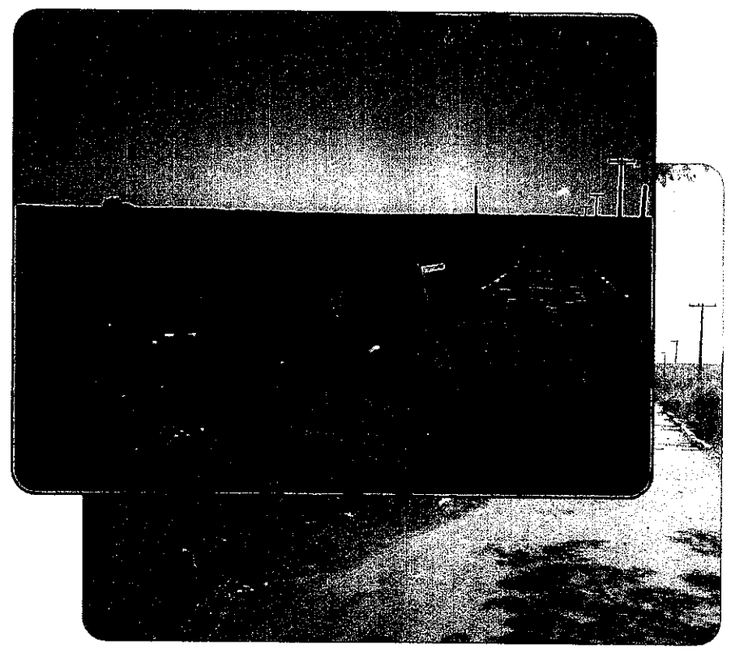
# REPÚBLICA DEL PARAGUAY

**MINISTERIO DE OBRAS PÚBLICAS Y COMUNICACIONES**
GABINETE DEL VICEMINISTRO
DE OBRAS PUBLICAS Y COMUNICACIONES
DIRECCIÓN DE VIALIDAD

**LLAMADO MOPC No. 47/2010**



**Estudios de Factibilidad Técnico - Económico y Socio - ambientales y Diseño Final de Ingeniería para el Proyecto de Rehabilitación del Tramo: Luque - San Bernardino**

***INFORME FINAL FASE 2***
***DISEÑO FINAL DE INGENIERIA***

***VOLUMEN 2***
***PLANOS DE LA OBRA***

***Octubre- 2.011***
***ASUNCION - PARAGUAY***

**INCONPAR S.A.**

**Tramo: Luque - San Bernardino**

# INDICE DE PLANOS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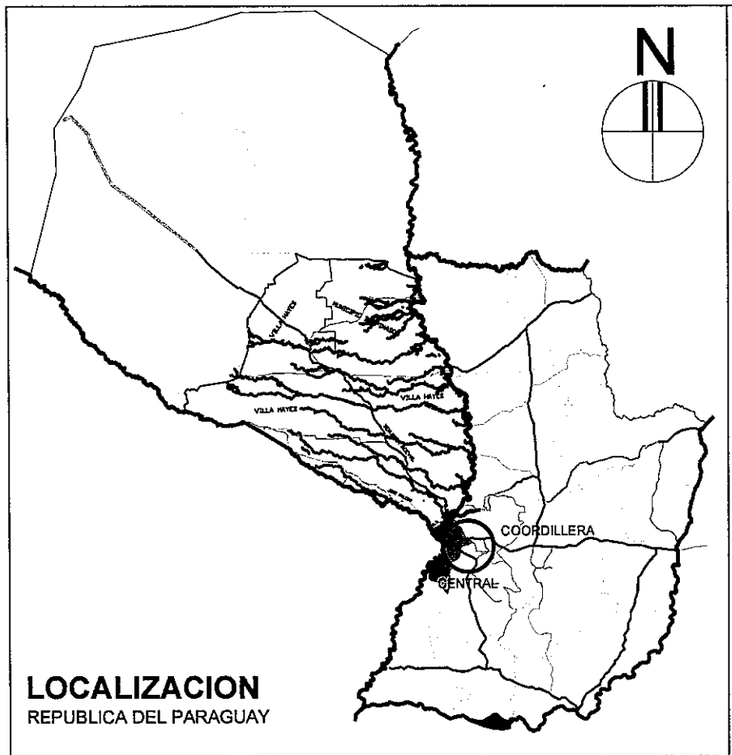
Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

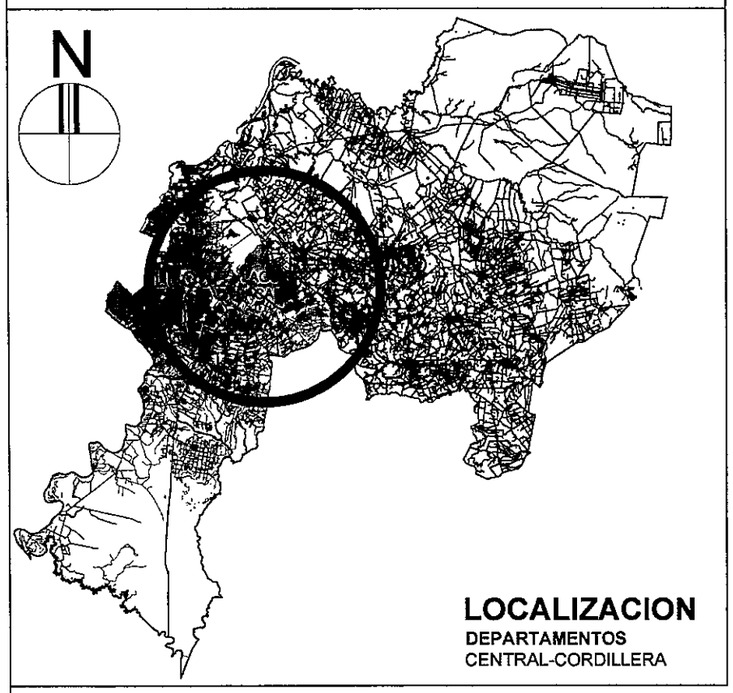
002
(DOS)

# MAPA DE UBICACIÓN

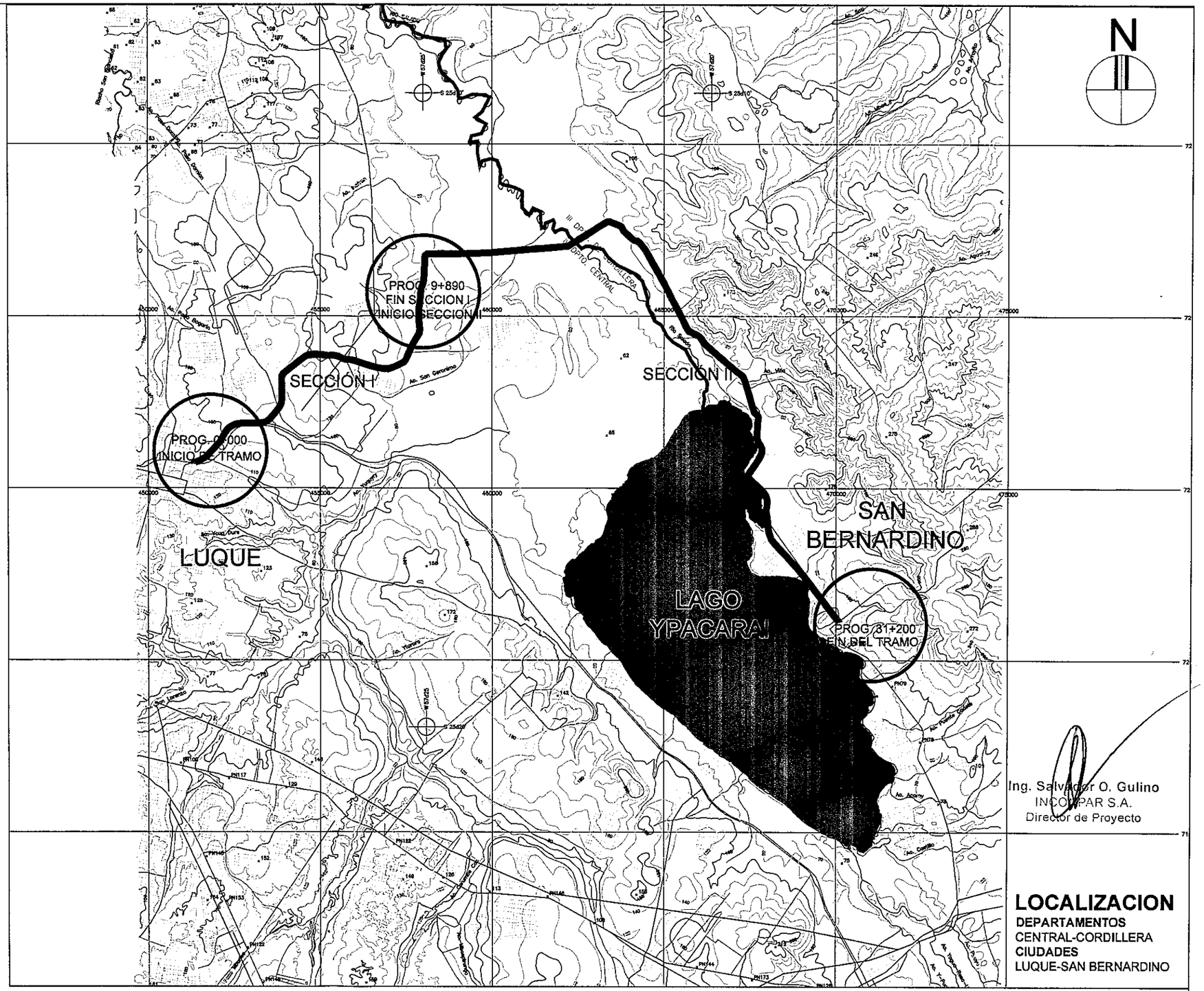
Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto




**LOCALIZACION**
REPUBLICA DEL PARAGUAY



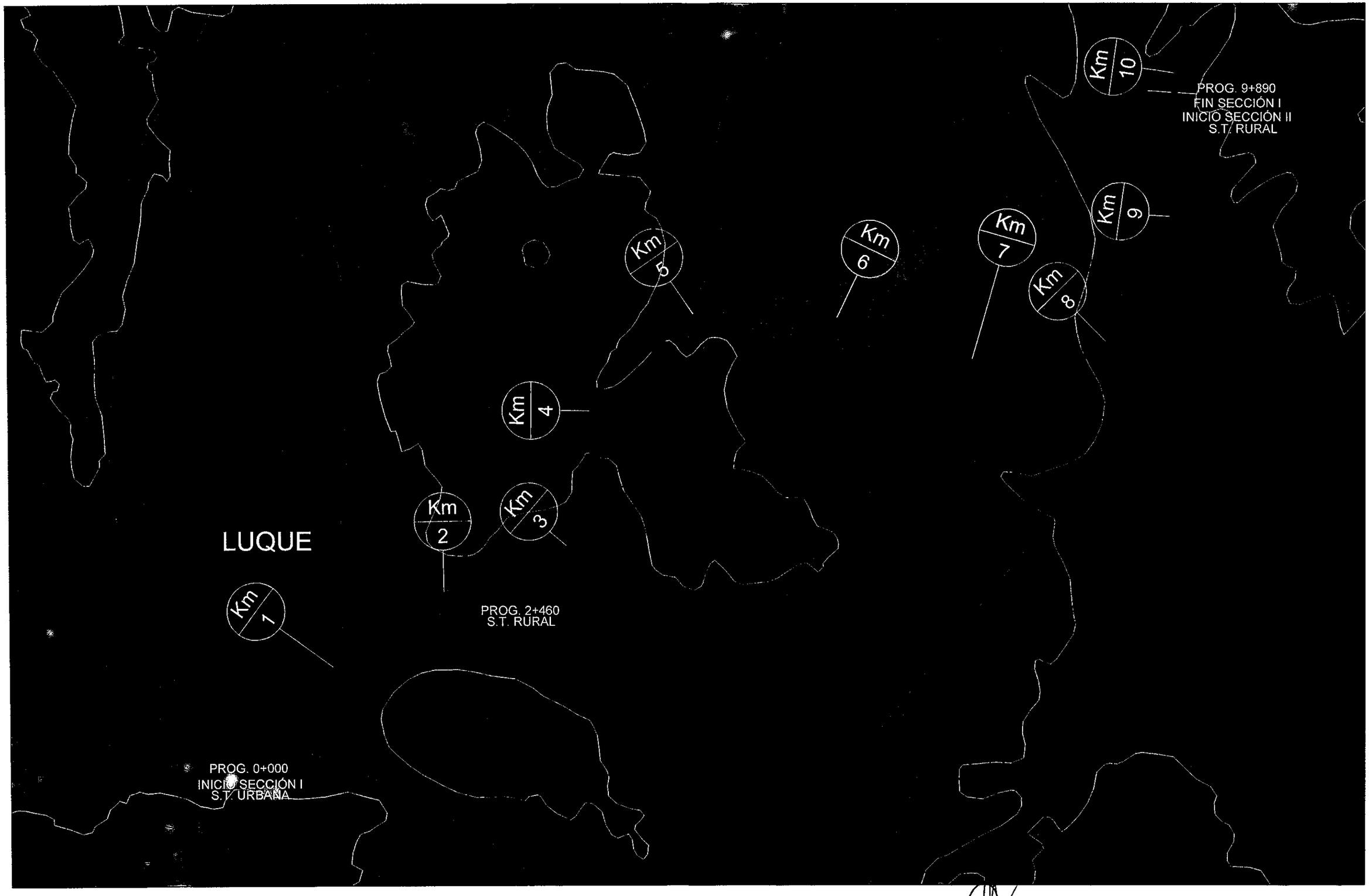

**LOCALIZACION**
**DEPARTAMENTOS**
CENTRAL-CORDILLERA




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

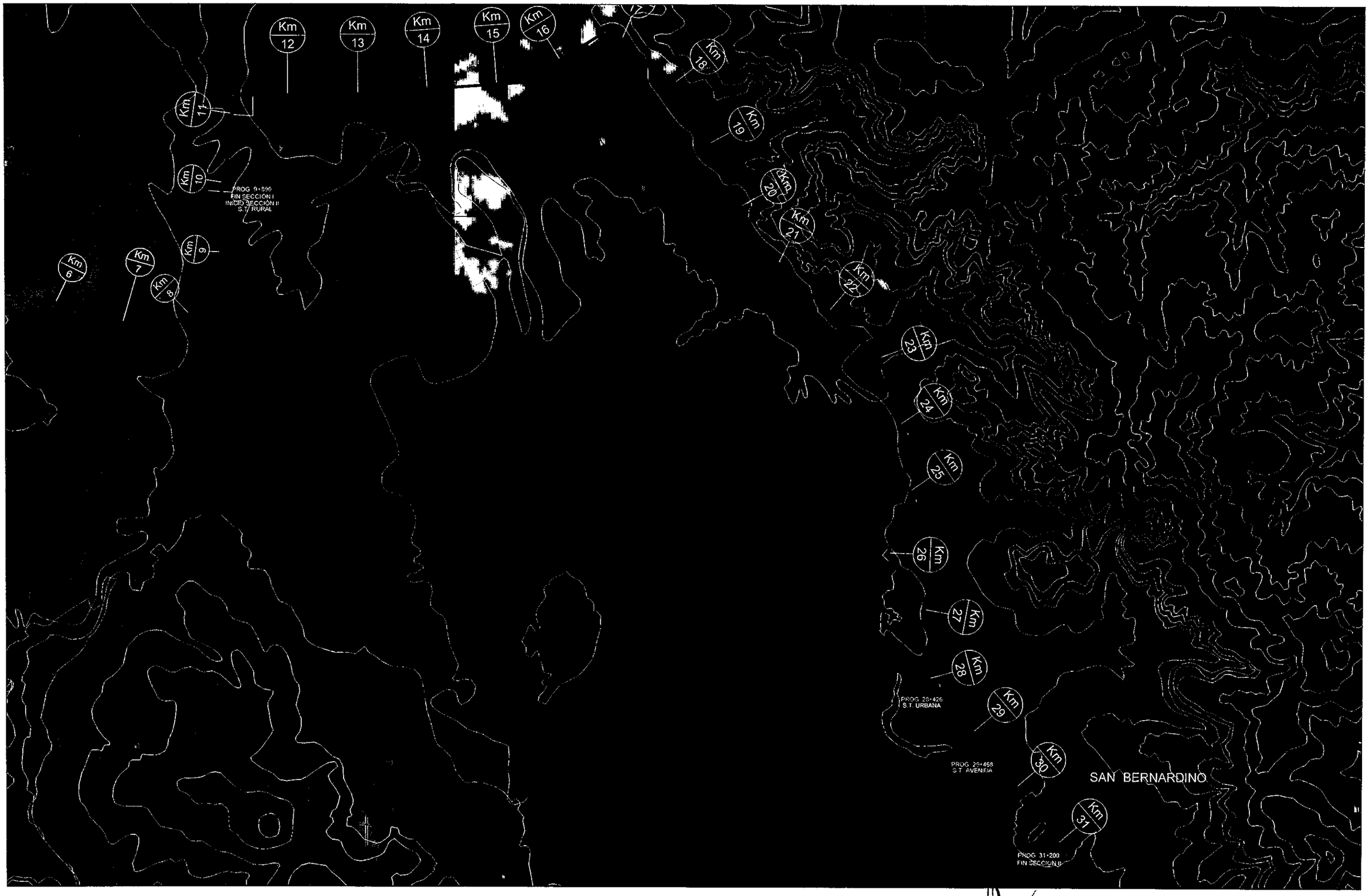
**LOCALIZACION**
**DEPARTAMENTOS**
CENTRAL-CORDILLERA
**CIUDADES**
LUQUE-SAN BERNARDINO

| | | | |
|---|---|---|---|
| REPUBLICA DEL PARAGUAY<br>MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES<br>GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES<br>DIRECCION DE VIALIDAD | INCONPAR S.A. | DISEÑO FINAL DE INGENIERÍA<br>TRAMO: LUQUE - SAN BERNARDINO<br>RESOLUCIÓN MINISTERIAL Nº 2.532/2010 - FONDO LOCAL<br>CONTRATO S.G. MINISTRO Nº 362/2010 | MAPA DE LOCALIZACIÓN<br>TRAMO: LUQUE - SAN BERNARDINO (Cuatro) 004 |
| | | | FECHA: SETIEMBRE / 2011 · ESCALA: SIN ESCALA · LAMINA Nº: PG-01 |




| | | | | |
|---|---|---|---|---|
| REPUBLICA DEL PARAGUAY<br>MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES<br>GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES<br>DIRECCION DE VIALIDAD | INCONPAR S.A. | DISEÑO FINAL DE INGENIERÍA<br>TRAMO: LUQUE - SAN BERNARDINO<br>SECCIÓN I: PROG. 0+000 A PROG. 9+890<br>RESOLUCIÓN MINISTERIAL Nº 2.532/2010 - FONDO LOCAL<br>CONTRATO S.G. MINISTRO Nº 362/2010 | Ing. Salvador O. Gulino<br>INCONPAR S.A.<br>Director de Proyecto | MAPA DE UBICACIÓN<br>SECCIÓN I - PROG.0+000 A 9+890 |
| | | | FECHA<br>SETIEMBRE / 2011 | ESCALA<br>1:25.000 |
| | | | LAMINA Nº<br>PG-02 | |

065




| | | | | |
|---|---|---|---|---|
| REPUBLICA DEL PARAGUAY<br>MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES<br>GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES<br>DIRECCION DE VIALIDAD | INCONPAR S.A. | DISEÑO FINAL DE INGENIERÍA<br>TRAMO: LUQUE - SAN BERNARDINO<br>SECCIÓN II: PROG. 9+890 A PROG. 31+200<br>RESOLUCIÓN MINISTERIAL Nº 2.532/2010 - FONDO LOCAL<br>CONTRATO S.G. MINISTRO Nº 362/2010 | Ing. Salvador O. Gulino<br>INCONPAR S.A.<br>Director de Proyecto | MAPA DE UBICACIÓN<br>SECCIÓN II - PROG. 9+890 A 31+200 |
| | | | FECHA<br>SETIEMBRE / 2011 | ESCALA<br>1:25.000 |
| | | | LAMINA Nº<br>PG-03 | |

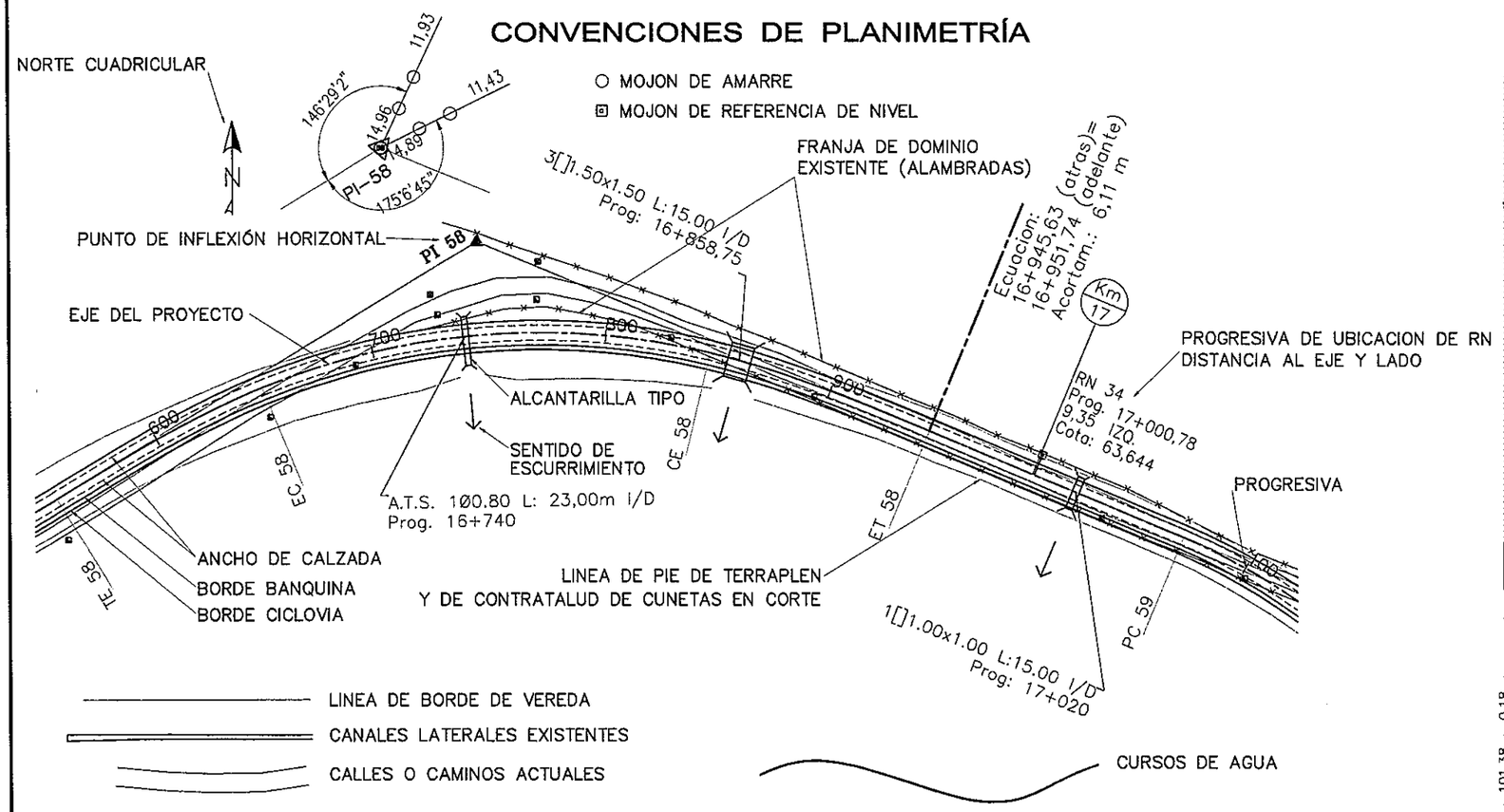
006
(sis)

# DISEÑO GEOMÉTRICO

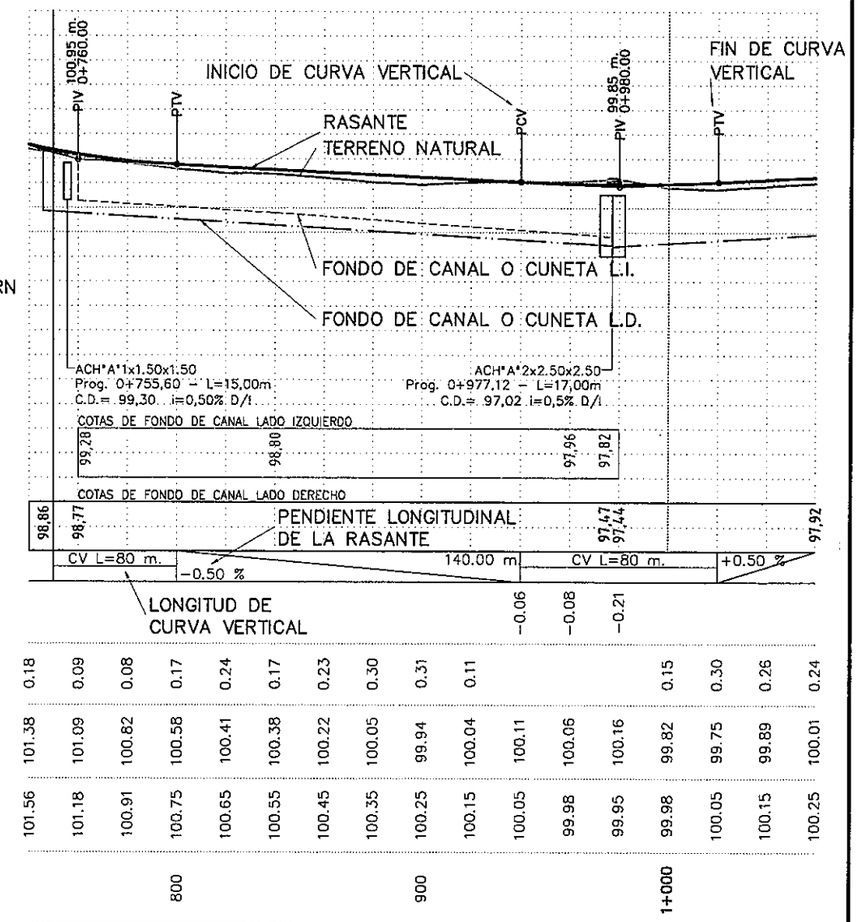
Ing. Salvador O. Gulino
INCONTAR S.A.
Director de Proyecto

007
(siete)

# CONVENCIONES DE PLANIMETRÍA




# CONVENCIONES DE ALTIMETRIA




## ABREVIATURAS:

| | | | |
|---|---|---|---|
| R: | RADIO DE CURVA HORIZONTAL | PI: | PUNTO DE INFLEXION HORIZONTAL |
| D: | DESARROLLO DE CURVA | PC: | PUNTO DE INICIO DE CURVA HORIZONTAL |
| T: | TANGENTE | PT: | PUNTO DE TERMINACION DE CURVA HORIZONTAL |
| E: | EXTERNA | TE: | PUNTO DE INICIO DE CURVA DE TRANSICIÓN (ESPIRAL) |
| d.p.m. | DEFLEXIÓN POR METRO | EC: | PUNTO DE FIN DE ESPIRAL E INICIO DE CURVA CIRCULAR |
| p: | PERALTE | CE: | PUNTO DE TERMINACION DE CURVA CIRCULAR E INICIO DE ESPIRAL |
| Sa: | SOBREANCHO | ET: | PUNTO DE FIN DE CURVA DE TRANSICIÓN (ESPIRAL) |
| RN: | REFERENCIA DE NIVEL | PL: | PUNTO DE LINEA |
| A.L.: | AMBOS LADOS | Prog.: | PROGRESIVA |
| L.I.: | LADO IZQUIERDO | A.C.: | ÁNGULO DE DEFLEXIÓN |
| L.D.: | LADO DERECHO | R.Cl.: | REGISTRO CLOACAL |
| | | S.V.: | SUMIDERO DE VENTANA |
| M.T.: | MEDIA TENSION | S.M.: | SUMIDERO MIXTO |
| B.T.: | BAJA TENSION | | |

- COLUMNAS DE HORMIGON M.T.
- COLUMNAS DE HORMIGON B.T.
- COLUMNAS METALICAS M.T.
- COLUMNAS METALICAS B.T.
- COLUMNAS DE MADERA

| | |
|---|---|
| PIV: | PUNTO DE INFLEXIÓN VERTICAL |
| PCV: | PUNTO DE INICIO DE CURVA VERTICAL |
| PTV: | PUNTO DE TERMINACIÓN DE CURVA VERTICAL |
| L: | LONGITUD DE CURVA VERTICAL |
| AT H°A° | ALCANTARILLA TUBULAR DE HORMIGÓN ARMADO |
| AC H°A° | ALCANTARILLA CELULAR DE HORMIGÓN ARMADO |
| CD: | COTA DE DESAGÜE ALCANTARILLA |
| I/D – D/I: | SENTIDO DE ESCURRIMIENTO (IZQUIERDA–DERECHA O DERECHA–IZQUIERDA) |
| i: | PENDIENTE LONGITUDINAL DE LA ALCANTARILLA |
| Long.: | LONGITUD DE ALCANTARILLAS |
| NAM: | NIVEL DE AGUAS MÁXIMAS (OBSERVADO) |

ALCANTARILLAS TUBULARES DE H°A°
(SIMPLES, DOBLES O TRIPLES)

ALCANTARILLAS CELULARES DE H°A°
(SIMPLES, DOBLES O TRIPLES)

Ing. Salvador O. Guillén
INCONPAR S.A.
Director de Proyecto

008
(OCHO)

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

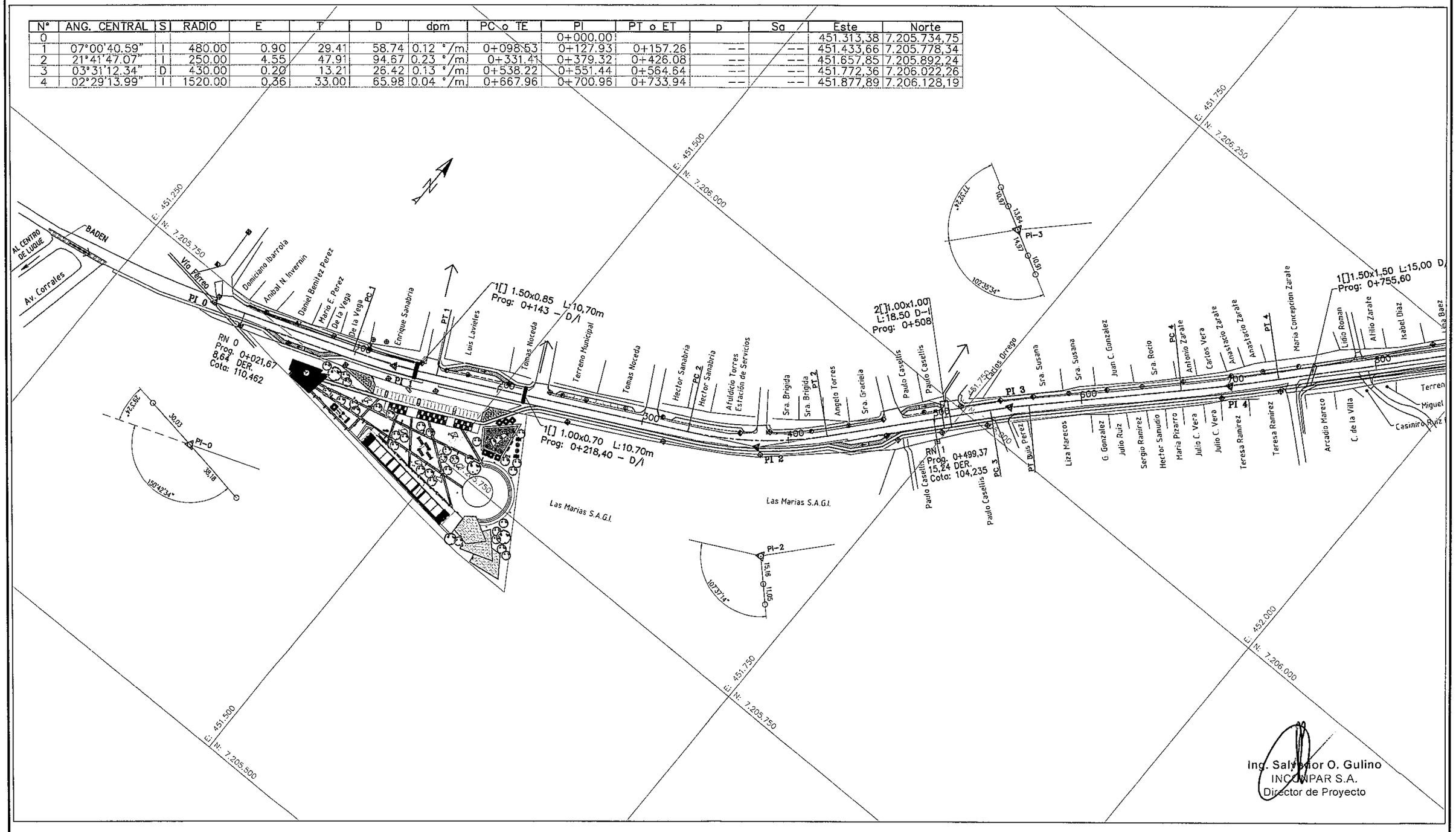
TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I y SECCIÓN II**

LAMINA DE CONVENCIONES Y ABREVIATURAS

ESCALA H = 1:2.500 V = 1:250

LAMINA N° DG–01

| N° | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | | | | | | 0+000.00 | | | | 451.313,38 | 7.205.734,75 |
| 1 | 07°00'40.59" | I | 480.00 | 0.90 | 29.41 | 58.74 | 0.12 °/m | 0+098.53 | 0+127.93 | 0+157.26 | -- | -- | 451.433,66 | 7.205.778,34 |
| 2 | 21°41'47.07" | I | 250.00 | 4.55 | 47.91 | 94.67 | 0.23 °/m | 0+331.41 | 0+379.32 | 0+426.08 | -- | -- | 451.657,85 | 7.205.892,24 |
| 3 | 03°31'12.34" | D | 430.00 | 0.20 | 13.21 | 26.42 | 0.13 °/m | 0+538.22 | 0+551.44 | 0+564.64 | -- | -- | 451.772,36 | 7.206.022,26 |
| 4 | 02°29'13.99" | I | 1520.00 | 0.36 | 33.00 | 65.98 | 0.04 °/m | 0+667.96 | 0+700.96 | 0+733.94 | -- | -- | 451.877,89 | 7.206.128,19 |




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

109
(Neve)

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

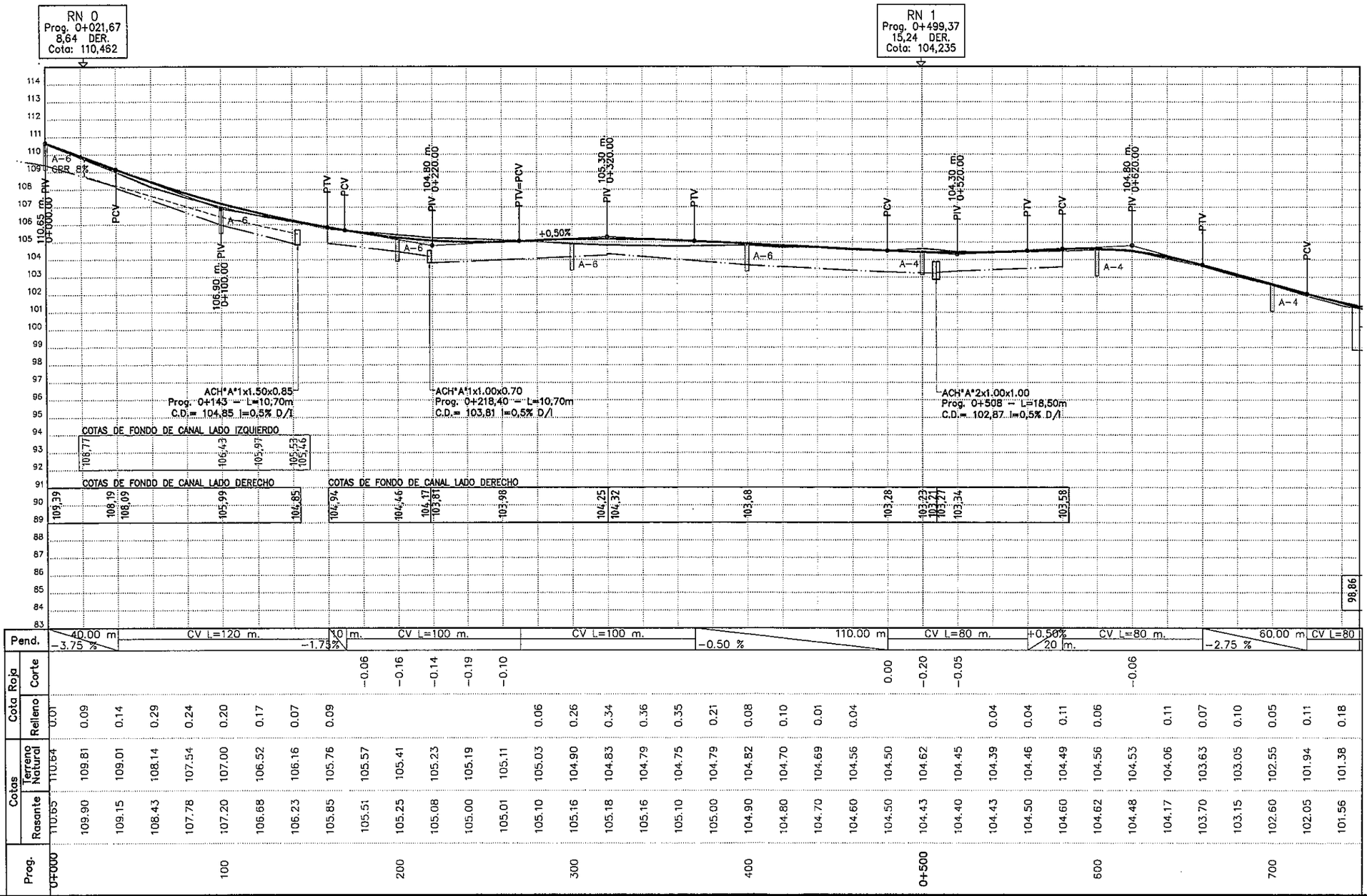
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

