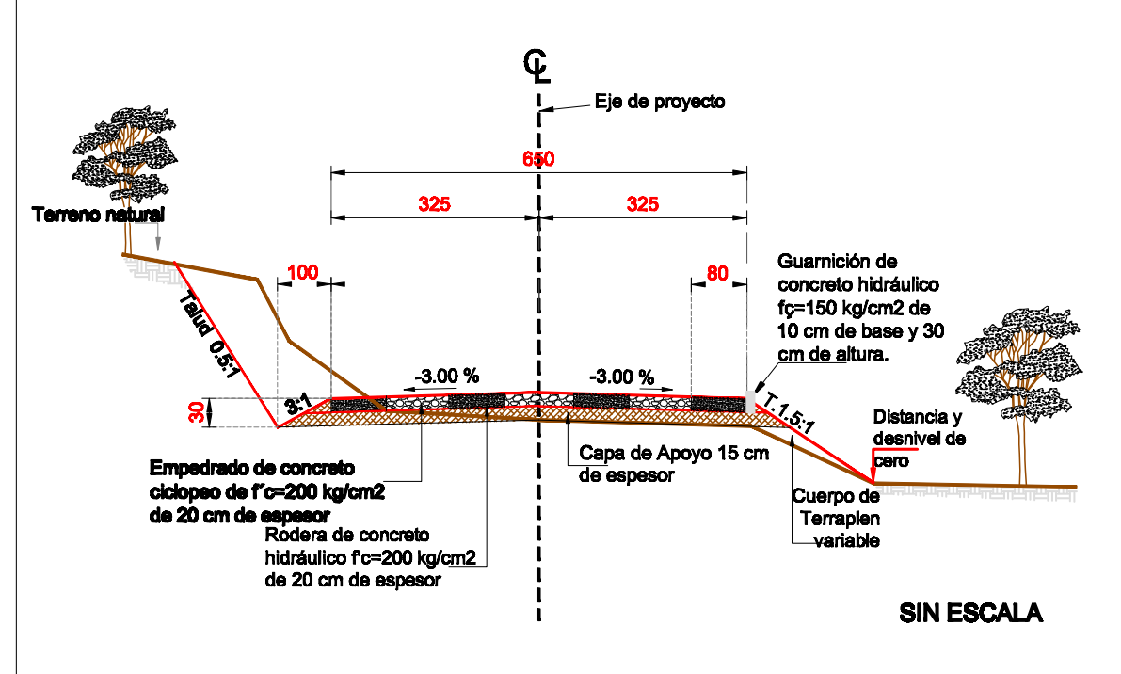
DATOS DE PROYECTO

CAMINO TIPO " ARTESANAL "

VELOCIDAD DE PROYECTO	ANCHO DE CORONA	ANCHO DE CALZADA
30 km/h	6.50 m.	6.50 m.
CURVATURA MAXIMA	**PENDIENTE MAXIMA**	**PENDIENTE GOBERNADORA**
127°00'00"	21.20 %	12.00 %

SECCION TIPO



℄
Eje de proyecto
650
325
325
Terreno natural
100
80
Talud 0.5:1
3:1
30
-3.00 %
-3.00 %
T.1.5:1
Guarnición de concreto hidráulico fç=150 kg/cm2 de 10 cm de base y 30 cm de altura.
Distancia y desnivel de cero
Empedrado de concreto ciclopeo de f'c=200 kg/cm2 de 20 cm de espesor
Rodera de concreto hidráulico f'c=200 kg/cm2 de 20 cm de espesor
Capa de Apoyo 15 cm de espesor
Cuerpo de Terraplen variable
SIN ESCALA

SIMBOLOGIA

- BANCOS DE NIVEL
- CERCO DE PUAS O MALLA
- DERECHO DE VIA
- OBRA DE DRENAJE
- ORILLA DE CAMINO EXISTENTE
- NUMERO DE CURVA
- CURVA DE NIVEL ORDINARIA
- KILOMETRAJE
- CURVA DE NIVEL MAESTRA A CADA 5 MTS
- POSTE DE C.F.E.
- TIRANTE (ARREMETIDA DE POSTE)

