# UNIVERSIDAD NACIONAL "PEDRO RUIZ GALLO"

**FACULTAD DE INGENIERÍA CIVIL, DE SISTEMAS Y DE ARQUITECTURA**

**ESCUELA PROFESIONAL DE INGENIERÍA CIVIL**

# TESIS

## "Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque"

**PARA OPTAR EL TÍTULO PROFESIONAL DE INGENIERO (A) CIVIL**


**RESPONSABLES:**

**Bach. Arroyo Ayala, Milagros**

**Bach. Sanchez Montenegro, Nolber Ricardo**

**ASESOR:**

**Msc. Ing. Anaya Morales, Roger Antonio**



**LAMBAYEQUE – PERÚ**
**2026**

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# ACTA DE SUSTENTACIÓN
# N° 041-2026-UI-FICSA

Siendo las 8:00 am del día 31 de agosto del 2026, se reunieron los miembros de jurado de la Tesis titulada: **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE" con código N° IC_V_2024_074,** y designado por **Resolución Decanal N°866-2024-UNPRG-FICSA** con la finalidad de Evaluar y Calificar la sustentación de la tesis profesional antes mencionada, conformado por los siguientes docentes:

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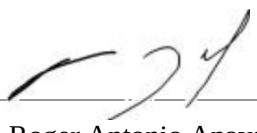

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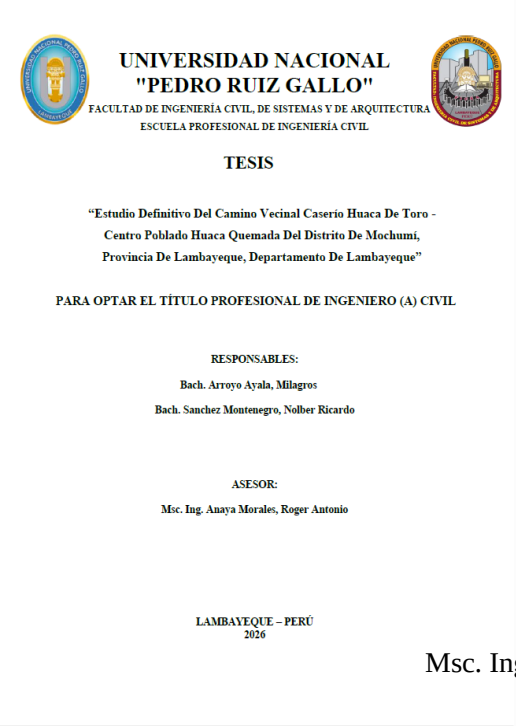

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## RESUMEN

En el estudio definitivo se ha considerado el diseño de la vía con una velocidad de 30 km/h, para el mejoramiento del tránsito vehicular existente y proyectado, y el proyecto en cuestión, genera un beneficio directo a la población de Mochumí y el departamento en general.

El objeto del trabajo de tesis es la elaboración del "Estudio Definitivo del Camino Vecinal Caserío Huaca de Toro – Centro Poblado Huaca Quemada del Distrito de Mochumí, Provincia de Lambayeque, Departamento de Lambayeque".

Para el desarrollo del estudio se efectuarán el levantamiento topográfico, los estudios de mecánica de suelos, el estudio de tráfico, los estudios hidráulicos e hidrológicos, el diseño geométrico, el diseño de pavimentación, el diseño de obras de arte, la evaluación de impacto ambiental, el estudio de conservación vial, así como los metrados del proyecto, el presupuesto de obra y la programación de la ejecución.

Se determinó el IMDA y la topografía correspondiente siendo estos parámetros fundamentales para determinar la velocidad de diseño, con la cual el corredor vial se diseñará, utilizando softwares específicos como el CIVIL 3D.

El proyecto consta de un corredor vial (Km 11+174.06), que tiene su inicio en el caserío Huaca de Toro y como destino final el centro poblado Huaca Quemada; del mismo modo, el corredor atraviesa otros importantes centros poblados y anexos, tales como Solecape, San Antonio, Huaca de Toro Mariposo, Muy Finca Sector Cassinelli, Muy Finca Rama Carrizo, El Carrizo y Los Peches, y forma parte de intersecciones con ramales que conectan a las zonas rurales de todo el distrito de Mochumí. La topografía es relativamente plana, lo cual ha sido considerado para la determinación de sus secciones transversales.



**Palabras Claves:** Corredor Vial, Velocidad de diseño, Índice Medio Diario Anual, Topografía.

## ABSTRACT

The final study considered a road design with a speed of 30 km/h to improve existing and projected vehicular traffic. The project directly benefits the population of Mochumí and the department as a whole.

The objective of this thesis is the development of the "Estudio Definitivo del Camino Vecinal Caserío Huaca de Toro – Centro Poblado Huaca Quemada del Distrito de Mochumí, Provincia de Lambayeque, Departamento de Lambayeque".

The study will include topographic surveying, soil mechanics studies, traffic studies, hydraulic and hydrological studies, geometric design, pavement design, design of structures, environmental impact assessment, road conservation study, as well as project measurements, construction budget, and execution schedule.

The Average Daily Traffic (ADT) and corresponding topography were determined, these being fundamental parameters for determining the Design Speed (DS), with which the road corridor will be designed using specialized software such as Civil 3D.

The project consists of a road corridor (Km 11+174.06), which begins in the hamlet of Huaca de Toro and ends in the town of Huaca Quemada. Similarly, the corridor passes through other important population centers and annexes, such as Solecape, San Antonio, Huaca de Toro Mariposo, Muy Finca Sector Cassinelli, Muy Finca Rama Carrizo, El Carrizo, and Los Peches, and forms part of intersections with branch roads that connect the rural areas throughout the Mochumí district. The topography is relatively flat, which has been taken into account in determining its cross-sections.



**Keywords:** Road Corridor, Design Speed, Average Annual Daily Traffic, Topography.

# CAPÍTULO I.- ASPECTOS GENERALES

## 1.1 INTRODUCCIÓN

El trabajo de tesis tiene por objeto reducir las limitaciones en la transitabilidad que actualmente afectan al tramo Huaca de Toro – Huaca Quemada, con una longitud total de (km 11+174.06). La vía existente no ofrece las condiciones mínimas para un tránsito fluido y seguro, lo que afecta el traslado de mercancías y usuarios.

El objetivo del presente trabajo de tesis es elaborar el "Estudio Definitivo del Camino Vecinal Caserío Huaca de Toro – Centro Poblado Huaca Quemada, distrito de Mochumí, provincia de Lambayeque, departamento de Lambayeque", mediante los estudios de topografía, mecánica de suelos, tráfico, hidráulica e hidrología, así como el diseño geométrico, el diseño de pavimentación, el diseño de obras de arte, la evaluación de impacto ambiental, el estudio de conservación vial, los metrados, el presupuesto y la programación de obra, de acuerdo con la normativa técnica vigente.

Para el desarrollo del estudio, resulta fundamental realizar un diagnóstico integral del área de influencia del proyecto, considerando aspectos físicos, ambientales y socioeconómicos. En ese sentido, se analizarán las características de la zona de estudio, así como las condiciones relacionadas con la salud, la vivienda, la educación y el acceso a los servicios públicos, lo cual contribuye a comprender mejor las condiciones reales del lugar.

Este trabajo de tesis se desarrolla como una propuesta aplicada que podría servir de apoyo al distrito de Mochumí para el inicio de su implementación. Con este fin, se ha priorizado la confiabilidad diseño técnico y los cálculos de costos del proyecto.

## 1.2 ANTECEDENTES

Los caseríos y centros poblados ubicados en la zona noreste de la carretera FBT y en la zona suroeste de la carretera Panamericana, dentro del distrito de Mochumí, presentan una significativa disponibilidad de recursos naturales y potencial agropecuario. En esta zona, la población desarrolla principalmente actividades agrícolas que constituyen la base de su economía local. No obstante, las condiciones actuales de accesibilidad generan dificultades para el adecuado desarrollo de dichas actividades productivas, ya que la limitada transitabilidad de la vía restringe el traslado oportuno de los productos hacia los centros de comercialización. Esta situación ocasiona pérdidas económicas para los productores, debido a las dificultades

para acceder de manera eficiente a los mercados cercanos y de mayor importancia. En la actualidad, la vía de estudio se encuentra clasificada como una carretera no pavimentada, la cual presenta deficiencias en su superficie de rodadura y diversos niveles de deterioro ocasionados principalmente por las condiciones climáticas y el tránsito vehicular.

El presente estudio surge como respuesta a la necesidad manifestada por los agricultores y productores del distrito de Mochumí, quienes requieren mejorar el acceso hacia los mercados cercanos para comercializar sus productos en condiciones más favorables. Asimismo, se busca establecer una adecuada interconexión con la carretera Panamericana Norte. La importancia de esta vía radica en que facilitará la comunicación entre el caserío Huaca de Toro y el centro poblado Huaca Quemada con el distrito de Mochumí.

## 1.3 OBJETIVOS

### 1.3.1 OBJETIVO GENERAL

"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE".

### 1.3.2 OBJETIVOS ESPECÍFICOS

- ✓ Efectuar el levantamiento topográfico del área de estudio
- ✓ Realizar estudios de mecánica de suelos y canteras.
- ✓ Realizar estudio de tráfico.
- ✓ Realizar estudios hidráulicos e hidrológicos.
- ✓ Realizar el diseño geométrico.
- ✓ Realizar el diseño de la pavimentación.
- ✓ Realizar el diseño de obras de arte.
- ✓ Realizar la evaluación de impacto ambiental
- ✓ Realizar el estudio de conservación vial.
- ✓ Realizar los metrados del proyecto.
- ✓ Realizar el presupuesto de obra.
- ✓ Realizar la programación de obra.

## 1.4 DESCRIPCIÓN GENERAL DEL PROYECTO

### 1.4.1 ESTUDIOS POLÍTICOS

#### 1.4.1.1 SITUACIÓN POLÍTICA

El área de intervención se encuentra en el distrito de Mochumí, provincia y departamento de Lambayeque.

**Figura 1**

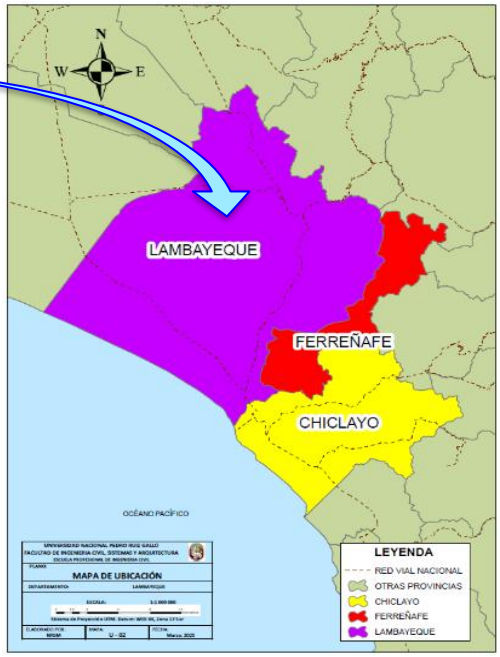
*Ubicación Geográfica*




***Nota:*** Elaboración propia

**Figura 2**

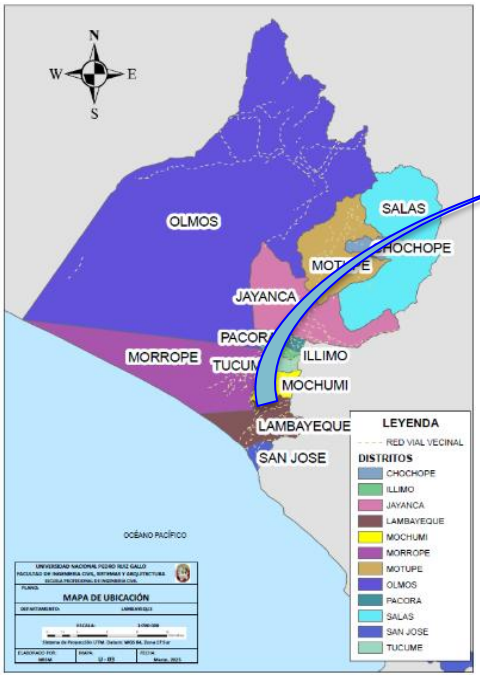
*Ubicación Departamental*




***Nota:*** Elaboración propia

**Figura 3**

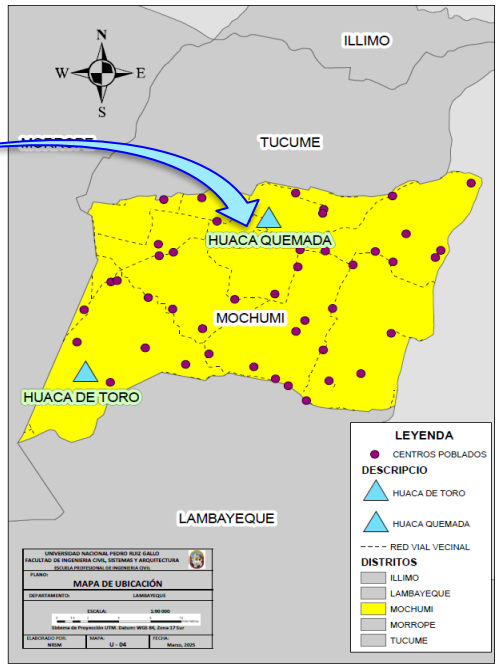
*Ubicación Provincial*




***Nota:*** Elaboración propia

**Figura 4**

*Ubicación Distrital*




***Nota:*** Elaboración propia

### 1.4.2 ESTUDIO FÍSICO - GEOGRÁFICOS

#### 1.4.2.1 SITUACIÓN GEOGRÁFICA

La zona de interés pertenece al distrito de Mochumí, perteneciente a la provincia y departamento de Lambayeque, en la costa norte del Perú. Geográficamente, se ubica en las coordenadas 6° 32’ 39’’ de latitud sur y 79° 51’ 51’’ de longitud oeste, presentando una altitud promedio aproximada de 36 msnm.

La carretera ubicada entre el caserío Huaca de Toro y el centro poblado Huaca Quemada se encuentra georreferenciada mediante las siguientes coordenadas UTM bajo el sistema WGS84.

TRAMO PRINCIPAL (HUACA DE TORO – HUACA QUEMADA):

**PUNTO INICIAL (km 0 + 000 – HUACA DE TORO)**

- NORTE : 9271024.047
- ESTE : 616061.665
- ALTITUD : 20.305 m.s.n.m.

**PUNTO FINAL (Km 11+174.06– HUACA QUEMADA)**

- NORTE : 9276879.438
- ESTE : 623458.356
- ALTITUD : 35.861 m.s.n.m.

Sus límites son

- Norte: Con el distrito de Túcume.
- Sur: Con el distrito de Lambayeque y caserío Pueblo Nuevo.
- Este: Con la provincia de Ferreñafe.
- Oeste: Con el distrito de Mórrope.

#### 1.4.2.2 ACCESO A LA ZONA DEL PROYECTO

Podemos llegar al área de estudio se realiza mediante vía terrestre, tomando como punto de partida el distrito de Chiclayo, como referencia inicial desde la Plaza de Armas. Desde este lugar se continúa el recorrido hasta el sector de Medianía, ubicado aproximadamente a 24.3

km de distancia. Posteriormente, se prosigue desde dicho sector hasta el inicio de la vía en estudio, recorriendo una distancia aproximada de 3.3 km.

**Tabla 1**

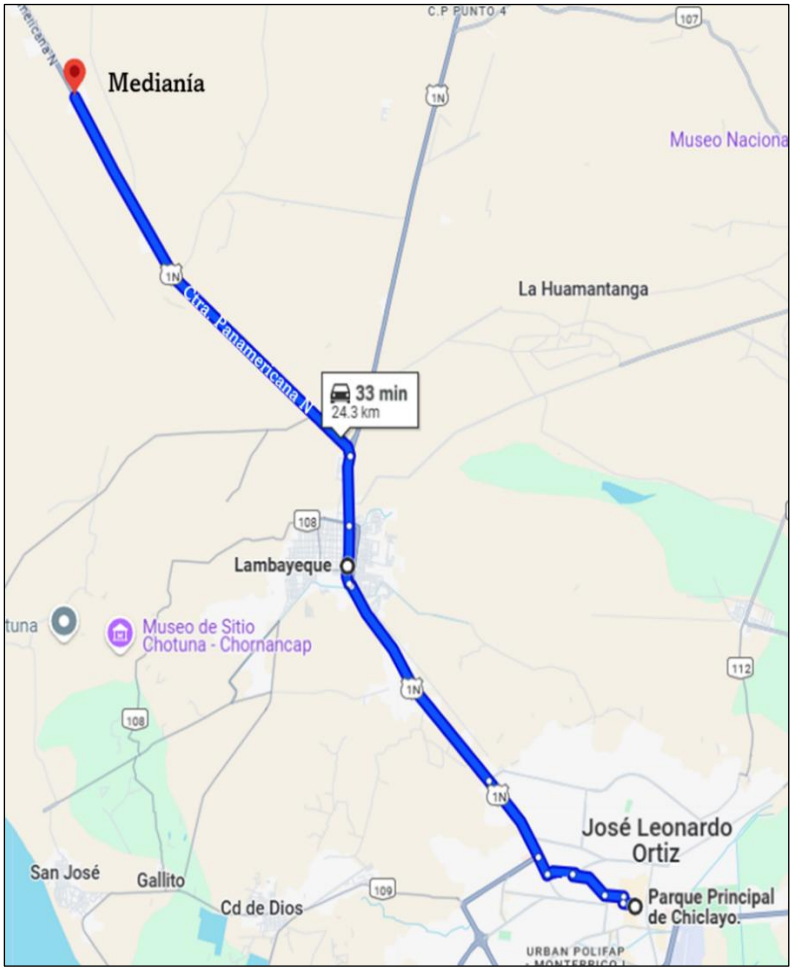
*Vías de acceso al área de estudio*

| Partida | Llegada | Kilometraje | Tipo De Vía | Tiempo |
|---|---|---|---|---|
| **Chiclayo** | **Medianía** (Ctra. Panamericana) | 24.3 Km | Asfaltada | 33 min |
| **Medianía** | **Inicio de Tramo** (Huaca de Toro) | 3.3 Km | Afirmado | 8 min |
| | **Total** | 27..6 km | | 41 |

***Nota:*** Elaboración propia

**Figura 5**

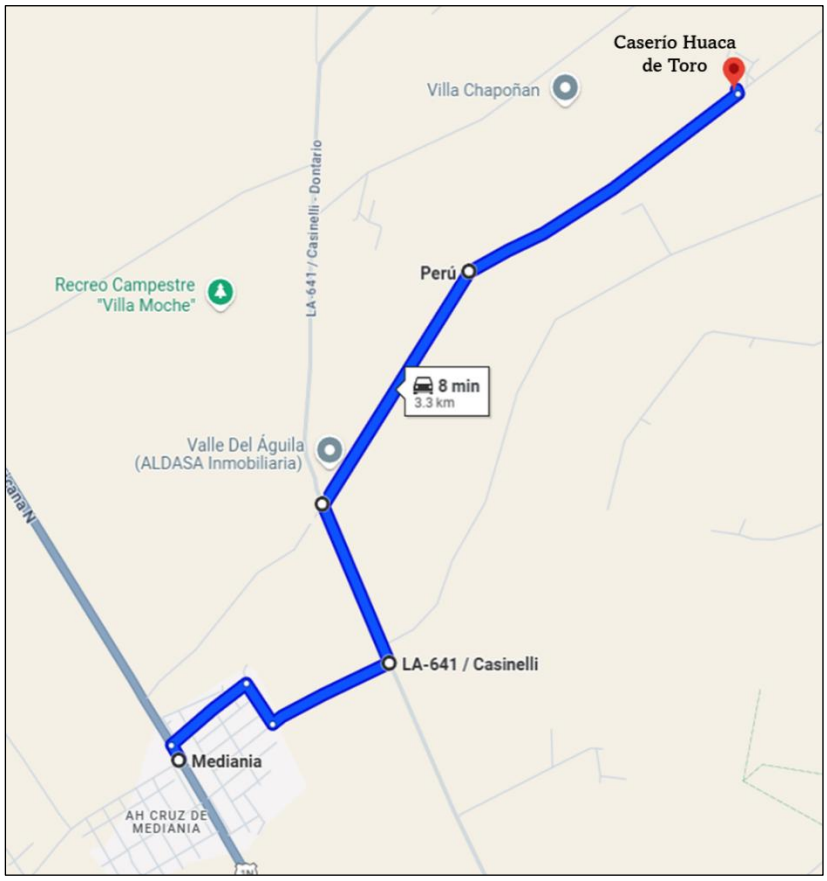
*Tramo I: Chiclayo - Medianía*




***Nota:*** Elaboración propia.

**Figura 6**

*Tramo II: Medianía – Inicio de Carretera*




***Nota:*** Elaboración propia.

### 1.4.2.3 RELIEVE DE LA ZONA

Su terreno es plano, posee huacas y varias de ellas han sido reconocidas como áreas arqueológicas. El nivel freático se incrementa a la superficie durante periodos de cosecha agrícola y el suelo presenta un elevado contenido de salitre o sulfatos.

De acuerdo con las condiciones topográficas**,** el área analizada corresponde a un terreno plano (Tipo 01), aspecto que será analizado con mayor detalle en el estudio topográfico y considerada durante el proceso de diseño geométrico de la vía.

### 1.4.2.4 METEOROLOGÍA Y CLIMATOLOGÍA

La zona presenta condiciones climáticas cálidas y secas, propias de la región natural Costa, también denominada Chala. Durante el verano, las temperaturas oscilan entre los 35 °C en los meses de enero a marzo, sin embargo, en invierno llega a bajar hasta los 17°C en los meses de julio a agosto.

En relación con el régimen de precipitaciones, su frecuencia se incrementa desde noviembre hasta abril, alcanzando mayor intensidad durante enero, febrero y marzo.

### 1.4.3 ESTUDIOS SOCIOECONÓMICOS

### 1.4.3.1 ACTIVIDADES ECONÓMICAS PREDOMINANTES EN EL SECTOR

#### 1.4.3.1.1 DEMOGRAFÍA

Según el (INEI, 2017), en el distrito de Mochumí se registró una población total de 18 401 personas, siendo 10 651 del sector rural y 7 750 del sector urbano; respecto al género, la población masculina alcanza 8 993 y la femenina 9 408, con una tasa de crecimiento de 0.7%.

**POBLACIÓN EN EL ÁREA DE INFLUENCIA**

El trabajo de investigación actual, contempla una ruta general cuya extensión representa la Población – ruta que inicia en el Emp. LA – 641 (614738.01 E, 9269766.42 N) hasta Emp. LA – 608 (623442.00 E, 9276879.00 N) cuenta con una longitud total de 12 km.

**Tabla 2**

*Población Beneficiada*

| POBLACIÓN: COORDENADAS DE LA RUTA | | | |
|---|---|---|---|
| ZONA | | UTM – 17S | |
| PUNTO | DESCRIPCIÓN | COOR. ESTE | COOR. NORTE |
| INICIO | Emp. LA - 641 | 614738.01 | 9269766.42 |
| FIN | Emp. LA - 608 | 623442.00 | 9276879.00 |

***Nota:*** Elaboración propia.

#### 1.4.3.1.2 AGRICULTURA Y GANADERÍA

**a) AGRICULTURA**

Entre los principales productos agrícolas más importantes del distrito de Mochumí tenemos de forma predominante siembras de Arroz y Arveja Grano Verde con un porcentaje superior al 50% en los meses de Julio, además del Arroz en los meses de enero a marzo con porcentaje próximo al 75%, y en menor escala se encuentra el Maíz Amarillo Duro que se siembra entre julio y noviembre, aunque con poco porcentaje es el producto con más tiempo de sembrío.

De acuerdo con datos oficiales del (MIDAGRI, 2025), se detalla el nivel productivo y la competitividad de los cultivos más representativos del área.

**b) GANADERÍA**

En el distrito de Mochumí, la crianza de ganado porcino y ovino, constituye una actividad relevante para contribuir al sustento económico de la población.

**Tabla 3**

*Resumen de población de ganado*

| GANADO | | CANTIDAD DE UNIDADES AGROPECUARIA |
|---|---|---|
| TIPO | CABEZAS | |
| PORCINOS | 2 244 | 816 |
| OVINOS | 4 279 | 724 |
| VACUNOS | 1 663 | 590 |
| CAPRINOS | 993 | 267 |
| LLAMAS | 7 | 3 |
| Total | 9186 | 2400 |

***Nota:*** Elaboración propia con base de datos del INEI – IV Censo Nacional Agropecuario (2012).

### 1.4.3.2 PROVISIÓN DE SERVICIOS

#### 1.4.3.2.1 EDUCACIÓN

Respecto al sector educación, los centros educativos están distribuidos en los diferentes caseríos del distrito de Mochumí, comprendidos dentro del área de influencia del proyecto. Se identificaron 6 locales de nivel inicial, 6 de primaria y 3 de secundaria.

La institución con mayor cantidad de alumnado es la I.E. 10141 – 7 de Noviembre, con 237 estudiantes, seguida por la I.E. Pedro Ruiz Gallo con 226 alumnos, mientras que el nivel inicial N.º 067 presenta la menor cantidad con 97 alumnos.

La mejora de la vía facilitará el traslado diario de estudiantes y docentes, reduciendo los tiempos de viaje y contribuyendo a una mayor seguridad en el desplazamiento, lo cual favorece el desarrollo educativo y social de la población.

**Tabla 4**

*Instituciones en la zona de influencia*

| Nombre de IE | Nivel / Modalidad | Dirección de IE | Gestión | Alumnos | Docentes |
|---|---|---|---|---|---|
| 237 | Inicial - Jardín | Las Maravillas | Pública | 37 | 2 |
| 10995 Nuestra Patrona de las Mercedes | Primaria | El Carrizo | Pública | 46 | 3 |
| 11258 | Primaria | San Antonio | Pública | 42 | 3 |
| 10136 Alfredo Maldonado Arias | Primaria | Las Maravillas | Pública | 68 | 4 |
| 10996 | Primaria | Valle Nuevo Muy Finca | Pública | 92 | 6 |
| 10135 Pedro Ruiz Gallo | Secundaria | Muy Finca | Pública | 116 | 7 |
| 10135 Pedro Ruiz Gallo | Primaria | Muy Finca | Pública | 226 | 12 |
| 067 | Inicial - Jardín | Muy Finca S/N | Pública | 97 | 4 |
| 10141 - 7 De Noviembre | Secundaria | Solecape | Pública | 237 | 15 |
| 10141 - 7 De Noviembre | Primaria | Solecape | Pública | 227 | 12 |
| Caritas Felices | Inicial No Escolarizado | Rama El Carrizo | Pública | 15 | 0 |
| Las Fresitas | Inicial No Escolarizado | Paredones San Juan | Pública | 13 | 0 |
| 10141 - 7 De Noviembre | Inicial – Jardín | Solecape | Pública | 96 | 4 |
| Niños Talentos | Inicial No Escolarizado | Cassinelli | Pública | 14 | 0 |
| 10996 | Secundaria | Valle Nuevo Muy Finca | Pública | 83 | 7 |

***Nota:*** Datos tomados de la Unidad de Estadística Educativa – ESCALE del Ministerio de Educación del Perú (2017), Censo Escolar.

#### 1.4.3.2.2 SALUD

En el distrito de Mochumí, las condiciones de salud se ven seriamente afectados por factores alimenticios, factor que se relaciona directamente con la situación socioeconómica de sus habitantes. La limitada presencia de centros de salud, sumada a las deficiencias en los servicios esenciales como agua, alcantarillado y energía eléctrica, así como la disponibilidad de equipos médicos que no cumplen con los requerimientos mínimos, afectan principalmente a los caseríos ubicados dentro del proyecto.

En el distrito de Mochumí se identifican tres establecimientos de salud. Estos centros únicamente brindan servicios a nivel básico, sin capacidad resolutiva para atenciones generales ni especializadas. Esta limitación estructural repercute directamente en la cobertura y calidad del servicio asistencial. La ausencia de niveles superiores de atención condiciona una respuesta insuficiente ante demandas más complejas. Por tanto, se evidencia una brecha significativa en el acceso integral a servicios de salud.

**Tabla 5**

*Establecimientos de Salud en la zona de influencia*

| Establecimiento de Salud | Categoría | Funciona Si/No | Diresa | Clasificación |
|---|---|---|---|---|
| C.S Mochumí | I - 3 | SI | Geresa Lambayeque | Centro De Salud |
| P.S Maravillas | I - 1 | SI | Geresa Lambayeque | Posta De Salud |
| P.S Paredones Muy Finca | I - 1 | SI | Geresa Lambayeque | Posta De Salud |

***Nota:*** Elaboración propia con base en datos de GERESA.

#### 1.4.3.2.3 VIVIENDA

En Mochumí, predominas viviendas construidas con tipo rústico, representando el 63.87% del total, teniendo como material mayormente utilizado en los muros de vivienda el adobe. En segundo lugar, el 30.93% de las casas presentan paredes de ladrillo o bloques de cemento. En tercer lugar, tenemos las construcciones de triplay con un 2.29% y de quincha (caña con barro), que constituyen el 2.27%. Finalmente, un 0.63% corresponde a viviendas edificadas con materiales como madera, piedra con barro, piedra o sillar unidas con cal o cemento.

**Tabla 6**

*Disponibilidad de servicios básicos en las viviendas en la zona de influencia*

| DISPONIBILIDAD DE SERV. BÁSICOS EN LAS CASAS | | |
|---|---|---|
| Cantidad total de viviendas de uso particular | 4 584 | 100.00% |
| Viviendas abastecidas con agua a través de la red pública | 3 864 | 84.29% |
| Viviendas con instalaciones sanitarias conectadas al alcantarillado público | 1 876 | 40.92% |
| Viviendas que disponen de alumbrado eléctrico por red pública | 4 270 | 93.15% |

***Nota:*** Información elaborada con datos estadísticos del INEI – Censos Nacionales 2017.

# CAPÍTULO II.- ESTUDIOS BÁSICOS

## 2.1 ESTUDIO DE TRÁFICO

### 2.1.1 GENERALIDADES

El estudio definitivo ha sido elaborado según la normativa vigente, dada la importancia para evaluar el flujo vehicular y sus características respecto de la vía que une las localidades Huaca Toro – Huaca Quemada del Distrito de Mochumí.

La evaluación que se ha realizado ha permitido determinar el IMD según clase de vehículos que transitan, estudiar las velocidades de los vehículos, hasta finalmente estimar la demanda de la vía con proyecto.

En tal sentido, de acuerdo con lo señalado en el estudio de tráfico realizado se podrá diseñar el respectivo proyecto cuyo propósito es mejorar la situación actual de transitabilidad del camino vecinal.

### 2.1.2 METODOLOGÍA

El conteo para este estudio se realizó en puntos estratégicamente ubicados. En este caso se optó establecerlo según la imagen adjunta. La contabilización de unidades vehiculares se realizó durante un lapso de siete días seguidos desde el 06 de enero hasta el 12 de enero del 2025, en base al cuál se obtuvo el IMDA y la proyección de tráfico.

- Como etapa inicial, se establecieron los puntos más adecuados donde se realizaría el conteo vehicular, para lo cual se efectuó una inspección previa del tramo general, con la intención de asegurar una adecuada recolección de datos con la máxima eficiencia.

- Posteriormente, se realizó el conteo del tránsito vehicular empleando el formato de registro establecido por el Ministerio de Transportes y Comunicaciones (MTC),

- Finalmente, se realizó el procesamiento de la información obtenida en gabinete, con la finalidad de integrarla al proceso de diseño del proyecto vial.

#### 2.1.2.1 RECOPILACIÓN DE INFORMACIÓN

Ubicación de las 04 estaciones: E-01, E-02, E-03 y E-04.

**Tabla 7**

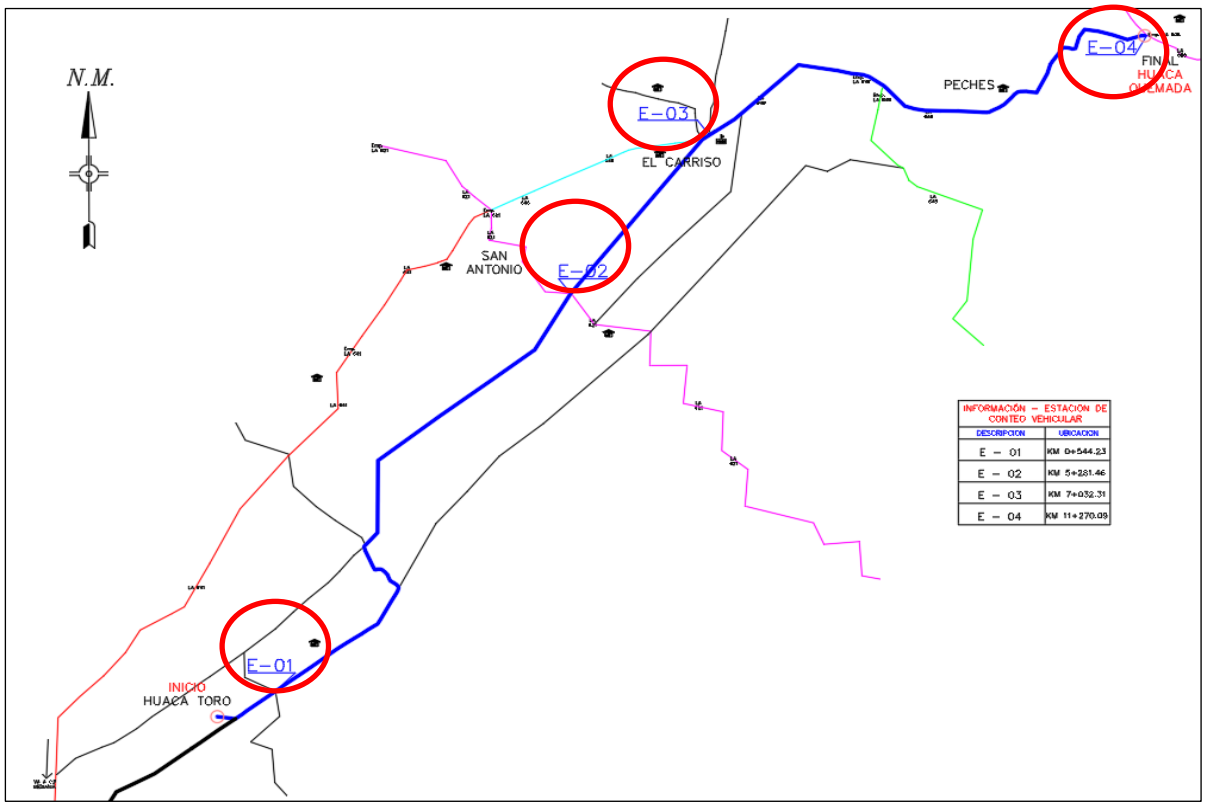
*Ubicación de las Estaciones*

| TRAMO DE CARRETERA | EST. | CÓDIGO |
|---|---|---|
| HUACA TORO – SOLECAPE | Estación 01 | E - 01 |
| HUACA TORO – CRUCE A SAN ANTONIO | Estación 02: EMPALME LA-621 | E - 02 |
| CRUCE A SAN ANTONIO – EL CARRIZO | Estación 03: EMPALME LA-646 (EL CARRIZO) | E - 03 |
| EL CARRIZO – PECHES – HUACA QUEMADA | Estación 04: EMP. LA 608 (FIN DEL TRAMO) | E - 04 |

***Nota:*** Elaboración propia.

**Figura 7**

*Ubicación de las Estaciones*




***Nota:*** Elaboración propia.

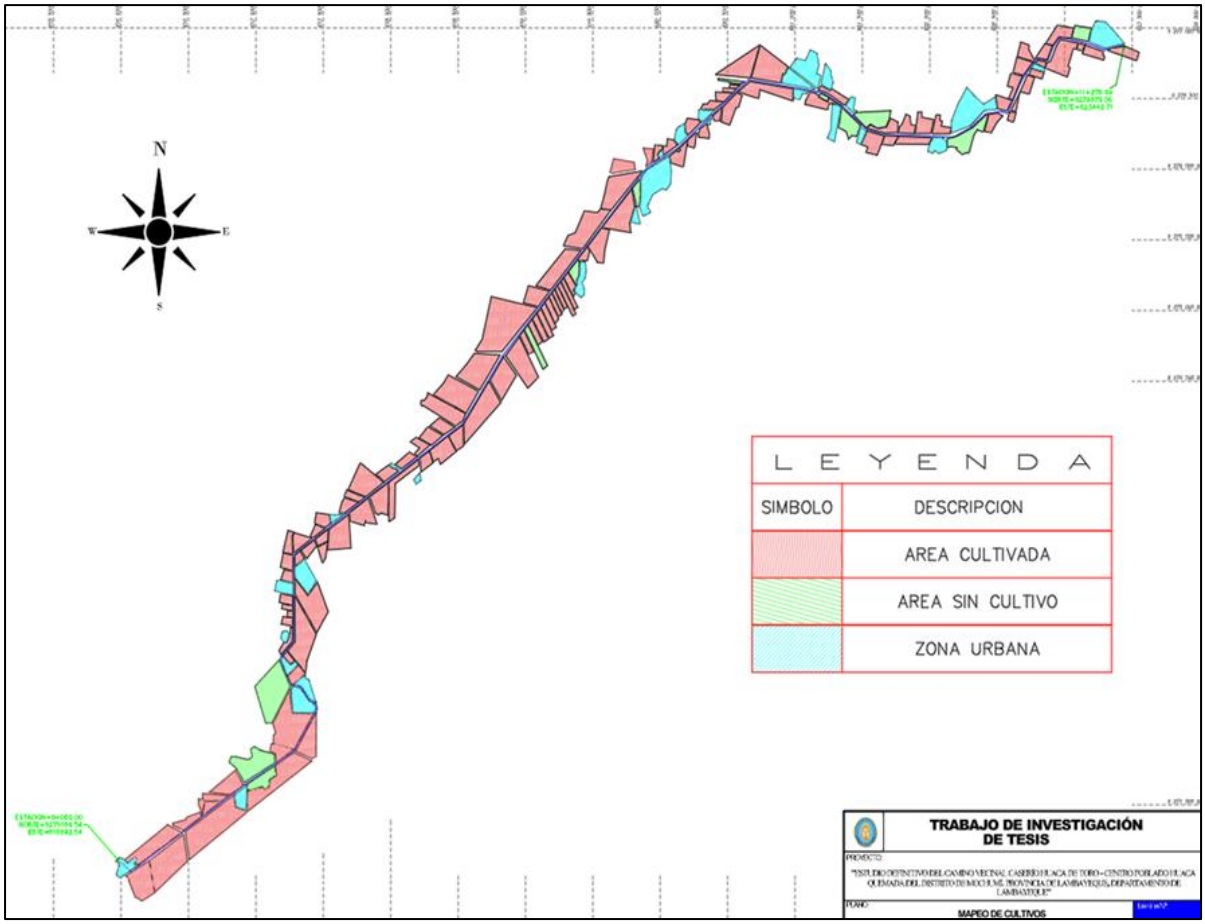
La conformación del equipo de campo consideró el número óptimo de personal, a fin de asegurar la correcta rotación de turnos, la continuidad de los registros y el cumplimiento de los procedimientos de control establecidos.

### 2.1.3 DETERMINACIÓN DEL (IMDA) – CON PRODUCCIÓN

Se obtuvieron las superficies cultivadas, expresadas en hectáreas, a partir del mapeo de cultivos.

**Figura 8**

*Mapeo de cultivos Huaca Toro - Huaca Quemada*




***Nota:*** Elaboración propia.

**Tabla 8**

*Área referente al mapeo de cultivos*

| Total de Áreas | | |
|---|---|---|
| Área cultivada | Arroz | 139.85 ha |
| | Arveja grano verde | 50.22 ha |
| Área sin cultivo | | 23.71 ha |
| Área Urbana | | 36.65 ha |

***Nota:*** Elaboración propia.

En un año calcularemos el tráfico teniendo en cuenta la cantidad de producción, la capacidad del camión y teniendo como cantidad de vehículos, la cantidad de viajes que se requieran.

**Tabla 9**

*Número de viajes requeridos*

| CULTIVOS | PRODUCCIÓN (ton) | # DE VIAJES | # DE VEHÍCULOS POR DÍA |
|---|---|---|---|
| ARROZ | 1132.79 | 534.00 | 2 |
| ARVEJA DE GRANO VERDE | 130.57 | 62.00 | 2 |

***Nota:*** Elaboración propia.

### 2.1.4 ANÁLISIS DE RESULTADOS DEL CONTEO DE TRÁFICO

Una vez realizada la consolidación y validación de la información obtenida correspondientes a los siete (07) días del conteo vehicular, se determinaron los volúmenes de tránsito según los tramos de la carretera evaluada, por día, según el vehículo, sentido de circulación en ambos sentidos.

El resumen de los resultados del IMD Anual obtenidos en la estación E-2 con más vehículos.

**Tabla 10**

*Cálculo del IMDa correspondiente a la Estación 2*

| TRÁFICO VEHICULAR | | |
|---|---|---|
| **IMD ANUAL Y CLASIFICACIÓN VEHICULAR (Veh/día)** | | |
| **Vehículos** | **IMD.** | **Dist. %** |
| Autos | 28 | 52.9% |
| Station Wagon | 1 | 1.9% |
| Pick Up | 17 | 32.1% |
| Cam. Panel | 0 | 0.0% |
| Combi rural | 0 | 0.0% |
| Micro | 0 | 0.0% |

| TRÁFICO VEHICULAR | | |
|---|---|---|
| Ómnibus 2E y 3E | 0 | 0.0% |
| Camión 2E | 7 | 13.0% |
| Camión 3E | 0 | 0.0% |
| Camión 4E | 0 | 0.0% |
| Semi tráiler | 0 | 0.0% |
| Tráiler | 0 | 0.0% |
| **TOTAL** | **53** | **100.0%** |

***Nota:*** Elaboración propia - Cada 02 Mototaxis, se considera como 01 Vehículo Ligero.

Posteriormente, se efectuó la proyección del tránsito vehicular tomando como base la estación de conteo que registró el mayor volumen de vehículos, correspondiente a la estación 2. Asimismo, para el cálculo del tránsito proyectado se contemplaron los componentes del tránsito normal, el tránsito generado y el tránsito desviado. En este sentido, para estimar el tránsito normal se consideró la tasa de crecimiento vehicular establecida a nivel departamental y se asumió un incremento del 15 % para el tránsito generado y del 10 % para el tránsito desviado, valores que se aplican al tráfico actual.

Los resultados de cada estación se encuentran Anexo N°02.

## 2.2 ESTUDIO TOPOGRÁFICO

### 2.2.1 GENERALIDADES

El presente informe describe las actividades topográficas efectuadas durante el desarrollo del estudio. En este documento se expone la información de campo, así como los datos procesados posteriormente en gabinete. El trabajo se desarrolla en dos partes: la primera corresponde a la recopilación de la data in situ y la segunda al procesamiento y análisis de dichos datos mediante el uso de programas de diseño como Civil 3D y Excel.

El objetivo del estudio topográfico es generar un plano detallado del terreno donde se ejecutará el diseño vial, mediante el trazo del eje de la vía y la obtención de curvas de nivel, perfiles longitudinales y secciones transversales.

### 2.2.2 TRABAJOS TOPOGRÁFICOS

El levantamiento del terreno y el proceso de datos de campo se realizaron utilizando instrumentos topográficos de alta precisión, como la estación total. Los datos recopilados fueron almacenados para su posterior procesamiento en el software Civil 3D.

**A) TECNICA APLICADA**

Para este estudio se aplicó el levantamiento topográfico mediante el método de secciones transversales, con apoyo de instrumentos electrónicos de medición como estación total y GPS. Esta técnica es adecuada para proyectos de carreteras en zonas montañosas, ya que permite registrar la geometría del terreno a lo largo del eje proyectado, con precisión en la determinación de cotas, distancias y coordenadas UTM.

**B) INSTRUMENTOS UTILIZADOS**

1. Libretas de campo.
2. Cintas métricas y jalones.
3. Prismas topográficos.
4. Estacas y pintura para señalización de puntos.
5. Croquis manuales.

**C) EQUIPOS EMPLEADOS**

1. Estación Total Topcon ES-105, para capturar ángulos, distancias y cotas con alta precisión.
2. Receptor GNSS marca KOLIDA modelo K30 de doble frecuencia (Base), para georreferenciación de puntos clave con coordenadas UTM (Datum WGS-84, Zona 17M).
3. Prismas y bastones telescópicos, para la correcta recepción de señales desde la estación.
4. Trípodes de aluminio, para estabilidad de los equipos.

**D) PROCEDIMIENTO**

Se realizaron visitas iniciales al terreno para verificar accesos, estado del trazo y condiciones físicas del entorno. Además, se monumentó puntos de control (monumentaciones de orden C) y se referenciaron con GPS. Se utilizó el sistema geodésico WGS-84, proyección UTM zona 17M. Se encuentra en el Anexo N°03.

**Tabla 11**

*Coordenadas UTM WGS84 del PG-01 y PG-02*

| COORDENADAS UTM WGS84 | | | |
|---|---|---|---|
| **PUNTO** | **NORTE** | **ESTE** | **ELEVACION** |
| PG - 01 | 9271033.55 | 616033.99 | 20.312 |
| PG – 02 | 9276899.51 | 623469.24 | 36.128 |

***Nota:*** Elaboración propia.

Para el levantamiento, se trazó una poligonal base abierta, tomando como referencias coordenadas conocidas y se capturaron puntos del eje, márgenes, elementos naturales y construcciones dentro de la franja vial, además se midieron perfiles transversales cada 20 m en rectas y cada 10 m en curvas, adaptándose a la topografía plana.

Este levantamiento incluyó el eje principal de la vía proyectada, así como el área lateral necesaria para definir las secciones transversales, pendientes laterales, taludes y posibles ampliaciones o variantes. La franja abarcó un ancho suficiente para representar el perfil del terreno natural y permitir el diseño de la plataforma vial, incluyendo zonas de corte y relleno, ubicación de obras de drenaje, bermas, cunetas, y otras estructuras complementarias.

**Tabla 12**

*Ubicación de BM's*

| BM's Abs. | | | | |
|---|---|---|---|---|
| **COORDENADAS** | | | **N° DE BM** | **DESCRIPCIÓN** |
| **COTA (m)** | **NORTE (m)** | **ESTE (m)** | | |
| 20.312 | 9271033.552 | 616033.990 | PG - 01 | Inicio de la ruta. |
| 21.550 | 9271307.260 | 616462.765 | BM - 01 | Localizado en el trazo de la carretera, al margen derecho. |
| 21.627 | 9271566.324 | 616821.863 | BM - 02 | Localizado en el trazo de la carretera, al margen derecho. |
| 36.128 | 9276899.512 | 623469.238 | PG - 02 | Final de la ruta. |
| **BM's Aux.** | | | | |
| 22.974 | 9271881.783 | 617285.480 | BM - 03 | Localizado en el borde derecho de la carretera, en una estructura |

| | | | | |
|---|---|---|---|---|
| | | | | de concreto armado de una compuerta (km 1) |
| 23.011 | 9272167.416 | 617449.462 | BM - 04 | Localizado en el trazo de la carretera, al margen derecho. (km 2) |
| 22.875 | 9272555.774 | 617182.058 | BM - 06 | Localizado en el trazo de la carretera, al margen izquierdo. (km 3) |
| 23.697 | 9272997.478 | 617278.656 | BM - 07 | Localizado en el borde izquierdo de la carretera, en una estructura de concreto armado del canal. (km 4) |
| 28.122 | 9274907.683 | 619011.662 | BM - 08 | Localizado en el trazo de la carretera, al margen izquierdo. (km 5) |
| 28.631 | 9275102.981 | 619169.841 | BM - 09 | Localizado en el trazo de la carretera, al margen izquierdo. (km 6) |
| 30.300 | 9276013.444 | 619901.947 | BM - 10 | Localizado en el trazo de la carretera, al margen izquierdo. (km 7) |
| 32.180 | 9276556.957 | 621166.696 | BM - 11 | Localizado en el trazo de la carretera, al margen izquierdo. (km 8) |
| 33.738 | 9276274.482 | 622263.670 | BM -12 | Localizado en el trazo de la carretera, al margen derecho. (km 9) |
| 35.861 | 9276882.634 | 623439.710 | BM - 13 | Localizado en el trazo de la carretera, al margen derecho. (km 10) |

***Nota:*** Elaboración propia.

La data de puntos del levantamiento topográfico se encuentra en Anexo N°04.

## 2.3 ESTUDIO DE MECANICA DE SUELOS (EMS)

### 2.3.1 GENERALIDADES

Las actividades realizadas en campo tuvieron como finalidad recolectar datos que permitan determinar las propiedades tanto físicas cómo mecánicas del suelo. Para ello, se realizó exploraciones directas, que incluyó la excavación de doce (12) calicatas, distribuidas de manera estratégica en el área de estudio, con el propósito de caracterizar el terreno en estudio.

### 2.3.2 TOMA DE MUESTRAS

Según los resultados del estudio de tránsito efectuado en la investigación, la carretera analizada se clasifica dentro de la categoría de bajo volumen de tráfico, debido a que presenta un IDMA menor a 200 vehículos por día.

Asimismo, conforme a lo establecido por el Manual de Suelos y Pavimentos del MTC (2014), se establece que debe ejecutarse como mínimo una calicata por cada kilómetro de vía, con una profundidad de 1.50 m medida desde el nivel de la subrasante (MTC, 2014).

### 2.3.3 POZOS O CALICATAS

Se hicieron 12 calicatas, las cuales se distribuyeron cada 1 km a lo largo de todo el tramo y dos en canteras, profundizando 1.5 metros la excavación de cada una de ellas. Asimismo, se tuvo tipos de muestras alteradas como para obtener una muestra representativa de todo el perfil, en donde la muestra fue recolectada y colocada en bolsas y sacos de polietileno debidamente identificados con el respectivo número de calicata y profundidad.

### 2.3.4 UBICACIÓN DE LAS CALICATAS

**Tabla 13**

*Ubicación. de las calicatas*

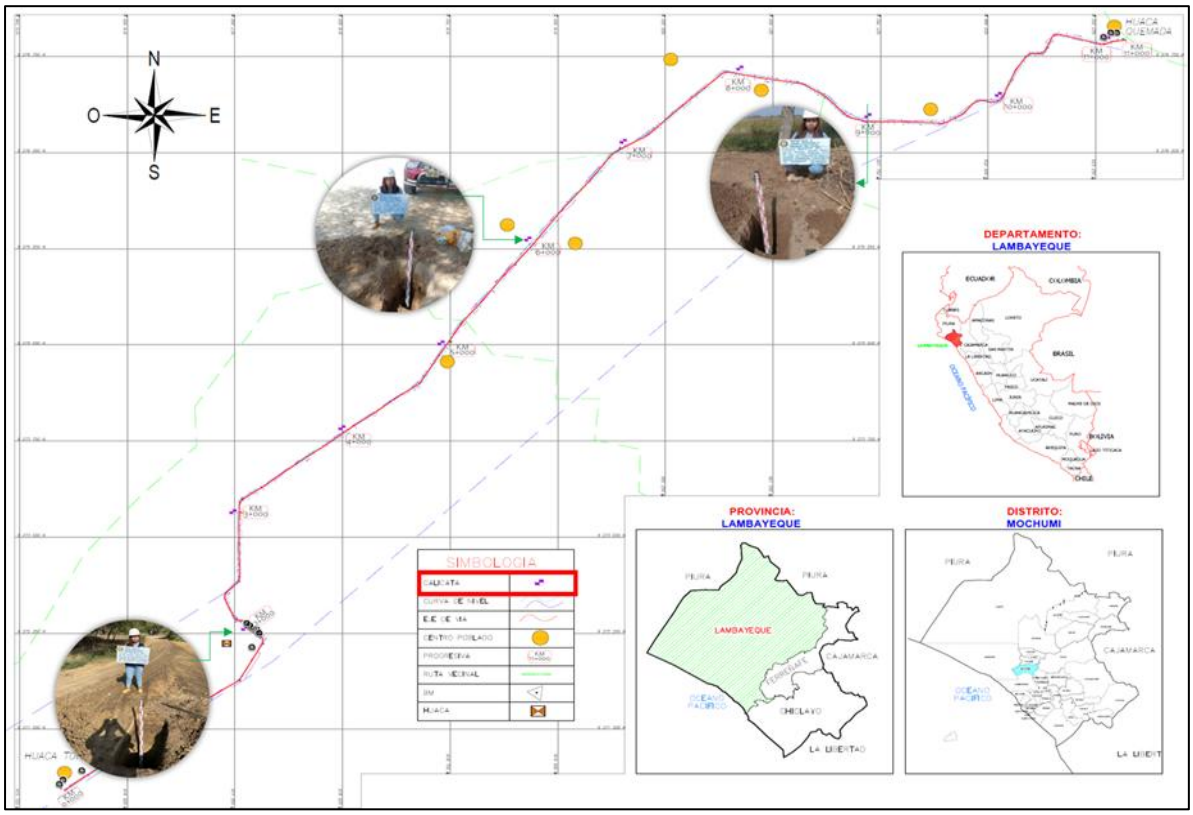
| CALICATA | PROGRESIVA (km) | ESTE (E) | NORTE (S) |
|---|---|---|---|
| **C1** | 0+000 | 616048.55 | 9271022.23 |
| **C2** | 1+000 | 616854.25 | 9271597.80 |
| **C3** | 2+000 | 617365.16 | 9272288.79 |
| **C4** | 3+000 | 617281.70 | 9273158.04 |
| **C5** | 4+000 | 617995.14 | 9273802.04 |
| **C6** | 5+000 | 618698.32 | 9274486.11 |

| CALICATA | PROGRESIVA (km) | ESTE (E) | NORTE (S) |
|---|---|---|---|
| **C7** | 6+000 | 619305.75 | 9275279.59 |
| **C8** | 7+000 | 619950.63 | 9276040.58 |
| **C9** | 8+000 | 620735.20 | 9276626.62 |
| **C10** | 9+000 | 621625.95 | 9276246.79 |
| **C11** | 10+000 | 622567.38 | 9276398.10 |
| **C12** | 11+000 | 623292.10 | 9276859.55 |

***Nota:*** Elaboración propia.

**Figura 9**

*Distribución de calicatas a lo largo del proyecto*




***Nota:*** Elaboración propia.

### 2.3.5 TRABAJO DE LABORATORIO

Para esta investigación se usaron las instalaciones de un laboratorio particular, es pertinente precisar que dicho laboratorio cuenta con autorización vigente para su funcionamiento, cumple con los requisitos técnicos y normativos, dispone de certificaciones y documentación legal actualizada, lo que garantiza la confiabilidad y validez de los ensayos realizados.

Los ensayos fueron realizados bajo constante supervisión y en coordinación permanente con los técnicos responsables del laboratorio.

### 2.3.6 ENSAYOS DE LABORATORIOS

Según el manual de carreteras, a las muestras representativas obtenidas se les practica los siguientes ensayos.

- Contenido de humedad – ASTM D2216
- Límites de Atterberg – NTP 339.129
- Granulométrico (Tamizado) – NTP 339.128
- Contenido de Sales – NTP 339.152
- Proctor Modificado – NTP 339.141
- CBR – NTP 339.145
- Clasificación SUCS – NTP 339.13
- Clasificación AASHTO – NTP 339.135
- Peso Específico – NTP 339.131

Se presentan los resultados obtenidos en el Anexo N°05.

## 2.4 ESTUDIO DE CANTERAS Y FUENTES DE AGUA

### 2.4.1 ESTUDIO DE CANTERAS

Este estudio tiene como objeto determinar las características tanto físicas como mecánicas de los materiales que se van a utilizar para mejoramiento de la vía, subbase y base, que permita cubrir los mínimos propuestos para el Proyecto.

#### 2.4.1.1 IDENTIFICACIÓN DE CANTERAS:

En el área evaluada se observó que no existen canteras de agregados ni depósitos de materiales que puedan emplearse como alternativa para el mejoramiento de la vía vecinal. Sin embargo, se efectuó un diagnóstico a escala regional, bajo el criterio de que las principales canteras de la región son las que suministran materiales a los proveedores de construcción ubicados en el área de estudio y zonas aledañas.

- Piedra chancada ½": Cantera Tres Tomas ub. en Ferreñafe
- Arena gruesa: Cantera La Victoria ub. en Pátapo
- Over 2" – 8": Cantera Río Motupe ub. en Motupe

### 2.4.2 FUENTE DE AGUA

El presente capítulo corresponde a la identificación y descripción de fuentes de agua aprovechables para las diferentes actividades del proyecto que consideren el recurso hídrico, cabe precisar que estas actividades no comprenderán la fabricación de concreto ya que este será adquirido a proveedores debidamente autorizados y especializados en la fabricación, transporte y suministro de este material.

### 2.4.3 UBICACIÓN DE FUENTES DE AGUA

Según con la información que maneja la (JASS) de los sectores Los Peches y San Antonio, la fuente de abastecimiento se ubicaría en las siguientes coordenadas geográficas:

**Tabla 14**

*Localización geográfica del punto de captación de agua.*

| N° | DESCRIPCIÓN | ESTE | NORTE | ALTITUD |
|---|---|---|---|---|
| 01 | Reservorio (Tanque elevado Los Peches) | 620710.59 | 9276548.49 | 20 m.s.n.m. |
| 01 | Reservorio (Tanque elevado San Antonio) | 618680.38 | 9274549.91 | 19 m.s.n.m. |

***Nota:*** Elaboración propia.

## 2.5 ESTUDIO GEOLÓGICO Y GEOTÉCNICO

### 2.5.1 GENERALIDADES

El distrito de Mochumí se ubica dentro de la planicie costera de la región Lambayeque, donde predominan depósitos aluviales y eólicos originados por procesos fluviales y la acción del viento. Desde el punto de vista geotécnico, los suelos están compuestos principalmente por arenas, limos y gravas, los cuales influyen en el comportamiento del terreno para el desarrollo del proyecto.

#### 2.5.1.1 GEOLOGÍA LOCAL

a) **Depósito Aluvial Reciente (Qr – al):** Se encuentra constituido por sedimentos de tamaño grueso, tales como cantos rodados, gravas y arenas, acompañados de una matriz compuesta por arena, limo y arcilla. Estos materiales se originan principalmente por el transporte de sedimentos asociado a procesos fluviales y a variaciones climáticas intensas.

b) **Depósito eólico reciente (Qr – eo):** Depósitos formados por arenas finas, compuestas principalmente por cuarzo y fragmentos de roca, transportadas y acumuladas por la acción de los vientos litorales predominantes.

#### 2.5.1.2 GEOMORFOLOGIA LOCAL

a) **Llanura o planicie aluvial (Pl – al):** Corresponde a superficies planas ubicadas en los valles, asociadas a procesos de inundación fluvial. Presentan ancho variable y pendientes suaves que generalmente oscilan entre 1° y 5°.

Los mapas de geología y geomorfología local se encuentran en el Anexo N°06.

## 2.6 ESTUDIO DE HIDROLOGÍA Y DRENAJE

### 2.6.1 GENERALIDADES

En este estudio se determinarán los caudales de diseño de las estructuras que forman parte del sistema de drenaje del proyecto, considerando las metodologías hidrológicas descritas en este informe. Para ello, se empleará información pluviométrica correspondiente a precipitaciones máximas en 24 horas, proporcionada por el SENAMHI. Los datos utilizados provienen de la estación meteorológica Jayanca, por ser la más cercana al área de estudio, y comprenden el periodo entre los años 1988 y 2025.

### 2.6.2 INFORMACIÓN METEROLÓGICA

En el caso específico la estación más próxima al área de estudio, para la evaluación y posteriores cálculos se tomará como los datos históricos de las pp máx 24h registradas en la estación meteorológica de Jayanca (La Viña).

**Tabla 15**

*Estación Meteorológica Jayanca (La Viña)*

| Nombre de la est. | Tipo | Entidad operativa | Ubicación | | Alt. (msnm) |
|---|---|---|---|---|---|
| | | | Lat. | Long. | |
| JAYANCA (La viña) | CONV - MET | SENAMHI | 6°19'53.73" S | 79°46'7.29" W | 78.00 |

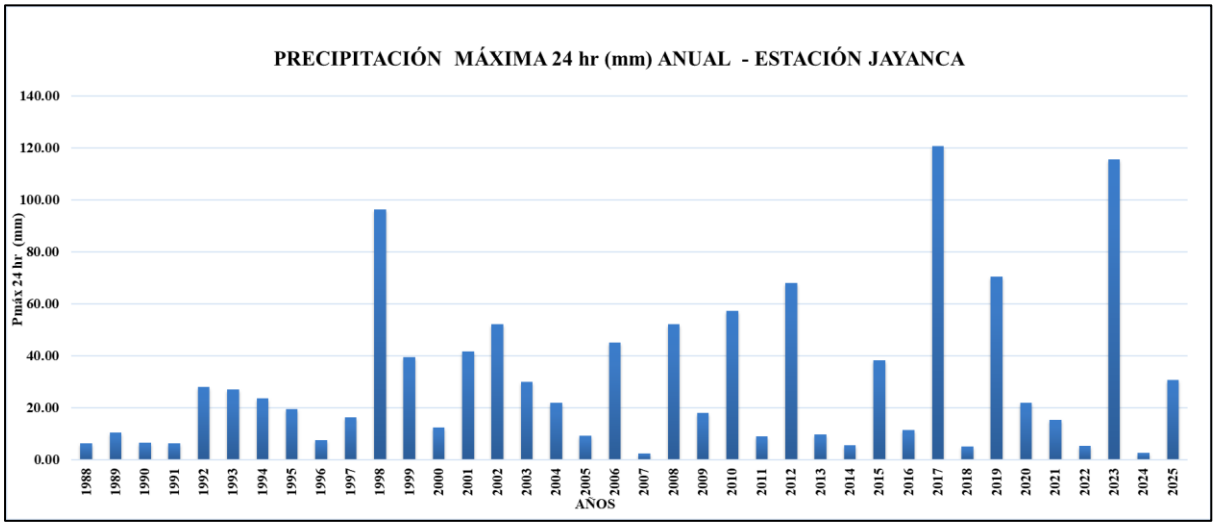
***Nota:*** Elaboración propia.

A partir de los registros de precipitación recopilados, se determinó el valor máximo correspondiente a cada año, con lo cual se elaboró una serie de precipitaciones máximas en 24

h. Esta información fue obtenida de los registros de la est. meteorológica de Jayanca. Las respectivas precipitaciones se observarán en el Anexo N°07.

**Figura 10**

*Histograma de las PP máx en 24 h anual, Estación Jayanca 1988-2025*




***Nota:*** *Elaboración propia.*

### 2.6.3 PRUEBAS DE BONDAD Y AJUSTES DE LAS DISTRIBUCIONES

Las pruebas de bondad de ajuste permiten verificar, mediante métodos gráficos estadísticos, si la frecuencia observada de una serie de datos se adapta a una función de probabilidad teórica previamente seleccionada, utilizando parámetros estimados a partir de los datos muestrales (Villón Bejar, 2005).

**Tabla 16**

*Prueba de ajuste de Smirnov - Kolmogorov*

| MODELOS DE DIST. | PRUEBA DE BONDAD DE AJUSTE SMIRNOV - KOLMOGOROV | | |
|---|---|---|---|
| | Δ MÁX | Δ S-K | Verificación de datos |
| NORMAL | 0.1647 | **0.220621** | **OK** |
| GUMBEL | 0.1315 | **0.220621** | **OK** |
| **LOG NORMAL** | **0.0604** | **0.220621** | **OK** |
| PEARSON III | 0.1074 | **0.220621** | **OK** |
| LOG PEARSON | 0.0610 | **0.220621** | **OK** |

***Nota:*** Elaboración propia.

**Tabla 17**

*Resultados de la distribución de Log-Normal 2 parámetros*

Cálculos del ajuste Smirnov Kolmogorov:

| m | X | P(X) | F(Z) Ordinario | F(Z) Mom Lineal | Delta |
|---|---|---|---|---|---|
| 1 | 2.4 | 0.0256 | 0.0209 | 0.0240 | 0.0047 |
| 2 | 2.8 | 0.0513 | 0.0297 | 0.0335 | 0.0215 |
| 3 | 5.1 | 0.0769 | 0.0973 | 0.1038 | 0.0204 |
| 4 | 5.4 | 0.1026 | 0.1073 | 0.1139 | 0.0047 |
| 5 | 5.6 | 0.1282 | 0.1140 | 0.1207 | 0.0142 |
| 6 | 6.4 | 0.1538 | 0.1413 | 0.1482 | 0.0125 |
| 7 | 6.4 | 0.1795 | 0.1413 | 0.1482 | 0.0382 |
| 8 | 6.5 | 0.2051 | 0.1447 | 0.1516 | 0.0604 |
| 9 | 7.7 | 0.2308 | 0.1859 | 0.1927 | 0.0449 |
| 10 | 9.1 | 0.2564 | 0.2328 | 0.2392 | 0.0236 |
| 11 | 9.4 | 0.2821 | 0.2427 | 0.2489 | 0.0394 |
| 12 | 9.8 | 0.3077 | 0.2556 | 0.2616 | 0.0521 |
| 13 | 10.5 | 0.3333 | 0.2778 | 0.2834 | 0.0555 |
| 14 | 11.5 | 0.3590 | 0.3085 | 0.3135 | 0.0505 |
| 15 | 12.4 | 0.3846 | 0.3349 | 0.3393 | 0.0497 |
| 16 | 15.4 | 0.4103 | 0.4153 | 0.4176 | 0.0050 |
| 17 | 16.3 | 0.4359 | 0.4371 | 0.4388 | 0.0012 |
| 18 | 18.0 | 0.4615 | 0.4756 | 0.4763 | 0.0141 |
| 19 | 19.5 | 0.4872 | 0.5069 | 0.5067 | 0.0197 |
| 20 | 22.03 | 0.5128 | 0.5544 | 0.5529 | 0.0416 |
| 21 | 22.03 | 0.5385 | 0.5544 | 0.5529 | 0.0160 |
| 22 | 23.6 | 0.5641 | 0.5809 | 0.5787 | 0.0168 |
| 23 | 27.1 | 0.5897 | 0.6330 | 0.6294 | 0.0433 |
| 24 | 28.1 | 0.6154 | 0.6463 | 0.6424 | 0.0309 |
| 25 | 29.9 | 0.6410 | 0.6686 | 0.6642 | 0.0276 |
| 26 | 30.7 | 0.6667 | 0.6780 | 0.6733 | 0.0113 |
| 27 | 38.3 | 0.6923 | 0.7514 | 0.7453 | 0.0591 |
| 28 | 39.5 | 0.7179 | 0.7608 | 0.7546 | 0.0429 |
| 29 | 41.6 | 0.7436 | 0.7763 | 0.7699 | 0.0327 |
| 30 | 45.1 | 0.7692 | 0.7993 | 0.7926 | 0.0300 |
| 31 | 52.1 | 0.7949 | 0.8365 | 0.8296 | 0.0417 |
| 32 | 52.2 | 0.8205 | 0.8370 | 0.8301 | 0.0165 |
| 33 | 57.4 | 0.8462 | 0.8589 | 0.8520 | 0.0127 |
| 34 | 68.0 | 0.8718 | 0.8928 | 0.8862 | 0.0210 |
| 35 | 70.5 | 0.8974 | 0.8992 | 0.8926 | 0.0017 |
| 36 | 96.3 | 0.9231 | 0.9432 | 0.9379 | 0.0201 |
| 37 | 115.5 | 0.9487 | 0.9608 | 0.9564 | 0.0121 |
| 38 | 120.8 | 0.9744 | 0.9644 | 0.9602 | 0.0099 |

Ajuste con momentos ordinarios:

Como el delta teórico 0.0604, es menor que el delta tabular 0.2206. Los datos se ajustan a la distribución logNormal 2 parámetros, con un nivel de significación del 5%

Parámetros de la distribución logNormal:

Con momentos ordinarios:
Parámetro de escala (μy)= 2.9528
Parámetro de forma (Sy)= 1.0205

Con momentos lineales:
Parámetro de escala (μyl)= 2.9528
Parámetro de forma (Syl)= 1.0501

***Nota:*** Elaboración propia con el Software *Hidroesta*.

### 2.6.4 PRECIPITACIÓN MÁXIMA EN 24 HORAS PARA DIVERSOS TIEMPOS DE RETORNO

**Tabla 18**

*Precipitación máxima en 24h para diversos tiempos de retorno*

| MODELOS DE DISTRIBUCIÓN | PERIODO DE RETORNO (AÑOS) | | | | | | |
|---|---|---|---|---|---|---|---|
| | **2** | **5** | **10** | **25** | **50** | **100** | **250** |
| NORMAL | 34.52 | 63.31 | 78.36 | 94.40 | 104.77 | 114.09 | 125.23 |
| GUMBEL | 28.91 | 59.13 | 79.15 | 104.43 | 123.19 | 141.81 | 166.33 |
| **LOG NORMAL** | **22.44** | **52.97** | **82.98** | **133.94** | **182.48** | **241.01** | **336.04** |
| PEARSON III | 25.97 | 57.25 | 79.48 | 108.25 | 129.86 | 151.47 | 180.12 |
| LOG PEARSON | 21.90 | 51.26 | 79.46 | 126.19 | 169.67 | 221.04 | 302.51 |

***Nota:*** Elaboración propia.

### 2.6.5 MÉTODO DICK PESCHKE

Se empleó el Método de Dick Peschke, el cual permite estimar la precipitación para diferentes duraciones a partir de la precipitación máxima registrada. Posteriormente, el cálculo se realizó mediante la siguiente expresión:

$$P_D = P_{24h} \times \left(\frac{D}{1440}\right)^{0.25}$$

- $P_D$ = Precipitación máxima de duración D, en mm.
- $P_{24h}$ = Precipitación máxima de 24 horas, en mm.
- $D$ = Duración de la precipitación, en minutos.

**Tabla 19**

*Modelo Dick Peschke*

| **Duración (Minutos)** | **Precipitación en 24 horas (mm)** | | | | | | |
|---|---|---|---|---|---|---|---|
| | **22.44** | **52.97** | **82.98** | **133.94** | **182.48** | **241.01** | **336.04** |
| | **Periodo de Retorno (Años)** | | | | | | |
| | **2** | **5** | **10** | **25** | **50** | **100** | **250** |
| | **Precipitación (mm)** | | | | | | |
| 10 | 6.48 | 15.29 | 23.96 | 38.67 | 52.68 | 69.57 | 97.01 |
| 20 | 7.70 | 18.18 | 28.49 | 45.98 | 62.65 | 82.74 | 115.36 |
| 30 | 8.53 | 20.12 | 31.53 | 50.89 | 69.33 | 91.56 | 127.67 |
| 40 | 9.16 | 21.62 | 33.88 | 54.68 | 74.50 | 98.39 | 137.19 |
| 50 | 9.69 | 22.87 | 35.82 | 57.82 | 78.77 | 104.04 | 145.06 |
| 60 | 10.14 | 23.93 | 37.49 | 60.51 | 82.45 | 108.89 | 151.82 |
| 90 | 11.22 | 26.48 | 41.49 | 66.97 | 91.24 | 120.51 | 168.02 |
| 120 | 12.06 | 28.46 | 44.59 | 71.96 | 98.05 | 129.49 | 180.55 |
| 240 | 14.34 | 33.84 | 53.02 | 85.58 | 116.60 | 153.99 | 214.71 |
| 360 | 15.87 | 37.46 | 58.68 | 94.71 | 129.04 | 170.42 | 237.62 |
| 420 | 16.49 | 38.93 | 60.98 | 98.43 | 134.11 | 177.12 | 246.95 |
| 480 | 17.05 | 40.25 | 63.05 | 101.77 | 138.66 | 183.13 | 255.33 |
| 600 | 18.03 | 42.56 | 66.67 | 107.61 | 146.61 | 193.63 | 269.98 |
| 660 | 18.46 | 43.58 | 68.28 | 110.21 | 150.15 | 198.30 | 276.49 |
| 720 | 18.87 | 44.54 | 69.78 | 112.63 | 153.45 | 202.66 | 282.57 |
| 1440 | 22.44 | 52.97 | 82.98 | 133.94 | 182.48 | 241.01 | 336.04 |

***Nota:*** Elaboración propia.

### 2.6.6 INTENSIDADES MÁXIMAS DE PRECIPITACIONES PLUVIAL

Las intensidades máximas de precipitación corresponden a la mayor cantidad de lluvia registrada por unidad de tiempo para distintas duraciones y periodos de retorno.

En el presente estudio, el valor de $\boldsymbol{P_D}$ fue obtenido mediante el método de Dick-Peschke. Posteriormente, la intensidad de precipitación se calculó dividiendo la precipitación máxima correspondiente a una duración determinada $\boldsymbol{P_D}$ entre la duración del evento $\boldsymbol{D}$.

$$\boldsymbol{I = \frac{P_D}{D}}$$

- $\boldsymbol{PD}$ = precipitación máxima de duración D, en mm
- $\boldsymbol{D}$ = duración de la precipitación, en horas.

**Tabla 20**

*Intensidades de Precipitación*

| Intensidad de Precipitación | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Duración (Horas)** | **Duración (min)** | **Periodo de Retorno (Años)** | | | | | | |
| | | **2** | **5** | **10** | **25** | **50** | **100** | **250** |
| | | **Intensidad (mm/hr)** | | | | | | |
| 0.167 | 10 | 38.87 | 91.75 | 143.73 | 231.99 | 316.07 | 417.44 | 582.04 |
| 0.333 | 20 | 23.11 | 54.55 | 85.46 | 137.94 | 187.94 | 248.21 | 346.08 |
| 0.500 | 30 | 17.05 | 40.25 | 63.05 | 101.77 | 138.66 | 183.13 | 255.33 |
| 0.667 | 40 | 13.74 | 32.44 | 50.82 | 82.02 | 111.75 | 147.59 | 205.78 |
| 0.833 | 50 | 11.62 | 27.44 | 42.99 | 69.38 | 94.53 | 124.84 | 174.07 |
| 1.000 | 60 | 10.14 | 23.93 | 37.49 | 60.51 | 82.45 | 108.89 | 151.82 |
| 1.500 | 90 | 7.48 | 17.66 | 27.66 | 44.65 | 60.83 | 80.34 | 112.01 |
| 2.000 | 120 | 6.03 | 14.23 | 22.29 | 35.98 | 49.02 | 64.75 | 90.27 |
| 4.000 | 240 | 3.58 | 8.46 | 13.26 | 21.40 | 29.15 | 38.50 | 53.68 |
| 6.000 | 360 | 2.64 | 6.24 | 9.78 | 15.79 | 21.51 | 28.40 | 39.60 |
| 7.000 | 420 | 2.36 | 5.56 | 8.71 | 14.06 | 19.16 | 25.30 | 35.28 |
| 8.000 | 480 | 2.13 | 5.03 | 7.88 | 12.72 | 17.33 | 22.89 | 31.92 |
| 10.000 | 600 | 1.80 | 4.26 | 6.67 | 10.76 | 14.66 | 19.36 | 27.00 |
| 11.000 | 660 | 1.68 | 3.96 | 6.21 | 10.02 | 13.65 | 18.03 | 25.14 |
| 12.000 | 720 | 1.57 | 3.71 | 5.82 | 9.39 | 12.79 | 16.89 | 23.55 |
| 24.000 | 1440 | 0.94 | 2.21 | 3.46 | 5.58 | 7.60 | 10.04 | 14.00 |

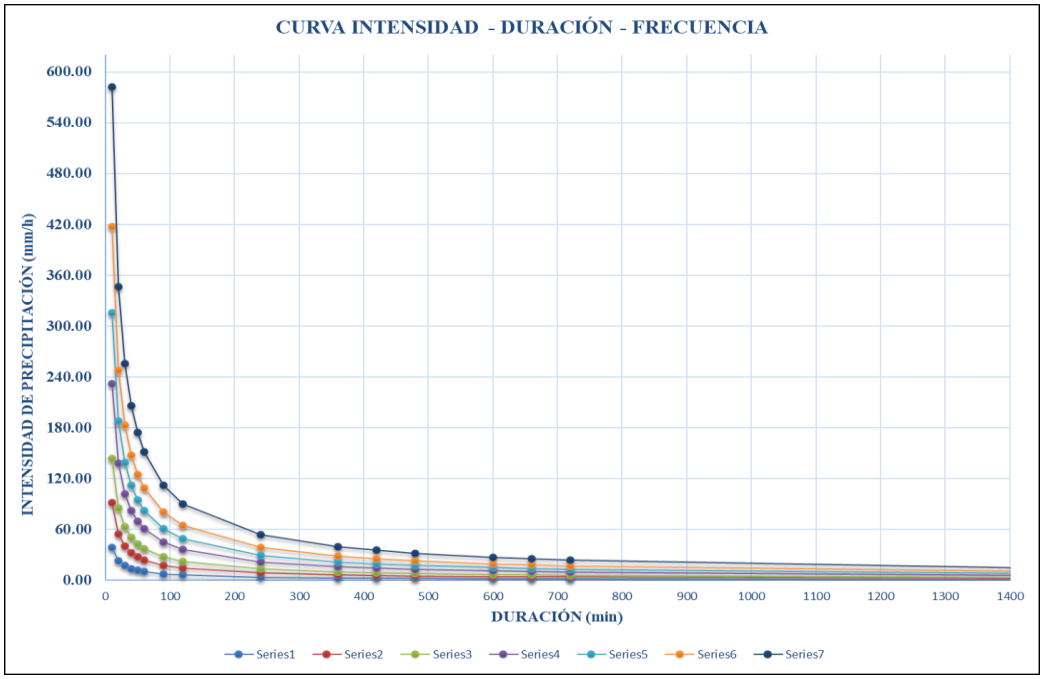
***Nota:*** Elaboración propia.

### 2.6.7 CURVAS DE INTENSIDAD – DURACIÓN – FRECUENCIA (IDF)

Es la relación que muestra cómo varía la intensidad de la precipitación de acuerdo con la duración de la lluvia para un determinado período de retorno.

**Figura 11**

*Curva - IDF*




***Nota:*** Elaboración propia.

### 2.6.8 ANÁLISIS DE REGRESIÓN MÚLTIPLE

El análisis de regresión múltiple permite evaluar la relación existente entre una variable dependiente y dos o más variables independientes, con el propósito de explicar el comportamiento del fenómeno estudiado.

En esta investigación se analizarán las curvas IDF de la estación meteorológica Jayanca, que posee un registro histórico corregido de 38 años de precipitaciones máximas en 24 horas y presenta influencia sobre la cuenca en estudio. El procedimiento de análisis se expone a continuación para una duración de 1440 minutos.

**Tabla 21**

*Estadísticas de la regresión*

| **Estadísticas de la regresión** | |
|---|---|
| Coeficiente de correlación múltiple | 0.993667252 |
| Coeficiente de determinación R^2 | 0.987374608 |
| R^2 ajustado | 0.987142950 |

| Estadísticas de la regresión | |
|---|---|
| Error típico | 0.068599858 |
| Observaciones | 112 |

***Nota:*** Elaboración propia.

**Tabla 22**

*Análisis de varianza (1 de 2)*

| | Grados de libertad | Suma de cuadrados | Promedio de los cuadrados | F | Valor crítico de F |
|---|---|---|---|---|---|
| Regresión | 2 | 40.11529893 | 20.05764947 | 4262.197815 | 3.295E-104 |
| Residuos | 109 | 0.512947518 | 0.004705941 | | |
| Total | 111 | 40.62824645 | | | |

***Nota:*** Elaboración propia.

**Tabla 23**

*Análisis de varianza (2 de 2)*

| | Coef. | Error típico | Estadístico | Prob. | Infer. 95% | Superior 95% | Inferior 95.0% | Super. 95.0% |
|---|---|---|---|---|---|---|---|---|
| Intercepción | **2.29479** | 0.027 | 85.9387 | 5.6E-102 | 2.2419 | 2.3477 | 2.2419 | 2.3477 |
| X 1 | **-0.75** | 0.010 | -72.3615 | 5.65E-94 | -0.771 | -0.7295 | -0.7701 | -0.7295 |
| X 2 | **0.5421** | 0.009 | 57.3429 | 3.04E-83 | 0.5234 | 0.5608 | 0.5234 | 0.5608 |

***Nota:*** Elaboración propia.

**Tabla 24**

*Análisis de regresión múltiple para un Tr = 50 años*

| ANÁLISIS DE REGRESIÓN MÚLTIPLE | | | | | |
|---|---|---|---|---|---|
| **Duración min** | **TR años** | **Intensidad mm/hr** | **m 0.5421** | **n -0.75** | **10^k 197.146** |
| 10 | 50 | 316.07 | 1.00 | 1.70 | 2.50 |
| 20 | 50 | 187.94 | 1.30 | 1.70 | 2.27 |
| 30 | 50 | 138.66 | 1.48 | 1.70 | 2.14 |
| 40 | 50 | 111.75 | 1.60 | 1.70 | 2.05 |
| 50 | 50 | 94.53 | 1.70 | 1.70 | 1.98 |
| 60 | 50 | 82.45 | 1.78 | 1.70 | 1.92 |
| 90 | 50 | 60.83 | 1.95 | 1.70 | 1.78 |

| ANÁLISIS DE REGRESIÓN MÚLTIPLE | | | | | |
|---|---|---|---|---|---|
| 120 | 50 | 49.02 | 2.08 | 1.70 | 1.69 |
| 240 | 50 | 29.15 | 2.38 | 1.70 | 1.46 |
| 360 | 50 | 21.51 | 2.56 | 1.70 | 1.33 |
| 420 | 50 | 19.16 | 2.62 | 1.70 | 1.28 |
| 480 | 50 | 17.33 | 2.68 | 1.70 | 1.24 |
| 600 | 50 | 14.66 | 2.78 | 1.70 | 1.17 |
| 660 | 50 | 13.65 | 2.82 | 1.70 | 1.14 |
| 720 | 50 | 12.79 | 2.86 | 1.70 | 1.11 |
| 1440 | 50 | 7.60 | 3.16 | 1.70 | 0.88 |

***Nota:*** Elaboración propia.

### 2.6.9 BLOQUE ALTERNO

**Tabla 25**

*Método del Bloque Alterno para un Tr = 50 años*

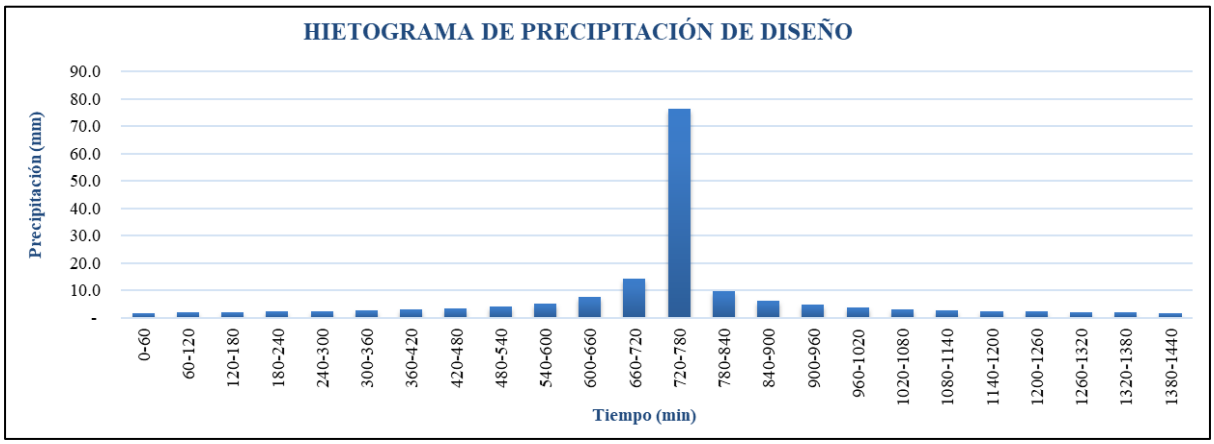
| MÉTODO DEL BLOQUE ALTERNO | | | | | |
|---|---|---|---|---|---|
| **Duración** | **Intensidad** | **Profundidad Acumulada** | **Profundidad Incremental** | **Tiempo** | **Precipitación** |
| **min** | **mm/hr** | **mm** | **mm** | **min** | **mm** |
| 60 | 76.237 | 76.237 | 76.237 | 0-60 | 1.786 |
| 120 | 45.331 | 90.661 | 14.425 | 60-120 | 1.909 |
| 180 | 33.444 | 100.333 | 9.672 | 120-180 | 2.054 |
| 240 | 26.954 | 107.815 | 7.482 | 180-240 | 2.228 |
| 300 | 22.800 | 114.000 | 6.185 | 240-300 | 2.440 |
| 360 | 19.886 | 119.317 | 5.316 | 300-360 | 2.707 |
| 420 | 17.715 | 124.005 | 4.688 | 360-420 | 3.053 |
| 480 | 16.027 | 128.214 | 4.210 | 420-480 | 3.524 |
| 540 | 14.672 | 132.046 | 3.831 | 480-540 | 4.210 |
| 600 | 13.557 | 135.570 | 3.524 | 540-600 | 5.316 |
| 660 | 12.622 | 138.839 | 3.269 | 600-660 | 7.482 |
| 720 | 11.824 | 141.892 | 3.053 | 660-720 | 14.425 |
| 780 | 11.135 | 144.760 | 2.868 | 720-780 | 76.237 |
| 840 | 10.533 | 147.467 | 2.707 | 780-840 | 9.672 |
| 900 | 10.002 | 150.033 | 2.566 | 840-900 | 6.185 |

| MÉTODO DEL BLOQUE ALTERNO | | | | | |
|---|---|---|---|---|---|
| 960 | 9.530 | 152.473 | 2.440 | 900-960 | 4.688 |
| 1020 | 9.106 | 154.802 | 2.329 | 960-1020 | 3.831 |
| 1080 | 8.724 | 157.030 | 2.228 | 1020-1080 | 3.269 |
| 1140 | 8.377 | 159.167 | 2.137 | 1080-1140 | 2.868 |
| 1200 | 8.061 | 161.221 | 2.054 | 1140-1200 | 2.566 |
| 1260 | 7.771 | 163.199 | 1.979 | 1200-1260 | 2.329 |
| 1320 | 7.505 | 165.108 | 1.909 | 1260-1320 | 2.137 |
| 1380 | 7.259 | 166.954 | 1.845 | 1320-1380 | 1.979 |
| 1440 | 7.031 | 168.739 | 1.786 | 1380-1440 | 1.845 |

***Nota:*** Elaboración propia.

**Figura 12**

*Hietograma para un Tr = 50 años*




***Nota:*** Elaboración propia.

## 2.6.10 UBICACIÓN HIDROGRÁFICA

La zona de estudio está en una subcuenca hidrográfica que forma parte del sistema de drenaje local, presentando un área aproximada de 0.021 km². Esta subcuenca recoge las escorrentías superficiales generadas por las precipitaciones en la zona, las cuales drenan hacia un cauce natural secundario.

### 2.6.10.1 CARACTERÍSTICAS MORFOMÉTRICAS

Después del análisis de las imágenes satelitales, generación de las redes de acumulación de Flujo con el DEM de 12.5 m y teniendo en consideración la red de canales dentro del ámbito de intervención, se determina que el tramo de estudio se encuentra conformado por 1 pequeña Unidad Hidrográfica.

**Tabla 26**

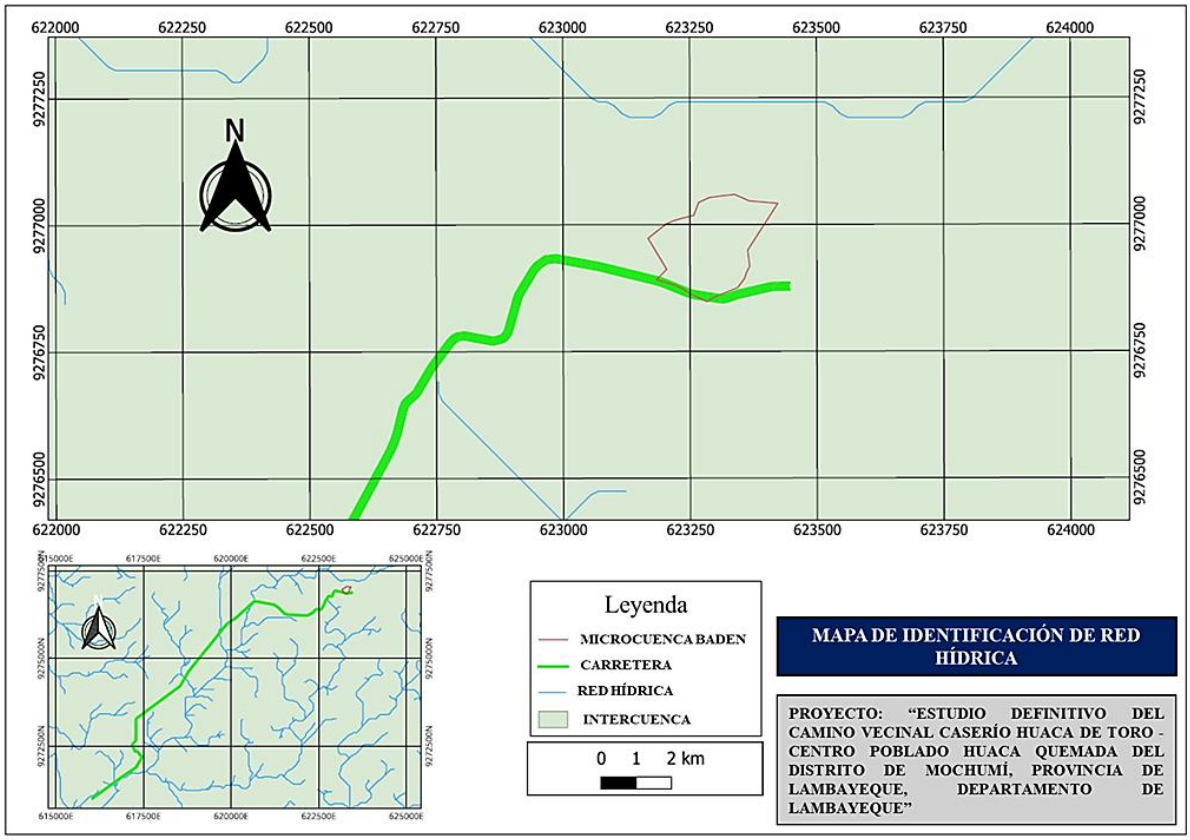
*Parámetros de Microcuenca*

| UNIDAD HIDROGRÁFICA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Nombre** | **Perímetro (Km)** | **Área ($Km^2$)** | **Área (Ha)** | **Longitud Cauce (m)** | **Cota Max (msnm)** | **Cota Min (msnm)** | **Pendiente de la cuenca (%)** | **Pendiente del cauce (%)** |
| **UH-01** | 0.657 | 0.021 | 2.1 | 144.9 | 20.268 | 20.175 | 1.079% | 0.064% |

***Nota:*** Elaboración propia.

**Figura 13**

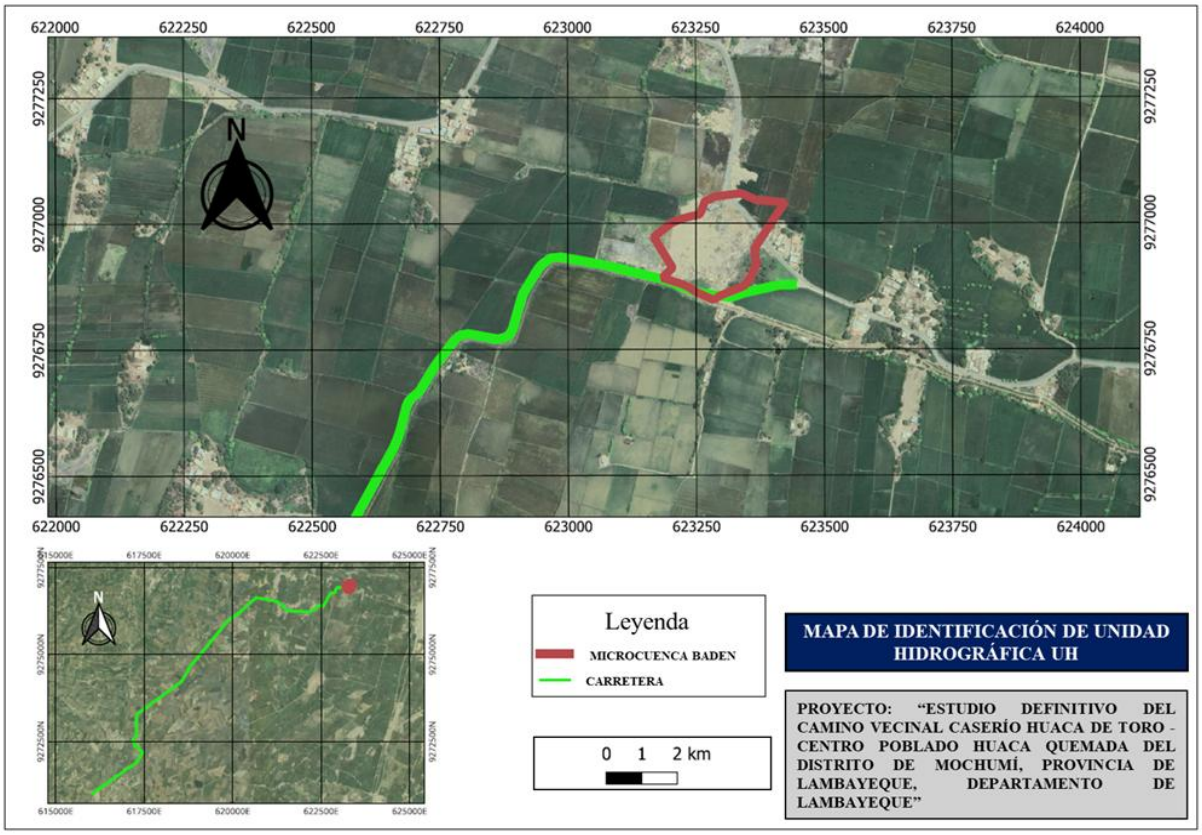
*Identificación de la Red Hídrica en el área de estudio*




***Nota:*** Elaboración propia.

**Figura 14**

*Identificación de las Unidad Hidrográfica*




***Nota:*** *Elaboración propia.*

### 2.6.11 TIEMPO DE RETORNO

Para la estimación de estos valores, según el tipo de obra hidráulica, se consideró como referencia el Manual de Dis. de Carret. No Pavimentadas de Bajo Volumen de Tránsito, el cual establece los periodos de retorno que deben emplearse en el diseño de estas estructuras.

**Tabla 27**

*Tiempo de Retorno*

| OBRA | PERIODO DE RETORNO (AÑOS) |
|---|---|
| Badenes – Alcant. de paso | 50 |
| Alcant. de alivio | 20 |

***Nota:*** *Tomado del Manual para el diseño de carreteras no pavimentadas de bajo volumen de tránsito. Dirección General de Caminos y Ferrocarriles (MTC,2008).*

### 2.6.12 TIEMPO DE CONCENTRACIÓN

Se utilizó la ecuación de Témez que es una expresión empírica ampliamente utilizada en hidrología para estimar el tiempo de concentración $\boldsymbol{T_c}$ de una cuenca, entendido como el

tiempo que tarda una gota de agua en desplazarse desde el punto hidráulicamente más alejado hasta la sección de salida.

Esta ecuación se aplica en estudios hidrológicos de obras de drenaje, infraestructura vial y obras civiles, permitiendo determinar el tiempo de respuesta de la cuenca para la estimación de caudales máximos mediante el método racional.

$$T_c = 0.3 * \left(\frac{L}{(J)^{1/4}}\right)^{3/4}$$

Donde:

- $T_c$ = Tiempo de concentración en horas.
- $L$ = Longitud del cauce principal enkm.
- $J$ = Pendiente media del cauce (m/m).

### 2.6.13 ANÁLISIS Y VALIDACIÓN DE CAUDALES MÁXIMOS

**MÉTODO RACIONAL**

El Qmáx, según esta metodología, se obtiene a partir de la siguiente expresión:

$$Q = C \times I \times A/3.6$$

Donde:

- Q= Caudal m3/seg. (Para cuencas pequeñas) en la sección en estudio.
- C= Coeficiente de escorrentía
- I= Intensidad de la precipitación pluvial máxima, previsible, correspondiente a una duración igual al tiempo de concentración y a un período de retorno dado, en mm/h.
- A= Área de la cuenca en (Km²)

**Tabla 28**

*Coef. de escorrentía*

| Cobertura vegetal | Condición del terreno | Pendiente del terreno | |
|---|---|---|---|
| | | **Suave** | **Despreciable** |
| | | **>1%** | **<1%** |
| Cultivos | Permeable | **0.25** | **0.20** |

***Nota:*** Tomado del *Manual de Hidrología, Hidráulica y Drenaje*, Ministerio de Transportes y Comunicaciones (MTC).

De acuerdo con la cobertura vegetal tenemos que corresponder áreas agrícolas, además que tenemos suelos permeables y teniendo en cuenta la pendiente de la Unidad Hidrográfica (UH), se estima un coeficiente de escorrentía de C = 0.20 y 0.25.

El diseño de obras de artes se encuentra en el Anexo N°08.

**Tabla 29**

*Caudales máximos (m3/s) - Método Racional Microcuenca*

| **Caudal Máximo - UH 01** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MÉTODO RACIONAL** | | | | | | | | |
| **Tr** | **L (km)** | **S (m/m)** | **Tc (min)** | **C** | **I (mm/hr)** | **Área (Km²)** | **Q (m³/s)** | **Q (m³/s)** |
| **2** | 0.1449 | 0.06418 | 10 | 0.20 | 38.87 | 0.021 | 0.04534649 | 0.0 |
| **5** | 0.1449 | 0.06418 | 10 | 0.20 | 91.75 | 0.021 | 0.10703758 | 0.1 |
| **10** | 0.1449 | 0.06418 | 10 | 0.20 | 143.73 | 0.021 | 0.16768959 | 0.2 |
| **25** | 0.1449 | 0.06418 | 10 | 0.20 | 231.99 | 0.021 | 0.27065666 | 0.3 |
| **50** | 0.1449 | 0.06418 | 10 | 0.20 | 316.07 | 0.021 | 0.36874925 | **0.4** |
| **100** | 0.1449 | 0.06418 | 10 | 0.20 | 417.44 | 0.021 | 0.48701517 | 0.5 |
| **250** | 0.1449 | 0.06418 | 10 | 0.20 | 582.04 | 0.021 | 0.67904264 | 0.7 |
| *Cobertura Vegetal: CULTIVOS* | | | *Tipo de suelo: Clasificación SP (Permeable)* | | | *Pendiente: >1%* | | |

***Nota:*** Elaboración propia.

# CAPÍTULO III.- DISEÑO GEOMÉTRICO

## 3.1 GENERALIDADES

El diseño involucra la planta, el perfil longitudinal y las secciones transversales. Estos tres componentes forman la base del trazo vial y se desarrollan de manera coordinada para garantizar condiciones seguras, eficientes y confortables para la circulación vehicular, respetando siempre los criterios técnicos y normativos (DG- 2018).

## 3.2 CRITERIOS DE DISEÑO GEOMÉTRICO

De acuerdo con lo establecido con la DG-2018, el diseño geométrico de una vía debe considerar parámetros técnicos como la Vel. D., el tipo de vía, las condiciones del terreno y las caract. del tránsito. Estos criterios permiten definir adecuadamente el diseño, garantizando condiciones óptima de comodidad, de seguridad y operatividad para los usuarios de la vía.

Las consideraciones que hemos obtenido se encuentran en el Anexo N°01.

## 3.3 RESUMEN DE LAS CARACTERÍSTICAS DE DISEÑO

Según los parámetros que brinda la DG - 2018, se resumen en los siguientes:

**Tabla 30**

*Resumen de las características del Diseño Geométrico*

| PARÁMETROS PARA EL DIS. GEOMÉTRICO | |
|---|---|
| Clasificación de la Carretera | Trocha carrozable |
| Topografía | Plano – Tipo 1 |
| Vel. de D. | 30 km/h |
| Dist. De Vis. de Parada | 35 m |
| R. mín | 30 m |
| Pend. mín | 0.35% |
| Pend. máx | 3.00% |
| Derecho de Vía | 8.00 m a cada lado del eje |
| Ancho de Calzada | 4.00 m |
| Bermas | 0.5 m |
| Bombeo | 2.5% |
| Peralte máx. | 8% |

| PARÁMETROS PARA EL DIS. GEOMÉTRICO | |
|---|---|
| Cunetas | No se consideró. |

***Nota:*** Elaboración propia.

# CAPÍTULO IV.- DISEÑO DE PAVIMENTO

## 4.1 GENERALIDADES

El pavimento es una estructura constituida por un conjunto de capas superpuestas de materiales de calidad y compactados, formadas sobre la subrasante, cuya propósito es soportar y distribuir las cargas producidas por el tránsito vehicular, proporcionando una superficie de rodadura segura, cómoda y durable.

## 4.2 DISEÑO DE ESTRUCTURA DE PAVIMENTO

### 4.2.1 CARACTERÍSTICAS DEL TRAMO DE ESTUDIO

El tramo en estudio se cataloga como vía de trocha carrozable debido a que, según el informe de tráfico realizado, presenta un IMDa de 53 veh/día. Asimismo, por esta vía circula una diversidad de veh. livianos y pesados, incluyendo camiones, los cuales se utilizan principalmente para el transporte y comercialización de productos agrícolas, tales como arroz, algodón, arveja grano verde entre otros.

### 4.2.2 TRÁNSITO DE DISEÑO

Recopilada y procesada la información previa, se procede a determinar el número de EE (ESAL), para los tipos de pavimento: flexible y rígido. Para ello, es necesario contar con el Tránsito Promedio Diario (Average Daily Traffic – ADT), obtenido a partir del conteo vehicular realizado en campo, así como con los correspondientes factores de equivalencia por eje (EALF).

$$W_{18} = \sum EE_{dia-carril} * Fca * 365$$

Dónde:

- $W_{18}$: Número total de EE estándar de 8.2 ton (ESAL) acumulados en el período considerado.
- $EE_{dia-carril}$: Número de ejes equivalentes diarios en el carril
- $Fca$: Factor de crecimiento anual acumulado, que considera la tasa de crecimiento del tránsito durante el período de diseño.

**Tabla 31**

*Parámetros para cálculo del W18*

| PARÁMETRO | VALOR |
|---|---|
| $W_{18}$ | 2.47E+05 |
| $M_R$ | 8297.9126 |
| $Z_R$ | -0.524 |
| $S_O$ | 0.45 |
| ΔPSI | 1.8 |
| $SN_R$ | 2.31753849 |
| $SN_O$ | 2.69748 |

***Nota:*** Elaboración propia.

Se obtiene un número de EE (ESAL) final para cada tipo de carga de:

$$W_{18} = 2.47E + 05$$

### 4.2.3 RESUMEN DEL DISEÑO DE PAVIMENTOS

**Tabla 32**

*Tabla Resumen*

| Parámetros, método AASHTO | |
|---|---|
| Periodo de diseño (n) | 10 años |
| Transito (ESAL) | 2.47E+05 |
| I. de serviciab. inicial (Po) | 3.8 |
| I. de serviciab. final (Pf) | 2 |
| I. de california subrasante (CBR) | 17.80% |
| Módulo de resil. de subr. (MR) | 8297.912 psi |
| Nivel de confiabilidad (R) | 70% |
| Desviación estándar normal (ZR) | -0.524 |
| Error estándar combinado (So) | 0.45 |
| Coef. de drenaje (mi) | |
| - Base Granular | 1 |
| - Sub base Granular | 1 |

***Nota:*** Elaboración propia.

## COEF. ESTRUCTURALES PARA LAS CAPAS DEL PAVIMENTO

**Tabla 33**

*Tabla Coef. estructurales*

| Capa | CBR | Coef. estructural ($a_1$) |
|---|---|---|
| Carpeta asfáltica (a1) | - | 0.4318 |
| Base ($a_2$) | 100% | 0.13208 |
| Sub base($a_3$) | 60% | 0.11938 |

***Nota:*** Elaboración propia.

En consecuencia, los espesores correspondientes al pavimento flexible, determinados mediante el método AASHTO.

**Tabla 34**

*Espesores pavimento flexible AASTHO*

| CAPA | H(pulg) |
|---|---|
| Mortero asfaltico | - |
| Base | 15” |
| Sub base | 6” |

***Nota:*** Elaboración propia.

El diseño de pavimentos a más detalle se encuentra en el Anexo N°09.

# CAPÍTULO V.- EVALUACIÓN DE IMPACTO AMBIENTAL

## 5.1 GENERALIDADES

El estudio busca identificar, analizar y valorar los posibles efectos sobre el medio ambiente que podrían generarse por la ejecución de proyectos viales, considerando las fases de planificación, construcción y operación.

## 5.2 ÁREA DE INFLUENCIA DEL PROYECTO

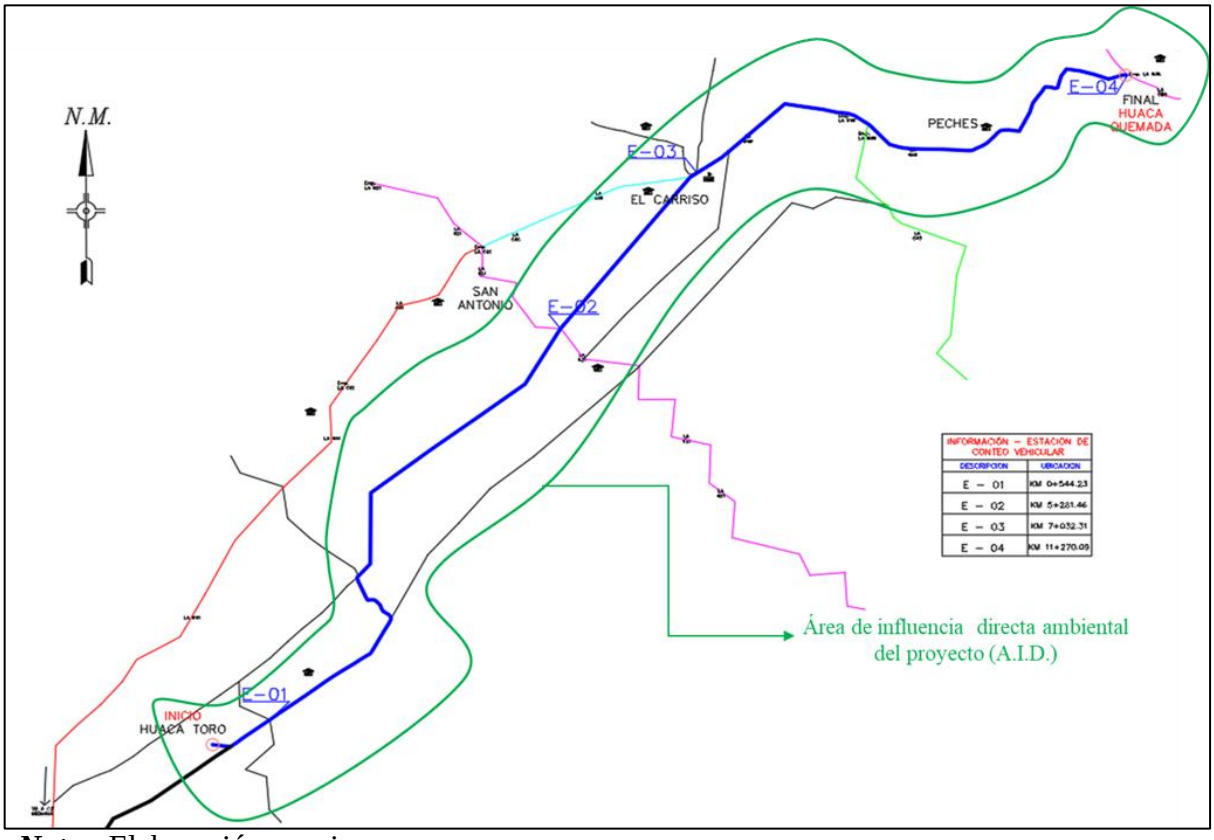
### 5.2.1 ÁREA DE INFLUENCIA DIRECTA DEL PROYECTO (AID)

El AID del proyecto en cuestión corresponde al área geográfica donde se generan los impactos ambientales directos debido a las act. propias del proceso constructivo de la carretera.

Considerando el área agrícola y la población (ruido) existente se ha considerado que el (A.I.D.) debe extenderse hasta los 25 m a cada lado de la vía a construir. Esta área podría ser afectada por la ejecución de las actividades programadas como desmonte, almacenamiento temporal de material excedente, residuos sólidos, ruido, etc.

**Tabla 35**

*Área De Influencia Directa del Proyecto*




***Nota:*** Elaboración propia.

### 5.2.2 ÁREA DE INFLUENCIA INDIRECTA DEL PROYECTO (AII)

El AII comprende los espacios geográficos que, sin ser intervenidos físicamente por la ejecución de la carretera, podrían experimentar efectos ambientales y socioeconómicos de manera secundaria o progresiva como consecuencia de su construcción y posterior operación.

## 5.3 IMPACTOS AMBIENTALES

Durante el desarrollo de proyectos de infraestructura vial, los efectos ambientales se generan sobre todo en las etapas de construcción y operación, produciendo modificaciones en el suelo, la calidad del aire, el agua, la biodiversidad, el paisaje y las act. que realiza la población en el área intervenida.

Durante la evaluación ambiental del proyecto se elaboraron 4 matrices de análisis: matriz de ident. de impactos, de caracterización de impactos, importancia de impactos y de valoración de impactos. Estas herramientas permitieron reconocer, describir y evaluar los efectos que las actividades del proyecto pueden generar sobre los diferentes componentes ambientales.

Cabe señalar que cada una de estas matrices fue aplicada distintas etapas, con el propósito de analizar de manera diferenciada los impactos ambientales asociados a las actividades propias de cada fase del proyecto. A más detalle las matrices se encuentran en el Anexo N°14.

### 5.3.1 ANÁLISIS DE LA MATRIZ DE IMPORTANCIA

**ETAPA DE PROYECTO**

**Medio físico**

- Aire: Impacto irrelevante por excavación de calicatas (I = 21).
- Suelo: Impacto moderado en la topografía (I = 26) e irrelevante en erosión (I = 25). Residuos sólidos generan impacto irrelevante (I = 24).
- Agua: Excavación genera impacto irrelevante (I = 22); residuos producen impacto moderado en contaminación de aguas superficiales (I = 26).

**Medio biótico**

- Flora: Tala de arbustos genera impacto moderado (I = 26); excavación genera impacto irrelevante (I = 22).

- Fauna: Tala de arbustos genera impacto irrelevante (I = 25).

**Medio socioeconómico**

- Impactos irrelevantes en salud y seguridad (I < 25) y efectos positivos en la generación de empleo.

### 5.3.2 ANÁLISIS DE LA MATRIZ DE VALORACIÓN

**ETAPA DE CONSTRUCCIÓN**

**Medio físico**

- Aire: El factor emisión de gases presenta la mayor fragilidad (Ir = 60), siendo la eliminación de material excedente la acción más agresiva (Ir = 45).
- Suelo: El factor topografía registra la mayor fragilidad (Ir = 62), destacando la eliminación de material excedente como la acción de mayor impacto (Ir = 36).
- Agua: La contaminación de aguas superficiales muestra la mayor fragilidad (Ir = 245), asociada principalmente a la eliminación de material excedente (Ir = 38).

**Medio biótico**

- Flora: El factor arbustos presenta la mayor fragilidad (Ir = 69), siendo la eliminación de material excedente la acción más agresiva (Ir = 33).
- Fauna: El factor mamífero registra la mayor fragilidad (Ir = 93), y las actividades de corte y relleno del terreno generan la mayor agresividad (Ir = 28).

**Medio socioeconómico**

- Salud y seguridad: Presenta la mayor fragilidad (Ir = 118), siendo la eliminación de material excedente la acción más agresiva (Ir = 31).

## 5.4 PLAN DE MANEJO AMBIENTAL

Las obras consideradas en el proyecto comprenden varias acciones que pueden provocar efectos sobre el medio ambiente durante las etapas de planificación, construcción y puesta en funcionamiento.

El PMA ha sido elaborado sobre la base de los impactos identificados y evaluados previamente, considerando las características físicas, biológicas y socioeconómicas del área de influencia del proyecto, así como las condiciones propias de la zona de la costa norte del Perú, donde predominan áreas agrícolas.

## 5.5 PROGRAMA DE CONTINGENCIAS

Debido a la importancia del proyecto, es indispensable disponer de un plan de contingencia que facilite la organización y el uso adecuado de los recursos necesarios, con el propósito de minimizar los efectos negativos que puedan originarse por accidentes, eventos inesperados o fenómenos que constituyan un peligro para las personas y el entorno.

### 5.5.1 IDENTIFICACIÓN DE RIESGOS Y ÁREAS SENSIBLES

**Tabla 36**

*Eventos más probables*

| N° | EVENTO PROBABLE | RIESGO |
|---|---|---|
| 1 | Lluvias | Probabilidad de daños materiales/ daños a la salud |
| 2 | Mov. sísmicos | Perdida de estab. de suelo/ desl. de tierras/muerte |
| 3 | Incendios | Probabilidad de daños materiales / daños a la salud |
| 4 | Afectación a la salud | Daño a la salud y vida del trabajador |
| 5 | Accidente laboral | Daño a la salud |
| 6 | Atropellamiento de la fauna silvestre | Daño a la integridad de la fauna característica de la zona |

***Nota:*** Elaboración propia.

# CAPÍTULO VI.- SEÑALIZACIÓN Y SEGURIDAD VIAL

## 6.1 GENERALIDADES

Este capítulo describe los criterios para la señalización y la seguridad en la vía del proyecto, estableciendo los parámetros técnicos para la instalación de señales de tránsito y dispositivos que contribuyan a advertir, regular y guiar a los usuarios durante su desplazamiento.

## 6.2 METODOLOGÍA DEL ESTUDIO

Para la elaboración del estudio se consideraron los lineamientos técnicos señalados en el Manual de Dispositivos de Control del Tránsito Automotor para Calles y Carreteras (MTC, 2016), aplicándose las etapas que se describen a continuación.

1. **Planeación:** Identificación de posibles ubicaciones de señalización.
2. **Trabajo de Campo:** Verificación y ajuste de la señalización propuesta.
3. **Gabinete:** Evaluación de la información y distribución de las señales en los planos.

## 6.3 TIPOS DE SEÑALIZACIÓN

1. **Señales Reglamentarias:** Indican prohibiciones y restricciones, garantizando el orden en la vía. Ejemplos: El límite de velocidad es de 30km/h en nuestro proyecto.

**Figura 15**

*Señal Reglamentaria*




***Nota:*** Elaboración propia.

2. **Señales Preventivas:** Alertan sobre peligros potenciales. En nuestro proyecto encontramos la P-2A que es curva a la derecha como la más concurrente, también tenemos la P-4 de proximidad de baden, etc.

**Figura 16**

*Señal Preventiva*




***Nota:*** *Elaboración propia.*

3. **Señales Informativas:** Proporcionan orientación sobre destinos, localización y distancias. Ejemplo: Localidad Huaca de Toro.

**Figura 17**

*Señales Informativas*




***Nota:*** Elaboración propia.

## 6.4 PARÁMETROS DEL PROYECTO

- **Longitud de la carretera:** 11.174 km.
- **Vel. D.:** 30 km/h.
- **Señales:** Fabricadas en fibra de vidrio, con materiales reflectantes y postes metálicos pintados para máxima visibilidad.
- **Ubicación:** Lado derecho de la vía, respetando distancias y condiciones geométricas para anticipación segura del conductor.

Este resumen refleja la planificación de la señalización vial del proyecto, asegurando que los usuarios reciban información clara y oportuna, contribuyendo a la seguridad y eficiencia del tránsito en la carretera. Estas señales encuentran detallados de manera específica en el Anexo N°16: PLANOS.

# CAPÍTULO VII.- ESPECIFICACIONES TÉCNICAS

## 7.1 GENERALIDADES

Las EE.TT establecen los lineamientos, criterios y procedimientos que deben cumplirse durante la ejecución de las tareas del proceso constructivo en proyectos de ingeniería civil. Asimismo, permiten garantizar que los trabajos se desarrollen conforme a estándares de calidad, seguridad y eficiencia, tomando como referencia la normativa vigente del sector transporte.

## 7.2 ESPECIFICACIONES TÉCNICAS

Las EE.TT del presente proyecto se han elaborado considerando los lineamientos establecidos por el MTC. En este apartado se describen los diferentes ítems de trabajo que forman parte del proyecto, cuya información se presenta en el Anexo N°13.

# CAPÍTULO VIII.- ESTUDIO ECONÓMICO

## 8.1 GENERALIDADES

En este capítulo, se presentan el sustento de los metrados, presupuesto, APU y cronograma de obra. El estudio económico se elaboró en función de los planos, EE.TT y normas del MTC.

## 8.2 METRADOS

Los metrados fueron realizados en base a planos que se han diseñado para el presente proyecto.

El sustento y resumen de metrados se encuentra en el Anexo N° 10.

## 8.3 ANÁLISIS DE COSTOS UNITARIOS (ACU)

Para los costos unitarios de cada partida se consideró la MO, mat. y equipos.

**Tabla 29**

*Ejemplo de APU – 1.3.3.1 Perfilado y compactado de sub rasante*

| **Rendimiento: 400 m2/ dia** | | **Unidad: m2** | | **CU:** | **16.67** |
|---|---|---|---|---|---|
| **\|\|Insumo** | **Unidad** | **Cuadrilla** | **Cantidad** | | **Parcial** |
| Operario | hh | 1.00 | 0.0200 | 28.94 | 0.58 |
| Oficial | hh | 1.00 | 0.0200 | 22.66 | 0.45 |
| Peón | hh | 4.00 | 0.0800 | 20.51 | 1.65 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | **Mano de obra:** | **2.67** |
| Herramientas man. | %mo | | 5.0000 | 2.67 | 0.13 |
| Rodillo liso vibratorio 135 HP – 10 ton | hm | 1.00 | 0.0200 | 220.00 | 4.40 |
| Motoniveladora 145-150 HP | hm | 1.00 | 0.0200 | 250.00 | 5.00 |
| Camión Cisterna 122 HP 1500 GAL | hm | 1.00 | 0.0200 | 200.00 | 4.98 |
| | | | | **Equipo:** | **13.53** |
| Agua puesta en obra | m3 | | 0.03 | 15.74 | 0.47 |
| | | | | **Sub Partidas:** | **0.47** |

***Nota:*** Elaboración propia.

## 8.4 PRESUPUESTO

Para el presente proyecto, se elaboró el presupuesto general considerando los metrados obtenidos y los precios unitarios calculados con base en normas técnicas vigentes. Además, de los gastos generales, utilidades y otros.

**Tabla 37**

*Costo Directo y Total*

| | |
|---|---|
| **COSTO DIRECTO** | **6,070,362.27** |
| GASTOS GENERALES 12.13% | 736,100.33 |
| UTILIDAD 10% | 607,036.23 |
| **SUB TOTAL** | **7,413,498.83** |
| IGV 18% | 1,334,429.79 |
| **COSTO DE OBRA** | **8,747,928.62** |
| SUPERVISION DE OBRA | 593,169.00 |
| EXPEDIENTE TECNICO | 60,000.00 |
| **COSTO TOTAL DEL PROYECTO** | **9,401,097.62** |

**SON: NUEVE MILLONES CUATROCIENTOS UN MIL NOVENTA Y SIETE CON 62/100 SOLES**

***Nota:*** El sustento del presupuesto se encuentra en el Anexo N°11.

# CAPÍTULO IX.- PROGRAMACION DE OBRA

## 8.5 CRONOGRAMA DE EJECUCIÓN DE OBRA – DIAGRAMA DE GANTT

De acuerdo con el cronograma de Gantt del proyecto vial del Camino Vecinal: Huaca Toro – Huaca Quemada, la duración es de 10 meses, considerando la programación de las diferentes partidas establecidas en el metrado del proyecto.

La ejecución del proyecto inicia con las actividades de trabajos preliminares, las cuales comprenden labores iniciales como la instalación de campamento, señalización, movilización de equipos y acondicionamiento del área de trabajo. Posteriormente, se desarrollan las partidas correspondientes a la infraestructura vial, las cuales representan la mayor parte del tiempo de ejecución del proyecto, con una duración aproximada de 176 días, e incluyen actividades relacionadas con movimiento de tierras, conformación de la subrasante, colocación de capas estructurales de la vía y demás trabajos necesarios para la construcción del camino vecinal.

La programación de estas actividades se ha realizado en función de los metrados establecidos en el expediente técnico, permitiendo organizar de manera secuencial y lógica cada una de las partidas hasta la culminación de la obra. Se encuentra detallado en el Anexo N°12.

# CAPÍTULO X.- PLAN DE CONSERVACION VIAL

## 10.1 GENERALIDADES

El corredor vial que une las diferentes localidades como Huaca de Toro y Huaca Quemada es de altísima importancia para el desarrollo agrícola, constituyéndose en una vía estratégica para la integración territorial de la región Lambayeque. Esta vía asegura el transporte eficiente de una variedad de productos, facilita el acceso a servicios esenciales y fortalece la conectividad entre centros poblados rurales y urbanos.

En este contexto, el Plan de Conservación Vial se presenta como un informe importante para garantizar la transitabilidad permanente, así como la seguridad vial y el mantenimiento en el tiempo de la infraestructura existente. La conservación oportuna de la carretera permite minimizar los daños de la vía, reducir los costos de mejoramiento y asegurar condiciones adecuadas para el tránsito vehicular y peatonal durante todo el año.

## 10.2 TRAMIFICACIÓN DEL PROYECTO

**Tabla 38**

*Tramos del proyecto*

| N° | TRAMO | INICIO | FIN | LONG. (km) |
|---|---|---|---|---|
| 1 | TRAMO 1: INICIO DE LA RUTA | HUACA TORO | SOLECAPE | 0. 544 km |
| 2 | TRAMO II | SOLECAPE | CRUCE A SAN ANTONIO (EMPALME LA-621) | 4.737 km |
| 3 | TRAMO III | CRUCE A SAN ANTONIO | EL CARRIZO (EMPALME LA-646) | 1.751 km |
| 4 | TRAMO IV: FIN DE LA RUTA | EL CARRIZO | HUACA QUEMADA | 4.238 km |

***Nota:*** Elaboración propia.

## 10.3 PLAZO DE INICIO DE INTERVENCION EN LA ZONA AFECTADA

El plazo máximo para el inicio de la intervención será de tres (03) horas, contadas a partir del momento en que la emergencia sea debidamente reportada.

## 10.4 CRONOGRAMA DE ATENCIÓN DE LAS EMERGENCIAS VIALES

Se realiza un cronograma de ejecución para la atención de emergencias viales, aplicable a los eventos que puedan presentarse durante la ejecución y mantenimiento del proyecto vial.

## 10.5 IDENTIFICACIÓN DE ZONAS VULNERABLES EN EL CORREDOR VIAL

El nivel de riesgo se determina mediante una matriz que integra dos componentes fundamentales: la probabilidad de que suceda un evento negativo y la severidad de las consecuencias que este pueda generar.

**Tabla 39**

*Valoración de la Probabilidad y consecuencias pontenciales*

| Área Crítica | Evento Indicador | Probabilidad de Ocurrencia | Consecuencia Potenciales |
|---|---|---|---|
| **Almacenamiento de productos** | Falla en los Sistemas de señalización | D | 3 |
| | Inadecuada disposición de residuos sólidos | D | 4 |

| | | | |
|---|---|---|---|
| | Personal (Choferes / Operadores) sin descanso | D | 3 |
| **Tramos** | Mantenimiento deficiente de maquinaria pesada. | D | 3 |
| | Condiciones inadecuadas de habilitación o preparación de la vía. | D | 3 |
| **Distribución en almacén y campo** | Manipulación inadecuada durante el transporte de sustancias peligrosas. | D | 3 |
| | Deficiente aseguramiento de la carga en vehículos de traslado. | D | 3 |
| **Manejo Operaciones** | Manipulación incorrecta de sustancias peligrosas. | D | 3 |
| | Acumulación y disposición inadecuada de residuos tóxicos. | D | 3 |
| **Sectores Críticos** | Procesos de erosión. | D | 2 |
| | Eventos de inundación. | D | 2 |

***Nota:*** Elaboración propia.

# XI.- CONCLUSIONES Y RECOMENDACIONES

## CONCLUSIONES

- En términos de viabilidad, la elaboración del expediente técnico para el mejoramiento de la vía Huaca Toro – Huaca Quemada es viable desde los aspectos sociales, económicos y ambientales, contribuyendo a reducir las limitaciones de transitabilidad existentes.
- Según el levantamiento topográfico, tenemos un terreno del tipo plano (TIPO 1).
- Según el EMS, el material predominante son los suelos finos, entre los cuales, están las arcillas.
- Para el conteo vehicular, se obtuvieron resultados de la Estación 02 para determinar el IMDA siendo 76 veh/día, con predominio de vehículos ligeros (86.97%) frente a vehículos pesados (13.03%).
- Según el estudio hidrológico, se obtiene un tiempo de concentración de 10 min con una intensidad promedio de 316.07 mm/h para un tiempo de retorno de 50 años.
- El diseño geométrico se realizó con una velocidad de diseño 30 km/h, con pendientes longitudinales menores al 3%, un ancho de carril de 4 m y bermas de 0.5 m.
- Según el diseño del pavimento, se usó el MÉTODO DE AUSTROADS y tendrá una capa de 20 cm de afirmado.
- En cuanto a las obras de arte, se plantea construir un badén de concreto armado con un emboquillado de piedra, para un tirante de 8.40 cm. Asimismo, se diseñará las tajeas (alcantarillas de paso) con un caudal de 1.20 m3/s y 0.40 m3/s, según el sistema de distribución de riego del Subsector Muy Finca.
- Según la EIA, los impactos más relevantes corresponden a la alteración de la calidad del aire y del agua, debido a los movimientos de tierra.
- El Plan de Conservación Vial permitirá mantener la transitabilidad y seguridad de la vía, prevenir su deterioro y prolongar la vida útil de la infraestructura, garantizando condiciones adecuadas para el tránsito durante todo el año.
- Se realizaron los metrados usando los planos elaborados y teniendo en cuenta el proceso constructivo.

- El presupuesto contempla un costo directo de S/ 6,070,362.27, con gastos generales que representan el 12.12% y una utilidad del 10%. El proyecto alcanza una inversión presupuestal de S/.9’401,097.62 a la fecha de febrero del 2026, siendo el costo por Km de S/.839,383.72.
- El proyecta contempla una programación de obra de 10 meses.

# RECOMENDACIONES

- Se recomienda ejecutar el proyecto, priorizando las intervenciones que mejoren la transitabilidad y reduzcan las limitaciones actuales de la vía.
- Según el estudio topográfico, se recomienda usar los BMs y puntos geodésicos para replanteo al inicio y durante la ejecución.
- Se recomienda considerar el comportamiento de los suelos finos en la conformación de la vía para el mejoramiento.
- Se recomienda considerar el predominio de vehículos ligeros para la definición de las características de la vía y su diseño.
- Se recomienda mantener los parámetros hidrológicos adoptados y verificar la capacidad de las obras de drenaje para el periodo de retorno de diseño.
- Se recomienda mantener el ancho de 4 m, bermas de 0.50 m y una velocidad de diseño de 30 km/h, garantizando condiciones adecuadas de seguridad vial.
- Se recomienda ejecutar el afirmado de 20 cm.
- Se recomienda ejecutar correctamente el badén y las alcantarillas, respetando los planos correspondientes.
- Se recomienda elaborar un plan de mitigación ambiental para controlar los impactos negativos generados principalmente los movimientos de tierras.
- Se recomienda la aplicación durante todo el proyecto del PMA, además del Plan de Conservación Vial para reducir los impactos que se puedan ocasionar durante la ejecución y mantenimiento de la vía proyectada.
- Se recomienda realizar la verificación de los metrados según los planos.
- Actualizar el presupuesto de obra a la fecha de presentación del expediente técnico para evitar problemas en la ejecución.
- Se recomienda monitorear el avance de obra para cumplir el plazo de 10 meses.

# REFERENCIAS


AASHTO (1993). *Guide for Design of Pavement Structures*. Obtenido de https://habib00ugm.wordpress.com/wp-content/uploads/2010/05/aashto1993.pdf

BRAJA M. DAS. (2015). *Fundamentos de la Ingeniería Geotécnica.* Cengage Learning.

CÁRDENAS, J. (2013). *Diseño Geométrico de Carreteras.* Ecoe Ediciones.

JUAREZ, E & RICO, A. (2011). *Mecánica de Suelos I - TOMO I.* EDITORIAL LIMUSA S.A.

MINISTERIO DE ECONOMÍA Y FINANZAS. (2015). *Pautas metodológicas para el desarrollo de alternativas de pavimento en la formulación y evaluación social de proyectos de inversión pública de carreteras.* Obtenido de https://cdn.www.gob.pe/uploads/document/file/1780996/Compendio%20Normativo%20de%20Pesos%20y%20Medidas.pdf.pdf?v=1634941119

MINISTERIO DE TRANSPORTE Y COMUNICACIONES. (2008). *Manual de diseño de carreteras no pavimentadas de bajo volumen de tránsito*. Obtenido de https://www.sutran.gob.pe/wp-content/uploads/2015/08/manualdedisenodecarreterasnopavimentadasdebajovolumendetransito.pdf

MINISTERIO DE TRANSPORTE Y COMUNICACIONES. (2013). *Manual de Carreteras Especificaciones técnicas generales para construcción EG-2013.* Obtenido de https://portal.mtc.gob.pe/transportes/caminos/normas_carreteras/documentos/manuales/MANUALES%20DE%20CARRETERAS%202019/MC-01-13%20Especificaciones%20Tecnicas%20Generales%20para%20Construcción%20-%20EG-2013%20-%20(Versión%20Revisada%20-%20JULIO%202013).pdf

MINISTERIO DE TRANSPORTE Y COMUNICACIONES. (2014). *Manual de Carreteras Geología, geotecnia y Pavimentos*. Obtenido de https://portal.mtc.gob.pe/transportes/caminos/normas_carreteras/documentos/manuales/MANUALES%20DE%20CARRETERAS%202019/MC-05-14%20Seccion%20Suelos%20y%20Pavimentos_Manual_de_Carreteras_OK.pdf.

MINISTERIO DE TRANSPORTE Y COMUNICACIONES. (2014). *Manual de Carreteras: Hidrología, Hidráulica y Drenaje.* Obtenido de https://drive.google.com/file/d/1BhZ4zp-Nh6fuPrKbIJCEj0VzHhXkvsso/view.

MINISTERIO DE TRANSPORTE Y COMUNICACIONES. (2018). *Manual de carreteras, diseño geométrico DG-2018.* (Dirección General de Caminos y Ferrocarriles.) Obtenido de https://portal.mtc.gob.pe/transportes/caminos/normas_carreteras/documentos/manuales/MANUALES%20DE%20CARRETERAS%202019/MC-02-18%20Diseño%20Geometrico%20DG-2018.pdf.

MINISTERIO DE TRANSPORTE Y COMUNICACIONES. (2018). *Manual de Dispositivos de Control de Tránsito Automotor para Calles y Carreteras*. (Dirección General de Caminos y Ferrocarriles.) Obtenido de https://portal.mtc.gob.pe/transportes/caminos/normas_carreteras/documentos/manuales/MANUALES%20DE%20CARRETERAS%202019/MC-09-16%20Manual%20de%20Dispositivos%

MINISTERIO DE TRANSPORTE Y COMUNICACIONES. (2018). *Manual de Mantenimiento de carreteras mantenimiento o conservación vial*. (Dirección General de Caminos y Ferrocarriles.) Obtenido de https://portal.mtc.gob.pe/transportes/caminos/normas_carreteras/documentos/manuales/MANUALES%20DE%20CARRETERAS%202019/MC-08-14%20Mantenimiento%20o%20Conservacion%20y%20Parte_4_Mant_Rutinario_Caminos_Vecinales_GL_OK.pdf

MINISTERIO DE TRANSPORTE Y COMUNICACIONES. (2021). *Compendio Normativo sobre Pesos y Medidas.* (Superintendencia de Transporte Terrestre de Personas, Carga y Mercancías). Obtenido de https://cdn.www.gob.pe/uploads/document/file/1780996/Compendio%20Normativo%20de%20Pesos%20y%20Medidas.pdf.pdf?v=1634941119

MINISTERIO DE TRANSPORTE Y COMUNICACIONES. (2023). *Ficha Técnica Estándar para Formulación y Evaluación de Proyectos de Inversión de Carreteras Interurbanas.* Obtenido de https://portal.mtc.gob.pe/transportes/caminos/normas_carreteras/documentos/manuales/MANUALES%20DE%20CARRETERAS%202019/MC-08-14%20Mantenimiento%20o%20Conservacion%20y%20Parte_4_Mant_Rutinario_Caminos_Vecinales_GL_OK.pdf

# ANEXOS

# ANEXO N°01.- CRÍTERIOS PARA EL DISEÑO GEOMÉTRICO

## 1.1 GENERALIDADES

El diseño geométrico de una carretera comprende integralmente la planta, el perfil longitudinal y las secciones transversales. Estos tres componentes forman la base del trazado vial y se desarrollan de manera coordinada para garantizar condiciones seguras, eficientes y confortables para la circulación vehicular, respetando siempre los criterios técnicos y normativos (DG- 2018).

Es fundamental que el proyecto se base en una velocidad de diseño adecuada, y principalmente, que se mantenga una relación eficiente entre dicha velocidad, la curvatura y el peralte. Es garantizar una vía segura, eficiente y cómoda para los usuarios, permitiendo una circulación continua a una velocidad razonable, acorde con el entorno y con las condiciones técnicas y económicas.

## 1.2 CLASIFICACIÓN DE LA CARRETERA

### 1.2.1 CLASIFICACIÓN POR DEMANDA

De acuerdo con el estudio de tráfico y considerando un IDMA menor a 200 veh/día, con 2 carriles de 2.50 m según el Manual DG – 2018 para la carretera tramo Huaca Toro – Huaca Quemada, se clasifica como Trocha carrozable.

### 1.2.2 CLASIFICACICIÓN POR SU OROGRAFÍA

De acuerdo con las pendientes transversales al eje de la vía que son menores a 10% y sus pendientes longitudinales son menores al 3%, se considera terreno plano (Tipo-1), demandando un mínimo movimiento de tierras, motivo por el que su trazado no presenta dificultades significativas; la carretera del Caserío Huaca Toro - Centro Poblado Huaca Quemada del Distrito Mochumí.

## 1.3 VELOCIDAD DE DISEÑO

La velocidad de diseño se establece considerando la clasificación de la carretera según su demanda o las características de la orografía. Cuando se tiene una orografía de terreno plano (Tipo I) es posible diseñar trazados que permitan velocidades elevadas con costos relativamente bajos de construcción. Sin embargo, en terrenos abruptos o montañosos, mantener una velocidad alta de diseño implica inversiones significativas para garantizar la seguridad del trazado. Este tipo de solución solo se justificaría si los volúmenes de tránsito esperados fueran considerablemente altos como para justificar la inversión.

Para el desarrollo de este proyecto de mejoramiento de carreteras, especialmente en terreno plano y por razones económicas, es común que el diseño vial se adapte tanto a las inflexiones del terreno como al trazo original. Esto permite minimizar costos y aprovechar la infraestructura existente, manteniendo una velocidad de diseño adecuada a las condiciones del entorno. Por su orografía se consideró un terreno plano y se ha trabajado con una velocidad de diseño: 30 Km/h.

## 1.4 DISEÑO GEOMÉTRICO EN PLANTA

### 1.4.1 GENERALIDADES

El diseño geométrico en planta o alineamiento horizontal está constituido por alineamientos rectos, curvas circulares y de grado de curvatura variable, que permiten una transición suave al pasar de alineamientos rectos a curvas circulares o viceversa o también entre dos curvas circulares de curvatura diferente.

En general, el relieve del terreno es el elemento de control del radio de las curvas horizontales y el de la velocidad de diseño y a su vez, controla la distancia de visibilidad.

### 1.4.2 CONSIDERACIONES DE DISEÑO

Para el diseño en planta, se considera los siguientes criterios:

- Deben evitarse tramos con alineamientos rectos demasiado largos. Tales tramos son monótonos durante el día, y en la noche aumenta el peligro de deslumbramiento de las luces del vehículo que avanza en sentido opuesto. Es preferible reemplazar grandes alineamientos, por curvas de grandes radios.
- En el caso de ángulos de deflexión Δ pequeños, iguales o inferiores a 5º, los radios deberán ser suficientemente grandes para proporcionar longitud de curva mínima L obtenida con la fórmula siguiente:

$$L > 30\ (10 - \Delta), \Delta < 5°$$

Donde:

(L en metros; Δ en grados)

No se usará nunca ángulos de deflexión menores de 59' (minutos).

La longitud mínima de curva (L) será:

**Tabla 1**
*Consideraciones de diseño*

| Carretera red nacional | L (m) |
|---|---|
| Autopistas | 6 V |
| Carreteras de dos carriles | 3 V |

V = Velocidad de diseño (km/h)

***Nota:*** Diseño Geométrico DG-2018 – MTC

- No se requiere curva horizontal para pequeños ángulos de deflexión, en el siguiente cuadro se muestran los ángulos de inflexión máximos para los cuales no es requerida la curva horizontal.

**Tabla 2**
*Deflexión máxima para prescindir de curva circular*

| Velocidad de diseño Km/h | Deflexión máxima aceptable sin curva circular |
|---|---|
| 30 | 2º 30´ |
| 40 | 2º 15´ |
| 50 | 1º 50´ |
| 60 | 1º 30´ |
| 70 | 1º 20´ |
| 80 | 1º 10´ |

***Nota:*** Diseño Geométrico DG-2018 – MTC

- No son deseables dos curvas sucesivas en el mismo sentido cuando entre ellas existe un tramo en tangente. Será preferible sustituir por una curva extensa única o, por lo menos, la tangente intermedia por un arco circular, constituyéndose entonces en curva compuesta. Si no es posible adoptar estas medidas, la tangente intermedia deberá ser superior a 500 m. En el caso de carreteras de tercera clase la tangente podrá ser inferior o bien sustituida por una espiral o una transición en espiral dotada de peralte.

### 1.4.3 TRAMOS TANGENTES

Se usarán en función de la Velocidad de Diseño, los tramos permisibles de la tabla siguiente:

**Tabla 3**
*Longitudes de tramos en tangente*

| V (km/h) | L mín.s (m) | L mín.o (m) | L máx (m) |
|---|---|---|---|
| 30 | 42 | 84 | 500 |
| 40 | 56 | 111 | 668 |
| 50 | 69 | 139 | 835 |
| 60 | 83 | 167 | 1002 |
| 70 | 97 | 194 | 1169 |
| 80 | 111 | 222 | 1336 |
| 90 | 125 | 250 | 1503 |
| 100 | 139 | 278 | 1670 |
| 110 | 153 | 306 | 1837 |
| 120 | 167 | 333 | 2004 |
| 130 | 180 | 362 | 2171 |

***Nota:*** Diseño Geométrico DG-2018 – MTC

Donde:

- $L_{mín.s}$**:** Longitud mínima (m) para trazados en "S" (alineación recta entre alineaciones curvas con radios de curvatura de sentido contrario).
- $L_{mín.o}$**:** Longitud mínima (m) para el resto de casos (alineación recta entre alineaciones curvas con radios de curvatura del mismo sentido).
- $L_{máx}$ **:** Longitud máxima deseable (m)
- $V$ : Velocidad de diseño (km/h)

Se concluye:

- Longitud Mínima de tangente CURVA EN S: 42 m
- Longitud Mínima de tangente CURVA EN O: 84 m
- Longitud Máxima de tangente: 500 m

Cuando las longitudes mínimas no se puedan cumplir es preferible anular la tangente alargando convenientemente las longitudes de transición en ESPIRAL.

### 1.4.4 CURVAS CIRCULARES

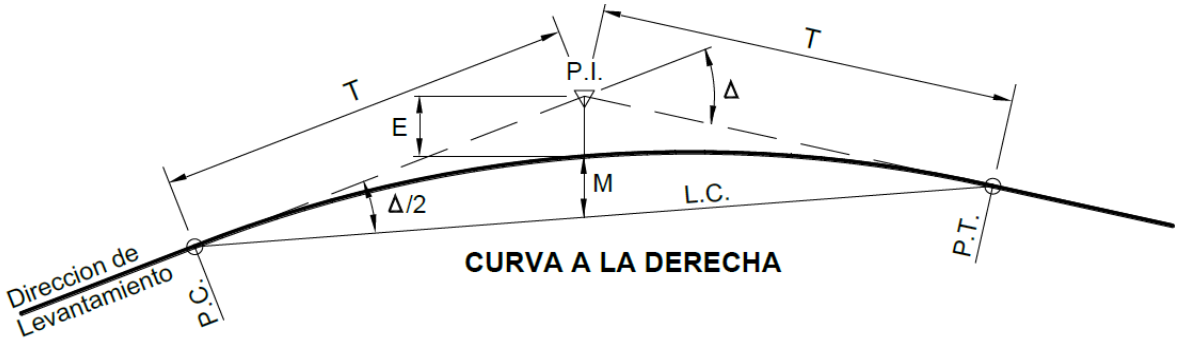
Las curvas horizontales circulares simples son arcos de circunferencia de un solo radio que unen dos tangentes consecutivas, conformando la proyección horizontal de las curvas. reales o espaciales.

### 1.4.4.1 ELEMENTOS DE LA CURVA CIRCULAR

En la ilustración se indica los elementos y nomenclatura de la curva horizontal circular.

**Figura 1**

*Simbología de la curva circular*




***Nota:*** Diseño Geométrico DG-2018 – MTC

- $P.C.$ : Punto de inicio de la curva
- $P.I.$ : Punto de Intersección de 2 alineaciones consecutivas
- $P.T.$ : Punto de tangencia
- $E$ : Distancia a externa (m)
- $M$ : Distancia de la ordenada media (m)
- $R$ : Longitud del radio de la curva (m)
- $T$ : Longitud de la subtangente (P.C a P.I. y P.I. a P.T.) (m)
- $L$ : Longitud de la curva (m)
- $L.C$ : Longitud de la cuerda (m)
- $\Delta$ : Ángulo de deflexión (º)

### 1.4.5 RADIOS MÍNIMOS

Los radios mínimos de curvatura horizontal son los radios de menor valor numérico que pueden recorrerse con la velocidad de diseño y la tasa máxima de peralte, en condiciones aceptables de seguridad y comodidad.

Se usará la siguiente fórmula para carretera de tercera clase:

$$R_{mín} = \frac{V^2}{127(0.01\, e_{máx} + f_{máx})}$$

Dónde:

- $R_{mín}$ : mínimo radio de curvatura.
- $e_{máx}$ : valor máximo del peralte.
- $f_{máx}$ : factor máximo de fricción.
- $V$ : velocidad específica de diseño

**Tabla 4**

*Fricción transversal máxima en curvas*

| Velocidad de diseño Km/h | $f_{máx}$ |
|---|---|
| 30 (ó menos) | 0.17 |
| 40 | 0.17 |
| 50 | 0.16 |
| 60 | 0.15 |

***Nota:*** Diseño Geométrico DG-2018 – MTC

La tabla correspondiente se detallan los valores de radios mínimos y los peraltes máximos que pueden utilizarse según la velocidad de diseño. Asimismo, se incluyen los valores correspondientes a la fricción transversal máxima permitida.

**Tabla 5**

*Radios mínimos y peralte máximos para diseños de carreteras*

| Ubicación de la vía | Velocidad de diseño | Þ máx. (%) | ƒ máx. | Radio calculado (m) | Radio redondeado (m) |
|---|---|---|---|---|---|
| Área urbana | 30 | 4.00 | 0.17 | 33.7 | 35 |
| | 40 | 4.00 | 0.17 | 60.0 | 60 |
| | 50 | 4.00 | 0.16 | 98.4 | 100 |
| | 60 | 4.00 | 0.15 | 149.2 | 150 |
| | 70 | 4.00 | 0.14 | 214.3 | 215 |
| | 80 | 4.00 | 0.14 | 280.0 | 280 |
| | 90 | 4.00 | 0.13 | 375.2 | 375 |
| | 100 | 4.00 | 0.12 | 492.10 | 495 |
| | 110 | 4.00 | 0.11 | 635.2 | 635 |
| | 120 | 4.00 | 0.09 | 872.2 | 875 |
| | 130 | 4.00 | 0.08 | 1,108.9 | 1,110 |
| Área rural (con peligro de hielo) | 30 | 6.00 | 0.17 | 30.8 | 30 |
| | 40 | 6.00 | 0.17 | 54.8 | 55 |
| | 50 | 6.00 | 0.16 | 89.5 | 90 |
| | 60 | 6.00 | 0.15 | 135.0 | 135 |
| | 70 | 6.00 | 0.14 | 192.9 | 195 |
| | 80 | 6.00 | 0.14 | 252.9 | 255 |
| | 90 | 6.00 | 0.13 | 335.9 | 335 |
| | 100 | 6.00 | 0.12 | 437.4 | 440 |
| | 110 | 6.00 | 0.11 | 560.4 | 560 |
| | 120 | 6.00 | 0.09 | 755.9 | 755 |
| | 130 | 6.00 | 0.08 | 950.5 | 950 |
| Área rural (plano u ondulada) | 30 | 8.00 | 0.17 | 28.3 | 30 |
| | 40 | 8.00 | 0.17 | 50.4 | 50 |
| | 50 | 8.00 | 0.16 | 82.0 | 85 |
| | 60 | 8.00 | 0.15 | 123.2 | 125 |
| | 70 | 8.00 | 0.14 | 175.4 | 175 |
| | 80 | 8.00 | 0.14 | 229.1 | 230 |
| | 90 | 8.00 | 0.13 | 303.7 | 305 |
| | 100 | 8.00 | 0.12 | 393.7 | 395 |
| | 110 | 8.00 | 0.11 | 501.5 | 500 |
| | 120 | 8.00 | 0.09 | 667.0 | 670 |
| | 130 | 8.00 | 0.08 | 831.7 | 835 |
| Área rural (accidentada o escarpada) | 30 | 12.00 | 0.17 | 24.4 | 25 |
| | 40 | 12.00 | 0.17 | 43.4 | 45 |
| | 50 | 12.00 | 0.16 | 70.3 | 70 |
| | 60 | 12.00 | 0.15 | 105.0 | 105 |
| | 70 | 12.00 | 0.14 | 148.4 | 150 |
| | 80 | 12.00 | 0.14 | 193.8 | 195 |
| | 90 | 12.00 | 0.13 | 255.1 | 255 |
| | 100 | 12.00 | 0.12 | 328.1 | 330 |
| | 110 | 12.00 | 0.11 | 414.2 | 415 |
| | 120 | 12.00 | 0.09 | 539.9 | 540 |
| | 130 | 12.00 | 0.08 | 665.4 | 665 |

***Nota:*** Diseño Geométrico DG-2018 – MTC

Dado que el proyecto se ubica en un área rural (plana u ondulada), y con una velocidad de diseño de 30 km/h, un peralte del 8% y un coeficiente máximo de fricción de 0.17, se establece un radio mínimo de 30 metros.

De manera general, se procurará utilizar curvas con radios amplios, dejando el uso de radios mínimos solo para escenarios de diseño de condiciones críticas.

## GIRO MÍNIMO DE VEHÍCULO DE DISEÑO

El espacio mínimo absoluto para ejecutar un giro de 180º en el sentido del movimiento de las agujas del reloj, queda definido por la trayectoria que sigue la rueda delantera izquierda del vehículo (trayectoria exterior) y por la rueda trasera derecha (trayectoria interior). Además de la trayectoria exterior, debe considerarse el espacio libre requerido por la sección en volado que existe entre el primer eje y el parachoques, o elemento más sobresaliente. Las dimensiones de los vehículos que afectan el alineamiento horizontal y la sección transversal.

El vehículo de diseño utilizado es un camión simple de 2 ejes de nomenclatura (C2), que es el de mayor dimensión que circula en la vía según los resultados obtenidos en el estudio de tráfico de esta investigación. A continuación, se muestra en la tabla, el espacio para un giro de 180° y el radio mínimo que es de12.80 metros para un C2.

**Tabla 6**

*Giro mínimo de vehículo de diseño*

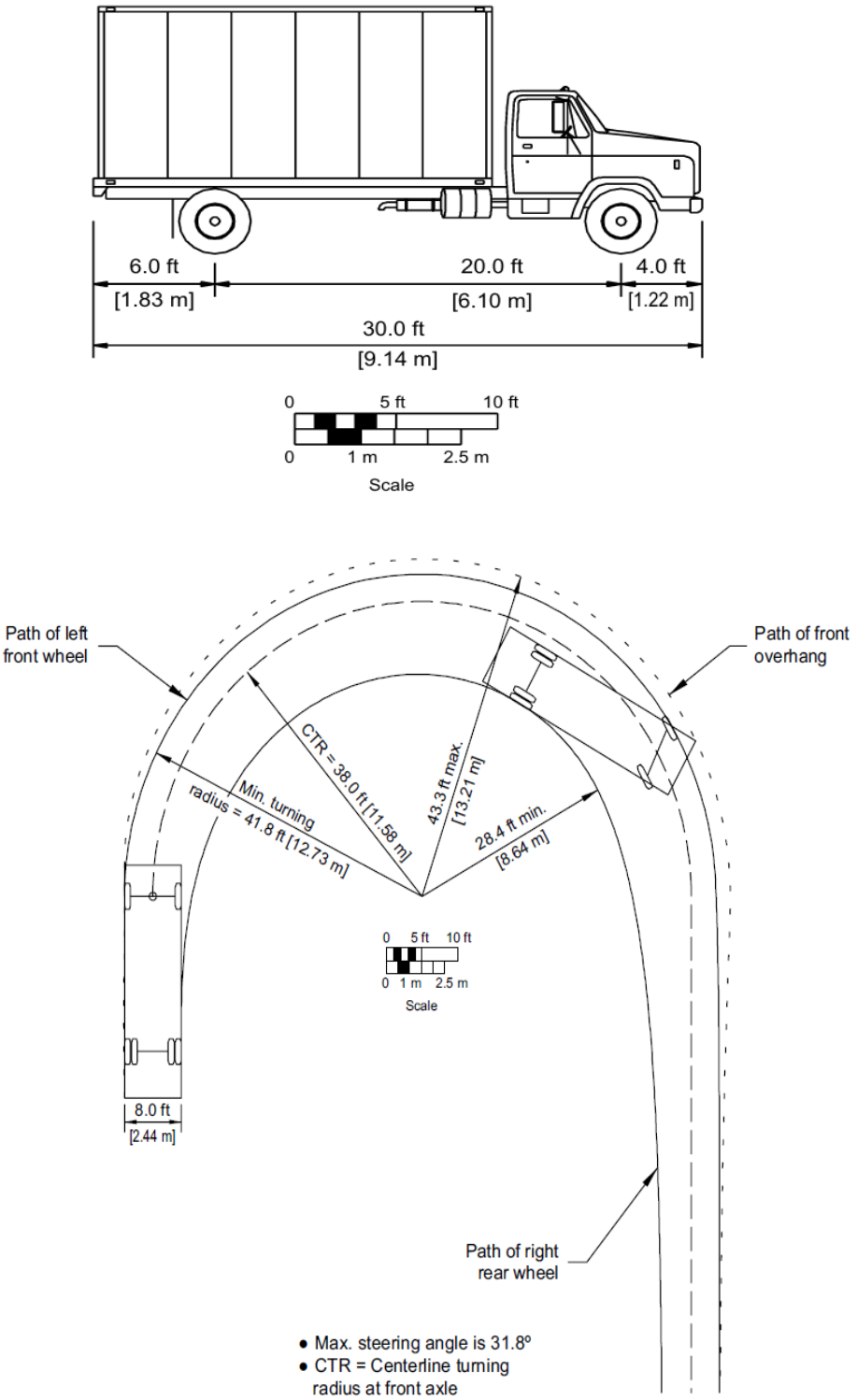
**DATOS BÁSICOS DE LOS VEHÍCULOS DE DISEÑO**
**(medidas en metros)**

| TIPO DE VEHÍCULO | NOMENCLA-TURA | ALTO TOTAL | ANCHO TOTAL | LARGO TOTAL | LONGITUD ENTRE EJES | RADIO MÍNIMO RUEDA EXTERNA DELANTERA | RADIO MÍNIMO RUEDA INTERNA TRASERA |
|---|---|---|---|---|---|---|---|
| VEHÍCULO LIGERO | VL | 1,30 | 2,10 | 5,80 | 3,40 | 7,30 | 4,20 |
| OMNIBUS DE DOS EJES | B2 | 4,10 | 2,60 | 9,10 | 6,10 | 12,80 | 8,50 |
| OMNIBUS DE TRES EJES | B3 | 4,10 | 2,60 | 12,10 | 7,60 | 12,80 | 7,40 |
| CAMION SIMPLE 2 EJES | C2 | 4,10 | 2,60 | 9,10 | 6,10 | 12,80 | 8,50 |
| CAMION SIMPLE 3 EJES O MAS | C3 / C4 | 4,10 | 2,60 | 12,20 | 7.6 | 12,80 | 7,40 |
| COMBINACION DE CAMIONES | | | | | | | |
| SEMIREMOLQUE TANDEM | T2S1/ 2 / 3 | 4,10 * | 2,60 | 15,20 | 4,00 / 7,00 | 12,20 | 5,80 |
| SEMIREMOLQUE TANDEM | T3S1 / 2 / 3 | 4,10 | 2,60 | 16,70 | 4,90 / 7,90 | 13,70 | 5,90 |
| REMOLQUE 2 EJES + 1 DOBLE (TANDEM) | C2 – R2 / 3 | 4,10 | 2,60 | 19,90 | 3,80 / 6,10 / 6,40 | 13,70 | 6,80 |
| REMOLQUE 3 EJES + 1 DOBLE (TANDEM) | C3 – R2 / 3 / 4 | 4,10 | 2,60 | 19,90 | 3,80 / 6,10 /6,40 | 13,70 | 6,80 |

* Altura máxima para contenedores 4.65

***Nota:*** Diseño Geométrico DG-2001 – MTC

**Figura 2**
*Radio mínimo de giro*




***Nota:*** A Policy on Geometric Design of Highways and Streets.

### 1.4.6 CURVAS DE TRANSICIÓN

Las curvas de transición son espirales que tienen por objeto evitar las discontinuidades en la curvatura del trazo, por lo que, en su diseño deberán ofrecer las mismas condiciones de seguridad, comodidad y estética que el resto de los elementos del trazo.

**Tabla 7**

*Simbología de la curva circular*

| Velocidad Km/h | Radio mín. m | J $m/s^3$ | Peralte máx. % | A mín. $m^2$ | Longitud de transición (L) | |
|---|---|---|---|---|---|---|
| | | | | | Calculada m | Redondeada m |
| 30 | 24 | 0.5 | 12 | 26 | 28 | 30 |
| 30 | 26 | 0.5 | 10 | 27 | 28 | 30 |
| 30 | 28 | 0.5 | 8 | 28 | 28 | 30 |
| 30 | 31 | 0.5 | 6 | 29 | 27 | 30 |
| 30 | 34 | 0.5 | 4 | 31 | 28 | 30 |
| 30 | 37 | 0.5 | 2 | 32 | 28 | 30 |

***Nota:*** Diseño Geométrico DG-2018 – MTC

Sí estamos trabajando con una velocidad de 30 km/h, en el presente proyecto se adoptará una longitud mínima de curva de transición de L = 30 metros, la cual ha sido determinada mediante la aplicación de las fórmulas correspondientes para calcular los valores mínimo y máximo, que se detallan a continuación.

$$L_{mín} = 0.0178\, V^3/R$$

$$L_{máz} = (24R)^{0.5}$$

***Fuente:*** *Diseño Geométrico DG-2018 – MTC*

Dónde:

- $R$ : Radio de curvatura circular horizontal.
- $L_{mín}$ : Longitud mínima de la curva de transición en metros.
- $L_{máz}$ : Longitud máxima de la curva de transición en metros.
- $V$ : Velocidad específica en Km/h.

Se considerará que la longitud máxima de una curva de transición no será mayor a 1.5 veces la longitud mínima.

Para el caso de carreteras de Tercerea Clase y cuando el radio de las curvas horizontales sea superior al señalado en la tabla, se podría prescindir de curvas de transición.

**Tabla 8**

*Radios que permiten prescindir de la curva de transición en carreteras de Tercera Clase*

| Velocidad de diseño Km/h | Radio M |
|---|---|
| 20 | 24 |
| 30 | 55 |
| 40 | 95 |
| 50 | 150 |
| 60 | 210 |
| 70 | 290 |
| 80 | 380 |
| 90 | 480 |

***Nota:*** *Diseño Geométrico DG-2018 – MTC*

### 1.4.7 TRANSICIÓN DEL PERALTE

Siendo el peralte la inclinación transversal de la carretera en los tramos de curva, destinada a contrarrestar la fuerza centrífuga del vehículo, la transición de peralte viene a ser la traza del borde de la calzada, en la que se desarrolla el cambio gradual de la pendiente de dicho borde, entre la que corresponde a la zona en tangente, y la que corresponde a la zona peraltada de la curva.

El peralte máximo se calcula con la siguiente fórmula:

$$ip_{máx} = 1.8 - 0.01\,V$$

Dónde:

- $ip_{máx}$ : Máxima inclinación de cualquier borde de la calzada respecto al eje de la vía (%).
- $V$ : Velocidad de diseño (km/h).

La longitud del tramo de transición del peralte tendrá por tanto una longitud mínima definida por la fórmula:

$$L_{mín} = \frac{p_f - p_i}{ip_{máx}}\,B$$

Dónde:

- $ip_{máx}$ : Longitud mínima del tramo de transición del peralte (m).
- $p_f$ : Peralte final con su signo (%)
- $p_i$ p : Peralte inicial con su signo (%)
- B : distancia del borde de la calzada al eje de giro del peralte (m).
- $ip_{máx}$ : Máxima inclinación de cualquier borde de la calzada respecto al eje de la vía (%).

- $V$ : Velocidad de diseño (km/h).

En carreteras de Tercera Clase, se tomarán los valores que muestra la tabla para definir las longitudes mínimas de transición de bombeo y de transición de peralte en función a la velocidad de diseño y valor del peralte.

**Tabla 9**

*Longitud mínima de transición de peralte y de transición de bombeo.*

| Velocidad de diseño (Km/h) | Valor del peralte | | | | | | Longitud mínima de transición de bombeo (m)** |
|---|---|---|---|---|---|---|---|
| | 2% | 4% | 6% | 8% | 10 % | 12 % | |
| | Longitud mínima de transición de peralte (m)* | | | | | | |
| 20 | 9 | 18 | 27 | 36 | 45 | 54 | 9 |
| 30 | 10 | 19 | 29 | 38 | 48 | 58 | 10 |
| 40 | 10 | 21 | 31 | 41 | 51 | 62 | 10 |
| 50 | 11 | 22 | 33 | 44 | 55 | 66 | 11 |
| 60 | 12 | 24 | 36 | 48 | 60 | 72 | 12 |
| 70 | 13 | 26 | 39 | 52 | 65 | 79 | 13 |
| 80 | 14 | 29 | 43 | 58 | 72 | 86 | 14 |
| 90 | 15 | 31 | 46 | 61 | 77 | 92 | 15 |

*Longitud de transición basada en la rotación de un carril

**Longitud basada en 2% de bombeo

***Nota:*** Diseño Geométrico DG-2018 – MTC

### 1.4.8 SOBREANCHO

La necesidad de proporcionar sobreancho en una calzada se debe a la extensión de la trayectoria de los vehículos y a la mayor dificultad en mantener el vehículo dentro del carril en tramos curvos.

$$Sa = n\left(R - \sqrt{R^2 - L^2}\right)$$

Dónde:

- Sa: Sobreancho (m)
- n: Número de carriles
- R: Radio de curvatura circular (m)
- L: Distancia entre eje posterior y parte frontal (m)
- V: Velocidad de diseño (km/h)

Se trata de una carretera de bajo volumen que se desarrolla en terreno de topografía plano y teniendo en cuenta que el sobreancho Se considera apropiado un valor mínimo de 0.40 m de sobreancho para justificar su adopción.

### 1.4.9 DISTANCIA DE VISIBILIDAD DE PARADA

La coordinación de los alineamientos horizontal y vertical, respecto a las distancias de visibilidad, debe efectuarse al inicio del proyecto, es decir cuando aún es posible hacer modificaciones en el diseño.

La distancia de visibilidad de parada. De acuerdo con la pendiente y la velocidad de diseño, la visibilidad mínima de parada es 35 metros, como se muestra en la sgte tabla:

**Tabla 10**

*Distancia de visibilidad de parada*

| Velocidad de diseño (km/h) | Pendiente nula o en bajada | | | Pendiente en subida | | |
|---|---|---|---|---|---|---|
| | 3% | 6% | 9% | 3% | 6% | 9% |
| **20** | 20 | 20 | 20 | 19 | 18 | 18 |
| **30** | 35 | 35 | 35 | 31 | 30 | 29 |
| **40** | 50 | 50 | 53 | 45 | 44 | 43 |
| **50** | 66 | 70 | 74 | 61 | 59 | 58 |
| **60** | 87 | 92 | 97 | 80 | 77 | 75 |
| **70** | 110 | 116 | 124 | 100 | 97 | 93 |
| **80** | 136 | 144 | 154 | 123 | 118 | 114 |
| **90** | 164 | 174 | 187 | 148 | 141 | 136 |
| **100** | 194 | 207 | 223 | 174 | 167 | 160 |
| **110** | 227 | 243 | 262 | 203 | 194 | 186 |
| **120** | 283 | 293 | 304 | 234 | 223 | 214 |
| **130** | 310 | 338 | 375 | 267 | 252 | 238 |

***Nota:*** *Diseño Geométrico DG-2018 – MTC*

## 1.5 DISEÑO GEOMÉTRICO EN PERFIL

### 1.5.1 GENERALIDADES

El diseño geométrico en perfil o alineamiento vertical está constituido por una serie de rectas enlazadas por curvas verticales parabólicas, a los cuales dichas rectas son tangentes; en cuyo desarrollo, el sentido de las pendientes se define según el avance del kilometraje, en positivas, aquellas que implican un aumento de cotas y negativas las que producen una disminución de cotas.

El perfil longitudinal está controlado principalmente por la Topografía, Alineamiento, horizontal, Distancias de visibilidad, Velocidad de proyecto, Seguridad, Costos de Construcción, Categoría de la vía, Valores Estéticos y Drenaje.

### 1.5.2 CONSIDERACIONES DE DISEÑO

- En terreno plano, por razones de drenaje, la rasante estará sobre el nivel del terreno.
- Es deseable lograr una rasante compuesta por pendientes moderadas, que presenten variaciones graduales de los lineamientos, compatibles con la categoría de la carretera y la topografía del terreno.

### 1.5.3 PENDIENTES

#### a. Pendiente mínima

Es conveniente proveer una pendiente mínima del orden de 0.5%, a fin de asegurar en todo punto de la calzada un drenaje de las aguas superficiales.

#### b. Pendiente máxima

Los límites máximos de pendiente se establecerán teniendo en cuenta la seguridad de la circulación de los vehículos más pesados en las condiciones más desfavorables de la superficie de rodadura.

**Tabla 11**

*Pendiente máxima*

**CUADRO Nº 3.3.3.a**
**PENDIENTES MÁXIMAS**

| OROGRAFÍA TIPO | Terreno plano | Terreno ondulado | Terreno montañoso | Terreno escarpado |
|---|---|---|---|---|
| VELOCIDAD DE DISEÑO: | | | | |
| 20 | 8 | 9 | 10 | 12 |
| 30 | 8 | 9 | 10 | 12 |
| 40 | 8 | 9 | 10 | 10 |
| 50 | 8 | 8 | 8 | 8 |
| 60 | 8 | 8 | 8 | 8 |

***Nota:*** Manual de Diseño de Carreteras de Bajo Volumen de Tránsito

- La máxima pendiente promedio en tramos de longitud mayor a 2,000 m, no debe superar el 6%.
- En curvas con radios menores a 50 m de longitud debe evitarse pendientes mayores a 8%, para evitar que las pendientes del lado interior de la curva se incrementen significativamente.

### 1.5.4 CURVAS VERTICALES

#### 1.5.4.1 GENERALIDADES

Los tramos consecutivos de rasante serán enlazados con curvas verticales parabólicas, cuando la diferencia algebraica de sus pendientes sea mayor del 1%, para carreteras pavimentadas y del 2% para las demás.

Dichas curvas verticales parabólicas, son definidas por su parámetro de curvatura K, que equivale a la longitud de la curva en el plano horizontal, en metros, para cada 1% de variación en la pendiente, así:

$$K = L/A$$

- K: Parámetro de curvatura
- L: Longitud de la curva vertical
- A: Valor Absoluto de la diferencia algebraica de las pendientes

### 1.5.4.2 LONGITUD DE CURVAS CONVEXAS

Los valores del Índice K para la determinación de la longitud de las curvas verticales convexas serán los indicados en la Tabla.

**Tabla12**
*Valores del índice K para el cálculo de la longitud de curva vertical convexa en carreteras de tercera clase*

| Velocidad de diseño km/h | Longitud controlada por visibilidad de parada | | Longitud controlada por visibilidad de paso | |
|---|---|---|---|---|
| | Distancia de visibilidad de parada | Índice de curvatura K | Distancia de visibilidad de paso | Índice de curvatura K |
| 20 | 20 | 0.6 | | |
| 30 | 35 | 1.9 | 200 | 46 |
| 40 | 50 | 3.8 | 270 | 84 |
| 50 | 65 | 6.4 | 345 | 138 |
| 60 | 85 | 11 | 410 | 195 |
| 70 | 105 | 17 | 485 | 272 |
| 80 | 130 | 26 | 540 | 338 |
| 90 | 160 | 39 | 615 | 438 |

***Nota:*** *Diseño Geométrico DG-2018 – MTC*

### 1.5.4.3 LONGITUD DE CURVS CONCAVAS

Los valores del Índice K para la determinación de la longitud de las curvas verticales cóncavas serán los indicados en la Tabla.

**Tabla 13**
*Valores del índice K para el cálculo de la longitud de curva vertical cóncava en carreteras de Tercera Clase*

| Velocidad de diseño (km/h) | Distancia de visibilidad de parada (m) | Índice de curvatura K |
|---|---|---|
| 20 | 20 | 3 |
| 30 | 35 | 6 |
| 40 | 50 | 9 |
| 50 | 65 | 13 |
| 60 | 85 | 18 |
| 70 | 105 | 23 |
| 80 | 130 | 30 |
| 90 | 160 | 38 |

***Nota:*** *Diseño Geométrico DG-2018 – MTC*

## 1.6 DISEÑO GEOMÉTRICO DE LA SECCIÓN TRANSVERSAL

### 1.6.1 GENERALIDADES

El diseño geométrico de la sección transversal consiste en la descripción de los elementos de la carretera en un plano de corte vertical normal al alineamiento horizontal, el cual permite definir la disposición y dimensiones de dichos elementos, en el punto correspondiente a cada sección y su relación con el terreno natural.

### 1.6.2 ELEMENTOS DE LA SECCIÓN TRANSVERSAL

Los elementos que conforman la sección transversal de la carretera son: carriles, calzada o superficie de rodadura, bermas, cunetas, taludes y elementos complementarios (barreras de seguridad, ductos y cámaras para fibra óptica, guardavías y otros) que se encuentran dentro del Derecho de Vía del proyecto.

El elemento más importante de la sección transversal es la zona destinada a la superficie de rodadura o calzada, cuyas dimensiones deben permitir el nivel de servicio previsto en el proyecto.

### 1.6.3 CALZADA O SUPERFICIE DE RODADURA

Para la definición del ancho de calzada y la cantidad de carriles en el presente proyecto, se han considerado el Manual para el Diseño de Carreteras No Pavimentadas de Bajo Volumen de Tránsito. De acuerdo con al cuadro N° 3.5.1.a, referente a los anchos mínimos de calzada, la velocidad de diseño considerada para el proyecto es de (30 km/h) y el IMDA proyectado (51 a 100 veh/día), obtenido en el estudio de tránsito, se ha determinado la implementación de una calzada de un solo carril con un ancho de 5.50 metros, complementada con plazoletas de cruce y/o adelantamiento cada 500 metros.

**Tabla 14.**

*Ancho mínimo deseable de la calzada en tangente (en metros)*

| Tráfico IMDA | <15 | 16 á 50 | | 51 á 100 | | 101 á 200 | |
|---|---|---|---|---|---|---|---|
| Velocidad Km./h | * | | ** | | ** | | ** |
| 25 | 3.50 | 3.50 | 5.00 | 5.50 | 5.50 | 5.50 | 6.00 |
| 30 | 3.50 | 4.00 | 5.50 | 5.50 | 5.50 | 5.50 | 6.00 |
| 40 | 3.50 | 5.50 | 5.50 | 5.50 | 6.00 | 6.00 | 6.00 |
| 50 | 3.50 | 5.50 | 6.00 | 5.50 | 6.00 | 6.00 | 6.00 |
| 60 | | 5.50 | 6.00 | 5.50 | 6.00 | 6.00 | 6.00 |

* Calzada de un solo carril, con plazoleta de cruce y/o adelantamiento.

** Carreteras con predominio de tráfico pesado.

***Nota:*** Manual de Diseño de Carreteras de Bajo Volumen de Tránsito

### 1.6.4 BERMAS

A cada lado de la calzada, se proveerán bermas con un ancho mínimo de 0.50 m. Este ancho deberá permanecer libre de todo obstáculo incluyendo señales y guardavías, indicada en el Manual de Diseño de Carreteras no Pavimentadas de Bajo Volumen de Tránsito.

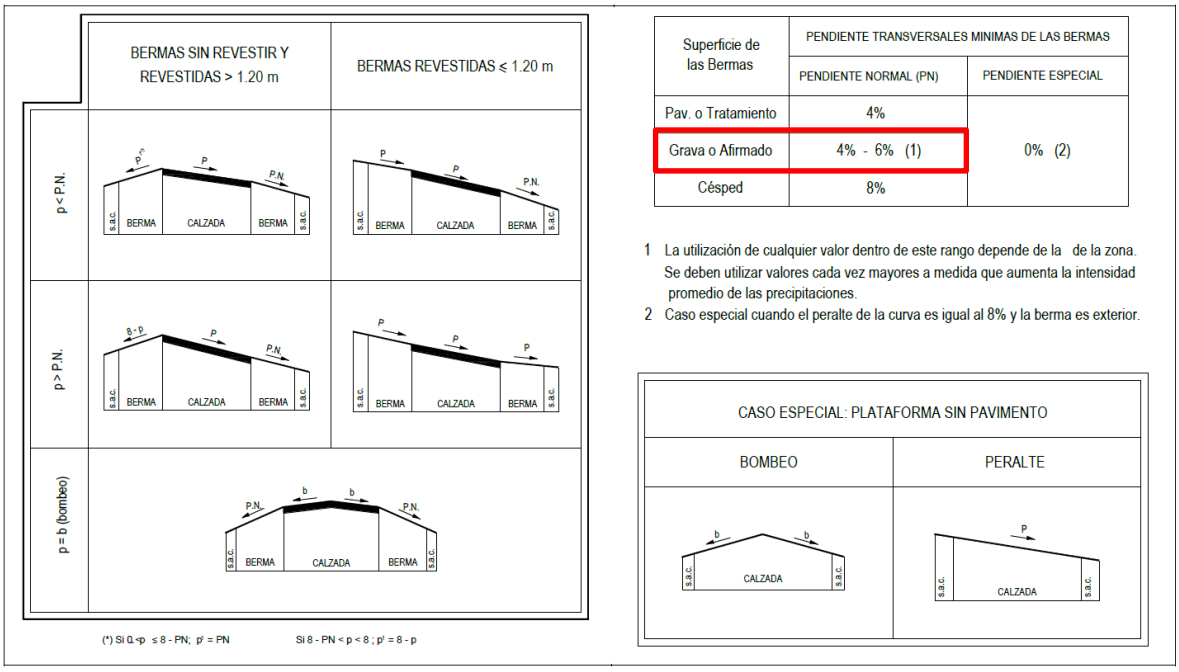
***Inclinación de las bermas***

En el caso de las carreteras de bajo tránsito:

- En los tramos en tangentes, las bermas tendrán una pendiente de 4% hacia el exterior de la plataforma.
- La berma situada en el lado inferior del peralte seguirá la inclinación de éste cuando su valor sea superior a 4%. En caso contrario, la inclinación de la berma será igual al 4%.
- La berma situada en la parte superior del peralte tendrá en lo posible, una inclinación en sentido contrario al peralte igual a 4%, de modo que escurra hacia la cuneta.

**Figura 3**

*Pendiente transversal de bermas*




| Superficie de las Bermas | PENDIENTE TRANSVERSALES MINIMAS DE LAS BERMAS | |
|---|---|---|
| | PENDIENTE NORMAL (PN) | PENDIENTE ESPECIAL |
| Pav. o Tratamiento | 4% | 0% (2) |
| Grava o Afirmado | 4% - 6% (1) | |
| Césped | 8% | |

1 La utilización de cualquier valor dentro de este rango depende de la de la zona. Se deben utilizar valores cada vez mayores a medida que aumenta la intensidad promedio de las precipitaciones.

2 Caso especial cuando el peralte de la curva es igual al 8% y la berma es exterior.

| CASO ESPECIAL: PLATAFORMA SIN PAVIMENTO | |
|---|---|
| BOMBEO | PERALTE |

***Nota:*** Diseño Geométrico DG-2018 – MTC

### 1.6.5 BOMBEO

En tramos en tangente o en curvas en contraperalte, las calzadas deben tener una inclinación transversal mínima denominada bombeo, con la finalidad de evacuar las aguas

superficiales. El bombeo depende del tipo de superficie de rodadura y de los niveles de precipitación de la zona.

En nuestro proyecto será de superficie de afirmado y con una precipitación menor al 500 mm/año se optará por un bombeo 3.5%.

**Tabla 15**
*Valores del bombeo de la calzada*

| Tipo de Superficie | Bombeo (%) | |
|---|---|---|
| | Precipitación <500 mm/año | Precipitación >500 mm/año |
| Pavimento asfáltico y/o concreto Portland | 2.0 | 2.5 |
| Tratamiento superficial | 2.5 | 2.5-3.0 |
| Afirmado | 3.0-3.5 | 3.0-4.0 |

***Nota:*** Diseño Geométrico DG-2018 – MTC

### 1.6.6 PERALTE

Inclinación transversal de la carretera en los tramos de curva, destinada a contrarrestar la fuerza centrífuga del vehículo.

Los valores de peralte máximo son según la zona rural o urbana, en nuestro proyecto se considera el valor del 8% ya que es una zona rural (Terreno Plano).

**Tabla 16**
*Valores de peralte máximo*

| Pueblo o ciudad | Peralte Máximo (p) | |
|---|---|---|
| | Absoluto | Normal |
| Atravesamiento de zonas urbanas | 6.0% | 4.0% |
| Zona rural (T. Plano, Ondulado o Accidentado) | 8.0% | 6.0% |
| Zona rural (T. Accidentado o Escarpado) | 12.0 | 8.0% |
| Zona rural con peligro de hielo | 8.0 | 6.0% |

***Nota:*** *Diseño Geométrico DG-2018 – MTC*

El peralte mínimo será del 2%, para los radios y velocidades de diseño indicadas en la Tabla en nuestro caso estamos trabajando con una velocidad de diseño de 30 km/h.

**Tabla 17**
*Peralte Mínimo*

| Velocidad de diseño km/h | Radios de curvatura |
|---|---|
| V≥100 | 5,000 ≤ R < 7,500 |
| 40 ≤ V < 100 | 2,500 ≤ R < 3,500 |

**Nota:** Diseño Geométrico DG-2018 – MTC

**Desarrollo del peralte entre curvas sucesivas**

Para el desarrollo adecuado de las transiciones de peralte entre dos curvas sucesivas del mismo sentido, deberá existir un tramo mínimo en tangente, de acuerdo a lo establecido en la sgt tabla.

**Tabla 18**

*Tramos mínimos en tangentes entre curvas del mismo sentido*

| Velocidad (km/h) | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Longitud mín. (m) | 40 | 55 | 70 | 85 | 100 | 110 | 125 | 140 | 155 | 170 | 190 |

***Nota:*** Diseño Geométrico DG-2018 – MTC

La longitud que se considera es de 40 m para tramos mínimos en tangentes entre curvas del mismo sentido según la velocidad de diseño de 30 km/h.

### 1.6.7 TALUDES

El talud es la inclinación de diseño dada al terreno lateral de la carretera, tanto en zonas de corte como en terraplenes. Dicha inclinación es la tangente del ángulo formado por el plano de la superficie del terreno y la línea teórica horizontal.

Los taludes para las secciones en corte, variarán de acuerdo a las características geomecánicas del terreno; su altura, inclinación y otros detalles de diseño o tratamiento, se determinarán en función al estudio de mecánica de suelos o geológicos correspondientes, condiciones de drenaje superficial y subterráneo, según sea el caso, con la finalidad de determinar las condiciones de su estabilidad, aspecto que debe contemplarse en forma prioritaria durante el diseño del proyecto, especialmente en las zonas que presenten fallas geológicas o materiales inestables, para optar por la solución más conveniente, entre diversas alternativas.

**Tabla 19**

*Valores referenciales para taludes en corte*

| Clasificación de materiales de corte | | Roca fija | Roca suelta | Material | | |
|---|---|---|---|---|---|---|
| | | | | Grava | Limo arcilloso o arcilla | Arenas |
| Altura de corte | <5 m | 1:10 | 1:6-1:4 | 1:1 - 1:3 | 1:1 | 2:1 |
| | 5–10 m | 1:10 | 1:4–1:2 | 1:1 | 1:1 | * |
| | >10 m | 1:8 | 1:2 | * | * | * |

***Nota:*** Diseño Geométrico DG-2018 – MTC

**Tabla 20**
*Taludes referenciales en zona de relleno (terraplenes)*

| Materiales | Talud (V:H) | | |
|---|---|---|---|
| | Altura (m) | | |
| | <5 | 5-10 | >10 |
| Gravas, limo arenoso y arcilla | 1:1.5 | 1:1.75 | 1:2 |
| Arena | 1:2 | 1:2.25 | 1:2.5 |
| Enrocado | 1:1 | 1:1.25 | 1:1.5 |

***Nota:*** Diseño Geométrico DG-2018 – MTC

### 1.6.8 CUNETAS

Son canales construidos lateralmente a lo largo de la carretera, con el propósito de conducir los escurrimientos superficiales y subsuperficiales, procedentes de la plataforma vial, taludes y áreas adyacentes, a fin de proteger la estructura del pavimento.

En el presente proyecto no se ha considerado la ejecución de cunetas, en razón de que el régimen de precipitaciones en el área de estudio es bajo durante el año y el escurrimiento superficial se encuentra controlado mediante la infraestructura existente de canales de irrigación.

## 1.7 RESUMEN DE LAS CARACTERÍSTICAS DE DISEÑO

Según los parámetros que brinda la DG - 2018, se resumen en los siguientes:

**Tabla 21**
*Resumen de las características del Diseño Geométrico*

| PARÁMETROS PARA EL DIS. GEOMÉTRICO | |
|---|---|
| Clasificación de la Carretera | Trocha carrozable |
| Topografía | Plano – Tipo 1 |
| Vel. de D. | 30 km/h |
| Dist. De Vis. de Parada | 35 m |
| R. mín | 30 m |
| Pend. mín | 0.35% |
| Pend. máx | 3.00% |
| Derecho de Vía | 8.00 m a cada lado del eje |
| Ancho de Calzada | 4.00 m |
| Bermas | 0.5 m |

| PARÁMETROS PARA EL DIS. GEOMÉTRICO | |
|---|---|
| Bombeo | 2.5% |
| Peralte máx. | 8% |
| Cunetas | No se consideró. |

***Nota:*** Elaboración propia.

# ANEXO N°02.- ESTUDIO DE TRÁFICO

# ESTACIÓN 01

**UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO**
**FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA**
**ESCUELA PROFESIONAL DE INGENIERIA CIVIL**

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

**Tramo :** 1 **Ubicacion** CRUCE CON...
**Cod Estación:** E - 1 **Sentido** ENTRADA
**Estación:** ESTACIÓN 01 **Dia** LUNES **Fecha** 04-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | COMBI RURAL | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14.29 |
| **07-08** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.57 |
| **08-09** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.57 |
| **09-10** | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.71 |
| **10-11** | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14.29 |
| **11-12** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.71 |
| **12-13** | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.71 |
| **13-14** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.57 |
| **14-15** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.57 |
| **15-16** | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.14 |
| **16-17** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.57 |
| **17-18** | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.71 |
| **18-19** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.57 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 11 | 6 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 100.00 |
| % | 39.29 | 21.43 | 7.14 | 28.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACION 01

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** LUNES **Fecha** 04-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 19.05 |
| **07-08** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.76 |
| **08-09** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.76 |
| **09-10** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.76 |
| **10-11** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **11-12** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.76 |
| **12-13** | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 14.29 |
| **13-14** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.76 |
| **14-15** | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9.52 |
| **15-16** | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 19.05 |
| **16-17** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **17-18** | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 14.29 |
| **18-19** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 8 | 6 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 100.00 |
| % | 38.10 | 28.57 | 0.00 | 33.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACIÓN 01

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** LUNES **Fecha** 04-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 16.33 |
| 07-08 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4.08 |
| 08-09 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4.08 |
| 09-10 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8.16 |
| 10-11 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8.16 |
| 11-12 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8.16 |
| 12-13 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12.24 |
| 13-14 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4.08 |
| 14-15 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6.12 |
| 15-16 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12.24 |
| 16-17 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.04 |
| 17-18 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 12.24 |
| 18-19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.04 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 19 | 12 | 2 | 15 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 100.00 |
| % | 38.78 | 24.49 | 4.08 | 30.61 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACION 01

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** MARTES **Fecha** 05-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.85 |
| **07-08** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.85 |
| **08-09** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.85 |
| **09-10** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.85 |
| **10-11** | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 15.38 |
| **11-12** | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 23.08 |
| **12-13** | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11.54 |
| **13-14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **14-15** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.85 |
| **15-16** | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 15.38 |
| **16-17** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.85 |
| **17-18** | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11.54 |
| **18-19** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 10 | 9 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 100.00 |
| % | 38.46 | 34.62 | 0.00 | 26.92 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1 **Ubicacion** CRUCE CON…
**Cod Estación** E - 1 **Sentido** SALIDA
**Estación** ESTACIÓN 01 **Dia** MARTES **Fecha** 05-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| **07-08** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| **08-09** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| **09-10** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| **10-11** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **11-12** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| **12-13** | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 21.05 |
| **13-14** | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 26.32 |
| **14-15** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| **15-16** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| **16-17** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **17-18** | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 15.79 |
| **18-19** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 6 | 6 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 100.00 |
| % | 31.58 | 31.58 | 5.26 | 26.32 | 0.00 | 5.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACION 01

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** MARTES **Fecha** 05-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4.44 |
| 07-08 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4.44 |
| 08-09 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4.44 |
| 09-10 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4.44 |
| 10-11 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8.89 |
| 11-12 | 3 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 15.56 |
| 12-13 | 2 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 15.56 |
| 13-14 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 11.11 |
| 14-15 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4.44 |
| 15-16 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 11.11 |
| 16-17 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.22 |
| 17-18 | 1 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 13.33 |
| 18-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 16 | 15 | 1 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 100.00 |
| % | 35.56 | 33.33 | 2.22 | 26.67 | 0.00 | 2.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACION 01

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** MIERCOLES **Fecha** 06-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.76 |
| 07-08 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.76 |
| 08-09 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9.52 |
| 09-10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.76 |
| 10-11 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 14.29 |
| 11-12 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9.52 |
| 12-13 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 19.05 |
| 13-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.76 |
| 14-15 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9.52 |
| 15-16 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9.52 |
| 16-17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.76 |
| 17-18 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.76 |
| 18-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 6 | 5 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 100.00 |
| % | 28.57 | 23.81 | 4.76 | 38.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE

**Tramo** 1 **Ubicacion** CRUCE CON…

**Cod Estación** E - 1 **Sentido** SALIDA

**Estación** ESTACION 01 **Dia** MIERCOLES **Fecha** 06-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.56 |
| 07-08 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.56 |
| 08-09 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 16.67 |
| 09-10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.56 |
| 10-11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.56 |
| 11-12 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 22.22 |
| 12-13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.56 |
| 13-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.56 |
| 14-15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11.11 |
| 15-16 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 16.67 |
| 16-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 17-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 18-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 7 | 4 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 100.00 |
| % | 38.89 | 22.22 | 0.00 | 27.78 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 11.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACION 01

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** MIERCOLES **Fecha** 06-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.13 |
| 07-08 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.13 |
| 08-09 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 12.82 |
| 09-10 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.13 |
| 10-11 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 10.26 |
| 11-12 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 15.38 |
| 12-13 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 12.82 |
| 13-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.13 |
| 14-15 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 10.26 |
| 15-16 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 12.82 |
| 16-17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.56 |
| 17-18 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.56 |
| 18-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 13 | 9 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 100.00 |
| % | 33.33 | 23.08 | 2.56 | 33.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7.69 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACION 01

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** JUEVES **Fecha** 07-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 16.67 |
| 07-08 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.17 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.17 |
| 09-10 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.33 |
| 10-11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 11-12 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.33 |
| 12-13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12.50 |
| 13-14 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.33 |
| 14-15 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12.50 |
| 15-16 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.17 |
| 16-17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.17 |
| 17-18 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.33 |
| 18-19 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.17 |
| 19-20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.17 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 7 | 7 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 100.00 |
| % | 29.17 | 29.17 | 0.00 | 29.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 12.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACIÓN 01

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** JUEVES **Fecha** 07-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.56 |
| 07-08 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.56 |
| 08-09 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11.11 |
| 09-10 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11.11 |
| 10-11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 11-12 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.56 |
| 12-13 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.56 |
| 13-14 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 27.78 |
| 14-15 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11.11 |
| 15-16 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11.11 |
| 16-17 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.56 |
| 17-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 18-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 6 | 9 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 100.00 |
| % | 33.33 | 50.00 | 5.56 | 38.89 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACIÓN 01

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** JUEVES **Fecha** 07-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.57 |
| 07-08 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.86 |
| 08-09 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.57 |
| 09-10 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11.43 |
| 10-11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 11-12 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.57 |
| 12-13 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.57 |
| 13-14 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 17.14 |
| 14-15 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 14.29 |
| 15-16 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.57 |
| 16-17 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.86 |
| 17-18 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.71 |
| 18-19 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.86 |
| 19-20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 13 | 16 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 100.00 |
| % | 37.14 | 45.71 | 2.86 | 40.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 11.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACION 01

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** VIERNES **Fecha** 08-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 07-08 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13.33 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 09-10 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13.33 |
| 10-11 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 11-12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 12-13 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 20.00 |
| 13-14 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 14-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 15-16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 16-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 17-18 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 18-19 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 7 | 8 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 100.00 |
| % | 46.67 | 53.33 | 0.00 | 33.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 13.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÌ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1 **Ubicacion** CRUCE CON…

**Cod Estación** E - 1 **Sentido** SALIDA

**Estación** ESTACION 01 **Dia** VIERNES **Fecha** 08-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 26.32 |
| 07-08 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10.53 |
| 08-09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 09-10 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10.53 |
| 10-11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 11-12 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10.53 |
| 12-13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 13-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| 14-15 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 15.79 |
| 15-16 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| 16-17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| 17-18 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| 18-19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 6 | 5 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 100.00 |
| % | 31.58 | 26.32 | 0.00 | 36.84 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACIÓN 01

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** VIERNES **Fecha** 08-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 19.51 |
| 07-08 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 12.20 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.44 |
| 09-10 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 9.76 |
| 10-11 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4.88 |
| 11-12 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.32 |
| 12-13 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 9.76 |
| 13-14 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.32 |
| 14-15 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 9.76 |
| 15-16 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.44 |
| 16-17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.44 |
| 17-18 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4.88 |
| 18-19 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.32 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 13 | 13 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 100.00 |
| % | 31.71 | 31.71 | 0.00 | 29.27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 68.29 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACION 01

**Ubicacion** CRUCE CON...
**Sentido** ENTRADA
**Dia** SABADO **Fecha** 09-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.94 |
| 06-07 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 14.71 |
| 07-08 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.88 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.94 |
| 09-10 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.88 |
| 10-11 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.82 |
| 11-12 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.88 |
| 12-13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.88 |
| 13-14 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.88 |
| 14-15 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.82 |
| 15-16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.88 |
| 16-17 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.82 |
| 17-18 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.82 |
| 18-19 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.82 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 10 | 10 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 100.00 |
| % | 29.41 | 29.41 | 0.00 | 35.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACIÓN 01

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** SABADO **Fecha** 09-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.00 |
| 07-08 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.00 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.00 |
| 09-10 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 16.00 |
| 10-11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.00 |
| 11-12 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12.00 |
| 12-13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.00 |
| 13-14 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.00 |
| 14-15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.00 |
| 15-16 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12.00 |
| 16-17 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 16.00 |
| 17-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 18-19 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.00 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 8 | 8 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 100.00 |
| % | 32.00 | 32.00 | 0.00 | 28.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACIÒN 01

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** SABADO **Fecha** 09-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.69 |
| **06-07** | 2 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 11.86 |
| **07-08** | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.78 |
| **08-09** | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.39 |
| **09-10** | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10.17 |
| **10-11** | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.78 |
| **11-12** | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8.47 |
| **12-13** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.08 |
| **13-14** | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.78 |
| **14-15** | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.78 |
| **15-16** | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8.47 |
| **16-17** | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 11.86 |
| **17-18** | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.08 |
| **18-19** | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.78 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 18 | 18 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | 100.00 |
| % | 30.51 | 30.51 | 0.00 | 32.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.78 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÒN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACION 01

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** DOMINGO **Fecha** 10-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 26.67 |
| **07-08** | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13.33 |
| **08-09** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13.33 |
| **09-10** | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 26.67 |
| **10-11** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| **11-12** | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 26.67 |
| **12-13** | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13.33 |
| **13-14** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| **14-15** | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 26.67 |
| **15-16** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| **16-17** | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13.33 |
| **17-18** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **18-19** | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 20.00 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 10 | 9 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 200.00 |
| % | 33.33 | 30.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.67 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACIÓN 01

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** DOMINGO **Fecha** 10-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10.53 |
| 07-08 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| 09-10 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 21.05 |
| 10-11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10.53 |
| 11-12 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 26.32 |
| 12-13 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 15.79 |
| 13-14 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10.53 |
| 14-15 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10.53 |
| 15-16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10.53 |
| 16-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 17-18 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10.53 |
| 18-19 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| 19-20 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.26 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 7 | 8 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 147.37 |
| % | 25.00 | 28.57 | 3.57 | 32.14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.71 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACIÓN 01

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** DOMINGO **Fecha** 10-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 1 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10.34 |
| 07-08 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.17 |
| 08-09 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.17 |
| 09-10 | 3 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 13.79 |
| 10-11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.17 |
| 11-12 | 1 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 15.52 |
| 12-13 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8.62 |
| 13-14 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.17 |
| 14-15 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10.34 |
| 15-16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.17 |
| 16-17 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.45 |
| 17-18 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.45 |
| 18-19 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.90 |
| 19-20 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.72 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 17 | 17 | 1 | 18 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | 100.00 |
| % | 29.31 | 29.31 | 1.72 | 31.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACIÓN 01

**Ubicacion** CRUCE CON…
**Sentido** TOTAL
**Dia** Del 04/08/2025 AL 10/08/2025

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | |
| **LUNES** | | | | | | | | | | | | | | | | | | | | | |
| **04/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 11 | 6 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| **SALIDA** | 8 | 6 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| **Ambos** | **19** | **12** | **2** | **15** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **40** |
| **MARTES** | | | | | | | | | | | | | | | | | | | | | |
| **05/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 10 | 9 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| **SALIDA** | 6 | 6 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| **Ambos** | **16** | **15** | **1** | **12** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **37** |
| **MIERCOLES** | | | | | | | | | | | | | | | | | | | | | |
| **06/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 6 | 5 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| **SALIDA** | 7 | 4 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| **Ambos** | **13** | **9** | **1** | **13** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **33** |
| **JUEVES** | | | | | | | | | | | | | | | | | | | | | |
| **07/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 7 | 7 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| **SALIDA** | 6 | 9 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| **Ambos** | **13** | **16** | **1** | **14** | **0** | **0** | **0** | **0** | **0** | **4** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **42** |
| **VIERNES** | | | | | | | | | | | | | | | | | | | | | |
| **08/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 7 | 8 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| **SALIDA** | 6 | 5 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| **Ambos** | **13** | **13** | **0** | **12** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **35** |
| **SABADO** | | | | | | | | | | | | | | | | | | | | | |
| **09/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 10 | 10 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| **SALIDA** | 8 | 8 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| **Ambos** | **18** | **18** | **0** | **19** | **0** | **0** | **0** | **0** | **0** | **4** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **50** |
| **DOMINGO** | | | | | | | | | | | | | | | | | | | | | |
| **10/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 10 | 9 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| **SALIDA** | 7 | 8 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| **Ambos** | **17** | **17** | **1** | **18** | **0** | **0** | **0** | **0** | **0** | **5** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **50** |
| **TOTAL** | **109** | **100** | **6** | **103** | **0** | **1** | **0** | **0** | **0** | **20** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **287** |

## RESUMEN DEL VOLUMEN DE TRAFICO PROMEDIO DE SALIDA Y ENTRADA

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 1
**Estación** ESTACIÓN 01

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** Del 04/08/2025 AL 10/08/2025

| SENTIDO | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | |
| ENTRADA | 9 | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| SALIDA | 7 | 7 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| **AMBOS** | **16** | **14** | **1** | **15** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **48** |

## VOLUMEN DE TRÁFICO PROMEDIO DIARIO

**Carretera** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo**
**Cod Estación** E - 1
**Estación** ESTACIÓN 01
**Ubicacion** CRUCE CON...
**Sentido** TOTAL
**Dia** Del 04/08/2025 AL 10/08/2025

| DIA | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | CAMION | | | SEMITRAYLER | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PICK UP | PANEL | COMBI RURAL | | 2E | 2E | 3E | 4E | 2S1/2S2 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| LUNES | 22 | 2 | 15 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 13.94 |
| MARTES | 23 | 1 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 12.89 |
| MIERCOLES | 16 | 1 | 13 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 11.50 |
| JUEVES | 23 | 1 | 14 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 14.63 |
| VIERNES | 20 | 0 | 12 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 12.20 |
| SABADO | 27 | 0 | 19 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 17.42 |
| DOMINGO | 26 | 1 | 18 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 17.42 |
| **TOTAL** | **157** | **6** | **103** | **0** | **1** | **0** | **0** | **44** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **287** | 100.00 |
| **IMDS** | **22** | **1** | **15** | **0** | **0** | **0** | **0** | **6** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **44** | |
| **%** | **50.00** | **2.27** | **34.09** | **0.00** | **0.00** | **0.00** | **0.00** | **13.64** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **100.00** | |
| | **VEHICULOS LIGEROS** | | | | | **VEHICULOS PESADOS** | | | | | | | | | | | | | |

**TRAFICO VEHICULAR**
**IMD Sin Corrección**
**(Veh/dia)**

| Tipo de Vehículos | IMDS | Distrib. % |
|---|---|---|
| Autos | 22 | 50.0% |
| Satation Wagon | 1 | 2.3% |
| Camioneta Pick Up | 15 | 34.1% |
| Camioneta Panel | 0 | 0.0% |
| COMBI RURAL | 0 | 0.0% |
| Micro | 0 | 0.0% |
| Omnibus 2E y 3E | 0 | 0.0% |
| Camión 2E | 6 | 13.6% |
| Camión 3E | 0 | 0.0% |
| Camión 4E | 0 | 0.0% |
| Semi tráiler | 0 | 0.0% |
| Tráiler | 0 | 0.0% |
| **TOTAL IMD** | **44** | **100.0%** |

**CALCULO DEL IMD**
**Resumen de Metodologia**

$$IMD = \frac{VS}{7}$$

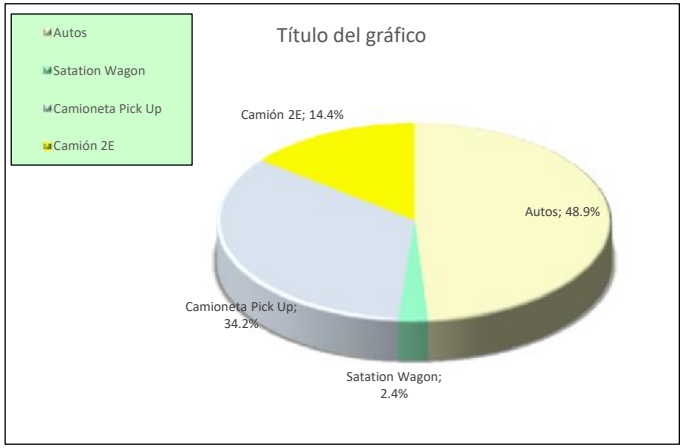
VS = Volumen Promedio Semanal

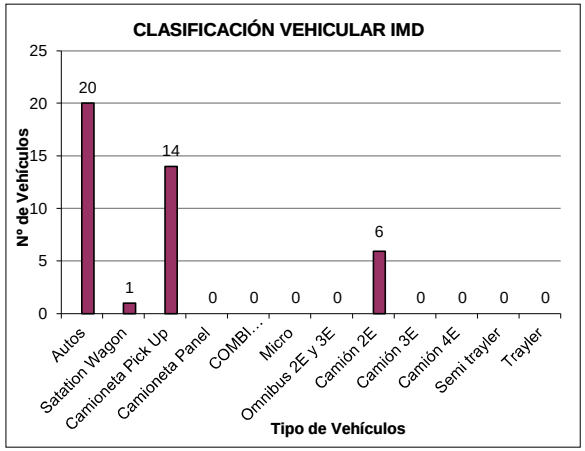
Fc Veh. Ligeros = **0.905430**
Fc Veh. Pesados = **0.984976**

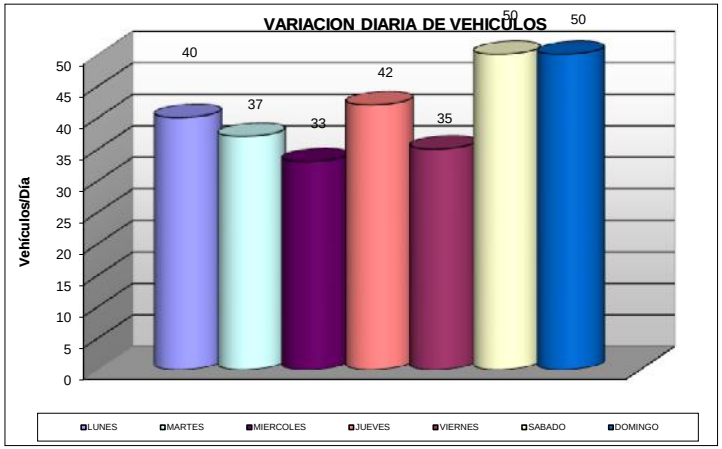
IMD = **41** Vehiculos por dia
14,932 V. x año

**TRAFICO VEHICULAR**
**IMD ANUAL Y CLASIFICACION VEHICULAR**
**(Veh/dia)**

| Tipo de Vehículos | IMD | Distrib. % |
|---|---|---|
| Autos | 20 | 48.9% |
| Satation Wagon | 1 | 2.4% |
| Camioneta Pick Up | 14 | 34.2% |
| Camioneta Panel | 0 | 0.0% |
| COMBI RURAL | 0 | 0.0% |
| Micro | 0 | 0.0% |
| Omnibus 2E y 3E | 0 | 0.0% |
| Camión 2E | 6 | 14.4% |
| Camión 3E | 0 | 0.0% |
| Camión 4E | 0 | 0.0% |
| Semi trayler | 0 | 0.0% |
| Trayler | 0 | 0.0% |
| **TOTAL IMD** | **41** | **100.0%** |



**PROYECTO: "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

**ESTACIÓN 1**

| Auto | Station Wagon | CAMIONETA | | | | BUS | | | CAMION | | | TRAILER | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Pick Up | Panel | COMBI rural | Micros | B2 | B3 | B4 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | TOTAL |
| 20 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |

**ANEXO PROYECCION DEL TRAFICO**

**Proyección de Tráfico**

**PROYECTO: "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

## ESTACIÓN 1

**Tráfico Normal**

| | Años | Auto | Station Wagon | Pick Up | Panel | Combi Rural | Micros | B2 | B3 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | Total IMDA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2025 | 20 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **41** |
| 1 | 2026 | 20 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **42** |
| 2 | 2027 | 20 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **42** |
| 3 | 2028 | 20 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **43** |
| 4 | 2029 | 21 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **43** |
| 5 | 2030 | 21 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **44** |
| 6 | 2031 | 21 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **44** |
| 7 | 2032 | 21 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **45** |
| 8 | 2033 | 21 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **46** |
| 9 | 2034 | 21 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **46** |
| 10 | 2035 | 21 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **47** |

**Tráfico Generado**

| | Años | Auto | Station Wagon | Pick Up | Panel | Combi Rural | Micros | B2 | B3 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | Total IMDA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| 1 | 2026 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| 2 | 2027 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| 3 | 2028 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| 4 | 2029 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| 5 | 2030 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| 6 | 2031 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| 7 | 2032 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| 8 | 2033 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| 9 | 2034 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| 10 | 2035 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |

**Tráfico Total**

| | Años | Auto | Station Wagon | Pick Up | Panel | Combi Rural | Micros | B2 | B3 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | Total IMDA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2025 | 20 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **41** |
| 1 | 2026 | 23 | 1 | 16 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **48** |
| 2 | 2027 | 23 | 1 | 16 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **48** |
| 3 | 2028 | 23 | 1 | 16 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **49** |
| 4 | 2029 | 24 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **50** |
| 5 | 2030 | 24 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **50** |
| 6 | 2031 | 24 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **51** |
| 7 | 2032 | 24 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **52** |
| 8 | 2033 | 24 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **53** |
| 9 | 2034 | 24 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **53** |
| 10 | 2035 | 25 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **54** |

# ESTACIÓN 02

**UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO**
**FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA**
**ESCUELA PROFESIONAL DE INGENIERIA CIVIL**

# VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

**Tramo :** 1 **Ubicacion** CRUCE CON...
**Cod Estación:** E - 2 **Sentido** ENTRADA
**Estación:** ESTACIÓN 02 **Dia** LUNES **Fecha** 04-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | COMBI RURAL | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.90 |
| **06-07** | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13.79 |
| **07-08** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.90 |
| **08-09** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.45 |
| **09-10** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.45 |
| **10-11** | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.90 |
| **11-12** | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 17.24 |
| **12-13** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.45 |
| **13-14** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.45 |
| **14-15** | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.90 |
| **15-16** | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13.79 |
| **16-17** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.45 |
| **17-18** | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.34 |
| **18-19** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 9 | 9 | 2 | 6 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 100.00 |
| % | 31.03 | 31.03 | 6.90 | 20.69 | 0.00 | 3.45 | 0.00 | 0.00 | 0.00 | 6.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACION 02

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** LUNES **Fecha** 04-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13.79 |
| **07-08** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.45 |
| **08-09** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.45 |
| **09-10** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.45 |
| **10-11** | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.90 |
| **11-12** | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.34 |
| **12-13** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.45 |
| **13-14** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.90 |
| **14-15** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.90 |
| **15-16** | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.34 |
| **16-17** | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.34 |
| **17-18** | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13.79 |
| **18-19** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.45 |
| **19-20** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.45 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 9 | 9 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 100.00 |
| % | 31.03 | 31.03 | 0.00 | 34.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACION 02

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** LUNES **Fecha** 04-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.45 |
| **06-07** | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 13.79 |
| **07-08** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.17 |
| **08-09** | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.45 |
| **09-10** | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.45 |
| **10-11** | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.90 |
| **11-12** | 2 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 13.79 |
| **12-13** | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.45 |
| **13-14** | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.17 |
| **14-15** | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.90 |
| **15-16** | 4 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 12.07 |
| **16-17** | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.90 |
| **17-18** | 1 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 12.07 |
| **18-19** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.72 |
| **19-20** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.72 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 18 | 18 | 2 | 16 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | 100.00 |
| % | 31.03 | 31.03 | 3.45 | 27.59 | 0.00 | 1.72 | 0.00 | 0.00 | 0.00 | 5.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACION 02

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** MARTES **Fecha** 05-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.33 |
| **07-08** | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13.33 |
| **08-09** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.33 |
| **09-10** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **10-11** | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.00 |
| **11-12** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.67 |
| **12-13** | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13.33 |
| **13-14** | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13.33 |
| **14-15** | 1 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 23.33 |
| **15-16** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.33 |
| **16-17** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.33 |
| **17-18** | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.67 |
| **18-19** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 11 | 9 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 100.00 |
| % | 36.67 | 30.00 | 0.00 | 33.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1 **Ubicacion** CRUCE CON…
**Cod Estación** E - 2 **Sentido** SALIDA
**Estación** ESTACIÓN 02 **Dia** MARTES **Fecha** 05-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.78 |
| **07-08** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.78 |
| **08-09** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.78 |
| **09-10** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.78 |
| **10-11** | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 13.89 |
| **11-12** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.78 |
| **12-13** | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11.11 |
| **13-14** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.78 |
| **14-15** | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.56 |
| **15-16** | 3 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 25.00 |
| **16-17** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.56 |
| **17-18** | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11.11 |
| **18-19** | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11.11 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 11 | 9 | 1 | 12 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 100.00 |
| % | 30.56 | 25.00 | 2.78 | 33.33 | 0.00 | 2.78 | 0.00 | 0.00 | 0.00 | 5.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACION 02

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** MARTES **Fecha** 05-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.03 |
| **07-08** | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 7.58 |
| **08-09** | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.03 |
| **09-10** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.52 |
| **10-11** | 2 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 12.12 |
| **11-12** | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4.55 |
| **12-13** | 1 | 2 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 12.12 |
| **13-14** | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 7.58 |
| **14-15** | 2 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 13.64 |
| **15-16** | 3 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 15.15 |
| **16-17** | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4.55 |
| **17-18** | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 9.09 |
| **18-19** | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.06 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 22 | 18 | 1 | 22 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 | 100.00 |
| % | 33.33 | 27.27 | 1.52 | 33.33 | 0.00 | 1.52 | 0.00 | 0.00 | 0.00 | 3.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACION 02

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** MIERCOLES **Fecha** 06-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.25 |
| 07-08 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.25 |
| 08-09 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.25 |
| 09-10 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 18.75 |
| 10-11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.25 |
| 11-12 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 12.50 |
| 12-13 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 18.75 |
| 13-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 14-15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.25 |
| 15-16 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 12.50 |
| 16-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 17-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 18-19 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.25 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 6 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 100.00 |
| % | 37.50 | 25.00 | 6.25 | 31.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE

**Tramo** 1 **Ubicacion** CRUCE CON…

**Cod Estación** E - 2 **Sentido** SALIDA

**Estación** ESTACION 02 **Dia** MIERCOLES **Fecha** 06-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 07-08 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 08-09 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 09-10 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13.33 |
| 10-11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 11-12 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13.33 |
| 12-13 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 13-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 14-15 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 20.00 |
| 15-16 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 26.67 |
| 16-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 17-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 18-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 5 | 4 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 100.00 |
| % | 33.33 | 26.67 | 0.00 | 33.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.67 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACION 02

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** MIERCOLES **Fecha** 06-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.45 |
| 07-08 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.45 |
| 08-09 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.45 |
| 09-10 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 16.13 |
| 10-11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.23 |
| 11-12 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.90 |
| 12-13 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.90 |
| 13-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 14-15 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.90 |
| 15-16 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 19.35 |
| 16-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 17-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 18-19 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.23 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 11 | 8 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 100.00 |
| % | 35.48 | 25.81 | 3.23 | 32.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACION 02

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** JUEVES **Fecha** 07-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.41 |
| 07-08 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.41 |
| 08-09 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11.11 |
| 09-10 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14.81 |
| 10-11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.70 |
| 11-12 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.41 |
| 12-13 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11.11 |
| 13-14 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.70 |
| 14-15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.41 |
| 15-16 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.70 |
| 16-17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.70 |
| 17-18 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.41 |
| 18-19 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.41 |
| 19-20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.70 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 11 | 6 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 100.00 |
| % | 40.74 | 22.22 | 0.00 | 29.63 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7.41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACIÓN 02

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** JUEVES **Fecha** 07-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 07-08 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 08-09 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13.33 |
| 09-10 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 20.00 |
| 10-11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 11-12 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 12-13 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 26.67 |
| 13-14 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13.33 |
| 14-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 15-16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 16-17 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6.67 |
| 17-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 18-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 7 | 7 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 100.00 |
| % | 46.67 | 46.67 | 6.67 | 46.67 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACIÓN 02

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** JUEVES **Fecha** 07-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.68 |
| 07-08 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.45 |
| 08-09 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.68 |
| 09-10 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 16.13 |
| 10-11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 11-12 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.68 |
| 12-13 | 2 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 19.35 |
| 13-14 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.68 |
| 14-15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.23 |
| 15-16 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.23 |
| 16-17 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.23 |
| 17-18 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.23 |
| 18-19 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.45 |
| 19-20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 18 | 13 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 100.00 |
| % | 58.06 | 41.94 | 3.23 | 48.39 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACION 02

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** VIERNES **Fecha** 08-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.17 |
| 07-08 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.33 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.17 |
| 09-10 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.17 |
| 10-11 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 20.83 |
| 11-12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.17 |
| 12-13 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 16.67 |
| 13-14 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.33 |
| 14-15 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.17 |
| 15-16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 16-17 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.33 |
| 17-18 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.17 |
| 18-19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12.50 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 9 | 10 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 100.00 |
| % | 37.50 | 41.67 | 0.00 | 50.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÌ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1 **Ubicacion** CRUCE CON…

**Cod Estación** E - 2 **Sentido** SALIDA

**Estación** ESTACION 02 **Dia** VIERNES **Fecha** 08-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14.81 |
| 07-08 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.41 |
| 08-09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 09-10 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14.81 |
| 10-11 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11.11 |
| 11-12 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11.11 |
| 12-13 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.41 |
| 13-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.70 |
| 14-15 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11.11 |
| 15-16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 16-17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.70 |
| 17-18 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.41 |
| 18-19 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.41 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 12 | 8 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 100.00 |
| % | 44.44 | 29.63 | 0.00 | 22.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACIÓN 02

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** VIERNES **Fecha** 08-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 4 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 11.67 |
| 07-08 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8.33 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.67 |
| 09-10 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10.00 |
| 10-11 | 1 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 13.33 |
| 11-12 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.67 |
| 12-13 | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 11.67 |
| 13-14 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.67 |
| 14-15 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8.33 |
| 15-16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 16-17 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.00 |
| 17-18 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.67 |
| 18-19 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.00 |
| 19-20 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 21 | 18 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 100.00 |
| % | 35.00 | 30.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 65.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACION 02

**Ubicacion** CRUCE CON...
**Sentido** ENTRADA
**Dia** SABADO **Fecha** 09-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9.62 |
| **07-08** | 3 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 15.38 |
| **08-09** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.85 |
| **09-10** | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7.69 |
| **10-11** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.92 |
| **11-12** | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 11.54 |
| **12-13** | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7.69 |
| **13-14** | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7.69 |
| **14-15** | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9.62 |
| **15-16** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **16-17** | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.77 |
| **17-18** | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 13.46 |
| **18-19** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.85 |
| **19-20** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.92 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 23 | 17 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | 100.00 |
| % | 44.23 | 32.69 | 0.00 | 19.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.85 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACIÓN 02

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** SABADO **Fecha** 09-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.45 |
| 07-08 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7.27 |
| 08-09 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9.09 |
| 09-10 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7.27 |
| 10-11 | 4 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 12.73 |
| 11-12 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7.27 |
| 12-13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.64 |
| 13-14 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10.91 |
| 14-15 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9.09 |
| 15-16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.82 |
| 16-17 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10.91 |
| 17-18 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7.27 |
| 18-19 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7.27 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 24 | 14 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 100.00 |
| % | 43.64 | 25.45 | 0.00 | 29.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.82 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACIÒN 02

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** SABADO **Fecha** 09-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 2 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 7.48 |
| **07-08** | 6 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 11.21 |
| **08-09** | 5 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 6.54 |
| **09-10** | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 7.48 |
| **10-11** | 5 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 7.48 |
| **11-12** | 5 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 9.35 |
| **12-13** | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 5.61 |
| **13-14** | 5 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 9.35 |
| **14-15** | 1 | 5 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 9.35 |
| **15-16** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.93 |
| **16-17** | 3 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 8.41 |
| **17-18** | 6 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 10.28 |
| **18-19** | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 5.61 |
| **19-20** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.93 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 47 | 31 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 107 | 100.00 |
| % | 43.93 | 28.97 | 0.00 | 24.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÒN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACION 02

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** DOMINGO **Fecha** 10-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.17 |
| 07-08 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 16.67 |
| 08-09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 09-10 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 25.00 |
| 10-11 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 20.83 |
| 11-12 | 1 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 20.83 |
| 12-13 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 20.83 |
| 13-14 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 25.00 |
| 14-15 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.33 |
| 15-16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.33 |
| 16-17 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 16.67 |
| 17-18 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.33 |
| 18-19 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 20.83 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 14 | 14 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 195.83 |
| % | 29.79 | 29.79 | 0.00 | 36.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACIÓN 02

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** DOMINGO **Fecha** 10-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11.11 |
| 07-08 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 11.11 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.70 |
| 09-10 | 0 | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 22.22 |
| 10-11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.41 |
| 11-12 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.41 |
| 12-13 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14.81 |
| 13-14 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14.81 |
| 14-15 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.41 |
| 15-16 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 22.22 |
| 16-17 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14.81 |
| 17-18 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.70 |
| 18-19 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14.81 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 14 | 14 | 1 | 11 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 155.56 |
| % | 33.33 | 33.33 | 2.38 | 26.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACIÓN 02

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** DOMINGO **Fecha** 10-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4.49 |
| 07-08 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7.87 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.12 |
| 09-10 | 3 | 3 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 13.48 |
| 10-11 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7.87 |
| 11-12 | 2 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7.87 |
| 12-13 | 0 | 2 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 10.11 |
| 13-14 | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 11.24 |
| 14-15 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4.49 |
| 15-16 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 8.99 |
| 16-17 | 2 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 8.99 |
| 17-18 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3.37 |
| 18-19 | 5 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 10.11 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 28 | 28 | 1 | 28 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 89 | 100.00 |
| % | 31.46 | 31.46 | 1.12 | 31.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACIÓN 02

**Ubicacion** CRUCE CON…
**Sentido** TOTAL
**Dia** Del 04/08/2025 AL 10/08/2025

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | |
| **LUNES** | | | | | | | | | | | | | | | | | | | | | |
| **04/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 9 | 9 | 2 | 6 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| **SALIDA** | 9 | 9 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| **Ambos** | **18** | **18** | **2** | **16** | **0** | **1** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **49** |
| **MARTES** | | | | | | | | | | | | | | | | | | | | | |
| **05/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 11 | 9 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| **SALIDA** | 11 | 9 | 1 | 12 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| **Ambos** | **22** | **18** | **1** | **22** | **0** | **1** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **55** |
| **MIERCOLES** | | | | | | | | | | | | | | | | | | | | | |
| **06/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 6 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| **SALIDA** | 5 | 4 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| **Ambos** | **11** | **8** | **1** | **10** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **26** |
| **JUEVES** | | | | | | | | | | | | | | | | | | | | | |
| **07/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 11 | 6 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| **SALIDA** | 7 | 7 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| **Ambos** | **18** | **13** | **1** | **15** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **40** |
| **VIERNES** | | | | | | | | | | | | | | | | | | | | | |
| **08/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 9 | 10 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| **SALIDA** | 12 | 8 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| **Ambos** | **21** | **18** | **0** | **18** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **50** |
| **SABADO** | | | | | | | | | | | | | | | | | | | | | |
| **09/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 23 | 17 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
| **SALIDA** | 24 | 14 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| **Ambos** | **47** | **31** | **0** | **26** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **84** |
| **DOMINGO** | | | | | | | | | | | | | | | | | | | | | |
| **10/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 14 | 14 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| **SALIDA** | 14 | 14 | 1 | 11 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| **Ambos** | **28** | **28** | **1** | **28** | **0** | **0** | **0** | **0** | **0** | **4** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **75** |
| **TOTAL** | **165** | **134** | **6** | **135** | **0** | **2** | **0** | **0** | **0** | **18** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **379** |

## RESUMEN DEL VOLUMEN DE TRAFICO PROMEDIO DE SALIDA Y ENTRADA

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 2
**Estación** ESTACIÓN 02

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** Del 04/08/2025 AL 10/08/2025

| SENTIDO | MOTO TAXI | AUTO | STATION | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | WAGON | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | |
| ENTRADA | 12 | 10 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| SALIDA | 12 | 9 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| **AMBOS** | **24** | **19** | **1** | **19** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **66** |

## VOLUMEN DE TRÁFICO PROMEDIO DIARIO

**Carretera** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo**
**Cod Estación** E - 2
**Estación** ESTACIÓN 02

**Ubicacion** CRUCE CON...
**Sentido** TOTAL
**Dia** Del 04/08/2025 AL 10/08/2025

| DIA | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| LUNES | 27 | 2 | 16 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 12.93 |
| MARTES | 29 | 1 | 22 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 14.51 |
| MIERCOLES | 14 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 6.86 |
| JUEVES | 22 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 10.55 |
| VIERNES | 29 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 13.19 |
| SABADO | 55 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 84 | 22.16 |
| DOMINGO | 42 | 1 | 28 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 | 19.79 |
| **TOTAL** | **218** | **6** | **135** | **0** | **2** | **0** | **0** | **0** | **46** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **379** | 100.00 |
| **IMDS** | **31** | **1** | **19** | **0** | **0** | **0** | **0** | **0** | **7** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **58** | |
| **%** | **53.45** | **1.72** | **32.76** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **12.07** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **100.00** | |
| | **VEHICULOS LIGEROS** | | | | | **VEHICULOS PESADOS** | | | | | | | | | | | | | | | |

**TRAFICO VEHICULAR**
**IMD Sin Corrección**
**(Veh/dia)**

| Tipo de Vehículos | IMDS | Distrib. % |
|---|---|---|
| Autos | 31 | 53.4% |
| Satation Wagon | 1 | 1.7% |
| Camioneta Pick Up | 19 | 32.8% |
| Camioneta Panel | 0 | 0.0% |
| COMBI RURAL | 0 | 0.0% |
| Micro | 0 | 0.0% |
| Omnibus 2E y 3E | 0 | 0.0% |
| Camión 2E | 7 | 12.1% |
| Camión 3E | 0 | 0.0% |
| Camión 4E | 0 | 0.0% |
| Semi trayler | 0 | 0.0% |
| Trayler | 0 | 0.0% |
| **TOTAL IMD** | **58** | **100.0%** |

**CALCULO DEL IMD**
**Resumen de Metodologia**

$$IMD = \frac{VS}{7}$$

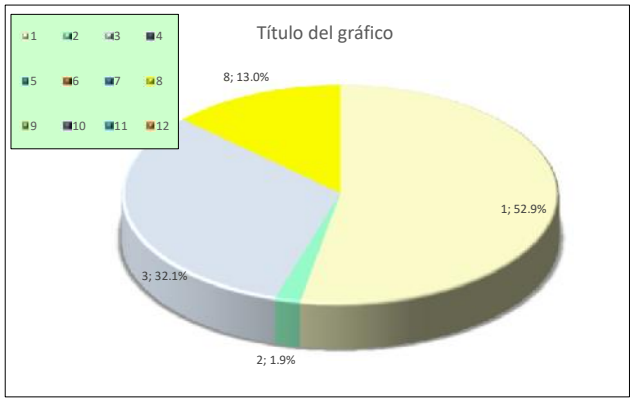
VS = Volumen Promedio Semanal

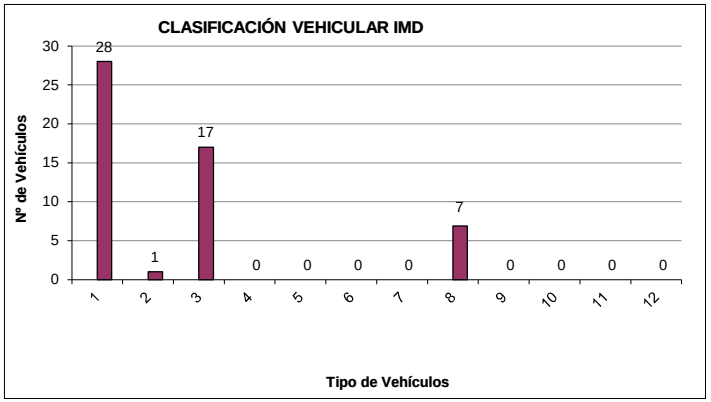
Fc Veh. Ligeros = **0.905430**
Fc Veh. Pesados = **0.984976**

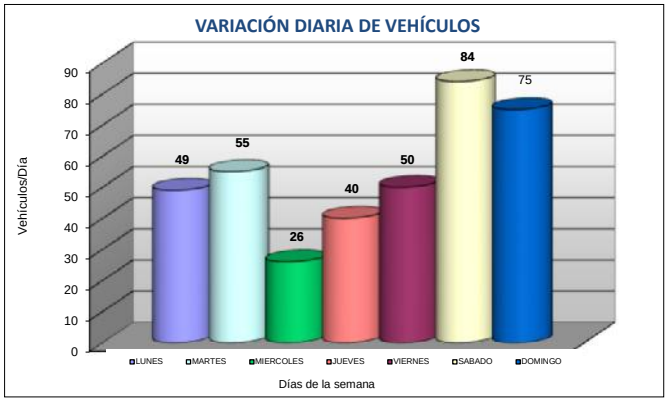
IMD = **53** Vehiculos por dia
19,307 V. x año

**TRAFICO VEHICULAR**
**IMD ANUAL Y CLASIFICACION VEHICULAR**
**(Veh/dia)**

| Tipo de Vehículos | IMD | Distrib. % |
|---|---|---|
| Autos | 28 | 52.9% |
| Satation Wagon | 1 | 1.9% |
| Camioneta Pick Up | 17 | 32.1% |
| Camioneta Panel | 0 | 0.0% |
| COMBI RURAL | 0 | 0.0% |
| Micro | 0 | 0.0% |
| Omnibus 2E y 3E | 0 | 0.0% |
| Camión 2E | 7 | 13.0% |
| Camión 3E | 0 | 0.0% |
| Camión 4E | 0 | 0.0% |
| Semi trayler | 0 | 0.0% |
| Trayler | 0 | 0.0% |
| **TOTAL IMD** | **53** | **100.0%** |



**PROYECTO: "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

**ESTACIÓN 2**

| Auto | Station Wagon | CAMIONETA | | | | BUS | | | CAMION | | | TRAILER | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Pick Up | Panel | COMBI rural | Micros | B2 | B3 | B4 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | TOTAL |
| 28 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 |

**ANEXO PROYECCION DEL TRAFICO**

**Proyección de Tráfico**

**PROYECTO: "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

## ESTACIÓN 2

**Tráfico Normal**

| | Años | Auto | Station Wagon | Pick Up | Panel | Combi Rural | Micros | B2 | B3 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | Total IMDA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2025 | 28 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **53** |
| 1 | 2026 | 28 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **54** |
| 2 | 2027 | 28 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **54** |
| 3 | 2028 | 29 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **55** |
| 4 | 2029 | 29 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **56** |
| 5 | 2030 | 29 | 1 | 18 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **56** |
| 6 | 2031 | 29 | 1 | 18 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **57** |
| 7 | 2032 | 29 | 1 | 18 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **58** |
| 8 | 2033 | 30 | 1 | 18 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **59** |
| 9 | 2034 | 30 | 1 | 18 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **60** |
| 10 | 2035 | 30 | 1 | 18 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **60** |

**Tráfico Generado**

| | Años | Auto | Station Wagon | Pick Up | Panel | Combi Rural | Micros | B2 | B3 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | Total IMDA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| 1 | 2026 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| 2 | 2027 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| 3 | 2028 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| 4 | 2029 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| 5 | 2030 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| 6 | 2031 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **9** |
| 7 | 2032 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **9** |
| 8 | 2033 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **9** |
| 9 | 2034 | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **9** |
| 10 | 2035 | 5 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **9** |

**Tráfico Desviado**

| | Años | Auto | Station Wagon | Pick Up | Panel | Combi Rural | Micros | B2 | B3 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | Total IMDA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2025 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| 1 | 2026 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| 2 | 2027 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| 3 | 2028 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| 4 | 2029 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| 5 | 2030 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| 6 | 2031 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| 7 | 2032 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| 8 | 2033 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| 9 | 2034 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| 10 | 2035 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |

**Tráfico Total**

| | Años | Auto | Station Wagon | Pick Up | Panel | Combi Rural | Micros | B2 | B3 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | Total IMDA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2025 | 31 | 1 | 19 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **58** |
| 1 | 2026 | 35 | 1 | 21 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **67** |
| 2 | 2027 | 35 | 1 | 22 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **68** |
| 3 | 2028 | 36 | 1 | 22 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **69** |
| 4 | 2029 | 36 | 1 | 22 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **70** |
| 5 | 2030 | 36 | 1 | 22 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **71** |
| 6 | 2031 | 36 | 1 | 22 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **71** |
| 7 | 2032 | 37 | 1 | 22 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **72** |
| 8 | 2033 | 37 | 1 | 22 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **73** |
| 9 | 2034 | 37 | 1 | 23 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **74** |
| 10 | 2035 | 38 | 1 | 23 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **76** |

# ESTACIÓN 03

**UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO**
**FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA**
**ESCUELA PROFESIONAL DE INGENIERIA CIVIL**

# VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

**Tramo :** 1 **Ubicacion** CRUCE CON...
**Cod Estación:** E - 3 **Sentido** ENTRADA
**Estación:** ESTACIÓN 03 **Dia** LUNES **Fecha** 04-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | COMBI RURAL | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.94 |
| **07-08** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.94 |
| **08-09** | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 14.71 |
| **09-10** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.88 |
| **10-11** | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 14.71 |
| **11-12** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.88 |
| **12-13** | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11.76 |
| **13-14** | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 14.71 |
| **14-15** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.94 |
| **15-16** | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11.76 |
| **16-17** | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.82 |
| **17-18** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.94 |
| **18-19** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 15 | 9 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 100.00 |
| % | 44.12 | 26.47 | 5.88 | 14.71 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.82 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACION 03

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** LUNES **Fecha** 04-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.06 |
| 07-08 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.03 |
| 08-09 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.12 |
| 09-10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.03 |
| 10-11 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.06 |
| 11-12 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.12 |
| 12-13 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.12 |
| 13-14 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 15.15 |
| 14-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 15-16 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 15.15 |
| 16-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 17-18 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.12 |
| 18-19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.03 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 17 | 9 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 100.00 |
| % | 51.52 | 27.27 | 0.00 | 21.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACIÓN 03

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** LUNES **Fecha** 04-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4.48 |
| 07-08 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2.99 |
| 08-09 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 13.43 |
| 09-10 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4.48 |
| 10-11 | 1 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 10.45 |
| 11-12 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 8.96 |
| 12-13 | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 11.94 |
| 13-14 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 14.93 |
| 14-15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.49 |
| 15-16 | 3 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 13.43 |
| 16-17 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4.48 |
| 17-18 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 7.46 |
| 18-19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.49 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 32 | 18 | 2 | 12 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 | 100.00 |
| % | 47.76 | 26.87 | 2.99 | 17.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACION 03

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** MARTES **Fecha** 05-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.94 |
| 07-08 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.94 |
| 08-09 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.88 |
| 09-10 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11.76 |
| 10-11 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11.76 |
| 11-12 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11.76 |
| 12-13 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.82 |
| 13-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 14-15 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 14.71 |
| 15-16 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.88 |
| 16-17 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.88 |
| 17-18 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11.76 |
| 18-19 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.88 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 17 | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 100.00 |
| % | 50.00 | 23.53 | 0.00 | 23.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.94 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1 **Ubicacion** CRUCE CON…
**Cod Estación** E - 3 **Sentido** SALIDA
**Estación** ESTACIÓN 03 **Dia** MARTES **Fecha** 05-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.06 |
| **07-08** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.03 |
| **08-09** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.03 |
| **09-10** | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 15.15 |
| **10-11** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **11-12** | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.12 |
| **12-13** | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 15.15 |
| **13-14** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.09 |
| **14-15** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.06 |
| **15-16** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.06 |
| **16-17** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.06 |
| **17-18** | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 18.18 |
| **18-19** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 19 | 5 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 100.00 |
| % | 57.58 | 15.15 | 3.03 | 15.15 | 0.00 | 3.03 | 0.00 | 0.00 | 0.00 | 6.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACION 03

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** MARTES **Fecha** 05-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4.48 |
| **07-08** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2.99 |
| **08-09** | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4.48 |
| **09-10** | 6 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 13.43 |
| **10-11** | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5.97 |
| **11-12** | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 11.94 |
| **12-13** | 3 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 11.94 |
| **13-14** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4.48 |
| **14-15** | 4 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 10.45 |
| **15-16** | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5.97 |
| **16-17** | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5.97 |
| **17-18** | 6 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 14.93 |
| **18-19** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2.99 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 36 | 13 | 1 | 13 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 | 100.00 |
| % | 53.73 | 19.40 | 1.49 | 19.40 | 0.00 | 1.49 | 0.00 | 0.00 | 0.00 | 4.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACION 03

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** MIERCOLES **Fecha** 06-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.94 |
| 07-08 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.94 |
| 08-09 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.94 |
| 09-10 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 14.71 |
| 10-11 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.88 |
| 11-12 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11.76 |
| 12-13 | 2 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 20.59 |
| 13-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 14-15 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11.76 |
| 15-16 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.82 |
| 16-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 17-18 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 14.71 |
| 18-19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.94 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 16 | 6 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 100.00 |
| % | 47.06 | 17.65 | 5.88 | 23.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE

**Tramo** 1 **Ubicacion** CRUCE CON…

**Cod Estación** E - 3 **Sentido** SALIDA

**Estación** ESTACION 03 **Dia** MIERCOLES **Fecha** 06-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.90 |
| 07-08 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.45 |
| 08-09 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.34 |
| 09-10 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.90 |
| 10-11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.34 |
| 11-12 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.34 |
| 12-13 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.34 |
| 13-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 14-15 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 17.24 |
| 15-16 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.34 |
| 16-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 17-18 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13.79 |
| 18-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 17 | 6 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 100.00 |
| % | 58.62 | 20.69 | 0.00 | 13.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACION 03

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** MIERCOLES **Fecha** 06-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4.76 |
| 07-08 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.17 |
| 08-09 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.35 |
| 09-10 | 3 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 11.11 |
| 10-11 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 7.94 |
| 11-12 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 11.11 |
| 12-13 | 3 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 15.87 |
| 13-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 14-15 | 4 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 14.29 |
| 15-16 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 9.52 |
| 16-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 17-18 | 5 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 14.29 |
| 18-19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.59 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 33 | 12 | 2 | 12 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 | 100.00 |
| % | 52.38 | 19.05 | 3.17 | 19.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.17 | 3.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACION 03

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** JUEVES **Fecha** 07-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.45 |
| 07-08 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.45 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.23 |
| 09-10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.68 |
| 10-11 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.90 |
| 11-12 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 16.13 |
| 12-13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.23 |
| 13-14 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.45 |
| 14-15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.45 |
| 15-16 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.90 |
| 16-17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.23 |
| 17-18 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.45 |
| 18-19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.23 |
| 19-20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.23 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 16 | 7 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 100.00 |
| % | 51.61 | 22.58 | 0.00 | 19.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACIÓN 03

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** JUEVES **Fecha** 07-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.88 |
| 07-08 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.88 |
| 08-09 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11.76 |
| 09-10 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11.76 |
| 10-11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 11-12 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 17.65 |
| 12-13 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11.76 |
| 13-14 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 17.65 |
| 14-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 15-16 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.88 |
| 16-17 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.88 |
| 17-18 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.88 |
| 18-19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 15 | 7 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 100.00 |
| % | 88.24 | 41.18 | 5.88 | 41.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 11.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACIÓN 03

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** JUEVES **Fecha** 07-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.25 |
| 07-08 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.25 |
| 08-09 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.38 |
| 09-10 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.38 |
| 10-11 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.25 |
| 11-12 | 5 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 15.63 |
| 12-13 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.25 |
| 13-14 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.50 |
| 14-15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.25 |
| 15-16 | 5 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.38 |
| 16-17 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.13 |
| 17-18 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.38 |
| 18-19 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 31 | 14 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 100.00 |
| % | 96.88 | 43.75 | 3.13 | 40.63 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 12.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACION 03

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** VIERNES **Fecha** 08-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7.69 |
| 07-08 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15.38 |
| 08-09 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7.69 |
| 09-10 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7.69 |
| 10-11 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15.38 |
| 11-12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 12-13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 13-14 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15.38 |
| 14-15 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7.69 |
| 15-16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 16-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7.69 |
| 17-18 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15.38 |
| 18-19 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 18 | 5 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 100.00 |
| % | 138.46 | 38.46 | 0.00 | 46.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 15.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÌ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1 **Ubicacion** CRUCE CON…

**Cod Estación** E - 3 **Sentido** SALIDA

**Estación** ESTACION 03 **Dia** VIERNES **Fecha** 08-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.13 |
| **07-08** | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.38 |
| **08-09** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **09-10** | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 18.75 |
| **10-11** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **11-12** | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.50 |
| **12-13** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.13 |
| **13-14** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.50 |
| **14-15** | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.25 |
| **15-16** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.50 |
| **16-17** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.13 |
| **17-18** | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.38 |
| **18-19** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.38 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 20 | 6 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 100.00 |
| % | 62.50 | 18.75 | 0.00 | 12.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACIÓN 03

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** VIERNES **Fecha** 08-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4.76 |
| 07-08 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 7.94 |
| 08-09 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4.76 |
| 09-10 | 6 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 14.29 |
| 10-11 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.17 |
| 11-12 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 7.94 |
| 12-13 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.59 |
| 13-14 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 15.87 |
| 14-15 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.35 |
| 15-16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.35 |
| 16-17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.17 |
| 17-18 | 6 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 14.29 |
| 18-19 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 9.52 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 38 | 11 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 | 100.00 |
| % | 60.32 | 17.46 | 0.00 | 15.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 39.68 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACION 03

**Ubicacion** CRUCE CON...
**Sentido** ENTRADA
**Dia** SABADO **Fecha** 09-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 14.29 |
| 07-08 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4.76 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.38 |
| 09-10 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 11.90 |
| 10-11 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.14 |
| 11-12 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 9.52 |
| 12-13 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 11.90 |
| 13-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 14-15 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 9.52 |
| 15-16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.14 |
| 16-17 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.14 |
| 17-18 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.14 |
| 18-19 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.14 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 20 | 9 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 100.00 |
| % | 47.62 | 21.43 | 0.00 | 26.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACIÓN 03

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** SABADO **Fecha** 09-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.32 |
| 07-08 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 9.76 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.44 |
| 09-10 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.32 |
| 10-11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.32 |
| 11-12 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.32 |
| 12-13 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 14.63 |
| 13-14 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 12.20 |
| 14-15 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 9.76 |
| 15-16 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.44 |
| 16-17 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 9.76 |
| 17-18 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4.88 |
| 18-19 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4.88 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 22 | 10 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 100.00 |
| % | 53.66 | 24.39 | 0.00 | 17.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.88 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACIÓN 03

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** SABADO **Fecha** 09-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 4 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 10.84 |
| **07-08** | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 7.23 |
| **08-09** | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2.41 |
| **09-10** | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 9.64 |
| **10-11** | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 7.23 |
| **11-12** | 3 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 8.43 |
| **12-13** | 4 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 13.25 |
| **13-14** | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 6.02 |
| **14-15** | 1 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 9.64 |
| **15-16** | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4.82 |
| **16-17** | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 8.43 |
| **17-18** | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 6.02 |
| **18-19** | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 6.02 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 42 | 19 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83 | 100.00 |
| % | 50.60 | 22.89 | 0.00 | 21.69 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.82 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACION 03

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** DOMINGO **Fecha** 10-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7.69 |
| 07-08 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15.38 |
| 08-09 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15.38 |
| 09-10 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 30.77 |
| 10-11 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 30.77 |
| 11-12 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 23.08 |
| 12-13 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 38.46 |
| 13-14 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 23.08 |
| 14-15 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 23.08 |
| 15-16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 30.77 |
| 16-17 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 30.77 |
| 17-18 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 15.38 |
| 18-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 21 | 7 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 284.62 |
| % | 56.76 | 18.92 | 0.00 | 16.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.41 | 2.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACIÓN 03

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** DOMINGO **Fecha** 10-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.25 |
| 07-08 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.25 |
| 08-09 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.25 |
| 09-10 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.50 |
| 10-11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.50 |
| 11-12 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.38 |
| 12-13 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.50 |
| 13-14 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.13 |
| 14-15 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 15.63 |
| 15-16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.50 |
| 16-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 17-18 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.38 |
| 18-19 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.50 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 22 | 6 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 118.75 |
| % | 57.89 | 15.79 | 2.63 | 18.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACIÓN 03

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** DOMINGO **Fecha** 10-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4.00 |
| 07-08 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5.33 |
| 08-09 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5.33 |
| 09-10 | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 10.67 |
| 10-11 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 10.67 |
| 11-12 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 8.00 |
| 12-13 | 5 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 12.00 |
| 13-14 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5.33 |
| 14-15 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 10.67 |
| 15-16 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 10.67 |
| 16-17 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5.33 |
| 17-18 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 6.67 |
| 18-19 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5.33 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 43 | 13 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 | 100.00 |
| % | 57.33 | 17.33 | 1.33 | 17.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.33 | 1.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACIÓN 03

**Ubicacion** CRUCE CON…
**Sentido** TOTAL
**Dia** Del 04/08/2025 AL 10/08/2025

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | |
| **LUNES 04/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 15 | 9 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| **SALIDA** | 17 | 9 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| **Ambos** | **32** | **18** | **2** | **12** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **51** |
| **MARTES 05/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 17 | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| **SALIDA** | 19 | 5 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| **Ambos** | **36** | **13** | **1** | **13** | **0** | **1** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **49** |
| **MIERCOLES 06/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 16 | 6 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| **SALIDA** | 17 | 6 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| **Ambos** | **33** | **12** | **2** | **12** | **0** | **0** | **0** | **0** | **0** | **2** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **47** |
| **JUEVES 07/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 16 | 7 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| **SALIDA** | 15 | 7 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| **Ambos** | **31** | **14** | **1** | **13** | **0** | **0** | **0** | **0** | **0** | **4** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **48** |
| **VIERNES 08/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 18 | 5 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| **SALIDA** | 20 | 6 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| **Ambos** | **38** | **11** | **0** | **10** | **0** | **0** | **0** | **0** | **0** | **4** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **44** |
| **SABADO 09/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 20 | 9 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| **SALIDA** | 22 | 10 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| **Ambos** | **42** | **19** | **0** | **18** | **0** | **0** | **0** | **0** | **0** | **4** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **62** |
| **DOMINGO 10/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 21 | 7 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| **SALIDA** | 22 | 6 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| **Ambos** | **43** | **13** | **1** | **13** | **0** | **0** | **0** | **0** | **0** | **4** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **54** |
| **TOTAL** | **255** | **100** | **7** | **91** | **0** | **1** | **0** | **0** | **0** | **24** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **355** |

## RESUMEN DEL VOLUMEN DE TRAFICO PROMEDIO DE SALIDA Y ENTRADA

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 3
**Estación** ESTACIÓN 03

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** Del 04/08/2025 AL 10/08/2025

| SENTIDO | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | |
| ENTRADA | 18 | 7 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| SALIDA | 19 | 7 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| **AMBOS** | **36** | **14** | **1** | **13** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **69** |

## VOLUMEN DE TRÁFICO PROMEDIO DIARIO

**Carretera** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo**
**Cod Estación** E - 3
**Estación** ESTACIÓN 03
**Ubicacion** CRUCE CON...
**Sentido** TOTAL
**Dia** Del 04/08/2025 AL 10/08/2025

| DIA | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | CAMION | | | SEMITRAYLER | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PICK UP | PANEL | COMBI RURAL | | 2E | 2E | 3E | 4E | 2S1/2S2 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| LUNES | 34 | 2 | 12 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | 14.37 |
| MARTES | 31 | 1 | 13 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 13.80 |
| MIERCOLES | 29 | 2 | 12 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 13.24 |
| JUEVES | 30 | 1 | 13 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 13.52 |
| VIERNES | 30 | 0 | 10 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | 12.39 |
| SABADO | 40 | 0 | 18 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62 | 17.46 |
| DOMINGO | 35 | 1 | 13 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 15.21 |
| **TOTAL** | **229** | **7** | **91** | **0** | **1** | **0** | **0** | **52** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **355** | 100.00 |
| **IMDS** | **33** | **1** | **13** | **0** | **0** | **0** | **0** | **7** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **54** | |
| **%** | **61.11** | **1.85** | **24.07** | **0.00** | **0.00** | **0.00** | **0.00** | **12.96** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **100.00** | |
| | **VEHICULOS LIGEROS** | | | | | **VEHICULOS PESADOS** | | | | | | | | | | | | | |

**TRAFICO VEHICULAR**
**IMD Sin Corrección**
**(Veh/dia)**

| Tipo de Vehículos | IMDS | Distrib. % |
|---|---|---|
| Autos | 33 | 61.1% |
| Satation Wagon | 1 | 1.9% |
| Camioneta Pick Up | 13 | 24.1% |
| Camioneta Panel | 0 | 0.0% |
| COMBI RURAL | 0 | 0.0% |
| Micro | 0 | 0.0% |
| Omnibus 2E y 3E | 0 | 0.0% |
| Camión 2E | 7 | 13.0% |
| Camión 3E | 0 | 0.0% |
| Camión 4E | 0 | 0.0% |
| Semi trayler | 0 | 0.0% |
| Trayler | 0 | 0.0% |
| **TOTAL IMD** | **54** | **100.0%** |

**CALCULO DEL IMD**
**Resumen de Metodologia**

$$IMD = \frac{VS}{7}$$

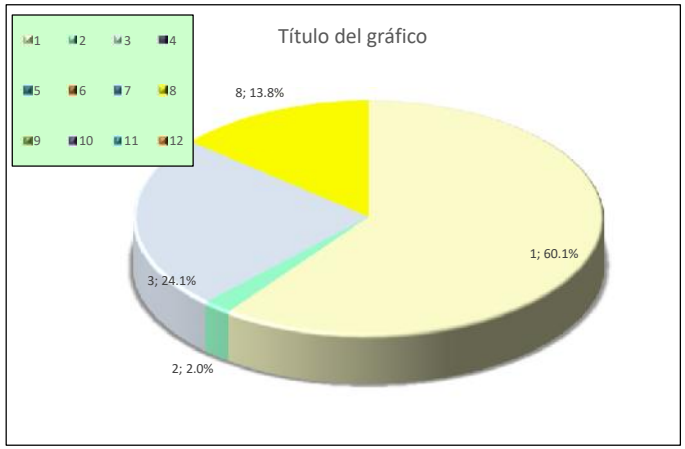
VS = Volumen Promedio Semanal

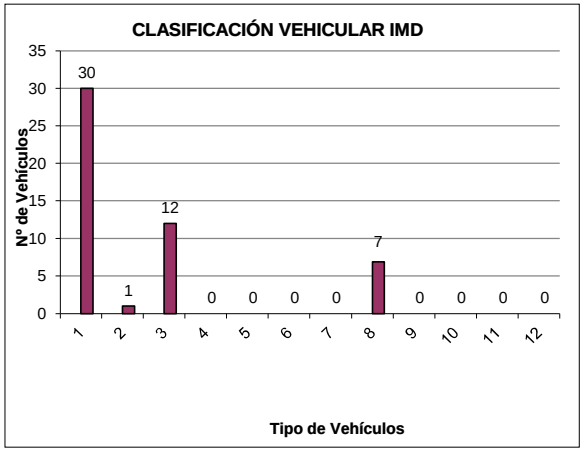
Fc Veh. Ligeros = **0.905430**
Fc Veh. Pesados = **0.984976**

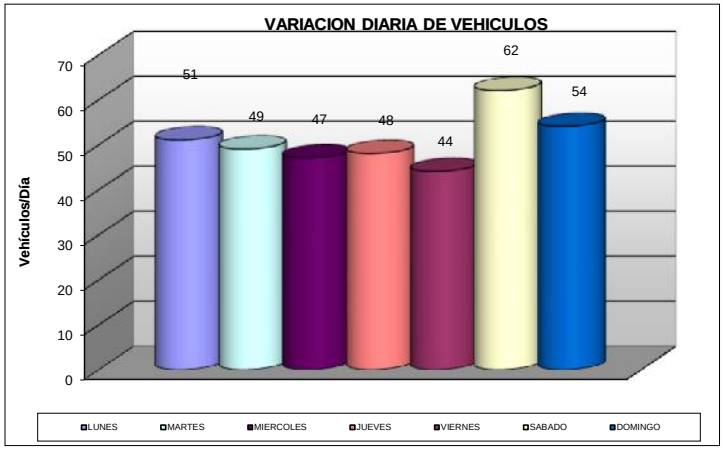
IMD = **50** Vehiculos por dia
18,212 V. x año

**TRAFICO VEHICULAR**
**IMD ANUAL Y CLASIFICACION VEHICULAR**
**(Veh/dia)**

| Tipo de Vehículos | IMD | Distrib. % |
|---|---|---|
| Autos | 30 | 60.1% |
| Satation Wagon | 1 | 2.0% |
| Camioneta Pick Up | 12 | 24.1% |
| Camioneta Panel | 0 | 0.0% |
| COMBI RURAL | 0 | 0.0% |
| Micro | 0 | 0.0% |
| Omnibus 2E y 3E | 0 | 0.0% |
| Camión 2E | 7 | 13.8% |
| Camión 3E | 0 | 0.0% |
| Camión 4E | 0 | 0.0% |
| Semi trayler | 0 | 0.0% |
| Trayler | 0 | 0.0% |
| **TOTAL IMD** | **50** | **100.0%** |



**PROYECTO: "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

**ESTACIÓN 3**

| Auto | Station Wagon | CAMIONETA | | | | BUS | | | CAMION | | | TRAILER | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Pick Up | Panel | COMBI rural | Micros | B2 | B3 | B4 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | TOTAL |
| 30 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |

**ANEXO PROYECCION DEL TRAFICO**

**Proyección de Tráfico**

**PROYECTO: "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

**ESTACIÓN 3**

**Tráfico Normal**

| | Años | Auto | Station Wagon | Pick Up | Panel | Combi Rural | Micros | B2 | B3 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | Total IMDA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2025 | 30 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **50** |
| 1 | 2026 | 30 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **51** |
| 2 | 2027 | 30 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **51** |
| 3 | 2028 | 31 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **52** |
| 4 | 2029 | 31 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **53** |
| 5 | 2030 | 31 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **53** |
| 6 | 2031 | 31 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **54** |
| 7 | 2032 | 32 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **55** |
| 8 | 2033 | 32 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **56** |
| 9 | 2034 | 32 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **56** |
| 10 | 2035 | 32 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **57** |

**Tráfico Generado**

| | Años | Auto | Station Wagon | Pick Up | Panel | Combi Rural | Micros | B2 | B3 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | Total IMDA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| 1 | 2026 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| 2 | 2027 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| 3 | 2028 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| 4 | 2029 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| 5 | 2030 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| 6 | 2031 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| 7 | 2032 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| 8 | 2033 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| 9 | 2034 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |
| 10 | 2035 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **9** |

**Tráfico Desviado**

| | Años | Auto | Station Wagon | Pick Up | Panel | Combi Rural | Micros | B2 | B3 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | Total IMDA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2025 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| 1 | 2026 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| 2 | 2027 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| 3 | 2028 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| 4 | 2029 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| 5 | 2030 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| 6 | 2031 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| 7 | 2032 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **5** |
| 8 | 2033 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| 9 | 2034 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| 10 | 2035 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |

**Tráfico Total**

| | Años | Auto | Station Wagon | Pick Up | Panel | Combi Rural | Micros | B2 | B3 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | Total IMDA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2025 | 33 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **55** |
| 1 | 2026 | 38 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **63** |
| 2 | 2027 | 38 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **64** |
| 3 | 2028 | 38 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **65** |
| 4 | 2029 | 39 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **66** |
| 5 | 2030 | 39 | 1 | 16 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **67** |
| 6 | 2031 | 39 | 1 | 16 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **68** |
| 7 | 2032 | 39 | 1 | 16 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **69** |
| 8 | 2033 | 40 | 1 | 16 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **69** |
| 9 | 2034 | 40 | 1 | 16 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **70** |
| 10 | 2035 | 40 | 1 | 16 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **71** |

# ESTACIÓN 04

**UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO**
**FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA**
**ESCUELA PROFESIONAL DE INGENIERIA CIVIL**

# VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

**Tramo :** 1 **Ubicacion** CRUCE CON...
**Cod Estación:** E - 4 **Sentido** ENTRADA
**Estación:** ESTACIÓN 04 **Dia** LUNES **Fecha** 04-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | COMBI RURAL | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11.43 |
| **07-08** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.86 |
| **08-09** | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.71 |
| **09-10** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.86 |
| **10-11** | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11.43 |
| **11-12** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.71 |
| **12-13** | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.57 |
| **13-14** | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11.43 |
| **14-15** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.71 |
| **15-16** | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.71 |
| **16-17** | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 14.29 |
| **17-18** | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.57 |
| **18-19** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.71 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 14 | 6 | 2 | 10 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 100.00 |
| % | 40.00 | 17.14 | 5.71 | 28.57 | 0.00 | 2.86 | 0.00 | 0.00 | 0.00 | 5.71 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACION 04

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** LUNES **Fecha** 04-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 20.00 |
| **07-08** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.00 |
| **08-09** | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10.00 |
| **09-10** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.00 |
| **10-11** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **11-12** | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10.00 |
| **12-13** | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 15.00 |
| **13-14** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.00 |
| **14-15** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10.00 |
| **15-16** | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10.00 |
| **16-17** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **17-18** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10.00 |
| **18-19** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 9 | 5 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 100.00 |
| % | 45.00 | 25.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACIÓN 04

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** LUNES **Fecha** 04-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 14.55 |
| **07-08** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.64 |
| **08-09** | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7.27 |
| **09-10** | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.64 |
| **10-11** | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7.27 |
| **11-12** | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7.27 |
| **12-13** | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10.91 |
| **13-14** | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9.09 |
| **14-15** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7.27 |
| **15-16** | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7.27 |
| **16-17** | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9.09 |
| **17-18** | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9.09 |
| **18-19** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.64 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 23 | 11 | 2 | 16 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 100.00 |
| % | 41.82 | 20.00 | 3.64 | 29.09 | 0.00 | 1.82 | 0.00 | 0.00 | 0.00 | 3.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACION 04

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** MARTES **Fecha** 05-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.33 |
| 07-08 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.00 |
| 08-09 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.00 |
| 09-10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.33 |
| 10-11 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13.33 |
| 11-12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.33 |
| 12-13 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13.33 |
| 13-14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.33 |
| 14-15 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.00 |
| 15-16 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.67 |
| 16-17 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.00 |
| 17-18 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.67 |
| 18-19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.33 |
| 19-20 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.33 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 12 | 6 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 100.00 |
| % | 40.00 | 20.00 | 0.00 | 33.33 | 3.33 | 0.00 | 0.00 | 0.00 | 0.00 | 3.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1 **Ubicacion** CRUCE CON…
**Cod Estación** E - 4 **Sentido** SALIDA
**Estación** ESTACIÓN 04 **Dia** MARTES **Fecha** 05-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.33 |
| **07-08** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.33 |
| **08-09** | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 16.67 |
| **09-10** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.33 |
| **10-11** | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 16.67 |
| **11-12** | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.67 |
| **12-13** | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.00 |
| **13-14** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.67 |
| **14-15** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.67 |
| **15-16** | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.67 |
| **16-17** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.67 |
| **17-18** | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13.33 |
| **18-19** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 13 | 7 | 1 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 100.00 |
| % | 43.33 | 23.33 | 3.33 | 26.67 | 0.00 | 3.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1 **Ubicacion** CRUCE CON…
**Cod Estación** E - 4 **Sentido** AMBOS
**Estación** ESTACION 04 **Dia** MARTES **Fecha** 05-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.33 |
| 07-08 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.67 |
| 08-09 | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 13.33 |
| 09-10 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.33 |
| 10-11 | 6 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 15.00 |
| 11-12 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.00 |
| 12-13 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 11.67 |
| 13-14 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.00 |
| 14-15 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8.33 |
| 15-16 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.67 |
| 16-17 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8.33 |
| 17-18 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10.00 |
| 18-19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.67 |
| 19-20 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.67 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 25 | 13 | 1 | 18 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 100.00 |
| % | 41.67 | 21.67 | 1.67 | 30.00 | 1.67 | 1.67 | 0.00 | 0.00 | 0.00 | 1.67 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACION 04

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** MIERCOLES **Fecha** 06-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12.00 |
| 07-08 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.00 |
| 08-09 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.00 |
| 09-10 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 16.00 |
| 10-11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 11-12 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12.00 |
| 12-13 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 24.00 |
| 13-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.00 |
| 14-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 15-16 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12.00 |
| 16-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 17-18 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12.00 |
| 18-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 13 | 6 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 100.00 |
| % | 52.00 | 24.00 | 4.00 | 16.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE

**Tramo** 1 **Ubicacion** CRUCE CON…

**Cod Estación** E - 4 **Sentido** SALIDA

**Estación** ESTACION 04 **Dia** MIERCOLES **Fecha** 06-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13.79 |
| **07-08** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.45 |
| **08-09** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.45 |
| **09-10** | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.34 |
| **10-11** | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 17.24 |
| **11-12** | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.90 |
| **12-13** | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.34 |
| **13-14** | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.34 |
| **14-15** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.34 |
| **15-16** | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.34 |
| **16-17** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.45 |
| **17-18** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **18-19** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 14 | 7 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 100.00 |
| % | 48.28 | 24.14 | 0.00 | 20.69 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACION 04

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** MIERCOLES **Fecha** 06-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 5 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 12.96 |
| 07-08 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.70 |
| 08-09 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.70 |
| 09-10 | 5 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 12.96 |
| 10-11 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9.26 |
| 11-12 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9.26 |
| 12-13 | 5 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 16.67 |
| 13-14 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7.41 |
| 14-15 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.56 |
| 15-16 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 11.11 |
| 16-17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.85 |
| 17-18 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.56 |
| 18-19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 27 | 13 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 100.00 |
| % | 50.00 | 24.07 | 1.85 | 18.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACION 04

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** JUEVES **Fecha** 07-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 15.79 |
| 07-08 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.63 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.63 |
| 09-10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.89 |
| 10-11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 11-12 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.89 |
| 12-13 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 10.53 |
| 13-14 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 13.16 |
| 14-15 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.89 |
| 15-16 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.26 |
| 16-17 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.63 |
| 17-18 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 13.16 |
| 18-19 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7.89 |
| 19-20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.63 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 18 | 10 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 100.00 |
| % | 47.37 | 26.32 | 0.00 | 21.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.63 | 2.63 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACIÓN 04

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** JUEVES **Fecha** 07-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.88 |
| 07-08 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.88 |
| 08-09 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11.76 |
| 09-10 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11.76 |
| 10-11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 11-12 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.88 |
| 12-13 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5.88 |
| 13-14 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11.76 |
| 14-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 15-16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 16-17 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11.76 |
| 17-18 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 17.65 |
| 18-19 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11.76 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 20 | 9 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 100.00 |
| % | 117.65 | 52.94 | 5.88 | 41.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACIÓN 04

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** JUEVES **Fecha** 07-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 4 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 13.51 |
| 07-08 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.70 |
| 08-09 | 4 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.11 |
| 09-10 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.41 |
| 10-11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 11-12 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 10.81 |
| 12-13 | 5 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.11 |
| 13-14 | 2 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 13.51 |
| 14-15 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.11 |
| 15-16 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2.70 |
| 16-17 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5.41 |
| 17-18 | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 13.51 |
| 18-19 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8.11 |
| 19-20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 38 | 19 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 100.00 |
| % | 102.70 | 51.35 | 2.70 | 40.54 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.70 | 2.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACION 04

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** VIERNES **Fecha** 08-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7.14 |
| 07-08 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 14.29 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7.14 |
| 09-10 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 14.29 |
| 10-11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 11-12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7.14 |
| 12-13 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 21.43 |
| 13-14 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 21.43 |
| 14-15 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 15-16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7.14 |
| 16-17 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 17-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 18-19 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 17 | 7 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 100.00 |
| % | 121.43 | 50.00 | 0.00 | 35.71 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 14.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÌ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1 **Ubicacion** CRUCE CON…

**Cod Estación** E - 4 **Sentido** SALIDA

**Estación** ESTACION 04 **Dia** VIERNES **Fecha** 08-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.70 |
| **07-08** | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.70 |
| **08-09** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **09-10** | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 17.39 |
| **10-11** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.35 |
| **11-12** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.70 |
| **12-13** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.35 |
| **13-14** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.70 |
| **14-15** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.35 |
| **15-16** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.70 |
| **16-17** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 13.04 |
| **17-18** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.70 |
| **18-19** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.35 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 17 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 100.00 |
| % | 73.91 | 13.04 | 0.00 | 8.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACIÓN 04

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** VIERNES **Fecha** 08-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9.26 |
| 07-08 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 12.96 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.85 |
| 09-10 | 6 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 18.52 |
| 10-11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.70 |
| 11-12 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.56 |
| 12-13 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 11.11 |
| 13-14 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9.26 |
| 14-15 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.56 |
| 15-16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.56 |
| 16-17 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9.26 |
| 17-18 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.70 |
| 18-19 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.70 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 34 | 10 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 100.00 |
| % | 62.96 | 18.52 | 0.00 | 12.96 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.70 | 1.85 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 37.04 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACION 04

**Ubicacion** CRUCE CON...
**Sentido** ENTRADA
**Dia** SABADO **Fecha** 09-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.14 |
| 07-08 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 17.86 |
| 08-09 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 09-10 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.14 |
| 10-11 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.71 |
| 11-12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 12-13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.71 |
| 13-14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.57 |
| 14-15 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.71 |
| 15-16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10.71 |
| 16-17 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.14 |
| 17-18 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.14 |
| 18-19 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7.14 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 16 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 100.00 |
| % | 57.14 | 17.86 | 0.00 | 17.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7.14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACIÓN 04

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** SABADO **Fecha** 09-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.45 |
| 07-08 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6.45 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.23 |
| 09-10 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 19.35 |
| 10-11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.23 |
| 11-12 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.90 |
| 12-13 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.68 |
| 13-14 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.90 |
| 14-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 15-16 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9.68 |
| 16-17 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 12.90 |
| 17-18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 18-19 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3.23 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 14 | 5 | 0 | 9 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 100.00 |
| % | 45.16 | 16.13 | 0.00 | 29.03 | 0.00 | 3.23 | 0.00 | 0.00 | 0.00 | 6.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACIÒN 04

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** SABADO **Fecha** 09-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.78 |
| 07-08 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 11.86 |
| 08-09 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.69 |
| 09-10 | 3 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 13.56 |
| 10-11 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.78 |
| 11-12 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.78 |
| 12-13 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10.17 |
| 13-14 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8.47 |
| 14-15 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.08 |
| 15-16 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10.17 |
| 16-17 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10.17 |
| 17-18 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3.39 |
| 18-19 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.08 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 30 | 10 | 0 | 14 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | 100.00 |
| % | 50.85 | 16.95 | 0.00 | 23.73 | 0.00 | 1.69 | 0.00 | 0.00 | 0.00 | 6.78 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÒN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACION 04

**Ubicacion** CRUCE CON…
**Sentido** ENTRADA
**Dia** DOMINGO **Fecha** 10-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| **00-01** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **01-02** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **02-03** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **03-04** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **04-05** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **05-06** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **06-07** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7.14 |
| **07-08** | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 14.29 |
| **08-09** | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 28.57 |
| **09-10** | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 28.57 |
| **10-11** | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 21.43 |
| **11-12** | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 28.57 |
| **12-13** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 21.43 |
| **13-14** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7.14 |
| **14-15** | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 28.57 |
| **15-16** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 14.29 |
| **16-17** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7.14 |
| **17-18** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **18-19** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7.14 |
| **19-20** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **20-21** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **21-22** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **22-23** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **23-24** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| **TOTAL** | 16 | 7 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 214.29 |
| % | 53.33 | 23.33 | 0.00 | 20.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACIÓN 04

**Ubicacion** CRUCE CON…
**Sentido** SALIDA
**Dia** DOMINGO **Fecha** 10-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | % |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 13.04 |
| 07-08 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.35 |
| 08-09 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 13.04 |
| 09-10 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 17.39 |
| 10-11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 13.04 |
| 11-12 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 13.04 |
| 12-13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.70 |
| 13-14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 14-15 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 17.39 |
| 15-16 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.70 |
| 16-17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 17-18 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4.35 |
| 18-19 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8.70 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 17 | 6 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 121.74 |
| % | 60.71 | 21.43 | 0.00 | 14.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACIÓN 04

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** DOMINGO **Fecha** 10-Ago-25

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |
| 00-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 01-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 02-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 03-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 04-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 05-06 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 06-07 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.90 |
| 07-08 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.17 |
| 08-09 | 5 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 12.07 |
| 09-10 | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 13.79 |
| 10-11 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 10.34 |
| 11-12 | 2 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 12.07 |
| 12-13 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8.62 |
| 13-14 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.72 |
| 14-15 | 4 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 13.79 |
| 15-16 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6.90 |
| 16-17 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.72 |
| 17-18 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1.72 |
| 18-19 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5.17 |
| 19-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 20-21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 21-22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 22-23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| 23-24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| TOTAL | 33 | 13 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | 100.00 |
| % | 56.90 | 22.41 | 0.00 | 17.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | |

ELABORACIÓN: TESISTAS

## VOLUMEN DE TRAFICO PROMEDIO DIARIO

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACIÓN 04

**Ubicacion** CRUCE CON…
**Sentido** TOTAL
**Dia** Del 04/08/2025 AL 10/08/2025

| HORA | MOTO TAXI | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | |
| **LUNES 04/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 14 | 6 | 2 | 10 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| **SALIDA** | 9 | 5 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| **Ambos** | **23** | **11** | **2** | **16** | **0** | **1** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **44** |
| **MARTES 05/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 12 | 6 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| **SALIDA** | 13 | 7 | 1 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| **Ambos** | **25** | **13** | **1** | **18** | **1** | **1** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **48** |
| **MIERCOLES 06/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 13 | 6 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| **SALIDA** | 14 | 7 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| **Ambos** | **27** | **13** | **1** | **10** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **41** |
| **JUEVES 07/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 18 | 10 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| **SALIDA** | 20 | 9 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 |
| **Ambos** | **38** | **19** | **1** | **15** | **0** | **0** | **0** | **0** | **0** | **1** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **56** |
| **VIERNES 08/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 17 | 7 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| **SALIDA** | 17 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| **Ambos** | **34** | **10** | **0** | **7** | **0** | **0** | **0** | **0** | **0** | **2** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **37** |
| **SABADO 09/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 16 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| **SALIDA** | 14 | 5 | 0 | 9 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| **Ambos** | **30** | **10** | **0** | **14** | **0** | **1** | **0** | **0** | **0** | **4** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **44** |
| **DOMINGO 10/08/2025** | | | | | | | | | | | | | | | | | | | | | |
| **ENTRADA** | 16 | 7 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| **SALIDA** | 17 | 6 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| **Ambos** | **33** | **13** | **0** | **10** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **42** |
| **TOTAL** | **210** | **89** | **5** | **90** | **1** | **3** | **0** | **0** | **0** | **15** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **312** |

## RESUMEN DEL VOLUMEN DE TRAFICO PROMEDIO DE SALIDA Y ENTRADA

**Carretera:** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo** 1
**Cod Estación** E - 4
**Estación** ESTACIÓN 04

**Ubicacion** CRUCE CON…
**Sentido** AMBOS
**Dia** Del 04/08/2025 AL 10/08/2025

| SENTIDO | MOTO TAXI | AUTO | STATION | CAMIONETAS | | | MICRO | BUS | | CAMION | | | SEMITRAYLER | | | | TRAYLERS | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | WAGON | PICK UP | PANEL | COMBI RURAL | | 2E | >=3E | 2E | 3E | 4E | 2S1/2S2 | 2S3 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | |
| ENTRADA | 15 | 7 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| SALIDA | 15 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| **AMBOS** | **30** | **13** | **1** | **13** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **59** |

## VOLUMEN DE TRÁFICO PROMEDIO DIARIO

**Carretera** "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

**Tramo**
**Cod Estación** E - 4
**Estación** ESTACIÓN 04
**Ubicacion** CRUCE CON...
**Sentido** TOTAL
**Dia** Del 04/08/2025 AL 10/08/2025

| DIA | AUTO | STATION WAGON | CAMIONETAS | | | MICRO | BUS | CAMION | | | SEMITRAYLER | | | TRAYLERS | | | | TOTAL | PORC. % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PICK UP | PANEL | COMBI RURAL | | 2E | 2E | 3E | 4E | 2S1/2S2 | 3S1/3S2 | >=3S3 | 2T2 | 2T3 | 3T2 | >=3T3 | | |
| LUNES | 23 | 2 | 16 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | 14.10 |
| MARTES | 26 | 1 | 18 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 15.38 |
| MIERCOLES | 27 | 1 | 10 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 13.14 |
| JUEVES | 38 | 1 | 15 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 56 | 17.95 |
| VIERNES | 27 | 0 | 7 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 11.86 |
| SABADO | 25 | 0 | 14 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | 14.10 |
| DOMINGO | 30 | 0 | 10 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 13.46 |
| **TOTAL** | **196** | **5** | **90** | **1** | **3** | **0** | **0** | **43** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **312** | 100.00 |
| **IMDS** | **28** | **1** | **13** | **0** | **0** | **0** | **0** | **6** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **48** | |
| **%** | **58.33** | **2.08** | **27.08** | **0.00** | **0.00** | **0.00** | **0.00** | **12.50** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **100.00** | |
| | **VEHICULOS LIGEROS** | | | | | **VEHICULOS PESADOS** | | | | | | | | | | | | | |

**TRAFICO VEHICULAR**
**IMD Sin Corrección**
**(Veh/dia)**

| Tipo de Vehículos | IMDS | Distrib. % |
|---|---|---|
| Autos | 28 | 58.3% |
| Satation Wagon | 1 | 2.1% |
| Camioneta Pick Up | 13 | 27.1% |
| Camioneta Panel | 0 | 0.0% |
| COMBI RURAL | 0 | 0.0% |
| Micro | 0 | 0.0% |
| Omnibus 2E y 3E | 0 | 0.0% |
| Camión 2E | 6 | 12.5% |
| Camión 3E | 0 | 0.0% |
| Camión 4E | 0 | 0.0% |
| Semi trayler | 0 | 0.0% |
| Trayler | 0 | 0.0% |
| **TOTAL IMD** | **48** | **100.0%** |

**CALCULO DEL IMD**
**Resumen de Metodologia**

$$IMD = \frac{VS}{7}$$

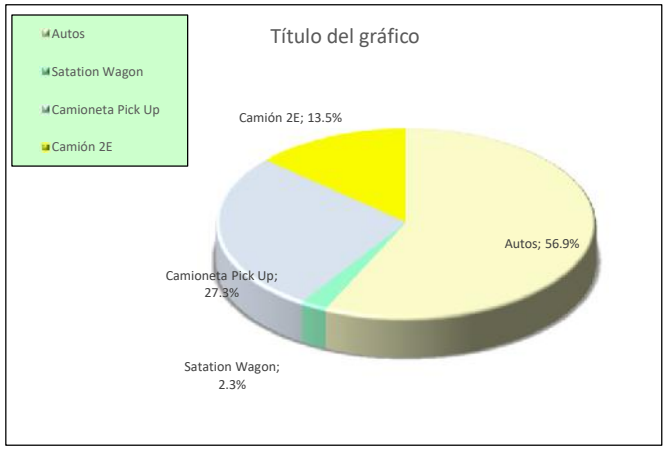
VS = Volumen Promedio Semanal

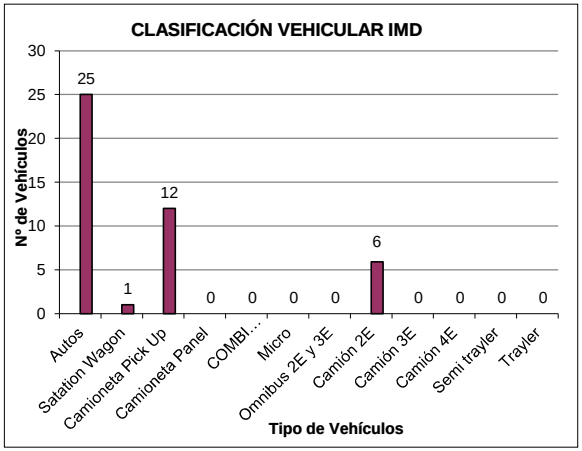
Fc Veh. Ligeros = **0.905430**
Fc Veh. Pesados = **0.984976**

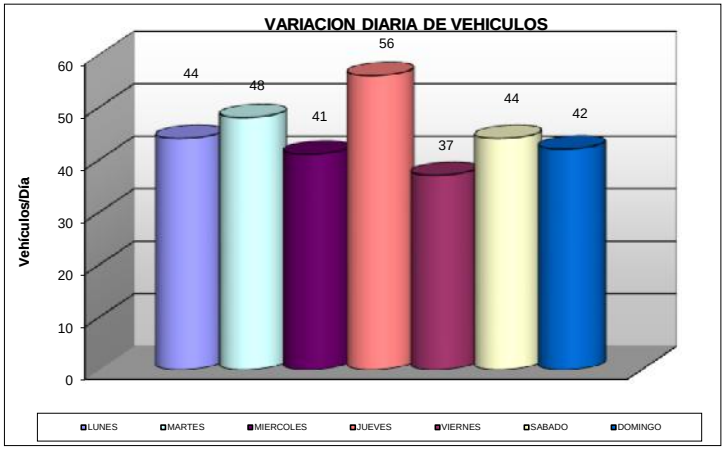
IMD = **44** Vehiculos por dia
16,027 V. x año

**TRAFICO VEHICULAR**
**IMD ANUAL Y CLASIFICACION VEHICULAR**
**(Veh/dia)**

| Tipo de Vehículos | IMD | Distrib. % |
|---|---|---|
| Autos | 25 | 56.9% |
| Satation Wagon | 1 | 2.3% |
| Camioneta Pick Up | 12 | 27.3% |
| Camioneta Panel | 0 | 0.0% |
| COMBI RURAL | 0 | 0.0% |
| Micro | 0 | 0.0% |
| Omnibus 2E y 3E | 0 | 0.0% |
| Camión 2E | 6 | 13.5% |
| Camión 3E | 0 | 0.0% |
| Camión 4E | 0 | 0.0% |
| Semi trayler | 0 | 0.0% |
| Trayler | 0 | 0.0% |
| **TOTAL IMD** | **44** | **100.0%** |



**PROYECTO: "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

**ESTACIÓN 4**

| Auto | Station Wagon | CAMIONETA | | | | BUS | | | CAMION | | | TRAILER | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Pick Up | Panel | COMBI rural | Micros | B2 | B3 | B4 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | TOTAL |
| 25 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |

**ANEXO PROYECCION DEL TRAFICO**

**Proyección de Tráfico**

**PROYECTO: "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

## ESTACIÓN 4

**Tráfico Normal**

| | Años | Auto | Station Wagon | Pick Up | Panel | Combi Rural | Micros | B2 | B3 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | Total IMDA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2025 | 25 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **44** |
| 1 | 2026 | 25 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **45** |
| 2 | 2027 | 25 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **45** |
| 3 | 2028 | 26 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **46** |
| 4 | 2029 | 26 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **46** |
| 5 | 2030 | 26 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **47** |
| 6 | 2031 | 26 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **48** |
| 7 | 2032 | 26 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **48** |
| 8 | 2033 | 26 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **49** |
| 9 | 2034 | 27 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **50** |
| 10 | 2035 | 27 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **50** |

**Tráfico Generado**

| | Años | Auto | Station Wagon | Pick Up | Panel | Combi Rural | Micros | B2 | B3 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | Total IMDA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| 1 | 2026 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| 2 | 2027 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| 3 | 2028 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| 4 | 2029 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| 5 | 2030 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| 6 | 2031 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| 7 | 2032 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| 8 | 2033 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| 9 | 2034 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **7** |
| 10 | 2035 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **8** |

**Tráfico Total**

| | Años | Auto | Station Wagon | Pick Up | Panel | Combi Rural | Micros | B2 | B3 | C2 | C3 | C4 | 2S1 | 2S2 | 2S3 | 3S1 | 3S2 | 3S3 | 2T2 | 2T3 | 3T2 | 3T3 | Total IMDA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 2025 | 25 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **44** |
| 1 | 2026 | 29 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **51** |
| 2 | 2027 | 29 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **52** |
| 3 | 2028 | 29 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **53** |
| 4 | 2029 | 30 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **53** |
| 5 | 2030 | 30 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **54** |
| 6 | 2031 | 30 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **55** |
| 7 | 2032 | 30 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **55** |
| 8 | 2033 | 30 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **56** |
| 9 | 2034 | 31 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **57** |
| 10 | 2035 | 31 | 1 | 15 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **58** |

# ANEXO N°03.- ESTUDIO DE GEODESIA

# INFORME DE GEODESIA

## DETERMINACIÓN DE LOS PUNTOS DE CONTROL GEODÉSICOS




## PROYECTO

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

**OCTUBRE – 2025**

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# 1. MEMORIA DESCRIPTIVA

## 1.1 GENERALIDADES

El trabajo comprende en establecer (02) puntos geodésicos de orden "C" para enlazar a la ERP del Gobierno Regional de Lambayeque en el marco de estudios básicos de topografía para proyecto de tesis "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"

## 1.2 UBICACIÓN POLÍTICA

El punto denominado PG-01 y el PG-02, este punto fue ubicado en zona estratégica para su conservación.

Para ubicar el punto a tomar, se buscó la parte más libre de obstrucciones y reflejos de calaminas o espejos de agua y por supuesto la parte más elevada en el terreno y se encuentra ubicado en:

- ✓ **Departamento :** Lambayeque.
- ✓ **Provincia :** Lambayeque.
- ✓ **Distrito :** Mochumí

# 2. PERIODO Y DURACIÓN DE TRABAJOS

La finalidad de establecer el Punto Geodésico con coordenadas absolutas conocidas y de alta precisión Georreferenciadas. El Control Horizontal/Vertical Básico fue constituido por una Poligonal Geodésica mediante receptores GNSS, teniendo como base la estación de rastreo Permanente LB01 correspondiente a la red geodésica Nacional del Instituto Geográfico Nacional del Perú. Los trabajos de captura de datos Satelitales se efectuaron según la siguiente Tabla N°01, concluyendo el vector con la Antena de base en ERP LB01 del IGN.

El receptor se encuentra dentro de una caja metálica de color blanco humo, ubicado en la Oficina de Servicio Mecánico del Gobierno Regional de Lambayeque.

**Tabla 1**

*DESCRIPCIÓN DE INICIO DEL RASTREO DEL PUNTO GEODÉSICO*

| FECHA | CÓDIGO | HORA DE INICIO | HORA FINAL | DURACIÓN |
|---|---|---|---|---|
| 10/08/2025 | PG - 01 | 11:06:23 | 12:33:40 | 01:27:17 |
| 10/08/2025 | PG - 02 | 13:16:35 | 14:50:44 | 01:34:09 |

## 3. CÁLCULO DE ALTURA VERTICAL

Explicaremos en esta sección como realizamos el cálculo para la altura vertical (plano de referencia mecánico) teniendo en cuenta la lectura de altura inclinada al extremo de la placa de medición de 12 cm para el receptor GNSS utilizado en campo marca KOLIDA K30.

