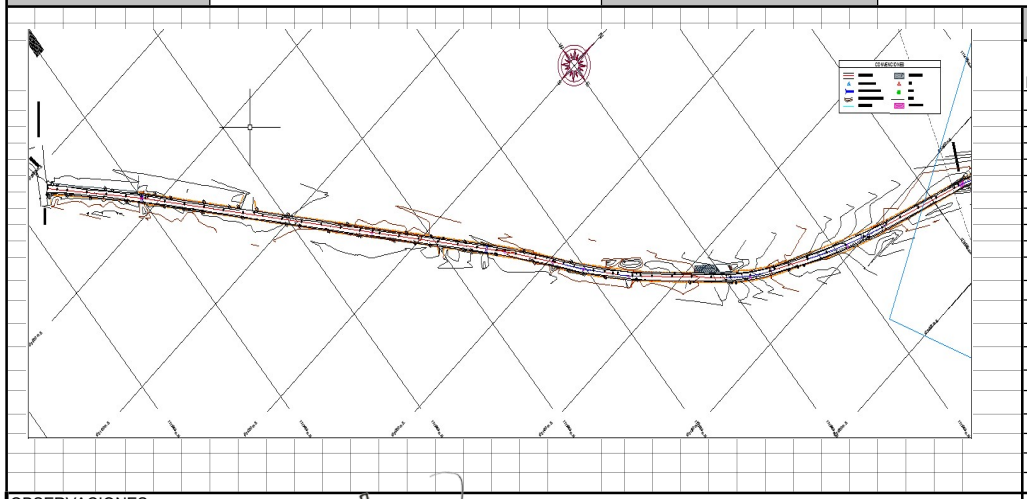
## MEMORIAS DE CALCULO.

| FECHA | DD | 12 | MM | 5 | AA | 17 | ITEM | 1,1 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

**PROYECTO:** PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA

| CAPÍTULO | 1.PAVIMENTO FLEXIBLE | ITEM | 1.1 LOCALIZACION Y REPLANTEO TOPOGRAFICO | UNID. | M | UBICACIÓN | |
|---|---|---|---|---|---|---|---|



| Localización | Dimensiones | | | Cantidad / m2 | Medida Total |
|---|---|---|---|---|---|
| | Área (m2) | Ancho (m) | Longitud (km) | | |
| Localización y Replanteo | 39845,00 | 6,50 | 6,13 | 0 | 6,13 |
| | | | Subtotal | | 6,13 |
| | | | 0% | | 0,00 |
| | | | TOTAL | | 6,13 |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

## MEMORIAS DE CALCULO.

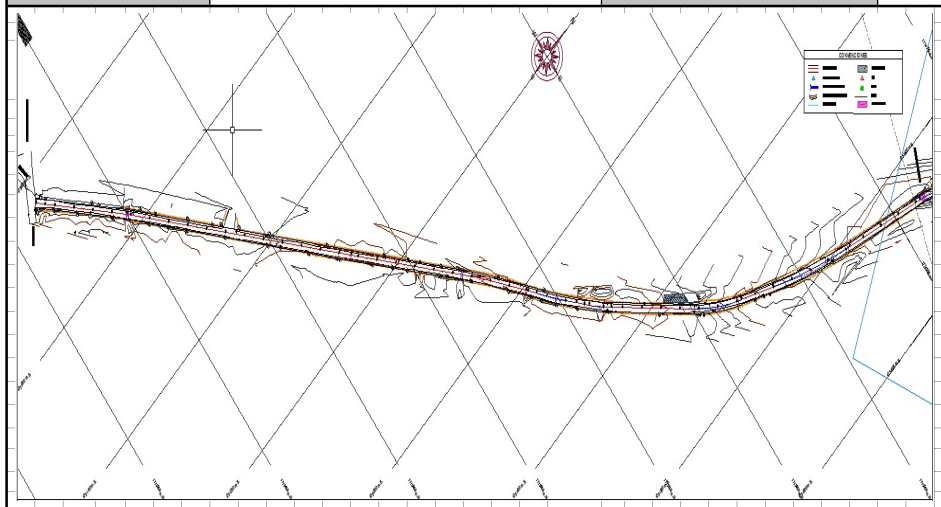
| FECHA | DD | 12 | MM | 5 | AA | 17 |
|---|---|---|---|---|---|---|

| ITEM | 1,2 |
|---|---|

| ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|

**PROYECTO:** PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA

| CAPÍTULO | 1.PAVIMENTO FLEXIBLE | ITEM | 1.2 DEMOLICION PAVIMENTO ASFALTICO E<=10 CMS(INCLUYE CARGUE Y TRANSPORTE HASTA 5 KM) | UNID. | M2 | UBICACIÓN | |
|---|---|---|---|---|---|---|---|



| Localización | Dimensiones ancho (m) | Espesor (m) | Longitud (m) | Cantidad / m2 | Medida Total |
|---|---|---|---|---|---|
| k00+000 al k01+342 | 6,50 | 0,00 | 1342,00 | 8723 | 8723,00 |
| | | | Subtotal | | 8.723,00 |
| | | | 0% | | 0,00 |
| | | | TOTAL | | 8.723,00 |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

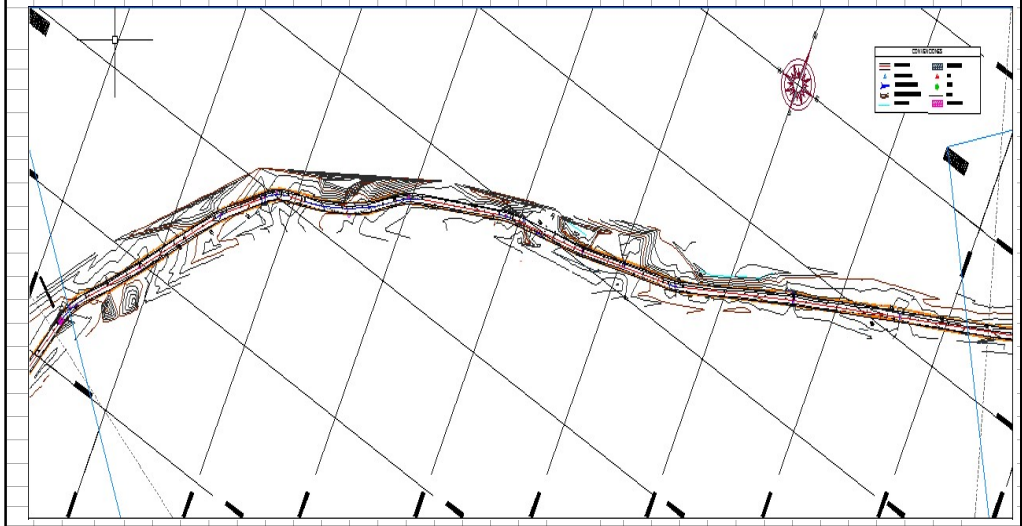
| FECHA | DD | 12 | MM | 5 | AA | 17 |
|---|---|---|---|---|---|---|

| ITEM | 1,3 |
|---|---|

| ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 1.PAVIMENTO FLEXIBLE | ITEM | 1,3 APERTURA MECANICA DE CAJA Y RETIRO DE SOBRANTES | UNID. | M3 | UBICACIÓN | |
|---|---|---|---|---|---|---|---|



| Localización | Dimensiones ancho (m) | Espesor (m) | Longitud (m) | Cantidad | Medida Total |
|---|---|---|---|---|---|
| EXCAVACIÓN MECÁNICA | 6,50 | 0,27 | 6128,00 | | 10754,64 |
| Subtotal | | | | | 10.754,64 |
| 0% | | | | | 0,00 |
| TOTAL | | | | | 10.754,64 |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

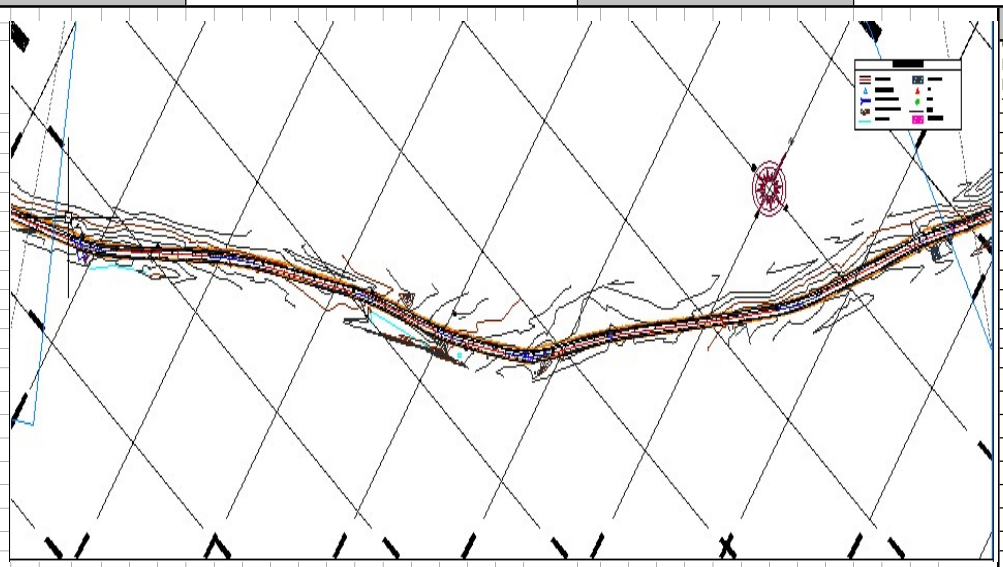
| FECHA | DD | 12 | MM | 5 | AA | 17 |
|---|---|---|---|---|---|---|

| ITEM | 1,4 |
|---|---|

| ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 1.PAVIMENTO FLEXIBLE | ITEM | 1,4 CUNETEO, PERFILADO Y COMPACTACION DE MATERIAL SELECCIONADO PARA SUBBASE GRANULAR | UNID. | KM | UBICACIÓN | |
|---|---|---|---|---|---|---|---|



| Localización | Dimensiones | | | Cantidad | Medida Total |
|---|---|---|---|---|---|
| | ancho (m) | Espesor (m) | Longitud (m) | | |
| CUNETEO Y PERFILADO DE LA BANCA LONGITUD TOTAL | 6,50 | 0,27 | 6128,00 | | 6,13 |
| | | | | Subtotal | 6,13 |
| | | | | 0% | 0,00 |
| | | | | TOTAL | 6,13 |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

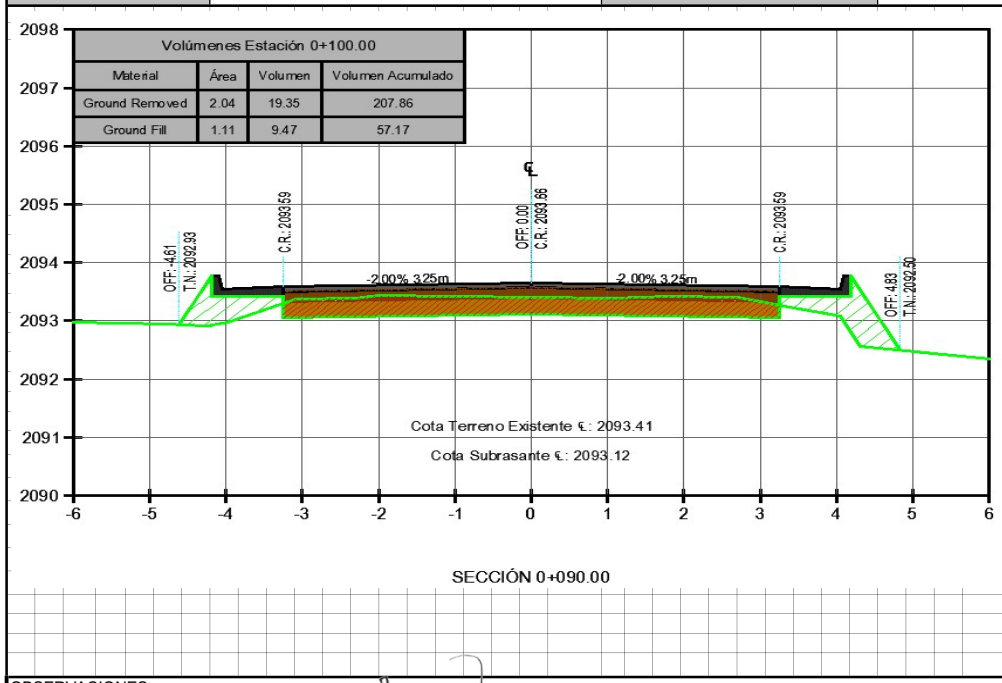
| FECHA | DD | 12 | MM | 5 | AA | 17 |
|---|---|---|---|---|---|---|

| ITEM | 1,5 |
|---|---|

| ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 1.PAVIMENTO FLEXIBLE | ITEM | 1,5 SUMINISTRO, EXTENDIDA Y COMPACTACION DE MATERIAL SELECCIONADO PARA SUBBASE GRANULAR | UNID. | M3 | UBICACIÓN | |
|---|---|---|---|---|---|---|---|




SECCIÓN 0+090.00

| Localización | Dimensiones ancho (m) | Espesor (m) | Longitud (m) | Cantidad | Medida Total |
|---|---|---|---|---|---|
| SUMINISTRO, EXTENDIDA Y COMPACTACION DE MATERIAL SELECCIONADO PARA SUBBASE GRANULAR (INCLUYE ACARREO LIBRE DE 5KM) (**) | 6,50 | 0,25 | 6128,00 | | 9958,00 |
| | | | | Subtotal | 9.958,00 |
| | | | | 0% | 0,00 |
| | | | | TOTAL | 9.958,00 |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