Camino: CONSTRUCCIÓN DE PAVIMENTO CON CONCRETO HIDRÁULICO DE LA CARRETERA DEL E.C. (YUCUDAA - SANTIAGO PINOTEPA NACIONAL) - SAN JUAN COLORADO, TRAMO DEL KM 0+000 AL KM 23+800, SUBTRAMO DEL KM 20+480 AL KM 21+700, EN EL MUNICIPIO DE PINOTEPA DE DON LUIS.

PLANTA TOPOGRAFICA
DEL KM. 20+480.00 AL KM. 21+700.00

PROYECTO:

DIRECCION DE PROYECTOS Y CONTROL DE CALIDAD

REVISÓ:

CAMINOS BIENESTAR

JEFE DE LA UNIDAD DE ESTUDIOS Y PROYECTOS	DIRECTOR DE PROYECTOS Y CONTROL DE CALIDAD	EL DIRECTOR GENERAL
Cédula Profesional 8652384 ING. JAIRO RAMIREZ REYES	Cédula Profesional 12890930 ING. ALVARO PEREZ HERNANDEZ	ING. MOISES SALAZAR MARTINEZ

2025	Escala 1:1000	Plano 1 1 DE

COORDENADAS DEL EJE DE TRAZO

ESTACION	PUNTO OBSERVADO	SUBTANGENTE ATRAS	TANGENTE	SUBTANGENTE ADELANTE	DISTANCIA	DEFLEXIONES				RUMBO					PROYECCIONES						COORDENADAS	
						°	'	"	SENTIDO		°	'	"		COSENO	SENO	+N	-S	+E	-W	NORTE	ESTE
	NORTE										00°	00'	00.00 "								1816694.053	609525.955
19+660.00		0.000	5.800	7.701	13.501					N	69°	32'	58.00 "	E	0.34940	0.93697	4.717	0.000	12.650	0.000	1816698.770	609538.605
19+673.50	19+715.62	7.701	22.700	11.756	42.157	08°	27'	20.56 "	DER.	N	78°	00'	18.56 "	E	0.20782	0.97817	8.761	0.000	41.237	0.000	1816707.531	609579.842
19+715.62	19+752.42	11.756	12.060	13.139	36.955	16°	20'	48.79 "	DER.	S	85°	38'	52.65 "	E	0.07588	0.99712	0.000	2.804	36.848	0.000	1816704.727	609616.690
19+752.42	19+806.53	13.139	31.500	9.578	54.217	11°	46'	58.98 "	DER.	S	73°	51'	53.67 "	E	0.27790	0.96061	0.000	15.067	52.081	0.000	1816689.660	609668.771
19+806.53	19+842.71	9.578	7.910	18.720	36.208	08°	36'	13.34 "	IZQ.	S	82°	28'	07.01 "	E	0.13107	0.99137	0.000	4.746	35.896	0.000	1816684.914	609704.667
19+842.71	19+947.45	18.720	50.240	40.063	109.023	66°	19'	31.52 "	IZQ.	N	31°	12'	21.47 "	E	0.85531	0.51812	93.248	0.000	56.487	0.000	1816778.163	609761.154
19+947.45	20+029.42	40.063	25.050	16.897	82.010	04°	00'	16.67 "	DER.	N	35°	12'	38.14 "	E	0.81704	0.57658	67.005	0.000	47.286	0.000	1816845.168	609808.439
20+029.42	20+129.08	16.897	44.940	38.164	100.001	20°	04'	05.49 "	DER.	N	55°	16'	43.63 "	E	0.56958	0.82193	56.959	0.000	82.194	0.000	1816902.127	609890.633
20+129.08	20+211.67	38.164	33.430	12.735	84.329	29°	50'	16.52 "	IZQ.	N	25°	26'	27.11 "	E	0.90303	0.42958	76.152	0.000	36.226	0.000	1816978.279	609926.859
20+211.67	20+316.41	12.735	73.900	18.168	104.803	10°	09'	40.03 "	IZQ.	N	15°	16'	47.08 "	E	0.96465	0.26353	101.098	0.000	27.619	0.000	1817079.377	609954.478
20+316.41	20+406.39	18.168	39.020	33.746	90.934	31°	51'	21.79 "	IZQ.	N	16°	34'	34.71 "	W	0.95844	0.28529	87.155	0.000	0.000	25.943	1817166.532	609928.536