PLANIMETRIA
Prog: 0+000 a 0+750

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–02




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

010
(0102)

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

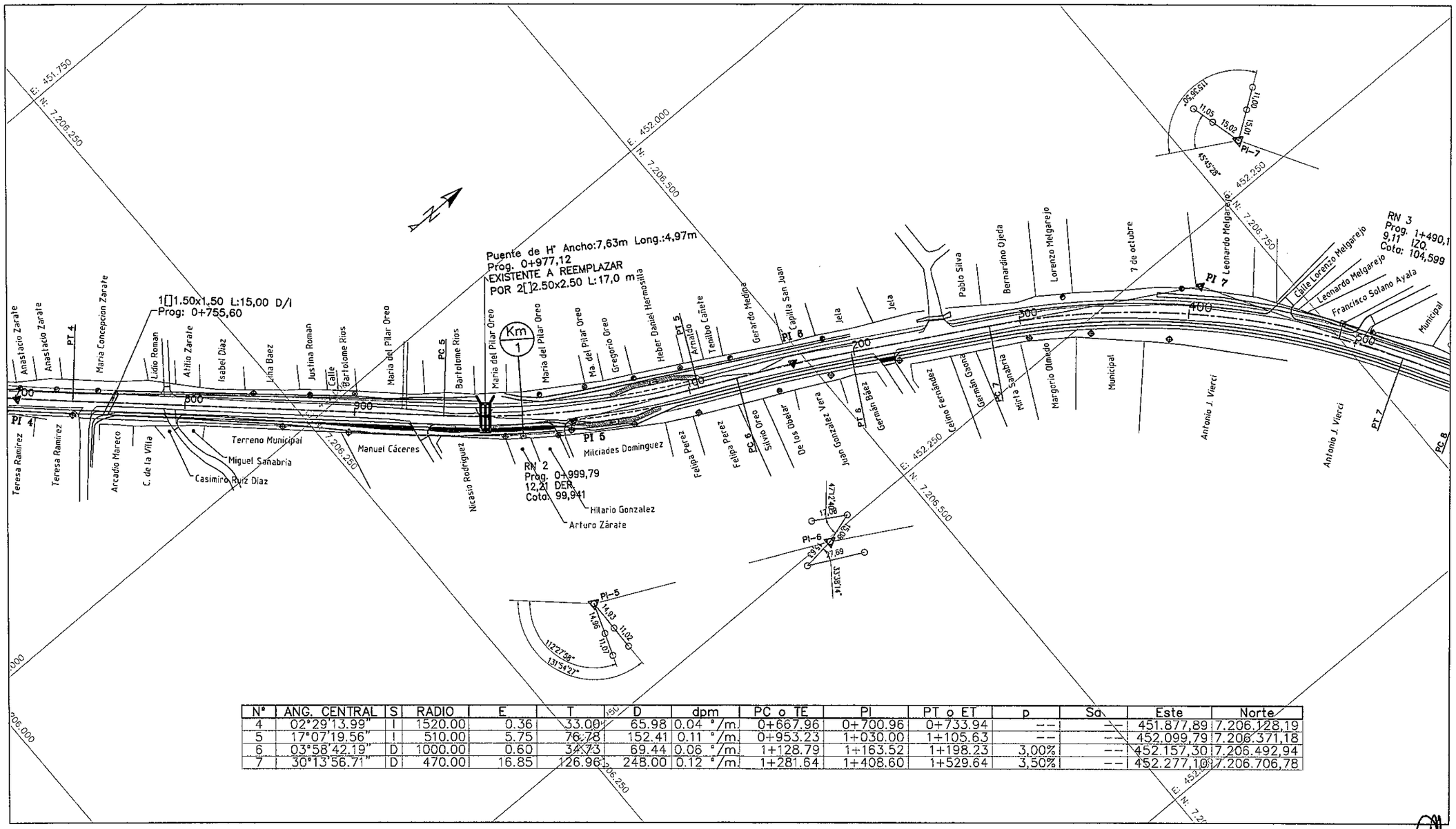
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

ALTIMETRIA
Prog: 0+000 a 0+750

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–03




| N° | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 02°29'13.99" | I | 1520.00 | 0.36 | 33.00 | 65.98 | 0.04 °/m | 0+667.96 | 0+700.96 | 0+733.94 | -- | -- | 451.877,89 | 7.206.128,19 |
| 5 | 17°07'19.56" | I | 510.00 | 5.75 | 76.78 | 152.41 | 0.11 °/m | 0+953.23 | 1+030.00 | 1+105.63 | -- | -- | 452.099,79 | 7.206.371,18 |
| 6 | 03°58'42.19" | D | 1000.00 | 0.60 | 34.73 | 69.44 | 0.06 °/m | 1+128.79 | 1+163.52 | 1+198.23 | 3,00% | -- | 452.157,30 | 7.206.492,94 |
| 7 | 30°13'56.71" | D | 470.00 | 16.85 | 126.96 | 248.00 | 0.12 °/m | 1+281.64 | 1+408.60 | 1+529.64 | 3,50% | -- | 452.277,10 | 7.206.706,78 |

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

011
(Once)

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

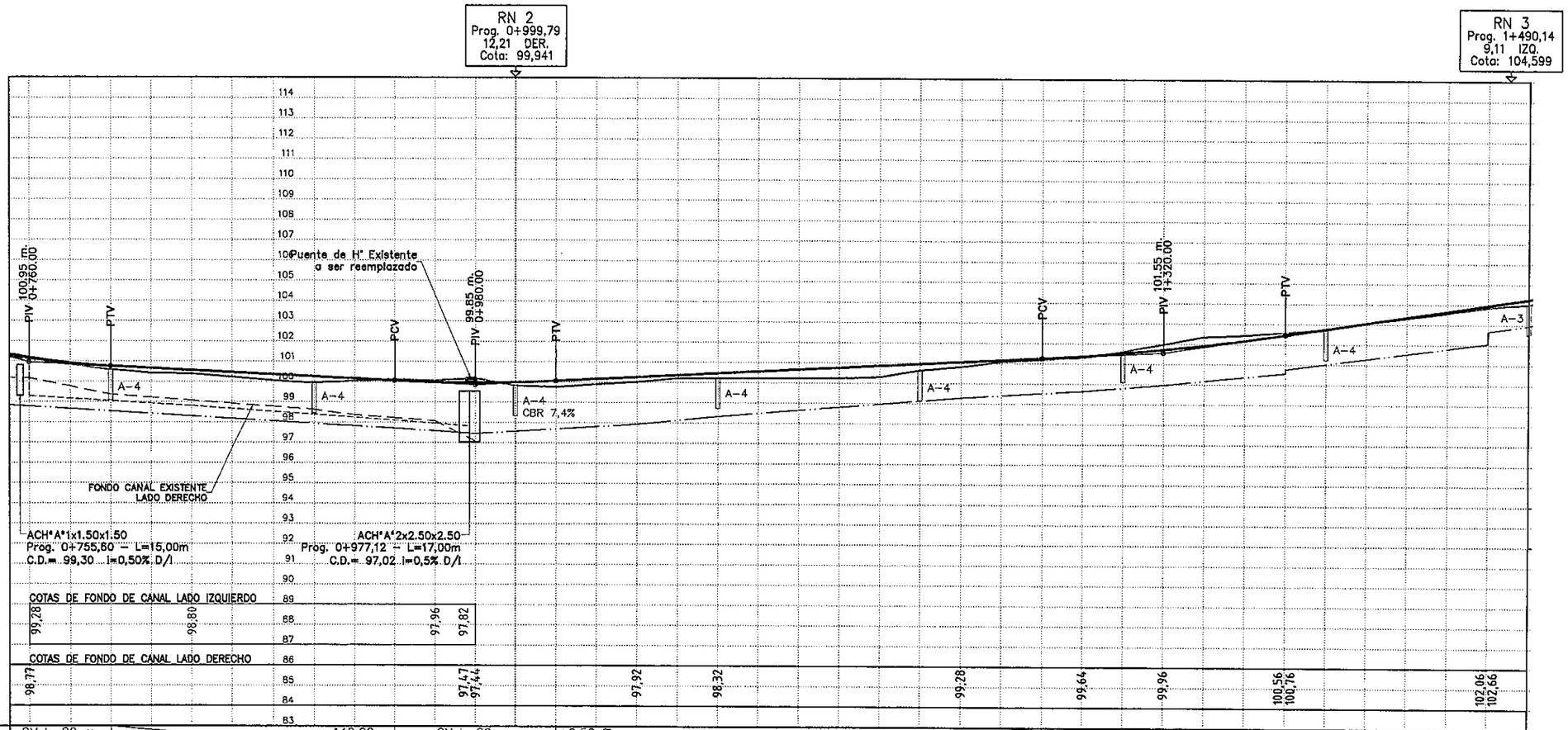
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

PLANIMETRIA
Prog: 0+750 a 1+500

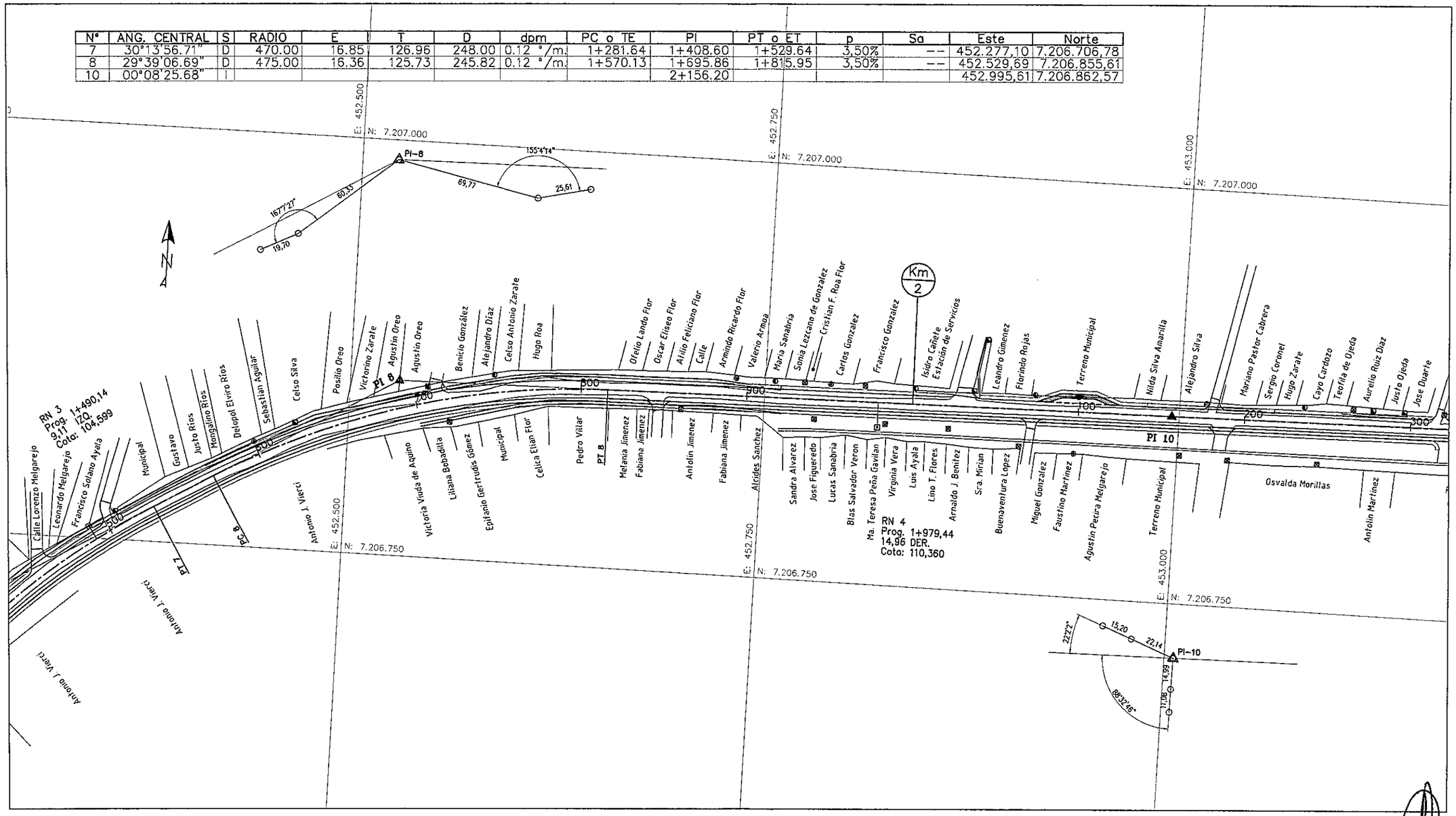
ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–04


RN 2
Prog. 0+999,79
12,21 DER.
Cota: 99,941
RN 3
Prog. 1+490,14
9,11 IZQ.
Cota: 104,599
PIV 100,95 m.
0+760,00
PTV
PCV
PIV 99,85 m.
0+980,00
PTV
PCV
PIV 101,55 m.
1+320,00
PTV
Puente de H° Existente
a ser reemplazado
A-4
A-4
A-4
CBR 7,4%
A-4
A-4
A-4
A-4
A-3
FONDO CANAL EXISTENTE
LADO DERECHO
ACH°A°1x1.50x1.50
Prog. 0+755,60 -- L=15,00m
C.D.= 99,30 I=0,50% D/I
ACH°A°2x2.50x2.50
Prog. 0+977,12 -- L=17,00m
C.D.= 97,02 I=0,5% D/I
COTAS DE FONDO DE CANAL LADO IZQUIERDO
99,28
98,80
97,96
97,82
COTAS DE FONDO DE CANAL LADO DERECHO
98,77
97,47
97,44
97,92
98,32
99,28
99,64
99,96
100,56
100,76
102,06
102,66

| | | |

| Nº | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 30°13'56.71" | D | 470.00 | 16.85 | 126.96 | 248.00 | 0.12 °/m. | 1+281.64 | 1+408.60 | 1+529.64 | 3,50% | -- | 452.277,10 | 7.206.706,78 |
| 8 | 29°39'06.69" | D | 475.00 | 16.36 | 125.73 | 245.82 | 0.12 °/m. | 1+570.13 | 1+695.86 | 1+815.95 | 3,50% | -- | 452.529,69 | 7.206.855,61 |
| 10 | 00°08'25.68" | I | | | | | | | 2+156.20 | | | | 452.995,61 | 7.206.862,57 |




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

013

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

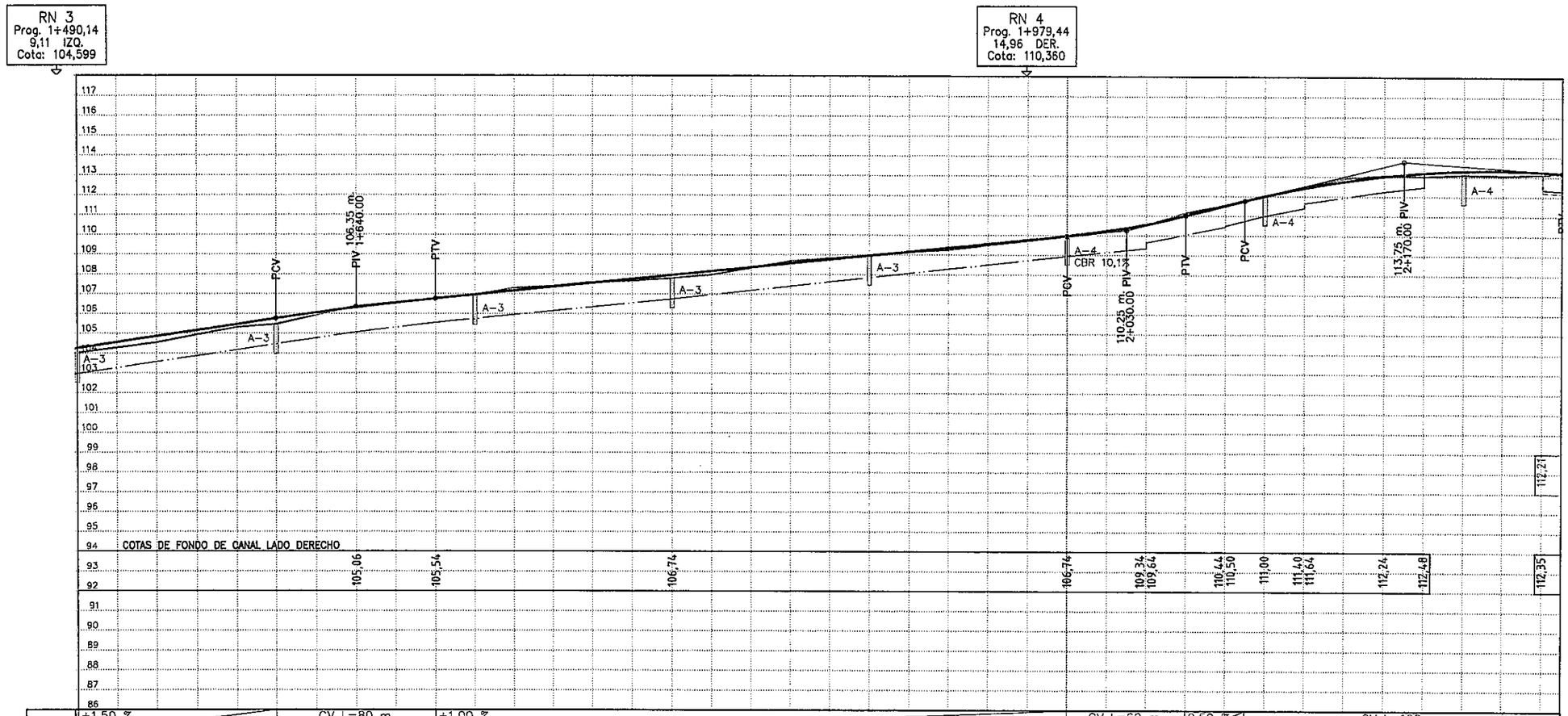
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL Nº 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO Nº 362/2010

TRAMO: "LUQUE – SAN BERNARDINO" (trece)
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

PLANIMETRIA
Prog: 1+500 a 2+250

ESCALA
H = 1:2.500
V = 1:250

LAMINA Nº
DG–06




| Pend. | +1.50 % | CV L=80 m. | +1.00 % | CV L=60 m. | 2.50 % | CV L=160 m. |
|---|---|---|---|---|---|---|
| | 100.00 m | | 320.00 m | | 30.00 m. | |

| Prog. | Rasante | Terreno Natural | Relleno | Corte |
|---|---|---|---|---|
| 1+500 | 104.25 | 104.01 | 0.24 | |
| | 104.55 | 104.27 | 0.28 | |
| | 104.85 | 104.53 | 0.32 | |
| | 105.15 | 104.93 | 0.22 | |
| | 105.45 | 105.31 | 0.14 | |
| 600 | 105.75 | 105.46 | 0.29 | |
| | 106.04 | 105.92 | 0.12 | |
| | 106.30 | 106.38 | | -0.08 |
| | 106.54 | 106.56 | | -0.03 |
| | 106.75 | 106.74 | 0.01 | |
| 700 | 106.95 | 106.94 | 0.01 | |
| | 107.15 | 107.29 | | -0.14 |
| | 107.35 | 107.39 | | -0.04 |
| | 107.55 | 107.58 | | -0.03 |
| | 107.75 | 107.66 | 0.09 | |
| 800 | 107.95 | 107.80 | 0.15 | |
| | 108.15 | 107.98 | 0.17 | |
| | 108.35 | 108.32 | 0.03 | |
| | 108.55 | 108.66 | | -0.11 |
| | 108.75 | 108.81 | | -0.06 |
| 900 | 108.95 | 108.96 | | -0.01 |
| | 109.15 | 109.13 | 0.02 | |
| | 109.35 | 109.24 | 0.11 | |
| | 109.55 | 109.49 | 0.06 | |
| | 109.75 | 109.71 | 0.04 | |
| 2+000 | 109.95 | 110.00 | | -0.05 |
| | 110.20 | 110.25 | | -0.05 |
| | 110.55 | 110.51 | 0.04 | |
| | 111.00 | 111.14 | | -0.14 |
| | 111.50 | 111.54 | | -0.04 |
| 100 | 111.99 | 112.03 | | -0.04 |
| | 112.41 | 112.46 | | -0.05 |
| | 112.75 | 112.91 | | -0.16 |
| | 113.01 | 113.06 | | -0.05 |
| | 113.19 | 113.01 | 0.18 | |
| 200 | 113.29 | 113.10 | 0.19 | |
| | 113.31 | 113.06 | 0.25 | |
| | 113.25 | 113.12 | 0.13 | |

Ing. Salvador D. Gulino
INCONPAR S.A.
Director de Proyecto

014

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

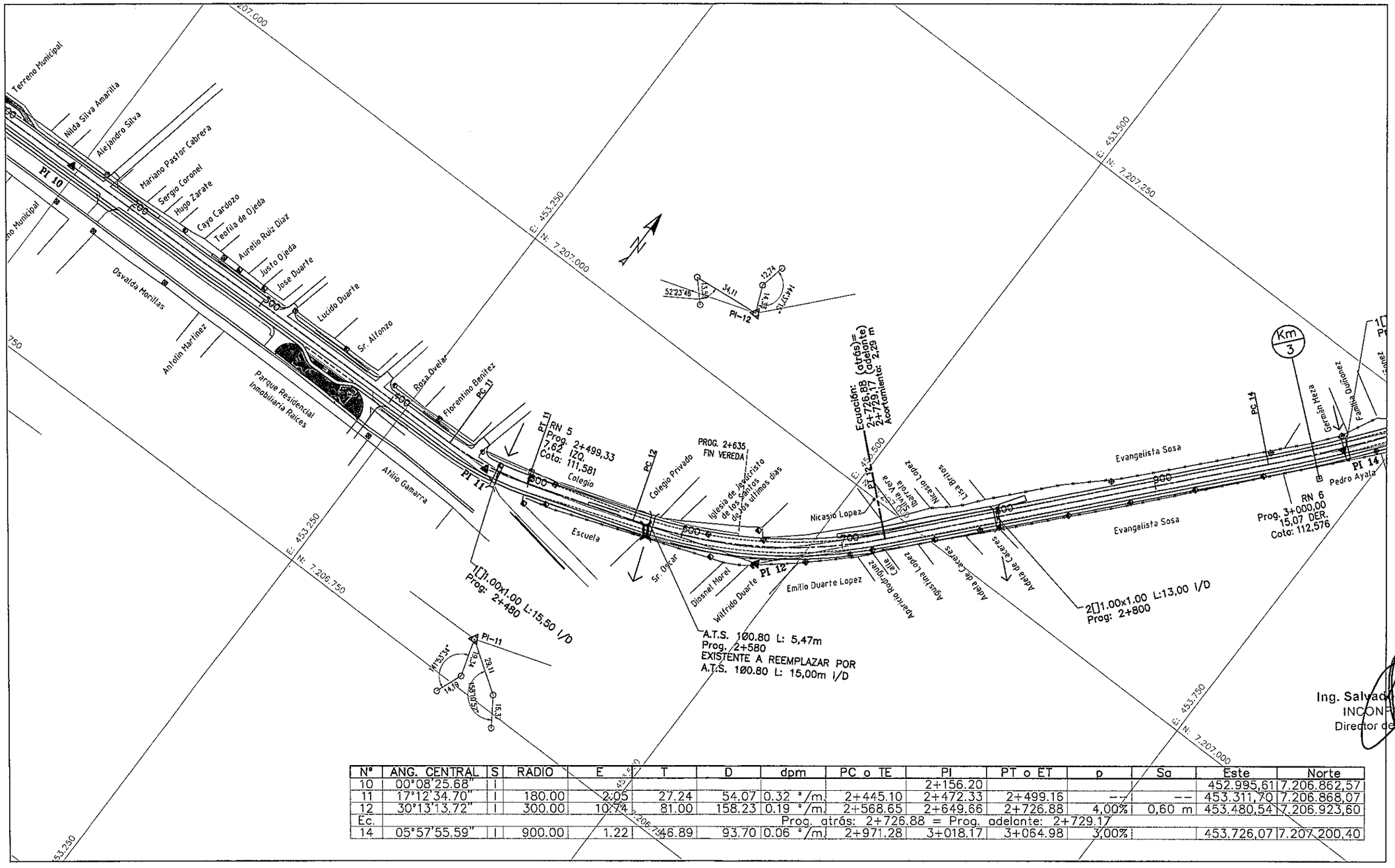
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO" (catorce)
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

ALTIMETRIA
Prog: 1+500 a 2+250

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–07




Ing. Salvador D. Gulino
INCONPAR S.A.
Director de Proyecto

| Nº | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 00°08'25.68" | I | | | | | | | 2+156.20 | | | | 452.995,61 | 7.206.862,57 |
| 11 | 17°12'34.70" | I | 180.00 | 2.05 | 27.24 | 54.07 | 0.32 °/m | 2+445.10 | 2+472.33 | 2+499.16 | -- | -- | 453.311,70 | 7.206.868,07 |
| 12 | 30°13'13.72" | I | 300.00 | 10.74 | 81.00 | 158.23 | 0.19 °/m | 2+568.65 | 2+649.66 | 2+726.88 | 4,00% | 0,60 m | 453.480,54 | 7.206.923,60 |
| Ec. | | | | | | | | Prog. atrás: 2+726.88 = Prog. adelante: 2+729.17 | | | | | | |
| 14 | 05°57'55.59" | I | 900.00 | 1.22 | 46.89 | 93.70 | 0.06 °/m | 2+971.28 | 3+018.17 | 3+064.98 | 3,00% | | 453.726,07 | 7.207.200,40 |

015

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

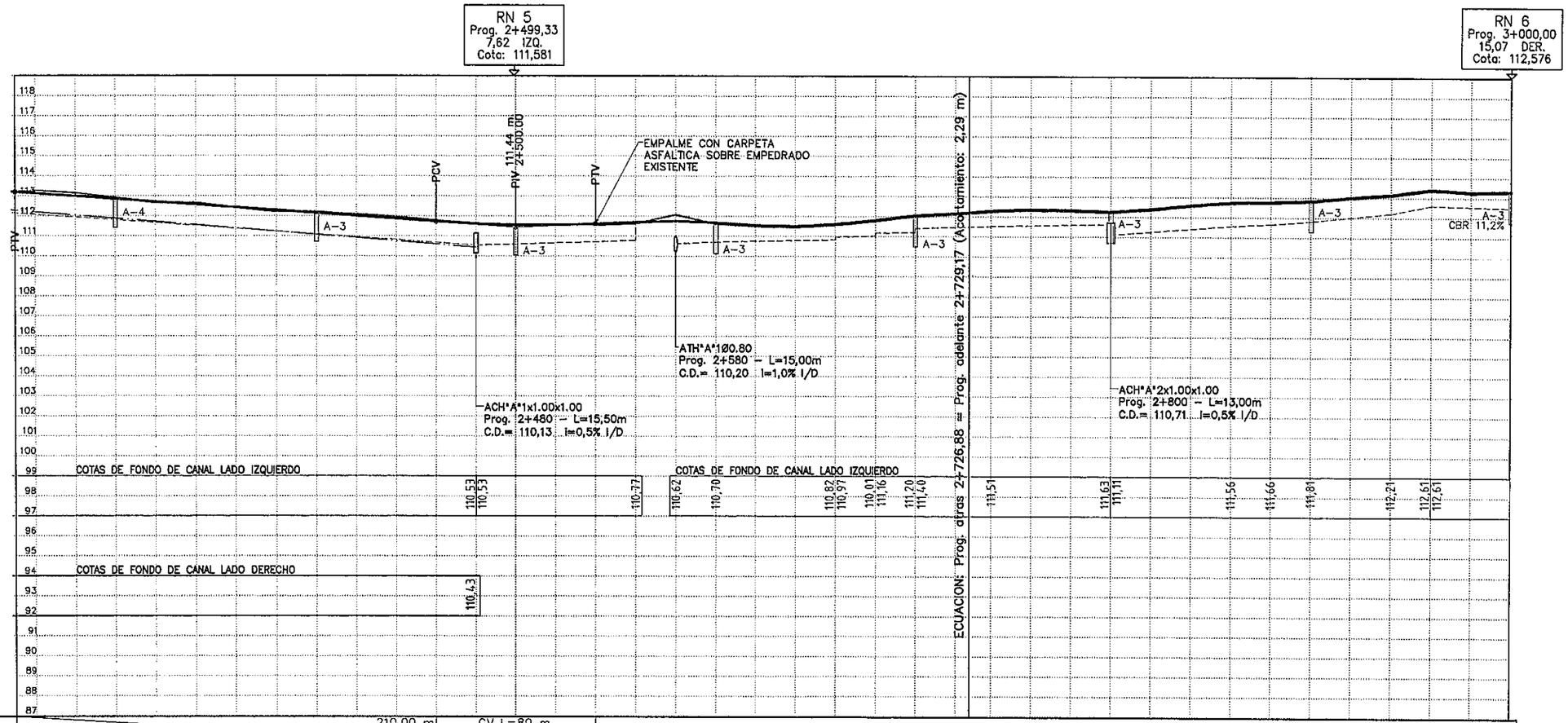
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL Nº 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO Nº 362/2010

TRAMO: "LUQUE – SAN BERNARDINO" (quince)
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

PLANIMETRIA
Prog: 2+250 a 3+000

ESCALA
H = 1:2.500
V = 1:250

LAMINA Nº
DG–08




Pend. -0.70 % | 210.00 m | CV L=80 m. | ZONA DE CARPETA ASFALTICA SOBRE EMPEDRADO EXISTENTE

| Prog. | Cota Roja Corte | Cota Roja Relleno | Cotas Terreno Natural | Cotas Rasante |
|---|---|---|---|---|
| | -0.14 | | 113.26 | 113.12 |
| | -0.15 | | 113.13 | 112.98 |
| 300 | -0.08 | | 112.92 | 112.84 |
| | | 0.06 | 112.64 | 112.70 |
| | -0.10 | | 112.66 | 112.56 |
| | | 0.01 | 112.41 | 112.42 |
| | | 0.08 | 112.20 | 112.28 |
| 400 | -0.07 | | 112.21 | 112.14 |
| | -0.08 | | 112.08 | 112.00 |
| | -0.10 | | 111.96 | 111.86 |
| | -0.06 | | 111.78 | 111.72 |
| | -0.01 | | 111.62 | 111.61 |
| 2+500 | | 0.03 | 111.52 | 111.55 |
| | -0.03 | | 111.59 | 111.55 |
| | | 0.065 | 111.54 | 111.61 |
| | | 0.065 | 111.62 | 111.68 |
| | -0.31 | | 112.06 | 111.75 |
| 600 | | 0.065 | 111.61 | 111.67 |
| | | 0.065 | 111.48 | 111.54 |
| | | 0.065 | 111.44 | 111.50 |
| | | 0.065 | 111.55 | 111.61 |
| | | 0.065 | 111.75 | 111.81 |
| 700 | | 0.065 | 111.99 | 112.05 |
| | | 0.065 | 112.10 | 112.16 |
| | | 0.065 | 112.23 | 112.29 |
| | | 0.065 | 112.31 | 112.37 |
| | | 0.065 | 112.27 | 112.34 |
| 800 | | 0.065 | 112.21 | 112.27 |
| | | 0.065 | 112.34 | 112.41 |
| | | 0.065 | 112.54 | 112.61 |
| | | 0.065 | 112.69 | 112.75 |
| | | 0.065 | 112.72 | 112.79 |
| 900 | | 0.065 | 112.78 | 112.84 |
| | | 0.065 | 112.96 | 113.03 |
| | | 0.065 | 113.10 | 113.17 |
| | | 0.065 | 113.36 | 113.43 |
| | | 0.065 | 113.23 | 113.30 |
| 3+000 | | 0.065 | 113.27 | 113.34 |

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

016

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

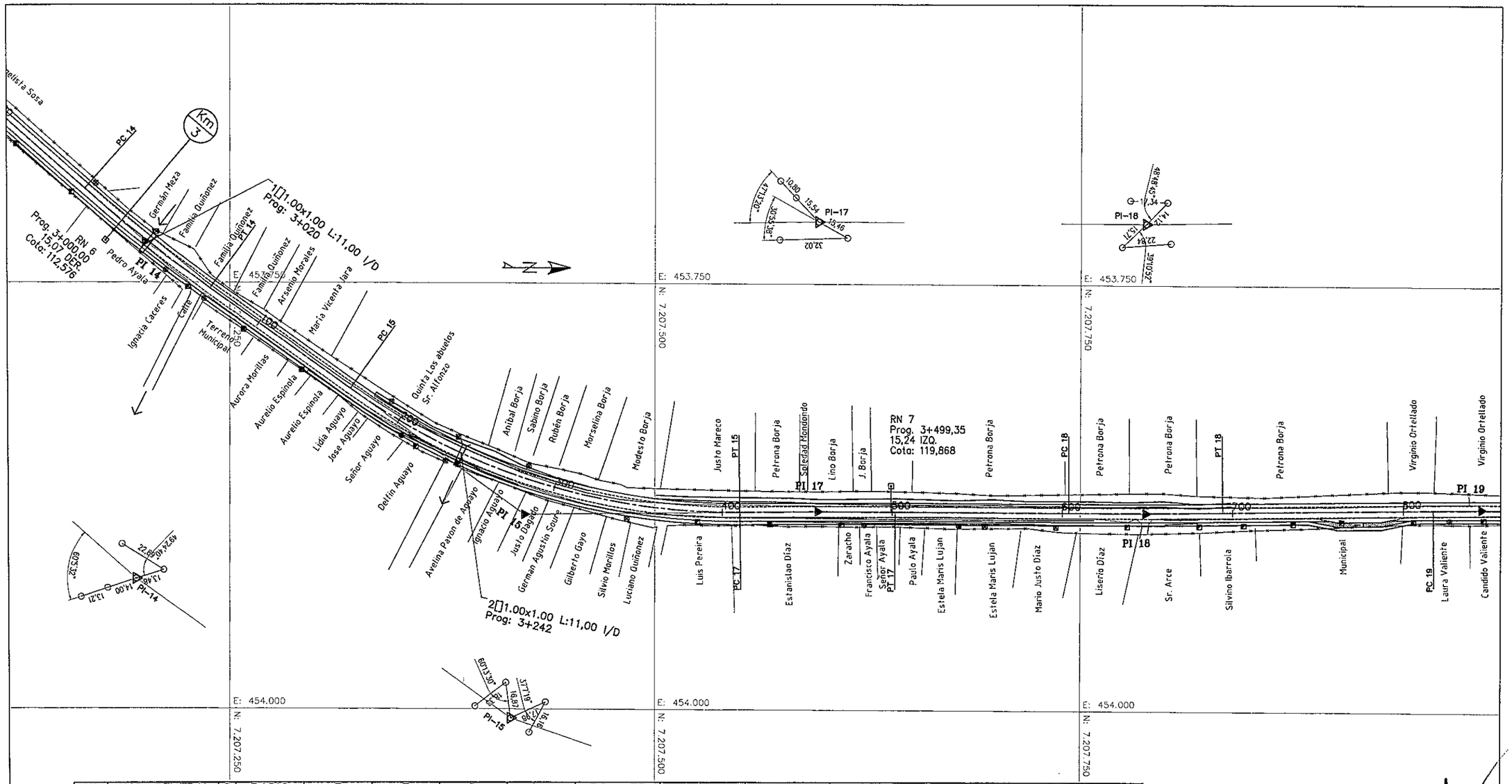
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO" (Dieciseis)
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

ALTIMETRIA
Prog: 2+250 a 3+000

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–09




| N° | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | 05°57'55.59" | I | 900.00 | 1.22 | 46.89 | 93.70 | 0.06 °/m. | 2+971.28 | 3+018.17 | 3+064.98 | 3,00% | -- | 453.726,07 | 7.207.200,40 |
| 15 | 36°23'56.98" | I | 385.00 | 20.27 | 126.58 | 244.58 | 0.15 °/m. | 3+165.73 | 3+292.31 | 3+410.32 | 4,50% | 0,60 m | 453.885,73 | 7.207.423,35 |
| 17 | 00°53'32.02" | D | 5869.10 | 0.18 | 45.70 | 91.40 | 0.01 °/m. | 3+410.32 | 3+456.02 | 3+501.71 | -- | -- | 453.883,35 | 7.207.595,61 |
| 18 | 01°01'00.01" | I | 5100.00 | 0.20 | 45.25 | 90.50 | 0.01 °/m. | 3+603.59 | 3+648.84 | 3+694.09 | -- | -- | 453.883,69 | 7.207.788,44 |
| 19 | 01°37'37.01" | D | 1980.00 | 0.20 | 28.11 | 56.22 | 0.03 °/m. | 3+817.88 | 3+845.99 | 3+874.10 | -- | -- | 453.880,54 | 7.207.985,56 |