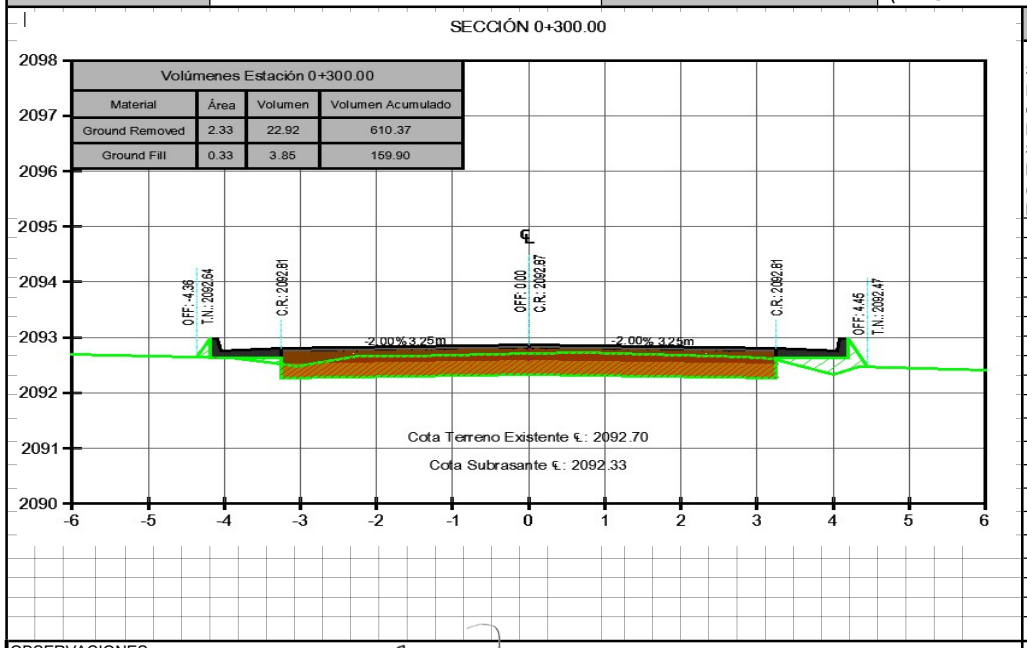
| FECHA | DD | 12 | MM | 5 | AA | 17 |
|---|---|---|---|---|---|---|

| ITEM | 1,6 |
|---|---|

| ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 1.PAVIMENTO FLEXIBLE | ITEM | 1,6 SUMINISTRO, EXTENDIDA Y COMPACTACION DE MATERIAL SELECCIONADO PARA BASE GRANULAR (INCLUYE ACARREO LIBRE DE 5KM) (**) | UNID. | M3 | UBICACIÓN | |
|---|---|---|---|---|---|---|---|




| Localización | Dimensiones ancho (m) | Espesor (m) | Longitud (m) | Cantidad | Medida Total |
|---|---|---|---|---|---|
| SUMINISTRO, EXTENDIDA Y COMPACTACION DE MATERIAL SELECCIONADO PARA BASE GRANULAR (INCLUYE ACARREO LIBRE DE 5KM) (**) | 6,50 | 0,20 | 6128,00 | | 7966,40 |
| | | | | Subtotal | 7.966,40 |
| | | | | 0% | 0,00 |
| | | | | TOTAL | 7.966,40 |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

| FECHA | DD | 12 | MM | 5 | AA | 17 |
|---|---|---|---|---|---|---|

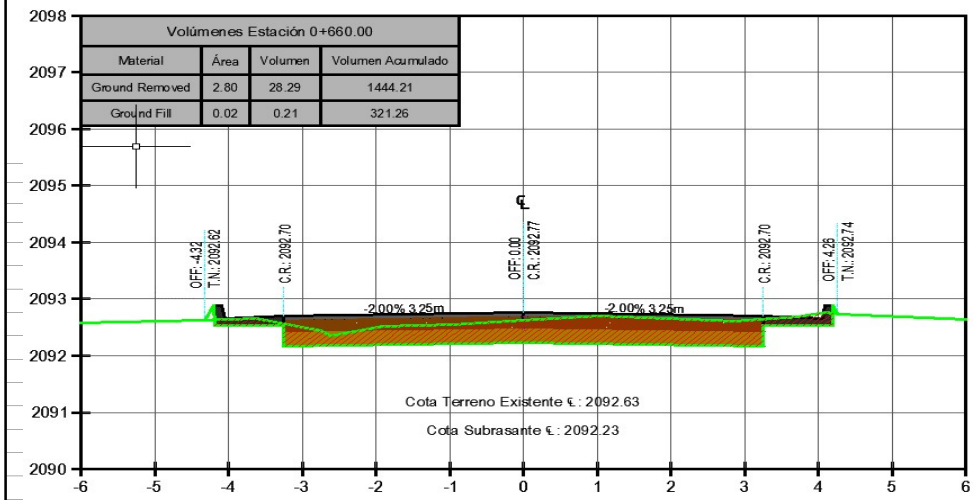
| ITEM | 1,7 |
|---|---|

| ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 1.PAVIMENTO FLEXIBLE | ITEM | 1,7 CONSTRUCCION DE CARPETA ASFALTICA EN CALIENTE, INCLUYE BARRIDO, SUMINISTRO Y COMPACTACION ( INCLUYE ACARREO LIBRE DE 5 KM) NORMA INVIAS (**) | UNID. | M3 | UBICACIÓN | |
|---|---|---|---|---|---|---|---|

SECCIÓN 0+660.00




| Volúmenes Estación 0+660.00 | | | |
|---|---|---|---|
| Material | Área | Volumen | Volumen Acumulado |
| Ground Removed | 2.80 | 28.29 | 1444.21 |
| Ground Fill | 0.02 | 0.21 | 321.26 |

| Localización | Dimensiones ancho (m) | Espesor (m) | Longitud (m) | Cantidad | Medida Total |
|---|---|---|---|---|---|
| CONSTRUCCION DE CARPETA ASFALTICA EN CALIENTE, INCLUYE BARRIDO, SUMINISTRO Y COMPACTACION ( INCLUYE ACARREO LIBRE DE 5 KM) NORMA INVIAS (**) | 6,50 | 0,09 | 6128,00 | | 3584,88 |
| | | | Subtotal | | 3.584,88 |
| | | | 0% | | 0,00 |
| | | | TOTAL | | 3.584,88 |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

## MEMORIAS DE CALCULO.

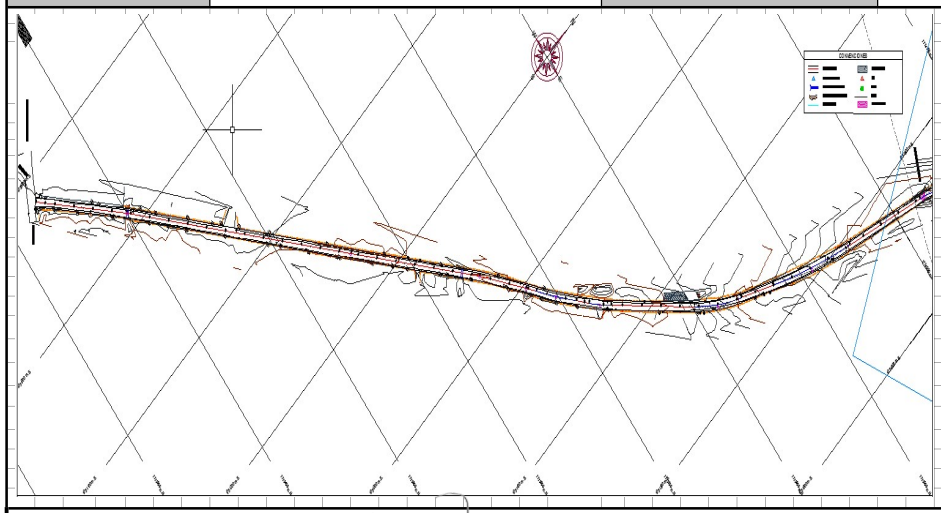
| FECHA | DD | 12 | MM | 5 | AA | 17 |
|---|---|---|---|---|---|---|

| ITEM | 1,8 |
|---|---|

| ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 1.PAVIMENTO FLEXIBLE | ITEM | 1.8 IMPRIMACIÓN CON EMULSIÓN ASFÁLTICA CRL-1H | UNID. | M2 | UBICACIÓN | |
|---|---|---|---|---|---|---|---|



| Localización | Dimensiones ancho (m) | Espesor (m) | Longitud (m) | Cantidad / m2 | Medida Total |
|---|---|---|---|---|---|
| IMPRIMACIÓN CON EMULSIÓN ASFÁLTICA CRL-1H | 6,50 | 0,00 | 6128,00 | 39832 | 39832,00 |
| | | | | Subtotal | 39.832,00 |
| | | | | 0% | 0,00 |
| | | | | TOTAL | 39.832,00 |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

| FECHA | DD | 12 | MM | 5 | AA | 17 |
|---|---|---|---|---|---|---|

| ITEM | 1,9 |
|---|---|

| ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 1.PAVIMENTO FLEXIBLE | ITEM | 1,9 TRANSPORTE DE MATERIAL DE AFIRMADO Y/O GRANULAR DESPUÉS DE 5 KM (INSTALADO Y COMPACTADO SEGÚN SECCIÓN DE DISEÑO). | UNID. | M3-KM | UBICACIÓN | |
|---|---|---|---|---|---|---|---|

| Localización | Dimensiones ancho (m) | Espesor (m) | Longitud (m) | Distancia (Km) | Medida Total |
|---|---|---|---|---|---|
| MATERIAL SELECCIONADO PARA SUBBASE | | 9958,00 | | 25 | 248950,00 |
| MATERIAL SELECCIONADO PARA BASE GRANULAR | | 7966,40 | | 25 | 199160,00 |
| RELLENO CON MATERIAL DE AFIRMADO | | 424,54 | | 25 | 10613,40 |
| **Subtotal** | | | | | **458.723,40** |
| **0%** | | | | | 0,00 |
| **TOTAL** | | | | | **458.723,40** |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

| FECHA | DD | 12 | MM | 5 | AA | 17 |
|---|---|---|---|---|---|---|

| ITEM | 1,10 |
|---|---|

| ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 1.PAVIMENTO FLEXIBLE | ITEM | 1,10 TRANSPORTE DE MEZCLA ASFALTICA DESPUES DE 5 KM, (INSTALADO Y COMPACTADO SEGÚN SECCIÓN DE DISEÑO). | UNID. | M3-KM | UBICACIÓN | |
|---|---|---|---|---|---|---|---|

| Localización | Dimensiones ancho (m) | Espesor (m) | Longitud (m) | Distancia (Km) | Medida Total |
|---|---|---|---|---|---|
| TRANSPORTE DE MEZCLA ASFALTICA DESPUES DE 5 KM, (INSTALADO Y | 6,50 | 0,09 | 6128,00 | 45 | 161319,60 |
| | | | | Subtotal | 161.319,60 |
| | | | | 0% | 0,00 |
| | | | | TOTAL | 161.319,60 |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

| FECHA | DD | 12 | MM | 5 | AA | 17 | ITEM | 1,11 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 1.PAVIMENTO FLEXIBLE | ITEM | 1,11 TRANPORTE DE MATERIAL SUELTO DESPUES DE 5 KM | UNID. | M3-KM | UBICACIÓN | |
|---|---|---|---|---|---|---|---|

| Localización | Dimensiones | | | Distancia*coef exp | Medida Total |
|---|---|---|---|---|---|
| | ancho (m) | Espesor (m) | Longitud (m) | | |
| DEMOLICION PAVIMENTO ASFALTICO | | 872,30 | | 13 | 11339,90 |
| APERTURA MECANICA DE CAJA Y RETIRO DE SOBRANTES | | 10754,64 | | 13 | 139810,32 |
| EXCAVACION MANUAL EN MATERIAL COMUN | | 814,80 | | 13 | 10592,35 |
| EXCAVACIONES MECANICAS VARIAS EN MATERIAL COMUN SECO | | 4412,16 | | 13 | 57358,08 |
| | | | | Subtotal | 219.100,65 |
| | | | | 0% | 0,00 |
| | | | | TOTAL | 219.100,65 |

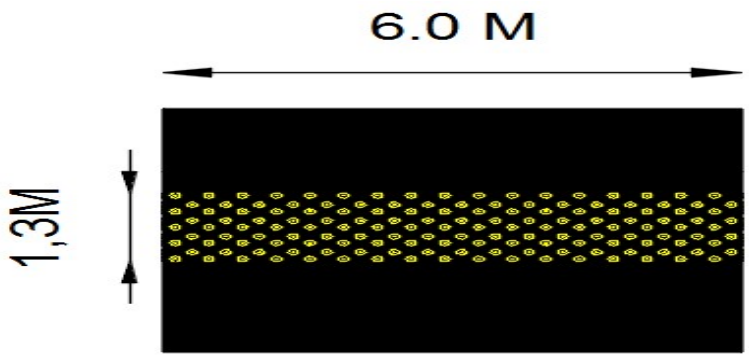
OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

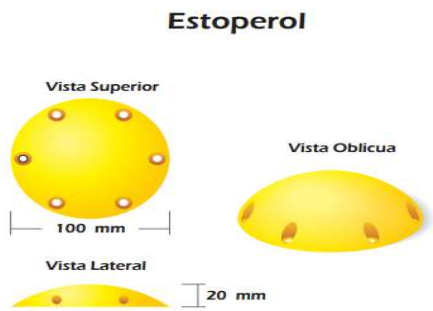
| MEMORIAS DE CALCULO. | | |
|---|---|---|

| FECHA | DD | 12 | MM | 5 | AA | 17 | ITEM | 2,1 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 2.SEÑALIZACION | ITEM | 2,1 ESTOPEROLES D=10 CM H=25 CMS | UNID. | UND | UBICACIÓN | |
|---|---|---|---|---|---|---|---|




| ABSCISA | Dimensiones Área (m2) | Ancho (m) | Longitud (km) | Cantidad / m2 | Medida Total |
|---|---|---|---|---|---|
| K0+910 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K0+990 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K1+120 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K1+200 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K1+380 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K1+460 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K1+760 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K1+840 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K1+900 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K1+980 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K2+180 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K2+260 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K2+720 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K2+800 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K2+900 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K2+904 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K2+980 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K2+984 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K3+030 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K3+110 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K3+480 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K3+560 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K3+650 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K3+730 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K4+040 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K4+120 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K4+640 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K4+720 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K4+860 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K4+940 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K5+220 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K5+300 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K5+460 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K5+540 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K6+080 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| K6+120 | 7,80 | 1,30 | 6,00 | 153 | 153 |
| | | | Subtotal | | 5.508,00 |
| | | | 0% | | 0,00 |
| | | | TOTAL | | 5.508,00 |

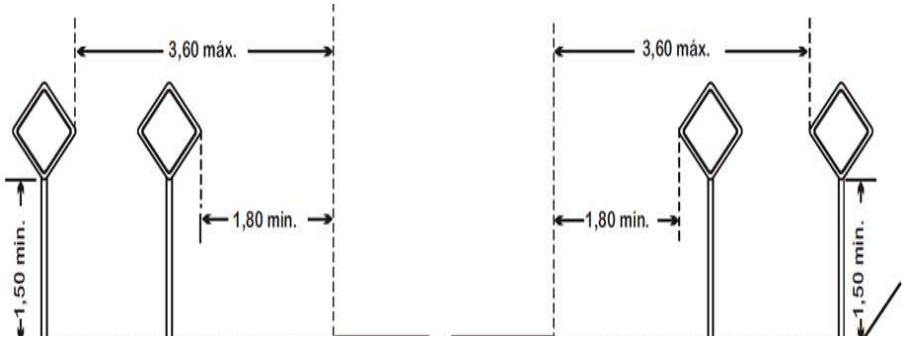
OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

| MEMORIAS DE CALCULO. | | |
|---|---|---|

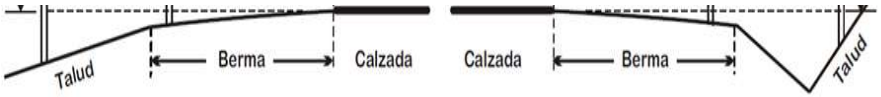
| FECHA | DD | 12 | MM | 5 | AA | 17 | ITEM | 2,2 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 2.SEÑALIZACION | ITEM | 2,2 SEÑALES DE TRANSITO 0.90*1.13 MTS (INFORMATIVAS) SEGUN NORMA INVIAS | UNID. | UND | UBICACIÓN | | |
|---|---|---|---|---|---|---|---|---|