20+406.39	20+511.71	33.746	58.280	18.725	110.751	55°	51'	17.87 "	DER.	N	39°	16'	43.16 "	E	0.77408	0.63309	85.730	0.000	70.116	0.000	1817252.261	609998.651
20+511.71	20+559.53	18.725	19.490	9.610	47.825	02°	48'	29.45 "	IZQ.	N	36°	28'	13.71 "	E	0.80416	0.59441	38.459	0.000	28.428	0.000	1817290.721	610027.079
20+559.53	20+640.14	9.610	55.440	15.567	80.617	01°	55'	18.53 "	DER.	N	38°	23'	32.24 "	E	0.78378	0.62104	63.186	0.000	50.067	0.000	1817353.906	610077.145
20+640.14	20+687.57	15.567	8.890	22.990	47.447	04°	40'	03.16 "	DER.	N	43°	03'	35.40 "	E	0.73064	0.68276	34.667	0.000	32.395	0.000	1817388.573	610109.540
20+687.57	20+754.21	22.990	5.030	41.291	69.311	47°	37'	52.26 "	DER.	S	89°	18'	32.34 "	E	0.01206	0.99993	0.000	0.836	69.306	0.000	1817387.737	610178.846
20+754.21	20+858.17	41.291	38.400	24.843	104.534	16°	24'	12.58 "	IZQ.	N	74°	17'	15.08 "	E	0.27081	0.96263	28.309	0.000	100.628	0.000	1817416.046	610279.474
20+858.17	20+944.98	24.843	53.710	9.892	88.445	36°	01'	43.23 "	IZQ.	N	38°	15'	31.85 "	E	0.78522	0.61922	69.449	0.000	54.766	0.000	1817485.495	610334.241
20+944.98	21+012.88	9.892	40.330	17.778	68.000	13°	46'	57.41 "	DER.	N	52°	02'	29.26 "	E	0.61509	0.78846	41.826	0.000	53.615	0.000	1817527.321	610387.856
21+012.88	21+053.53	17.778	12.430	15.439	45.647	73°	20'	56.90 "	IZQ.	N	21°	18'	27.64 "	W	0.93164	0.36338	42.527	0.000	0.000	16.587	1817569.848	610371.269
21+053.53	21+101.90	15.439	25.810	9.676	50.925	56°	38'	30.50 "	DER.	N	35°	20'	02.86 "	E	0.81579	0.57834	41.544	0.000	29.452	0.000	1817611.392	610400.721
21+101.90	21+148.95	9.676	10.220	27.172	47.068	05°	48'	01.63 "	DER.	N	41°	08'	04.49 "	E	0.75317	0.65783	35.450	0.000	30.963	0.000	1817646.842	610431.684
21+148.95	21+203.43	27.172	19.310	10.975	57.457	46°	13'	37.54 "	DER.	N	87°	21'	42.03 "	E	0.04603	0.99894	2.645	0.000	57.396	0.000	1817649.487	610489.080
21+203.43	21+263.30	10.975	34.750	14.151	59.876	03°	17'	30.12 "	IZQ.	N	84°	04'	11.91 "	E	0.10331	0.99465	6.186	0.000	59.556	0.000	1817655.673	610548.635
21+263.30	21+312.04	14.151	15.210	19.925	49.286	27°	44'	46.00 "	IZQ.	N	56°	19'	25.91 "	E	0.55450	0.83219	27.329	0.000	41.015	0.000	1817683.002	610589.650
21+312.04	21+398.90	19.925	48.380	18.954	87.259	19°	43'	39.86 "	DER.	N	76°	03'	05.77 "	E	0.24105	0.97051	21.034	0.000	84.686	0.000	1817704.036	610674.336
21+398.90	21+460.38	18.954	24.410	18.867	62.231	27°	52'	04.73 "	IZQ.	N	48°	11'	01.04 "	E	0.66675	0.74529	41.492	0.000	46.380	0.000	1817745.528	610720.716
21+460.38	21+618.97	18.867	102.480	37.583	158.930	18°	41'	56.38 "	DER.	N	66°	52'	57.42 "	E	0.39262	0.91970	62.398	0.000	146.168	0.000	1817807.926	610866.884
21+618.97	21+700.00	37.583	47.000	0.000	84.583	42°	57'	57.57 "	IZQ.	N	23°	54'	59.85 "	E	0.91414	0.40541	77.320	0.000	34.291	0.000	1817885.247	610901.175