**Figura 1**

*Lectura de la altura inclinada PG-01*




***Nota:*** Elaboración propia

**Figura 2**

*Lectura de la altura inclinada al extremo de la placa*




***Nota:*** Elaboración propia

**Tabla 2**

*VALOR DE LA ALTURA INCLINADA PARA PUNTO GEODÉSICO PG - 01*

| Punto Geodésico | INCLINADA | MARCA |
|---|---|---|
| **PG-01** | 1.771 m | KOLIDA K30 |

$$ALTURA\ VERTICAL = \sqrt{(1.771^2 - 0.12^2)}$$

$$\boldsymbol{ALTURA\ VERTICAL = 1.7669\ m}$$

***Nota:*** Esta altura se utilizará en el software de procesamiento GNSS

**Figura 3**

*Lectura de la altura inclinada PG-02*




***Nota:*** Elaboración propia

**Tabla 3**

*VALOR DE LA ALTURA INCLINADA PARA PUNTO GEODÉSICO PG - 02*

| Punto Geodésico | INCLINADA | MARCA |
|---|---|---|
| **PG-02** | 1.785 m | KOLIDA K30 |

$$ALTURA\ VERTICAL = \sqrt{(1.785^2 - 0.12^2)}$$

$$\boldsymbol{ALTURA\ VERTICAL = 1.7810\ m}$$

***Nota:*** Esta altura se utilizará en el software de procesamiento GNSS.

## 4. METODOLOGÍA

Consiste en la trilateración del equipo base (base de monitoreo o base permanente), satélites como mínimo 04 y el equipo Rover (punto por conocer o establecer). El modo en el cual se trabajó y según norma de IGN (Instituto Geográfico Nacional), es modo estático, en este caso el tiempo estuvo a nuestro favor con un cielo despejado y soleado, ya que días antes estaba bastante nublado.

- ✓ En el PG-01 el tiempo que se considero fue de aproximadamente superior 1h 27min 17s.
- ✓ En el PG-02 el tiempo que se considero fue de aproximadamente superior 1h 34min 09s.

### 4.1 MONUMENTACIÓN

Consiste en monumentar hitos que sirvan de control horizontal y asignarles valores de coordenadas absolutas de un sistema convencional con la finalidad de que se puedan representar fielmente en los planos y tener un único lenguaje geodésico durante el estudio y la construcción, utilizando los equipos GPS diferenciales.

Para esto utilizamos las especificaciones técnicas para posicionamiento, como el hito de concreto de 0.4*0.4*0.6 es sus medidas, con dos varillas de fierro de 0.75 m para que 0.15m sean incrustados en el terreno natural y así como la placa de bronce siguiendo lo especificado en el manual.

### 4.2 CONTROL HORIZONTAL

Se utilizó el método Diferencial o Estático, el cual consiste en colocar un equipo GPS que recibe datos de los satélites (BASE) en un Punto Geodésico con coordenadas conocidas y un equipo GPS (ROVER) que recibe los datos del GPS BASE en el punto del cual se desea conocer sus coordenadas absolutas.

Para este proyecto se utilizaron los puntos bases pertenecientes a la Red Geodésica Nacional del Instituto Geográfico Nacional del Perú (IGN), ubicado en la provincia de Chiclayo, distrito de Chiclayo, departamento de Lambayeque con código LB01.

**Tabla 4**

*CONSIDERACIONES TÉCNICAS PARA EL PUNTO GEODÉSICO PG-01*

| **CONSIDERACIONES PG-01** | |
|---|---|
| CÓDIGO: | PG-01 |
| METODO DE POSICIONAMIENTO: | ESTÁTICO |
| ESTACIÓN BASE: | LB01 |
| INTERVALO DE GRABACIÓN: | 5 SEGUNDOS |
| MÁSCARA DE ELEVACIÓN: | 10 GRADOS |
| DATUM HORIZONTAL: | WGS 84 |
| TIEMPO DE REGISTRO DE DATOS: | 01:27:17 |

***Nota:*** Elaboración propia.

**Tabla 5**

*CONSIDERACIONES TÉCNICAS PARA EL PUNTO GEODÉSICO PG-02*

| **CONSIDERACIONES PG-02** | |
|---|---|
| CÓDIGO: | PG-02 |
| METODO DE POSICIONAMIENTO: | ESTÁTICO |
| ESTACIÓN BASE: | LB01 |
| INTERVALO DE GRABACIÓN: | 5 SEGUNDOS |
| MÁSCARA DE ELEVACIÓN: | 10 GRADOS |
| DATUM HORIZONTAL: | WGS 84 |
| TIEMPO DE REGISTRO DE DATOS: | 01:34:09 |

***Nota:*** Elaboración propia.

## 5. CÁLCULO DE PROCESAMIENTO

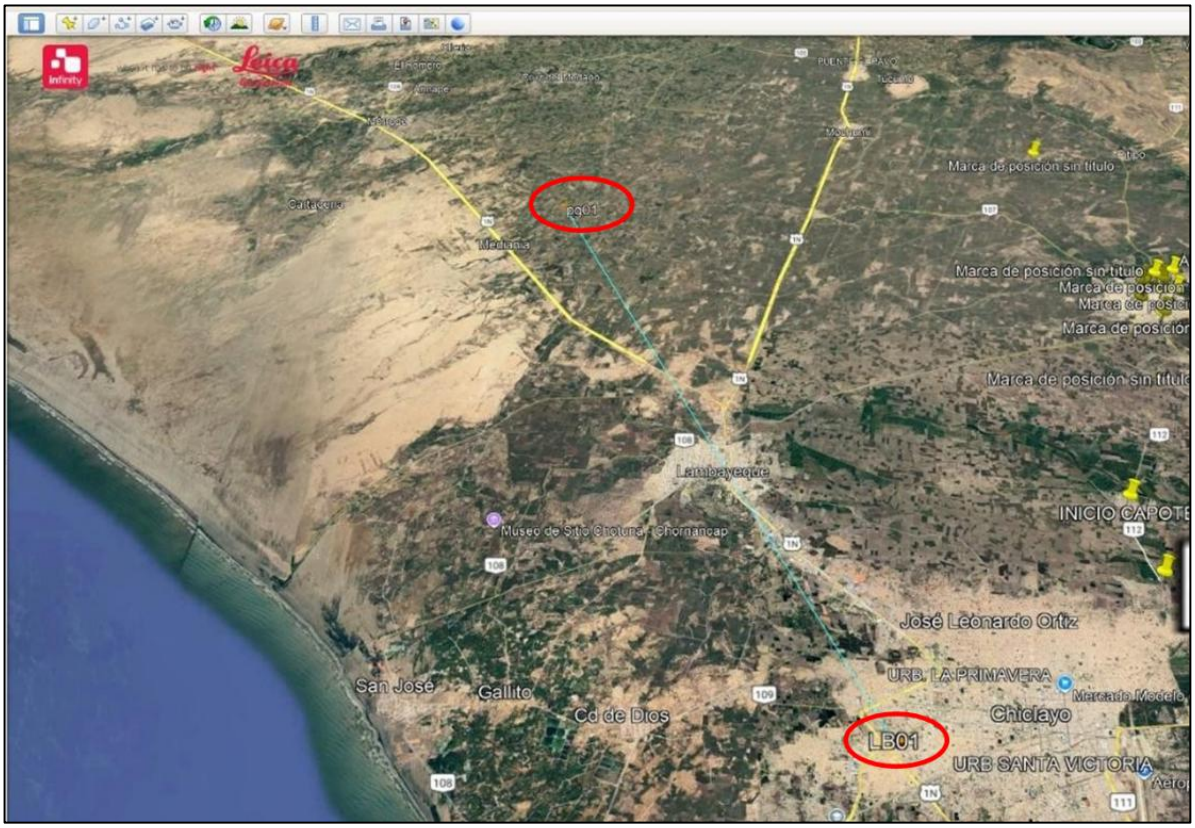
Para el procesamiento de los datos generalmente es necesario utilizar un programa informático específico, según la marca del instrumental, aunque cada vez es más frecuente

mezclar la información registrada con diferentes receptores, y tratarla con diferentes programas. En programa de tratamiento de datos en general consta de los siguientes módulos:

El procesamiento se realizó en el software Leica Geosystems Infinity Versión 3.2.

**Figura 4**

*Procesamiento en software Leica Geosystems Infinity Versión 3.2.*

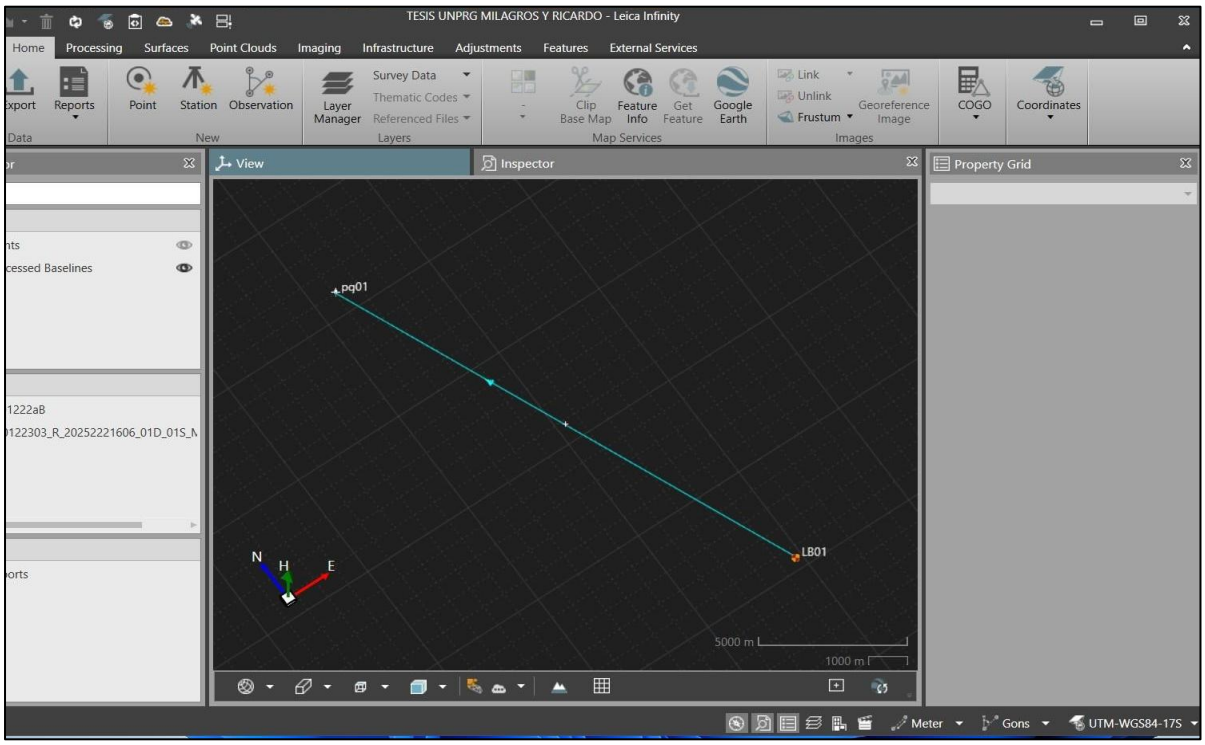



***Nota:*** Elaboración propia.

- ✓ Planificación de observaciones
- ✓ Descarga de datos, incluidos los ficheros universales RINEX.
- ✓ Gestión de proyectos, como unidades de trabajo.
- ✓ Resolución de "Ambigüedades", calculando la línea-base.
- ✓ Visualizar y editar los datos GPS definitivos.
- ✓ Ajuste de los datos redundantes.
- ✓ Edición de las coordenadas definitivas.

**Figura 5**

*ESQUEMA O FIGURA DE LA LÍNEA BASE Y/O AJUSTE DE RED GENERADO POR EL SOFTWARE DE PROCESAMIENTO*




***Nota:*** Elaboración propia.

## 6. PERSONAL Y EQUIPOS EMPLEADOS

### 6.1 PERSONAL

- 01 Ing. Civil Especialista.
- 01 técnico Topográfico.
- 02 auxiliares de campo para monumentación hitos.

### 6.2 EQUIPOS

- 01 receptor GNSS marca KOLIDA modelo K30 de doble frecuencia (Base).
- 01 trípode

## 7. SOFTWARE UTILIZADO

SOFTWARE DE OFICINA LEICA INFINITY VERSION 3.2: LEICA INIFINITY.

El software Leica infinity, está diseñado especialmente para administrar, procesar, analizar y verificar la calidad de todos los datos de los instrumentos de medición topográfica,

tales como las estaciones totales, los niveles digitales, los datos GNSS y los vehículos aéreos no tripulados (UAV).

Dentro de sus funciones básicas podemos encontrar los módulos principales de entrada y salida de datos tales como inicio, características y servicios externos para facilitar la preparación de datos de campo a oficina o de oficina a campo.

## 8. DIARIO DE OBSERVACION LLENADO EN CAMPO

# DIARIO DE OBSERVACIÓN GNSS

**Proyecto:**

**"Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque"**

**Estación**

Nombre completo: PG - 01 Identificado (4 letras): PG - 01

Inscripción en el monumento: PG - 01 Fecha: 10/08/2025

**Coordenadas Aproximadas**

Latitud: 6° 35' 37.65235" Longitud: 79° 57' 01.41150"

| Receptor/ Antena | Tipo | Modelo | Nro. de Serie |
|---|---|---|---|
| Receptor: | KOLIDA | K-30 | AA60E3148704931 |
| Antena: | KOLIDA | K-30 | AA60E3148704931 |

Software del Receptor (Versión): _____

Longitud de Cable Antena – Receptor: _____

**Altura de la Antena**

Sobre el monumento

Punto de referencia:

Placa de extensión: 12 cm

☐ Vertical o ☒ Inclinada

Antes de las Observaciones: 1.771 m

Después de las Observaciones: _____ m

Datos del receptor: K-30

**Observación:**

Nro. de la sesión del mismo día: 01

Intervalo de Medición: 05 seg

Elevación Mínima: 10

Hora de Inicio: 11:06:23 h.

Hora de Término: 12:33:40 h

Operador / Institución: Rober Correa

**Croquis de las medidas de la Antena**



# DIARIO DE OBSERVACIÓN GNSS

**Proyecto:**

**"Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque"**

**Estación**

Nombre completo: PG - 02 Identificado (4 letras): PG - 02

Inscripción en el monumento: PG - 02 Fecha: 10/08/2025

**Coordenadas Aproximadas**

Latitud: 6° 32' 26.13208" Longitud: 79° 52' 59.74253"

| Receptor/ Antena | Tipo | Modelo | Nro. de Serie |
|---|---|---|---|
| Receptor: | KOLIDA | K-30 | AA60E3148704931 |
| Antena: | KOLIDA | K-30 | AA60E3148704931 |

Software del Receptor (Versión): _____

Longitud de Cable Antena – Receptor: _____

**Altura de la Antena**

Sobre el monumento

Punto de referencia:

Placa de extensión: 12 cm

☐ Vertical o ☒ Inclinada

Antes de las Observaciones: 1.785 m

Después de las Observaciones: _____ m

Datos del receptor: K-30

**Observación:**

Nro. de la sesión del mismo día: 01

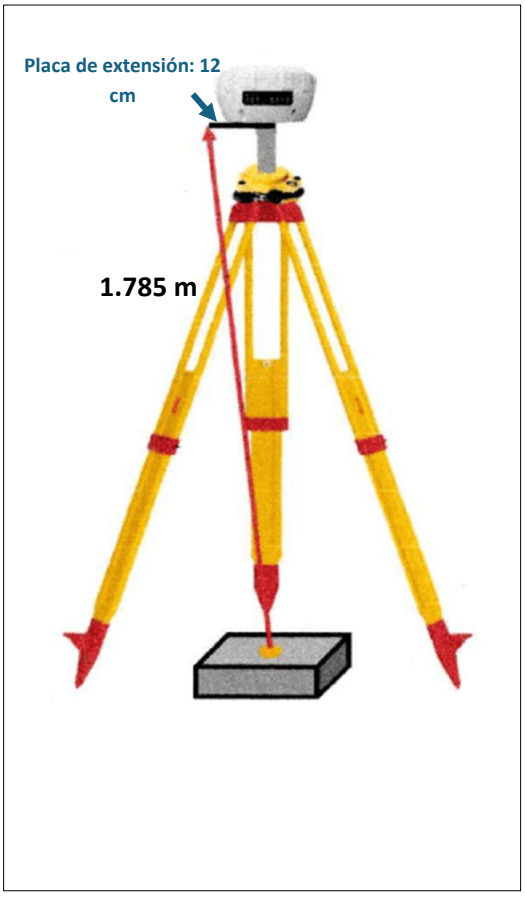
Intervalo de Medición: 05 seg

Elevación Mínima: 10

Hora de Inicio: 13:16:35 h.

Hora de Término: 14:50:44 h

**Croquis de las medidas de la Antena**



## 9. DESCRIPCIÓN MONOGRÁFICA DEL PUNTO GEODÉSICO

# PUNTO GEODÉSICO PG-01 PARA EL "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA TORO – CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO LAMBAYEQUE"

**DESCRIPCIÓN MONOGRÁFICA**

| NOMBRE | CÓDIGO | DISTRITO | ESTABLECIDA POR: |
|---|---|---|---|
| PG-01 | PG-01-AGO | MOCHUMÍ | DARWIN SÁNCHEZ TAMAY |

| UBICACIÓN: | CARACTERÍSTICAS DE LA MARCA: |
|---|---|
| Departamento : Lambayeque<br>Provincia : Lambayeque<br>Distrito : Mochumí | PLACA DE BRONCE DE 70 mm |

| LATITUD (S) WGS-84 | LONGITUD (W) WGS-84 | NORTE (N) WGS-84 | ESTE (E) WGS-84 |
|---|---|---|---|
| S 6° 35' 37.65235" | O 79° 57' 01.41150" | 9271033.5519m | 616033.9901 m |

| ALTURA ELIPSOIDAL | ELEVACIÓN (EGM-08) | ZONA UTM |
|---|---|---|
| 29.0307 m | 20.3122 m | **17 SUR** |

**ORDEN DEL PUNTO GEODÉSICO**
**C**

**CROQUIS TOPOGRÁFICO**




Nota: Triangulo rojo punto PG-01-AGO

**IMAGEN DE RASTREO DE ANTENA**



**IMAGEN DEL DISCO**




**DESCRIPCIÓN**

Hito de concreto, de base cuadrada 0.40cm X 0.40cm profundidad de 0.60m más dos varillas de fierro corrugado según norma, con placa de bronce de 70mm de diámetro.

| DESCRITA POR: | REVISADO POR: | JEFE PROYECTO: | FECHA: |
|---|---|---|---|
| Ing. Darwin Sánchez Tamay.<br>Ing. Darwin Yeffirin J. Sanchez Tamay VERIFICADOR CIP. N° 228633 CIV. 15994 | Ing. Darwin Sánchez Tamay.<br>Ing. Darwin Yeffirin J. Sanchez Tamay VERIFICADOR CIP. N° 228633 CIV. 15994 | Ing. Darwin Sánchez Tamay.<br>Ing. Darwin Yeffirin J. Sanchez Tamay VERIFICADOR CIP. N° 228633 CIV. 15994 | Agosto del 2025 |

# PUNTO GEODÉSICO PG-02 PARA EL "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA TORO – CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO LAMBAYEQUE"

## DESCRIPCIÓN MONOGRÁFICA

| NOMBRE | CÓDIGO | DISTRITO |
|---|---|---|
| PG-02 | PG-02-AGO | MOCHUMÍ |

**UBICACIÓN:**

Departamento : Lambayeque
Provincia : Lambayeque
Distrito : Mochumí

**CARACTERÍSTICAS DE LA MARCA:**

PLACA DE BRONCE DE 70 mm

| LATITUD (S) WGS-84 | LONGITUD (W) WGS-84 | NORTE (N) WGS-84 | ESTE (E) WGS-84 |
|---|---|---|---|
| S 6° 32' 37.65235" | O 79° 52' 59.74253" | 9276899.512 m | 623469.238 m |

| ALTURA ELIPSOIDAL | ELEVACIÓN (EGM-08) | ZONA UTM |
|---|---|---|
| 44.5797 m | 36.128 m | **17 SUR** |

**ORDEN DEL PUNTO GEODÉSICO**
**C**

**CROQUIS TOPOGRÁFICO**




Nota: Triangulo rojo punto PG-02-AGO

**IMAGEN DE RASTREO DE ANTENA**



**IMAGEN DEL DISCO**




**DESCRIPCIÓN**

Hito de concreto, de base cuadrada 0.40cm X 0.40cm profundidad de 0.60m más dos varillas de fierro corrugado según norma, con placa de bronce de 70mm de diámetro.

## 10. CERTIFICADO DE OPERATIVIDAD Y/O CALIBRACIÓNDE LOS EQUIPOS GNSS UTILIZADOS (ACTUALIZADOS Y/O EN VIGENCIA)

Survey Rental & Sales S.A.C.

Venta - Alquiler - Reparación y Mantenimiento de Equipos Topográficos, Geodésicos y de Exploración

when it has to be right — Leica Geosystems

Distribuidor y Servicio Técnico Autorizado de Leica Geosystems

Con patrones de trazabilidad INACAL

INACAL
INSTITUTO NACIONAL DE CALIDAD

# CERTIFICADO DE OPERATIVIDAD

Área de Soporte Técnico



**N.º de certificado: 0275-24**

| | |
|---|---|
| Solicitante: | CONSULTORIA DE PROYECTOS & OBRAS EMPUR E.I.R.L. |
| Equipo: | Receptor GNSS |
| Método: | Estático SI / Tiempo real SI |
| Marca: | KOLIDA |
| Modelo: | K30 |
| N.º de serie: | AA60DC148699911EGA |
| Fecha de certificado: | 11 / 07 / 2024 |
| Fecha de vencimiento: | 11 /07 / 2025 |
| Orden de servicio: | S/N |

Survey Rental & Sales S.A.C. certifica que, habiendo efectuado las pruebas y regulaciones al equipo descrito, se encuentra dentro las especificaciones técnicas de fábrica en lo referente a la metodología estático y/o cinemático en tiempo real

Patrón utilizado:
Receptores GNSS Leica GS16 certificados por el INACAL con código LGD-007-2022 y LGD-006-2022, sobre Punto de Orden "C" LIM012675 certificado por el IGN y Punto de Control Survey respectivamente, con software de post proceso patrocinado por la misma marca.

Se expide el presente certificado a solicitud de la parte interesada, para los fines que estime conveniente.

Responsable de la revisión

JOSE MANUEL QUISPE R.



Sello de garantía

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(01) 224-0858 / 991972985177 / Serv Tec: +51 993526869
ventas@surveyrental.com.pe / serviciotécnico@surveyrental.net
Av. Dos de Mayo 1664, San Isidro
Lima (Perú)

CERTIFICADO DE CALIBRACIÓN BRONZE

surveyrental.com.pe

INACAL
INSTITUTO NACIONAL DE CALIDAD

# CERTIFICADO DE OPERATIVIDAD

Área de Soporte Técnico



## N.º de certificado: 0276-24

| | |
|---|---|
| Solicitante: | CONSULTORIA DE PROYECTOS & OBRAS EMPUR E.I.R.L. |
| Equipo: | Receptor GNSS |
| Método: | Estático SI / Tiempo real SI |
| Marca: | KOLIDA |
| Modelo: | K30 |
| N.º de serie: | AA60E3148704931EGA |
| Fecha de certificado: | 11 / 07 / 2024 |
| Fecha de vencimiento: | 11 / 07 / 2025 |
| Orden de servicio: | S/N |

Survey Rental & Sales S.A.C. certifica que, habiendo efectuado las pruebas y regulaciones al equipo descrito, se encuentra dentro las especificaciones técnicas de fábrica en lo referente a la metodología estático y/o cinemático en tiempo real

Patrón utilizado:
Receptores GNSS Leica GS16 certificados por el INACAL con código LGD-007-2022 y LGD-006-2022, sobre Punto de Orden "C" LIM012675 certificado por el IGN y Punto de Control Survey respectivamente, con software de post proceso patrocinado por la misma marca.

Se expide el presente certificado a solicitud de la parte interesada, para los fines que estime conveniente.

Responsable de la revisión

Survey Rental & Sales S.A.C.
JOSE MANUEL QUISPE R.
ING. ELECTRONICO JEFE DE SERVICIO TECNICO


Sello de garantía

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# 11. ESPECIFICACIONES TÉCNICAS DE LOS EQUIPOS GNSS UTILIZADOS

## SPECIFICATIONS

| GNSS Performance | |
|---|---|
| Channels | 1598 |
| GPS | L1C/A, L2P, L1C, L2C, L5 |
| GLONASS | G1, G2, G3* (* means reserved/ coming soon) |
| BeiDou | B1I, B2I, B3I, B1C, B2a, B2b |
| Galileo | E1, E5b, E5a, E6, E5AltBoc* |
| QZSS | L1C/A, L5, L1C, L2 |
| SBAS | L1, L5 |
| IRNSS | L5* (* means reserved/ coming soon) |
| L-Band* | B2b |

| Positioning Accuracy | |
|---|---|
| Code Differential GNSS Positioning | Horizontal: ±0.25m+1ppm<br>Vertical: ±0.50+1ppm |
| SBAS Positioning | Typically<5m 3DRMS |
| High Precision Static | Horizontal: ±2.5mm+0.1ppm<br>Vertical: ±3.5mm+0.1ppm |
| Fast Static and Static | Horizontal: ±2.5mm+0.5ppm<br>Vertical: ±5mm+0.5ppm |
| Post Processing Kinematic (PPK) | Horizontal: ±2.5mm+1ppm<br>Vertical: ±5mm+1ppm |
| Real Time Kinematic (RTK) | Horizontal: ±8mm+1ppm<br>Vertical: ±15mm+1ppm |
| Network RTK (VRS, FKP, MAC) | Horizontal: ±8mm+0.5ppm<br>Vertical: ±15mm+0.5ppm |
| RTK Initialization | Time 2-8s, reliability >99.99% |
| Positioning Rate | 1Hz-20Hz |
| Inertial Measurement | Tilt Angle: up to 60 degrees<br>Accuracy: down to 2cm<br>(Typically less than 10mm+0.7mm/°tilt) |

| Data Formats | |
|---|---|
| Positioning Data | NMEA 0183, PSIC, PJK, Binary Code |
| Differential Correction | RTCM 2.1, RTCM 2.3, RTCM 3.0, RTCM 3.1, RTCM 3.2,CMR,CMR+ |
| Static | STH, Rinex 2, Rinex 3 |
| Network | Supported VRS, FKP, MAC, Ntrip |

| Operation Mode | |
|---|---|
| Base | Base Internal Radio\ Base Network\ Base External Radio\ Base WIFI |
| Rover | Rover UHF\ Rover Network\ Rover Bluetooth |
| Static | Static\ PPK |

| UHF Radio Chracteristics | |
|---|---|
| TX\RX | Up to 3W Transmitting and Receiving |
| Frequency Range | 410-470MHz |
| Protocols | Farlink\ Trimtalk\ SOUTH(KOLIDA) |
| Channels | 60 channels for Farlink protocol<br>120 channels for other protocols |

| Hardware | |
|---|---|
| Size | 165mm*108mm |
| Weight | 1.35kg |
| Data Storage | 16GB SSD internal storage<br>Support external USB storage (up to 64GB)<br>Automatic cycle storage<br>Changeable record interval<br>Up to 20Hz raw data collection |
| Communication | 1.3 inches colorful touch screen<br>3 Indicator lights, 2 Key Buttons<br>1 Type-C USB port<br>1 5-PIN LEMO external power port<br>1 UHF antenna port<br>1 PPS output port<br>1 SIM card slot<br>Linux OS, WEB UI, WIFI: 802.11 b/g/n standard<br>Bluetooth 4.2 standard and Bluetooth 2.1+EDR<br>NFC, Network: 4G LTE\3G WCDMA\2G GSM<br>Supported USB, FTP, HTTP data communication |
| Voice Guide | Intelligent voice technology provides status indication and operation guide<br>Chinese, English, Korean, Russian, Portuguese, Spanish, Turkish and user define |
| Environment | Operating: -30°C to +70°C<br>Storage: -40°C to +80°C |
| Humidity | 100% condensation |
| Ingress Protection | IP68 waterproof, sealed against sand and dust |
| Shock | Survive 2m pole drop on concrete |

| Power | |
|---|---|
| Battery | 7.2V, 10000mAh unremovable battery |
| Battery Life | Base up to 10 -14 hours<br>Rover up to 20 - 27 hours<br>Static up to 25 - 30 hours<br>(when environment temperature is 25°C) |
| Fast Charge | 3.5 - 4 hours charge to full power |
| USB recharge | Supported |

## FIELD SOFTWARE



K Survey



Field Genius



Surv X

KOLIDA
Professional's Choice

**GUANGDONG KOLIDA INSTRUMENT CO., LTD.**
Add: 7/F, South Geo-information Industrial Park, No.39 Si Cheng Road, Tian He IBD, Guangzhou 510663, China
Tel: +86-20-22139033 Fax: +86-20-22139032
Email: export@kolidainstrument.com market@kolidainstrument. com http://www.kolidainstrument.com

## 12. FORMULARIO DE INFORMACIÓN DE LA ESTACIÓN BASE UTILIZADA

Vo Bo
Firmado digitalmente por: SIERRA FARFAN Ciro FIR 31860016 hard
Motivo: Doy V° B°
Fecha: 27/03/2024 15:56:19-0500

Vo Bo
Firmado digitalmente por: VERAMENDI CELIS Ronnie FIR 46298903 hard
Motivo: Soy el autor del documento
Fecha: 27/03/2024 15:49:57-0500

**INSTITUTO GEOGRÁFICO NACIONAL**
**DIRECCIÓN DE INFORMACIÓN GEOESPACIAL**
**SUB DIRECCIÓN DE PROCESAMIENTO GEODÉSICO**

### DESCRIPCIÓN MONOGRÁFICA DE LA ERP

**0. DATOS GENERALES:**

| | |
|---|---|
| **Preparado por:** | Sub Dirección de Procesamiento Geodésico |
| **Realizado:** | 13 de marzo de 2024 |
| **Versión:** | 3.1.1 |

**1. INFORMACIÓN DE LA ESTACIÓN GNSS:**

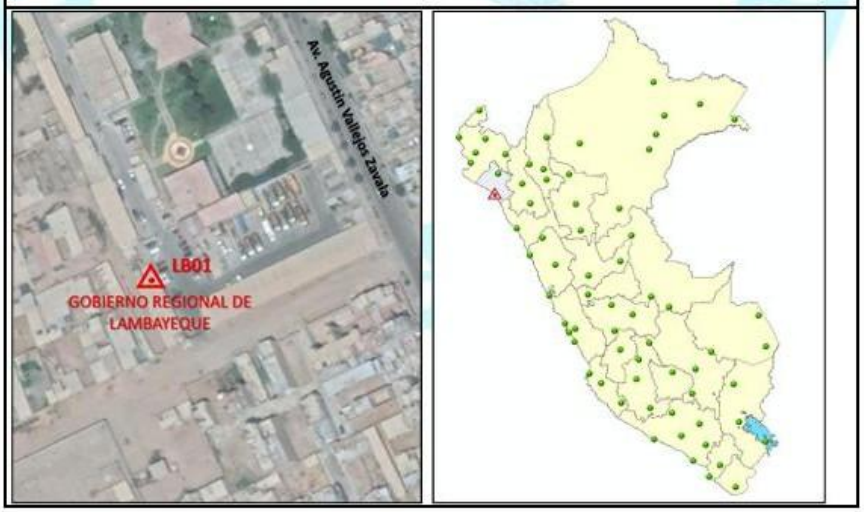


| | |
|---|---|
| **Nombre:** | Chiclayo |
| **Código Nacional:** | LB01 |
| **Código Internacional:** | 42212M001 |
| **Inscripción:** | Placa de bronce |
| **Orden de la estación:** | "0" |
| **Fecha de monumentación:** | 19 de noviembre de 2009 |

**2. INFORMACIÓN SOBRE LA LOCALIZACIÓN:**

| | |
|---|---|
| **Departamento:** | Lambayeque |
| **Provincia:** | Chiclayo |
| **Distrito:** | Chiclayo |
| **Ubicación de la estación:** | Gobierno Regional de Lambayeque |

**CROQUIS DE UBICACIÓN**



Vo Bo
Firmado digitalmente por: SIERRA FARFAN Ciro FIR 31860015 hard
Motivo: Doy V° B°
Fecha: 27/03/2024 15:56:19-0500

Vo Bo
Firmado digitalmente por: VERAMENDI CELIS Ronnie FIR 46298903 hard
Motivo: Soy el autor del documento
Fecha: 27/03/2024 15:49:57-0500

## 3. COORDENADAS DE LA ESTACIÓN:

| | |
|---|---|
| **Sistema de referencia:** GRS80 / WGS84 | **Marco de referencia:** ITRF2000 |

### 3.1. GEODÉSICAS:

| Latitud (S) | Longitud (O) |
|---|---|
| 06°46'44.16340" | 79°52'16.36522" |
| **Altura Elipsoidal (m)** | **Factor de escala combinado** |
| 42.5760 | 0.999792556537 |

### 3.2. CARTESIANAS

| X (m) | Y (m) | Z (m) |
|---|---|---|
| 1113885.5805 | -6235171.0119 | -747868.0699 |

### 3.3. UTM

| Este (m) | Norte (m) |
|---|---|
| 624741.3822 | 9250544.0132 |
| **Zona:** 17 Sur | |

## 4. INFORMACIÓN SOBRE EL EQUIPO GNSS

### 4.1. RECEPTOR:

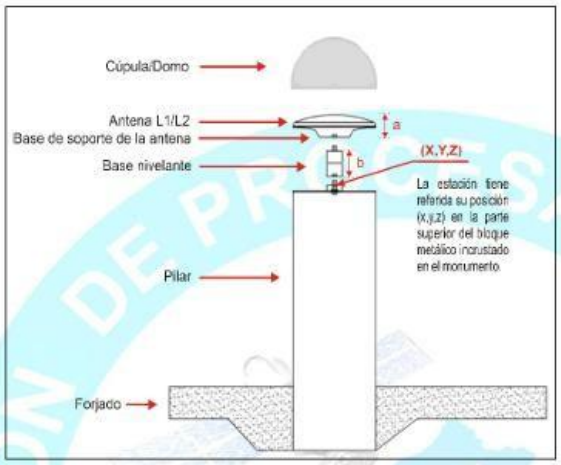
**Modelo:** TRIMBLE ALLOY
**N°de serie:** 6315R40156
**Versión del firmware:** 6.23
**Fecha de instalación:** 11 de marzo de 2024
**Ubicación del receptor:** El receptor se encuentra dentro de una caja metálica de color blanco humo, ubicada en la Oficina de Servicio Mecánico de la mencionada institución.

### 4.2. ANTENA:

**Modelo:** Zephyr Geodetic Model 2 (L1,L2) Trimble
**N° de serie:** 1440925402
**Cubierta protectora:** con domo
**Medición de la antena:** ARP (Base de soporte de la antena)
**Altura de la antena:** 0.0750 m
**Fecha de instalación** 20 de noviembre de 2009
**Ubicación de la antena:** La antena está instalada sobre un monumento de concreto de 2.00 m de alto y 30 cm x 30 cm de ancho de color blanco, ubicada en el techo del primer piso de la mencionada institución.

## 5. ESQUEMA DE LA ESTACIÓN

### 5.1. ESQUEMA DE ALTURA DE LA ANTENA

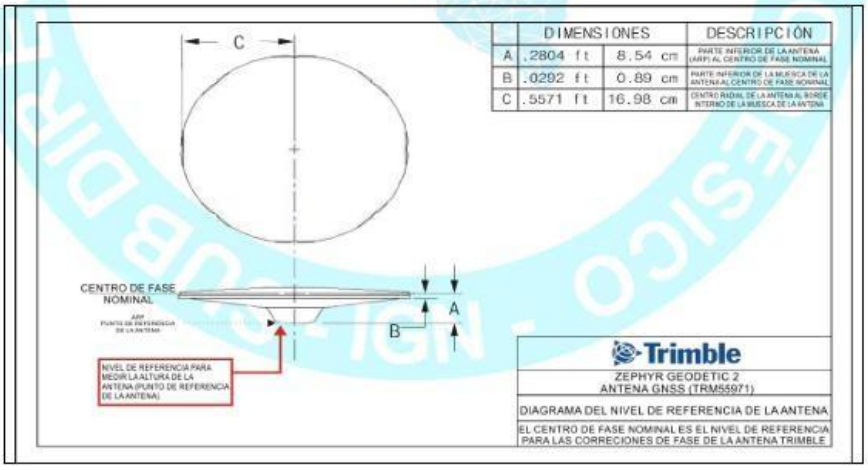






| | |
|---|---|
| **a = 8.54 cm** | Distancia de compensación del centro de fase. (Phase Center Offset) |
| **b = 7.50 cm** | Distancia entre la base de soporte de la antena y el límite superior del bloque metálico incrustado en el monumento. |

### 5.2. DIMENSIONES DE LA ANTENA




| | DIMENSIONES | | DESCRIPCIÓN |
|---|---|---|---|
| A | .2804 ft | 8.54 cm | PARTE INFERIOR DE LA ANTENA (ARP) AL CENTRO DE FASE NOMINAL |
| B | .0292 ft | 0.89 cm | PARTE INFERIOR DE LA MUESCA DE LA ANTENA AL CENTRO DE FASE NOMINAL |
| C | .5571 ft | 16.98 cm | CENTRO RADIAL DE LA ANTENA AL BORDE INTERNO DE LA MUESCA DE LA ANTENA |

Vo Bo
Firmado digitalmente por: SIERRA FARFAN Ciro FIR 31860015 hard
Motivo: Doy V° B°
Fecha: 27/03/2024 15:56:19-0500

Vo Bo
Firmado digitalmente por: VERAMENDI CELIS Ronnie FIR 46298903 hard
Motivo: Soy el autor del documento
Fecha: 27/03/2024 15:49:57-0500

## 13. ANEXO: PANEL FOTOGRÁFICO

### PROCESO DE MONUMENTACIÓN




***Figura 01:*** *Ubicación del punto geodésico.*




***Figura 02:*** *Excavación de terreno y encofrado para hito en el punto.*

### PROFUNDIDAD DEL TERRENO



***Figura 03:*** *Medición con flexómetro de la parte superior de excavación para hito en el punto.*




***Figura 04:*** *Medición de profundidad de excavación para hito en el punto, el cual tiene una medida de 60cm.*



***Figura 05:*** *Medición con flexómetro de la parte superior de excavación para hito en el punto.*



***Figura 06:*** *Medición de profundidad de excavación para hito en el punto.*

## ANCLAJE DEL DISCO DE BRONCE




***Figura 07:*** *Vista frontal de placa del punto geodésico.*




***Figura 08:*** *El anclaje tendrá forma en cruz.*

## ANCLAJE DEL DISCO DE BRONCE



***Figura 09:*** *Vista frontal de placa del punto geodésico.*




***Figura 10:*** *El anclaje tendrá forma en cruz, sus brazos tendrán un diámetro de 10 milímetros y 50 milímetros de longitud.*

## INCRUSTACIÓN DEL DISCO DE BRONCE




***Figura 11:*** *Incrustación de disco en Punto geodésico.*



***Figura 12:*** *Detalle de la instalación del disco de bronce en el punto de control geodésico, de forma circular, con un diámetro de 70 milímetros y un espesor de 05 milímetro.*

## MONUMENTO TERMINADO DEL PUNTO GEODÉSICO




***Figura 13:*** *Colocación del disco en Punto geodésico.*




***Figura 14:*** *Monumento terminado fraguado.*

## MEDICIÓN DE ALTURA DE ANTENA, CARACTERIZANDO LA MARCA EN LA ANTENA O EL ACCESORIO EMPLEADO




***Figura 15:*** *Medición desde placa bronce hacia base del soporte del receptor GNSS en el punto.*

**FOTOGRAFÍA PANORÁMICAS DEL LUGAR QUE PERMITAN VISUALIZAR QUE EL PUNTO ESTE LIBRE DE OBSTRUCCIONES (DESDE DISTINTOS ÁNGULOS)**