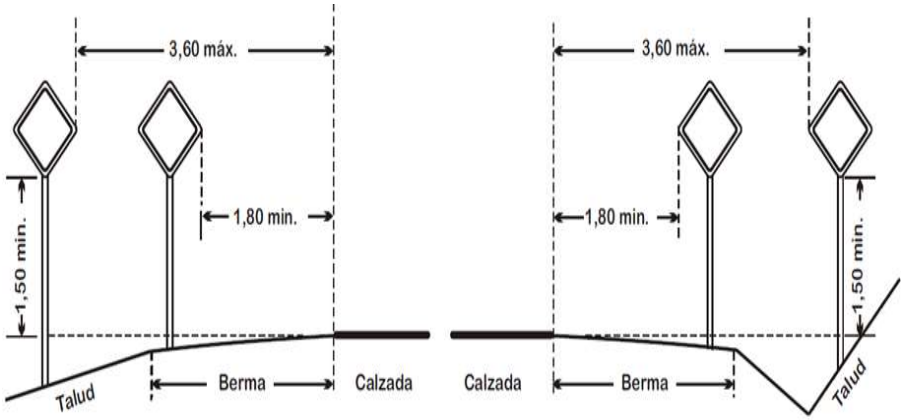

| ABSCISA | IDENTIFICACION | | | CANTIDAD | Medida Total |
|---|---|---|---|---|---|
| | TIPO | CODIGO | NOMBRE | | |
| 0+020 | Reglamentaria | SR-30 (30 KM/H) | ELOCIDAD MÁXIM | 1 | 1 |
| 0+040 | Preventiva | SP-39 | SENTIDOS DE TRAN | 1 | 1 |
| 0+100 | Preventiva | SP-49 | NIMALES EN LA VI | 1 | 1 |
| 0+150 | Preventiva | SP-12 | LATERAL IZQUIER | 1 | 1 |
| 0+220 | Preventiva | SP-59 | ICLISTAS EN LA VI | 1 | 1 |
| 0+330 | Preventiva | SP-13 | A LATERAL DEREC | 1 | 1 |
| 0+400 | Preventiva | SP- 45 | QUINARIA AGRICO | 1 | 1 |
| 0+530 | Preventiva | SP-13 | A LATERAL DEREC | 1 | 1 |
| 0+630 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 0+700 | Preventiva | SP-59 | ICLISTAS EN LA VI | 1 | 1 |
| 0+800 | Preventiva | SP-67 | ESGO DE ACCIDEN | 1 | 1 |
| 0+860 | Preventiva | SP -24 | SUPERFICIE RISAD | 1 | 1 |
| 0+900 | Preventiva | SP-04 | RONUNCIADA A LA | 1 | 1 |
| 1+070 | Preventiva | SP -24 | SUPERFICIE RISAD | 1 | 1 |
| 1+100 | Preventiva | SP-04 | RONUNCIADA A LA | 1 | 1 |
| 1+150 | Preventiva | SP-49 | NIMALES EN LA VI | 1 | 1 |
| 1+200 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 1+270 | Preventiva | SP-04 | RONUNCIADA A LA | 1 | 1 |
| 1+330 | Preventiva | SP -24 | SUPERFICIE RISAD | 1 | 1 |
| 1+340 | Preventiva | SP-04 | RONUNCIADA A LA | 1 | 1 |
| 1+500 | Preventiva | SP-67 | ESGO DE ACCIDEN | 1 | 1 |
| 1+710 | Preventiva | SP -24 | SUPERFICIE RISAD | 1 | 1 |
| 1+850 | Preventiva | SP -24 | SUPERFICIE RISAD | 1 | 1 |
| 1+890 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 2+100 | Preventiva | SP- 45 | QUINARIA AGRICO | 1 | 1 |
| 2+130 | Preventiva | SP -24 | SUPERFICIE RISAD | 1 | 1 |
| 2+150 | Preventiva | SP-13 | A LATERAL DEREC | 1 | 1 |
| 2+200 | Preventiva | SP-49 | NIMALES EN LA VI | 1 | 1 |
| 2+310 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 2+420 | Preventiva | SP-59 | ICLISTAS EN LA VI | 1 | 1 |
| 2+500 | Preventiva | SP-13 | A LATERAL DEREC | 1 | 1 |
| 2+555 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 2+670 | Preventiva | SP -24 | SUPERFICIE RISAD | 1 | 1 |
| 2+680 | Preventiva | SP- 45 | QUINARIA AGRICO | 1 | 1 |
| 2+700 | Preventiva | SP-12 | LATERAL IZQUIER | 1 | 1 |
| 2+850 | Preventiva | SP -24 | SUPERFICIE RISAD | 1 | 1 |
| 2+880 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |




| | | | | | |
|---|---|---|---|---|---|
| 2+900 | Preventiva | SP-47 | ZONA ESCOLAR | 1 | 1 |
| 2+940 | Preventiva | SP-47B | CIÓN DE CRUCE ES | 2 | 2 |
| 2+970 | Preventiva | SP -24 | SUPERFICIE RISADA | 1 | 1 |
| 2+980 | Preventiva | SP-04 | RONUNCIADA A LA | 1 | 1 |
| 3+050 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 3+110 | Preventiva | SP-04 | RONUNCIADA A LA | 1 | 1 |
| 3+140 | Reglamentaria | SR-30 (30 KM/H) | ELOCIDAD MÁXIM | 1 | 1 |
| 3+180 | Preventiva | SP-49 | NIMALES EN LA VI | 1 | 1 |
| 3+300 | Preventiva | SP-67 | ESGO DE ACCIDEN | 1 | 1 |
| 3+420 | Preventiva | SP -24 | SUPERFICIE RISADA | 1 | 1 |
| 3+430 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 3+580 | Preventiva | SP-04 | RONUNCIADA A LA | 1 | 1 |
| 3+600 | Preventiva | SP -24 | SUPERFICIE RISADA | 1 | 1 |
| 3+990 | Preventiva | SP -24 | SUPERFICIE RISADA | 1 | 1 |
| 4+010 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 4+100 | Preventiva | SP-59 | ICLISTAS EN LA VI | 1 | 1 |
| 4+200 | Preventiva | SP-49 | NIMALES EN LA VI | 1 | 1 |
| 4+280 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 4+590 | Preventiva | SP -24 | SUPERFICIE RISADA | 1 | 1 |
| 4+600 | Preventiva | SP-04 | RONUNCIADA A LA | 1 | 1 |
| 4+810 | Preventiva | SP -24 | SUPERFICIE RISADA | 1 | 1 |
| 4+830 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 5+000 | Preventiva | SP-59 | ICLISTAS EN LA VI | 1 | 1 |
| 5+160 | Preventiva | SP -24 | SUPERFICIE RISADA | 1 | 1 |
| 5+170 | Preventiva | SP-04 | RONUNCIADA A LA | 1 | 1 |
| 5+200 | Preventiva | SP- 45 | QUINARIA AGRICO | 1 | 1 |
| 5+230 | Preventiva | SP-49 | NIMALES EN LA VI | 1 | 1 |

## Tabla 2.3-1 Guía para ubicación de señales de prevención

| Límite actual o velocidad 85% (km/h) | Distancia de adelantamiento[1] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Condición A: Reducción de velocidad y cambio de carril con alto volumen de tránsito[2] | Condición B: Velocidad máxima segura de la situación señalizada | | | | | | | |
| | | 0[3] | 20[4] | 30[4] | 50 | 60[4] | 80[4] | 100[4] | 110[4] |
| 30 | 70 m | 30 m[6] | N/A[5] | – | – | – | – | – | – |
| 40 | 100 m | 30 m[6] | N/A[5] | N/A[5] | – | – | – | – | – |
| 50 | 140 m | 30 m[6] | N/A[5] | N/A[5] | – | – | – | – | – |
| 60 | 200 m | 35 m | 30 m[6] | 30 m[6] | N/A[5] | – | – | – | – |
| 70 | 235 m | 50 m | 40 m | 30 m[6] | 30 m[6] | N/A[5] | – | – | – |
| 80 | 270 m | 75 m | 60 m | 50 m | 35 m | 30 m[6] | – | – | – |
| 90 | 300 m | 100 m | 80 m | 70 m | 60 m | 35 m | N/A[5] | – | – |
| 100 | 365 m | 145 m | 135 m | 120 m | 105 m | 80 m | 60 m | 30 m[6] | – |
| 110 | 380 m | 170 m | 160 m | 150 m | 135 m | 114 m | 80 m | 45 m | – |




| | | | | | |
|---|---|---|---|---|---|
| 5+270 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 5+280 | Preventiva | SP-13 | A LATERAL DEREC | 1 | 1 |
| 5+320 | Preventiva | SP-67 | ESGO DE ACCIDEN | 1 | 1 |
| 5+410 | Preventiva | SP -24 | SUPERFICIE RISAD/ | 1 | 1 |
| 5+420 | Preventiva | SP-04 | ZONUNCIADA A LA | 1 | 1 |
| 5+600 | Preventiva | SP-59 | ICLISTAS EN LA VI | 1 | 1 |
| 6+020 | Preventiva | SP -24 | SUPERFICIE RISAD/ | 1 | 1 |
| 6+100 | Reglamentaria | SR-30 | ELOCIDAD MÁXIM | 1 | 1 |
| 6+100 | Reglamentaria | SR-30 (30 KM/H) | ELOCIDAD MÁXIM | 1 | 1 |
| 6+060 | Preventiva | SP-39 | SENTIDOS DE TRAN | 1 | 1 |
| 5+800 | Preventiva | SP-67 | ESGO DE ACCIDEN | 1 | 1 |
| 5+650 | Preventiva | SP-59 | ICLISTAS EN LA VI | 1 | 1 |
| 5+590 | Preventiva | SP -24 | SUPERFICIE RISAD/ | 1 | 1 |
| 5+560 | Preventiva | SP-12 | A LATERAL IZQUIER | 1 | 1 |
| 5+500 | Preventiva | SP- 45 | QUINARIA AGRICO | 1 | 1 |
| 5+410 | Preventiva | SP-04 | ZONUNCIADA A LA | 1 | 1 |
| 5+400 | Preventiva | SP-12 | A LATERAL IZQUIER | 1 | 1 |
| 5+350 | Preventiva | SP -24 | SUPERFICIE RISAD/ | 1 | 1 |
| 5+310 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 5+150 | Preventiva | SP-49 | NIMALES EN LA VI | 1 | 1 |
| 5+000 | Preventiva | SP -24 | SUPERFICIE RISAD/ | 1 | 1 |
| 4+970 | Preventiva | SP-04 | ZONUNCIADA A LA | 1 | 1 |
| 4+775 | Preventiva | SP -24 | SUPERFICIE RISAD/ | 1 | 1 |
| 4+740 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 4+600 | Preventiva | SP-67 | ESGO DE ACCIDEN | 1 | 1 |
| 4+500 | Preventiva | SP-59 | ICLISTAS EN LA VI | 1 | 1 |
| 4+425 | Preventiva | SP-04 | ZONUNCIADA A LA | 1 | 1 |
| 4+188 | Preventiva | SP -24 | SUPERFICIE RISAD/ | 1 | 1 |
| 4+170 | Preventiva | SP-49 | NIMALES EN LA VI | 1 | 1 |
| 4+155 | Preventiva | SP-04 | ZONUNCIADA A LA | 1 | 1 |
| 3+790 | Preventiva | SP -24 | SUPERFICIE RISAD/ | 1 | 1 |
| 3+760 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 3+690 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 3+600 | Preventiva | SP -24 | SUPERFICIE RISAD/ | 1 | 1 |
| 3+570 | Preventiva | SP-04 | ZONUNCIADA A LA | 1 | 1 |
| 3+400 | Preventiva | SP-67 | ESGO DE ACCIDEN | 1 | 1 |
| 3+240 | Preventiva | SP-04 | ZONUNCIADA A LA | 1 | 1 |
| 3+180 | Preventiva | SP -24 | SUPERFICIE RISAD/ | 1 | 1 |
| 3+160 | Reglamentaria | SR-30 (30 KM/H) | ELOCIDAD MÁXIM | 1 | 1 |
| 3+140 | Preventiva | SP-04 | ZONUNCIADA A LA | 1 | 1 |
| 3+070 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 3+040 | Preventiva | SP -24 | SUPERFICIE RISAD/ | 1 | 1 |
| 3+020 | Preventiva | SP-04 | ZONUNCIADA A LA | 1 | 1 |
| 2+980 | Preventiva | SP-47 | ZONA ESCOLAR | 1 | 1 |
| 2+950 | Preventiva | SP -24 | SUPERFICIE RISAD/ | 1 | 1 |
| 2+900 | Preventiva | SP-49 | NIMALES EN LA VI | 1 | 1 |
| 2+870 | Preventiva | SP -24 | SUPERFICIE RISAD/ | 1 | 1 |
| 2+840 | Preventiva | SP-13 | A LATERAL DEREC | 1 | 1 |
| 2+740 | Preventiva | SP- 45 | QUINARIA AGRICO | 1 | 1 |
| 2+700 | Preventiva | SP-04 | ZONUNCIADA A LA | 1 | 1 |
| 2+640 | Preventiva | SP-12 | A LATERAL IZQUIER | 1 | 1 |
| 2+550 | Preventiva | SP-59 | ICLISTAS EN LA VI | 1 | 1 |
| 2+450 | Preventiva | SP-04 | ZONUNCIADA A LA | 1 | 1 |
| 2+310 | Preventiva | SP -24 | SUPERFICIE RISAD/ | 1 | 1 |
| 2+290 | Preventiva | SP-12 | A LATERAL IZQUIER | 1 | 1 |
| 2+100 | Preventiva | SP-49 | NIMALES EN LA VI | 1 | 1 |
| 2+030 | Preventiva | SP -24 | SUPERFICIE RISAD/ | 1 | 1 |

| | | | | | |
|---|---|---|---|---|---|
| 2+000 | Preventiva | SP-04 | RONUNCIADA A LA | 1 | 1 |
| 1+890 | Preventiva | SP -24 | SUPERFICIE RISADA | 1 | 1 |
| 1+700 | Preventiva | SP-67 | ESGO DE ACCIDEN | 1 | 1 |
| 1+600 | Preventiva | SP-59 | ICLISTAS EN LA VI | 1 | 1 |
| 1+505 | Preventiva | SP -24 | SUPERFICIE RISADA | 1 | 1 |
| 1+490 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 1+360 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 1+280 | Preventiva | SP-04 | RONUNCIADA A LA | 1 | 1 |
| 1+250 | Preventiva | SP -24 | SUPERFICIE RISADA | 1 | 1 |
| 1+240 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 1+100 | Preventiva | SP-49 | NIMALES EN LA VI | 1 | 1 |
| 1+050 | Preventiva | SP -24 | SUPERFICIE RISADA | 1 | 1 |
| 1+040 | Preventiva | SP-03 | ONUNCIADA A LA I | 1 | 1 |
| 0+770 | Preventiva | SP-04 | RONUNCIADA A LA | 1 | 1 |
| 0+670 | Preventiva | SP-12 | LATERAL IZQUIER | 1 | 1 |
| 0+570 | Preventiva | SP- 45 | QUINARIA AGRICO | 1 | 1 |
| 0+470 | Preventiva | SP-12 | LATERAL IZQUIER | 1 | 1 |
| 0+350 | Preventiva | SP-59 | ICLISTAS EN LA VI | 1 | 1 |
| 0+290 | Preventiva | SP-13 | A LATERAL DEREC | 1 | 1 |
| 0+200 | Preventiva | SP-67 | ESGO DE ACCIDEN | 1 | 1 |
| 0+130 | Preventiva | SP-49 | NIMALES EN LA VI | 1 | 1 |
| 0+020 | Reglamentaria | SR-30 | ELOCIDAD MÀXIM | 1 | 1 |
| | | | **Subtotal** | | **144,00** |
| | | | **0%** | | 0,00 |
| | | | **TOTAL** | | **144,00** |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

