REPÚBLICA DEL PARAGUAY

MINISTERIO DE OBRAS PÚBLICAS Y COMUNICACIONES

LLAMADO MOPC N° 55 / 2013

AD REFERENDUM A LA REPROGRAMACION PRESUPUESTARIA

LICITACIÓN PÚBLICA NACIONAL DE FIRMAS CONSTRUCTORAS PARA LA EJECUCION DE LA OBRA DE PAVIMENTACION DEL TRAMO: LOMA PLATA - FILADELFIA

ANEXO A LA ADDENDA N° 2

PLANOS

AÑO 2013

ASUNCIÓN, PARAGUAY

INGEVÍAS
CONSULTORA DE INGENIERIA
Y GESTION VIAL
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

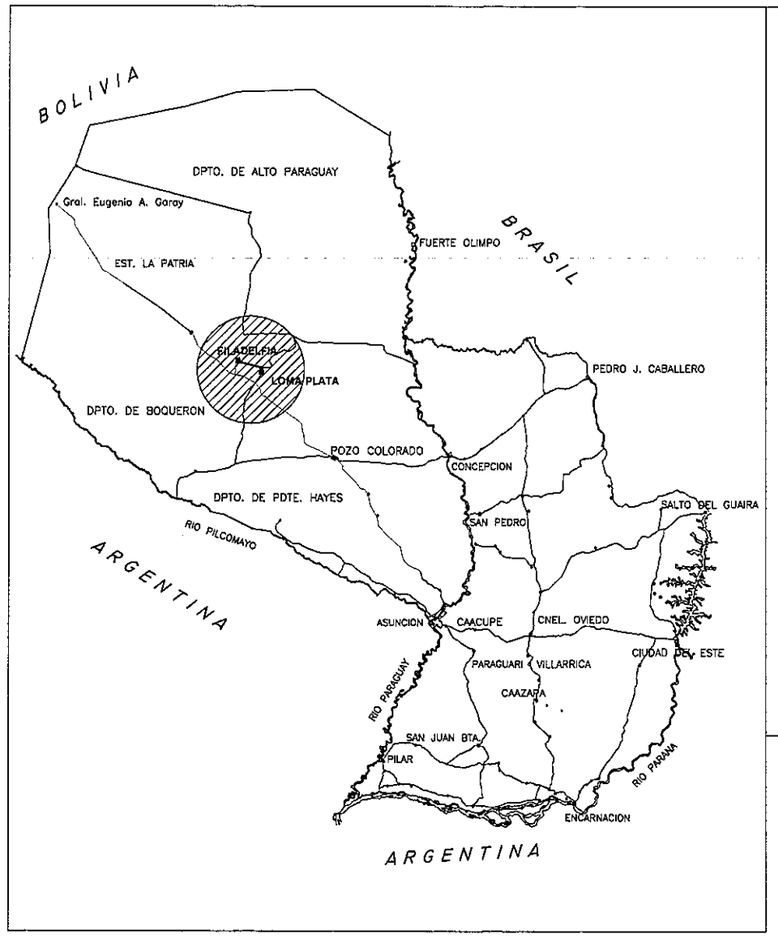
ACOMEPA

INGEVIAS
CONSULTORIA DE INGENIERIA
Y GESTION VIAL

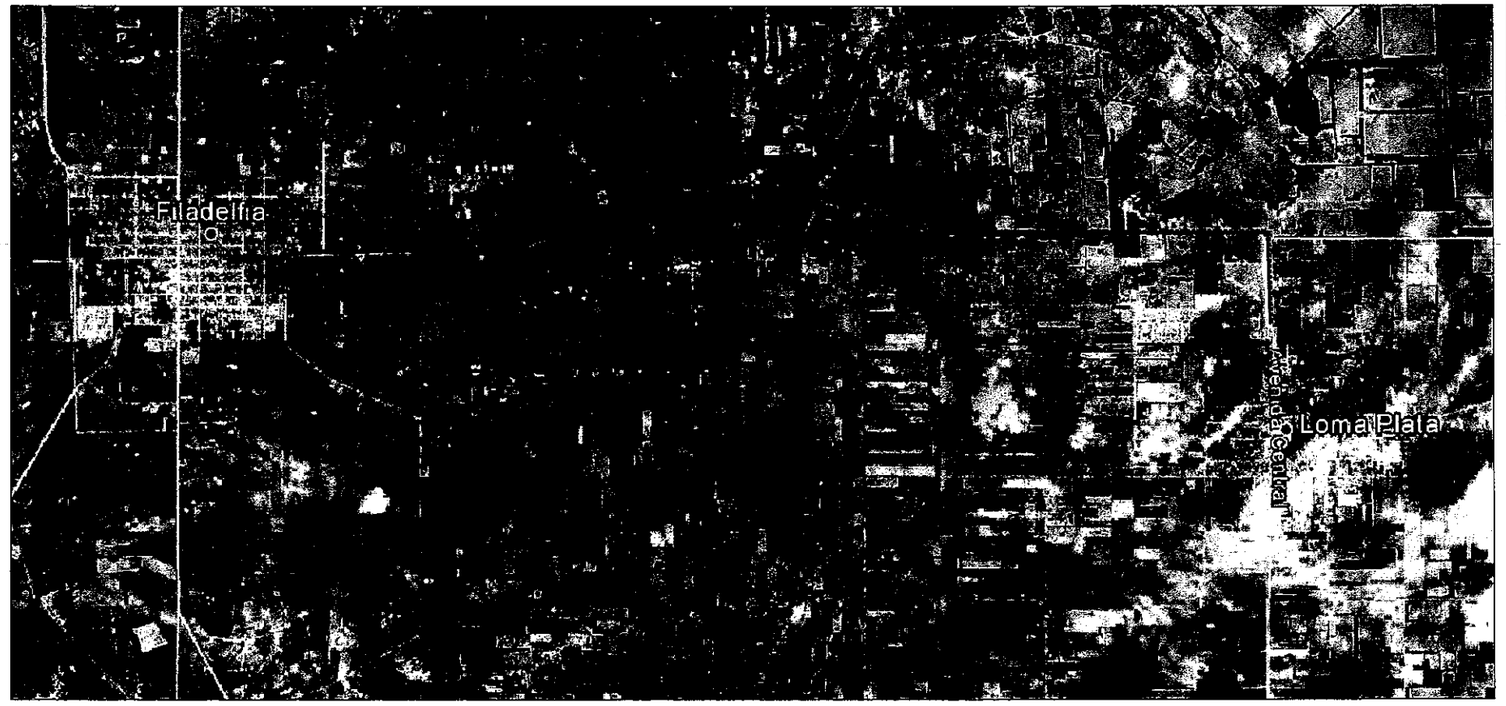
PLANO GENERAL DE UBICACIÓN

PLANO GENERAL DE UBICACIÓN

MAPA DEL PARAGUAY



PLANTA TRAZADO



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REPUBLICA DEL PARAGUAY MINISTERIO DE OBRAS PÚBLICAS Y COMUNICACIONES GABINETE DEL VICEMINISTRO DE OBRAS PÚBLICAS Y COMUNICACIONES DIRECCIÓN DE VIALIDAD	ACOMEPA ASOCIACIÓN DE COLONIAS MENNONITAS EN EL PARAGUAY	INGEVIAS CONSULTORÍA DE INGENIERÍA Y GESTIÓN VIAL	ESTUDIOS DE FACTIBILIDAD TÉCNICO, ECONÓMICO Y AMBIENTAL Y DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA	PLANO GENERAL DE UBICACION SIN ESCALA	LÁMINA N°: PGU 01

MOPC
MAPA DEL PARAGUAY

ACOMEPA

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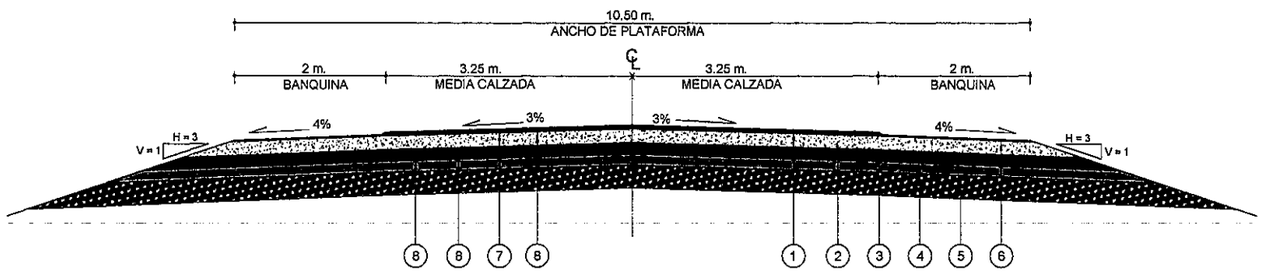
SECCIONES TIPO - PAVIMENTO

SECCIONES TRANSVERSALES TIPO

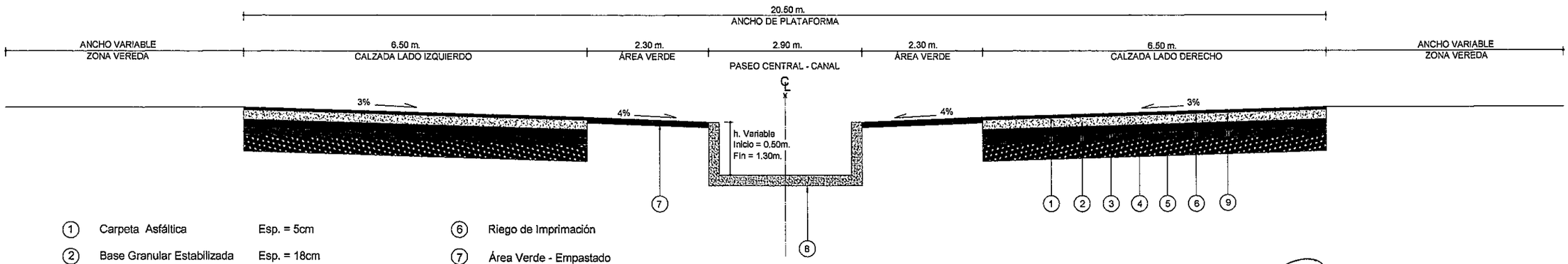
PAVIMENTO FLEXIBLE - CARPETA DE CONCRETO ASFÁLTICO

SECCIÓN TRANSVERSAL ZONA RURAL



1. Carpeta Asfáltica — Esp. = 5cm
2. Base Granular Estabilizada — Esp. = 18cm
3. Sub Base de Suelo Cemento — 3% CEMENTO — Esp. = 15cm
4. Sub Rasante Mejorada con CBR ≥ 15% — Esp. = 15cm
5. Sub Rasante Mejorada con CBR ≥ 7% en los últimos 30cm de la capa de Terraplén
6. Tratamiento Superficial Doble en Banquina
7. Riego de Imprimación
8. Riego de Liga

SECCIÓN TRANSVERSAL ZONA URBANA (AVENIDA TREBOL)



1. Carpeta Asfáltica — Esp. = 5cm
2. Base Granular Estabilizada — Esp. = 18cm
3. Sub Base de Suelo Cemento — 3% Cemento — Esp. = 15cm
4. Sub Rasante Mejorada con CBR ≥ 15% — Esp. = 15cm
5. Sub Rasante Mejorada con CBR ≥ 7% en los últimos 30cm de la capa de Terraplén
6. Riego de Imprimación
7. Área Verde - Empastado
8. Paseo Central (Canal Colector de Agua Superficial) Hormigòn 110 Kg./cm2 - Espesor = 0.20 m.
9. Riego de Liga

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ACOMEPA

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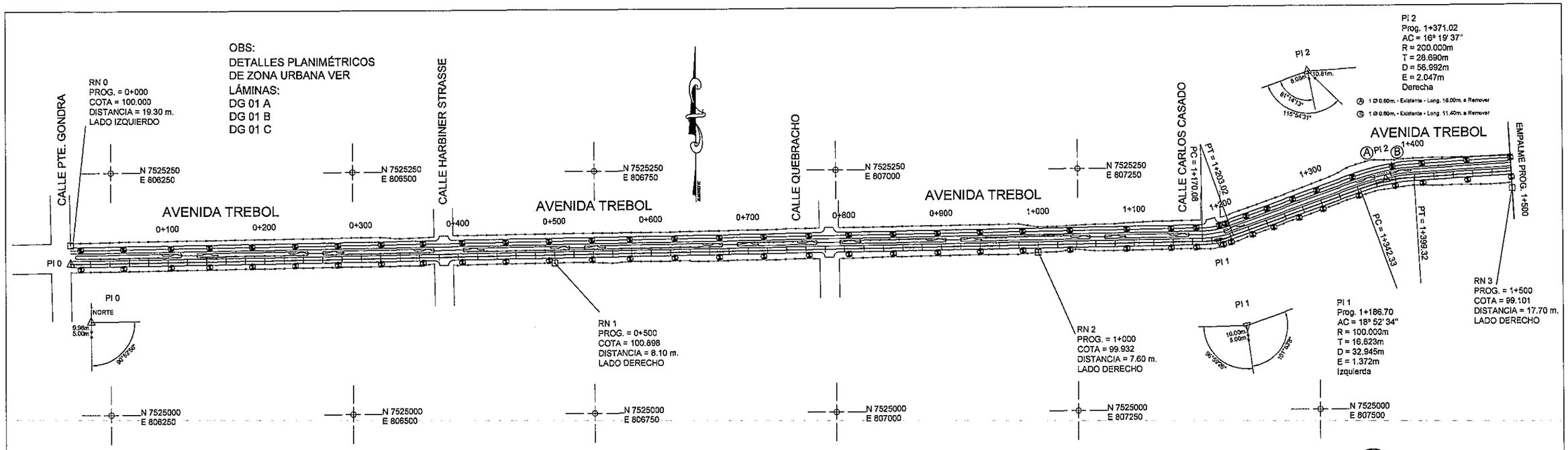
PLANIALTIMETRÍA



REFERENCIAS ESPECIFICAS

ALCANTARILLA CELULAR SIMPLE 1.00 m. X 1.00 m. (Losa Superior con Refuerzo Especial de Armaduras)
En Cortes Separador Central-Tapada 5 cm.=Espesor Carpeta Asfáltica

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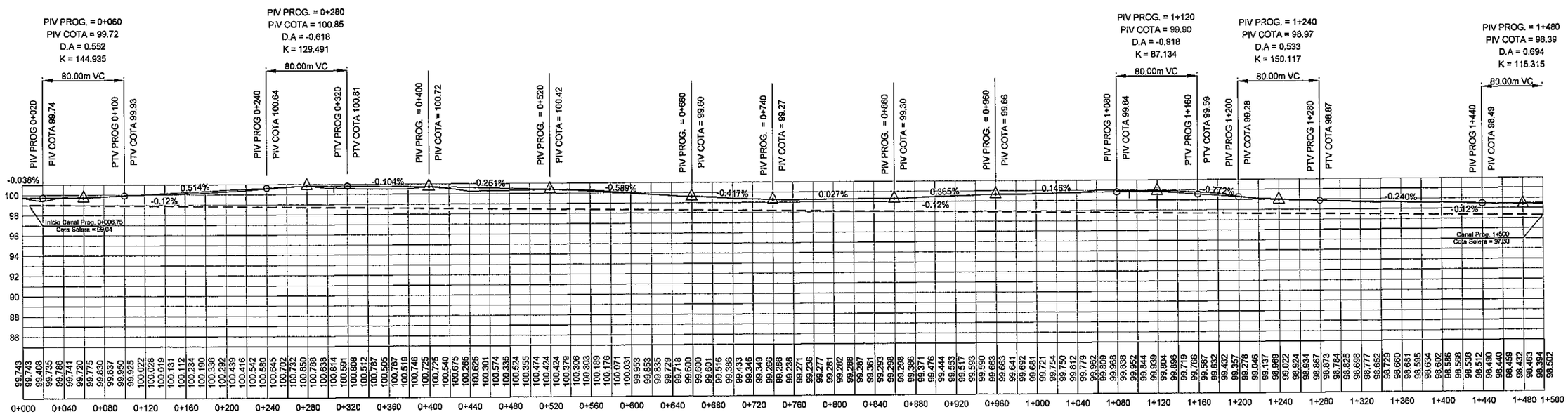

REFERENCIAS

- ALAMBRADO - LIMITES PROPIEDADES
- 2+300 PROGRESIVA
- FRANJA DE DOMINIO
- BORDE BANQUINA
- BORDE CALZADA
- EJE PROYECTO
- FRANJA DE DOMINIO
- COLUMNAS TENDIDO ELECTRICO
- PL : PUNTOS DE LINEAS
- PI : PUNTO DE INFLEXION HORIZONTAL
- AMARRES
- RN : REFERENCIAS DE NIVEL

COTA TERRENO 84.14 / 85.233 COTA RASANTE
2+400
PROGRESIVA

ACOMEPA
ASOCIACIÓN DE COLONIAS MENNONITAS EN EL PARAGUAY

INGEVIAS
CONSULTORIA DE INGENIERÍA Y GESTIÓN VIAL

REPUBLICA DEL PARAGUAY

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GABINETE DEL VICEMINISTRO DE OBRAS PÚBLICAS Y COMUNICACIONES

DIRECCIÓN DE VIALIDAD

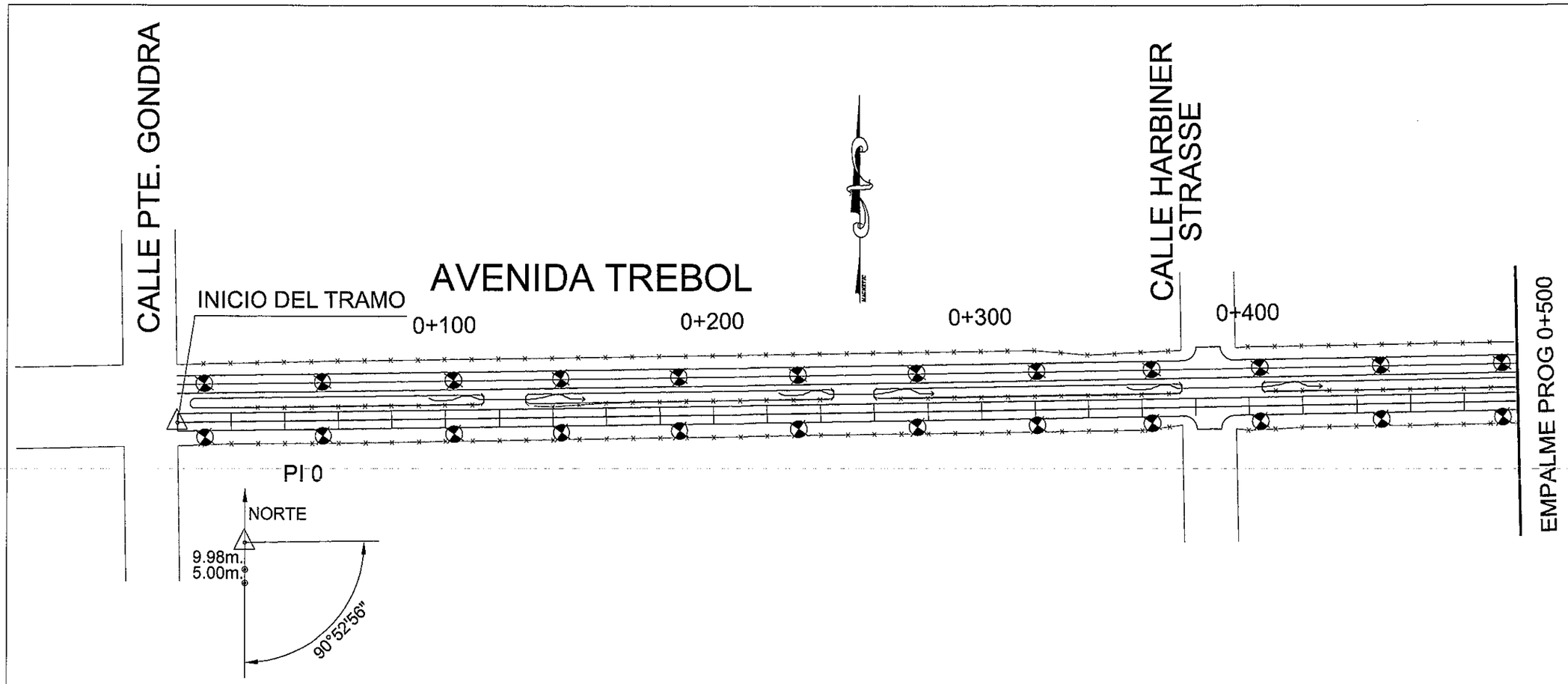
ESTUDIOS DE FACTIBILIDAD TÉCNICO, ECONÓMICO Y AMBIENTAL Y
DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO:
FILADELFIA - LOMA PLATA

PLANIALTIMETRIA
PROG. 0+000 A PROG 1+500

ESCALAS:
H:1:4.000
V:1:400

LAMINA N° :
DG - 01

MOPC
MAPA DEL PARAGUAY



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Arcadia Insfran Nº 151 c/ 10 de Agosto

REFERENCIAS		
ALAMBRADO - LIMITES PROPIEDADES	COLUMNAS TENDIDO ELECTRICO	COTA TERRENO 84.14 / 85.233 COTA RASANTE
2+300 PROGRESIVA	PL : PUNTOS DE LINEAS	2+400 PROGRESIVA
FRANJA DE DOMINIO	PI : PUNTO DE INFLEXION HORIZONTAL	
BORDE BANQUINA	AMARRES	
BORDE CALZADA	RN : REFERENCIAS DE NIVEL	
EJE PROYECTO		
FRANJA DE DOMINIO		

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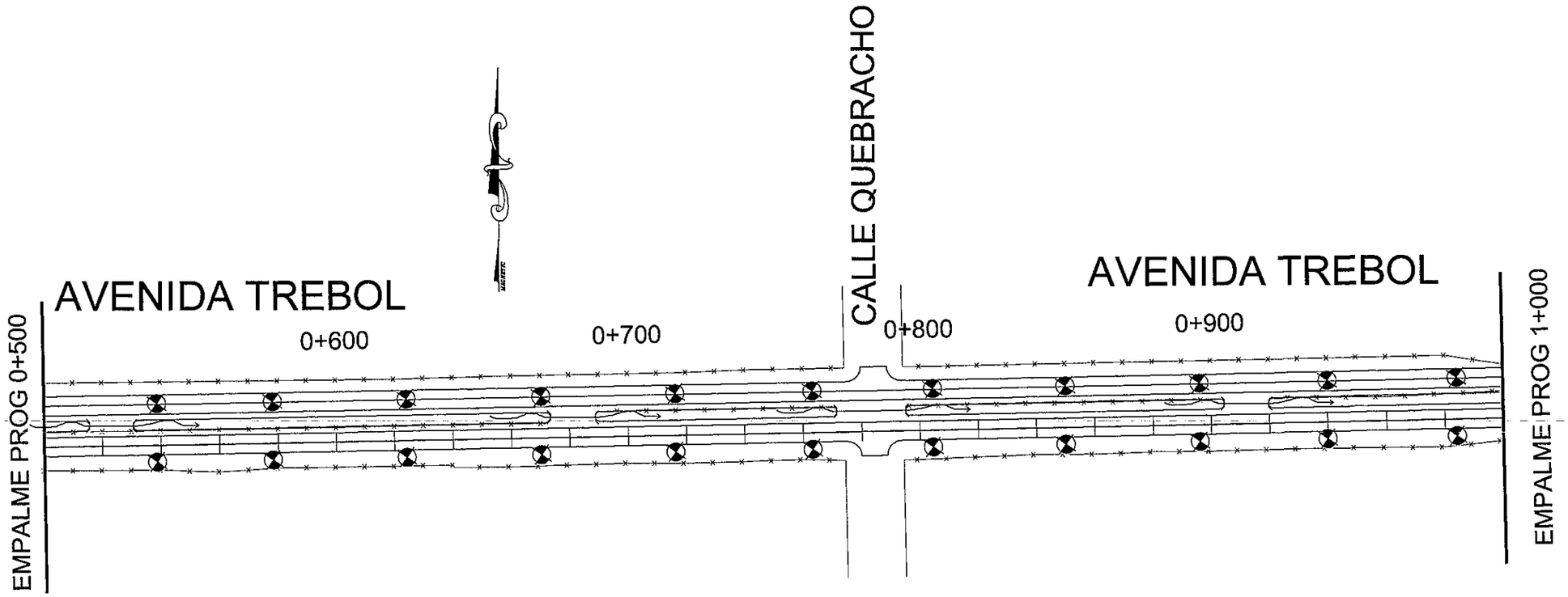
PLANIALTIMETRIA
PROG. 0+000 A PROG 0+500

ESCALA: SIN ESCALA

LAMINA Nº : DG - 01 A

MOPC
MAPA DEL PARAGUAY



REFERENCIAS ESPECIFICAS

ALCANTARILLA CELULAR SIMPLE 1.00 m. X 1.00 m. (Losa Superior con Refuerzo Especial de Armaduras)

En Cortes Separador Central-Tapada 5 cm.=Espesor Carpeta Asfáltica

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Tel. 575 824
Ma Insfran N° 151 c/ 10 de Agosto

REFERENCIAS		
ALAMBRADO - LIMITES PROPIEDADES	COLUMNAS TENDIDO ELECTRICO	COTA TERRENO 84.14 / 85.233 COTA RASANTE
2+300 PROGRESIVA	PL : PUNTOS DE LINEAS	2+400 PROGRESIVA
FRANJA DE DOMINIO	PI : PUNTO DE INFLEXION HORIZONTAL	
BORDE BANQUINA	AMARRES	
BORDE CALZADA	RN : REFERENCIAS DE NIVEL	
EJE PROYECTO		
FRANJA DE DOMINIO		

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PLANIALTIMETRIA
PROG. 0+500 A PROG 1+000

ESCALA: SIN ESCALA

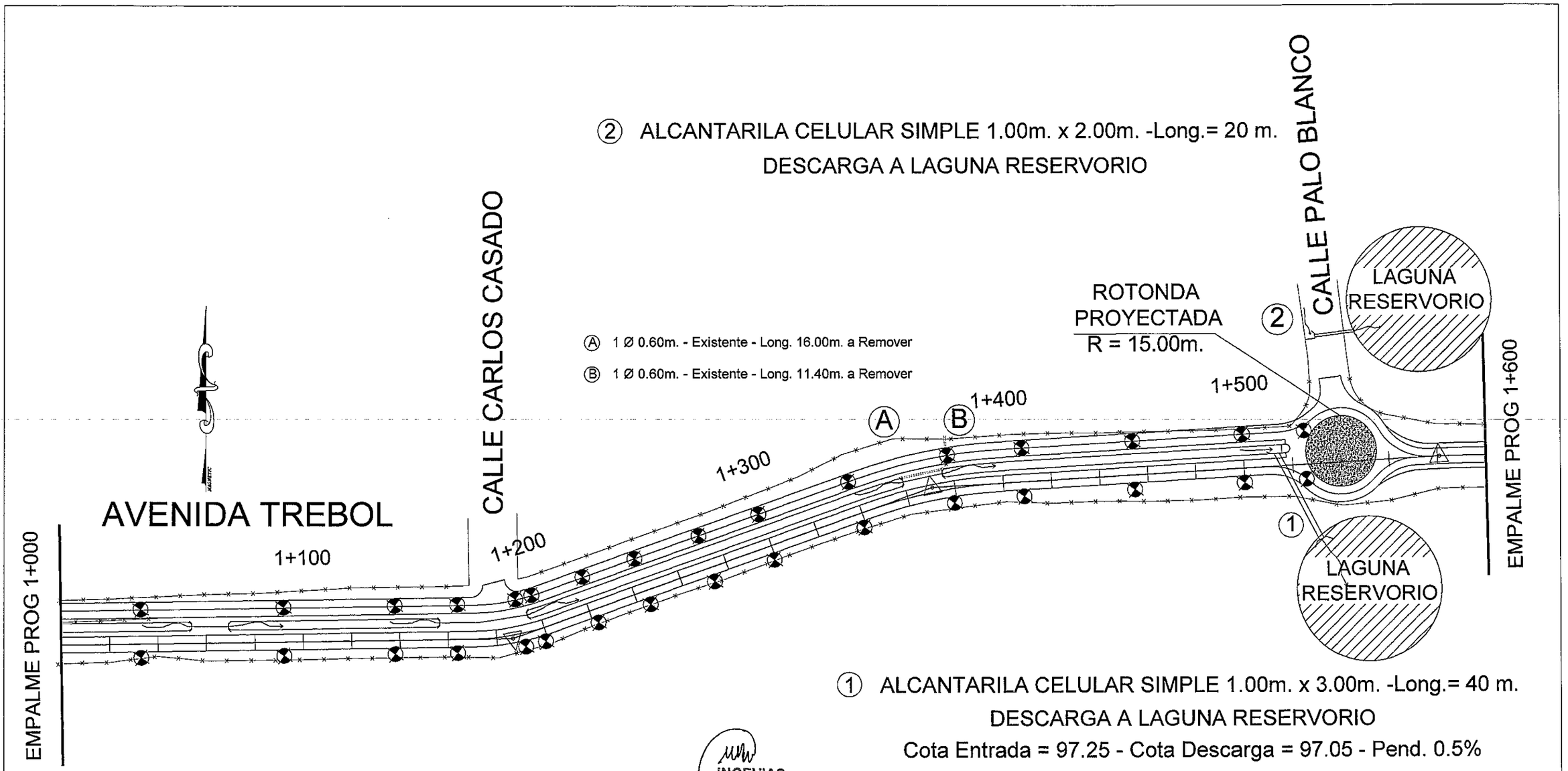
LAMINA N°: DG - 01 B

MOPC
MAPA DEL PARAGUAY

② ALCANTARILA CELULAR SIMPLE 1.00m. x 2.00m. -Long.= 20 m.
DESCARGA A LAGUNA RESERVORIO

Ⓐ 1 Ø 0.60m. - Existente - Long. 16.00m. a Remover

Ⓑ 1 Ø 0.60m. - Existente - Long. 11.40m. a Remover



① ALCANTARILA CELULAR SIMPLE 1.00m. x 3.00m. -Long.= 40 m.
DESCARGA A LAGUNA RESERVORIO
Cota Entrada = 97.25 - Cota Descarga = 97.05 - Pend. 0.5%

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En Cortes Separador Central-Tapada 5 cm.=Espesor Carpeta Asfáltica

REFERENCIAS

2+300 PROGRESIVA
ALAMBRADO - LIMITES PROPIEDADES
FRANJA DE DOMINIO
BORDE BANQUINA
BORDE CALZADA
EJE PROYECTO
FRANJA DE DOMINIO

COLUMNAS TENDIDO ELECTRICO
PL : PUNTOS DE LINEAS
PI : PUNTO DE INFLEXION HORIZONTAL
AMARRES
RN : REFERENCIAS DE NIVEL

COTA TERRENO 84.14 / 85.233 COTA RASANTE
2+400 PROGRESIVA

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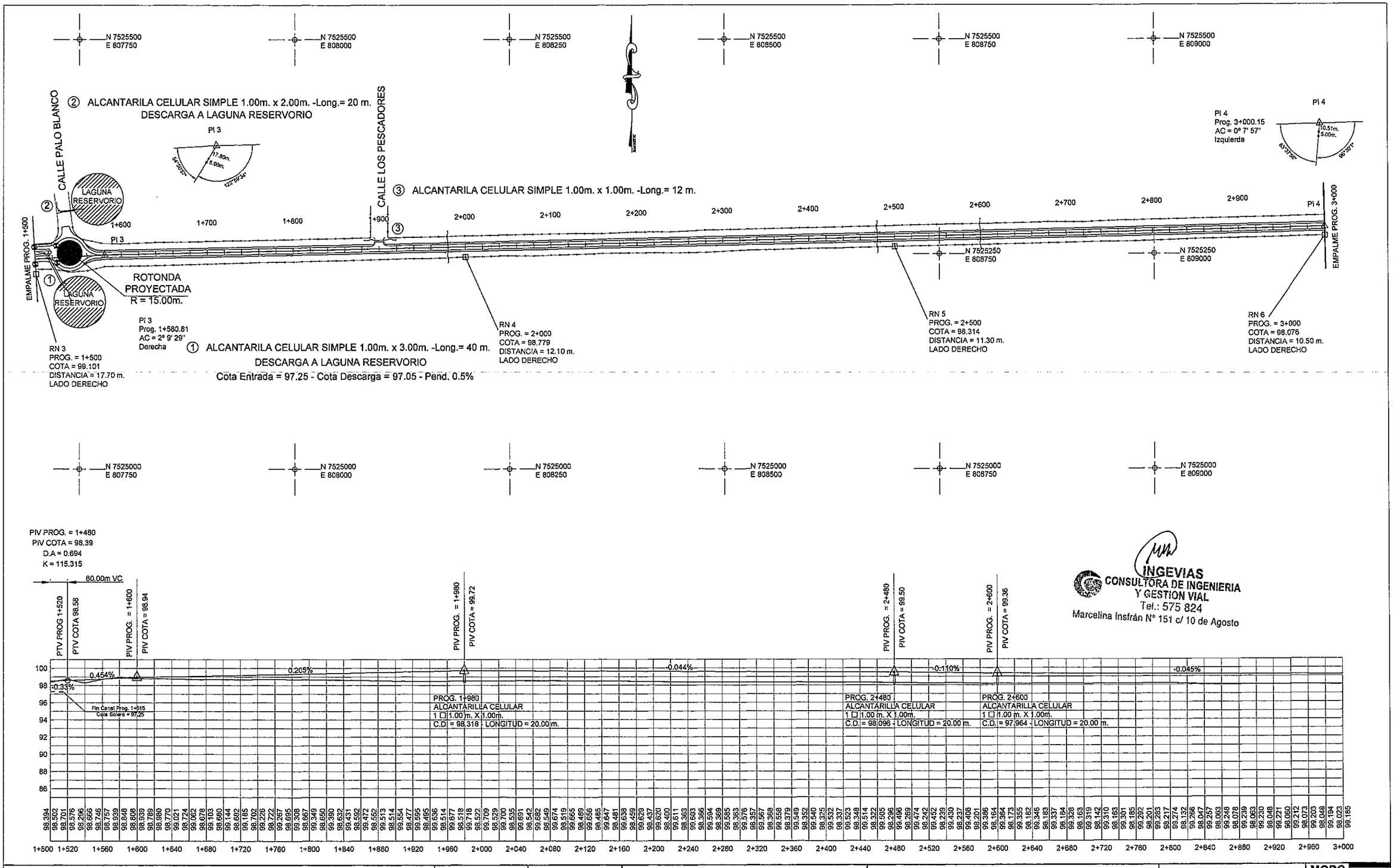
PLANIALTIMETRIA
PROG. 1+000 A PROG 1+600
ESCALA: SIN ESCALA
LAMINA N°: DG - 01 C