N
BN 20-2 C/SOBRE CONCRETO EN ESQ. DE CASA A 12.72 MTS. IZQ. ATRAS DE LA ESTACION 19+660.00 ELEV. PROM. = 410.823 MTS
CURVA :1 PI = 19+673.50 Δc = 8° 27' 20.56" DER. Gc = 11° 0' 0" Rc = 104.174 ST = 7.701 Lc = 15.374
CURVA :2 PI = 19+715.62 Δc = 16° 20' 48.79" DER. Gc = 14° 0' 0" Rc = 81.851 ST = 11.756 Lc = 23.353
CURVA :3 PI = 19+752.42 Δc = 11° 46' 58.98" DER. Gc = 9° 0' 0" Rc = 127.324 ST = 13.139 Lc = 26.185
CURVA :4 PI = 19+806.53 Δc = 8° 36' 13.34" IZQ. Gc = 9° 0' 0" Rc = 127.324 ST = 9.578 Lc = 19.119
CURVA :5 PI = 19+842.71 Δc = 66° 19' 31.52" IZQ. Gc = 40° 0' 0" Rc = 28.648 ST = 18.720 Lc = 33.163
CURVA :6 PI = 19+947.45 Δc = 4° 0' 16.67" DER. Gc = 1° 0' 0" Rc = 1145.916 ST = 40.063 Lc = 80.092
CURVA :7 PI = 20+029.42 Δc = 20° 4' 5.49" DER. Gc = 12° 0' 0" Rc = 95.493 ST = 16.897 Lc = 33.447
CURVA :8 PI = 20+129.08 Δc = 29° 50' 16.52" IZQ. Gc = 8° 0' 0" Rc = 143.239 ST = 38.164 Lc = 74.595
CURVA :9 PI = 20+211.67 Δc = 10° 9' 40.03" IZQ. Gc = 8° 0' 0" Rc = 143.239 ST = 12.735 Lc = 25.403
CURVA :10 PI = 20+316.41 Δc = 31° 51' 21.79" IZQ. Gc = 18° 0' 0" Rc = 63.662 ST = 18.168 Lc = 35.396
CURVA :11 PI = 20+406.39 Δc = 55° 51' 17.87" DER. Gc = 18° 0' 0" Rc = 63.662 ST = 33.746 Lc = 62.061
CURVA :12 PI = 20+511.71 Δc = 2° 48' 29.45" IZQ. Gc = 1° 30' 0" Rc = 763.944 ST = 18.725 Lc = 37.442
CURVA :13 PI = 20+559.53 Δc = 1° 55' 18.53" DER. Gc = 2° 0' 0" Rc = 572.958 ST = 9.610 Lc = 19.218
CURVA :14 PI = 20+640.14 Δc = 4° 40' 3.16" DER. Gc = 3° 0' 0" Rc = 381.972 ST = 15.567 Lc = 31.117
CURVA :15 PI = 20+687.57 Δc = 47° 37' 52.26" DER. Gc = 22° 0' 0" Rc = 52.087 ST = 22.990 Lc = 43.301
CURVA :16 PI = 20+754.21 Δc = 16° 24' 12.58" IZQ. Gc = 4° 0' 0" Rc = 286.479 ST = 41.291 Lc = 82.017