## MEMORIAS DE CALCULO.

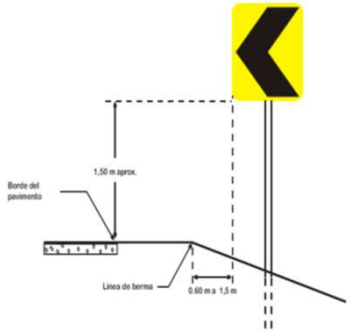
| FECHA | DD | 12 | MM | 5 | AA | 17 |
|---|---|---|---|---|---|---|

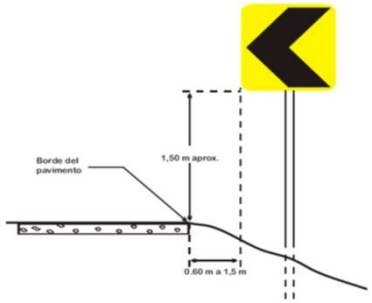
| ITEM | 2,3 |
|---|---|

| ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 2.SEÑALIZACION | ITEM | 2,3 SEÑALES DE TRANSITO DIMENSIONES 60*75 CMS (DELINEADORES DE CURVA) SEGUN NORMA INVIAS | UNID. | UND | UBICACIÓN | |
|---|---|---|---|---|---|---|---|




| ABSCISA | IDENTIFICACION CURVA | CANTIDAD | Medida Total |
|---|---|---|---|
| K2+347 | C1 | 2 | 2 |
| K2+380 | | 2 | 2 |
| K2+413 | | 2 | 2 |
| K2+917 | C2 | 2 | 2 |
| K2+950 | | 2 | 2 |
| K2+983 | | 2 | 2 |
| K3+620 | C3 | 2 | 2 |
| K3+658 | | 2 | 2 |
| K3+696 | | 2 | 2 |
| K3+734 | | 2 | 2 |
| K4+642 | C4 | 2 | 2 |
| K4+680 | | 2 | 2 |
| K4+718 | | 2 | 2 |
| K4+867 | C5 | 2 | 2 |
| K4+900 | | 2 | 2 |
| K4+933 | | 2 | 2 |
| K5+442 | C6 | 2 | 2 |
| K5+480 | | 2 | 2 |
| K5+518 | | 2 | 2 |
| | Subtotal | | 38,00 |
| | 0% | | 0,00 |
| | TOTAL | | 38,00 |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

| MEMORIAS DE CALCULO. | | |
|---|---|---|

| FECHA | DD | 12 | MM | 5 | AA | 17 | ITEM | 2,4 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 2.SEÑALIZACION | ITEM | 2,4 SUMINISTRO E INSTALACION DE TACHAS REFLECTIVAS UNIDIRECCIONALES Y BIDIRECCIONALES | UNID. | UND | UBICACIÓN | |
|---|---|---|---|---|---|---|---|

| UBICACIÓN DE TACHAS DE BORDE TRAMO K0+000 A K6+128 | | | | | | | | CANTIDAD |
|---|---|---|---|---|---|---|---|---|
| K0+000 | K0+820 | 1+628 | K2+432 | K3+236 | K4+040 | K4+844 | K5+648 | 16 |
| K0+004 | K0+824 | 1+632 | K2+436 | K3+240 | K4+044 | K4+848 | K5+652 | 16 |
| K0+008 | K0+828 | 1+636 | K2+440 | K3+244 | K4+048 | K4+852 | K5+656 | 16 |
| K0+012 | K0+832 | 1+640 | K2+444 | K3+248 | K4+052 | K4+856 | K5+660 | 16 |
| K0+016 | K0+836 | 1+644 | K2+448 | K3+252 | K4+056 | K4+860 | K5+664 | 16 |
| K0+020 | K0+840 | 1+648 | K2+452 | K3+256 | K4+060 | K4+864 | K5+668 | 16 |
| K0+024 | K0+844 | 1+652 | K2+456 | K3+260 | K4+064 | K4+868 | K5+672 | 16 |
| K0+028 | K0+848 | 1+656 | K2+460 | K3+264 | K4+068 | K4+872 | K5+676 | 16 |
| K0+032 | K0+852 | 1+660 | K2+464 | K3+268 | K4+072 | K4+876 | K5+680 | 16 |
| K0+036 | K0+856 | 1+664 | K2+468 | K3+272 | K4+076 | K4+880 | K5+684 | 16 |
| K0+040 | K0+860 | 1+668 | K2+472 | K3+276 | K4+080 | K4+884 | K5+688 | 16 |
| K0+044 | K0+864 | 1+672 | K2+476 | K3+280 | K4+084 | K4+888 | K5+692 | 16 |
| K0+048 | K0+868 | 1+676 | K2+480 | K3+284 | K4+088 | K4+892 | K5+696 | 16 |
| K0+052 | K0+872 | 1+680 | K2+484 | K3+288 | K4+092 | K4+896 | K5+700 | 16 |
| K0+056 | K0+876 | 1+684 | K2+488 | K3+292 | K4+096 | K4+900 | K5+704 | 16 |
| K0+060 | K0+880 | 1+688 | K2+492 | K3+296 | K4+100 | K4+904 | K5+708 | 16 |
| K0+064 | K0+884 | 1+692 | K2+496 | K3+300 | K4+104 | K4+908 | K5+712 | 16 |
| K0+068 | K0+888 | 1+696 | K2+500 | K3+304 | K4+108 | K4+912 | K5+716 | 16 |
| K0+072 | K0+892 | 1+700 | K2+504 | K3+308 | K4+112 | K4+916 | K5+720 | 16 |
| K0+076 | K0+896 | 1+704 | K2+508 | K3+312 | K4+116 | K4+920 | K5+724 | 16 |
| K0+080 | K0+900 | 1+708 | K2+512 | K3+316 | K4+120 | K4+924 | K5+728 | 16 |
| K0+084 | K0+904 | 1+712 | K2+516 | K3+320 | K4+124 | K4+928 | K5+732 | 16 |
| K0+088 | K0+908 | 1+716 | K2+520 | K3+324 | K4+128 | K4+932 | K5+736 | 16 |
| K0+092 | K0+912 | 1+720 | K2+524 | K3+328 | K4+132 | K4+936 | K5+740 | 16 |
| K0+096 | K0+916 | 1+724 | K2+528 | K3+332 | K4+136 | K4+940 | K5+744 | 16 |
| K0+100 | K0+920 | 1+728 | K2+532 | K3+336 | K4+140 | K4+944 | K5+748 | 16 |
| K0+104 | K0+924 | 1+732 | K2+536 | K3+340 | K4+144 | K4+948 | K5+752 | 16 |
| K0+108 | K0+928 | 1+736 | K2+540 | K3+344 | K4+148 | K4+952 | K5+756 | 16 |
| K0+112 | K0+932 | 1+740 | K2+544 | K3+348 | K4+152 | K4+956 | K5+760 | 16 |
| K0+116 | K0+936 | 1+744 | K2+548 | K3+352 | K4+156 | K4+960 | K5+764 | 16 |
| K0+120 | K0+940 | 1+748 | K2+552 | K3+356 | K4+160 | K4+964 | K5+768 | 16 |
| K0+124 | K0+944 | 1+752 | K2+556 | K3+360 | K4+164 | K4+968 | K5+772 | 16 |
| K0+128 | K0+948 | 1+756 | K2+560 | K3+364 | K4+168 | K4+972 | K5+776 | 16 |
| K0+132 | K0+952 | 1+760 | K2+564 | K3+368 | K4+172 | K4+976 | K5+780 | 16 |
| K0+136 | K0+956 | 1+764 | K2+568 | K3+372 | K4+176 | K4+980 | K5+784 | 16 |
| K0+140 | K0+960 | 1+768 | K2+572 | K3+376 | K4+180 | K4+984 | K5+788 | 16 |
| K0+144 | K0+964 | 1+772 | K2+576 | K3+380 | K4+184 | K4+988 | K5+792 | 16 |
| K0+148 | K0+968 | 1+776 | K2+580 | K3+384 | K4+188 | K4+992 | K5+796 | 16 |
| K0+152 | K0+972 | 1+780 | K2+584 | K3+388 | K4+192 | K4+996 | K5+800 | 16 |
| K0+156 | K0+976 | 1+784 | K2+588 | K3+392 | K4+196 | K5+000 | K5+804 | 16 |
| K0+160 | K0+980 | 1+788 | K2+592 | K3+396 | K4+200 | K5+004 | K5+808 | 16 |
| K0+164 | K0+984 | 1+792 | K2+596 | K3+400 | K4+204 | K5+008 | K5+812 | 16 |
| K0+168 | K0+988 | 1+796 | K2+600 | K3+404 | K4+208 | K5+012 | K5+816 | 16 |
| K0+172 | K0+992 | 1+800 | K2+604 | K3+408 | K4+212 | K5+016 | K5+820 | 16 |
| K0+176 | K0+996 | 1+804 | K2+608 | K3+412 | K4+216 | K5+020 | K5+824 | 16 |
| K0+180 | K1+004 | 1+808 | K2+612 | K3+416 | K4+220 | K5+024 | K5+828 | 16 |
| K0+184 | K1+008 | 1+812 | K2+616 | K3+420 | K4+224 | K5+028 | K5+832 | 16 |
| K0+188 | K1+012 | 1+816 | K2+620 | K3+424 | K4+228 | K5+032 | K5+836 | 16 |
| K0+192 | K1+016 | 1+820 | K2+624 | K3+428 | K4+232 | K5+036 | K5+840 | 16 |
| K0+196 | K1+020 | 1+824 | K2+628 | K3+432 | K4+236 | K5+040 | K5+844 | 16 |
| K0+200 | K1+024 | 1+828 | K2+632 | K3+436 | K4+240 | K5+044 | K5+848 | 16 |
| K0+204 | K1+028 | 1+832 | K2+636 | K3+440 | K4+244 | K5+048 | K5+852 | 16 |
| K0+208 | K1+032 | 1+836 | K2+640 | K3+444 | K4+248 | K5+052 | K5+856 | 16 |
| K0+212 | K1+036 | 1+840 | K2+644 | K3+448 | K4+252 | K5+056 | K5+860 | 16 |
| K0+216 | K1+040 | 1+844 | K2+648 | K3+452 | K4+256 | K5+060 | K5+864 | 16 |

**Tabla 3-3 Patrón - Demarcación / Brecha para líneas segmentadas**

| Velocidad máxima de la vía (km/h) | Patrón p(m) | Relación demarcación brecha | Largo demarcación (m) | Largo brecha (m) |
|---|---|---|---|---|
| Mayor a 60 | 12 | 3 a 5 | 4,5 | 7,5 |
| Menor o igual a 60 | 8 | 3 a 5 | 3 | 5 |
| Ciclovía | 3 | 1 a 2 | 1 | 2 |