***Figura 16:*** *Vista panorámica de receptor GNSS en el Punto Geodésico*

# ANEXO N°04.- ESTUDIO TOPOGRÁFICO

## DATA DE PUNTOS DEL LEVANTAMIENTO TOPOGRÁFICO

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1 | 616033.990 | 9271033.552 | 20.312 | **PG-01** |
| 2 | 616049.384 | 9271003.445 | 21.303 | BORDE |
| 3 | 616048.376 | 9271005.714 | 20.305 | BORDE |
| 4 | 616048.011 | 9271006.249 | 19.166 | CANAL |
| 5 | 616047.402 | 9271007.329 | 19.239 | CANAL |
| 6 | 616046.517 | 9271007.559 | 20.045 | CANAL |
| 7 | 616046.558 | 9271007.841 | 20.103 | BORDE |
| 8 | 616046.097 | 9271008.746 | 20.568 | BORDE |
| 9 | 616045.748 | 9271009.242 | 20.573 | TERRENO |
| 10 | 616045.563 | 9271009.706 | 20.586 | CAMINO |
| 11 | 616044.388 | 9271011.480 | 20.472 | EJE |
| 12 | 616043.017 | 9271013.645 | 20.448 | CAMINO |
| 13 | 616042.590 | 9271014.346 | 20.468 | CAMINO |
| 14 | 616042.395 | 9271014.815 | 20.360 | TERRENO |
| 15 | 616041.231 | 9271016.577 | 20.375 | TERRENO |
| 16 | 616040.165 | 9271018.089 | 20.258 | TERRENO |
| 17 | 616053.197 | 9271024.578 | 20.333 | TERRENO |
| 18 | 616053.726 | 9271023.649 | 20.327 | TERRENO |
| 19 | 616054.284 | 9271022.789 | 20.373 | TERRENO |
| 20 | 616055.337 | 9271021.519 | 20.417 | CAMINO |
| 21 | 616055.966 | 9271020.852 | 20.367 | CAMINO |
| 22 | 616056.634 | 9271019.822 | 20.410 | EJE |
| 23 | 616057.411 | 9271018.786 | 20.467 | CAMINO |
| 24 | 616057.900 | 9271018.266 | 20.525 | CAMINO |
| 25 | 616058.059 | 9271017.914 | 20.521 | BORDE |
| 26 | 616058.244 | 9271017.781 | 20.552 | BORDE |
| 27 | 616058.641 | 9271017.047 | 20.130 | BORDE |
| 28 | 616058.972 | 9271016.580 | 19.337 | CANAL |
| 29 | 616059.854 | 9271015.474 | 19.177 | CANAL |
| 30 | 616060.749 | 9271014.725 | 20.179 | BORDE |
| 31 | 616061.320 | 9271013.667 | 21.081 | BORDE |
| 32 | 616074.356 | 9271021.845 | 21.140 | BORDE |
| 33 | 616072.949 | 9271023.655 | 20.319 | BORDE |
| 34 | 616072.540 | 9271024.197 | 19.231 | CAMINO |
| 35 | 616071.856 | 9271025.270 | 19.385 | CAMINO |
| 36 | 616071.210 | 9271026.337 | 20.302 | BORDE |
| 37 | 616070.659 | 9271026.968 | 20.475 | CAMINO |
| 38 | 616069.667 | 9271028.593 | 20.496 | EJE |
| 39 | 616068.657 | 9271029.994 | 20.509 | CAMINO |
| 40 | 616065.488 | 9271032.339 | 20.127 | TERRENO |
| 41 | 616063.853 | 9271035.378 | 20.041 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 42 | 616075.544 | 9271042.965 | 19.889 | TERRENO |
| 43 | 616076.436 | 9271042.022 | 19.915 | TERRENO |
| 44 | 616077.491 | 9271040.102 | 19.979 | TERRENO |
| 45 | 616078.230 | 9271039.232 | 20.314 | TERRENO |
| 46 | 616078.842 | 9271037.659 | 20.681 | CAMINO |
| 47 | 616078.982 | 9271037.569 | 20.738 | CAMINO |
| 48 | 616080.040 | 9271035.851 | 20.576 | EJE |
| 49 | 616080.835 | 9271034.663 | 20.589 | CAMINO |
| 50 | 616081.262 | 9271034.279 | 20.672 | CAMINO |
| 51 | 616081.564 | 9271033.866 | 20.578 | BORDE |
| 52 | 616081.946 | 9271033.431 | 20.163 | BORDE |
| 53 | 616082.390 | 9271032.778 | 19.531 | BORDE |
| 54 | 616083.017 | 9271031.712 | 19.268 | CANAL |
| 55 | 616083.422 | 9271031.432 | 20.134 | CANAL |
| 56 | 616096.225 | 9271041.118 | 20.118 | CANAL |
| 57 | 616096.175 | 9271041.247 | 19.449 | CANAL |
| 58 | 616095.759 | 9271042.294 | 19.383 | CANAL |
| 59 | 616095.137 | 9271042.869 | 20.254 | CANAL |
| 60 | 616094.502 | 9271043.422 | 20.543 | BORDE |
| 61 | 616094.252 | 9271043.728 | 20.726 | CAMINO |
| 62 | 616093.919 | 9271044.147 | 20.688 | CAMINO |
| 63 | 616093.383 | 9271045.325 | 20.668 | EJE |
| 64 | 616092.258 | 9271046.809 | 20.640 | CAMINO |
| 65 | 616091.768 | 9271047.566 | 20.608 | CAMINO |
| 66 | 616091.706 | 9271047.529 | 20.744 | TERRENO |
| 67 | 616090.814 | 9271048.609 | 19.991 | TERRENO |
| 68 | 616090.196 | 9271049.464 | 20.086 | TERRENO |
| 69 | 616088.651 | 9271051.192 | 19.703 | TERRENO |
| 70 | 616101.274 | 9271061.166 | 19.800 | TERRENO |
| 71 | 616101.911 | 9271060.277 | 19.721 | TERRENO |
| 72 | 616102.476 | 9271059.494 | 19.896 | TERRENO |
| 73 | 616104.072 | 9271057.484 | 20.631 | TERRENO |
| 74 | 616104.801 | 9271056.681 | 20.799 | TERRENO |
| 75 | 616104.960 | 9271056.356 | 20.739 | CAMINO |
| 76 | 616105.087 | 9271056.239 | 20.724 | CAMINO |
| 77 | 616105.796 | 9271055.047 | 20.689 | EJE |
| 78 | 616106.978 | 9271053.449 | 20.740 | CAMINO |
| 79 | 616107.017 | 9271053.365 | 20.749 | CAMINO |
| 80 | 616107.531 | 9271052.524 | 20.423 | CAJA |
| 81 | 616108.392 | 9271051.550 | 19.940 | CAJA |
| 82 | 616109.034 | 9271051.018 | 19.280 | CAJA |
| 83 | 616109.367 | 9271050.473 | 20.176 | CAJA |
| 84 | 616120.835 | 9271058.861 | 20.442 | CAJA |
| 85 | 616120.442 | 9271059.149 | 19.790 | CAJA |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 86 | 616120.147 | 9271060.144 | 19.539 | CAJA |
| 87 | 616119.699 | 9271060.984 | 20.206 | CAJA |
| 88 | 616119.123 | 9271061.718 | 20.606 | CAMINO |
| 89 | 616119.013 | 9271061.918 | 20.652 | CAMINO |
| 90 | 616117.886 | 9271063.371 | 20.541 | EJE |
| 91 | 616117.069 | 9271064.447 | 20.472 | CAMINO |
| 92 | 616116.745 | 9271065.180 | 20.504 | CAMINO |
| 93 | 616116.389 | 9271065.537 | 20.600 | CAMINO |
| 94 | 616116.018 | 9271066.056 | 20.434 | TERRENO |
| 95 | 616115.844 | 9271066.276 | 20.423 | TERRENO |
| 96 | 616114.551 | 9271068.077 | 19.917 | TERRENO |
| 97 | 616113.318 | 9271070.052 | 19.742 | TERRENO |
| 98 | 616124.786 | 9271077.499 | 19.917 | TERRENO |
| 99 | 616125.133 | 9271076.921 | 19.911 | TERRENO |
| 100 | 616125.822 | 9271076.015 | 20.131 | TERRENO |
| 101 | 616127.600 | 9271073.629 | 20.414 | CAMINO |
| 102 | 616127.761 | 9271073.530 | 20.473 | CAMINO |
| 103 | 616129.179 | 9271071.547 | 20.404 | EJE |
| 104 | 616130.608 | 9271069.565 | 20.521 | CAMINO |
| 105 | 616130.930 | 9271069.132 | 20.432 | CANAL |
| 106 | 616131.726 | 9271068.321 | 19.479 | CANAL |
| 107 | 616132.072 | 9271067.224 | 19.443 | CANAL |
| 108 | 616132.026 | 9271067.014 | 20.473 | CANAL |
| 109 | 616146.686 | 9271076.551 | 20.329 | CANAL |
| 110 | 616146.059 | 9271077.114 | 19.400 | CANAL |
| 111 | 616145.455 | 9271078.253 | 19.556 | CANAL |
| 112 | 616144.874 | 9271079.222 | 20.555 | CANAL |
| 113 | 616144.455 | 9271079.674 | 20.556 | CAMINO |
| 114 | 616143.355 | 9271081.325 | 20.539 | EJE |
| 115 | 616142.256 | 9271082.940 | 20.521 | CAMINO |
| 116 | 616142.189 | 9271083.057 | 20.564 | CAMINO |
| 117 | 616141.546 | 9271084.045 | 20.102 | TERRENO |
| 118 | 616140.320 | 9271085.915 | 20.014 | TERRENO |
| 119 | 616139.243 | 9271087.325 | 19.956 | TERRENO |
| 120 | 616138.164 | 9271088.710 | 19.852 | TERRENO |
| 121 | 616150.330 | 9271096.671 | 20.072 | TERRENO |
| 122 | 616151.435 | 9271095.325 | 19.896 | TERRENO |
| 123 | 616153.399 | 9271092.523 | 20.027 | TERRENO |
| 124 | 616153.842 | 9271091.649 | 20.518 | CAMINO |
| 125 | 616155.031 | 9271089.942 | 20.486 | EJE |
| 126 | 616156.443 | 9271087.942 | 20.569 | CAMINO |
| 127 | 616156.643 | 9271087.636 | 20.488 | CAMINO |
| 128 | 616156.795 | 9271087.431 | 20.269 | CANAL |
| 129 | 616157.267 | 9271086.661 | 19.589 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 130 | 616158.034 | 9271085.927 | 19.403 | CANAL |
| 131 | 616158.274 | 9271085.416 | 20.179 | CANAL |
| 132 | 616174.507 | 9271093.067 | 21.735 | TERRENO |
| 133 | 616173.765 | 9271094.300 | 20.917 | BORDE |
| 134 | 616173.025 | 9271095.337 | 20.299 | BORDE |
| 135 | 616172.690 | 9271096.075 | 19.376 | CANAL |
| 136 | 616171.873 | 9271097.224 | 19.668 | CANAL |
| 137 | 616171.427 | 9271098.086 | 20.508 | CANAL |
| 138 | 616171.411 | 9271098.194 | 20.581 | CAMINO |
| 139 | 616171.254 | 9271098.311 | 20.605 | CAMINO |
| 140 | 616170.956 | 9271098.881 | 20.598 | CAMINO |
| 141 | 616170.247 | 9271100.563 | 20.520 | EJE |
| 142 | 616169.496 | 9271101.716 | 20.546 | CAMINO |
| 143 | 616169.272 | 9271102.186 | 20.616 | CAMINO |
| 144 | 616168.627 | 9271102.804 | 19.939 | TERRENO |
| 145 | 616168.206 | 9271103.471 | 20.243 | TERRENO |
| 146 | 616167.294 | 9271105.240 | 19.968 | TERRENO |
| 147 | 616163.428 | 9271111.198 | 19.936 | TERRENO |
| 148 | 616177.477 | 9271120.036 | 19.960 | TERRENO |
| 149 | 616180.232 | 9271116.127 | 19.948 | TERRENO |
| 150 | 616182.207 | 9271113.352 | 19.942 | TERRENO |
| 151 | 616182.409 | 9271113.034 | 20.292 | TERRENO |
| 152 | 616182.729 | 9271112.402 | 20.522 | CAMINO |
| 153 | 616183.182 | 9271112.094 | 20.564 | CAMINO |
| 154 | 616183.866 | 9271110.670 | 20.476 | EJE |
| 155 | 616184.704 | 9271109.784 | 20.453 | CAMINO |
| 156 | 616185.233 | 9271109.276 | 20.544 | CAMINO |
| 157 | 616185.895 | 9271108.434 | 20.370 | CANAL |
| 158 | 616186.307 | 9271108.212 | 19.761 | CANAL |
| 159 | 616199.962 | 9271118.169 | 19.737 | CANAL |
| 160 | 616199.612 | 9271118.744 | 20.620 | CANAL |
| 161 | 616199.399 | 9271118.978 | 20.771 | CAMINO |
| 162 | 616199.197 | 9271119.235 | 20.614 | CAMINO |
| 163 | 616198.990 | 9271119.391 | 20.744 | CAMINO |
| 164 | 616197.782 | 9271120.728 | 20.616 | EJE |
| 165 | 616197.026 | 9271121.548 | 20.603 | CAMINO |
| 166 | 616196.454 | 9271122.027 | 20.656 | CAMINO |
| 167 | 616195.887 | 9271122.618 | 20.106 | TERRENO |
| 168 | 616192.344 | 9271127.673 | 19.887 | TERRENO |
| 169 | 616188.925 | 9271132.606 | 19.941 | TERRENO |
| 170 | 616201.562 | 9271140.824 | 19.938 | TERRENO |
| 171 | 616204.894 | 9271136.076 | 19.924 | TERRENO |
| 172 | 616208.384 | 9271132.430 | 19.931 | TERRENO |
| 173 | 616208.521 | 9271131.966 | 20.306 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 174 | 616209.173 | 9271131.474 | 20.531 | CAMINO |
| 175 | 616209.458 | 9271131.078 | 20.625 | CAMINO |
| 176 | 616210.132 | 9271130.039 | 20.652 | EJE |
| 177 | 616210.779 | 9271129.254 | 20.584 | CAMINO |
| 178 | 616211.289 | 9271128.302 | 20.611 | CAMINO |
| 179 | 616211.676 | 9271127.546 | 20.639 | CAMINO |
| 180 | 616212.110 | 9271127.180 | 20.358 | BORDE |
| 181 | 616212.491 | 9271126.748 | 19.579 | CANAL |
| 182 | 616226.996 | 9271138.147 | 19.871 | CANAL |
| 183 | 616226.459 | 9271138.694 | 20.693 | CANAL |
| 184 | 616226.112 | 9271139.019 | 20.826 | CAMINO |
| 185 | 616225.389 | 9271139.698 | 20.858 | CAMINO |
| 186 | 616224.979 | 9271140.536 | 20.826 | EJE |
| 187 | 616224.130 | 9271141.522 | 20.816 | CAMINO |
| 188 | 616223.738 | 9271142.050 | 20.775 | CAMINO |
| 189 | 616223.133 | 9271143.007 | 20.099 | TERRENO |
| 190 | 616218.751 | 9271147.501 | 19.899 | TERRENO |
| 191 | 616215.797 | 9271150.417 | 20.055 | TERRENO |
| 192 | 616230.499 | 9271160.606 | 20.045 | TERRENO |
| 193 | 616233.660 | 9271155.601 | 20.053 | TERRENO |
| 194 | 616235.811 | 9271152.445 | 20.220 | TERRENO |
| 195 | 616236.244 | 9271152.214 | 21.031 | CAMINO |
| 196 | 616236.520 | 9271151.683 | 20.991 | CAMINO |
| 197 | 616236.874 | 9271151.092 | 20.951 | CAMINO |
| 198 | 616237.474 | 9271150.248 | 20.912 | EJE |
| 199 | 616238.359 | 9271149.229 | 20.842 | CAMINO |
| 200 | 616238.760 | 9271148.608 | 20.872 | CAMINO |
| 201 | 616239.090 | 9271148.018 | 20.803 | BORDE |
| 202 | 616239.491 | 9271147.521 | 20.167 | CANAL |
| 203 | 616239.669 | 9271147.037 | 19.546 | CANAL |
| 204 | 616253.387 | 9271156.476 | 19.741 | CANAL |
| 205 | 616253.016 | 9271157.013 | 20.490 | CANAL |
| 206 | 616252.696 | 9271157.382 | 20.846 | BORDE |
| 207 | 616252.403 | 9271157.688 | 20.923 | CAMINO |
| 208 | 616252.219 | 9271158.236 | 20.974 | CAMINO |
| 209 | 616251.422 | 9271159.341 | 20.986 | EJE |
| 210 | 616250.652 | 9271160.630 | 21.019 | CAMINO |
| 211 | 616250.202 | 9271161.372 | 21.006 | CAMINO |
| 212 | 616250.098 | 9271161.519 | 21.204 | CAMINO |
| 213 | 616249.057 | 9271162.483 | 20.638 | TERRENO |
| 214 | 616246.525 | 9271165.870 | 20.119 | TERRENO |
| 215 | 616244.433 | 9271169.475 | 20.108 | TERRENO |
| 216 | 616258.479 | 9271177.167 | 20.133 | TERRENO |
| 217 | 616260.728 | 9271174.011 | 20.046 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 218 | 616262.167 | 9271171.873 | 20.368 | TERRENO |
| 219 | 616262.839 | 9271170.619 | 20.983 | CAMINO |
| 220 | 616263.133 | 9271170.138 | 20.990 | CAMINO |
| 221 | 616263.293 | 9271169.732 | 20.977 | CAMINO |
| 222 | 616263.803 | 9271169.024 | 20.980 | EJE |
| 223 | 616264.573 | 9271167.840 | 21.016 | CAMINO |
| 224 | 616265.017 | 9271167.065 | 20.977 | CAMINO |
| 225 | 616265.365 | 9271166.658 | 20.952 | BORDE |
| 226 | 616265.500 | 9271166.393 | 20.851 | BORDE |
| 227 | 616266.211 | 9271165.874 | 19.668 | BORDE |
| 228 | 616266.250 | 9271165.799 | 19.446 | CANAL |
| 229 | 616280.128 | 9271176.003 | 19.695 | CANAL |
| 230 | 616280.021 | 9271176.165 | 20.435 | CANAL |
| 231 | 616279.740 | 9271176.412 | 20.835 | BORDE |
| 232 | 616279.596 | 9271176.703 | 20.935 | TERRENO |
| 233 | 616279.266 | 9271177.023 | 20.967 | CAMINO |
| 234 | 616278.572 | 9271178.030 | 21.049 | CAMINO |
| 235 | 616278.318 | 9271178.374 | 21.107 | EJE |
| 236 | 616277.683 | 9271179.214 | 21.076 | CAMINO |
| 237 | 616277.192 | 9271179.853 | 21.059 | CAMINO |
| 238 | 616276.890 | 9271180.077 | 21.076 | CAMINO |
| 239 | 616276.507 | 9271180.651 | 20.652 | TERRENO |
| 240 | 616276.249 | 9271181.066 | 20.393 | TERRENO |
| 241 | 616274.385 | 9271183.817 | 20.080 | TERRENO |
| 242 | 616272.243 | 9271187.340 | 19.990 | TERRENO |
| 243 | 616284.867 | 9271195.830 | 20.221 | TERRENO |
| 244 | 616287.112 | 9271192.363 | 20.109 | TERRENO |
| 245 | 616288.684 | 9271189.766 | 20.137 | TERRENO |
| 246 | 616289.213 | 9271188.978 | 20.820 | TERRENO |
| 247 | 616289.166 | 9271189.015 | 20.803 | TERRENO |
| 248 | 616289.418 | 9271188.781 | 20.993 | CAMINO |
| 249 | 616289.784 | 9271188.301 | 20.994 | CAMINO |
| 250 | 616290.214 | 9271187.561 | 20.962 | EJE |
| 251 | 616290.935 | 9271186.550 | 20.934 | CAMINO |
| 252 | 616291.204 | 9271186.007 | 20.913 | CAMINO |
| 253 | 616291.808 | 9271185.311 | 20.811 | CANAL |
| 254 | 616291.986 | 9271185.005 | 20.463 | CANAL |
| 255 | 616292.572 | 9271184.704 | 19.737 | CANAL |
| 256 | 616305.173 | 9271194.224 | 19.823 | CANAL |
| 257 | 616304.805 | 9271194.908 | 20.873 | CANAL |
| 258 | 616304.759 | 9271195.334 | 20.822 | CAMINO |
| 259 | 616304.406 | 9271195.984 | 20.960 | CAMINO |
| 260 | 616303.808 | 9271196.897 | 20.984 | EJE |
| 261 | 616303.240 | 9271197.775 | 20.982 | CAMINO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 262 | 616302.939 | 9271198.428 | 21.010 | CAMINO |
| 263 | 616302.657 | 9271198.851 | 21.119 | CAMINO |
| 264 | 616301.895 | 9271199.720 | 20.163 | TERRENO |
| 265 | 616299.601 | 9271202.025 | 20.129 | TERRENO |
| 266 | 616297.538 | 9271204.013 | 20.128 | TERRENO |
| 267 | 616311.051 | 9271213.061 | 20.278 | TERRENO |
| 268 | 616313.052 | 9271210.776 | 20.243 | TERRENO |
| 269 | 616314.001 | 9271209.593 | 20.270 | TERRENO |
| 270 | 616314.942 | 9271208.349 | 21.047 | CAMINO |
| 271 | 616314.994 | 9271207.730 | 21.281 | CAMINO |
| 272 | 616315.532 | 9271207.395 | 21.212 | CAMINO |
| 273 | 616316.088 | 9271206.557 | 21.206 | EJE |
| 274 | 616316.744 | 9271205.461 | 21.181 | CAMINO |
| 275 | 616317.122 | 9271204.982 | 21.157 | CAMINO |
| 276 | 616317.650 | 9271204.103 | 20.969 | CANAL |
| 277 | 616318.060 | 9271203.620 | 20.363 | CANAL |
| 278 | 616318.387 | 9271203.364 | 19.753 | CANAL |
| 279 | 616332.202 | 9271213.498 | 19.982 | CANAL |
| 280 | 616332.021 | 9271214.048 | 20.556 | CANAL |
| 281 | 616331.662 | 9271214.091 | 21.012 | CANAL |
| 282 | 616331.385 | 9271214.362 | 21.269 | CAMINO |
| 283 | 616330.993 | 9271214.659 | 21.316 | CAMINO |
| 284 | 616330.613 | 9271215.806 | 21.346 | EJE |
| 285 | 616329.992 | 9271216.880 | 21.356 | CAMINO |
| 286 | 616329.596 | 9271217.345 | 21.329 | CAMINO |
| 287 | 616329.347 | 9271217.756 | 21.434 | CAMINO |
| 288 | 616329.035 | 9271218.314 | 20.780 | TERRENO |
| 289 | 616328.923 | 9271218.460 | 20.383 | TERRENO |
| 290 | 616327.282 | 9271220.876 | 20.230 | TERRENO |
| 291 | 616325.110 | 9271223.560 | 20.275 | TERRENO |
| 292 | 616338.893 | 9271232.053 | 20.216 | TERRENO |
| 293 | 616340.711 | 9271229.533 | 20.244 | TERRENO |
| 294 | 616341.727 | 9271228.027 | 20.306 | TERRENO |
| 295 | 616341.886 | 9271227.694 | 20.666 | TERRENO |
| 296 | 616342.124 | 9271227.510 | 21.090 | TERRENO |
| 297 | 616342.142 | 9271227.182 | 21.254 | CAMINO |
| 298 | 616342.354 | 9271226.742 | 21.369 | CAMINO |
| 299 | 616342.993 | 9271225.977 | 21.309 | EJE |
| 300 | 616343.883 | 9271224.814 | 21.421 | CAMINO |
| 301 | 616344.165 | 9271224.288 | 21.400 | CAMINO |
| 302 | 616344.878 | 9271223.611 | 21.052 | CANAL |
| 303 | 616345.223 | 9271223.352 | 20.530 | CANAL |
| 304 | 616345.427 | 9271223.051 | 19.874 | CANAL |
| 305 | 616354.734 | 9271227.003 | 20.711 | COMPUERTA |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 306 | 616354.655 | 9271227.165 | 20.688 | COMPUERTA |
| 307 | 616354.756 | 9271227.427 | 20.771 | COMPUERTA |
| 308 | 616354.877 | 9271227.587 | 20.788 | COMPUERTA |
| 309 | 616355.356 | 9271227.448 | 20.665 | COMPUERTA |
| 310 | 616355.399 | 9271227.275 | 20.707 | COMPUERTA |
| 311 | 616355.484 | 9271228.019 | 20.635 | COMPUERTA |
| 312 | 616355.107 | 9271227.948 | 20.700 | COMPUERTA |
| 313 | 616355.047 | 9271228.086 | 20.702 | FIERRO |
| 314 | 616353.868 | 9271228.846 | 20.794 | COMPUERTA |
| 315 | 616354.017 | 9271228.912 | 20.788 | COMPUERTA |
| 316 | 616353.829 | 9271228.720 | 20.734 | COMPUERTA |
| 317 | 616354.419 | 9271229.103 | 20.737 | FIERRO |
| 318 | 616354.626 | 9271229.289 | 20.691 | COMPUERTA |
| 319 | 616354.585 | 9271229.969 | 20.615 | COMPUERTA |
| 320 | 616354.037 | 9271228.142 | 19.487 | FONDO |
| 321 | 616354.259 | 9271227.736 | 19.515 | FONDO |
| 322 | 616353.983 | 9271228.360 | 19.587 | FONDO |
| 323 | 616355.111 | 9271228.699 | 19.735 | FONDO |
| 324 | 616354.976 | 9271228.774 | 19.657 | FONDO |
| 325 | 616355.149 | 9271228.505 | 19.739 | FONDO |
| 326 | 616353.664 | 9271229.735 | 20.910 | TERRENO |
| 327 | 616354.062 | 9271229.621 | 20.845 | TERRENO |
| 328 | 616353.339 | 9271230.640 | 21.221 | CAMINO |
| 329 | 616352.997 | 9271231.055 | 21.262 | CAMINO |
| 330 | 616352.703 | 9271231.908 | 21.290 | EJE |
| 331 | 616351.791 | 9271232.764 | 21.262 | CAMINO |
| 332 | 616351.751 | 9271233.166 | 21.354 | CAMINO |
| 333 | 616351.391 | 9271233.778 | 21.148 | CAMINO |
| 334 | 616351.008 | 9271234.641 | 20.581 | TERRENO |
| 335 | 616348.891 | 9271237.198 | 20.247 | TERRENO |
| 336 | 616347.457 | 9271238.990 | 20.176 | TERRENO |
| 337 | 616360.459 | 9271247.560 | 20.172 | TERRENO |
| 338 | 616361.820 | 9271245.838 | 20.191 | TERRENO |
| 339 | 616363.321 | 9271243.713 | 20.294 | TERRENO |
| 340 | 616363.784 | 9271242.842 | 21.080 | CAMINO |
| 341 | 616364.019 | 9271242.694 | 21.337 | CAMINO |
| 342 | 616364.677 | 9271241.232 | 21.310 | EJE |
| 343 | 616365.294 | 9271240.370 | 21.300 | CAMINO |
| 344 | 616365.750 | 9271239.750 | 21.256 | CAMINO |
| 345 | 616366.391 | 9271239.053 | 21.024 | BORDE |
| 346 | 616366.689 | 9271238.719 | 19.811 | CANAL |
| 347 | 616379.536 | 9271247.943 | 19.888 | CANAL |
| 348 | 616379.345 | 9271248.298 | 20.983 | CANAL |
| 349 | 616378.758 | 9271248.488 | 21.093 | CAMINO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 350 | 616378.927 | 9271248.583 | 21.095 | CAMINO |
| 351 | 616378.650 | 9271248.908 | 21.224 | CAMINO |
| 352 | 616378.283 | 9271249.602 | 21.193 | CAMINO |
| 353 | 616377.462 | 9271250.500 | 21.225 | EJE |
| 354 | 616376.654 | 9271251.618 | 21.198 | CAMINO |
| 355 | 616376.311 | 9271251.941 | 21.252 | CAMINO |
| 356 | 616375.654 | 9271252.465 | 20.727 | TERRENO |
| 357 | 616375.355 | 9271252.770 | 20.736 | TERRENO |
| 358 | 616373.000 | 9271255.234 | 20.278 | TERRENO |
| 359 | 616371.253 | 9271257.553 | 20.242 | TERRENO |
| 360 | 616384.920 | 9271268.352 | 20.207 | TERRENO |
| 361 | 616386.202 | 9271266.607 | 20.337 | TERRENO |
| 362 | 616388.563 | 9271263.551 | 20.286 | TERRENO |
| 363 | 616388.907 | 9271262.301 | 21.212 | CAMINO |
| 364 | 616389.502 | 9271261.789 | 21.213 | CAMINO |
| 365 | 616389.686 | 9271261.332 | 21.152 | CAMINO |
| 366 | 616390.356 | 9271260.300 | 21.140 | EJE |
| 367 | 616391.214 | 9271259.198 | 21.163 | CAMINO |
| 368 | 616391.379 | 9271258.844 | 21.100 | CAMINO |
| 369 | 616391.820 | 9271258.227 | 21.172 | CAMINO |
| 370 | 616392.735 | 9271257.353 | 20.406 | CANAL |
| 371 | 616392.781 | 9271257.201 | 19.640 | CANAL |
| 372 | 616409.817 | 9271264.710 | 20.172 | TERRENO |
| 373 | 616409.761 | 9271264.986 | 20.650 | BORDE |
| 374 | 616409.226 | 9271265.609 | 20.604 | BORDE |
| 375 | 616408.802 | 9271266.015 | 20.430 | BORDE |
| 376 | 616408.520 | 9271266.535 | 19.935 | CANAL |
| 377 | 616407.712 | 9271267.415 | 19.684 | CANAL |
| 378 | 616407.700 | 9271267.678 | 20.393 | CANAL |
| 379 | 616406.924 | 9271268.430 | 21.001 | BORDE |
| 380 | 616406.661 | 9271268.673 | 21.165 | BORDE |
| 381 | 616406.480 | 9271269.087 | 21.151 | CAMINO |
| 382 | 616406.382 | 9271269.086 | 21.186 | CAMINO |
| 383 | 616405.300 | 9271270.798 | 21.118 | EJE |
| 384 | 616404.681 | 9271271.803 | 21.199 | CAMINO |
| 385 | 616404.568 | 9271272.085 | 21.281 | CAMINO |
| 386 | 616403.982 | 9271272.947 | 21.198 | TERRENO |
| 387 | 616403.582 | 9271273.417 | 20.696 | TERRENO |
| 388 | 616403.049 | 9271274.605 | 20.349 | TERRENO |
| 389 | 616401.119 | 9271276.583 | 20.385 | TERRENO |
| 390 | 616400.228 | 9271277.683 | 20.361 | TERRENO |
| 391 | 616413.922 | 9271287.752 | 20.354 | TERRENO |
| 392 | 616414.963 | 9271286.075 | 20.458 | TERRENO |
| 393 | 616416.522 | 9271283.798 | 20.437 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 394 | 616417.951 | 9271282.398 | 21.377 | CAMINO |
| 395 | 616418.299 | 9271282.321 | 21.279 | CAMINO |
| 396 | 616418.629 | 9271281.762 | 21.226 | CAMINO |
| 397 | 616419.468 | 9271280.653 | 21.258 | EJE |
| 398 | 616420.085 | 9271279.652 | 21.237 | CAMINO |
| 399 | 616420.193 | 9271279.282 | 21.206 | CANAL |
| 400 | 616421.252 | 9271277.678 | 20.380 | CANAL |
| 401 | 616421.538 | 9271277.582 | 19.964 | CANAL |
| 402 | 616421.963 | 9271276.641 | 19.854 | CANAL |
| 403 | 616422.378 | 9271276.045 | 20.409 | BORDE |
| 404 | 616422.812 | 9271275.609 | 20.737 | BORDE |
| 405 | 616423.146 | 9271275.187 | 20.866 | BORDE |
| 406 | 616423.805 | 9271274.668 | 20.364 | TERRENO |
| 407 | 616439.455 | 9271286.146 | 20.420 | TERRENO |
| 408 | 616439.326 | 9271286.380 | 20.799 | BORDE |
| 409 | 616438.818 | 9271287.180 | 20.705 | BORDE |
| 410 | 616438.665 | 9271287.810 | 20.267 | CANAL |
| 411 | 616438.080 | 9271288.285 | 19.800 | CANAL |
| 412 | 616437.946 | 9271288.491 | 19.944 | CANAL |
| 413 | 616437.336 | 9271289.493 | 20.394 | CANAL |
| 414 | 616436.789 | 9271290.182 | 21.247 | CANAL |
| 415 | 616436.605 | 9271290.396 | 21.424 | BORDE |
| 416 | 616436.445 | 9271290.569 | 21.384 | CAMINO |
| 417 | 616436.331 | 9271290.760 | 21.463 | CAMINO |
| 418 | 616435.431 | 9271292.007 | 21.373 | EJE |
| 419 | 616434.700 | 9271292.564 | 21.347 | CAMINO |
| 420 | 616434.609 | 9271292.622 | 21.382 | CAMINO |
| 421 | 616434.073 | 9271293.396 | 21.336 | CAMINO |
| 422 | 616433.870 | 9271293.577 | 21.401 | CAMINO |
| 423 | 616433.686 | 9271294.077 | 21.016 | TERRENO |
| 424 | 616433.504 | 9271294.397 | 20.350 | TERRENO |
| 425 | 616453.169 | 9271296.295 | 20.426 | TERRENO |
| 426 | 616453.088 | 9271296.486 | 20.725 | TERRENO |
| 427 | 616452.869 | 9271297.310 | 20.896 | BORDE |
| 428 | 616452.324 | 9271297.434 | 20.847 | CONCRETO |
| 429 | 616452.913 | 9271297.619 | 20.904 | CONCRETO |
| 430 | 616452.904 | 9271297.940 | 20.861 | CONCRETO |
| 431 | 616452.613 | 9271298.221 | 20.839 | CONCRETO |
| 432 | 616451.278 | 9271299.084 | 20.897 | CONCRETO |
| 433 | 616451.168 | 9271299.196 | 20.936 | CONCRETO |
| 434 | 616451.367 | 9271299.445 | 20.894 | CONCRETO |
| 435 | 616451.067 | 9271299.416 | 20.888 | CONCRETO |
| 436 | 616451.361 | 9271299.297 | 20.911 | COMPUERTA |
| 437 | 616452.344 | 9271298.107 | 20.914 | COMPUERTA |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 438 | 616452.216 | 9271299.042 | 19.896 | FONDO |
| 439 | 616452.582 | 9271298.716 | 20.107 | FONDO |
| 440 | 616452.053 | 9271299.160 | 19.906 | FONDO |
| 441 | 616450.969 | 9271300.162 | 20.928 | TERRENO |
| 442 | 616450.469 | 9271300.823 | 21.010 | CAMINO |
| 443 | 616450.440 | 9271300.931 | 21.068 | CAMINO |
| 444 | 616449.542 | 9271302.101 | 21.026 | EJE |
| 445 | 616448.594 | 9271303.176 | 21.113 | CAMINO |
| 446 | 616448.557 | 9271303.234 | 21.112 | CAMINO |
| 447 | 616448.061 | 9271304.082 | 21.119 | CAMINO |
| 448 | 616447.533 | 9271304.698 | 20.330 | TERRENO |
| 449 | 616444.986 | 9271306.895 | 20.160 | TERRENO |
| 450 | 616443.126 | 9271307.776 | 20.331 | TERRENO |
| 451 | 616454.160 | 9271308.867 | 20.604 | BORDE |
| 452 | 616451.020 | 9271308.236 | 20.580 | BORDE |
| 453 | 616453.475 | 9271307.464 | 20.717 | ALCANTARILLA |
| 454 | 616452.762 | 9271307.277 | 20.681 | ALCANTARILLA |
| 455 | 616453.937 | 9271307.467 | 20.690 | ALCANTARILLA |
| 456 | 616454.036 | 9271308.257 | 20.742 | ALCANTARILLA |
| 457 | 616456.653 | 9271306.563 | 20.820 | ALCANTARILLA |
| 458 | 616455.996 | 9271306.234 | 20.840 | ALCANTARILLA |
| 459 | 616455.819 | 9271306.095 | 20.874 | ALCANTARILLA |
| 460 | 616455.569 | 9271304.963 | 20.737 | ALCANTARILLA |
| 461 | 616450.231 | 9271308.813 | 20.550 | BORDE |
| 462 | 616447.550 | 9271310.615 | 20.675 | BORDE |
| 463 | 616443.342 | 9271313.010 | 20.632 | BORDE |
| 464 | 616441.027 | 9271314.164 | 20.612 | BORDE |
| 465 | 616441.537 | 9271316.757 | 20.843 | BORDE |
| 466 | 616443.499 | 9271315.655 | 20.862 | BORDE |
| 467 | 616444.585 | 9271315.090 | 20.772 | BORDE |
| 468 | 616444.683 | 9271314.459 | 20.392 | CANAL |
| 469 | 616444.407 | 9271313.383 | 20.299 | CANAL |
| 470 | 616448.173 | 9271311.312 | 20.209 | CANAL |
| 471 | 616448.845 | 9271311.638 | 20.307 | CANAL |
| 472 | 616449.743 | 9271312.476 | 20.874 | BORDE |
| 473 | 616451.631 | 9271311.160 | 20.800 | BORDE |
| 474 | 616453.045 | 9271309.842 | 20.616 | BORDE |
| 475 | 616452.825 | 9271308.936 | 20.066 | CAJA |
| 476 | 616452.342 | 9271308.550 | 20.073 | CAJA |
| 477 | 616452.936 | 9271308.426 | 20.075 | CAJA |
| 478 | 616453.464 | 9271308.286 | 20.168 | CAJA |
| 479 | 616454.068 | 9271311.244 | 21.005 | CAMINO |
| 480 | 616450.699 | 9271313.206 | 21.001 | CAMINO |
| 481 | 616447.339 | 9271314.998 | 21.024 | CAMINO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 482 | 616444.504 | 9271316.419 | 21.070 | CAMINO |
| 483 | 616441.330 | 9271318.037 | 21.009 | CAMINO |
| 484 | 616442.750 | 9271321.534 | 20.912 | CAMINO |
| 485 | 616443.727 | 9271321.732 | 20.958 | CAMINO |
| 486 | 616445.963 | 9271320.880 | 21.041 | CAMINO |
| 487 | 616450.188 | 9271319.281 | 21.096 | CAMINO |
| 488 | 616454.220 | 9271317.971 | 20.940 | CAMINO |
| 489 | 616454.694 | 9271317.656 | 21.022 | CAMINO |
| 490 | 616455.702 | 9271317.298 | 20.903 | CAMINO |
| 491 | 616458.558 | 9271317.170 | 20.970 | CAMINO |
| 492 | 616460.830 | 9271317.287 | 20.978 | CAMINO |
| 493 | 616462.597 | 9271317.597 | 20.858 | CAMINO |
| 494 | 616464.388 | 9271317.785 | 21.094 | CAMINO |
| 495 | 616457.401 | 9271305.162 | 20.170 | FONDO |
| 496 | 616458.442 | 9271304.583 | 20.118 | CANAL |
| 497 | 616459.499 | 9271303.461 | 19.964 | CANAL |
| 498 | 616460.653 | 9271303.266 | 20.854 | BORDE |
| 499 | 616459.774 | 9271305.168 | 19.885 | CANAL |
| 500 | 616460.764 | 9271304.360 | 20.115 | CANAL |
| 501 | 616462.410 | 9271307.143 | 19.969 | FONDO |
| 502 | 616463.046 | 9271306.272 | 20.008 | FONDO |
| 503 | 616463.690 | 9271306.077 | 21.537 | ALCANTARILLA |
| 504 | 616462.782 | 9271307.527 | 21.495 | ALCANTARILLA |
| 505 | 616465.764 | 9271309.835 | 21.432 | ALCANTARILLA |
| 506 | 616467.118 | 9271308.592 | 21.536 | ALCANTARILLA |
| 507 | 616466.435 | 9271309.730 | 20.042 | FONDO |
| 508 | 616466.761 | 9271309.400 | 20.280 | FONDO |
| 509 | 616462.765 | 9271307.260 | 21.550 | **BM - 01** |
| 510 | 616461.979 | 9271308.335 | 21.119 | BORDE |
| 511 | 616461.367 | 9271308.091 | 21.079 | BORDE |
| 512 | 616460.404 | 9271307.929 | 21.043 | BORDE |
| 513 | 616459.412 | 9271307.724 | 21.163 | BORDE |
| 514 | 616458.288 | 9271307.194 | 20.853 | BORDE |
| 515 | 616457.524 | 9271306.966 | 21.009 | BORDE |
| 516 | 616460.031 | 9271309.133 | 21.153 | CAMIINO |
| 517 | 616459.754 | 9271309.441 | 21.159 | CAMIINO |
| 518 | 616458.205 | 9271310.505 | 21.156 | EJE |
| 519 | 616457.386 | 9271311.076 | 21.150 | CAMIINO |
| 520 | 616456.352 | 9271311.523 | 21.182 | CAMIINO |
| 521 | 616465.517 | 9271310.791 | 21.260 | CAMIINO |
| 522 | 616465.178 | 9271311.362 | 21.212 | CAMIINO |
| 523 | 616464.497 | 9271312.189 | 21.194 | CAMIINO |
| 524 | 616463.739 | 9271313.323 | 21.230 | EJE |
| 525 | 616463.121 | 9271314.456 | 21.214 | CAMIINO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 526 | 616462.788 | 9271315.197 | 21.215 | CAMIINO |
| 527 | 616461.813 | 9271316.124 | 21.131 | CAMIINO |
| 528 | 616460.893 | 9271317.327 | 21.030 | BORDE |
| 529 | 616462.045 | 9271317.460 | 20.995 | BORDE |
| 530 | 616463.938 | 9271317.806 | 21.015 | BORDE |
| 531 | 616466.700 | 9271319.301 | 20.865 | BORDE |
| 532 | 616469.262 | 9271320.614 | 20.962 | BORDE |
| 533 | 616471.056 | 9271316.457 | 21.040 | BORDE |
| 534 | 616470.523 | 9271314.544 | 21.032 | BORDE |
| 535 | 616468.777 | 9271313.633 | 21.072 | BORDE |
| 536 | 616467.274 | 9271312.723 | 21.313 | BORDE |
| 537 | 616465.761 | 9271310.600 | 21.251 | BORDE |
| 538 | 616466.955 | 9271308.298 | 21.205 | BORDE |
| 539 | 616468.173 | 9271307.238 | 21.167 | BORDE |
| 540 | 616468.954 | 9271305.692 | 21.099 | BORDE |
| 541 | 616470.227 | 9271303.503 | 21.003 | BORDE |
| 542 | 616471.184 | 9271301.138 | 21.077 | BORDE |
| 543 | 616472.193 | 9271297.435 | 20.991 | BORDE |
| 544 | 616470.181 | 9271296.135 | 21.008 | BORDE |
| 545 | 616468.178 | 9271297.422 | 20.955 | BORDE |
| 546 | 616467.952 | 9271298.368 | 21.088 | BORDE |
| 547 | 616467.206 | 9271300.141 | 21.178 | BORDE |
| 548 | 616466.363 | 9271302.210 | 21.165 | BORDE |
| 549 | 616465.294 | 9271304.228 | 21.077 | BORDE |
| 550 | 616464.819 | 9271304.905 | 21.274 | BORDE |
| 551 | 616478.198 | 9271315.614 | 21.172 | CANAL |
| 552 | 616478.048 | 9271316.106 | 20.623 | CANAL |
| 553 | 616477.812 | 9271316.344 | 20.019 | CAJA |
| 554 | 616477.239 | 9271317.319 | 20.085 | CAJA |
| 555 | 616476.874 | 9271318.076 | 20.780 | CANAL |
| 556 | 616476.478 | 9271318.723 | 21.061 | BORDE |
| 557 | 616476.254 | 9271319.410 | 21.173 | CAMINO |
| 558 | 616476.054 | 9271319.819 | 21.178 | CAMINO |
| 559 | 616475.384 | 9271321.262 | 21.119 | EJE |
| 560 | 616474.563 | 9271323.002 | 21.049 | CAMINO |
| 561 | 616474.118 | 9271324.292 | 20.826 | CAMINO |
| 562 | 616472.985 | 9271327.340 | 20.710 | TERRENO |
| 563 | 616472.271 | 9271329.025 | 20.681 | TERRENO |
| 564 | 616485.845 | 9271338.586 | 20.587 | TERRENO |
| 565 | 616486.687 | 9271337.005 | 20.555 | TERRENO |
| 566 | 616487.163 | 9271335.849 | 20.793 | TERRENO |
| 567 | 616488.086 | 9271334.498 | 20.868 | TERRENO |
| 568 | 616489.016 | 9271333.656 | 21.032 | CAMINO |
| 569 | 616489.357 | 9271333.422 | 21.096 | CAMINO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 570 | 616490.281 | 9271332.137 | 21.153 | EJE |
| 571 | 616490.833 | 9271331.118 | 21.109 | CAMINO |
| 572 | 616491.312 | 9271330.239 | 21.105 | CAMINO |
| 573 | 616492.342 | 9271329.230 | 20.529 | CANAL |
| 574 | 616492.563 | 9271328.787 | 19.984 | CAJA |
| 575 | 616507.659 | 9271339.883 | 20.025 | CAJA |
| 576 | 616507.993 | 9271339.548 | 19.793 | CAJA |
| 577 | 616507.334 | 9271340.521 | 20.988 | CANAL |
| 578 | 616506.932 | 9271341.075 | 21.159 | CAMINO |
| 579 | 616506.658 | 9271341.648 | 21.167 | CAMINO |
| 580 | 616505.649 | 9271342.911 | 21.140 | EJE |
| 581 | 616504.927 | 9271343.846 | 21.109 | CAMINO |
| 582 | 616504.604 | 9271344.597 | 21.065 | CAMINO |
| 583 | 616503.668 | 9271345.512 | 21.087 | TERRENO |
| 584 | 616503.496 | 9271346.476 | 20.709 | TERRENO |
| 585 | 616501.857 | 9271348.548 | 20.586 | TERRENO |
| 586 | 616501.009 | 9271349.808 | 20.621 | TERRENO |
| 587 | 616514.849 | 9271359.859 | 20.385 | TERRENO |
| 588 | 616515.831 | 9271358.531 | 20.545 | TERRENO |
| 589 | 616517.373 | 9271356.517 | 20.787 | TERRENO |
| 590 | 616517.624 | 9271356.160 | 21.195 | CAMINO |
| 591 | 616518.219 | 9271355.265 | 21.146 | CAMINO |
| 592 | 616518.182 | 9271355.287 | 21.262 | CAMINO |
| 593 | 616519.250 | 9271353.608 | 21.072 | CAMINO |
| 594 | 616519.106 | 9271353.497 | 21.074 | EJE |
| 595 | 616520.587 | 9271351.796 | 21.134 | CAMINO |
| 596 | 616520.580 | 9271351.741 | 21.146 | CAMINO |
| 597 | 616521.420 | 9271350.761 | 21.100 | CANAL |
| 598 | 616522.068 | 9271349.909 | 20.030 | CAJA |
| 599 | 616522.231 | 9271349.650 | 19.925 | CAJA |
| 600 | 616542.486 | 9271362.699 | 20.781 | BORDE |
| 601 | 616542.321 | 9271363.345 | 20.069 | CAJA |
| 602 | 616541.829 | 9271363.988 | 20.026 | CAJA |
| 603 | 616541.354 | 9271364.629 | 20.523 | CANAL |
| 604 | 616540.709 | 9271365.215 | 21.148 | CAMINO |
| 605 | 616540.416 | 9271365.830 | 21.154 | CAMINO |
| 606 | 616539.679 | 9271366.739 | 21.125 | CAMINO |
| 607 | 616539.056 | 9271367.440 | 21.122 | EJE |
| 608 | 616538.339 | 9271368.797 | 21.140 | CAMINO |
| 609 | 616537.819 | 9271369.391 | 21.105 | CAMINO |
| 610 | 616537.057 | 9271370.557 | 21.191 | TERRENO |
| 611 | 616536.839 | 9271370.851 | 20.796 | TERRENO |
| 612 | 616535.958 | 9271372.126 | 20.581 | TERRENO |
| 613 | 616534.786 | 9271373.453 | 20.333 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 614 | 616548.462 | 9271384.897 | 20.574 | TERRENO |
| 615 | 616549.481 | 9271383.368 | 20.680 | TERRENO |
| 616 | 616551.028 | 9271381.445 | 20.993 | TERRENO |
| 617 | 616551.890 | 9271379.988 | 21.132 | CAMINO |
| 618 | 616552.572 | 9271378.976 | 21.253 | CAMINO |
| 619 | 616553.485 | 9271377.297 | 21.237 | EJE |
| 620 | 616554.319 | 9271375.901 | 21.250 | CAMINO |
| 621 | 616554.859 | 9271374.854 | 21.186 | CAMINO |
| 622 | 616555.207 | 9271374.361 | 19.916 | CAJA |
| 623 | 616569.414 | 9271384.453 | 20.170 | CAJA |
| 624 | 616568.974 | 9271385.082 | 21.257 | CANAL |
| 625 | 616568.426 | 9271385.602 | 21.336 | CAMINO |
| 626 | 616568.021 | 9271385.727 | 21.378 | CAMINO |
| 627 | 616566.819 | 9271387.191 | 21.338 | EJE |
| 628 | 616566.066 | 9271388.188 | 21.334 | CAMINO |
| 629 | 616565.260 | 9271389.330 | 21.279 | CAMINO |
| 630 | 616564.242 | 9271390.605 | 20.986 | TERRENO |
| 631 | 616562.643 | 9271392.748 | 20.634 | TERRENO |
| 632 | 616561.987 | 9271394.178 | 20.501 | TERRENO |
| 633 | 616582.361 | 9271407.326 | 20.480 | TERRENO |
| 634 | 616582.935 | 9271406.507 | 20.901 | TERRENO |
| 635 | 616583.243 | 9271405.841 | 20.772 | TERRENO |
| 636 | 616584.791 | 9271403.924 | 21.241 | CAMINO |
| 637 | 616585.203 | 9271403.633 | 21.295 | CAMINO |
| 638 | 616586.273 | 9271402.358 | 21.325 | EJE |
| 639 | 616587.011 | 9271401.314 | 21.330 | CAMINO |
| 640 | 616587.594 | 9271400.488 | 21.292 | CAMINO |
| 641 | 616588.061 | 9271399.996 | 21.032 | BORDE |
| 642 | 616588.561 | 9271399.291 | 20.618 | CANAL |
| 643 | 616588.984 | 9271398.903 | 20.145 | CAJA |
| 644 | 616589.419 | 9271398.166 | 20.026 | CAJA |
| 645 | 616588.896 | 9271396.897 | 20.984 | CONCRETO |
| 646 | 616589.023 | 9271396.896 | 20.994 | CONCRETO |
| 647 | 616589.067 | 9271396.896 | 21.003 | CONCRETO |
| 648 | 616589.260 | 9271397.064 | 21.007 | CONCRETO |
| 649 | 616589.519 | 9271396.968 | 21.027 | CONCRETO |
| 650 | 616589.600 | 9271396.893 | 20.978 | CONCRETO |
| 651 | 616589.474 | 9271397.167 | 20.906 | CONCRETO |
| 652 | 616589.405 | 9271397.311 | 20.938 | CONCRETO |
| 653 | 616589.840 | 9271397.586 | 20.803 | CONCRETO |
| 654 | 616590.187 | 9271398.031 | 20.871 | CONCRETO |
| 655 | 616590.280 | 9271397.964 | 20.832 | CONCRETO |
| 656 | 616590.348 | 9271397.837 | 20.743 | CONCRETO |
| 657 | 616589.923 | 9271397.945 | 20.381 | FONDO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 658 | 616590.389 | 9271397.361 | 20.363 | FONDO |
| 659 | 616590.111 | 9271397.449 | 20.390 | FONDO |
| 660 | 616589.886 | 9271397.368 | 20.452 | FONDO |
| 661 | 616589.221 | 9271397.844 | 20.173 | FONDO |
| 662 | 616588.606 | 9271397.398 | 20.122 | FONDO |
| 663 | 616588.310 | 9271398.364 | 20.874 | CONCRETO |
| 664 | 616588.376 | 9271398.618 | 20.879 | CONCRETO |
| 665 | 616588.441 | 9271398.712 | 20.900 | CONCRETO |
| 666 | 616588.473 | 9271398.820 | 20.928 | CONCRETO |
| 667 | 616588.250 | 9271398.759 | 20.906 | CONCRETO |
| 668 | 616587.960 | 9271398.608 | 20.943 | CONCRETO |
| 669 | 616587.902 | 9271398.553 | 20.927 | CONCRETO |
| 670 | 616587.879 | 9271398.578 | 20.914 | CONCRETO |
| 671 | 616587.783 | 9271398.021 | 20.300 | FONDO |
| 672 | 616588.731 | 9271398.468 | 20.225 | FONDO |
| 673 | 616600.826 | 9271406.544 | 19.938 | CAJA |
| 674 | 616600.741 | 9271406.759 | 20.122 | CAJA |
| 675 | 616600.392 | 9271407.485 | 20.920 | CANAL |
| 676 | 616599.686 | 9271408.104 | 21.383 | BORDE |
| 677 | 616599.339 | 9271408.584 | 21.403 | CAMINO |
| 678 | 616598.459 | 9271409.887 | 21.396 | EJE |
| 679 | 616597.557 | 9271411.212 | 21.388 | CAMINO |
| 680 | 616596.734 | 9271412.351 | 21.327 | CAMINO |
| 681 | 616596.298 | 9271413.717 | 21.445 | TERRENO |
| 682 | 616595.741 | 9271414.999 | 21.033 | TERRENO |
| 683 | 616594.457 | 9271417.562 | 20.622 | TERRENO |
| 684 | 616594.321 | 9271418.377 | 20.578 | TERRENO |
| 685 | 616602.002 | 9271422.887 | 20.903 | TERRENO |
| 686 | 616601.675 | 9271422.568 | 20.958 | TERRENO |
| 687 | 616602.629 | 9271421.313 | 20.844 | TERRENO |
| 688 | 616603.129 | 9271420.113 | 20.879 | TERRENO |
| 689 | 616603.884 | 9271418.939 | 20.982 | TERRENO |
| 690 | 616604.452 | 9271417.923 | 21.293 | TERRENO |
| 691 | 616604.759 | 9271417.533 | 21.225 | CAMINO |
| 692 | 616605.980 | 9271415.698 | 21.356 | EJE |
| 693 | 616606.720 | 9271414.666 | 21.378 | CAMINO |
| 694 | 616607.372 | 9271413.857 | 21.327 | CAMINO |
| 695 | 616607.934 | 9271412.988 | 20.969 | CANAL |
| 696 | 616608.328 | 9271412.575 | 20.550 | CANAL |
| 697 | 616608.755 | 9271412.089 | 19.926 | CAJA |
| 698 | 616600.101 | 9271418.263 | 21.003 | CAMINO |
| 699 | 616599.559 | 9271420.273 | 20.983 | CAMINO |
| 700 | 616599.219 | 9271423.912 | 20.811 | CAMINO |
| 701 | 616595.925 | 9271424.663 | 20.899 | CAMINO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 702 | 616596.000 | 9271422.614 | 21.024 | CAMINO |
| 703 | 616596.830 | 9271418.640 | 20.986 | CAMINO |
| 704 | 616614.667 | 9271430.400 | 20.851 | TERRENO |
| 705 | 616615.919 | 9271428.366 | 20.867 | TERRENO |
| 706 | 616616.534 | 9271427.269 | 20.981 | TERRENO |
| 707 | 616617.041 | 9271426.219 | 21.386 | CAMINO |
| 708 | 616617.679 | 9271425.468 | 21.347 | CAMINO |
| 709 | 616618.421 | 9271424.218 | 21.288 | EJE |
| 710 | 616619.166 | 9271423.273 | 21.319 | CAMINO |
| 711 | 616619.583 | 9271422.547 | 21.291 | CAMINO |
| 712 | 616620.256 | 9271421.608 | 21.117 | BORDE |
| 713 | 616620.520 | 9271421.415 | 20.222 | CAJA |
| 714 | 616620.922 | 9271421.042 | 19.905 | CAJA |
| 715 | 616636.245 | 9271431.122 | 20.653 | BORDE |
| 716 | 616636.387 | 9271431.032 | 20.241 | CANAL |
| 717 | 616636.144 | 9271431.733 | 20.262 | CAJA |
| 718 | 616635.595 | 9271432.162 | 20.782 | CAJA |
| 719 | 616635.159 | 9271432.965 | 21.282 | BORDE |
| 720 | 616634.689 | 9271433.206 | 21.339 | CAMINO |
| 721 | 616634.324 | 9271433.390 | 21.286 | CAMINO |
| 722 | 616633.787 | 9271434.751 | 21.224 | EJE |
| 723 | 616633.265 | 9271435.577 | 21.192 | CAMINO |
| 724 | 616632.867 | 9271436.406 | 21.125 | CAMINO |
| 725 | 616630.754 | 9271439.244 | 20.737 | TERRENO |
| 726 | 616629.576 | 9271440.375 | 20.887 | TERRENO |
| 727 | 616643.058 | 9271434.094 | 21.214 | ALCANTARILLA |
| 728 | 616644.274 | 9271434.599 | 21.124 | ALCANTARILLA |
| 729 | 616643.697 | 9271437.432 | 21.134 | ALCANTARILLA |
| 730 | 616640.843 | 9271436.665 | 21.142 | ALCANTARILLA |
| 731 | 616644.421 | 9271436.855 | 20.156 | FONDO |
| 732 | 616644.174 | 9271437.263 | 20.347 | FONDO |
| 733 | 616659.671 | 9271447.386 | 20.809 | BORDE |
| 734 | 616659.450 | 9271447.648 | 20.263 | CAJA |
| 735 | 616659.114 | 9271448.549 | 20.269 | CAJA |
| 736 | 616658.090 | 9271449.511 | 21.216 | BORDE |
| 737 | 616657.761 | 9271450.133 | 21.372 | CAMINO |
| 738 | 616657.475 | 9271450.491 | 21.398 | CAMINO |
| 739 | 616656.654 | 9271451.385 | 21.392 | EJE |
| 740 | 616655.963 | 9271452.500 | 21.402 | CAMINO |
| 741 | 616655.432 | 9271453.290 | 21.446 | CAMINO |
| 742 | 616654.371 | 9271454.779 | 20.971 | TERRENO |
| 743 | 616653.715 | 9271456.124 | 20.961 | TERRENO |
| 744 | 616653.030 | 9271458.358 | 20.826 | TERRENO |
| 745 | 616669.059 | 9271470.769 | 20.889 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 746 | 616669.833 | 9271468.886 | 20.891 | TERRENO |
| 747 | 616670.586 | 9271467.886 | 21.153 | TERRENO |
| 748 | 616671.800 | 9271466.614 | 21.395 | TERRENO |
| 749 | 616672.480 | 9271465.451 | 21.441 | CAMINO |
| 750 | 616672.507 | 9271465.312 | 21.434 | CAMINO |
| 751 | 616672.973 | 9271464.580 | 21.376 | EJE |
| 752 | 616674.252 | 9271462.799 | 21.363 | CAMINO |
| 753 | 616675.459 | 9271461.577 | 20.824 | CANAL |
| 754 | 616675.744 | 9271461.493 | 20.184 | CAJA |
| 755 | 616676.148 | 9271461.149 | 20.059 | CAJA |
| 756 | 616682.958 | 9271466.002 | 20.201 | CAJA |
| 757 | 616683.055 | 9271466.388 | 20.352 | CAJA |
| 758 | 616682.678 | 9271467.013 | 20.975 | CANAL |
| 759 | 616682.179 | 9271467.550 | 21.343 | CAMINO |
| 760 | 616681.857 | 9271468.004 | 21.364 | CAMINO |
| 761 | 616680.717 | 9271469.127 | 21.395 | EJE |
| 762 | 616680.032 | 9271470.098 | 21.418 | CAMINO |
| 763 | 616679.108 | 9271470.860 | 21.400 | CAMINO |
| 764 | 616678.790 | 9271471.336 | 21.301 | BORDE |
| 765 | 616678.099 | 9271472.193 | 21.101 | BORDE |
| 766 | 616677.799 | 9271472.664 | 21.115 | BORDE |
| 767 | 616676.775 | 9271474.182 | 21.060 | BORDE |
| 768 | 616674.818 | 9271475.731 | 20.987 | BORDE |
| 769 | 616033.990 | 9271033.550 | 20.452 | BORDE |
| 770 | 616695.621 | 9271475.578 | 20.351 | CAJA |
| 771 | 616694.756 | 9271476.596 | 21.371 | CANAL |
| 772 | 616694.657 | 9271476.586 | 21.420 | BORDE |
| 773 | 616694.524 | 9271476.894 | 21.364 | CAMINO |
| 774 | 616694.109 | 9271477.554 | 21.390 | CAMINO |
| 775 | 616693.300 | 9271478.619 | 21.393 | EJE |
| 776 | 616692.565 | 9271479.659 | 21.406 | CAMINO |
| 777 | 616692.087 | 9271480.462 | 21.486 | BORDE |
| 778 | 616691.596 | 9271481.073 | 21.472 | TERRENO |
| 779 | 616690.730 | 9271481.947 | 20.991 | TERRENO |
| 780 | 616689.413 | 9271483.851 | 21.101 | TERRENO |
| 781 | 616687.964 | 9271485.464 | 20.956 | TERRENO |
| 782 | 616708.984 | 9271484.912 | 20.303 | CAJA |
| 783 | 616708.689 | 9271485.414 | 21.198 | CANAL |
| 784 | 616708.037 | 9271486.071 | 21.435 | BORDE |
| 785 | 616707.914 | 9271486.335 | 21.482 | CAMINO |
| 786 | 616707.089 | 9271487.668 | 21.469 | CAMINO |
| 787 | 616706.715 | 9271488.396 | 21.486 | EJE |
| 788 | 616706.049 | 9271489.303 | 21.517 | CAMINO |
| 789 | 616705.469 | 9271490.120 | 21.556 | CAMINO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 790 | 616704.805 | 9271490.862 | 21.543 | BORDE |
| 791 | 616704.288 | 9271491.694 | 21.157 | TERRENO |
| 792 | 616702.980 | 9271493.572 | 21.078 | TERRENO |
| 793 | 616701.877 | 9271495.352 | 20.942 | TERRENO |
| 794 | 616722.659 | 9271494.339 | 20.446 | CAJA |
| 795 | 616721.995 | 9271494.906 | 21.296 | CANAL |
| 796 | 616721.481 | 9271495.346 | 21.548 | BORDE |
| 797 | 616721.348 | 9271495.545 | 21.597 | CAMINO |
| 798 | 616720.838 | 9271496.374 | 21.593 | CAMINO |
| 799 | 616719.873 | 9271497.318 | 21.594 | EJE |
| 800 | 616719.287 | 9271498.279 | 21.588 | CAMINO |
| 801 | 616718.783 | 9271499.120 | 21.658 | CAMINO |
| 802 | 616718.070 | 9271499.858 | 21.582 | BORDE |
| 803 | 616717.357 | 9271500.889 | 21.051 | TERRENO |
| 804 | 616716.158 | 9271503.135 | 21.067 | TERRENO |
| 805 | 616714.766 | 9271506.293 | 20.952 | TERRENO |
| 806 | 616736.215 | 9271504.535 | 20.340 | CAJA |
| 807 | 616735.947 | 9271504.854 | 21.223 | CANAL |
| 808 | 616735.596 | 9271505.607 | 21.616 | BORDE |
| 809 | 616735.427 | 9271505.729 | 21.723 | CAMINO |
| 810 | 616734.842 | 9271506.671 | 21.704 | CAMINO |
| 811 | 616734.341 | 9271507.420 | 21.680 | EJE |
| 812 | 616733.491 | 9271508.420 | 21.667 | CAMINO |
| 813 | 616733.175 | 9271509.052 | 21.679 | CAMINO |
| 814 | 616732.904 | 9271509.521 | 21.694 | BORDE |
| 815 | 616731.523 | 9271510.618 | 21.274 | TERRENO |
| 816 | 616730.184 | 9271513.253 | 21.269 | TERRENO |
| 817 | 616729.344 | 9271515.468 | 20.963 | TERRENO |
| 818 | 616752.636 | 9271516.262 | 20.436 | MARGEN |
| 819 | 616752.342 | 9271517.136 | 21.421 | CANAL |
| 820 | 616752.053 | 9271517.535 | 21.673 | BORDE |
| 821 | 616751.797 | 9271517.902 | 21.753 | CANAL |
| 822 | 616751.032 | 9271518.721 | 21.756 | CANAL |
| 823 | 616750.595 | 9271519.425 | 21.752 | EJE |
| 824 | 616749.968 | 9271520.467 | 21.756 | CANAL |
| 825 | 616749.317 | 9271521.205 | 21.717 | CANAL |
| 826 | 616748.810 | 9271521.850 | 21.794 | BORDE |
| 827 | 616747.840 | 9271523.104 | 21.354 | TERRENO |
| 828 | 616747.080 | 9271524.973 | 21.246 | TERRENO |
| 829 | 616765.514 | 9271525.764 | 20.378 | CAJA |
| 830 | 616765.125 | 9271526.399 | 21.431 | CANAL |
| 831 | 616764.651 | 9271526.876 | 21.704 | CANAL |
| 832 | 616764.352 | 9271527.131 | 21.866 | CANAL |
| 833 | 616763.934 | 9271526.266 | 21.625 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 834 | 616763.788 | 9271527.878 | 21.850 | CANAL |
| 835 | 616763.225 | 9271528.799 | 21.829 | EJE |
| 836 | 616762.648 | 9271529.730 | 21.817 | CANAL |
| 837 | 616762.184 | 9271530.709 | 21.796 | CANAL |
| 838 | 616761.958 | 9271531.035 | 21.712 | BORDE |
| 839 | 616761.473 | 9271531.690 | 21.387 | TERRENO |
| 840 | 616760.768 | 9271532.581 | 21.318 | TERRENO |
| 841 | 616758.918 | 9271535.022 | 21.279 | CAJA |
| 842 | 616754.865 | 9271531.923 | 21.351 | CAJA |
| 843 | 616750.626 | 9271528.685 | 21.347 | CANAL |
| 844 | 616747.403 | 9271526.738 | 21.279 | CANAL |
| 845 | 616746.010 | 9271530.265 | 21.309 | CANAL |
| 846 | 616749.230 | 9271532.525 | 21.415 | CANAL |
| 847 | 616753.579 | 9271535.506 | 21.397 | CANAL |
| 848 | 616756.431 | 9271537.586 | 21.519 | CANAL |
| 849 | 616783.205 | 9271538.928 | 20.499 | BORDE |
| 850 | 616782.937 | 9271539.700 | 21.324 | CANAL |
| 851 | 616782.373 | 9271540.636 | 21.760 | CANAL |
| 852 | 616781.598 | 9271541.553 | 21.775 | CANAL |
| 853 | 616781.421 | 9271542.189 | 21.773 | CANAL |
| 854 | 616780.439 | 9271543.498 | 21.813 | CAJA |
| 855 | 616780.210 | 9271544.260 | 21.787 | CAJA |
| 856 | 616779.757 | 9271544.606 | 21.638 | BORDE |
| 857 | 616778.749 | 9271545.948 | 21.478 | TERRENO |
| 858 | 616777.361 | 9271547.565 | 21.395 | CANAL |
| 859 | 616803.961 | 9271553.665 | 20.600 | CAJA |
| 860 | 616804.717 | 9271552.760 | 20.588 | CAJA |
| 861 | 616804.825 | 9271552.760 | 21.101 | TALUD |
| 862 | 616804.123 | 9271553.948 | 21.128 | TALUD |
| 863 | 616803.694 | 9271554.886 | 21.703 | CANAL |
| 864 | 616803.381 | 9271555.465 | 21.902 | CANAL |
| 865 | 616802.528 | 9271554.238 | 21.777 | BORDE |
| 866 | 616802.452 | 9271556.040 | 21.911 | CANAL |
| 867 | 616802.204 | 9271557.007 | 21.906 | CANAL |
| 868 | 616801.173 | 9271558.224 | 21.906 | CANAL |
| 869 | 616800.590 | 9271558.843 | 21.905 | CANAL |
| 870 | 616800.383 | 9271559.638 | 21.698 | BORDE |
| 871 | 616799.478 | 9271560.644 | 21.406 | TERRENO |
| 872 | 616798.254 | 9271562.199 | 21.467 | CANAL |
| 873 | 616795.443 | 9271564.823 | 21.482 | CANAL |
| 874 | 616803.715 | 9271567.592 | 21.592 | CANAL |
| 875 | 616807.223 | 9271567.190 | 21.608 | CANAL |
| 876 | 616810.625 | 9271567.758 | 21.429 | CANAL |
| 877 | 616810.723 | 9271567.845 | 21.420 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 878 | 616812.499 | 9271567.612 | 21.807 | ALCANTARILLA |
| 879 | 616814.078 | 9271569.375 | 21.894 | ALCANTARILLA |
| 880 | 616817.146 | 9271568.850 | 21.719 | ALCANTARILLA |
| 881 | 616815.909 | 9271567.303 | 21.806 | ALCANTARILLA |
| 882 | 616818.562 | 9271566.569 | 21.521 | CANAL |
| 883 | 616820.686 | 9271566.956 | 21.530 | CANAL |
| 884 | 616822.226 | 9271566.865 | 21.549 | COMPUERTA |
| 885 | 616823.262 | 9271565.726 | 21.601 | COMPUERTA |
| 886 | 616821.863 | 9271566.324 | 21.627 | **BM - 02** |
| 887 | 616822.438 | 9271567.007 | 21.524 | CONCRETO |
| 888 | 616822.826 | 9271567.944 | 21.499 | CONCRETO |
| 889 | 616821.799 | 9271568.127 | 21.526 | CONCRETO |
| 890 | 616821.750 | 9271568.527 | 21.550 | CANAL |
| 891 | 616820.612 | 9271568.877 | 21.553 | CANAL |
| 892 | 616818.598 | 9271568.882 | 21.639 | CANAL |
| 893 | 616817.217 | 9271568.280 | 20.650 | FONDO |
| 894 | 616813.428 | 9271570.220 | 21.657 | CANAL |
| 895 | 616810.896 | 9271570.765 | 21.444 | CANAL |
| 896 | 616807.525 | 9271571.324 | 21.413 | CANAL |
| 897 | 616826.844 | 9271570.559 | 20.576 | CAJA |
| 898 | 616826.464 | 9271571.101 | 21.569 | TALUD |
| 899 | 616825.906 | 9271571.996 | 22.044 | BORDE |
| 900 | 616825.605 | 9271572.247 | 22.068 | CANAL |
| 901 | 616824.900 | 9271573.635 | 22.033 | CANAL |
| 902 | 616824.334 | 9271574.702 | 22.027 | EJE |
| 903 | 616823.840 | 9271575.721 | 22.072 | CANAL |
| 904 | 616823.532 | 9271575.980 | 22.021 | CANAL |
| 905 | 616823.130 | 9271576.960 | 22.004 | BORDE |
| 906 | 616822.336 | 9271577.873 | 21.251 | BORDE |
| 907 | 616820.272 | 9271579.721 | 21.207 | TERRENO |
| 908 | 616819.042 | 9271580.958 | 21.183 | TERRENO |
| 909 | 616844.059 | 9271582.612 | 20.396 | CANAL |
| 910 | 616843.911 | 9271583.382 | 21.491 | TALUD |
| 911 | 616842.926 | 9271583.876 | 22.054 | BORDE |
| 912 | 616842.496 | 9271584.382 | 22.138 | CANAL |
| 913 | 616842.949 | 9271583.797 | 22.059 | BORDE |
| 914 | 616841.990 | 9271585.367 | 22.152 | CANAL |
| 915 | 616841.488 | 9271586.323 | 22.158 | EJE |
| 916 | 616841.109 | 9271587.057 | 22.123 | CANAL |
| 917 | 616840.457 | 9271587.906 | 22.124 | CANAL |
| 918 | 616840.188 | 9271588.430 | 22.032 | BORDE |
| 919 | 616839.560 | 9271588.878 | 21.350 | TERRENO |
| 920 | 616839.098 | 9271589.307 | 21.348 | TERRENO |
| 921 | 616838.150 | 9271590.620 | 21.298 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 922 | 616836.524 | 9271591.567 | 21.451 | TERRENO |
| 923 | 616861.960 | 9271593.326 | 21.447 | ESTRUCTURA |
| 924 | 616861.404 | 9271593.605 | 21.447 | ESTRUCTURA |
| 925 | 616860.580 | 9271593.367 | 21.438 | ESTRUCTURA |
| 926 | 616860.463 | 9271592.549 | 21.472 | ESTRUCTURA |
| 927 | 616860.736 | 9271593.472 | 20.395 | FONDO |
| 928 | 616860.684 | 9271595.165 | 21.448 | ESTRUCTURA |
| 929 | 616860.525 | 9271594.503 | 21.488 | ESTRUCTURA |
| 930 | 616859.938 | 9271594.161 | 21.503 | ESTRUCTURA |
| 931 | 616859.577 | 9271594.442 | 21.522 | ESTRUCTURA |
| 932 | 616859.521 | 9271595.010 | 21.669 | BORDE |
| 933 | 616858.512 | 9271595.964 | 21.971 | CANAL |
| 934 | 616858.335 | 9271596.093 | 22.054 | CANAL |
| 935 | 616856.988 | 9271597.538 | 22.094 | EJE |
| 936 | 616857.426 | 9271597.012 | 22.105 | CANAL |
| 937 | 616856.366 | 9271598.399 | 22.082 | CANAL |
| 938 | 616855.981 | 9271598.979 | 21.990 | CANAL |
| 939 | 616855.544 | 9271599.572 | 21.826 | BORDE |
| 940 | 616855.128 | 9271600.231 | 21.510 | BORDE |
| 941 | 616854.208 | 9271602.076 | 21.511 | TERRENO |
| 942 | 616853.092 | 9271603.918 | 21.459 | TERRENO |
| 943 | 616876.706 | 9271609.026 | 22.389 | BORDE |
| 944 | 616887.292 | 9271614.667 | 20.726 | CAJA |
| 945 | 616887.031 | 9271615.722 | 21.830 | CANAL |
| 946 | 616886.290 | 9271616.531 | 22.389 | BORDE |
| 947 | 616886.143 | 9271616.742 | 22.582 | CANAL |
| 948 | 616885.987 | 9271617.163 | 22.588 | CANAL |
| 949 | 616885.591 | 9271617.983 | 22.567 | CANAL |
| 950 | 616885.130 | 9271618.721 | 22.548 | CANAL |
| 951 | 616883.980 | 9271620.080 | 22.520 | CANAL |
| 952 | 616883.778 | 9271620.316 | 22.467 | BORDE |
| 953 | 616883.306 | 9271620.695 | 22.124 | BORDE |
| 954 | 616881.668 | 9271623.254 | 21.661 | TERRENO |
| 955 | 616880.767 | 9271625.113 | 21.522 | TERRENO |
| 956 | 616915.034 | 9271634.956 | 22.170 | ESTRUCTURA |
| 957 | 616915.578 | 9271634.555 | 22.176 | ESTRUCTURA |
| 958 | 616916.094 | 9271634.835 | 22.227 | ESTRUCTURA |
| 959 | 616916.534 | 9271635.222 | 22.197 | ESTRUCTURA |
| 960 | 616916.149 | 9271634.811 | 22.198 | COMPUERTA |
| 961 | 616916.451 | 9271634.739 | 20.900 | FONDO |
| 962 | 616916.782 | 9271633.947 | 22.128 | COMPUERTA |
| 963 | 616917.976 | 9271634.062 | 22.115 | ESTRUCTURA |
| 964 | 616917.430 | 9271634.209 | 22.105 | ESTRUCTURA |
| 965 | 616916.626 | 9271633.708 | 22.143 | ESTRUCTURA |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 966 | 616916.544 | 9271633.389 | 22.090 | ESTRUCTURA |
| 967 | 616926.457 | 9271643.231 | 22.209 | ALCANTARILLA |
| 968 | 616927.296 | 9271641.885 | 22.202 | ALCANTARILLA |
| 969 | 616930.402 | 9271644.080 | 22.194 | ALCANTARILLA |
| 970 | 616930.057 | 9271645.595 | 22.225 | ALCANTARILLA |
| 971 | 616930.349 | 9271645.374 | 20.880 | FONDO |
| 972 | 616926.707 | 9271642.441 | 20.903 | FONDO |
| 973 | 616926.130 | 9271643.392 | 22.022 | ALCANTARILLA |
| 974 | 616926.763 | 9271641.706 | 21.929 | ALCANTARILLA |
| 975 | 616930.883 | 9271644.380 | 21.993 | ALCANTARILLA |
| 976 | 616929.926 | 9271645.843 | 22.092 | ALCANTARILLA |
| 977 | 616927.980 | 9271639.317 | 22.154 | TALUD |
| 978 | 616926.559 | 9271640.804 | 21.742 | CANAL |
| 979 | 616926.204 | 9271641.102 | 20.855 | CAJA |
| 980 | 616925.208 | 9271642.212 | 20.849 | CAJA |
| 981 | 616924.965 | 9271642.583 | 21.676 | CANAL |
| 982 | 616924.286 | 9271643.669 | 22.489 | BORDE |
| 983 | 616924.110 | 9271644.032 | 22.454 | CANAL |
| 984 | 616923.651 | 9271644.438 | 22.478 | CANAL |
| 985 | 616922.983 | 9271645.217 | 22.492 | CANAL |
| 986 | 616922.396 | 9271645.723 | 22.483 | EJE |
| 987 | 616921.781 | 9271646.375 | 22.454 | CANAL |
| 988 | 616920.956 | 9271647.122 | 22.451 | CANAL |
| 989 | 616919.744 | 9271648.201 | 22.405 | CANAL |
| 990 | 616918.497 | 9271650.046 | 22.355 | TERRENO |
| 991 | 616917.472 | 9271651.059 | 22.327 | TERRENO |
| 992 | 616915.290 | 9271653.228 | 22.296 | TERRENO |
| 993 | 616951.177 | 9271661.270 | 20.742 | CAJA |
| 994 | 616951.146 | 9271661.874 | 22.072 | CANAL |
| 995 | 616950.374 | 9271663.011 | 22.640 | BORDE |
| 996 | 616950.097 | 9271663.338 | 22.668 | CANAL |
| 997 | 616949.814 | 9271663.737 | 22.634 | CANAL |
| 998 | 616949.071 | 9271664.888 | 22.654 | EJE |
| 999 | 616948.535 | 9271665.603 | 22.637 | CANAL |
| 1000 | 616947.718 | 9271666.664 | 22.695 | CANAL |
| 1001 | 616947.470 | 9271667.118 | 22.669 | BORDE |
| 1002 | 616946.638 | 9271668.021 | 22.520 | TERRENO |
| 1003 | 616945.599 | 9271669.913 | 22.901 | TERRENO |
| 1004 | 616944.252 | 9271671.466 | 23.245 | TERRENO |
| 1005 | 616987.990 | 9271686.079 | 21.018 | CAJA |
| 1006 | 616987.787 | 9271686.916 | 22.075 | TALUD |
| 1007 | 616986.703 | 9271688.424 | 22.841 | BORDE |
| 1008 | 616986.220 | 9271689.069 | 22.909 | CANAL |
| 1009 | 616985.848 | 9271689.368 | 22.890 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1010 | 616985.255 | 9271690.665 | 22.836 | EJE |
| 1011 | 616984.465 | 9271691.682 | 22.830 | CANAL |
| 1012 | 616983.960 | 9271692.300 | 22.789 | CANAL |
| 1013 | 616983.600 | 9271692.979 | 22.771 | BORDE |
| 1014 | 616982.644 | 9271694.118 | 22.568 | TERRENO |
| 1015 | 616981.521 | 9271695.113 | 22.644 | TERRENO |
| 1016 | 616979.014 | 9271697.069 | 22.511 | TERRENO |
| 1017 | 617019.181 | 9271707.265 | 21.860 | CAJA |
| 1018 | 617019.566 | 9271707.061 | 21.483 | CAJA |
| 1019 | 617019.827 | 9271706.611 | 20.817 | FONDO |
| 1020 | 617019.423 | 9271707.521 | 22.115 | TALUD |
| 1021 | 617019.129 | 9271709.308 | 23.277 | BORDE |
| 1022 | 617018.060 | 9271709.897 | 23.408 | CANAL |
| 1023 | 617017.582 | 9271710.652 | 23.385 | CANAL |
| 1024 | 617016.981 | 9271711.556 | 23.386 | EJE |
| 1025 | 617016.543 | 9271712.389 | 23.349 | CANAL |
| 1026 | 617015.810 | 9271713.395 | 23.361 | CANAL |
| 1027 | 617015.448 | 9271714.072 | 23.382 | BORDE |
| 1028 | 617013.631 | 9271715.707 | 23.545 | TERRENO |
| 1029 | 617049.626 | 9271726.500 | 20.942 | CAJA |
| 1030 | 617050.094 | 9271726.038 | 20.790 | CAJA |
| 1031 | 617050.254 | 9271726.088 | 21.304 | TALUD |
| 1032 | 617049.556 | 9271726.673 | 21.609 | TALUD |
| 1033 | 617049.241 | 9271727.410 | 22.110 | CANAL |
| 1034 | 617048.565 | 9271728.404 | 22.964 | BORDE |
| 1035 | 617048.339 | 9271728.763 | 23.125 | CANAL |
| 1036 | 617047.853 | 9271729.641 | 23.177 | CANAL |
| 1037 | 617047.304 | 9271730.407 | 23.182 | EJE |
| 1038 | 617046.656 | 9271731.013 | 23.191 | CANAL |
| 1039 | 617046.248 | 9271731.850 | 23.136 | CANAL |
| 1040 | 617045.620 | 9271732.731 | 23.143 | BORDE |
| 1041 | 617044.996 | 9271733.647 | 23.134 | TERRENO |
| 1042 | 617043.778 | 9271734.554 | 23.297 | TERRENO |
| 1043 | 617085.186 | 9271750.065 | 21.078 | CAJA |
| 1044 | 617086.159 | 9271748.673 | 21.055 | CAJA |
| 1045 | 617086.202 | 9271748.461 | 21.656 | TALUD |
| 1046 | 617086.543 | 9271748.311 | 21.977 | CANAL |
| 1047 | 617085.197 | 9271750.246 | 21.600 | TALUD |
| 1048 | 617084.267 | 9271751.529 | 22.661 | BORDE |
| 1049 | 617083.797 | 9271751.964 | 22.727 | CANAL |
| 1050 | 617083.327 | 9271752.676 | 22.739 | CANAL |
| 1051 | 617082.948 | 9271753.392 | 22.703 | EJE |
| 1052 | 617082.256 | 9271754.023 | 22.668 | CANAL |
| 1053 | 617081.657 | 9271755.062 | 22.616 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1054 | 617081.317 | 9271755.346 | 22.660 | BORDE |
| 1055 | 617080.090 | 9271756.568 | 22.457 | TALUD |
| 1056 | 617079.026 | 9271757.269 | 22.383 | TALUD |
| 1057 | 617113.906 | 9271769.234 | 20.869 | CAJA |
| 1058 | 617113.761 | 9271769.485 | 22.266 | TALUD |
| 1059 | 617113.603 | 9271770.378 | 22.748 | BORDE |
| 1060 | 617112.796 | 9271771.046 | 22.958 | CANAL |
| 1061 | 617112.645 | 9271771.533 | 22.947 | CANAL |
| 1062 | 617112.046 | 9271772.470 | 22.981 | EJE |
| 1063 | 617111.437 | 9271773.197 | 22.979 | CANAL |
| 1064 | 617110.958 | 9271773.965 | 22.972 | CANAL |
| 1065 | 617110.628 | 9271774.344 | 22.917 | BORDE |
| 1066 | 617109.936 | 9271775.155 | 22.856 | TERRENO |
| 1067 | 617108.073 | 9271777.805 | 22.867 | TERRENO |
| 1068 | 617144.924 | 9271808.553 | 22.326 | CANAL |
| 1069 | 617144.446 | 9271804.065 | 22.508 | CANAL |
| 1070 | 617144.740 | 9271801.393 | 22.274 | CANAL |
| 1071 | 617145.646 | 9271798.760 | 22.267 | CANAL |
| 1072 | 617146.102 | 9271797.593 | 22.733 | ALCANTARILLA |
| 1073 | 617147.683 | 9271798.088 | 22.690 | ALCANTARILLA |
| 1074 | 617148.843 | 9271795.608 | 22.688 | ALCANTARILLA |
| 1075 | 617147.413 | 9271794.504 | 22.647 | ALCANTARILLA |
| 1076 | 617149.206 | 9271792.173 | 22.447 | COMPUERTA |
| 1077 | 617149.843 | 9271791.491 | 22.297 | COMPUERTA |
| 1078 | 617149.683 | 9271792.026 | 22.463 | CANAL |
| 1079 | 617149.065 | 9271793.153 | 22.444 | CANAL |
| 1080 | 617148.600 | 9271793.621 | 22.508 | CANAL |
| 1081 | 617149.227 | 9271795.170 | 22.615 | CANAL |
| 1082 | 617149.997 | 9271794.469 | 22.095 | CANAL |
| 1083 | 617147.875 | 9271799.260 | 22.531 | CANAL |
| 1084 | 617148.236 | 9271802.063 | 22.300 | CANAL |
| 1085 | 617148.033 | 9271806.275 | 22.282 | CANAL |
| 1086 | 617159.229 | 9271798.380 | 20.847 | CAJA |
| 1087 | 617158.841 | 9271799.189 | 21.931 | TALUD |
| 1088 | 617158.102 | 9271799.845 | 22.701 | BORDE |
| 1089 | 617157.644 | 9271800.670 | 22.712 | CANAL |
| 1090 | 617157.501 | 9271800.776 | 22.753 | CANAL |
| 1091 | 617156.860 | 9271801.961 | 22.712 | EJE |
| 1092 | 617156.346 | 9271803.019 | 22.727 | CANAL |
| 1093 | 617155.778 | 9271803.638 | 22.706 | CANAL |
| 1094 | 617155.292 | 9271804.433 | 22.522 | BORDE |
| 1095 | 617154.805 | 9271805.721 | 21.928 | TERRENO |
| 1096 | 617153.868 | 9271806.775 | 21.872 | TERRENO |
| 1097 | 617152.498 | 9271808.895 | 21.899 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1098 | 617182.597 | 9271814.110 | 21.223 | CAJA |
| 1099 | 617181.855 | 9271814.837 | 22.217 | TALUD |
| 1100 | 617181.604 | 9271815.543 | 22.644 | BORDE |
| 1101 | 617181.205 | 9271816.073 | 22.638 | CANAL |
| 1102 | 617181.139 | 9271816.354 | 22.696 | CANAL |
| 1103 | 617180.321 | 9271817.618 | 22.656 | EJE |
| 1104 | 617179.628 | 9271818.505 | 22.651 | CANAL |
| 1105 | 617178.873 | 9271819.103 | 22.693 | CANAL |
| 1106 | 617178.377 | 9271819.681 | 22.537 | BORDE |
| 1107 | 617177.970 | 9271820.315 | 22.238 | BORDE |
| 1108 | 617176.725 | 9271821.534 | 21.991 | TALUD |
| 1109 | 617175.504 | 9271823.110 | 22.165 | TALUD |
| 1110 | 617175.338 | 9271823.253 | 22.037 | TALUD |
| 1111 | 617199.651 | 9271825.057 | 20.934 | CAJA |
| 1112 | 617199.420 | 9271825.990 | 22.250 | TALUD |
| 1113 | 617198.949 | 9271826.706 | 22.632 | BORDE |
| 1114 | 617198.557 | 9271827.257 | 22.596 | CANAL |
| 1115 | 617198.412 | 9271827.953 | 22.594 | CANAL |
| 1116 | 617197.942 | 9271829.338 | 22.636 | EJE |
| 1117 | 617197.031 | 9271830.211 | 22.627 | CANAL |
| 1118 | 617196.306 | 9271831.027 | 22.608 | CANAL |
| 1119 | 617195.611 | 9271831.892 | 22.567 | BORDE |
| 1120 | 617195.031 | 9271832.377 | 22.009 | TERRENO |
| 1121 | 617193.877 | 9271834.147 | 22.024 | TERRENO |
| 1122 | 617192.878 | 9271835.172 | 22.115 | TERRENO |
| 1123 | 617222.839 | 9271840.058 | 21.080 | CAJA |
| 1124 | 617222.140 | 9271841.122 | 22.325 | TALUD |
| 1125 | 617221.579 | 9271841.712 | 22.700 | BORDE |
| 1126 | 617221.429 | 9271842.070 | 22.647 | CANAL |
| 1127 | 617221.152 | 9271842.639 | 22.674 | CANAL |
| 1128 | 617220.325 | 9271843.932 | 22.659 | EJE |
| 1129 | 617219.586 | 9271845.021 | 22.653 | CANAL |
| 1130 | 617218.834 | 9271846.046 | 22.694 | CANAL |
| 1131 | 617218.519 | 9271846.348 | 22.580 | BORDE |
| 1132 | 617217.861 | 9271847.458 | 22.000 | BORDE |
| 1133 | 617217.124 | 9271848.725 | 21.976 | TERRENO |
| 1134 | 617214.688 | 9271851.956 | 21.821 | TERRENO |
| 1135 | 617243.532 | 9271855.059 | 22.405 | CONCRETO |
| 1136 | 617243.817 | 9271854.713 | 22.412 | CONCRETO |
| 1137 | 617244.512 | 9271855.018 | 22.388 | CONCRETO |
| 1138 | 617244.607 | 9271855.112 | 22.436 | CONCRETO |
| 1139 | 617244.158 | 9271854.679 | 22.403 | COMPUERTA |
| 1140 | 617244.082 | 9271854.163 | 22.272 | COMPUERTA |
| 1141 | 617244.322 | 9271854.441 | 21.384 | FONDO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1142 | 617244.466 | 9271853.190 | 22.415 | CONCRETO |
| 1143 | 617244.627 | 9271853.594 | 22.432 | CONCRETO |
| 1144 | 617245.087 | 9271853.569 | 22.575 | CONCRETO |
| 1145 | 617245.200 | 9271853.707 | 22.312 | CONCRETO |
| 1146 | 617243.567 | 9271855.473 | 22.272 | BORDE |
| 1147 | 617243.560 | 9271856.176 | 22.555 | BORDE |
| 1148 | 617242.746 | 9271856.981 | 22.681 | CANAL |
| 1149 | 617242.926 | 9271857.339 | 22.702 | CANAL |
| 1150 | 617242.197 | 9271858.623 | 22.730 | EJE |
| 1151 | 617241.695 | 9271859.636 | 22.766 | CANAL |
| 1152 | 617241.175 | 9271860.152 | 22.688 | CANAL |
| 1153 | 617240.622 | 9271861.213 | 22.455 | BORDE |
| 1154 | 617240.576 | 9271861.623 | 22.232 | BORDE |
| 1155 | 617239.246 | 9271863.897 | 21.979 | TALUD |
| 1156 | 617238.114 | 9271865.655 | 21.937 | TALUD |
| 1157 | 617263.212 | 9271866.724 | 21.722 | CAJA |
| 1158 | 617262.883 | 9271867.303 | 22.526 | TALUD |
| 1159 | 617262.391 | 9271868.312 | 22.902 | CANAL |
| 1160 | 617262.158 | 9271868.726 | 22.863 | CANAL |
| 1161 | 617262.080 | 9271868.748 | 22.861 | CANAL |
| 1162 | 617260.878 | 9271870.533 | 22.851 | EJE |
| 1163 | 617260.462 | 9271871.437 | 22.826 | CANAL |
| 1164 | 617259.703 | 9271872.606 | 22.770 | CANAL |
| 1165 | 617259.296 | 9271872.956 | 22.545 | BORDE |
| 1166 | 617258.887 | 9271873.348 | 22.154 | BORDE |
| 1167 | 617257.659 | 9271874.927 | 22.028 | TALUD |
| 1168 | 617255.149 | 9271876.943 | 21.912 | TALUD |
| 1169 | 617285.480 | 9271881.783 | 22.974 | **BM - 03** |
| 1170 | 617285.227 | 9271881.797 | 22.823 | ALCANTARILLA |
| 1171 | 617286.108 | 9271880.501 | 22.738 | ALCANTARILLA |
| 1172 | 617282.767 | 9271878.247 | 22.816 | ALCANTARILLA |
| 1173 | 617281.651 | 9271879.305 | 22.794 | CAJA |
| 1174 | 617281.073 | 9271878.686 | 21.684 | CAJA |
| 1175 | 617280.648 | 9271879.133 | 22.480 | TALUD |
| 1176 | 617279.986 | 9271879.475 | 22.783 | BORDE |
| 1177 | 617279.322 | 9271879.944 | 22.862 | CANAL |
| 1178 | 617279.119 | 9271880.200 | 22.922 | CANAL |
| 1179 | 617277.785 | 9271881.928 | 22.960 | CANAL |
| 1180 | 617277.188 | 9271882.536 | 22.858 | CANAL |
| 1181 | 617276.603 | 9271883.364 | 22.873 | CANAL |
| 1182 | 617275.449 | 9271885.178 | 22.504 | BORDE |
| 1183 | 617275.065 | 9271885.433 | 22.425 | BORDE |
| 1184 | 617274.157 | 9271887.192 | 21.999 | TALUD |
| 1185 | 617271.961 | 9271889.398 | 21.992 | TALUD |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1186 | 617293.488 | 9271891.133 | 21.263 | CAJA |
| 1187 | 617292.589 | 9271891.853 | 22.409 | CANAL |
| 1188 | 617291.521 | 9271892.212 | 22.902 | BORDE |
| 1189 | 617290.918 | 9271892.868 | 23.000 | CANAL |
| 1190 | 617290.439 | 9271893.106 | 22.931 | CANAL |
| 1191 | 617289.143 | 9271894.074 | 22.917 | EJE |
| 1192 | 617288.419 | 9271894.570 | 22.851 | CANAL |
| 1193 | 617287.794 | 9271895.181 | 22.774 | CANAL |
| 1194 | 617287.114 | 9271895.844 | 22.399 | BORDE |
| 1195 | 617286.339 | 9271896.317 | 22.341 | BORDE |
| 1196 | 617281.725 | 9271899.254 | 21.959 | TALUD |
| 1197 | 617302.593 | 9271907.223 | 21.360 | CAJA |
| 1198 | 617302.245 | 9271907.459 | 22.272 | CANAL |
| 1199 | 617301.285 | 9271908.204 | 22.877 | BORDE |
| 1200 | 617300.555 | 9271908.463 | 22.930 | CANAL |
| 1201 | 617300.388 | 9271908.517 | 22.954 | CANAL |
| 1202 | 617299.244 | 9271909.506 | 22.886 | EJE |
| 1203 | 617298.401 | 9271910.060 | 22.869 | CANAL |
| 1204 | 617297.554 | 9271910.442 | 22.793 | CANAL |
| 1205 | 617296.685 | 9271911.013 | 22.600 | BORDE |
| 1206 | 617296.395 | 9271911.275 | 22.166 | BORDE |
| 1207 | 617294.776 | 9271912.235 | 21.854 | TALUD |
| 1208 | 617292.447 | 9271913.683 | 21.897 | TALUD |
| 1209 | 617314.691 | 9271928.594 | 21.458 | CAJA |
| 1210 | 617314.316 | 9271928.956 | 22.343 | CANAL |
| 1211 | 617313.467 | 9271929.565 | 22.781 | BORDE |
| 1212 | 617312.929 | 9271929.853 | 22.801 | CANAL |
| 1213 | 617312.412 | 9271929.964 | 22.866 | CANAL |
| 1214 | 617311.244 | 9271930.674 | 22.844 | EJE |
| 1215 | 617310.314 | 9271931.161 | 22.875 | CANAL |
| 1216 | 617309.572 | 9271931.734 | 22.807 | CANAL |
| 1217 | 617308.706 | 9271932.097 | 22.540 | BORDE |
| 1218 | 617307.866 | 9271932.416 | 22.042 | BORDE |
| 1219 | 617305.565 | 9271933.754 | 21.833 | TALUD |
| 1220 | 617303.221 | 9271934.698 | 21.840 | TALUD |
| 1221 | 617332.276 | 9271960.437 | 21.510 | CAJA |
| 1222 | 617331.672 | 9271961.035 | 22.462 | CANAL |
| 1223 | 617331.188 | 9271961.455 | 22.706 | BORDE |
| 1224 | 617330.769 | 9271961.669 | 22.763 | CANAL |
| 1225 | 617330.015 | 9271962.023 | 22.772 | CANAL |
| 1226 | 617329.319 | 9271962.482 | 22.726 | EJE |
| 1227 | 617328.203 | 9271963.185 | 22.761 | CANAL |
| 1228 | 617327.795 | 9271963.474 | 22.726 | CANAL |
| 1229 | 617327.016 | 9271964.031 | 22.616 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1230 | 617326.072 | 9271964.817 | 22.097 | BORDE |
| 1231 | 617323.386 | 9271966.291 | 22.017 | TALUD |
| 1232 | 617321.508 | 9271967.108 | 22.127 | TALUD |
| 1233 | 617345.553 | 9271983.576 | 21.433 | CAJA |
| 1234 | 617346.349 | 9271982.948 | 21.439 | CAJA |
| 1235 | 617346.567 | 9271982.831 | 22.245 | CANAL |
| 1236 | 617347.260 | 9271982.435 | 22.597 | BORDE |
| 1237 | 617345.289 | 9271983.920 | 22.263 | CANAL |
| 1238 | 617344.574 | 9271984.312 | 22.820 | BORDE |
| 1239 | 617344.111 | 9271984.616 | 22.845 | CANAL |
| 1240 | 617343.357 | 9271985.130 | 22.871 | CANAL |
| 1241 | 617341.660 | 9271986.305 | 22.848 | EJE |
| 1242 | 617341.104 | 9271986.396 | 22.823 | CANAL |
| 1243 | 617340.091 | 9271987.065 | 22.771 | CANAL |
| 1244 | 617339.220 | 9271987.929 | 22.500 | BORDE |
| 1245 | 617338.829 | 9271987.955 | 22.563 | BORDE |
| 1246 | 617337.117 | 9271989.159 | 21.932 | TALUD |
| 1247 | 617334.201 | 9271990.909 | 21.952 | TALUD |
| 1248 | 617362.138 | 9272012.747 | 21.496 | CAJA |
| 1249 | 617362.991 | 9272012.362 | 21.699 | CAJA |
| 1250 | 617363.028 | 9272012.572 | 22.131 | CANAL |
| 1251 | 617363.685 | 9272012.290 | 22.606 | BORDE |
| 1252 | 617361.926 | 9272013.374 | 22.219 | CANAL |
| 1253 | 617361.358 | 9272013.405 | 22.745 | BORDE |
| 1254 | 617360.348 | 9272014.266 | 22.945 | CANAL |
| 1255 | 617359.837 | 9272014.419 | 22.898 | CANAL |
| 1256 | 617358.394 | 9272015.371 | 22.933 | EJE |
| 1257 | 617357.503 | 9272016.004 | 22.934 | CANAL |
| 1258 | 617356.563 | 9272016.469 | 22.931 | CANAL |
| 1259 | 617356.148 | 9272016.875 | 22.687 | BORDE |
| 1260 | 617355.775 | 9272017.089 | 22.468 | BORDE |
| 1261 | 617352.971 | 9272018.903 | 21.993 | TERRENO |
| 1262 | 617350.630 | 9272019.995 | 21.820 | TERRENO |
| 1263 | 617375.674 | 9272037.115 | 21.737 | CAJA |
| 1264 | 617375.293 | 9272037.535 | 22.501 | CANAL |
| 1265 | 617374.762 | 9272038.067 | 22.893 | BORDE |
| 1266 | 617373.960 | 9272038.403 | 22.957 | CANAL |
| 1267 | 617373.230 | 9272038.931 | 22.881 | CANAL |
| 1268 | 617371.932 | 9272039.973 | 22.914 | EJE |
| 1269 | 617371.371 | 9272040.327 | 22.851 | CANAL |
| 1270 | 617370.968 | 9272040.632 | 22.958 | CANAL |
| 1271 | 617369.976 | 9272041.376 | 22.586 | BORDE |
| 1272 | 617369.214 | 9272041.824 | 22.077 | BORDE |
| 1273 | 617367.147 | 9272043.290 | 22.182 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1274 | 617364.798 | 9272044.784 | 22.167 | TERRENO |
| 1275 | 617388.426 | 9272059.774 | 21.595 | CAJA |
| 1276 | 617388.155 | 9272059.806 | 22.496 | CANAL |
| 1277 | 617387.284 | 9272060.519 | 22.776 | BORDE |
| 1278 | 617386.367 | 9272060.924 | 22.802 | CANAL |
| 1279 | 617385.810 | 9272061.405 | 22.811 | CANAL |
| 1280 | 617385.256 | 9272061.825 | 22.739 | EJE |
| 1281 | 617384.322 | 9272062.333 | 22.739 | CANAL |
| 1282 | 617384.035 | 9272062.410 | 22.792 | CANAL |
| 1283 | 617383.017 | 9272063.367 | 22.470 | BORDE |
| 1284 | 617382.649 | 9272063.508 | 22.305 | BORDE |
| 1285 | 617380.279 | 9272064.789 | 22.002 | TERRENO |
| 1286 | 617378.914 | 9272065.415 | 22.189 | TERRENO |
| 1287 | 617402.846 | 9272086.210 | 21.818 | CAJA |
| 1288 | 617402.300 | 9272086.458 | 22.496 | CANAL |
| 1289 | 617401.909 | 9272086.639 | 22.792 | BORDE |
| 1290 | 617401.418 | 9272086.949 | 22.844 | CANAL |
| 1291 | 617400.947 | 9272087.240 | 22.713 | CANAL |
| 1292 | 617399.903 | 9272088.270 | 22.789 | EJE |
| 1293 | 617399.026 | 9272088.706 | 22.767 | CANAL |
| 1294 | 617398.823 | 9272088.826 | 22.817 | CANAL |
| 1295 | 617397.657 | 9272089.592 | 22.548 | BORDE |
| 1296 | 617397.279 | 9272089.723 | 22.111 | CANAL |
| 1297 | 617396.610 | 9272090.000 | 22.054 | CANAL |
| 1298 | 617395.622 | 9272090.485 | 22.570 | BORDE |
| 1299 | 617393.544 | 9272091.331 | 21.830 | TERRENO |
| 1300 | 617420.516 | 9272117.059 | 21.797 | CAJA |
| 1301 | 617419.978 | 9272117.516 | 22.493 | CANAL |
| 1302 | 617419.571 | 9272117.729 | 22.901 | BORDE |
| 1303 | 617418.825 | 9272118.343 | 22.883 | CANAL |
| 1304 | 617418.358 | 9272118.665 | 22.880 | CANAL |
| 1305 | 617417.480 | 9272119.326 | 22.853 | EJE |
| 1306 | 617416.896 | 9272119.796 | 22.801 | CANAL |
| 1307 | 617415.598 | 9272120.362 | 22.778 | CANAL |
| 1308 | 617414.841 | 9272120.850 | 22.517 | CANAL |
| 1309 | 617414.730 | 9272120.885 | 22.735 | CANAL |
| 1310 | 617414.467 | 9272121.131 | 22.135 | CANAL |
| 1311 | 617412.802 | 9272122.024 | 22.614 | BORDE |
| 1312 | 617411.502 | 9272122.941 | 22.183 | TERRENO |
| 1313 | 617432.838 | 9272139.108 | 21.841 | CAJA |
| 1314 | 617433.214 | 9272138.925 | 21.836 | CAJA |
| 1315 | 617433.856 | 9272138.899 | 22.290 | CANAL |
| 1316 | 617432.840 | 9272139.408 | 22.330 | CANAL |
| 1317 | 617432.198 | 9272139.593 | 22.958 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1318 | 617431.163 | 9272140.062 | 23.076 | CANAL |
| 1319 | 617430.835 | 9272140.313 | 23.046 | CANAL |
| 1320 | 617430.124 | 9272140.632 | 22.977 | EJE |
| 1321 | 617428.963 | 9272141.197 | 22.995 | CANAL |
| 1322 | 617428.380 | 9272141.392 | 23.046 | CANAL |
| 1323 | 617427.138 | 9272141.860 | 23.032 | BORDE |
| 1324 | 617425.667 | 9272142.053 | 22.319 | CANAL |
| 1325 | 617425.816 | 9272142.421 | 22.314 | CANAL |
| 1326 | 617424.639 | 9272142.971 | 22.779 | BORDE |
| 1327 | 617422.915 | 9272143.392 | 22.280 | TERRENO |
| 1328 | 617442.628 | 9272157.178 | 21.937 | CAJA |
| 1329 | 617442.320 | 9272157.151 | 22.864 | CANAL |
| 1330 | 617441.434 | 9272157.795 | 23.088 | BORDE |
| 1331 | 617441.067 | 9272158.001 | 23.084 | TERRENO |
| 1332 | 617440.711 | 9272158.090 | 23.049 | CANAL |
| 1333 | 617440.533 | 9272158.355 | 23.140 | CANAL |
| 1334 | 617439.776 | 9272158.726 | 23.001 | EJE |
| 1335 | 617438.117 | 9272159.560 | 23.063 | CANAL |
| 1336 | 617438.035 | 9272159.783 | 22.965 | CANAL |
| 1337 | 617436.647 | 9272160.517 | 22.859 | BORDE |
| 1338 | 617436.066 | 9272160.758 | 22.277 | CANAL |
| 1339 | 617435.607 | 9272160.950 | 22.230 | CANAL |
| 1340 | 617433.784 | 9272161.759 | 22.822 | BORDE |
| 1341 | 617432.582 | 9272162.293 | 22.152 | TERRENO |
| 1342 | 617449.462 | 9272167.416 | 23.011 | **BM - 04** |
| 1343 | 617449.574 | 9272167.499 | 22.990 | CANAL |
| 1344 | 617449.574 | 9272167.496 | 22.972 | CANAL |
| 1345 | 617449.275 | 9272167.116 | 22.977 | COMPUERTA |
| 1346 | 617448.843 | 9272167.607 | 22.916 | COMPUERTA |
| 1347 | 617448.638 | 9272166.046 | 22.990 | CANAL |
| 1348 | 617449.429 | 9272166.195 | 22.991 | COMPUERTA |
| 1349 | 617449.676 | 9272165.949 | 23.038 | COMPUERTA |
| 1350 | 617449.464 | 9272165.207 | 22.977 | CANAL |
| 1351 | 617449.854 | 9272165.345 | 22.916 | CANAL |
| 1352 | 617448.546 | 9272168.428 | 23.014 | CANAL |
| 1353 | 617447.580 | 9272167.242 | 22.937 | CANAL |
| 1354 | 617447.494 | 9272167.170 | 22.883 | CANAL |
| 1355 | 617448.277 | 9272167.291 | 22.056 | FONDO |
| 1356 | 617448.368 | 9272168.965 | 22.963 | CANAL |
| 1357 | 617451.805 | 9272172.933 | 21.769 | CAJA |
| 1358 | 617451.515 | 9272173.328 | 22.547 | CANAL |
| 1359 | 617450.694 | 9272174.059 | 23.005 | BORDE |
| 1360 | 617450.383 | 9272174.219 | 23.049 | CANAL |
| 1361 | 617449.872 | 9272174.554 | 23.019 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1362 | 617448.706 | 9272175.316 | 23.027 | EJE |
| 1363 | 617447.876 | 9272175.747 | 23.075 | CANAL |
| 1364 | 617447.061 | 9272176.106 | 23.047 | CANAL |
| 1365 | 617446.658 | 9272176.377 | 23.113 | BORDE |
| 1366 | 617445.397 | 9272177.283 | 22.984 | BORDE |
| 1367 | 617444.618 | 9272177.895 | 22.824 | TERRENO |
| 1368 | 617449.206 | 9272178.392 | 22.948 | ALCANTARILLA |
| 1369 | 617449.804 | 9272179.384 | 22.878 | ALCANTARILLA |
| 1370 | 617451.837 | 9272176.772 | 22.991 | ALCANTARILLA |
| 1371 | 617451.972 | 9272176.891 | 23.106 | ALCANTARILLA |
| 1372 | 617456.271 | 9272181.588 | 22.013 | CAJA |
| 1373 | 617455.842 | 9272181.965 | 22.676 | CANAL |
| 1374 | 617454.909 | 9272182.335 | 23.021 | BORDE |
| 1375 | 617454.444 | 9272182.479 | 23.045 | CANAL |
| 1376 | 617453.647 | 9272183.006 | 23.032 | CANAL |
| 1377 | 617452.697 | 9272183.286 | 22.981 | EJE |
| 1378 | 617451.898 | 9272183.596 | 22.908 | CANAL |
| 1379 | 617451.433 | 9272183.729 | 22.931 | CANAL |
| 1380 | 617450.166 | 9272184.150 | 22.785 | TERRENO |
| 1381 | 617447.282 | 9272184.138 | 22.695 | TERRENO |
| 1382 | 617457.657 | 9272193.943 | 23.084 | TERRENO |
| 1383 | 617455.750 | 9272194.271 | 22.984 | TERRENO |
| 1384 | 617454.880 | 9272194.200 | 22.747 | TERRENO |
| 1385 | 617453.983 | 9272194.048 | 22.776 | CANAL |
| 1386 | 617452.551 | 9272193.825 | 22.751 | CANAL |
| 1387 | 617451.426 | 9272193.464 | 22.738 | EJE |
| 1388 | 617449.897 | 9272193.162 | 22.786 | CANAL |
| 1389 | 617448.608 | 9272192.730 | 22.711 | CANAL |
| 1390 | 617447.159 | 9272192.340 | 22.720 | TERRENO |
| 1391 | 617445.104 | 9272190.850 | 22.775 | TERRENO |
| 1392 | 617453.039 | 9272204.944 | 22.767 | TERRENO |
| 1393 | 617451.549 | 9272203.312 | 22.823 | TERRENO |
| 1394 | 617450.071 | 9272202.238 | 22.935 | CANAL |
| 1395 | 617449.559 | 9272201.775 | 22.891 | CANAL |
| 1396 | 617448.563 | 9272201.383 | 22.875 | EJE |
| 1397 | 617447.504 | 9272200.665 | 22.847 | CANAL |
| 1398 | 617446.601 | 9272200.322 | 22.728 | CANAL |
| 1399 | 617444.395 | 9272199.052 | 22.842 | TERRENO |
| 1400 | 617442.112 | 9272198.609 | 23.314 | TERRENO |
| 1401 | 617447.866 | 9272212.943 | 22.929 | TERRENO |
| 1402 | 617446.812 | 9272211.616 | 22.824 | TERRENO |
| 1403 | 617445.127 | 9272209.795 | 23.005 | CANAL |
| 1404 | 617444.702 | 9272209.358 | 22.937 | CANAL |
| 1405 | 617443.948 | 9272208.708 | 22.985 | EJE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1406 | 617443.174 | 9272208.003 | 22.828 | CANAL |
| 1407 | 617441.986 | 9272206.892 | 23.140 | CANAL |
| 1408 | 617440.914 | 9272205.328 | 23.147 | TERRENO |
| 1409 | 617440.082 | 9272203.646 | 23.477 | TERRENO |
| 1410 | 617442.298 | 9272216.992 | 22.582 | TERRENO |
| 1411 | 617441.796 | 9272216.276 | 23.088 | TERRENO |
| 1412 | 617440.334 | 9272215.116 | 23.342 | CANAL |
| 1413 | 617439.586 | 9272214.472 | 23.310 | CANAL |
| 1414 | 617439.034 | 9272214.085 | 23.294 | EJE |
| 1415 | 617438.191 | 9272213.229 | 23.260 | CANAL |
| 1416 | 617437.683 | 9272212.766 | 23.235 | CANAL |
| 1417 | 617436.208 | 9272211.306 | 23.344 | TERRENO |
| 1418 | 617435.019 | 9272209.638 | 23.816 | TERRENO |
| 1419 | 617432.033 | 9272223.582 | 23.782 | TERRENO |
| 1420 | 617431.676 | 9272223.377 | 24.126 | BORDE |
| 1421 | 617431.360 | 9272222.988 | 24.177 | CANAL |
| 1422 | 617430.814 | 9272222.446 | 24.030 | CANAL |
| 1423 | 617430.334 | 9272221.249 | 24.114 | EJE |
| 1424 | 617429.639 | 9272220.517 | 24.105 | CANAL |
| 1425 | 617429.267 | 9272219.671 | 24.124 | CANAL |
| 1426 | 617428.664 | 9272219.005 | 24.187 | TERRENO |
| 1427 | 617427.911 | 9272217.297 | 24.280 | TERRENO |
| 1428 | 617422.674 | 9272231.555 | 24.397 | TERRENO |
| 1429 | 617422.060 | 9272230.778 | 24.594 | BORDE |
| 1430 | 617421.910 | 9272230.381 | 24.593 | CANAL |
| 1431 | 617421.501 | 9272229.731 | 24.555 | CANAL |
| 1432 | 617420.844 | 9272228.848 | 24.541 | EJE |
| 1433 | 617420.127 | 9272227.870 | 24.593 | CANAL |
| 1434 | 617419.844 | 9272227.151 | 24.617 | CANAL |
| 1435 | 617419.329 | 9272226.275 | 24.706 | TERRENO |
| 1436 | 617418.476 | 9272225.094 | 24.792 | TERRENO |
| 1437 | 617413.076 | 9272239.252 | 24.631 | TERRENO |
| 1438 | 617412.335 | 9272238.442 | 24.651 | TERRENO |
| 1439 | 617411.682 | 9272237.604 | 24.778 | BORDE |
| 1440 | 617411.466 | 9272237.127 | 24.806 | CANAL |
| 1441 | 617411.203 | 9272236.397 | 24.802 | CANAL |
| 1442 | 617410.101 | 9272234.895 | 24.845 | EJE |
| 1443 | 617409.745 | 9272234.666 | 24.822 | CANAL |
| 1444 | 617408.859 | 9272233.643 | 24.918 | CANAL |
| 1445 | 617408.460 | 9272233.035 | 25.034 | TERRENO |
| 1446 | 617407.864 | 9272231.730 | 25.188 | TERRENO |
| 1447 | 617428.402 | 9272214.112 | 24.375 | ESTACIÓN 2 |
| 1448 | 617428.402 | 9272214.112 | 24.375 | ESTACIÓN 2 |
| 1449 | 617397.327 | 9272248.465 | 24.850 | CAMINO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1450 | 617397.146 | 9272248.237 | 24.976 | CAMINO |
| 1451 | 617396.467 | 9272247.489 | 24.966 | CAMINO |
| 1452 | 617395.153 | 9272246.376 | 24.979 | EJE |
| 1453 | 617394.226 | 9272245.548 | 25.024 | CANAL |
| 1454 | 617393.192 | 9272244.684 | 25.063 | CANAL |
| 1455 | 617392.111 | 9272244.047 | 25.108 | BORDE |
| 1456 | 617391.245 | 9272242.453 | 25.297 | TERRENO |
| 1457 | 617390.209 | 9272240.523 | 25.346 | TERRENO |
| 1458 | 617388.874 | 9272257.363 | 25.221 | TERRENO |
| 1459 | 617388.341 | 9272257.130 | 25.397 | TERRENO |
| 1460 | 617387.529 | 9272256.753 | 25.332 | CANAL |
| 1461 | 617386.922 | 9272256.349 | 25.199 | CANAL |
| 1462 | 617385.652 | 9272255.271 | 25.329 | EJE |
| 1463 | 617384.696 | 9272254.684 | 25.365 | CANAL |
| 1464 | 617383.637 | 9272254.032 | 25.393 | CANAL |
| 1465 | 617382.853 | 9272253.464 | 25.405 | TERRENO |
| 1466 | 617381.783 | 9272252.587 | 25.515 | TERRENO |
| 1467 | 617379.923 | 9272251.690 | 25.520 | TERRENO |
| 1468 | 617380.513 | 9272268.664 | 25.717 | TERRENO |
| 1469 | 617379.701 | 9272268.123 | 25.768 | CANAL |
| 1470 | 617379.294 | 9272267.906 | 25.743 | CANAL |
| 1471 | 617377.989 | 9272267.384 | 25.697 | CANAL |
| 1472 | 617376.607 | 9272266.680 | 25.770 | EJE |
| 1473 | 617375.740 | 9272266.195 | 25.805 | CANAL |
| 1474 | 617374.931 | 9272265.883 | 25.809 | CANAL |
| 1475 | 617373.243 | 9272264.948 | 25.843 | BORDE |
| 1476 | 617371.042 | 9272263.689 | 26.312 | TERRENO |
| 1477 | 617374.861 | 9272281.093 | 26.120 | TERRENO |
| 1478 | 617373.841 | 9272281.134 | 25.763 | BORDE |
| 1479 | 617373.248 | 9272280.837 | 25.757 | CANAL |
| 1480 | 617372.747 | 9272280.512 | 25.688 | CANAL |
| 1481 | 617371.651 | 9272280.440 | 25.735 | EJE |
| 1482 | 617370.634 | 9272280.296 | 25.723 | CANAL |
| 1483 | 617369.197 | 9272279.957 | 25.784 | CANAL |
| 1484 | 617368.489 | 9272279.460 | 25.891 | BORDE |
| 1485 | 617367.495 | 9272279.391 | 26.145 | TERRENO |
| 1486 | 617370.826 | 9272293.122 | 25.506 | TERRENO |
| 1487 | 617369.907 | 9272293.427 | 25.473 | CANAL |
| 1488 | 617369.701 | 9272293.325 | 25.520 | CANAL |
| 1489 | 617367.353 | 9272292.663 | 25.491 | EJE |
| 1490 | 617366.694 | 9272292.562 | 25.430 | CANAL |
| 1491 | 617365.908 | 9272292.350 | 25.477 | CANAL |
| 1492 | 617364.093 | 9272291.765 | 25.600 | BORDE |
| 1493 | 617362.952 | 9272291.502 | 25.845 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1494 | 617364.567 | 9272305.153 | 25.012 | TERRENO |
| 1495 | 617363.212 | 9272304.839 | 25.186 | CANAL |
| 1496 | 617362.608 | 9272304.560 | 25.116 | CANAL |
| 1497 | 617361.897 | 9272304.116 | 25.048 | EJE |
| 1498 | 617360.918 | 9272303.532 | 25.060 | CANAL |
| 1499 | 617360.103 | 9272303.119 | 25.019 | CANAL |
| 1500 | 617358.633 | 9272302.816 | 25.147 | TERRENO |
| 1501 | 617357.165 | 9272317.273 | 24.295 | TERRENO |
| 1502 | 617355.039 | 9272315.854 | 24.442 | CANAL |
| 1503 | 617354.290 | 9272315.340 | 24.351 | CANAL |
| 1504 | 617353.585 | 9272314.779 | 24.343 | EJE |
| 1505 | 617352.383 | 9272313.919 | 24.321 | CANAL |
| 1506 | 617351.450 | 9272313.188 | 24.302 | CANAL |
| 1507 | 617350.761 | 9272312.556 | 24.323 | TERRENO |
| 1508 | 617349.953 | 9272311.547 | 24.221 | TERRENO |
| 1509 | 617340.856 | 9272332.768 | 23.098 | TERRENO |
| 1510 | 617342.791 | 9272334.887 | 23.049 | TERRENO |
| 1511 | 617339.509 | 9272331.613 | 23.287 | CANAL |
| 1512 | 617338.659 | 9272330.938 | 23.305 | CANAL |
| 1513 | 617338.020 | 9272330.510 | 23.303 | EJE |
| 1514 | 617337.261 | 9272329.840 | 23.188 | CANAL |
| 1515 | 617336.197 | 9272328.730 | 23.342 | CANAL |
| 1516 | 617336.174 | 9272327.911 | 23.329 | CANAL |
| 1517 | 617335.841 | 9272327.178 | 23.190 | TERRENO |
| 1518 | 617327.689 | 9272345.165 | 22.676 | TERRENO |
| 1519 | 617327.317 | 9272345.168 | 22.657 | TERRENO |
| 1520 | 617326.093 | 9272343.498 | 22.862 | CANAL |
| 1521 | 617325.553 | 9272343.064 | 22.933 | CANAL |
| 1522 | 617324.628 | 9272341.960 | 22.838 | EJE |
| 1523 | 617324.076 | 9272341.145 | 22.753 | CANAL |
| 1524 | 617323.139 | 9272340.129 | 22.812 | CANAL |
| 1525 | 617322.723 | 9272339.608 | 22.801 | BORDE |
| 1526 | 617321.834 | 9272338.840 | 22.831 | TERRENO |
| 1527 | 617316.869 | 9272355.694 | 22.525 | TERRENO |
| 1528 | 617314.992 | 9272352.319 | 22.533 | TERRENO |
| 1529 | 617314.599 | 9272350.467 | 22.678 | CANAL |
| 1530 | 617314.164 | 9272349.385 | 22.726 | CANAL |
| 1531 | 617313.834 | 9272348.216 | 22.729 | EJE |
| 1532 | 617313.358 | 9272347.417 | 22.687 | CANAL |
| 1533 | 617312.922 | 9272346.587 | 22.677 | CANAL |
| 1534 | 617312.674 | 9272346.343 | 22.690 | BORDE |
| 1535 | 617311.997 | 9272345.794 | 22.732 | TERRENO |
| 1536 | 617303.708 | 9272356.021 | 22.513 | TERRENO |
| 1537 | 617303.472 | 9272354.441 | 22.626 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1538 | 617303.535 | 9272353.621 | 22.756 | CANAL |
| 1539 | 617303.443 | 9272352.977 | 22.757 | CANAL |
| 1540 | 617303.347 | 9272350.963 | 22.740 | EJE |
| 1541 | 617303.263 | 9272349.936 | 22.735 | CANAL |
| 1542 | 617303.074 | 9272349.379 | 22.659 | CANAL |
| 1543 | 617302.948 | 9272348.719 | 22.654 | BORDE |
| 1544 | 617302.544 | 9272346.736 | 22.688 | TERRENO |
| 1545 | 617286.294 | 9272353.211 | 22.563 | TERRENO |
| 1546 | 617286.351 | 9272352.131 | 22.609 | TERRENO |
| 1547 | 617286.505 | 9272350.735 | 22.678 | CANAL |
| 1548 | 617286.687 | 9272350.143 | 22.661 | CANAL |
| 1549 | 617286.742 | 9272349.018 | 22.675 | EJE |
| 1550 | 617286.851 | 9272348.091 | 22.646 | CANAL |
| 1551 | 617287.059 | 9272347.141 | 22.675 | CANAL |
| 1552 | 617287.429 | 9272346.784 | 22.629 | BORDE |
| 1553 | 617287.821 | 9272345.745 | 22.582 | TERRENO |
| 1554 | 617270.744 | 9272349.809 | 22.412 | TERRENO |
| 1555 | 617271.087 | 9272348.118 | 22.341 | TERRENO |
| 1556 | 617271.315 | 9272347.497 | 22.287 | CANAL |
| 1557 | 617271.372 | 9272346.910 | 22.285 | CANAL |
| 1558 | 617271.693 | 9272345.444 | 22.326 | EJE |
| 1559 | 617271.728 | 9272344.737 | 22.331 | CANAL |
| 1560 | 617271.867 | 9272344.080 | 22.316 | CANAL |
| 1561 | 617272.068 | 9272343.361 | 22.380 | BORDE |
| 1562 | 617272.394 | 9272342.385 | 22.323 | TERRENO |
| 1563 | 617267.934 | 9272346.824 | 22.358 | ALCANTARILLA |
| 1564 | 617267.503 | 9272342.154 | 22.338 | ALCANTARILLA |
| 1565 | 617264.939 | 9272342.273 | 22.311 | ALCANTARILLA |
| 1566 | 617265.456 | 9272346.410 | 22.266 | ALCANTARILLA |
| 1567 | 617265.201 | 9272348.468 | 22.513 | CANAL |
| 1568 | 617266.349 | 9272350.532 | 22.427 | CANAL |
| 1569 | 617269.554 | 9272353.731 | 22.336 | CANAL |
| 1570 | 617270.276 | 9272353.402 | 21.658 | CANAL |
| 1571 | 617270.574 | 9272353.041 | 21.697 | CANAL |
| 1572 | 617271.852 | 9272351.513 | 22.476 | CANAL |
| 1573 | 617270.730 | 9272350.165 | 22.258 | CANAL |
| 1574 | 617269.104 | 9272348.368 | 22.398 | CANAL |
| 1575 | 617263.726 | 9272341.387 | 22.335 | CANAL |
| 1576 | 617262.533 | 9272338.934 | 22.267 | CANAL |
| 1577 | 617261.415 | 9272335.252 | 22.196 | CANAL |
| 1578 | 617260.127 | 9272332.037 | 22.098 | CANAL |
| 1579 | 617260.964 | 9272330.531 | 21.520 | CANAL |
| 1580 | 617261.467 | 9272330.195 | 21.492 | CANAL |
| 1581 | 617264.335 | 9272329.459 | 22.831 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1582 | 617265.653 | 9272331.334 | 22.806 | CANAL |
| 1583 | 617267.044 | 9272335.451 | 22.650 | CANAL |
| 1584 | 617267.018 | 9272339.092 | 22.267 | CANAL |
| 1585 | 617264.076 | 9272348.947 | 22.482 | TERRENO |
| 1586 | 617263.619 | 9272347.894 | 22.419 | TERRENO |
| 1587 | 617263.429 | 9272346.960 | 22.338 | CANAL |
| 1588 | 617263.389 | 9272346.824 | 22.181 | CANAL |
| 1589 | 617262.759 | 9272345.481 | 22.244 | EJE |
| 1590 | 617262.806 | 9272345.233 | 22.153 | CANAL |
| 1591 | 617262.174 | 9272343.405 | 22.280 | CANAL |
| 1592 | 617261.993 | 9272342.281 | 22.277 | TERRENO |
| 1593 | 617261.671 | 9272340.320 | 22.250 | TERRENO |
| 1594 | 617263.327 | 9272353.318 | 22.003 | TERRENO |
| 1595 | 617262.239 | 9272352.252 | 22.074 | TERRENO |
| 1596 | 617261.029 | 9272350.727 | 22.400 | BORDE |
| 1597 | 617260.149 | 9272349.775 | 22.239 | CANAL |
| 1598 | 617259.406 | 9272349.047 | 22.231 | CANAL |
| 1599 | 617258.413 | 9272348.187 | 22.299 | EJE |
| 1600 | 617257.713 | 9272347.652 | 22.256 | CANAL |
| 1601 | 617256.354 | 9272346.759 | 22.275 | CANAL |
| 1602 | 617255.727 | 9272346.452 | 22.261 | TERRENO |
| 1603 | 617255.225 | 9272345.639 | 22.230 | TERRENO |
| 1604 | 617253.725 | 9272344.450 | 21.823 | TERRENO |
| 1605 | 617260.728 | 9272355.081 | 22.128 | TERRENO |
| 1606 | 617259.429 | 9272353.533 | 22.331 | TERRENO |
| 1607 | 617258.494 | 9272353.519 | 22.504 | BORDE |
| 1608 | 617257.826 | 9272352.992 | 22.369 | CANAL |
| 1609 | 617257.180 | 9272352.678 | 22.208 | CANAL |
| 1610 | 617255.903 | 9272352.115 | 22.282 | EJE |
| 1611 | 617255.206 | 9272351.541 | 22.261 | CANAL |
| 1612 | 617254.271 | 9272350.892 | 22.288 | CANAL |
| 1613 | 617253.165 | 9272350.496 | 22.211 | BORDE |
| 1614 | 617252.316 | 9272350.086 | 22.035 | BORDE |
| 1615 | 617251.022 | 9272349.293 | 21.853 | TERRENO |
| 1616 | 617255.301 | 9272366.120 | 22.124 | TERRENO |
| 1617 | 617254.448 | 9272365.606 | 22.073 | TERRENO |
| 1618 | 617253.582 | 9272365.043 | 22.129 | BORDE |
| 1619 | 617252.885 | 9272365.098 | 22.315 | CANAL |
| 1620 | 617251.914 | 9272364.557 | 22.233 | CANAL |
| 1621 | 617250.959 | 9272364.079 | 22.303 | EJE |
| 1622 | 617249.740 | 9272363.581 | 22.348 | CANAL |
| 1623 | 617249.293 | 9272363.321 | 22.268 | CANAL |
| 1624 | 617248.162 | 9272362.599 | 22.295 | BORDE |
| 1625 | 617246.413 | 9272361.753 | 21.801 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1626 | 617245.517 | 9272361.336 | 21.740 | TERRENO |
| 1627 | 617248.902 | 9272381.777 | 22.077 | TERRENO |
| 1628 | 617247.404 | 9272381.003 | 22.053 | TERRENO |
| 1629 | 617245.661 | 9272380.070 | 22.586 | BORDE |
| 1630 | 617245.005 | 9272379.693 | 22.424 | CANAL |
| 1631 | 617244.798 | 9272379.682 | 22.304 | CANAL |
| 1632 | 617243.506 | 9272378.974 | 22.327 | EJE |
| 1633 | 617243.130 | 9272378.822 | 22.295 | CANAL |
| 1634 | 617242.840 | 9272378.600 | 22.361 | CANAL |
| 1635 | 617241.345 | 9272377.714 | 22.258 | BORDE |
| 1636 | 617240.974 | 9272377.465 | 22.067 | BORDE |
| 1637 | 617239.311 | 9272376.816 | 21.821 | TERRENO |
| 1638 | 617237.993 | 9272406.321 | 22.073 | TERRENO |
| 1639 | 617236.057 | 9272405.777 | 22.018 | TERRENO |
| 1640 | 617234.048 | 9272405.108 | 22.450 | BORDE |
| 1641 | 617233.747 | 9272404.800 | 22.525 | CANAL |
| 1642 | 617233.059 | 9272404.515 | 22.453 | CANAL |
| 1643 | 617232.167 | 9272404.189 | 22.493 | EJE |
| 1644 | 617231.336 | 9272403.896 | 22.477 | CANAL |
| 1645 | 617230.806 | 9272403.701 | 22.405 | CANAL |
| 1646 | 617229.946 | 9272403.280 | 22.333 | BORDE |
| 1647 | 617228.964 | 9272402.858 | 21.896 | BORDE |
| 1648 | 617227.119 | 9272401.848 | 21.854 | TERRENO |
| 1649 | 617231.467 | 9272422.544 | 22.397 | TERRENO |
| 1650 | 617227.762 | 9272431.364 | 22.272 | TERRENO |
| 1651 | 617235.718 | 9272435.606 | 22.397 | TERRENO |
| 1652 | 617240.506 | 9272426.747 | 22.262 | TERRENO |
| 1653 | 617226.821 | 9272433.161 | 22.204 | TERRENO |
| 1654 | 617229.127 | 9272426.858 | 22.412 | TERRENO |
| 1655 | 617227.556 | 9272426.048 | 22.244 | TERRENO |
| 1656 | 617225.948 | 9272425.498 | 22.474 | CANAL |
| 1657 | 617225.351 | 9272425.378 | 22.500 | CANAL |
| 1658 | 617224.168 | 9272425.052 | 22.518 | EJE |
| 1659 | 617223.031 | 9272424.569 | 22.547 | CANAL |
| 1660 | 617222.369 | 9272424.194 | 22.493 | CANAL |
| 1661 | 617221.414 | 9272423.523 | 22.307 | BORDE |
| 1662 | 617221.364 | 9272423.518 | 22.317 | BORDE |
| 1663 | 617219.316 | 9272422.360 | 21.865 | TERRENO |
| 1664 | 617221.893 | 9272440.585 | 22.433 | TERRENO |
| 1665 | 617220.541 | 9272440.589 | 22.482 | TERRENO |
| 1666 | 617219.649 | 9272440.151 | 22.523 | CANAL |
| 1667 | 617218.863 | 9272439.766 | 22.595 | CANAL |
| 1668 | 617218.099 | 9272439.441 | 22.592 | EJE |
| 1669 | 617217.314 | 9272439.067 | 22.582 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1670 | 617217.091 | 9272438.915 | 22.482 | CANAL |
| 1671 | 617215.716 | 9272438.236 | 22.433 | BORDE |
| 1672 | 617215.141 | 9272437.931 | 22.105 | BORDE |
| 1673 | 617213.239 | 9272436.743 | 21.812 | TERRENO |
| 1674 | 617214.876 | 9272462.448 | 22.186 | TERRENO |
| 1675 | 617213.995 | 9272462.032 | 22.240 | TERRENO |
| 1676 | 617212.634 | 9272460.868 | 22.484 | BORDE |
| 1677 | 617211.830 | 9272460.464 | 22.679 | CANAL |
| 1678 | 617210.753 | 9272460.082 | 22.707 | CANAL |
| 1679 | 617209.428 | 9272459.830 | 22.741 | EJE |
| 1680 | 617208.669 | 9272459.503 | 22.726 | CANAL |
| 1681 | 617207.923 | 9272459.054 | 22.719 | CANAL |
| 1682 | 617207.681 | 9272458.574 | 22.410 | BORDE |
| 1683 | 617206.703 | 9272457.760 | 22.088 | BORDE |
| 1684 | 617203.293 | 9272457.042 | 22.055 | TERRENO |
| 1685 | 617204.536 | 9272484.133 | 22.352 | TERRENO |
| 1686 | 617203.166 | 9272483.920 | 22.204 | TERRENO |
| 1687 | 617201.259 | 9272482.721 | 22.615 | BORDE |
| 1688 | 617200.886 | 9272482.479 | 22.686 | CANAL |
| 1689 | 617200.403 | 9272482.246 | 22.622 | CANAL |
| 1690 | 617199.177 | 9272481.863 | 22.716 | EJE |
| 1691 | 617198.587 | 9272481.442 | 22.686 | CANAL |
| 1692 | 617198.176 | 9272481.449 | 22.538 | CANAL |
| 1693 | 617196.728 | 9272480.766 | 22.562 | BORDE |
| 1694 | 617195.898 | 9272480.405 | 22.070 | BORDE |
| 1695 | 617194.028 | 9272479.541 | 22.010 | TERRENO |
| 1696 | 617194.659 | 9272507.983 | 22.312 | TERRENO |
| 1697 | 617192.634 | 9272507.569 | 22.251 | TERRENO |
| 1698 | 617190.910 | 9272506.756 | 22.490 | CANAL |
| 1699 | 617190.456 | 9272506.545 | 22.630 | CANAL |
| 1700 | 617189.787 | 9272506.321 | 22.560 | CANAL |
| 1701 | 617188.970 | 9272505.865 | 22.602 | EJE |
| 1702 | 617188.501 | 9272505.745 | 22.552 | CANAL |
| 1703 | 617187.709 | 9272505.453 | 22.558 | CANAL |
| 1704 | 617186.437 | 9272505.040 | 22.486 | TERRENO |
| 1705 | 617186.172 | 9272504.749 | 22.120 | TERRENO |
| 1706 | 617184.759 | 9272504.133 | 22.026 | TERRENO |
| 1707 | 617189.642 | 9272521.194 | 22.233 | TERRENO |
| 1708 | 617186.754 | 9272520.347 | 22.315 | TERRENO |
| 1709 | 617186.177 | 9272520.086 | 22.675 | BORDE |
| 1710 | 617185.469 | 9272519.926 | 22.640 | CANAL |
| 1711 | 617185.158 | 9272519.861 | 22.548 | CANAL |
| 1712 | 617184.228 | 9272519.470 | 22.621 | EJE |
| 1713 | 617182.923 | 9272519.172 | 22.674 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1714 | 617182.336 | 9272519.091 | 22.636 | CANAL |
| 1715 | 617181.454 | 9272518.798 | 22.544 | BORDE |
| 1716 | 617180.532 | 9272518.334 | 22.233 | BORDE |
| 1717 | 617178.491 | 9272517.714 | 22.088 | TERRENO |
| 1718 | 617185.774 | 9272532.081 | 22.260 | TERRENO |
| 1719 | 617184.269 | 9272531.804 | 22.329 | TERRENO |
| 1720 | 617182.946 | 9272531.396 | 22.392 | BORDE |
| 1721 | 617182.505 | 9272531.073 | 22.608 | CANAL |
| 1722 | 617181.930 | 9272531.066 | 22.627 | CANAL |
| 1723 | 617180.583 | 9272530.827 | 22.715 | EJE |
| 1724 | 617179.981 | 9272530.921 | 22.687 | CANAL |
| 1725 | 617179.539 | 9272530.471 | 22.684 | CANAL |
| 1726 | 617178.551 | 9272529.866 | 22.600 | BORDE |
| 1727 | 617177.330 | 9272529.001 | 22.250 | BORDE |
| 1728 | 617173.312 | 9272526.633 | 22.005 | TERRENO |
| 1729 | 617173.312 | 9272526.633 | 22.005 | TERRENO |
| 1730 | 617186.468 | 9272536.811 | 22.232 | TERRENO |
| 1731 | 617184.166 | 9272537.711 | 22.309 | TERRENO |
| 1732 | 617183.216 | 9272537.979 | 22.629 | BORDE |
| 1733 | 617182.762 | 9272538.175 | 22.565 | CANAL |
| 1734 | 617181.613 | 9272538.641 | 22.611 | CANAL |
| 1735 | 617180.596 | 9272539.011 | 22.733 | EJE |
| 1736 | 617179.785 | 9272539.127 | 22.749 | CANAL |
| 1737 | 617179.032 | 9272539.180 | 22.748 | CANAL |
| 1738 | 617178.300 | 9272539.176 | 22.647 | TERRENO |
| 1739 | 617172.510 | 9272538.838 | 22.621 | TERRENO |
| 1740 | 617189.994 | 9272544.540 | 22.255 | TERRENO |
| 1741 | 617189.359 | 9272545.880 | 22.312 | TERRENO |
| 1742 | 617187.607 | 9272547.074 | 22.457 | BORDE |
| 1743 | 617186.549 | 9272547.769 | 22.663 | CANAL |
| 1744 | 617185.237 | 9272548.391 | 22.735 | CANAL |
| 1745 | 617184.756 | 9272548.853 | 22.689 | EJE |
| 1746 | 617184.206 | 9272549.361 | 22.645 | CANAL |
| 1747 | 617182.434 | 9272550.706 | 22.761 | CANAL |
| 1748 | 617181.707 | 9272551.085 | 22.747 | TERRENO |
| 1749 | 617180.347 | 9272551.467 | 22.844 | CANAL |
| 1750 | 617182.363 | 9272554.649 | 22.761 | CANAL |
| 1751 | 617179.079 | 9272550.372 | 22.631 | CANAL |
| 1752 | 617175.276 | 9272545.674 | 22.753 | CANAL |
| 1753 | 617171.981 | 9272542.130 | 22.941 | CANAL |
| 1754 | 617170.036 | 9272542.654 | 21.976 | CANAL |
| 1755 | 617169.713 | 9272542.710 | 22.062 | CANAL |
| 1756 | 617169.104 | 9272543.165 | 22.462 | CANAL |
| 1757 | 617175.671 | 9272548.531 | 21.810 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1758 | 617176.204 | 9272549.456 | 22.048 | CANAL |
| 1759 | 617176.105 | 9272549.361 | 22.152 | CANAL |
| 1760 | 617182.484 | 9272555.203 | 22.812 | ALCANTARILLA |
| 1761 | 617181.347 | 9272557.042 | 22.857 | ALCANTARILLA |
| 1762 | 617184.115 | 9272559.883 | 22.793 | ALCANTARILLA |
| 1763 | 617184.483 | 9272558.911 | 22.752 | ALCANTARILLA |
| 1764 | 617182.058 | 9272555.774 | 22.875 | **BM - 06** |
| 1765 | 617195.975 | 9272552.287 | 22.415 | TERRENO |
| 1766 | 617194.186 | 9272553.914 | 22.479 | TERRENO |
| 1767 | 617193.002 | 9272554.786 | 22.712 | BORDE |
| 1768 | 617192.470 | 9272555.333 | 22.655 | CANAL |
| 1769 | 617191.247 | 9272556.590 | 22.744 | CANAL |
| 1770 | 617190.305 | 9272557.423 | 22.785 | EJE |
| 1771 | 617188.954 | 9272558.621 | 22.804 | CANAL |
| 1772 | 617188.441 | 9272559.315 | 22.767 | CANAL |
| 1773 | 617187.555 | 9272560.044 | 22.758 | CANAL |
| 1774 | 617187.060 | 9272560.671 | 21.938 | CANAL |
| 1775 | 617191.045 | 9272562.856 | 22.722 | CANAL |
| 1776 | 617190.830 | 9272564.127 | 22.178 | CANAL |
| 1777 | 617196.984 | 9272570.211 | 22.654 | CANAL |
| 1778 | 617196.225 | 9272571.264 | 21.871 | CANAL |
| 1779 | 617196.060 | 9272571.620 | 21.982 | CANAL |
| 1780 | 617195.566 | 9272571.877 | 22.702 | CANAL |
| 1781 | 617190.484 | 9272565.743 | 22.042 | CANAL |
| 1782 | 617189.958 | 9272566.190 | 22.655 | CANAL |
| 1783 | 617207.262 | 9272569.167 | 22.125 | CANAL |
| 1784 | 617206.650 | 9272570.129 | 22.171 | CANAL |
| 1785 | 617205.246 | 9272571.018 | 22.731 | BORDE |
| 1786 | 617203.964 | 9272571.650 | 22.793 | CANAL |
| 1787 | 617203.685 | 9272571.972 | 22.749 | CANAL |
| 1788 | 617202.697 | 9272572.878 | 22.834 | EJE |
| 1789 | 617202.312 | 9272573.349 | 22.812 | CANAL |
| 1790 | 617201.463 | 9272574.052 | 22.843 | CANAL |
| 1791 | 617200.739 | 9272574.569 | 22.787 | CANAL |
| 1792 | 617200.296 | 9272575.034 | 22.036 | CANAL |
| 1793 | 617199.855 | 9272575.384 | 21.886 | CANAL |
| 1794 | 617199.961 | 9272575.443 | 22.309 | CANAL |
| 1795 | 617218.462 | 9272580.759 | 22.413 | CANAL |
| 1796 | 617218.416 | 9272581.887 | 22.506 | CANAL |
| 1797 | 617217.044 | 9272583.824 | 22.787 | BORDE |
| 1798 | 617216.756 | 9272583.935 | 22.875 | CANAL |
| 1799 | 617216.208 | 9272584.788 | 22.887 | CANAL |
| 1800 | 617215.514 | 9272585.478 | 22.858 | EJE |
| 1801 | 617214.689 | 9272586.288 | 22.890 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1802 | 617213.815 | 9272587.249 | 22.947 | CANAL |
| 1803 | 617213.069 | 9272587.725 | 22.940 | CANAL |
| 1804 | 617212.316 | 9272588.288 | 22.141 | CANAL |
| 1805 | 617211.347 | 9272589.031 | 22.222 | CANAL |
| 1806 | 617210.710 | 9272589.473 | 22.899 | CANAL |
| 1807 | 617227.808 | 9272591.926 | 23.002 | TERRENO |
| 1808 | 617227.505 | 9272593.139 | 23.179 | TERRENO |
| 1809 | 617226.664 | 9272594.216 | 23.049 | CANAL |
| 1810 | 617226.179 | 9272594.833 | 22.993 | CANAL |
| 1811 | 617225.304 | 9272595.953 | 23.108 | EJE |
| 1812 | 617224.742 | 9272596.610 | 23.112 | CANAL |
| 1813 | 617224.339 | 9272597.083 | 23.051 | CANAL |
| 1814 | 617223.207 | 9272598.109 | 23.102 | TERRENO |
| 1815 | 617223.161 | 9272599.044 | 22.612 | CANAL |
| 1816 | 617229.546 | 9272597.200 | 23.015 | ALCANTARILLA |
| 1817 | 617230.043 | 9272597.594 | 22.921 | ALCANTARILLA |
| 1818 | 617228.150 | 9272599.744 | 23.084 | ALCANTARILLA |
| 1819 | 617227.871 | 9272600.077 | 23.014 | ALCANTARILLA |
| 1820 | 617239.953 | 9272600.640 | 22.481 | TERRENO |
| 1821 | 617239.155 | 9272601.369 | 22.417 | TERRENO |
| 1822 | 617237.086 | 9272603.192 | 22.963 | TERRENO |
| 1823 | 617236.420 | 9272603.709 | 23.159 | CANAL |
| 1824 | 617235.706 | 9272604.503 | 23.212 | CANAL |
| 1825 | 617235.447 | 9272604.771 | 23.107 | EJE |
| 1826 | 617234.052 | 9272606.107 | 23.210 | CANAL |
| 1827 | 617233.701 | 9272606.340 | 23.217 | CANAL |
| 1828 | 617232.282 | 9272607.609 | 23.158 | BORDE |
| 1829 | 617231.753 | 9272607.759 | 22.895 | CANAL |
| 1830 | 617230.952 | 9272608.468 | 22.318 | CANAL |
| 1831 | 617230.461 | 9272608.724 | 21.916 | CANAL |
| 1832 | 617229.520 | 9272609.608 | 22.815 | CANAL |
| 1833 | 617256.616 | 9272623.793 | 22.325 | TERRENO |
| 1834 | 617256.373 | 9272624.332 | 22.643 | TERRENO |
| 1835 | 617255.722 | 9272625.012 | 23.056 | BORDE |
| 1836 | 617255.162 | 9272625.229 | 23.251 | CANAL |
| 1837 | 617254.766 | 9272625.482 | 23.265 | CANAL |
| 1838 | 617253.691 | 9272626.721 | 23.342 | EJE |
| 1839 | 617253.079 | 9272627.101 | 23.328 | CANAL |
| 1840 | 617252.054 | 9272627.801 | 23.342 | CANAL |
| 1841 | 617251.561 | 9272628.305 | 23.179 | CANAL |
| 1842 | 617250.986 | 9272628.409 | 22.493 | CANAL |
| 1843 | 617273.194 | 9272640.097 | 22.477 | TERRENO |
| 1844 | 617271.853 | 9272640.882 | 22.305 | TERRENO |
| 1845 | 617270.421 | 9272642.266 | 23.179 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1846 | 617269.893 | 9272642.573 | 23.303 | CANAL |
| 1847 | 617269.532 | 9272642.853 | 23.310 | CANAL |
| 1848 | 617268.522 | 9272643.874 | 23.355 | EJE |
| 1849 | 617267.876 | 9272644.460 | 23.335 | CANAL |
| 1850 | 617267.516 | 9272644.793 | 23.198 | CANAL |
| 1851 | 617266.705 | 9272645.221 | 23.274 | CANAL |
| 1852 | 617266.293 | 9272645.461 | 22.555 | CANAL |
| 1853 | 617281.957 | 9272654.031 | 22.469 | TERRENO |
| 1854 | 617281.827 | 9272653.918 | 22.468 | TERRENO |
| 1855 | 617280.660 | 9272654.523 | 22.384 | TERRENO |
| 1856 | 617278.703 | 9272655.531 | 23.176 | BORDE |
| 1857 | 617278.171 | 9272655.632 | 23.298 | CANAL |
| 1858 | 617277.558 | 9272656.011 | 23.290 | CANAL |
| 1859 | 617276.504 | 9272656.789 | 23.323 | EJE |
| 1860 | 617275.810 | 9272657.074 | 23.277 | CANAL |
| 1861 | 617275.534 | 9272657.114 | 23.303 | CANAL |
| 1862 | 617274.229 | 9272657.568 | 23.245 | CANAL |
| 1863 | 617273.758 | 9272657.775 | 22.433 | CANAL |
| 1864 | 617287.384 | 9272670.054 | 22.537 | TERRENO |
| 1865 | 617285.249 | 9272670.415 | 22.498 | TERRENO |
| 1866 | 617283.075 | 9272670.786 | 23.131 | BORDE |
| 1867 | 617282.656 | 9272670.725 | 23.348 | CANAL |
| 1868 | 617282.055 | 9272670.784 | 23.377 | CANAL |
| 1869 | 617281.293 | 9272670.959 | 23.321 | EJE |
| 1870 | 617280.230 | 9272671.247 | 23.313 | CANAL |
| 1871 | 617279.757 | 9272671.430 | 23.218 | CANAL |
| 1872 | 617278.828 | 9272671.446 | 23.191 | CANAL |
| 1873 | 617277.930 | 9272671.496 | 22.370 | CANAL |
| 1874 | 617276.747 | 9272671.897 | 22.292 | CANAL |
| 1875 | 617276.271 | 9272671.767 | 23.174 | CANAL |
| 1876 | 617289.627 | 9272684.858 | 22.577 | TERRENO |
| 1877 | 617286.462 | 9272684.457 | 22.518 | TERRENO |
| 1878 | 617284.899 | 9272683.870 | 23.190 | TERRENO |
| 1879 | 617284.614 | 9272683.782 | 23.251 | BORDE |
| 1880 | 617284.481 | 9272683.759 | 23.288 | CANAL |
| 1881 | 617283.779 | 9272684.111 | 23.279 | CANAL |
| 1882 | 617282.533 | 9272684.285 | 23.330 | EJE |
| 1883 | 617281.675 | 9272684.405 | 23.308 | CANAL |
| 1884 | 617281.284 | 9272684.305 | 23.247 | CANAL |
| 1885 | 617279.950 | 9272684.429 | 23.201 | CANAL |
| 1886 | 617278.955 | 9272684.629 | 22.438 | CANAL |
| 1887 | 617278.550 | 9272684.343 | 22.133 | CANAL |
| 1888 | 617277.043 | 9272684.373 | 23.119 | CANAL |
| 1889 | 617286.966 | 9272732.020 | 23.012 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1890 | 617286.368 | 9272732.256 | 22.568 | CANAL |
| 1891 | 617285.949 | 9272732.293 | 22.528 | CANAL |
| 1892 | 617285.594 | 9272732.279 | 23.002 | CANAL |
| 1893 | 617284.579 | 9272732.523 | 23.212 | BORDE |
| 1894 | 617284.215 | 9272732.385 | 23.265 | CANAL |
| 1895 | 617283.968 | 9272732.514 | 23.292 | CANAL |
| 1896 | 617282.675 | 9272732.749 | 23.268 | EJE |
| 1897 | 617281.840 | 9272732.834 | 23.256 | CANAL |
| 1898 | 617281.258 | 9272732.781 | 23.195 | CANAL |
| 1899 | 617280.083 | 9272732.743 | 23.249 | CANAL |
| 1900 | 617279.176 | 9272732.276 | 22.362 | CANAL |
| 1901 | 617278.575 | 9272732.441 | 22.072 | CANAL |
| 1902 | 617277.265 | 9272732.258 | 23.125 | CANAL |
| 1903 | 617287.334 | 9272758.384 | 23.079 | CANAL |
| 1904 | 617286.732 | 9272758.553 | 22.697 | CANAL |
| 1905 | 617286.386 | 9272758.662 | 22.632 | CANAL |
| 1906 | 617285.550 | 9272758.601 | 23.096 | CANAL |
| 1907 | 617284.515 | 9272758.550 | 23.325 | BORDE |
| 1908 | 617284.507 | 9272758.545 | 23.345 | CANAL |
| 1909 | 617283.930 | 9272758.501 | 23.313 | CANAL |
| 1910 | 617282.849 | 9272758.682 | 23.344 | EJE |
| 1911 | 617282.105 | 9272758.815 | 23.330 | CANAL |
| 1912 | 617281.273 | 9272758.788 | 23.332 | CANAL |
| 1913 | 617280.216 | 9272758.759 | 23.264 | CANAL |
| 1914 | 617278.500 | 9272758.468 | 22.212 | CANAL |
| 1915 | 617278.119 | 9272758.460 | 22.190 | CANAL |
| 1916 | 617278.862 | 9272758.673 | 22.943 | ESTRUCTURA |
| 1917 | 617278.724 | 9272757.897 | 22.873 | ESTRUCTURA |
| 1918 | 617277.663 | 9272758.386 | 22.900 | ESTRUCTURA |
| 1919 | 617277.265 | 9272758.044 | 22.944 | ESTRUCTURA |
| 1920 | 617277.072 | 9272757.642 | 22.921 | ESTRUCTURA |
| 1921 | 617277.403 | 9272758.299 | 22.894 | ESTRUCTURA |
| 1922 | 617279.099 | 9272758.836 | 22.889 | ESTRUCTURA |
| 1923 | 617278.665 | 9272757.766 | 22.683 | ESTRUCTURA |
| 1924 | 617288.285 | 9272782.816 | 23.160 | CANAL |
| 1925 | 617287.163 | 9272782.803 | 22.752 | CANAL |
| 1926 | 617286.145 | 9272782.692 | 22.704 | CANAL |
| 1927 | 617284.939 | 9272782.632 | 23.244 | CANAL |
| 1928 | 617284.600 | 9272782.600 | 23.314 | BORDE |
| 1929 | 617284.500 | 9272782.534 | 23.334 | CANAL |
| 1930 | 617283.571 | 9272782.597 | 23.360 | CANAL |
| 1931 | 617282.634 | 9272782.527 | 23.361 | EJE |
| 1932 | 617282.095 | 9272782.555 | 23.325 | CANAL |
| 1933 | 617281.572 | 9272782.494 | 23.222 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1934 | 617280.251 | 9272782.623 | 23.320 | CANAL |
| 1935 | 617279.236 | 9272782.560 | 22.381 | CANAL |
| 1936 | 617278.795 | 9272782.736 | 22.618 | CANAL |
| 1937 | 617278.640 | 9272782.772 | 22.396 | CANAL |
| 1938 | 617287.685 | 9272815.594 | 23.061 | CANAL |
| 1939 | 617287.100 | 9272815.940 | 22.654 | CANAL |
| 1940 | 617286.900 | 9272815.935 | 22.726 | CANAL |
| 1941 | 617286.258 | 9272816.059 | 23.122 | CANAL |
| 1942 | 617285.301 | 9272816.204 | 23.433 | BORDE |
| 1943 | 617284.532 | 9272816.111 | 23.399 | CANAL |
| 1944 | 617284.326 | 9272816.248 | 23.361 | CANAL |
| 1945 | 617283.045 | 9272816.214 | 23.427 | EJE |
| 1946 | 617282.390 | 9272816.195 | 23.356 | CANAL |
| 1947 | 617281.958 | 9272816.295 | 23.425 | CANAL |
| 1948 | 617280.744 | 9272816.246 | 23.322 | CANAL |
| 1949 | 617279.501 | 9272816.241 | 22.427 | CANAL |
| 1950 | 617288.630 | 9272844.097 | 23.187 | CANAL |
| 1951 | 617287.921 | 9272844.272 | 22.730 | CANAL |
| 1952 | 617287.640 | 9272844.262 | 22.781 | CANAL |
| 1953 | 617286.438 | 9272844.341 | 23.177 | CANAL |
| 1954 | 617285.235 | 9272844.583 | 23.490 | BORDE |
| 1955 | 617284.797 | 9272844.537 | 23.483 | CANAL |
| 1956 | 617284.434 | 9272844.482 | 23.481 | CANAL |
| 1957 | 617283.151 | 9272844.679 | 23.551 | EJE |
| 1958 | 617282.319 | 9272844.686 | 23.568 | CANAL |
| 1959 | 617281.584 | 9272844.606 | 23.517 | CANAL |
| 1960 | 617280.682 | 9272844.634 | 23.577 | CANAL |
| 1961 | 617278.973 | 9272844.820 | 22.410 | CANAL |
| 1962 | 617278.435 | 9272844.850 | 22.320 | CANAL |
| 1963 | 617285.603 | 9272841.714 | 23.248 | TERRENO |
| 1964 | 617288.655 | 9272886.836 | 23.252 | CANAL |
| 1965 | 617287.915 | 9272886.866 | 22.904 | CANAL |
| 1966 | 617287.649 | 9272886.902 | 22.808 | CANAL |
| 1967 | 617286.799 | 9272886.975 | 23.396 | CANAL |
| 1968 | 617286.003 | 9272887.088 | 23.541 | BORDE |
| 1969 | 617285.417 | 9272887.116 | 23.527 | CANAL |
| 1970 | 617285.089 | 9272887.115 | 23.549 | CANAL |
| 1971 | 617283.874 | 9272887.157 | 23.491 | EJE |
| 1972 | 617283.076 | 9272887.209 | 23.447 | CANAL |
| 1973 | 617281.653 | 9272887.160 | 23.491 | CANAL |
| 1974 | 617280.834 | 9272887.205 | 23.552 | CANAL |
| 1975 | 617279.890 | 9272887.143 | 22.714 | CANAL |
| 1976 | 617278.626 | 9272887.086 | 22.580 | CANAL |
| 1977 | 617276.979 | 9272886.792 | 23.397 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 1978 | 617288.163 | 9272918.954 | 23.472 | CANAL |
| 1979 | 617287.812 | 9272919.153 | 22.936 | CANAL |
| 1980 | 617287.544 | 9272919.322 | 22.931 | CANAL |
| 1981 | 617285.682 | 9272919.435 | 23.568 | CANAL |
| 1982 | 617285.073 | 9272919.465 | 23.611 | BORDE |
| 1983 | 617284.866 | 9272919.485 | 23.586 | CANAL |
| 1984 | 617284.001 | 9272919.532 | 23.566 | CANAL |
| 1985 | 617283.257 | 9272919.434 | 23.584 | EJE |
| 1986 | 617281.899 | 9272919.474 | 23.631 | CANAL |
| 1987 | 617281.245 | 9272919.436 | 23.566 | CANAL |
| 1988 | 617280.193 | 9272919.170 | 23.690 | CANAL |
| 1989 | 617278.688 | 9272919.219 | 22.597 | CANAL |
| 1990 | 617277.946 | 9272919.193 | 22.694 | CANAL |
| 1991 | 617277.063 | 9272919.059 | 23.655 | CANAL |
| 1992 | 617288.128 | 9272937.588 | 23.678 | CANAL |
| 1993 | 617287.683 | 9272937.897 | 23.233 | CANAL |
| 1994 | 617287.377 | 9272937.700 | 23.306 | CANAL |
| 1995 | 617285.902 | 9272937.779 | 23.712 | CANAL |
| 1996 | 617285.034 | 9272937.818 | 23.897 | BORDE |
| 1997 | 617284.643 | 9272937.797 | 23.829 | CANAL |
| 1998 | 617283.787 | 9272937.871 | 23.910 | CANAL |
| 1999 | 617282.709 | 9272937.891 | 23.931 | EJE |
| 2000 | 617281.977 | 9272937.854 | 23.946 | CANAL |
| 2001 | 617280.540 | 9272938.028 | 23.965 | CANAL |
| 2002 | 617280.294 | 9272937.950 | 23.909 | CANAL |
| 2003 | 617279.191 | 9272938.150 | 22.989 | CANAL |
| 2004 | 617278.482 | 9272938.205 | 23.053 | CANAL |
| 2005 | 617277.540 | 9272938.116 | 23.625 | CANAL |
| 2006 | 617288.354 | 9272977.023 | 23.077 | CANAL |
| 2007 | 617288.364 | 9272977.470 | 22.861 | CANAL |
| 2008 | 617287.796 | 9272977.555 | 22.795 | CANAL |
| 2009 | 617286.633 | 9272977.480 | 23.439 | CANAL |
| 2010 | 617285.539 | 9272977.746 | 23.799 | BORDE |
| 2011 | 617285.057 | 9272977.830 | 23.878 | CANAL |
| 2012 | 617284.600 | 9272977.795 | 23.920 | CANAL |
| 2013 | 617283.737 | 9272977.981 | 23.903 | EJE |
| 2014 | 617282.363 | 9272977.842 | 23.919 | CANAL |
| 2015 | 617281.647 | 9272977.866 | 23.914 | CANAL |
| 2016 | 617280.789 | 9272977.830 | 23.830 | CANAL |
| 2017 | 617279.089 | 9272977.499 | 23.002 | CANAL |
| 2018 | 617278.380 | 9272977.769 | 23.212 | CANAL |
| 2019 | 617276.872 | 9272977.162 | 23.410 | CANAL |
| 2020 | 617278.656 | 9272997.478 | 23.697 | **BM - 07** |
| 2021 | 617279.233 | 9272997.798 | 23.662 | ESTRUCTURA |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2022 | 617279.186 | 9272998.090 | 23.733 | ESTRUCTURA |
| 2023 | 617278.740 | 9272997.639 | 23.666 | ESTRUCTURA |
| 2024 | 617278.971 | 9272997.240 | 23.650 | ESTRUCTURA |
| 2025 | 617277.069 | 9272998.260 | 23.562 | ESTRUCTURA |
| 2026 | 617277.170 | 9272997.730 | 23.624 | ESTRUCTURA |
| 2027 | 617277.134 | 9272997.797 | 23.666 | ESTRUCTURA |
| 2028 | 617277.101 | 9272997.180 | 23.686 | ESTRUCTURA |
| 2029 | 617287.222 | 9272986.867 | 23.886 | TERRENO |
| 2030 | 617289.854 | 9272998.803 | 23.376 | TERRENO |
| 2031 | 617288.314 | 9272999.534 | 23.321 | TERRENO |
| 2032 | 617285.960 | 9272999.032 | 23.874 | BORDE |
| 2033 | 617284.824 | 9272999.068 | 24.011 | CANAL |
| 2034 | 617284.366 | 9272998.988 | 23.949 | CANAL |
| 2035 | 617283.120 | 9272999.170 | 24.008 | EJE |
| 2036 | 617282.126 | 9272999.140 | 24.013 | CANAL |
| 2037 | 617281.107 | 9272999.032 | 24.024 | CANAL |
| 2038 | 617280.255 | 9272999.136 | 23.928 | CANAL |
| 2039 | 617278.524 | 9272999.023 | 22.899 | CANAL |
| 2040 | 617278.256 | 9272998.921 | 22.896 | CANAL |
| 2041 | 617276.901 | 9272999.438 | 23.217 | CANAL |
| 2042 | 617291.280 | 9273021.289 | 23.358 | TERRENO |
| 2043 | 617288.119 | 9273021.600 | 23.524 | TERRENO |
| 2044 | 617287.212 | 9273021.639 | 24.140 | BORDE |
| 2045 | 617286.588 | 9273021.579 | 24.336 | BORDE |
| 2046 | 617286.297 | 9273021.722 | 24.353 | CANAL |
| 2047 | 617285.287 | 9273021.733 | 24.366 | CANAL |
| 2048 | 617284.210 | 9273021.896 | 24.367 | EJE |
| 2049 | 617283.354 | 9273021.861 | 24.349 | CANAL |
| 2050 | 617282.310 | 9273021.963 | 24.369 | CANAL |
| 2051 | 617281.622 | 9273021.999 | 24.265 | CANAL |
| 2052 | 617280.459 | 9273021.874 | 23.839 | CANAL |
| 2053 | 617279.350 | 9273021.549 | 22.956 | CANAL |
| 2054 | 617278.096 | 9273021.509 | 22.694 | CANAL |
| 2055 | 617276.681 | 9273021.649 | 23.547 | CANAL |
| 2056 | 617292.729 | 9273054.935 | 23.502 | TERRENO |
| 2057 | 617290.977 | 9273054.954 | 23.456 | TERRENO |
| 2058 | 617287.638 | 9273055.359 | 24.180 | TERRENO |
| 2059 | 617287.170 | 9273055.410 | 24.304 | BORDE |
| 2060 | 617286.554 | 9273055.400 | 24.399 | CANAL |
| 2061 | 617285.891 | 9273055.268 | 24.388 | CANAL |
| 2062 | 617284.776 | 9273055.303 | 24.455 | EJE |
| 2063 | 617283.787 | 9273055.130 | 24.432 | CANAL |
| 2064 | 617283.188 | 9273055.013 | 24.383 | CANAL |
| 2065 | 617282.259 | 9273054.993 | 24.205 | EJE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2066 | 617280.841 | 9273055.068 | 23.752 | EJE |
| 2067 | 617280.022 | 9273055.054 | 23.382 | CANAL |
| 2068 | 617278.630 | 9273055.231 | 22.659 | CANAL |
| 2069 | 617278.313 | 9273055.635 | 22.633 | CANAL |
| 2070 | 617276.107 | 9273055.400 | 23.338 | CANAL |
| 2071 | 617292.079 | 9273084.565 | 23.499 | TERRENO |
| 2072 | 617289.541 | 9273084.134 | 23.509 | TERRENO |
| 2073 | 617287.325 | 9273084.219 | 24.034 | BORDE |
| 2074 | 617287.027 | 9273084.060 | 24.292 | BORDE |
| 2075 | 617286.300 | 9273084.210 | 24.368 | CANAL |
| 2076 | 617286.004 | 9273084.139 | 24.372 | CANAL |
| 2077 | 617284.259 | 9273084.226 | 24.462 | EJE |
| 2078 | 617283.675 | 9273084.302 | 24.411 | CANAL |
| 2079 | 617282.816 | 9273084.233 | 24.453 | CANAL |
| 2080 | 617281.155 | 9273084.154 | 24.327 | BORDE |
| 2081 | 617280.309 | 9273084.031 | 23.910 | CANAL |
| 2082 | 617279.335 | 9273084.456 | 23.293 | CANAL |
| 2083 | 617278.374 | 9273084.528 | 22.799 | CANAL |
| 2084 | 617277.483 | 9273083.989 | 23.435 | CANAL |
| 2085 | 617287.575 | 9273106.457 | 23.776 | TERRENO |
| 2086 | 617287.342 | 9273118.892 | 23.946 | TERRENO |
| 2087 | 617286.477 | 9273119.253 | 24.217 | CANAL |
| 2088 | 617285.599 | 9273119.174 | 24.297 | CANAL |
| 2089 | 617284.060 | 9273119.335 | 24.345 | EJE |
| 2090 | 617283.523 | 9273119.321 | 24.269 | CANAL |
| 2091 | 617281.744 | 9273119.039 | 24.360 | CANAL |
| 2092 | 617280.357 | 9273119.233 | 24.097 | BORDE |
| 2093 | 617279.021 | 9273119.087 | 22.729 | CANAL |
| 2094 | 617287.203 | 9273145.635 | 24.028 | TERRENO |
| 2095 | 617286.391 | 9273139.436 | 24.194 | TERRENO |
| 2096 | 617286.119 | 9273135.997 | 24.173 | TERRENO |
| 2097 | 617291.077 | 9273146.943 | 23.849 | TERRENO |
| 2098 | 617296.459 | 9273146.399 | 23.923 | TERRENO |
| 2099 | 617292.242 | 9273148.703 | 23.901 | TERRENO |
| 2100 | 617289.862 | 9273148.615 | 23.889 | TERRENO |
| 2101 | 617287.705 | 9273148.579 | 24.107 | CANAL |
| 2102 | 617287.367 | 9273148.424 | 24.047 | CANAL |
| 2103 | 617285.542 | 9273148.644 | 24.111 | EJE |
| 2104 | 617284.706 | 9273148.674 | 24.090 | CANAL |
| 2105 | 617283.396 | 9273148.566 | 24.004 | CANAL |
| 2106 | 617283.063 | 9273148.699 | 23.910 | BORDE |
| 2107 | 617281.575 | 9273148.442 | 23.510 | BORDE |
| 2108 | 617279.618 | 9273147.352 | 22.987 | CANAL |
| 2109 | 617279.042 | 9273147.645 | 22.601 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2110 | 617291.079 | 9273181.100 | 23.656 | TERRENO |
| 2111 | 617289.112 | 9273181.060 | 23.758 | TERRENO |
| 2112 | 617287.113 | 9273180.889 | 24.136 | BORDE |
| 2113 | 617286.464 | 9273180.732 | 24.182 | CANAL |
| 2114 | 617285.522 | 9273180.806 | 24.167 | CANAL |
| 2115 | 617284.607 | 9273180.752 | 24.111 | EJE |
| 2116 | 617283.183 | 9273180.716 | 24.178 | CANAL |
| 2117 | 617282.731 | 9273180.713 | 24.206 | CANAL |
| 2118 | 617281.427 | 9273180.862 | 24.339 | BORDE |
| 2119 | 617280.519 | 9273180.972 | 23.917 | BORDE |
| 2120 | 617279.378 | 9273181.161 | 22.973 | CANAL |
| 2121 | 617292.658 | 9273215.688 | 23.614 | TERRENO |
| 2122 | 617291.761 | 9273215.623 | 23.770 | TERRENO |
| 2123 | 617288.717 | 9273215.472 | 24.079 | BORDE |
| 2124 | 617287.126 | 9273215.532 | 23.950 | CANAL |
| 2125 | 617286.377 | 9273215.726 | 23.953 | CANAL |
| 2126 | 617284.582 | 9273216.146 | 24.015 | EJE |
| 2127 | 617283.861 | 9273216.310 | 23.952 | CANAL |
| 2128 | 617282.588 | 9273215.867 | 23.927 | CANAL |
| 2129 | 617281.112 | 9273216.135 | 24.311 | BORDE |
| 2130 | 617279.871 | 9273215.901 | 23.952 | CANAL |
| 2131 | 617279.393 | 9273215.833 | 23.259 | CANAL |
| 2132 | 617278.692 | 9273241.087 | 22.904 | CANAL |
| 2133 | 617278.177 | 9273240.848 | 22.954 | CANAL |
| 2134 | 617278.219 | 9273240.844 | 23.340 | CANAL |
| 2135 | 617278.533 | 9273240.819 | 23.590 | CANAL |
| 2136 | 617279.973 | 9273240.503 | 23.946 | BORDE |
| 2137 | 617281.691 | 9273239.980 | 23.966 | BORDE |
| 2138 | 617282.329 | 9273240.177 | 23.835 | CANAL |
| 2139 | 617283.001 | 9273240.608 | 23.885 | CANAL |
| 2140 | 617284.210 | 9273240.758 | 23.870 | EJE |
| 2141 | 617285.660 | 9273241.008 | 23.936 | CANAL |
| 2142 | 617286.985 | 9273241.109 | 23.823 | CANAL |
| 2143 | 617288.171 | 9273241.013 | 23.985 | BORDE |
| 2144 | 617288.570 | 9273241.047 | 23.852 | BORDE |
| 2145 | 617293.449 | 9273241.666 | 23.611 | TERRENO |
| 2146 | 617292.090 | 9273260.380 | 23.641 | TERRENO |
| 2147 | 617289.664 | 9273260.285 | 23.684 | TERRENO |
| 2148 | 617288.580 | 9273260.234 | 23.667 | BORDE |
| 2149 | 617287.838 | 9273260.364 | 23.950 | BORDE |
| 2150 | 617287.387 | 9273260.409 | 23.860 | CANAL |
| 2151 | 617286.906 | 9273260.594 | 23.902 | CANAL |
| 2152 | 617284.413 | 9273260.894 | 23.882 | EJE |
| 2153 | 617283.710 | 9273261.041 | 23.797 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2154 | 617282.913 | 9273261.268 | 23.900 | CANAL |
| 2155 | 617281.349 | 9273261.131 | 23.770 | BORDE |
| 2156 | 617279.851 | 9273261.187 | 24.043 | BORDE |
| 2157 | 617278.564 | 9273261.073 | 23.304 | CANAL |
| 2158 | 617278.067 | 9273261.151 | 22.953 | CANAL |
| 2159 | 617278.338 | 9273260.767 | 23.731 | CANAL |
| 2160 | 617291.184 | 9273267.548 | 23.625 | TERRENO |
| 2161 | 617289.811 | 9273267.853 | 23.744 | TERRENO |
| 2162 | 617288.914 | 9273268.227 | 23.835 | BORDE |
| 2163 | 617288.116 | 9273268.478 | 23.907 | CANAL |
| 2164 | 617287.982 | 9273268.606 | 23.959 | CANAL |
| 2165 | 617286.043 | 9273269.369 | 23.956 | EJE |
| 2166 | 617285.144 | 9273269.505 | 23.958 | CANAL |
| 2167 | 617283.417 | 9273270.046 | 23.895 | CANAL |
| 2168 | 617282.638 | 9273270.402 | 23.893 | TERRENO |
| 2169 | 617282.233 | 9273270.541 | 23.938 | TERRENO |
| 2170 | 617280.374 | 9273271.088 | 23.760 | CANAL |
| 2171 | 617279.374 | 9273271.436 | 23.216 | CANAL |
| 2172 | 617278.195 | 9273271.283 | 23.420 | CANAL |
| 2173 | 617277.757 | 9273271.278 | 23.961 | CANAL |
| 2174 | 617276.875 | 9273271.623 | 23.938 | TERRENO |
| 2175 | 617276.401 | 9273271.920 | 23.988 | BCB |
| 2176 | 617276.298 | 9273271.942 | 24.007 | TERRENO |
| 2177 | 617280.067 | 9273277.560 | 23.264 | CANAL |
| 2178 | 617279.528 | 9273277.828 | 23.152 | CANAL |
| 2179 | 617278.999 | 9273277.934 | 23.346 | CANAL |
| 2180 | 617280.757 | 9273277.727 | 23.728 | CANAL |
| 2181 | 617283.321 | 9273275.738 | 23.950 | TERRENO |
| 2182 | 617284.117 | 9273275.604 | 23.866 | TERRENO |
| 2183 | 617285.462 | 9273275.474 | 23.969 | CANAL |
| 2184 | 617285.730 | 9273275.320 | 23.990 | CANAL |
| 2185 | 617287.188 | 9273274.713 | 23.990 | EJE |
| 2186 | 617288.388 | 9273274.204 | 23.970 | CANAL |
| 2187 | 617289.350 | 9273273.812 | 23.903 | CANAL |
| 2188 | 617290.317 | 9273273.441 | 23.856 | BORDE |
| 2189 | 617290.941 | 9273273.311 | 23.625 | TERRENO |
| 2190 | 617292.957 | 9273272.684 | 23.577 | TERRENO |
| 2191 | 617297.872 | 9273279.301 | 23.473 | TERRENO |
| 2192 | 617297.552 | 9273279.439 | 23.742 | TERRENO |
| 2193 | 617296.419 | 9273281.238 | 23.813 | BORDE |
| 2194 | 617296.337 | 9273281.441 | 24.016 | BORDE |
| 2195 | 617295.738 | 9273281.586 | 24.042 | CANAL |
| 2196 | 617295.671 | 9273281.680 | 24.105 | CANAL |
| 2197 | 617293.929 | 9273283.460 | 24.042 | EJE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2198 | 617293.050 | 9273284.183 | 24.097 | CANAL |
| 2199 | 617291.863 | 9273285.556 | 24.028 | CANAL |
| 2200 | 617291.627 | 9273285.712 | 24.090 | BORDE |
| 2201 | 617291.610 | 9273285.902 | 24.193 | BORDE |
| 2202 | 617290.939 | 9273286.609 | 23.999 | BORDE |
| 2203 | 617290.595 | 9273287.090 | 23.841 | CANAL |
| 2204 | 617290.008 | 9273287.653 | 23.105 | CANAL |
| 2205 | 617289.337 | 9273288.366 | 23.067 | CANAL |
| 2206 | 617289.032 | 9273288.657 | 23.524 | CANAL |
| 2207 | 617306.151 | 9273289.727 | 23.677 | TERRENO |
| 2208 | 617306.796 | 9273288.833 | 23.675 | TERRENO |
| 2209 | 617305.662 | 9273290.070 | 24.021 | BORDE |
| 2210 | 617305.138 | 9273290.595 | 24.064 | CANAL |
| 2211 | 617304.780 | 9273291.000 | 24.079 | CANAL |
| 2212 | 617303.477 | 9273292.720 | 24.137 | EJE |
| 2213 | 617302.520 | 9273293.632 | 24.133 | CANAL |
| 2214 | 617301.894 | 9273294.402 | 24.200 | CANAL |
| 2215 | 617301.840 | 9273294.569 | 24.286 | BORDE |
| 2216 | 617301.161 | 9273295.332 | 24.163 | BORDE |
| 2217 | 617301.029 | 9273295.601 | 24.116 | CANAL |
| 2218 | 617300.874 | 9273296.009 | 23.317 | CANAL |
| 2219 | 617280.922 | 9273265.472 | 23.791 | ESTACIÓN 3 |
| 2220 | 617329.051 | 9273305.287 | 23.914 | TERRENO |
| 2221 | 617328.028 | 9273307.182 | 23.978 | TERRENO |
| 2222 | 617326.871 | 9273308.826 | 24.306 | BORDE |
| 2223 | 617326.638 | 9273308.949 | 24.338 | CANAL |
| 2224 | 617326.282 | 9273309.595 | 24.341 | CANAL |
| 2225 | 617325.968 | 9273310.405 | 24.359 | EJE |
| 2226 | 617325.552 | 9273311.026 | 24.361 | CANAL |
| 2227 | 617324.582 | 9273311.653 | 24.382 | CANAL |
| 2228 | 617324.320 | 9273312.090 | 24.221 | BORDE |
| 2229 | 617323.953 | 9273312.393 | 23.982 | CANAL |
| 2230 | 617323.824 | 9273312.763 | 23.332 | CANAL |
| 2231 | 617351.290 | 9273325.056 | 23.560 | TERRENO |
| 2232 | 617351.311 | 9273325.520 | 24.165 | BORDE |
| 2233 | 617351.080 | 9273325.790 | 24.247 | CANAL |
| 2234 | 617350.460 | 9273326.441 | 24.342 | CANAL |
| 2235 | 617349.880 | 9273327.276 | 24.360 | EJE |
| 2236 | 617349.076 | 9273328.408 | 24.409 | CANAL |
| 2237 | 617348.618 | 9273329.141 | 24.446 | CANAL |
| 2238 | 617348.079 | 9273329.587 | 24.379 | BORDE |
| 2239 | 617347.855 | 9273329.954 | 23.861 | CANAL |
| 2240 | 617347.347 | 9273330.537 | 23.286 | CANAL |
| 2241 | 617380.712 | 9273346.131 | 23.624 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2242 | 617380.372 | 9273346.386 | 24.176 | TERRENO |
| 2243 | 617380.298 | 9273347.074 | 24.432 | BORDE |
| 2244 | 617379.933 | 9273347.426 | 24.625 | CANAL |
| 2245 | 617379.468 | 9273348.194 | 24.540 | CANAL |
| 2246 | 617379.082 | 9273348.802 | 24.593 | EJE |
| 2247 | 617378.576 | 9273349.976 | 24.610 | CANAL |
| 2248 | 617378.305 | 9273350.170 | 24.668 | CANAL |
| 2249 | 617377.426 | 9273351.506 | 24.585 | BORDE |
| 2250 | 617376.947 | 9273352.133 | 23.792 | CANAL |
| 2251 | 617376.790 | 9273352.205 | 24.279 | CANAL |
| 2252 | 617414.730 | 9273371.273 | 24.096 | TERRENO |
| 2253 | 617414.105 | 9273372.324 | 24.406 | BORDE |
| 2254 | 617413.799 | 9273372.478 | 24.403 | CANAL |
| 2255 | 617413.372 | 9273373.109 | 24.525 | CANAL |
| 2256 | 617412.725 | 9273374.401 | 24.528 | EJE |
| 2257 | 617412.291 | 9273374.977 | 24.461 | CANAL |
| 2258 | 617411.863 | 9273375.474 | 24.565 | CANAL |
| 2259 | 617411.070 | 9273376.324 | 24.412 | BORDE |
| 2260 | 617410.695 | 9273376.539 | 24.343 | CANAL |
| 2261 | 617410.259 | 9273376.607 | 23.308 | CANAL |
| 2262 | 617427.320 | 9273389.094 | 24.321 | COMPUERTA |
| 2263 | 617425.856 | 9273390.334 | 24.416 | COMPUERTA |
| 2264 | 617450.215 | 9273396.596 | 24.216 | TERRENO |
| 2265 | 617449.797 | 9273397.329 | 24.333 | BORDE |
| 2266 | 617449.308 | 9273397.694 | 24.455 | CANAL |
| 2267 | 617449.051 | 9273398.042 | 24.545 | CANAL |
| 2268 | 617448.460 | 9273399.060 | 24.504 | EJE |
| 2269 | 617448.047 | 9273400.192 | 24.511 | CANAL |
| 2270 | 617446.930 | 9273401.266 | 24.469 | CANAL |
| 2271 | 617446.465 | 9273402.435 | 24.502 | BORDE |
| 2272 | 617446.190 | 9273402.728 | 24.049 | CANAL |
| 2273 | 617445.895 | 9273402.966 | 23.495 | CANAL |
| 2274 | 617486.113 | 9273422.718 | 23.757 | TERRENO |
| 2275 | 617485.929 | 9273423.104 | 24.270 | BORDE |
| 2276 | 617484.990 | 9273424.469 | 24.414 | CANAL |
| 2277 | 617484.382 | 9273425.166 | 24.496 | CANAL |
| 2278 | 617483.628 | 9273426.691 | 24.624 | EJE |
| 2279 | 617483.233 | 9273426.940 | 24.592 | CANAL |
| 2280 | 617482.390 | 9273428.050 | 24.580 | CANAL |
| 2281 | 617481.778 | 9273428.888 | 24.502 | BORDE |
| 2282 | 617481.477 | 9273429.442 | 23.999 | CANAL |
| 2283 | 617481.311 | 9273429.494 | 23.465 | CANAL |
| 2284 | 617514.041 | 9273444.028 | 24.459 | TERRENO |
| 2285 | 617514.358 | 9273444.558 | 24.541 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2286 | 617514.063 | 9273445.063 | 24.515 | CANAL |
| 2287 | 617513.275 | 9273445.690 | 24.502 | CANAL |
| 2288 | 617512.416 | 9273446.888 | 24.518 | EJE |
| 2289 | 617511.566 | 9273447.940 | 24.604 | CANAL |
| 2290 | 617510.654 | 9273449.140 | 24.623 | CANAL |
| 2291 | 617509.257 | 9273450.267 | 24.557 | BORDE |
| 2292 | 617509.820 | 9273450.499 | 24.394 | CANAL |
| 2293 | 617510.156 | 9273451.247 | 24.011 | CANAL |
| 2294 | 617549.261 | 9273470.994 | 24.256 | TERRENO |
| 2295 | 617548.634 | 9273471.551 | 24.580 | BORDE |
| 2296 | 617548.400 | 9273472.086 | 24.672 | CANAL |
| 2297 | 617547.548 | 9273473.057 | 24.699 | CANAL |
| 2298 | 617547.488 | 9273473.714 | 24.640 | EJE |
| 2299 | 617546.660 | 9273474.995 | 24.699 | CANAL |
| 2300 | 617545.857 | 9273475.860 | 24.650 | CANAL |
| 2301 | 617545.279 | 9273476.361 | 24.614 | BORDE |
| 2302 | 617545.033 | 9273476.861 | 24.222 | CANAL |
| 2303 | 617544.400 | 9273477.279 | 23.820 | CANAL |
| 2304 | 617580.160 | 9273493.729 | 24.397 | TERRENO |
| 2305 | 617579.769 | 9273494.751 | 24.799 | BORDE |
| 2306 | 617579.664 | 9273494.903 | 24.807 | CANAL |
| 2307 | 617579.532 | 9273495.369 | 24.778 | CANAL |
| 2308 | 617578.822 | 9273496.673 | 24.879 | EJE |
| 2309 | 617578.623 | 9273497.501 | 24.816 | CANAL |
| 2310 | 617577.878 | 9273498.985 | 24.854 | CANAL |
| 2311 | 617577.453 | 9273499.304 | 24.830 | BORDE |
| 2312 | 617576.887 | 9273499.681 | 24.194 | CANAL |
| 2313 | 617576.565 | 9273499.981 | 24.311 | CANAL |
| 2314 | 617575.464 | 9273501.508 | 23.550 | CANAL |
| 2315 | 617575.304 | 9273501.539 | 24.177 | CANAL |
| 2316 | 617606.343 | 9273513.871 | 24.835 | TERRENO |
| 2317 | 617606.406 | 9273514.271 | 25.074 | BORDE |
| 2318 | 617606.445 | 9273514.893 | 25.034 | CANAL |
| 2319 | 617605.973 | 9273515.308 | 25.032 | CANAL |
| 2320 | 617604.959 | 9273516.734 | 25.137 | EJE |
| 2321 | 617604.491 | 9273517.361 | 25.124 | CANAL |
| 2322 | 617603.799 | 9273518.154 | 24.970 | CANAL |
| 2323 | 617603.324 | 9273518.918 | 24.683 | BORDE |
| 2324 | 617602.880 | 9273519.349 | 24.291 | CANAL |
| 2325 | 617602.540 | 9273519.775 | 24.065 | CANAL |
| 2326 | 617634.770 | 9273535.348 | 25.044 | TERRENO |
| 2327 | 617634.845 | 9273535.471 | 25.258 | BORDE |
| 2328 | 617634.589 | 9273535.886 | 25.275 | CANAL |
| 2329 | 617634.454 | 9273536.071 | 25.362 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2330 | 617633.711 | 9273537.242 | 25.328 | EJE |
| 2331 | 617633.711 | 9273537.242 | 25.328 | EJE |
| 2332 | 617633.030 | 9273538.474 | 25.381 | CANAL |
| 2333 | 617632.984 | 9273538.442 | 25.343 | CANAL |
| 2334 | 617631.993 | 9273539.545 | 25.244 | BORDE |
| 2335 | 617631.484 | 9273539.892 | 24.597 | CANAL |
| 2336 | 617630.938 | 9273539.962 | 23.765 | CANAL |
| 2337 | 617665.593 | 9273557.929 | 24.855 | TERRENO |
| 2338 | 617665.244 | 9273558.291 | 25.313 | BORDE |
| 2339 | 617665.253 | 9273558.381 | 25.389 | CANAL |
| 2340 | 617664.574 | 9273558.952 | 25.420 | CANAL |
| 2341 | 617664.167 | 9273559.754 | 25.429 | EJE |
| 2342 | 617663.619 | 9273560.830 | 25.431 | CANAL |
| 2343 | 617663.334 | 9273561.118 | 25.326 | CANAL |
| 2344 | 617662.763 | 9273561.705 | 25.198 | BORDE |
| 2345 | 617661.645 | 9273562.512 | 24.950 | CANAL |
| 2346 | 617660.677 | 9273563.343 | 23.742 | CANAL |
| 2347 | 617661.571 | 9273563.812 | 24.774 | COMPUERTA |
| 2348 | 617661.358 | 9273564.285 | 24.675 | COMPUERTA |
| 2349 | 617661.064 | 9273563.365 | 24.773 | ESTRUCTURA |
| 2350 | 617661.097 | 9273563.364 | 24.725 | ESTRUCTURA |
| 2351 | 617661.981 | 9273563.684 | 24.689 | ESTRUCTURA |
| 2352 | 617662.710 | 9273563.983 | 24.868 | ESTRUCTURA |
| 2353 | 617661.052 | 9273565.245 | 24.744 | ESTRUCTURA |
| 2354 | 617661.052 | 9273565.412 | 24.743 | ESTRUCTURA |
| 2355 | 617660.139 | 9273565.165 | 24.777 | ESTRUCTURA |
| 2356 | 617659.671 | 9273564.832 | 24.787 | ESTRUCTURA |
| 2357 | 617694.262 | 9273575.204 | 24.617 | TERRENO |
| 2358 | 617692.847 | 9273576.912 | 24.881 | TERRENO |
| 2359 | 617692.396 | 9273577.340 | 25.244 | BORDE |
| 2360 | 617692.001 | 9273577.653 | 25.288 | CANAL |
| 2361 | 617691.900 | 9273577.934 | 25.329 | CANAL |
| 2362 | 617690.632 | 9273579.494 | 25.356 | EJE |
| 2363 | 617690.381 | 9273579.765 | 25.285 | CANAL |
| 2364 | 617689.913 | 9273580.278 | 25.336 | CANAL |
| 2365 | 617689.086 | 9273581.116 | 25.331 | BORDE |
| 2366 | 617687.343 | 9273582.379 | 24.831 | CANAL |
| 2367 | 617687.332 | 9273583.237 | 24.086 | CANAL |
| 2368 | 617717.670 | 9273593.161 | 24.327 | TERRENO |
| 2369 | 617716.885 | 9273594.312 | 24.776 | TERRENO |
| 2370 | 617716.146 | 9273595.350 | 25.016 | BORDE |
| 2371 | 617715.679 | 9273595.941 | 25.125 | CANAL |
| 2372 | 617715.359 | 9273596.100 | 25.126 | CANAL |
| 2373 | 617714.329 | 9273597.457 | 25.241 | EJE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2374 | 617714.157 | 9273597.985 | 25.171 | CANAL |
| 2375 | 617713.523 | 9273598.794 | 25.193 | CANAL |
| 2376 | 617712.663 | 9273599.661 | 25.180 | BORDE |
| 2377 | 617712.124 | 9273600.069 | 25.052 | CANAL |
| 2378 | 617711.434 | 9273600.655 | 24.062 | CANAL |
| 2379 | 617739.739 | 9273609.107 | 24.548 | TERRENO |
| 2380 | 617738.203 | 9273611.003 | 24.472 | TERRENO |
| 2381 | 617736.400 | 9273612.958 | 24.889 | BORDE |
| 2382 | 617736.102 | 9273613.478 | 24.963 | CANAL |
| 2383 | 617735.962 | 9273613.617 | 24.835 | CANAL |
| 2384 | 617735.347 | 9273614.774 | 24.957 | EJE |
| 2385 | 617734.917 | 9273615.463 | 24.965 | CANAL |
| 2386 | 617734.707 | 9273615.925 | 24.938 | CANAL |
| 2387 | 617734.078 | 9273616.520 | 24.933 | BORDE |
| 2388 | 617733.571 | 9273617.102 | 24.475 | CANAL |
| 2389 | 617733.425 | 9273617.093 | 24.632 | CANAL |
| 2390 | 617733.004 | 9273617.773 | 23.767 | CANAL |
| 2391 | 617733.249 | 9273617.811 | 24.238 | CANAL |
| 2392 | 617759.238 | 9273626.311 | 24.321 | TERRENO |
| 2393 | 617758.875 | 9273626.555 | 24.490 | TERRENO |
| 2394 | 617758.258 | 9273628.122 | 24.714 | BORDE |
| 2395 | 617757.777 | 9273628.818 | 24.877 | CANAL |
| 2396 | 617757.466 | 9273629.349 | 24.842 | CANAL |
| 2397 | 617756.851 | 9273630.216 | 24.922 | EJE |
| 2398 | 617756.613 | 9273630.844 | 24.895 | CANAL |
| 2399 | 617756.281 | 9273631.530 | 24.965 | CANAL |
| 2400 | 617755.421 | 9273632.387 | 24.818 | BORDE |
| 2401 | 617755.122 | 9273632.745 | 24.523 | CANAL |
| 2402 | 617755.012 | 9273632.931 | 24.070 | CANAL |
| 2403 | 617778.380 | 9273641.472 | 24.283 | TERRENO |
| 2404 | 617778.047 | 9273641.878 | 24.730 | TERRENO |
| 2405 | 617777.454 | 9273643.149 | 24.823 | BORDE |
| 2406 | 617777.268 | 9273643.093 | 24.854 | CANAL |
| 2407 | 617776.870 | 9273643.739 | 24.820 | CANAL |
| 2408 | 617776.148 | 9273644.900 | 24.919 | EJE |
| 2409 | 617775.882 | 9273645.307 | 24.872 | CANAL |
| 2410 | 617775.534 | 9273645.821 | 24.883 | CANAL |
| 2411 | 617774.351 | 9273646.895 | 24.779 | BORDE |
| 2412 | 617774.285 | 9273647.225 | 24.385 | CANAL |
| 2413 | 617774.235 | 9273647.242 | 24.454 | CANAL |
| 2414 | 617795.956 | 9273654.097 | 24.231 | TERRENO |
| 2415 | 617795.632 | 9273654.838 | 24.604 | TERRENO |
| 2416 | 617794.945 | 9273655.885 | 24.861 | BORDE |
| 2417 | 617794.800 | 9273656.225 | 24.947 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2418 | 617794.467 | 9273656.649 | 24.924 | CANAL |
| 2419 | 617793.681 | 9273657.686 | 24.992 | EJE |
| 2420 | 617793.258 | 9273658.359 | 24.959 | CANAL |
| 2421 | 617792.929 | 9273658.664 | 24.984 | CANAL |
| 2422 | 617791.951 | 9273659.701 | 24.957 | BORDE |
| 2423 | 617791.647 | 9273659.967 | 24.559 | CANAL |
| 2424 | 617791.520 | 9273660.141 | 24.207 | CANAL |
| 2425 | 617812.596 | 9273666.377 | 24.274 | TERRENO |
| 2426 | 617812.140 | 9273667.121 | 24.766 | TERRENO |
| 2427 | 617811.656 | 9273667.892 | 24.855 | BORDE |
| 2428 | 617811.287 | 9273668.316 | 24.962 | CANAL |
| 2429 | 617810.964 | 9273668.738 | 24.969 | CANAL |
| 2430 | 617810.345 | 9273669.742 | 25.020 | EJE |
| 2431 | 617809.913 | 9273670.427 | 24.962 | CANAL |
| 2432 | 617809.509 | 9273671.018 | 24.980 | CANAL |
| 2433 | 617808.892 | 9273671.734 | 25.080 | BORDE |
| 2434 | 617808.287 | 9273672.447 | 24.596 | CANAL |
| 2435 | 617808.322 | 9273672.592 | 24.508 | CANAL |
| 2436 | 617807.591 | 9273673.696 | 24.120 | CANAL |
| 2437 | 617807.160 | 9273673.703 | 24.627 | CANAL |
| 2438 | 617819.919 | 9273672.430 | 24.262 | TERRENO |
| 2439 | 617819.528 | 9273673.086 | 24.783 | TERRENO |
| 2440 | 617819.047 | 9273673.784 | 24.879 | BORDE |
| 2441 | 617818.598 | 9273674.328 | 24.946 | CANAL |
| 2442 | 617818.489 | 9273674.392 | 24.928 | CANAL |
| 2443 | 617817.701 | 9273675.677 | 25.017 | EJE |
| 2444 | 617817.210 | 9273676.333 | 25.021 | CANAL |
| 2445 | 617817.024 | 9273676.797 | 24.963 | CANAL |
| 2446 | 617816.212 | 9273677.607 | 24.897 | BORDE |
| 2447 | 617815.683 | 9273677.934 | 24.364 | CANAL |
| 2448 | 617815.472 | 9273677.964 | 24.560 | CANAL |
| 2449 | 617814.467 | 9273679.103 | 24.083 | CANAL |
| 2450 | 617814.257 | 9273679.716 | 24.283 | CANAL |
| 2451 | 617280.922 | 9273265.472 | 23.791 | CANAL |
| 2452 | 617280.922 | 9273265.472 | 23.791 | BORDE |
| 2453 | 617280.922 | 9273265.472 | 23.791 | BORDE |
| 2454 | 617280.922 | 9273265.472 | 23.791 | BORDE |
| 2455 | 617280.922 | 9273265.472 | 23.791 | BORDE |
| 2456 | 617280.922 | 9273265.472 | 23.791 | BORDE |
| 2457 | 617835.439 | 9273681.906 | 24.896 | TERRENO |
| 2458 | 617834.340 | 9273683.200 | 24.754 | TERRENO |
| 2459 | 617833.949 | 9273683.989 | 24.792 | BORDE |
| 2460 | 617833.673 | 9273684.217 | 24.835 | CANAL |
| 2461 | 617833.359 | 9273684.809 | 24.833 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2462 | 617832.451 | 9273686.284 | 24.960 | EJE |
| 2463 | 617831.895 | 9273687.198 | 24.958 | CANAL |
| 2464 | 617831.072 | 9273687.997 | 24.977 | CANAL |
| 2465 | 617830.789 | 9273688.461 | 24.903 | BORDE |
| 2466 | 617830.234 | 9273688.921 | 24.490 | CANAL |
| 2467 | 617830.167 | 9273689.118 | 23.997 | CANAL |
| 2468 | 617870.443 | 9273708.874 | 24.448 | TERRENO |
| 2469 | 617870.057 | 9273709.396 | 24.355 | TERRENO |
| 2470 | 617869.078 | 9273710.840 | 24.800 | BORDE |
| 2471 | 617868.385 | 9273711.145 | 24.872 | BORDE |
| 2472 | 617868.213 | 9273711.137 | 24.879 | CANAL |
| 2473 | 617868.088 | 9273711.706 | 24.869 | CANAL |
| 2474 | 617867.519 | 9273712.697 | 24.881 | EJE |
| 2475 | 617866.945 | 9273713.554 | 24.911 | CANAL |
| 2476 | 617866.382 | 9273714.204 | 24.940 | CANAL |
| 2477 | 617866.062 | 9273714.579 | 24.879 | BORDE |
| 2478 | 617865.444 | 9273715.293 | 24.047 | CANAL |
| 2479 | 617865.763 | 9273715.097 | 24.627 | CANAL |
| 2480 | 617903.030 | 9273732.791 | 24.338 | TERRENO |
| 2481 | 617902.129 | 9273734.794 | 24.463 | TERRENO |
| 2482 | 617901.809 | 9273735.250 | 24.807 | BORDE |
| 2483 | 617901.567 | 9273735.524 | 24.903 | CANAL |
| 2484 | 617901.122 | 9273735.830 | 24.892 | CANAL |
| 2485 | 617900.680 | 9273736.649 | 24.967 | EJE |
| 2486 | 617900.061 | 9273737.487 | 24.988 | CANAL |
| 2487 | 617899.608 | 9273738.063 | 25.006 | CANAL |
| 2488 | 617899.144 | 9273738.755 | 25.038 | BORDE |
| 2489 | 617898.670 | 9273739.371 | 24.502 | CANAL |
| 2490 | 617898.497 | 9273739.440 | 24.129 | CANAL |
| 2491 | 617933.785 | 9273754.822 | 24.349 | TERRENO |
| 2492 | 617933.053 | 9273756.624 | 24.719 | TERRENO |
| 2493 | 617932.484 | 9273757.178 | 24.947 | BORDE |
| 2494 | 617932.028 | 9273757.755 | 25.037 | CANAL |
| 2495 | 617931.697 | 9273758.214 | 25.039 | CANAL |
| 2496 | 617931.321 | 9273758.863 | 25.044 | EJE |
| 2497 | 617931.160 | 9273759.409 | 25.032 | CANAL |
| 2498 | 617930.724 | 9273760.133 | 25.118 | CANAL |
| 2499 | 617929.946 | 9273761.142 | 24.367 | CANAL |
| 2500 | 617929.750 | 9273761.426 | 24.022 | CANAL |
| 2501 | 617931.434 | 9273762.816 | 25.079 | ESTRUCTURA |
| 2502 | 617931.449 | 9273763.588 | 25.057 | ESTRUCTURA |
| 2503 | 617932.046 | 9273764.324 | 25.070 | ESTRUCTURA |
| 2504 | 617932.554 | 9273764.479 | 25.118 | ESTRUCTURA |
| 2505 | 617931.254 | 9273765.992 | 25.329 | ESTRUCTURA |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2506 | 617931.146 | 9273765.928 | 25.161 | ESTRUCTURA |
| 2507 | 617930.413 | 9273765.614 | 24.980 | ESTRUCTURA |
| 2508 | 617930.030 | 9273765.273 | 25.086 | ESTRUCTURA |
| 2509 | 617930.646 | 9273765.040 | 25.055 | COMPUERTA |
| 2510 | 617931.627 | 9273764.075 | 25.192 | COMPUERTA |
| 2511 | 617965.775 | 9273778.950 | 24.532 | TERRENO |
| 2512 | 617965.069 | 9273780.239 | 24.692 | TERRENO |
| 2513 | 617964.647 | 9273780.920 | 24.936 | BORDE |
| 2514 | 617964.289 | 9273781.503 | 24.975 | CANAL |
| 2515 | 617963.845 | 9273782.153 | 25.048 | CANAL |
| 2516 | 617963.454 | 9273782.904 | 25.069 | EJE |
| 2517 | 617962.912 | 9273783.731 | 25.088 | CANAL |
| 2518 | 617962.649 | 9273784.126 | 25.109 | CANAL |
| 2519 | 617961.688 | 9273785.335 | 25.076 | BORDE |
| 2520 | 617961.221 | 9273785.686 | 24.739 | CANAL |
| 2521 | 617961.002 | 9273785.859 | 24.195 | CANAL |
| 2522 | 617994.391 | 9273799.207 | 24.847 | TERRENO |
| 2523 | 617993.575 | 9273800.387 | 25.025 | TERRENO |
| 2524 | 617993.393 | 9273800.927 | 25.024 | BORDE |
| 2525 | 617993.014 | 9273801.342 | 25.063 | CANAL |
| 2526 | 617992.785 | 9273801.885 | 24.965 | CANAL |
| 2527 | 617992.206 | 9273802.641 | 24.979 | EJE |
| 2528 | 617991.700 | 9273803.341 | 24.976 | CANAL |
| 2529 | 617991.047 | 9273804.184 | 24.951 | CANAL |
| 2530 | 617990.416 | 9273804.980 | 25.171 | BORDE |
| 2531 | 617989.525 | 9273805.991 | 24.828 | CANAL |
| 2532 | 617989.164 | 9273806.278 | 24.266 | CANAL |
| 2533 | 617988.702 | 9273807.269 | 24.221 | CANAL |
| 2534 | 617989.014 | 9273807.991 | 24.384 | CANAL |
| 2535 | 618014.133 | 9273812.078 | 24.672 | TERRENO |
| 2536 | 618012.743 | 9273814.425 | 24.917 | TERRENO |
| 2537 | 618012.539 | 9273814.869 | 24.962 | BORDE |
| 2538 | 618012.286 | 9273815.283 | 24.971 | CANAL |
| 2539 | 618011.334 | 9273816.571 | 25.120 | CANAL |
| 2540 | 618011.340 | 9273816.564 | 25.097 | CANAL |
| 2541 | 618010.842 | 9273817.333 | 25.095 | EJE |
| 2542 | 618010.145 | 9273818.225 | 25.135 | CANAL |
| 2543 | 618009.357 | 9273819.559 | 25.121 | CANAL |
| 2544 | 618009.048 | 9273820.059 | 25.281 | CANAL |
| 2545 | 618008.611 | 9273820.809 | 24.810 | CANAL |
| 2546 | 618008.343 | 9273821.131 | 24.514 | CANAL |
| 2547 | 618039.021 | 9273829.749 | 24.621 | TERRENO |
| 2548 | 618037.838 | 9273831.228 | 24.813 | TERRENO |
| 2549 | 618036.579 | 9273832.662 | 25.004 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2550 | 618036.580 | 9273832.640 | 24.984 | TERRENO |
| 2551 | 618036.366 | 9273833.031 | 24.925 | BORDE |
| 2552 | 618036.373 | 9273833.032 | 24.920 | BORDE |
| 2553 | 618035.974 | 9273833.515 | 25.109 | BORDE |
| 2554 | 618036.063 | 9273833.635 | 25.022 | CANAL |
| 2555 | 618035.365 | 9273834.675 | 25.098 | CANAL |
| 2556 | 618034.735 | 9273835.382 | 25.056 | EJE |
| 2557 | 618034.110 | 9273836.202 | 25.122 | CANAL |
| 2558 | 618033.325 | 9273837.365 | 25.173 | CANAL |
| 2559 | 618033.052 | 9273837.738 | 25.312 | BORDE |
| 2560 | 618032.640 | 9273838.414 | 24.761 | CANAL |
| 2561 | 618032.399 | 9273838.653 | 24.213 | CANAL |
| 2562 | 618063.281 | 9273847.967 | 24.690 | TERRENO |
| 2563 | 618061.750 | 9273849.848 | 24.879 | TERRENO |
| 2564 | 618061.003 | 9273850.821 | 25.143 | BORDE |
| 2565 | 618060.747 | 9273851.145 | 25.028 | CANAL |
| 2566 | 618059.718 | 9273852.438 | 25.101 | CANAL |
| 2567 | 618058.974 | 9273853.369 | 25.064 | EJE |
| 2568 | 618058.198 | 9273854.397 | 25.119 | CANAL |
| 2569 | 618057.494 | 9273855.395 | 25.137 | CANAL |
| 2570 | 618057.055 | 9273855.949 | 25.275 | BORDE |
| 2571 | 618056.535 | 9273856.366 | 24.901 | CANAL |
| 2572 | 618056.251 | 9273856.811 | 24.136 | CANAL |
| 2573 | 618088.582 | 9273866.313 | 24.700 | TERRENO |
| 2574 | 618087.054 | 9273868.172 | 25.113 | TERRENO |
| 2575 | 618085.950 | 9273869.478 | 25.033 | TERRENO |
| 2576 | 618085.505 | 9273870.050 | 25.096 | BORDE |
| 2577 | 618084.891 | 9273870.532 | 25.218 | CANAL |
| 2578 | 618083.937 | 9273871.489 | 25.248 | CANAL |
| 2579 | 618083.352 | 9273872.224 | 25.280 | EJE |
| 2580 | 618082.708 | 9273873.143 | 25.350 | CANAL |
| 2581 | 618081.903 | 9273873.959 | 25.432 | CANAL |
| 2582 | 618081.539 | 9273874.402 | 25.178 | BORDE |
| 2583 | 618081.202 | 9273874.834 | 24.813 | CANAL |
| 2584 | 618080.977 | 9273875.054 | 24.382 | CANAL |
| 2585 | 618080.147 | 9273875.928 | 24.329 | CANAL |
| 2586 | 618079.994 | 9273876.342 | 24.907 | CANAL |
| 2587 | 618117.723 | 9273890.915 | 24.915 | TERRENO |
| 2588 | 618116.853 | 9273892.625 | 25.058 | TERRENO |
| 2589 | 618116.340 | 9273893.262 | 25.214 | BORDE |
| 2590 | 618116.050 | 9273893.626 | 25.259 | CANAL |
| 2591 | 618115.308 | 9273894.536 | 25.440 | CANAL |
| 2592 | 618114.579 | 9273895.577 | 25.494 | EJE |
| 2593 | 618113.905 | 9273896.481 | 25.497 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2594 | 618113.424 | 9273897.062 | 25.589 | CANAL |
| 2595 | 618112.939 | 9273897.674 | 25.308 | BORDE |
| 2596 | 618112.516 | 9273898.052 | 24.945 | CANAL |
| 2597 | 618112.231 | 9273898.296 | 24.467 | CANAL |
| 2598 | 618151.640 | 9273916.006 | 24.735 | TERRENO |
| 2599 | 618150.850 | 9273917.303 | 24.818 | TERRENO |
| 2600 | 618149.887 | 9273918.109 | 25.428 | BORDE |
| 2601 | 618149.554 | 9273918.637 | 25.582 | CANAL |
| 2602 | 618148.729 | 9273919.645 | 25.756 | CANAL |
| 2603 | 618148.143 | 9273920.511 | 25.738 | EJE |
| 2604 | 618147.576 | 9273921.255 | 25.695 | CANAL |
| 2605 | 618146.979 | 9273922.020 | 25.728 | CANAL |
| 2606 | 618146.652 | 9273922.446 | 25.672 | BORDE |
| 2607 | 618146.327 | 9273922.849 | 25.039 | CANAL |
| 2608 | 618145.987 | 9273923.200 | 24.465 | CANAL |
| 2609 | 618145.236 | 9273924.063 | 24.438 | CANAL |
| 2610 | 618144.825 | 9273924.325 | 25.177 | CANAL |
| 2611 | 618178.589 | 9273935.569 | 24.729 | TERRENO |
| 2612 | 618177.449 | 9273936.795 | 25.025 | TERRENO |
| 2613 | 618176.414 | 9273938.146 | 25.663 | BORDE |
| 2614 | 618176.174 | 9273938.591 | 25.684 | CANAL |
| 2615 | 618175.222 | 9273939.764 | 25.815 | CANAL |
| 2616 | 618174.637 | 9273940.518 | 25.725 | EJE |
| 2617 | 618174.081 | 9273941.280 | 25.823 | CANAL |
| 2618 | 618173.268 | 9273942.132 | 25.831 | CANAL |
| 2619 | 618172.974 | 9273942.585 | 25.633 | BORDE |
| 2620 | 618172.643 | 9273942.902 | 25.066 | CANAL |
| 2621 | 618172.406 | 9273943.331 | 24.404 | CANAL |
| 2622 | 618202.432 | 9273952.809 | 24.767 | TERRENO |
| 2623 | 618201.622 | 9273954.220 | 24.811 | TERRENO |
| 2624 | 618200.731 | 9273955.391 | 25.575 | BORDE |
| 2625 | 618200.087 | 9273956.184 | 25.592 | CANAL |
| 2626 | 618199.423 | 9273957.164 | 25.665 | CANAL |
| 2627 | 618198.853 | 9273957.879 | 25.618 | EJE |
| 2628 | 618198.114 | 9273958.820 | 25.676 | CANAL |
| 2629 | 618197.435 | 9273959.798 | 25.793 | CANAL |
| 2630 | 618196.792 | 9273960.834 | 25.441 | BORDE |
| 2631 | 618196.658 | 9273961.193 | 25.512 | CANAL |
| 2632 | 618196.775 | 9273961.339 | 24.372 | CANAL |
| 2633 | 618195.903 | 9273961.952 | 24.548 | CANAL |
| 2634 | 618195.671 | 9273962.103 | 25.434 | CANAL |
| 2635 | 618195.174 | 9273964.267 | 25.127 | TERRENO |
| 2636 | 618214.035 | 9273966.290 | 25.662 | ALCANTARILLA |
| 2637 | 618216.012 | 9273967.179 | 25.722 | ALCANTARILLA |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2638 | 618215.178 | 9273971.073 | 25.749 | ALCANTARILLA |
| 2639 | 618212.544 | 9273969.661 | 25.734 | ALCANTARILLA |
| 2640 | 618213.250 | 9273964.747 | 25.704 | CANAL |
| 2641 | 618212.604 | 9273961.315 | 25.799 | CANAL |
| 2642 | 618213.137 | 9273959.129 | 26.375 | CANAL |
| 2643 | 618214.832 | 9273955.961 | 24.773 | CANAL |
| 2644 | 618214.863 | 9273956.014 | 24.923 | CANAL |
| 2645 | 618216.849 | 9273956.543 | 25.645 | CANAL |
| 2646 | 618217.372 | 9273956.758 | 25.762 | TERRENO |
| 2647 | 618217.296 | 9273960.700 | 25.610 | CANAL |
| 2648 | 618217.247 | 9273963.104 | 25.386 | CANAL |
| 2649 | 618217.358 | 9273965.391 | 25.423 | CANAL |
| 2650 | 618213.845 | 9273972.961 | 25.583 | CANAL |
| 2651 | 618212.922 | 9273972.918 | 25.350 | CANAL |
| 2652 | 618236.363 | 9273977.153 | 24.970 | TERRENO |
| 2653 | 618235.762 | 9273978.112 | 25.066 | TERRENO |
| 2654 | 618234.225 | 9273980.038 | 25.632 | BORDE |
| 2655 | 618234.259 | 9273980.042 | 25.752 | CANAL |
| 2656 | 618233.817 | 9273980.933 | 25.441 | CANAL |
| 2657 | 618233.170 | 9273981.853 | 25.488 | EJE |
| 2658 | 618232.458 | 9273982.728 | 25.465 | CANAL |
| 2659 | 618230.760 | 9273984.161 | 25.624 | CANAL |
| 2660 | 618230.614 | 9273984.163 | 25.803 | BORDE |
| 2661 | 618230.009 | 9273984.876 | 25.205 | CANAL |
| 2662 | 618229.709 | 9273985.292 | 25.228 | CANAL |
| 2663 | 618228.985 | 9273986.206 | 24.613 | CANAL |
| 2664 | 618228.757 | 9273986.312 | 25.130 | CANAL |
| 2665 | 618259.409 | 9273994.288 | 24.880 | TERRENO |
| 2666 | 618259.347 | 9273994.738 | 24.917 | TERRENO |
| 2667 | 618257.699 | 9273996.942 | 25.462 | BORDE |
| 2668 | 618257.141 | 9273997.571 | 25.565 | CANAL |
| 2669 | 618256.301 | 9273998.568 | 25.649 | CANAL |
| 2670 | 618255.846 | 9273999.186 | 25.550 | EJE |
| 2671 | 618255.527 | 9273999.685 | 25.691 | CANAL |
| 2672 | 618254.799 | 9274000.603 | 25.676 | CANAL |
| 2673 | 618254.053 | 9274001.508 | 25.805 | CANALBORDE |
| 2674 | 618253.573 | 9274002.409 | 25.394 | CANAL |
| 2675 | 618253.329 | 9274002.775 | 24.655 | CANAL |
| 2676 | 618288.654 | 9274017.434 | 24.929 | TERRENO |
| 2677 | 618287.478 | 9274019.146 | 24.871 | TERRENO |
| 2678 | 618286.876 | 9274019.797 | 25.617 | BORDE |
| 2679 | 618286.741 | 9274020.117 | 25.675 | CANAL |
| 2680 | 618285.881 | 9274021.126 | 25.675 | CANAL |
| 2681 | 618285.401 | 9274021.843 | 25.683 | EJE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2682 | 618284.612 | 9274022.836 | 25.706 | CANAL |
| 2683 | 618284.335 | 9274023.003 | 25.703 | CANAL |
| 2684 | 618283.726 | 9274023.592 | 26.013 | BORDE |
| 2685 | 618282.929 | 9274024.365 | 25.321 | CANAL |
| 2686 | 618282.715 | 9274024.753 | 24.757 | CANAL |
| 2687 | 618282.281 | 9274025.312 | 24.786 | CANAL |
| 2688 | 618281.811 | 9274026.082 | 25.243 | CANAL |
| 2689 | 618280.588 | 9274027.778 | 26.073 | BORDE |
| 2690 | 618300.672 | 9274042.719 | 25.971 | BORDE |
| 2691 | 618300.672 | 9274042.719 | 25.971 | BORDE |
| 2692 | 618301.604 | 9274042.085 | 25.257 | CANAL |
| 2693 | 618302.101 | 9274041.496 | 24.623 | CANAL |
| 2694 | 618302.711 | 9274040.430 | 24.549 | CANAL |
| 2695 | 618303.230 | 9274040.114 | 25.403 | CANAL |
| 2696 | 618304.005 | 9274039.088 | 25.799 | BORDE |
| 2697 | 618304.177 | 9274038.635 | 25.827 | CANAL |
| 2698 | 618304.623 | 9274038.012 | 25.628 | CANAL |
| 2699 | 618305.318 | 9274037.159 | 25.587 | EJE |
| 2700 | 618306.021 | 9274036.264 | 25.603 | CANAL |
| 2701 | 618306.839 | 9274035.244 | 25.667 | CANAL |
| 2702 | 618307.198 | 9274034.835 | 25.632 | BORDE |
| 2703 | 618308.077 | 9274034.042 | 25.403 | TERRENO |
| 2704 | 618308.204 | 9274033.850 | 25.080 | TERRENO |
| 2705 | 618309.423 | 9274032.104 | 24.820 | TERRENO |
| 2706 | 618326.055 | 9274041.880 | 25.406 | TERRENO |
| 2707 | 618325.146 | 9274043.633 | 25.395 | TERRENO |
| 2708 | 618323.496 | 9274046.173 | 25.644 | BORDE |
| 2709 | 618323.186 | 9274046.736 | 25.675 | CANAL |
| 2710 | 618322.658 | 9274047.544 | 25.691 | CANAL |
| 2711 | 618322.579 | 9274048.031 | 25.635 | EJE |
| 2712 | 618322.315 | 9274048.679 | 25.613 | CANAL |
| 2713 | 618321.298 | 9274049.796 | 25.609 | CANAL |
| 2714 | 618320.830 | 9274050.734 | 25.793 | BORDE |
| 2715 | 618320.407 | 9274051.522 | 25.490 | CANAL |
| 2716 | 618319.924 | 9274052.309 | 24.680 | CANAL |
| 2717 | 618346.222 | 9274059.079 | 25.107 | TERRENO |
| 2718 | 618345.919 | 9274059.903 | 25.247 | TERRENO |
| 2719 | 618344.830 | 9274061.314 | 25.768 | BORDE |
| 2720 | 618344.762 | 9274061.613 | 25.765 | CANAL |
| 2721 | 618344.610 | 9274061.950 | 25.724 | CANAL |
| 2722 | 618344.009 | 9274062.876 | 25.610 | EJE |
| 2723 | 618343.208 | 9274063.920 | 25.585 | CANAL |
| 2724 | 618342.434 | 9274064.808 | 25.741 | CANAL |
| 2725 | 618341.722 | 9274065.824 | 25.962 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2726 | 618341.090 | 9274066.862 | 25.517 | CANAL |
| 2727 | 618340.784 | 9274067.203 | 25.107 | CANAL |
| 2728 | 618374.990 | 9274080.434 | 25.116 | TERRENO |
| 2729 | 618374.489 | 9274081.185 | 25.198 | TERRENO |
| 2730 | 618373.467 | 9274082.831 | 25.777 | BORDE |
| 2731 | 618373.081 | 9274083.294 | 25.830 | CANAL |
| 2732 | 618373.113 | 9274083.783 | 25.729 | CANAL |
| 2733 | 618371.826 | 9274085.395 | 25.778 | CANAL |
| 2734 | 618372.099 | 9274085.198 | 25.811 | CANAL |
| 2735 | 618372.141 | 9274084.874 | 25.820 | EJE |
| 2736 | 618371.317 | 9274086.050 | 25.834 | CANAL |
| 2737 | 618370.477 | 9274087.075 | 25.853 | CANAL |
| 2738 | 618370.106 | 9274087.341 | 26.160 | BORDE |
| 2739 | 618369.465 | 9274088.628 | 25.753 | CANAL |
| 2740 | 618369.355 | 9274088.672 | 24.756 | CANAL |
| 2741 | 618401.722 | 9274098.915 | 25.250 | TERRENO |
| 2742 | 618400.277 | 9274101.162 | 25.294 | TERRENO |
| 2743 | 618400.051 | 9274101.696 | 25.718 | BORDE |
| 2744 | 618399.587 | 9274102.049 | 25.777 | CANAL |
| 2745 | 618399.340 | 9274102.459 | 25.758 | CANAL |
| 2746 | 618398.263 | 9274104.157 | 25.811 | EJE |
| 2747 | 618397.543 | 9274105.188 | 25.826 | CANAL |
| 2748 | 618397.420 | 9274105.499 | 25.758 | CANAL |
| 2749 | 618396.523 | 9274106.848 | 25.851 | BORDE |
| 2750 | 618395.849 | 9274108.144 | 25.504 | CANAL |
| 2751 | 618395.811 | 9274108.333 | 24.994 | CANAL |
| 2752 | 618395.120 | 9274109.901 | 24.740 | CANAL |
| 2753 | 618394.669 | 9274110.370 | 25.432 | CANAL |
| 2754 | 618393.990 | 9274111.244 | 25.869 | BORDE |
| 2755 | 618423.037 | 9274115.277 | 25.139 | TERRENO |
| 2756 | 618421.600 | 9274116.942 | 25.088 | TERRENO |
| 2757 | 618421.320 | 9274117.954 | 25.850 | BORDE |
| 2758 | 618421.156 | 9274118.342 | 25.950 | CANAL |
| 2759 | 618421.127 | 9274118.614 | 25.939 | CANAL |
| 2760 | 618420.237 | 9274119.865 | 25.902 | EJE |
| 2761 | 618419.637 | 9274120.820 | 25.914 | CANAL |
| 2762 | 618418.871 | 9274121.666 | 25.887 | CANAL |
| 2763 | 618417.972 | 9274122.893 | 26.273 | BORDE |
| 2764 | 618417.370 | 9274123.552 | 25.817 | CANAL |
| 2765 | 618416.683 | 9274123.928 | 24.926 | CANAL |
| 2766 | 618449.213 | 9274133.898 | 25.421 | TERRENO |
| 2767 | 618448.486 | 9274134.847 | 25.461 | TERRENO |
| 2768 | 618447.026 | 9274136.290 | 25.946 | BORDE |
| 2769 | 618446.699 | 9274136.725 | 26.054 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2770 | 618446.448 | 9274137.103 | 26.094 | CANAL |
| 2771 | 618445.984 | 9274137.908 | 26.056 | EJE |
| 2772 | 618445.415 | 9274139.301 | 25.947 | CANAL |
| 2773 | 618444.639 | 9274139.972 | 25.940 | CANAL |
| 2774 | 618443.735 | 9274141.131 | 26.330 | BORDE |
| 2775 | 618443.000 | 9274142.446 | 26.073 | CANAL |
| 2776 | 618442.414 | 9274143.261 | 25.184 | CANAL |
| 2777 | 618474.324 | 9274152.040 | 25.438 | TERRENO |
| 2778 | 618472.877 | 9274154.116 | 25.429 | TERRENO |
| 2779 | 618472.492 | 9274154.068 | 26.004 | BORDE |
| 2780 | 618472.084 | 9274154.893 | 26.041 | CANAL |
| 2781 | 618471.891 | 9274155.084 | 26.104 | CANAL |
| 2782 | 618471.334 | 9274156.072 | 25.994 | EJE |
| 2783 | 618470.684 | 9274157.043 | 25.960 | CANAL |
| 2784 | 618470.059 | 9274158.115 | 26.014 | CANAL |
| 2785 | 618468.852 | 9274159.565 | 26.867 | BORDE |
| 2786 | 618468.174 | 9274160.578 | 26.316 | CANAL |
| 2787 | 618467.407 | 9274161.293 | 25.463 | CANAL |
| 2788 | 618484.512 | 9274173.410 | 25.936 | ESTRUCTURA |
| 2789 | 618484.230 | 9274173.759 | 25.896 | ESTRUCTURA |
| 2790 | 618483.768 | 9274173.724 | 25.882 | ESTRUCTURA |
| 2791 | 618483.495 | 9274173.373 | 25.928 | ESTRUCTURA |
| 2792 | 618483.367 | 9274174.907 | 25.800 | ESTRUCTURA |
| 2793 | 618483.456 | 9274174.888 | 25.964 | ESTRUCTURA |
| 2794 | 618482.719 | 9274174.621 | 25.948 | ESTRUCTURA |
| 2795 | 618481.995 | 9274174.891 | 25.817 | ESTRUCTURA |
| 2796 | 618482.497 | 9274174.619 | 25.944 | COMPUERTA |
| 2797 | 618483.572 | 9274173.733 | 25.987 | COMPUERTA |
| 2798 | 618506.938 | 9274176.444 | 25.368 | TERRENO |
| 2799 | 618506.020 | 9274177.538 | 25.382 | TERRENO |
| 2800 | 618505.250 | 9274178.611 | 26.000 | BORDE |
| 2801 | 618505.046 | 9274179.004 | 26.042 | CANAL |
| 2802 | 618504.787 | 9274179.326 | 25.877 | CANAL |
| 2803 | 618503.581 | 9274181.298 | 26.127 | EJE |
| 2804 | 618503.103 | 9274182.356 | 26.131 | CANAL |
| 2805 | 618502.649 | 9274182.603 | 26.037 | CANAL |
| 2806 | 618501.483 | 9274183.956 | 26.637 | BORDE |
| 2807 | 618499.707 | 9274184.883 | 26.020 | CANAL |
| 2808 | 618499.361 | 9274185.527 | 24.989 | CANAL |
| 2809 | 618498.805 | 9274186.505 | 25.053 | CANAL |
| 2810 | 618498.662 | 9274186.337 | 25.585 | CANAL |
| 2811 | 618527.413 | 9274186.143 | 25.487 | TERRENO |
| 2812 | 618525.952 | 9274188.632 | 25.388 | TERRENO |
| 2813 | 618524.649 | 9274190.870 | 25.538 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2814 | 618523.846 | 9274191.772 | 26.019 | BORDE |
| 2815 | 618523.657 | 9274192.133 | 26.074 | CANAL |
| 2816 | 618522.893 | 9274193.057 | 26.173 | CANAL |
| 2817 | 618522.216 | 9274194.470 | 26.178 | EJE |
| 2818 | 618521.053 | 9274195.873 | 26.173 | CANAL |
| 2819 | 618520.507 | 9274196.313 | 26.197 | CANAL |
| 2820 | 618519.670 | 9274197.946 | 26.851 | BORDE |
| 2821 | 618518.955 | 9274199.077 | 26.113 | CANAL |
| 2822 | 618518.443 | 9274199.467 | 25.358 | CANAL |
| 2823 | 618517.721 | 9274200.961 | 25.148 | CANAL |
| 2824 | 618517.266 | 9274201.254 | 25.943 | CANAL |
| 2825 | 618535.369 | 9274202.003 | 26.211 | ALCANTARILLA |
| 2826 | 618535.988 | 9274202.639 | 26.208 | ALCANTARILLA |
| 2827 | 618535.431 | 9274205.338 | 26.139 | ALCANTARILLA |
| 2828 | 618534.190 | 9274205.272 | 26.200 | ALCANTARILLA |
| 2829 | 618531.077 | 9274208.641 | 25.971 | ESTRUCTURA |
| 2830 | 618530.759 | 9274208.656 | 25.935 | ESTRUCTURA |
| 2831 | 618530.247 | 9274208.362 | 25.917 | ESTRUCTURA |
| 2832 | 618530.130 | 9274208.109 | 25.924 | ESTRUCTURA |
| 2833 | 618528.590 | 9274209.672 | 25.984 | ESTRUCTURA |
| 2834 | 618528.869 | 9274209.303 | 25.972 | ESTRUCTURA |
| 2835 | 618529.645 | 9274209.656 | 26.111 | ESTRUCTURA |
| 2836 | 618529.665 | 9274210.053 | 25.931 | ESTRUCTURA |
| 2837 | 618531.077 | 9274208.641 | 25.971 | ESTRUCTURA |
| 2838 | 618530.759 | 9274208.656 | 25.935 | ESTRUCTURA |
| 2839 | 618530.247 | 9274208.362 | 25.917 | ESTRUCTURA |
| 2840 | 618530.130 | 9274208.109 | 25.924 | ESTRUCTURA |
| 2841 | 618528.590 | 9274209.672 | 25.984 | ESTRUCTURA |
| 2842 | 618528.869 | 9274209.303 | 25.972 | ESTRUCTURA |
| 2843 | 618529.645 | 9274209.656 | 26.111 | ESTRUCTURA |
| 2844 | 618529.665 | 9274210.053 | 25.931 | ESTRUCTURA |
| 2845 | 618529.402 | 9274209.562 | 25.984 | COMPUERTA |
| 2846 | 618530.154 | 9274208.393 | 26.080 | COMPUERTA |
| 2847 | 618534.448 | 9274200.149 | 26.060 | CANAL |
| 2848 | 618533.670 | 9274195.885 | 25.899 | CANAL |
| 2849 | 618534.018 | 9274188.699 | 26.054 | CANAL |
| 2850 | 618535.755 | 9274188.692 | 25.334 | CANAL |
| 2851 | 618536.391 | 9274188.711 | 25.422 | CANAL |
| 2852 | 618537.577 | 9274188.863 | 26.007 | CANAL |
| 2853 | 618537.659 | 9274193.632 | 26.036 | CANAL |
| 2854 | 618537.786 | 9274199.881 | 25.881 | CANAL |
| 2855 | 618549.730 | 9274203.216 | 25.586 | TERRENO |
| 2856 | 618546.046 | 9274205.865 | 25.540 | TERRENO |
| 2857 | 618544.205 | 9274207.080 | 25.666 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2858 | 618543.667 | 9274207.441 | 26.066 | BORDE |
| 2859 | 618543.347 | 9274207.728 | 26.022 | CANAL |
| 2860 | 618542.846 | 9274208.235 | 26.030 | CANAL |
| 2861 | 618542.382 | 9274208.526 | 26.111 | CANAL |
| 2862 | 618541.310 | 9274209.783 | 26.065 | EJE |
| 2863 | 618540.668 | 9274210.562 | 26.014 | CANAL |
| 2864 | 618539.523 | 9274211.381 | 26.000 | CANAL |
| 2865 | 618538.333 | 9274212.227 | 26.336 | BORDE |
| 2866 | 618537.041 | 9274212.998 | 26.066 | CANAL |
| 2867 | 618536.344 | 9274213.478 | 25.329 | CANAL |
| 2868 | 618535.862 | 9274214.085 | 25.067 | CANAL |
| 2869 | 618534.268 | 9274215.560 | 26.492 | CANAL |
| 2870 | 618557.066 | 9274219.561 | 25.567 | TERRENO |
| 2871 | 618555.517 | 9274221.018 | 25.579 | TERRENO |
| 2872 | 618554.248 | 9274221.975 | 25.765 | TERRENO |
| 2873 | 618553.745 | 9274222.301 | 26.045 | BORDE |
| 2874 | 618553.423 | 9274222.531 | 26.081 | CANAL |
| 2875 | 618552.986 | 9274223.071 | 26.091 | CANAL |
| 2876 | 618551.737 | 9274224.106 | 26.112 | EJE |
| 2877 | 618550.891 | 9274224.866 | 26.074 | CANAL |
| 2878 | 618549.925 | 9274225.524 | 26.080 | CANAL |
| 2879 | 618548.435 | 9274226.224 | 26.525 | BORDE |
| 2880 | 618547.968 | 9274226.391 | 25.775 | CANAL |
| 2881 | 618547.459 | 9274226.542 | 25.113 | CANAL |
| 2882 | 618547.178 | 9274226.782 | 25.017 | CANAL |
| 2883 | 618546.209 | 9274227.439 | 25.970 | CANAL |
| 2884 | 618572.184 | 9274245.068 | 25.683 | TERRENO |
| 2885 | 618570.405 | 9274246.232 | 25.657 | TERRENO |
| 2886 | 618570.188 | 9274246.346 | 25.733 | TERRENO |
| 2887 | 618569.278 | 9274247.143 | 26.127 | BORDE |
| 2888 | 618568.790 | 9274247.333 | 26.142 | CANAL |
| 2889 | 618568.680 | 9274247.504 | 26.087 | CANAL |
| 2890 | 618567.033 | 9274248.412 | 26.201 | EJE |
| 2891 | 618566.044 | 9274249.218 | 26.209 | CANAL |
| 2892 | 618565.478 | 9274249.489 | 26.139 | CANAL |
| 2893 | 618564.484 | 9274250.075 | 26.561 | BORDE |
| 2894 | 618562.795 | 9274252.075 | 25.910 | CANAL |
| 2895 | 618562.322 | 9274252.541 | 25.211 | CANAL |
| 2896 | 618562.159 | 9274252.727 | 25.223 | CANAL |
| 2897 | 618561.342 | 9274253.069 | 26.057 | CANAL |
| 2898 | 618586.581 | 9274266.961 | 25.674 | TERRENO |
| 2899 | 618584.420 | 9274268.405 | 25.717 | TERRENO |
| 2900 | 618582.983 | 9274269.226 | 25.726 | TERRENO |
| 2901 | 618582.340 | 9274269.544 | 26.205 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2902 | 618582.142 | 9274269.618 | 26.234 | CANAL |
| 2903 | 618581.038 | 9274270.321 | 26.197 | CANAL |
| 2904 | 618580.186 | 9274270.738 | 26.236 | EJE |
| 2905 | 618579.016 | 9274271.301 | 26.247 | CANAL |
| 2906 | 618578.429 | 9274271.448 | 26.146 | CANAL |
| 2907 | 618576.910 | 9274272.372 | 26.490 | BORDE |
| 2908 | 618575.673 | 9274273.307 | 25.980 | CANAL |
| 2909 | 618574.687 | 9274273.777 | 25.268 | CANAL |
| 2910 | 618573.958 | 9274274.543 | 25.427 | CANAL |
| 2911 | 618573.217 | 9274274.996 | 25.885 | CANAL |
| 2912 | 618599.775 | 9274291.722 | 25.712 | TERRENO |
| 2913 | 618598.125 | 9274293.056 | 25.700 | TERRENO |
| 2914 | 618597.704 | 9274293.194 | 25.754 | TERRENO |
| 2915 | 618596.511 | 9274293.933 | 26.227 | BORDE |
| 2916 | 618596.073 | 9274294.208 | 26.314 | CANAL |
| 2917 | 618595.360 | 9274294.702 | 26.191 | CANAL |
| 2918 | 618593.968 | 9274295.676 | 26.278 | EJE |
| 2919 | 618593.057 | 9274296.254 | 26.306 | CANAL |
| 2920 | 618592.333 | 9274296.648 | 26.397 | CANAL |
| 2921 | 618591.449 | 9274297.062 | 26.881 | BORDE |
| 2922 | 618590.259 | 9274297.668 | 26.225 | CANAL |
| 2923 | 618589.670 | 9274297.824 | 25.623 | CANAL |
| 2924 | 618614.281 | 9274314.433 | 25.941 | TERRENO |
| 2925 | 618612.485 | 9274315.337 | 25.980 | TERRENO |
| 2926 | 618610.564 | 9274316.320 | 25.955 | TERRENO |
| 2927 | 618610.280 | 9274316.538 | 26.290 | BORDE |
| 2928 | 618609.870 | 9274316.640 | 26.307 | CANAL |
| 2929 | 618609.489 | 9274316.927 | 26.364 | CANAL |
| 2930 | 618608.194 | 9274317.939 | 26.282 | EJE |
| 2931 | 618607.152 | 9274318.548 | 26.345 | CANAL |
| 2932 | 618606.447 | 9274319.167 | 26.337 | CANAL |
| 2933 | 618605.290 | 9274319.623 | 26.864 | BORDE |
| 2934 | 618605.096 | 9274319.999 | 26.945 | BORDE |
| 2935 | 618603.543 | 9274320.710 | 26.376 | CANAL |
| 2936 | 618602.889 | 9274321.058 | 25.878 | CANAL |
| 2937 | 618625.364 | 9274334.304 | 25.989 | TERRENO |
| 2938 | 618623.336 | 9274335.200 | 25.987 | TERRENO |
| 2939 | 618622.310 | 9274335.792 | 25.966 | TERRENO |
| 2940 | 618621.441 | 9274336.132 | 26.416 | BORDE |
| 2941 | 618621.138 | 9274336.159 | 26.407 | CANAL |
| 2942 | 618620.408 | 9274336.559 | 26.369 | CANAL |
| 2943 | 618619.024 | 9274337.403 | 26.404 | EJE |
| 2944 | 618617.931 | 9274338.035 | 26.346 | CANAL |
| 2945 | 618617.072 | 9274338.623 | 26.524 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2946 | 618615.882 | 9274339.133 | 26.467 | BORDE |
| 2947 | 618614.412 | 9274339.752 | 26.037 | CANAL |
| 2948 | 618614.152 | 9274339.901 | 25.514 | CANAL |
| 2949 | 618612.802 | 9274340.410 | 25.576 | CANAL |
| 2950 | 618612.034 | 9274341.239 | 26.215 | CANAL |
| 2951 | 618609.702 | 9274343.674 | 26.257 | TERRENO |
| 2952 | 618638.721 | 9274356.787 | 25.960 | TERRENO |
| 2953 | 618636.848 | 9274358.114 | 25.929 | TERRENO |
| 2954 | 618635.477 | 9274359.072 | 26.087 | TERRENO |
| 2955 | 618634.763 | 9274359.469 | 26.537 | BORDE |
| 2956 | 618634.206 | 9274359.890 | 26.552 | CANAL |
| 2957 | 618633.291 | 9274360.457 | 26.520 | CANAL |
| 2958 | 618632.261 | 9274361.099 | 26.543 | EJE |
| 2959 | 618631.397 | 9274361.660 | 26.524 | CANAL |
| 2960 | 618630.109 | 9274362.408 | 26.592 | CANAL |
| 2961 | 618629.075 | 9274362.735 | 27.236 | BORDE |
| 2962 | 618628.152 | 9274363.610 | 26.152 | CANAL |
| 2963 | 618627.509 | 9274363.734 | 25.394 | CANAL |
| 2964 | 618652.536 | 9274379.138 | 26.130 | TERRENO |
| 2965 | 618650.143 | 9274380.462 | 26.208 | TERRENO |
| 2966 | 618648.648 | 9274381.486 | 26.150 | TERRENO |
| 2967 | 618648.353 | 9274381.468 | 26.555 | BORDE |
| 2968 | 618647.698 | 9274381.767 | 26.582 | CANAL |
| 2969 | 618646.565 | 9274382.514 | 26.577 | CANAL |
| 2970 | 618645.314 | 9274383.188 | 26.621 | EJE |
| 2971 | 618644.317 | 9274383.651 | 26.586 | CANAL |
| 2972 | 618643.572 | 9274383.954 | 26.657 | CANAL |
| 2973 | 618642.014 | 9274385.031 | 27.080 | BORDE |
| 2974 | 618640.561 | 9274385.656 | 26.147 | CANAL |
| 2975 | 618640.046 | 9274385.972 | 25.388 | CANAL |
| 2976 | 618639.060 | 9274386.869 | 25.378 | CANAL |
| 2977 | 618637.409 | 9274387.973 | 27.115 | CANAL |
| 2978 | 618665.535 | 9274401.106 | 26.230 | TERRENO |
| 2979 | 618663.372 | 9274402.471 | 26.131 | TERRENO |
| 2980 | 618662.278 | 9274403.109 | 26.194 | TERRENO |
| 2981 | 618661.356 | 9274404.090 | 26.789 | BORDE |
| 2982 | 618660.689 | 9274404.463 | 26.709 | CANAL |
| 2983 | 618659.890 | 9274404.998 | 26.790 | CANAL |
| 2984 | 618658.360 | 9274405.774 | 26.828 | EJE |
| 2985 | 618657.119 | 9274406.493 | 26.752 | CANAL |
| 2986 | 618656.922 | 9274406.644 | 26.744 | CANAL |
| 2987 | 618655.173 | 9274407.717 | 27.320 | BORDE |
| 2988 | 618654.211 | 9274408.129 | 26.189 | CANAL |
| 2989 | 618653.777 | 9274408.190 | 25.578 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 2990 | 618678.371 | 9274423.602 | 26.145 | TERRENO |
| 2991 | 618676.418 | 9274425.034 | 26.160 | TERRENO |
| 2992 | 618674.322 | 9274426.245 | 26.118 | TERRENO |
| 2993 | 618674.170 | 9274426.485 | 26.796 | CANAL |
| 2994 | 618673.798 | 9274426.548 | 26.705 | CANAL |
| 2995 | 618672.569 | 9274427.309 | 26.746 | CANAL |
| 2996 | 618670.872 | 9274428.198 | 26.719 | EJE |
| 2997 | 618669.934 | 9274428.689 | 26.770 | CANAL |
| 2998 | 618669.162 | 9274429.242 | 26.785 | CANAL |
| 2999 | 618667.921 | 9274429.952 | 26.926 | BORDE |
| 3000 | 618666.867 | 9274430.578 | 26.228 | CANAL |
| 3001 | 618665.829 | 9274431.066 | 25.497 | CANAL |
| 3002 | 618664.768 | 9274431.630 | 25.595 | CANAL |
| 3003 | 618664.064 | 9274432.281 | 26.321 | CANAL |
| 3004 | 618689.643 | 9274443.971 | 26.180 | TERRENO |
| 3005 | 618687.422 | 9274445.578 | 26.161 | TERRENO |
| 3006 | 618686.421 | 9274446.188 | 26.249 | TERRENO |
| 3007 | 618685.509 | 9274446.701 | 26.696 | BORDE |
| 3008 | 618684.855 | 9274447.202 | 26.756 | CANAL |
| 3009 | 618683.877 | 9274447.677 | 26.740 | CANAL |
| 3010 | 618682.841 | 9274448.121 | 26.737 | EJE |
| 3011 | 618681.676 | 9274448.768 | 26.733 | CANAL |
| 3012 | 618680.934 | 9274449.160 | 26.878 | CANAL |
| 3013 | 618678.910 | 9274450.545 | 27.199 | BORDE |
| 3014 | 618677.803 | 9274451.034 | 26.248 | CANAL |
| 3015 | 618677.673 | 9274451.079 | 25.816 | CANAL |
| 3016 | 618676.848 | 9274451.626 | 25.607 | CANAL |
| 3017 | 618676.139 | 9274451.995 | 26.374 | CANAL |
| 3018 | 618706.029 | 9274469.383 | 26.212 | TERRENO |
| 3019 | 618704.268 | 9274470.600 | 26.034 | TERRENO |
| 3020 | 618701.961 | 9274472.071 | 26.115 | TERRENO |
| 3021 | 618700.489 | 9274472.929 | 26.896 | BORDE |
| 3022 | 618700.000 | 9274473.262 | 26.824 | CANAL |
| 3023 | 618699.924 | 9274473.320 | 26.814 | CANAL |
| 3024 | 618698.031 | 9274474.492 | 26.877 | EJE |
| 3025 | 618697.133 | 9274474.912 | 26.823 | CANAL |
| 3026 | 618696.101 | 9274475.544 | 26.930 | CANAL |
| 3027 | 618694.429 | 9274476.609 | 27.390 | BORDE |
| 3028 | 618693.182 | 9274477.334 | 26.366 | CANAL |
| 3029 | 618692.772 | 9274477.531 | 25.920 | CANAL |
| 3030 | 618722.345 | 9274492.130 | 26.198 | TERRENO |
| 3031 | 618718.049 | 9274495.145 | 26.202 | TERRENO |
| 3032 | 618716.281 | 9274496.202 | 26.215 | TERRENO |
| 3033 | 618714.751 | 9274497.199 | 26.830 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3034 | 618714.111 | 9274497.485 | 26.770 | CANAL |
| 3035 | 618713.576 | 9274497.833 | 26.774 | CANAL |
| 3036 | 618712.067 | 9274498.278 | 26.754 | EJE |
| 3037 | 618710.181 | 9274499.301 | 26.881 | CANAL |
| 3038 | 618708.850 | 9274500.035 | 26.937 | CANAL |
| 3039 | 618708.271 | 9274500.386 | 27.058 | BORDE |
| 3040 | 618707.026 | 9274501.140 | 26.310 | CANAL |
| 3041 | 618706.949 | 9274501.274 | 25.632 | CANAL |
| 3042 | 618724.441 | 9274517.987 | 27.055 | ALCANTARILLA |
| 3043 | 618725.812 | 9274519.771 | 27.067 | ALCANTARILLA |
| 3044 | 618723.443 | 9274522.704 | 26.975 | ALCANTARILLA |
| 3045 | 618722.192 | 9274521.625 | 26.985 | ALCANTARILLA |
| 3046 | 618724.828 | 9274517.399 | 26.781 | CANAL |
| 3047 | 618726.604 | 9274514.004 | 26.558 | CANAL |
| 3048 | 618730.372 | 9274507.732 | 26.501 | CANAL |
| 3049 | 618731.990 | 9274506.674 | 26.785 | CANAL |
| 3050 | 618733.322 | 9274507.271 | 26.153 | CANAL |
| 3051 | 618733.552 | 9274507.585 | 26.646 | CANAL |
| 3052 | 618732.527 | 9274510.666 | 26.641 | CANAL |
| 3053 | 618731.193 | 9274513.844 | 26.599 | CANAL |
| 3054 | 618727.777 | 9274518.627 | 26.766 | CANAL |
| 3055 | 618734.570 | 9274522.738 | 26.612 | TERRENO |
| 3056 | 618731.774 | 9274524.618 | 26.513 | TERRENO |
| 3057 | 618730.382 | 9274525.507 | 26.668 | TERRENO |
| 3058 | 618729.570 | 9274525.811 | 27.017 | BORDE |
| 3059 | 618729.142 | 9274526.080 | 27.087 | CANAL |
| 3060 | 618728.650 | 9274526.616 | 26.963 | CANAL |
| 3061 | 618727.353 | 9274527.562 | 27.091 | EJE |
| 3062 | 618726.495 | 9274528.136 | 27.103 | CANAL |
| 3063 | 618725.964 | 9274528.314 | 26.944 | CANAL |
| 3064 | 618724.759 | 9274529.670 | 27.133 | BORDE |
| 3065 | 618724.239 | 9274530.005 | 26.359 | CANAL |
| 3066 | 618723.823 | 9274530.326 | 25.985 | CANAL |
| 3067 | 618745.155 | 9274543.261 | 26.565 | TERRENO |
| 3068 | 618743.536 | 9274544.709 | 26.520 | TERRENO |
| 3069 | 618741.683 | 9274545.934 | 26.591 | TERRENO |
| 3070 | 618740.875 | 9274546.244 | 27.003 | BORDE |
| 3071 | 618740.504 | 9274546.461 | 27.094 | CANAL |
| 3072 | 618740.216 | 9274546.513 | 27.187 | CANAL |
| 3073 | 618738.594 | 9274547.447 | 27.070 | EJE |
| 3074 | 618738.105 | 9274547.754 | 27.011 | CANAL |
| 3075 | 618736.492 | 9274548.618 | 27.097 | CANAL |
| 3076 | 618736.068 | 9274548.600 | 27.288 | BORDE |
| 3077 | 618734.817 | 9274548.745 | 26.420 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3078 | 618734.393 | 9274549.028 | 25.989 | CANAL |
| 3079 | 618733.290 | 9274549.815 | 26.062 | CANAL |
| 3080 | 618733.115 | 9274549.975 | 26.763 | CANAL |
| 3081 | 618757.405 | 9274560.381 | 26.481 | TERRENO |
| 3082 | 618755.331 | 9274561.897 | 26.546 | TERRENO |
| 3083 | 618752.133 | 9274564.674 | 26.656 | TERRENO |
| 3084 | 618751.897 | 9274564.694 | 27.080 | BORDE |
| 3085 | 618751.237 | 9274565.383 | 27.124 | CANAL |
| 3086 | 618750.532 | 9274565.700 | 27.054 | CANAL |
| 3087 | 618749.387 | 9274566.568 | 27.119 | EJE |
| 3088 | 618748.268 | 9274567.363 | 27.126 | CANAL |
| 3089 | 618747.715 | 9274567.728 | 27.194 | CANAL |
| 3090 | 618746.895 | 9274568.370 | 27.240 | BORDE |
| 3091 | 618746.121 | 9274568.590 | 26.493 | CANAL |
| 3092 | 618745.678 | 9274568.948 | 25.823 | CANAL |
| 3093 | 618744.755 | 9274569.416 | 25.970 | CANAL |
| 3094 | 618744.497 | 9274569.844 | 26.445 | CANAL |
| 3095 | 618756.919 | 9274587.355 | 25.660 | CANAL |
| 3096 | 618757.127 | 9274587.237 | 26.579 | CANAL |
| 3097 | 618757.601 | 9274586.465 | 27.214 | BORDE |
| 3098 | 618758.255 | 9274586.399 | 27.023 | CANAL |
| 3099 | 618758.890 | 9274586.175 | 26.882 | CANAL |
| 3100 | 618760.347 | 9274585.528 | 27.011 | EJE |
| 3101 | 618761.396 | 9274584.872 | 27.030 | CANAL |
| 3102 | 618761.565 | 9274584.976 | 26.932 | CANAL |
| 3103 | 618762.786 | 9274584.328 | 26.951 | BORDE |
| 3104 | 618763.321 | 9274584.109 | 26.641 | TERRENO |
| 3105 | 618764.606 | 9274583.350 | 26.801 | TERRENO |
| 3106 | 618768.908 | 9274581.644 | 26.557 | TERRENO |
| 3107 | 618781.308 | 9274601.926 | 26.507 | TERRENO |
| 3108 | 618778.681 | 9274604.413 | 26.503 | TERRENO |
| 3109 | 618777.102 | 9274605.506 | 26.518 | TERRENO |
| 3110 | 618775.991 | 9274606.316 | 27.090 | BORDE |
| 3111 | 618775.631 | 9274606.642 | 27.023 | CANAL |
| 3112 | 618774.929 | 9274607.111 | 26.938 | CANAL |
| 3113 | 618773.441 | 9274608.200 | 27.024 | EJE |
| 3114 | 618771.898 | 9274608.963 | 26.848 | CANAL |
| 3115 | 618771.725 | 9274609.199 | 27.045 | CANAL |
| 3116 | 618770.962 | 9274609.508 | 27.296 | BORDE |
| 3117 | 618770.122 | 9274609.794 | 26.751 | CANAL |
| 3118 | 618769.878 | 9274610.076 | 26.186 | CANAL |
| 3119 | 618789.053 | 9274615.814 | 26.377 | TERRENO |
| 3120 | 618787.429 | 9274617.340 | 26.432 | TERRENO |
| 3121 | 618784.393 | 9274619.823 | 26.499 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3122 | 618783.965 | 9274619.995 | 27.084 | BORDE |
| 3123 | 618783.169 | 9274620.825 | 27.003 | CANAL |
| 3124 | 618782.675 | 9274621.098 | 26.882 | CANAL |
| 3125 | 618781.393 | 9274621.983 | 27.002 | EJE |
| 3126 | 618780.621 | 9274622.457 | 27.030 | CANAL |
| 3127 | 618779.597 | 9274622.853 | 27.036 | CANAL |
| 3128 | 618779.023 | 9274623.395 | 27.304 | BORDE |
| 3129 | 618777.938 | 9274623.853 | 26.465 | CANAL |
| 3130 | 618777.677 | 9274623.886 | 26.088 | CANAL |
| 3131 | 618800.959 | 9274634.723 | 26.527 | TERRENO |
| 3132 | 618798.965 | 9274637.479 | 26.525 | TERRENO |
| 3133 | 618797.099 | 9274638.741 | 26.591 | TERRENO |
| 3134 | 618796.385 | 9274639.380 | 26.982 | BORDE |
| 3135 | 618796.034 | 9274639.584 | 26.956 | CANAL |
| 3136 | 618795.604 | 9274639.808 | 26.846 | CANAL |
| 3137 | 618793.597 | 9274641.302 | 26.908 | EJE |
| 3138 | 618792.744 | 9274641.858 | 26.955 | CANAL |
| 3139 | 618791.638 | 9274642.420 | 26.972 | CANAL |
| 3140 | 618791.150 | 9274642.843 | 27.397 | BORDE |
| 3141 | 618789.799 | 9274643.643 | 26.844 | CANAL |
| 3142 | 618789.180 | 9274643.957 | 26.221 | CANAL |
| 3143 | 618812.987 | 9274649.575 | 26.673 | TERRENO |
| 3144 | 618810.827 | 9274653.180 | 26.518 | TERRENO |
| 3145 | 618809.428 | 9274655.350 | 26.541 | TERRENO |
| 3146 | 618808.593 | 9274656.239 | 26.936 | BORDE |
| 3147 | 618808.235 | 9274656.531 | 26.896 | CANAL |
| 3148 | 618807.849 | 9274656.809 | 26.797 | CANAL |
| 3149 | 618805.793 | 9274658.620 | 26.889 | EJE |
| 3150 | 618804.419 | 9274659.495 | 26.918 | CANAL |
| 3151 | 618803.784 | 9274660.118 | 27.011 | CANAL |
| 3152 | 618803.454 | 9274661.097 | 27.397 | BORDE |
| 3153 | 618802.029 | 9274661.597 | 26.634 | CANAL |
| 3154 | 618801.791 | 9274661.925 | 26.076 | CANAL |
| 3155 | 618829.281 | 9274672.461 | 26.592 | TERRENO |
| 3156 | 618827.695 | 9274674.647 | 26.667 | TERRENO |
| 3157 | 618825.803 | 9274675.980 | 26.658 | TERRENO |
| 3158 | 618825.258 | 9274676.846 | 27.004 | BORDE |
| 3159 | 618824.581 | 9274677.275 | 27.029 | CANAL |
| 3160 | 618824.092 | 9274677.583 | 26.966 | CANAL |
| 3161 | 618822.725 | 9274678.787 | 27.084 | EJE |
| 3162 | 618821.486 | 9274679.730 | 27.142 | CANAL |
| 3163 | 618820.784 | 9274680.180 | 27.095 | CANAL |
| 3164 | 618819.803 | 9274681.242 | 27.337 | BORDE |
| 3165 | 618818.767 | 9274681.990 | 26.776 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3166 | 618818.295 | 9274682.167 | 26.032 | CANAL |
| 3167 | 618817.571 | 9274682.942 | 26.111 | CANAL |
| 3168 | 618817.235 | 9274683.567 | 26.841 | CANAL |
| 3169 | 618833.532 | 9274685.672 | 27.938 | ALCANTARILLA |
| 3170 | 618832.689 | 9274686.079 | 28.031 | ALCANTARILLA |
| 3171 | 618832.350 | 9274686.655 | 28.066 | ALCANTARILLA |
| 3172 | 618831.346 | 9274685.481 | 28.068 | ALCANTARILLA |
| 3173 | 618831.578 | 9274684.880 | 27.978 | ALCANTARILLA |
| 3174 | 618831.811 | 9274683.553 | 27.867 | ALCANTARILLA |
| 3175 | 618832.308 | 9274684.852 | 26.355 | FONDO |
| 3176 | 618831.463 | 9274684.321 | 27.550 | CAMINO |
| 3177 | 618830.832 | 9274686.023 | 27.563 | CAMINO |
| 3178 | 618829.891 | 9274686.704 | 27.557 | EJE |
| 3179 | 618828.363 | 9274688.107 | 27.583 | CAMINO |
| 3180 | 618826.997 | 9274689.123 | 27.610 | CAMINO |
| 3181 | 618825.558 | 9274689.335 | 27.842 | CAMINO |
| 3182 | 618826.115 | 9274689.102 | 27.515 | CAMINO |
| 3183 | 618826.487 | 9274688.909 | 27.578 | CAMINO |
| 3184 | 618827.681 | 9274690.312 | 27.762 | CAMINO |
| 3185 | 618827.352 | 9274690.798 | 27.749 | CAMINO |
| 3186 | 618826.060 | 9274691.915 | 27.794 | CAMINO |
| 3187 | 618826.050 | 9274691.873 | 27.806 | ALCANTARILLA |
| 3188 | 618825.355 | 9274692.905 | 27.848 | ALCANTARILLA |
| 3189 | 618823.766 | 9274693.200 | 27.680 | ALCANTARILLA |
| 3190 | 618828.718 | 9274698.245 | 27.594 | ALCANTARILLA |
| 3191 | 618828.116 | 9274698.020 | 27.778 | ALCANTARILLA |
| 3192 | 618829.291 | 9274696.680 | 27.813 | ALCANTARILLA |
| 3193 | 618830.919 | 9274697.190 | 27.607 | ALCANTARILLA |
| 3194 | 618825.565 | 9274700.464 | 27.436 | CAMINO |
| 3195 | 618824.874 | 9274699.844 | 27.524 | CAMINO |
| 3196 | 618822.491 | 9274693.200 | 27.567 | CAMINO |
| 3197 | 618818.102 | 9274694.247 | 27.626 | CAMINO |
| 3198 | 618817.509 | 9274699.627 | 27.771 | CAMINO |
| 3199 | 618807.882 | 9274699.988 | 27.737 | CAMINO |
| 3200 | 618806.609 | 9274693.908 | 27.842 | CAMINO |
| 3201 | 618834.161 | 9274685.649 | 27.643 | CANAL |
| 3202 | 618838.520 | 9274682.508 | 27.475 | CANAL |
| 3203 | 618841.779 | 9274679.395 | 27.732 | CANAL |
| 3204 | 618833.555 | 9274682.683 | 26.974 | CANAL |
| 3205 | 618834.559 | 9274679.123 | 27.019 | CANAL |
| 3206 | 618838.954 | 9274674.692 | 27.244 | CANAL |
| 3207 | 618839.986 | 9274681.846 | 27.773 | CAMINO |
| 3208 | 618844.624 | 9274684.199 | 27.740 | CAMINO |
| 3209 | 618851.415 | 9274677.193 | 27.720 | CAMINO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3210 | 618848.913 | 9274673.736 | 27.458 | CAMINO |
| 3211 | 618843.141 | 9274688.475 | 27.649 | CAMINO |
| 3212 | 618835.984 | 9274685.309 | 27.737 | CAMINO |
| 3213 | 618839.199 | 9274687.117 | 27.746 | TERRENO |
| 3214 | 618838.445 | 9274689.082 | 27.804 | TERRENO |
| 3215 | 618836.413 | 9274690.633 | 27.884 | CANAL |
| 3216 | 618835.620 | 9274691.739 | 27.911 | CANAL |
| 3217 | 618834.160 | 9274693.082 | 27.897 | EJE |
| 3218 | 618832.542 | 9274694.276 | 27.923 | CANAL |
| 3219 | 618830.133 | 9274695.668 | 27.834 | CANAL |
| 3220 | 618828.956 | 9274696.782 | 27.813 | TERRENO |
| 3221 | 618830.347 | 9274704.311 | 27.699 | BORDE |
| 3222 | 618831.182 | 9274703.228 | 27.365 | CANAL |
| 3223 | 618831.715 | 9274703.153 | 26.796 | CANAL |
| 3224 | 618832.204 | 9274702.882 | 26.200 | CANAL |
| 3225 | 618832.740 | 9274702.368 | 26.371 | CANAL |
| 3226 | 618833.532 | 9274701.677 | 26.995 | CANAL |
| 3227 | 618834.994 | 9274700.297 | 27.850 | CANAL |
| 3228 | 618835.069 | 9274700.192 | 27.931 | BORDE |
| 3229 | 618835.179 | 9274700.066 | 27.919 | CANAL |
| 3230 | 618836.451 | 9274699.678 | 27.915 | CANAL |
| 3231 | 618838.239 | 9274698.962 | 27.945 | EJE |
| 3232 | 618838.843 | 9274698.628 | 27.906 | CANAL |
| 3233 | 618840.267 | 9274697.794 | 27.803 | CANAL |
| 3234 | 618841.715 | 9274697.095 | 27.700 | TERRENO |
| 3235 | 618845.050 | 9274696.273 | 27.299 | TERRENO |
| 3236 | 618847.303 | 9274695.937 | 26.800 | TERRENO |
| 3237 | 618856.202 | 9274707.849 | 26.730 | TERRENO |
| 3238 | 618855.084 | 9274709.273 | 26.741 | TERRENO |
| 3239 | 618853.713 | 9274710.168 | 26.857 | TERRENO |
| 3240 | 618851.807 | 9274711.987 | 27.780 | BORDE |
| 3241 | 618851.495 | 9274712.289 | 27.849 | CANAL |
| 3242 | 618851.355 | 9274712.269 | 27.804 | CANAL |
| 3243 | 618849.734 | 9274713.735 | 27.873 | EJE |
| 3244 | 618849.348 | 9274714.175 | 27.778 | CANAL |
| 3245 | 618848.314 | 9274714.870 | 27.850 | CANAL |
| 3246 | 618847.568 | 9274715.507 | 27.788 | BORDE |
| 3247 | 618846.515 | 9274716.341 | 26.945 | CANAL |
| 3248 | 618846.029 | 9274716.616 | 26.233 | CANAL |
| 3249 | 618871.065 | 9274723.484 | 26.751 | TERRENO |
| 3250 | 618868.062 | 9274725.547 | 26.723 | TERRENO |
| 3251 | 618866.088 | 9274727.252 | 26.756 | TERRENO |
| 3252 | 618865.003 | 9274728.192 | 27.712 | BORDE |
| 3253 | 618864.883 | 9274728.388 | 27.785 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3254 | 618864.327 | 9274728.948 | 27.709 | CANAL |
| 3255 | 618862.969 | 9274730.282 | 27.801 | EJE |
| 3256 | 618862.527 | 9274730.454 | 27.756 | CANAL |
| 3257 | 618861.324 | 9274731.341 | 27.689 | CANAL |
| 3258 | 618860.537 | 9274732.131 | 27.536 | BORDE |
| 3259 | 618859.766 | 9274732.770 | 26.998 | CANAL |
| 3260 | 618858.873 | 9274733.397 | 26.248 | CANAL |
| 3261 | 618858.439 | 9274733.705 | 26.105 | CANAL |
| 3262 | 618857.303 | 9274733.946 | 27.386 | CANAL |
| 3263 | 618856.450 | 9274735.605 | 27.690 | BORDE |
| 3264 | 618869.470 | 9274751.093 | 27.605 | BORDE |
| 3265 | 618870.329 | 9274750.445 | 27.219 | CANAL |
| 3266 | 618871.100 | 9274750.199 | 26.351 | CANAL |
| 3267 | 618871.391 | 9274749.919 | 26.351 | CANAL |
| 3268 | 618873.456 | 9274748.670 | 27.221 | CANAL |
| 3269 | 618873.995 | 9274748.484 | 27.763 | BORDE |
| 3270 | 618874.278 | 9274748.216 | 27.794 | CANAL |
| 3271 | 618874.800 | 9274747.772 | 27.819 | CANAL |
| 3272 | 618876.074 | 9274746.970 | 27.824 | EJE |
| 3273 | 618877.017 | 9274746.205 | 27.834 | CANAL |
| 3274 | 618878.199 | 9274745.191 | 27.783 | CANAL |
| 3275 | 618878.846 | 9274744.754 | 27.706 | BORDE |
| 3276 | 618879.700 | 9274744.162 | 27.243 | BORDE |
| 3277 | 618880.089 | 9274743.630 | 26.761 | TERRENO |
| 3278 | 618882.391 | 9274742.382 | 26.666 | TERRENO |
| 3279 | 618884.948 | 9274741.081 | 26.660 | TERRENO |
| 3280 | 618899.166 | 9274760.351 | 26.707 | TERRENO |
| 3281 | 618897.484 | 9274761.656 | 26.827 | TERRENO |
| 3282 | 618896.081 | 9274762.531 | 26.697 | TERRENO |
| 3283 | 618894.510 | 9274763.841 | 27.762 | BORDE |
| 3284 | 618894.191 | 9274764.064 | 27.836 | CANAL |
| 3285 | 618893.764 | 9274764.585 | 27.754 | CANAL |
| 3286 | 618892.363 | 9274765.777 | 27.864 | EJE |
| 3287 | 618891.144 | 9274766.901 | 27.888 | CANAL |
| 3288 | 618890.103 | 9274767.656 | 27.877 | CANAL |
| 3289 | 618889.763 | 9274767.782 | 27.708 | BORDE |
| 3290 | 618888.899 | 9274768.576 | 26.978 | CANAL |
| 3291 | 618888.017 | 9274769.207 | 26.425 | CANAL |
| 3292 | 618887.633 | 9274769.637 | 26.228 | CANAL |
| 3293 | 618886.742 | 9274769.986 | 27.156 | CANAL |
| 3294 | 618886.080 | 9274770.127 | 27.373 | BORDE |
| 3295 | 618897.996 | 9274786.577 | 27.524 | BORDE |
| 3296 | 618898.584 | 9274785.966 | 27.398 | BORDE |
| 3297 | 618899.195 | 9274785.692 | 27.246 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3298 | 618899.354 | 9274785.408 | 27.014 | CANAL |
| 3299 | 618900.161 | 9274784.751 | 26.570 | CANAL |
| 3300 | 618901.488 | 9274783.389 | 27.197 | CANAL |
| 3301 | 618902.092 | 9274783.111 | 27.868 | BORDE |
| 3302 | 618902.615 | 9274782.611 | 27.979 | CANAL |
| 3303 | 618903.236 | 9274782.312 | 27.922 | CANAL |
| 3304 | 618904.256 | 9274781.531 | 27.953 | EJE |
| 3305 | 618905.382 | 9274780.424 | 27.978 | CANAL |
| 3306 | 618906.103 | 9274779.717 | 27.931 | CANAL |
| 3307 | 618906.660 | 9274779.186 | 27.873 | BORDE |
| 3308 | 618908.132 | 9274778.195 | 26.865 | TERRENO |
| 3309 | 618911.362 | 9274776.075 | 26.867 | TERRENO |
| 3310 | 618915.177 | 9274774.569 | 26.833 | TERRENO |
| 3311 | 618929.243 | 9274786.898 | 26.854 | TERRENO |
| 3312 | 618925.318 | 9274791.492 | 26.807 | TERRENO |
| 3313 | 618922.736 | 9274793.994 | 26.802 | TERRENO |
| 3314 | 618920.766 | 9274796.085 | 27.885 | BORDE |
| 3315 | 618920.222 | 9274796.429 | 27.958 | CANAL |
| 3316 | 618919.503 | 9274797.189 | 28.003 | CANAL |
| 3317 | 618918.359 | 9274798.097 | 28.010 | EJE |
| 3318 | 618917.276 | 9274799.072 | 28.004 | CANAL |
| 3319 | 618916.629 | 9274799.668 | 27.968 | CANAL |
| 3320 | 618915.828 | 9274800.590 | 27.337 | CANAL |
| 3321 | 618914.917 | 9274801.282 | 26.667 | CANAL |
| 3322 | 618914.065 | 9274801.919 | 26.252 | CANAL |
| 3323 | 618912.425 | 9274802.336 | 27.439 | CANAL |
| 3324 | 618911.668 | 9274803.325 | 27.682 | BORDE |
| 3325 | 618928.248 | 9274822.940 | 27.674 | BORDE |
| 3326 | 618929.114 | 9274822.912 | 27.473 | BORDE |
| 3327 | 618930.006 | 9274822.337 | 26.924 | CANAL |
| 3328 | 618930.195 | 9274822.229 | 26.350 | CANAL |
| 3329 | 618930.682 | 9274821.728 | 26.368 | CANAL |
| 3330 | 618931.031 | 9274821.626 | 26.930 | CANAL |
| 3331 | 618931.972 | 9274820.510 | 27.520 | BORDE |
| 3332 | 618932.894 | 9274820.039 | 27.999 | CANAL |
| 3333 | 618933.450 | 9274819.681 | 27.915 | CANAL |
| 3334 | 618934.834 | 9274818.626 | 28.001 | EJE |
| 3335 | 618935.830 | 9274818.062 | 27.962 | CANAL |
| 3336 | 618936.342 | 9274817.613 | 27.967 | CANAL |
| 3337 | 618301.604 | 9274042.085 | 25.257 | CANAL |
| 3338 | 618302.101 | 9274041.496 | 24.623 | CANAL |
| 3339 | 618302.711 | 9274040.430 | 24.549 | CANAL |
| 3340 | 618303.230 | 9274040.114 | 25.403 | CANAL |
| 3341 | 618304.005 | 9274039.088 | 25.799 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3342 | 618304.177 | 9274038.635 | 25.827 | CANAL |
| 3343 | 618304.623 | 9274038.012 | 25.628 | CANAL |
| 3344 | 618305.318 | 9274037.159 | 25.587 | EJE |
| 3345 | 618306.021 | 9274036.264 | 25.603 | CANAL |
| 3346 | 618306.839 | 9274035.244 | 25.667 | CANAL |
| 3347 | 618307.198 | 9274034.835 | 25.632 | BORDE |
| 3348 | 618308.077 | 9274034.042 | 25.403 | TERRENO |
| 3349 | 618308.204 | 9274033.850 | 25.080 | TERRENO |
| 3350 | 618309.423 | 9274032.104 | 24.820 | TERRENO |
| 3351 | 618326.055 | 9274041.880 | 25.406 | TERRENO |
| 3352 | 618325.146 | 9274043.633 | 25.395 | TERRENO |
| 3353 | 618323.496 | 9274046.173 | 25.644 | BORDE |
| 3354 | 618323.186 | 9274046.736 | 25.675 | CANAL |
| 3355 | 618322.658 | 9274047.544 | 25.691 | CANAL |
| 3356 | 618322.579 | 9274048.031 | 25.635 | EJE |
| 3357 | 618322.315 | 9274048.679 | 25.613 | CANAL |
| 3358 | 618321.298 | 9274049.796 | 25.609 | CANAL |
| 3359 | 618320.830 | 9274050.734 | 25.793 | BORDE |
| 3360 | 618320.407 | 9274051.522 | 25.490 | CANAL |
| 3361 | 618319.924 | 9274052.309 | 24.680 | CANAL |
| 3362 | 618346.222 | 9274059.079 | 25.107 | TERRENO |
| 3363 | 618345.919 | 9274059.903 | 25.247 | TERRENO |
| 3364 | 618344.830 | 9274061.314 | 25.768 | BORDE |
| 3365 | 618344.762 | 9274061.613 | 25.765 | CANAL |
| 3366 | 618344.610 | 9274061.950 | 25.724 | CANAL |
| 3367 | 618344.009 | 9274062.876 | 25.610 | EJE |
| 3368 | 618343.208 | 9274063.920 | 25.585 | CANAL |
| 3369 | 618342.434 | 9274064.808 | 25.741 | CANAL |
| 3370 | 618341.722 | 9274065.824 | 25.962 | BORDE |
| 3371 | 618341.090 | 9274066.862 | 25.517 | CANAL |
| 3372 | 618340.784 | 9274067.203 | 25.107 | CANAL |
| 3373 | 618374.990 | 9274080.434 | 25.116 | TERRENO |
| 3374 | 618374.489 | 9274081.185 | 25.198 | TERRENO |
| 3375 | 618373.467 | 9274082.831 | 25.777 | BORDE |
| 3376 | 618373.081 | 9274083.294 | 25.830 | CANAL |
| 3377 | 618373.113 | 9274083.783 | 25.729 | CANAL |
| 3378 | 618371.826 | 9274085.395 | 25.778 | CANAL |
| 3379 | 618372.099 | 9274085.198 | 25.811 | CANAL |
| 3380 | 618372.141 | 9274084.874 | 25.820 | EJE |
| 3381 | 618371.317 | 9274086.050 | 25.834 | CANAL |
| 3382 | 618370.477 | 9274087.075 | 25.853 | CANAL |
| 3383 | 618370.106 | 9274087.341 | 26.160 | BORDE |
| 3384 | 618369.465 | 9274088.628 | 25.753 | CANAL |
| 3385 | 618369.355 | 9274088.672 | 24.756 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3386 | 618401.722 | 9274098.915 | 25.250 | TERRENO |
| 3387 | 618400.277 | 9274101.162 | 25.294 | TERRENO |
| 3388 | 618400.051 | 9274101.696 | 25.718 | BORDE |
| 3389 | 618399.587 | 9274102.049 | 25.777 | CANAL |
| 3390 | 618399.340 | 9274102.459 | 25.758 | CANAL |
| 3391 | 618398.263 | 9274104.157 | 25.811 | EJE |
| 3392 | 618397.543 | 9274105.188 | 25.826 | CANAL |
| 3393 | 618397.420 | 9274105.499 | 25.758 | CANAL |
| 3394 | 618396.523 | 9274106.848 | 25.851 | BORDE |
| 3395 | 618395.849 | 9274108.144 | 25.504 | CANAL |
| 3396 | 618395.811 | 9274108.333 | 24.994 | CANAL |
| 3397 | 618395.120 | 9274109.901 | 24.740 | CANAL |
| 3398 | 618394.669 | 9274110.370 | 25.432 | CANAL |
| 3399 | 618393.990 | 9274111.244 | 25.869 | BORDE |
| 3400 | 618423.037 | 9274115.277 | 25.139 | TERRENO |
| 3401 | 618421.600 | 9274116.942 | 25.088 | TERRENO |
| 3402 | 618421.320 | 9274117.954 | 25.850 | BORDE |
| 3403 | 618421.156 | 9274118.342 | 25.950 | CANAL |
| 3404 | 618421.127 | 9274118.614 | 25.939 | CANAL |
| 3405 | 618420.237 | 9274119.865 | 25.902 | EJE |
| 3406 | 618419.637 | 9274120.820 | 25.914 | CANAL |
| 3407 | 618418.871 | 9274121.666 | 25.887 | CANAL |
| 3408 | 618417.972 | 9274122.893 | 26.273 | BORDE |
| 3409 | 618417.370 | 9274123.552 | 25.817 | CANAL |
| 3410 | 618416.683 | 9274123.928 | 24.926 | CANAL |
| 3411 | 618449.213 | 9274133.898 | 25.421 | TERRENO |
| 3412 | 618448.486 | 9274134.847 | 25.461 | TERRENO |
| 3413 | 618447.026 | 9274136.290 | 25.946 | BORDE |
| 3414 | 618446.699 | 9274136.725 | 26.054 | CANAL |
| 3415 | 618446.448 | 9274137.103 | 26.094 | CANAL |
| 3416 | 618445.984 | 9274137.908 | 26.056 | EJE |
| 3417 | 618445.415 | 9274139.301 | 25.947 | CANAL |
| 3418 | 618444.639 | 9274139.972 | 25.940 | CANAL |
| 3419 | 618443.735 | 9274141.131 | 26.330 | BORDE |
| 3420 | 618443.000 | 9274142.446 | 26.073 | CANAL |
| 3421 | 618442.414 | 9274143.261 | 25.184 | CANAL |
| 3422 | 618474.324 | 9274152.040 | 25.438 | TERRENO |
| 3423 | 618472.877 | 9274154.116 | 25.429 | TERRENO |
| 3424 | 618472.492 | 9274154.068 | 26.004 | BORDE |
| 3425 | 618472.084 | 9274154.893 | 26.041 | CANAL |
| 3426 | 618471.891 | 9274155.084 | 26.104 | CANAL |
| 3427 | 618471.334 | 9274156.072 | 25.994 | EJE |
| 3428 | 618470.684 | 9274157.043 | 25.960 | CANAL |
| 3429 | 618470.059 | 9274158.115 | 26.014 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3430 | 618468.852 | 9274159.565 | 26.867 | BORDE |
| 3431 | 618468.174 | 9274160.578 | 26.316 | CANAL |
| 3432 | 618467.407 | 9274161.293 | 25.463 | CANAL |
| 3433 | 618484.512 | 9274173.410 | 25.936 | ESTRUCTURA |
| 3434 | 618484.230 | 9274173.759 | 25.896 | ESTRUCTURA |
| 3435 | 618483.768 | 9274173.724 | 25.882 | ESTRUCTURA |
| 3436 | 618483.495 | 9274173.373 | 25.928 | ESTRUCTURA |
| 3437 | 618483.367 | 9274174.907 | 25.800 | ESTRUCTURA |
| 3438 | 618483.456 | 9274174.888 | 25.964 | ESTRUCTURA |
| 3439 | 618482.719 | 9274174.621 | 25.948 | ESTRUCTURA |
| 3440 | 618481.995 | 9274174.891 | 25.817 | ESTRUCTURA |
| 3441 | 618482.497 | 9274174.619 | 25.944 | COMPUERTA |
| 3442 | 618483.572 | 9274173.733 | 25.987 | COMPUERTA |
| 3443 | 618506.938 | 9274176.444 | 25.368 | TERRENO |
| 3444 | 618506.020 | 9274177.538 | 25.382 | TERRENO |
| 3445 | 618505.250 | 9274178.611 | 26.000 | BORDE |
| 3446 | 618505.046 | 9274179.004 | 26.042 | CANAL |
| 3447 | 618504.787 | 9274179.326 | 25.877 | CANAL |
| 3448 | 618503.581 | 9274181.298 | 26.127 | EJE |
| 3449 | 618503.103 | 9274182.356 | 26.131 | CANAL |
| 3450 | 618502.649 | 9274182.603 | 26.037 | CANAL |
| 3451 | 618501.483 | 9274183.956 | 26.637 | BORDE |
| 3452 | 618499.707 | 9274184.883 | 26.020 | CANAL |
| 3453 | 618499.361 | 9274185.527 | 24.989 | CANAL |
| 3454 | 618498.805 | 9274186.505 | 25.053 | CANAL |
| 3455 | 618498.662 | 9274186.337 | 25.585 | CANAL |
| 3456 | 618527.413 | 9274186.143 | 25.487 | TERRENO |
| 3457 | 618525.952 | 9274188.632 | 25.388 | TERRENO |
| 3458 | 618524.649 | 9274190.870 | 25.538 | TERRENO |
| 3459 | 618523.846 | 9274191.772 | 26.019 | BORDE |
| 3460 | 618523.657 | 9274192.133 | 26.074 | CANAL |
| 3461 | 618522.893 | 9274193.057 | 26.173 | CANAL |
| 3462 | 618522.216 | 9274194.470 | 26.178 | EJE |
| 3463 | 618521.053 | 9274195.873 | 26.173 | CANAL |
| 3464 | 618520.507 | 9274196.313 | 26.197 | CANAL |
| 3465 | 618519.670 | 9274197.946 | 26.851 | BORDE |
| 3466 | 618518.955 | 9274199.077 | 26.113 | CANAL |
| 3467 | 618518.443 | 9274199.467 | 25.358 | CANAL |
| 3468 | 618517.721 | 9274200.961 | 25.148 | CANAL |
| 3469 | 618517.266 | 9274201.254 | 25.943 | CANAL |
| 3470 | 618535.369 | 9274202.003 | 26.211 | ALCANTARILLA |
| 3471 | 618535.988 | 9274202.639 | 26.208 | ALCANTARILLA |
| 3472 | 618535.431 | 9274205.338 | 26.139 | ALCANTARILLA |
| 3473 | 618534.190 | 9274205.272 | 26.200 | ALCANTARILLA |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3474 | 618937.523 | 9274816.626 | 27.898 | BORDE |
| 3475 | 618938.851 | 9274815.465 | 26.930 | TERRENO |
| 3476 | 618940.611 | 9274813.679 | 26.577 | TERRENO |
| 3477 | 618952.224 | 9274825.416 | 27.208 | CANAL |
| 3478 | 618950.739 | 9274827.314 | 27.255 | CANAL |
| 3479 | 618949.415 | 9274828.281 | 27.202 | CANAL |
| 3480 | 618948.664 | 9274828.878 | 27.537 | ALCANTARILLA |
| 3481 | 618948.435 | 9274829.121 | 27.753 | ALCANTARILLA |
| 3482 | 618948.221 | 9274829.847 | 27.987 | ALCANTARILLA |
| 3483 | 618948.856 | 9274831.009 | 27.939 | ALCANTARILLA |
| 3484 | 618948.975 | 9274831.139 | 28.047 | ALCANTARILLA |
| 3485 | 618949.719 | 9274831.196 | 27.605 | ALCANTARILLA |
| 3486 | 618951.061 | 9274830.827 | 27.300 | CANAL |
| 3487 | 618952.851 | 9274828.707 | 27.252 | CANAL |
| 3488 | 618953.892 | 9274826.762 | 27.260 | CANAL |
| 3489 | 618944.717 | 9274835.596 | 27.559 | ALCANTARILLA |
| 3490 | 618944.895 | 9274835.108 | 28.008 | ALCANTARILLA |
| 3491 | 618944.885 | 9274835.060 | 28.008 | ALCANTARILLA |
| 3492 | 618944.528 | 9274834.277 | 28.023 | ALCANTARILLA |
| 3493 | 618943.956 | 9274833.845 | 28.023 | ALCANTARILLA |
| 3494 | 618943.318 | 9274833.943 | 27.499 | ALCANTARILLA |
| 3495 | 618944.596 | 9274833.549 | 27.949 | CANAL |
| 3496 | 618944.845 | 9274833.375 | 27.940 | CANAL |
| 3497 | 618945.847 | 9274832.494 | 27.957 | EJE |
| 3498 | 618947.172 | 9274831.497 | 27.958 | CANAL |
| 3499 | 618948.054 | 9274830.699 | 28.005 | CANAL |
| 3500 | 618961.993 | 9274836.079 | 26.810 | TERRENO |
| 3501 | 618960.689 | 9274837.727 | 26.670 | TERRENO |
| 3502 | 618958.264 | 9274839.754 | 27.019 | TERRENO |
| 3503 | 618957.065 | 9274841.060 | 27.884 | BORDE |
| 3504 | 618956.492 | 9274841.211 | 27.959 | CANAL |
| 3505 | 618955.814 | 9274841.934 | 27.902 | CANAL |
| 3506 | 618954.470 | 9274843.099 | 27.965 | EJE |
| 3507 | 618954.112 | 9274843.151 | 27.901 | CANAL |
| 3508 | 618952.948 | 9274843.962 | 27.980 | CANAL |
| 3509 | 618952.210 | 9274844.728 | 27.911 | BORDE |
| 3510 | 618951.206 | 9274845.371 | 27.176 | CANAL |
| 3511 | 618950.828 | 9274845.998 | 26.465 | CANAL |
| 3512 | 618950.068 | 9274846.594 | 26.520 | CANAL |
| 3513 | 618949.695 | 9274846.886 | 27.492 | CANAL |
| 3514 | 618962.841 | 9274866.563 | 27.608 | BORDE |
| 3515 | 618963.637 | 9274865.814 | 27.390 | CANAL |
| 3516 | 618964.381 | 9274864.983 | 26.414 | CANAL |
| 3517 | 618965.345 | 9274864.168 | 26.585 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3518 | 618966.052 | 9274863.486 | 27.180 | CANAL |
| 3519 | 618966.689 | 9274863.101 | 27.885 | BORDE |
| 3520 | 618967.301 | 9274862.742 | 27.957 | CANAL |
| 3521 | 618967.556 | 9274862.665 | 27.960 | CANAL |
| 3522 | 618968.973 | 9274861.645 | 27.930 | EJE |
| 3523 | 618969.808 | 9274860.779 | 27.902 | CANAL |
| 3524 | 618970.912 | 9274859.760 | 27.910 | CANAL |
| 3525 | 618971.329 | 9274859.416 | 27.877 | BORDE |
| 3526 | 618973.015 | 9274858.278 | 26.963 | TERRENO |
| 3527 | 618975.408 | 9274856.497 | 26.726 | TERRENO |
| 3528 | 618990.276 | 9274869.060 | 26.824 | TERRENO |
| 3529 | 618988.762 | 9274871.270 | 26.844 | TERRENO |
| 3530 | 618986.648 | 9274873.672 | 26.839 | TERRENO |
| 3531 | 618985.272 | 9274874.880 | 27.805 | BORDE |
| 3532 | 618984.801 | 9274875.343 | 27.924 | CANAL |
| 3533 | 618984.521 | 9274875.482 | 27.880 | CANAL |
| 3534 | 618983.115 | 9274876.913 | 27.991 | EJE |
| 3535 | 618982.270 | 9274877.594 | 27.961 | CANAL |
| 3536 | 618980.909 | 9274878.551 | 28.024 | CANAL |
| 3537 | 618980.363 | 9274879.117 | 27.939 | BORDE |
| 3538 | 618979.434 | 9274880.126 | 27.066 | CANAL |
| 3539 | 618979.049 | 9274880.462 | 26.445 | CANAL |
| 3540 | 618978.749 | 9274880.481 | 26.738 | CANAL |
| 3541 | 618978.537 | 9274881.195 | 27.182 | CANAL |
| 3542 | 618976.450 | 9274882.732 | 27.683 | BORDE |
| 3543 | 618994.090 | 9274902.909 | 27.406 | BORDE |
| 3544 | 618994.892 | 9274902.186 | 27.235 | CANAL |
| 3545 | 618995.537 | 9274902.116 | 26.513 | CANAL |
| 3546 | 618995.661 | 9274901.879 | 26.436 | CANAL |
| 3547 | 618996.559 | 9274901.181 | 27.123 | CANAL |
| 3548 | 618998.246 | 9274899.708 | 28.061 | BORDE |
| 3549 | 618998.357 | 9274899.584 | 28.076 | CANAL |
| 3550 | 618999.154 | 9274898.882 | 28.012 | CANAL |
| 3551 | 618999.910 | 9274898.272 | 28.017 | EJE |
| 3552 | 619000.370 | 9274898.132 | 28.010 | CANAL |
| 3553 | 619002.374 | 9274896.386 | 28.012 | CANAL |
| 3554 | 619002.738 | 9274896.169 | 27.980 | BORDE |
| 3555 | 619004.049 | 9274895.192 | 26.853 | BORDE |
| 3556 | 619005.746 | 9274893.606 | 26.920 | TERRENO |
| 3557 | 619006.807 | 9274892.517 | 26.919 | TERRENO |
| 3558 | 619020.272 | 9274904.683 | 26.947 | TERRENO |
| 3559 | 619018.449 | 9274907.522 | 26.959 | TERRENO |
| 3560 | 619016.117 | 9274910.280 | 27.137 | TERRENO |
| 3561 | 619014.261 | 9274911.649 | 28.033 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3562 | 619013.694 | 9274911.954 | 28.073 | CANAL |
| 3563 | 619013.474 | 9274912.289 | 27.976 | CANAL |
| 3564 | 619011.932 | 9274913.501 | 28.035 | EJE |
| 3565 | 619011.151 | 9274914.117 | 28.047 | CANAL |
| 3566 | 619010.681 | 9274914.540 | 28.007 | CANAL |
| 3567 | 619009.211 | 9274914.962 | 27.585 | CANAL |
| 3568 | 619008.823 | 9274915.690 | 26.986 | CANAL |
| 3569 | 619008.394 | 9274915.975 | 26.681 | CANAL |
| 3570 | 619007.686 | 9274916.563 | 26.795 | CANAL |
| 3571 | 619007.277 | 9274916.758 | 27.191 | CANAL |
| 3572 | 619006.088 | 9274917.905 | 27.679 | BORDE |
| 3573 | 619019.343 | 9274909.657 | 27.075 | ESTACIÓN 4 |
| 3574 | 619019.343 | 9274909.657 | 27.075 | ESTACIÓN 4 |
| 3575 | 619024.890 | 9274917.815 | 27.063 | TERRENO |
| 3576 | 619024.036 | 9274918.458 | 27.435 | TERRENO |
| 3577 | 619023.425 | 9274918.763 | 27.070 | TERRENO |
| 3578 | 619022.732 | 9274919.348 | 27.369 | TERRENO |
| 3579 | 619021.385 | 9274920.392 | 28.015 | BORDE |
| 3580 | 619021.174 | 9274920.648 | 28.053 | CANAL |
| 3581 | 619020.218 | 9274921.342 | 28.063 | CANAL |
| 3582 | 619019.191 | 9274922.075 | 28.074 | EJE |
| 3583 | 619018.062 | 9274922.949 | 28.088 | CANAL |
| 3584 | 619017.203 | 9274923.665 | 27.989 | CANAL |
| 3585 | 619016.840 | 9274923.891 | 27.830 | BORDE |
| 3586 | 619016.077 | 9274924.827 | 27.346 | CANAL |
| 3587 | 619015.475 | 9274925.288 | 26.606 | CANAL |
| 3588 | 619014.714 | 9274925.887 | 26.562 | CANAL |
| 3589 | 619013.913 | 9274926.665 | 27.520 | CANAL |
| 3590 | 619013.504 | 9274927.929 | 27.639 | BORDE |
| 3591 | 619028.728 | 9274947.912 | 27.730 | BORDE |
| 3592 | 619030.010 | 9274947.150 | 27.408 | CANAL |
| 3593 | 619030.262 | 9274946.763 | 26.670 | CANAL |
| 3594 | 619030.862 | 9274946.219 | 26.570 | CANAL |
| 3595 | 619032.024 | 9274944.767 | 27.323 | CANAL |
| 3596 | 619032.273 | 9274944.625 | 28.044 | BORDE |
| 3597 | 619033.086 | 9274944.220 | 28.178 | CANAL |
| 3598 | 619033.811 | 9274943.433 | 28.193 | CANAL |
| 3599 | 619035.249 | 9274942.445 | 28.169 | EJE |
| 3600 | 619036.365 | 9274941.598 | 28.151 | CANAL |
| 3601 | 619037.260 | 9274941.140 | 28.173 | CANAL |
| 3602 | 619037.831 | 9274940.897 | 28.033 | BORDE |
| 3603 | 619038.529 | 9274940.603 | 27.627 | TERRENO |
| 3604 | 619038.862 | 9274940.189 | 27.498 | TERRENO |
| 3605 | 619039.450 | 9274939.733 | 26.946 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3606 | 619039.812 | 9274939.513 | 27.278 | TERRENO |
| 3607 | 619040.727 | 9274939.283 | 27.436 | TERRENO |
| 3608 | 619041.637 | 9274938.511 | 27.088 | TERRENO |
| 3609 | 619057.400 | 9274955.152 | 26.984 | TERRENO |
| 3610 | 619056.227 | 9274956.471 | 27.169 | TERRENO |
| 3611 | 619054.997 | 9274957.589 | 27.369 | BORDE |
| 3612 | 619054.489 | 9274958.185 | 27.031 | BORDE |
| 3613 | 619054.265 | 9274958.439 | 26.986 | BORDE |
| 3614 | 619053.716 | 9274958.966 | 27.590 | BORDE |
| 3615 | 619052.831 | 9274959.680 | 28.150 | BORDE |
| 3616 | 619052.518 | 9274959.853 | 28.266 | CANAL |
| 3617 | 619051.764 | 9274960.472 | 28.266 | CANAL |
| 3618 | 619050.709 | 9274961.226 | 28.271 | EJE |
| 3619 | 619049.739 | 9274961.855 | 28.264 | CANAL |
| 3620 | 619048.633 | 9274962.658 | 28.267 | CANAL |
| 3621 | 619048.123 | 9274962.944 | 28.201 | BORDE |
| 3622 | 619046.969 | 9274963.713 | 27.358 | CANAL |
| 3623 | 619046.743 | 9274963.974 | 27.395 | CANAL |
| 3624 | 619045.968 | 9274964.810 | 26.855 | CANAL |
| 3625 | 619044.894 | 9274965.748 | 27.764 | CANAL |
| 3626 | 619044.012 | 9274967.062 | 27.840 | BORDE |
| 3627 | 619060.397 | 9274987.619 | 27.867 | BORDE |
| 3628 | 619061.396 | 9274986.908 | 27.746 | BORDE |
| 3629 | 619062.113 | 9274986.722 | 27.259 | CANAL |
| 3630 | 619062.225 | 9274986.526 | 26.798 | CANAL |
| 3631 | 619062.264 | 9274986.532 | 26.785 | CANAL |
| 3632 | 619063.419 | 9274985.803 | 26.997 | CANAL |
| 3633 | 619065.129 | 9274984.508 | 28.202 | BORDE |
| 3634 | 619065.413 | 9274984.230 | 28.348 | CANAL |
| 3635 | 619065.840 | 9274983.767 | 28.285 | CANAL |
| 3636 | 619066.997 | 9274982.900 | 28.357 | EJE |
| 3637 | 619067.577 | 9274982.366 | 28.330 | CANAL |
| 3638 | 619068.126 | 9274981.912 | 28.343 | CANAL |
| 3639 | 619068.692 | 9274981.428 | 28.327 | BORDE |
| 3640 | 619069.706 | 9274980.867 | 28.227 | BORDE |
| 3641 | 619070.084 | 9274980.553 | 27.637 | BORDE |
| 3642 | 619070.583 | 9274980.208 | 26.993 | TERRENO |
| 3643 | 619071.281 | 9274979.756 | 27.039 | TERRENO |
| 3644 | 619072.227 | 9274979.960 | 27.421 | TERRENO |
| 3645 | 619073.049 | 9274979.287 | 26.956 | TERRENO |
| 3646 | 619074.958 | 9274977.647 | 27.004 | TERRENO |
| 3647 | 619090.724 | 9274996.672 | 27.207 | TERRENO |
| 3648 | 619089.490 | 9274997.662 | 27.177 | TERRENO |
| 3649 | 619088.260 | 9274998.541 | 27.618 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3650 | 619087.984 | 9274998.899 | 27.169 | TERRENO |
| 3651 | 619087.116 | 9274999.575 | 27.251 | TERRENO |
| 3652 | 619086.730 | 9275000.169 | 27.690 | BORDE |
| 3653 | 619085.820 | 9275000.585 | 28.335 | BORDE |
| 3654 | 619085.582 | 9275000.766 | 28.398 | CANAL |
| 3655 | 619084.983 | 9275001.295 | 28.421 | CANAL |
| 3656 | 619083.802 | 9275002.283 | 28.432 | EJE |
| 3657 | 619082.884 | 9275002.943 | 28.423 | CANAL |
| 3658 | 619081.827 | 9275003.949 | 28.406 | CANAL |
| 3659 | 619081.654 | 9275004.043 | 28.334 | BORDE |
| 3660 | 619080.400 | 9275004.870 | 27.587 | CANAL |
| 3661 | 619080.034 | 9275005.181 | 26.980 | CANAL |
| 3662 | 619078.521 | 9275006.650 | 26.882 | CANAL |
| 3663 | 619077.996 | 9275006.763 | 27.691 | CANAL |
| 3664 | 619077.572 | 9275007.225 | 28.209 | BORDE |
| 3665 | 619091.111 | 9275025.061 | 27.619 | BORDE |
| 3666 | 619092.510 | 9275024.003 | 27.305 | CANAL |
| 3667 | 619093.131 | 9275023.884 | 26.575 | CANAL |
| 3668 | 619093.031 | 9275023.720 | 26.651 | CANAL |
| 3669 | 619094.487 | 9275022.837 | 27.398 | CANAL |
| 3670 | 619095.519 | 9275022.416 | 28.296 | BORDE |
| 3671 | 619095.953 | 9275021.657 | 28.448 | CANAL |
| 3672 | 619096.576 | 9275021.130 | 28.490 | CANAL |
| 3673 | 619097.448 | 9275020.441 | 28.488 | EJE |
| 3674 | 619098.323 | 9275019.785 | 28.463 | CANAL |
| 3675 | 619099.572 | 9275018.768 | 28.460 | CANAL |
| 3676 | 619100.034 | 9275018.463 | 28.403 | BORDE |
| 3677 | 619101.001 | 9275018.015 | 27.960 | BORDE |
| 3678 | 619102.034 | 9275017.299 | 27.250 | TERRENO |
| 3679 | 619102.348 | 9275016.963 | 27.287 | TERRENO |
| 3680 | 619103.256 | 9275016.483 | 27.642 | BORDE |
| 3681 | 619104.129 | 9275015.897 | 27.159 | TERRENO |
| 3682 | 619106.188 | 9275014.183 | 27.203 | TERRENO |
| 3683 | 619121.028 | 9275033.052 | 27.235 | TERRENO |
| 3684 | 619119.700 | 9275034.046 | 27.235 | TERRENO |
| 3685 | 619118.206 | 9275035.114 | 27.676 | BORDE |
| 3686 | 619117.514 | 9275035.919 | 27.221 | TERRENO |
| 3687 | 619117.512 | 9275035.926 | 27.231 | TERRENO |
| 3688 | 619116.741 | 9275036.188 | 27.699 | BORDE |
| 3689 | 619115.964 | 9275036.820 | 28.254 | BORDE |
| 3690 | 619115.210 | 9275037.311 | 28.486 | CANAL |
| 3691 | 619114.695 | 9275037.845 | 28.473 | CANAL |
| 3692 | 619113.571 | 9275038.536 | 28.489 | EJE |
| 3693 | 619112.447 | 9275039.388 | 28.520 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3694 | 619112.294 | 9275039.686 | 28.429 | CANAL |
| 3695 | 619111.215 | 9275040.620 | 28.437 | BORDE |
| 3696 | 619110.631 | 9275041.037 | 27.592 | CANAL |
| 3697 | 619109.751 | 9275041.824 | 26.852 | CANAL |
| 3698 | 619108.938 | 9275042.456 | 26.728 | CANAL |
| 3699 | 619107.726 | 9275043.282 | 28.180 | CANAL |
| 3700 | 619106.722 | 9275044.253 | 28.129 | BORDE |
| 3701 | 619124.919 | 9275066.320 | 28.202 | BORDE |
| 3702 | 619126.083 | 9275065.472 | 27.900 | CANAL |
| 3703 | 619126.519 | 9275065.004 | 26.903 | CANAL |
| 3704 | 619127.665 | 9275064.286 | 26.909 | CANAL |
| 3705 | 619128.414 | 9275063.482 | 28.038 | CANAL |
| 3706 | 619129.198 | 9275062.985 | 28.529 | BORDE |
| 3707 | 619129.272 | 9275062.796 | 28.556 | CANAL |
| 3708 | 619129.614 | 9275062.421 | 28.649 | CANAL |
| 3709 | 619131.161 | 9275061.315 | 28.563 | EJE |
| 3710 | 619132.273 | 9275060.644 | 28.569 | CANAL |
| 3711 | 619132.363 | 9275060.412 | 28.490 | CANAL |
| 3712 | 619133.742 | 9275059.637 | 28.584 | BORDE |
| 3713 | 619134.109 | 9275059.436 | 28.491 | BORDE |
| 3714 | 619134.468 | 9275059.487 | 28.517 | BORDE |
| 3715 | 619135.290 | 9275058.913 | 27.268 | TERRENO |
| 3716 | 619135.916 | 9275058.575 | 27.276 | TERRENO |
| 3717 | 619136.239 | 9275058.451 | 27.759 | BORDE |
| 3718 | 619137.227 | 9275057.865 | 27.251 | TERRENO |
| 3719 | 619138.513 | 9275056.490 | 27.427 | TERRENO |
| 3720 | 619154.156 | 9275075.318 | 27.412 | TERRENO |
| 3721 | 619152.331 | 9275076.354 | 27.255 | TERRENO |
| 3722 | 619151.392 | 9275077.253 | 27.710 | BORDE |
| 3723 | 619150.984 | 9275077.658 | 27.261 | TERRENO |
| 3724 | 619150.528 | 9275077.981 | 27.356 | TERRENO |
| 3725 | 619150.316 | 9275078.523 | 27.914 | BORDE |
| 3726 | 619149.636 | 9275078.849 | 28.447 | BORDE |
| 3727 | 619149.176 | 9275079.209 | 28.603 | CANAL |
| 3728 | 619148.541 | 9275079.568 | 28.471 | CANAL |
| 3729 | 619147.175 | 9275080.869 | 28.584 | EJE |
| 3730 | 619146.198 | 9275081.562 | 28.607 | CANAL |
| 3731 | 619145.496 | 9275082.232 | 28.569 | CANAL |
| 3732 | 619144.881 | 9275082.688 | 28.518 | BORDE |
| 3733 | 619144.305 | 9275083.068 | 27.868 | CANAL |
| 3734 | 619143.494 | 9275083.872 | 27.014 | CANAL |
| 3735 | 619142.604 | 9275084.485 | 26.798 | CANAL |
| 3736 | 619141.722 | 9275085.251 | 28.171 | CANAL |
| 3737 | 619140.931 | 9275086.118 | 28.463 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3738 | 619156.302 | 9275106.358 | 27.758 | BORDE |
| 3739 | 619157.427 | 9275104.937 | 27.836 | COMPUERTA |
| 3740 | 619158.123 | 9275104.099 | 27.963 | COMPUERTA |
| 3741 | 619158.189 | 9275105.128 | 26.799 | FONDO |
| 3742 | 619157.831 | 9275105.868 | 27.890 | ESTRUCTURA |
| 3743 | 619157.922 | 9275105.778 | 27.833 | ESTRUCTURA |
| 3744 | 619156.984 | 9275104.731 | 27.762 | ESTRUCTURA |
| 3745 | 619156.552 | 9275104.520 | 27.927 | ESTRUCTURA |
| 3746 | 619159.544 | 9275104.484 | 27.929 | ESTRUCTURA |
| 3747 | 619159.618 | 9275104.377 | 28.157 | ESTRUCTURA |
| 3748 | 619158.616 | 9275103.626 | 27.735 | ESTRUCTURA |
| 3749 | 619158.646 | 9275103.568 | 28.133 | ESTRUCTURA |
| 3750 | 619160.049 | 9275103.488 | 28.349 | BORDE |
| 3751 | 619160.843 | 9275102.960 | 28.557 | CANAL |
| 3752 | 619161.287 | 9275102.473 | 28.482 | CANAL |
| 3753 | 619162.964 | 9275101.180 | 28.594 | EJE |
| 3754 | 619164.003 | 9275100.246 | 28.599 | CANAL |
| 3755 | 619164.291 | 9275099.839 | 28.586 | CANAL |
| 3756 | 619165.335 | 9275099.109 | 28.684 | BORDE |
| 3757 | 619166.443 | 9275098.457 | 28.131 | EJE |
| 3758 | 619166.664 | 9275098.280 | 27.601 | EJE |
| 3759 | 619167.143 | 9275097.829 | 27.279 | EJE |
| 3760 | 619168.201 | 9275097.302 | 27.763 | BORDE |
| 3761 | 619170.673 | 9275095.402 | 27.311 | TERRENO |
| 3762 | 619169.841 | 9275102.981 | 28.631 | **BM - 09** |
| 3763 | 619169.985 | 9275103.134 | 28.162 | ALCANTARILLA |
| 3764 | 619169.657 | 9275103.349 | 28.532 | ALCANTARILLA |
| 3765 | 619169.461 | 9275103.516 | 28.566 | ALCANTARILLA |
| 3766 | 619168.553 | 9275102.628 | 28.561 | ALCANTARILLA |
| 3767 | 619168.427 | 9275102.323 | 28.584 | ALCANTARILLA |
| 3768 | 619168.412 | 9275101.781 | 28.154 | ALCANTARILLA |
| 3769 | 619166.120 | 9275108.483 | 28.224 | ALCANTARILLA |
| 3770 | 619165.962 | 9275108.552 | 28.482 | ALCANTARILLA |
| 3771 | 619165.978 | 9275107.814 | 28.619 | ALCANTARILLA |
| 3772 | 619165.430 | 9275106.840 | 28.580 | ALCANTARILLA |
| 3773 | 619165.048 | 9275106.594 | 28.781 | ALCANTARILLA |
| 3774 | 619164.539 | 9275106.720 | 28.517 | ALCANTARILLA |
| 3775 | 619165.772 | 9275106.452 | 28.545 | CANAL |
| 3776 | 619165.716 | 9275106.025 | 28.595 | CANAL |
| 3777 | 619167.004 | 9275105.072 | 28.597 | EJE |
| 3778 | 619167.863 | 9275103.900 | 28.563 | CANAL |
| 3779 | 619168.301 | 9275103.259 | 28.501 | CANAL |
| 3780 | 619189.420 | 9275119.131 | 27.413 | TERRENO |
| 3781 | 619187.828 | 9275120.728 | 27.428 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3782 | 619186.559 | 9275121.644 | 27.796 | BORDE |
| 3783 | 619185.391 | 9275122.512 | 28.579 | BORDE |
| 3784 | 619185.040 | 9275122.770 | 28.626 | CANAL |
| 3785 | 619184.899 | 9275122.960 | 28.595 | CANAL |
| 3786 | 619183.420 | 9275124.518 | 28.635 | EJE |
| 3787 | 619182.402 | 9275125.285 | 28.665 | CANAL |
| 3788 | 619182.037 | 9275125.712 | 28.587 | CANAL |
| 3789 | 619180.981 | 9275126.308 | 28.576 | BORDE |
| 3790 | 619180.332 | 9275127.197 | 27.587 | CANAL |
| 3791 | 619179.785 | 9275127.707 | 26.969 | CANAL |
| 3792 | 619179.617 | 9275127.916 | 27.003 | CANAL |
| 3793 | 619178.437 | 9275128.926 | 27.916 | CANAL |
| 3794 | 619177.401 | 9275130.524 | 28.033 | BORDE |
| 3795 | 619192.947 | 9275150.195 | 28.138 | BORDE |
| 3796 | 619194.176 | 9275149.269 | 27.924 | CANAL |
| 3797 | 619194.633 | 9275148.954 | 27.109 | CANAL |
| 3798 | 619195.670 | 9275148.425 | 27.078 | CANAL |
| 3799 | 619196.113 | 9275147.056 | 27.845 | CANAL |
| 3800 | 619197.123 | 9275146.962 | 28.787 | BORDE |
| 3801 | 619197.309 | 9275146.702 | 28.741 | CANAL |
| 3802 | 619198.079 | 9275146.113 | 28.654 | CANAL |
| 3803 | 619199.184 | 9275145.615 | 28.707 | EJE |
| 3804 | 619199.735 | 9275145.280 | 28.616 | CANAL |
| 3805 | 619200.312 | 9275144.629 | 28.619 | CANAL |
| 3806 | 619201.418 | 9275143.759 | 28.640 | BORDE |
| 3807 | 619202.164 | 9275142.932 | 28.068 | BORDE |
| 3808 | 619202.761 | 9275142.906 | 27.511 | EJE |
| 3809 | 619202.901 | 9275142.655 | 27.561 | EJE |
| 3810 | 619203.995 | 9275142.094 | 27.881 | BORDE |
| 3811 | 619204.517 | 9275141.473 | 27.441 | TERRENO |
| 3812 | 619205.945 | 9275140.192 | 27.524 | TERRENO |
| 3813 | 619222.647 | 9275159.991 | 27.535 | TERRENO |
| 3814 | 619222.281 | 9275160.338 | 27.729 | TERRENO |
| 3815 | 619221.042 | 9275161.420 | 28.044 | BORDE |
| 3816 | 619219.713 | 9275162.148 | 27.571 | EJE |
| 3817 | 619219.068 | 9275162.367 | 27.781 | EJE |
| 3818 | 619218.046 | 9275163.184 | 28.606 | BORDE |
| 3819 | 619217.928 | 9275163.679 | 28.664 | CANAL |
| 3820 | 619217.004 | 9275164.617 | 28.732 | CANAL |
| 3821 | 619216.196 | 9275165.209 | 28.724 | EJE |
| 3822 | 619215.407 | 9275165.826 | 28.698 | CANAL |
| 3823 | 619214.480 | 9275166.632 | 28.734 | CANAL |
| 3824 | 619213.798 | 9275166.996 | 28.772 | BORDE |
| 3825 | 619212.623 | 9275168.087 | 27.903 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3826 | 619212.303 | 9275168.207 | 27.973 | CANAL |
| 3827 | 619211.797 | 9275168.636 | 27.278 | CANAL |
| 3828 | 619210.906 | 9275169.642 | 27.853 | CANAL |
| 3829 | 619210.725 | 9275171.347 | 28.069 | BORDE |
| 3830 | 619224.463 | 9275190.107 | 28.203 | BORDE |
| 3831 | 619225.548 | 9275188.758 | 28.144 | CANAL |
| 3832 | 619225.920 | 9275188.579 | 27.302 | CANAL |
| 3833 | 619226.484 | 9275188.145 | 26.984 | CANAL |
| 3834 | 619228.145 | 9275187.075 | 27.956 | CANAL |
| 3835 | 619229.061 | 9275186.695 | 28.707 | BORDE |
| 3836 | 619229.381 | 9275186.186 | 28.754 | CANAL |
| 3837 | 619229.648 | 9275185.881 | 28.681 | CANAL |
| 3838 | 619231.182 | 9275184.915 | 28.722 | EJE |
| 3839 | 619232.206 | 9275184.175 | 28.744 | CANAL |
| 3840 | 619232.881 | 9275183.677 | 28.643 | CANAL |
| 3841 | 619233.734 | 9275183.226 | 28.662 | BORDE |
| 3842 | 619234.743 | 9275182.748 | 28.122 | TERRENO |
| 3843 | 619235.153 | 9275182.598 | 27.670 | TERRENO |
| 3844 | 619235.804 | 9275182.219 | 27.594 | TERRENO |
| 3845 | 619235.737 | 9275182.208 | 27.673 | TERRENO |
| 3846 | 619237.304 | 9275180.941 | 27.994 | TERRENO |
| 3847 | 619238.173 | 9275179.899 | 27.944 | TERRENO |
| 3848 | 619252.675 | 9275196.928 | 27.683 | TERRENO |
| 3849 | 619250.951 | 9275198.314 | 27.630 | TERRENO |
| 3850 | 619250.377 | 9275198.752 | 28.033 | TERRENO |
| 3851 | 619250.173 | 9275199.067 | 27.551 | TERRENO |
| 3852 | 619249.502 | 9275199.343 | 27.630 | TERRENO |
| 3853 | 619249.060 | 9275199.530 | 28.032 | TERRENO |
| 3854 | 619247.852 | 9275200.167 | 28.902 | BORDE |
| 3855 | 619247.502 | 9275200.534 | 28.831 | CANAL |
| 3856 | 619246.846 | 9275201.431 | 28.734 | CANAL |
| 3857 | 619245.473 | 9275202.381 | 28.787 | EJE |
| 3858 | 619245.127 | 9275202.757 | 28.735 | CANAL |
| 3859 | 619244.559 | 9275203.228 | 28.760 | CANAL |
| 3860 | 619243.313 | 9275204.188 | 28.734 | BORDE |
| 3861 | 619242.678 | 9275204.751 | 28.058 | CANAL |
| 3862 | 619242.391 | 9275204.818 | 27.672 | CANAL |
| 3863 | 619241.602 | 9275205.686 | 27.403 | CANAL |
| 3864 | 619240.374 | 9275206.719 | 28.211 | CANAL |
| 3865 | 619239.471 | 9275207.596 | 28.614 | BORDE |
| 3866 | 619256.001 | 9275228.234 | 28.505 | BORDE |
| 3867 | 619256.891 | 9275227.240 | 28.128 | CANAL |
| 3868 | 619257.226 | 9275227.219 | 27.673 | CANAL |
| 3869 | 619257.721 | 9275226.784 | 27.447 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3870 | 619259.510 | 9275225.491 | 28.287 | CANAL |
| 3871 | 619259.745 | 9275225.431 | 28.530 | BORDE |
| 3872 | 619260.642 | 9275224.621 | 28.827 | CANAL |
| 3873 | 619260.997 | 9275224.339 | 28.791 | CANAL |
| 3874 | 619262.213 | 9275223.103 | 28.783 | EJE |
| 3875 | 619262.745 | 9275222.747 | 28.750 | CANAL |
| 3876 | 619263.859 | 9275221.948 | 28.769 | CANAL |
| 3877 | 619264.741 | 9275221.288 | 28.816 | BORDE |
| 3878 | 619265.410 | 9275220.780 | 28.333 | TERRENO |
| 3879 | 619265.780 | 9275220.676 | 28.079 | TERRENO |
| 3880 | 619266.181 | 9275220.116 | 27.680 | TERRENO |
| 3881 | 619266.686 | 9275219.707 | 28.028 | TERRENO |
| 3882 | 619267.538 | 9275219.147 | 27.797 | TERRENO |
| 3883 | 619269.786 | 9275217.234 | 27.891 | TERRENO |
| 3884 | 619283.722 | 9275235.058 | 27.960 | TERRENO |
| 3885 | 619282.560 | 9275236.442 | 28.039 | TERRENO |
| 3886 | 619281.733 | 9275237.519 | 28.444 | TERRENO |
| 3887 | 619281.602 | 9275237.916 | 28.489 | BORDE |
| 3888 | 619281.396 | 9275238.040 | 28.808 | BORDE |
| 3889 | 619280.531 | 9275239.020 | 28.791 | BORDE |
| 3890 | 619280.010 | 9275239.524 | 28.806 | CANAL |
| 3891 | 619279.103 | 9275240.437 | 28.846 | CANAL |
| 3892 | 619277.839 | 9275241.384 | 28.854 | EJE |
| 3893 | 619277.044 | 9275242.035 | 28.848 | CANAL |
| 3894 | 619276.893 | 9275242.208 | 28.801 | CANAL |
| 3895 | 619275.640 | 9275243.193 | 28.776 | BORDE |
| 3896 | 619271.960 | 9275238.507 | 28.706 | ALCANTARILLA |
| 3897 | 619271.901 | 9275238.104 | 28.816 | ALCANTARILLA |
| 3898 | 619271.915 | 9275237.841 | 28.889 | ALCANTARILLA |
| 3899 | 619271.589 | 9275237.074 | 28.872 | ALCANTARILLA |
| 3900 | 619271.206 | 9275236.695 | 28.949 | ALCANTARILLA |
| 3901 | 619270.793 | 9275236.815 | 28.710 | ALCANTARILLA |
| 3902 | 619274.712 | 9275232.812 | 28.600 | ALCANTARILLA |
| 3903 | 619275.131 | 9275232.484 | 28.842 | ALCANTARILLA |
| 3904 | 619275.116 | 9275233.064 | 28.804 | ALCANTARILLA |
| 3905 | 619275.316 | 9275233.314 | 28.909 | ALCANTARILLA |
| 3906 | 619275.675 | 9275233.819 | 28.807 | ALCANTARILLA |
| 3907 | 619276.071 | 9275233.883 | 28.838 | ALCANTARILLA |
| 3908 | 619275.843 | 9275234.195 | 28.832 | CANAL |
| 3909 | 619275.610 | 9275234.408 | 28.790 | CANAL |
| 3910 | 619273.520 | 9275235.683 | 28.847 | CANALEJE |
| 3911 | 619272.445 | 9275236.502 | 28.839 | CANAL |
| 3912 | 619272.379 | 9275236.461 | 28.839 | CANAL |
| 3913 | 619275.724 | 9275244.105 | 28.202 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3914 | 619275.292 | 9275244.482 | 28.191 | CANAL |
| 3915 | 619274.024 | 9275246.125 | 27.141 | CANAL |
| 3916 | 619273.350 | 9275246.161 | 28.110 | CANAL |
| 3917 | 619272.659 | 9275247.265 | 28.585 | BORDE |
| 3918 | 619288.017 | 9275267.898 | 28.402 | BORDE |
| 3919 | 619289.600 | 9275266.508 | 28.157 | CANAL |
| 3920 | 619290.014 | 9275266.356 | 27.132 | CANAL |
| 3921 | 619290.738 | 9275265.878 | 27.318 | CANAL |
| 3922 | 619291.412 | 9275264.890 | 28.255 | CANAL |
| 3923 | 619292.111 | 9275264.304 | 29.005 | BORDE |
| 3924 | 619292.861 | 9275263.774 | 28.970 | CANAL |
| 3925 | 619293.463 | 9275263.429 | 28.916 | CANAL |
| 3926 | 619294.473 | 9275262.722 | 28.918 | EJE |
| 3927 | 619295.131 | 9275262.412 | 28.923 | CANAL |
| 3928 | 619296.435 | 9275261.367 | 28.904 | CANAL |
| 3929 | 619297.510 | 9275260.790 | 28.924 | BORDE |
| 3930 | 619297.993 | 9275260.378 | 28.857 | BORDE |
| 3931 | 619298.688 | 9275259.680 | 28.391 | TERRENO |
| 3932 | 619299.338 | 9275259.034 | 28.372 | TERRENO |
| 3933 | 619301.804 | 9275257.457 | 28.045 | TERRENO |
| 3934 | 619315.779 | 9275275.129 | 28.308 | TERRENO |
| 3935 | 619314.969 | 9275276.386 | 28.421 | TERRENO |
| 3936 | 619313.679 | 9275277.882 | 28.355 | TERRENO |
| 3937 | 619313.196 | 9275278.500 | 28.745 | BORDE |
| 3938 | 619312.705 | 9275278.915 | 29.079 | BORDE |
| 3939 | 619312.203 | 9275279.738 | 29.078 | CANAL |
| 3940 | 619311.825 | 9275280.209 | 29.091 | CANAL |
| 3941 | 619310.081 | 9275281.822 | 29.078 | EJE |
| 3942 | 619309.176 | 9275282.580 | 29.090 | CANAL |
| 3943 | 619308.910 | 9275283.073 | 29.027 | CANAL |
| 3944 | 619307.883 | 9275283.593 | 28.983 | BORDE |
| 3945 | 619307.182 | 9275284.240 | 28.331 | CANAL |
| 3946 | 619306.692 | 9275284.635 | 27.203 | CANAL |
| 3947 | 619305.681 | 9275285.038 | 27.255 | CANAL |
| 3948 | 619305.212 | 9275285.374 | 28.061 | CANAL |
| 3949 | 619304.302 | 9275285.861 | 28.537 | BORDE |
| 3950 | 619311.351 | 9275287.630 | 28.778 | ALCANTARILLA |
| 3951 | 619312.154 | 9275287.576 | 29.091 | ALCANTARILLA |
| 3952 | 619312.318 | 9275287.726 | 29.069 | ALCANTARILLA |
| 3953 | 619313.211 | 9275287.825 | 29.093 | ALCANTARILLA |
| 3954 | 619313.690 | 9275289.111 | 29.104 | ALCANTARILLA |
| 3955 | 619313.681 | 9275289.414 | 29.095 | ALCANTARILLA |
| 3956 | 619314.576 | 9275281.819 | 28.835 | ALCANTARILLA |
| 3957 | 619314.780 | 9275281.614 | 28.993 | ALCANTARILLA |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 3958 | 619314.898 | 9275281.914 | 29.068 | ALCANTARILLA |
| 3959 | 619315.328 | 9275282.819 | 29.056 | ALCANTARILLA |
| 3960 | 619315.936 | 9275283.324 | 29.175 | ALCANTARILLA |
| 3961 | 619316.141 | 9275283.236 | 29.114 | ALCANTARILLA |
| 3962 | 619318.317 | 9275282.031 | 28.387 | CANAL |
| 3963 | 619319.745 | 9275278.753 | 28.675 | CANAL |
| 3964 | 619320.973 | 9275276.152 | 28.721 | CANAL |
| 3965 | 619320.898 | 9275274.711 | 28.124 | CANAL |
| 3966 | 619320.805 | 9275274.412 | 27.811 | CANAL |
| 3967 | 619320.088 | 9275274.251 | 28.265 | CANAL |
| 3968 | 619319.255 | 9275275.760 | 28.050 | CANAL |
| 3969 | 619316.914 | 9275277.220 | 28.760 | CANAL |
| 3970 | 619315.315 | 9275279.592 | 28.735 | CANAL |
| 3971 | 619315.442 | 9275282.859 | 29.119 | CANAL |
| 3972 | 619315.013 | 9275283.881 | 29.094 | CANAL |
| 3973 | 619314.052 | 9275285.931 | 29.113 | EJE |
| 3974 | 619313.697 | 9275286.828 | 29.112 | CANAL |
| 3975 | 619313.309 | 9275287.490 | 29.146 | CANAL |
| 3976 | 619338.318 | 9275300.988 | 27.967 | TERRENO |
| 3977 | 619337.183 | 9275302.566 | 27.903 | TERRENO |
| 3978 | 619336.318 | 9275303.082 | 28.141 | TERRENO |
| 3979 | 619334.903 | 9275304.100 | 28.389 | BORDE |
| 3980 | 619334.595 | 9275304.275 | 28.713 | BORDE |
| 3981 | 619333.987 | 9275304.755 | 29.033 | BORDE |
| 3982 | 619333.438 | 9275305.414 | 29.058 | CANAL |
| 3983 | 619332.390 | 9275306.442 | 29.142 | CANAL |
| 3984 | 619331.240 | 9275307.518 | 29.178 | EJE |
| 3985 | 619329.993 | 9275308.400 | 29.207 | CANAL |
| 3986 | 619329.681 | 9275308.881 | 29.140 | CANAL |
| 3987 | 619328.917 | 9275309.485 | 29.132 | BORDE |
| 3988 | 619328.025 | 9275310.345 | 28.326 | CANAL |
| 3989 | 619327.407 | 9275310.787 | 27.305 | CANAL |
| 3990 | 619327.595 | 9275311.193 | 27.657 | CANAL |
| 3991 | 619325.643 | 9275312.329 | 28.571 | CANAL |
| 3992 | 619325.068 | 9275313.110 | 28.491 | BORDE |
| 3993 | 619340.529 | 9275331.550 | 28.725 | BORDE |
| 3994 | 619341.295 | 9275330.530 | 28.510 | CANAL |
| 3995 | 619341.738 | 9275330.315 | 27.523 | CANAL |
| 3996 | 619342.527 | 9275329.395 | 27.369 | CANAL |
| 3997 | 619343.307 | 9275328.759 | 28.682 | CANAL |
| 3998 | 619344.525 | 9275328.201 | 29.171 | BORDE |
| 3999 | 619344.985 | 9275328.064 | 29.172 | CANAL |
| 4000 | 619345.619 | 9275327.546 | 29.122 | CANAL |
| 4001 | 619346.447 | 9275326.984 | 29.075 | EJE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4002 | 619347.700 | 9275326.209 | 29.127 | CANAL |
| 4003 | 619348.455 | 9275325.605 | 29.045 | CANAL |
| 4004 | 619349.570 | 9275325.198 | 29.097 | BORDE |
| 4005 | 619349.890 | 9275325.168 | 29.065 | BORDE |
| 4006 | 619351.711 | 9275323.236 | 28.485 | TERRENO |
| 4007 | 619352.969 | 9275321.423 | 28.364 | TERRENO |
| 4008 | 619368.236 | 9275341.329 | 28.170 | TERRENO |
| 4009 | 619369.112 | 9275342.332 | 28.194 | TERRENO |
| 4010 | 619367.456 | 9275343.992 | 27.982 | TERRENO |
| 4011 | 619367.088 | 9275344.313 | 28.418 | BORDE |
| 4012 | 619366.135 | 9275345.002 | 28.986 | BORDE |
| 4013 | 619365.491 | 9275345.309 | 29.167 | BORDE |
| 4014 | 619365.333 | 9275345.497 | 29.201 | CANAL |
| 4015 | 619363.994 | 9275346.413 | 29.195 | CANAL |
| 4016 | 619363.478 | 9275347.024 | 29.151 | EJE |
| 4017 | 619362.785 | 9275347.652 | 29.132 | CANAL |
| 4018 | 619362.087 | 9275348.214 | 29.175 | CANAL |
| 4019 | 619360.804 | 9275349.039 | 29.150 | BORDE |
| 4020 | 619360.159 | 9275349.402 | 28.402 | CANAL |
| 4021 | 619359.628 | 9275349.663 | 28.287 | CANAL |
| 4022 | 619358.915 | 9275350.101 | 27.615 | CANAL |
| 4023 | 619359.001 | 9275350.178 | 27.402 | CANAL |
| 4024 | 619357.905 | 9275351.165 | 28.372 | CANAL |
| 4025 | 619357.441 | 9275352.393 | 28.560 | BORDE |
| 4026 | 619374.576 | 9275373.397 | 28.775 | BORDE |
| 4027 | 619375.377 | 9275373.074 | 28.625 | CANAL |
| 4028 | 619375.959 | 9275372.347 | 27.466 | CANAL |
| 4029 | 619376.210 | 9275372.379 | 27.577 | CANAL |
| 4030 | 619378.052 | 9275370.953 | 28.716 | CANAL |
| 4031 | 619378.062 | 9275370.809 | 29.182 | BORDE |
| 4032 | 619378.778 | 9275370.213 | 29.194 | CANAL |
| 4033 | 619378.920 | 9275369.922 | 29.143 | CANAL |
| 4034 | 619380.621 | 9275368.299 | 29.245 | EJE |
| 4035 | 619381.574 | 9275367.683 | 29.265 | CANAL |
| 4036 | 619382.513 | 9275366.860 | 29.225 | CANAL |
| 4037 | 619383.360 | 9275366.297 | 29.215 | TERRENO |
| 4038 | 619385.054 | 9275364.882 | 29.216 | TERRENO |
| 4039 | 619385.567 | 9275364.541 | 29.098 | TERRENO |
| 4040 | 619386.900 | 9275363.593 | 29.203 | TERRENO |
| 4041 | 619389.540 | 9275361.445 | 29.074 | TERRENO |
| 4042 | 619407.697 | 9275388.753 | 28.323 | TERRENO |
| 4043 | 619406.962 | 9275390.024 | 28.591 | TERRENO |
| 4044 | 619406.322 | 9275391.635 | 28.554 | TERRENO |
| 4045 | 619405.346 | 9275392.774 | 29.002 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4046 | 619405.137 | 9275392.937 | 29.218 | BORDE |
| 4047 | 619404.882 | 9275393.084 | 29.263 | CANAL |
| 4048 | 619404.406 | 9275393.606 | 29.183 | CANAL |
| 4049 | 619402.731 | 9275394.832 | 29.306 | EJE |
| 4050 | 619402.586 | 9275394.931 | 29.234 | CANAL |
| 4051 | 619401.454 | 9275395.676 | 29.295 | CANAL |
| 4052 | 619400.113 | 9275396.697 | 29.221 | BORDE |
| 4053 | 619399.103 | 9275397.173 | 28.155 | CANAL |
| 4054 | 619398.707 | 9275397.539 | 28.023 | CANAL |
| 4055 | 619397.801 | 9275398.358 | 27.521 | CANAL |
| 4056 | 619396.907 | 9275399.221 | 28.642 | CANAL |
| 4057 | 619396.927 | 9275399.834 | 29.073 | BORDE |
| 4058 | 619418.152 | 9275426.105 | 29.040 | BORDE |
| 4059 | 619419.025 | 9275425.312 | 28.299 | CANAL |
| 4060 | 619419.937 | 9275424.958 | 27.489 | CANAL |
| 4061 | 619420.231 | 9275424.573 | 27.525 | CANAL |
| 4062 | 619421.694 | 9275423.363 | 28.474 | CANAL |
| 4063 | 619422.113 | 9275423.130 | 29.143 | BORDE |
| 4064 | 619422.573 | 9275422.816 | 29.308 | CANAL |
| 4065 | 619423.524 | 9275422.229 | 29.352 | CANAL |
| 4066 | 619424.146 | 9275421.537 | 29.367 | EJE |
| 4067 | 619425.041 | 9275420.783 | 29.382 | CANAL |
| 4068 | 619426.293 | 9275419.962 | 29.403 | CANAL |
| 4069 | 619427.047 | 9275419.616 | 29.357 | BORDE |
| 4070 | 619427.431 | 9275419.303 | 29.164 | BORDE |
| 4071 | 619428.477 | 9275418.914 | 28.453 | BORDE |
| 4072 | 619428.868 | 9275418.528 | 28.384 | TERRENO |
| 4073 | 619430.012 | 9275417.179 | 28.335 | TERRENO |
| 4074 | 619450.824 | 9275439.844 | 28.444 | TERRENO |
| 4075 | 619449.133 | 9275441.597 | 28.274 | TERRENO |
| 4076 | 619448.269 | 9275442.146 | 28.507 | TERRENO |
| 4077 | 619447.320 | 9275443.247 | 28.762 | BORDE |
| 4078 | 619446.961 | 9275443.293 | 29.196 | BORDE |
| 4079 | 619446.529 | 9275443.594 | 29.354 | BORDE |
| 4080 | 619446.026 | 9275443.926 | 29.380 | CANAL |
| 4081 | 619445.182 | 9275444.778 | 29.339 | CANAL |
| 4082 | 619444.090 | 9275445.625 | 29.358 | EJE |
| 4083 | 619443.220 | 9275446.262 | 29.387 | CANAL |
| 4084 | 619442.371 | 9275446.860 | 29.322 | CANAL |
| 4085 | 619441.420 | 9275447.413 | 29.362 | BORDE |
| 4086 | 619440.244 | 9275447.601 | 28.903 | CANAL |
| 4087 | 619439.375 | 9275448.038 | 28.058 | CANAL |
| 4088 | 619438.230 | 9275448.845 | 27.666 | CANAL |
| 4089 | 619437.892 | 9275450.125 | 28.566 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4090 | 619437.108 | 9275450.072 | 29.342 | CANAL |
| 4091 | 619454.815 | 9275465.532 | 29.009 | ALCANTARILLA |
| 4092 | 619454.831 | 9275465.345 | 29.062 | ALCANTARILLA |
| 4093 | 619455.227 | 9275464.925 | 29.501 | ALCANTARILLA |
| 4094 | 619455.839 | 9275464.555 | 29.617 | ALCANTARILLA |
| 4095 | 619456.443 | 9275464.915 | 29.674 | ALCANTARILLA |
| 4096 | 619456.819 | 9275465.939 | 29.541 | ALCANTARILLA |
| 4097 | 619456.762 | 9275466.363 | 29.331 | ALCANTARILLA |
| 4098 | 619458.890 | 9275459.715 | 29.464 | ALCANTARILLA |
| 4099 | 619459.222 | 9275459.476 | 29.480 | ALCANTARILLA |
| 4100 | 619459.714 | 9275459.276 | 28.978 | ALCANTARILLA |
| 4101 | 619458.137 | 9275458.705 | 29.442 | ALCANTARILLA |
| 4102 | 619458.153 | 9275458.450 | 29.377 | ALCANTARILLA |
| 4103 | 619458.447 | 9275457.543 | 28.779 | ALCANTARILLA |
| 4104 | 619458.442 | 9275456.107 | 28.720 | CANAL |
| 4105 | 619459.770 | 9275451.407 | 29.199 | CANAL |
| 4106 | 619461.211 | 9275451.665 | 28.179 | CANAL |
| 4107 | 619461.814 | 9275451.940 | 28.288 | CANAL |
| 4108 | 619462.603 | 9275452.056 | 28.607 | CANAL |
| 4109 | 619463.024 | 9275452.425 | 29.243 | CANAL |
| 4110 | 619462.980 | 9275453.722 | 29.273 | CANAL |
| 4111 | 619462.704 | 9275454.616 | 29.334 | CANAL |
| 4112 | 619462.499 | 9275456.088 | 29.404 | CANAL |
| 4113 | 619462.271 | 9275457.034 | 29.618 | CANAL |
| 4114 | 619461.004 | 9275459.026 | 29.025 | CANAL |
| 4115 | 619458.606 | 9275459.213 | 29.465 | CANAL |
| 4116 | 619458.524 | 9275460.040 | 29.492 | CANAL |
| 4117 | 619458.074 | 9275462.224 | 29.456 | EJE |
| 4118 | 619457.629 | 9275463.204 | 29.459 | CANAL |
| 4119 | 619456.748 | 9275465.515 | 29.564 | CANAL |
| 4120 | 619472.082 | 9275468.540 | 28.442 | TERRENO |
| 4121 | 619471.603 | 9275469.053 | 28.734 | TERRENO |
| 4122 | 619470.498 | 9275470.544 | 28.693 | BORDE |
| 4123 | 619470.229 | 9275470.731 | 28.850 | BORDE |
| 4124 | 619468.822 | 9275471.617 | 29.335 | CANAL |
| 4125 | 619468.288 | 9275471.939 | 29.457 | CAMINO |
| 4126 | 619467.934 | 9275472.212 | 29.306 | CAMINO |
| 4127 | 619465.956 | 9275473.651 | 29.462 | EJE |
| 4128 | 619465.094 | 9275474.434 | 29.463 | CANAL |
| 4129 | 619464.933 | 9275474.517 | 29.415 | CANAL |
| 4130 | 619464.320 | 9275474.975 | 29.482 | BORDE |
| 4131 | 619462.982 | 9275475.885 | 28.506 | CANAL |
| 4132 | 619462.246 | 9275476.577 | 27.680 | CANAL |
| 4133 | 619461.810 | 9275476.901 | 27.756 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4134 | 619460.984 | 9275477.609 | 28.508 | CANAL |
| 4135 | 619460.374 | 9275478.104 | 29.267 | BORDE |
| 4136 | 619480.025 | 9275504.950 | 29.308 | BORDE |
| 4137 | 619481.099 | 9275503.980 | 28.531 | CANAL |
| 4138 | 619482.107 | 9275502.904 | 27.822 | CANAL |
| 4139 | 619482.219 | 9275503.349 | 27.790 | CANAL |
| 4140 | 619483.219 | 9275502.994 | 28.432 | CANAL |
| 4141 | 619483.697 | 9275502.624 | 28.999 | CANAL |
| 4142 | 619484.287 | 9275501.817 | 29.212 | BORDE |
| 4143 | 619484.952 | 9275501.577 | 29.421 | CANAL |
| 4144 | 619485.239 | 9275501.371 | 29.529 | CANAL |
| 4145 | 619486.563 | 9275500.509 | 29.404 | EJE |
| 4146 | 619487.624 | 9275499.838 | 29.383 | CANAL |
| 4147 | 619489.109 | 9275498.766 | 29.395 | CANAL |
| 4148 | 619489.453 | 9275498.356 | 29.426 | BORDE |
| 4149 | 619489.802 | 9275497.951 | 29.111 | BORDE |
| 4150 | 619490.737 | 9275497.367 | 28.400 | BORDE |
| 4151 | 619491.522 | 9275496.707 | 28.501 | TERRENO |
| 4152 | 619492.295 | 9275495.884 | 28.708 | TERRENO |
| 4153 | 619493.277 | 9275494.968 | 28.773 | TERRENO |
| 4154 | 619512.947 | 9275518.713 | 28.474 | TERRENO |
| 4155 | 619511.651 | 9275520.159 | 28.450 | TERRENO |
| 4156 | 619510.747 | 9275520.971 | 28.475 | TERRENO |
| 4157 | 619510.618 | 9275521.239 | 28.905 | BORDE |
| 4158 | 619509.808 | 9275521.689 | 29.088 | BORDE |
| 4159 | 619508.489 | 9275522.688 | 29.318 | CANAL |
| 4160 | 619508.291 | 9275523.110 | 29.378 | CANAL |
| 4161 | 619508.074 | 9275523.494 | 29.280 | CANAL |
| 4162 | 619506.970 | 9275524.304 | 29.300 | EJE |
| 4163 | 619505.483 | 9275525.348 | 29.398 | CANAL |
| 4164 | 619505.064 | 9275525.537 | 29.325 | CANAL |
| 4165 | 619504.098 | 9275526.146 | 29.296 | BORDE |
| 4166 | 619503.232 | 9275526.560 | 28.370 | CANAL |
| 4167 | 619502.817 | 9275526.880 | 28.308 | CANAL |
| 4168 | 619513.324 | 9275538.552 | 29.001 | ALCANTARILLA |
| 4169 | 619513.515 | 9275538.210 | 29.211 | ALCANTARILLA |
| 4170 | 619513.871 | 9275538.415 | 29.363 | ALCANTARILLA |
| 4171 | 619514.575 | 9275538.564 | 29.296 | ALCANTARILLA |
| 4172 | 619515.190 | 9275539.281 | 29.486 | ALCANTARILLA |
| 4173 | 619515.213 | 9275540.382 | 29.253 | ALCANTARILLA |
| 4174 | 619517.910 | 9275533.880 | 28.862 | ALCANTARILLA |
| 4175 | 619517.936 | 9275534.112 | 29.221 | ALCANTARILLA |
| 4176 | 619517.798 | 9275534.266 | 29.197 | ALCANTARILLA |
| 4177 | 619516.784 | 9275533.888 | 29.211 | ALCANTARILLA |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4178 | 619516.521 | 9275533.117 | 29.402 | ALCANTARILLA |
| 4179 | 619516.224 | 9275532.648 | 29.277 | ALCANTARILLA |
| 4180 | 619516.617 | 9275533.116 | 29.356 | CANAL |
| 4181 | 619516.543 | 9275534.136 | 29.282 | CANAL |
| 4182 | 619515.814 | 9275536.384 | 29.385 | EJE |
| 4183 | 619515.525 | 9275537.199 | 29.323 | CANAL |
| 4184 | 619514.991 | 9275538.652 | 29.306 | CANAL |
| 4185 | 619516.237 | 9275531.538 | 28.634 | CANAL |
| 4186 | 619516.789 | 9275527.912 | 28.471 | CANAL |
| 4187 | 619519.492 | 9275522.423 | 28.679 | CANAL |
| 4188 | 619519.893 | 9275522.242 | 28.646 | CANAL |
| 4189 | 619520.945 | 9275522.489 | 28.217 | CANAL |
| 4190 | 619521.778 | 9275522.337 | 28.681 | CANAL |
| 4191 | 619521.817 | 9275526.351 | 28.884 | CANAL |
| 4192 | 619520.645 | 9275529.719 | 28.560 | CANAL |
| 4193 | 619519.375 | 9275532.398 | 28.560 | CANAL |
| 4194 | 619512.342 | 9275538.969 | 28.706 | COMPUERTA |
| 4195 | 619511.566 | 9275539.523 | 28.661 | COMPUERTA |
| 4196 | 619512.459 | 9275539.074 | 28.892 | ESTRUCTURA |
| 4197 | 619512.383 | 9275539.082 | 28.861 | ESTRUCTURA |
| 4198 | 619511.926 | 9275538.991 | 28.689 | ESTRUCTURA |
| 4199 | 619511.621 | 9275538.732 | 28.882 | ESTRUCTURA |
| 4200 | 619511.185 | 9275540.514 | 28.743 | ESTRUCTURA |
| 4201 | 619510.506 | 9275540.070 | 28.650 | ESTRUCTURA |
| 4202 | 619510.340 | 9275540.064 | 29.039 | ESTRUCTURA |
| 4203 | 619510.307 | 9275540.259 | 28.941 | ESTRUCTURA |
| 4204 | 619520.472 | 9275555.248 | 29.125 | TERRENO |
| 4205 | 619521.046 | 9275555.809 | 29.285 | BORDE |
| 4206 | 619521.998 | 9275554.876 | 29.049 | CANAL |
| 4207 | 619522.814 | 9275554.314 | 27.936 | CANAL |
| 4208 | 619523.128 | 9275554.066 | 28.144 | CANAL |
| 4209 | 619524.325 | 9275553.619 | 28.705 | CANAL |
| 4210 | 619525.040 | 9275552.940 | 29.346 | CANAL |
| 4211 | 619525.438 | 9275552.659 | 29.420 | BORDE |
| 4212 | 619525.991 | 9275552.676 | 29.441 | CANAL |
| 4213 | 619526.700 | 9275551.808 | 29.451 | CANAL |
| 4214 | 619527.809 | 9275551.042 | 29.446 | EJE |
| 4215 | 619528.351 | 9275550.569 | 29.367 | CANAL |
| 4216 | 619528.898 | 9275550.177 | 29.281 | CANAL |
| 4217 | 619530.006 | 9275549.146 | 29.360 | BORDE |
| 4218 | 619530.403 | 9275548.755 | 29.155 | BORDE |
| 4219 | 619531.228 | 9275547.562 | 28.417 | TERRENO |
| 4220 | 619532.604 | 9275546.391 | 28.354 | TERRENO |
| 4221 | 619534.391 | 9275545.456 | 28.501 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4222 | 619553.806 | 9275567.847 | 28.289 | TERRENO |
| 4223 | 619552.792 | 9275568.671 | 28.594 | TERRENO |
| 4224 | 619550.393 | 9275570.790 | 28.306 | TERRENO |
| 4225 | 619549.875 | 9275571.376 | 28.795 | BORDE |
| 4226 | 619548.773 | 9275571.966 | 29.330 | BORDE |
| 4227 | 619548.341 | 9275572.234 | 29.487 | CANAL |
| 4228 | 619547.807 | 9275573.050 | 29.367 | CANAL |
| 4229 | 619546.164 | 9275574.439 | 29.525 | EJE |
| 4230 | 619544.812 | 9275575.358 | 29.522 | CANAL |
| 4231 | 619544.065 | 9275575.907 | 29.502 | CANAL |
| 4232 | 619543.797 | 9275576.353 | 29.372 | BORDE |
| 4233 | 619542.573 | 9275577.090 | 28.496 | CANAL |
| 4234 | 619542.514 | 9275577.118 | 28.867 | CANAL |
| 4235 | 619541.891 | 9275577.716 | 27.966 | CANAL |
| 4236 | 619541.520 | 9275578.137 | 28.684 | CANAL |
| 4237 | 619540.722 | 9275578.658 | 29.364 | BORDE |
| 4238 | 619560.441 | 9275605.528 | 29.167 | BORDE |
| 4239 | 619561.869 | 9275604.604 | 28.894 | CANAL |
| 4240 | 619562.457 | 9275604.292 | 28.050 | CANAL |
| 4241 | 619563.184 | 9275603.579 | 28.062 | CANAL |
| 4242 | 619563.844 | 9275603.293 | 28.733 | CANAL |
| 4243 | 619564.561 | 9275602.727 | 29.588 | BORDE |
| 4244 | 619565.238 | 9275602.577 | 29.671 | CANAL |
| 4245 | 619566.154 | 9275602.094 | 29.614 | CANAL |
| 4246 | 619567.091 | 9275601.355 | 29.636 | EJE |
| 4247 | 619568.519 | 9275600.413 | 29.650 | CANAL |
| 4248 | 619569.865 | 9275599.616 | 29.653 | CANAL |
| 4249 | 619570.291 | 9275599.450 | 29.607 | BORDE |
| 4250 | 619570.893 | 9275598.908 | 29.190 | BORDE |
| 4251 | 619571.341 | 9275598.430 | 28.774 | BORDE |
| 4252 | 619572.403 | 9275597.736 | 28.459 | TERRENO |
| 4253 | 619573.439 | 9275596.913 | 28.557 | TERRENO |
| 4254 | 619575.019 | 9275595.584 | 28.548 | TERRENO |
| 4255 | 619594.856 | 9275619.919 | 28.369 | TERRENO |
| 4256 | 619593.611 | 9275620.851 | 28.480 | TERRENO |
| 4257 | 619591.388 | 9275622.403 | 28.417 | TERRENO |
| 4258 | 619590.277 | 9275623.000 | 28.990 | BORDE |
| 4259 | 619589.914 | 9275623.141 | 29.481 | BORDE |
| 4260 | 619589.277 | 9275623.756 | 29.695 | BORDE |
| 4261 | 619589.216 | 9275623.894 | 29.738 | CANAL |
| 4262 | 619588.804 | 9275624.284 | 29.701 | CANAL |
| 4263 | 619587.536 | 9275625.078 | 29.746 | EJE |
| 4264 | 619586.508 | 9275625.838 | 29.740 | CANAL |
| 4265 | 619585.951 | 9275626.354 | 29.608 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4266 | 619585.103 | 9275627.097 | 29.728 | BORDE |
| 4267 | 619583.768 | 9275628.071 | 28.753 | CANAL |
| 4268 | 619583.164 | 9275628.539 | 28.051 | CANAL |
| 4269 | 619582.424 | 9275628.872 | 28.067 | CANAL |
| 4270 | 619581.901 | 9275629.152 | 28.986 | CANAL |
| 4271 | 619581.609 | 9275630.246 | 29.274 | BORDE |
| 4272 | 619599.218 | 9275653.871 | 29.566 | BORDE |
| 4273 | 619600.787 | 9275652.822 | 29.180 | BORDE |
| 4274 | 619601.370 | 9275652.664 | 28.105 | CANAL |
| 4275 | 619602.243 | 9275652.179 | 28.260 | CANAL |
| 4276 | 619603.099 | 9275651.524 | 29.127 | CANAL |
| 4277 | 619603.483 | 9275650.917 | 29.749 | BORDE |
| 4278 | 619604.135 | 9275650.677 | 29.862 | CANAL |
| 4279 | 619604.986 | 9275650.300 | 29.882 | CANAL |
| 4280 | 619606.468 | 9275649.307 | 29.919 | EJE |
| 4281 | 619607.433 | 9275648.508 | 29.917 | CANAL |
| 4282 | 619608.169 | 9275648.117 | 29.866 | CANAL |
| 4283 | 619608.738 | 9275647.681 | 29.850 | CANAL |
| 4284 | 619609.758 | 9275647.243 | 29.741 | BORDE |
| 4285 | 619609.265 | 9275646.580 | 29.665 | TERRENO |
| 4286 | 619610.815 | 9275646.466 | 29.040 | TERRENO |
| 4287 | 619611.072 | 9275646.190 | 29.065 | TERRENO |
| 4288 | 619613.761 | 9275644.250 | 28.508 | TERRENO |
| 4289 | 619633.894 | 9275668.040 | 28.564 | TERRENO |
| 4290 | 619632.391 | 9275669.241 | 28.541 | TERRENO |
| 4291 | 619630.972 | 9275670.182 | 28.531 | TERRENO |
| 4292 | 619630.033 | 9275670.688 | 28.937 | BORDE |
| 4293 | 619629.478 | 9275671.100 | 29.522 | BORDE |
| 4294 | 619628.969 | 9275671.474 | 29.890 | BORDE |
| 4295 | 619628.477 | 9275671.769 | 29.881 | CANAL |
| 4296 | 619628.157 | 9275672.158 | 29.860 | CANAL |
| 4297 | 619626.239 | 9275673.582 | 29.970 | EJE |
| 4298 | 619625.453 | 9275674.266 | 29.920 | CANAL |
| 4299 | 619624.192 | 9275675.212 | 29.941 | CANAL |
| 4300 | 619623.084 | 9275675.598 | 29.826 | BORDE |
| 4301 | 619622.669 | 9275675.877 | 29.014 | CANAL |
| 4302 | 619622.146 | 9275676.085 | 28.813 | CANAL |
| 4303 | 619621.269 | 9275676.571 | 28.341 | CANAL |
| 4304 | 619620.615 | 9275677.198 | 28.862 | CANAL |
| 4305 | 619619.740 | 9275677.567 | 29.600 | BORDE |
| 4306 | 619642.628 | 9275707.781 | 29.589 | BORDE |
| 4307 | 619643.988 | 9275706.774 | 28.854 | CANAL |
| 4308 | 619644.319 | 9275706.499 | 28.117 | CANAL |
| 4309 | 619644.998 | 9275705.765 | 28.063 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4310 | 619645.272 | 9275705.521 | 28.848 | CANAL |
| 4311 | 619645.689 | 9275705.438 | 29.087 | CANAL |
| 4312 | 619646.837 | 9275704.780 | 29.933 | BORDE |
| 4313 | 619647.154 | 9275704.656 | 30.011 | CANAL |
| 4314 | 619647.714 | 9275704.293 | 29.938 | CANAL |
| 4315 | 619648.870 | 9275703.278 | 29.934 | EJE |
| 4316 | 619649.797 | 9275702.422 | 29.916 | CANAL |
| 4317 | 619650.394 | 9275701.863 | 29.836 | CANAL |
| 4318 | 619651.756 | 9275701.058 | 29.841 | BORDE |
| 4319 | 619652.361 | 9275700.484 | 29.533 | BORDE |
| 4320 | 619653.058 | 9275699.567 | 28.949 | BORDE |
| 4321 | 619653.538 | 9275699.069 | 28.573 | TERRENO |
| 4322 | 619656.117 | 9275697.412 | 28.807 | TERRENO |
| 4323 | 619673.928 | 9275721.326 | 28.956 | TERRENO |
| 4324 | 619672.582 | 9275722.020 | 28.911 | TERRENO |
| 4325 | 619671.816 | 9275722.472 | 29.048 | TERRENO |
| 4326 | 619670.831 | 9275722.920 | 29.318 | BORDE |
| 4327 | 619670.085 | 9275723.329 | 29.743 | BORDE |
| 4328 | 619669.408 | 9275723.845 | 29.896 | CANAL |
| 4329 | 619668.936 | 9275724.212 | 29.941 | CANAL |
| 4330 | 619667.030 | 9275725.705 | 30.024 | EJE |
| 4331 | 619665.985 | 9275726.848 | 30.014 | CANAL |
| 4332 | 619665.761 | 9275726.892 | 30.059 | CANAL |
| 4333 | 619664.913 | 9275727.883 | 29.845 | BORDE |
| 4334 | 619664.073 | 9275728.603 | 29.009 | CANAL |
| 4335 | 619663.640 | 9275728.708 | 28.422 | CANAL |
| 4336 | 619662.961 | 9275729.085 | 28.248 | CANAL |
| 4337 | 619662.361 | 9275729.819 | 29.273 | CANAL |
| 4338 | 619661.560 | 9275730.590 | 29.544 | BORDE |
| 4339 | 619683.851 | 9275759.019 | 29.674 | BORDE |
| 4340 | 619685.067 | 9275758.026 | 29.239 | CANAL |
| 4341 | 619685.478 | 9275757.932 | 28.498 | CANAL |
| 4342 | 619685.985 | 9275757.554 | 28.715 | CANAL |
| 4343 | 619686.902 | 9275757.092 | 29.131 | CANAL |
| 4344 | 619688.096 | 9275756.181 | 29.889 | BORDE |
| 4345 | 619688.575 | 9275755.816 | 30.006 | CANAL |
| 4346 | 619688.933 | 9275755.673 | 30.040 | CANAL |
| 4347 | 619689.712 | 9275755.015 | 29.896 | EJE |
| 4348 | 619691.431 | 9275753.844 | 29.979 | CANAL |
| 4349 | 619691.857 | 9275753.651 | 30.025 | CANAL |
| 4350 | 619692.864 | 9275753.059 | 29.918 | BORDE |
| 4351 | 619693.550 | 9275752.817 | 29.562 | BORDE |
| 4352 | 619694.451 | 9275752.483 | 29.023 | TERRENO |
| 4353 | 619694.815 | 9275751.979 | 28.765 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4354 | 619696.412 | 9275750.687 | 28.826 | TERRENO |
| 4355 | 619698.431 | 9275749.540 | 28.714 | TERRENO |
| 4356 | 619725.254 | 9275784.204 | 28.925 | TERRENO |
| 4357 | 619723.992 | 9275785.300 | 28.880 | TERRENO |
| 4358 | 619722.978 | 9275786.031 | 28.943 | TERRENO |
| 4359 | 619722.273 | 9275786.583 | 29.178 | BORDE |
| 4360 | 619722.069 | 9275786.637 | 29.419 | BORDE |
| 4361 | 619721.771 | 9275786.881 | 29.407 | BORDE |
| 4362 | 619721.089 | 9275787.306 | 30.021 | BORDE |
| 4363 | 619721.058 | 9275787.443 | 29.997 | CANAL |
| 4364 | 619719.708 | 9275788.599 | 30.062 | CANAL |
| 4365 | 619719.281 | 9275788.937 | 29.988 | EJE |
| 4366 | 619718.469 | 9275789.651 | 29.928 | CANAL |
| 4367 | 619717.683 | 9275790.337 | 29.948 | CANAL |
| 4368 | 619716.789 | 9275790.923 | 30.013 | BORDE |
| 4369 | 619716.004 | 9275791.459 | 29.341 | CANAL |
| 4370 | 619715.161 | 9275792.206 | 28.353 | CANAL |
| 4371 | 619715.126 | 9275792.465 | 28.544 | CANAL |
| 4372 | 619714.044 | 9275793.161 | 29.327 | CANAL |
| 4373 | 619712.832 | 9275794.030 | 29.541 | BORDE |
| 4374 | 619730.944 | 9275818.152 | 30.029 | BORDE |
| 4375 | 619731.855 | 9275818.724 | 30.045 | CANAL |
| 4376 | 619733.323 | 9275817.450 | 28.780 | CANAL |
| 4377 | 619734.151 | 9275817.085 | 28.756 | CANAL |
| 4378 | 619735.038 | 9275816.512 | 29.409 | CANAL |
| 4379 | 619735.398 | 9275816.235 | 29.885 | BORDE |
| 4380 | 619735.887 | 9275815.503 | 30.054 | CANAL |
| 4381 | 619736.967 | 9275814.847 | 30.084 | CANAL |
| 4382 | 619738.054 | 9275814.026 | 30.086 | EJE |
| 4383 | 619739.097 | 9275813.329 | 30.067 | CANAL |
| 4384 | 619739.919 | 9275812.900 | 30.030 | CANAL |
| 4385 | 619741.041 | 9275812.278 | 29.992 | BORDE |
| 4386 | 619741.660 | 9275811.965 | 29.759 | BORDE |
| 4387 | 619742.307 | 9275811.588 | 29.514 | BORDE |
| 4388 | 619742.978 | 9275811.286 | 29.260 | BORDE |
| 4389 | 619745.803 | 9275809.682 | 28.952 | BORDE |
| 4390 | 619764.656 | 9275831.086 | 28.895 | TERRENO |
| 4391 | 619763.414 | 9275832.010 | 28.865 | TERRENO |
| 4392 | 619762.322 | 9275833.071 | 28.959 | TERRENO |
| 4393 | 619761.770 | 9275833.356 | 29.312 | TERRENO |
| 4394 | 619760.584 | 9275834.614 | 29.519 | BORDE |
| 4395 | 619760.039 | 9275835.000 | 29.973 | BORDE |
| 4396 | 619759.903 | 9275835.097 | 30.111 | BORDE |
| 4397 | 619759.670 | 9275835.313 | 30.165 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4398 | 619758.620 | 9275836.108 | 30.086 | CANAL |
| 4399 | 619757.496 | 9275836.995 | 30.168 | EJE |
| 4400 | 619756.439 | 9275837.756 | 30.188 | CANAL |
| 4401 | 619756.067 | 9275837.983 | 30.212 | CANAL |
| 4402 | 619755.200 | 9275838.556 | 30.186 | BORDE |
| 4403 | 619753.882 | 9275839.463 | 29.563 | CANAL |
| 4404 | 619753.686 | 9275839.744 | 29.121 | CANAL |
| 4405 | 619752.827 | 9275840.651 | 28.699 | CANAL |
| 4406 | 619751.786 | 9275840.844 | 29.541 | CANAL |
| 4407 | 619750.590 | 9275842.543 | 30.150 | BORDE |
| 4408 | 619773.400 | 9275871.648 | 30.213 | BORDE |
| 4409 | 619774.778 | 9275870.310 | 29.431 | CANAL |
| 4410 | 619774.857 | 9275869.902 | 29.386 | CANAL |
| 4411 | 619776.246 | 9275869.077 | 28.702 | CANAL |
| 4412 | 619777.491 | 9275868.414 | 29.756 | CANAL |
| 4413 | 619778.124 | 9275868.019 | 30.292 | BORDE |
| 4414 | 619778.396 | 9275867.623 | 30.397 | CANAL |
| 4415 | 619778.964 | 9275867.157 | 30.366 | CANAL |
| 4416 | 619780.540 | 9275866.124 | 30.400 | EJE |
| 4417 | 619781.374 | 9275865.519 | 30.377 | CANAL |
| 4418 | 619782.265 | 9275864.866 | 30.379 | CANAL |
| 4419 | 619782.917 | 9275864.496 | 30.330 | BORDE |
| 4420 | 619783.267 | 9275864.242 | 30.192 | BORDE |
| 4421 | 619784.370 | 9275863.159 | 29.810 | BORDE |
| 4422 | 619785.719 | 9275861.904 | 29.440 | TERRENO |
| 4423 | 619786.910 | 9275859.776 | 28.912 | TERRENO |
| 4424 | 619787.926 | 9275870.746 | 30.409 | ALCANTARILLA |
| 4425 | 619787.830 | 9275870.618 | 30.416 | ALCANTARILLA |
| 4426 | 619787.725 | 9275870.322 | 30.165 | ALCANTARILLA |
| 4427 | 619788.775 | 9275871.860 | 30.397 | ALCANTARILLA |
| 4428 | 619789.085 | 9275872.029 | 30.434 | ALCANTARILLA |
| 4429 | 619789.588 | 9275871.573 | 30.003 | ALCANTARILLA |
| 4430 | 619787.129 | 9275877.745 | 30.378 | ALCANTARILLA |
| 4431 | 619786.679 | 9275877.901 | 30.361 | ALCANTARILLA |
| 4432 | 619785.832 | 9275878.543 | 29.518 | ALCANTARILLA |
| 4433 | 619787.910 | 9275878.806 | 30.540 | ALCANTARILLA |
| 4434 | 619787.987 | 9275879.258 | 30.390 | ALCANTARILLA |
| 4435 | 619787.912 | 9275879.801 | 29.866 | ALCANTARILLA |
| 4436 | 619787.495 | 9275878.649 | 30.454 | CANAL |
| 4437 | 619787.422 | 9275877.853 | 30.453 | CANAL |
| 4438 | 619787.643 | 9275875.014 | 30.470 | EJE |
| 4439 | 619787.612 | 9275873.414 | 30.422 | CANAL |
| 4440 | 619788.327 | 9275871.354 | 30.453 | CANAL |
| 4441 | 619786.645 | 9275868.516 | 30.260 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4442 | 619786.717 | 9275867.306 | 30.097 | CANAL |
| 4443 | 619787.845 | 9275865.950 | 29.783 | CANAL |
| 4444 | 619787.703 | 9275864.896 | 29.710 | CANAL |
| 4445 | 619789.379 | 9275862.346 | 29.401 | CANAL |
| 4446 | 619789.610 | 9275860.768 | 29.418 | CANAL |
| 4447 | 619790.897 | 9275858.614 | 29.068 | CANAL |
| 4448 | 619791.627 | 9275858.836 | 28.938 | CANAL |
| 4449 | 619792.073 | 9275860.438 | 29.108 | CANAL |
| 4450 | 619792.438 | 9275860.638 | 29.397 | CANAL |
| 4451 | 619793.066 | 9275861.869 | 29.589 | CANAL |
| 4452 | 619792.816 | 9275863.928 | 29.569 | CANAL |
| 4453 | 619791.921 | 9275866.739 | 29.646 | CANAL |
| 4454 | 619790.982 | 9275869.454 | 29.893 | CANAL |
| 4455 | 619790.467 | 9275870.624 | 30.037 | CANAL |
| 4456 | 619790.756 | 9275872.151 | 30.206 | TERRENO |
| 4457 | 619810.070 | 9275884.238 | 29.227 | TERRENO |
| 4458 | 619808.256 | 9275886.104 | 29.199 | TERRENO |
| 4459 | 619806.929 | 9275886.935 | 29.397 | TERRENO |
| 4460 | 619805.604 | 9275888.409 | 29.675 | BORDE |
| 4461 | 619804.664 | 9275889.111 | 30.220 | BORDE |
| 4462 | 619804.275 | 9275889.626 | 30.460 | BORDE |
| 4463 | 619803.740 | 9275890.093 | 30.500 | CANAL |
| 4464 | 619809.838 | 9275896.455 | 30.336 | TERRENO |
| 4465 | 619803.071 | 9275891.512 | 30.484 | CANAL |
| 4466 | 619801.786 | 9275892.185 | 30.516 | EJE |
| 4467 | 619800.661 | 9275892.893 | 30.540 | CANAL |
| 4468 | 619800.512 | 9275893.143 | 30.380 | CANAL |
| 4469 | 619799.434 | 9275894.124 | 30.355 | BORDE |
| 4470 | 619798.746 | 9275894.819 | 29.722 | CANAL |
| 4471 | 619796.533 | 9275895.687 | 28.822 | CANAL |
| 4472 | 619796.835 | 9275896.204 | 28.784 | CANAL |
| 4473 | 619795.948 | 9275898.059 | 29.839 | CANAL |
| 4474 | 619795.347 | 9275898.346 | 30.249 | BORDE |
| 4475 | 619814.340 | 9275921.415 | 30.259 | BORDE |
| 4476 | 619815.382 | 9275920.411 | 29.697 | CANAL |
| 4477 | 619815.896 | 9275920.469 | 28.973 | CANAL |
| 4478 | 619816.809 | 9275919.788 | 28.800 | CANAL |
| 4479 | 619818.434 | 9275919.299 | 29.571 | CANAL |
| 4480 | 619819.218 | 9275919.173 | 30.325 | CANAL |
| 4481 | 619819.623 | 9275918.427 | 30.501 | BORDE |
| 4482 | 619819.812 | 9275918.214 | 30.524 | CANAL |
| 4483 | 619820.791 | 9275916.992 | 30.545 | CANAL |
| 4484 | 619822.074 | 9275916.265 | 30.586 | EJE |
| 4485 | 619822.414 | 9275915.775 | 30.497 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4486 | 619824.141 | 9275914.501 | 30.545 | CANAL |
| 4487 | 619824.631 | 9275914.249 | 30.487 | BORDE |
| 4488 | 619824.871 | 9275914.079 | 30.267 | BORDE |
| 4489 | 619825.956 | 9275913.001 | 29.797 | BORDE |
| 4490 | 619826.893 | 9275912.443 | 29.560 | TERRENO |
| 4491 | 619827.514 | 9275911.967 | 29.490 | TERRENO |
| 4492 | 619828.541 | 9275911.015 | 29.420 | TERRENO |
| 4493 | 619834.827 | 9275926.865 | 30.456 | ALCANTARILLA |
| 4494 | 619834.948 | 9275926.681 | 30.332 | ALCANTARILLA |
| 4495 | 619834.945 | 9275926.497 | 30.345 | ALCANTARILLA |
| 4496 | 619835.025 | 9275927.447 | 30.380 | ALCANTARILLA |
| 4497 | 619835.617 | 9275928.272 | 30.501 | ALCANTARILLA |
| 4498 | 619836.077 | 9275928.099 | 30.313 | ALCANTARILLA |
| 4499 | 619831.592 | 9275931.008 | 30.609 | ALCANTARILLA |
| 4500 | 619831.078 | 9275931.260 | 30.497 | ALCANTARILLA |
| 4501 | 619830.811 | 9275931.577 | 30.361 | ALCANTARILLA |
| 4502 | 619830.496 | 9275930.420 | 30.605 | ALCANTARILLA |
| 4503 | 619830.041 | 9275930.001 | 30.468 | ALCANTARILLA |
| 4504 | 619829.353 | 9275929.929 | 30.191 | ALCANTARILLA |
| 4505 | 619826.002 | 9275929.737 | 29.768 | COMPUERTA |
| 4506 | 619824.578 | 9275930.575 | 29.827 | COMPUERTA |
| 4507 | 619823.526 | 9275929.646 | 29.696 | ESTRUCTURA |
| 4508 | 619823.824 | 9275929.658 | 29.730 | ESTRUCTURA |
| 4509 | 619824.989 | 9275931.090 | 29.783 | ESTRUCTURA |
| 4510 | 619825.589 | 9275931.820 | 29.764 | ESTRUCTURA |
| 4511 | 619825.216 | 9275929.444 | 29.726 | ESTRUCTURA |
| 4512 | 619825.191 | 9275929.332 | 29.848 | ESTRUCTURA |
| 4513 | 619826.243 | 9275930.063 | 29.690 | ESTRUCTURA |
| 4514 | 619826.859 | 9275930.290 | 29.386 | ESTRUCTURA |
| 4515 | 619830.640 | 9275929.948 | 30.463 | CANAL |
| 4516 | 619831.076 | 9275929.880 | 30.523 | CANAL |
| 4517 | 619831.748 | 9275929.470 | 30.512 | EJE |
| 4518 | 619833.705 | 9275928.383 | 30.483 | CANAL |
| 4519 | 619835.004 | 9275927.641 | 30.530 | CANAL |
| 4520 | 619835.469 | 9275925.367 | 30.106 | CANAL |
| 4521 | 619837.074 | 9275924.724 | 29.823 | CANAL |
| 4522 | 619839.223 | 9275924.356 | 29.780 | CANAL |
| 4523 | 619841.273 | 9275924.050 | 29.684 | CANAL |
| 4524 | 619844.195 | 9275924.964 | 28.826 | CANAL |
| 4525 | 619844.214 | 9275925.265 | 28.898 | CANAL |
| 4526 | 619844.445 | 9275925.255 | 29.312 | CANAL |
| 4527 | 619844.423 | 9275926.042 | 29.795 | CANAL |
| 4528 | 619844.129 | 9275926.984 | 30.202 | CANAL |
| 4529 | 619843.651 | 9275927.229 | 30.301 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4530 | 619842.356 | 9275927.594 | 30.082 | CANAL |
| 4531 | 619841.682 | 9275927.848 | 30.138 | CANAL |
| 4532 | 619840.089 | 9275927.972 | 30.136 | CANAL |
| 4533 | 619838.649 | 9275928.179 | 30.209 | CANAL |
| 4534 | 619837.404 | 9275928.295 | 30.151 | CANAL |
| 4535 | 619843.451 | 9275936.701 | 30.280 | TERRENO |
| 4536 | 619850.252 | 9275936.334 | 30.049 | TERRENO |
| 4537 | 619849.066 | 9275937.214 | 29.912 | TERRENO |
| 4538 | 619847.353 | 9275938.298 | 30.122 | TERRENO |
| 4539 | 619844.914 | 9275939.853 | 30.420 | CANAL |
| 4540 | 619844.638 | 9275940.175 | 30.396 | CANAL |
| 4541 | 619842.944 | 9275941.454 | 30.461 | EJE |
| 4542 | 619841.672 | 9275942.310 | 30.506 | CANAL |
| 4543 | 619841.382 | 9275942.493 | 30.478 | CANAL |
| 4544 | 619840.386 | 9275943.192 | 30.479 | BORDE |
| 4545 | 619839.177 | 9275944.543 | 29.640 | CANAL |
| 4546 | 619838.610 | 9275945.774 | 29.000 | CANAL |
| 4547 | 619837.519 | 9275945.745 | 28.659 | CANAL |
| 4548 | 619837.127 | 9275945.714 | 29.500 | CANAL |
| 4549 | 619836.012 | 9275947.682 | 30.430 | BORDE |
| 4550 | 619857.816 | 9275972.416 | 30.251 | BORDE |
| 4551 | 619858.897 | 9275972.075 | 29.548 | BORDE |
| 4552 | 619859.365 | 9275971.101 | 28.678 | CANAL |
| 4553 | 619859.901 | 9275970.588 | 29.124 | CANAL |
| 4554 | 619860.439 | 9275969.954 | 29.876 | CANAL |
| 4555 | 619861.079 | 9275969.399 | 29.887 | BORDE |
| 4556 | 619861.299 | 9275969.195 | 30.187 | BORDE |
| 4557 | 619861.595 | 9275968.964 | 30.230 | CANAL |
| 4558 | 619862.598 | 9275968.129 | 30.207 | CANAL |
| 4559 | 619864.064 | 9275966.954 | 30.297 | EJE |
| 4560 | 619865.065 | 9275965.886 | 30.271 | CANAL |
| 4561 | 619866.685 | 9275964.822 | 30.309 | CANAL |
| 4562 | 619867.362 | 9275964.283 | 30.193 | BORDE |
| 4563 | 619868.740 | 9275962.988 | 30.235 | TERRENO |
| 4564 | 619869.938 | 9275961.738 | 30.206 | TERRENO |
| 4565 | 619871.438 | 9275960.187 | 30.250 | TERRENO |
| 4566 | 619873.497 | 9275972.214 | 30.410 | TERRENO |
| 4567 | 619886.877 | 9275986.396 | 30.235 | TERRENO |
| 4568 | 619886.334 | 9275986.735 | 30.362 | CANAL |
| 4569 | 619885.264 | 9275987.813 | 30.369 | CANAL |
| 4570 | 619884.288 | 9275988.937 | 30.340 | EJE |
| 4571 | 619883.585 | 9275989.567 | 30.226 | CANAL |
| 4572 | 619882.669 | 9275990.330 | 30.183 | CANAL |
| 4573 | 619881.332 | 9275991.269 | 30.264 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4574 | 619880.698 | 9275991.501 | 29.816 | CANAL |
| 4575 | 619880.347 | 9275991.608 | 29.084 | CANAL |
| 4576 | 619883.948 | 9275998.262 | 30.349 | ALCANTARILLA |
| 4577 | 619882.624 | 9275998.208 | 30.200 | ALCANTARILLA |
| 4578 | 619885.232 | 9276001.424 | 30.344 | ALCANTARILLA |
| 4579 | 619887.260 | 9276002.315 | 30.278 | ALCANTARILLA |
| 4580 | 619887.990 | 9276003.002 | 29.948 | CANAL |
| 4581 | 619889.598 | 9276004.325 | 29.765 | CANAL |
| 4582 | 619890.959 | 9276005.935 | 29.893 | CANAL |
| 4583 | 619891.699 | 9276006.328 | 29.845 | CANAL |
| 4584 | 619890.241 | 9276006.479 | 29.019 | CANAL |
| 4585 | 619890.326 | 9276006.639 | 29.728 | CANAL |
| 4586 | 619888.999 | 9276007.310 | 29.651 | COMPUERTA |
| 4587 | 619888.229 | 9276008.721 | 29.985 | CANAL |
| 4588 | 619888.568 | 9276007.572 | 29.534 | CANAL |
| 4589 | 619889.467 | 9276007.017 | 29.042 | CANAL |
| 4590 | 619888.058 | 9276006.398 | 29.519 | CANAL |
| 4591 | 619886.249 | 9276004.440 | 29.846 | CANAL |
| 4592 | 619882.686 | 9275997.408 | 28.686 | FONDO |
| 4593 | 619887.062 | 9276000.730 | 30.345 | TERRENO |
| 4594 | 619888.583 | 9275999.680 | 30.327 | CANAL |
| 4595 | 619889.635 | 9275998.946 | 30.203 | CANAL |
| 4596 | 619891.903 | 9275996.811 | 30.302 | EJE |
| 4597 | 619892.252 | 9275996.251 | 30.237 | CANAL |
| 4598 | 619893.843 | 9275995.060 | 30.281 | CANAL |
| 4599 | 619894.900 | 9275994.665 | 30.452 | BORDE |
| 4600 | 619895.522 | 9275993.899 | 30.691 | TERRENO |
| 4601 | 619895.672 | 9275993.903 | 30.908 | TERRENO |
| 4602 | 619903.356 | 9276001.671 | 30.260 | TERRENO |
| 4603 | 619904.278 | 9276001.642 | 30.370 | TERRENO |
| 4604 | 619904.190 | 9276001.963 | 30.296 | BORDE |
| 4605 | 619903.727 | 9276002.686 | 30.380 | CANAL |
| 4606 | 619902.980 | 9276004.092 | 30.284 | CANAL |
| 4607 | 619901.536 | 9276005.900 | 30.369 | EJE |
| 4608 | 619901.110 | 9276007.290 | 30.343 | CANAL |
| 4609 | 619900.223 | 9276008.966 | 30.324 | CANAL |
| 4610 | 619899.616 | 9276010.015 | 30.311 | BORDE |
| 4611 | 619899.438 | 9276010.500 | 30.293 | BORDE |
| 4612 | 619899.115 | 9276011.021 | 29.359 | CANAL |
| 4613 | 619898.842 | 9276011.252 | 28.925 | CANAL |
| 4614 | 619901.803 | 9276013.819 | 29.185 | CANAL |
| 4615 | 619902.181 | 9276013.468 | 30.159 | TERRENO |
| 4616 | 619902.875 | 9276012.883 | 30.310 | TERRENO |
| 4617 | 619903.351 | 9276011.327 | 30.366 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4618 | 619903.374 | 9276011.047 | 30.246 | CANAL |
| 4619 | 619904.328 | 9276008.923 | 30.243 | EJE |
| 4620 | 619905.031 | 9276007.698 | 30.268 | CANAL |
| 4621 | 619906.418 | 9276004.987 | 30.364 | CANAL |
| 4622 | 619906.696 | 9276004.744 | 30.388 | TERRENO |
| 4623 | 619906.777 | 9276004.693 | 30.403 | TERRENO |
| 4624 | 619906.916 | 9276004.195 | 30.328 | TERRENO |
| 4625 | 619912.618 | 9276007.113 | 30.472 | TERRENO |
| 4626 | 619912.507 | 9276007.683 | 30.523 | BORDE |
| 4627 | 619911.913 | 9276008.364 | 30.464 | BORDE |
| 4628 | 619911.917 | 9276008.531 | 30.381 | CANAL |
| 4629 | 619911.868 | 9276008.901 | 30.387 | CANAL |
| 4630 | 619910.831 | 9276010.899 | 30.292 | EJE |
| 4631 | 619909.821 | 9276013.386 | 30.477 | CANAL |
| 4632 | 619908.944 | 9276014.594 | 30.448 | CANAL |
| 4633 | 619908.679 | 9276014.932 | 30.337 | TERRENO |
| 4634 | 619907.444 | 9276016.589 | 30.383 | TERRENO |
| 4635 | 619910.185 | 9276017.832 | 30.027 | ALCANTARILLA |
| 4636 | 619908.684 | 9276018.252 | 30.426 | ALCANTARILLA |
| 4637 | 619908.695 | 9276018.240 | 30.455 | ALCANTARILLA |
| 4638 | 619907.389 | 9276019.298 | 30.349 | ALCANTARILLA |
| 4639 | 619907.201 | 9276019.842 | 30.426 | ALCANTARILLA |
| 4640 | 619907.483 | 9276020.446 | 30.375 | ALCANTARILLA |
| 4641 | 619900.765 | 9276017.978 | 29.792 | ALCANTARILLA |
| 4642 | 619900.805 | 9276017.616 | 30.138 | ALCANTARILLA |
| 4643 | 619901.886 | 9276017.338 | 30.313 | ALCANTARILLA |
| 4644 | 619902.545 | 9276016.485 | 30.334 | ALCANTARILLA |
| 4645 | 619902.925 | 9276015.432 | 30.419 | ALCANTARILLA |
| 4646 | 619902.580 | 9276014.737 | 30.276 | ALCANTARILLA |
| 4647 | 619901.947 | 9276013.444 | 30.300 | **BM - 10** |
| 4648 | 619899.505 | 9276033.256 | 30.585 | ESTACIÓN 5 |
| 4649 | 619011.662 | 9274907.683 | 28.122 | **BM - 08** |
| 4650 | 619899.505 | 9276033.256 | 30.585 | ESTACIÓN 4 |
| 4651 | 619921.968 | 9276011.881 | 30.607 | TERRENO |
| 4652 | 619921.705 | 9276012.220 | 30.773 | TERRENO |
| 4653 | 619921.491 | 9276013.321 | 30.487 | TERRENO |
| 4654 | 619921.020 | 9276014.386 | 30.470 | CANAL |
| 4655 | 619920.436 | 9276015.939 | 30.474 | CANAL |
| 4656 | 619919.768 | 9276017.311 | 30.449 | EJE |
| 4657 | 619919.099 | 9276018.820 | 30.447 | CANAL |
| 4658 | 619918.001 | 9276020.181 | 30.427 | CANAL |
| 4659 | 619917.657 | 9276020.942 | 30.433 | BORDE |
| 4660 | 619917.190 | 9276021.563 | 29.624 | CANAL |
| 4661 | 619916.612 | 9276021.836 | 28.674 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4662 | 619941.060 | 9276036.745 | 29.157 | CANAL |
| 4663 | 619941.346 | 9276036.565 | 29.887 | CANAL |
| 4664 | 619941.742 | 9276036.054 | 30.374 | BORDE |
| 4665 | 619939.444 | 9276040.134 | 29.144 | CANAL |
| 4666 | 619939.316 | 9276040.606 | 30.188 | CANAL |
| 4667 | 619939.184 | 9276041.107 | 30.426 | BORDE |
| 4668 | 619942.167 | 9276036.278 | 30.473 | CANAL |
| 4669 | 619943.055 | 9276035.118 | 30.458 | CANAL |
| 4670 | 619944.248 | 9276033.603 | 30.523 | EJE |
| 4671 | 619945.069 | 9276032.348 | 30.506 | CANAL |
| 4672 | 619945.515 | 9276031.666 | 30.446 | CANAL |
| 4673 | 619946.317 | 9276030.224 | 30.758 | BORDE |
| 4674 | 619946.640 | 9276029.466 | 31.015 | TERRENO |
| 4675 | 619952.277 | 9276034.440 | 30.641 | TERRENO |
| 4676 | 619968.558 | 9276044.060 | 31.368 | TERRENO |
| 4677 | 619968.072 | 9276045.000 | 30.967 | BORDE |
| 4678 | 619967.801 | 9276045.513 | 30.469 | CANAL |
| 4679 | 619967.359 | 9276046.396 | 30.282 | CANAL |
| 4680 | 619966.727 | 9276047.604 | 30.264 | EJE |
| 4681 | 619966.281 | 9276048.308 | 30.271 | CANAL |
| 4682 | 619965.708 | 9276049.239 | 30.282 | CANAL |
| 4683 | 619965.102 | 9276050.408 | 30.154 | BORDE |
| 4684 | 619964.550 | 9276051.207 | 29.895 | CANAL |
| 4685 | 619964.504 | 9276051.267 | 29.064 | CANAL |
| 4686 | 619994.319 | 9276060.620 | 31.014 | TERRENO |
| 4687 | 619993.857 | 9276061.138 | 31.094 | BORDE |
| 4688 | 619993.873 | 9276061.462 | 30.819 | BORDE |
| 4689 | 619993.449 | 9276062.264 | 30.464 | CANAL |
| 4690 | 619992.984 | 9276062.943 | 30.378 | CANAL |
| 4691 | 619992.607 | 9276063.668 | 30.397 | EJE |
| 4692 | 619991.872 | 9276065.020 | 30.430 | CANAL |
| 4693 | 619991.142 | 9276066.187 | 30.443 | CANAL |
| 4694 | 619990.875 | 9276066.807 | 30.253 | CANAL |
| 4695 | 619990.250 | 9276067.718 | 30.331 | BORDE |
| 4696 | 619989.469 | 9276068.009 | 29.727 | CANAL |
| 4697 | 619989.438 | 9276068.317 | 29.167 | CANAL |
| 4698 | 619988.322 | 9276070.322 | 28.755 | CANAL |
| 4699 | 619987.698 | 9276070.920 | 29.273 | CANAL |
| 4700 | 619987.142 | 9276071.619 | 30.465 | CANAL |
| 4701 | 620020.416 | 9276096.668 | 30.186 | BORDE |
| 4702 | 620020.823 | 9276095.982 | 29.667 | CANAL |
| 4703 | 620021.249 | 9276095.129 | 28.971 | CANAL |
| 4704 | 620022.354 | 9276092.852 | 28.799 | CANAL |
| 4705 | 620023.155 | 9276091.755 | 29.844 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4706 | 620023.251 | 9276091.755 | 30.240 | CANAL |
| 4707 | 620024.159 | 9276090.685 | 30.612 | BORDE |
| 4708 | 620024.791 | 9276089.887 | 30.574 | CANAL |
| 4709 | 620025.286 | 9276089.109 | 30.548 | CANAL |
| 4710 | 620026.670 | 9276087.178 | 30.642 | EJE |
| 4711 | 620027.853 | 9276085.819 | 30.691 | CANAL |
| 4712 | 620028.192 | 9276085.230 | 30.655 | CANAL |
| 4713 | 620028.691 | 9276084.716 | 30.884 | BORDE |
| 4714 | 620028.984 | 9276084.035 | 31.207 | BORDE |
| 4715 | 620030.237 | 9276082.347 | 30.755 | TERRENO |
| 4716 | 620052.295 | 9276098.455 | 30.913 | ALCANTARILLA |
| 4717 | 620052.943 | 9276098.807 | 30.908 | ALCANTARILLA |
| 4718 | 620051.573 | 9276104.090 | 30.666 | ALCANTARILLA |
| 4719 | 620050.516 | 9276104.096 | 30.782 | ALCANTARILLA |
| 4720 | 620049.020 | 9276104.650 | 30.467 | COMPUERTA |
| 4721 | 620049.320 | 9276104.615 | 30.400 | COMPUERTA |
| 4722 | 620049.603 | 9276104.689 | 29.533 | FONDO |
| 4723 | 620055.686 | 9276101.110 | 31.713 | TERRENO |
| 4724 | 620055.772 | 9276101.230 | 31.415 | BORDE |
| 4725 | 620055.949 | 9276101.555 | 31.050 | BORDE |
| 4726 | 620055.779 | 9276101.700 | 30.914 | CANAL |
| 4727 | 620055.590 | 9276102.653 | 30.799 | CANAL |
| 4728 | 620055.043 | 9276103.562 | 30.762 | EJE |
| 4729 | 620053.964 | 9276105.335 | 30.826 | CANAL |
| 4730 | 620053.387 | 9276106.061 | 30.785 | CANAL |
| 4731 | 620052.924 | 9276106.732 | 30.800 | BORDE |
| 4732 | 620052.208 | 9276107.282 | 30.354 | CANAL |
| 4733 | 620051.333 | 9276108.225 | 30.002 | CANAL |
| 4734 | 620051.284 | 9276108.898 | 29.018 | CANAL |
| 4735 | 620050.355 | 9276110.276 | 28.730 | CANAL |
| 4736 | 620049.762 | 9276111.096 | 29.210 | CANAL |
| 4737 | 620048.935 | 9276112.796 | 30.511 | CANAL |
| 4738 | 620048.346 | 9276114.756 | 30.997 | BORDE |
| 4739 | 620077.746 | 9276135.084 | 31.045 | BORDE |
| 4740 | 620078.219 | 9276133.962 | 31.125 | CANAL |
| 4741 | 620078.820 | 9276132.843 | 30.355 | CANAL |
| 4742 | 620079.625 | 9276131.840 | 30.037 | CANAL |
| 4743 | 620079.971 | 9276131.162 | 29.050 | CANAL |
| 4744 | 620080.644 | 9276130.061 | 28.778 | CANAL |
| 4745 | 620081.542 | 9276129.241 | 29.935 | CANAL |
| 4746 | 620082.115 | 9276128.668 | 30.533 | CANAL |
| 4747 | 620082.445 | 9276128.165 | 30.930 | BORDE |
| 4748 | 620082.608 | 9276127.832 | 30.916 | CANAL |
| 4749 | 620083.314 | 9276127.125 | 30.913 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4750 | 620083.984 | 9276126.244 | 30.898 | EJE |
| 4751 | 620084.609 | 9276125.283 | 30.938 | CANAL |
| 4752 | 620085.609 | 9276123.983 | 30.937 | CANAL |
| 4753 | 620086.054 | 9276123.475 | 31.159 | BORDE |
| 4754 | 620086.016 | 9276123.508 | 31.346 | BORDE |
| 4755 | 620086.307 | 9276122.831 | 31.886 | TERRENO |
| 4756 | 620112.169 | 9276137.977 | 31.123 | TERRENO |
| 4757 | 620112.103 | 9276137.839 | 31.942 | TERRENO |
| 4758 | 620111.642 | 9276138.363 | 32.175 | BORDE |
| 4759 | 620111.415 | 9276138.781 | 31.788 | BORDE |
| 4760 | 620111.114 | 9276139.518 | 31.347 | BORDE |
| 4761 | 620110.725 | 9276139.999 | 31.084 | CANAL |
| 4762 | 620110.535 | 9276140.282 | 30.944 | CANAL |
| 4763 | 620110.071 | 9276141.272 | 30.924 | EJE |
| 4764 | 620109.259 | 9276143.054 | 30.866 | CANAL |
| 4765 | 620108.892 | 9276143.966 | 30.978 | CANAL |
| 4766 | 620107.781 | 9276145.294 | 30.806 | BORDE |
| 4767 | 620107.135 | 9276145.645 | 30.505 | CANAL |
| 4768 | 620106.651 | 9276146.065 | 29.812 | CANAL |
| 4769 | 620106.683 | 9276146.729 | 28.823 | CANAL |
| 4770 | 620105.734 | 9276148.017 | 28.915 | CANAL |
| 4771 | 620104.510 | 9276148.146 | 29.888 | CANAL |
| 4772 | 620103.995 | 9276149.438 | 30.576 | CANAL |
| 4773 | 620103.835 | 9276150.473 | 31.478 | BORDE |
| 4774 | 620131.625 | 9276169.650 | 31.801 | BORDE |
| 4775 | 620132.157 | 9276168.607 | 30.803 | CANAL |
| 4776 | 620132.703 | 9276168.201 | 29.933 | CANAL |
| 4777 | 620133.402 | 9276167.345 | 29.334 | CANAL |
| 4778 | 620133.806 | 9276167.077 | 28.855 | CANAL |
| 4779 | 620134.130 | 9276166.764 | 28.856 | CANAL |
| 4780 | 620134.806 | 9276165.446 | 29.334 | CANAL |
| 4781 | 620135.231 | 9276165.217 | 30.154 | CANAL |
| 4782 | 620136.001 | 9276164.326 | 30.839 | BORDE |
| 4783 | 620136.392 | 9276163.739 | 30.970 | CANAL |
| 4784 | 620136.592 | 9276163.537 | 31.010 | CANAL |
| 4785 | 620137.643 | 9276162.061 | 30.954 | EJE |
| 4786 | 620138.052 | 9276161.217 | 30.899 | CANAL |
| 4787 | 620139.198 | 9276159.664 | 30.977 | CANAL |
| 4788 | 620139.824 | 9276159.045 | 31.271 | BORDE |
| 4789 | 620139.558 | 9276158.686 | 31.919 | BORDE |
| 4790 | 620140.094 | 9276158.298 | 31.475 | TERRENO |
| 4791 | 620143.241 | 9276161.300 | 31.148 | TERRENO |
| 4792 | 620162.094 | 9276176.526 | 31.342 | TERRENO |
| 4793 | 620162.287 | 9276176.577 | 31.379 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4794 | 620162.546 | 9276177.000 | 31.112 | CANAL |
| 4795 | 620162.400 | 9276177.194 | 31.076 | CANAL |
| 4796 | 620161.364 | 9276179.263 | 30.988 | EJE |
| 4797 | 620161.146 | 9276179.875 | 30.854 | CANAL |
| 4798 | 620159.896 | 9276181.062 | 31.048 | CANAL |
| 4799 | 620159.185 | 9276181.983 | 30.827 | BORDE |
| 4800 | 620158.739 | 9276182.239 | 30.142 | CANAL |
| 4801 | 620158.179 | 9276182.817 | 29.091 | CANAL |
| 4802 | 620157.145 | 9276184.809 | 29.120 | CANAL |
| 4803 | 620156.931 | 9276184.919 | 29.862 | CANAL |
| 4804 | 620156.146 | 9276185.949 | 30.637 | CANAL |
| 4805 | 620179.561 | 9276208.275 | 30.775 | CANAL |
| 4806 | 620180.010 | 9276207.735 | 30.029 | CANAL |
| 4807 | 620180.048 | 9276207.370 | 29.871 | CANAL |
| 4808 | 620180.775 | 9276206.783 | 29.043 | CANAL |
| 4809 | 620181.712 | 9276205.866 | 28.914 | CANAL |
| 4810 | 620182.449 | 9276205.063 | 29.700 | CANAL |
| 4811 | 620182.364 | 9276205.234 | 30.241 | CANAL |
| 4812 | 620183.409 | 9276204.279 | 30.547 | BORDE |
| 4813 | 620184.155 | 9276203.535 | 30.715 | CANAL |
| 4814 | 620184.920 | 9276202.805 | 30.716 | CANAL |
| 4815 | 620185.834 | 9276201.791 | 30.672 | EJE |
| 4816 | 620186.307 | 9276201.108 | 30.588 | CANAL |
| 4817 | 620187.744 | 9276199.883 | 30.729 | CANAL |
| 4818 | 620187.933 | 9276199.521 | 31.009 | BORDE |
| 4819 | 620189.008 | 9276198.591 | 31.269 | TERRENO |
| 4820 | 620208.058 | 9276216.452 | 30.636 | TERRENO |
| 4821 | 620208.161 | 9276216.861 | 30.721 | BORDE |
| 4822 | 620207.766 | 9276217.798 | 30.382 | CANAL |
| 4823 | 620207.672 | 9276218.061 | 30.292 | CANAL |
| 4824 | 620206.559 | 9276219.660 | 30.306 | EJE |
| 4825 | 620205.602 | 9276220.797 | 30.317 | CANAL |
| 4826 | 620204.975 | 9276221.349 | 30.265 | CANAL |
| 4827 | 620204.053 | 9276222.233 | 30.245 | BORDE |
| 4828 | 620203.057 | 9276222.730 | 29.622 | CANAL |
| 4829 | 620203.181 | 9276222.740 | 29.337 | CANAL |
| 4830 | 620202.013 | 9276224.183 | 29.198 | CANAL |
| 4831 | 620201.457 | 9276225.301 | 30.076 | CANAL |
| 4832 | 620201.063 | 9276225.862 | 30.671 | CANAL |
| 4833 | 620200.314 | 9276226.994 | 31.126 | BORDE |
| 4834 | 620225.317 | 9276250.290 | 31.015 | BORDE |
| 4835 | 620226.299 | 9276249.150 | 30.202 | CANAL |
| 4836 | 620226.191 | 9276249.006 | 29.941 | CANAL |
| 4837 | 620226.529 | 9276248.351 | 29.303 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4838 | 620227.334 | 9276247.703 | 29.204 | CANAL |
| 4839 | 620227.791 | 9276247.692 | 29.669 | CANAL |
| 4840 | 620229.197 | 9276246.794 | 30.141 | BORDE |
| 4841 | 620229.882 | 9276246.076 | 30.274 | CANAL |
| 4842 | 620230.346 | 9276245.683 | 30.244 | CANAL |
| 4843 | 620231.356 | 9276244.602 | 30.212 | EJE |
| 4844 | 620232.498 | 9276243.695 | 30.145 | CANAL |
| 4845 | 620232.847 | 9276243.305 | 30.245 | CANAL |
| 4846 | 620234.299 | 9276241.955 | 30.501 | BORDE |
| 4847 | 620234.832 | 9276241.311 | 31.138 | TERRENO |
| 4848 | 620255.536 | 9276261.296 | 30.442 | TERRENO |
| 4849 | 620255.270 | 9276260.477 | 30.882 | TERRENO |
| 4850 | 620254.649 | 9276260.837 | 30.652 | BORDE |
| 4851 | 620254.400 | 9276261.426 | 30.348 | CANAL |
| 4852 | 620253.982 | 9276261.885 | 30.186 | CANAL |
| 4853 | 620253.408 | 9276262.494 | 30.143 | EJE |
| 4854 | 620252.021 | 9276264.093 | 30.249 | CANAL |
| 4855 | 620251.753 | 9276264.400 | 30.290 | CANAL |
| 4856 | 620250.543 | 9276265.650 | 30.260 | BORDE |
| 4857 | 620249.764 | 9276266.186 | 30.290 | CANAL |
| 4858 | 620249.483 | 9276266.276 | 30.193 | CANAL |
| 4859 | 620248.591 | 9276266.767 | 29.181 | CANAL |
| 4860 | 620248.433 | 9276267.684 | 29.069 | CANAL |
| 4861 | 620247.704 | 9276268.445 | 29.888 | CANAL |
| 4862 | 620246.919 | 9276269.836 | 30.698 | CANAL |
| 4863 | 620272.124 | 9276293.092 | 31.445 | CANAL |
| 4864 | 620272.932 | 9276292.163 | 30.493 | CANAL |
| 4865 | 620273.244 | 9276291.676 | 29.869 | CANAL |
| 4866 | 620273.459 | 9276291.137 | 29.491 | CANAL |
| 4867 | 620274.164 | 9276290.369 | 28.893 | CANAL |
| 4868 | 620275.116 | 9276289.342 | 29.925 | CANAL |
| 4869 | 620275.884 | 9276288.363 | 30.392 | BORDE |
| 4870 | 620276.407 | 9276287.897 | 30.532 | CANAL |
| 4871 | 620276.827 | 9276287.296 | 30.451 | CANAL |
| 4872 | 620277.401 | 9276286.477 | 30.401 | EJE |
| 4873 | 620278.785 | 9276284.772 | 30.439 | CANAL |
| 4874 | 620279.665 | 9276283.629 | 30.505 | CANAL |
| 4875 | 620280.500 | 9276282.632 | 30.795 | BORDE |
| 4876 | 620281.397 | 9276282.039 | 31.020 | TERRENO |
| 4877 | 620298.187 | 9276297.994 | 31.031 | TERRENO |
| 4878 | 620302.268 | 9276301.283 | 31.385 | TERRENO |
| 4879 | 620302.362 | 9276301.789 | 31.463 | BORDE |
| 4880 | 620302.130 | 9276302.740 | 30.932 | CANAL |
| 4881 | 620301.555 | 9276303.757 | 30.817 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4882 | 620301.065 | 9276304.593 | 30.743 | EJE |
| 4883 | 620300.225 | 9276305.669 | 30.760 | CANAL |
| 4884 | 620299.487 | 9276306.878 | 30.818 | CANAL |
| 4885 | 620298.936 | 9276307.766 | 30.739 | BORDE |
| 4886 | 620297.855 | 9276308.502 | 29.867 | CANAL |
| 4887 | 620297.134 | 9276309.173 | 29.468 | CANAL |
| 4888 | 620297.347 | 9276309.239 | 29.187 | CANAL |
| 4889 | 620296.666 | 9276310.467 | 29.254 | CANAL |
| 4890 | 620295.997 | 9276311.158 | 30.082 | CANAL |
| 4891 | 620304.657 | 9276316.251 | 30.539 | COMPUERTA |
| 4892 | 620303.762 | 9276316.849 | 30.636 | COMPUERTA |
| 4893 | 620302.797 | 9276317.480 | 30.508 | ESTRUCTURA |
| 4894 | 620302.401 | 9276317.294 | 30.686 | ESTRUCTURA |
| 4895 | 620303.643 | 9276316.457 | 30.417 | ESTRUCTURA |
| 4896 | 620303.853 | 9276315.961 | 30.545 | ESTRUCTURA |
| 4897 | 620305.380 | 9276317.031 | 30.528 | ESTRUCTURA |
| 4898 | 620305.546 | 9276316.819 | 30.514 | ESTRUCTURA |
| 4899 | 620303.757 | 9276318.124 | 30.582 | ESTRUCTURA |
| 4900 | 620303.794 | 9276318.161 | 30.653 | ESTRUCTURA |
| 4901 | 620303.724 | 9276316.586 | 30.202 | FONDO |
| 4902 | 620307.734 | 9276313.731 | 31.044 | ALCANTARILLA |
| 4903 | 620309.114 | 9276314.163 | 31.009 | ALCANTARILLA |
| 4904 | 620311.294 | 9276310.849 | 30.936 | ALCANTARILLA |
| 4905 | 620311.388 | 9276310.491 | 31.029 | ALCANTARILLA |
| 4906 | 620311.290 | 9276310.296 | 31.067 | CANAL |
| 4907 | 620311.008 | 9276310.787 | 30.999 | CANAL |
| 4908 | 620310.132 | 9276312.296 | 31.019 | EJE |
| 4909 | 620309.420 | 9276313.529 | 31.034 | CANAL |
| 4910 | 620309.222 | 9276313.947 | 30.978 | CANAL |
| 4911 | 620325.106 | 9276322.114 | 31.192 | TERRENO |
| 4912 | 620324.967 | 9276322.512 | 31.583 | BORDE |
| 4913 | 620324.832 | 9276322.588 | 31.415 | BORDE |
| 4914 | 620324.453 | 9276323.369 | 30.904 | CANAL |
| 4915 | 620324.097 | 9276324.133 | 30.750 | CANAL |
| 4916 | 620323.125 | 9276325.269 | 30.801 | EJE |
| 4917 | 620323.045 | 9276325.762 | 30.705 | CANAL |
| 4918 | 620321.358 | 9276327.567 | 30.766 | CANAL |
| 4919 | 620321.041 | 9276328.154 | 30.627 | BORDE |
| 4920 | 620319.997 | 9276329.316 | 30.183 | CANAL |
| 4921 | 620319.531 | 9276329.837 | 29.904 | CANAL |
| 4922 | 620319.420 | 9276329.937 | 29.799 | CANAL |
| 4923 | 620318.677 | 9276330.759 | 28.965 | CANAL |
| 4924 | 620318.056 | 9276331.380 | 29.754 | CANAL |
| 4925 | 620317.432 | 9276332.335 | 30.631 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4926 | 620338.169 | 9276350.679 | 29.950 | CANAL |
| 4927 | 620338.430 | 9276350.769 | 29.244 | CANAL |
| 4928 | 620338.673 | 9276349.712 | 29.103 | CANAL |
| 4929 | 620338.802 | 9276349.417 | 30.059 | CANAL |
| 4930 | 620340.789 | 9276348.050 | 30.655 | CANAL |
| 4931 | 620341.366 | 9276347.915 | 30.705 | BORDE |
| 4932 | 620341.718 | 9276347.575 | 30.717 | CANAL |
| 4933 | 620342.205 | 9276346.990 | 30.681 | CANAL |
| 4934 | 620343.034 | 9276346.180 | 30.774 | EJE |
| 4935 | 620344.573 | 9276344.397 | 30.754 | CANAL |
| 4936 | 620345.177 | 9276343.580 | 30.729 | CANAL |
| 4937 | 620346.279 | 9276342.298 | 30.872 | TERRENO |
| 4938 | 620346.527 | 9276341.893 | 30.722 | TERRENO |
| 4939 | 620348.236 | 9276339.977 | 30.975 | TERRENO |
| 4940 | 620339.172 | 9276334.588 | 30.741 | TERRENO |
| 4941 | 620370.257 | 9276362.667 | 31.593 | TERRENO |
| 4942 | 620369.873 | 9276362.938 | 31.548 | BORDE |
| 4943 | 620369.261 | 9276363.867 | 30.928 | CANAL |
| 4944 | 620367.937 | 9276365.117 | 30.850 | CANAL |
| 4945 | 620367.061 | 9276365.756 | 30.814 | EJE |
| 4946 | 620366.605 | 9276366.462 | 30.716 | CANAL |
| 4947 | 620365.240 | 9276367.715 | 30.606 | CANAL |
| 4948 | 620364.470 | 9276368.284 | 30.593 | BORDE |
| 4949 | 620363.144 | 9276368.961 | 29.756 | CANAL |
| 4950 | 620362.033 | 9276369.982 | 29.373 | CANAL |
| 4951 | 620361.377 | 9276370.189 | 29.487 | CANAL |
| 4952 | 620360.581 | 9276371.234 | 30.014 | CANAL |
| 4953 | 620360.210 | 9276371.935 | 30.618 | CANAL |
| 4954 | 620383.518 | 9276372.530 | 31.551 | TERRENO |
| 4955 | 620386.362 | 9276377.339 | 30.487 | TERRENO |
| 4956 | 620394.968 | 9276385.291 | 31.910 | TERRENO |
| 4957 | 620394.395 | 9276385.362 | 31.597 | BORDE |
| 4958 | 620393.588 | 9276385.669 | 30.966 | CANAL |
| 4959 | 620392.847 | 9276386.536 | 30.849 | CANAL |
| 4960 | 620391.789 | 9276387.725 | 30.879 | EJE |
| 4961 | 620390.994 | 9276388.874 | 30.737 | CANAL |
| 4962 | 620390.275 | 9276389.616 | 30.837 | CANAL |
| 4963 | 620389.560 | 9276390.483 | 30.882 | BORDE |
| 4964 | 620387.976 | 9276391.869 | 29.923 | CANAL |
| 4965 | 620387.272 | 9276392.160 | 29.932 | CANAL |
| 4966 | 620386.896 | 9276392.994 | 29.591 | CANAL |
| 4967 | 620385.753 | 9276394.220 | 30.068 | CANAL |
| 4968 | 620385.748 | 9276394.618 | 30.678 | CANAL |
| 4969 | 620409.987 | 9276415.818 | 30.373 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 4970 | 620410.396 | 9276415.919 | 29.981 | CANAL |
| 4971 | 620410.381 | 9276415.664 | 30.006 | CANAL |
| 4972 | 620410.670 | 9276414.715 | 29.532 | CANAL |
| 4973 | 620411.473 | 9276413.911 | 29.589 | CANAL |
| 4974 | 620411.631 | 9276413.881 | 30.225 | CANAL |
| 4975 | 620413.291 | 9276412.780 | 30.804 | BORDE |
| 4976 | 620413.811 | 9276412.262 | 30.783 | CANAL |
| 4977 | 620414.451 | 9276411.590 | 30.684 | CANAL |
| 4978 | 620415.689 | 9276410.239 | 30.706 | EJE |
| 4979 | 620417.036 | 9276408.686 | 30.767 | CANAL |
| 4980 | 620417.405 | 9276408.268 | 30.698 | CANAL |
| 4981 | 620417.948 | 9276407.835 | 30.774 | BORDE |
| 4982 | 620419.298 | 9276406.413 | 31.443 | BORDE |
| 4983 | 620433.385 | 9276422.302 | 31.087 | TERRENO |
| 4984 | 620441.261 | 9276426.919 | 31.670 | TERRENO |
| 4985 | 620440.978 | 9276427.230 | 31.458 | BORDE |
| 4986 | 620440.768 | 9276427.749 | 31.279 | BORDE |
| 4987 | 620440.290 | 9276428.402 | 30.889 | CANAL |
| 4988 | 620439.625 | 9276429.466 | 30.778 | CANAL |
| 4989 | 620438.332 | 9276430.809 | 30.839 | EJE |
| 4990 | 620437.554 | 9276431.805 | 30.792 | CANAL |
| 4991 | 620437.273 | 9276432.133 | 30.731 | CANAL |
| 4992 | 620436.269 | 9276433.192 | 30.712 | BORDE |
| 4993 | 620435.220 | 9276434.112 | 30.174 | CANAL |
| 4994 | 620434.548 | 9276434.618 | 29.672 | CANAL |
| 4995 | 620434.718 | 9276434.661 | 29.358 | CANAL |
| 4996 | 620434.417 | 9276435.248 | 29.237 | CANAL |
| 4997 | 620433.522 | 9276436.148 | 29.897 | CANAL |
| 4998 | 620433.025 | 9276436.858 | 30.465 | CANAL |
| 4999 | 620432.850 | 9276437.326 | 30.887 | CANAL |
| 5000 | 620457.292 | 9276460.335 | 31.658 | CANAL |
| 5001 | 620457.438 | 9276460.213 | 30.993 | CANAL |
| 5002 | 620458.138 | 9276459.328 | 29.957 | CANAL |
| 5003 | 620458.700 | 9276458.912 | 29.461 | CANAL |
| 5004 | 620459.543 | 9276457.884 | 29.299 | CANAL |
| 5005 | 620460.028 | 9276457.630 | 30.120 | CANAL |
| 5006 | 620461.162 | 9276456.768 | 30.777 | BORDE |
| 5007 | 620461.616 | 9276456.200 | 30.708 | CANAL |
| 5008 | 620461.876 | 9276455.941 | 30.725 | CANAL |
| 5009 | 620463.422 | 9276454.460 | 30.601 | EJE |
| 5010 | 620464.835 | 9276453.244 | 30.695 | CANAL |
| 5011 | 620465.133 | 9276452.959 | 30.566 | CANAL |
| 5012 | 620466.113 | 9276451.993 | 30.752 | BORDE |
| 5013 | 620466.565 | 9276451.714 | 30.647 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5014 | 620485.995 | 9276472.093 | 30.812 | TERRENO |
| 5015 | 620486.030 | 9276472.071 | 30.839 | BORDE |
| 5016 | 620485.739 | 9276472.536 | 30.711 | BORDE |
| 5017 | 620485.445 | 9276473.033 | 30.672 | CANAL |
| 5018 | 620485.584 | 9276473.047 | 30.569 | CANAL |
| 5019 | 620484.491 | 9276474.083 | 30.581 | EJE |
| 5020 | 620483.664 | 9276474.915 | 30.554 | CANAL |
| 5021 | 620482.981 | 9276475.843 | 30.580 | CANAL |
| 5022 | 620482.564 | 9276476.235 | 30.680 | BORDE |
| 5023 | 620481.407 | 9276477.152 | 30.090 | CANAL |
| 5024 | 620480.811 | 9276477.413 | 30.150 | CANAL |
| 5025 | 620480.586 | 9276478.062 | 29.447 | CANAL |
| 5026 | 620480.216 | 9276478.447 | 29.327 | CANAL |
| 5027 | 620478.744 | 9276479.551 | 30.119 | CANAL |
| 5028 | 620478.371 | 9276479.545 | 30.773 | CANAL |
| 5029 | 620477.006 | 9276480.584 | 31.534 | BORDE |
| 5030 | 620499.880 | 9276503.625 | 31.878 | BORDE |
| 5031 | 620500.729 | 9276502.493 | 31.294 | CANAL |
| 5032 | 620501.059 | 9276502.320 | 30.591 | CANAL |
| 5033 | 620501.496 | 9276501.758 | 30.083 | CANAL |
| 5034 | 620501.934 | 9276501.389 | 29.421 | CANAL |
| 5035 | 620502.882 | 9276500.463 | 29.556 | CANAL |
| 5036 | 620503.850 | 9276499.774 | 30.169 | CANAL |
| 5037 | 620504.635 | 9276498.997 | 30.898 | BORDE |
| 5038 | 620505.095 | 9276498.516 | 30.823 | CANAL |
| 5039 | 620505.933 | 9276497.707 | 30.776 | CANAL |
| 5040 | 620506.682 | 9276496.974 | 30.751 | EJE |
| 5041 | 620507.336 | 9276496.309 | 30.758 | CANAL |
| 5042 | 620508.491 | 9276494.973 | 30.750 | CANAL |
| 5043 | 620509.030 | 9276494.682 | 30.967 | BORDE |
| 5044 | 620510.817 | 9276493.081 | 30.931 | TERRENO |
| 5045 | 620520.579 | 9276503.541 | 30.828 | TERRENO |
| 5046 | 620531.397 | 9276511.472 | 31.504 | privad |
| 5047 | 620531.130 | 9276511.916 | 31.314 | BORDE |
| 5048 | 620530.767 | 9276512.829 | 30.907 | BORDE |
| 5049 | 620530.731 | 9276512.881 | 31.016 | CANAL |
| 5050 | 620530.274 | 9276513.815 | 30.661 | CANAL |
| 5051 | 620529.124 | 9276515.152 | 30.724 | EJE |
| 5052 | 620527.883 | 9276516.541 | 30.693 | CANAL |
| 5053 | 620526.899 | 9276517.504 | 30.742 | CANAL |
| 5054 | 620526.378 | 9276518.107 | 30.805 | BORDE |
| 5055 | 620525.217 | 9276518.839 | 29.942 | CANAL |
| 5056 | 620523.892 | 9276519.446 | 30.041 | CANAL |
| 5057 | 620523.661 | 9276520.550 | 29.386 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5058 | 620523.270 | 9276520.998 | 30.058 | CANAL |
| 5059 | 620522.376 | 9276521.771 | 30.496 | CANAL |
| 5060 | 620521.101 | 9276523.121 | 31.748 | BORDE |
| 5061 | 620547.199 | 9276547.466 | 31.676 | BORDE |
| 5062 | 620548.189 | 9276546.647 | 31.226 | CANAL |
| 5063 | 620548.538 | 9276546.007 | 30.637 | CANAL |
| 5064 | 620549.082 | 9276545.902 | 29.891 | CANAL |
| 5065 | 620549.424 | 9276544.914 | 29.293 | CANAL |
| 5066 | 620551.191 | 9276543.184 | 30.043 | CANAL |
| 5067 | 620551.492 | 9276542.642 | 30.738 | BORDE |
| 5068 | 620551.782 | 9276542.293 | 30.760 | CANAL |
| 5069 | 620552.583 | 9276541.487 | 30.679 | CANAL |
| 5070 | 620553.781 | 9276540.151 | 30.684 | EJE |
| 5071 | 620555.067 | 9276538.625 | 30.640 | CANAL |
| 5072 | 620556.555 | 9276537.129 | 30.787 | CANAL |
| 5073 | 620557.044 | 9276536.111 | 30.899 | BORDE |
| 5074 | 620557.856 | 9276534.491 | 31.078 | TERRENO |
| 5075 | 620586.889 | 9276552.309 | 30.323 | TERRENO |
| 5076 | 620586.235 | 9276553.089 | 30.435 | TERRENO |
| 5077 | 620584.375 | 9276554.825 | 30.548 | TERRENO |
| 5078 | 620583.366 | 9276556.093 | 30.621 | BORDE |
| 5079 | 620582.548 | 9276556.855 | 30.851 | BORDE |
| 5080 | 620581.349 | 9276558.205 | 30.914 | CANAL |
| 5081 | 620581.265 | 9276558.375 | 30.919 | CANAL |
| 5082 | 620579.615 | 9276560.355 | 30.936 | EJE |
| 5083 | 620578.877 | 9276561.426 | 30.833 | CANAL |
| 5084 | 620577.349 | 9276562.884 | 30.889 | CANAL |
| 5085 | 620576.588 | 9276563.661 | 30.881 | BORDE |
| 5086 | 620575.827 | 9276563.931 | 30.562 | CANAL |
| 5087 | 620575.563 | 9276564.307 | 29.761 | CANAL |
| 5088 | 620600.934 | 9276589.156 | 29.449 | CANAL |
| 5089 | 620601.065 | 9276589.219 | 30.224 | CANAL |
| 5090 | 620601.607 | 9276588.654 | 30.580 | BORDE |
| 5091 | 620601.736 | 9276588.541 | 30.848 | BORDE |
| 5092 | 620601.944 | 9276588.121 | 30.820 | CANAL |
| 5093 | 620602.932 | 9276586.969 | 30.815 | CANAL |
| 5094 | 620603.711 | 9276585.973 | 30.834 | EJE |
| 5095 | 620604.962 | 9276584.357 | 30.817 | CANAL |
| 5096 | 620606.476 | 9276582.806 | 30.940 | CANAL |
| 5097 | 620607.247 | 9276582.219 | 31.047 | BORDE |
| 5098 | 620607.496 | 9276581.696 | 30.760 | BORDE |
| 5099 | 620608.117 | 9276580.875 | 30.621 | BORDE |
| 5100 | 620610.466 | 9276578.813 | 30.343 | TERRENO |
| 5101 | 620612.105 | 9276577.539 | 30.307 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5102 | 620611.203 | 9276584.084 | 30.919 | TERRENO |
| 5103 | 620638.283 | 9276598.360 | 30.328 | TERRENO |
| 5104 | 620636.604 | 9276600.526 | 30.446 | TERRENO |
| 5105 | 620635.593 | 9276601.908 | 30.440 | TERRENO |
| 5106 | 620634.331 | 9276603.400 | 30.890 | BORDE |
| 5107 | 620634.070 | 9276603.968 | 31.067 | BORDE |
| 5108 | 620633.591 | 9276604.646 | 31.031 | BORDE |
| 5109 | 620633.507 | 9276604.758 | 30.960 | CANAL |
| 5110 | 620633.278 | 9276605.512 | 30.909 | CANAL |
| 5111 | 620631.643 | 9276607.383 | 30.985 | EJE |
| 5112 | 620630.533 | 9276608.727 | 31.021 | CANAL |
| 5113 | 620629.953 | 9276609.417 | 30.838 | CANAL |
| 5114 | 620628.874 | 9276610.695 | 30.981 | BORDE |
| 5115 | 620628.584 | 9276610.953 | 30.557 | CANAL |
| 5116 | 620628.294 | 9276611.412 | 30.062 | CANAL |
| 5117 | 620633.835 | 9276617.196 | 29.667 | CANAL |
| 5118 | 620634.164 | 9276616.776 | 30.702 | CANAL |
| 5119 | 620634.128 | 9276616.589 | 31.037 | BORDE |
| 5120 | 620635.013 | 9276616.465 | 31.015 | CANAL |
| 5121 | 620636.150 | 9276615.481 | 30.899 | CANAL |
| 5122 | 620637.278 | 9276613.927 | 30.868 | EJE |
| 5123 | 620637.985 | 9276612.638 | 30.896 | CANAL |
| 5124 | 620638.721 | 9276611.545 | 30.935 | CANAL |
| 5125 | 620640.159 | 9276609.950 | 31.069 | BORDE |
| 5126 | 620640.670 | 9276609.319 | 30.758 | BORDE |
| 5127 | 620642.793 | 9276607.068 | 30.019 | TERRENO |
| 5128 | 620643.765 | 9276605.598 | 30.514 | TERRENO |
| 5129 | 620650.218 | 9276607.307 | 30.341 | TERRENO |
| 5130 | 620648.953 | 9276609.936 | 30.349 | TERRENO |
| 5131 | 620648.012 | 9276611.172 | 30.352 | TERRENO |
| 5132 | 620647.303 | 9276612.348 | 30.295 | TERRENO |
| 5133 | 620646.372 | 9276613.753 | 30.971 | BORDE |
| 5134 | 620646.169 | 9276614.164 | 31.032 | BORDE |
| 5135 | 620645.653 | 9276615.097 | 31.069 | BORDE |
| 5136 | 620645.587 | 9276615.333 | 30.943 | CANAL |
| 5137 | 620645.417 | 9276615.908 | 30.947 | CANAL |
| 5138 | 620644.344 | 9276618.368 | 31.082 | EJE |
| 5139 | 620643.646 | 9276619.802 | 31.043 | CANAL |
| 5140 | 620643.296 | 9276620.405 | 30.883 | CANAL |
| 5141 | 620642.046 | 9276622.308 | 31.046 | BORDE |
| 5142 | 620641.398 | 9276623.362 | 31.169 | CANAL |
| 5143 | 620641.383 | 9276623.343 | 31.107 | CANAL |
| 5144 | 620640.594 | 9276624.036 | 29.597 | CANAL |
| 5145 | 620647.770 | 9276630.279 | 29.900 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5146 | 620648.128 | 9276629.936 | 31.306 | CANAL |
| 5147 | 620648.127 | 9276629.542 | 31.367 | BORDE |
| 5148 | 620649.408 | 9276627.834 | 31.199 | CANAL |
| 5149 | 620650.386 | 9276625.837 | 31.203 | CANAL |
| 5150 | 620650.664 | 9276624.315 | 30.968 | EJE |
| 5151 | 620651.220 | 9276621.626 | 31.089 | CANAL |
| 5152 | 620651.471 | 9276620.290 | 30.946 | CANAL |
| 5153 | 620652.056 | 9276618.975 | 31.149 | BORDE |
| 5154 | 620652.214 | 9276618.798 | 31.037 | BORDE |
| 5155 | 620652.562 | 9276617.889 | 30.570 | BORDE |
| 5156 | 620653.980 | 9276614.442 | 30.476 | TERRENO |
| 5157 | 620655.365 | 9276611.614 | 30.224 | TERRENO |
| 5158 | 620660.962 | 9276613.279 | 30.329 | TERRENO |
| 5159 | 620661.151 | 9276613.511 | 30.318 | TERRENO |
| 5160 | 620661.086 | 9276616.878 | 30.292 | TERRENO |
| 5161 | 620659.801 | 9276620.451 | 30.378 | TERRENO |
| 5162 | 620659.659 | 9276620.908 | 30.494 | TERRENO |
| 5163 | 620659.566 | 9276622.775 | 30.774 | BORDE |
| 5164 | 620659.491 | 9276622.987 | 30.846 | BORDE |
| 5165 | 620659.242 | 9276624.466 | 30.941 | CANAL |
| 5166 | 620659.047 | 9276625.654 | 30.880 | CANAL |
| 5167 | 620658.994 | 9276628.206 | 31.098 | EJE |
| 5168 | 620658.656 | 9276630.266 | 31.189 | CANAL |
| 5169 | 620658.276 | 9276631.943 | 31.067 | CANAL |
| 5170 | 620657.937 | 9276633.701 | 31.171 | TERRENO |
| 5171 | 620657.769 | 9276634.757 | 30.941 | TERRENO |
| 5172 | 620657.566 | 9276636.841 | 31.046 | ALCANTARILLA |
| 5173 | 620657.495 | 9276636.604 | 31.220 | ALCANTARILLA |
| 5174 | 620655.264 | 9276635.365 | 30.919 | ALCANTARILLA |
| 5175 | 620653.397 | 9276636.261 | 31.010 | ALCANTARILLA |
| 5176 | 620666.842 | 9276639.042 | 29.755 | CANAL |
| 5177 | 620666.781 | 9276638.907 | 30.409 | CANAL |
| 5178 | 620666.773 | 9276638.471 | 31.003 | CANAL |
| 5179 | 620666.551 | 9276636.969 | 31.205 | BORDE |
| 5180 | 620666.742 | 9276635.424 | 31.226 | CANAL |
| 5181 | 620666.751 | 9276633.698 | 31.083 | CANAL |
| 5182 | 620666.670 | 9276632.331 | 31.041 | EJE |
| 5183 | 620666.197 | 9276629.423 | 30.991 | CANAL |
| 5184 | 620666.102 | 9276627.750 | 30.741 | CANAL |
| 5185 | 620666.250 | 9276625.943 | 31.015 | BORDE |
| 5186 | 620666.407 | 9276625.835 | 31.255 | BORDE |
| 5187 | 620666.544 | 9276624.755 | 30.542 | TERRENO |
| 5188 | 620667.292 | 9276620.518 | 30.358 | TERRENO |
| 5189 | 620668.198 | 9276617.696 | 30.444 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5190 | 620673.212 | 9276618.279 | 30.472 | TERRENO |
| 5191 | 620673.502 | 9276621.002 | 30.395 | TERRENO |
| 5192 | 620673.824 | 9276623.335 | 30.316 | TERRENO |
| 5193 | 620674.075 | 9276624.955 | 30.436 | TERRENO |
| 5194 | 620674.619 | 9276626.846 | 30.701 | BORDE |
| 5195 | 620674.751 | 9276627.030 | 31.296 | BORDE |
| 5196 | 620674.346 | 9276628.654 | 31.117 | BORDE |
| 5197 | 620674.731 | 9276629.112 | 31.074 | CANAL |
| 5198 | 620675.364 | 9276631.274 | 31.049 | CANAL |
| 5199 | 620675.907 | 9276633.231 | 31.159 | EJE |
| 5200 | 620676.345 | 9276634.518 | 31.212 | CANAL |
| 5201 | 620676.797 | 9276635.868 | 31.030 | CANAL |
| 5202 | 620677.357 | 9276637.821 | 31.259 | BORDE |
| 5203 | 620677.644 | 9276638.944 | 30.969 | CANAL |
| 5204 | 620677.974 | 9276639.232 | 30.338 | CANAL |
| 5205 | 620677.884 | 9276639.347 | 29.720 | CANAL |
| 5206 | 620685.762 | 9276638.309 | 29.804 | CANAL |
| 5207 | 620685.890 | 9276637.955 | 30.556 | CANAL |
| 5208 | 620685.235 | 9276637.227 | 31.201 | BORDE |
| 5209 | 620685.164 | 9276636.590 | 31.254 | CANAL |
| 5210 | 620684.606 | 9276634.709 | 31.252 | CANAL |
| 5211 | 620684.442 | 9276634.002 | 31.041 | EJE |
| 5212 | 620683.136 | 9276631.107 | 31.042 | CANAL |
| 5213 | 620682.855 | 9276630.188 | 30.902 | CANAL |
| 5214 | 620682.563 | 9276629.392 | 31.091 | BORDE |
| 5215 | 620682.311 | 9276627.766 | 31.396 | BORDE |
| 5216 | 620682.312 | 9276626.447 | 30.693 | TERRENO |
| 5217 | 620686.708 | 9276626.461 | 31.159 | TERRENO |
| 5218 | 620689.365 | 9276619.829 | 30.397 | TERRENO |
| 5219 | 620689.593 | 9276620.807 | 30.319 | TERRENO |
| 5220 | 620690.234 | 9276623.896 | 31.205 | TERRENO |
| 5221 | 620690.128 | 9276625.770 | 31.307 | BORDE |
| 5222 | 620690.300 | 9276626.179 | 31.816 | BORDE |
| 5223 | 620690.693 | 9276627.858 | 31.101 | BORDE |
| 5224 | 620690.595 | 9276628.443 | 31.228 | CANAL |
| 5225 | 620690.980 | 9276629.302 | 30.890 | CANAL |
| 5226 | 620691.449 | 9276631.336 | 30.999 | EJE |
| 5227 | 620691.837 | 9276632.995 | 31.057 | CANAL |
| 5228 | 620691.977 | 9276634.233 | 31.021 | CANAL |
| 5229 | 620692.071 | 9276635.905 | 31.201 | BORDE |
| 5230 | 620692.160 | 9276637.031 | 30.627 | CANAL |
| 5231 | 620692.111 | 9276637.334 | 30.739 | CANAL |
| 5232 | 620692.197 | 9276638.104 | 29.583 | CANAL |
| 5233 | 620721.631 | 9276616.798 | 30.552 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5234 | 620721.978 | 9276618.767 | 30.518 | TERRENO |
| 5235 | 620722.641 | 9276621.318 | 30.587 | TERRENO |
| 5236 | 620723.136 | 9276622.791 | 31.583 | BORDE |
| 5237 | 620722.948 | 9276622.696 | 31.673 | BORDE |
| 5238 | 620723.168 | 9276623.858 | 31.273 | CANAL |
| 5239 | 620723.235 | 9276624.503 | 31.020 | CANAL |
| 5240 | 620723.745 | 9276626.764 | 31.184 | EJE |
| 5241 | 620724.357 | 9276628.611 | 31.245 | CANAL |
| 5242 | 620724.526 | 9276629.409 | 31.039 | CANAL |
| 5243 | 620724.879 | 9276630.725 | 31.086 | BORDE |
| 5244 | 620725.034 | 9276631.327 | 30.654 | CANAL |
| 5245 | 620724.960 | 9276631.814 | 29.770 | CANAL |
| 5246 | 620749.688 | 9276623.841 | 31.398 | ALCANTARILLA |
| 5247 | 620748.615 | 9276624.132 | 31.213 | ALCANTARILLA |
| 5248 | 620746.762 | 9276621.491 | 31.286 | ALCANTARILLA |
| 5249 | 620745.505 | 9276620.711 | 31.253 | ALCANTARILLA |
| 5250 | 620746.379 | 9276619.402 | 31.343 | CANAL |
| 5251 | 620745.485 | 9276617.405 | 31.259 | CANAL |
| 5252 | 620743.845 | 9276612.414 | 31.005 | CANAL |
| 5253 | 620743.195 | 9276607.492 | 30.732 | CANAL |
| 5254 | 620742.760 | 9276607.040 | 30.873 | CANAL |
| 5255 | 620742.342 | 9276607.051 | 30.538 | CANAL |
| 5256 | 620740.256 | 9276607.394 | 30.942 | CANAL |
| 5257 | 620739.948 | 9276610.054 | 30.939 | CANAL |
| 5258 | 620740.865 | 9276612.970 | 30.749 | CANAL |
| 5259 | 620742.562 | 9276618.559 | 30.968 | CANAL |
| 5260 | 620743.816 | 9276619.196 | 30.756 | CANAL |
| 5261 | 620745.629 | 9276620.050 | 30.318 | FONDO |
| 5262 | 620748.664 | 9276624.387 | 30.548 | FONDO |
| 5263 | 620751.306 | 9276626.164 | 31.035 | COMPUERTA |
| 5264 | 620750.580 | 9276626.616 | 31.151 | COMPUERTA |
| 5265 | 620749.792 | 9276627.669 | 30.820 | ESTRUCTURA |
| 5266 | 620749.892 | 9276627.315 | 30.959 | ESTRUCTURA |
| 5267 | 620748.992 | 9276626.542 | 30.972 | ESTRUCTURA |
| 5268 | 620748.322 | 9276625.167 | 30.983 | ESTRUCTURA |
| 5269 | 620748.594 | 9276625.200 | 31.018 | ESTRUCTURA |
| 5270 | 620749.166 | 9276625.349 | 30.903 | ESTRUCTURA |
| 5271 | 620751.827 | 9276626.300 | 31.020 | ESTRUCTURA |
| 5272 | 620752.423 | 9276626.917 | 30.972 | ESTRUCTURA |
| 5273 | 620754.729 | 9276618.097 | 31.064 | TERRENO |
| 5274 | 620754.636 | 9276618.268 | 31.609 | BORDE |
| 5275 | 620754.909 | 9276618.363 | 31.399 | BORDE |
| 5276 | 620755.084 | 9276618.589 | 31.305 | CANAL |
| 5277 | 620755.345 | 9276619.266 | 31.094 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5278 | 620755.877 | 9276621.346 | 31.253 | EJE |
| 5279 | 620756.691 | 9276622.993 | 31.284 | CANAL |
| 5280 | 620756.856 | 9276623.755 | 31.178 | CANAL |
| 5281 | 620757.064 | 9276624.756 | 31.249 | BORDE |
| 5282 | 620757.222 | 9276625.414 | 30.598 | CANAL |
| 5283 | 620757.514 | 9276626.033 | 30.105 | CANAL |
| 5284 | 620785.114 | 9276610.658 | 30.699 | TERRENO |
| 5285 | 620785.191 | 9276610.901 | 31.420 | TERRENO |
| 5286 | 620785.312 | 9276611.611 | 31.927 | BORDE |
| 5287 | 620785.496 | 9276612.098 | 31.442 | BORDE |
| 5288 | 620785.733 | 9276613.384 | 31.231 | CANAL |
| 5289 | 620785.907 | 9276613.724 | 30.955 | CANAL |
| 5290 | 620786.301 | 9276615.524 | 30.963 | EJE |
| 5291 | 620786.757 | 9276617.407 | 31.115 | CANAL |
| 5292 | 620787.035 | 9276618.269 | 30.950 | CANAL |
| 5293 | 620787.394 | 9276619.385 | 30.999 | BORDE |
| 5294 | 620787.417 | 9276620.044 | 30.445 | CANAL |
| 5295 | 620787.624 | 9276620.387 | 29.841 | CANAL |
| 5296 | 620822.331 | 9276606.114 | 31.080 | TERRENO |
| 5297 | 620822.219 | 9276606.642 | 31.629 | BORDE |
| 5298 | 620822.674 | 9276606.945 | 31.337 | CANAL |
| 5299 | 620822.738 | 9276606.337 | 31.625 | TERRENO |
| 5300 | 620822.990 | 9276607.642 | 31.176 | CANAL |
| 5301 | 620823.426 | 9276609.335 | 31.165 | EJE |
| 5302 | 620823.560 | 9276610.484 | 31.042 | CANAL |
| 5303 | 620823.966 | 9276612.397 | 31.142 | CANAL |
| 5304 | 620824.203 | 9276612.919 | 31.069 | BORDE |
| 5305 | 620824.179 | 9276613.093 | 30.776 | CANAL |
| 5306 | 620824.334 | 9276613.652 | 30.130 | CANAL |
| 5307 | 620853.418 | 9276595.049 | 30.757 | TERRENO |
| 5308 | 620853.678 | 9276595.539 | 30.961 | TERRENO |
| 5309 | 620853.959 | 9276597.054 | 30.994 | TERRENO |
| 5310 | 620854.593 | 9276599.831 | 31.439 | BORDE |
| 5311 | 620854.940 | 9276601.296 | 31.476 | CANAL |
| 5312 | 620855.142 | 9276601.912 | 31.288 | CANAL |
| 5313 | 620855.568 | 9276603.512 | 31.404 | EJE |
| 5314 | 620855.781 | 9276604.531 | 31.340 | CANAL |
| 5315 | 620855.951 | 9276604.982 | 31.437 | CANAL |
| 5316 | 620856.368 | 9276606.628 | 31.288 | BORDE |
| 5317 | 620856.343 | 9276607.333 | 30.910 | CANAL |
| 5318 | 620856.387 | 9276607.646 | 30.388 | CANAL |
| 5319 | 620886.557 | 9276594.481 | 31.986 | TERRENO |
| 5320 | 620886.423 | 9276594.590 | 31.986 | BORDE |
| 5321 | 620886.706 | 9276594.760 | 31.753 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5322 | 620887.139 | 9276595.273 | 31.543 | CANAL |
| 5323 | 620887.437 | 9276596.286 | 31.585 | EJE |
| 5324 | 620887.816 | 9276597.866 | 31.475 | CANAL |
| 5325 | 620888.092 | 9276598.914 | 31.377 | CANAL |
| 5326 | 620888.358 | 9276600.344 | 31.429 | BORDE |
| 5327 | 620888.485 | 9276601.418 | 31.065 | CANAL |
| 5328 | 620888.350 | 9276602.034 | 29.990 | CANAL |
| 5329 | 620889.351 | 9276603.479 | 30.011 | CANAL |
| 5330 | 620889.225 | 9276605.198 | 30.823 | CANAL |
| 5331 | 620889.273 | 9276605.446 | 31.238 | CANAL |
| 5332 | 620889.561 | 9276606.532 | 31.698 | BORDE |
| 5333 | 620917.807 | 9276588.826 | 32.362 | TERRENO |
| 5334 | 620918.017 | 9276588.885 | 31.916 | BORDE |
| 5335 | 620918.151 | 9276589.093 | 31.688 | CANAL |
| 5336 | 620918.869 | 9276590.989 | 31.490 | CANAL |
| 5337 | 620919.188 | 9276591.602 | 31.372 | EJE |
| 5338 | 620919.753 | 9276593.442 | 31.445 | CANAL |
| 5339 | 620920.154 | 9276594.685 | 31.297 | CANAL |
| 5340 | 620920.416 | 9276595.796 | 31.518 | BORDE |
| 5341 | 620920.978 | 9276596.983 | 30.775 | CANAL |
| 5342 | 620921.159 | 9276597.518 | 30.538 | CANAL |
| 5343 | 620950.915 | 9276582.221 | 32.391 | TERRENO |
| 5344 | 620951.175 | 9276582.720 | 32.512 | BORDE |
| 5345 | 620951.530 | 9276583.468 | 32.259 | CANAL |
| 5346 | 620951.624 | 9276583.872 | 32.092 | CANAL |
| 5347 | 620952.020 | 9276585.781 | 32.191 | EJE |
| 5348 | 620952.553 | 9276587.670 | 32.235 | CANAL |
| 5349 | 620952.692 | 9276588.235 | 31.956 | CANAL |
| 5350 | 620953.115 | 9276589.756 | 32.006 | BORDE |
| 5351 | 620953.294 | 9276590.933 | 31.747 | CANAL |
| 5352 | 620953.510 | 9276591.401 | 31.146 | CANAL |
| 5353 | 620953.764 | 9276592.715 | 30.152 | CANAL |
| 5354 | 620983.812 | 9276576.207 | 32.462 | TERRENO |
| 5355 | 620984.085 | 9276576.445 | 32.465 | BORDE |
| 5356 | 620984.649 | 9276576.240 | 32.419 | BORDE |
| 5357 | 620984.871 | 9276576.468 | 32.409 | CANAL |
| 5358 | 620985.108 | 9276577.232 | 32.161 | CANAL |
| 5359 | 620985.629 | 9276578.759 | 32.210 | EJE |
| 5360 | 620985.996 | 9276579.922 | 32.038 | CANAL |
| 5361 | 620986.503 | 9276581.546 | 31.961 | CANAL |
| 5362 | 620986.796 | 9276582.410 | 32.021 | BORDE |
| 5363 | 620987.150 | 9276584.059 | 31.502 | CANAL |
| 5364 | 620987.181 | 9276584.162 | 30.990 | CANAL |
| 5365 | 620987.395 | 9276584.602 | 31.035 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5366 | 621002.582 | 9276572.935 | 32.222 | TERRENO |
| 5367 | 621002.420 | 9276573.033 | 32.394 | BORDE |
| 5368 | 621003.069 | 9276573.049 | 32.399 | CANAL |
| 5369 | 621003.241 | 9276574.025 | 32.197 | CANAL |
| 5370 | 621003.377 | 9276574.851 | 32.140 | EJE |
| 5371 | 621003.991 | 9276576.819 | 32.226 | CANAL |
| 5372 | 621004.016 | 9276576.895 | 32.078 | CANAL |
| 5373 | 621004.232 | 9276578.392 | 31.973 | BORDE |
| 5374 | 621004.293 | 9276579.580 | 31.248 | CANAL |
| 5375 | 621004.688 | 9276580.436 | 30.737 | CANAL |
| 5376 | 621004.398 | 9276581.040 | 29.691 | CANAL |
| 5377 | 621019.862 | 9276570.338 | 32.356 | TERRENO |
| 5378 | 621020.027 | 9276571.018 | 32.582 | TERRENO |
| 5379 | 621020.187 | 9276571.147 | 32.540 | BORDE |
| 5380 | 621019.988 | 9276572.078 | 32.426 | BORDE |
| 5381 | 621020.112 | 9276572.744 | 32.386 | CANAL |
| 5382 | 621020.510 | 9276573.603 | 32.378 | CANAL |
| 5383 | 621020.669 | 9276574.540 | 32.279 | EJE |
| 5384 | 621020.687 | 9276575.370 | 32.156 | CANAL |
| 5385 | 621020.962 | 9276576.948 | 32.342 | CANAL |
| 5386 | 621020.927 | 9276578.257 | 32.234 | BORDE |
| 5387 | 621020.947 | 9276579.414 | 31.699 | CANAL |
| 5388 | 621020.607 | 9276579.774 | 31.780 | CANAL |
| 5389 | 621020.939 | 9276580.902 | 30.217 | CANAL |
| 5390 | 621038.315 | 9276568.613 | 32.479 | CANAL |
| 5391 | 621038.438 | 9276569.019 | 33.136 | BORDE |
| 5392 | 621038.686 | 9276569.430 | 32.657 | BORDE |
| 5393 | 621038.809 | 9276570.596 | 32.281 | CANAL |
| 5394 | 621038.914 | 9276572.167 | 32.280 | CANAL |
| 5395 | 621039.103 | 9276572.790 | 32.229 | EJE |
| 5396 | 621039.505 | 9276574.408 | 32.276 | CANAL |
| 5397 | 621039.765 | 9276575.935 | 32.202 | CANAL |
| 5398 | 621039.709 | 9276576.673 | 32.104 | CANAL |
| 5399 | 621040.013 | 9276577.227 | 31.327 | CANAL |
| 5400 | 621040.201 | 9276577.625 | 31.233 | CANAL |
| 5401 | 621049.708 | 9276568.106 | 32.805 | BORDE |
| 5402 | 621049.841 | 9276568.536 | 32.485 | BORDE |
| 5403 | 621050.358 | 9276568.722 | 32.291 | CANAL |
| 5404 | 621050.544 | 9276569.545 | 32.067 | CANAL |
| 5405 | 621050.952 | 9276571.260 | 32.219 | EJE |
| 5406 | 621051.086 | 9276572.532 | 32.192 | CANAL |
| 5407 | 621051.248 | 9276573.105 | 31.972 | CANAL |
| 5408 | 621051.843 | 9276574.955 | 31.751 | BORDE |
| 5409 | 621051.997 | 9276575.627 | 31.182 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5410 | 621052.025 | 9276576.624 | 30.162 | CANAL |
| 5411 | 621081.008 | 9276560.278 | 33.189 | BORDE |
| 5412 | 621081.105 | 9276560.647 | 33.311 | BORDE |
| 5413 | 621081.330 | 9276560.979 | 32.838 | BORDE |
| 5414 | 621081.651 | 9276561.909 | 32.214 | CANAL |
| 5415 | 621081.794 | 9276562.833 | 32.015 | CANAL |
| 5416 | 621082.190 | 9276564.517 | 32.200 | EJE |
| 5417 | 621082.833 | 9276565.480 | 32.132 | CANAL |
| 5418 | 621083.051 | 9276566.816 | 32.116 | CANAL |
| 5419 | 621082.873 | 9276567.517 | 32.084 | BORDE |
| 5420 | 621083.167 | 9276567.842 | 31.733 | CANAL |
| 5421 | 621083.334 | 9276568.312 | 31.678 | CANAL |
| 5422 | 621083.389 | 9276569.265 | 30.313 | CANAL |
| 5423 | 621110.680 | 9276544.852 | 31.213 | TERRENO |
| 5424 | 621111.074 | 9276547.328 | 31.077 | TERRENO |
| 5425 | 621111.754 | 9276550.375 | 31.210 | BORDE |
| 5426 | 621111.687 | 9276550.910 | 32.246 | BORDE |
| 5427 | 621112.166 | 9276551.878 | 32.361 | BORDE |
| 5428 | 621112.632 | 9276553.441 | 32.352 | BORDE |
| 5429 | 621112.702 | 9276553.942 | 32.179 | CANAL |
| 5430 | 621113.320 | 9276555.824 | 32.168 | CANAL |
| 5431 | 621113.758 | 9276557.073 | 32.043 | EJE |
| 5432 | 621114.569 | 9276558.870 | 32.131 | CANAL |
| 5433 | 621114.763 | 9276560.279 | 31.877 | CANAL |
| 5434 | 621114.959 | 9276562.163 | 32.129 | BORDE |
| 5435 | 621115.461 | 9276563.011 | 31.786 | CANAL |
| 5436 | 621115.548 | 9276563.636 | 31.183 | CANAL |
| 5437 | 621115.730 | 9276564.463 | 30.348 | CANAL |
| 5438 | 621146.079 | 9276542.196 | 31.235 | TERRENO |
| 5439 | 621146.518 | 9276543.591 | 31.883 | TERRENO |
| 5440 | 621146.141 | 9276545.751 | 32.456 | BORDE |
| 5441 | 621146.189 | 9276546.190 | 32.151 | BORDE |
| 5442 | 621146.711 | 9276548.084 | 32.158 | CANAL |
| 5443 | 621147.086 | 9276549.615 | 32.074 | CANAL |
| 5444 | 621147.951 | 9276551.360 | 32.064 | EJE |
| 5445 | 621148.228 | 9276553.317 | 32.100 | CANAL |
| 5446 | 621148.374 | 9276554.499 | 31.850 | CANAL |
| 5447 | 621149.164 | 9276556.789 | 32.027 | BORDE |
| 5448 | 621149.231 | 9276557.745 | 31.379 | CANAL |
| 5449 | 621149.354 | 9276558.295 | 30.682 | CANAL |
| 5450 | 621154.630 | 9276544.352 | 32.136 | TERRENO |
| 5451 | 621161.094 | 9276555.943 | 31.625 | ALCANTARILLA |
| 5452 | 621160.944 | 9276555.599 | 31.797 | ALCANTARILLA |
| 5453 | 621162.838 | 9276557.663 | 31.923 | ALCANTARILLA |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5454 | 621161.840 | 9276559.199 | 31.529 | ALCANTARILLA |
| 5455 | 621166.866 | 9276557.901 | 31.849 | ALCANTARILLA |
| 5456 | 621165.714 | 9276556.093 | 31.768 | ALCANTARILLA |
| 5457 | 621167.040 | 9276554.878 | 31.582 | CANAL |
| 5458 | 621168.722 | 9276554.378 | 31.552 | CANAL |
| 5459 | 621170.872 | 9276553.846 | 31.507 | CANAL |
| 5460 | 621172.148 | 9276553.437 | 31.501 | CANAL |
| 5461 | 621171.486 | 9276554.227 | 31.667 | COMPUERTA |
| 5462 | 621171.773 | 9276555.701 | 31.615 | COMPUERTA |
| 5463 | 621172.156 | 9276556.507 | 31.440 | CANAL |
| 5464 | 621172.039 | 9276556.648 | 31.461 | CANAL |
| 5465 | 621171.493 | 9276556.943 | 31.565 | CANAL |
| 5466 | 621170.526 | 9276557.172 | 31.546 | CANAL |
| 5467 | 621167.658 | 9276557.902 | 31.562 | CANAL |
| 5468 | 621166.696 | 9276556.957 | 32.180 | **BM -11** |
| 5469 | 621179.157 | 9276535.176 | 31.927 | TERRENO |
| 5470 | 621179.276 | 9276537.497 | 31.980 | TERRENO |
| 5471 | 621179.408 | 9276538.931 | 32.028 | TERRENO |
| 5472 | 621179.231 | 9276541.058 | 31.906 | TERRENO |
| 5473 | 621179.651 | 9276542.628 | 32.034 | CANAL |
| 5474 | 621180.098 | 9276544.632 | 32.085 | CANAL |
| 5475 | 621180.492 | 9276545.337 | 31.932 | EJE |
| 5476 | 621181.041 | 9276547.281 | 32.010 | CANAL |
| 5477 | 621180.799 | 9276548.412 | 31.850 | CANAL |
| 5478 | 621181.156 | 9276550.066 | 31.995 | BORDE |
| 5479 | 621181.121 | 9276551.215 | 31.127 | CANAL |
| 5480 | 621181.081 | 9276551.474 | 30.547 | CANAL |
| 5481 | 621199.272 | 9276533.914 | 31.687 | TERRENO |
| 5482 | 621199.493 | 9276535.930 | 32.505 | TERRENO |
| 5483 | 621199.558 | 9276537.739 | 32.809 | TERRENO |
| 5484 | 621199.731 | 9276538.367 | 32.188 | TERRENO |
| 5485 | 621199.611 | 9276538.540 | 32.286 | CANAL |
| 5486 | 621200.377 | 9276540.346 | 32.013 | CANAL |
| 5487 | 621200.943 | 9276541.609 | 32.016 | EJE |
| 5488 | 621201.722 | 9276543.503 | 32.060 | CANAL |
| 5489 | 621202.392 | 9276545.028 | 32.040 | CANAL |
| 5490 | 621203.132 | 9276547.245 | 31.966 | BORDE |
| 5491 | 621203.016 | 9276548.294 | 31.565 | CANAL |
| 5492 | 621202.642 | 9276548.947 | 30.819 | CANAL |
| 5493 | 621207.205 | 9276534.875 | 32.003 | TERRENO |
| 5494 | 621207.524 | 9276535.150 | 32.696 | TERRENO |
| 5495 | 621208.117 | 9276536.503 | 32.199 | TERRENO |
| 5496 | 621208.380 | 9276537.346 | 32.213 | CANAL |
| 5497 | 621208.685 | 9276537.805 | 31.989 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5498 | 621210.088 | 9276539.573 | 32.046 | EJE |
| 5499 | 621211.006 | 9276540.858 | 31.989 | CANAL |
| 5500 | 621213.087 | 9276543.315 | 32.341 | CANAL |
| 5501 | 621213.700 | 9276544.646 | 32.333 | BORDE |
| 5502 | 621214.271 | 9276545.202 | 32.145 | CANAL |
| 5503 | 621214.390 | 9276545.445 | 31.925 | CANAL |
| 5504 | 621215.239 | 9276546.110 | 30.845 | CANAL |
| 5505 | 621212.201 | 9276531.478 | 32.003 | TERRENO |
| 5506 | 621213.411 | 9276532.685 | 32.233 | TERRENO |
| 5507 | 621213.735 | 9276533.224 | 32.644 | BORDE |
| 5508 | 621214.044 | 9276533.525 | 32.278 | BORDE |
| 5509 | 621215.109 | 9276534.927 | 32.297 | CANAL |
| 5510 | 621216.522 | 9276536.484 | 32.311 | CANAL |
| 5511 | 621217.427 | 9276537.738 | 32.315 | EJE |
| 5512 | 621219.093 | 9276539.554 | 32.456 | CANAL |
| 5513 | 621219.797 | 9276540.026 | 32.185 | CANAL |
| 5514 | 621221.084 | 9276541.424 | 32.394 | BORDE |
| 5515 | 621221.939 | 9276542.477 | 32.045 | CANAL |
| 5516 | 621222.329 | 9276542.925 | 31.341 | CANAL |
| 5517 | 621222.475 | 9276543.314 | 30.847 | CANAL |
| 5518 | 621218.873 | 9276528.002 | 32.574 | TERRENO |
| 5519 | 621219.659 | 9276529.270 | 32.716 | TERRENO |
| 5520 | 621220.795 | 9276531.087 | 32.928 | TERRENO |
| 5521 | 621220.792 | 9276531.379 | 32.715 | TERRENO |
| 5522 | 620226.529 | 9276248.351 | 29.303 | CANAL |
| 5523 | 620227.334 | 9276247.703 | 29.204 | CANAL |
| 5524 | 620227.791 | 9276247.692 | 29.669 | CANAL |
| 5525 | 620229.197 | 9276246.794 | 30.141 | BORDE |
| 5526 | 620229.882 | 9276246.076 | 30.274 | CANAL |
| 5527 | 620230.346 | 9276245.683 | 30.244 | CANAL |
| 5528 | 620231.356 | 9276244.602 | 30.212 | EJE |
| 5529 | 620232.498 | 9276243.695 | 30.145 | CANAL |
| 5530 | 620232.847 | 9276243.305 | 30.245 | CANAL |
| 5531 | 620234.299 | 9276241.955 | 30.501 | BORDE |
| 5532 | 620234.832 | 9276241.311 | 31.138 | TERRENO |
| 5533 | 620255.536 | 9276261.296 | 30.442 | TERRENO |
| 5534 | 620255.270 | 9276260.477 | 30.882 | TERRENO |
| 5535 | 620254.649 | 9276260.837 | 30.652 | BORDE |
| 5536 | 620254.400 | 9276261.426 | 30.348 | CANAL |
| 5537 | 620253.982 | 9276261.885 | 30.186 | CANAL |
| 5538 | 620253.408 | 9276262.494 | 30.143 | EJE |
| 5539 | 620252.021 | 9276264.093 | 30.249 | CANAL |
| 5540 | 620251.753 | 9276264.400 | 30.290 | CANAL |
| 5541 | 620250.543 | 9276265.650 | 30.260 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5542 | 620249.764 | 9276266.186 | 30.290 | CANAL |
| 5543 | 620249.483 | 9276266.276 | 30.193 | CANAL |
| 5544 | 620248.591 | 9276266.767 | 29.181 | CANAL |
| 5545 | 620248.433 | 9276267.684 | 29.069 | CANAL |
| 5546 | 620247.704 | 9276268.445 | 29.888 | CANAL |
| 5547 | 620246.919 | 9276269.836 | 30.698 | CANAL |
| 5548 | 620272.124 | 9276293.092 | 31.445 | CANAL |
| 5549 | 620272.932 | 9276292.163 | 30.493 | CANAL |
| 5550 | 620273.244 | 9276291.676 | 29.869 | CANAL |
| 5551 | 620273.459 | 9276291.137 | 29.491 | CANAL |
| 5552 | 620274.164 | 9276290.369 | 28.893 | CANAL |
| 5553 | 620275.116 | 9276289.342 | 29.925 | CANAL |
| 5554 | 620275.884 | 9276288.363 | 30.392 | BORDE |
| 5555 | 620276.407 | 9276287.897 | 30.532 | CANAL |
| 5556 | 620276.827 | 9276287.296 | 30.451 | CANAL |
| 5557 | 620277.401 | 9276286.477 | 30.401 | EJE |
| 5558 | 620278.785 | 9276284.772 | 30.439 | CANAL |
| 5559 | 620279.665 | 9276283.629 | 30.505 | CANAL |
| 5560 | 620280.500 | 9276282.632 | 30.795 | BORDE |
| 5561 | 620281.397 | 9276282.039 | 31.020 | TERRENO |
| 5562 | 620298.187 | 9276297.994 | 31.031 | TERRENO |
| 5563 | 620302.268 | 9276301.283 | 31.385 | TERRENO |
| 5564 | 620302.362 | 9276301.789 | 31.463 | BORDE |
| 5565 | 620302.130 | 9276302.740 | 30.932 | CANAL |
| 5566 | 620301.555 | 9276303.757 | 30.817 | CANAL |
| 5567 | 620301.065 | 9276304.593 | 30.743 | EJE |
| 5568 | 620300.225 | 9276305.669 | 30.760 | CANAL |
| 5569 | 620299.487 | 9276306.878 | 30.818 | CANAL |
| 5570 | 620298.936 | 9276307.766 | 30.739 | BORDE |
| 5571 | 620297.855 | 9276308.502 | 29.867 | CANAL |
| 5572 | 620297.134 | 9276309.173 | 29.468 | CANAL |
| 5573 | 620297.347 | 9276309.239 | 29.187 | CANAL |
| 5574 | 620296.666 | 9276310.467 | 29.254 | CANAL |
| 5575 | 620295.997 | 9276311.158 | 30.082 | CANAL |
| 5576 | 620304.657 | 9276316.251 | 30.539 | COMPUERTA |
| 5577 | 620303.762 | 9276316.849 | 30.636 | COMPUERTA |
| 5578 | 620302.797 | 9276317.480 | 30.508 | ESTRUCTURA |
| 5579 | 620302.401 | 9276317.294 | 30.686 | ESTRUCTURA |
| 5580 | 620303.643 | 9276316.457 | 30.417 | ESTRUCTURA |
| 5581 | 620303.853 | 9276315.961 | 30.545 | ESTRUCTURA |
| 5582 | 620305.380 | 9276317.031 | 30.528 | ESTRUCTURA |
| 5583 | 620305.546 | 9276316.819 | 30.514 | ESTRUCTURA |
| 5584 | 620303.757 | 9276318.124 | 30.582 | ESTRUCTURA |
| 5585 | 620303.794 | 9276318.161 | 30.653 | ESTRUCTURA |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5586 | 620303.724 | 9276316.586 | 30.202 | FONDO |
| 5587 | 620307.734 | 9276313.731 | 31.044 | ALCANTARILLA |
| 5588 | 620309.114 | 9276314.163 | 31.009 | ALCANTARILLA |
| 5589 | 620311.294 | 9276310.849 | 30.936 | ALCANTARILLA |
| 5590 | 620311.388 | 9276310.491 | 31.029 | ALCANTARILLA |
| 5591 | 620311.290 | 9276310.296 | 31.067 | CANAL |
| 5592 | 620311.008 | 9276310.787 | 30.999 | CANAL |
| 5593 | 620310.132 | 9276312.296 | 31.019 | EJE |
| 5594 | 620309.420 | 9276313.529 | 31.034 | CANAL |
| 5595 | 620309.222 | 9276313.947 | 30.978 | CANAL |
| 5596 | 620325.106 | 9276322.114 | 31.192 | TERRENO |
| 5597 | 620324.967 | 9276322.512 | 31.583 | BORDE |
| 5598 | 620324.832 | 9276322.588 | 31.415 | BORDE |
| 5599 | 620324.453 | 9276323.369 | 30.904 | CANAL |
| 5600 | 620324.097 | 9276324.133 | 30.750 | CANAL |
| 5601 | 620323.125 | 9276325.269 | 30.801 | EJE |
| 5602 | 620323.045 | 9276325.762 | 30.705 | CANAL |
| 5603 | 620321.358 | 9276327.567 | 30.766 | CANAL |
| 5604 | 620321.041 | 9276328.154 | 30.627 | BORDE |
| 5605 | 620319.997 | 9276329.316 | 30.183 | CANAL |
| 5606 | 620319.531 | 9276329.837 | 29.904 | CANAL |
| 5607 | 620319.420 | 9276329.937 | 29.799 | CANAL |
| 5608 | 620318.677 | 9276330.759 | 28.965 | CANAL |
| 5609 | 620318.056 | 9276331.380 | 29.754 | CANAL |
| 5610 | 620317.432 | 9276332.335 | 30.631 | CANAL |
| 5611 | 620338.169 | 9276350.679 | 29.950 | CANAL |
| 5612 | 620338.430 | 9276350.769 | 29.244 | CANAL |
| 5613 | 620338.673 | 9276349.712 | 29.103 | CANAL |
| 5614 | 620338.802 | 9276349.417 | 30.059 | CANAL |
| 5615 | 620340.789 | 9276348.050 | 30.655 | CANAL |
| 5616 | 620341.366 | 9276347.915 | 30.705 | BORDE |
| 5617 | 620341.718 | 9276347.575 | 30.717 | CANAL |
| 5618 | 620342.205 | 9276346.990 | 30.681 | CANAL |
| 5619 | 620343.034 | 9276346.180 | 30.774 | EJE |
| 5620 | 620344.573 | 9276344.397 | 30.754 | CANAL |
| 5621 | 620345.177 | 9276343.580 | 30.729 | CANAL |
| 5622 | 620346.279 | 9276342.298 | 30.872 | TERRENO |
| 5623 | 620346.527 | 9276341.893 | 30.722 | TERRENO |
| 5624 | 620348.236 | 9276339.977 | 30.975 | TERRENO |
| 5625 | 620339.172 | 9276334.588 | 30.741 | TERRENO |
| 5626 | 620370.257 | 9276362.667 | 31.593 | TERRENO |
| 5627 | 620369.873 | 9276362.938 | 31.548 | BORDE |
| 5628 | 620369.261 | 9276363.867 | 30.928 | CANAL |
| 5629 | 620367.937 | 9276365.117 | 30.850 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5630 | 620367.061 | 9276365.756 | 30.814 | EJE |
| 5631 | 620366.605 | 9276366.462 | 30.716 | CANAL |
| 5632 | 620365.240 | 9276367.715 | 30.606 | CANAL |
| 5633 | 620364.470 | 9276368.284 | 30.593 | BORDE |
| 5634 | 620363.144 | 9276368.961 | 29.756 | CANAL |
| 5635 | 620362.033 | 9276369.982 | 29.373 | CANAL |
| 5636 | 620361.377 | 9276370.189 | 29.487 | CANAL |
| 5637 | 620360.581 | 9276371.234 | 30.014 | CANAL |
| 5638 | 620360.210 | 9276371.935 | 30.618 | CANAL |
| 5639 | 620383.518 | 9276372.530 | 31.551 | TERRENO |
| 5640 | 620386.362 | 9276377.339 | 30.487 | TERRENO |
| 5641 | 620394.968 | 9276385.291 | 31.910 | TERRENO |
| 5642 | 620394.395 | 9276385.362 | 31.597 | BORDE |
| 5643 | 620393.588 | 9276385.669 | 30.966 | CANAL |
| 5644 | 620392.847 | 9276386.536 | 30.849 | CANAL |
| 5645 | 620391.789 | 9276387.725 | 30.879 | EJE |
| 5646 | 620390.994 | 9276388.874 | 30.737 | CANAL |
| 5647 | 620390.275 | 9276389.616 | 30.837 | CANAL |
| 5648 | 620389.560 | 9276390.483 | 30.882 | BORDE |
| 5649 | 620387.976 | 9276391.869 | 29.923 | CANAL |
| 5650 | 620387.272 | 9276392.160 | 29.932 | CANAL |
| 5651 | 620386.896 | 9276392.994 | 29.591 | CANAL |
| 5652 | 620385.753 | 9276394.220 | 30.068 | CANAL |
| 5653 | 620385.748 | 9276394.618 | 30.678 | CANAL |
| 5654 | 620409.987 | 9276415.818 | 30.373 | CANAL |
| 5655 | 620410.396 | 9276415.919 | 29.981 | CANAL |
| 5656 | 620410.381 | 9276415.664 | 30.006 | CANAL |
| 5657 | 620410.670 | 9276414.715 | 29.532 | CANAL |
| 5658 | 620411.473 | 9276413.911 | 29.589 | CANAL |
| 5659 | 620411.631 | 9276413.881 | 30.225 | CANAL |
| 5660 | 620413.291 | 9276412.780 | 30.804 | BORDE |
| 5661 | 620413.811 | 9276412.262 | 30.783 | CANAL |
| 5662 | 620414.451 | 9276411.590 | 30.684 | CANAL |
| 5663 | 620415.689 | 9276410.239 | 30.706 | EJE |
| 5664 | 620417.036 | 9276408.686 | 30.767 | CANAL |
| 5665 | 620417.405 | 9276408.268 | 30.698 | CANAL |
| 5666 | 620417.948 | 9276407.835 | 30.774 | BORDE |
| 5667 | 620419.298 | 9276406.413 | 31.443 | EJE |
| 5668 | 620433.385 | 9276422.302 | 31.087 | TERRENO |
| 5669 | 620441.261 | 9276426.919 | 31.670 | TERRENO |
| 5670 | 620440.978 | 9276427.230 | 31.458 | BORDE |
| 5671 | 620440.768 | 9276427.749 | 31.279 | BORDE |
| 5672 | 620440.290 | 9276428.402 | 30.889 | CANAL |
| 5673 | 620439.625 | 9276429.466 | 30.778 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5674 | 620438.332 | 9276430.809 | 30.839 | EJE |
| 5675 | 620437.554 | 9276431.805 | 30.792 | CANAL |
| 5676 | 620437.273 | 9276432.133 | 30.731 | CANAL |
| 5677 | 620436.269 | 9276433.192 | 30.712 | BORDE |
| 5678 | 620435.220 | 9276434.112 | 30.174 | CANAL |
| 5679 | 620434.548 | 9276434.618 | 29.672 | CANAL |
| 5680 | 620434.718 | 9276434.661 | 29.358 | CANAL |
| 5681 | 620434.417 | 9276435.248 | 29.237 | CANAL |
| 5682 | 620433.522 | 9276436.148 | 29.897 | CANAL |
| 5683 | 620433.025 | 9276436.858 | 30.465 | CANAL |
| 5684 | 620432.850 | 9276437.326 | 30.887 | CANAL |
| 5685 | 620457.292 | 9276460.335 | 31.658 | CANAL |
| 5686 | 620457.438 | 9276460.213 | 30.993 | CANAL |
| 5687 | 620458.138 | 9276459.328 | 29.957 | CANAL |
| 5688 | 620458.700 | 9276458.912 | 29.461 | CANAL |
| 5689 | 620459.543 | 9276457.884 | 29.299 | CANAL |
| 5690 | 620460.028 | 9276457.630 | 30.120 | CANAL |
| 5691 | 620461.162 | 9276456.768 | 30.777 | BORDE |
| 5692 | 620461.616 | 9276456.200 | 30.708 | CANAL |
| 5693 | 620461.876 | 9276455.941 | 30.725 | CANAL |
| 5694 | 620463.422 | 9276454.460 | 30.601 | EJE |
| 5695 | 620464.835 | 9276453.244 | 30.695 | CANAL |
| 5696 | 620465.133 | 9276452.959 | 30.566 | CANAL |
| 5697 | 620466.113 | 9276451.993 | 30.752 | BORDE |
| 5698 | 620466.565 | 9276451.714 | 30.647 | TERRENO |
| 5699 | 620485.995 | 9276472.093 | 30.812 | TERRENO |
| 5700 | 620486.030 | 9276472.071 | 30.839 | BORDE |
| 5701 | 620485.739 | 9276472.536 | 30.711 | BORDE |
| 5702 | 620485.445 | 9276473.033 | 30.672 | CANAL |
| 5703 | 620485.584 | 9276473.047 | 30.569 | CANAL |
| 5704 | 620484.491 | 9276474.083 | 30.581 | EJE |
| 5705 | 620483.664 | 9276474.915 | 30.554 | CANAL |
| 5706 | 620482.981 | 9276475.843 | 30.580 | CANAL |
| 5707 | 621222.073 | 9276532.378 | 32.280 | CANAL |
| 5708 | 621223.461 | 9276533.492 | 32.121 | CANAL |
| 5709 | 621224.537 | 9276534.499 | 32.193 | EJE |
| 5710 | 621225.726 | 9276535.453 | 32.185 | CANAL |
| 5711 | 621226.848 | 9276536.231 | 32.204 | CANAL |
| 5712 | 621228.693 | 9276537.497 | 32.251 | BORDE |
| 5713 | 621229.357 | 9276537.995 | 31.703 | CANAL |
| 5714 | 621230.372 | 9276538.935 | 30.661 | CANAL |
| 5715 | 621228.074 | 9276525.220 | 32.577 | TERRENO |
| 5716 | 621228.511 | 9276525.685 | 33.005 | TERRENO |
| 5717 | 621229.437 | 9276526.705 | 32.446 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5718 | 621230.634 | 9276528.614 | 32.426 | CANAL |
| 5719 | 621231.290 | 9276529.556 | 32.269 | CANAL |
| 5720 | 621232.381 | 9276530.578 | 32.277 | EJE |
| 5721 | 621234.054 | 9276532.037 | 32.427 | CANAL |
| 5722 | 621234.393 | 9276532.519 | 32.265 | CANAL |
| 5723 | 621235.884 | 9276533.787 | 32.271 | BORDE |
| 5724 | 621236.372 | 9276534.349 | 31.747 | CANAL |
| 5725 | 621236.936 | 9276535.003 | 30.571 | CANAL |
| 5726 | 621235.799 | 9276522.557 | 31.824 | TERRENO |
| 5727 | 621236.315 | 9276523.389 | 32.489 | TERRENO |
| 5728 | 621237.017 | 9276524.138 | 32.513 | BORDE |
| 5729 | 621237.596 | 9276524.783 | 32.320 | CANAL |
| 5730 | 621237.738 | 9276524.970 | 32.179 | CANAL |
| 5731 | 621239.192 | 9276526.533 | 32.173 | EJE |
| 5732 | 621240.295 | 9276527.375 | 32.129 | CANAL |
| 5733 | 621241.150 | 9276528.166 | 32.084 | CANAL |
| 5734 | 621242.940 | 9276529.692 | 32.141 | BORDE |
| 5735 | 621243.225 | 9276530.134 | 31.624 | CANAL |
| 5736 | 621243.635 | 9276530.661 | 30.571 | CANAL |
| 5737 | 621254.643 | 9276508.498 | 31.686 | TERRENO |
| 5738 | 621255.713 | 9276509.306 | 32.622 | TERRENO |
| 5739 | 621256.053 | 9276509.725 | 32.465 | TERRENO |
| 5740 | 621257.070 | 9276511.411 | 31.901 | TERRENO |
| 5741 | 621257.373 | 9276512.298 | 32.113 | CANAL |
| 5742 | 621257.957 | 9276512.817 | 31.895 | CANAL |
| 5743 | 621259.187 | 9276514.121 | 32.044 | EJE |
| 5744 | 621260.392 | 9276515.308 | 32.068 | CANAL |
| 5745 | 621261.678 | 9276516.443 | 32.022 | CANAL |
| 5746 | 621262.217 | 9276517.182 | 31.987 | BORDE |
| 5747 | 621262.752 | 9276517.642 | 31.289 | CANAL |
| 5748 | 621262.891 | 9276517.878 | 30.569 | CANAL |
| 5749 | 621268.330 | 9276502.627 | 32.742 | BORDE |
| 5750 | 621268.312 | 9276502.920 | 32.220 | BORDE |
| 5751 | 621269.204 | 9276503.693 | 32.081 | CANAL |
| 5752 | 621269.673 | 9276504.299 | 31.785 | CANAL |
| 5753 | 621271.055 | 9276505.740 | 31.902 | EJE |
| 5754 | 621272.226 | 9276506.894 | 31.932 | CANAL |
| 5755 | 621272.787 | 9276507.494 | 32.009 | CANAL |
| 5756 | 621273.895 | 9276508.932 | 31.834 | BORDE |
| 5757 | 621274.270 | 9276509.935 | 31.191 | CANAL |
| 5758 | 621274.219 | 9276510.126 | 30.728 | CANAL |
| 5759 | 621284.981 | 9276486.948 | 31.884 | TERRENO |
| 5760 | 621286.182 | 9276488.261 | 32.076 | TERRENO |
| 5761 | 621287.481 | 9276489.493 | 32.533 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5762 | 621287.972 | 9276489.915 | 32.049 | BORDE |
| 5763 | 621288.541 | 9276490.925 | 32.141 | CANAL |
| 5764 | 621288.990 | 9276491.826 | 31.889 | CANAL |
| 5765 | 621290.145 | 9276493.493 | 32.114 | EJE |
| 5766 | 621291.622 | 9276495.433 | 32.161 | CANAL |
| 5767 | 621292.023 | 9276495.776 | 31.968 | CANAL |
| 5768 | 621292.462 | 9276496.754 | 31.906 | BORDE |
| 5769 | 621293.015 | 9276497.294 | 31.320 | CANAL |
| 5770 | 621293.258 | 9276497.535 | 30.436 | CANAL |
| 5771 | 621305.134 | 9276473.813 | 32.048 | TERRENO |
| 5772 | 621306.330 | 9276475.189 | 31.950 | TERRENO |
| 5773 | 621308.101 | 9276477.554 | 32.188 | TERRENO |
| 5774 | 621308.604 | 9276478.468 | 32.325 | CANAL |
| 5775 | 621308.947 | 9276479.101 | 32.160 | CANAL |
| 5776 | 621309.828 | 9276480.389 | 32.225 | EJE |
| 5777 | 621310.779 | 9276481.847 | 32.288 | CANAL |
| 5778 | 621311.666 | 9276483.062 | 32.239 | CANAL |
| 5779 | 621312.205 | 9276483.611 | 32.087 | BORDE |
| 5780 | 621312.800 | 9276484.495 | 31.261 | CANAL |
| 5781 | 621312.839 | 9276484.758 | 30.574 | CANAL |
| 5782 | 621324.885 | 9276464.546 | 33.479 | BORDE |
| 5783 | 621325.055 | 9276464.256 | 33.818 | BORDE |
| 5784 | 621325.603 | 9276465.114 | 32.514 | BORDE |
| 5785 | 621326.516 | 9276465.617 | 32.421 | CANAL |
| 5786 | 621327.016 | 9276466.331 | 32.194 | CANAL |
| 5787 | 621327.815 | 9276467.320 | 32.177 | EJE |
| 5788 | 621329.631 | 9276469.206 | 32.277 | CANAL |
| 5789 | 621329.649 | 9276469.312 | 32.271 | CANAL |
| 5790 | 621330.811 | 9276470.818 | 32.116 | BORDE |
| 5791 | 621331.382 | 9276471.442 | 31.529 | CANAL |
| 5792 | 621331.474 | 9276471.729 | 30.723 | CANAL |
| 5793 | 621342.802 | 9276454.644 | 32.350 | ALCANTARILLA |
| 5794 | 621343.626 | 9276453.762 | 32.307 | ALCANTARILLA |
| 5795 | 621348.585 | 9276454.270 | 32.329 | ALCANTARILLA |
| 5796 | 621349.043 | 9276453.851 | 32.418 | ALCANTARILLA |
| 5797 | 621350.216 | 9276453.649 | 32.176 | CANAL |
| 5798 | 621351.188 | 9276453.489 | 32.147 | CANAL |
| 5799 | 621354.199 | 9276454.550 | 31.976 | CANAL |
| 5800 | 621354.791 | 9276454.876 | 32.014 | CANAL |
| 5801 | 621355.143 | 9276454.582 | 31.913 | CANAL |
| 5802 | 621354.429 | 9276455.464 | 32.001 | COMPUERTA |
| 5803 | 621354.216 | 9276455.710 | 31.903 | COMPUERTA |
| 5804 | 621352.955 | 9276456.913 | 32.078 | CANAL |
| 5805 | 621352.669 | 9276456.527 | 31.985 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5806 | 621352.960 | 9276456.431 | 31.892 | CANAL |
| 5807 | 621352.858 | 9276456.636 | 32.089 | CANAL |
| 5808 | 621350.914 | 9276455.899 | 31.910 | CANAL |
| 5809 | 621349.448 | 9276455.459 | 32.104 | CANAL |
| 5810 | 621343.148 | 9276452.068 | 32.211 | CANAL |
| 5811 | 621340.771 | 9276454.580 | 31.795 | CANAL |
| 5812 | 621343.728 | 9276453.684 | 32.473 | CANAL |
| 5813 | 621344.677 | 9276453.806 | 32.252 | CANAL |
| 5814 | 621346.494 | 9276453.684 | 32.411 | EJE |
| 5815 | 621347.765 | 9276453.607 | 32.438 | CANAL |
| 5816 | 621348.909 | 9276453.678 | 32.407 | CANAL |
| 5817 | 621346.883 | 9276442.228 | 32.261 | TERRENO |
| 5818 | 621349.141 | 9276442.633 | 32.507 | TERRENO |
| 5819 | 621350.405 | 9276443.538 | 32.249 | TERRENO |
| 5820 | 621352.827 | 9276445.069 | 32.537 | CANAL |
| 5821 | 621353.942 | 9276445.973 | 32.388 | CANAL |
| 5822 | 621355.357 | 9276447.187 | 32.490 | EJE |
| 5823 | 621356.678 | 9276448.182 | 32.462 | CANAL |
| 5824 | 621357.256 | 9276449.321 | 32.233 | CANAL |
| 5825 | 621358.355 | 9276450.686 | 32.422 | BORDE |
| 5826 | 621358.969 | 9276451.465 | 31.838 | CANAL |
| 5827 | 621359.309 | 9276452.012 | 30.830 | CANAL |
| 5828 | 621357.448 | 9276434.149 | 32.511 | TERRENO |
| 5829 | 621357.932 | 9276434.188 | 32.958 | TERRENO |
| 5830 | 621359.671 | 9276435.584 | 32.487 | TERRENO |
| 5831 | 621361.898 | 9276437.551 | 32.630 | CANAL |
| 5832 | 621362.726 | 9276438.330 | 32.307 | CANAL |
| 5833 | 621364.197 | 9276439.920 | 32.460 | EJE |
| 5834 | 621366.128 | 9276441.702 | 32.623 | CANAL |
| 5835 | 621367.269 | 9276443.050 | 32.524 | CANAL |
| 5836 | 621367.642 | 9276443.418 | 32.597 | BORDE |
| 5837 | 621368.388 | 9276444.178 | 32.298 | CANAL |
| 5838 | 621368.905 | 9276444.650 | 31.705 | CANAL |
| 5839 | 621369.224 | 9276445.193 | 30.994 | CANAL |
| 5840 | 621377.912 | 9276421.281 | 33.420 | BORDE |
| 5841 | 621378.169 | 9276421.722 | 32.946 | BORDE |
| 5842 | 621378.759 | 9276421.804 | 32.643 | CANAL |
| 5843 | 621379.527 | 9276422.378 | 32.558 | CANAL |
| 5844 | 621381.161 | 9276423.771 | 32.605 | EJE |
| 5845 | 621382.161 | 9276424.643 | 32.442 | CANAL |
| 5846 | 621383.125 | 9276425.366 | 32.327 | CANAL |
| 5847 | 621384.509 | 9276426.833 | 32.359 | BORDE |
| 5848 | 621385.316 | 9276427.566 | 31.972 | CANAL |
| 5849 | 621385.769 | 9276428.186 | 31.152 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5850 | 621401.900 | 9276397.148 | 33.087 | BORDE |
| 5851 | 621402.016 | 9276397.117 | 32.920 | BORDE |
| 5852 | 621402.538 | 9276397.753 | 32.509 | CANAL |
| 5853 | 621403.032 | 9276398.354 | 32.667 | CANAL |
| 5854 | 621404.273 | 9276399.608 | 32.578 | EJE |
| 5855 | 621405.678 | 9276400.840 | 32.612 | CANAL |
| 5856 | 621407.222 | 9276402.005 | 32.578 | CANAL |
| 5857 | 621408.304 | 9276402.909 | 32.534 | BORDE |
| 5858 | 621408.653 | 9276403.652 | 32.332 | CANAL |
| 5859 | 621409.193 | 9276403.999 | 31.782 | CANAL |
| 5860 | 621409.455 | 9276404.099 | 30.864 | CANAL |
| 5861 | 621425.283 | 9276373.681 | 32.871 | BORDE |
| 5862 | 621425.453 | 9276373.969 | 32.643 | BORDE |
| 5863 | 621425.895 | 9276374.445 | 32.701 | CANAL |
| 5864 | 621426.456 | 9276375.051 | 32.498 | CANAL |
| 5865 | 621428.178 | 9276376.431 | 32.694 | EJE |
| 5866 | 621428.719 | 9276376.781 | 32.546 | CANAL |
| 5867 | 621429.487 | 9276377.474 | 32.360 | CANAL |
| 5868 | 621430.714 | 9276378.548 | 32.385 | BORDE |
| 5869 | 621431.371 | 9276379.309 | 31.817 | CANAL |
| 5870 | 621431.697 | 9276379.492 | 31.371 | CANAL |
| 5871 | 621435.138 | 9276373.335 | 32.614 | ALCANTARILLA |
| 5872 | 621435.126 | 9276373.203 | 32.650 | ALCANTARILLA |
| 5873 | 621436.310 | 9276371.986 | 32.589 | ALCANTARILLA |
| 5874 | 621436.709 | 9276372.032 | 32.699 | ALCANTARILLA |
| 5875 | 621437.226 | 9276372.957 | 32.383 | COMPUERTA |
| 5876 | 621436.899 | 9276373.679 | 32.233 | COMPUERTA |
| 5877 | 621430.208 | 9276368.924 | 32.659 | ALCANTARILLA |
| 5878 | 621430.137 | 9276369.051 | 32.505 | ALCANTARILLA |
| 5879 | 621431.055 | 9276368.121 | 32.646 | ALCANTARILLA |
| 5880 | 621431.624 | 9276367.610 | 32.696 | ALCANTARILLA |
| 5881 | 621437.430 | 9276372.733 | 32.338 | ESTRUCTURA |
| 5882 | 621437.306 | 9276372.823 | 32.335 | ESTRUCTURA |
| 5883 | 621437.030 | 9276372.620 | 32.423 | ESTRUCTURA |
| 5884 | 621435.732 | 9276373.276 | 32.475 | ESTRUCTURA |
| 5885 | 621435.711 | 9276373.887 | 32.357 | ESTRUCTURA |
| 5886 | 621435.488 | 9276374.200 | 32.380 | ESTRUCTURA |
| 5887 | 621444.674 | 9276350.228 | 32.951 | BORDE |
| 5888 | 621445.609 | 9276350.147 | 33.079 | BORDE |
| 5889 | 621445.971 | 9276351.157 | 33.090 | BORDE |
| 5890 | 621446.979 | 9276352.469 | 32.866 | CANAL |
| 5891 | 621447.855 | 9276353.230 | 32.708 | CANAL |
| 5892 | 621449.535 | 9276354.208 | 32.904 | EJE |
| 5893 | 621450.171 | 9276354.638 | 32.578 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5894 | 621451.883 | 9276355.861 | 32.808 | CANAL |
| 5895 | 621452.668 | 9276356.577 | 32.722 | BORDE |
| 5896 | 621453.841 | 9276357.147 | 32.032 | CANAL |
| 5897 | 621453.946 | 9276357.525 | 31.169 | CANAL |
| 5898 | 621462.897 | 9276331.669 | 34.040 | TERRENO |
| 5899 | 621466.070 | 9276329.259 | 34.037 | BORDE |
| 5900 | 621466.609 | 9276329.175 | 33.596 | BORDE |
| 5901 | 621467.278 | 9276329.415 | 33.169 | BORDE |
| 5902 | 621467.923 | 9276329.586 | 33.048 | CANAL |
| 5903 | 621469.006 | 9276330.599 | 32.921 | CANAL |
| 5904 | 621471.009 | 9276332.078 | 33.004 | EJE |
| 5905 | 621471.949 | 9276332.732 | 33.004 | CANAL |
| 5906 | 621472.804 | 9276333.552 | 32.863 | CANAL |
| 5907 | 621473.360 | 9276334.240 | 32.803 | BORDE |
| 5908 | 621473.825 | 9276335.011 | 32.011 | CANAL |
| 5909 | 621474.426 | 9276335.272 | 30.841 | CANAL |
| 5910 | 621488.203 | 9276306.636 | 33.533 | BORDE |
| 5911 | 621488.966 | 9276307.454 | 33.406 | BORDE |
| 5912 | 621489.223 | 9276307.279 | 33.121 | BORDE |
| 5913 | 621489.358 | 9276307.519 | 33.024 | CANAL |
| 5914 | 621490.173 | 9276307.870 | 32.809 | CANAL |
| 5915 | 621491.046 | 9276308.655 | 32.751 | EJE |
| 5916 | 621492.321 | 9276309.803 | 32.922 | CANAL |
| 5917 | 621493.169 | 9276310.445 | 32.775 | CANAL |
| 5918 | 621494.362 | 9276311.743 | 32.781 | BORDE |
| 5919 | 621494.824 | 9276311.798 | 32.137 | CANAL |
| 5920 | 621495.184 | 9276312.296 | 31.173 | CANAL |
| 5921 | 621500.684 | 9276295.041 | 33.080 | TERRENO |
| 5922 | 621500.913 | 9276295.351 | 33.084 | TERRENO |
| 5923 | 621501.213 | 9276295.618 | 33.013 | TERRENO |
| 5924 | 621501.418 | 9276295.932 | 33.000 | CANAL |
| 5925 | 621502.465 | 9276296.686 | 32.861 | CANAL |
| 5926 | 621503.622 | 9276297.872 | 32.953 | EJE |
| 5927 | 621504.594 | 9276298.809 | 32.933 | CANAL |
| 5928 | 621505.248 | 9276299.262 | 32.734 | CANAL |
| 5929 | 621506.139 | 9276300.730 | 32.459 | BORDE |
| 5930 | 621506.353 | 9276301.049 | 32.022 | CANAL |
| 5931 | 621506.719 | 9276301.241 | 30.962 | CANAL |
| 5932 | 621512.623 | 9276286.817 | 32.619 | TERRENO |
| 5933 | 621512.844 | 9276287.096 | 32.856 | TERRENO |
| 5934 | 621513.082 | 9276287.098 | 32.900 | CANAL |
| 5935 | 621513.728 | 9276287.335 | 32.640 | CANAL |
| 5936 | 621514.730 | 9276288.764 | 32.792 | EJE |
| 5937 | 621516.053 | 9276290.121 | 32.803 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5938 | 621516.682 | 9276290.774 | 32.715 | CANAL |
| 5939 | 621516.888 | 9276291.095 | 32.464 | BORDE |
| 5940 | 621519.383 | 9276277.904 | 32.891 | TERRENO |
| 5941 | 621522.184 | 9276277.868 | 32.865 | TERRENO |
| 5942 | 621522.575 | 9276278.978 | 32.841 | CANAL |
| 5943 | 621522.895 | 9276279.531 | 32.828 | CANAL |
| 5944 | 621523.977 | 9276281.987 | 32.751 | EJE |
| 5945 | 621524.799 | 9276283.083 | 32.623 | CANAL |
| 5946 | 621525.342 | 9276284.152 | 32.418 | CANAL |
| 5947 | 621526.125 | 9276285.510 | 32.453 | BORDE |
| 5948 | 621526.669 | 9276286.166 | 32.073 | CANAL |
| 5949 | 621526.692 | 9276286.617 | 30.976 | CANAL |
| 5950 | 621532.544 | 9276271.060 | 31.147 | TERRENO |
| 5951 | 621533.124 | 9276272.755 | 32.064 | TERRENO |
| 5952 | 621533.535 | 9276273.997 | 32.613 | BORDE |
| 5953 | 621533.650 | 9276274.613 | 32.582 | CANAL |
| 5954 | 621533.929 | 9276275.258 | 32.342 | CANAL |
| 5955 | 621534.666 | 9276277.175 | 32.588 | EJE |
| 5956 | 621535.173 | 9276278.298 | 32.560 | CANAL |
| 5957 | 621535.584 | 9276279.425 | 32.319 | CANAL |
| 5958 | 621536.290 | 9276280.800 | 32.290 | BORDE |
| 5959 | 621536.582 | 9276281.584 | 31.754 | CANAL |
| 5960 | 621536.629 | 9276281.864 | 31.000 | CANAL |
| 5961 | 621561.337 | 9276259.644 | 31.189 | TERRENO |
| 5962 | 621562.066 | 9276260.739 | 30.975 | TERRENO |
| 5963 | 621562.563 | 9276262.224 | 31.756 | TERRENO |
| 5964 | 621563.549 | 9276263.990 | 32.345 | BORDE |
| 5965 | 621563.718 | 9276265.026 | 32.498 | CANAL |
| 5966 | 621564.464 | 9276266.816 | 32.518 | CANAL |
| 5967 | 621564.928 | 9276268.385 | 32.507 | EJE |
| 5968 | 621565.255 | 9276269.997 | 32.485 | CANAL |
| 5969 | 621565.233 | 9276269.909 | 32.238 | CANAL |
| 5970 | 621565.743 | 9276271.758 | 32.177 | CANAL |
| 5971 | 621566.002 | 9276272.036 | 32.132 | CANAL |
| 5972 | 621566.046 | 9276272.484 | 31.201 | CANAL |
| 5973 | 621593.897 | 9276253.082 | 31.310 | TERRENO |
| 5974 | 621594.491 | 9276253.869 | 32.495 | TERRENO |
| 5975 | 621594.531 | 9276254.873 | 32.537 | BORDE |
| 5976 | 621594.685 | 9276256.050 | 32.467 | CANAL |
| 5977 | 621594.988 | 9276256.876 | 32.356 | CANAL |
| 5978 | 621595.238 | 9276257.941 | 32.268 | EJE |
| 5979 | 621595.818 | 9276259.314 | 32.311 | CANAL |
| 5980 | 621596.560 | 9276261.606 | 32.472 | CANAL |
| 5981 | 621596.843 | 9276261.995 | 32.200 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 5982 | 621597.324 | 9276262.458 | 32.058 | BORDE |
| 5983 | 621597.564 | 9276262.960 | 31.006 | CANAL |
| 5984 | 621606.493 | 9276250.504 | 32.616 | TERRENO |
| 5985 | 621622.256 | 9276241.943 | 31.485 | TERRENO |
| 5986 | 621622.932 | 9276243.146 | 31.379 | TERRENO |
| 5987 | 621623.322 | 9276245.529 | 32.204 | TERRENO |
| 5988 | 621623.729 | 9276246.114 | 32.597 | BORDE |
| 5989 | 621624.270 | 9276248.092 | 32.553 | CANAL |
| 5990 | 621624.482 | 9276248.857 | 32.267 | CANAL |
| 5991 | 621625.083 | 9276251.117 | 32.529 | EJE |
| 5992 | 621625.377 | 9276252.392 | 32.532 | CANAL |
| 5993 | 621625.516 | 9276253.729 | 32.419 | CANAL |
| 5994 | 621625.744 | 9276254.579 | 32.195 | BORDE |
| 5995 | 621625.841 | 9276255.496 | 31.642 | CANAL |
| 5996 | 621625.876 | 9276255.586 | 30.978 | CANAL |
| 5997 | 621639.185 | 9276241.697 | 32.279 | TERRENO |
| 5998 | 621638.972 | 9276240.449 | 31.368 | TERRENO |
| 5999 | 621638.900 | 9276240.823 | 32.243 | TERRENO |
| 6000 | 621639.283 | 9276242.192 | 32.694 | BORDE |
| 6001 | 621639.668 | 9276243.442 | 32.592 | BORDE |
| 6002 | 621639.879 | 9276244.091 | 32.601 | CANAL |
| 6003 | 621640.260 | 9276245.416 | 32.589 | CANAL |
| 6004 | 621640.987 | 9276246.625 | 32.514 | EJE |
| 6005 | 621641.545 | 9276247.881 | 32.369 | CANAL |
| 6006 | 621641.259 | 9276249.161 | 32.470 | CANAL |
| 6007 | 621641.671 | 9276250.403 | 32.305 | BORDE |
| 6008 | 621642.375 | 9276251.343 | 32.110 | CANAL |
| 6009 | 621642.292 | 9276251.956 | 31.252 | CANAL |
| 6010 | 621655.609 | 9276238.489 | 31.386 | TERRENO |
| 6011 | 621655.643 | 9276238.926 | 32.007 | TERRENO |
| 6012 | 621656.190 | 9276240.516 | 32.521 | TERRENO |
| 6013 | 621656.195 | 9276241.951 | 32.669 | BORDE |
| 6014 | 621656.252 | 9276242.463 | 32.616 | CANAL |
| 6015 | 621656.582 | 9276244.083 | 32.610 | CANAL |
| 6016 | 621656.916 | 9276245.488 | 32.567 | EJE |
| 6017 | 621657.173 | 9276246.497 | 32.506 | CANAL |
| 6018 | 621657.503 | 9276247.467 | 32.548 | CANAL |
| 6019 | 621657.702 | 9276248.850 | 32.229 | BORDE |
| 6020 | 621657.807 | 9276250.033 | 32.019 | CANAL |
| 6021 | 621657.664 | 9276250.256 | 31.300 | CANAL |
| 6022 | 621657.944 | 9276251.052 | 30.890 | CANAL |
| 6023 | 621657.462 | 9276252.245 | 30.907 | CANAL |
| 6024 | 621657.638 | 9276252.219 | 31.646 | CANAL |
| 6025 | 621658.152 | 9276252.553 | 31.640 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6026 | 621675.268 | 9276247.386 | 32.868 | ALCANTARILLA |
| 6027 | 621675.164 | 9276247.187 | 32.830 | ALCANTARILLA |
| 6028 | 621676.951 | 9276246.452 | 32.747 | ALCANTARILLA |
| 6029 | 621677.527 | 9276246.762 | 32.791 | ALCANTARILLA |
| 6030 | 621677.252 | 9276247.645 | 32.574 | COMPUERTA |
| 6031 | 621677.489 | 9276248.047 | 32.596 | ESTRUCTURA |
| 6032 | 621677.414 | 9276248.161 | 32.572 | ESTRUCTURA |
| 6033 | 621677.255 | 9276247.889 | 32.468 | ESTRUCTURA |
| 6034 | 621675.639 | 9276248.932 | 32.232 | ESTRUCTURA |
| 6035 | 621675.767 | 9276248.386 | 32.387 | ESTRUCTURA |
| 6036 | 621675.483 | 9276247.912 | 32.549 | ESTRUCTURA |
| 6037 | 621671.484 | 9276243.266 | 32.752 | ALCANTARILLA |
| 6038 | 621671.234 | 9276243.207 | 32.693 | ALCANTARILLA |
| 6039 | 621672.525 | 9276242.771 | 32.708 | ALCANTARILLA |
| 6040 | 621673.284 | 9276242.560 | 32.810 | ALCANTARILLA |
| 6041 | 621673.610 | 9276243.020 | 32.561 | CANAL |
| 6042 | 621674.027 | 9276243.171 | 32.582 | CANAL |
| 6043 | 621674.688 | 9276244.541 | 32.717 | EJE |
| 6044 | 621676.248 | 9276246.259 | 32.580 | CANAL |
| 6045 | 621676.613 | 9276246.569 | 32.686 | CANAL |
| 6046 | 621676.000 | 9276247.499 | 32.494 | COMPUERTA |
| 6047 | 621694.668 | 9276239.969 | 32.731 | TERRENO |
| 6048 | 621694.750 | 9276238.780 | 31.329 | TERRENO |
| 6049 | 621694.694 | 9276239.176 | 32.106 | TERRENO |
| 6050 | 621694.379 | 9276240.019 | 32.824 | BORDE |
| 6051 | 621694.692 | 9276240.891 | 32.613 | CANAL |
| 6052 | 621694.892 | 9276242.245 | 32.452 | CANAL |
| 6053 | 621695.002 | 9276243.953 | 32.590 | EJE |
| 6054 | 621695.185 | 9276245.541 | 32.637 | CANAL |
| 6055 | 621694.990 | 9276246.691 | 32.550 | CANAL |
| 6056 | 621695.190 | 9276247.421 | 32.488 | BORDE |
| 6057 | 621695.384 | 9276248.137 | 32.124 | CANAL |
| 6058 | 621695.450 | 9276248.373 | 31.844 | CANAL |
| 6059 | 621721.691 | 9276236.680 | 31.275 | TERRENO |
| 6060 | 621722.153 | 9276237.882 | 31.314 | TERRENO |
| 6061 | 621722.178 | 9276239.694 | 32.542 | BORDE |
| 6062 | 621722.482 | 9276240.305 | 32.617 | BORDE |
| 6063 | 621722.475 | 9276241.023 | 32.645 | CANAL |
| 6064 | 621722.485 | 9276241.637 | 32.457 | CANAL |
| 6065 | 621722.567 | 9276243.215 | 32.543 | EJE |
| 6066 | 621722.739 | 9276244.396 | 32.419 | CANAL |
| 6067 | 621722.713 | 9276246.062 | 32.437 | CANAL |
| 6068 | 621722.916 | 9276247.149 | 32.321 | BORDE |
| 6069 | 621722.971 | 9276248.058 | 31.908 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6070 | 621722.825 | 9276248.688 | 31.009 | CANAL |
| 6071 | 621748.310 | 9276238.986 | 32.563 | TERRENO |
| 6072 | 621748.143 | 9276237.935 | 31.552 | TERRENO |
| 6073 | 621748.014 | 9276238.207 | 32.513 | TERRENO |
| 6074 | 621747.964 | 9276238.749 | 32.687 | TERRENO |
| 6075 | 621748.078 | 9276239.438 | 32.643 | BORDE |
| 6076 | 621748.075 | 9276240.073 | 32.700 | CANAL |
| 6077 | 621748.062 | 9276240.595 | 32.606 | CANAL |
| 6078 | 621748.267 | 9276242.604 | 32.650 | EJE |
| 6079 | 621748.340 | 9276244.521 | 32.740 | CANAL |
| 6080 | 621748.415 | 9276244.774 | 32.700 | CANAL |
| 6081 | 621748.427 | 9276246.437 | 32.481 | BORDE |
| 6082 | 621748.363 | 9276247.347 | 32.167 | CANAL |
| 6083 | 621748.185 | 9276248.056 | 31.609 | CANAL |
| 6084 | 621748.064 | 9276248.437 | 30.926 | CANAL |
| 6085 | 621775.757 | 9276235.606 | 31.246 | TERRENO |
| 6086 | 621776.070 | 9276235.975 | 31.502 | TERRENO |
| 6087 | 621776.477 | 9276237.277 | 32.543 | TERRENO |
| 6088 | 621776.283 | 9276237.467 | 32.566 | TERRENO |
| 6089 | 621776.544 | 9276239.208 | 32.694 | CANAL |
| 6090 | 621776.363 | 9276239.633 | 32.676 | CANAL |
| 6091 | 621776.609 | 9276241.704 | 32.652 | EJE |
| 6092 | 621776.756 | 9276243.753 | 32.759 | CANAL |
| 6093 | 621776.774 | 9276244.484 | 32.676 | CANAL |
| 6094 | 621776.559 | 9276245.626 | 32.573 | BORDE |
| 6095 | 621776.597 | 9276246.187 | 32.228 | CANAL |
| 6096 | 621776.387 | 9276246.727 | 31.247 | CANAL |
| 6097 | 621803.259 | 9276237.323 | 32.340 | TERRENO |
| 6098 | 621802.859 | 9276235.042 | 31.278 | TERRENO |
| 6099 | 621803.138 | 9276235.414 | 31.619 | TERRENO |
| 6100 | 621803.044 | 9276236.175 | 32.024 | TERRENO |
| 6101 | 621803.279 | 9276237.904 | 32.428 | BORDE |
| 6102 | 621803.161 | 9276237.929 | 32.339 | CANAL |
| 6103 | 621803.351 | 9276239.182 | 32.318 | CANAL |
| 6104 | 621803.549 | 9276241.564 | 32.527 | EJE |
| 6105 | 621803.740 | 9276243.006 | 32.659 | CANAL |
| 6106 | 621803.818 | 9276243.693 | 32.541 | CANAL |
| 6107 | 621803.816 | 9276245.119 | 32.377 | BORDE |
| 6108 | 621803.835 | 9276245.528 | 32.334 | CANAL |
| 6109 | 621803.758 | 9276245.371 | 32.329 | CANAL |
| 6110 | 621829.531 | 9276233.702 | 31.272 | TERRENO |
| 6111 | 621829.906 | 9276234.779 | 31.841 | TERRENO |
| 6112 | 621829.748 | 9276235.295 | 32.692 | TERRENO |
| 6113 | 621829.928 | 9276236.613 | 32.739 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6114 | 621829.879 | 9276236.887 | 32.572 | CANAL |
| 6115 | 621830.160 | 9276239.668 | 32.731 | CANAL |
| 6116 | 621830.151 | 9276240.180 | 32.584 | EJE |
| 6117 | 621830.462 | 9276242.511 | 32.767 | CANAL |
| 6118 | 621830.483 | 9276242.789 | 32.567 | CANAL |
| 6119 | 621830.583 | 9276243.742 | 32.564 | BORDE |
| 6120 | 621830.459 | 9276244.681 | 32.297 | CANAL |
| 6121 | 621830.300 | 9276244.991 | 31.440 | CANAL |
| 6122 | 621857.611 | 9276235.314 | 32.646 | TERRENO |
| 6123 | 621857.055 | 9276234.054 | 31.985 | TERRENO |
| 6124 | 621857.237 | 9276234.563 | 32.233 | TERRENO |
| 6125 | 621857.139 | 9276234.673 | 32.515 | TERRENO |
| 6126 | 621857.202 | 9276236.516 | 32.700 | CANAL |
| 6127 | 621857.221 | 9276236.603 | 32.565 | CANAL |
| 6128 | 621857.260 | 9276237.594 | 32.694 | CANAL |
| 6129 | 621857.419 | 9276239.510 | 32.641 | EJE |
| 6130 | 621857.725 | 9276242.056 | 32.722 | CANAL |
| 6131 | 621857.851 | 9276242.371 | 32.634 | CANAL |
| 6132 | 621858.118 | 9276243.840 | 32.649 | BORDE |
| 6133 | 621858.200 | 9276244.535 | 32.274 | CANAL |
| 6134 | 621858.130 | 9276244.857 | 31.503 | CANAL |
| 6135 | 621886.587 | 9276233.000 | 31.608 | TERRENO |
| 6136 | 621886.656 | 9276233.325 | 32.120 | TERRENO |
| 6137 | 621886.890 | 9276234.809 | 32.968 | TERRENO |
| 6138 | 621887.103 | 9276235.740 | 32.883 | BORDE |
| 6139 | 621887.302 | 9276236.479 | 32.862 | CANAL |
| 6140 | 621887.295 | 9276236.846 | 32.592 | CANAL |
| 6141 | 621887.519 | 9276238.835 | 32.824 | EJE |
| 6142 | 621887.657 | 9276240.205 | 32.793 | CANAL |
| 6143 | 621887.780 | 9276241.652 | 32.684 | CANAL |
| 6144 | 621887.934 | 9276242.624 | 32.630 | BORDE |
| 6145 | 621887.995 | 9276243.419 | 32.311 | CANAL |
| 6146 | 621887.742 | 9276244.021 | 31.421 | CANAL |
| 6147 | 621913.848 | 9276235.019 | 32.617 | TERRENO |
| 6148 | 621912.864 | 9276232.217 | 31.316 | TERRENO |
| 6149 | 621912.818 | 9276232.650 | 32.120 | TERRENO |
| 6150 | 621913.038 | 9276233.573 | 32.773 | TERRENO |
| 6151 | 621913.094 | 9276234.942 | 32.954 | BORDE |
| 6152 | 621913.390 | 9276235.832 | 32.966 | CANAL |
| 6153 | 621913.386 | 9276236.387 | 32.665 | CANAL |
| 6154 | 621913.737 | 9276238.465 | 32.924 | EJE |
| 6155 | 621914.092 | 9276240.646 | 32.922 | CANAL |
| 6156 | 621914.410 | 9276240.991 | 32.734 | CANAL |
| 6157 | 621914.234 | 9276242.492 | 32.590 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6158 | 621914.098 | 9276242.901 | 32.396 | CANAL |
| 6159 | 621914.165 | 9276243.171 | 31.573 | CANAL |
| 6160 | 621940.582 | 9276231.980 | 31.509 | TERRENO |
| 6161 | 621940.608 | 9276232.456 | 32.305 | TERRENO |
| 6162 | 621940.691 | 9276234.174 | 32.937 | TERRENO |
| 6163 | 621940.938 | 9276235.039 | 32.957 | CANAL |
| 6164 | 621941.105 | 9276235.978 | 32.800 | CANAL |
| 6165 | 621941.176 | 9276237.077 | 32.758 | EJE |
| 6166 | 621941.428 | 9276238.918 | 32.845 | CANAL |
| 6167 | 621941.509 | 9276240.246 | 32.726 | CANAL |
| 6168 | 621941.242 | 9276241.876 | 32.806 | BORDE |
| 6169 | 621941.194 | 9276242.444 | 32.524 | CANAL |
| 6170 | 621941.005 | 9276242.973 | 31.588 | CANAL |
| 6171 | 621966.370 | 9276232.918 | 32.529 | TERRENO |
| 6172 | 621967.293 | 9276230.664 | 31.659 | TERRENO |
| 6173 | 621967.587 | 9276231.090 | 32.278 | TERRENO |
| 6174 | 621967.199 | 9276232.676 | 33.124 | TERRENO |
| 6175 | 621967.204 | 9276232.749 | 32.998 | TERRENO |
| 6176 | 621967.589 | 9276234.313 | 33.062 | CANAL |
| 6177 | 621967.562 | 9276234.374 | 33.016 | CANAL |
| 6178 | 621967.952 | 9276236.426 | 32.960 | EJE |
| 6179 | 621968.264 | 9276238.166 | 33.043 | CANAL |
| 6180 | 621968.478 | 9276238.972 | 32.927 | CANAL |
| 6181 | 621968.447 | 9276240.129 | 32.927 | BORDE |
| 6182 | 621968.441 | 9276241.371 | 32.599 | CANAL |
| 6183 | 621968.258 | 9276241.889 | 31.729 | CANAL |
| 6184 | 621994.330 | 9276229.367 | 31.662 | TERRENO |
| 6185 | 621994.658 | 9276230.025 | 32.383 | TERRENO |
| 6186 | 621994.506 | 9276231.202 | 33.156 | TERRENO |
| 6187 | 621994.738 | 9276231.830 | 32.971 | TERRENO |
| 6188 | 621994.861 | 9276233.062 | 33.085 | CANAL |
| 6189 | 621994.850 | 9276233.200 | 32.933 | CANAL |
| 6190 | 621995.200 | 9276235.648 | 33.027 | EJE |
| 6191 | 621995.311 | 9276237.161 | 33.032 | CANAL |
| 6192 | 621995.319 | 9276238.132 | 32.768 | CANAL |
| 6193 | 621995.490 | 9276239.483 | 32.801 | BORDE |
| 6194 | 621995.438 | 9276240.736 | 32.350 | CANAL |
| 6195 | 621995.309 | 9276241.328 | 31.997 | CANAL |
| 6196 | 621995.172 | 9276241.680 | 31.343 | CANAL |
| 6197 | 622022.564 | 9276231.089 | 33.126 | TERRENO |
| 6198 | 622023.886 | 9276229.800 | 32.445 | TERRENO |
| 6199 | 622023.929 | 9276229.916 | 32.986 | TERRENO |
| 6200 | 622024.117 | 9276231.754 | 33.213 | TERRENO |
| 6201 | 622024.425 | 9276232.348 | 32.892 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6202 | 622024.724 | 9276233.069 | 32.964 | CANAL |
| 6203 | 622024.922 | 9276234.254 | 32.842 | CANAL |
| 6204 | 622025.238 | 9276236.093 | 33.012 | EJE |
| 6205 | 622025.392 | 9276237.015 | 32.919 | CANAL |
| 6206 | 622025.468 | 9276239.051 | 32.930 | CANAL |
| 6207 | 622025.483 | 9276240.109 | 32.976 | BORDE |
| 6208 | 622025.657 | 9276240.630 | 32.457 | CANAL |
| 6209 | 622025.669 | 9276240.928 | 31.830 | CANAL |
| 6210 | 622032.007 | 9276237.232 | 33.059 | ALCANTARILLA |
| 6211 | 622031.931 | 9276237.163 | 33.126 | ALCANTARILLA |
| 6212 | 622032.944 | 9276236.707 | 33.150 | ALCANTARILLA |
| 6213 | 622033.494 | 9276236.910 | 33.163 | ALCANTARILLA |
| 6214 | 622033.763 | 9276237.448 | 32.770 | CANAL |
| 6215 | 622034.618 | 9276237.952 | 32.732 | CANAL |
| 6216 | 622034.925 | 9276238.608 | 32.645 | CANAL |
| 6217 | 622034.623 | 9276238.837 | 32.756 | COMPUERTA |
| 6218 | 622034.462 | 9276238.875 | 32.645 | COMPUERTA |
| 6219 | 622033.726 | 9276240.581 | 32.778 | CANAL |
| 6220 | 622033.576 | 9276240.427 | 32.520 | CANAL |
| 6221 | 622033.184 | 9276240.360 | 32.554 | CANAL |
| 6222 | 622032.374 | 9276238.457 | 32.713 | CANAL |
| 6223 | 622031.765 | 9276237.915 | 32.729 | CANAL |
| 6224 | 622028.313 | 9276233.120 | 33.095 | ALCANTARILLA |
| 6225 | 622028.309 | 9276233.156 | 33.142 | ALCANTARILLA |
| 6226 | 622029.543 | 9276233.157 | 33.084 | ALCANTARILLA |
| 6227 | 622030.317 | 9276233.042 | 33.146 | ALCANTARILLA |
| 6228 | 622030.149 | 9276231.698 | 32.704 | ALCANTARILLA |
| 6229 | 622030.488 | 9276231.742 | 32.701 | ALCANTARILLA |
| 6230 | 622028.270 | 9276233.796 | 32.903 | ALCANTARILLA |
| 6231 | 622027.842 | 9276233.018 | 32.890 | ALCANTARILLA |
| 6232 | 622029.117 | 9276232.804 | 31.820 | FONDO |
| 6233 | 622046.755 | 9276228.743 | 32.535 | TERRENO |
| 6234 | 622047.034 | 9276229.505 | 32.951 | TERRENO |
| 6235 | 622047.152 | 9276231.512 | 33.098 | CANAL |
| 6236 | 622047.322 | 9276233.035 | 33.128 | CANAL |
| 6237 | 622047.829 | 9276233.753 | 32.952 | EJE |
| 6238 | 622047.996 | 9276235.578 | 33.025 | CANAL |
| 6239 | 622047.983 | 9276237.403 | 32.985 | CANAL |
| 6240 | 622048.172 | 9276238.506 | 32.822 | BORDE |
| 6241 | 622048.162 | 9276238.951 | 32.542 | CANAL |
| 6242 | 622048.111 | 9276239.507 | 31.845 | CANAL |
| 6243 | 622049.752 | 9276241.480 | 31.169 | CANAL |
| 6244 | 622048.765 | 9276242.967 | 32.962 | CANAL |
| 6245 | 622049.094 | 9276244.922 | 33.270 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6246 | 622061.824 | 9276227.787 | 32.560 | TERRENO |
| 6247 | 622061.781 | 9276228.404 | 33.135 | TERRENO |
| 6248 | 622062.211 | 9276229.251 | 33.030 | TERRENO |
| 6249 | 622062.238 | 9276231.417 | 33.128 | CANAL |
| 6250 | 622062.269 | 9276231.894 | 32.817 | CANAL |
| 6251 | 622062.553 | 9276233.902 | 33.032 | EJE |
| 6252 | 622062.562 | 9276236.124 | 33.033 | CANAL |
| 6253 | 622062.729 | 9276236.738 | 33.068 | CANAL |
| 6254 | 622062.940 | 9276237.703 | 33.314 | BORDE |
| 6255 | 622062.938 | 9276238.440 | 32.912 | BORDE |
| 6256 | 622075.194 | 9276230.114 | 33.265 | TERRENO |
| 6257 | 622090.793 | 9276226.322 | 33.452 | TERRENO |
| 6258 | 622091.106 | 9276227.223 | 33.356 | TERRENO |
| 6259 | 622091.600 | 9276231.027 | 33.458 | CANAL |
| 6260 | 622091.562 | 9276231.512 | 33.180 | CANAL |
| 6261 | 622091.805 | 9276233.577 | 33.348 | EJE |
| 6262 | 622091.906 | 9276234.586 | 33.276 | CANAL |
| 6263 | 622092.049 | 9276235.708 | 33.160 | CANAL |
| 6264 | 622091.730 | 9276237.288 | 33.502 | BORDE |
| 6265 | 622092.164 | 9276237.865 | 33.106 | CANAL |
| 6266 | 622092.082 | 9276238.177 | 32.921 | CANAL |
| 6267 | 622092.172 | 9276238.381 | 32.069 | CANAL |
| 6268 | 622099.249 | 9276229.560 | 33.315 | TERRENO |
| 6269 | 622124.722 | 9276226.465 | 33.435 | TERRENO |
| 6270 | 622124.520 | 9276224.716 | 32.657 | TERRENO |
| 6271 | 622124.399 | 9276225.830 | 33.445 | TERRENO |
| 6272 | 622124.916 | 9276226.810 | 33.539 | BORDE |
| 6273 | 622125.136 | 9276228.071 | 34.027 | BORDE |
| 6274 | 622125.186 | 9276229.440 | 33.539 | CANAL |
| 6275 | 622125.186 | 9276229.717 | 33.394 | CANAL |
| 6276 | 622125.475 | 9276231.857 | 33.416 | EJE |
| 6277 | 622125.701 | 9276233.012 | 33.397 | CANAL |
| 6278 | 622125.861 | 9276234.397 | 33.311 | CANAL |
| 6279 | 622125.891 | 9276235.436 | 33.246 | BORDE |
| 6280 | 622125.825 | 9276236.750 | 32.716 | CANAL |
| 6281 | 622125.774 | 9276237.262 | 31.622 | CANAL |
| 6282 | 622155.479 | 9276224.879 | 33.460 | TERRENO |
| 6283 | 622155.838 | 9276225.415 | 33.958 | TERRENO |
| 6284 | 622156.166 | 9276226.501 | 33.630 | TERRENO |
| 6285 | 622156.271 | 9276227.269 | 33.499 | CANAL |
| 6286 | 622156.683 | 9276228.653 | 33.402 | CANAL |
| 6287 | 622157.032 | 9276229.492 | 33.317 | EJE |
| 6288 | 622157.214 | 9276231.821 | 33.489 | CANAL |
| 6289 | 622157.379 | 9276233.198 | 33.455 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6290 | 622157.263 | 9276234.179 | 33.353 | BORDE |
| 6291 | 622157.304 | 9276234.651 | 33.183 | BORDE |
| 6292 | 622157.409 | 9276235.985 | 32.877 | CANAL |
| 6293 | 622157.264 | 9276235.956 | 32.536 | CANAL |
| 6294 | 622174.023 | 9276226.702 | 33.696 | TERRENO |
| 6295 | 622173.924 | 9276227.336 | 33.833 | TERRENO |
| 6296 | 622174.171 | 9276227.463 | 33.723 | CANAL |
| 6297 | 622174.353 | 9276228.601 | 33.655 | CANAL |
| 6298 | 622174.341 | 9276230.277 | 33.560 | EJE |
| 6299 | 622174.462 | 9276231.947 | 33.496 | CANAL |
| 6300 | 622174.432 | 9276232.731 | 33.313 | CANAL |
| 6301 | 622174.359 | 9276234.722 | 33.278 | BORDE |
| 6302 | 622174.281 | 9276235.982 | 32.769 | CANAL |
| 6303 | 622174.204 | 9276236.573 | 32.144 | CANAL |
| 6304 | 622193.020 | 9276229.355 | 34.300 | TERRENO |
| 6305 | 622193.109 | 9276229.734 | 33.913 | TERRENO |
| 6306 | 622192.462 | 9276230.587 | 33.750 | CANAL |
| 6307 | 622192.505 | 9276230.600 | 33.491 | CANAL |
| 6308 | 622191.954 | 9276232.094 | 33.314 | EJE |
| 6309 | 622191.642 | 9276234.074 | 33.455 | CANAL |
| 6310 | 622191.445 | 9276234.841 | 33.206 | CANAL |
| 6311 | 622191.117 | 9276236.771 | 33.263 | BORDE |
| 6312 | 622190.878 | 9276237.657 | 32.684 | CANAL |
| 6313 | 622190.541 | 9276237.933 | 31.666 | CANAL |
| 6314 | 622211.201 | 9276235.968 | 34.143 | TERRENO |
| 6315 | 622210.630 | 9276236.385 | 34.054 | TERRENO |
| 6316 | 622210.543 | 9276237.353 | 33.637 | CANAL |
| 6317 | 622210.093 | 9276238.113 | 33.440 | CANAL |
| 6318 | 622209.653 | 9276239.730 | 33.442 | EJE |
| 6319 | 622209.140 | 9276241.154 | 33.441 | CANAL |
| 6320 | 622209.165 | 9276241.598 | 33.221 | CANAL |
| 6321 | 622208.745 | 9276242.888 | 33.332 | BORDE |
| 6322 | 622207.983 | 9276243.868 | 32.763 | CANAL |
| 6323 | 622207.598 | 9276244.699 | 31.974 | CANAL |
| 6324 | 622230.435 | 9276244.848 | 33.592 | TERRENO |
| 6325 | 622230.340 | 9276245.545 | 33.862 | TERRENO |
| 6326 | 622229.795 | 9276246.341 | 33.673 | TERRENO |
| 6327 | 622229.526 | 9276246.528 | 33.659 | CANAL |
| 6328 | 622229.404 | 9276246.846 | 33.381 | CANAL |
| 6329 | 622228.658 | 9276248.567 | 33.554 | EJE |
| 6330 | 622228.164 | 9276249.800 | 33.503 | CANAL |
| 6331 | 622227.998 | 9276251.548 | 33.485 | CANAL |
| 6332 | 622227.000 | 9276253.001 | 33.365 | BORDE |
| 6333 | 622226.244 | 9276253.605 | 32.842 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6334 | 622226.150 | 9276253.891 | 32.444 | CANAL |
| 6335 | 622241.700 | 9276250.604 | 33.957 | TERRENO |
| 6336 | 622241.489 | 9276251.021 | 34.007 | TERRENO |
| 6337 | 622241.489 | 9276251.745 | 33.651 | TERRENO |
| 6338 | 622241.346 | 9276252.205 | 33.561 | CANAL |
| 6339 | 622240.895 | 9276252.944 | 33.359 | CANAL |
| 6340 | 622240.387 | 9276254.532 | 33.414 | EJE |
| 6341 | 622240.137 | 9276255.086 | 33.494 | CANAL |
| 6342 | 622239.657 | 9276256.425 | 33.230 | CANAL |
| 6343 | 622238.426 | 9276258.732 | 33.271 | BORDE |
| 6344 | 622238.028 | 9276259.388 | 32.711 | CANAL |
| 6345 | 622237.752 | 9276259.646 | 32.036 | CANAL |
| 6346 | 622262.060 | 9276258.840 | 33.356 | TERRENO |
| 6347 | 622261.455 | 9276260.429 | 33.728 | TERRENO |
| 6348 | 622261.416 | 9276260.578 | 33.493 | TERRENO |
| 6349 | 622260.662 | 9276262.005 | 33.582 | CANAL |
| 6350 | 622260.364 | 9276262.814 | 33.353 | CANAL |
| 6351 | 622259.670 | 9276264.211 | 33.392 | EJE |
| 6352 | 622258.957 | 9276265.820 | 33.426 | CANAL |
| 6353 | 622258.808 | 9276267.132 | 33.169 | CANAL |
| 6354 | 622257.848 | 9276268.553 | 33.165 | BORDE |
| 6355 | 622256.679 | 9276270.283 | 32.556 | CANAL |
| 6356 | 622256.440 | 9276270.739 | 31.863 | CANAL |
| 6357 | 622280.869 | 9276269.567 | 33.648 | TERRENO |
| 6358 | 622280.489 | 9276270.165 | 33.750 | TERRENO |
| 6359 | 622279.820 | 9276272.110 | 33.679 | CANAL |
| 6360 | 622279.538 | 9276272.779 | 33.330 | CANAL |
| 6361 | 622278.576 | 9276274.819 | 33.577 | EJE |
| 6362 | 622277.841 | 9276276.554 | 33.604 | CANAL |
| 6363 | 622277.680 | 9276277.418 | 33.206 | CANAL |
| 6364 | 622276.711 | 9276279.120 | 33.395 | BORDE |
| 6365 | 622275.784 | 9276280.782 | 32.747 | CANAL |
| 6366 | 622275.469 | 9276281.077 | 31.621 | CANAL |
| 6367 | 622304.694 | 9276283.498 | 34.418 | TERRENO |
| 6368 | 622304.481 | 9276284.119 | 34.387 | TERRENO |
| 6369 | 622303.962 | 9276284.893 | 33.918 | TERRENO |
| 6370 | 622303.635 | 9276285.480 | 33.770 | CANAL |
| 6371 | 622303.040 | 9276286.605 | 33.526 | CANAL |
| 6372 | 622302.390 | 9276287.771 | 33.493 | EJE |
| 6373 | 622301.531 | 9276289.226 | 33.575 | CANAL |
| 6374 | 622301.535 | 9276290.434 | 33.410 | CANAL |
| 6375 | 622300.461 | 9276292.075 | 33.541 | BORDE |
| 6376 | 622299.229 | 9276292.958 | 32.800 | CANAL |
| 6377 | 622299.105 | 9276293.532 | 31.814 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6378 | 622315.998 | 9276305.611 | 32.148 | CANAL |
| 6379 | 622316.158 | 9276305.186 | 33.289 | CANAL |
| 6380 | 622317.214 | 9276304.524 | 33.690 | BORDE |
| 6381 | 622317.600 | 9276304.126 | 33.598 | CANAL |
| 6382 | 622318.215 | 9276303.578 | 33.592 | CANAL |
| 6383 | 622319.556 | 9276301.946 | 33.755 | EJE |
| 6384 | 622320.654 | 9276300.167 | 33.945 | CANAL |
| 6385 | 622321.331 | 9276299.121 | 33.990 | CANAL |
| 6386 | 622322.164 | 9276298.064 | 34.158 | TERRENO |
| 6387 | 622323.851 | 9276296.538 | 34.264 | TERRENO |
| 6388 | 622324.486 | 9276295.466 | 34.168 | TERRENO |
| 6389 | 622341.385 | 9276314.345 | 33.706 | TERRENO |
| 6390 | 622340.397 | 9276315.358 | 34.250 | TERRENO |
| 6391 | 622339.813 | 9276315.914 | 33.992 | CANAL |
| 6392 | 622339.573 | 9276316.199 | 33.991 | CANAL |
| 6393 | 622339.081 | 9276316.707 | 33.829 | CANAL |
| 6394 | 622337.299 | 9276318.514 | 33.947 | EJE |
| 6395 | 622336.517 | 9276319.457 | 33.875 | CANAL |
| 6396 | 622335.709 | 9276320.117 | 33.593 | CANAL |
| 6397 | 622334.766 | 9276321.950 | 33.705 | BORDE |
| 6398 | 622334.189 | 9276322.483 | 33.074 | CANAL |
| 6399 | 622333.961 | 9276322.572 | 32.260 | CANAL |
| 6400 | 622263.670 | 9276274.482 | 33.738 | **BM - 12** |
| 6401 | 622352.447 | 9276344.562 | 31.655 | CANAL |
| 6402 | 622352.652 | 9276344.373 | 32.508 | CANAL |
| 6403 | 622353.570 | 9276343.445 | 33.344 | CANAL |
| 6404 | 622354.881 | 9276342.705 | 33.942 | BORDE |
| 6405 | 622355.723 | 9276342.022 | 33.962 | CANAL |
| 6406 | 622356.579 | 9276341.478 | 33.864 | CANAL |
| 6407 | 622357.391 | 9276340.645 | 33.847 | EJE |
| 6408 | 622358.744 | 9276339.299 | 33.971 | CANAL |
| 6409 | 622359.427 | 9276338.707 | 33.929 | CANAL |
| 6410 | 622360.972 | 9276337.272 | 34.356 | BORDE |
| 6411 | 622361.593 | 9276336.896 | 34.187 | TERRENO |
| 6412 | 622362.144 | 9276336.389 | 34.225 | TERRENO |
| 6413 | 622381.933 | 9276357.861 | 34.891 | TERRENO |
| 6414 | 622381.615 | 9276358.600 | 34.698 | BORDE |
| 6415 | 622381.249 | 9276358.885 | 34.241 | BORDE |
| 6416 | 622380.145 | 9276359.755 | 34.214 | CANAL |
| 6417 | 622379.965 | 9276359.819 | 34.117 | CANAL |
| 6418 | 622378.048 | 9276361.590 | 34.185 | EJE |
| 6419 | 622377.168 | 9276362.463 | 34.147 | CANAL |
| 6420 | 622376.781 | 9276362.864 | 33.908 | CANAL |
| 6421 | 622375.335 | 9276364.198 | 34.034 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6422 | 622374.068 | 9276365.687 | 33.125 | CANAL |
| 6423 | 622373.643 | 9276366.040 | 32.333 | CANAL |
| 6424 | 622402.672 | 9276379.533 | 34.208 | TERRENO |
| 6425 | 622401.944 | 9276380.298 | 34.207 | TERRENO |
| 6426 | 622401.188 | 9276381.285 | 34.085 | CANAL |
| 6427 | 622400.243 | 9276382.219 | 34.025 | CANAL |
| 6428 | 622398.929 | 9276383.782 | 34.085 | EJE |
| 6429 | 622397.628 | 9276385.306 | 34.159 | CANAL |
| 6430 | 622396.954 | 9276386.615 | 34.065 | CANAL |
| 6431 | 622395.610 | 9276387.713 | 33.981 | BORDE |
| 6432 | 622394.767 | 9276388.800 | 33.076 | BORDE |
| 6433 | 622394.018 | 9276389.376 | 32.804 | CANAL |
| 6434 | 622393.688 | 9276389.730 | 32.082 | CANAL |
| 6435 | 622419.852 | 9276393.749 | 34.197 | TERRENO |
| 6436 | 622419.432 | 9276394.386 | 34.027 | BORDE |
| 6437 | 622419.126 | 9276395.032 | 34.000 | CANAL |
| 6438 | 622418.683 | 9276395.897 | 33.938 | CANAL |
| 6439 | 622418.229 | 9276396.794 | 33.814 | EJE |
| 6440 | 622417.296 | 9276398.948 | 34.168 | CANAL |
| 6441 | 622416.991 | 9276399.502 | 33.967 | CANAL |
| 6442 | 622416.206 | 9276401.429 | 34.125 | BORDE |
| 6443 | 622415.401 | 9276404.470 | 34.312 | CANAL |
| 6444 | 622414.784 | 9276405.312 | 34.401 | CANAL |
| 6445 | 622414.434 | 9276406.484 | 33.288 | CANAL |
| 6446 | 622414.252 | 9276406.386 | 32.641 | CANAL |
| 6447 | 622430.791 | 9276398.807 | 33.976 | CANAL |
| 6448 | 622430.726 | 9276400.265 | 34.027 | CANAL |
| 6449 | 622430.671 | 9276401.023 | 33.845 | CANAL |
| 6450 | 622430.218 | 9276403.635 | 34.150 | EJE |
| 6451 | 622430.258 | 9276405.651 | 34.091 | CANAL |
| 6452 | 622430.580 | 9276405.814 | 34.170 | CANAL |
| 6453 | 622429.845 | 9276407.239 | 34.319 | BORDE |
| 6454 | 622428.988 | 9276409.202 | 34.133 | BORDE |
| 6455 | 622428.951 | 9276409.607 | 33.012 | CANAL |
| 6456 | 622444.885 | 9276402.587 | 33.224 | BORDE |
| 6457 | 622444.877 | 9276403.139 | 34.079 | BORDE |
| 6458 | 622444.872 | 9276403.918 | 34.067 | CANAL |
| 6459 | 622444.773 | 9276404.279 | 33.952 | CANAL |
| 6460 | 622444.354 | 9276406.230 | 34.041 | EJE |
| 6461 | 622444.230 | 9276407.806 | 34.199 | CANAL |
| 6462 | 622444.324 | 9276408.631 | 33.947 | CANAL |
| 6463 | 622444.159 | 9276409.888 | 33.906 | BORDE |
| 6464 | 622443.778 | 9276411.003 | 33.401 | CANAL |
| 6465 | 622443.912 | 9276411.259 | 33.291 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6466 | 622477.473 | 9276401.947 | 35.227 | BORDE |
| 6467 | 622477.438 | 9276402.841 | 34.674 | BORDE |
| 6468 | 622476.869 | 9276404.385 | 34.293 | CANAL |
| 6469 | 622476.829 | 9276405.819 | 34.273 | CANAL |
| 6470 | 622476.771 | 9276406.836 | 34.231 | EJE |
| 6471 | 622476.866 | 9276408.330 | 34.268 | CANAL |
| 6472 | 622477.114 | 9276408.737 | 34.047 | CANAL |
| 6473 | 622477.264 | 9276410.211 | 34.076 | BORDE |
| 6474 | 622476.827 | 9276411.213 | 33.409 | CANAL |
| 6475 | 622476.927 | 9276411.642 | 32.420 | CANAL |
| 6476 | 622506.982 | 9276402.047 | 33.977 | BORDE |
| 6477 | 622507.043 | 9276402.579 | 34.012 | CANAL |
| 6478 | 622507.185 | 9276403.800 | 33.986 | CANAL |
| 6479 | 622507.146 | 9276405.483 | 34.063 | EJE |
| 6480 | 622507.349 | 9276406.478 | 34.064 | CANAL |
| 6481 | 622507.607 | 9276406.767 | 33.920 | CANAL |
| 6482 | 622507.818 | 9276408.310 | 34.016 | BORDE |
| 6483 | 622507.596 | 9276409.610 | 33.361 | CANAL |
| 6484 | 622507.539 | 9276409.833 | 32.743 | CANAL |
| 6485 | 622537.374 | 9276396.749 | 33.738 | BORDE |
| 6486 | 622537.615 | 9276397.470 | 33.756 | CANAL |
| 6487 | 622537.705 | 9276398.512 | 33.728 | CANAL |
| 6488 | 622537.866 | 9276399.122 | 33.563 | EJE |
| 6489 | 622538.392 | 9276401.056 | 33.722 | CANAL |
| 6490 | 622538.813 | 9276401.944 | 33.603 | CANAL |
| 6491 | 622539.161 | 9276403.400 | 33.833 | BORDE |
| 6492 | 622539.023 | 9276404.226 | 33.292 | CANAL |
| 6493 | 622539.187 | 9276404.863 | 32.163 | CANAL |
| 6494 | 622551.966 | 9276393.034 | 33.379 | CANAL |
| 6495 | 622552.490 | 9276393.714 | 33.427 | CANAL |
| 6496 | 622552.626 | 9276394.316 | 33.431 | CANAL |
| 6497 | 622552.814 | 9276395.154 | 33.272 | CANAL |
| 6498 | 622553.297 | 9276397.230 | 33.404 | EJE |
| 6499 | 622553.798 | 9276398.571 | 33.387 | CANAL |
| 6500 | 622554.337 | 9276399.562 | 33.271 | CANAL |
| 6501 | 622554.867 | 9276400.398 | 33.395 | BORDE |
| 6502 | 622554.663 | 9276401.522 | 32.940 | CANAL |
| 6503 | 622554.586 | 9276402.011 | 32.362 | CANAL |
| 6504 | 622562.176 | 9276391.137 | 33.254 | TERRENO |
| 6505 | 622562.352 | 9276392.101 | 33.422 | TERRENO |
| 6506 | 622562.343 | 9276393.448 | 33.390 | CANAL |
| 6507 | 622562.362 | 9276393.751 | 33.183 | CANAL |
| 6508 | 622562.342 | 9276395.025 | 33.188 | EJE |
| 6509 | 622562.147 | 9276396.997 | 33.237 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6510 | 622562.241 | 9276398.244 | 33.022 | CANAL |
| 6511 | 622562.373 | 9276400.853 | 33.203 | BORDE |
| 6512 | 622562.294 | 9276401.697 | 32.944 | CANAL |
| 6513 | 622562.129 | 9276402.092 | 31.984 | CANAL |
| 6514 | 622574.414 | 9276395.331 | 33.656 | TERRENO |
| 6515 | 622573.057 | 9276396.580 | 33.735 | TERRENO |
| 6516 | 622572.151 | 9276397.645 | 33.758 | CANAL |
| 6517 | 622571.541 | 9276398.386 | 33.654 | CANAL |
| 6518 | 622570.424 | 9276399.441 | 33.700 | EJE |
| 6519 | 622569.825 | 9276400.441 | 33.679 | CANAL |
| 6520 | 622569.706 | 9276401.153 | 33.550 | CANAL |
| 6521 | 622568.728 | 9276402.076 | 33.372 | CANAL |
| 6522 | 622568.643 | 9276402.241 | 33.030 | CANAL |
| 6523 | 622571.211 | 9276404.006 | 33.698 | ALCANTARILLA |
| 6524 | 622571.177 | 9276404.077 | 33.694 | ALCANTARILLA |
| 6525 | 622572.776 | 9276405.825 | 33.625 | ALCANTARILLA |
| 6526 | 622572.897 | 9276406.262 | 33.697 | ALCANTARILLA |
| 6527 | 622571.944 | 9276406.793 | 33.376 | ALCANTARILLA |
| 6528 | 622571.874 | 9276406.765 | 33.456 | ALCANTARILLA |
| 6529 | 622571.002 | 9276403.941 | 33.438 | ALCANTARILLA |
| 6530 | 622570.888 | 9276403.893 | 33.438 | ALCANTARILLA |
| 6531 | 622579.702 | 9276403.616 | 33.641 | ALCANTARILLA |
| 6532 | 622579.663 | 9276403.784 | 33.736 | ALCANTARILLA |
| 6533 | 622579.942 | 9276405.575 | 33.805 | ALCANTARILLA |
| 6534 | 622580.274 | 9276406.473 | 33.799 | ALCANTARILLA |
| 6535 | 622580.550 | 9276406.464 | 33.470 | ALCANTARILLA |
| 6536 | 622581.931 | 9276406.820 | 33.374 | ALCANTARILLA |
| 6537 | 622583.359 | 9276406.926 | 33.263 | ALCANTARILLA |
| 6538 | 622583.730 | 9276407.323 | 33.127 | ALCANTARILLA |
| 6539 | 622581.810 | 9276404.473 | 33.132 | ALCANTARILLA |
| 6540 | 622581.905 | 9276404.065 | 33.361 | ALCANTARILLA |
| 6541 | 622583.760 | 9276403.011 | 33.135 | ALCANTARILLA |
| 6542 | 622581.988 | 9276404.398 | 33.332 | COMPUERTA |
| 6543 | 622580.741 | 9276406.815 | 33.482 | COMPUERTA |
| 6544 | 622586.833 | 9276409.277 | 31.868 | CANAL |
| 6545 | 622586.281 | 9276410.352 | 33.017 | CANAL |
| 6546 | 622585.334 | 9276411.907 | 33.563 | BORDE |
| 6547 | 622584.821 | 9276412.491 | 33.602 | CANAL |
| 6548 | 622584.925 | 9276412.788 | 33.649 | CANAL |
| 6549 | 622582.656 | 9276414.472 | 33.654 | EJE |
| 6550 | 622581.709 | 9276415.127 | 33.683 | CANAL |
| 6551 | 622580.627 | 9276416.304 | 33.661 | CANAL |
| 6552 | 622579.510 | 9276416.796 | 33.709 | BORDE |
| 6553 | 622579.481 | 9276416.925 | 33.603 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6554 | 622578.896 | 9276417.540 | 33.248 | BORDE |
| 6555 | 622597.700 | 9276430.328 | 33.075 | CANAL |
| 6556 | 622597.093 | 9276430.392 | 33.579 | CANAL |
| 6557 | 622596.432 | 9276431.260 | 33.590 | CANAL |
| 6558 | 622596.082 | 9276431.570 | 33.557 | CANAL |
| 6559 | 622594.518 | 9276432.597 | 33.572 | EJE |
| 6560 | 622593.305 | 9276433.302 | 33.594 | CANAL |
| 6561 | 622592.130 | 9276433.699 | 33.597 | CANAL |
| 6562 | 622591.410 | 9276434.447 | 33.338 | BORDE |
| 6563 | 622591.276 | 9276434.903 | 33.066 | BORDE |
| 6564 | 622590.166 | 9276435.205 | 32.522 | BORDE |
| 6565 | 622614.914 | 9276463.209 | 32.578 | CANAL |
| 6566 | 622614.468 | 9276463.102 | 33.692 | CANAL |
| 6567 | 622613.752 | 9276463.761 | 33.835 | BORDE |
| 6568 | 622613.386 | 9276463.848 | 33.806 | CANAL |
| 6569 | 622612.729 | 9276464.165 | 33.659 | CANAL |
| 6570 | 622611.344 | 9276464.961 | 33.790 | EJE |
| 6571 | 622610.399 | 9276465.604 | 33.822 | CANAL |
| 6572 | 622609.166 | 9276466.412 | 33.804 | CANAL |
| 6573 | 622608.922 | 9276466.452 | 33.597 | BORDE |
| 6574 | 622608.570 | 9276466.688 | 33.635 | BORDE |
| 6575 | 622630.119 | 9276492.905 | 32.738 | CANAL |
| 6576 | 622630.002 | 9276492.899 | 33.667 | CANAL |
| 6577 | 622629.212 | 9276493.391 | 33.813 | CANAL |
| 6578 | 622628.570 | 9276493.744 | 33.623 | CANAL |
| 6579 | 622626.766 | 9276494.802 | 33.846 | EJE |
| 6580 | 622625.725 | 9276495.739 | 33.793 | CANAL |
| 6581 | 622624.837 | 9276495.902 | 33.720 | CANAL |
| 6582 | 622644.799 | 9276520.959 | 32.667 | CANAL |
| 6583 | 622644.407 | 9276520.829 | 33.884 | CANAL |
| 6584 | 622643.923 | 9276521.353 | 33.940 | BORDE |
| 6585 | 622643.220 | 9276522.046 | 33.999 | CANAL |
| 6586 | 622642.750 | 9276522.224 | 33.818 | CANAL |
| 6587 | 622641.243 | 9276522.891 | 33.971 | EJE |
| 6588 | 622640.465 | 9276523.470 | 33.921 | CANAL |
| 6589 | 622639.537 | 9276524.430 | 33.799 | CANAL |
| 6590 | 622637.607 | 9276525.046 | 33.656 | BORDE |
| 6591 | 622636.248 | 9276525.391 | 33.169 | BORDE |
| 6592 | 622635.827 | 9276525.575 | 32.730 | BORDE |
| 6593 | 622632.387 | 9276527.145 | 32.397 | BORDE |
| 6594 | 622659.629 | 9276550.696 | 33.193 | CANAL |
| 6595 | 622659.077 | 9276551.046 | 33.876 | CANAL |
| 6596 | 622658.607 | 9276551.619 | 34.007 | BORDE |
| 6597 | 622657.998 | 9276551.959 | 34.038 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6598 | 622657.128 | 9276552.405 | 33.935 | CANAL |
| 6599 | 622655.950 | 9276553.162 | 33.981 | EJE |
| 6600 | 622654.777 | 9276553.706 | 33.973 | CANAL |
| 6601 | 622654.293 | 9276554.081 | 33.676 | CANAL |
| 6602 | 622652.787 | 9276554.798 | 33.719 | BORDE |
| 6603 | 622650.897 | 9276555.609 | 32.883 | BORDE |
| 6604 | 622669.103 | 9276570.468 | 32.983 | CANAL |
| 6605 | 622668.778 | 9276570.697 | 33.798 | CANAL |
| 6606 | 622667.869 | 9276571.060 | 34.021 | CANAL |
| 6607 | 622667.473 | 9276571.202 | 33.812 | CANAL |
| 6608 | 622666.210 | 9276571.883 | 33.849 | EJE |
| 6609 | 622664.802 | 9276572.702 | 33.837 | CANAL |
| 6610 | 622663.852 | 9276573.285 | 33.823 | CANAL |
| 6611 | 622662.481 | 9276573.822 | 33.806 | BORDE |
| 6612 | 622661.784 | 9276573.804 | 33.059 | BORDE |
| 6613 | 622677.886 | 9276601.418 | 32.534 | CANAL |
| 6614 | 622677.328 | 9276601.433 | 33.627 | CANAL |
| 6615 | 622676.347 | 9276601.902 | 33.736 | CANAL |
| 6616 | 622676.171 | 9276601.893 | 33.595 | CANAL |
| 6617 | 622674.905 | 9276602.306 | 33.619 | EJE |
| 6618 | 622674.066 | 9276602.575 | 33.554 | CANAL |
| 6619 | 622672.458 | 9276603.188 | 33.661 | CANAL |
| 6620 | 622671.239 | 9276603.586 | 33.789 | BORDE |
| 6621 | 622670.503 | 9276603.494 | 33.205 | BORDE |
| 6622 | 622686.011 | 9276629.053 | 32.743 | CANAL |
| 6623 | 622685.490 | 9276629.239 | 33.829 | CANAL |
| 6624 | 622684.494 | 9276629.493 | 33.915 | CANAL |
| 6625 | 622684.403 | 9276629.539 | 33.843 | CANAL |
| 6626 | 622682.300 | 9276630.230 | 33.964 | EJE |
| 6627 | 622681.171 | 9276630.575 | 34.019 | CANAL |
| 6628 | 622680.678 | 9276630.883 | 33.802 | CANAL |
| 6629 | 622679.288 | 9276631.327 | 33.977 | BORDE |
| 6630 | 622678.494 | 9276631.310 | 33.019 | BORDE |
| 6631 | 622674.374 | 9276633.565 | 32.622 | BORDE |
| 6632 | 622680.139 | 9276649.316 | 32.624 | TERRENO |
| 6633 | 622681.979 | 9276648.887 | 32.460 | TERRENO |
| 6634 | 622684.469 | 9276647.861 | 32.865 | TERRENO |
| 6635 | 622685.355 | 9276647.836 | 33.645 | TERRENO |
| 6636 | 622686.230 | 9276647.256 | 34.018 | TERRENO |
| 6637 | 622686.614 | 9276647.148 | 34.127 | CANAL |
| 6638 | 622687.739 | 9276646.656 | 34.042 | CANAL |
| 6639 | 622689.425 | 9276645.651 | 33.955 | EJE |
| 6640 | 622691.061 | 9276644.863 | 33.946 | CANAL |
| 6641 | 622691.126 | 9276644.884 | 33.912 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6642 | 622692.150 | 9276643.939 | 33.773 | BORDE |
| 6643 | 622693.118 | 9276643.679 | 33.076 | CANAL |
| 6644 | 622693.233 | 9276643.670 | 32.665 | CANAL |
| 6645 | 622710.647 | 9276663.011 | 33.107 | CANAL |
| 6646 | 622710.183 | 9276663.527 | 33.961 | CANAL |
| 6647 | 622709.226 | 9276664.309 | 33.934 | CANAL |
| 6648 | 622709.012 | 9276664.405 | 34.009 | CANAL |
| 6649 | 622708.402 | 9276665.087 | 33.926 | CANAL |
| 6650 | 622707.219 | 9276666.270 | 33.935 | EJE |
| 6651 | 622706.236 | 9276667.585 | 33.924 | CANAL |
| 6652 | 622704.939 | 9276668.518 | 33.960 | CANAL |
| 6653 | 622703.734 | 9276668.617 | 33.839 | BORDE |
| 6654 | 622703.000 | 9276669.082 | 32.927 | BORDE |
| 6655 | 622729.299 | 9276695.037 | 32.747 | CANAL |
| 6656 | 622729.162 | 9276695.270 | 33.754 | CANAL |
| 6657 | 622728.896 | 9276695.645 | 33.827 | CANAL |
| 6658 | 622728.066 | 9276696.323 | 33.953 | CANAL |
| 6659 | 622727.378 | 9276696.488 | 33.879 | CANAL |
| 6660 | 622726.330 | 9276697.180 | 33.975 | EJE |
| 6661 | 622725.191 | 9276697.758 | 34.021 | CANAL |
| 6662 | 622724.453 | 9276698.455 | 34.043 | CANAL |
| 6663 | 622723.717 | 9276698.775 | 33.765 | BORDE |
| 6664 | 622722.993 | 9276699.054 | 33.148 | BORDE |
| 6665 | 622745.302 | 9276718.068 | 33.273 | CANAL |
| 6666 | 622744.940 | 9276718.361 | 34.153 | CANAL |
| 6667 | 622744.917 | 9276718.387 | 33.974 | CANAL |
| 6668 | 622744.643 | 9276719.020 | 34.042 | CANAL |
| 6669 | 622743.856 | 9276719.713 | 33.903 | CANAL |
| 6670 | 622742.860 | 9276720.802 | 34.022 | EJE |
| 6671 | 622741.685 | 9276721.624 | 34.118 | CANAL |
| 6672 | 622740.671 | 9276722.242 | 34.147 | CANAL |
| 6673 | 622740.430 | 9276722.581 | 34.020 | BORDE |
| 6674 | 622739.632 | 9276723.113 | 33.137 | BORDE |
| 6675 | 622764.782 | 9276742.310 | 33.163 | CANAL |
| 6676 | 622764.598 | 9276742.428 | 33.859 | CANAL |
| 6677 | 622764.004 | 9276742.947 | 34.004 | CANAL |
| 6678 | 622763.079 | 9276743.822 | 33.956 | CANAL |
| 6679 | 622762.043 | 9276744.722 | 33.965 | EJE |
| 6680 | 622761.057 | 9276745.419 | 33.924 | CANAL |
| 6681 | 622760.533 | 9276746.013 | 33.884 | CANAL |
| 6682 | 622759.213 | 9276746.827 | 33.618 | BORDE |
| 6683 | 622758.801 | 9276746.846 | 33.028 | BORDE |
| 6684 | 622781.032 | 9276766.539 | 33.178 | CANAL |
| 6685 | 622780.493 | 9276766.703 | 33.928 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6686 | 622779.804 | 9276767.429 | 33.951 | CANAL |
| 6687 | 622778.998 | 9276768.077 | 33.950 | CANAL |
| 6688 | 622778.268 | 9276768.913 | 33.979 | EJE |
| 6689 | 622777.181 | 9276769.709 | 34.076 | CANAL |
| 6690 | 622776.949 | 9276770.204 | 33.894 | CANAL |
| 6691 | 622775.094 | 9276771.155 | 33.695 | BORDE |
| 6692 | 622774.563 | 9276771.248 | 33.083 | BORDE |
| 6693 | 622771.751 | 9276771.923 | 32.979 | TERRENO |
| 6694 | 622787.448 | 9276773.752 | 33.303 | CANAL |
| 6695 | 622786.619 | 9276774.329 | 34.016 | CANAL |
| 6696 | 622786.736 | 9276774.533 | 34.060 | CANAL |
| 6697 | 622786.765 | 9276774.636 | 34.066 | CANAL |
| 6698 | 622785.529 | 9276776.804 | 34.151 | EJE |
| 6699 | 622784.877 | 9276778.101 | 34.259 | CANAL |
| 6700 | 622784.294 | 9276778.885 | 34.196 | CANAL |
| 6701 | 622783.821 | 9276779.490 | 34.188 | BORDE |
| 6702 | 622783.067 | 9276780.018 | 33.303 | BORDE |
| 6703 | 622791.621 | 9276776.957 | 33.729 | CANAL |
| 6704 | 622791.354 | 9276777.160 | 34.051 | CANAL |
| 6705 | 622791.365 | 9276778.163 | 34.086 | CANAL |
| 6706 | 622791.507 | 9276779.901 | 34.171 | EJE |
| 6707 | 622791.275 | 9276781.002 | 34.298 | CANAL |
| 6708 | 622791.258 | 9276781.679 | 34.271 | CANAL |
| 6709 | 622790.655 | 9276783.154 | 34.129 | BORDE |
| 6710 | 622790.331 | 9276783.655 | 33.146 | BORDE |
| 6711 | 622799.153 | 9276777.057 | 33.269 | CANAL |
| 6712 | 622799.189 | 9276777.363 | 33.940 | CANAL |
| 6713 | 622799.187 | 9276778.741 | 34.147 | CANAL |
| 6714 | 622799.202 | 9276779.308 | 34.172 | CANAL |
| 6715 | 622799.334 | 9276779.986 | 34.151 | CANAL |
| 6716 | 622799.788 | 9276781.349 | 34.221 | EJE |
| 6717 | 622799.796 | 9276782.612 | 34.315 | CANAL |
| 6718 | 622799.892 | 9276783.281 | 34.309 | CANAL |
| 6719 | 622799.670 | 9276784.324 | 34.205 | BORDE |
| 6720 | 622799.207 | 9276785.191 | 33.061 | BORDE |
| 6721 | 622816.550 | 9276776.637 | 33.459 | CANAL |
| 6722 | 622816.650 | 9276777.401 | 34.203 | CANAL |
| 6723 | 622817.397 | 9276778.154 | 34.229 | CANAL |
| 6724 | 622817.595 | 9276778.707 | 34.180 | CANAL |
| 6725 | 622818.013 | 9276780.120 | 34.258 | EJE |
| 6726 | 622818.428 | 9276781.678 | 34.328 | CANAL |
| 6727 | 622818.639 | 9276781.967 | 34.229 | CANAL |
| 6728 | 622818.971 | 9276783.420 | 33.472 | BORDE |
| 6729 | 622842.083 | 9276770.283 | 34.215 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6730 | 622842.115 | 9276769.681 | 33.707 | CANAL |
| 6731 | 622842.399 | 9276770.653 | 34.188 | CANAL |
| 6732 | 622842.824 | 9276771.064 | 34.176 | CANAL |
| 6733 | 622844.249 | 9276773.795 | 34.241 | EJE |
| 6734 | 622844.743 | 9276774.908 | 34.193 | CANAL |
| 6735 | 622844.836 | 9276776.004 | 34.222 | CANAL |
| 6736 | 622844.829 | 9276777.160 | 34.180 | BORDE |
| 6737 | 622844.704 | 9276777.980 | 33.276 | BORDE |
| 6738 | 622863.227 | 9276764.712 | 34.129 | CANAL |
| 6739 | 622863.418 | 9276765.471 | 34.740 | CANAL |
| 6740 | 622863.643 | 9276766.469 | 34.521 | CANAL |
| 6741 | 622863.648 | 9276766.656 | 34.426 | CANAL |
| 6742 | 622863.978 | 9276767.423 | 34.330 | CANAL |
| 6743 | 622864.678 | 9276770.619 | 34.443 | EJE |
| 6744 | 622865.003 | 9276771.787 | 34.389 | CANAL |
| 6745 | 622865.169 | 9276772.959 | 34.239 | CANAL |
| 6746 | 622865.018 | 9276774.356 | 34.107 | BORDE |
| 6747 | 622864.751 | 9276775.445 | 33.416 | BORDE |
| 6748 | 622878.439 | 9276765.051 | 33.980 | CANAL |
| 6749 | 622878.273 | 9276766.045 | 34.990 | CANAL |
| 6750 | 622877.837 | 9276767.810 | 34.573 | TERRENO |
| 6751 | 622877.920 | 9276768.631 | 34.700 | CANAL |
| 6752 | 622877.804 | 9276769.915 | 34.567 | CANAL |
| 6753 | 622876.964 | 9276772.220 | 34.610 | EJE |
| 6754 | 622876.386 | 9276773.720 | 34.452 | CANAL |
| 6755 | 622875.710 | 9276775.126 | 34.246 | CANAL |
| 6756 | 622874.990 | 9276776.516 | 33.977 | BORDE |
| 6757 | 622874.348 | 9276777.898 | 33.415 | BORDE |
| 6758 | 622889.838 | 9276774.608 | 33.774 | CANAL |
| 6759 | 622889.083 | 9276775.035 | 34.707 | CANAL |
| 6760 | 622888.199 | 9276776.046 | 34.628 | TERRENO |
| 6761 | 622887.563 | 9276776.955 | 34.699 | CANAL |
| 6762 | 622887.141 | 9276777.461 | 34.653 | CANAL |
| 6763 | 622885.332 | 9276778.829 | 34.613 | EJE |
| 6764 | 622883.827 | 9276780.232 | 34.492 | CANAL |
| 6765 | 622883.262 | 9276780.795 | 34.320 | CANAL |
| 6766 | 622881.755 | 9276781.928 | 34.131 | BORDE |
| 6767 | 622880.925 | 9276782.326 | 33.520 | BORDE |
| 6768 | 622895.746 | 9276791.142 | 33.381 | CANAL |
| 6769 | 622895.390 | 9276791.247 | 34.432 | CANAL |
| 6770 | 622894.714 | 9276791.680 | 34.421 | CANAL |
| 6771 | 622894.147 | 9276791.948 | 34.440 | CANAL |
| 6772 | 622893.194 | 9276792.535 | 34.305 | CANAL |
| 6773 | 622891.474 | 9276793.432 | 34.462 | EJE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6774 | 622889.867 | 9276794.159 | 34.482 | CANAL |
| 6775 | 622888.422 | 9276794.654 | 34.421 | CANAL |
| 6776 | 622887.645 | 9276794.631 | 34.266 | BORDE |
| 6777 | 622887.373 | 9276794.676 | 33.906 | BORDE |
| 6778 | 622906.954 | 9276828.643 | 33.399 | CANAL |
| 6779 | 622906.536 | 9276828.832 | 34.379 | CANAL |
| 6780 | 622905.562 | 9276829.431 | 34.453 | CANAL |
| 6781 | 622904.673 | 9276829.634 | 34.558 | CAMINO |
| 6782 | 622903.834 | 9276830.524 | 34.440 | CANAL |
| 6783 | 622902.730 | 9276831.018 | 34.414 | EJE |
| 6784 | 622901.186 | 9276831.646 | 34.579 | CANAL |
| 6785 | 622900.015 | 9276832.208 | 34.589 | CANAL |
| 6786 | 622898.965 | 9276832.301 | 34.383 | BORDE |
| 6787 | 622898.409 | 9276832.249 | 33.468 | BORDE |
| 6788 | 622915.186 | 9276857.071 | 33.595 | CANAL |
| 6789 | 622914.154 | 9276857.476 | 34.355 | BORDE |
| 6790 | 622913.835 | 9276857.394 | 34.439 | CANAL |
| 6791 | 622913.227 | 9276858.028 | 34.309 | CANAL |
| 6792 | 622911.336 | 9276858.864 | 34.522 | EJE |
| 6793 | 622910.484 | 9276859.385 | 34.521 | CANAL |
| 6794 | 622910.038 | 9276859.765 | 34.379 | CANAL |
| 6795 | 622908.458 | 9276859.863 | 34.328 | BORDE |
| 6796 | 622907.865 | 9276859.960 | 33.409 | BORDE |
| 6797 | 622927.697 | 9276880.759 | 34.098 | CANAL |
| 6798 | 622927.068 | 9276881.307 | 34.338 | BORDE |
| 6799 | 622926.760 | 9276881.619 | 34.434 | CANAL |
| 6800 | 622926.442 | 9276882.017 | 34.316 | CANAL |
| 6801 | 622924.681 | 9276882.957 | 34.469 | EJE |
| 6802 | 622924.109 | 9276883.515 | 34.400 | CANAL |
| 6803 | 622922.833 | 9276884.359 | 34.378 | CANAL |
| 6804 | 622921.929 | 9276885.000 | 34.401 | BORDE |
| 6805 | 622920.508 | 9276885.499 | 33.578 | BORDE |
| 6806 | 622945.069 | 9276906.580 | 33.470 | CANAL |
| 6807 | 622944.674 | 9276906.718 | 34.362 | CANAL |
| 6808 | 622943.651 | 9276907.826 | 34.463 | CANAL |
| 6809 | 622943.120 | 9276908.602 | 34.406 | CANAL |
| 6810 | 622941.812 | 9276909.885 | 34.495 | EJE |
| 6811 | 622941.018 | 9276910.489 | 34.488 | CANAL |
| 6812 | 622940.151 | 9276911.393 | 34.475 | CANAL |
| 6813 | 622940.046 | 9276911.544 | 34.320 | BORDE |
| 6814 | 622938.784 | 9276912.107 | 33.350 | BORDE |
| 6815 | 622958.321 | 9276924.625 | 33.664 | CANAL |
| 6816 | 622957.872 | 9276924.816 | 34.508 | CANAL |
| 6817 | 622958.042 | 9276925.605 | 34.440 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6818 | 622957.595 | 9276926.775 | 34.449 | CANAL |
| 6819 | 622956.988 | 9276927.511 | 34.506 | EJE |
| 6820 | 622955.992 | 9276928.382 | 34.665 | CANAL |
| 6821 | 622955.487 | 9276929.167 | 34.613 | CANAL |
| 6822 | 622954.805 | 9276930.067 | 34.724 | BORDE |
| 6823 | 622953.711 | 9276930.409 | 33.573 | BORDE |
| 6824 | 622965.665 | 9276928.251 | 33.774 | CANAL |
| 6825 | 622965.814 | 9276928.675 | 34.352 | CANAL |
| 6826 | 622965.708 | 9276929.344 | 34.406 | CANAL |
| 6827 | 622965.718 | 9276930.115 | 34.290 | CANAL |
| 6828 | 622966.029 | 9276931.944 | 34.462 | EJE |
| 6829 | 622965.836 | 9276933.478 | 34.602 | CANAL |
| 6830 | 622965.638 | 9276934.524 | 34.575 | CANAL |
| 6831 | 622965.701 | 9276934.877 | 34.512 | BORDE |
| 6832 | 622965.253 | 9276936.310 | 33.451 | BORDE |
| 6833 | 622976.715 | 9276928.591 | 33.231 | CANAL |
| 6834 | 622976.499 | 9276929.180 | 34.361 | CANAL |
| 6835 | 622976.784 | 9276930.315 | 34.379 | CANAL |
| 6836 | 622976.896 | 9276930.630 | 34.222 | CANAL |
| 6837 | 622976.978 | 9276932.824 | 34.447 | EJE |
| 6838 | 622977.002 | 9276934.015 | 34.467 | CANAL |
| 6839 | 622977.267 | 9276934.552 | 34.332 | CANAL |
| 6840 | 622977.216 | 9276936.237 | 33.847 | BORDE |
| 6841 | 622977.241 | 9276936.990 | 33.390 | BORDE |
| 6842 | 622988.388 | 9276926.999 | 33.501 | CANAL |
| 6843 | 622988.489 | 9276927.566 | 34.533 | CANAL |
| 6844 | 622988.769 | 9276927.911 | 34.344 | CANAL |
| 6845 | 622988.914 | 9276928.732 | 34.265 | CANAL |
| 6846 | 622989.148 | 9276929.708 | 34.157 | CANAL |
| 6847 | 622989.542 | 9276931.485 | 34.402 | EJE |
| 6848 | 622989.635 | 9276932.817 | 34.455 | CANAL |
| 6849 | 622989.793 | 9276932.847 | 34.278 | CANAL |
| 6850 | 622990.166 | 9276934.924 | 34.303 | BORDE |
| 6851 | 622989.911 | 9276935.716 | 33.481 | BORDE |
| 6852 | 623028.285 | 9276921.126 | 33.239 | CANAL |
| 6853 | 623028.008 | 9276921.634 | 34.409 | CANAL |
| 6854 | 623028.751 | 9276922.489 | 34.285 | CANAL |
| 6855 | 623028.945 | 9276922.863 | 34.168 | CANAL |
| 6856 | 623029.648 | 9276924.887 | 34.273 | EJE |
| 6857 | 623029.997 | 9276926.401 | 34.334 | CANAL |
| 6858 | 623030.231 | 9276927.752 | 34.386 | CANAL |
| 6859 | 623030.353 | 9276928.490 | 34.146 | BORDE |
| 6860 | 623030.132 | 9276928.847 | 33.956 | BORDE |
| 6861 | 623065.691 | 9276913.451 | 33.701 | CANAL |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6862 | 623065.981 | 9276914.056 | 34.342 | CANAL |
| 6863 | 623066.327 | 9276914.720 | 34.382 | CANAL |
| 6864 | 623066.952 | 9276915.818 | 34.378 | CANAL |
| 6865 | 623067.536 | 9276917.302 | 34.396 | EJE |
| 6866 | 623067.958 | 9276918.969 | 34.455 | CANAL |
| 6867 | 623068.624 | 9276920.425 | 34.507 | CANAL |
| 6868 | 623069.069 | 9276921.985 | 34.718 | BORDE |
| 6869 | 623069.751 | 9276923.098 | 34.669 | BORDE |
| 6870 | 623069.734 | 9276923.937 | 34.880 | BORDE |
| 6871 | 623099.233 | 9276904.142 | 33.713 | CANAL |
| 6872 | 623099.477 | 9276904.503 | 34.516 | CANAL |
| 6873 | 623099.845 | 9276905.377 | 34.434 | CANAL |
| 6874 | 623100.257 | 9276905.995 | 34.353 | CANAL |
| 6875 | 623101.241 | 9276908.193 | 34.459 | EJE |
| 6876 | 623101.478 | 9276908.826 | 34.321 | CANAL |
| 6877 | 623101.936 | 9276910.183 | 34.329 | CANAL |
| 6878 | 623102.400 | 9276911.681 | 34.240 | BORDE |
| 6879 | 623102.465 | 9276913.283 | 34.250 | BORDE |
| 6880 | 623134.358 | 9276896.223 | 33.968 | CANAL |
| 6881 | 623134.207 | 9276896.951 | 34.554 | CANAL |
| 6882 | 623134.574 | 9276898.065 | 34.410 | BORDE |
| 6883 | 623134.755 | 9276898.671 | 34.325 | CANAL |
| 6884 | 623135.177 | 9276899.561 | 34.240 | CANAL |
| 6885 | 623135.744 | 9276902.016 | 34.437 | EJE |
| 6886 | 623136.216 | 9276903.347 | 34.441 | CAMINO |
| 6887 | 623136.560 | 9276904.209 | 34.305 | CAMINO |
| 6888 | 623136.660 | 9276905.372 | 34.489 | BORDE |
| 6889 | 623136.938 | 9276907.413 | 34.297 | BORDE |
| 6890 | 623171.448 | 9276887.011 | 33.809 | CANAL |
| 6891 | 623171.769 | 9276887.787 | 34.698 | CANAL |
| 6892 | 623172.278 | 9276889.363 | 34.801 | BORDE |
| 6893 | 623172.409 | 9276890.270 | 34.541 | CANAL |
| 6894 | 623172.920 | 9276891.572 | 34.416 | CANAL |
| 6895 | 623173.548 | 9276893.860 | 34.535 | EJE |
| 6896 | 623174.114 | 9276895.216 | 34.552 | CANAL |
| 6897 | 623174.480 | 9276895.907 | 34.428 | CANAL |
| 6898 | 623175.304 | 9276897.394 | 34.353 | BORDE |
| 6899 | 623175.886 | 9276899.314 | 34.638 | BORDE |
| 6900 | 623212.262 | 9276875.387 | 34.389 | CANAL |
| 6901 | 623212.649 | 9276876.031 | 35.205 | CANAL |
| 6902 | 623213.434 | 9276877.089 | 34.920 | BORDE |
| 6903 | 623213.950 | 9276878.114 | 34.739 | CANAL |
| 6904 | 623214.346 | 9276878.911 | 34.629 | CANAL |
| 6905 | 623215.340 | 9276880.606 | 34.792 | EJE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6906 | 623215.933 | 9276881.755 | 34.829 | CANAL |
| 6907 | 623216.359 | 9276882.241 | 34.694 | CANAL |
| 6908 | 623216.985 | 9276882.937 | 34.860 | BORDE |
| 6909 | 623218.467 | 9276885.868 | 34.696 | BORDE |
| 6910 | 623249.755 | 9276857.289 | 34.799 | CANAL |
| 6911 | 623250.282 | 9276858.472 | 35.083 | BORDE |
| 6912 | 623250.547 | 9276859.325 | 34.761 | CAMINO |
| 6913 | 623251.062 | 9276860.190 | 34.697 | CAMINO |
| 6914 | 623252.146 | 9276862.348 | 34.683 | EJE |
| 6915 | 623252.787 | 9276864.037 | 34.682 | CAMINO |
| 6916 | 623253.394 | 9276865.598 | 34.574 | CAMINO |
| 6917 | 623254.115 | 9276868.192 | 34.755 | BORDE |
| 6918 | 623254.145 | 9276869.526 | 34.633 | BADÉN |
| 6919 | 623272.352 | 9276849.490 | 34.409 | BADÉN |
| 6920 | 623272.017 | 9276848.829 | 34.372 | BADÉN |
| 6921 | 623275.888 | 9276846.828 | 33.825 | BADÉN |
| 6922 | 623279.507 | 9276846.093 | 34.077 | BADÉN |
| 6923 | 623284.818 | 9276859.320 | 34.652 | BADÉN |
| 6924 | 623282.716 | 9276860.443 | 34.485 | BADÉN |
| 6925 | 623279.798 | 9276861.539 | 34.426 | BADÉN |
| 6926 | 623277.191 | 9276862.446 | 34.534 | BADÉN |
| 6927 | 623282.624 | 9276865.010 | 34.527 | TERRENO |
| 6928 | 623282.870 | 9276867.718 | 34.444 | TERRENO |
| 6929 | 623283.940 | 9276871.938 | 34.592 | TERRENO |
| 6930 | 623293.466 | 9276867.074 | 34.752 | TERRENO |
| 6931 | 623293.799 | 9276864.144 | 34.813 | TERRENO |
| 6932 | 623295.367 | 9276859.686 | 34.565 | TERRENO |
| 6933 | 623295.116 | 9276842.998 | 34.810 | CANAL |
| 6934 | 623295.850 | 9276843.739 | 34.803 | CANAL |
| 6935 | 623294.205 | 9276839.780 | 34.024 | CANAL |
| 6936 | 623301.090 | 9276838.265 | 34.423 | CANAL |
| 6937 | 623302.898 | 9276838.011 | 34.738 | ALCANTARILLA |
| 6938 | 623303.585 | 9276837.491 | 34.739 | ALCANTARILLA |
| 6939 | 623305.841 | 9276836.188 | 34.588 | CANAL |
| 6940 | 623307.516 | 9276840.309 | 34.898 | TERRENO |
| 6941 | 623307.924 | 9276841.299 | 34.627 | TERRENO |
| 6942 | 623308.908 | 9276843.637 | 34.678 | TERRENO |
| 6943 | 623310.188 | 9276846.284 | 34.771 | TERRENO |
| 6944 | 623310.702 | 9276849.648 | 34.821 | CANAL |
| 6945 | 623311.627 | 9276852.609 | 34.745 | EJE |
| 6946 | 623312.196 | 9276855.522 | 34.679 | CANAL |
| 6947 | 623312.469 | 9276858.384 | 34.652 | CANAL |
| 6948 | 623312.546 | 9276860.742 | 34.690 | BORDE |
| 6949 | 623312.898 | 9276864.336 | 34.706 | BORDE |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6950 | 623322.275 | 9276847.091 | 34.167 | TERRENO |
| 6951 | 623322.009 | 9276847.778 | 34.238 | TERRENO |
| 6952 | 623321.183 | 9276850.384 | 34.767 | CANAL |
| 6953 | 623321.326 | 9276851.162 | 34.731 | CANAL |
| 6954 | 623321.254 | 9276853.871 | 34.703 | EJE |
| 6955 | 623320.792 | 9276856.947 | 34.793 | CANAL |
| 6956 | 623320.849 | 9276857.607 | 34.556 | CANAL |
| 6957 | 623320.289 | 9276861.399 | 34.749 | TERRENO |
| 6958 | 623339.996 | 9276856.483 | 34.165 | TERRENO |
| 6959 | 623339.778 | 9276857.111 | 34.935 | TERRENO |
| 6960 | 623339.876 | 9276857.834 | 34.970 | CANAL |
| 6961 | 623339.888 | 9276858.474 | 34.787 | CANAL |
| 6962 | 623339.881 | 9276860.993 | 34.963 | EJE |
| 6963 | 623339.599 | 9276862.297 | 34.988 | CANAL |
| 6964 | 623339.401 | 9276862.900 | 34.910 | CANAL |
| 6965 | 623338.773 | 9276865.061 | 34.887 | TERRENO |
| 6966 | 623360.094 | 9276861.906 | 34.219 | TERRENO |
| 6967 | 623360.142 | 9276862.558 | 35.180 | TERRENO |
| 6968 | 623360.073 | 9276863.227 | 35.219 | CANAL |
| 6969 | 623360.127 | 9276864.079 | 35.115 | CANAL |
| 6970 | 623359.983 | 9276865.239 | 35.057 | EJE |
| 6971 | 623359.524 | 9276867.323 | 35.196 | CANAL |
| 6972 | 623359.477 | 9276868.090 | 35.069 | CANAL |
| 6973 | 623358.854 | 9276870.197 | 35.770 | TERRENO |
| 6974 | 623389.087 | 9276868.166 | 34.133 | TERRENO |
| 6975 | 623389.134 | 9276868.790 | 35.027 | TERRENO |
| 6976 | 623389.015 | 9276868.944 | 35.339 | TERRENO |
| 6977 | 623389.280 | 9276869.530 | 35.412 | CANAL |
| 6978 | 623389.315 | 9276870.573 | 35.308 | CANAL |
| 6979 | 623388.951 | 9276872.727 | 35.449 | EJE |
| 6980 | 623388.897 | 9276873.643 | 35.405 | CANAL |
| 6981 | 623389.060 | 9276874.193 | 35.359 | CANAL |
| 6982 | 623388.349 | 9276876.795 | 36.272 | TERRENO |
| 6983 | 623411.845 | 9276873.872 | 34.644 | TERRENO |
| 6984 | 623411.775 | 9276874.423 | 35.306 | TERRENO |
| 6985 | 623411.915 | 9276874.890 | 35.305 | CANAL |
| 6986 | 623412.053 | 9276875.668 | 35.198 | CANAL |
| 6987 | 623412.277 | 9276877.555 | 35.332 | EJE |
| 6988 | 623411.988 | 9276879.628 | 35.382 | CANAL |
| 6989 | 623412.142 | 9276880.649 | 35.331 | CANAL |
| 6990 | 623412.231 | 9276881.511 | 35.387 | CANAL |
| 6991 | 623411.866 | 9276883.736 | 35.188 | TERRENO |
| 6992 | 623430.527 | 9276872.517 | 34.111 | TERRENO |
| 6993 | 623430.900 | 9276872.846 | 34.409 | TERRENO |