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

017 Dieciseis

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

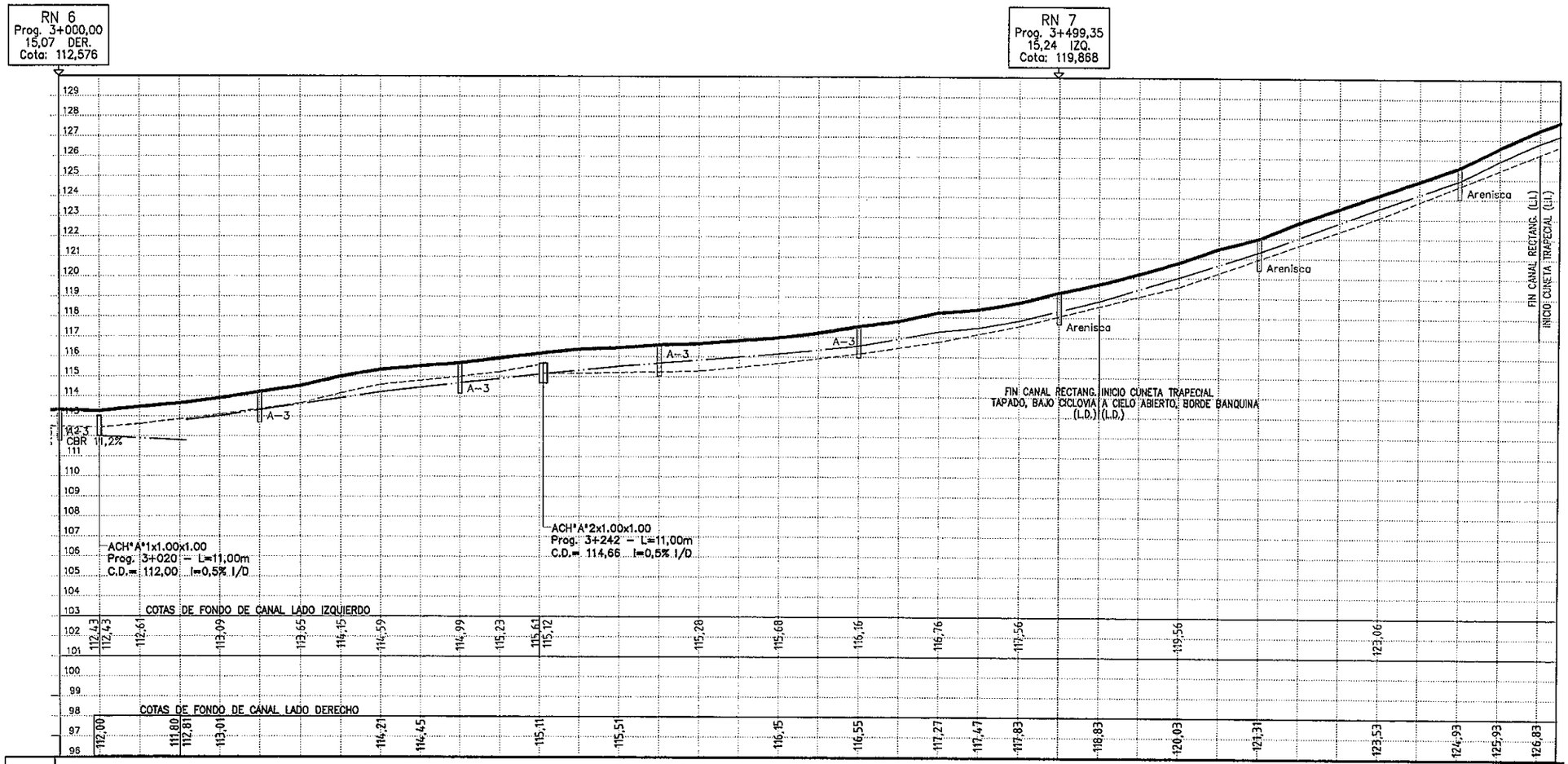
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

PLANIMETRIA
Prog: 3+000 a 3+750

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–10




| Pend. | ZONA DE CARPETA ASFALTICA SOBRE EMPEDRADO EXISTENTE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cota Roja – Corte | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cota Roja – Relleno | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 |
| Cotas – Terreno Natural | 113.27 | 113.21 | 113.42 | 113.60 | 113.86 | 114.17 | 114.48 | 114.95 | 115.29 | 115.47 | 115.62 | 115.88 | 116.11 | 116.32 | 116.39 | 116.54 | 116.61 | 116.76 | 116.91 | 117.15 | 117.48 | 117.75 | 118.18 | 118.34 | 118.69 | 119.20 | 119.63 | 120.15 | 120.73 | 121.43 | 121.95 | 122.76 | 123.45 | 124.15 | 124.84 | 125.55 | 126.54 | 127.44 |
| Cotas – Rasante | 113.34 | 113.28 | 113.48 | 113.66 | 113.92 | 114.24 | 114.54 | 115.02 | 115.35 | 115.54 | 115.68 | 115.94 | 116.18 | 116.38 | 116.46 | 116.60 | 116.68 | 116.82 | 116.98 | 117.22 | 117.54 | 117.82 | 118.24 | 118.40 | 118.76 | 119.26 | 119.70 | 120.22 | 120.80 | 121.50 | 122.02 | 122.82 | 123.52 | 124.22 | 124.90 | 125.62 | 126.60 | 127.50 |
| Prog. | 3+000 | | | | | 100 | | | | | 200 | | | | | 300 | | | | | 400 | | | | | 3+500 | | | | | 600 | | | | | 700 | | |

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

018

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

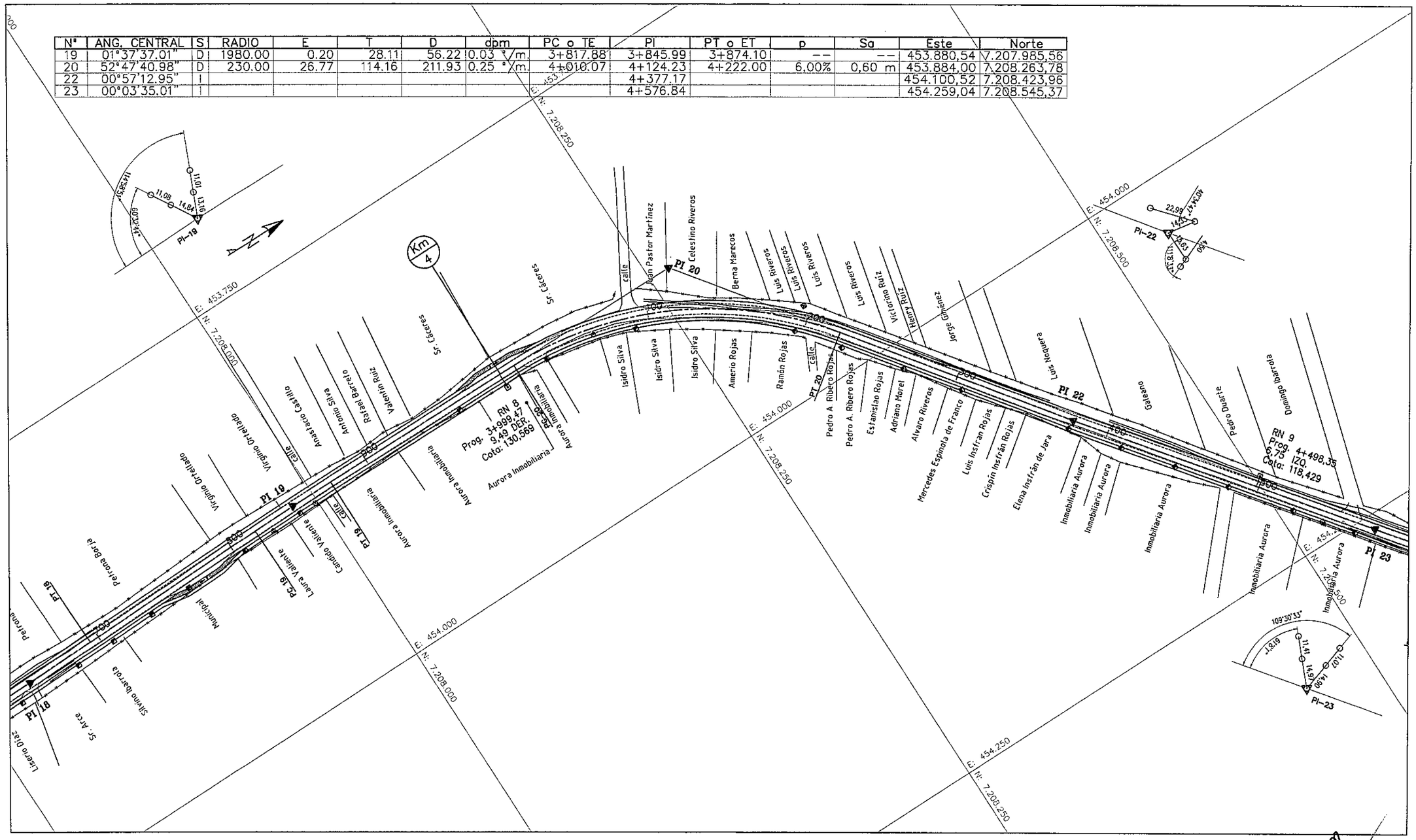
TRAMO: "LUQUE – SAN BERNARDINO" (Diecuatro)
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

ALTIMETRIA
Prog: 3+000 a 3+750

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–11

| N° | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 01°37'37.01" | D | 1980.00 | 0.20 | 28.11 | 56.22 | 0.03 °/m. | 3+817.88 | 3+845.99 | 3+874.10 | -- | -- | 453.880,54 | 7.207.985,56 |
| 20 | 52°47'40.98" | D | 230.00 | 26.77 | 114.16 | 211.93 | 0.25 °/m. | 4+010.07 | 4+124.23 | 4+222.00 | 6,00% | 0,60 m | 453.884,00 | 7.208.263,78 |
| 22 | 00°57'12.95" | I | | | | | | | 4+377.17 | | | | 454.100,52 | 7.208.423,96 |
| 23 | 00°03'35.01" | I | | | | | | | 4+576.84 | | | | 454.259,04 | 7.208.545,37 |




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

019

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

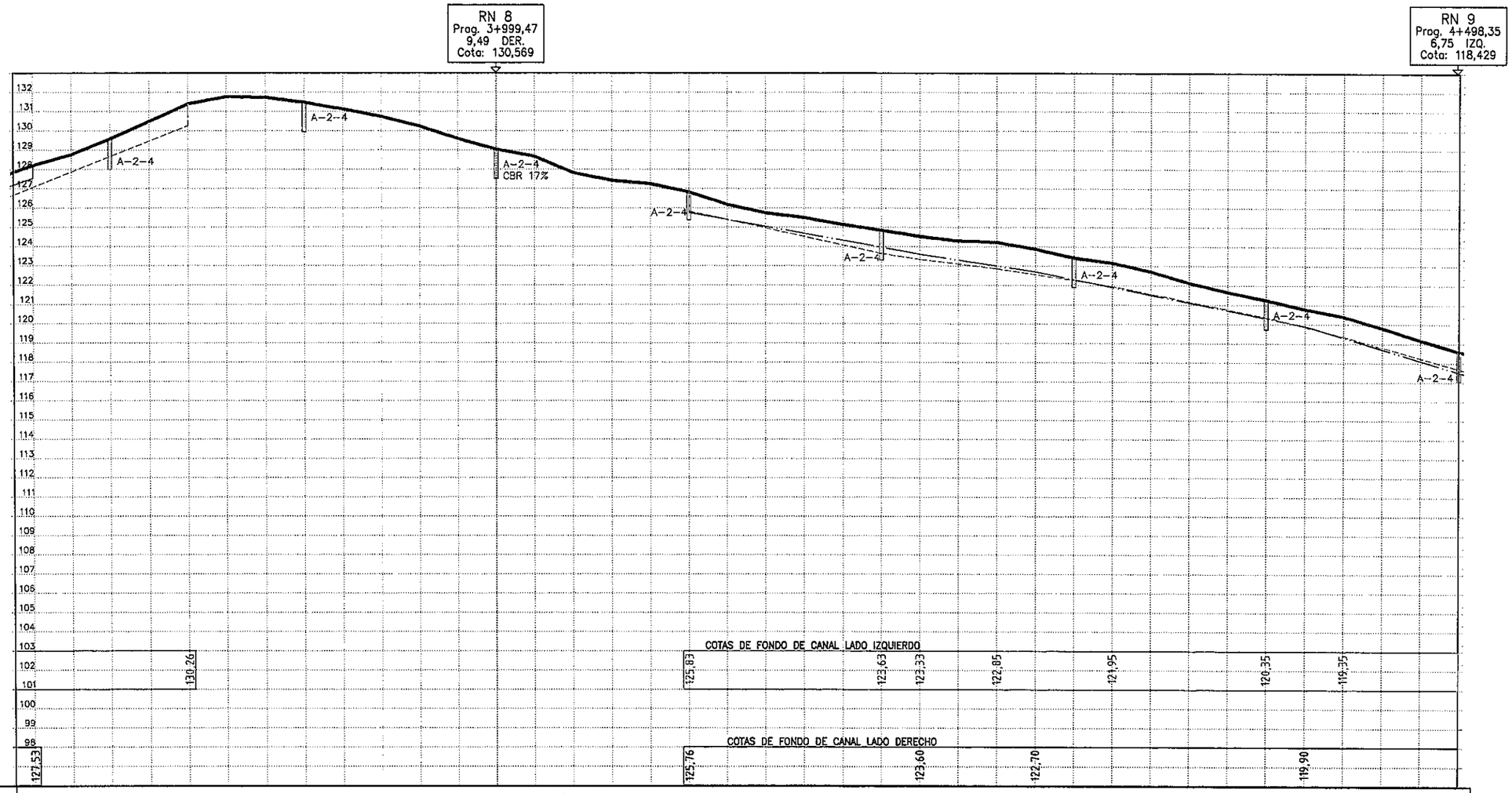
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

PLANIMETRIA
Prog: 3+750 a 4+500

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–12




| Prog. | Cotas: Rasante | Cotas: Terreno Natural | Cota Roja: Relleno | Cota Roja: Corte | Pend. |
|---|---|---|---|---|---|
| | | | | | ZONA DE CARPETA ASFALTICA SOBRE EMPEDRADO EXISTENTE |
| | 128.22 | 128.15 | 0.065 | | |
| | 128.78 | 128.71 | 0.065 | | |
| 800 | 129.58 | 129.52 | 0.065 | | |
| | 130.50 | 130.43 | 0.065 | | |
| | 131.40 | 131.34 | 0.065 | | |
| | 131.78 | 131.71 | 0.065 | | |
| | 131.74 | 131.68 | 0.065 | | |
| 900 | 131.50 | 131.43 | 0.065 | | |
| | 131.14 | 131.08 | 0.065 | | |
| | 130.76 | 130.69 | 0.065 | | |
| | 130.26 | 130.19 | 0.065 | | |
| | 129.60 | 129.54 | 0.065 | | |
| 4+000 | 129.06 | 128.99 | 0.065 | | |
| | 128.68 | 128.62 | 0.065 | | |
| | 127.84 | 127.78 | 0.065 | | |
| | 127.44 | 127.38 | 0.065 | | |
| | 127.26 | 127.20 | 0.065 | | |
| 100 | 126.84 | 126.77 | 0.065 | | |
| | 126.20 | 126.13 | 0.065 | | |
| | 125.76 | 125.69 | 0.065 | | |
| | 125.52 | 125.45 | 0.065 | | |
| | 125.15 | 125.09 | 0.065 | | |
| 200 | 124.86 | 124.79 | 0.065 | | |
| | 124.54 | 124.48 | 0.065 | | |
| | 124.32 | 124.25 | 0.065 | | |
| | 124.24 | 124.18 | 0.065 | | |
| | 123.90 | 123.83 | 0.065 | | |
| 300 | 123.44 | 123.38 | 0.065 | | |
| | 123.18 | 123.11 | 0.065 | | |
| | 122.74 | 122.67 | 0.065 | | |
| | 122.14 | 122.07 | 0.065 | | |
| | 121.68 | 121.61 | 0.065 | | |
| 400 | 121.26 | 121.20 | 0.065 | | |
| | 120.80 | 120.73 | 0.065 | | |
| | 120.42 | 120.35 | 0.065 | | |
| | 119.82 | 119.76 | 0.065 | | |
| | 119.18 | 119.12 | 0.065 | | |
| 4+500 | 118.60 | 118.53 | 0.065 | | |

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

020
(veinte)

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

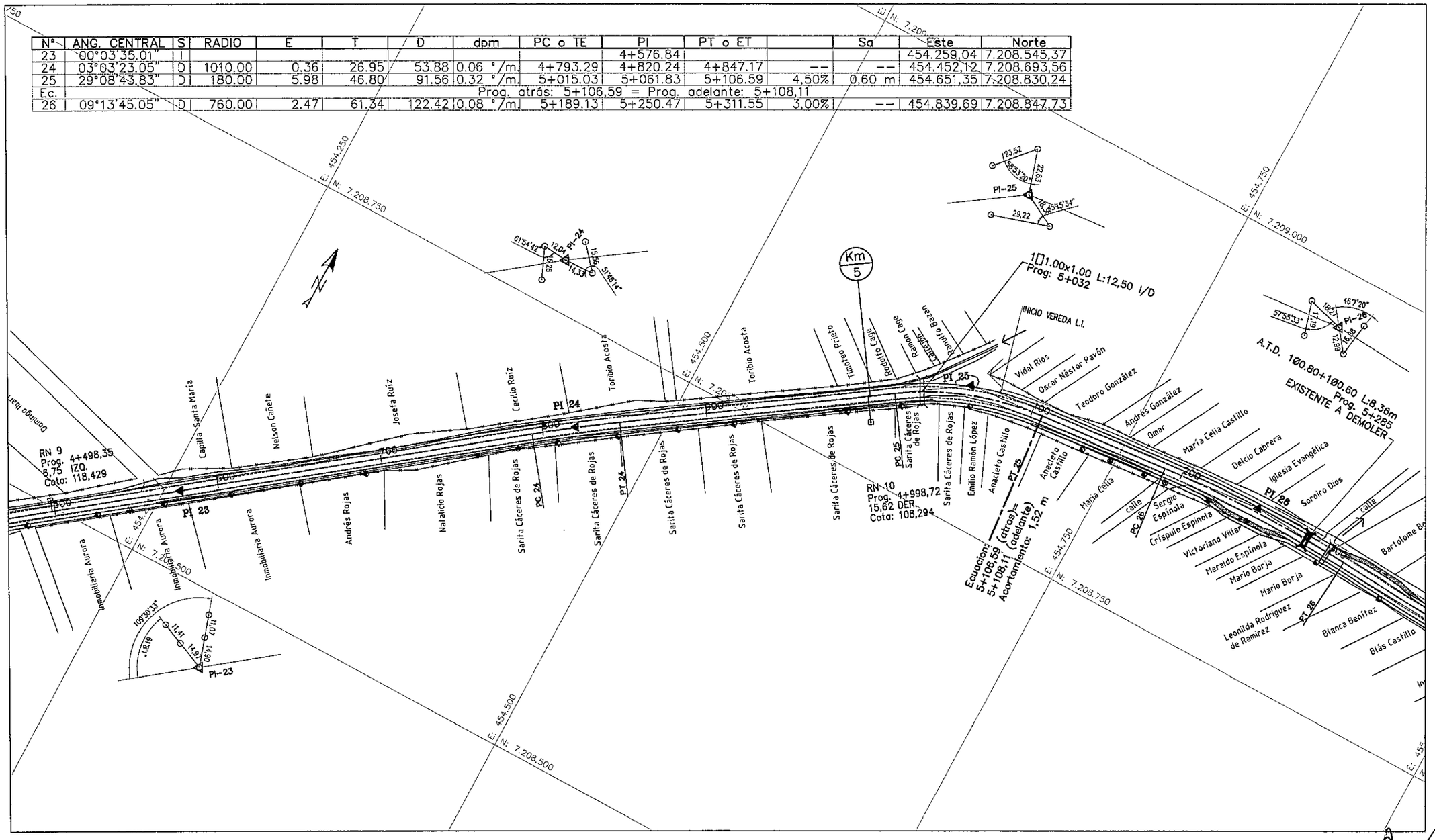
TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

ALTIMETRIA
Prog: 3+750 a 4+500

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG-13

| N° | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 00°03'35.01" | I | | | | | | | 4+576.84 | | | | 454.259,04 | 7.208.545,37 |
| 24 | 03°03'23.05" | D | 1010.00 | 0.36 | 26.95 | 53.88 | 0.06 °/m. | 4+793.29 | 4+820.24 | 4+847.17 | -- | -- | 454.452,12 | 7.208.693,56 |
| 25 | 29°08'43.83" | D | 180.00 | 5.98 | 46.80 | 91.56 | 0.32 °/m. | 5+015.03 | 5+061.83 | 5+106.59 | 4,50% | 0,60 m | 454.651,35 | 7.208.830,24 |
| Ec. | Prog. atrás: 5+106,59 = Prog. adelante: 5+108,11 | | | | | | | | | | | | | |
| 26 | 09°13'45.05" | D | 760.00 | 2.47 | 61.34 | 122.42 | 0.08 °/m. | 5+189.13 | 5+250.47 | 5+311.55 | 3,00% | -- | 454.839,69 | 7.208.847,73 |




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

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(pentino)

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

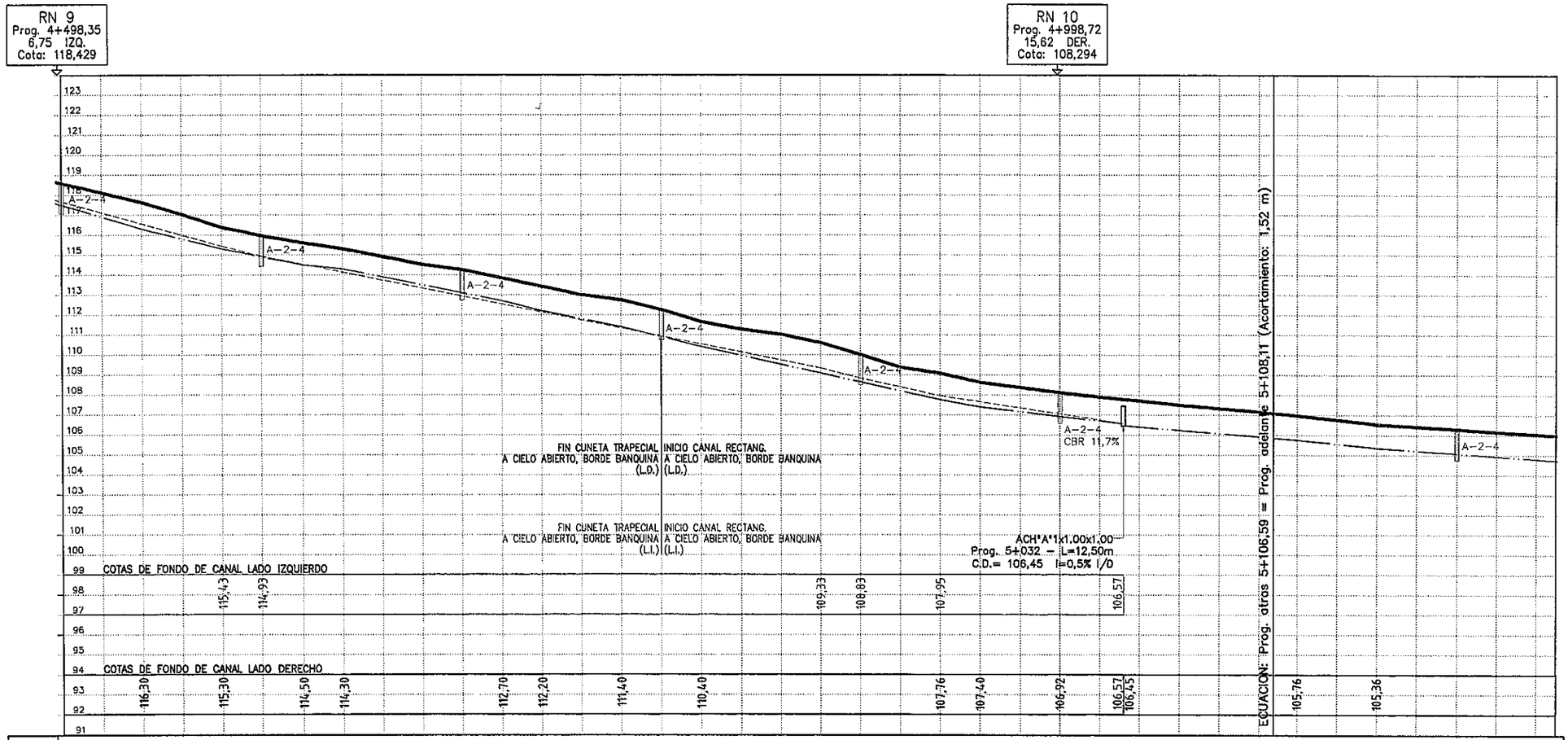
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

PLANIMETRIA
Prog: 4+500 a 5+250

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–14




| Prog. | Cotas Rasante | Cotas Terreno Natural | Cota Roja Relleno | Cota Roja Corte | Pend. |
|---|---|---|---|---|---|
| 4+500 | 118.60 | 118.53 | 0.065 | | ZONA DE CARPETA ASFALTICA SOBRE EMPEDRADO EXISTENTE |
| | 118.12 | 118.06 | 0.065 | | |
| | 117.64 | 117.58 | 0.065 | | |
| | 117.04 | 116.98 | 0.065 | | |
| | 116.40 | 116.33 | 0.065 | | |
| 600 | 115.98 | 115.91 | 0.065 | | |
| | 115.62 | 115.55 | 0.065 | | |
| | 115.32 | 115.26 | 0.065 | | |
| | 114.94 | 114.87 | 0.065 | | |
| | 114.54 | 114.47 | 0.065 | | |
| 700 | 114.28 | 114.21 | 0.065 | | |
| | 113.86 | 113.80 | 0.065 | | |
| | 113.44 | 113.37 | 0.065 | | |
| | 113.02 | 112.95 | 0.065 | | |
| | 112.76 | 112.69 | 0.065 | | |
| 800 | 112.28 | 112.21 | 0.065 | | |
| | 111.66 | 111.60 | 0.065 | | |
| | 111.30 | 111.23 | 0.065 | | |
| | 111.04 | 110.97 | 0.065 | | |
| | 110.62 | 110.56 | 0.065 | | |
| 900 | 110.02 | 109.96 | 0.065 | | |
| | 109.40 | 109.33 | 0.065 | | |
| | 109.10 | 109.03 | 0.065 | | |
| | 108.65 | 108.58 | 0.065 | | |
| | 108.41 | 108.33 | 0.065 | | |
| 5+000 | 108.14 | 108.07 | 0.065 | | |
| | 107.92 | 107.85 | 0.065 | | |
| | 107.72 | 107.66 | 0.065 | | |
| | 107.52 | 107.45 | 0.065 | | |
| | 107.34 | 107.28 | 0.065 | | |
| 100 | 107.18 | 107.11 | 0.065 | | |
| | 107.00 | 106.93 | 0.065 | | |
| | 106.78 | 106.72 | 0.065 | | |
| | 106.57 | 106.49 | 0.065 | | |
| | 106.44 | 106.38 | 0.065 | | |
| 200 | 106.32 | 106.25 | 0.065 | | |
| | 106.18 | 106.11 | 0.065 | | |
| | 106.06 | 106.00 | 0.065 | | |

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

022
(veintidos)

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

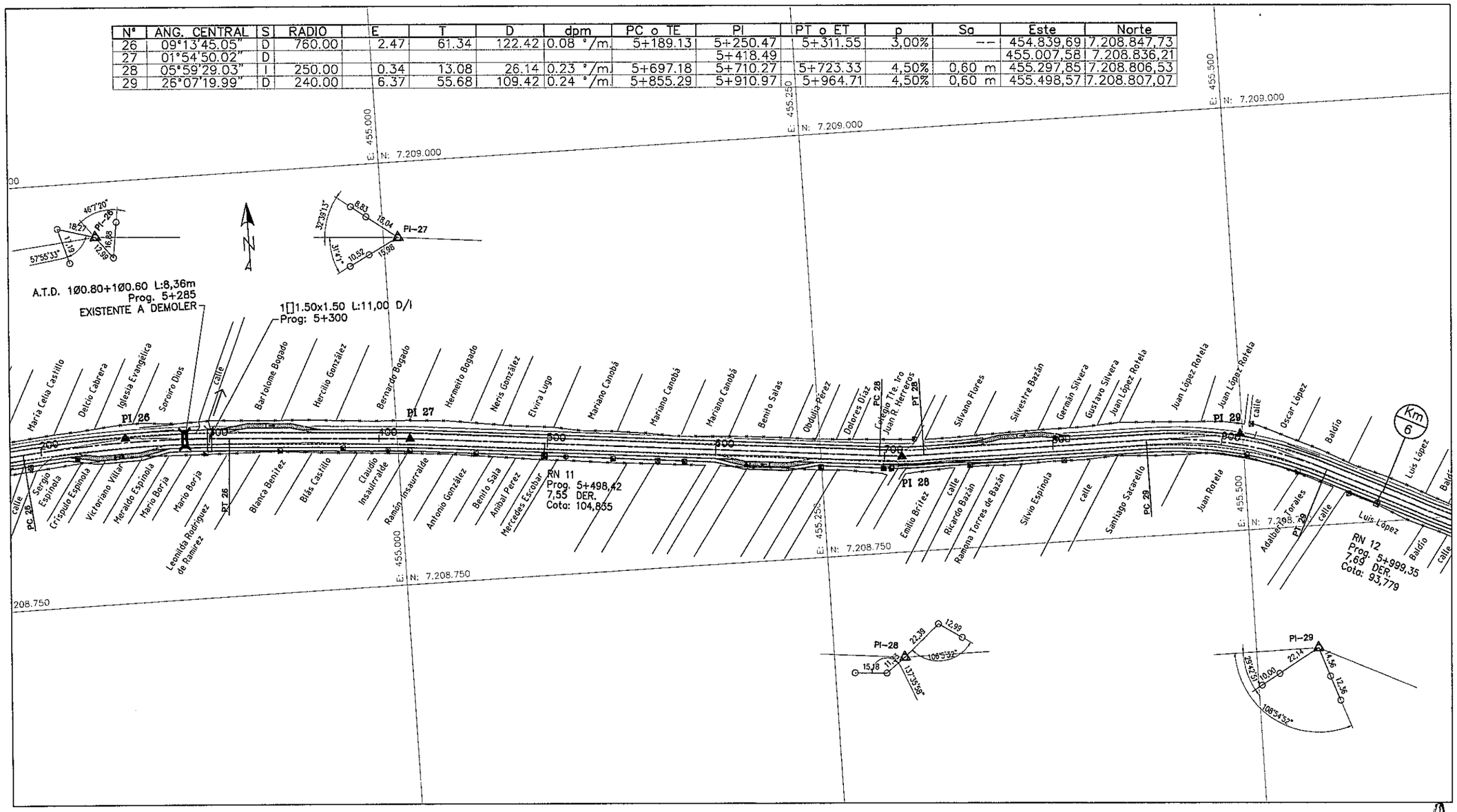
TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

ALTIMETRIA
Prog: 4+500 a 5+250

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–15

| Nº | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 26 | 09°13'45.05" | D | 760.00 | 2.47 | 61.34 | 122.42 | 0.08 °/m. | 5+189.13 | 5+250.47 | 5+311.55 | 3,00% | -- | 454.839,69 | 7.208.847,73 |
| 27 | 01°54'50.02" | D | | | | | | | 5+418.49 | | | | 455.007,58 | 7.208.836,21 |
| 28 | 05°59'29.03" | I | 250.00 | 0.34 | 13.08 | 26.14 | 0.23 °/m. | 5+697.18 | 5+710.27 | 5+723.33 | 4,50% | 0,60 m | 455.297,85 | 7.208.806,53 |
| 29 | 26°07'19.99" | D | 240.00 | 6.37 | 55.68 | 109.42 | 0.24 °/m. | 5+855.29 | 5+910.97 | 5+964.71 | 4,50% | 0,60 m | 455.498,57 | 7.208.807,07 |




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto



| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

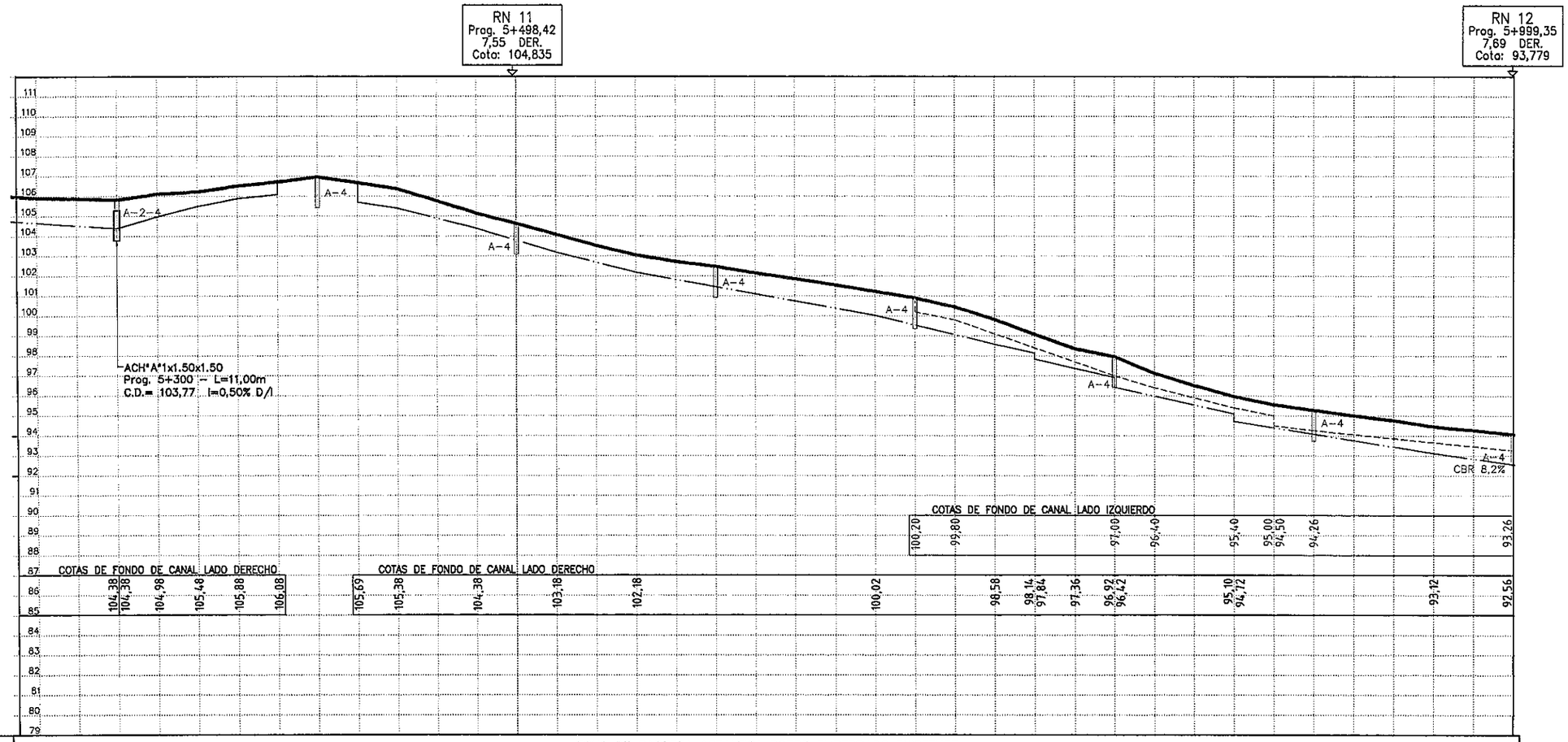
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL Nº 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO Nº 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

PLANIMETRIA
Prog: 5+250 a 6+000

ESCALA
H = 1:2.500
V = 1:250

LAMINA Nº
DG–16




ZONA DE CARPETA ASFALTICA SOBRE EMPEDRADO EXISTENTE

| Prog. | Rasante | Cotas: Terreno Natural | Cota Roja: Relleno | Cota Roja: Corte | Pend. |
|---|---|---|---|---|---|
| | 105.94 | 105.86 | 0.065 | | |
| | 105.90 | 105.83 | 0.065 | | |
| 300 | 105.83 | 105.77 | 0.065 | | |
| | 106.12 | 106.06 | 0.065 | | |
| | 106.26 | 106.17 | 0.065 | | |
| | 106.51 | 106.46 | 0.065 | | |
| | 106.73 | 106.66 | 0.065 | | |
| 400 | 106.98 | 106.91 | 0.065 | | |
| | 106.69 | 106.62 | 0.065 | | |
| | 106.38 | 106.31 | 0.065 | | |
| | 105.78 | 105.71 | 0.065 | | |
| | 105.15 | 105.09 | 0.065 | | |
| 5+500 | 104.64 | 104.58 | 0.065 | | |
| | 104.10 | 104.03 | 0.065 | | |
| | 103.54 | 103.48 | 0.065 | | |
| | 103.07 | 103.00 | 0.065 | | |
| | 102.74 | 102.68 | 0.065 | | |
| 600 | 102.49 | 102.43 | 0.065 | | |
| | 102.17 | 102.10 | 0.065 | | |
| | 101.88 | 101.81 | 0.065 | | |
| | 101.57 | 101.50 | 0.065 | | |
| | 101.24 | 101.17 | 0.065 | | |
| 700 | 100.92 | 100.85 | 0.065 | | |
| | 100.46 | 100.40 | 0.065 | | |
| | 99.84 | 99.78 | 0.065 | | |
| | 99.10 | 99.03 | 0.065 | | |
| | 98.38 | 98.31 | 0.065 | | |
| 800 | 97.97 | 97.91 | 0.065 | | |
| | 97.14 | 97.08 | 0.065 | | |
| | 96.54 | 96.47 | 0.065 | | |
| | 95.99 | 95.92 | 0.065 | | |
| | 95.57 | 95.51 | 0.065 | | |
| 900 | 95.30 | 95.24 | 0.065 | | |
| | 95.02 | 94.96 | 0.065 | | |
| | 94.79 | 94.72 | 0.065 | | |
| | 94.48 | 94.41 | 0.065 | | |
| | 94.30 | 94.23 | 0.065 | | |
| 6+000 | 94.09 | 94.02 | 0.065 | | |