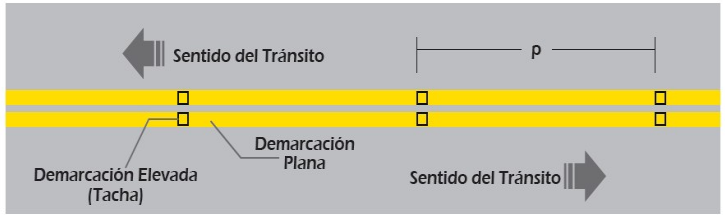
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| K0+220 | K1+044 | 1+848 | K2+652 | K3+456 | K4+260 | K5+064 | K5+868 | 16 |
| K0+224 | K1+048 | 1+852 | K2+656 | K3+460 | K4+264 | K5+068 | K5+872 | 16 |
| K0+228 | K1+052 | 1+856 | K2+660 | K3+464 | K4+268 | K5+072 | K5+876 | 16 |
| K0+232 | K1+056 | 1+860 | K2+664 | K3+468 | K4+272 | K5+076 | K5+880 | 16 |
| K0+236 | K1+060 | 1+864 | K2+668 | K3+472 | K4+276 | K5+080 | K5+884 | 16 |
| K0+240 | K1+064 | 1+868 | K2+672 | K3+476 | K4+280 | K5+084 | K5+888 | 16 |
| K0+244 | K1+068 | 1+872 | K2+676 | K3+480 | K4+284 | K5+088 | K5+892 | 16 |
| K0+248 | K1+072 | 1+876 | K2+680 | K3+484 | K4+288 | K5+092 | K5+896 | 16 |
| K0+252 | K1+076 | 1+880 | K2+684 | K3+488 | K4+292 | K5+096 | K5+900 | 16 |
| K0+256 | K1+080 | 1+884 | K2+688 | K3+492 | K4+296 | K5+100 | K5+904 | 16 |
| K0+260 | K1+084 | 1+888 | K2+692 | K3+496 | K4+300 | K5+104 | K5+908 | 16 |
| K0+264 | K1+088 | 1+892 | K2+696 | K3+500 | K4+304 | K5+108 | K5+912 | 16 |
| K0+268 | K1+092 | 1+896 | K2+700 | K3+504 | K4+308 | K5+112 | K5+916 | 16 |
| K0+272 | K1+096 | 1+900 | K2+704 | K3+508 | K4+312 | K5+116 | K5+920 | 16 |
| K0+276 | K1+100 | 1+904 | K2+708 | K3+512 | K4+316 | K5+120 | K5+924 | 16 |
| K0+280 | K1+104 | 1+908 | K2+712 | K3+516 | K4+320 | K5+124 | K5+928 | 16 |
| K0+284 | K1+108 | 1+912 | K2+716 | K3+520 | K4+324 | K5+128 | K5+932 | 16 |
| K0+288 | K1+112 | 1+916 | K2+720 | K3+524 | K4+328 | K5+132 | K5+936 | 16 |
| K0+292 | K1+116 | 1+920 | K2+724 | K3+528 | K4+332 | K5+136 | K5+940 | 16 |
| K0+296 | K1+120 | 1+924 | K2+728 | K3+532 | K4+336 | K5+140 | K5+944 | 16 |
| K0+300 | K1+124 | 1+928 | K2+732 | K3+536 | K4+340 | K5+144 | K5+948 | 16 |
| K0+304 | K1+128 | 1+932 | K2+736 | K3+540 | K4+344 | K5+148 | K5+952 | 16 |
| K0+308 | K1+132 | 1+936 | K2+740 | K3+544 | K4+348 | K5+152 | K5+956 | 16 |
| K0+312 | K1+136 | 1+940 | K2+744 | K3+548 | K4+352 | K5+156 | K5+960 | 16 |
| K0+316 | K1+140 | 1+944 | K2+748 | K3+552 | K4+356 | K5+160 | K5+964 | 16 |
| K0+320 | K1+144 | 1+948 | K2+752 | K3+556 | K4+360 | K5+164 | K5+968 | 16 |
| K0+324 | K1+148 | 1+952 | K2+756 | K3+560 | K4+364 | K5+168 | K5+972 | 16 |
| K0+328 | K1+152 | 1+956 | K2+760 | K3+564 | K4+368 | K5+172 | K5+976 | 16 |
| K0+332 | K1+156 | 1+960 | K2+764 | K3+568 | K4+372 | K5+176 | K5+980 | 16 |
| K0+336 | K1+160 | 1+964 | K2+768 | K3+572 | K4+376 | K5+180 | K5+984 | 16 |
| K0+340 | K1+164 | 1+968 | K2+772 | K3+576 | K4+380 | K5+184 | K5+988 | 16 |
| K0+344 | K1+168 | 1+972 | K2+776 | K3+580 | K4+384 | K5+188 | K5+992 | 16 |
| K0+348 | K1+172 | 1+976 | K2+780 | K3+584 | K4+388 | K5+192 | K5+996 | 16 |
| K0+352 | K1+176 | 1+980 | K2+784 | K3+588 | K4+392 | K5+196 | K6+000 | 16 |
| K0+356 | K1+180 | 1+984 | K2+788 | K3+592 | K4+396 | K5+200 | K6+004 | 16 |
| K0+360 | K1+184 | 1+988 | K2+792 | K3+596 | K4+400 | K5+204 | K6+008 | 16 |
| K0+364 | K1+188 | 1+992 | K2+796 | K3+600 | K4+404 | K5+208 | K6+012 | 16 |
| K0+368 | K1+192 | 1+996 | K2+800 | K3+604 | K4+408 | K5+212 | K6+016 | 16 |
| K0+372 | K1+196 | 2+000 | K2+804 | K3+608 | K4+412 | K5+216 | K6+020 | 16 |
| K0+376 | K1+200 | 2+004 | K2+808 | K3+612 | K4+416 | K5+220 | K6+024 | 16 |
| K0+380 | K1+204 | 2+008 | K2+812 | K3+616 | K4+420 | K5+224 | K6+028 | 16 |
| K0+384 | K1+208 | 2+012 | K2+816 | K3+620 | K4+424 | K5+228 | K6+032 | 16 |
| K0+388 | K1+212 | 2+016 | K2+820 | K3+624 | K4+428 | K5+232 | K6+036 | 16 |
| K0+392 | K1+216 | 2+020 | K2+824 | K3+628 | K4+432 | K5+236 | K6+040 | 16 |
| K0+396 | K1+220 | 2+024 | K2+828 | K3+632 | K4+436 | K5+240 | K6+044 | 16 |
| K0+400 | K1+224 | 2+028 | K2+832 | K3+636 | K4+440 | K5+244 | K6+048 | 16 |
| K0+404 | K1+228 | 2+032 | K2+836 | K3+640 | K4+444 | K5+248 | K6+052 | 16 |
| K0+408 | K1+232 | 2+036 | K2+840 | K3+644 | K4+448 | K5+252 | K6+056 | 16 |
| K0+412 | K1+236 | 2+040 | K2+844 | K3+648 | K4+452 | K5+256 | K6+060 | 16 |
| K0+416 | K1+240 | 2+044 | K2+848 | K3+652 | K4+456 | K5+260 | K6+064 | 16 |
| K0+420 | K1+244 | 2+048 | K2+852 | K3+656 | K4+460 | K5+264 | K6+068 | 16 |
| K0+424 | K1+248 | 2+052 | K2+856 | K3+660 | K4+464 | K5+268 | K6+072 | 16 |
| K0+428 | K1+252 | 2+056 | K2+860 | K3+664 | K4+468 | K5+272 | K6+076 | 16 |
| K0+432 | K1+256 | 2+060 | K2+864 | K3+668 | K4+472 | K5+276 | K6+080 | 16 |
| K0+436 | K1+260 | 2+064 | K2+868 | K3+672 | K4+476 | K5+280 | K6+084 | 16 |
| K0+440 | K1+264 | 2+068 | K2+872 | K3+676 | K4+480 | K5+284 | K6+088 | 16 |
| K0+444 | K1+268 | 2+072 | K2+876 | K3+680 | K4+484 | K5+288 | K6+092 | 16 |
| K0+448 | K1+272 | 2+076 | K2+880 | K3+684 | K4+488 | K5+292 | K6+096 | 16 |
| K0+452 | K1+276 | 2+080 | K2+884 | K3+688 | K4+492 | K5+296 | K6+100 | 16 |
| K0+456 | K1+280 | 2+084 | K2+888 | K3+692 | K4+496 | K5+300 | K6+104 | 16 |
| K0+460 | K1+284 | 2+088 | K2+892 | K3+696 | K4+500 | K5+304 | K6+108 | 16 |
| K0+464 | K1+288 | 2+092 | K2+896 | K3+700 | K4+504 | K5+308 | K6+112 | 16 |
| K0+468 | K1+292 | 2+096 | K2+900 | K3+704 | K4+508 | K5+312 | K6+116 | 16 |
| K0+472 | K1+296 | 2+100 | K2+904 | K3+708 | K4+512 | K5+316 | K6+120 | 16 |
| K0+476 | K1+300 | 2+104 | K2+908 | K3+712 | K4+516 | K5+320 | K6+124 | 16 |
| K0+480 | K1+304 | 2+108 | K2+912 | K3+716 | K4+520 | K5+324 | K6+128 | 16 |
| K0+484 | K1+308 | 2+112 | K2+916 | K3+720 | K4+524 | K5+328 | | 14 |
| K0+488 | K1+312 | 2+116 | K2+920 | K3+724 | K4+528 | K5+332 | | 14 |
| K0+492 | K1+316 | 2+120 | K2+924 | K3+728 | K4+532 | K5+336 | | 14 |
| K0+496 | K1+320 | 2+124 | K2+928 | K3+732 | K4+536 | K5+340 | | 14 |
| K0+500 | K1+324 | 2+128 | K2+932 | K3+736 | K4+540 | K5+344 | | 14 |
| K0+504 | K1+328 | 2+132 | K2+936 | K3+740 | K4+544 | K5+348 | | 14 |
| K0+508 | K1+332 | 2+136 | K2+940 | K3+744 | K4+548 | K5+352 | | 14 |
| K0+512 | K1+336 | 2+140 | K2+944 | K3+748 | K4+552 | K5+356 | | 14 |
| K0+516 | K1+340 | 2+144 | K2+948 | K3+752 | K4+556 | K5+360 | | 14 |
| K0+520 | K1+344 | 2+148 | K2+952 | K3+756 | K4+560 | K5+364 | | 14 |

## Tabla 3-3 Patrón - Demarcación / Brecha para líneas segmentadas

| Velocidad máxima de la vía (km/h) | Patrón (m) | Relación demarcación | Largo demarcación | Largo brecha |
|---|---|---|---|---|

| de la vía (km/h) | p(m) | brecha | (m) | (m) |
|---|---|---|---|---|
| Mayor a 60 | 12 | 3 a 5 | 4,5 | 7,5 |
| Menor o igual a 60 | 8 | 3 a 5 | 3 | 5 |
| Ciclovía | 3 | 1 a 2 | 1 | 2 |

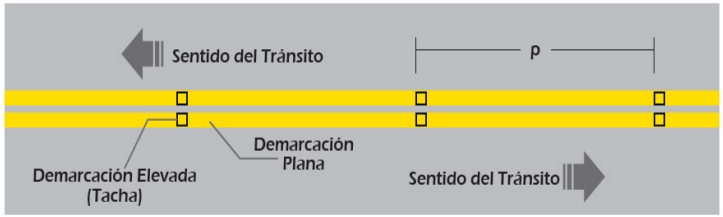
## Figura 3-10 Líneas Centrales Continuas Caso 4




Separación vía doble sentido con restricción de adelantamiento en ambos sentidos y una separación de tachas = p, según patrón de la Tabla 3-3.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| K0+524 | K1+348 | 2+152 | K2+956 | K3+760 | K4+564 | K5+368 | | 14 |
| K0+528 | K1+352 | 2+156 | K2+960 | K3+764 | K4+568 | K5+372 | | 14 |
| K0+532 | K1+356 | 2+160 | K2+964 | K3+768 | K4+572 | K5+376 | | 14 |
| K0+536 | K1+360 | 2+164 | K2+968 | K3+772 | K4+576 | K5+380 | | 14 |
| K0+540 | K1+364 | 2+168 | K2+972 | K3+776 | K4+580 | K5+384 | | 14 |
| K0+544 | K1+368 | 2+172 | K2+976 | K3+780 | K4+584 | K5+388 | | 14 |
| K0+548 | K1+372 | 2+176 | K2+980 | K3+784 | K4+588 | K5+392 | | 14 |
| K0+552 | K1+376 | 2+180 | K2+984 | K3+788 | K4+592 | K5+396 | | 14 |
| K0+556 | K1+380 | 2+184 | K2+988 | K3+792 | K4+596 | K5+400 | | 14 |
| K0+560 | K1+384 | 2+188 | K2+992 | K3+796 | K4+600 | K5+404 | | 14 |
| K0+564 | K1+388 | 2+192 | K2+996 | K3+800 | K4+604 | K5+408 | | 14 |
| K0+568 | K1+392 | 2+196 | K3+000 | K3+804 | K4+608 | K5+412 | | 14 |
| K0+572 | K1+396 | 2+200 | K3+004 | K3+808 | K4+612 | K5+416 | | 14 |
| K0+576 | K1+400 | 2+204 | K3+008 | K3+812 | K4+616 | K5+420 | | 14 |
| K0+580 | K1+404 | 2+208 | K3+012 | K3+816 | K4+620 | K5+424 | | 14 |
| K0+584 | K1+408 | 2+212 | K3+016 | K3+820 | K4+624 | K5+428 | | 14 |
| K0+588 | K1+412 | 2+216 | K3+020 | K3+824 | K4+628 | K5+432 | | 14 |
| K0+592 | K1+416 | 2+220 | K3+024 | K3+828 | K4+632 | K5+436 | | 14 |
| K0+596 | K1+420 | 2+224 | K3+028 | K3+832 | K4+636 | K5+440 | | 14 |
| K0+600 | K1+424 | 2+228 | K3+032 | K3+836 | K4+640 | K5+444 | | 14 |
| K0+604 | K1+428 | 2+232 | K3+036 | K3+840 | K4+644 | K5+448 | | 14 |
| K0+608 | K1+432 | 2+236 | K3+040 | K3+844 | K4+648 | K5+452 | | 14 |
| K0+612 | K1+436 | 2+240 | K3+044 | K3+848 | K4+652 | K5+456 | | 14 |
| K0+616 | K1+440 | 2+244 | K3+048 | K3+852 | K4+656 | K5+460 | | 14 |
| K0+620 | K1+444 | 2+248 | K3+052 | K3+856 | K4+660 | K5+464 | | 14 |
| K0+624 | K1+448 | 2+252 | K3+056 | K3+860 | K4+664 | K5+468 | | 14 |
| K0+628 | K1+452 | 2+256 | K3+060 | K3+864 | K4+668 | K5+472 | | 14 |
| K0+632 | K1+456 | 2+260 | K3+064 | K3+868 | K4+672 | K5+476 | | 14 |
| K0+636 | K1+460 | 2+264 | K3+068 | K3+872 | K4+676 | K5+480 | | 14 |
| K0+640 | K1+464 | 2+268 | K3+072 | K3+876 | K4+680 | K5+484 | | 14 |
| K0+644 | K1+468 | 2+272 | K3+076 | K3+880 | K4+684 | K5+488 | | 14 |
| K0+648 | K1+472 | 2+276 | K3+080 | K3+884 | K4+688 | K5+492 | | 14 |
| K0+652 | K1+476 | 2+280 | K3+084 | K3+888 | K4+692 | K5+496 | | 14 |
| K0+656 | K1+480 | 2+284 | K3+088 | K3+892 | K4+696 | K5+500 | | 14 |
| K0+660 | K1+484 | 2+288 | K3+092 | K3+896 | K4+700 | K5+504 | | 14 |
| K0+664 | K1+488 | 2+292 | K3+096 | K3+900 | K4+704 | K5+508 | | 14 |
| K0+668 | K1+492 | 2+296 | K3+100 | K3+904 | K4+708 | K5+512 | | 14 |
| K0+672 | K1+496 | 2+300 | K3+104 | K3+908 | K4+712 | K5+516 | | 14 |
| K0+676 | K1+500 | 2+304 | K3+108 | K3+912 | K4+716 | K5+520 | | 14 |
| K0+680 | K1+504 | 2+308 | K3+112 | K3+916 | K4+720 | K5+524 | | 14 |
| K0+684 | K1+508 | 2+312 | K3+116 | K3+920 | K4+724 | K5+528 | | 14 |
| K0+688 | K1+512 | 2+316 | K3+120 | K3+924 | K4+728 | K5+532 | | 14 |
| K0+692 | K1+516 | 2+320 | K3+124 | K3+928 | K4+732 | K5+536 | | 14 |
| K0+696 | K1+520 | 2+324 | K3+128 | K3+932 | K4+736 | K5+540 | | 14 |
| K0+700 | K1+524 | 2+328 | K3+132 | K3+936 | K4+740 | K5+544 | | 14 |
| K0+704 | K1+528 | 2+332 | K3+136 | K3+940 | K4+744 | K5+548 | | 14 |
| K0+708 | K1+532 | 2+336 | K3+140 | K3+944 | K4+748 | K5+552 | | 14 |
| K0+712 | K1+536 | 2+340 | K3+144 | K3+948 | K4+752 | K5+556 | | 14 |
| K0+716 | K1+540 | 2+344 | K3+148 | K3+952 | K4+756 | K5+560 | | 14 |
| K0+720 | K1+544 | 2+348 | K3+152 | K3+956 | K4+760 | K5+564 | | 14 |
| K0+724 | K1+548 | 2+352 | K3+156 | K3+960 | K4+764 | K5+568 | | 14 |
| K0+728 | K1+552 | 2+356 | K3+160 | K3+964 | K4+768 | K5+572 | | 14 |
| K0+732 | K1+556 | 2+360 | K3+164 | K3+968 | K4+772 | K5+576 | | 14 |
| K0+736 | K1+560 | 2+364 | K3+168 | K3+972 | K4+776 | K5+580 | | 14 |
| K0+740 | K1+564 | 2+368 | K3+172 | K3+976 | K4+780 | K5+584 | | 14 |
| K0+744 | K1+568 | 2+372 | K3+176 | K3+980 | K4+784 | K5+588 | | 14 |
| K0+748 | K1+572 | 2+376 | K3+180 | K3+984 | K4+788 | K5+592 | | 14 |
| K0+752 | K1+576 | 2+380 | K3+184 | K3+988 | K4+792 | K5+596 | | 14 |
| K0+756 | K1+580 | 2+384 | K3+188 | K3+992 | K4+796 | K5+600 | | 14 |
| K0+760 | K1+584 | 2+388 | K3+192 | K3+996 | K4+800 | K5+604 | | 14 |
| K0+764 | K1+588 | 2+392 | K3+196 | K4+000 | K4+804 | K5+608 | | 14 |
| K0+768 | K1+592 | 2+396 | K3+200 | K4+004 | K4+808 | K5+612 | | 14 |
| K0+772 | K1+596 | 2+400 | K3+204 | K4+008 | K4+812 | K5+616 | | 14 |
| K0+776 | K1+600 | 2+404 | K3+208 | K4+012 | K4+816 | K5+620 | | 14 |
| K0+780 | K1+604 | 2+408 | K3+212 | K4+016 | K4+820 | K5+624 | | 14 |
| K0+784 | K1+608 | 2+412 | K3+216 | K4+020 | K4+824 | K5+628 | | 14 |
| K0+788 | K1+612 | 2+416 | K3+220 | K4+024 | K4+828 | K5+632 | | 14 |
| K0+792 | K1+616 | 2+420 | K3+224 | K4+028 | K4+832 | K5+636 | | 14 |
| K0+796 | K1+620 | 2+424 | K3+228 | K4+032 | K4+836 | K5+640 | | 14 |
| K0+800 | K1+624 | 2+428 | K3+232 | K4+036 | K4+840 | K5+644 | | 14 |
| | | | | | | | | |
| **UBICACIÓN DE TACHAS DE CENTRO TRAMO K0+000 A K6+128** | | | | | | | | |
| K0+000 | K0+824 | 1+648 | K2+472 | K3+296 | K4+120 | K4+944 | K5+768 | 8 |
| K0+008 | K0+832 | 1+656 | K2+480 | K3+304 | K4+128 | K4+952 | K5+776 | 8 |
| K0+016 | K0+840 | 1+664 | K2+488 | K3+312 | K4+136 | K4+960 | K5+784 | 8 |
| K0+024 | K0+848 | 1+672 | K2+496 | K3+320 | K4+144 | K4+968 | K5+792 | 8 |