| PUNTO | NORTE | ESTE | COTA | DESCRIPCIÓN |
|---|---|---|---|---|
| 6994 | 623431.137 | 9276873.715 | 35.008 | CANAL |
| 6995 | 623431.245 | 9276874.129 | 35.056 | CANAL |
| 6996 | 623431.620 | 9276876.553 | 35.215 | CANAL |
| 6997 | 623431.743 | 9276878.432 | 35.266 | EJE |
| 6998 | 623431.905 | 9276880.037 | 35.267 | CANAL |
| 6999 | 623432.139 | 9276881.208 | 35.128 | CANAL |
| 7000 | 623432.097 | 9276883.657 | 35.256 | TERRENO |
| 7001 | 623445.308 | 9276871.198 | 34.254 | TERRENO |
| 7002 | 623445.546 | 9276871.942 | 34.969 | TERRENO |
| 7003 | 623445.741 | 9276873.062 | 34.908 | TERRENO |
| 7004 | 623445.899 | 9276874.748 | 35.262 | CANAL |
| 7005 | 623445.982 | 9276875.487 | 35.227 | CANAL |
| 7006 | 623446.427 | 9276877.935 | 35.357 | EJE |
| 7007 | 623446.790 | 9276879.565 | 35.402 | CANAL |
| 7008 | 623446.986 | 9276880.644 | 35.333 | CANAL |
| 7009 | 623447.074 | 9276882.865 | 35.311 | TERRENO |
| 7010 | 623452.311 | 9276883.345 | 35.462 | TERRENO |
| 7011 | 623448.254 | 9276886.714 | 35.441 | TERRENO |
| 7012 | 623446.272 | 9276886.900 | 35.271 | TERRENO |
| 7013 | 623463.488 | 9276869.053 | 34.058 | TERRENO |
| 7014 | 623464.247 | 9276870.207 | 34.920 | TERRENO |
| 7015 | 623464.744 | 9276871.555 | 35.404 | TERRENO |
| 7016 | 623465.723 | 9276871.948 | 35.201 | CAMINO |
| 7017 | 623459.375 | 9276875.804 | 35.381 | CAMINO |
| 7018 | 623453.352 | 9276879.613 | 35.442 | CAMINO |
| 7019 | 623449.495 | 9276881.753 | 35.399 | CAMINO |
| 7020 | 623446.514 | 9276879.094 | 35.312 | EJE |
| 7021 | 623439.710 | 9276882.634 | 35.861 | **BM -13** |
| 7022 | 623469.238 | 9276899.512 | 36.128 | **PG-02** |

***Nota:*** Elaboración propia

# ANEXO N°05.- ESTUDIO DE MECÁNICA DE SUELOS

# ESTUDIO DE MECÁNICA DE SUELOS CON FINES DE PAVIMENTACIÓN

**PROYECTO:**

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

**UBICACIÓN:**

- **DISTRTIO : MOCHUMI**
- **PROVINCIA : LAMBAYEQUE**
- **DEPARTAMENTO : LAMBAYEQUE**

**TESISTAS:**

- **ARROYO AYALA MILAGROS**
- **SANCHEZ MONTENEGRO NOLBER RICARDO**

**Lambayeque, Diciembre del 2025**

Mario Ramirez Dejo
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## 1.0 GENERALIDADES

El estudio de mecánica de suelos comprende una serie de ensayos, análisis y evaluaciones orientadas a determinar las propiedades físicas, mecánicas y geomecánicas del suelo, así como su comportamiento ante la aplicación de cargas. Este estudio permite evaluar su capacidad portante, deformabilidad y estabilidad, constituyéndose en un elemento esencial para el diseño de carreteras, donde el suelo actúa como base de sustentación de la estructura del pavimento.

## 1.1. OBJETIVO DEL ESTUDIO

Se efectúa el presente estudio de suelos en el área destinada para el proyecto de tesis: "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE", con la finalidad de conocer las características geomecánicas y comportamiento como base de sustentación de los suelos con el propósito de poder diseñar la estructura del pavimento.

## 1.2. UBICACIÓN DEL ESTUDIO

- **DISTRTIO** **:** Mochumí
- **PROVINCIA** **:** Lambayeque
- **DEPARTAMENTO :** Lambayeque

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**Figura 1**

*Ubicación geográfica*



**Figura 2**

*Ubicación Departamental*






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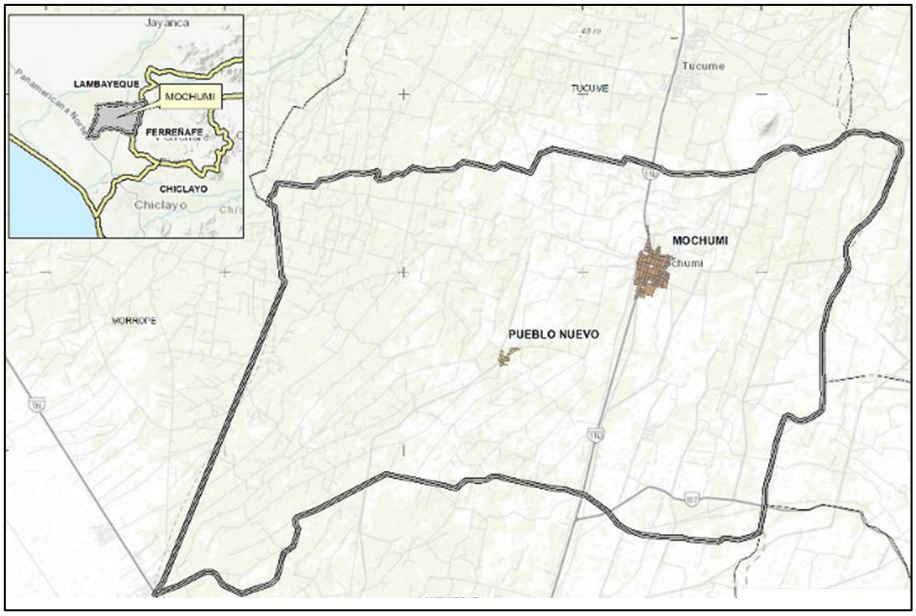
**Figura 3**

*Ubicación Provincial*




**Figura 4**

*Ubicación Distrital*



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LABORATORIO LINUS E.I.R.L. SUELOS PAVIMENTOS ASFALTO ANALISIS DE MATERIALES

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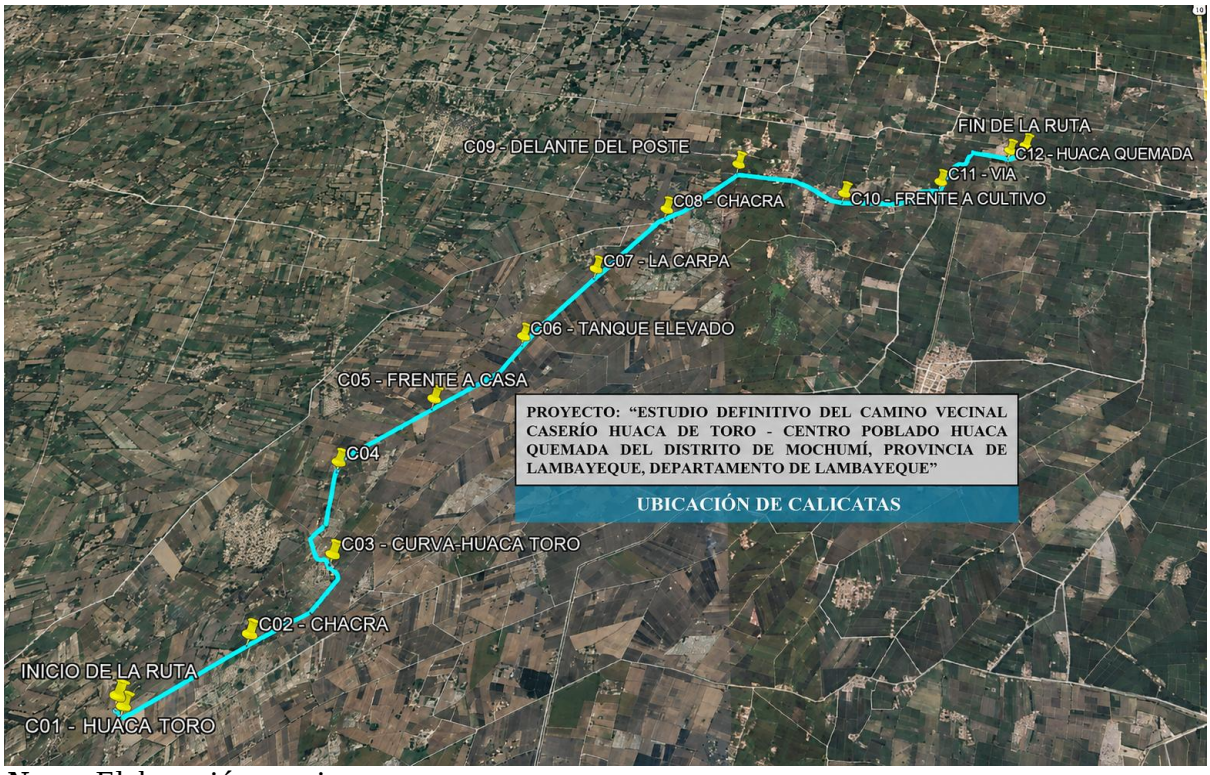
## 2.0 INVESTIGACION DE CAMPO

Los trabajos de campo han sido dirigidos a la obtención de la información necesaria para la determinación de las propiedades físicas y mecánicas del suelo, mediante un programa de exploración directa, habiéndose ejecutado (12) calicatas a cielo abierto; distribuidas de tal manera que cubran toda el área de estudio y que nos permita obtener con bastante aproximación la conformación litológica de los suelos. A continuación, se detalla en el siguiente gráfico.

**Figura 5**

*Número de calicatas*




***Nota:*** Elaboración propia.

**Tabla 1**

*Ubicación de calicatas*

| CALICATA | PROGRESIVA (km) | ESTE (E) | NORTE (S) |
|---|---|---|---|
| **C1** | 0+000 | 616048.55 | 9271022.23 |
| **C2** | 1+000 | 616854.25 | 9271597.80 |

| CALICATA | PROGRESIVA (km) | ESTE (E) | NORTE (S) |
|---|---|---|---|
| **C3** | 2+000 | 617365.16 | 9272288.79 |
| **C4** | 3+000 | 617281.70 | 9273158.04 |
| **C5** | 4+000 | 617995.14 | 9273802.04 |
| **C6** | 5+000 | 618698.32 | 9274486.11 |
| **C7** | 6+000 | 619305.75 | 9275279.59 |
| **C8** | 7+000 | 619950.63 | 9276040.58 |
| **C9** | 8+000 | 620735.20 | 9276626.62 |
| **C10** | 9+000 | 621625.95 | 9276246.79 |
| **C11** | 10+000 | 622567.38 | 9276398.10 |
| **C12** | 11+000 | 623292.10 | 9276859.55 |

***Nota:*** Elaboración propia.

En esta fase se han efectuado de cada calicata toma de muestras de cada calicata, para sus ensayos pertinentes en el laboratorio, y muestras para las pruebas de C.B.R. (Razón Soporte California), con la finalidad de realizar el diseño de la estructura del pavimento. La profundidad alcanzada en las 12 calicatas es de 1.50 m. El Registro de exploración, se presenta en Anexo.

## 3.0 ENSAYOS DE LABORATORIO

- Las pruebas efectuadas son las siguientes:
- Análisis granulométrico por tamizado AASHTO T 88
- Límites de Atterberg ASTM D 4318
- Clasificación de Suelos AASHTO M 145, ASTM D 2487
- Humedad Natural ASTM – D2216
- Proctor Modificado AASHTO T 180

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- California Bearing Ratio (CBR) AASHTO T 193

## 4.0 INTERPRETACION DE RESULTADOS

**Tabla 2**

*CALICATA 01*

| CALICATA 01 – PROGRESIVA – KM. 0+00 | |
|---|---|
| **MUESTRA** | MUESTRA 01 |
| **PROFUNDIDAD** | 0.30 Metros – 1.50 Metros |
| **CLASIFICACION SUCS** | SC – Arenas arcillosas de mediana plasticidad |
| **CLASIFICACION AASHTO** | A – 6 (2) |
| **LIMITE LIQUIDO** | 29.21 |
| **LIMITE PLASTICO** | 17.01 |
| **INDICE DE PLASTICIDAD** | 12.20 |
| **% CONTENIDO DE HUMEDAD** | 10.13 |
| **% CONTENIDO DE SALES** | 0.20 |
| **MAXIMA DENSIDAD SECA** | 1.85 gr/cm$^3$ |
| **OPTIMO CONTENIDO DE HUMEDAD** | 13.79 % |
| **NIVEL FREATICO** | NO SE UBICO |

***Nota:*** Elaboración propia.

**Tabla 3**

*CALICATA 02*

| **CALICATA 02 – PROGRESIVA – KM. 1+00** | |
|---|---|
| **MUESTRA** | MUESTRA 01 |
| **PROFUNDIDAD** | 0.30 Metros – 1.50 Metros |
| **CLASIFICACION SUCS** | SC – Arenas arcillosas de mediana plasticidad |
| **CLASIFICACION AASHTO** | A – 6 (2) |
| **LIMITE LIQUIDO** | 29.54 |
| **LIMITE PLASTICO** | 17.39 |
| **INDICE DE PLASTICIDAD** | 12.15 |
| **% CONTENIDO DE HUMEDAD** | 10.15 |
| **% CONTENIDO DE SALES** | 0.18 |
| **MAXIMA DENSIDAD SECA** | 1.88 gr/cm$^3$ |
| **OPTIMO CONTENIDO DE HUMEDAD** | 13.78 % |
| **NIVEL FREATICO** | NO SE UBICO |

***Nota:*** Elaboración propia.

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**Tabla 4**

*CALICATA 03*

| CALICATA 03 – PROGRESIVA – KM. 2+00 | |
|---|---|
| **MUESTRA** | **MUESTRA 01** |
| **PROFUNDIDAD** | **0.30 Metros – 1.50 Metros** |
| **CLASIFICACION SUCS** | **SC – Arenas arcillosas de mediana plasticidad** |
| **CLASIFICACION AASHTO** | **A – 6 (5)** |
| **LIMITE LIQUIDO** | **32.62** |
| **LIMITE PLASTICO** | **17.17** |
| **INDICE DE PLASTICIDAD** | **15.45** |
| **% CONTENIDO DE HUMEDAD** | **8.72** |
| **% CONTENIDO DE SALES** | **0.18** |
| **MAXIMA DENSIDAD SECA** | **1.83 gr/cm$^3$** |
| **OPTIMO CONTENIDO DE HUMEDAD** | **13.93 %** |
| **C.B.R – 100%** | **10.00%** |
| **C.B.R – 95%** | **6.1%** |
| **NIVEL FREATICO** | **NO SE UBICO** |

***Nota:*** Elaboración propia.

**Tabla 5**

*CALICATA 04*

| **CALICATA 04 – PROGRESIVA – KM. 3+00** | |
|---|---|
| **MUESTRA** | MUESTRA 01 |
| **PROFUNDIDAD** | 0.30 Metros – 1.50 Metros |
| **CLASIFICACION SUCS** | SC – Arenas arcillosas de mediana plasticidad |
| **CLASIFICACION AASHTO** | A – 6 (5) |
| **LIMITE LIQUIDO** | 28.14 |
| **LIMITE PLASTICO** | 20.20 |
| **INDICE DE PLASTICIDAD** | 7.94 |
| **% CONTENIDO DE HUMEDAD** | 13.40 |
| **% CONTENIDO DE SALES** | 0.20 |
| **MAXIMA DENSIDAD SECA** | 1.80 gr/cm$^3$ |
| **OPTIMO CONTENIDO DE HUMEDAD** | 14.44 % |
| **NIVEL FREATICO** | NO SE UBICO |

***Nota:*** Elaboración propia.

**Tabla 6**

*CALICATA 05*

| **CALICATA 05 – PROGRESIVA – KM. 4+00** | |
|---|---|
| **MUESTRA** | MUESTRA 01 |
| **PROFUNDIDAD** | 0.50 Metros – 1.50 Metros |
| **CLASIFICACION SUCS** | CL – Arcillas de mediana plasticidad |
| **CLASIFICACION AASHTO** | A – 6 (11) |
| **LIMITE LIQUIDO** | 38.92 |
| **LIMITE PLASTICO** | 21.22 |
| **INDICE DE PLASTICIDAD** | 17.70 |
| **% CONTENIDO DE HUMEDAD** | 18.19 |
| **% CONTENIDO DE SALES** | 0.19 |
| **MAXIMA DENSIDAD SECA** | 1.79 gr/cm$^3$ |
| **OPTIMO CONTENIDO DE HUMEDAD** | 14.92 % |
| **NIVEL FREATICO** | 1.20 metros. |

***Nota:*** Elaboración propia.

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**Tabla 7**

*CALICATA 06*

| CALICATA 06 – PROGRESIVA – KM. 5+00 | |
|---|---|
| **MUESTRA** | MUESTRA 01 |
| **PROFUNDIDAD** | 0.30 Metros – 1.50 Metros |
| **CLASIFICACION SUCS** | SC – Arenas arcillosas de mediana plasticidad |
| **CLASIFICACION AASHTO** | A – 6 (2) |
| **LIMITE LIQUIDO** | 36.14 |
| **LIMITE PLASTICO** | 20.43 |
| **INDICE DE PLASTICIDAD** | 15.71 |
| **% CONTENIDO DE HUMEDAD** | 16.13 |
| **% CONTENIDO DE SALES** | 0.18 |
| **MAXIMA DENSIDAD SECA** | 1.82 gr/cm$^3$ |
| **OPTIMO CONTENIDO DE HUMEDAD** | 14.12 % |
| **C.B.R. – 100%** | 9.5% |
| **C.B.R. – 95%** | 5.8% |
| **NIVEL FREATICO** | NO SE UBICO |

***Nota:*** Elaboración propia.

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**Tabla 8**

*CALICATA 07*

| **CALICATA 07 – PROGRESIVA – KM. 6+00** | |
|---|---|
| **MUESTRA** | MUESTRA 01 |
| **PROFUNDIDAD** | 0.20 Metros – 1.50 Metros |
| **CLASIFICACION SUCS** | SC – Arenas arcillosas de mediana plasticidad |
| **CLASIFICACION AASHTO** | A – 6 (4) |
| **LIMITE LIQUIDO** | 35.95 |
| **LIMITE PLASTICO** | 19.71 |
| **INDICE DE PLASTICIDAD** | 16.24 |
| **% CONTENIDO DE HUMEDAD** | 19.72 |
| **% CONTENIDO DE SALES** | 0.20 |
| **MAXIMA DENSIDAD SECA** | 1.85 gr/cm$^3$ |
| **OPTIMO CONTENIDO DE HUMEDAD** | 13.55 % |
| **NIVEL FREATICO** | 1.50 metros. |

***Nota:*** Elaboración propia.

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**Tabla 9**

*CALICATA 08*

| CALICATA 08 – PROGRESIVA – KM. 7+00 | |
|---|---|
| **MUESTRA** | MUESTRA 01 |
| **PROFUNDIDAD** | 0.20 Metros – 1.50 Metros |
| **CLASIFICACION SUCS** | SM – Arenas limosas de baja plasticidad |
| **CLASIFICACION AASHTO** | A – 2 – 4(0) |
| **LIMITE LIQUIDO** | 39.20 |
| **LIMITE PLASTICO** | 22.10 |
| **INDICE DE PLASTICIDAD** | 7.10 |
| **% CONTENIDO DE HUMEDAD** | 13.42 |
| **% CONTENIDO DE SALES** | 0.19 |
| **MAXIMA DENSIDAD SECA** | 1.87 gr/cm$^3$ |
| **OPTIMO CONTENIDO DE HUMEDAD** | 9.41 % |
| **NIVEL FREATICO** | NO SE UBICO |

***Nota:*** Elaboración propia.

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**Tabla 10**

*CALICATA 09*

| CALICATA 09 – PROGRESIVA – KM. 8+00 | |
|---|---|
| **MUESTRA** | MUESTRA 01 |
| **PROFUNDIDAD** | 0.20 Metros – 1.50 Metros |
| **CLASIFICACION SUCS** | SM – Arenas limosas de baja plasticidad |
| **CLASIFICACION AASHTO** | A – 2 – 4 (0) |
| **LIMITE LIQUIDO** | 28.90 |
| **LIMITE PLASTICO** | 22.61 |
| **INDICE DE PLASTICIDAD** | 6.29 |
| **% CONTENIDO DE HUMEDAD** | 11.69 |
| **% CONTENIDO DE SALES** | 0.18 |
| **MAXIMA DENSIDAD SECA** | 1.87 gr/cm$^3$ |
| **OPTIMO CONTENIDO DE HUMEDAD** | 6.26 % |
| **C.B.R. – 100%** | 12.1 % |
| **C.B.R. – 95%** | 7.4 % |
| **NIVEL FREATICO** | NO SE UBICO |

***Nota:*** Elaboración propia.

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**Tabla 11**

*CALICATA 10*

| **CALICATA 10 – PROGRESIVA – KM. 9+00** | |
|---|---|
| **MUESTRA** | MUESTRA 01 |
| **PROFUNDIDAD** | 0.30 Metros – 1.50 Metros |
| **CLASIFICACION SUCS** | SC – Arenas arcillosas de mediana plasticidad |
| **CLASIFICACION AASHTO** | A – 6(5) |
| **LIMITE LIQUIDO** | 29.30 |
| **LIMITE PLASTICO** | 20.48 |
| **INDICE DE PLASTICIDAD** | 8.82 |
| **% CONTENIDO DE HUMEDAD** | 11.82 |
| **% CONTENIDO DE SALES** | 0.18 |
| **MAXIMA DENSIDAD SECA** | 1.82 gr/cm$^3$ |
| **OPTIMO CONTENIDO DE HUMEDAD** | 9.78 % |
| **NIVEL FREATICO** | NO SE UBICO |

***Nota:*** Elaboración propia.

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**Tabla 12**

*CALICATA 11*

| CALICATA 11 – PROGRESIVA – KM. 10+00 | |
|---|---|
| **MUESTRA** | MUESTRA 01 |
| **PROFUNDIDAD** | 0.30 Metros – 1.50 Metros |
| **CLASIFICACION SUCS** | SC – Arenas arcillosas de mediana plasticidad |
| **CLASIFICACION AASHTO** | A – 2 – 4(0) |
| **LIMITE LIQUIDO** | 29.51 |
| **LIMITE PLASTICO** | 21.10 |
| **INDICE DE PLASTICIDAD** | 8.41 |
| **% CONTENIDO DE HUMEDAD** | 12.98 |
| **% CONTENIDO DE SALES** | 0.19 |
| **MAXIMA DENSIDAD SECA** | 1.83 gr/cm$^3$ |
| **OPTIMO CONTENIDO DE HUMEDAD** | 11.56 % |
| **NIVEL FREATICO** | NO SE UBICO |

***Nota:*** Elaboración propia.

**Tabla 13**

*CALICATA 12*

| CALICATA 12 – PROGRESIVA – KM. 11+00 | |
|---|---|
| **MUESTRA** | MUESTRA 01 |
| **PROFUNDIDAD** | 0.30 Metros – 1.50 Metros |
| **CLASIFICACION SUCS** | SC – Arenas arcillosas de mediana plasticidad |
| **CLASIFICACION AASHTO** | A – 2 – 4 (0) |
| **LIMITE LIQUIDO** | 29.73 |
| **LIMITE PLASTICO** | 21.51 |
| **INDICE DE PLASTICIDAD** | 8.22 |
| **% CONTENIDO DE HUMEDAD** | 13.48 |
| **% CONTENIDO DE SALES** | 0.19 |
| **MAXIMA DENSIDAD SECA** | 1.84 gr/cm$^3$ |
| **OPTIMO CONTENIDO DE HUMEDAD** | 13.81 % |
| **C.B.R. – 100%** | 10.2 % |
| **C.B.R. – 95%** | 6.2 % |
| **NIVEL FREATICO** | NO SE UBICO |

***Nota:*** Elaboración propia.

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# RESULTADOS DEL LABORATORIO

| CALICATA | PROFUNDIDAD | C.B.R 95% | ANÁLISIS GRANULOMÉTRICO | | LIMITES ATTERBERG | | | CLASIFICACIÓN | |
|---|---|---|---|---|---|---|---|---|---|
| | | | PASA 40 | PASA 200 | LL | LP | IP | SUCS | AASTHO |
| C1 | 0.3-1.50 | – | 91.41 | 43.83 | 29.21 | 17.01 | 12.20 | SC | A - 6(2) |
| C2 | 0.3-1.50 | – | 92.47 | 43.10 | 29.54 | 17.39 | 12.15 | SC | A - 6(2) |
| C3 | 0.3-1.50 | 6.1 | 96.29 | 49.49 | 32.62 | 17.17 | 15.45 | SC | A - 6(5) |
| C4 | 0.3-1.50 | – | 93.46 | 56.41 | 28.14 | 20.20 | 7.94 | SC | A - 6(5) |
| C5 | 0.3-1.50 | – | 95.80 | 82.07 | 38.92 | 21.22 | 17.70 | CL | A - 6(11) |
| C6 | 0.3-1.50 | 5.8 | 95.40 | 48.53 | 36.14 | 20.43 | 15.71 | SC | A - 6(2) |
| C7 | 0.3-1.50 | – | 89.89 | 47.37 | 35.95 | 19.71 | 16.24 | SC | A - 6(4) |
| C8 | 0.3-1.50 | – | 92.61 | 45.60 | 29.20 | 22.10 | 7.10 | SM | A - 2 - 4(0) |
| C9 | 0.3-1.50 | 7.2 | 90.15 | 18.85 | 28.90 | 22.61 | 6.29 | SM | A - 2 - 4(0) |
| C10 | 0.3-1.50 | – | 88.43 | 19.53 | 29.30 | 20.48 | 8.82 | SC | A - 6(5) |
| C11 | 0.3-1.50 | – | 91.14 | 17.13 | 29.51 | 21.10 | 8.41 | SM | A - 2 - 4(0) |
| C12 | 0.3-1.50 | 6.2 | 93.88 | 19.80 | 29.73 | 21.51 | 8.22 | SC | A - 2 - 4(0) |

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## 5.0 ASPECTOS GEOLOGICOS

### 5.1 GEOLOGÍA

La ciudad de Lambayeque, y en general todo el valle del Chancay, están apoyados sobre un depósito de suelos finos, sedimentarios, heterogéneos, de unidades estratigráficas recientes en estado sumergido y no saturado. Un análisis cualitativo de la estratigrafía que conforma los depósitos sedimentarios de suelos finos ubica un estrato de potencia definida sobre depósitos fluviales, eólicos, aluviales del cuaternario reciente.

### 5.2 GEOTECNIA

Son diversos los problemas de capacidad de carga, asentamientos, expansión, etc., que plantean los depósitos de suelos finos sedimentarios; más aún si se tiene en cuenta el fenómeno que se presenta por la variación de la napa freática, que en determinadas épocas del año ubican a estos suelos en condiciones de sumergido y saturado. Este fenómeno de variación de la napa freática se debe fundamentalmente a que la zona de Lambayeque se ubica topográficamente mas bajo respecto a las zonas agrícolas que la rodean y estos depósitos presentan en su estratigrafía estratos permeables por donde discurre el agua, elevando el nivel de la napa freática en tiempo de máximas avenidas.

### 5.3 GEODINAMICA EXTERNA

El sub suelo de actividad no está sujeto a socavaciones ni deslizamientos, así como no se ha encontrado evidencias de hundimientos ni levantamientos en el terreno; asimismo la geodinámica externa en el área de estudio no presenta en la actualidad riesgo alguno de deslizamiento de masas de tierra, etc. Tampoco se han observado fallas geológicas cuya existencia afectaría la seguridad de la obra.

## 6.0 ESTUDIO DE CANTERAS

En el presente ítem se acompañan las investigaciones de mecánica de suelos ejecutados como parte de la Evaluación de Materiales de Construcción; el estudio realizado se orientó a determinar las características físicas y mecánicas de los materiales que se pueden utilizar para

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rellenos o mejoramiento de fundación, sub base y base granular, que permita cubrir los requerimientos del Proyecto en cuanto a cantidad y calidad.

**CANTERA – 3 TOMAS FERREÑAFE**

En la ciudad de Mochumi existen varios proveedores de agregados de materiales para la construcción, los que al ser consultados nos informan que la fuente de dichos agregados es la Cantera Tres Tomas ubicada en el distrito de Mesones Muro de la provincia de Ferreñafe.

Con muestra de esta cantera, que fueron proporcionadas por proveedores locales, tanto material para sub base y base granular, se han realizado los respectivos ensayos de laboratorio, habiéndose obtenido las siguientes características físico mecánicas orientadas al diseño de pavimentos:

Suelos identificados en el sistema AASHTO, como A - 1- a (0), gravas limosas, mezcla de gravas, arena y limo de baja plasticidad.

**MATERIAL PARA SUB BASE Y BASE GRANULAR**

- Uso : Base y Sub Base
- Ubicación : Carretera FERREÑAFE
- Distancia : 30 Km. Aprox. desde ubicación de la obra.
- Rendimiento : 85%
- Acceso : Tiene
- Clasificación SUCS : GW - GM
- Límite Líquido : 18.75
- Límite Plástico : 15.09
- Índice Plástico : 3.66
- Máxima Densidad : 2.22 gr/cm3

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- Humedad Optima : 6.95%
- C.B.R. al 100% : 92.40%
- Abrasión : 19.08% Equivalente de Arena : 71.60%

## 7.0 PAVIMENTOS

## 7.1 DISEÑO DEL PAVIMENTO

El cálculo de la estructura del pavimento se ha realizado por el método AASHTO, el cual consiste en determinar el espesor de la Sub - Base y el espesor del pavimento a fin de soportar el volumen de tránsito en forma satisfactoria durante el periodo de diseño.

Para determinar los espesores se ha tenido en cuenta los siguientes factores: El Tráfico, el Índice de Serviciabilidad y el tipo de Suelo de fundación.

### 7.1.1 DETERMINACION DEL C.B.R. DE DISEÑO AL 95%

**Tabla 14**

*DETERMINACION DEL C.B.R.*

| CALICATA | CBR 95% |
|---|---|
| C 03 | 6.1 |
| C 06 | 5.8 |
| C 09 | 7.2 |
| C 12 | 6.2 |
| **Promedio** | **6.3** |

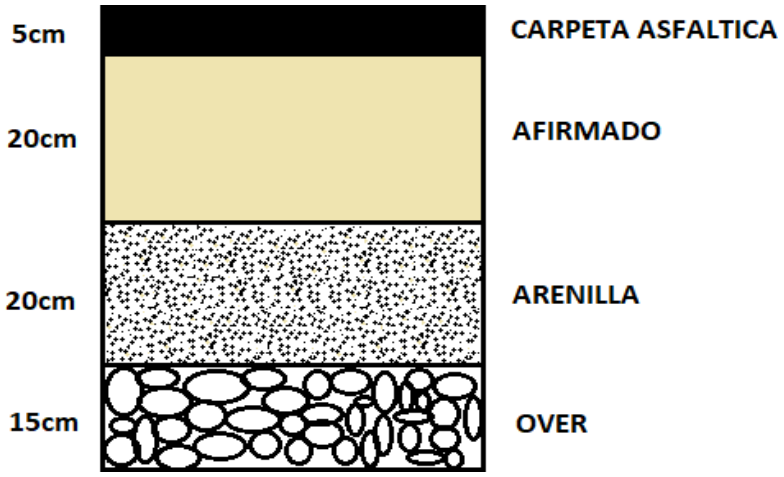
***Nota:*** Elaboración propia.

## 7.2 DISTRIBUCION EN ALTURAS (cm.) DE LAS CAPAS

Para la construcción de la pavimentación flexible se recomienda cortar 60cm. de material existente y reemplazarlo por 60cm. de material granular, quedando distribuido de la siguiente manera:

**Figura 6**

*Alturas de capas*




***Nota:*** Elaboración propia.

## 8.0 CONCLUSIONES Y RECOMENDACIONES

De acuerdo a la información de campo y laboratorio realizados, se pueden obtener las siguientes conclusiones y recomendaciones.

1. El área del proyecto de tesis, denominado "Estudio Definitivo del Camino Vecinal Caserío Huaca del Toro – Centro Poblado Huaca Quemada", se ubica en el distrito de Mochumí, caracterizado por presentar suelos predominantemente agrícolas, de textura variable entre arenosa y arcillosa, aptos para el cultivo bajo riego.

2. Las calicatas y ensayos de laboratorio fueron realizados por los jóvenes tesistas: ARROYO AYALA M. & SANCHEZ MONTENEGRO R.
3. La exploración de la sub rasante, nos muestra que está formada por suelos donde predominan las arcillas, arenas finas y limos inorgánicas de mediana plasticidad, cuya consistencia es media. Estos suelos están clasificados en el sistema AASHTO como:

**Tabla 15**

*Clasificación SUCS - AASTHO*

| CALICATA | CLASIFICACIÓN | |
|---|---|---|
| | SUCS | AASHTO |
| C1 | SC | A - 6(2) |
| C2 | SC | A - 6(2) |
| C3 | SC | A - 6(5) |
| C4 | SC | A - 6(5) |
| C5 | CL | A - 6(11) |
| C6 | SC | A - 6(2) |
| C7 | SC | A - 6(4) |
| C8 | SM | A - 2 - 4(0) |
| C9 | SM | A - 2 - 4(0) |
| C10 | SC | A - 6(5) |
| C11 | SM | A - 2 - 4(0) |
| C12 | SC | A - 6(2) |

***Nota:*** Elaboración propia.

4. Al momento de la realización de la exploración de campo, se detectó el nivel freático. Solo en las calicatas:
   C3 – 1.20 metros de profundidad
   C4 – 1.50 metros de profundidad
   Sin embargo, por encontrarse en una zona de cultivo, en los meses de siembra y en los meses de verano donde las lluvias son frecuentes el nivel freático aumenta.

5. Los resultados del análisis químico de sales solubles totales, de acuerdo a las recomendaciones de la NTP 339.152 (BS 1377), se indica que el suelo en estudio se encuentra dentro del rango "MODERADA" concentración, por lo que se recomienda utilizar para los trabajos de obras de arte cemento anti salitre (de preferencia tipo "MS") para los elementos de concreto a usar según a las recomendaciones de la NTP 339.152 (BS 1377).

6. Durante la inspección realizada al área de estudio no se ha evidenciado fenómenos geodinámicos importantes.

7. Para el uso de over se recomienda usar de la cantera Rio MOTUPE.

8. OBRAS DE DRENAJE: Se recomienda colocar o diseñar un sistema de drenaje eficiente con la finalidad de discurrir las aguas provenientes del factor climático y otros eventos extraordinarios, su filtración originaría el incremento de sus contenidos naturales de humedad, causando variaciones volumétricas en los suelos, lo que daría lugar a la aparición de asentamientos.

9. Al momento de la conformación de la Base, esta deberá ser compactada enérgicamente, hasta obtener el 100% de compactación, comparada de su curva densidad – húmeda, obtenida en el laboratorio de acuerdo a las Normas AASHTO T – 180 D.

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10. Preferentemente los materiales a utilizarse como capa de base deberán ser provenientes de cantera antes mencionada, siempre y cuando estos sean extraídos de áreas que cumplan los requisitos establecidos por el Ministerio de Transportes y Comunicaciones, MTC.
11. Los requisitos de materiales a emplearse para Base granular y Sub Base, es la siguiente:

    Para la construcción de afirmados y sub bases granulares, los materiales serán agregados naturales procedentes de excedentes de excavaciones o canteras clasificados y aprobados por el Supervisor o podrán provenir de la trituración de rocas y gravas, o podrán estar constituidos por una mezcla de productos de ambas procedencias.
    Los materiales para base granular solo provendrán de canteras autorizadas y será obligatorio el empleo de un agregado que contenga una fracción producto de trituración mecánica.

    En ambos casos, las partículas de los agregados serán duras, resistentes y durables, sin exceso de partículas planas, blandas o desintegrables y sin materia orgánica, terrones de arcilla u otras sustancias perjudiciales. Sus condiciones de limpieza dependerán del uso que se vaya a dar al material.
    Los requisitos de calidad que deben cumplir los diferentes materiales y los requisitos granulométricos se presentan en la especificación respectiva (Norma Técnica C.E. 010 Pavimentos Urbanos).

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**Tabla 16**

*Requerimientos Granulométricos para Sub-Base Granular*

| Tamiz | Porcentaje que Pasa en Peso | | | |
|---|---|---|---|---|
| | **Gradación A (1)** | **Gradación B** | **Gradación C** | **Gradación D** |
| 50 mm (2”) | 100 | 100 | --- | --- |
| 25 mm (1”) | --- | 75 – 95 | 100 | 100 |
| 9.5 mm (3/8”) | 30 – 65 | 40 – 75 | 50 – 85 | 60 – 100 |
| 4.75 mm (Nº 4) | 25 – 55 | 30 – 60 | 35 – 65 | 50 – 85 |
| 2.0 mm (Nº 10) | 15 – 40 | 20 – 45 | 25 – 50 | 40 – 70 |
| 4.25 um (Nº 40) | 8 – 20 | 15 – 30 | 15 – 30 | 25 – 45 |
| 75 um (Nº 200) | 2 – 8 | 5 – 15 | 5 – 15 | 8 – 15 |

La curva de gradación "A" deberá emplearse en zonas cuya altitud sea igual o superior a 3000 m.s.n.m.

Además, el material también deberá cumplir con los siguientes requisitos de calidad:

**Tabla 17**

*Requerimientos de Ensayos Especiales para Sub-Base Granular*

| Ensayo | Norma MTC | Requerimiento | |
|---|---|---|---|
| | | **< 3000 msnm** | **> 3000 msnm** |
| Abrasión | NTP 400.019:2002 | 50 % máximo | |
| CBR (1) | NTP 339.145:1999 | 30 - 40 % mínimo* | |
| Límite Líquido | NTP 339.129:1999 | 25% máximo | |
| Índice de Plasticidad | NTP 339.129:1999 | 6% máximo | 4% máximo |
| Equivalente de Arena | NTP 339.146:2000 | 25% mínimo | 35% mínimo |
| Sales Solubles | NTP 339.152:2002 | 1% máximo | |

El 30% para pavimentos rígidos y de adoquines. 40% para pavimentos flexibles.

El material de Base Granular deberá cumplir además con las siguientes características físico-mecánicas y químicas que a continuación se indican:

**Tabla 18**

*Valor Relativo de Soporte, CBR*

| | | |
|---|---|---|
| Valor Relativo de Soporte, CBR (NTP 339.145:1999) | Vías Locales y Colectoras | Mín 80% |
| | Vías Arteriales y Expresas | Mín 100% |



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El material de Base Granular deberá cumplir además con las siguientes características físico-mecánicas y químicas que a continuación se indican:

**Tabla 19**

*Requerimientos Agregado Grueso de Base Granular*

| Ensayo | Norma MTC | Requerimientos | |
|---|---|---|---|
| | | Altitud | |
| | | < Menor de 3000 msnm | ≥ 3000 msnm |
| Partículas con una cara fracturada | MTC E 210 | 80% mínimo | |
| Partículas con dos caras fracturadas | MTC E 210 | 40% min. | 50% min. |
| Abrasión Los Ángeles | N.T.P. 400.019:2002 | 40% máximo | |
| Sales Solubles Totales | N.T.P. 339.152:2002 | 0.5% máximo | |
| Pérdida con Sulfato de Sodio | N.T.P. 400.016:1999 | -.- | 12% máx. |
| Pérdida con Sulfato de Magnesio | N.T.P. 400.016:1999 | -.- | 18% máx. |

**Tabla 20**

*Requerimientos Agregado Fino de Base Granular*

| Ensayo | Norma | Requerimientos | |
|---|---|---|---|
| | | < 3 000 m.s.n.m. | > 3 000 m.s.n.m |
| Índice Plástico | N.T.P. 339.129 | 4% máx | 2% máx |
| Sales solubles totales | N.T.P. 339.152 | 0.5% máximo | |
| Índice de durabilidad | MTC E 214 | 35% mínimo | |

Las conclusiones y recomendaciones establecidas en el presente informe técnico son solo aplicables para el área estudiada. de ninguna manera se puede aplicar a otros sectores u otros fines.

## 9.0 BIBLIOGRAFIA


- Diseño y Construcción de Pavimentos, German Vivar Romero.
- Norma Técnica C.E. 010 Pavimentos Urbanos.
- Propiedades Geofísicas de los suelos, Joseph Bowles
- MANUAL DE CARRETERAS SUELOS, GEOLOGÍA, GEOTECNIA Y PAVIMENTOS SECCIÓN SUELOS Y PAVIMENTOS


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# DOCUMENTOS



Mario Ramirez Dejo
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### CERTIFICADO N° 00120108

La Dirección de Signos Distintivos del Instituto Nacional de Defensa de la Competencia y de la Protección de la Propiedad Intelectual – INDECOPI, certifica que por mandato de la Resolución Nº 031616-2019/DSD - INDECOPI de fecha 13 de diciembre de 2019, ha quedado inscrito en el Registro de Marcas de Servicio, el siguiente signo:

| | | |
|---|---|---|
| Signo | : | La denominación LABORATORIO LINUS y logotipo (se reivindica colores), conforme al modelo |
| Distingue | : | Servicios de estudios de mecánica de suelos y análisis de materiales de construcción, pavimentos y asfaltos |
| Clase | : | 42 de la Clasificación Internacional. |
| Solicitud | : | 0822190-2019 |
| Titular | : | LABORATORIO LINUS E.I.R.L. |
| País | : | Perú |
| Vigencia | : | 13 de diciembre de 2029 |
| Tomo | : | 0601 |
| Folio | : | 122 |

RAY MELONI GARCIA
Director
Dirección de Signos Distintivos
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OECE Organismo Especializado para las Contrataciones Públicas Eficientes

**RUC N° 20605369139**

# REGISTRO NACIONAL DE PROVEEDORES

## CONSTANCIA DE INSCRIPCIÓN PARA SER PARTICIPANTE, POSTOR Y CONTRATISTA

**LABORATORIO LINUS E.I.R.L.**

Domiciliado en: CAL. MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE LAMBAYEQUE LAMBAYEQUE (Según información declarada en la SUNAT)

***Se encuentra con inscripción vigente en los siguientes registros:***

**PROVEEDOR DE BIENES**
Vigencia : Desde 16/10/2020

**PROVEEDOR DE SERVICIOS**
Vigencia : Desde 16/10/2020

**FECHA IMPRESIÓN: 25/12/2025**

**Nota:**
Para mayor información la Entidad deberá verificar el estado actual de la vigencia de inscripción del proveedor en la página web del RNP: www.rnp.gob.pe - opción Verifique su Inscripción.

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# UBICACIÓN DE CALICATAS

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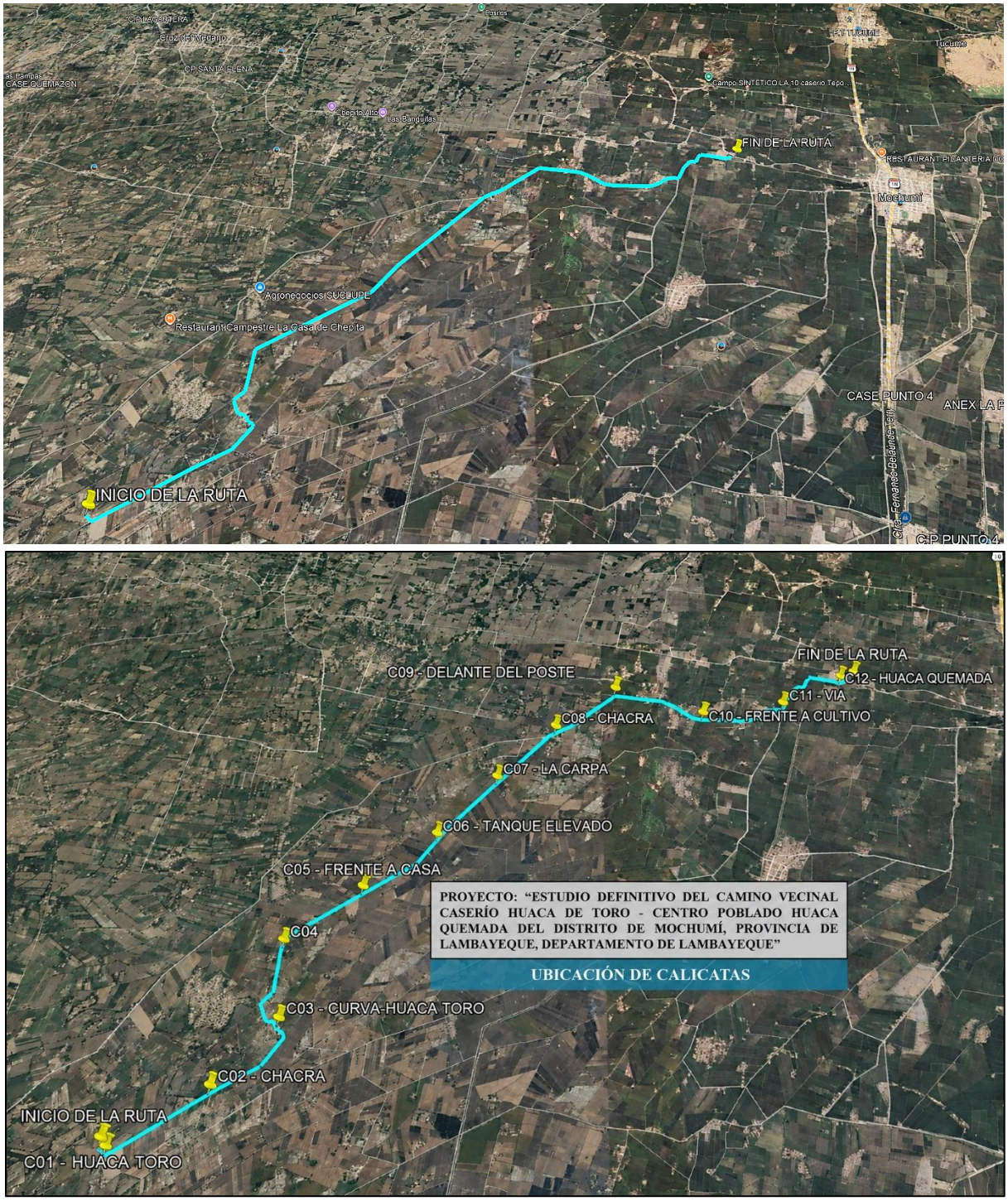
**Figura 7**

*Ubicación de las calicatas*




***Nota:*** Elaboración propia.

# MATERIAL FOTOGRÁFICO

**Foto 1**

*Calicata N°01*









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GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

LABORATORIO LINUS E.I.R.L. SUELOS PAVIMENTOS ASFALTO ANALISIS DE MATERIALES

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

**Foto 2**

*Calicata N° 02*




**Foto 3**

*Calicata N°03*





Mario Ramirez Dejo
GERENTE GENERAL
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**Foto 4**

*Calicata N°04*






**Foto 5**

*Calicata N°05*






**Foto 6**

*Calicata N°06*






**Foto 7**

*Calicata N°07*






**Foto 8**

*Calicata N°08*









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**Foto 9**

*Calicata N°09*






**Foto 10**

*Calicata N°10*






**Foto 11**

*Calicata N°11*






**Foto 12**

*Calicata N°12*






# ENSAYOS DE LABORATORIO

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

# CALICATA 01

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KEVIN JUNIOR ROSILLO VASQUEZ
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# LABORATORIO LINUS E.I.R.L.

## SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS
## PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION
## RESOLUCION Nº 031616-2019/DSD – INDECOPI
## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.

**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**CALICATA** : C-1

**FECHA** : 29.12.2025

## REGISTRO DE PERFORACIONES

| COTA | PROFUNDIDAD (mts.) | MUESTRA | SIMBOLO | NATURALEZA DEL TERRENO ESTRATO | OBSERVACIONES |
|---|---|---|---|---|---|
| 0.00 | 0.00 | | | | |
| 0.10 | | | | | |
| 0.20 | | RELLENO | | MATERIAL DE RELLENO NO CALIFICADO | |
| 0.30 | 0.30 | | | | |
| 0.40 | | | | | |
| 0.50 | | | | | |
| 0.60 | | | | ARENAS ARCILLOSAS | |
| 0.70 | | | | CLASIFICACION - AASHTO: A - 6 (2) | MAXIMA DENSIDAD SECA = 1.85 gr/cm3 |
| 0.80 | | | | DE COLOR MARRON CLARO, DE CONSISTENCIA MEDIA | OPTIMO DE HUMEDAD = 13.79 % |
| 0.90 | | M.1 | SC | L.L = 29.21 | C.B.R. - 100% = 10.5 % |
| 1.00 | | | | L.P = 17.01 | C.B.R. - 95% = 6.4 % |
| 1.10 | | | | I.P = 12.20 | |
| 1.20 | | | | % CONTENIDO DE HUMEDAD = 10.13 % | |
| 1.30 | | | | % CONTENIDO DE SALES = 0.20 % | DURANTE EL TIEMPO DE EXCAVACION |
| 1.40 | | | | | NO SE DETECTO NIVEL FREATICO |
| 1.50 | 1.50 | | | | |

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Mario Ramirez Dejo
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KEVIN JUNIOR ROSILLO VASQUEZ
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REG. CIP Nº 309074

# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**
**RUC. 20605369139**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C1
**FECHA** : 29.12.2025

## HUMEDAD NATURAL

| CALICATA-MUESTRA | **C1-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.30 - 1.50** |
| Nº RECIPIENTE | 166 |
| 1.- PESO SUELO HUMEDO + RECIPIENTE | 91.54 |
| 2.- PESO SUELO SECO + RECIPIENTE | 85.50 |
| 3.- PESO DEL AGUA | 6.04 |
| 4.- PESO RECIPIENTE | 25.88 |
| 5.- PESO SUELO SECO | 59.62 |
| 6.- PORCENTAJE DE HUMEDAD | **10.13%** |
| | |

## DETERMINACION DE LA SAL

| CALICATA-MUESTRA | **C1-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.30 - 1.50** |
| Nº RECIPIENTE | 168 |
| (1) PESO DEL TARRO | 20.01 |
| (2) PESO TARRO + AGUA + SAL | 29.90 |
| (3) PESO TARRO SECO + SAL | 20.03 |
| (4) PESO SAL ( 3 - 1) | 0.02 |
| (5) PESO AGUA ( 2 - 3 ) | 9.87 |
| (6) PORCENTAJE DE SAL | **0.20%** |
| | |

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

### ANALISIS GRANULOMETRICO POR TAMIZADO
**(ASTM - D422 / N.T.P. 339.128)**

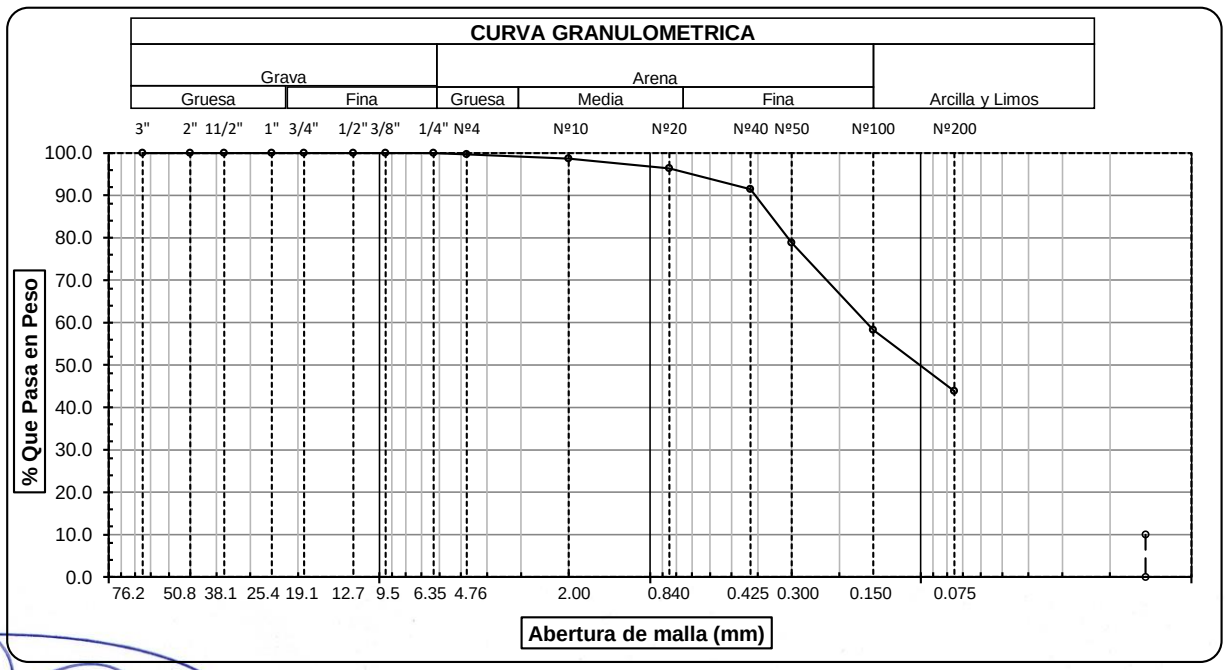
**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C1M1 - PROG. 0+00
**FECHA** : 29.12.2025

| ABERTURA MALLA (Pul) | ABERTURA MALLA (mm) | PESO RETENIDO | % RETENIDO PARCIAL | % RETENIDO ACUMULADO | % QUE PASA |
|---|---|---|---|---|---|
| 3" | 76.200 | | | | |
| 2 1/2" | 63.500 | | | | |
| 2" | 50.800 | | | | |
| 1 1/2" | 38.100 | | | | |
| 1" | 25.400 | | | | |
| 3/4" | 19.050 | | | | |
| 1/2" | 12.700 | | | | |
| 3/8" | 9.525 | | | | |
| 1/4" | 6.350 | 0.00 | 0.00 | 0.00 | 100.00 |
| Nº4 | 4.760 | 0.57 | 0.29 | 0.29 | 99.72 |
| Nº10 | 2.000 | 2.15 | 1.08 | 1.36 | 98.64 |
| Nº20 | 0.840 | 4.62 | 2.31 | 3.67 | 96.33 |
| N40 | 0.425 | 9.85 | 4.93 | 8.60 | 91.41 |
| Nº50 | 0.300 | 25.14 | 12.57 | 21.17 | 78.84 |
| Nº100 | 0.150 | 41.17 | 20.59 | 41.75 | 58.25 |
| Nº200 | 0.075 | 28.84 | 14.42 | 56.17 | 43.83 |
| < Nº 200 | FONDO | 87.66 | 43.83 | 100.00 | 0.00 |

| DESCRIPCION DE LA MUESTRA | | |
|---|---|---|
| PESO TOTAL | : | 200.0 g. |
| PESO LAVADO | : | 87.7 g. |
| LIMITE LIQUIDO | : | 29.21 % |
| LIMITE PLASTICO | : | 17.01 % |
| INDICE PLASTICIDAD | : | 12.20 % |
| CLASF. AASHTO | : | **A-6 (2)** |
| CLASF. SUCS | : | **SC** |
| DESCRIPCIÓN DEL SUELO | : | **MALO** |
| **Arena arcillosa** | | |

| Ensayo Malla Nº200 | P.S.Sec | P.S.Lav | (%) 200 |
|---|---|---|---|
| | 200.0 | 88 | 56.2 |

| | |
|---|---|
| MODULO DE FINEZA | 0.768 |
| Coef. Uniformidad | 0.0 |
| Coef. Curvatura | 0.0 |




Observaciones: _____

Mario Ramirez Dejo
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LABORATORIO LINUS E.I.R.L. SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS PAVIMENTOS ANALISIS DE MATERIALES

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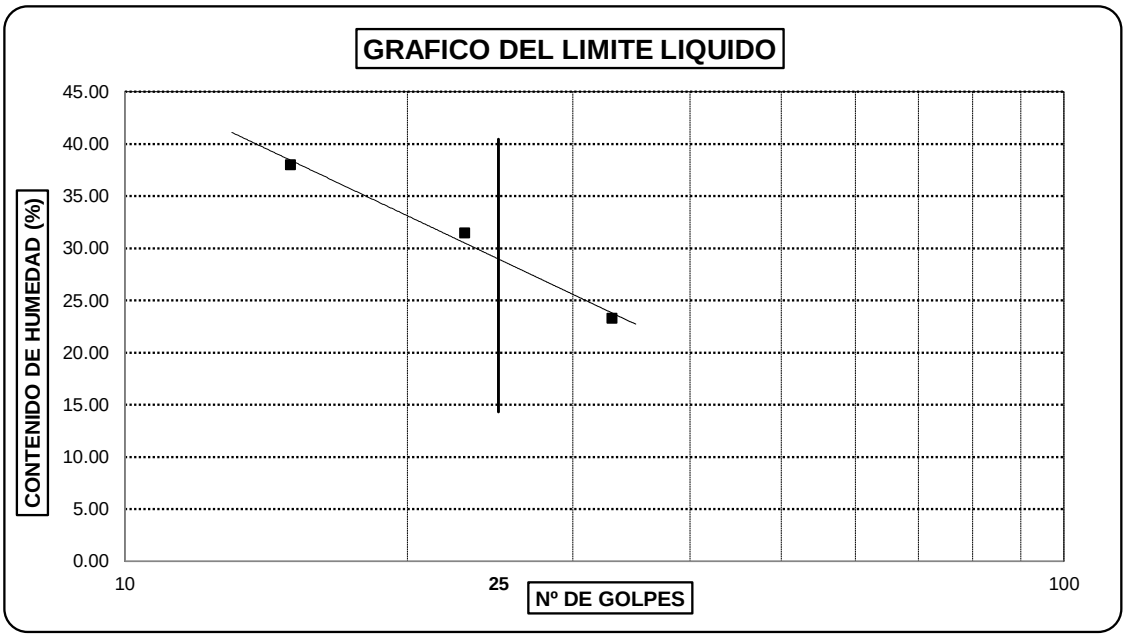
# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**
**RUC. 20605369139**


## LIMITES DE ATTERBERG
**(ASTM - D423 / N.T.P. 339.129)**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C1M1 - PROG. 0+00
**FECHA** : 29.12.2025

| DATOS DE ENSAYO | | LIMITE LIQUIDO | | | LIMITE PLASTICO | | |
|---|---|---|---|---|---|---|---|
| N° de golpes | | **15** | **23** | **33** | --- | --- | --- |
| 1. Recipiente N° | | 66 | 65 | 67 | 62 | --- | --- |
| 2. Peso suelo húmedo + tara | (gr) | 80.20 | 81.54 | 81.06 | 80.79 | --- | --- |
| 3. Peso suelo seco + Tara | (gr) | 76.61 | 77.14 | 78.68 | 78.8 | --- | --- |
| 4. Peso de la Tara | (gr) | 65.74 | 66.26 | 66.36 | 67.10 | --- | --- |
| 5. Peso del agua | (gr) | 3.59 | 4.40 | 2.38 | 1.99 | | |
| 6. Peso del suelo seco | (gr) | 10.87 | 10.88 | 12.32 | 11.70 | --- | --- |
| 7. Contenido de humedad | (%) | 33.03 | 40.44 | 19.32 | 17.01 | --- | --- |




| LIMITE DE CONSISTENCIA DE LA MUESTRA | |
|---|---|
| **Límite Líquido** | 29.21 |
| **Límite Plástico** | 17.01 |
| **Índice de Plasticidad** | 12.20 |

| MUESTRA: C1M1 - PROG. 0+00 | |
|---|---|
| **Clasificaciòn SUCS** | **SC** |
| **Clasificaciòn AASHTO** | **A-6 (2)** |

Observaciones: _____

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# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

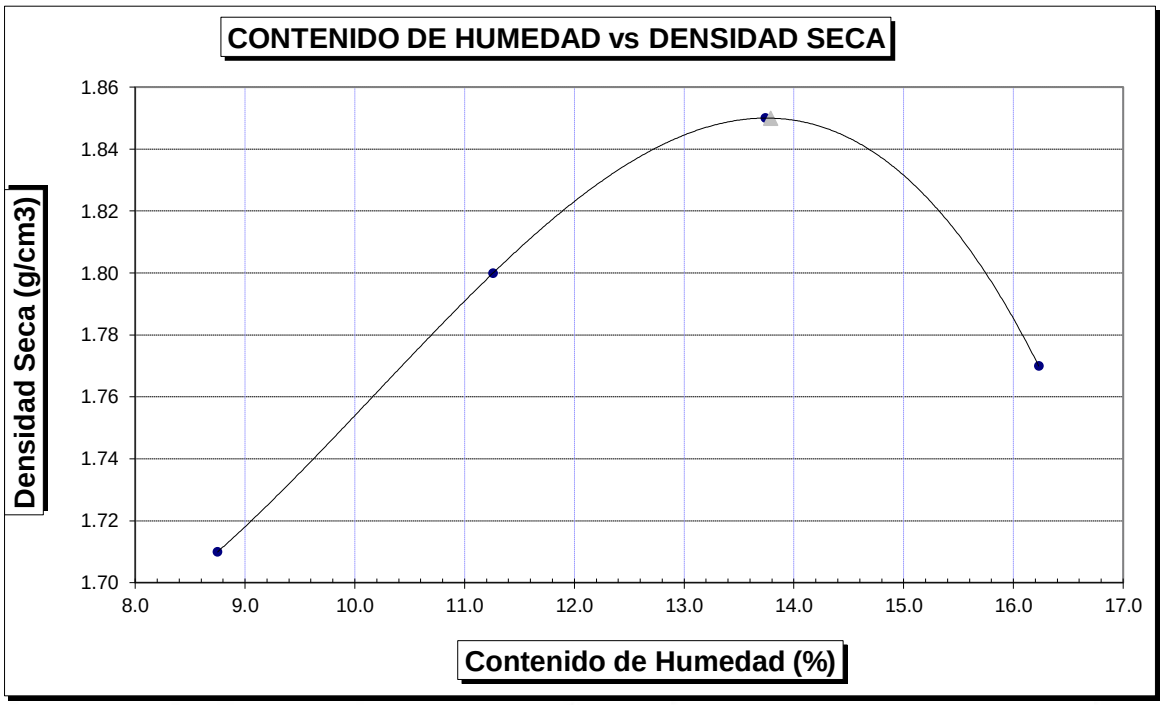
| | | |
|---|---|---|
| **SOLICITANTE** | : | ARROYO AYALA M.<br>SANCHEZ MONTENEGRO R. |
| **PROYECTO** | : | ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **UBICACIÓN** | : | DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **MATERIAL** | : | TERRENO NATURAL |
| **CALICATA** | : | C1M1 |
| **FECHA** | : | 29.12.2025 |

# PROCTOR MODIFICADO AASHTO T - 180 D

| | | | | | |
|---|---|---|---|---|---|
| MOLDE Nº | | : | | | |
| VOLUMEN | | : | **2130** $cm^3$ | **---** | $pie^3$ |
| METODO DE COMPACTACION | | : | **AASHTO T - 180 D** | | |

| | | | | | |
|---|---|---|---|---|---|
| .- Peso Suelo Humedo + Molde | (g) | 10882 | 11180 | 11393 | 11308 |
| .- Peso de Molde | (g) | 6920 | 6920 | 6920 | 6920 |
| .- Peso Suelo Húmedo Compactado | (g) | 3962 | 4260 | 4473 | 4388 |
| .- Peso Volumétrico Húmedo | (g) | 1.860 | 2.000 | 2.100 | 2.060 |
| .- Recipiente Nº | | 103 | 114 | 108 | 100 |
| .- Peso de Suelo Húmedo + Tara | (g) | 71.75 | 73.85 | 73.03 | 90.92 |
| .- Peso de Suelo Seco + Tara | (g) | 68.15 | 69.43 | 67.22 | 83.92 |
| .- Tara | (g) | 27.00 | 30.16 | 24.94 | 40.79 |
| .- Peso de Agua | (g) | 3.60 | 4.42 | 5.81 | 7.00 |
| .- Peso de Suelo Seco | (g) | 41.15 | 39.27 | 42.28 | 43.13 |
| .- Contenido de agua | (%) | 8.75 | 11.26 | 13.74 | 16.23 |
| .- Peso Volumétrico Seco | ($g/cm^3$) | 1.71 | 1.80 | 1.85 | 1.77 |

| | | | |
|---|---|---|---|
| **Máxima Densidad Seca** | : | **1.85** | **$gr/cm^3$** |
| **Optimo Contenido de Humedad** | : | **13.79** | **%** |

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# CALICATA 02

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## SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS
## PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION
## RESOLUCION Nº 031616-2019/DSD – INDECOPI
## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.

**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**CALICATA** : C-2

**FECHA** : 29.12.2025

## REGISTRO DE PERFORACIONES

| COTA | PROFUNDIDAD (mts.) | MUESTRA | SIMBOLO | NATURALEZA DEL TERRENO ESTRATO | OBSERVACIONES |
|---|---|---|---|---|---|
| 0.00 | 0.00 | | | | |
| 0.10 | | RELLENO | | MATERIAL DE RELLENO NO CALIFICADO | |
| 0.20 | | | | | |
| 0.30 | 0.30 | | | | |
| 0.40 | | M.1 | SC | ARENAS ARCILLOSAS<br>CLASIFICACION - AASHTO: A - 6 (2)<br>DE COLOR MARRON CLARO, DE CONSISTENCIA MEDIA<br>L.L = 29.54<br>L.P = 17.39<br>I.P = 12.15<br>% CONTENIDO DE HUMEDAD = 10.15 %<br>% CONTENIDO DE SALES = 0.18 % | MAXIMA DENSIDAD SECA = 1.88 gr/cm3<br>OPTIMO DE HUMEDAD = 13.78 %<br>C.B.R. - 100% = 10.2 %<br>C.B.R. - 95% = 6.4 %<br><br>DURANTE EL TIEMPO DE EXCAVACION NO SE DETECTO NIVEL FREATICO |
| 0.50 | | | | | |
| 0.60 | | | | | |
| 0.70 | | | | | |
| 0.80 | | | | | |
| 0.90 | | | | | |
| 1.00 | | | | | |
| 1.10 | | | | | |
| 1.20 | | | | | |
| 1.30 | | | | | |
| 1.40 | | | | | |
| 1.50 | 1.50 | | | | |

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

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CALLE MANUEL SEOANE Nº 717 – LAMBAYEQUE - CEL. 907075398 –
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# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**
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**SOLICITANTE** : ARROYO AYALA M.
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**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C2
**FECHA** : 29.12.2025

## HUMEDAD NATURAL

| CALICATA-MUESTRA | **C2-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.30 - 1.50** |
| Nº RECIPIENTE | 166 |
| 1.- PESO SUELO HUMEDO + RECIPIENTE | 90.63 |
| 2.- PESO SUELO SECO + RECIPIENTE | 82.50 |
| 3.- PESO DEL AGUA | 6.21 |
| 4.- PESO RECIPIENTE | 24.80 |
| 5.- PESO SUELO SECO | 58.66 |
| 6.- PORCENTAJE DE HUMEDAD | **10.15%** |
| | |

## DETERMINACION DE LA SAL

| CALICATA-MUESTRA | **C2-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.30 - 1.50** |
| Nº RECIPIENTE | 168 |
| (1) PESO DEL TARRO | 20.01 |
| (2) PESO TARRO + AGUA + SAL | 29.90 |
| (3) PESO TARRO SECO + SAL | 20.03 |
| (4) PESO SAL ( 3 - 1) | 0.02 |
| (5) PESO AGUA ( 2 - 3 ) | 9.87 |
| (6) PORCENTAJE DE SAL | **0.22%** |
| | |

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

### ANALISIS GRANULOMETRICO POR TAMIZADO
**(ASTM - D422 / N.T.P. 339.128)**

**SOLICITANTE** : ARROYO AYALA M.
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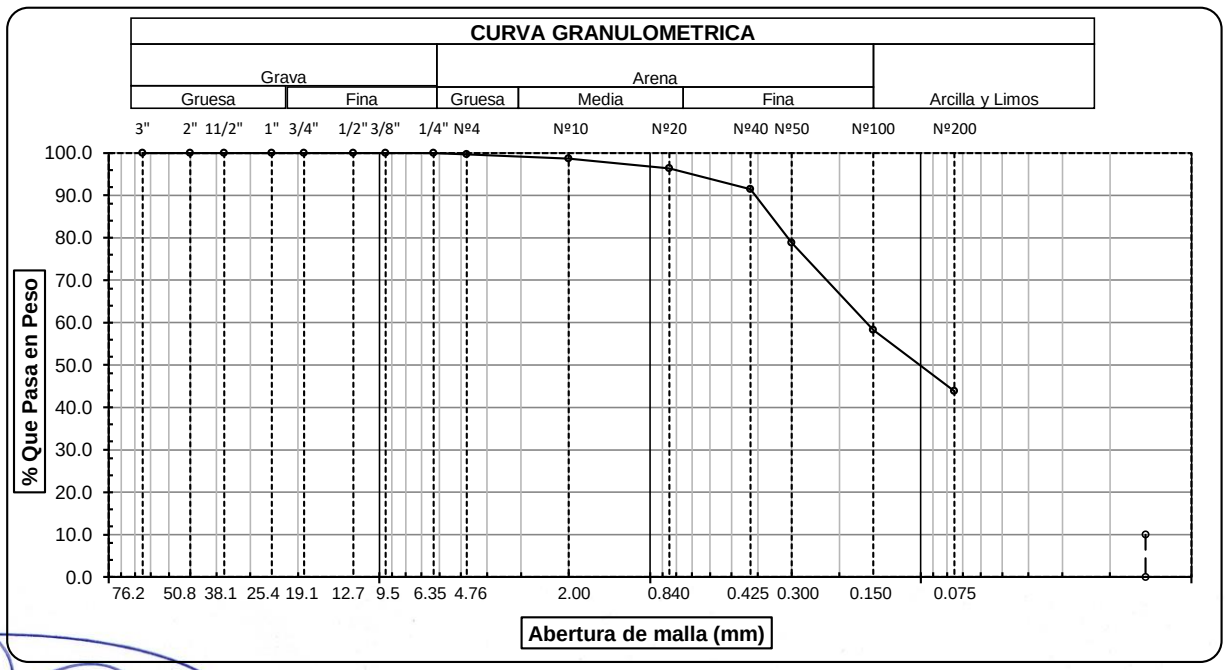
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C2M1 - PROG. 1+00
**FECHA** : 29.12.2025

| ABERTURA MALLA (Pul) | ABERTURA MALLA (mm) | PESO RETENIDO | % RETENIDO PARCIAL | % RETENIDO ACUMULADO | % QUE PASA |
|---|---|---|---|---|---|
| 3" | 76.200 | | | | |
| 2 1/2" | 63.500 | | | | |
| 2" | 50.800 | | | | |
| 1 1/2" | 38.100 | | | | |
| 1" | 25.400 | | | | |
| 3/4" | 19.050 | | | | |
| 1/2" | 12.700 | | | | |
| 3/8" | 9.525 | | | | |
| 1/4" | 6.350 | 0.00 | 0.00 | 0.00 | 100.00 |
| Nº4 | 4.760 | 0.57 | 0.29 | 0.29 | 99.72 |
| Nº10 | 2.000 | 2.15 | 1.08 | 1.36 | 98.64 |
| Nº20 | 0.840 | 4.62 | 2.31 | 3.67 | 96.33 |
| N40 | 0.425 | 9.85 | 4.93 | 8.60 | 92.47 |
| Nº50 | 0.300 | 25.14 | 12.57 | 21.17 | 78.84 |
| Nº100 | 0.150 | 41.17 | 20.59 | 41.75 | 58.25 |
| Nº200 | 0.075 | 28.84 | 14.42 | 56.17 | 43.10 |
| < Nº 200 | FONDO | 87.66 | 43.83 | 100.00 | 0.00 |

| DESCRIPCION DE LA MUESTRA | | |
|---|---|---|
| PESO TOTAL | : | 200.0 g. |
| PESO LAVADO | : | 87.7 g. |
| LIMITE LIQUIDO | : | 29.54 % |
| LIMITE PLASTICO | : | 17.39 % |
| INDICE PLASTICIDAD | : | 12.15 % |
| CLASF. AASHTO | : | **A-6 (2)** |
| CLASF. SUCS | : | **SC** |
| DESCRIPCIÓN DEL SUELO | : | **MALO** |
| **Arena arcillosa** | | |

| Ensayo Malla Nº200 | P.S.Sec | P.S.Lav | (%) 200 |
|---|---|---|---|
| | 200.0 | 88 | 56.2 |

| | |
|---|---|
| MODULO DE FINEZA | 0.762 |
| Coef. Uniformidad | 0.0 |
| Coef. Curvatura | 0.0 |




Observaciones: _____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Mario Ramirez Dejo
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LABORATORIO LINUS E.I.R.L.

KEVIN JUNIOR ROSILLO VASQUEZ
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REG. CIP Nº 309074

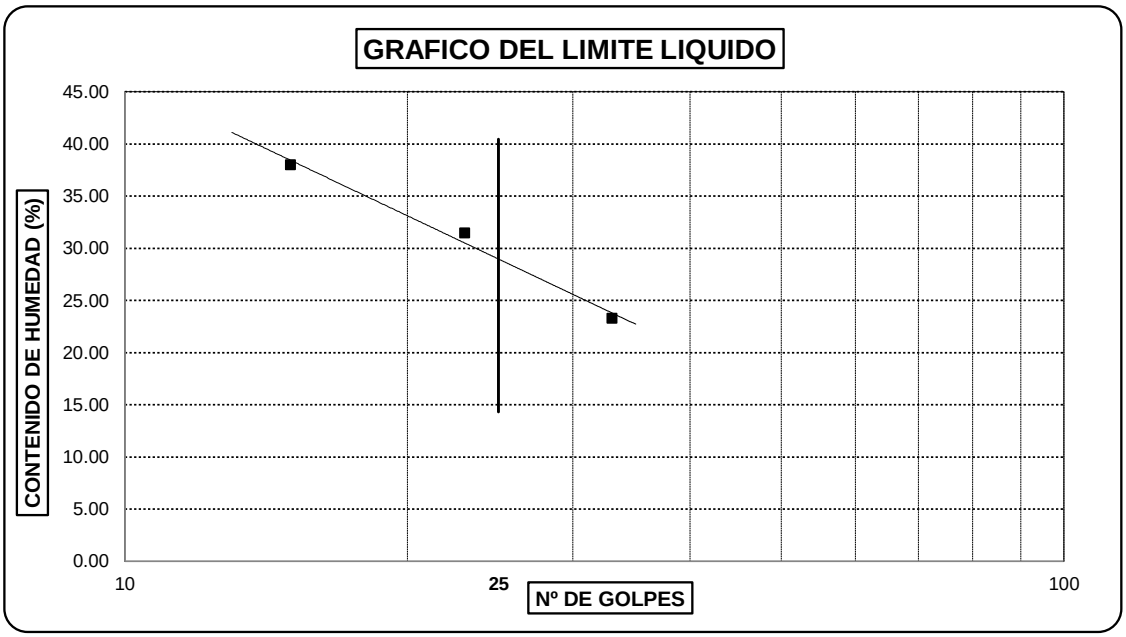
# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**
**RUC. 20605369139**


## LIMITES DE ATTERBERG
**(ASTM - D423 / N.T.P. 339.129)**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C2M1 - PROG. 1+00
**FECHA** : 29.12.2025

| DATOS DE ENSAYO | | LIMITE LIQUIDO | | | LIMITE PLASTICO | | |
|---|---|---|---|---|---|---|---|
| N° de golpes | | **15** | **23** | **33** | --- | --- | --- |
| 1. Recipiente N° | | 66 | 65 | 67 | 62 | --- | --- |
| 2. Peso suelo húmedo + tara | (gr) | 80.20 | 81.54 | 81.06 | 80.79 | --- | --- |
| 3. Peso suelo seco + Tara | (gr) | 76.61 | 77.14 | 78.68 | 78.8 | --- | --- |
| 4. Peso de la Tara | (gr) | 65.74 | 66.26 | 66.36 | 67.10 | --- | --- |
| 5. Peso del agua | (gr) | 3.59 | 4.40 | 2.38 | 1.99 | | |
| 6. Peso del suelo seco | (gr) | 10.87 | 10.88 | 12.32 | 11.70 | --- | --- |
| 7. Contenido de humedad | (%) | 33.03 | 40.44 | 19.32 | 17.01 | --- | --- |




| LIMITE DE CONSISTENCIA DE LA MUESTRA | |
|---|---|
| **Límite Líquido** | 29.54 |
| **Límite Plástico** | 17.39 |
| **Índice de Plasticidad** | 12.15 |

| MUESTRA: C1M1 - PROG. 0+00 | |
|---|---|
| **Clasificaciòn SUCS** | **SC** |
| **Clasificaciòn AASHTO** | **A-6 (2)** |

Observaciones: _____

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

LABORATORIO LINUS E.I.R.L. SERVICIOS DE ESTUDIOS PAVIMENTOS ANALISIS DE MATERIALES

KEVIN JUNIOR ROSILLO VASQUEZ
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# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

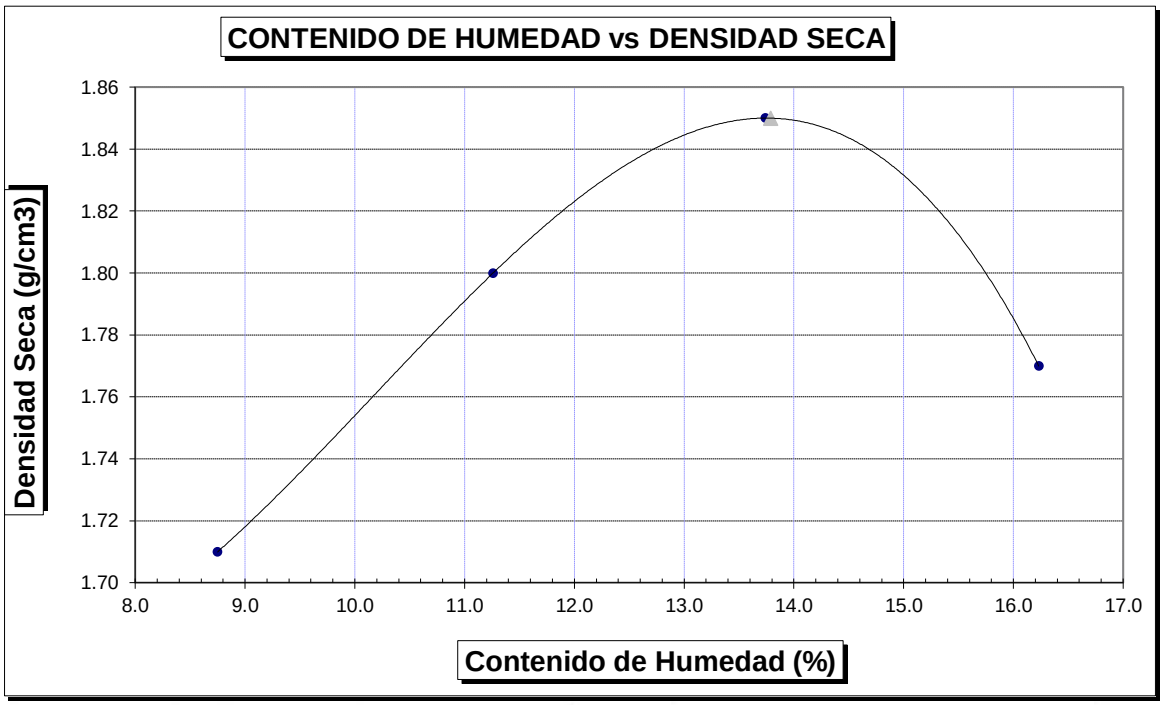
## RUC. 20605369139

| | | |
|---|---|---|
| **SOLICITANTE** | : | ARROYO AYALA M.<br>SANCHEZ MONTENEGRO R. |
| **PROYECTO** | : | ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **UBICACIÓN** | : | DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **MATERIAL** | : | TERRENO NATURAL |
| **CALICATA** | : | C2M1 |
| **FECHA** | : | 29.12.2025 |

# PROCTOR MODIFICADO AASHTO T - 180 D

| | | | | | |
|---|---|---|---|---|---|
| MOLDE Nº | | : | | | |
| VOLUMEN | | : | **2130** $cm^3$ | **---** | $pie^3$ |
| METODO DE COMPACTACION | | : | **AASHTO T - 180 D** | | |
| .- Peso Suelo Humedo + Molde | (g) | 10882 | 11180 | 11393 | 11308 |
| .- Peso de Molde | (g) | 6920 | 6920 | 6920 | 6920 |
| .- Peso Suelo Húmedo Compactado | (g) | 3962 | 4260 | 4473 | 4388 |
| .- Peso Volumétrico Húmedo | (g) | 1.860 | 2.000 | 2.100 | 2.060 |
| .- Recipiente Nº | | 103 | 114 | 108 | 100 |
| .- Peso de Suelo Húmedo + Tara | (g) | 71.75 | 73.85 | 73.03 | 90.92 |
| .- Peso de Suelo Seco + Tara | (g) | 68.15 | 69.43 | 67.22 | 83.92 |
| .- Tara | (g) | 27.00 | 30.16 | 24.94 | 40.79 |
| .- Peso de Agua | (g) | 3.60 | 4.42 | 5.81 | 7.00 |
| .- Peso de Suelo Seco | (g) | 41.15 | 39.27 | 42.28 | 43.13 |
| .- Contenido de agua | (%) | 8.75 | 11.26 | 13.74 | 16.23 |
| .- Peso Volumétrico Seco | ($g/cm^3$) | 1.71 | 1.80 | 1.85 | 1.77 |

| | | | |
|---|---|---|---|
| **Máxima Densidad Seca** | : | **1.88** | **$gr/cm^3$** |
| **Optimo Contenido de Humedad** | : | **13.78** | **%** |




Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

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# CALICATA 03

Mario Ramirez Dejo
GERENTE GENERAL
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# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C-3
**FECHA** : 29.12.2025

## REGISTRO DE PERFORACIONES

| COTA | PROFUNDIDAD (mts.) | MUESTRA | SIMBOLO | NATURALEZA DEL TERRENO ESTRATO | OBSERVACIONES |
|---|---|---|---|---|---|
| 0.00 | 0.00 | | | | |
| 0.10 | | | | | |
| 0.20 | | RELLENO | | MATERIAL DE RELLENO NO CALIFICADO | |
| 0.30 | 0.30 | | | | |
| 0.40 | | | | | |
| 0.50 | | | | | |
| 0.60 | | | | ARENAS ARCILLOSAS | |
| 0.70 | | | | CLASIFICACION - AASHTO: A - 6 (5) | MAXIMA DENSIDAD SECA = 1.83 gr/cm3 |
| 0.80 | | | | DE COLOR AMARILLENTO, DE CONSISTENCIA MEDIA | OPTIMO DE HUMEDAD = 13.93 % |
| 0.90 | | M.1 | SC | L.L = 32.62 | C.B.R. - 100% = 10 % |
| 1.00 | | | | L.P = 17.17 | C.B.R. - 95% = 6.1 % |
| 1.10 | | | | I.P = 15.45 | |
| 1.20 | | | | % CONTENIDO DE HUMEDAD = 8.72 % | |
| 1.30 | | | | % CONTENIDO DE SALES = 0.18 % | DURANTE EL TIEMPO DE EXCAVACION |
| 1.40 | | | | | NO SE DETECTO NIVEL FREATICO |
| 1.50 | 1.50 | | | | |

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**
**RUC. 20605369139**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C3
**FECHA** : 29.12.2025

## HUMEDAD NATURAL

| CALICATA-MUESTRA | **C3-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.30 - 1.50** |
| Nº RECIPIENTE | 108 |
| 1.- PESO SUELO HUMEDO + RECIPIENTE | 41.19 |
| 2.- PESO SUELO SECO + RECIPIENTE | 38.77 |
| 3.- PESO DEL AGUA | 2.42 |
| 4.- PESO RECIPIENTE | 11.01 |
| 5.- PESO SUELO SECO | 27.76 |
| 6.- PORCENTAJE DE HUMEDAD | **8.72%** |
| | |

## DETERMINACION DE LA SAL

| CALICATA-MUESTRA | **C3-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.30 - 1.50** |
| Nº RECIPIENTE | 105 |
| (1) PESO DEL TARRO | 11.19 |
| (2) PESO TARRO + AGUA + SAL | 22.20 |
| (3) PESO TARRO SECO + SAL | 11.21 |
| (4) PESO SAL ( 3 - 1) | 0.02 |
| (5) PESO AGUA ( 2 - 3 ) | 10.99 |
| (6) PORCENTAJE DE SAL | **0.18%** |
| | |

Mario Ramirez Dejo
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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

### ANALISIS GRANULOMETRICO POR TAMIZADO
**(ASTM - D422 / N.T.P. 339.128)**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C3M1 - PROG. 2+00
**FECHA** : 29.12.2025

| ABERTURA MALLA (Pul) | ABERTURA MALLA (mm) | PESO RETENIDO | % RETENIDO PARCIAL | % RETENIDO ACUMULADO | % QUE PASA |
|---|---|---|---|---|---|
| 3" | 76.200 | | | | |
| 2 1/2" | 63.500 | | | | |
| 2" | 50.800 | | | | |
| 1 1/2" | 38.100 | | | | |
| 1" | 25.400 | | | | |
| 3/4" | 19.050 | | | | |
| 1/2" | 12.700 | | | | |
| 3/8" | 9.525 | | | | |
| 1/4" | 6.350 | 0.00 | 0.00 | 0.00 | 100.00 |
| Nº4 | 4.760 | 0.00 | 0.00 | 0.00 | 100.00 |
| Nº10 | 2.000 | 0.18 | 0.09 | 0.09 | 99.91 |
| Nº20 | 0.840 | 2.45 | 1.23 | 1.32 | 98.69 |
| N40 | 0.425 | 4.80 | 2.40 | 3.72 | 96.29 |
| Nº50 | 0.300 | 22.05 | 11.03 | 14.74 | 85.26 |
| Nº100 | 0.150 | 38.95 | 19.48 | 34.22 | 65.79 |
| Nº200 | 0.075 | 32.60 | 16.30 | 50.52 | 49.49 |
| < Nº 200 | FONDO | 98.97 | 49.49 | 100.00 | 0.00 |

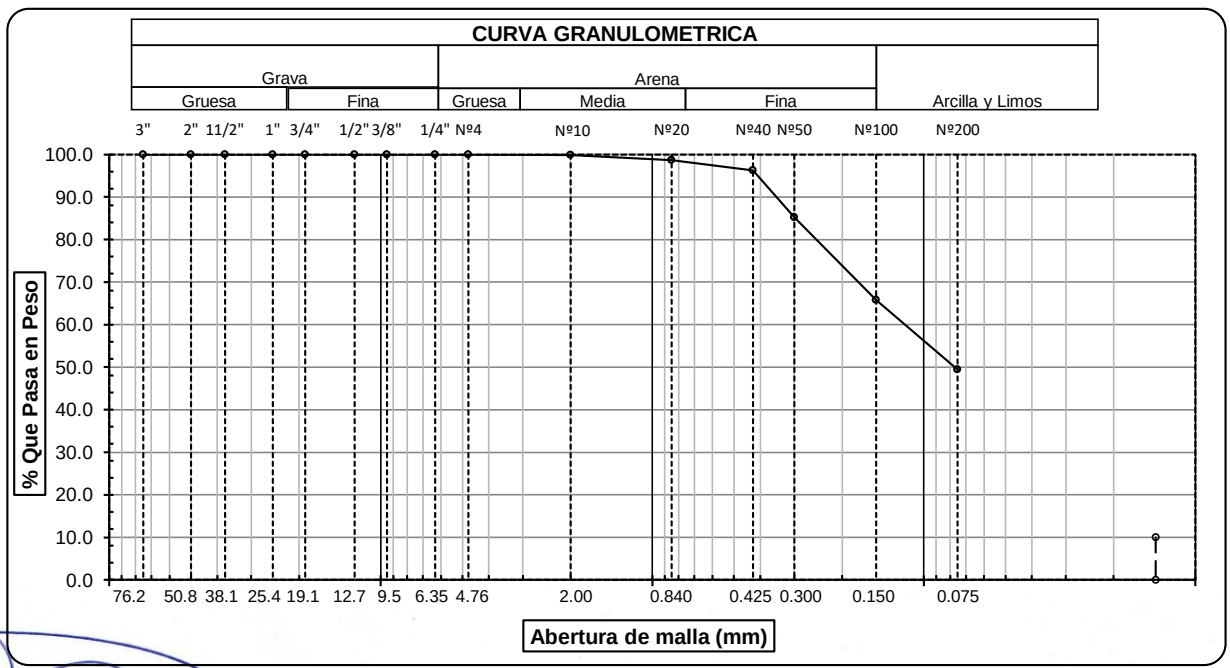
**DESCRIPCION DE LA MUESTRA**

| | | |
|---|---|---|
| PESO TOTAL | : | 200.0 g. |
| PESO LAVADO | : | 99.0 g. |
| LIMITE LIQUIDO | : | 32.62 % |
| LIMITE PLASTICO | : | 17.17 % |
| INDICE PLASTICIDAD | : | 15.45 % |
| CLASF. AASHTO | : | **A-6 (5)** |
| CLASF. SUCS | : | **SC** |
| DESCRIPCIÓN DEL SUELO | : | **MALO** |

**Arena arcillosa**

| Ensayo Malla Nº200 | P.S.Sec | P.S.Lav | (%) 200 |
|---|---|---|---|
| | 200.0 | 99 | 50.5 |

| | |
|---|---|
| MODULO DE FINEZA | 0.541 |
| Coef. Uniformidad | 0.0 |
| Coef. Curvatura | 0.0 |




Observaciones: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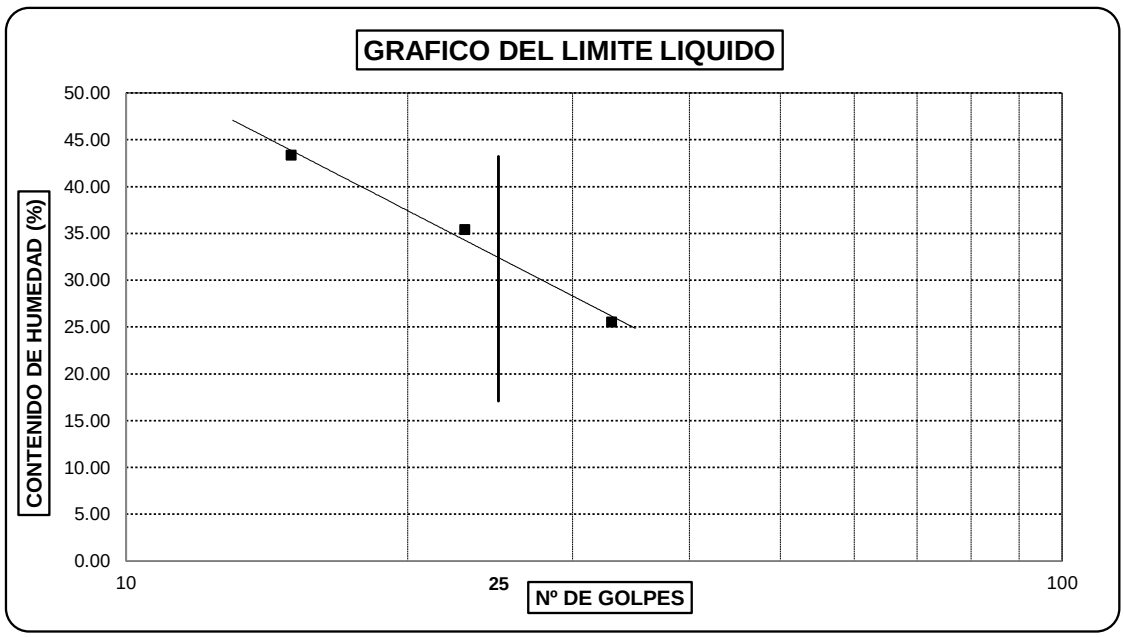
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**
**RUC. 20605369139**


## LIMITES DE ATTERBERG
**(ASTM - D423 / N.T.P. 339.129)**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C3M1 - PROG. 2+00
**FECHA** : 29.12.2025

| DATOS DE ENSAYO | | LIMITE LIQUIDO | | | LIMITE PLASTICO | | |
|---|---|---|---|---|---|---|---|
| N° de golpes | | **15** | **23** | **33** | --- | --- | --- |
| 1. Recipiente N° | | 17 | 18 | 16 | 19 | --- | --- |
| 2. Peso suelo húmedo + tara | (gr) | 78.96 | 79.96 | 79.46 | 78.76 | --- | --- |
| 3. Peso suelo seco + Tara | (gr) | 74.60 | 75.13 | 76.67 | 76.73 | --- | --- |
| 4. Peso de la Tara | (gr) | 63.43 | 63.95 | 64.05 | 64.91 | --- | --- |
| 5. Peso del agua | (gr) | 4.36 | 4.83 | 2.79 | 2.03 | | |
| 6. Peso del suelo seco | (gr) | 11.17 | 11.18 | 12.62 | 11.82 | --- | --- |
| 7. Contenido de humedad | (%) | 39.03 | 43.20 | 22.11 | 17.17 | --- | --- |




| LIMITE DE CONSISTENCIA DE LA MUESTRA | |
|---|---|
| **Límite Líquido** | 32.62 |
| **Límite Plástico** | 17.17 |
| **Índice de Plasticidad** | 15.45 |

| MUESTRA: C2M1 - PROG. 1+00 | |
|---|---|
| **Clasificaciòn SUCS** | **SC** |
| **Clasificaciòn AASHTO** | **A-6 (5)** |

Observaciones:

Mario Ramirez Dejo
GERENTE GENERAL
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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

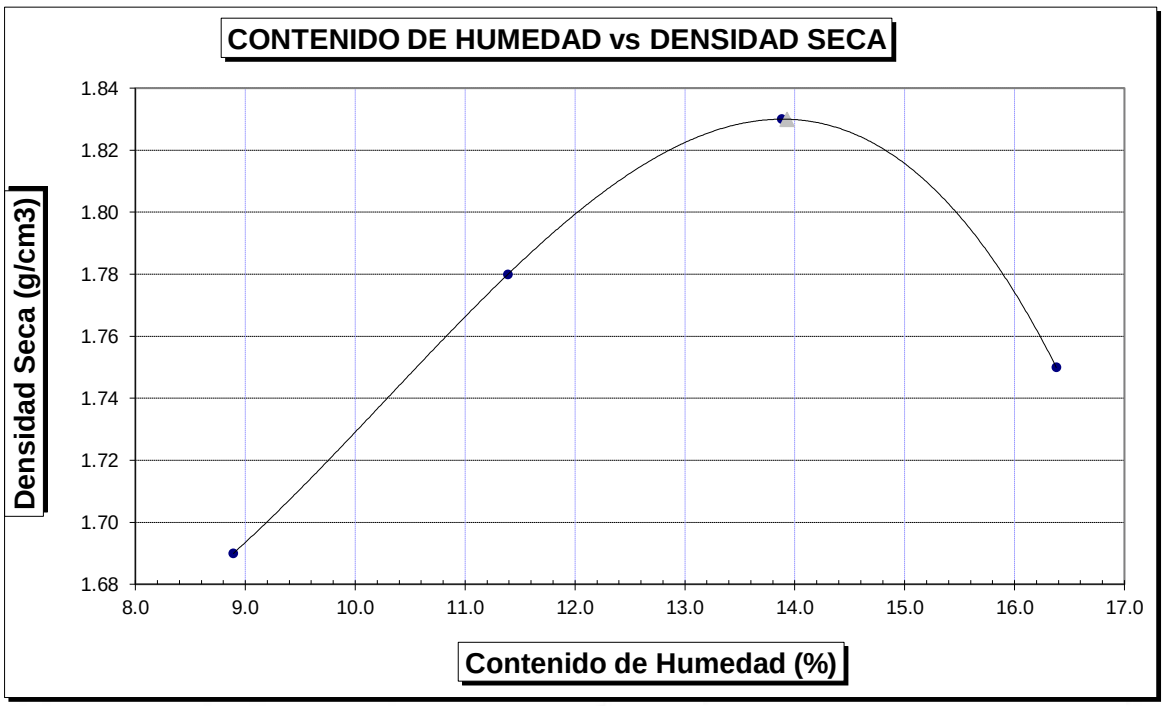
## RUC. 20605369139

| | |
|---|---|
| **SOLICITANTE** | : ARROYO AYALA M.<br>SANCHEZ MONTENEGRO R. |
| **PROYECTO** | : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **UBICACIÓN** | : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **MATERIAL** | : TERRENO NATURAL |
| **CALICATA** | : C3M1 |
| **FECHA** | : 29.12.2025 |

# PROCTOR MODIFICADO AASHTO T - 180 D

| | | | | | |
|---|---|---|---|---|---|
| MOLDE Nº | | : | | | |
| VOLUMEN | | : | **2120** cm³ | --- | pie³ |
| METODO DE COMPACTACION | | : | **AASHTO T - 180 D** | | |
| .- Peso Suelo Humedo + Molde | (g) | 11026 | 11323 | 11535 | 11450 |
| .- Peso de Molde | (g) | 7125 | 7125 | 7125 | 7125 |
| .- Peso Suelo Húmedo Compactado | (g) | 3901 | 4198 | 4410 | 4325 |
| .- Peso Volumétrico Húmedo | (g) | 1.840 | 1.980 | 2.080 | 2.040 |
| .- Recipiente Nº | | 256 | 267 | 261 | 253 |
| .- Peso de Suelo Húmedo + Tara | (g) | 72.12 | 74.22 | 73.41 | 91.31 |
| .- Peso de Suelo Seco + Tara | (g) | 68.45 | 69.73 | 67.52 | 84.22 |
| .- Tara | (g) | 27.15 | 30.31 | 25.09 | 40.94 |
| .- Peso de Agua | (g) | 3.67 | 4.49 | 5.89 | 7.09 |
| .- Peso de Suelo Seco | (g) | 41.30 | 39.42 | 42.43 | 43.28 |
| .- Contenido de agua | (%) | 8.89 | 11.39 | 13.88 | 16.38 |
| .- Peso Volumétrico Seco | (g/cm³) | 1.69 | 1.78 | 1.83 | 1.75 |

| | | | |
|---|---|---|---|
| **Máxima Densidad Seca** | : | **1.83** | **gr/cm³** |
| **Optimo Contenido de Humedad** | : | **13.93** | **%** |

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**
**RUC. 20605369139**

## ENSAYO CALIFORNIA BEARNING RATIO

**SOLICITANTE** : MOLINO CHICLAYO SAC
REPARACION DE PISTA - PATIO PRINCIPAL
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI
DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C3M1
**FECHA** : 29.12.2025

## C.B.R.

| MOLDE Nº | | 6L | | 4L | | 5L | |
|---|---|---|---|---|---|---|---|
| Nº DE Ggolpes POR CAPA | | 56 | | 25 | | 12 | |
| CONDICION DE MUESTRA | | SIN MOJAR | MOJADA | SIN MOJAR | MOJADA | SIN MOJAR | MOJADA |
| PESO MOLDE + SUELO HUMEDO | (g) | 12,216 | 12,291 | 12,285 | 12,388 | 12,046 | 12,245 |
| PESO DEL MOLDE | (g) | 7,748 | 7,748 | 7,948 | 7,948 | 7,916 | 7,916 |
| PESO DEL SUELO HUMEDO | (g) | 4468 | 4543 | 4337 | 4440 | 4130 | 4329 |
| VOLUMEN DEL SUELO | (g) | 2,143 | 2,143 | 2,143 | 2,143 | 2,143 | 2,143 |
| DENSIDAD HUMEDA | ($g/cm^3$) | 2.08 | 2.12 | 2.02 | 2.07 | 1.93 | 2.02 |
| CAPSULA Nº | | 55 | 77 | 106 | 134 | 148 | 178 |
| PESO CAPSULA + SUELO HUMEDO | (g) | 57.93 | 68.18 | 66.95 | 64.40 | 49.64 | 76.22 |
| PESO CAPSULA + SUELO SECO | (g) | 52.93 | 61.71 | 60.99 | 57.58 | 45.55 | 67.10 |
| PESO DE AGUA CONTENIDA | (g) | 5.00 | 6.47 | 5.96 | 6.82 | 4.09 | 9.12 |
| PESO DE CAPSULA | (g) | 17.04 | 19.22 | 19.41 | 15.97 | 16.35 | 18.64 |
| PESO DE SUELO SECO | (g) | 35.89 | 42.49 | 41.58 | 41.61 | 29.2 | 48.46 |
| HUMEDAD | (%) | 13.93% | 15.23% | 14.33% | 16.39% | 14.01% | 18.82% |
| DENSIDAD SECA | | 1.83 | 1.84 | 1.77 | 1.78 | 1.69 | 1.70 |

## EXPANSION

| FECHA | HORA | TIEMPO | DIAL | EXPANSION | | DIAL | EXPANSION | | DIAL | EXPANSION | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | mm. | % | | mm. | % | | mm. | % |
| | | 0 hrs | 0.000 | | | 0.000 | | | 0.000 | | 0.000 |
| | | 24 hrs | 0.216 | 0.216 | 0.186 | 0.455 | 0.455 | 0.391 | 0.665 | 0.665 | 0.572 |
| | | 48 hrs | 0.298 | 0.298 | 0.256 | 0.551 | 0.551 | 0.474 | 0.773 | 0.773 | 0.665 |
| | | 72 hrs | 0.422 | 0.422 | 0.363 | 0.665 | 0.665 | 0.572 | 0.868 | 0.868 | 0.746 |
| | | 96 hrs | 0.554 | 0.554 | 0.476 | 0.780 | 0.780 | 0.671 | 0.967 | 0.967 | 0.831 |

## PENETRACION

| PENETRACION pulg. | CARGA ESTANDAR | MOLDE Nº 6L | | | | MOLDE Nº 4L | | | | MOLDE Nº 5L | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CARGA | CORECCION | | | CARGA | CORECCION | | | CARGA | CORECCION | | |
| | (lbs/pulg²) | Lectura | lbs | lbs/pulg² | % | Lectura | lbs | lbs/pulg² | % | Lectura | lbs | lbs/pulg² | % |
| 0.020 | | 5.10 | 60 | 20.00 | | 3.60 | 42 | 14.00 | | 2.30 | 27 | 9.00 | |
| 0.040 | | 10.80 | 126 | 42.00 | | 7.70 | 90 | 30.00 | | 4.60 | 54 | 18.00 | |
| 0.060 | | 15.60 | 183 | 61.00 | | 11.30 | 132 | 44.00 | | 6.70 | 78 | 26.00 | |
| 0.080 | | 20.50 | 240 | 80.00 | | 14.90 | 174 | 58.00 | | 8.70 | 102 | 34.00 | |
| 0.100 | 1000 | 25.60 | 300 | 100.00 | 10.00 | 18.50 | 216 | 72.00 | 7.20 | 11.00 | 129 | 43.00 | 4.30 |
| 0.200 | 1500 | 41.80 | 489 | 163.00 | | 30.00 | 351 | 117.00 | | 17.90 | 210 | 70.00 | |
| 0.300 | | 53.10 | 621 | 207.00 | | 38.20 | 447 | 149.00 | | 22.80 | 267 | 89.00 | |
| 0.400 | | 61.50 | 720 | 240.00 | | 44.40 | 519 | 173.00 | | 26.40 | 309 | 103.00 | |
| 0.500 | | 64.10 | 750 | 250.00 | | 46.20 | 540 | 180.00 | | 27.70 | 324 | 108.00 | |

CALLE MANUEL SEOANE Nº 717 – LAMBAYEQUE - CEL. 907075398 –
E-Mail = mario_rd8@hotmail.com

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**
**RUC. 20605369139**


## ENSAYO CALIFORNIA BEARNING RATIO

**SOLICITANTE** : MOLINO CHICLAYO SAC
REPARACION DE PISTA - PATIO PRINCIPAL
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C3M1
**FECHA** : 29.12.2025

## C.B.R.

| MOLDE Nº | | 6L | | 4L | | 5L | |
|---|---|---|---|---|---|---|---|
| Nº DE GOLPES POR CAPA | | 56 | | 25 | | 12 | |
| CONDICION DE MUESTRA | | SIN MOJAR | MOJADA | SIN MOJAR | MOJADA | SIN MOJAR | MOJADA |
| PESO MOLDE + SUELO HUMEDO | (g) | 12,216 | 12,291 | 12,285 | 12,388 | 12,046 | 12,245 |
| PESO DEL MOLDE | (g) | 7,748 | 7,748 | 7,948 | 7,948 | 7,916 | 7,916 |
| PESO DEL SUELO HUMEDO | (g) | 4468 | 4543 | 4337 | 4440 | 4130 | 4329 |
| VOLUMEN DEL SUELO | (g) | 2,143 | 2,143 | 2,143 | 2,143 | 2,143 | 2,143 |
| DENSIDAD HUMEDA | ($g/cm^3$) | 2.08 | 2.12 | 2.02 | 2.07 | 1.93 | 2.02 |
| CAPSULA Nº | | 55 | 77 | 106 | 134 | 148 | 178 |
| PESO CAPSULA + SUELO HUMEDO | (g) | 57.93 | 68.18 | 66.95 | 64.40 | 49.64 | 76.22 |
| PESO CAPSULA + SUELO SECO | (g) | 52.93 | 61.71 | 60.99 | 57.58 | 45.55 | 67.10 |
| PESO DE AGUA CONTENIDA | (g) | 5.00 | 6.47 | 5.96 | 6.82 | 4.09 | 9.12 |
| PESO DE CAPSULA | (g) | 17.04 | 19.22 | 19.41 | 15.97 | 16.35 | 18.64 |
| PESO DE SUELO SECO | (g) | 35.89 | 42.49 | 41.58 | 41.61 | 29.2 | 48.46 |
| HUMEDAD | (%) | 13.93% | 15.23% | 14.33% | 16.39% | 14.01% | 18.82% |
| DENSIDAD SECA | | 1.83 | 1.84 | 1.77 | 1.78 | 1.69 | 1.70 |

## EXPANSION

| FECHA | HORA | TIEMPO | DIAL | EXPANSION | | DIAL | EXPANSION | | DIAL | EXPANSION | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | mm. | % | | mm. | % | | mm. | % |
| | | 0 hrs | 0.000 | | | 0.000 | | | 0.000 | | 0.000 |
| | | 24 hrs | 0.216 | 0.216 | 0.186 | 0.455 | 0.455 | 0.391 | 0.665 | 0.665 | 0.572 |
| | | 48 hrs | 0.298 | 0.298 | 0.256 | 0.551 | 0.551 | 0.474 | 0.773 | 0.773 | 0.665 |
| | | 72 hrs | 0.422 | 0.422 | 0.363 | 0.665 | 0.665 | 0.572 | 0.868 | 0.868 | 0.746 |
| | | 96 hrs | 0.554 | 0.554 | 0.476 | 0.780 | 0.780 | 0.671 | 0.967 | 0.967 | 0.831 |

## PENETRACION

| PENETRACION pulg. | CARGA ESTANDAR | MOLDE Nº 6L | | | | MOLDE Nº 4L | | | | MOLDE Nº 5L | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CARGA | CORECCION | | | CARGA | CORECCION | | | CARGA | CORECCION | | |
| | (lbs/pulg²) | Lectura | lbs | lbs/pulg² | % | Lectura | lbs | lbs/pulg² | % | Lectura | lbs | lbs/pulg² | % |
| 0.020 | | 5.10 | 60 | 20.00 | | 3.60 | 42 | 14.00 | | 2.30 | 27 | 9.00 | |
| 0.040 | | 10.80 | 126 | 42.00 | | 7.70 | 90 | 30.00 | | 4.60 | 54 | 18.00 | |
| 0.060 | | 15.60 | 183 | 61.00 | | 11.30 | 132 | 44.00 | | 6.70 | 78 | 26.00 | |
| 0.080 | | 20.50 | 240 | 80.00 | | 14.90 | 174 | 58.00 | | 8.70 | 102 | 34.00 | |
| 0.100 | 1000 | 25.60 | 300 | 100.00 | 10.00 | 18.50 | 216 | 72.00 | 7.20 | 11.00 | 129 | 43.00 | 4.30 |
| 0.200 | 1500 | 41.80 | 489 | 163.00 | | 30.00 | 351 | 117.00 | | 17.90 | 210 | 70.00 | |
| 0.300 | | 53.10 | 621 | 207.00 | | 38.20 | 447 | 149.00 | | 22.80 | 267 | 89.00 | |
| 0.400 | | 61.50 | 720 | 240.00 | | 44.40 | 519 | 173.00 | | 26.40 | 309 | 103.00 | |
| 0.500 | | 64.10 | 750 | 250.00 | | 46.20 | 540 | 180.00 | | 27.70 | 324 | 108.00 | |


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Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

# CALICATA 04

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.

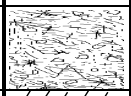
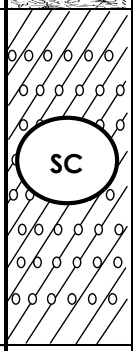
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**CALICATA** : C-4

**FECHA** : 09.07.2026

## REGISTRO DE PERFORACIONES

| COTA | PROFUNDIDAD (mts.) | MUESTRA | SIMBOLO | NATURALEZA DEL TERRENO ESTRATO | OBSERVACIONES |
|---|---|---|---|---|---|
| 0.00 | 0.00 | | | | |
| 0.10 | | RELLENO |  | MATERIAL DE RELLENO NO CALIFICADO | |
| 0.20 | | | | | |
| 0.30 | 0.30 | | | | |
| 0.40 | | |  | | |
| 0.50 | | | | | |
| 0.60 | | | | ARENAS ARCILLOSAS | |
| 0.70 | | | | CLASIFICACION - AASHTO: A - 6 (5) | MAXIMA DENSIDAD SECA = 1.80 gr/cm3 |
| 0.80 | | | | DE COLOR MARRON CLARO, DE CONSISTENCIA MEDIA | OPTIMO DE HUMEDAD = 14.44 % |
| 0.90 | | M.1 | SC | L.L = 25.14 | C.B.R. - 100% = 9.6 % |
| 1.00 | | | | L.P = 20.20 | C.B.R. - 95% = 5.5 % |
| 1.10 | | | | I.P = 14.94 | |
| 1.20 | | | | % CONTENIDO DE HUMEDAD = 13.40 % | |
| 1.30 | | | | % CONTENIDO DE SALES = 0.20 % | DURANTE EL TIEMPO DE EXCAVACION |
| 1.40 | | | | | NO SE DETECTO NIVEL FREATICO |
| 1.50 | 1.50 | | | | |

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Mario Ramirez Dejo
GERENTE GENERAL
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KEVIN JUNIOR ROSILLO VASQUEZ
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# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C4
**FECHA** : 09.07.2026

## HUMEDAD NATURAL

| CALICATA-MUESTRA | **C4-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.30 - 1.50** |
| Nº RECIPIENTE | 166 |
| 1.- PESO SUELO HUMEDO + RECIPIENTE | 90.63 |
| 2.- PESO SUELO SECO + RECIPIENTE | 82.50 |
| 3.- PESO DEL AGUA | 6.21 |
| 4.- PESO RECIPIENTE | 24.80 |
| 5.- PESO SUELO SECO | 58.66 |
| 6.- PORCENTAJE DE HUMEDAD | **10.18%** |
| | |

## DETERMINACION DE LA SAL

| CALICATA-MUESTRA | **C4-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.30 - 1.50** |
| Nº RECIPIENTE | 168 |
| (1) PESO DEL TARRO | 20.01 |
| (2) PESO TARRO + AGUA + SAL | 29.90 |
| (3) PESO TARRO SECO + SAL | 20.03 |
| (4) PESO SAL ( 3 - 1) | 0.02 |
| (5) PESO AGUA ( 2 - 3 ) | 9.87 |
| (6) PORCENTAJE DE SAL | **0.23%** |
| | |

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

KEVIN JUNIOR ROSILLO VASQUEZ
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# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

### ANALISIS GRANULOMETRICO POR TAMIZADO
**(ASTM - D422 / N.T.P. 339.128)**

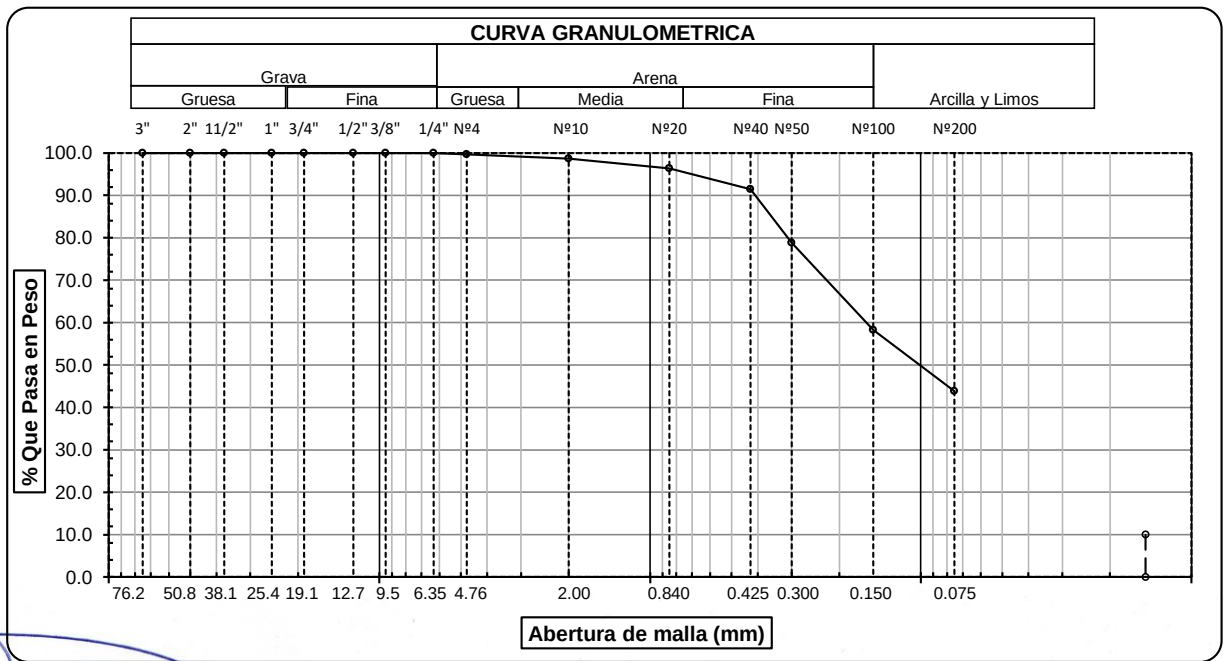
**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C4M1 - PROG. 3+00
**FECHA** : 09.07.2026

| ABERTURA MALLA (Pul) | ABERTURA MALLA (mm) | PESO RETENIDO | % RETENIDO PARCIAL | % RETENIDO ACUMULADO | % QUE PASA |
|---|---|---|---|---|---|
| 3" | 76.200 | | | | |
| 2 1/2" | 63.500 | | | | |
| 2" | 50.800 | | | | |
| 1 1/2" | 38.100 | | | | |
| 1" | 25.400 | | | | |
| 3/4" | 19.050 | | | | |
| 1/2" | 12.700 | | | | |
| 3/8" | 9.525 | | | | |
| 1/4" | 6.350 | 0.00 | 0.00 | 0.00 | 100.00 |
| Nº4 | 4.760 | 0.57 | 0.29 | 0.29 | 99.72 |
| Nº10 | 2.000 | 2.15 | 1.08 | 1.36 | 98.64 |
| Nº20 | 0.840 | 4.62 | 2.31 | 3.67 | 96.33 |
| N40 | 0.425 | 9.85 | 4.93 | 8.60 | 93.46 |
| Nº50 | 0.300 | 25.14 | 12.57 | 21.17 | 78.84 |
| Nº100 | 0.150 | 41.17 | 20.59 | 41.75 | 58.25 |
| Nº200 | 0.075 | 28.84 | 14.42 | 44.60 | 44.60 |
| < Nº 200 | FONDO | 87.66 | 43.83 | 100.00 | 0.00 |

| DESCRIPCION DE LA MUESTRA | | |
|---|---|---|
| PESO TOTAL | : | 200.0 g. |
| PESO LAVADO | : | 87.7 g. |
| LIMITE LIQUIDO | : | 28.14 % |
| LIMITE PLASTICO | : | 20.20 % |
| INDICE PLASTICIDAD | : | 7.94 % |
| CLASF. AASHTO | : | **A-6 (5)** |
| CLASF. SUCS | : | **SC** |
| DESCRIPCIÓN DEL SUELO | : | **MALO** |
| **Arena arcillosa** | | |

| Ensayo Malla Nº200 | P.S.Sec | P.S.Lav | (%) 200 |
|---|---|---|---|
| | 200.0 | 88 | 56.2 |

| | |
|---|---|
| MODULO DE FINEZA | 0.758 |
| Coef. Uniformidad | 0.0 |
| Coef. Curvatura | 0.0 |




Observaciones: _____

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

LABORATORIO LINUS E.I.R.L. SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS PAVIMENTOS ANALISIS DE MATERIALES

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

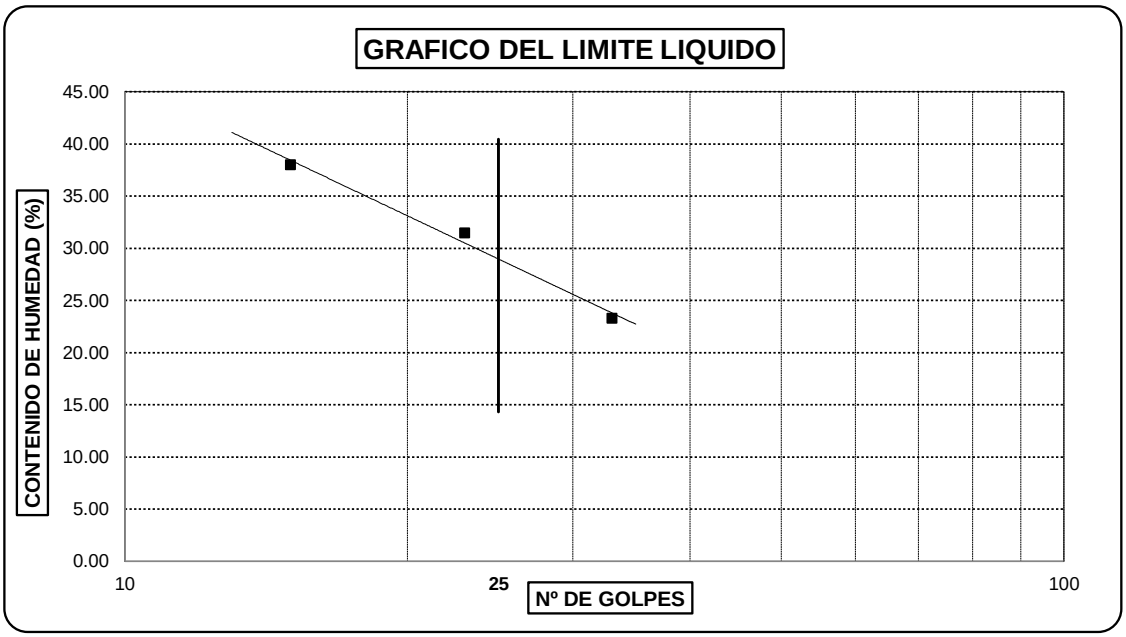
## RUC. 20605369139

## LIMITES DE ATTERBERG
**(ASTM - D423 / N.T.P. 339.129)**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C4M1 - PROG. 3+00
**FECHA** : 09.07.2026

| DATOS DE ENSAYO | | LIMITE LIQUIDO | | | LIMITE PLASTICO | | |
|---|---|---|---|---|---|---|---|
| N° de golpes | | **15** | **23** | **33** | --- | --- | --- |
| 1. Recipiente N° | | 66 | 65 | 67 | 62 | --- | --- |
| 2. Peso suelo húmedo + tara | (gr) | 80.20 | 81.54 | 81.06 | 80.79 | --- | --- |
| 3. Peso suelo seco + Tara | (gr) | 76.61 | 77.14 | 78.68 | 78.8 | --- | --- |
| 4. Peso de la Tara | (gr) | 65.74 | 66.26 | 66.36 | 67.10 | --- | --- |
| 5. Peso del agua | (gr) | 3.59 | 4.40 | 2.38 | 1.99 | | |
| 6. Peso del suelo seco | (gr) | 10.87 | 10.88 | 12.32 | 11.70 | --- | --- |
| 7. Contenido de humedad | (%) | 33.03 | 40.44 | 19.32 | 17.01 | --- | --- |

### GRAFICO DEL LIMITE LIQUIDO




| LIMITE DE CONSISTENCIA DE LA MUESTRA | |
|---|---|
| **Límite Líquido** | 28.14 |
| **Límite Plástico** | 20.20 |
| **Índice de Plasticidad** | 7.94 |

| MUESTRA: C4M1 - PROG. 3+00 | |
|---|---|
| **Clasificaciòn SUCS** | **SC** |
| **Clasificaciòn AASHTO** | **A-6 (5)** |

Observaciones: _____

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

LABORATORIO LINUS E.I.R.L. SERVICIOS DE ESTUDIOS PAVIMENTOS ANALISIS DE MATERIALES

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

CALLE MANUEL SEOANE Nº 717 – LAMBAYEQUE - CEL. 907075398 –
E-Mail = mario_rd8@hotmail.com

# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

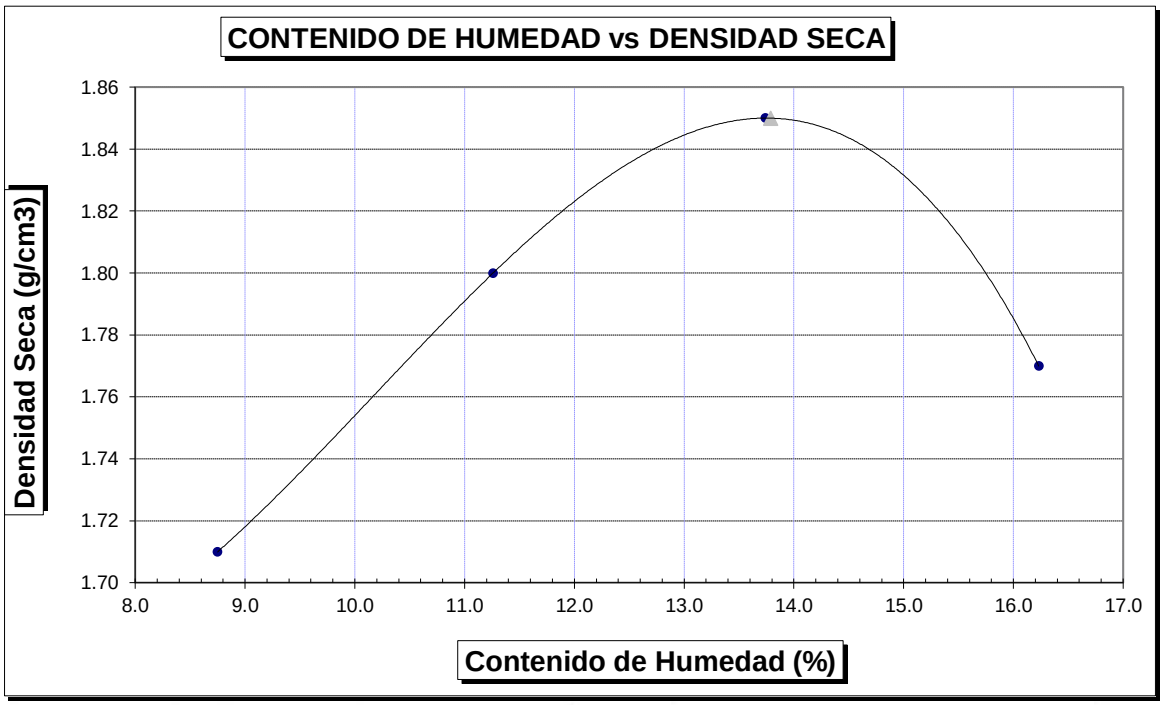
## RUC. 20605369139

| | | |
|---|---|---|
| **SOLICITANTE** | : | ARROYO AYALA M.<br>SANCHEZ MONTENEGRO R. |
| **PROYECTO** | : | ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **UBICACIÓN** | : | DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **MATERIAL** | : | TERRENO NATURAL |
| **CALICATA** | : | C4M1 |
| **FECHA** | : | 09.07.2026 |

# PROCTOR MODIFICADO AASHTO T - 180 D

| | | | | | |
|---|---|---|---|---|---|
| MOLDE Nº | | : | | | |
| VOLUMEN | | : | **2130** cm³ | --- pie³ | |
| METODO DE COMPACTACION | | : | **AASHTO T - 180 D** | | |
| .- Peso Suelo Humedo + Molde | (g) | 10882 | 11180 | 11393 | 11308 |
| .- Peso de Molde | (g) | 6920 | 6920 | 6920 | 6920 |
| .- Peso Suelo Húmedo Compactado | (g) | 3962 | 4260 | 4473 | 4388 |
| .- Peso Volumétrico Húmedo | (g) | 1.860 | 2.000 | 2.100 | 2.060 |
| .- Recipiente Nº | | 103 | 114 | 108 | 100 |
| .- Peso de Suelo Húmedo + Tara | (g) | 71.75 | 73.85 | 73.03 | 90.92 |
| .- Peso de Suelo Seco + Tara | (g) | 68.15 | 69.43 | 67.22 | 83.92 |
| .- Tara | (g) | 27.00 | 30.16 | 24.94 | 40.79 |
| .- Peso de Agua | (g) | 3.60 | 4.42 | 5.81 | 7.00 |
| .- Peso de Suelo Seco | (g) | 41.15 | 39.27 | 42.28 | 43.13 |
| .- Contenido de agua | (%) | 8.75 | 11.26 | 13.74 | 16.23 |
| .- Peso Volumétrico Seco | (g/cm³) | 1.71 | 1.80 | 1.85 | 1.77 |

| | | | |
|---|---|---|---|
| **Máxima Densidad Seca** | : | **1.80** | **gr/cm³** |
| **Optimo Contenido de Humedad** | : | **14.44** | **%** |

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# CALICATA 05

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# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C-5
**FECHA** : 29.12.2025

## REGISTRO DE PERFORACIONES

| COTA | PROFUNDIDAD (mts.) | MUESTRA | SIMBOLO | NATURALEZA DEL TERRENO ESTRATO | OBSERVACIONES |
|---|---|---|---|---|---|
| 0.00 | 0.00 | | | | |
| 0.10 | | RELLENO | | MATERIAL DE RELLENO NO CALIFICADO | |
| 0.20 | | | | | |
| 0.30 | | | | | |
| 0.40 | | | | | |
| 0.50 | 0.50 | | | | |
| 0.60 | | M.1 | CL | ARCILLAS DE MEDIANA PLASTICIDAD | MAXIMA DENSIDAD SECA = 1.79 gr/cm3 |
| 0.70 | | | | CLASIFICACION - AASHTO: A - 6 (11) | OPTIMO DE HUMEDAD = 14.92 % |
| 0.80 | | | | DE COLOR MARRON OSCURO, DE CONSISTENCIA MEDIA | C.B.R. - 100% = 9.2 % |
| 0.90 | | | | L.L = 38.92 | C.B.R. - 95% = 5.6 % |
| 1.00 | | | | L.P = 21.22 | |
| 1.10 | | | | I.P = 17.70 | |
| 1.20 | | | | % CONTENIDO DE HUMEDAD = 18.19 % | DURANTE EL TIEMPO DE EXCAVACION |
| 1.30 | | | | % CONTENIDO DE SALES = 0.19 % | SE DETECTO NIVEL FREATICO |
| 1.40 | | | | | A LA PROFUNDIDAD 1.20metros |
| 1.50 | 1.50 | | | | |

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**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C5
**FECHA** : 29.12.2025

## HUMEDAD NATURAL

| CALICATA-MUESTRA | **C5-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.50 - 1.50** |
| Nº RECIPIENTE | 18 |
| 1.- PESO SUELO HUMEDO + RECIPIENTE | 96.77 |
| 2.- PESO SUELO SECO + RECIPIENTE | 85.80 |
| 3.- PESO DEL AGUA | 10.97 |
| 4.- PESO RECIPIENTE | 25.50 |
| 5.- PESO SUELO SECO | 60.30 |
| 6.- PORCENTAJE DE HUMEDAD | **18.19%** |
| | |

## DETERMINACION DE LA SAL

| CALICATA-MUESTRA | **C5-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.50 - 1.50** |
| Nº RECIPIENTE | 15 |
| (1) PESO DEL TARRO | 16.60 |
| (2) PESO TARRO + AGUA + SAL | 27.40 |
| (3) PESO TARRO SECO + SAL | 16.62 |
| (4) PESO SAL ( 3 - 1) | 0.02 |
| (5) PESO AGUA ( 2 - 3 ) | 10.78 |
| (6) PORCENTAJE DE SAL | **0.19%** |
| | |

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

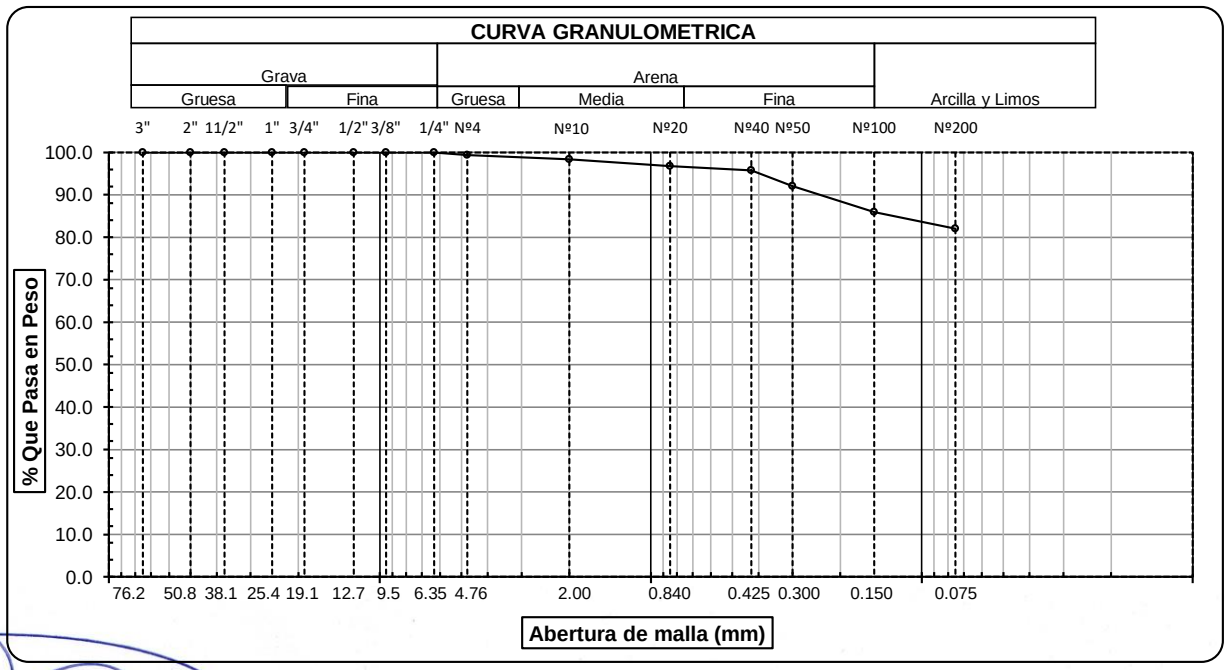
## RUC. 20605369139

### ANALISIS GRANULOMETRICO POR TAMIZADO
**(ASTM - D422 / N.T.P. 339.128)**

**SOLICITANTE :** ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO :** ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN :** DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD :** 0.50 mts. - 1.50 mts.
**CALICATA :** C5M1 - PROG. 4+00
**FECHA :** 29.12.2025

| ABERTURA MALLA (Pul) | ABERTURA MALLA (mm) | PESO RETENIDO | % RETENIDO PARCIAL | % RETENIDO ACUMULADO | % QUE PASA |
|---|---|---|---|---|---|
| 3" | 76.200 | | | | |
| 2 1/2" | 63.500 | | | | |
| 2" | 50.800 | | | | |
| 1 1/2" | 38.100 | | | | |
| 1" | 25.400 | | | | |
| 3/4" | 19.050 | | | | |
| 1/2" | 12.700 | | | | |
| 3/8" | 9.525 | | | | |
| 1/4" | 6.350 | 0.00 | 0.00 | 0.00 | 100.00 |
| Nº4 | 4.760 | 1.17 | 0.59 | 0.59 | 99.42 |
| Nº10 | 2.000 | 2.14 | 1.07 | 1.66 | 98.35 |
| Nº20 | 0.840 | 3.26 | 1.63 | 3.29 | 96.72 |
| N40 | 0.425 | 1.84 | 0.92 | 4.21 | 95.80 |
| Nº50 | 0.300 | 7.48 | 3.74 | 7.95 | 92.06 |
| Nº100 | 0.150 | 12.14 | 6.07 | 14.02 | 85.99 |
| Nº200 | 0.075 | 7.84 | 3.92 | 17.94 | 82.07 |
| < Nº 200 | FONDO | 164.13 | 82.07 | 100.00 | 0.00 |

| DESCRIPCION DE LA MUESTRA | | | |
|---|---|---|---|
| PESO TOTAL | : | 200.0 g. | |
| PESO LAVADO | : | 164.1 g. | |
| | | | |
| LIMITE LIQUIDO | : | 38.92 % | |
| LIMITE PLASTICO | : | 21.22 % | |
| INDICE PLASTICIDAD | : | 17.70 % | |
| CLASF. AASHTO | : | **A-6 (11)** | |
| CLASF. SUCS | : | **CL** | |
| DESCRIPCIÓN DEL SUELO : | | **MALO** | |
| **Arcilla de baja plasticidad con arena** | | | |
| Ensayo Malla Nº200 | P.S.Sec | P.S.Lav | (%) 200 |
| | 200.0 | 164 | 17.9 |
| MODULO DE FINEZA | 0.317 | | |
| Coef. Uniformidad | 0.0 | | |
| Coef. Curvatura | 0.0 | | |




Observaciones: _____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# LABORATORIO LINUS E.I.R.L.

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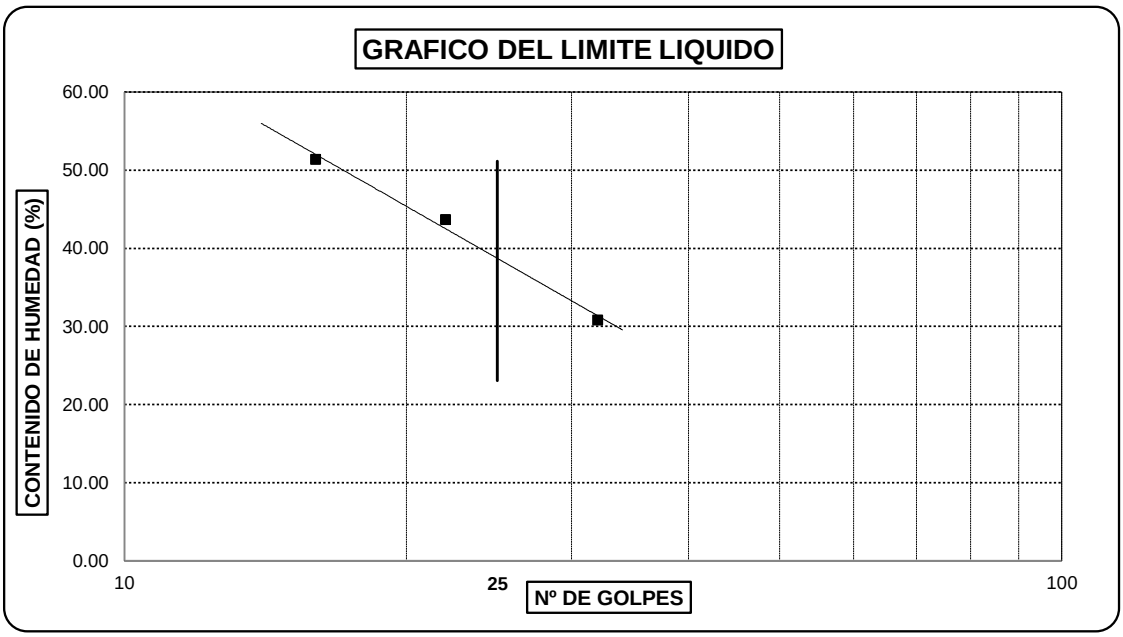
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**
**RUC. 20605369139**


## LIMITES DE ATTERBERG
**(ASTM - D423 / N.T.P. 339.129)**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.50 mts. - 1.50 mts.
**CALICATA** : C5M1 - PROG. 4+00
**FECHA** : 29.12.2025

| DATOS DE ENSAYO | | LIMITE LIQUIDO | | | LIMITE PLASTICO | | |
|---|---|---|---|---|---|---|---|
| N° de golpes | | **16** | **22** | **32** | --- | --- | --- |
| 1. Recipiente N° | | 303 | 306 | 302 | 301 | --- | --- |
| 2. Peso suelo húmedo + tara | (gr) | 69.93 | 70.93 | 70.43 | 70.18 | --- | --- |
| 3. Peso suelo seco + Tara | (gr) | 64.99 | 65.52 | 67.06 | 67.58 | --- | --- |
| 4. Peso de la Tara | (gr) | 54.42 | 54.94 | 55.04 | 55.33 | --- | --- |
| 5. Peso del agua | (gr) | 4.94 | 5.41 | 3.37 | 2.60 | | |
| 6. Peso del suelo seco | (gr) | 10.57 | 10.58 | 12.02 | 12.25 | --- | --- |
| 7. Contenido de humedad | (%) | 46.74 | 51.13 | 28.04 | 21.22 | --- | --- |




| LIMITE DE CONSISTENCIA DE LA MUESTRA | |
|---|---|
| **Límite Líquido** | 38.92 |
| **Límite Plástico** | 21.22 |
| **Índice de Plasticidad** | 17.70 |

| MUESTRA: C3M1 - PROG. 2+00 | |
|---|---|
| **Clasificaciòn SUCS** | **CL** |
| **Clasificaciòn AASHTO** | **A-6 (11)** |

Observaciones: _____

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

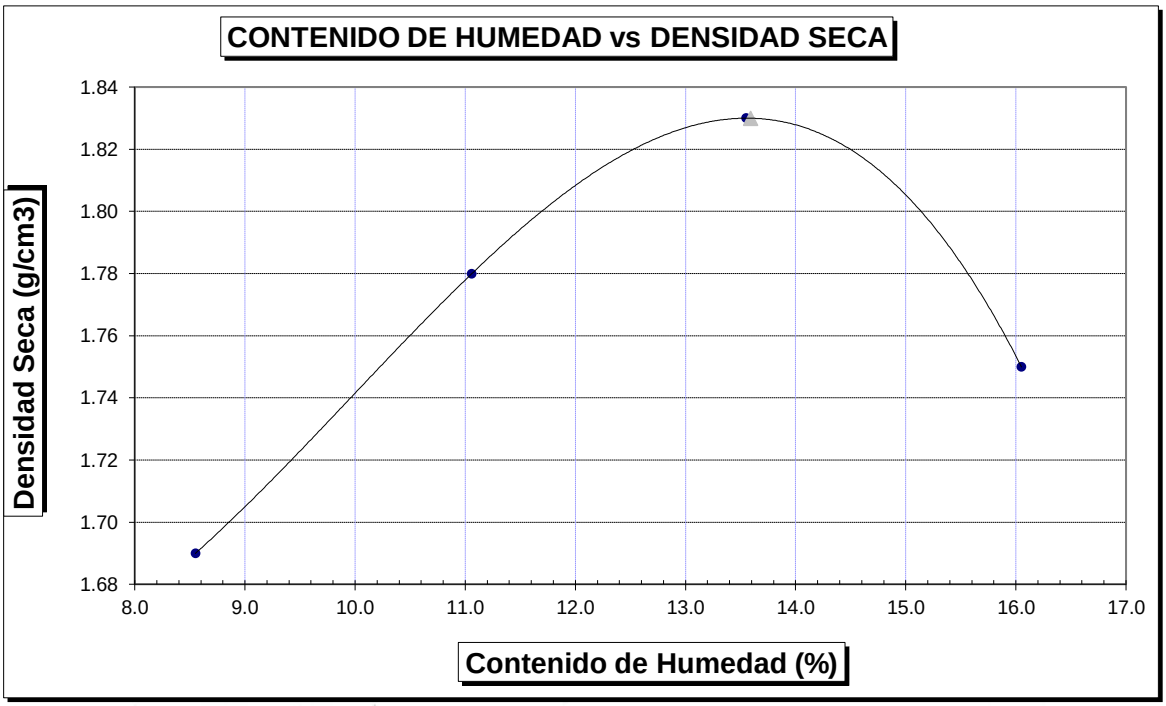
## RUC. 20605369139

| | | |
|---|---|---|
| **SOLICITANTE** | : | ARROYO AYALA M.<br>SANCHEZ MONTENEGRO R. |
| **PROYECTO** | : | ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **UBICACIÓN** | : | DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **MATERIAL** | : | TERRENO NATURAL |
| **CALICATA** | : | C5M1 |
| **FECHA** | : | 29.12.2025 |

# PROCTOR MODIFICADO AASHTO T - 180 D

| | | | | | |
|---|---|---|---|---|---|
| MOLDE Nº | | : | | | |
| VOLUMEN | | : | **2261** cm³ | **---** pie³ | |
| METODO DE COMPACTACION | | : | **AASHTO T - 180 D** | | |
| .- Peso Suelo Humedo + Molde | (g) | 11332 | 11671 | 11897 | 11784 |
| .- Peso de Molde | (g) | 7194 | 7194 | 7194 | 7194 |
| .- Peso Suelo Húmedo Compactado | (g) | 4138 | 4477 | 4703 | 4590 |
| .- Peso Volumétrico Húmedo | (g) | 1.830 | 1.980 | 2.080 | 2.030 |
| .- Recipiente Nº | | 222 | 233 | 227 | 219 |
| .- Peso de Suelo Húmedo + Tara | (g) | 71.25 | 73.35 | 72.52 | 90.41 |
| .- Peso de Suelo Seco + Tara | (g) | 67.75 | 69.03 | 66.82 | 83.52 |
| .- Tara | (g) | 26.80 | 29.96 | 24.74 | 40.59 |
| .- Peso de Agua | (g) | 3.50 | 4.32 | 5.70 | 6.89 |
| .- Peso de Suelo Seco | (g) | 40.95 | 39.07 | 42.08 | 42.93 |
| .- Contenido de agua | (%) | 8.55 | 11.06 | 13.55 | 16.05 |
| .- Peso Volumétrico Seco | (g/cm³) | 1.69 | 1.78 | 1.83 | 1.75 |

| | | | |
|---|---|---|---|
| **Máxima Densidad Seca** | : | **1.83** | **gr/cm³** |
| **Optimo Contenido de Humedad** | : | **13.59** | **%** |

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# CALICATA 06

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## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
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**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**CALICATA** : C-6

**FECHA** : 29.12.2025

## REGISTRO DE PERFORACIONES

| COTA | PROFUNDIDAD (mts.) | MUESTRA | SIMBOLO | NATURALEZA DEL TERRENO ESTRATO | OBSERVACIONES |
|---|---|---|---|---|---|
| 0.00 | 0.00 | | | | |
| 0.10 | | | | | |
| 0.20 | | RELLENO | | MATERIAL DE RELLENO NO CALIFICADO | |
| 0.30 | 0.30 | | | | |
| 0.40 | | | | | |
| 0.50 | | | | | |
| 0.60 | | | | ARENAS ARCILLOSAS | |
| 0.70 | | | | CLASIFICACION - AASHTO: A - 6 (2) | MAXIMA DENSIDAD SECA = 1.82 gr/cm3 |
| 0.80 | | | | DE COLOR MARRON CLARO, DE CONSISTENCIA MEDIA | OPTIMO DE HUMEDAD = 14.12 % |
| 0.90 | | M.1 | SC | L.L = 36.14 | C.B.R. - 100% = 9.5 % |
| 1.00 | | | | L.P = 20.43 | C.B.R. - 95% = 5.8 % |
| 1.10 | | | | I.P = 15.71 | |
| 1.20 | | | | % CONTENIDO DE HUMEDAD = 16.13 % | |
| 1.30 | | | | % CONTENIDO DE SALES = 0.18 % | DURANTE EL TIEMPO DE EXCAVACION |
| 1.40 | | | | | NO SE DETECTO NIVEL FREATICO |
| 1.50 | 1.50 | | | | |

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

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**SOLICITANTE** : ARROYO AYALA M.
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**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C6
**FECHA** : 29.12.2025

## HUMEDAD NATURAL

| CALICATA-MUESTRA | **C6-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.30 - 1.50** |
| Nº RECIPIENTE | 166 |
| 1.- PESO SUELO HUMEDO + RECIPIENTE | 90.63 |
| 2.- PESO SUELO SECO + RECIPIENTE | 82.50 |
| 3.- PESO DEL AGUA | 6.21 |
| 4.- PESO RECIPIENTE | 24.80 |
| 5.- PESO SUELO SECO | 58.66 |
| 6.- PORCENTAJE DE HUMEDAD | **10.19%** |
| | |

## DETERMINACION DE LA SAL

| CALICATA-MUESTRA | **C6-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.30 - 1.50** |
| Nº RECIPIENTE | 168 |
| (1) PESO DEL TARRO | 20.01 |
| (2) PESO TARRO + AGUA + SAL | 29.90 |
| (3) PESO TARRO SECO + SAL | 20.03 |
| (4) PESO SAL ( 3 - 1) | 0.02 |
| (5) PESO AGUA ( 2 - 3 ) | 9.87 |
| (6) PORCENTAJE DE SAL | **0.24%** |
| | |

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## RUC. 20605369139

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**(ASTM - D422 / N.T.P. 339.128)**

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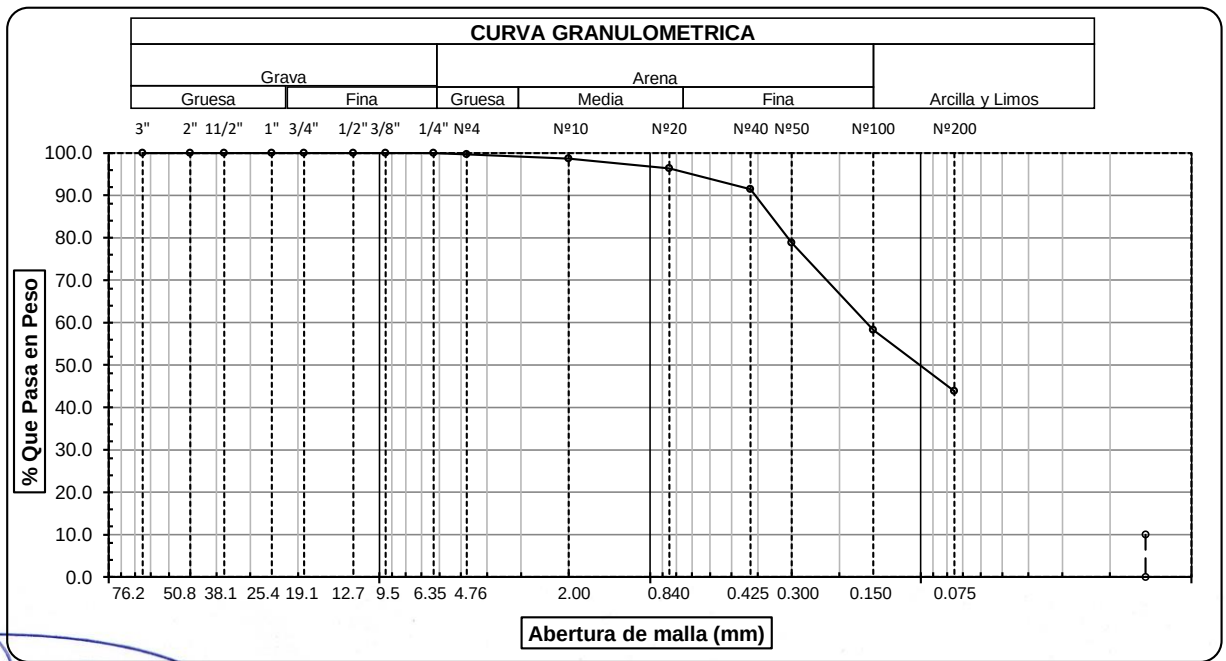
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C6M1 - PROG. 5+00
**FECHA** : 29.12.2025

| ABERTURA MALLA (Pul) | ABERTURA MALLA (mm) | PESO RETENIDO | % RETENIDO PARCIAL | % RETENIDO ACUMULADO | % QUE PASA |
|---|---|---|---|---|---|
| 3" | 76.200 | | | | |
| 2 1/2" | 63.500 | | | | |
| 2" | 50.800 | | | | |
| 1 1/2" | 38.100 | | | | |
| 1" | 25.400 | | | | |
| 3/4" | 19.050 | | | | |
| 1/2" | 12.700 | | | | |
| 3/8" | 9.525 | | | | |
| 1/4" | 6.350 | 0.00 | 0.00 | 0.00 | 100.00 |
| Nº4 | 4.760 | 0.57 | 0.29 | 0.29 | 99.72 |
| Nº10 | 2.000 | 2.15 | 1.08 | 1.36 | 98.64 |
| Nº20 | 0.840 | 4.62 | 2.31 | 3.67 | 96.33 |
| N40 | 0.425 | 9.85 | 4.93 | 8.60 | 95.40 |
| Nº50 | 0.300 | 25.14 | 12.57 | 21.17 | 78.84 |
| Nº100 | 0.150 | 41.17 | 20.59 | 41.75 | 58.25 |
| Nº200 | 0.075 | 28.84 | 14.42 | 56.17 | 48.53 |
| < Nº 200 | FONDO | 87.66 | 43.83 | 100.00 | 0.00 |

| DESCRIPCION DE LA MUESTRA | | |
|---|---|---|
| PESO TOTAL | : | 200.0 g. |
| PESO LAVADO | : | 87.7 g. |
| LIMITE LIQUIDO | : | 36.14 % |
| LIMITE PLASTICO | : | 20.43 % |
| INDICE PLASTICIDAD | : | 15.71 % |
| CLASF. AASHTO | : | **A-6 (2)** |
| CLASF. SUCS | : | **SC** |
| DESCRIPCIÓN DEL SUELO | : | **MALO** |
| **Arena arcillosa** | | |

| Ensayo Malla Nº200 | P.S.Sec | P.S.Lav | (%) 200 |
|---|---|---|---|
| | 200.0 | 88 | 56.2 |

| | |
|---|---|
| MODULO DE FINEZA | 0.753 |
| Coef. Uniformidad | 0.0 |
| Coef. Curvatura | 0.0 |




Observaciones: _____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Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

KEVIN JUNIOR ROSILLO VASQUEZ
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REG. CIP Nº 309074

# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

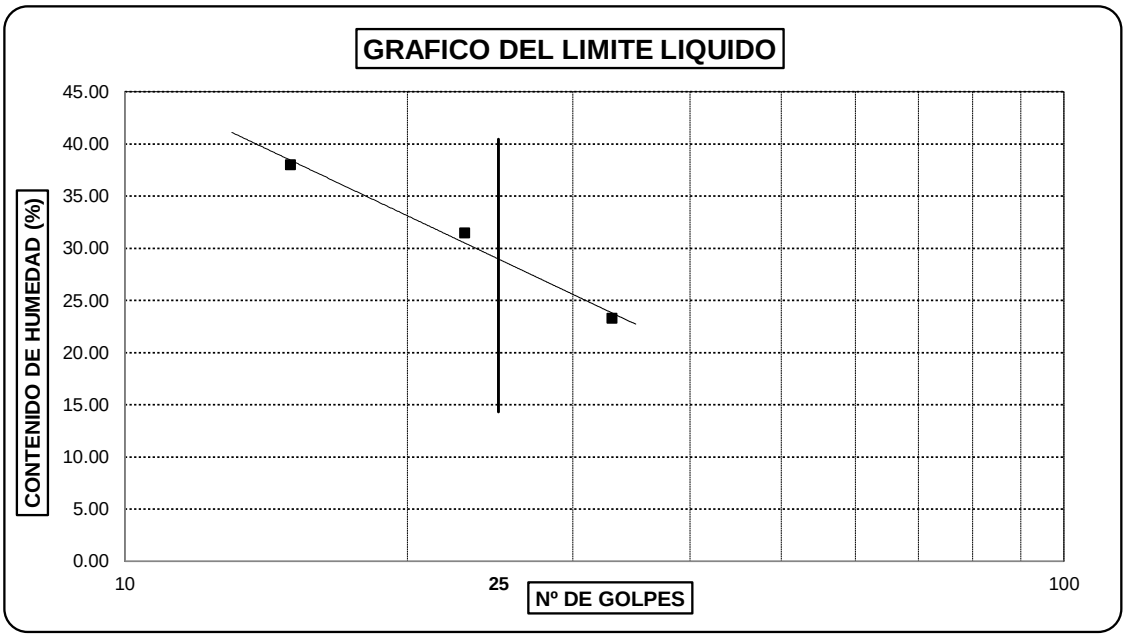
## RUC. 20605369139

## LIMITES DE ATTERBERG
**(ASTM - D423 / N.T.P. 339.129)**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C6M1 - PROG. 5+00
**FECHA** : 29.12.2025

| DATOS DE ENSAYO | | LIMITE LIQUIDO | | | LIMITE PLASTICO | | |
|---|---|---|---|---|---|---|---|
| N° de golpes | | **15** | **23** | **33** | --- | --- | --- |
| 1. Recipiente N° | | 66 | 65 | 67 | 62 | --- | --- |
| 2. Peso suelo húmedo + tara | (gr) | 80.20 | 81.54 | 81.06 | 80.79 | --- | --- |
| 3. Peso suelo seco + Tara | (gr) | 76.61 | 77.14 | 78.68 | 78.8 | --- | --- |
| 4. Peso de la Tara | (gr) | 65.74 | 66.26 | 66.36 | 67.10 | --- | --- |
| 5. Peso del agua | (gr) | 3.59 | 4.40 | 2.38 | 1.99 | | |
| 6. Peso del suelo seco | (gr) | 10.87 | 10.88 | 12.32 | 11.70 | --- | --- |
| 7. Contenido de humedad | (%) | 33.03 | 40.44 | 19.32 | 17.01 | --- | --- |

### GRAFICO DEL LIMITE LIQUIDO




| LIMITE DE CONSISTENCIA DE LA MUESTRA | |
|---|---|
| **Límite Líquido** | 36.14 |
| **Límite Plástico** | 20.43 |
| **Índice de Plasticidad** | 15.71 |

| MUESTRA | C6M1 - PROG. 5+00 |
|---|---|
| **Clasificaciòn SUCS** | **SC** |
| **Clasificaciòn AASHTO** | **A-6 (2)** |

Observaciones: _____

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

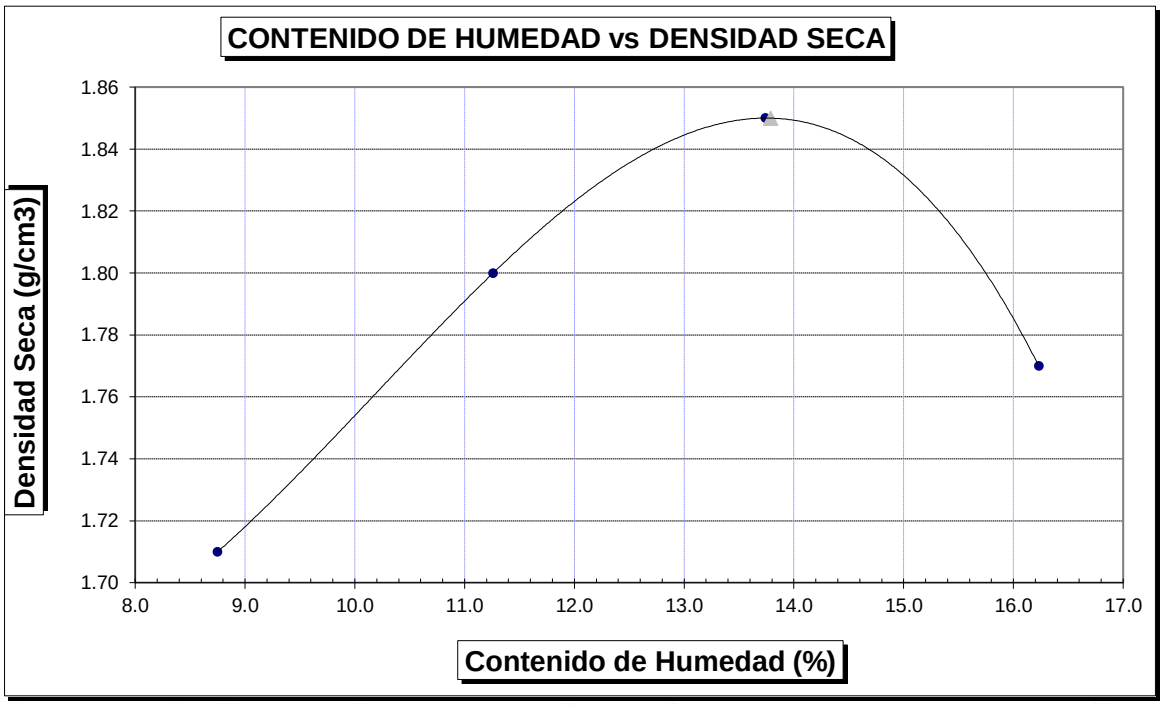
## RUC. 20605369139

| | | |
|---|---|---|
| **SOLICITANTE** | : | ARROYO AYALA M.<br>SANCHEZ MONTENEGRO R. |
| **PROYECTO** | : | ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **UBICACIÓN** | : | DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **MATERIAL** | : | TERRENO NATURAL |
| **CALICATA** | : | C6M1 |
| **FECHA** | : | 29.12.2025 |

# PROCTOR MODIFICADO AASHTO T - 180 D

| | | | | | |
|---|---|---|---|---|---|
| MOLDE Nº | | : | | | |
| VOLUMEN | | : | **2130** cm³ | --- | pie³ |
| METODO DE COMPACTACION | | : | **AASHTO T - 180 D** | | |
| .- Peso Suelo Humedo + Molde | (g) | 10882 | 11180 | 11393 | 11308 |
| .- Peso de Molde | (g) | 6920 | 6920 | 6920 | 6920 |
| .- Peso Suelo Húmedo Compactado | (g) | 3962 | 4260 | 4473 | 4388 |
| .- Peso Volumétrico Húmedo | (g) | 1.860 | 2.000 | 2.100 | 2.060 |
| .- Recipiente Nº | | 103 | 114 | 108 | 100 |
| .- Peso de Suelo Húmedo + Tara | (g) | 71.75 | 73.85 | 73.03 | 90.92 |
| .- Peso de Suelo Seco + Tara | (g) | 68.15 | 69.43 | 67.22 | 83.92 |
| .- Tara | (g) | 27.00 | 30.16 | 24.94 | 40.79 |
| .- Peso de Agua | (g) | 3.60 | 4.42 | 5.81 | 7.00 |
| .- Peso de Suelo Seco | (g) | 41.15 | 39.27 | 42.28 | 43.13 |
| .- Contenido de agua | (%) | 8.75 | 11.26 | 13.74 | 16.23 |
| .- Peso Volumétrico Seco | (g/cm³) | 1.71 | 1.80 | 1.85 | 1.77 |

| | | | |
|---|---|---|---|
| **Máxima Densidad Seca** | : | **1.82** | **gr/cm³** |
| **Optimo Contenido de Humedad** | : | **14.12** | **%** |

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**RUC. 20605369139**

## ENSAYO CALIFORNIA BEARNING RATIO

**SOLICITANTE** : MOLINO CHICLAYO SAC
REPARACION DE PISTA - PATIO PRINCIPAL
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C6M1
**FECHA** : 29.12.2025

## C.B.R.

| MOLDE Nº | | 1D | | 3D | | 2D | |
|---|---|---|---|---|---|---|---|
| Nº DE GOLPES POR CAPA | | 56 | | 25 | | 12 | |
| CONDICION DE MUESTRA | | SIN MOJAR | MOJADA | SIN MOJAR | MOJADA | SIN MOJAR | MOJADA |
| PESO MOLDE + SUELO HUMEDO | (g) | 13,229 | 13,306 | 13,298 | 13,401 | 13,058 | 13,260 |
| PESO DEL MOLDE | (g) | 8,718 | 8,718 | 8,918 | 8,918 | 8,886 | 8,886 |
| PESO DEL SUELO HUMEDO | (g) | 4511 | 4588 | 4380 | 4483 | 4172 | 4374 |
| VOLUMEN DEL SUELO | (g) | 2,143 | 2,143 | 2,143 | 2,143 | 2,143 | 2,143 |
| DENSIDAD HUMEDA | ($g/cm^3$) | 2.10 | 2.14 | 2.04 | 2.09 | 1.95 | 2.04 |
| CAPSULA Nº | | 202 | 224 | 253 | 281 | 295 | 325 |
| PESO CAPSULA + SUELO HUMEDO | (g) | 57.69 | 67.93 | 66.70 | 64.14 | 49.40 | 75.96 |
| PESO CAPSULA + SUELO SECO | (g) | 52.75 | 61.53 | 60.81 | 57.40 | 45.37 | 66.92 |
| PESO DE AGUA CONTENIDA | (g) | 4.94 | 6.40 | 5.89 | 6.74 | 4.03 | 9.04 |
| PESO DE CAPSULA | (g) | 16.95 | 19.13 | 19.32 | 15.88 | 16.26 | 18.55 |
| PESO DE SUELO SECO | (g) | 35.80 | 42.40 | 41.49 | 41.52 | 29.11 | 48.37 |
| HUMEDAD | (%) | 13.80% | 15.09% | 14.20% | 16.23% | 13.84% | 18.69% |
| DENSIDAD SECA | | 1.85 | 1.86 | 1.79 | 1.80 | 1.71 | 1.72 |

## EXPANSION

| FECHA | HORA | TIEMPO | DIAL | EXPANSION | | DIAL | EXPANSION | | DIAL | EXPANSION | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | mm. | % | | mm. | % | | mm. | % |
| | | 0 hrs | 0.000 | | | 0.000 | | | 0.000 | | |
| | | 24 hrs | 0.546 | 0.546 | 0.469 | 0.785 | 0.785 | 0.675 | 0.995 | 0.995 | 0.856 |
| | | 48 hrs | 0.628 | 0.628 | 0.540 | 0.881 | 0.881 | 0.758 | 1.103 | 1.103 | 0.948 |
| | | 72 hrs | 0.752 | 0.752 | 0.647 | 0.995 | 0.995 | 0.856 | 1.198 | 1.198 | 1.030 |
| | | 96 hrs | 0.884 | 0.884 | 0.760 | 1.110 | 1.110 | 0.954 | 1.297 | 1.297 | 1.115 |

## PENETRACION

| PENETRACION pulg. | CARGA ESTANDAR | MOLDE Nº 1D | | | | MOLDE Nº 3D | | | | MOLDE Nº 2D | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CARGA | CORECCION | | | CARGA | CORECCION | | | CARGA | CORECCION | | |
| | (lbs/pulg²) | Lectura | lbs | lbs/pulg² | % | Lectura | lbs | lbs/pulg² | % | Lectura | lbs | lbs/pulg² | % |
| 0.020 | | 5.40 | 63 | 21.00 | | 3.80 | 45 | 15.00 | | 2.30 | 27 | 9.00 | |
| 0.040 | | 11.30 | 132 | 44.00 | | 8.20 | 96 | 32.00 | | 4.90 | 57 | 19.00 | |
| 0.060 | | 16.40 | 192 | 64.00 | | 11.80 | 138 | 46.00 | | 6.90 | 81 | 27.00 | |
| 0.080 | | 21.50 | 252 | 84.00 | | 15.60 | 183 | 61.00 | | 9.20 | 108 | 36.00 | |
| 0.100 | 1000 | 26.90 | 315 | 105.00 | 10.50 | 19.50 | 228 | 76.00 | 7.60 | 11.50 | 135 | 45.00 | 4.50 |
| 0.200 | 1500 | 43.80 | 513 | 171.00 | | 31.80 | 372 | 124.00 | | 18.70 | 219 | 73.00 | |
| 0.300 | | 55.60 | 651 | 217.00 | | 40.30 | 471 | 157.00 | | 23.80 | 279 | 93.00 | |
| 0.400 | | 64.60 | 756 | 252.00 | | 46.70 | 546 | 182.00 | | 27.70 | 324 | 108.00 | |
| 0.500 | | 67.40 | 789 | 263.00 | | 48.70 | 570 | 190.00 | | 29.00 | 339 | 113.00 | |

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LABORATORIO LINUS E.I.R.L.

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CALLE MANUEL SEOANE Nº 717 – LAMBAYEQUE - CEL. 907075398 –
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# LABORATORIO LINUS E.I.R.L.

## SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS
## PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION
## RESOLUCION Nº 031616-2019/DSD – INDECOPI
## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.

**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

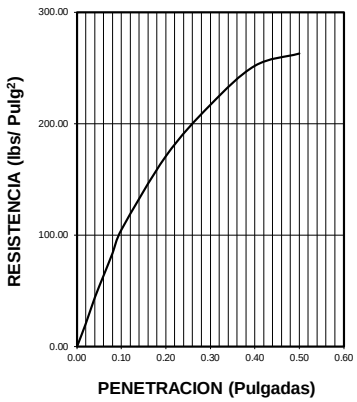
**CALICATA** : C6M1

**FECHA** : 29.12.2025

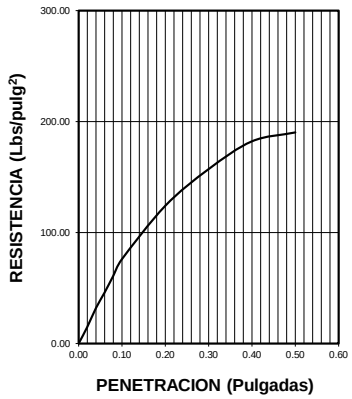
| DATOS DEL PROCTOR | |
|---|---|
| Densidad Máxima (gr/cm$^3$) | 1.82 |
| Humedad Optima (%) | 14.12 |

| DATOS DEL C.B.R. | |
|---|---|
| C.B.R. al 100% de M.D.S. (%) | 9.50 |
| C.B.R. al 95% de M.D.S. (%) | 5.80 |

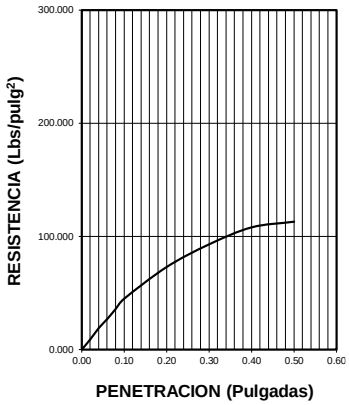
**56 GOLPES**

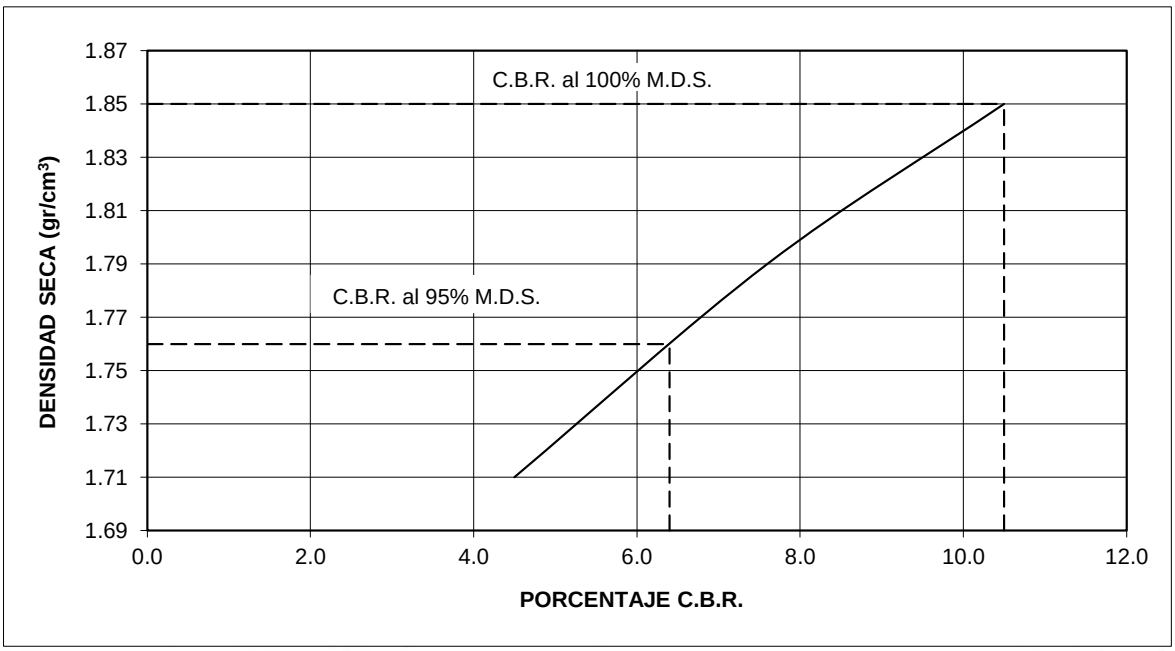



**25 GOLPES**




**12 GOLPES**

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# CALICATA 07

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**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C-7
**FECHA** : 29.12.2025

## REGISTRO DE PERFORACIONES

| COTA | PROFUNDIDAD (mts.) | MUESTRA | SIMBOLO | NATURALEZA DEL TERRENO ESTRATO | OBSERVACIONES |
|---|---|---|---|---|---|
| 0.00 | 0.00 | | | | |
| 0.10 | | RELLENO | | MATERIAL DE RELLENO NO CALIFICADO | |
| 0.20 | 0.20 | | | | |
| 0.30 | | | | | |
| 0.40 | | | | | |
| 0.50 | | | | ARENAS ARCILLOSAS | |
| 0.60 | | | | CLASIFICACION - AASHTO: A - 6 (4) | |
| 0.70 | | | | DE COLOR MARRON OSCURO, DE CONSISTENCIA MEDIA | MAXIMA DENSIDAD SECA = 1.85 gr/cm3 |
| 0.80 | | | | L.L = 35.95 | OPTIMO DE HUMEDAD = 13.55 % |
| 0.90 | | M.1 | SC | L.P = 19.71 | C.B.R. - 100% = 10.1 % |
| 1.00 | | | | I.P = 16.24 | C.B.R. - 95% = 6.2 % |
| 1.10 | | | | % CONTENIDO DE HUMEDAD = 19.72 % | |
| 1.20 | | | | % CONTENIDO DE SALES = 0.20 % | |
| 1.30 | | | | | DURANTE EL TIEMPO DE EXCAVACION |
| 1.40 | | | | | SE DETECTO NIVEL FREATICO |
| 1.50 | 1.50 | | | | A LA PROFUNDIDAD DE 1.50metros |

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**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**CALICATA** : C7

**FECHA** : 29.12.2025

## HUMEDAD NATURAL

| CALICATA-MUESTRA | **C7-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.20 - 1.50** |
| Nº RECIPIENTE | 205 |
| 1.- PESO SUELO HUMEDO + RECIPIENTE | 104.47 |
| 2.- PESO SUELO SECO + RECIPIENTE | 92.80 |
| 3.- PESO DEL AGUA | 11.67 |
| 4.- PESO RECIPIENTE | 33.62 |
| 5.- PESO SUELO SECO | 59.18 |
| 6.- PORCENTAJE DE HUMEDAD | **19.72%** |
| | |

## DETERMINACION DE LA SAL

| CALICATA-MUESTRA | **C7-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.20 - 1.50** |
| Nº RECIPIENTE | 202 |
| (1) PESO DEL TARRO | 28.54 |
| (2) PESO TARRO + AGUA + SAL | 33.60 |
| (3) PESO TARRO SECO + SAL | 28.55 |
| (4) PESO SAL ( 3 - 1) | 0.01 |
| (5) PESO AGUA ( 2 - 3 ) | 5.05 |
| (6) PORCENTAJE DE SAL | **0.20%** |
| | |

Mario Ramirez Dejo
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LABORATORIO LINUS E.I.R.L.

LABORATORIO LINUS E.I.R.L. SERVICIOS DE ESTUDIOS DE PAVIMENTOS ANALISIS DE MATERIALES

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**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

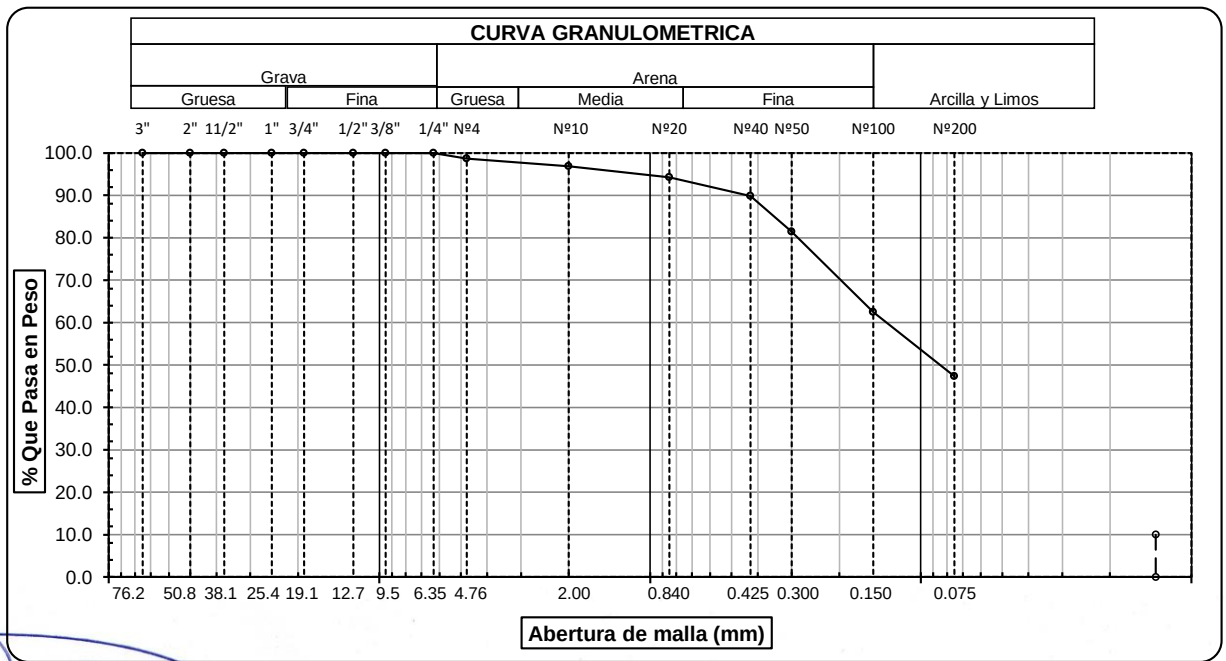
## RUC. 20605369139

### ANALISIS GRANULOMETRICO POR TAMIZADO
**(ASTM - D422 / N.T.P. 339.128)**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.20 mts. - 1.50 mts.
**CALICATA** : C7M1 - PROG. 6+00
**FECHA** : 29.12.2025

| ABERTURA MALLA (Pul) | ABERTURA MALLA (mm) | PESO RETENIDO | % RETENIDO PARCIAL | % RETENIDO ACUMULADO | % QUE PASA |
|---|---|---|---|---|---|
| 3" | 76.200 | | | | |
| 2 1/2" | 63.500 | | | | |
| 2" | 50.800 | | | | |
| 1 1/2" | 38.100 | | | | |
| 1" | 25.400 | | | | |
| 3/4" | 19.050 | | | | |
| 1/2" | 12.700 | | | | |
| 3/8" | 9.525 | | | | |
| 1/4" | 6.350 | 0.00 | 0.00 | 0.00 | 100.00 |
| Nº4 | 4.760 | 2.57 | 1.29 | 1.29 | 98.72 |
| Nº10 | 2.000 | 3.63 | 1.82 | 3.10 | 96.90 |
| Nº20 | 0.840 | 5.25 | 2.63 | 5.73 | 94.28 |
| N40 | 0.425 | 8.77 | 4.39 | 10.11 | 89.89 |
| Nº50 | 0.300 | 16.95 | 8.48 | 18.59 | 81.42 |
| Nº100 | 0.150 | 37.84 | 18.92 | 37.51 | 62.50 |
| Nº200 | 0.075 | 30.26 | 15.13 | 52.64 | 47.37 |
| < Nº 200 | FONDO | 94.73 | 47.37 | 100.00 | 0.00 |

| DESCRIPCION DE LA MUESTRA | | | |
|---|---|---|---|
| PESO TOTAL | : | 200.0 g. | |
| PESO LAVADO | : | 94.7 g. | |
| | | | |
| LIMITE LIQUIDO | : | 35.95 % | |
| LIMITE PLASTICO | : | 19.71 % | |
| INDICE PLASTICIDAD | : | 16.24 % | |
| CLASF. AASHTO | : | **A-6 (4)** | |
| CLASF. SUCS | : | **SC** | |
| DESCRIPCIÓN DEL SUELO | : | **MALO** | |
| **Arena arcillosa** | | | |
| Ensayo Malla Nº200 | P.S.Sec | P.S.Lav | (%) 200 |
| | 200.0 | 95 | 52.6 |
| MODULO DE FINEZA | 0.763 | | |
| Coef. Uniformidad | 0.0 | | |
| Coef. Curvatura | 0.0 | | |




Observaciones: _____


CALLE MANUEL SEOANE Nº 717 – LAMBAYEQUE - CEL. 907075398 –
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Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

KEVIN JUNIOR ROSILLO VASQUEZ
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REG. CIP Nº 309074

# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

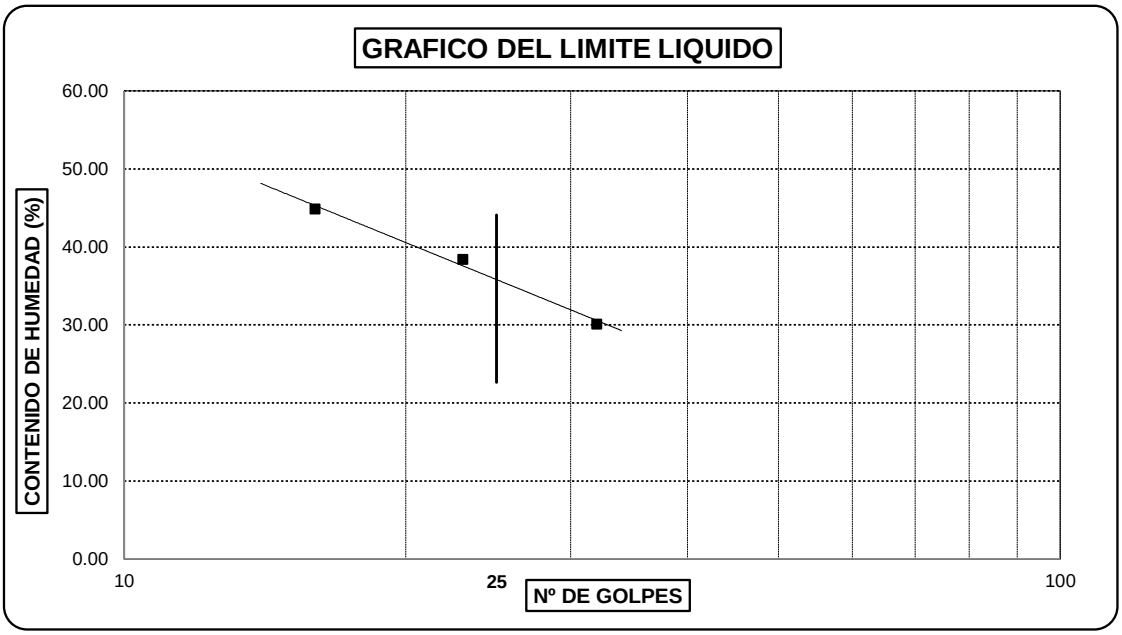
**RUC. 20605369139**

## LIMITES DE ATTERBERG
**(ASTM - D423 / N.T.P. 339.129)**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.20 mts. - 1.50 mts.
**CALICATA** : C7M1 - PROG. 6+00
**FECHA** : 29.12.2025

| DATOS DE ENSAYO | | LIMITE LIQUIDO | | | LIMITE PLASTICO | | |
|---|---|---|---|---|---|---|---|
| N° de golpes | | **16** | **23** | **32** | --- | --- | --- |
| 1. Recipiente N° | | 94 | 99 | 96 | 98 | --- | --- |
| 2. Peso suelo húmedo + tara | (gr) | 79.26 | 80.06 | 80.16 | 79.06 | --- | --- |
| 3. Peso suelo seco + Tara | (gr) | 74.60 | 75.13 | 76.67 | 76.73 | --- | --- |
| 4. Peso de la Tara | (gr) | 63.43 | 63.95 | 64.05 | 64.91 | --- | --- |
| 5. Peso del agua | (gr) | 4.66 | 4.93 | 3.49 | 2.33 | | |
| 6. Peso del suelo seco | (gr) | 11.17 | 11.18 | 12.62 | 11.82 | --- | --- |
| 7. Contenido de humedad | (%) | 41.72 | 44.10 | 27.65 | 19.71 | --- | --- |

### GRAFICO DEL LIMITE LIQUIDO




| LIMITE DE CONSISTENCIA DE LA MUESTRA | |
|---|---|
| **Límite Líquido** | 35.95 |
| **Límite Plástico** | 19.71 |
| **Índice de Plasticidad** | 16.24 |

| MUESTRA: C4M1 - PROG. 3+00 | |
|---|---|
| **Clasificaciòn SUCS** | **SC** |
| **Clasificaciòn AASHTO** | **A-6 (4)** |

Observaciones:

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

LABORATORIO LINUS E.I.R.L. SUELOS PAVIMENTOS ANALISIS DE MATERIALES

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

# LABORATORIO LINUS E.I.R.L.

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

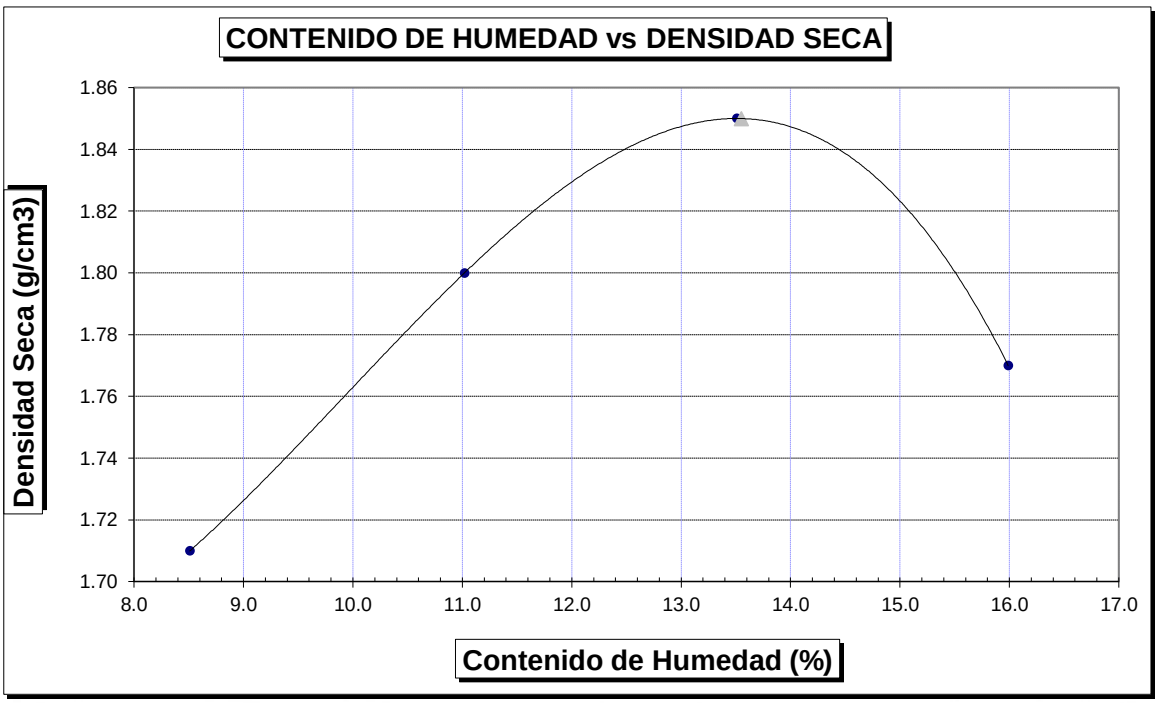
## RUC. 20605369139

| | | |
|---|---|---|
| **SOLICITANTE** | : | ARROYO AYALA M.<br>SANCHEZ MONTENEGRO R. |
| **PROYECTO** | : | ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **UBICACIÓN** | : | DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **MATERIAL** | : | TERRENO NATURAL |
| **CALICATA** | : | C7M1 |
| **FECHA** | : | 29.12.2025 |

# PROCTOR MODIFICADO AASHTO T - 180 D

| | | | | | |
|---|---|---|---|---|---|
| MOLDE Nº | | : | | | |
| VOLUMEN | | : | **2362** cm³ | --- pie³ | |
| METODO DE COMPACTACION | | : | **AASHTO T - 180 D** | | |
| .- Peso Suelo Humedo + Molde | (g) | 11140 | 11471 | 11707 | 11589 |
| .- Peso de Molde | (g) | 6747 | 6747 | 6747 | 6747 |
| .- Peso Suelo Húmedo Compactado | (g) | 4393 | 4724 | 4960 | 4842 |
| .- Peso Volumétrico Húmedo | (g) | 1.860 | 2.000 | 2.100 | 2.050 |
| .- Recipiente Nº | | 196 | 207 | 201 | 193 |
| .- Peso de Suelo Húmedo + Tara | (g) | 71.15 | 73.25 | 72.42 | 90.30 |
| .- Peso de Suelo Seco + Tara | (g) | 67.67 | 68.95 | 66.74 | 83.44 |
| .- Tara | (g) | 26.76 | 29.92 | 24.70 | 40.55 |
| .- Peso de Agua | (g) | 3.48 | 4.30 | 5.68 | 6.86 |
| .- Peso de Suelo Seco | (g) | 40.91 | 39.03 | 42.04 | 42.89 |
| .- Contenido de agua | (%) | 8.51 | 11.02 | 13.51 | 15.99 |
| .- Peso Volumétrico Seco | (g/cm³) | 1.71 | 1.80 | 1.85 | 1.77 |

| | | | |
|---|---|---|---|
| **Máxima Densidad Seca** | : | **1.85** | **gr/cm³** |
| **Optimo Contenido de Humedad** | : | **13.55** | **%** |




Mario Ramirez Dejo
GERENTE GENERAL
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KEVIN JUNIOR ROSILLO VASQUEZ
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# CALICATA 08

Mario Ramirez Dejo
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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.

**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**CALICATA** : C-8

**FECHA** : 29.12.2025

## REGISTRO DE PERFORACIONES

| COTA | PROFUNDIDAD (mts.) | MUESTRA | SIMBOLO | NATURALEZA DEL TERRENO ESTRATO | OBSERVACIONES |
|---|---|---|---|---|---|
| 0.00 | 0.00 | | | | |
| 0.10 | | | | | |
| 0.20 | | RELLENO | | MATERIAL DE RELLENO NO CALIFICADO | |
| 0.30 | 0.30 | | | | |
| 0.40 | | | | | |
| 0.50 | | | | | |
| 0.60 | | | | | |
| 0.70 | | | | | MAXIMA DENSIDAD SECA = 1.87 gr/cm |
| 0.80 | | | | DE COLOR MARRON CLARO, DE CONSISTENCIA MEDIA | OPTIMO DE HUMEDAD = .41 % |
| 0.90 | | M.1 | SC | L.L = 29.20 | C.B.R. - 100% = 9.5 % |
| 1.00 | | | | L.P = 22.10 | C.B.R. - 95% = 6. % |
| 1.10 | | | | I.P = 7.10 | |
| 1.20 | | | | % CONTENIDO DE HUMEDAD = 13.42 % | |
| 1.30 | | | | % CONTENIDO DE SALES = 0.19 % | DURANTE EL TIEMPO DE EXCAVACION |
| 1.40 | | | | | NO SE DETECTO NIVEL FREATICO |
| 1.50 | 1.50 | | | | |

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**
**RUC. 20605369139**

**SOLICITANTE** : ARROYO AYALA M.
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**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C8
**FECHA** : 29.12.2025

## HUMEDAD NATURAL

| CALICATA-MUESTRA | **C8-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.20 - 1.50** |
| Nº RECIPIENTE | 166 |
| 1.- PESO SUELO HUMEDO + RECIPIENTE | 90.63 |
| 2.- PESO SUELO SECO + RECIPIENTE | 82.50 |
| 3.- PESO DEL AGUA | 6.21 |
| 4.- PESO RECIPIENTE | 24.80 |
| 5.- PESO SUELO SECO | 58.66 |
| 6.- PORCENTAJE DE HUMEDAD | **10.12%** |
| | |

## DETERMINACION DE LA SAL

| CALICATA-MUESTRA | **C8-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.220 -** |
| **1.50** Nº RECIPIENTE | 168 |
| (1) PESO DEL TARRO | 20.01 |
| (2) PESO TARRO + AGUA + SAL | 29.90 |
| (3) PESO TARRO SECO + SAL | 20.03 |
| (4) PESO SAL ( 3 - 1) | 0.02 |
| (5) PESO AGUA ( 2 - 3 ) | 9.87 |
| (6) PORCENTAJE DE SAL | **0.22%** |
| | |

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# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

### ANALISIS GRANULOMETRICO POR TAMIZADO
**(ASTM - D422 / N.T.P. 339.128)**

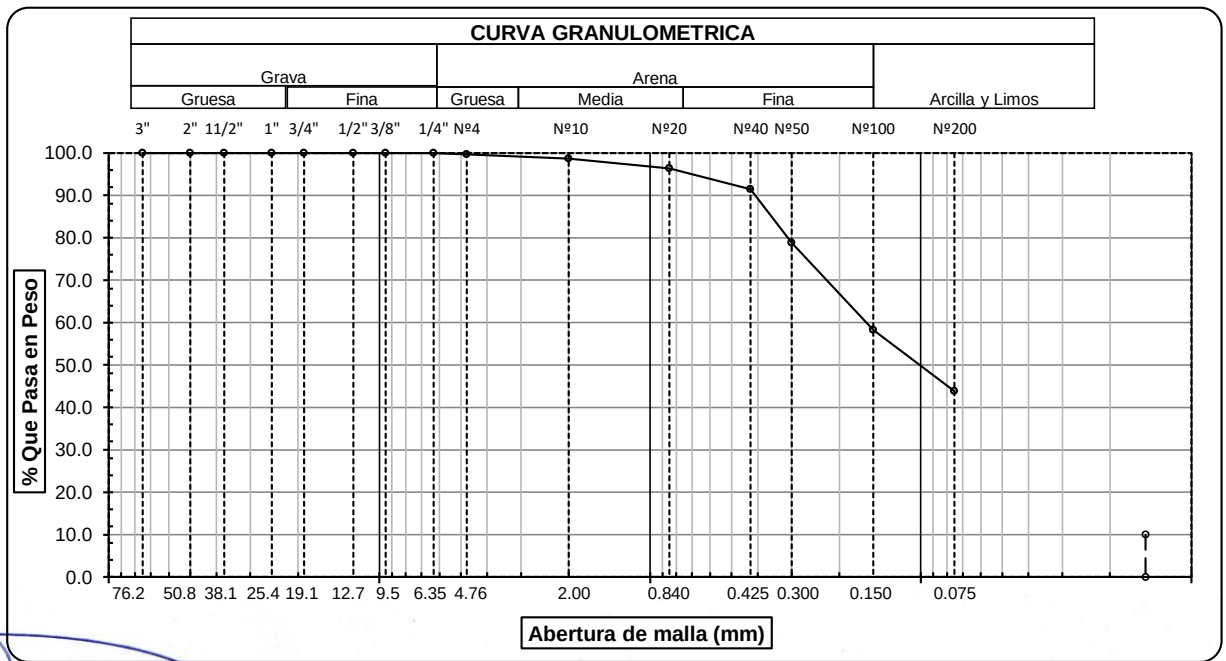
**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.20 mts. - 1.50 mts.
**CALICATA** : C8M1 - PROG. 7+00
**FECHA** : 29.12.2025

| ABERTURA MALLA (Pul) | ABERTURA MALLA (mm) | PESO RETENIDO | % RETENIDO PARCIAL | % RETENIDO ACUMULADO | % QUE PASA |
|---|---|---|---|---|---|
| 3" | 76.200 | | | | |
| 2 1/2" | 63.500 | | | | |
| 2" | 50.800 | | | | |
| 1 1/2" | 38.100 | | | | |
| 1" | 25.400 | | | | |
| 3/4" | 19.050 | | | | |
| 1/2" | 12.700 | | | | |
| 3/8" | 9.525 | | | | |
| 1/4" | 6.350 | 0.00 | 0.00 | 0.00 | 100.00 |
| Nº4 | 4.760 | 0.57 | 0.29 | 0.29 | 99.72 |
| Nº10 | 2.000 | 2.15 | 1.08 | 1.36 | 98.64 |
| Nº20 | 0.840 | 4.62 | 2.31 | 3.67 | 96.33 |
| N40 | 0.425 | 9.85 | 4.93 | 8.60 | 92.61 |
| Nº50 | 0.300 | 25.14 | 12.57 | 21.17 | 78.84 |
| Nº100 | 0.150 | 41.17 | 20.59 | 41.75 | 58.25 |
| Nº200 | 0.075 | 28.84 | 14.42 | 56.17 | 45.6 |
| < Nº 200 | FONDO | 87.66 | 43.83 | 100.00 | 0.00 |

| DESCRIPCION DE LA MUESTRA | | |
|---|---|---|
| PESO TOTAL | : | 200.0 g. |
| PESO LAVADO | : | 87.7 g. |
| LIMITE LIQUIDO | : | 2 .20% |
| LIMITE PLASTICO | : | 22.10 % |
| INDICE PLASTICIDAD | : | 7.10 % |
| CLASF. AASHTO | : | **A-2-4(0)** |
| CLASF. SUCS | : | **SM** |
| DESCRIPCIÓN DEL SUELO | : | **MALO** |
| **Arena arcillosa** | | |

| Ensayo Malla Nº200 | P.S.Sec | P.S.Lav | (%) 200 |
|---|---|---|---|
| | 200.0 | 88 | 56.2 |

| | |
|---|---|
| MODULO DE FINEZA | 0.752 |
| Coef. Uniformidad | 0.0 |
| Coef. Curvatura | 0.0 |




Observaciones: _____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Mario Ramirez Dejo
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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

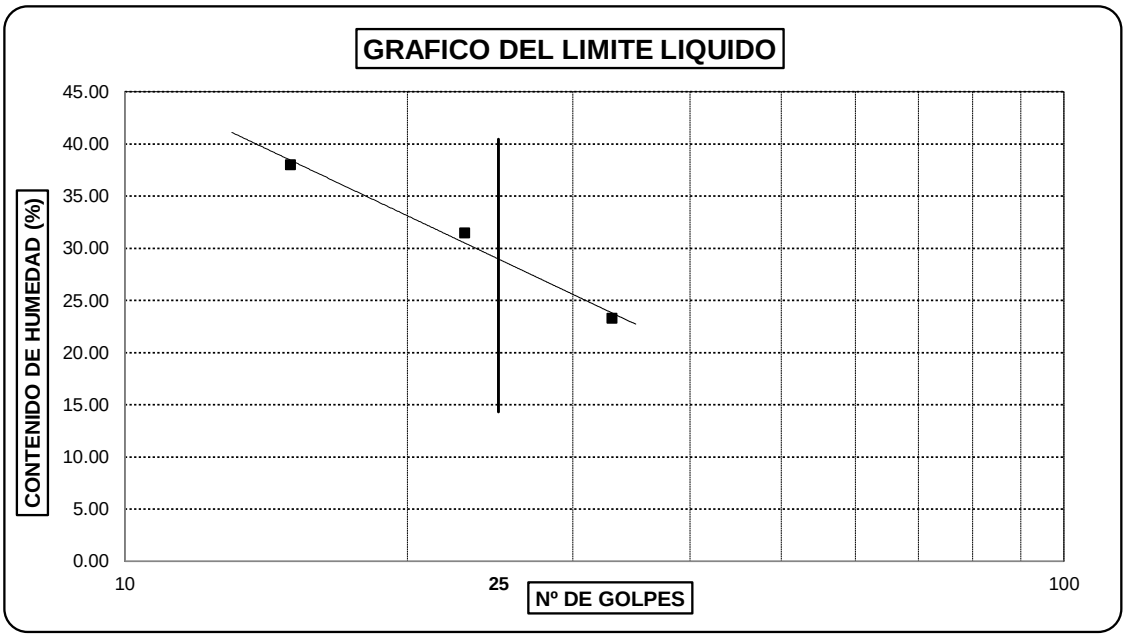
## RUC. 20605369139

## LIMITES DE ATTERBERG
**(ASTM - D423 / N.T.P. 339.129)**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C8M1 - PROG. 7+00
**FECHA** : 29.12.2025

| DATOS DE ENSAYO | | LIMITE LIQUIDO | | | LIMITE PLASTICO | | |
|---|---|---|---|---|---|---|---|
| N° de golpes | | **15** | **23** | **33** | --- | --- | --- |
| 1. Recipiente N° | | 66 | 65 | 67 | 62 | --- | --- |
| 2. Peso suelo húmedo + tara | (gr) | 80.20 | 81.54 | 81.06 | 80.79 | --- | --- |
| 3. Peso suelo seco + Tara | (gr) | 76.61 | 77.14 | 78.68 | 78.8 | --- | --- |
| 4. Peso de la Tara | (gr) | 65.74 | 66.26 | 66.36 | 67.10 | --- | --- |
| 5. Peso del agua | (gr) | 3.59 | 4.40 | 2.38 | 1.99 | | |
| 6. Peso del suelo seco | (gr) | 10.87 | 10.88 | 12.32 | 11.70 | --- | --- |
| 7. Contenido de humedad | (%) | 33.03 | 40.44 | 19.32 | 17.01 | --- | --- |

### GRAFICO DEL LIMITE LIQUIDO




| LIMITE DE CONSISTENCIA DE LA MUESTRA | |
|---|---|
| **Límite Líquido** | 2 .20 |
| **Límite Plástico** | 22.10 |
| **Índice de Plasticidad** | 7.10 |

| MUESTRA | C8M1 - PROG. 7+00 |
|---|---|
| **Clasificaciòn SUCS** | **SM** |
| **Clasificaciòn AASHTO** | **A-2-4(0)** |

Observaciones: _____

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

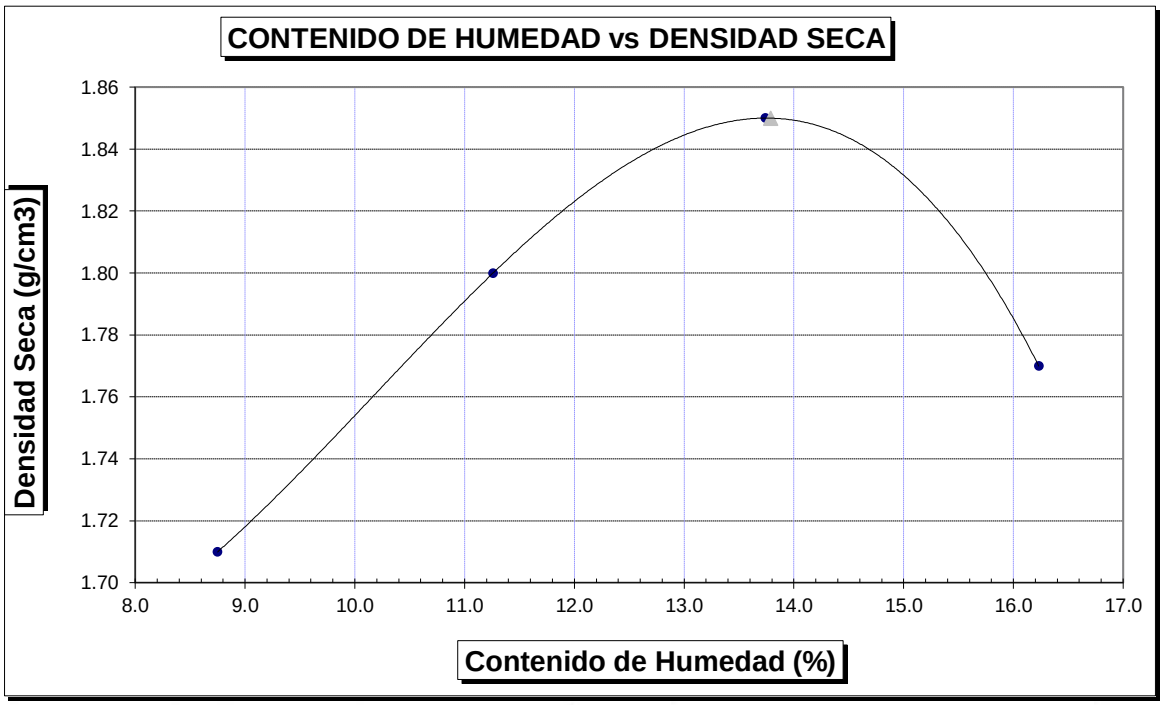
## RUC. 20605369139

| | | |
|---|---|---|
| **SOLICITANTE** | : | ARROYO AYALA M.<br>SANCHEZ MONTENEGRO R. |
| **PROYECTO** | : | ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **UBICACIÓN** | : | DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **MATERIAL** | : | TERRENO NATURAL |
| **CALICATA** | : | C8M1 |
| **FECHA** | : | 29.12.2025 |

# PROCTOR MODIFICADO AASHTO T - 180 D

| | | | | | |
|---|---|---|---|---|---|
| MOLDE Nº | | : | | | |
| VOLUMEN | | : | **2130** cm³ | --- pie³ | |
| METODO DE COMPACTACION | | : | **AASHTO T - 180 D** | | |
| .- Peso Suelo Humedo + Molde | (g) | 10882 | 11180 | 11393 | 11308 |
| .- Peso de Molde | (g) | 6920 | 6920 | 6920 | 6920 |
| .- Peso Suelo Húmedo Compactado | (g) | 3962 | 4260 | 4473 | 4388 |
| .- Peso Volumétrico Húmedo | (g) | 1.860 | 2.000 | 2.100 | 2.060 |
| .- Recipiente Nº | | 103 | 114 | 108 | 100 |
| .- Peso de Suelo Húmedo + Tara | (g) | 71.75 | 73.85 | 73.03 | 90.92 |
| .- Peso de Suelo Seco + Tara | (g) | 68.15 | 69.43 | 67.22 | 83.92 |
| .- Tara | (g) | 27.00 | 30.16 | 24.94 | 40.79 |
| .- Peso de Agua | (g) | 3.60 | 4.42 | 5.81 | 7.00 |
| .- Peso de Suelo Seco | (g) | 41.15 | 39.27 | 42.28 | 43.13 |
| .- Contenido de agua | (%) | 8.75 | 11.26 | 13.74 | 16.23 |
| .- Peso Volumétrico Seco | (g/cm³) | 1.71 | 1.80 | 1.85 | 1.77 |

| | | | |
|---|---|---|---|
| **Máxima Densidad Seca** | : | **1.87** | **gr/cm³** |
| **Optimo Contenido de Humedad** | : | **9.41** | **%** |

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LABORATORIO LINUS E.I.R.L.

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# CALICATA 09

Mario Ramirez Dejo
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REG. CIP Nº 309074

# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C-9
**FECHA** : 29.12.2025

## REGISTRO DE PERFORACIONES

| COTA | PROFUNDIDAD (mts.) | MUESTRA | SIMBOLO | NATURALEZA DEL TERRENO ESTRATO | OBSERVACIONES |
|---|---|---|---|---|---|
| 0.00 | 0.00 | | | | |
| 0.10 | | RELLENO | | MATERIAL DE RELLENO NO CALIFICADO | |
| 0.20 | 0.20 | | | | |
| 0.30 | | | | | |
| 0.40 | | | | | |
| 0.50 | | | | ARENAS LIMOSAS | |
| 0.60 | | | | CLASIFICACION - AASHTO: A - 2 - 4 (0) | |
| 0.70 | | | | DE COLOR MARRON CLARO, DE CONSISTENCIA MEDIA | MAXIMA DENSIDAD SECA = 1.87 gr/cm3 |
| 0.80 | | | | L.L = 28.90 | OPTIMO DE HUMEDAD = 6.26 % |
| 0.90 | | M.1 | SM | L.P = 22.61 | C.B.R. - 100% = 12.1 % |
| 1.00 | | | | I.P = 6.29 | C.B.R. - 95% = 7.4 % |
| 1.10 | | | | % CONTENIDO DE HUMEDAD = 11.69 % | |
| 1.20 | | | | % CONTENIDO DE SALES = 0.18 % | |
| 1.30 | | | | | DURANTE EL TIEMPO DE EXCAVACION |
| 1.40 | | | | | NO SE DETECTO NIVEL FREATICO |
| 1.50 | 1.50 | | | | |

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**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**CALICATA** : C9

**FECHA** : 29.12.2025

## HUMEDAD NATURAL

| CALICATA-MUESTRA | **C9-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.20 - 1.50** |
| Nº RECIPIENTE | 78 |
| 1.- PESO SUELO HUMEDO + RECIPIENTE | 84.12 |
| 2.- PESO SUELO SECO + RECIPIENTE | 77.41 |
| 3.- PESO DEL AGUA | 6.71 |
| 4.- PESO RECIPIENTE | 20.02 |
| 5.- PESO SUELO SECO | 57.39 |
| 6.- PORCENTAJE DE HUMEDAD | **11.69%** |
| | |

## DETERMINACION DE LA SAL

| CALICATA-MUESTRA | **C9-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.20 - 1.50** |
| Nº RECIPIENTE | 77 |
| (1) PESO DEL TARRO | 11.01 |
| (2) PESO TARRO + AGUA + SAL | 22.25 |
| (3) PESO TARRO SECO + SAL | 11.03 |
| (4) PESO SAL ( 3 - 1) | 0.02 |
| (5) PESO AGUA ( 2 - 3 ) | 11.22 |
| (6) PORCENTAJE DE SAL | **0.18%** |
| | |

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## RUC. 20605369139

### ANALISIS GRANULOMETRICO POR TAMIZADO
**(ASTM - D422 / N.T.P. 339.128)**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.20 mts. - 1.50 mts.
**CALICATA** : C9M1 - PROG. 8+00
**FECHA** : 29.12.2025

| ABERTURA MALLA (Pul) | ABERTURA MALLA (mm) | PESO RETENIDO | % RETENIDO PARCIAL | % RETENIDO ACUMULADO | % QUE PASA |
|---|---|---|---|---|---|
| 3" | 76.200 | | | | |
| 2 1/2" | 63.500 | | | | |
| 2" | 50.800 | | | | |
| 1 1/2" | 38.100 | | | | |
| 1" | 25.400 | | | | |
| 3/4" | 19.050 | | | | |
| 1/2" | 12.700 | | | | |
| 3/8" | 9.525 | | | | |
| 1/4" | 6.350 | 0.00 | 0.00 | 0.00 | 100.00 |
| Nº4 | 4.760 | 6.29 | 3.15 | 3.15 | 96.86 |
| Nº10 | 2.000 | 2.05 | 1.03 | 4.17 | 95.83 |
| Nº20 | 0.840 | 4.14 | 2.07 | 6.24 | 93.76 |
| N40 | 0.425 | 7.23 | 3.62 | 9.86 | 90.15 |
| Nº50 | 0.300 | 32.60 | 16.30 | 26.16 | 73.85 |
| Nº100 | 0.150 | 68.90 | 34.45 | 60.61 | 39.40 |
| Nº200 | 0.075 | 41.10 | 20.55 | 81.16 | 18.85 |
| < Nº 200 | FONDO | 37.69 | 18.85 | 100.00 | 0.00 |

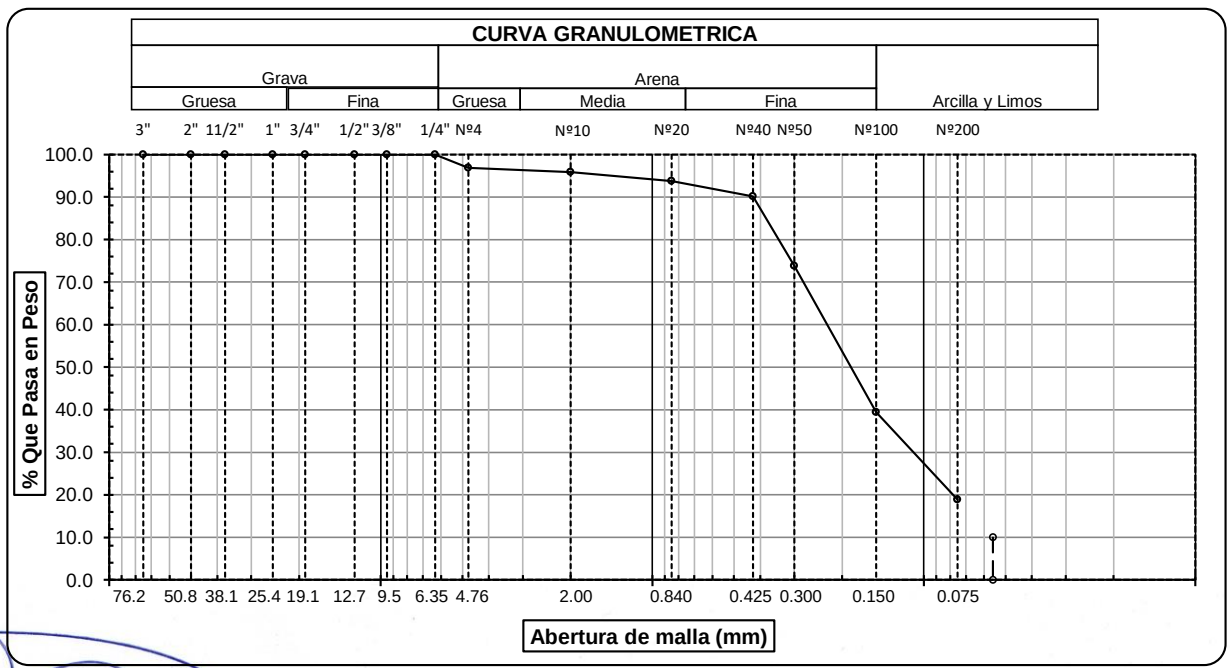
**DESCRIPCION DE LA MUESTRA**

| | | |
|---|---|---|
| PESO TOTAL | : | 200.0 g. |
| PESO LAVADO | : | 37.7 g. |
| LIMITE LIQUIDO | : | 28.90 % |
| LIMITE PLASTICO | : | 22.61 % |
| INDICE PLASTICIDAD | : | 6.29 % |
| CLASF. AASHTO | : | **A-2-4 (0)** |
| CLASF. SUCS | : | **SM** |
| DESCRIPCIÓN DEL SUELO | : | **BUENO** |

**Arena limosa**

| Ensayo Malla Nº200 | P.S.Sec | P.S.Lav | (%) 200 |
|---|---|---|---|
| | 200.0 | 38 | 81.2 |

| | |
|---|---|
| MODULO DE FINEZA | 1.102 |
| Coef. Uniformidad | 0.0 |
| Coef. Curvatura | 0.0 |




Observaciones: _____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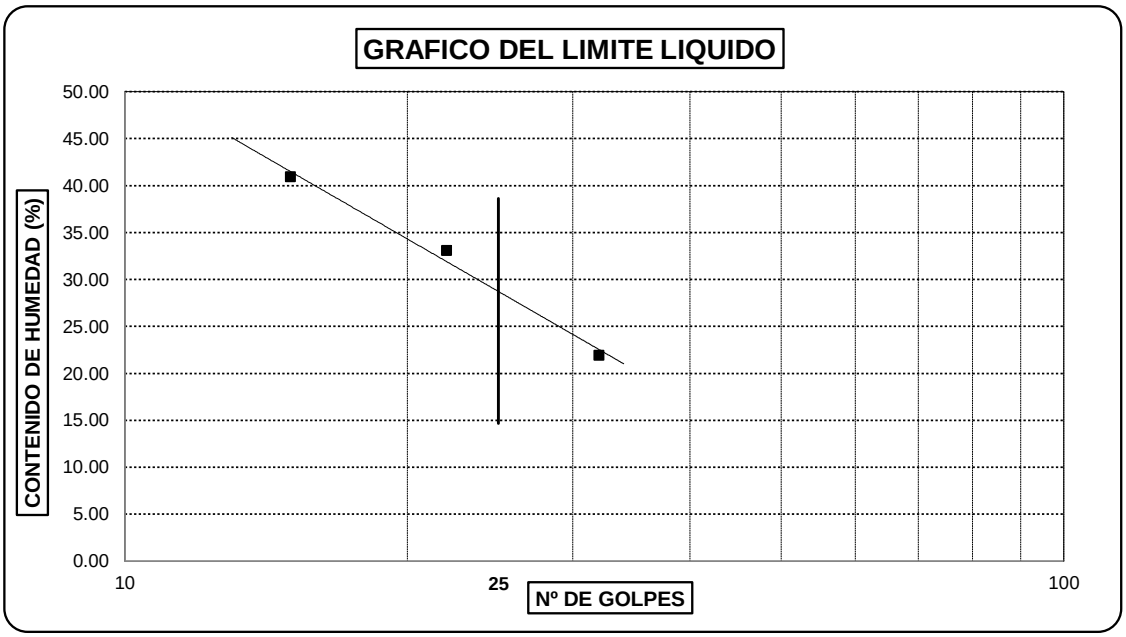
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**
**RUC. 20605369139**


## LIMITES DE ATTERBERG
**(ASTM - D423 / N.T.P. 339.129)**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.20 mts. - 1.50 mts.
**CALICATA** : C9M1 - PROG. 8+00
**FECHA** : 29.12.2025

| DATOS DE ENSAYO | | LIMITE LIQUIDO | | | LIMITE PLASTICO | | |
|---|---|---|---|---|---|---|---|
| N° de golpes | | **15** | **22** | **32** | --- | --- | --- |
| 1. Recipiente N° | | 353 | 356 | 359 | 357 | --- | --- |
| 2. Peso suelo húmedo + tara | (gr) | 61.51 | 62.14 | 62.03 | 63.28 | --- | --- |
| 3. Peso suelo seco + Tara | (gr) | 57.67 | 58.20 | 59.74 | 60.58 | --- | --- |
| 4. Peso de la Tara | (gr) | 47.48 | 48.00 | 48.10 | 48.64 | --- | --- |
| 5. Peso del agua | (gr) | 3.84 | 3.94 | 2.29 | 2.70 | | |
| 6. Peso del suelo seco | (gr) | 10.19 | 10.2 | 11.64 | 11.94 | --- | --- |
| 7. Contenido de humedad | (%) | 37.68 | 38.63 | 19.67 | 22.61 | --- | --- |

### GRAFICO DEL LIMITE LIQUIDO




| LIMITE DE CONSISTENCIA DE LA MUESTRA | |
|---|---|
| **Límite Líquido** | 28.90 |
| **Límite Plástico** | 22.61 |
| **Índice de Plasticidad** | 6.29 |

| MUESTRA: C5M1 - PROG. 4+00 | |
|---|---|
| **Clasificaciòn SUCS** | **SM** |
| **Clasificaciòn AASHTO** | **A-2-4 (0)** |

Observaciones: _____

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LABORATORIO LINUS E.I.R.L. SERVICIOS DE ESTUDIOS PAVIMENTOS ANALISIS DE MATERIALES

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

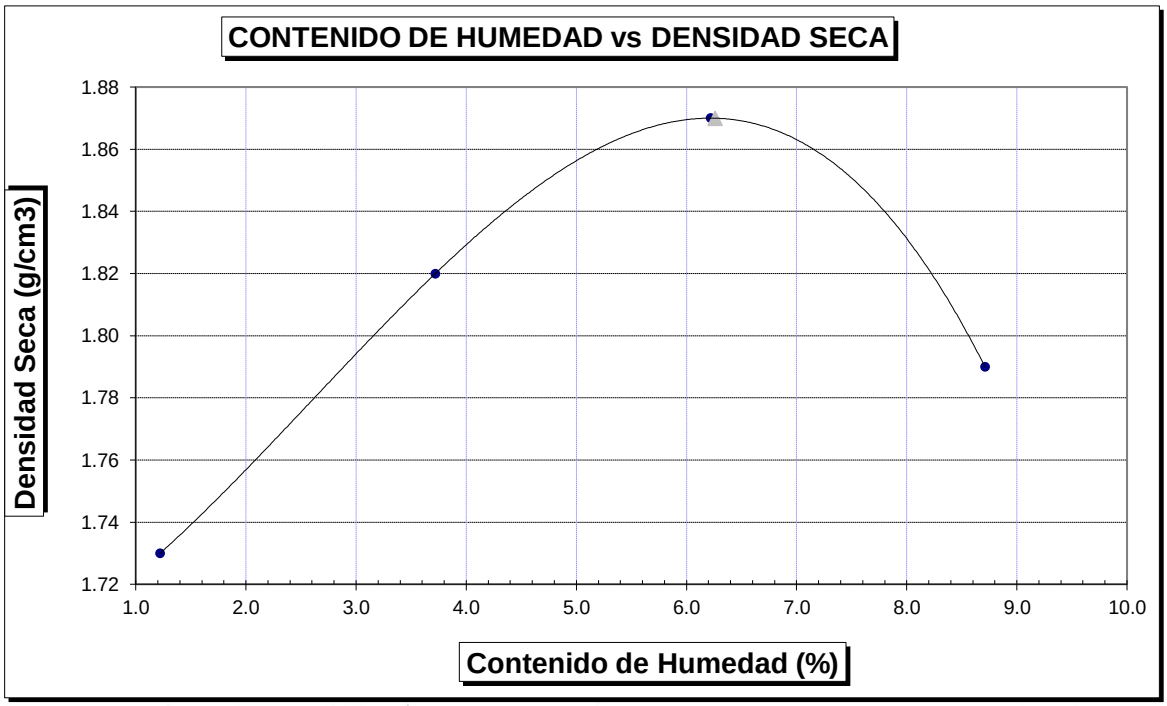
## RUC. 20605369139

| | |
|---|---|
| **SOLICITANTE** | : ARROYO AYALA M.<br>SANCHEZ MONTENEGRO R. |
| **PROYECTO** | : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **UBICACIÓN** | : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **MATERIAL** | : TERRENO NATURAL |
| **CALICATA** | : C9M1 |
| **FECHA** | : 29.12.2025 |

# PROCTOR MODIFICADO AASHTO T - 180 D

| | | | | | |
|---|---|---|---|---|---|
| MOLDE Nº | | : | | | |
| VOLUMEN | | : | **2070** $cm^3$ | --- | $pie^3$ |
| METODO DE COMPACTACION | | : | **AASHTO T - 180 D** | | |
| .- Peso Suelo Humedo + Molde | (g) | 10229 | 10518 | 10725 | 10643 |
| .- Peso de Molde | (g) | 6606 | 6606 | 6606 | 6606 |
| .- Peso Suelo Húmedo Compactado | (g) | 3623 | 3912 | 4119 | 4037 |
| .- Peso Volumétrico Húmedo | (g) | 1.750 | 1.890 | 1.990 | 1.950 |
| .- Recipiente Nº | | 136 | 147 | 141 | 133 |
| .- Peso de Suelo Húmedo + Tara | (g) | 53.50 | 55.55 | 54.32 | 71.96 |
| .- Peso de Suelo Seco + Tara | (g) | 53.09 | 54.37 | 52.16 | 68.86 |
| .- Tara | (g) | 19.47 | 22.63 | 17.41 | 33.26 |
| .- Peso de Agua | (g) | 0.41 | 1.18 | 2.16 | 3.10 |
| .- Peso de Suelo Seco | (g) | 33.62 | 31.74 | 34.75 | 35.60 |
| .- Contenido de agua | (%) | 1.22 | 3.72 | 6.22 | 8.71 |
| .- Peso Volumétrico Seco | ($g/cm^3$) | 1.73 | 1.82 | 1.87 | 1.79 |

| | | | |
|---|---|---|---|
| **Máxima Densidad Seca** | : | **1.87** | **$gr/cm^3$** |
| **Optimo Contenido de Humedad** | : | **6.26** | **%** |

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## ENSAYO CALIFORNIA BEARNING RATIO

**SOLICITANTE** : MOLINO CHICLAYO SAC
REPARACION DE PISTA - PATIO PRINCIPAL
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C9M1
**FECHA** : 29.12.2025

## C.B.R.

| MOLDE Nº | | 8H | | 7H | | 9H | |
|---|---|---|---|---|---|---|---|
| Nº DE GOLPES POR CAPA | | 56 | | 25 | | 12 | |
| CONDICION DE MUESTRA | | SIN MOJAR | MOJADA | SIN MOJAR | MOJADA | SIN MOJAR | MOJADA |
| PESO MOLDE + SUELO HUMEDO | (g) | 13,172 | 13,247 | 13,252 | 13,355 | 13,025 | 13,227 |
| PESO DEL MOLDE | (g) | 8,914 | 8,914 | 9,114 | 9,114 | 9,082 | 9,082 |
| PESO DEL SUELO HUMEDO | (g) | 4258 | 4333 | 4138 | 4241 | 3943 | 4145 |
| VOLUMEN DEL SUELO | (g) | 2,143 | 2,143 | 2,143 | 2,143 | 2,143 | 2,143 |
| DENSIDAD HUMEDA | ($g/cm^3$) | 1.99 | 2.02 | 1.93 | 1.98 | 1.84 | 1.93 |
| CAPSULA Nº | | 162 | 184 | 213 | 241 | 255 | 285 |
| PESO CAPSULA + SUELO HUMEDO | (g) | 61.36 | 71.15 | 69.96 | 67.47 | 53.59 | 78.84 |
| PESO CAPSULA + SUELO SECO | (g) | 58.93 | 67.71 | 66.99 | 63.58 | 51.55 | 73.10 |
| PESO DE AGUA CONTENIDA | (g) | 2.43 | 3.44 | 2.97 | 3.89 | 2.04 | 5.74 |
| PESO DE CAPSULA | (g) | 20.04 | 22.22 | 22.41 | 18.97 | 19.35 | 21.64 |
| PESO DE SUELO SECO | (g) | 38.89 | 45.49 | 44.58 | 44.61 | 32.2 | 51.46 |
| HUMEDAD | (%) | 6.25% | 7.56% | 6.66% | 8.72% | 6.34% | 11.15% |
| DENSIDAD SECA | | 1.87 | 1.88 | 1.81 | 1.82 | 1.73 | 1.74 |

## EXPANSION

| FECHA | HORA | TIEMPO | DIAL | EXPANSION | | DIAL | EXPANSION | | DIAL | EXPANSION | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | mm. | % | | mm. | % | | mm. | % |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

NO REGISTRA

## PENETRACION

| PENETRACION pulg. | CARGA ESTANDAR | MOLDE Nº 8H | | | | MOLDE Nº 7H | | | | MOLDE Nº 9H | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CARGA | CORECCION | | | CARGA | CORECCION | | | CARGA | CORECCION | | |
| | (lbs/pulg²) | Lectura | lbs | lbs/pulg² | % | Lectura | lbs | lbs/pulg² | % | Lectura | lbs | lbs/pulg² | % |
| 0.020 | | 6.20 | 72 | 24.00 | | 4.60 | 54 | 18.00 | | 2.60 | 30 | 10.00 | |
| 0.040 | | 12.80 | 150 | 50.00 | | 9.50 | 111 | 37.00 | | 5.60 | 66 | 22.00 | |
| 0.060 | | 19.00 | 222 | 74.00 | | 13.80 | 162 | 54.00 | | 8.20 | 96 | 32.00 | |
| 0.080 | | 24.90 | 291 | 97.00 | | 17.90 | 210 | 70.00 | | 10.80 | 126 | 42.00 | |
| 0.100 | 1000 | 31.00 | 363 | 121.00 | 12.10 | 22.60 | 264 | 88.00 | 8.80 | 13.30 | 156 | 52.00 | 5.20 |
| 0.200 | 1500 | 50.50 | 591 | 197.00 | | 36.70 | 429 | 143.00 | | 21.80 | 255 | 85.00 | |
| 0.300 | | 64.10 | 750 | 250.00 | | 46.70 | 546 | 182.00 | | 27.70 | 324 | 108.00 | |
| 0.400 | | 74.40 | 870 | 290.00 | | 54.10 | 633 | 211.00 | | 32.10 | 375 | 125.00 | |
| 0.500 | | 77.70 | 909 | 303.00 | | 56.40 | 660 | 220.00 | | 33.30 | 390 | 130.00 | |


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## PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION
## RESOLUCION Nº 031616-2019/DSD – INDECOPI
## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.

**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

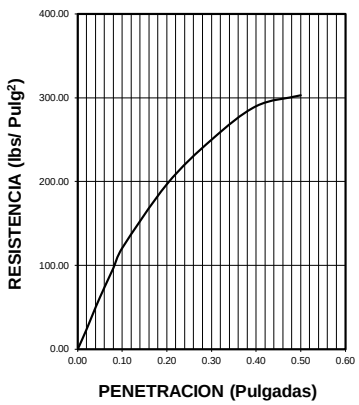
**CALICATA** : C9M1

**FECHA** : 29.12.2025

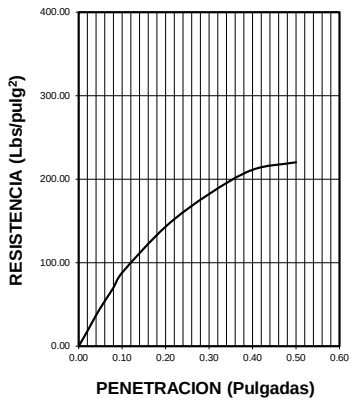
| DATOS DEL PROCTOR | |
|---|---|
| Densidad Máxima (gr/cm$^3$) | 1.87 |
| Humedad Optima (%) | 6.26 |

| DATOS DEL C.B.R. | |
|---|---|
| C.B.R. al 100% de M.D.S. (%) | 12.10 |
| C.B.R. al 95% de M.D.S. (%) | 7.40 |

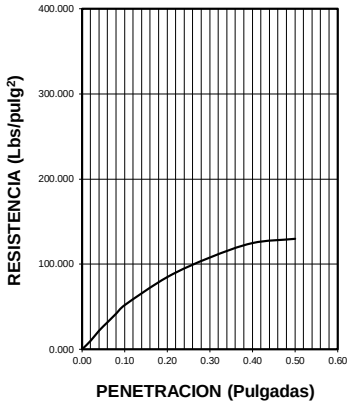
**56 GOLPES**

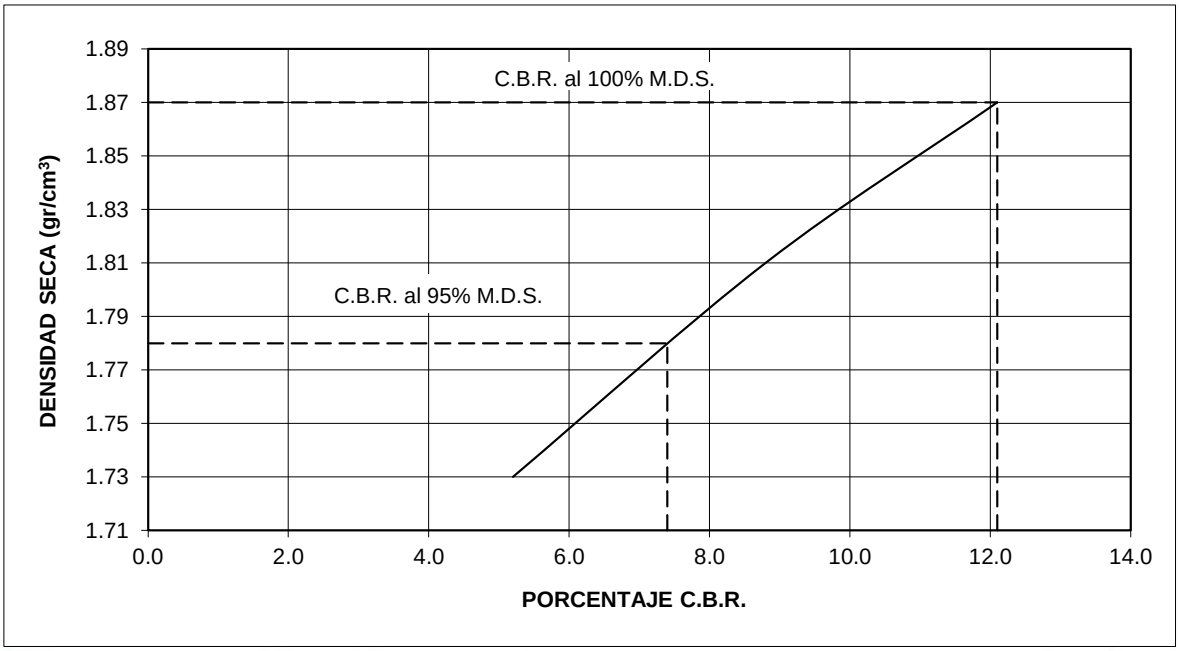



**25 GOLPES**




**12 GOLPES**




Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

LABORATORIO LINUS E.I.R.L. SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS PAVIMENTOS ANALISIS DE MATERIALES

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

CALLE MANUEL SEOANE Nº 717 – LAMBAYEQUE - CEL. 907075398 –
E-Mail = mario_rd8@hotmail.com

# CALICATA 10

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

KEVIN JUNIOR ROSILLO VASQUEZ
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REG. CIP Nº 309074

# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.