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

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(veinticuatro)

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

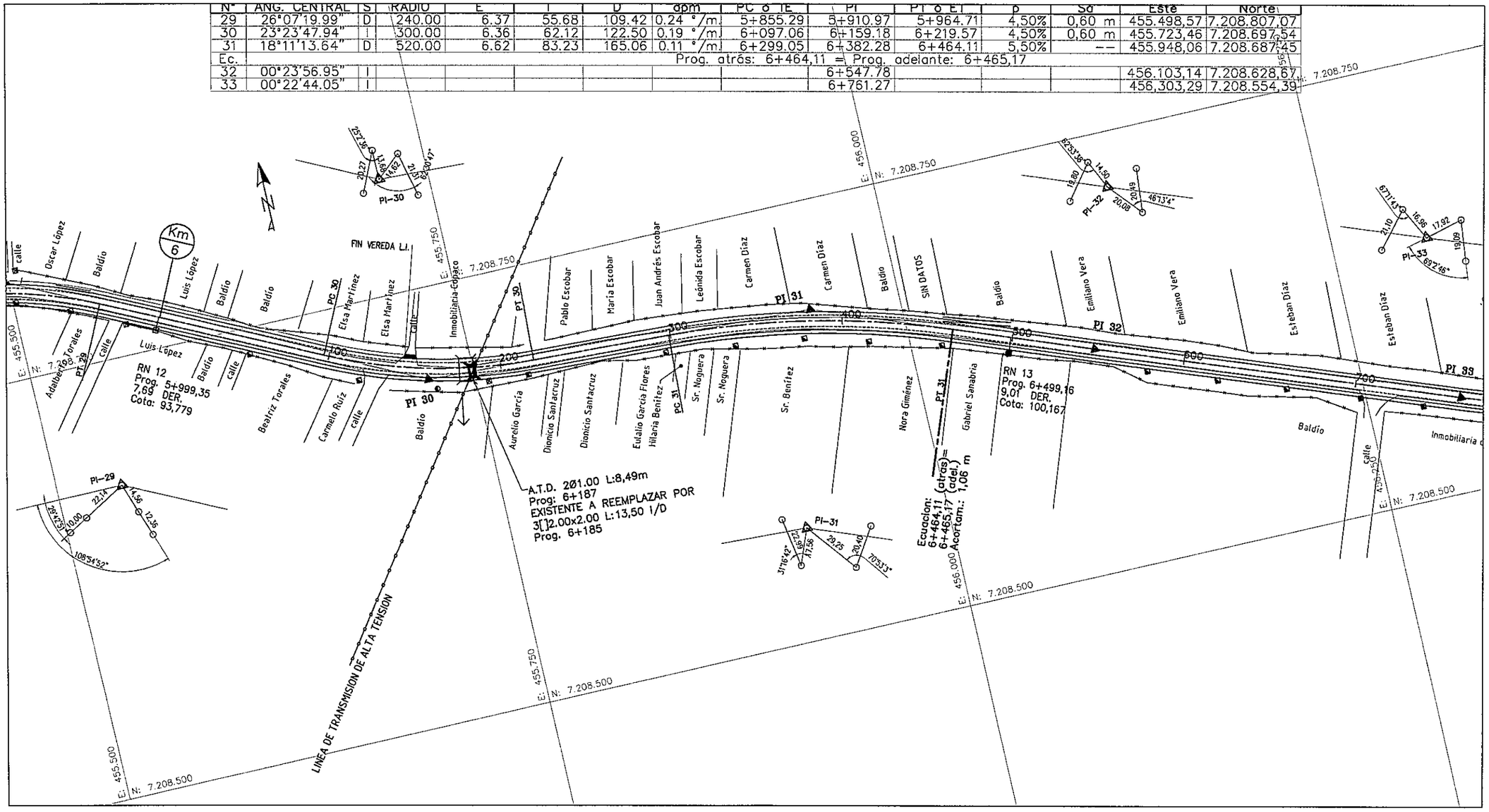
TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

ALTIMETRIA
Prog: 5+250 a 6+000

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–17

| N° | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC ó TE | PI | PT ó ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 29 | 26°07'19.99" | D | 240.00 | 6.37 | 55.68 | 109.42 | 0.24 °/m | 5+855.29 | 5+910.97 | 5+964.71 | 4,50% | 0,60 m | 455.498,57 | 7.208.807,07 |
| 30 | 23°23'47.94" | I | 300.00 | 6.36 | 62.12 | 122.50 | 0.19 °/m | 6+097.06 | 6+159.18 | 6+219.57 | 4,50% | 0,60 m | 455.723,46 | 7.208.697,54 |
| 31 | 18°11'13.64" | D | 520.00 | 6.62 | 83.23 | 165.06 | 0.11 °/m | 6+299.05 | 6+382.28 | 6+464.11 | 5,50% | -- | 455.948,06 | 7.208.687,45 |
| Ec. | | | | | | | | Prog. atrás: 6+464,11 = Prog. adelante: 6+465,17 | | | | | | |
| 32 | 00°23'56.95" | I | | | | | | | 6+547.78 | | | | 456.103,14 | 7.208.628,67 |
| 33 | 00°22'44.05" | I | | | | | | | 6+761.27 | | | | 456.303,29 | 7.208.554,39 |




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

025

(veinticinco)

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

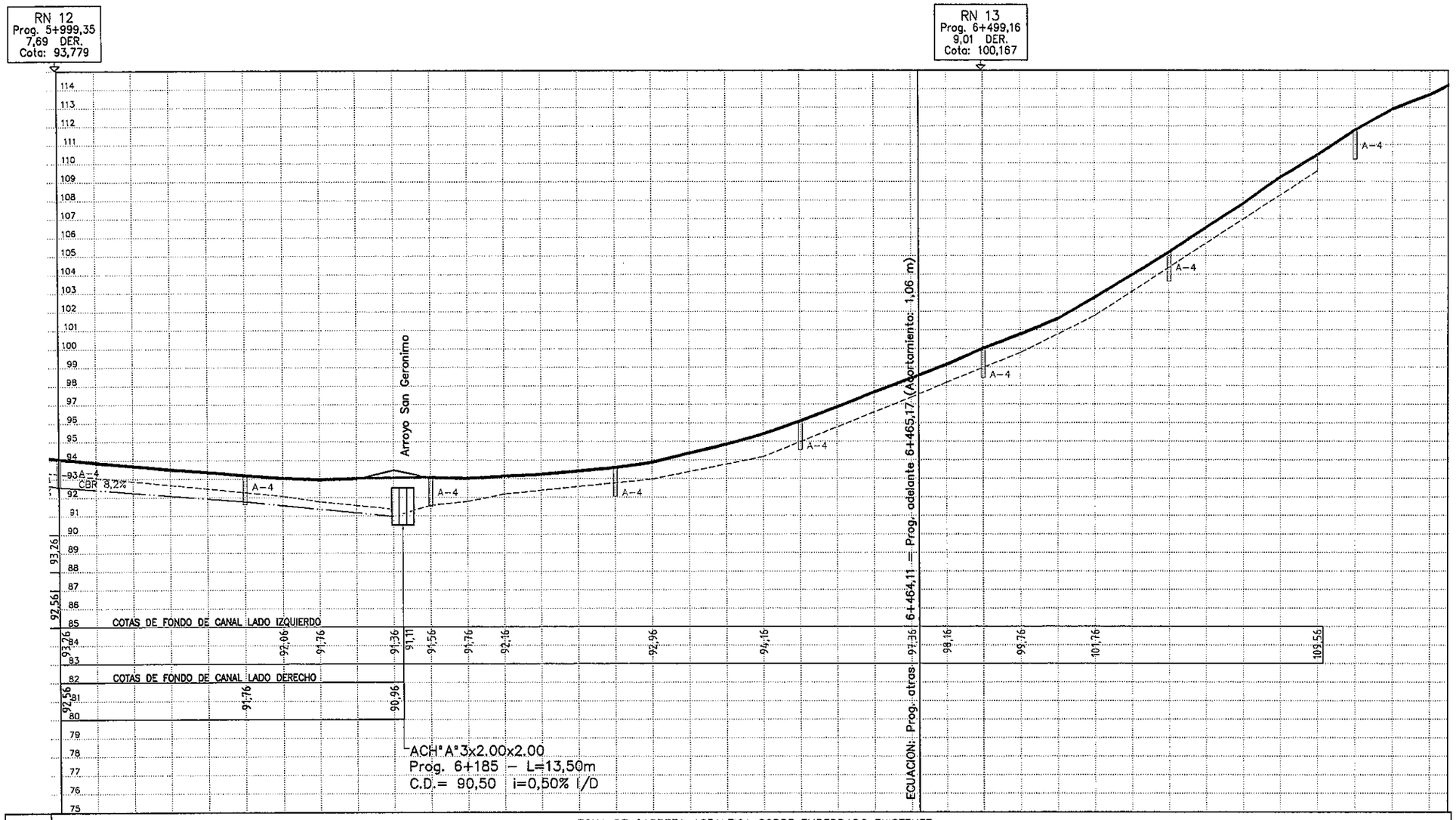
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

PLANIMETRIA
Prog: 6+000 a 6+750

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–18




ZONA DE CARPETA ASFALTICA SOBRE EMPEDRADO EXISTENTE

| Prog. | Cotas Rasante | Cotas Terreno Natural | Cota Roja Relleno | Cota Roja Corte |
|---|---|---|---|---|
| 6+000 | 94.09 | 94.02 | 0.065 | |
| | 93.88 | 93.82 | 0.065 | |
| | 93.72 | 93.65 | 0.065 | |
| | 93.52 | 93.45 | 0.065 | |
| | 93.38 | 93.31 | 0.065 | |
| 100 | 93.19 | 93.13 | 0.065 | |
| | 93.05 | 92.98 | 0.065 | |
| | 92.97 | 92.91 | 0.065 | |
| | 93.04 | 92.97 | 0.065 | |
| | 93.06 | 93.46 | | -0.40 |
| 200 | 93.08 | 93.01 | 0.065 | |
| | 93.03 | 92.97 | 0.065 | |
| | 93.15 | 93.08 | 0.065 | |
| | 93.24 | 93.18 | 0.065 | |
| | 93.42 | 93.35 | 0.065 | |
| 300 | 93.61 | 93.54 | 0.065 | |
| | 93.89 | 93.82 | 0.065 | |
| | 94.38 | 94.31 | 0.065 | |
| | 94.85 | 94.79 | 0.065 | |
| | 95.40 | 95.34 | 0.065 | |
| 400 | 96.11 | 96.04 | 0.065 | |
| | 96.86 | 96.80 | 0.065 | |
| | 97.66 | 97.59 | 0.065 | |
| | 98.41 | 98.34 | 0.065 | |
| 6+500 | 99.15 | 99.08 | 0.065 | |
| | 100.02 | 99.95 | 0.065 | |
| | 100.78 | 100.72 | 0.065 | |
| | 101.61 | 101.55 | 0.065 | |
| | 102.76 | 102.70 | 0.065 | |
| | 103.98 | 103.91 | 0.065 | |
| 600 | 105.20 | 105.14 | 0.065 | |
| | 106.52 | 106.46 | 0.065 | |
| | 107.82 | 107.75 | 0.065 | |
| | 109.25 | 109.18 | 0.065 | |
| | 110.45 | 110.39 | 0.065 | |
| 700 | 111.79 | 111.73 | 0.065 | |
| | 112.93 | 112.86 | 0.065 | |
| | 113.72 | 113.65 | 0.065 | |

Pend.

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

026
(veintiseis)

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

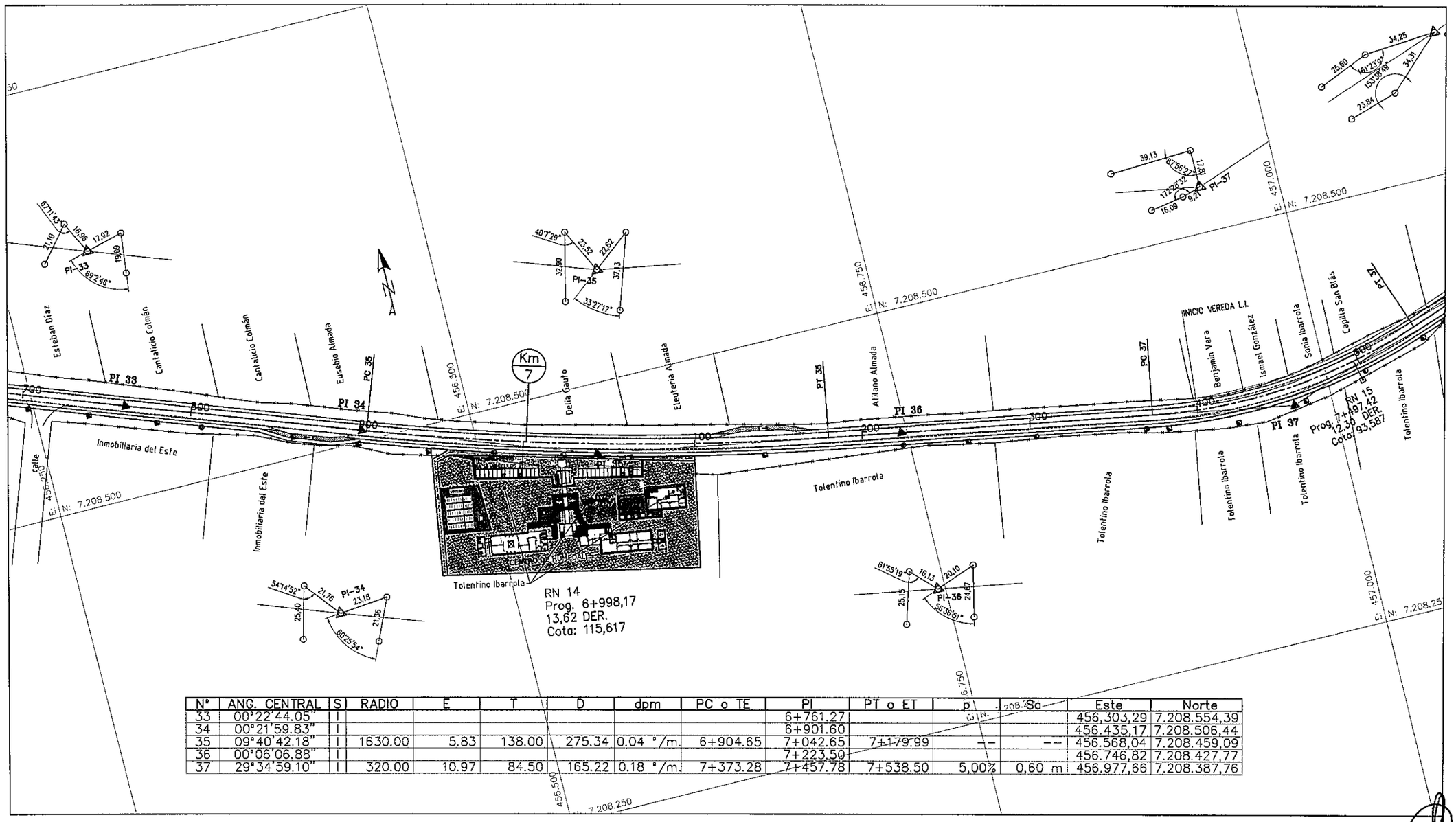
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

ALTIMETRIA
Prog: 6+000 a 6+750

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–19




| N° | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | P | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 33 | 00°22'44.05" | I | | | | | | | 6+761.27 | | | | 456,303,29 | 7.208.554,39 |
| 34 | 00°21'59.83" | I | | | | | | | 6+901.60 | | | | 456.435,17 | 7.208.506,44 |
| 35 | 09°40'42.18" | I | 1630.00 | 5.83 | 138.00 | 275.34 | 0.04 °/m | 6+904.65 | 7+042.65 | 7+179.99 | -- | -- | 456.568,04 | 7.208.459,09 |
| 36 | 00°06'06.88" | I | | | | | | | 7+223.50 | | | | 456.746,82 | 7.208.427,77 |
| 37 | 29°34'59.10" | I | 320.00 | 10.97 | 84.50 | 165.22 | 0.18 °/m | 7+373.28 | 7+457.78 | 7+538.50 | 5,00% | 0,60 m | 456.977,66 | 7.208.387,76 |

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

027
(veintisiete)

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

PLANIMETRIA
Prog: 6+750 a 7+500

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–20

| Prog. | Rasante | Terreno Natural | Relleno | Corte | Pend. |
|---|---|---|---|---|---|
| | | | | | ZONA DE CARPETA ASFALTICA SOBRE EMPEDRADO EXISTENTE |
| | 114.68 | 114.62 | 0.065 | | |
| | 115.59 | 115.53 | 0.065 | | |
| 800 | 116.68 | 116.61 | 0.065 | | |
| | 117.58 | 117.51 | 0.065 | | |
| | 118.12 | 118.06 | 0.065 | | |
| | 118.52 | 118.46 | 0.065 | | |
| | 118.74 | 118.68 | 0.065 | | |
| 900 | 118.68 | 118.61 | 0.065 | | |
| | 118.34 | 118.27 | 0.065 | | |
| | 117.83 | 117.77 | 0.065 | | |
| | 116.98 | 116.91 | 0.065 | | |
| | 116.22 | 116.15 | 0.065 | | |
| 7+000 | 115.34 | 115.28 | 0.065 | | |
| | 114.28 | 114.21 | 0.065 | | |
| | 113.36 | 113.30 | 0.065 | | |
| | 112.49 | 112.43 | 0.065 | | |
| | 111.22 | 111.16 | 0.065 | | |
| 100 | 109.80 | 109.73 | 0.065 | | |
| | 108.49 | 108.43 | 0.065 | | |
| | 107.15 | 107.09 | 0.065 | | |
| | 106.07 | 106.00 | 0.065 | | |
| | 105.11 | 105.05 | 0.065 | | |
| 200 | 104.41 | 104.35 | 0.065 | | |
| | 103.82 | 103.76 | 0.065 | | |
| | 103.25 | 103.18 | 0.065 | | |
| | 102.71 | 102.64 | 0.065 | | |
| | 102.15 | 102.09 | 0.065 | | |
| 300 | 101.60 | 101.54 | 0.065 | | |
| | 100.93 | 100.86 | 0.065 | | |
| | 100.27 | 100.20 | 0.065 | | |
| | 99.62 | 99.56 | 0.065 | | |
| | 98.84 | 98.78 | 0.065 | | |
| 400 | 98.13 | 98.07 | 0.065 | | |
| | 97.13 | 97.07 | 0.065 | | |
| | 96.15 | 96.08 | 0.065 | | |
| | 95.21 | 95.15 | 0.065 | | |
| | 94.16 | 94.10 | 0.065 | | |
| 7+500 | 93.04 | 92.98 | 0.065 | | |

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

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(Veintiocho)

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

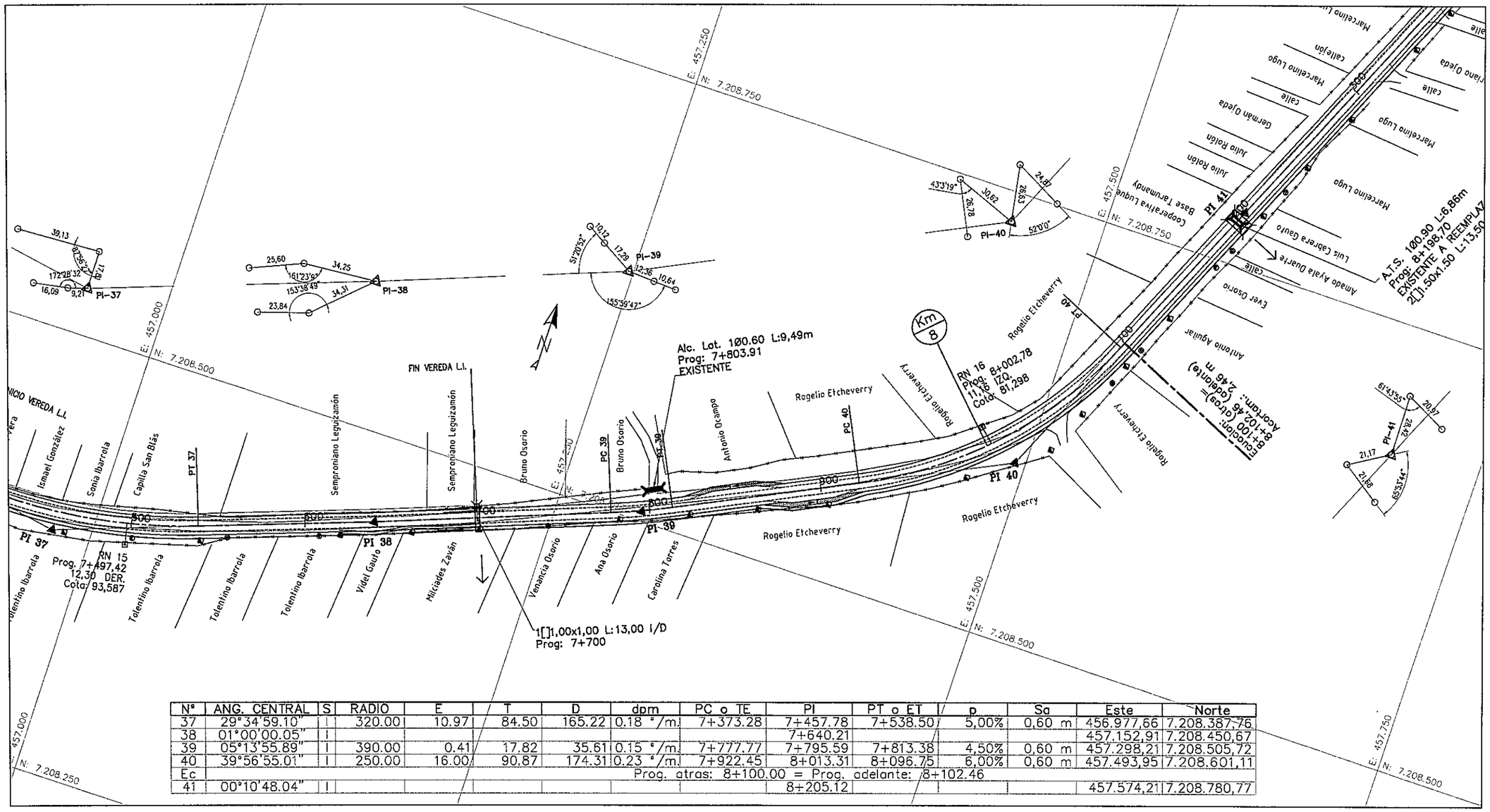
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

ALTIMETRIA
Prog: 6+750 a 7+500

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–21




| Nº | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 37 | 29°34'59.10" | I | 320.00 | 10.97 | 84.50 | 165.22 | 0.18 °/m | 7+373.28 | 7+457.78 | 7+538.50 | 5,00% | 0,60 m | 456.977,66 | 7.208.387,76 |
| 38 | 01°00'00.05" | I | | | | | | | 7+640.21 | | | | 457.152,91 | 7.208.450,67 |
| 39 | 05°13'55.89" | I | 390.00 | 0.41 | 17.82 | 35.61 | 0.15 °/m | 7+777.77 | 7+795.59 | 7+813.38 | 4,50% | 0,60 m | 457.298,21 | 7.208.505,72 |
| 40 | 39°56'55.01" | I | 250.00 | 16.00 | 90.87 | 174.31 | 0.23 °/m | 7+922.45 | 8+013.31 | 8+096.75 | 6,00% | 0,60 m | 457.493,95 | 7.208.601,11 |
| Ec | Prog. atras: 8+100.00 = Prog. adelante: 8+102.46 | | | | | | | | | | | | | |
| 41 | 00°10'48.04" | I | | | | | | | 8+205.12 | | | | 457.574,21 | 7.208.780,77 |

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto



(veintinueve)

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

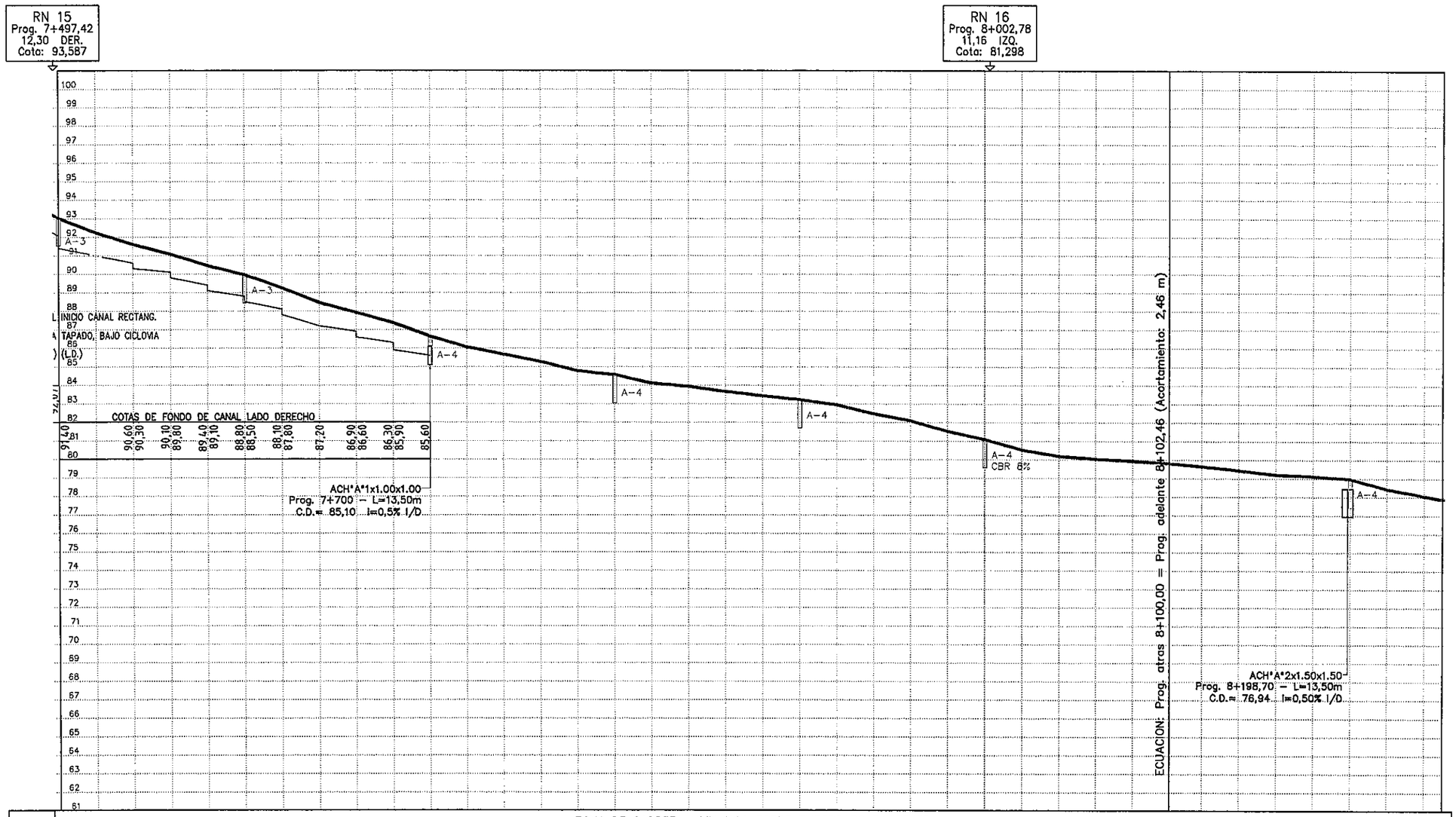
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL Nº 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO Nº 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

PLANIMETRIA
Prog: 7+500 a 8+250

ESCALA
H = 1:2.500
V = 1:250

LAMINA Nº
DG–22




ZONA DE CARPETA ASFALTICA SOBRE EMPEDRADO EXISTENTE

| Prog. | Cotas: Rasante | Cotas: Terreno Natural | Cota Roja: Relleno | Cota Roja: Corte | Pend. |
|---|---|---|---|---|---|
| 7+500 | 93.04 | 92.98 | 0.065 | | |
| | 92.25 | 92.19 | 0.065 | | |
| | 91.63 | 91.56 | 0.065 | | |
| | 91.10 | 91.03 | 0.065 | | |
| | 90.48 | 90.41 | 0.065 | | |
| 600 | 89.97 | 89.91 | 0.065 | | |
| | 89.27 | 89.20 | 0.065 | | |
| | 88.47 | 88.41 | 0.065 | | |
| | 87.94 | 87.88 | 0.065 | | |
| | 87.39 | 87.32 | 0.065 | | |
| 700 | 86.66 | 86.59 | 0.065 | | |
| | 86.08 | 86.01 | 0.065 | | |
| | 85.68 | 85.62 | 0.065 | | |
| | 85.29 | 85.23 | 0.065 | | |
| | 84.79 | 84.73 | 0.065 | | |
| 800 | 84.59 | 84.52 | 0.065 | | |
| | 84.12 | 84.06 | 0.065 | | |
| | 83.96 | 83.89 | 0.065 | | |
| | 83.68 | 83.61 | 0.065 | | |
| | 83.45 | 83.38 | 0.065 | | |
| 900 | 83.25 | 83.18 | 0.065 | | |
| | 82.97 | 82.90 | 0.065 | | |
| | 82.48 | 82.42 | 0.065 | | |
| | 82.10 | 82.04 | 0.065 | | |
| | 81.55 | 81.48 | 0.065 | | |
| 8+000 | 81.11 | 81.04 | 0.065 | | |
| | 80.55 | 80.48 | 0.065 | | |
| | 80.20 | 80.14 | 0.065 | | |
| | 80.06 | 79.99 | 0.065 | | |
| | 79.95 | 79.89 | 0.065 | | |
| 100 | 79.82 | 79.76 | 0.065 | | |
| | 79.66 | 79.60 | 0.065 | | |
| | 79.46 | 79.39 | 0.065 | | |
| | 79.22 | 79.16 | 0.065 | | |
| | 79.13 | 79.07 | 0.065 | | |
| 200 | 79.00 | 78.93 | 0.065 | | |
| | 78.46 | 78.39 | 0.065 | | |
| | 78.08 | 78.01 | 0.065 | | |

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

030
(treinta)

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

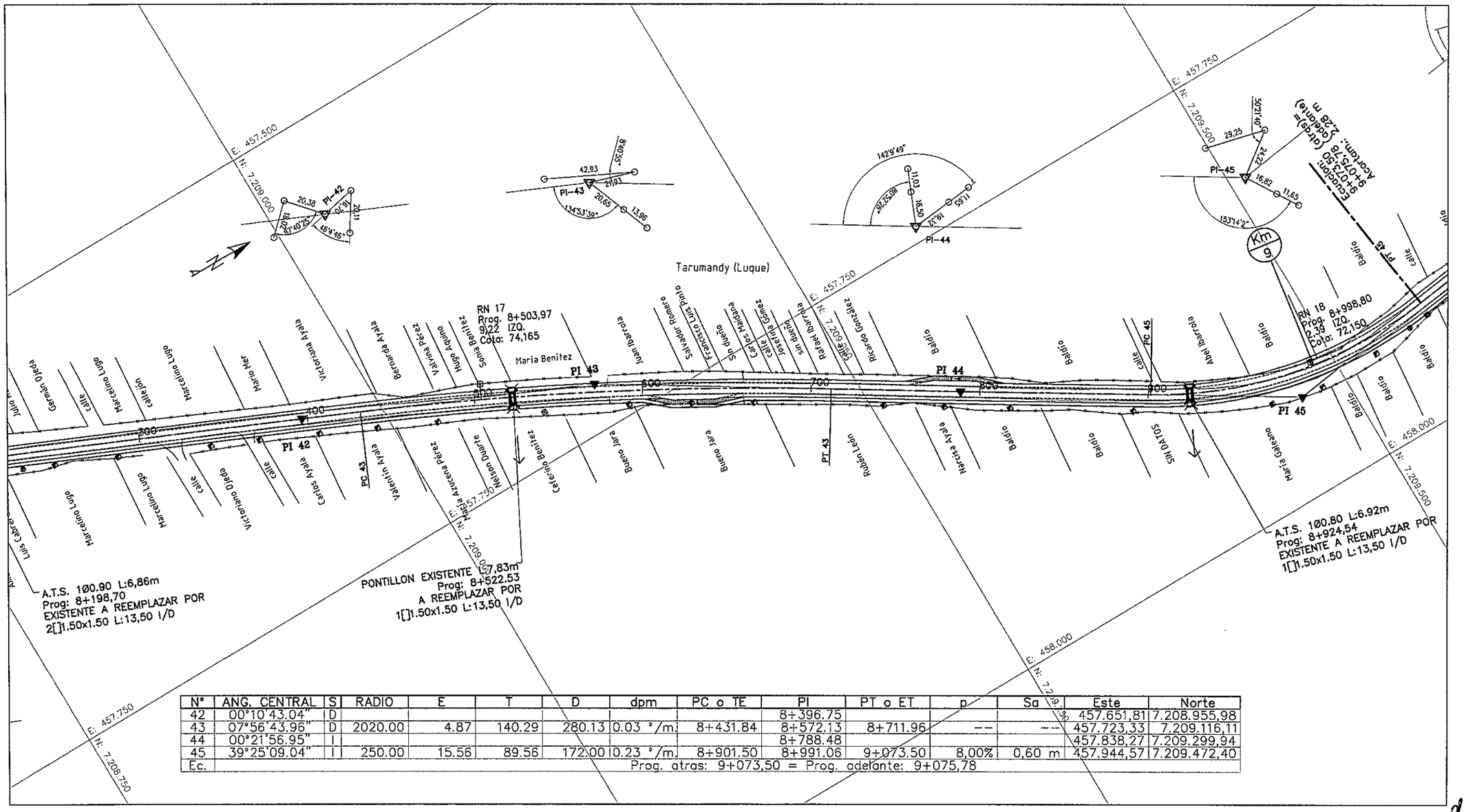
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

ALTIMETRIA
Prog: 7+500 a 8+250

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–23




| N° | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 42 | 00°10'43.04" | D | | | | | | | 8+396.75 | | | | 457.651,81 | 7.208.955,98 |
| 43 | 07°56'43.96" | D | 2020.00 | 4.87 | 140.29 | 280.13 | 0.03 °/m. | 8+431.84 | 8+572.13 | 8+711.96 | -- | -- | 457.723,33 | 7.209.116,11 |
| 44 | 00°21'56.95" | I | | | | | | | 8+788.48 | | | | 457.838,27 | 7.209.299,94 |
| 45 | 39°25'09.04" | I | 250.00 | 15.56 | 89.56 | 172.00 | 0.23 °/m. | 8+901.50 | 8+991.06 | 9+073.50 | 8,00% | 0,60 m | 457.944,57 | 7.209.472,40 |
| Ec. | Prog. atras: 9+073,50 = Prog. adelante: 9+075,78 | | | | | | | | | | | | | |

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

31
(treintaiuno)