MOPC
MAPA DEL PARAGUAY
BOLIVIA BRASIL ZONA DEL PROYECTO ARGENTINA ARGENTINA



REFERENCIAS

- ALAMBRADO - LIMITES PROPIEDADES
- 2+300 PROGRESIVA
- FRANJA DE DOMINIO
- BORDE BANQUINA
- BORDE CALZADA
- EJE PROYECTO
- FRANJA DE DOMINIO
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- PL : PUNTOS DE LINEAS
- PI : PUNTO DE INFLEXION HORIZONTAL
- AMARRES
- RN : REFERENCIAS DE NIVEL

COTA TERRENO 84.14 / 85.233 COTA RASANTE
2+400 PROGRESIVA

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DIRECCIÓN DE VIALIDAD

ESTUDIOS DE FACTIBILIDAD TÉCNICO, ECONÓMICO Y AMBIENTAL Y
DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

PLANIALTIMETRIA
PROG. 1+500 A PROG 3+000

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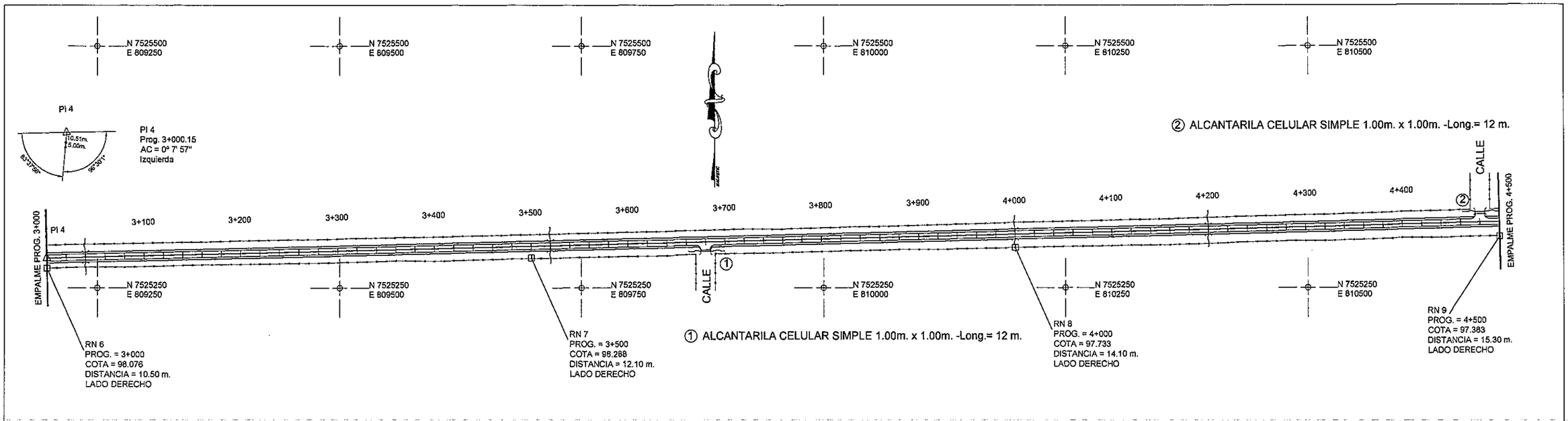
LAMINA N° : DG - 02

MOPC
MAPA DEL PARAGUAY



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REFERENCIAS

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- 2+300 PROGRESIVA
- FRANJA DE DOMINIO
- BORDE BANQUINA
- BORDE CALZADA
- EJE PROYECTO
- FRANJA DE DOMINIO
- COLUMNAS TENDIDO ELECTRICO
- PL : PUNTOS DE LINEAS
- PI : PUNTO DE INFLEXION HORIZONTAL
- AMARRES
- RN : REFERENCIAS DE NIVEL
- COTA TERRENO 84.14 / 85.233 COTA RASANTE — 2+400 PROGRESIVA

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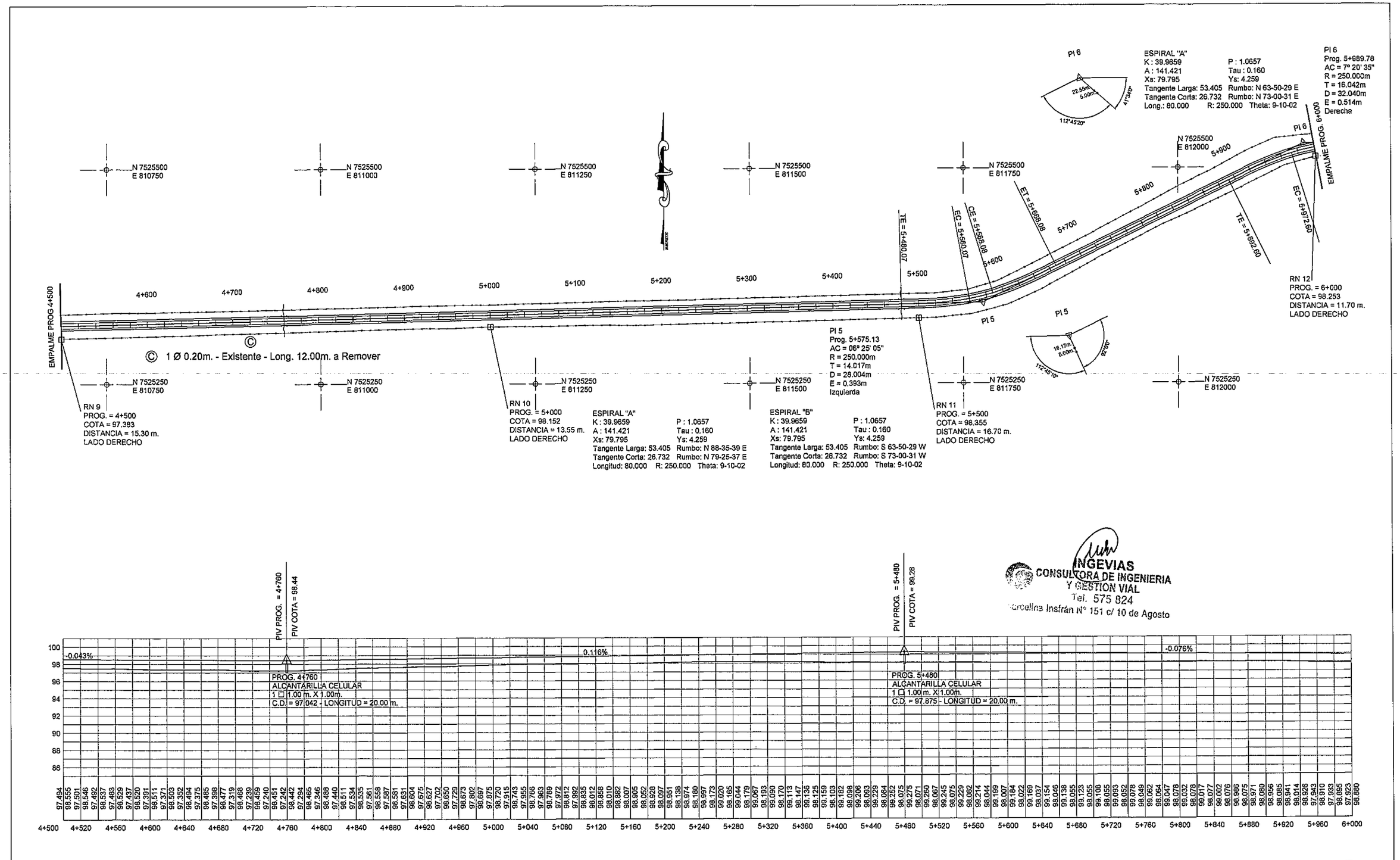
PLANIALTIMETRIA
PROG. 3+000 A PROG 4+500

ESCALAS:
H:1:4.000
V:1:400

LAMINA N° :
DG - 03

MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA



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- AMARRES
- RN : REFERENCIAS DE NIVEL
- COTA TERRENO 84.14 / 85.233 COTA RASANTE — 2+400 PROGRESIVA

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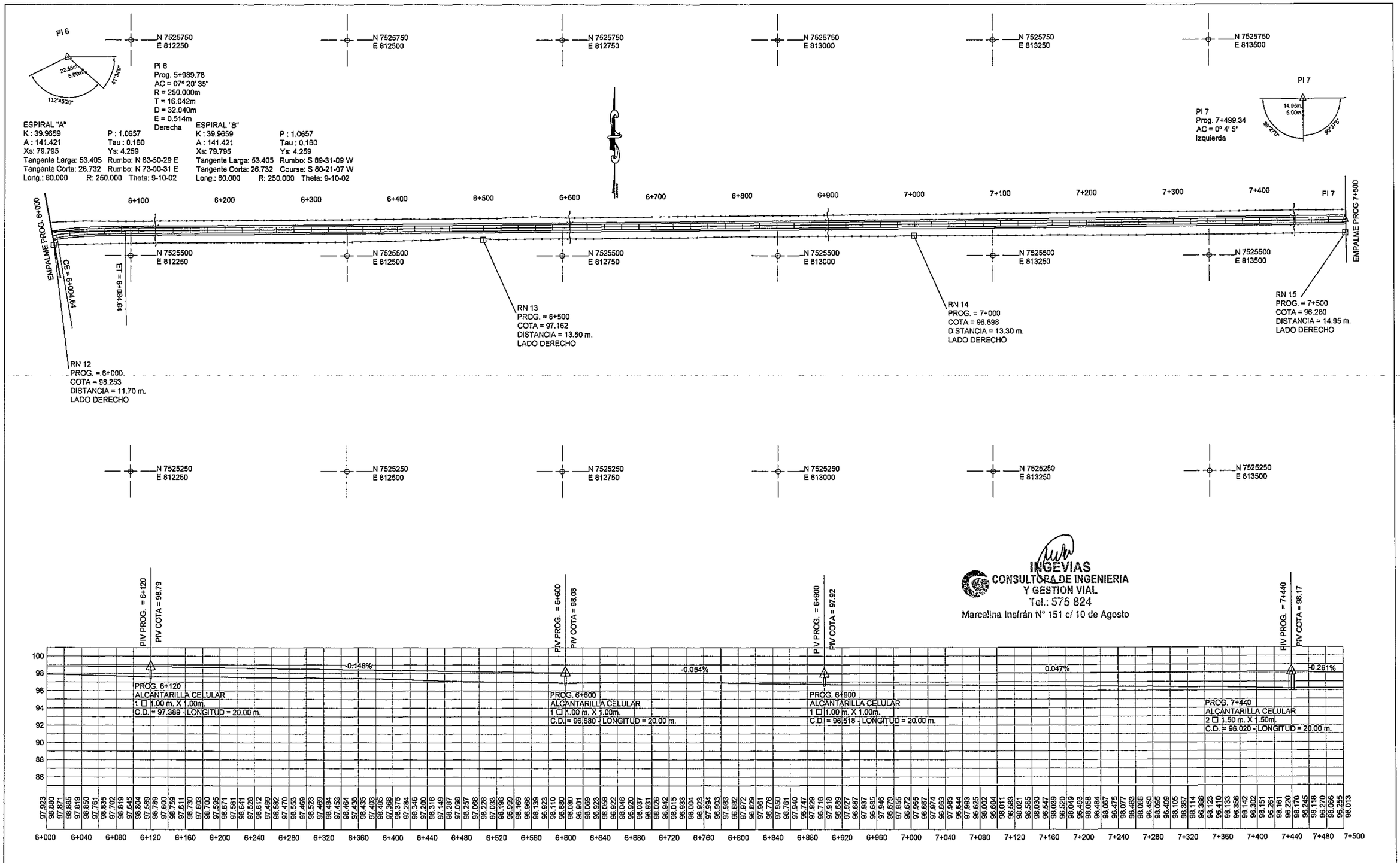
FILADELFIA - LOMA PLATA

PLANIALTIMETRIA
PROG. 4+500 A PROG 6+000

ESCALAS: H:1:4.000 V:1:400

LAMINA Nº: DG - 04

MOPC
MAPA DEL PARAGUAY
BOLIVIA BRASIL ZONA DEL PROYECTO ARGENTINA



REFERENCIAS

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- AMARRES
- RN : REFERENCIAS DE NIVEL

COTA TERRENO 84.14 / 85.233 COTA RASANTE
2+400 PROGRESIVA

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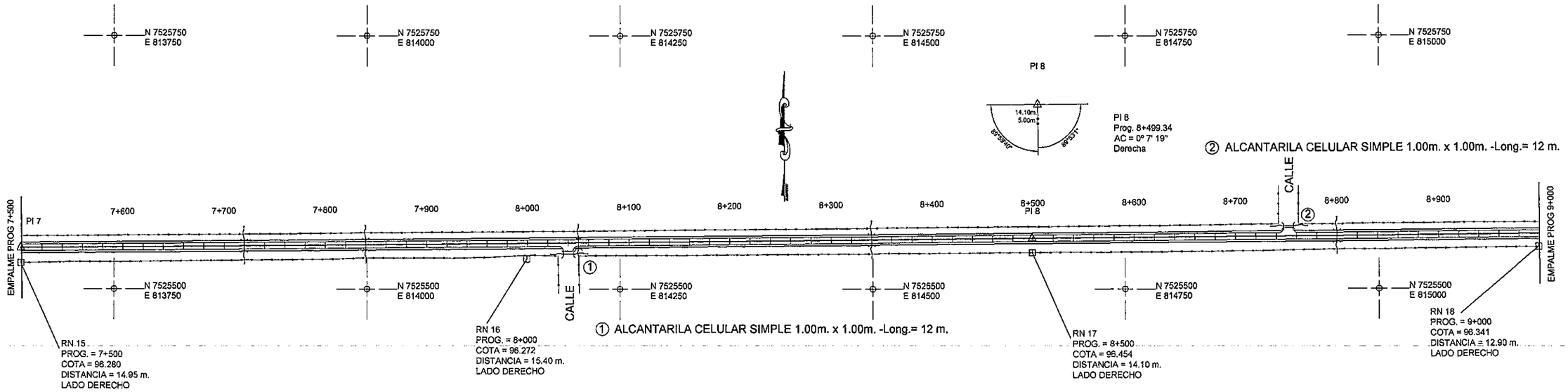
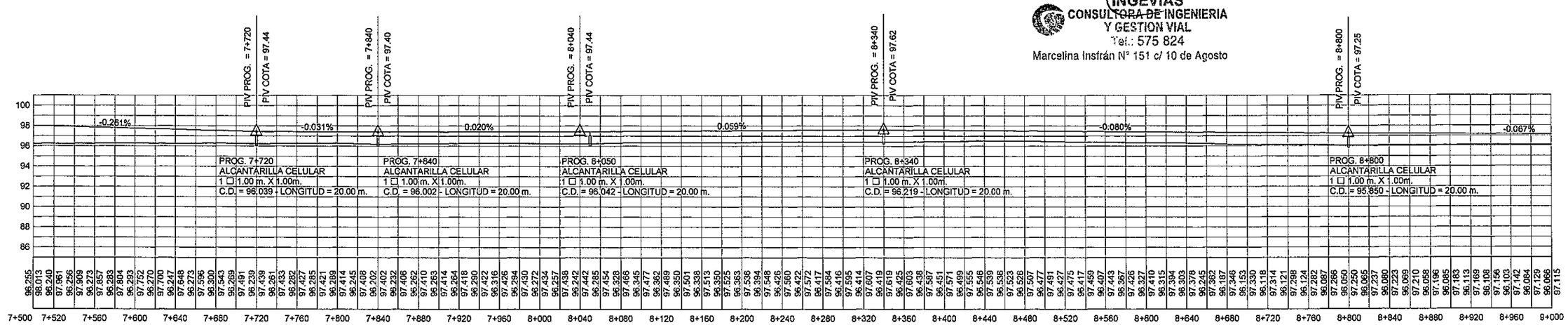
PLANIALTIMETRIA
PROG. 6+000 A PROG 7+500

ESCALAS:
H:1:4.000
V:1:400

LAMINA N° :
DG - 05

MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA





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COTA TERRENO 84.14 / 85.233 COTA RASANTE
2+400 PROGRESIVA

ASOCIACIÓN DE COLONIAS MENNONITAS EN EL PARAGUAY

CONSULTORA DE INGENIERIA ACOMETRA

INGEVIAS

REPUBLICA DEL PARAGUAY

MINISTERIO DE OBRAS PÚBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PÚBLICAS Y COMUNICACIONES

DIRECCIÓN DE VIALIDAD

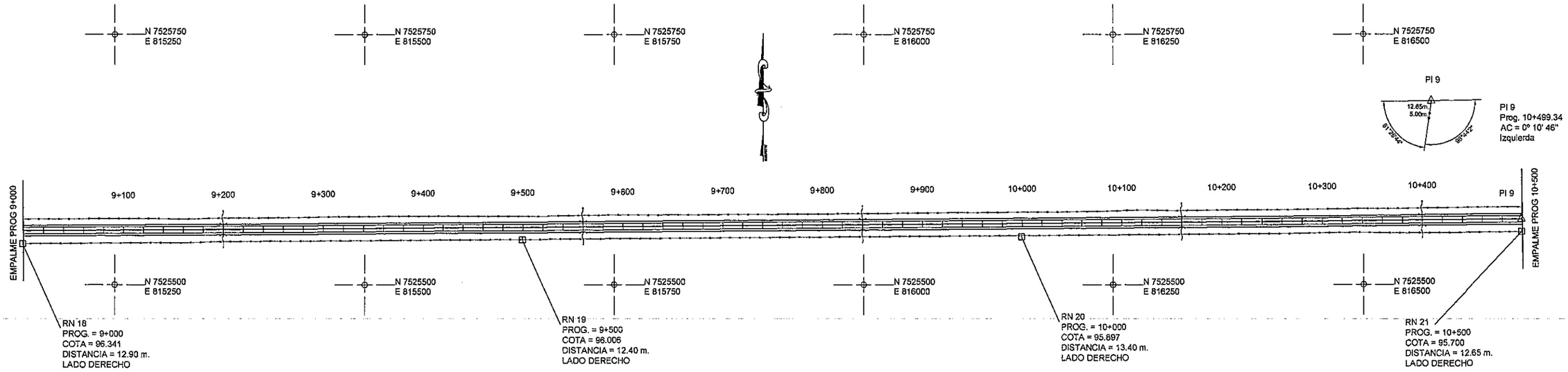
ESTUDIOS DE FACTIBILIDAD TÉCNICO, ECONÓMICO Y AMBIENTAL Y DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

PLANIALTIMETRIA
PROG. 7+500 A PROG 9+000

ESCALAS:
H:1:4.000
V:1:400

LAMINA Nº :
DG - 06

MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA



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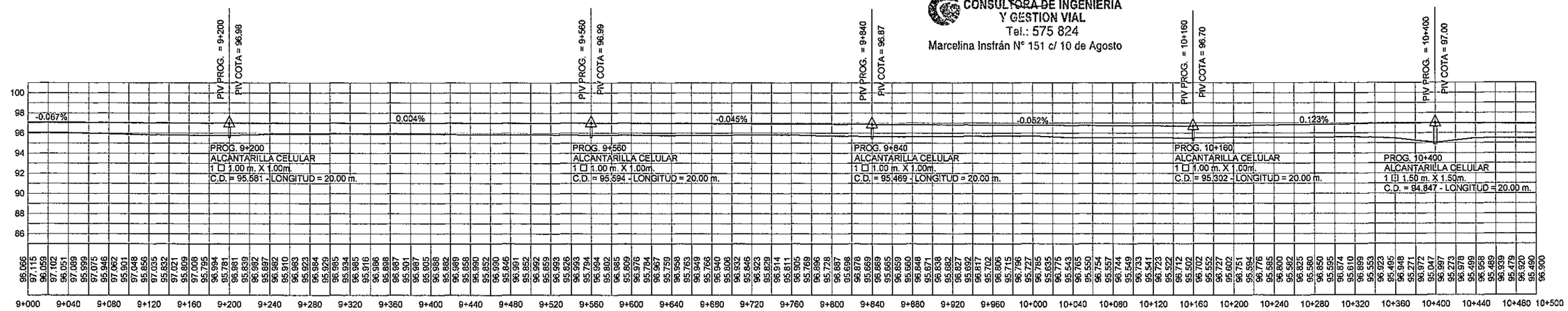
CONSULTORA DE INGENIERIA
Y GESTION VIAL
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto



REFERENCIAS

- ALAMBRADO - LIMITES PROPIEDADES
- 2+300 PROGRESIVA
- FRANJA DE DOMINIO
- BORDE BANQUINA
- BORDE CALZADA
- EJE PROYECTO
- FRANJA DE DOMINIO
- COLUMNAS TENDIDO ELECTRICO
- PL : PUNTOS DE LINEAS
- PI : PUNTO DE INFLEXION HORIZONTAL
- AMARRES
- RN : REFERENCIAS DE NIVEL

COTA TERRENO 84.14 / 85.233 COTA RASANTE
2+400
PROGRESIVA

ACOMEPA
ASOCIACIÓN DE COLONIAS MENNONITAS EN EL PARAGUAY

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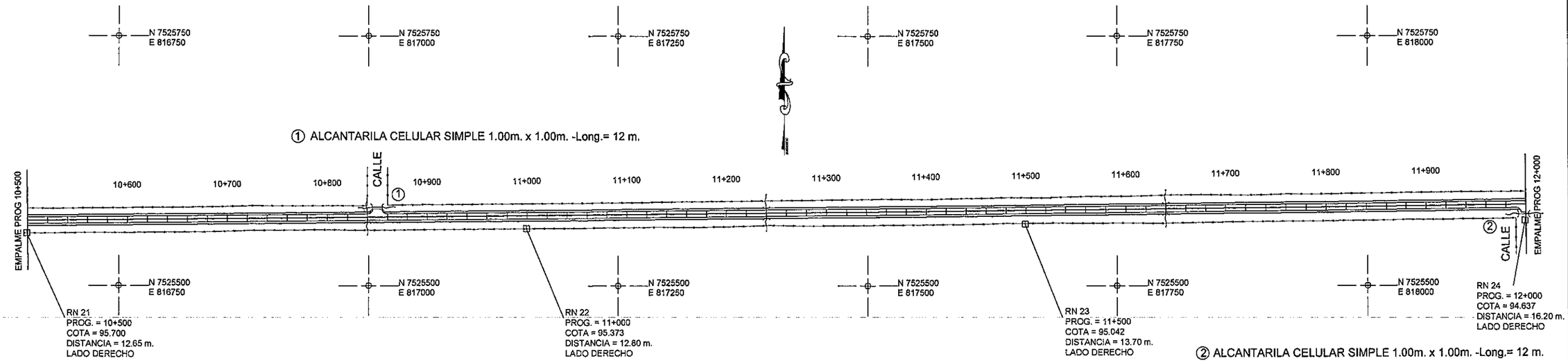
PLANIALTIMETRIA
PROG. 9+000 A PROG 10+500

ESCALAS:
H:1:4.000
V:1:400

LAMINA N°:
DG - 07

MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA



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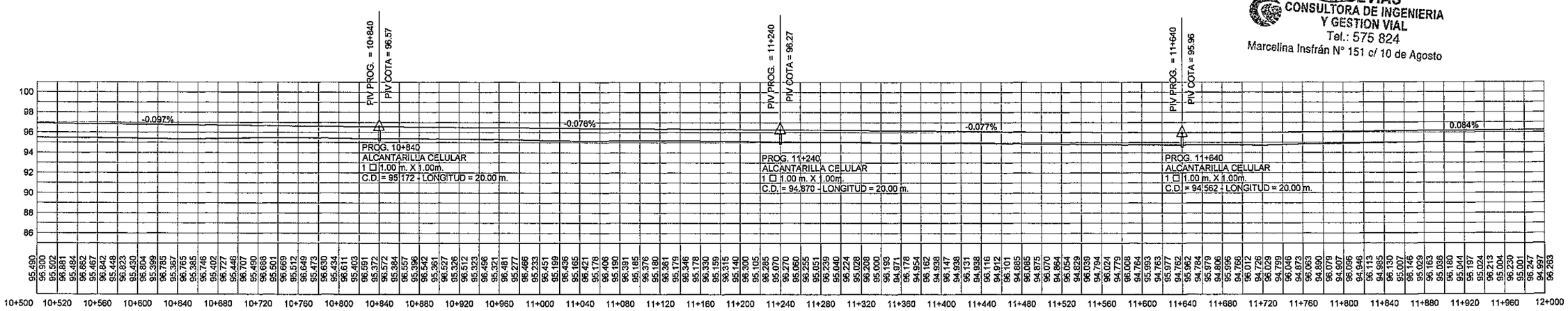
Marcelina Insfrán N° 151 c/ 10 de Agosto



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- 2+300 PROGRESIVA
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- BORDE BANQUINA
- BORDE CALZADA
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- RN : REFERENCIAS DE NIVEL
- COTA TERRENO 84.14 / 85.233 COTA RASANTE — 2+400 PROGRESIVA

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ASOCIACIÓN DE COLONIAS MENNONITAS EN EL PARAGUAY

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DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

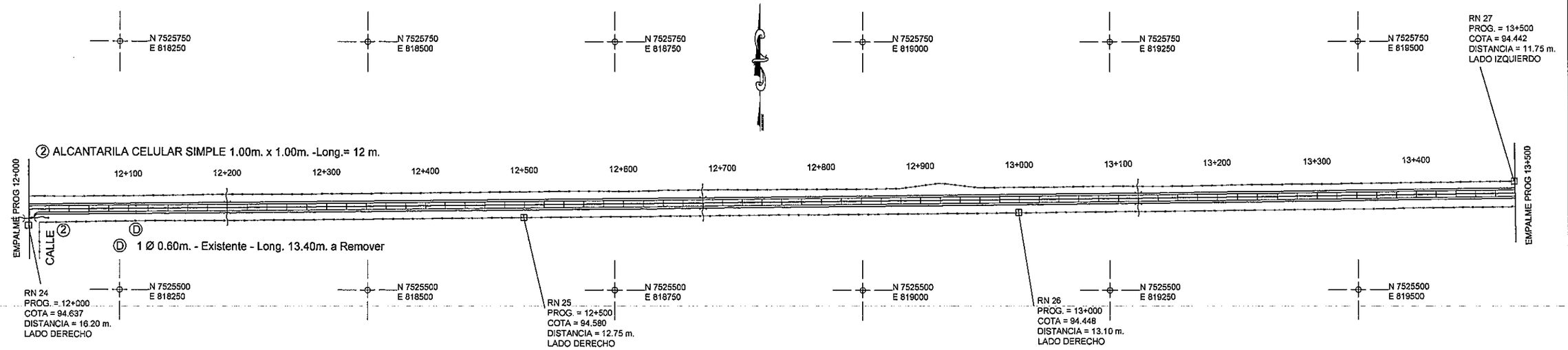
PLANIALTIMETRIA

PROG. 10+500 A PROG 12+000

ESCALAS: H:1:4.000 V:1:400

LAMINA N° : DG - 08

MOPC
MAPA DEL PARAGUAY



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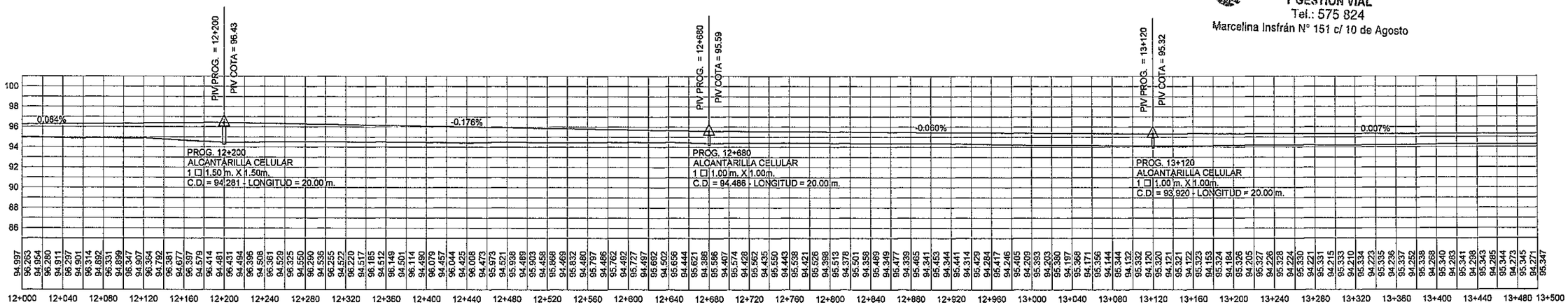
CONSULTORA DE INGENIERIA
Y GESTION VIAL
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto



REFERENCIAS

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- 2+300 PROGRESIVA
- FRANJA DE DOMINIO
- BORDE BANQUINA
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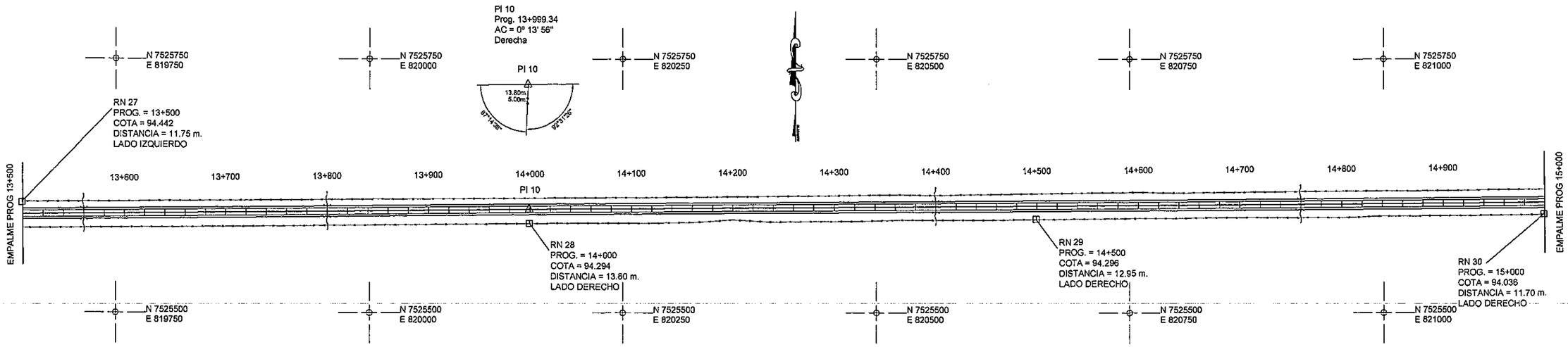
PLANIALTIMETRIA
PROG. 12+000 A PROG 13+500

ESCALAS:
H:1:4.000
V:1:400

LAMINA N°:
DG - 09

MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA



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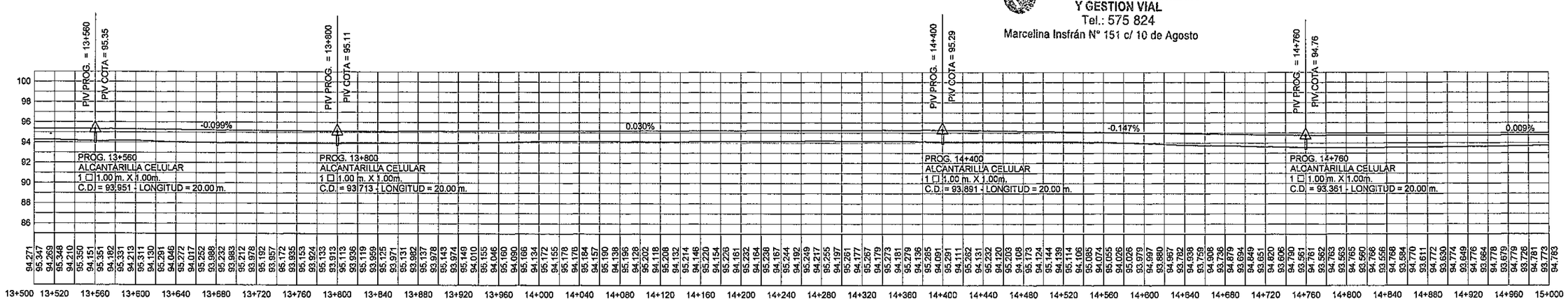