**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**CALICATA** : C-10

**FECHA** : 29.12.2025

## REGISTRO DE PERFORACIONES

| COTA | PROFUNDIDAD (mts.) | MUESTRA | SIMBOLO | NATURALEZA DEL TERRENO ESTRATO | OBSERVACIONES |
|---|---|---|---|---|---|
| 0.00 | 0.00 | | | | |
| 0.10 | | | | | |
| 0.20 | | RELLENO | | MATERIAL DE RELLENO NO CALIFICADO | |
| 0.30 | 0.30 | | | | |
| 0.40 | | | | | |
| 0.50 | | | | | |
| 0.60 | | | | | |
| 0.70 | | | | ARENAS ARCILLOSAS | MAXIMA DENSIDAD SECA = 1.82 gr/cm |
| 0.80 | | | | CLASIFICACION - AASHTO: A - 6(5) | OPTIMO DE HUMEDAD = 9.78 % |
| 0.90 | | | | DE COLOR MARRON CLARO, DE CONSISTENCIA MEDIA | |
| 1.00 | | M.1 | SC | L.L = 29.30 | C.B.R. - 100% = 11.85 % |
| 1.10 | | | | L.P = 20.48 | C.B.R. - 95% = 6.2 % |
| 1.20 | | | | I.P = 8.82 | |
| 1.30 | | | | % CONTENIDO DE HUMEDAD = 11.82 % | |
| 1.40 | | | | % CONTENIDO DE SALES = 0.18 % | DURANTE EL TIEMPO DE EXCAVACION |
| 1.50 | 1.50 | | | | NO SE DETECTO NIVEL FREATICO |

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**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
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**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C10
**FECHA** : 29.12.2025

## HUMEDAD NATURAL

| CALICATA-MUESTRA | **C10-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.30 - 1.50** |
| Nº RECIPIENTE | 166 |
| 1.- PESO SUELO HUMEDO + RECIPIENTE | 90.63 |
| 2.- PESO SUELO SECO + RECIPIENTE | 82.50 |
| 3.- PESO DEL AGUA | 6.21 |
| 4.- PESO RECIPIENTE | 24.80 |
| 5.- PESO SUELO SECO | 58.66 |
| 6.- PORCENTAJE DE HUMEDAD | **10.12%** |
| | |

## DETERMINACION DE LA SAL

| CALICATA-MUESTRA | **C10-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.220 - 1**.50 |
| Nº RECIPIENTE | 168 (1) |
| PESO DEL TARRO | 20.01 |
| (2) PESO TARRO + AGUA + SAL | 29.90 |
| (3) PESO TARRO SECO + SAL | 20.03 |
| (4) PESO SAL ( 3 - 1) | 0.02 (5) |
| PESO AGUA ( 2 - 3 ) | 9.87 (6) |
| PORCENTAJE DE SAL | **0.22%** |
| | |

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**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

### ANALISIS GRANULOMETRICO POR TAMIZADO
**(ASTM - D422 / N.T.P. 339.128)**

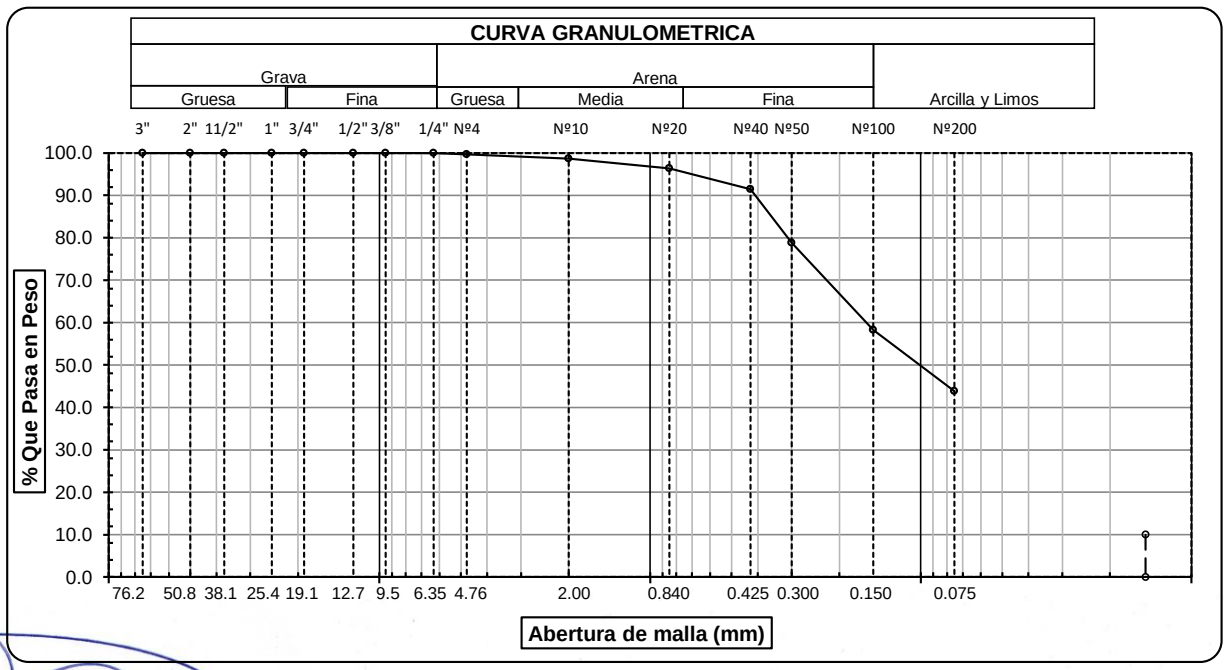
**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.20 mts. - 1.50 mts.
**CALICATA** : C10M1 - PROG. 9+00
**FECHA** : 29.12.2025

| ABERTURA MALLA (Pul) | ABERTURA MALLA (mm) | PESO RETENIDO | % RETENIDO PARCIAL | % RETENIDO ACUMULADO | % QUE PASA |
|---|---|---|---|---|---|
| 3" | 76.200 | | | | |
| 2 1/2" | 63.500 | | | | |
| 2" | 50.800 | | | | |
| 1 1/2" | 38.100 | | | | |
| 1" | 25.400 | | | | |
| 3/4" | 19.050 | | | | |
| 1/2" | 12.700 | | | | |
| 3/8" | 9.525 | | | | |
| 1/4" | 6.350 | 0.00 | 0.00 | 0.00 | 100.00 |
| Nº4 | 4.760 | 0.57 | 0.29 | 0.29 | 99.72 |
| Nº10 | 2.000 | 2.15 | 1.08 | 1.36 | 98.64 |
| Nº20 | 0.840 | 4.62 | 2.31 | 3.67 | 96.33 |
| N40 | 0.425 | 9.85 | 4.93 | 8.60 | 88.43 |
| Nº50 | 0.300 | 25.14 | 12.57 | 21.17 | 78.84 |
| Nº100 | 0.150 | 41.17 | 20.59 | 41.75 | 58.25 |
| Nº200 | 0.075 | 28.84 | 14.42 | 56.17 | 1 .53 |
| < Nº 200 | FONDO | 87.66 | 43.83 | 100.00 | 0.00 |

| DESCRIPCION DE LA MUESTRA | | |
|---|---|---|
| PESO TOTAL | : | 200.0 g. |
| PESO LAVADO | : | 87.7 g. |
| LIMITE LIQUIDO | : | 2 30 % |
| LIMITE PLASTICO | : | 20.48 % |
| INDICE PLASTICIDAD | : | 8.82 % |
| CLASF. AASHTO | : | **A-6(5)** |
| CLASF. SUCS | : | **SC** |
| DESCRIPCIÓN DEL SUELO | : | **MALO** |
| **Arena arcillosa** | | |

| Ensayo Malla Nº200 | P.S.Sec | P.S.Lav | (%) 200 |
|---|---|---|---|
| | 200.0 | 88 | 56.2 |

| | |
|---|---|
| MODULO DE FINEZA | 0.74 |
| Coef. Uniformidad | 0.0 |
| Coef. Curvatura | 0.0 |




Observaciones: _____


CALLE MANUEL SEOANE Nº 717 – LAMBAYEQUE - CEL. 907075398 –
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KEVIN JUNIOR ROSILLO VASQUEZ
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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

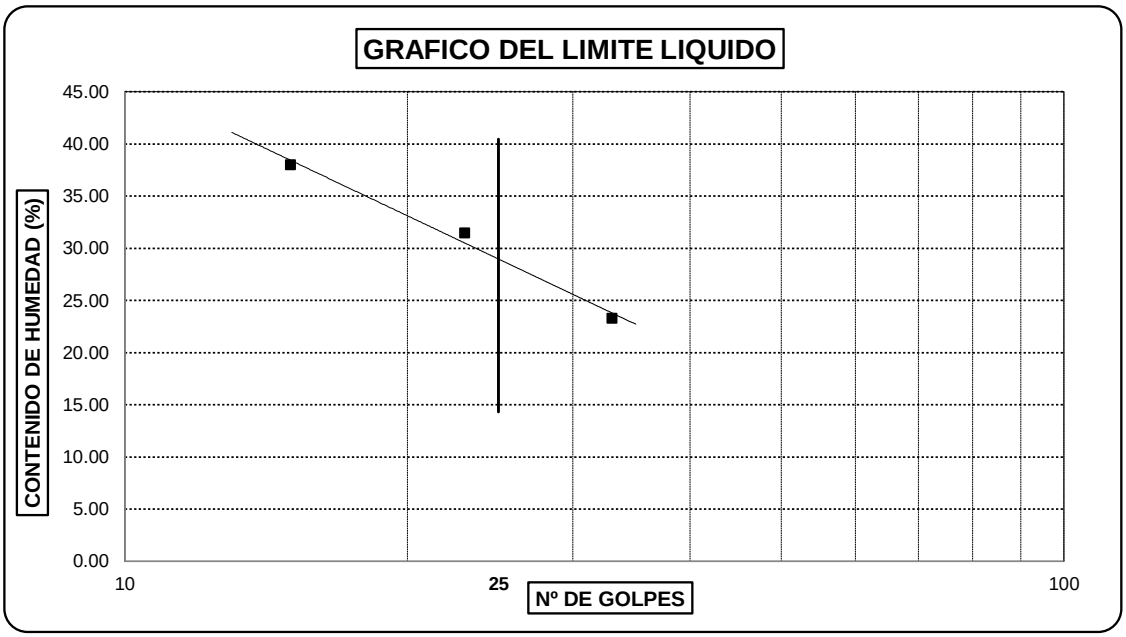
## RUC. 20605369139

## LIMITES DE ATTERBERG
**(ASTM - D423 / N.T.P. 339.129)**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C10M1 - PROG. 9+00
**FECHA** : 29.12.2025

| DATOS DE ENSAYO | | LIMITE LIQUIDO | | | LIMITE PLASTICO | | |
|---|---|---|---|---|---|---|---|
| N° de golpes | | **15** | **23** | **33** | --- | --- | --- |
| 1. Recipiente N° | | 66 | 65 | 67 | 62 | --- | --- |
| 2. Peso suelo húmedo + tara | (gr) | 80.20 | 81.54 | 81.06 | 80.79 | --- | --- |
| 3. Peso suelo seco + Tara | (gr) | 76.61 | 77.14 | 78.68 | 78.8 | --- | --- |
| 4. Peso de la Tara | (gr) | 65.74 | 66.26 | 66.36 | 67.10 | --- | --- |
| 5. Peso del agua | (gr) | 3.59 | 4.40 | 2.38 | 1.99 | | |
| 6. Peso del suelo seco | (gr) | 10.87 | 10.88 | 12.32 | 11.70 | --- | --- |
| 7. Contenido de humedad | (%) | 33.03 | 40.44 | 19.32 | 17.01 | --- | --- |

### GRAFICO DEL LIMITE LIQUIDO




| LIMITE DE CONSISTENCIA DE LA MUESTRA | |
|---|---|
| **Límite Líquido** | 29.30 |
| **Límite Plástico** | 20.48 |
| **) Índice de Plasticidad** | 8.82 |

| MUESTRA | C10M1 - PROG. 9+00 |
|---|---|
| **Clasificaciòn SUCS** | **SC** |
| **Clasificaciòn AASHTO** | **A-6(5)(** |

Observaciones: _____

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

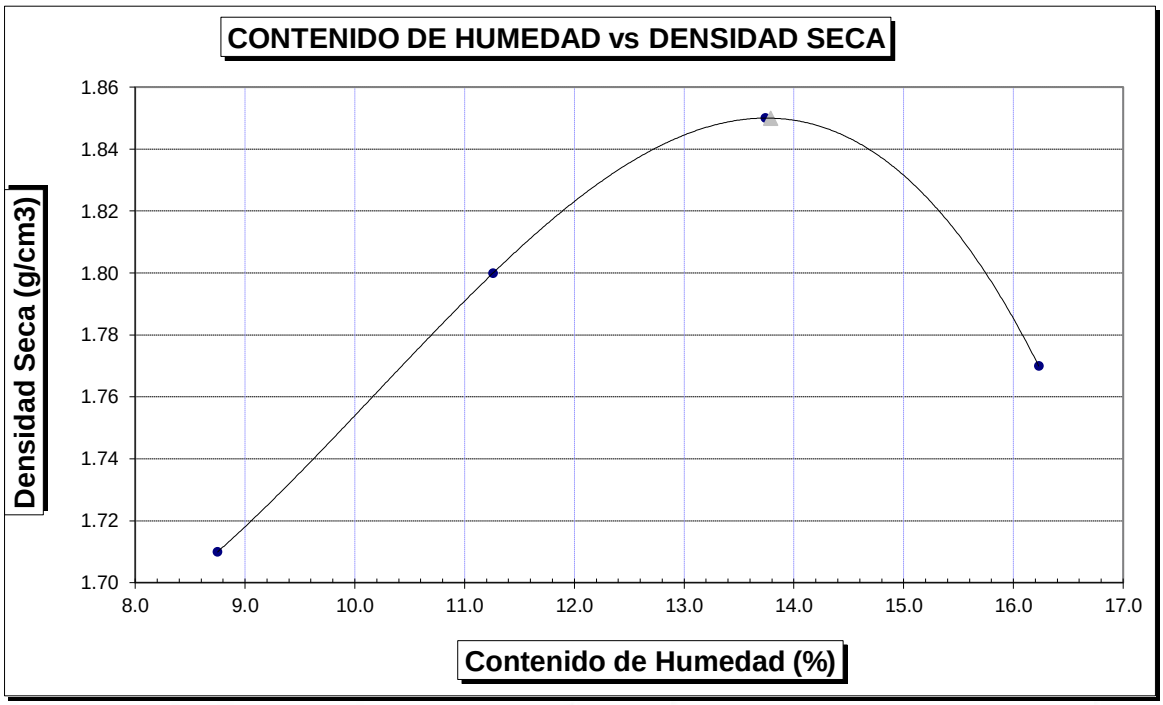
## RUC. 20605369139

| | | |
|---|---|---|
| **SOLICITANTE** | : | ARROYO AYALA M.<br>SANCHEZ MONTENEGRO R. |
| **PROYECTO** | : | ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **UBICACIÓN** | : | DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **MATERIAL** | : | TERRENO NATURAL |
| **CALICATA** | : | C10M1 |
| **FECHA** | : | 29.12.2025 |

# PROCTOR MODIFICADO AASHTO T - 180 D

| | | | | | |
|---|---|---|---|---|---|
| MOLDE Nº | | : | | | |
| VOLUMEN | | : | **2130** $cm^3$ | **---** | $pie^3$ |
| METODO DE COMPACTACION | | : | **AASHTO T - 180 D** | | |
| .- Peso Suelo Humedo + Molde | (g) | 10882 | 11180 | 11393 | 11308 |
| .- Peso de Molde | (g) | 6920 | 6920 | 6920 | 6920 |
| .- Peso Suelo Húmedo Compactado | (g) | 3962 | 4260 | 4473 | 4388 |
| .- Peso Volumétrico Húmedo | (g) | 1.860 | 2.000 | 2.100 | 2.060 |
| .- Recipiente Nº | | 103 | 114 | 108 | 100 |
| .- Peso de Suelo Húmedo + Tara | (g) | 71.75 | 73.85 | 73.03 | 90.92 |
| .- Peso de Suelo Seco + Tara | (g) | 68.15 | 69.43 | 67.22 | 83.92 |
| .- Tara | (g) | 27.00 | 30.16 | 24.94 | 40.79 |
| .- Peso de Agua | (g) | 3.60 | 4.42 | 5.81 | 7.00 |
| .- Peso de Suelo Seco | (g) | 41.15 | 39.27 | 42.28 | 43.13 |
| .- Contenido de agua | (%) | 8.75 | 11.26 | 13.74 | 16.23 |
| .- Peso Volumétrico Seco | ($g/cm^3$) | 1.71 | 1.80 | 1.85 | 1.77 |

| | | | |
|---|---|---|---|
| **Máxima Densidad Seca** | : | **1.82** | **$gr/cm^3$** |
| **Optimo Contenido de Humedad** | : | **9.78** | **%** |

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# CALICATA 11

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C-11
**FECHA** : 29.12.2025

## REGISTRO DE PERFORACIONES

| COTA | PROFUNDIDAD (mts.) | MUESTRA | SIMBOLO | NATURALEZA DEL TERRENO ESTRATO | OBSERVACIONES |
|---|---|---|---|---|---|
| 0.00 | 0.00 | | | | |
| 0.10 | | RELLENO | | MATERIAL DE RELLENO NO CALIFICADO | |
| 0.20 | | | | | |
| 0.30 | 0.30 | | | | |
| 0.40 | | M.1 | SC | ARENAS ARCILLOSAS<br>CLASIFICACION - AASHTO: A - 2 - 4 (0)<br>DE COLOR MARRON CLARO, DE CONSISTENCIA MEDIA<br>L.L = 29.51<br>L.P = 21.10<br>I.P = 8.41<br>% CONTENIDO DE HUMEDAD = 12.98 %<br>% CONTENIDO DE SALES = 0.19 % | MAXIMA DENSIDAD SECA = 1.83 gr/cm3<br>OPTIMO DE HUMEDAD = 11.56 %<br>C.B.R. - 100% = 10.85 %<br>C.B.R. - 95% = 7.10 %<br><br>DURANTE EL TIEMPO DE EXCAVACION NO SE DETECTO NIVEL FREATICO |
| 0.50 | | | | | |
| 0.60 | | | | | |
| 0.70 | | | | | |
| 0.80 | | | | | |
| 0.90 | | | | | |
| 1.00 | | | | | |
| 1.10 | | | | | |
| 1.20 | | | | | |
| 1.30 | | | | | |
| 1.40 | | | | | |
| 1.50 | 1.50 | | | | |

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Mario Ramirez Dejo
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LABORATORIO LINUS E.I.R.L.

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**SOLICITANTE** : ARROYO AYALA M.
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**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C11
**FECHA** : 29.12.2025

## HUMEDAD NATURAL

| CALICATA-MUESTRA | **C11-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.20 - 1.50** |
| Nº RECIPIENTE | 3 |
| 1.- PESO SUELO HUMEDO + RECIPIENTE | 208.19 |
| 2.- PESO SUELO SECO + RECIPIENTE | 188.90 |
| 3.- PESO DEL AGUA | 19.29 |
| 4.- PESO RECIPIENTE | 45.80 |
| 5.- PESO SUELO SECO | 143.10 |
| 6.- PORCENTAJE DE HUMEDAD | **12.34%** |
| | |

## DETERMINACION DE LA SAL

| CALICATA-MUESTRA | **C11-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.20 - 1.50** |
| Nº RECIPIENTE | 2 |
| (1) PESO DEL TARRO | 41.09 |
| (2) PESO TARRO + AGUA + SAL | 51.50 |
| (3) PESO TARRO SECO + SAL | 41.11 |
| (4) PESO SAL ( 3 - 1) | 0.02 |
| (5) PESO AGUA ( 2 - 3 ) | 10.39 |
| (6) PORCENTAJE DE SAL | **0.15%** |
| | |

Mario Ramirez Dejo
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## RUC. 20605369139

### ANALISIS GRANULOMETRICO POR TAMIZADO
**(ASTM - D422 / N.T.P. 339.128)**

**SOLICITANTE** : ARROYO AYALA M.
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**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C11M1 - PROG. 10+00
**FECHA** : 29.12.2025

| ABERTURA MALLA (Pul) | ABERTURA MALLA (mm) | PESO RETENIDO | % RETENIDO PARCIAL | % RETENIDO ACUMULADO | % QUE PASA |
|---|---|---|---|---|---|
| 3" | 76.200 | | | | |
| 2 1/2" | 63.500 | | | | |
| 2" | 50.800 | | | | |
| 1 1/2" | 38.100 | | | | |
| 1" | 25.400 | | | | |
| 3/4" | 19.050 | | | | |
| 1/2" | 12.700 | | | | |
| 3/8" | 9.525 | | | | |
| 1/4" | 6.350 | 0.00 | 0.00 | 0.00 | 100.00 |
| Nº4 | 4.760 | 0.69 | 0.35 | 0.35 | 99.66 |
| Nº10 | 2.000 | 1.77 | 0.89 | 1.23 | 98.77 |
| Nº20 | 0.840 | 3.53 | 1.77 | 3.00 | 97.01 |
| N40 | 0.425 | 6.26 | 3.13 | 6.13 | 91.14 |
| Nº50 | 0.300 | 28.84 | 14.42 | 20.55 | 79.46 |
| Nº100 | 0.150 | 75.14 | 37.57 | 58.12 | 41.89 |
| Nº200 | 0.075 | 44.17 | 22.09 | 80.20 | 17.13 |
| < Nº 200 | FONDO | 39.60 | 19.80 | 100.00 | 0.00 |

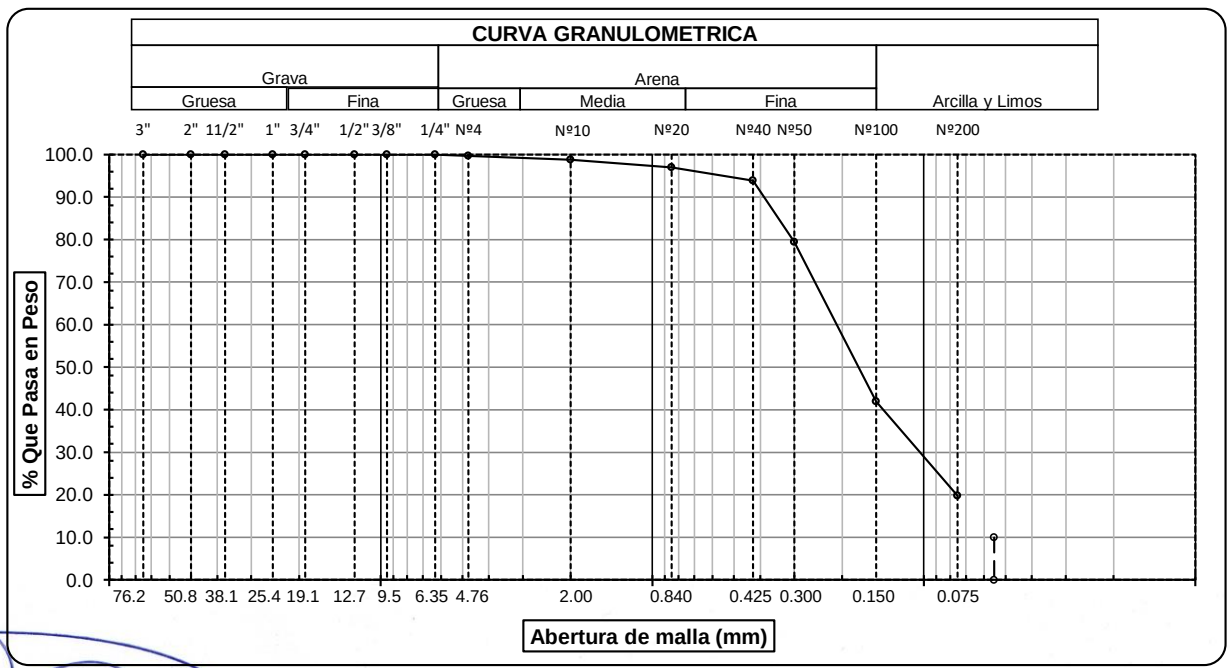
**DESCRIPCION DE LA MUESTRA**

| | | |
|---|---|---|
| PESO TOTAL | : | 200.0 g. |
| PESO LAVADO | : | 39.6 g. |
| LIMITE LIQUIDO | : | 29.73 % |
| LIMITE PLASTICO | : | 21.51 % |
| INDICE PLASTICIDAD | : | 8.22 % |
| CLASF. AASHTO | : | **A-2-4 (0)** |
| CLASF. SUCS | : | **SM** |
| DESCRIPCIÓN DEL SUELO | : | **BUENO** |

**Arena arcillosa**

| Ensayo Malla Nº200 | P.S.Sec | P.S.Lav | (%) 200 |
|---|---|---|---|
| | 200.0 | 40 | 80.2 |

| | |
|---|---|
| MODULO DE FINEZA | 0.786 |
| Coef. Uniformidad | 0.0 |
| Coef. Curvatura | 0.0 |




Observaciones:


CALLE MANUEL SEOANE Nº 717 – LAMBAYEQUE - CEL. 907075398 –
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Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

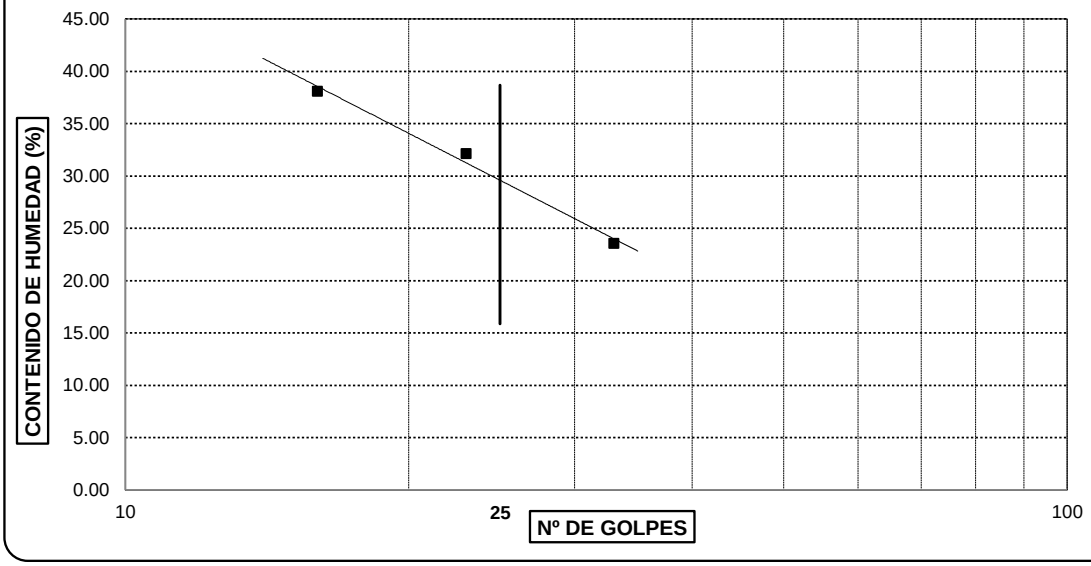
**RUC. 20605369139**

## LIMITES DE ATTERBERG
**(ASTM - D423 / N.T.P. 339.129)**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C11M1 - PROG. 10+00
**FECHA** : 29.12.2025

| DATOS DE ENSAYO | | LIMITE LIQUIDO | | | LIMITE PLASTICO | | |
|---|---|---|---|---|---|---|---|
| N° de golpes | | **16** | **23** | **33** | --- | --- | --- |
| 1. Recipiente N° | | 206 | 205 | 201 | 357 | --- | --- |
| 2. Peso suelo húmedo + tara | (gr) | 41.99 | 42.94 | 43.09 | 44.98 | --- | --- |
| 3. Peso suelo seco + Tara | (gr) | 38.73 | 39.26 | 40.80 | 42.36 | --- | --- |
| 4. Peso de la Tara | (gr) | 29.22 | 29.74 | 29.84 | 30.18 | --- | --- |
| 5. Peso del agua | (gr) | 3.26 | 3.68 | 2.29 | 2.62 | | |
| 6. Peso del suelo seco | (gr) | 9.51 | 9.52 | 10.96 | 12.18 | --- | --- |
| 7. Contenido de humedad | (%) | 34.28 | 38.66 | 20.89 | 21.51 | --- | --- |

**GRAFICO DEL LIMITE LIQUIDO**




| LIMITE DE CONSISTENCIA DE LA MUESTRA | |
|---|---|
| **Límite Líquido** | 29.51 |
| **Límite Plástico** | 21.10 |
| **Índice de Plasticidad** | 8.41 |

| MUESTRA: C11M1 - PROG. 10+00 | |
|---|---|
| **Clasificaciòn SUCS** | **SM** |
| **Clasificaciòn AASHTO** | **A-2-4 (0)** |

Observaciones: _____

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

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# LABORATORIO LINUS E.I.R.L.

**SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS**
**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

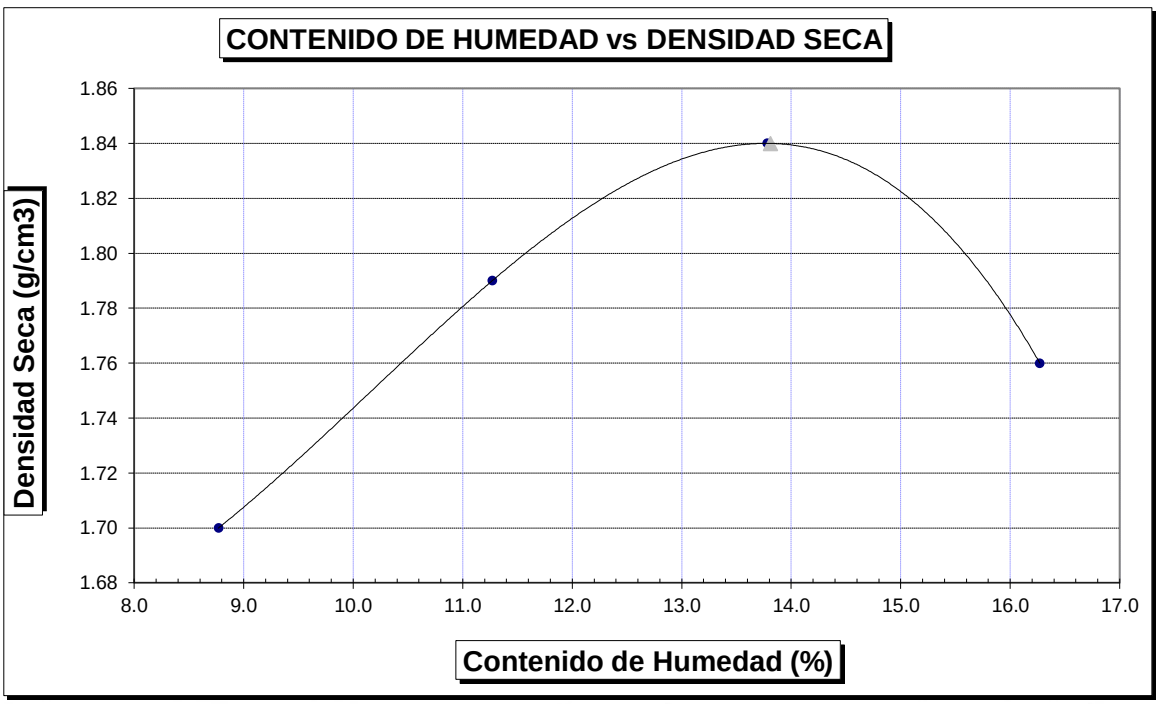
## RUC. 20605369139

| | | |
|---|---|---|
| **SOLICITANTE** | : | ARROYO AYALA M.<br>SANCHEZ MONTENEGRO R. |
| **PROYECTO** | : | ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **UBICACIÓN** | : | DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **MATERIAL** | : | TERRENO NATURAL |
| **CALICATA** | : | C11M1 |
| **FECHA** | : | 29.12.2025 |

# PROCTOR MODIFICADO AASHTO T - 180 D

| | | | | | | |
|---|---|---|---|---|---|---|
| MOLDE Nº | | : | | | | |
| VOLUMEN | | : | **2220** | $cm^3$ | **---** | $pie^3$ |
| METODO DE COMPACTACION | | : | **AASHTO T - 180 D** | | | |
| .- Peso Suelo Humedo + Molde | (g) | | 11108 | 11419 | 11641 | 11552 |
| .- Peso de Molde | (g) | | 7001 | 7001 | 7001 | 7001 |
| .- Peso Suelo Húmedo Compactado | (g) | | 4107 | 4418 | 4640 | 4551 |
| .- Peso Volumétrico Húmedo | (g) | | 1.850 | 1.990 | 2.090 | 2.050 |
| .- Recipiente Nº | | | 53 | 64 | 58 | 50 |
| .- Peso de Suelo Húmedo + Tara | (g) | | 71.82 | 73.92 | 73.11 | 91.00 |
| .- Peso de Suelo Seco + Tara | (g) | | 68.21 | 69.49 | 67.28 | 83.98 |
| .- Tara | (g) | | 27.03 | 30.19 | 24.97 | 40.82 |
| .- Peso de Agua | (g) | | 3.61 | 4.43 | 5.83 | 7.02 |
| .- Peso de Suelo Seco | (g) | | 41.18 | 39.30 | 42.31 | 43.16 |
| .- Contenido de agua | (%) | | 8.77 | 11.27 | 13.78 | 16.27 |
| .- Peso Volumétrico Seco | $(g/cm^3)$ | | 1.70 | 1.79 | 1.84 | 1.76 |

| | | | |
|---|---|---|---|
| **Máxima Densidad Seca** | : | **1.83** | **$gr/cm^3$** |
| **Optimo Contenido de Humedad** | : | **11.56** | **%** |




Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

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# CALICATA 12

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

# LABORATORIO LINUS E.I.R.L.

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.

**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**CALICATA** : C-12

**FECHA** : 29.12.2025

## REGISTRO DE PERFORACIONES

| COTA | PROFUNDIDAD (mts.) | MUESTRA | SIMBOLO | NATURALEZA DEL TERRENO ESTRATO | OBSERVACIONES |
|---|---|---|---|---|---|
| 0.00 | 0.00 | | | | |
| 0.10 | | RELLENO | | MATERIAL DE RELLENO NO CALIFICADO | |
| 0.20 | | | | | |
| 0.30 | 0.30 | | | | |
| 0.40 | | M.1 | SC | ARENAS ARCILLOSAS<br>CLASIFICACION - AASHTO: A - 2 - 4 (0)<br>DE COLOR MARRON CLARO, DE CONSISTENCIA MEDIA<br>L.L = 29.73<br>L.P = 21.51<br>I.P = 8.22<br>% CONTENIDO DE HUMEDAD = 13.48 %<br>% CONTENIDO DE SALES = 0.19 % | MAXIMA DENSIDAD SECA = 1.84 gr/cm3<br>OPTIMO DE HUMEDAD = 13.81 %<br>C.B.R. - 100% = 10.2 %<br>C.B.R. - 95% = 6.2 %<br><br>DURANTE EL TIEMPO DE EXCAVACION NO SE DETECTO NIVEL FREATICO |
| 0.50 | | | | | |
| 0.60 | | | | | |
| 0.70 | | | | | |
| 0.80 | | | | | |
| 0.90 | | | | | |
| 1.00 | | | | | |
| 1.10 | | | | | |
| 1.20 | | | | | |
| 1.30 | | | | | |
| 1.40 | | | | | |
| 1.50 | 1.50 | | | | |

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Mario Ramirez Dejo
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LABORATORIO LINUS E.I.R.L.

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**
**RUC. 20605369139**

**SOLICITANTE** : ARROYO AYALA M.
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**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C12
**FECHA** : 29.12.2025

## HUMEDAD NATURAL

| CALICATA-MUESTRA | **C12-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.30 - 1.50** |
| Nº RECIPIENTE | 3 |
| 1.- PESO SUELO HUMEDO + RECIPIENTE | 208.19 |
| 2.- PESO SUELO SECO + RECIPIENTE | 188.90 |
| 3.- PESO DEL AGUA | 19.29 |
| 4.- PESO RECIPIENTE | 45.80 |
| 5.- PESO SUELO SECO | 143.10 |
| 6.- PORCENTAJE DE HUMEDAD | **13.48%** |
| | |

## DETERMINACION DE LA SAL

| CALICATA-MUESTRA | **C12-M1** |
|---|---|
| | |
| PROFUNDIDAD (m) | **0.30 - 1.50** |
| Nº RECIPIENTE | 2 |
| (1) PESO DEL TARRO | 41.09 |
| (2) PESO TARRO + AGUA + SAL | 51.50 |
| (3) PESO TARRO SECO + SAL | 41.11 |
| (4) PESO SAL ( 3 - 1) | 0.02 |
| (5) PESO AGUA ( 2 - 3 ) | 10.39 |
| (6) PORCENTAJE DE SAL | **0.19%** |
| | |

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

## RUC. 20605369139

### ANALISIS GRANULOMETRICO POR TAMIZADO
**(ASTM - D422 / N.T.P. 339.128)**

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C12M1 - PROG. 11+00
**FECHA** : 29.12.2025

| ABERTURA MALLA (Pul) | ABERTURA MALLA (mm) | PESO RETENIDO | % RETENIDO PARCIAL | % RETENIDO ACUMULADO | % QUE PASA |
|---|---|---|---|---|---|
| 3" | 76.200 | | | | |
| 2 1/2" | 63.500 | | | | |
| 2" | 50.800 | | | | |
| 1 1/2" | 38.100 | | | | |
| 1" | 25.400 | | | | |
| 3/4" | 19.050 | | | | |
| 1/2" | 12.700 | | | | |
| 3/8" | 9.525 | | | | |
| 1/4" | 6.350 | 0.00 | 0.00 | 0.00 | 100.00 |
| Nº4 | 4.760 | 0.69 | 0.35 | 0.35 | 99.66 |
| Nº10 | 2.000 | 1.77 | 0.89 | 1.23 | 98.77 |
| Nº20 | 0.840 | 3.53 | 1.77 | 3.00 | 97.01 |
| N40 | 0.425 | 6.26 | 3.13 | 6.13 | 93.88 |
| Nº50 | 0.300 | 28.84 | 14.42 | 20.55 | 79.46 |
| Nº100 | 0.150 | 75.14 | 37.57 | 58.12 | 41.89 |
| Nº200 | 0.075 | 44.17 | 22.09 | 80.20 | 19.80 |
| < Nº 200 | FONDO | 39.60 | 19.80 | 100.00 | 0.00 |

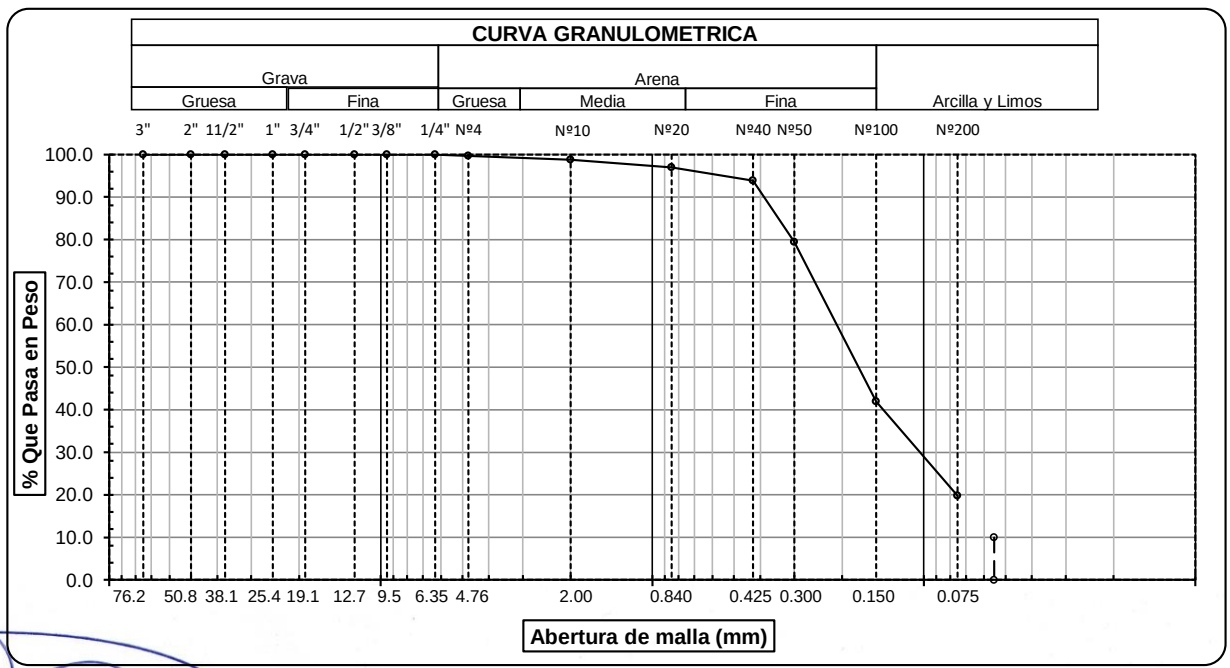
**DESCRIPCION DE LA MUESTRA**

| | | |
|---|---|---|
| PESO TOTAL | : | 200.0 g. |
| PESO LAVADO | : | 39.6 g. |
| LIMITE LIQUIDO | : | 29.73 % |
| LIMITE PLASTICO | : | 21.51 % |
| INDICE PLASTICIDAD | : | 8.22 % |
| CLASF. AASHTO | : | **A-2-4 (0)** |
| CLASF. SUCS | : | **SC** |
| DESCRIPCIÓN DEL SUELO | : | **BUENO** |

**Arena arcillosa**

| Ensayo Malla Nº200 | P.S.Sec | P.S.Lav | (%) 200 |
|---|---|---|---|
| | 200.0 | 40 | 80.2 |

| | |
|---|---|
| MODULO DE FINEZA | 0.894 |
| Coef. Uniformidad | 0.0 |
| Coef. Curvatura | 0.0 |




Observaciones: _____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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

**RUC. 20605369139**

## LIMITES DE ATTERBERG
**(ASTM - D423 / N.T.P. 339.129)**

**SOLICITANTE** : ARROYO AYALA M.
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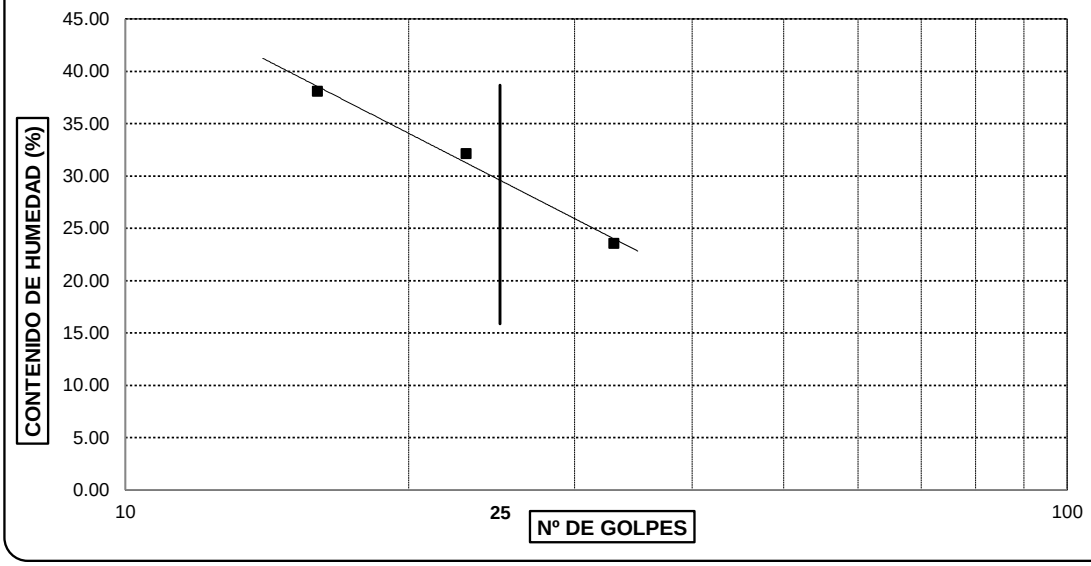
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACIÓN** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**PROFUNDIDAD** : 0.30 mts. - 1.50 mts.
**CALICATA** : C12M1 - PROG. 11+00
**FECHA** : 29.12.2025

| DATOS DE ENSAYO | | LIMITE LIQUIDO | | | LIMITE PLASTICO | | |
|---|---|---|---|---|---|---|---|
| N° de golpes | | **16** | **23** | **33** | --- | --- | --- |
| 1. Recipiente N° | | 206 | 205 | 201 | 357 | --- | --- |
| 2. Peso suelo húmedo + tara | (gr) | 41.99 | 42.94 | 43.09 | 44.98 | --- | --- |
| 3. Peso suelo seco + Tara | (gr) | 38.73 | 39.26 | 40.80 | 42.36 | --- | --- |
| 4. Peso de la Tara | (gr) | 29.22 | 29.74 | 29.84 | 30.18 | --- | --- |
| 5. Peso del agua | (gr) | 3.26 | 3.68 | 2.29 | 2.62 | | |
| 6. Peso del suelo seco | (gr) | 9.51 | 9.52 | 10.96 | 12.18 | --- | --- |
| 7. Contenido de humedad | (%) | 34.28 | 38.66 | 20.89 | 21.51 | --- | --- |

**GRAFICO DEL LIMITE LIQUIDO**




| LIMITE DE CONSISTENCIA DE LA MUESTRA | |
|---|---|
| **Límite Líquido** | 29.73 |
| **Límite Plástico** | 21.51 |
| **Índice de Plasticidad** | 8.22 |

| MUESTRA: C12M1 - PROG. 11+00 | |
|---|---|
| **Clasificaciòn SUCS** | **SC** |
| **Clasificaciòn AASHTO** | **A-2-4 (0)** |

Observaciones: _____

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

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**PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION**
**RESOLUCION Nº 031616-2019/DSD – INDECOPI**

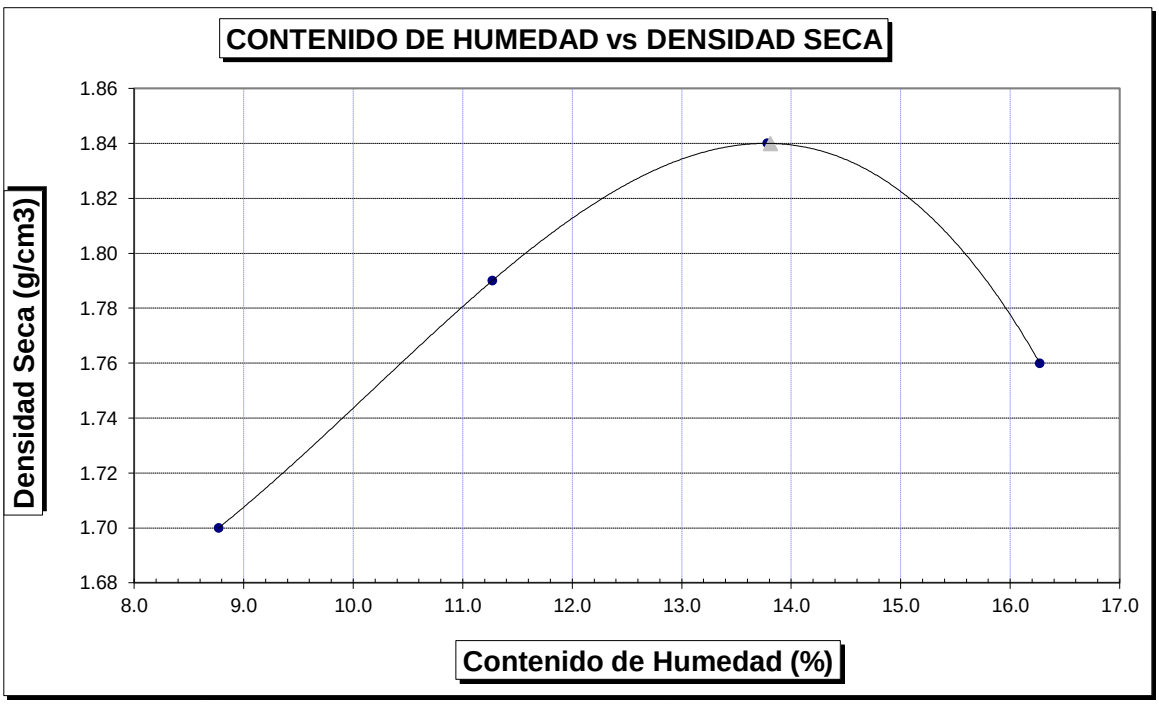
## RUC. 20605369139

| | | |
|---|---|---|
| **SOLICITANTE** | : | ARROYO AYALA M.<br>SANCHEZ MONTENEGRO R. |
| **PROYECTO** | : | ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **UBICACIÓN** | : | DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE |
| **MATERIAL** | : | TERRENO NATURAL |
| **CALICATA** | : | C12M1 |
| **FECHA** | : | 29.12.2025 |

# PROCTOR MODIFICADO AASHTO T - 180 D

| | | | | | | |
|---|---|---|---|---|---|---|
| MOLDE Nº | | : | | | | |
| VOLUMEN | | : | **2220** | $cm^3$ | **---** | $pie^3$ |
| METODO DE COMPACTACION | | : | **AASHTO T - 180 D** | | | |
| .- Peso Suelo Humedo + Molde | (g) | | 11108 | 11419 | 11641 | 11552 |
| .- Peso de Molde | (g) | | 7001 | 7001 | 7001 | 7001 |
| .- Peso Suelo Húmedo Compactado | (g) | | 4107 | 4418 | 4640 | 4551 |
| .- Peso Volumétrico Húmedo | (g) | | 1.850 | 1.990 | 2.090 | 2.050 |
| .- Recipiente Nº | | | 53 | 64 | 58 | 50 |
| .- Peso de Suelo Húmedo + Tara | (g) | | 71.82 | 73.92 | 73.11 | 91.00 |
| .- Peso de Suelo Seco + Tara | (g) | | 68.21 | 69.49 | 67.28 | 83.98 |
| .- Tara | (g) | | 27.03 | 30.19 | 24.97 | 40.82 |
| .- Peso de Agua | (g) | | 3.61 | 4.43 | 5.83 | 7.02 |
| .- Peso de Suelo Seco | (g) | | 41.18 | 39.30 | 42.31 | 43.16 |
| .- Contenido de agua | (%) | | 8.77 | 11.27 | 13.78 | 16.27 |
| .- Peso Volumétrico Seco | ($g/cm^3$) | | 1.70 | 1.79 | 1.84 | 1.76 |

| | | | |
|---|---|---|---|
| **Máxima Densidad Seca** | : | **1.83** | **$gr/cm^3$** |
| **Optimo Contenido de Humedad** | : | **11.56** | **%** |

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**RESOLUCION Nº 031616-2019/DSD – INDECOPI**
**RUC. 20605369139**

## ENSAYO CALIFORNIA BEARNING RATIO

**SOLICITANTE** : MOLINO CHICLAYO SAC
REPARACION DE PISTA - PATIO PRINCIPAL
**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE
**CALICATA** : C12M1
**FECHA** : 29.12.2025

## C.B.R.

| MOLDE Nº | | 2V | | 1V | | 3V | |
|---|---|---|---|---|---|---|---|
| Nº DE GOLPES POR CAPA | | 56 | | 25 | | 12 | |
| CONDICION DE MUESTRA | | SIN MOJAR | MOJADA | SIN MOJAR | MOJADA | SIN MOJAR | MOJADA |
| PESO MOLDE + SUELO HUMEDO | (g) | 12,495 | 12,573 | 12,565 | 12,668 | 12,325 | 12,526 |
| PESO DEL MOLDE | (g) | 8,008 | 8,008 | 8,208 | 8,208 | 8,176 | 8,176 |
| PESO DEL SUELO HUMEDO | (g) | 4487 | 4565 | 4357 | 4460 | 4149 | 4350 |
| VOLUMEN DEL SUELO | (g) | 2,143 | 2,143 | 2,143 | 2,143 | 2,143 | 2,143 |
| DENSIDAD HUMEDA | ($g/cm^3$) | 2.09 | 2.13 | 2.03 | 2.08 | 1.94 | 2.03 |
| CAPSULA Nº | | 247 | 269 | 298 | 326 | 340 | 370 |
| PESO CAPSULA + SUELO HUMEDO | (g) | 62.93 | 73.21 | 71.95 | 69.45 | 54.65 | 81.32 |
| PESO CAPSULA + SUELO SECO | (g) | 57.65 | 66.43 | 65.71 | 62.30 | 50.27 | 71.82 |
| PESO DE AGUA CONTENIDA | (g) | 5.28 | 6.78 | 6.24 | 7.15 | 4.38 | 9.5 |
| PESO DE CAPSULA | (g) | 19.40 | 21.58 | 21.77 | 18.33 | 18.71 | 21.00 |
| PESO DE SUELO SECO | (g) | 38.25 | 44.85 | 43.94 | 43.97 | 31.56 | 50.82 |
| HUMEDAD | (%) | 13.80% | 15.12% | 14.20% | 16.26% | 13.88% | 18.69% |
| DENSIDAD SECA | | 1.84 | 1.85 | 1.78 | 1.79 | 1.70 | 1.71 |

## EXPANSION

| FECHA | HORA | TIEMPO | DIAL | EXPANSION | | DIAL | EXPANSION | | DIAL | EXPANSION | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | mm. | % | | mm. | % | | mm. | % |
| | | 0 hrs | 0.000 | | | 0.000 | | | 0.000 | | 0.000 |
| | | 24 hrs | 0.606 | 0.606 | 0.521 | 0.845 | 0.845 | 0.727 | 1.055 | 1.055 | 0.907 |
| | | 48 hrs | 0.688 | 0.688 | 0.592 | 0.941 | 0.941 | 0.809 | 1.163 | 1.163 | 1.000 |
| | | 72 hrs | 0.812 | 0.812 | 0.698 | 1.055 | 1.055 | 0.907 | 1.258 | 1.258 | 1.082 |
| | | 96 hrs | 0.944 | 0.944 | 0.812 | 1.170 | 1.170 | 1.006 | 1.357 | 1.357 | 1.167 |

## PENETRACION

| PENETRACION pulg. | CARGA ESTANDAR | MOLDE Nº 2V | | | | MOLDE Nº 1V | | | | MOLDE Nº 3V | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CARGA | CORECCION | | | CARGA | CORECCION | | | CARGA | CORECCION | | |
| | (lbs/pulg²) | Lectura | lbs | lbs/pulg² | % | Lectura | lbs | lbs/pulg² | % | Lectura | lbs | lbs/pulg² | % |
| 0.020 | | 5.10 | 60 | 20.00 | | 3.80 | 45 | 15.00 | | 2.30 | 27 | 9.00 | |
| 0.040 | | 11.00 | 129 | 43.00 | | 7.90 | 93 | 31.00 | | 4.60 | 54 | 18.00 | |
| 0.060 | | 15.90 | 186 | 62.00 | | 11.50 | 135 | 45.00 | | 6.90 | 81 | 27.00 | |
| 0.080 | | 21.00 | 246 | 82.00 | | 15.10 | 177 | 59.00 | | 9.00 | 105 | 35.00 | |
| 0.100 | 1000 | 26.20 | 306 | 102.00 | 10.20 | 19.00 | 222 | 74.00 | 7.40 | 11.30 | 132 | 44.00 | 4.40 |
| 0.200 | 1500 | 42.60 | 498 | 166.00 | | 31.00 | 363 | 121.00 | | 18.50 | 216 | 72.00 | |
| 0.300 | | 54.10 | 633 | 211.00 | | 39.20 | 459 | 153.00 | | 23.30 | 273 | 91.00 | |
| 0.400 | | 62.80 | 735 | 245.00 | | 45.60 | 534 | 178.00 | | 27.20 | 318 | 106.00 | |
| 0.500 | | 65.40 | 765 | 255.00 | | 47.40 | 555 | 185.00 | | 28.20 | 330 | 110.00 | |

CALLE MANUEL SEOANE Nº 717 – LAMBAYEQUE - CEL. 907075398 –
E-Mail = mario_rd8@hotmail.com

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

# LABORATORIO LINUS E.I.R.L.

## SERVICIOS DE ESTUDIOS DE MECANICA DE SUELOS
## PAVIMENTOS, ASFALTOS Y ANALISIS DE MATERIALES DE CONSTRUCCION
## RESOLUCION Nº 031616-2019/DSD – INDECOPI
## RUC. 20605369139

**SOLICITANTE** : ARROYO AYALA M.
SANCHEZ MONTENEGRO R.

**PROYECTO** : ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERIO HUACA DEL TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMI DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

**UBICACION** : DISTRITO DE MOCHUMI, PROVINCIA LAMBAYEQUE, REGION LAMBAYEQUE

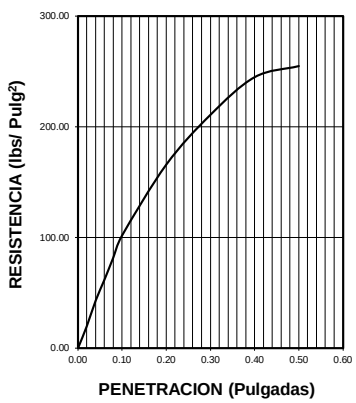
**CALICATA** : C12M1

**FECHA** : 29.12.2025

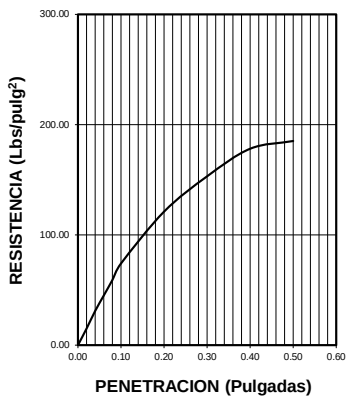
| DATOS DEL PROCTOR | |
|---|---|
| Densidad Máxima (gr/cm$^3$) | 1.84 |
| Humedad Optima (%) | 13.81 |

| DATOS DEL C.B.R. | |
|---|---|
| C.B.R. al 100% de M.D.S. (%) | 10.20 |
| C.B.R. al 95% de M.D.S. (%) | 6.20 |

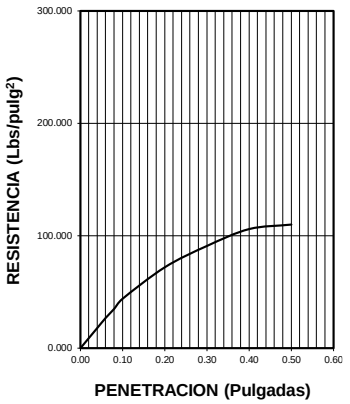
**56 GOLPES**

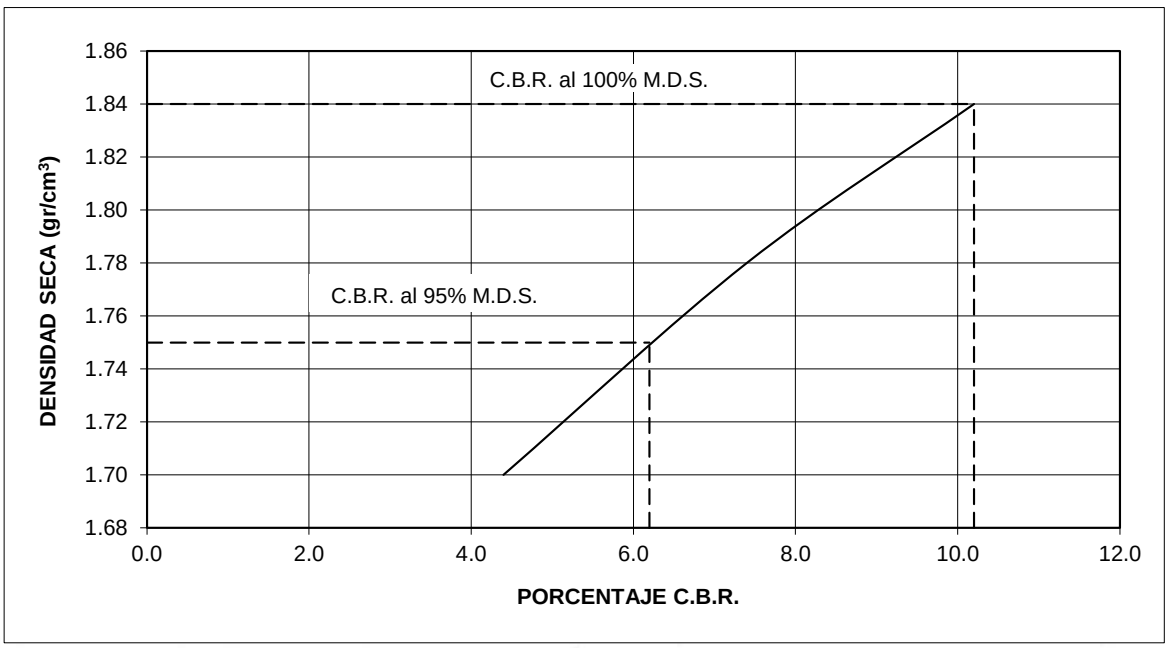



**25 GOLPES**




**12 GOLPES**




Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

CALLE MANUEL SEOANE Nº 717 – LAMBAYEQUE - CEL. 907075398 –
E-Mail = mario_rd8@hotmail.com

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

# CERTIFICADOS DE CALIBRACION

Mario Ramirez Dejo
GERENTE GENERAL
LABORATORIO LINUS E.I.R.L.

KEVIN JUNIOR ROSILLO VASQUEZ
INGENIERO CIVIL
REG. CIP Nº 309074

Arsou Group
Laboratorio de Metrología

**CERTIFICADO DE CALIBRACIÓN**
**N° LBS-657-2025**



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **EQUIPO DE PENETRACIÓN ESTANDAR (SPT)** |
| Identificación | NO INDICA |
| Marca | G & L EQUILAB |
| Modelo | GLS-78 |
| Serie | SPTM-OPK |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**
La calibración de efectuó por comparación directa tomando como referencia la norma NTP 339.134, ASTM D2488, ASTM D4220

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

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Arsou Group S.A.C Laboratorio de Metrología

ARSOU GROUP S.A.C.
Josheph [illegible] Flores
METROLOGIA

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ventas@arsougroup.com
www.arsougroup.com

Arsou Group
Laboratorio de Metrología

**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| DSI PERU AUTOMATION EIRL | Pie de Rey digital | L-0006-2025 |
| ARSOU | Balanza | LMA-235-2024 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

**VARILLAS DE PERFORACION**

| | |
|---|---|
| **Longirud sondaje (cm)** | **2500** |
| Diámetro (mm) | 42.20 |
| División (cm) | 100.04 |

**MASA DE IMPACTO**

| | |
|---|---|
| **Altura de caída (cm)** | **75.6** |
| Peso (Kgr) | 63.50 |
| Orificio interno (mm) | 49.02 |
| Diámetro (mm) | 228.95 |
| Altura masa(mm) | 214.98 |

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ventas@arsougroup.com
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**PUNTA CÓNICA**

| N° DE MEDICIONES | DIAMETRO DE PUNTA CÓNICA (mm) | OUNTA CÓNICA |
|---|---|---|
| 1 | 45.31 | 60 ° |
| 2 | 45.36 | 60 ° |
| 3 | 45.41. | 60 ° |
| 4 | 45.29 | 60 ° |
| 5 | 45.37 | 60 ° |
| 6 | 45.35 | 60 ° |
| PROMEDIO | 45.34 | 60 ° |

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

**Fin de documento**

ARSOU GROUP S.A.C.

Arsou Group
Laboratorio de Metrología

**CERTIFICADO DE CALIBRACIÓN**
**N° LLA-659-2025**



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **TAMIZ 2"** |
| Identificación | NO INDICA |
| Marca | ORION |
| Modelo | NO INDICA |
| Serie | 16F09 |
| Diámetro | 8" |
| Estructura | ACERO |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**

La Calibración se realizó por comparación tomando como referencia el método descrito en el PC-012 5ta Ed. 2012: "Procedimiento de Calibración de Pie de Rey" del Instituto Nacional de Calidad - INACAL y la Norma Americana ASTM - E11.

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

Este certificado no podrá ser reproducido o difundido parcialmente, excepto con autorización previa por escrito de ARSOU GROUP S.A.C.

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ventas@arsougroup.com
www.arsougroup.com

**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| DSI PERU AUTOMATION EIRL | Pie de Rey digital | L-0006-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

| MEDIDAS TOMADAS mm | | | | | | | PROMEDIO mm | ESTANDAR mm | ERROR mm | DESVIACION ESTANDAR mm |
|---|---|---|---|---|---|---|---|---|---|---|
| 50.21 | 50.36 | 50.24 | 51.06 | 50.48 | 51.12 | 50.69 | 50.63 | 50.00 | 0.63 | 0.343 |
| 51.03 | 50.68 | 50.42 | | | | | | | | |

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

Arsou Group S.A.C Laboratorio de Metrología

**Fin de documento**

ARSOU GROUP S.A.C.
Joshep Andres Arevalo Flores

Arsou Group
Laboratorio de Metrología

**CERTIFICADO DE CALIBRACIÓN**
**N° LLA-658-2025**



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **TAMIZ 1 1/2"** |
| Identificación | NO INDICA |
| Marca | ORION |
| Modelo | NO INDICA |
| Serie | 16A12 |
| Diámetro | 8" |
| Estructura | ACERO |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**

La Calibración se realizó por comparación tomando como referencia el método descrito en el PC-012 5ta Ed. 2012: "Procedimiento de Calibración de Pie de Rey" del Instituto Nacional de Calidad - INACAL y la Norma Americana ASTM - E11.

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

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Arsou Group S.A.C
Laboratorio de Metrología

ARSOU GROUP S.A.C.
Justiniano Andres Arevalo Flores
METROLOGÍA

**ARSOU GROUP S.A.C.**
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ventas@arsougroup.com
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Arsou Group
Laboratorio de Metrología

**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| DSI PERU AUTOMATION EIRL | Pie de Rey digital | L-0006-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

| MEDIDAS TOMADAS mm | | | | | | | PROMEDIO mm | ESTANDAR mm | ERROR mm | DESVIACION ESTANDAR mm |
|---|---|---|---|---|---|---|---|---|---|---|
| 37.81 | 37.54 | 36.96 | 37.44 | 37.26 | 37.35 | 37.42 | 37.43 | 37.50 | -0.07 | 0.260 |
| 37.55 | 37.56 | 37.58 | 37.51 | 37.48 | 37.44 | 37.53 | | | | |
| 36.91 | 37.55 | 36.97 | 37.84 | | | | | | | |

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

Arsou Group S.A.C Laboratorio de Metrología

**Fin de documento**

ARSOU GROUP S.A.C.
Joshua Andrés Arevalo Flores

**ARSOU GROUP S.A.C.**
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Arsou Group
Laboratorio de Metrología

**CERTIFICADO DE CALIBRACIÓN**
**N° LLA-657-2025**



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **TAMIZ 1"** |
| Identificación | NO INDICA |
| Marca | ORION |
| Modelo | NO INDICA |
| Serie | 16D01 |
| Diámetro | 8" |
| Estructura | ACERO |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**

La Calibración se realizó por comparación tomando como referencia el método descrito en el PC-012 5ta Ed. 2012: "Procedimiento de Calibración de Pie de Rey" del Instituto Nacional de Calidad - INACAL y la Norma Americana ASTM - E11.

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

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Arsou Group S.A.C
Laboratorio de Metrología

ARSOU GROUP S.A.C.
Justiel Santos Arevalo Flores

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ventas@arsougroup.com
www.arsougroup.com

**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| DSI PERU AUTOMATION EIRL | Pie de Rey digital | L-0006-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

| MEDIDAS TOMADAS mm | | | | | | | PROMEDIO mm | ESTANDAR mm | ERROR mm | DESVIACION ESTANDAR mm |
|---|---|---|---|---|---|---|---|---|---|---|
| 25.16 | 25.11 | 25.26 | 25.08 | 25.22 | 25.14 | 25.22 | 25.13 | 25.00 | 0.13 | 0.166 |
| 24.75 | 24.86 | 25.09 | 25.03 | 25.46 | 24.91 | 25.13 | | | | |
| 25.21 | 25.12 | 24.97 | 25.34 | 25.28 | 25.19 | | | | | |

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

**Fin de documento**

ARSOU GROUP S.A.C.
Justiniano Carlos Arevalo Flores

Arsou Group
Laboratorio de Metrología

**CERTIFICADO DE CALIBRACIÓN**
**N° LLA-656-2025**



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **TAMIZ 3/4"** |
| Identificación | NO INDICA |
| Marca | ORION |
| Modelo | NO INDICA |
| Serie | 16H45 |
| Diámetro | 8" |
| Estructura | ACERO |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**

La Calibración se realizó por comparación tomando como referencia el método descrito en el PC-012 5ta Ed. 2012: "Procedimiento de Calibración de Pie de Rey" del Instituto Nacional de Calidad - INACAL y la Norma Americana ASTM - E11.

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

Este certificado no podrá ser reproducido o difundido parcialmente, excepto con autorización previa por escrito de ARSOU GROUP S.A.C.

Arsou Group S.A.C Laboratorio de metrología

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Arsou Group
Laboratorio de Metrología

**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| DSI PERU AUTOMATION EIRL | Pie de Rey digital | L-0006-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

| MEDIDAS TOMADAS mm | | | | | | | PROMEDIO mm | ESTANDAR mm | ERROR mm | DESVIACION ESTANDAR mm |
|---|---|---|---|---|---|---|---|---|---|---|
| 19.14 | 19.16 | 19.21 | 19.16 | 19.30 | 19.05 | 19.06 | 19.10 | 19.00 | 0.10 | 0.072 |
| 19.11 | 19.04 | 19.12 | 19.03 | 19.14 | 19.11 | 19.02 | | | | |
| 19.03 | 19.05 | 19.16 | 19.07 | 19.09 | 19.03 | | | | | |

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

Arsou Group S.A.C Laboratorio de Metrología

**Fin de documento**

ARSOU GROUP S.A.C.
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Arsou Group
Laboratorio de Metrología

**CERTIFICADO DE CALIBRACIÓN**
**N° LLA-655-2025**



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **TAMIZ 1/2"** |
| Identificación | NO INDICA |
| Marca | ORION |
| Modelo | NO INDICA |
| Serie | 16B11 |
| Diámetro | 8" |
| Estructura | ACERO |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**

La Calibración se realizó por comparación tomando como referencia el método descrito en el PC-012 5ta Ed. 2012: "Procedimiento de Calibración de Pie de Rey" del Instituto Nacional de Calidad - INACAL y la Norma Americana ASTM - E11.

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

Este certificado no podrá ser reproducido o difundido parcialmente, excepto con autorización previa por escrito de ARSOU GROUP S.A.C.

Arsou Group S.A.C Laboratorio de Metrología

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Arsou Group
Laboratorio de Metrología

**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| DSI PERU AUTOMATION EIRL | Pie de Rey digital | L-0006-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

| MEDIDAS TOMADAS mm | | | | | | | PROMEDIO mm | ESTANDAR mm | ERROR mm | DESVIACION ESTANDAR mm |
|---|---|---|---|---|---|---|---|---|---|---|
| 12.41 | 12.43 | 12.39 | 12.51 | 12.48 | 12.43 | 12.44 | 12.49 | 12.50 | -0.01 | 3.759 |
| 12.56 | 12.53 | 12.48 | 12.46 | 12.45. | 12.57 | 12.50 | | | | |
| 12.55 | 12.48 | 12.69 | 12.51 | 12.55 | 12.41 | | | | | |

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

Arsou Group S.A.C Laboratorio de Metrología

**Fin de documento**

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**CERTIFICADO DE CALIBRACIÓN**
**N° LLA-654-2025**



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **TAMIZ 3/8"** |
| Identificación | NO INDICA |
| Marca | ORION |
| Modelo | NO INDICA |
| Serie | 16I18 |
| Diámetro | 8" |
| Estructura | ACERO |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**

La Calibración se realizó por comparación tomando como referencia el método descrito en el PC-012 5ta Ed. 2012: "Procedimiento de Calibración de Pie de Rey" del Instituto Nacional de Calidad - INACAL y la Norma Americana ASTM - E11.

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

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**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| DSI PERU AUTOMATION EIRL | Pie de Rey digital | L-0006-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

| MEDIDAS TOMADAS mm | | | | | | | PROMEDIO mm | ESTANDAR mm | ERROR mm | DESVIACION ESTANDAR mm |
|---|---|---|---|---|---|---|---|---|---|---|
| 9.48 | 9.41 | 9.46 | 9.53 | 9.51 | 9.44 | 9.56 | 9.49 | 9.50 | -0.01 | 2.071 |
| 9.53 | 9.56 | 9.47 | 9.45 | 9.44 | 9.52 | 9.57 | | | | |
| 9.56 | 9.46 | 9.45 | 9.47 | 9.46 | 9.44 | | | | | |

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

**Fin de documento**

ARSOU GROUP S.A.C.
Joshep [illegible] Arevalo Flores

Arsou Group
Laboratorio de Metrología

# CERTIFICADO DE CALIBRACIÓN
## N° LLA-653-2025



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **TAMIZ Nº 4** |
| Identificación | NO INDICA |
| Marca | ORION |
| Modelo | NO INDICA |
| Serie | 16M27 |
| Diámetro | 8" |
| Estructura | ACERO |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**

La Calibración se realizó por comparación tomando como referencia el método descrito en el PC-012 5ta Ed. 2012: "Procedimiento de Calibración de Pie de Rey" del Instituto Nacional de Calidad - INACAL y la Norma Americana ASTM - E11.

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ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

Este certificado no podrá ser reproducido o difundido parcialmente, excepto con autorización previa por escrito de ARSOU GROUP S.A.C.

Arsou Group S.A.C
Laboratorio de Metrología

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Joshep [illegible] Arevalo Flores
[illegible]OGIA

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**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| DSI PERU AUTOMATION EIRL | Pie de Rey digital | L-0006-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºc | Final: 22 ºc |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

| MEDIDAS TOMADAS mm | | | | | | | PROMEDIO mm | ESTANDAR mm | ERROR mm | DESVIACION ESTANDAR mm |
|---|---|---|---|---|---|---|---|---|---|---|
| 4.81 | 4.85 | 4.77 | 4.82 | 4.81 | 4.79 | 4.83 | 4.80 | 4.75 | 0.05 | 0.027 |
| 4.82 | 4.76 | 4.79 | 4.75 | 4.76 | 4.78 | 4.81 | | | | |
| 4.82 | 4.82 | 4.81 | 4.77 | 4.78 | 4.79 | | | | | |

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

**Fin de documento**

ARSOU GROUP S.A.C.
Jushep[illegible]s Arevalo Flores
METROLOGÍA

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Arsou Group
Laboratorio de Metrología

# CERTIFICADO DE CALIBRACIÓN
## N° LLA-651-2025



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **TAMIZ Nº 10** |
| Identificación | NO INDICA |
| Marca | ORION |
| Modelo | NO INDICA |
| Serie | 16Q36 |
| Diámetro | 8" |
| Estructura | ACERO |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**

La Calibración se realizó por comparación tomando como referencia el método descrito en el PC-012 5ta Ed. 2012: "Procedimiento de Calibración de Pie de Rey" del Instituto Nacional de Calidad - INACAL y la Norma Americana ASTM - E11.

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Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

Este certificado no podrá ser reproducido o difundido parcialmente, excepto con autorización previa por escrito de ARSOU GROUP S.A.C.

Arsou Group S.A.C
Laboratorio de Metrología

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Joshep [illegible] Arévalo Flores
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**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| DSI PERU AUTOMATION EIRL | Pie de Rey digital | L-0006-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

| MEDIDAS TOMADAS mm | | | | | | | PROMEDIO mm | ESTANDAR mm | ERROR mm | DESVIACION ESTANDAR mm |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.99 | 1.98 | 1.99 | 1.96 | 1.97 | 1.98 | 1.99 | 1.99 | 2.00 | -0.01 | 0.016 |
| 2.01 | 2.01 | 1.99 | 1.98 | 1.98 | 2.01 | 1.97 | | | | |
| 1.97 | 1.97 | 2.00 | 1.99 | 2.01 | 1.97 | | | | | |

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

Arsou Group S.A.C. Laboratorio de Metrología

**Fin de documento**

ARSOU GROUP S.A.C.
Josher [illegible] Arevalo Flores
METROLOGIA

Arsou Group
Laboratorio de Metrología

**CERTIFICADO DE CALIBRACIÓN**
**N° LLA-649-2025**



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **TAMIZ Nº 20** |
| Identificación | NO INDICA |
| Marca | ORION |
| Modelo | NO INDICA |
| Serie | 16U25 |
| Diámetro | 8" |
| Estructura | ACERO |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**

La Calibración se realizó por comparación tomando como referencia el método descrito en el PC-012 5ta Ed. 2012: "Procedimiento de Calibración de Pie de Rey" del Instituto Nacional de Calidad - INACAL y la Norma Americana ASTM - E11.

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Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

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Arsou Group S.A.C Laboratorio de Metrología

ARSOU GROUP S.A.C.
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**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| INACAL | RETÍCULA DE MEDICIÓN | LLA-288-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

| MEDIDAS TOMADAS µm | | | | | | | PROMEDIO µm | ESTANDAR µm | ERROR µm | DESVIACION ESTANDAR µm |
|---|---|---|---|---|---|---|---|---|---|---|
| 855 | 851 | 855 | 854 | 849 | 854 | 854 | 849.21 | 850.00 | -0.79 | 12.194 |
| 846 | 849 | 845 | 853 | 852 | 820 | 851 | | | | |
| 851 | 852 | 819 | 854 | 822 | 856 | 857 | | | | |
| 819 | 849 | 842 | 853 | 851 | 864 | 856 | | | | |
| 856 | 855 | 849 | 848 | 850 | 859 | 852 | | | | |
| 852 | 849 | 829 | 821 | 866 | 839 | 854 | | | | |
| 854 | 866 | 850 | 852 | 855 | 855 | 853 | | | | |
| 851 | 849 | 857 | 847 | 853 | 852 | 850 | | | | |

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

Arsou Group S.A.C Laboratorio de Metrología

**Fin de documento**

ARSOU GROUP S.A.C.
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**CERTIFICADO DE CALIBRACIÓN**
**N° LLA-648-2025**



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **TAMIZ Nº 30** |
| Identificación | NO INDICA |
| Marca | ORION |
| Modelo | NO INDICA |
| Serie | 16Y15 |
| Diámetro | 8" |
| Estructura | ACERO |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**
La Calibración se realizó por comparación tomando como referencia el método descrito en el PC-012 5ta Ed. 2012: "Procedimiento de Calibración de Pie de Rey" del Instituto Nacional de Calidad - INACAL y la Norma Americana ASTM - E11.

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

Este certificado no podrá ser reproducido o difundido parcialmente, excepto con autorización previa por escrito de ARSOU GROUP S.A.C.

Arsou Group S.A.C Laboratorio de Metrología

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www.arsougroup.com

Arsou Group
Laboratorio de Metrología

**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| INACAL | RETÍCULA DE MEDICIÓN | LLA-288-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

| MEDIDAS TOMADAS µm | | | | | | | PROMEDIO µm | ESTANDAR µm | ERROR µm | DESVIACION ESTANDAR µm |
|---|---|---|---|---|---|---|---|---|---|---|
| 612 | 605 | 612 | 613 | 608 | 611 | 614 | 610.93 | 600.00 | 10.93 | 4.014 |
| 603 | 614 | 602 | 611 | 605 | 608 | 605 | | | | |
| 609 | 613 | 608 | 608 | 614 | 612 | 611 | | | | |
| 612 | 613 | 614 | 618 | 614 | 608 | 604 | | | | |
| 603 | 606 | 611 | 610 | 608 | 615 | 621 | | | | |
| 622 | 618 | 619 | 617 | 605 | 608 | 603 | | | | |
| 621 | 618 | 619 | 603 | 614 | 615 | 622 | | | | |
| 602 | 602 | 615 | 613 | 610 | 602 | 609 | | | | |

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

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**CERTIFICADO DE CALIBRACIÓN**
**N° LLA-647-2025**



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **TAMIZ Nº 40** |
| Identificación | NO INDICA |
| Marca | ORION |
| Modelo | NO INDICA |
| Serie | 16X14 |
| Diámetro | 8" |
| Estructura | ACERO |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**

La Calibración se realizó por comparación tomando como referencia el método descrito en el PC-012 5ta Ed. 2012: "Procedimiento de Calibración de Pie de Rey" del Instituto Nacional de Calidad - INACAL y la Norma Americana ASTM - E11.

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

Este certificado no podrá ser reproducido o difundido parcialmente, excepto con autorización previa por escrito de ARSOU GROUP S.A.C.

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Arsou Group
Laboratorio de Metrología

**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| INACAL | RETÍCULA DE MEDICIÓN | LLA-288-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

| MEDIDAS TOMADAS µm | | | | | | | PROMEDIO µm | ESTANDAR µm | ERROR µm | DESVIACION ESTANDAR µm |
|---|---|---|---|---|---|---|---|---|---|---|
| 426 | 418 | 418 | 425 | 423 | 421 | 417 | 422.32 | 425.00 | -2.68 | 8.034 |
| 411 | 415 | 416 | 425 | 423 | 427 | 429 | | | | |
| 433 | 405 | 411 | 412 | 421 | 407 | 414 | | | | |
| 414 | 427 | 402 | 403 | 421 | 417 | 411 | | | | |
| 402 | 402 | 425 | 426 | 428 | 429 | 423 | | | | |
| 426 | 426 | 431 | 434 | 436 | 422 | 433 | | | | |
| 431 | 419 | 422 | 426 | 428 | 436 | 438 | | | | |
| 441 | 432 | 432 | 419 | 429 | 431 | 431 | | | | |

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

Arsou Group S.A.C Laboratorio de Metrología

**Fin de documento**

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T.L.A.

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Laboratorio de Metrología

# CERTIFICADO DE CALIBRACIÓN
## N° LLA-646-2025

| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **TAMIZ Nº 50** |
| Identificación | NO INDICA |
| Marca | ORION |
| Modelo | NO INDICA |
| Serie | 16Y09 |
| Diámetro | 8" |
| Estructura | ACERO |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**

La Calibración se realizó por comparación tomando como referencia el método descrito en el PC-012 5ta Ed. 2012: "Procedimiento de Calibración de Pie de Rey" del Instituto Nacional de Calidad - INACAL y la Norma Americana ASTM - E11.

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

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Arsou Group S.A.C Laboratorio de Metrología

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Laboratorio de Metrología

**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| INACAL | RETÍCULA DE MEDICIÓN | LLA-288-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

| MEDIDAS TOMADAS µm | | | | | | | PROMEDIO µm | ESTANDAR µm | ERROR µm | DESVIACION ESTANDAR µm |
|---|---|---|---|---|---|---|---|---|---|---|
| 312 | 305 | 306 | 312 | 310 | 314 | 311 | 306.36 | 300.00 | 6.36 | 4.171 |
| 311 | 309 | 305 | 306 | 307 | 312 | 310 | | | | |
| 301 | 303 | 312 | 312 | 316 | 308 | 309 | | | | |
| 302 | 303 | 301 | 314 | 312 | 311 | 310 | | | | |
| 311 | 308 | 305 | 316 | 312 | 311 | 303 | | | | |
| 306 | 302 | 302 | 315 | 310 | 301 | 301 | | | | |
| 299 | 301 | 300 | 301 | 305 | 302 | 312 | | | | |
| 288 | 286 | 294 | 312 | 302 | 304 | 303 | | | | |

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

Arsou Group S.A.C Laboratorio de Metrología

**Fin de documento**

ARSOU GROUP S.A.C.
Joshep Andres Arevalo Flores
LABORATORIO

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Laboratorio de Metrología

**CERTIFICADO DE CALIBRACIÓN**
**N° LLA-644-2025**



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **TAMIZ Nº 100** |
| Identificación | NO INDICA |
| Marca | ORION |
| Modelo | NO INDICA |
| Serie | 16AB23 |
| Diámetro | 8" |
| Estructura | ACERO |
| Procedencia | PERÚ |
| **Ubicación** | Labortorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**
La Calibración se realizó por comparación tomando como referencia el método descrito en el PC-012 5ta Ed. 2012: "Procedimiento de Calibración de Pie de Rey" del Instituto Nacional de Calidad - INACAL y la Norma Americana ASTM - E11.

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

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Laboratorio de Metrología

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Josher Andres Arevalo Flores

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www.arsougroup.com

**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| INACAL | RETÍCULA DE MEDICIÓN | LLA-288-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

| MEDIDAS TOMADAS µm | | | | | | | PROMEDIO µm | ESTANDAR µm | ERROR µm | DESVIACION ESTANDAR µm |
|---|---|---|---|---|---|---|---|---|---|---|
| 154 | 154 | 156 | 152 | 143 | 146 | 154 | 152.60 | 150.00 | 2.60 | 3.131 |
| 144 | 151 | 153 | 152 | 154 | 155 | 152 | | | | |
| 151 | 150 | 152 | 149 | 153 | 152 | 153 | | | | |
| 154 | 152 | 156 | 154 | 152 | 151 | 151 | | | | |
| 151 | 152 | 154 | 156 | 155 | 153 | 154 | | | | |
| 156 | 158 | 152 | 154 | 146 | 152 | 151 | | | | |
| 151 | 152 | 152 | 148 | 157 | 146 | 155 | | | | |
| 154 | 154 | 152 | 151 | 156 | 154 | 155 | | | | |
| 152 | 150 | 154 | 154 | 152 | 153 | 156 | | | | |
| 157 | 153 | 156 | 158 | 157 | 156 | 159 | | | | |
| 151 | 152 | 155 | 156 | 148 | 155 | 152 | | | | |
| 154 | 154 | 142 | 151 | 150 | 154 | 151 | | | | |
| 151 | 157 | 154 | 151 | 150 | 155 | 153 | | | | |
| 147 | 149 | 152 | 151 | 155 | 149 | 158 | | | | |

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

Arsou Group S.A.C. Laboratorio de metrología

**Fin de documento**

ARSOU GROUP S.A.C.
Joshep Andres Arevalo Flores
METROLOGIA

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Arsou Group
Laboratorio de Metrología

**CERTIFICADO DE CALIBRACIÓN**
**N° LLA-643-2025**



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **TAMIZ Nº 200** |
| Identificación | NO INDICA |
| Marca | ORION |
| Modelo | NO INDICA |
| Serie | 16AE26 |
| Diámetro | 8" |
| Estructura | ACERO |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**
La Calibración se realizó por comparación tomando como referencia el método descrito en el PC-012 5ta Ed. 2012: "Procedimiento de Calibración de Pie de Rey" del Instituto Nacional de Calidad - INACAL y la Norma Americana ASTM - E11.

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

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Laboratorio de Metrología

ARSOU GROUP S.A.C.
Joshep Andres Arevalo Flores
GERENTE

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Arsou Group
Laboratorio de Metrología

**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| INACAL | RETÍCULA DE MEDICIÓN | LLA-288-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 74 %hr | Final: 74 %hr |

**Resultados**

| MEDIDAS TOMADAS µm | | | | | | | PROMEDIO µm | ESTANDAR µm | ERROR µm | DESVIACION ESTANDAR µm |
|---|---|---|---|---|---|---|---|---|---|---|
| 74 | 76 | 77 | 72 | 74 | 77 | 75 | 74.77 | 75.00 | -0.23 | 1.895 |
| 74 | 75 | 74 | 74 | 73 | 75 | 76 | | | | |
| 75 | 74 | 73 | 73 | 72 | 76 | 78 | | | | |
| 76 | 73 | 76 | 71 | 71 | 78 | 74 | | | | |
| 78 | 72 | 72 | 76 | 73 | 74 | 76 | | | | |
| 72 | 71 | 72 | 74 | 73 | 76 | 74 | | | | |
| 76 | 76 | 79 | 75 | 76 | 74 | 73 | | | | |
| 73 | 77 | 78 | 78 | 74 | 75 | 74 | | | | |
| 74 | 78 | 79 | 76 | 71 | 76 | 78 | | | | |
| 75 | 76 | 77 | 74 | 73 | 75 | 76 | | | | |
| 76 | 76 | 76 | 73 | 76 | 78 | 77 | | | | |
| 73 | 75 | 75 | 76 | 78 | 78 | 74 | | | | |
| 71 | 72 | 74 | 73 | 76 | 74 | 75 | | | | |
| 74 | 71 | 76 | 71 | 77 | 76 | 71 | | | | |

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

Arsou Group S.A.C. Laboratorio de Metrología

**Fin de documento**

ARSOU GROUP S.A.C.
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CIP

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Arsou Group
Laboratorio de Metrología

# CERTIFICADO DE CALIBRACIÓN
## N° LFP-075-2025



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **PRENSA CBR CON CELDA DE CARGA** |
| Identificación | NO INDICA |
| Marca Prensa | SHERMAN |
| Modelo | CHK-01 |
| Serie | PR-01 |
| Celda | TIPO S |
| Modelo | 5000 kg |
| Indicador | HIGH WEIGHT |
| Modelo | 315-x8 |
| Serie | 1720010158 |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos y concreto |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**

El procedimiento toma como referencia a la norma ISO 7500-1 "Metallic materials - Verification of static uniaxial testing machines", Se aplicaron dos series de carga al Sistema Digital mediante la misma prensa. En cada serie se registraron las lecturas de las cargas.

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

Este certificado no podrá ser reproducido o difundido parcialmente, excepto con autorización previa por escrito de ARSOU GROUP S.A.C.

Arsou Group S.A.C. Laboratorio de Metrología

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Joshep Andres Arevalo Flores

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Arsou Group
Laboratorio de Metrología

**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| Patrones de referencia de PUCP | FORCE TRANSDUCER | INF-LE N° 039-23 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

**TABLA N° 01**

**CALIBRACION DE CELDA DE CARGA**

| SISTEMA DIGITAL "A" Kg | SERIES DE VERIFICACIÓN PATRON ( Kg) | | | | PROMEDIO "B" Kg | ERROR Ep % | RPTBLD Rp % |
|---|---|---|---|---|---|---|---|
| | SERIE (1) Kg | SERIE (2) Kg | ERROR % | ERROR (2) % | | | |
| 500 | 499.5 | 500.3 | -0.10 | 0.06 | 499.9 | -0.02 | 0.11 |
| 1000 | 1000.5 | 1000.9 | 0.05 | 0.09 | 1000.7 | 0.07 | 0.03 |
| 1500 | 1500.5 | 1500.2 | 0.03 | 0.01 | 1500.4 | 0.02 | 0.01 |
| 2000 | 2000.0 | 2000.6 | 0 | 0.03 | 2000.3 | 0.01 | 0.02 |
| 2500 | 2500.5 | 2501.3 | 0.02 | 0.05 | 2500.9 | 0.04 | 0.02 |
| 3000 | 3000.0 | 3000.4 | 0 | 0.01 | 3000.2 | 0.01 | 0.01 |
| 3500 | 3500.0 | 3501.7 | 0 | 0.05 | 3500.9 | 0.02 | 0.03 |
| 4000 | 4019.5 | 4011.2 | 0.49 | 0.28 | 4015.4 | 0.38 | 0.15 |

NOTAS SOBRE CALIBRACION

1. - La Calibración se hizo según el Método C de la norma ISO 7500-1
2.- Ep y Rp son el Error Porcentual y la Repetibilidad definidos en la citada Norma:
   Ep = ((A-B) / B)* 100  Rp = Error( 2) - Error(1)
3. - La norma exige que Ep y Rp no excedan el +/- 1.0 %

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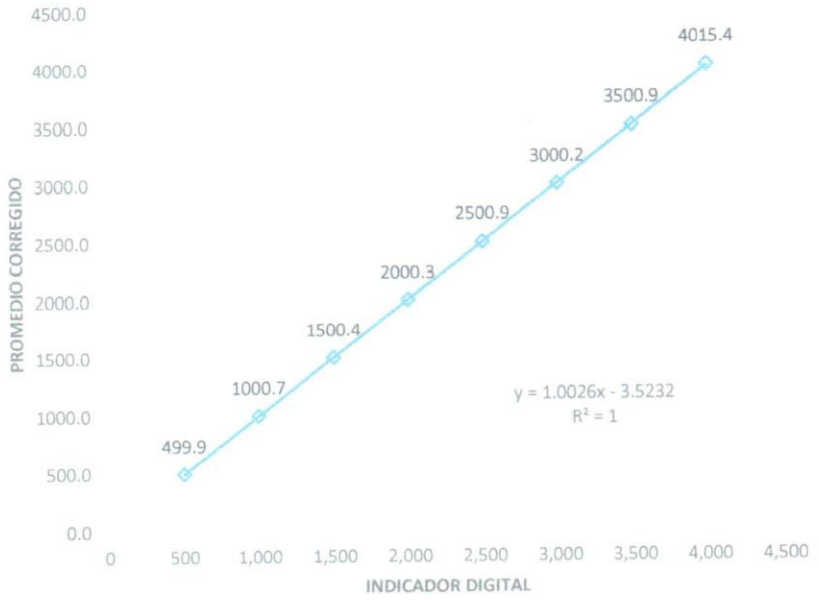
Arsou Group
Laboratorio de Metrología

**Gráfica (Coeficiente de correlación y Ecuación de Ajuste**

**GRAFICO N° 01**




Ecuación de ajuste:
Donde: **y = 1,0026x - 3,5232**
Coeficiente Correlación **$R^2$ = 1**

X : Lectura de la pantalla (kg)
Y : fuerza promedio (kg)

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. La incertidumbre de la medición ha sido calculada para un nivel de confianza de aproximadamente del 95 % con un factor de cobertura k=2 .
3. (*) Codigo indicado en una etiqueta adherida al instrumento.
4. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

**Fin de documento**

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Arevalo Flores

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**CERTIFICADO DE CALIBRACIÓN**
**N° LFP-074-2025**



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **CORTE DIRECTO CON CELDA DE CARGA** |
| Identificación | NO INDICA |
| Marca Corte Directo | PERUTEST |
| Modelo | PT-CD |
| Serie | 1043 |
| Marca Celda de Carga | NO INDICA |
| Serie | NO INDICA |
| Capacidad | 500 kg |
| Marca Indicador | NO INDICA |
| Modelo | NO INDICA |
| Serie | NO INDICA |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**
El procedimiento toma como referencia a la norma ISO 7500-1 "Metallic materials - Verification of static uniaxial testing machines", Se aplicaron dos series de carga al Sistema Digital mediante la misma prensa. En cada serie se registraron las lecturas de las cargas.

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

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**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| Patrones de referencia de PUCP | Celda de Carga de 100 TN | INF-LE N° 039-23 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºc | Final: 22 ºc |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

**TABLA N° 01**
**CALIBRACION DE ANILLO DE CARGA**

| SISTEMA DIGITAL "A" Kg | SERIES DE VERIFICACIÓN PATRON ( Kg) | | | | PROMEDIO "B" Kg | ERROR Ep % | RPTBLD Rp % |
|---|---|---|---|---|---|---|---|
| | SERIE (1) Kg | SERIE (2) Kg | ERROR (1) % | ERROR (2) % | | | |
| 10 | 10.2 | 10.6 | 2.0 | 6.00 | 10.4 | 4 | 2.72 |
| 50 | 20.6 | 20.3 | -58.8 | -59.40 | 20.5 | -59.10 | 1.04 |
| 100 | 31.5 | 30.8 | -68.5 | -69.20 | 31.2 | -68.85 | 1.59 |
| 150 | 41.2 | 40.4 | -72.5 | -73.07 | 40.8 | -72.80 | 1.39 |
| 200 | 50.7 | 52.6 | -74.7 | -73.70 | 51.7 | -74.18 | 2.60 |
| 250 | 60.8 | 59.6 | -75.7 | -76.16 | 60.2 | -75.92 | 1.41 |
| 300 | 70.3 | 73.1 | -76.6 | -75.63 | 71.7 | -76.10 | 2.76 |
| 350 | 80.4 | 79.1 | -77.0 | -77.40 | 79.8 | -77.21 | 1.15 |

NOTAS SOBRE CALIBRACION

1. - La Calibración se hizo según la norma ISO 7500-1
2.- Ep y Rp son el Error Porcentual y la Repetibilidad definidos en la citada Norma:
   Ep = ((A-B) / B)* 100  Rp = Error( 2) - Error(1)
3. - La norma exige que Ep y Rp no excedan el +/- 1.0 %

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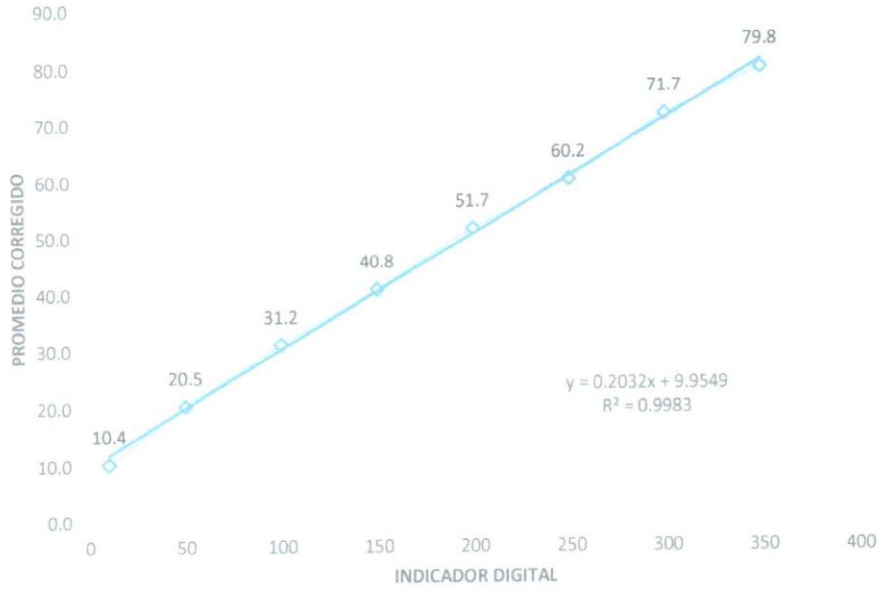
**Gráfica (Coeficiente de correlación y Ecuación de Ajuste**

**GRAFICO N° 01**




Ecuación de ajuste:
Donde: **y = 0,9996x + 0,7786**
Coeficiente Correlación: **$^2$ = 0,9992**

X : Lectura de la pantalla (kg)
Y : fuerza promedio (kg)

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**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.

2. La incertidumbre de la medición ha sido calculada para un nivel de confianza de aproximadamente del 95 % con un factor de cobertura k=2 .
3. (*) Codigo indicado en una etiqueta adherida al instrumento.
4. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

**Fin de documento**

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# CERTIFICADO DE CALIBRACIÓN
## N° LBS-660-2025



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **MOLDE PROCTOR DE 6"** |
| Identificación | NO INDICA |
| Marca | NO INDICA |
| Modelo | NO INDICA |
| Serie | MOD-01 |
| Estructura | FIERRO |
| Acabado | ZINCADO |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**

La calibración se efectuó por comparación directa tomando como referencia el procedimiento PC-012 5ta Ed. 2012., "Procedimiento de Calibración de Pie de Rey", del Instituto Nacional de Calidad - INACAL y la Norma ASTM D 1557 y MTC E 115 Compactación de Suelos en Laboratorio utilizando una energía modificada (56 000 pie-lb/pie3 [2 700 kN-m/m3]).

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

Este certificado no podrá ser reproducido o difundido parcialmente, excepto con autorización previa por escrito de ARSOU GROUP S.A.C.

Arsou Group S.A.C Laboratorio de Metrología

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[illegible]

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Laboratorio de Metrología

**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| DSI PERU AUTOMATION EIRL | Pie de Rey digital | L-0006-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

**TABLA N° 01**

**DIÁMETRO INTERIOR**

| PUNTO | MEDICIÓN | DIAMETRO ESPECIFICADO | EMP |
|---|---|---|---|
| N° 1 | 152.44 | 152.4 | +/- 0,66mm |
| N° 2 | 152.51 | 152.4 | +/- 0,66mm |
| N° 3 | 152.48 | 152.4 | +/- 0,66mm |
| N° 4 | 152.39 | 152.4 | +/- 0,66mm |

| PROMEDIO | 152.46 | : | OK |
|---|---|---|---|

**TABLA N° 02**

**ALTURA MEDIDO**

| PUNTO | MEDICIÓN | ALTURA ESPECIFICADO | EMP |
|---|---|---|---|
| N° 1 | 116.41 | 116.43 | +/- 0,5mm |
| N° 2 | 116.56 | 116.43 | +/- 0,5mm |
| N° 3 | 116.54 | 116.43 | +/- 0,5mm |
| N° 4 | 116.35 | 116.43 | +/- 0,5mm |

| PROMEDIO | 116.47 | : | OK |
|---|---|---|---|

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**TABLA N° 03**

**VOLUMEN**

| PUNTO | MEDICIÓN | VOLUMEN ESPECIFICADO | EMP |
|---|---|---|---|
| N° 1 | 2126 | 2124 | +/- 25 cc |

| PROMEDIO | 2126 | : | OK |
|---|---|---|---|

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

Arsou Group S.A.C Laboratorio de Metrología

**Fin de documento**

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# CERTIFICADO DE CALIBRACIÓN
## N° LBS-659-2025



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **MARTILLO PROCTOR DE 10 LB** |
| Identificación | NO INDICA |
| Marca | NO INDICA |
| Modelo | NO INDICA |
| Serie | MT-01 |
| Estructura | FIERRO |
| Acabado | ZINCADO |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**

La calibración se efectuó por comparación directa tomando como referencia el procedimiento PC-012 5ta Ed. 2012., "Procedimiento de Calibración de Pie de Rey", del Instituto Nacional de Calidad - INACAL y la Norma ASTM D 1557 y MTC E 115 Compactación de Suelos en Laboratorio utilizando una energía modificada (56 000 pie-lb/pie3 [2 700 kN-m/m3]).

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

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Arsou Group S.A.C
Laboratorio de Instrumentación

ARSOU GROUP S.A.C.
Ing. Fernando Arevalo Flores

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ventas@arsougroup.com
www.arsougroup.com

**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| DSI PERU AUTOMATION EIRL | Pie de Rey digital | L-0006-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 ºC | Final: 22 ºC |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

**TABLA N° 01**
**VERIFICACIÓN**

| | Promedio | Tolerancia | Resultado |
|---|---|---|---|
| Peso Martillo (g.) | 4535 | 4536 ± 9 | OK |
| Ø Cara Impacto (mm) | 50.77 | 50,8 ± 0,13 | OK |
| Altura de Caída (mm) | 457.1 | 457,2 ± 1,6 | OK |

**Observaciones**
1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

**Fin de documento**

ARSOU GROUP S.A.C.
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INGENIERO

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Arsou Group
Laboratorio de Metrología

**CERTIFICADO DE CALIBRACIÓN**
**N° LBS-655-2025**



| | |
|---|---|
| **Fecha de emisión** | 2025/07/15 |
| **Solicitante** | **LABORATORIO LINUS E.I.R.L.** |
| **Dirección** | CAL.MANUEL SEOANE NRO. 717 P.J. EL ROSARIO LAMBAYEQUE - LAMBAYEQUE - LAMBAYEQUE |
| **Instrumento de medición** | **COPA CASAGRANDE** |
| Identificación | NO INDICA |
| Marca | ORION |
| Modelo | COP-01 |
| Serie | 16011217 |
| Mecanismo | MANUAL |
| Procedencia | PERÚ |
| **Ubicación** | Laboratorio de suelos |
| **Lugar de calibración** | Instalaciones del cliente |
| **Fecha de calibración** | 2025/07/10 |

**Método/Procedimiento de calibración**

La calibración de efectuó por comparación directa tomando como referencia el procedimiento PC-012 5ta. Ed. , "Procedimiento de Calibración de Pie de Rey", del Instituto Nacional de la Calidad - INACAL y la Norma del MTC 110.

Este certificado de calibración documenta la trazabilidad a patrones nacionales o internacionales, que realizan las unidades de medida de acuerdo con el Sistema Internacional de Unidades (SI)

Los resultados son válidos en el momento de la calibración. Al solicitante le corresponde disponer en su momento recalibrar sus instrumentos a intervalos regulares, los cuales deben ser establecidos sobre la base de las características propias del instrumento, sus condiciones de uso, el mantenimiento realizado y conservación del instrumento de medición o de acuerdo a reglamentaciones vigentes.

ARSOU GROUP S.A.C. no se responsabiliza de los perjuicios que pueda ocasionar el uso inadecuado de este instrumento después de su calibración, ni de una incorrecta interpretación de los resultados de la calibración declarados en este documento.

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Arsou Group S.A.C Laboratorio de Metrología

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**Patrones e Instrumentos auxiliares**

| Trazabilidad | Patrón Utilizado | Certificado de Calibración |
|---|---|---|
| DSI PERU AUTOMATION EIRL | Pie de Rey digital | L-0006-2025 |

**Condiciones ambientales durante la calibración**

| | | |
|---|---|---|
| Temperatura Ambiental | Inicial: 22 °C | Final: 22 °C |
| Humedad Relativa | Inicial: 75 %hr | Final: 75 %hr |

**Resultados**

**IMAGEN N° 01**

| Aparato de Límite Líquido | | | | | | | | Ranurador | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Conjunto de la Cazuela | | | Base | | | | Extremo Curvado | | |
| Dimensiones | A | B | C | N | K | L | M | a | b | c |
| Descripción | Radio de la Copa | Espesor de la Copa | Profundidad de la Copa | Copa desde la guia del elevador hasta la base | Espesor | Largo | Ancho | Espesor | Borde Cortante | Ancho |
| Métrico, mm | 54 | 2.0 | 27 | 47 | 50 | 150 | 125 | 10.0 | 2.0 | 13.5 |
| Tolerancia, mm | 2 | 0.1 | 1 | 1.5 | 5 | 5 | 5 | 0.1 | 0.1 | 0.1 |
| Ingles, pulg. | 2.13 | 0.079 | 1.063 | 1.850 | 2 | 5.90 | 4.92 | 0.39 | 0.08 | 0.53 |
| Tolerancia, pulg. | 0.08 | 0.004 | 0.4 | 0.6 | 0.2 | 0.2 | 0.2 | 0.004 | 0.004 | 0.004 |

**TABLA N° 01**

**CAZUELA**

| DESCRIPCIÓN | DATO PROMEDIO (mm) | TOLERANCIA (mm) | RESULTADO |
|---|---|---|---|
| ESPESOR | 2.04 | +/- 0.1 | OK |
| PROFUNDIDAD | 26.71 | +/- 1 | OK |

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ARSOU GROUP S.A.C.
Josnel ... Arevalo Flores
...LOGIA

**TABLA N° 02**

**BASE**

| DESCRIPCIÓN | DATO PROMEDIO (mm) | TOLERANCIA (mm) | RESULTADO |
|---|---|---|---|
| GUÍA DEL ELEVADOR | 47.74 | +/- 1.5 | OK |
| ESPESOR | 47.38 | +/- 5 | OK |
| LARGO | 146.91 | +/- 5 | OK |
| ANCHO | 123.81 | +/- 5 | OK |
| HUELLA | 9.05 | +/- 13 | OK |

**TABLA N° 03**

**RANURADOR**

| DESCRIPCIÓN | DATO PROMEDIO (mm) | TOLERANCIA (mm) | RESULTADO |
|---|---|---|---|
| CALIBRADOR CUADRADO | 10.04 | +/- 0.2 | OK |
| ESPESOR | 10.09 | +/- 0.1 | OK |
| BORDE CORTANTE | 2.03 | +/- 0.1 | OK |
| ANCHO | 13.48 | +/- 0.1 | OK |

Arsou Group S.A.C Laboratorio de Metrología

**Observaciones**

1. Antes de la calibración no se realizó ningún tipo de ajuste.
2. (*) Codigo indicado en una etiqueta adherida al instrumento.
3. Con fines de identificación se colocó una etiqueta autoadhesiva con la indicación "CALIBRADO"

**Fin de documento**

ARSOU GROUP S.A.C.
Arevalo Flores
OGIA

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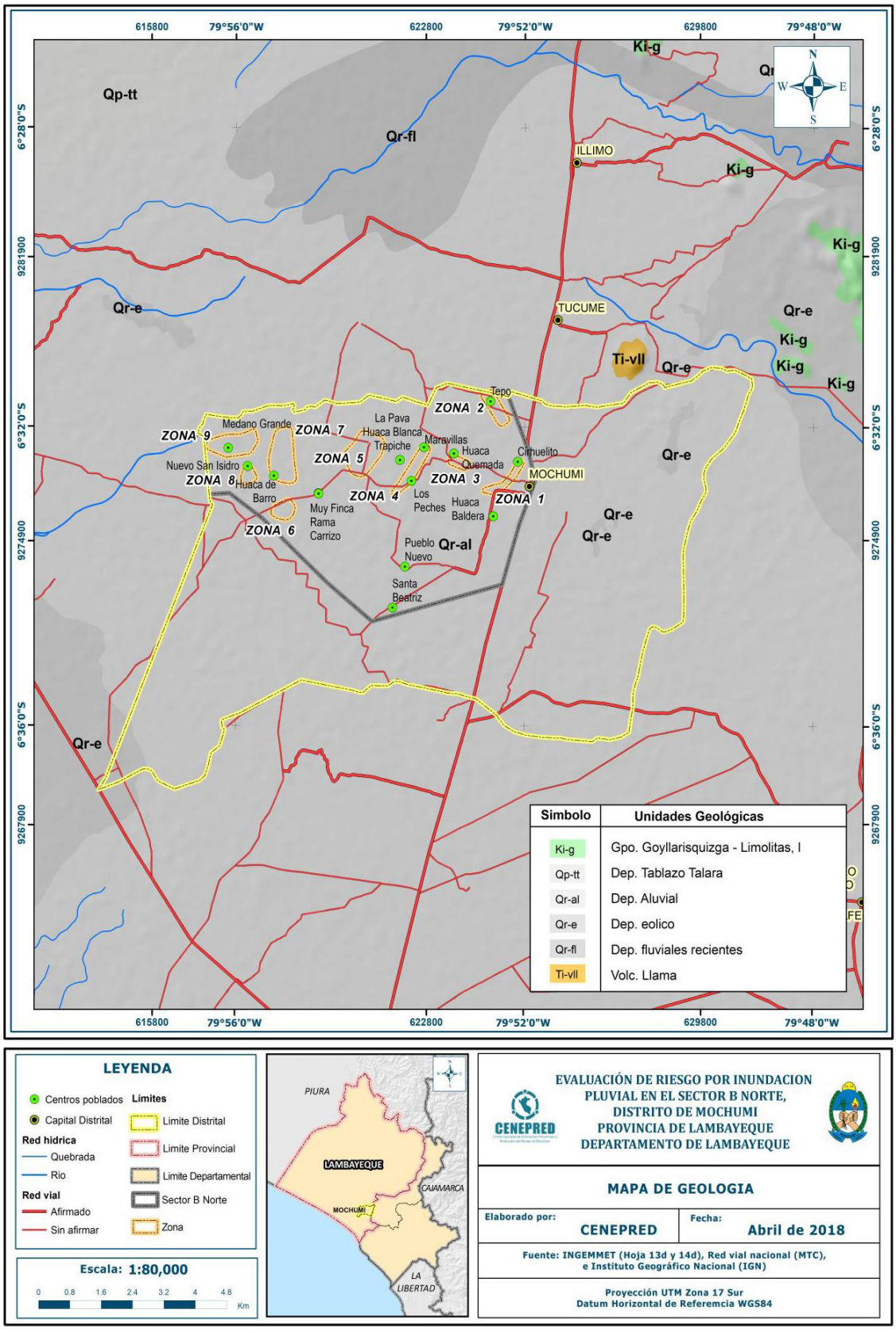
# ANEXO N°06.- ESTUDIO GEOLÓGICO

**Figura 4**

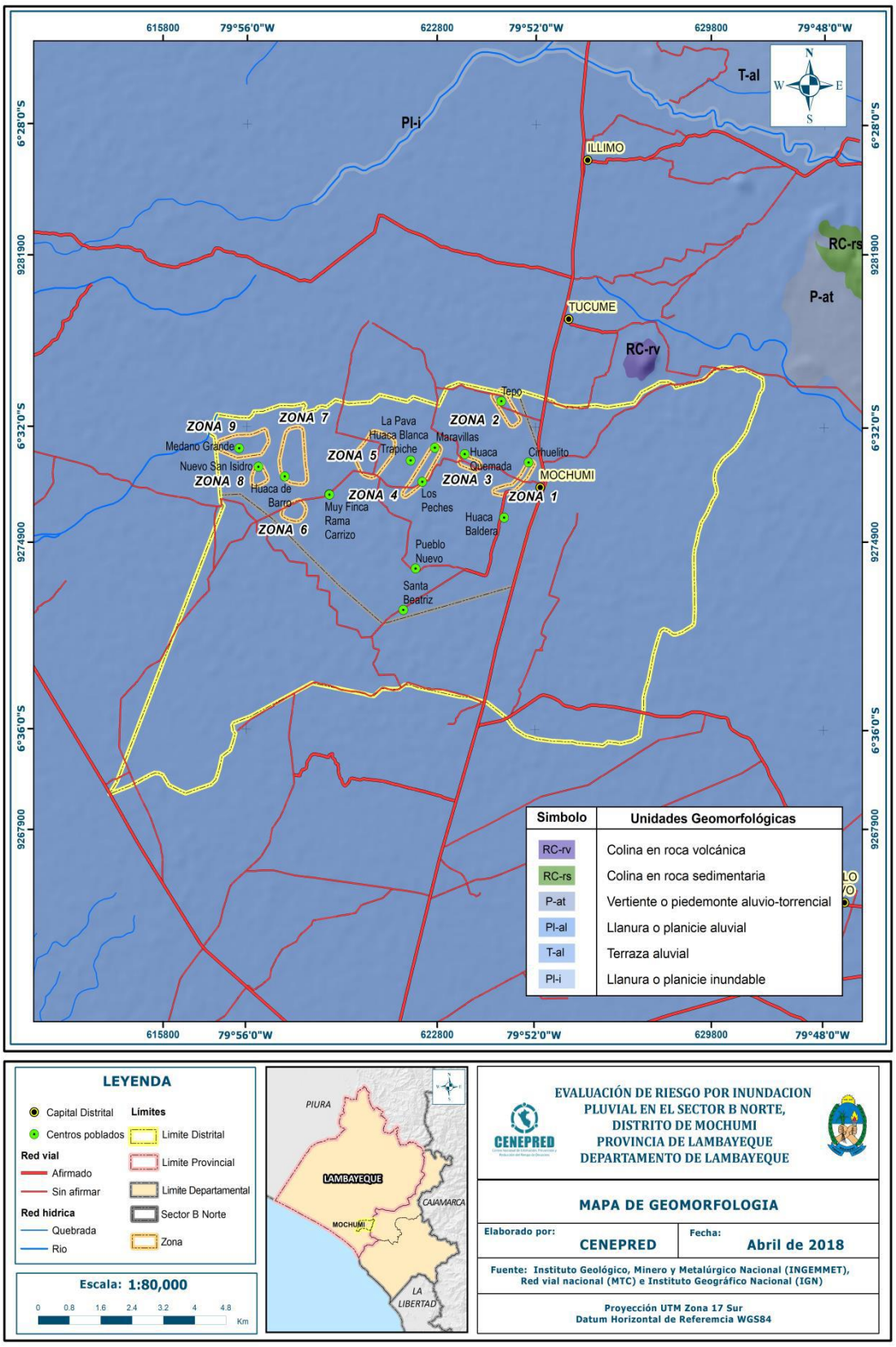
*Mapa de Geología del Distrito de Mochumí*




***Nota:*** *Información obtenida del Centro Nacional de Estimación, Prevención y Reducción del Riesgo de Desastres (CENEPRED).*

**Figura 5**

*Mapa de Geomorfológico del Distrito de Mochumí*




***Nota:*** *Información obtenida del Centro Nacional de Estimación, Prevención y Reducción del Riesgo de Desastres (CENEPRED).*

# ANEXO N°07.- ESTUDIO HIDROLÓGICO

## INFORMACIÓN HIDROLÓGICA – ESTACIÓN JAYANCA

SERVICIO NACIONAL DE METEOROLOGÍA E HIDROLOGÍA DEL PERÚ

Senamhi

### DIRECCION DE REDES DE OBSERVACION Y DATOS

ESTACION : JAYANCA (LA VIÑA) /000333/ DZ-02
PARAMETRO : **PRECIPITACION MAXIMA EN 24 HORAS (mm)**

LONG. : 79° 46' "W"
LAT. : 06° 19' "S"
ALT. : 78 msnm

DPTO. : LAMBAYEQUE
PROV. : LAMBAYEQUE
DIST. : JAYANCA

| AÑO | ENE | FEB | MAR | ABR | MAY | JUN | JUL | AGO | SET | OCT | NOV | DIC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 | 6.4 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | S/D | S/D | 0.0 | 0.0 | 0.0 | 0.5 |
| 1989 | 4.0 | 10.5 | 0.0 | 4.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.5 | 0.0 | 0.0 |
| 1990 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.5 | 4.0 | 0.0 |
| 1991 | 0.0 | 0.0 | 2.4 | 6.4 | 0.0 | 0.0 | S/D | S/D | S/D | 0.0 | 1.4 | 0.0 |
| 1992 | 0.8 | 0.0 | 6.1 | 28.1 | 1.6 | 0.0 | 0.0 | 0.0 | S/D | S/D | S/D | 6.0 |
| 1993 | 0.6 | 4.9 | 27.1 | 6.1 | 0.5 | S/D | S/D | S/D | 0.3 | 0.0 | 0.0 | 0.0 |
| 1994 | 2.6 | 9.7 | 23.6 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.7 | 1.9 | 0.0 | 0.5 |
| 1995 | 0.0 | 19.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | S/D | 0.3 | 1.5 | 2.3 |
| 1996 | 0.2 | 0.0 | 7.7 | 4.6 | 0.8 | 0.5 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| 1997 | 0.0 | 0.9 | 0.0 | 12.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 7.4 | 16.3 |
| 1998 | 59.6 | 92.7 | 96.3 | 26.0 | 5.2 | 0.4 | 0.0 | 0.0 | 2.1 | 0.0 | 0.0 | 0.3 |
| 1999 | 1.6 | 39.5 | 2.2 | 10.1 | 4.1 | 2.6 | 0.0 | 0.0 | 3.9 | 0.5 | 0.2 | 3.9 |
| 2000 | 1.5 | 0.7 | 12.4 | 9.5 | 0.0 | 0.8 | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 | 2.8 |
| 2001 | 5.1 | 9.2 | 41.6 | S/D | 0.0 | 0.3 | 0.6 | 0.0 | 0.0 | 0.9 | 0.9 | 0.8 |

S/D = Sin Dato

INFORMACION PREPARADA PARA CONSORCIO RIO OLMOS COPE
LIMA, 02 DE MAYO DEL 2019

N° PRES/SOLIC: 201903000161 /201904000042 3026

SUBDIRECCION DE GESTION DE DATOS
SENAMHI

VÁLIDO SÓLO EN ORIGINAL

***Nota:*** Elaborado con base en información del SENAMHI, tomada del Expediente Técnico *"Mejoramiento de la carretera Capilla San José - La Pava - San Carlos del Distrito de Mochumi - Provincia de Lambayeque - Departamento de Lambayeque"*.

**INFORMACIÓN HIDROLÓGICA – ESTACIÓN JAYANCA**

SERVICIO NACIONAL DE METEOROLOGÍA E HIDROLOGÍA DEL PERÚ

Senamhi

## DIRECCION DE REDES DE OBSERVACION Y DATOS

ESTACION : JAYANCA (LA VIÑA) /000333/ DZ-02
PARAMETRO : **PRECIPITACION MAXIMA EN 24 HORAS (mm)**

LONG. : 79° 46' "W"
LAT. : 06° 19' "S"
ALT. : 78 msnm

DPTO. : LAMBAYEQUE
PROV. : LAMBAYEQUE
DIST. : JAYANCA

| AÑO | ENE | FEB | MAR | ABR | MAY | JUN | JUL | AGO | SET | OCT | NOV | DIC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 | 0.0 | 23.3 | 52.1 | 35.3 | 0.0 | S/D | S/D | S/D | 0.0 | 0.9 | 6.8 | 0.0 |
| 2003 | 3.6 | 29.9 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 0.0 | 0.8 | 2.5 |
| 2004 | 0.4 | 1.6 | S/D | 2.6 | S/D | 0.0 | 5.0 | 0.0 | 1.5 | 2.5 | 0.2 | 8.2 |
| 2005 | 0.6 | 3.5 | 9.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 1.7 | 0.0 |
| 2006 | 7.8 | 2.8 | 45.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 | 0.0 |
| 2007 | 0.8 | 0.0 | 2.4 | 2.4 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 2.3 | 2.4 | 0.0 |
| 2008 | 2.1 | 12.0 | 52.2 | 2.7 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 5.4 | S/D |
| 2009 | 4.9 | 6.7 | 18.0 | 0.6 | 4.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| 2010 | 0.0 | 57.4 | 4.7 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.7 | 3.4 | 0.0 |
| 2011 | 9.0 | 1.0 | 0.0 | 9.1 | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.5 |
| 2012 | 2.8 | 68.0 | 46.3 | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 | 1.2 | 2.2 |
| 2013 | 2.0 | 2.0 | 8.2 | 0.0 | 9.8 | 0.0 | S/D | 0.0 | 0.0 | 1.2 | 0.0 | 2.0 |
| 2014 | 0.0 | 0.0 | 0.8 | 0.7 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 5.6 | 0.0 |
| 2015 | 2.0 | 4.5 | 38.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.5 | 0.0 |
| 2016 | 5.2 | 11.5 | 7.0 | 8.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2017 | 25.9 | 120.8 | 113.0 | 10.0 | 11.3 | 0.0 | 0.0 | 0.0 | 0.0 | 2.6 | 0.0 | 0.0 |
| 2018 | 1.7 | 0.0 | 1.0 | 3.8 | 1.3 | 0.0 | 0.0 | 0.0 | S/D | 0.0 | 5.1 | 1.5 |

S/D = Sin Dato

INFORMACION PREPARADA PARA CONSORCIO RIO OLMOS COPE
LIMA, 02 DE MAYO DEL 2019

N° PRES/SOLIC: 201903000161 /201904000042 3027

SUBDIRECCION DE GESTION DE DATOS
SENAMHI

VÁLIDO SÓLO EN ORIGINAL

***Nota:*** Elaborado con base en información del SENAMHI, tomada del Expediente Técnico *"Mejoramiento de la carretera Capilla San José - La Pava - San Carlos del Distrito de Mochumi - Provincia de Lambayeque - Departamento de Lambayeque"*.

**INFORMACIÓN HIDROLÓGICA – ESTACIÓN JAYANCA**

SERVICIO NACIONAL DE METEOROLOGÍA E HIDROLOGÍA DEL PERÚ

DIRECCION DE REDES DE OBSERVACION Y DATOS

ESTACION : JAYANCA / 000333 / DZ-02
PARAMETRO : PRECIPITACION MAXIMA EN 24 HORAS (mm)

LAT. : 6° 19´ "S"
LONG. : 79° 46´ "W"
ALT. : 78 msnm

DPTO. : LAMBAYEQUE
PROV. : LAMBAYEQUE
DIST. : JAYANCA

| AÑO | ENE. | FEB. | MAR. | ABR. | MAY. | JUN. | JUL. | AGO. | SET. | OCT. | NOV. | DIC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2018 | 1.7 | 0.0 | 1.0 | 3.8 | 1.3 | 0.0 | 0.0 | 0.0 | S/D | 0.0 | 5.1 | 1.5 |
| 2019 | 0.2 | 70.5 | 9.0 | 18.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.4 |
| 2020 | 0.0 | 0.0 | S/D | 3.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 |
| 2021 | 0.0 | 0.0 | 14.4 | 15.4 | 2.8 | 0.8 | 0.0 | 1.3 | 3.0 | 0.0 | 1.2 | 2.8 |

S/D= Sin Dato

INFORMACIÓN PREPARADA PARA: MAMANI TTITO VIDAL AMERICO
LIMA, 18 de Noviembre de 2022

N° PRES / SOLIC. PROC: 202211000036/202211000021
EXP: 7465 N° IMPRESION: 17285

***Nota:*** Elaborado con base en información del SENAMHI, tomada del Expediente Técnico N.º 2: *"Construcción del Puente Peatonal La Pilca, Distrito de Olmos – Provincia de Lambayeque – Departamento de Lambayeque"*.

## INFORMACIÓN HIDROLÓGICA – ESTACIÓN JAYANCA

Información de precipitación máxima en 24 horas, proporcionada por el SENAMHI

- **Estación:** Jayanca/000333/DZ02
- **Número de expediente:** 2026-0009650
- **Periodo:** 2019 - 2025

**UNIDAD DE ATENCION AL CIUDADANO Y GESTION DOCUMENTAL**

ESTACIÓN: JAYANCA/000333/DZ02 ALT: 78 MSNM LONG: 79° 46' 7.29"

LAT: 6° 19' 53.73" DPTO: LAMBAYEQUE

PT202 PRECIPITACION MAXIMA EN 24 HORAS

| CODIGO | PLANILLA | VARIABLE | AÑO | ENE | FEB | MAR | ABR | MAY | JUN | JUL | AGO | SET | OCT | NOV | DIC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 333 | 52 | PT202 | 2019 | 0.2 | 70.5 | 9 | 18.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3.4 |
| 333 | 52 | PT202 | 2020 | 0 | 0 | S/D | 3.2 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 4.8 |
| 333 | 52 | PT202 | 2021 | 0 | 0 | 14.4 | 15.4 | 2.8 | 0.8 | 0 | 1.3 | 3 | 0 | 1.2 | 2.8 |
| 333 | 52 | PT202 | 2022 | 0 | 2.1 | 5.4 | 0.4 | 0.6 | 0 | 2.5 | S/D | 0 | 0.2 | 0 | 0 |
| 333 | 52 | PT202 | 2023 | 0 | 28.3 | 115.5 | 85.3 | 0 | 0 | 0 | 0 | 0 | 8.2 | 6.4 | 2.4 |
| 333 | 52 | PT202 | 2024 | 2.4 | 2.8 | 0 | 0 | 0 | 0 | 0 | 0 | 2.3 | 0 | 1.2 | 1.5 |
| 333 | 52 | PT202 | 2025 | S/D | 18.2 | 30.7 | 2.8 | 0 | 0 | 0 | 0 | 0 | 1 | 12.2 | 4.8 |

***Nota:*** SENAMHI

| "Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque" | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nombre de la estación | Tipo | Entidad operativa | Ubicación | | Altitud | Distrito | Provincia | Departamento | Periodo de registro |
| | | | Latitud | Longuitud | | | | | |
| JAYANCA | CONV - MET | SENAMHI | 6°19'53.73" S | 79°46'7.29" W | 78 (msnm) | Jayanca | Lambayeque | Lambayeque | 1988 - 2025 |

**Serie histórica disponible de precipitaciones máximas en 24 horas (mm) - Estación Jayanca - SENAMHI sin correguir**

**PRECIPITACIÓN MAXIMA EN 24 HORAS (mm) - ESTACIÓN JAYANCA**

**ESTACIÓN:** JAYANCA — **Latitud:** 6°19'53.73''' S — **Departamento:** Lambayeque
**ESTADO:** -------- — **Longitud:** 79°46'7.29'' W — **Provincia:** Lambayeque
**FUENTE:** SENAMHI — **Altitud:** 78 (msnm) — **Distrito:** Jayanca

| AÑOS | ENE | FEB | MAR | ABR | MAY | JUN | JUL | AGOS | SEP | OCT | NOV | DIC | MÁXIMO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 | 6.40 | 0.00 | 0.00 | 0.00 | 0.70 | 0.00 | S/D | S/D | 0.00 | 0.00 | 0.00 | 0.50 | **6.40** |
| 1989 | 4.00 | 10.50 | 0.00 | 4.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.50 | 0.00 | 0.00 | **10.50** |
| 1990 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.50 | 4.00 | 0.00 | **6.50** |
| 1991 | 0.00 | 0.00 | 2.40 | 6.40 | 0.00 | 0.00 | S/D | S/D | S/D | 0.00 | 1.40 | 0.00 | **6.40** |
| 1992 | 0.80 | 0.00 | 6.10 | 28.10 | 1.60 | 0.00 | 0.00 | 0.00 | S/D | S/D | S/D | 6.00 | **28.10** |
| 1993 | 0.60 | 4.90 | 27.10 | 6.10 | 0.50 | S/D | S/D | S/D | 0.30 | 0.00 | 0.00 | 0.00 | **27.10** |
| 1994 | 2.60 | 9.70 | 23.60 | 0.00 | 0.80 | 0.00 | 0.00 | 0.00 | 0.70 | 1.90 | 0.00 | 0.50 | **23.60** |
| 1995 | 0.00 | 19.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | S/D | 0.30 | 1.50 | 2.30 | **19.50** |
| 1996 | 0.20 | 0.00 | 7.70 | 4.60 | 0.80 | 0.50 | 0.00 | 0.00 | 0.00 | 0.50 | 0.00 | 0.00 | **7.70** |
| 1997 | 0.00 | 0.90 | 0.00 | 12.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.70 | 0.00 | 7.40 | 16.30 | **16.30** |
| 1998 | 59.60 | 92.70 | 96.30 | 26.00 | 5.20 | 0.40 | 0.00 | 0.00 | 2.10 | 0.00 | 0.00 | 0.30 | **96.30** |
| 1999 | 1.60 | 39.50 | 2.20 | 10.10 | 4.10 | 2.60 | 0.00 | 0.00 | 3.90 | 0.50 | 0.20 | 3.90 | **39.50** |
| 2000 | 1.50 | 0.70 | 12.40 | 9.50 | 0.00 | 0.80 | 0.00 | 1.10 | 0.00 | 0.00 | 0.00 | 2.80 | **12.40** |
| 2001 | 5.10 | 9.20 | 41.60 | S/D | 0.00 | 0.30 | 0.60 | 0.00 | 0.00 | 0.90 | 0.90 | 0.80 | **41.60** |
| 2002 | 0.00 | 23.30 | 52.10 | 35.30 | 0.00 | S/D | S/D | S/D | 0.00 | 0.90 | 6.80 | 0.00 | **52.10** |
| 2003 | 3.60 | 29.90 | 0.00 | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 1.20 | 0.00 | 0.80 | 2.50 | **29.90** |
| 2004 | 0.40 | 1.60 | S/D | 2.60 | S/D | 0.00 | 5.00 | 0.00 | 1.50 | 2.50 | 0.20 | 8.20 | **8.20** |
| 2005 | 0.60 | 3.50 | 9.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.80 | 1.70 | 0.00 | **9.40** |
| 2006 | 7.80 | 2.80 | 45.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.20 | 0.00 | **45.10** |
| 2007 | 0.80 | 0.00 | 2.40 | 2.40 | 0.70 | 0.00 | 0.00 | 0.00 | 0.00 | 2.30 | 2.40 | 0.00 | **2.40** |
| 2008 | 2.10 | 12.00 | 52.20 | 2.70 | 0.00 | 0.00 | 0.30 | 0.00 | 0.00 | 0.00 | 5.40 | S/D | **52.20** |
| 2009 | 4.90 | 6.70 | 18.00 | 0.60 | 4.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.00 | **18.00** |
| 2010 | 0.00 | 57.40 | 4.70 | 4.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.70 | 3.40 | 0.00 | **57.40** |
| 2011 | 9.00 | 1.00 | 0.00 | 9.10 | 1.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.50 | **9.10** |
| 2012 | 2.80 | 68.00 | 46.30 | 4.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.70 | 1.20 | 2.20 | **68.00** |
| 2013 | 2.00 | 2.00 | 8.20 | 0.00 | 9.80 | 0.00 | S/D | 0.00 | 0.00 | 1.20 | 0.00 | 2.00 | **9.80** |
| 2014 | 0.00 | 0.00 | 0.80 | 0.70 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.50 | 5.60 | 0.00 | **5.60** |
| 2015 | 2.00 | 4.50 | 38.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.50 | 0.00 | **38.30** |
| 2016 | 5.20 | 11.50 | 7.00 | 8.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **11.50** |
| 2017 | 25.90 | 120.80 | 113.00 | 10.00 | 11.30 | 0.00 | 0.00 | 0.00 | 0.00 | 2.60 | 0.00 | 0.00 | **120.80** |
| 2018 | 1.70 | 0.00 | 1.00 | 3.80 | 1.30 | 0.00 | 0.00 | 0.00 | S/D | 0.00 | 5.10 | 1.50 | **5.10** |
| 2019 | 0.20 | 70.50 | 9.00 | 18.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.40 | **70.50** |
| 2020 | 0.00 | 0.00 | S/D | 3.20 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.80 | **4.80** |
| 2021 | 0.00 | 0.00 | 14.40 | 15.40 | 2.80 | 0.80 | 0.00 | 1.30 | 3.00 | 0.00 | 1.20 | 2.80 | **15.40** |
| 2022 | 0.00 | 2.10 | 5.40 | 0.40 | 0.60 | 0.00 | 2.50 | S/D | 0.00 | 0.20 | 0.00 | 0.00 | **5.40** |
| 2023 | 0.00 | 28.30 | 115.50 | 85.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.20 | 6.40 | 2.40 | **115.50** |
| 2024 | 2.40 | 2.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.30 | 0.00 | 1.20 | 1.50 | **2.80** |
| 2025 | S/D | 18.20 | 30.70 | 2.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 12.20 | 4.80 | **30.70** |
| **PROM** | **4.16** | **17.22** | **22.03** | **8.61** | **1.30** | **0.15** | **0.25** | **0.07** | **0.46** | **1.13** | **2.13** | **1.92** | |
| **DESV EST** | **10.43** | **28.48** | **31.22** | **15.49** | **2.60** | **0.47** | **0.96** | **0.29** | **0.98** | **1.93** | **2.84** | **3.14** | |
| **MAX** | **59.60** | **120.80** | **115.50** | **85.30** | **11.30** | **2.60** | **5.00** | **1.30** | **3.90** | **8.20** | **12.20** | **16.30** | |
| **MIN** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | |
| **N° DE DATOS** | **37** | **38** | **36** | **37** | **37** | **36** | **33** | **33** | **34** | **37** | **37** | **37** | |

**Serie histórica disponible de precipitaciones maximas en 24 horas (mm) - Estación Jayanca - SENAMHI corregido**

**PRECIPITACION MAXIMA EN 24 HORAS (mm) - ESTACIÓN JAYANCA**

**ESTACIÓN:** JAYANCA — **Latitud:** 6°19'53.73''' S — **Departamento:** Lambayeque
**ESTADO:** -------- — **Longitud:** 79°46'7.29'' W — **Provincia:** Lambayeque
**FUENTE:** SENAMHI — **Altitud:** 78 (msnm) — **Distrito:** Jayanca

| AÑOS | ENE | FEB | MAR | ABR | MAY | JUN | JUL | AGOS | SEP | OCT | NOV | DIC | MÁXIMO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 | 6.40 | 0.00 | 0.00 | 0.00 | 0.70 | 0.00 | 0.25 | 0.07 | 0.00 | 0.00 | 0.00 | 0.50 | **6.40** |
| 1989 | 4.00 | 10.50 | 0.00 | 4.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.50 | 0.00 | 0.00 | **10.50** |
| 1990 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.50 | 4.00 | 0.00 | **6.50** |
| 1991 | 0.00 | 0.00 | 2.40 | 6.40 | 0.00 | 0.00 | 0.25 | 0.07 | 0.46 | 0.00 | 1.40 | 0.00 | **6.40** |
| 1992 | 0.80 | 0.00 | 6.10 | 28.10 | 1.60 | 0.00 | 0.00 | 0.00 | 0.46 | 1.13 | 2.13 | 6.00 | **28.10** |
| 1993 | 0.60 | 4.90 | 27.10 | 6.10 | 0.50 | 0.15 | 0.25 | 0.07 | 0.30 | 0.00 | 0.00 | 0.00 | **27.10** |
| 1994 | 2.60 | 9.70 | 23.60 | 0.00 | 0.80 | 0.00 | 0.00 | 0.00 | 0.70 | 1.90 | 0.00 | 0.50 | **23.60** |
| 1995 | 0.00 | 19.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.46 | 0.30 | 1.50 | 2.30 | **19.50** |
| 1996 | 0.20 | 0.00 | 7.70 | 4.60 | 0.80 | 0.50 | 0.00 | 0.00 | 0.00 | 0.50 | 0.00 | 0.00 | **7.70** |
| 1997 | 0.00 | 0.90 | 0.00 | 12.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.70 | 0.00 | 7.40 | 16.30 | **16.30** |
| 1998 | 59.60 | 92.70 | 96.30 | 26.00 | 5.20 | 0.40 | 0.00 | 0.00 | 2.10 | 0.00 | 0.00 | 0.30 | **96.30** |
| 1999 | 1.60 | 39.50 | 2.20 | 10.10 | 4.10 | 2.60 | 0.00 | 0.00 | 3.90 | 0.50 | 0.20 | 3.90 | **39.50** |
| 2000 | 1.50 | 0.70 | 12.40 | 9.50 | 0.00 | 0.80 | 0.00 | 1.10 | 0.00 | 0.00 | 0.00 | 2.80 | **12.40** |
| 2001 | 5.10 | 9.20 | 41.60 | 8.61 | 0.00 | 0.30 | 0.60 | 0.00 | 0.00 | 0.90 | 0.90 | 0.80 | **41.60** |
| 2002 | 0.00 | 23.30 | 52.10 | 35.30 | 0.00 | 0.15 | 0.25 | 0.07 | 0.00 | 0.90 | 6.80 | 0.00 | **52.10** |
| 2003 | 3.60 | 29.90 | 0.00 | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 1.20 | 0.00 | 0.80 | 2.50 | **29.90** |
| 2004 | 0.40 | 1.60 | 22.03 | 2.60 | 1.30 | 0.00 | 5.00 | 0.00 | 1.50 | 2.50 | 0.20 | 8.20 | **22.03** |
| 2005 | 0.60 | 3.50 | 9.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.80 | 1.70 | 0.00 | **9.40** |
| 2006 | 7.80 | 2.80 | 45.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.20 | 0.00 | **45.10** |
| 2007 | 0.80 | 0.00 | 2.40 | 2.40 | 0.70 | 0.00 | 0.00 | 0.00 | 0.00 | 2.30 | 2.40 | 0.00 | **2.40** |
| 2008 | 2.10 | 12.00 | 52.20 | 2.70 | 0.00 | 0.00 | 0.30 | 0.00 | 0.00 | 0.00 | 5.40 | 1.92 | **52.20** |
| 2009 | 4.90 | 6.70 | 18.00 | 0.60 | 4.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.00 | **18.00** |
| 2010 | 0.00 | 57.40 | 4.70 | 4.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.70 | 3.40 | 0.00 | **57.40** |
| 2011 | 9.00 | 1.00 | 0.00 | 9.10 | 1.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.50 | **9.10** |
| 2012 | 2.80 | 68.00 | 46.30 | 4.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.70 | 1.20 | 2.20 | **68.00** |
| 2013 | 2.00 | 2.00 | 8.20 | 0.00 | 9.80 | 0.00 | 0.25 | 0.00 | 0.00 | 1.20 | 0.00 | 2.00 | **9.80** |
| 2014 | 0.00 | 0.00 | 0.80 | 0.70 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.50 | 5.60 | 0.00 | **5.60** |
| 2015 | 2.00 | 4.50 | 38.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.50 | 0.00 | **38.30** |
| 2016 | 5.20 | 11.50 | 7.00 | 8.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **11.50** |
| 2017 | 25.90 | 120.80 | 113.00 | 10.00 | 11.30 | 0.00 | 0.00 | 0.00 | 0.00 | 2.60 | 0.00 | 0.00 | **120.80** |
| 2018 | 1.70 | 0.00 | 1.00 | 3.80 | 1.30 | 0.00 | 0.00 | 0.00 | 0.46 | 0.00 | 5.10 | 1.50 | **5.10** |
| 2019 | 0.20 | 70.50 | 9.00 | 18.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.40 | **70.50** |
| 2020 | 0.00 | 0.00 | 22.03 | 3.20 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.80 | **22.03** |
| 2021 | 0.00 | 0.00 | 14.40 | 15.40 | 2.80 | 0.80 | 0.00 | 1.30 | 3.00 | 0.00 | 1.20 | 2.80 | **15.40** |
| 2022 | 0.00 | 2.10 | 5.40 | 0.40 | 0.60 | 0.00 | 2.50 | 0.07 | 0.00 | 0.20 | 0.00 | 0.00 | **5.40** |
| 2023 | 0.00 | 28.30 | 115.50 | 85.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.20 | 6.40 | 2.40 | **115.50** |
| 2024 | 2.40 | 2.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.30 | 0.00 | 1.20 | 1.50 | **2.80** |
| 2025 | 4.16 | 18.20 | 30.70 | 2.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 12.20 | 4.80 | **30.70** |
| **PROM** | **4.16** | **17.22** | **22.03** | **8.61** | **1.30** | **0.15** | **0.25** | **0.07** | **0.46** | **1.13** | **2.13** | **1.92** | |
| **DESV EST** | **10.29** | **28.48** | **30.36** | **15.28** | **2.57** | **0.46** | **0.89** | **0.27** | **0.92** | **1.90** | **2.80** | **3.10** | |
| **MAX** | **59.60** | **120.80** | **115.50** | **85.30** | **11.30** | **2.60** | **5.00** | **1.30** | **3.90** | **8.20** | **12.20** | **16.30** | |
| **MIN** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | |
| **N° DE DATOS** | **38** | **38** | **38** | **38** | **38** | **38** | **38** | **38** | **38** | **38** | **38** | **38** | |

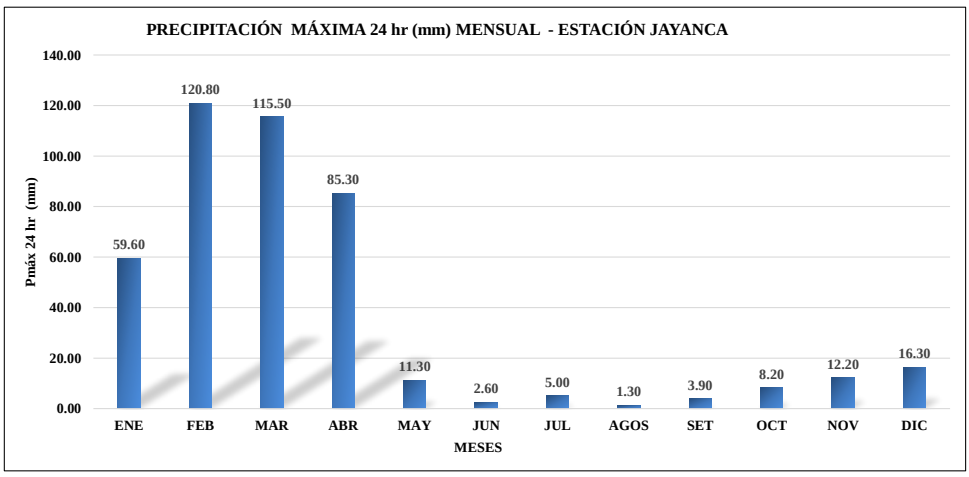
| "Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque" | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Nombre de la estación | Tipo | Entidad operativa | Ubicación | | Altitud | Distrito | Provincia | Departamento | Periodo de registro |
| | | | Latitud | Longitud | | | | | |
| JAYANCA | CONV - MET | SENAMHI | 6°19'53.73" S | 79°46'7.29" W | 78 (msnm) | Jayanca | Lambayeque | Lambayeque | 1988- 2025 |

Cuadro. Serie histórica disponible de precipitaciones maximas en 24 horas (mm) - Estacion Jayanca - SENAMHI

**PRECIPITACIÓN MAXIMA EN 24 HORAS (mm)**

| | | | | | |
|---|---|---|---|---|---|
| **ESTACIÓN:** | **JAYANCA** | **LATITUD:** | **6°19'53.73'' S** | **Departamento:** | **Lambayeque** |
| **ESTADO:** | -------- | **LONGUITU** | **79°46'7.29'' W** | **Provincia:** | **Lambayeque** |
| **FUENTE:** | **SENAMHI** | **ALTITUD:** | **78 m.s.n.m** | **Distrito:** | **Jayanca** |

| AÑOS | ENE | FEB | MAR | ABR | MAY | JUN | JUL | AGOS | SET | OCT | NOV | DIC | MÁXIMO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 | 6.40 | 0.00 | 0.00 | 0.00 | 0.70 | 0.00 | 0.25 | 0.07 | 0.00 | 0.00 | 0.00 | 0.50 | **6.40** |
| 1989 | 4.00 | 10.50 | 0.00 | 4.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.50 | 0.00 | 0.00 | **10.50** |
| 1990 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.50 | 4.00 | 0.00 | **6.50** |
| 1991 | 0.00 | 0.00 | 2.40 | 6.40 | 0.00 | 0.00 | 0.25 | 0.07 | 0.46 | 0.00 | 1.40 | 0.00 | **6.40** |
| 1992 | 0.80 | 0.00 | 6.10 | 28.10 | 1.60 | 0.00 | 0.00 | 0.00 | 0.46 | 1.13 | 2.13 | 6.00 | **28.10** |
| 1993 | 0.60 | 4.90 | 27.10 | 6.10 | 0.50 | 0.15 | 0.25 | 0.07 | 0.30 | 0.00 | 0.00 | 0.00 | **27.10** |
| 1994 | 2.60 | 9.70 | 23.60 | 0.00 | 0.80 | 0.00 | 0.00 | 0.00 | 0.70 | 1.90 | 0.00 | 0.50 | **23.60** |
| 1995 | 0.00 | 19.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.46 | 0.30 | 1.50 | 2.30 | **19.50** |
| 1996 | 0.20 | 0.00 | 7.70 | 4.60 | 0.80 | 0.50 | 0.00 | 0.00 | 0.00 | 0.50 | 0.00 | 0.00 | **7.70** |
| 1997 | 0.00 | 0.90 | 0.00 | 12.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.70 | 0.00 | 7.40 | 16.30 | **16.30** |
| 1998 | 59.60 | 92.70 | 96.30 | 26.00 | 5.20 | 0.40 | 0.00 | 0.00 | 2.10 | 0.00 | 0.00 | 0.30 | **96.30** |
| 1999 | 1.60 | 39.50 | 2.20 | 10.10 | 4.10 | 2.60 | 0.00 | 0.00 | 3.90 | 0.50 | 0.20 | 3.90 | **39.50** |
| 2000 | 1.50 | 0.70 | 12.40 | 9.50 | 0.00 | 0.80 | 0.00 | 1.10 | 0.00 | 0.00 | 0.00 | 2.80 | **12.40** |
| 2001 | 5.10 | 9.20 | 41.60 | 8.61 | 0.00 | 0.30 | 0.60 | 0.00 | 0.00 | 0.90 | 0.90 | 0.80 | **41.60** |
| 2002 | 0.00 | 23.30 | 52.10 | 35.30 | 0.00 | 0.15 | 0.25 | 0.07 | 0.00 | 0.90 | 6.80 | 0.00 | **52.10** |
| 2003 | 3.60 | 29.90 | 0.00 | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 1.20 | 0.00 | 0.80 | 2.50 | **29.90** |
| 2004 | 0.40 | 1.60 | 22.03 | 2.60 | 1.30 | 0.00 | 5.00 | 0.00 | 1.50 | 2.50 | 0.20 | 8.20 | **22.03** |
| 2005 | 0.60 | 3.50 | 9.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.80 | 1.70 | 0.00 | **9.40** |
| 2006 | 7.80 | 2.80 | 45.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.20 | 0.00 | **45.10** |
| 2007 | 0.80 | 0.00 | 2.40 | 2.40 | 0.70 | 0.00 | 0.00 | 0.00 | 0.00 | 2.30 | 2.40 | 0.00 | **2.40** |
| 2008 | 2.10 | 12.00 | 52.20 | 2.70 | 0.00 | 0.00 | 0.30 | 0.00 | 0.00 | 0.00 | 5.40 | 1.92 | **52.20** |
| 2009 | 4.90 | 6.70 | 18.00 | 0.60 | 4.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.00 | **18.00** |
| 2010 | 0.00 | 57.40 | 4.70 | 4.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.70 | 3.40 | 0.00 | **57.40** |
| 2011 | 9.00 | 1.00 | 0.00 | 9.10 | 1.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.50 | **9.10** |
| 2012 | 2.80 | 68.00 | 46.30 | 4.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.70 | 1.20 | 2.20 | **68.00** |
| 2013 | 2.00 | 2.00 | 8.20 | 0.00 | 9.80 | 0.00 | 0.25 | 0.00 | 0.00 | 1.20 | 0.00 | 2.00 | **9.80** |
| 2014 | 0.00 | 0.00 | 0.80 | 0.70 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.50 | 5.60 | 0.00 | **5.60** |
| 2015 | 2.00 | 4.50 | 38.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.50 | 0.00 | **38.30** |
| 2016 | 5.20 | 11.50 | 7.00 | 8.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **11.50** |
| 2017 | 25.90 | 120.80 | 113.00 | 10.00 | 11.30 | 0.00 | 0.00 | 0.00 | 0.00 | 2.60 | 0.00 | 0.00 | **120.80** |
| 2018 | 1.70 | 0.00 | 1.00 | 3.80 | 1.30 | 0.00 | 0.00 | 0.00 | 0.46 | 0.00 | 5.10 | 1.50 | **5.10** |
| 2019 | 0.20 | 70.50 | 9.00 | 18.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.40 | **70.50** |
| 2020 | 0.00 | 0.00 | 22.03 | 3.20 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.80 | **22.03** |
| 2021 | 0.00 | 0.00 | 14.40 | 15.40 | 2.80 | 0.80 | 0.00 | 1.30 | 3.00 | 0.00 | 1.20 | 2.80 | **15.40** |
| 2022 | 0.00 | 2.10 | 5.40 | 0.40 | 0.60 | 0.00 | 2.50 | 0.07 | 0.00 | 0.20 | 0.00 | 0.00 | **5.40** |
| 2023 | 0.00 | 28.30 | 115.50 | 85.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.20 | 6.40 | 2.40 | **115.50** |
| 2024 | 2.40 | 2.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.30 | 0.00 | 1.20 | 1.50 | **2.80** |
| 2025 | 4.16 | 18.20 | 30.70 | 2.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 12.20 | 4.80 | **30.70** |
| | | | | | | | | | | | | | |
| **PROM** | **4.16** | **17.22** | **22.03** | **8.61** | **1.30** | **0.15** | **0.25** | **0.07** | **0.46** | **1.13** | **2.13** | **1.92** | |
| **DESV EST** | **10.29** | **28.48** | **30.36** | **15.28** | **2.57** | **0.46** | **0.89** | **0.27** | **0.92** | **1.90** | **2.80** | **3.10** | |
| **MAX** | **59.60** | **120.80** | **115.50** | **85.30** | **11.30** | **2.60** | **5.00** | **1.30** | **3.90** | **8.20** | **12.20** | **16.30** | |
| **MIN** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | |
| **N° DE DATOS** | **38** | **38** | **38** | **38** | **38** | **38** | **38** | **38** | **38** | **38** | **38** | **38** | |



**REGISTRO DE PRECIPITACIÓN MÁXIMA DE 24 HORAS (mm)**

| | | | | | |
|---|---|---|---|---|---|
| Estación: | JAYANCA | Latitud: | 6°19'53.73" S | Dpto: | Lambayeque |
| ESTADO: | -------- | Longitud: | 79°46'7.29" W | Prov: | Lambayeque |
| FUENTE: | SENAMHI | Altitud | 78 m.s.n.m | Dist: | Jayanca |

| Año | Ene | Feb | Mar | Abr | May | Jun | Jul | Ago | Set | Oct | Nov | Dic | Pmax24 | Log (P24hr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1988 | 6.40 | 0.00 | 0.00 | 0.00 | 0.70 | 0.00 | 0.25 | 0.07 | 0.00 | 0.00 | 0.00 | 0.50 | **6.40** | **0.81** |
| 1989 | 4.00 | 10.50 | 0.00 | 4.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.50 | 0.00 | 0.00 | **10.50** | **1.02** |
| 1990 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.50 | 4.00 | 0.00 | **6.50** | **0.81** |
| 1991 | 0.00 | 0.00 | 2.40 | 6.40 | 0.00 | 0.00 | 0.25 | 0.07 | 0.46 | 0.00 | 1.40 | 0.00 | **6.40** | **0.81** |
| 1992 | 0.80 | 0.00 | 6.10 | 28.10 | 1.60 | 0.00 | 0.00 | 0.00 | 0.46 | 1.13 | 2.13 | 6.00 | **28.10** | **1.45** |
| 1993 | 0.60 | 4.90 | 27.10 | 6.10 | 0.50 | 0.15 | 0.25 | 0.07 | 0.30 | 0.00 | 0.00 | 0.00 | **27.10** | **1.43** |
| 1994 | 2.60 | 9.70 | 23.60 | 0.00 | 0.80 | 0.00 | 0.00 | 0.00 | 0.70 | 1.90 | 0.00 | 0.50 | **23.60** | **1.37** |
| 1995 | 0.00 | 19.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.46 | 0.30 | 1.50 | 2.30 | **19.50** | **1.29** |
| 1996 | 0.20 | 0.00 | 7.70 | 4.60 | 0.80 | 0.50 | 0.00 | 0.00 | 0.00 | 0.50 | 0.00 | 0.00 | **7.70** | **0.89** |
| 1997 | 0.00 | 0.90 | 0.00 | 12.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.70 | 0.00 | 7.40 | 16.30 | **16.30** | **1.21** |
| 1998 | 59.60 | 92.70 | 96.30 | 26.00 | 5.20 | 0.40 | 0.00 | 0.00 | 2.10 | 0.00 | 0.00 | 0.30 | **96.30** | **1.98** |
| 1999 | 1.60 | 39.50 | 2.20 | 10.10 | 4.10 | 2.60 | 0.00 | 0.00 | 3.90 | 0.50 | 0.20 | 3.90 | **39.50** | **1.60** |
| 2000 | 1.50 | 0.70 | 12.40 | 9.50 | 0.00 | 0.80 | 0.00 | 1.10 | 0.00 | 0.00 | 0.00 | 2.80 | **12.40** | **1.09** |
| 2001 | 5.10 | 9.20 | 41.60 | 8.61 | 0.00 | 0.30 | 0.60 | 0.00 | 0.00 | 0.90 | 0.90 | 0.80 | **41.60** | **1.62** |
| 2002 | 0.00 | 23.30 | 52.10 | 35.30 | 0.00 | 0.15 | 0.25 | 0.07 | 0.00 | 0.90 | 6.80 | 0.00 | **52.10** | **1.72** |
| 2003 | 3.60 | 29.90 | 0.00 | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 1.20 | 0.00 | 0.80 | 2.50 | **29.90** | **1.48** |
| 2004 | 0.40 | 1.60 | 22.03 | 2.60 | 1.30 | 0.00 | 5.00 | 0.00 | 1.50 | 2.50 | 0.20 | 8.20 | **22.03** | **1.34** |
| 2005 | 0.60 | 3.50 | 9.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.80 | 1.70 | 0.00 | **9.40** | **0.97** |
| 2006 | 7.80 | 2.80 | 45.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.20 | 0.00 | **45.10** | **1.65** |
| 2007 | 0.80 | 0.00 | 2.40 | 2.40 | 0.70 | 0.00 | 0.00 | 0.00 | 0.00 | 2.30 | 2.40 | 0.00 | **2.40** | **0.38** |
| 2008 | 2.10 | 12.00 | 52.20 | 2.70 | 0.00 | 0.00 | 0.30 | 0.00 | 0.00 | 0.00 | 5.40 | 1.92 | **52.20** | **1.72** |
| 2009 | 4.90 | 6.70 | 18.00 | 0.60 | 4.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.00 | **18.00** | **1.26** |
| 2010 | 0.00 | 57.40 | 4.70 | 4.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.70 | 3.40 | 0.00 | **57.40** | **1.76** |
| 2011 | 9.00 | 1.00 | 0.00 | 9.10 | 1.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.50 | **9.10** | **0.96** |
| 2012 | 2.80 | 68.00 | 46.30 | 4.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.70 | 1.20 | 2.20 | **68.00** | **1.83** |
| 2013 | 2.00 | 2.00 | 8.20 | 0.00 | 9.80 | 0.00 | 0.25 | 0.00 | 0.00 | 1.20 | 0.00 | 2.00 | **9.80** | **0.99** |
| 2014 | 0.00 | 0.00 | 0.80 | 0.70 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.50 | 5.60 | 0.00 | **5.60** | **0.75** |
| 2015 | 2.00 | 4.50 | 38.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.50 | 0.00 | **38.30** | **1.58** |
| 2016 | 5.20 | 11.50 | 7.00 | 8.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **11.50** | **1.06** |
| 2017 | 25.90 | 120.80 | 113.00 | 10.00 | 11.30 | 0.00 | 0.00 | 0.00 | 0.00 | 2.60 | 0.00 | 0.00 | **120.80** | **2.08** |
| 2018 | 1.70 | 0.00 | 1.00 | 3.80 | 1.30 | 0.00 | 0.00 | 0.00 | 0.46 | 0.00 | 5.10 | 1.50 | **5.10** | **0.71** |
| 2019 | 0.20 | 70.50 | 9.00 | 18.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.40 | **70.50** | **1.85** |
| 2020 | 0.00 | 0.00 | 22.03 | 3.20 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.80 | **22.03** | **1.34** |
| 2021 | 0.00 | 0.00 | 14.40 | 15.40 | 2.80 | 0.80 | 0.00 | 1.30 | 3.00 | 0.00 | 1.20 | 2.80 | **15.40** | **1.19** |
| 2022 | 0.00 | 2.10 | 5.40 | 0.40 | 0.60 | 0.00 | 2.50 | 0.07 | 0.00 | 0.20 | 0.00 | 0.00 | **5.40** | **0.73** |
| 2023 | 0.00 | 28.30 | 115.50 | 85.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.20 | 6.40 | 2.40 | **115.50** | **2.06** |
| 2024 | 2.40 | 2.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.30 | 0.00 | 1.20 | 1.50 | **2.80** | **0.45** |
| 2025 | 4.16 | 18.20 | 30.70 | 2.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 12.20 | 4.80 | **30.70** | **1.49** |

| *Pmáx24 Ordenado* |
|---|
| **2.40** |
| **2.80** |
| **5.10** |
| **5.40** |
| **5.60** |
| **6.40** |
| **6.40** |
| **6.50** |
| **7.70** |
| **9.10** |
| **9.40** |
| **9.80** |
| **10.50** |
| **11.50** |
| **12.40** |
| **15.40** |
| **16.30** |
| **18.00** |
| **19.50** |
| **22.03** |
| **22.03** |
| **23.60** |
| **27.10** |
| **28.10** |
| **29.90** |
| **30.70** |
| **38.30** |
| **39.50** |
| **41.60** |
| **45.10** |
| **52.10** |
| **52.20** |
| **57.40** |
| **68.00** |
| **70.50** |
| **96.30** |
| **115.50** |
| **120.80** |

| Cuadro: Valores para coeficiente de Kn para la prueba de datos dudosos | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Tamaño de muestra n** | **Kn** | **Tamaño de muestra n** | **Kn** | **Tamaño de muestra n** | **Kn** | **Tamaño de muestra n** | **Kn** |
| 10 | 2.036 | 24 | 2.467 | 38 | 2.661 | 60 | 2.837 |
| 11 | 2.088 | 25 | 2.486 | 39 | 2.671 | 65 | 2.866 |
| 12 | 2.134 | 26 | 2.502 | 40 | 2.682 | 70 | 2.893 |
| 13 | 2.175 | 27 | 2.519 | 41 | 2.692 | 75 | 2.917 |
| 14 | 2.23 | 28 | 2.534 | 42 | 2.700 | 80 | 2.940 |
| 15 | 2.247 | 29 | 2.549 | 43 | 2.710 | 85 | 2.961 |
| 16 | 2.279 | 30 | 2.563 | 44 | 2.719 | 90 | 2.981 |
| 17 | 2.309 | 31 | 2.577 | 45 | 2.727 | 95 | 3.000 |
| 18 | 2.335 | 32 | 2.591 | 46 | 2.736 | 100 | 3.017 |
| 19 | 2.361 | 33 | 2.604 | 47 | 2.744 | 110 | 3.049 |
| 20 | 2.385 | 34 | 2.616 | 48 | 2.753 | 120 | 3.078 |
| 21 | 2.408 | 35 | 2.628 | 49 | 2.760 | 130 | 3.104 |
| 22 | 2.429 | 36 | 2.639 | 50 | 2.768 | 140 | 3.129 |
| 23 | 2.448 | 37 | 2.65 | 55 | 2.804 | | |

*Fuente U.S.Water Resources Council, 1981. Está tabla contiiene valores de Kn, de un lado con un nivel de significancia del 10% para la distribución normal.*

| PARÁMETROS ESTADISTICOS | P24hr | Log(P24hr) |
|---|---|---|
| **Número de datos (N)** | **38.00** | **38.00** |
| **Sumatoria** | **1160.96** | **48.73** |
| **Valor Máximo** | **120.80** | **2.082** |
| **Valor Mínimo** | **2.40** | **0.380** |
| **Media $(\overline{X})$ :** | **30.55** | **1.282** |
| **Varianza:** | **916.21** | **0.196** |
| **Desviación Estándar:** | **30.27** | **0.443** |
| **Coeficiente Variación:** | **0.99** | **0.346** |
| **Coeficiente de Sesgo:** | **1.63** | **-0.068** |
| **Se Considera:** | **Aplicar pruebas para detectar datos dudosos altos y bajos** | |

**n=** 38
**Kn=** 2.661
**Kn:** Valor recomendado, varia según el valor de n (significancia:10%)

Umbral de datos dudosos **altos (xH: unidad. Logaritmicas)**

$$x_H = \bar{x} + k_n \cdot s$$ **xH= 2.46**

Precipitacion maxima aceptaba

PH= $10^{xH}$ **PH= 289.52 mm**

**NO EXISTEN DATOS DUDOSOS ALTO DE LA MUESTRA**

Umbral de datos dudosos bajos **(xL: unidad. Logaritmicas)**

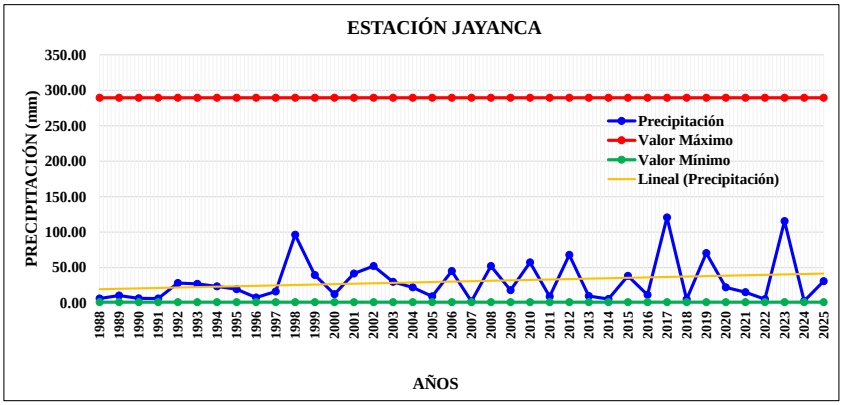
$$x_L = \bar{x} - k_n \cdot s$$ **xL= 0.10**

Precipitacion minima aceptaba

PH= $10^{xH}$ **PL= 1.27 mm**

**NO EXISTEN DATOS DUDOSOS MINIMO DE LA MUESTRA**

| Año | Precipitación | Valor Máximo | Valor Mínimo |
|---|---|---|---|
| 1988 | 6.40 | 289.52 | 1.27 |
| 1989 | 10.50 | 289.52 | 1.27 |
| 1990 | 6.50 | 289.52 | 1.27 |
| 1991 | 6.40 | 289.52 | 1.27 |
| 1992 | 28.10 | 289.52 | 1.27 |
| 1993 | 27.10 | 289.52 | 1.27 |
| 1994 | 23.60 | 289.52 | 1.27 |
| 1995 | 19.50 | 289.52 | 1.27 |
| 1996 | 7.70 | 289.52 | 1.27 |
| 1997 | 16.30 | 289.52 | 1.27 |
| 1998 | 96.30 | 289.52 | 1.27 |
| 1999 | 39.50 | 289.52 | 1.27 |
| 2000 | 12.40 | 289.52 | 1.27 |
| 2001 | 41.60 | 289.52 | 1.27 |
| 2002 | 52.10 | 289.52 | 1.27 |
| 2003 | 29.90 | 289.52 | 1.27 |
| 2004 | 22.03 | 289.52 | 1.27 |
| 2005 | 9.40 | 289.52 | 1.27 |
| 2006 | 45.10 | 289.52 | 1.27 |
| 2007 | 2.40 | 289.52 | 1.27 |
| 2008 | 52.20 | 289.52 | 1.27 |
| 2009 | 18.00 | 289.52 | 1.27 |
| 2010 | 57.40 | 289.52 | 1.27 |
| 2011 | 9.10 | 289.52 | 1.27 |
| 2012 | 68.00 | 289.52 | 1.27 |
| 2013 | 9.80 | 289.52 | 1.27 |
| 2014 | 5.60 | 289.52 | 1.27 |
| 2015 | 38.30 | 289.52 | 1.27 |
| 2016 | 11.50 | 289.52 | 1.27 |
| 2017 | 120.80 | 289.52 | 1.27 |
| 2018 | 5.10 | 289.52 | 1.27 |
| 2019 | 70.50 | 289.52 | 1.27 |
| 2020 | 22.03 | 289.52 | 1.27 |
| 2021 | 15.40 | 289.52 | 1.27 |
| 2022 | 5.40 | 289.52 | 1.27 |
| 2023 | 115.50 | 289.52 | 1.27 |
| 2024 | 2.80 | 289.52 | 1.27 |
| 2025 | 30.70 | 289.52 | 1.27 |



# INFORMACIÓN PLUVIOMÉTRICA

| | | | | | |
|---|---|---|---|---|---|
| Estación: | JAYANCA | Latitud: | 6°19'53.73" S | Dpto: | Lambayeque |
| ESTADO: | -------- | Longitud: | 79°46'7.29" W | Prov: | Lambayeque |
| FUENTE: | SENAMHI | Altitud | 78 m.s.n.m | Dist: | Jayanca |

| PRECIPITACIÓN MÁXIMA EN 24 HORAS (mm) | | | | | | | | | | | | | PRECIPITAC. MÁXIMA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AÑO | ENERO | FEBRERO | MARZO | ABRIL | MAYO | JUNIO | JULIO | AGOSTO | SETIEMBRE | OCTUBRE | NOVIEMBRE | DICIEMBRE | |
| **1988** | 6.40 | 0.00 | 0.00 | 0.00 | 0.70 | 0.00 | 0.25 | 0.07 | 0.00 | 0.00 | 0.00 | 0.50 | **6.40** |
| **1989** | 4.00 | 10.50 | 0.00 | 4.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.50 | 0.00 | 0.00 | **10.50** |
| **1990** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.50 | 4.00 | 0.00 | **6.50** |
| **1991** | 0.00 | 0.00 | 2.40 | 6.40 | 0.00 | 0.00 | 0.25 | 0.07 | 0.46 | 0.00 | 1.40 | 0.00 | **6.40** |
| **1992** | 0.80 | 0.00 | 6.10 | 28.10 | 1.60 | 0.00 | 0.00 | 0.00 | 0.46 | 1.13 | 2.13 | 6.00 | **28.10** |
| **1993** | 0.60 | 4.90 | 27.10 | 6.10 | 0.50 | 0.15 | 0.25 | 0.07 | 0.30 | 0.00 | 0.00 | 0.00 | **27.10** |
| **1994** | 2.60 | 9.70 | 23.60 | 0.00 | 0.80 | 0.00 | 0.00 | 0.00 | 0.70 | 1.90 | 0.00 | 0.50 | **23.60** |
| **1995** | 0.00 | 19.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.46 | 0.30 | 1.50 | 2.30 | **19.50** |
| **1996** | 0.20 | 0.00 | 7.70 | 4.60 | 0.80 | 0.50 | 0.00 | 0.00 | 0.00 | 0.50 | 0.00 | 0.00 | **7.70** |
| **1997** | 0.00 | 0.90 | 0.00 | 12.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.70 | 0.00 | 7.40 | 16.30 | **16.30** |
| **1998** | 59.60 | 92.70 | 96.30 | 26.00 | 5.20 | 0.40 | 0.00 | 0.00 | 2.10 | 0.00 | 0.00 | 0.30 | **96.30** |
| **1999** | 1.60 | 39.50 | 2.20 | 10.10 | 4.10 | 2.60 | 0.00 | 0.00 | 3.90 | 0.50 | 0.20 | 3.90 | **39.50** |
| **2000** | 1.50 | 0.70 | 12.40 | 9.50 | 0.00 | 0.80 | 0.00 | 1.10 | 0.00 | 0.00 | 0.00 | 2.80 | **12.40** |
| **2001** | 5.10 | 9.20 | 41.60 | 8.61 | 0.00 | 0.30 | 0.60 | 0.00 | 0.00 | 0.90 | 0.90 | 0.80 | **41.60** |
| **2002** | 0.00 | 23.30 | 52.10 | 35.30 | 0.00 | 0.15 | 0.25 | 0.07 | 0.00 | 0.90 | 6.80 | 0.00 | **52.10** |
| **2003** | 3.60 | 29.90 | 0.00 | 0.90 | 0.00 | 0.00 | 0.00 | 0.00 | 1.20 | 0.00 | 0.80 | 2.50 | **29.90** |
| **2004** | 0.40 | 1.60 | 22.03 | 2.60 | 1.30 | 0.00 | 5.00 | 0.00 | 1.50 | 2.50 | 0.20 | 8.20 | **22.03** |
| **2005** | 0.60 | 3.50 | 9.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.80 | 1.70 | 0.00 | **9.40** |
| **2006** | 7.80 | 2.80 | 45.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.20 | 0.00 | **45.10** |
| **2007** | 0.80 | 0.00 | 2.40 | 2.40 | 0.70 | 0.00 | 0.00 | 0.00 | 0.00 | 2.30 | 2.40 | 0.00 | **2.40** |
| **2008** | 2.10 | 12.00 | 52.20 | 2.70 | 0.00 | 0.00 | 0.30 | 0.00 | 0.00 | 0.00 | 5.40 | 1.92 | **52.20** |
| **2009** | 4.90 | 6.70 | 18.00 | 0.60 | 4.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.00 | 0.00 | **18.00** |
| **2010** | 0.00 | 57.40 | 4.70 | 4.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.70 | 3.40 | 0.00 | **57.40** |
| **2011** | 9.00 | 1.00 | 0.00 | 9.10 | 1.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.50 | **9.10** |
| **2012** | 2.80 | 68.00 | 46.30 | 4.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.70 | 1.20 | 2.20 | **68.00** |
| **2013** | 2.00 | 2.00 | 8.20 | 0.00 | 9.80 | 0.00 | 0.25 | 0.00 | 0.00 | 1.20 | 0.00 | 2.00 | **9.80** |
| **2014** | 0.00 | 0.00 | 0.80 | 0.70 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.50 | 5.60 | 0.00 | **5.60** |
| **2015** | 2.00 | 4.50 | 38.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.50 | 0.00 | **38.30** |
| **2016** | 5.20 | 11.50 | 7.00 | 8.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **11.50** |
| **2017** | 25.90 | 120.80 | 113.00 | 10.00 | 11.30 | 0.00 | 0.00 | 0.00 | 0.00 | 2.60 | 0.00 | 0.00 | **120.80** |
| **2018** | 1.70 | 0.00 | 1.00 | 3.80 | 1.30 | 0.00 | 0.00 | 0.00 | 0.46 | 0.00 | 5.10 | 1.50 | **5.10** |
| **2019** | 0.20 | 70.50 | 9.00 | 18.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.40 | **70.50** |
| **2020** | 0.00 | 0.00 | 22.03 | 3.20 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.80 | **22.03** |
| **2021** | 0.00 | 0.00 | 14.40 | 15.40 | 2.80 | 0.80 | 0.00 | 1.30 | 3.00 | 0.00 | 1.20 | 2.80 | **15.40** |
| **2022** | 0.00 | 2.10 | 5.40 | 0.40 | 0.60 | 0.00 | 2.50 | 0.07 | 0.00 | 0.20 | 0.00 | 0.00 | **5.40** |
| **2023** | 0.00 | 28.30 | 115.50 | 85.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.20 | 6.40 | 2.40 | **115.50** |
| **2024** | 2.40 | 2.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.30 | 0.00 | 1.20 | 1.50 | **2.80** |
| **2025** | 4.16 | 18.20 | 30.70 | 2.80 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 12.20 | 4.80 | **30.70** |

## PRUEBA DE BONDAD KOLMOVOROV-SMIRNOV

| m | P=X(mm) | WEIBULL | NORMAL | | | LOG-NORMAL | | | PEARSON III | | | LOG-PEARSON | | | GUMBEL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | P(x)=1/(m+1) | Z=(X-Xm)/S | F(x)Normal | IF(Xm)-P(x)I normal | Y=Ln(x) | F(Xm) Log-Normal | IF(Xm)-P(x)I Log Normal | X-X0 | F(Xm) Pearson III | IF(Xm)-P(x)I Pearson III | Ln(x)-X0 | F(Xm) LogPearson | IF(Xm)-P(x)I LogPearson | F(Xm) Gumbel | IF(Xm)-P(x)I Gumbel |
| **1** | **2.40** | 0.02564 | -0.9300 | 0.1762 | 0.1505 | 0.8755 | 0.0209 | 0.0047 | 8.92 | 0.131943988 | 0.106302963 | 27.9687 | 0.019079866 | 0.00656116 | 0.157091386 | 0.13145036 |
| **2** | **2.80** | 0.05128 | -0.9168 | 0.1796 | 0.1283 | 1.0296 | 0.0297 | 0.0215 | 9.32 | 0.139614477 | 0.088332426 | 28.1229 | 0.027748778 | 0.02353327 | 0.16205475 | 0.110772699 |
| **3** | **5.10** | 0.07692 | -0.8408 | 0.2002 | 0.1233 | 1.6292 | 0.0973 | 0.0204 | 11.62 | 0.184316443 | 0.107393366 | 28.7225 | 0.095920146 | 0.01899707 | 0.191889075 | 0.114965998 |
| **4** | **5.40** | 0.10256 | -0.8309 | 0.2030 | 0.1004 | 1.6864 | 0.1073 | 0.0047 | 11.92 | 0.1901875 | 0.087623397 | 28.7797 | 0.106112308 | 0.00354821 | 0.195932336 | 0.093368233 |
| **5** | **5.60** | 0.12821 | -0.8243 | 0.2049 | 0.0767 | 1.7228 | 0.1140 | 0.0142 | 12.12 | 0.194103106 | 0.065897978 | 28.8160 | 0.112984063 | 0.01522107 | 0.198645953 | 0.070440825 |
| **6** | **6.40** | 0.15385 | -0.7979 | 0.2125 | 0.0586 | 1.8563 | 0.1413 | 0.0125 | 12.92 | 0.209766569 | 0.055920415 | 28.9496 | 0.140859602 | 0.01298655 | 0.209640071 | 0.055793918 |
| **7** | **6.40** | 0.17949 | -0.7979 | 0.2125 | 0.0330 | 1.8563 | 0.1413 | 0.0382 | 12.92 | 0.209766569 | 0.03027939 | 28.9496 | 0.140859602 | 0.03862758 | 0.209640071 | 0.030152892 |
| **8** | **6.50** | 0.20513 | -0.7946 | 0.2134 | 0.0083 | 1.8718 | 0.1447 | 0.0604 | 13.02 | 0.211723583 | 0.006595378 | 28.9651 | 0.144369143 | 0.06075906 | 0.211029541 | 0.005901336 |
| **9** | **7.70** | 0.23077 | -0.7550 | 0.2251 | 0.0056 | 2.0412 | 0.1859 | 0.0449 | 14.22 | 0.235160565 | 0.004391334 | 29.1345 | 0.186438069 | 0.04433116 | 0.227949718 | 0.002819513 |
| **10** | **9.10** | 0.25641 | -0.7087 | 0.2393 | 0.0172 | 2.2083 | 0.2328 | 0.0236 | 15.62 | 0.262311876 | 0.00590162 | 29.3015 | 0.234435122 | 0.02197513 | 0.248213028 | 0.008197228 |
| **11** | **9.40** | 0.28205 | -0.6988 | 0.2423 | 0.0397 | 2.2407 | 0.2427 | 0.0394 | 15.92 | 0.26809221 | 0.013959072 | 29.3340 | 0.244465517 | 0.03758577 | 0.252620509 | 0.029430773 |
| **12** | **9.80** | 0.30769 | -0.6856 | 0.2465 | 0.0612 | 2.2824 | 0.2556 | 0.0521 | 16.32 | 0.275774763 | 0.031917545 | 29.3757 | 0.257673255 | 0.05001905 | 0.258529835 | 0.049162473 |
| **13** | **10.50** | 0.33333 | -0.6624 | 0.2538 | 0.0795 | 2.3514 | 0.2778 | 0.0555 | 17.02 | 0.289145454 | 0.044187879 | 29.4446 | 0.280297997 | 0.05303534 | 0.268955167 | 0.064378166 |
| **14** | **11.50** | 0.35897 | -0.6294 | 0.2645 | 0.0944 | 2.4423 | 0.3085 | 0.0505 | 18.02 | 0.308064788 | 0.050909571 | 29.5356 | 0.311467665 | 0.04750669 | 0.284014553 | 0.074959806 |
| **15** | **12.40** | 0.38462 | -0.5997 | 0.2744 | 0.1103 | 2.5177 | 0.3349 | 0.0497 | 18.92 | 0.324888748 | 0.059726637 | 29.6110 | 0.338312364 | 0.04630302 | 0.29771093 | 0.086904455 |
| **16** | **15.40** | 0.41026 | -0.5006 | 0.3083 | 0.1019 | 2.7344 | 0.4153 | 0.0050 | 21.92 | 0.379363888 | 0.030892523 | 29.8276 | 0.419489202 | 0.00923279 | 0.344038372 | 0.066218038 |
| **17** | **16.30** | 0.43590 | -0.4708 | 0.3189 | 0.1170 | 2.7912 | 0.4371 | 0.0012 | 22.82 | 0.395176419 | 0.040721017 | 29.8844 | 0.441444526 | 0.00554709 | 0.358051519 | 0.077845917 |
| **18** | **18.00** | 0.46154 | -0.4147 | 0.3392 | 0.1223 | 2.8904 | 0.4756 | 0.0141 | 24.52 | 0.424324613 | 0.037213848 | 29.9836 | 0.48012029 | 0.01858183 | 0.384543844 | 0.076994618 |
| **19** | **19.50** | 0.48718 | -0.3651 | 0.3575 | 0.1297 | 2.9704 | 0.5069 | 0.0197 | 26.02 | 0.44923344 | 0.037946047 | 30.0637 | 0.511416992 | 0.02423751 | 0.407854196 | 0.079325291 |
| **20** | **22.03** | 0.51282 | -0.2815 | 0.3892 | 0.1237 | 3.0924 | 0.5544 | 0.0416 | 28.55 | 0.489470448 | 0.023350065 | 30.1857 | 0.558810508 | 0.04599 | 0.446785366 | 0.066035146 |
| **21** | **22.03** | 0.53846 | -0.2815 | 0.3892 | 0.1493 | 3.0924 | 0.5544 | 0.0160 | 28.55 | 0.489470448 | 0.048991091 | 30.1857 | 0.558810508 | 0.02034897 | 0.446785366 | 0.091676172 |
| **22** | **23.60** | 0.56410 | -0.2297 | 0.4092 | 0.1549 | 3.1612 | 0.5809 | 0.0168 | 30.12 | 0.513300829 | 0.050801735 | 30.2545 | 0.58517619 | 0.02107363 | 0.470563616 | 0.093538948 |
| **23** | **27.10** | 0.58974 | -0.1140 | 0.4546 | 0.1351 | 3.2995 | 0.6330 | 0.0433 | 33.62 | 0.563278761 | 0.026464829 | 30.3928 | 0.636768601 | 0.04702501 | 0.522084711 | 0.067658879 |
| **24** | **28.10** | 0.61538 | -0.0810 | 0.4677 | 0.1477 | 3.3358 | 0.6463 | 0.0309 | 34.62 | 0.576767221 | 0.038617394 | 30.4290 | 0.649902818 | 0.0345182 | 0.536353318 | 0.079031297 |
| **25** | **29.90** | 0.64103 | -0.0215 | 0.4914 | 0.1496 | 3.3979 | 0.6686 | 0.0276 | 36.42 | 0.600175971 | 0.04084967 | 30.4911 | 0.671965658 | 0.03094002 | 0.561459324 | 0.079566317 |
| **26** | **30.70** | 0.66667 | 0.0049 | 0.5020 | 0.1647 | 3.4243 | 0.6780 | 0.0113 | 37.22 | 0.610225438 | 0.056441229 | 30.5175 | 0.681165907 | 0.01449924 | 0.572365394 | 0.094301273 |
| **27** | **38.30** | 0.69231 | 0.2560 | 0.6010 | 0.0913 | 3.6454 | 0.7514 | 0.0591 | 44.82 | 0.695346131 | 0.003038438 | 30.7387 | 0.753313288 | 0.0610056 | 0.667407215 | 0.024900477 |
| **28** | **39.50** | 0.71795 | 0.2956 | 0.6162 | 0.1017 | 3.6763 | 0.7608 | 0.0429 | 46.02 | 0.707168453 | 0.010780265 | 30.7696 | 0.762608615 | 0.0446599 | 0.680921034 | 0.037027684 |
| **29** | **41.60** | 0.74359 | 0.3650 | 0.6424 | 0.1011 | 3.7281 | 0.7763 | 0.0327 | 48.12 | 0.726871402 | 0.016718341 | 30.8214 | 0.777760529 | 0.03417079 | 0.703568488 | 0.040021255 |
| **30** | **45.10** | 0.76923 | 0.4806 | 0.6846 | 0.0846 | 3.8089 | 0.7993 | 0.0300 | 51.62 | 0.757059232 | 0.012171538 | 30.9022 | 0.800221176 | 0.03099041 | 0.738502488 | 0.030728281 |
| **31** | **52.10** | 0.79487 | 0.7119 | 0.7617 | 0.0331 | 3.9532 | 0.8365 | 0.0417 | 58.62 | 0.808452553 | 0.013580758 | 31.0464 | 0.836693877 | 0.04182208 | 0.798253559 | 0.003381764 |
| **32** | **52.20** | 0.82051 | 0.7152 | 0.7628 | 0.0578 | 3.9551 | 0.8370 | 0.0165 | 58.72 | 0.809107571 | 0.01140525 | 31.0484 | 0.83714679 | 0.01663397 | 0.79901445 | 0.021498371 |
| **33** | **57.40** | 0.84615 | 0.8870 | 0.8125 | 0.0337 | 4.0500 | 0.8589 | 0.0127 | 63.92 | 0.840420765 | 0.005733081 | 31.1433 | 0.858532576 | 0.01237873 | 0.835265117 | 0.010888729 |
| **34** | **68.00** | 0.87179 | 1.2372 | 0.8920 | 0.0202 | 4.2195 | 0.8928 | 0.0210 | 74.52 | 0.889863902 | 0.01806903 | 31.3128 | 0.891696093 | 0.01990122 | 0.8914771 | 0.019682229 |
| **35** | **70.50** | 0.89744 | 1.3198 | 0.9065 | 0.0091 | 4.2556 | 0.8992 | 0.0017 | 77.02 | 0.899182782 | 0.001746884 | 31.3489 | 0.897958755 | 0.00052286 | 0.901830083 | 0.004394185 |
| **36** | **96.30** | 0.92308 | 2.1721 | 0.9851 | 0.0620 | 4.5675 | 0.9432 | 0.0201 | 102.82 | 0.960170146 | 0.037093223 | 31.6607 | 0.941338467 | 0.01826154 | 0.965962568 | 0.042885645 |
| **37** | **115.50** | 0.94872 | 2.8065 | 0.9975 | 0.0488 | 4.7493 | 0.9608 | 0.0121 | 122.02 | 0.98033508 | 0.031617131 | 31.8425 | 0.958880113 | 0.01016216 | 0.984766136 | 0.036048187 |
| **38** | **120.80** | 0.97436 | 2.9816 | 0.9986 | 0.0242 | 4.7941 | 0.9644 | 0.0099 | 127.32 | 0.983843264 | 0.009484289 | 31.8874 | 0.962471411 | 0.01188756 | 0.987811531 | 0.013452556 |

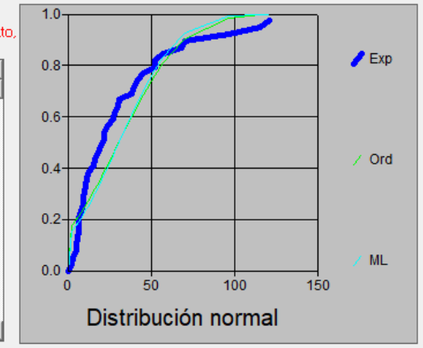
| | |
|---|---|
| Xm | **30.55** |
| S | **30.27** |
| CS | **1.63303** |
| N | 38 |
| a | 0.05 |
| **Δcritico** | **0.2206** |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Xm **2.95** | | α= **1.50** | | α= **866.91** | | α= | **23.60** |
| | | S **1.02** | | β= **24.72** | | β= **0.03** | | μ= | **16.93** |
| | | CS **-0.07** | | X0= **-6.52** | | X0= **-27.09** | | | |
| Δmax | **0.1647** | Δmax | **0.060390** | Δmax | **0.1074** | Δmax | **0.061006** | Δmax | **0.1315** |
| Δcritico>Δmax | **si se ajusta** | Δcritico>Δmax | **si se ajusta** | Δcritico>Δmax | **si se ajusta** | Δcritico>Δmax | **si se ajusta** | Δcritico>Δmax | **si se ajusta** |
| Posicion del ajuste | 5 | Posicion del ajuste | **1** | Posicion del ajuste | 3 | Posicion del ajuste | 2 | Posicion del ajuste | 4 |

Ajuste de una serie de datos a la distribución Normal

**Ingreso de datos:**
**Nota:** Una vez que digite el dato, presionar ENTER

| N° | X |
|---|---|
| 1 | 2.4 |
| 2 | 2.8 |
| 3 | 5.1 |
| 4 | 5.4 |
| 5 | 5.6 |
| 6 | 6.4 |
| 7 | 6.4 |
| 8 | 6.5 |
| 9 | 7.7 |
| 10 | 9.1 |
| 11 | 9.4 |
| 12 | 9.8 |
| 13 | 10.5 |
| 14 | 11.5 |




Caudal de diseño:
Caudal (Q): m3/s
Período de retorno (T): años
Probabilidad (P): %
Q=f(T) | T=f(Q) | P(Q<q) | P(Q>q)

Parámetros distribución normal:
Con momentos ordinarios:
De localización (Xm): 30.5516
De escala (S): 30.2689
Con momentos lineales:
Media lineal (Xl): 30.5516
Des. Estandar (S l): 27.5005

| m | X | P(X) | F(Z) Ordinario | F(Z) Mom Lineal | Delta |
|---|---|---|---|---|---|
| 1 | 2.4 | 0.0256 | 0.1762 | 0.1530 | 0.1505 |
| 2 | 2.8 | 0.0513 | 0.1796 | 0.1565 | 0.1283 |
| 3 | 5.1 | 0.0769 | 0.2002 | 0.1774 | 0.1233 |
| 4 | 5.4 | 0.1026 | 0.2030 | 0.1802 | 0.1004 |
| 5 | 5.6 | 0.1282 | 0.2049 | 0.1821 | 0.0767 |
| 6 | 6.4 | 0.1538 | 0.2125 | 0.1899 | 0.0586 |
| 7 | 6.4 | 0.1795 | 0.2125 | 0.1899 | 0.0330 |
| 8 | 6.5 | 0.2051 | 0.2134 | 0.1909 | 0.0083 |

Tipo de ajuste:
(•) Parámetros ordinarios
( ) Momentos lineales

Nivel significación:
( ) 0.20
( ) 0.10
(•) 0.05
( ) 0.01

Ajuste con momentos ordinarios:
Como el delta teórico 0.1647, es menor que el delta tabular 0.2206. Los datos se ajustan a la distribución Normal, con un nivel de significación del 5%

Calcular | Graficar | Limpiar | Imprimir | Menú Principal

Archivos y resultados:
Crear | Accesar | Excel | Reporte

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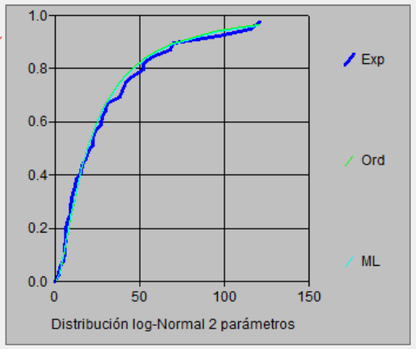
Ajuste de una serie de datos a la distribución log-Normal de 2 parámetros

**Ingreso de datos:**
**Nota:** Una vez que digite el dato, presionar ENTER

| N° | X |
|---|---|
| 1 | 2.4 |
| 2 | 2.8 |
| 3 | 5.1 |
| 4 | 5.4 |
| 5 | 5.6 |
| 6 | 6.4 |
| 7 | 6.4 |
| 8 | 6.5 |
| 9 | 7.7 |
| 10 | 9.1 |
| 11 | 9.4 |
| 12 | 9.8 |
| 13 | 10.5 |
| 14 | 11.5 |




Caudal de diseño:
Caudal (Q): m3/s
Período de retorno (T): años
Probabilidad (P): %
Q=f(T) | T=f(Q) | P(Q<q) | P(Q>q)

Parámetros distribución log-normal:
Con momentos ordinarios:
De escala (μy): 2.9528
De forma (Sy): 1.0205
Con momentos lineales:
De escala (μyl): 2.9528
De forma (Syl): 1.0501

| m | X | P(X) | F(Z) Ordinario | F(Z) Mom Lineal | Delta |
|---|---|---|---|---|---|
| 1 | 2.4 | 0.0256 | 0.0209 | 0.0240 | 0.0047 |
| 2 | 2.8 | 0.0513 | 0.0297 | 0.0335 | 0.0215 |
| 3 | 5.1 | 0.0769 | 0.0973 | 0.1038 | 0.0204 |
| 4 | 5.4 | 0.1026 | 0.1073 | 0.1139 | 0.0047 |
| 5 | 5.6 | 0.1282 | 0.1140 | 0.1207 | 0.0142 |
| 6 | 6.4 | 0.1538 | 0.1413 | 0.1482 | 0.0125 |
| 7 | 6.4 | 0.1795 | 0.1413 | 0.1482 | 0.0382 |
| 8 | 6.5 | 0.2051 | 0.1447 | 0.1516 | 0.0604 |

Tipo de ajuste:
(•) Parámetros ordinarios
( ) Momentos lineales

Nivel significación:
( ) 0.20
( ) 0.10
(•) 0.05
( ) 0.01

Ajuste con momentos ordinarios:
Como el delta teórico 0.0604, es menor que el delta tabular 0.2206. Los datos se ajustan a la distribución logNormal 2 parámetros, con un nivel de significación del 5%

Calcular | Graficar | Limpiar | Imprimir | Menú Principal

Archivos y resultados:
Crear | Accesar | Excel | Reporte

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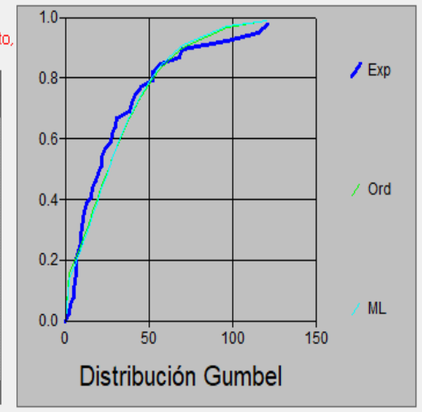
Ajuste de una serie de datos a la distribución Gumbel

**Ingreso de datos:**
**Nota:** Una vez que digite el dato, presionar ENTER

| N° | X |
|---|---|
| 1 | 2.4 |
| 2 | 2.8 |
| 3 | 5.1 |
| 4 | 5.4 |
| 5 | 5.6 |
| 6 | 6.4 |
| 7 | 6.4 |
| 8 | 6.5 |
| 9 | 7.7 |
| 10 | 9.1 |
| 11 | 9.4 |
| 12 | 9.8 |
| 13 | 10.5 |
| 14 | 11.5 |




Caudal de diseño:
Caudal (Q): m3/s
Período de retorno (T): años
Probabilidad (P): %
Q=f(T) | T=f(Q) | P(Q<q) | P(Q>q)

Parámetros distribución Gumbel:
Con momentos ordinarios:
De posición (μ): 16.929
De escala (alfa): 23.6006
Con momentos lineales:
De posición (μl): 17.6311
De escala (alfal): 22.3842

| m | X | P(X) | G(Y) Ordinario | G(Y) Mom Lineal | Delta |
|---|---|---|---|---|---|
| 1 | 2.4 | 0.0256 | 0.1571 | 0.1388 | 0.1315 |
| 2 | 2.8 | 0.0513 | 0.1621 | 0.1437 | 0.1108 |
| 3 | 5.1 | 0.0769 | 0.1919 | 0.1737 | 0.1150 |
| 4 | 5.4 | 0.1026 | 0.1960 | 0.1778 | 0.0934 |
| 5 | 5.6 | 0.1282 | 0.1987 | 0.1806 | 0.0705 |
| 6 | 6.4 | 0.1538 | 0.2097 | 0.1917 | 0.0558 |
| 7 | 6.4 | 0.1795 | 0.2097 | 0.1917 | 0.0302 |
| 8 | 6.5 | 0.2051 | 0.2111 | 0.1932 | 0.0059 |

Tipo de ajuste:
(•) Parámetros ordinarios
( ) Momentos lineales

Nivel significación:
( ) 0.20
( ) 0.10
(•) 0.05
( ) 0.01

Ajuste con momentos ordinarios:
Como el delta teórico 0.1315, es menor que el delta tabular 0.2206. Los datos se ajustan a la distribución Gumbel, con un nivel de significación del 5%

Calcular | Graficar | Limpiar | Imprimir | Menú Principal

Archivos y resultados:
Crear | Accesar | Excel | Reporte

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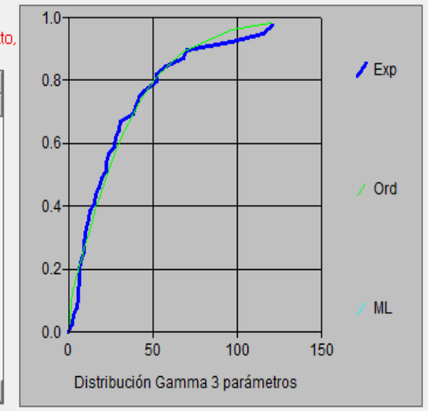
Ajuste de una serie de datos a la distribución Gamma de 3 parámetros

**Ingreso de datos:**
**Nota:** Una vez que digite el dato, presionar ENTER

| N° | X |
|---|---|
| 1 | 2.4 |
| 2 | 2.8 |
| 3 | 5.1 |
| 4 | 5.4 |
| 5 | 5.6 |
| 6 | 6.4 |
| 7 | 6.4 |
| 8 | 6.5 |
| 9 | 7.7 |
| 10 | 9.1 |
| 11 | 9.4 |
| 12 | 9.8 |
| 13 | 10.5 |
| 14 | 11.5 |




Caudal de diseño:
Caudal (Q): m3/s
Período de retorno (T): años
Probabilidad (P): %
Q=f(T) | T=f(Q) | P(Q<q) | P(Q>q)

Parámetros distribución Gamma 3 par:
Momentos ordinarios:
De posición (x0): -6.5193
De forma (gamma): 1.4999
De escala (beta): 24.715
Momentos lineales:
De posición (x0l): 2.5424
De forma (gammal): 0.7594
De escala (betal): 36.8821

| m | X | P(X) | G(Y) Ordinario | G(Y) Mom Lineal | Delta |
|---|---|---|---|---|---|
| 1 | 2.4 | 0.0256 | 0.1319 | 0.0000 | 0.1063 |
| 2 | 2.8 | 0.0513 | 0.1396 | 0.0000 | 0.0883 |
| 3 | 5.1 | 0.0769 | 0.1843 | 0.0000 | 0.1074 |
| 4 | 5.4 | 0.1026 | 0.1902 | 0.0000 | 0.0876 |
| 5 | 5.6 | 0.1282 | 0.1941 | 0.0000 | 0.0659 |
| 6 | 6.4 | 0.1538 | 0.2098 | 0.0000 | 0.0559 |
| 7 | 6.4 | 0.1795 | 0.2098 | 0.0000 | 0.0303 |
| 8 | 6.5 | 0.2051 | 0.2117 | 0.0000 | 0.0066 |

Tipo de ajuste:
(•) Parámetros ordinarios
( ) Momentos lineales

Nivel significación:
( ) 0.20
( ) 0.10
(•) 0.05
( ) 0.01

Ajuste con momentos ordinarios:
Como el delta teórico 0.10739, es menor que el delta tabular 0.2206. Los datos se ajustan a la distribución Gamma de 3 parámetros, con un nivel de significación del 5%

Calcular | Graficar | Limpiar | Imprimir | Menú Principal

Archivos y resultados:
Crear | Accesar | Excel | Reporte

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| Distribución de probabilidad pluviométrica NORMAL | | | |
|---|---|---|---|
| **Nº** | **AÑO** | **Precipitacion mm** | |
| | | **xi** | **(xi-xm)2** |
| 1 | 1988 | 6.40 | 583.30 |
| 2 | 1989 | 10.50 | 402.07 |
| 3 | 1990 | 6.50 | 578.48 |
| 4 | 1991 | 6.40 | 583.30 |
| 5 | 1992 | 28.10 | 6.01 |
| 6 | 1993 | 27.10 | 11.91 |
| 7 | 1994 | 23.60 | 48.32 |
| 8 | 1995 | 19.50 | 122.14 |
| 9 | 1996 | 7.70 | 522.19 |
| 10 | 1997 | 16.30 | 203.11 |
| 11 | 1998 | 96.30 | 4322.85 |
| 12 | 1999 | 39.50 | 80.07 |
| 13 | 2000 | 12.40 | 329.48 |
| 14 | 2001 | 41.60 | 122.07 |
| 15 | 2002 | 52.10 | 464.33 |
| 16 | 2003 | 29.90 | 0.42 |
| 17 | 2004 | 22.03 | 72.62 |
| 18 | 2005 | 9.40 | 447.39 |
| 19 | 2006 | 45.10 | 211.66 |
| 20 | 2007 | 2.40 | 792.51 |
| 21 | 2008 | 52.20 | 468.65 |
| 22 | 2009 | 18.00 | 157.54 |
| 23 | 2010 | 57.40 | 720.84 |
| 24 | 2011 | 9.10 | 460.17 |
| 25 | 2012 | 68.00 | 1402.38 |
| 26 | 2013 | 9.80 | 430.63 |
| 27 | 2014 | 5.60 | 622.58 |
| 28 | 2015 | 38.30 | 60.04 |
| 29 | 2016 | 11.50 | 362.96 |
| 30 | 2017 | 120.80 | 8144.78 |
| 31 | 2018 | 5.10 | 647.78 |
| 32 | 2019 | 70.50 | 1595.88 |
| 33 | 2020 | 22.03 | 72.62 |
| 34 | 2021 | 15.40 | 229.57 |
| 35 | 2022 | 5.40 | 632.60 |
| 36 | 2023 | 115.50 | 7216.23 |
| 37 | 2024 | 2.80 | 770.15 |
| 38 | 2025 | 30.70 | 0.02 |

| | |
|---|---|
| Xm | **30.55** |
| S | **30.27** |
| α= | **23.60** |
| μ= | **16.93** |

Interpolación de Z

| | |
|---|---|
| 0.49601 | 0.01 |
| 0.50000 | 0.00 |
| 0.5 | 0.00 |

| Precipitación Normal | | | | |
|---|---|---|---|---|
| **Periodo de Retorno** | **P** | **NORMAL** | **Precipitación** | **Corrección PPmm** |
| **Años** | **F(Z)** | **Z** | **Xtmm** | |
| 2 | 0.50000 | 0.00000 | 30.5516 | **34.52** |
| 5 | 0.80000 | 0.84161 | 56.0263 | **63.31** |
| 10 | 0.90000 | 1.28155 | 69.3428 | **78.36** |
| 25 | 0.96000 | 1.75070 | 83.5433 | **94.40** |
| 50 | 0.98000 | 2.05375 | 92.7164 | **104.77** |
| 100 | 0.99000 | 2.32630 | 100.9660 | **114.09** |
| 250 | 0.99600 | 2.65182 | 110.8192 | **125.23** |

| Corrección PPmm | | | | | | |
|---|---|---|---|---|---|---|
| 34.52328421 | 63.30970746 | 78.35732026 | 94.40393009 | 104.7694942 | 114.09163 | 125.225744 |

Interpolación de Z

| | |
|---|---|
| 0.79955 | 0.84 |
| 0.80000 | 0.84161 |
| 0.80234 | 0.85 |

| | |
|---|---|
| 0.89973 | 1.28 |
| 0.90000 | 1.28155 |
| 0.90147 | 1.29 |

| | |
|---|---|
| 0.95994 | 1.75 |
| 0.96000 | 1.75070 |
| 0.96080 | 1.76 |

| | |
|---|---|
| 0.97982 | 2.05 |
| 0.98000 | 2.05375 |
| 0.9803 | 2.06 |

Interpolación de Z

| | |
|---|---|
| 0.98983 | 2.32 |
| 0.99000 | 2.32630 |
| 0.9901 | 2.33 |

| | |
|---|---|
| 0.99598 | 2.65 |
| 0.99600 | 2.65182 |
| 0.99609 | 2.66 |

| Distribución de probabilidad pluviometrica LOGNORMAL | | | |
|---|---|---|---|
| Nº | AÑO | Precipitación mm | |
| | | xi | Log(xi) |
| 1 | 1988 | 6.40 | 0.81 |
| 2 | 1989 | 10.50 | 1.02 |
| 3 | 1990 | 6.50 | 0.81 |
| 4 | 1991 | 6.40 | 0.81 |
| 5 | 1992 | 28.10 | 1.45 |
| 6 | 1993 | 27.10 | 1.43 |
| 7 | 1994 | 23.60 | 1.37 |
| 8 | 1995 | 19.50 | 1.29 |
| 9 | 1996 | 7.70 | 0.89 |
| 10 | 1997 | 16.30 | 1.21 |
| 11 | 1998 | 96.30 | 1.98 |
| 12 | 1999 | 39.50 | 1.60 |
| 13 | 2000 | 12.40 | 1.09 |
| 14 | 2001 | 41.60 | 1.62 |
| 15 | 2002 | 52.10 | 1.72 |
| 16 | 2003 | 29.90 | 1.48 |
| 17 | 2004 | 22.03 | 1.34 |
| 18 | 2005 | 9.40 | 0.97 |
| 19 | 2006 | 45.10 | 1.65 |
| 20 | 2007 | 2.40 | 0.38 |
| 21 | 2008 | 52.20 | 1.72 |
| 22 | 2009 | 18.00 | 1.26 |
| 23 | 2010 | 57.40 | 1.76 |
| 24 | 2011 | 9.10 | 0.96 |
| 25 | 2012 | 68.00 | 1.83 |
| 26 | 2013 | 9.80 | 0.99 |
| 27 | 2014 | 5.60 | 0.75 |
| 28 | 2015 | 38.30 | 1.58 |
| 29 | 2016 | 11.50 | 1.06 |
| 30 | 2017 | 120.80 | 2.08 |
| 31 | 2018 | 5.10 | 0.71 |
| 32 | 2019 | 70.50 | 1.85 |
| 33 | 2020 | 22.03 | 1.34 |
| 34 | 2021 | 15.40 | 1.19 |
| 35 | 2022 | 5.40 | 0.73 |
| 36 | 2023 | 115.50 | 2.06 |
| 37 | 2024 | 2.80 | 0.45 |
| 38 | 2025 | 30.70 | 1.49 |

| | |
|---|---|
| Nº Datos | 38 |
| Suma | 48.73 |
| Max | 2.08 |
| Min | 0.38 |
| Promedio | 1.30 |
| Desv. Estand s | 0.443183414 |
| Coef Asimet Cs | -0.067926959 |
| k=Cs/6 | -0.01132116 |

| Precipitación LogNormal | | | | | |
|---|---|---|---|---|---|
| Periodo de Retorno | P | LOGNORMAL | | Precipitación | Corrección PPmm |
| Años | | Kt | Xt | 10^Xt | |
| 2 | 0.50000 | 0.00000 | 1.297957832 | 19.8590 | **22.44** |
| 5 | 0.80000 | 0.84162 | 1.670950404 | 46.8760 | **52.97** |
| 10 | 0.90000 | 1.28155 | 1.865920231 | 73.4379 | **82.98** |
| 25 | 0.96000 | 1.75069 | 2.073832863 | 118.5312 | **133.94** |
| 50 | 0.98000 | 2.05375 | 2.208145287 | 161.4899 | **182.48** |
| 100 | 0.99000 | 2.32635 | 2.328956626 | 213.2832 | **241.01** |
| 250 | 0.99600 | 2.65207 | 2.473311185 | 297.3796 | **336.04** |

| Corrección PPmm | | | | | | |
|---|---|---|---|---|---|---|
| 22.44069359 | 52.96986277 | 82.98482347 | 133.9403121 | 182.483554 | 241.010004 | 336.0389575 |

| Distribución de probabilidad pluviometrica PEARSON III | | |
|---|---|---|
| **Nº** | **AÑO** | **Precipitación mm** |
| | | **xi** |
| 1 | 1988 | 6.40 |
| 2 | 1989 | 10.50 |
| 3 | 1990 | 6.50 |
| 4 | 1991 | 6.40 |
| 5 | 1992 | 28.10 |
| 6 | 1993 | 27.10 |
| 7 | 1994 | 23.60 |
| 8 | 1995 | 19.50 |
| 9 | 1996 | 7.70 |
| 10 | 1997 | 16.30 |
| 11 | 1998 | 96.30 |
| 12 | 1999 | 39.50 |
| 13 | 2000 | 12.40 |
| 14 | 2001 | 41.60 |
| 15 | 2002 | 52.10 |
| 16 | 2003 | 29.90 |
| 17 | 2004 | 22.03 |
| 18 | 2005 | 9.40 |
| 19 | 2006 | 45.10 |
| 20 | 2007 | 2.40 |
| 21 | 2008 | 52.20 |
| 22 | 2009 | 18.00 |
| 23 | 2010 | 57.40 |
| 24 | 2011 | 9.10 |
| 25 | 2012 | 68.00 |
| 26 | 2013 | 9.80 |
| 27 | 2014 | 5.60 |
| 28 | 2015 | 38.30 |
| 29 | 2016 | 11.50 |
| 30 | 2017 | 120.80 |
| 31 | 2018 | 5.10 |
| 32 | 2019 | 70.50 |
| 33 | 2020 | 22.03 |
| 34 | 2021 | 15.40 |
| 35 | 2022 | 5.40 |
| 36 | 2023 | 115.50 |
| 37 | 2024 | 2.80 |
| 38 | 2025 | 30.70 |

| | |
|---|---|
| Xm | **30.55** |
| S | **30.27** |
| α= | **23.60** |
| μ= | **16.93** |
| Coef Asimet Cs | **1.633** |
| k=Cs/6 | **0.272** |

| Precipitación Pearson III | | | | | |
|---|---|---|---|---|---|
| **Periodo de Retorno** | **Probabilidad de Ocurrencia** | **Dist N** | **Kt** | **Precipitación** | **Corrección Intervalo Fijo** |
| **Años** | **F(x)** | | | **xt** | **xt(mm)** |
| 2 | 0.5000 | 0.00000 | -0.25018 | 22.979 | **25.97** |
| 5 | 0.8000 | 0.84162 | 0.66459 | 50.668 | **57.25** |
| 10 | 0.9000 | 1.28155 | 1.31440 | 70.337 | **79.48** |
| 25 | 0.9600 | 1.75069 | 2.15562 | 95.800 | **108.25** |
| 50 | 0.9800 | 2.05375 | 2.78741 | 114.924 | **129.86** |
| 100 | 0.9900 | 2.32635 | 3.41900 | 134.041 | **151.47** |
| 250 | 0.9960 | 2.65207 | 4.25663 | 159.395 | **180.12** |

| Corrección Intervalo Fijo | | | | | | |
|---|---|---|---|---|---|---|
| 25.96612845 | 57.25497135 | 79.48093291 | 108.253747 | 129.8635846 | 151.4663955 | 180.1164115 |

| Distribución de probabilidad pluviometrica LOG PEARSON | | | |
|---|---|---|---|
| Nº | AÑO | Precipitación mm | |
| | | xi | log(xi) |
| 1 | 1988 | 6.40 | 0.81 |
| 2 | 1989 | 10.50 | 1.02 |
| 3 | 1990 | 6.50 | 0.81 |
| 4 | 1991 | 6.40 | 0.81 |
| 5 | 1992 | 28.10 | 1.45 |
| 6 | 1993 | 27.10 | 1.43 |
| 7 | 1994 | 23.60 | 1.37 |
| 8 | 1995 | 19.50 | 1.29 |
| 9 | 1996 | 7.70 | 0.89 |
| 10 | 1997 | 16.30 | 1.21 |
| 11 | 1998 | 96.30 | 1.98 |
| 12 | 1999 | 39.50 | 1.60 |
| 13 | 2000 | 12.40 | 1.09 |
| 14 | 2001 | 41.60 | 1.62 |
| 15 | 2002 | 52.10 | 1.72 |
| 16 | 2003 | 29.90 | 1.48 |
| 17 | 2004 | 22.03 | 1.34 |
| 18 | 2005 | 9.40 | 0.97 |
| 19 | 2006 | 45.10 | 1.65 |
| 20 | 2007 | 2.40 | 0.38 |
| 21 | 2008 | 52.20 | 1.72 |
| 22 | 2009 | 18.00 | 1.26 |
| 23 | 2010 | 57.40 | 1.76 |
| 24 | 2011 | 9.10 | 0.96 |
| 25 | 2012 | 68.00 | 1.83 |
| 26 | 2013 | 9.80 | 0.99 |
| 27 | 2014 | 5.60 | 0.75 |
| 28 | 2015 | 38.30 | 1.58 |
| 29 | 2016 | 11.50 | 1.06 |
| 30 | 2017 | 120.80 | 2.08 |
| 31 | 2018 | 5.10 | 0.71 |
| 32 | 2019 | 70.50 | 1.85 |
| 33 | 2020 | 22.03 | 1.34 |
| 34 | 2021 | 15.40 | 1.19 |
| 35 | 2022 | 5.40 | 0.73 |
| 36 | 2023 | 115.50 | 2.06 |
| 37 | 2024 | 2.80 | 0.45 |
| 38 | 2025 | 30.70 | 1.49 |

| | | |
|---|---|---|
| Xm | **30.55** | **1.28** |
| S | **30.27** | **0.44** |
| α= | **23.60** | **0.35** |
| μ= | **16.93** | **1.08** |
| Coef Asimet Cs | **1.633** | **-0.068** |
| k=Cs/6 | **0.272** | **-0.011** |

A

| Precipitación LogPearson | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Tr años | p | w | z | k | A | B | Kt | Yt | Precipitación mm | Corrección Intervalo Fijo xt(mm) |
| 2 | 0.5000 | 1.17741 | 0.00000 | -0.011 | -1.0000 | 0.0000 | 0.01132 | 1.287382 | 19.381268 | **21.90** |
| 5 | 0.2000 | 1.79412 | 0.84146 | -0.011 | -0.2920 | -1.4843 | 0.84457 | 1.656666 | 45.359213 | **51.26** |
| 10 | 0.1000 | 2.14597 | 1.28173 | -0.011 | 0.6428 | -1.8616 | 1.27421 | 1.847076 | 70.319511 | **79.46** |
| 25 | 0.0400 | 2.53727 | 1.75108 | -0.011 | 2.0663 | -1.7124 | 1.72747 | 2.047950 | 111.673592 | **126.19** |
| 50 | 0.0200 | 2.79715 | 2.05419 | -0.011 | 3.2197 | -1.2190 | 2.01759 | 2.176526 | 150.150356 | **169.67** |
| 100 | 0.0100 | 3.03485 | 2.32679 | -0.011 | 4.4139 | -0.4546 | 2.27676 | 2.291389 | 195.609076 | **221.04** |
| 250 | 0.0040 | 3.32309 | 2.65246 | -0.011 | 6.0356 | 0.9156 | 2.58426 | 2.427667 | 267.711200 | **302.51** |

| Corrección Intervalo Fijo xt(mm) | | | | | | |
|---|---|---|---|---|---|---|
| 21.90083309 | 51.25591119 | 79.461047 | 126.1911584 | 169.6699028 | 221.038 | 302.514 |

**Distribución de probabilidad pluviometrica GUMBEL**

| Nº | AÑO | Precipitacion mm | |
|---|---|---|---|
| | | xi | (xi-xm)2 |
| **1** | **1988** | **6.40** | 583.30 |
| **2** | **1989** | **10.5** | 402.07 |
| **3** | **1990** | **6.5** | 578.48 |
| **4** | **1991** | **6.4** | 583.30 |
| **5** | **1992** | **28.1** | 6.01 |
| **6** | **1993** | **27.1** | 11.91 |
| **7** | **1994** | **23.6** | 48.32 |
| **8** | **1995** | **19.5** | 122.14 |
| **9** | **1996** | **7.7** | 522.19 |
| **10** | **1997** | **16.3** | 203.11 |
| **11** | **1998** | **96.3** | 4322.85 |
| **12** | **1999** | **39.5** | 80.07 |
| **13** | **2000** | **12.4** | 329.48 |
| **14** | **2001** | **41.6** | 122.07 |
| **15** | **2002** | **52.1** | 464.33 |
| **16** | **2003** | **29.9** | 0.42 |
| **17** | **2004** | **22.03** | 72.62 |
| **18** | **2005** | **9.4** | 447.39 |
| **19** | **2006** | **45.1** | 211.66 |
| **20** | **2007** | **2.4** | 792.51 |
| **21** | **2008** | **52.2** | 468.65 |
| **22** | **2009** | **18** | 157.54 |
| **23** | **2010** | **57.4** | 720.84 |
| **24** | **2011** | **9.1** | 460.17 |
| **25** | **2012** | **68** | 1402.38 |
| **26** | **2013** | **9.8** | 430.63 |
| **27** | **2014** | **5.6** | 622.58 |
| **28** | **2015** | **38.3** | 60.04 |
| **29** | **2016** | **11.5** | 362.96 |
| **30** | **2017** | **120.8** | 8144.78 |
| **31** | **2018** | **5.1** | 647.78 |
| **32** | **2019** | **70.5** | 1595.88 |
| **33** | **2020** | **22.03** | 72.62 |
| **34** | **2021** | **15.4** | 229.57 |
| **35** | **2022** | **5.4** | 632.60 |
| **36** | **2023** | **115.5** | 7216.23 |
| **37** | **2024** | **2.8** | 770.15 |
| **38** | **2025** | **30.7** | 0.02 |

| | |
|---|---|
| Xm | **30.55** |
| S | **30.27** |
| α= | **23.60** |
| μ= | **16.93** |

**Precipitacion Gumbel**

| Periodo de Retorno | Variable Reducida | Precipitacion | Probabilidad de ocurrencia | Correccion Intervalo Fijo |
|---|---|---|---|---|
| Años | yi | xf | F(xt) | xt(mm) |
| 2 | 0.36651 | 25.58048 | 0.5000 | **28.91** |
| 5 | 1.49994 | 52.33002 | 0.8000 | **59.13** |
| 10 | 2.25037 | 70.04053 | 0.9000 | **79.15** |
| 25 | 3.19853 | 92.41782 | 0.9600 | **104.43** |
| 50 | 3.90194 | 109.01857 | 0.9800 | **123.19** |
| 100 | 4.60015 | 125.49674 | 0.9900 | **141.81** |
| 250 | 5.51946 | 147.19295 | 0.9960 | **166.33** |

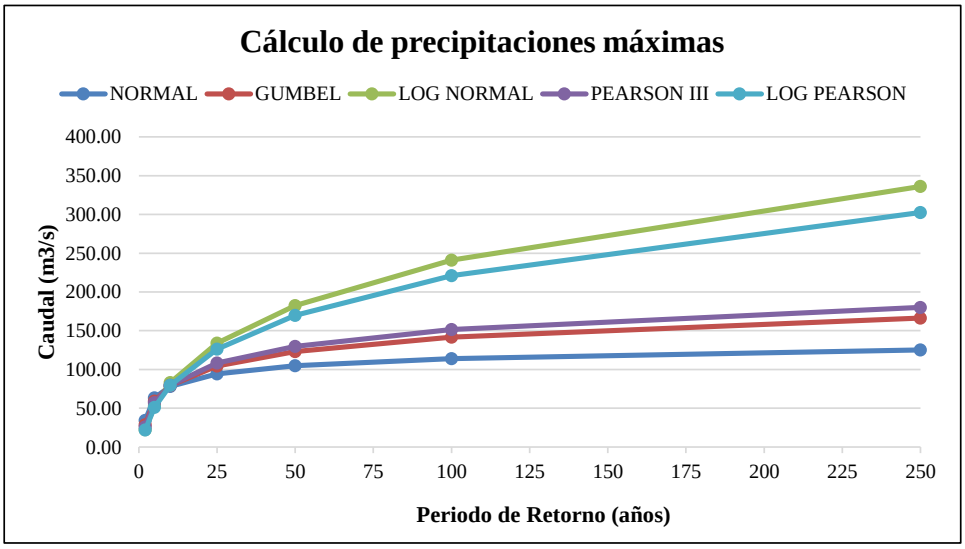
| CÁLCULO DE PRECIPITACIONES MÁXIMAS O EXTREMAS (mm) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **MODELOS DE DISTRIBUCIÓN** | | | | | | | | **PRUEBA DE BONDAD DE AJUSTE SMIRNOV - KOLMOGOROV** | | |
| | **2** | **5** | **10** | **25** | **50** | **100** | **250** | $\Delta$ **DE DATOS** | $\Delta$ **S-K** | CONSISTENCIA DE DATOS |
| NORMAL | 34.52 | 63.31 | 78.36 | 94.40 | 104.77 | 114.09 | 125.23 | 0.1647 | **0.2206211** | OK! |
| GUMBEL | 28.91 | 59.13 | 79.15 | 104.43 | 123.19 | 141.81 | 166.33 | 0.1315 | **0.2206211** | OK! |
| **LOG NORMAL** | **22.44** | **52.97** | **82.98** | **133.94** | **182.48** | **241.01** | **336.04** | **0.0604** | **0.2206211** | OK! |
| PEARSON III | 25.97 | 57.25 | 79.48 | 108.25 | 129.86 | 151.47 | 180.12 | 0.1074 | **0.2206211** | OK! |
| LOG PEARSON | 21.90 | 51.26 | 79.46 | 126.19 | 169.67 | 221.04 | 302.51 | 0.0610 | **0.2206211** | OK! |

***NOTA:***

NIVEL DE SIGNIFICANCIA: 95%

Conservadoramente se trabajará con la Distribución de NORMAL, según el cuadro anterior.

Para los cálculos anteriores, se ha hecho en excel



## Modelo de Dick Peschke

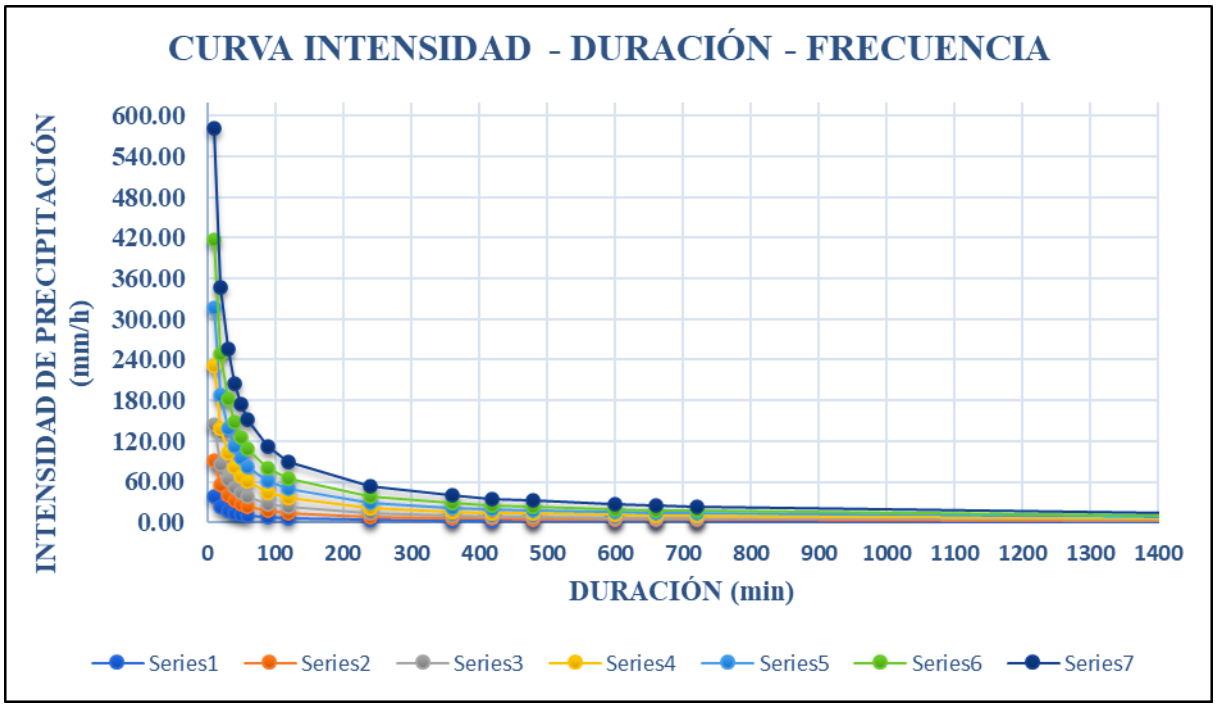
$$P_D = P_{24h} \times \left(\frac{D}{1440}\right)^{0.25}$$

***PD*** **=** precipitación máxima de duración D, en mm.
***P24h*** **=** precipitación máxima de 24 horas, en mm.
***D*** **=** duración de la precipitación, en minutos.

| **Duración (Minutos)** | **Precipitación en 24 horas (mm)** | | | | | | |
|---|---|---|---|---|---|---|---|
| | **22.44** | **52.97** | **82.98** | **133.94** | **182.48** | **241.01** | **336.04** |
| | **Periodo de Retorno (Años)** | | | | | | |
| | **2** | **5** | **10** | **25** | **50** | **100** | **250** |
| | **Precipitación (mm)** | | | | | | |
| 10 | 6.48 | 15.29 | 23.96 | 38.67 | 52.68 | 69.57 | 97.01 |
| 20 | 7.70 | 18.18 | 28.49 | 45.98 | 62.65 | 82.74 | 115.36 |
| 30 | 8.53 | 20.12 | 31.53 | 50.89 | 69.33 | 91.56 | 127.67 |
| 40 | 9.16 | 21.62 | 33.88 | 54.68 | 74.50 | 98.39 | 137.19 |
| 50 | 9.69 | 22.87 | 35.82 | 57.82 | 78.77 | 104.04 | 145.06 |
| 60 | 10.14 | 23.93 | 37.49 | 60.51 | 82.45 | 108.89 | 151.82 |
| 90 | 11.22 | 26.48 | 41.49 | 66.97 | 91.24 | 120.51 | 168.02 |
| 120 | 12.06 | 28.46 | 44.59 | 71.96 | 98.05 | 129.49 | 180.55 |
| 240 | 14.34 | 33.84 | 53.02 | 85.58 | 116.60 | 153.99 | 214.71 |
| 360 | 15.87 | 37.46 | 58.68 | 94.71 | 129.04 | 170.42 | 237.62 |
| 420 | 16.49 | 38.93 | 60.98 | 98.43 | 134.11 | 177.12 | 246.95 |
| 480 | 17.05 | 40.25 | 63.05 | 101.77 | 138.66 | 183.13 | 255.33 |
| 600 | 18.03 | 42.56 | 66.67 | 107.61 | 146.61 | 193.63 | 269.98 |
| 660 | 18.46 | 43.58 | 68.28 | 110.21 | 150.15 | 198.30 | 276.49 |
| 720 | 18.87 | 44.54 | 69.78 | 112.63 | 153.45 | 202.66 | 282.57 |
| 1440 | 22.44 | 52.97 | 82.98 | 133.94 | 182.48 | 241.01 | 336.04 |

## Intensidad de Precipitación

| Duración (Horas) | Duración (min) | Periodo de Retorno (Años) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2 | 5 | 10 | 25 | 50 | 100 | 250 |
| | | Intensidad (mm/hr) | | | | | | |
| 0.167 | 10 | 38.87 | 91.75 | 143.73 | 231.99 | 316.07 | 417.44 | 582.04 |
| 0.333 | 20 | 23.11 | 54.55 | 85.46 | 137.94 | 187.94 | 248.21 | 346.08 |
| 0.500 | 30 | 17.05 | 40.25 | 63.05 | 101.77 | 138.66 | 183.13 | 255.33 |
| 0.667 | 40 | 13.74 | 32.44 | 50.82 | 82.02 | 111.75 | 147.59 | 205.78 |
| 0.833 | 50 | 11.62 | 27.44 | 42.99 | 69.38 | 94.53 | 124.84 | 174.07 |
| 1.000 | 60 | 10.14 | 23.93 | 37.49 | 60.51 | 82.45 | 108.89 | 151.82 |
| 1.500 | 90 | 7.48 | 17.66 | 27.66 | 44.65 | 60.83 | 80.34 | 112.01 |
| 2.000 | 120 | 6.03 | 14.23 | 22.29 | 35.98 | 49.02 | 64.75 | 90.27 |
| 4.000 | 240 | 3.58 | 8.46 | 13.26 | 21.40 | 29.15 | 38.50 | 53.68 |
| 6.000 | 360 | 2.64 | 6.24 | 9.78 | 15.79 | 21.51 | 28.40 | 39.60 |
| 7.000 | 420 | 2.36 | 5.56 | 8.71 | 14.06 | 19.16 | 25.30 | 35.28 |
| 8.000 | 480 | 2.13 | 5.03 | 7.88 | 12.72 | 17.33 | 22.89 | 31.92 |
| 10.000 | 600 | 1.80 | 4.26 | 6.67 | 10.76 | 14.66 | 19.36 | 27.00 |
| 11.000 | 660 | 1.68 | 3.96 | 6.21 | 10.02 | 13.65 | 18.03 | 25.14 |
| 12.000 | 720 | 1.57 | 3.71 | 5.82 | 9.39 | 12.79 | 16.89 | 23.55 |
| 24.000 | 1440 | 0.94 | 2.21 | 3.46 | 5.58 | 7.60 | 10.04 | 14.00 |



## ANÁLISIS DE REGRESIÓN MÚLTIPLE

| Duración | TR | Intensidad | m | n | 10^k |
|---|---|---|---|---|---|
| min | años | mm/hr | **0.5421** | **-0.75** | **197.146** |
| 10 | 2 | 38.87 | 1.00 | 0.30 | 1.59 |
| 20 | 2 | 23.11 | 1.30 | 0.30 | 1.36 |
| 30 | 2 | 17.05 | 1.48 | 0.30 | 1.23 |
| 40 | 2 | 13.74 | 1.60 | 0.30 | 1.14 |
| 50 | 2 | 11.62 | 1.70 | 0.30 | 1.07 |
| 60 | 2 | 10.14 | 1.78 | 0.30 | 1.01 |
| 90 | 2 | 7.48 | 1.95 | 0.30 | 0.87 |
| 120 | 2 | 6.03 | 2.08 | 0.30 | 0.78 |
| 240 | 2 | 3.58 | 2.38 | 0.30 | 0.55 |
| 360 | 2 | 2.64 | 2.56 | 0.30 | 0.42 |
| 420 | 2 | 2.36 | 2.62 | 0.30 | 0.37 |
| 480 | 2 | 2.13 | 2.68 | 0.30 | 0.33 |
| 600 | 2 | 1.80 | 2.78 | 0.30 | 0.26 |
| 660 | 2 | 1.68 | 2.82 | 0.30 | 0.22 |
| 720 | 2 | 1.57 | 2.86 | 0.30 | 0.20 |
| 1440 | 2 | 0.94 | 3.16 | 0.30 | 0.0 |
| 10 | 5 | 91.75 | 1.00 | 0.70 | 1.96 |
| 20 | 5 | 54.55 | 1.30 | 0.70 | 1.74 |
| 30 | 5 | 40.25 | 1.48 | 0.70 | 1.60 |
| 40 | 5 | 32.44 | 1.60 | 0.70 | 1.51 |
| 50 | 5 | 27.44 | 1.70 | 0.70 | 1.44 |
| 60 | 5 | 23.93 | 1.78 | 0.70 | 1.38 |
| 90 | 5 | 17.66 | 1.95 | 0.70 | 1.25 |
| 120 | 5 | 14.23 | 2.08 | 0.70 | 1.15 |
| 240 | 5 | 8.46 | 2.38 | 0.70 | 0.93 |
| 360 | 5 | 6.24 | 2.56 | 0.70 | 0.80 |
| 420 | 5 | 5.56 | 2.62 | 0.70 | 0.75 |
| 480 | 5 | 5.03 | 2.68 | 0.70 | 0.70 |
| 600 | 5 | 4.26 | 2.78 | 0.70 | 0.63 |
| 660 | 5 | 3.96 | 2.82 | 0.70 | 0.60 |
| 720 | 5 | 3.71 | 2.86 | 0.70 | 0.57 |
| 1440 | 5 | 2.21 | 3.16 | 0.70 | 0.34 |

| Duración | TR | Intensidad | m | n | 10^k |
|---|---|---|---|---|---|
| min | años | mm/hr | **0.5421** | **-0.75** | **197.146** |
| 10 | 10 | 143.73 | 1.00 | 1.00 | 2.16 |
| 20 | 10 | 85.46 | 1.30 | 1.00 | 1.93 |
| 30 | 10 | 63.05 | 1.48 | 1.00 | 1.80 |
| 40 | 10 | 50.82 | 1.60 | 1.00 | 1.71 |
| 50 | 10 | 42.99 | 1.70 | 1.00 | 1.63 |
| 60 | 10 | 37.49 | 1.78 | 1.00 | 1.57 |
| 90 | 10 | 27.66 | 1.95 | 1.00 | 1.44 |
| 120 | 10 | 22.29 | 2.08 | 1.00 | 1.35 |
| 240 | 10 | 13.26 | 2.38 | 1.00 | 1.12 |
| 360 | 10 | 9.78 | 2.56 | 1.00 | 0.99 |
| 420 | 10 | 8.71 | 2.62 | 1.00 | 0.94 |
| 480 | 10 | 7.88 | 2.68 | 1.00 | 0.90 |
| 600 | 10 | 6.67 | 2.78 | 1.00 | 0.82 |
| 660 | 10 | 6.21 | 2.82 | 1.00 | 0.79 |
| 720 | 10 | 5.82 | 2.86 | 1.00 | 0.76 |
| 1440 | 10 | 3.46 | 3.16 | 1.00 | 0.54 |
| 10 | 25 | 231.99 | 1.00 | 1.40 | 2.37 |
| 20 | 25 | 137.94 | 1.30 | 1.40 | 2.14 |
| 30 | 25 | 101.77 | 1.48 | 1.40 | 2.01 |
| 40 | 25 | 82.02 | 1.60 | 1.40 | 1.91 |
| 50 | 25 | 69.38 | 1.70 | 1.40 | 1.84 |
| 60 | 25 | 60.51 | 1.78 | 1.40 | 1.78 |
| 90 | 25 | 44.65 | 1.95 | 1.40 | 1.65 |
| 120 | 25 | 35.98 | 2.08 | 1.40 | 1.56 |
| 240 | 25 | 21.40 | 2.38 | 1.40 | 1.33 |
| 360 | 25 | 15.79 | 2.56 | 1.40 | 1.20 |
| 420 | 25 | 14.06 | 2.62 | 1.40 | 1.15 |
| 480 | 25 | 12.72 | 2.68 | 1.40 | 1.10 |
| 600 | 25 | 10.76 | 2.78 | 1.40 | 1.03 |
| 660 | 25 | 10.02 | 2.82 | 1.40 | 1.00 |
| 720 | 25 | 9.39 | 2.86 | 1.40 | 0.97 |
| 1440 | 25 | 5.58 | 3.16 | 1.40 | 0.75 |

| Duración | TR | Intensidad | m | n | 10^k |
|---|---|---|---|---|---|
| min | años | mm/hr | **0.5421** | **-0.75** | **197.146** |
| 10 | 50 | 316.07 | 1.00 | 1.70 | 2.50 |
| 20 | 50 | 187.94 | 1.30 | 1.70 | 2.27 |
| 30 | 50 | 138.66 | 1.48 | 1.70 | 2.14 |
| 40 | 50 | 111.75 | 1.60 | 1.70 | 2.05 |
| 50 | 50 | 94.53 | 1.70 | 1.70 | 1.98 |
| 60 | 50 | 82.45 | 1.78 | 1.70 | 1.92 |
| 90 | 50 | 60.83 | 1.95 | 1.70 | 1.78 |
| 120 | 50 | 49.02 | 2.08 | 1.70 | 1.69 |
| 240 | 50 | 29.15 | 2.38 | 1.70 | 1.46 |
| 360 | 50 | 21.51 | 2.56 | 1.70 | 1.33 |
| 420 | 50 | 19.16 | 2.62 | 1.70 | 1.28 |
| 480 | 50 | 17.33 | 2.68 | 1.70 | 1.24 |
| 600 | 50 | 14.66 | 2.78 | 1.70 | 1.17 |
| 660 | 50 | 13.65 | 2.82 | 1.70 | 1.14 |
| 720 | 50 | 12.79 | 2.86 | 1.70 | 1.11 |
| 1440 | 50 | 7.60 | 3.16 | 1.70 | 0.88 |
| 10 | 100 | 417.44 | 1.00 | 2.00 | 2.62 |
| 20 | 100 | 248.21 | 1.30 | 2.00 | 2.39 |
| 30 | 100 | 183.13 | 1.48 | 2.00 | 2.26 |
| 40 | 100 | 147.59 | 1.60 | 2.00 | 2.17 |
| 50 | 100 | 124.84 | 1.70 | 2.00 | 2.10 |
| 60 | 100 | 108.89 | 1.78 | 2.00 | 2.04 |
| 90 | 100 | 80.34 | 1.95 | 2.00 | 1.90 |
| 120 | 100 | 64.75 | 2.08 | 2.00 | 1.81 |
| 240 | 100 | 38.50 | 2.38 | 2.00 | 1.59 |
| 360 | 100 | 28.40 | 2.56 | 2.00 | 1.45 |
| 420 | 100 | 25.30 | 2.62 | 2.00 | 1.40 |
| 480 | 100 | 22.89 | 2.68 | 2.00 | 1.36 |
| 600 | 100 | 19.36 | 2.78 | 2.00 | 1.29 |
| 660 | 100 | 18.03 | 2.82 | 2.00 | 1.26 |
| 720 | 100 | 16.89 | 2.86 | 2.00 | 1.23 |
| 1440 | 100 | 10.04 | 3.16 | 2.00 | 1.00 |

| Duración | TR | Intensidad | m | n | 10^k |
|---|---|---|---|---|---|
| min | años | mm/hr | **0.5421** | **-0.75** | **197.146** |
| 10 | 250 | 582.04 | 1.00 | 2.40 | 2.76 |
| 20 | 250 | 346.08 | 1.30 | 2.40 | 2.54 |
| 30 | 250 | 255.33 | 1.48 | 2.40 | 2.41 |
| 40 | 250 | 205.78 | 1.60 | 2.40 | 2.31 |
| 50 | 250 | 174.07 | 1.70 | 2.40 | 2.24 |
| 60 | 250 | 151.82 | 1.78 | 2.40 | 2.18 |
| 90 | 250 | 112.01 | 1.95 | 2.40 | 2.05 |
| 120 | 250 | 90.27 | 2.08 | 2.40 | 1.96 |
| 240 | 250 | 53.68 | 2.38 | 2.40 | 1.73 |
| 360 | 250 | 39.60 | 2.56 | 2.40 | 1.60 |
| 420 | 250 | 35.28 | 2.62 | 2.40 | 1.55 |
| 480 | 250 | 31.92 | 2.68 | 2.40 | 1.50 |
| 600 | 250 | 27.00 | 2.78 | 2.40 | 1.43 |
| 660 | 250 | 25.14 | 2.82 | 2.40 | 1.40 |
| 720 | 250 | 23.55 | 2.86 | 2.40 | 1.37 |
| 1440 | 250 | 14.00 | 3.16 | 2.40 | 1.15 |

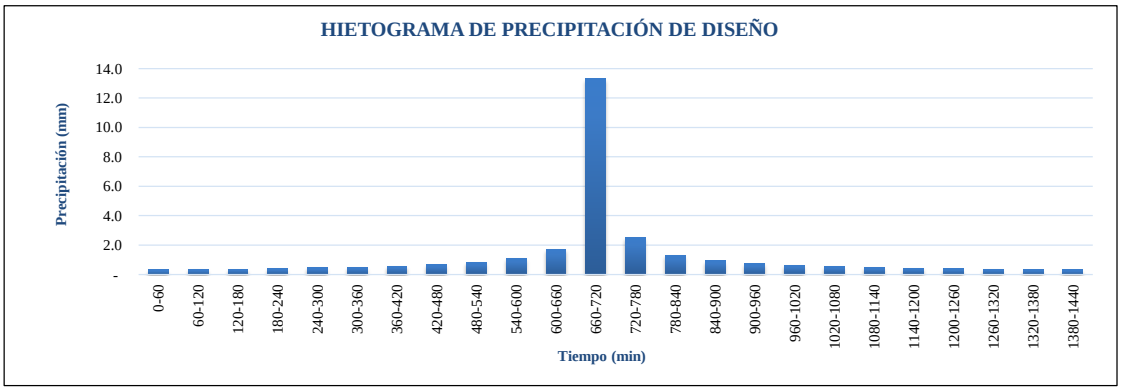
# HIETOGRAMA DE PRECIPITACIÓN DE DISEÑO

| | |
|---|---|
| 10^K = | 197.146 |
| T = | 2.00 |
| m = | 0.5421 |
| n = | 0.750 |

$$I = \frac{10^k \times T^m}{D^n}$$

**MÉTODO DEL BLOQUE ALTERNO**

| DURACIÓN min | INTENSIDAD mm/hr | PROFUNDIDAD ACUMULADA mm | PROFUNDIDAD INCREMENTAL mm | TIEMPO min | PRECIPITACIÓN mm |
|---|---|---|---|---|---|
| 60 | 13.316 | 13.316 | 13.316 | 0-60 | 0.322 |
| 120 | 7.917 | 15.835 | 2.519 | 60-120 | 0.346 |
| 180 | 5.841 | 17.524 | 1.689 | 120-180 | 0.373 |
| 240 | 4.708 | 18.831 | 1.307 | 180-240 | 0.407 |
| 300 | 3.982 | 19.911 | 1.080 | 240-300 | 0.448 |
| 360 | 3.473 | 20.840 | 0.929 | 300-360 | 0.501 |
| 420 | 3.094 | 21.659 | 0.819 | 360-420 | 0.571 |
| 480 | 2.799 | 22.394 | 0.735 | 420-480 | 0.669 |
| 540 | 2.563 | 23.063 | 0.669 | 480-540 | 0.819 |
| 600 | 2.368 | 23.679 | 0.616 | 540-600 | 1.080 |
| 660 | 2.205 | 24.250 | 0.571 | 600-660 | 1.689 |
| 720 | 2.065 | 24.783 | 0.533 | 660-720 | 13.316 |
| 780 | 1.945 | 25.284 | 0.501 | 720-780 | 2.519 |
| 840 | 1.840 | 25.757 | 0.473 | 780-840 | 1.307 |
| 900 | 1.747 | 26.205 | 0.448 | 840-900 | 0.929 |
| 960 | 1.664 | 26.631 | 0.426 | 900-960 | 0.735 |
| 1020 | 1.590 | 27.038 | 0.407 | 960-1020 | 0.616 |
| 1080 | 1.524 | 27.427 | 0.389 | 1020-1080 | 0.533 |
| 1140 | 1.463 | 27.800 | 0.373 | 1080-1140 | 0.473 |
| 1200 | 1.408 | 28.159 | 0.359 | 1140-1200 | 0.426 |
| 1260 | 1.357 | 28.504 | 0.346 | 1200-1260 | 0.389 |
| 1320 | 1.311 | 28.838 | 0.333 | 1260-1320 | 0.359 |
| 1380 | 1.268 | 29.160 | 0.322 | 1320-1380 | 0.333 |
| 1440 | 1.228 | 29.472 | 0.312 | 1380-1440 | 0.312 |



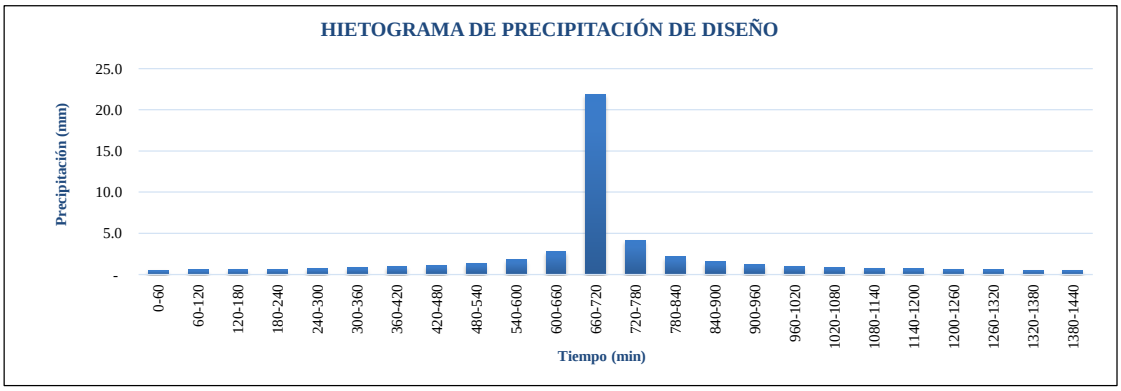
# HIETOGRAMA DE PRECIPITACIÓN DE DISEÑO

| | |
|---|---|
| 10^K = | 197.146 |
| T = | 5.00 |
| m = | 0.5421 |
| n = | 0.750 |

$$I = \frac{10^k \times T^m}{D^n}$$

**MÉTODO DEL BLOQUE ALTERNO**

| DURACIÓN min | INTENSIDAD mm/hr | PROFUNDIDAD ACUMULADA mm | PROFUNDIDAD INCREMENTAL mm | TIEMPO min | PRECIPITACIÓN mm |
|---|---|---|---|---|---|
| 60 | 21.881 | 21.881 | 21.881 | 0-60 | 0.530 |
| 120 | 13.011 | 26.022 | 4.140 | 60-120 | 0.568 |
| 180 | 9.599 | 28.798 | 2.776 | 120-180 | 0.613 |
| 240 | 7.736 | 30.945 | 2.147 | 180-240 | 0.668 |
| 300 | 6.544 | 32.720 | 1.775 | 240-300 | 0.736 |
| 360 | 5.708 | 34.246 | 1.526 | 300-360 | 0.823 |
| 420 | 5.085 | 35.592 | 1.346 | 360-420 | 0.938 |
| 480 | 4.600 | 36.800 | 1.208 | 420-480 | 1.100 |
| 540 | 4.211 | 37.900 | 1.100 | 480-540 | 1.346 |
| 600 | 3.891 | 38.911 | 1.012 | 540-600 | 1.775 |
| 660 | 3.623 | 39.850 | 0.938 | 600-660 | 2.776 |
| 720 | 3.394 | 40.726 | 0.876 | 660-720 | 21.881 |
| 780 | 3.196 | 41.549 | 0.823 | 720-780 | 4.140 |
| 840 | 3.023 | 42.326 | 0.777 | 780-840 | 2.147 |
| 900 | 2.871 | 43.063 | 0.736 | 840-900 | 1.526 |
| 960 | 2.735 | 43.763 | 0.700 | 900-960 | 1.208 |
| 1020 | 2.614 | 44.431 | 0.668 | 960-1020 | 1.012 |
| 1080 | 2.504 | 45.071 | 0.639 | 1020-1080 | 0.876 |
| 1140 | 2.404 | 45.684 | 0.613 | 1080-1140 | 0.777 |
| 1200 | 2.314 | 46.274 | 0.590 | 1140-1200 | 0.700 |
| 1260 | 2.231 | 46.842 | 0.568 | 1200-1260 | 0.639 |
| 1320 | 2.154 | 47.390 | 0.548 | 1260-1320 | 0.590 |
| 1380 | 2.083 | 47.919 | 0.530 | 1320-1380 | 0.548 |
| 1440 | 2.018 | 48.432 | 0.513 | 1380-1440 | 0.513 |



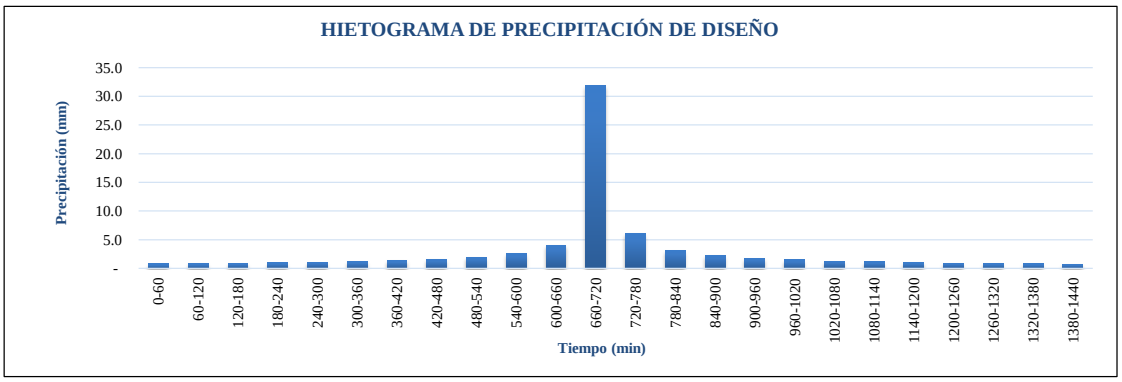
## HIETOGRAMA DE PRECIPITACIÓN DE DISEÑO

| | |
|---|---|
| 10^K = | 197.146 |
| T = | 10.00 |
| m = | 0.5421 |
| n = | 0.750 |

$$I = \frac{10^k \times T^m}{D^n}$$

**MÉTODO DEL BLOQUE ALTERNO**

| DURACIÓN min | INTENSIDAD mm/hr | PROFUNDIDAD ACUMULADA mm | PROFUNDIDAD INCREMENTAL mm | TIEMPO min | PRECIPITACIÓN mm |
|---|---|---|---|---|---|
| 60 | 31.861 | 31.861 | 31.861 | 0-60 | 0.771 |
| 120 | 18.945 | 37.889 | 6.028 | 60-120 | 0.827 |
| 180 | 13.977 | 41.932 | 4.042 | 120-180 | 0.893 |
| 240 | 11.265 | 45.058 | 3.127 | 180-240 | 0.973 |
| 300 | 9.529 | 47.643 | 2.585 | 240-300 | 1.072 |
| 360 | 8.311 | 49.865 | 2.222 | 300-360 | 1.199 |
| 420 | 7.404 | 51.825 | 1.959 | 360-420 | 1.366 |
| 480 | 6.698 | 53.584 | 1.759 | 420-480 | 1.601 |
| 540 | 6.132 | 55.185 | 1.601 | 480-540 | 1.959 |
| 600 | 5.666 | 56.658 | 1.473 | 540-600 | 2.585 |
| 660 | 5.275 | 58.024 | 1.366 | 600-660 | 4.042 |
| 720 | 4.942 | 59.300 | 1.276 | 660-720 | 31.861 |
| 780 | 4.654 | 60.499 | 1.199 | 720-780 | 6.028 |
| 840 | 4.402 | 61.630 | 1.131 | 780-840 | 3.127 |
| 900 | 4.180 | 62.702 | 1.072 | 840-900 | 2.222 |
| 960 | 3.983 | 63.722 | 1.020 | 900-960 | 1.759 |
| 1020 | 3.806 | 64.695 | 0.973 | 960-1020 | 1.473 |
| 1080 | 3.646 | 65.627 | 0.931 | 1020-1080 | 1.276 |
| 1140 | 3.501 | 66.520 | 0.893 | 1080-1140 | 1.131 |
| 1200 | 3.369 | 67.378 | 0.858 | 1140-1200 | 1.020 |
| 1260 | 3.248 | 68.205 | 0.827 | 1200-1260 | 0.931 |
| 1320 | 3.136 | 69.003 | 0.798 | 1260-1320 | 0.858 |
| 1380 | 3.034 | 69.774 | 0.771 | 1320-1380 | 0.798 |
| 1440 | 2.938 | 70.520 | 0.746 | 1380-1440 | 0.746 |



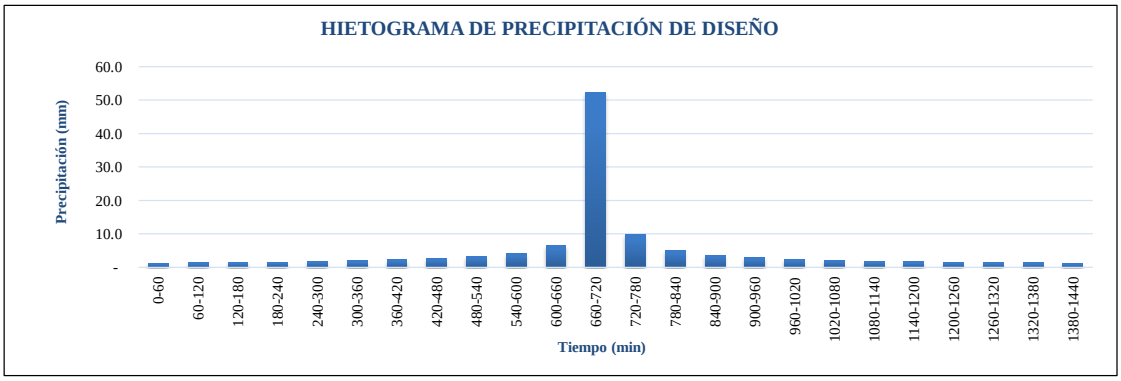
# HIETOGRAMA DE PRECIPITACIÓN DE DISEÑO

| | |
|---|---|
| 10^K = | 197.146 |
| T = | 25.00 |
| m = | 0.5421 |
| n = | 0.750 |

$$I = \frac{10^k \times T^m}{D^n}$$

**MÉTODO DEL BLOQUE ALTERNO**

| DURACIÓN min | INTENSIDAD mm/hr | PROFUNDIDAD ACUMULADA mm | PROFUNDIDAD INCREMENTAL mm | TIEMPO min | PRECIPITACIÓN mm |
|---|---|---|---|---|---|
| 60 | 52.358 | 52.358 | 52.358 | 0-60 | 1.267 |
| 120 | 31.132 | 62.264 | 9.906 | 60-120 | 1.359 |
| 180 | 22.969 | 68.906 | 6.642 | 120-180 | 1.468 |
| 240 | 18.511 | 74.045 | 5.138 | 180-240 | 1.599 |
| 300 | 15.659 | 78.293 | 4.248 | 240-300 | 1.762 |
| 360 | 13.657 | 81.944 | 3.651 | 300-360 | 1.970 |
| 420 | 12.166 | 85.164 | 3.220 | 360-420 | 2.245 |
| 480 | 11.007 | 88.055 | 2.891 | 420-480 | 2.631 |
| 540 | 10.076 | 90.686 | 2.631 | 480-540 | 3.220 |
| 600 | 9.311 | 93.106 | 2.420 | 540-600 | 4.248 |
| 660 | 8.668 | 95.351 | 2.245 | 600-660 | 6.642 |
| 720 | 8.121 | 97.448 | 2.097 | 660-720 | 52.358 |
| 780 | 7.648 | 99.418 | 1.970 | 720-780 | 9.906 |
| 840 | 7.234 | 101.277 | 1.859 | 780-840 | 5.138 |
| 900 | 6.869 | 103.039 | 1.762 | 840-900 | 3.651 |
| 960 | 6.545 | 104.715 | 1.676 | 900-960 | 2.891 |
| 1020 | 6.254 | 106.314 | 1.599 | 960-1020 | 2.420 |
| 1080 | 5.991 | 107.844 | 1.530 | 1020-1080 | 2.097 |
| 1140 | 5.753 | 109.312 | 1.468 | 1080-1140 | 1.859 |
| 1200 | 5.536 | 110.723 | 1.411 | 1140-1200 | 1.676 |
| 1260 | 5.337 | 112.082 | 1.359 | 1200-1260 | 1.530 |
| 1320 | 5.154 | 113.393 | 1.311 | 1260-1320 | 1.411 |
| 1380 | 4.985 | 114.660 | 1.267 | 1320-1380 | 1.311 |
| 1440 | 4.829 | 115.886 | 1.226 | 1380-1440 | 1.226 |



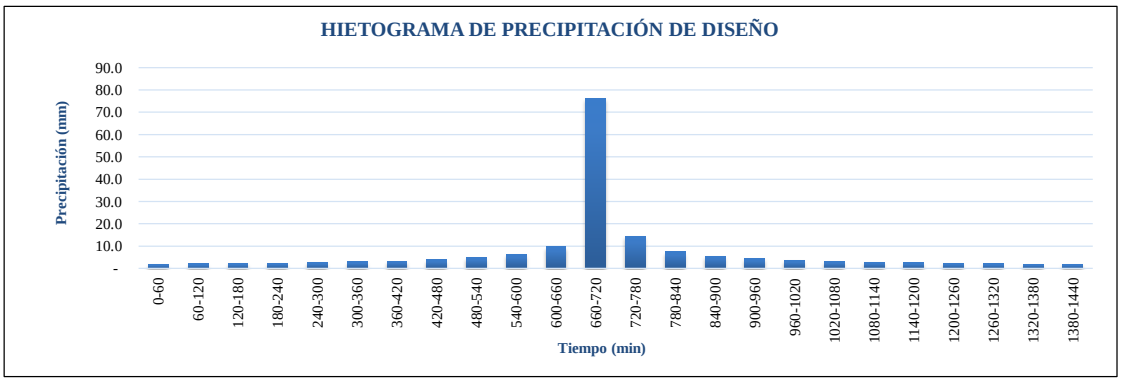
## HIETOGRAMA DE PRECIPITACIÓN DE DISEÑO

| | |
|---|---|
| 10^K = | 197.146 |
| T = | 50.00 |
| m = | 0.5421 |
| n = | 0.750 |

$$I = \frac{10^k \times T^m}{D^n}$$

**MÉTODO DEL BLOQUE ALTERNO**

| DURACIÓN min | INTENSIDAD mm/hr | PROFUNDIDAD ACUMULADA mm | PROFUNDIDAD INCREMENTAL mm | TIEMPO min | PRECIPITACIÓN mm |
|---|---|---|---|---|---|
| 60 | 76.237 | 76.237 | 76.237 | 0-60 | 1.845 |
| 120 | 45.331 | 90.661 | 14.425 | 60-120 | 1.979 |
| 180 | 33.444 | 100.333 | 9.672 | 120-180 | 2.137 |
| 240 | 26.954 | 107.815 | 7.482 | 180-240 | 2.329 |
| 300 | 22.800 | 114.000 | 6.185 | 240-300 | 2.566 |
| 360 | 19.886 | 119.317 | 5.316 | 300-360 | 2.868 |
| 420 | 17.715 | 124.005 | 4.688 | 360-420 | 3.269 |
| 480 | 16.027 | 128.214 | 4.210 | 420-480 | 3.831 |
| 540 | 14.672 | 132.046 | 3.831 | 480-540 | 4.688 |
| 600 | 13.557 | 135.570 | 3.524 | 540-600 | 6.185 |
| 660 | 12.622 | 138.839 | 3.269 | 600-660 | 9.672 |
| 720 | 11.824 | 141.892 | 3.053 | 660-720 | 76.237 |
| 780 | 11.135 | 144.760 | 2.868 | 720-780 | 14.425 |
| 840 | 10.533 | 147.467 | 2.707 | 780-840 | 7.482 |
| 900 | 10.002 | 150.033 | 2.566 | 840-900 | 5.316 |
| 960 | 9.530 | 152.473 | 2.440 | 900-960 | 4.210 |
| 1020 | 9.106 | 154.802 | 2.329 | 960-1020 | 3.524 |
| 1080 | 8.724 | 157.030 | 2.228 | 1020-1080 | 3.053 |
| 1140 | 8.377 | 159.167 | 2.137 | 1080-1140 | 2.707 |
| 1200 | 8.061 | 161.221 | 2.054 | 1140-1200 | 2.440 |
| 1260 | 7.771 | 163.199 | 1.979 | 1200-1260 | 2.228 |
| 1320 | 7.505 | 165.108 | 1.909 | 1260-1320 | 2.054 |
| 1380 | 7.259 | 166.954 | 1.845 | 1320-1380 | 1.909 |
| 1440 | 7.031 | 168.739 | 1.786 | 1380-1440 | 1.786 |



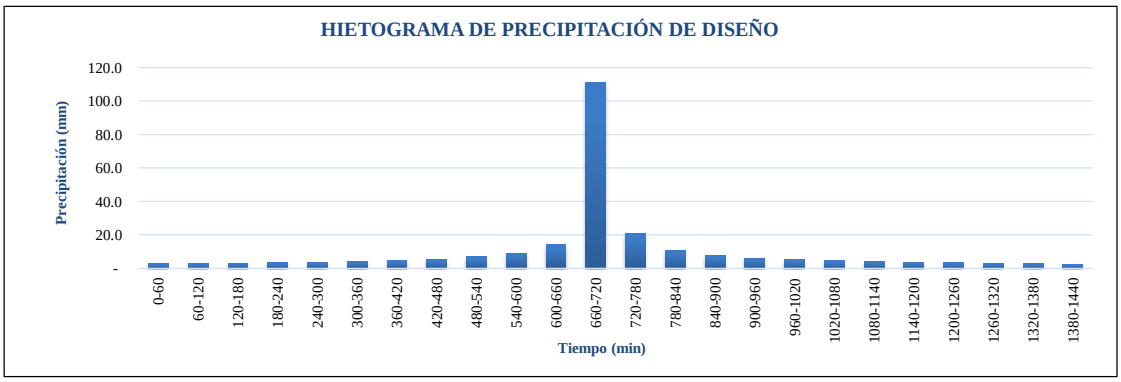
## HIETOGRAMA DE PRECIPITACIÓN DE DISEÑO

| | |
|---|---|
| 10^K = | 197.146 |
| T = | 100.00 |
| m = | 0.5421 |
| n = | 0.750 |

$$I = \frac{10^k \times T^m}{D^n}$$

**MÉTODO DEL BLOQUE ALTERNO**

| DURACIÓN min | INTENSIDAD mm/hr | PROFUNDIDAD ACUMULADA mm | PROFUNDIDAD INCREMENTAL mm | TIEMPO min | PRECIPITACIÓN mm |
|---|---|---|---|---|---|
| 60 | 111.006 | 111.006 | 111.006 | 0-60 | 2.687 |
| 120 | 66.005 | 132.010 | 21.003 | 60-120 | 2.881 |
| 180 | 48.698 | 146.093 | 14.083 | 120-180 | 3.112 |
| 240 | 39.247 | 156.987 | 10.894 | 180-240 | 3.390 |
| 300 | 33.199 | 165.993 | 9.007 | 240-300 | 3.736 |
| 360 | 28.956 | 173.734 | 7.741 | 300-360 | 4.176 |
| 420 | 25.794 | 180.560 | 6.826 | 360-420 | 4.760 |
| 480 | 23.336 | 186.690 | 6.129 | 420-480 | 5.579 |
| 540 | 21.363 | 192.269 | 5.579 | 480-540 | 6.826 |
| 600 | 19.740 | 197.400 | 5.132 | 540-600 | 9.007 |
| 660 | 18.378 | 202.161 | 4.760 | 600-660 | 14.083 |
| 720 | 17.217 | 206.606 | 4.446 | 660-720 | 111.006 |
| 780 | 16.214 | 210.782 | 4.176 | 720-780 | 21.003 |
| 840 | 15.337 | 214.724 | 3.942 | 780-840 | 10.894 |
| 900 | 14.564 | 218.460 | 3.736 | 840-900 | 7.741 |
| 960 | 13.876 | 222.013 | 3.553 | 900-960 | 6.129 |
| 1020 | 13.259 | 225.403 | 3.390 | 960-1020 | 5.132 |
| 1080 | 12.703 | 228.647 | 3.244 | 1020-1080 | 4.446 |
| 1140 | 12.198 | 231.759 | 3.112 | 1080-1140 | 3.942 |
| 1200 | 11.738 | 234.750 | 2.991 | 1140-1200 | 3.553 |
| 1260 | 11.316 | 237.631 | 2.881 | 1200-1260 | 3.244 |
| 1320 | 10.928 | 240.411 | 2.780 | 1260-1320 | 2.991 |
| 1380 | 10.569 | 243.097 | 2.687 | 1320-1380 | 2.780 |
| 1440 | 10.237 | 245.698 | 2.600 | 1380-1440 | 2.600 |



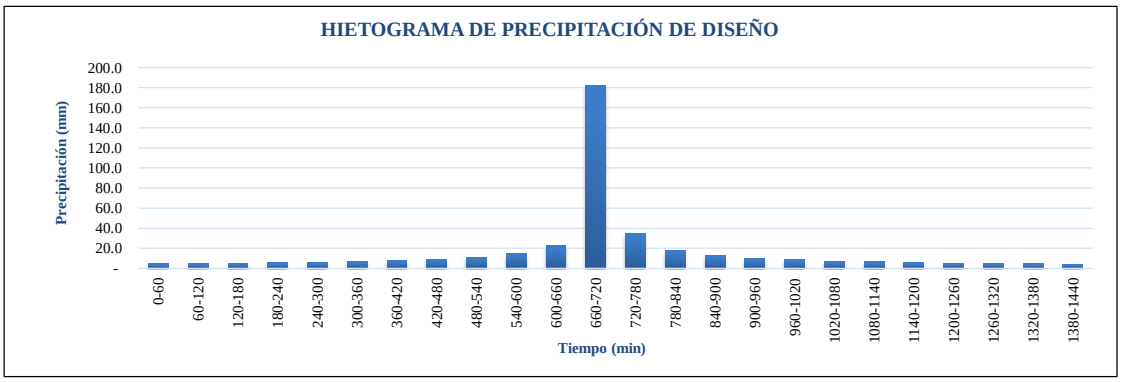
# HIETOGRAMA DE PRECIPITACIÓN DE DISEÑO

| | |
|---|---|
| 10^K = | 197.146 |
| T = | 250.00 |
| m = | 0.5421 |
| n = | 0.750 |

$$I = \frac{10^k \times T^m}{D^n}$$

**MÉTODO DEL BLOQUE ALTERNO**

| DURACIÓN min | INTENSIDAD mm/hr | PROFUNDIDAD ACUMULADA mm | PROFUNDIDAD INCREMENTAL mm | TIEMPO min | PRECIPITACIÓN mm |
|---|---|---|---|---|---|
| 60 | 182.417 | 182.417 | 182.417 | 0-60 | 4.415 |
| 120 | 108.466 | 216.932 | 34.515 | 60-120 | 4.734 |
| 180 | 80.025 | 240.075 | 23.143 | 120-180 | 5.113 |
| 240 | 64.494 | 257.977 | 17.902 | 180-240 | 5.572 |
| 300 | 54.556 | 272.778 | 14.800 | 240-300 | 6.139 |
| 360 | 47.583 | 285.499 | 12.721 | 300-360 | 6.862 |
| 420 | 42.388 | 296.716 | 11.217 | 360-420 | 7.822 |
| 480 | 38.349 | 306.788 | 10.072 | 420-480 | 9.168 |
| 540 | 35.106 | 315.956 | 9.168 | 480-540 | 11.217 |
| 600 | 32.439 | 324.389 | 8.433 | 540-600 | 14.800 |
| 660 | 30.201 | 332.211 | 7.822 | 600-660 | 23.143 |
| 720 | 28.293 | 339.517 | 7.306 | 660-720 | 182.417 |
| 780 | 26.645 | 346.379 | 6.862 | 720-780 | 34.515 |
| 840 | 25.204 | 352.857 | 6.477 | 780-840 | 17.902 |
| 900 | 23.933 | 358.996 | 6.139 | 840-900 | 12.721 |
| 960 | 22.802 | 364.835 | 5.839 | 900-960 | 10.072 |
| 1020 | 21.789 | 370.406 | 5.572 | 960-1020 | 8.433 |
| 1080 | 20.874 | 375.737 | 5.331 | 1020-1080 | 7.306 |
| 1140 | 20.045 | 380.851 | 5.113 | 1080-1140 | 6.477 |
| 1200 | 19.288 | 385.766 | 4.915 | 1140-1200 | 5.839 |
| 1260 | 18.595 | 390.500 | 4.734 | 1200-1260 | 5.331 |
| 1320 | 17.958 | 395.068 | 4.568 | 1260-1320 | 4.915 |
| 1380 | 17.369 | 399.483 | 4.415 | 1320-1380 | 4.568 |
| 1440 | 16.823 | 403.756 | 4.273 | 1380-1440 | 4.273 |



## HIETOGRAMA DE PRECIPITACIÓN DE DISEÑO

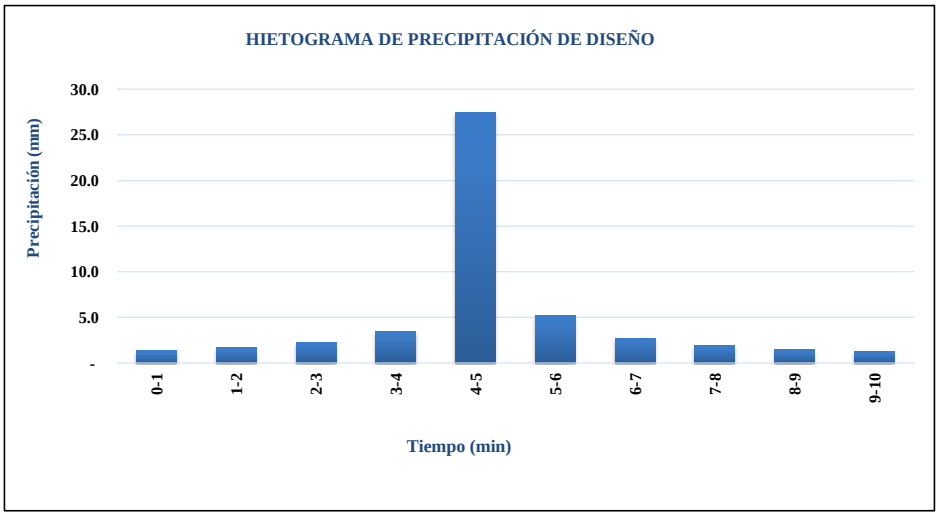
| | |
|---|---|
| 10^K = | 197.146 |
| T = | 50.00 |
| m = | 0.5421 |
| n = | 0.750 |

Periodo de Retorno (Años)

$$I = \frac{10^k \times T^m}{D^n}$$

**MÉTODO DEL BLOQUE ALTERNO**

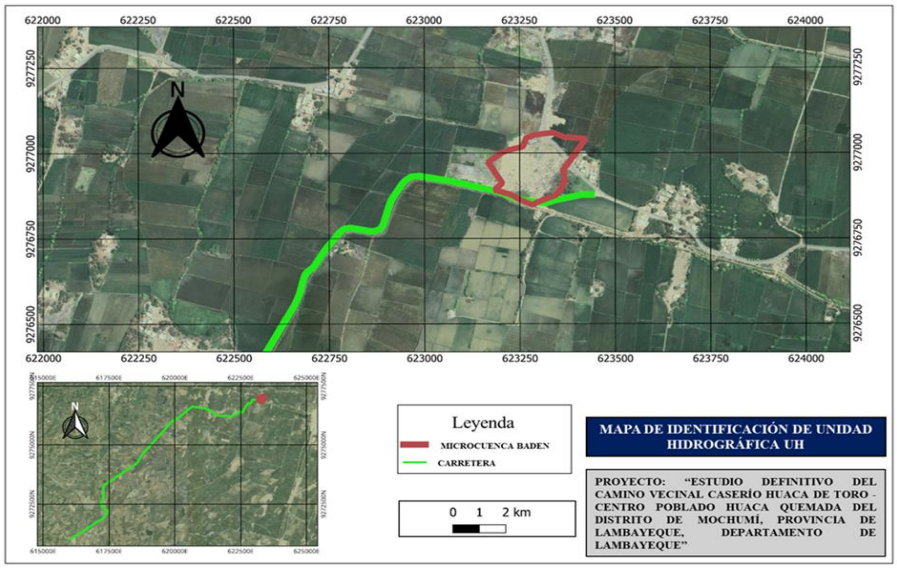
| DURACIÓN min | INTENSIDAD mm/hr | PROFUNDIDAD ACUMULADA mm | PROFUNDIDAD INCREMENTAL mm | TIEMPO min | PRECIPITACIÓN mm |
|---|---|---|---|---|---|
| 1 | 1,643.528 | 27.392 | 27.392 | 0-1 | 1.377 |
| 2 | 977.248 | 32.575 | 5.183 | 1-2 | 1.684 |
| 3 | 721.002 | 36.050 | 3.475 | 2-3 | 2.222 |
| 4 | 581.075 | 38.738 | 2.688 | 3-4 | 3.475 |
| 5 | 491.530 | 40.961 | 2.222 | 4-5 | 27.392 |
| 6 | 428.710 | 42.871 | 1.910 | 5-6 | 5.183 |
| 7 | 381.903 | 44.555 | 1.684 | 6-7 | 2.688 |
| 8 | 345.509 | 46.068 | 1.512 | 7-8 | 1.910 |
| 9 | 316.297 | 47.445 | 1.377 | 8-9 | 1.512 |
| **10** | 292.265 | 48.711 | 1.266 | 9-10 | 1.266 |



NOTA: Los datos fueron obtenidos del Programa Argis, Civil 3D y Global Mapper.