CURVA :17 PI = 20+858.17 Δc = 36° 1' 43.23" IZQ. Gc = 15° 0' 0" Rc = 76.394 ST = 24.843 Lc = 48.038
CURVA :18 PI = 20+944.98 Δc = 13° 46' 57.41" DER. Gc = 14° 0' 0" Rc = 81.851 ST = 9.892 Lc = 19.689
CURVA :19 PI = 21+012.88 Δc = 73° 20' 56.90" IZQ. Gc = 48° 0' 0" Rc = 23.873 ST = 17.778 Lc = 30.562
CURVA :20 PI = 21+053.53 Δc = 56° 38' 30.50" DER. Gc = 40° 0' 0" Rc = 28.648 ST = 15.439 Lc = 28.321
CURVA :21 PI = 21+101.90 Δc = 5° 48' 1.63" DER. Gc = 6° 0' 0" Rc = 190.986 ST = 9.676 Lc = 19.335
CURVA :22 PI = 21+148.95 Δc = 46° 13' 37.54" DER. Gc = 18° 0' 0" Rc = 63.662 ST = 27.172 Lc = 51.363
CURVA :23 PI = 21+203.43 Δc = 3° 17' 30.12" IZQ. Gc = 3° 0' 0" Rc = 381.972 ST = 10.975 Lc = 21.945
CURVA :24 PI = 21+263.30 Δc = 27° 44' 46.00" IZQ. Gc = 20° 0' 0" Rc = 57.296 ST = 14.151 Lc = 27.746
CURVA :25 PI = 21+312.04 Δc = 19° 43' 39.86" DER. Gc = 10° 0' 0" Rc = 114.592 ST = 19.925 Lc = 39.455
CURVA :26 PI = 21+398.90 Δc = 27° 52' 4.73" IZQ. Gc = 15° 0' 0" Rc = 76.394 ST = 18.954 Lc = 37.157
CURVA :27 PI = 21+460.38 Δc = 18° 41' 56.38" DER. Gc = 10° 0' 0" Rc = 114.592 ST = 18.867 Lc = 37.398
CURVA :28 PI = 21+618.97 Δc = 42° 57' 57.57" IZQ. Gc = 12° 0' 0" Rc = 95.493 ST = 37.583 Lc = 71.610
19+894 TUBO DE ϕ = 1.23 m ESV. 28° 00' IZQ. EN TANGENTE
20+124.80
BN 21-1 C/ SOBRE RAIZ DE ARBOL DE MANGO A 7.48 MTS. DER.
BN 21-2 C/SOBRE TRONCO DE ARBOL DE NANCHE A 11.56 MTS. DER. DE LA ESTACION 20+559.16 ELEV. PROM. = 401.822 MTS
PUNTO BAJO ESTA EN PARTEAGUAS
21+020 TUBO DE ϕ = 1.22 m RADIAL EN CURVA IZQ.
BN 22-1 C/SOBRE TRONCO DE ARBOL DE CAULOTE A 11.84 MTS. DER. DE LA ESTACION 21+012.35 ELEV. PROM. = 431.143 MTS
21+236.40 TUBO DE ϕ = 1.22 m NORMAL EN TANGENTE
BN 22-2 C/SOBRE TRONCO DE ARBOL DE PIEDRA A 7.42 MTS. IZQ. DE LA ESTACION 21+684.67 ELEV. PROM. = 460.095 MTS
km 20
km 21