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- BORDE BANQUINA
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DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

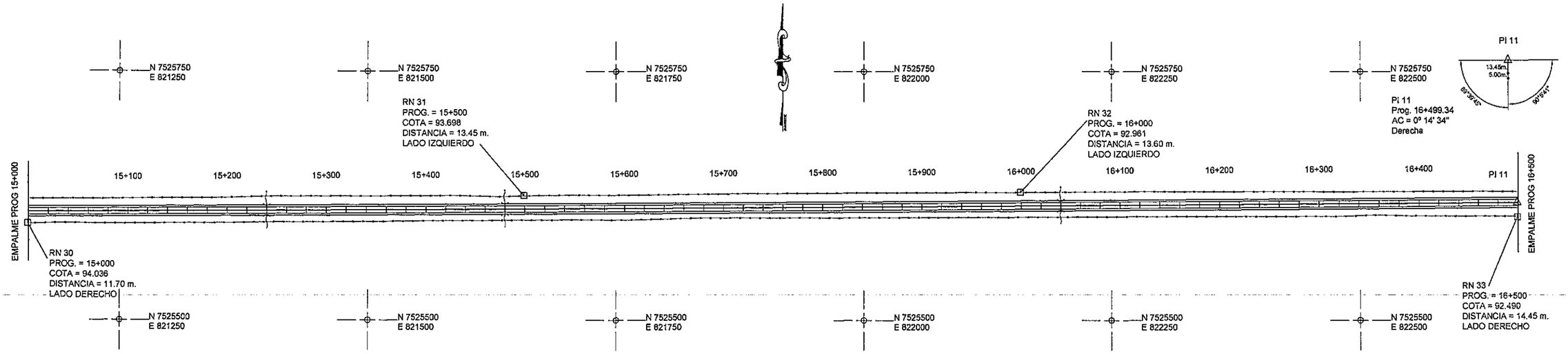
PLANIALTIMETRIA

PROG. 13+500 A PROG 15+000

ESCALAS: H:1:4.000 V:1:400

LAMINA Nº : DG - 10

MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA



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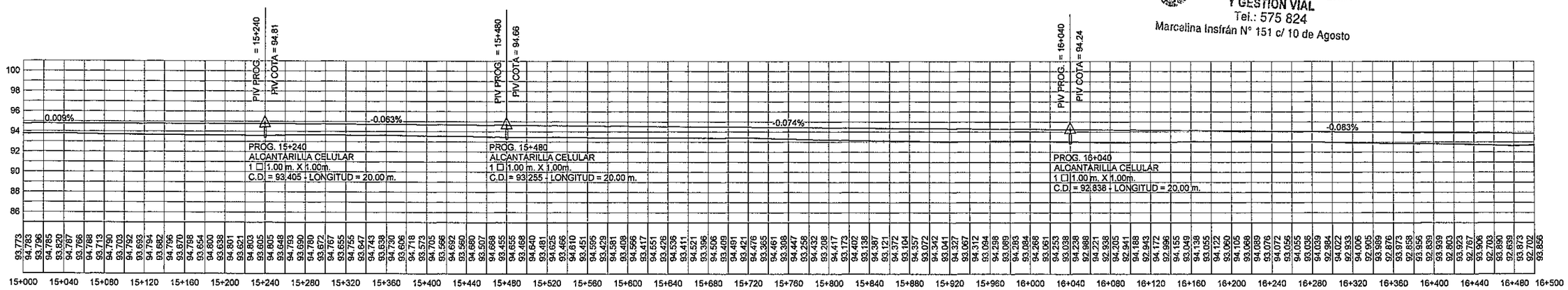

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PLANIALTIMETRIA

PROG. 15+000 A PROG 16+500

ESCALAS: H:1:4.000 V:1:400

LAMINA N°: DG - 11

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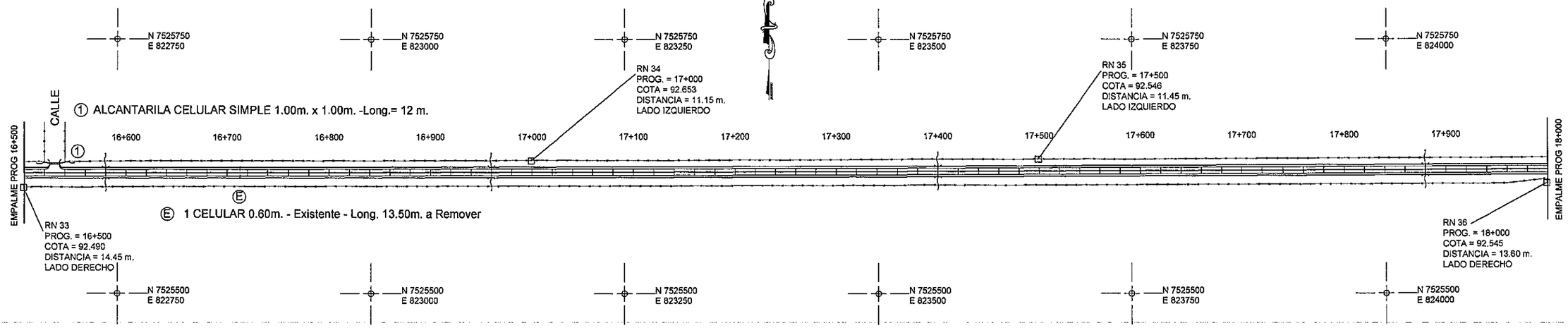
MAPA DEL PARAGUAY
BOLIVIA BRASIL ZONA DEL PROYECTO ARGENTINA ARGENTINA



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Y GESTION VIAL
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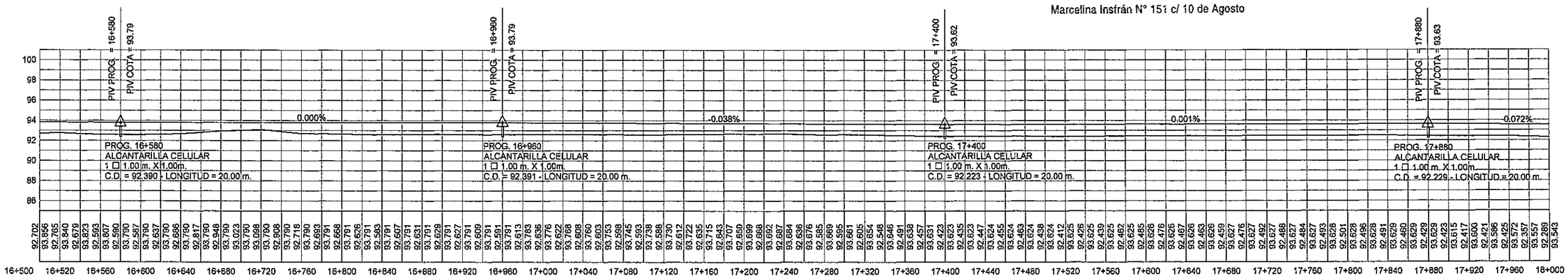
Marcelina Insfrán N° 151 c/ 10 de Agosto



REFERENCIAS

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- COTA TERRENO 84.14 / 85.233 COTA RASANTE — 2+400 PROGRESIVA

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ASOCIACIÓN DE COLONIAS MENNONITAS EN EL PARAGUAY

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DIRECCIÓN DE VIALIDAD

ESTUDIOS DE FACTIBILIDAD TÉCNICO, ECONÓMICO Y AMBIENTAL Y

DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

PLANIALTIMETRIA

PROG. 16+500 A PROG 18+000

ESCALAS: H:1:4.000 V:1:400

LAMINA N°: DG - 12

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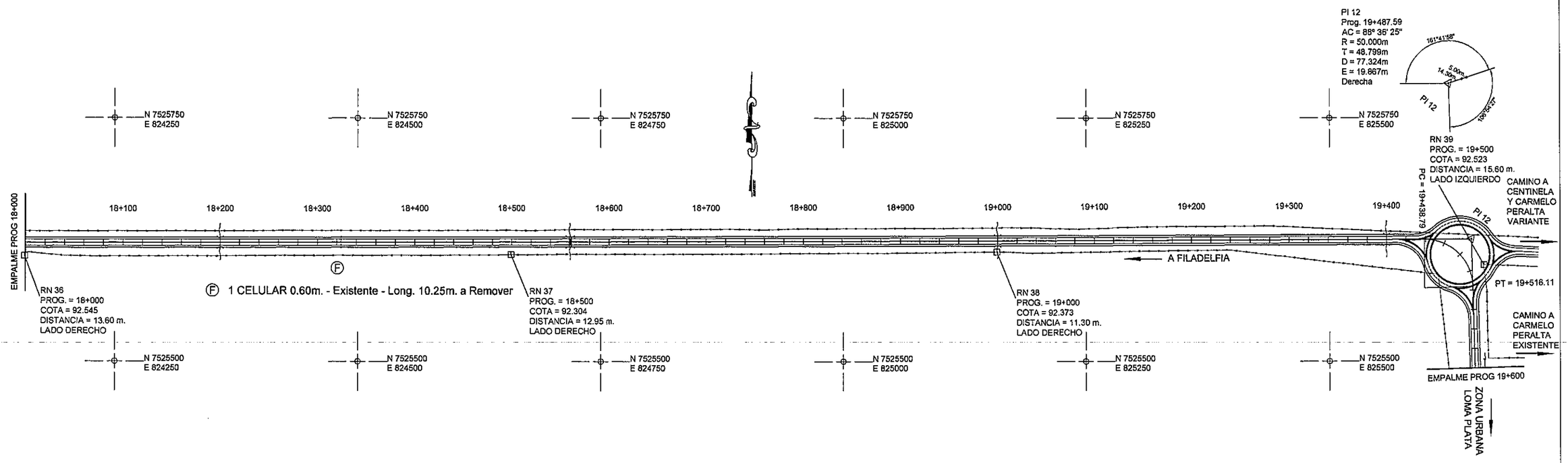
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA



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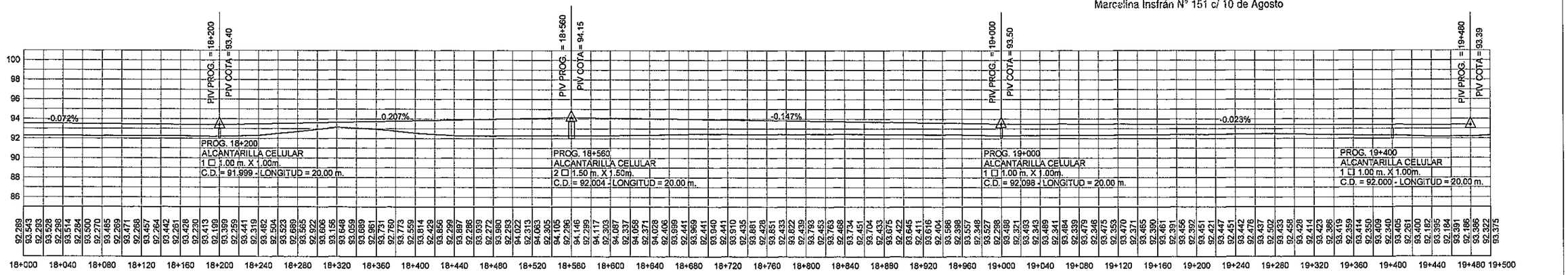
CONSULTORA DE INGENIERIA
Y GESTION VIAL
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto



REFERENCIAS

- ALAMBRADO - LIMITES PROPIEDADES
- 2+300 PROGRESIVA
- FRANJA DE DOMINIO
- BORDE BANQUINA
- BORDE CALZADA
- EJE PROYECTO
- FRANJA DE DOMINIO
- COLUMNAS TENDIDO ELECTRICO
- PL : PUNTOS DE LINEAS
- PI : PUNTO DE INFLEXION HORIZONTAL
- AMARRES
- RN : REFERENCIAS DE NIVEL
- COTA TERRENO 94.14 / 95.293 COTA RASANTE
- 2+400 PROGRESIVA

ACOMEPA
ASOCIACIÓN DE COLONIAS MENNONITAS EN EL PARAGUAY

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REPUBLICA DEL PARAGUAY
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GABINETE DEL VICEMINISTRO DE OBRAS PÚBLICAS Y COMUNICACIONES
DIRECCIÓN DE VIALIDAD

ESTUDIOS DE FACTIBILIDAD TÉCNICO, ECONÓMICO Y AMBIENTAL Y
DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

PLANIALTIMETRIA
PROG. 18+000 A PROG 19+500

ESCALAS: H:1:4.000 V:1:400

LAMINA Nº : DG - 13

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MAPA DEL PARAGUAY
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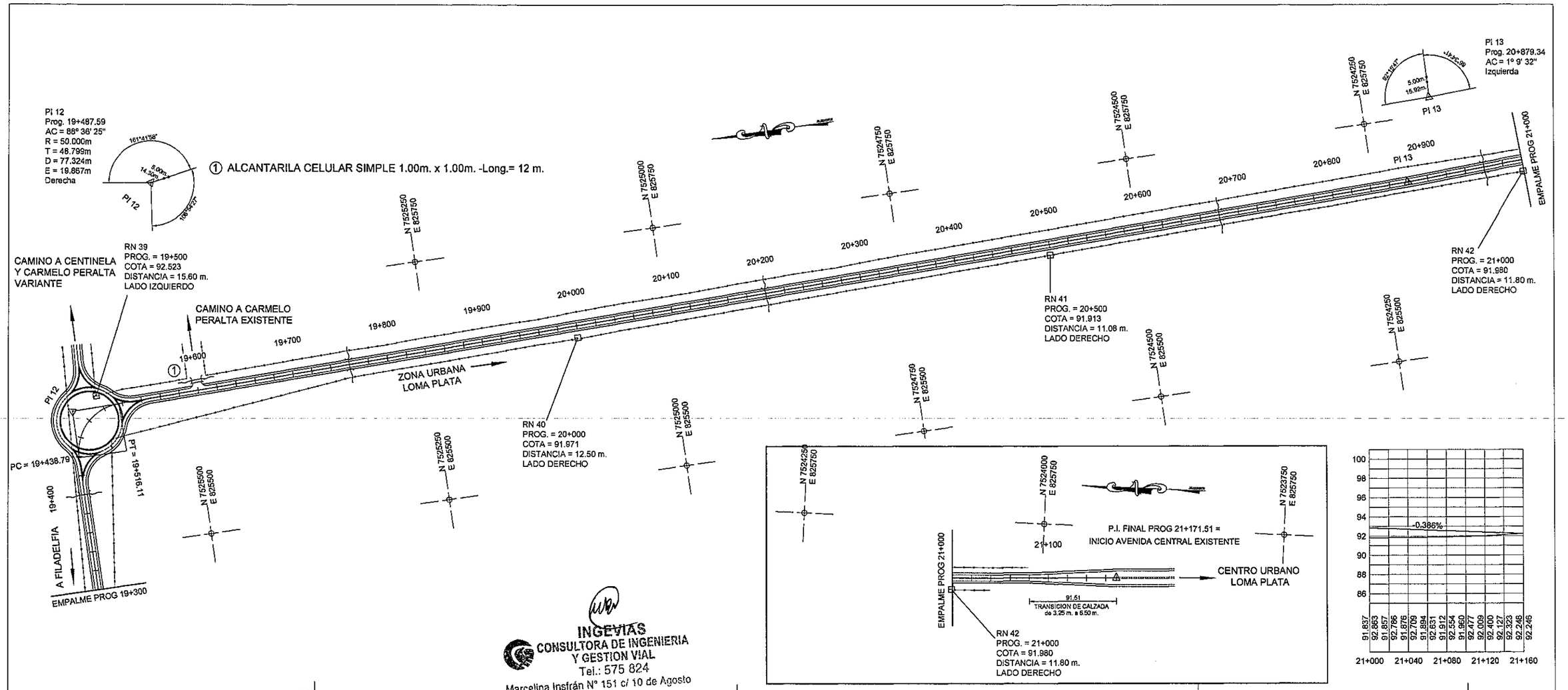
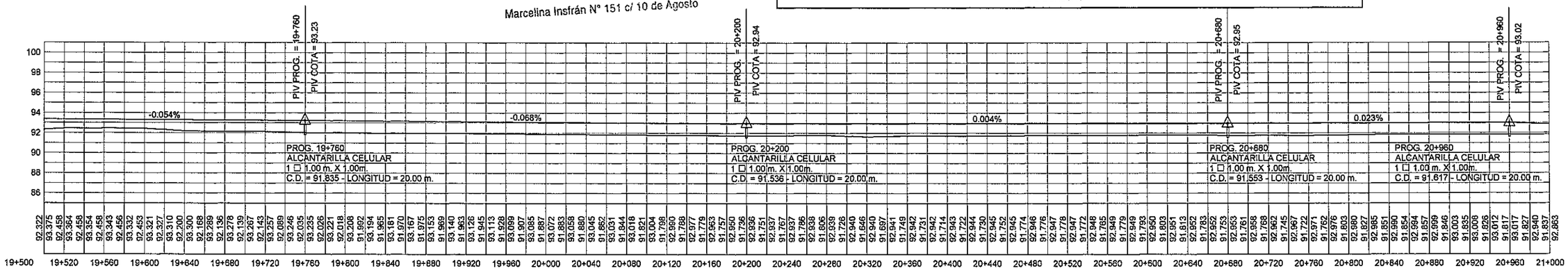


INGEVIAS
CONSULTORA DE INGENIERIA Y GESTION VIAL
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto



REFERENCIAS

- ALAMBRADO - LIMITES PROPIEDADES
- 2+300 PROGRESIVA
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COTA TERRENO 84.14 / 85.233 COTA RASANTE
2+400
PROGRESIVA

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PLANIALTIMETRIA
PROG. 19+500 A PROG 21+171.51

ESCALAS: H:1:4.000 V:1:400

LAMINA Nº : DG - 14

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MAPA DEL PARAGUAY
BOLIVIA BRASIL ZONA DEL PROYECTO ARGENTINA ARGENTINA

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Y GESTION VIAL
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

ACOMEPA

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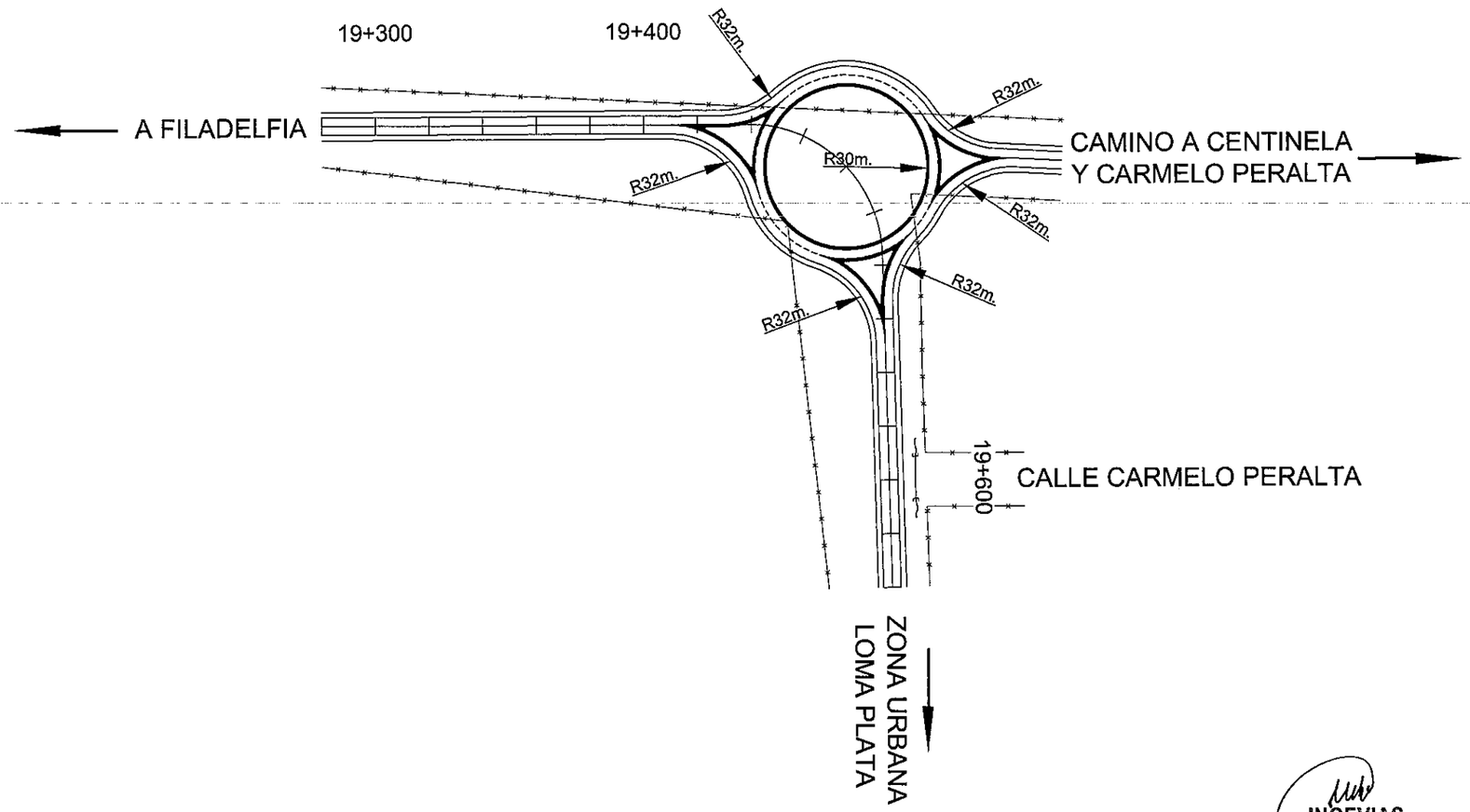
Y GESTION VIAL

DISEÑO DE INTERSECCIÓN

DISEÑO DE INTERSECCIÓN - ROTONDA



INGEVIAS
CONSULTORA DE INGENIERIA
Y GESTION VIAL
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

REFERENCIAS

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COTA TERRENO 84.14 / 85.233 COTA RASANTE
2+400
PROGRESIVA

ACOMEPA
ASOCIACIÓN DE COLONIAS MENNONITAS EN EL PARAGUAY

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DIRECCIÓN DE VIALIDAD

ESTUDIOS DE FACTIBILIDAD TÉCNICO, ECONÓMICO Y AMBIENTAL Y
DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO:
FILADELFIA - LOMA PLATA

DISEÑO DE INTERSECCIÓN

ESCALA: SIN ESCALA

LAMINA N°: DI - 01

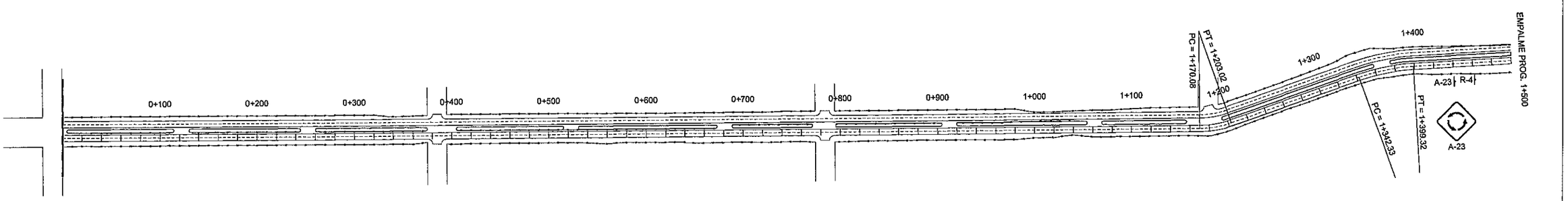
MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA

INGEVIAS
CONSULTORA DE INGENIERIA
Y GESTION VIAL
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

ACOMEPA

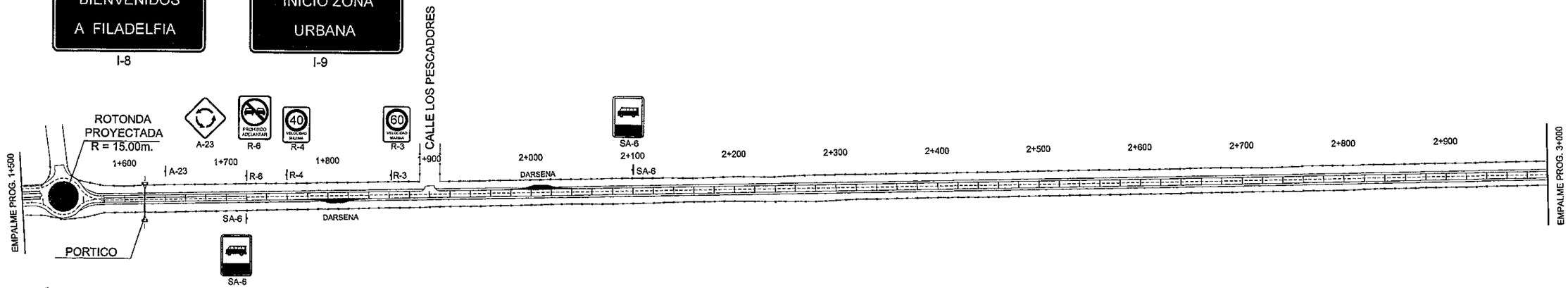
INGEVIAS
CONSULTORIA DE INGENIERIA
Y GESTION VIAL

DISEÑO DE SEÑALIZACION

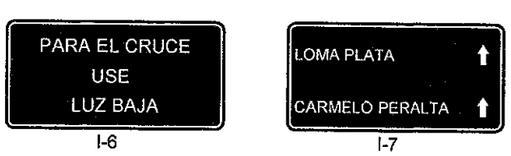


SEÑALES INFORMATIVAS EN PORTICOS

I-8 I-9



SEÑALES INFORMATIVAS EN PORTICOS



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INGEVIAS
CONSULTORA DE INGENIERIA
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Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

REFERENCIAS

ACOMEPA
ASOCIACIÓN DE COLONIAS MENNONITAS EN EL PARAGUAY

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REPUBLICA DEL PARAGUAY

MINISTERIO DE OBRAS PÚBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PÚBLICAS Y COMUNICACIONES

DIRECCIÓN DE VIALIDAD

ESTUDIOS DE FACTIBILIDAD TÉCNICO, ECONÓMICO Y AMBIENTAL Y

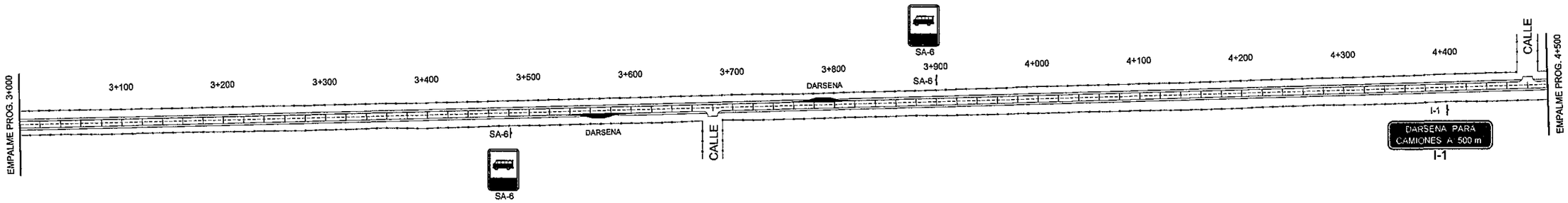
DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

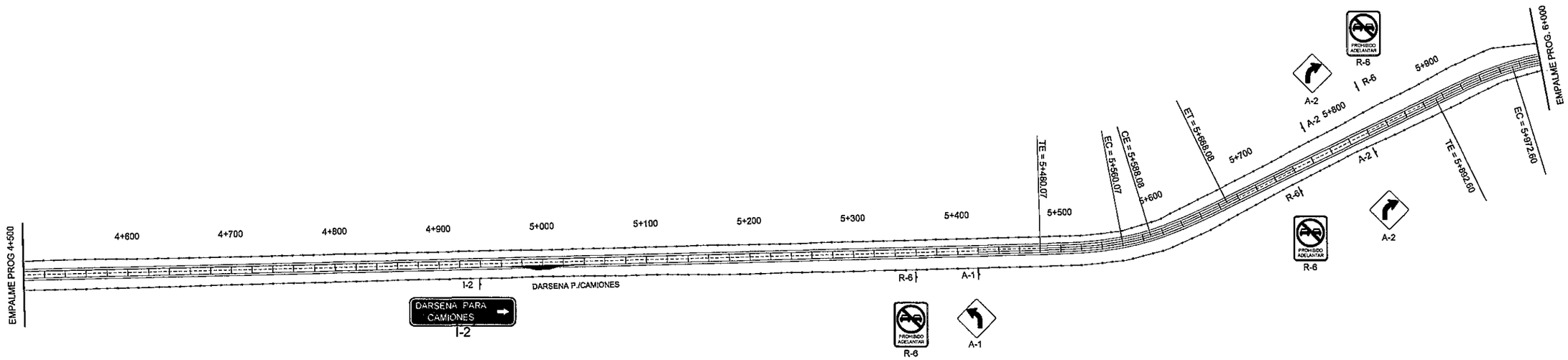
DISEÑO DE SEÑALIZACION
PROG. 0+000 A PROG 3+000

ESCALA: 1:4.000

LAMINA N°: DS - 01

MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA





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DISEÑO DE SEÑALIZACION
PROG. 3+000 A PROG 6+000

ESCALA: 1:4.000

LAMINA N°: DS - 02

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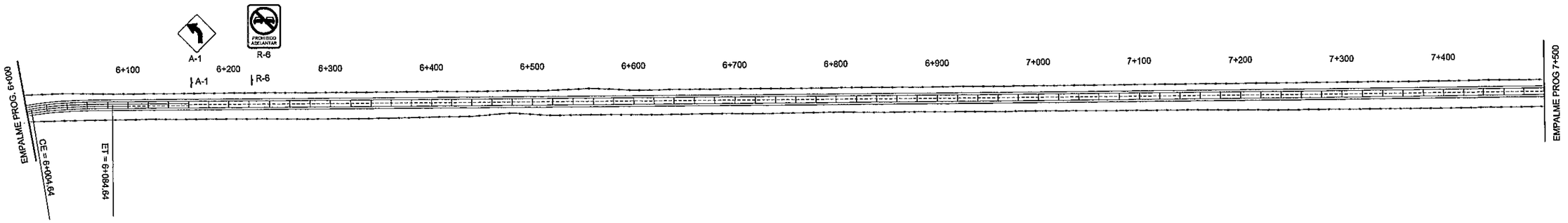

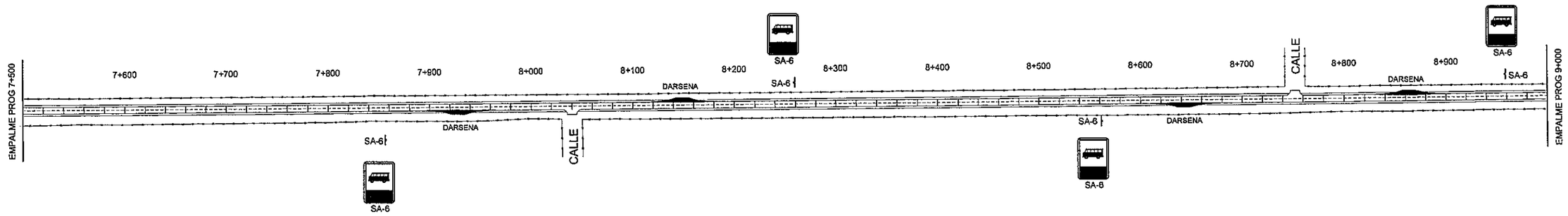

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DISEÑO DE SEÑALIZACION
PROG. 6+000 A PROG 9+000

ESCALA: 1:4.000

LAMINA N°: DS - 03

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BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
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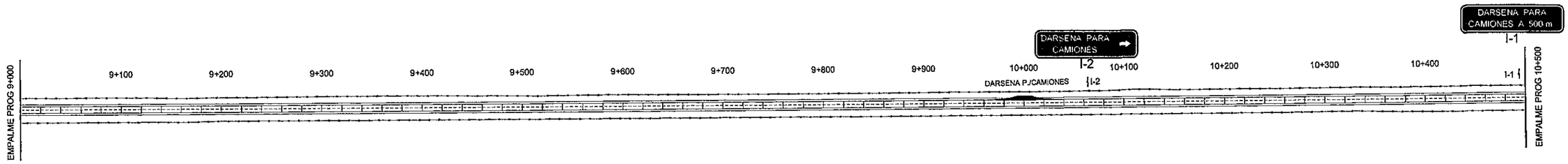