## 1. PARÁMETROS DE FORMA:

### MICROCUENCA BADÉN




**Datos obtenidos del Argis Y AUTOCAD**

| | | | | |
|---|---|---|---|---|
| **a) ÁREA (A):** | 0.021 | Km2 | 2.1 | Ha |
| **b) PERÍMETRO (P):** | 0.657 | Km | | |

**Como referencia se puede utilizar esta clasificación:**

| TAMAÑO CUENCA (KM2) | DESCRIPCION |
|---|---|
| <25 | Muy pequeña |
| 25a 250 | Pequeña |
| 250 a 500 | Intermedia - pequeña |
| 500 a 2500 | Intermedia -grande |
| 2500 a 5000 | Grande |
| >5000 | Muy grande |

*Según esa clasificación podemos indicar que la Microcuenca es muy pequeña ya que es menor a los 25 Km2*

**Otra clasificacion:**

| UNIDAD HIDROLOGICA | AREA (Ha) |
|---|---|
| Cuenca | 50 000-800 000 |
| Subcuenca | 5 000 - 50 000 |
| Microcuenca | <5 000 |

*Según esa clasificación podemos indicar que según su Unidad hidrologica es una Microcuenca ya que se encuentra entre esos rangos*

| | | | | |
|---|---|---|---|---|
| **c)LONGITUD DE LA CUENCA (L)** | | L= | 0.44 | Km |
| **d) ANCHO DE LA CUENCA (W)** | W = AREA/ LONGITUD | W= | 0.047425 | Km |

| | | | | |
|---|---|---|---|---|
| **e) FACTOR DE FORMA (Ff)** | Ff = AREA/LONGITUD $^2$ | Ff= | 1.590667 | |

Según el valor obtenido relacionaremos con el siguiente cuadro para verificar que forma tiene:

| Factor de forma | DESCRIPCION | PRODUCCION SOSTENIDA DE CAUDALES | POTENCIALES DE CRECIENTES |
|---|---|---|---|
| 0 - 0.25 | Estrecha | Bajo | Bajo |
| 0.25 - 0.50 | Alargada | Moderado | Moderado |
| 0.50 - 0.75 | Amplia | Alto | Alto |
| 0.75 - 1 | Ancha | Muy alto | Muy alto |

*Según esa clasificación podemos indicar que la Microcuenca es ESTRECHA, producción sostenida de caudales es BAJO, de igual forma para potenciales de crecientes*

| | | | |
|---|---|---|---|
| **f) COEFICIENTE DE COMPACIDAD (Kc)** | Kc= 0.28*P/ $\sqrt{A}$ | Kc= | 1.269444603 |

**Según FAO, 1985:**

| COEFICIENTE DE COMPACIDAD | DESCRIPCION |
|---|---|
| 1.00 - 1.25 | Forma redonda a oval redonda |
| 1.25 - 1.50 | Forma oval redonda a Oval oblonga |
| 1.50 - 1.75 | Forma oval oblonga a rectangular oblonga |

**Cc > 1 Mas irregular es la cuenca**

**Cc < 1 se aproxima a la circular (crecientes)**

**Cc ≈ Cuenca alargada**

*Según esa clasificación podemos indicar que la Cuenca es FORMA REDONDA A OVAL REDONDA ,y como el Cc es < 1 se aproxima a circular (crecientes)*

| | | | |
|---|---|---|---|
| **g) RELACION DE ELONGACION (Re)** | Re=1.128$\sqrt{A}$ / L cuenca | Re= | 0.369157023 |

| | | |
|---|---|---|
| **h) LONGITUD DEL CAUCE PRINCIPAL:** | 0.11 | Km |

| UNIDAD HIDROGRÁFICA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Nombre** | **Perímetro (Km)** | **Área ($Km^2$)** | **Área (Ha)** | **Longitud Cauce (m)** | **Cota Max (msnm)** | **Cota Min (msnm)** | **Pendiente de la cuenca (%)** | **Pendiente del cauce (%)** |
| **UH-01** | 0.657 | 0.021 | 2.1 | 144.9 | 20.268 | 20.175 | 1.079% | 0.064% |

| Caudal Máximo - UH 01 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **MÉTODO RACIONAL** | | | | | | | | |
| **Tr** | **L (km)** | **S (m/m)** | **Tc (min)** | **C** | **I (mm/hr)** | **Área ($Km^2$)** | **Q ($m^3/s$)** | **Q ($m^3/s$)** |
| **2** | 0.1449 | 0.06418 | 10 | 0.20 | 38.87 | 0.021 | 0.04534649 | 0.0 |
| **5** | 0.1449 | 0.06418 | 10 | 0.20 | 91.75 | 0.021 | 0.10703758 | 0.1 |
| **10** | 0.1449 | 0.06418 | 10 | 0.20 | 143.73 | 0.021 | 0.16768959 | 0.2 |
| **25** | 0.1449 | 0.06418 | 10 | 0.20 | 231.99 | 0.021 | 0.27065666 | 0.3 |
| **50** | 0.1449 | 0.06418 | 10 | 0.20 | 316.07 | 0.021 | 0.36874925 | **0.4** |
| **100** | 0.1449 | 0.06418 | 10 | 0.20 | 417.44 | 0.021 | 0.48701517 | 0.5 |
| **250** | 0.1449 | 0.06418 | 10 | 0.20 | 582.04 | 0.021 | 0.67904264 | 0.7 |

*Cobertura Vegetal: CULTIVOS* *Tipo de suelo: Clasificación SP (Permeable)* *Pendiente: >1%*

# ANEXO N°08.- DISEÑO DE OBRAS DE ARTE

| Caudal de diseño: | 0.40 | m3/s |
|---|---|---|

**A.-** **DISEÑO HIDRÁULICO DE ALCANTARILLAS DE PASO:**

Aplicando la formula de ROBERT MANNING:

**Donde :**

- Q: Caudal en m3/s
- A: Área hidráulica en m2
- P: Perímetro mojado en m
- R: Radio hidráulico = A/P
- S: Pendiente de la alcantarilla en m/m
- n: coeficiente de rugosidad

**Valores de "n" para la formula de MANNING**

| N° | TIPO DE MATERIAL | " n " |
|---|---|---|
| 1 | Tierra común nivelada. | 0.020 |
| 2 | Roca lisa y uniforme | 0.080 |
| 3 | Roca con salientes y entrantes | 0.040 |
| 4 | Lecho pedregoso y bordes enyerbados | 0.030 |
| 5 | Plantilla de tierra, taludes ásperos | 0.030 |
| 6 | Revestidos de: Concreto áspero o bituminoso | 0.017 |
| 7 | Piedra lisa | 0.020 |
| 8 | Pasto bien mantenido, profundidad de Flujo: | |
| | - Mayor a 15.24 cm | 0.040 |
| | - Menor a 15.24 cm | 0.060 |
| 9 | Concreto Liso | 0.013 |

**B.-** **DISEÑO HIDRÁULICO DE ALCANTARILLA TIPO MARCO QUE CRUZAN LA VÍA**

**B.1. PARA TODAS LAS ALCANTARILLAS DE ALIVIO:**

Caudal de Diseño para las alcantarillas:

Q = 0.400 m3/s

Adoptamos: **Q = 0.400 m3/s**

**1.- DATOS DE DISEÑO:**

| | | | | |
|---|---|---|---|---|
| Q max: | Caudal Máximo | = | 0.400 | m3/seg. |
| S: | Pend. Alcant. O Pend paso de agua | = | 0.010 | % |
| n: | Coef de fricción o Rugosidad | = | 0.013 | (Concreto) |

**2.- SECCIÓN DEL OJO:**

Asumiendo Valores, con la condicion de: e b e

h = 1.50 x b

Donde: e°

Ancho: b = 0.40 H h

Altura: h = 0.80

Con la condicion que : e°

Asumimos :

e = 0.20 B

e° = 0.20

Con lo que se obtiene: B = 0.80 m

H = 1.20 m

**3.- CAPACIDAD DE LA ALCANTARILLA DE ALIVIO**

La capacidad la calculamos con la formula de MANNING

A= 0.320 m2 Remplazando:

P= 2.000 m Q= 0.725 m3/s

R= 0.160 m Se Verifica entonces que:

S= 0.010 Q= 0.725 m3/s

n= 0.013 >

Qmax.= 0.400 m3/s **Ok CUMPLE!**

**Tabulación de datos cuando Transporte el Caudal Normal Asumido**

Con el Caudal maximo: Q = 0.400 m3/s

n = 0.013

S = 0.010

e = 0.200 Espesor de losa y Pared

1.20 b = Ancho libre Interno = 0.40 m

y h = Alto libre Interno = 0.80 m

Área = 0.40 x Y m2

0.80 Perímetro = 0.40 + 2Y m

Probamos que: 5

Y

0.0137 = 2

(0.40 + 2Y)

Usamos Aprox. Y = 0.480

Donde: 0.014 = 0.014

**Ok el Valor de Y es Correcto**

Asumimos Y = 0.50 m

Donde:

| | | |
|---|---|---|
| Área Mojada: | 0.2000 | m2 |
| Perímetro Mojado: | 1.4000 | m |
| Radio Hidráulico: | 0.1429 | m |
| Velocidad del flujo: | 2.0000 | m/s |

# DISEÑO DE ALCANTARILLAS

**TIPO A** **DIMENSIONES 0.80m. X 1.20m.**

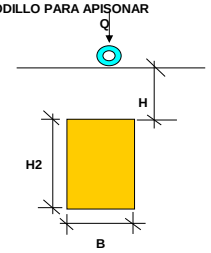
## DISEÑO LOSA SUPERIOR

PESO DEL MATERIAL

Ka = Tg2(45-Ø/2)

Ø = 28
Ka = 0.361

**RODILLO PARA APISONAR**




**1ra CONDICION**

Estructura sometida a carga del camion al 100%
Relleno

**DATOS**

| | | | |
|---|---|---|---|
| & = | 1.6 | Tn/m3 | Peso del relleno |
| H = | 0.60 | mt | Altura de relleno |
| H-25 Q = | 11 | Tn | |
| B = | 0.80 | mt | |
| H2 = | 1.20 | mt | |

**CALCULO PESO DEL MATERIAL**

P = &xH
P = 0.96 Tn/m2

**PESO DEL CAMION**

AGV = 3xQx1 / 2xPI*H^2

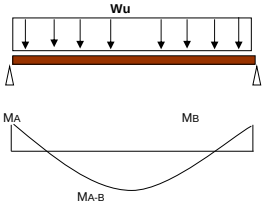
AGV = 14.59

**Coeficientes Metodo de Rotura**

CM = 1.4 CV = 1.7

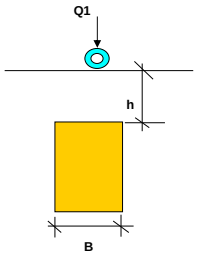
**Wu =** 26.15 Tn/m2

**Estructura analizada como una Viga Simplemente Apoyada**




MA=MB= WuxL^2/11 1.52 Tn-m

MA-B = WuxL^2/8 = 2.092 Tn-m




**2da CONDICION**

CONSIDERANDO UN RODILLO DE 8-12TN AL COMPACTADO

**DATOS**

| | | |
|---|---|---|
| B = | 0.80 | mt |
| h = | 0.60 | mt |
| Q1 = | 10 | Tn |

**CALCULO PESO DEL MATERIAL**

P = &xH
P = 0.96 Tn/m2

**PESO DEL RODILLO**

Q1 = Peso/Ancho
Q1 = 12.50 Tn/m

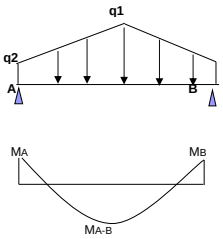
AGV = 2xQ1xH^3 / PIx(X^2+H^2)^2

para

| | | | | | |
|---|---|---|---|---|---|
| Q1 = | 12.50 | H = 0.6 | X = 0 | AGV = | 13.26 Tn/m2 |
| Q1 = | 12.50 | H = 0.6 | X = 0.4 | AGV = | 6.36 Tn/m2 |

**FINALMENTE**

qu = 1.4 CM + 1.7 CV
q1 = 23.89 Tn/m2
q2 = 12.15 Tn/m2




MA=MB= q2L^2/12+5x(q1-q2)xL^2/96

MA=MB= 1.04 Tn-m

**Momento Central igual al 75% de una Viga Simplemente apoyada**

MA-B = 0.75*(q2*L^2/8 +(q1-q2)*L^2/12)

MA-B = 1.20 Tn-m

## Calculo As en losa Superior Alcantarillas

**DATOS**

| | | |
|---|---|---|
| Altura Viga h = | 20 | cm |
| Ancho Viga B = | 100 | cm |
| Recubrimiento e = | 2.5 | cm |
| f'c = | 210 | Kg/cm2 |
| f'y = | 4200 | Kg/cm2 |
| **Momento Ultimo A-B =** | 2091.65 | Kgxmt |

**RESULTADOS**

| | | |
|---|---|---|
| **Acero Tracción (+) =** | 4.23 | cm2 |
| Ø | 0.90 | |
| b1 | 0.85 | |
| pb=0.85*f'c*b1*6000/fy/(6000+fy) | 0.02 | |
| pmax=0.75pb | 0.02 | |
| **w = p*fy/f'c** | 0.32 | |
| **k=Ø*f'c*w*(1-0.59w)** | 48.91 | |
| Momento Resist | 14979.96 | Kgxmt |

| | | |
|---|---|---|
| a6(Acero Minimo) | 4.2266516 | |
| k=Mu*100/(bd2) | 6.8298829 | |
| cte1 | 0.0361369 | |
| cte2= | 0.9564083 | |
| w = | 0.0369421 | |
| p= | 0.0018471 | |
| As = | 3.2324365 | |

**RESULTADOS CON ACERO EN COMPRESION**

No Necesita As Compresión 0

| | | |
|---|---|---|
| **Acero Compresión =** | NO EXISTE | cm2 |
| **Acero Tracción =** | 3.23 | cm2 |
| **a=** | 5.83 | |
| **b=** | 4.00 | |
| **Cuantia Minima** | 5.83 | cm2 |

**DATOS**

| | | |
|---|---|---|
| Altura Viga h = | 20 | cm |
| Ancho Viga B = | 100 | cm |
| Recubrimiento e = | 2.5 | cm |
| f'c = | 210 | Kg/cm2 |
| f'y = | 4200 | Kg/cm2 |
| **Momento Ultimo A =** | 1521.20 | Kgxmt |

**RESULTADOS**

| | | |
|---|---|---|
| **Acero Tracción ( - )=** | 4.23 | cm2 |
| Ø | 0.90 | |
| b1 | 0.85 | |
| pb | 0.02 | |
| pmax=0.75pb | 0.02 | |
| **w = p*fy/f'c** | 0.32 | |
| **k=** | 48.91 | |
| Momento Resist | 14979.96 | Kgxmt |

| | | |
|---|---|---|
| a6(Acero Minimo) | 4.2266516 | |
| k | 4.9671875 | |
| cte1 | 0.0262814 | |
| cte2= | 0.9684915 | |
| w = | 0.0267021 | |
| p= | 0.0013351 | |
| As = | 2.3364326 | |

Recubrimiento Compres. cm = 0

| | | |
|---|---|---|
| **Acero Compresión =** | 4.23 | cm2 |
| **\cero Total en Compresión =** | 4.23 | cm2 |
| **a=** | 5.83 | |
| **b=** | 4.00 | |
| **Cuantia Minima =** | 5.83 | cm2 |

**CALCULO DE VARRILA DE FIERRO**

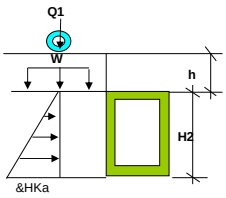
| ø (pulg) | peso (Kg/ml) | area (cm2) | |
|---|---|---|---|
| 1/4 | 0.25 | 0.32 | |
| 8mm | 0.39 | 0.50 | |
| 3/8 | 0.56 | 0.71 | |
| 12 mm | 0.89 | 1.13 | |
| 1/2 | 0.99 | 1.27 | |
| 5/8 | 1.55 | 1.98 | |
| 3/4 | 2.24 | 2.85 | |
| | 1 | 3.98 | 5.07 |

| **espaciamiento en a-b (-)** | | **espaciamiento en b (-)** | |
|---|---|---|---|
| **Varilla de Ø 5/8 @** | **33.93 cm** | **Varilla de Ø 5/8 @** | **33.93 cm** |
| **Varilla de Ø 1/2 @** | **21.72 cm** | **Varilla de Ø 1/2 @** | **21.72 cm** |
| **Varilla de Ø 3/8 @** | **12.22 cm** | **Varilla de Ø 3/8 @** | **12.22 cm** |

| | |
|---|---|
| **Por Cuantia minima Varilla de Ø 3/8 @** | **12.22 cm** |
| **Acero Capa Inferior 2/3 (As min) Ø 3/8 @** | **18.32 cm** |
| **Acero Capa Superior 1/3 (As min) Ø 3/8 @** | **36.65 cm** |

## DISEÑO DE LOSA LATERAL

**1er CASO (**Con el rodillo Compactando)




W = Peso Rodillo/Ancho Rodillo
**W =** 12.50 Tn/m2

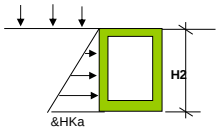
| Z | AGV |
|---|---|
| 0.2 | 39.79 |
| 0.4 | 19.89 |
| 0.6 | 13.26 |
| 0.8 | 9.95 |
| 1.0 | 7.96 |
| 1.2 | 6.63 |
| 1.4 | 5.68 |
| 1.6 | 4.97 |
| 1.8 | 4.42 |
| 2.0 | 3.98 |
| 2.2 | 3.62 |

AGV = 2 Q1/PI/Z

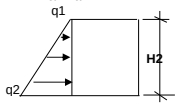
AGV promedio= 10.92 Tn/m2

AGV = 13.26 Tn/m2

**EZFUERZO POR RELLENO**




CM = &HKa
CM = 0.69 Tn/m2



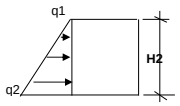

q1u = CVxAGVxKa
q2u = q1u+CMxCM
q1 = 6.70 Tn/m
q2 = 7.88 Tn/m

Ma = q1xH2^2/12 + (q2-q1)xH2^2/30 Ma = 0.86 Tn-m

Mb = q1xH2^2/12 + (q2-q1)xH2^2/20 Mb= 0.89 Tn-m

Ma-b = 0.75x(q1*H2^2/8+0.128x(q2-q1)xH2^2) Ma-b = 1.07 Tn-m

**2do CASO (**Considerando la estructura con relleno al 100% + carga del Camion H-25)




q1u = CMx&xHxKa+CVxAGV(PESO DEL CAMION)

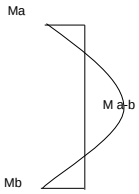
q2u = CMx&x(H+H2)xKa+CVxAGV(PESO DEL CAMION)

q1 = 25.2869
q2 = 25.6508

Ma = q1xH2^2/12 + (q2-q1)xH2^2/30 Ma = 3.05 Tn-m

Mb = q1xH2^2/12 + (q2-q1)xH2^2/20 Mb= 3.06 Tn-m

Ma-b = 0.75x(q1*H2^2/8+0.128x(q2-q1)xH2^2) Ma-b = 3.46 Tn-m




| ø fe (pulg) | peso (Kg/ml) | area (cm2) |
|---|---|---|
| 1/4 | 0.25 | 0.32 |
| 8mm | 0.39 | 0.50 |
| 3/8 | 0.56 | 0.71 |
| 12 mm | 0.89 | 1.13 |
| 1/2 | 0.99 | 1.27 |
| 5/8 | 1.55 | 1.98 |
| 3/4 | 2.24 | 2.85 |

**Calculo As Muros Laterales**

**DATOS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Altura Viga h = | 20 | cm | Altura Viga h = | 20 | cm | Altura Viga h = | 20 | cm |
| Ancho Viga B = | 100 | cm | Ancho Viga B = | 100 | cm | Ancho Viga B = | 100 | cm |
| Recubrimiento e = | 4 | cm | Recubrimiento e = | 4 | cm | Recubrimiento e = | 4 | cm |
| f'c = | 175 | Kg/cm2 | f'c = | 175 | Kg/cm2 | f'c = | 175 | Kg/cm2 |
| f'y = | 4200 | Kg/cm2 | f'y = | 4200 | Kg/cm2 | f'y = | 4200 | Kg/cm2 |
| **Mua=** | 3051.89 | Kgxmt | **Mub=** | 3060.63 | Kgxmt | **Mu(a-b) =** | 3464.04 | Kgxmt |

**RESULTADOS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Acero Tracción =** | 5.29 | cm2 | **Acero Tracción =** | 5.31 | cm2 | **Acero Tracción =** | 6.05 | cm2 |
| Ø | 0.9 | | Ø | 0.9 | | Ø | 0.9 | |
| b1 | 0.85 | | b1 | 0.85 | | b1 | 0.85 | |
| pb=0.85*f'c*b1*6000/fy/(6000+fy) | 0.0177083 | | pb=0.85*f'c*b1*6000/fy/(6000+fy) | 0.0177083 | | pb=0.85*f'c*b1*6000/fy/(6000+fy) | 0.0177083 | |
| pmax=0.75pb | 0.0132813 | | pmax=0.75pb | 0.0132813 | | pmax=0.75pb | 0.0132813 | |
| **w = p*fy/f'c** | 0.31875 | | **w = p*fy/f'c** | 0.31875 | | **w = p*fy/f'c** | 0.31875 | |
| **k=o*f'c*w*(1-0.59w)** | 40.7618 | | **k=o*f'c*w*(1-0.59w)** | 40.7618 | | **k=o*f'c*w*(1-0.59w)** | 40.7618 | |
| Momento Resist | 10435.021 | Kg*mt | Momento Resist | 10435.021 | Kg*mt | Momento Resist | 10435.021 | |
| a6(Acero Minimo) | 3.5276684 | | a6(Acero Minimo) | 3.5276684 | | a6(Acero Minimo) | 3.5276684 | |
| k=Mu*100/(bd2) | 11.921458 | | k=Mu*100/(bd2) | 11.955575 | | k=Mu*100/(bd2) | 13.531393 | |
| cte1 | 0.0756918 | | cte1 | 0.0759084 | | cte1 | 0.0859136 | |
| cte2= | 0.9062932 | | cte2= | 0.9060111 | | cte2= | 0.8928851 | |
| w = | 0.0794125 | | w = | 0.0796516 | | w = | 0.0907753 | |
| p= | 0.0033089 | | p= | 0.0033188 | | p= | 0.0037823 | |
| As = | 5.2941695 | | As = | 5.3101065 | | As = | 6.0516864 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No Nesecita As Compresión | 0 | | Recubrimiento Compres. cm = | 0 | | Recubrimiento Compres. cm = | 0 | |
| **Acero Compresión =** | NO EXISTE | cm2 | **Acero Compresión =** | NO EXISTE | cm2 | **Acero Compresión =** | NO EXISTE | cm2 |
| **Acero Tracción =** | 5.29 | cm2 | **Acero Tracción =** | 5.31 | cm2 | **Acero Tracción =** | 6.05 | cm2 |
| **a=** | 5.33 | | **a=** | 5.33 | | **a=** | 5.33 | |
| **b=** | 4.00 | | **b=** | 4.00 | | **b=** | 4.00 | |
| **Cuantia Minima** | 5.33 | cm2 | **Cuantia Minima** | 5.33 | cm2 | **Cuantia Minima** | 5.33 | cm2 |

| espaciamiento en a (-) | | espaciamiento en b (-) | | Espaciamiento en a-b (+) | |
|---|---|---|---|---|---|
| **Varilla de Ø 5/8 @** | **37.11 cm** | **Varilla de Ø 5/8 @** | **37.11 cm** | **Varilla de Ø 5/8 @** | **32.71 cm** |
| **Varilla de Ø 1/2 @** | **23.75 cm** | **Varilla de Ø 1/2 @** | **23.75 cm** | **Varilla de Ø 1/2 @** | **20.93 cm** |
| **Varilla de Ø 3/8 @** | **13.36 cm** | **Varilla de Ø 3/8 @** | **13.36 cm** | **Varilla de Ø 3/8 @** | **11.77 cm** |

| | |
|---|---|
| **Por Cuantia minima Varilla de Ø 3/8 @** | **13.36 cm** |
| **Acero Capa Inferior 2/3 (As min) Ø 3/8 @** | **20.04 cm** |
| **Acero Capa Superior 1/3 (As min) Ø 3/8 @** | **40.08 cm** |

| Caudal de diseño: | 1.20 | m3/s |
|---|---|---|

**A.-** **DISEÑO HIDRÁULICO DE ALCANTARILLAS DE PASO:**

Aplicando la formula de ROBERT MANNING:

**Donde :**

Q: Caudal en m3/s
A: Área hidráulica en m2
P: Perímetro mojado en m
R: Radio hidráulico = A/P
S: Pendiente de la alcantarilla en m/m
n: coeficiente de rugosidad

**Valores de "n" para la formula de MANNING**

| N° | TIPO DE MATERIAL | " n " |
|---|---|---|
| 1 | Tierra común nivelada. | 0.020 |
| 2 | Roca lisa y uniforme | 0.080 |
| 3 | Roca con salientes y entrantes | 0.040 |
| 4 | Lecho pedregoso y bordes enyerbados | 0.030 |
| 5 | Plantilla de tierra, taludes ásperos | 0.030 |
| 6 | Revestidos de: Concreto áspero o bituminoso | 0.017 |
| 7 | Piedra lisa | 0.020 |
| 8 | Pasto bien mantenido, profundidad de Flujo: | |
| | - Mayor a 15.24 cm | 0.040 |
| | - Menor a 15.24 cm | 0.060 |
| 9 | Concreto Liso | 0.013 |

**B.-** **DISEÑO HIDRÁULICO DE ALCANTARILLA TIPO MARCO QUE CRUZAN LA VÍA**

**B.1. PARA TODAS LAS ALCANTARILLAS DE ALIVIO:**

Caudal de Diseño para las alcantarillas:

Q = 1.200 m3/s

Adoptamos: **Q = 1.200 m3/s**

**1.- DATOS DE DISEÑO:**

| | | | | |
|---|---|---|---|---|
| Q max: | Caudal Máximo | = | 1.200 | m3/seg. |
| S: | Pend. Alcant. O Pend paso de agua | = | 0.010 | % |
| n: | Coef de fricción o Rugosidad | = | 0.013 | (Concreto) |

**2.- SECCIÓN DEL OJO:**

Asumiendo Valores, con la condicion de: h = 1.50 x b

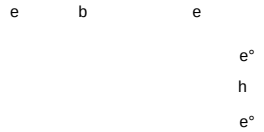
Donde:
Ancho: b = 0.60
Altura: h = 1.00

Con la condicion que :

Asumimos :

e = 0.20
e° = 0.20

Con lo que se obtiene:
B = 1.00 m
H = 1.40 m




**3.- CAPACIDAD DE LA ALCANTARILLA DE ALIVIO**

La capacidad la calculamos con la formula de MANNING

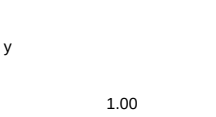
A= 0.600 m2
P= 2.600 m
R= 0.231 m
S= 0.010
n= 0.013

Remplazando: Q= 1.736 m3/s

Se Verifica entonces que: Q= 1.736 m3/s > Qmax.= 1.200 m3/s **Ok CUMPLE!**

**Tabulación de datos cuando Transporte el Caudal Normal Asumido**

Con el Caudal maximo: Q = 1.200 m3/s
n = 0.013
S = 0.010
e = 0.200 Espesor de losa y Pared
b = Ancho libre Interno = 0.60 m
h = Alto libre Interno = 1.00 m
Área = 0.60 x Y m2
Perímetro = 0.60 + 2Y m




Probamos que:

$$0.0488 = \frac{Y^{5}}{(0.60 + 2Y)^{2}}$$

Usamos Aprox. Y = 0.729

Donde: 0.049 = 0.049

**Ok el Valor de Y es Correcto**

Asumimos Y = 0.75 m

Donde:

| | | |
|---|---|---|
| Área Mojada: | 0.4500 | m2 |
| Perímetro Mojado: | 2.1000 | m |
| Radio Hidráulico: | 0.2143 | m |
| Velocidad del flujo: | 2.6667 | m/s |

# DISEÑO DE ALCANTARILLAS

**TIPO A** **DIMENSIONES 1.00m. X 1.40m.**

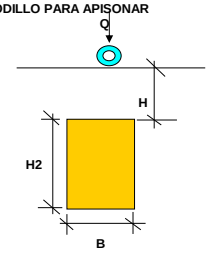
## DISEÑO LOSA SUPERIOR

PESO DEL MATERIAL

Ka = Tg2(45-Ø/2)

Ø = 28
Ka = 0.361

**RODILLO PARA APISONAR**




**1ra CONDICION**

Estructura sometida a carga del camion al 100%
Relleno

**DATOS**

| | | | |
|---|---|---|---|
| & = | 1.6 | Tn/m3 | Peso del relleno |
| H = | 0.60 | mt | Altura de relleno |
| H-25 Q = | 11 | Tn | |
| B = | 1.00 | mt | |
| H2 = | 1.40 | mt | |

**CALCULO PESO DEL MATERIAL**

P = &xH
P = 0.96 Tn/m2

**PESO DEL CAMION**

AGV = 3xQx1 / 2xPI*H^2

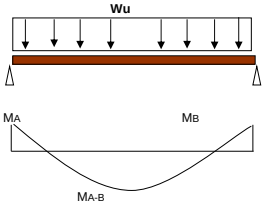
AGV = 14.59

**Coeficientes Metodo de Rotura**

CM = 1.4 CV = 1.7

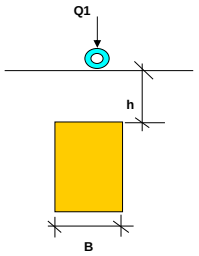
**Wu =** 26.15 Tn/m2

**Estructura analizada como una Viga Simplemente Apoyada**




MA=MB= WuxL^2/11 2.38 Tn-m

MA-B = WuxL^2/8 = 3.268 Tn-m




**2da CONDICION**

CONSIDERANDO UN RODILLO DE 8-12TN AL COMPACTADO

**DATOS**

| | | |
|---|---|---|
| B = | 1.00 | mt |
| h = | 0.60 | mt |
| Q1 = | 10 | Tn |

**CALCULO PESO DEL MATERIAL**

P = &xH
P = 0.96 Tn/m2

**PESO DEL RODILLO**

Q1 = Peso/Ancho
Q1 = 10.00 Tn/m

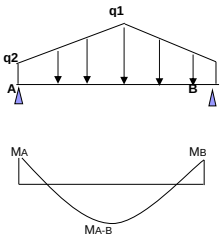
AGV = 2xQ1xH^3 / PIx(X^2+H^2)^2

para

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Q1 = | 10.00 | H = | 0.6 | X = | 0 | AGV = | 10.61 Tn/m2 |
| Q1 = | 10.00 | H = | 0.6 | X = | 0.5 | AGV = | 3.70 Tn/m2 |

**FINALMENTE**

qu = 1.4 CM + 1.7 CV
q1 = 19.38 Tn/m2
q2 = 7.63 Tn/m2




MA=MB= q2L^2/12+5x(q1-q2)xL^2/96

MA=MB= 1.25 Tn-m

**Momento Central igual al 75% de una Viga Simplemente apoyada**

MA-B = 0.75*(q2*L^2/8 +(q1-q2)*L^2/12)

MA-B = 1.45 Tn-m

## Calculo As en losa Superior Alcantarillas

**DATOS**

| | | |
|---|---|---|
| Altura Viga h = | 20 | cm |
| Ancho Viga B = | 100 | cm |
| Recubrimiento e = | 2.5 | cm |
| f'c = | 210 | Kg/cm2 |
| f'y = | 4200 | Kg/cm2 |
| **Momento Ultimo A-B =** | 3268.21 | Kgxmt |

**RESULTADOS**

| | | |
|---|---|---|
| **Acero Tracción (+) =** | 5.12 | cm2 |
| Ø | 0.90 | |
| b1 | 0.85 | |
| pb=0.85*f'c*b1*6000/fy/(6000+fy) | 0.02 | |
| pmax=0.75pb | 0.02 | |
| **w = p*fy/f'c** | 0.32 | |
| **k=Ø*f'c*w*(1-0.59w)** | 48.91 | |
| Momento Resist | 14979.96 | Kgxmt |

| | |
|---|---|
| a6(Acero Minimo) | 4.2266516 |
| k=Mu*100/(bd2) | 10.671692 |
| cte1 | 0.056464 |
| cte2= | 0.9309914 |
| w = | 0.0584819 |
| p= | 0.0029241 |
| As = | 5.1171622 |

**RESULTADOS CON ACERO EN COMPRESION**

No Necesita As Compresión 2.5

| | | |
|---|---|---|
| **Acero Compresión =** | NO EXISTE | cm2 |
| **Acero Tracción =** | 5.12 | cm2 |
| **a=** | 5.83 | |
| **b=** | 4.00 | |
| **Cuantia Minima** | 5.83 | cm2 |

**DATOS**

| | | |
|---|---|---|
| Altura Viga h = | 20 | cm |
| Ancho Viga B = | 100 | cm |
| Recubrimiento e = | 2.5 | cm |
| f'c = | 210 | Kg/cm2 |
| f'y = | 4200 | Kg/cm2 |
| **Momento Ultimo A =** | 2376.88 | Kgxmt |

**RESULTADOS**

| | | |
|---|---|---|
| **Acero Tracción ( - )=** | 4.23 | cm2 |
| Ø | 0.90 | |
| b1 | 0.85 | |
| pb | 0.02 | |
| pmax=0.75pb | 0.02 | |
| **w = p*fy/f'c** | 0.32 | |
| **k=** | 48.91 | |
| Momento Resist | 14979.96 | Kgxmt |

| | |
|---|---|
| a6(Acero Minimo) | 4.2266516 |
| k | 7.7612305 |
| cte1 | 0.0410647 |
| cte2= | 0.950309 |
| w = | 0.042111 |
| p= | 0.0021055 |
| As = | 3.6847107 |

Recubrimiento Compres. cm = 2.5

| | | |
|---|---|---|
| **Acero Compresión =** | 4.23 | cm2 |
| **Acero Total en Compresión =** | 4.23 | cm2 |
| **a=** | 5.83 | |
| **b=** | 4.00 | |
| **Cuantia Minima =** | 5.83 | cm2 |

**CALCULO DE VARRILA DE FIERRO**

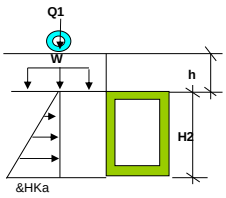
| ø (pulg) | peso (Kg/ml) | area (cm2) | |
|---|---|---|---|
| 1/4 | 0.25 | 0.32 | |
| 8mm | 0.39 | 0.50 | |
| 3/8 | 0.56 | 0.71 | |
| 12 mm | 0.89 | 1.13 | |
| 1/2 | 0.99 | 1.27 | |
| 5/8 | 1.55 | 1.98 | |
| 3/4 | 2.24 | 2.85 | |
| 1 | 3.98 | 5.07 | |

| espaciamiento en a-b (-) | | espaciamiento en b (-) | |
|---|---|---|---|
| **Varilla de Ø 5/8 @** | **33.93 cm** | **Varilla de Ø 5/8 @** | **33.93 cm** |
| **Varilla de Ø 1/2 @** | **21.72 cm** | **Varilla de Ø 1/2 @** | **21.72 cm** |
| **Varilla de Ø 3/8 @** | **12.22 cm** | **Varilla de Ø 3/8 @** | **12.22 cm** |

| | |
|---|---|
| **Por Cuantia minima Varilla de Ø 3/8 @** | **12.22 cm** |
| **Acero Capa Inferior 2/3 (As min) Ø 3/8 @** | **18.32 cm** |
| **Acero Capa Superior 1/3 (As min) Ø 3/8 @** | **36.65 cm** |

## DISEÑO DE LOSA LATERAL

**1er CASO (**Con el rodillo Compactando)




W = Peso Rodillo/Ancho Rodillo
**W =** 10.00 Tn/m2

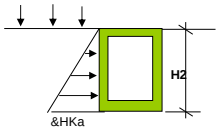
| Z | AGV |
|---|---|
| 0.2 | 31.83 |
| 0.4 | 15.92 |
| 0.6 | 10.61 |
| 0.8 | 7.96 |
| 1.0 | 6.37 |
| 1.2 | 5.31 |
| 1.4 | 4.55 |
| 1.6 | 3.98 |
| 1.8 | 3.54 |
| 2.0 | 3.18 |
| 2.2 | 2.89 |

AGV = 2 Q1/PI/Z

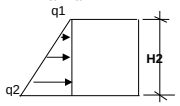
AGV promedio= 8.74 Tn/m2

AGV = 10.61 Tn/m2

**EZFUERZO POR RELLENO**




CM = &HKa
CM = 0.81 Tn/m2



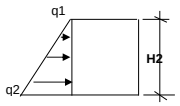

q1u = CVxAGVxKa
q2u = q1u+CMxCM
q1 = 5.36 Tn/m
q2 = 6.74 Tn/m

Ma = q1xH2^2/12 + (q2-q1)xH2^2/30 Ma = 0.97 Tn-m

Mb = q1xH2^2/12 + (q2-q1)xH2^2/20 Mb= 1.01 Tn-m

Ma-b = 0.75x(q1*H2^2/8+0.128x(q2-q1)xH2^2) Ma-b = 1.24 Tn-m

**2do CASO (**Considerando la estructura con relleno al 100% + carga del Camion H-25)




q1u = CMx&xHxKa+CVxAGV(PESO DEL CAMION)

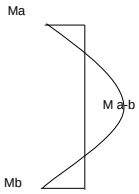
q2u = CMx&x(H+H2)xKa+CVxAGV(PESO DEL CAMION)

q1 = 25.2869
q2 = 25.7114

Ma = q1xH2^2/12 + (q2-q1)xH2^2/30 Ma = 4.16 Tn-m

Mb = q1xH2^2/12 + (q2-q1)xH2^2/20 Mb= 4.17 Tn-m

Ma-b = 0.75x(q1*H2^2/8+0.128x(q2-q1)xH2^2) Ma-b = 4.73 Tn-m




| ø fe (pulg) | peso (Kg/ml) | area (cm2) |
|---|---|---|
| 1/4 | 0.25 | 0.32 |
| 8mm | 0.39 | 0.50 |
| 3/8 | 0.56 | 0.71 |
| 12 mm | 0.89 | 1.13 |
| 1/2 | 0.99 | 1.27 |
| 5/8 | 1.55 | 1.98 |
| 3/4 | 2.24 | 2.85 |

**Calculo As Muros Laterales**

**DATOS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Altura Viga h = | 20 | cm | Altura Viga h = | 20 | cm | Altura Viga h = | 20 | cm |
| Ancho Viga B = | 100 | cm | Ancho Viga B = | 100 | cm | Ancho Viga B = | 100 | cm |
| Recubrimiento e = | 4 | cm | Recubrimiento e = | 4 | cm | Recubrimiento e = | 4 | cm |
| f'c = | 175 | Kg/cm2 | f'c = | 175 | Kg/cm2 | f'c = | 175 | Kg/cm2 |
| f'y = | 4200 | Kg/cm2 | f'y = | 4200 | Kg/cm2 | f'y = | 4200 | Kg/cm2 |
| **Mua=** | 4157.93 | Kgxmt | **Mub=** | 4171.80 | Kgxmt | **Mu(a-b) =** | 4726.35 | Kgxmt |

**RESULTADOS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Acero Tracción =** | 7.35 | cm2 | **Acero Tracción =** | 7.38 | cm2 | **Acero Tracción =** | 8.45 | cm2 |
| Ø | 0.9 | | Ø | 0.9 | | Ø | 0.9 | |
| b1 | 0.85 | | b1 | 0.85 | | b1 | 0.85 | |
| pb=0.85*f'c*b1*6000/fy/(6000+fy) | 0.0177083 | | pb=0.85*f'c*b1*6000/fy/(6000+fy) | 0.0177083 | | pb=0.85*f'c*b1*6000/fy/(6000+fy) | 0.0177083 | |
| pmax=0.75pb | 0.0132813 | | pmax=0.75pb | 0.0132813 | | pmax=0.75pb | 0.0132813 | |
| **w = p*fy/f'c** | 0.31875 | | **w = p*fy/f'c** | 0.31875 | | **w = p*fy/f'c** | 0.31875 | |
| **k=o*f'c*w*(1-0.59w)** | 40.7618 | | **k=o*f'c*w*(1-0.59w)** | 40.7618 | | **k=o*f'c*w*(1-0.59w)** | 40.7618 | |
| Momento Resist | 10435.021 | Kg*mt | Momento Resist | 10435.021 | Kg*mt | Momento Resist | 10435.021 | |
| a6(Acero Minimo) | 3.5276684 | | a6(Acero Minimo) | 3.5276684 | | a6(Acero Minimo) | 3.5276684 | |
| k=Mu*100/(bd2) | 16.241908 | | k=Mu*100/(bd2) | 16.296085 | | k=Mu*100/(bd2) | 18.46231 | |
| cte1 | 0.1031232 | | cte1 | 0.1034672 | | cte1 | 0.117221 | |
| cte2= | 0.8698443 | | cte2= | 0.8693776 | | cte2= | 0.8505048 | |
| w = | 0.1103014 | | w = | 0.110697 | | w = | 0.1266909 | |
| p= | 0.0045959 | | p= | 0.0046124 | | p= | 0.0052788 | |
| As = | 7.3534266 | | As = | 7.3797974 | | As = | 8.4460567 | |
| No Nesecita As Compresión | 0 | | Recubrimiento Compres. cm = | 0 | | Recubrimiento Compres. cm = | 0 | |
| **Acero Compresión =** | NO EXISTE | cm2 | **Acero Compresión =** | NO EXISTE | cm2 | **Acero Compresión =** | NO EXISTE | cm2 |
| **Acero Tracción =** | 7.35 | cm2 | **Acero Tracción =** | 7.38 | cm2 | **Acero Tracción =** | 8.45 | cm2 |
| **a=** | 5.33 | | **a=** | 5.33 | | **a=** | 5.33 | |
| **b=** | 4.00 | | **b=** | 4.00 | | **b=** | 4.00 | |
| **Cuantia Minima** | 5.33 | cm2 | **Cuantia Minima** | 5.33 | cm2 | **Cuantia Minima** | 5.33 | cm2 |

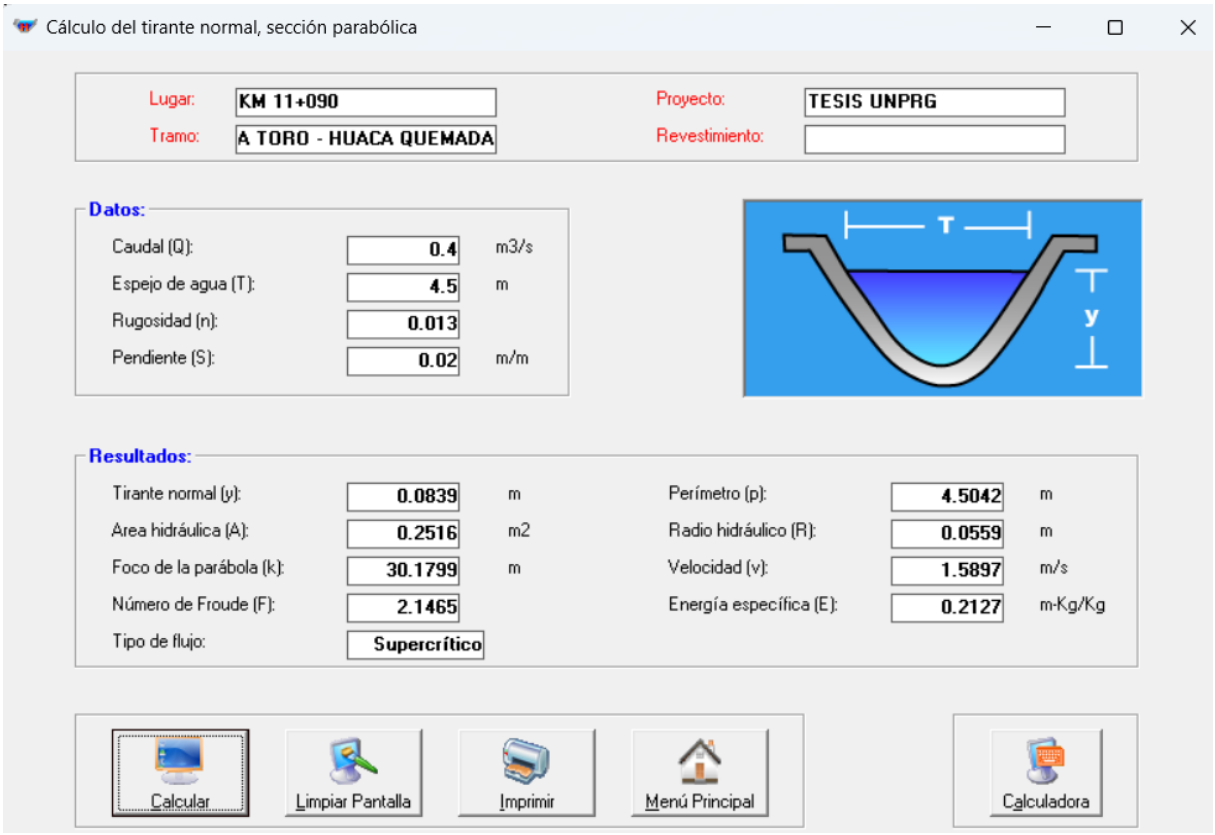
| espaciamiento en a (-) | | espaciamiento en b (-) | | Espaciamiento en a-b (+) | |
|---|---|---|---|---|---|
| **Varilla de Ø 5/8 @** | **26.92 cm** | **Varilla de Ø 5/8 @** | **26.82 cm** | **Varilla de Ø 5/8 @** | **23.43 cm** |
| **Varilla de Ø 1/2 @** | **17.23 cm** | **Varilla de Ø 1/2 @** | **17.17 cm** | **Varilla de Ø 1/2 @** | **15.00 cm** |
| **Varilla de Ø 3/8 @** | **9.69 cm** | **Varilla de Ø 3/8 @** | **9.66 cm** | **Varilla de Ø 3/8 @** | **8.44 cm** |

| | |
|---|---|
| **Por Cuantia minima Varilla de Ø 3/8 @** | **13.36 cm** |
| **Acero Capa Inferior 2/3 (As min) Ø 3/8 @** | **20.04 cm** |
| **Acero Capa Superior 1/3 (As min) Ø 3/8 @** | **40.08 cm** |

**DISEÑO HIDRAULICO DE BADEN**

DATOS DE INGRESO:

| | | |
|---|---|---|
| Q= | 0.40 m3/s | Caudal de diseño |
| TRAMO= | 11+090 | |
| ESPEJO DE AGUA | 4.5 m | |
| RUGOSIDAD | 0.013 | concreto |
| PENDIENTE | 0.02 | ( varía entre 0.02 - 0.03) |




RESULTADOS

| | |
|---|---|
| TIRANTE NORMAL= | 0.08 m |
| VELOCIDAD= | 1.59 m/s2 |
| ÁREA HIDRAULICA= | 0.25 m2 |

Borde LIBRE

-Ven Te Chow recomienda Valores que varian entre ( 5%- 30%) del tirante
-El Manual de Hidrología y drenaje recomienda valores entre ( 0.30m y 0.5m)

Asumimos un tirante H= 10 cm

# ANEXO N°09.- DISEÑO DE PAVIMENTO

**DISEÑO DE PAVIMENTOS**

**1. PROYECCION DE TRAFICO GENERADO SEGÚN IMDa**

| TIPOS DE VEHICULOS | | | CODIGO | 2025 | PROYECCIÓN DE 10 AÑOS | 2035 |
|---|---|---|---|---|---|---|
| LIGEROS | AUTO | | AUTO | 28 | | 38 |
| | STATION WAGON | | SW | 1 | | 1 |
| | PICK UP | | PICK UP | 17 | | 23 |
| | PANEL | | PANEL | 0 | | 0 |
| | RURAL COMBI | | RURAL C. | 0 | | 0 |
| | MICRO | | MICRO | 0 | | 0 |
| PESADOS | BUS | 2E | B2 | 0 | | 0 |
| | | >=3E | B3-1 | 0 | | 0 |
| | CAMION | 2E | C2 | 7 | | 14 |
| | | 3E | C3 | 0 | | 0 |
| | | 4E | C4 | 0 | | 0 |
| | SEMI TRAYLER | 2ST2S2 | T2S1 | 0 | | 0 |
| | | S23 | T2S3 | 0 | | 0 |
| | | 3ST3S2 | T2S1 | 0 | | 0 |
| | | >=3S3 | T3S2 | 0 | | 0 |
| | TRAYLER | 2T2 | C2R2 | 0 | | 0 |
| | | 2T3 | C2R3 | 0 | | 0 |
| | | 3T2 | C3R2 | 0 | | 0 |
| | | >=3T3 | C3R3 | 0 | | 0 |
| PROYECCION DE TRAFICO | | | IMDa | 53 | | 76 |

**2. NUMERO DE REPETICIONES DE EJES EQUIVALENTES**

$$W_{18} = \sum EE_{dia-carril} * Fca * 365$$

$$EE_{dia-carril} = IMD_{pi} * Fd * Fc * Fvpi * Fpi$$

**fd:** factor direccional
**fc:** factor carril
**fpi:** factor vehiculo pesado

| TIPOS DE VEHICULOS | | | CODIGO | CARGAS (tn)/CONFIGURACION (Figura 6.1 Manual MTC - PAG. 65) | | | | | | | | | | | FLEXIBLE Y SEMIRIGIDO FACTOR DE EJE EQUIVALENTE | | | | | | TOTAL | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | E. DELANT. | CONF. E1 | E1 POST. | CONF. E1 | E2 POST. | CONF. E2 | E3 POST. | CONF. E3 | E4 POST. | CONF. E4 | E5 POST. | CONF. E5 | E. DELANT | E1. POST. | E2. POST | E3 POST. | E4 POST. | E5 POST. | Fvp | IMDa | Fd | Fc | Fpi | EE |
| LIGEROS | AUTO | | AUTO | 1 | | 1 | | | | | | | | | | 0.0005 | 0.0005 | | | | | 0.0010 | 38 | 1 | 1 | 1 | 0.038 |
| | STATION WAGON | | SW | 1 | | 1 | | | | | | | | | | 0.0005 | 0.0005 | | | | | 0.0010 | 1 | 1 | 1 | 1 | 0.001 |
| | PICK UP | | PICK UP | 1 | | 1 | | | | | | | | | | 0.0005 | 0.0005 | | | | | 0.0010 | 23 | 1 | 1 | 1 | 0.023 |
| | PANEL | | PANEL | 1 | | 1 | | | | | | | | | | 0.0005 | 0.0005 | | | | | 0.0010 | 0 | 1 | 1 | 1 | 0.000 |
| | RURAL COMBI | | RURAL C. | 1 | | 1 | | | | | | | | | | 0.0005 | 0.0005 | | | | | 0.0010 | 0 | 1 | 1 | 1 | 0.000 |
| | MICRO | | MICRO | 1 | | 1 | | | | | | | | | | 0.0005 | 0.0005 | | | | | 0.0010 | 0 | 1 | 1 | 1 | 0.000 |
| PESADOS | BUS | 2E | B2 | 7 | | 11 | | | | | | | | | | 1.2654 | 3.2383 | | | | | 4.5040 | 0 | 1 | 1 | 1 | 0.000 |
| | | >=3E | B3-1 | 7 | | 16 | | | | | | | | | | 1.2654 | 1.3659 | | | | | 2.6310 | 0 | 1 | 1 | 1 | 0.000 |
| | CAMION | 2E | C2 | 7 | | 11 | | | | | | | | | | 1.2654 | 3.2383 | | | | | 4.5040 | 14 | 1 | 1 | 1 | 63.056 |
| | | 3E | C3 | 7 | | 18 | | | | | | | | | | 1.2654 | 2.0192 | | | | | 3.2850 | 0 | 1 | 1 | 1 | 0.000 |
| | | 4E | C4 | 7 | | 23 | | | | | | | | | | 1.2654 | 1.5082 | | | | | 2.7740 | 0 | 1 | 1 | 1 | 0.000 |
| | SEMI TRAYLER | 2ST2S2 | T2S1 | 7 | | 11 | | | | | | | | | | 1.2654 | 3.2383 | 3.2383 | | | | 7.7420 | 0 | 1 | 1 | 1 | 0.000 |
| | | S23 | T2S3 | 7 | | 11 | | | | | | | | | | 1.2654 | 3.2383 | 1.7060 | | | | 6.2100 | 0 | 1 | 1 | 1 | 0.000 |
| | | 3ST3S2 | T2S1 | 7 | | 18 | | | | | | | | | | 1.2654 | 2.0192 | 3.2383 | | | | 6.5230 | 0 | 1 | 1 | 1 | 0.000 |
| | | >=3S3 | T3S2 | 7 | | 18 | | | | | | | | | | 1.2654 | 2.0192 | 3.2383 | 3.2383 | | | 9.7610 | 0 | 1 | 1 | 1 | 0.000 |
| | TRAYLER | 2T2 | C2R2 | 7 | | 11 | | | | | | | | | | 1.2654 | 3.2300 | 3.2383 | 3.2383 | | | 10.9720 | 0 | 1 | 1 | 1 | 0.000 |
| | | 2T3 | C2R3 | 7 | | 11 | | | | | | | | | | 1.2654 | 3.2300 | 3.2383 | 2.0192 | | | 9.7530 | 0 | 1 | 1 | 1 | 0.000 |
| | | 3T2 | C3R2 | 7 | | 18 | | | | | | | | | | 1.2654 | 2.0192 | 3.2383 | 3.2383 | | | 9.7610 | 0 | 1 | 1 | 1 | 0.000 |
| | | >=3T3 | C3R3 | 7 | | 18 | | | | | | | | | | 1.2654 | 2.0192 | 3.2383 | 2.0192 | | | 8.5420 | 0 | 1 | 1 | 1 | 0.000 |
| | | | | | | | | | | | | | | | | | | | | | | TOTAL | 76 | | | | 63.118 |

*Fuente: Cuadro 6.3 - MANUAL DE CARRETERAS: SUELOS, GEOTECNIA Y PAVIMENTOS*

**Cuadro 6.3**
**Relación de Cargas por Eje para determinar Ejes Equivalentes (EE) Para Afirmados, Pavimentos Flexibles y Semirrígidos**

| Tipo de Eje | Eje Equivalente ($EE_{8.2\,TNO}$) |
|---|---|
| Eje Simple de ruedas simples ($EE_{S1}$) | $EE_{S1} = [\,P / 6.6\,]^{4.0}$ |
| Eje Simple de ruedas dobles ($EE_{S2}$) | $EE_{S2} = [\,P / 8.2\,]^{4.0}$ |
| Eje Tandem (1 eje ruedas dobles + 1 eje rueda simple) ($EE_{TA1}$) | $EE_{TA1} = [\,P / 14.8\,]^{4.0}$ |
| Eje Tandem ( 2 ejes de ruedas dobles) ($EE_{TA2}$) | $EE_{TA2} = [\,P / 15.1\,]^{4.0}$ |
| Ejes Tridem (2 ejes ruedas dobles + 1 eje rueda simple) ($EE_{TR1}$) | $EE_{TR1} = [\,P / 20.7\,]^{3.9}$ |
| Ejes Tridem (3 ejes de ruedas dobles) ($EE_{TR2}$) | $EE_{TR2} = [\,P / 21.8\,]^{3.9}$ |
| P = peso real por eje en toneladas | |

Fuente: Elaboración Propia, en base a correlaciones con los valores de las Tablas del apéndice D de la Guía AASHTO'93

**2.1 CÁLCULO DE Fpi**

*Según el cuadro 6.13*

| Fpi | 1 |
|---|---|

**2.2 CÁLCULO DE Fd**

*Según el cuadro 6.1*

| Fd | 1 |
|---|---|

**2.3 CÁLCULO DE Fc**

*Según el cuadro 6.1*

| Fc | 1 |
|---|---|

$$W_{18} = \sum EE_{dia-carril} * Fca * 365$$

| Fca | 11.92 |
|---|---|

| | |
|---|---|
| r | 3.85% |
| n | 10 años |

| | |
|---|---|
| **W18** | 274682.4805 |
| **W18** | 2.75E+05 |
| **TTP** | TP1 |

SEGÚN LA NORMA Y EL VALOR OBTENIDO DE EE
A ESTE CASO COMPETE REVESTIMIENDO GRANULAR (AFIRMADO)

**MÉTODO NAASRA - AUSTROADS**

| | | |
|---|---|---|
| **CBR** | **8** | **%** |
| **Nrep** | **246867.3** | **ESALs** |
| **e** | **17.43** | **cm** |
| **e** | **20** | **cm** |

**Cuadro 6.1**
**Factores de Distribución Direccional y de Carril para determinar el Tránsito en el Carril de Diseño**

| Número de calzadas | Número de sentidos | Número de carriles por sentido | Factor Direccional (Fd) | Factor Carril (Fc) | Factor Ponderado Fd x Fc para carril de diseño |
|---|---|---|---|---|---|
| 1 calzada (para IMDa total de la calzada) | 1 sentido | 1 | 1.00 | 1.00 | 1.00 |
| | 1 sentido | 2 | 1.00 | 0.80 | 0.80 |
| | 1 sentido | 3 | 1.00 | 0.60 | 0.60 |
| | 1 sentido | 4 | 1.00 | 0.50 | 0.50 |
| | 2 sentidos | 1 | 0.50 | 1.00 | 0.50 |
| | 2 sentidos | 2 | 0.50 | 0.80 | 0.40 |
| 2 calzadas con separador central (para IMDa total de las dos calzadas) | 2 sentidos | 1 | 0.50 | 1.00 | 0.50 |
| | 2 sentidos | 2 | 0.50 | 0.80 | 0.40 |
| | 2 sentidos | 3 | 0.50 | 0.60 | 0.30 |
| | 2 sentidos | 4 | 0.50 | 0.50 | 0.25 |

Fuente: Elaboración Propia, en base a datos de la Guía AASHTO'93

| EEdia-carril | 63.118 |
|---|---|

$$\text{Factor Fca} = \frac{(1+r)^n - 1}{r}$$

Donde
**r** = Tasa anual de crecimiento
**n** = Período de diseño

$$e = [219 - 211 \times (\log_{10}CBR) + 58 \times (\log_{10}CBR)^2] \times \log_{10}(Nrep/120)$$

Donde:

e = espesor de la capa de afirmado en mm.
CBR = valor del CBR de la sub rasante.
Nrep = número de repeticiones de EE para el carril de diseño.




**Cuadro 6.13**
**FACTOR DE AJUSTE POR PRESIÓN DE NEUMÁTICO ($F_P$) PARA EJES EQUIVALENTES (EE)**

| Espeso de Capa de Rodadura (mm) | Presión de Contaco del Neumático (PCN) en psc PCN = 0.90x[Presión de inflado del neumatico] (pai) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 80 | 90 | 100 | 110 | 120 | 130 | 140 |
| 50 | 1.00 | 1.30 | 1.80 | 2.13 | 2.91 | 3.59 | 4.37 |
| 60 | 1.00 | 1.33 | 1.72 | 2.18 | 2.69 | 3.27 | 3.92 |
| 70 | 1.00 | 1.30 | 1.65 | 2.05 | 2.49 | 2.99 | 3.53 |
| 80 | 1.00 | 1.28 | 1.59 | 1.94 | 2.32 | 2.74 | 3.20 |
| 90 | 1.00 | 1.25 | 1.53 | 1.84 | 2.17 | 2.52 | 2.91 |
| 100 | 1.00 | 1.23 | 1.48 | 1.75 | 2.04 | 2.35 | 2.68 |
| 110 | 1.00 | 1.21 | 1.43 | 1.66 | 1.91 | 2.17 | 2.44 |
| 120 | 1.00 | 1.19 | 1.38 | 1.59 | 1.80 | 2.02 | 2.25 |
| 130 | 1.00 | 1.17 | 1.34 | 1.52 | 1.70 | 1.89 | 2.09 |
| 140 | 1.00 | 1.15 | 1.30 | 1.46 | 1.62 | 1.78 | 1.94 |
| 150 | 1.00 | 1.13 | 1.26 | 1.39 | 1.52 | 1.66 | 1.79 |
| 160 | 1.00 | 1.12 | 1.24 | 1.36 | 1.47 | 1.59 | 1.71 |
| 170 | 1.00 | 1.11 | 1.21 | 1.31 | 1.41 | 1.51 | 1.61 |
| 180 | 1.00 | 1.09 | 1.18 | 1.27 | 1.36 | 1.45 | 1.53 |
| 190 | 1.00 | 1.08 | 1.16 | 1.24 | 1.31 | 1.39 | 1.46 |
| 200 | 1.00 | 1.08 | 1.15 | 1.22 | 1.28 | 1.35 | 1.41 |

**Nota:**
- EE = Ejes Equivalentes
- Presión de inflado del neumático (Pin): esta referido al promedio de presiones de inflado de neumáticos por tipo de vehiculo pesado.
- Presión de Contacto del neumático (PCN): igual al 90% del promedio de presiones de inflado de neumáticos por tipo de vehiculos pesado.
- Para espesores menores de capa de rodadura asfáltica, se aplicará el factor de ajuste igual al espesor de 50 mm.

**Fuente:** Elaboración propia, en base a correlaciones con la figura IV-4 EAL Adjustment Factor for Tire Pressures del Manula MS-1 del Instituto de Asfalto

# ANEXO N°10.- METRADOS

# RESUMEN DE METRADOS

# RESUMEN DE METRADO DE PROYECTO DE TESIS

Proyecto : "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"
Propietario : -
Fecha : Febrero/2026 Hecho por : NRSM - MAA
Especialidad : OBRAS VIALES
Modulo : 11 KM Revidado por : -

| ITEM | DESCRIPCION | Und. | Parcial | Total |
|---|---|---|---|---|
| 01 | CAMINO VECINAL: HUACA TORO - HUACA QUEMADA | | | |
| 01.01 | OBRAS PROVISIONALES | | | |
| 01.01.01 | CARTEL DE OBRA DE 2.40 x 3.60 M | und | 1.00 | 1.00 |
| 01.01.02 | MOVILIZACION Y DESMOVILIZACION DE EQUIPOS | GLB | 1.00 | 1.00 |
| 01.01.03 | FLETE TERRESTRE DE MATERIALES A OBRA | GLB | 1.00 | 1.00 |
| 01.01.04 | AGUA PARA LA CONSTRUCCION | mes | 10.00 | 10.00 |
| 01.01.05 | ENERGIA ELECTRICA PARA LA CONSTRUCCION | mes | 10.00 | 10.00 |
| 01.01.06 | ALQUILER DE SERVICIOS HIGIENICOS PORTATILES | mes | 10.00 | 10.00 |
| 01.01.07 | PLAN DE SEGURIDAD Y SALUD EN EL TRABAJO | GLB | 1.00 | 1.00 |
| 01.01.08 | EQUIPO DE PROTECCION INDIVIDUAL | GLB | 1.00 | 1.00 |
| 01.01.09 | ACONDICIONAMIENTO Y MANTENIMIENTO DE DESVIOS | km | 1.00 | 1.00 |
| 01.02 | TRABAJOS PRELIMINARES | | | |
| 01.02.01 | TOPOGRAFIA Y GEORREFERENCIACION INICIAL | km | 11.17 | 11.17 |
| 01.02.02 | DEMOLICION DE ESTRUCTURAS | m3 | 82.00 | 82.00 |
| 01.02.03 | TRAZO Y REPLANTEO DURANTE LA OBRA | km | 11.17 | 11.17 |
| 01.02.04 | MANTENIMIENTO DE TRANSITO TEMPORAL Y SEGURIDAD VIAL | GLB | 1.00 | 1.00 |
| 01.02.05 | CAMPAMENTOS | | | |
| 01.02.05.01 | CAMPAMENTO PARA PERSONAL OBRERO | GLB | 1.00 | 1.00 |
| 01.03 | INFRAESTRUCTURA VIAL | | | |
| 01.03.01 | EXCAVACION PARA EXPLANACIONES | | | |
| 01.03.01.01 | DESBROCE Y LIMPIEZA DEL TERRENO | m2 | 55,870.30 | 55,870.30 |
| 01.03.01.02 | CORTE DE TERRENO A NIVEL DE SUBRASANTE | m3 | 233.87 | 233.87 |
| 01.03.02 | TERRAPLENES | | | |
| 01.03.02.01 | CONFORMACION DE TERRAPLENES | m3 | 14,140.70 | 14,140.70 |
| 01.03.03 | MEJORAMIENTO DE SUELOS | | | |
| 01.03.03.01 | PERFILADO Y COMPACTADO DE SUB RASANTE | m2 | 55,870.30 | 55,870.30 |
| 01.03.04 | ELIMINACION DE MATERIAL EXCEDENTE A DME | | | |
| 01.03.04.01 | TRANSPORTE DE ELIMINACION DE MATERIAL A DME PARA D> 1 KM | m3 | 292.34 | 292.34 |
| 01.03.05 | PAVIMENTOS | | | |
| 01.03.05.01 | SUB BASE GRANULAR E=0.20 m | | | |
| 01.03.05.01.01 | SUB BASE DE AFIRMADO e=0.20m DESDE EK 0+000 HASTA 11+174.06 | m3 | 11,174.06 | 11,174.06 |
| 01.03.05.02 | BASE GRANULAR E=0.40 m | | | |
| 01.03.05.02.01 | BASE DE AFIRMADO e=0.40m DESDE EK 0+000 HASTA 11+174.06 | m3 | 22,348.12 | 22,348.12 |
| 01.03.06 | SEÑALIZACION | | | |
| 01.03.06.01 | HITO KILOMETRICO | und | 11.00 | 11.00 |
| 01.03.06.02 | SEÑALES PREVENTIVAS | und | 1.00 | 1.00 |
| 01.03.06.03 | SEÑALES INFORMATIVAS | und | 1.00 | 1.00 |
| 01.03.06.04 | SEÑAL REGLAMENTARIA | und | 1.00 | 1.00 |
| 01.03.07 | ENSAYOS | | | |
| 01.03.07.01 | DENSIDAD DE CAMPO | und | 1.00 | 1.00 |
| 01.03.07.02 | CBR | und | 1.00 | 1.00 |
| 01.04 | OBRAS DE ARTE: ALCANTARILLAS | | | |
| 01.04.01 | TRABAJOS PRELIMINARES | | | |
| 01.04.01.01 | TRAZO Y REPLANTEO DE ALCANTARILLAS | m2 | 144.00 | 144.00 |
| 01.04.01.02 | ELIMINACION DE DESMONTE PROVENIENTE DEL MOVIMIENTO DE TIERRAS | m3 | 120.00 | 120.00 |
| 01.04.01.03 | RELLENO COMPACTADO CON MATERIAL SELECCIONADO | m3 | 60.00 | 60.00 |
| 01.04.02 | OBRAS DE CONCRETO SIMPLE | | | |
| 01.04.02.01 | CONCRETO PARA SOLADO DE ALCANTARILLA, MEZCLA C:H=1:10, E=10CM | m2 | 100.00 | 100.00 |
| 01.04.03 | OBRAS DE CONCRETO ARMADO | | | |
| 01.04.03.01 | CONCRETO F'c=210 KG/CM2 PARA ALCANTARILLA | m3 | 339.20 | 339.20 |
| 01.04.03.02 | ENCOFRADO Y DESENCOFRADO PARA ALCANTARILLAS | m2 | 1,248.00 | 1,248.00 |
| 01.04.03.03 | ACERO FY=4200KG/CM2 MUROS Y ALAS - ALCANTARILLAS | kg | 4,534.20 | 4,534.20 |
| 01.04.04 | EMBOQUILLADO | | | |
| 01.04.04.01 | COMPACTACION PARA CONSTRUCCION DE MAMPOSTERIA DE PIEDRA | m2 | 41.60 | 41.60 |
| 01.04.04.02 | MAMPOSTERIA DE PIEDRA (C/C F´C =140 KG/CM2 + 60% P.G) | m2 | 41.60 | 41.60 |
| 01.04.05 | SOLAQUEADO DE ALCANTARILLAS | | | |
| 01.04.05.01 | SOLAQUEADO DE ALCANTARILLAS | m2 | 41.60 | 41.60 |
| 01.04.06 | PINTURA | | | |
| 01.04.06.01 | PINTURA EN ALCANTARILLAS | m2 | 339.20 | 339.20 |
| 01.05 | OBRAS DE ARTE: BADENES | | | |
| 01.05.01 | OBRAS PRELIMINARES | | | |
| 01.05.01.01 | TRAZO Y REPLANTEO DE BADENES | m2 | 300.00 | 300.00 |
| 01.05.02 | MOVIMIENTO DE TIERRAS | | | |
| 01.05.02.01 | EXCAVACION MANUAL EN BADENES | m3 | 150.00 | 150.00 |
| 01.05.02.02 | ELIMINACION DE MATERIAL EXCEDENTE A DME | m3 | 150.00 | 150.00 |
| 01.05.03 | OBRAS DE MAMPOSTERIA DE CONCRETO | | | |
| 01.05.03.01 | MAMPOSTERIA DE PIEDRA (C/C F´C =140 KG/CM2 + 60% P.G) | m2 | 300.00 | 300.00 |
| 01.05.03.02 | ENCOFRADO Y DESENCOFRADO - BADENES | m2 | 180.00 | 180.00 |
| 01.05.03.03 | CONCRETO EN BADEN F'C=210KG/CM2 (E=0.25M) | m3 | 75.00 | 75.00 |
| 01.05.04 | VARIOS | | | |
| 01.05.04.01 | JUNTA FLEXIBLE | m | 40.00 | 40.00 |

# RESUMEN DE METRADO DE PROYECTO DE TESIS

Proyecto : "ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"
Propietario : -
Fecha : Febrero/2026 Hecho por : NRSM - MAA
Especialidad : OBRAS VIALES
Modulo : 11 KM Revidado por : -

| ITEM | DESCRIPCION | Und. | Parcial | Total |
|---|---|---|---|---|
| 01.06 | MITIGACION DE IMPACTO AMBIENTAL | | | |
| 01.06.01 | MEDIDAS DE PREVENCION, MITIGACION O CORRECION DE LOS IMPACTOS AMBIEN | GLB | 1.00 | 1.00 |
| 01.06.02 | RIEGO DE ZONA DE TRABAJO PARA MITIGAR LA CONTAMINACION - POLVO (inc. costo de agua y transp. surtido a obra) | mes | 10.00 | 10.00 |
| 01.07 | MONITOREIO ARQUEOLOGICO | | | |
| 01.07.01 | PLAN DE MONITORIO ARQUEOLOGICO | GLB | 1.00 | 1.00 |
| 01.07.02 | INFORME FINAL DE MONITOREO | und | 1.00 | 1.00 |
| 01.08 | PLAN DE CONSERVACION VIAL | | | |
| 01.08.01 | PLAN DE CONSERVACION VIAL | GLB | 1.00 | 1.00 |
| 01.09 | VARIOS | | | |
| 01.09.01 | LIMPIEZA FINAL DE LA OBRA | GLB | 1.00 | 1.00 |

# SUSTENTO DE METRADOS

| Nivel | ITEM | DESCRIPCIÓN | Und | Elem. Simil. | DIMENSIONES | | | Nº de Veces | METRADO | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Largo | Ancho | Alto | | Lon. | Área | Vol. | Kg. | Und. | |
| 1 | 01 | CAMINO VECINAL: HUACA TORO - HUACA QUEMADA | | | | | | | | | | | | |
| 2 | 01.01 | OBRAS PROVISIONALES | | | | | | | | | | | | |
| 3 | 01.01.01 | **CARTEL DE OBRA DE 2.40 x 3.60 M** | **und** | | | | | | | | | | | **1.00** |
| | | CARTEL DE IDENTIFICACION DE OBRA | und | 1 | | | | 1 | | | | | 1.00 | |
| 3 | 01.01.02 | **MOVILIZACION Y DESMOVILIZACION DE EQUIPOS** | **GLB** | | | | | | | | | | | **1.00** |
| | | Movilizacion y desmovilizacion de maquinaria | GLB | 1 | | | | 1 | | | | | 1.00 | |
| 3 | 01.01.03 | **FLETE TERRESTRE DE MATERIALES A OBRA** | **GLB** | | | | | | | | | | | **1.00** |
| | | Flete | GLB | 1 | | | | 1 | | | | | 1.00 | |
| 3 | 01.01.04 | **AGUA PARA LA CONSTRUCCION** | **mes** | | | | | | | | | | | **10.00** |
| | | Agua | mes | 1 | | | | 10 | | | | | 10.00 | |
| 3 | 01.01.05 | **ENERGIA ELECTRICA PARA LA CONSTRUCCION** | **mes** | | | | | | | | | | | **10.00** |
| | | Energia | mes | 1 | | | | 10 | | | | | 10.00 | |
| 3 | 01.01.06 | **ALQUILER DE SERVICIOS HIGIENICOS PORTATILES** | **mes** | | | | | | | | | | | **10.00** |
| | | SS.HH | mes | 1 | | | | 10 | | | | | 10.00 | |
| 3 | 01.01.07 | **PLAN DE SEGURIDAD Y SALUD EN EL TRABAJO** | **GLB** | | | | | | | | | | | **1.00** |
| | | PLAN DE SST | GLB | 1 | | | | 1 | | | | | 1.00 | |
| 3 | 01.01.08 | **EQUIPO DE PROTECCION INDIVIDUAL** | **GLB** | | | | | | | | | | | **1.00** |
| | | Proteccion individual | GLB | 1 | | | | 1 | | | | | 1.00 | |
| 3 | 01.01.09 | **ACONDICIONAMIENTO Y MANTENIMIENTO DE DESVIOS** | **km** | | | | | | | | | | | **1.00** |
| | | Desvios | km | 1 | 1.00 | | | 1 | 1.00 | | | | | |
| 2 | 01.02 | TRABAJOS PRELIMINARES | | | | | | | | | | | | |
| 3 | 01.02.01 | **TOPOGRAFIA Y GEORREFERENCIACION INICIAL** | **km** | | | | | | | | | | | **11.17** |
| | | Topografia y georreferenciación del trazo | km | | 11.17 | | | 1 | 11.17 | | | | | |
| 3 | 01.02.02 | **DEMOLICION DE ESTRUCTURAS** | **m3** | | | | | | | | | | | **82.00** |
| | | **Obras de arte existente** | | | | | | | | | | | | |
| | | Alcantarillas de paso | m3 | | 5.00 | 0.60 | 1.00 | 14 | | | 42.00 | | | |
| | | Baden | m3 | | 10.00 | 8.00 | 0.50 | 1 | | | 40.00 | | | |
| 3 | 01.02.03 | **TRAZO Y REPLANTEO DURANTE LA OBRA** | **km** | | | | | | | | | | | **11.17** |
| | | Trazo y replanteo durante la obra | km | | 11.17 | | | 1 | 11.17 | | | | | |
| 3 | 01.02.04 | **MANTENIMIENTO DE TRANSITO TEMPORAL Y SEGURIDAD VIAL** | **GLB** | | | | | | | | | | | **1.00** |
| | | Transito temporal y seguridad vial | GLB | 1 | | | | 1 | | | | | 1.00 | |
| 3 | 01.02.05 | CAMPAMENTOS | | | | | | | | | | | | |
| 4 | 01.02.05.01 | **CAMPAMENTO PARA PERSONAL OBRERO** | **GLB** | | | | | | | | | | | **1.00** |
| | | Oficina, almacén y guardania | GLB | 1 | | | | 1 | | | | | 1.00 | |
| 2 | 01.03 | INFRAESTRUCTURA VIAL | | | | | | | | | | | | |
| 3 | 01.03.01 | EXCAVACION PARA EXPLANACIONES | | | | | | | | | | | | |
| 4 | 01.03.01.01 | **DESBROCE Y LIMPIEZA DEL TERRENO** | **m2** | | | | | | | | | | | **55870.30** |
| | | **Trocha** | | | **11174.06** | **5.00** | | | **55870.30** | | | | | |
| 4 | 01.03.01.02 | **CORTE DE TERRENO A NIVEL DE SUBRASANTE** | **m3** | | | | | | | | | | | **233.87** |
| | | Extraido de reporte CIVIL 3D (Hoja MOV. TIERRAS) | m3 | 1 | | | | 234 | | 233.87 | | | | |
| 3 | 01.03.02 | TERRAPLENES | | | | | | | | | | | | |
| 4 | 01.03.02.01 | **CONFORMACION DE TERRAPLENES** | **m3** | | | | | | | | | | | **14140.70** |
| | | Extraido de reporte CIVIL 3D (Hoja MOV. TIERRAS) | m3 | 1 | | | | 14141 | | 14140.70 | | | | |
| 3 | 01.03.03 | MEJORAMIENTO DE SUELOS | | | | | | | | | | | | |
| 4 | 01.03.03.01 | **PERFILADO Y COMPACTADO DE SUB RASANTE** | **m2** | | | | | | | | | | | **55870.30** |
| | | **Area de la subrasante** | | | **11174.06** | **5.00** | | | **55870.30** | | | | | |
| 3 | 01.03.04 | ELIMINACION DE MATERIAL EXCEDENTE A DME | | | | | | | | | | | | |
| 4 | 01.03.04.01 | **TRANSPORTE DE ELIMINACION DE MATERIAL A DME PARA D> 1 KM** | **m3** | | | | | | | | | | | **292.34** |
| | | Material excedente | m3 | 1 | | | 1.25 | 234 | | 292.34 | | | | |
| 3 | 01.03.05 | PAVIMENTOS | | | | | | | | | | | | |
| 4 | 01.03.05.01 | SUB BASE GRANULAR E=0.20 m | | | | | | | | | | | | |
| 5 | 01.03.05.01.01 | **SUB BASE DE AFIRMADO e=0.20m DESDE EK 0+000 HASTA 11+174.06** | **m3** | | | | | | | | | | | **11174.06** |
| | | **Afirmado** | | | **11174.06** | **5.00** | **0.20** | | | **11174.06** | | | | |
| 4 | 01.03.05.02 | BASE GRANULAR E=0.40 m | | | | | | | | | | | | |
| 5 | 01.03.05.02.01 | **BASE DE AFIRMADO e=0.40m DESDE EK 0+000 HASTA 11+174.06** | **m3** | | | | | | | | | | | **22348.12** |
| | | **Afirmado** | | | **11174.06** | **5.00** | **0.40** | | | **22348.12** | | | | |
| 3 | 01.03.06 | SEÑALIZACION | | | | | | | | | | | | |
| 4 | 01.03.06.01 | **HITO KILOMETRICO** | **und** | | | | | | | | | | | **11.00** |
| | | HITO | und | 1 | | | | 11 | | | | | 11.00 | |
| 4 | 01.03.06.02 | **SEÑALES PREVENTIVAS** | **und** | | | | | | | | | | | **1.00** |
| | | Señales preventivas | und | 1 | | | | 1 | | | | | 1.00 | |
| 4 | 01.03.06.03 | **SEÑALES INFORMATIVAS** | **und** | | | | | | | | | | | **1.00** |
| | | Señales informativas | und | 1 | | | | 1 | | | | | 1.00 | |
| 4 | 01.03.06.04 | **SEÑAL REGLAMENTARIA** | **und** | | | | | | | | | | | **1.00** |
| | | Señales reglamentarias | und | 1 | | | | 1 | | | | | 1.00 | |
| 3 | 01.03.07 | ENSAYOS | | | | | | | | | | | | |
| 4 | 01.03.07.01 | **DENSIDAD DE CAMPO** | **und** | | | | | | | | | | | **1.00** |
| | | Densidad de campo | und | 1 | | | | 1 | | | | | 1.00 | |
| 4 | 01.03.07.02 | **CBR** | **und** | | | | | | | | | | | **1.00** |
| | | CBR | und | 1 | | | | 1 | | | | | 1.00 | |
| 2 | 01.04 | OBRAS DE ARTE: ALCANTARILLAS | | | | | | | | | | | | |
| 3 | 01.04.01 | TRABAJOS PRELIMINARES | | | | | | | | | | | | |
| 4 | 01.04.01.01 | **TRAZO Y REPLANTEO DE ALCANTARILLAS** | **m2** | | | | | | | | | | | **144.00** |
| | | TRAZO Y REPLANTEO | m2 | | 6.00 | | 1.20 | 20 | | 144.00 | | | | |
| 4 | 01.04.01.02 | **ELIMINACION DE DESMONTE PROVENIENTE DEL MOVIMIENTO DE TIERRAS** | **m3** | | | | | | | | | | | **120.00** |
| | | Eliminacion por alcantarilla | m3 | | 5.00 | 1.00 | 1.20 | 20 | | | 120.00 | | | |
| 4 | 01.04.01.03 | **RELLENO COMPACTADO CON MATERIAL SELECCIONADO** | **m3** | | | | | | | | | | | **60.00** |
| | | Relleno sobre la alcantarilla | m3 | | 5.00 | 1.00 | 0.60 | 20 | | | 60.00 | | | |
| 3 | 01.04.02 | OBRAS DE CONCRETO SIMPLE | | | | | | | | | | | | |
| 4 | 01.04.02.01 | **CONCRETO PARA SOLADO DE ALCANTARILLA, MEZCLA C:H=1:10, E=10CM** | **m2** | | | | | | | | | | | **100.00** |
| | | Solados | m2 | | 5.00 | 1.00 | | 20 | | 100.00 | | | | |
| 3 | 01.04.03 | OBRAS DE CONCRETO ARMADO | | | | | | | | | | | | |
| 4 | 01.04.03.01 | **CONCRETO F'c=210 KG/CM2 PARA ALCANTARILLA** | **m3** | | | | | | | | | | | **339.20** |
| | | **MUROS** | | | | | | | | | | | | |
| | | CARAS LATERALES | m3 | 80 | 5.00 | 0.20 | 1.00 | 2 | | | 160.00 | | | |
| | | TAPAS | m3 | 80 | 5.00 | 0.20 | 0.60 | 2 | | | 96.00 | | | |
| | | ALAS | m3 | 80 | 1.30 | 0.20 | 1.00 | 4 | | | 83.20 | | | |
| 4 | 01.04.03.02 | **ENCOFRADO Y DESENCOFRADO PARA ALCANTARILLAS** | **m2** | | | | | | | | | | | **1248.00** |
| | | **MUROS** | | | | | | | | | | | | |
| | | CARAS LATERALES | m2 | 80 | 5.00 | | 1.00 | 2 | | 800.00 | | | | |
| | | TAPAS | m2 | 80 | 5.00 | | 0.60 | 1 | | 240.00 | | | | |
| | | **ALAS** | | | | | | | | | | | | |
| | | | m2 | 80 | 1.30 | | 1.00 | 2 | | 208.00 | | | | |
| 4 | 01.04.03.03 | **ACERO FY=4200KG/CM2 MUROS Y ALAS - ALCANTARILLAS** | **kg** | | | **gancho** | **empal** | | | | | **kg/m** | | **4534.20** |
| | | **MUROS** | | | | | | | | | | | | |
| | | CARA LATERAL - AC. HORIZ. 5 Ø1/2" _____ | kg | 40 | 5.00 | | 0.00 | 5 | 1000.00 | | | 0.99 | 990.00 | |
| | | CARA LATERAL - AC. VERT. 25 Ø1/2" _____ | kg | 40 | 1.00 | | 0.00 | 25 | 1000.00 | | | 0.99 | 990.00 | |
| | | TAPAS - AC. LONG. 4 Ø1/2" _____ | kg | 40 | 5.00 | | 0.00 | 4 | 800.00 | | | 0.99 | 792.00 | |
| | | TAPAS - AC. TRANS. 25 Ø1/2" _____ | kg | 40 | 0.70 | | 0.00 | 25 | 700.00 | | | 0.99 | 693.00 | |

| Nivel | ITEM | DESCRIPCIÓN | Und | Elem. Simil. | DIMENSIONES | | | Nº de Veces | METRADO | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Largo | Ancho | Alto | | Lon. | Área | Vol. | Kg. | Und. | |
| | | **ALAS** | | | | | | | | | | | | |
| | | ACERO LONG. 5 Ø1/2" _____\| | kg | 80 | 1.00 | 0.30 | 0.00 | 5 | 520.00 | | 0.99 | 514.80 | | |
| | | ACERO TRANS. 7 Ø1/2" _____ | kg | 80 | 1.00 | | 0.00 | 7 | 560.00 | | 0.99 | 554.40 | | |
| 3 | 01.04.04 | **EMBOQUILLADO** | | | | | | | | | | | | |
| | 01.04.04.01 | **COMPACTACION PARA CONSTRUCCION DE MAMPOSTERIA DE PIEDRA** | **m2** | | | | | | | | | | | **41.60** |
| 4 | | | | | | | | | | | | | | |
| | | Compactacion | m2 | 20 | 1.30 | 0.80 | | 2 | | 41.60 | | | | |
| | 01.04.04.02 | **MAMPOSTERIA DE PIEDRA (C/C F´C =140 KG/CM2 + 60% P.G)** | **m2** | | | | | | | | | | | **41.60** |
| 4 | | | | | | | | | | | | | | |
| | | Mamposteria boca de entrada y salida | m2 | 20 | 1.30 | 0.80 | | 2 | | 41.60 | | | | |
| 3 | 01.04.05 | **SOLAQUEADO DE ALCANTARILLAS** | | | | | | | | | | | | |
| 4 | 01.04.05.01 | **SOLAQUEADO DE ALCANTARILLAS** | **m2** | | | | | | | | | | | **41.60** |
| | | Solaqueado | m2 | 20 | 1.30 | 0.80 | | 2 | | 41.60 | | | | |
| 3 | 01.04.06 | **PINTURA** | | | | | | | | | | | | |
| 4 | 01.04.06.01 | **PINTURA EN ALCANTARILLAS** | **m2** | | | | | | | | | | | **339.20** |
| | | Pintura | m2 | | 339.20 | | | 1 | | 339.20 | | | | |
| 2 | 01.05 | **OBRAS DE ARTE: BADENES** | | | | | | | | | | | | |
| 3 | 01.05.01 | **OBRAS PRELIMINARES** | | | | | | | | | | | | |
| 4 | 01.05.01.01 | **TRAZO Y REPLANTEO DE BADENES** | **m2** | | | | | | | | | | | **300.00** |
| | | Trazo y replanteo preliminar | m2 | 1 | 20.00 | 15.00 | | | | 300.00 | | | | |
| 3 | 01.05.02 | **MOVIMIENTO DE TIERRAS** | | | | | | | | | | | | |
| 4 | 01.05.02.01 | **EXCAVACION MANUAL EN BADENES** | **m3** | | | | | | | | | | | **150.00** |
| | | Exc. Manual | m3 | 1 | 20.00 | 15.00 | 0.50 | | | | 150.00 | | | |
| 4 | 01.05.02.02 | **ELIMINACION DE MATERIAL EXCEDENTE A DME** | **m3** | | | | | | | | | | | **150.00** |
| | | ELIMINACION DE ME | m3 | 1 | | | | 150 | | | 150.00 | | | |
| 3 | 01.05.03 | **OBRAS DE MAMPOSTERIA DE CONCRETO** | | | | | | | | | | | | |
| | 01.05.03.01 | **MAMPOSTERIA DE PIEDRA (C/C F´C =140 KG/CM2 + 60% P.G)** | **m2** | | | | | | | | | | | **300.00** |
| 4 | | | | | | | | | | | | | | |
| | | **Mamposteria en baden** | | | **20.00** | **15.00** | | | | **300.00** | | | | |
| 4 | 01.05.03.02 | **ENCOFRADO Y DESENCOFRADO - BADENES** | **m2** | | | | | | | | | | | **180.00** |
| | | ENCOFRADO Y DESENCOFRADO - BADENES | m2 | | 20.00 | 15.00 | 0.30 | 2 | | 180.00 | | | | |
| 4 | 01.05.03.03 | **CONCRETO EN BADEN F'C=210KG/CM2 (E=0.25M)** | **m3** | | | | | | | | | | | **75.00** |
| | | **Concreto f'c 210** | | | **20.00** | **15.00** | **0.25** | | | | **75.00** | | | |
| 3 | 01.05.04 | **VARIOS** | | | | | | | | | | | | |
| 4 | 01.05.04.01 | **JUNTA FLEXIBLE** | **m** | | | | | | | | | | | **40.00** |
| | | JUNTA FLEXIBLE | m | | 40.00 | | | 1 | 40.00 | | | | | |
| 2 | 01.06 | **MITIGACION DE IMPACTO AMBIENTAL** | | | | | | | | | | | | |
| | 01.06.01 | **MEDIDAS DE PREVENCION, MITIGACION O CORRECION DE LOS IMPACTOS AMBIENTALES** | **GLB** | | | | | | | | | | | **1.00** |
| 3 | | MITIGACION | GLB | 1 | | | | 1 | | | | | 1.00 | |
| | 01.06.02 | **RIEGO DE ZONA DE TRABAJO PARA MITIGAR LA CONTAMINACION - POLVO (inc. costo de agua y transp. surtido a obra)** | **mes** | | | | | | | | | | | **10.00** |
| 3 | | Riego | mes | 10 | | | | 1 | | | | | 10.00 | |
| 2 | 01.07 | **MONITOREIO ARQUEOLOGICO** | | | | | | | | | | | | |
| 3 | 01.07.01 | **PLAN DE MONITORIO ARQUEOLOGICO** | **GLB** | | | | | | | | | | | **1.00** |
| | | PLAN DE MONITOREO ARQUEOLOGICO | GLB | 1 | | | | 1 | | | | | 1.00 | |
| 3 | 01.07.02 | **INFORME FINAL DE MONITOREO** | **und** | | | | | | | | | | | **1.00** |
| | | Informe final | und | 1 | | | | 1 | | | | | 1.00 | |
| 2 | 01.08 | **PLAN DE CONSERVACION VIAL** | | | | | | | | | | | | |
| 3 | 01.08.01 | **PLAN DE CONSERVACION VIAL** | **GLB** | | | | | | | | | | | **1.00** |
| | | PLAN DE CONSERVACION VIAL | GLB | 1 | | | | 1 | | | | | 1.00 | |
| 2 | 01.09 | **VARIOS** | | | | | | | | | | | | |
| 3 | 01.09.01 | **LIMPIEZA FINAL DE LA OBRA** | **GLB** | | | | | | | | | | | **1.00** |
| | | LIMPIEZA FINAL DE LA OBRA | GLB | 1 | | | | 1 | | | | | 1.00 | |

# ANEXO N°11.- PRESUPUESTO

**PRESUPUESTO**

**PROYECTO:** **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

**SUBPRESUPUESTO:** **CARRETERA**
**CLIENTE:**
**UBICACION:** **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**
**FECHA BASE:** **FEBRERO DEL 2026**
**MONEDA:** **SOLES**

| Item | Partida | Unidad | Metrado | CU | Parcial |
|---|---|---|---|---|---|
| **1** | **CAMINO VECINAL: HUACA TORO - HUACA QUEMADA** | | | | **6,070,362.27** |
| **1.1** | **OBRAS PROVISIONALES** | | | | **155,646.14** |
| 1.1.1 | CARTEL DE OBRA 3.60M X 2.40M | und | 1.00 | 1,896.66 | 1,896.66 |
| 1.1.2 | MOVILIZACION Y DESMOVILIZACION DE EQUIPOS | GLB | 1.00 | 60,000.00 | 60,000.00 |
| 1.1.3 | FLETE TERRESTRE DE MATERIALES A OBRA | GLB | 1.00 | 35,000.00 | 35,000.00 |
| 1.1.4 | AGUA PARA LA CONSTRUCCION | mes | 10.00 | 712.50 | 7,125.00 |
| 1.1.5 | ENERGIA ELECTRICA PARA LA CONSTRUCCION | MES | 10.00 | 700.00 | 7,000.00 |
| 1.1.6 | ALQUILER DE SERVICIOS HIGIENICOS PORTATILES | mes | 10.00 | 1,200.00 | 12,000.00 |
| 1.1.7 | PLAN DE SEGURIDAD Y SALUD EN EL TRABAJO | GLB | 1.00 | 10,000.00 | 10,000.00 |
| 1.1.8 | EQUIPO DE PROTECCION INDIVIDUAL | GLB | 1.00 | 10,920.00 | 10,920.00 |
| 1.1.9 | ACONDICIONAMIENTO Y MANTENIMIENTO DE DESVIOS | KM | 1.00 | 11,704.48 | 11,704.48 |
| **1.2** | **TRABAJOS PRELIMINARES** | | | | **192,376.75** |
| 1.2.1 | TOPOGRAFIA Y GEOREFERENCIACION INICIAL | KM | 11.17 | 8,325.93 | 93,000.64 |
| 1.2.2 | RECURSOS PARA RESPUESTAS ANTE EMERGENCIAS | GLB | 1.00 | 2,140.00 | 2,140.00 |
| 1.2.3 | DEMOLICION DE ESTRUCTURA DE CONCRETO | M3 | 82.00 | 47.78 | 3,917.96 |
| 1.2.4 | SEÑALIZACION TEMPORAL DE SEGURIDAD | GLB | 1.00 | 2,854.91 | 2,854.91 |
| 1.2.5 | SEÑALIZACION DE DESVIO Y CONTROL DEL TRANSITO | GLB | 1.00 | 9,375.00 | 9,375.00 |
| 1.2.6 | TRAZO Y REPLANTEO DURANTE LA OBRA | KM | 11.17 | 4,197.69 | 46,888.20 |
| 1.2.7 | MANTENIMIENTO DE TRANSITO Y SEGURIDAD VIAL | GLB | 1.00 | 12,897.04 | 12,897.04 |
| **1.2.8** | **CAMPAMENTOS** | | | | **21,303.00** |
| 1.2.8.1 | CAMPAMENTO PARA PERSONAL OBRERO | GLB | 1.00 | 21,303.00 | 21,303.00 |
| **1.3** | **INFRAESTRUCTURA VIAL** | | | | **4,937,241.20** |
| **1.3.1** | **EXCAVACIONES PARA EXPLANACIONES** | | | | **1,320,468.76** |
| 1.3.1.1 | DESBROCE Y LIMPIEZA DEL TERRENO | m2 | 55,870.30 | 7.62 | 425,731.69 |
| 1.3.1.2 | CORTE DE TERRENO A NIVEL DE SUBRASANTE | M3 | 233.87 | 10.64 | 2,488.38 |
| 1.3.1.3 | ESCARIFICADO Y COMPACTADO DE SUBRASANTE CON MAQUINARIA E=2 | m2 | 55,870.30 | 15.97 | 892,248.69 |
| **1.3.2** | **TERRAPLANES** | | | | **1,057,582.95** |
| 1.3.2.1 | CONFORMACION DE TERRAPLENES | M3 | 14,140.70 | 74.79 | 1,057,582.95 |
| **1.3.3** | **MEJORAMIENTO DE SUELOS** | | | | **931,364.57** |
| 1.3.3.1 | PERFILADO Y COMPACTADO DE SUBRASANTE | M2 | 55,870.70 | 16.67 | 931,364.57 |
| **1.3.4** | **ELIMINACION DE MATERIAL EXCEDENTE** | | | | **7,562.84** |
| 1.3.4.1 | TRANSPORTE DE ELIMINACION DE MATERIAL A DME PARA D> 1 KM | M3K | 292.34 | 25.87 | 7,562.84 |
| **1.3.5** | **PAVIMENTOS** | | | | **1,529,281.85** |
| **1.3.5.1** | **SUB BASE GRANULAR E=0.20 m** | | | | **509,760.62** |
| 1.3.5.1.1 | SUB BASE DE AFIRMADO e=0.20m DESDE EK 0+000 HASTA 11+174.06 | M3 | 11,174.06 | 45.62 | 509,760.62 |

**PRESUPUESTO**

**PROYECTO:** **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

**SUBPRESUPUESTO:** **CARRETERA**
**CLIENTE:**
**UBICACION:** **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**
**FECHA BASE:** **FEBRERO DEL 2026**
**MONEDA:** **SOLES**

| | | | | | |
|---|---|---|---|---|---|
| **1.3.5.2** | **BASE GRANULAR E=0.40 m** | | | | **1,019,521.23** |
| 1.3.5.2.1 | SUB BASE DE AFIRMADO e=0.40m DESDE EK 0+000 HASTA 11+174.06 | M3 | 22,348.12 | 45.62 | 1,019,521.23 |
| **1.3.6** | **SEÑALIZACION** | | | | **27,980.23** |
| 1.3.6.1 | HITO KILOMETRICO | UND | 11.00 | 272.13 | 2,993.43 |
| 1.3.6.2 | SEÑALES PREVENTIVAS | UND | 10.00 | 551.08 | 5,510.80 |
| 1.3.6.3 | SEÑALES INFORMATIVAS | UND | 10.00 | 664.10 | 6,641.00 |
| 1.3.6.4 | SEÑAL REGLAMENTARIA | UND | 20.00 | 641.75 | 12,835.00 |
| **1.3.7** | **ENSAYOS** | | | | **63,000.00** |
| 1.3.7.1 | DENSIDAD DE CAMPO | und | 11.00 | 3,000.00 | 33,000.00 |
| 1.3.7.2 | CBR | und | 10.00 | 3,000.00 | 30,000.00 |
| **1.4** | **OBRAS DE ARTE: ALCANTARILLA** | | | | **391,705.03** |
| **1.4.1** | **TRABAJOS PRELIMINARES** | | | | **16,935.48** |
| 1.4.1.1 | TRAZO Y REPLANTEO DE ALCANTARILLAS | M2 | 144.00 | 9.37 | 1,349.28 |
| 1.4.1.2 | ELIMINACION DE DESMONTE PROVENIENTE DEL MOVIMIENTO DE TIERR/ | M3 | 120.00 | 34.46 | 4,135.20 |
| 1.4.1.3 | RELLENO COMPACTADO CON MATERIAL SELECCIONADO | M3 | 60.00 | 190.85 | 11,451.00 |
| **1.4.2** | **OBRAS DE CONCRETO SIMPLE** | | | | **5,524.00** |
| 1.4.2.1 | CONCRETO PARA SOLADO DE ALCANTARILLA, MEZCLA C:H=1:10, E=10CI | M2 | 100.00 | 55.24 | 5,524.00 |
| **1.4.3** | **OBRAS DE CONCRETO ARMADO** | | | | **333,260.95** |
| 1.4.3.1 | CONCRETO F'c=210 KG/CM2 PARA ALCANTARILLA | M3 | 339.20 | 444.77 | 150,865.98 |
| 1.4.3.2 | ENCOFRADO Y DESENCOFRADO PARA ALCANTARILLAS | M2 | 1,248.00 | 111.78 | 139,501.44 |
| 1.4.3.3 | ACERO F´Y = 4200 KG/CM2 MUROS Y ALAS - ALCANTARILLAS | KG | 4,534.20 | 9.46 | 42,893.53 |
| **1.4.4** | **EMBOQUILLADO** | | | | **20,749.66** |
| 1.4.4.1 | COMPACTACION PARA CONSTRUCCION DE MAMPOSTERIA DE PIEDRA | m2 | 41.60 | 10.05 | 418.08 |
| 1.4.4.2 | MAMPOSTERIA DE PIEDRA (C/C F´C =140 KG/CM2 + 60% P.G) | M2 | 41.60 | 488.74 | 20,331.58 |
| **1.4.5** | **SOLAQUEADO DE ALCANTARILLAS** | | | | **1,731.39** |
| 1.4.5.1 | SOLAQUEADO DE ALCANTARILLA | m2 | 41.60 | 41.62 | 1,731.39 |
| **1.4.6** | **PINTURA** | | | | **13,503.55** |
| 1.4.6.1 | PINTURA EN ALCANTARILLAS | m2 | 339.20 | 39.81 | 13,503.55 |
| **1.5** | **OBRAS DE ARTE: BADENES** | | | | **252,393.15** |
| **1.5.1** | **OBRAS PRELIMINARES** | | | | **1,776.00** |
| 1.5.1.1 | TRAZO Y REPLANTEO DE BADENES | M2 | 300.00 | 5.92 | 1,776.00 |
| **1.5.2** | **MOVIMIENTO DE TIERRAS** | | | | **35,371.50** |
| 1.5.2.1 | EXCAVACION MANUAL EN BADENES | M3 | 150.00 | 229.71 | 34,456.50 |
| 1.5.2.2 | TRANSPORTE DE ELIMINACION DE MATERIAL A DME PARA D> 1 KM | M3K | 150.00 | 6.10 | 915.00 |

**PRESUPUESTO**

**PROYECTO:** **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

**SUBPRESUPUESTO:** **CARRETERA**
**CLIENTE:**
**UBICACION:** **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**
**FECHA BASE:** **FEBRERO DEL 2026**
**MONEDA:** **SOLES**

| | | | | | |
|---|---|---|---|---|---|
| **1.5.3** | **OBRAS DE MAMPOSTERIA DE CONCRETO** | | | | **213,496.05** |
| 1.5.3.1 | MAMPOSTERIA DE PIEDRA (C/C F´C =140 KG/CM2 + 60% P.G) | M2 | 300.00 | 488.74 | 146,622.00 |
| 1.5.3.2 | ENCOFRADO Y DESENCOFRADO - BADENES | M2 | 180.00 | 165.31 | 29,755.80 |
| 1.5.3.3 | CONCRETO EN BADEN F'C=210 KG/CM2 (E=0.25CM) | M3 | 75.00 | 494.91 | 37,118.25 |
| **1.5.4** | **VARIOS** | | | | **1,749.60** |
| 1.5.4.1 | JUNTA FLEXIBLE | m | 40.00 | 43.74 | 1,749.60 |
| **1.6** | **MITIGACION DE IMPACTO AMBIENTAL** | | | | **70,000.00** |
| 1.6.1 | MEDIDAS DE PREVENCION, MITIGACION O CORRECCION DE LOS IMPACT( | GLB | 1.00 | 35,000.00 | 35,000.00 |
| 1.6.2 | RIEGO DE ZONA DE TRABAJO PARA MITIGAR LA CONTAMINACION - POLV | mes | 10.00 | 3,500.00 | 35,000.00 |
| **1.7** | **MONITOREO ARQUEOLOGICO** | | | | **6,000.00** |
| 1.7.1 | PLAN DE MONITOREO ARQUELOGICO | GLB | 1.00 | 3,000.00 | 3,000.00 |
| 1.7.2 | INFORME FINAL DE MONITOREO | UND | 1.00 | 3,000.00 | 3,000.00 |
| **1.8** | **PLAN DE CONSERVACION VIAL** | | | | **50,000.00** |
| 1.8.1 | PLAN DE CONSERVACION VIAL | GLB | 1.00 | 50,000.00 | 50,000.00 |
| **1.9** | **VARIOS** | | | | **15,000.00** |
| 1.9.1 | LIMPIEZA FINAL DE LA OBRA | GLB | 1.00 | 15,000.00 | 15,000.00 |
| | **COSTO DIRECTO** | | | | **6,070,362.27** |
| | GASTOS GENERALES 12.13% | | | | 736,100.33 |
| | UTILIDAD 10% | | | | 607,036.23 |
| | **SUB TOTAL** | | | | **7,413,498.83** |
| | IGV 18% | | | | 1,334,429.79 |
| | **COSTO DE OBRA** | | | | **8,747,928.62** |
| | SUPERVISION DE OBRA | | | | 593,169.00 |
| | EXPEDIENTE TECNICO | | | | 60,000.00 |
| | **COSTO TOTAL DEL PROYECTO** | | | | **9,401,097.62** |

**SON: NUEVE MILLONES CUATROCIENTOS UN MIL NOVENTA Y SIETE CON 62/100 SOLES**

# COSTO TOTAL

| | |
|---|---|
| **PROYECTO:** | **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"** |
| **FECHA:** | **FEBRERO DEL 2026** |

| **COSTO TOTAL DEL PROYECTO** | | | |
|---|---|---|---|
| **Fecha del Presupuesto : ABRIL DEL 2026** | | | |
| | | | |
| **COSTO DIRECTO (C.D.)** | **S/.** | **6,070,362.27** | CD |
| **GASTOS GENERALES (12.13%)** | **S/.** | **736,100.33** | 12.13% x CD |
| **UTILIDAD (10%)** | **S/.** | **607,036.23** | 10.00% x CD |
| | ========== | | |
| **SUB TOTAL** | **S/.** | **7,413,498.83** | ST |
| IGV (18.00 %) | S/. | 1,334,429.79 | IGV |
| | ========== | | |
| **COSTO DE OBRA** | **S/.** | **8,747,928.62** | **CO** |
| SUPERVISIÓN DE OBRA | S/. | 593,169.00 | 6.78% x CO |
| EXPEDIENTE TECNICO | S/. | 60,000.00 | 0.69% x CO |
| | ========== | | |
| **COSTO TOTAL DEL PROYECTO** | **S/.** | **9,401,097.62** | |

**SON: NUEVE MILLONES CUATROCIENTOS UN MIL NOVENTA Y SIETE CON 62/100 SOLES**

| ANALISIS DE GASTOS GENERALES | | | | |
|---|---|---|---|---|
| **PROYECTO** | **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"** | | | |
| **FECHA** | **FEBRERO DEL 2026** | | | |
| **ANALISIS DE GASTOS GENERALES** | | **MONEDA NACIONAL** | | **GASTOS GENERALES(%)** |
| | | **S/** | **%** | |
| **COSTO DIRECTO** | | **6,070,362.27** | | |
| 1.- | GASTOS GENERALES | | | |
| | A.- GASTOS FIJOS<br>No directamente relacionados con el tiempo | 22,340.72 | 0.37% | 12.1261350223% |
| | B.- GASTOS VARIABLES<br>Directamente relacionados con el tiempo | 713,759.61 | 11.76% | |
| | | 736,100.33 | | |

# ANALISIS DE GASTOS GENERALES FIJOS

| | |
|---|---|
| **PROYECTO:** | **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"** |
| **FECHA:** | **FEBRERO DEL 2026** |

| | | | |
|---|---|---|---|
| **DURACION DE LA OBRA (MESES)** | **10.00** | **MESES** | |
| **COSTO DIRECTO (SOLES)** | **6,070,362.27** | | |

| ITEM | DESCRIPCION | UND. | CANTIDAD | | VALOR UNITARIO | VALOR TOTAL |
|---|---|---|---|---|---|---|
| | | | Factor | Tiempo | S/ | S/ |
| **1.00** | **GASTOS ADMINISTRATIVOS** | | | | | |
| 1.01 | Gastos de Licitación y Elaboración de Oferta (Incl. viaje) | est | | 1.00 | 1,500.00 | 1,500.00 |
| 1.02 | Gastos Legales (Notariales) | est | | 1.00 | 800.00 | 800.00 |
| 1.03 | Gastos Varios (Fotocopias, etc) | est | | 1.00 | 300.00 | 300.00 |
| | **TOTAL DE GASTOS ADMINISTRATIVOS** | | | | | **2,600.00** |
| **2.00** | **LIQUIDACION DE OBRA** | | | | | |
| 2.01 | Ingeniero Residente | mes | 0.5 | 1.00 | 10,000.00 | 5,000.00 |
| 2.02 | Fotocopias Planos | est | 1.0 | 1.00 | 800.00 | 800.00 |
| 2.03 | Fotocopias Documentos | est | 1.0 | 1.00 | 500.00 | 500.00 |
| 2.04 | Empastado, Encuadernado, Anillados | est | 1.0 | 1.00 | 300.00 | 300.00 |
| 2.05 | Comunicaciones | est | 1.0 | 1.00 | 300.00 | 300.00 |
| 2.06 | Movilización Coordinaciones | est | 1.0 | 1.00 | 350.00 | 350.00 |
| 2.07 | Utiles de Oficina | est | 1.0 | 1.00 | 350.00 | 350.00 |
| | **TOTAL COSTO LIQUIDACION DE OBRA** | | | | | **7,600.00** |
| **3.00** | **IMPUESTOS** | | | | | |
| 3.01 | SENCICO (0.2% presupuesto sin igv) | % | 0.0020 | 1.00 | 6,070,362.27 | 12,140.72 |
| | **TOTAL COSTO IMPUESTOS** | | | | | **12,140.72** |
| | | | | | | |
| **TOTAL GASTOS GENERALES FIJOS** | | | | | **S/** | **22,340.72** |

# ANALISIS DE GASTOS GENERALES VARIABLES

| | |
|---|---|
| **PROYECTO:** | **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"** |
| **FECHA:** | **FEBRERO DEL 2026** |

| | | |
|---|---|---|
| **DURACION DE LA OBRA (meses)** | **10.00** | |
| **COSTO DIRECTO** | **6,070,362.27** | |

| ITEM | DESCRIPCION | UNIDAD | CANTIDAD | | | VALOR UNITARIO | VALOR TOTAL |
|---|---|---|---|---|---|---|---|
| | | | FACTOR | CANT. | TIEMPO | S/. / u | S/. |
| **1.00** | **PERSONAL PROFESIONAL Y ESPECIALISTAS** | | | | | | |
| **1.1.0** | **PERSONAL PROFESIONAL Y DE INGENIERIA** | | | | | | |
| 1.1.1 | Ingeniero Residente | mes | 1 | 1.00 | 10.00 | 10,000.00 | 100,000.00 |
| 1.1.2 | Ingeniero Especialista en Seguridad y/o Prevencionista | mes | 1 | 1.00 | 10.00 | 7,000.00 | 70,000.00 |
| 1.1.3 | Ingeniero Especialista en Ambiental | mes | 1 | 1.00 | 10.00 | 7,000.00 | 70,000.00 |
| 1.1.4 | Ingeniero Especialista en Calidad | mes | 1 | 1.00 | 10.00 | 7,000.00 | 70,000.00 |
| 1.1.5 | Ingeniero asistente de residente de obra | mes | 1 | 1.00 | 10.00 | 6,000.00 | 60,000.00 |
| | **SUBTOTAL** | | | | | | **370,000.00** |
| **2.00** | **PERSONAL TÉCNICO Y ADMINISTRATIVO** | | | | | | |
| 2.1 | Maestro de Obra | mes | 1 | 1.00 | 10.00 | 5,000.00 | 50,000.00 |
| 2.2 | Almacenero | mes | 1 | 1.00 | 10.00 | 3,500.00 | 35,000.00 |
| 2.3 | Guardian | mes | 1 | 1.00 | 10.00 | 3,500.00 | 35,000.00 |
| | **SUBTOTAL** | | | | | | **120,000.00** |
| **3.00** | **ALQUILER DE EQUIPOS, SERVICIOS Y GASTOS DE LABORATORIO** | | | | | | |
| 3.1 | Alquiler de Camioneta Pick Up 4 x 4-Doble Cabina (*) | mes | 1 | 1.00 | 10.00 | 7,000.00 | 70,000.00 |
| 3.2 | Equipos de Computo y Oficina (Incluye Laptop, Impresoras) | mes | 1 | 1.00 | 10.00 | 8,000.00 | 80,000.00 |
| | **SUB TOTAL** | | | | | | **150,000.00** |
| **4.00** | **ENSAYOS Y PRUEBAS DE CALIDAD** | | | | | | |
| 4.1 | Rotura de Probetas | und | 1 | 1.00 | 12.00 | 150.00 | 1,800.00 |
| 4.2 | Diseño de mezclas F'c=210 kg/cm2 y 175 kg/cm2 | und | 1 | 1.00 | 2.00 | 800.00 | 1,600.00 |
| | **SUB TOTAL** | | | | | | **3,400.00** |
| **4.00** | **MATERIALES DE OFICINA** | | | | | | |
| 4.1 | Materiales de Oficina y Dibujo | mes | 1 | 1.00 | 10.00 | 400.00 | 4,000.00 |
| 4.2 | Materiales Fotográficos y Filmicos | glb | 1 | 1.00 | 1.00 | 600.00 | 600.00 |
| | **SUB TOTAL** | | | | | | **4,600.00** |

# ANALISIS DE GASTOS GENERALES VARIABLES

| | |
|---|---|
| **PROYECTO:** | **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"** |
| **FECHA:** | **FEBRERO DEL 2026** |

| | | |
|---|---|---|
| **DURACION DE LA OBRA (meses)** | **10.00** | |
| **COSTO DIRECTO** | **6,070,362.27** | |

| ITEM | DESCRIPCION | UNIDAD | CANTIDAD | | | VALOR UNITARIO | VALOR TOTAL |
|---|---|---|---|---|---|---|---|
| | | | FACTOR | CANT. | TIEMPO | S/. / u | S/. |
| **4.00** | **GASTOS FINANCIEROS (ver hoja de calculo anexa)** | | | | | | |
| 4.1 | Carta Fianza de Fiel Cumplimiento del Contrato | mes | | 1.00 | 1.00 | 12,646.59 | 12,646.59 |
| 4.2 | Carta Fianza de Adelanto en Efectivo y para Materiales | mes | | 1.00 | 1.00 | 22,763.86 | 22,763.86 |
| 4.3 | Gastos Bancarios Obra (ITF, 2 movimientos) | glb | | 1.00 | **0.005%** | 6,070,362.27 | 303.52 |
| | **TOTAL GASTOS FINANCIEROS** | | | | | | **35,713.97** |
| **6.00** | **SEGUROS (Ver hoja de cálculo anexa)** | | | | | | |
| 6.1 | A.- SEGURO COMPLEMENTARIO DE TRABAJO DE RIESGO | | | | | | 4,242.49 |
| 6.2 | B.- VIDA LEY | | | | | | 2,164.17 |
| 6.3 | C.- SEGUROS CONTRA TODO RIESGO (CAR) | | | | | | 22,763.86 |
| 6.4 | Costo por emisión de Póliza | | | | | | 875.12 |
| | **TOTAL COSTO DE SEGUROS** | | | | | | **30,045.64** |
| | **TOTAL GASTOS GENERALES VARIABLES** | | | | | | **713,759.61** |

# GASTOS FINANCIEROS

| | |
|---|---|
| **PROYECTO** | **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"** |
| **FECHA** | **FEBRERO DEL 2026** |

## GASTOS FINANCIEROS

A.- GARANTIA DE FIEL CUMPLIMIENTO DEL CONTRATO

| | | | | | | |
|---|---|---|---|---|---|---|
| Tasa: | 10.00% | Comisión del Banco : | 2.50% | | | |
| | | Período (Meses) : | 10.00 | | | |
| | | Monto de la Carta Fianza | | | | 607,036.23 |
| | | Garantía Bancaria | 10.00% | | | 60,703.62 |
| Monto Aplicable: | S/. | 6,070,362.27 | | | **COSTO FINANCIERO (S/.)** | **12,646.59** |

B.- GARANTIA DEL ADELANTO DIRECTO

| | | | | | | |
|---|---|---|---|---|---|---|
| Tasa: | 10.00% | Comisión del Banco : | 2.50% | | | |
| | | Período Neto : | 6.00 | Meses | | |
| | | Monto de la Carta Fianza | | | | 607,036.23 |
| | | Garantía Bancaria | 10.00% | | | 60,703.62 |
| | Carta Fianza renovable cada : | | 3 | Meses | | |
| Monto Aplicable: | S/. | 6,070,362.27 | | | **COSTO FINANCIERO (S/.)** | **7,587.95** |

C.- GARANTIA DEL ADELANTO PARA MATERIALES

| | | | | | | |
|---|---|---|---|---|---|---|
| Tasa: | 20.00% | Comisión del Banco : | 2.50% | | | |
| | | Período Neto : | 6.00 | Meses | | |
| | | Monto de la Carta Fianza | | | | 1,214,072.45 |
| | | Garantía Bancaria | 20.00% | | | 242,814.49 |
| Monto Aplicable: | S/. | 6,070,362.27 | | | **COSTO FINANCIERO (S/.)** | **15,175.91** |

| | |
|---|---|
| **SUBTOTAL DE GASTOS FINANCIEROS (S/)** | **35,410.45** |

## ANALISIS DE GASTOS GENERALES VARIABLES

| | |
|---|---|
| **PROYECTO** | **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"** |
| **FECHA** | **FEBRERO DEL 2026** |

## SEGUROS

A.- SEGURO COMPLEMENTARIO DE TRABAJO DE RIESGO

| | | | | | | |
|---|---|---|---|---|---|---|
| Tasa SALUD (Obreros): | 1.20% | | | | | 1,590.93 |
| Tasa SALUD (Empleados): | 0.50% | | | | | 662.89 |
| Tasa PENSION: | 1.50% | | Período (Meses) : | 10.00 | | 1,988.67 |
| Monto Aplicable: | | S/. | 159,093.32 | | **COSTO FINANCIERO (S/)** | **4,242.49** |

B.- VIDA LEY

| | | | | | | |
|---|---|---|---|---|---|---|
| Tasa: | 0.53% | | | | | |
| | | | Período (Meses) : | 10.00 | | |
| Monto Aplicable: | | S/. | 490,000.00 | | **COSTO FINANCIERO (S/)** | **2,164.17** |

C.- SEGUROS CONTRA TODO RIESGO (CAR)

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | Monto del Contrato | 6,070,362.27 | | |
| Tasa: | 4.50 | ‰ | COBERTURA ( S/. ) : | 6,070,362.27 | | 22,763.86 |
| | | | Porcentaje Aplicable del C. | 100.00% | | |
| | | | Período (Meses) : | 10.00 | | |
| | | | | | **COSTO FINANCIERO (S/)** | **22,763.86** |

| | | |
|---|---|---|
| | **SUBTOTAL (S/)** | **29,170.52** |
| Costo por emisión de Póliza | 3% | 875.12 |
| | **TOTAL DE GASTOS FINANCIEROS POR SEGUROS (S/)** | **30,045.64** |

# ANALISIS DE GASTOS DE SUPERVISION

| | |
|---|---|
| **PROYECTO:** | **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"** |
| **FECHA:** | **FEBRERO DEL 2026** |
| **DURACION DE LA OBRA (meses)** | **10.00** |
| **COSTO DIRECTO** | **6,070,362.27** |

| ITEM | DESCRIPCION | UNIDAD | CANTIDAD | | VALOR UNITARIO | VALOR TOTAL |
|---|---|---|---|---|---|---|
| | | | Factor | UNIDAD | S/ | S/ |
| **I. ETAPA DE SUPERVISIÓN DE OBRA** | | | | | | **496,760.59** |
| **1.00** | **PERSONAL PROFESIONAL - TÉCNICO Y ADMINISTRATIVO** | | | | | |
| 1.1 | Ingeniero Jefe Supervisor | mes | 1.00 | 10.00 | 11,000.00 | 110,000.00 |
| 1.1.2 | Ingeniero Especialista en Seguridad y/o Prevencionista | mes | 1 | 10.00 | 7,000.00 | 70,000.00 |
| 1.1.3 | Ingeniero Especialista en Ambiental | mes | 1 | 10.00 | 7,000.00 | 70,000.00 |
| 1.1.4 | Ingeniero Especialista en Calidad | mes | 1 | 10.00 | 7,000.00 | 70,000.00 |
| 1.1.5 | Ingeniero asistente de residente de obra | mes | 1 | 10.00 | 5,000.00 | 50,000.00 |
| | **SUB TOTAL (Item 1)** | | | | | **370,000.00** |
| **2.00** | **ALQUILER DE EQUIPOS Y SERVICIOS** | | | | | |
| 2.1 | Alquiler de Oficina | mes | 1.00 | 10.00 | 850.00 | 8,500.00 |
| 2.2 | Equipos de Computo y Oficina (Incluye Laptop, Impresoras) | mes | 1.00 | 10.00 | 8,000.00 | 80,000.00 |
| 2.3 | Alquiler de de Camionetas Pick Up 4 x 4-Doble Cabina (*) | mes | 0.50 | 10.00 | 7,000.00 | 35,000.00 |
| | (*) Los costos incluyen combustible. | | | | | |
| | **SUB TOTAL (Item 2)** | | | | | **123,500.00** |
| **3.00** | **MATERIALES DE OFICINA** | | | | | |
| 3.1 | Materiales de Oficina y Dibujo | mes | 1.00 | 10.00 | 300.00 | 3,000.00 |
| 3.2 | Materiales Fotográficos y Filmicos | glb | 1.00 | 1.00 | 260.59 | 260.59 |
| | **SUB TOTAL (Item 3)** | | | | | **3,260.59** |
| **II. ETAPA RECEPCIÓN Y LIQUIDACIÓN DE OBRA** | | | | | | **5,925.00** |
| **1.00** | **PERSONAL PROFESIONAL - TÉCNICO Y ADMINISTRATIVO** | | | | | |
| 1.1 | Ingeniero Jefe Supervisor | mes | 1.00 | 0.50 | 11,000.00 | 5,500.00 |
| | **SUB TOTAL (Item 1)** | | | | | **5,500.00** |
| **2.00** | **ALQUILER DE EQUIPOS Y SERVICIOS** | | | | | |
| 2.1 | Alquiler de Oficina | mes | 1.00 | 0.50 | 850.00 | 425.00 |
| | **SUB TOTAL (Item 2)** | | | | | **425.00** |
| | **COSTO DIRECTO DE SUPERVISION** | | | | | **502,685.59** |
| | **COSTO DE SUPERVISION SIN IGV** | | | | | **502,685.59** |
| | **IGV (18%)** | | | | | **90,483.41** |
| | **COSTO DE SUPERVISION CON IGV** | | | | | **593,169.00** |
| | | | | | | **6.78%** |

# ANÁLISIS DE COSTOS UNITARIOS

# ANÁLISIS DE COSTOS UNITARIOS

PROYECTO: **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

UBICACION: **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**

FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.1.1 CARTEL DE OBRA 3.60M X 2.40M**

Rendimiento: 1.0000 und/DIA Unidad: und **Costo Unitario: 1,896.66 x [und]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| PEON | HH | 2.00 | 16.0000 | 20.51 | 328.16 |
| OPERARIO | HH | 1.00 | 8.0000 | 28.94 | 231.52 |
| | | | | **Mano de obra:** | **559.68** |
| CLAVOS C/C 3/4" | KG | | 2.0000 | 4.50 | 9.00 |
| CEMENTO PORTLAND TIPO I (42.5KG) | BOL | | 1.2000 | 27.00 | 32.40 |
| MADERA TORNILLO | P2 | | 71.0000 | 10.00 | 710.00 |
| HORMIGON | M3 | | 0.9600 | 60.00 | 57.60 |
| | | | | **Materiales:** | **809.00** |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 559.68 | 27.98 |
| | | | | **Equipos:** | **27.98** |
| GIGANTOGRAFIA DE 3.60x2.40M S/DISEÑO | GLB | | 1.0000 | 500.00 | 500.00 |
| | | | | **Subcontratos:** | **500.00** |

**1.1.2 MOVILIZACION Y DESMOVILIZACION DE EQUIPOS**

Rendimiento: 1.0000 GLB/DIA Unidad: GLB **Costo Unitario: 60,000.00 x [GLB]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| MOVILIZACION Y DESMOVILIZACION DE EQUIPOS | GLB | | 1.0000 | 60,000.00 | 60,000.00 |
| | | | | **Subcontratos:** | **60,000.00** |

**1.1.3 FLETE TERRESTRE DE MATERIALES A OBRA**

Rendimiento: GLB/DIA Unidad: GLB **Costo Unitario: 35,000.00 x [GLB]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| FLETE TERRESTRE | GLB | | 1.0000 | 35,000.00 | 35,000.00 |
| | | | | **Subcontratos:** | **35,000.00** |

**1.1.4 AGUA PARA LA CONSTRUCCION**

Rendimiento: 1.0000 mes/DIA Unidad: mes **Costo Unitario: 712.50 x [mes]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| AGUA PARA LA OBRA | M3 | | 75.0000 | 9.50 | 712.50 |
| | | | | **Materiales:** | **712.50** |

**1.1.5 ENERGIA ELECTRICA PARA LA CONSTRUCCION**

Rendimiento: 1.0000 MES/DIA Unidad: MES **Costo Unitario: 700.00 x [MES]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| ENERGIA ELECTRICA | glb | | 1.0000 | 700.00 | 700.00 |
| | | | | **Materiales:** | **700.00** |

# ANÁLISIS DE COSTOS UNITARIOS

PROYECTO: **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

UBICACION: **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**

FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.1.6 ALQUILER DE SERVICIOS HIGIENICOS PORTATILES**

Rendimiento: 1.0000 mes/DIA Unidad: mes **Costo Unitario: 1,200.00 x [mes]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| ALQUILER DE BAÑOS PORTATILES | und | | 1.0000 | 1,200.00 | 1,200.00 |
| | | | | **Materiales:** | **1,200.00** |

**1.1.7 PLAN DE SEGURIDAD Y SALUD EN EL TRABAJO**

Rendimiento: 1.0000 GLB/DIA Unidad: GLB **Costo Unitario: 10,000.00 x [GLB]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| PLAN DE SEGURIDAD Y SALUD EN EL TRABAJO | GLB | | 1.0000 | 10,000.00 | 10,000.00 |
| | | | | **Materiales:** | **10,000.00** |

**1.1.8 EQUIPO DE PROTECCION INDIVIDUAL**

Rendimiento: 1.0000 GLB/DIA Unidad: GLB **Costo Unitario: 10,920.00 x [GLB]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| POLOS MANGA LARGA | UND | | 40.0000 | 25.00 | 1,000.00 |
| TAPON DE OIDOS | UND | | 80.0000 | 5.00 | 400.00 |
| CHALECO REFLECTIVO | UND | | 80.0000 | 9.50 | 760.00 |
| BOTAS DE JEBE | UND | | 80.0000 | 40.00 | 3,200.00 |
| LENTES DE SEGURIDAD | UND | | 40.0000 | 15.00 | 600.00 |
| MASCARA DE POLVO | UND | | 40.0000 | 9.00 | 360.00 |
| GUANTES DE JEBE | UND | | 80.0000 | 20.00 | 1,600.00 |
| PANTALON DRILL NARANJA | UND | | 60.0000 | 35.00 | 2,100.00 |
| CASCO DE SEGURIDAD | UND | | 60.0000 | 15.00 | 900.00 |
| | | | | **Materiales:** | **10,920.00** |

**1.1.9 ACONDICIONAMIENTO Y MANTENIMIENTO DE DESVIOS**

Rendimiento: 0.5000 KM/DIA Unidad: KM **Costo Unitario: 11,704.48 x [KM]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 0.00 | 0.0000 | 28.94 | 0.00 |
| PEON | HH | 3.00 | 48.0000 | 20.51 | 984.48 |
| | | | | **Mano de obra:** | **984.48** |
| CAMION CISTERNA AGUA 4X2 122 HP 1500 GAL | HM | 1.00 | 16.0000 | 200.00 | 3,200.00 |
| RODILLO LISO VIBRATORIO AUTOPROPULSADO 101-135 HP 10-12 TN | HM | 1.00 | 16.0000 | 220.00 | 3,520.00 |
| MOTONIVELADORA 130-135 HP | HM | 1.00 | 16.0000 | 250.00 | 4,000.00 |
| | | | | **Equipos:** | **10,720.00** |

# ANÁLISIS DE COSTOS UNITARIOS

PROYECTO: **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

UBICACION: **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**

FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.2.1 TOPOGRAFIA Y GEOREFERENCIACION INICIAL**

Rendimiento: 0.3000 KM/DIA Unidad: KM **Costo Unitario: 8,325.93 x [KM]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| PEON | HH | 4.00 | 106.6667 | 20.51 | 2,187.73 |
| NIVELADOR | HH | 2.00 | 53.3333 | 29.94 | 1,596.80 |
| TOPOGRAFO | HH | 2.00 | 53.3333 | 29.94 | 1,596.80 |
| | | | | | **Mano de obra: 5,381.33** |
| CLAVOS | KG | | 6.7400 | 3.17 | 21.37 |
| YESO BOLSA 25 KG | BLS | | 0.1600 | 13.42 | 2.15 |
| MADERA TORNILLO | P2 | | 1.6000 | 10.00 | 16.00 |
| PINTURA ESMALTE | GLN | | 0.1770 | 50.00 | 8.85 |
| PLACA DE BRONCE | UND | | 0.1067 | 180.00 | 19.21 |
| TRIPLAY DE 19 MM PARA ENCOFRADO | PLN | | 0.1000 | 130.00 | 13.00 |
| ACERO CORRUGADO F´Y = 4200 KG/CM2 GRADO 60 | KG | | 0.9676 | 5.00 | 4.84 |
| | | | | | **Materiales: 85.42** |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 5,381.33 | 269.07 |
| NIVEL TOPOGRAFICO | HM | 1.00 | 26.6667 | 15.00 | 400.00 |
| ESTACION TOTAL CON TRES PRISMAS | HM | 2.00 | 53.3333 | 40.00 | 2,133.33 |
| | | | | | **Equipos: 2,802.40** |
| PRODUCCION CONCRETO CLASE F (F'C=140 KG/CM2) | M3 | | 0.1517 | 374.26 | 56.78 |
| | | | | | **Sub Partidas: 56.78** |

**1.2.2 RECURSOS PARA RESPUESTAS ANTE EMERGENCIAS**

Rendimiento: 1.0000 GLB/DIA Unidad: GLB **Costo Unitario: 2,140.00 x [GLB]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| BOTIQUIN DE PRIMEROS AUXILIOS | UND | | 3.0000 | 400.00 | 1,200.00 |
| CAMILLA DE PRIMEROS AUXILIOS | UND | | 2.0000 | 350.00 | 700.00 |
| EXTINTOR PQS 6KG | UND | | 3.0000 | 80.00 | 240.00 |
| | | | | | **Materiales: 2,140.00** |

**1.2.3 DEMOLICION DE ESTRUCTURA DE CONCRETO**

Rendimiento: 30.0000 M3/DIA Unidad: M3 **Costo Unitario: 47.78 x [M3]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.2667 | 28.94 | 7.72 |
| PEON | HH | 2.00 | 0.5333 | 20.51 | 10.94 |
| | | | | | **Mano de obra: 18.66** |
| BARRENO 5´ X 7/8 | UND | | 0.0200 | 274.41 | 5.49 |
| | | | | | **Materiales: 5.49** |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 18.66 | 0.93 |
| COMPRESORA NEUMATICA 87 HP 250-330 PCM | HM | 1.00 | 0.2667 | 75.62 | 20.17 |
| MARTILLO NEUMATICO 25-29 KG | HM | 2.00 | 0.5333 | 4.75 | 2.53 |
| | | | | | **Equipos: 23.63** |

# ANÁLISIS DE COSTOS UNITARIOS

PROYECTO: **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

UBICACION: **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**

FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.2.4 SEÑALIZACION TEMPORAL DE SEGURIDAD**

Rendimiento: 1.0000 GLB/DIA Unidad: GLB **Costo Unitario: 2,854.91 x [GLB]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OFICIAL | HH | 1.00 | 8.0000 | 22.66 | 181.28 |
| PEON | HH | 2.00 | 16.0000 | 20.51 | 328.16 |
| | | | | | **Mano de obra: 509.44** |
| CONO DE SEGURIDAD | UND | | 10.0000 | 20.00 | 200.00 |
| CARTEL DE SEÑALIZACION 1.20X0.80 | UND | | 2.0000 | 300.00 | 600.00 |
| CARTEL DE ORIENTACION | UND | | 4.0000 | 280.00 | 1,120.00 |
| SEÑALIZACIONES VARIAS | UND | | 10.0000 | 25.00 | 250.00 |
| PANELES DE INFORMACION, ORIENTACION Y PREVENCION | UND | | 6.0000 | 25.00 | 150.00 |
| | | | | | **Materiales: 2,320.00** |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 509.44 | 25.47 |
| | | | | | **Equipos: 25.47** |

**1.2.5 SEÑALIZACION DE DESVIO Y CONTROL DEL TRANSITO**

Rendimiento: 1.0000 GLB/DIA Unidad: GLB **Costo Unitario: 9,375.00 x [GLB]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| MALLA NARANJA | rll | | 60.0000 | 35.00 | 2,100.00 |
| TRANQUERA | UND | | 25.0000 | 250.00 | 6,250.00 |
| SEÑALIZACION DE PREVENCION (ZONA DE TRABAJO) | UND | | 10.0000 | 25.00 | 250.00 |
| SEÑALES INFORMATIVAS | UND | | 10.0000 | 25.00 | 250.00 |
| SEÑALES DE PREVENCION (MAQUINARIA EN LA VIA) | UND | | 5.0000 | 25.00 | 125.00 |
| SEÑALES INFORMATIVAS (UN SOLO CARRIL) | UND | | 6.0000 | 25.00 | 150.00 |
| SEÑALES INFORMATIVAS (OBRAS EN LA VIA) | UND | | 10.0000 | 25.00 | 250.00 |
| | | | | | **Materiales: 9,375.00** |

**1.2.6 TRAZO Y REPLANTEO DURANTE LA OBRA**

Rendimiento: 0.3000 KM/DIA Unidad: KM **Costo Unitario: 4,197.69 x [KM]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| TOPOGRAFO | HH | 1.00 | 26.6667 | 29.94 | 798.40 |
| PEON | HH | 2.00 | 53.3333 | 20.51 | 1,093.87 |
| OPERARIO | HH | 1.00 | 26.6667 | 28.94 | 771.73 |
| | | | | | **Mano de obra: 2,664.00** |
| ESTACA DE MADERA | P2 | | 50.0000 | 0.90 | 45.00 |
| YESO DE 28 KG | BOL | | 0.7500 | 10.20 | 7.65 |
| WINCHA | UND | | 0.0500 | 30.00 | 1.50 |
| ESMALTE SINTETICO | GAL | | 0.2000 | 65.00 | 13.00 |
| PRISMAS | hm | | 0.0000 | 3.00 | 0.00 |
| | | | | | **Materiales: 67.15** |
| NIVEL TOPOGRAFICO | HM | 1.00 | 26.6667 | 15.00 | 400.00 |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 2,664.00 | 133.20 |
| ESTACION TOTAL | HM | 1.00 | 26.6667 | 25.00 | 666.67 |
| MIRA TOPOGRAFICA | HM | 1.00 | 26.6667 | 10.00 | 266.67 |
| | | | | | **Equipos: 1,466.54** |

# ANÁLISIS DE COSTOS UNITARIOS

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SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

UBICACION: **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**

FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.2.7 MANTENIMIENTO DE TRANSITO Y SEGURIDAD VIAL**

Rendimiento: 1.0000 GLB/DIA Unidad: GLB **Costo Unitario: 12,897.04 x [GLB]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| PEON | HH | 60.00 | 480.0000 | 20.51 | 9,844.80 |
| | | | | **Mano de obra:** | **9,844.80** |
| MALLA NARANJA | rll | | 0.0000 | 35.00 | 0.00 |
| CONO DE SEÑALIZACION NARANJA DE 28" DE ALTURA | und | | 6.0000 | 60.00 | 360.00 |
| CINTA DE SEGURIDAD | rll | | 10.0000 | 50.00 | 500.00 |
| SEÑALIZACIONES PROVISIONALES | und | | 20.0000 | 40.00 | 800.00 |
| CILINDRO DE SEGURIDAD | UND | | 2.0000 | 200.00 | 400.00 |
| TRANQUERA | UND | | 2.0000 | 250.00 | 500.00 |
| | | | | **Materiales:** | **2,560.00** |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 9,844.80 | 492.24 |
| | | | | **Equipos:** | **492.24** |

**1.2.8.1 CAMPAMENTO PARA PERSONAL OBRERO**

Rendimiento: 1.0000 GLB/DIA Unidad: GLB **Costo Unitario: 21,303.00 x [GLB]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OFICINA, ALMACÉN, CASETA DE GUARDIANÍA | M2 | | 150.0000 | 142.02 | 21,303.00 |
| | | | | **Sub Partidas:** | **21,303.00** |

**1.3.1.1 DESBROCE Y LIMPIEZA DEL TERRENO**

Rendimiento: 120.0000 m2/DIA Unidad: m2 **Costo Unitario: 7.62 x [m2]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.0667 | 28.94 | 1.93 |
| PEON | HH | 4.00 | 0.2667 | 20.51 | 5.47 |
| | | | | **Mano de obra:** | **7.40** |
| HERRAMIENTAS MANUALES | %MO | | 3.0000 | 7.40 | 0.22 |
| | | | | **Equipos:** | **0.22** |

**1.3.1.2 CORTE DE TERRENO A NIVEL DE SUBRASANTE**

Rendimiento: 600.0000 M3/DIA Unidad: M3 **Costo Unitario: 10.64 x [M3]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.0133 | 28.94 | 0.38 |
| PEON | HH | 2.00 | 0.0267 | 20.51 | 0.55 |
| | | | | **Mano de obra:** | **0.93** |
| MOTONIVELADORA 125 HP | HM | 1.00 | 0.0133 | 210.00 | 2.79 |
| CAMION VOLQUETE 210 HP x 6 M3 | HM | 1.00 | 0.0133 | 220.00 | 2.93 |
| CARGADOR FRONTAL SOBRE ORUGAS 135 HP 2.2 YD3 | HM | 1.00 | 0.0133 | 300.00 | 3.99 |
| | | | | **Equipos:** | **9.71** |

# ANÁLISIS DE COSTOS UNITARIOS

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SUBPRESUPUESTO: **CARRETERA**

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FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.3.1.3 ESCARIFICADO Y COMPACTADO DE SUBRASANTE CON MAQUINARIA E=25CM**

Rendimiento: 350.0000 m2/DIA Unidad: m2 **Costo Unitario: 15.97 x [m2]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OFICIAL | HH | 1.00 | 0.0229 | 22.66 | 0.52 |
| PEON | HH | 2.00 | 0.0457 | 20.51 | 0.94 |
| | | | | **Mano de obra: 1.46** | |
| CAMION CISTERNA AGUA 4X2 178-210 HP 3000 GAL | HM | 1.00 | 0.0229 | 250.00 | 5.73 |
| HERRAMIENTAS MANUALES | %MO | | 3.0000 | 1.46 | 0.04 |
| RODILLO LISO VIBRATORIO AUTOPROPULSADO 101-135 HP 10-12 TN | HM | 0.60 | 0.0137 | 220.00 | 3.01 |
| MOTONIVELADORA 130-135 HP | HM | 1.00 | 0.0229 | 250.00 | 5.73 |
| | | | | **Equipos: 14.51** | |

**1.3.2.1 CONFORMACION DE TERRAPLENES**

Rendimiento: 500.0000 M3/DIA Unidad: M3 **Costo Unitario: 74.79 x [M3]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.0160 | 28.94 | 0.46 |
| PEON | HH | 5.00 | 0.0800 | 20.51 | 1.64 |
| OFICIAL | HH | 1.00 | 0.0160 | 22.66 | 0.36 |
| | | | | **Mano de obra: 2.46** | |
| MATERIAL AFIRMADO | M3 | | 0.5000 | 120.00 | 60.00 |
| | | | | **Materiales: 60.00** | |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 2.46 | 0.12 |
| TRACTOR SOBRE ORUGAS 190-240 HP | HM | 0.50 | 0.0080 | 350.00 | 2.80 |
| RODILLO LISO VIBRATORIO AUTOPROPULSADO 101-135 HP 10-12 TN | HM | 1.00 | 0.0160 | 220.00 | 3.52 |
| MOTONIVELADORA 145-150 HP | HM | 1.00 | 0.0160 | 250.00 | 4.00 |
| | | | | **Equipos: 10.44** | |
| AGUA PARA LA OBRA | M3 | | 0.1200 | 15.74 | 1.89 |
| | | | | **Sub Partidas: 1.89** | |

**1.3.3.1 PERFILADO Y COMPACTADO DE SUBRASANTE**

Rendimiento: 400.0000 M2/DIA Unidad: M2 **Costo Unitario: 16.67 x [M2]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.0200 | 28.94 | 0.58 |
| OFICIAL | HH | 1.00 | 0.0200 | 22.66 | 0.45 |
| PEON | HH | 4.00 | 0.0800 | 20.51 | 1.64 |
| | | | | **Mano de obra: 2.67** | |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 2.67 | 0.13 |
| RODILLO LISO VIBRATORIO AUTOPROPULSADO 101-135 HP 10-12 TN | HM | 1.00 | 0.0200 | 220.00 | 4.40 |
| MOTONIVELADORA 145-150 HP | HM | 1.00 | 0.0200 | 250.00 | 5.00 |
| CAMION CISTERNA AGUA 4X2 122 HP 1500 GAL | HM | 1.00 | 0.0200 | 200.00 | 4.00 |
| | | | | **Equipos: 13.53** | |
| AGUA PARA LA OBRA | M3 | | 0.0300 | 15.74 | 0.47 |
| | | | | **Sub Partidas: 0.47** | |

# ANÁLISIS DE COSTOS UNITARIOS

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SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

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FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.3.4.1 TRANSPORTE DE ELIMINACION DE MATERIAL A DME PARA D> 1 KM**

Rendimiento: 350.0000 M3K/DIA Unidad: M3K **Costo Unitario: 25.87 x [M3K]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.0229 | 28.94 | 0.66 |
| PEON | HH | 1.00 | 0.0229 | 20.51 | 0.47 |
| | | | | **Mano de obra: 1.13** | |
| VOLQUETE 6X4 330HP 15M3 | HM | 4.00 | 0.0914 | 270.00 | 24.68 |
| CARGADOR FRONTAL SOBRE ORUGAS 135 HP 2.2 YD3 | HM | 0.00 | 0.0000 | 300.00 | 0.00 |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 1.13 | 0.06 |
| | | | | **Equipos: 24.74** | |

**1.3.5.1.1 SUB BASE DE AFIRMADO e=0.20m DESDE EK 0+000 HASTA 11+174.06**

Rendimiento: 400.0000 M3/DIA Unidad: M3 **Costo Unitario: 45.62 x [M3]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.0200 | 28.94 | 0.58 |
| OFICIAL | HH | 1.00 | 0.0200 | 22.66 | 0.45 |
| PEON | HH | 6.00 | 0.1200 | 20.51 | 2.46 |
| | | | | **Mano de obra: 3.49** | |
| MATERIAL AFIRMADO | M3 | | 0.2500 | 120.00 | 30.00 |
| AGUA | M3 | | 0.0290 | 12.26 | 0.36 |
| | | | | **Materiales: 30.36** | |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 3.49 | 0.17 |
| CAMION CISTERNA AGUA 4X2 122 HP 1500 GAL | HM | 1.00 | 0.0200 | 200.00 | 4.00 |
| RODILLO LISO VIBRATORIO AUTOPROPULSADO 70-100 HP 7-9 TN | HM | 1.00 | 0.0200 | 170.00 | 3.40 |
| MOTONIVELADORA 125 HP | HM | 1.00 | 0.0200 | 210.00 | 4.20 |
| | | | | **Equipos: 11.77** | |

**1.3.5.2.1 SUB BASE DE AFIRMADO e=0.40m DESDE EK 0+000 HASTA 11+174.06**

Rendimiento: 400.0000 M3/DIA Unidad: M3 **Costo Unitario: 45.62 x [M3]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.0200 | 28.94 | 0.58 |
| OFICIAL | HH | 1.00 | 0.0200 | 22.66 | 0.45 |
| PEON | HH | 6.00 | 0.1200 | 20.51 | 2.46 |
| | | | | **Mano de obra: 3.49** | |
| MATERIAL AFIRMADO | M3 | | 0.2500 | 120.00 | 30.00 |
| AGUA | M3 | | 0.0290 | 12.26 | 0.36 |
| | | | | **Materiales: 30.36** | |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 3.49 | 0.17 |
| CAMION CISTERNA AGUA 4X2 122 HP 1500 GAL | HM | 1.00 | 0.0200 | 200.00 | 4.00 |
| RODILLO LISO VIBRATORIO AUTOPROPULSADO 70-100 HP 7-9 TN | HM | 1.00 | 0.0200 | 170.00 | 3.40 |
| MOTONIVELADORA 125 HP | HM | 1.00 | 0.0200 | 210.00 | 4.20 |
| | | | | **Equipos: 11.77** | |

# ANÁLISIS DE COSTOS UNITARIOS

PROYECTO: **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

UBICACION: **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**

FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.3.6.1 HITO KILOMETRICO**

Rendimiento: UND/DIA Unidad: UND **Costo Unitario: 272.13 x [UND]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| PRODUCCION CONCRETO CLASE F (F'C=140 KG/CM2) | M3 | | 0.1130 | 383.61 | 43.35 |
| PRODUCCION CONCRETO CLASE E (F'C=175 KG/CM2) | M3 | | 0.0320 | 434.86 | 13.92 |
| PINTADO DE POSTES DELINEADORES | UND | | 1.0000 | 72.25 | 72.25 |
| ACERO DE REFUERZO F´Y = 4200 KG/CM2 | KG | | 2.7140 | 11.76 | 31.92 |
| EXCAVACIÓN MANUAL | M3 | | 0.1250 | 185.83 | 23.23 |
| ENCOFRADO Y DESENCOFRADO | M2 | | 0.7640 | 114.48 | 87.46 |
| | | | | | **Sub Partidas: 272.13** |

**1.3.6.2 SEÑALES PREVENTIVAS**

Rendimiento: 5.0000 UND/DIA Unidad: UND **Costo Unitario: 551.08 x [UND]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 1.6000 | 28.94 | 46.30 |
| OFICIAL | HH | 1.00 | 1.6000 | 22.66 | 36.26 |
| | | | | | **Mano de obra: 82.56** |
| THINNER CORRIENTE | GLN | | 0.0040 | 15.82 | 0.06 |
| SOLDADURA | KG | | 0.0710 | 9.81 | 0.70 |
| LAMINA REFLECTIVA ALTA INTENSIDAD | P2 | | 6.0547 | 14.23 | 86.16 |
| FIBRA DE VIDRIO PREPARADA 4 MM | M2 | | 0.5625 | 170.00 | 95.63 |
| LIJA PARA CONCRETO | HJA | | 1.0000 | 1.72 | 1.72 |
| PINTURA ESMALTE | GAL | | 0.0560 | 35.00 | 1.96 |
| SOLVENTE XILOL | GLN | | 0.0270 | 38.39 | 1.04 |
| TINTA SERIGRAFICA NEGRA | GLN | | 0.0330 | 1,854.32 | 61.19 |
| PINTURA IMPRIMANTE | GLN | | 0.0560 | 25.00 | 1.40 |
| ANGULO DE FIERRO 1"x 1"x 3/16" | ML | | 2.4000 | 4.50 | 10.80 |
| PLATINA DE FIERRO 1/8"x 2" | ML | | 1.7000 | 3.50 | 5.95 |
| | | | | | **Materiales: 266.61** |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 82.56 | 4.13 |
| MOTOSOLDADORA GASOLINERA DE 225 A | HM | 1.00 | 1.6000 | 37.00 | 59.20 |
| | | | | | **Equipos: 63.33** |
| COLOCACION DE SEÑAL PREVENT/REGLAMENT. | UND | | 1.0000 | 138.58 | 138.58 |
| | | | | | **Sub Partidas: 138.58** |

# ANÁLISIS DE COSTOS UNITARIOS

PROYECTO: **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

UBICACION: **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**

FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.3.6.3 SEÑALES INFORMATIVAS**

Rendimiento: 5.0000 UND/DIA Unidad: UND **Costo Unitario: 664.10 x [UND]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| CAPATAZ | HH | 0.20 | 0.3200 | 32.25 | 10.32 |
| OPERARIO | HH | 1.00 | 1.6000 | 28.94 | 46.30 |
| OFICIAL | HH | 1.00 | 1.6000 | 22.66 | 36.26 |
| | | | | | **Mano de obra: 92.88** |
| THINNER CORRIENTE | GAL | | 0.0071 | 15.82 | 0.11 |
| SOLDADURA | KG | | 0.0290 | 9.81 | 0.28 |
| LAMINA REFLECTIVA ALTA INTENSIDAD | P2 | | 14.0000 | 14.23 | 199.22 |
| FIBRA DE VIDRIO PREPARADA 4MM | M2 | | 1.0000 | 154.95 | 154.95 |
| PERFIL "T" 1 1/2" X 3/16" | M | | 2.1600 | 7.02 | 15.16 |
| PINTURA ESMALTE | GAL | | 0.1000 | 35.00 | 3.50 |
| SOLVENTE XILOL | GL | | 0.0100 | 38.39 | 0.38 |
| PINTURA IMPRIMANTE | GAL | | 0.1000 | 18.95 | 1.90 |
| | | | | | **Materiales: 375.50** |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 92.88 | 4.64 |
| MOTOSOLDADORA GASOLINERA 225A | HM | 1.00 | 1.6000 | 32.81 | 52.50 |
| | | | | | **Equipos: 57.14** |
| COLOCACION DE SEÑAL PREVENT/REGLAMENT. | UND | | 1.0000 | 138.58 | 138.58 |
| | | | | | **Sub Partidas: 138.58** |

**1.3.6.4 SEÑAL REGLAMENTARIA**

Rendimiento: 5.0000 UND/DIA Unidad: UND **Costo Unitario: 641.75 x [UND]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| CAPATAZ | HH | 0.20 | 0.3200 | 32.25 | 10.32 |
| OPERARIO | HH | 1.00 | 1.6000 | 28.94 | 46.30 |
| OFICIAL | HH | 1.00 | 1.6000 | 22.66 | 36.26 |
| | | | | | **Mano de obra: 92.88** |
| THINNER CORRIENTE | GLN | | 0.0040 | 15.82 | 0.06 |
| SOLDADURA | KG | | 0.0800 | 9.81 | 0.78 |
| LAMINA REFLECTIVA ALTA INTENSIDAD | P2 | | 10.3300 | 14.23 | 147.00 |
| FIBRA DE VIDRIO PREPARADA 4 MM | M2 | | 0.9600 | 170.00 | 163.20 |
| LIJA PARA CONCRETO | HJA | | 1.0000 | 1.72 | 1.72 |
| PINTURA ESMALTE | GAL | | 0.0960 | 35.00 | 3.36 |
| SOLVENTE XILOL | GLN | | 0.0360 | 38.39 | 1.38 |
| TINTA SERIGRAFICA NEGRA | GLN | | 0.0100 | 1,854.32 | 18.54 |
| PINTURA IMPRIMANTE | GLN | | 0.1000 | 25.00 | 2.50 |
| PLATINA DE FIERRO 1/8"x 2" | ML | | 1.8000 | 3.50 | 6.30 |
| TINTA SERIGRAFICA ROJA | GLN | | 0.0130 | 1,854.32 | 24.11 |
| | | | | | **Materiales: 368.95** |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 92.88 | 4.64 |
| MOTOSOLDADORA GASOLINERA DE 225 A | HM | 1.00 | 1.6000 | 37.00 | 59.20 |
| | | | | | **Equipos: 63.84** |
| COLOCACION DE SEÑAL PREVENT/REGLAMENT. | UND | | 1.0000 | 116.08 | 116.08 |
| | | | | | **Sub Partidas: 116.08** |

# ANÁLISIS DE COSTOS UNITARIOS

PROYECTO: **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

UBICACION: **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**

FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.3.7.1 DENSIDAD DE CAMPO**

Rendimiento: 1.0000 und/DIA Unidad: und **Costo Unitario: 3,000.00 x [und]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| DENSIDAD DE CAMPO | und | | 1.0000 | 3,000.00 | 3,000.00 |
| | | | | **Sub Partidas:** | **3,000.00** |

**1.3.7.2 CBR**

Rendimiento: 1.0000 und/DIA Unidad: und **Costo Unitario: 3,000.00 x [und]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| CBR | und | | 1.0000 | 3,000.00 | 3,000.00 |
| | | | | **Sub Partidas:** | **3,000.00** |

**1.4.1.1 TRAZO Y REPLANTEO DE ALCANTARILLAS**

Rendimiento: 150.0000 M2/DIA Unidad: M2 **Costo Unitario: 9.37 x [M2]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| TOPOGRAFO | HH | 1.00 | 0.0533 | 29.94 | 1.60 |
| OPERARIO | HH | 1.00 | 0.0533 | 28.94 | 1.54 |
| OFICIAL | HH | 1.00 | 0.0533 | 22.66 | 1.21 |
| PEON | HH | 3.00 | 0.1600 | 20.51 | 3.28 |
| | | | | **Mano de obra:** | **7.63** |
| CLAVOS 3" | KG | | 0.0050 | 4.50 | 0.02 |
| YESO BOLSA 25 KG | BLS | | 0.0250 | 13.42 | 0.34 |
| WINCHA | UND | | 0.0010 | 30.00 | 0.03 |
| MADERA TORNILLO | P2 | | 0.0264 | 10.00 | 0.26 |
| PINTURA ESMALTE | GAL | | 0.0020 | 35.00 | 0.07 |
| | | | | **Materiales:** | **0.72** |
| MIRA TOPOGRAFICA | HM | 1.00 | 0.0533 | 10.00 | 0.53 |
| JALON | HM | 2.00 | 0.1067 | 1.00 | 0.11 |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 7.63 | 0.38 |
| ESTACION TOTAL | HM | 0.00 | 0.0000 | 25.00 | 0.00 |
| | | | | **Equipos:** | **1.02** |

**1.4.1.2 ELIMINACION DE DESMONTE PROVENIENTE DEL MOVIMIENTO DE TIERRAS**

Rendimiento: 5.0000 M3/DIA Unidad: M3 **Costo Unitario: 34.46 x [M3]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| PEON | HH | 1.00 | 1.6000 | 20.51 | 32.82 |
| | | | | **Mano de obra:** | **32.82** |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 32.82 | 1.64 |
| | | | | **Equipos:** | **1.64** |

# ANÁLISIS DE COSTOS UNITARIOS

PROYECTO: **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

UBICACION: **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**

FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.4.1.3 RELLENO COMPACTADO CON MATERIAL SELECCIONADO**

Rendimiento: 15.0000 M3/DIA Unidad: M3 **Costo Unitario: 190.85 x [M3]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.5333 | 28.94 | 15.43 |
| PEON | HH | 2.00 | 1.0667 | 20.51 | 21.88 |
| OPERADOR DE EQUIPO LIVIANO | HH | 1.00 | 0.5333 | 20.73 | 11.06 |
| | | | | | **Mano de obra: 48.37** |
| AGUA PARA LA OBRA | M3 | | 0.1200 | 9.50 | 1.14 |
| MATERIAL AFIRMADO | M3 | | 1.0500 | 120.00 | 126.00 |
| | | | | | **Materiales: 127.14** |
| PLANCHA COMPACTADORA 4 HP | HM | 1.00 | 0.5333 | 26.05 | 13.89 |
| HERRAMIENTAS MANUALES | %MO | | 3.0000 | 48.37 | 1.45 |
| | | | | | **Equipos: 15.34** |

**1.4.2.1 CONCRETO PARA SOLADO DE ALCANTARILLA, MEZCLA C:H=1:10, E=10CM**

Rendimiento: 50.0000 M2/DIA Unidad: M2 **Costo Unitario: 55.24 x [M2]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OFICIAL | HH | 2.00 | 0.3200 | 22.66 | 7.25 |
| OPERARIO | HH | 1.00 | 0.1600 | 28.94 | 4.63 |
| PEON | HH | 8.00 | 1.2800 | 20.51 | 26.25 |
| OPERADOR DE EQUIPO LIVIANO | HH | 1.00 | 0.1600 | 20.73 | 3.32 |
| | | | | | **Mano de obra: 41.45** |
| CEMENTO PORTLAND TIPO I (42.5KG) | BLS | | 0.1900 | 27.00 | 5.13 |
| HORMIGON | M3 | | 0.0650 | 60.00 | 3.90 |
| AGUA PARA LA OBRA | M3 | | 0.0081 | 9.50 | 0.08 |
| GASOLINA 84 OCTANOS | GAL | | 0.0600 | 11.50 | 0.69 |
| | | | | | **Materiales: 9.80** |
| MEZCLADORA DE CONCRETO 18 HP 11-12 P3 | HM | 1.00 | 0.1600 | 12.01 | 1.92 |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 41.45 | 2.07 |
| | | | | | **Equipos: 3.99** |

# ANÁLISIS DE COSTOS UNITARIOS

PROYECTO: **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

UBICACION: **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**

FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.4.3.1 CONCRETO F'c=210 KG/CM2 PARA ALCANTARILLA**

Rendimiento: 15.0000 M3/DIA Unidad: M3 **Costo Unitario: 444.77 x [M3]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 2.00 | 1.0667 | 28.94 | 30.87 |
| OFICIAL | HH | 3.00 | 1.6000 | 22.66 | 36.26 |
| PEON | HH | 6.00 | 3.2000 | 20.51 | 65.63 |
| | | | | | **Mano de obra: 132.76** |
| CEMENTO PORTLAND TIPO I (42.5KG) | BLS | | 9.0000 | 27.00 | 243.00 |
| GASOLINA | GLN | | 0.2800 | 9.73 | 2.72 |
| LUBRICANTES Y FILTROS | %EQ | | 5.0000 | 9.04 | 0.45 |
| | | | | | **Materiales: 246.17** |
| MEZCLADORA DE CONCRETO 18 HP 11-12 P3 | HM | 1.00 | 0.5333 | 12.01 | 6.40 |
| VIBRADOR DE CONCRETO 4 HP 1.50" | HM | 1.00 | 0.5333 | 4.95 | 2.64 |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 132.76 | 6.64 |
| | | | | | **Equipos: 15.68** |
| AGUA | M3 | | 0.1800 | 12.19 | 2.19 |
| PIEDRA CHANCADA | M3 | | 0.7500 | 46.03 | 34.52 |
| ARENA ZARANDEADA | M3 | | 0.5000 | 26.90 | 13.45 |
| | | | | | **Sub Partidas: 50.16** |

**1.4.3.2 ENCOFRADO Y DESENCOFRADO PARA ALCANTARILLAS**

Rendimiento: 10.0000 M2/DIA Unidad: M2 **Costo Unitario: 111.78 x [M2]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.8000 | 28.94 | 23.15 |
| OFICIAL | HH | 1.00 | 0.8000 | 22.66 | 18.13 |
| PEON | HH | 2.00 | 1.6000 | 20.51 | 32.82 |
| | | | | | **Mano de obra: 74.10** |
| ALAMBRE NEGRO N° 8 | KG | | 0.2000 | 2.48 | 0.50 |
| CLAVOS | KG | | 0.2000 | 3.17 | 0.63 |
| MADERA TORNILLO | P2 | | 1.5400 | 10.00 | 15.40 |
| TRIPLAY DE 19 MM PARA ENCOFRADO | PLN | | 0.1200 | 130.00 | 15.60 |
| DESMOLDANTE PARA MADERA | LT | | 0.0500 | 36.75 | 1.84 |
| | | | | | **Materiales: 33.97** |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 74.10 | 3.71 |
| | | | | | **Equipos: 3.71** |

# ANÁLISIS DE COSTOS UNITARIOS

PROYECTO: **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

UBICACION: **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**

FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.4.3.3 ACERO F´Y = 4200 KG/CM2 MUROS Y ALAS - ALCANTARILLAS**

Rendimiento: 150.0000 KG/DIA Unidad: KG **Costo Unitario: 9.46 x [KG]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.0533 | 28.94 | 1.54 |
| OFICIAL | HH | 1.00 | 0.0533 | 22.66 | 1.21 |
| PEON | HH | 1.00 | 0.0533 | 20.51 | 1.09 |
| | | | | | **Mano de obra: 3.84** |
| ALAMBRE NEGRO N° 16 | KG | | 0.0500 | 3.50 | 0.18 |
| ACERO CORRUGADO F´Y = 4200 KG/CM2 GRADO 60 | KG | | 1.0500 | 5.00 | 5.25 |
| | | | | | **Materiales: 5.43** |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 3.84 | 0.19 |
| | | | | | **Equipos: 0.19** |

**1.4.4.1 COMPACTACION PARA CONSTRUCCION DE MAMPOSTERIA DE PIEDRA**

Rendimiento: 80.0000 m2/DIA Unidad: m2 **Costo Unitario: 10.05 x [m2]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.1000 | 28.94 | 2.89 |
| PEON | HH | 2.00 | 0.2000 | 20.51 | 4.10 |
| | | | | | **Mano de obra: 6.99** |
| AGUA PARA LA OBRA | M3 | | 0.0100 | 9.50 | 0.10 |
| | | | | | **Materiales: 0.10** |
| PLANCHA COMPACTADORA 4 HP | HM | 1.00 | 0.1000 | 26.05 | 2.61 |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 6.99 | 0.35 |
| | | | | | **Equipos: 2.96** |

**1.4.4.2 MAMPOSTERIA DE PIEDRA (C/C F´C =140 KG/CM2 + 60% P.G)**

Rendimiento: 10.0000 M2/DIA Unidad: M2 **Costo Unitario: 488.74 x [M2]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.8000 | 28.94 | 23.15 |
| OFICIAL | HH | 2.00 | 1.6000 | 22.66 | 36.26 |
| PEON | HH | 6.00 | 4.8000 | 20.51 | 98.45 |
| | | | | | **Mano de obra: 157.86** |
| ARENA GRUESA | M3 | | 0.4800 | 65.00 | 31.20 |
| CEMENTO PORTLAND TIPO I (42.5KG) | BOL | | 8.0000 | 27.00 | 216.00 |
| AGUA | M3 | | 0.1900 | 12.26 | 2.33 |
| PIEDRA SELECCIONADA | M3 | | 0.6700 | 100.00 | 67.00 |
| | | | | | **Materiales: 316.53** |
| HERRAMIENTAS MANUALES | %MO | | 3.0000 | 157.86 | 4.74 |
| MEZCLADORA DE CONCRETO 18 HP 11-12 P3 | HM | 1.00 | 0.8000 | 12.01 | 9.61 |
| | | | | | **Equipos: 14.35** |

# ANÁLISIS DE COSTOS UNITARIOS

PROYECTO: **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

UBICACION: **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**

FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.4.5.1 SOLAQUEADO DE ALCANTARILLA**

Rendimiento: 15.0000 m2/DIA Unidad: m2 **Costo Unitario: 41.62 x [m2]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.5333 | 28.94 | 15.43 |
| PEON | HH | 2.00 | 1.0667 | 20.51 | 21.88 |
| | | | | | **Mano de obra: 37.31** |
| ARENA FINA | M3 | | 0.0160 | 65.00 | 1.04 |
| CEMENTO PORTLAND TIPO I (42.5KG) | BLS | | 0.0585 | 27.00 | 1.58 |
| AGUA PARA LA OBRA | M3 | | 0.0600 | 9.50 | 0.57 |
| | | | | | **Materiales: 3.19** |
| HERRAMIENTAS MANUALES | %MO | | 3.0000 | 37.31 | 1.12 |
| | | | | | **Equipos: 1.12** |

**1.4.6.1 PINTURA EN ALCANTARILLAS**

Rendimiento: 30.0000 m2/DIA Unidad: m2 **Costo Unitario: 39.81 x [m2]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| PEON | HH | 4.00 | 1.0667 | 20.51 | 21.88 |
| OPERARIO | HH | 1.00 | 0.2667 | 28.94 | 7.72 |
| | | | | | **Mano de obra: 29.60** |
| LIJA PARA CONCRETO | und | | 0.0200 | 3.50 | 0.07 |
| THINER ACRILICO | GL | | 0.0500 | 35.00 | 1.75 |
| PINTURA PARA TRAFICO | GLN | | 0.1000 | 75.00 | 7.50 |
| | | | | | **Materiales: 9.32** |
| HERRAMIENTAS MANUALES | %MO | | 3.0000 | 29.60 | 0.89 |
| | | | | | **Equipos: 0.89** |

**1.5.1.1 TRAZO Y REPLANTEO DE BADENES**

Rendimiento: 250.0000 M2/DIA Unidad: M2 **Costo Unitario: 5.92 x [M2]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| TOPOGRAFO | HH | 1.00 | 0.0320 | 29.94 | 0.96 |
| OPERARIO | HH | 1.00 | 0.0320 | 28.94 | 0.93 |
| OFICIAL | HH | 1.00 | 0.0320 | 22.66 | 0.73 |
| PEON | HH | 3.00 | 0.0960 | 20.51 | 1.97 |
| | | | | | **Mano de obra: 4.59** |
| CLAVOS 3" | KG | | 0.0050 | 4.50 | 0.02 |
| YESO BOLSA 25 KG | BLS | | 0.0250 | 13.42 | 0.34 |
| WINCHA | UND | | 0.0010 | 30.00 | 0.03 |
| MADERA TORNILLO | P2 | | 0.0264 | 10.00 | 0.26 |
| PINTURA ESMALTE | GAL | | 0.0020 | 35.00 | 0.07 |
| | | | | | **Materiales: 0.72** |
| MIRA TOPOGRAFICA | HM | 1.00 | 0.0320 | 10.00 | 0.32 |
| JALON | HM | 2.00 | 0.0640 | 1.00 | 0.06 |
| ESTACION TOTAL | HM | 0.00 | 0.0000 | 25.00 | 0.00 |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 4.59 | 0.23 |
| | | | | | **Equipos: 0.61** |

# ANÁLISIS DE COSTOS UNITARIOS

PROYECTO: **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

UBICACION: **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**

FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.5.2.1 EXCAVACION MANUAL EN BADENES**

Rendimiento: 1.5000 M3/DIA Unidad: M3 **Costo Unitario: 229.71 x [M3]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| PEON | HH | 2.00 | 10.6667 | 20.51 | 218.77 |
| | | | | **Mano de obra:** | **218.77** |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 218.77 | 10.94 |
| | | | | **Equipos:** | **10.94** |

**1.5.2.2 TRANSPORTE DE ELIMINACION DE MATERIAL A DME PARA D> 1 KM**

Rendimiento: 750.0000 M3K/DIA Unidad: M3K **Costo Unitario: 6.10 x [M3K]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| VOLQUETE 6X4 330HP 15M3 | HM | 1.00 | 0.0107 | 270.00 | 2.89 |
| CARGADOR FRONTAL SOBRE ORUGAS 135 HP 2.2 YD3 | HM | 1.00 | 0.0107 | 300.00 | 3.21 |
| | | | | **Equipos:** | **6.10** |

**1.5.3.1 MAMPOSTERIA DE PIEDRA (C/C F´C =140 KG/CM2 + 60% P.G)**

Rendimiento: 10.0000 M2/DIA Unidad: M2 **Costo Unitario: 488.74 x [M2]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.8000 | 28.94 | 23.15 |
| OFICIAL | HH | 2.00 | 1.6000 | 22.66 | 36.26 |
| PEON | HH | 6.00 | 4.8000 | 20.51 | 98.45 |
| | | | | **Mano de obra:** | **157.86** |
| ARENA GRUESA | M3 | | 0.4800 | 65.00 | 31.20 |
| CEMENTO PORTLAND TIPO I (42.5KG) | BOL | | 8.0000 | 27.00 | 216.00 |
| AGUA | M3 | | 0.1900 | 12.26 | 2.33 |
| PIEDRA SELECCIONADA | M3 | | 0.6700 | 100.00 | 67.00 |
| | | | | **Materiales:** | **316.53** |
| HERRAMIENTAS MANUALES | %MO | | 3.0000 | 157.86 | 4.74 |
| MEZCLADORA DE CONCRETO 18 HP 11-12 P3 | HM | 1.00 | 0.8000 | 12.01 | 9.61 |
| | | | | **Equipos:** | **14.35** |

**1.5.3.2 ENCOFRADO Y DESENCOFRADO - BADENES**

Rendimiento: 10.0000 M2/DIA Unidad: M2 **Costo Unitario: 165.31 x [M2]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.8000 | 28.94 | 23.15 |
| OFICIAL | HH | 1.00 | 0.8000 | 22.66 | 18.13 |
| PEON | HH | 4.00 | 3.2000 | 20.51 | 65.63 |
| | | | | **Mano de obra:** | **106.91** |
| ALAMBRE NEGRO N° 16 | KG | | 0.5000 | 3.50 | 1.75 |
| CLAVOS 3" | KG | | 0.2000 | 4.50 | 0.90 |
| MADERA PARA ENCOFRADO | P2 | | 6.3000 | 8.00 | 50.40 |
| | | | | **Materiales:** | **53.05** |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 106.91 | 5.35 |
| | | | | **Equipos:** | **5.35** |

# ANÁLISIS DE COSTOS UNITARIOS

PROYECTO: **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

UBICACION: **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**

FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.5.3.3 CONCRETO EN BADEN F'C=210 KG/CM2 (E=0.25CM)**

Rendimiento: 10.0000 M3/DIA Unidad: M3 **Costo Unitario: 494.91 x [M3]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.8000 | 28.94 | 23.15 |
| OFICIAL | HH | 3.00 | 2.4000 | 22.66 | 54.38 |
| PEON | HH | 6.00 | 4.8000 | 20.51 | 98.45 |
| | | | | **Mano de obra:** | **175.98** |
| CEMENTO PORTLAND TIPO I (42.5KG) | BLS | | 9.0000 | 27.00 | 243.00 |
| GASOLINA | GLN | | 0.2800 | 9.73 | 2.72 |
| LUBRICANTES Y FILTROS | %EQ | | 5.0000 | 13.57 | 0.68 |
| | | | | **Materiales:** | **246.40** |
| MEZCLADORA DE CONCRETO 18 HP 11-12 P3 | HM | 1.00 | 0.8000 | 12.01 | 9.61 |
| VIBRADOR DE CONCRETO 4 HP 1.50" | HM | 1.00 | 0.8000 | 4.95 | 3.96 |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 175.98 | 8.80 |
| | | | | **Equipos:** | **22.37** |
| AGUA | M3 | | 0.1800 | 12.19 | 2.19 |
| PIEDRA CHANCADA | M3 | | 0.7500 | 46.03 | 34.52 |
| ARENA ZARANDEADA | M3 | | 0.5000 | 26.90 | 13.45 |
| | | | | **Sub Partidas:** | **50.16** |

**1.5.4.1 JUNTA FLEXIBLE**

Rendimiento: 45.0000 m/DIA Unidad: m **Costo Unitario: 43.74 x [m]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| OPERARIO | HH | 1.00 | 0.1778 | 28.94 | 5.15 |
| PEON | HH | 4.00 | 0.7111 | 20.51 | 14.58 |
| | | | | **Mano de obra:** | **19.73** |
| TECKNOPOR PLANCHA 0.80mx1.20m | pza | | 0.1670 | 16.00 | 2.67 |
| WATER STOP PVC DE 6" | ML | | 1.1000 | 18.50 | 20.35 |
| | | | | **Materiales:** | **23.02** |
| HERRAMIENTAS MANUALES | %MO | | 5.0000 | 19.73 | 0.99 |
| | | | | **Equipos:** | **0.99** |

**1.6.1 MEDIDAS DE PREVENCION, MITIGACION O CORRECCION DE LOS IMPACTOS AMBIENTALES**

Rendimiento: 1.0000 GLB/DIA Unidad: GLB **Costo Unitario: 35,000.00 x [GLB]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| PLAN DE MANEJO AMBIENTAL | GLB | | 1.0000 | 35,000.00 | 35,000.00 |
| | | | | **Materiales:** | **35,000.00** |

# ANÁLISIS DE COSTOS UNITARIOS

PROYECTO: **"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

SUBPRESUPUESTO: **CARRETERA**

CLIENTE:

UBICACION: **HUACA TORO - HUACA QUEMADA - Mochumi - Lambayeque - Lambayeque**

FECHA BASE: **06-04-2026** MONEDA: **SOLES**

**1.6.2 RIEGO DE ZONA DE TRABAJO PARA MITIGAR LA CONTAMINACION - POLVO (inc. costo de agua y transp. surtido a obra)**

Rendimiento: 1.0000 mes/DIA Unidad: mes **Costo Unitario: 3,500.00 x [mes]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| RIEGO DE ZONA DE TRABAJO PARA MITIGAR LA CONTAMINACION - POLVO (inc. costo de agua y transp. surtido a obra) | mes | | 1.0000 | 3,500.00 | 3,500.00 |

**Materiales: 3,500.00**

**1.7.1 PLAN DE MONITOREO ARQUELOGICO**

Rendimiento: 1.0000 GLB/DIA Unidad: GLB **Costo Unitario: 3,000.00 x [GLB]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| PLAN DE MONITOREO ARQUEOLOGICO | GLB | | 1.0000 | 3,000.00 | 3,000.00 |

**Materiales: 3,000.00**

**1.7.2 INFORME FINAL DE MONITOREO**

Rendimiento: 1.0000 UND/DIA Unidad: UND **Costo Unitario: 3,000.00 x [UND]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| INFORME FINAL DE MONITOREO ARQUEOLOGICO | UND | | 1.0000 | 3,000.00 | 3,000.00 |

**Materiales: 3,000.00**

**1.8.1 PLAN DE CONSERVACION VIAL**

Rendimiento: 1.0000 GLB/DIA Unidad: GLB **Costo Unitario: 50,000.00 x [GLB]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| PLAN DE CONSERVACION VIAL | GLB | | 1.0000 | 50,000.00 | 50,000.00 |

**Materiales: 50,000.00**

**1.9.1 LIMPIEZA FINAL DE LA OBRA**

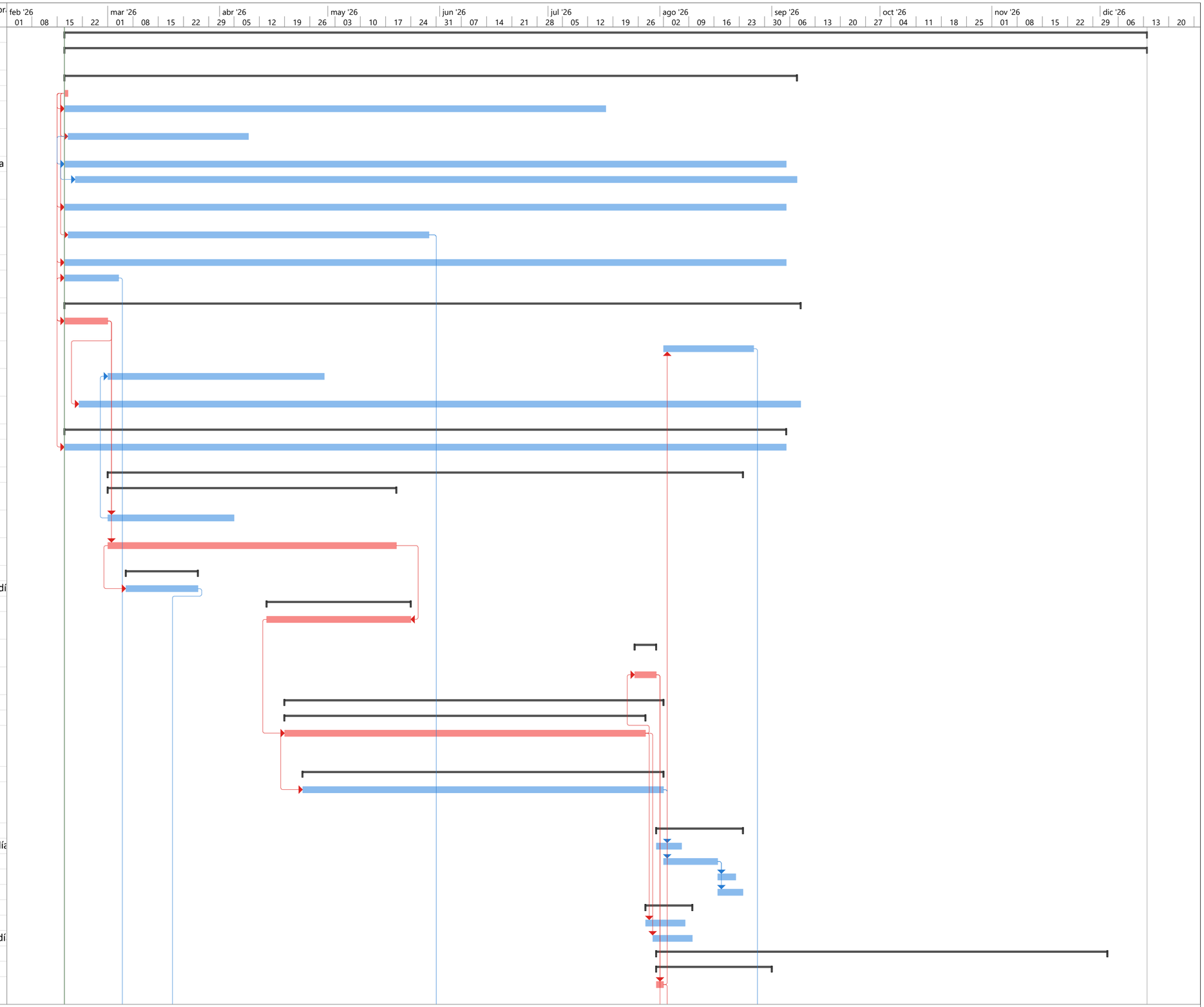
Rendimiento: 1.0000 GLB/DIA Unidad: GLB **Costo Unitario: 15,000.00 x [GLB]**

| Insumo | Unidad | Cuadrilla | Cantidad | PU | Parcial |
|---|---|---|---|---|---|
| LIMPIEZA FINAL DE OBRA | GLB | | 10.0000 | 1,500.00 | 15,000.00 |

**Materiales: 15,000.00**

# ANEXO N°12.-
# PROGRAMACIÓN DE OBRA

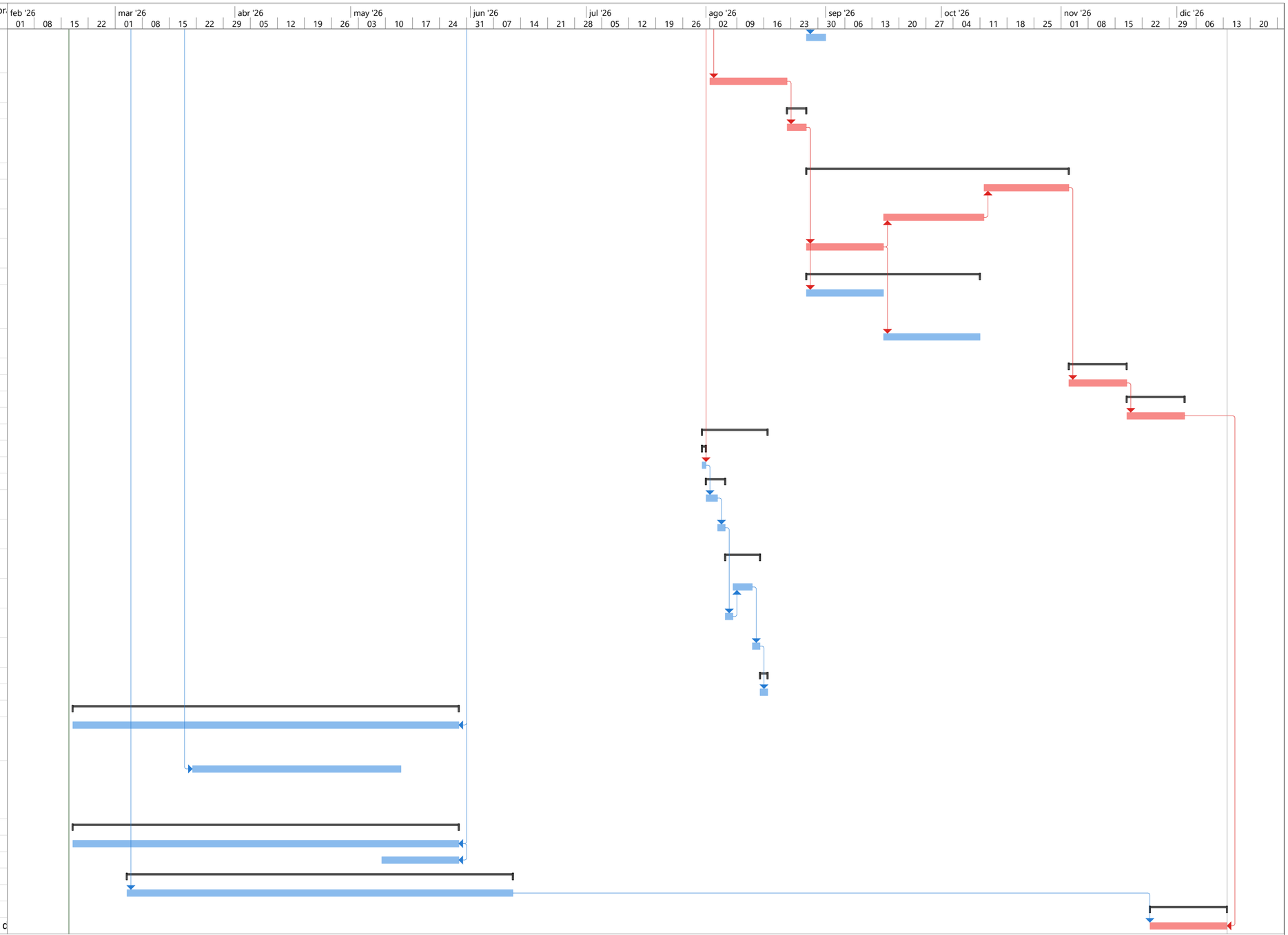
| Id | Modo de tarea | Nombre de tarea | Duración | Predecesor. |
|---|---|---|---|---|
| 1 | | **SP: CARRETERA** | **300 días** | |
| 2 | | **CAMINO VECINAL: HUACA TORO - HUACA QUEMADA** | **300 días** | |
| 3 | | **OBRAS PROVISIONALES** | **203 días** | |
| 4 | | CARTEL DE OBRA 3.60M X 2.40M | 1 día | |
| 5 | | MOVILIZACION Y DESMOVILIZACION DE EQUIPOS | 150 días | 4CC |
| 6 | | FLETE TERRESTRE DE MATERIALES A OBRA | 50 días | 4CC+1 día |
| 7 | | AGUA PARA LA CONSTRUCCION | 200 días | 6CC-1 día |
| 8 | | ENERGIA ELECTRICA PARA LA CONSTRUCCION | 200 días | 7CC+3 días |
| 9 | | ALQUILER DE SERVICIOS HIGIENICOS PORTATILES | 200 días | 4CC |
| 10 | | PLAN DE SEGURIDAD Y SALUD EN EL TRABAJO | 100 días | 4CC+1 día |
| 11 | | EQUIPO DE PROTECCION INDIVIDUAL | 200 días | 4CC |
| 12 | | ACONDICIONAMIENTO Y MANTENIMIENTO DE DESVIOS | 15 días | 14CC |
| 13 | | **TRABAJOS PRELIMINARES** | **204 días** | |
| 14 | | TOPOGRAFIA Y GEOREFERENCIACION INICIAL | 12 días | 4CC |
| 15 | | DEMOLICION DE ESTRUCTURA DE CONCRETO | 25 días | 45 |
| 16 | | TRAZO Y REPLANTEO DURANTE LA OBRA | 60 días | 22CC |
| 17 | | MANTENIMIENTO DE TRANSITO Y SEGURIDAD VIAL | 200 días | 14FC-8 días |
| 18 | | **CAMPAMENTOS** | **200 días** | |
| 19 | | CAMPAMENTO PARA PERSONAL OBRERO | 200 días | 4CC |
| 20 | | **INFRAESTRUCTURA VIAL** | **176 días** | |
| 21 | | **EXCAVACIONES PARA EXPLANACIONES** | **80 días** | |
| 22 | | DESBROCE Y LIMPIEZA DEL TERRENO | 35 días | 14 |
| 23 | | CORTE DE TERRENO A NIVEL DE SUBRASANTE | 80 días | 14 |
| 24 | | **TERRAPLANES** | **20 días** | |
| 25 | | CONFORMACION DE TERRAPLENES | 20 días | 23CC+5 dí |
| 26 | | **MEJORAMIENTO DE SUELOS** | **40 días** | |
| 27 | | PERFILADO Y COMPACTADO DE SUBRASANTE | 40 días | 23FF+4 días |
| 28 | | **ELIMINACION DE MATERIAL EXCEDENTE** | **6 días** | |
| 29 | | TRANSPORTE DE ELIMINACION DE MATERIAL A DME PARA D> 1 KM | 6 días | 32FC-3 días |
| 30 | | **PAVIMENTOS** | **105 días** | |
| 31 | | **SUB BASE GRANULAR E=0.20 m** | **100 días** | |
| 32 | | SUB BASE DE AFIRMADO e=0.20m DESDE EK 0+000 HASTA 11+174.06 | 100 días | 27CC+5 días |
| 33 | | **BASE GRANULAR E=0.40 m** | **100 días** | |
| 34 | | SUB BASE DE AFIRMADO e=0.40m DESDE EK 0+000 HASTA 11+174.06 | 100 días | 32CC+5 días |
| 35 | | **SEÑALIZACION** | **24 días** | |
| 36 | | HITO KILOMETRICO | 7 días | 34FC-2 día |
| 37 | | SEÑALES PREVENTIVAS | 15 días | 34 |
| 38 | | SEÑALES INFORMATIVAS | 5 días | 37 |
| 39 | | SEÑAL REGLAMENTARIA | 7 días | 37 |
| 40 | | **ENSAYOS** | **13 días** | |
| 41 | | DENSIDAD DE CAMPO | 11 días | 32 |
| 42 | | CBR | 11 días | 32FC+2 dí |
| 43 | | **OBRAS DE ARTE: ALCANTARILLA** | **125 días** | |
| 44 | | **TRABAJOS PRELIMINARES** | **32 días** | |
| 45 | | TRAZO Y REPLANTEO DE ALCANTARILLAS | 2 días | 29 |




Proyecto: Project (1)
Fecha: mar 17/02/26

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tarea | Resumen | Hito inactivo | solo duración | solo el comienzo | Hito externo | División crítica |
| División | Resumen del proyecto | Resumen inactivo | Informe de resumen manual | solo fin | Fecha límite | Progreso |
| Hito | Tarea inactiva | Tarea manual | Resumen manual | Tareas externas | Tareas críticas | Progreso manual |

| Id | Modo de tarea | Nombre de tarea | Duración | Predecesor. |
|---|---|---|---|---|
| 46 | | ELIMINACION DE DESMONTE PROVENIENTE DEL MOVIMIENTO DE TIERRAS | 5 días | 15 |
| 47 | | RELLENO COMPACTADO CON MATERIAL SELECCIONADO | 20 días | 45 |
| 48 | | **OBRAS DE CONCRETO SIMPLE** | **5 días** | |
| 49 | | CONCRETO PARA SOLADO DE ALCANTARILLA, MEZCLA C:H=1:10, E=10CM | 5 días | 47 |
| 50 | | **OBRAS DE CONCRETO ARMADO** | **68 días** | |
| 51 | | CONCRETO F'c=210 KG/CM2 PARA ALCANTARILLA | 22 días | 52 |
| 52 | | ENCOFRADO Y DESENCOFRADO PARA ALCANTARILLAS | 26 días | 53 |
| 53 | | ACERO F´Y = 4200 KG/CM2 MUROS Y ALAS - ALCANTARILLAS | 20 días | 49 |
| 54 | | **EMBOQUILLADO** | **45 días** | |
| 55 | | COMPACTACION PARA CONSTRUCCION DE MAMPOSTERIA DE PIEDRA | 20 días | 49 |
| 56 | | MAMPOSTERIA DE PIEDRA (C/C F´C =140 KG/CM2 + 60% P.G) | 25 días | 53 |
| 57 | | **SOLAQUEADO DE ALCANTARILLAS** | **15 días** | |
| 58 | | SOLAQUEADO DE ALCANTARILLA | 15 días | 51 |
| 59 | | **PINTURA** | **15 días** | |
| 60 | | PINTURA EN ALCANTARILLAS | 15 días | 58 |
| 61 | | **OBRAS DE ARTE: BADENES** | **17 días** | |
| 62 | | **OBRAS PRELIMINARES** | **1 día** | |
| 63 | | TRAZO Y REPLANTEO DE BADENES | 1 día | 29 |
| 64 | | **MOVIMIENTO DE TIERRAS** | **5 días** | |
| 65 | | EXCAVACION MANUAL EN BADENES | 3 días | 63 |
| 66 | | TRANSPORTE DE ELIMINACION DE MATERIAL A DME PARA D> 1 KM | 2 días | 65 |
| 67 | | **OBRAS DE MAMPOSTERIA DE CONCRETO** | **9 días** | |
| 68 | | MAMPOSTERIA DE PIEDRA (C/C F´C =140 KG/CM2 + 60% P.G) | 5 días | 69 |
| 69 | | ENCOFRADO Y DESENCOFRADO - BADENES | 2 días | 66 |
| 70 | | CONCRETO EN BADEN F'C=210 KG/CM2 (E=0.25CM) | 2 días | 68 |
| 71 | | **VARIOS** | **2 días** | |
| 72 | | JUNTA FLEXIBLE | 2 días | 70 |
| 73 | | **MITIGACION DE IMPACTO AMBIENTAL** | **100 días** | |
| 74 | | MEDIDAS DE PREVENCION, MITIGACION O CORRECCION DE LOS IMPACTOS AMBIENTALES | 100 días | 10FF |
| 75 | | RIEGO DE ZONA DE TRABAJO PARA MITIGAR LA CONTAMINACION - POLVO (inc. costo de agua y transp. surtido a obra) | 54 días | 25FC-5 días |
| 76 | | **MONITOREO ARQUEOLOGICO** | **100 días** | |
| 77 | | PLAN DE MONITOREO ARQUELOGICO | 100 días | 10FF |
| 78 | | INFORME FINAL DE MONITOREO | 20 días | 77FF |
| 79 | | **PLAN DE CONSERVACION VIAL** | **100 días** | |
| 80 | | PLAN DE CONSERVACION VIAL | 100 días | 12 |
| 81 | | **VARIOS** | **20 días** | |
| 82 | | LIMPIEZA FINAL DE LA OBRA | 20 días | 60FF+11 d |




Proyecto: Project (1)
Fecha: mar 17/02/26

Tarea
División
Hito
Resumen
Resumen del proyecto
Tarea inactiva
Hito inactivo
Resumen inactivo
Tarea manual
solo duración
Informe de resumen manual
Resumen manual
solo el comienzo
solo fin
Tareas externas
Hito externo
Fecha límite
Tareas críticas
División crítica
Progreso
Progreso manual

# ANEXO N°13.- ESPECIFICACIONES TÉCNICAS

## 01.CAMINO VECINAL: HUACA TORO – HUACA QUEMADA

### 01.01 OBRAS PROVISIONALES

### 01.01.01 CARTEL DE IDENTIFICACIÓN DE OBRA DE 3.60M x 2.40 M

**DESCRIPCIÓN**

Este elemento servirá como identificación de la obra, cuyo modelo será una impresión en banner a full color (colores de la Institución responsable de la ejecución) de 2.40 x 3.60 m, el cual se instalará en un marco de madera, colocado sobre postes de madera.

La ubicación será al inicio de la obra, previa consulta con el Ingeniero Inspector o Supervisor de la obra.

**CONSIDERACIONES GENERALES**

El cartel de obra deberá colocarse durante la primera semana de iniciado la ejecución de los trabajos. El cartel deberá contener la siguiente información:

- Indicará el nombre de la Obra.
- Costo de ejecución del Proyecto.
- Plazo de Ejecución.
- Nombre de la entidad Contratante.
- Entidad Financiera y del Contratista.

**UNIDAD DE MEDIDA**

Esta partida ejecutada se medirá por unidad (und), Además deberá contar con la conformidad y aceptación del Ingeniero Supervisor.

**FORMA DE PAGO**

El 100% del monto global de la partida se pagará una vez ejecutada, la misma que deberá permanecer visible hasta el término de la obra.

La longitud medida será pagada al precio unitario por unidad.

### 01.01.02 MOVILIZACION Y DESMOVILIZACION DE MAQUINARIA

**DESCRIPCIÓN**

Esta partida consiste en el traslado de equipos pesados (excavadora, rodillo liso vibratorio, retroexcavadora, motoniveladora) y equipos menores (mezcladora de concreto, vibrador de concreto, motobomba, estación total, nivel de ingeniero, plancha compactadora,

etc.), a emplearse durante la ejecución de la obra con el propósito de garantizar el avance del cronograma de ejecución física.

**UNIDAD DE MEDIDA**

Se considerará el pago en forma global (GLB), por lo que se considerara como unidad total a la movilización y desmovilización de la maquinaria necesaria para realizar los trabajos donde se utilizaran estos equipos.

**FORMA DE PAGO**

El pago corresponderá a la partida "Movilización y Desmovilización de Equipos", el pago se hará de la siguiente forma: El Proyecto pagará solamente la movilización y se hará efectivo conforme el equipo pesado vaya incorporando a la obra. El pago se hará previa autorización de la Supervisión.

**01.01.03 FLETE TERRESTRE DE MATERIALES A OBRA**

**DESCRIPCIÓN**

Esta actividad comprende el transporte de diversos materiales a utilizarse en la construcción de la obra desde la ciudad de Chiclayo hasta el lugar de construcción de la obra es decir en vehículo.

**UNIDAD DE MEDIDA**

La forma de medición de la partida será de acuerdo a la necesidad del traslado de los materiales según su descripción y análisis, para el presente proyecto será Global (glb), al Precio señalado en el Presupuesto Aprobado para la partida correspondiente.

**FORMA DE PAGO**

La partida descrita anteriormente se pagará de acuerdo a la necesidad del traslado de los materiales y de acuerdo al análisis realizado en el presente estudio y de acuerdo al presente Expediente Técnico será en forma Global (Glb), entendiéndose que dicho precio y pago constituirá compensación total por toda mano de obra, equipo, herramientas, materiales e imprevistos necesarios para completar satisfactoriamente el trabajo.

**01.01.04 AGUA PARA LA CONSTRUCCIÓN**

**DESCRIPCIÓN**

Esta partida comprende la contratación del servicio, el suministro y la distribución del agua requerida para la ejecución de las distintas actividades constructivas previstas al inicio de la obra, asegurando su disponibilidad oportuna para el desarrollo adecuado de los trabajos.

**MATERIALES**

El agua se empleará en la mezcla, la cual deberá ser limpia, potable, libre de aceites, grasas, ácidos, sales, materia orgánica, azúcares u otras sustancias perjudiciales que puedan alterar las propiedades del concreto.

**UNIDAD DE MEDIDA**

El agua para la construcción será medida mensualmente, en función al período efectivamente ejecutado durante la obra.

La medición se realizará por mes, considerándose el suministro, abastecimiento y distribución del agua utilizada en las diferentes partidas de la obra vial, previa verificación y conformidad de la Supervisión.

**FORMA DE PAGO**

El pago se realizará por período mensual, de acuerdo al avance efectivamente ejecutado, al precio unitario establecido en el presupuesto del proyecto. Para efectos de programación, se ha previsto un consumo promedio de agua durante un plazo estimado de 10 meses.

**01.01.05 ENERGÍA ELÉCTRICA PROVISIONAL**

**DESCRIPCIÓN**

Esta partida comprende la implementación integral de las instalaciones de energía eléctrica provisional necesarias para la ejecución de la obra. Dichas instalaciones se ubicarán dentro del área de trabajo, de modo que los desplazamientos del personal y el transporte de materiales sean mínimos y no interfieran con el normal desarrollo de las actividades constructivas.

La energía eléctrica provisional deberá garantizar condiciones adecuadas de seguridad, continuidad y confiabilidad, de acuerdo con la normativa vigente y bajo supervisión técnica.

**UNIDAD DE MEDIDA**

Se ha considerado un costo mensual por concepto de energía eléctrica provisional para atender las necesidades de la obra durante todo el período de ejecución del proyecto.

**FORMA DE PAGO**

La cantidad obtenida conforme al método de medición será cancelada al precio unitario establecido en el contrato, entendiéndose que dicho pago constituye compensación total por los

costos de materiales, equipos, mano de obra y demás gastos necesarios para la correcta ejecución de la partida.

**01.01.06 SERVICIOS HIGIÉNICOS**

**DESCRIPCIÓN**

Esta partida comprende la provisión, instalación, uso, limpieza, mantenimiento y retiro de baños portátiles destinados al personal que participa en la ejecución del proyecto de carretera.

Los baños portátiles se ubicarán dentro del área de obra o campamento, en lugares accesibles y estratégicos, garantizando adecuadas condiciones de higiene, salubridad y comodidad para los trabajadores, sin interferir con el normal desarrollo de las actividades constructivas, y en cumplimiento de la normativa vigente de seguridad y salud en el trabajo.

**UNIDAD DE MEDIDA**

Los servicios higiénicos mediante baños portátiles serán medidos mensualmente, de acuerdo al período efectivamente ejecutado durante la obra.

**FORMA DE PAGO**

El pago de estos trabajos se efectuará mensualmente, al precio unitario establecido en el presupuesto del proyecto.

**01.01.07 PLAN DE SEGURIDAD Y SALUD EN EL TRABAJO**

**DESCRIPCIÓN**

Esta partida comprende la elaboración, implementación, ejecución, control y actualización del Plan de Seguridad y Salud en el Trabajo durante la construcción de la carretera, con la finalidad de prevenir accidentes laborales, enfermedades ocupacionales y daños a terceros.

El Plan se desarrollará de conformidad con lo establecido en la Ley N° 29783 – Ley de Seguridad y Salud en el Trabajo y su Reglamento, aprobado mediante el Decreto Supremo N° 005-2012-TR.

Asimismo, incluirá la identificación de peligros, evaluación y control de riesgos (IPERC), señalización temporal de seguridad, procedimientos seguros de trabajo, capacitación del personal, supervisión permanente y cumplimiento de las medidas de seguridad en todos los frentes de trabajo del proyecto.

**UNIDAD DE MEDIDA**

Unidad de Medida: la unidad de medida es global (GLB).

**FORMA DE PAGO**

La partida Plan de Seguridad y Salud en el Trabajo será pagada en forma global (GLB), al precio unitario establecido en el contrato. El Supervisor verificará que el Plan de Seguridad y Salud en el Trabajo sea implementado, ejecutado y mantenido de manera permanente durante todo el desarrollo de la obra, desde su inicio hasta su culminación.

## 01.01.08 EQUIPOS DE PROTECCIÓN INDIVIDUAL

**DESCRIPCIÓN**

Esta partida comprende la provisión, reposición, control de uso y mantenimiento de los Equipos de Protección Individual (EPI) necesarios para proteger la integridad física y la salud del personal que participa en la ejecución del proyecto de carretera.

Los EPI serán utilizados obligatoriamente en todos los frentes de trabajo, de acuerdo con los riesgos identificados en el Plan de Seguridad y Salud en el Trabajo, en cumplimiento de la Ley N.° 29783 – Ley de Seguridad y Salud en el Trabajo, su Reglamento y las disposiciones aplicables a obras viales.

**MATERIALES**

Los materiales comprendidos en esta partida incluyen los Equipos de Protección Individual (EPI) necesarios para la seguridad del personal en la obra vial, tales como:

- Casco de seguridad
- Chaleco reflectivo de alta visibilidad
- Botas de seguridad con puntera reforzada
- Guantes de protección (según tipo de trabajo)
- Lentes de seguridad
- Protectores auditivos
- Mascarillas o respiradores
- Otros EPI necesarios según el riesgo específico de la actividad

Todos los equipos deberán ser nuevos, certificados, de calidad comprobada y adecuados a los riesgos identificados en cada actividad, garantizando la protección efectiva del trabajador durante la ejecución del proyecto de carretera.

**UNIDAD DE MEDIDA**

Unidad de Medida: la unidad de medida es global (glb).

**FORMA DE PAGO**

La partida será pagada en forma global (GLB), al precio unitario establecido en el contrato. El Supervisor velará por el cumplimiento y uso permanente del equipamiento de seguridad por parte de los trabajadores, desde el inicio hasta la culminación de la obra.

## 01.01.09 ACONDICIONAMIENTO Y MANTENIMIENTO DE DESVIOS

**DESCRIPCIÓN**

Contempla la totalidad de las acciones que sean necesarias adoptar, para que se asegure el mantenimiento de tránsito durante la ejecución de los trabajos a cargo del Contratista. Así también contempla las labores dentro del plan de desvío para su mejor funcionamiento del tránsito

**MÉTODO DE CONSTRUCCIÓN**

Previamente a la iniciación de los trabajos el Contratista debe coordinar con el supervisor las acciones y el programa previsto para disminuir al mínimo posible las molestias de los usuarios de las vías e incomodidad al vecindario, considerando que la totalidad de las obras contratadas deberán efectuarse en el plazo establecido.

El plan de trabajo podrá ser modificados por el Contratista, previa coordinación con el Ingeniero Supervisor, si se demuestra que la modificación introducida permite reducir las molestias e inconvenientes al tránsito vehicular o al peatonal.

El Contratista coordinará con las autoridades policial y municipal respectiva, cualquier modificación del tránsito vehicular o peatonal que signifique una variación sustancial del sistema actual, haciendo uso en estos casos de los banderines, señales luminosas, tranqueras, mallas de seguridad y demás dispositivos de control necesarios.

Sin perjuicio de lo anterior, de ser necesario y donde lo indique el Ingeniero Supervisor, el contratista deberá, por su propia cuenta ubicar vigilantes con banderolas, linternas, silbatos, etc. a fin de que puedan orientar el movimiento Vehicular a través del área de trabajo, teniendo en cuenta en todo momento la obligación de proporcionar a los conductores, peatones y vigilantes una adecuada seguridad personal y de sus bienes, así como comodidad para su circulación.

**MÉTODO DE CONTROL**

El Supervisor deberá aprobar el programa del Contratista para la ejecución de los trabajos de mantenimiento del tránsito para evitar el caos peatonal y facilitar el libre tránsito peatonal y vehicular.

**UNIDAD DE MEDIDA**

Unidad de Medida: la unidad de medida es kilómetros (km).

**FORMA DE PAGO**

El pago de este ítem será cuantificado en forma proporcional al kilometraje de la partida prevista en el presupuesto de obra concordado con el plazo de ejecución, y constituirá compensación completa por los trabajos descritos incluyendo mano de obra, leyes sociales, materiales, equipo, imprevistos y en general todo lo necesario para completar la actividad.

## 01.02 TRABAJOS PRELIMINARES

### 01.02.01 TOPOGRAFÍA Y GEOREFERENCIACIÓN

**DESCRIPCIÓN**

Basándose en los planos y levantamientos topográficos del proyecto, sus referencias y BMs, el contratista procederá al replanteo general de la obra en el que de ser necesario se efectuarán los ajustes necesarios a las condiciones reales encontradas en el terreno. El contratista será el responsable del replanteo topográfico que será revisado y aprobado por el supervisor, así como del cuidado y resguardo de los puntos físicos, estacas y monumentación instalada durante el proceso del levantamiento del proceso constructivo.

El contratista instalará puntos de control topográfico estableciendo en cada uno de ellos sus coordenadas en sistema UTM. Para los trabajos a realizar dentro de esta sección el contratista deberá proporcionar personal calificado, el equipo necesario y materiales que se requieran para el replanteo estacado, referenciación, monumentación, cálculo y registro de datos para el control de las obras.

La información sobre estos trabajos deberá estar disponible en todo momento para su revisión y control por el Supervisor. El personal, equipo y materiales deberán cumplir con los siguientes requisitos:

**a. Personal:** Se implementarán cuadrillas de topografía en número suficiente para tener un flujo ordenado de operaciones que permitan la ejecución de las obras de acuerdo con los

programas y cronogramas. El personal deberá estar suficientemente tecnificado y calificado para cumplir de manera adecuada con sus funciones en el tiempo establecido.

Las cuadrillas de topografía estarán bajo el mando y control de un Ingeniero especializado en topografía con lo menos 02 años de experiencia.

**b. Equipo:** Se deberá implementar el equipo de topografía necesario, capaz de trabajar dentro de los rangos de tolerancia especificados. Así mismo se deberá proveer el equipo de soporte para el cálculo, procesamiento y dibujo.

**c. Materiales:** Se proveerá suficiente material adecuado para la cimentación, monumentación, estacado, pintura y herramientas adecuadas. Las estacas deben tener área suficiente que permita anotar marcas legibles.

## CONSIDERACIONES GENERALES

Antes del inicio de los trabajos se deberá coordinar con el Supervisor sobre la ubicación de los puntos de control geográfico, el sistema de campo a emplear, la monumentación, sus referencias, tipo de marcas en las estacas, colores y el resguardo que se implementará en cada caso.

**Tabla22**

*Tolerancias para trabajos de Levantamientos Topográficos, Replanteos y Estacado en Construcción de Carreteras*

| Tolerancias Fase de trabajo | Tolerancias Fase de trabajo | |
|---|---|---|
| | **Horizontal** | **Vertical** |
| Georreferenciación | 1:100 000 | ± 5 mm. |
| Puntos de Control | 1:10 000 | ± 5 mm. |
| Puntos del eje, (PC), (PT), puntos en curva y referencias | 1:5 000 | ± 10 mm. |
| Otros puntos del eje | ± 50 mm. | ± 100 mm. |
| Sección transversal y estacas de talud | ± 50 mm. | ± 100 mm. |
| Alcantarillas, cunetas y estructuras menores | ± 50 mm. | ± 20 mm. |
| Muros de contención | ± 20 mm. | ± 10 mm. |
| Límites para roce y limpieza | ± 500 mm. | -- |
| Estacas de subrasante | ± 50 mm. | ±10 mm. |

| | | |
|---|---|---|
| Estacas de rasante | ± 50 mm. | ± 10 mm. |

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

Cualquier trabajo topográfico y de control que no cumpla con las tolerancias anotadas será rechazado. La aceptación del estacado por el Supervisor no releva al Contratista de su responsabilidad de corregir probables errores que puedan ser descubiertos durante el trabajo y de asumir sus costos asociados.

Cada 500 m. de estacado se deberá proveer una tablilla de dimensiones y color contrastante aprobados por el Supervisor en el que se anotará en forma legible para el usuario de la vía la progresiva de su ubicación.

**Requerimientos para los trabajos**

Los trabajos de Topografía y Georreferenciación comprenden los siguientes aspectos:

**(a) Georreferenciación:**

La georreferenciación se hará estableciendo puntos de control geográfico mediante coordenadas UTM con una equidistancia aproximada de 10 Km. ubicados a lo largo de la carretera. Los puntos seleccionados estarán en lugares cercanos y accesibles que no sean afectados por las obras o por el tráfico vehicular y peatonal. Los puntos serán monumentados en concreto con una placa de bronce en su parte superior en el que se definirá el punto por la intersección de dos líneas. Estos puntos servirán de base para todo el trabajo topográfico y a ellos estarán referidos los puntos de control y los del replanteo de la vía.

**(b) Límites de Limpieza y Roce**

Los límites para los trabajos de limpieza y roce deben ser establecidos en ambos lados de la línea del eje en cada sección de la carretera.

**UNIDAD DE MEDIDA**

La topografía y georreferenciación se medirán por kilómetros (Km).

**FORMA DE PAGO**

Las cantidades medidas y aceptadas serán pagadas al precio de contrato. El pago de la Topografía y Georreferenciación será de acuerdo con el avance de obra de la partida específica.

- El 30% (km) del total de la partida se pagará cuando se concluyan los trabajos de replanteo

y georreferenciación de la obra.

- El 70% (km) restante de la partida se pagará en forma prorrateada y uniforme en los meses que dura la ejecución de la obra. Este costo incluye también la conservación de los monumentos de los puntos georrefenciados y/o de control. de la partida.

**01.02.02 DEMOLICIÓN DE ESTRUCTURAS**

**DESCRIPCIÓN**

Comprende la demolición de Alcantarillas existentes en mal estado, o sin ancho suficiente para la albergar la nueva vía, todas las estructuras son de concreto armado.

**MÉTODO DE EJECUCIÓN**

Se ejecutará los trabajos de demolición de alcantarillas, incluyendo cabezales. Se utilizarán herramientas menores como combas, puntas, cinceles y lampa, para que los bloques sean de tamaño maniobrable. El volumen de demolición será sumado al volumen de eliminación demolición.

**UNIDAD DE MEDIDA**

La medición será en metro cúbico (M3) de demolición

**01.02.03 TRAZO Y REPLANTEO DURANTE LA OBRA**

**DESCRIPCIÓN**

Basándose en los planos y levantamientos topográficos del proyecto, sus referencias y BMs, el contratista procederá al replanteo general de la obra en el que de ser necesario se efectuarán los ajustes necesarios a las condiciones reales encontradas en el terreno. El contratista será el responsable del replanteo topográfico que será revisado y aprobado por el supervisor, así como del cuidado y resguardo de los puntos físicos, estacas y monumentación instalada durante el proceso del levantamiento del proceso constructivo.

El contratista instalará puntos de control topográfico estableciendo en cada uno de ellos sus coordenadas en sistema UTM. Para los trabajos a realizar dentro de esta sección el contratista deberá proporcionar personal calificado, el equipo necesario y materiales que se requieran para el replanteo estacado, referenciación, monumentación, cálculo y registro de datos para el control de las obras.

La información sobre estos trabajos deberá estar disponible en todo momento para su revisión y control por el Supervisor. El personal, equipo y materiales deberán cumplir con los siguientes requisitos:

- **Personal:** Se implementarán cuadrillas de topografía en número suficiente para tener un flujo ordenado de operaciones que permitan la ejecución de las obras de acuerdo con los programas y cronogramas. El personal deberá estar suficientemente tecnificado y calificado para cumplir de manera adecuada con sus funciones en el tiempo establecido. Las cuadrillas de topografía estarán bajo el mando y control de un Ingeniero especializado en topografía con lo menos 02 años de experiencia.
- **Equipo:** Se deberá implementar el equipo de topografía necesario, capaz de trabajar dentro de los rangos de tolerancia especificados. Así mismo se deberá proveer el equipo de soporte para el cálculo, procesamiento y dibujo.
- **Materiales:** Se proveerá suficiente material adecuado para la cimentación, monumentación, estacado, pintura y herramientas adecuadas. Las estacas deben tener área suficiente que permita anotar marcas legibles.

**CONSIDERACIONES GENERALES**

Antes del inicio de los trabajos se deberá coordinar con el Supervisor sobre la ubicación de los puntos de control geográfico, el sistema de campo a emplear, la monumentación, sus referencias, tipo de marcas en las estacas, colores y el resguardo que se implementará en cada caso.

Los trabajos de topografía y de control estarán concordantes con las tolerancias que se dan en la siguiente tabla:

**Tabla02**
*Tolerancias para trabajos de Levantamientos Topográficos, Replanteos y Estacado en Construcción de Carreteras*

| **Tolerancias Fase de trabajo** | **Tolerancias Fase de trabajo** | |
|---|---|---|
| | **Horizontal** | **Vertical** |
| Georreferenciación | 1:100 000 | ± 5 mm. |
| Puntos de Control | 1:10 000 | ± 5 mm. |
| Puntos del eje, (PC), (PT), puntos en curva y referencias | 1:5 000 | ± 10 mm. |
| Otros puntos del eje | ± 50 mm. | ± 100 mm. |
| Sección transversal y estacas de talud | ± 50 mm. | ± 100 mm. |
| Alcantarillas, cunetas y estructuras menores | ± 50 mm. | ± 20 mm. |

| | | |
|---|---|---|
| Muros de contención | ± 20 mm. | ± 10 mm. |
| Límites para roce y limpieza | ± 500 mm. | -- |
| Estacas de subrasante | ± 50 mm. | ±10 mm. |
| Estacas de rasante | ± 50 mm. | ± 10 mm. |

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

Los formatos para utilizar serán previamente aprobados por el Supervisor y toda la información de campo, su procesamiento y documentos de soporte serán de propiedad del GRTC una vez completados los trabajos. Esta documentación será organizada y sistematizada de preferencia en medios electrónicos. Los trabajos en cualquier etapa serán iniciados solo cuando se cuente con la aprobación escrita de la Supervisión.

Cualquier trabajo topográfico y de control que no cumpla con las tolerancias anotadas será rechazado. La aceptación del estacado por el Supervisor no releva al Contratista de su responsabilidad de corregir probables errores que puedan ser descubiertos durante el trabajo y de asumir sus costos asociados.

Cada 500 m. de estacado se deberá proveer una tablilla de dimensiones y color contrastante aprobados por el Supervisor en el que se anotará en forma legible para el usuario de la vía la progresiva de su ubicación.

**UNIDAD DE MEDIDA**

Unidad de Medida: la unidad de medida es kilómetros (km).

**FORMA DE PAGO**

El pago de estos trabajos se efectuará por kilómetro (km), conforme a los precios unitarios establecidos en el presupuesto del proyecto. El Supervisor verificará que su implementación se realice de manera continua y permanente durante todo el desarrollo de la obra.

## 01.02.04 MANTENIMIENTO DE TRANSITO TEMPORAL Y SEGURIDAD VIAL

**DESCRIPCIÓN**

Esta actividad comprende el mantenimiento de tránsito en la vía, desvíos y accesos, limpieza y señalización y seguridad vial necesarios para la ejecución de obras para no afectar el tránsito vehicular.

Los trabajos de mantenimiento de tránsito y seguridad vial incluyen:

El mantenimiento de accesos y desvíos, señalización y seguridad vial necesarios para la ejecución de puentes, alcantarillas y badenes. Incluyendo las estructuras de cruce temporal que se requieran, así como la restauración de los cauces a sus condiciones iniciales. Además, El mantenimiento del tránsito peatonal, en todo el tramo de la vía, mientras dure la construcción.

La implementación, instalación y mantenimiento de dispositivos de control de tránsito y seguridad acorde a las distintas fases de la construcción, la seguridad necesaria para garantizar al usuario de la vía, de un tránsito seguro a lo largo del tramo en ejecución.

La colocación de la señalización ambiental provisional: Señales informativas de ubicación de campamento, canteras, DME y plantas de proceso, cuyas características se encuentran en el EIA y La colocación de señalización y dispositivos de control del tránsito a través de la zona de trabajo, para cada uno de los frentes, habilitados.

## CONSIDERACIONES GENERALES

### Control temporal de tránsito y seguridad vial

El tránsito vehicular durante la ejecución de las obras no deberá sufrir detenciones de duración excesiva. Para esto, se deberá diseñar sistemas de control por medios visuales y sonoros, con personal capacitado de manera que se garantice la seguridad y confort del público y usuarios de la vía; así como la protección de las propiedades adyacentes. El control de tránsito se deberá mantener hasta que las obras sean recibidas por el MTC.

### Mantenimiento vial

La vía principal en construcción, los desvíos, rutas alternas y toda aquella que se utilice para el tránsito vehicular y peatonal será mantenida en condiciones aceptables de transitabilidad y seguridad durante el período de ejecución de obra, incluyendo los días feriados, días en que no se ejecuten trabajos y aún en probables períodos de paralización. La vía no pavimentada deberá ser mantenida sin baches ni depresiones y con niveles de rugosidad que permita velocidad uniforme de operación de los vehículos en todo el tramo contratado

Los horarios de transporte serán fijados por el Contratista, así como la cantidad de vehículos a utilizar en función al avance de las obras.

## MATERIALES

Las señales, dispositivos de control, colores a utilizar y calidad del material estará de acuerdo a lo normado en El Manual De Dispositivos Para Control De Tránsito Automotor Para Calles y Carreteras del MTC y todos ellos tendrán la posibilidad de ser trasladados rápidamente de un lugar otro, para lo que deben contar con sistemas de soporte adecuados.

Requerimiento de construcción

El Contratista deberá proveer el personal suficiente, así como las señales, materiales y elementos de seguridad que se requieren para un efectivo control del tránsito y de la seguridad vial.

**Requerimientos complementarios**

Los sectores en que existan excavaciones puntuales en la zona de tránsito, tales como excavaciones de zanjas laterales o transversales que signifiquen algún peligro para la seguridad del usuario, deben ser claramente delimitadas y señalizadas con dispositivos de control de tránsito y señales que serán mantenidos durante el día y la noche hasta la conclusión de las obras en dichos sectores. Principalmente en las noches se utilizarán señales y dispositivos muy notorios y visibles para resguardar la seguridad del usuario.

Se instalarán sólo los dispositivos y señales de control que se requieran en cada etapa de la obra y en cada frente de trabajo

Los dispositivos y señales deben ser reubicados cuando sea necesario.

Las unidades perdidas, sustraídas, destruidas en mal estado o calificado en estado inaceptable por la Supervisión deberán ser inmediatamente sustituidas.

Las señales y dispositivos deben ser limpiados y reparados periódicamente

Las señales y dispositivos serán retirados totalmente cuando las obras hayan concluido

Aceptación de los trabajos

Los trabajos de mantenimiento de tránsito y seguridad vial, según lo indicado en esta sección, serán evaluados y aceptados por el Supervisor.

Si se detectan condiciones inaceptables de transitabilidad o de seguridad vial a criterio de la Supervisión de acuerdo a lo establecido en la descripción de esta especificación, la Supervisión ordenará la paralización de las obras en su totalidad, hasta que el Contratista efectúe las acciones correctivas, sin perjuicio de que le sean aplicadas las multas que se

disponga en el Contrato. En este caso todos los costos derivados de tal acción serán asumidos por el Contratista. Estas acciones serán informadas de inmediato por el Supervisor a la entidad

Para la aceptación de los trabajos, el Contratista deberá cerrar los accesos a los desvíos utilizados durante la construcción, así como desmantelar los puentes o estructuras provisionales, dejando todas las áreas cercanas a la vía, niveladas sin afectare el paisaje y de a las indicaciones del Supervisor.

Para la recepción de las obras el Supervisor deberá certificar claramente que el Contratista no tiene pendiente ninguna observación originada por alguna disposición de esta especificación.

**UNIDAD DE MEDIDA**

El mantenimiento de tránsito y seguridad vial se medirá de manera global (global). Si el servicio completo de esta partida incluyendo la provisión de señales, mantenimiento de tránsito, mantenimiento de desvíos y rutas habilitadas, control de emisión de polvo y otros, solicitados por el Supervisor, ha sido ejecutado a satisfacción de éste, se considerará una unidad completa en el período de medición.

**FORMA DE PAGO**

Las cantidades medidas y aceptadas serán pagadas al precio del contrato de la partida MANTENIMIENTO DE TRANSITO TEMPORAL Y SEGURIDAD VIAL. Este precio y pago, constituye compensación total por toda mano de obra, beneficios sociales, equipos, materiales, implementos de seguridad y por todos los trabajos prescritos en esta especificación. El transporte de personal no tendrá pago directo en esta partida, pues el Contratista deberá incluir este costo en los Gastos Generales Variables, pero el control de la buena ejecución de este transporte, rige lo expuesto líneas arriba de la presente especificación.

## 01.02.05 CAMPAMENTO

### 01.02.05.01 CAMPAMENTO PARA PERSONAL OBRERO

**DESCRIPCIÓN**

Son las construcciones necesarias para instalar la infraestructura que permita albergar a los trabajadores, insumos, maquinaria, equipos y otros, que incluye la carga, descarga, transporte de ida y vuelta, manipuleo y almacenamiento, permisos, seguros y otros.

El Proyecto debe incluir todos los diseños que estén de acuerdo con estas especificaciones y con el Reglamento Nacional de Edificaciones vigente del Ministerio de Vivienda, Construcción y Saneamiento.

La ubicación del campamento y otras instalaciones será propuesta por el Contratista y aprobada por la Supervisión, previa verificación que dicha ubicación cumpla con los requerimientos del Plan de Manejo Ambiental, salubridad, abastecimiento de agua, tratamiento de residuos y desagües.

**MATERIALES**

Los materiales para la construcción de los campamentos serán preferentemente de triplay, parantes de eucalipto y calamina, desarmables y transportables.

**REQUERIMIENTO DE CONSTRUCCIÓN**

**Generalidades**

En este rubro se incluye la ejecución de todas las edificaciones, tales como campamentos, que cumplen con la finalidad de albergar al personal que labora en las obras, así como también para el almacenamiento temporal de algunos insumos, materiales que se emplean en la construcción de carreteras; tanques de almacenamiento de insumos, casetas de inspección, depósitos de materiales y de herramientas, caseta de guardianía, vestuarios, servicios higiénicos, cercos, carteles, etc.

El contratista deberá solicitar ante las autoridades competentes, dueños o representante legal del área a ocupar, los permisos correspondientes.

Las construcciones provisionales, no deberán ubicarse dentro de las zonas “Áreas Naturales Protegidas”. Además, en ningún caso se ubicarán arriba de aguas de centros poblados, por los riesgos sanitarios inherentes que esto implica. En la construcción del campamento se evitará al máximo los cortes de terreno, relleno, y remoción de vegetación. En lo posible, los campamentos deberán ser prefabricados y estar debidamente cercados.

No deberá talarse árboles o especies forestales que tengan un especial valor genético o paisajístico. Así tampoco, deberá afectarse cualquier lugar de interés cultural o histórico.

De ser necesario el retiro de material vegetal, éste deberá ser utilizado en procesos de revegetación de otras zonas. Los residuos de tala y desbroce no deben ser depositados en

corrientes de agua, debiendo ser apiladas de manera que no causen desequilibrios en el área. Estos residuos no deben ser incinerados, salvo excepciones justificadas y aprobadas por el Supervisor.

**Caminos de acceso**

Los caminos de acceso estarán dotados de una adecuada señalización para indicar su ubicación y la circulación de equipos pesados, debiendo utilizarse como mínimo material reflectivo Tipo IV. Los caminos de acceso, al tener el carácter provisional, deben ser construidos evitando en lo posible movimiento de tierras, efectuando un tratamiento que mejore la circulación y evite la producción de polvo.

**Instalaciones**

En el campamento, se incluirá la construcción de canales perimetrales en el área utilizada, si fuere necesario, para conducir las aguas de lluvias y de escorrentía al drenaje natural más próximo. Fijarla ubicación de las instalaciones de las construcciones provisionales conjuntamente con el Supervisor, teniendo en cuenta las recomendaciones necesarias, de acuerdo a la morfología y los aspectos atmosféricos de la zona.

Instalar los servicios de agua, desagüe y electricidad necesarios para el normal funcionamiento de las construcciones provisionales.

Se debe instalar un sistema de tratamiento a fin de que garantice la potabilidad de la fuente de agua; además, se realizarán periódicamente un análisis físico-químico y bacteriológico del agua que se emplea para el consumo humano.

Incluir sistemas adecuados para la disposición de residuos líquidos y sólidos. Para ello el campamento se va a dotar de ss.hh. portátiles con su sistema de limpieza.

**Del personal de obra**

A excepción del personal autorizado de vigilancia, se prohibirá el porte y uso de armas de fuego en el área de trabajo.

Las actividades de caza o compra de animales silvestres (vivos, pieles, cornamentas, o cualquier otro producto animal) quedan prohibidas. El incumplimiento de esta norma deberá ser causal de las sanciones que correspondan según normas vigentes. Además, la empresa

contratista deberá prohibir el consumo de bebidas alcohólicas y estupefacientes al interior de los campamentos.

Estas disposiciones deben ser de conocimiento de todo el personal antes del inicio de obras, mediante carteles, charlas periódicas u otros medios.

**Patio de máquinas**

Para el manejo y mantenimiento de las máquinas en los lugares previamente establecidos al inicio de las obras, se debe considerar algunas medidas con el propósito de que no alteren el ecosistema natural y socioeconómico, las cuales deben ser llevadas a cabo por el Contratista.

Los patios de máquinas deberán tener señalización adecuada para indicar el camino de acceso, ubicación y la circulación de equipos pesados. Los caminos de acceso, al tener el carácter provisional, deben ser construidos con el mínimo movimiento de tierras efectuando un tratamiento constructivo, para facilitar el tránsito de los vehículos de la obra.

El acceso a los patios de máquina debe estar independizado del acceso al campamento, por lo que debe dotarse de todos los servicios necesarios señalados para éstos, teniendo presente el tamaño de las instalaciones, número de personas que trabajarán y el tiempo que prestará servicios. Al finalizar la operación, se procederá a su desmontaje y retiro.

Instalar sistemas de manejo y disposición de grasas y aceites. Para ello es necesario contar con recipientes herméticos para la disposición de residuos de aceites y lubricantes, los cuales se dispondrán en lugares adecuados para su posterior eliminación.

En las zonas de lavado de vehículos y maquinaria deberán construirse desarenadores y trampas de grasa antes que las aguas puedan contaminar suelos, vegetación, agua o cualquier otro recurso. El abastecimiento de combustible deberá efectuarse de tal forma que se evite el derrame de hidrocarburos u otras sustancias contaminantes al suelo, ríos, quebradas, arroyos, etc. Similares medidas deberán tomarse para el mantenimiento de maquinaria y equipo. Los depósitos de combustible deben quedar alejados de las zonas de dormitorios, comedores y servicios del campamento.

**Desmontaje y retiro de campamentos**

Antes de desmontar las construcciones provisionales, al concluir las obras, y de ser posible, se debe considerar la posibilidad de donación del mismo a los caseríos que hubiere en la zona.

El área utilizada debe quedar totalmente limpia de basura, papeles, trozos de madera, etc., una vez desmontadas las instalaciones, patio de máquinas y vías de acceso, se procederá a la recuperación ambiental de las áreas afectadas de acuerdo al Plan de Manejo Ambiental.

**Aceptación de los trabajos**

El Supervisor efectuará entre otros, los siguientes controles:

- Verificar que las áreas de dormitorio y servicios sean suficientes para albergar al personal de obra, así como las instalaciones sanitarias.
- Verificar el correcto funcionamiento de los servicios de abastecimiento de agua potable.
- Verificar el correcto funcionamiento de los sistemas de drenaje y desagüe del campamento, oficinas, patios de máquina, cocina y comedores.
- Verificar las condiciones higiénicas de mantenimiento, limpieza y orden de las instalaciones.
- Abastecimiento de combustible deberá efectuarse de tal forma que se evite el derrame de hidrocarburos u otras sustancias contaminantes al suelo, ríos, quebradas, arroyos, etc. Similares medidas deberán tomarse para el mantenimiento de maquinaria y equipo.
- Los depósitos de combustible deben quedar alejados de las zonas de dormitorios, comedores y servicios del campamento

**UNIDAD DE MEDIDA**

El Campamento se medirá en forma Global (Glb).

**FORMA DE PAGO**

El pago de estos trabajos se hará por monto GLOBAL (GLB), cuyos precios unitarios se encuentran definidos en el presupuesto. El Supervisor velará porque ella se ejecute permanentemente durante el desarrollo de la obra, hasta su culminación.

## 01.03 INFRAESTRUCTURA VIAL

### 01.03.01 EXCAVACIÓN PARA EXPLANACIONES

## 01.03.01.01 DESBROCE Y LIMPIEZA DEL TERRENO

### DESCRIPCIÓN

Comprende el desraíce y la limpieza en zonas cubiertas de pastos, rastrojo, maleza, escombros, cultivos y arbustos. También comprende la remoción total de árboles aislados o grupos de árboles dentro de superficies que no presenten características de bosque continuo.

En esta actividad se deberá proteger las especies de flora y fauna que hacen uso de la zona a ser afectada, dañando lo menos posible y sin hacer desbroces innecesarios, así como también considerar al entorno socioeconómico protegiendo áreas con interés económico.

### MATERIALES

Los materiales obtenidos como resultado de la ejecución de los trabajos de limpieza y deforestación se depositarán de acuerdo con lo establecido en las presentes especificaciones.

El volumen obtenido por esta labor no se depositará por ningún motivo en lugares donde interrumpa alguna vía altamente transitada o zonas que sean utilizadas por la población como acceso a centros de importancia social, salvo si el supervisor lo autoriza por circunstancias de fuerza mayor.

### EQUIPO

El equipo empleado para la ejecución de los trabajos de limpieza y deforestación deberá ser compatible con los procedimientos de ejecución adoptados y requiere la aprobación previa del Supervisor, teniendo en cuenta que su capacidad y eficiencia se ajuste al programa de ejecución de los trabajos y al cumplimiento de las exigencias de la especificación.

Los equipos que se empleen deben contar con adecuados sistemas de silenciadores, sobre todo si se trabaja en zonas vulnerables o se perturba la tranquilidad del entorno.

### EJECUCIÓN

Los trabajos de limpieza y deforestación deberán efectuarse en todas las zonas señaladas en los planos o indicadas por el Supervisor y de acuerdo con procedimientos aprobados por éste, tomando las precauciones necesarias para lograr condiciones de seguridad satisfactorias.

Para evitar daños en las propiedades adyacentes o en los árboles que deban permanecer en su lugar, se procurará que los árboles que han de derribarse caigan en el centro de la zona

objeto de limpieza, troceándolos por su copa y tronco progresivamente, cuando así lo exija el Supervisor.

Las ramas de los árboles que se extiendan sobre el área que, según el proyecto, vaya a estar ocupada por la corona de la carretera, deberán ser cortadas o podadas para dejar un claro mínimo de seis metros (6 m), a partir de la superficie de esta.

**REMOCIÓN DE TRONCONES Y RAÍCES**

En aquellas áreas donde se deban efectuar trabajos de excavación, todos los troncos, raíces y otros materiales inconvenientes, deberán ser removidos hasta una profundidad no menor a sesenta centímetros (60 cm) del nivel de la Subrasante del proyecto.

En las áreas que vayan a servir de base de terraplenes o estructuras de contención o drenaje, los tocones, raíces y demás materiales inconvenientes a juicio del Supervisor, deberán eliminarse hasta una profundidad no menor de treinta centímetros (30 cm) por debajo de la superficie que deba descubrirse de acuerdo con las necesidades del proyecto.

Todos los troncos que estén en la zona del proyecto, pero por fuera de las áreas de excavación, terraplenes o estructuras, podrán cortarse a ras del suelo.

Todas las oquedades causadas por la extracción de tocones y raíces se rellenarán con el suelo que haya quedado al descubierto al hacer la limpieza y éste se conformará y apisonará hasta obtener un grado de compactación similar al del terreno adyacente.

**REMOCIÓN Y DISPOSICIÓN DE MATERIALES**

Salvo que el pliego de condiciones, los demás documentos del proyecto o las normas legales vigentes expresen lo contrario, todos los productos de la limpieza y deforestación quedarán de propiedad del Contratista.

Los árboles talados que sean susceptibles de aprovechamiento deberán ser despojados de sus ramas y cortados en trozos de tamaño conveniente, los que deberán apilarse debidamente a lo largo de la zona de derecho de vía, disponiéndose posteriormente según lo apruebe el Supervisor.

El resto de los materiales provenientes del desbroce y la limpieza deberá ser retirado del lugar de los trabajos, transportado y depositado en los lugares establecidos en los planos del proyecto o señalados por el Supervisor, donde dichos materiales deberán ser enterrados

convenientemente, de tal manera que la acción de los elementos naturales no pueda dejarlos al descubierto.

Para el traslado de estos materiales los vehículos deberán estar cubiertos con una lona de protección con la seguridad respectiva, a fin de que estas no se dispersen accidentalmente durante el trayecto a la zona de disposición de desechos previamente establecido por la autoridad competente, así como también es necesario aplicar las normas y disposiciones legales vigentes. Los materiales excedentes por ningún motivo deben ser dispuestos sobre cursos de agua (escorrentía o freática), debido a la contaminación de las aguas que afecta a los seres vivos e inclusive puede modificar el Microclima. Por otro lado, tampoco deben ser dispuestos de manera que altere el paisaje natural.

Cuando la autoridad competente y las normas de conservación de Medio Ambiente lo permitan, la materia vegetal inservible y los demás desechos de la limpieza y deforestación podrán quemarse en un momento oportuno y de una manera apropiada para prevenir la propagación del fuego. La quema no se podrá efectuar al aire libre.

El Contratista será responsable tanto de obtener el permiso de quema como de cualquier conflagración que resulte de dicho proceso.

Por ningún motivo se permitirá que los materiales de desecho se incorporen en los terraplenes, ni disponerlos a la vista en las zonas o fajas laterales reservadas para la vía, ni en sitios donde puedan ocasionar perjuicios ambientales.

**ORDEN DE LAS OPERACIONES**

Los trabajos de limpieza y deforestación deben efectuarse con anterioridad al inicio de las operaciones de explanación. Si después de ejecutados el desbroce y la limpieza, la vegetación vuelve a crecer por motivos imputables al Contratista, éste deberá efectuar una nueva limpieza, a su costo, antes de realizar la operación constructiva subsiguiente.

**ACEPTACIÓN DE LOS TRABAJOS**

Durante la ejecución de los trabajos, el Supervisor efectuará los siguientes controles principales:

- Verificar que El Contratista disponga de todos los permisos requeridos.
- Comprobar el estado y funcionamiento del equipo utilizado por El Contratista.

- Verificar la eficiencia y seguridad de los procedimientos aplicados por El Contratista.
- Vigilar el cumplimiento de los programas de trabajo.
- Comprobar que la disposición de los materiales obtenidos de los trabajos de limpieza y deforestación se ajuste a las exigencias de la presente especificación y todas las disposiciones legales vigentes.
- Medir las áreas en las que se ejecuten los trabajos en acuerdo a esta especificación.
- Señalar todos los árboles que deban quedar de pie y ordenar las medidas para evitar que sean dañados.
- El Contratista aplicará las acciones y los procedimientos constructivos recomendados en los respectivos estudios o evaluaciones ambientales del proyecto y las disposiciones vigentes sobre la conservación del medio ambiente y los recursos naturales, y el Supervisor velará por su cumplimiento.
- La actividad de limpieza y deforestación se considerará terminada cuando la zona quede despejada para permitir que se continúe con las siguientes actividades de la construcción. La máxima distancia en que se ejecuten las actividades de desbroce dentro del trazo de la carretera será de un kilómetro (Km.) delante de las obras de explanación. El Supervisor no permitirá que esta distancia sea excedida.

**UNIDAD DE MEDIDA**

La unidad de medida del área desbrozada y limpiada será por metro cuadrado (m2), satisfactoriamente, dentro de las zonas señaladas en el Proyecto o indicadas por el Supervisor. No se incluirán en la medida las áreas correspondientes a la plataforma de vías existentes Tampoco se medirán las áreas limpiadas y desbrozadas en zonas de préstamos o de canteras y otras fuentes de materiales que se encuentren localizadas fuera de la zona del proyecto, ni aquellas que el Contratista haya despejado por conveniencia propia, tales como vías de acceso, vías para acarreos, campamentos, instalaciones o depósitos de materiales.

**FORMA DE PAGO**

El pago del desbroce y limpieza se hará al respectivo precio unitario del contrato, por todo trabajo ejecutado de acuerdo con esta especificación y aprobado por el Supervisor.

El precio deberá cubrir todos los costos de desmontar, destroncar, desenraizar, rellenar y compactar los huecos de tocones; disponer los materiales sobrantes de manera uniforme en los sitios aprobados por el Supervisor.

El pago por concepto de desbroce y limpieza se hará independientemente del correspondiente a la remoción de capa vegetal en los mismos sitios, aun cuando los dos trabajos se ejecuten en una sola operación. La remoción de capa vegetal se medirá y pagará por (m2).

**01.03.01.02 CORTE DE TERRENO A NIVEL DE SUBRASANTE**

**DESCRIPCIÓN**

Se considera material suelto, aquel que se encuentra casi sin cohesión y puede ser trabajado a lampa y pico, o con un tractor para su desagregación. No requiere el uso de explosivos. Dentro de este grupo están las arenas, tierras vegetales húmedas, tierras arcillosas secas, arenas aglomeradas con arcilla seca y tierras vegetales secas.

**MATERIALES**

Los materiales provenientes de excavación para la explanación se utilizarán, si reúnen las calidades exigidas, en la construcción de las obras de acuerdo con los usos fijados en el Proyecto o determinados por el Supervisor.

El Contratista no podrá desechar materiales ni retirarlos para fines distintos a los del contrato, sin la autorización previa del Supervisor.

Los materiales provenientes de la excavación que presenten buenas características para uso en la construcción de la vía, serán reservados para utilizarlos posteriormente.

Los materiales de excavación que no sean utilizables serán eliminados como materiales excedentes y colocados en los Depósitos de Materiales Excedentes (DME).

Los materiales adicionales que se requieran para las obras se extraerán de las zonas de préstamo aprobadas por el Supervisor y deberán cumplir con las características establecidas en las especificaciones correspondientes.

**EQUIPO**

El Contratista propondrá, para consideración del Supervisor, los equipos más adecuados para las operaciones por realizar, los cuales no deben producir daños innecesarios ni a construcciones ni a cultivos; y garantizarán el avance físico de ejecución, según el programa de trabajo, que permita el desarrollo de las etapas constructivas siguientes.

Los equipos de corte deberán disponer de sistemas de silenciadores (Tractor S/Oruga).

Cuando se trabaje cerca a zonas ambientalmente sensibles, tales como colegios, hospitales, mercados y otros que considere el Supervisor, aunado a los especificados en el Estudio de Impacto Ambiental, los trabajos se harán manualmente si es que los niveles de ruido sobrepasan los niveles máximos recomendados.

**REQUERIMIENTOS DE CONSTRUCCIÓN**

**EXCAVACIÓN**

Antes de iniciar las excavaciones se requiere la aprobación, por parte del Supervisor, de los trabajos de topografía, desbroce, limpieza y demoliciones, así como los de remoción de especies vegetales, cercas de alambre y de instalaciones de servicios que interfieran con los trabajos a ejecutar.

Las obras de excavación deberán avanzar en forma coordinada con las de drenaje del Proyecto, tales como alcantarillas, desagües, alivios de cunetas y construcción de filtros.

Además, se debe garantizar el correcto funcionamiento del drenaje y controlar fenómenos de erosión e inestabilidad.

La secuencia de todas las operaciones de excavación debe ser tal, que asegure la utilización de todos los materiales aptos y necesarios para la construcción de las obras señaladas en los planos del Proyecto o indicadas por el Supervisor.

La excavación de la explanación se debe ejecutar de acuerdo con las secciones transversales del Proyecto o las instrucciones del Supervisor. Toda sobre excavación que haga el Contratista, por error o por conveniencia propia para la operación de sus equipos, correrá por su cuenta, costo y riesgo y el Supervisor podrá suspenderla, si lo estima necesario, por razones técnicas o económicas.

Cuando la altura del talud de corte sea mayor de 7 m (en suelos), o de diez metros (10 m en rocas), o según lo especifique el Proyecto, y la calidad del material por excavar lo exija, deberán construirse banquetas de corte con pendiente hacia el interior del talud a una cuneta que debe recoger y encauzar las aguas superficiales hacia áreas donde el talud no sea afectado.

El ancho mínimo de la terraza deberá permitir la operación normal de los equipos de construcción. La pendiente longitudinal de las banquetas y su dimensionamiento deberá especificarse en el Proyecto o seguir las indicaciones del Supervisor.

Al alcanzar el nivel de la subrasante en la excavación de material suelto, se deberá escarificar una profundidad mínima de 15 cm, conformar de acuerdo con las pendientes transversales especificadas y compactar.

Si los suelos encontrados a nivel de subrasante están constituidos por suelos inestables, el Supervisor ordenará las modificaciones que corresponden a las instrucciones del párrafo anterior, con el fin de asegurar la estabilidad de la subrasante.

En caso de que al nivel de la subrasante se haya determinado la existencia de propiedades físicas propias de suelos expansivos, se priorizará su estabilización en caso de que los documentos del Proyecto o el Supervisor determinen su reemplazo, la profundidad de la excavación se determinará en base a un análisis de esfuerzos y deformaciones para las condiciones existentes de los materiales que conformarán la plataforma vial y del terreno de fundación. Los materiales de reemplazo deberán cumplir con las características definidas.

Las cunetas y bermas deben construirse de acuerdo con las secciones, pendientes transversales y cotas especificadas en el Proyecto o las instrucciones del Supervisor.

Para las excavaciones en roca, los procedimientos, tipos y cantidades de explosivos y equipos que el Contratista proponga utilizar, deberán estar aprobados previamente por el Supervisor; así como la secuencia y disposición de las voladuras, las cuales se deberán proyectar en tal forma que sea mínimo su efecto fuera de los taludes proyectados.

**ENSANCHE O MODIFICACIÓN DEL ALINEAMIENTO DE PLATAFORMA EXISTENTE**

En los Proyectos de mejoramiento de vías, donde se conserve la plataforma existente, los procedimientos que utilice el Contratista deberán permitir la ejecución de los trabajos de ensanche o modificación del alineamiento, evitando la contaminación del afirmado con materiales arcillosos, orgánicos o vegetales.

Los materiales excavados deberán cargarse y transportarse hasta los sitios de utilización o establecidos en el Proyecto o aprobados por el Supervisor.

En las zonas de ensanche de terraplenes, el talud existente deberá cortarse en forma escalonada de acuerdo con lo que establezcan el Proyecto y las indicaciones del Supervisor.

**TALUDES**

La excavación de los taludes se realizará adecuadamente para no dañar su superficie final, evitar la descompresión prematura o excesiva de su pie y contrarrestar cualquier otra causa que pueda comprometer la estabilidad del talud de corte final.

Los trabajos de excavación de taludes sean en cualesquiera de los materiales clasificados se debe ajustar a las consideraciones técnicas (Geología y Geotecnia) contenidas en el Proyecto en especial a los taludes considerados en los sectores críticos, cualquier modificación al respecto deberá ser coordinada con el Supervisor de la Obra si este lo considere pertinente.

El Contratista deberá comunicar con suficiente anticipación a la Supervisión el comienzo de cualquier excavación, y el sistema de ejecución previsto, para obtener la aprobación del proceso constructivo.

Cuando los taludes excavados, tienen más de 7 m, debido a que implica un riesgo potencial para la integridad física de los usuarios de la carretera, y se presenten síntomas de inestabilidad, se deberán hacer terrazas o banquetas de corte y realizar labores de sembrado de vegetación típica en la zona afectada para evitar la erosión, ocurrencia de derrumbes, o deslizamientos que puedan interrumpir las labores de obra, así como la interrupción del tránsito en la etapa operativa, para evitar aumentar los costos de mantenimiento. En los lugares que se estime conveniente, se deberán construir muros de contención.

El Contratista deberá realizar una inspección adecuada antes de realizar la excavación de los taludes, considerando la presencia de terrenos de sembríos, canales de regadíos, tomas de agua, diques y/o cualquier almacenamiento de agua en las zonas del talud superior; y de acuerdo con esta evaluación empezar a realizar los trabajos respectivos. Por ningún motivo el Contratista iniciara los trabajos si no ha establecido estas zonas debido a que podría generarse una nueva distribución de los flujos de las aguas y generar deslizamientos en las zonas de excavación. En el caso de que encuentre agua en los taludes de corte realizados, el Contratista deberá establecer inmediatamente un plan de contingencia para su control o derivación antes de continuar con los trabajos de estabilización del talud, en caso contrario podría causar una inestabilidad operativa imputable al Contratista.

Todos estos trabajos deberán realizarse con la aprobación de la Supervisión. Cuando sea preciso adoptar medidas especiales para la protección superficial del talud, tales como plantaciones superficiales, revestimientos, etc., previstas en el Proyecto u ordenadas por el

Supervisor, estos trabajos deberán realizarse inmediatamente después de la excavación del talud.

En el caso que los taludes presenten deterioro antes del recibo definitivo de las obras, el Contratista eliminará los materiales desprendidos o movidos y realizará las correcciones complementarias ordenadas por el Supervisor. Si dicho deterioro es imputable a una mala ejecución de las excavaciones, el Contratista será responsable por los daños ocasionados y, por lo tanto, las correcciones se efectuarán a su cuenta, costo y riesgo.

## UTILIZACIÓN DE MATERIALES EXCAVADOS Y DISPOSICIÓN DE SOBRANTES

Todos los materiales provenientes de las excavaciones de la explanación que sean utilizables y, según el Proyecto, estas especificaciones o aprobadas por el Supervisor, necesarios para la construcción o protección de terraplenes, pedraplenes u otras partes de las obras proyectadas, se deberán utilizar en ellos. El Contratista no podrá disponer de los materiales provenientes de las excavaciones ni retirarlos para fines distintos del contrato, sin autorización previa del Supervisor.

Los materiales provenientes de la remoción de capa vegetal, deberán almacenarse para su uso posterior en sitios accesibles, y de manera aceptable para el Supervisor; estos materiales se deberán usar preferentemente para el recubrimiento de los taludes de los terraplenes terminados, áreas de canteras explotadas y niveladas o donde lo disponga el Proyecto o el Supervisor.

Los materiales sobrantes de la excavación deberán ser colocados en los DME, de acuerdo con las instrucciones del Supervisor y en zonas aprobadas por éste, se usarán para el tendido de los taludes de terraplenes o para emparejar las zonas laterales de la vía y de las canteras. Se dispondrán en tal forma que no ocasionen ningún perjuicio al drenaje de la carretera o a los terrenos que ocupen, a la visibilidad en la vía ni a la estabilidad de los taludes o del terreno al lado y debajo de la carretera. Todos los materiales sobrantes se deberán extender y emparejar de tal modo que permitan el drenaje de las aguas alejándolas de la vía, sin estancamiento y sin causar erosión, y se deberán conformar para presentar una buena apariencia.

Los materiales aprovechables de las excavaciones de zanjas, acequias y similares se deberán utilizar en los terraplenes del Proyecto, extender o acordonar a lo largo de los cauces

excavados, o disponer según lo determine y apruebe el Supervisor.

**EXCAVACIÓN EN ZONAS DE PRÉSTAMO**

Los materiales adicionales que se requieran para la terminación de las obras proyectadas o indicadas por el Supervisor se obtendrán mediante el ensanche adecuado de las excavaciones del Proyecto o de zonas de préstamo establecidas y/o previamente aprobadas por el Supervisor.

Para la excavación en zonas de préstamo se debe verificar que no se hayan producido desestabilizaciones en las áreas de corte que produzcan derrumbes y que pongan en peligro al personal de obra.

Los cortes de gran altura se harán con aprobación del Supervisor.

Si se utilizan materiales de las playas del río, el nivel de extracción debe estar sobre el nivel del curso de las aguas para que las maquinarias no remuevan material que afecte el ecosistema acuático, debiendo ceñirse a lo dispuesto a la Ley Nº 28221 Ley que Regula el Derecho por Extracción de Materiales de los Álveos o Cauces de los Ríos por las Municipalidades.

En la excavación de préstamos se seguirá todo lo pertinente a los procedimientos de ejecución de las excavaciones de la explanación y complementarios.

**MANEJO DEL AGUA SUPERFICIAL**

Cuando se estén efectuando las excavaciones, se deberá tener cuidado para que no se presenten depresiones y hundimientos y acordonamientos de material que afecten el normal escurrimiento de las aguas superficiales.

En los trabajos de excavación, no deben alterarse los cursos de aguas superficiales, para lo cual mediante obras hidráulicas se debe encauzar, reducir la velocidad del agua y disminuir la distancia que tiene que recorrer. Estas labores traerán beneficios en la conservación del medio ambiente y disminución en los costos de mantenimiento, así como evitará retrasos en la obra.

**LIMPIEZA FINAL**

Al terminar los trabajos de excavación, el Contratista deberá limpiar y conformar las zonas laterales de la vía, las de préstamo y las de disposición de sobrantes, de acuerdo con las

indicaciones del Supervisor.

**REFERENCIAS TOPOGRÁFICAS**

Durante la ejecución de la excavación para explanaciones complementarias y préstamos, el Contratista deberá mantener, sin alteración, las referencias topográficas y marcas especiales para limitar las áreas de trabajo.

**Aceptación de los Trabajos**

Durante la ejecución de los trabajos, el Supervisor efectuará los siguientes controles principales:

- Verificar que el Contratista disponga de todos los permisos requeridos para la ejecución de los trabajos.
- Comprobar el estado y funcionamiento del equipo utilizado por el Contratista.
- Verificar la eficiencia y seguridad de los procedimientos adoptados por el Contratista.
- Vigilar el cumplimiento de los programas de trabajo.
- Verificar el alineamiento, perfil y sección de las áreas excavadas.
- Comprobar que toda superficie para base de terraplén o subrasante mejorada quede limpia y libre de materia orgánica
- Medir los volúmenes de trabajo ejecutado por el Contratista en acuerdo a la presente especificación.

El trabajo de excavación se dará por terminado y aceptado cuando el alineamiento, el perfil, la sección y la compactación de la subrasante estén de acuerdo con los planos del Proyecto, con estas especificaciones y las instrucciones del Supervisor.

La cota de cualquier punto de la subrasante conformada y terminada no deberá variar en más de 10 mm con respecto a la cota proyectada.

Las cotas de fondo de las cunetas, zanjas y canales no deberán diferir en más de 15 mm de las proyectadas.

Todas las deficiencias que excedan las tolerancias mencionadas deberán ser corregidas por el Contratista, a su cuenta, costo y riesgo, y a satisfacción del Supervisor.

Las secciones transversales ejecutadas serán debidamente medidas y anotadas por el Contratista. El Supervisor verificará estos registros y si los encontrase correctos aprobará las mediciones como base para el pago.

No se pagarán las excavaciones efectuadas en exceso al de las secciones transversales aprobadas. Dichas sobre excavaciones serán rellenadas como lo ordene el Supervisor, con material de sub base o de base granular, los gastos correrán por cuenta del Contratista.

Alternativamente, a los controles de compactación y deflectometría se deberá aplicar otros ensayos de calidad a nivel de subrasante como Ensayo de Placa, Penetración Dinámica de Cono (PDC), Geogauge.

**UNIDAD DE MEDIDA**

La unidad de medida será el metro cúbico (m3), aproximado al metro cúbico completo, de material excavado en su posición original. Todas las excavaciones para explanaciones, zanjas, acequias y préstamos serán medidas por volumen ejecutado, con base en las áreas de corte de las secciones transversales del Proyecto, original o modificado, verificadas por el Supervisor antes y después de ejecutarse el trabajo de excavación.

No se medirán las excavaciones que el Contratista haya efectuado por error o por conveniencia fuera de las líneas de pago del Proyecto o las autorizadas por el Supervisor. Si dicha sobre excavación se efectúa en la subrasante o en una calzada existente, el Contratista deberá rellenar y compactar los respectivos espacios, a su cuenta, costo y riesgo, y usando materiales y procedimientos aceptados por el Supervisor.

No se medirán ni se autorizarán pagos para los volúmenes de material colocado, perfilado, nivelado y compactado sobre plataforma excavada en roca.

En las zonas de préstamo, solamente se medirán en su posición original los materiales aprovechables y utilizados en la construcción de terraplenes y pedraplenes; alternativamente, se podrá establecer la medición de los volúmenes de materiales de préstamo utilizados, en su posición final en la vía, reduciéndolos a su posición original mediante relación de densidades determinadas por el Supervisor.

No se medirán ni se autorizarán pagos para los volúmenes de material removido de derrumbes, durante los trabajos de excavación de taludes, cuando a juicio del Supervisor fueren

causados por procedimientos inadecuados o error del Contratista.

**FORMA DE PAGO**

El trabajo de excavación se pagará al precio unitario del contrato por (m3) por toda obra ejecutada de acuerdo con el Proyecto o las instrucciones del Supervisor, para la respectiva clase de excavación ejecutada satisfactoriamente y aceptada por éste. Deberá cubrir, además los costos de conformación de la subrasante, su compactación en todo tipo de terreno y la limpieza final, conformación de las zonas laterales y las de préstamo y disposición de sobrantes; los costos de perforación en roca, recortes, explosivos y voladuras; la excavación de acequias, zanjas, obras similares y el mejoramiento de esas mismas obras o de cauces naturales.

En las zonas del Proyecto donde se deba realizar trabajo de remoción de la capa vegetal, el precio unitario deberá cubrir el almacenamiento de los materiales necesarios para las obras; y cuando ellos se acordonan a lo largo de futuros terraplenes, su posterior traslado y extensión sobre los taludes de éstos, así como el traslado y extensión sobre los taludes de los cortes donde esté proyectada su utilización.

El precio unitario para excavación de préstamos deberá cubrir todos los costos de limpieza y remoción de capa vegetal de las zonas de préstamo, la excavación y los costos de adquisición, obtención de permisos y derechos de explotación y de alquiler de las fuentes de materiales de préstamo, según corresponda.

No habrá pago por las excavaciones y disposición o desecho de los materiales no utilizados en las zonas de préstamo, pero es obligación del Contratista dejar el área bien conformada o restaurada de acuerdo con el Plan de Manejo Ambiental.

**01.03.02 TERRAPLENES**

**01.03.02.01 CONFORMACIÓN DE TERRAPLANES**

**DESCRIPCIÓN**

Todos los materiales provenientes de las excavaciones de la explanación que sean utilizables y, según el Proyecto, estas especificaciones o aprobadas por el Supervisor, necesarios para la construcción o protección de terraplenes, pedraplenes u otras partes de las obras proyectadas, se deberán utilizar en ellos. El Contratista no podrá disponer de los materiales provenientes de las excavaciones ni retirarlos para fines distintos del contrato, sin autorización previa del Supervisor.

Los materiales sobrantes de la excavación deberán ser colocados en los DME, de

acuerdo con las instrucciones del Supervisor y en zonas aprobadas por éste, se usarán para el tendido de los taludes de terraplenes o para emparejar las zonas laterales de la vía y de las canteras. Se dispondrán en tal forma que no ocasionen ningún perjuicio al drenaje de la carretera o a los terrenos que ocupen, a la visibilidad en la vía ni a la estabilidad de los taludes o del terreno al lado y debajo de la carretera. Todos los materiales sobrantes se deberán extender y emparejar de tal modo que permitan el drenaje de las aguas alejándolas de la vía, sin estancamiento y sin causar erosión, y se deberán conformar para presentar una buena apariencia.

**UNIDAD DE MEDIDA**

La unidad de medida para los volúmenes de terraplenes será el metro cúbico (m3), aproximado al metro cúbico completo, de material compactado, aprobada por el Supervisor, en su posición final.

Todos los terraplenes serán medidos por los volúmenes verificadas por el Supervisor antes y después de ser ejecutados los trabajos de terraplenes. Dichas áreas están limitadas por las siguientes líneas de pago:

- Las líneas del terreno (terreno natural, con capa vegetal removida, afirmado existente, cunetas y taludes existentes).
- Las líneas del Proyecto (nivel de subrasante, cunetas y taludes proyectados).

No habrá medida ni pago para los terraplenes efectuados por el Contratista, que, por error o conveniencia, se hayan ejecutado fuera de las líneas del Proyecto o de las establecidas por el Supervisor.

No se medirán los terraplenes que haga el Contratista en sus caminos de acceso y obras auxiliares que no formen parte de las obras del Proyecto.

**FORMA DE PAGO**

El trabajo de terraplenes se pagará por (m3) al precio unitario del contrato, por toda obra ejecutada satisfactoriamente de acuerdo con la presente especificación y aceptada por el Supervisor.

El precio unitario deberá cubrir los costos de escarificación, nivelación, conformación, compactación y demás trabajos preparatorios de las áreas en donde se haya de

construir un terraplén nuevo; deberá cubrir, además, la colocación, conformación, humedecimiento o secamiento y compactación de los materiales utilizados en la construcción de terraplenes; y, en general, todo costo relacionado con la correcta construcción de los terraplenes, de acuerdo con esta especificación, los planos y las instrucciones del Supervisor.

## 01.03.03 MEJORAMIENTO DE SUELOS

## 01.03.03.01 PERFILADO Y COMPACTADO DE SUBRASANTE

### DESCRIPCIÓN

El Contratista, bajo esta partida, realizará los trabajos necesarios de modo que la superficie de la subrasante presente los niveles, alineamiento, dimensiones y grado de compactación indicados, tanto en los planos del proyecto, como en las presentes especificaciones.

Se denomina subrasante a la capa superior de la explanación que sirve como superficie de sustentación de la capa de sub base. Su nivel es paralelo al de la rasante y se logrará conformando el terreno natural mediante los cortes o rellenos previstos en el proyecto.

La superficie de la subrasante estará libre de raíces, hierbas, desmonte o material suelto.

### MÉTODO DE CONSTRUCCIÓN

Una vez terminados los trabajos de excavación se procederá a efectuar el escarificado de la subrasante en las zonas de corte, hasta una profundidad de 15 cm por debajo del nivel de subrasante de replanteo, y se procederá a eliminar las piedras mayores 3” de diámetro previo a la conformación (riego y batido), perfilado y compactado.

El Contratista suministrara y usara las plantillas, para el control de anchos y cotas. La cota de cualquier punto de la subrasante perfilada no deberá variar en más de 10 mm con respecto a la cota de replanteo aprobada.

La compactación de la subrasante, en los casos establecidos en el (EG-2014), se verificará de acuerdo con los siguientes criterios:

- La densidad de la subrasante compactada se definirá sobre un mínimo de 6 determinaciones, en sitios elegidos al azar con una frecuencia de una, cada 250 m2 de plataforma terminada y compactada.

- Las densidades individuales del lote (Di) deben ser, como mínimo, el 95% de la máxima densidad en el ensayo Proctor Modificado de referencia (De).
  - Di > 0.95 De
  - Di: Densidades individuales
  - De: Máxima densidad en el ensayo Proctor Modificado

**ENSAYO DE DEFLECTOMETRÍA SOBRE LA SUBRASANTE TERMINADA**

Una vez terminada la explanación se hará Deflectometría cada 25 metros alternados en ambos sentidos, es decir, en cada uno de los carriles, mediante el empleo de la viga Benkelman FWD o cualquier equipo de alta confiabilidad, antes de cubrir la subrasante con la subbase. Se analizará la deformada o curvatura de la deflexión obtenida de acuerdo con el procedimiento del dispositivo utilizado (en el caso del FWD de por lo menos tres mediciones por punto).

Los puntos de medición estarán referenciados con el estacado del proyecto, de tal manera que exista una coincidencia con relación a las mediciones que se efectúen a nivel de carpeta.

Los trabajos e investigaciones antes descritos, serán ejecutados por el Contratista. El Contratista deberá cumplir con lo indicado en el (EG-2014). Para la protección del equipo de trabajo y el control de tránsito. Para el caso de la Viga Benkelman el Contra:

- Clasificación del vehículo: C2
- Peso con carga en el eje posterior: 8,200 kilogramos
- Llantas del eje posterior: dimensión 10 x 20, 12 lonas. Presión de inflado: 0.56 MPa o80psi). Excelente estado.

El vehículo estará a disposición hasta que sean concluidas todas las evaluaciones deflectometría.

El Contratista garantizará que el radio de curvatura de la deformada de la Subrasante que determine en obra sea preciso, para lo cual hará la provisión del equipo idóneo para la medición de las deflexiones.

Así mismo, para la ejecución de los ensayos deflectométricos, el Contratista hará la provisión del personal técnico, papelería, equipo de viga Benkelman doble o simples, equipo FWD u otro aprobado por la Supervisión, acompañante y en general, de todos los elementos

que sean requeridos para llevar a efecto satisfactoriamente los trabajos antes descritos.

Los ensayos de deflectometría serán también realizados con las mismas condiciones y exigencias en la subrasante terminadas en secciones en terraplén. De cada tramo que el Contratista entregue a la Supervisión completamente terminado para su aprobación, deberá enviar un documento técnico con la información de deflectometría, procesada y analizada. La Supervisión tendrá veinticuatro (24) horas hábiles para responder, informando las medidas correctivas que sean necesarias. Se requiere realizar el procedimiento indicado, para colocar la capa estructural siguiente.

**UNIDAD DE MEDIDA**

El área para pagar será el número de metros cuadrados (m2) de superficie perfilada y compactada, de acuerdo con los alineamientos, rasantes y secciones indicadas en los planos y en las presentes especificaciones, medida en su posición final. El trabajo deberá contar con la conformidad del Ingeniero Supervisor.

**FORMA DE PAGO**

El trabajo de Perfilado y Compactado de Subrasante se pagará al precio unitario del contrato por toda obra ejecutada de acuerdo con el Proyecto o las instrucciones del Supervisor, y aceptada satisfactoriamente en (m2).

## 01.03.04 ELIMINACIÓN DE MATERIAL EXCEDENTE DME

### 01.03.04.01 TRANSPORTE DE ELIMINACION DE MATERIAL A DME PARA D> 1 KM

**DESCRIPCIÓN**

En esta partida el material del corte del terreno producto del movimiento de tierras efectuado deberá removerse y eliminarse al DME, área ya aprobada por la supervisión en un lugar adecuado.

**MÉTODO DE EJCUCIÓN**

Todo el material excedente de excavaciones, cortes y demoliciones de materiales, deberá ser retirado de la obra. Se debe transportar y eliminar todo material sobrante proveniente de excavaciones y cortes, a una ubicación de desecho autorizada fuera del área del trabajo que no debe de ser menor a 5 Km de la zona de trabajo.

Este material eliminado será colocado en capas compactadas con la finalidad de no generar impacto ambiental negativo.

El Contratista, una vez terminada la obra deberá dejar el terreno completamente limpio de desmonte u otros materiales que interfieran los trabajos de jardinería u otras obras.

El material excedente se depositará solamente en los lugares permitidos por el Ingeniero Supervisor.

**UNIDAD DE MEDICIÓN**

La medición será en metro cúbico (m3) de Eliminación de Material Excedente con Maquinaria D =10Km.

**FORMA DE PAGO**

El pago de esta partida será de acuerdo a la unidad de medición y constituirá compensación completa por los trabajos descritos incluyendo mano de obra, leyes sociales, materiales, equipo, imprevistos y en general todo lo necesario para completar la partida, previa aprobación de la Supervisión.

## 01.03.05 PAVIMENTOS

### 01.03.05.01 SUB BASE GRANULAR e= 0.20m

#### 01.03.05.01.01 SUB BASE DE AFIRMADO e=0.20m DESDE EK 0+000 HASTA 11+174.06

**DESCRIPCIÓN**

Este trabajo consiste en la construcción de una capa de material granular como es el afirmado e=0.20 m, que pueden ser obtenidos en forma natural o procesados, con inclusión o no de algún tipo de estabilizador o ligante, debidamente aprobados, en este caso se colocara sobre una subrasante. Incluye el suministro, transporte, colocación y compactación de material de conformidad con los alineamientos, pendientes y dimensiones indicados en los planos del Proyecto y aprobados por el Supervisor, y teniendo en cuenta lo establecido en el Plan de Manejo Ambiental. Incluye así mismo el aprovisionamiento de los estabilizadores.

**MATERIALES**

Los materiales para la construcción de la base granular deberán satisfacer los requisitos. Además, deberán ajustarse a las siguientes especificaciones de calidad:

**a) Granulometría**

La composición final de los materiales presentará una granulometría continua, bien graduada y según los requerimientos de una de las franjas granulométricas. Para las zonas con altitud iguales o mayores 3000 msnm. Se deberá seleccionar la gradación A.

**Tabla 03**
Requerimientos granulométricos para base granular

| Tamiz | Porcentaje que pasa en peso | | | |
|---|---|---|---|---|
| | Gradación A | Gradación B | Gradación C | Gradación D |
| 50 mm. (2") | 100 | 100 | | |
| 25 mm. (1") | | 75-95 | 100 | 100 |
| 9,5 mm.( $^{3}/_{8}$ ") | 30-65 | 40-75 | 50-85 | 60-100 |
| 4,75 mm. (N.º 4) | 25-55 | 30-60 | 35-65 | 50-85 |
| 2,0 mm. (N.º 10) | 15-40 | 20-45 | 25-50 | 40-70 |
| 425 µm. (N.º 40) | 8-20 | 15-30 | 15-30 | 25-45 |
| 75 µm. (N.º 200) | 2-8 | 5-15 | 5-15 | 8-15 |

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

El material de Base Granular deberá cumplir además con las siguientes características físico-mecánicas y químicas.

**Tabla 04**
Valor Relativo de Soporte, CBR

| | | |
|---|---|---|
| Valor Relativo de Soporte, CBR (1) | Tráfico en ejes equivalentes (<$10^6$) | Mín. 80% |
| | Tráfico en ejes equivalentes (≥$10^6$) | Mín. 100% |

(1) Referido al 100% de la Máxima Densidad Seca y una Penetración de Carga de 0.1" (2.5 mm)

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

**b) Agregado Grueso**

Se denominará así a los materiales retenidos en la malla Nº 4, que podrán provenir de fuentes naturales, procesados o combinación de ambos.

**Tabla 05**
*Requerimiento agregado grueso*

| Ensayo | Norma MTC | Norma ASTM | Norma AASHTO | Requerimientos Altitud | |
|---|---|---|---|---|---|
| | | | | < 3.000 msnm | ≥ 3.000 msnm |
| Partículas con una cara fracturada | MTC E 210 | D 5821 | | 80% mín. | 80% mín. |
| Partículas con dos caras fracturadas | MTC E 210 | D 5821 | | 40% mín. | 50% mín. |
| Abrasión Los Ángeles | MTC E 207 | C 131 | T 96 | 40% máx. | 40% máx. |
| Partículas chatas y alargadas (1) | | D 4791 | | 15% máx. | 15% máx. |
| Sales solubles totales | MTC E 219 | D 1888 | | 0,5% máx. | 0,5% máx. |
| Durabilidad al sulfato de magnesio | MTC E 209 | C 88 | T 104 | | 18% máx. |

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

**c) Agregado Fino**

Se denominará así a los materiales que pasan la malla Nº 4, que podrán provenir de fuentes naturales, procesados o combinación de ambos.

**Tabla 06**

*Requerimiento agregado fino*

| Ensayo | Norma | Requerimientos Altitud | |
|---|---|---|---|
| | | <3.000 msnm | ≥3.000 msnm |
| Índice plástico | MTC E 111 | 4% máx. | 2% mín. |
| Equivalente de arena | MTC E 114 | 35% mín. | 45% mín. |
| Sales solubles | MTC E 219 | 0,5% máx. | 0,5% máx. |
| Durabilidad al sulfato de magnesio | MTC E 209 | ----- | 15% |

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

**Equipo**

El Contratista deberá mantener en los sitios de las obras los equipos adecuados a las características y magnitud de las obras y en la cantidad requerida, de manera que se garantice su ejecución de acuerdo con los planos, especificaciones de construcción, programas de trabajo y dentro de los plazos previstos.

El Contratista deberá mantener los equipos de construcción en óptimas condiciones, con el objeto de evitar demoras o interrupciones debidas a danos en los mismos. Las máquinas, equipos y herramientas manuales deberán ser de buen diseño y construcción teniendo en cuenta los principios de la seguridad, la salud y la ergonomía en lo que atañe a su diseño.

Deben tener como edad máxima la que corresponde a su vida útil. La mala calidad de los equipos o los daños que ellos puedan sufrir, no serán causa que exima al Contratista del cumplimiento de sus obligaciones.

El Supervisor se reserva el derecho de exigir el reemplazo o reparación, por cuenta del Contratista, de aquellos equipos que a su juicio sean inadecuados o ineficientes o que por sus características no se ajusten a los requerimientos de seguridad o sean un obstáculo para el cumplimiento de lo estipulado en los documentos del contrato.

El mantenimiento o la conservación adecuada de los equipos, maquinaria y herramientas, no solo es básico para la continuidad de los procesos de producción y para un

resultado satisfactorio y óptimo de las operaciones a realizarse, sino que también es de suma importancia en cuanto a la prevención de los accidentes.

Por lo cual es responsabilidad del Contratista:

- Establecer un sistema periódico de inspección que pueda prever y corregir a tiempo cualquier deficiencia.
- Programar una política de mantenimiento preventivo sistemático.
- Llevar un registro de inspección y renovación de equipos, maquinarias y herramientas, lo cual pondrá a disposición del Supervisor en el momento que sea requerido.

El Contratista asume la responsabilidad del cumplimiento del plan de mantenimiento y de los registros levantados al respecto. Emitirá informes periódicos y especiales a la Supervisión, quien dará las recomendaciones del caso si los hubiere y verificará posteriormente el cumplimiento de las recomendaciones dadas las condiciones de operación de los equipos deberán ser tales, que no se presenten emisiones de sustancias nocivas que sobrepasen los límites permisibles de contaminación de los recursos naturales, de acuerdo con las disposiciones ambientales vigentes.

Toda maquinaria o equipo que de alguna forma puedan producir peligro deberá cumplir, entre otros, con los requisitos siguientes:

- Estar firmemente instaladas, ser fuertes y resistentes al fuego y a la corrosión.
- Que no constituyan un riesgo en sí, es decir que estén libres de astillas, bordes ásperos, afilados o puntiagudos.
- Prevengan el acceso a la zona de peligro durante las operaciones.
- Que no ocasionen molestias al operador en cuanto a visión y maniobrabilidad, y que estén provistos de casetas de protección contra la luz solar y lluvias.

Los equipos deberán tener los dispositivos de señalización necesarios para prevenir accidentes de trabajo. El Contratista debe solicitar al fabricante las instrucciones adecuadas para una utilización segura, las cuales deben ser proporcionadas a los trabajadores que hagan uso de ellos. Deberá así mismo, establecerse un reglamento y las sanciones respectivas a fin de evitar que los operarios sean distraídos en el momento que ejecuten su trabajo. Las máquinas y equipos accionados a motor deberán estar provistos de dispositivos adecuados, de accesos

inmediatos y perfectamente visibles, para que el operario pueda detenerlos rápidamente en caso de urgencia y prevenir toda puesta en marcha intempestiva.

Además, se proveerá a quienes utilicen las máquinas y equipos, de la protección adecuada y cuando sea necesario de protección auditiva.

**Requerimientos de construcción**

Definida la Fórmula de Trabajo, la granulometría deberá estar dentro del rango dado por el huso granulométrico adoptado.

**Preparación de la superficie existente**

El Supervisor sólo autorizará la colocación de material de base granular cuando la superficie sobre la cual debe asentarse tenga la densidad especificada, esté acorde a los planos del Proyecto y aprobada por el Supervisor. Además, deberá estar concluida la construcción de las cunetas, desagües, filtros y otras obras necesarias.

**Tramo de prueba**

Antes de iniciar los trabajos de cada partida, el Contratista emprenderá una fase de ejecución de tramos de prueba, para verificar el estado y comportamiento de los equipos y determinar, en secciones de ensayo, el método definitivo de preparación, transporte, colocación y compactación de los materiales, de manera que se cumplan los requisitos de cada especificación.

Para tal efecto, construirá uno o varios tramos de prueba de ancho y longitud aprobados por el Supervisor y en ellas se probarán el equipo y el plan de trabajo.

El Supervisor tomará muestras de las capas de prueba en cada caso y las ensayará para determinar su conformidad con las condiciones especificadas de densidad, granulometría y demás requisitos.

En el caso de que los ensayos indiquen que los materiales no se ajustan a dichas condiciones, el Contratista deberá efectuar las correcciones requeridas a los sistemas de preparación, extensión y compactación, hasta que ellos resulten satisfactorios para el Supervisor, debiendo repetirse los tramos de prueba cuantas veces sea necesario.

Bajo estas condiciones, si el tramo de prueba defectuoso ha sido realizado sobre un sector de la carretera proyectada, todo el material colocado será totalmente removido y transportado al lugar de disposición final de materiales excedentes, según lo indique el Supervisor a cuenta, costo y riesgo del Contratista.

**Transporte y colocación de material**

El Contratista deberá transportar y colocar el material, de tal modo que no se produzca segregación, ni se cause daño o contaminación en la superficie existente.

Cualquier contaminación, deberá ser subsanada antes de proseguir el trabajo. La colocación del material sobre la capa subyacente, se hará en una longitud que no sobrepase 1.500 m de las operaciones de mezcla, conformación y compactación del material de la subbase granular.

Durante esta labor se tomarán las medidas para el manejo del material de sub base, evitando los derrames del material y por ende la contaminación de fuentes de agua, suelos y flora cercana al lugar.

**Distribución y mezcla del material**

El material será dispuesto en un carril de la vía, de tal forma que permita el tránsito por el otro carril. Si la subrasante granular se va a construir mediante combinación de varios materiales, éstos serán dispuestos de igual modo, intercalando dichos materiales según su dosificación, los cuales luego serán mezclados hasta lograr su homogeneidad.

En caso de que sea necesario humedecer o airear el material para lograr la humedad óptima de compactación, el Contratista empleará el equipo adecuado y aprobado, de manera que no perjudique la capa subyacente y deje el material con una humedad uniforme. Este, después de mezclado, se extenderá en una capa de espesor uniforme que permita obtener el espesor y grado de compactación exigidos, de acuerdo con los resultados obtenidos en la fase de prueba.

Durante esta actividad se tomarán las medidas para el extendido y mezcla del material, evitando los derrames de material que pudieran contaminar fuentes de agua, suelos y flora cercana al lugar.

**Compactación**

Una vez que el material de la subrasante granular tenga la humedad apropiada, se conformará y compactará con el equipo aprobado por el Supervisor, hasta alcanzar la densidad especificada.

Aquellas zonas que, por su reducida extensión, su pendiente o su proximidad a otras obras, no permitan la utilización del equipo que normalmente se utiliza, se compactarán por los medios adecuados para el caso, en forma tal que las densidades que se alcancen no sean inferiores a las obtenidas en el resto de la capa.

La compactación se efectuará longitudinalmente, comenzando por los bordes exteriores y avanzando hacia el centro, traslapando en cada recorrido un ancho no menor de un tercio del ancho del rodillo compactador. En las zonas peraltadas, la compactación se hará del borde inferior al superior.

No se extenderá ninguna capa de material, mientras no se haya realizado los controles topográficos y de compactación aprobados por el Supervisor en la capa precedente.

Tampoco se ejecutará la subbase granular durante precipitaciones pluviales o cuando la temperatura ambiente sea inferior a 6°C. En esta actividad se tomarán los cuidados necesarios para evitar derrames de material que puedan contaminar las fuentes de agua, suelo y flora cercana al lugar de compactación.

También, resultan válidas las limitaciones expuestas en dicha Subsección.

**Apertura Al Tránsito**

Sobre las capas en ejecución se prohibirá la acción de todo tipo de tránsito mientras no se haya completado la compactación. Si ello no es factible, el tránsito que necesariamente deba pasar sobre ellas, se distribuirá de forma que no se concentren ahuellamientos sobre la superficie. El Contratista deberá responder por los daños producidos por esta causa, debiendo proceder a la reparación de los mismos con arreglo a las indicaciones del Supervisor.

**Conservación**

Si después de aceptada la subrasante granular, el Contratista demora por cualquier motivo la construcción de la capa inmediatamente superior, deberá reparar, a su cuenta, costo y riesgo, todos los daños en la subrasante y restablecer el mismo estado en que se aceptó.

**ACEPTACIÓN DE LOS TRABAJOS**

**Controles**

Durante la ejecución de los trabajos, el Supervisor efectuará los siguientes controles principales:

- Verificar la implementación para cada fase de los trabajos
- Verificar el estado y funcionamiento de todo el equipo aprobado por el supervisor y empleado por el Contratista.
- Comprobar que los materiales cumplen con los requisitos de calidad Supervisar la correcta aplicación del método de trabajo aceptado como resultado de los tramos de prueba.

- Ejecutar ensayos de compactación.
- Verificar la densidad de las capas compactadas efectuando la corrección previa por partículas de tamaño superior al máximo especificado, siempre que ello sea necesario. Este control se realizará en el espesor de capa realmente construida.
- Tomar medidas para determinar espesores, levantar perfiles y comprobar la uniformidad de la superficie granular mediante controles del IRI con equipos previamente definidos y calibrados.
- Vigilar la regularidad en la producción de los agregados de acuerdo con los programas de trabajo.
- Vigilar la ejecución de las consideraciones ambientales incluidas en esta sección para la ejecución de obras.

**Calidad de los materiales**

De cada procedencia de los materiales y para cualquier volumen previsto se tomarán cuatro muestras para los ensayos y frecuencias.

**Tabla 07**

*Ensayo y Frecuencias*

| Material o Producto | Propiedades y Características | Método de ensayo | Norma ASTM | Norma AASHTO | Frecuencia (1) | Lugar de Muestreo |
|---|---|---|---|---|---|---|
| Base Granular | Granulometría | MTC E 204 | C 136 | T 27 | 750 m³ | Cantera (2) y pista |
| | Límite líquido | MTC E 110 | D 4318 | T 89 | 750 m³ | Pista |
| | Índice de plasticidad | MTC E 111 | D 4318 | T 90 | 750 m³ | Pista |
| | Abrasión Los Ángeles | MTC E 207 | C131 | T 96 | 2.000 m³ | Cantera (2) |
| | Equivalente de Arena | MTC E 114 | D 2419 | T 176 | 2.000 m³ | Pista |
| | Sales Solubles | MTC E 219 | | | 2.000 m³ | Cantera (2) |
| | CBR | MTC E 132 | D 1883 | T 193 | 2.000 m³ | Cantera (2) |
| | Partículas fracturadas | MTC E 210 | D 5821 | | 2.000 m³ | Cantera (2) y pista |
| | Partículas Chatas y Alargadas | | D 4791 | | 2.000 m³ | Cantera (2) y pista |
| | Durabilidad al Sulfato de Magnesio | MTC E 209 | C 88 | T 104 | 2.000 m³ | Cantera (2) |
| | Densidad y Humedad | MTC E 115 | D 1557 | T180 | 750 m³ | Pista |
| | Compactación | MTC E 117<br>MTC E 124 | D 4718<br>D 2922 | T191<br>T238 | 250 m³ | Pista |

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

**Calidad del trabajo terminado**

La capa terminada deberá presentar una superficie uniforme y ajustarse a las rasantes y pendientes establecidas. La distancia entre el eje del Proyecto y el borde de la capa no podrá ser inferior a la señalada en los planos o la definida por el Supervisor quien, además, deberá verificar que la cota de cualquier punto de la base conformada y compactada no varíe en más

de 10 mm. de la proyectada.

Así mismo, deberá efectuar las siguientes comprobaciones:

**Compactación**

Las determinaciones de la densidad se efectuarán cuando menos una vez por cada 250 m2 y los tramos por aprobar se definirán sobre la base de un mínimo de 6 medidas de densidad, exigiéndose que los valores individuales (Di) sean iguales o mayores al 100% de la densidad máxima obtenida en el ensayo Proctor Modificado (De).

$$Di > De$$

La humedad de trabajo no debe variar en ± 1,5 % respecto del Óptimo Contenido de Humedad obtenido con el ensayo Proctor Modificado. En caso de no cumplirse estos requisitos se rechazará el tramo. Siempre que sea necesario, se efectuarán las correcciones por presencia de partículas gruesas, previamente al cálculo de los porcentajes de compactación.

**Espesor**

Sobre la base de los tramos escogidos para el control de la compactación, se determinará el espesor medio de la capa compactada (em), el cual no podrá ser inferior al de diseño (ed).

$$em > ed$$

Además, el valor obtenido en cada determinación individual (ei) deberá ser, como mínimo, igual al 95% del espesor de diseño, en caso contrario se rechazará el tramo controlado.

$$ei > 0{,}95\ ed$$

Todas las irregularidades que excedan las tolerancias mencionadas, así como las áreas en donde se presenten agrietamientos o segregaciones, deberán ser corregidas por el Contratista, a su cuenta, costo y riesgo, y aprobadas por el Supervisor.

**Uniformidad de la Superficie**

La uniformidad de la superficie de la obra ejecutada será comprobada, por cualquier metodología que permita determinar tanto en forma paralela como transversal, al eje de la vía, que no existan variaciones superiores a 10 mm. Cualquier diferencia que exceda esta tolerancia, así como cualquier otra falla o deficiencia que presentase el trabajo realizado, deberá ser corregida por el Contratista a su cuenta, costo y riesgo de acuerdo a las instrucciones y

aprobación del Supervisor.

**Ensayo de deflectometría sobre la base terminada**

Se requiere un estricto control de calidad tanto de los materiales como de los equipos, procedimientos constructivos y en general de todos los elementos involucrados en la puesta en obra de la subrasante. De dicho control forma parte la medición de las deflexiones que se menciona a continuación.

Una vez terminada la explanación se hará deflectometría cada 25 metros en ambos sentidos, es decir, en cada uno de los carriles, mediante el empleo de Viga Benkelman, FWD o cualquier equipo de alta confiabilidad, antes de cubrir la subrasante con la subbase o con la base granular. Se analizará la deformada o curvatura de la deflexión obtenida de acuerdo al procedimiento del dispositivo utilizado (en el caso del FWD de por lo menos tres mediciones por punto).

Los puntos de medición estarán georreferenciados con el estacado del Proyecto, de tal manera que exista una coincidencia con relación a las mediciones que se efectúen a nivel de carpeta.

Un propósito específico de la medición de deflexiones sobre la subrasante, es la determinación del módulo resiliente de la capa, con la finalidad de detectar problemas puntuales de baja resistencia por módulos resilientes inferiores al de diseño, que puedan presentarse durante el proceso constructivo, su análisis y la oportuna aplicación de los correctivos a que hubiere lugar.

Los trabajos e investigaciones antes descritos, serán efectuados por el Contratista.

El Contratista brindar protección al equipo de trabajo y el control de tránsito. Para el caso de la Viga Benkelman el Contratista proveerá un volquete operado con las siguientes características:

- Clasificación del vehículo: C2
- Peso con carga en el eje posterior: 82 kN (8.200 kg)
- Llantas del eje posterior: dimensión 10x20, 12 lonas. Presión de inflado: 0,56 MPa o 80psi. Excelente estado.

El vehículo estará a disposición hasta que sean concluidas todas las evaluaciones de deflectometría.

El Contratista garantizará que el radio de curvatura de la deformada de la Subrasante que determine en obra sea preciso, para lo cual hará la provisión del equipo idóneo para la medición de las deflexiones.

Así mismo, para la ejecución de los ensayos deflectométricos, el Contratista hará la provisión del personal técnico, papelería, equipo de viga Benkelman doble o simples, equipo FWD u otro aprobado por la Supervisión, acompañante y en general, de todos los elementos que sean requeridos para llevar a efecto satisfactoriamente los trabajos antes descritos.

Los ensayos de deflectometría serán también realizados con las mismas condiciones y exigencias en las subrasantes terminadas en secciones en terraplén. De cada tramo que el Contratista entregue a la Supervisión completamente terminado para su aprobación, deberá enviar un documento técnico con la información de deflectometría, procesada y analizada.

La Supervisión tendrá 24 horas hábiles para aprobar los ensayos presentados y de ser el caso, dictará las medidas correctivas que sean necesarias.

**UNIDAD DE MEDIDA**

La unidad de medida será el metro cuadrado (m2), aproximado al entero, de material o mezcla suministrado, colocado y compactado, y aprobado por el Supervisor, de acuerdo con lo que exija la especificación respectiva, las dimensiones que se indican en el Proyecto o las modificaciones aprobadas por el Supervisor.

No se medirán cantidades en exceso de las especificadas, ni fuera de las dimensiones de Los planos y del Proyecto, especialmente cuando ellas se produzcan por sobre excavaciones; por parte del Contratista.

**FORMA DE PAGO**

El pago se hará por metro cuadrado (m2), al respectivo precio unitario del contrato, por toda obra ejecutada de acuerdo con esta Sección, así como con la especificación respectiva y aceptada por el Supervisor.

El precio unitario deberá cubrir todos los costos de adquisición, obtención de permisos y derechos de explotación o alquiler de fuentes de materiales y canteras; obtención de permisos ambientales para la explotación de los suelos y agregados; las instalaciones provisionales; los costos de arreglo o construcción de las vías de acceso a las fuentes y canteras;

la preparación de las zonas por explotar, así como todos los costos de explotación, selección, trituración, lavado, carga, descarga y transporte dentro de las zonas de producción, almacenamiento, clasificación, desperdicios, mezcla, colocación, nivelación y compactación de los materiales utilizados; y los de extracción, bombeo, transporte del agua requerida y su distribución.

El transporte del material al punto de aplicación se pagará.

El precio unitario deberá incluir, también, los costos de ejecución de los tramos de prueba y, en general, todo costo relacionado con la correcta ejecución de la capa respectiva.

En el caso de utilización de materiales provenientes de la misma vía, el precio unitario deberá incluir su escarificación en el espesor requerido y su posterior procesamiento hasta cumplir las exigencias de la respectiva especificación. Tanto si los materiales provienen de la misma vía, como si son transportados, el precio unitario deberá incluir el costo del agua requerido, la aplicación y mezcla del producto estabilizante, así como el suministro, almacenamiento, desperdicios, cargas, transporte, descargas y aplicación del producto requerido para la estabilización y curado, según lo exija la respectiva especificación y, en general, todo costo relacionado con la correcta ejecución de los trabajos especificados.

Según las pruebas realizadas a las canteras consideradas para este proyecto se recomienda que el material granular para la conformación de la sub base, será de la cantera de Tres Tomas.

**01.03.05.02 BASE GRANULAR e= 0.40m**

**01.03.05.02.02 BASE DE AFIRMADO e=0.40m DESDE EK 0+000 HASTA 11+174.06**

**DESCRIPCIÓN**

Este trabajo consiste en la construcción de una capa de material granular como es el afirmado e=0.40 m, que pueden ser obtenidos en forma natural o procesados, con inclusión o no de algún tipo de estabilizador o ligante, debidamente aprobados, en este caso se colocara sobre una subrasante. Incluye el suministro, transporte, colocación y compactación de material de conformidad con los alineamientos, pendientes y dimensiones indicados en los planos del Proyecto y aprobados por el Supervisor, y teniendo en cuenta lo establecido en el Plan de Manejo Ambiental. Incluye así mismo el aprovisionamiento de los estabilizadores.