## Figura 3-10 Líneas Centrales Continuas Caso 4




Separación vía doble sentido con restricción de adelantamiento en ambos sentidos y una separación de tachas = p, según patrón de la Tabla 3-3.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| K0+032 | K0+856 | 1+680 | K2+504 | K3+328 | K4+152 | K4+976 | K5+800 | 8 |
| K0+040 | K0+864 | 1+688 | K2+512 | K3+336 | K4+160 | K4+984 | K5+808 | 8 |
| K0+048 | K0+872 | 1+696 | K2+520 | K3+344 | K4+168 | K4+992 | K5+816 | 8 |
| K0+056 | K0+880 | 1+704 | K2+528 | K3+352 | K4+176 | K5+000 | K5+824 | 8 |
| K0+064 | K0+888 | 1+712 | K2+536 | K3+360 | K4+184 | K5+008 | K5+832 | 8 |
| K0+072 | K0+896 | 1+720 | K2+544 | K3+368 | K4+192 | K5+016 | K5+840 | 8 |
| K0+080 | K0+904 | 1+728 | K2+552 | K3+376 | K4+200 | K5+024 | K5+848 | 8 |
| K0+088 | K0+912 | 1+736 | K2+560 | K3+384 | K4+208 | K5+032 | K5+856 | 8 |
| K0+096 | K0+920 | 1+744 | K2+568 | K3+392 | K4+216 | K5+040 | K5+864 | 8 |
| K0+104 | K0+928 | 1+752 | K2+576 | K3+400 | K4+224 | K5+048 | K5+872 | 8 |
| K0+112 | K0+936 | 1+760 | K2+584 | K3+408 | K4+232 | K5+056 | K5+880 | 8 |
| K0+120 | K0+944 | 1+768 | K2+592 | K3+416 | K4+240 | K5+064 | K5+888 | 8 |
| K0+128 | K0+952 | 1+776 | K2+600 | K3+424 | K4+248 | K5+072 | K5+896 | 8 |
| K0+136 | K0+960 | 1+784 | K2+608 | K3+432 | K4+256 | K5+080 | K5+904 | 8 |
| K0+144 | K0+968 | 1+792 | K2+616 | K3+440 | K4+264 | K5+088 | K5+912 | 8 |
| K0+152 | K0+976 | 1+800 | K2+624 | K3+448 | K4+272 | K5+096 | K5+920 | 8 |
| K0+160 | K0+984 | 1+808 | K2+632 | K3+456 | K4+280 | K5+104 | K5+928 | 8 |
| K0+168 | K0+992 | 1+816 | K2+640 | K3+464 | K4+288 | K5+112 | K5+936 | 8 |
| K0+176 | K1+000 | 1+824 | K2+648 | K3+472 | K4+296 | K5+120 | K5+944 | 8 |
| K0+184 | K1+008 | 1+832 | K2+656 | K3+480 | K4+304 | K5+128 | K5+952 | 8 |
| K0+192 | K1+016 | 1+840 | K2+664 | K3+488 | K4+312 | K5+136 | K5+960 | 8 |
| K0+200 | K1+024 | 1+848 | K2+672 | K3+496 | K4+320 | K5+144 | K5+968 | 8 |
| K0+208 | K1+032 | 1+856 | K2+680 | K3+504 | K4+328 | K5+152 | K5+976 | 8 |
| K0+216 | K1+040 | 1+864 | K2+688 | K3+512 | K4+336 | K5+160 | K5+984 | 8 |
| K0+224 | K1+048 | 1+872 | K2+696 | K3+520 | K4+344 | K5+168 | K5+992 | 8 |
| K0+232 | K1+056 | 1+880 | K2+704 | K3+528 | K4+352 | K5+176 | K6+000 | 8 |
| K0+240 | K1+064 | 1+888 | K2+712 | K3+536 | K4+360 | K5+184 | K6+008 | 8 |
| K0+248 | K1+072 | 1+896 | K2+720 | K3+544 | K4+368 | K5+192 | K6+016 | 8 |
| K0+256 | K1+080 | 1+904 | K2+728 | K3+552 | K4+376 | K5+200 | K6+024 | 8 |
| K0+264 | K1+088 | 1+912 | K2+736 | K3+560 | K4+384 | K5+208 | K6+032 | 8 |
| K0+272 | K1+096 | 1+920 | K2+744 | K3+568 | K4+392 | K5+216 | K6+040 | 8 |
| K0+280 | K1+104 | 1+928 | K2+752 | K3+576 | K4+400 | K5+224 | K6+048 | 8 |
| K0+288 | K1+112 | 1+936 | K2+760 | K3+584 | K4+408 | K5+232 | K6+056 | 8 |
| K0+296 | K1+120 | 1+944 | K2+768 | K3+592 | K4+416 | K5+240 | K6+064 | 8 |
| K0+304 | K1+128 | 1+952 | K2+776 | K3+600 | K4+424 | K5+248 | K6+072 | 8 |
| K0+312 | K1+136 | 1+960 | K2+784 | K3+608 | K4+432 | K5+256 | K6+080 | 8 |
| K0+320 | K1+144 | 1+968 | K2+792 | K3+616 | K4+440 | K5+264 | K6+088 | 8 |
| K0+328 | K1+152 | 1+976 | K2+800 | K3+624 | K4+448 | K5+272 | K6+096 | 8 |
| K0+336 | K1+160 | 1+984 | K2+808 | K3+632 | K4+456 | K5+280 | K6+104 | 8 |
| K0+344 | K1+168 | 1+992 | K2+816 | K3+640 | K4+464 | K5+288 | K6+112 | 8 |
| K0+352 | K1+176 | 2+000 | K2+824 | K3+648 | K4+472 | K5+296 | K6+120 | 8 |
| K0+360 | K1+184 | 2+008 | K2+832 | K3+656 | K4+480 | K5+304 | K6+128 | 8 |
| K0+368 | K1+192 | 2+016 | K2+840 | K3+664 | K4+488 | K5+312 | | 7 |
| K0+376 | K1+200 | 2+024 | K2+848 | K3+672 | K4+496 | K5+320 | | 7 |
| K0+384 | K1+208 | 2+032 | K2+856 | K3+680 | K4+504 | K5+328 | | 7 |
| K0+392 | K1+216 | 2+040 | K2+864 | K3+688 | K4+512 | K5+336 | | 7 |
| K0+400 | K1+224 | 2+048 | K2+872 | K3+696 | K4+520 | K5+344 | | 7 |
| K0+408 | K1+232 | 2+056 | K2+880 | K3+704 | K4+528 | K5+352 | | 7 |
| K0+416 | K1+240 | 2+064 | K2+888 | K3+712 | K4+536 | K5+360 | | 7 |
| K0+424 | K1+248 | 2+072 | K2+896 | K3+720 | K4+544 | K5+368 | | 7 |
| K0+432 | K1+256 | 2+080 | K2+904 | K3+728 | K4+552 | K5+376 | | 7 |
| K0+440 | K1+264 | 2+088 | K2+912 | K3+736 | K4+560 | K5+384 | | 7 |
| K0+448 | K1+272 | 2+096 | K2+920 | K3+744 | K4+568 | K5+392 | | 7 |
| K0+456 | K1+280 | 2+104 | K2+928 | K3+752 | K4+576 | K5+400 | | 7 |
| K0+464 | K1+288 | 2+112 | K2+936 | K3+760 | K4+584 | K5+408 | | 7 |
| K0+472 | K1+296 | 2+120 | K2+944 | K3+768 | K4+592 | K5+416 | | 7 |
| K0+480 | K1+304 | 2+128 | K2+952 | K3+776 | K4+600 | K5+424 | | 7 |
| K0+488 | K1+312 | 2+136 | K2+960 | K3+784 | K4+608 | K5+432 | | 7 |
| K0+496 | K1+320 | 2+144 | K2+968 | K3+792 | K4+616 | K5+440 | | 7 |
| K0+504 | K1+328 | 2+152 | K2+976 | K3+800 | K4+624 | K5+448 | | 7 |
| K0+512 | K1+336 | 2+160 | K2+984 | K3+808 | K4+632 | K5+456 | | 7 |
| K0+520 | K1+344 | 2+168 | K2+992 | K3+816 | K4+640 | K5+464 | | 7 |
| K0+528 | K1+352 | 2+176 | K3+000 | K3+824 | K4+648 | K5+472 | | 7 |
| K0+536 | K1+360 | 2+184 | K3+008 | K3+832 | K4+656 | K5+480 | | 7 |
| K0+544 | K1+368 | 2+192 | K3+016 | K3+840 | K4+664 | K5+488 | | 7 |
| K0+552 | K1+376 | 2+200 | K3+024 | K3+848 | K4+672 | K5+496 | | 7 |
| K0+560 | K1+384 | 2+208 | K3+032 | K3+856 | K4+680 | K5+504 | | 7 |
| K0+568 | K1+392 | 2+216 | K3+040 | K3+864 | K4+688 | K5+512 | | 7 |
| K0+576 | K1+400 | 2+224 | K3+048 | K3+872 | K4+696 | K5+520 | | 7 |
| K0+584 | K1+408 | 2+232 | K3+056 | K3+880 | K4+704 | K5+528 | | 7 |
| K0+592 | K1+416 | 2+240 | K3+064 | K3+888 | K4+712 | K5+536 | | 7 |
| K0+600 | K1+424 | 2+248 | K3+072 | K3+896 | K4+720 | K5+544 | | 7 |
| K0+608 | K1+432 | 2+256 | K3+080 | K3+904 | K4+728 | K5+552 | | 7 |
| K0+616 | K1+440 | 2+264 | K3+088 | K3+912 | K4+736 | K5+560 | | 7 |
| K0+624 | K1+448 | 2+272 | K3+096 | K3+920 | K4+744 | K5+568 | | 7 |
| K0+632 | K1+456 | 2+280 | K3+104 | K3+928 | K4+752 | K5+576 | | 7 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| K0+640 | K1+464 | 2+288 | K3+112 | K3+936 | K4+760 | K5+584 | | 7 |
| K0+648 | K1+472 | 2+296 | K3+120 | K3+944 | K4+768 | K5+592 | | 7 |
| K0+656 | K1+480 | 2+304 | K3+128 | K3+952 | K4+776 | K5+600 | | 7 |
| K0+664 | K1+488 | 2+312 | K3+136 | K3+960 | K4+784 | K5+608 | | 7 |
| K0+672 | K1+496 | 2+320 | K3+144 | K3+968 | K4+792 | K5+616 | | 7 |
| K0+680 | K1+504 | 2+328 | K3+152 | K3+976 | K4+800 | K5+624 | | 7 |
| K0+688 | K1+512 | 2+336 | K3+160 | K3+984 | K4+808 | K5+632 | | 7 |
| K0+696 | K1+520 | 2+344 | K3+168 | K3+992 | K4+816 | K5+640 | | 7 |
| K0+704 | K1+528 | 2+352 | K3+176 | K4+000 | K4+824 | K5+648 | | 7 |
| K0+712 | K1+536 | 2+360 | K3+184 | K4+008 | K4+832 | K5+656 | | 7 |
| K0+720 | K1+544 | 2+368 | K3+192 | K4+016 | K4+840 | K5+664 | | 7 |
| K0+728 | K1+552 | 2+376 | K3+200 | K4+024 | K4+848 | K5+672 | | 7 |
| K0+736 | K1+560 | 2+384 | K3+208 | K4+032 | K4+856 | K5+680 | | 7 |
| K0+744 | K1+568 | 2+392 | K3+216 | K4+040 | K4+864 | K5+688 | | 7 |
| K0+752 | K1+576 | 2+400 | K3+224 | K4+048 | K4+872 | K5+696 | | 7 |
| K0+760 | K1+584 | 2+408 | K3+232 | K4+056 | K4+880 | K5+704 | | 7 |
| K0+768 | K1+592 | 2+416 | K3+240 | K4+064 | K4+888 | K5+712 | | 7 |
| K0+776 | K1+600 | 2+424 | K3+248 | K4+072 | K4+896 | K5+720 | | 7 |
| K0+784 | K1+608 | 2+432 | K3+256 | K4+080 | K4+904 | K5+728 | | 7 |
| K0+792 | K1+616 | 2+440 | K3+264 | K4+088 | K4+912 | K5+736 | | 7 |
| K0+800 | K1+624 | 2+448 | K3+272 | K4+096 | K4+920 | K5+744 | | 7 |
| K0+808 | K1+632 | 2+456 | K3+280 | K4+104 | K4+928 | K5+752 | | 7 |
| K0+816 | K1+640 | 2+464 | K3+288 | K4+112 | K4+936 | K5+760 | | 7 |
| | | | | | **Subtotal** | | | **3.823,00** |
| | | | | | **0%** | | | 0,00 |
| | | | | | **TOTAL** | | | **3.823,00** |

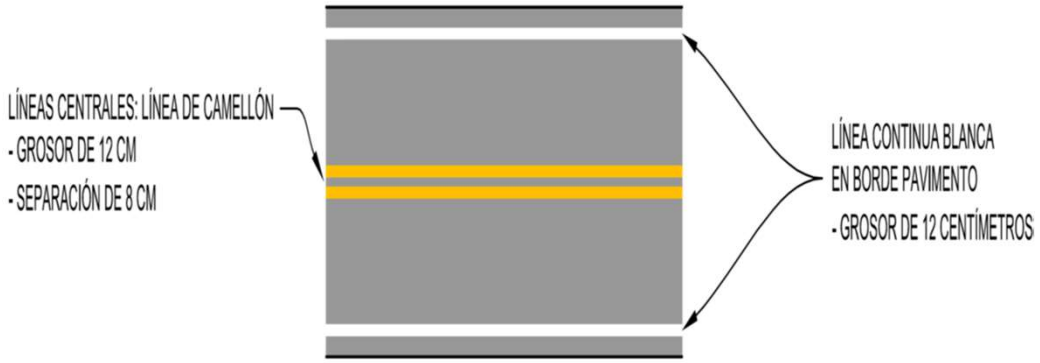
OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