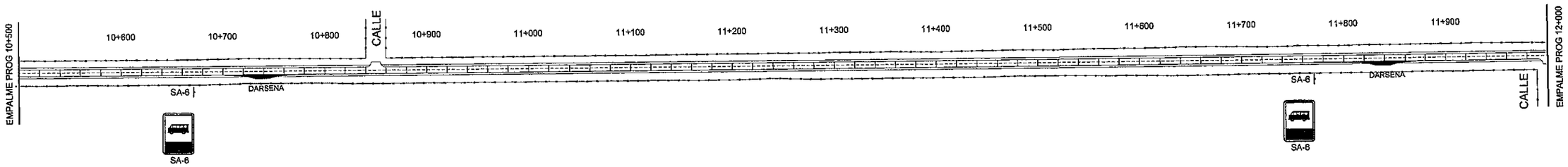

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DISEÑO DE SEÑALIZACION
PROG. 9+000 A PROG 12+000

ESCALA: 1:4.000

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ZONA DEL PROYECTO
ARGENTINA
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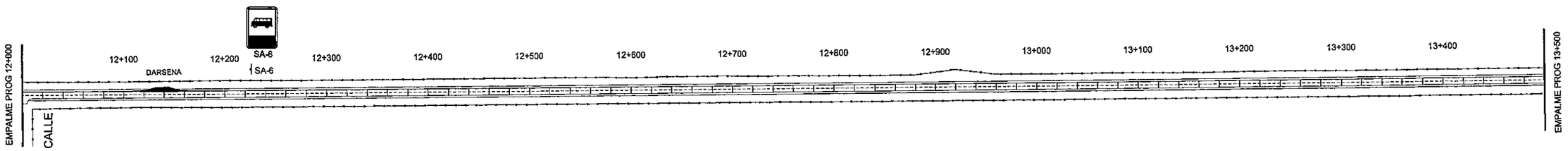

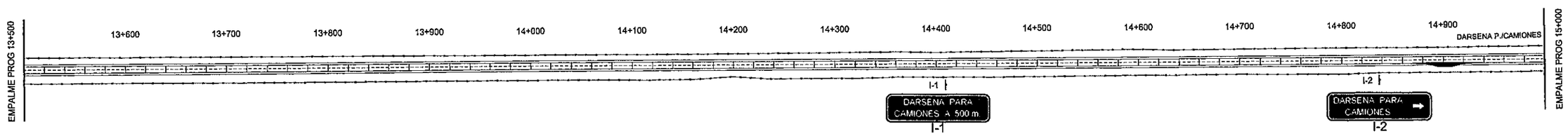

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DISEÑO DE SEÑALIZACION
PROG. 12+000 A PROG 15+000

ESCALA: 1:4.000

LAMINA Nº: DS - 05

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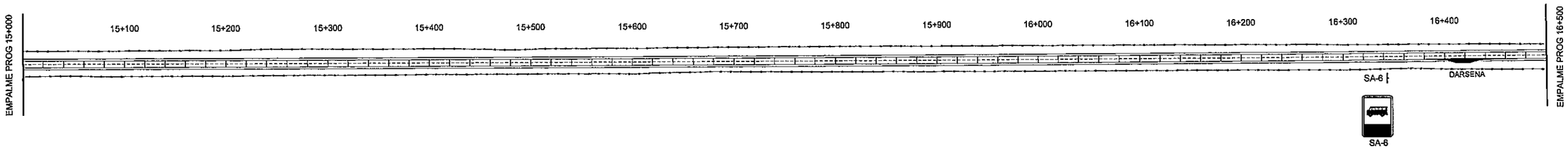
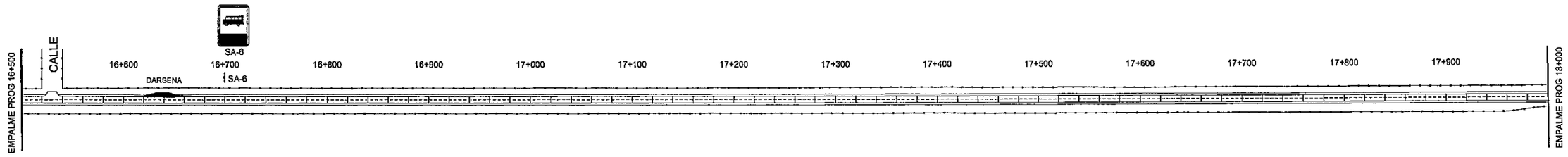
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA





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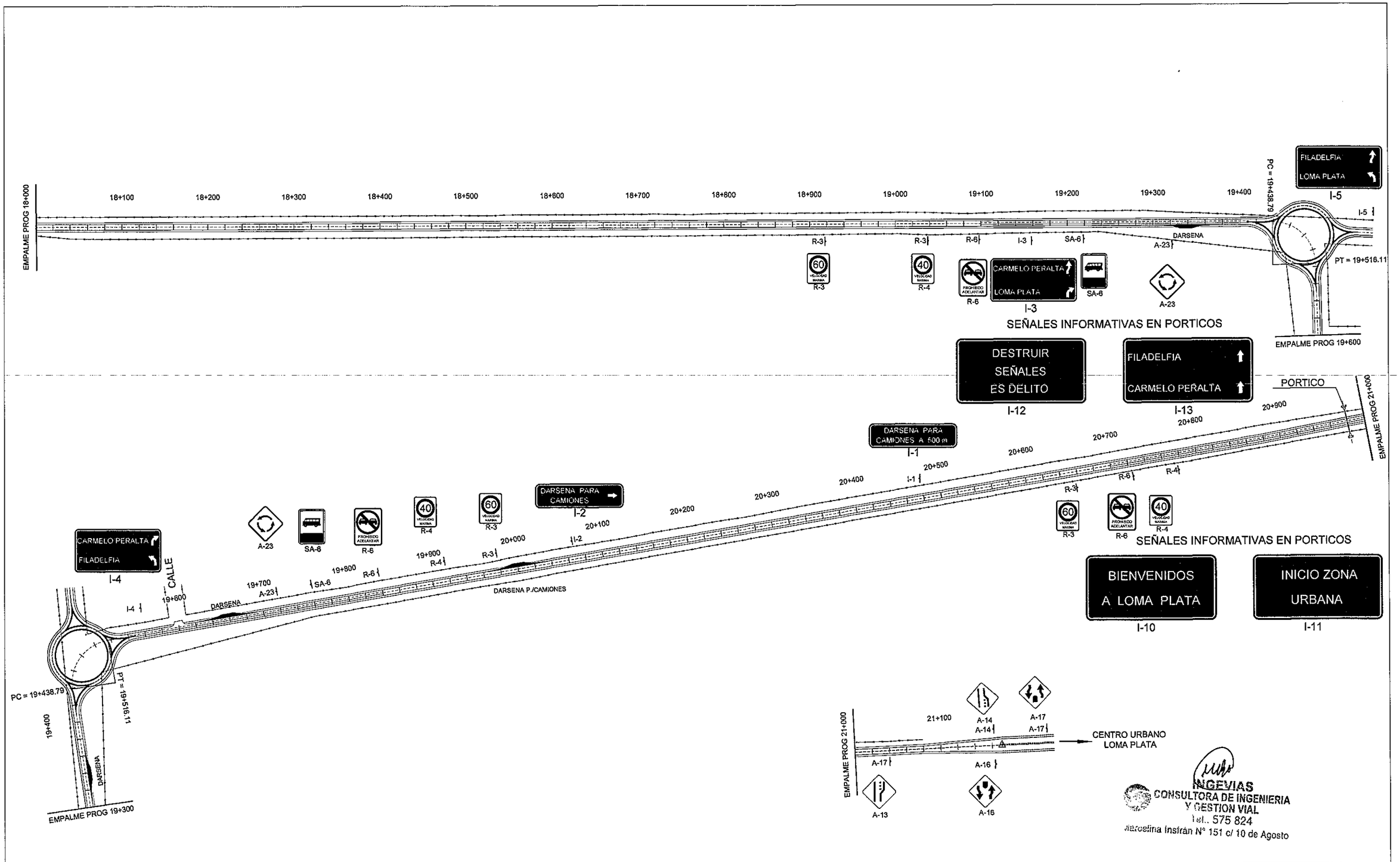
DISEÑO DE SEÑALIZACION
PROG. 15+000 A PROG 18+000

ESCALA: 1:4.000

LAMINA Nº: DS - 06

MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA



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DISEÑO DE SEÑALIZACION

PROG. 18+000 A PROG 21+171.51

ESCALA: 1:4.000

LAMINA N°: DS - 07

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ZONA DEL PROYECTO
ARGENTINA
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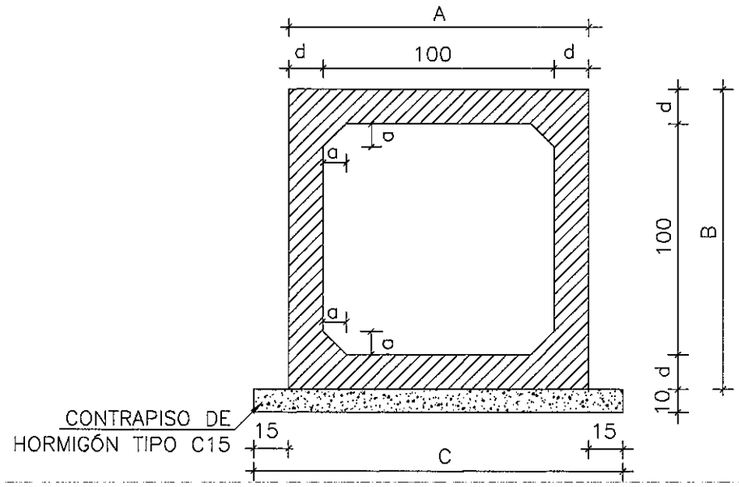
DISEÑO DE DRENAJE

ALCANTARILLA CELULAR SIMPLE DE 1.00 m. x 1.00 m.

(LOSA SUPERIOR A NIVEL DE RASANTE)

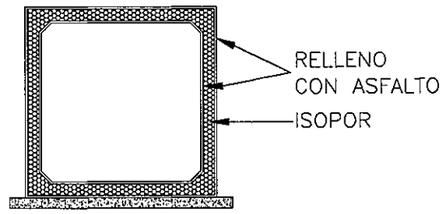
DETALLE DE ENCOFRADO



TABLAS DE DIMENSIONES Y CANTIDAD DE MATERIALES

fs ≥ MPa		0.09
MEDIDAS	UNID.	SIMPLE
A	cm.	130
B	cm.	130
C	cm.	160
a	cm.	10
b	cm.	—
d	cm.	15
CONTRAPISO	m^3	0.16
ENCOFRADO	m^2	8.97
HORMIGON	m^3	0.71

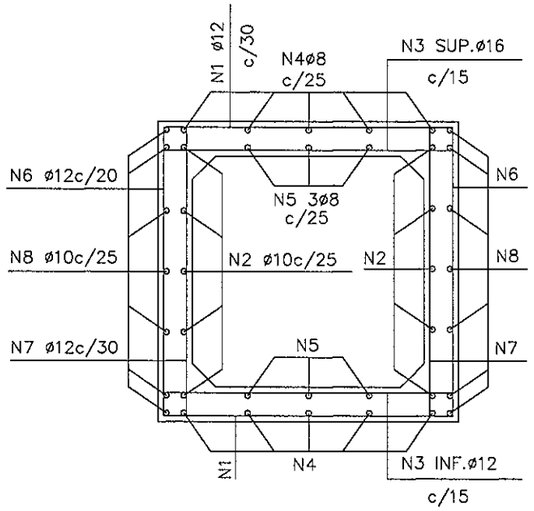
DETALLES DE LA JUNTA DE DILATACION

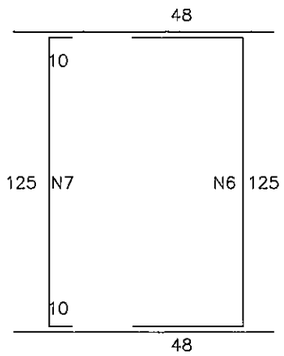


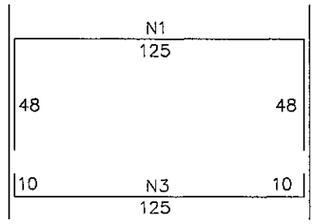
NOTA:

DESPUÉS DEL HORMIGONADO DE LA 1 a ETAPA DEBERÁN RETIRARSE LAS CHAPAS FENOLICAS DE LA JUNTA.

SECCIÓN TRANSVERSAL–DETALLE DE ARMADURAS





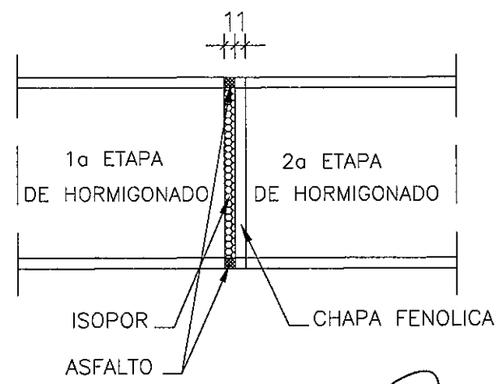


NOTAS:
LAS TABLAS DE ARMADURAS FUERON CALCULADAS CON ACERO DE fyk = 4200 kg/cm2
LOS DIAMETROS UTILIZADOS CORRESPONDEN A LOS ENCONTRADOS EN EL MERCADO LOCAL

TABLA DE ARMADURAS POR METRO DE GALERIA

0 ≤ h < 1,00 fs ≥ 0,09 Mpa				
N°	ø	C	LONG	SEP.
1	12	6	221	30
2	10	10	CORR.	25
3 SUP.	16	7	145	15
3 INF.	12	7	145	15
4	8	10	CORR.	25
5	8	6	CORR.	25
6	12	10	221	20
7	12	8	145	25
8	10	14	CORR.	25

RESUMEN		
ø	KG./m.	PESO(Kg)
8.0	0.416	7
10.0	0.624	15
12.0	0.988	57
16.0	1.570	16
	TOTAL	95 Kg.



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OBSERVACIONES:

1.- HORMIGÓN TIPO C18.-
2.-CONTRAPISO DE HORMIGÓN TIPO C15.-
3.-VEHÍCULO TIPO TB 36
4.-NOMENCLATURA: h = ALTURA DEL TERRAPLÉN SOBRE LA GALERIA.-
fs = TENSIÓN ADMISIBLE DEL SUELO BAJO LA GALERIA.-
5.-REALIZAR JUNTA DE DILATACIÓN EN ALCANTARILLAS CON LONGITUD A 40 m.

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ALCANTARILLAS CELULARES SIMPLES
1.00m. x 1.00m.
GALERIA: ENCOFRADO - ARMADURA

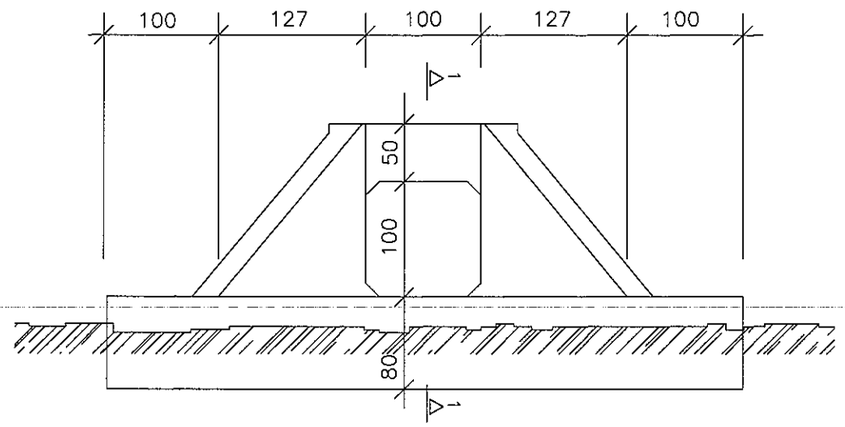
ESCALA: SIN ESCALA

LAMINA N°: DD - 01 A

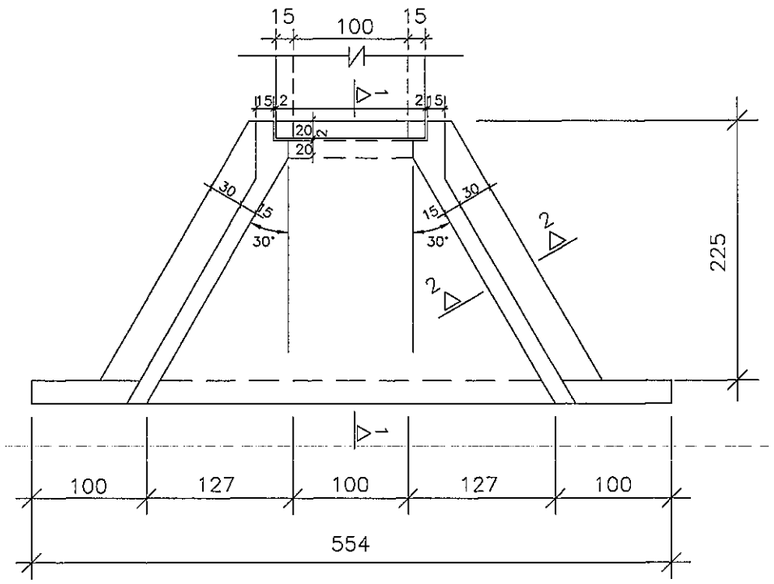
MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA

ALCANTARILLA CELULAR SIMPLE DE 1.00 m. x 1.00 m.

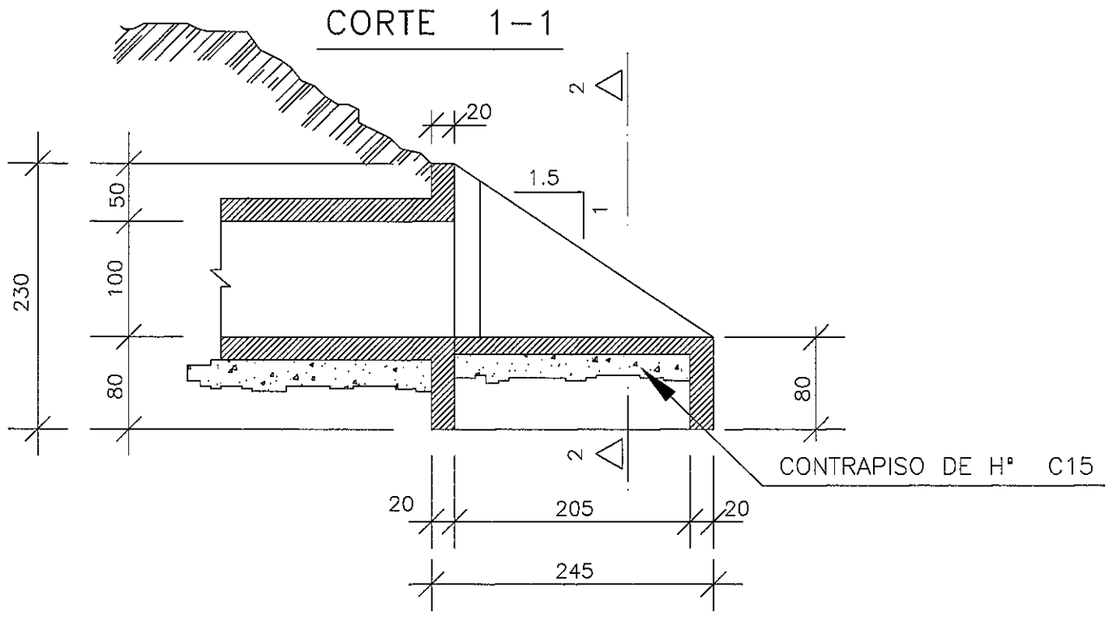
DETALLE DE VISTA FRONTAL



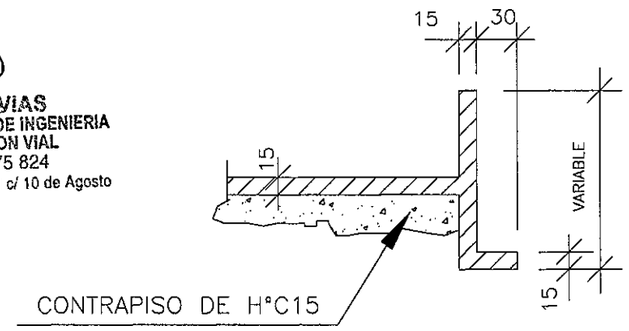
DETALLE DE VISTA EN PLANTA



CORTE 1–1



CORTE 2–2



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ALCANTARILLAS CELULARES SIMPLES
1.00m. x 1.00m.
CABECERAS: ENCOFRADO - DIMENSIONES

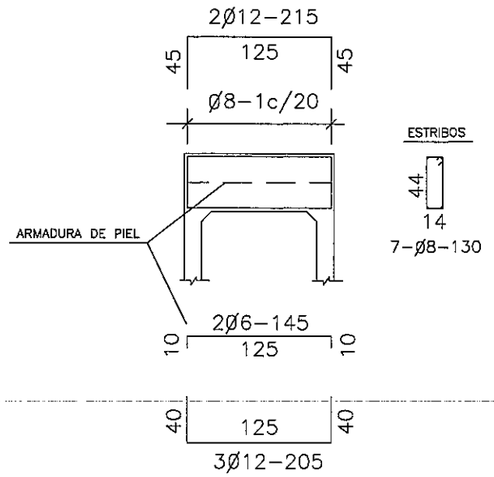
ESCALA: SIN ESCALA

LAMINA N°: DD - 01 B

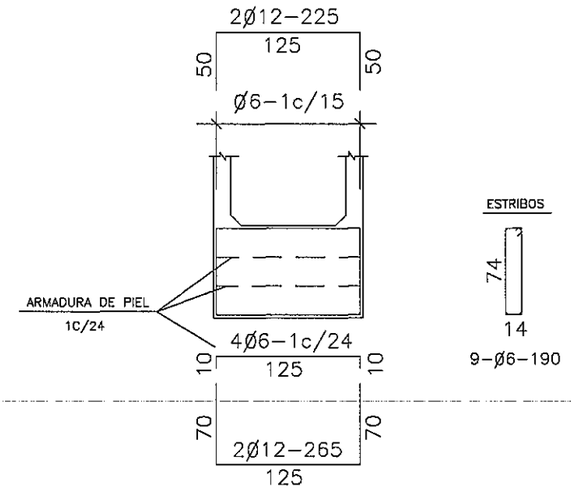
MOPC
MAPA DEL PARAGUAY
ZONA DEL PROYECTO

ALCANTARILLA CELULAR SIMPLE DE 1.00 m. x 1.00 m.

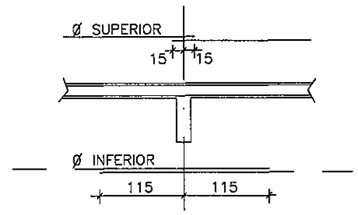
VIGA DE BORDE SUPERIOR



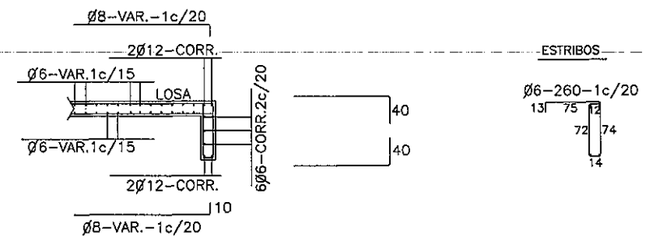
VIGA DE BORDE INFERIOR



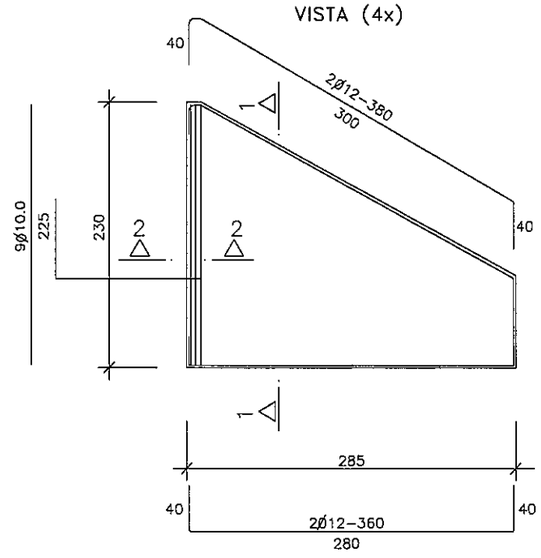
EMPALME DE LAS ALCANTARILLAS CON LAS CABECERAS (LOSA INFERIOR)



CORTE DE VIGA DE BORDE DE LA LOSA INFERIOR (2x)

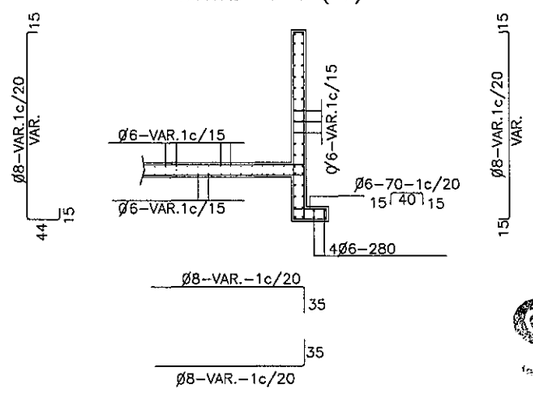


VISTA (4x)

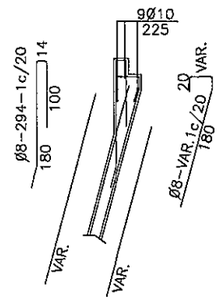


ARMADURAS DE CABECERAS

CORTE 1-1 (4x)



CORTE 2-2 (4x)



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DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

ALCANTARILLAS CELULARES SIMPLES
1.00m. x 1.00m.
CABECERAS: ARMADURAS - VIGAS DE BORDE

ESCALA: SIN ESCALA

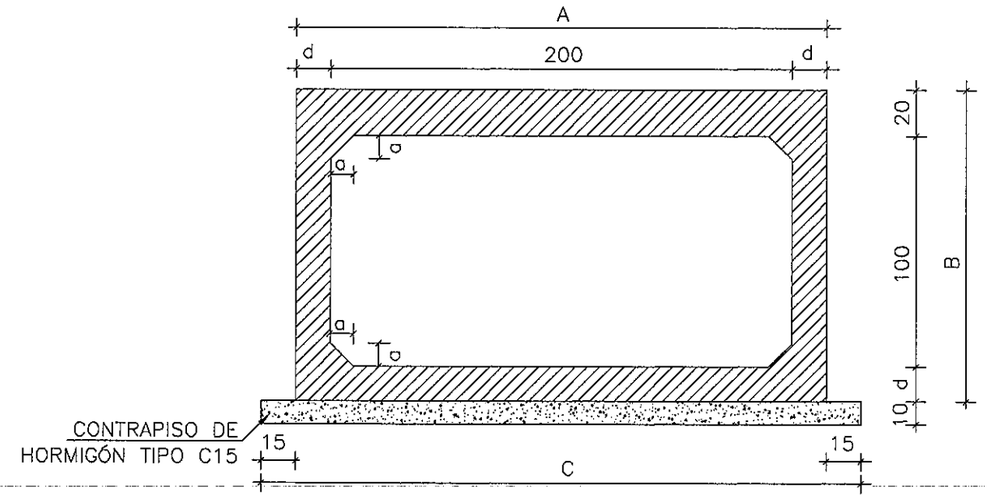
LAMINA N°: DD - 01 C

MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA

ALCANTARILLA CELULAR SIMPLE DE 1.00 m. x 2.00 m.

(LOSA SUPERIOR A NIVEL DE RASANTE)

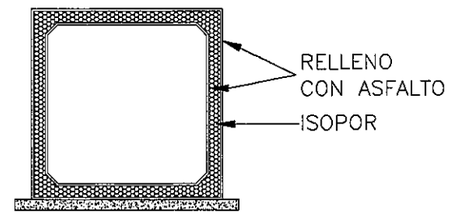
DETALLE DE ENCOFRADO



TABLAS DE DIMENSIONES Y CANTIDAD DE MATERIALES

fs ≥ MPa		0.09
MEDIDAS	UNID.	SIMPLE
A	cm.	230
B	cm.	135
C	cm.	260
a	cm.	10
b	cm.	—
d	cm.	15
CONTRAPISO	m^3	0.26
ENCOFRADO	m^2	13.07
HORMIGON	m^3	1.13

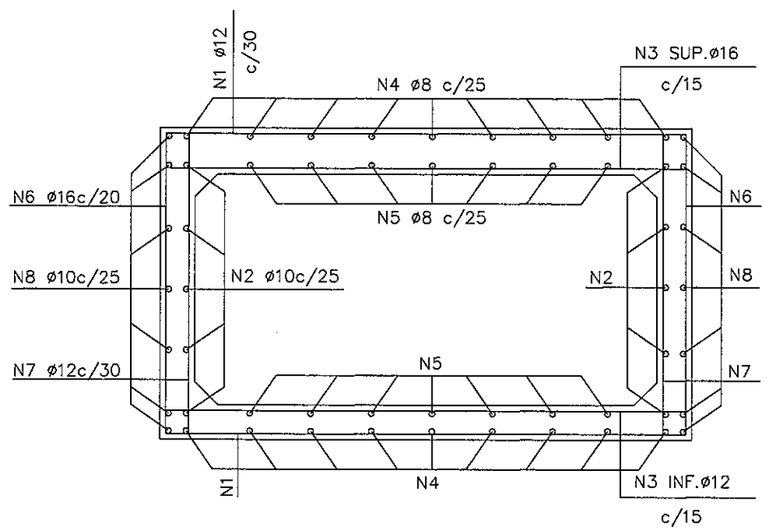
DETALLES DE LA JUNTA DE DILATACION

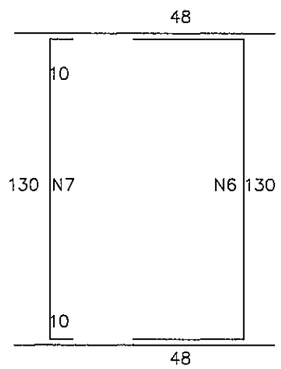


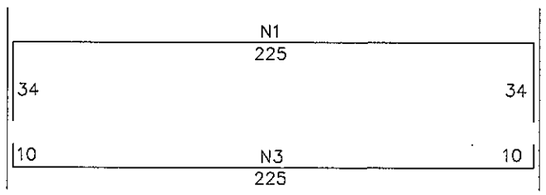
NOTA:

DESPUÉS DEL HORMIGONADO DE LA 1 a ETAPA DEBERÁN RETIRARSE LAS CHAPAS FENOLICAS DE LA JUNTA.

SECCIÓN TRANSVERSAL–DETALLE DE ARMADURAS





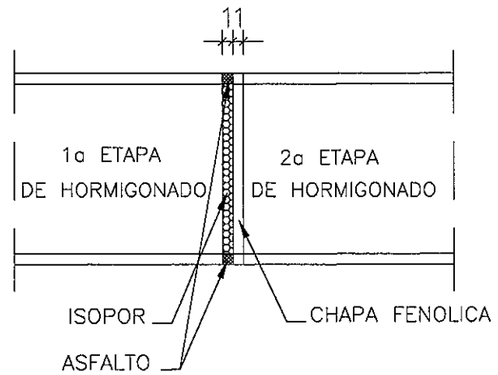


NOTAS:
LAS TABLAS DE ARMADURAS FUERON CALCULADAS CON ACERO DE fyk = 4200 kg/cm2
LOS DIAMETROS UTILIZADOS CORRESPONDEN A LOS ENCONTRADOS EN EL MERCADO LOCAL

TABLA DE ARMADURAS POR METRO DE GALERIA

0 < h < 1,00 fs ≥ 0,09 Mpa				
N°	ø	C	LONG	SEP.
1	12	6	293	30
2	10	10	CORR.	25
3 SUP.	16	7	245	15
3 INF.	12	7	245	15
4	8	18	CORR.	25
5	8	14	CORR.	25
6	16	10	226	20
7	12	8	150	25
8	10	14	CORR.	25

RESUMEN		
ø	KG./m.	PESO(Kg)
8.0	0.416	14
10.0	0.624	15
12.0	0.988	46
16.0	1.570	63
	TOTAL	138 Kg.



INGEVIAS
CONSULTORA DE INGENIERIA Y GESTION VIAL
Tel.: 575 824
Marcelina Insfran N° 151 c/ 10 de Agosto

OBSERVACIONES:

1.- HORMIGÓN TIPO C18.-
2.-CONTRAPISO DE HORMIGÓN TIPO C15.-
3.-VEHÍCULO TIPO TB 36
4.-NOMENCLATURA: h = ALTURA DEL TERRAPLÉN SOBRE LA GALERIA.-
fs = TENSIÓN ADMISIBLE DEL SUELO BAJO LA GALERIA.-
5.-REALIZAR JUNTA DE DILATACIÓN EN ALCANTARILLAS CON LONGITUD A 40 m.