GEOMETRIA DEL ALINEAMIENTO HORIZONTAL

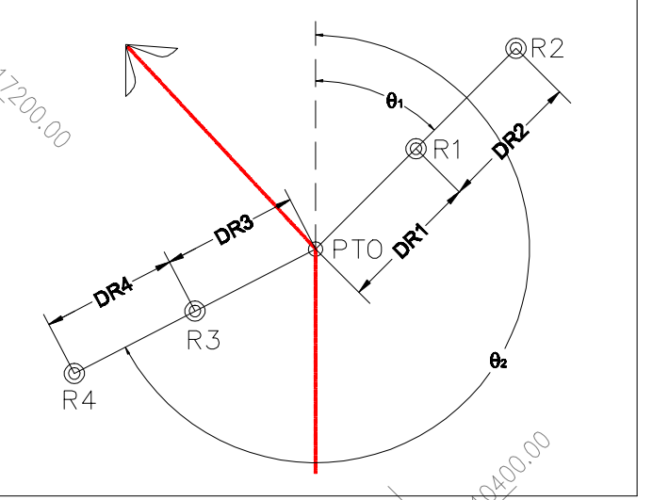
CURVA	TE O PC		EC		PI O PST		CE		ET O PT	
	N	E	N	E	N	E	N	E	N	E
					19+660.00					
					1816694.053	609525.955				
C1	19+665.80				19+673.50				19+681.17	
	1816696.080	609531.390			1816698.771	609538.605			1816700.371	609546.138
C2	19+703.87				19+715.62				19+727.22	
	1816705.087	609568.333			1816707.530	609579.833			1816706.638	609591.555
C3	19+739.28				19+752.42				19+765.46	
	1816705.723	609603.579			1816704.726	609616.680			1816701.075	609629.301
C4	19+796.96				19+806.53				19+816.08	
	1816692.322	609659.556			1816689.660	609668.757			1816688.405	609678.252
C5	19+823.99				19+842.71				19+857.15	
	1816687.368	609686.096			1816684.914	609704.655			1816700.926	609714.354
C6	19+907.39				19+947.45				19+987.48	
	1816743.894	609740.383			1816778.160	609761.140			1816810.893	609784.239
C7	20+012.53				20+029.42				20+045.97	
	1816831.356	609798.680			1816845.162	609808.423			1816854.786	609822.311
C8	20+090.91				20+129.08				20+165.51	
	1816880.382	609859.247			1816902.120	609890.615			1816936.583	609907.010
C9	20+198.94				20+211.67				20+224.34	
	1816966.771	609921.370			1816978.271	609926.841			1816990.556	609930.197
C10	20+298.24				20+316.41				20+333.63	
	1817061.841	609949.671			1817079.367	609954.459			1817096.780	609949.276
C11	20+372.65				20+406.39				20+434.71	
	1817134.170	609938.147			1817166.514	609928.519			1817192.636	609949.883
C12	20+492.99				20+511.71				20+530.43	
	1817237.749	609986.779			1817252.243	609998.634			1817267.301	610009.764
C13	20+549.92				20+559.53				20+569.14	
	1817282.979	610021.352			1817290.707	610027.065			1817298.239	610033.033
C14	20+624.58				20+640.14				20+655.69	
	1817341.687	610067.460			1817353.888	610077.128			1817365.262	610087.757
C15	20+664.58				20+687.57				20+707.89	
	1817371.759	610093.827			1817388.556	610109.524			1817388.279	610132.512
C16	20+712.92				20+754.21				20+794.93	
	1817388.218	610137.543			1817387.720	610178.831			1817398.902	610218.579
C17	20+833.33				20+858.17				20+881.37	
	1817409.301	610255.542			1817416.029	610279.457			1817435.536	610294.840
C18	20+935.08				20+944.98				20+954.77	
	1817477.714	610328.101			1817485.482	610334.227			1817491.567	610342.026
C19	20+995.10				21+012.88				21+025.66	
	1817516.371	610373.822			1817527.306	610387.839			1817543.869	610381.379
C20	21+038.09				21+053.53				21+066.41	
	1817555.444	610376.864			1817569.828	610371.254			1817582.423	610380.183
C21	21+092.22				21+101.90				21+111.56	
	1817603.484	610395.114			1817611.377	610400.709			1817618.664	610407.074
C22	21+121.78				21+148.95				21+173.14	
	1817626.360	610413.796			1817646.825	610431.670			1817648.076	610458.814
C23	21+192.45				21+203.43				21+214.40	
	1817648.965	610478.103			1817649.470	610489.067			1817650.604	610499.984
C24	21+249.15				21+263.30				21+276.90	
	1817654.195	610534.555			1817655.657	610548.630			1817663.503	610560.406
C25	21+292.11				21+312.04				21+331.57	
	1817671.940	610573.068			1817682.988	610589.649			1817687.791	610608.986
C26	21+379.95				21+398.90				21+417.10	
	1817699.452	610655.936			1817704.021	610674.331			1817716.658	610688.457
C27	21+441.51				21+460.38				21+478.91	
	1817732.934	610706.650			1817745.514	610720.712			1817752.921	610738.063
C28	21+581.39				21+618.97				21+653.00	
	1817793.154	610832.309			1817807.910	610866.874			1817842.266	610882.110
					21+700.00					
					1817885.234	610901.166				