## MEMORIAS DE CALCULO.

| FECHA | DD | 12 | MM | 5 | AA | 17 | ITEM | 2,5 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 2.SEÑALIZACION | ITEM | 2,5 SUMINISTRO Y APLICACIÓN DE PINTURA ACRILICA CON MICROESFERAS, LINEAS CONTINUAS Y DISCONTINUAS DE 12 CMS SEGUN NORMA INVIAS | UNID. | ML | UBICACIÓN | |
|---|---|---|---|---|---|---|---|




| DESCRIPCION | ABSCISA | Dimensiones | | | cantidad | Medida Total (ML) |
|---|---|---|---|---|---|---|
| | | Área (m2) | Ancho (m) | Longitud (km) | | |
| LINEA CONTINUAA Y DISCONTINUA AMARILLA | K0+000 A K6+ | 735,36 | 0,12 | 6,128 | 2 | 12256 |
| LINEA CONTINUA BLANCA | K0+000 A K6+ | 735,36 | 0,12 | 6,128 | 2 | 12256 |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

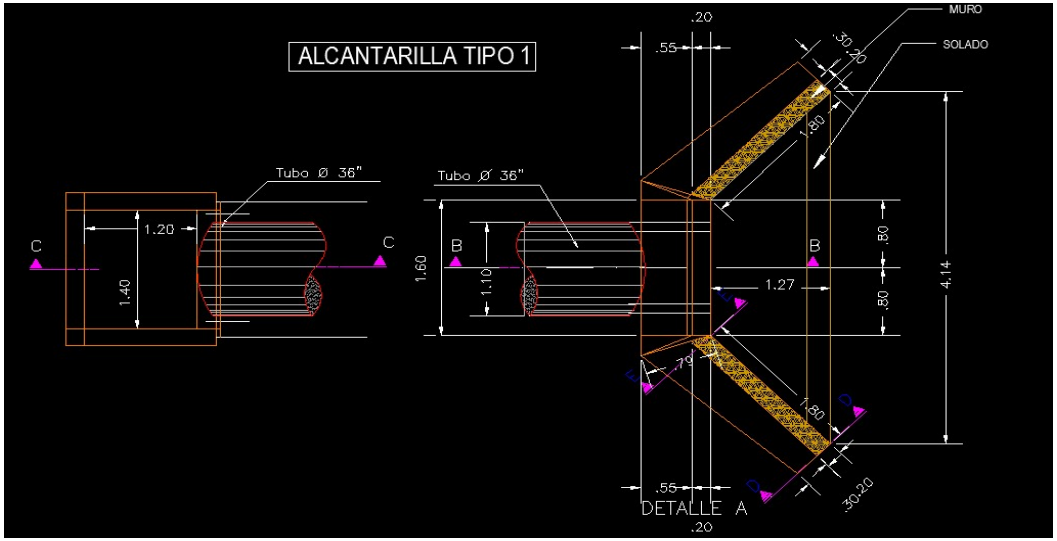
| | |
|---|---|
| Subtotal | 24.512,00 |
| 0% | 0,00 |
| TOTAL | 24.512,00 |

| MEMORIAS DE CALCULO. | | |
|---|---|---|

| FECHA | DD | 12 | MM | 5 | AA | 17 | ITEM | 3,1 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 3, OBRAS DE DRENAJE (ALCANTARILLAS, CUNETAS Y FILTROS) | ITEM | 3,1 CONCRETO SIMPLE DE 21 Mpa - (3000 PSI) IMPERMEABILIZADO | UNID. | M3 | UBICACIÓN | |
|---|---|---|---|---|---|---|---|




| DESCRIPCION | VOLUMENES MURO POSTERIOR (M3) | MURO CABEZAL Y SOLADO (M3) | MUROS ENTRADA (M3) | CANTIDAD (UND) | TOTAL |
|---|---|---|---|---|---|
| POCETA | 0,74 | 0,67 | 0,82 | 38,00 | 84,74 |
| | | | | TOTAL | 84,74 |

| DESCRIPCION | VOLUMENES ALETAS (M3) | MURO CABEZAL (M3) | GUARDARUEDA (M3) | CANTIDAD (UND) | TOTAL |
|---|---|---|---|---|---|
| ALETAS | 3,18 | 1,18 | 0,09 | 38,00 | 169,10 |

| | |
|---|---|
| Subtotal | 253,84 |
| 0% | 0,00 |
| TOTAL | 253,84 |

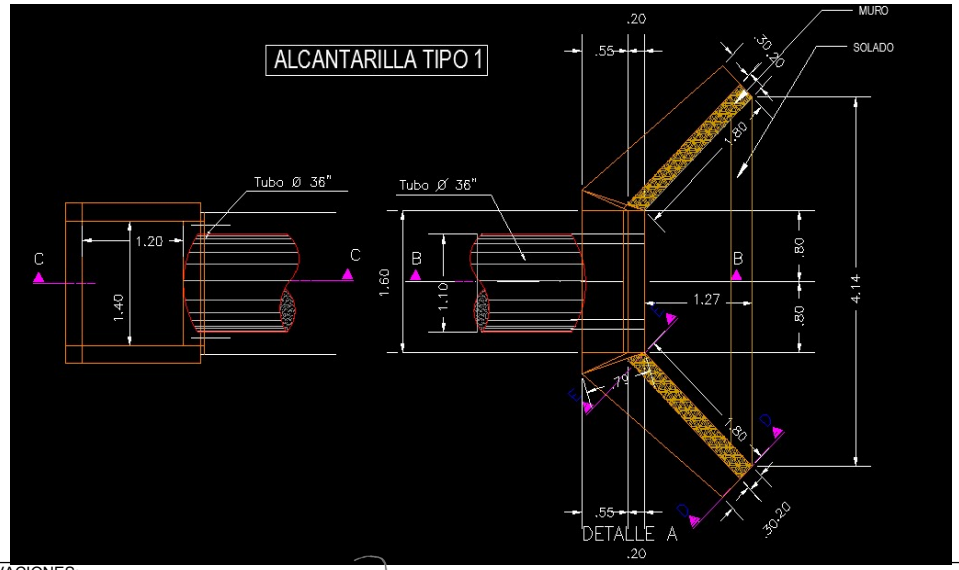
OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

| MEMORIAS DE CALCULO. | | |
|---|---|---|

| FECHA | DD | 12 | MM | 5 | AA | 17 | ITEM | 3,2 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 3, OBRAS DE DRENAJE (ALCANTARILLAS, CUNETAS Y FILTROS) | ITEM | 3,2 EXCAVACION MANUAL EN MATERIAL COMUN (INCLUYE RETIRO) | UNID. | M3 | UBICACIÓN | |
|---|---|---|---|---|---|---|---|




| DESCRIPCION | VOLUMENES | | | CANTIDAD (UND) | TOTAL |
|---|---|---|---|---|---|
| | LONGITUD (M) | ANCHO (M) | PROFUNDIDAD | | |
| EXCAVACION EN MATERIAL COMUN | 7,00 | 1,60 | 1,91 | 38,00 | 814,80 |
| | | | Subtotal | | 814,80 |
| | | | 0% | | 0,00 |
| | | | TOTAL | | 814,80 |

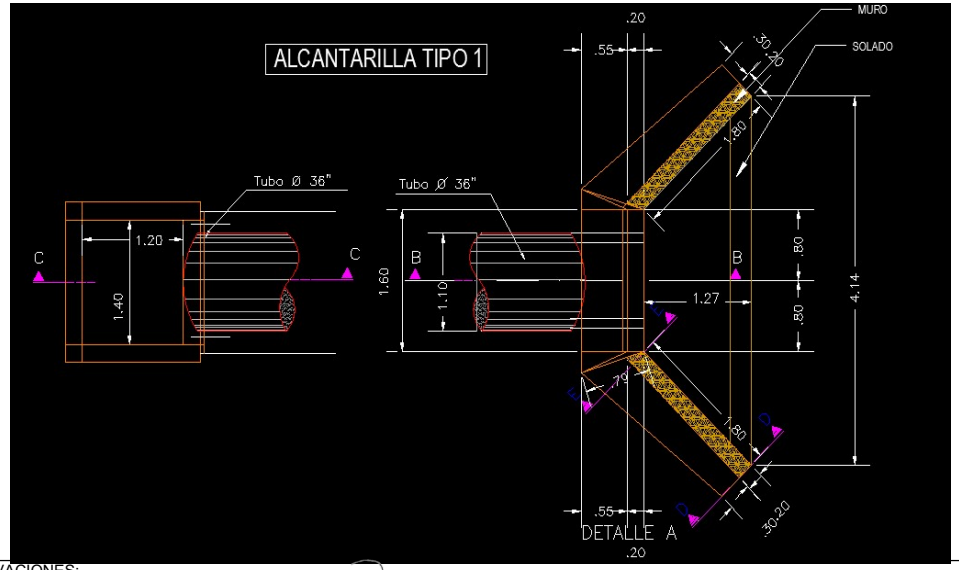
OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

| MEMORIAS DE CALCULO. | | |
|---|---|---|

| FECHA | DD | 12 | MM | 5 | AA | 17 | ITEM | 3,3 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 3, OBRAS DE DRENAJE (ALCANTARILLAS, CUNETAS Y FILTROS) | ITEM | 3,3 EXCAVACIONES MECANICAS VARIAS EN MATERIAL COMUN SECO | UNID. | M3 | UBICACIÓN | |
|---|---|---|---|---|---|---|---|




| DESCRIPCION | VOLUMENES LONGITUD (M) | ANCHO (M) | PROFUNDIDAD | CANTIDAD (UND) | TOTAL |
|---|---|---|---|---|---|
| EXCAVACION EN MATERIAL COMUN | 6128,00 | 0,60 | 1,20 | 1,00 | 4412,16 |
| | | | Subtotal | | 4.412,16 |
| | | | 0% | | 0,00 |
| | | | TOTAL | | 4.412,16 |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

## MEMORIAS DE CALCULO.

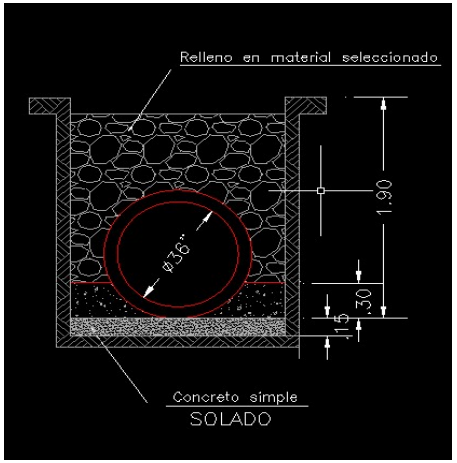
| FECHA | DD | 12 | MM | 5 | AA | 17 |
|---|---|---|---|---|---|---|

| ITEM | 3,4 |
|---|---|

| ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 3, OBRAS DE DRENAJE (ALCANTARILLAS, CUNETAS Y FILTROS) | ITEM | 3,4 SUMINISTRO E INSTALACION DE CONCRETO DE 14 MPA (2000 PSI) SOLADOS Y ATRAQUES | UNID. | M3 | UBICACIÓN | |
|---|---|---|---|---|---|---|---|




| DESCRIPCION | VOLUMENES | | | CANTIDAD (UND) | TOTAL |
|---|---|---|---|---|---|
| | SOLADO POCETA (M3) | SOLADO ALETAS (M3) | SOLADO TUBERIA Y ATRAQUE(M3) | | |
| ALCANTARILLA (7 TUBOS | 0,68 | 1,15 | 3,66 | 38,00 | 208,47 |
| | | | Subtotal | | 208,47 |
| | | | 0% | | 0,00 |
| | | | TOTAL | | 208,47 |

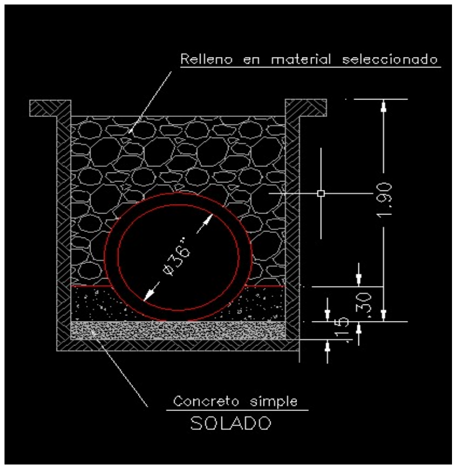
OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

| MEMORIAS DE CALCULO. | | |
|---|---|---|

| FECHA | DD | 12 | MM | 5 | AA | 17 | ITEM | 3,5 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 3, OBRAS DE DRENAJE (ALCANTARILLAS, CUNETAS Y FILTROS) | ITEM | 3,5 RELLENO CON MATERIAL DE AFIRMADO COMPACTADO PLANCHA VIBRADORA INCLUYE ACARREO | UNID. | M3 | UBICACIÓN | |
|---|---|---|---|---|---|---|---|




| DESCRIPCION | VOLUMENES | | | CANTIDAD (UND) | TOTAL |
|---|---|---|---|---|---|
| | LONGITUD (M) | ANCHO (M) | PROFUNDIDAD | | |
| EXCAVACION EN MATERIAL COMUN | 7,00 | 1,60 | 1,00 | 38,00 | 424,54 |
| Subtotal | | | | | 424,54 |
| 0% | | | | | 0,00 |
| TOTAL | | | | | 424,54 |

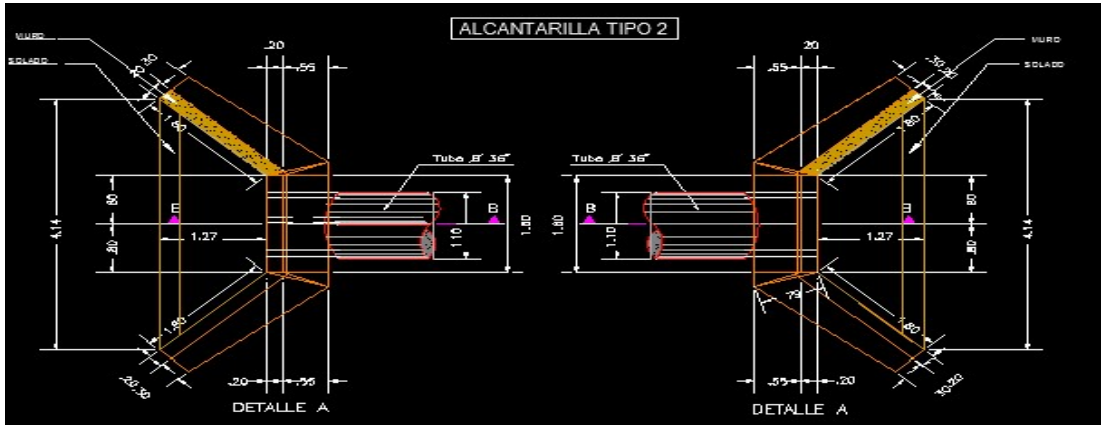
OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

| MEMORIAS DE CALCULO. | | |
|---|---|---|

| FECHA | DD | 12 | MM | 5 | AA | 17 | ITEM | 3,6 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 3, OBRAS DE DRENAJE (ALCANTARILLAS, CUNETAS Y FILTROS) | ITEM | 3,6 SUMINISTRO E INSTALACION DE TUBERIA DE CONCRETOREFORZADO D=36", INCLUYE EMBOQUILLADA | UNID. | ML | UBICACIÓN | |
|---|---|---|---|---|---|---|---|




| DESCRIPCION | VOLUMENES | | | CANTIDAD (UND) | TOTAL |
|---|---|---|---|---|---|
| | LONGITUD (M) | ANCHO (M) | PROFUNDIDAD | | |
| TUBERIA LONGITUD 1 METRO | 7,00 | 1,60 | 1,00 | 38,00 | 266,00 |
| | | | Subtotal | | 266,00 |
| | | | 0% | | 0,00 |
| | | | TOTAL | | 266,00 |