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

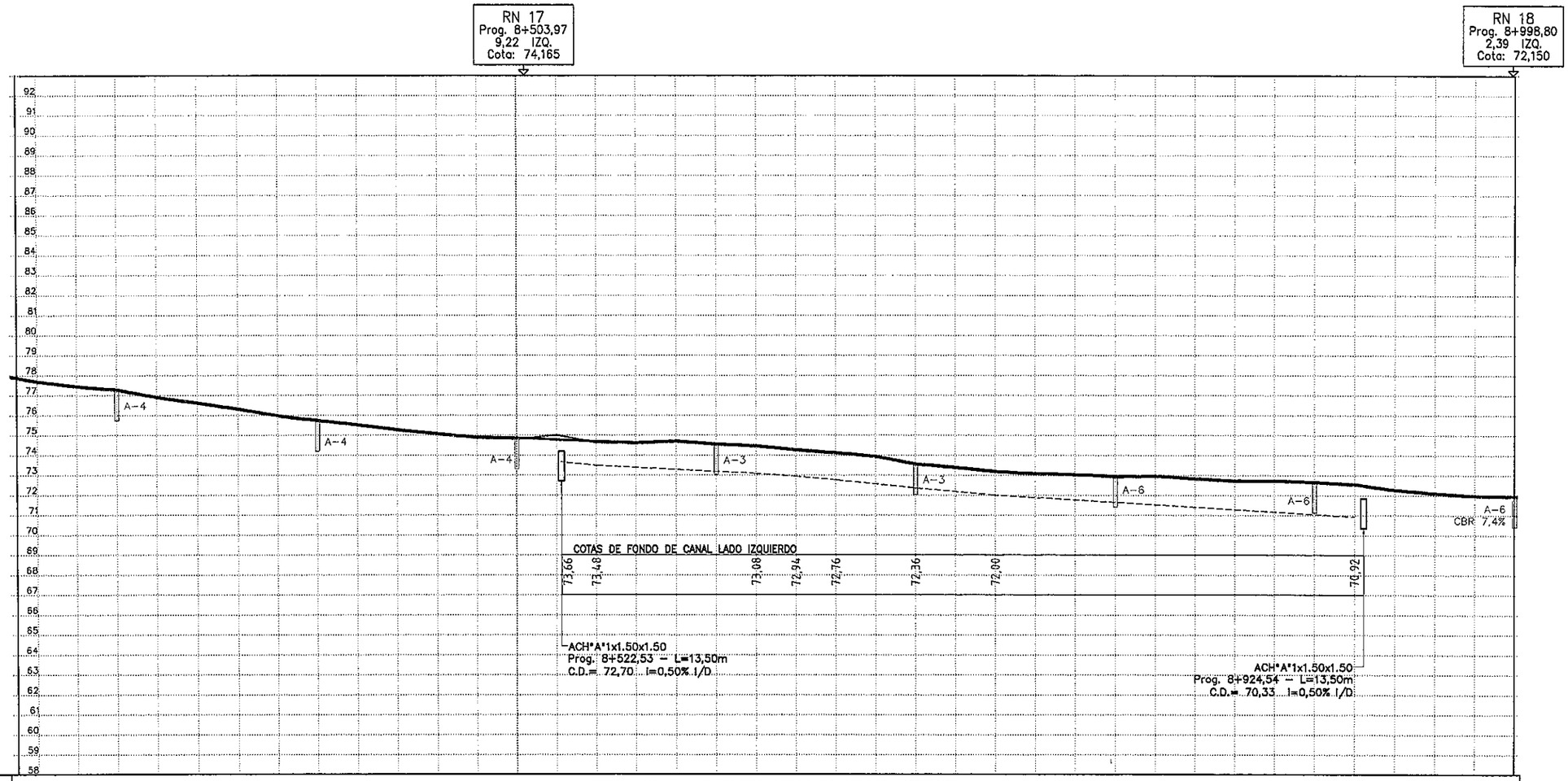
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

PLANIMETRIA
Prog: 8+250 a 9+000

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–24




| Pend. | ZONA DE CARPETA ASFALTICA SOBRE EMPEDRADO EXISTENTE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cota Roja – Corte | | | | | | | | | | | | | | | -0.22 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cota Roja – Relleno | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 | 0.065 |
| Cotas – Terreno Natural | 77.64 | 77.39 | 77.23 | 76.85 | 76.57 | 76.26 | 75.92 | 75.69 | 75.47 | 75.22 | 75.02 | 74.84 | 74.80 | 75.00 | 74.62 | 74.57 | 74.65 | 74.50 | 74.41 | 74.22 | 74.07 | 73.89 | 73.51 | 73.34 | 73.14 | 73.03 | 72.98 | 72.89 | 72.91 | 72.78 | 72.67 | 72.67 | 72.61 | 72.50 | 72.22 | 72.05 | 71.92 | 71.90 |
| Cotas – Rasante | 77.71 | 77.46 | 77.29 | 76.92 | 76.64 | 76.33 | 75.98 | 75.75 | 75.54 | 75.29 | 75.08 | 74.91 | 74.87 | 74.78 | 74.69 | 74.64 | 74.72 | 74.56 | 74.48 | 74.28 | 74.13 | 73.95 | 73.57 | 73.41 | 73.20 | 73.10 | 73.04 | 72.96 | 72.98 | 72.85 | 72.74 | 72.73 | 72.67 | 72.56 | 72.29 | 72.11 | 71.99 | 71.96 |
| Prog. | | | 300 | | | | | 400 | | | | | 8+500 | | | | | 600 | | | | | 700 | | | | | 800 | | | | | 900 | | | | | | 9+000 |

Ing. Salvador O. Gulin.
INCONPAR S.A.
Director de Proyecto

32
(Treinta y dos)

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

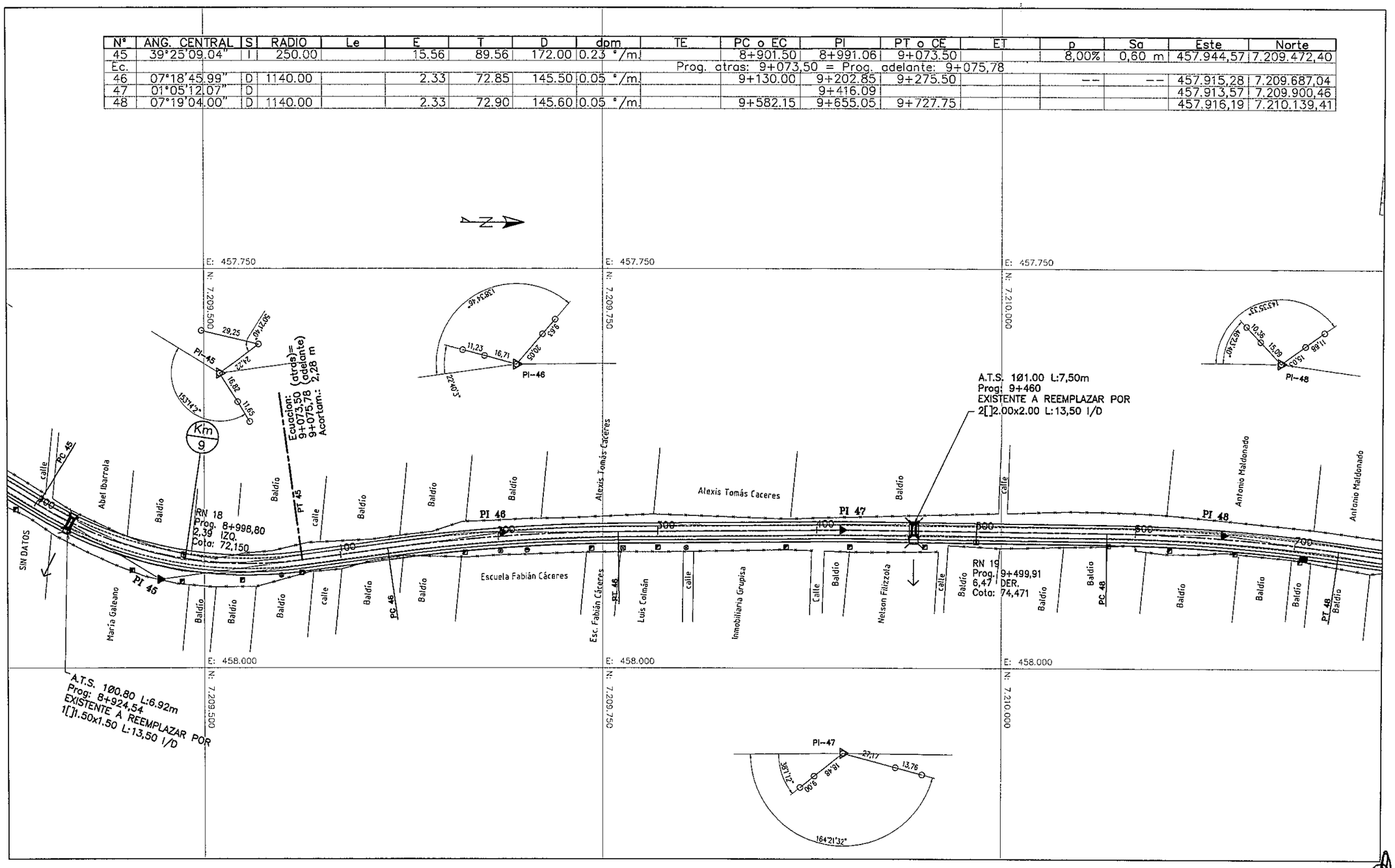
TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

ALTIMETRIA
Prog: 8+250 a 9+000

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–25

| Nº | ANG. CENTRAL | S | RADIO | Le | E | T | D | dpm | TE | PC o EC | PI | PT o CE | ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | 39°25'09.04" | I | 250.00 | | 15.56 | 89.56 | 172.00 | 0.23 °/m. | | 8+901.50 | 8+991.06 | 9+073.50 | | 8,00% | 0,60 m | 457.944,57 | 7.209.472,40 |
| Ec. | | | | | | | | | | Prog. atras: 9+073,50 = Prog. adelante: 9+075,78 | | | | | | | |
| 46 | 07°18'45.99" | D | 1140.00 | | 2.33 | 72.85 | 145.50 | 0.05 °/m. | | 9+130.00 | 9+202.85 | 9+275.50 | | -- | -- | 457.915,28 | 7.209.687,04 |
| 47 | 01°05'12.07" | D | | | | | | | | | 9+416.09 | | | | | 457.913,57 | 7.209.900,46 |
| 48 | 07°19'04.00" | D | 1140.00 | | 2.33 | 72.90 | 145.60 | 0.05 °/m. | | 9+582.15 | 9+655.05 | 9+727.75 | | | | 457.916,19 | 7.210.139,41 |




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

33
treintay tres

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

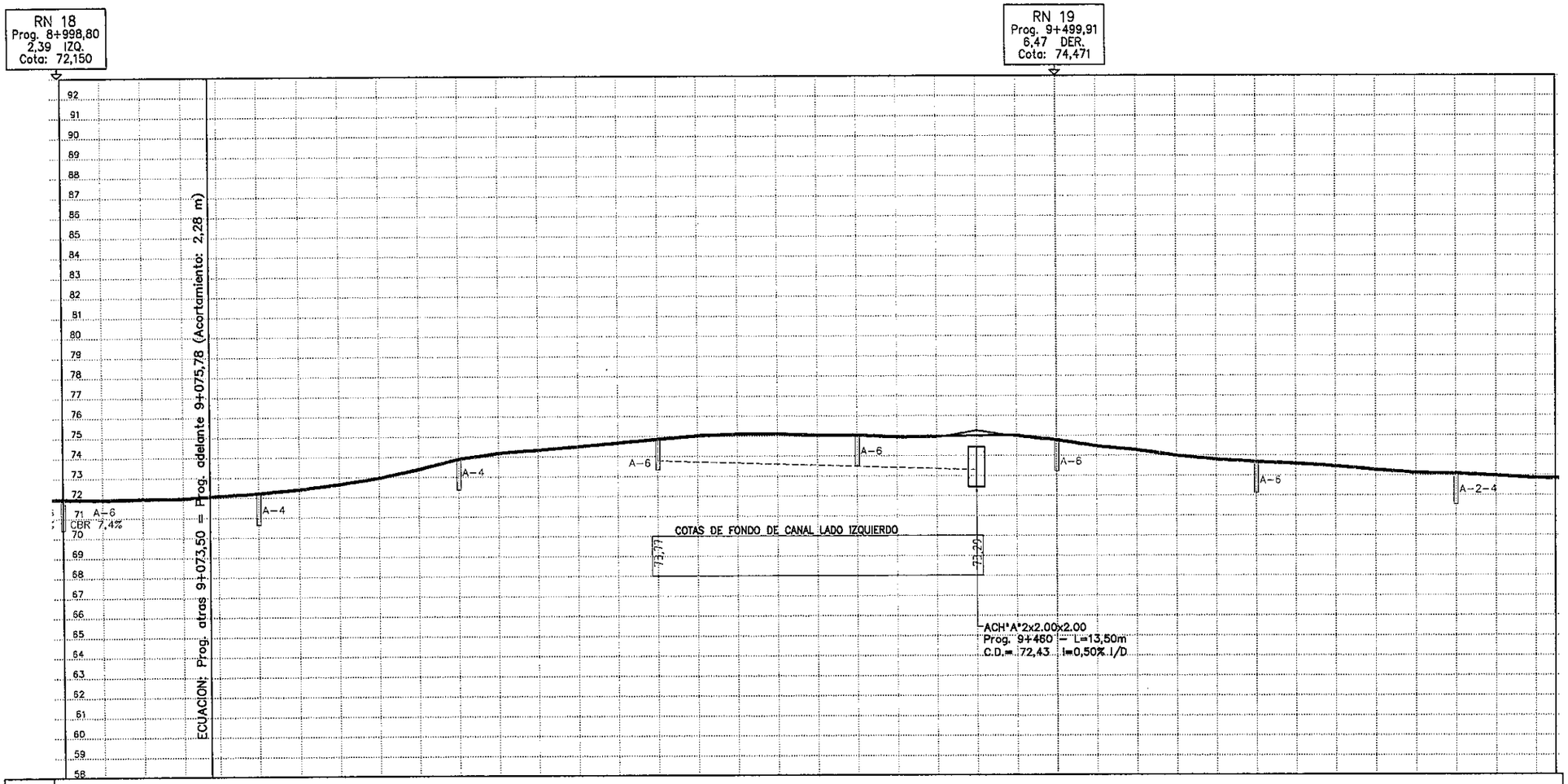
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL Nº 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO Nº 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

PLANIMETRIA
Prog: 9+000 a 9+750

ESCALA
H = 1:2.500
V = 1:250

LAMINA Nº
DG–26




| Prog. | Cotas Rasante | Cotas Terreno Natural | Cota Roja Relleno | Cota Roja Corte | Pend. |
|---|---|---|---|---|---|
| 9+000 | 71.96 | 71.90 | 0.065 | | |
| | 71.92 | 71.86 | 0.065 | | |
| | 71.97 | 71.91 | 0.065 | | |
| | 71.98 | 71.92 | 0.065 | | |
| | 72.11 | 72.04 | 0.065 | | |
| 100 | 72.23 | 72.16 | 0.065 | | |
| | 72.42 | 72.35 | 0.065 | | |
| | 72.66 | 72.60 | 0.065 | | |
| | 72.97 | 72.91 | 0.065 | | |
| | 73.40 | 73.34 | 0.065 | | |
| 200 | 73.90 | 73.84 | 0.065 | | |
| | 74.20 | 74.13 | 0.065 | | |
| | 74.35 | 74.28 | 0.065 | | |
| | 74.52 | 74.45 | 0.065 | | |
| | 74.69 | 74.63 | 0.065 | | |
| 300 | 74.87 | 74.81 | 0.065 | | |
| | 75.04 | 74.98 | 0.065 | | |
| | 75.12 | 75.05 | 0.065 | | |
| | 75.12 | 75.06 | 0.065 | | |
| | 75.05 | 74.98 | 0.065 | | |
| 400 | 75.05 | 74.99 | 0.065 | | |
| | 74.95 | 74.89 | 0.065 | | |
| | 74.98 | 74.91 | 0.065 | | |
| | 75.00 | 75.25 | | -0.25 | |
| | 75.01 | 74.95 | 0.065 | | |
| 9+500 | 74.79 | 74.73 | 0.065 | | |
| | 74.48 | 74.41 | 0.065 | | |
| | 74.29 | 74.22 | 0.065 | | |
| | 74.00 | 73.94 | 0.065 | | |
| | 73.81 | 73.75 | 0.065 | | |
| 600 | 73.69 | 73.62 | 0.065 | | |
| | 73.60 | 73.53 | 0.065 | | |
| | 73.47 | 73.40 | 0.065 | | |
| | 73.28 | 73.22 | 0.065 | | |
| | 73.13 | 73.06 | 0.065 | | |
| 700 | 73.09 | 73.03 | 0.065 | | |
| | 72.98 | 72.92 | 0.065 | | |
| | 72.87 | 72.80 | 0.065 | | |

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

034

treintaycuatro

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

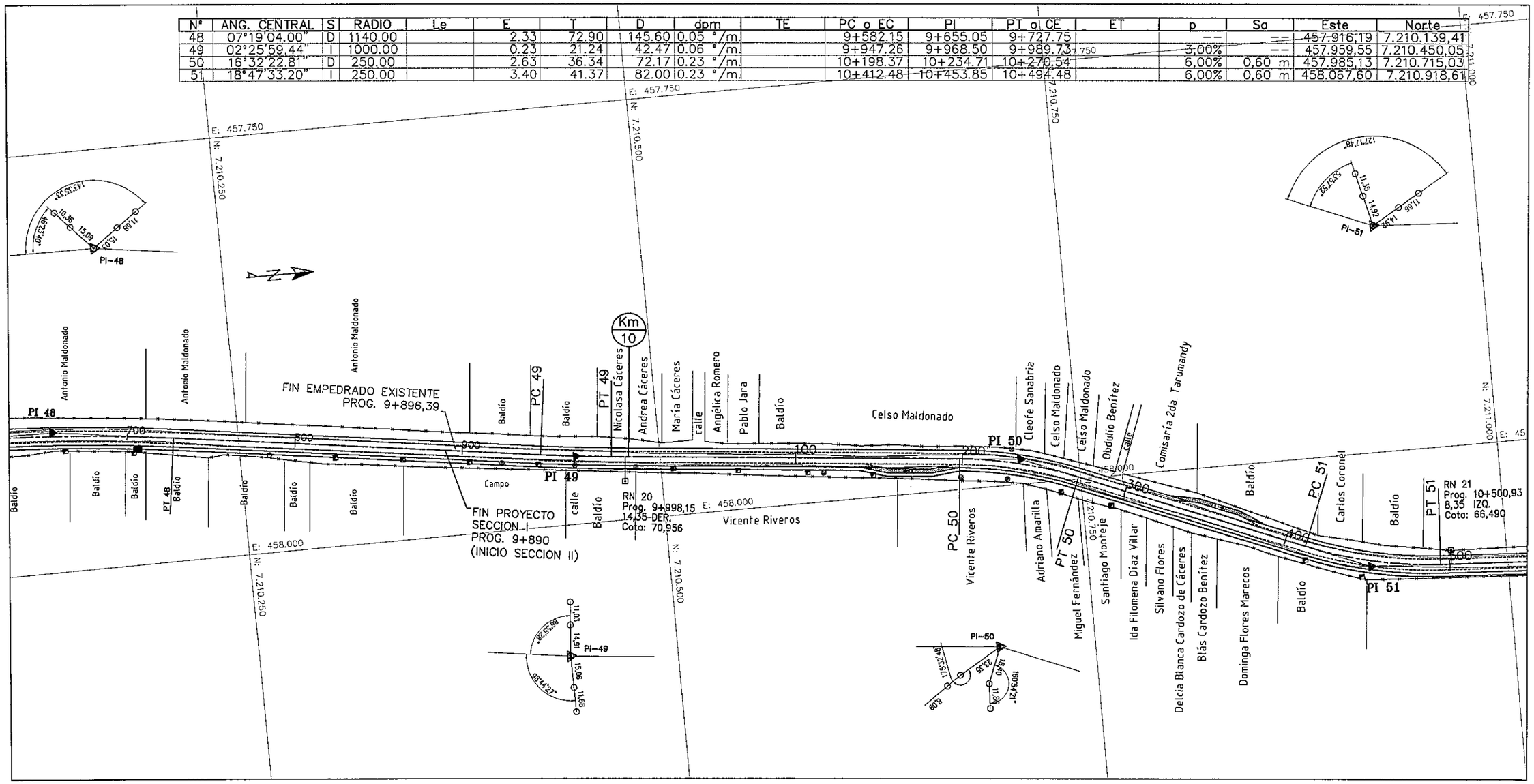
TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

ALTIMETRIA
Prog: 9+000 a 9+750

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–27

| N° | ANG. CENTRAL | S | RADIO | Le | E | T | D | dpm | TE | PC o EC | PI | PT o CE | ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48 | 07°19'04.00" | D | 1140.00 | | 2.33 | 72.90 | 145.60 | 0.05 °/m. | | 9+582.15 | 9+655.05 | 9+727.75 | | -- | -- | 457.916,19 | 7.210.139,41 |
| 49 | 02°25'59.44" | I | 1000.00 | | 0.23 | 21.24 | 42.47 | 0.06 °/m. | | 9+947.26 | 9+968.50 | 9+989.73 | | 3,00% | -- | 457.959,55 | 7.210.450,05 |
| 50 | 16°32'22.81" | D | 250.00 | | 2.63 | 36.34 | 72.17 | 0.23 °/m. | | 10+198.37 | 10+234.71 | 10+270.54 | | 6,00% | 0,60 m | 457.985,13 | 7.210.715,03 |
| 51 | 18°47'33.20" | I | 250.00 | | 3.40 | 41.37 | 82.00 | 0.23 °/m. | | 10+412.48 | 10+453.85 | 10+494.48 | | 6,00% | 0,60 m | 458.067,60 | 7.210.918,61 |




Ing. Salvador D. Gulino
INCONPAR S.A.
Director de Proyecto



| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

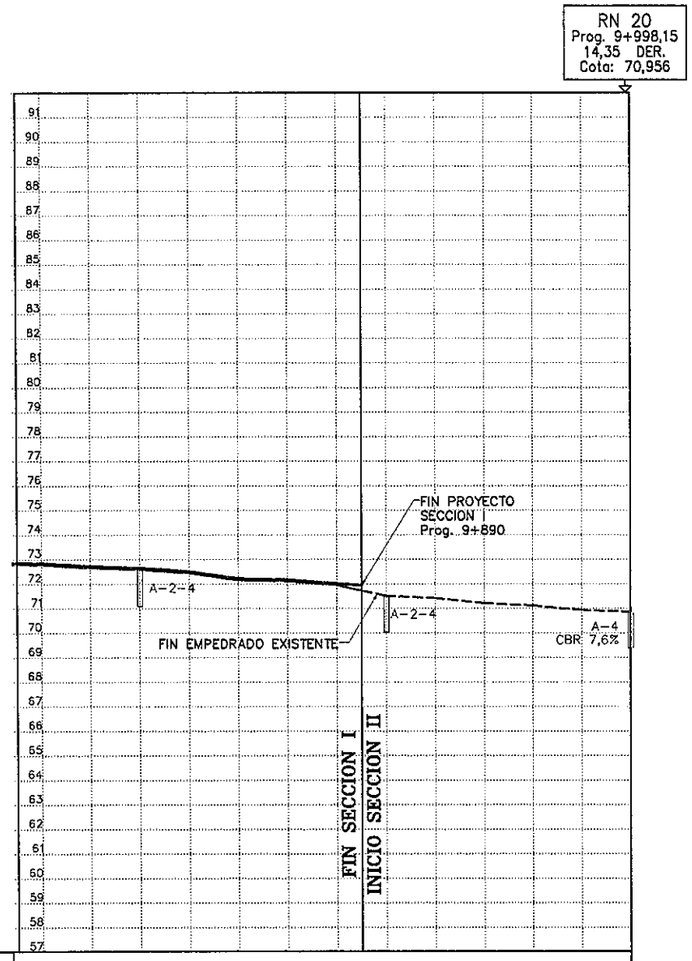
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

PLANIMETRIA
Prog: 9+750 a 9+890

ESCALA
H = 1:2.500
V = 1:250

LAMINA N°
DG–28




| Prog. | Cotas Rasante | Cotas Terreno Natural | Cota Roja Relleno | Cota Roja Corte | Pend. |
|---|---|---|---|---|---|
| | 72.84 | 72.78 | 0.065 | | |
| | 72.71 | 72.65 | 0.065 | | |
| 800 | 72.64 | 72.58 | 0.065 | | |
| | 72.50 | 72.43 | 0.065 | | |
| | 72.21 | 72.14 | 0.065 | | |
| | 72.17 | 72.10 | 0.065 | | |
| | 72.00 | 71.94 | 0.065 | | |
| 9+890 | 71.93 | 71.72 | 0.21 | | |
| | | 71.51 | | | |
| | | 71.41 | | | |
| | | 71.20 | | | |
| | | 71.11 | | | |
| | | 70.91 | | | |
| 10+000 | | 70.83 | | | |

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

036
(treinta y seis)

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

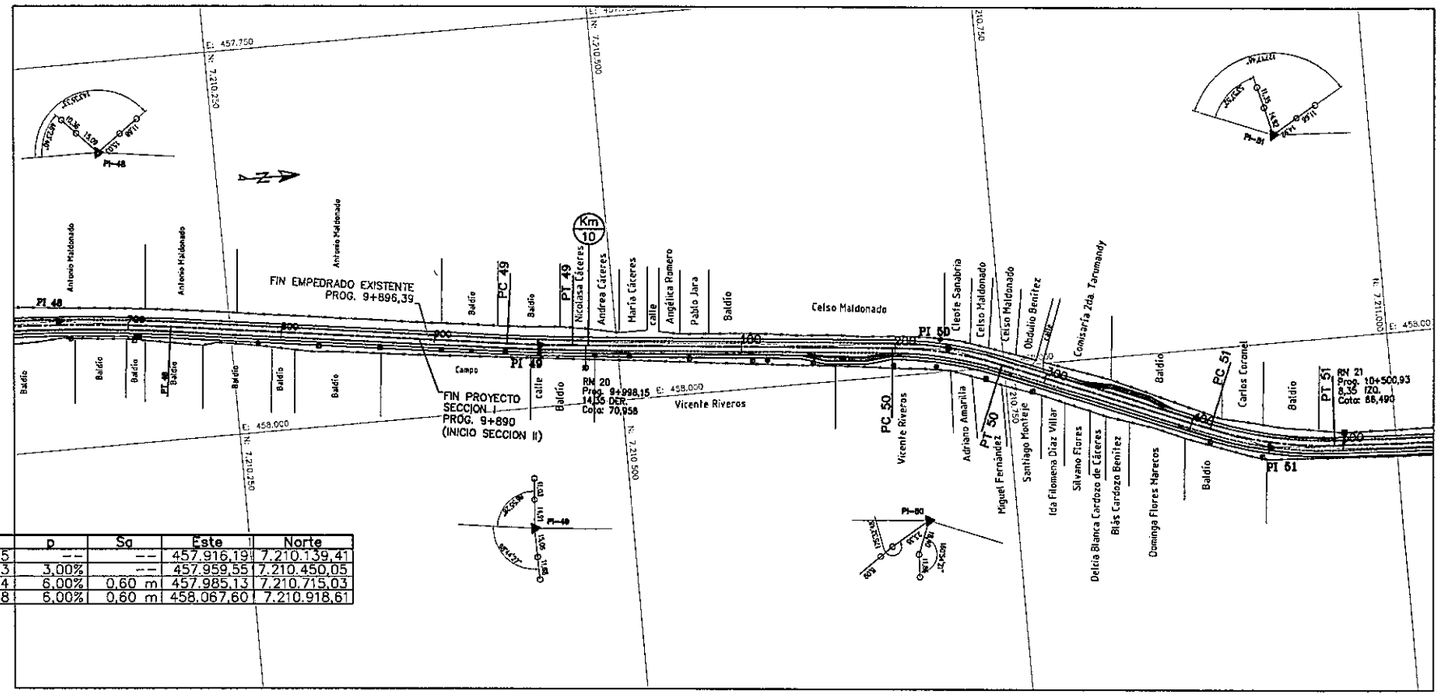
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL Nº 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO Nº 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN I – Prog. 0+000 a Prog. 9+890**

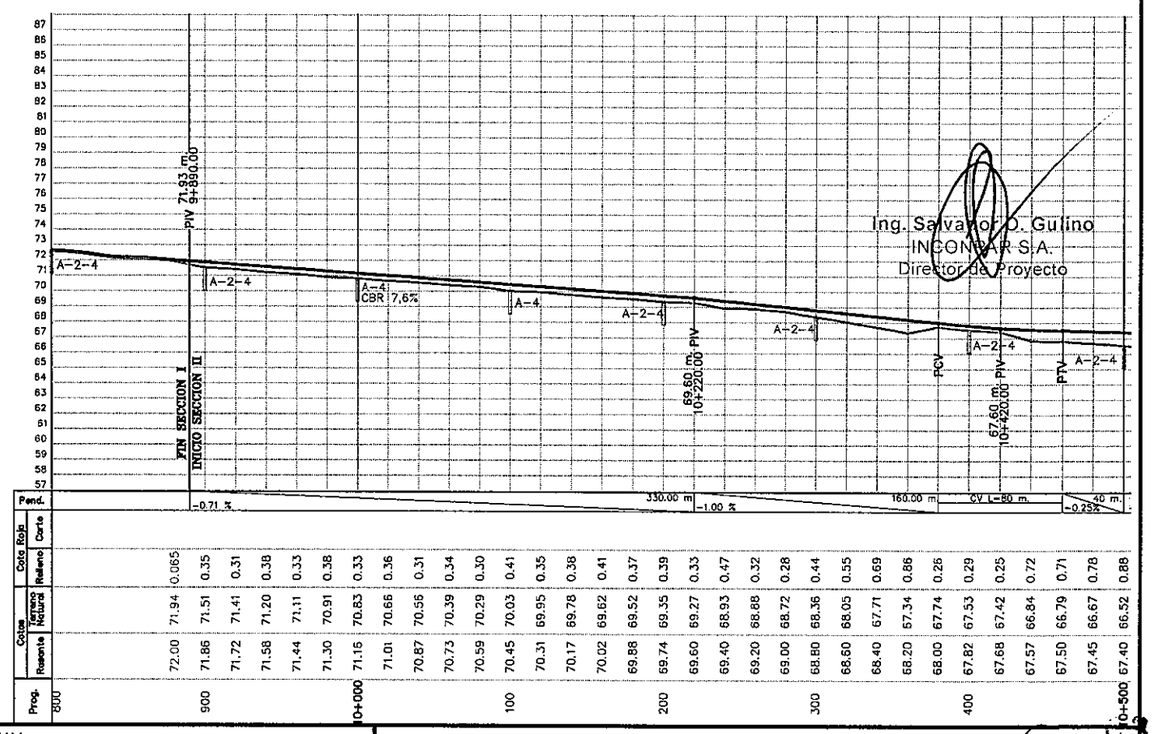
ALTIMETRIA
Prog: 9+750 a 9+890

ESCALA
H = 1:2.500
V = 1:250

LAMINA Nº
DG–29




| N° | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o EC | PI | PT o CE | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48 | 07°19'04.00" | D | 1140.00 | 2.33 | 72.90 | 145.60 | 0.05 °/m | 9+582.15 | 9+655.05 | 9+727.75 | -- | -- | 457.916,19 | 7.210.139,41 |
| 49 | 02°25'59.44" | I | 1000.00 | 0.23 | 21.24 | 42.47 | 0.06 °/m | 9+947.26 | 9+968.50 | 9+989.73 | 3,00% | -- | 457.959,55 | 7.210.450,05 |
| 50 | 16°32'22.81" | D | 250.00 | 2.63 | 36.34 | 72.17 | 0.23 °/m | 10+198.37 | 10+234.71 | 10+270.54 | 6,00% | 0,60 m | 457.985,13 | 7.210.715,03 |
| 51 | 18°47'33.20" | I | 250.00 | 3.40 | 41.37 | 82.00 | 0.23 °/m | 10+412.48 | 10+453.85 | 10+494.48 | 6,00% | 0,60 m | 458.067,60 | 7.210.918,61 |




Ing. Salvador D. Gulino
INCONPAR S.A.
Director de Proyecto

| PARAMETROS DE DISEÑO | | | |
|---|---|---|---|
| ZONA RURAL | | ZONA URBANA | |
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN II – Prog. 9+890 a Prog. 31+203,81**

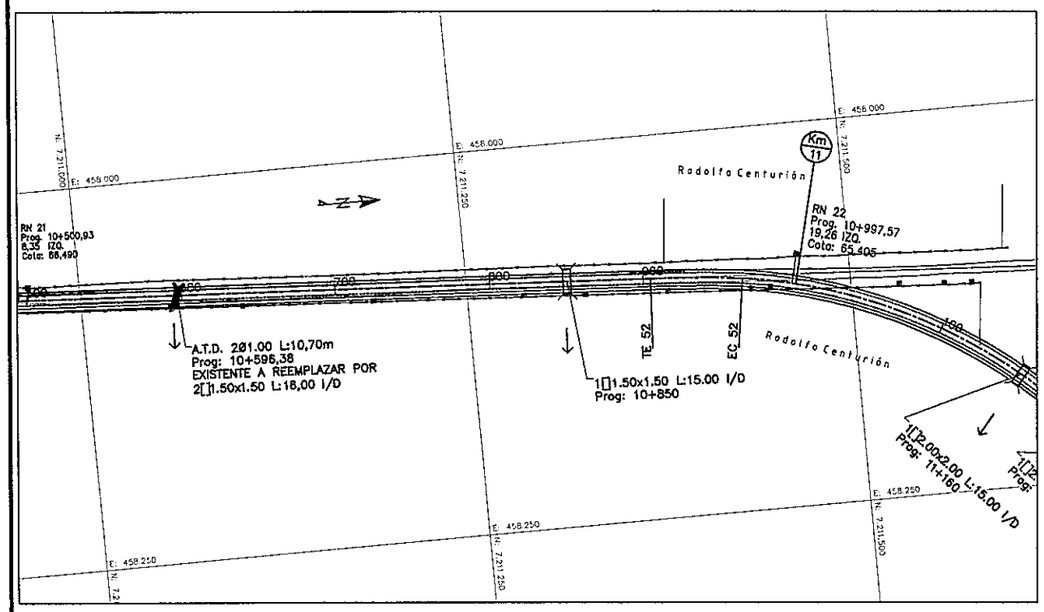
PLANIALTIMETRIA
Prog: 9+890 a 10+500

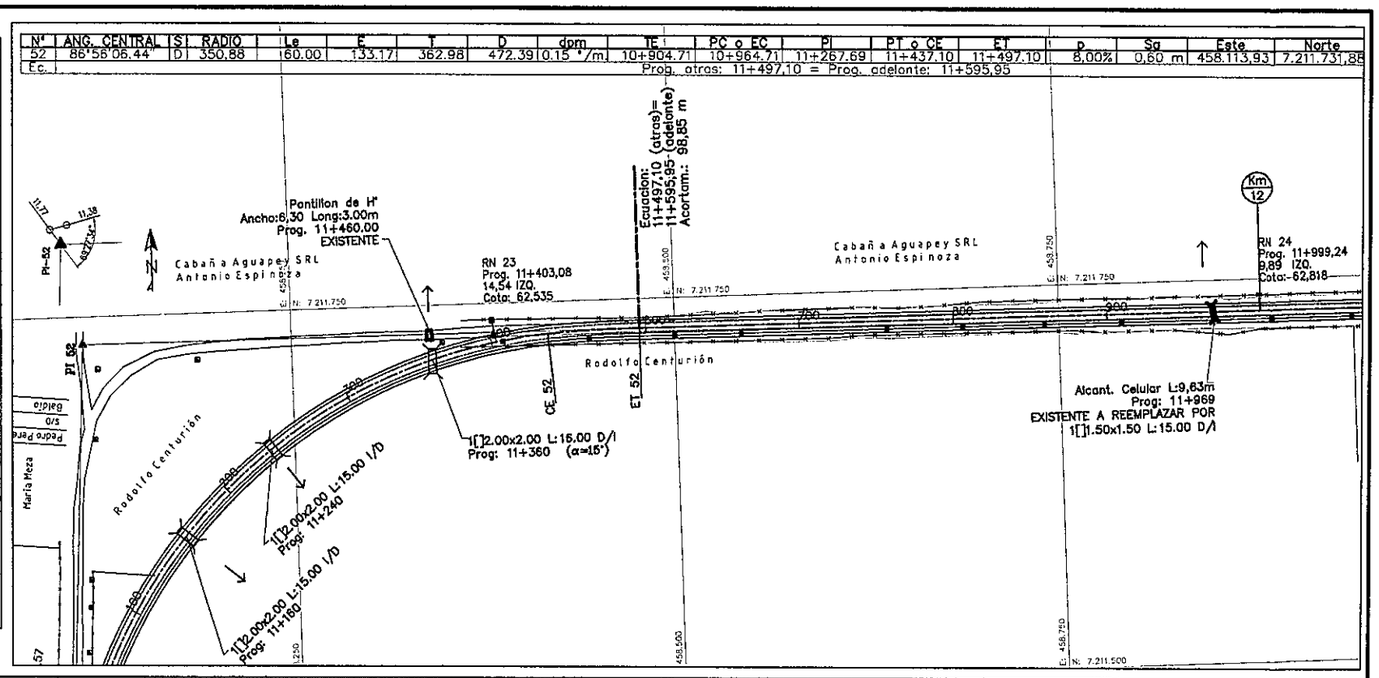
ESCALA
H = 1:4.000
V = 1:400

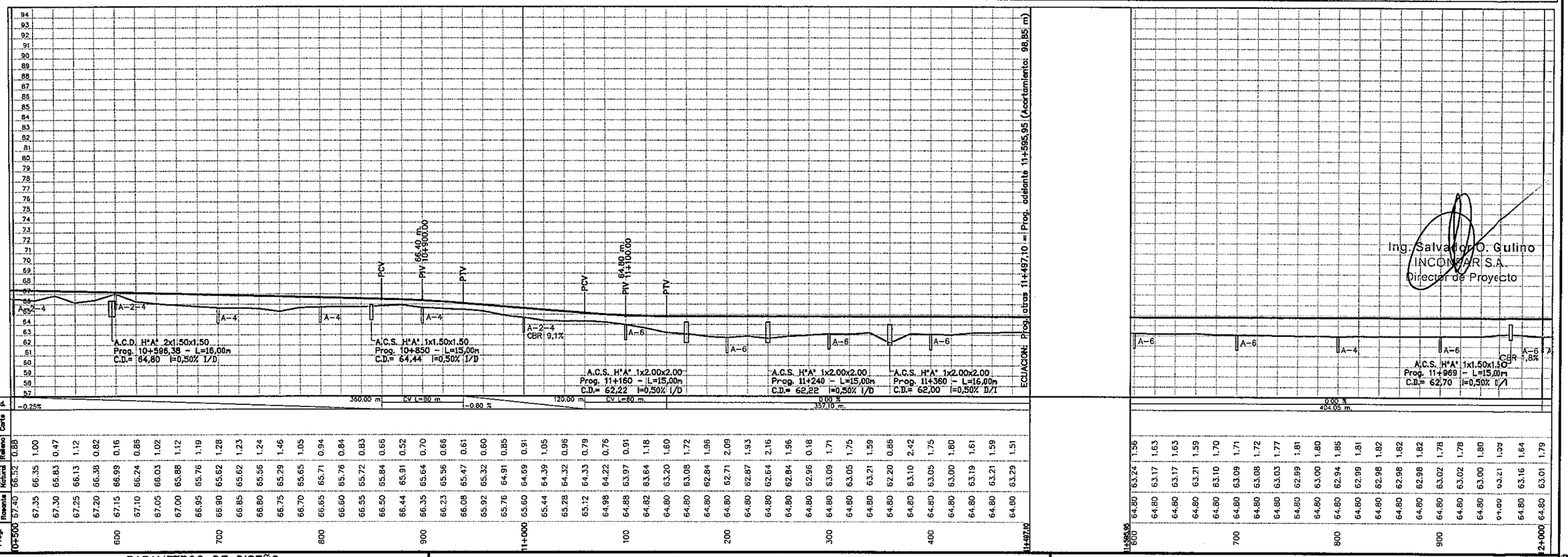
LAMINA N°
DG–30

Treinta y siete

| N° | ANG. CENTRAL | S | RADIO | Le | E | T | D | dpm | TE | PC o EC | PI | PT o CE | ET | p | Sg | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 52 | 86°56'06.44" | D | 350.88 | 60.00 | 133.17 | 362.98 | 472.39 | 0.15 °/m | 10+904.71 | 10+964.71 | 11+267.69 | 11+437.10 | 11+497.10 | 8.00% | 0.60 m | 458.113,93 | 7.211.731,88 |
| Ec. | | | | | | | | | | Prog. atras: 11+497,10 = Prog. adelante: 11+595,95 | | | | | | | |