REFERENCIAS

ACOMEPA
ASOCIACIÓN DE COLONIAS MENNONITAS EN EL PARAGUAY

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DIRECCION DE VIALIDAD

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DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

ALCANTARILLAS CELULARES SIMPLES
1.00 m. x 2.00 m.
GALERIA: ENCOFRADO - ARMADURA

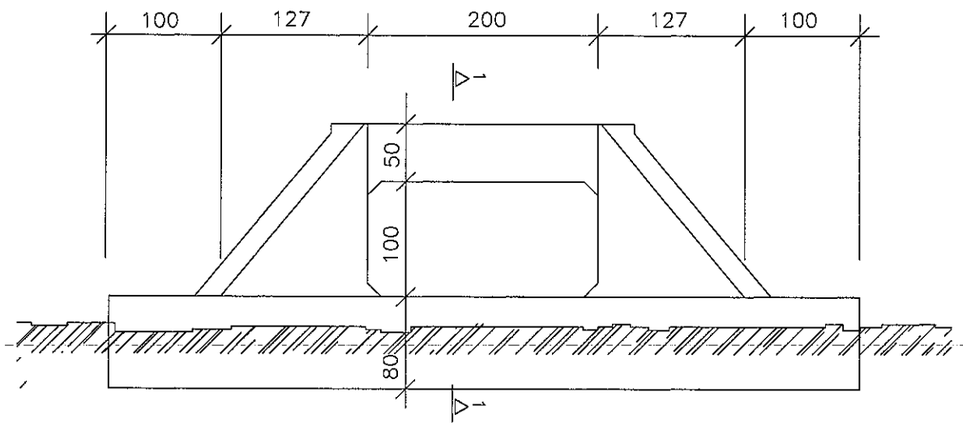
ESCALA: SIN ESCALA

LAMINA N°: DD - 02 A

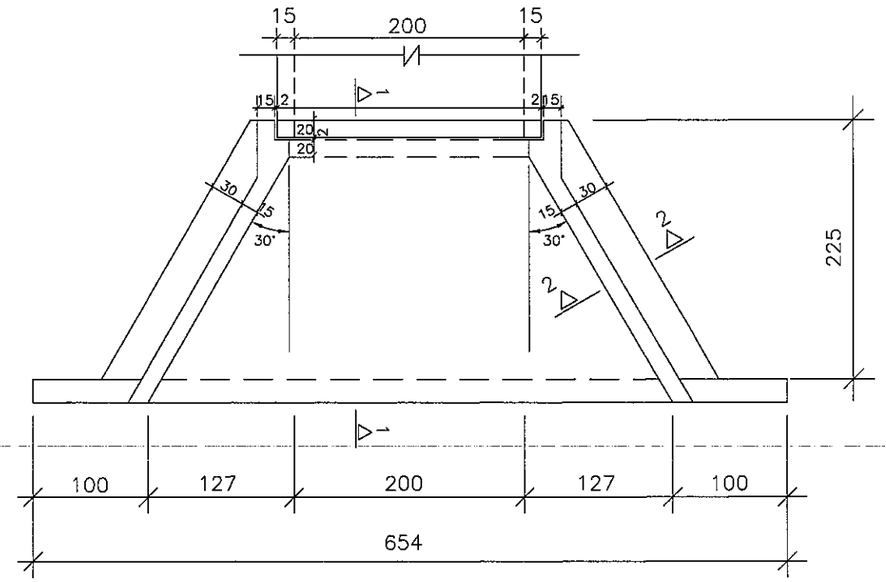
MOPC
MAPA DEL PARAGUAY

ALCANTARILLA CELULAR SIMPLE DE 1.00 m. x 2.00 m.

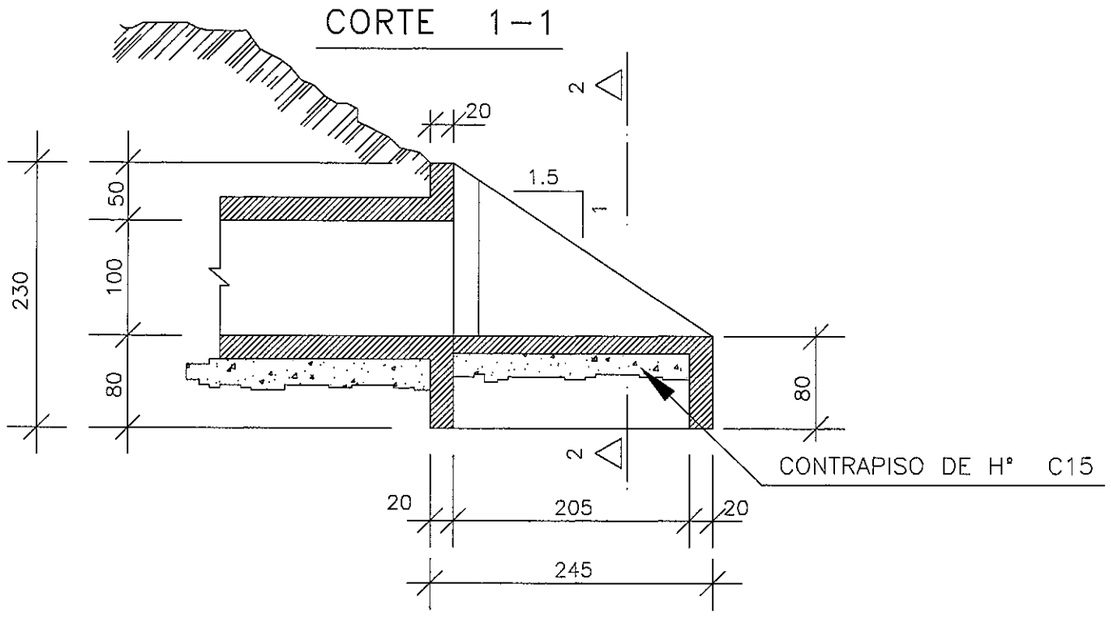
DETALLE DE VISTA FRONTAL



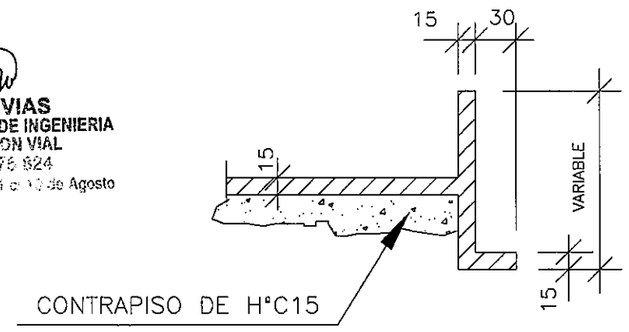
DETALLE DE VISTA EN PLANTA



CORTE 1–1



CORTE 2–2



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DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

ALCANTARILLAS CELULARES SIMPLES
1.00 m. x 2.00 m.
CABECERAS: ENCOFRADO - DIMENSIONES

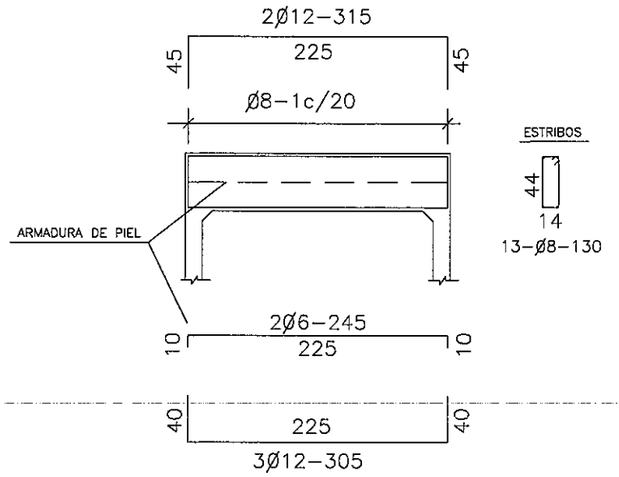
ESCALA: SIN ESCALA

LAMINA N°: DD - 02 B

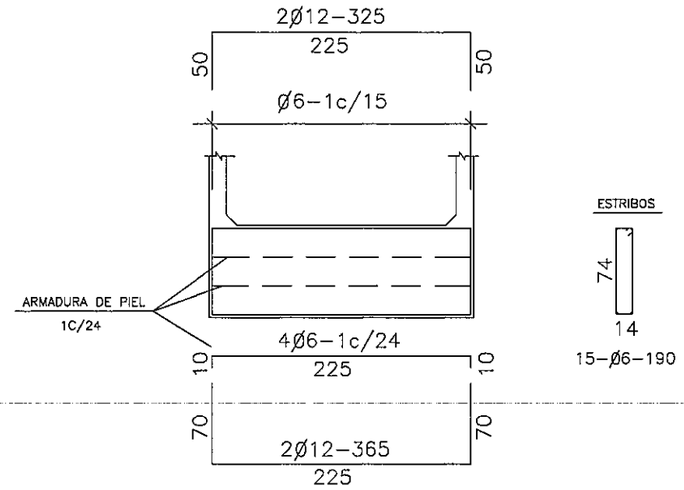
MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
URUGUAY

ALCANTARILLA CELULAR SIMPLE DE 1.00 m. x 2.00 m.

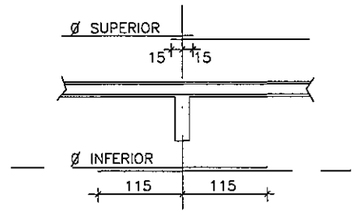
VIGA DE BORDE SUPERIOR



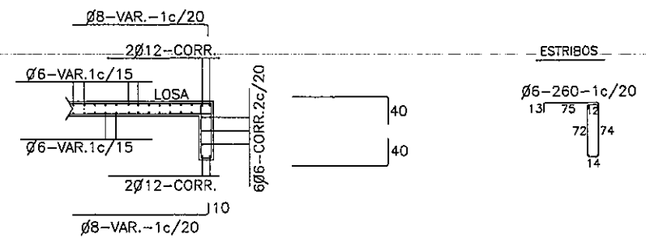
VIGA DE BORDE INFERIOR



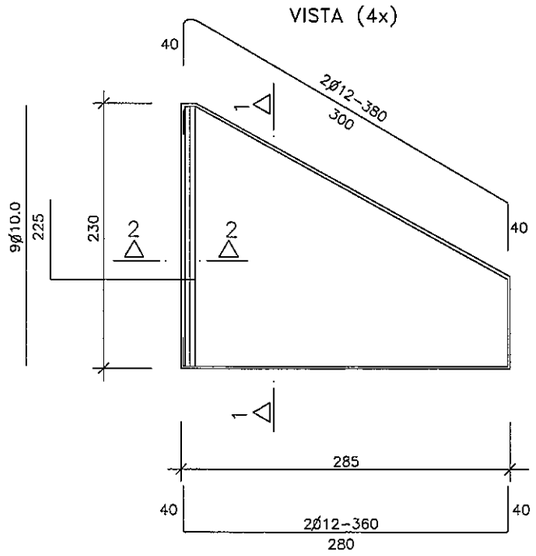
EMPALME DE LAS ALCANTARILLAS CON LAS CABECERAS (LOSA INFERIOR)



CORTE DE VIGA DE BORDE DE LA LOSA INFERIOR (2x)

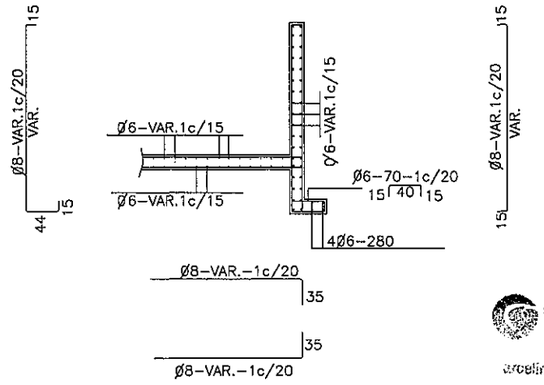


VISTA (4x)

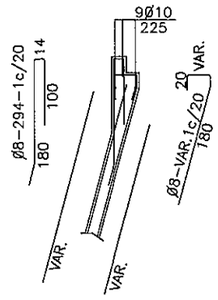


ARMADURAS DE CABECERAS

CORTE 1–1 (4x)



CORTE 2–2 (4x)



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Y GESTION VIAL
Tel. 575 824
Arcelina Insfrán N° 151 c/ 10 de Agosto

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DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

ALCANTARILLAS CELULAR SIMPLE
1.00 m. x 2.00 m.
CABECERAS: ARMADURAS - VIGAS DE BORDE

ESCALA: SIN ESCALA

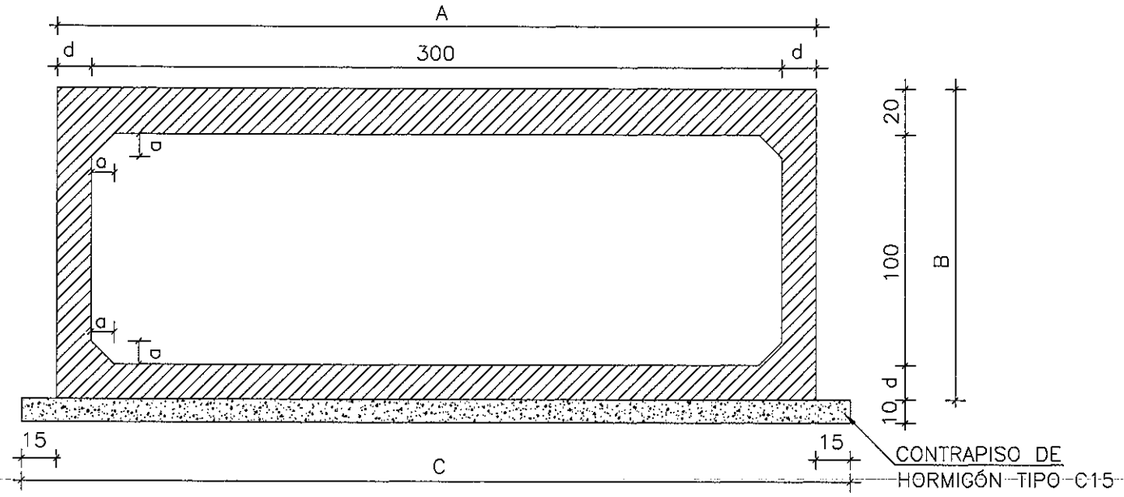
LAMINA N°: DD - 02 C

MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA

ALCANTARILLA CELULAR SIMPLE DE 1.00 m. x 3.00 m.

(LOSA SUPERIOR A NIVEL DE RASANTE)

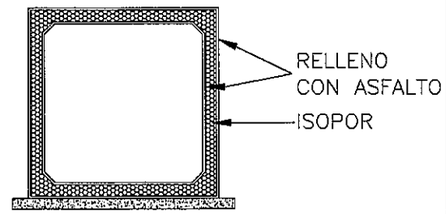
DETALLE DE ENCOFRADO



TABLAS DE DIMENSIONES Y CANTIDAD DE MATERIALES

fs ≥ MPa		0.09
MEDIDAS	UNID.	SIMPLE
A	cm.	330
B	cm.	135
C	cm.	360
a	cm.	10
b	cm.	—
d	cm.	15
CONTRAPISO	m^3	0.36
ENCOFRADO	m^2	17.07
HORMIGON	m^3	1.48

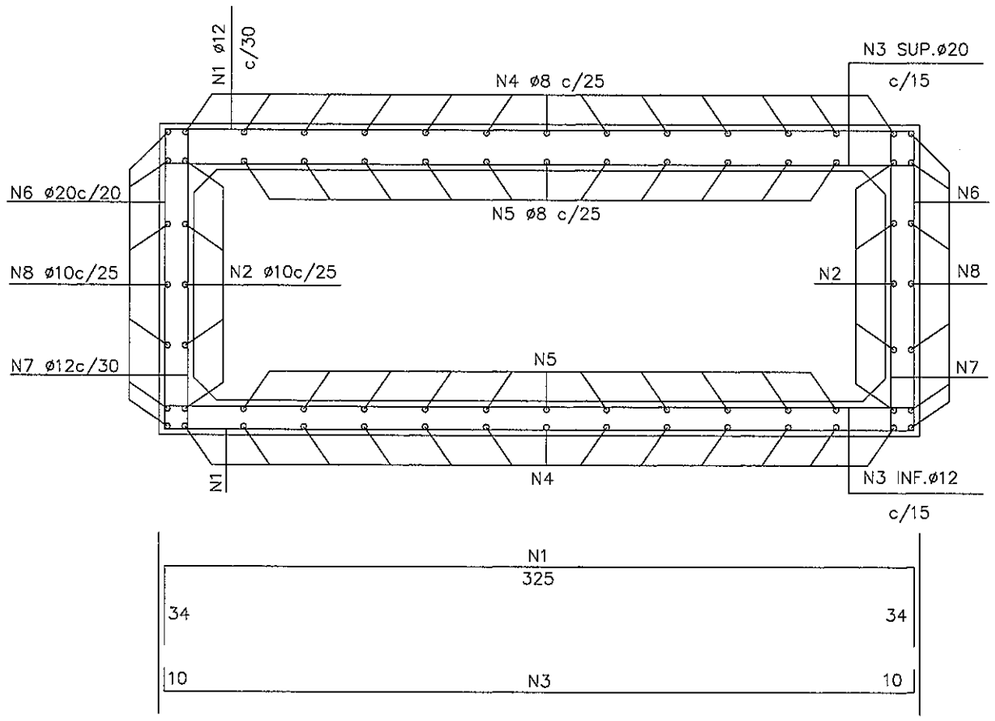
DETALLES DE LA JUNTA DE DILATACION



NOTA:

DESPUÉS DEL HORMIGONADO DE LA 1 a ETAPA DEBERÁN RETIRARSE LAS CHAPAS FENOLICAS DE LA JUNTA.

SECCIÓN TRANSVERSAL–DETALLE DE ARMADURAS



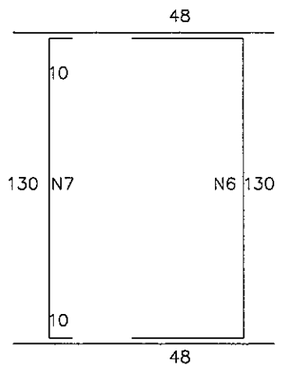


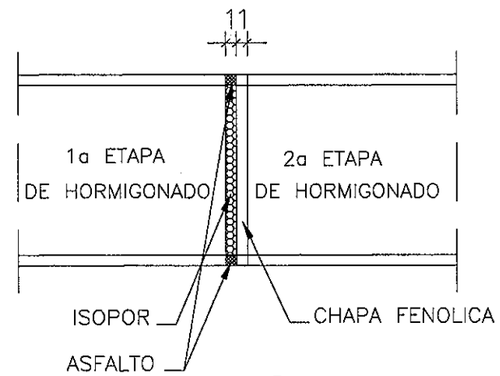
TABLA DE ARMADURAS POR METRO DE GALERIA

0 ≤ h < 1,00 fs ≥ 0,09 Mpa				
N°	ø	C	LONG	SEP.
1	12	6	393	30
2	10	10	CORR.	25
3 SUP.	20	7	345	15
3 INF.	12	7	345	15
4	8	26	CORR.	25
5	8	22	CORR.	25
6	20	10	226	20
7	12	8	150	25
8	10	14	CORR.	25

RESUMEN

ø	KG./m.	PESO(Kg)
8.0	0.416	20
10.0	0.624	15
12.0	0.988	59
20.0	2.466	116
	TOTAL	210 Kg.

NOTAS:
LAS TABLAS DE ARMADURAS FUERON CALCULADAS CON ACERO DE fyk = 4200 kg/cm2
LOS DIAMETROS UTILIZADOS CORRESPONDEN A LOS ENCONTRADOS EN EL MERCADO LOCAL



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CONSULTORA DE INGENIERIA Y GESTION VIAL
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

OBSERVACIONES:

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2.-CONTRAPISO DE HORMIGÓN TIPO C15.-
3.-VEHÍCULO TIPO TB 36
4.-NOMENCLATURA: h = ALTURA DEL TERRAPLÉN SOBRE LA GALERIA.-
fs = TENSIÓN ADMISIBLE DEL SUELO BAJO LA GALERIA.-
5.-REALIZAR JUNTA DE DILATACIÓN EN ALCANTARILLAS CON LONGITUD A 40 m.

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DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

ALCANTARILLAS CELULARES SIMPLES
1.00 m. x 3.00 m.
GALERIA: ENCOFRADO - ARMADURA

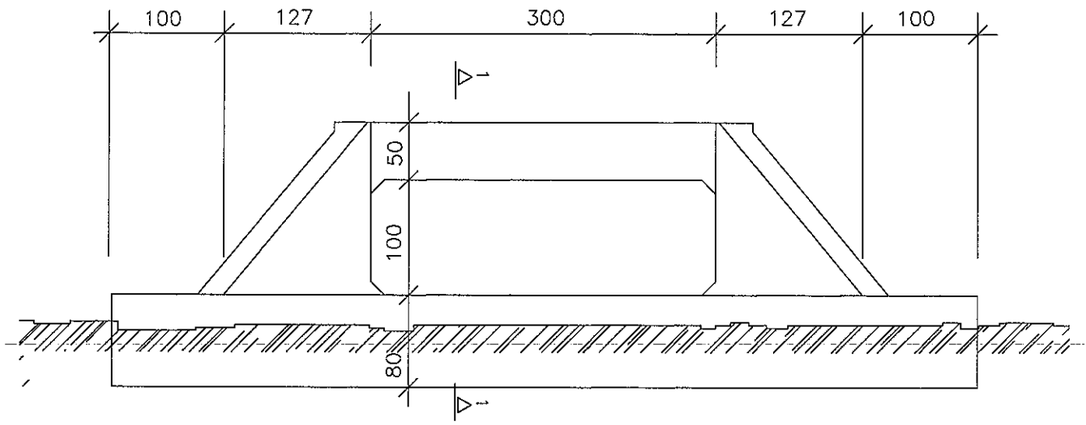
ESCALA: SIN ESCALA

LAMINA N°: DD - 03 A

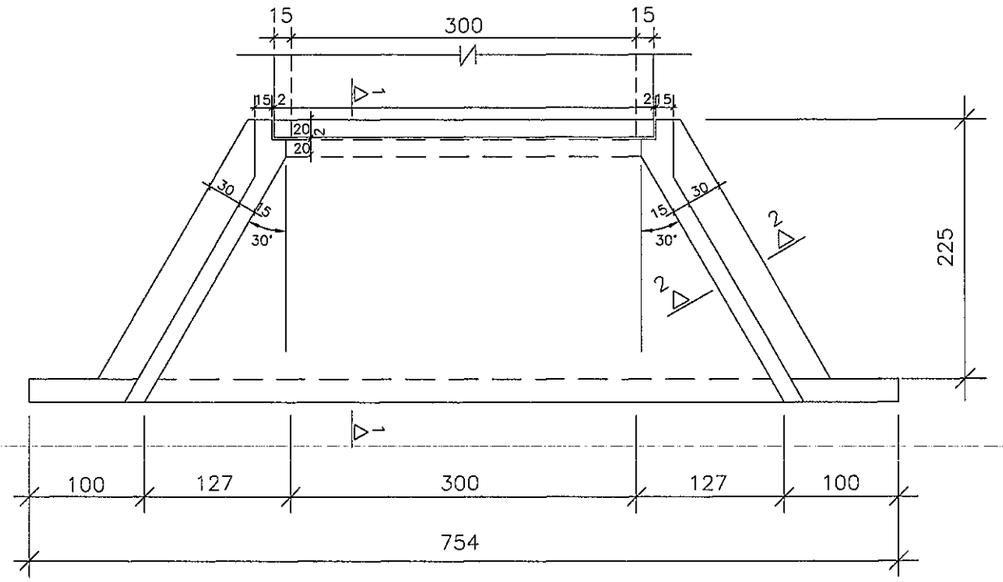
MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA

ALCANTARILLA CELULAR SIMPLE DE 1.00 m. x 3.00 m.

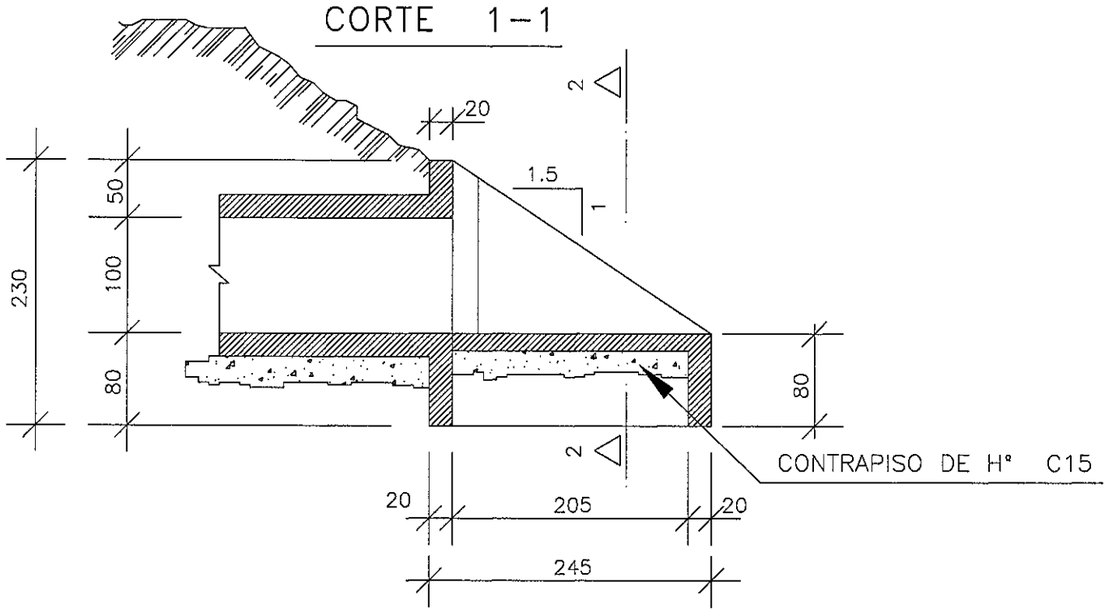
DETALLE DE VISTA FRONTAL



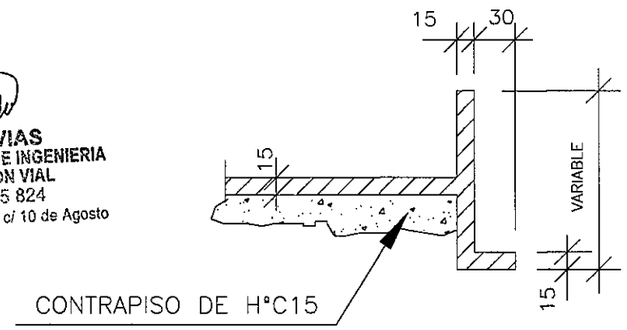
DETALLE DE VISTA EN PLANTA



CORTE 1-1



CORTE 2-2



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DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

ALCANTARILLAS CELULARES SIMPLES
1.00 m. x 3.00 m.
CABECERAS: ENCOFRADO - DIMENSIONES

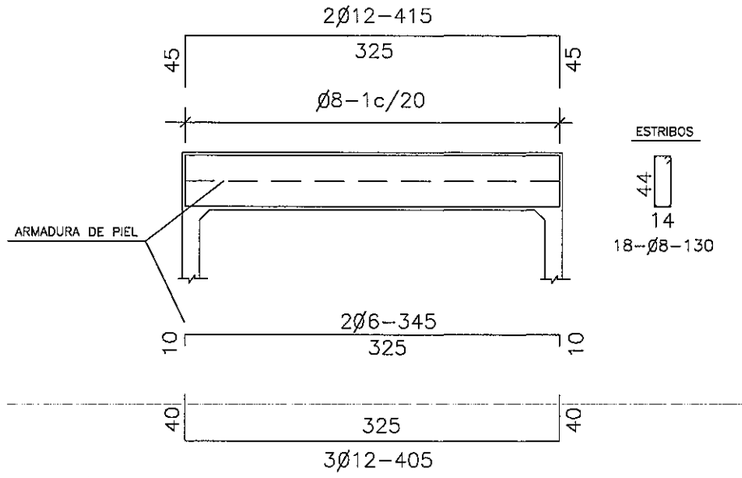
ESCALA: SIN ESCALA

LAMINA N°: DD - 03 B

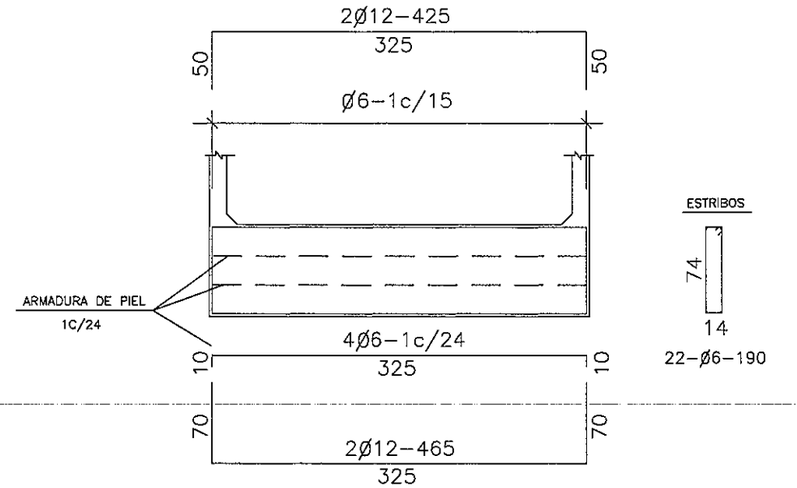
MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA

ALCANTARILLA CELULAR SIMPLE DE 1.00 m. x 3.00 m.