**MATERIALES**

Los materiales para la construcción de la base granular deberán satisfacer los requisitos.

Además, deberán ajustarse a las siguientes especificaciones de calidad:

**a) Granulometría**

La composición final de los materiales presentará una granulometría continua, bien graduada y según los requerimientos de una de las franjas granulométricas. Para las zonas con altitud iguales o mayores 3000 msnm. Se deberá seleccionar la gradación A.

**Tabla 08**

*Requerimientos granulométricos para base granular*

| Tamiz | Porcentaje que pasa en peso | | | |
|---|---|---|---|---|
| | Gradación A | Gradación B | Gradación C | Gradación D |
| 50 mm. (2") | 100 | 100 | | |
| 25 mm. (1") | | 75-95 | 100 | 100 |
| 9,5 mm.($^3/_8$") | 30-65 | 40-75 | 50-85 | 60-100 |
| 4,75 mm. (N.º 4) | 25-55 | 30-60 | 35-65 | 50-85 |
| 2,0 mm. (N.º 10) | 15-40 | 20-45 | 25-50 | 40-70 |
| 425 µm. (N.º 40) | 8-20 | 15-30 | 15-30 | 25-45 |
| 75 µm. (N.º 200) | 2-8 | 5-15 | 5-15 | 8-15 |

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

El material de Base Granular deberá cumplir además con las siguientes características físico-mecánicas y químicas.

**Tabla 09**

*Valor Relativo de Soporte, CBR*

| | | |
|---|---|---|
| Valor Relativo de Soporte, CBR (1) | Tráfico en ejes equivalentes ($<10^6$) | Mín. 80% |
| | Tráfico en ejes equivalentes ($\geq 10^6$) | Mín. 100% |

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

La franja por utilizar será la establecida en los documentos del Proyecto y aprobada por el Supervisor.

**b) Agregado Grueso**

Se denominará así a los materiales retenidos en la malla Nº 4, que podrán provenir de fuentes naturales, procesados o combinación de ambos.

**Tabla 10**

*Requerimiento agregado grueso*

| Ensayo | Norma MTC | Norma ASTM | Norma AASHTO | Requerimientos Altitud | |
|---|---|---|---|---|---|
| | | | | < 3.000 msnm | ≥ 3.000 msnm |
| Partículas con una cara fracturada | MTC E 210 | D 5821 | | 80% mín. | 80% mín. |
| Partículas con dos caras fracturadas | MTC E 210 | D 5821 | | 40% mín. | 50% mín. |
| Abrasión Los Ángeles | MTC E 207 | C 131 | T 96 | 40% máx. | 40% máx. |
| Partículas chatas y alargadas (1) | | D 4791 | | 15% máx. | 15% máx. |
| Sales solubles totales | MTC E 219 | D 1888 | | 0,5% máx. | 0,5% máx. |
| Durabilidad al sulfato de magnesio | MTC E 209 | C 88 | T 104 | | 18% máx. |

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

**c) Agregado Fino**

Se denominará así a los materiales que pasan la malla N° 4, que podrán provenir de fuentes naturales, procesados o combinación de ambos.

**Tabla 11**

*Requerimientos agregado fino*

| Ensayo | Norma | Requerimientos Altitud | |
|---|---|---|---|
| | | <3.000 msnm | ≥3.000 msnm |
| Índice plástico | MTC E 111 | 4% máx. | 2% mín. |
| Equivalente de arena | MTC E 114 | 35% mín. | 45% mín. |
| Sales solubles | MTC E 219 | 0,5% máx. | 0,5% máx. |
| Durabilidad al sulfato de magnesio | MTC E 209 | ----- | 15% |

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

**Equipo**

El Contratista deberá mantener en los sitios de las obras los equipos adecuados a las características y magnitud de las obras y en la cantidad requerida, de manera que se garantice su ejecución de acuerdo con los planos, especificaciones de construcción, programas de trabajo y dentro de los plazos previstos.

El Contratista deberá mantener los equipos de construcción en óptimas condiciones, con el objeto de evitar demoras o interrupciones debidas a danos en los mismos. Las máquinas, equipos y herramientas manuales deberán ser de buen diseño y construcción teniendo en cuenta los principios de la seguridad, la salud y la ergonomía en lo que atañe a su diseño.

Deben tener como edad máxima la que corresponde a su vida útil. La mala calidad de los equipos o los daños que ellos puedan sufrir, no serán causa que exima al Contratista del cumplimiento de sus obligaciones.

El Supervisor se reserva el derecho de exigir el reemplazo o reparación, por cuenta del Contratista, de aquellos equipos que a su juicio sean inadecuados o ineficientes o que por sus características no se ajusten a los requerimientos de seguridad o sean un obstáculo para el cumplimiento de lo estipulado en los documentos del contrato.

El mantenimiento o la conservación adecuada de los equipos, maquinaria y herramientas, no solo es básico para la continuidad de los procesos de producción y para un resultado satisfactorio y óptimo de las operaciones a realizarse, sino que también es de suma importancia en cuanto a la prevención de los accidentes.

Por lo cual es responsabilidad del Contratista:

- Establecer un sistema periódico de inspección que pueda prever y corregir a tiempo cualquier deficiencia.
- Programar una política de mantenimiento preventivo sistemático.
- Llevar un registro de inspección y renovación de equipos, maquinarias y herramientas, lo cual pondrá a disposición del Supervisor en el momento que sea requerido.

El Contratista asume la responsabilidad del cumplimiento del plan de mantenimiento y de los registros levantados al respecto. Emitirá informes periódicos y especiales a la Supervisión, quien dará las recomendaciones del caso si los hubiere y verificará posteriormente el cumplimiento de las recomendaciones dadas las condiciones de operación de los equipos deberán ser tales, que no se presenten emisiones de sustancias nocivas que sobrepasen los límites permisibles de contaminación de los recursos naturales, de acuerdo con las disposiciones ambientales vigentes.

Toda maquinaria o equipo que de alguna forma puedan producir peligro deberá cumplir, entre otros, con los requisitos siguientes:

- Estar firmemente instaladas, ser fuertes y resistentes al fuego y a la corrosión.
- Que no constituyan un riesgo en sí, es decir que estén libres de astillas, bordes ásperos, afilados o puntiagudos.
- Prevengan el acceso a la zona de peligro durante las operaciones.
- Que no ocasionen molestias al operador en cuanto a visión y maniobrabilidad, y que estén

provistos de casetas de protección contra la luz solar y lluvias.

Los equipos deberán tener los dispositivos de señalización necesarios para prevenir accidentes de trabajo. El Contratista debe solicitar al fabricante las instrucciones adecuadas para una utilización segura, las cuales deben ser proporcionadas a los trabajadores que hagan uso de ellos. Deberá así mismo, establecerse un reglamento y las sanciones respectivas a fin de evitar que los operarios sean distraídos en el momento que ejecuten su trabajo. Las máquinas y equipos accionados a motor deberán estar provistos de dispositivos adecuados, de accesos inmediatos y perfectamente visibles, para que el operario pueda detenerlos rápidamente en caso de urgencia y prevenir toda puesta en marcha intempestiva.

Además, se proveerá a quienes utilicen las máquinas y equipos, de la protección adecuada y cuando sea necesario de protección auditiva.

**Requerimientos de construcción**

Definida la Fórmula de Trabajo, la granulometría deberá estar dentro del rango dado por el huso granulométrico adoptado.

**Preparación de la superficie existente**

El Supervisor sólo autorizará la colocación de material de base granular cuando la superficie sobre la cual debe asentarse tenga la densidad especificada, esté acorde a los planos del Proyecto y aprobada por el Supervisor. Además, deberá estar concluida la construcción de las cunetas, desagües, filtros y otras obras necesarias.

**Tramo de Prueba**

Antes de iniciar los trabajos de cada partida, el Contratista emprenderá una fase de ejecución de tramos de prueba, para verificar el estado y comportamiento de los equipos y determinar, en secciones de ensayo, el método definitivo de preparación, transporte, colocación y compactación de los materiales, de manera que se cumplan los requisitos de cada especificación.

Para tal efecto, construirá uno o varios tramos de prueba de ancho y longitud aprobados por el Supervisor y en ellas se probarán el equipo y el plan de trabajo.

El Supervisor tomará muestras de las capas de prueba en cada caso y las ensayará para determinar su conformidad con las condiciones especificadas de densidad, granulometría y demás requisitos.

En el caso de que los ensayos indiquen que los materiales no se ajustan a dichas condiciones, el Contratista deberá efectuar las correcciones requeridas a los sistemas de preparación, extensión y compactación, hasta que ellos resulten satisfactorios para el Supervisor, debiendo repetirse los tramos de prueba cuantas veces sea necesario.

Bajo estas condiciones, si el tramo de prueba defectuoso ha sido realizado sobre un sector de la carretera proyectada, todo el material colocado será totalmente removido y transportado al lugar de disposición final de materiales excedentes, según lo indique el Supervisor a cuenta, costo y riesgo del Contratista.

**Transporte y colocación de material**

El Contratista deberá transportar y colocar el material, de tal modo que no se produzca segregación, ni se cause daño o contaminación en la superficie existente.

Cualquier contaminación, deberá ser subsanada antes de proseguir el trabajo. La colocación del material sobre la capa subyacente, se hará en una longitud que no sobrepase

1.500 m de las operaciones de mezcla, conformación y compactación del material de la subbase granular.

Durante esta labor se tomarán las medidas para el manejo del material de sub-base, evitando los derrames del material y por ende la contaminación de fuentes de agua, suelos y flora cercana al lugar.

**Distribución y mezcla del material**

El material será dispuesto en un carril de la vía, de tal forma que permita el tránsito por el otro carril. Si la subrasante granular se va a construir mediante combinación de varios materiales, éstos serán dispuestos de igual modo, intercalando dichos materiales según su dosificación, los cuales luego serán mezclados hasta lograr su homogeneidad.

En caso de que sea necesario humedecer o airear el material para lograr la humedad óptima de compactación, el Contratista empleará el equipo adecuado y aprobado, de manera que no perjudique la capa subyacente y deje el material con una humedad uniforme. Este, después de mezclado, se extenderá en una capa de espesor uniforme que permita obtener el espesor y grado de compactación exigidos, de acuerdo con los resultados obtenidos en la fase de prueba.

Durante esta actividad se tomarán las medidas para el extendido y mezcla del material, evitando los derrames de material que pudieran contaminar fuentes de agua, suelos y flora cercana al lugar.

**Compactación**

Una vez que el material de la subrasante granular tenga la humedad apropiada, se conformará y compactará con el equipo aprobado por el Supervisor, hasta alcanzar la densidad especificada.

Aquellas zonas que, por su reducida extensión, su pendiente o su proximidad a otras obras, no permitan la utilización del equipo que normalmente se utiliza, se compactarán por los medios adecuados para el caso, en forma tal que las densidades que se alcancen no sean inferiores a las obtenidas en el resto de la capa

La compactación se efectuará longitudinalmente, comenzando por los bordes exteriores y avanzando hacia el centro, traslapando en cada recorrido un ancho no menor de un tercio del ancho del rodillo compactador. En las zonas peraltadas, la compactación se hará del borde inferior al superior.

No se extenderá ninguna capa de material, mientras no se haya realizado los controles topográficos y de compactación aprobados por el Supervisor en la capa precedente.

Tampoco se ejecutará la subbase granular durante precipitaciones pluviales o cuando la temperatura ambiente sea inferior a 6°C.

En esta actividad se tomarán los cuidados necesarios para evitar derrames de material que puedan contaminar las fuentes de agua, suelo y flora cercana al lugar de compactación.

También, resultan válidas las limitaciones expuestas en dicha Subsección.

**Apertura al tránsito**

Sobre las capas en ejecución se prohibirá la acción de todo tipo de tránsito mientras no se haya completado la compactación. Si ello no es factible, el tránsito que necesariamente deba pasar sobre ellas, se distribuirá de forma que no se concentren ahuellamientos sobre la superficie. El Contratista deberá responder por los daños producidos por esta causa, debiendo proceder a la reparación de los mismos con arreglo a las indicaciones del Supervisor.

## Conservación

Si después de aceptada la subrasante granular, el Contratista demora por cualquier motivo la construcción de la capa inmediatamente superior, deberá reparar, a su cuenta, costo y riesgo, todos los daños en la subrasante y restablecer el mismo estado en que se aceptó.

## Aceptación de los trabajos

**a) Controles**

Durante la ejecución de los trabajos, el Supervisor efectuará los siguientes controles principales:

- Verificar la implementación para cada fase de los trabajos
- Verificar el estado y funcionamiento de todo el equipo aprobado por el supervisor y empleado por el Contratista.
- Comprobar que los materiales cumplen con los requisitos de calidad Supervisar la correcta aplicación del método de trabajo aceptado como resultado de los tramos de prueba.
- Ejecutar ensayos de compactación.
- Verificar la densidad de las capas compactadas efectuando la corrección previa por partículas de tamaño superior al máximo especificado, siempre que ello sea necesario. Este control se realizará en el espesor de capa realmente construida.
- Tomar medidas para determinar espesores, levantar perfiles y comprobar la uniformidad de la superficie granular mediante controles del IRI con equipos previamente definidos y calibrados.
- Vigilar la regularidad en la producción de los agregados de acuerdo con los programas de trabajo.
- Vigilar la ejecución de las consideraciones ambientales incluidas en esta sección para la ejecución de obras.

**Tabla 12**

*Ensayos y frecuencias*

| Material o Producto | Propiedades y Características | Método de ensayo | Norma ASTM | Norma AASHTO | Frecuencia (1) | Lugar de Muestreo |
|---|---|---|---|---|---|---|
| Base Granular | Granulometría | MTC E 204 | C 136 | T 27 | 750 m³ | Cantera (2) y pista |
| | Límite líquido | MTC E 110 | D 4318 | T 89 | 750 m³ | Pista |
| | Índice de plasticidad | MTC E 111 | D 4318 | T 90 | 750 m³ | Pista |
| | Abrasión Los Ángeles | MTC E 207 | C131 | T 96 | 2.000 m³ | Cantera (2) |
| | Equivalente de Arena | MTC E 114 | D 2419 | T 176 | 2.000 m³ | Pista |
| | Sales Solubles | MTC E 219 | | | 2.000 m³ | Cantera (2) |
| | CBR | MTC E 132 | D 1883 | T 193 | 2.000 m³ | Cantera (2) |
| | Partículas fracturadas | MTC E 210 | D 5821 | | 2.000 m³ | Cantera (2) y pista |
| | Partículas Chatas y Alargadas | | D 4791 | | 2.000 m³ | Cantera (2) y pista |
| | Durabilidad al Sulfato de Magnesio | MTC E 209 | C 88 | T 104 | 2.000 m³ | Cantera (2) |
| | Densidad y Humedad | MTC E 115 | D 1557 | T180 | 750 m³ | Pista |
| | Compactación | MTC E 117<br>MTC E 124 | D 4718<br>D 2922 | T191<br>T238 | 250 m³ | Pista |

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

**Calidad de los materiales**

De cada procedencia de los materiales y para cualquier volumen previsto se tomarán cuatro muestras para los ensayos y frecuencias

**Calidad del trabajo terminado**

La capa terminada deberá presentar una superficie uniforme y ajustarse a las rasantes y pendientes establecidas. La distancia entre el eje del Proyecto y el borde de la capa no podrá ser inferior a la señalada en los planos o la definida por el Supervisor quien, además, deberá verificar que la cota de cualquier punto de la base conformada y compactada, no varíe en más de 10 mm. de la proyectada.

Así mismo, deberá efectuar las siguientes comprobaciones:

**a) Compactación**

Las determinaciones de la densidad se efectuarán cuando menos una vez por cada 250 m2 y los tramos por aprobar se definirán sobre la base de un mínimo de 6 medidas de densidad, exigiéndose que los valores individuales (Di) sean iguales o mayores al 100% de la densidad máxima obtenida en el ensayo Proctor Modificado (De).

$$Di>De$$

La humedad de trabajo no debe variar en ± 1,5 % respecto del Óptimo Contenido de

Humedad obtenido con el ensayo Proctor Modificado. En caso de no cumplirse estos requisitos se rechazará el tramo. Siempre que sea necesario, se efectuarán las correcciones por presencia de partículas gruesas, previamente al cálculo de los porcentajes de compactación.

**b) Espesor**

Sobre la base de los tramos escogidos para el control de la compactación, se determinará el espesor medio de la capa compactada (em), el cual no podrá ser inferior al de diseño (ed).

$$em > ed$$

Además, el valor obtenido en cada determinación individual (ei) deberá ser, como mínimo, igual al 95% del espesor de diseño, en caso contrario se rechazará el tramo controlado.

$$ei > 0{,}95\ ed$$

Todas las irregularidades que excedan las tolerancias mencionadas, así como las áreas en donde se presenten agrietamientos o segregaciones, deberán ser corregidas por el Contratista, a su cuenta, costo y riesgo, y aprobadas por el Supervisor.

**c) Uniformidad de la Superficie**

La uniformidad de la superficie de la obra ejecutada será comprobada, por cualquier metodología que permita determinar tanto en forma paralela como transversal, al eje de la vía, que no existan variaciones superiores a 10 mm. Cualquier diferencia que exceda esta tolerancia, así como cualquier otra falla o deficiencia que presentase el trabajo realizado, deberá ser corregida por el Contratista a su cuenta, costo y riesgo de acuerdo a las instrucciones y aprobación del Supervisor.

**Ensayo de deflectometría sobre la base terminada**

Se requiere un estricto control de calidad tanto de los materiales como de los equipos, procedimientos constructivos y en general de todos los elementos involucrados en la puesta en obra de la subrasante. De dicho control forma parte la medición de las deflexiones que se menciona a continuación.

Una vez terminada la explanación se hará deflectometría cada 25 metros en ambos sentidos, es decir, en cada uno de los carriles, mediante el empleo de Viga Benkelman, FWD o cualquier equipo de alta confiabilidad, antes de cubrir la subrasante con la subbase o con la base granular. Se analizará la deformada o curvatura de la deflexión obtenida de acuerdo al

procedimiento del dispositivo utilizado (en el caso del FWD de por lo menos tres mediciones por punto).

Los puntos de medición estarán georreferenciados con el estacado del Proyecto, de tal manera que exista una coincidencia con relación a las mediciones que se efectúen a nivel de carpeta.

Un propósito específico de la medición de deflexiones sobre la subrasante, es la determinación del módulo resiliente de la capa, con la finalidad de detectar problemas puntuales de baja resistencia por módulos resilientes inferiores al de diseño, que puedan presentarse durante el proceso constructivo, su análisis y la oportuna aplicación de los correctivos a que hubiere lugar.

Los trabajos e investigaciones antes descritos, serán efectuados por el Contratista.

El Contratista brindar protección al equipo de trabajo y el control de tránsito. Para el caso de la Viga Benkelman el Contratista proveerá un volquete operado con las siguientes características:

- Clasificación del vehículo: C2
- Peso con carga en el eje posterior: 82 kN (8.200 kg)
- Llantas del eje posterior: dimensión 10x20, 12 lonas. Presión de inflado: 0,56 MPa o 80psi. Excelente estado.

El vehículo estará a disposición hasta que sean concluidas todas las evaluaciones de deflectometría.

El Contratista garantizará que el radio de curvatura de la deformada de la Subrasante que determine en obra sea preciso, para lo cual hará la provisión del equipo idóneo para la medición de las deflexiones.

Así mismo, para la ejecución de los ensayos deflectométricos, el Contratista hará la provisión del personal técnico, papelería, equipo de viga Benkelman doble o simples, equipo FWD u otro aprobado por la Supervisión, acompañante y en general, de todos los elementos que sean requeridos para llevar a efecto satisfactoriamente los trabajos antes descritos.

Los ensayos de deflectometría serán también realizados con las mismas condiciones

y exigencias en las subrasantes terminadas en secciones en terraplén. De cada tramo que el Contratista entregue a la Supervisión completamente terminado para su aprobación, deberá enviar un documento técnico con la información de deflectometría, procesada y analizada.

La Supervisión tendrá 24 horas hábiles para aprobar los ensayos presentados y de ser el caso, dictará las medidas correctivas que sean necesarias.

**METODO DE MEDICION**

La unidad de medida será el metro cuadrado (m2), aproximado al entero, de material o mezcla suministrado, colocado y compactado, y aprobado por el Supervisor, de acuerdo con lo que exija la especificación respectiva, las dimensiones que se indican en el Proyecto o las modificaciones aprobadas por el Supervisor.

No se medirán cantidades en exceso de las especificadas, ni fuera de las dimensiones de Los planos y del Proyecto, especialmente cuando ellas se produzcan por sobre excavaciones; por parte del Contratista.

**FORMA DE PAGO**

El pago se hará por metro cuadrado (m2), al respectivo precio unitario del contrato, por toda obra ejecutada de acuerdo con esta Sección, así como con la especificación respectiva y aceptada por el Supervisor.

El precio unitario deberá cubrir todos los costos de adquisición, obtención de permisos y derechos de explotación o alquiler de fuentes de materiales y canteras; obtención de permisos ambientales para la explotación de los suelos y agregados; las instalaciones provisionales; los costos de arreglo o construcción de las vías de acceso a las fuentes y canteras; la preparación de las zonas por explotar, así como todos los costos de explotación, selección, trituración, lavado, carga, descarga y transporte dentro de las zonas de producción, almacenamiento, clasificación, desperdicios, mezcla, colocación, nivelación y compactación de los materiales utilizados; y los de extracción, bombeo, transporte del agua requerida y su distribución.

El transporte del material al punto de aplicación se pagará.

El precio unitario deberá incluir, también, los costos de ejecución de los tramos de prueba y, en general, todo costo relacionado con la correcta ejecución de la capa respectiva.

En el caso de utilización de materiales provenientes de la misma vía, el precio unitario deberá incluir su escarificación en el espesor requerido y su posterior procesamiento hasta cumplir las exigencias de la respectiva especificación. Tanto si los materiales provienen de la misma vía, como si son transportados, el precio unitario deberá incluir el costo del agua requerido, la aplicación y mezcla del producto estabilizante, así como el suministro, almacenamiento, desperdicios, cargas, transporte, descargas y aplicación del producto requerido para la estabilización y curado, según lo exija la respectiva especificación y, en general, todo costo relacionado con la correcta ejecución de los trabajos especificados.

Según las pruebas realizadas a las canteras consideradas para este proyecto se recomienda que el material granular para la conformación de la base, será de la cantera de Tres Tomas.

## 01.03.06 SEÑALIZACIÓN

### 01.03.06.01 HITO KILOMÉTRICO

#### DESCRIPCIÓN

Este trabajo consiste en el suministro, transporte, manejo, almacenamiento, pintura e instalación de postes indicativos del kilometraje en los sitios establecidos en los planos del proyecto o indicados por el Supervisor.

El diseño del poste deberá estar de acuerdo con lo estipulado en el "Manual de Dispositivos de Control de Tránsito Automotor para Calles y Carreteras" del MTC y demás normas complementarias.

#### MATERIALES

**Concreto**

- Los postes serán prefabricados y se elaborarán con un concreto reforzado según planos.

**Refuerzo**

- La armadura de refuerzo cumplirá con lo indicado en los planos y documentos del proyecto y el "Manual de Dispositivos de Control de Tránsito Automotor para Calles y Carreteras". Los postes serán reforzados con acero que cumpla las exigencias y especificaciones.

**Pintura**

- El color de los postes será blanco y se pintarán con esmalte sintético. Su contenido

informativo en bajorrelieve se hará utilizando esmalte negro y caracteres del alfabeto serie C y letras de las dimensiones mostradas en el “Manual de Dispositivos de Control del Tránsito para Calles y Carreteras del MTC”.

## EQUIPO

- Se deberá disponer de todos los equipos necesarios para la correcta y oportuna ejecución de los trabajos especificados.

## REQUERIMIENTOS DE CONSTRUCCIÓN

### Fabricación de los postes

Los postes se fabricarán fuera del sitio de instalación, con un concreto y una armadura que satisfagan los requisitos de calidad establecidos en concreto refuerzo, con la forma y dimensiones establecidas para el poste de kilometraje en el “Manual de Dispositivos de Control del Tránsito para Calles y Carreteras del MTC”. La pintura del poste se realizará con productos acordes con los colores establecidos para el poste.

### Ubicación de los postes

Los postes se colocarán en los sitios que indiquen los planos del proyecto o señale el Supervisor, como resultado de mediciones efectuadas por el eje longitudinal de la carretera.

La colocación en el caso de carreteras de una pista bidimensional se hará en el costado derecho de la vía para los kilómetros pares y en el izquierdo para el kilometraje impar. En caso de autopistas se colocará un poste de kilometraje en cada pista y en cada kilómetro. Los postes se colocarán a una distancia del borde de la berma de cuando menos un metro y medio (1,50 m), debiendo quedar resguardado de impactos que puedan efectuar los vehículos.

### Excavación

Las dimensiones de la excavación para anclar los postes en el suelo deberán ser las indicadas en el Manual de Dispositivos de Control de Tránsito para Calles y Carreteras del MTC.

### Colocación y anclaje del poste

El poste se colocará verticalmente de manera que su leyenda quede perpendicular al eje de la vía. El espacio entre el poste y las paredes de la excavación se rellenará con el concreto de anclaje.

### Limitaciones en la ejecución

No se permitirá la colocación de postes de kilometraje en instantes de lluvia, ni cuando haya agua retenida en la excavación o el fondo de ésta se encuentre demasiado húmedo, a juicio del Supervisor.

Toda agua retenida en la excavación deberá ser retirada por el Contratista antes de colocar el poste y su anclaje.

**Aceptación de los Trabajos Controles**

Durante la ejecución de los trabajos, el Supervisor efectuará los siguientes controles:

- Verificar el estado y funcionamiento del equipo empleado por el Contratista.
- Comprobar que los materiales y mezclas satisfagan las exigencias de la presente especificación.
- Verificar que los postes tengan las dimensiones correctas y que su instalación esté conforme con los planos y las exigencias de esta especificación Contar, para efectos de pago, los postes correctamente elaborados e instalados.

**Calidad de los materiales**

El Supervisor no admitirá tolerancias para los diversos materiales que conforman los postes y su anclaje.

**Excavación**

La excavación no podrá tener dimensiones inferiores a las establecidas, El Supervisor verificará, además, que su fondo sea horizontal y se encuentre debidamente compactado, de manera que proporcione apoyo uniforme al poste.

**Instalación del poste**

Los postes de kilometraje sólo serán aceptados por el Supervisor, si su instalación está en un todo de acuerdo con lo que se indica en la presente especificación.

**Dimensiones del poste**

No se admitirán postes cuyas dimensiones sean inferiores a las indicadas en el "Manual de Dispositivos de Control para Tránsito en Calles y Carreteras del MTC" para el poste de kilometraje. Tampoco se aceptarán si una o más de sus dimensiones exceden las indicadas en el manual en más de dos centímetros (2 cm). Todas las deficiencias que excedan las tolerancias mencionadas, deberán ser corregidas por el Contratista, a su costo, a satisfacción del Supervisor.

**UNIDAD DE MEDIDA**

Los postes de kilometraje se medirán por Unidad (Und) instalada de acuerdo con los documentos del proyecto y la presente especificación, debidamente aceptada por el Supervisor.

**FORMA DE PAGO**

El pago estará en función al Sistema de Contratación y de acuerdo a lo estipulado en el Reglamento de la Ley de Contrataciones del Estado.

**01.03.06.02 SEÑALES PREVENTIVAS**

**DESCRIPCIÓN**

Este trabajo consiste en la colocación de dispositivos de control vertical permanente, con la finalidad de advertir al usuario sobre ciertas condiciones de la vía, que impliquen peligro y requieran precaución, de acuerdo con estas especificaciones y en conformidad con el Proyecto, en el marco del Manual de Dispositivos de Control del Tránsito Automotor para Calles y Carreteras vigente.

**MATERIALES**

Los materiales a emplear en las señales serán los que indiquen los planos y documentos del Expediente Técnico. El fondo de la señal será con material retro reflectivo color amarillo de alta intensidad prismático (Tipo III). El símbolo y el borde del marco se pintarán en color negro con el sistema de serigrafía. Los materiales serán concordantes con los siguientes requerimientos para los paneles, material retro reflectivo y cimentación.

**Requerimientos Para Los Paneles Resina Poliéster**

Los paneles de resina poliéster serán reforzados con fibra de vidrio, acrílico y estabilizador ultravioleta. El panel deberá ser plano y completamente liso en una de sus caras para aceptar en buenas condiciones el material adhesivo de la lámina retro reflectiva.

El panel debe estar libre de fisuras, perforaciones, intrusiones extrañas, arrugas y curvatura que afecten su rendimiento, altere las dimensiones del panel o afecte su nivel de servicio.

La cara frontal deberá tener una textura similar al vidrio.

Los paneles de señales preventivas serán de acuerdo al diseño, forma y refuerzo que se indique en los planos y documentos del proyecto.

**UNIDAD DE MEDIDA**

Los paneles de señales preventivas se medirán por Unidad (Und.)

**FORMA DE PAGO**

El pago estará en función al Sistema de Contratación y de acuerdo a lo estipulado en el Reglamento de la Ley de Contrataciones del Estado.

**01.03.06.03 SEÑALES INFORMATIVAS**

**DESCRIPCIÓN**

Este trabajo consiste en la colocación de dispositivos de control vertical permanente, con la finalidad de guiar al usuario hacia el lugar de destino, identificar rutas, puntos notables, sentidos de circulación, servicios auxiliares y otros, de acuerdo con estas especificaciones y en conformidad con el Proyecto, en el marco del Manual de Dispositivos de Control del Tránsito Automotor para Calles y Carreteras vigente.

Los paneles de señales informativas se utilizarán para guiar al conductor de un vehículo a través de una determinada ruta, dirigiéndolo al lugar de su destino. Tiene también por objeto identificar puntos notables tales como: ciudades, ríos, lugares históricos, etc. y la información que ayude al usuario en el uso de la vía y en la conservación de los recursos naturales, arqueológicos humanos y culturales que se hallen dentro del entorno vial.

Se utilizan para indicar a los usuarios las limitaciones o restricciones que gobiernan el uso de la vía y cuyo incumplimiento constituye una violación al Reglamento de la Circulación Vehicular.

Los paneles que servirán de sustento para las señales informativas serán uniformes para un proyecto, es decir todos los paneles serán del mismo tipo de material y de una sola pieza. Los paneles de señales con dimensión horizontal mayor que dos metros cincuenta (2,50m) podrán estar formados por varias piezas modulares uniformes de acuerdo al diseño que se indique en los planos y documentos del proyecto. No se permitirá en ningún caso traslapes, uniones, soldaduras ni añadiduras en cada panel individual.

La forma, dimensiones, colocación y ubicación a utilizar en la fabricación de las señales informativas se hallan en el Manual de Dispositivos de Control de Tránsito Automotor para Calles y Carreteras del MTC y la relación de señales a instalar será la indicada en los planos y documentos del Expediente Técnico.

La fabricación, materiales, exigencias de calidad, pruebas, ensayos e instalación.

**MATERIALES**

Los materiales para emplear en las señales serán los que indiquen los planos y documentos del Expediente Técnico. El fondo de la señal de ser el caso será con material retro reflectivo de color verde, y las letras y marco de color blanco, ambos de grado alta intensidad prismático (Tipo III). Las letras serán recortadas en una sola pieza, no se aceptarán letras formadas por segmentos.

La parte posterior de todos los paneles se pintará con dos manos de pintura esmalte color negro, la cual deberá de cumplir con lo establecido en las Especificaciones Técnicas de Calidad de Materiales para Uso en Señalización de Obras Viales del MTC.

El panel de la señal será reforzado con ángulos y platinas, según se detalla en los planos.

Estos refuerzos estarán embebidos en la fibra de vidrio y formarán rectángulos de 0.65 x 0.65 m como máximo.

Los materiales serán concordantes con algunos de los siguientes:

**Paneles de Resina Poliéster**

Los paneles de resina poliéster serán reforzados con fibra de vidrio, acrílico y estabilizador ultravioleta. El panel deberá ser plano y completamente liso en una de sus caras para aceptar en buenas condiciones el material adhesivo de la lámina retro reflectiva. Los refuerzos serán de un solo tipo (ángulos o platinas)

El panel debe estar libre de fisuras, perforaciones, intrusiones extrañas, arrugas y curvatura que afecten su rendimiento, altere las dimensiones del panel o afecte su nivel de servicio.

La cara frontal deberá tener una textura similar al vidrio.

Los paneles de señales informativas de acuerdo al diseño, forma y refuerzo que se indique en los planos y documentos del proyecto.

**METODO DE MEDICIÓN**

Los paneles de señales informativas se medirán unidades (Und.)

**FORMA DE PAGO**

El pago estará en función al Sistema de Contratación y de acuerdo a lo estipulado en el Reglamento de la Ley de Contrataciones del Estado.

**01.03.06.04 SEÑALES REGLAMENTARIAS**

**DESCRIPCIÓN**

Este trabajo consiste en la colocación de dispositivos de control vertical permanente, con la finalidad de indicar al usuario las limitaciones o restricciones que gobiernan el uso de la vía, de acuerdo con estas especificaciones y en conformidad con el Proyecto, en el marco del Manual de Dispositivos de Control del Tránsito Automotor para Calles y Carreteras vigente.

**MATERIALES**

Se destacan por tener forma circular con borde rojo y fondo blanco. También las hay en color azul con borde rojo o sin él. Las más comunes son las que indican los límites de velocidad o las que indicar los límites de altura para un camión.

**Requerimientos Para Los Paneles de Resina Poliéster**

Los paneles de resina poliéster serán reforzados con fibra de vidrio, acrílico y estabilizador ultravioleta. El panel deberá ser plano y completamente liso en una de sus caras para aceptar en buenas condiciones el material adhesivo de la lámina retro reflectiva

El panel debe estar libre de fisuras, perforaciones, intrusiones extrañas, arrugas y curvatura que afecten su rendimiento, altere las dimensiones del panel o afecte su nivel de servicio.

La cara frontal deberá tener una textura similar al vidrio.

Los paneles de señales reglamentarias serán de acuerdo al diseño, forma y refuerzo que se indique en los planos y documentos del proyecto.

**UNIDAD DE MEDICIÓN**

Los paneles de señales preventivas se medirán por Unidad (Und)

**FORMA DE PAGO**

El pago estará en función al Sistema de Contratación y de acuerdo a lo estipulado en el Reglamento de la Ley de Contrataciones del Estado.

**01.03.07 ENSAYOS**

**01.03.07.01 DENSIDAD DE CAMPO**

**DESCRIPCIÓN**

Esta partida comprende la ejecución de ensayos de densidad de campo para el control de calidad de los trabajos de compactación en:

- Subrasante
- Subbase
- Base Granular
- Rellenos Estructurales De Alcantarillas
- Terraplenes

Los ensayos se realizarán con la finalidad de verificar que el material colocado y compactado en obra alcance el porcentaje de densidad especificado en el expediente técnico (generalmente ≥ 95% del Proctor Modificado o el valor indicado en planos y especificaciones).

**UNIDAD DE MEDIDA**

La medición se realizará por unidad (und) de ensayo de densidad de campo efectivamente ejecutado, aprobado por la supervisión y registrado en los formatos de control de calidad.

**FORMA DE PAGO**

El pago se efectuará por unidad (und) de ensayo de densidad de campo ejecutado, medido y aprobado por la supervisión.

**01.03.07.02 CBR**

**DESCRIPCIÓN**

Esta partida comprende la ejecución de ensayos CBR (California Bearing Ratio) en laboratorio, para el control de calidad de los materiales que conformarán la estructura de la vía, tales como:

- Subrasante
- Subbase
- Base Granular
- Material De Préstamo
- Material Seleccionado Para Rellenos

Los ensayos se realizarán con la finalidad de verificar que los materiales cumplan con la capacidad de soporte especificada en el expediente técnico, de acuerdo con los valores

mínimos de CBR exigidos para cada capa estructural. El procedimiento se ejecutará conforme a las normas técnicas vigentes del MTC y normas ASTM o AASHTO aplicables.

**UNIDAD DE MEDIDA**

La medición se realizará por unidad (und) de ensayo CBR completo ejecutado en laboratorio, aprobado por la supervisión y sustentado con el respectivo informe técnico.

**FORMA DE PAGO**

El pago se efectuará por unidad (und) de ensayo CBR ejecutado, medido y aprobado por la supervisión. El precio unitario incluirá la toma de muestra, traslado al laboratorio, preparación, ejecución del ensayo, procesamiento de resultados y emisión del informe correspondiente.

## 01.04 OBRAS DE ARTE: ALCANTARILLAS

### 01.04.01TRABAJOS PRELIMINARES

#### 01.04.01.01 TRAZO Y REPLANTEO DE ALCANTARILLAS

**DESCRIPCIÓN**

El trazo se refiere a llevar al terreno los ejes de la obra a construir con la orientación y ubicación definida en los planos.

**MÉTODO DE EJECUCIÓN**

Comprende el replanteo de todas las alcantarillas, cabezales de alcantarillas y badenes de los planos en el terreno, fijando los ejes de referencia y las estacas de nivelación. Para los efectos del trazo y replanteo de los planos, se fijarán los niveles y puntos de referencia en armonía con el plano.

Las labores de trazo y replanteo serán realizadas por el Ingeniero Residente, el que dispondrá de personal especializado. Antes de proceder al movimiento de tierras, todos los trazos requeridos deberán contar con la aprobación del Ingeniero Supervisor.

Dichos ejes deben ser aprobados antes del inicio de las excavaciones. Cualquier modificación que por las condiciones reales encontradas en el terreno al momento de la ejecución de la obra serán propuestas por el Ingeniero Supervisor, debiendo ser anotadas cuidadosamente en el Cuaderno de Obra y plasmados en los planos de replanteo.

**UNIDAD DE MEDIDA**

La medición será en metro cuadrado (m2) de Trazo y Replanteo.

**FORMA DE PAGO**

El pago de esta partida será de acuerdo con la unidad de medición y constituirá compensación completa por los trabajos descritos incluyendo mano de obra, leyes sociales, materiales, equipo, imprevistos y en general todo lo necesario para completar la partida, previa aprobación de la Supervisión.

**01.04.01.02 ELIMINACION DE DESMONTE PROVENIENTE DEL MOVIMIENTO DE TIERRAS**

**DESCRIPCIÓN**

Bajo esta partida se considera los traslados de cualquier material excedente inservible incluyendo las piedras que se salgan a la superficie, trozos de concreto demolidos, llevándolos al depósito de material excedente, indicado en los planos.

**Materiales**

A diferentes lugares y para diferentes objetos que indique el Ingeniero Supervisor, todo de acuerdo con sus correspondientes especificaciones. El material remanente inservible que sea necesario eliminar se mide desde el centro de gravedad de la fuente de origen hasta el centro de gravedad de uno de los depósitos (botaderos) señalados en el proyecto o los que indique el Supervisor. En el metrado se ha considerado el esponjamiento del material a eliminar.

**Proceso Constructivo:**

Se eliminará el material de demolición, el cual será cargado y transportado a los botaderos que indique indiquen el expediente técnico o donde indique el Ingeniero Supervisor.

**UNIDAD DE MEDIDA**

La partida será pagada por cada (m3) Metro Cúbico.

**FORMA DE PAGO**

La cantidad de metros cúbicos (m3), determinada en la forma descrita, se pagará al finalizar con la actividad de Eliminación de Material Excedente. Entendiéndose que el precio y pago serán la compensación total por mano de obra (incluidas leyes sociales), equipo, herramientas e imprevistos necesarios para completar la partida correspondiente a satisfacción del Supervisor.

**01.04.01.03 RELLENO COMPACTADO CON MATERIAL SELECCIONADO**

**DESCRIPCIÓN**

Esta partida comprende los rellenos a ejecutarse con material propio para alcanzar los niveles y formas del proyecto indicadas en los planos.

**MÉTODO DE EJECUCIÓN**

Comprende el relleno de las partes que han sido excavadas y que no han sido rellenadas con concreto, específicamente en lo que se refiere a la cimentación de las alcantarillas, cabezales y a las áreas donde se desea alcanzar los niveles requeridos.

El relleno será realizado con material producto de las excavaciones de los materiales que reúna las condiciones para el fin indicado, es decir que esté libre de materias orgánicas, debiendo ser aprobado previamente por el Ingeniero Supervisor.

Una vez culminada los trabajos de concreto se realizará el trabajo del relleno el que será compactado en capas de 0.20m de espesor, para lo cual previamente se regará el material hasta alcanzar su humedad óptima y posteriormente se procederá al compactado.

**MÉTODO DE MEDICIÓN**

La medición será en metro cúbico (m3) de Relleno Compactado c/equipo Material Propio.

**FORMA DE PAGO**

El pago de esta partida será de acuerdo con la unidad de medición y constituirá compensación completa por los trabajos descritos incluyendo mano de obra, leyes sociales, materiales, equipo, imprevistos y en general todo lo necesario para completar la partida, previa aprobación de la Supervisión.

**01.04.02 OBRAS DE CONCRETO SIMPLE**

**01.04.02.01 CONCRETO PARA SOLADO DE ALCANTARILLA, MEZCLA C:H=1:10, E=10CM**

**DESCRIPCIÓN**

Consiste en la preparación y vaciado de un solado de 10cm de espesor de concreto pobre con una proporción de cemento y hormigón de 1:10. El cemento a utilizar será MS. Constituye las sub-base para zapatas, y otros elementos que lo requieran, el solado permitirá obtener una superficie nivelada de apoyo de la zapata y a su vez aislar el refuerzo del terreno natural.

**MÉTODO DE EJECUCIÓN**

Estos serán hechos de concreto, mezcla 1:10 cemento - hormigón, con e=10 cm de espesor.

Se deberá controlar los procesos de mezclado y vaciado, así como la calidad de los materiales.

Se utilizará una mezcladora mecánica para los materiales y el vaciado se hará sobre terreno firme; solamente con la aprobación del Supervisor se podrá efectuar el batido manual.

La cara expuesta del concreto colocado, recibirá un tratamiento adecuado para permitir obtener una superficie horizontal y uniforme, tal que facilite el trazo de replanteos de los elementos de la cimentación.

**UNIDAD DE MEDIDA**

La medición será en metro cuadrado (m2) de Solados de Concreto e=10 cm, 1:10 cemento: hormigón.

**FORMA DE PAGO**

El pago de esta partida será de acuerdo con la unidad de medición y constituirá compensación completa por los trabajos descritos incluyendo mano de obra, leyes sociales, materiales, equipo, imprevistos y en general todo lo necesario para completar la partida, previa aprobación de la Supervisión.

## 01.04.03 OBRAS DE CONCRETO ARMADO

### 01.04.03.01 CONCRETO F'c=210 KG/CM2 PARA ALCANTARILLA

**DESCRIPCIÓN**

Las especificaciones de este rubro corresponden a las obras de concreto armado, cuyo diseño figura en los planos del proyecto. Complementan estas especificaciones las notas y detalles que aparecen en los planos estructurales, así como también lo especificado en el Reglamento Nacional de Construcciones y las Normas de Concreto reforzado (ACI 318-99) y las Normas ASTM.

Este trabajo consiste en el suministro de materiales, fabricación, transporte, colocación, vibrado, curado y acabados de los concretos de cemento Portland, utilizados para la construcción de estructuras de drenaje, muros de contención, cabezales de alcantarillas, cajas de captación, aletas, sumideros y estructuras en general, de acuerdo con los planos y especificaciones del proyecto.

## MATERIALES

### Cemento

El cemento utilizado será Portland, el cual deberá cumplir lo especificado en la Norma Técnica Peruana NTP334.009, NTP 334.090, Norma AASHTO M85 o la Norma ASTM-C150.

Si los documentos del proyecto, no especifican lo contrario, se empleará el denominado Tipo I o Cemento Portland Normal.

### Agregados

### Agregado fino

Se considera como tal, a la fracción que pase la malla de 4.75 mm (N° 4).

Provendrá de arenas naturales o de la trituración de rocas o gravas. El porcentaje de arena de trituración no podrá constituir más de treinta por ciento (30%) del agregado fino.

El agregado fino deberá cumplir con los siguientes requisitos:

- **Contenido de sustancias perjudiciales**

El siguiente cuadro señala los requisitos de límites de aceptación.

**Tabla 13**
*Requisitos de límites de aceptación*

| Características | Norma de Ensayo | Masa total de la muestra |
|---|---|---|
| Terrones de Arcilla y partículas deleznables | MTC E 212 | 1.00% máx. |
| Material que pasa el Tamiz de 75um (N°200) | MTC E 202 | 5.00 % máx. |
| Cantidad de Partículas Livianas | MTC E 211 | 0.50% máx. |
| Contenido de sulfatos, expresados como ión $SO_4$ | AASHTO T290 | 0.06% máx. |
| Contenido de Cloruros, expresado como ión $cl^-$ | AASHTO T291 | 0.10% máx. |

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

Además, no se permitirá el empleo de arena que, en el ensayo colorimétrico para detección de materia orgánica, según norma de ensayo Norma Técnica Peruana 400.013 y 400.024, produzca un color más oscuro que el de la muestra patrón.

- **Reactividad**

El agregado fino no podrá presentar reactividad potencial con los álcalis del cemento. Se considera que el agregado es potencialmente reactivo, si al determinar su concentración de SiO2 y la reducción de alcalinidad R, mediante la norma ASTM C 289, se obtienen los siguientes resultados:

$$SiO2 > R \text{ cuando } R \geq 70$$

$$SiO2 > 35 + 0{,}5\ R \text{ cuando } R < 70$$

- **Granulometría**

La curva granulométrica del agregado fino deberá encontrarse dentro de los límites que se señalan a continuación.

**Tabla 14**

*Límites de granulometría*

| Tamiz | Porcentaje que pasa |
|---|---|
| 9,50 mm (3/8") | 100 |
| 4,75 mm (N°.4) | 95-100 |
| 2,36 mm (N°.8) | 80-100 |
| 1,18 mm (N°.16) | 50-85 |
| 600 µm (N°.30) | 25-60 |
| 300 µm (N°.50) | 10-30 |
| 150 µm (N°.100) | 2-10 |

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

En ningún caso, el agregado fino podrá tener más de cuarenta y cinco por ciento (45%) de material retenido entre dos tamices consecutivos. El Módulo de Finura se encontrará entre 2 .3 y 3.1.

Durante el período de construcción no se permitirán variaciones mayores de

0.2 en el Módulo de Finura con respecto al valor correspondiente a la curva adoptada para la fórmula de trabajo.

- **Durabilidad**

El agregado fino no podrá presentar pérdidas superiores a diez por ciento (10%) o quince por ciento (15%), al ser sometido a la prueba de durabilidad en sulfatos de sodio o magnesio, respectivamente, según la norma MTC E 209.

En caso de no cumplirse esta condición, el agregado podrá aceptarse siempre que habiendo sido empleado para preparar concretos de características similares, expuestas a condiciones ambientales parecidas durante largo tiempo, haya dado pruebas de

comportamiento satisfactorio

- **Limpieza**

El Equivalente de Arena, medido según la Norma MTC E 114, será sesenta y cinco por Ciento (65%) mínimo para concreto f´c < 210kg/cm2 y para resistencias mayores setenta y cinco por ciento (75%) como mínimo.

**Agregado Grueso**

Se considera como tal, al material granular que quede retenido en el tamiz 4.75 mm (N° 4).

Será grava natural o provendrá de la trituración de roca, grava u otro producto cuyo empleo resulte satisfactorio cumpla la especificación.

Los requisitos que debe cumplir el agregado grueso son los siguientes:

- **Contenido de sustancias perjudiciales**

El siguiente cuadro, señala los límites de aceptación.

**Tabla 15**
*Límites de contenido de aceptación de sustancias perjudiciales*

| Características | Norma de Ensayo | Masa total de la muestra |
|---|---|---|
| Terrones de Arcilla y partículas deleznables | MTC E 212 | 0.25 % máx. |
| Material que pasa el Tamiz de 75um (N°200) | MTC E 202 | 0.50 % máx. |
| Cantidad de Partículas Livianas | MTC E 211 | 1.00% máx. |
| Contenido de sulfatos, expresados como ión $SO_4$ | AASHTO T290 | 0.06% máx. |
| Contenido de Cloruros, expresado como ión $cl^-$ | AASHTO T291 | 0.10% máx. |

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

- **Reactividad**

El agregado no podrá presentar reactividad potencial con los álcalis del cemento, lo cual se comprobará por idéntico procedimiento y análogo criterio que en el caso de agregado fino.

- **Durabilidad**

Los resultados del ensayo de durabilidad (norma de ensayo MTC E 209, no podrán

superar el doce por ciento (12%) o dieciocho por ciento (18%), según se utilice sulfato de sodio o de magnesio, respectivamente.

- **Abrasión L.A.**

El desgaste del agregado grueso en la máquina de Los Ángeles (norma de ensayo MTC E 207 no podrá ser mayor de cuarenta por ciento (40%).

- **Granulometría**

La gradación del agregado grueso deberá satisfacer una de las siguientes franjas, según se especifique en los documentos del proyecto, con base en el tamaño máximo de agregado a usar, de acuerdo a la estructura de que se trate, la separación del refuerzo y la clase de concreto especificado.

**Tabla 16**
*Huso granulométrico*

| **Huso** | | **Porcentaje que pasa** | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Granulométrico N°** | | **7** | **67** | **57** | **467** | **357** | **4** | **3** |
| 63 mm | 2,5" | - | - | - | - | 100 | - | 100 |
| 50 mm | 2" | - | - | - | 100 | 95 - 100 | 100 | 90 - 100 |
| 37,5 mm | 1,5" | - | - | 100 | 95 - 100 | - | 90 - 100 | 35 - 70 |
| 25,0 mm | 1" | - | 100 | 95 - 100 | - | 35 - 70 | 20 - 55 | 0 - 15 |
| 19,0 mm | 3/4" | 100 | 90 - 100 | - | 35 - 70 | - | 0 - 15 | - |
| 12,5 mm | 1/2" | 90 - 100 | - | 25 - 60 | - | 10 -30 | - | 0 - 5 |
| 9.5 mm | 3/8" | 40 - 70 | 20 - 55 | - | 10 -30 | - | 0 - 5 | - |
| 4.75 mm | N°4 | 0 - 15 | 0 - 10 | 0 - 10 | 0 - 5 | 0 - 5 | - | - |
| 2.36 mm | N°8 | 0 - 5 | 0 - 5 | 0 - 5 | - | - | - | - |

***Nota:*** ASTM C33, AASHTO M-43

Se permitirá el uso de agregados que no cumplan con las gradaciones especificadas, siempre y cuando existan estudios calificados a satisfacción de las partes, que aseguren que el material producirá hormigón (concreto) de la calidad requerida.

La curva granulométrica obtenida al mezclar los agregados grueso y fino en el diseño y construcción del concreto, deberá ser continua y asemejarse a las teóricas.

- **Forma**

El porcentaje de partículas chatas y alargadas del agregado grueso procesado, determinados según la norma MTC E 221, no deberán ser mayores de quince por ciento (15%).

Para concretos de fc > 210 Kg/cm2, los agregados deben ser 100% triturados.

**Agregado ciclópeo**

El agregado ciclópeo será roca triturada o canto rodado de buena calidad. El agregado será preferiblemente angular y su forma tenderá a ser cúbica. La relación entre las dimensiones mayor y menor de cada piedra no será mayor que dos a uno (2:1).

El tamaño máximo admisible del agregado ciclópeo dependerá del espesor y volumen de la estructura de la cual formará parte. En cabezales, aletas y obras similares con espesor no mayor de ochenta centímetros (80cm), se admitirán agregados ciclópeos con dimensión máxima de treinta centímetros (30cm). En estructuras de mayor espesor se podrán emplear agregados de mayor volumen, previa autorización del Supervisor.

**Agua**

El agua por emplear en las mezclas de concreto deberá estar limpia y libre de impurezas perjudiciales, tales como aceite, ácidos, álcalis y materia orgánica. Se considera adecuada el agua que sea apta para consumo humano, debiendo ser analizado según norma MTC E 716.

**Tabla 17**

*Tolerancias del agua*

| Ensayos | Tolerancias |
|---|---|
| Sales solubles (ppm) | 5000 máx. |
| Materia Orgánica (ppm) | 3,00 máx. |
| Alkalinidad $HCO_3$ (ppm) | 1000 máx. |
| Sulfatos como ión $SO_4$ (ppm) | 600 máx. |
| Cloruros como ión $Cl^-$ (ppm) | 1000 máx. |
| pH | 5,5 a 8,0 |

***Nota:*** MANUAL DE CARRETERAS Especificaciones Técnicas Generales Para Construcción (EG-2013).

El agua debe tener las características apropiadas para una óptima calidad del concreto.

Así mismo, se debe tener presente los aspectos químicos del suelo a fin de establecer el grado de afectación de este sobre el concreto.

**Aditivos**

Se podrán usar aditivos de reconocida calidad que cumplan con la norma ASTM C-494, para modificar las propiedades del concreto, con el fin de que sea más adecuado para las condiciones particulares de la estructura por construir. Su empleo deberá definirse por medio de ensayos efectuados con antelación a la obra, con dosificaciones que garanticen el efecto deseado, sin perturbar las propiedades restantes de la mezcla, ni representar riesgos para la armadura que tenga la estructura. En las Especificaciones Especiales (EE) del proyecto se definirán que tipo de aditivos se pueden usar, los requerimientos que deben cumplir y los ensayos de control que se harán a los mismos.

**Equipo**

Los principales elementos requeridos para la elaboración de concretos y la construcción de estructuras con dicho material, son los siguientes:

- **Equipo para la producción de agregados y la fabricación del concreto**

Se permite el empleo de mezcladoras portátiles en el lugar de la obra.

La mezcla manual sólo se podrá efectuar, previa autorización del Supervisor, para estructuras pequeñas de muy baja resistencia. En tal caso, las tandas no podrán ser mayores de un cuarto de metro cúbico (0,25 m3).

- **Elementos de transporte**

La utilización de cualquier sistema de transporte o de conducción del concreto deberá contar con la aprobación del Supervisor. Dicha aprobación no deberá ser considerada como definitiva por el Contratista y se da bajo la condición de que el uso del sistema de conducción o transporte se suspenda inmediatamente, si el asentamiento o la segregación de la mezcla exceden los límites especificados señale el Proyecto.

Cuando la distancia de transporte sea mayor de trescientos metros (300m), no se podrán emplear sistemas de bombeo, sin la aprobación del Supervisor.

Cuando el concreto se vaya a transportar en vehículos a distancias superiores a seiscientos metros (600 m), el transporte se deberá efectuar en camiones mezcladores.

- **Encofrados y obra falsa**

El Contratista deberá suministrar e instalar todos los encofrados necesarios para

confinar y dar forma al concreto, de acuerdo con las líneas mostradas en los planos u ordenadas por el Supervisor. Los encofrados podrán ser de madera o metálicas y deberán tener la resistencia suficiente para contener la mezcla de concreto, sin que se formen combas entre los soportes y evitar desviaciones de las líneas y contornos que muestran los planos, ni se pueda escapar el mortero.

Los encofrados de madera podrán ser de tabla cepillada o de triplay, y deberán tener un espesor uniforme.

- **Elementos para la colocación del concreto**

El Contratista deberá disponer de los medios de colocación del concreto que permitan una buena regulación de la cantidad de mezcla depositada, para evitar salpicaduras, segregación y choques contra los encofrados o el refuerzo.

- **Vibradores**

Los vibradores para compactación del concreto deberán ser de tipo interno, y deberán operar a una frecuencia no menor de siete mil (7 000) ciclos por minuto y ser de una intensidad suficiente para producir la plasticidad y adecuada consolidación del concreto, pero sin llegar a causar la segregación de los materiales.

Para estructuras delgadas, donde los encofrados estén especialmente diseñados para resistir la vibración, se podrán emplear vibradores externos de encofrado.

- **Equipos varios**

El Contratista deberá disponer de elementos para usos varios, entre ellos los necesarios para la ejecución de juntas, la corrección superficial del concreto terminado, la aplicación de productos de curado, equipos para limpieza, etc.

**MÉTODO DE EJECUCIÓN**

Antes de proceder al vaciado de concreto para conformar la zapata se deberá haber cumplido con:

- Haber terminado todas las actividades para colocación de armadura de fierro, tanto de las zapatas como de las columnas que nacen en ella.
- Haber terminado todas las actividades de encofrado de zapatas, si las hay.
- Haber hecho limpieza de fondo de zapata, eliminando desperdicios, elementos extraños.

- Haber humedecido con agua el fondo y paredes laterales de la zapata.
- Determinar que no existe ninguna interferencia con las redes de agua, desagüe y eléctricas.
- Disponer de equipos, herramientas, materiales y mano de obra necesarios para cumplir esta actividad.
- Tener un diseño de mezcla aprobado por el Ingeniero Supervisor.
- Tener moldes para tomar testigos de concreto.
- Haber puesto los niveles de vaciado.

El concreto se vaciará en forma continua y en capas de 30 cm procediendo a su consolidación mediante el uso de vibradores, se recomienda tener 2 en uso de 2" a 3" de diámetro de la cabeza y 1 en espera de igual diámetro.

Se continuará vaciando concreto en la misma forma, hasta llegar al nivel establecido.

Llegado al nivel de vaciado, se debe emparejar la superficie con regla de madera.

El vaciado de cada zapata debe ser continuo para que sea monolítico, no se aceptan cortes de vaciado. No se adicionará piedra de ningún tamaño. Cuando comience a endurecer el concreto se procederá al curado del mismo el que se hará por vía húmeda, formando "arroceras" las que se llenaran de agua por 7 días.

Verificaciones - Controles:

Antes, durante y/o después de esta actividad se verificará y/o controlará:

- Dimensiones de las zapatas. Profundidad, altura de vaciado.
- Verticalidad de encofrado o paredes del terreno.
- Inamovilidad de las armaduras de fierro de las zapatas y de las columnas.
- Recubrimientos de la Armadura.
- Dosificación del concreto durante la preparación.
- Asentamiento o Slump.
- Toma de muestras para ensayos.

Las verificaciones y/o controles, no son limitativos, el Ingeniero Supervisor, a su

criterio, podrá hacer o mandar se hagan otros, concordantes con los procesos constructivos y con la buena práctica de la Ingeniería.

**UNIDAD DE MEDIDA**

La medición será en metro cúbico (m3) Concreto f´c=210 kg/cm2 para Alcantarilla.

**FORMA DE PAGO**

El pago de esta partida será de acuerdo con la unidad de medición y constituirá compensación completa por los trabajos descritos incluyendo mano de obra, leyes sociales, materiales, equipo, imprevistos y en general todo lo necesario para completar la partida, previa aprobación de la Supervisión.

## 01.04.03.02 ENCOFRADO Y DESENCOFRADO PARA ALCANTARILLA

**DESCRIPCIÓN**

Bajo esta partida, el Contratista suministrará, habilitará, y colocará las formas de madera necesarias para el vaciado del concreto de todas las obras de arte y drenaje; la partida incluye el desencofrado y el suministro de materiales diversos, como clavos y alambre.

**Materiales**

El Contratista deberá garantizar el empleo de madera en buen estado, convenientemente apuntalada, a fin de obtener superficies lisas y libres de imperfecciones, Los alambres que se empleen para amarrar los encofrados no deberán atravesar las caras del concreto que queden expuestas en la obra terminada.

**MÉTODO DE EJECUCIÓN**

El Contratista deberá garantizar el correcto apuntalamiento de los encofrados de manera que resistan plenamente, sin deformaciones, el empuje del concreto al momento del llenado. Los encofrados deberán ceñirse a la forma, límites y dimensiones indicadas en los planos y estarán los suficientemente unidos para evitar la pérdida de agua del concreto.

Para el apuntalamiento de los encofrados se deberá tener en cuenta los siguientes factores:

- Velocidad y sistema del vaciado del concreto
- Cargas de materiales, equipos, personal, incluyendo fuerzas horizontales, verticales y de impacto.
- Resistencia del material usado en las formas y la rigidez de las uniones que forman los elementos del encofrado.

- Antes de vaciarse el concreto, las formas deberán ser mojadas o aceitadas para evitar el descascaramiento.
- La operación de desencofrar se hará gradualmente, quedando totalmente prohibido golpear o forzar.
- El Contratista es responsable del diseño e Ingeniería de los encofrados, proporcionando los planos de detalle de todos los encofrados al Ingeniero Supervisor para su aprobación.
- El encofrado será diseñado para resistir con seguridad todas las cargas impuestas por su propio peso, el peso y empuje del concreto y la sobre carga de llenado no inferior a 200 Kg/m2.

Las formas deben ser herméticas para prevenir la filtración de la lechada de cemento y serán debidamente arriostradas o ligadas entre sí de manera que se mantenga en la posición y forma deseada con seguridad, asimismo evitar las deflexiones laterales.

Las caras laterales del encofrado en contacto con el concreto, serán convenientemente humedecidas antes de depositar el concreto y sus superficies interiores debidamente lubricadas para evitar la adherencia del mortero; previamente, deberá verificarse la limpieza de los encofrados, retirando cualquier elemento extraño que se encuentre dentro de los mismos.

Los encofrados se construirán de modo tal que faciliten el desencofrado sin producir daños a las superficies de concreto vaciadas. Todo encofrado, para volver a ser usado, no deberá presentar daños ni deformaciones y deberá ser limpiado cuidadosamente antes de ser colocado nuevamente

Desencofrado: las formas deberán retirarse de manera que se asegure la completa indeformalidad de la estructura.

En general, las formas no deberán quitarse hasta que el concreto se haya endurecido suficientemente como para soportar con seguridad su propio peso y los pesos superpuestos que pueden colocarse sobre él. Las formas no deben quitarse sin el permiso del Supervisor.

Se debe considerar los siguientes tiempos mínimos para efectuar el Desencofrado.

- Costado de Vigas y muros 24 horas. Losas 14 días.
- Estribos y Pilares 3 días.
- Cabezales de Alcantarillas 48 horas. Sardineles 24 horas.

**UNIDAD DE MEDIDA**

La medición será en metro cuadrado (m2) de Encofrado de Alcantarilla.

**FORMA DE PAGO**

El pago de esta partida será de acuerdo a la unidad de medición y constituirá compensación completa por los trabajos descritos incluyendo mano de obra, leyes sociales, materiales, equipo, imprevistos y en general todo lo necesario para completar la partida, previa aprobación de la Supervisión.

**01.04.03.03 ACERO FY=4200KG/CM2 MUROS Y ALAS - ALCANTARILLAS**

**DESCRIPCIÓN**

Esta partida consiste en el suministro, transportes, almacenamiento, corte, doblamiento y colocación de las barras de acero dentro de las diferentes estructuras permanentes de concreto, de acuerdo con los planos del proyecto.

**MÉTODO DE EJECUCIÓN**

Los aceros serán habilitados teniendo en cuenta los recubrimientos laterales, 7.5 cm si van en contacto con el terreno, y los dobleces indicados en planos.

Se colocarán en forma ortogonal, y en el fondo de la zapata, sobre separadores de concreto F´c 210kg/cm2.

Todos los puntos de contacto de los fierros se asegurarán envolviéndolos con alambre negro N° 16 y dándole varias vueltas a las puntas para asegurar los aceros.

El espaciamiento de las varillas se mide entre ejes y debe ser de acuerdo a planos. No se permite el empalme de varillas.

Antes de iniciar esta actividad el contratista habrá cumplido con:

- Trazado de perímetro de Alcantarilla
- Lista de habilitación de Acero.
- Armadura.
- Verificaciones y Controles:
- Antes, durante y/o después de colocada la armadura se verificará y/o controlará:
- Los diámetros de las varillas.
- Las dimensiones y dobleces de las varillas.

- La ubicación de la armadura.
- El espaciamiento entre varillas.
- El amarre de varillas entre ellas.
- El anclaje de armadura de columnas.
- La inamovilidad de armadura de columnas.

Las verificaciones y/o controles, no son limitativos, el Ingeniero Supervisor, a su criterio, podrá hacer o mandar se hagan otros, concordantes con los procesos constructivos y con la buena práctica de la Ingeniería.

**UNIDAD DE MEDIDA**

La medición será en kilogramo (kg) Acero Fy=4200 kg/cm2 en Alcantarilla

**FORMA DE PAGO**

El pago de esta partida será de acuerdo a la unidad de medición y constituirá compensación completa por los trabajos descritos incluyendo mano de obra, leyes sociales, materiales, equipo, imprevistos y en general todo lo necesario para completar la partida, previa aprobación de la Supervisión.

**01.04.04 EMBOQUILLADO**

**01.04.04.01 COMPACTACION PARA CONSTRUCCION DE MAMPOSTERIA DE PIEDRA**

**DESCRIPCIÓN**

Esta partida comprende los trabajos de nivelación, humedecimiento y compactación del terreno de fundación donde se construirá la mampostería de piedra en el emboquillado de alcantarillas (entrada y salida), con la finalidad de garantizar una base estable y uniforme para la correcta colocación de la mampostería.

La compactación se realizará sobre el terreno natural o material de relleno previamente colocado, en un espesor aproximado de 0.10 a 0.20 m, hasta alcanzar el grado de compactación especificado en el expediente técnico (generalmente no menor al 95% del Proctor Modificado o el valor indicado por la supervisión).

Incluye el uso de herramientas manuales, plancha compactadora o equipo equivalente, así como el suministro y aplicación de agua necesaria para lograr la humedad óptima de compactación.

**MÉTODO DE MEDICIÓN**

La medición se realizará por metro cuadrado (m²) de superficie efectivamente compactada y preparada para la construcción de la mampostería de piedra del emboquillado, verificada y aprobada por la supervisión.

**FORMA DE PAGO**

El pago se efectuará por metro cuadrado (m²) de compactación ejecutada, medida y aprobada por la supervisión. El precio unitario incluirá mano de obra, equipos, herramientas, agua y todas las operaciones necesarias para dejar la superficie debidamente compactada y lista para la construcción de la mampostería de piedra del emboquillado. No se reconocerán pagos adicionales por ningún concepto relacionado con esta actividad.

**01.04.04.02 MAMPOSTERIA DE PIEDRA (C/C F´C =140 KG/CM2 + 60% P.G)**

**DESCRIPCIÓN**

Esta partida comprende la construcción de mampostería de piedra para el emboquillado de alcantarillas en las zonas de entrada y salida, utilizando piedra grande (piedra bruta) colocada manualmente y asentada con concreto de resistencia f'c = 140 kg/cm², con un porcentaje aproximado de 60% de piedra grande (P.G.) y 40% de concreto.

Los trabajos incluyen el suministro de piedra, preparación del concreto, colocación, alineamiento, nivelación, emboquillado de juntas, curado y acabado final, de acuerdo con los planos del expediente técnico y las indicaciones de la supervisión.

La mampostería se ejecutará sobre la base previamente compactada, garantizando estabilidad, correcta geometría hidráulica y adecuada protección de la alcantarilla contra erosión y socavación.

**UNIDAD DE MEDIDA**

La medición se realizará por metro cúbico (m³) de mampostería de piedra efectivamente construida, colocada y aprobada por la supervisión, de acuerdo con las dimensiones indicadas en los planos del proyecto.

**FORMA DE PAGO**

El pago se efectuará por metro cúbico (m³) de mampostería de piedra ejecutada, medida y aprobada por la supervisión. El precio unitario incluirá el suministro de piedra, cemento, agregados, agua, preparación del concreto, mano de obra, herramientas, equipos, colocación, curado y todas las operaciones necesarias para la correcta ejecución de la

mampostería, sin que se reconozcan pagos adicionales por ningún concepto relacionado.

**01.04.05 SOLAQUEADO DE ALCANTARILLAS**

**01.04.05.01 SOLAQUEADO DE ALCANTARILLAS**

**DESCRIPCIÓN**

Esta partida comprende la ejecución del solaqueado con mortero de cemento en las superficies internas y/o externas de las alcantarillas, cabezales, muros de ala y emboquillados, con la finalidad de proteger la estructura, sellar juntas, mejorar el acabado y evitar filtraciones o erosión por acción del agua.

El solaqueado se realizará con mortero de cemento-arena en proporción indicada en el expediente técnico, aplicado sobre la superficie previamente limpia, humedecida y libre de material suelto. Incluye preparación de la superficie, elaboración del mortero, aplicación, nivelado, acabado y curado correspondiente, de acuerdo con los planos y las indicaciones de la supervisión.

**UNIDAD DE MEDIDA**

La medición se realizará por metro cuadrado (m²) de superficie efectivamente solaqueada en alcantarillas, cabezales y emboquillados, ejecutada y aprobada por la supervisión.

**FORMA DE PAGO**

El pago se efectuará por metro cuadrado (m²) de solaqueado ejecutado, medido y aprobado por la supervisión. El precio unitario incluirá materiales, mano de obra, herramientas, preparación de superficies, elaboración y aplicación del mortero, curado y todas las operaciones necesarias para la correcta ejecución del trabajo, sin que se reconozcan pagos adicionales por ningún concepto relacionado.

**01.04.06 PINTURA**

**01.04.06.01 PINTURA DE ALCANTARILLAS**

**DESCRIPCION**

Esta partida comprende el pintado de todos los parapetos de las alcantarillas, antes de ser aplicada la pintura deberá ser bien batida en su recipiente para evitar asentamiento y obtener una completa uniformidad en el color, El trabajo será ejecutado con brochas.

**METODO DE EJECUCIÓN**

El esmalte se aplicará en capas sucesivas a medida que se vayan secando las anteriores. Se dará un mínimo de dos (02) manos.

**UNIDAD DE MEDIDA**

El trabajo ejecutado se medirá por metro cuadrado (m2), aceptado y aprobado por el Ingeniero Supervisor de acuerdo a las dimensiones y especificaciones que se indiquen en los planos del proyecto, medido directamente sobre el terreno.

**FORMA DE PAGO**

La cantidad de metros cuadrados (m2) medidos según lo indicado anteriormente, será pagada por el precio unitario de la partida pintura de parapetos, entendiéndose que dicho precio y pago constituirá compensación total por toda mano de obra, equipo, herramientas, materiales, y cualquier otro insumo o suministro que se requiera para la ejecución de la partida.

**01.05 OBRAS DE ARTE: BADENES**

**01.05.01 TRABAJOS PRELIMINARES**

**01.05.01.01 TRAZO Y REPLANTEO DE BADENES**

**DESCRIPCIÓN**

SIMILAR AL ITEM 01.04.01.01

**01.05.02 TRABAJOS PRELIMINARES**

**01.05.02.01 TRAZO Y REPLANTEO DE BADENES**

**DESCRIPCIÓN**

Esta partida comprende los trabajos de excavación manual necesarios para la construcción de badenes, incluyendo el retiro de material suelto o semiconsolidado hasta alcanzar el nivel de fundación indicado en los planos del expediente técnico.

La excavación se realizará de forma manual en zonas donde no sea posible el acceso de maquinaria o donde se requiera precisión en la conformación del fondo y laterales del badén. Incluye el perfilado, nivelación, limpieza del fondo de excavación y el apilamiento del material extraído en zonas cercanas o su carga para eliminación, según lo disponga la supervisión.

Los trabajos se ejecutarán de acuerdo con las dimensiones y niveles establecidos en los planos del proyecto y bajo la aprobación de la supervisión.

**MÉTODO DE MEDICIÓN**

La medición se realizará por metro cúbico ($m^3$) de material excavado manualmente para la construcción de badenes, de acuerdo con las dimensiones indicadas en los planos y

aprobado por la supervisión.

**FORMA DE PAGO**

El pago se efectuará por metro cúbico (m³) de excavación manual en badenes ejecutada, medida y aprobada por la supervisión. El precio unitario incluirá mano de obra, herramientas, perfilado, limpieza y todas las operaciones necesarias para la correcta ejecución de la excavación, sin que se reconozcan pagos adicionales por ningún concepto relacionado.

**01.05.02.02 ELIMINACION DE MATERIAL EXCEDENTE A DME**

**DESCRIPCIÓN**

SIMILAR AL ITEM 01.04.01.02

**01.05.03 OBRAS DE MAMPOSTERIA DE CONCRETO**

**01.05.03.01 MAMPOSTERIA DE PIEDRA (C/C F´C =140 KG/CM2 + 60% P.G)**

**DESCRIPCIÓN**

SIMILAR AL ITEM 01.04.04.02

**01.05.03.02 ENCOFRADO Y DESENCOFRADO - BADENES**

**DESCRIPCIÓN**

SIMILAR AL ITEM 01.04.03.02

**01.05.03.03 CONCRETO EN BADEN F'C=210KG/CM2 (E=0.25M)**

**DESCRIPCIÓN**

SIMILAR AL ITEM 01.04.03.01

**01.05.04 VARIOS**

**01.05.04.01 JUNTA FLEXIBLE**

**DESCRIPCIÓN**

Los espacios de dilatación o junta sísmica, serán rellenados con elastómero y sellados con wáter stop 6”, fijados con pegamento de alta adherencia.

Los espacios para rellenar deberán estar limpios, libre de residuos y escombros producto de los trabajos de vaciados de concreto y tarrajeos.

**UNIDAD DE MEDIDA**

La unidad de medida será metro lineal (m).

**FORMA DE PAGO**

El pago de estos trabajos se hará por metro lineal y precio.

**01.06 MITIGACION DE IMPACTO AMBIENTAL**

## 01.06.01 MEDIDAS DE PREVENCIÓN, MITIGACIÓN O CORRECCIÓN DE LOS IMPACTOS AMBIENTALES

### DESCRIPCIÓN

Esta partida comprende la implementación de las medidas ambientales necesarias para prevenir, mitigar o corregir los impactos generados durante la ejecución de la obra vial, de acuerdo con el expediente técnico, el instrumento de gestión ambiental aprobado y las disposiciones de la supervisión.

Incluye, entre otros, el control de polvo mediante riego de agua, manejo y disposición adecuada de residuos sólidos, protección de cuerpos de agua y canales de riego, señalización ambiental, control de derrames de combustible, mantenimiento de áreas de préstamo y botaderos autorizados, rehabilitación de áreas intervenidas, así como la capacitación básica al personal en temas ambientales.

Los trabajos se ejecutarán durante toda la etapa de construcción, en coordinación con la supervisión y cumpliendo la normativa ambiental vigente.

### UNIDAD DE MEDIDA

La medición se realizará en forma global (glb), considerando el cumplimiento de todas las medidas de prevención, mitigación y corrección de impactos ambientales previstas en el expediente técnico y aprobadas por la supervisión.

### FORMA DE PAGO

El pago se efectuará en forma global (glb), de acuerdo con el avance y cumplimiento de las medidas ambientales establecidas y verificadas por la supervisión. El precio unitario incluirá mano de obra, materiales, equipos, herramientas y todas las acciones necesarias para la adecuada implementación de las medidas ambientales durante la ejecución de la obra, sin que se reconozcan pagos adicionales por ningún concepto relacionado.

## 01.06.02 RIEGO DE ZONA DE TRABAJO PARA MITIGAR LA CONTAMINACION POLVO (inc. costo de agua y transp. surtido a obra)

### DESCRIPCIÓN

Esta partida consiste en mitigar todos los impactos que se generan durante la Obra como el polvo.

### MÉTODO DE EJECUCIÓN

El polvo se mitiga a través de la constante regadío de agua con cisterna durante la

zona de trabajo, para que esto no afecte la salud del trabajador y población aledaña.

**UNIDAD DE MEDIDA**

La medición será en forma mensual (mes)

**FORMA DE PAGO**

El pago de esta partida será de acuerdo con la unidad de medición y constituirá compensación completa por los trabajos descritos incluyendo mano de obra, leyes sociales, materiales, equipo, imprevistos y en general todo lo necesario para completar la partida, previa aprobación de la Supervisión.

## 01.07 MONITOREO ARQUEOLÓGICO

### 01.07.01 PLAN DE MONITOREO ARQUEOLÓGICO

**DESCRIPCIÓN**

Esta partida comprende la ejecución del Plan de Monitoreo Arqueológico (PMA) durante las actividades de movimiento de tierras y construcción de la obra, con la finalidad de prevenir la afectación de posibles evidencias o restos arqueológicos existentes en el área de intervención.

Incluye la contratación de un profesional arqueólogo autorizado, el seguimiento permanente de las excavaciones, supervisión de cortes y rellenos, registro de hallazgos fortuitos, paralización preventiva en caso de evidencias arqueológicas y coordinación con las autoridades competentes del Ministerio de Cultura, de acuerdo con la normativa vigente.

Asimismo, comprende la elaboración de informes de monitoreo, reportes periódicos y el informe final correspondiente, conforme a lo establecido en el Plan de Monitoreo Arqueológico aprobado.

**UNIDAD DE MEDIDA**

La medición se realizará en forma global (glb), considerando la ejecución integral del Plan de Monitoreo Arqueológico durante el periodo de obra, conforme al expediente técnico y aprobado por la supervisión.

**FORMA DE PAGO**

El pago se efectuará en forma global (glb), de acuerdo con el cumplimiento del Plan de Monitoreo Arqueológico y la presentación de los informes respectivos, aprobados por la supervisión. El precio unitario incluirá honorarios del arqueólogo, equipos, movilidad, informes, gestiones administrativas y todas las actividades necesarias para la correcta ejecución

del monitoreo arqueológico durante la obra, sin que se reconozcan pagos adicionales por ningún concepto relacionado.

**01.07.01 INFORME FINAL DE MONITOREO**

**DESCRIPCIÓN**

Esta partida comprende la elaboración y presentación del Informe Final de Monitoreo Arqueológico correspondiente a la ejecución de la obra, el cual consolidará todas las actividades de monitoreo realizadas durante los trabajos de movimiento de tierras y construcción.

Incluye la recopilación de registros de campo, fichas de monitoreo, reportes de hallazgos (de existir), registro fotográfico, planos de ubicación, conclusiones y recomendaciones, así como la presentación del informe ante la entidad competente del Ministerio de Cultura, conforme a la normativa vigente.

El informe será elaborado y suscrito por el profesional arqueólogo responsable y deberá contar con la conformidad de la supervisión de obra.

**UNIDAD DE MEDIDA**

La medición se realizará en forma global (glb), considerando la elaboración, presentación y aprobación del Informe Final de Monitoreo Arqueológico por la supervisión y la entidad competente.

**FORMA DE PAGO**

El pago se efectuará en forma global (glb), una vez presentado el Informe Final de Monitoreo Arqueológico y aprobado por la supervisión. El precio unitario incluirá la elaboración del informe, recopilación de información, registro fotográfico, planos, trámites administrativos y todas las actividades necesarias para su presentación y aprobación, sin que se reconozcan pagos adicionales por ningún concepto relacionado.

**01.08 PLAN DE CONSERVACIÓN VIAL**

**01.08.01 PLAN DE CONSERVACIÓN VIAL**

**DESCRIPCIÓN**

Esta partida comprende la elaboración e implementación del Plan de Conservación Vial para la vía intervenida, con la finalidad de asegurar el adecuado mantenimiento y funcionamiento de la carretera durante su vida útil.

Incluye la programación de actividades de mantenimiento rutinario y periódico, tales

como limpieza de cunetas y alcantarillas, reposición de afirmado, control de baches, conservación de badenes, señalización y control de drenaje, así como la capacitación básica al personal encargado del mantenimiento y la entrega del plan a la entidad responsable de la vía.

El plan será elaborado conforme a las características de la carretera, condiciones climáticas y recomendaciones del expediente técnico, y deberá contar con la aprobación de la supervisión.

**UNIDAD DE MEDIDA**

La medición se realizará en forma global (glb), considerando la elaboración y entrega del Plan de Conservación Vial completo, aprobado por la supervisión.

**FORMA DE PAGO**

El pago se efectuará en forma global (glb), una vez elaborado, presentado y aprobado el Plan de Conservación Vial por la supervisión. El precio unitario incluirá la elaboración del documento, levantamiento de información, recomendaciones técnicas y todas las actividades necesarias para su correcta presentación, sin que se reconozcan pagos adicionales por ningún concepto relacionado.

## 01.09 VARIOS

### 01.09.01 LIMPIEZA FINAL DE LA OBRA

**DESCRIPCIÓN**

Se refiere al trabajo de limpieza que debe efectuarse durante todo el transcurso de la obra eliminando especialmente desperdicios.

**MÉTODO DE EJECUCIÓN**

Se dispondrá de personal en obra permanente dedicada exclusivamente a labores de limpieza; con la finalidad de facilitar las labores cotidianas de la obra.

**UNIDAD DE MEDIDA**

El trabajo ejecutado se medirá en forma mensual (mes), aprobado por el supervisor.

**FORMA DE PAGO**

El pago se efectuará en forma global como compensación total por el total de la partida realizada.

# ANEXO N°14.- ESTUDIO DE IMPACTO AMBIENTAL

## MATRIZ DE IDENTIFICACIÓN DE IMPACTOS

| **Proyecto:** | "Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque" | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Etapa de proyecto** | | | | | | | | |
| **FACTORES** / **ACCIONES** | | | Tala de arbustos para panorama visual al uso de equipo topográfico | Excavación para toma de muestras (calicatas) | Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas) | Tala de arbustos para panorama visual al uso de equipo topográfico | Excavación para toma de muestras (calicatas) | Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas, etc) |
| KILOMETRAJE | | | 00+000 - 01+000 | | | 01+000 - 11+174.06 | | |
| **MEDIO FÍSICO** | **Aire** | Polvo | | x | | | x | |
| | | Gases | | | | | | |
| | | Ruido | | | | | | |
| | **Suelo** | Erosión | | x | | | x | |
| | | Topografía (relieve) | | x | | | x | |
| | | Cambio de uso | | | | | | |
| | | Contaminación directa | | | x | | | x |
| | **Agua** | Cont. Aguas Superficiales | | x | x | | x | x |
| | | Cont. Aguas Subterráneas | | | | | | |
| **MEDIO BIÓTICO** | **Flora** | Árboles | x | | | x | | |
| | | Arbustos | x | x | x | x | x | x |
| | | Cultivos | | | | | | |
| | **Fauna** | Mamíferos | x | | | x | | |
| | | Aves | x | | | x | | |
| **MEDIO SOCIOECONÓMICO** | | Empleo | x | x | | x | x | |
| | | Salud y Seguridad | | x | | | x | |

## MATRIZ DE CARACTERIZACIÓN DE IMPACTOS

"Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque"
00+000 - 01+000

**Etapa de proyecto**

| ACCIONES / FACTORES | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **MEDIO FÍSCO** | | | | | | | | | | | | |
| | **AIRE** | | | | | | | | | | | | |
| **Tala de arbustos para panorama visual al uso de equipo topográfico** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | | | | | | | | | | | | | |
| Gases | | | | | | | | | | | | | |
| Ruido | | | | | | | | | | | | | |
| **Excavación para toma de muestras (calicatas)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| Gases | | | | | | | | | | | | | |
| Ruido | | | | | | | | | | | | | |
| **Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas, etc)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | | | | | | | | | | | | | |
| Gases | | | | | | | | | | | | | |
| Ruido | | | | | | | | | | | | | |
| ACCIONES / FACTORES | **MEDIO FÍSCO** | | | | | | | | | | | | |
| | **SUELO** | | | | | | | | | | | | |
| **Tala de arbustos para panorama visual al uso de equipo topográfico** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | | | | | | | | | | | | | |
| Topografía (relieve) | | | | | | | | | | | | | |
| Cambio de uso | | | | | | | | | | | | | |
| Contaminación directa | | | | | | | | | | | | | |
| **Excavación para toma de muestras (calicatas)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | (-) | 1 | 1 | 4 | 2 | 2 | 1 | 1 | 4 | 1 | 4 | -24 | IRRELEVANTE |
| Topografía (relieve) | (-) | 2 | 1 | 4 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -28 | MODERADO |
| Cambio de uso | | | | | | | | | | | | | |
| Contaminación directa | | | | | | | | | | | | | |
| **Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas, etc)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | | | | | | | | | | | | | |
| Topografía (relieve) | | | | | | | | | | | | | |
| Cambio de uso | | | | | | | | | | | | | |
| Contaminación directa | (-) | 1 | 1 | 4 | 2 | 1 | 2 | 1 | 4 | 1 | 4 | -24 | IRRELEVANTE |
| ACCIONES / FACTORES | **MEDIO BIÓTICO** | | | | | | | | | | | | |
| | **AGUA** | | | | | | | | | | | | |
| **Tala de arbustos para panorama visual al uso de equipo topográfico** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | | | | | | | | | | | | | |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Excavación para toma de muestras (calicatas)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 2 | -22 | IRRELEVANTE |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas, etc)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 1 | 2 | 4 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| ACCIONES / FACTORES | **MEDIO BIÓTICO** | | | | | | | | | | | | |
| | **FLORA** | | | | | | | | | | | | |
| **Tala de arbustos para panorama visual al uso de equipo topográfico** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 4 | -26 | MODERADO |
| Arbustos | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 4 | -26 | MODERADO |
| Cultivos | | | | | | | | | | | | | |

| Excavación para toma de muestras (calicatas) | NAT | In | EX | MO | PE | RV | SI | AC | EF | PR | MC | I=+/- | IMPORTANCIA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Árboles | | | | | | | | | | | | | |
| Arbustos | (-) | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 4 | 1 | 4 | -22 | IRRELEVANTE |
| Cultivos | | | | | | | | | | | | | |
| **Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas, etc)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | | | | | | | | | | | | | |
| Arbustos | (-) | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 4 | -23 | IRRELEVANTE |
| Cultivos | | | | | | | | | | | | | |
| **ACCIONES / FACTORES** | **MEDIO BIÓTICO** | | | | | | | | | | | | |
| | **FAUNA** | | | | | | | | | | | | |
| **Tala de arbustos para panorama visual al uso de equipo topográfico** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 1 | 2 | 4 | 2 | 1 | 1 | 1 | 4 | 1 | 4 | -25 | MODERADO |
| Aves | (-) | 1 | 2 | 4 | 2 | 1 | 1 | 1 | 4 | 1 | 4 | -25 | MODERADO |
| **Excavación para toma de muestras (calicatas)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | | | | | | | | | | | | | |
| Aves | | | | | | | | | | | | | |
| **Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas,etc)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | | | | | | | | | | | | | |
| Aves | | | | | | | | | | | | | |
| **ACCIONES / FACTORES** | **MEDIO SOCIOECONÓMICO** | | | | | | | | | | | | |
| **Tala de arbustos para panorama visual al uso de equipo topográfico** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 18 | IRRELEVANTE |
| Salud y Seguridad | | | | | | | | | | | | | |
| **Excavación para toma de muestras (calicatas)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 21 | IRRELEVANTE |
| Salud y Seguridad | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| **Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas, etc)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | | | | | | | | | | | | | |
| Salud y Seguridad | | | | | | | | | | | | | |

## MATRIZ DE CARACTERIZACIÓN DE IMPACTOS

"Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque"
01+000 - 11+174.06

**ETAPA DE PROYECTO**

| ACCIONES / FACTORES | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MEDIO FÍSCO** | | | | | | | | | | | | | |
| **AIRE** | | | | | | | | | | | | | |
| **Tala de arbustos para panorama visual al uso de equipo topográfico** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | | | | | | | | | | | | | |
| Gases | | | | | | | | | | | | | |
| Ruido | | | | | | | | | | | | | |
| **Excavación para toma de muestras (calicatas)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| Gases | | | | | | | | | | | | | |
| Ruido | | | | | | | | | | | | | |
| **Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas, etc)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | | | | | | | | | | | | | |
| Gases | | | | | | | | | | | | | |
| Ruido | | | | | | | | | | | | | |
| ACCIONES / FACTORES | | | | | | | | | | | | | |
| **MEDIO FÍSCO** | | | | | | | | | | | | | |
| **SUELO** | | | | | | | | | | | | | |
| **Tala de arbustos para panorama visual al uso de equipo topográfico** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | | | | | | | | | | | | | |
| Topografía (relieve) | | | | | | | | | | | | | |
| Cambio de uso | | | | | | | | | | | | | |
| Contaminación directa | | | | | | | | | | | | | |
| **Excavación para toma de muestras (calicatas)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | (-) | 1 | 1 | 4 | 2 | 2 | 1 | 1 | 4 | 1 | 4 | -24 | IRRELEVANTE |
| Topografía (relieve) | (-) | 2 | 1 | 4 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -28 | MODERADO |
| Cambio de uso | | | | | | | | | | | | | |
| Contaminación directa | | | | | | | | | | | | | |
| **Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas, etc)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | | | | | | | | | | | | | |
| Topografía (relieve) | | | | | | | | | | | | | |
| Cambio de uso | | | | | | | | | | | | | |
| Contaminación directa | (-) | 1 | 2 | 4 | 2 | 1 | 2 | 1 | 4 | 1 | 4 | -26 | MODERADO |
| ACCIONES / FACTORES | | | | | | | | | | | | | |
| **MEDIO BIÓTICO** | | | | | | | | | | | | | |
| **AGUA** | | | | | | | | | | | | | |
| **Tala de arbustos para panorama visual al uso de equipo topográfico** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | | | | | | | | | | | | | |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Excavación para toma de muestras (calicatas)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 2 | -22 | IRRELEVANTE |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas, etc)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 1 | 2 | 4 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| ACCIONES / FACTORES | | | | | | | | | | | | | |
| **MEDIO BIÓTICO** | | | | | | | | | | | | | |
| **FLORA** | | | | | | | | | | | | | |
| **Tala de arbustos para panorama visual al uso de equipo topográfico** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 4 | -26 | MODERADO |
| Arbustos | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 4 | -26 | MODERADO |
| Cultivos | | | | | | | | | | | | | |

| Excavación para toma de muestras (calicatas) | NAT | In | EX | MO | PE | RV | SI | AC | EF | PR | MC | I=+/- | IMPORTANCIA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Árboles | | | | | | | | | | | | | |
| Arbustos | (-) | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 4 | 1 | 4 | -22 | IRRELEVANTE |
| Cultivos | | | | | | | | | | | | | |
| **Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas, etc)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | | | | | | | | | | | | | |
| Arbustos | (-) | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 4 | -23 | IRRELEVANTE |
| Cultivos | | | | | | | | | | | | | |
| **ACCIONES / FACTORES** | **MEDIO BIÓTICO** | | | | | | | | | | | | |
| | **FAUNA** | | | | | | | | | | | | |
| **Tala de arbustos para panorama visual al uso de equipo topográfico** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 1 | 2 | 4 | 2 | 1 | 1 | 1 | 4 | 1 | 4 | -25 | MODERADO |
| Aves | (-) | 1 | 2 | 4 | 2 | 1 | 1 | 1 | 4 | 1 | 4 | -25 | MODERADO |
| **Excavación para toma de muestras (calicatas)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | | | | | | | | | | | | | |
| Aves | | | | | | | | | | | | | |
| **Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | | | | | | | | | | | | | |
| Aves | | | | | | | | | | | | | |
| **ACCIONES / FACTORES** | **MEDIO SOCIOECONÓMICO** | | | | | | | | | | | | |
| **Tala de arbustos para panorama visual al uso de equipo topográfico** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 18 | IRRELEVANTE |
| Salud y Seguridad | | | | | | | | | | | | | |
| **Excavación para toma de muestras (calicatas)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 1 | 2 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 21 | IRRELEVANTE |
| Salud y Seguridad | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| **Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas)** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | | | | | | | | | | | | | |
| Salud y Seguridad | | | | | | | | | | | | | |

## MATRIZ DE IMPORTANCIA DE IMPACTOS

| **Proyecto:** | "Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque" |
|---|---|

| | | | **Etapa de proyecto** | | | | | |
|---|---|---|---|---|---|---|---|---|
| FACTORES / ACCIONES | | | Tala de arbustos para panorama visual al uso de equipo topográfico | Excavación para toma de muestras (calicatas) | Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas) | Tala de arbustos para panorama visual al uso de equipo topográfico | Excavación para toma de muestras (calicatas) | Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas etc) |
| KILOMETRAJE | | | 00+000 - 01+000 | | | 01+000 - 11+174.06 | | |
| **MEDIO FÍSICO** | **Aire** | Polvo | | -19 | | | -19 | |
| | | Gases | | | | | | |
| | | Ruido | | | | | | |
| | **Suelo** | Erosión | | -24 | | | -24 | |
| | | Topografía (relieve) | | -28 | | | -28 | |
| | | Cambio de uso | | | | | | |
| | | Contaminación directa | | | -24 | | | -26 |
| | **Agua** | Cont. Aguas Superficiales | | -22 | -24 | | -22 | -24 |
| | | Cont. Aguas Subterráneas | | | | | | |
| **MEDIO BIÓTICO** | **Flora** | Árboles | -26 | | | -26 | | |
| | | Arbustos | -26 | -22 | -23 | -26 | -22 | -23 |
| | | Cultivos | | | | | | |
| | **Fauna** | Mamíferos | -25 | | | -25 | | |
| | | Aves | -25 | | | -25 | | |
| **MEDIO SOCIOECONÓMICO** | | Empleo | 18 | 21 | | 18 | 21 | |
| | | Salud y Seguridad | | -19 | | | -19 | |

| IMPACTO | ETAPA DE PROYECTO | | | |
|---|---|---|---|---|
| | 00+000 - 01+000 | | 01+000 - 11+174.06 | |
| | N | % | N | % |
| IRRELEVANTE | 10 | 66.67% | 9 | 60.00% |
| MODERADO | 5 | 33.33% | 6 | 40.00% |
| SEVERO | 0 | 0.00% | 0 | 0.00% |
| CRÍTICO | 0 | 0.00% | 0 | 0.00% |
| | 15 | 100.00% | 15 | 100.00% |

## MATRIZ DE VALORACIÓN DE IMPACTOS

| **Proyecto:** | "Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque" |
|---|---|

**Etapa de proyecto**

| FACTORES / ACCIONES | | | **UIP** | Tala de arbustos para panorama visual al uso de equipo topográfico | Excavación para toma de muestras (calicatas) | Acumulación de residuos generados por la brigada de trabajo (botellas, bolsas, etc) | **Σli** | **Ir** | **%** |
|---|---|---|---|---|---|---|---|---|---|
| KILOMETRAJE | | | **00+000 - 01+000** | | | | | | |
| **MEDIO FISICO** | **Aire** | Polvo | 5 | | -19 | | 19.00 | 19.00 | 100.00% |
| | | Gases | | | | | 0.00 | 0.00 | 0.00% |
| | | Ruido | | | | | 0.00 | 0.00 | 0.00% |
| | | Σ | 5 | | | | | 19.00 | 100.00% |
| | | li | | 0.00 | 19.00 | 0.00 | | | |
| | | Ir | | 0.00 | 19.00 | 0.00 | 19.00 | | |
| | | % | | 0.00% | 100.00% | 0.00% | 100.00% | | |
| | **Suelo** | Erosión | 14 | | -24 | | 24.00 | 8.00 | 31.58% |
| | | Topografía (relieve) | 14 | | -28 | | 28.00 | 9.33 | 36.84% |
| | | Cambio de uso | | | | | 0.00 | 0.00 | 0.00% |
| | | Contaminación directa | 14 | | | -24 | 24.00 | 8.00 | 31.58% |
| | | Σ | 42 | | | | | 25.33 | 100.00% |
| | | li | | 0.00 | 52.00 | 24.00 | | | |
| | | Ir | | 0.00 | 17.33 | 8.00 | 25.33 | | |
| | | % | | 0.00% | 68.42% | 31.58% | 100.00% | | |
| | **Agua** | Cont. Aguas Superficiales | 20 | | -22 | -24 | 46.00 | 46.00 | 100.00% |
| | | Cont. Aguas Subterráneas | | | | | 0.00 | 0.00 | 0.00% |
| | | Σ | 20 | | | | | 46.00 | 100.00% |
| | | li | | 0.00 | 22.00 | 24.00 | | | |
| | | Ir | | 0.00 | 22.00 | 24.00 | 46.00 | | |
| | | % | | 0.00% | 47.83% | 52.17% | 100.00% | | |
| **MEDIO BIÓTICO** | **Flora** | Árboles | 14 | -26 | | | 26.00 | 13.00 | 26.80% |
| | | Arbustos | 14 | -26 | -22 | -23 | 71.00 | 35.50 | 73.20% |
| | | Cultivos | | | | | 0.00 | 0.00 | 0.00% |
| | | Σ | 28 | | | | | 48.50 | 100.00% |
| | | li | | -52 | -22 | -23 | | | |
| | | Ir | | 26.00 | 11.00 | 11.50 | 48.50 | | |
| | | % | | 53.61% | 22.68% | 23.71% | 100.00% | | |
| | **Fauna** | Mamíferos | 5 | -25 | | | 25.00 | 12.50 | 50.00% |
| | | Aves | 5 | -25 | | | 25.00 | 12.50 | 50.00% |
| | | Σ | 10 | | | | | 25.00 | 100.00% |
| | | li | | -50 | 0 | 0 | | | |
| | | Ir | | 25.00 | 0.00 | 0.00 | 25.00 | | |
| | | % | | 100.00% | 0.00% | 0.00% | 100.00% | | |
| **MEDIO SOCIOECONÓMICO** | | Empleo | 13 | 18 | 21 | | 39.00 | 21.13 | 70.81% |
| | | Salud y Seguridad | 11 | | -19 | | 19.00 | 8.71 | 29.19% |
| | | Σ | 24 | | | | | 29.83 | 100.00% |
| | | li | | 18 | 40 | 0 | | | |
| | | Ir | | 9.75 | 20.08333 | 0.00 | 29.83 | | |
| | | % | | 32.68% | 67.32% | 0.00% | 100.00% | | |

## MATRIZ DE VALORACIÓN DE IMPACTOS

| **Proyecto:** | "Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque" |
|---|---|

**Etapa de proyecto**

| FACTORES / ACCIONES | | | UIP | Tala de arbustos para panorama visual al uso de equipo topográfico | Excavación para toma de muestras (calicatas) | Acumulacion de residuos generados por la brigada de trabajo (botellas, bolsas, etc) | Σli | Ir | % |
|---|---|---|---|---|---|---|---|---|---|
| KILOMETRAJE | | | **01+000 - 11+174.06** | | | | | | |
| **MEDIO FISICO** | **Aire** | Polvo | 5 | | -19 | | 19.00 | 19.00 | 100.00% |
| | | Gases | | | | | 0.00 | 0.00 | 0.00% |
| | | Ruido | | | | | 0.00 | 0.00 | 0.00% |
| | | Σ | 5 | | | | | 19.00 | 100.00% |
| | | li | 0.00 | 19.00 | 0.00 | | | | |
| | | Ir | 0.00 | 19.00 | 0.00 | 19.00 | | | |
| | | % | 0.00% | 100.00% | 0.00% | 100.00% | | | |
| | **Suelo** | Erosión | 14 | | -24 | | 24.00 | 8.00 | 30.77% |
| | | Topografía (relieve) | 14 | | -28 | | 28.00 | 9.33 | 35.90% |
| | | Cambio de uso | | | | | 0.00 | 0.00 | 0.00% |
| | | Contaminación directa | 14 | | | -26 | 26.00 | 8.67 | 33.33% |
| | | Σ | 42 | | | | | 26.00 | 100.00% |
| | | li | 0.00 | 52.00 | 26.00 | | | | |
| | | Ir | 0.00 | 17.33 | 8.67 | 26.00 | | | |
| | | % | 0.00% | 66.67% | 33.33% | 100.00% | | | |
| | **Agua** | Cont. Aguas Superficiales | 20 | | -22 | -24 | 46.00 | 46.00 | 100.00% |
| | | Cont. Aguas Subterráneas | | | | | 0.00 | 0.00 | 0.00% |
| | | Σ | 20 | | | | | 46.00 | 100.00% |
| | | li | 0.00 | 22.00 | 24.00 | | | | |
| | | Ir | 0.00 | 22.00 | 24.00 | 46.00 | | | |
| | | % | 0.00% | 47.83% | 52.17% | 100.00% | | | |
| **MEDIO BIÓTICO** | **Flora** | Árboles | 14 | -26 | | | 26.00 | 13.00 | 26.80% |
| | | Arbustos | 14 | -26 | -22 | -23 | 71.00 | 35.50 | 73.20% |
| | | Cultivos | | | | | 0.00 | 0.00 | 0.00% |
| | | Σ | 28 | | | | | 48.50 | 100.00% |
| | | li | -52 | -22 | -23 | | | | |
| | | Ir | 26.00 | 11.00 | 11.50 | 48.50 | | | |
| | | % | 53.61% | 22.68% | 23.71% | 100.00% | | | |
| | **Fauna** | Mamíferos | 5 | -25 | | | 25.00 | 12.50 | 50.00% |
| | | Aves | 5 | -25 | | | 25.00 | 12.50 | 50.00% |
| | | Σ | 10 | | | | | 25.00 | 100.00% |
| | | li | -50 | 0 | 0 | | | | |
| | | Ir | 25.00 | 0.00 | 0.00 | 25.00 | | | |
| | | % | 100.00% | 0.00% | 0.00% | 100.00% | | | |
| **MEDIO SOCIOECONÓMICO** | | Empleo | 13 | 18 | 21 | | 39.00 | 21.13 | 70.81% |
| | | Salud y Seguridad | 11 | | -19 | | 19.00 | 8.71 | 29.19% |
| | | Σ | 24 | | | | | 29.83 | 100.00% |
| | | li | 18 | 40 | 0 | | | | |
| | | Ir | 9.75 | 20.08 | 0.00 | 29.83 | | | |
| | | % | 32.68% | 67.32% | 0.00% | 100.00% | | | |

**MATRIZ DE IDENTIFICACIÓN DE IMPACTOS**

| **Proyecto:** | | "Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque" | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Etapa de construcción** | | | | | | | | | | | |
| FACTORES / ACCIONES | | | Construcción de campamento | Excavación para toma de Movilización y operación de | Demolición de alcantarillas | Corte de terreno | Relleno de terreno | Transporte de materiales | Perfilado y compactación de subrasante. | Eliminación de material excedente. | Construcción de obras de arte y drenaje. |
| KILOMETRAJE | | | 00+000 - 01+000 | | | | | | | | |
| **MEDIO FISICO** | **Aire** | Polvo | x | x | x | x | x | x | x | x | x |
| | | Gases | | | | | | | x | x | |
| | | Ruido | x | x | x | x | x | x | x | x | x |
| | **Suelo** | Erosión | x | | | x | x | | x | x | |
| | | Topografía (relieve) | x | x | x | x | x | x | x | x | x |
| | | Cambio de uso | x | | | x | x | | x | x | |
| | | Contaminación directa | x | x | x | | | | | x | |
| | **Agua** | Cont. Aguas Superficiales | x | x | | x | x | x | x | x | x |
| | | Cont. Aguas Subterráneas | | | | | | | | | |
| **MEDIO BIÓTICO** | **Flora** | Árboles | x | x | | x | x | x | x | x | x |
| | | Arbustos | x | x | | x | x | x | x | x | x |
| | | Cultivos | | x | | x | x | x | x | x | x |
| | **Fauna** | Mamíferos | x | x | | x | x | x | x | x | x |
| | | Aves | x | x | | x | x | x | x | x | x |
| **MEDIO SOCIOECONÓMICO** | | Empleo | x | x | x | x | x | x | x | x | x |
| | | Salud y Seguridad | x | x | x | x | x | x | x | x | x |

**MATRIZ DE IDENTIFICACIÓN DE IMPACTOS**

| **Proyecto:** | | "Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque" | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Etapa de construcción** | | | | | | | | | | | |
| FACTORES / ACCIONES | | | Construcción de campamento | Excavación para toma de Movilización y operación de | Demolición de alcantarillas | Corte de terreno | Relleno de terreno | Transporte de materiales | Perfilado y compactación de subrasante. | Eliminación de material excedente. | Construcción de obras de arte y drenaje. |
| KILOMETRAJE | | | 01+000 - 11+174.06 | | | | | | | | |
| **MEDIO FISICO** | **Aire** | Polvo | x | x | x | x | x | x | x | x | x |
| | | Gases | | | | | | | x | x | |
| | | Ruido | x | x | x | x | x | x | x | x | x |
| | **Suelo** | Erosión | x | | | x | x | | x | x | |
| | | Topografía (relieve) | x | x | x | x | x | x | x | x | x |
| | | Cambio de uso | x | | | x | x | | x | x | |
| | | Contaminación directa | x | x | x | | | | | x | |
| | **Agua** | ~~Cont. Aguas Superficiales~~ | x | x | | x | x | x | x | x | x |
| | | ~~Cont. Aguas Subterráneas~~ | | | | | | | | | |
| **MEDIO BIÓTICO** | **Flora** | Árboles | x | x | | x | x | x | x | x | x |
| | | Arbustos | x | x | | x | x | x | x | x | x |
| | | Cultivos | | x | | x | x | x | x | x | x |
| | **Fauna** | Mamíferos | x | x | | x | x | x | x | x | x |
| | | Aves | x | x | | x | x | x | x | x | x |
| **MEDIO SOCIOECONÓMICO** | | Empleo | x | x | x | x | x | x | x | x | x |
| | | Salud y Seguridad | x | x | x | x | x | x | x | x | x |

## MATRIZ DE CARACTERIZACIÓN DE IMPACTOS

"Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque"
00+000 - 01+000

**Etapa de Construcción**

| ACCIONES / FACTORES | MEDIO FISCO | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AIRE | | | | | | | | | | | | |
| **Construcción de campamento** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 2 | 1 | 4 | 1 | 2 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Gases | | | | | | | | | | | | | |
| Ruido | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 2 | -20 | IRRELEVANTE |
| **Excavación para toma de Movilización y operación de maquinaria** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 1 | 1 | 4 | 1 | 1 | 2 | 1 | 4 | 1 | 4 | -23 | IRRELEVANTE |
| Gases | | | | | | | | | | | | | |
| Ruido | (-) | 1 | 1 | 4 | 1 | 1 | 2 | 1 | 4 | 1 | 1 | -20 | IRRELEVANTE |
| **Demolición de alcantarillas** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Gases | | | | | | | | | | | | | |
| Ruido | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| **Corte de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 4 | 2 | 4 | 2 | 1 | 2 | 1 | 4 | 2 | 4 | -36 | MODERADO |
| Gases | | | | | | | | | | | | | |
| Ruido | (-) | 1 | 2 | 4 | 2 | 1 | 1 | 1 | 4 | 2 | 4 | -26 | MODERADO |
| **Relleno de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 4 | 2 | 4 | 2 | 1 | 2 | 1 | 4 | 2 | 4 | -36 | MODERADO |
| Gases | | | | | | | | | | | | | |
| Ruido | (-) | 1 | 2 | 4 | 2 | 1 | 1 | 1 | 4 | 2 | 4 | -26 | MODERADO |
| **Transporte de materiales** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 4 | 2 | 4 | -28 | MODERADO |
| Gases | | | | | | | | | | | | | |
| Ruido | (-) | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 4 | 2 | 4 | -28 | MODERADO |
| **Perfilado y compactación de subrasante.** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 2 | 1 | 4 | 1 | 1 | 2 | 1 | 4 | 1 | 4 | -26 | MODERADO |
| Gases | | 2 | 1 | 4 | 1 | 1 | 2 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Ruido | (-) | 2 | 1 | 4 | 1 | 1 | 2 | 1 | 4 | 1 | 1 | -23 | IRRELEVANTE |
| **Eliminación de material excedente** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 4 | 2 | 4 | 1 | 1 | 2 | 1 | 4 | 2 | 4 | -35 | MODERADO |
| Gases | (-) | 8 | 2 | 4 | 1 | 1 | 2 | 1 | 4 | 2 | 4 | -47 | MODERADO |
| Ruido | (-) | 4 | 2 | 4 | 1 | 1 | 2 | 1 | 4 | 2 | 4 | -35 | MODERADO |
| **Construcción de obras de arte y drenaje** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| Gases | | | | | | | | | | | | | |
| Ruido | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| ACCIONES / FACTORES | MEDIO FISCO | | | | | | | | | | | | |
| | SUELO | | | | | | | | | | | | |
| **Construcción de campamento** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | (-) | 1 | 1 | 2 | 1 | 2 | 2 | 1 | 4 | 1 | 4 | -22 | IRRELEVANTE |
| Topografía (relieve) | (-) | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Cambio de uso | (-) | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | -19 | IRRELEVANTE |
| Contaminación directa | (-) | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 4 | -22 | IRRELEVANTE |
| **Excavación para toma de Movilización y operación de maquinaria** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | | | | | | | | | | | | | |
| Topografía (relieve) | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -28 | MODERADO |
| Cambio de uso | | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Contaminación directa | (-) | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 4 | -21 | IRRELEVANTE |
| **Demolición de alcantarillas** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | | | | | | | | | | | | | |
| Topografía (relieve) | (-) | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 4 | 1 | 2 | -23 | IRRELEVANTE |
| Cambio de uso | | | | | | | | | | | | | |
| Contaminación directa | (-) | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 4 | 1 | 2 | -20 | IRRELEVANTE |
| **Corte de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Topografía (relieve) | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Cambio de uso | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 1 | 4 | -33 | MODERADO |
| Contaminación directa | | | | | | | | | | | | | |
| **Relleno de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Topografía (relieve) | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Cambio de uso | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 1 | 4 | -33 | MODERADO |
| Contaminación directa | | | | | | | | | | | | | |
| **Transporte de materiales** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | | | | | | | | | | | | | |
| Topografía (relieve) | (-) | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -22 | IRRELEVANTE |
| Cambio de uso | | | | | | | | | | | | | |
| Contaminación directa | | | | | | | | | | | | | |
| **Perfilado y compactación de subrasante.** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -26 | MODERADO |
| Topografía (relieve) | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 1 | 4 | 1 | 4 | -30 | MODERADO |
| Cambio de uso | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 1 | 4 | -33 | MODERADO |
| Contaminación directa | | | | | | | | | | | | | |
| **Eliminación de material excedente** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 1 | 4 | -31 | MODERADO |
| Topografía (relieve) | (-) | 4 | 2 | 4 | 2 | 4 | 2 | 2 | 4 | 1 | 8 | -43 | MODERADO |
| Cambio de uso | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 1 | 4 | -33 | MODERADO |
| Contaminación directa | (-) | 4 | 2 | 4 | 2 | 4 | 2 | 2 | 4 | 1 | 4 | -39 | MODERADO |
| **Construcción de obras de arte y drenaje** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | | | | | | | | | | | | | |
| Topografía (relieve) | (-) | 1 | 1 | 2 | 2 | 4 | 1 | 1 | 4 | 1 | 8 | -28 | MODERADO |
| Cambio de uso | | | | | | | | | | | | | |
| Contaminación directa | | | | | | | | | | | | | |
| **ACCIONES / FACTORES** | **MEDIO BIÓTICO** | | | | | | | | | | | | |
| | **AGUA** | | | | | | | | | | | | |
| **Construcción de campamento** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 1 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 1 | 2 | -26 | MODERADO |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Excavación para toma de Movilización y operación de maquinaria** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 1 | 2 | 4 | 2 | 2 | 2 | 4 | 4 | 1 | 2 | -28 | MODERADO |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Demolición de alcantarillas** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | | | | | | | | | | | | | |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Corte de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 1 | 2 | 4 | 2 | 2 | 2 | 4 | 4 | 1 | 2 | -28 | MODERADO |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Relleno de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 1 | 2 | 4 | 2 | 2 | 2 | 4 | 4 | 1 | 2 | -28 | MODERADO |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Transporte de materiales** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 1 | 2 | 4 | 2 | 2 | 2 | 4 | 4 | 1 | 2 | -28 | MODERADO |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Perfilado y compactación de subrasante.** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 1 | 2 | 4 | 2 | 2 | 2 | 4 | 4 | 1 | 2 | -28 | MODERADO |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Eliminación de material excedente** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 2 | 4 | 4 | 2 | 2 | 2 | 4 | 4 | 2 | 4 | -38 | MODERADO |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Construcción de obras de arte y drenaje** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 1 | 1 | 4 | 2 | 2 | 2 | 4 | 4 | 1 | 2 | -26 | MODERADO |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **ACCIONES / FACTORES** | **MEDIO BIÓTICO** | | | | | | | | | | | | |
| | **FLORA** | | | | | | | | | | | | |
| **Construcción de campamento** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -20 | IRRELEVANTE |
| Arbustos | (-) | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -23 | IRRELEVANTE |
| Cultivos | | | | | | | | | | | | | |
| **Excavación para toma de Movilización y operación de maquinaria** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 1 | 2 | 1 | 2 | 2 | 2 | 4 | 4 | 1 | 4 | -27 | MODERADO |
| Arbustos | (-) | 1 | 2 | 1 | 2 | 2 | 2 | 4 | 4 | 1 | 4 | -27 | MODERADO |
| Cultivos | (-) | 1 | 2 | 1 | 2 | 2 | 2 | 4 | 4 | 1 | 4 | -27 | MODERADO |
| **Demolición de alcantarillas** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | | | | | | | | | | | | | |
| Arbustos | | | | | | | | | | | | | |
| Cultivos | | | | | | | | | | | | | |
| **Corte de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -25 | MODERADO |
| Arbustos | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -26 | MODERADO |
| Cultivos | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 1 | 4 | -31 | MODERADO |
| **Relleno de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -25 | MODERADO |
| Arbustos | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -26 | MODERADO |
| Cultivos | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 1 | 4 | -31 | MODERADO |
| **Transporte de materiales** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 4 | -21 | IRRELEVANTE |
| Arbustos | (-) | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | -19 | IRRELEVANTE |
| Cultivos | (-) | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 4 | -21 | IRRELEVANTE |
| **Perfilado y compactación de subrasante.** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 4 | -24 | IRRELEVANTE |
| Arbustos | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 1 | 4 | 1 | 4 | -30 | MODERADO |
| Cultivos | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 1 | 4 | 1 | 4 | -30 | MODERADO |
| **Eliminación de material excedente** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 1 | 4 | -33 | MODERADO |
| Arbustos | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 1 | 4 | -33 | MODERADO |
| Cultivos | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 1 | 4 | -33 | MODERADO |
| **Construcción de obras de arte y drenaje** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -23 | IRRELEVANTE |
| Arbustos | (-) | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -23 | IRRELEVANTE |
| Cultivos | (-) | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -20 | IRRELEVANTE |
| **ACCIONES / FACTORES** | **MEDIO BIÓTICO** | | | | | | | | | | | | |
| | **FAUNA** | | | | | | | | | | | | |
| **Construcción de campamento** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 1 | 1 | 4 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -22 | IRRELEVANTE |
| Aves | (-) | 1 | 1 | 4 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -22 | IRRELEVANTE |

| Excavación para toma de Movilización y operación de maquinaria | NAT | In | EX | MO | PE | RV | SI | AC | EF | PR | MC | I=+/- | IMPORTANCIA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mamíferos | (-) | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 4 | 1 | 1 | -17 | IRRELEVANTE |
| Aves | (-) | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 4 | 1 | 1 | -17 | IRRELEVANTE |
| **Demolición de alcantarillas** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | | | | | | | | | | | | | |
| Aves | | | | | | | | | | | | | |
| **Corte de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -25 | MODERADO |
| Aves | (-) | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -25 | MODERADO |
| **Relleno de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -25 | MODERADO |
| Aves | (-) | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -25 | MODERADO |
| **Transporte de materiales** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -25 | MODERADO |
| Aves | (-) | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -25 | MODERADO |
| **Perfilado y compactación de subrasante.** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | -16 | IRRELEVANTE |
| Aves | (-) | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | -16 | IRRELEVANTE |
| **Eliminación de material excedente** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 2 | 1 | 2 | 2 | 4 | 2 | 1 | 4 | 2 | 2 | -27 | MODERADO |
| Aves | (-) | 2 | 1 | 2 | 2 | 4 | 2 | 1 | 4 | 2 | 2 | -27 | MODERADO |
| **Construcción de obras de arte y drenaje** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 1 | 1 | 4 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -23 | IRRELEVANTE |
| Aves | (-) | 1 | 1 | 4 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -23 | IRRELEVANTE |
| **ACCIONES / FACTORES** | **MEDIO SOCIOECONÓMICO** | | | | | | | | | | | | |
| **Construcción de campamento** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 18 | IRRELEVANTE |
| Salud y Seguridad | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| **Excavación para toma de Movilización y operación de maquinaria** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 18 | IRRELEVANTE |
| Salud y Seguridad | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| **Demolición de alcantarillas** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 18 | IRRELEVANTE |
| Salud y Seguridad | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| **Corte de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 18 | IRRELEVANTE |
| Salud y Seguridad | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| **Relleno de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 18 | IRRELEVANTE |
| Salud y Seguridad | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| **Transporte de materiales** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 18 | IRRELEVANTE |
| Salud y Seguridad | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| **Perfilado y compactación de subrasante.** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 18 | IRRELEVANTE |
| Salud y Seguridad | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| **Eliminación de material excedente** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 18 | IRRELEVANTE |
| Salud y Seguridad | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| **Construcción de obras de arte y drenaje** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 18 | IRRELEVANTE |
| Salud y Seguridad | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |

## MATRIZ DE CARACTERIZACIÓN DE IMPACTOS

"Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque"
01+000 - 11+174.06

**Etapa de Construcción**

| ACCIONES / FACTORES | MEDIO FISCO | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AIRE | | | | | | | | | | | | |
| **Construcción de campamento** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 2 | 1 | 4 | 1 | 2 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Gases | | | | | | | | | | | | | |
| Ruido | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 2 | -20 | IRRELEVANTE |
| **Excavación para toma de Movilización y operación de maquinaria** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 1 | 1 | 4 | 1 | 1 | 2 | 1 | 4 | 1 | 4 | -23 | IRRELEVANTE |
| Gases | | | | | | | | | | | | | |
| Ruido | (-) | 1 | 1 | 4 | 1 | 1 | 2 | 1 | 4 | 1 | 1 | -20 | IRRELEVANTE |
| **Demolición de alcantarillas** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Gases | | | | | | | | | | | | | |
| Ruido | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| **Corte de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 4 | 2 | 4 | 2 | 1 | 2 | 1 | 4 | 2 | 4 | -36 | MODERADO |
| Gases | | | | | | | | | | | | | |
| Ruido | (-) | 1 | 2 | 4 | 2 | 1 | 1 | 1 | 4 | 2 | 4 | -26 | MODERADO |
| **Relleno de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 4 | 2 | 4 | 2 | 1 | 2 | 1 | 4 | 2 | 4 | -36 | MODERADO |
| Gases | | | | | | | | | | | | | |
| Ruido | (-) | 1 | 2 | 4 | 2 | 1 | 1 | 1 | 4 | 2 | 4 | -26 | MODERADO |
| **Transporte de materiales** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 4 | 2 | 4 | -28 | MODERADO |
| Gases | | | | | | | | | | | | | |
| Ruido | (-) | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 4 | 2 | 4 | -28 | MODERADO |
| **Perfilado y compactación de subrasante.** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 2 | 1 | 4 | 1 | 1 | 2 | 1 | 4 | 1 | 4 | -26 | MODERADO |
| Gases | | 2 | 1 | 4 | 1 | 1 | 2 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Ruido | (-) | 2 | 1 | 4 | 1 | 1 | 2 | 1 | 4 | 1 | 1 | -23 | IRRELEVANTE |
| **Eliminación de material excedente** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 4 | 2 | 4 | 1 | 1 | 2 | 1 | 4 | 2 | 4 | -35 | MODERADO |
| Gases | (-) | 8 | 2 | 4 | 1 | 1 | 2 | 1 | 4 | 2 | 4 | -47 | MODERADO |
| Ruido | (-) | 4 | 2 | 4 | 1 | 1 | 2 | 1 | 4 | 2 | 4 | -35 | MODERADO |
| **Construcción de obras de arte y drenaje** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Polvo | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| Gases | | | | | | | | | | | | | |
| Ruido | (-) | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | -19 | IRRELEVANTE |
| ACCIONES / FACTORES | MEDIO FISCO | | | | | | | | | | | | |
| | SUELO | | | | | | | | | | | | |
| **Construcción de campamento** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | (-) | 1 | 1 | 2 | 1 | 2 | 2 | 1 | 4 | 1 | 4 | -22 | IRRELEVANTE |
| Topografía (relieve) | (-) | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Cambio de uso | (-) | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | -19 | IRRELEVANTE |
| Contaminación directa | (-) | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 4 | -22 | IRRELEVANTE |
| **Excavación para toma de Movilización y operación de maquinaria** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | | | | | | | | | | | | | |
| Topografía (relieve) | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -28 | MODERADO |
| Cambio de uso | | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Contaminación directa | (-) | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 4 | -21 | IRRELEVANTE |
| **Demolición de alcantarillas** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | | | | | | | | | | | | | |
| Topografía (relieve) | (-) | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 4 | 1 | 2 | -23 | IRRELEVANTE |
| Cambio de uso | | | | | | | | | | | | | |
| Contaminación directa | (-) | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 4 | 1 | 2 | -20 | IRRELEVANTE |
| **Corte de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Topografía (relieve) | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Cambio de uso | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 1 | 4 | -33 | MODERADO |
| Contaminación directa | | | | | | | | | | | | | |
| **Relleno de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Topografía (relieve) | (-) | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 4 | 1 | 2 | -24 | IRRELEVANTE |
| Cambio de uso | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 1 | 4 | -33 | MODERADO |
| Contaminación directa | | | | | | | | | | | | | |
| **Transporte de materiales** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | | | | | | | | | | | | | |
| Topografía (relieve) | (-) | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -22 | IRRELEVANTE |
| Cambio de uso | | | | | | | | | | | | | |
| Contaminación directa | | | | | | | | | | | | | |
| **Perfilado y compactación de subrasante.** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -26 | MODERADO |
| Topografía (relieve) | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 1 | 4 | 1 | 4 | -30 | MODERADO |
| Cambio de uso | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 1 | 4 | -33 | MODERADO |
| Contaminación directa | | | | | | | | | | | | | |
| **Eliminación de material excedente** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 1 | 4 | -31 | MODERADO |
| Topografía (relieve) | (-) | 4 | 2 | 4 | 2 | 4 | 2 | 2 | 4 | 1 | 8 | -43 | MODERADO |
| Cambio de uso | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 1 | 4 | -33 | MODERADO |
| Contaminación directa | (-) | 4 | 2 | 4 | 2 | 4 | 2 | 2 | 4 | 1 | 4 | -39 | MODERADO |
| **Construcción de obras de arte y drenaje** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Erosión | | | | | | | | | | | | | |
| Topografía (relieve) | | | | | | | | | | | | | |
| Cambio de uso | (-) | 1 | 1 | 2 | 2 | 4 | 1 | 1 | 4 | 1 | 8 | -28 | MODERADO |
| Contaminación directa | | | | | | | | | | | | | |
| **ACCIONES / FACTORES** | **MEDIO BIÓTICO** | | | | | | | | | | | | |
| | **AGUA** | | | | | | | | | | | | |
| **Construcción de campamento** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 1 | 2 | -29 | MODERADO |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Excavación para toma de Movilización y operación de maquinaria** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 1 | 2 | 4 | 2 | 2 | 2 | 4 | 4 | 1 | 2 | -28 | MODERADO |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Demolición de alcantarillas** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | | | | | | | | | | | | | |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Corte de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 2 | 2 | 4 | 2 | 2 | 2 | 4 | 4 | 1 | 2 | -31 | MODERADO |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Relleno de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 2 | 2 | 4 | 2 | 2 | 2 | 4 | 4 | 1 | 2 | -31 | MODERADO |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Transporte de materiales** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 2 | 2 | 4 | 2 | 2 | 2 | 4 | 4 | 1 | 2 | -31 | MODERADO |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Perfilado y compactación de subrasante.** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 2 | 2 | 4 | 2 | 2 | 2 | 4 | 4 | 1 | 2 | -31 | MODERADO |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Eliminación de material excedente** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 2 | 4 | 4 | 2 | 2 | 2 | 4 | 4 | 2 | 4 | -38 | MODERADO |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **Construcción de obras de arte y drenaje** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Cont. Aguas Superficiales | (-) | 1 | 1 | 4 | 2 | 2 | 2 | 4 | 4 | 1 | 2 | -26 | MODERADO |
| Cont. Aguas Subterráneas | | | | | | | | | | | | | |
| **ACCIONES / FACTORES** | **MEDIO BIÓTICO** | | | | | | | | | | | | |
| | **FLORA** | | | | | | | | | | | | |
| **Construcción de campamento** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -20 | IRRELEVANTE |
| Arbustos | (-) | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -23 | IRRELEVANTE |
| Cultivos | | | | | | | | | | | | | |
| **Excavación para toma de Movilización y operación de maquinaria** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 1 | 2 | 1 | 2 | 2 | 2 | 4 | 4 | 1 | 4 | -27 | MODERADO |
| Arbustos | (-) | 1 | 2 | 1 | 2 | 2 | 2 | 4 | 4 | 1 | 4 | -27 | MODERADO |
| Cultivos | (-) | 1 | 2 | 1 | 2 | 2 | 2 | 4 | 4 | 1 | 4 | -27 | MODERADO |
| **Demolición de alcantarillas** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | | | | | | | | | | | | | |
| Arbustos | | | | | | | | | | | | | |
| Cultivos | | | | | | | | | | | | | |
| **Corte de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -28 | MODERADO |
| Arbustos | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -26 | MODERADO |
| Cultivos | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 1 | 4 | -31 | MODERADO |
| **Relleno de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -25 | MODERADO |
| Arbustos | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -26 | MODERADO |
| Cultivos | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 1 | 4 | -31 | MODERADO |
| **Transporte de materiales** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 4 | -21 | IRRELEVANTE |
| Arbustos | (-) | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | -19 | IRRELEVANTE |
| Cultivos | (-) | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 4 | -21 | IRRELEVANTE |
| **Perfilado y compactación de subrasante.** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 4 | -24 | IRRELEVANTE |
| Arbustos | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 1 | 4 | 1 | 4 | -30 | MODERADO |
| Cultivos | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 1 | 4 | 1 | 4 | -30 | MODERADO |
| **Eliminación de material excedente** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 1 | 4 | -33 | MODERADO |
| Arbustos | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 1 | 4 | -33 | MODERADO |
| Cultivos | (-) | 2 | 2 | 2 | 2 | 4 | 2 | 4 | 4 | 1 | 4 | -33 | MODERADO |
| **Construcción de obras de arte y drenaje** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Árboles | (-) | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -23 | IRRELEVANTE |
| Arbustos | (-) | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -23 | IRRELEVANTE |
| Cultivos | (-) | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -20 | IRRELEVANTE |
| **ACCIONES / FACTORES** | **MEDIO BIÓTICO** | | | | | | | | | | | | |
| | **FAUNA** | | | | | | | | | | | | |
| **Construcción de campamento** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 1 | 1 | 4 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -22 | IRRELEVANTE |
| Aves | (-) | 1 | 1 | 4 | 2 | 2 | 1 | 1 | 4 | 1 | 2 | -22 | IRRELEVANTE |
| **Excavación para toma de Movilización y operación de maquinaria** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 4 | 1 | 1 | -17 | IRRELEVANTE |
| Aves | (-) | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 4 | 1 | 1 | -17 | IRRELEVANTE |
| **Demolición de alcantarillas** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aves | | | | | | | | | | | | | |
| **Corte de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -28 | MODERADO |
| Aves | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -28 | MODERADO |
| **Relleno de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -28 | MODERADO |
| Aves | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -28 | MODERADO |
| **Transporte de materiales** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -25 | MODERADO |
| Aves | (-) | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 4 | -25 | MODERADO |
| **Perfilado y compactación de subrasante.** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | -16 | IRRELEVANTE |
| Aves | (-) | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | -16 | IRRELEVANTE |
| **Eliminación de material excedente** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 2 | 1 | 2 | 2 | 4 | 2 | 1 | 4 | 2 | 2 | -27 | MODERADO |
| Aves | (-) | 2 | 1 | 2 | 2 | 4 | 2 | 1 | 4 | 2 | 2 | -27 | MODERADO |
| **Construcción de obras de arte y drenaje** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Mamíferos | (-) | 1 | 1 | 4 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -23 | IRRELEVANTE |
| Aves | (-) | 1 | 1 | 4 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -23 | IRRELEVANTE |
| **ACCIONES / FACTORES** | **MEDIO SOCIOECONÓMICO** | | | | | | | | | | | | |
| **Construcción de campamento** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 1 | 2 | 4 | 2 | 1 | 2 | 1 | 4 | 1 | 1 | 23 | IRRELEVANTE |
| Salud y Seguridad | (-) | 1 | 2 | 4 | 2 | 2 | 2 | 1 | 4 | 4 | 4 | -30 | MODERADO |
| **Excavación para toma de Movilización y operación de maquinaria** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 2 | 2 | 4 | 2 | 2 | 2 | 1 | 4 | 1 | 1 | 27 | MODERADO |
| Salud y Seguridad | (-) | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -26 | MODERADO |
| **Demolición de alcantarillas** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 1 | 2 | 4 | 2 | 1 | 2 | 1 | 4 | 1 | 1 | 23 | IRRELEVANTE |
| Salud y Seguridad | (-) | 2 | 2 | 4 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -28 | MODERADO |
| **Corte de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 2 | 2 | 4 | 2 | 1 | 2 | 1 | 4 | 1 | 1 | 26 | MODERADO |
| Salud y Seguridad | (-) | 2 | 2 | 4 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -28 | MODERADO |
| **Relleno de terreno** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 2 | 2 | 4 | 2 | 1 | 2 | 1 | 4 | 1 | 1 | 26 | MODERADO |
| Salud y Seguridad | (-) | 2 | 2 | 4 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -28 | MODERADO |
| **Transporte de materiales** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 2 | 2 | 4 | 2 | 1 | 2 | 1 | 4 | 1 | 1 | 26 | MODERADO |
| Salud y Seguridad | (-) | 2 | 2 | 4 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -28 | MODERADO |
| **Perfilado y compactación de subrasante.** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 2 | 2 | 4 | 2 | 1 | 2 | 1 | 4 | 1 | 1 | 26 | MODERADO |
| Salud y Seguridad | (-) | 2 | 2 | 4 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -28 | MODERADO |
| **Eliminación de material excedente** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 2 | 2 | 4 | 2 | 1 | 2 | 1 | 4 | 4 | 1 | 29 | MODERADO |
| Salud y Seguridad | (-) | 2 | 2 | 4 | 4 | 2 | 2 | 1 | 4 | 2 | 4 | -33 | MODERADO |
| **Construcción de obras de arte y drenaje** | **NAT** | **In** | **EX** | **MO** | **PE** | **RV** | **SI** | **AC** | **EF** | **PR** | **MC** | **I=+/-** | **IMPORTANCIA** |
| Empleo | (+) | 2 | 2 | 4 | 2 | 1 | 2 | 1 | 4 | 1 | 1 | 26 | MODERADO |
| Salud y Seguridad | (-) | 2 | 2 | 4 | 2 | 2 | 2 | 1 | 4 | 1 | 2 | -28 | MODERADO |

## MATRIZ DE IDENTIFICACIÓN DE IMPACTOS

| **Proyecto:** | “Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque” | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Etapa de construcción** | | | | | | | | | | |
| FACTORES / ACCIONES | | | Construcción de campamento | Excavación para toma de Movilización y operación de | Demolición de alcantarillas | Corte de terreno | Relleno de terreno | Transporte de materiales | Perfilado y compactación de subrasante. | Eliminación de material excedente. | Construcción de obras de arte y drenaje. |
| KILOMETRAJE | | | 00+000 - 01+000 | | | | | | | | |
| **MEDIO FISICO** | **Aire** | Polvo | -24 | -23 | -24 | -36 | -36 | -28 | -26 | -35 | -19 |
| | | Gases | | | | | | | -24 | -47 | |
| | | Ruido | -20 | -20 | -24 | -26 | -26 | -28 | -23 | -35 | -19 |
| | **Suelo** | Erosión | -22 | | | -24 | -24 | | -26 | -31 | |
| | | Topografía (relieve) | -24 | -28 | -23 | -24 | -24 | -22 | -30 | -43 | -28 |
| | | Cambio de uso | -19 | | | -33 | -33 | | -33 | -33 | |
| | | Contaminación directa | -22 | -21 | -20 | | | | | -39 | |
| | **Agua** | Cont. Aguas | -26 | -28 | | -28 | -28 | -28 | -28 | -38 | -26 |
| | | Cont. Aguas | | | | | | | | | |
| **MEDIO BIÓTICO** | **Flora** | Árboles | -20 | -27 | | -25 | -25 | -21 | -24 | -33 | -23 |
| | | Arbustos | -23 | -27 | | -26 | -26 | -19 | -30 | -33 | -23 |
| | | Cultivos | | -27 | | -31 | -31 | -21 | -30 | -33 | -20 |
| | **Fauna** | Mamíferos | -22 | -17 | | -25 | -25 | -16 | -16 | -27 | -23 |
| | | Aves | -22 | -17 | | -25 | -25 | -16 | -16 | -27 | -23 |
| **MEDIO SOCIOECONÓMICO** | | Empleo | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| | | Salud y Seguridad | -19 | -19 | -19 | -19 | -19 | -19 | -19 | -19 | -19 |

## MATRIZ DE IDENTIFICACIÓN DE IMPACTOS

| **Proyecto:** | "Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque" |
|---|---|

**Etapa de construcción**

| FACTORES / ACCIONES | | | Construcción de campamento | Excavación para toma de Movilización y operación de maquinaria | Demolición de alcantarillas | Corte de terreno | Relleno de terreno | Transporte de materiales | Perfilado y compactación de subrasante. | Eliminación de material excedente. | Construcción de obras de arte y drenaje. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| KILOMETRAJE | | | 01+000 - 11+174.06 | | | | | | | | |
| **MEDIO FISICO** | **Aire** | Polvo | -24 | -23 | -24 | -36 | -36 | -28 | -26 | -35 | -19 |
| | | Gases | | | | | | | -24 | -47 | |
| | | Ruido | -20 | -20 | -24 | -26 | -26 | -28 | -23 | -35 | -19 |
| | **Suelo** | Erosión | -22 | | | -24 | -24 | | -26 | -31 | |
| | | Topografía (relieve) | -24 | -28 | -23 | -24 | -24 | -22 | -30 | -43 | |
| | | Cambio de uso | -19 | | | -33 | -33 | | -33 | -31 | -28 |
| | | Contaminación directa | -22 | -21 | -20 | | | | | -39 | |
| | **Agua** | Cont. Aguas | -29 | -28 | | -31 | -31 | -31 | -31 | -38 | -26 |
| | | Cont. Aguas | | | | | | | | | |
| **MEDIO BIÓTICO** | **Flora** | Árboles | -20 | -27 | | -28 | -25 | -21 | -24 | -33 | -23 |
| | | Arbustos | -23 | -27 | | -26 | -26 | -19 | -30 | -33 | -23 |
| | | Cultivos | | -27 | | -31 | -31 | -21 | -30 | -33 | -20 |
| | **Fauna** | Mamíferos | -22 | -17 | | -28 | -28 | -25 | -16 | -27 | -23 |
| | | Aves | -22 | -17 | | -28 | -28 | -25 | -16 | -27 | -23 |
| **MEDIO SOCIOECONÓMICO** | | Empleo | 23 | 27 | 23 | 26 | 26 | 26 | 26 | 29 | 26 |
| | | Salud y Seguridad | -30 | -26 | -28 | -28 | -28 | -28 | -28 | -33 | -28 |

| IMPACTO | ETAPA DE PROYECTO | | | |
|---|---|---|---|---|
| | 00+000 - 02+000 | | 02+000 - 11+174.06 | |
| | N | % | N | % |
| IRRELEVANTE | 47 | 41.23% | 41 | 37.96% |
| MODERADO | 67 | 58.77% | 67 | 62.04% |
| SEVERO | 0 | 0.00% | 0 | 0.00% |
| CRÍTICO | 0 | 0.00% | 0 | 0.00% |
| | 114 | 100.00% | 108 | 100.00% |

## MATRIZ DE IDENTIFICACIÓN DE IMPACTOS

**Proyecto:** "Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque"

**Etapa de construcción**

| FACTORES / ACCIONES | | | UIP | Construcción de campamento | Excavación para toma de Movilización y operación de maquinaria | Demolición de alcantarillas | Corte de terreno | Relleno de terreno | Transporte de materiales | Perfilado y compactación de subrasante. | Eliminación de material excedente. | Construcción de obras de arte y drenaje. | **Σli** | **Ir** | **%** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KILOMETRAJE | | | | 00+000 - 01+000 | | | | | | | | | | | |
| **MEDIO FISICO** | **Aire** | Polvo | 5 | -24 | -23 | -24 | -36 | -36 | -28 | -26 | -35 | -19 | 251.00 | 20.24 | 20.74% |
| | | Gases | 52 | | | | | | | -24 | -47 | | 71.00 | 59.55 | 61.00% |
| | | Ruido | 5 | -20 | -20 | -24 | -26 | -26 | -28 | -23 | -35 | -19 | 221.00 | 17.82 | 18.26% |
| | | Σ | 62 | | | | | | | | | | | 97.61 | 100.00% |
| | | | li | 44 | -43 | -48 | -62 | -62 | -56 | -73 | -117 | -38 | | | |
| | | | Ir | 3.55 | 3.47 | 3.87 | 5.00 | 5.00 | 4.52 | 3.95 | 5.65 | 3.06 | | | |
| | | | % | 3.64% | 3.55% | 3.97% | 5.12% | 5.12% | 4.63% | 4.05% | 5.78% | 3.14% | | | |
| | **Suelo** | Erosión | 14 | -22 | | | -24 | -24 | | -26 | -31 | 0 | 127.00 | 31.75 | 20.35% |
| | | Topografía (relieve) | 14 | -24 | -28 | -23 | -24 | -24 | -22 | -30 | -43 | -28 | 246.00 | 61.50 | 39.42% |
| | | Cambio de uso | 14 | -19 | | | -33 | -33 | | -33 | -31 | 0 | 149.00 | 37.25 | 23.88% |
| | | Contaminación directa | 14 | -22 | -21 | -20 | | | | | -39 | 0 | 102.00 | 25.50 | 16.35% |
| | | Σ | 56 | | | | | | | | | | | 156.00 | 100.00% |
| | | | li | -87 | -49 | -43 | -81 | -81 | -22 | -89 | -144 | -28 | | | |
| | | | Ir | 21.75 | 12.25 | 10.75 | 20.25 | 20.25 | 5.50 | 22.25 | 36.00 | 7.00 | | | |
| | | | % | 13.94% | 7.85% | 6.89% | 12.98% | 12.98% | 3.53% | 14.26% | 23.08% | 4.49% | | | |
| | **Agua** | Cont. Aguas | 20 | -26 | -28 | | -28 | -28 | -28 | -28 | -38 | -26 | 230.00 | 230.00 | 147.44% |
| | | Cont. Aguas | | | | | | | | | | | | | |
| | | | 20 | | | | | | | | | | | 230.00 | 147.44% |
| | | | li | 26 | 28 | 0 | 28 | 28 | 28 | 28 | 38 | 26 | | | |
| | | | Ir | 26.00 | 28.00 | 0.00 | 28.00 | 28.00 | 28.00 | 28.00 | 38.00 | 26.00 | | | |
| | | | % | 11.30% | 12.17% | 0.00% | 12.17% | 12.17% | 12.17% | 12.17% | 16.52% | 11.30% | | | |
| **MEDIO BIÓTICO** | **Flora** | Árboles | 14 | -20 | -27 | | -25 | -25 | -21 | -24 | -33 | -23 | 198.00 | 66.00 | 33.11% |
| | | Arbustos | 14 | -23 | -27 | | -26 | -26 | -19 | -30 | -33 | -23 | 207.00 | 69.00 | 34.62% |
| | | Cultivos | 14 | | -27 | | -31 | -31 | -21 | -30 | -33 | -20 | 193.00 | 64.33 | 32.27% |
| | | Σ | 42 | | | | | | | | | | | 199.33 | 100.00% |
| | | | li | -43 | -81 | 0 | -82 | -82 | -61 | -84 | -99 | -66 | | | |
| | | | Ir | 14.33 | 27.00 | 0.00 | 27.33 | 27.33 | 20.33 | 28.00 | 33.00 | 22.00 | | | |
| | | | % | 7.19% | 13.55% | 0.00% | 13.71% | 13.71% | 10.20% | 14.05% | 16.56% | 11.04% | | | |
| | **Fauna** | Mamíferos | 5 | -22 | -17 | | -25 | -25 | -25 | -16 | -27 | -23 | 180.00 | 90.00 | 50.00% |
| | | Aves | 5 | -22 | -17 | | -25 | -25 | -25 | -16 | -27 | -23 | 180.00 | 90.00 | 50.00% |
| | | Σ | 10 | | | | | | | | | | | 180.00 | 100.00% |
| | | | li | 44 | 34 | 0 | 50 | 50 | 50 | 32 | 54 | 46 | | | |
| | | | Ir | 22.00 | 17.00 | 0.00 | 25.00 | 25.00 | 25.00 | 16.00 | 27.00 | 23.00 | | | |
| | | | % | 12.22% | 9.44% | 0.00% | 13.89% | 13.89% | 13.89% | 8.89% | 15.00% | 12.78% | | | |
| **MEDIO SOCIOECONÓMICO** | | Empleo | 13 | 23 | 27 | 23 | 26 | 26 | 26 | 26 | 29 | 26 | 232.00 | 125.67 | 51.62% |
| | | Salud y Seguridad | 11 | -30 | -26 | -28 | -28 | -28 | -28 | -28 | -33 | -28 | 257.00 | 117.79 | 48.38% |
| | | Σ | 24 | 53 | 53 | 51 | 54 | 54 | 54 | 54 | 62 | 54 | | 243.46 | 100.00% |
| | | | li | 26.21 | 26.54 | 25.29 | 26.92 | 26.92 | 26.92 | 26.92 | 30.83 | 26.92 | | | |
| | | | Ir | 10.77% | 10.90% | 10.39% | 11.06% | 11.06% | 11.06% | 11.06% | 12.66% | 11.06% | | | |
| | | | % | | | | | | | | | | | | |

## MATRIZ DE IDENTIFICACIÓN DE IMPACTOS

**Proyecto:** "Estudio Definitivo Del Camino Vecinal Caserío Huaca De Toro - Centro Poblado Huaca Quemada Del Distrito De Mochumí, Provincia De Lambayeque, Departamento De Lambayeque"

**Etapa de construcción**

| FACTORES / ACCIONES | | | UIP | Construcción de campamento | Excavación para toma de Movilización y operación de maquinaria | Demolición de alcantarillas | Corte de terreno | Relleno de terreno | Transporte de materiales | Perfilado y compactación de subrasante. | Eliminación de material excedente. | Construcción de obras de arte y drenaje. | **Σli** | **Ir** | **%** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KILOMETRAJE | | | 01+000 - 11+174.06 | | | | | | | | | | | | |
| **MEDIO FISICO** | **Aire** | Polvo | 5 | -24 | -23 | -24 | -36 | -36 | -28 | -26 | -35 | -19 | 251.00 | 20.24 | 20.74% |
| | | Gases | 52 | | | | | | | -24 | -47 | | 71.00 | 59.55 | 61.00% |
| | | Ruido | 5 | -20 | -20 | -24 | -26 | -26 | -28 | -23 | -35 | -19 | 221.00 | 17.82 | 18.26% |
| | | Σ | 62 | | | | | | | | | | | 97.61 | 100.00% |
| | | li | | 44 | -43 | -48 | -62 | -62 | -56 | -73 | -117 | -38 | | | |
| | | Ir | | 3.55 | 3.47 | 3.87 | 5.00 | 5.00 | 4.52 | 3.95 | 5.65 | 3.06 | | | |
| | | % | | 3.64% | 3.55% | 3.97% | 5.12% | 5.12% | 4.63% | 4.05% | 5.78% | 3.14% | | | |
| | **Suelo** | Erosión | 14 | -22 | | | -24 | -24 | | -26 | -31 | 0 | 127.00 | 31.75 | 20.35% |
| | | Topografía (relieve) | 14 | -24 | -28 | -23 | -24 | -24 | -22 | -30 | -43 | -28 | 246.00 | 61.50 | 39.42% |
| | | Cambio de uso | 14 | -19 | | | -33 | -33 | | -33 | -31 | 0 | 149.00 | 37.25 | 23.88% |
| | | Contaminación directa | 14 | -22 | -21 | -20 | | | | | -39 | 0 | 102.00 | 25.50 | 16.35% |
| | | Σ | 56 | | | | | | | | | | | 156.00 | 100.00% |
| | | li | | -87 | -49 | -43 | -81 | -81 | -22 | -89 | -144 | -28 | | | |
| | | Ir | | 21.75 | 12.25 | 10.75 | 20.25 | 20.25 | 5.50 | 22.25 | 36.00 | 7.00 | | | |
| | | % | | 13.94% | 7.85% | 6.89% | 12.98% | 12.98% | 3.53% | 14.26% | 23.08% | 4.49% | | | |
| | **Agua** | Cont. Aguas | 20 | -29 | -28 | | -31 | -31 | -31 | -31 | -38 | -26 | 245.00 | 245.00 | 157.05% |
| | | Cont. Aguas | | | | | | | | | | | | | |
| | | | 20 | | | | | | | | | | | 245.00 | 157.05% |
| | | li | | 29 | 28 | 0 | 31 | 31 | 31 | 31 | 38 | 26 | | | |
| | | Ir | | 29.00 | 28.00 | 0.00 | 31.00 | 31.00 | 31.00 | 31.00 | 38.00 | 26.00 | | | |
| | | % | | 11.84% | 11.43% | 0.00% | 12.65% | 12.65% | 12.65% | 12.65% | 15.51% | 10.61% | | | |
| **MEDIO BIÓTICO** | **Flora** | Árboles | 14 | -20 | -27 | | -28 | -25 | -21 | -24 | -33 | -23 | 201.00 | 67.00 | 33.44% |
| | | Arbustos | 14 | -23 | -27 | | -26 | -26 | -19 | -30 | -33 | -23 | 207.00 | 69.00 | 34.44% |
| | | Cultivos | 14 | | -27 | | -31 | -31 | -21 | -30 | -33 | -20 | 193.00 | 64.33 | 32.11% |
| | | Σ | 42 | | | | | | | | | | | 200.33 | 100.00% |
| | | li | | -43 | -81 | 0 | -85 | -82 | -61 | -84 | -99 | -66 | | | |
| | | Ir | | 14.33 | 27.00 | 0.00 | 28.33 | 27.33 | 20.33 | 28.00 | 33.00 | 22.00 | | | |
| | | % | | 7.15% | 13.48% | 0.00% | 14.14% | 13.64% | 10.15% | 13.98% | 16.47% | 10.98% | | | |
| | **Fauna** | Mamíferos | 5 | -22 | -17 | | -28 | -28 | -25 | -16 | -27 | -23 | 186.00 | 93.00 | 50.00% |
| | | Aves | 5 | -22 | -17 | | -28 | -28 | -25 | -16 | -27 | -23 | 186.00 | 93.00 | 50.00% |
| | | Σ | 10 | | | | | | | | | | | 186.00 | 100.00% |
| | | li | | 44 | 34 | 0 | 56 | 56 | 50 | 32 | 54 | 46 | | | |
| | | Ir | | 22.00 | 17.00 | 0.00 | 28.00 | 28.00 | 25.00 | 16.00 | 27.00 | 23.00 | | | |
| | | % | | 11.83% | 9.14% | 0.00% | 15.05% | 15.05% | 13.44% | 8.60% | 14.52% | 12.37% | | | |
| **MEDIO SOCIOECONÓMICO** | | Empleo | 13 | 23 | 27 | 23 | 26 | 26 | 26 | 26 | 29 | 26 | 232.00 | 125.67 | 51.62% |
| | | Salud y Seguridad | 11 | -30 | -26 | -28 | -28 | -28 | -28 | -28 | -33 | -28 | 257.00 | 117.79 | 48.38% |
| | | Σ | 24 | 53 | 53 | 51 | 54 | 54 | 54 | 54 | 62 | 54 | | 243.46 | 100.00% |
| | | li | | 26.21 | 26.54 | 25.29 | 26.92 | 26.92 | 26.92 | 26.92 | 30.83 | 26.92 | | | |
| | | Ir | | 10.77% | 10.90% | 10.39% | 11.06% | 11.06% | 11.06% | 11.06% | 12.66% | 11.06% | | | |
| | | % | | | | | | | | | | | | | |

# ANEXO N°15.- PANEL FOTOGRÁFICO

| PUNTO DE PARTIDA DEL PROYECTO | |
|---|---|
|  |  |
| ***FOTO N°1:*** *Inicio del Proyecto – Huaca Toro.* | ***FOTO N°2:*** *Inicio del Proyecto – Huaca Toro (KM 0+000).* |
| **REALIDAD PROBLEMÁTICA DEL PROYECTO** | |
|  |  |
| ***FOTO N°3:*** *Estado actual de la carretera.* | ***FOTO N°4:*** *Presencia de hundimientos en tramos de la carretera.* |

## MONUMENTACIÓN Y SEÑALIZACIÓN DE LOS PUNTOS TOPOGRÁFICOS

<table>
<tr><td>
</td><td></td></tr>
<tr><td>FOTO N°5: Ubicación del Punto Geodésico.</td><td>FOTO N°6: Medición con flexómetro de la parte superior de excavación para hito en el punto.</td></tr>
<tr><td></td><td>
</td></tr>
<tr><td>FOTO N°7: Medición de profundidad de excavación para hito en el punto.</td><td>FOTO N°8: Rectificación de medidas de excavación para hito en el punto.</td></tr>
<tr><td>
</td><td></td></tr>
<tr><td>FOTO N°9: El anclaje tendrá forma en cruz, sus brazos tendrán un diámetro de 10 milímetros y 50 milímetros de longitud.</td><td>Foto N° 10: Colocación del disco en Punto geodésico.</td></tr>
</table>

## MONUMENTACIÓN Y SEÑALIZACIÓN DE LOS PUNTOS TOPOGRÁFICOS




***FOTO N°11:*** *Incrustación de disco en el Punto geodésico.*




***FOTO N°12:*** *Monumento terminado fraguado.*




***FOTO N°13:*** *Vista panorámica del receptor GNSS en el Punto Geodésico.*

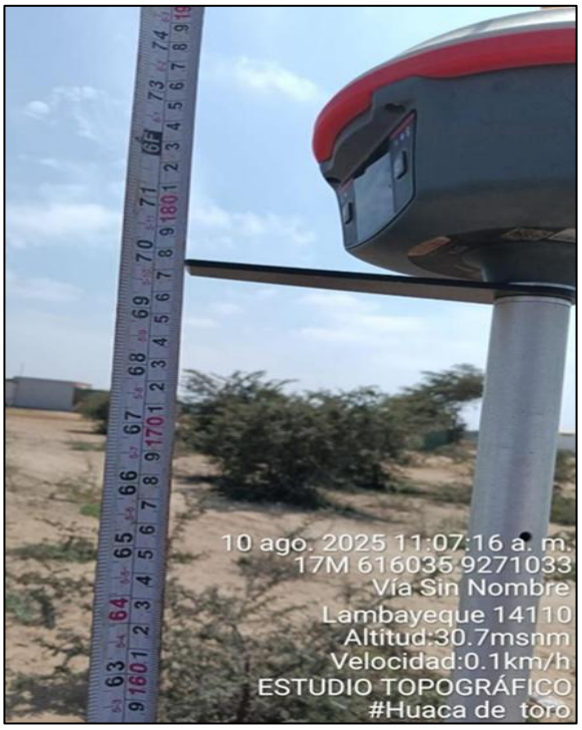



***FOTO N°14:*** *Lectura de altura inclinada*

| MONUMENTACIÓN Y SEÑALIZACIÓN DE LOS PUNTOS TOPOGRÁFICOS | |
|---|---|
|  |  |
| ***FOTO N°15:*** *Monumención del BM-03.* | ***FOTO N°16:*** *Monumentación del BM-06.* |
|  |  |
| ***FOTO N°17:*** *Señalización cerca a los Bm's con yeso.* | ***FOTO N°18:*** *Monumentación del BM-07.* |
|  |  |
| ***FOTO N°19:*** *Señalización cerca a los Bm's con yeso.* | ***FOTO N°20:*** *Monumentación del BM-10.* |

## LEVANTAMIENTO TOPOGRÁFICO DE LA CARRETRA




***FOTO N°21:*** *Levantamiento Topográfico de los tesistas*



***FOTO N°22:*** *Levantamiento topográfico con estación total en campo.*



***FOTO N°23:*** *Sostenimiento de prisma para levantamiento topográfico.*

## LEVANTAMIENTO TOPOGRÁFICO DE LA CARRETRA




***FOTO N°24:*** *Toma de datos de ángulos y distancias para el cálculo de la poligonal cerrada*



***FOTO N°25:*** *Ubicación de prisma en eje de vía.*

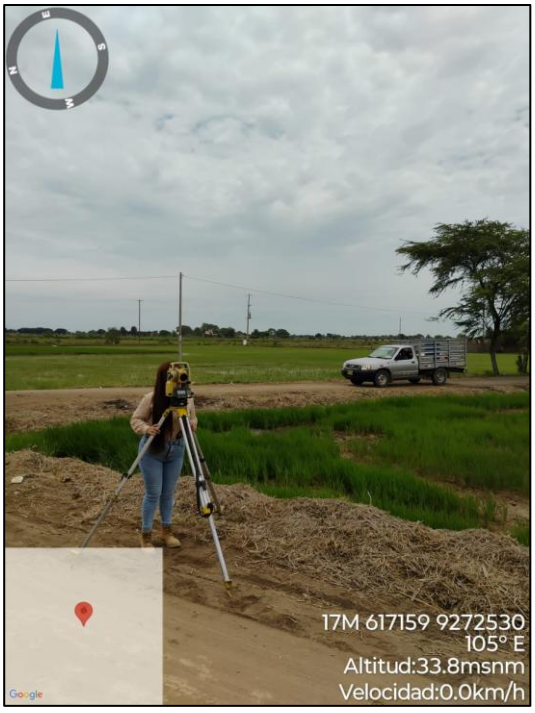



***FOTO N°26:*** *Apuntamiento de estación total hacia prisma.*



***FOTO N°27:*** *Ubicación de prisma al borde vía.*

## LEVANTAMIENTO TOPOGRÁFICO DE LA CARRETRA

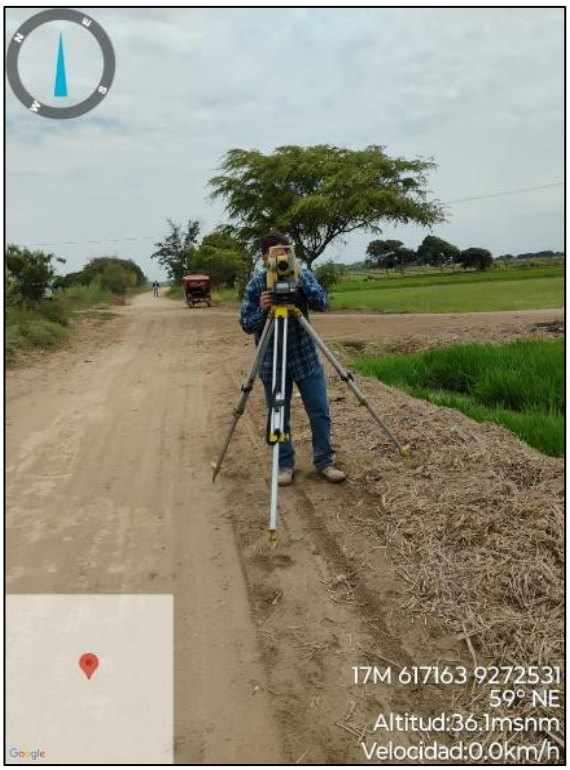



***FOTO N°28:*** *Observación del prisma para medición.*

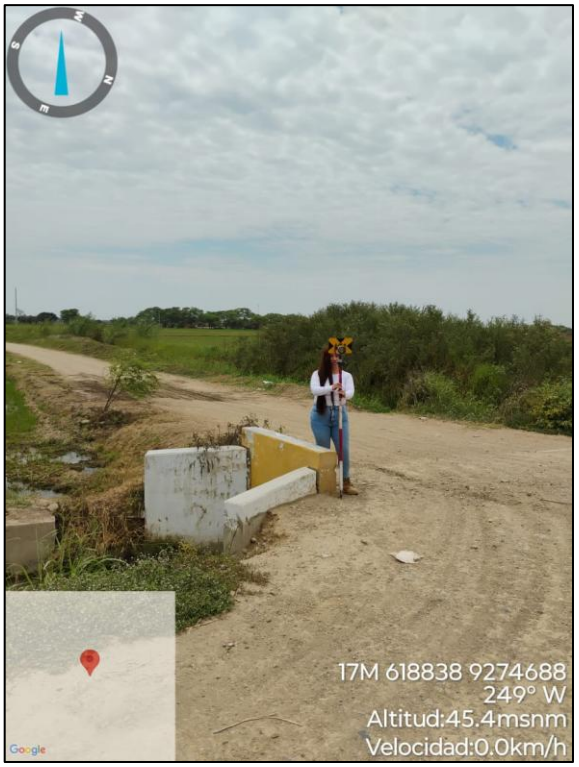



***FOTO N°29:*** *Ubicación de prisma en una de las obras de arte de la vía.*




***FOTO N°30:*** *Medición ejecutada y almacenada.*



***FOTO N°31:*** *Ubicación de prisma al borde vía.*

**ALCANTARILLA EXISTENTES**




***FOTO N°32:*** *Alcantarilla de cajón (o tipo marco)*



***FOTO N°33:*** *Alcantarilla de cajón (o tipo marco) en la estación E-02*

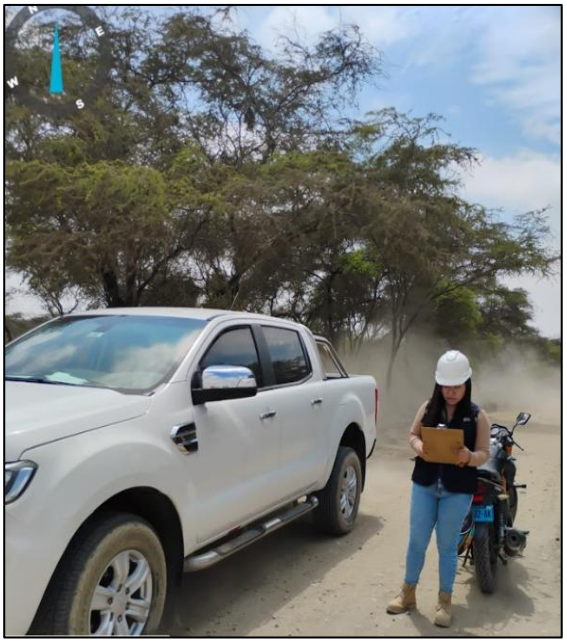
| ALCANTARILLA EXISTENTES | |
|---|---|
|  |  |
| ***FOTO N°34:*** *Alcantarilla de cajón (o tipo marco).* | ***FOTO N°35:*** *Alcantarilla de cajón (o tipo marco).* |
|  |  |
| ***FOTO N°36:*** *Alcantarillas pluviales/de paso.* | ***FOTO N°37:*** *Alcantarillas pluviales/de paso.* |

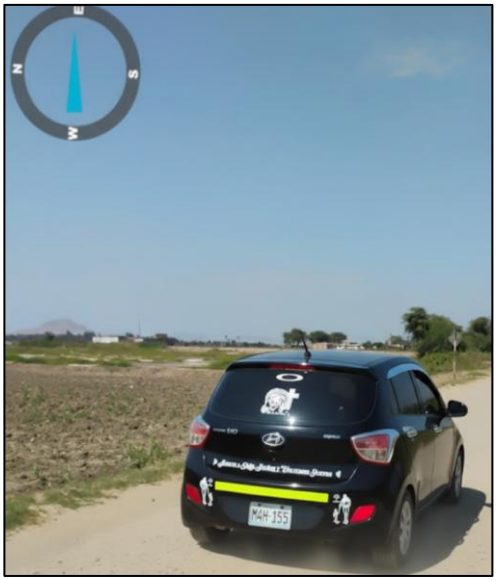
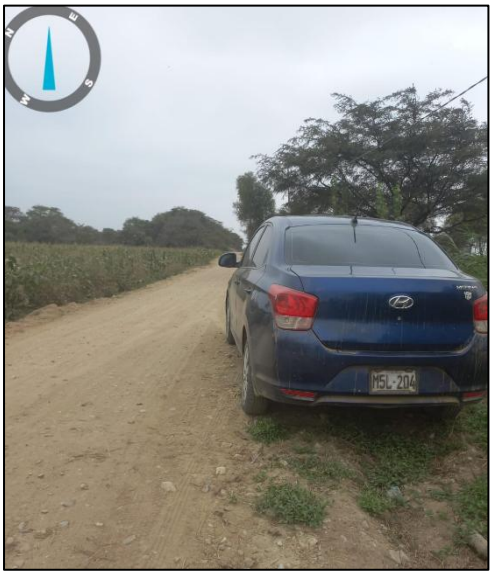
| EXCAVACIÓN DE CALICATAS | |
|---|---|
|  |  |
| ***FOTO N°38:*** *Excavación de calicatas para extracción de muestras.* | ***FOTO N°39:*** *Calicata 01 (C-01): coordenadas E=616048.55, N=9271022.23.* |
|  |  |
| ***FOTO N°40:*** *Calicata 03 (C-03): coordenadas E=617365.16, N=9272288.79.* | ***FOTO N°41:*** *Calicata 04 (C-04): coordenadas E=617281.70, N=9273158.04.* |

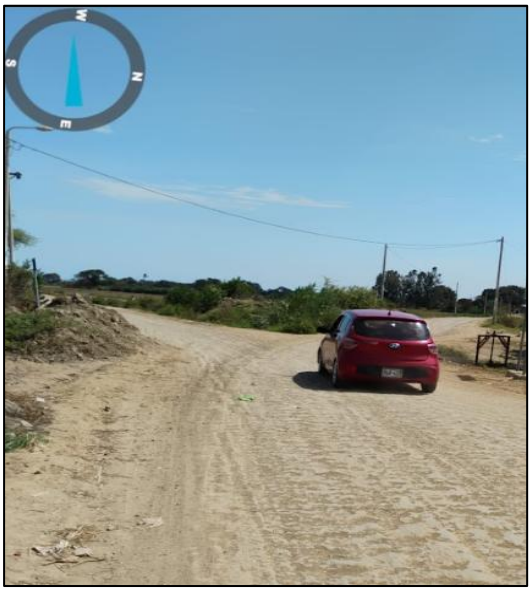
| EXCAVACIÓN DE CALICATAS | |
|---|---|
|  |  |
| ***FOTO N°42:*** *Calicata 06 (C-06): coordenadas E=618698.32, N=9274486.11.* | ***FOTO N°43:*** *Calicata 08(C-08): coordenadas E=618698.32, N=9274486.11.* |
|  |  |
| ***FOTO N°44:*** *Calicata 09 (C-09): coordenadas E=620735.20, N=9276626.62.* | ***FOTO N°45:*** *Calicata 10 (C-10): coordenadas E=621625.95, N=9276246.79.* |

| LABORATORIO DE MECANICA DE SUELOS | |
|---|---|
|  |  |
| ***FOTO N°46:*** *Pesaje de las muestras.* | ***FOTO N°47:*** *Muestras listas para llevarlas al horno para el Ensayo de Contenido de humedad.* |
|  |  |
| ***FOTO N°48:*** *Pesaje de muestra de suelo compactado para contenido de humedad.* | ***FOTO N°49:*** *Tamizado de muestra – Ensayo de análisis granulométrico.* |

| LABORATORIO DE MECANICA DE SUELOS | |
|---|---|
|  |  |
| ***FOTO N°50:*** *Disolución de muestra con agua destilada.* | ***FOTO N°51:*** *Compactado de muestra por capas para el Ensayo de CBR* |
|  |  |
| ***FOTO N°52:*** *Moldes con pesas de sobrecarga listos para sumergir en agua* | ***FOTO N°53:*** *Ensayo en la prensa de carga de CBR de la calicata C-03 muestra de 56 golpes para el cálculo de penetración.* |

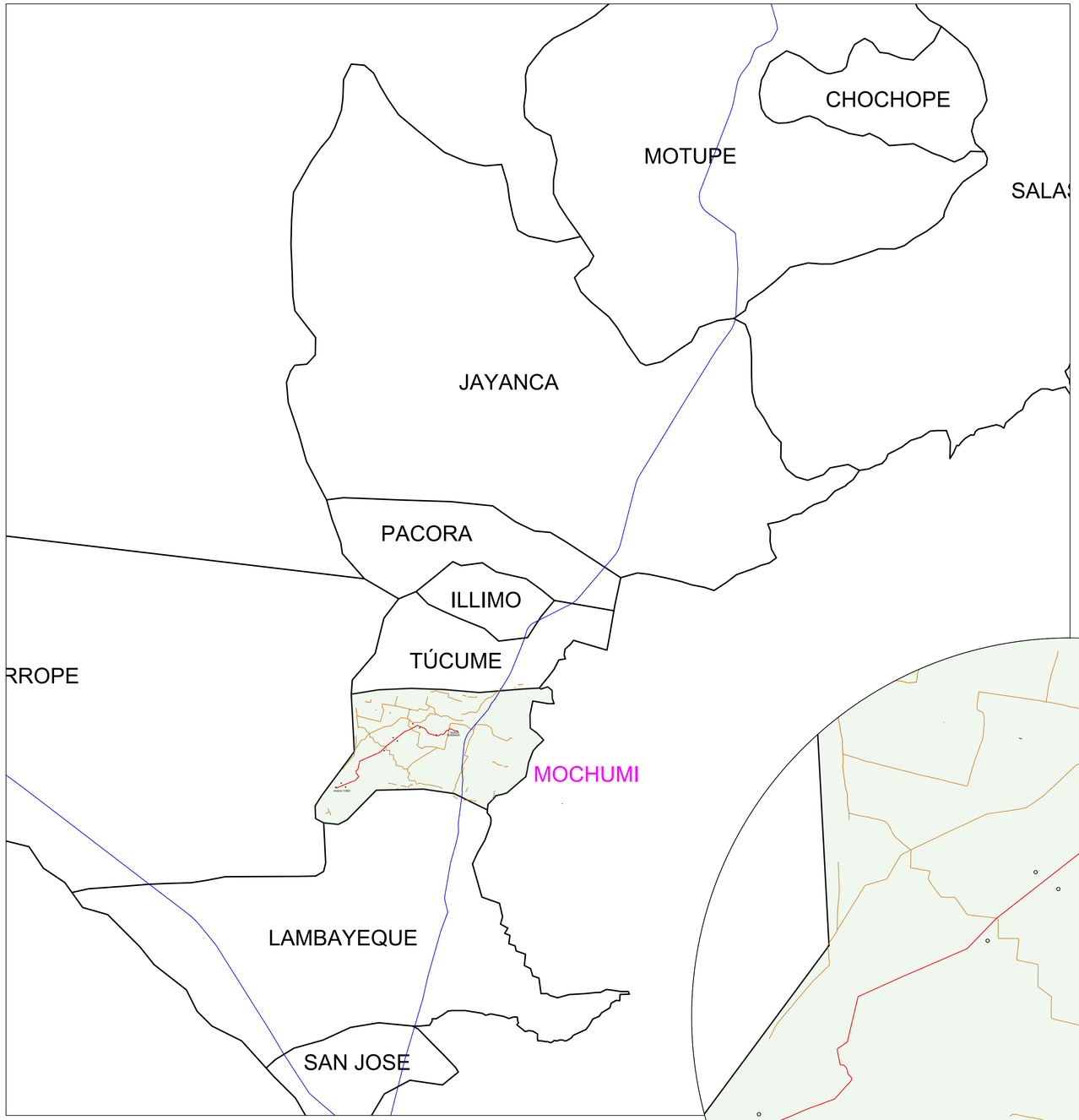
| ESTUDIO DE TRÁFICO | |
|---|---|
|  |  |
| ***FOTO N°54**: Conteo Vehicular en la Estación 01 (E-01)* | ***FOTO N°55:** Conteo vehicular para el estudio de tráfico en esta imagen podemos observar vehículos tipo camioneta.* |
|  |  |
| ***FOTO N°56:** Conteo vehicular para el estudio de tráfico en esta imagen podemos observar vehículos menores (mototaxi).* | ***FOTO N°57:** Conteo vehicular para el estudio de tráfico en esta imagen podemos observar vehículos tipo camioneta.* |

| ESTUDIO DE TRÁFICO | |
|---|---|
|  |  |
| ***FOTO N°58:*** *Conteo Vehicular en la Estación 02 (E-02)* | ***FOTO N°59:*** *Conteo vehicular para el estudio de tráfico en esta imagen podemos observar vehículos tipo camión.* |
|  |  |
| ***FOTO N°60:*** *Conteo vehicular para el estudio de tráfico en esta imagen podemos observar vehículos tipo auto.* | ***FOTO N°61:*** *Conteo vehicular para el estudio de tráfico en esta imagen podemos observar vehículos tipo auto.* |

| ESTUDIO DE TRÁFICO | |
|---|---|
|  |  |
| ***FOTO N°62:*** *Conteo Vehicular en la Estación 03 (E-03)* | ***FOTO N°63:*** *Conteo vehicular para el estudio de tráfico en esta imagen podemos observar vehículos tipo camión.* |
|  |  |
| ***FOTO N°64:*** *Conteo Vehicular en la Estación 04 (E-04)* | ***FOTO N°65:*** *Conteo vehicular para el estudio de tráfico en esta imagen podemos observar vehículos tipo auto.* |

# ANEXO N°16.- PLANOS

# PLANO DE LOCALIZACIÓN Y UBICACIÓN













| LEYENDA | |
|---|---|
| RUTA NACIONAL | |
| RUTA VECINAL | |
| RUTA EN ESTUDIO | |
| CENTROS POBLADOS | |
| DISTRITO DE MOCHUMI | |

# PLANO DE UBICACIÓN

**S/E**

UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**PLANO DE UBICACION**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

| ESC: | FECHA: |
|---|---|
| INDICADA | Febrero, 2026 |

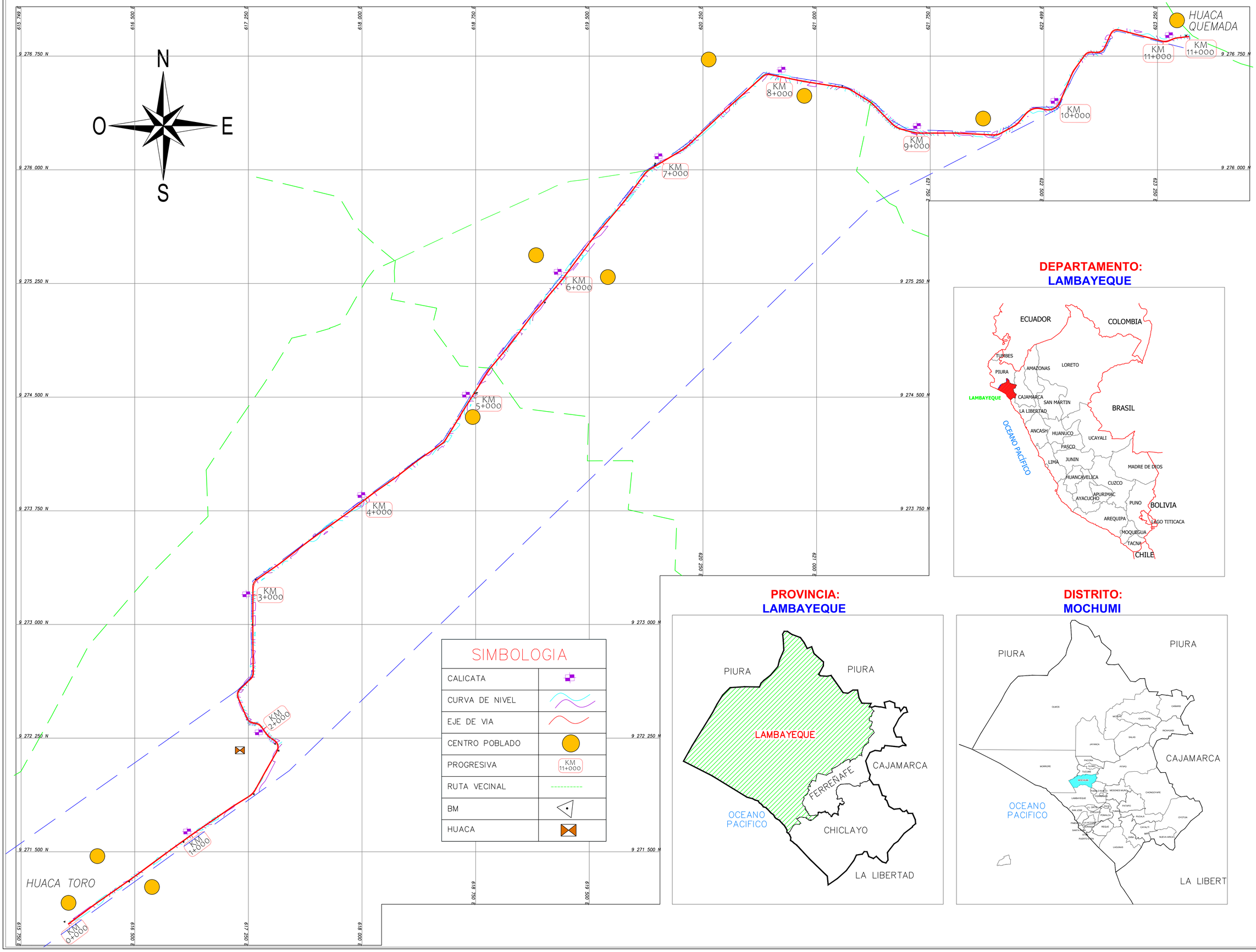
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**U-01**

# PLANO CLAVE




## SIMBOLOGIA

| | |
|---|---|
| CALICATA | |
| CURVA DE NIVEL | |
| EJE DE VIA | |
| CENTRO POBLADO | |
| PROGRESIVA | KM 11+000 |
| RUTA VECINAL | |
| BM | |
| HUACA | |

**DEPARTAMENTO:**
**LAMBAYEQUE**




**PROVINCIA:**
**LAMBAYEQUE**




**DISTRITO:**
**MOCHUMI**




UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION: N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

# PLANO CLAVE

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

| ESC: | FECHA: |
|---|---|
| INDICADA | Febrero, 2026 |

UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

# PC-01

# PLANO DE PLANTA Y PERFIL

# KM 0+000 – 0+500

## PLANTA
ESC: 1/1000

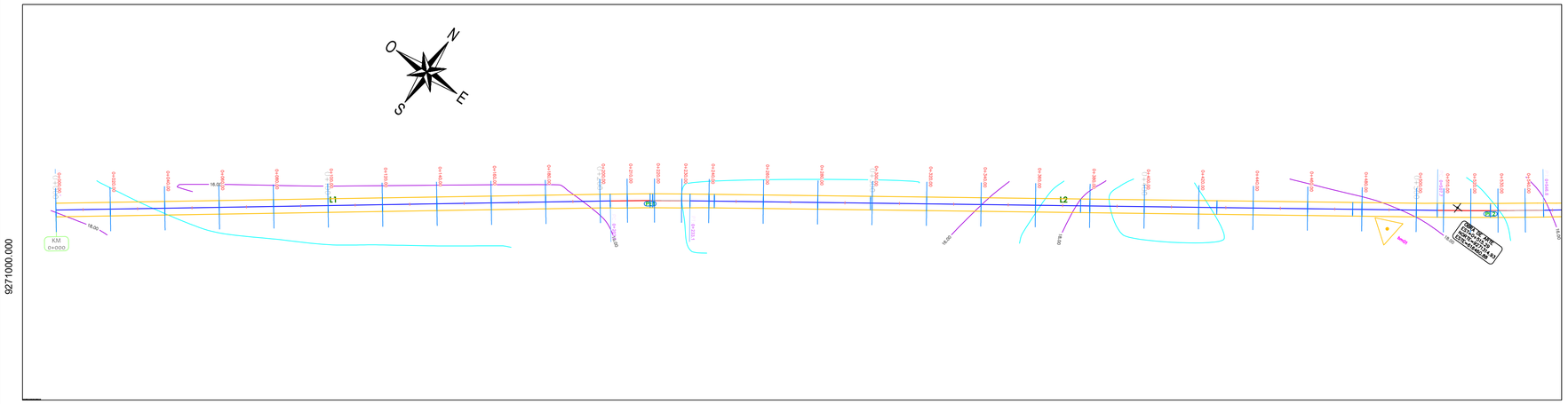


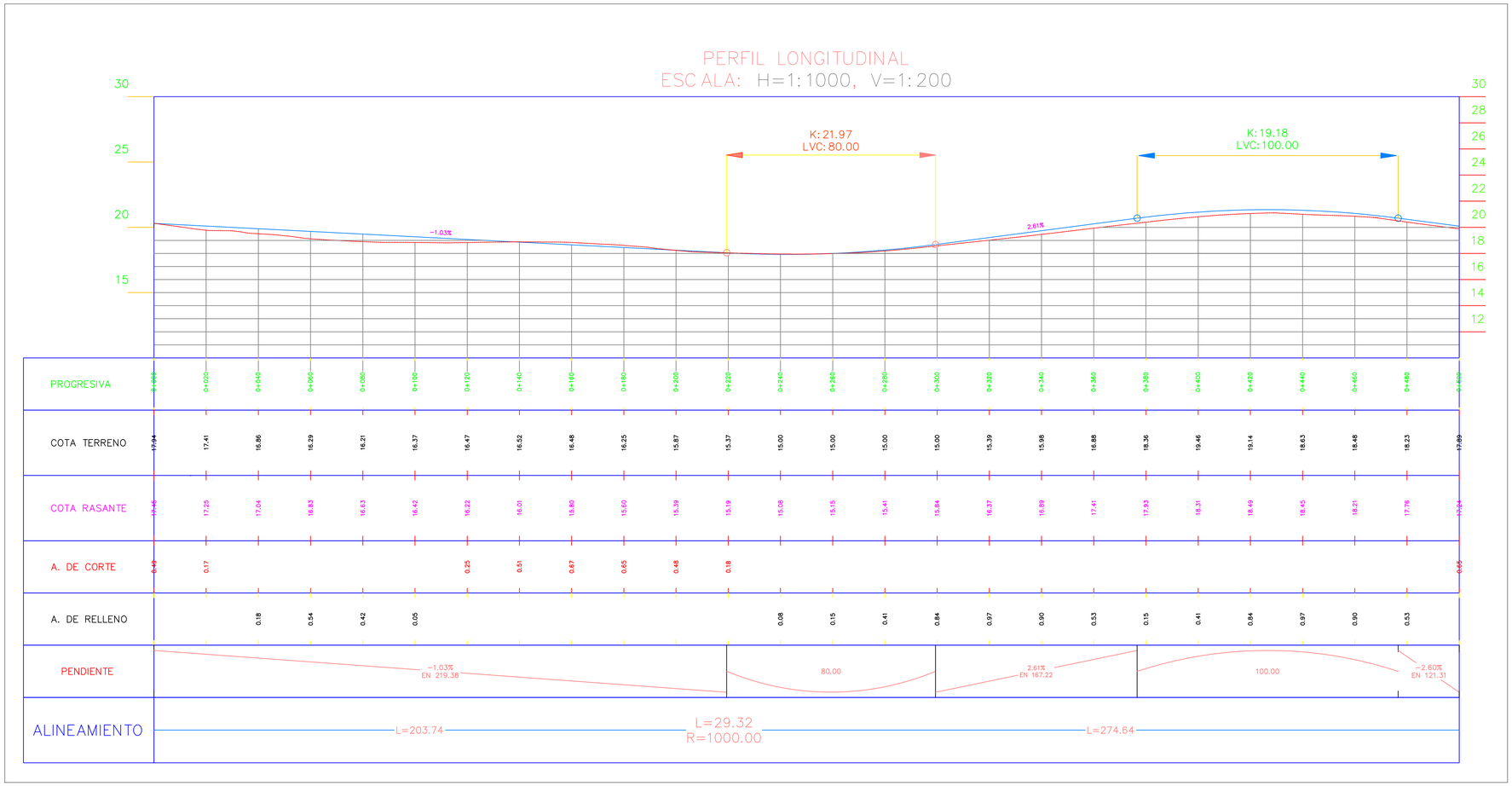

TABLA DE TANGENTES

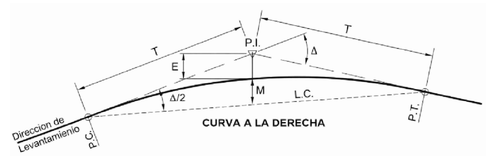
| LINEA | LONGITUD | DIRECCION | | |
|---|---|---|---|---|
| L1 | 203.74 | N53° 26' 21"E | 0+000.00 | 0+203.74 |
| L2 | 274.64 | N55° 07' 08"E | 0+233.05 | 0+507.69 |

CUADRO DE ELEMENTOS DE CURVA HORZONTAL

| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
|---|---|---|---|---|---|---|---|---|---|
| PI:1 | N54° 16' 44"E | 1°40'47" | 1000.00 | 29.32 | 0+203.74 | 0+218.40 | 616237.1 | 9271154.14 | 0+233.05 |
| PI: 2 | N54° 19' 09"E | 1°35'57" | 1400.00 | 39.08 | 0+507.69 | 0+527.23 | 616490.4 | 9271330.76 | 0+546.77 |

## ELEVACION
ESC: 1/1000




P.C. = Punto de Inicio de la Curva
P.I. = Punto de Intersección
P.T. = Punto de Tangencia
E = Distancia a Externa (m.)
M = Distancia de la Ordenada Media (m.)
R = Longitud del Radio de la Curva (m.) (a P.I a P.T.) (m.)
T = Longitud de la Subtangente (P.C. a P.I. a P.T.) (m.)
L = Longitud de la Curva (m.)
L.C. = Longitud de la Cuerda (m.)
Δ = Angulo de Deflexión

$T = R \tan\frac{\Delta}{2}$

$L.C. = 2R \operatorname{sen}\frac{\Delta}{2}$

$L = 2\pi R\frac{\Delta}{360}$

$M = R[1-\cos(\Delta/2)]$

$E = R[\sec(\Delta/2)-1]$

CARACTERISTICAS GEOMETRICAS DE DISEÑO

| | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11.174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
| TIPO DE RODADURA | AFIRMADO |
| VELOCIDAD DE DISEÑO | 30 KM/H |
| RADIO MAXIMO | NO APLICA |
| RADIO MINIMO | 30 M |
| ANCHO DE CALZADA | 4.0 M |
| BERMAS | 0.50 M |
| SOBREANCHO MAXIMO | 1.90 (R=40M) |
| SOBREANCHO MINIMO | 0.10 (R=1500M) |
| PENDIENTE MAXIMA | 3.76 % |
| PENDIENTE MINIMA | 0.35 % |
| BOMBEO DE CALZADA | 2.50 % |
| PERALTE MAXIMO | 8.00 % |
| PERALTE MINIMO | 2.00 % |
| CUNETAS | SIN CUNETAS |
| ALCANTARILLAS | 32 ALC. DE PASO |
| ANCHO DE DERECHO DE VIA | 20 M |

LEYENDA

- EJE DE VIA
- ANCHO DE VIA
- OBRA DE ARTE (ALCANTARILLA)
- BM/PUNTO DE CONTROL
- NORTE MAGNETICO
- CURVAS MAYORES @ 2m
- CURVAS MENORES @ 1m

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ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

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**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**PLANTA - PERFIL**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO


ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.


ESC: INDICADA

FECHA: Enero, 2026

UBICACION DEL PROYECTO

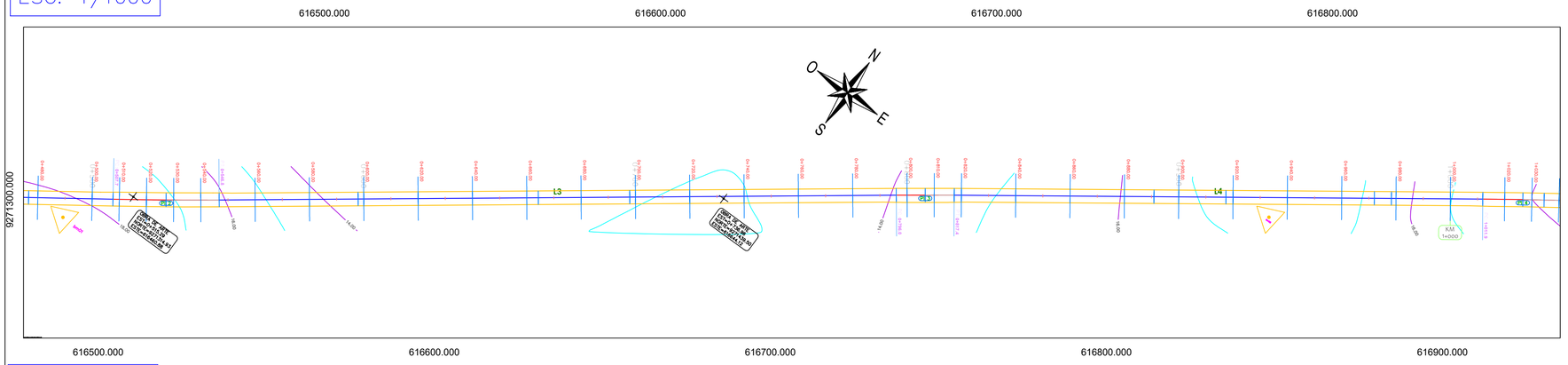
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**PP-01**

# KM 0+500 – 1+000

## PLANTA
ESC: 1/1000

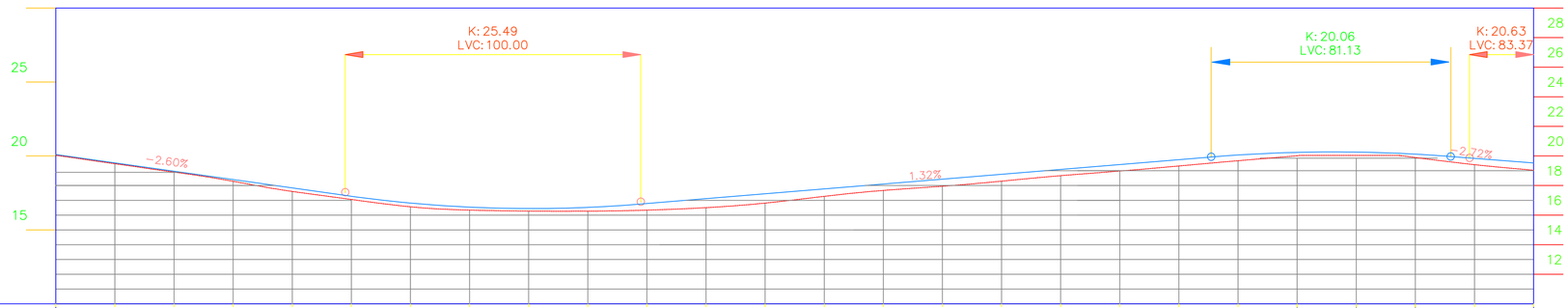



## ELEVACION
ESC: 1/1000

| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| L2 | 274.64 | N55° 07' 08"E | 0+233.05 | 0+507.69 |
| L3 | 249.26 | N53° 31' 10"E | 0+546.77 | 0+796.02 |
| L4 | 194.57 | N54° 20' 04"E | 0+817.36 | 1+011.93 |

| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
| Pi:2 | N54° 19' 09"E | 1°35'57" | 1400.00 | 39.08 | 0+507.69 | 0+527.23 | 616490.4 | 9271330.76 | 0+546.77 |
| Pi:3 | N53° 55' 37"E | 0°48'54" | 1500.00 | 21.34 | 0+796.02 | 0+806.69 | 616715.1 | 9271496.91 | 0+817.36 |
| Pi:4 | N54° 53' 55"E | 1°07'41" | 1500.00 | 29.53 | 1+011.93 | 1+026.69 | 616893.9 | 9271625.18 | 1+041.46 |

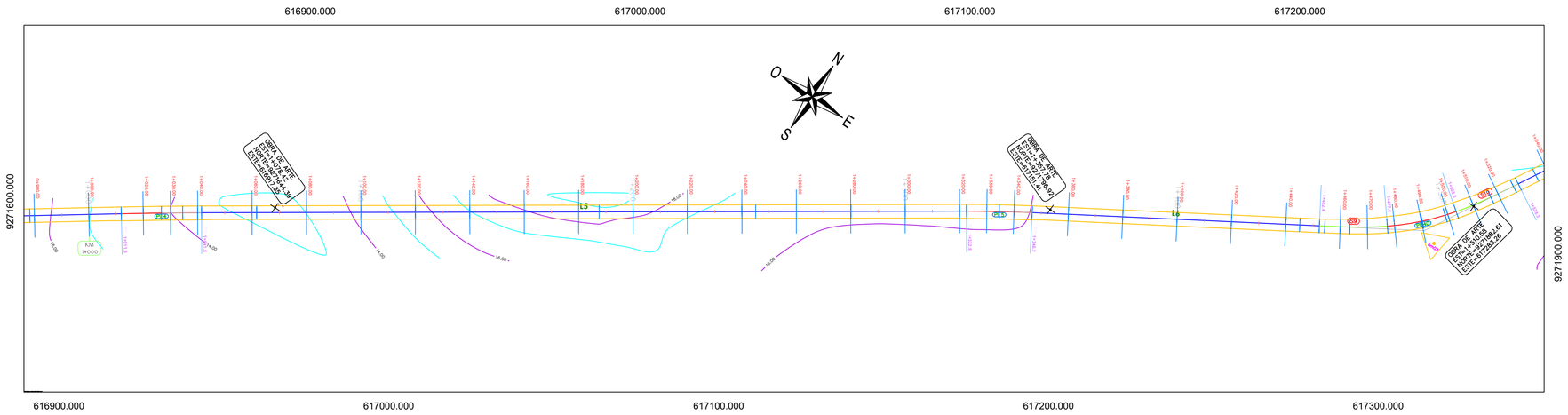
## PERFIL LONGITUDINAL
ESC ALA: H=1:1000, V=1:200




| | | | | | | | | |

# KM 1+000 – 1+500

## PLANTA
ESC: 1/1000



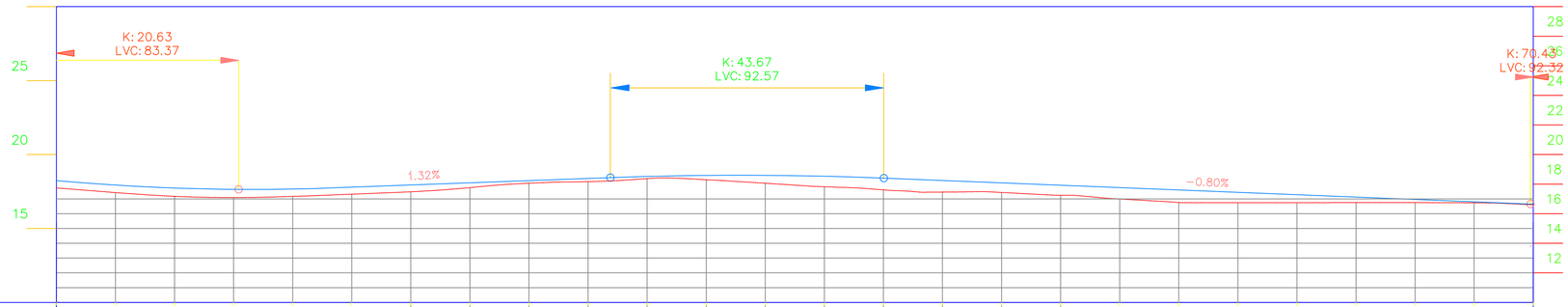

| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| L4 | 194.57 | N54° 20' 04"E | 0+817.36 | 1+011.93 |
| L5 | 281.09 | N55° 27' 45"E | 1+041.46 | 1+322.55 |
| L6 | 105.70 | N58° 13' 32"E | 1+346.66 | 1+452.36 |

| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
| PI: 4 | N54° 53' 55"E | 1°07'41" | 1500.00 | 29.53 | 1+011.93 | 1+026.69 | 616893.9 | 9271625.18 | 1+041.46 |
| PI: 5 | N56° 50' 39"E | 2°45'47" | 500.00 | 24.11 | 1+322.55 | 1+334.61 | 617147.5 | 9271799.76 | 1+346.66 |
| PI: 40 | N43° 38' 15"E | 14°51'09" | 100.00 | 25.92 | 1+477.36 | 1+490.39 | 617280.4 | 9271882.08 | 1+503.28 |

| TABLA DE ELEMENTOS DE ESPIRALES | | |
|---|---|---|
| # ESPIRAL | A | LONGITUD |
| S9 | 50.00 | 25.00 |
| S10 | 50.00 | 25.00 |

## ELEVACION
ESC: 1/1000

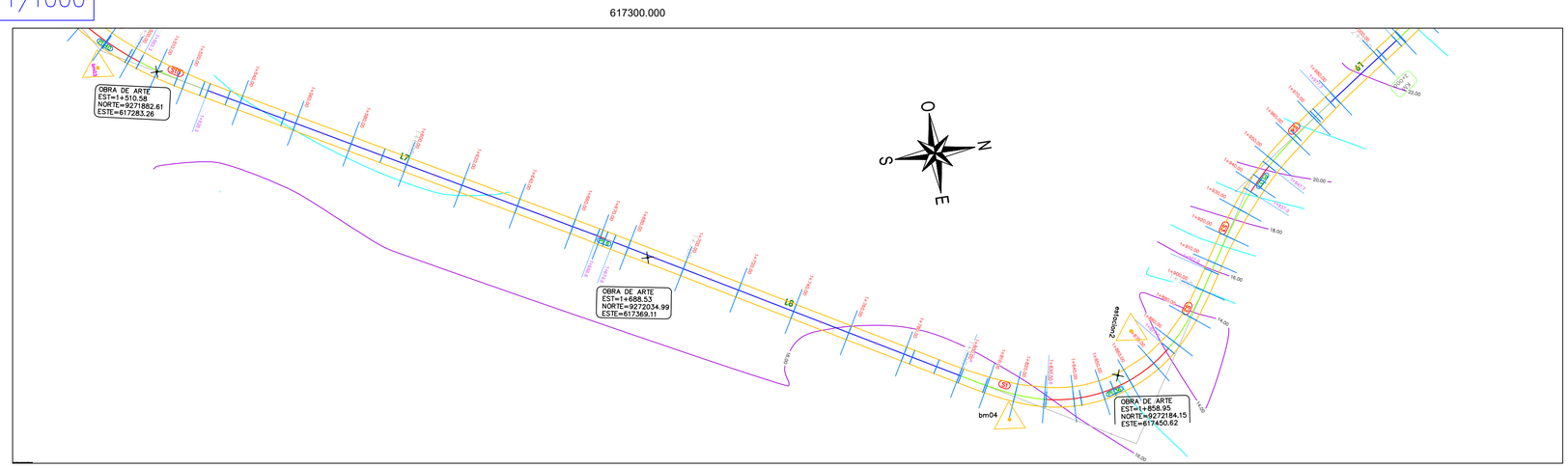
## PERFIL LONGITUDINAL
ESCALA: H=1:1000, V=1:200




| | | | | | | | | |

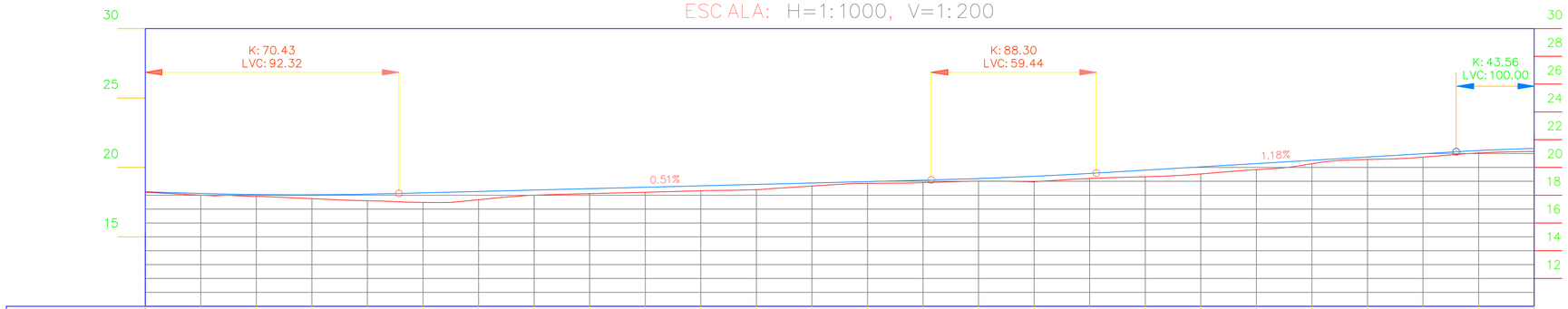
# KM 1+500 – 2+000

## PLANTA
ESC: 1/1000




## ELEVACION
ESC: 1/1000

## PERFIL LONGITUDINAL
ESCALA: H=1:1000, V=1:200




| PROGRESIVA | 1+500 | 1+520 | 1+540 | 1+560 | 1+580 | 1+600 | 1+620 | 1+640 | 1+660 | 1+680 | 1+700 | 1+720 | 1+740 | 1+760 | 1+780 | 1+800 | 1+820 | 1+840 | 1+860 | 1+880 | 1+900 | 1+920 | 1+940 | 1+960 | 1+980 | 2+000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COTA TERRENO | 15.36 | 15.15 | 15.06 | 14.90 | 14.75 | 14.63 | 14.82 | 15.15 | 15.28 | 15.36 | 15.47 | 15.55 | 15.81 | 16.00 | 16.05 | 16.16 | 16.11 | 15.83 | 14.79 | 14.00 | 15.02 | 17.35 | 19.40 | 20.72 | 21.38 | 20.61 |
| COTA RASANTE | 16.48 | 15.27 | 15.20 | 15.18 | 15.22 | 15.31 | 15.42 | 15.52 | 15.62 | 15.72 | 15.82 | 15.92 | 16.03 | 16.13 | 16.23 | 16.35 | 16.51 | 16.72 | 16.95 | 17.19 | 17.43 | 17.66 | 17.90 | 18.14 | 18.36 | 18.58 |
| A. DE CORTE | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A. DE RELLENO | 0.64 | 0.12 | 0.14 | 0.28 | 0.47 | 0.69 | 0.59 | 0.37 | 0.36 | 0.36 | 0.36 | 0.37 | 0.22 | 0.12 | 0.17 | 0.19 | 0.40 | 0.88 | 2.16 | 3.19 | 2.41 | 0.31 | 2.16 | 3.19 | 2.41 | 0.31 |
| PENDIENTE | | 92.32 | | | | | 0.51% EN 267.48 | | | | | | | | | 59.44 | | | 1.18% EN 209.27 | | | | | | 100.00 | |
| ALINEAMIENTO | L=25.92 R=100.00 | L=140.54 | | | | L=5.82 R=500.00 | L=125.97 | | | | | | | | | | | L=46.43 R=50.00 | | | | L=10.67 R=100.00 | | | L=30.53 | |

### TABLA DE TANGENTES

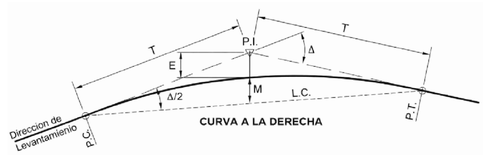
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
|---|---|---|---|---|
| L7 | 140.54 | N29° 02' 57"E | 1+528.28 | 1+668.82 |
| L8 | 125.97 | N29° 43' 00"E | 1+674.64 | 1+800.61 |
| L9 | 30.53 | N34° 33' 55"W | 1+977.71 | 2+008.25 |

### CUADRO DE ELEMENTOS DE CURVA HORIZONTAL

| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
|---|---|---|---|---|---|---|---|---|---|
| PI: 40 | N43° 38' 15"E | 14°51'09" | 100.00 | 25.92 | 1+477.36 | 1+490.39 | 617280.4 | 9271882.08 | 1+503.28 |
| PI:6 | N29° 22' 58"E | 0°40'02" | 500.00 | 5.82 | 1+668.82 | 1+671.73 | 617368.8 | 9272041.22 | 1+674.64 |
| PI:36 | N14° 04' 32"W | 53°12'25" | 50.00 | 46.43 | 1+830.61 | 1+855.65 | 617442.6 | 9272170.53 | 1+877.04 |
| PI:37 | N46° 13' 00"W | 6°06'50" | 100.00 | 10.67 | 1+937.04 | 1+942.38 | 617442.6 | 9272170.53 | 1+947.71 |

### TABLA DE ELEMENTOS DE ESPIRALES

| # ESPIRAL | A | LONGITUD |
|---|---|---|
| S10 | 50.00 | 25.00 |
| S1 | 38.73 | 30.00 |
| S2 | 38.73 | 30.00 |
| S3 | 54.77 | 30.00 |
| S4 | 54.77 | 30.00 |




P.C. = Punto de Inicio de la Curva
P.I. = Punto de Intersección
P.T. = Punto de Tangencia
E = Distancia a Externa (m.)
M = Distancia de la Ordenada Media (m.)
R = Longitud del Radio de la Curva (m.) (a P.I a P.T.) (m.)
T = Longitud de la Subtangente (P.C. a P.I. a P.T.) (m.)
L = Longitud de la Curva (m.)
L.C. = Longitud de la Cuerda (m.)
Δ = Angulo de Deflexión

$T = R \tan\frac{\Delta}{2}$

$L.C. = 2R \operatorname{sen}\frac{\Delta}{2}$

$L = 2\pi R \frac{\Delta}{360}$

$M = R[1 - \cos(\Delta/2)]$

$E = R[\sec(\Delta/2) - 1]$

### CARACTERISTICAS GEOMETRICAS DE DISEÑO

| | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11.174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
| TIPO DE RODADURA | AFIRMADO |
| VELOCIDAD DE DISEÑO | 30 KM/H |
| RADIO MAXIMO | NO APLICA |
| RADIO MINIMO | 30 M |
| ANCHO DE CALZADA | 4.0 M |
| BERMAS | 0.50 M |
| SOBREANCHO MAXIMO | 1.90 (R=40M) |
| SOBREANCHO MINIMO | 0.10 (R=1500M) |
| PENDIENTE MAXIMA | 3.76 % |
| PENDIENTE MINIMA | 0.35 % |
| BOMBEO DE CALZADA | 2.50 % |
| PERALTE MAXIMO | 8.00 % |
| PERALTE MINIMO | 2.00 % |
| CUNETAS | SIN CUNETAS |
| ALCANTARILLAS | 32 ALC. DE PASO |
| ANCHO DE DERECHO DE VIA | 20 M |

### LEYENDA

- EJE DE VIA
- ANCHO DE VIA
- OBRA DE ARTE (ALCANTARILLA)
- BM/PUNTO DE CONTROL
- NORTE MAGNETICO
- CURVAS MAYORES @ 2m
- CURVAS MENORES @ 1m

UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**PLANTA - PERFIL**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

UBICACION DEL PROYECTO

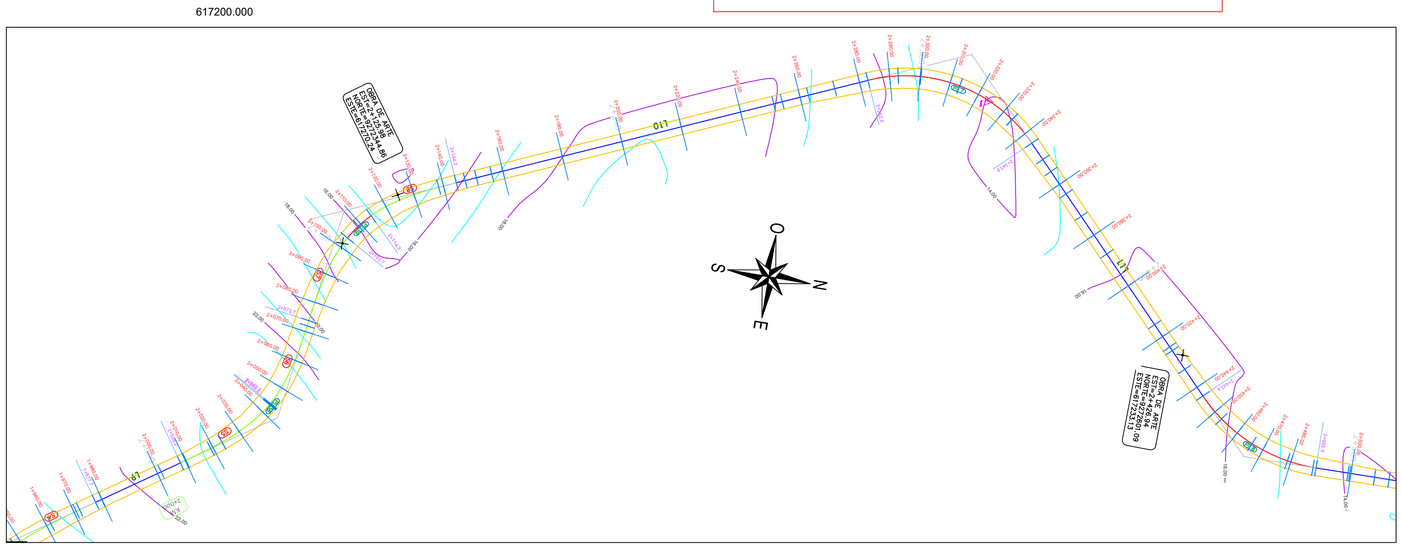
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**PP-04**

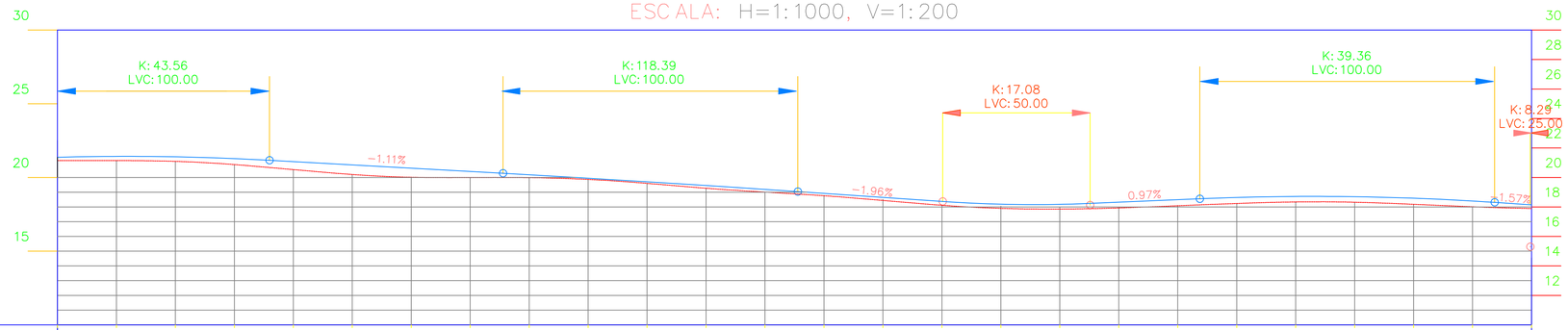
# KM 2+000 – 2+500

PLANTA
ESC: 1/1000




ELEVACION
ESC: 1/1000

PERFIL LONGITUDINAL
ESCALA: H=1:1000, V=1:200




| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROGRESIVA | 2+000 | 2+020 | 2+040 | 2+060 | 2+080 | 2+100 | 2+120 | 2+140 | 2+160 | 2+180 | 2+200 | 2+220 | 2+240 | 2+260 | 2+280 | 2+300 | 2+320 | 2+340 | 2+360 | 2+380 | 2+400 | 2+420 | 2+440 | 2+460 | 2+480 | 2+500 |
| COTA TERRENO | 22.61 | 23.14 | 23.50 | 22.47 | 19.53 | 17.14 | 14.72 | 15.53 | 17.08 | 17.99 | 18.65 | 18.41 | 18.14 | 17.29 | 16.23 | 14.86 | 14.09 | 14.39 | 15.02 | 15.65 | 16.05 | 16.19 | 16.30 | 15.82 | 14.77 | 13.90 |
| COTA RASANTE | 18.00 | 18.58 | 18.55 | 18.43 | 18.22 | 18.00 | 17.77 | 17.55 | 17.32 | 17.07 | 16.78 | 16.46 | 16.10 | 15.72 | 15.32 | 14.93 | 14.65 | 14.61 | 14.77 | 14.97 | 15.14 | 15.22 | 15.20 | 15.07 | 14.85 | 14.61 |
| A. DE CORTE | | | | | | | | | | | | | | | | | | | | | | 0.97 | 1.10 | 0.75 | | |
| A. DE RELLENO | 0.57 | 0.86 | 0.07 | 0.57 | 0.26 | 0.86 | 0.07 | 0.57 | 0.26 | 0.86 | 0.07 | 0.57 | 0.26 | 0.07 | 0.57 | 0.07 | 0.57 | 0.22 | 0.86 | 0.22 | 0.86 | 0.26 | 2.02 | 0.26 | 0.08 | 0.65 |
| PENDIENTE | 100.00 | | | | −1.11% EN 79.18 | | | | 100.00 | | | | | | −1.96% EN 49.14 | | | 50.00 | 0.97% EN 112.21 | | | 100.00 | | | | −1.57% EN 125.00 |
| ALINEAMIENTO | L=30.53 | | L=0.47 R=40.00 | | | L=10.62 R=40.00 | | | L=138.46 | | | | | | | | L=60.97 R=50.00 | | | L=99.67 | | | L=45.03 R=55.00 | | L=260.25 |

TABLA DE TANGENTES

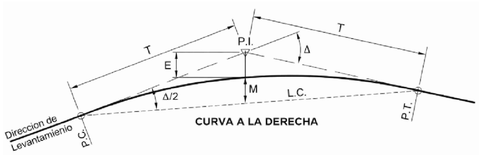
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
|---|---|---|---|---|
| L9 | 30.53 | N34° 33' 55"W | 1+977.71 | 2+008.25 |
| L10 | 138.46 | N23° 36' 47"W | 2+144.34 | 2+282.80 |
| L11 | 99.67 | N46° 15' 26"E | 2+343.77 | 2+443.44 |

CUADRO DE ELEMENTOS DE CURVA HORIZONTAL

| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
|---|---|---|---|---|---|---|---|---|---|
| PI:38 | N59° 58' 14"W | 0°40'38" | 40.00 | 0.47 | 2+043.25 | 2+043.48 | 617142.6 | 9272605.98 | 2+043.72 |
| PI:39 | N52° 42' 15"W | 15°12'37" | 40.00 | 10.82 | 2+103.72 | 2+109.06 | 617142.6 | 9272605.98 | 2+114.34 |
| PI:7 | N11° 19' 20"E | 69°52'12" | 50.00 | 60.97 | 2+282.80 | 2+317.72 | 617167.9 | 9272548.08 | 2+343.77 |
| PI:8 | N22° 48' 06"E | 46°34'40" | 55.00 | 45.03 | 2+443.44 | 2+467.30 | 617282.4 | 9272657.65 | 2+488.47 |

TABLA DE ELEMENTOS DE ESPIRALES

| # ESPIRAL | A | LONGITUD |
|---|---|---|
| S5 | 37.42 | 35.00 |
| S6 | 34.64 | 30.00 |
| S7 | 34.64 | 30.00 |
| S8 | 34.64 | 30.00 |




P.C. = Punto de Inicio de la Curva
P.I. = Punto de Intersección
P.T. = Punto de Tangencia
E = Distancia a Externa (m.)
M = Distancia de la Ordenada Media (m.)
R = Longitud del Radio de la Curva (m.) (a P.I a P.T.) (m.)
T = Longitud de la Subtangente (P.C. a P.I. a P.T.) (m.)
L = Longitud de la Curva (m.)
L.C. = Longitud de la Cuerda (m.)
Δ = Angulo de Deflexión

$T = R \tan\frac{\Delta}{2}$
$L.C. = 2R \operatorname{sen}\frac{\Delta}{2}$
$L = 2\pi R\frac{\Delta}{360}$
$M = R[1-\cos(\Delta/2)]$
$E = R[\sec(\Delta/2)-1]$

CARACTERISTICAS GEOMETRICAS DE DISEÑO

| | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11.174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
| TIPO DE RODADURA | AFIRMADO |
| VELOCIDAD DE DISEÑO | 30 KM/H |
| RADIO MAXIMO | NO APLICA |
| RADIO MINIMO | 30 M |
| ANCHO DE CALZADA | 4.0 M |
| BERMAS | 0.50 M |
| SOBREANCHO MAXIMO | 1.90 (R=40M) |
| SOBREANCHO MINIMO | 0.10 (R=1500M) |
| PENDIENTE MAXIMA | 3.76 % |
| PENDIENTE MINIMA | 0.35 % |
| BOMBEO DE CALZADA | 2.50 % |
| PERALTE MAXIMO | 8.00 % |
| PERALTE MINIMO | 2.00 % |
| CUNETAS | SIN CUNETAS |
| ALCANTARILLAS | 32 ALC. DE PASO |
| ANCHO DE DERECHO DE VIA | 20 M |

LEYENDA

- EJE DE VIA
- ANCHO DE VIA
- OBRA DE ARTE (ALCANTARILLA)
- BM/PUNTO DE CONTROL
- NORTE MAGNETICO
- CURVAS MAYORES @ 2m
- CURVAS MENORES @ 1m

UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**PLANTA - PERFIL**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO


ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.


ESC: INDICADA

FECHA: Enero, 2026

UBICACION DEL PROYECTO

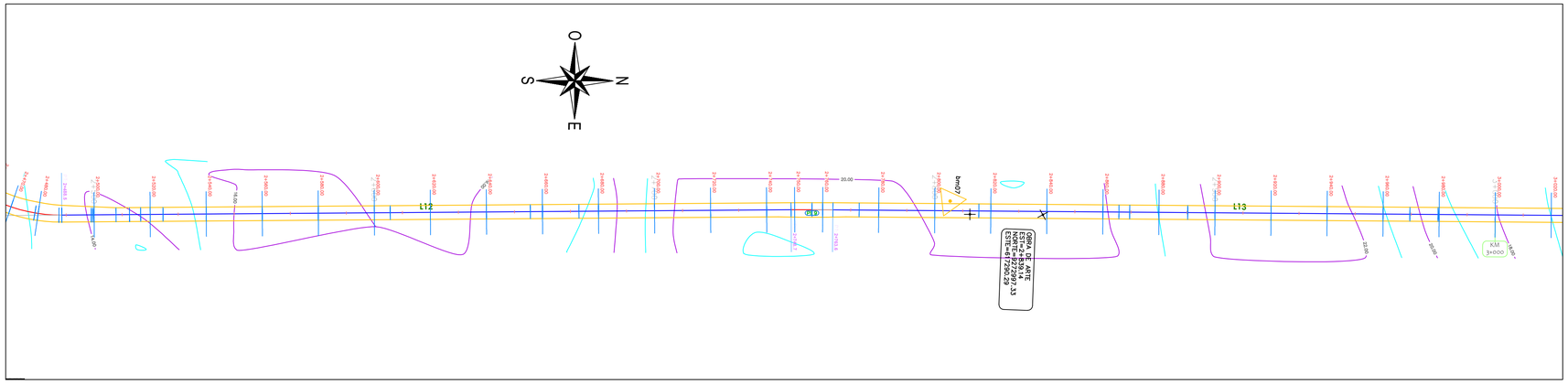
MOCHUMÍ – LAMBAYEQUE LAMBAYEQUE – PERÚ

LAMINA Nº

**PP-05**

# KM 2+500 – 3+000

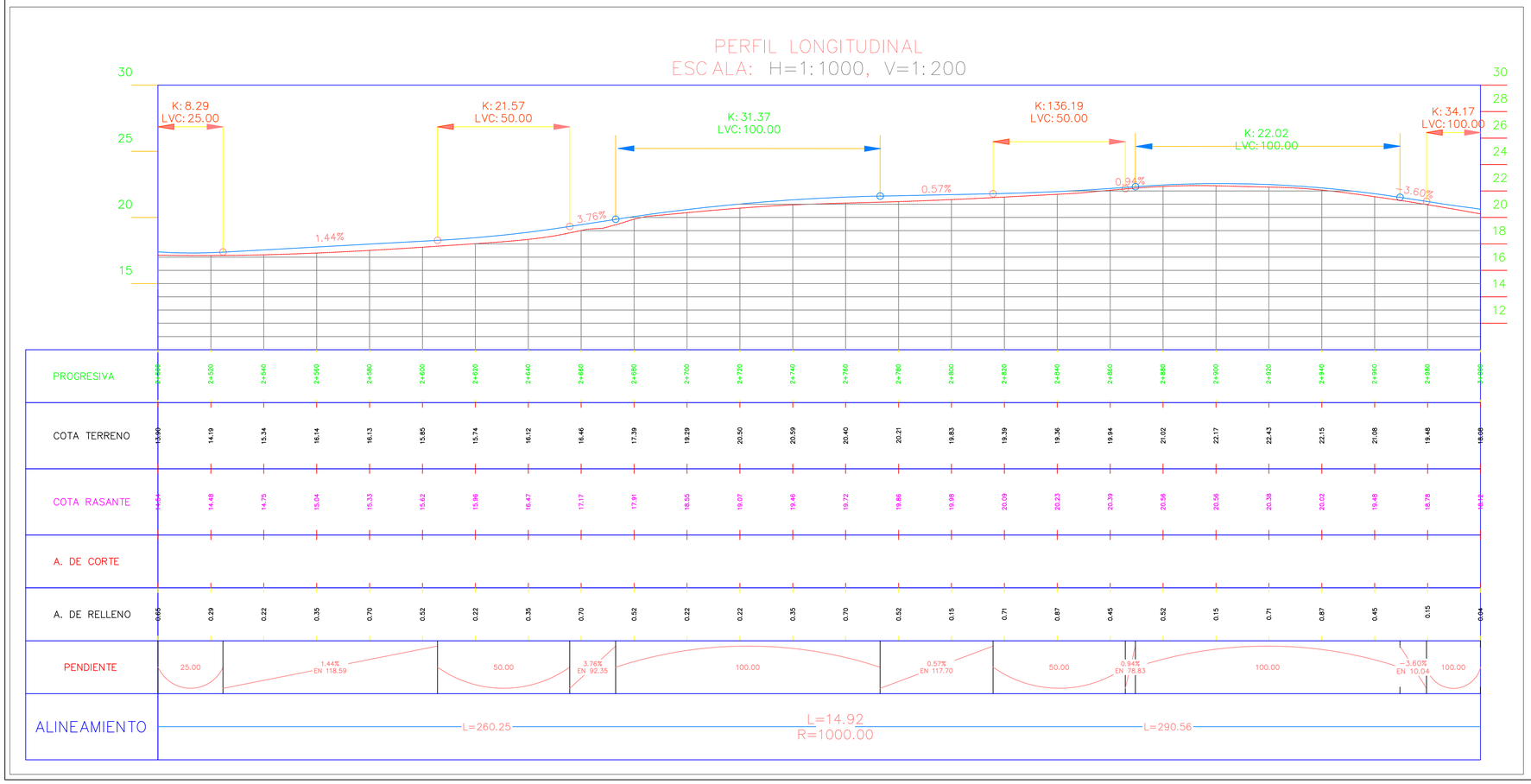
PLANTA
ESC: 1/1000

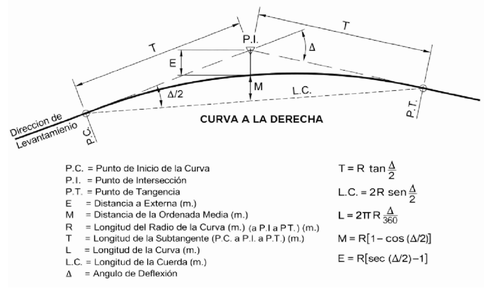



| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| L12 | 260.25 | N0° 39' 14"W | 2+488.47 | 2+748.72 |
| L13 | 290.56 | N0° 12' 03"E | 2+763.64 | 3+054.20 |

| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
| PI:9 | N0° 13' 36"W | 0°51'17" | 1000.00 | 14.92 | 2+748.72 | 2+756.18 | 617279.1 | 9272949.20 | 2+763.64 |

ELEVACION
ESC: 1/1000

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L = Longitud de la Curva (m.)
L.C. = Longitud de la Cuerda (m.)
Δ = Angulo de Deflexión

$T = R \tan\frac{\Delta}{2}$

$L.C. = 2R \operatorname{sen}\frac{\Delta}{2}$

$L = 2\pi R\frac{\Delta}{360}$

$M = R[1-\cos(\Delta/2)]$

$E = R[\sec(\Delta/2)-1]$

| CARACTERISTICAS GEOMETRICAS DE DISEÑO | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11,174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
| TIPO DE RODADURA | AFIRMADO |
| VELOCIDAD DE DISEÑO | 30 KM/H |
| RADIO MAXIMO | NO APLICA |
| RADIO MINIMO | 30 M |
| ANCHO DE CALZADA | 4.0 M |
| BERMAS | 0.50 M |
| SOBREANCHO MAXIMO | 1.90 (R=40M) |
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| PENDIENTE MAXIMA | 3.76 % |
| PENDIENTE MINIMA | 0.35 % |
| BOMBEO DE CALZADA | 2.50 % |
| PERALTE MAXIMO | 8.00 % |
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| CUNETAS | SIN CUNETAS |
| ALCANTARILLAS | 32 ALC. DE PASO |
| ANCHO DE DERECHO DE VIA | 20 M |

LEYENDA

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- ANCHO DE VIA
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- BM./PUNTO DE CONTROL
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PLANO :

**PLANTA - PERFIL**

DOCENTE ASESOR:

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ALUMNOS:

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ESC: INDICADA

FECHA: Enero, 2026

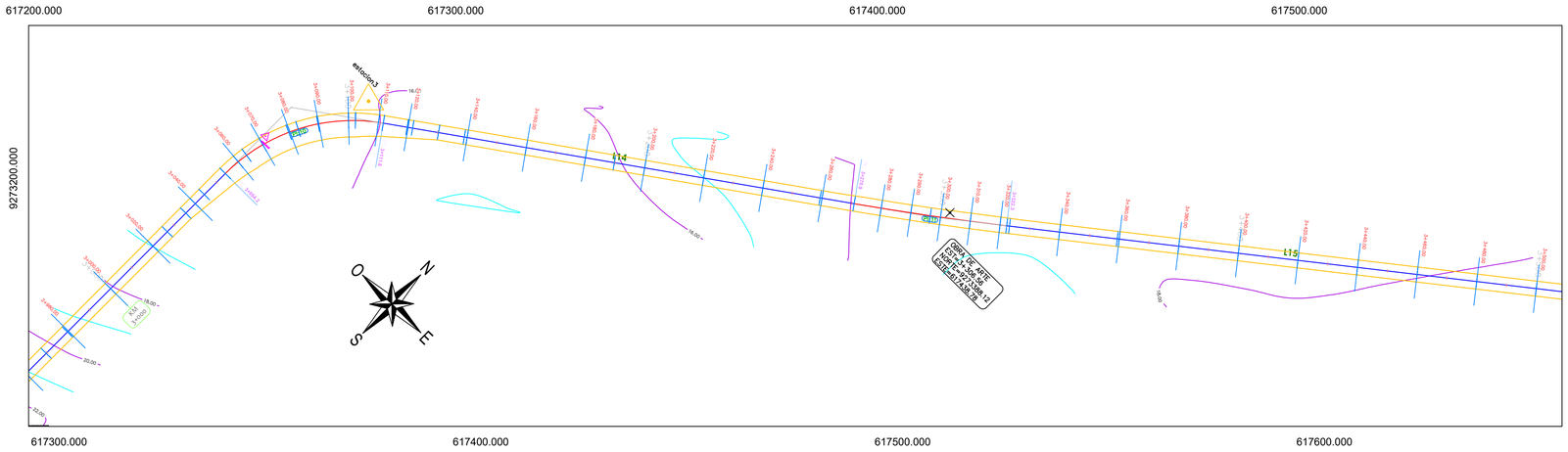
UBICACION DEL PROYECTO
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**PP-06**

# KM 3+000 – 3+500

## PLANTA
ESC: 1/1000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617300.000
617400.000
617500.000
617600.000
9273200.000
estacion3
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P.C.=0+300.00
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Δ=90°00'00"
R=60.00
T=60.00
L=94.25
P.C.=0+280.00
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P.I.=0+300.00
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Δ=90°00'00"
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T=60.00
L=94.25
P.C.=0+240.00
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T=60.00
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P.I.=0+200.00
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P.T.=0+234.25
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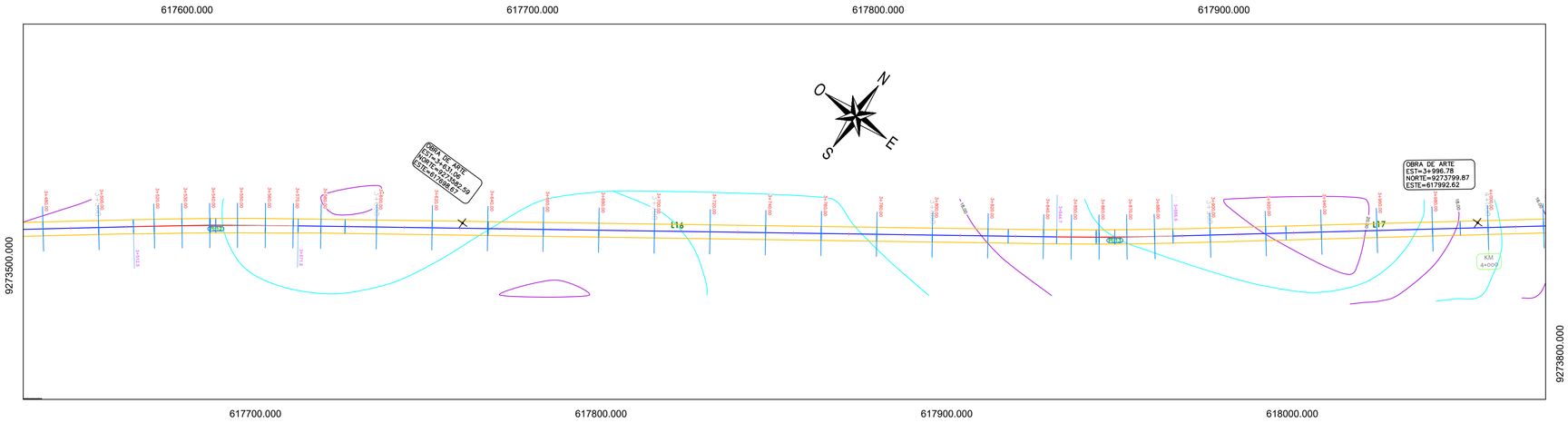
P.C.=0+120.00
P.T.=0+214.25
P.I.=0+160.00
E=16.00
Δ=90°00'00"
R=60.00
T=60.00
L=94.25
P.C.=0+100.00
P.T.=0+194.25
P.I.=0+140.00
E=16.00
Δ=90°00'00"
R=60.00
T=60.00
L=94.25
P.C.=0+080.00
P.T.=0+174.25
P.I.=0+120.00
E=16.00
Δ=90°00'00"
R=60.00
T=60.00
L=94.25
P.C.=0+060.00
P.T.=0+154.25
P.I.=0+100.00
E=16.00
Δ=90°00'00"
R=60.00
T=60.00
L=94.25
P.C.=0+040.00
P.T.=0+134.25
P.I.=0+080.00
E=16.00
Δ=90°00'00"
R=60.00
T=60.00
L=94.25
P.C.=0+020.00
P.T.=0+114.25
P.I.=0+060.00
E=16.00
Δ=90°00'00"
R=60.00
T=60.00
L=94.25
P.C.=0+000.00
P.T.=0+094.25
P.I.=0+040.00
E=16.00
Δ=90°00'00"
R=60.00
T=60.00
L=94.25
P.C.=0+020.00
P.T.=0+060.00
P.I.=0+000.00
E=16.00
Δ=90°00'00"
R=60.00
T=60.00
L=94.25
P.C.=0+000.00
P.T.=0+040.00
P.I.=0+000.00
E=16.00
Δ=90°00'00"
R=60.00
T=60.00
L=94.25
P.C.=0+000.00
P.T.=0+020.00
P.I.=0+000.00
E=16.00
Δ=90°00'00"
R=60.00
T=60.00
L=94.25
P.C.=0+000.00
P.T.=0+000

# KM 3+500 – 4+000

## PLANTA
ESC: 1/1000

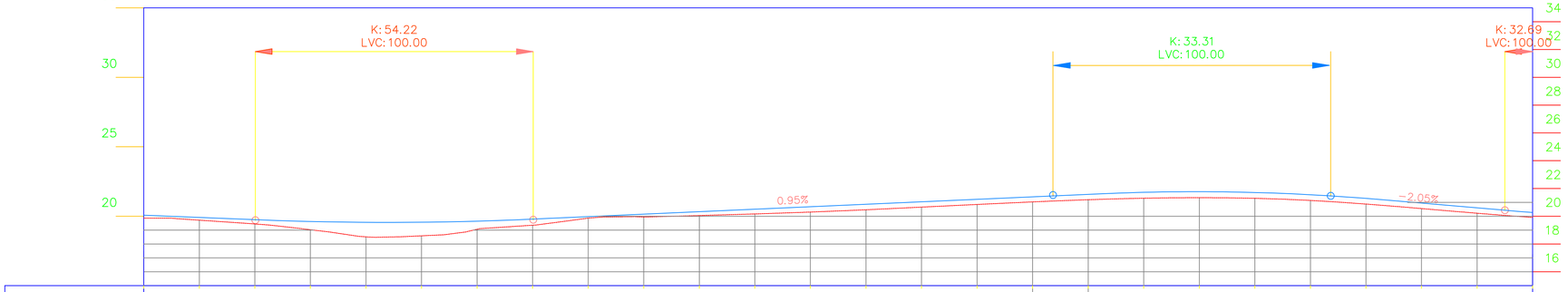



| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| L16 | 272.94 | N54° 22' 01"E | 3+571.79 | 3+844.73 |
| L17 | 148.69 | N51° 58' 05"E | 3+886.60 | 4+035.29 |

| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
| PI:12 | N53° 14' 07"E | 21°57'48" | 1500.00 | 59.25 | 3+512.54 | 3+542.17 | 617651.2 | 9273552.99 | 3+571.79 |
| PI:13 | N53° 10' 03"E | 2°23'57" | 1000.00 | 41.87 | 3+844.73 | 3+865.67 | 617914.1 | 9273741.46 | 3+886.60 |

## ELEVACION
ESC: 1/1000

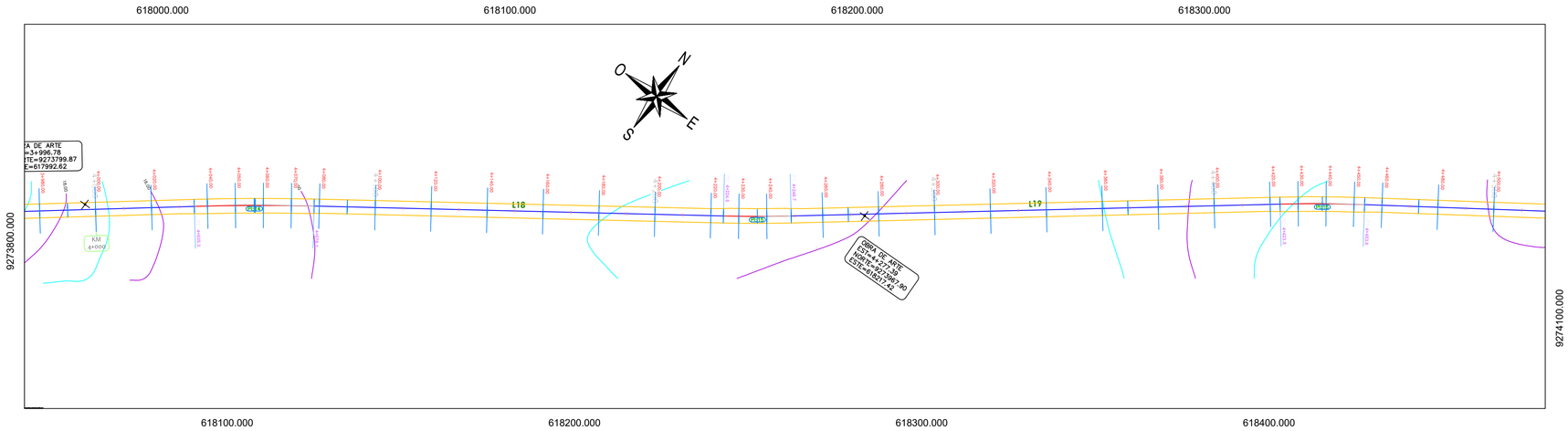
### PERFIL LONGITUDINAL
ESCALA: H=1:1000, V=1:200




| | | | | | | | | |

# KM 4+000 – 4+500

## PLANTA
ESC: 1/1000

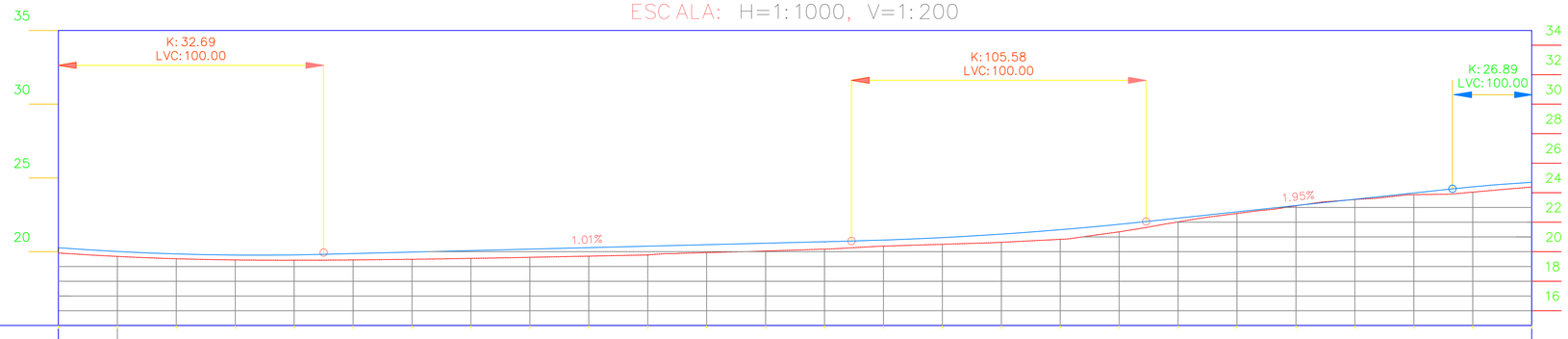



| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| L18 | 146.37 | N55° 02' 14"E | 4+078.14 | 4+224.52 |
| L19 | 174.81 | N52° 15' 43"E | 4+248.74 | 4+423.55 |

| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
| PI:14 | N53° 30' 09"E | 3°04'10" | 800.00 | 42.86 | 4+035.29 | 4+056.72 | 618064.6 | 9273859.18 | 4+078.14 |
| PI:15 | N53° 38' 58"E | 2°46'31" | 500.00 | 24.22 | 4+224.52 | 4+236.63 | 618212.0 | 9273962.28 | 4+248.74 |
| PI:16 | N53° 59' 38"E | 3°27'51" | 500.00 | 30.23 | 4+423.55 | 4+438.66 | 618371.8 | 9274085.94 | 4+453.78 |

## ELEVACION
ESC: 1/1000

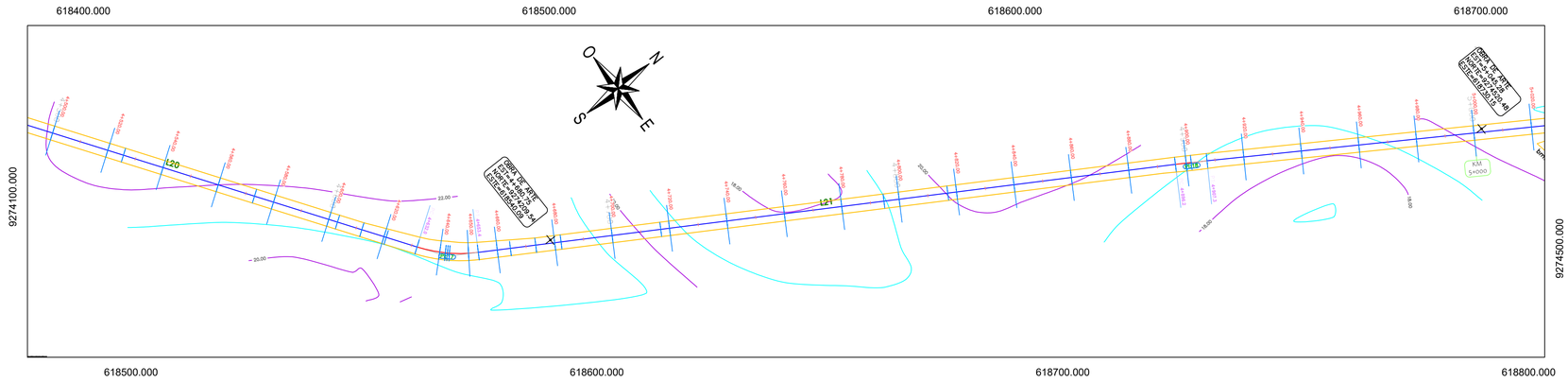
### PERFIL LONGITUDINAL
ESCALA: H=1:1000, V=1:200




| | | | | | | | |

# KM 4+500 – 5+000

## PLANTA
ESC: 1/1000

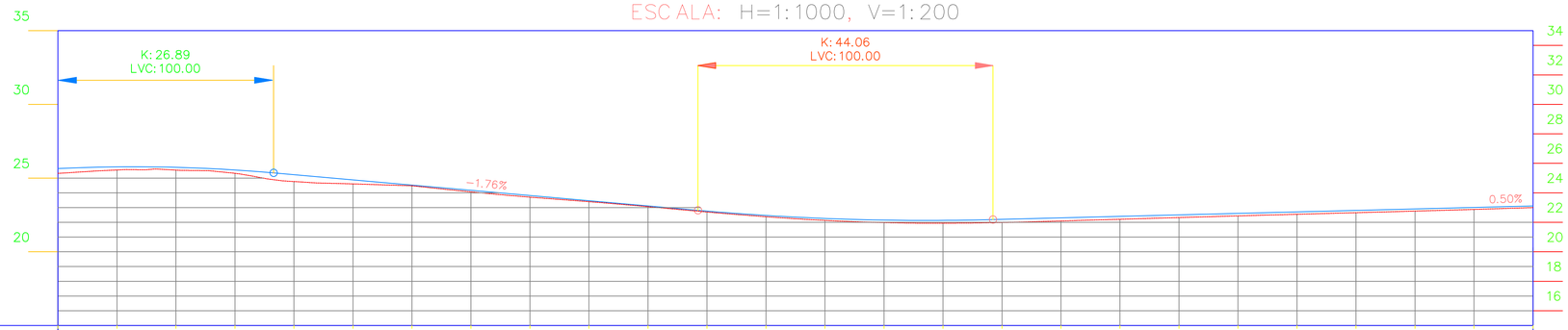



| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| L20 | 178.21 | N55° 43' 34"E | 4+453.78 | 4+631.99 |
| L21 | 242.85 | N31° 12' 10"E | 4+653.39 | 4+896.23 |

| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
| PI:17 | N43° 27' 52"E | 24°31'24" | 50.00 | 21.40 | 4+631.99 | 4+642.85 | 618540.5 | 9274200.93 | 4+653.39 |
| PI:18 | N31° 50' 03"E | 115°46" | 500.00 | 11.02 | 4+896.23 | 4+901.74 | 618674.8 | 9274422.66 | 4+907.25 |

## ELEVACION
ESC: 1/1000

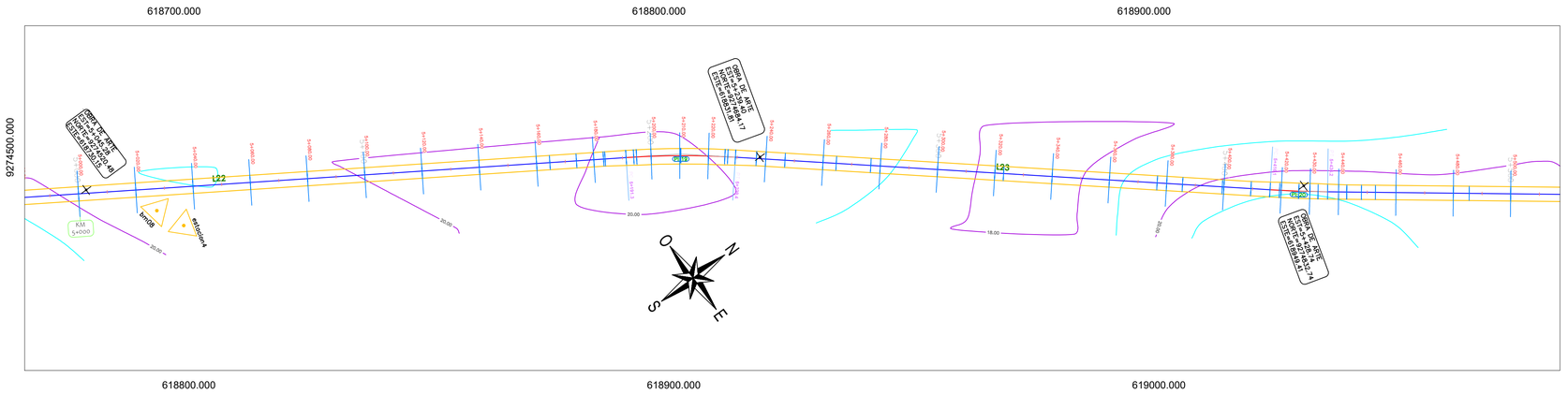
### PERFIL LONGITUDINAL
ESCALA: H=1:1000, V=1:200




| | | | | | | | | |

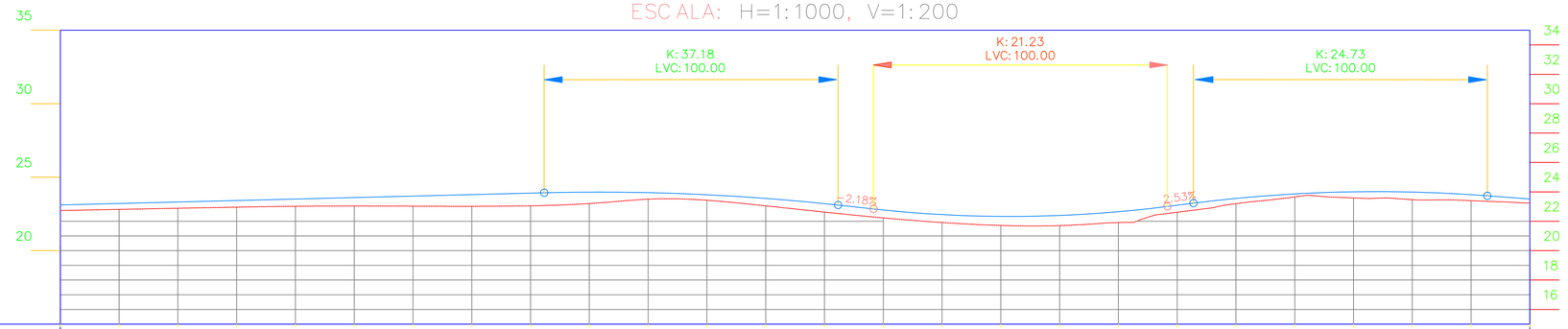
# KM 5+000 – 5+500

## PLANTA
ESC: 1/1000




## ELEVACION
ESC: 1/1000

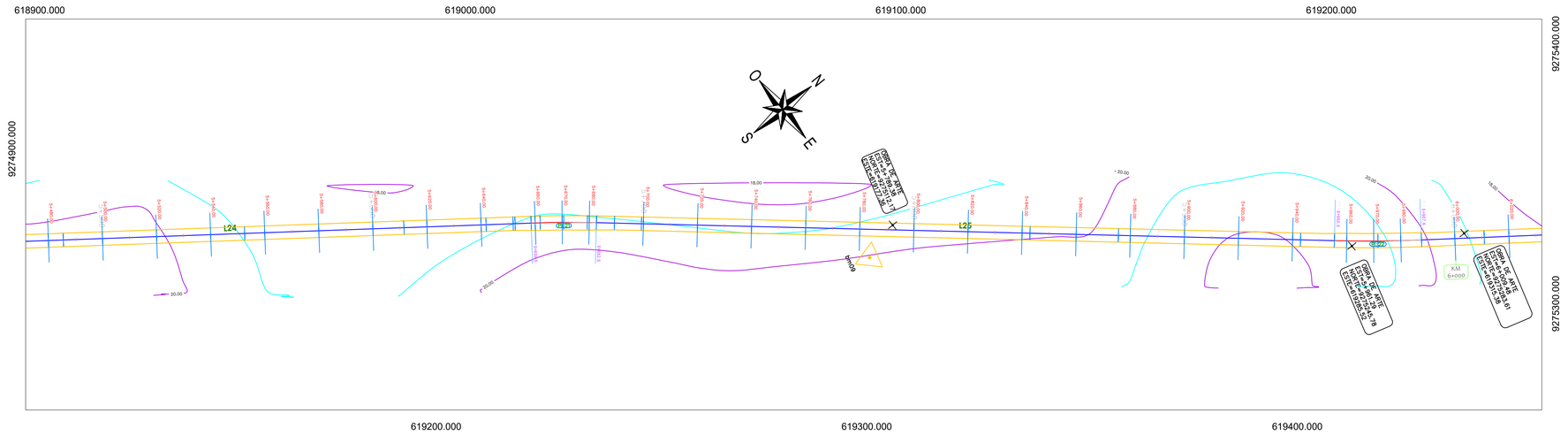
### PERFIL LONGITUDINAL
ESCALA: H=1:1000, V=1:200



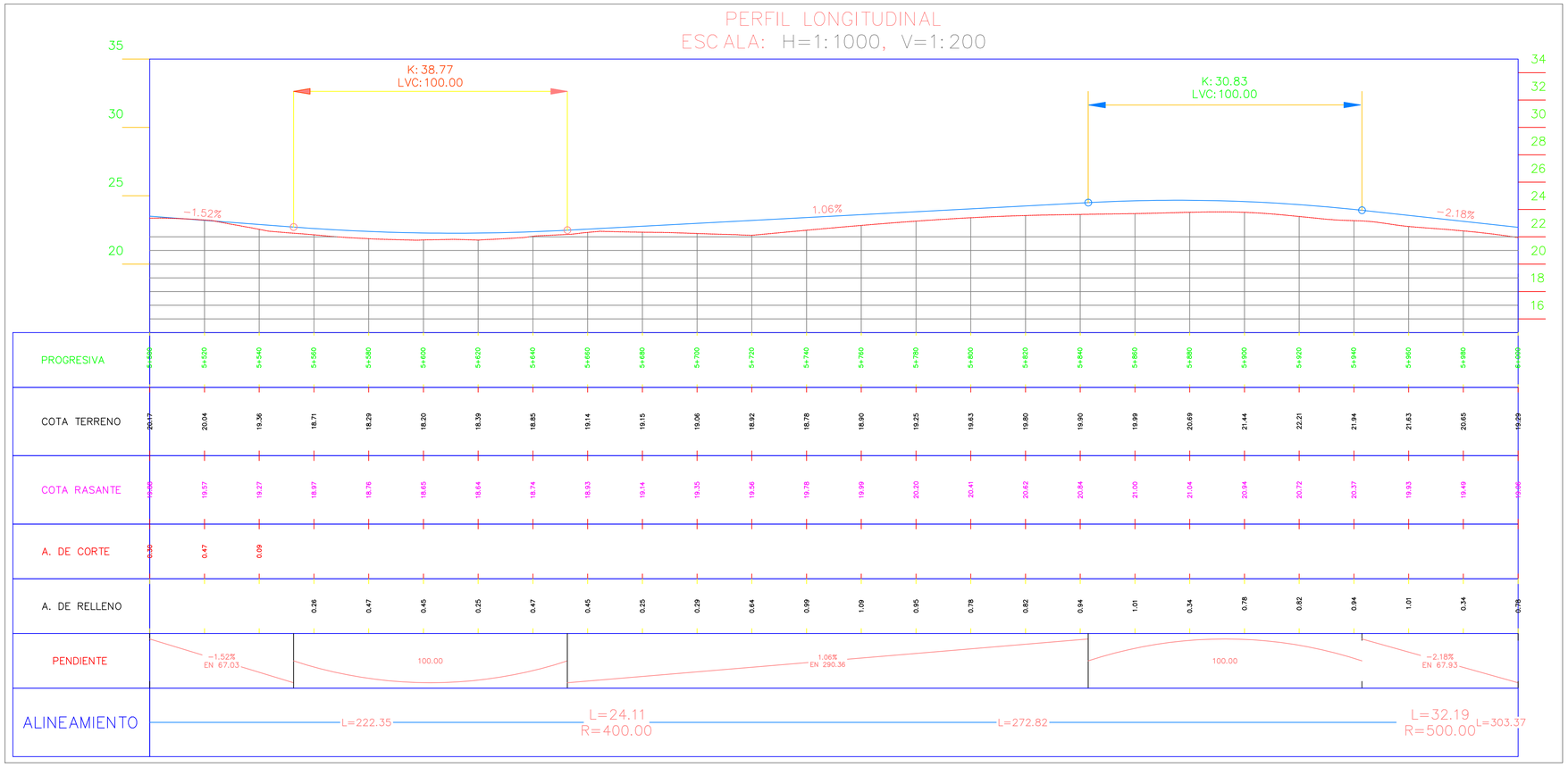

| | | |

# KM 5+500 – 6+000

## PLANTA
ESC: 1/1000




## ELEVACION
ESC: 1/1000

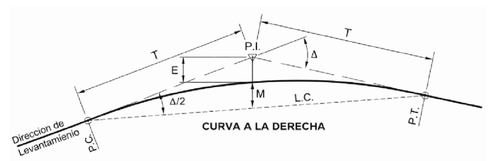



### TABLA DE TANGENTES

| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
|---|---|---|---|---|
| L24 | 222.35 | N36° 52' 11"E | 5+436.18 | 5+658.53 |
| L25 | 272.82 | N40° 19' 25"E | 5+682.64 | 5+955.46 |

### CUADRO DE ELEMENTOS DE CURVA HORIZONTAL

| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
|---|---|---|---|---|---|---|---|---|---|
| PI:21 | N38° 35' 48"E | 3°27'14" | 400.00 | 24.11 | 5+658.53 | 5+670.59 | 619125.2 | 9275044.55 | 5+682.64 |
| PI:22 | N38° 28' 45"E | 3°41'19" | 500.00 | 32.19 | 5+955.46 | 5+971.56 | 619319.9 | 9275274.02 | 5+987.65 |




P.C. = Punto de Inicio de la Curva
P.I. = Punto de Intersección
P.T. = Punto de Tangencia
E = Distancia a Externa (m.)
M = Distancia de la Ordenada Media (m.)
R = Longitud del Radio de la Curva (m.) (a P.I a P.T.) (m.)
T = Longitud de la Subtangente (P.C. a P.I. a P.T.) (m.)
L = Longitud de la Curva (m.)
L.C. = Longitud de la Cuerda (m.)
Δ = Angulo de Deflexión

$T = R \tan\frac{\Delta}{2}$
$L.C. = 2R \operatorname{sen}\frac{\Delta}{2}$
$L = 2\pi R \frac{\Delta}{360}$
$M = R[1 - \cos(\Delta/2)]$
$E = R[\sec(\Delta/2) - 1]$

### CARACTERISTICAS GEOMETRICAS DE DISEÑO

| | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11.174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
| TIPO DE RODADURA | AFIRMADO |
| VELOCIDAD DE DISEÑO | 30 KM/H |
| RADIO MAXIMO | NO APLICA |
| RADIO MINIMO | 30 M |
| ANCHO DE CALZADA | 4.0 M |
| BERMAS | 0.50 M |
| SOBREANCHO MAXIMO | 1.90 (R=40M) |
| SOBREANCHO MINIMO | 0.10 (R=1500M) |
| PENDIENTE MAXIMA | 3.76 % |
| PENDIENTE MINIMA | 0.35 % |
| BOMBEO DE CALZADA | 2.50 % |
| PERALTE MAXIMO | 8.00 % |
| PERALTE MINIMO | 2.00 % |
| CUNETAS | SIN CUNETAS |
| ALCANTARILLAS | 32 ALC. DE PASO |
| ANCHO DE DERECHO DE VIA | 20 M |

### LEYENDA

- EJE DE VIA
- ANCHO DE VIA
- OBRA DE ARTE (ALCANTARILLA)
- BM/PUNTO DE CONTROL
- NORTE MAGNETICO
- CURVAS MAYORES @ 2m
- CURVAS MENORES @ 1m

UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**PLANTA - PERFIL**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

UBICACION DEL PROYECTO

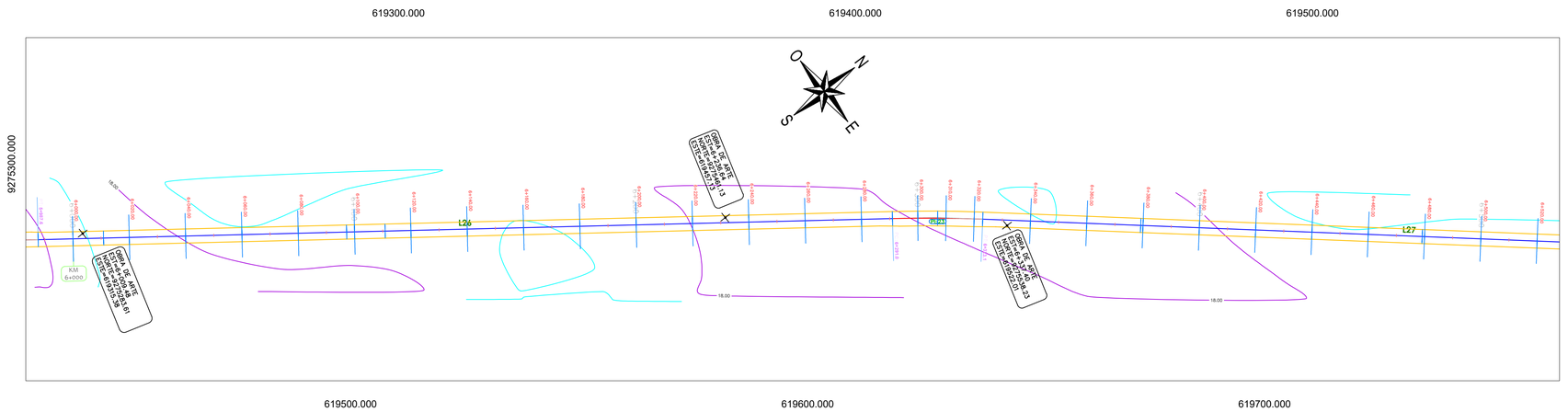
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**PP-12**

# KM 6+000 – 6+500

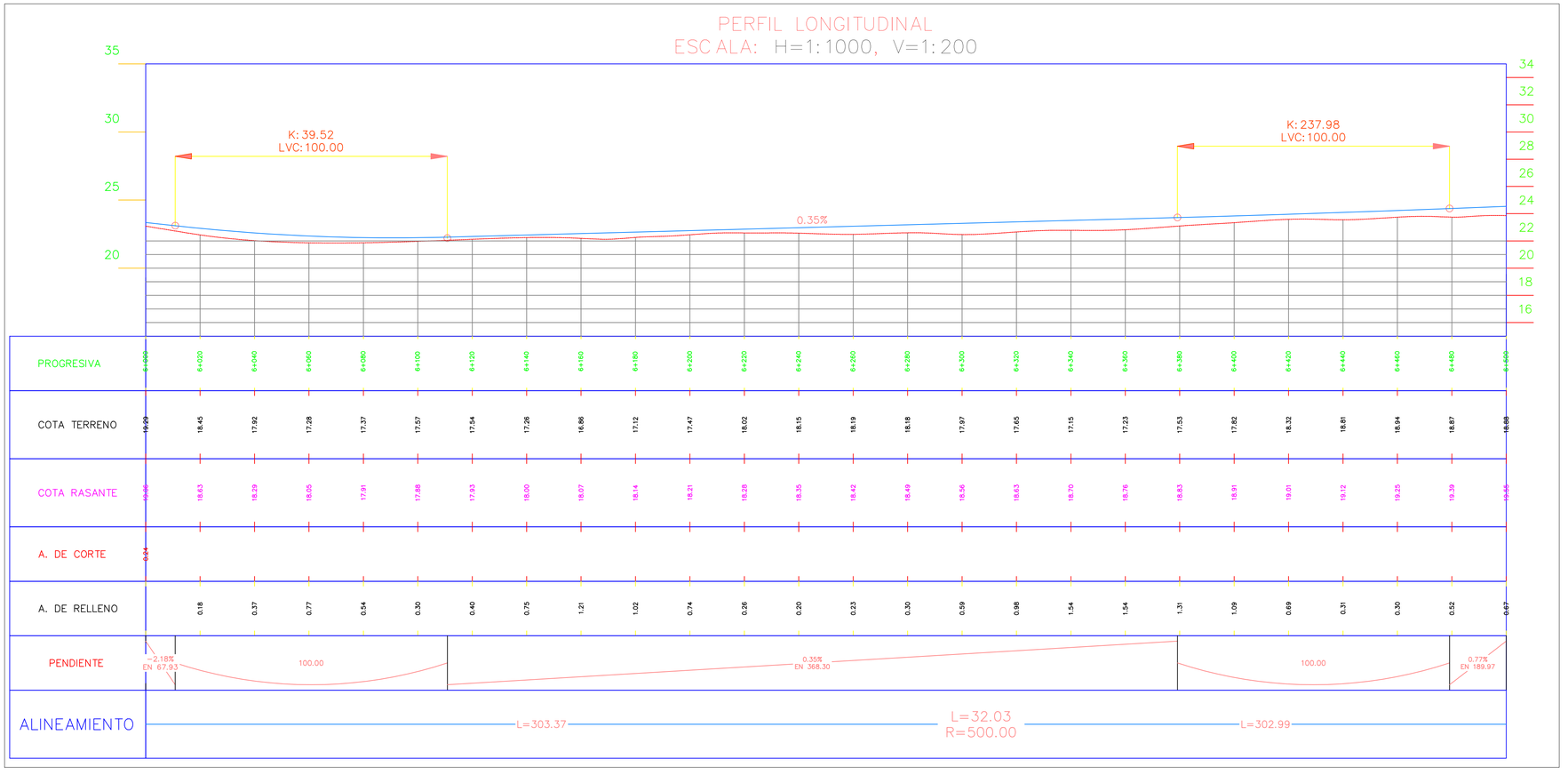
## PLANTA
ESC: 1/1000

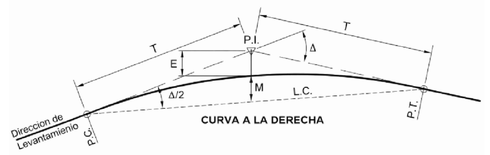



| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| L26 | 303.37 | N36° 38' 05"E | 5+987.65 | 6+291.02 |
| L27 | 302.99 | N40° 18' 20"E | 6+323.05 | 6+626.04 |

| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
| PI:23 | N38° 28' 13"E | 3°40'15" | 500.00 | 32.03 | 6+291.02 | 6+307.04 | 619520.1 | 9275543.24 | 6+323.05 |

## ELEVACION
ESC: 1/1000




P.C. = Punto de Inicio de la Curva
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P.T. = Punto de Tangencia
E = Distancia a Externa (m.)
M = Distancia de la Ordenada Media (m.)
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T = Longitud de la Subtangente (P.C. a P.I. a P.T.) (m.)
L = Longitud de la Curva (m.)
L.C. = Longitud de la Cuerda (m.)
Δ = Angulo de Deflexión

$T = R \tan\frac{\Delta}{2}$

$L.C. = 2R \operatorname{sen}\frac{\Delta}{2}$

$L = 2\pi R\frac{\Delta}{360}$

$M = R[1-\cos(\Delta/2)]$

$E = R[\sec(\Delta/2)-1]$

| CARACTERISTICAS GEOMETRICAS DE DISEÑO | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11.174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
| TIPO DE RODADURA | AFIRMADO |
| VELOCIDAD DE DISEÑO | 30 KM/H |
| RADIO MAXIMO | NO APLICA |
| RADIO MINIMO | 30 M |
| ANCHO DE CALZADA | 4.0 M |
| BERMAS | 0.50 M |
| SOBREANCHO MAXIMO | 1.90 (R=40M) |
| SOBREANCHO MINIMO | 0.10 (R=1500M) |
| PENDIENTE MAXIMA | 3.76 % |
| PENDIENTE MINIMA | 0.35 % |
| BOMBEO DE CALZADA | 2.50 % |
| PERALTE MAXIMO | 8.00 % |
| PERALTE MINIMO | 2.00 % |
| CUNETAS | SIN CUNETAS |
| ALCANTARILLAS | 32 ALC. DE PASO |
| ANCHO DE DERECHO DE VIA | 20 M |

## LEYENDA
- EJE DE VIA
- ANCHO DE VIA
- OBRA DE ARTE (ALCANTARILLA)
- BM/PUNTO DE CONTROL
- NORTE MAGNETICO
- CURVAS MAYORES @ 2m
- CURVAS MENORES @ 1m

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ORIENTACION:

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**PLANTA - PERFIL**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

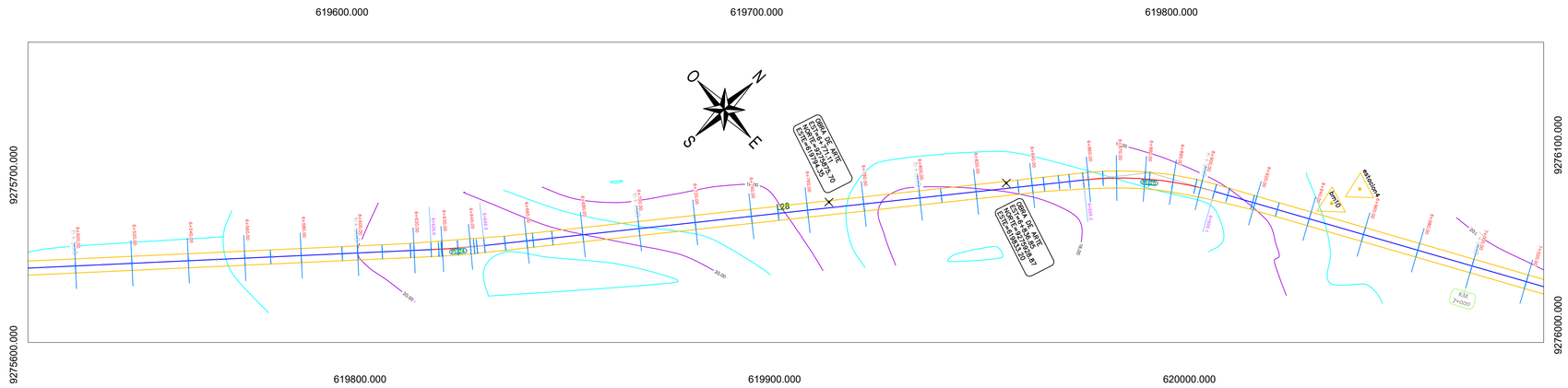
UBICACION DEL PROYECTO
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**PP-13**

# KM 6+500 – 7+000

## PLANTA
ESC: 1/1000

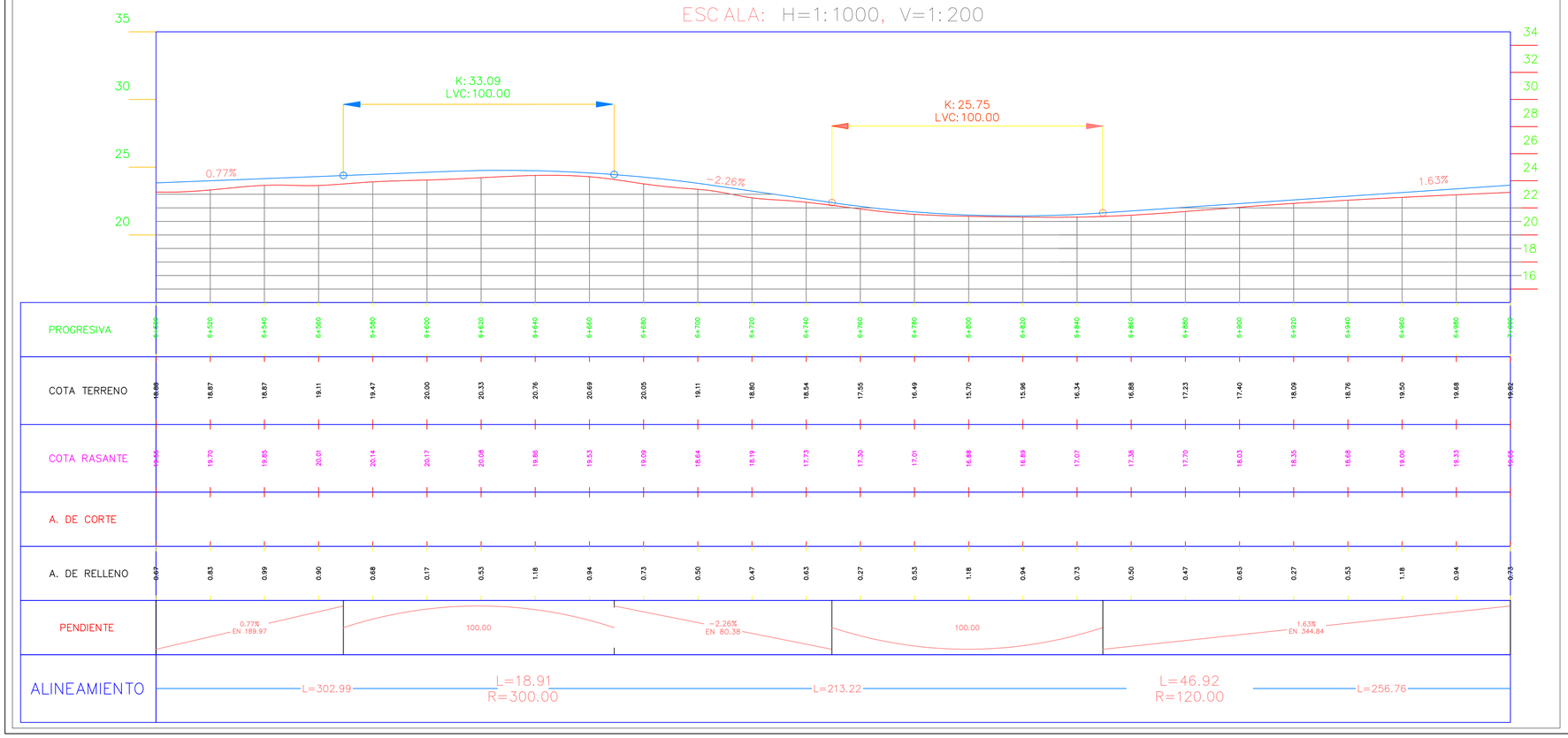


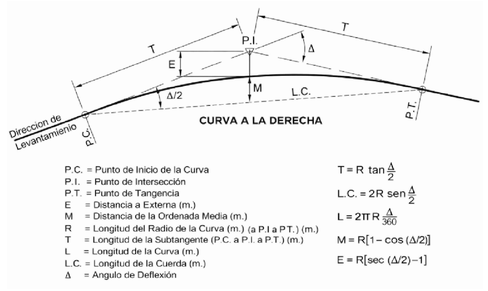

| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| 128 | 213.22 | N36° 41' 37"E | 6+644.95 | 6+858.17 |

| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
| PI: 24 | N38° 29' 59"E | 3°36'43" | 300.00 | 18.91 | 6+626.04 | 6+635.50 | 619732.6 | 9275793.73 | 6+644.95 |
| PI: 25 | N47° 53' 43"E | 22°24'12" | 120.00 | 46.92 | 6+858.17 | 6+881.94 | 619879.9 | 9275991.34 | 6+905.10 |

## ELEVACION
ESC: 1/1000

## PERFIL LONGITUDINAL
ESC ALA: H=1:1000, V=1:200

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L.C. = Longitud de la Cuerda (m.)
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$T = R \tan\frac{\Delta}{2}$
$L.C. = 2R \operatorname{sen}\frac{\Delta}{2}$
$L = 2\pi R\frac{\Delta}{360}$
$M = R[1 - \cos(\Delta/2)]$
$E = R[\sec(\Delta/2) - 1]$

| CARACTERISTICAS GEOMETRICAS DE DISEÑO | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11.174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
| TIPO DE RODADURA | AFIRMADO |
| VELOCIDAD DE DISEÑO | 30 KM/H |
| RADIO MAXIMO | NO APLICA |
| RADIO MINIMO | 30 M |
| ANCHO DE CALZADA | 4.0 M |
| BERMAS | 0.50 M |
| SOBREANCHO MAXIMO | 1.90 (R=40M) |
| SOBREANCHO MINIMO | 0.10 (R=1500M) |
| PENDIENTE MAXIMA | 3.76 % |
| PENDIENTE MINIMA | 0.35 % |
| BOMBEO DE CALZADA | 2.50 % |
| PERALTE MAXIMO | 8.00 % |
| PERALTE MINIMO | 2.00 % |
| CUNETAS | SIN CUNETAS |
| ALCANTARILLAS | 32 ALC. DE PASO |
| ANCHO DE DERECHO DE VIA | 20 M |

## LEYENDA
- EJE DE VIA
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ORIENTACION: N

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ESC: INDICADA

FECHA: Enero, 2026

UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**PP-14**

# KM 7+000 — 7+500

## PLANTA
ESC: 1/1000

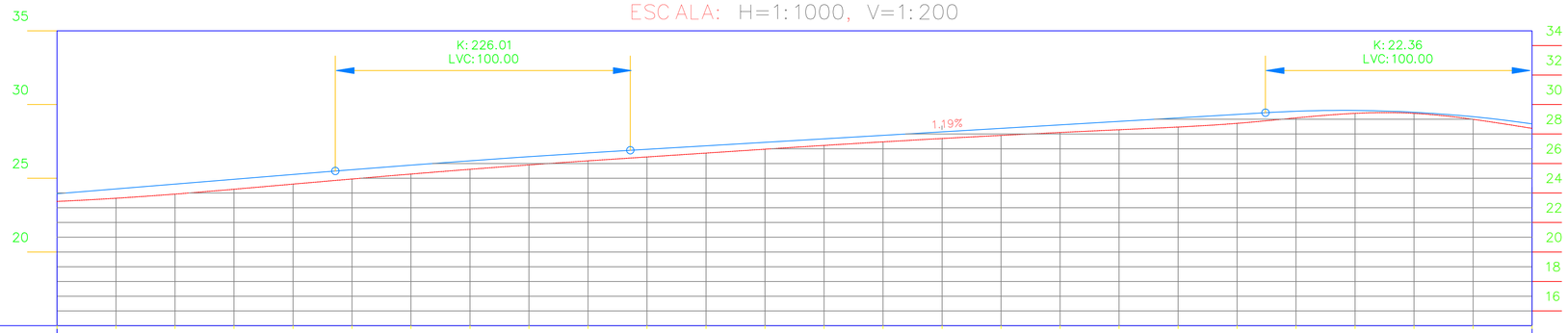



| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| L27 | 256.76 | N59° 05' 49"E | 6+905.10 | 7+161.85 |
| L30 | 314.58 | N46° 32' 39"E | 7+190.33 | 7+504.92 |

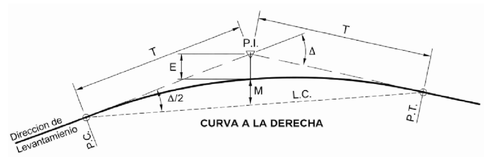
| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
| PI:26 | N52° 49' 14"E | 12°33'10" | 130.00 | 28.48 | 7+161.85 | 7+176.15 | 620132.8 | 9276142.75 | 7+190.33 |
| PI:27 | N47° 12' 09"E | 179°00" | 500.00 | 11.49 | 7+504.92 | 7+510.66 | 620375.7 | 9276372.91 | 7+516.41 |

## ELEVACION
ESC: 1/1000

## PERFIL LONGITUDINAL
ESCALA: H=1:1000, V=1:200




| PROGRESIVA | 7+000 | 7+020 | 7+040 | 7+060 | 7+080 | 7+100 | 7+120 | 7+140 | 7+160 | 7+180 | 7+200 | 7+220 | 7+240 | 7+260 | 7+280 | 7+300 | 7+320 | 7+340 | 7+360 | 7+380 | 7+400 | 7+420 | 7+440 | 7+460 | 7+480 | 7+500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COTA TERRENO | 19.82 | 19.88 | 19.92 | 19.99 | 20.11 | 20.32 | 20.71 | 21.41 | 22.59 | 24.19 | 25.85 | 27.59 | 28.32 | 28.44 | 25.09 | 24.25 | 24.11 | 24.04 | 24.00 | 23.98 | 24.19 | 24.62 | 25.08 | 25.50 | 25.16 | 24.92 |
| COTA RASANTE | 19.66 | 19.98 | 20.31 | 20.63 | 20.96 | 21.28 | 21.59 | 21.89 | 22.16 | 22.42 | 22.66 | 22.90 | 23.14 | 23.37 | 23.61 | 23.85 | 24.09 | 24.32 | 24.56 | 24.80 | 25.03 | 25.25 | 25.30 | 25.18 | 24.87 | 24.59 |
| A. DE CORTE | 0.16 | | | | | | | | | | | | | | | | | | | | | | | | | |
| A. DE RELLENO | | 0.10 | 0.38 | 0.64 | 0.85 | 0.96 | 0.88 | 0.48 | 0.38 | 0.64 | 0.85 | 0.96 | 0.88 | 0.48 | 0.10 | 0.38 | 0.64 | 0.28 | 0.56 | 0.81 | 0.84 | 0.62 | 0.22 | 0.62 | 0.22 | 0.17 |
| PENDIENTE | | 1.63% EN 344.84 | | | | | 100.00 | | | | | 1.19% EN 315.30 | | | | | | | | | | | 100.00 | | | |
| ALINEAMIENTO | | L=256.76 | | | | | L=28.48 R=130.00 | | | | | L=314.58 | | | | | | | | | | | | | | |




P.C. = Punto de Inicio de la Curva
P.I. = Punto de Intersección
P.T. = Punto de Tangencia
E. = Distancia a Externa (m.)
M = Distancia de la Ordenada Media (m.)
R = Longitud del Radio de la Curva (m.) (a P.I a P.T.) (m.)
T = Longitud de la Subtangente (P.C. a P.I. a P.T.) (m.)
L = Longitud de la Curva (m.)
L.C. = Longitud de la Cuerda (m.)
Δ = Angulo de Deflexión

$T = R \tan\frac{\Delta}{2}$

$L.C. = 2R \operatorname{sen}\frac{\Delta}{2}$

$L = 2\pi R \frac{\Delta}{360}$

$M = R[1 - \cos(\Delta/2)]$

$E = R[\sec(\Delta/2) - 1]$

| CARACTERISTICAS GEOMETRICAS DE DISEÑO | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11.174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
| TIPO DE RODADURA | AFIRMADO |
| VELOCIDAD DE DISEÑO | 30 KM/H |
| RADIO MAXIMO | NO APLICA |
| RADIO MINIMO | 30 M |
| ANCHO DE CALZADA | 4.0 M |
| BERMAS | 0.50 M |
| SOBREANCHO MAXIMO | 1.90 (R=40M) |
| SOBREANCHO MINIMO | 0.10 (R=1500M) |
| PENDIENTE MAXIMA | 3.76 % |
| PENDIENTE MINIMA | 0.35 % |
| BOMBEO DE CALZADA | 2.50 % |
| PERALTE MAXIMO | 8.00 % |
| PERALTE MINIMO | 2.00 % |
| CUNETAS | SIN CUNETAS |
| ALCANTARILLAS | 32 ALC. DE PASO |
| ANCHO DE DERECHO DE VIA | 20 M |

## LEYENDA
- EJE DE VIA
- ANCHO DE VIA
- OBRA DE ARTE (ALCANTARILLA)
- BM/PUNTO DE CONTROL
- NORTE MAGNETICO
- CURVAS MAYORES @ 2m
- CURVAS MENORES @ 1m

UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**PLANTA - PERFIL**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