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN II – Prog. 9+890 a Prog. 31+203,81**

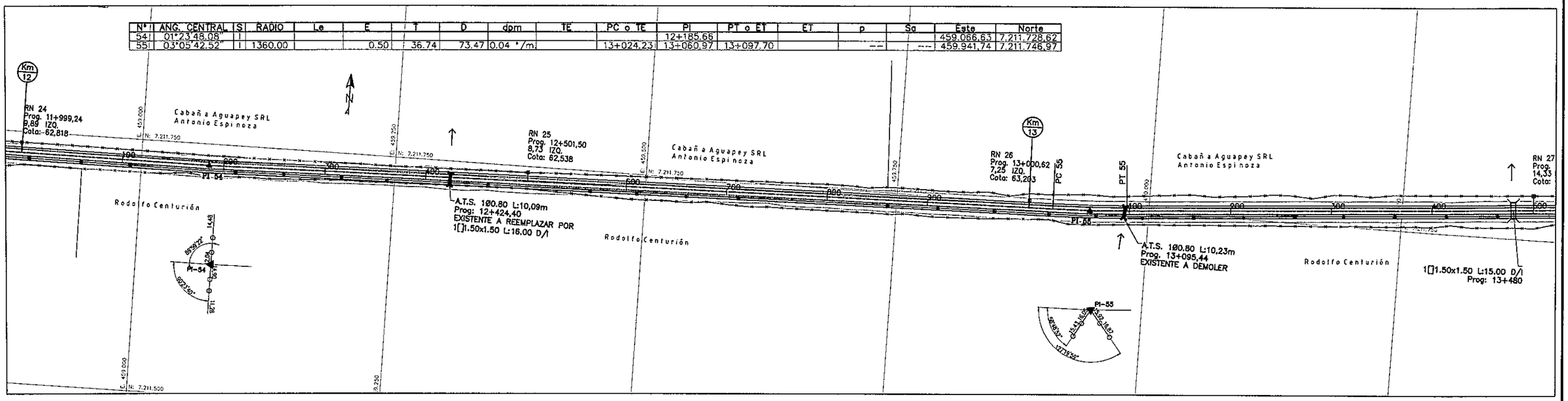
PLANIALTIMETRIA
Prog: 10+500 a 12+000

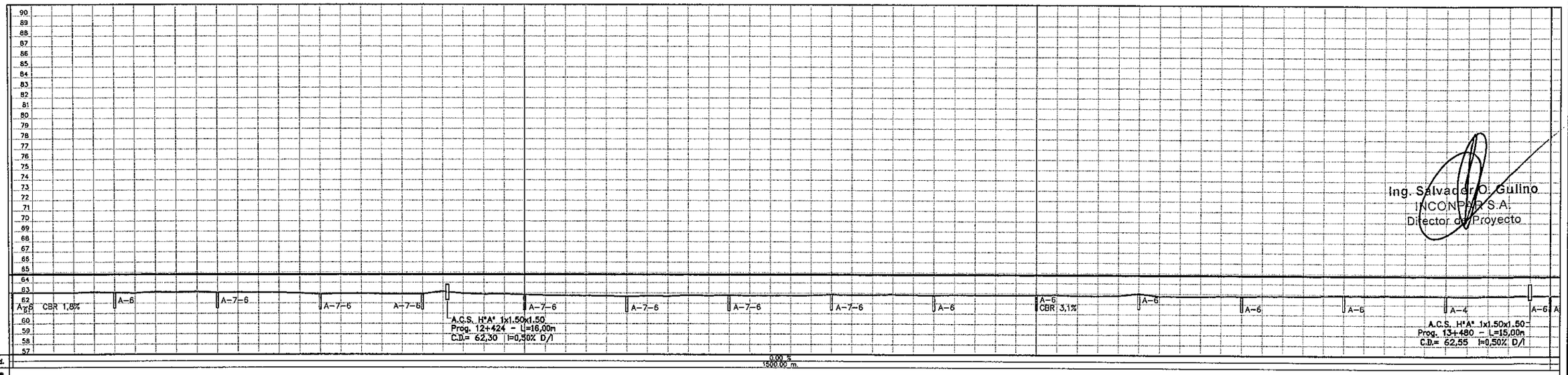
ESCALA
H = 1:4.000
V = 1:400

LAMINA N°
DG-31

38

| N° | ANG. CENTRAL | S | RADIO | Le | E | T | D | dpm | TE | PC o TE | PI | PT o ET | ET | p | Sg | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | 01°23'48.08" | I | | | | | | | | | 12+185.66 | | | | | 459.066,63 | 7.211.728,62 |
| 55 | 03°05'42.52" | I | 1360.00 | | 0.50 | 36.74 | 73.47 | 0.04 °/m | | 13+024.23 | 13+060.97 | 13+097.70 | | -- | --- | 459.941,74 | 7.211.746,97 |




| Prog. | Cotas Rasante | Cotas Terreno Natural | Cota Roja Relleno | Cota Roja Corte |
|---|---|---|---|---|
| 12+000 | 64.80 | 63.01 | 1.79 | |
| | 64.80 | 63.01 | 1.79 | |
| | 64.80 | 63.01 | 1.79 | |
| | 64.80 | 62.98 | 1.82 | |
| | 64.80 | 63.07 | 1.73 | |
| 100 | 64.80 | 63.02 | 1.78 | |
| | 64.80 | 62.99 | 1.81 | |
| | 64.80 | 63.10 | 1.70 | |
| | 64.80 | 63.07 | 1.73 | |
| | 64.80 | 63.14 | 1.66 | |
| 200 | 64.80 | 63.03 | 1.77 | |
| | 64.80 | 63.07 | 1.73 | |
| | 64.80 | 63.06 | 1.74 | |
| | 64.80 | 63.04 | 1.76 | |
| | 64.80 | 62.97 | 1.83 | |
| 300 | 64.80 | 62.87 | 1.93 | |
| | 64.80 | 62.94 | 1.86 | |
| | 64.80 | 62.95 | 1.85 | |
| | 64.80 | 62.89 | 1.91 | |
| | 64.80 | 62.87 | 1.93 | |
| 400 | 64.80 | 62.89 | 1.91 | |
| | 64.80 | 63.16 | 1.64 | |
| | 64.80 | 62.93 | 1.87 | |
| | 64.80 | 62.87 | 1.93 | |
| | 64.80 | 62.89 | 1.91 | |
| 12+500 | 64.80 | 62.83 | 1.97 | |
| | 64.80 | 62.76 | 2.04 | |
| | 64.80 | 62.73 | 2.07 | |
| | 64.80 | 62.73 | 2.07 | |
| | 64.80 | 62.71 | 2.09 | |
| 600 | 64.80 | 62.65 | 2.15 | |
| | 64.80 | 62.71 | 2.09 | |
| | 64.80 | 62.68 | 2.12 | |
| | 64.80 | 62.79 | 2.01 | |
| | 64.80 | 62.75 | 2.05 | |
| 700 | 64.80 | 62.78 | 2.02 | |
| | 64.80 | 62.75 | 2.05 | |
| | 64.80 | 62.77 | 2.03 | |
| | 64.80 | 62.77 | 2.03 | |
| | 64.80 | 62.78 | 2.02 | |
| 800 | 64.80 | 62.86 | 1.94 | |
| | 64.80 | 62.82 | 1.98 | |
| | 64.80 | 62.82 | 1.98 | |
| | 64.80 | 62.87 | 1.93 | |
| | 64.80 | 62.81 | 1.99 | |
| 900 | 64.80 | 62.78 | 2.02 | |
| | 64.80 | 62.84 | 1.96 | |
| | 64.80 | 62.81 | 1.99 | |
| | 64.80 | 62.83 | 1.97 | |
| | 64.80 | 62.81 | 1.99 | |
| 13+000 | 64.80 | 62.85 | 1.95 | |
| | 64.80 | 62.86 | 1.94 | |
| | 64.80 | 62.78 | 2.02 | |
| | 64.80 | 62.78 | 2.02 | |
| | 64.80 | 62.82 | 1.98 | |
| 100 | 64.80 | 63.02 | 1.78 | |
| | 64.80 | 62.77 | 2.03 | |
| | 64.80 | 62.76 | 2.04 | |
| | 64.80 | 62.75 | 2.05 | |
| | 64.80 | 62.80 | 2.00 | |
| 200 | 64.80 | 62.79 | 2.01 | |
| | 64.80 | 62.81 | 1.99 | |
| | 64.80 | 62.84 | 1.96 | |
| | 64.80 | 62.81 | 1.99 | |
| | 64.80 | 62.85 | 1.95 | |
| 300 | 64.80 | 62.88 | 1.92 | |
| | 64.80 | 62.86 | 1.94 | |
| | 64.80 | 62.89 | 1.91 | |
| | 64.80 | 62.86 | 1.94 | |
| | 64.80 | 62.87 | 1.93 | |
| 400 | 64.80 | 62.87 | 1.93 | |
| | 64.80 | 62.84 | 1.96 | |
| | 64.80 | 62.86 | 1.94 | |
| | 64.80 | 62.87 | 1.93 | |
| | 64.80 | 62.88 | 1.92 | |
| 13+500 | 64.80 | 62.93 | 1.87 | |

Ing. Salvador O. Gullino
INCONPAR S.A.
Director de Proyecto

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

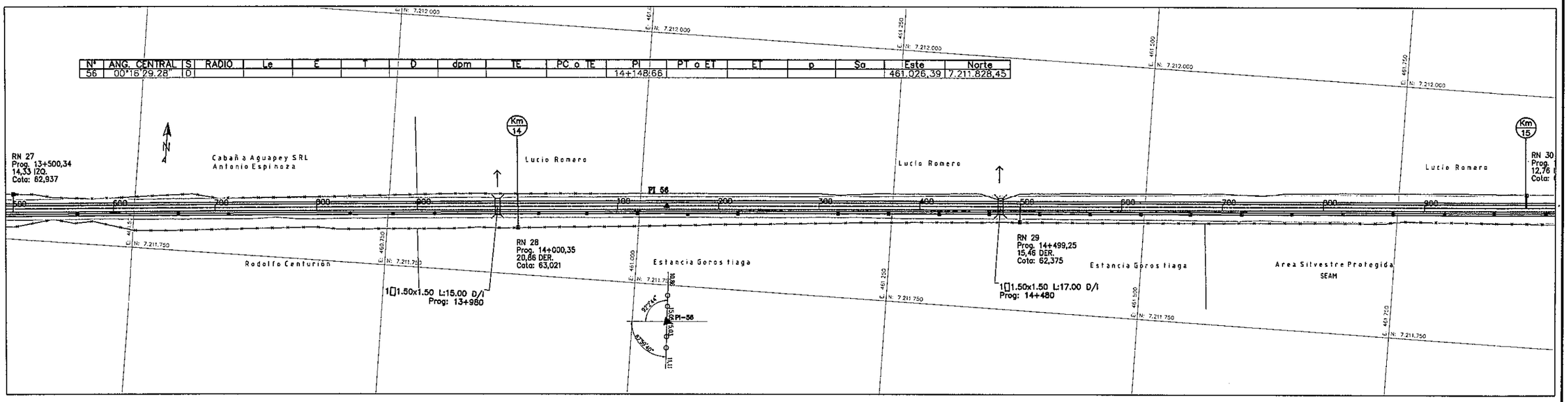
TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN II – Prog. 9+890 a Prog. 31+203,81**

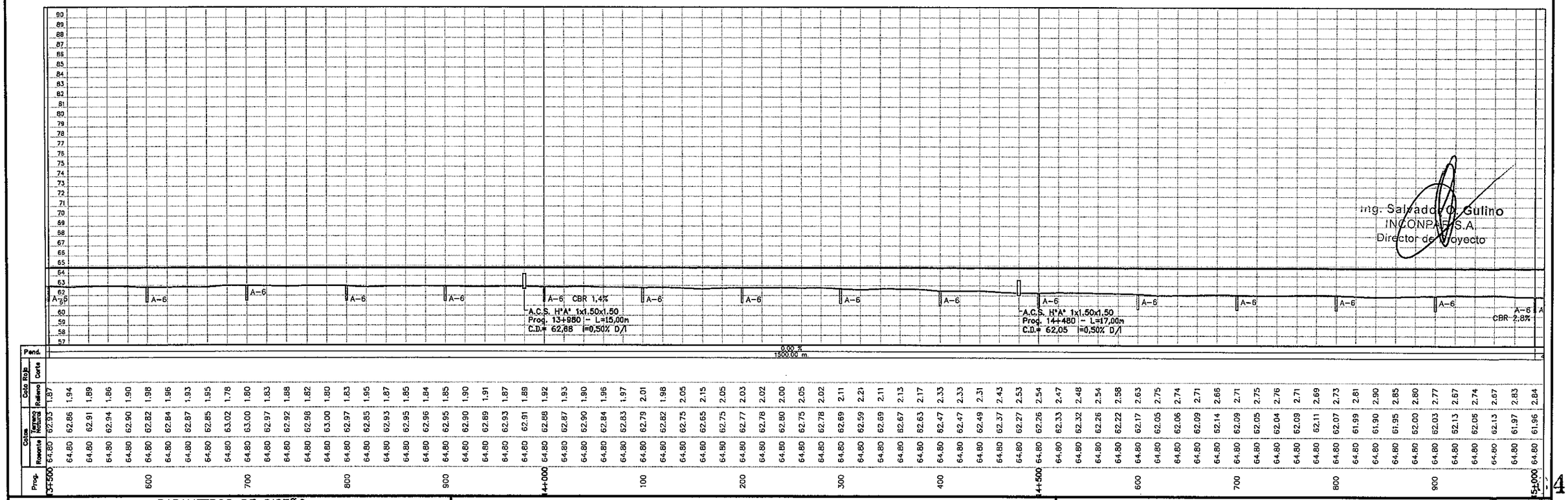
PLANIALTIMETRIA
Prog: 12+000 a 13+500

ESCALA
H = 1:4.000
V = 1:400

LAMINA N°
DG–32

| N° | ANG. CENTRAL | S | RADIO | Le | E | T | D | dpm | TE | PC o TE | PI | PT o ET | ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 56 | 00°16'29.25" | D | | | | | | | | | 14+148,66 | | | | | 461.026,39 | 7.211.828,45 |




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 - FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN II – Prog. 9+890 a Prog. 31+203,81**

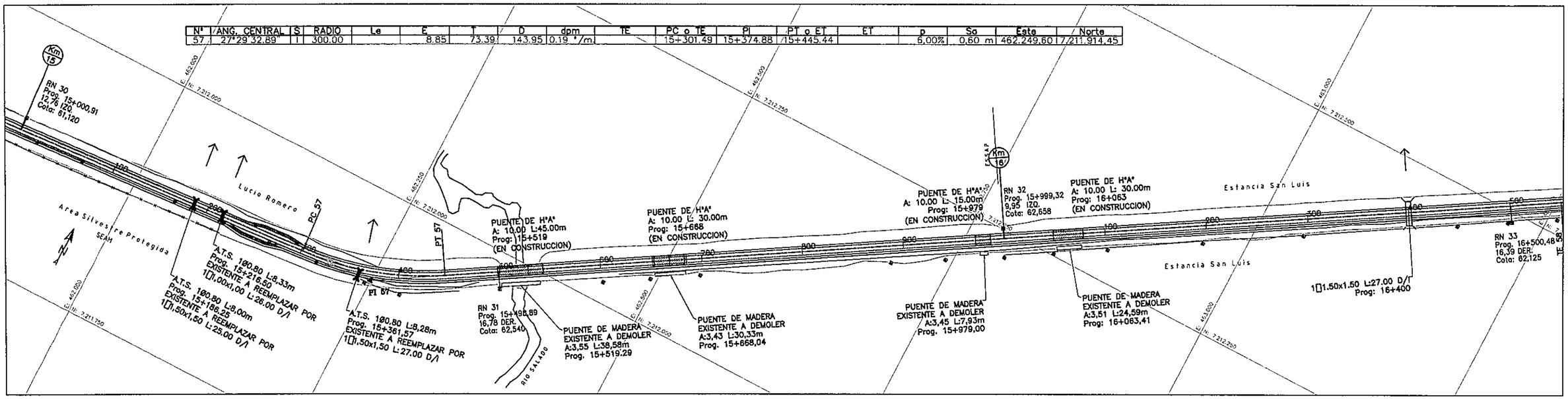
PLANIALTIMETRIA
Prog: 13+500 a 15+000

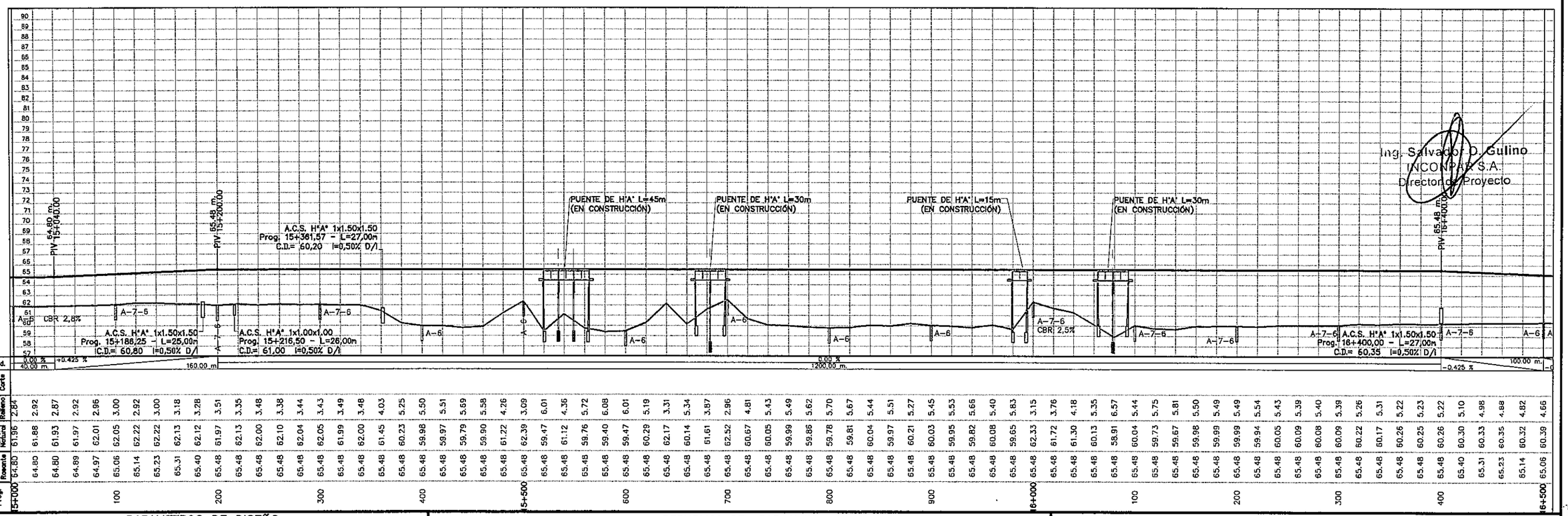
ESCALA
H = 1:4.000
V = 1:400

LAMINA N°
DG-33

140 (carrita)

| Nº | ANG. CENTRAL | S | RADIO | Le | E | T | D | dpm | TE | PC o TE | PI | PT o ET | ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 57 | 27°29'32.89" | I | 300.00 | | 8.85 | 73.39 | 143.95 | 0.19 °/m | | 15+301.49 | 15+374.88 | 15+445.44 | | 6,00% | 0,60 m | 462.249,60 | 7.211.914,45 |




Ing. Salvador D. Gulino
INCONPAR S.A.
Director de Proyecto

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

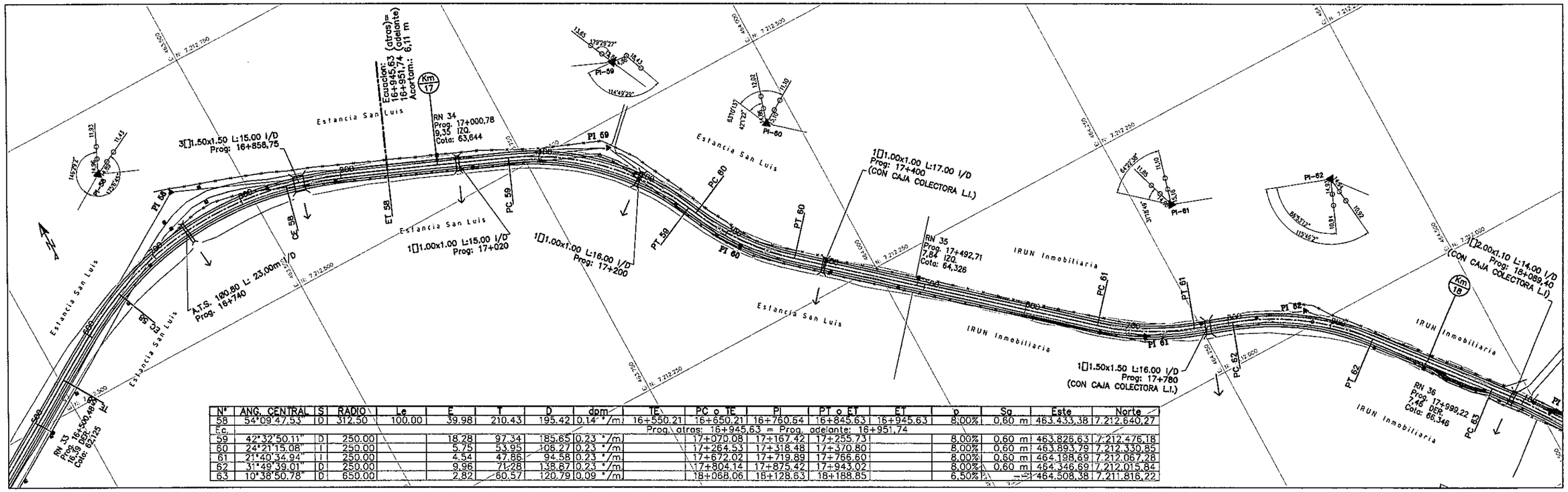
DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL Nº 2.532/2010 - FONDO LOCAL
CONTRATO S.G. MINISTRO Nº 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN II – Prog. 9+890 a Prog. 31+203,81** (cuarenta y uno)

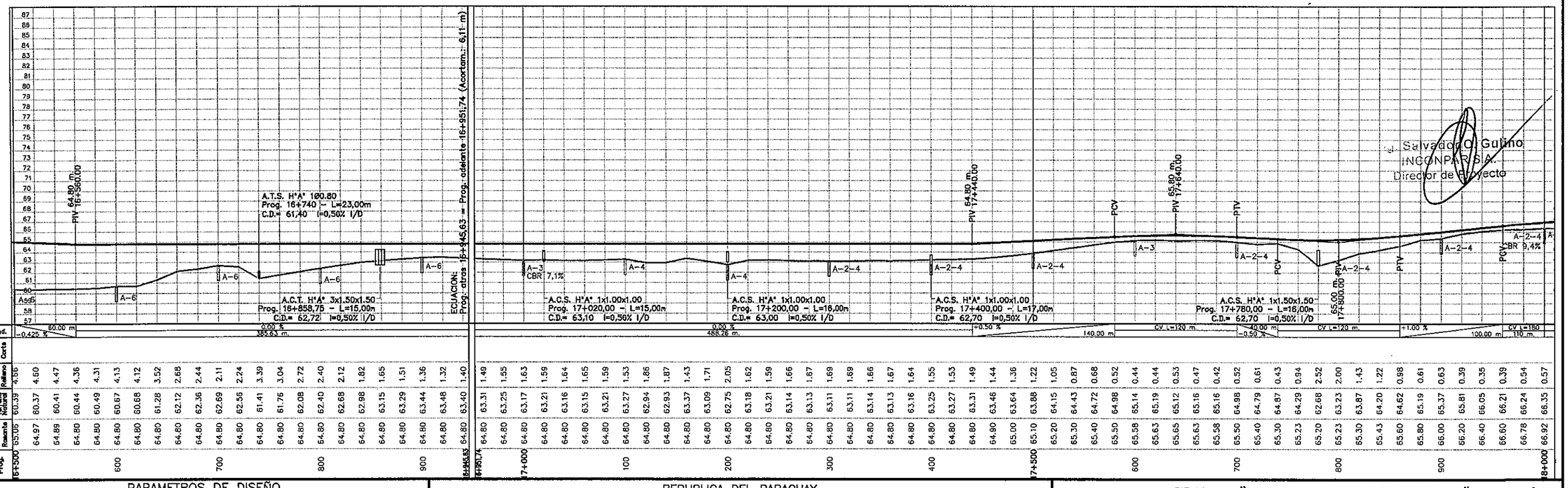
PLANIALTIMETRIA
Prog: 15+000 a 16+500

ESCALA
H = 1:4.000
V = 1:400

LAMINA Nº
DG-34




| N° | ANG. CENTRAL | S | RADIO | Le | E | T | D | dpm | TE | PC o TE | PI | PT o ET | ET | p | Sg | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 58 | 54°09'47.53" | D | 312.50 | 100.00 | 39.98 | 210.43 | 195.42 | 0.14 °/m | 16+550.21 | 16+650.21 | 16+760.64 | 16+845.63 | 16+945.63 | 8,00% | 0,60 m | 463.433,38 | 7.212.640,27 |
| Ec. | | | | | | | | | Prog. atras: 16+945,63 = Prog. adelante: 16+951,74 | | | | | | | | |
| 59 | 42°32'50.11" | D | 250.00 | | 18.28 | 97.34 | 185.65 | 0.23 °/m | | 17+070.08 | 17+167.42 | 17+255.73 | | 8,00% | 0,60 m | 463.826,63 | 7.212.476,18 |
| 60 | 24°21'15.08" | I | 250.00 | | 5.75 | 53.95 | 106.27 | 0.23 °/m | | 17+264.53 | 17+318.48 | 17+370.80 | | 8,00% | 0,60 m | 463.893,79 | 7.212.330,85 |
| 61 | 21°40'34.94" | I | 250.00 | | 4.54 | 47.86 | 94.58 | 0.23 °/m | | 17+672.02 | 17+719.89 | 17+766.60 | | 8,00% | 0,60 m | 464.198,69 | 7.212.067,28 |
| 62 | 31°49'39.01" | D | 250.00 | | 9.96 | 71.28 | 138.87 | 0.23 °/m | | 17+804.14 | 17+875.42 | 17+943.02 | | 8,00% | 0,60 m | 464.346,69 | 7.212.015,84 |
| 63 | 10°38'50.78" | D | 650.00 | | 2.82 | 60.57 | 120.79 | 0.09 °/m | | 18+068.06 | 18+128.63 | 18+188.85 | | 6,50% | | 464.508,38 | 7.211.816,22 |




Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN II – Prog. 9+890 a Prog. 31+203,81**

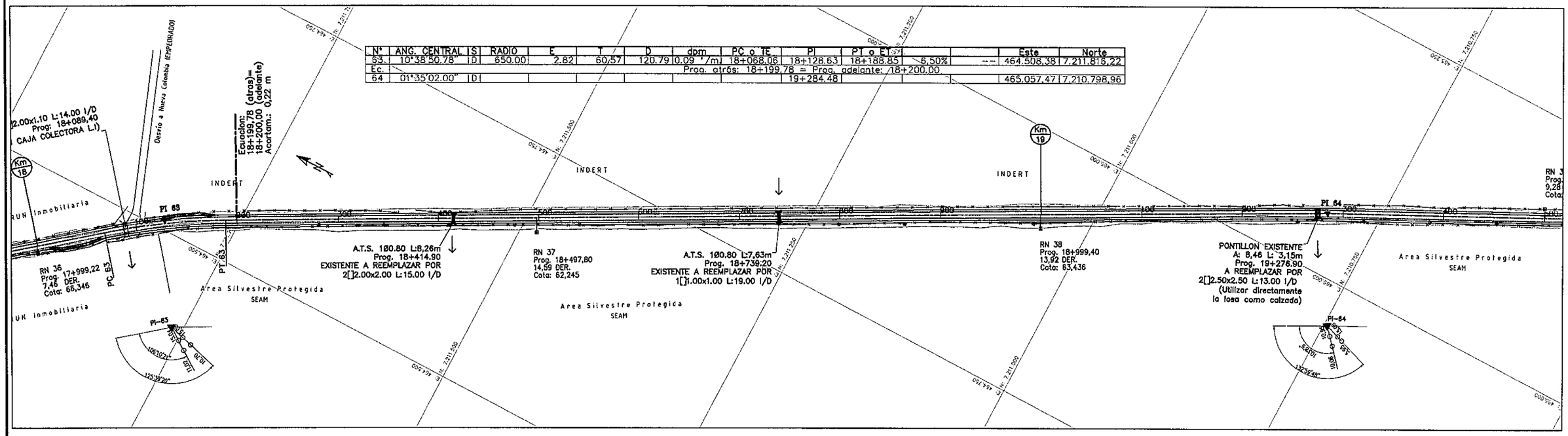
PLANIALTIMETRIA
Prog: 16+500 a 18+000

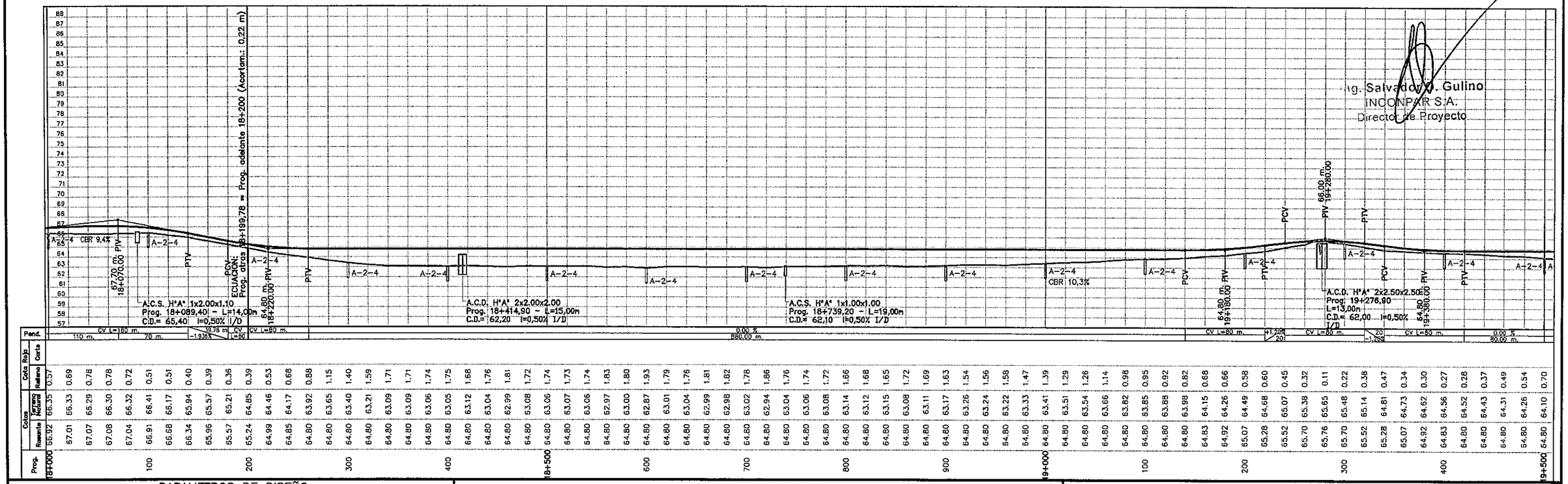
ESCALA
H = 1:4.000
V = 1:400

LAMINA N° DG–35

42 (cuarenta y dos)

| N° | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | | | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 63 | 10°38'30.78" | D | 650.00 | 2.82 | 60,57 | 120.79 | 0.09 °/m | 18+068.06 | 18+128.63 | 18+188.85 | 6.50% | --- | 464.508,38 | 7.211.815,22 |
| Ec. | | | | | | | Prog. atrás: 18+199.78 = Prog. adelante: 18+200.00 | | | | | | | |
| 64 | 01°35'02.00" | D | | | | | | | 19+284.48 | | | | 465.057,47 | 7.210.798,96 |




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN II – Prog. 9+890 a Prog. 31+203,81**

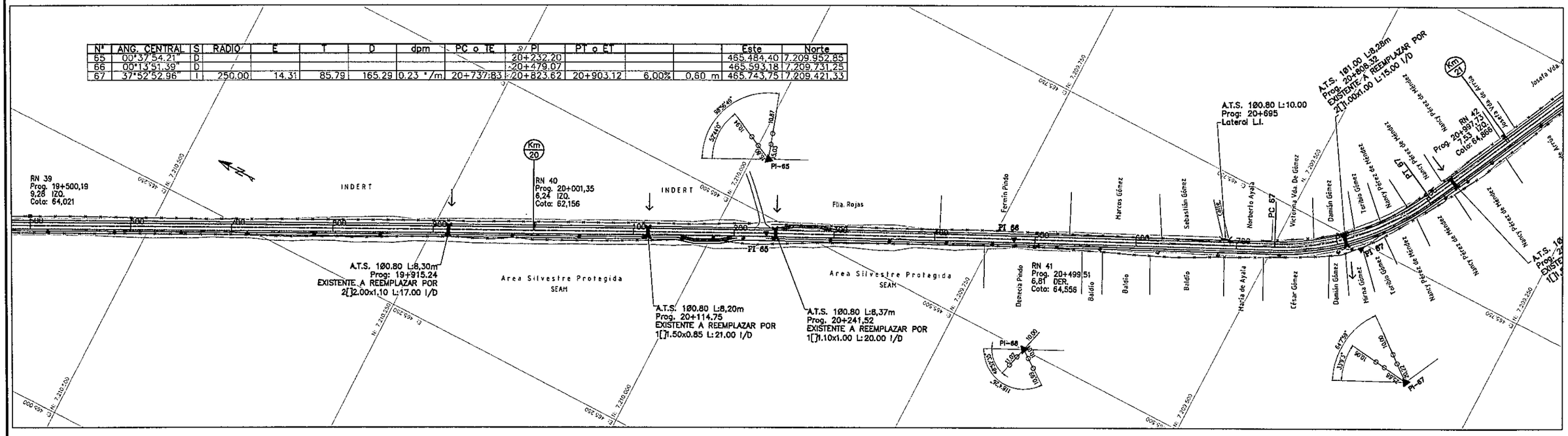
PLANIALTIMETRIA
Prog: 18+000 a 19+500

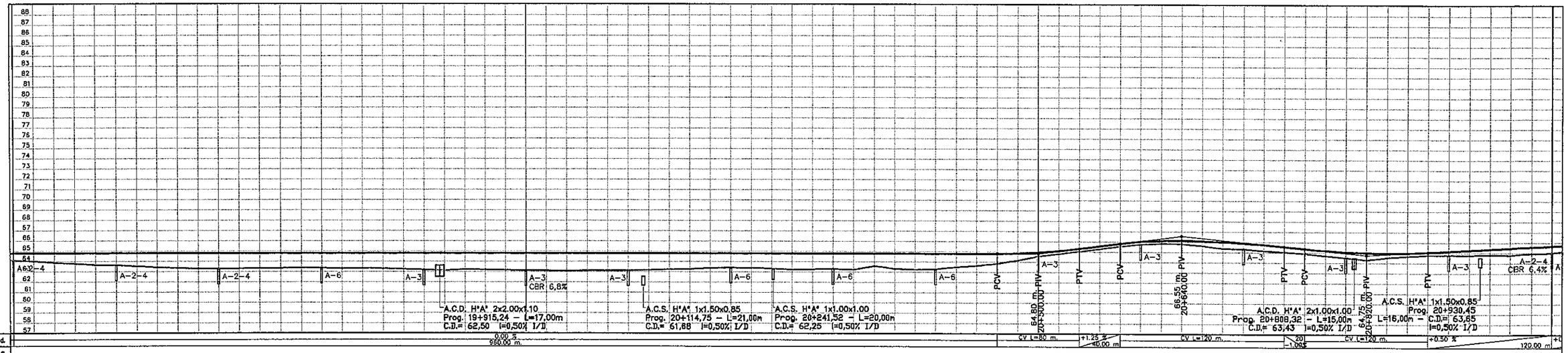
ESCALA
H = 1:4.000
V = 1:400

LAMINA N° DG–36

043
Cuarenta y tres

| N° | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | | | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 65 | 00°37'54.21" | D | | | | | | | 20+232.20 | | | | 465.484,40 | 7.209.952,85 |
| 66 | 00°13'51.39" | D | | | | | | | 20+479.07 | | | | 465.593,18 | 7.209.731,25 |
| 67 | 37°52'52.96" | I | 250.00 | 14.31 | 85.79 | 165.29 | 0.23 °/m | 20+737.83 | 20+823.62 | 20+903.12 | 6.00% | 0.60 m | 465.743,75 | 7.209.421,33 |




## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN II – Prog. 9+890 a Prog. 31+203,81**

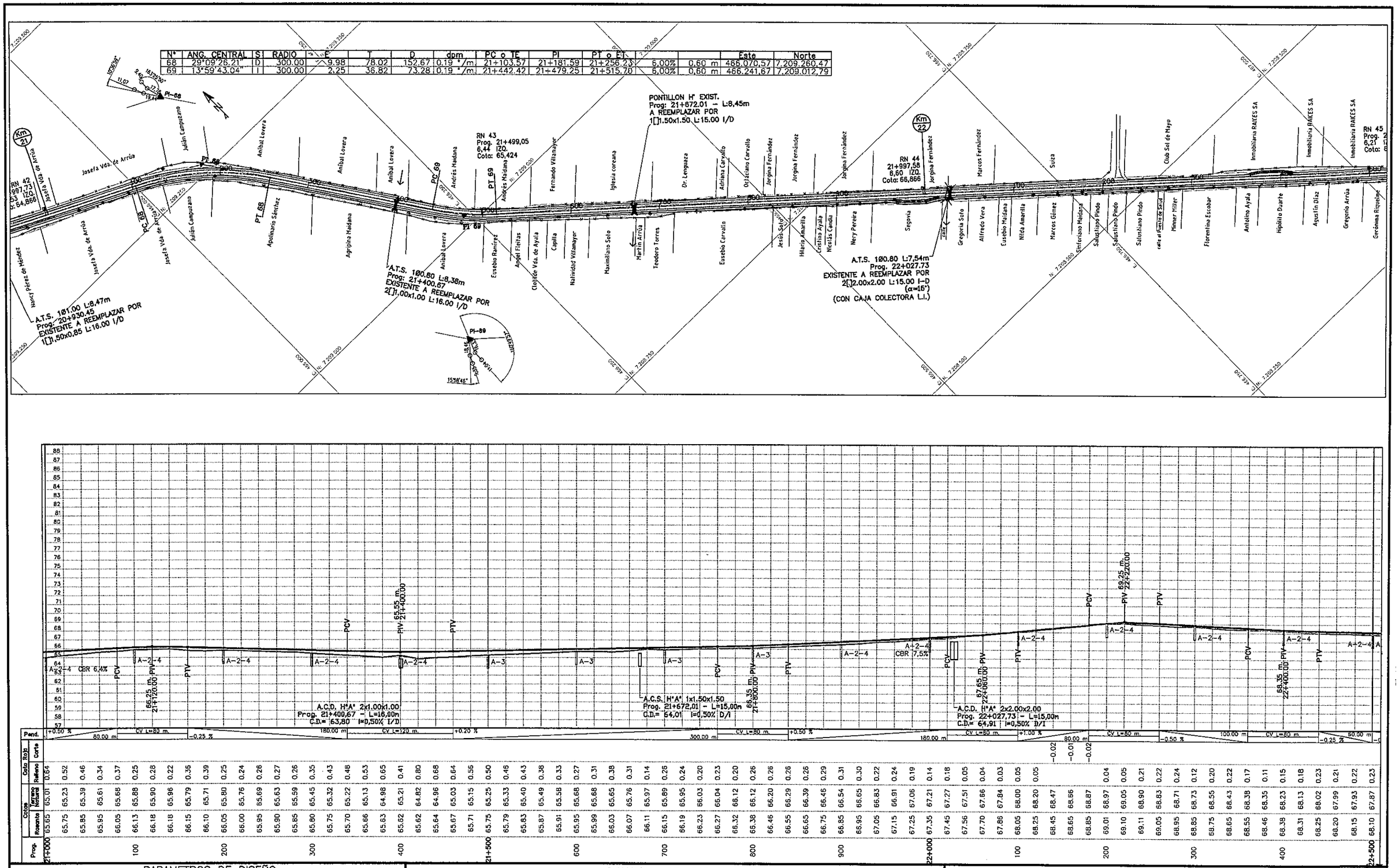
PLANIALTIMETRIA
Prog: 19+500 a 21+000

ESCALA
H = 1:4.000
V = 1:400

LAMINA N°
DG–37

44

| N° | ANG. CENTRAL | S | RADIO | e | T | D | dpm | PC o TE | PI | PT o ET | i | | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 68 | 29°09'26.21" | D | 300.00 | 9.98 | 78.02 | 152.67 | 0.19 °/m | 21+103.57 | 21+181.59 | 21+256.23 | 6,00% | 0,60 m | 466.070,57 | 7.209.260,47 |
| 69 | 13°59'43.04" | I | 300.00 | 2.25 | 36.82 | 73.28 | 0.19 °/m | 21+442.42 | 21+479.25 | 21+515.70 | 6,00% | 0,60 m | 466.241,67 | 7.209.012,79 |







## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

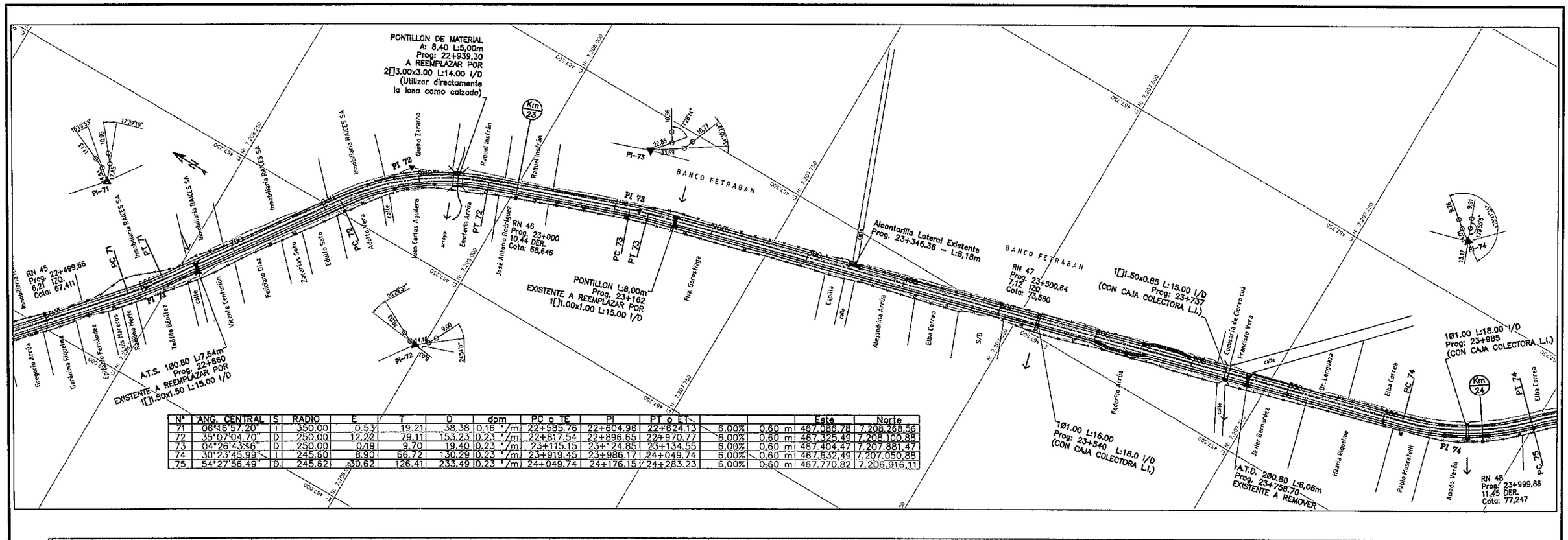
TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN II – Prog. 9+890 a Prog. 31+203,81**

PLANIALTIMETRIA
Prog: 21+000 a 22+500

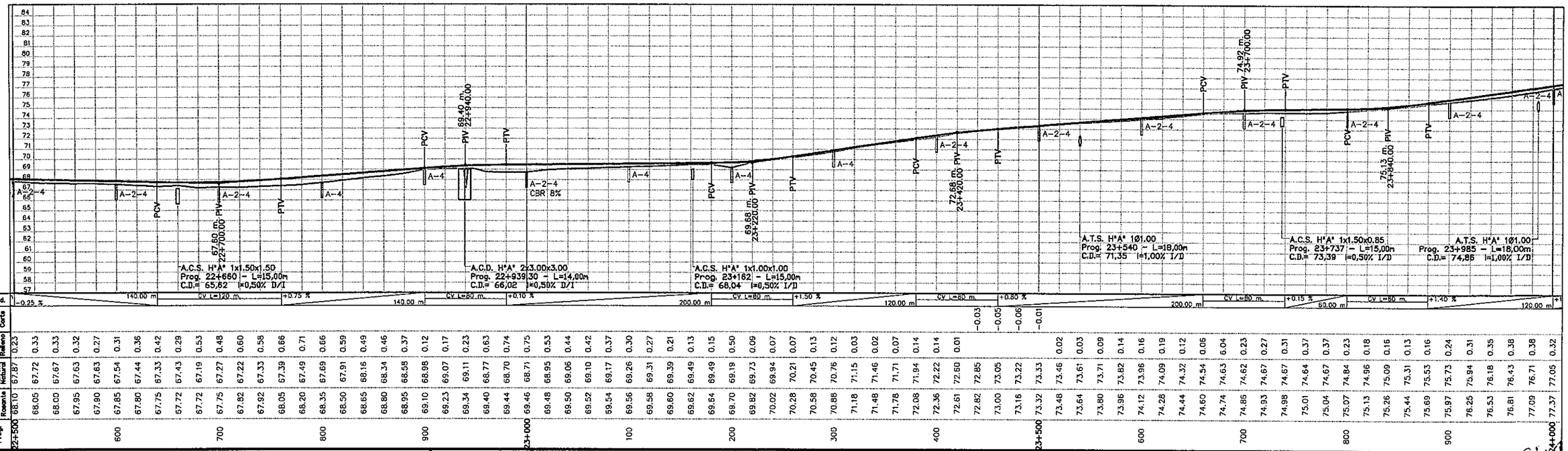
ESCALA
H = 1:4.000
V = 1:400

LAMINA N°
DG–38

045




| Nº | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | | | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 71 | 06°16'57.20" | I | 350.00 | 0.53 | 19.21 | 38.38 | 0.16 °/m | 22+585.76 | 22+604.96 | 22+624.13 | 6,00% | 0,60 m | 467.086.78 | 7.208.268.56 |
| 72 | 35°07'04.70" | D | 250.00 | 12.22 | 79.11 | 153.23 | 0.23 °/m | 22+817.54 | 22+896.65 | 22+970.77 | 6,00% | 0,60 m | 467.325.49 | 7.208.100.88 |
| 73 | 04°26'43.16" | D | 250.00 | 0.19 | 9.70 | 19.40 | 0.23 °/m | 23+115.15 | 23+124.85 | 23+134.55 | 6,00% | 0,60 m | 467.404.47 | 7.207.881.47 |
| 74 | 30°23'45.99" | I | 245.60 | 8.90 | 66.72 | 130.29 | 0.23 °/m | 23+919.45 | 23+986.17 | 24+049.74 | 6,00% | 0,60 m | 467.632.49 | 7.207.050.88 |
| 75 | 54°27'56.49" | D | 245.62 | 30.62 | 126.41 | 233.49 | 0.23 °/m | 24+049.74 | 24+176.15 | 24+283.23 | 6,00% | 0,60 m | 467.770.82 | 7.206.916.11 |




## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL Nº 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO Nº 362/2010

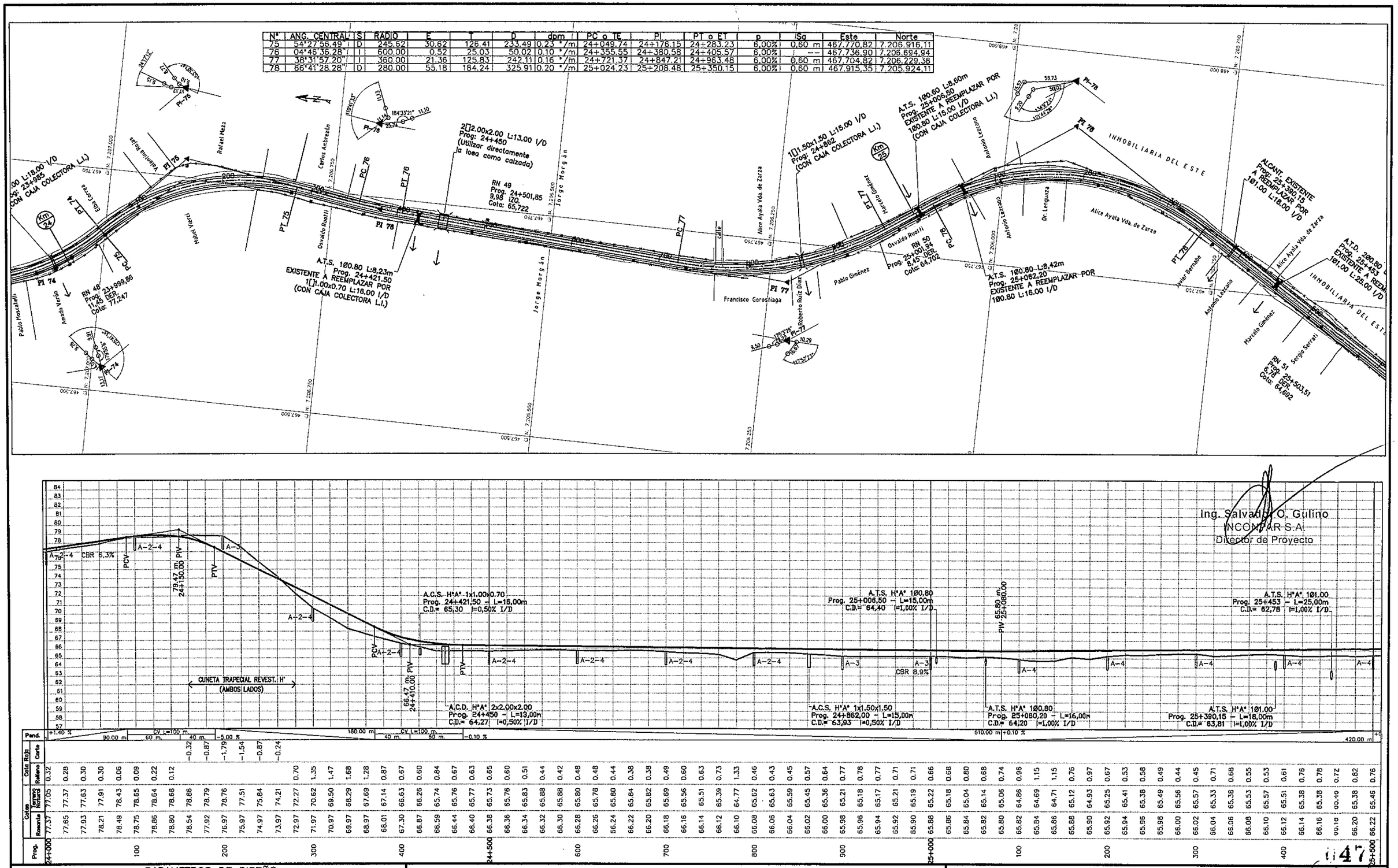
TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN II – Prog. 9+890 a Prog. 31+203,81**

PLANIALTIMETRIA
Prog: 22+500 a 24+000

ESCALA
H = 1:4.000
V = 1:400

LAMINA Nº
DG–39

| N° | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | p | Sg | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75 | 54°27'56.49" | D | 245.62 | 30.62 | 126.41 | 233.49 | 0.23 °/m | 24+049.74 | 24+176.15 | 24+283.23 | 6,00% | 0,60 m | 467.770,82 | 7.206.916,11 |
| 76 | 04°46'36.28" | I | 600.00 | 0.52 | 25.03 | 50.02 | 0.10 °/m | 24+355.55 | 24+380.58 | 24+405.57 | 6,00% | -- | 467.736,90 | 7.206.694,94 |
| 77 | 38°31'57.20" | I | 360.00 | 21.36 | 125.83 | 242.11 | 0.16 °/m | 24+721.37 | 24+847.21 | 24+963.48 | 6,00% | 0,60 m | 467.704,82 | 7.206.229,38 |
| 78 | 66°41'28.28" | D | 280.00 | 55.18 | 184.24 | 325.91 | 0.20 °/m | 25+024.23 | 25+208.48 | 25+350.15 | 6,00% | 0,60 m | 467.915,35 | 7.205.924,11 |




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

47

Cuarenta y siete

## PARÁMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
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DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

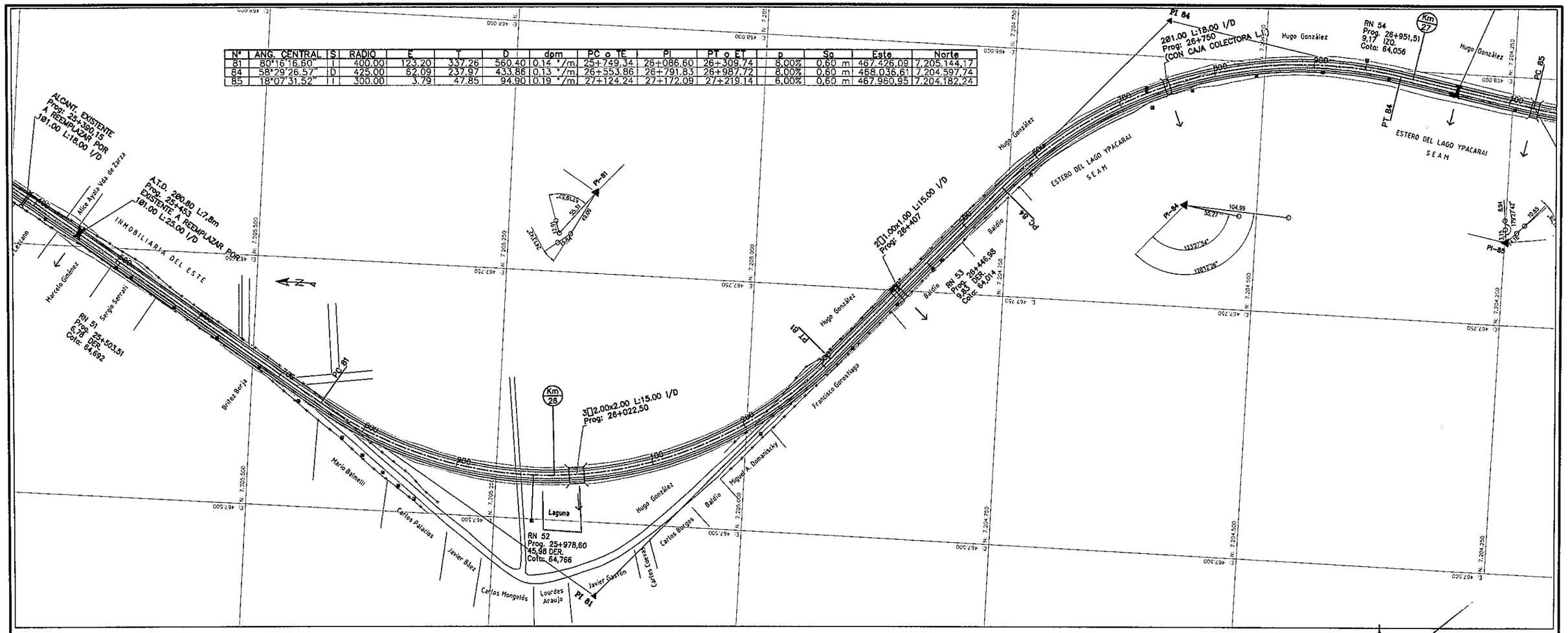
TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN II – Prog. 9+890 a Prog. 31+203,81**

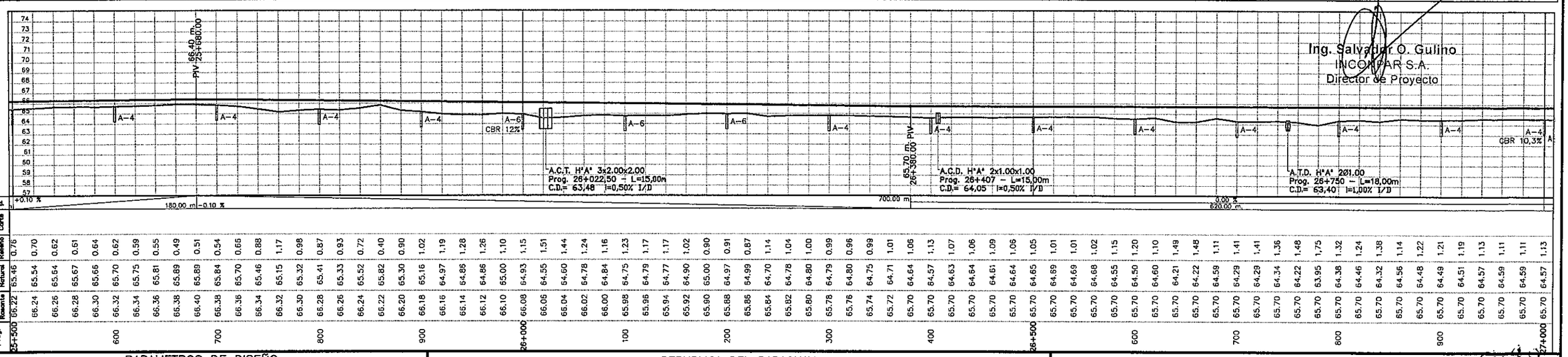
PLANIALTIMETRIA
Prog: 24+000 a 25+500

ESCALA
H = 1:4.000
V = 1:400

LAMINA N°
DG–40

| Nº | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 81 | 80°16'16.60" | I | 400.00 | 123.20 | 337.26 | 560.40 | 0.14 °/m | 25+749.34 | 26+086.60 | 26+309.74 | 8,00% | 0,60 m | 467.426,09 | 7.205.144,17 |
| 84 | 58°29'26.57" | D | 425.00 | 62.09 | 237.97 | 433.86 | 0.13 °/m | 26+553.86 | 26+791.83 | 26+987.72 | 8,00% | 0,60 m | 468.036,61 | 7.204.597,74 |
| 85 | 18°07'31.52" | I | 300.00 | 3.79 | 47.85 | 94.90 | 0.19 °/m | 27+124.24 | 27+172.09 | 27+219.14 | 6,00% | 0,60 m | 467.960,95 | 7.204.182,24 |




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL Nº 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO Nº 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN II – Prog. 9+890 a Prog. 31+203,81**

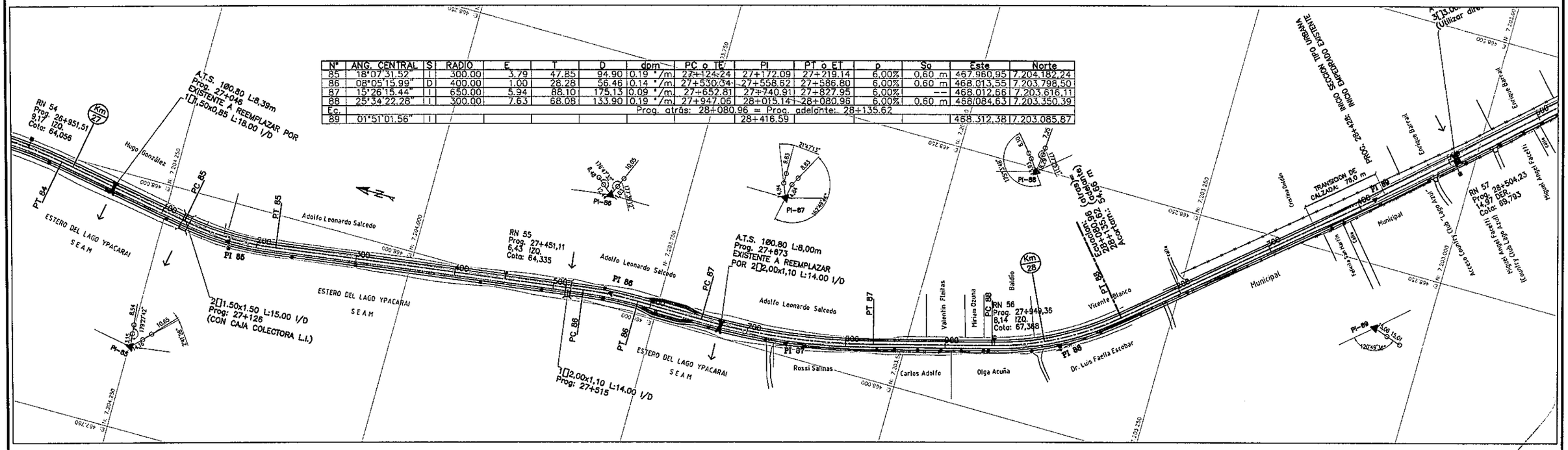
PLANIALTIMETRIA
Prog: 25+500 a 27+000

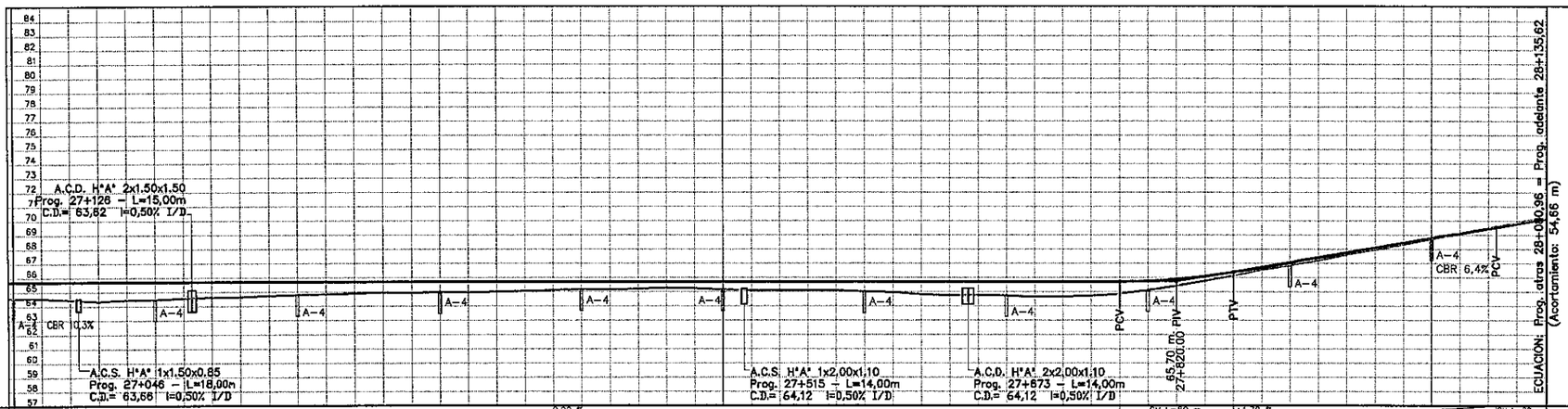
ESCALA
H = 1:4.000
V = 1:400

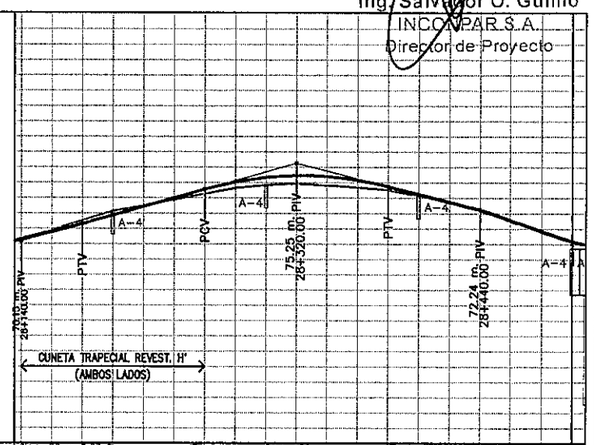
LAMINA Nº
DG–41

(cuarenta y ocho)

| N° | ANG. CENTRAL | S | RADIO | E | T | D | dpm | PC o TE | PI | PT o ET | p | Sa | Este | Norte |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 85 | 18°07'31.52" | I | 300.00 | 3.79 | 47.85 | 94.90 | 0.19 °/m | 27+124.24 | 27+172.09 | 27+219.14 | 6.00% | 0.60 m | 467.960,95 | 7.204.182,24 |
| 86 | 08°05'15.99" | D | 400.00 | 1.00 | 28.28 | 56.46 | 0.14 °/m | 27+530.34 | 27+558.62 | 27+586.80 | 6.00% | 0.60 m | 468.013,55 | 7.203.798,50 |
| 87 | 15°26'15.44" | I | 650.00 | 5.94 | 88.10 | 175.13 | 0.09 °/m | 27+652.81 | 27+740.91 | 27+827.95 | 6.00% | -- | 468.012,66 | 7.203.616,11 |
| 88 | 25°34'22.28" | I | 300.00 | 7.63 | 68.08 | 133.90 | 0.19 °/m | 27+947.06 | 28+015.14 | 28+080.96 | 6.00% | 0.60 m | 468.084,63 | 7.203.350,39 |
| Ec. | Prog. atrás: 28+080.96 = Prog. adelante: 28+135.62 | | | | | | | | | | | | | |
| 89 | 01°51'01.56" | I | | | | | | | 28+416.59 | | | | 468.312,38 | 7.203.085,87 |




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 - FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN II – Prog. 9+890 a Prog. 31+203,81**

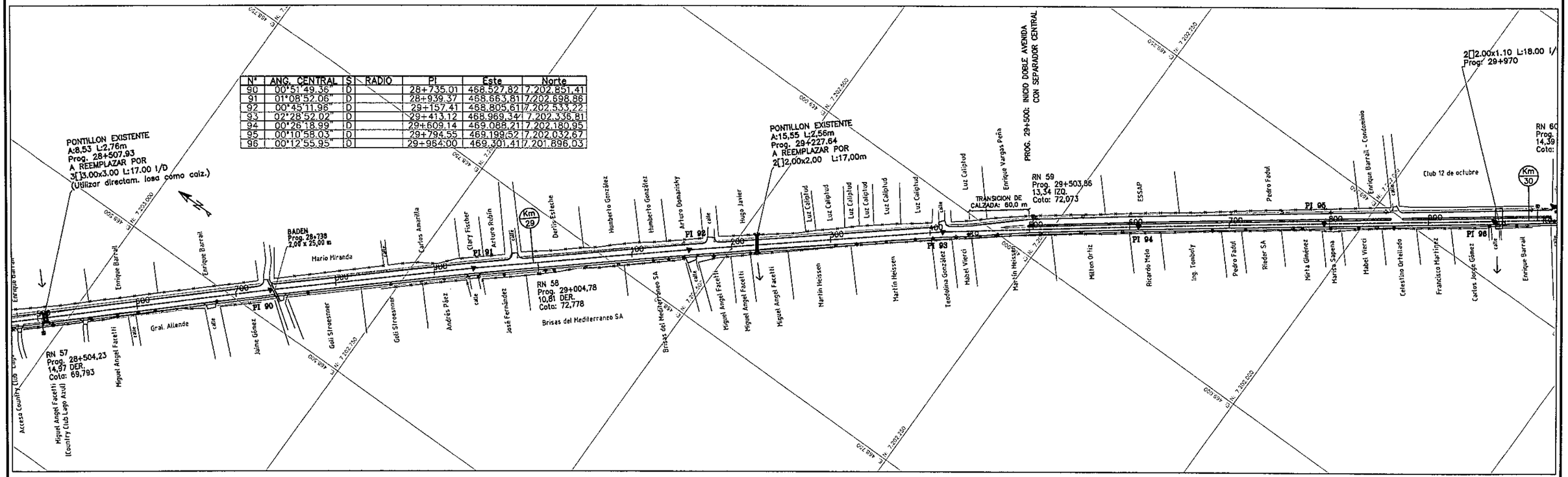
PLANIALTIMETRIA
Prog: 27+000 a 28+500

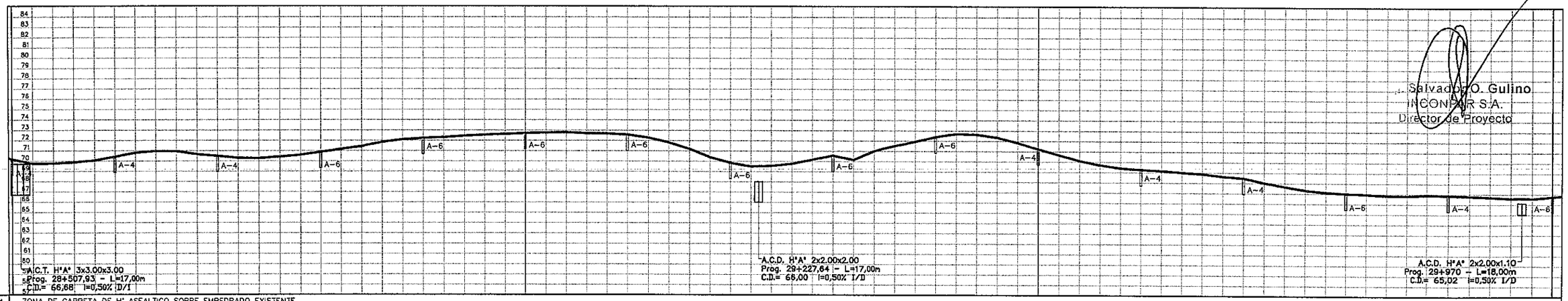
ESCALA
H = 1:4.000
V = 1:400

LAMINA N°
DG-42

49

| N° | ANG. CENTRAL | S | RADIO | PI | Este | Norte |
|---|---|---|---|---|---|---|
| 90 | 00°51'49.36" | D | | 28+735.01 | 468.527,82 | 7.202.851,41 |
| 91 | 01°08'52.06" | D | | 28+939.37 | 468.663,81 | 7.202.698,86 |
| 92 | 00°45'11.96" | D | | 29+157.41 | 468.805,61 | 7.202.533,22 |
| 93 | 02°28'52.02" | D | | 29+413.12 | 468.969,34 | 7.202.336,81 |
| 94 | 00°26'18.99" | D | | 29+609.14 | 469.088,21 | 7.202.180,95 |
| 95 | 00°10'58.03" | D | | 29+794.55 | 469.199,52 | 7.202.032,67 |
| 96 | 00°12'55.95" | D | | 29+964.00 | 469.301,41 | 7.201.896,03 |




Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

Pend. ZONA DE CARPETA DE H° ASFALTICO SOBRE EMPEDRADO EXISTENTE

Cota Roja: Relleno / Corte

| Prog. | Cotas Rasante | Cotas Terreno Natural |
|---|---|---|
| 28+500 | 70.18 | 70.11 |
| | 69.77 | 69.70 |
| | 69.78 | 69.71 |
| | 69.88 | 69.81 |
| | 70.07 | 70.00 |
| 600 | 70.43 | 70.36 |
| | 70.81 | 70.74 |
| | 70.96 | 70.89 |
| | 70.95 | 70.88 |
| | 70.67 | 70.60 |
| 700 | 70.50 | 70.43 |
| | 70.30 | 70.23 |
| | 70.27 | 70.20 |
| | 70.42 | 70.35 |
| | 70.60 | 70.53 |
| 800 | 70.88 | 70.81 |
| | 71.17 | 71.10 |
| | 71.44 | 71.37 |
| | 71.85 | 71.78 |
| | 72.10 | 72.03 |
| 900 | 72.24 | 72.17 |
| | 72.32 | 72.25 |
| | 72.45 | 72.38 |
| | 72.56 | 72.49 |
| | 72.63 | 72.56 |
| 29+000 | 72.73 | 72.66 |
| | 72.78 | 72.71 |
| | 72.81 | 72.74 |
| | 72.71 | 72.64 |
| | 72.69 | 72.62 |
| 100 | 72.59 | 72.52 |
| | 72.30 | 72.23 |
| | 71.83 | 71.76 |
| | 71.21 | 71.14 |
| | 70.40 | 70.33 |
| 200 | 69.86 | 69.79 |
| | 69.51 | 69.44 |
| | 69.57 | 69.50 |
| | 69.78 | 69.71 |
| | 70.19 | 70.12 |
| 300 | 70.57 | 70.50 |
| | 70.16 | 70.09 |
| | 71.02 | 70.95 |
| | 71.53 | 71.46 |
| | 71.94 | 71.87 |
| 400 | 72.41 | 72.34 |
| | 72.70 | 72.63 |
| | 72.64 | 72.57 |
| | 72.36 | 72.29 |
| | 71.85 | 71.78 |
| 29+500 | 71.25 | 71.18 |
| | 70.68 | 70.61 |
| | 70.12 | 70.05 |
| | 69.71 | 69.64 |
| | 69.42 | 69.35 |
| 600 | 69.28 | 69.21 |
| | 69.18 | 69.11 |
| | 69.02 | 68.95 |
| | 68.88 | 68.81 |
| | 68.65 | 68.58 |
| 700 | 68.50 | 68.43 |
| | 68.04 | 67.97 |
| | 67.69 | 67.62 |
| | 67.34 | 67.27 |
| | 67.14 | 67.07 |
| 800 | 67.04 | 66.97 |
| | 66.96 | 66.89 |
| | 66.85 | 66.78 |
| | 66.84 | 66.77 |
| | 66.91 | 66.84 |
| 900 | 66.89 | 66.82 |
| | 66.82 | 66.75 |
| | 66.72 | 66.65 |
| | 66.62 | 66.55 |
| | 66.59 | 66.52 |
| 30+000 | 66.77 | 66.70 |