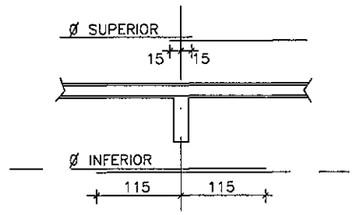
VIGA DE BORDE SUPERIOR



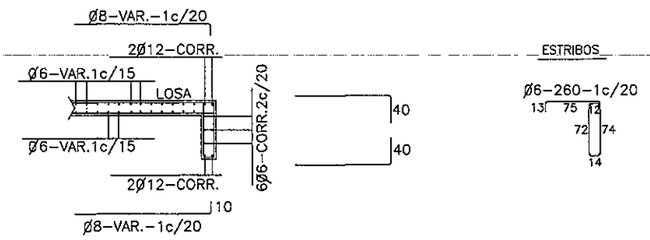
VIGA DE BORDE INFERIOR



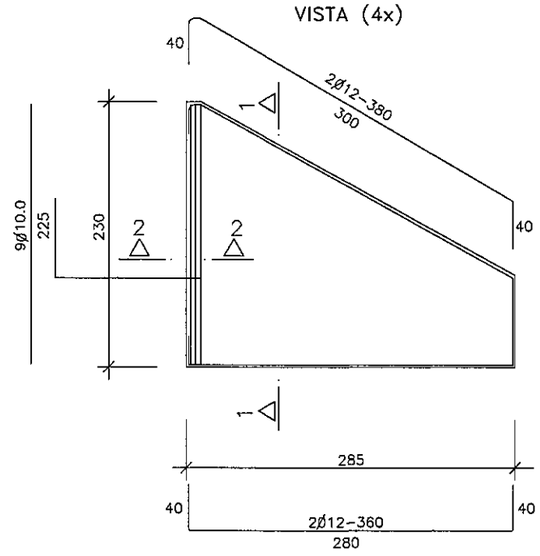
EMPALME DE LAS ALCANTARILLAS CON LAS CABECERAS (LOSA INFERIOR)



CORTE DE VIGA DE BORDE DE LA LOSA INFERIOR (2x)

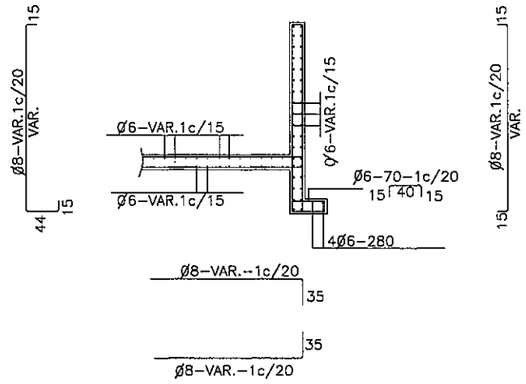


VISTA (4x)



ARMADURAS DE CABECERAS

CORTE 1–1 (4x)



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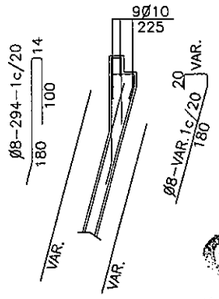

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Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

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ALCANTARILLAS CELULAR SIMPLE
1.00 m. x 3.00 m.
CABECERAS: ARMADURAS - VIGAS DE BORDE

ESCALA: SIN ESCALA

LAMINA Nº : DD - 03 C

MOPC
MAPA DEL PARAGUAY

ALCANTARILLAS CELULARES

TABLAS DE DIMENSIONES Y CANTIDAD DE MATERIALES

ALCANTARILLA CELULAR DE 1.50 x 1.50

fs ≥ MPa		0.09	0.10	0.10
MEDIDAS	UNID.	SIMPLE	DOBLE	TRIPLE
A	cm.	180	345	510
B	cm.	180	180	180
C	cm.	210	375	540
a	cm.	10	10	10
b	cm.	—	30	30
d	cm.	15	15	15
CONTRAPISO	m^3	0.21	0.38	0.54
ENCOFRADO	m^2	8.10	12.20	16.50
HORMIGON	m^3	1.01	1.79	2.57

ALCANTARILLA CELULAR DE 2.50 x 2.50

fs ≥ MPa		0.10	0.21	0.21
MEDIDAS	UNID.	SIMPLE	DOBLE	TRIPLE
A	cm.	290	545	810
B	cm.	290	280	280
C	cm.	320	575	840
a	cm.	15	15	15
b	cm.	—	45	45
d	cm.	20	15	15
CONTRAPISO	m^3	0.32	0.58	0.84
ENCOFRADO	m^2	13.20	20.00	27.20
HORMIGON	m^3	2.21	2.94	4.25

ALCANTARILLA CELULAR DE 2.00 x 2.00

fs ≥ MPa		0.09	0.13	0.13
MEDIDAS	UNID.	SIMPLE	DOBLE	TRIPLE
A	cm.	230	445	660
B	cm.	230	230	230
C	cm.	260	475	690
a	cm.	10	10	10
b	cm.	—	30	30
d	cm.	15	15	15
CONTRAPISO	m^3	0.26	0.48	0.69
ENCOFRADO	m^2	10.60	16.60	22.00
HORMIGON	m^3	1.31	2.32	3.32

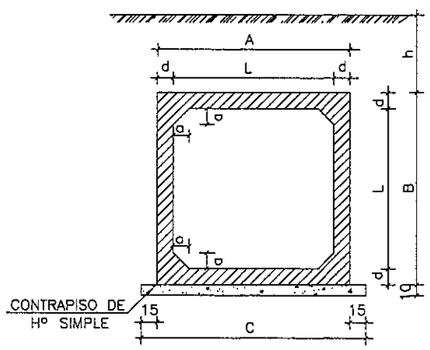
ALCANTARILLA CELULAR DE 3.00 x 3.00

fs ≥ MPa		0.12	0.21	0.21
MEDIDAS	UNID.	SIMPLE	DOBLE	TRIPLE
A	cm.	350	660	980
B	cm.	350	340	340
C	cm.	380	690	1010
a	cm.	15	15	15
b	cm.	—	45	45
d	cm.	25	20	20
CONTRAPISO	m^3	0.38	0.69	1.01
ENCOFRADO	m^2	15.90	24.20	32.90
HORMIGON	m^3	3.30	4.62	6.64

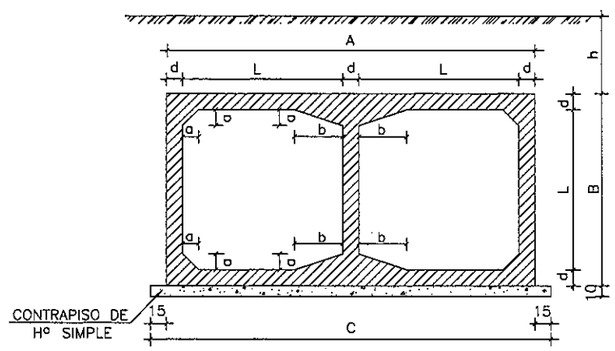
DETALLE DE ENCOFRADOS

ESC. 1:25

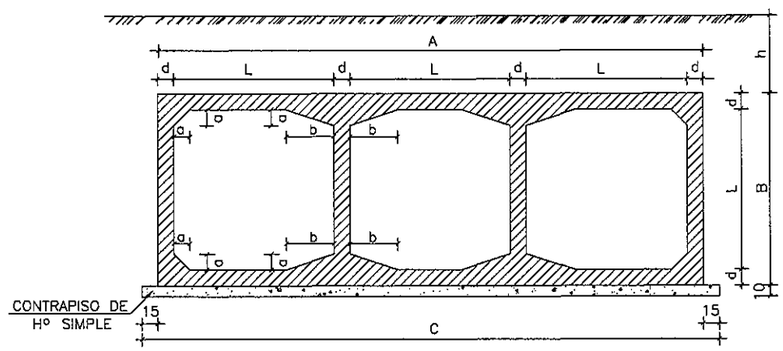
ALCANTARILLA SIMPLE



ALCANTARILLA DOBLE



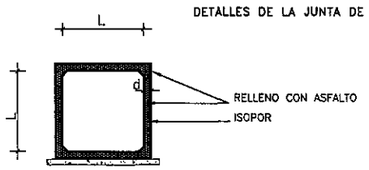
ALCANTARILLA TRIPLE



OBSERVACIONES:

1– HORMIGON fck ≥ 15 MPa
2– CONTRAPISO DE HORMIGON SIMPLE fck ≥ 9 MPa
3– VEHICULO TIPO TB 36
4– NOMENCLATURA: h = ALTURA DEL TERRAPLEN SOBRE LA GALERIA
fs = TENSION ADMISIBLE DEL SUELO BAJO LA GALERIA
5– REALIZAR JUNTA DE DILATACION EN ALCANTARILLAS CON LONGITUD MAYOR A 40 m.

DETALLES DE LA JUNTA DE DILATACION



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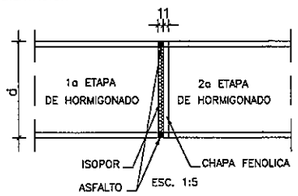

ESC. 1:5

NOTA:

DESPUES DEL HORMIGONADO DE LA 1a ETAPA DEBERAN RETIRARSE LAS CHAPAS FENOLICAS DE LA JUNTA.

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ALCANTARILLAS CELULAR SIMPLE
1.00 m. x 3.00 m.
CABECERAS: ARMADURAS - VIGAS DE BORDE

ESCALA: SIN ESCALA

LAMINA Nº: DD - 04

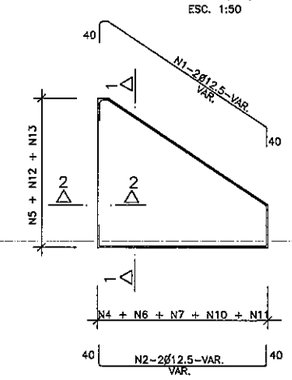
MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
URUGUAY

RESUMEN DE LAS ARMADURAS PARA DOS CABECERAS

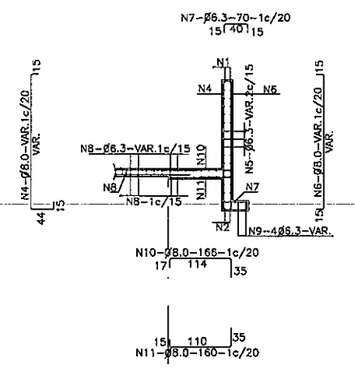
ø	1.50 x 1.50			2.00 x 2.00		
TIPO	SIMPLE	DOBLE	TRIPLE	SIMPLE	DOBLE	TRIPLE
6.3	492	545	749	531	701	865
8.0	15	96	46	420	450	514
10.0	95	111	161	115	122	172
12.5	161	220	274	167	281	368
16.0	—	—	—	22	—	—
20.0	—	—	—	—	—	—
TOTAL	763 Kg	972 Kg	1.229 Kg	1.275 Kg	1.554 Kg	1.919 Kg

ARMADURAS DE CABECERAS – ALCANTARILLA CELULAR DE 1.50 x 1.50

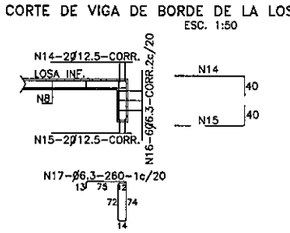
VISTA (4x)
ESC. 1:50

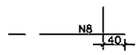


CORTE 1–1 (4x)
ESC. 1:50

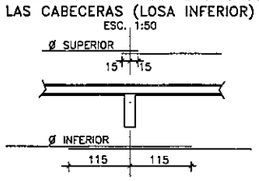


CORTE DE VIGA DE BORDE DE LA LOSA INFERIOR (2x)
ESC. 1:50

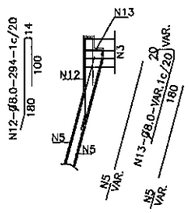




EMPALME DE LAS ALCANTARILLAS CON LAS CABECERAS (LOSA INFERIOR)
ESC. 1:50



CORTE 2–2 (4x)
ESC. 1:50



NOTAS

1– LA CANTIDAD DE ARMADURAS SERA DETERMINADA POR LAS MEDIDAS REALES DEL ENCOFRADO PARA CADA TIPO DE ALCANTARILLA

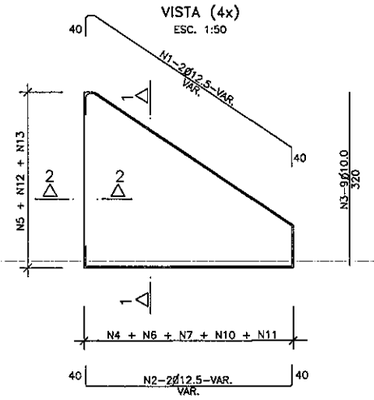
2– EN LA TABLA ESTAN COMPUTADAS AMBAS CABECERAS

TABLA DE ARMADURAS PARA CABECERAS DE ALCANTARILLA CELULAR – 1.50x1.50

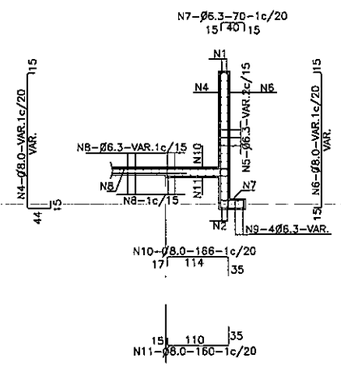
No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ø	12.5	12.5	10.0	8.0	6.3	8.0	6.3	6.3	8.0	8.0	8.0	8.0	8.0	12.5	12.5	6.3	6.3
C	8	8	36	—	—	—	—	—	—	—	—	—	—	4	4	12	—
LONG.	482	350	270	VAR.	VAR.	VAR.	70	VAR.	350	166	160	294	VAR.	CORR.	CORR.	CORR.	260

ARMADURAS DE CABECERAS – ALCANTARILLA CELULAR DE 2.00 x 2.00

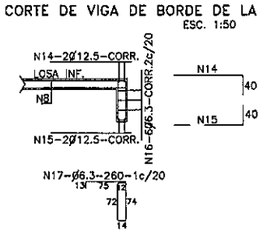
VISTA (4x)
ESC. 1:50

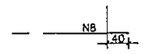


CORTE 1–1 (4x)
ESC. 1:50

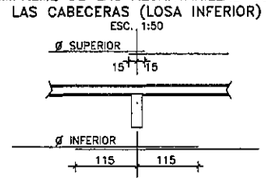


CORTE DE VIGA DE BORDE DE LA LOSA INFERIOR (2x)
ESC. 1:50

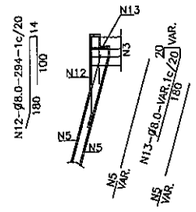




EMPALME DE LAS ALCANTARILLAS CON LAS CABECERAS (LOSA INFERIOR)
ESC. 1:50



CORTE 2–2 (4x)
ESC. 1:50



NOTAS

1– LA CANTIDAD DE ARMADURAS SERA DETERMINADA POR LAS MEDIDAS REALES DEL ENCOFRADO PARA CADA TIPO DE ALCANTARILLA

2– EN LA TABLA ESTAN COMPUTADAS AMBAS CABECERAS

TABLA DE ARMADURAS PARA CABECERAS DE ALCANTARILLA CELULAR – 2.00x2.00

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ø	12.5	12.5	10.0	8.0	6.3	8.0	6.3	6.3	6.3	8.0	8.0	8.0	8.0	12.5	12.5	6.3	6.3
C	8	8	36	—	—	—	—	—	16	—	—	—	—	4	4	12	—
LONG.	VAR.	VAR.	320	VAR.	VAR.	VAR.	70	VAR.	VAR.	166	160	294	VAR.	CORR.	CORR.	CORR.	260

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ALCANTARILLAS CELULARES - ARMADURAS
CABECERAS NORMALES - SECCIONES: 1.50m Y 2.00m

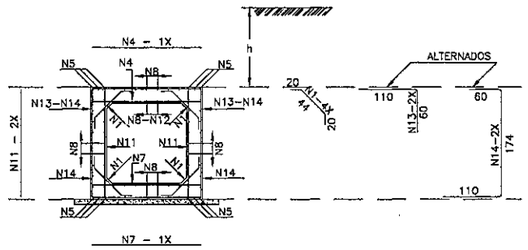
ESCALA: SIN ESCALA

LAMINA N°: DD - 05

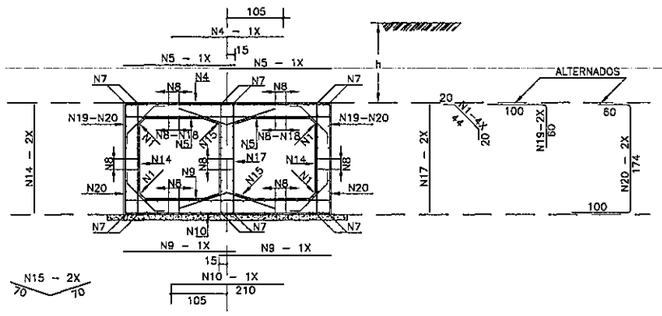
MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA

ALCANTARILLAS CELULARES DE 1.50 x 1.50

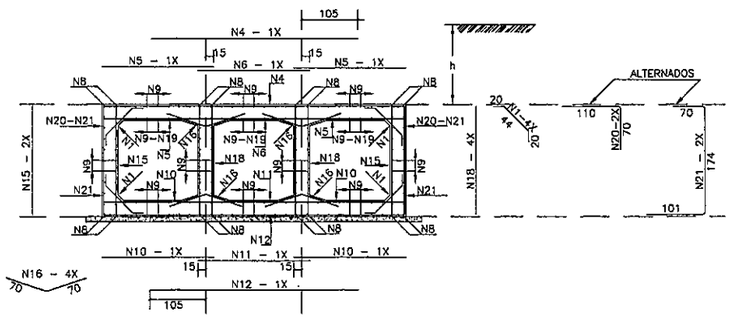
SECCION TRANSVERSAL SIMPLE



SECCION TRANSVERSAL DOBLE



SECCION TRANSVERSAL TRIPLE



TABLAS DE ARMADURAS POR METRO DE GALERIA

$\bar{f}s > 0.09$ MPa				
No.	Ø	C	LONG.	SEP.
1	6.3	20	84	c/20cm
2	—	—	—	—
3	—	—	—	—
4	12.5	6	175	c/16cm
5	12.5	12	CORR.	—
6	—	—	—	—
7	12.5	6	175	c/16cm
8	6.3	48	CORR.	c/20cm
9	—	—	—	—
10	—	—	—	—
11	6.3	10	175	c/20cm
12	10.0	7	CORR.	c/20cm
13	12.5	8	170	c/24cm
14	12.5	8	344	c/24cm

RESUMEN		
Ø	Kg/m	PESO(Kg)
6.3	0.252	22
10.0	0.624	5
12.5	0.988	75
TOTAL		102 Kg

$\bar{f}s > 0.13$ MPa				
No.	Ø	C	LONG.	SEP.
1	6.3	20	84	c/20cm
2	—	—	—	—
3	—	—	—	—
4	12.5	8	210	c/12cm
5	10.0	17	180	c/12cm
6	—	—	—	—
7	12.5	12	CORR.	—
8	6.3	84	CORR.	c/20cm
9	10.0	13	180	c/15cm
10	10.0	5	210	c/20cm
11	—	—	—	—
12	—	—	—	—
13	—	—	—	—
14	6.3	13	175	c/15cm
15	6.3	10	140	c/20cm
16	—	—	—	—
17	6.3	10	175	c/20cm
18	10.0	16	CORR.	c/18cm
19	12.5	10	160	c/20cm
20	12.5	10	334	c/20cm

RESUMEN		
Ø	Kg/m	PESO(Kg)
6.3	0.252	40
10.0	0.624	51
12.5	0.988	79
TOTAL		170 Kg

$\bar{f}s > 0.12$ MPa				
No.	Ø	C	LONG.	SEP.
1	6.3	20	84	c/20cm
2	—	—	—	—
3	—	—	—	—
4	12.5	7	375	c/15cm
5	12.5	10	180	c/20cm
6	12.5	5	180	c/20cm
7	—	—	—	—
8	12.5	16	CORR.	—
9	6.3	115	CORR.	c/20cm
10	8.0	20	180	c/10cm
11	8.0	9	180	c/11cm
12	8.0	8	375	c/13cm
13	—	—	—	—
14	—	—	—	—
15	6.3	13	175	c/15cm
16	6.3	20	140	c/20cm
17	—	—	—	—
18	6.3	27	175	c/15cm
19	8.0	33	CORR.	c/13cm
20	12.5	10	180	c/20cm
21	12.5	10	345	c/20cm

RESUMEN		
Ø	Kg/m	PESO(Kg)
6.3	0.252	61
8.0	0.393	47
12.5	0.988	122
TOTAL		230 Kg

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ALCANTARILLAS CELULARES - ARMADURAS
SECCION: 1.50 x 1.50 m

ESCALA: SIN ESCALA

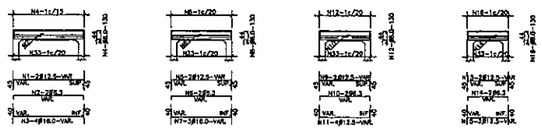
LAMINA N°: DD - 06

MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA

ALCANTARILLA CELULAR SIMPLE

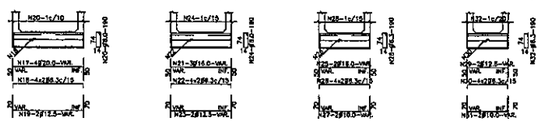
VIGAS DE BORDE DE LA LOSA SUPERIOR

L=300 (2x) L=250 (2x) L=200 (2x) L=150 (2x)



VIGAS DE BORDE DE LA LOSA INFERIOR

L=300 (2x) L=250 (2x) L=200 (2x) L=150 (2x)



MENSULA
VISTA

VIGA DE BORDE SUPERIOR
CORTE

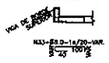


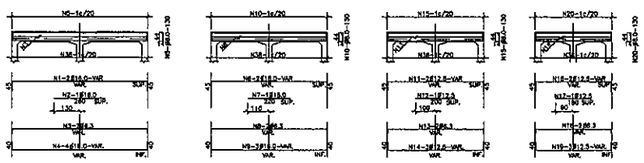
TABLA DE ARMADURAS PARA VIGAS DE BORDE DE LOSA SUPERIOR E INFERIOR – CELULAR SIMPLE

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Ø	12.5	6.3	16.0	8.0	12.5	6.3	16.0	8.0	12.5	6.3	12.5	8.0	12.5	6.3	12.5	8.0	20.0	6.3	12.5	8.0	16.0	6.3	12.5	8.0	16.0	6.3	10.0	6.3	12.5	6.3	10.0	6.3	8.0
C	4	4	8	—	4	4	6	—	4	4	8	—	4	4	6	—	8	16	4	—	6	16	4	—	4	16	4	—	4	16	4	—	—
LONG	VAR	VAR	VAR	130	VAR	VAR	VAR	130	VAR	VAR	VAR	130	VAR	VAR	VAR	130	VAR	VAR	VAR	190	VAR	VAR	VAR	190	VAR	VAR	VAR	190	VAR	VAR	VAR	190	VAR

ALCANTARILLA CELULAR DOBLE

VIGAS DE BORDE DE LA LOSA SUPERIOR

L=300 (2x) L=250 (2x) L=200 (2x) L=150 (2x)



VIGAS DE BORDE DE LA LOSA INFERIOR

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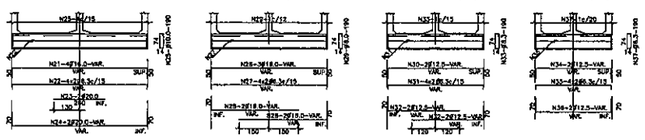


MENSULAS
VISTA

VISTA

VIGA DE BORDE SUPERIOR
CORTE

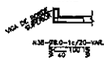
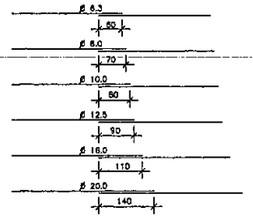


TABLA DE ARMADURAS PARA VIGAS DE BORDE DE LOSA SUPERIOR E INFERIOR – CELULAR DOBLE

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
Ø	16.0	16.0	6.3	16.0	8.0	16.0	16.0	6.3	16.0	8.0	12.5	12.5	6.3	12.5	8.0	12.5	12.5	6.3	12.5	8.0	16.0	6.3	20.0	20.0	10.0	16.0	6.3	16.0	8.0	12.5	6.3	12.5	6.3	12.5	6.3	12.5	6.3	8.0
C	4	2	4	8	—	4	2	4	6	—	4	2	4	6	—	4	2	4	6	—	8	16	4	4	—	6	16	8	—	4	16	8	—	4	16	4	—	—
LONG	VAR	260	VAR	VAR	130	VAR	220	VAR	VAR	130	VAR	200	VAR	VAR	130	VAR	180	VAR	VAR	130	VAR	VAR	260	VAR	190	VAR	VAR	VAR	190	VAR	VAR	VAR	190	VAR	VAR	VAR	190	VAR

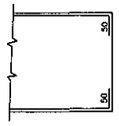
NOTAS Y DETALLES COMPLEMENTARIOS

EMPALME DE LAS VARILLAS CORRIDAS
(CUANDO SEA NECESARIO)
ESCALA 1:20

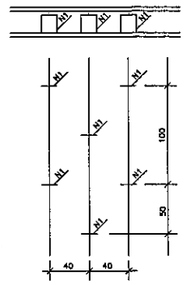


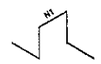
COLOCAR LOS EMPALMES EN PUNTOS ALTERNADOS

POSICION DE LA ARMADURA SUPERIOR E INFERIOR
DE LAS PAREDES EN LAS EXTREMIDADES
ESCALA 1:5



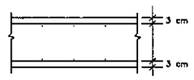
SOPORTE PARA APOYO DE LA ARMADURA
SUPERIOR EN LAS LOSAS
ESCALA 1:20





ESTA ARMADURA NO ESTA
COMPUTADA EN LOS
RESUMENES DE HIERRO

RECUBRIMIENTO
ESCALA 1:10



NOTAS

1– CARACTERISTICA DEL HIERRO: ACERO CA–50
2– ARMADURAS MEDIDAS EN CENTIMETROS
3– CANTIDAD DE HIERROS EN KILOGRAMOS
4– RESUMEN DE HIERROS SIN DESPERDICIOS
5– DEBERAN SER PREVISTOS DADOS DE HORMIGON PARA ASEGURAR EL RECUBRIMIENTO DE 3 cm.
6– LA CANTIDAD Y LAS MEDIDAS DE LAS ARMADURAS DE LAS CABECERAS SERAN DETERMINADAS POR LAS MEDIDAS REALES DEL ENCOFRADO DE CADA TIPO DE ALCANTARILLA

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FILADELFIA - LOMA PLATA

ALCANTARILLAS SIMPLES Y DOBLES
VIGAS DE BORDE

ESCALA:
SIN ESCALA

LAMINA N°:
DD - 07

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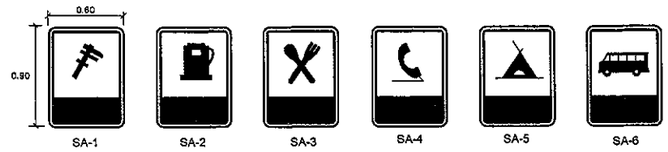
DISEÑO DE OBRAS COMPLEMENTARIAS

SEÑALES REGLAMENTARIAS

SEÑALES AUXILIARES



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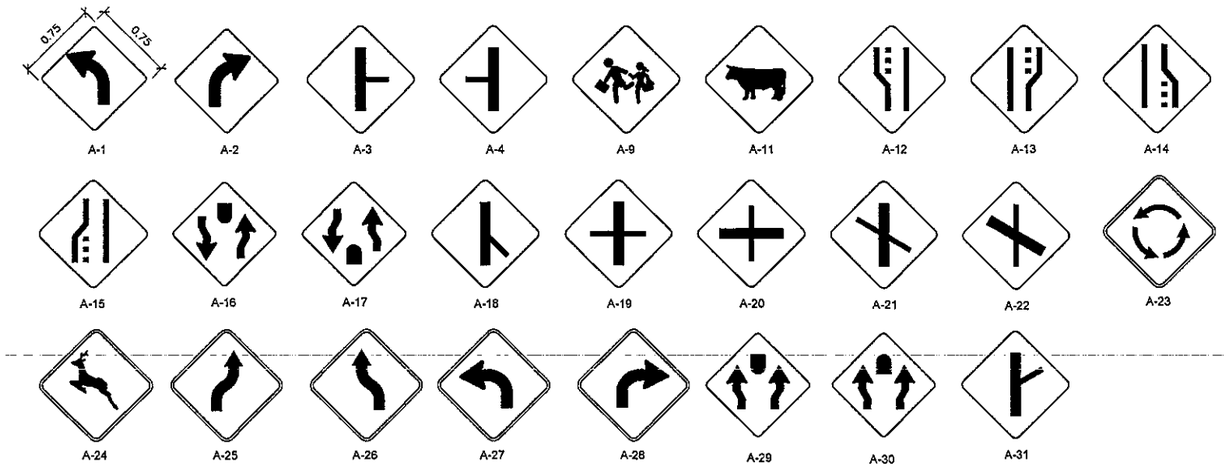

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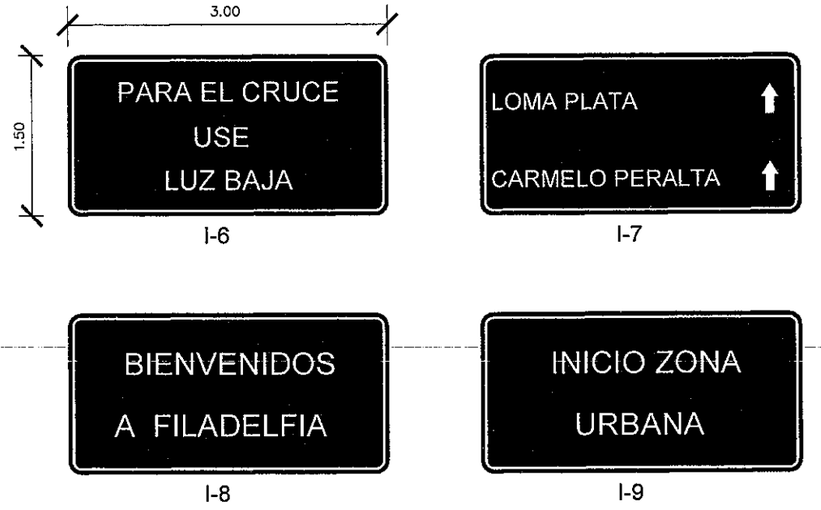

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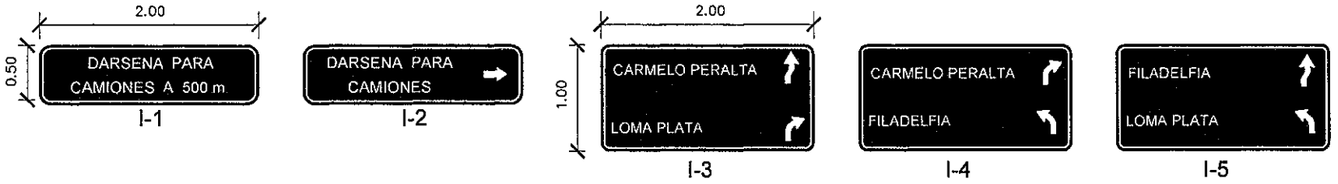

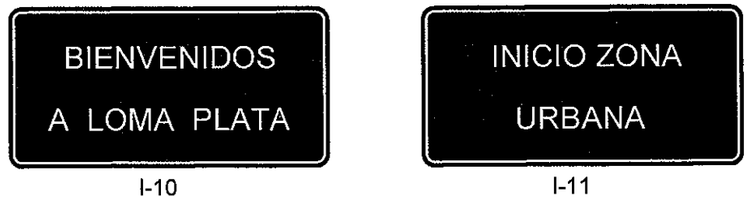

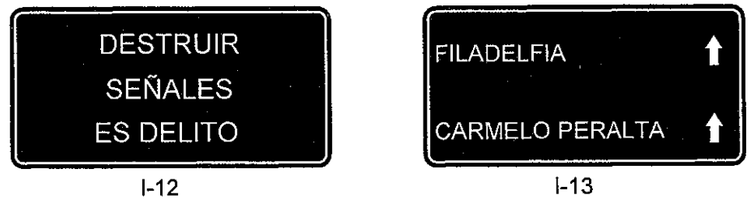

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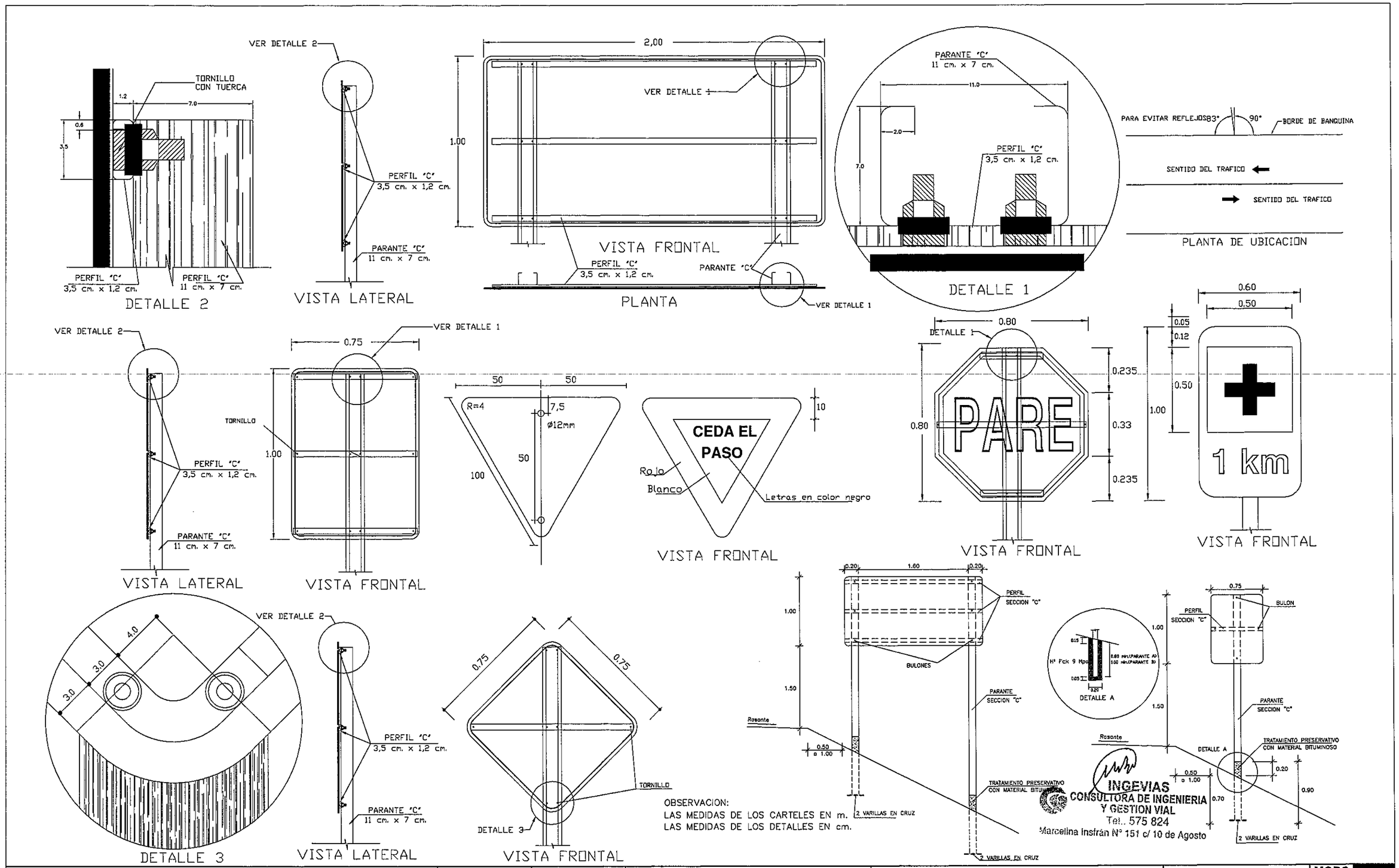

OBSERVACION:
LAS MEDIDAS DE LOS CARTELES EN m.
LAS MEDIDAS DE LOS DETALLES EN cm.