REFERENCIAS DEL TRAZO

ANGULOS (Ã?) SE MIDEN A LA DERECHA DESDE LA PROLONGACION DE LA TANGENTE DE ATRAS. LAS DISTANCIAS DR SON TOTALES

PUNTO REFERENCIADO (P)				DR1/DR3		COORDENADAS		DR2/DR4		COORDENADAS	
IDENT	KM	Ã?1/Ã?2		DIST	DESCRIPCION	N	E	DIST	DESCRIPCION	N	E
PI	19+673.50	189°	50'	30.76	CLAVO SOBRE CONCRETO DE CAMINO	1816693.145	609508.365	41.50	CLAVO SOBRE GUARNICION	1816691.180	609497.804
		204°	40'	14.55	CLAVO SOBRE GUARNICION DE CONCRETO	1816699.842	609524.095	29.10	CLAVO SOBRE TROMPO	1816700.913	609509.585
PT	20+165.51	24°	22'	17.38	CLAVO S/ RAIZ DE ARBOL DE MANGO	1816947.539	609920.507	34.94	CLAVO EN TRONCO CON PINTURA ROJA	1816958.604	609934.138
		61°	15'	17.12	CLAVO S/ RAIZ DE ARBOL DE MANGO	1816937.225	609924.115	34.23	CLAVO EN TRONCO CON PINTURA ROJA	1816937.879	609941.219
PST	20+540.00	30°	22'	27.43	CLAVO EN TRONCO DE ARBOL DE NANCHE	1817285.789	610040.672	44.13	CLAVO S/ TRONCO SECO	1817292.359	610056.027
		68°	10'	13.81	CLAVO EN TRONCO DE ARBOL DE NANCHE	1817271.506	610028.818	27.63	CLAVO EN TRONCO EN ARBOL DE PINO	1817268.015	610042.183
PI	21+012.88	342°	59'	23.46	CLAVO SOBRE TROMPO	1817546.515	610401.305	37.39	CLAVO EN TRONCO EN ARBOL DE PINO	1817557.922	610409.301
		346°	37'	13.44	CLAVO SOBRE TROMPO	1817537.807	610396.235	36.52	CLAVO EN TRONCO EN ARBOL DE PINO	1817555.831	610410.646
PST	21+680.00	355°	42'	24.60	CLAVO SOBRE CUNETA	1817890.119	610901.319	49.19	CLAVO S/ TRONCO SECO	1817913.282	610909.578
		359°	43'	38.02	CLAVO SOBRE CONCRETO EN EJE	1817901.805	610908.254	46.58	CLAVO EN TRONCO CON PINTURA ROJA	1817909.651	610911.675

CROQUIS



R1
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