Relleno: 0.065 (todos los puntos)

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL N° 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO N° 362/2010

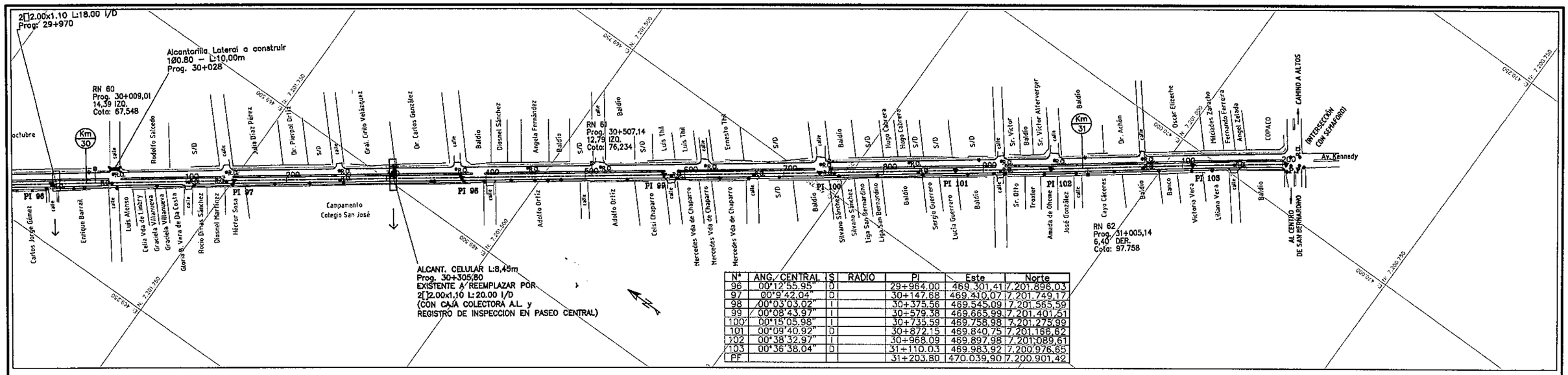
TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN II – Prog. 9+890 a Prog. 31+203,81**

PLANIALTIMETRIA
Prog: 28+500 a 30+000

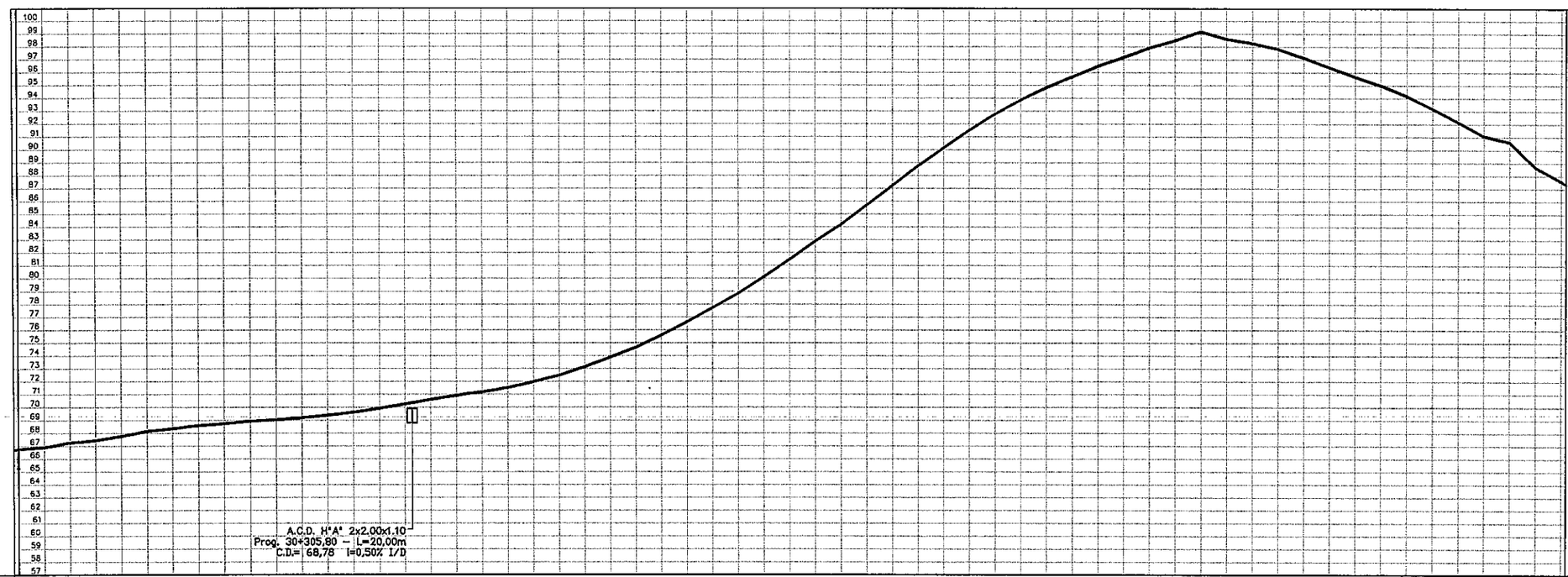
ESCALA
H = 1:4.000
V = 1:400

LAMINA N°
DG–43

50 (cincuenta)




| Nº | ANG. CENTRAL | S | RADIO | PI | Este | Norte |
|---|---|---|---|---|---|---|
| 96 | 00°12'55,95" | D | | 29+964,00 | 469.301,41 | 7.201.896,03 |
| 97 | 00°9'42,04" | D | | 30+147,68 | 469.410,07 | 7.201.749,17 |
| 98 | 00°03'03,02" | I | | 30+375,56 | 469.545,09 | 7.201.565,59 |
| 99 | 00°08'43,97" | I | | 30+579,38 | 469.665,99 | 7.201.401,51 |
| 100 | 00°15'05,98" | I | | 30+735,59 | 469.758,98 | 7.201.275,99 |
| 101 | 00°09'40,92" | D | | 30+872,15 | 469.840,75 | 7.201.166,62 |
| 102 | 00°38'32,97" | I | | 30+968,09 | 469.897,98 | 7.201.089,61 |
| 103 | 00°36'38,04" | D | | 31+110,03 | 469.983,92 | 7.200.976,65 |
| PF | | | | 31+203,80 | 470.039,90 | 7.200.901,42 |




ZONA DE CARPETA DE H° ASFALTICO SOBRE EMPEDRADO EXISTENTE

| Prog. | Cotas Rasante | Cotas Terreno Natural | Cota Roja Relleno | Cota Roja Corte | Pend. |
|---|---|---|---|---|---|
| 30+000 | 66.77 | 66.70 | 0.065 | | |
| | 66.91 | 66.84 | 0.065 | | |
| | 67.28 | 67.21 | 0.065 | | |
| | 67.45 | 67.38 | 0.065 | | |
| | 67.77 | 67.70 | 0.065 | | |
| 100 | 68.16 | 68.09 | 0.065 | | |
| | 68.37 | 68.30 | 0.065 | | |
| | 68.61 | 68.54 | 0.065 | | |
| | 68.75 | 68.68 | 0.065 | | |
| | 68.94 | 68.87 | 0.065 | | |
| 200 | 69.05 | 68.98 | 0.065 | | |
| | 69.20 | 69.13 | 0.065 | | |
| | 69.40 | 69.33 | 0.065 | | |
| | 69.62 | 69.55 | 0.065 | | |
| | 69.93 | 69.86 | 0.065 | | |
| 300 | 70.27 | 70.20 | 0.065 | | |
| | 70.61 | 70.54 | 0.065 | | |
| | 70.93 | 70.86 | 0.065 | | |
| | 71.20 | 71.13 | 0.065 | | |
| | 71.53 | 71.46 | 0.065 | | |
| 400 | 71.99 | 71.92 | 0.065 | | |
| | 72.49 | 72.42 | 0.065 | | |
| | 73.15 | 73.08 | 0.065 | | |
| | 73.88 | 73.81 | 0.065 | | |
| | 74.65 | 74.58 | 0.065 | | |
| 500 | 75.60 | 75.53 | 0.065 | | |
| | 76.64 | 76.57 | 0.065 | | |
| | 77.73 | 77.66 | 0.065 | | |
| | 78.84 | 78.77 | 0.065 | | |
| | 80.13 | 80.06 | 0.065 | | |
| 600 | 81.47 | 81.40 | 0.065 | | |
| | 82.89 | 82.82 | 0.065 | | |
| | 84.19 | 84.12 | 0.065 | | |
| | 85.70 | 85.63 | 0.065 | | |
| 700 | 88.74 | 88.67 | 0.065 | | |
| | 90.13 | 90.06 | 0.065 | | |
| | 91.51 | 91.44 | 0.065 | | |
| | 92.78 | 92.71 | 0.065 | | |
| | 93.88 | 93.81 | 0.065 | | |
| 800 | 94.83 | 94.76 | 0.065 | | |
| | 95.66 | 95.59 | 0.065 | | |
| | 96.49 | 96.42 | 0.065 | | |
| | 97.19 | 97.12 | 0.065 | | |
| | 97.91 | 97.84 | 0.065 | | |
| 900 | 98.49 | 98.42 | 0.065 | | |
| | 99.19 | 99.12 | 0.065 | | |
| | 98.61 | 98.54 | 0.065 | | |
| | 98.29 | 98.22 | 0.065 | | |
| | 97.84 | 97.77 | 0.055 | | |
| 31+000 | 97.16 | 97.09 | 0.055 | | |
| | 96.42 | 96.35 | 0.065 | | |
| | 95.68 | 95.61 | 0.065 | | |
| | 95.02 | 94.95 | 0.065 | | |
| | 94.21 | 94.14 | 0.065 | | |
| 100 | 93.22 | 93.15 | 0.065 | | |
| | 92.18 | 92.11 | 0.065 | | |
| | 91.09 | 91.02 | 0.065 | | |
| | 90.62 | 90.55 | 0.065 | | |
| | 88.67 | 88.60 | 0.065 | | |
| 200 31+203,81 | 87.59 | 87.52 | 0.065 | | |

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

51
(ancho 7 cm)

## PARAMETROS DE DISEÑO

| ZONA RURAL | | ZONA URBANA | |
|---|---|---|---|
| VELOCIDAD DIRECTRIZ: | 80 Km/h | VELOCIDAD DIRECTRIZ: | 60 Km/h |
| DISTANCIA DE VISIBILIDAD DE PARADA: | 155 m | DISTANCIA DE VISIBILIDAD DE PARADA: | 75 m |
| RADIO MINIMO HORIZONTAL: | 230 m | RADIO MINIMO HORIZONTAL: | 135 m |
| PERALTE MAXIMO: | 8 % | PERALTE MAXIMO: | 6 % |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES

DISEÑO FINAL DE INGENIERIA: INCONPAR S.A.
RESOLUCIÓN MINISTERIAL Nº 2.532/2010 – FONDO LOCAL
CONTRATO S.G. MINISTRO Nº 362/2010

TRAMO: "LUQUE – SAN BERNARDINO"
**SECCIÓN II – Prog. 9+890 a Prog. 31+203,81**

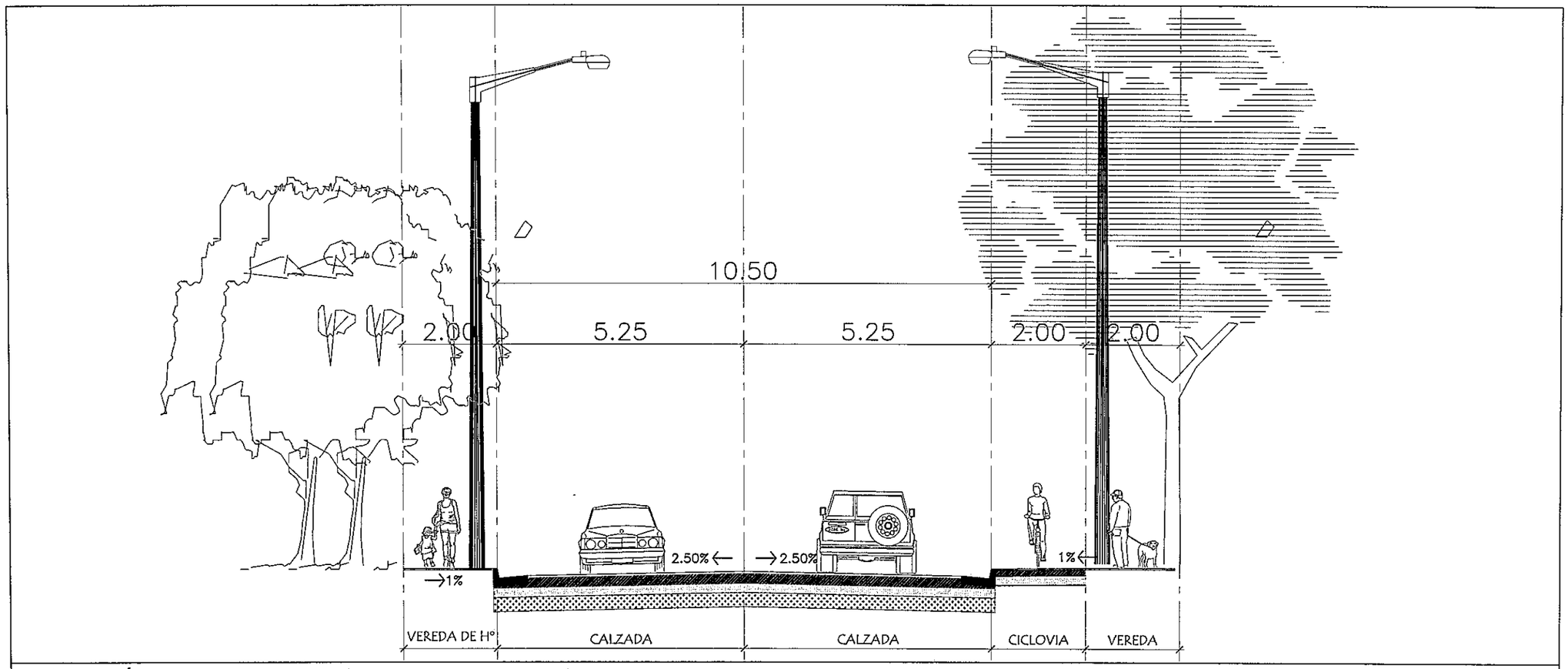
PLANIALTIMETRIA
Prog: 30+000 a 31+203,81

ESCALA
H = 1:4.000
V = 1:400

LAMINA Nº
DG–44

# SECCIONES TRANSVERSALES

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto




## SECCIÓN URBANA DESDE PROGRESIVA 0+000 A 2+460

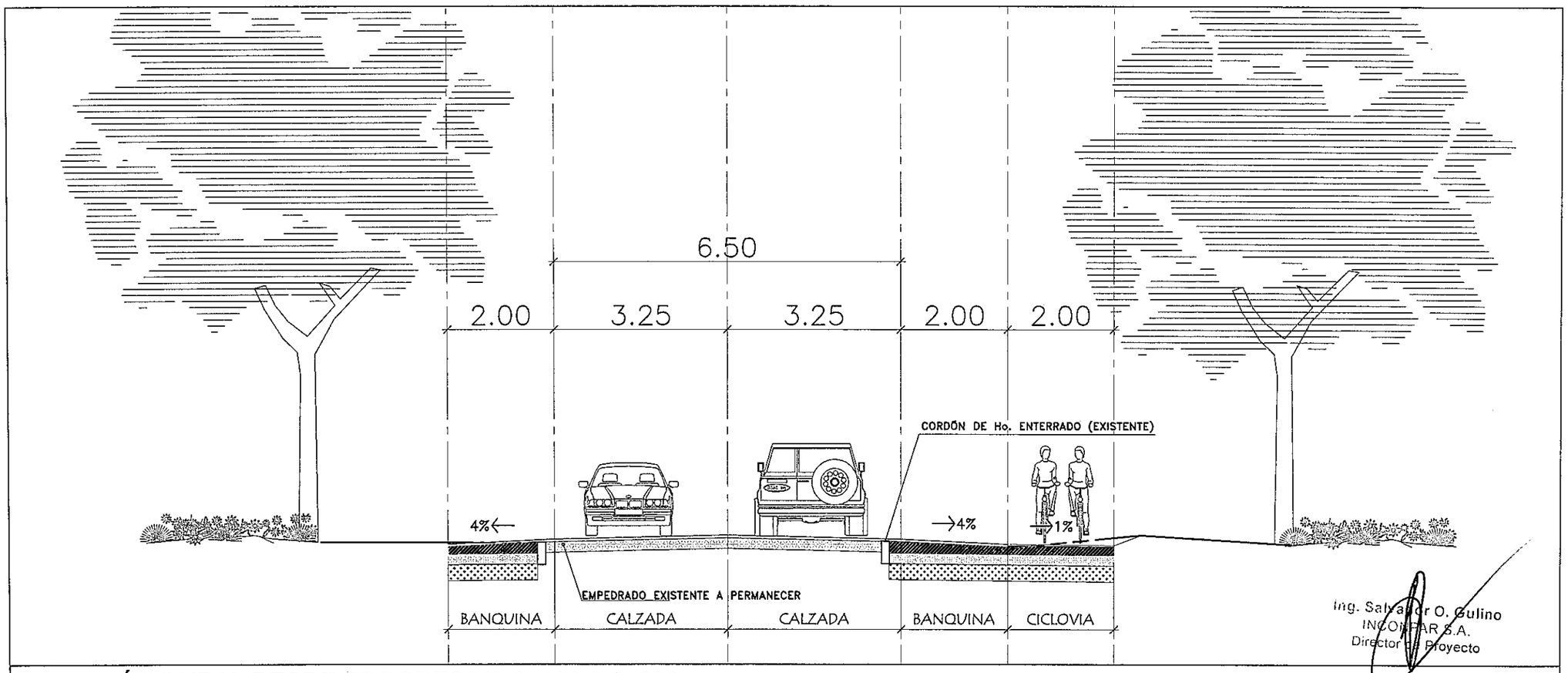
NOTA:

VER TRANSICIÓN DE SECCIONES URBANA A RURAL Y UBICACIÓN DE CANALES EN PLANOS DE PLANIMETRÍA
EL EMPEDRADO ACTUAL DESDE LA PROGRESIVA 0+000 A 2+540 SE REMUEVE, CONSTRUYENDO UN PAQUETE NUEVO SEGÚN PLANO PV-01
LAS VEREDAS Y CICLOVÍA, EN TRAMOS COINCIDENTES CON CANALES, SE CONSTITUIRÁN EN LA LOSA TAPA DE Hº Aº DEL CANAL

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

053 (cincuenta y tres)

| | | | |
|---|---|---|---|
| REPUBLICA DEL PARAGUAY<br>MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES<br>GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES<br>DIRECCION DE VIALIDAD | INCONPAR S.A. | DISEÑO FINAL DE INGENIERÍA<br>TRAMO: LUQUE - SAN BERNARDINO<br>SECCIÓN I: PROG. 0+000 A PROG. 9+890<br>RESOLUCIÓN MINISTERIAL Nº 2.532/2010 - FONDO LOCAL<br>CONTRATO S.G. MINISTRO Nº 362/2010 | SECCIONES TRANSVERSALES TIPO<br>PROG. 0+000 A 2+460<br>FECHA: SETIEMBRE / 2011 · ESCALA: 1:100 · LAMINA Nº: ST-01 |




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

## SECCIÓN RURAL DESDE PROGRESIVA 2+460 A 9+890

NOTA:

VER TRANSICIÓN DE SECCIONES URBANA A RURAL Y UBICACIÓN DE CANALES EN PLANOS DE PLANIMETRÍA
EL EMPEDRADO ACTUAL DESDE LA PROGRESIVA 0+000 A 2+540 SE REMUEVE, CONSTRUYENDO UN PAQUETE NUEVO SEGÚN PLANO PV-01
LAS VEREDAS Y CICLOVÍA, EN TRAMOS COINCIDENTES CON CANALES, SE CONSTITUIRÁN EN LA LOSA TAPA DE Hº Aº DEL CANAL
SOBRE EL EMPEDRADO ACTUAL SE EJECUTARÁ UNA REGULARIZACIÓN Y RESTITUCIÓN DEL GÁBILO CON CONCRETO ASFÁLTICO
RESPETANDO LAS PENDIENTES TRANSVERSALES EXISTENTES

| ECUACIONES | | |
|---|---|---|
| ATRÁS | ADELANTE | ALARG(+)/ACORT(-) |
| 2+726.88 | 2+729.17 | -2.29 |
| 5+106.59 | 5+108.11 | -1.52 |
| 6+464.11 | 6+465.17 | -1.06 |
| 8+100.00 | 8+102.46 | -2.46 |
| 9+073.50 | 9+075.78 | -2.28 |

| ECUACIONES | | |
|---|---|---|
| ATRÁS | ADELANTE | ALARG(+)/ACORT(-) |
| 11+497.10 | 11+595.95 | -98.85 |
| 16+945.63 | 16+951.74 | -6.11 |
| 18+199.78 | 18+200.00 | -0.22 |
| 28+080.96 | 28+135.62 | -54.66 |
| | | |

REPUBLICA DEL PARAGUAY
MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES
DIRECCION DE VIALIDAD

INCONPAR S.A.

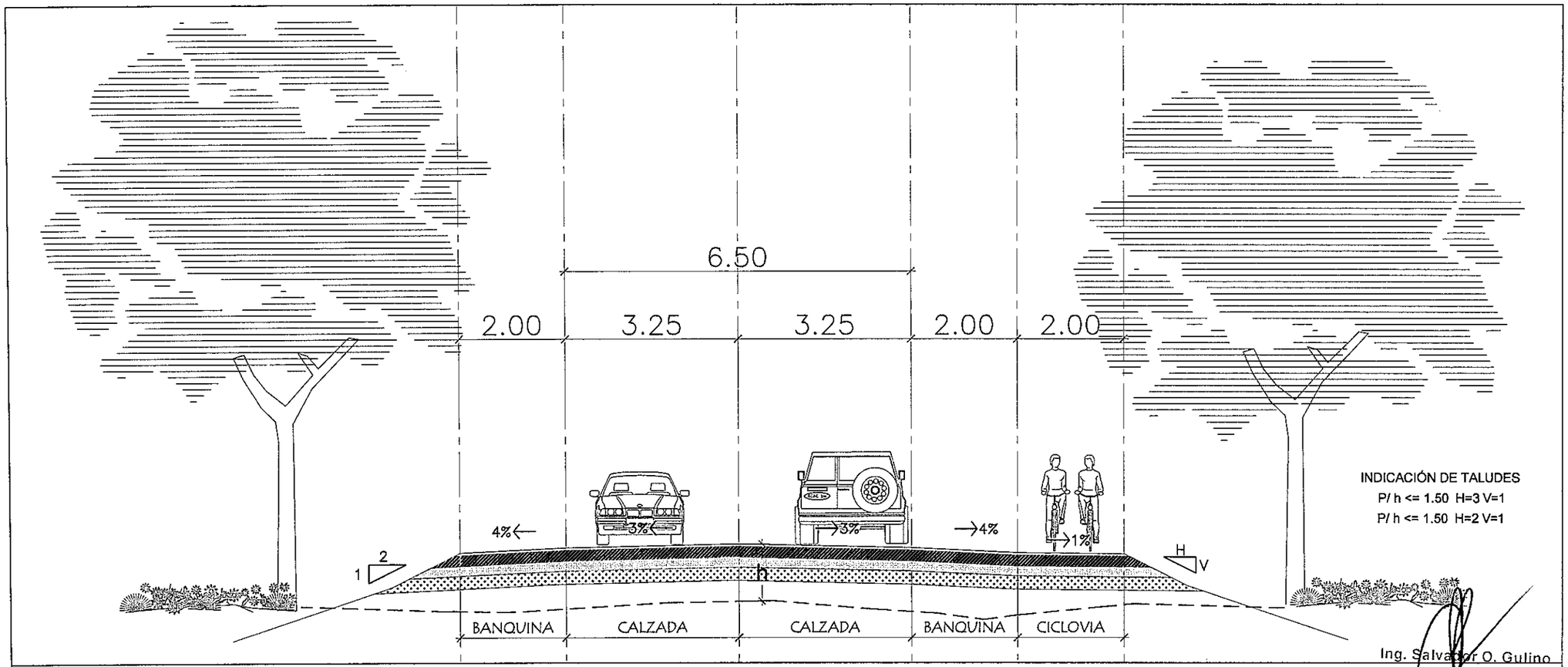
DISEÑO FINAL DE INGENIERÍA
TRAMO: LUQUE - SAN BERNARDINO
SECCIÓN I: PROG. 0+000 A PROG. 9+890

RESOLUCIÓN MINISTERIAL Nº 2.532/2010 - FONDO LOCAL
CONTRATO S.G. MINISTRO Nº 362/2010

SECCIONES TRANSVERSALES TIPO
PROG. 2+460 A 9+890

| FECHA | ESCALA | LAMINA Nº |
|---|---|---|
| SETIEMBRE / 2011 | 1:100 | ST-02 |

054




Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

## SECCIÓN RURAL DESDE PROGRESIVA 9+890 A 28+428

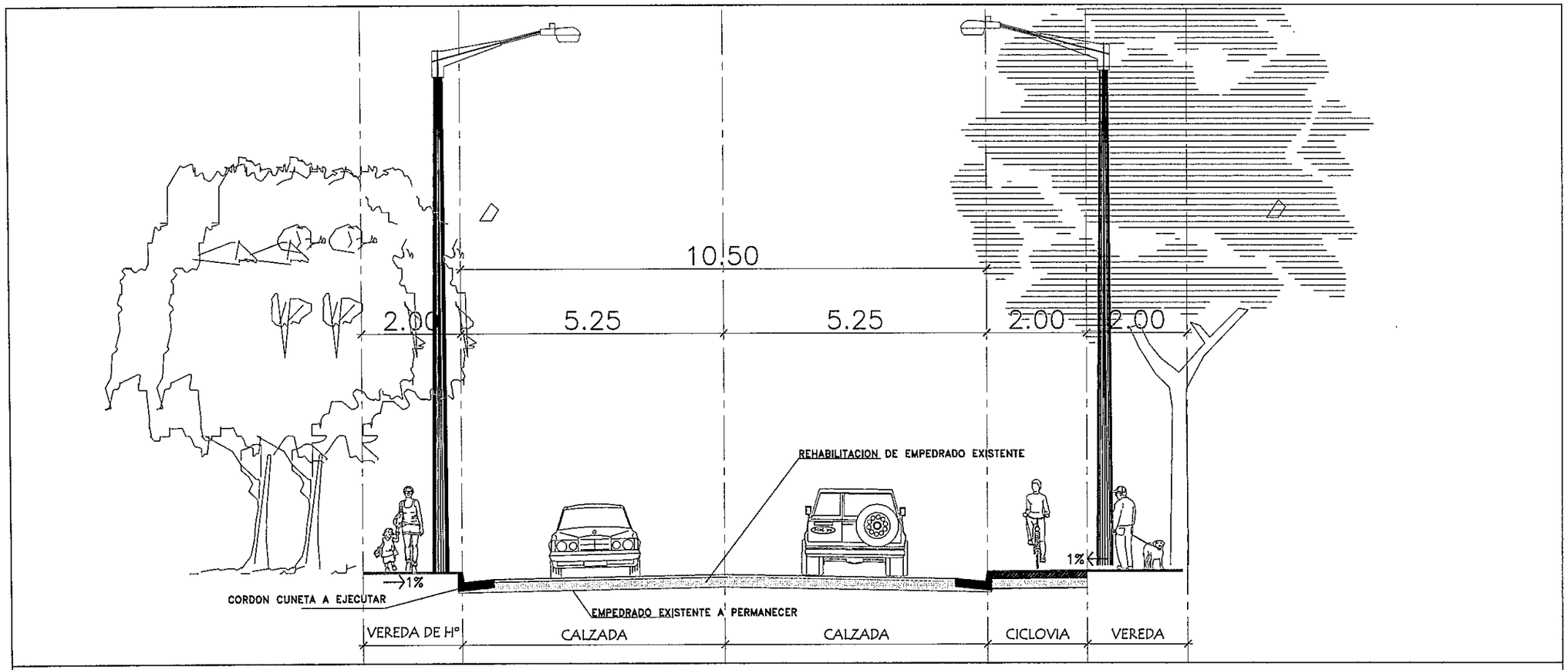
NOTA:
VER TRANSICIÓN DE SECCIONES RURAL A URBANA Y UBICACIÓN DE CANALES EN PLANOS DE PLANIMETRÍA
LA CICLOVÍA, EN TRAMOS COINCIDENTES CON CANALES, SE CONSTITUIRÁ EN LA LOSA DE H°A° DEL CANAL

| ECUACIONES | | |
|---|---|---|
| ATRÁS | ADELANTE | ALARG(+)/ACORT(-) |
| 2+726.88 | 2+729.17 | -2.29 |
| 5+106.59 | 5+108.11 | -1.52 |
| 6+464.11 | 6+465.17 | -1.06 |
| 8+100.00 | 8+102.46 | -2.46 |
| 9+073.50 | 9+075.78 | -2.28 |

| ECUACIONES | | |
|---|---|---|
| ATRÁS | ADELANTE | ALARG(+)/ACORT(-) |
| 11+497.10 | 11+595.95 | -98.85 |
| 16+945.63 | 16+951.74 | -6.11 |
| 18+199.78 | 18+200.00 | -0.22 |
| 28+080.96 | 28+135.62 | -54.66 |
| | | |

| | | | |
|---|---|---|---|
| REPUBLICA DEL PARAGUAY<br>MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES<br>GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES<br>DIRECCION DE VIALIDAD | INCONPAR S.A. | DISEÑO FINAL DE INGENIERÍA<br>TRAMO: LUQUE - SAN BERNARDINO<br>SECCIÓN II: PROG. 9+890 A PROG. 29+468<br>RESOLUCIÓN MINISTERIAL Nº 2.532/2010 - FONDO LOCAL<br>CONTRATO S.G. MINISTRO Nº 362/2010 | SECCIONES TRANSVERSALES TIPO<br>PROG. 9+890 A 28+428<br>FECHA: SETIEMBRE / 2011 · ESCALA: 1:100 · LAMINA Nº: ST-03 |

055 (cincuenta y cinco)




## SECCIÓN RURAL DESDE PROGRESIVA 28+428 A 29+468

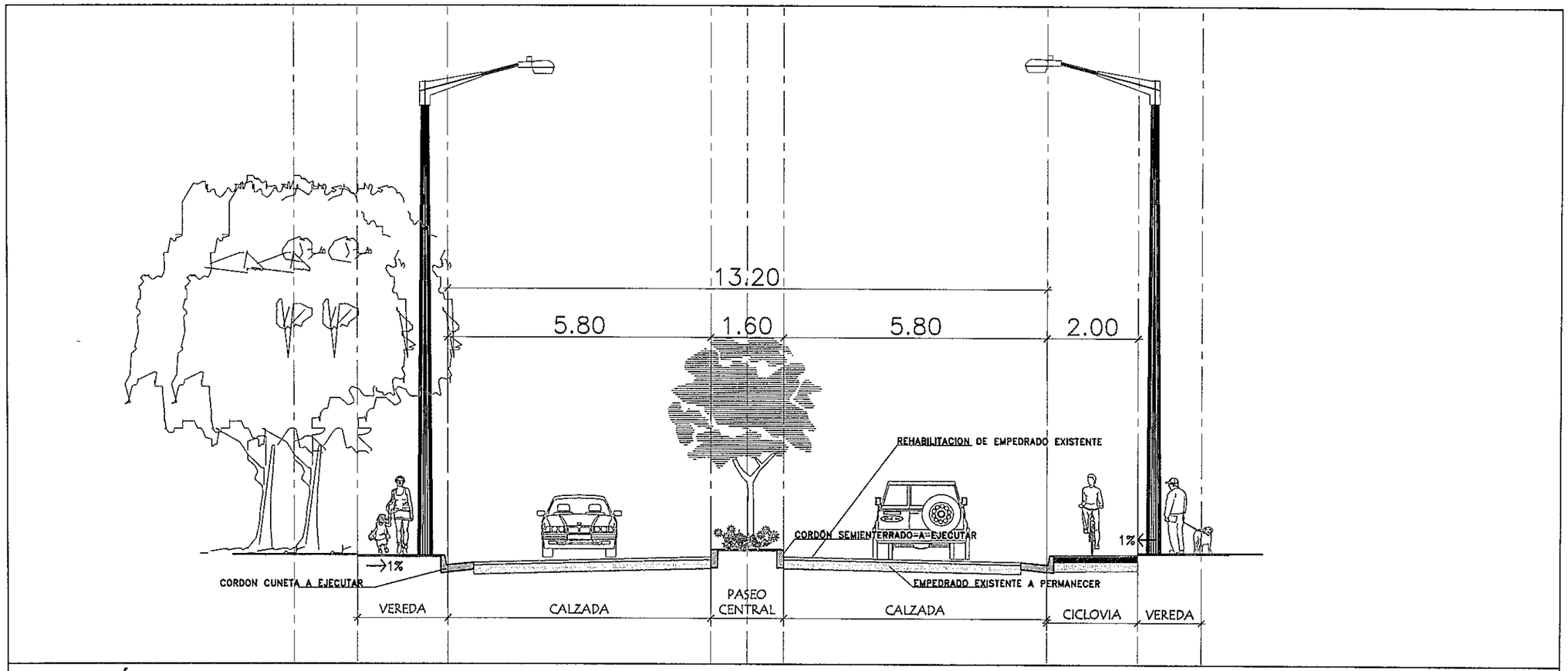
NOTA:

VER TRANSICIÓN DE SECCIONES RURAL A URBANA Y UBICACIÓN DE CANALES EN PLANOS DE PLANIMETRÍA
LAS VEREDAS Y CICLOVÍA, EN TRAMOS COINCIDENTES CON CANALES, SE CONSTITUIRÁN EN LA LOSA TAPA DE Hº Aº DEL CANAL
LOS ANCHOS DE VEREDAS SE ADECUARÁN A LOS ESPACIOS DISPONIBLES

Ing. Salvador O. Gulino
INCONPAR S.A.
Director de Proyecto

56 (cincuenta y seis)

| | | | |
|---|---|---|---|
| REPUBLICA DEL PARAGUAY<br>MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES<br>GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES<br>DIRECCION DE VIALIDAD | INCONPAR S.A. | DISEÑO FINAL DE INGENIERÍA<br>TRAMO: LUQUE - SAN BERNARDINO<br>SECCIÓN II: PROG. 9+890 A PROG. 29+468<br>RESOLUCIÓN MINISTERIAL Nº 2.532/2010 - FONDO LOCAL<br>CONTRATO S.G. MINISTRO Nº 362/2010 | SECCIONES TRANSVERSALES TIPO<br>PROG. 28+428 A 29+468<br>FECHA: SETIEMBRE / 2011 · ESCALA: 1:100 · LAMINA Nº: ST-04 |




## SECCIÓN URBANA DESDE PROGRESIVA 29+468 A 31+200

NOTA:

VER TRANSICIÓN DE SECCIONES RURAL A URBANA Y UBICACIÓN DE CANALES EN PLANOS DE PLANIMETRÍA
LAS VEREDAS Y CICLOVÍA, EN TRAMOS COINCIDENTES CON CANALES, SE CONSTITUIRÁN EN LA LOSA TAPA DE Hº Aº DEL CANAL
LOS ANCHOS DE LA VEREDAS SE ADECUARÁN A LOS ESPACIOS DISPONIBLES ENTRE LINEAS MUNICIPALES

Ing. Salvador C. Gulino
INCONPAR S.A.
Director de Proyecto

057
(cincuenta y siete)

| | | | |
|---|---|---|---|
| REPUBLICA DEL PARAGUAY<br>MINISTERIO DE OBRAS PUBLICAS Y COMUNICACIONES<br>GABINETE DEL VICEMINISTRO DE OBRAS PUBLICAS Y COMUNICACIONES<br>DIRECCION DE VIALIDAD | INCONPAR S.A. | DISEÑO FINAL DE INGENIERÍA<br>TRAMO: LUQUE - SAN BERNARDINO<br>SECCIÓN II: PROG. 9+890 A PROG. 29+468<br>RESOLUCIÓN MINISTERIAL Nº 2.532/2010 - FONDO LOCAL<br>CONTRATO S.G. MINISTRO Nº 362/2010 | SECCIONES TRANSVERSALES TIPO<br>PROG. 29+468 A 31+200<br>FECHA: SETIEMBRE / 2011 · ESCALA: 1:100 · LAMINA Nº: ST-05 |