**ALUMNOS:**

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

UBICACION DEL PROYECTO

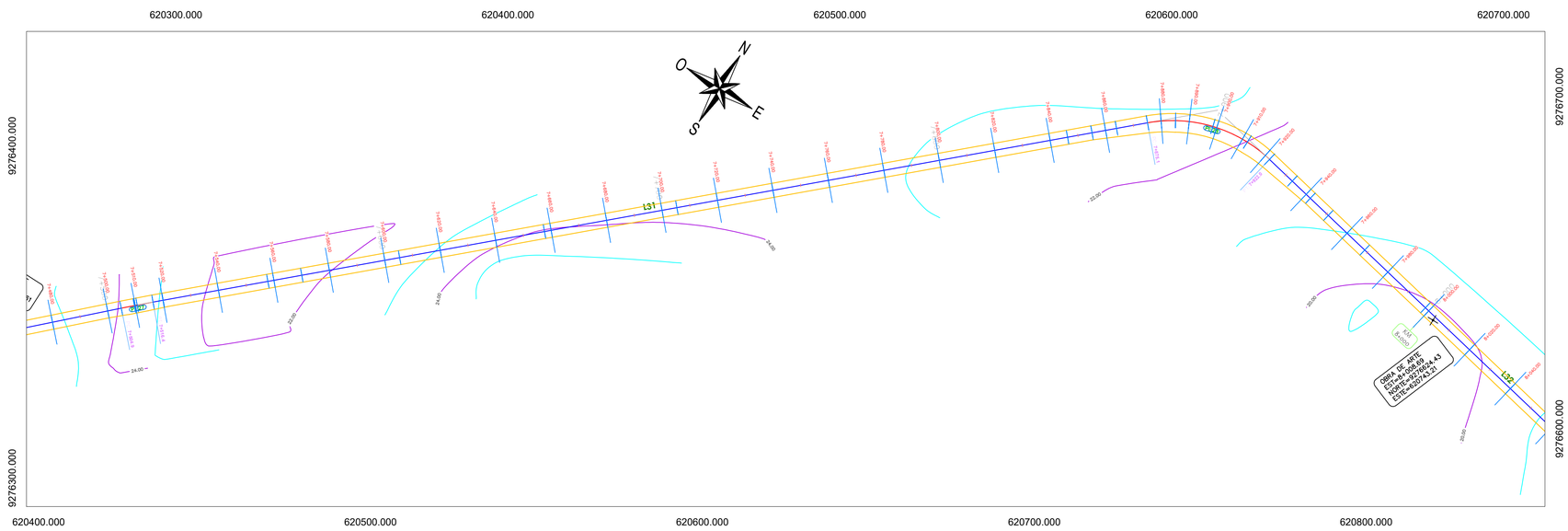
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**PP-15**

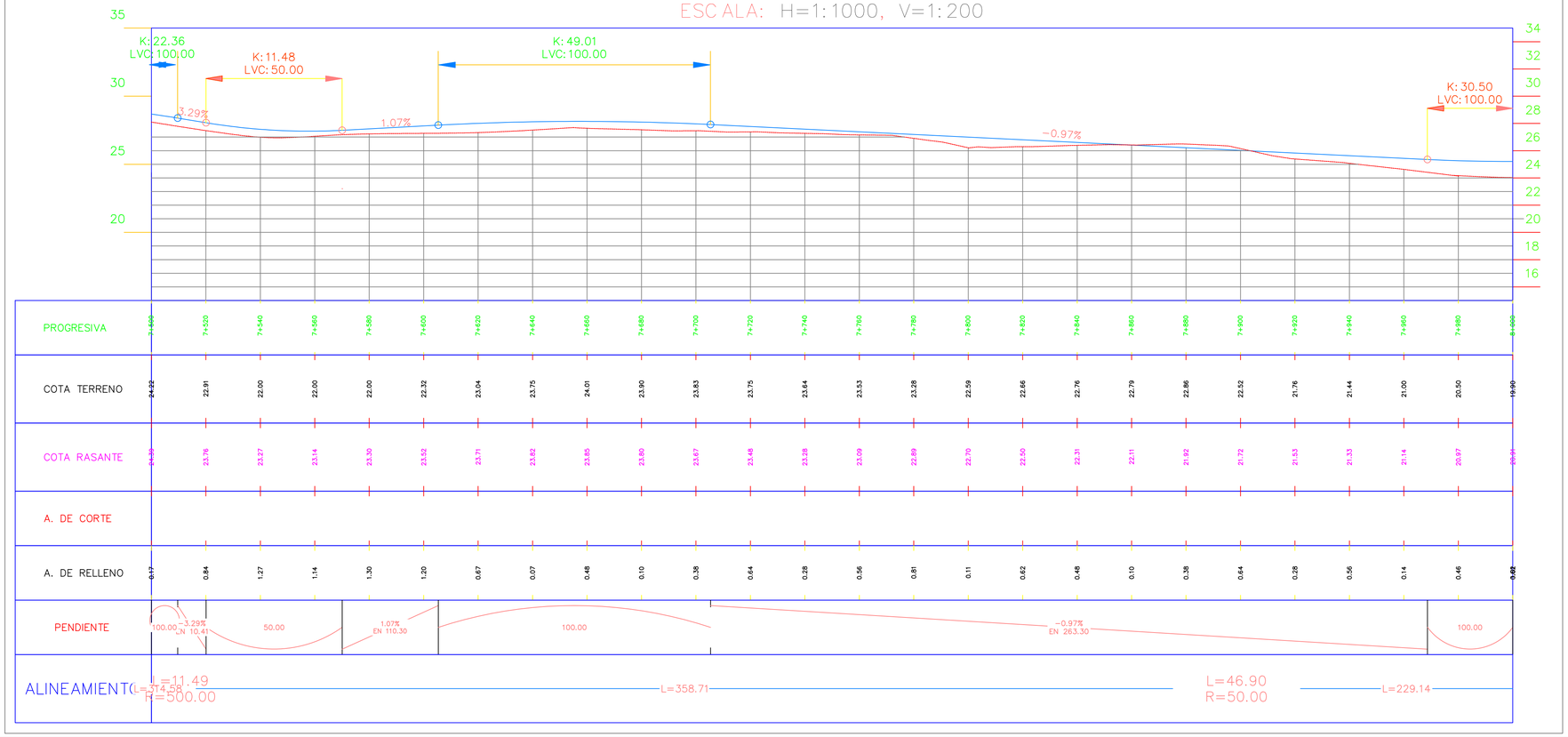
# KM 7+500 – 8+000

PLANTA
ESC: 1/1000



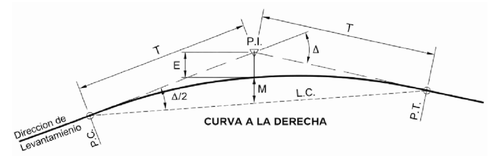

ELEVACION
ESC: 1/1000

## PERFIL LONGITUDINAL
ESCALA: H=1:1000, V=1:200




| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| L31 | 358.71 | N43° 51' 38"E | 7+516.41 | 7+875.12 |
| L32 | 229.14 | S78° 23' 38"E | 7+922.02 | 8+151.16 |

| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGTUD | PC | PI | PI ESTE | PI NORTE | PT |
| PI: 27 | N47° 12' 09"E | 1°19'00" | 500.00 | 11.49 | 7+504.92 | 7+510.66 | 620375.7 | 9276372.91 | 7+516.41 |
| PI: 28 | N74° 44' 00"E | 53°44'44" | 50.00 | 46.90 | 7+875.12 | 7+900.45 | 620664.8 | 9276634.43 | 7+922.02 |

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$T = R \tan\frac{\Delta}{2}$

$L.C. = 2R \operatorname{sen}\frac{\Delta}{2}$

$L = 2\pi R\frac{\Delta}{360}$

$M = R[1-\cos(\Delta/2)]$

$E = R[\sec(\Delta/2)-1]$

| CARACTERISTICAS GEOMETRICAS DE DISEÑO | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11.174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
| TIPO DE RODADURA | AFIRMADO |
| VELOCIDAD DE DISEÑO | 30 KM/H |
| RADIO MAXIMO | NO APLICA |
| RADIO MINIMO | 30 M |
| ANCHO DE CALZADA | 4.0 M |
| BERMAS | 0.50 M |
| SOBREANCHO MAXIMO | 1.90 (R=40M) |
| SOBREANCHO MINIMO | 0.10 (R=1500M) |
| PENDIENTE MAXIMA | 3.76 % |
| PENDIENTE MINIMA | 0.35 % |
| BOMBEO DE CALZADA | 2.50 % |
| PERALTE MAXIMO | 8.00 % |
| PERALTE MINIMO | 2.00 % |
| CUNETAS | SIN CUNETAS |
| ALCANTARILLAS | 32 ALC. DE PASO |
| ANCHO DE DERECHO DE VIA | 20 M |

## LEYENDA

- EJE DE VIA
- ANCHO DE VIA
- OBRA DE ARTE (ALCANTARILLA)
- BM/PUNTO DE CONTROL
- NORTE MAGNETICO
- CURVAS MAYORES @ 2m
- CURVAS MENORES @ 1m

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ORIENTACION:

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

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DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

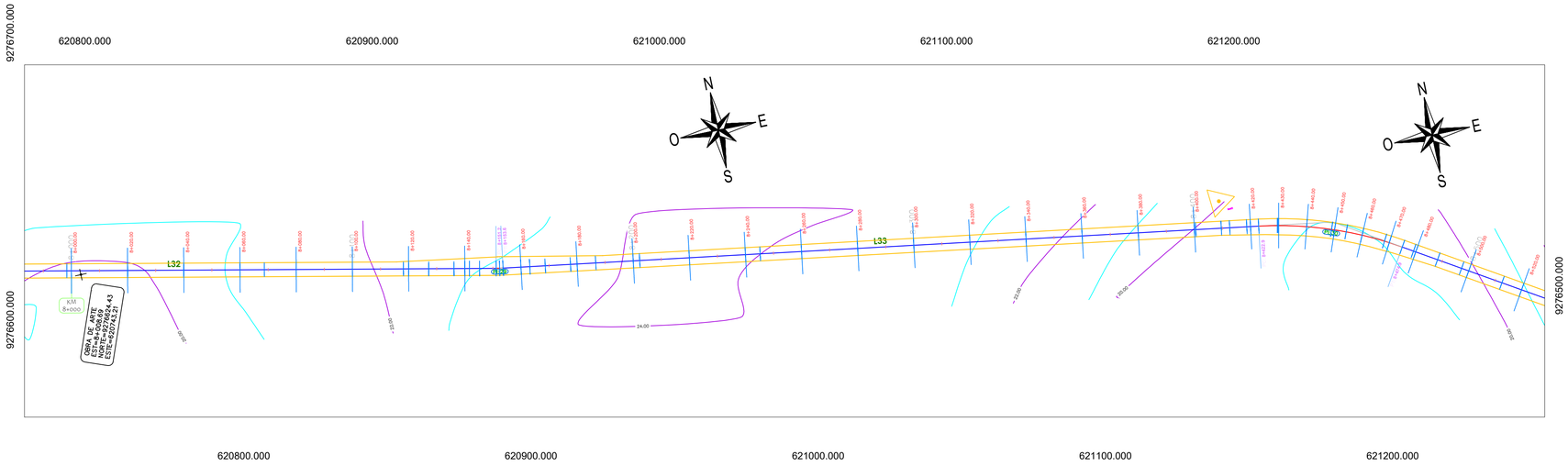
UBICACION DEL PROYECTO
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**PP-16**

# KM 8+000 – 8+500

## PLANTA
ESC: 1/1000

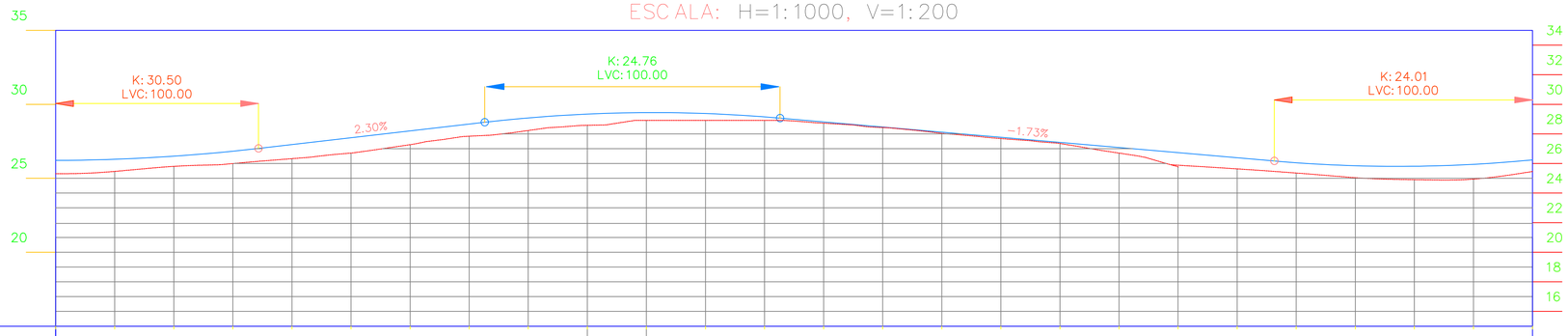



| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| L32 | 229.14 | S78° 23' 38"E | 7+922.02 | 8+151.16 |
| L33 | 269.28 | S81° 14' 23"E | 8+153.64 | 8+422.92 |

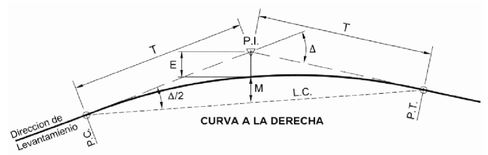
| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
| Pi:29 | S79° 49' 01"E | 2°50'45" | 50.00 | 2.48 | 8+151.16 | 8+152.40 | 620915.3 | 9276582.99 | 8+153.64 |
| Pi:30 | S69° 47' 07"E | 22°54'33" | 130.00 | 51.98 | 8+422.92 | 8+449.26 | 621208.7 | 9276537.78 | 8+474.90 |

## ELEVACION
ESC: 1/1000

## PERFIL LONGITUDINAL
ESCALA: H=1:1000, V=1:200




| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROGRESIVA | 8+000 | 8+020 | 8+040 | 8+060 | 8+080 | 8+100 | 8+120 | 8+140 | 8+160 | 8+180 | 8+200 | 8+220 | 8+240 | 8+260 | 8+280 | 8+300 | 8+320 | 8+340 | 8+360 | 8+380 | 8+400 | 8+420 | 8+440 | 8+460 | 8+480 | 8+500 |
| COTA TERRENO | 19.90 | 19.95 | 20.43 | 21.08 | 21.41 | 21.79 | 22.36 | 22.93 | 23.32 | 23.67 | 24.00 | 24.00 | 24.00 | 23.81 | 23.54 | 23.30 | 23.07 | 22.49 | 21.79 | 20.86 | 19.99 | 19.42 | 19.04 | 18.97 | 19.27 | 19.84 |
| COTA RASANTE | 20.97 | 20.99 | 21.19 | 21.53 | 21.88 | 22.44 | 22.90 | 23.36 | 23.78 | 24.04 | 24.14 | 24.08 | 23.86 | 23.51 | 23.17 | 22.82 | 22.47 | 22.13 | 21.78 | 21.43 | 21.09 | 20.75 | 20.55 | 20.51 | 20.65 | 20.94 |
| A. DE CORTE | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A. DE RELLENO | 1.07 | 1.04 | 0.77 | 0.45 | 0.57 | 0.65 | 0.54 | 0.43 | 0.46 | 0.37 | 0.14 | 0.08 | 0.65 | 0.54 | 0.43 | 0.46 | 0.37 | 0.14 | 0.08 | 0.57 | 1.10 | 1.33 | 1.51 | 1.54 | 1.37 | 1.10 |
| PENDIENTE | 100.00 | | | | | 2.30% EN 176.59 | | | | | 100.00 | | | | | | | -1.73% EN 167.33 | | | | | 100.00 | | | |
| ALINEAMIENTO | L=229.14 | | | | | L=2.48 R=50.00 | | | | | L=269.28 | | | | | | | | | | | | L=51.98 R=130.00 | | | L=132.32 |

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$L = 2\pi R \frac{\Delta}{360}$

$M = R[1 - \cos(\Delta/2)]$

$E = R[\sec(\Delta/2) - 1]$

| CARACTERISTICAS GEOMETRICAS DE DISEÑO | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11.174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
| TIPO DE RODADURA | AFIRMADO |
| VELOCIDAD DE DISEÑO | 30 KM/H |
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| CUNETAS | SIN CUNETAS |
| ALCANTARILLAS | 32 ALC. DE PASO |
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PLANO :

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DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO


ALUMNOS:

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ESC: INDICADA

FECHA: Enero, 2026

UBICACION DEL PROYECTO

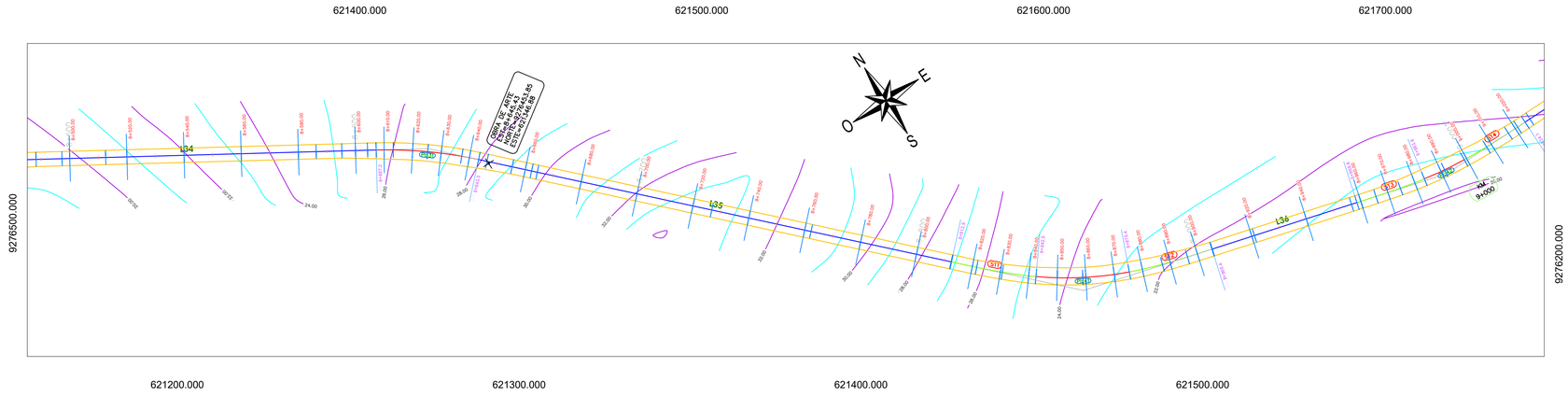
MOCHUMÍ – LAMBAYEQUE LAMBAYEQUE – PERÚ

LAMINA Nº

**PP-17**

# KM 8+000 – 8+500

## PLANTA
ESC: 1/1000



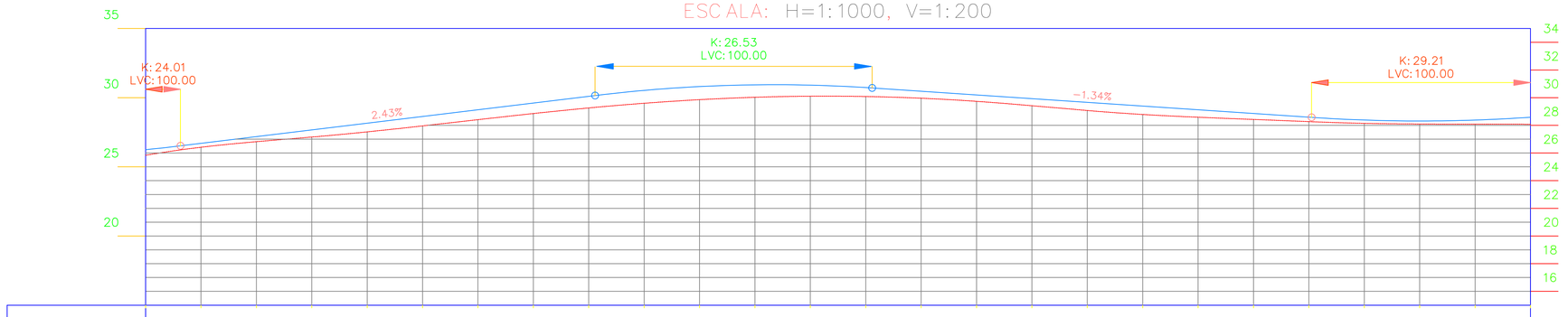

| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| L34 | 132.32 | S58° 19' 50"E | 8+474.90 | 8+607.22 |
| L35 | 169.24 | S44° 32' 58"E | 8+643.30 | 8+812.54 |
| L36 | 53.24 | S74° 32' 39"E | 8+905.36 | 8+958.60 |

| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
| PI: 31 | S51° 26' 25"E | 13°46'51" | 150.00 | 36.08 | 8+607.22 | 8+625.35 | 621359.1 | 9276444.96 | 8+643.30 |
| PI: 41 | S59° 32' 49"E | 15°40'14" | 120.00 | 32.82 | 8+842.54 | 8+859.05 | 621523.7 | 9276277.78 | 8+875.36 |
| PI: 42 | S82° 16' 48"E | 5°55'20" | 150.00 | 15.50 | 8+983.60 | 8+991.36 | 621652.2 | 9276242.24 | 8+999.10 |

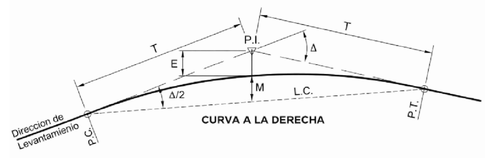
| TABLA DE ELEMENTOS DE ESPIRALES | | |
|---|---|---|
| # ESPIRAL | A | LONGITUD |
| S11 | 60.00 | 30.00 |
| S12 | 60.00 | 30.00 |
| S13 | 61.24 | 25.00 |
| S14 | 61.24 | 25.00 |

## ELEVACION
ESC: 1/1000

## PERFIL LONGITUDINAL
ESC ALA: H=1:1000, V=1:200




| PROGRESIVA | 8+500 | 8+520 | 8+540 | 8+560 | 8+580 | 8+600 | 8+620 | 8+640 | 8+660 | 8+680 | 8+700 | 8+720 | 8+740 | 8+760 | 8+780 | 8+800 | 8+820 | 8+840 | 8+860 | 8+880 | 8+900 | 8+920 | 8+940 | 8+960 | 8+980 | 9+000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COTA TERRENO | 19.84 | 20.88 | 21.94 | 23.21 | 24.60 | 25.33 | 26.37 | 27.49 | 29.36 | 30.78 | 32.02 | 33.47 | 32.86 | 31.50 | 30.54 | 28.17 | 26.39 | 24.92 | 23.64 | 22.70 | 21.76 | 21.60 | 21.14 | 20.69 | 20.55 | 20.82 |
| COTA RASANTE | 20.54 | 21.40 | 21.88 | 22.37 | 22.86 | 23.34 | 23.83 | 24.31 | 24.80 | 25.23 | 25.50 | 25.63 | 25.61 | 25.43 | 25.16 | 24.90 | 24.63 | 24.36 | 24.09 | 23.82 | 23.56 | 23.29 | 23.08 | 23.01 | 23.08 | 23.28 |
| A. DE CORTE | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A. DE RELLENO | 1.10 | 0.52 | 0.54 | 0.43 | 0.46 | 0.37 | 0.14 | 0.08 | 0.65 | 0.54 | 0.43 | 0.46 | 0.08 | 0.65 | 0.54 | 0.43 | 0.46 | 0.45 | 0.45 | 1.12 | 1.79 | 1.68 | 1.95 | 2.32 | 2.53 | 2.46 |
| PENDIENTE | 100.00 | 2.43% EN 249.70 | | | | | | | | | 100.00 | | | -1.34% EN 158.69 | | | | | | | | | 100.00 | | | |
| ALINEAMIENTO | L=132.32 | | | | L=36.08 R=150.00 | | | | L=169.24 | | | | | | | | | L=32.82 R=120.00 | | | | L=53.24 | | | L=15.50 R=150.00 | |




P.C. = Punto de Inicio de la Curva
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P.T. = Punto de Tangencia
E = Distancia a Externa (m.)
M = Distancia de la Ordenada Media (m.)
R = Longitud del Radio de la Curva (m.) (a P.I a P.T.) (m.)
T = Longitud de la Subtangente (P.C. a P.I. a P.T.) (m.)
L = Longitud de la Curva (m.)
L.C. = Longitud de la Cuerda (m.)
Δ = Angulo de Deflexión

$T = R \tan\frac{\Delta}{2}$

$L.C. = 2R \operatorname{sen}\frac{\Delta}{2}$

$L = 2\pi R\frac{\Delta}{360}$

$M = R[1-\cos(\Delta/2)]$

$E = R[\sec(\Delta/2)-1]$

| CARACTERISTICAS GEOMETRICAS DE DISEÑO | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11.174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
| TIPO DE RODADURA | AFIRMADO |
| VELOCIDAD DE DISEÑO | 30 KM/H |
| RADIO MAXIMO | NO APLICA |
| RADIO MINIMO | 30 M |
| ANCHO DE CALZADA | 4.0 M |
| BERMAS | 0.50 M |
| SOBREANCHO MAXIMO | 1.90 (R=40M) |
| SOBREANCHO MINIMO | 0.10 (R=1500M) |
| PENDIENTE MAXIMA | 3.76 % |
| PENDIENTE MINIMA | 0.35 % |
| BOMBEO DE CALZADA | 2.50 % |
| PERALTE MAXIMO | 8.00 % |
| PERALTE MINIMO | 2.00 % |
| CUNETAS | SIN CUNETAS |
| ALCANTARILLAS | 32 ALC. DE PASO |
| ANCHO DE DERECHO DE VIA | 20 M |

## LEYENDA
- EJE DE VIA
- ANCHO DE VIA
- OBRA DE ARTE (ALCANTARILLA)
- BM/PUNTO DE CONTROL
- NORTE MAGNETICO
- CURVAS MAYORES @ 2m
- CURVAS MENORES @ 1m

UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION: N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**PLANTA - PERFIL**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

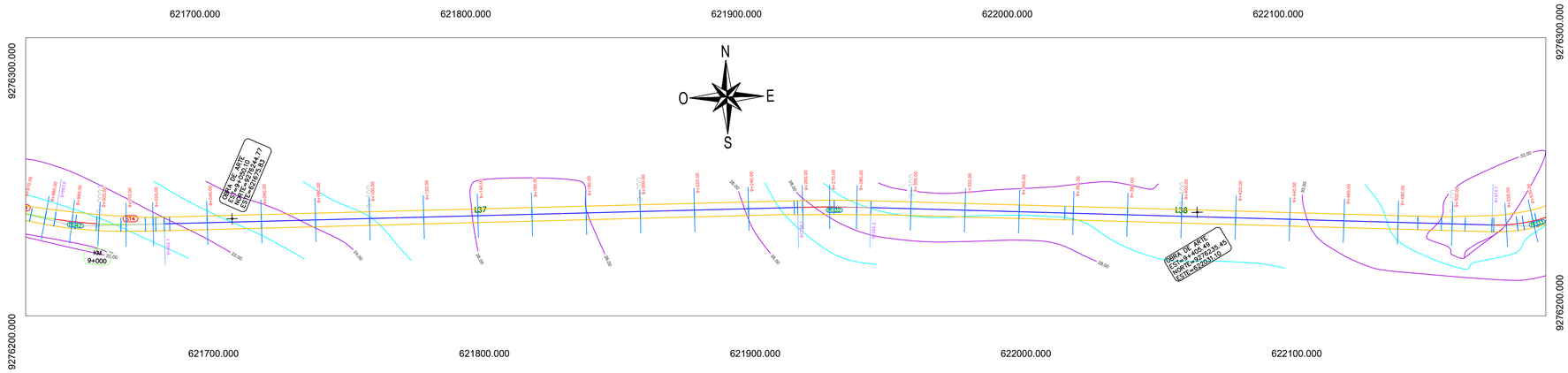
UBICACION DEL PROYECTO
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**PP-18**

# KM 9+000 – 9+500

## PLANTA
ESC: 1/1000

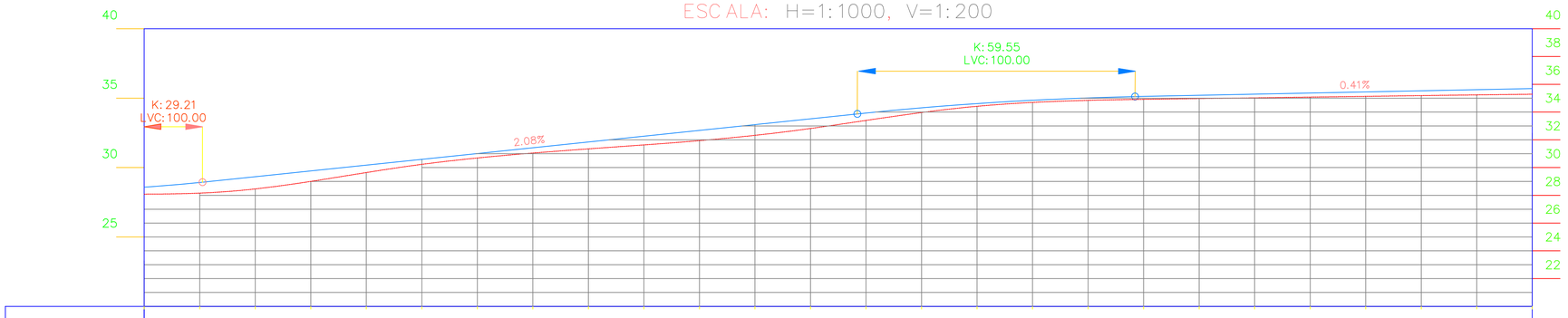



| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| L37 | 234.04 | N89° 59' 04"E | 9+024.10 | 9+258.15 |
| L38 | 229.50 | S86° 54' 48"E | 9+285.22 | 9+514.72 |

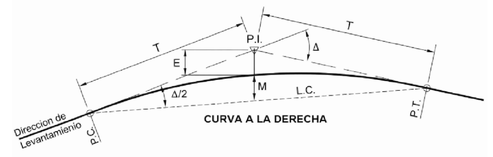
| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
| Pi.32 | S88° 27' 52"E | 3°06'09" | 500.00 | 27.07 | 9+258.15 | 9+271.69 | 621932.7 | 9276242.32 | 9+285.22 |
| Pi.33 | N77° 17' 46"E | 31°34'52" | 60.00 | 33.07 | 9+514.72 | 9+531.69 | 622192.3 | 9276228.32 | 9+547.79 |

## ELEVACION
ESC: 1/1000

### PERFIL LONGITUDINAL
ESCALA: H=1:1000, V=1:200




| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROGRESIVA | 9+000 | 9+020 | 9+040 | 9+060 | 9+080 | 9+100 | 9+120 | 9+140 | 9+160 | 9+180 | 9+200 | 9+220 | 9+240 | 9+260 | 9+280 | 9+300 | 9+320 | 9+340 | 9+360 | 9+380 | 9+400 | 9+420 | 9+440 | 9+460 | 9+480 | 9+500 |
| COTA TERRENO | 20.82 | 21.60 | 22.57 | 23.43 | 24.23 | 24.96 | 25.59 | 26.09 | 26.45 | 26.01 | 25.58 | 25.66 | 26.09 | 27.67 | 28.82 | 29.25 | 29.25 | 29.15 | 29.22 | 29.42 | 29.49 | 29.43 | 29.67 | 30.55 | 31.14 | 32.49 |
| COTA RASANTE | 21.49 | 23.63 | 24.05 | 24.46 | 24.86 | 25.30 | 25.71 | 26.13 | 26.55 | 26.97 | 27.38 | 27.80 | 28.22 | 28.63 | 29.01 | 29.31 | 29.55 | 29.72 | 29.83 | 29.91 | 29.99 | 30.07 | 30.15 | 30.23 | 30.31 | 30.39 |
| A. DE CORTE | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A. DE RELLENO | 2.46 | 2.03 | 1.48 | 1.03 | 0.65 | 0.33 | 0.13 | 0.05 | 0.10 | 0.95 | 1.80 | 2.14 | 2.13 | 0.97 | 0.18 | 0.06 | 0.30 | 0.57 | 0.61 | 0.49 | 0.50 | 0.64 | 0.48 | 0.50 | 0.64 | 0.45 |
| PENDIENTE | 100.00 | | | | | | | | 2.08% EN 335.91 | | | | | | | | | 100.00 | | | | | | 0.41% EN 258.45 | | |
| ALINEAMIENTO | L=234.04 | | | | | | | | | | | | | L=27.07 R=500.00 | | | | | | L=229.50 | | | | | | |

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T = Longitud de la Subtangente (P.C. a P.I. a P.T.) (m.)
L = Longitud de la Curva (m.)
L.C. = Longitud de la Cuerda (m.)
Δ = Angulo de Deflexión

$T = R \tan \frac{\Delta}{2}$

$L.C. = 2R \operatorname{sen} \frac{\Delta}{2}$

$L = 2\Pi R \frac{\Delta}{360}$

$M = R[1 - \cos(\Delta/2)]$

$E = R[\sec(\Delta/2) - 1]$

| CARACTERISTICAS GEOMETRICAS DE DISEÑO | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11.174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
| TIPO DE RODADURA | AFIRMADO |
| VELOCIDAD DE DISEÑO | 30 KM/H |
| RADIO MAXIMO | NO APLICA |
| RADIO MINIMO | 30 M |
| ANCHO DE CALZADA | 4.0 M |
| BERMAS | 0.50 M |
| SOBREANCHO MAXIMO | 1.90 (R=40M) |
| SOBREANCHO MINIMO | 0.10 (R=1500M) |
| PENDIENTE MAXIMA | 3.76 % |
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| CUNETAS | SIN CUNETAS |
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### LEYENDA
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ORIENTACION:

N

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PLANO :

**PLANTA - PERFIL**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

UBICACION DEL PROYECTO

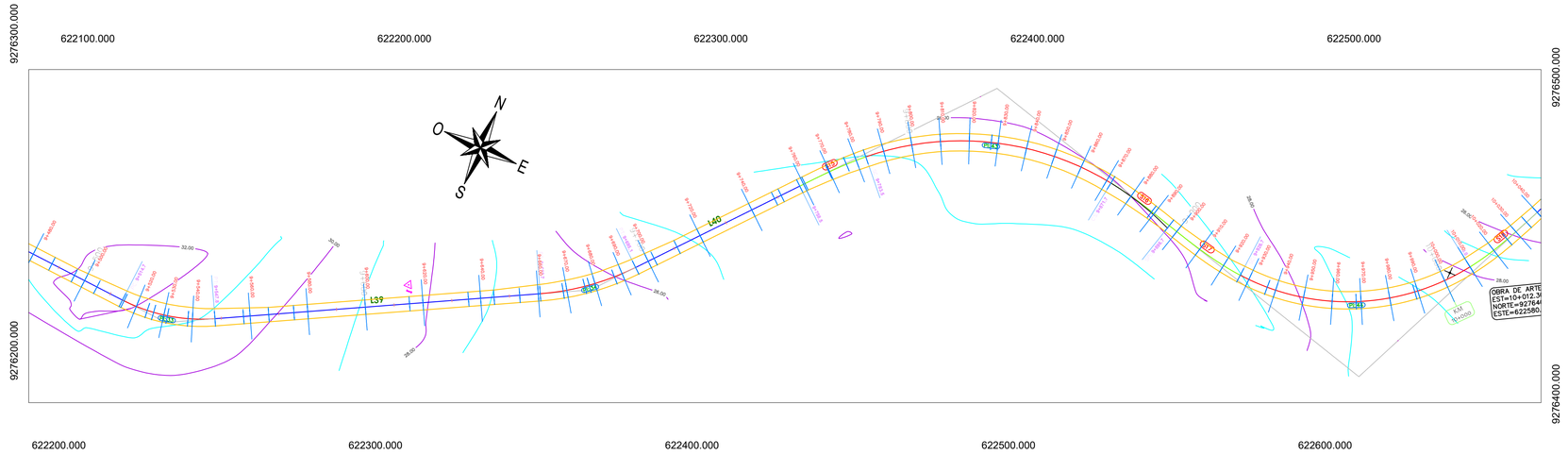
MOCHUMÍ – LAMBAYEQUE LAMBAYEQUE – PERÚ

LAMINA Nº

**PP-19**

# KM 9+500 — 10+000

## PLANTA
ESC: 1/1000



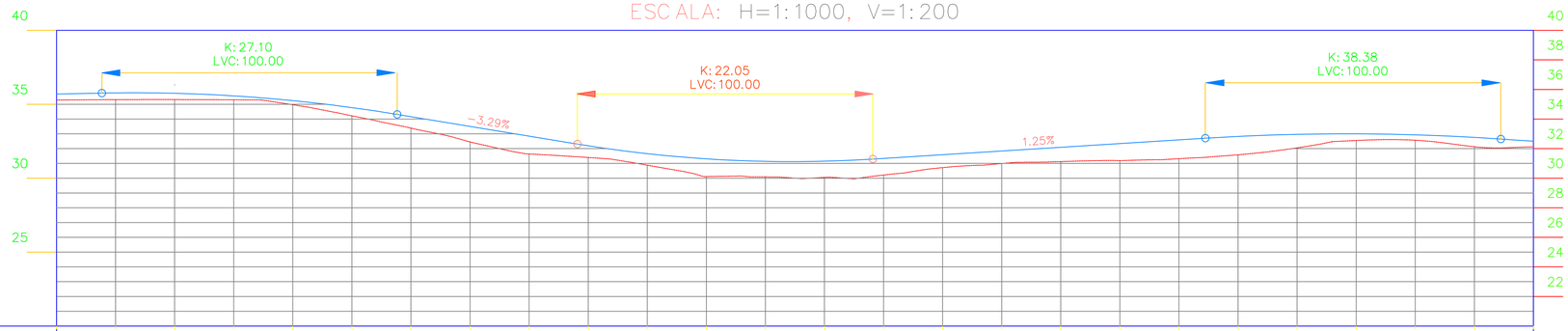

| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| L39 | 112.89 | N61° 30' 20"E | 9+547.79 | 9+660.68 |
| L40 | 63.39 | N39° 34' 12"E | 9+695.14 | 9+758.52 |

| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
| PI: 33 | N77° 17' 46"E | 31°34'52" | 60.00 | 33.07 | 9+514.72 | 9+531.69 | 622192.3 | 9276228.32 | 9+547.79 |
| PI: 34 | N50° 32' 16"E | 21°56'08" | 90.00 | 34.46 | 9+660.68 | 9+678.12 | 622321.8 | 9276298.59 | 9+695.14 |
| PI: 43 | N71° 59' 18"E | 50°30'46" | 100.00 | 88.16 | 9+783.52 | 9+830.70 | 622781.0 | 9276854.21 | 9+871.69 |
| PI: 44 | N63° 50' 43"E | 59°36'12" | 80.00 | 83.27 | 9+926.69 | 9+972.54 | 622781.0 | 9276854.21 | 10+009.95 |

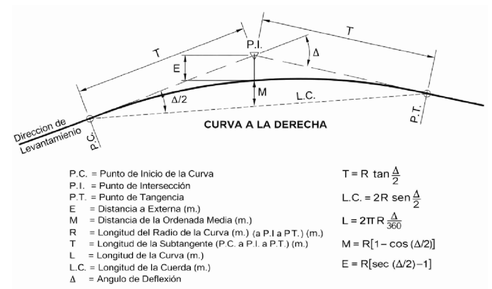
| TABLA DE ELEMENTOS DE ESPIRALES | | |
|---|---|---|
| # ESPIRAL | A | LONGITUD |
| S15 | 50.00 | 25.00 |
| S16 | 50.00 | 25.00 |
| S17 | 48.99 | 30.00 |
| S18 | 48.99 | 30.00 |

## ELEVACION
ESC: 1/1000

### PERFIL LONGITUDINAL
ESCALA: H=1:1000, V=1:200




| PROGRESIVA | 9+500 | 9+520 | 9+540 | 9+560 | 9+580 | 9+600 | 9+620 | 9+640 | 9+660 | 9+680 | 9+700 | 9+720 | 9+740 | 9+760 | 9+780 | 9+800 | 9+820 | 9+840 | 9+860 | 9+880 | 9+900 | 9+920 | 9+940 | 9+960 | 9+980 | 10+000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COTA TERRENO | 32.49 | 31.93 | 31.03 | 30.34 | 29.67 | 28.92 | 28.09 | 27.15 | 26.34 | 26.10 | 25.59 | 24.81 | 24.79 | 24.75 | 24.92 | 25.42 | 25.69 | 25.82 | 25.89 | 26.02 | 26.28 | 26.75 | 27.53 | 28.72 | 29.26 | 28.59 |
| COTA RASANTE | 32.20 | 30.47 | 30.44 | 30.27 | 29.95 | 29.48 | 28.86 | 28.21 | 27.55 | 26.90 | 26.36 | 26.01 | 25.84 | 25.85 | 26.04 | 26.29 | 26.54 | 26.79 | 27.04 | 27.29 | 27.53 | 27.67 | 27.70 | 27.63 | 27.46 | 27.09 |
| A. DE CORTE | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A. DE RELLENO | 0.28 | 0.56 | 0.77 | 1.05 | 0.28 | 0.56 | 0.77 | 1.05 | 1.21 | 0.79 | 0.77 | 1.20 | 1.05 | 1.10 | 1.12 | 0.87 | 0.85 | 0.97 | 1.15 | 1.27 | 1.24 | 0.91 | 0.17 | 1.24 | 0.91 | 0.17 |
| PENDIENTE | 0.41% EN 258.45 | | 100.00 | | -3.29% EN 61.01 | | | | | | 100.00 | | | | | 1.25% EN 212.59 | | | | | | | 100.00 | | | -1.36% EN 230.12 |
| ALINEAMIENTO | L=229.50 | L=33.07 R=60.00 | | L=112.89 | | | L=34.46 R=90.00 | | L=63.39 | | | | L=88.16 R=100.00 | | | | | | | | | | | L=83.27 R=80.00 | | |

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Δ = Angulo de Deflexión

$T = R \tan\frac{\Delta}{2}$

$L.C. = 2R \operatorname{sen}\frac{\Delta}{2}$

$L = 2\pi R\frac{\Delta}{360}$

$M = R[1-\cos(\Delta/2)]$

$E = R[\sec(\Delta/2)-1]$

| CARACTERISTICAS GEOMETRICAS DE DISEÑO | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11.174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
| TIPO DE RODADURA | AFIRMADO |
| VELOCIDAD DE DISEÑO | 30 KM/H |
| RADIO MAXIMO | NO APLICA |
| RADIO MINIMO | 30 M |
| ANCHO DE CALZADA | 4.0 M |
| BERMAS | 0.50 M |
| SOBREANCHO MAXIMO | 1.90 (R=40M) |
| SOBREANCHO MINIMO | 0.10 (R=1500M) |
| PENDIENTE MAXIMA | 3.76 % |
| PENDIENTE MINIMA | 0.35 % |
| BOMBEO DE CALZADA | 2.50 % |
| PERALTE MAXIMO | 8.00 % |
| PERALTE MINIMO | 2.00 % |
| CUNETAS | SIN CUNETAS |
| ALCANTARILLAS | 32 ALC. DE PASO |
| ANCHO DE DERECHO DE VIA | 20 M |

## LEYENDA
- EJE DE VIA
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ORIENTACION: N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**PLANTA - PERFIL**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO


ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.


ESC: INDICADA

FECHA: Enero, 2026

UBICACION DEL PROYECTO

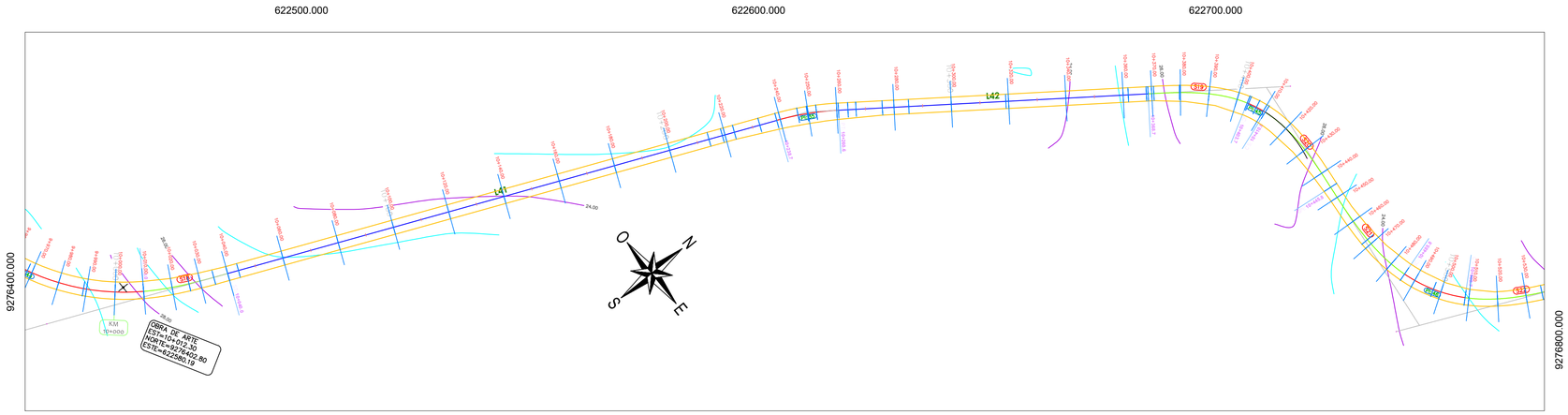
MOCHUMÍ – LAMBAYEQUE LAMBAYEQUE – PERÚ

LAMINA Nº

**PP-20**

# KM 10+000 – 10+500

## PLANTA
ESC: 1/1000

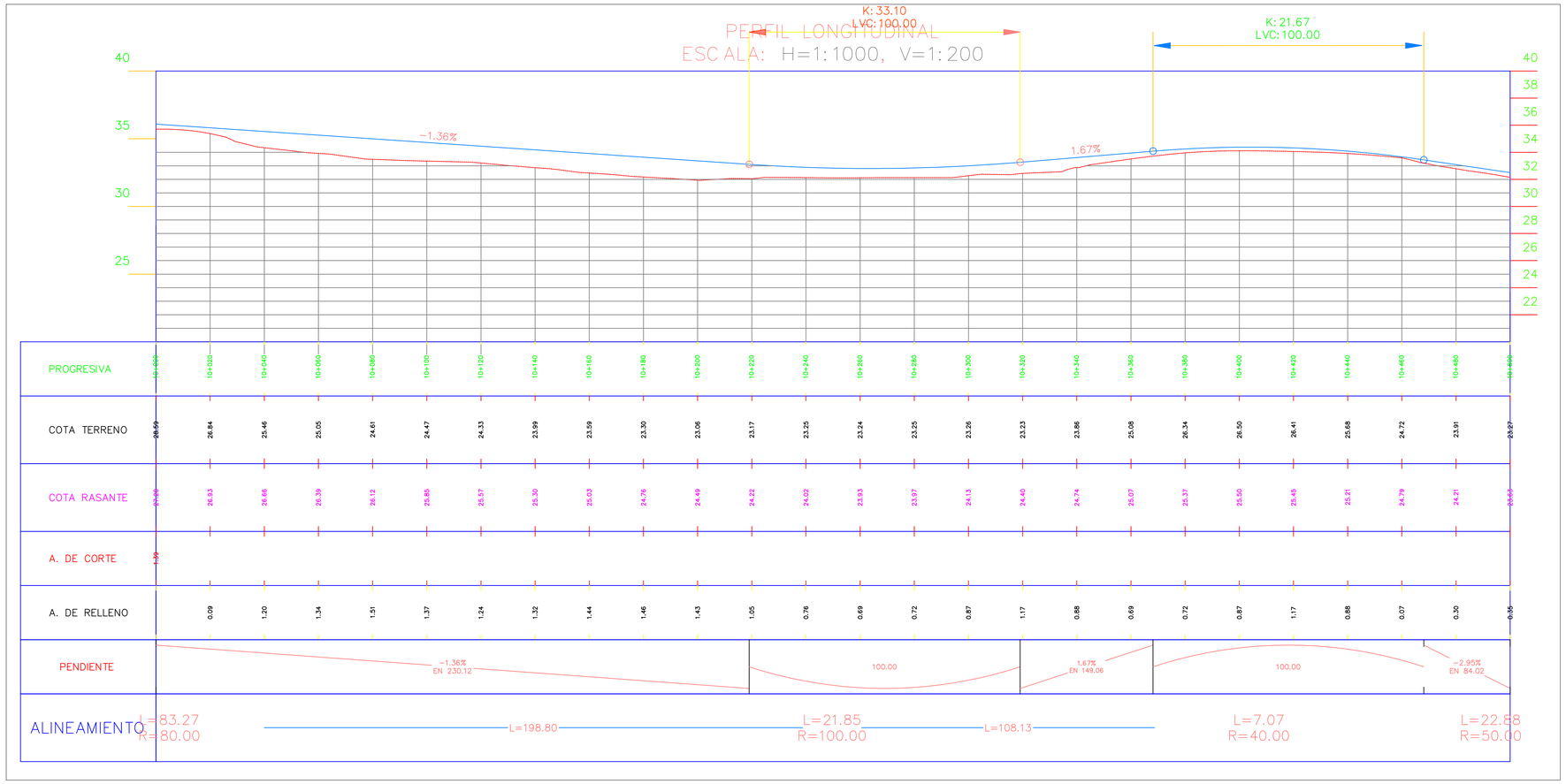


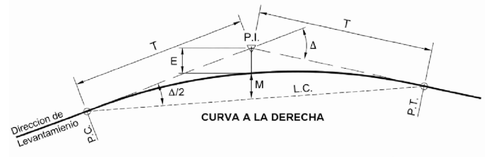

| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| L41 | 198.80 | N23° 17' 03"E | 10+039.95 | 10+238.75 |
| L42 | 108.13 | N35° 48' 12"E | 10+260.60 | 10+368.73 |

| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
| PI: 35 | N29° 32' 38"E | 12°31'09" | 100.00 | 21.85 | 10+238.75 | 10+249.72 | 622692.9 | 9276649.50 | 10+260.60 |
| PI: 45 | N65° 56' 15"E | 10°08'03" | 40.00 | 7.07 | 10+403.73 | 10+407.27 | 623055.4 | 9277152.04 | 10+410.80 |
| PI: 46 | N60° 02' 46"E | 26°12'49" | 50.00 | 22.88 | 10+485.80 | 10+497.44 | 623055.4 | 9277152.04 | 10+508.68 |

| TABLA DE ELEMENTOS DE ESPIRALES | | |
|---|---|---|
| # ESPIRAL | A | LONGITUD |
| S19 | 37.42 | 35.00 |
| S20 | 37.42 | 35.00 |
| S21 | 44.72 | 40.00 |
| S22 | 44.72 | 40.00 |

## ELEVACION
ESC: 1/1000

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L.C. = Longitud de la Cuerda (m.)
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$T = R \tan \frac{\Delta}{2}$

$L.C. = 2R \operatorname{sen} \frac{\Delta}{2}$

$L = 2\pi R \frac{\Delta}{360}$

$M = R[1 - \cos(\Delta/2)]$

$E = R[\sec(\Delta/2) - 1]$

| CARACTERISTICAS GEOMETRICAS DE DISEÑO | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11.174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
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| RADIO MAXIMO | NO APLICA |
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## LEYENDA

- EJE DE VIA
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PLANO :

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ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

UBICACION DEL PROYECTO

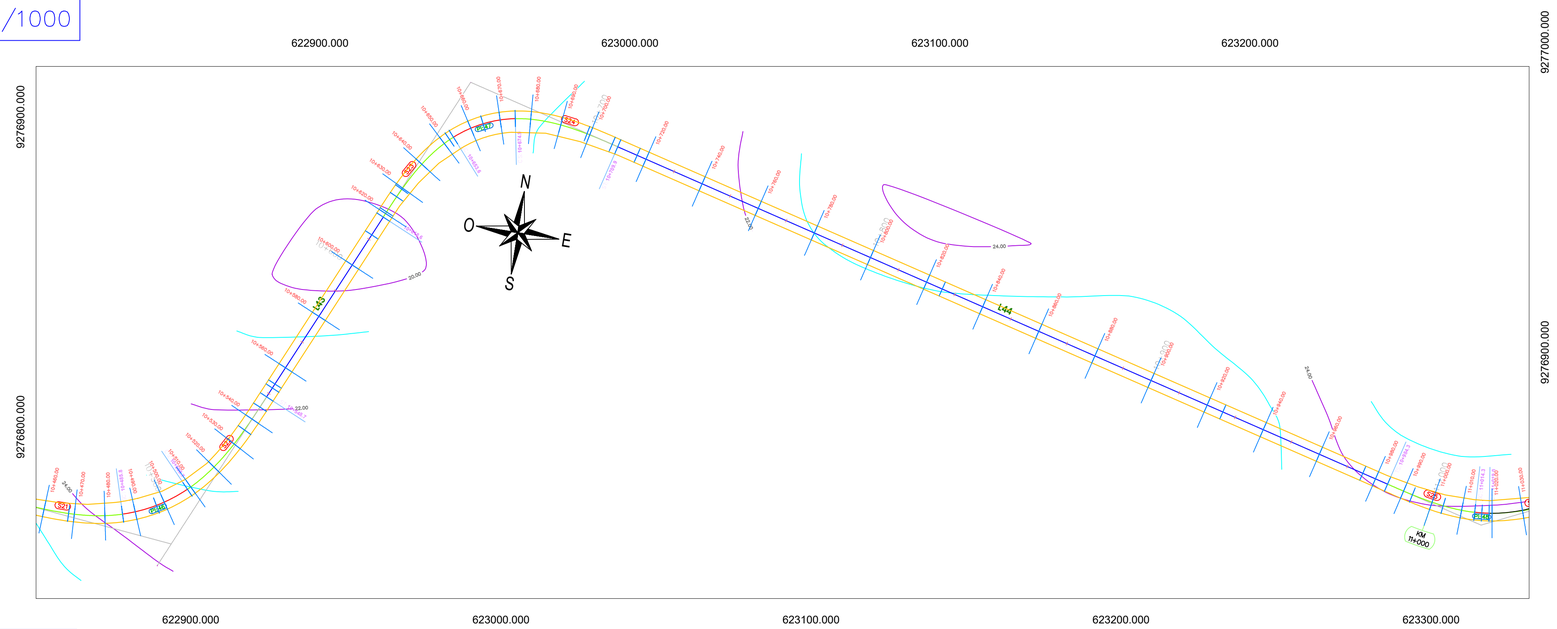
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**PP-21**

# KM 10+500 – 11+000

PLANTA
ESC: 1/1000




ELEVACION
ESC: 1/1000

PERFIL LONGITUDINAL
ESCALA: H=1:1000, V=1:200

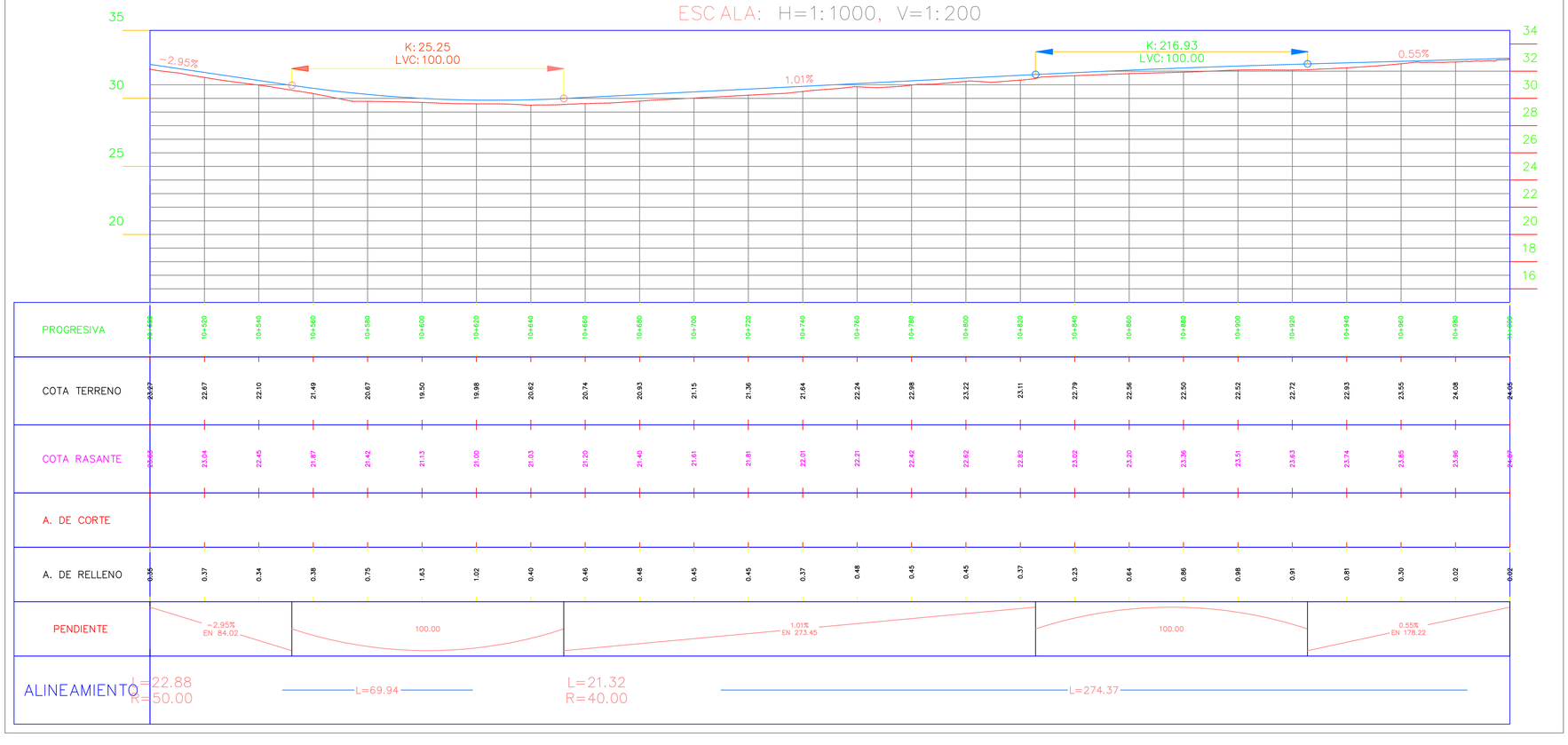



TABLA DE TANGENTES

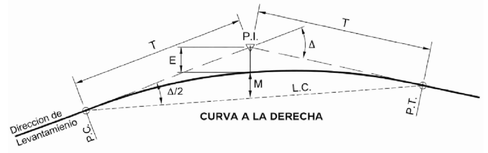
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
|---|---|---|---|---|
| L43 | 69.94 | N24° 01' 16"E | 10+548.68 | 10+618.62 |
| L44 | 274.37 | S75° 18' 09"E | 10+709.94 | 10+984.31 |

CUADRO DE ELEMENTOS DE CURVA HORIZONTAL

| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
|---|---|---|---|---|---|---|---|---|---|
| PI: 46 | N60° 02' 46"E | 26°12'49" | 50.00 | 22.88 | 10+485.80 | 10+497.44 | 623055.4 | 9277152.04 | 10+508.68 |
| PI: 47 | N84° 21' 33"E | 30°32'33" | 40.00 | 21.32 | 10+653.62 | 10+664.54 | 622957.8 | 9276933.24 | 10+674.94 |
| PI: 48 | N84° 48' 27"E | 5°24'08" | 50.00 | 4.71 | 11+014.31 | 11+016.67 | 623253.6 | 9276855.67 | 11+019.03 |

TABLA DE ELEMENTOS DE ESPIRALES

| # ESPIRAL | A | LONGITUD |
|---|---|---|
| S21 | 44.72 | 40.00 |
| S22 | 44.72 | 40.00 |
| S23 | 37.42 | 35.00 |
| S24 | 37.42 | 35.00 |
| S25 | 38.73 | 30.00 |
| S26 | 38.73 | 30.00 |




P.C. = Punto de Inicio de la Curva
P.I. = Punto de Intersección
P.T. = Punto de Tangencia
E = Distancia a Externa (m.)
M = Distancia de la Ordenada Media (m.)
R = Longitud del Radio de la Curva (m.) (a P.I.a P.T.) (m.)
T = Longitud de la Subtangente (P.C. a P.I. a P.T.) (m.)
L = Longitud de la Curva (m.)
L.C. = Longitud de la Cuerda (m.)
Δ = Angulo de Deflexión

$T = R \tan\frac{\Delta}{2}$

$L.C. = 2R \operatorname{sen}\frac{\Delta}{2}$

$L = 2\pi R\frac{\Delta}{360}$

$M = R[1-\cos(\Delta/2)]$

$E = R[\sec(\Delta/2)-1]$

CARACTERISTICAS GEOMETRICAS DE DISEÑO

| | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11.174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
| TIPO DE RODADURA | AFIRMADO |
| VELOCIDAD DE DISEÑO | 30 KM/H |
| RADIO MAXIMO | NO APLICA |
| RADIO MINIMO | 30 M |
| ANCHO DE CALZADA | 4.0 M |
| BERMAS | 0.50 M |
| SOBREANCHO MAXIMO | 1.90 (R=40M) |
| SOBREANCHO MINIMO | 0.10 (R=1500M) |
| PENDIENTE MAXIMA | 3.76 % |
| PENDIENTE MINIMA | 0.35 % |
| BOMBEO DE CALZADA | 2.50 % |
| PERALTE MAXIMO | 8.00 % |
| PERALTE MINIMO | 2.00 % |
| CUNETAS | SIN CUNETAS |
| ALCANTARILLAS | 32 ALC. DE PASO |
| ANCHO DE DERECHO DE VIA | 20 M |

LEYENDA

- EJE DE VIA
- ANCHO DE VIA
- OBRA DE ARTE (ALCANTARILLA)
- BM/PUNTO DE CONTROL
- NORTE MAGNETICO
- CURVAS MAYORES @ 2m
- CURVAS MENORES @ 1m

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FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**PLANTA - PERFIL**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

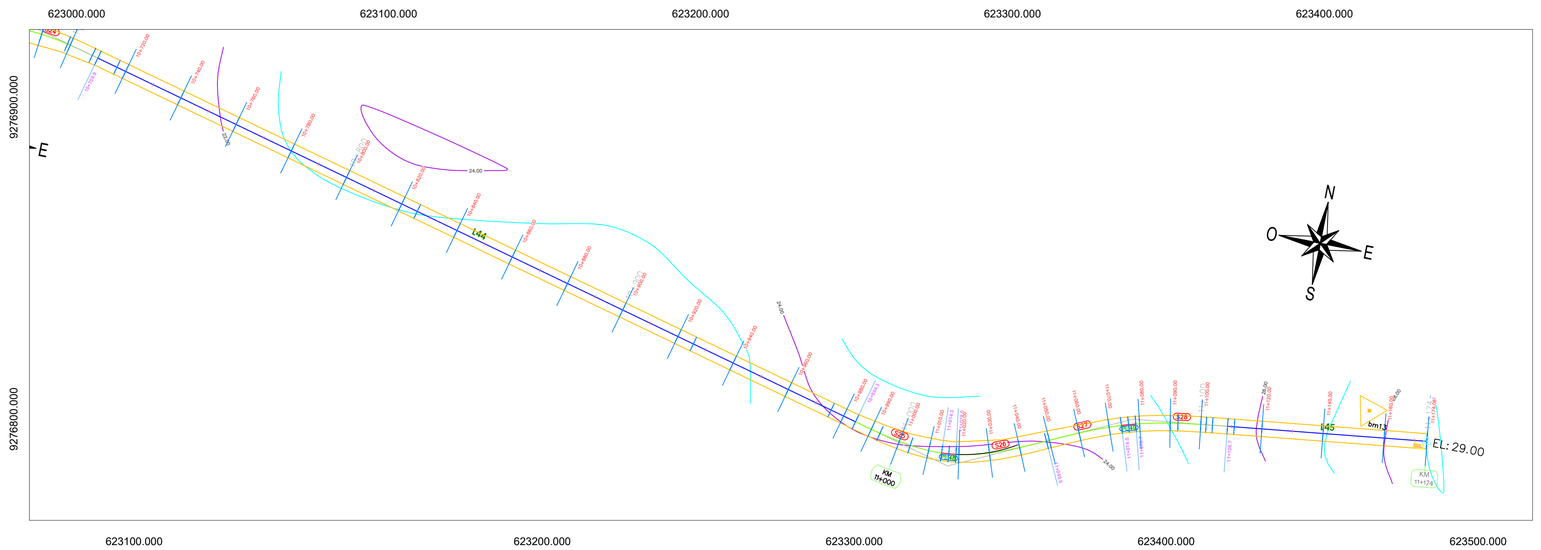
UBICACION DEL PROYECTO
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

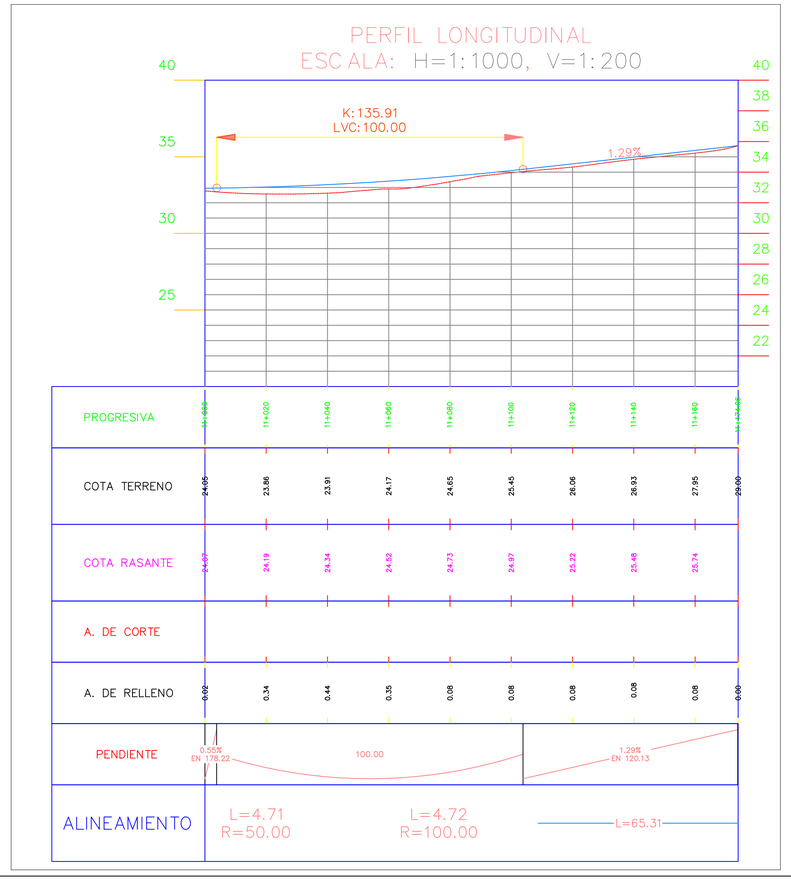
**PP-22**

# KM 11+000 — 11+174.06

## PLANTA
ESC: 1/1000



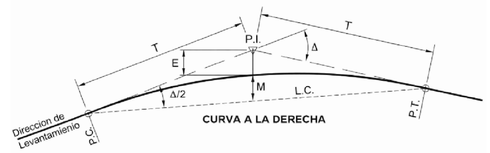

## ELEVACION
ESC: 1/1000




| TABLA DE TANGENTES | | | | |
|---|---|---|---|---|
| LINEA | LONGITUD | DIRECCION | EST. INICIO | EST. FINAL |
| L44 | 274.37 | S75° 18' 09"E | 10+709.94 | 10+984.31 |
| L45 | 65.31 | N83° 22' 42"E | 11+108.75 | 11+174.06 |

| CUADRO DE ELEMENTOS DE CURVA HORIZONTAL | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| # CURVA | DIRECCION | DELTA | RADIO | LONGITUD | PC | PI | PI ESTE | PI NORTE | PT |
| PI: 48 | N84° 48' 27"E | 5°24'08" | 50.00 | 4.71 | 11+014.31 | 11+016.67 | 623253.6 | 9276855.67 | 11+019.03 |
| PI: 49 | N73° 25' 54"E | 2°42'15" | 100.00 | 4.72 | 11+074.03 | 11+076.39 | 623253.6 | 9276855.67 | 11+078.75 |

| TABLA DE ELEMENTOS DE ESPIRALES | | |
|---|---|---|
| # ESPIRAL | A | LONGITUD |
| S25 | 38.73 | 30.00 |
| S26 | 38.73 | 30.00 |
| S27 | 50.00 | 25.00 |
| S28 | 54.77 | 30.00 |

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L = Longitud de la Curva (m.)
L.C. = Longitud de la Cuerda (m.)
Δ = Angulo de Deflexión

$T = R \tan\frac{\Delta}{2}$

$L.C. = 2R \operatorname{sen}\frac{\Delta}{2}$

$L = 2\pi R\frac{\Delta}{360}$

$M = R[1-\cos(\Delta/2)]$

$E = R[\sec(\Delta/2)-1]$

| CARACTERISTICAS GEOMETRICAS DE DISEÑO | |
|---|---|
| RED VIAL | NO APLICA |
| LONGITUD TOTAL | 11,174 KM |
| CATEGORIA SEGUN DEMANDA | TROCHA |
| CATEGORIA SEGUN OROGRAFIA | TIPO 1 – PLANO |
| TIPO DE RODADURA | AFIRMADO |
| VELOCIDAD DE DISEÑO | 30 KM/H |
| RADIO MAXIMO | NO APLICA |
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| ANCHO DE CALZADA | 4.0 M |
| BERMAS | 0.50 M |
| SOBREANCHO MAXIMO | 1.90 (R=40M) |
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| PENDIENTE MAXIMA | 3.76 % |
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| PERALTE MAXIMO | 8.00 % |
| PERALTE MINIMO | 2.00 % |
| CUNETAS | SIN CUNETAS |
| ALCANTARILLAS | 32 ALC. DE PASO |
| ANCHO DE DERECHO DE VIA | 20 M |

## LEYENDA
- EJE DE VIA
- ANCHO DE VIA
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- BM/PUNTO DE CONTROL
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ORIENTACION: N

PROYECTO :

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ALUMNOS:

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SANCHEZ MONTENEGRO, NOLBER RICARDO.


ESC: INDICADA

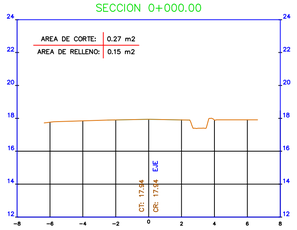
FECHA: Enero, 2026

UBICACION DEL PROYECTO
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**PP-23**

SECCION 0+000.00

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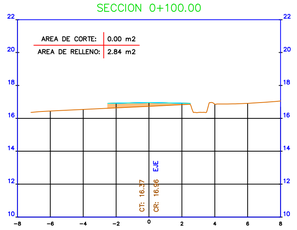


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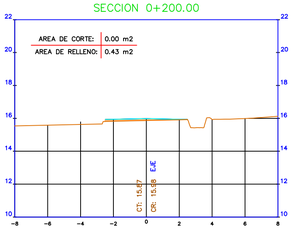


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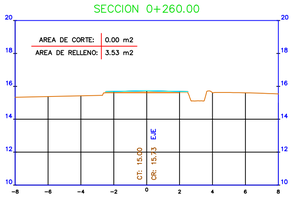


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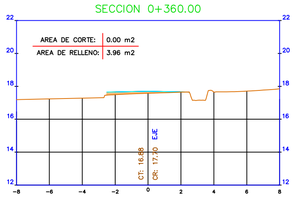


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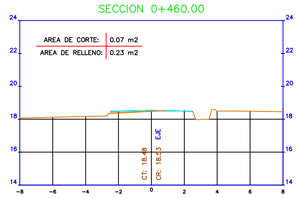


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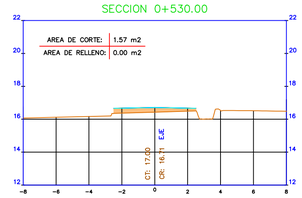


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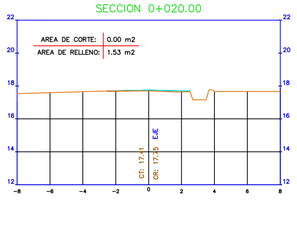


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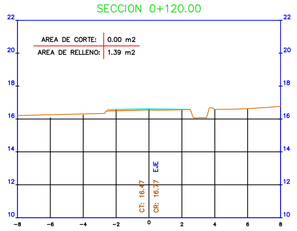


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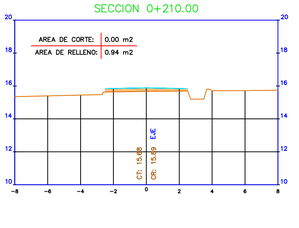


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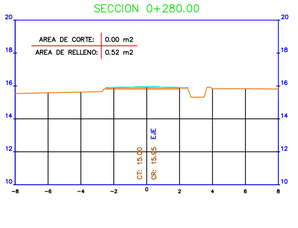


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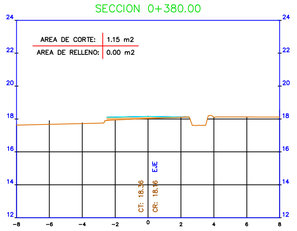


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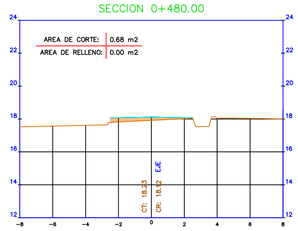


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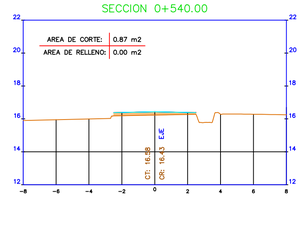


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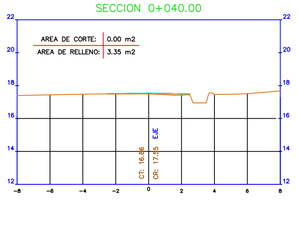


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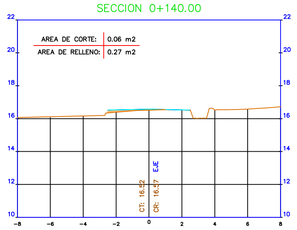


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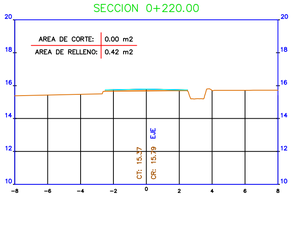


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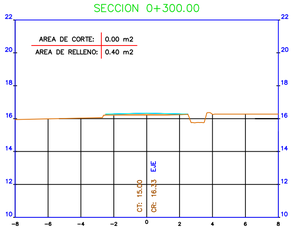


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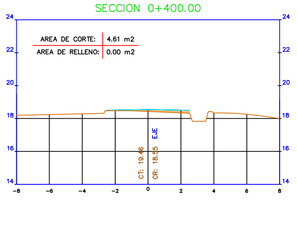


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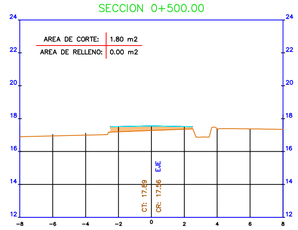


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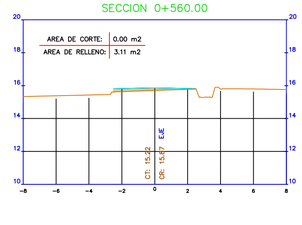


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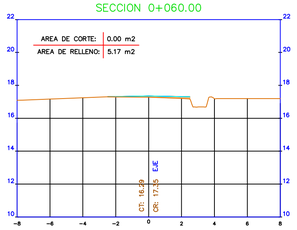


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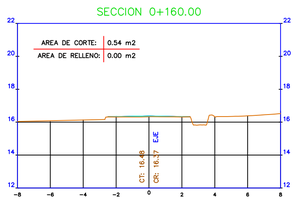


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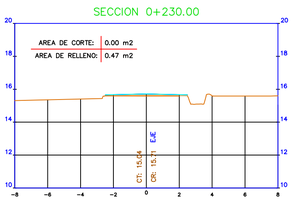


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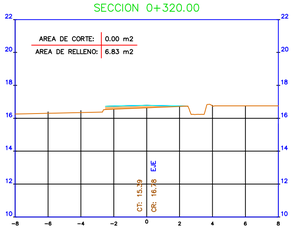


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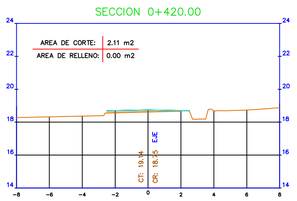


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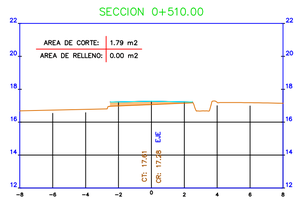


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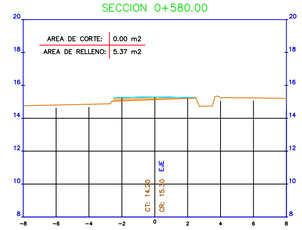


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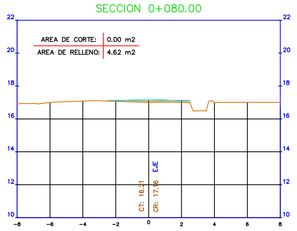


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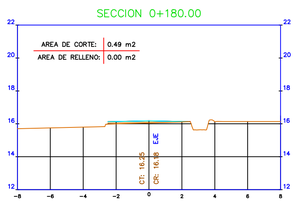


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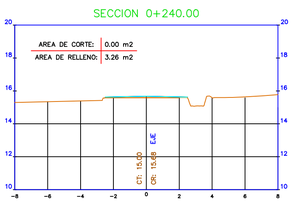


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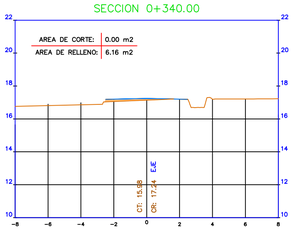


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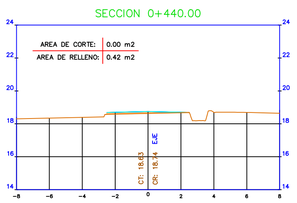


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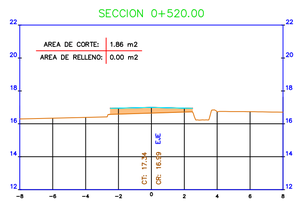


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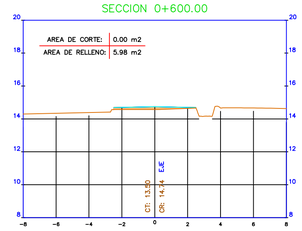



UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:




PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

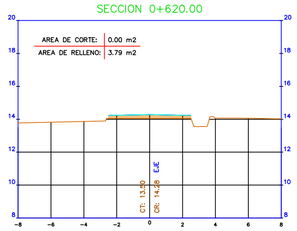
FECHA: Enero, 2026

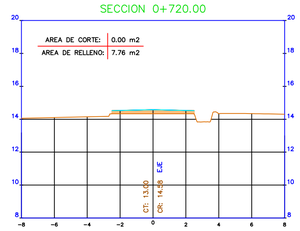
UBICACION DEL PROYECTO

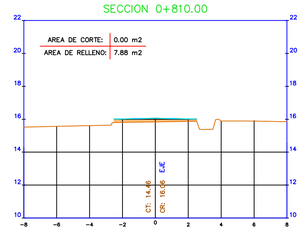
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

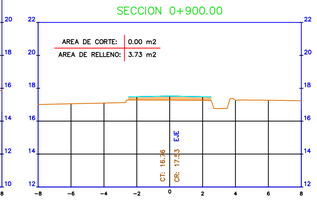
LAMINA Nº

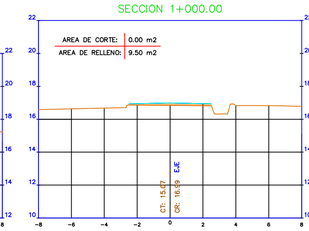
**ST-01**

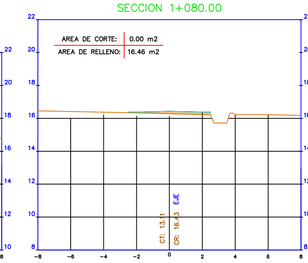


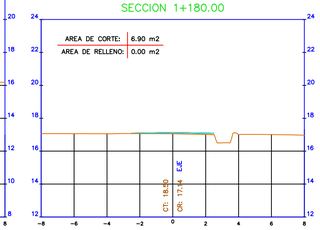



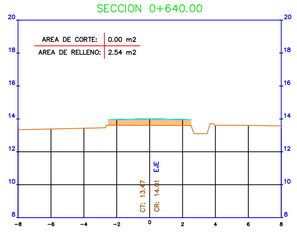



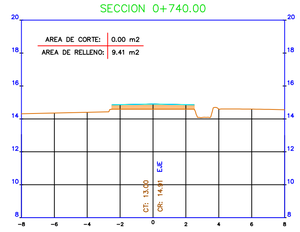



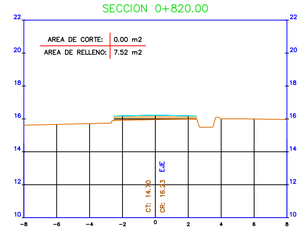



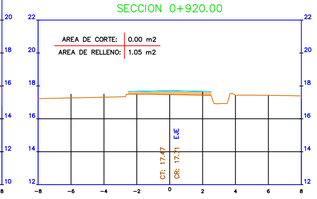



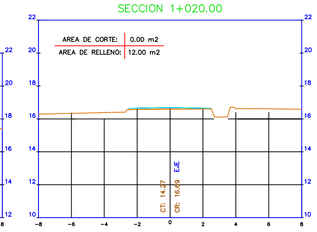



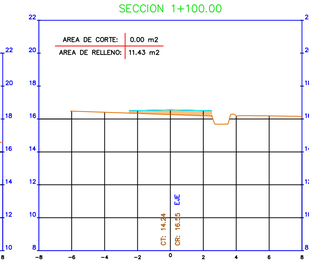



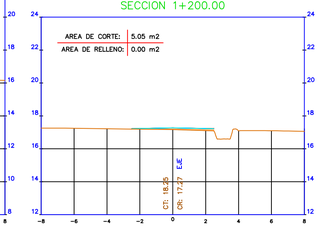



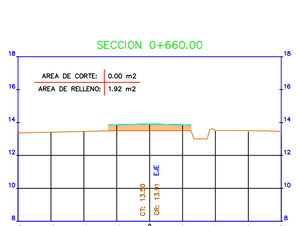



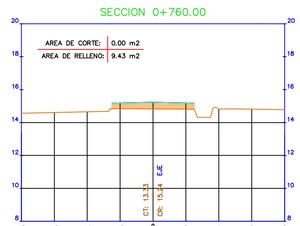



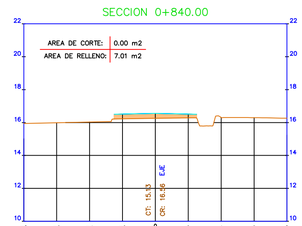



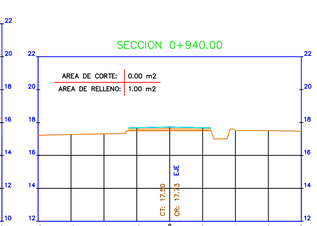



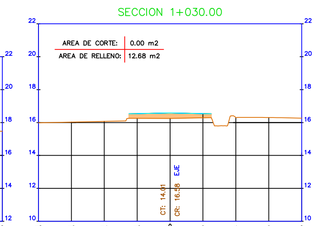



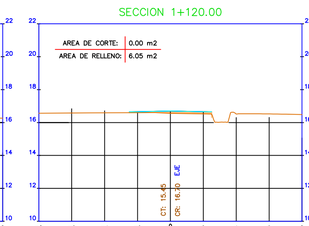



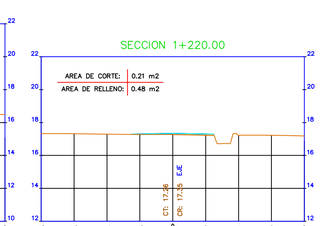



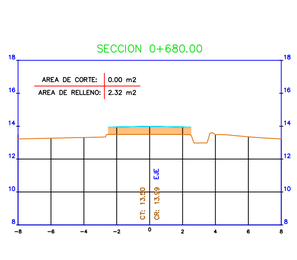



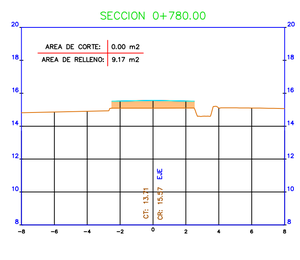



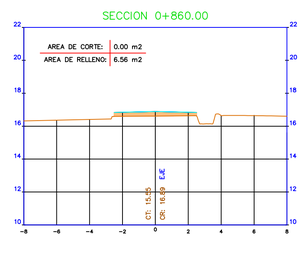



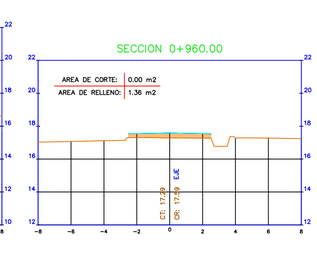



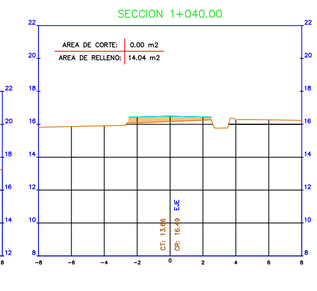



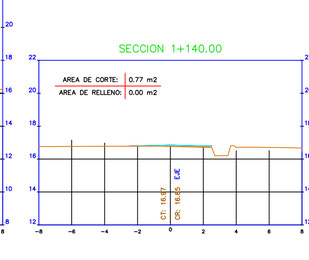



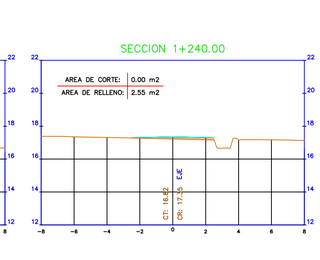



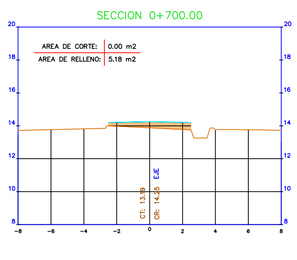



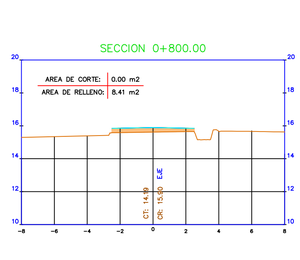



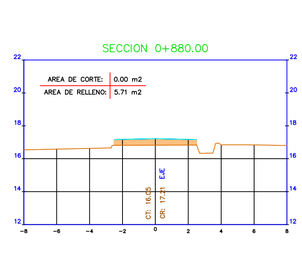



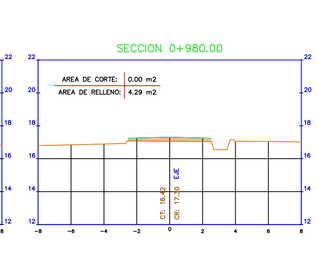



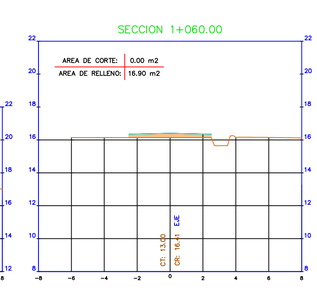



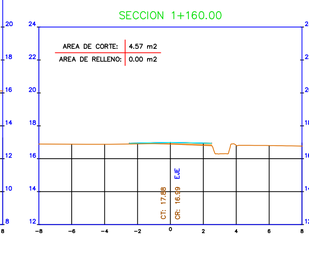



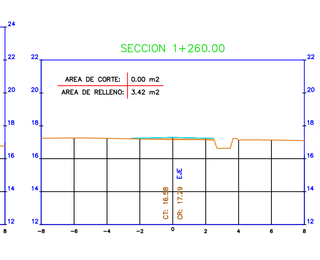




UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

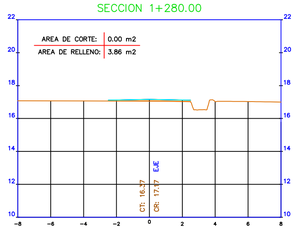
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

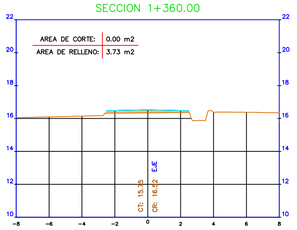
LAMINA Nº

**ST-02**

SECCION 1+280.00




SECCION 1+360.00

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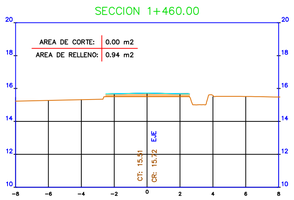


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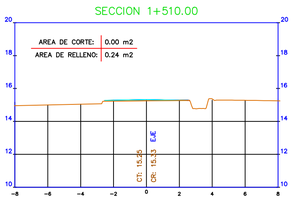


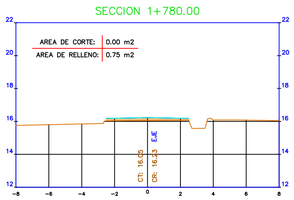

SECCION 1+600.00




SECCION 1+680.00




SECCION 1+780.00

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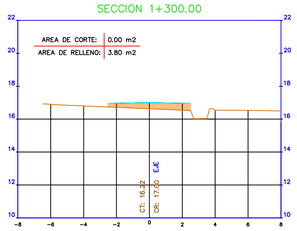
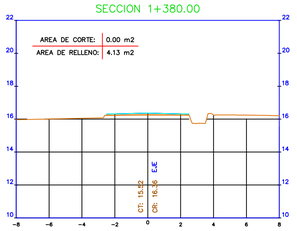


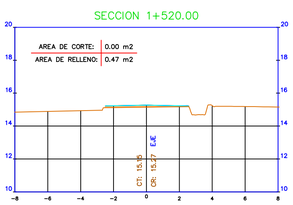

SECCION 1+380.00



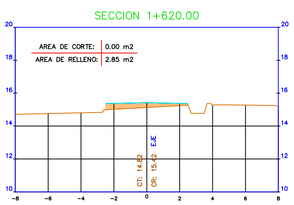

SECCION 1+470.00



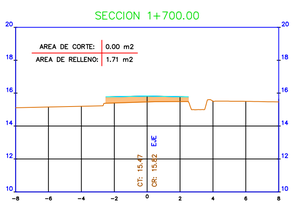

SECCION 1+520.00



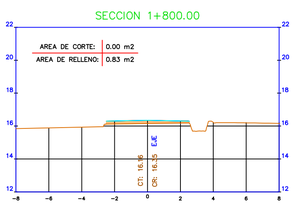

SECCION 1+620.00



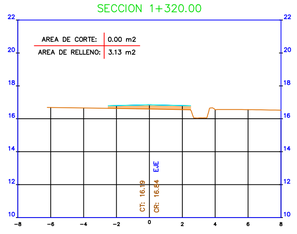

SECCION 1+700.00




SECCION 1+800.00




SECCION 1+320.00

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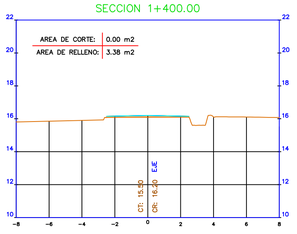
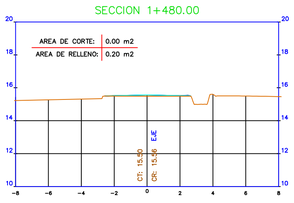
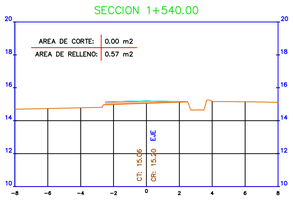


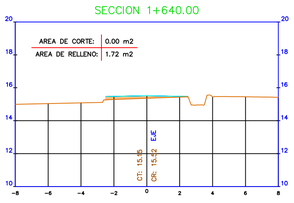

SECCION 1+480.00



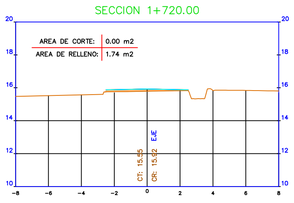

SECCION 1+540.00



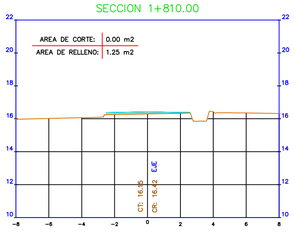

SECCION 1+640.00




SECCION 1+720.00




SECCION 1+810.00

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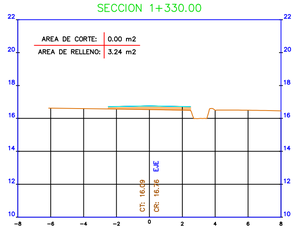
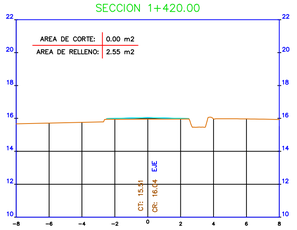


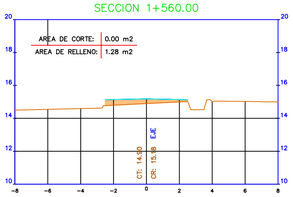

SECCION 1+420.00




SECCION 1+490.00



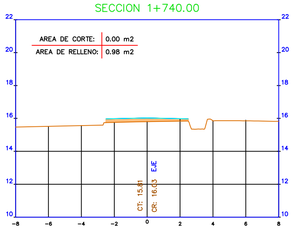

SECCION 1+560.00




SECCION 1+660.00




SECCION 1+740.00

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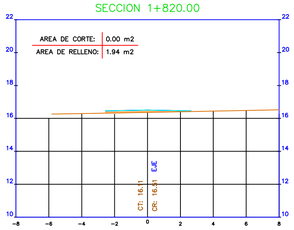


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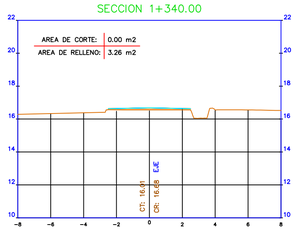


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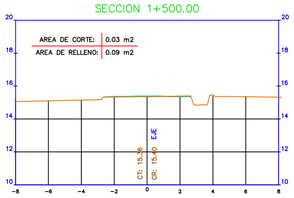
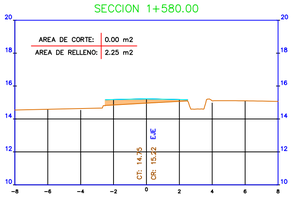
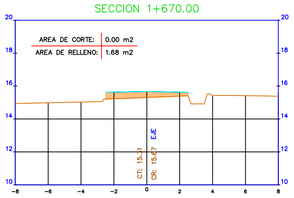
SECCION 1+500.00




SECCION 1+580.00




SECCION 1+670.00

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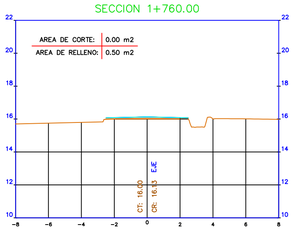
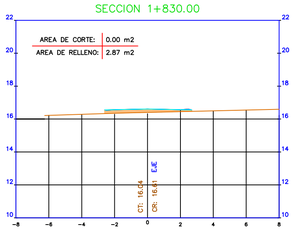



SECCION 1+830.00




UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

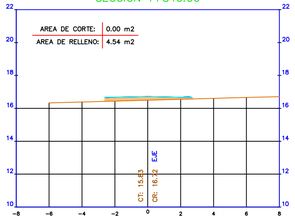
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

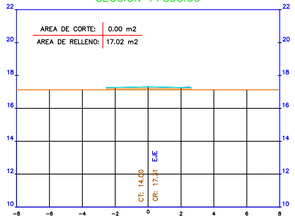
LAMINA Nº

**ST-03**

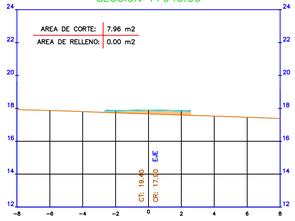
SECCION 1+840.00



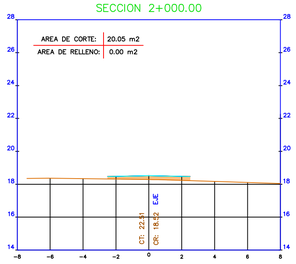

SECCION 1+890.00




SECCION 1+940.00




SECCION 2+000.00

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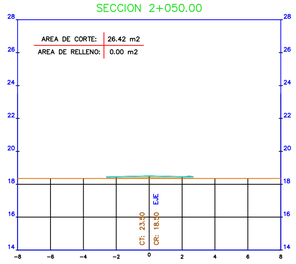


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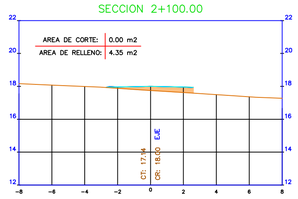
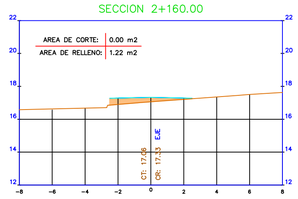
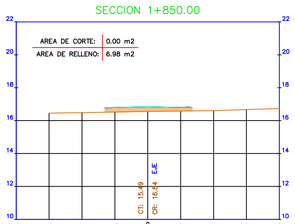



SECCION 2+160.00




SECCION 1+850.00

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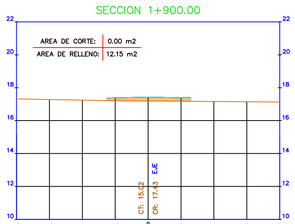


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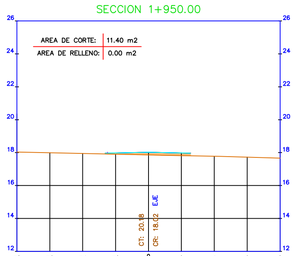
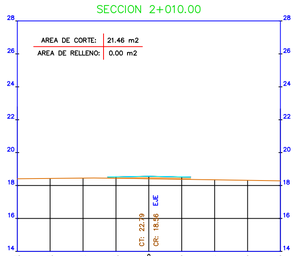



SECCION 2+010.00

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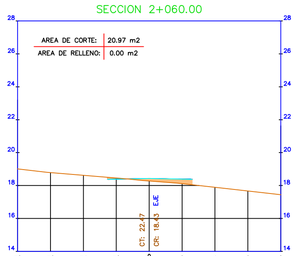
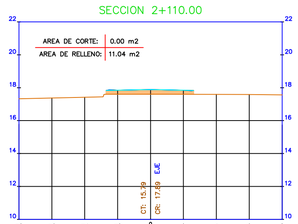
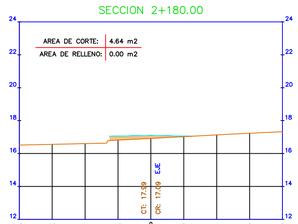


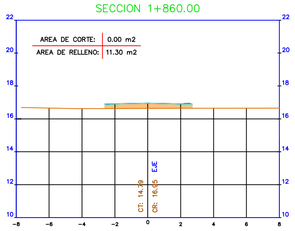

SECCION 2+110.00




SECCION 2+180.00




SECCION 1+860.00

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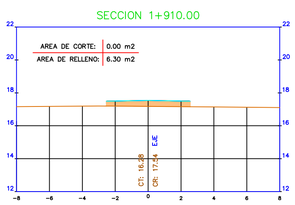


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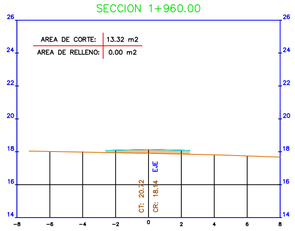


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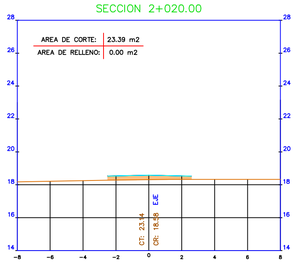


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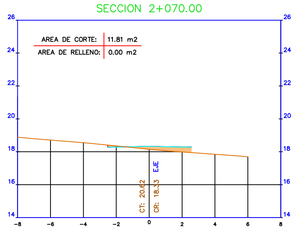


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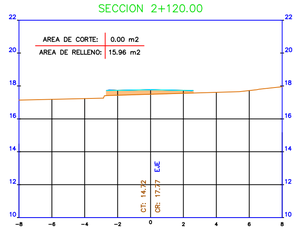
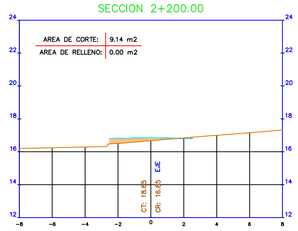
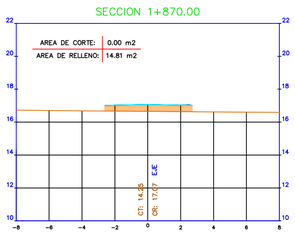



SECCION 2+200.00




SECCION 1+870.00

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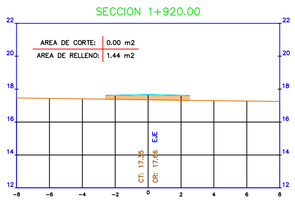


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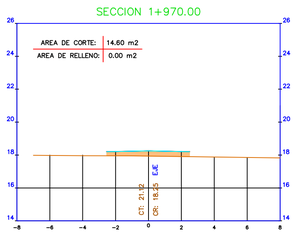


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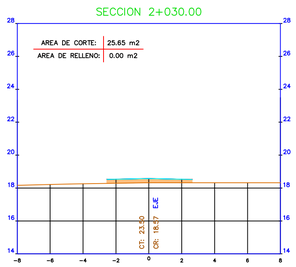


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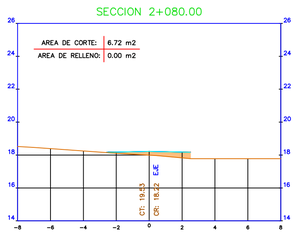
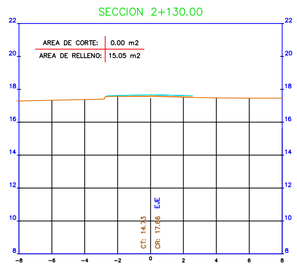



SECCION 2+130.00

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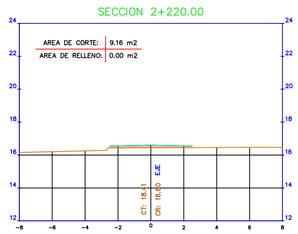


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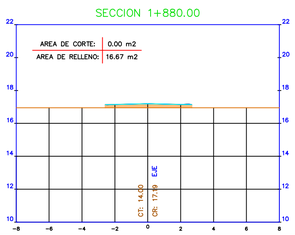


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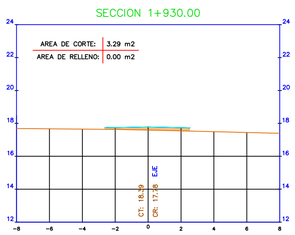


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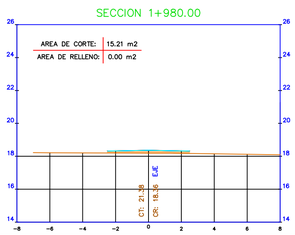


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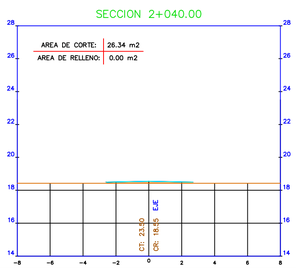


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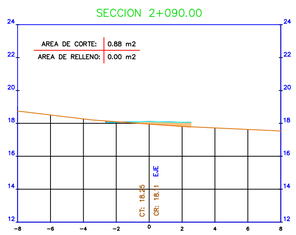
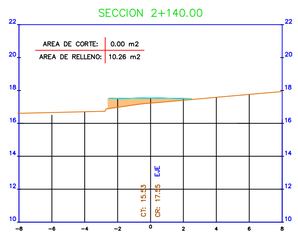



SECCION 2+140.00

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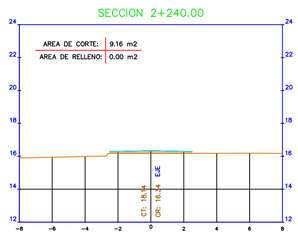


UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

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PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

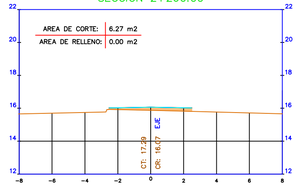
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

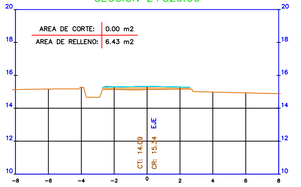
LAMINA Nº

**ST-04**

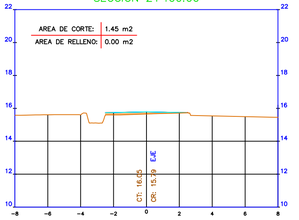
SECCION 2+260.00




SECCION 2+320.00




SECCION 2+400.00

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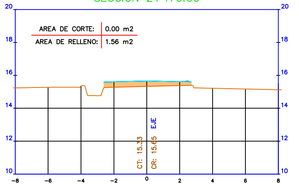
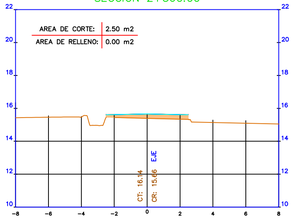
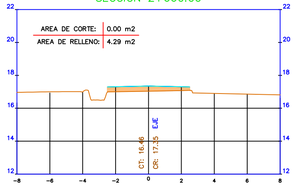



SECCION 2+560.00




SECCION 2+660.00

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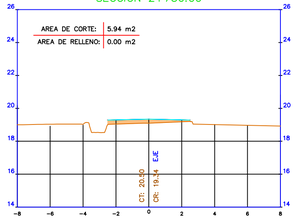


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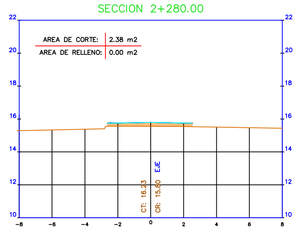


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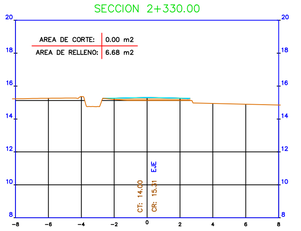


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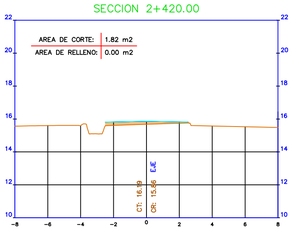


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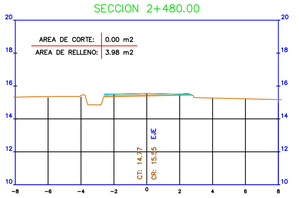


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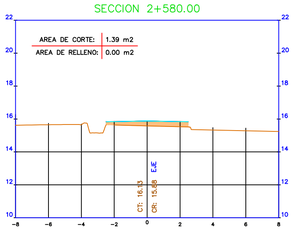


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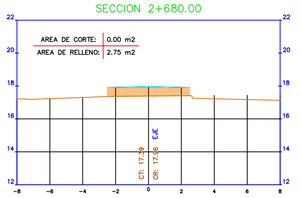


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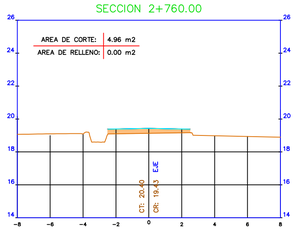


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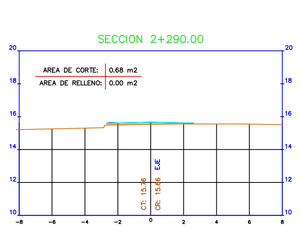


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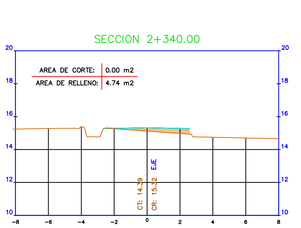


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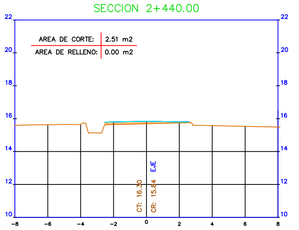


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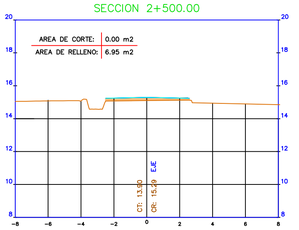


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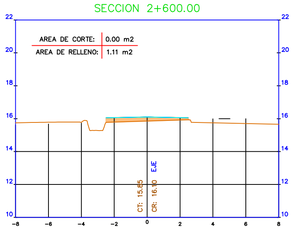


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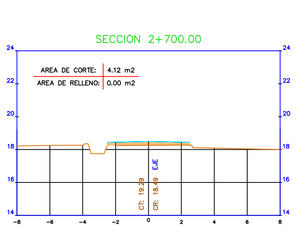


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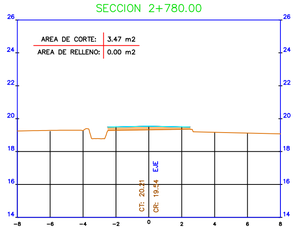


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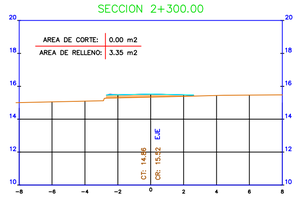


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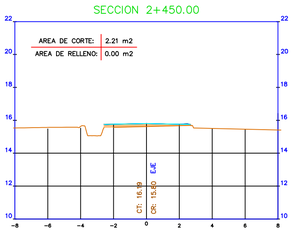


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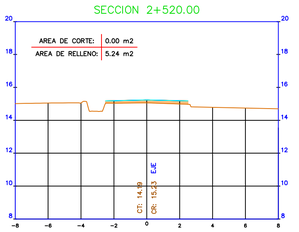


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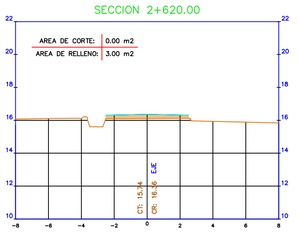


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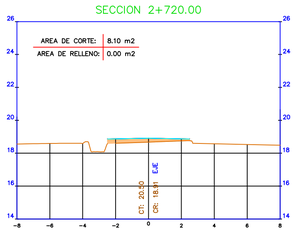


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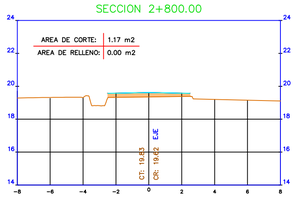


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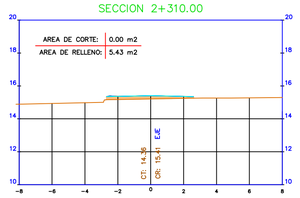


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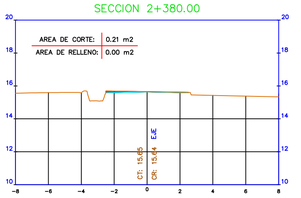


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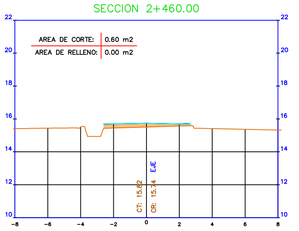


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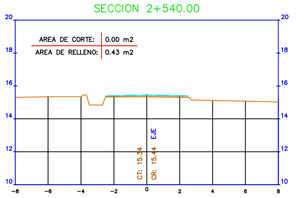


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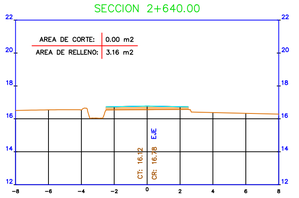


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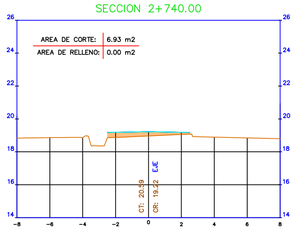


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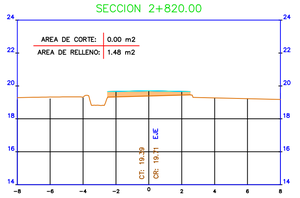



UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:




PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

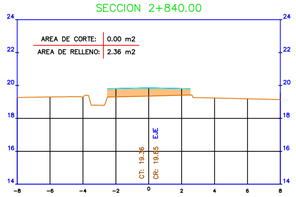
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

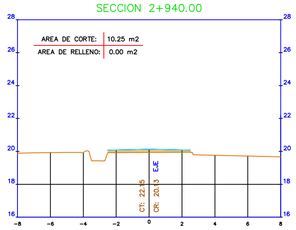
LAMINA Nº

**ST-05**

SECCION 2+840.00




SECCION 2+940.00

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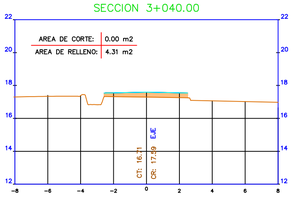


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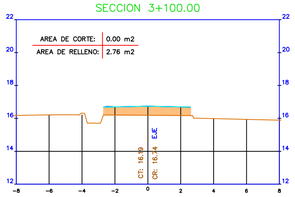


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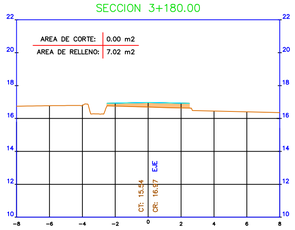


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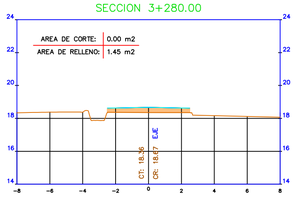


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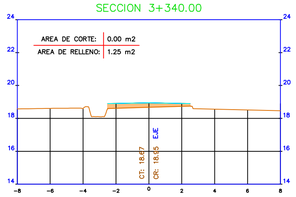


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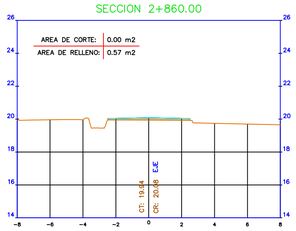


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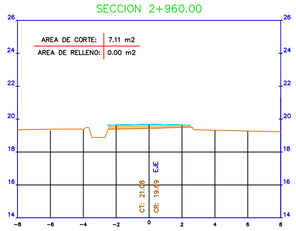


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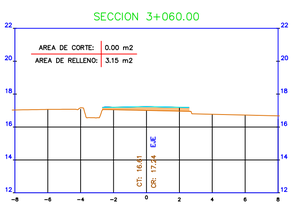


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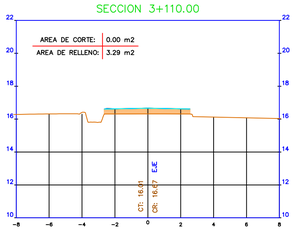


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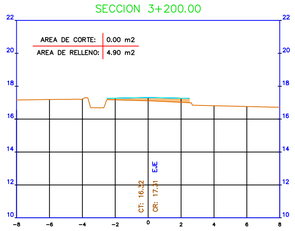


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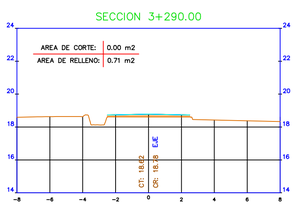


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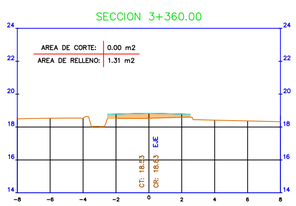


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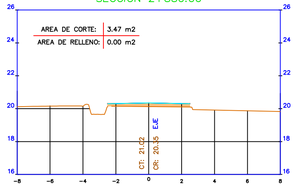


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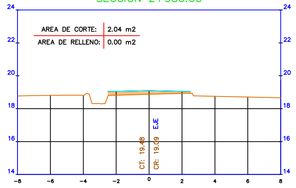


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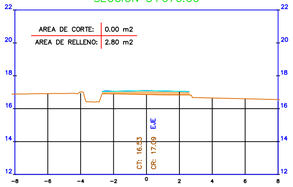


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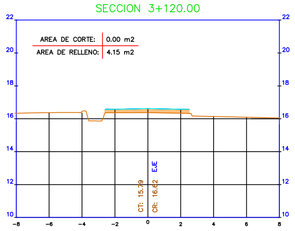


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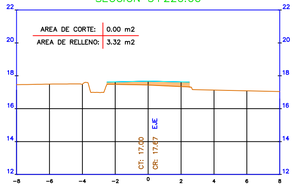


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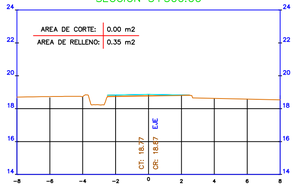


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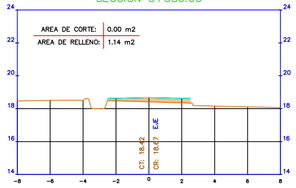


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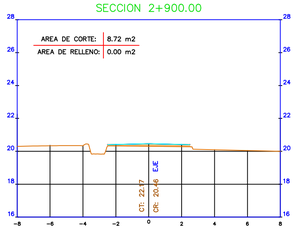


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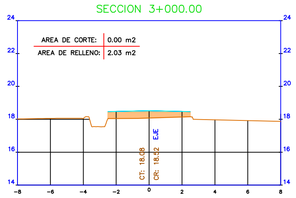


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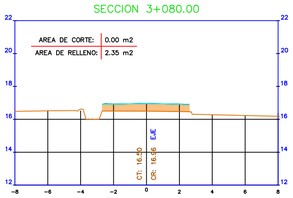


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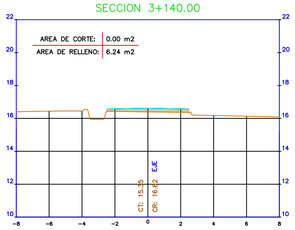


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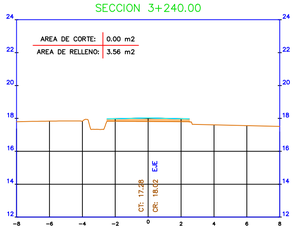
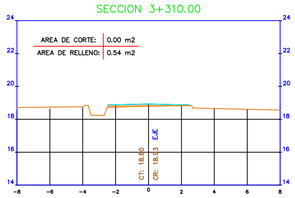
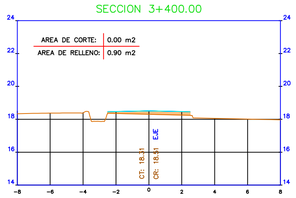


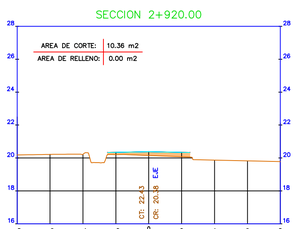

SECCION 3+310.00



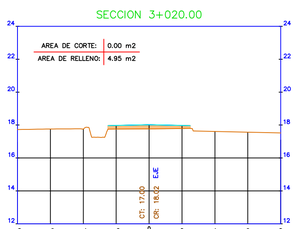

SECCION 3+400.00




SECCION 2+920.00



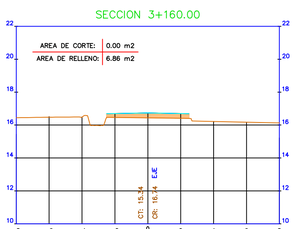

SECCION 3+020.00



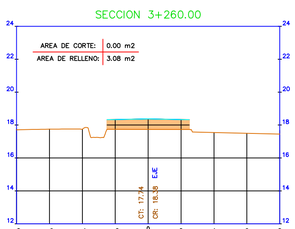

SECCION 3+090.00




SECCION 3+160.00




SECCION 3+260.00




SECCION 3+320.00




SECCION 3+420.00




UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:




PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

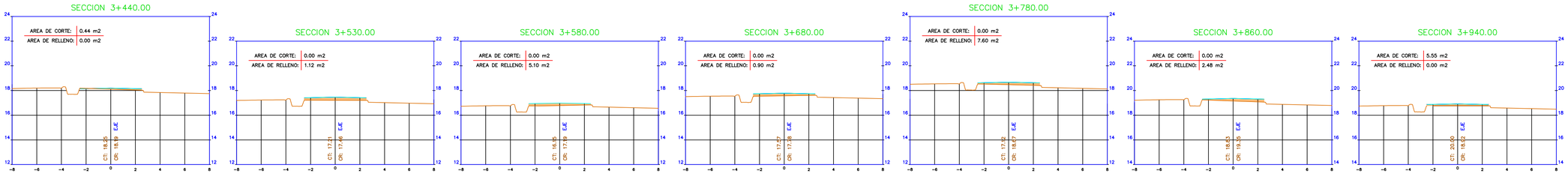
FECHA: Enero, 2026

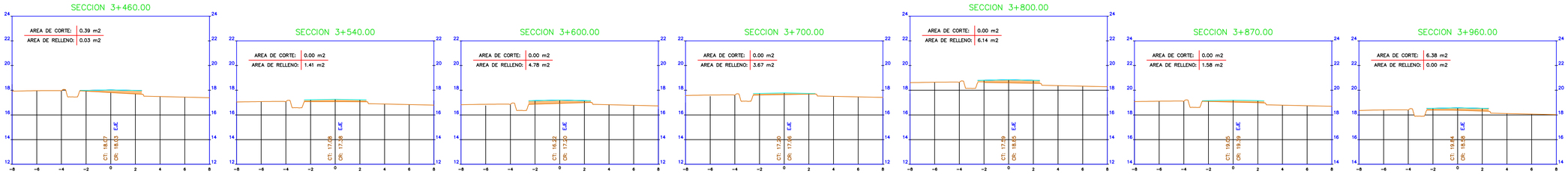
UBICACION DEL PROYECTO

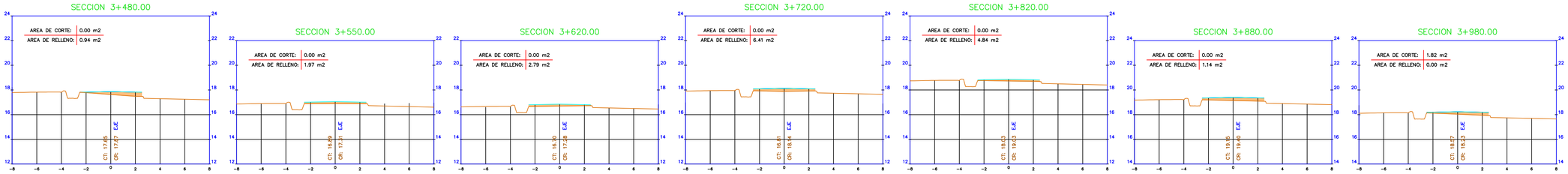
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

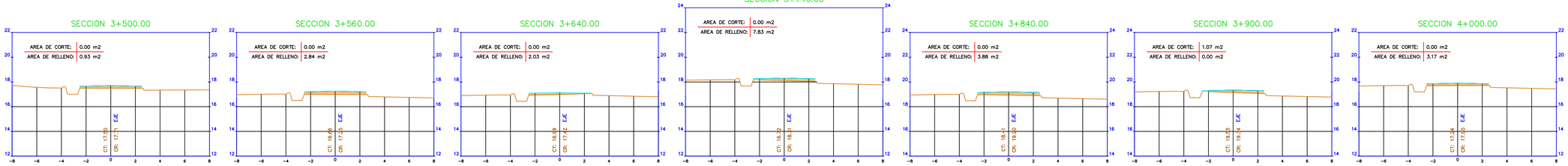
LAMINA Nº

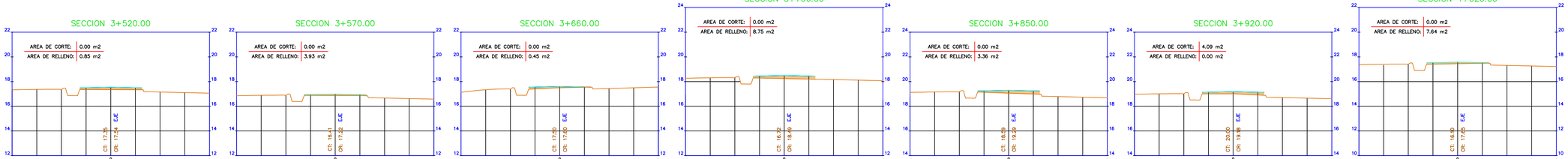
**ST-06**




UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

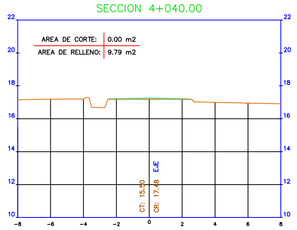
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

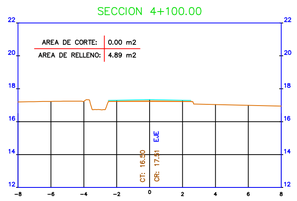
LAMINA Nº

**ST-07**

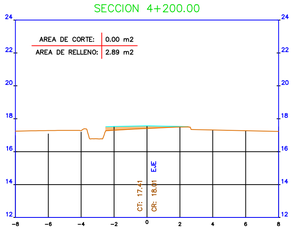
SECCION 4+040.00



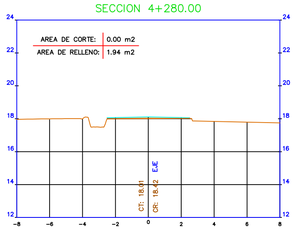

SECCION 4+100.00




SECCION 4+200.00




SECCION 4+280.00

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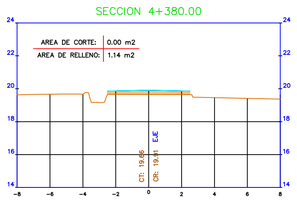
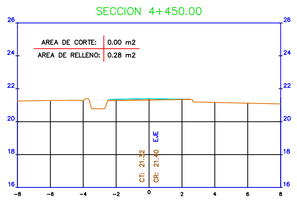



SECCION 4+450.00

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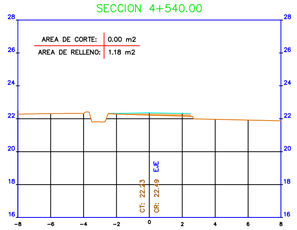
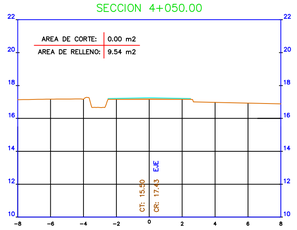



SECCION 4+050.00

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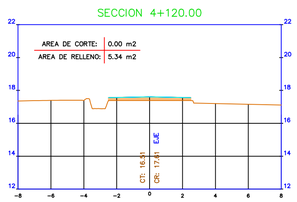


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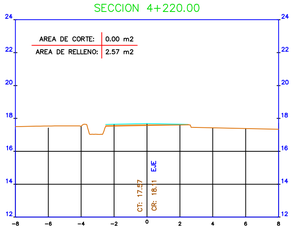
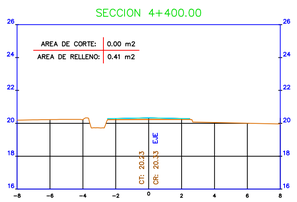



SECCION 4+300.00




SECCION 4+400.00

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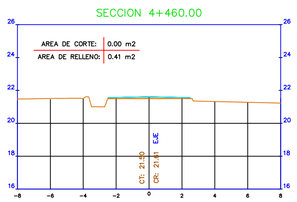
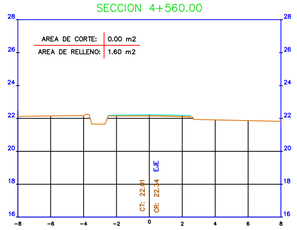



SECCION 4+560.00

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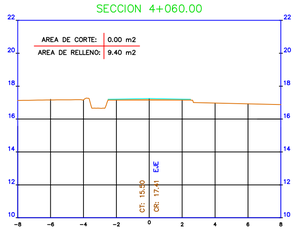
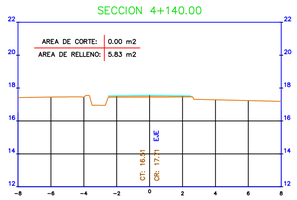



SECCION 4+140.00

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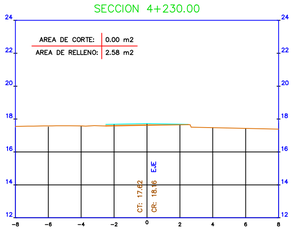
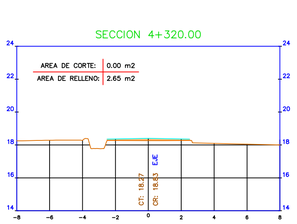



SECCION 4+320.00

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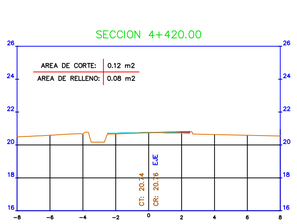
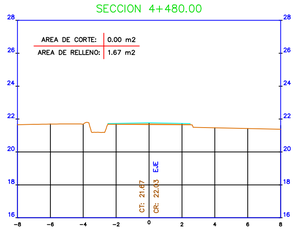



SECCION 4+480.00

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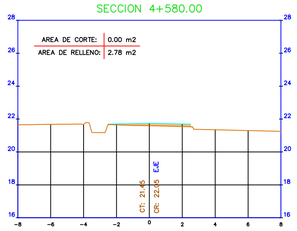


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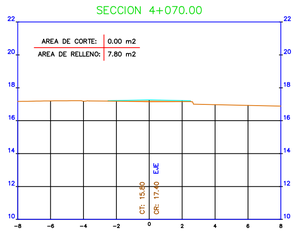
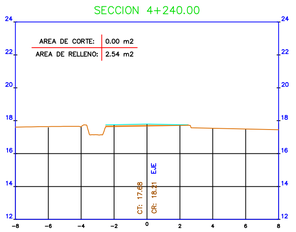



SECCION 4+160.00




SECCION 4+240.00

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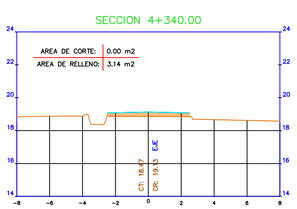


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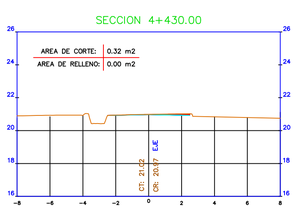
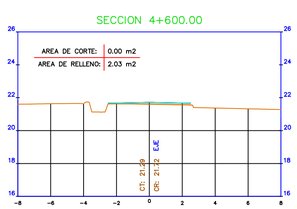



SECCION 4+500.00




SECCION 4+600.00

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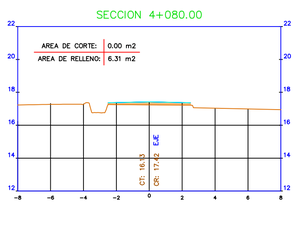
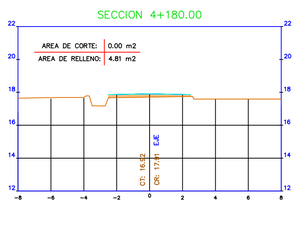



SECCION 4+180.00

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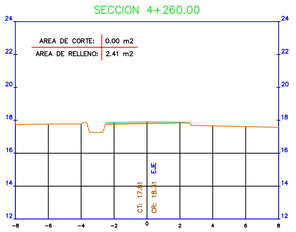
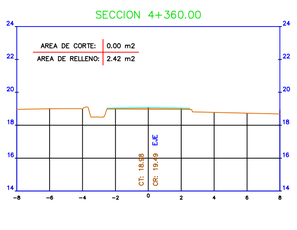



SECCION 4+360.00

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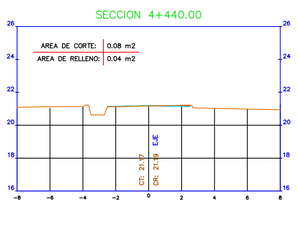


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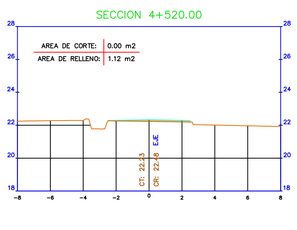
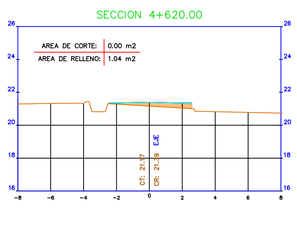



SECCION 4+620.00




UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:




PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

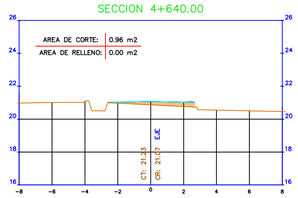
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

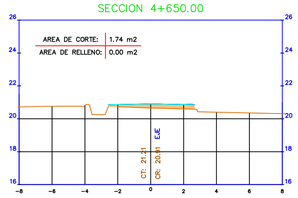
LAMINA Nº

**ST-08**

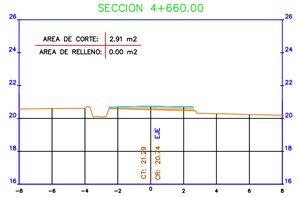
SECCION 4+640.00




SECCION 4+650.00



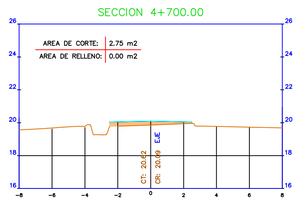

SECCION 4+660.00




SECCION 4+680.00




SECCION 4+700.00

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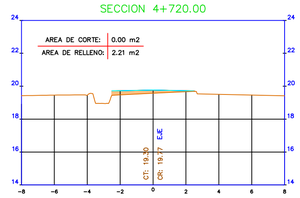


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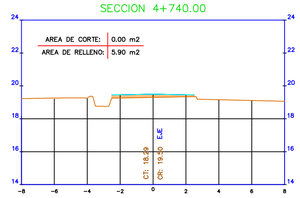


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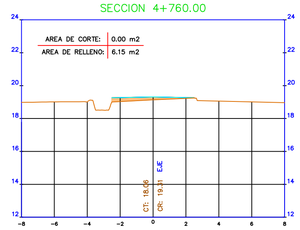
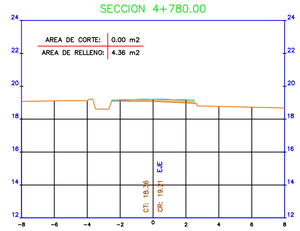



SECCION 4+780.00

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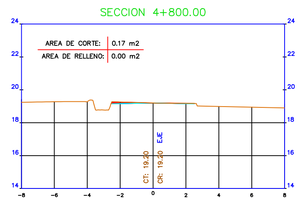


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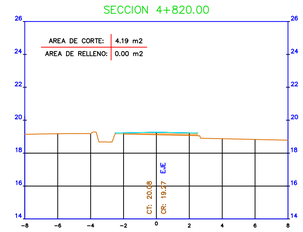


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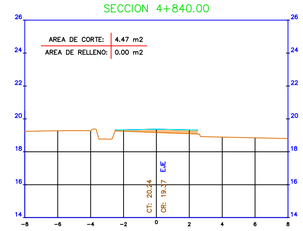


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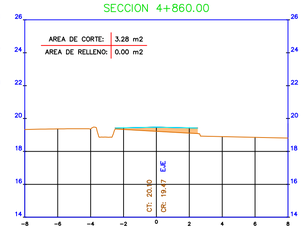


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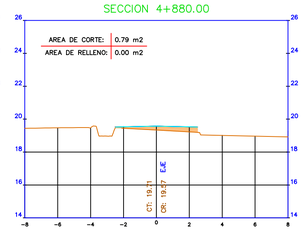


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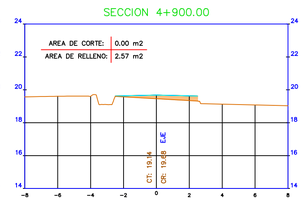


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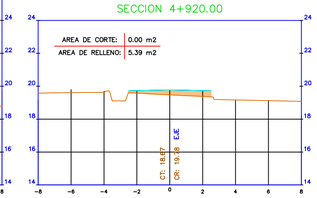


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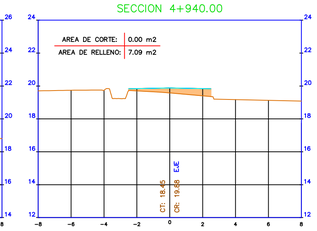


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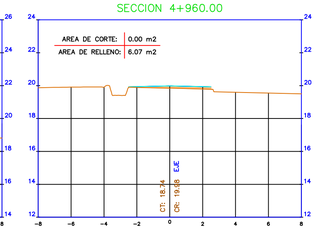


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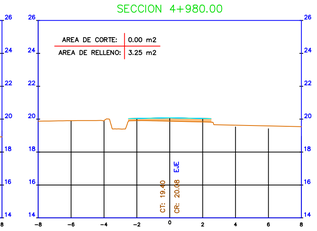


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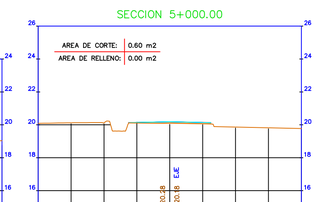


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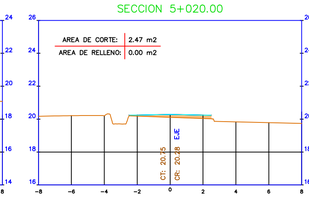


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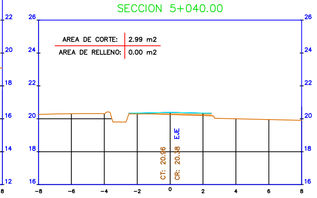


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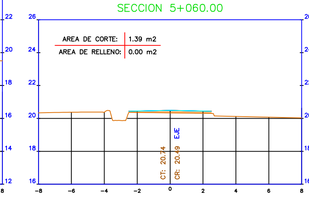


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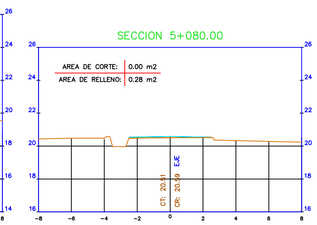


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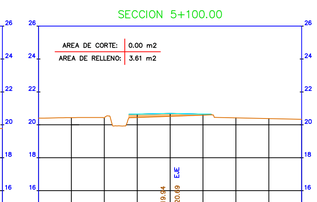


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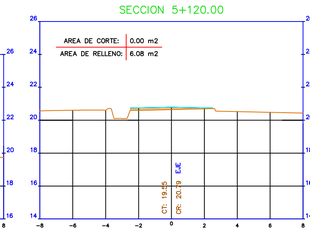


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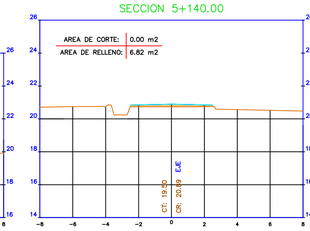


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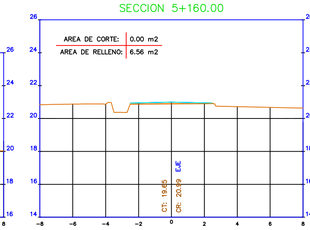


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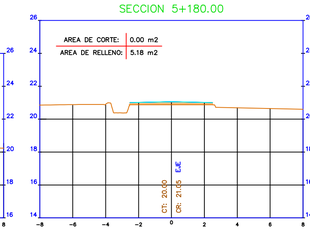


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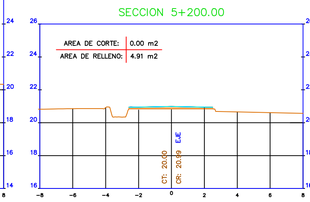


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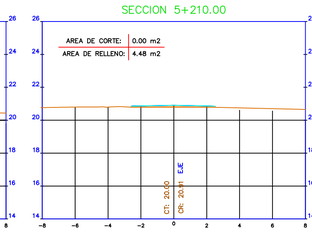


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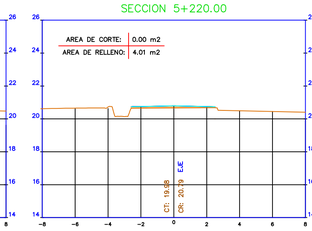


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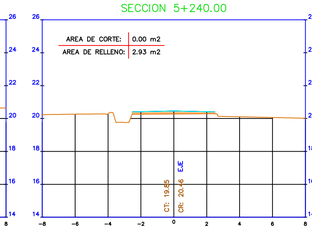


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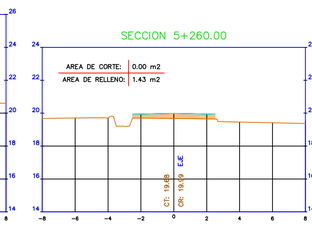


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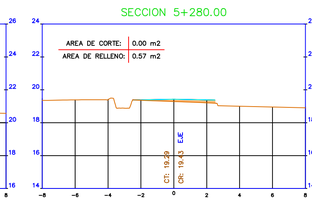



UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

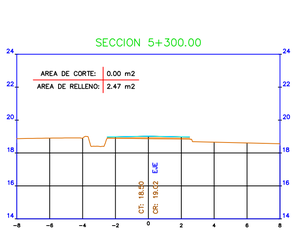
FECHA: Enero, 2026

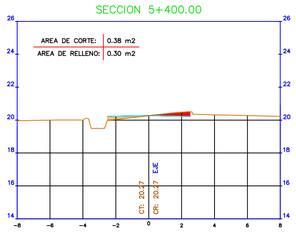
UBICACION DEL PROYECTO

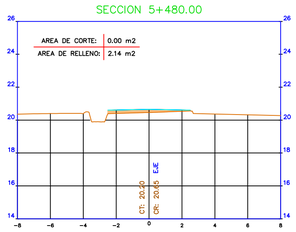
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

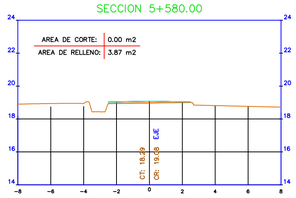
LAMINA Nº

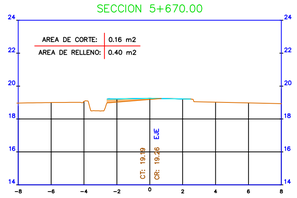
**ST-09**

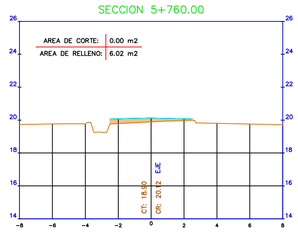


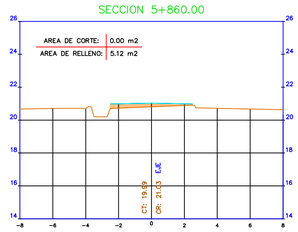



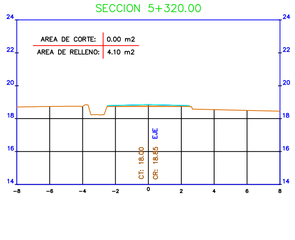



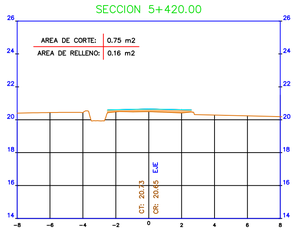



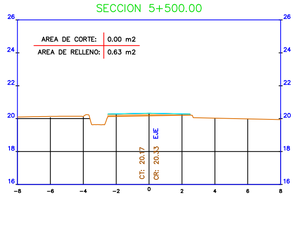



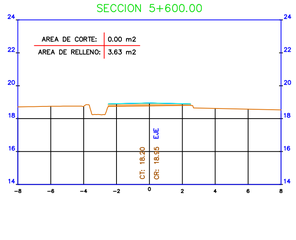



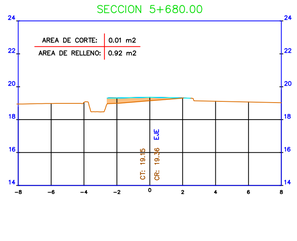



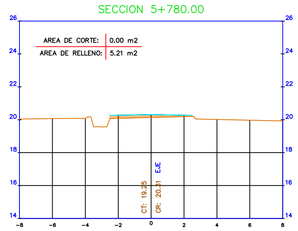



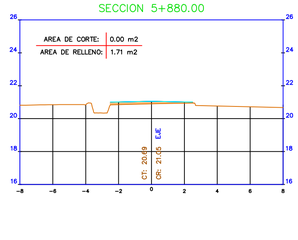



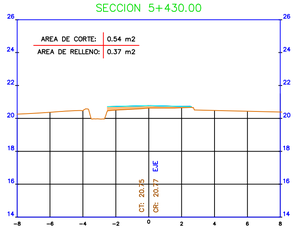



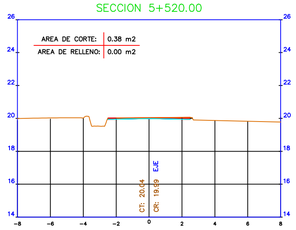







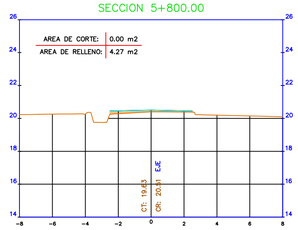




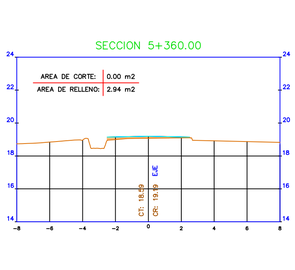


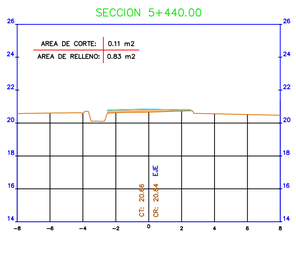


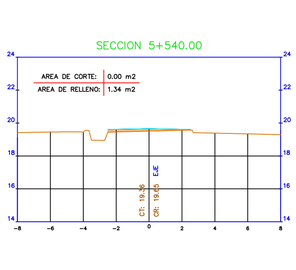



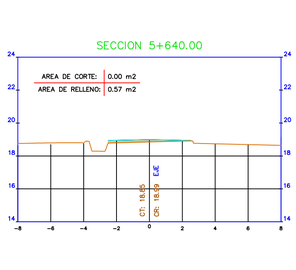


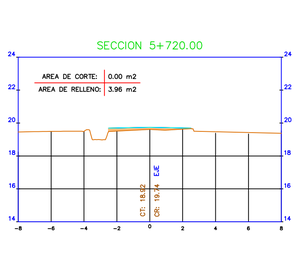


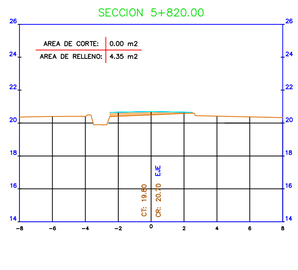


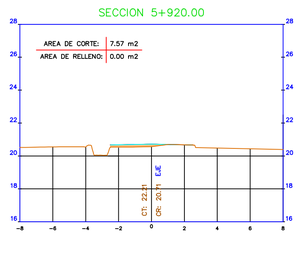



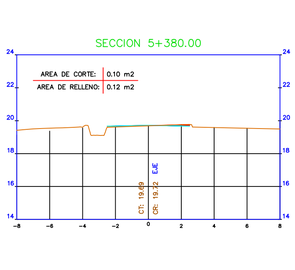



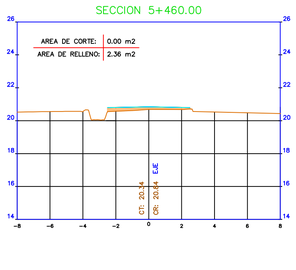



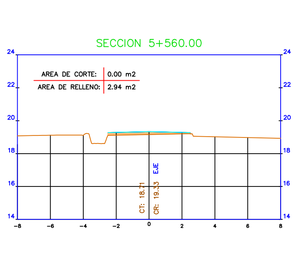



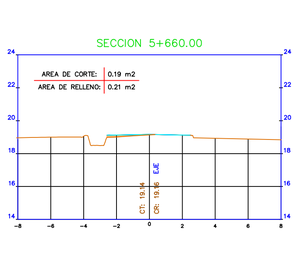



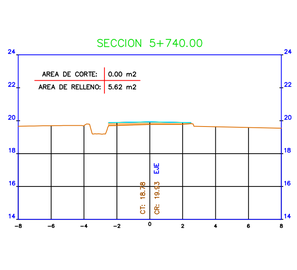



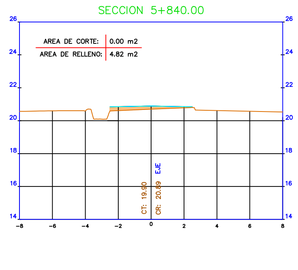



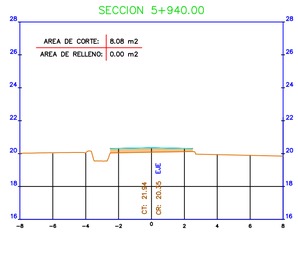




UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

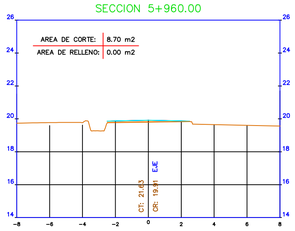
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

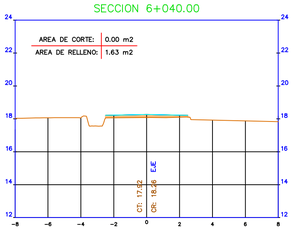
LAMINA Nº

**ST-10**

SECCION 5+960.00




SECCION 6+040.00

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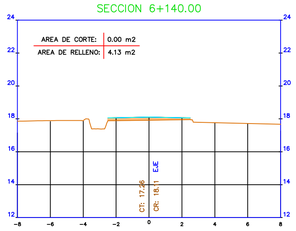


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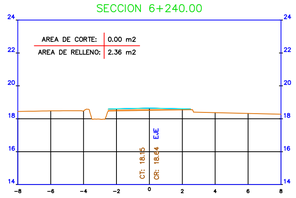


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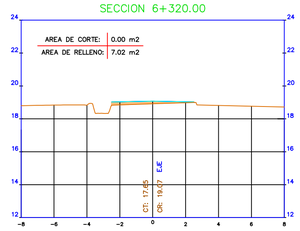


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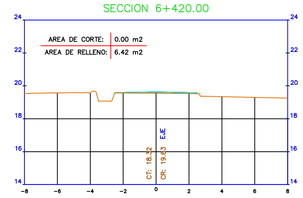


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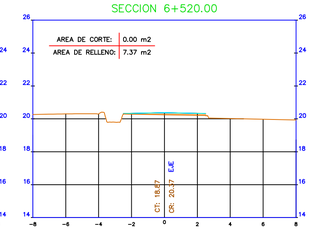
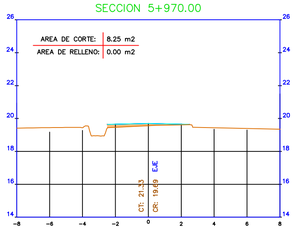
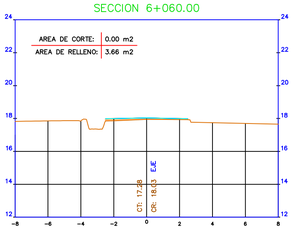



SECCION 5+970.00




SECCION 6+060.00

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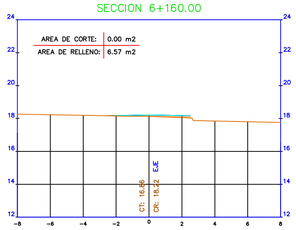


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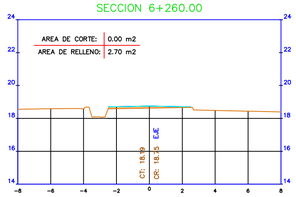


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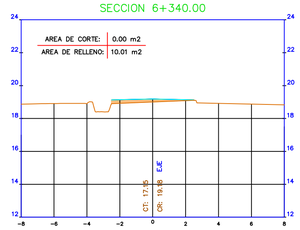
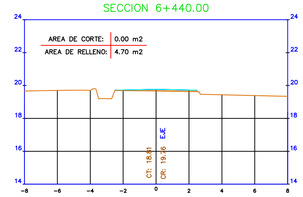
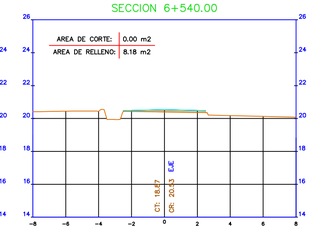


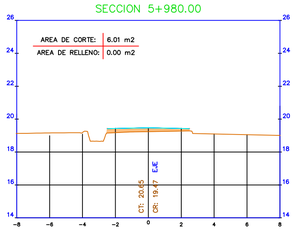

SECCION 6+440.00




SECCION 6+540.00



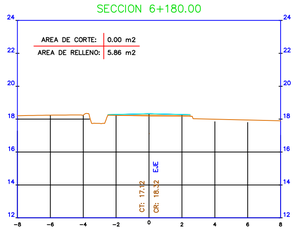

SECCION 5+980.00




SECCION 6+080.00




SECCION 6+180.00

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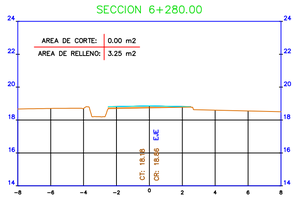


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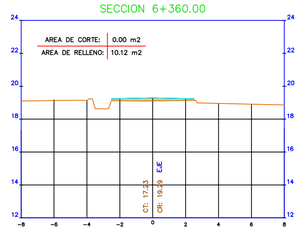


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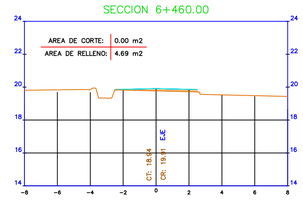
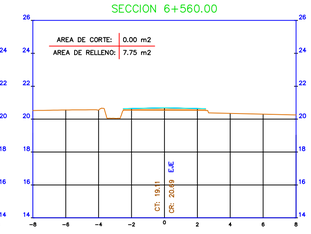
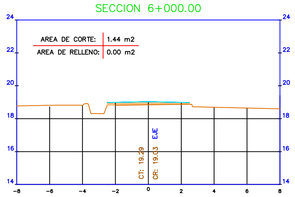



SECCION 6+560.00




SECCION 6+000.00

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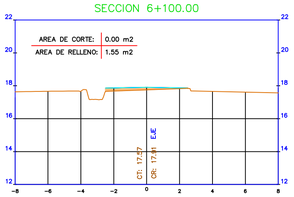


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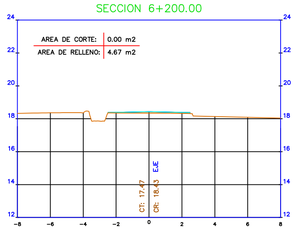


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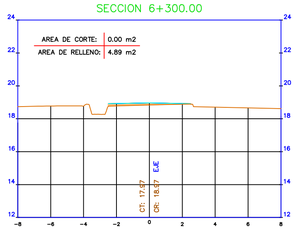


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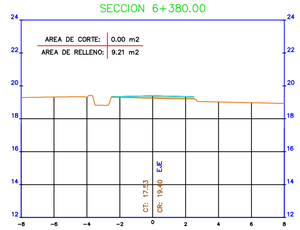


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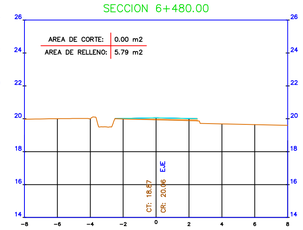


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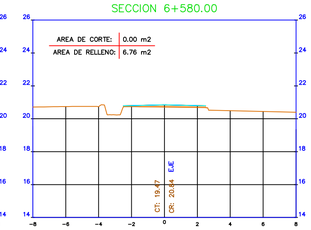
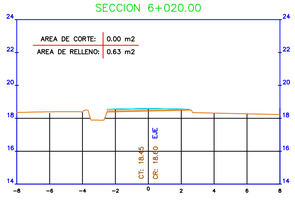
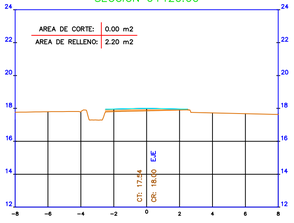



SECCION 6+020.00




SECCION 6+120.00

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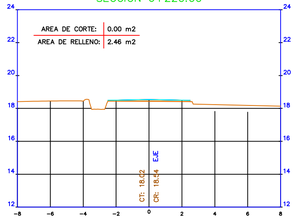


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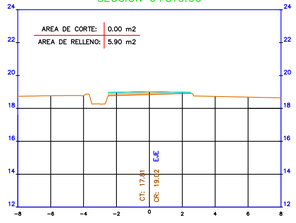
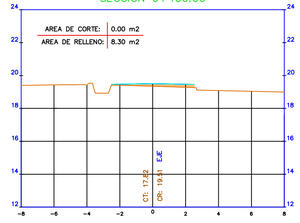
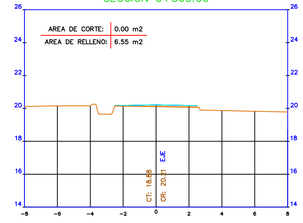


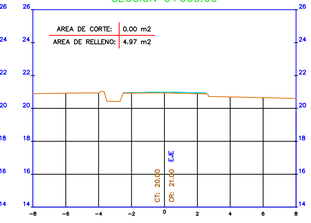

SECCION 6+400.00




SECCION 6+500.00




SECCION 6+600.00




UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

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ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

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PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

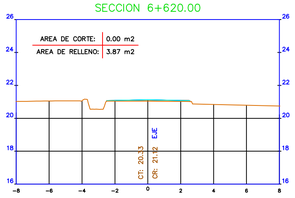
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

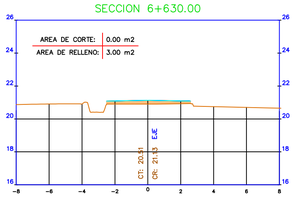
LAMINA Nº

**ST-11**

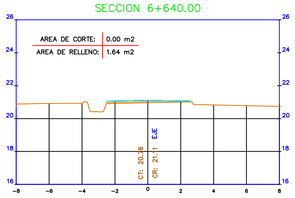
SECCION 6+620.00




SECCION 6+630.00




SECCION 6+640.00

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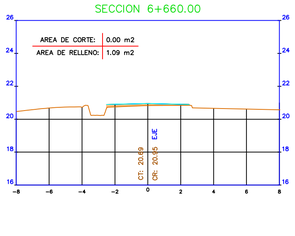


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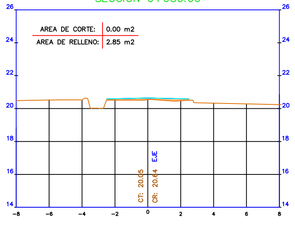


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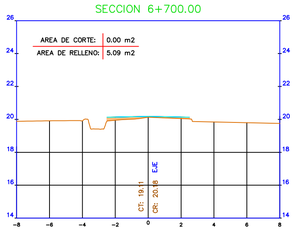


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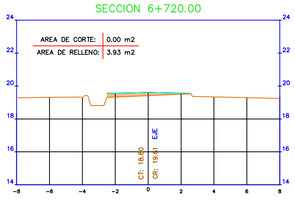


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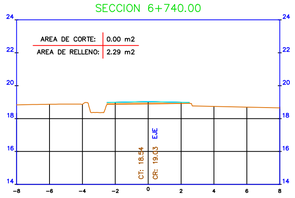


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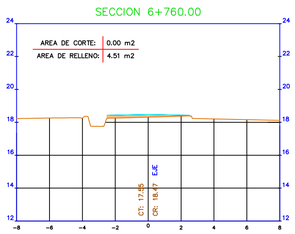


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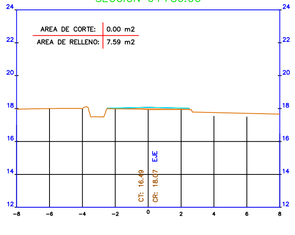
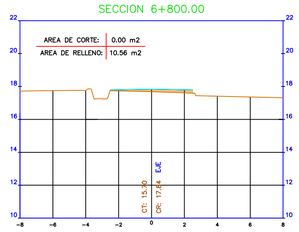
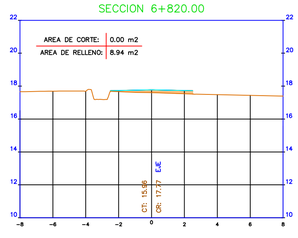


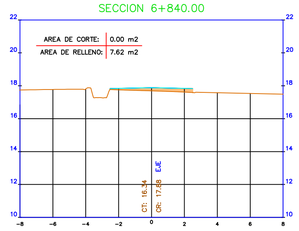

SECCION 6+800.00



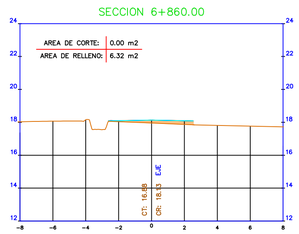

SECCION 6+820.00



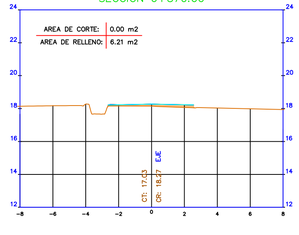

SECCION 6+840.00



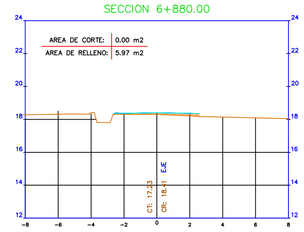

SECCION 6+860.00



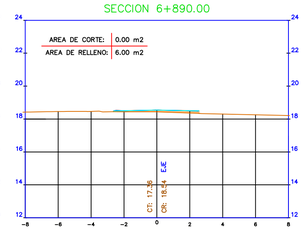

SECCION 6+870.00



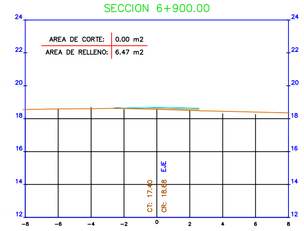

SECCION 6+880.00




SECCION 6+890.00




SECCION 6+900.00

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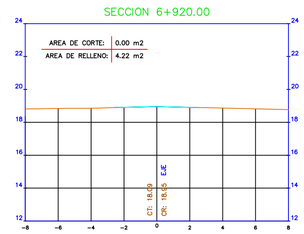


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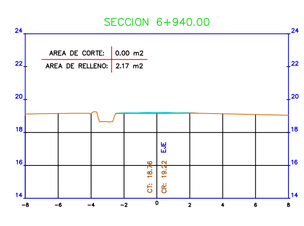


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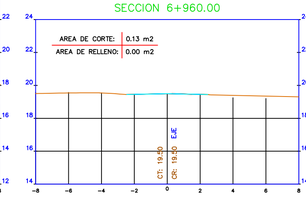


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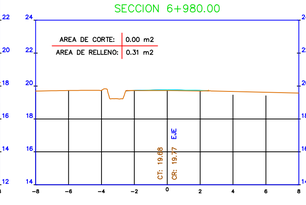


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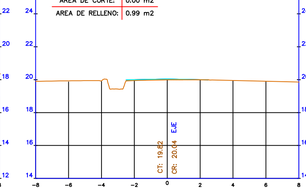


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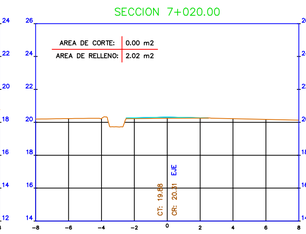


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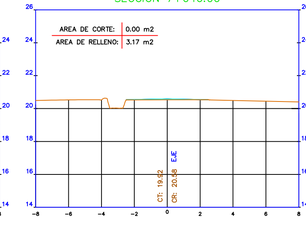


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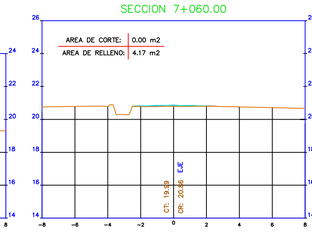


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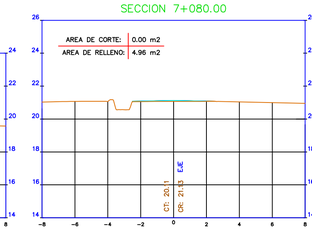


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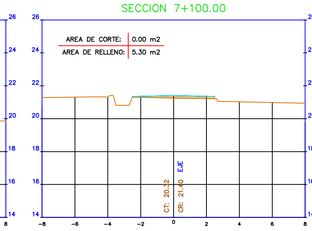


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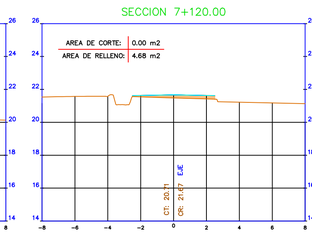


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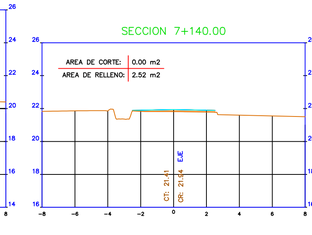


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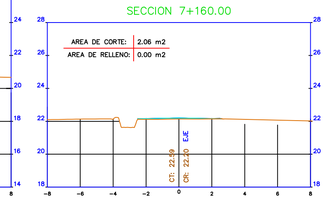


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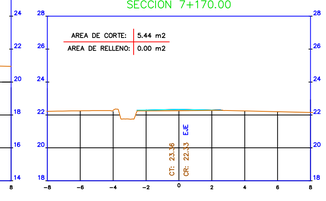


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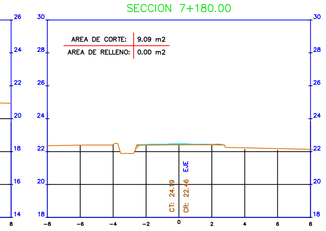


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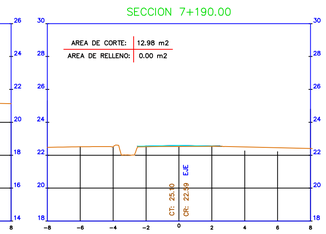
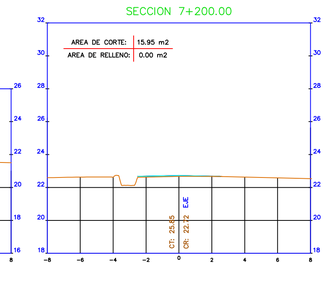



SECCION 7+200.00




UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:




PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

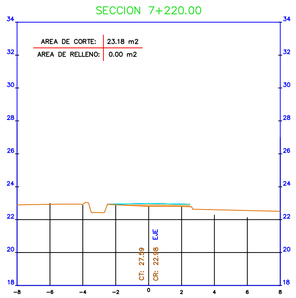
FECHA: Enero, 2026

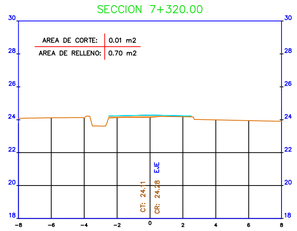
UBICACION DEL PROYECTO

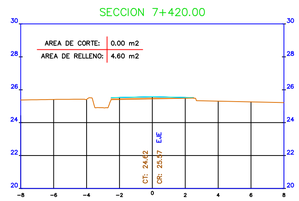
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

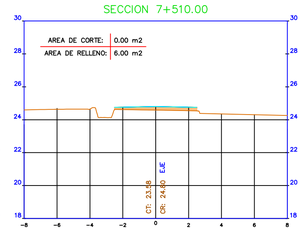
LAMINA Nº

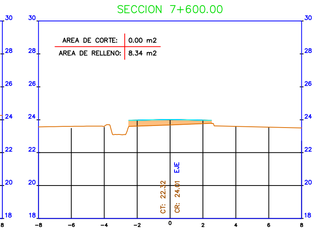
**ST-12**

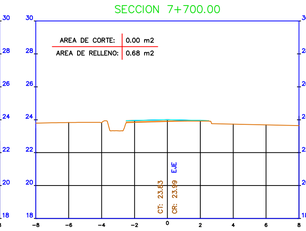


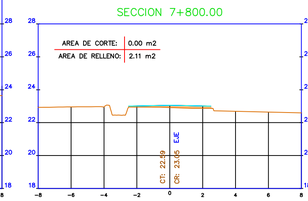



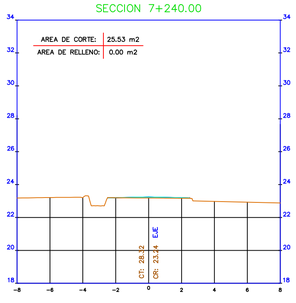



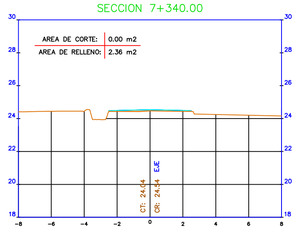



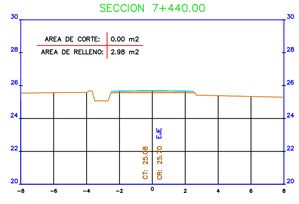



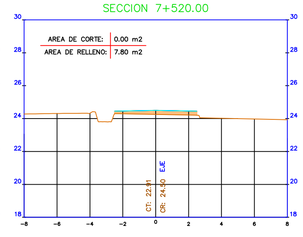



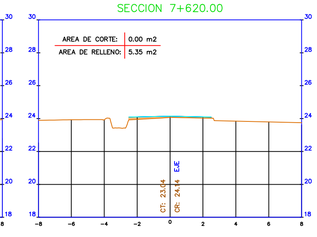



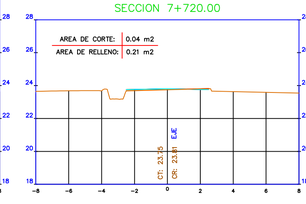



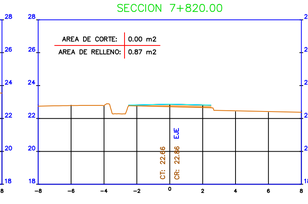



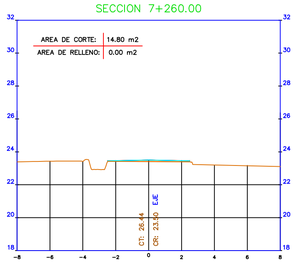



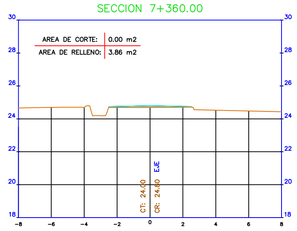



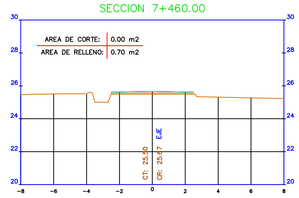



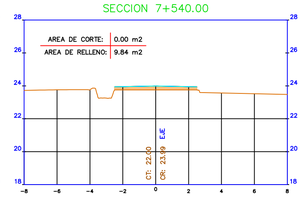



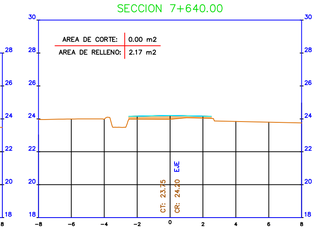



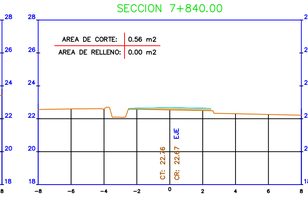



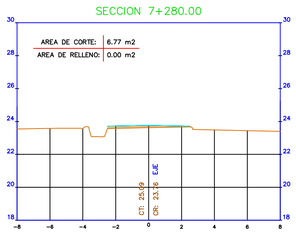



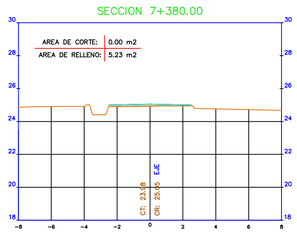



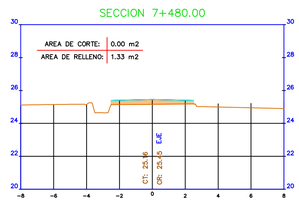


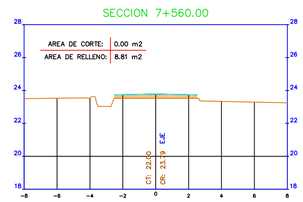


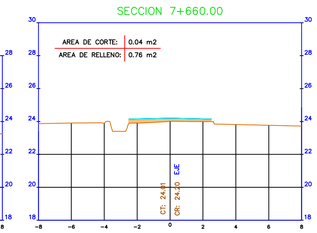


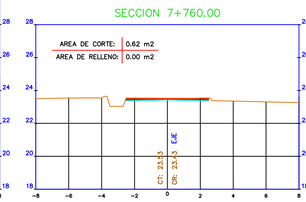



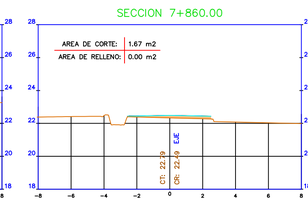



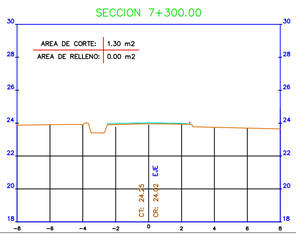



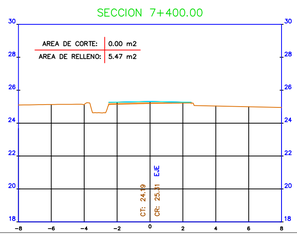



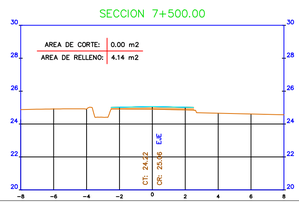



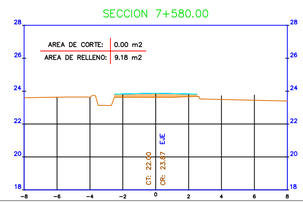



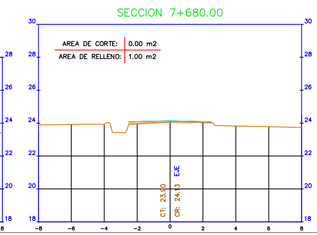



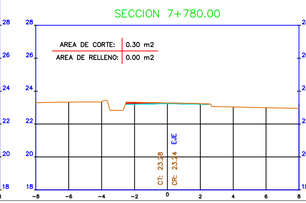



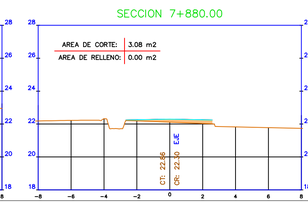

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FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

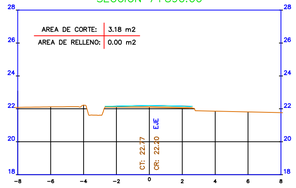
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

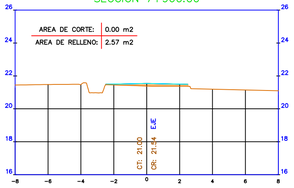
LAMINA Nº

**ST-13**

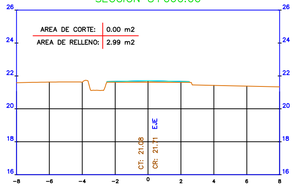
SECCION 7+890.00




SECCION 7+960.00




SECCION 8+060.00

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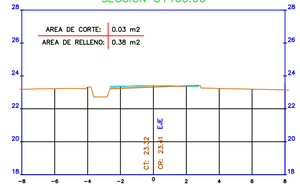


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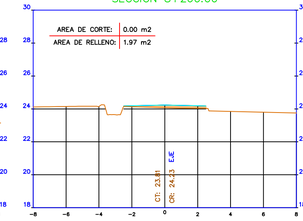


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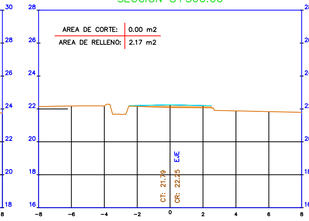


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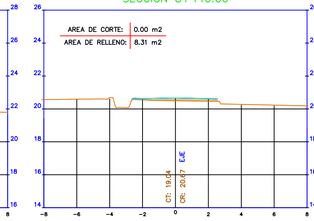


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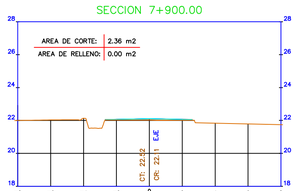


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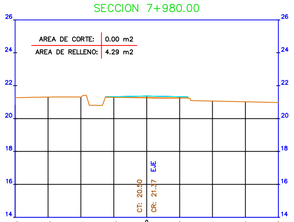


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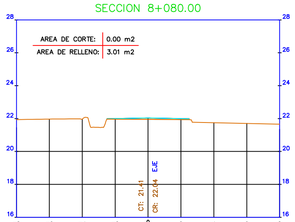


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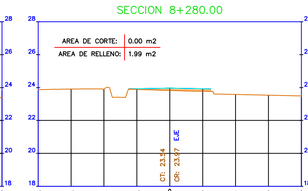
SECCION 8+280.00

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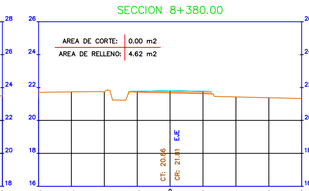


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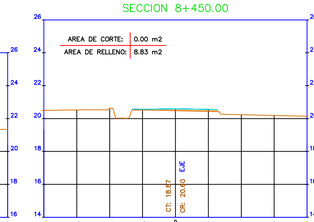


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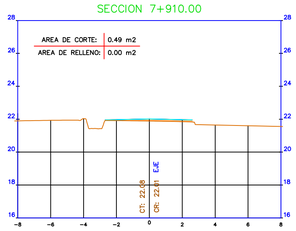


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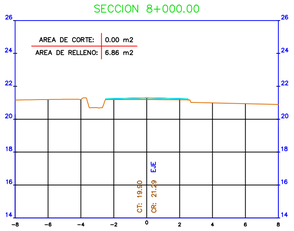


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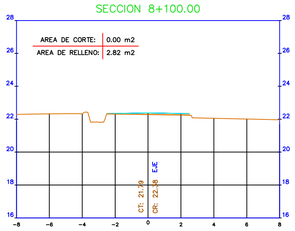
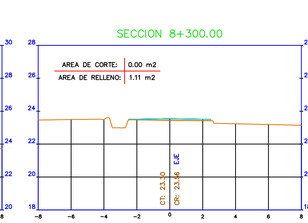



SECCION 8+200.00




SECCION 8+300.00

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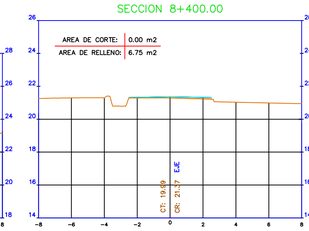


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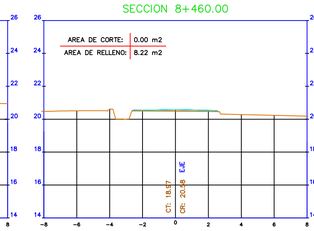


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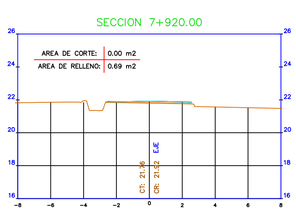


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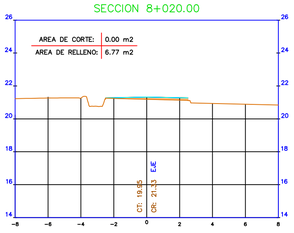


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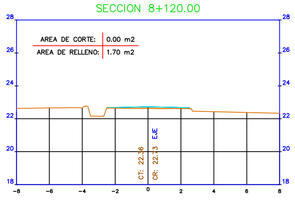


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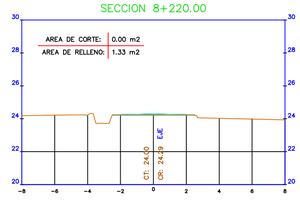


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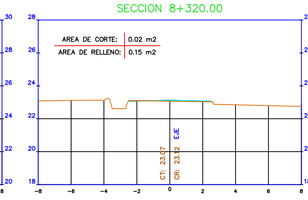


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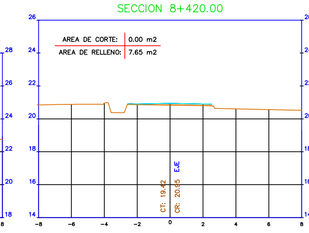


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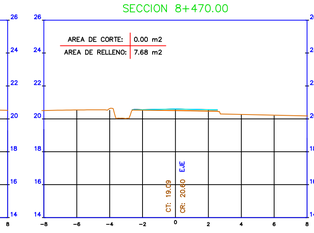
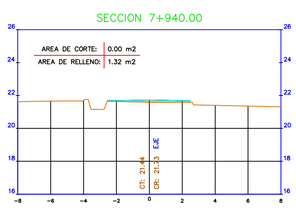



SECCION 7+940.00

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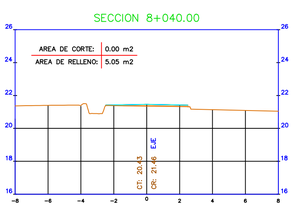


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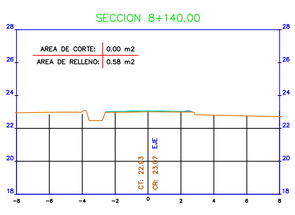


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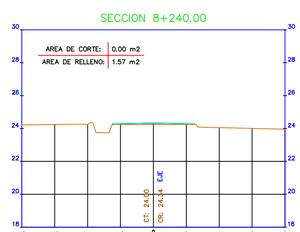


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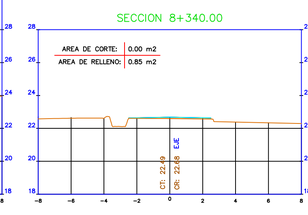


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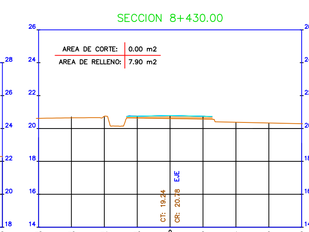


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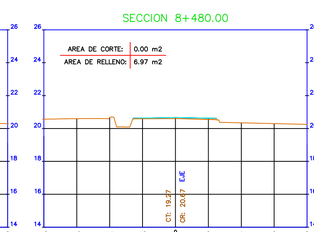



UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

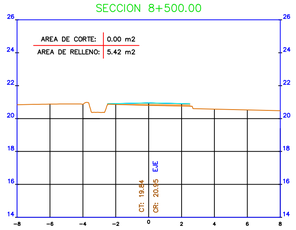
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**ST-14**

SECCION 8+500.00

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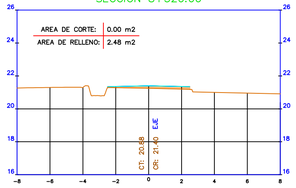


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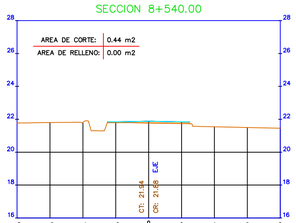


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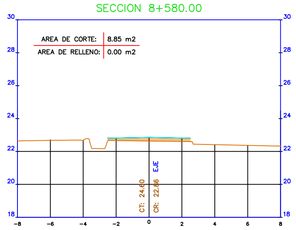
SECCION 8+580.00

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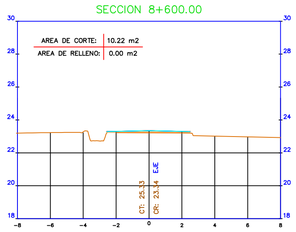


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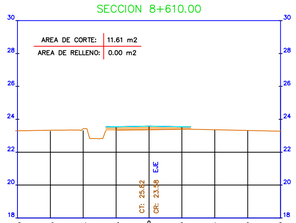


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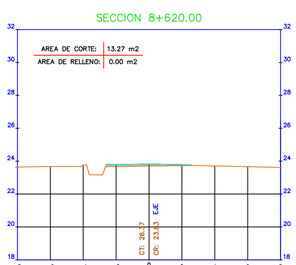


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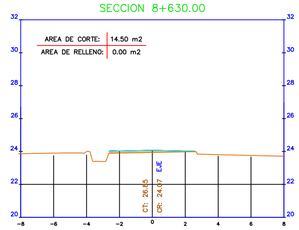


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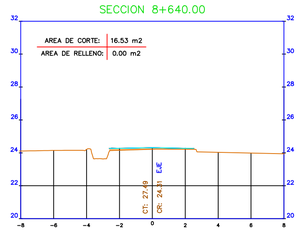


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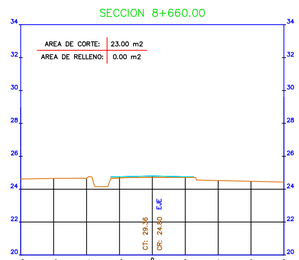


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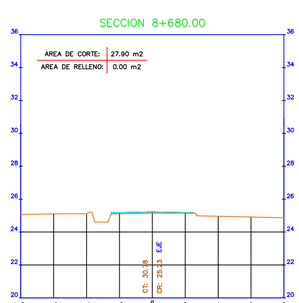


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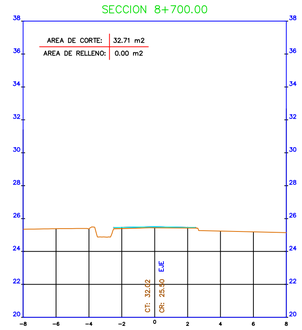


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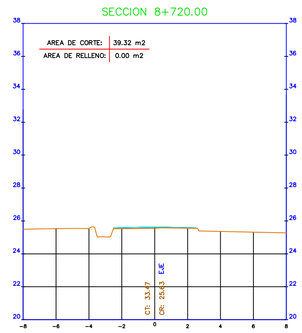


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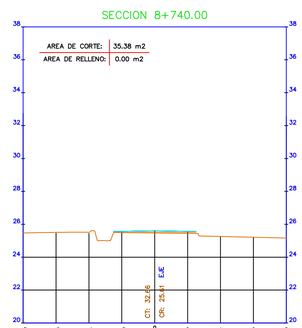


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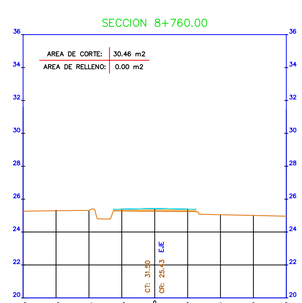


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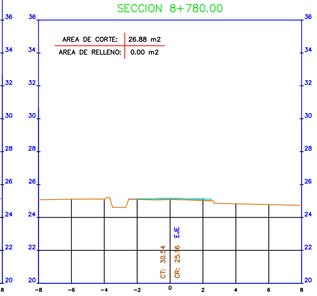


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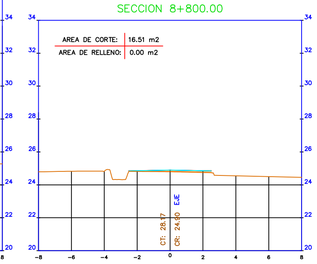


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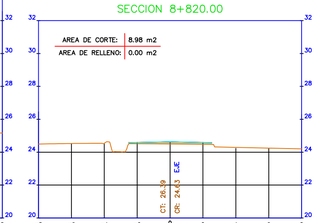


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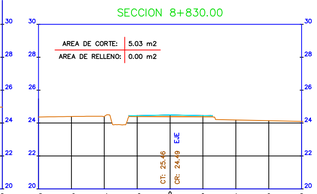


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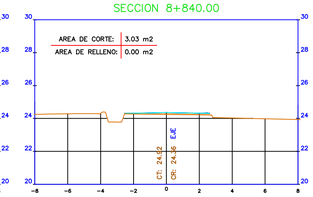


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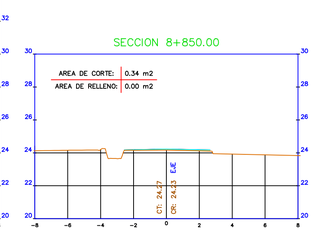


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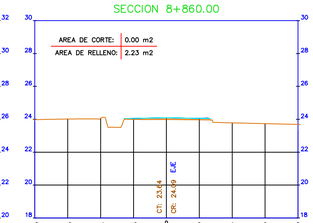


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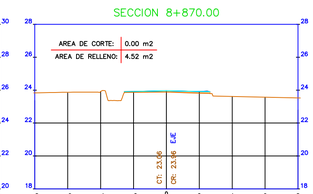


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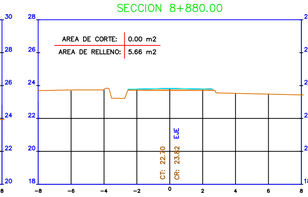


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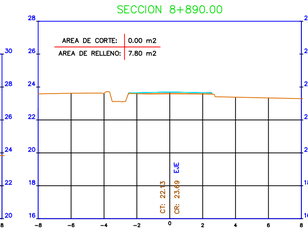
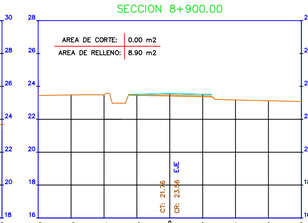
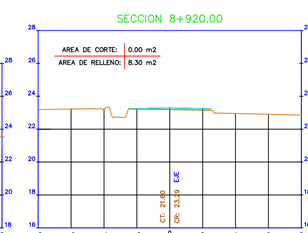



SECCION 8+900.00




SECCION 8+920.00




UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:




PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

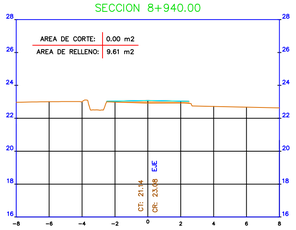
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

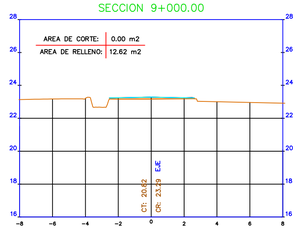
LAMINA Nº

**ST-15**

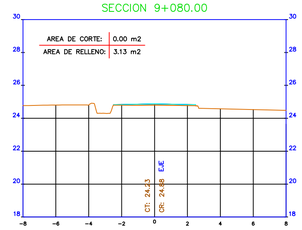
SECCION 8+940.00



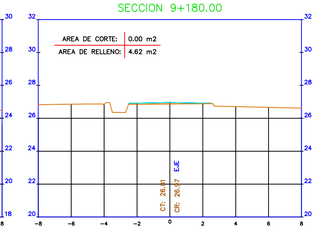

SECCION 9+000.00



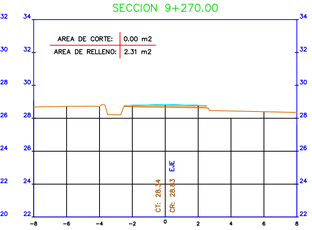

SECCION 9+080.00




SECCION 9+180.00




SECCION 9+270.00

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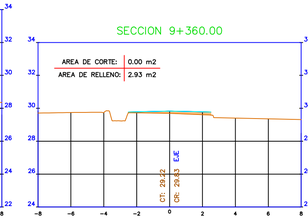
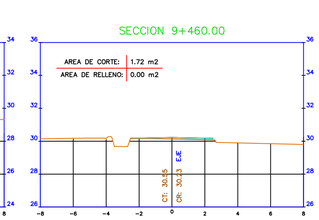
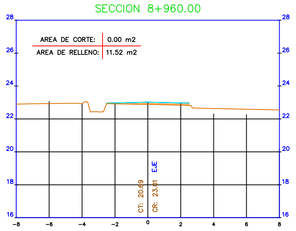


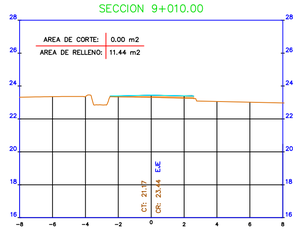

SECCION 9+460.00



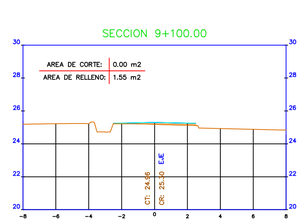

SECCION 8+960.00



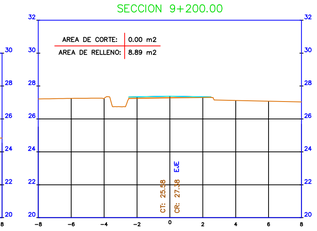

SECCION 9+010.00



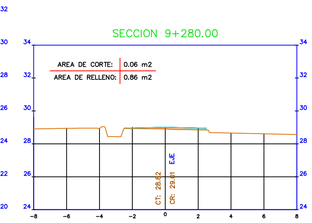

SECCION 9+100.00



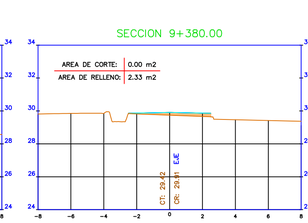

SECCION 9+200.00



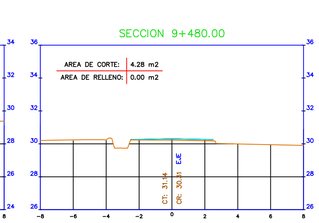

SECCION 9+280.00



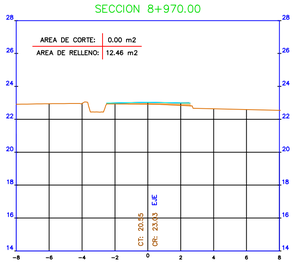

SECCION 9+380.00



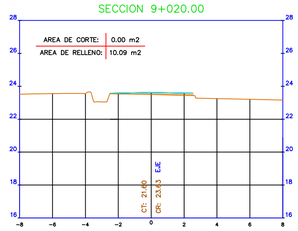

SECCION 9+480.00




SECCION 8+970.00



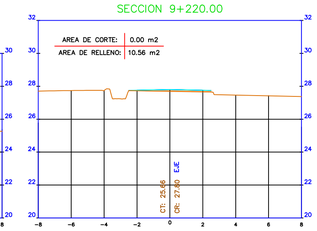

SECCION 9+020.00



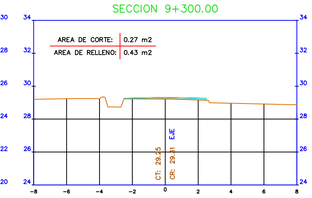

SECCION 9+120.00



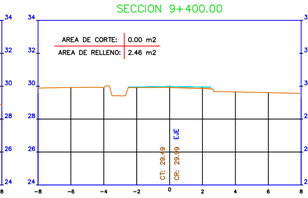

SECCION 9+220.00



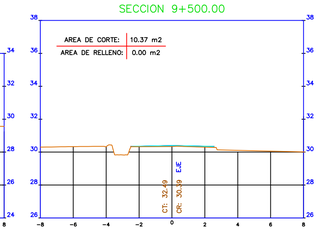

SECCION 9+300.00




SECCION 9+400.00




SECCION 9+500.00

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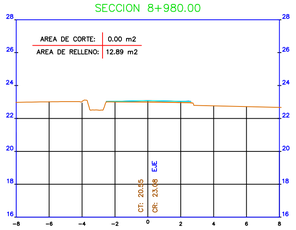
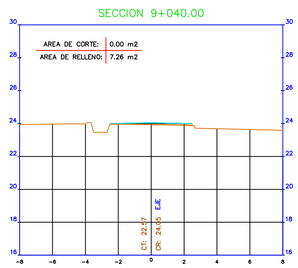


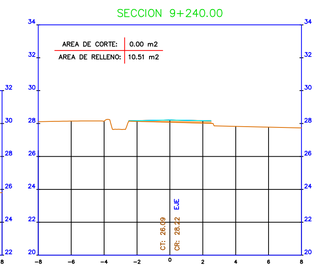

SECCION 9+040.00



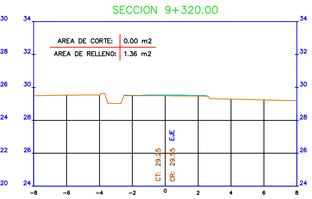

SECCION 9+140.00



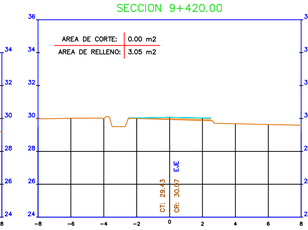

SECCION 9+240.00



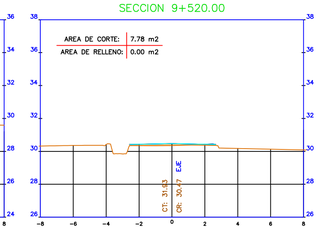

SECCION 9+320.00



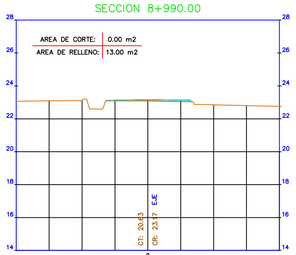

SECCION 9+420.00



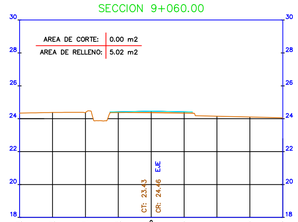

SECCION 9+520.00



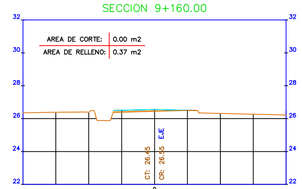

SECCION 8+990.00



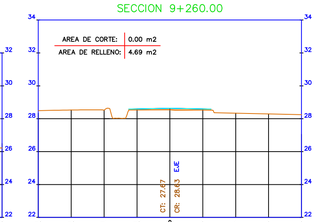

SECCION 9+060.00



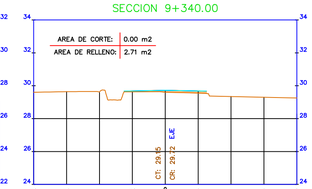

SECCION 9+160.00



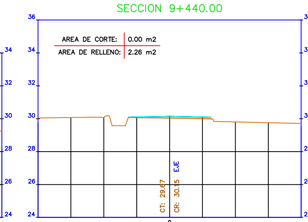

SECCION 9+260.00




SECCION 9+340.00




SECCION 9+440.00




SECCION 9+530.00




UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

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ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:




PROYECTO :

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PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

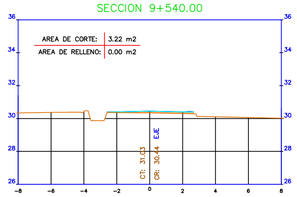
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

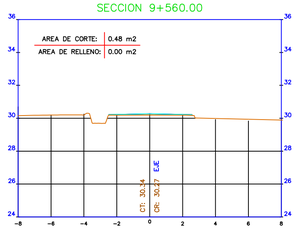
LAMINA Nº

**ST-16**

SECCION 9+540.00




SECCION 9+560.00



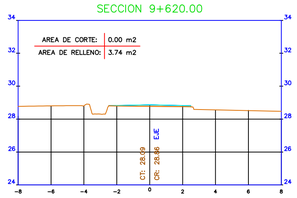

SECCION 9+580.00



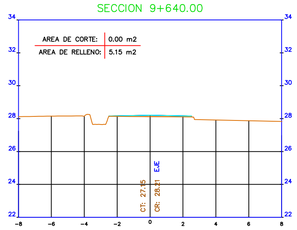

SECCION 9+600.00



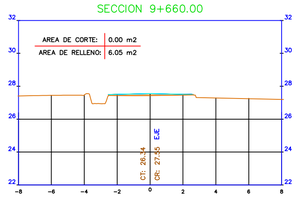

SECCION 9+620.00




SECCION 9+640.00



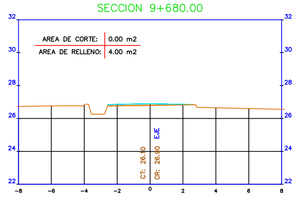

SECCION 9+660.00



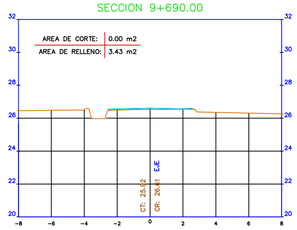

SECCION 9+670.00



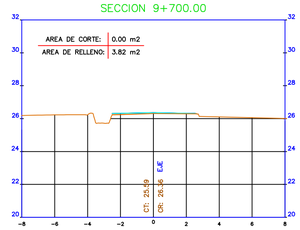

SECCION 9+680.00



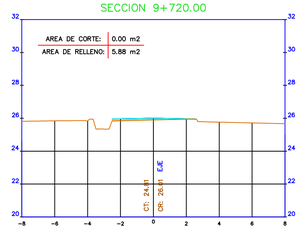

SECCION 9+690.00




SECCION 9+700.00



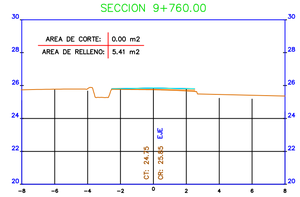

SECCION 9+720.00



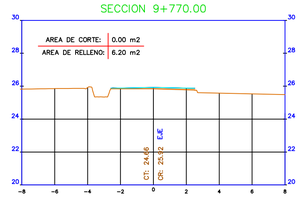

SECCION 9+740.00



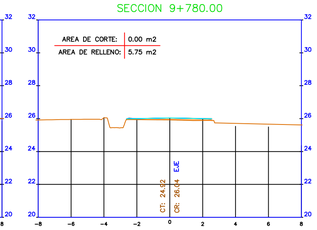

SECCION 9+760.00



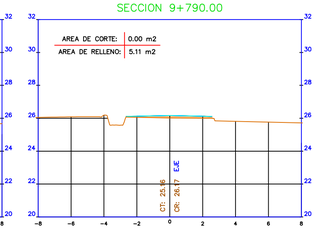

SECCION 9+770.00



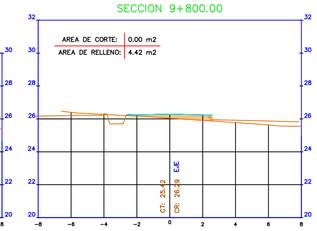

SECCION 9+780.00



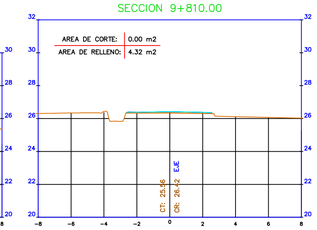

SECCION 9+790.00



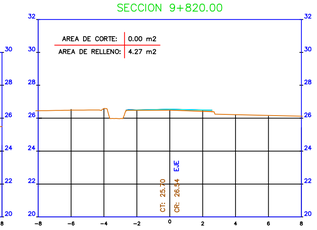

SECCION 9+800.00



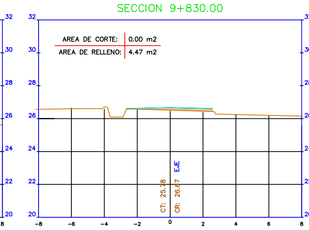

SECCION 9+810.00



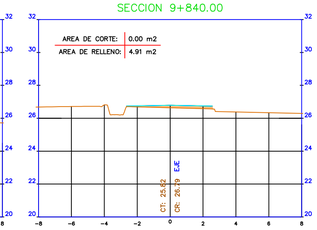

SECCION 9+820.00



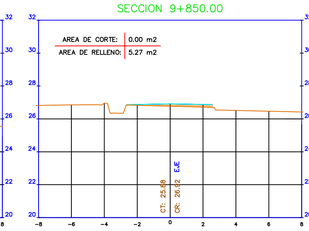

SECCION 9+830.00



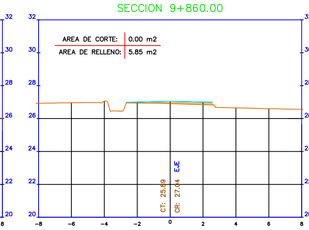

SECCION 9+840.00




SECCION 9+850.00




SECCION 9+860.00

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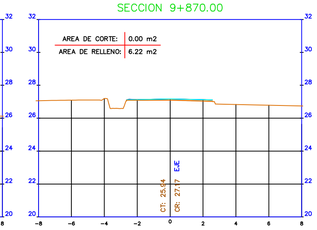


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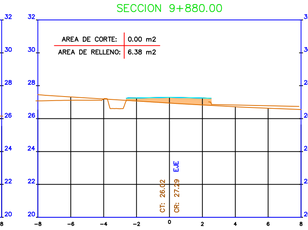
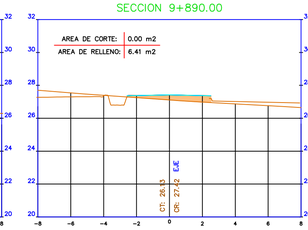



SECCION 9+890.00

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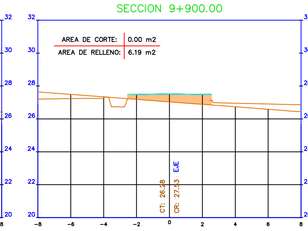


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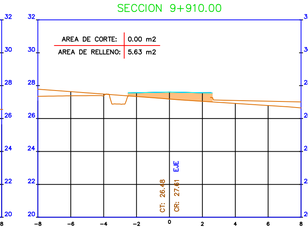


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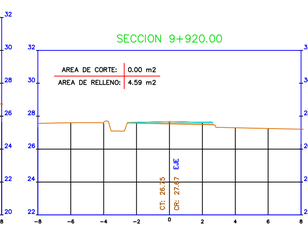


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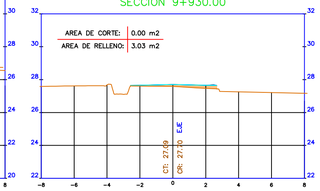


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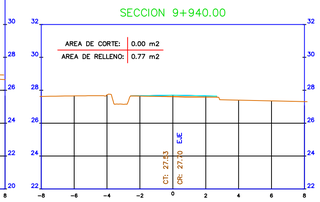
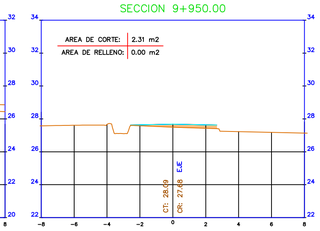
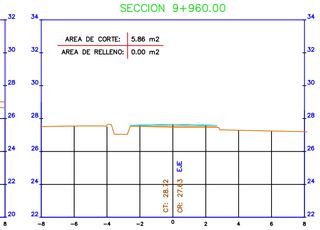


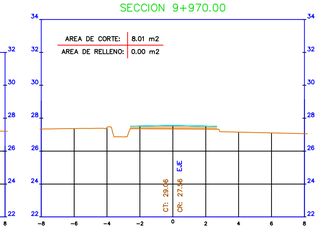

SECCION 9+950.00




SECCION 9+960.00




SECCION 9+970.00




UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

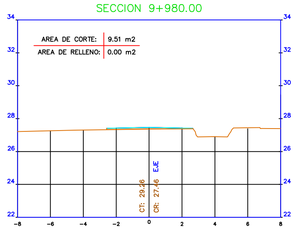
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

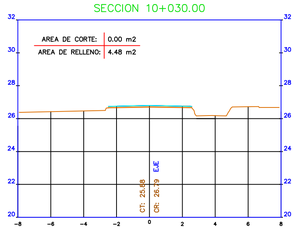
LAMINA Nº

**ST-17**

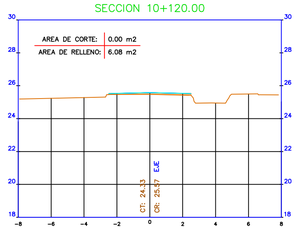
SECCION 9+980.00



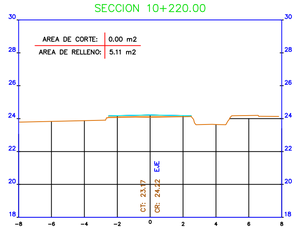

SECCION 10+030.00



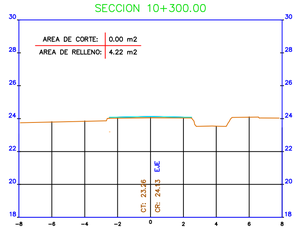

SECCION 10+120.00




SECCION 10+220.00




SECCION 10+300.00

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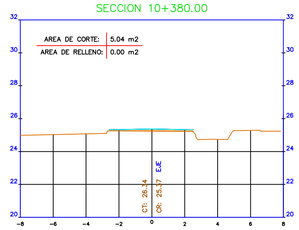


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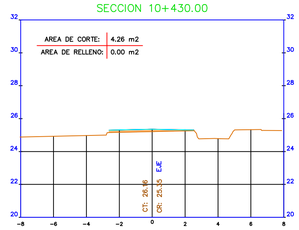
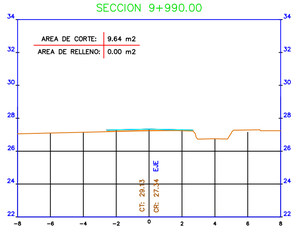



SECCION 9+990.00

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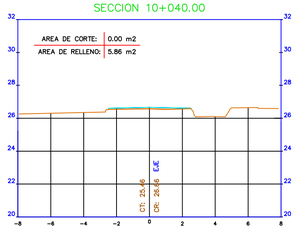


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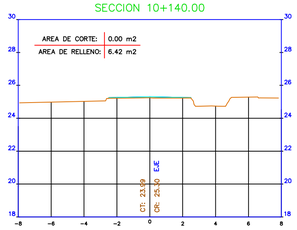


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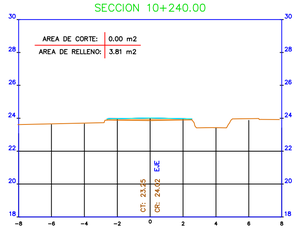
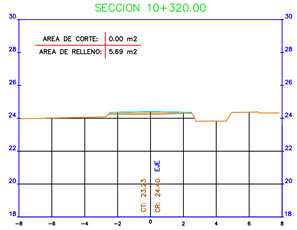
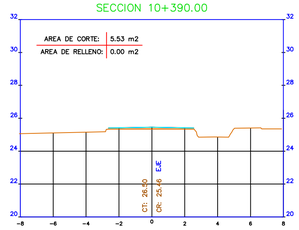



SECCION 10+320.00




SECCION 10+390.00

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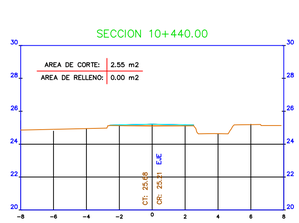
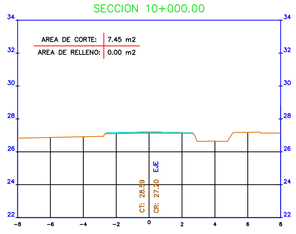



SECCION 10+000.00

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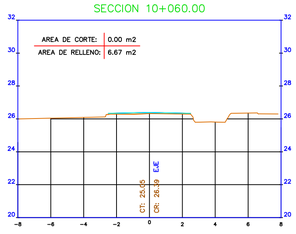


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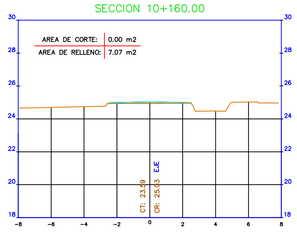


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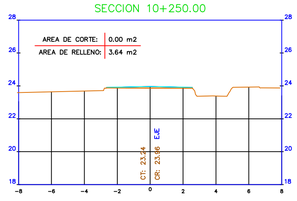


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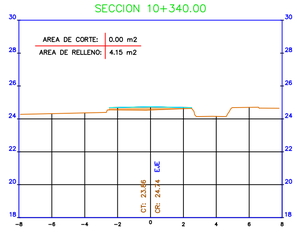


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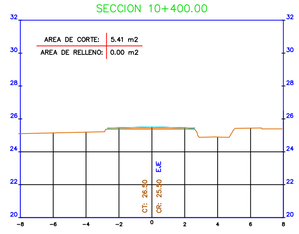


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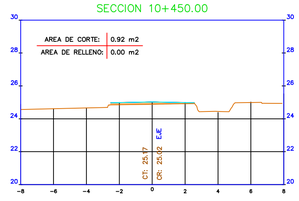
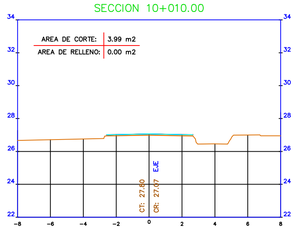



SECCION 10+010.00

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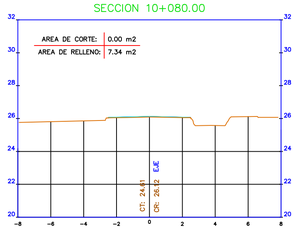


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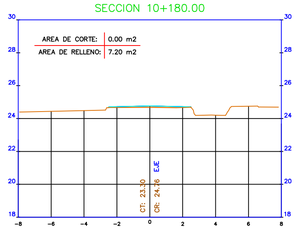


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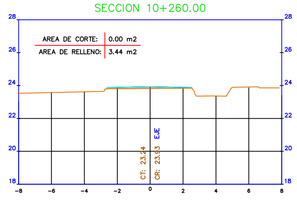


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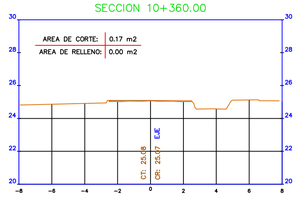


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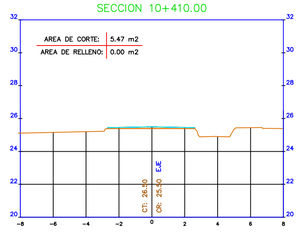


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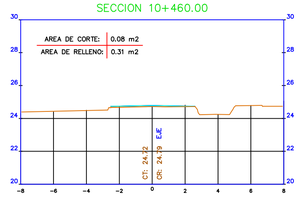
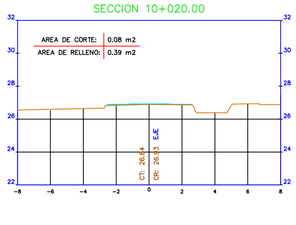



SECCION 10+020.00

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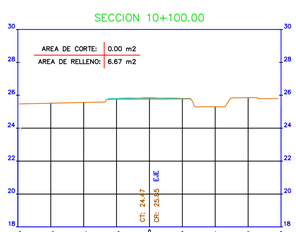


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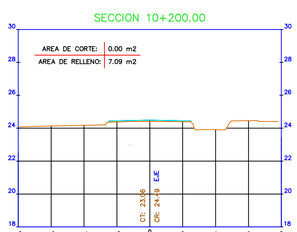
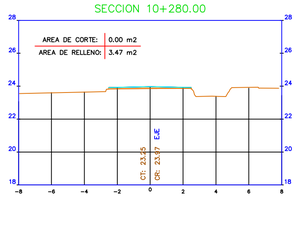
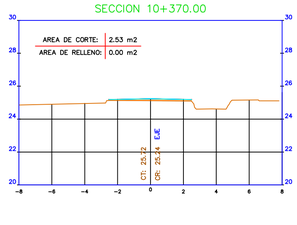


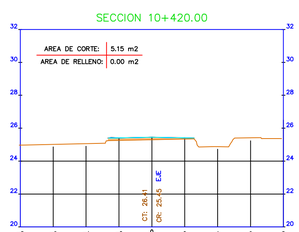

SECCION 10+280.00



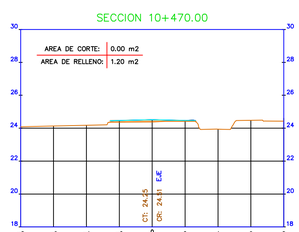

SECCION 10+370.00




SECCION 10+420.00




SECCION 10+470.00




UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

FACULTAD DE INGENIERIA CIVIL, SISTEMAS Y ARQUITECTURA

ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

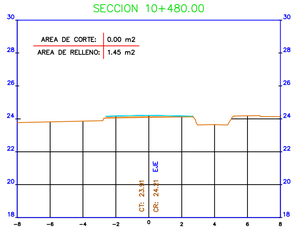
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**ST-18**

SECCION 10+480.00

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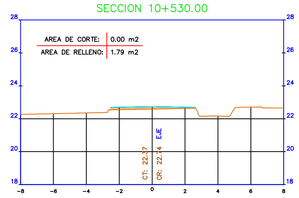
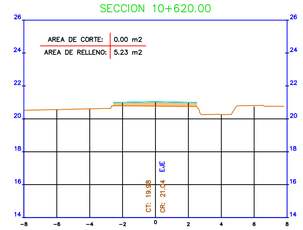



SECCION 10+620.00

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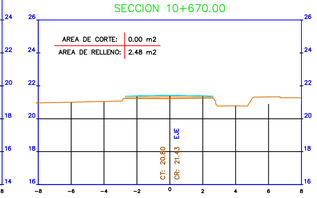
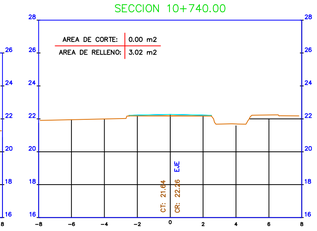



SECCION 10+740.00

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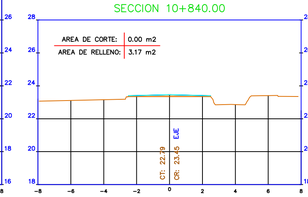


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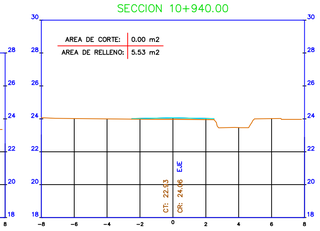


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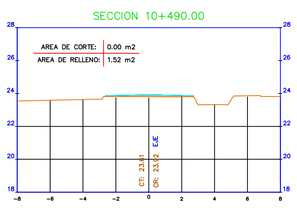


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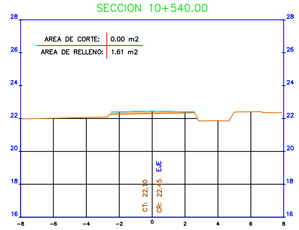


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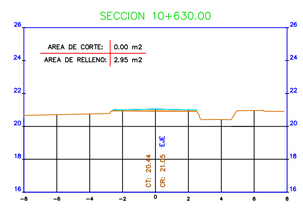


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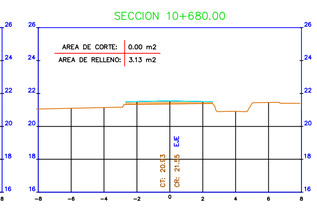


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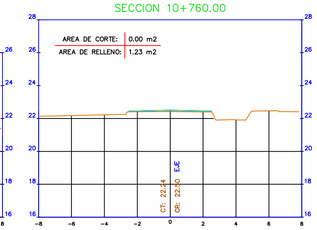


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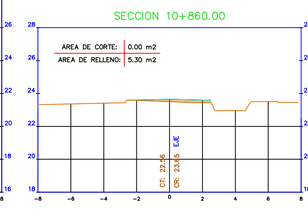


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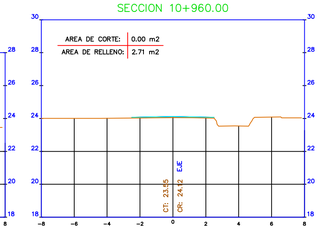
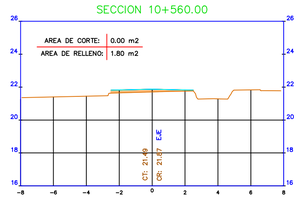



SECCION 10+500.00




SECCION 10+560.00

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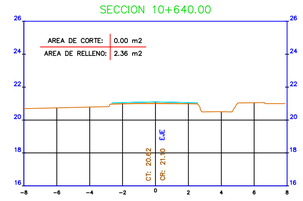


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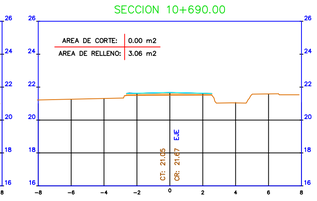


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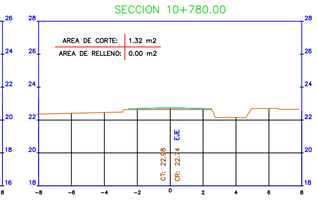


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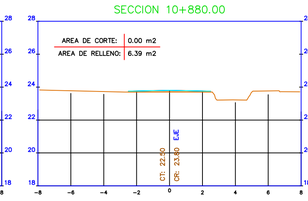
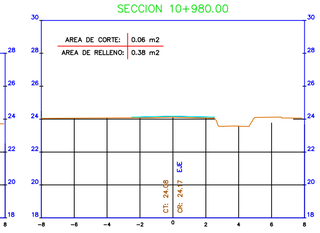



SECCION 10+980.00

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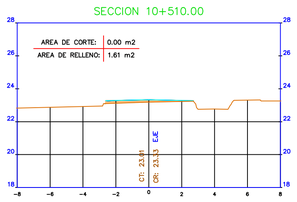


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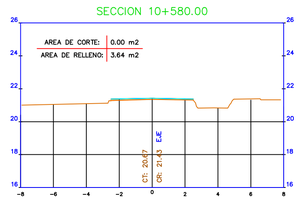


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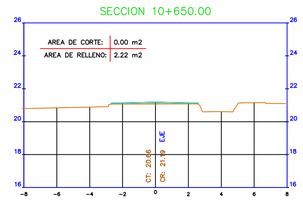


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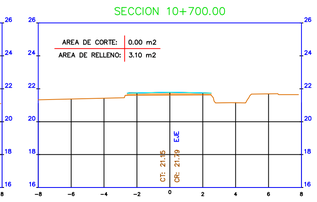


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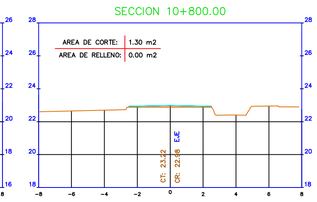


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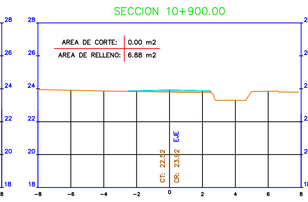


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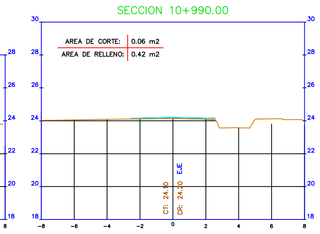


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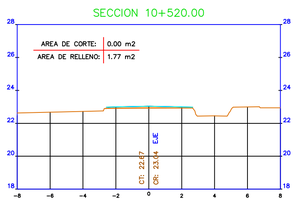


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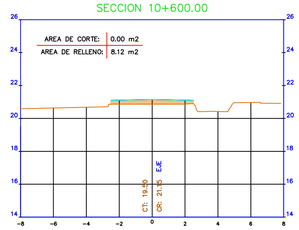


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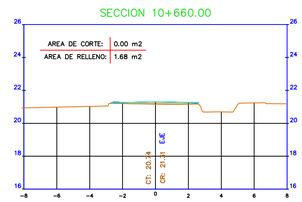
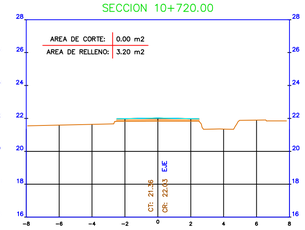



SECCION 10+720.00

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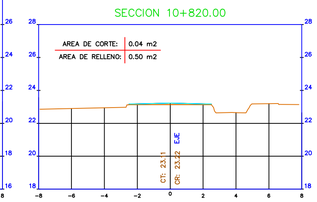


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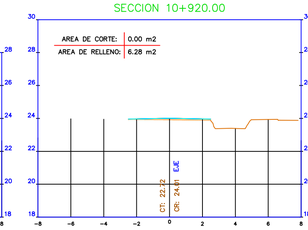
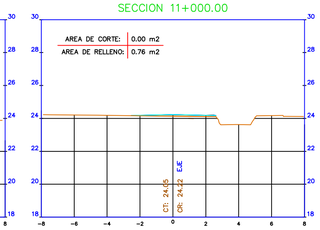



SECCION 11+000.00




UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

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ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:




PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

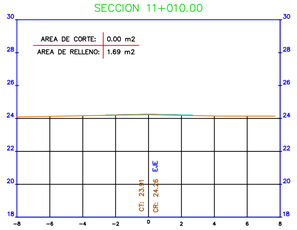
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**ST-19**

SECCION 11+010.00

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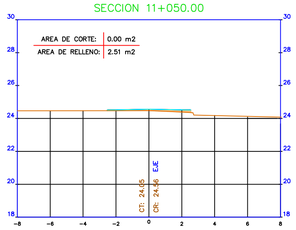


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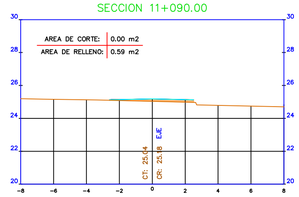


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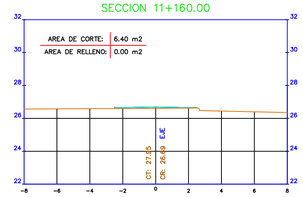
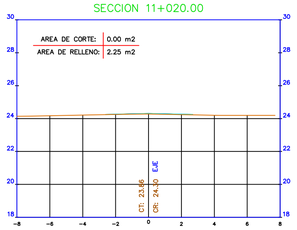



SECCION 11+020.00

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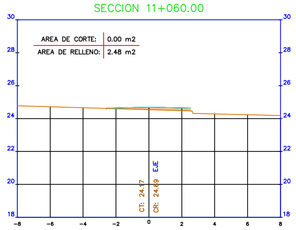
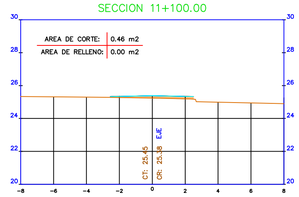
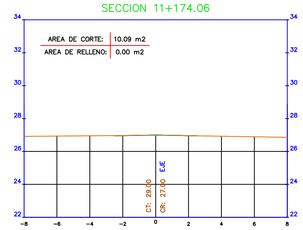


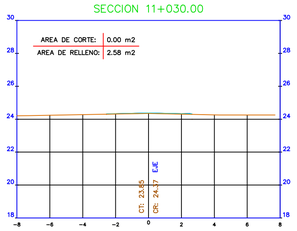

SECCION 11+100.00




SECCION 11+174.06




SECCION 11+030.00

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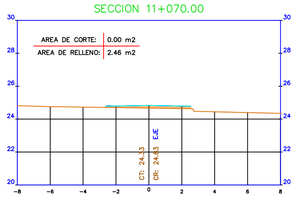


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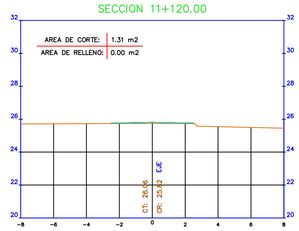


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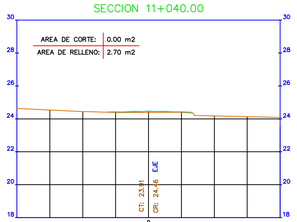
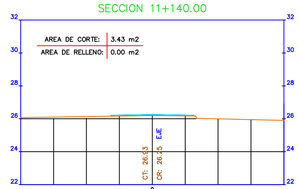



SECCION 11+080.00




SECCION 11+140.00




UNIVERSIDAD NACIONAL PEDRO RUIZ GALLO

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ORIENTACION:

N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

**SECCIONES TRANSVERSALES**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Enero, 2026

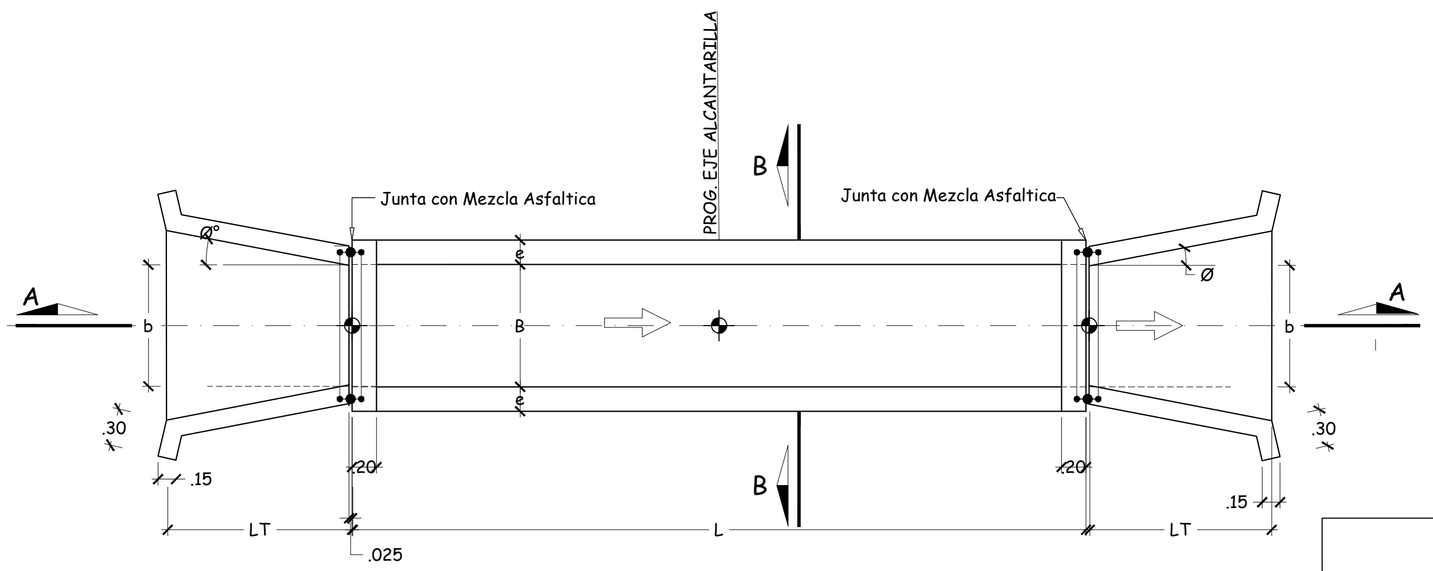
UBICACION DEL PROYECTO

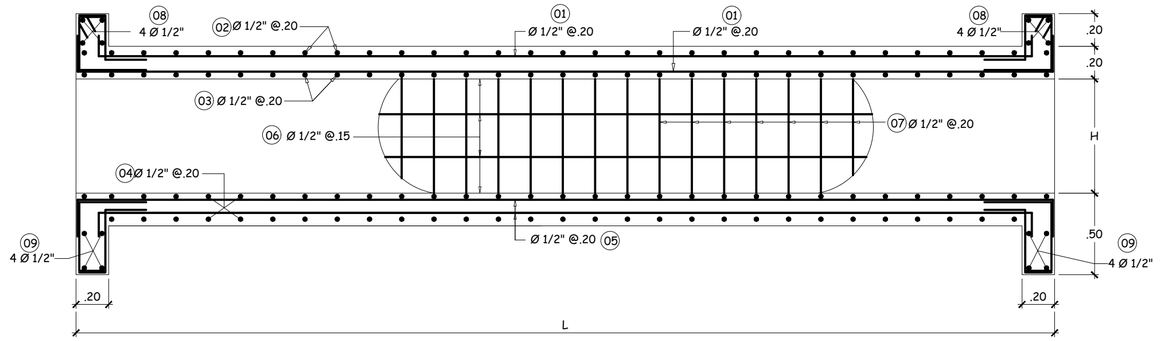
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**ST-20**

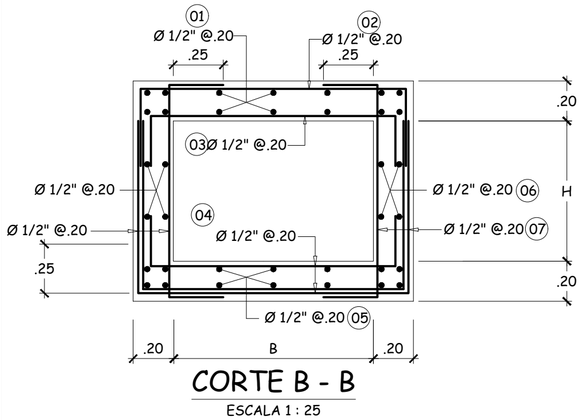
# PLANO DE ALCANTARILLAS



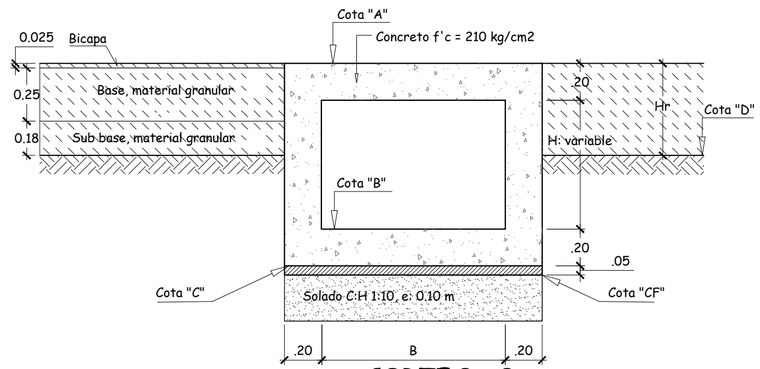

CORTE A - A

ESCALA 1 : 50




CORTE B - B

ESCALA 1 : 25




CORTE B - B

ESCALA 1 : 25

## ESPECIFICACIONES TECNICAS

1- En lozas Concreto f'c = 210 Kg/cm2

2- Acero de Refuerzo Fy = 4200Kg/cm2

3- Recubrimiento de Loza = 5cm

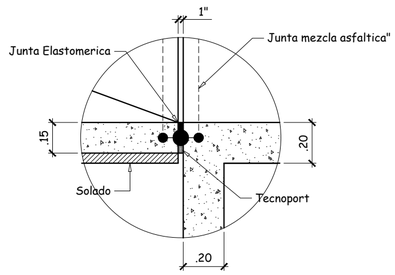
4- Longitud de desarrollo

Ø 3/8'' , Ø1/2'', Ø 1/4'' = 25cm
Ø 5/8" = 35cm
Ø 1'', Ø 3/4'' = 45cm

5- Longitud de Empalme

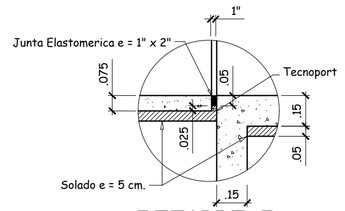
Ø 3/8'' , Ø1/2'', Ø 1/4'' = 50 cm

6- Desencofrado en fondo de losas 21 días




DETALLE "A"

ESCALA 1 / 20




DETALLE "B"

ESCALA 1 / 20

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ORIENTACION:

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PLANO :

ALCANTARILLA TIPO CAJON

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

FECHA: Febrero, 2026

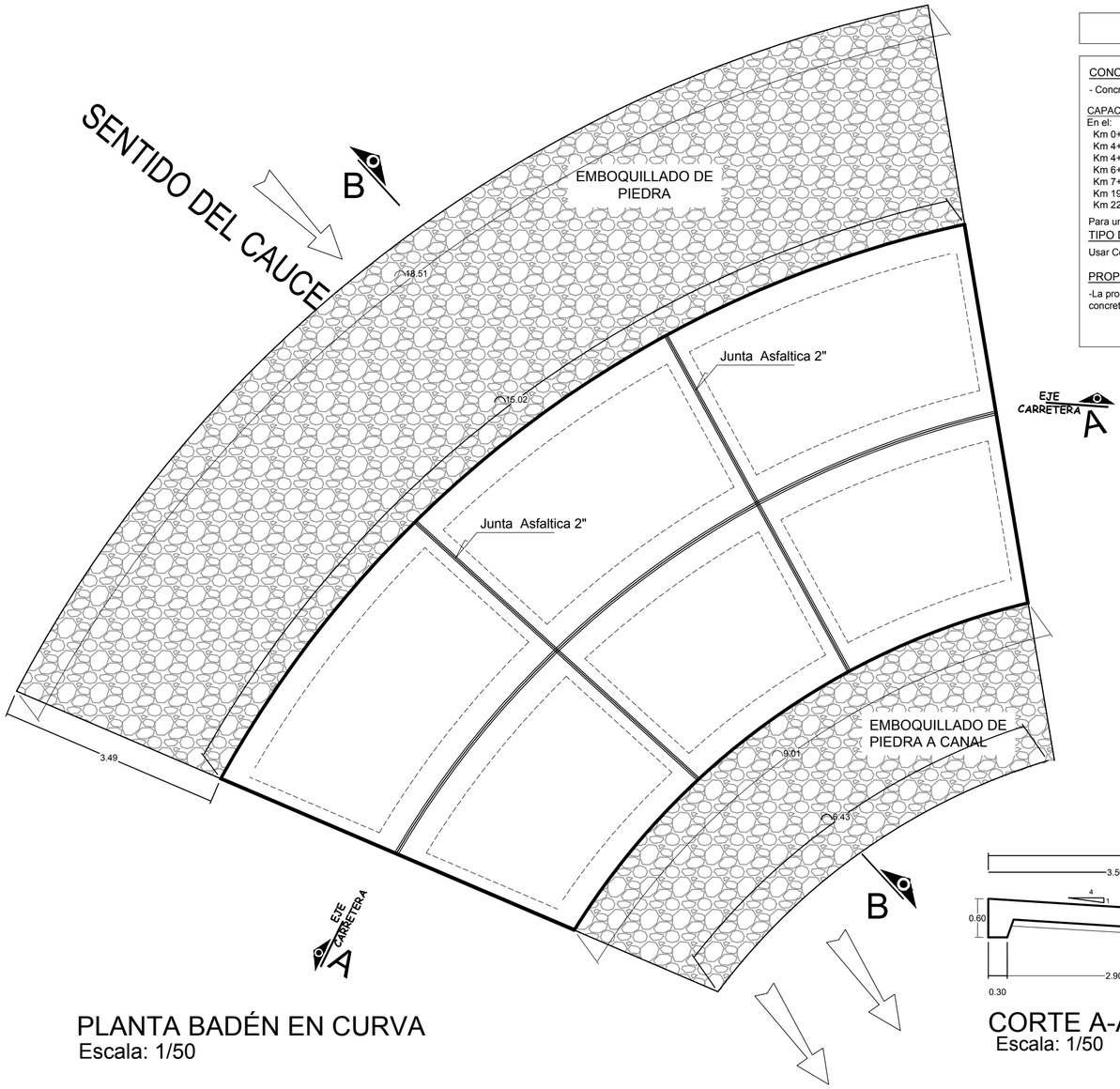
UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

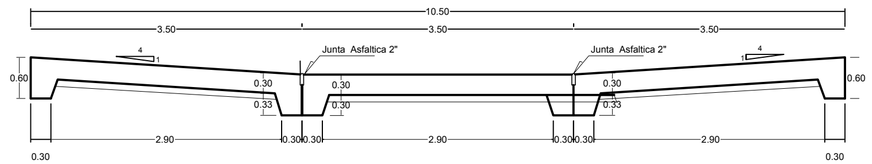
LAMINA N°

A-01

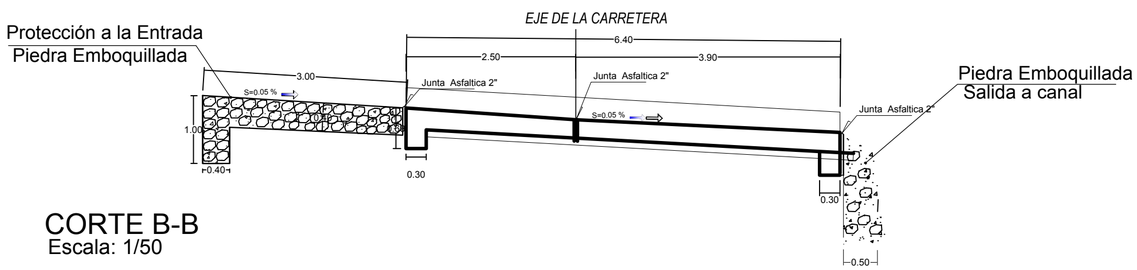
# PLANO DE BADÉN




PLANTA BADÉN EN CURVA
Escala: 1/50




CORTE A-A
Escala: 1/50




CORTE B-B
Escala: 1/50

ESPECIFICACIONES TECNICAS

CONCRETO

- Concreto para badenes F'c: 210 kg/cm2.

CAPACIDAD PORTANTE DEL SUELO

En el:
Km 0+304.95 es 1.55 kg/cm2
Km 4+076.86 es 0.97 kg/cm2
Km 4+401.24 es 1.09 kg/cm2
Km 6+095.54 es 0.92 kg/cm2
Km 7+357.44 es 0.94 kg/cm2
Km 19+605.12 es 1.40 kg/cm2
Km 22+650.50 es 0.93 kg/cm2

Para una profundidad cimentación de 1.00 m

TIPO DE CEMENTO

Usar Cemento Portland Tipo I

PROPORCIONES DE MEZCLA

-La proporción del diseño de mezcla a utilizar para el concreto f'c 210 kg/cm2 con una relación a/c =0.452
C : AF : AG / A
1 : 1.25 : 2.48 / 19.95

AGREGADOS

El agregado grueso consistirá en grava natural o triturada
-El tamaño máximo nominal del agregado grueso no deberá ser mayor de 1/2":
El agregado fino consistirá en arena natural o manfacturada, sus partículas serán, duras. compactas y resistentes.
Para ambos agregados, sus partículas serán limpias, libres de partículas escamosas, materia orgánica u otras sustancias dañinas .

MAMPOSTERÍA

Piedra de río o quebrada con Tam. Máx. 6"

ENSAYOS A REALIZAR

Realizar ensayos de resistencia a la compresión en probetas cilíndricas
NOTA :Se construira de acuerdo al R.N.E

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ORIENTACION:

N

PROYECTO :

**"ESTUDIO DEFINITIVO DEL CAMINO VECINAL CASERÍO HUACA DE TORO - CENTRO POBLADO HUACA QUEMADA DEL DISTRITO DE MOCHUMÍ, PROVINCIA DE LAMBAYEQUE, DEPARTAMENTO DE LAMBAYEQUE"**

PLANO :

BADEN

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: INDICADA

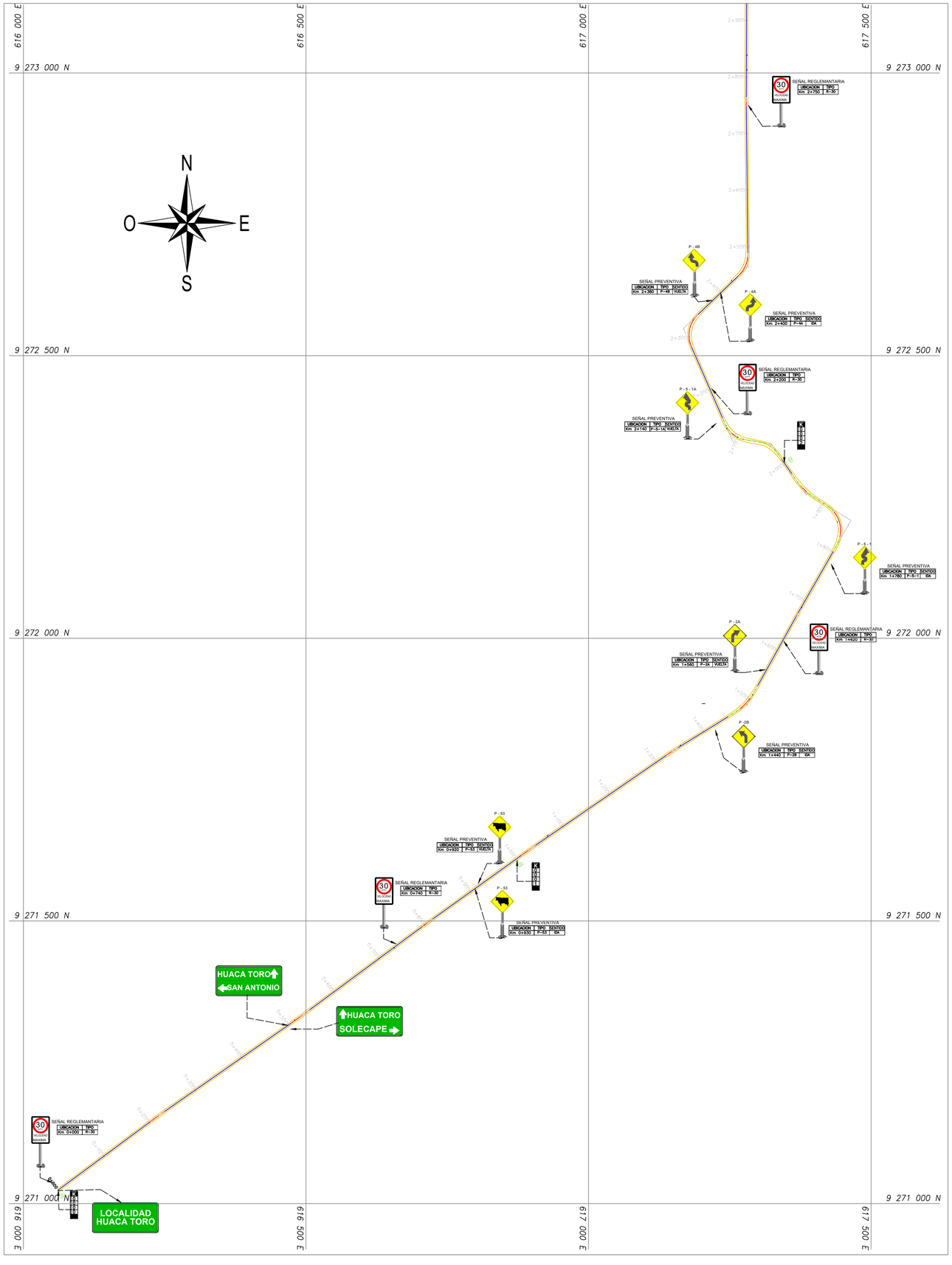
FECHA: Febrero, 2026

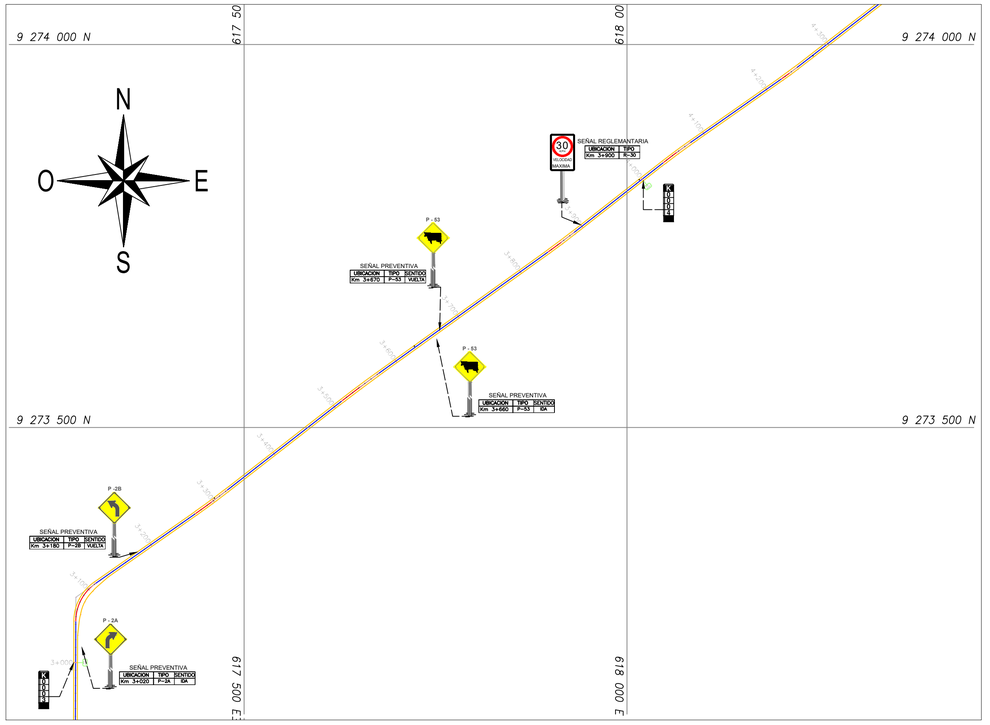
UBICACION DEL PROYECTO
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

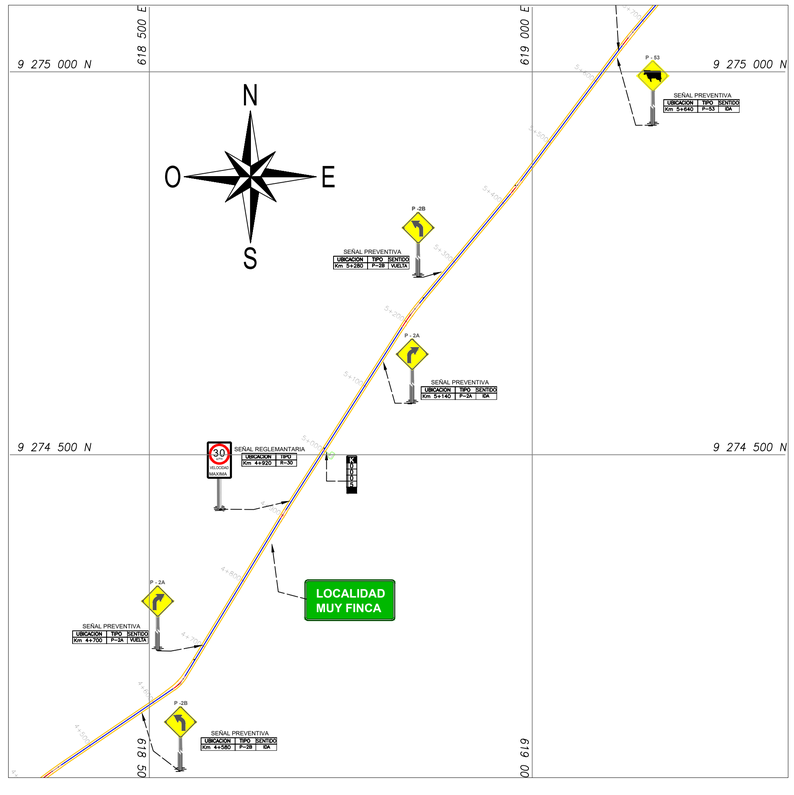
LAMINA Nº

B-01

# PLANO DE SEÑALIZACIÓN

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PLANO :

**SEÑALIZACION**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: 1/4000

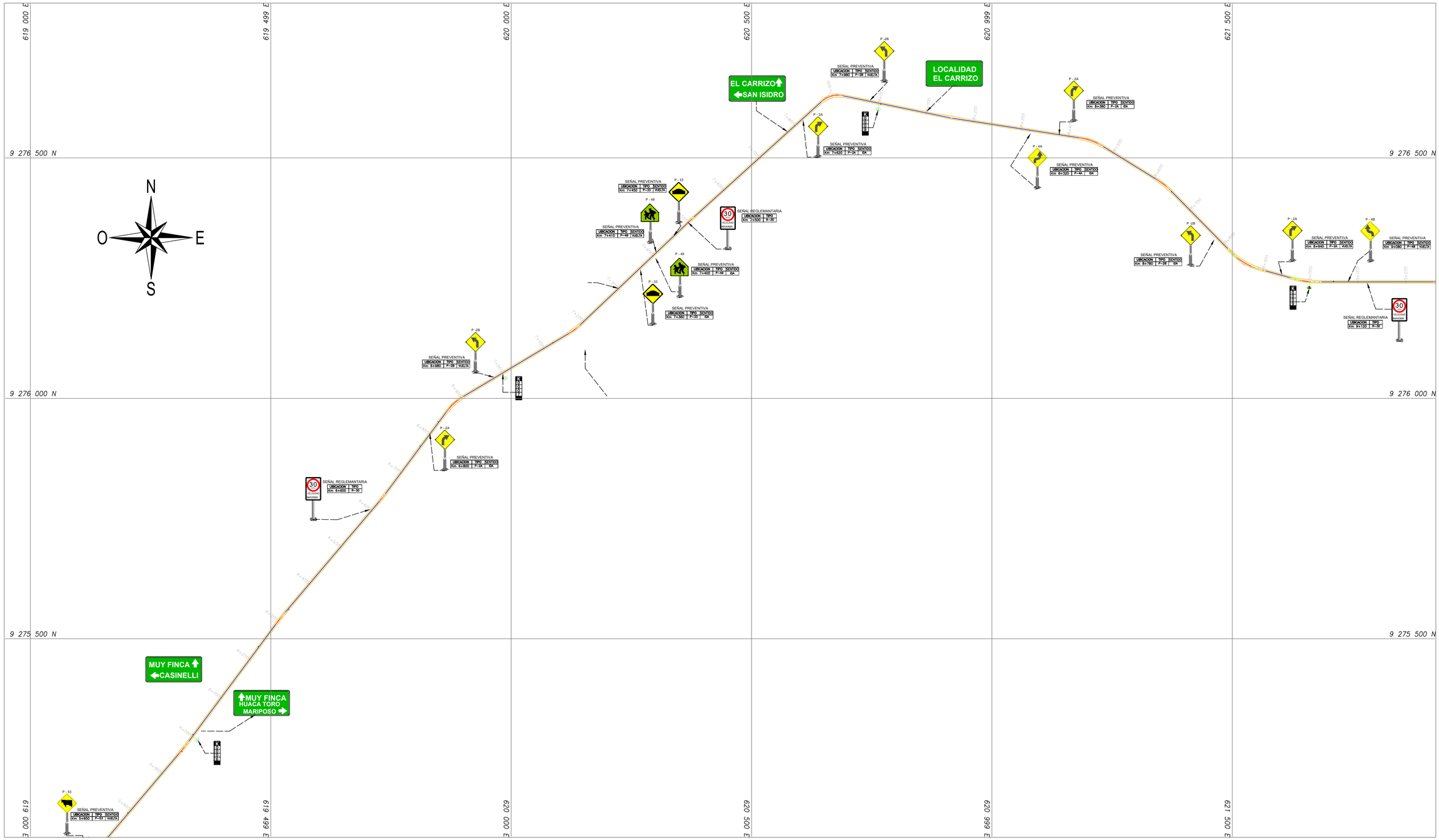
FECHA: Enero, 2026

UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**S-01**

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PLANO :

**SEÑALIZACION**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: 1/4000

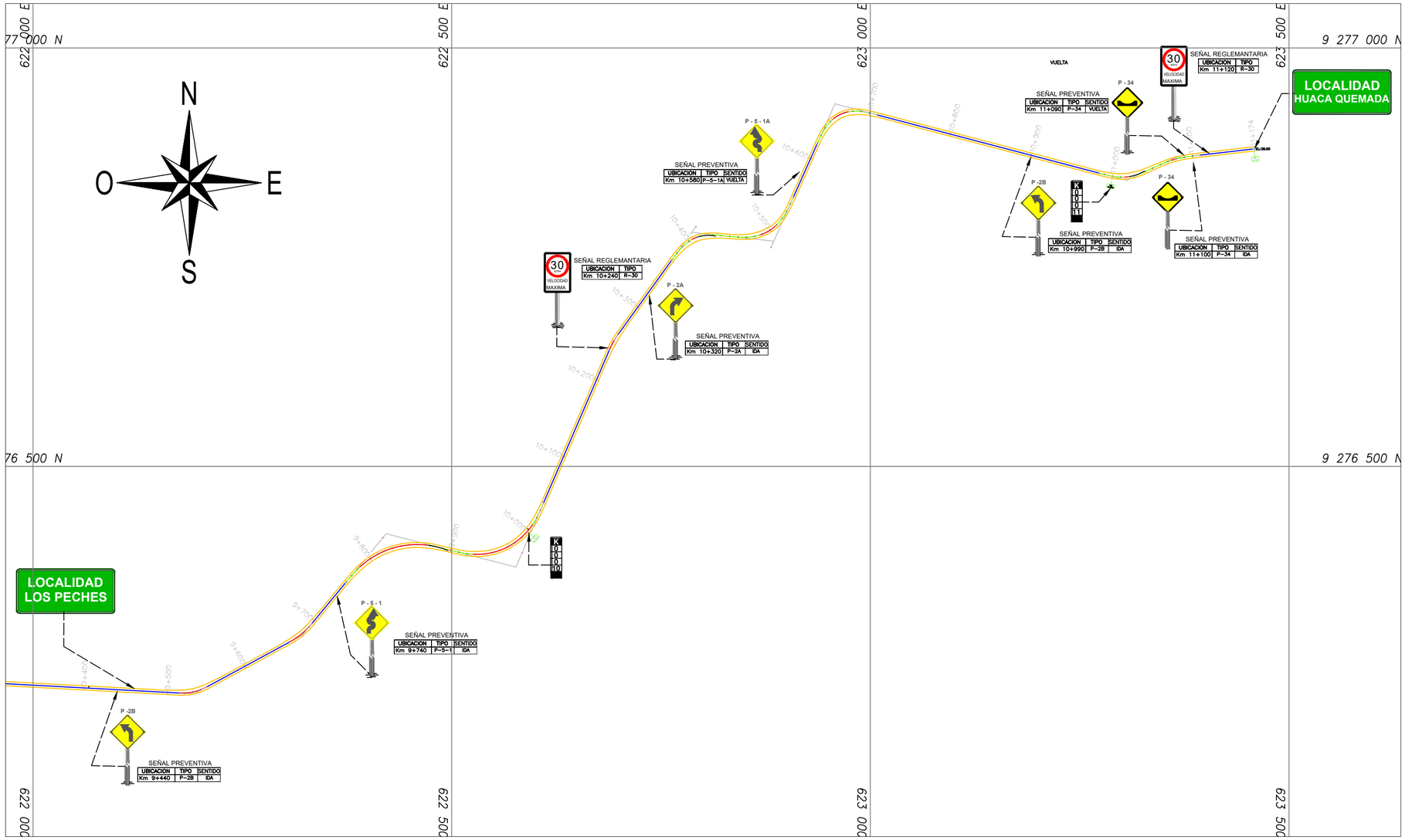
FECHA: Enero, 2026

UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**S-02**




## LEYENDA

| | |
|---|---|
| EJE DE VIA | LOCALIDAD HUACA TORO — LOCALIZACIÓN |
| HITO KILOMETRICO | P - 53 — ANIMALES EN VÍA |
| R - 30 — VELOCIDAD MÁXIMA | P - 5 - 1 — CURVA SINUOSO (DERECHA) |
| P - 2A — CURVA A LA DERECHA | P - 5 - 1A — CURVA SINUOSO (IZQUIERDA) |
| P -2B — CURVA A LA IZQUIERDA | P - 49 — ZONA ESCOLAR |
| P - 4A — CURVA Y CONTRACURVA (Derecha–Izquierda) | P - 33 — REDUCTOR DE VELOCIDAD |
| P - 4B — CURVA Y CONTRACURVA (Izquierda–Derecha) | P - 34 — PROXIMIDAD DE BADÉN |

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ORIENTACION:

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PLANO :

**SEÑALIZACION**

DOCENTE ASESOR:

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ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.


ESC: 1/4000

FECHA: Enero, 2026

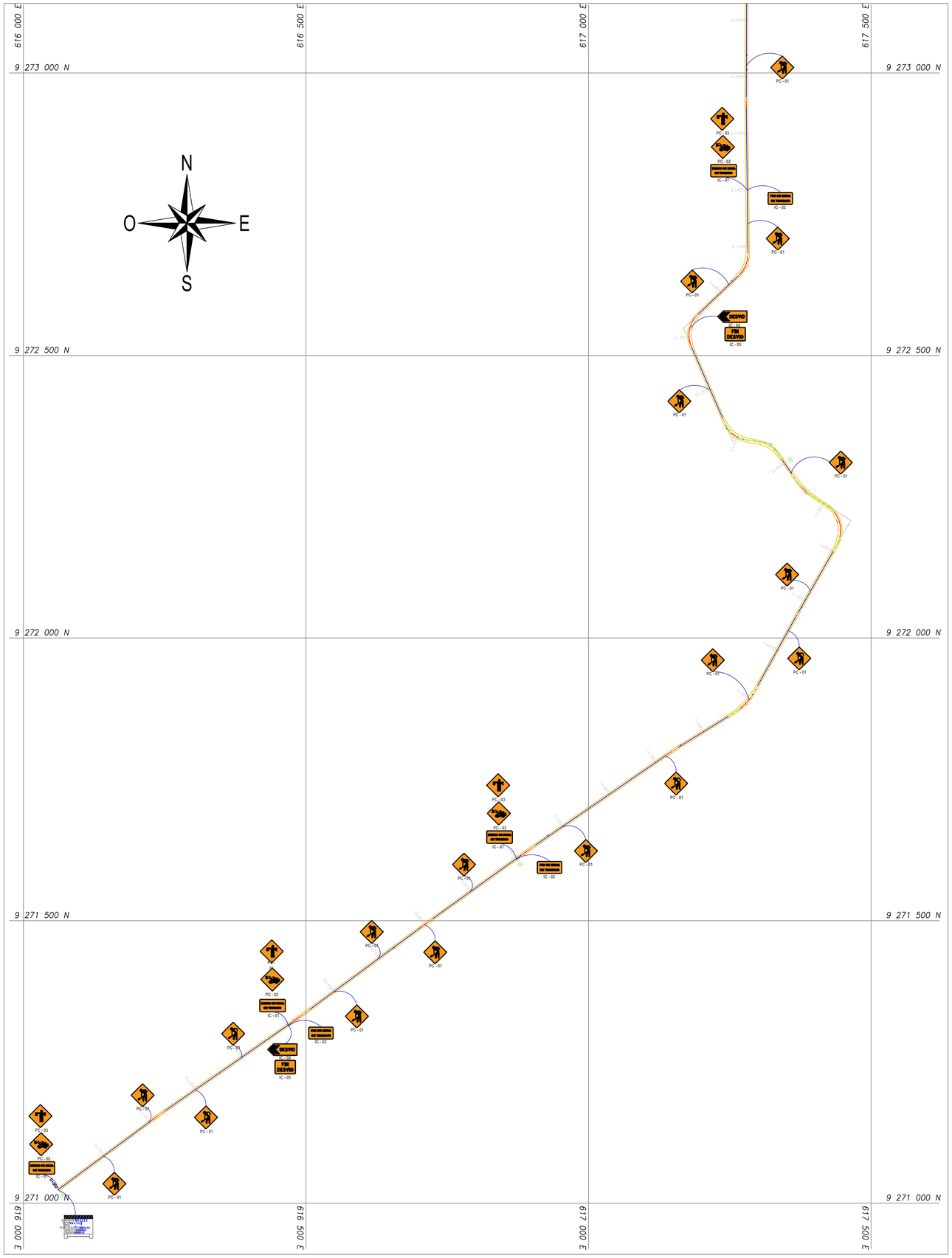
UBICACION DEL PROYECTO

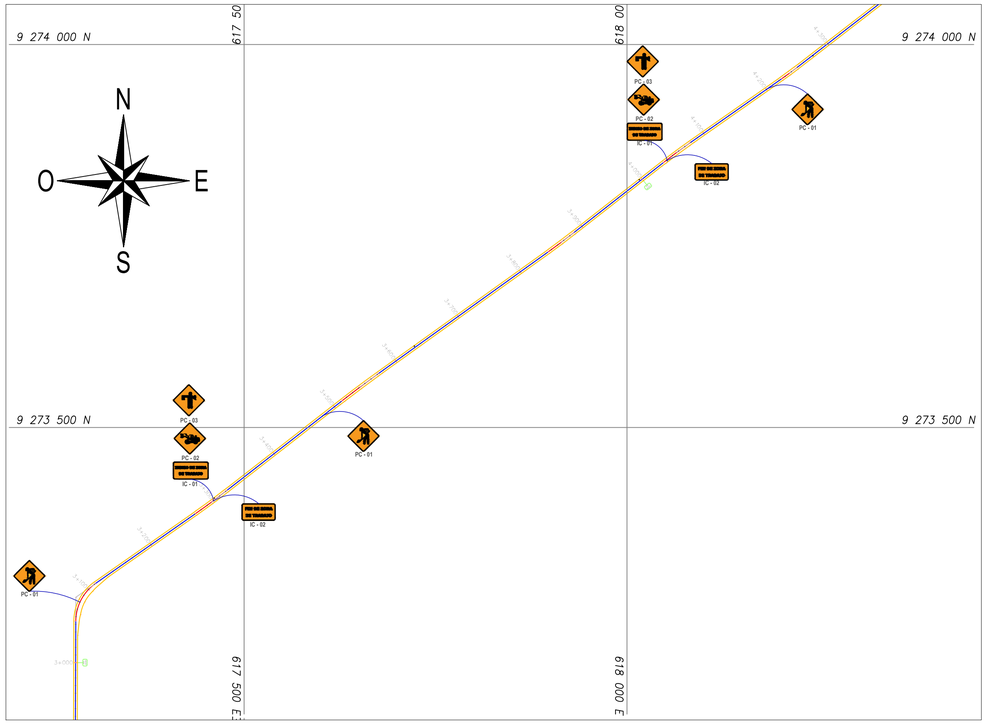
MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

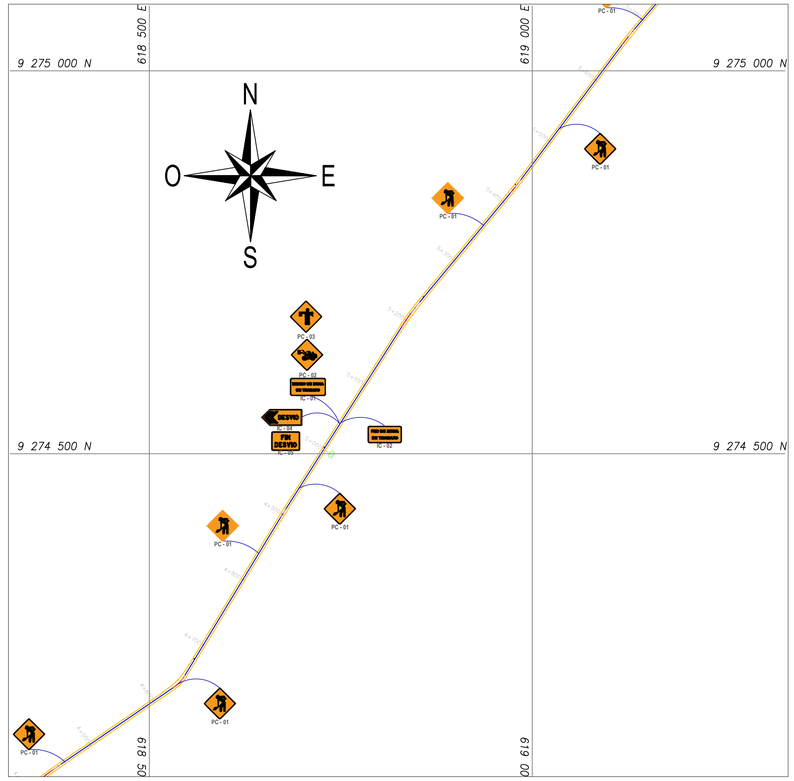
LAMINA Nº

**S-03**

# PLANO DE SEÑALIZACIÓN DE OBRA

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ESCUELA PROFESIONAL INGENIERÍA CIVIL

ORIENTACION:

N

PROYECTO :

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PLANO :

**SEÑALIZACION PARA OBRA**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: 1/4000

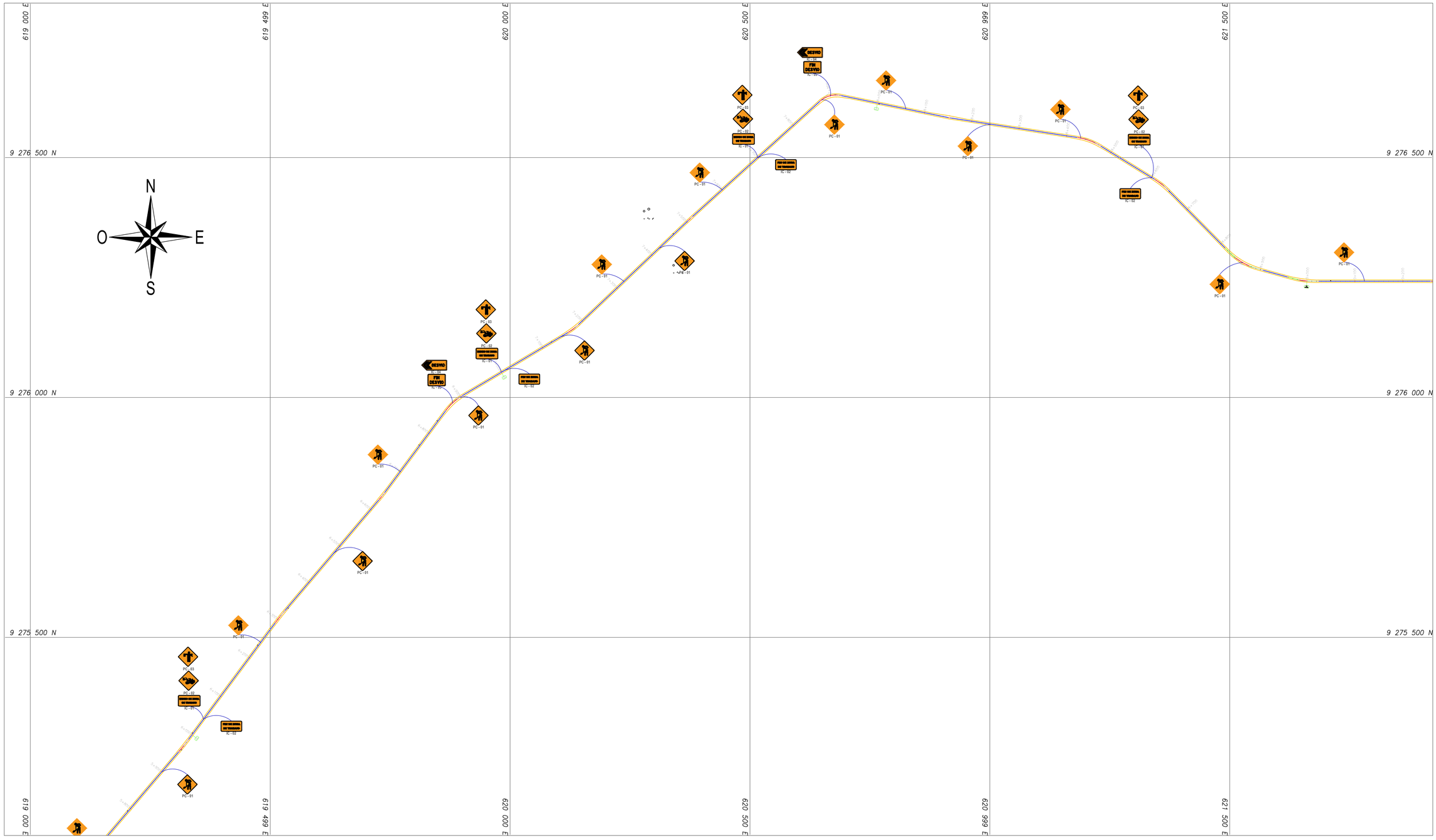
FECHA: Enero, 2026

UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**SO-01**

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PLANO :

**SEÑALIZACION PARA OBRA**

DOCENTE ASESOR:

ING. ANAYA MORALES ROGER ANTONIO

ALUMNOS:

ARROYO AYALA, MILAGROS.

SANCHEZ MONTENEGRO, NOLBER RICARDO.

ESC: 1/4000

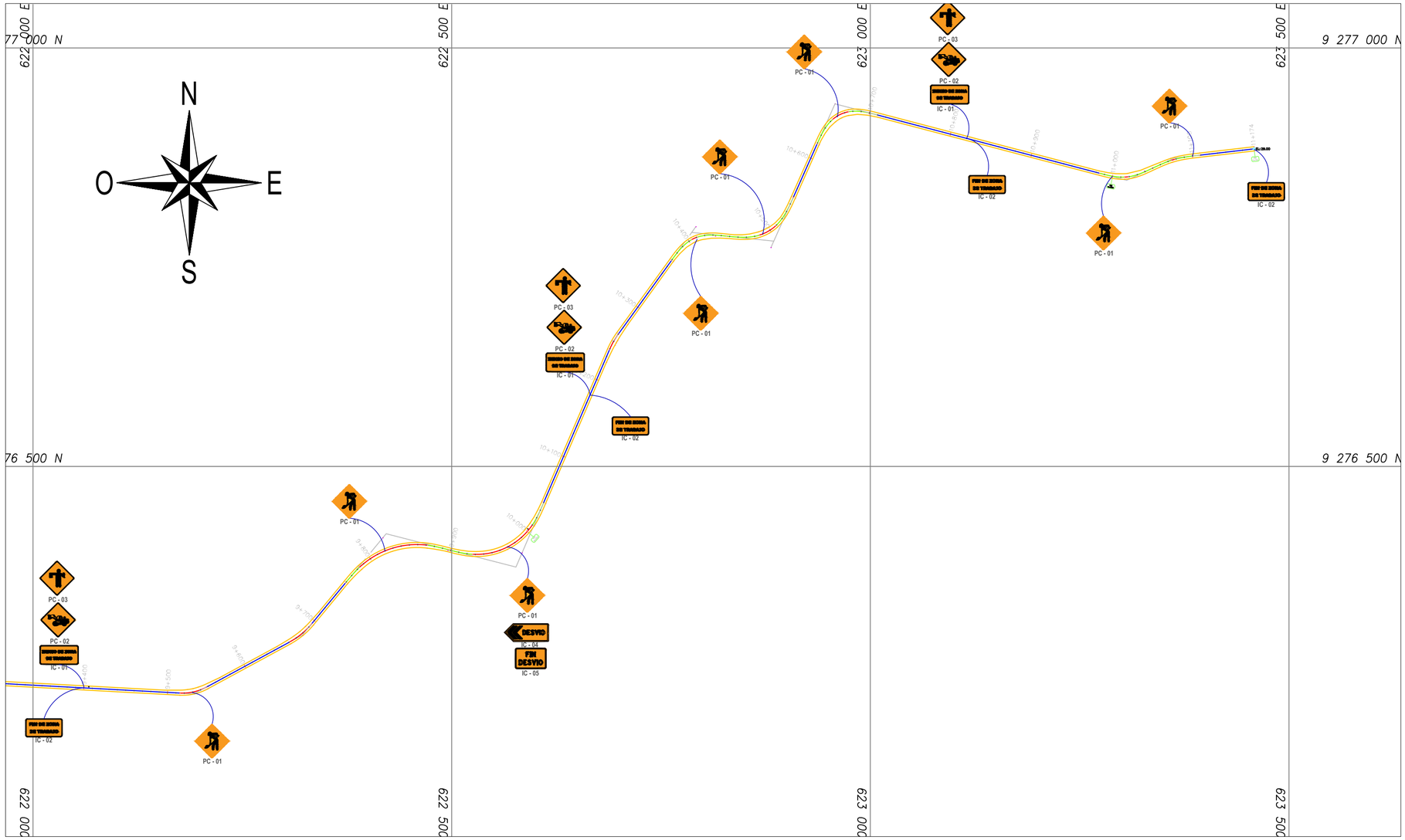
FECHA: Enero, 2026

UBICACION DEL PROYECTO

MOCHUMÍ – LAMBAYEQUE
LAMBAYEQUE – PERÚ

LAMINA Nº

**SO-02**




# LEYENDA

| | |
|---|---|
| (PC - 01) ZONA DE TRABAJO | (IC- 01) INICIO DE ZONA DE TRABAJO |
| (PC - 02) MAQUINARIA DE LA VÍA | (IC- 02) FIN DE ZONA DE TRABAJO |
| (PC - 03) BANDERILLERO | (IC- 04) DESVÍO |
| | (IC- 05) FIN DESVÍO |

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MOCHUMÍ – LAMBAYEQUE LAMBAYEQUE – PERÚ

LAMINA Nº

**SO-03**