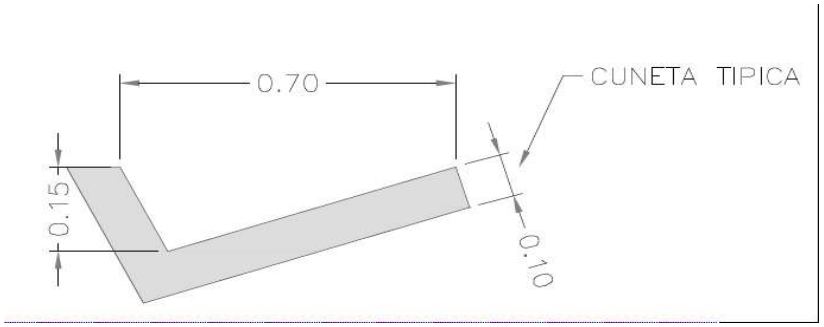
OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

## MEMORIAS DE CALCULO.

| FECHA | DD | 12 | MM | 5 | AA | 17 | ITEM | 3,7 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

**PROYECTO:** PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA

| CAPÍTULO | 3, OBRAS DE DRENAJE (ALCANTARILLAS, CUNETAS Y FILTROS) | ITEM | 3,7 CUNETAS REVESTIDAS EN CONCRETO DE 21 MPA ( 3000 PSI) SIN REFUERZO (INCLUYE SELLO DE JUNTAS) | UNID. | ML | UBICACIÓN | |
|---|---|---|---|---|---|---|---|




| DESCRIPCION | VOLUMENES LONGITUD (M) | AREA SECCION (M2) | PROFUNDIDAD | CANTIDAD (UND) | TOTAL |
|---|---|---|---|---|---|
| CUNETA REVESTIDA | 6128,00 | 0,13 | 1,00 | 2,00 | 1581,02 |
| | | | | Subtotal | 1.581,02 |
| | | | | 0% | 0,00 |
| | | | | TOTAL | 1.581,02 |

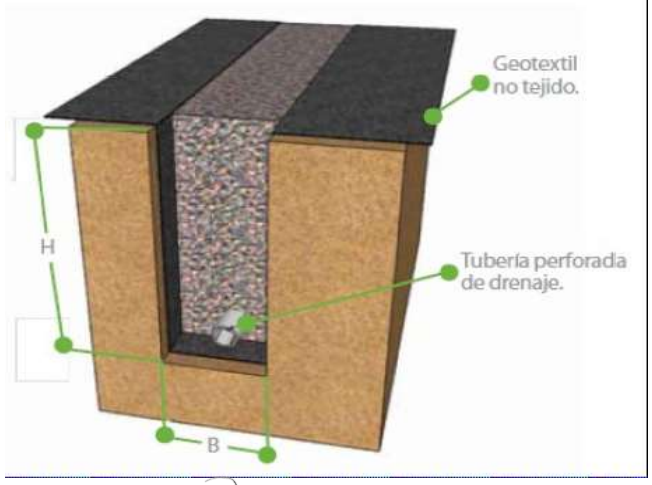
OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

## MEMORIAS DE CALCULO.

| FECHA | DD | 12 | MM | 5 | AA | 17 | ITEM | 3,8 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

**PROYECTO:** PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA

| CAPÍTULO | 3, OBRAS DE DRENAJE (ALCANTARILLAS, CUNETAS Y FILTROS) | ITEM | 3,8 CONSTRUCCION DE FILTROS A CUALQUIER PROFUNDIDAD, CON MATERIAL FILTRANTE SEGUN NORMA INVIAS, SIN EXCAVACION, INCLUYE GEOTEXTIL NT 2000 | UNID. | M3 | UBICACIÓN | |
|---|---|---|---|---|---|---|---|




| DESCRIPCION | VOLUMENES LONGITUD (M) | ANCHO (M) | PROFUNDIDAD (M) | CANTIDAD (UND) | TOTAL |
|---|---|---|---|---|---|
| FILTROS | 6128,00 | 0,60 | 1,20 | 1,00 | 4412,16 |
| | | | | Subtotal | 4.412,16 |
| | | | | 0% | 0,00 |
| | | | | TOTAL | 4.412,16 |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

## MEMORIAS DE CALCULO.

| FECHA | DD | 12 | MM | 5 | AA | 17 | ITEM | 3,9 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

**PROYECTO:** PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA

| CAPÍTULO | 3, OBRAS DE DRENAJE (ALCANTARILLAS, CUNETAS Y FILTROS) | ITEM | 3,9 DEMOLICION OBRAS EN CONCRETO SIMPLE, INCLUYE RETIRO DE SOBRANTES (ACARREO IIBRE 5 Km.) | UNID. | M3 | UBICACIÓN | |
|---|---|---|---|---|---|---|---|

| DESCRIPCION | VOLUMENES | | | CANTIDAD (UND) | TOTAL |
|---|---|---|---|---|---|
| | LONGITUD (M) | ANCHO (M) | PROFUNDIDAD (M) | | |
| POCETAS | 0,74 | 0,67 | 0,82 | 26,00 | 57,98 |
| ALETAS | 3,20 | 1,20 | 0,09 | 26,00 | 116,74 |
| SOLADOS Y ATRAQUES | 0,85 | 1,20 | 3,66 | 26,00 | 148,36 |
| Subtotal | | | | | 323,08 |
| 0% | | | | | 0,00 |
| TOTAL | | | | | 323,08 |

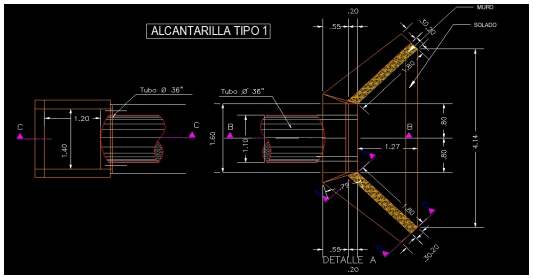
OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

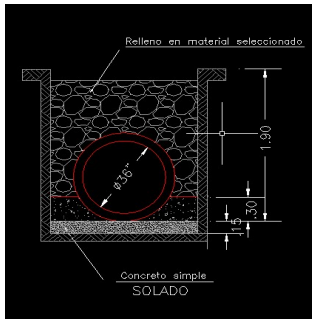
## MEMORIAS DE CALCULO.

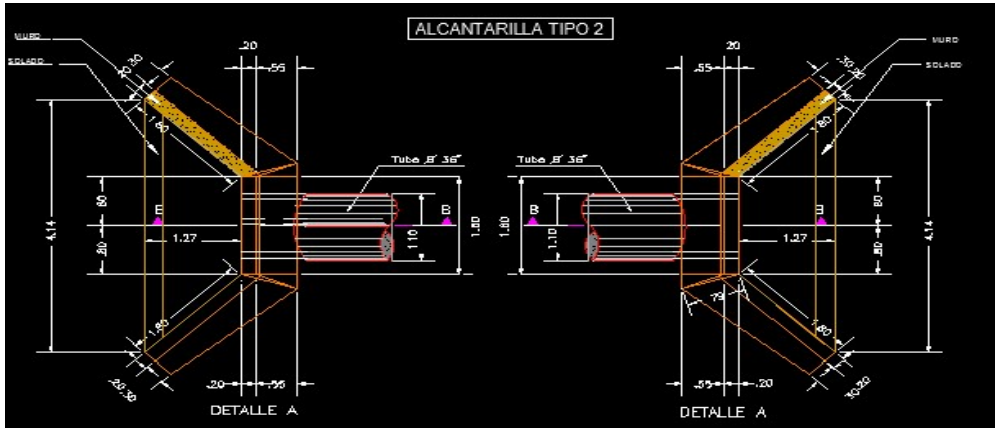
| FECHA | DD | 12 | MM | 5 | AA | 17 | ITEM | 3,10 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

**PROYECTO:** PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA

| CAPÍTULO | 3, OBRAS DE DRENAJE (ALCANTARILLAS, CUNETAS Y FILTROS) | ITEM | 3,10 SUMINISTRO FIGURADA Y AMARRE DE ACERO 60000 PSI 420 Mpa | UNID. | KG | UBICACIÓN | |
|---|---|---|---|---|---|---|---|




| DESCRIPCION | VOLUMENES LONGITUD (M) | PESO (KG) | CANTIDAD | N ELEMENTOS | TOTAL |
|---|---|---|---|---|---|
| ALETAS | 1,90 | 2,00 | 38,00 | 2,00 | 288,80 |
| | 1,97 | 2,00 | 38,00 | 2,00 | 299,44 |
| | 2,03 | 2,00 | 38,00 | 2,00 | 308,56 |
| | 2,08 | 2,00 | 38,00 | 2,00 | 316,16 |
| | 2,14 | 2,00 | 38,00 | 2,00 | 325,28 |
| | 2,90 | 2,00 | 38,00 | 2,00 | 440,80 |
| | 2,27 | 2,00 | 38,00 | 2,00 | 345,04 |
| | 2,30 | 2,00 | 38,00 | 2,00 | 349,60 |
| | 2,36 | 2,00 | 38,00 | 2,00 | 358,72 |
| | 2,40 | 9,00 | 38,00 | 2,00 | 1641,60 |
| | 5,60 | 8,00 | 38,00 | 2,00 | 3404,80 |
| | 4,52 | 1,00 | 38,00 | 2,00 | 343,52 |
| | 3,08 | 1,00 | 38,00 | 2,00 | 234,08 |
| | | | 38,00 | | |
| BASE ALETAS | 2,40 | 12,00 | 38,00 | 2,00 | 2188,80 |
| | 2,18 | 2,00 | 38,00 | 2,00 | 331,36 |
| | 1,94 | 2,00 | 38,00 | 2,00 | 294,88 |
| | 1,70 | 2,00 | 38,00 | 2,00 | 258,40 |
| | 1,40 | 2,00 | 38,00 | 2,00 | 212,80 |
| | 1,22 | 2,00 | 38,00 | 2,00 | 185,44 |
| | 2,75 | 1,00 | 38,00 | 2,00 | 209,00 |
| | 3,08 | 1,00 | 38,00 | 2,00 | 234,08 |
| | 3,42 | 1,00 | 38,00 | 2,00 | 259,92 |
| | 3,75 | 1,00 | 38,00 | 2,00 | 285,00 |
| | 4,08 | 1,00 | 38,00 | 2,00 | 310,08 |
| | 4,42 | 1,00 | 38,00 | 2,00 | 335,92 |
| | 4,75 | 1,00 | 38,00 | 2,00 | 361,00 |
| | 5,10 | 1,00 | 38,00 | 2,00 | 387,60 |
| | 5,04 | 1,00 | 38,00 | 2,00 | 383,04 |
| | 4,63 | 1,00 | 38,00 | 2,00 | 351,88 |
| | | | 38,00 | | |
| BASE POCETA | | | 38,00 | | |
| | 1,90 | 9,00 | 38,00 | 2,00 | 1299,60 |
| | 2,10 | 8,00 | 38,00 | 2,00 | 1276,80 |
| | | | 38,00 | | |
| MURO 1 POCETA | | | 38,00 | | |
| | 2,40 | 9,00 | 38,00 | 4,00 | 3283,20 |
| | 2,10 | 11,00 | 38,00 | 4,00 | 3511,20 |
| | | | 38,00 | | |
| MURO 2 POCETA | | | 38,00 | | |
| | 2,40 | 8,00 | 38,00 | 4,00 | 2918,40 |
| | 1,90 | 11,00 | 38,00 | 4,00 | 3176,80 |
| | | | **Subtotal** | | **30.711,60** |
| | | | **0%** | | 0,00 |
| | | | **TOTAL** | | **30.711,60** |

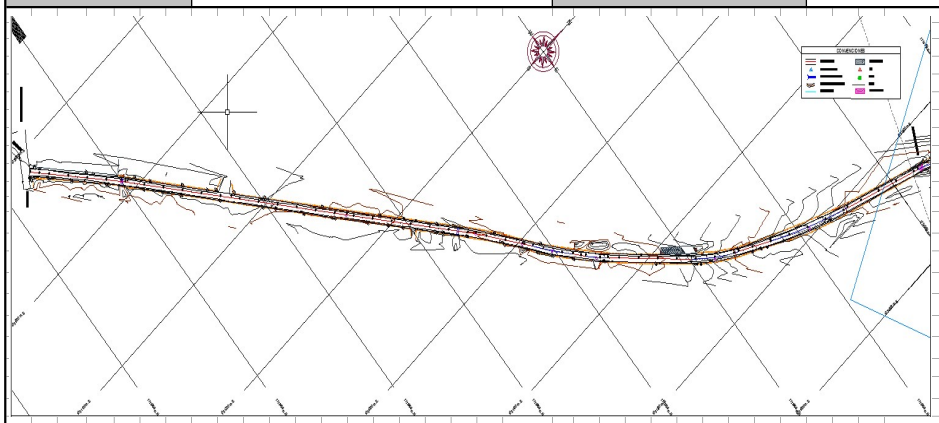
OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND

## MEMORIAS DE CALCULO.

| FECHA | DD | 12 | MM | 5 | AA | 17 | CORTE N° | 4,1 | ELABORÓ | INGENIERO LEONARDO ALVAREZ FONSECA |
|---|---|---|---|---|---|---|---|---|---|---|

| PROYECTO: | PAVIMENTACIÓN DE LA VÍA SUTAMARCHÁN - LA PUNTA DEL LLANO QUE COMUNICA LOS MUNICIPIOS DE SUTAMARCHÁN, VILLA DE LEYVA Y SANTA SOFÍA |
|---|---|

| CAPÍTULO | 4.PAVIMENTO FLEXIBLE | ITEM | 4.1 CARACTERIZACIÓN DEL TRAMO VIAL, DE ACUERDO CON LO DISPUESTO EN LAS RESOLUCIONES 1860 DE 2013 Y 1067 DE 2015 DEL MINISTERIO DE TRANSPORTE. | UNID. | GLB | UBICACIÓN | |
|---|---|---|---|---|---|---|---|



| DESCRIPCION | Dimensiones Área (m2) | Ancho (m) | Longitud (km) | Cantidad (GLB) | Medida Total |
|---|---|---|---|---|---|
| CARACTERIZACION TRAMO VIAL | 39845,00 | 6,50 | 6,13 | 0 | 6,13 |
| Subtotal | | | | | 6,13 |
| 0% | | | | | 0,00 |
| TOTAL | | | | | 6,13 |

OBSERVACIONES:
ELABORÓ: LEONARDO ALVAREZ FONSECA
MP. 25202-254770 CND