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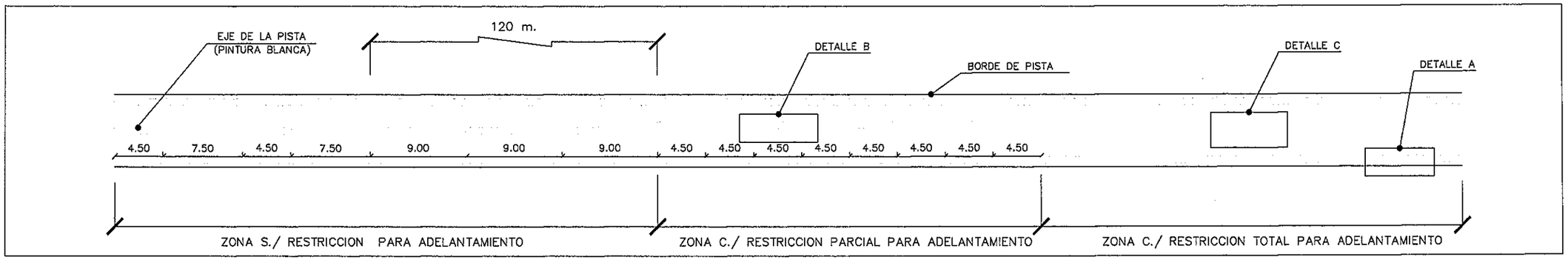
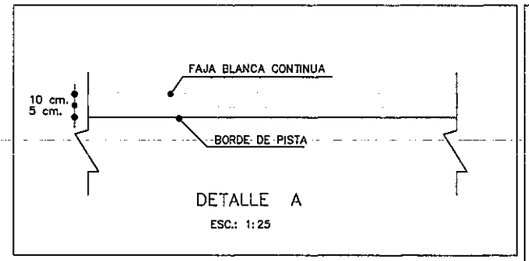
SEÑALIZACIÓN VERTICAL
DETALLE DE FIJACIONES

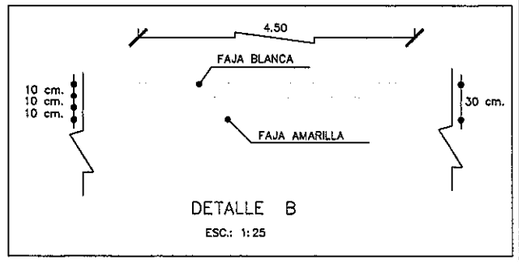
ESCALA: SIN ESCALA

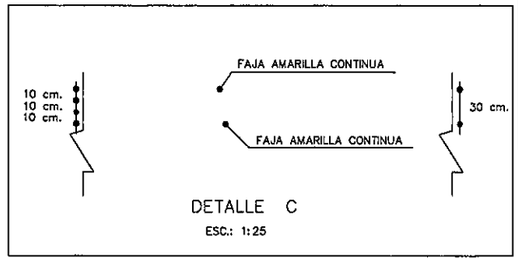
LAMINA Nº: DOC - 02

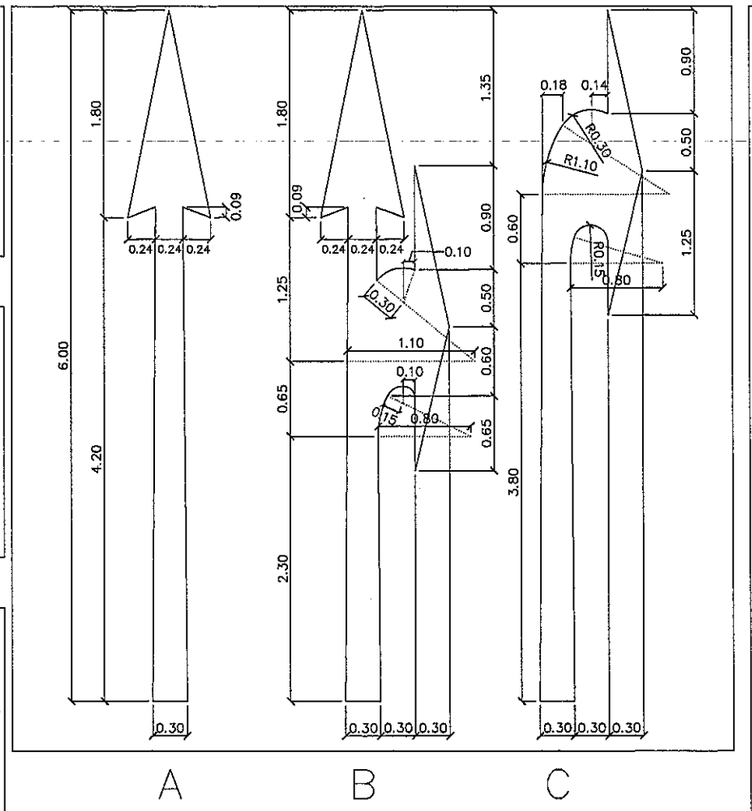
MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA



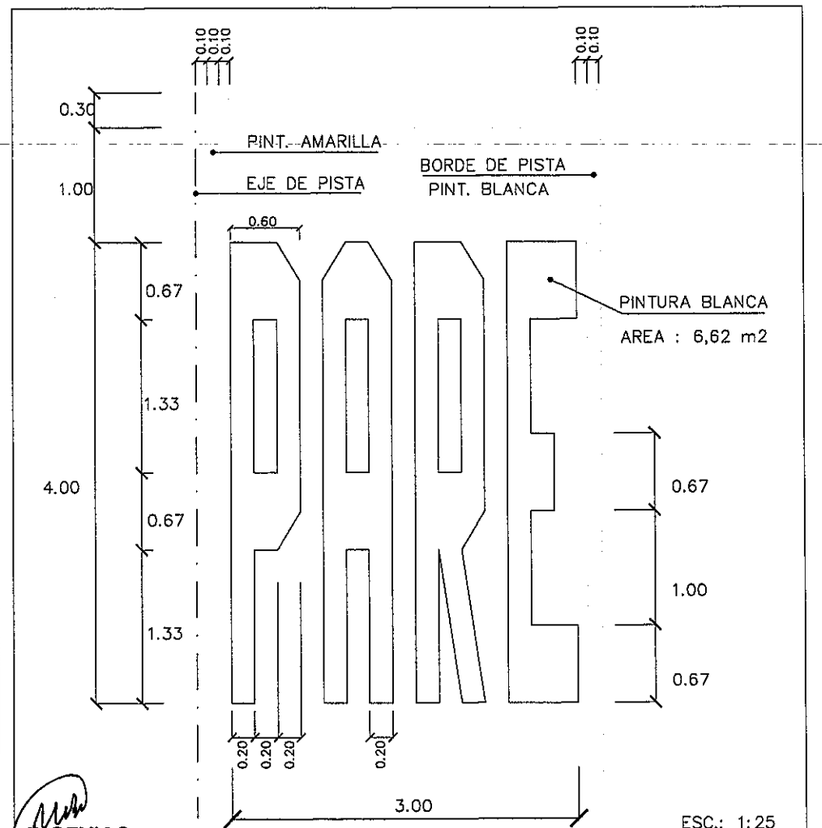








AREA DE LAS FLECHAS (m2)			
LONGITUD	TIPO A	TIPO B	TIPO C
6,00 m.	1,763	2,506	2,034



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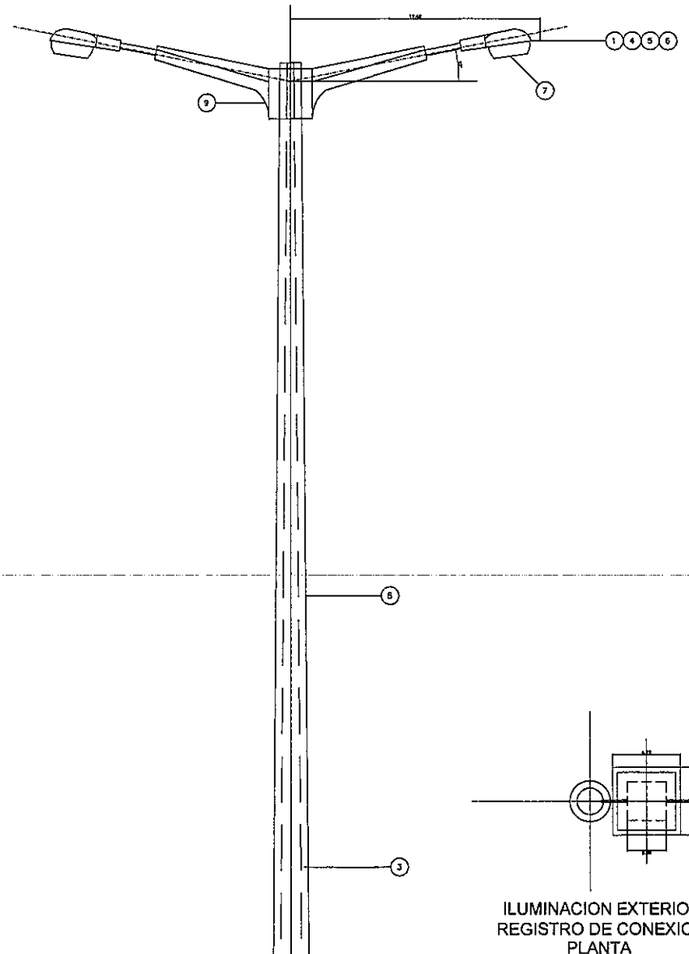
SEÑALIZACION HORIZONTAL

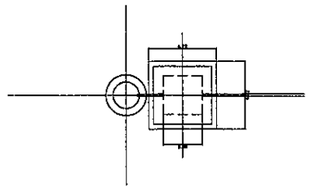
ESCALA: SIN ESCALA

LAMINA Nº: DOC - 03

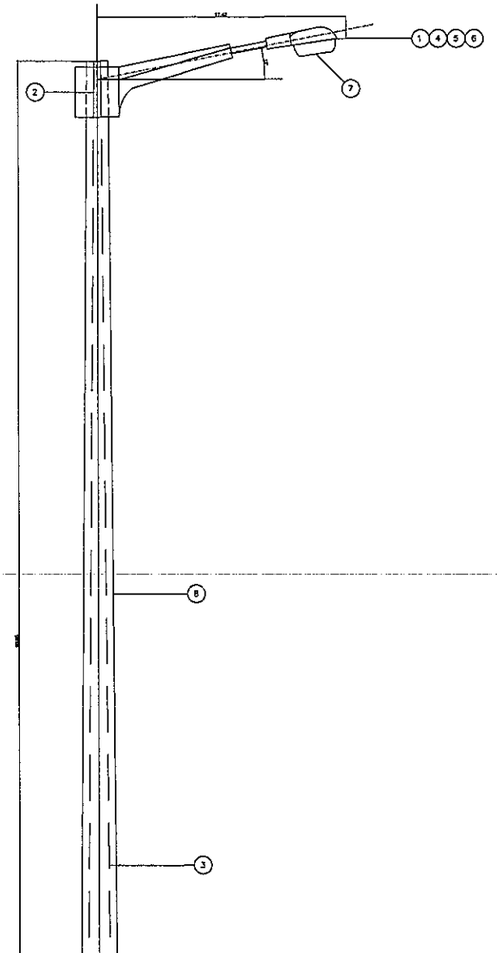
MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA



ILUMINACION EXTERIOR
TIPO CERRADO - DOBLE
ELEVACION



ILUMINACION EXTERIOR
REGISTRO DE CONEXION DE 70x70
PLANTA



ILUMINACION EXTERIOR
TIPO CERRADO - SIMPLE
ELEVACION

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ILUMINACION EXTERIOR

ESCALA: SIN ESCALA

LAMINA N°: DOC - 04

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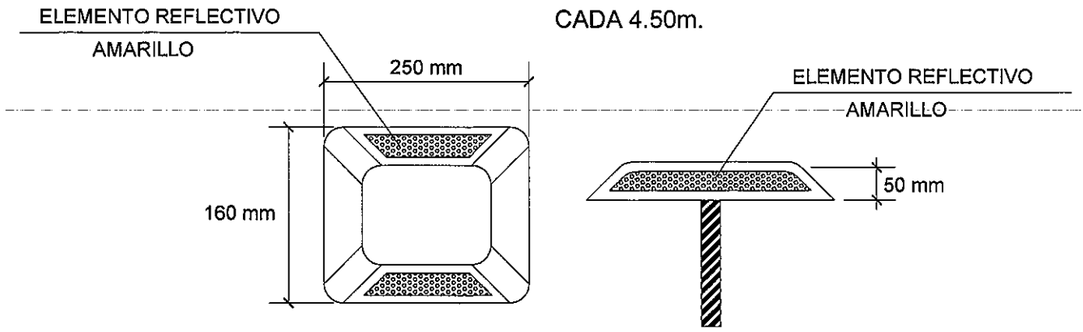
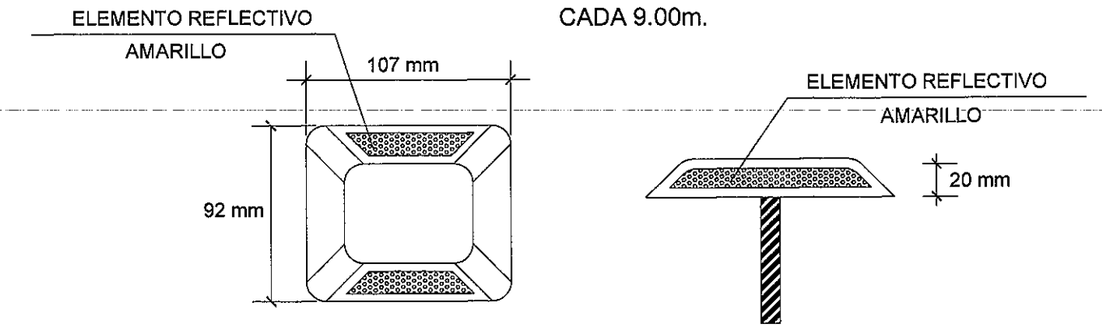
PARAGUAY
ARGENTINA

TACHONES REFLECTIVOS BI-DIRECCIONALES
CON PERNO DE FIJACION EN EJE Y BORDE CARRIL ADICIONAL
CADA 4.50m.



TACHAS REFLECTIVAS BI-DIRECCIONALES
CON PERNO DE FIJACION EN EJE
CADA 9.00m.



TACHAS REFLECTIVAS MONO-DIRECCIONALES
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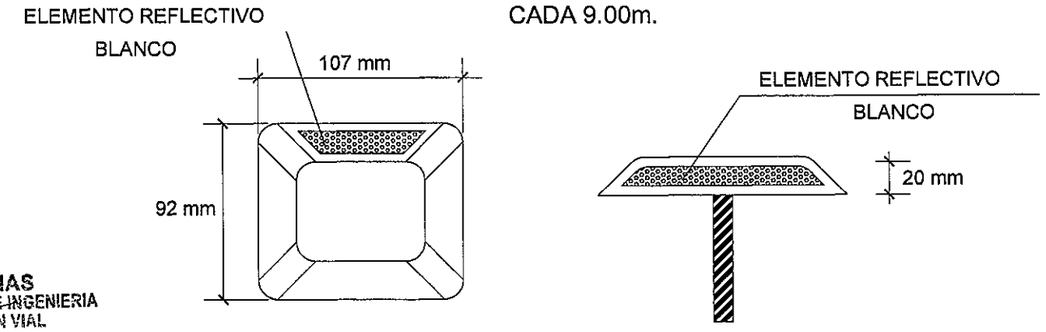
CADA 9.00m.



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TACHAS REFLECTIVAS

ESCALA: SIN ESCALA

LAMINA N°: DOC - 05

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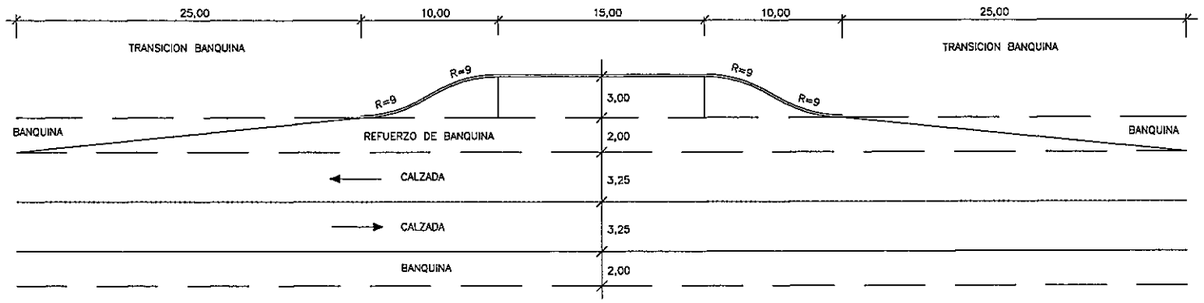
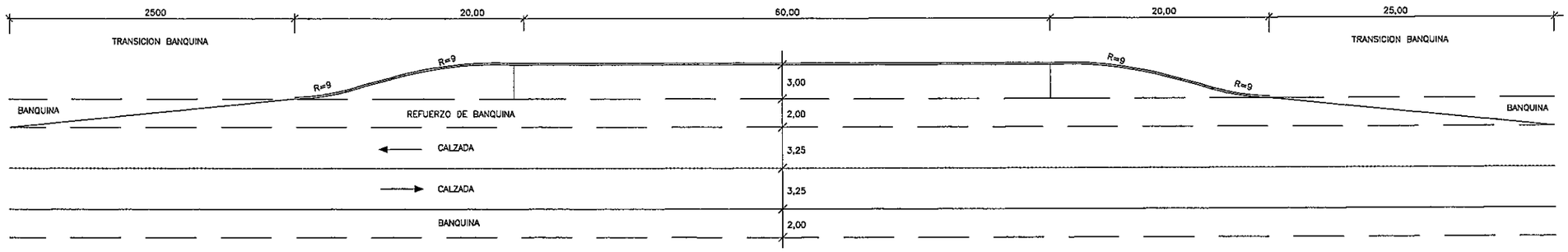
MAPA DEL PARAGUAY



DARSENA PARA AUTOBUSES



DARSENA PARA CAMIONES

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Y GESTION VIAL
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

REFERENCIAS

ACOMEPA
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ESTUDIOS DE FACTIBILIDAD TÉCNICO, ECONÓMICO Y AMBIENTAL Y
DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

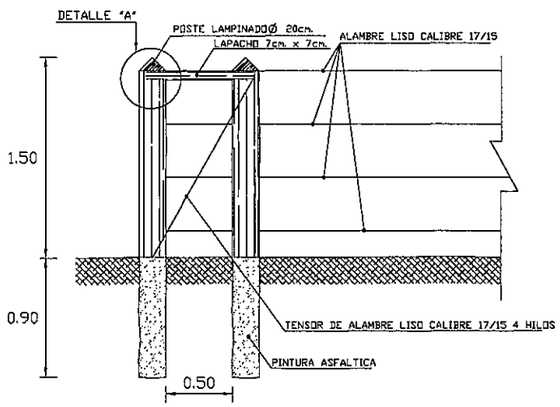
DARSENAS Y EMPALMES CON CALLES URBANAS

ESCALA: SIN ESCALA

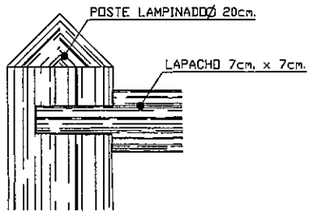
LAMINA Nº: DOC - 06

MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA

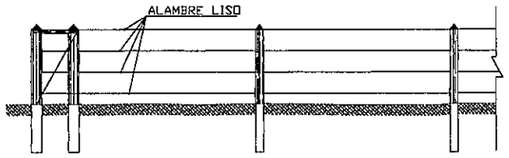
DETALLE TRAMO ESQUINERO
ESC.1:20



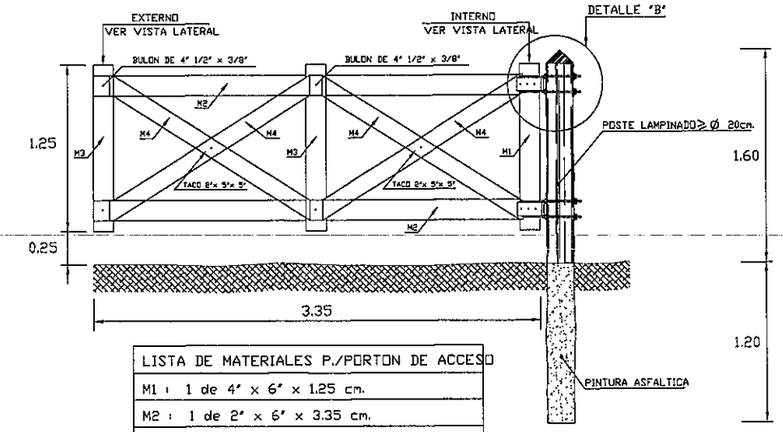
DETALLE "A"
ESC.1:5



VISTA FRONTAL ALAMBRADO
ESC.1:50

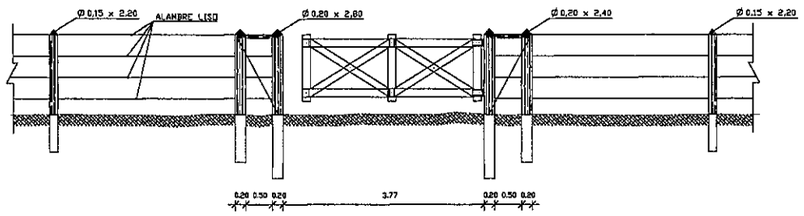


DETALLE PORTON DE ACCESO
ESC.1:20

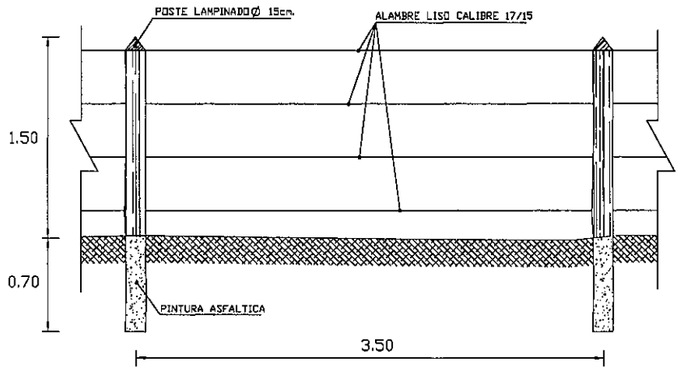


LISTA DE MATERIALES P./PORTON DE ACCESO
M1 : 1 de 4" x 6" x 1.25 cm.
M2 : 1 de 2" x 6" x 3.35 cm.
M3 : 2 de 1" x 6" x 1.25 cm.
M4 : 1 de 1" x 5" x 1.95 cm.

VISTA FRONTAL PORTON DE ACCESO
ESC.1:50



DETALLE TRAMO INTERMEDIO
ESC.1:20



VISTA LATERAL
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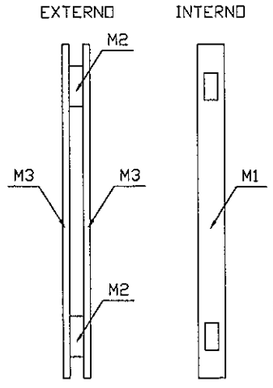

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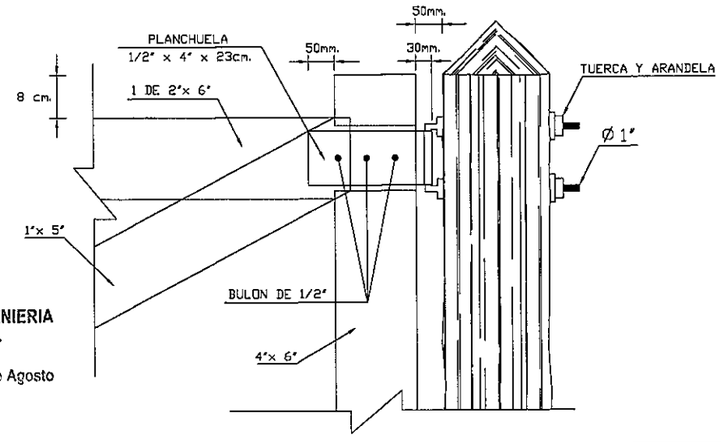
DETALLE "B"
ESC.1:5



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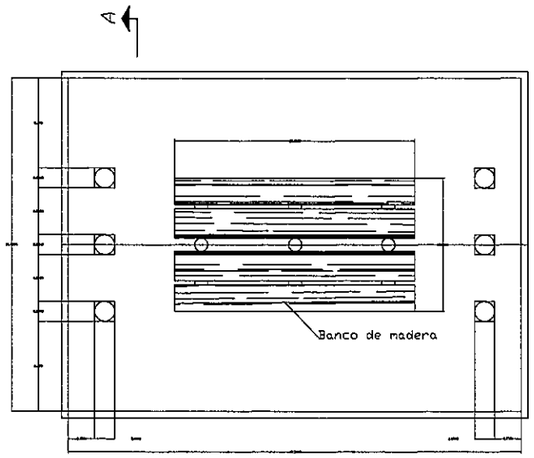
ALAMBRADAS Y ACCESOS

ESCALA: SIN ESCALA

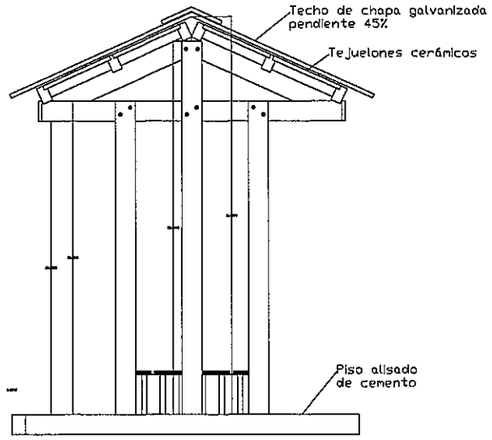
LAMINA N°: DOC - 07

MOPC
MAPA DEL PARAGUAY
ZONA DEL PROYECTO
BOLIVIA
BRASIL
ARGENTINA



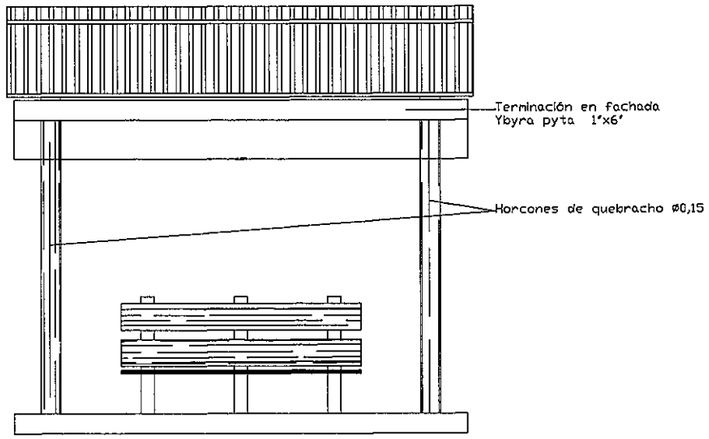
PLANTA ACOTADA

ESC.: 1:20



ALZADO LATERAL

ESC.: 1:20



FACHADA FRONTAL

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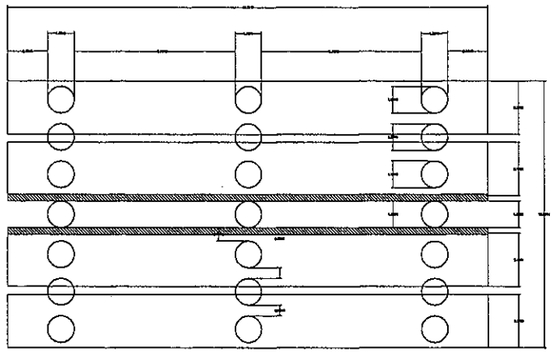
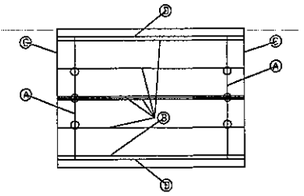
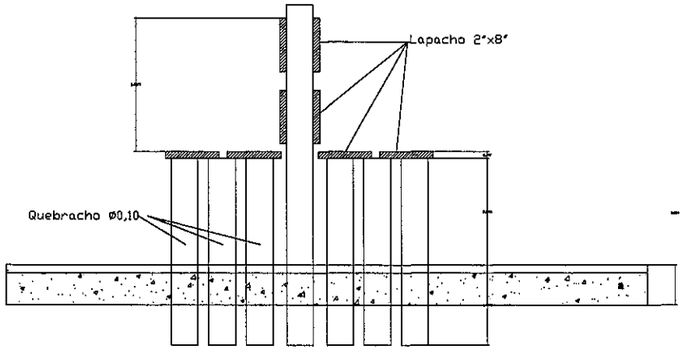




PLANTA Y PLANILLA DE MADERAMEN

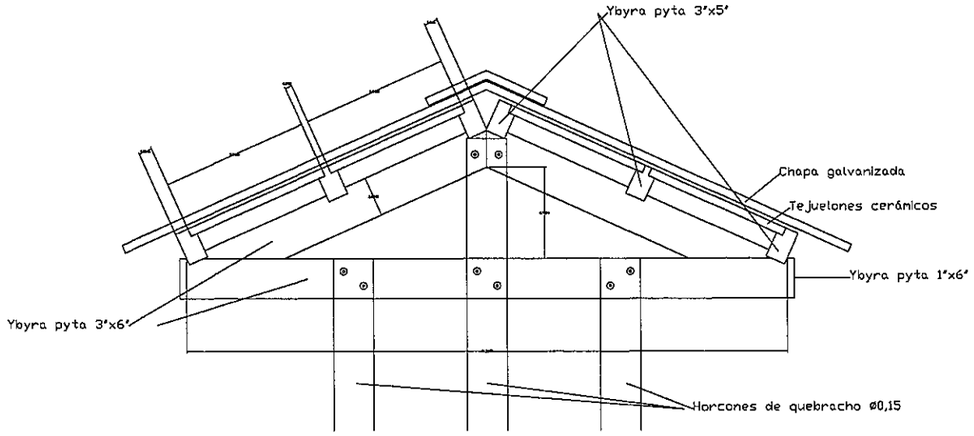
ESC.: 1:50

POS.	CANT.	TIPO	ESCUADRIA	LONG.
A	2	Cabriada	3"x6"	2,30 m
B	6	Correa	3"x5"	3,40 m
C	4	Tope tejuelón	1"x2"	1,75 m
D	2	Terminación en fachada	1"x6"	3,40 m



DETALLE DEL BANCO

ESC.: 1:10



CORTE A - A

ESC.: 1:10

PINTURA DE MADERAS:

- PROTECCION HIDROFUGA / FUNGICIDA .-
- TERMINACION CON BARNIZ SOLAR 3 MANOS .-
- POSTES ENTERRADOS TERMINACION CON ASFALTO .-

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DÁRSENA PARA ÓMNIBUS
DETALLE ÁREA PARA PASAJEROS

ESCALA: SIN ESCALA

LAMINA N°: DOC - 08

MOPC
MAPA DEL PARAGUAY
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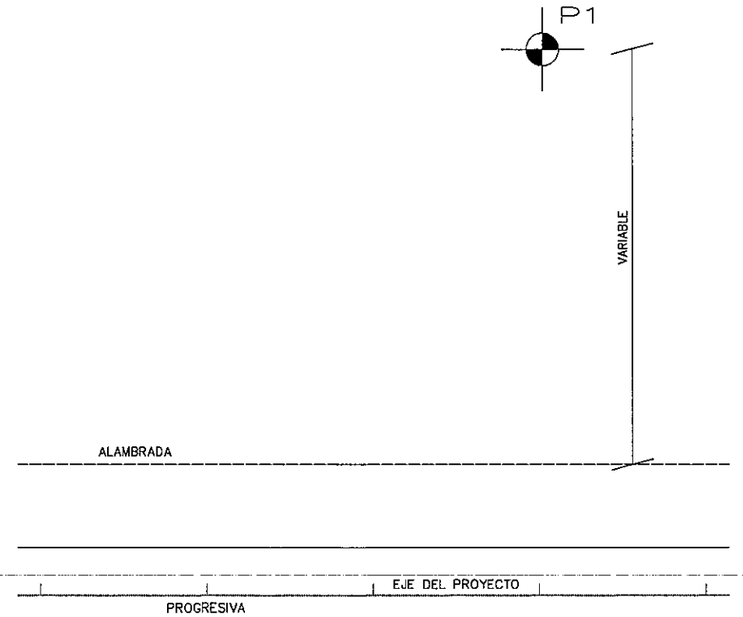
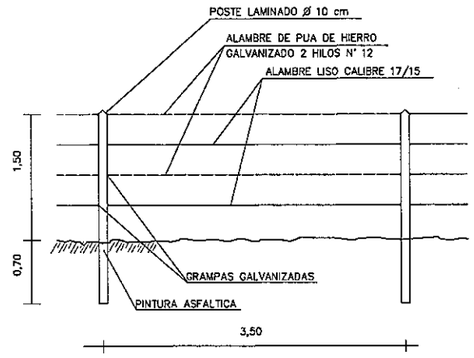
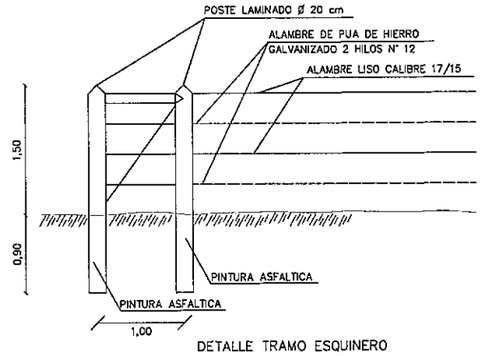
BRASIL
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA

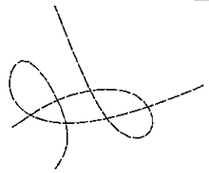




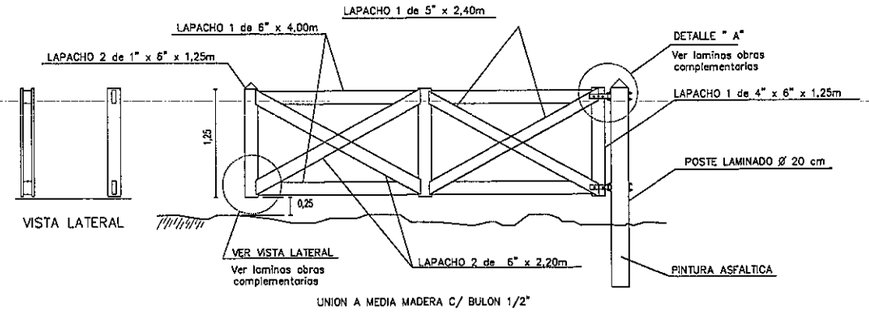
DETALLE TRAMO INTERMEDIO



DETALLE TRAMO ESQUINERO

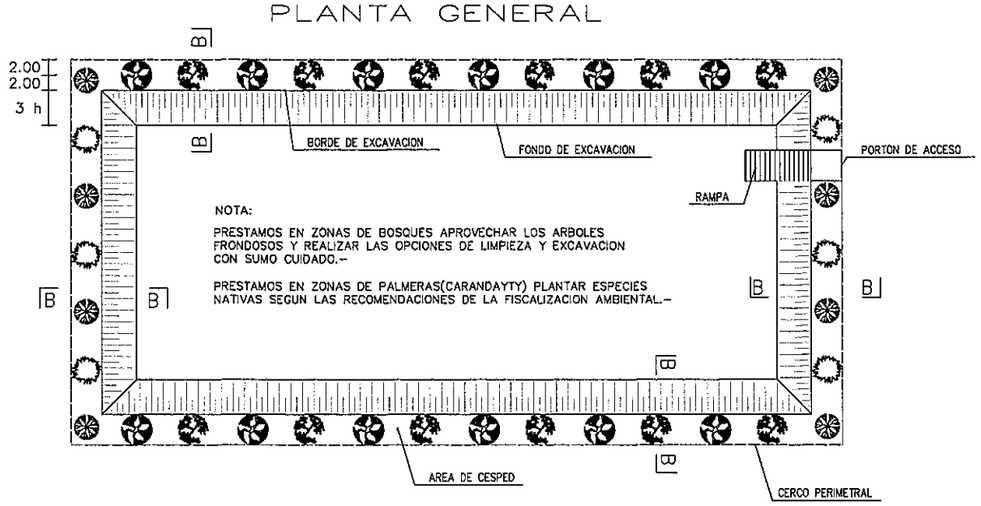


ATADURA PARA ALAMBRE

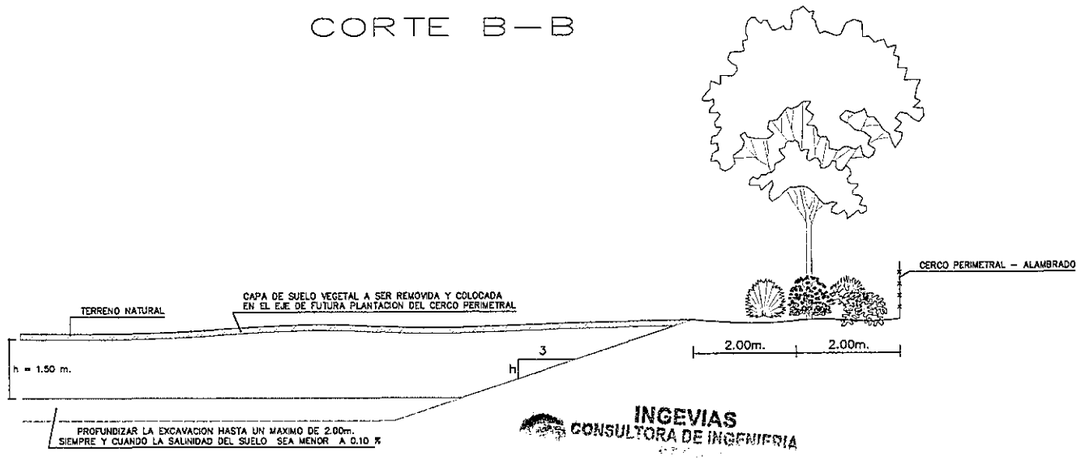


DETALLE PORTON DE ACCESO

PROTECCION DE PRESTAMO
PLANTA GENERAL



CORTE B—B



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PROTECCIÓN DE AREAS DE PRÉSTAMOS

ESCALA: SIN ESCALA

LAMINA Nº: DOC - 09

MOPC
MAPA DEL PARAGUAY
BOLIVIA
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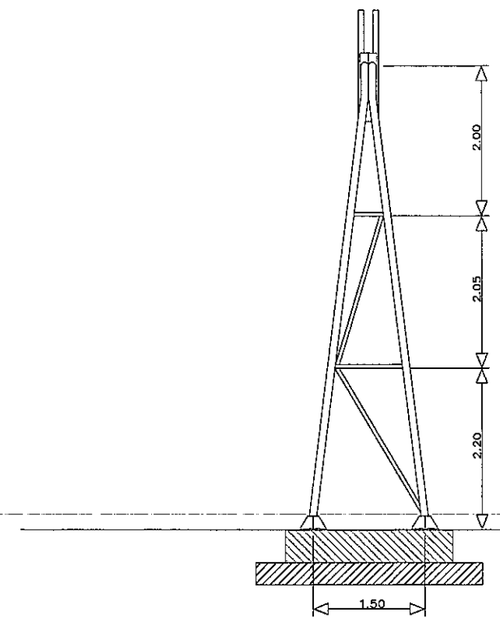
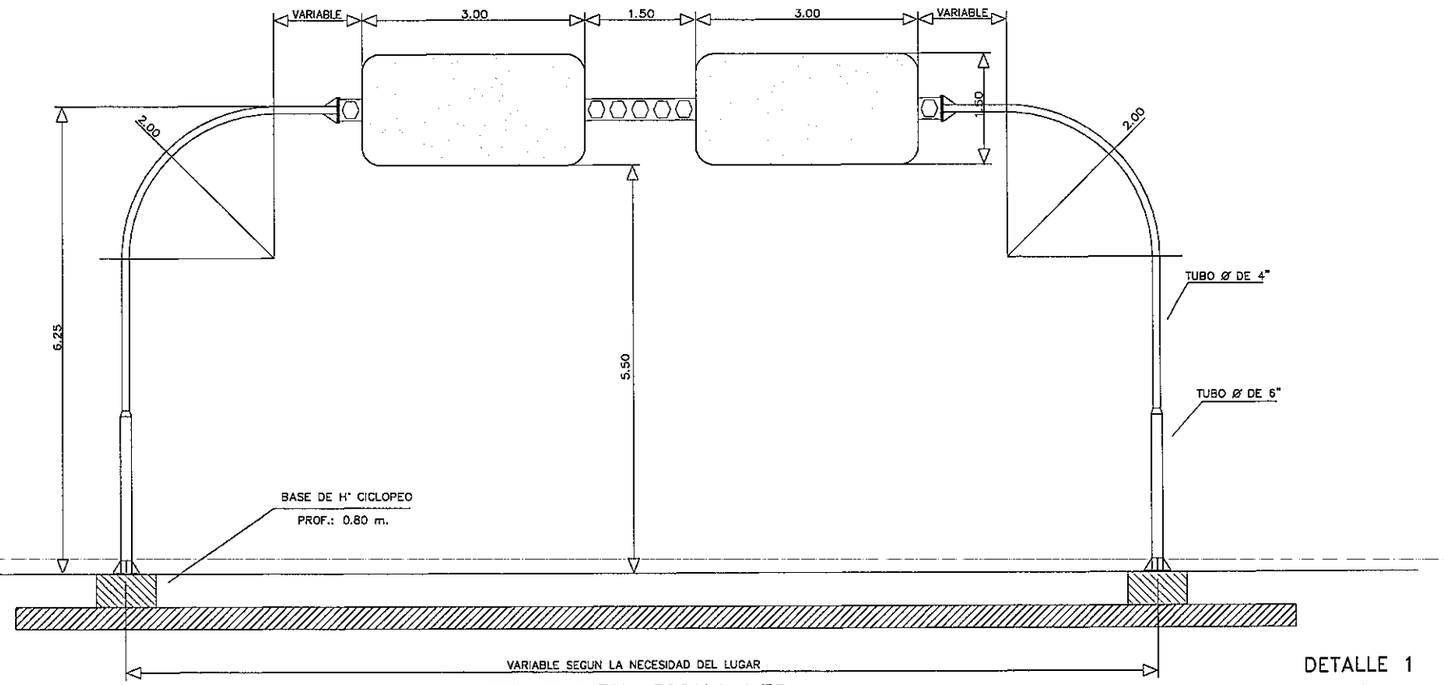
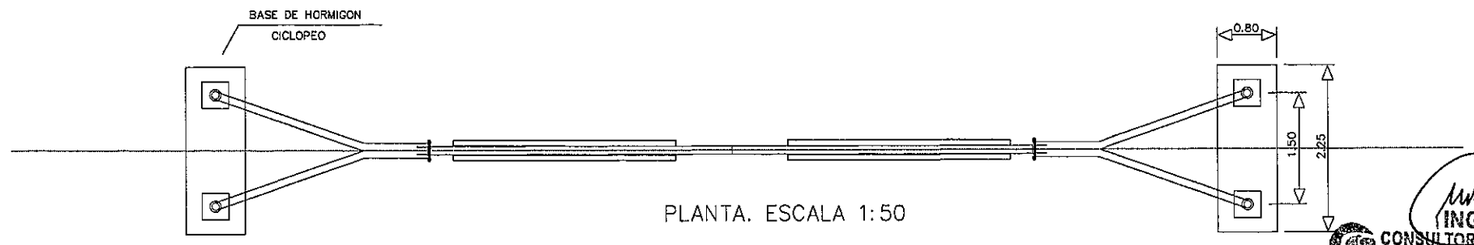
ZONA DEL PROYECTO
ARGENTINA
ARGENTINA



VISTA LATERAL. ESCALA 1:75

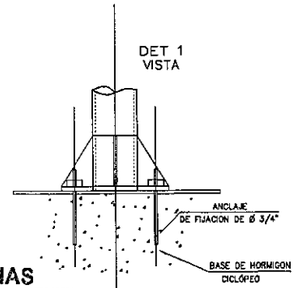


VISTA FRONTAL. ESCALA 1:75



PLANTA. ESCALA 1:50

DETALLE 1



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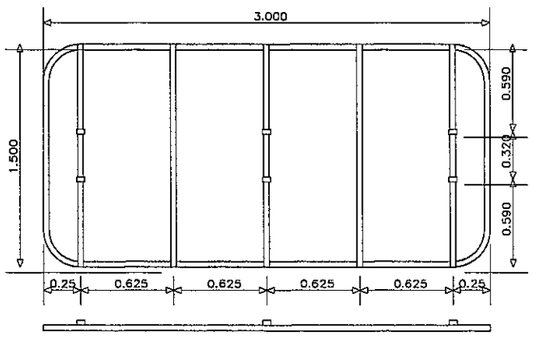
DETALLE DEL TABLERO ESCALA 1:375



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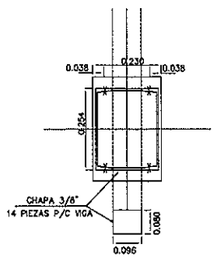
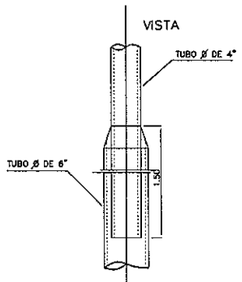
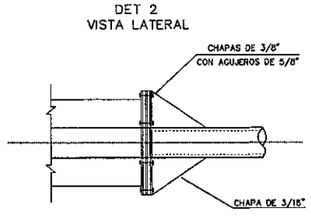
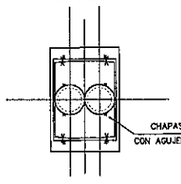


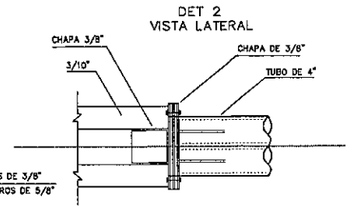
DETALLE 3

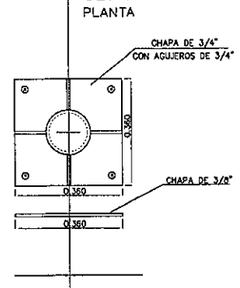


DETALLE 2









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PORTICO DE SEÑALIZACIÓN

ESCALA: SIN ESCALA

LAMINA N°: DOC - 10

MOPC
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ZONA DEL PROYECTO
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Marcelina Insfran N° 151 c/ 10 de Agosto

ACOMEPA

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CONSULTORIA DE INGENIERIA
Y GESTION VIAL

SECCIONES TRANSVERSALES

PROG.	CORTE m2	CARGA m2	CORTE m3	CARGA m3	CORTE ACUM. m3	CARGA ACUM. m3
18+000	0.000	14.749	0.000	589.570	13704.434	230125.832
18+040	0.000	14.729	0.000	564.474	13704.434	230690.306
18+080	0.000	13.495	0.000	560.884	13704.434	231251.190
18+120	0.000	14.549	0.000	568.608	13704.434	231819.798
18+160	0.000	13.881	0.000	551.944	13704.434	232371.742
18+200	0.000	13.716	0.000	564.672	13704.434	232936.414
18+240	0.000	14.517	0.000	489.481	13704.434	233425.896
18+280	0.000	9.957	0.000	292.397	13704.434	233718.292
18+320	0.000	4.663	0.000	305.846	13704.434	234024.138
18+360	0.000	10.629	0.000	564.401	13704.434	234588.539
18+400	0.000	17.591	0.000	809.916	13704.434	235398.455
18+440	0.000	22.905	0.000	964.202	13704.434	236362.657
18+480	0.000	25.305	0.000	1046.531	13704.434	237409.188
18+520	0.000	27.022	0.000	1129.357	13704.434	238538.545
18+560	0.000	29.446	0.000	1103.648	13704.434	239642.193
18+600	0.000	25.736	0.000	1012.618	13704.434	240654.811
18+640	0.000	24.895	0.000	937.094	13704.434	241591.905
18+680	0.000	21.960	0.000	855.080	13704.434	242446.985
18+720	0.000	20.794	0.000	805.330	13704.434	243252.315
18+760	0.000	19.472	0.000	757.465	13704.434	244009.780
18+800	0.000	18.401	0.000	701.085	13704.434	244710.865
18+840	0.000	16.653	0.000	659.821	13704.434	245370.686
18+880	0.000	16.338	0.000	630.777	13704.434	246001.463
18+920	0.000	15.201	0.000	597.310	13704.434	246598.774
18+960	0.000	14.664	0.000	580.341	13704.434	247179.114
19+000	0.000	14.353	0.000	565.682	13704.434	247744.797
19+520	0.000	9.514	0.000	379.281	13704.434	253701.233
19+560	0.000	9.450	0.000	331.831	13704.434	254033.064
19+600	0.000	7.142	0.000	436.929	13704.434	254469.993
19+640	0.000	14.705	0.000	589.220	13704.434	255059.213
19+680	0.000	14.756	0.000	574.847	13704.434	255634.060
19+720	0.000	13.986	0.000	563.872	13704.434	256197.932
19+760	0.000	14.207	0.000	562.030	13704.434	256759.961
19+800	0.000	13.894	0.000	553.602	13704.434	257313.563
19+840	0.000	13.786	0.000	551.885	13704.434	257865.448
19+880	0.000	13.808	0.000	543.722	13704.434	258409.171
19+920	0.000	13.378	0.000	536.536	13704.434	258945.707
19+960	0.000	13.449	0.000	552.328	13704.434	259498.035
20+000	0.000	14.168	0.000	532.528	13704.434	260030.563
20+040	0.000	12.459	0.000	520.501	13704.434	260551.064
20+080	0.000	13.566	0.000	531.772	13704.434	261082.836
20+120	0.000	13.022	0.000	510.668	13704.434	261593.504
20+160	0.000	12.511	0.000	516.931	13704.434	262110.435
20+200	0.000	13.336	0.000	522.468	13704.434	262632.903
20+240	0.000	12.788	0.000	507.766	13704.434	263140.668
20+280	0.000	12.600	0.000	524.232	13704.434	263664.900
20+320	0.000	13.611	0.000	537.202	13704.434	264202.102
20+360	0.000	13.249	0.000	528.961	13704.434	264731.063
20+400	0.000	13.199	0.000	530.463	13704.434	265261.526
20+440	0.000	13.324	0.000	515.819	13704.434	265777.345
20+480	0.000	12.467	0.000	506.298	13704.434	266283.642
20+520	0.000	12.848	0.000	525.000	13704.434	266808.642
20+560	0.000	13.402	0.000	537.341	13704.434	267345.983
20+600	0.000	13.465	0.000	521.437	13704.434	267867.420
20+640	0.000	12.607	0.000	504.228	13704.434	268371.649
20+680	0.000	12.605	0.000	527.078	13704.434	268898.727
20+720	0.000	13.749	0.000	549.434	13704.434	269448.161
20+760	0.000	13.722	0.000	539.487	13704.434	269987.647
20+800	0.000	13.252	0.000	518.505	13704.434	270506.152
20+840	0.000	12.673	0.000	515.683	13704.434	271021.836
20+880	0.000	13.111	0.000	533.427	13704.434	271555.263
20+920	0.000	13.561	0.000	545.906	13704.434	272101.170
20+960	0.000	13.735	0.000	496.998	13704.434	272598.168
21+000	0.000	11.115	0.000	387.515	13704.434	272985.683
21+040	0.000	8.261	0.000	253.218	13704.434	273238.901
21+080	0.000	4.400	0.000	104.710	13704.434	273343.612
21+120	0.000	0.835	17.665	90.842	13722.099	273434.454
21+160	0.883	3.707	0.000	0.000	13722.099	273434.454

PROG.	CORTE m2	CARGA m2	CORTE m3	CARGA m3	CORTE ACUM. m3	CARGA ACUM. m3
14+000	0.000	12.680	0.000	471.867	13704.434	178332.459
14+040	0.000	10.913	0.000	413.000	13704.434	178745.459
14+080	0.000	9.737	0.000	410.074	13704.434	179155.533
14+120	0.000	10.767	0.000	443.696	13704.434	179599.229
14+160	0.000	11.418	0.000	451.516	13704.434	180050.745
14+200	0.000	11.158	0.000	444.041	13704.434	180494.786
14+240	0.000	11.044	0.000	440.564	13704.434	180935.350
14+280	0.000	10.984	0.000	442.385	13704.434	181377.735
14+320	0.000	11.135	0.000	463.507	13704.434	181841.242
14+360	0.000	12.040	0.000	496.585	13704.434	182337.827
14+400	0.000	12.789	0.000	517.572	13704.434	182855.398
14+440	0.000	13.089	0.000	505.208	13704.434	183360.607
14+480	0.000	12.171	0.000	453.262	13704.434	183813.869
14+520	0.000	10.492	0.000	428.762	13704.434	184242.630
14+560	0.000	10.946	0.000	443.443	13704.434	184686.074
14+600	0.000	11.226	0.000	497.070	13704.434	185183.143
14+640	0.000	13.627	0.000	533.658	13704.434	185716.801
14+680	0.000	13.055	0.000	529.497	13704.434	186246.298
14+720	0.000	13.419	0.000	519.605	13704.434	186765.903
14+760	0.000	12.561	0.000	504.393	13704.434	187270.296
14+800	0.000	12.659	0.000	528.509	13704.434	187798.804
14+840	0.000	13.767	0.000	532.481	13704.434	188331.285
14+880	0.000	12.857	0.000	498.233	13704.434	188829.518
14+920	0.000	12.054	0.000	482.485	13704.434	189312.003
14+960	0.000	12.070	0.000	456.143	13704.434	189768.146
15+000	0.000	10.737	0.000	412.623	13704.434	190180.768
15+040	0.000	9.894	0.000	430.085	13704.434	190610.853
15+080	0.000	11.610	0.000	472.263	13704.434	191083.117
15+120	0.000	12.003	0.000	492.866	13704.434	191575.982
15+160	0.000	12.640	0.000	501.885	13704.434	192077.867
15+200	0.000	12.454	0.000	537.035	13704.434	192614.902
15+240	0.000	14.398	0.000	543.193	13704.434	193158.095
15+280	0.000	12.762	0.000	529.234	13704.434	193687.329
15+320	0.000	13.700	0.000	530.010	13704.434	194217.339
15+360	0.000	12.801	0.000	514.234	13704.434	194731.573
15+400	0.000	12.911	0.000	524.121	13704.434	195255.694
15+440	0.000	13.295	0.000	555.007	13704.434	195810.701
15+480	0.000	14.455	0.000	558.142	13704.434	196368.843
15+520	0.000	13.452	0.000	537.119	13704.434	196905.963
15+560	0.000	13.404	0.000	537.189	13704.434	197443.151
15+600	0.000	13.455	0.000	543.723	13704.434	197986.875
15+640	0.000	13.731	0.000	528.771	13704.434	198515.645
15+680	0.000	12.708	0.000	489.060	13704.434	199004.705
15+720	0.000	11.745	0.000	510.315	13704.434	199515.020
15+760	0.000	13.770	0.000	539.337	13704.434	200054.357
15+800	0.000	13.197	0.000	545.383	13704.434	200599.740
15+840	0.000	14.073	0.000	583.761	13704.434	201183.502
15+880	0.000	15.115	0.000	596.401	13704.434	201779.903
15+920	0.000	14.705	0.000	593.530	13704.434	202373.433
15+960	0.000	14.972	0.000	599.224	13704.434	202972.656
16+000	0.000	14.989	0.000	583.552	13704.434	203556.208
16+040	0.000	14.188	0.000	592.474	13704.434	204148.683
16+080	0.000	15.435	0.000	605.915	13704.434	204754.597
16+120	0.000	14.860	0.000	538.871	13704.434	205293.468
16+160	0.000	12.083	0.000	472.809	13704.434	205766.277
16+200	0.000	11.557	0.000	468.188	13704.434	206234.465
16+240	0.000	11.852	0.000	467.270	13704.434	206701.735
16+280	0.000	11.511	0.000	476.777	13704.434	207178.511
16+320	0.000	12.328	0.000	494.340	13704.434	207672.851
16+360	0.000	12.389	0.000	504.872	13704.434	208177.723
16+400	0.000	12.854	0.000	522.040	13704.434	208699.763
16+440	0.000	13.248	0.000	564.516	13704.434	209264.279
16+480	0.000	14.978	0.000	540.977	13704.434	209805.256
16+520	0.000	12.071	0.000	524.265	13704.434	210329.521
16+560	0.000	14.142	0.000	561.114	13704.434	210890.635
16+600	0.000	13.913	0.000	543.495	13704.434	211434.131
16+640	0.000	13.261	0.000	466.152	13704.434	211900.283
16+680	0.000	10.046	0.000	332.161	13704.434	212232.444
16+720	0.000	6.562	0.000	398.042	13704.434	212630.486
16+760	0.000	13.340	0.000	524.821	13704.434	213155.307
16+800	0.000	12.901	0.000	560.323	13704.434	213715.630
16+840	0.000	15.115	0.000	589.516	13704.434	214305.147
16+880	0.000	14.360	0.000	573.363	13704.434	214878.509
16+920	0.000	14.308	0.000	575.196	13704.434	215453.705
16+960	0.000	14.452	0.000	579.399	13704.434	216033.105
17+000	0.000	14.518	0.000	569.165	13704.434	216602.269
17+040	0.000	13.940	0.000	562.833	13704.434	217165.102
17+080	0.000	14.201	0.000	562.906	13704.434	217728.009
17+120	0.000	13.944	0.000	551.578	13704.434	218279.587
17+160	0.000	13.635	0.000	505.741	13704.434	218785.327
17+200	0.000	11.652	0.000	445.478	13704.434	219230.805
17+240	0.000	10.622	0.000	451.913	13704.434	219682.719
17+280	0.000	11.974	0.000	492.469	13704.434	220175.188
17+320	0.000	12.650	0.000	523.116	13704.434	220698.304
17+360	0.000	13.506	0.000	551.871	13704.434	221250.176
17+400	0.000	14.087	0.000	509.878	13704.434	221760.053
17+440	0.000	11.407	0.000	520.529	13704.434	222280.582
17+480	0.000	14.620	0.000	553.895	13704.434	222834.477
17+520	0.000	13.075	0.000	547.775	13704.434	223382.253
17+560	0.000	14.314	0.000	554.131	13704.434	223936.383
17+600	0.000	13.393	0.000	532.065	13704.434	224468.449
17+640	0.000	13.211	0.000	555.112	13704.434	225023.561
17+680	0.000	14.545	0.000	566.243	13704.434	225589.804
17+720	0.000	13.767	0.000	554.510	13704.434	226144.314
17+760	0.000	13.958	0.000	562.430	13704.434	226706.744
17+800	0.000	14.163	0.000	560.566	13704.434	227267.311
17+840	0.000	13.865	0.000	583.011	13704.434	227850.322
17+880	0.000	15.285	0.000	599.745	13704.434	228450.067
17+920	0.000	14.702	0.000	542.622	13704.434	228992.689
17+960	0.000	12.429	0.000	543.573	13704.434	229536.262
18+000	0.000	14.749	0.000	589.570	13704.434	230125.832

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MINISTERIO DE OBRAS PÚBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PÚBLICAS Y COMUNICACIONES

DIRECCIÓN DE VIALIDAD

ESTUDIOS DE FACTIBILIDAD TÉCNICO, ECONÓMICO Y AMBIENTAL Y

DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

SECCIONES TRANSVERSALES
CUADRO DE VOLUMENES

ESCALAS: SIN ESCALA

LAMINA N°: ST - 26

MOPC
MAPA DEL PARAGUAY
BOLIVIA BRASIL ZONA DEL PROYECTO ARGENTINA ARGENTINA

PROG.	CORTE m2	CARGA m2	CORTE m3	CARGA m3	CORTE ACUM. m3	CARGA ACUM. m3
10+000	0.000	12.021	0.000	551.503	13704.434	112493.734
10+040	0.000	15.554	0.000	613.918	13704.434	113107.652
10+080	0.000	15.142	0.000	595.139	13704.434	113702.791
10+120	0.000	14.615	0.000	593.916	13704.434	114296.706
10+160	0.000	15.081	0.000	581.954	13704.434	114878.660
10+200	0.000	14.017	0.000	596.432	13704.434	115475.093
10+240	0.000	15.805	0.000	664.170	13704.434	116139.262
10+280	0.000	17.404	0.000	689.062	13704.434	116828.324
10+320	0.000	17.049	0.000	710.615	13704.434	117538.940
10+360	0.000	18.481	0.000	975.403	13704.434	118514.343
10+400	0.000	30.289	0.000	1008.722	13704.434	119523.065
10+440	0.000	20.147	0.000	786.900	13704.434	120309.965
10+480	0.000	19.198	0.000	747.202	13704.434	121057.167
10+520	0.000	18.162	0.000	729.991	13704.434	121787.158
10+560	0.000	18.337	0.000	738.441	13704.434	122525.599
10+600	0.000	18.585	0.000	739.289	13704.434	123264.888
10+640	0.000	18.380	0.000	702.586	13704.434	123967.474
10+680	0.000	16.750	0.000	646.281	13704.434	124613.755
10+720	0.000	15.564	0.000	582.211	13704.434	125195.966
10+760	0.000	13.546	0.000	556.628	13704.434	125752.594
10+800	0.000	14.285	0.000	563.065	13704.434	126315.659
10+840	0.000	13.868	0.000	530.883	13704.434	126846.542
10+880	0.000	12.676	0.000	561.495	13704.434	127408.037
10+920	0.000	15.399	0.000	647.284	13704.434	128055.321
10+960	0.000	16.966	0.000	649.768	13704.434	128705.089
11+000	0.000	15.523	0.000	627.999	13704.434	129333.088
11+040	0.000	15.877	0.000	623.039	13704.434	129956.127
11+080	0.000	15.275	0.000	606.168	13704.434	130562.295
11+120	0.000	15.033	0.000	545.145	13704.434	131107.440
11+160	0.000	12.224	0.000	581.847	13704.434	131689.287
11+200	0.000	16.869	0.000	635.513	13704.434	132324.800
11+240	0.000	14.907	0.000	603.693	13704.434	132928.493
11+280	0.000	15.278	0.000	603.162	13704.434	133531.655
11+320	0.000	14.880	0.000	592.143	13704.434	134123.798
11+360	0.000	14.727	0.000	584.888	13704.434	134708.685
11+400	0.000	14.518	0.000	583.367	13704.434	135292.052
11+440	0.000	14.651	0.000	588.150	13704.434	135880.202
11+480	0.000	14.757	0.000	638.971	13704.434	136519.173
11+520	0.000	17.192	0.000	630.354	13704.434	137149.527
11+560	0.000	14.326	0.000	572.003	13704.434	137721.530
11+600	0.000	14.274	0.000	563.016	13704.434	138284.546
11+640	0.000	13.877	0.000	564.807	13704.434	138849.353
11+680	0.000	14.384	0.000	619.018	13704.434	139468.372
11+720	0.000	16.587	0.000	629.670	13704.434	140098.042
11+760	0.000	14.896	0.000	624.512	13704.434	140722.553
11+800	0.000	16.329	0.000	628.205	13704.434	141350.759
11+840	0.000	15.081	0.000	612.206	13704.434	141962.964
11+880	0.000	15.529	0.000	648.115	13704.434	142611.079
11+920	0.000	16.876	0.000	727.824	13704.434	143338.902
11+960	0.000	19.515	0.000	678.055	13704.434	144016.958
12+000	0.000	14.388	0.000	745.618	13704.434	144762.575
12+040	0.000	22.893	0.000	935.302	13704.434	145697.877
12+080	0.000	23.872	0.000	985.891	13704.434	146683.769
12+120	0.000	25.422	0.000	1073.127	13704.434	147756.896
12+160	0.000	28.234	0.000	1179.783	13704.434	148936.679
12+200	0.000	30.755	0.000	1180.699	13704.434	150117.378
12+240	0.000	28.280	0.000	1045.248	13704.434	151162.626
12+280	0.000	23.983	0.000	984.800	13704.434	152147.426
12+320	0.000	25.257	0.000	1001.449	13704.434	153148.875
12+360	0.000	24.815	0.000	979.765	13704.434	154128.640
12+400	0.000	24.173	0.000	948.238	13704.434	155076.879
12+440	0.000	23.239	0.000	876.200	13704.434	155953.078
12+480	0.000	20.571	0.000	807.459	13704.434	156760.537
12+520	0.000	19.802	0.000	751.839	13704.434	157512.377
12+560	0.000	17.790	0.000	682.675	13704.434	158195.051
12+600	0.000	16.344	0.000	627.499	13704.434	158822.550
12+640	0.000	15.031	0.000	559.859	13704.434	159382.410
12+680	0.000	12.962	0.000	524.277	13704.434	159906.687
12+720	0.000	13.252	0.000	525.047	13704.434	160431.734
12+760	0.000	13.000	0.000	534.356	13704.434	160966.090
12+800	0.000	13.718	0.000	544.124	13704.434	161510.214
12+840	0.000	13.488	0.000	532.730	13704.434	162042.944
12+880	0.000	13.148	0.000	527.558	13704.434	162570.502
12+920	0.000	13.230	0.000	546.325	13704.434	163116.828
12+960	0.000	14.086	0.000	625.989	13704.434	163742.817
13+000	0.000	17.213	0.000	625.218	13704.434	164368.034
13+040	0.000	14.048	0.000	557.747	13704.434	164925.781
13+080	0.000	13.840	0.000	574.060	13704.434	165499.840
13+120	0.000	14.863	0.000	595.423	13704.434	166095.263
13+160	0.000	14.908	0.000	575.347	13704.434	166670.611
13+200	0.000	13.860	0.000	553.591	13704.434	167224.202
13+240	0.000	13.820	0.000	549.208	13704.434	167773.410
13+280	0.000	13.641	0.000	545.793	13704.434	168319.204
13+320	0.000	13.649	0.000	536.694	13704.434	168855.897
13+360	0.000	13.186	0.000	524.181	13704.434	169380.078
13+400	0.000	13.023	0.000	517.400	13704.434	169897.478
13+440	0.000	12.847	0.000	515.281	13704.434	170412.759
13+480	0.000	12.918	0.000	500.516	13704.434	170913.275
13+520	0.000	12.108	0.000	558.893	13704.434	171472.168
13+560	0.000	15.836	0.000	575.552	13704.434	172047.721
13+600	0.000	12.941	0.000	566.147	13704.434	172613.867
13+640	0.000	15.366	0.000	617.324	13704.434	173231.192
13+680	0.000	15.500	0.000	608.582	13704.434	173839.773
13+720	0.000	14.929	0.000	593.053	13704.434	174432.826
13+760	0.000	14.724	0.000	578.449	13704.434	175011.275
13+800	0.000	14.199	0.000	569.165	13704.434	175580.441
13+840	0.000	14.259	0.000	565.746	13704.434	176146.186
13+880	0.000	14.028	0.000	570.311	13704.434	176716.497
13+920	0.000	14.488	0.000	590.119	13704.434	177306.617
13+960	0.000	15.018	0.000	553.975	13704.434	177860.592
14+000	0.000	12.680	0.000	471.867	13704.434	178332.459

PROG.	CORTE m2	CARGA m2	CORTE m3	CARGA m3	CORTE ACUM. m3	CARGA ACUM. m3
6+000	0.000	11.580	0.000	495.221	13704.434	55154.985
6+040	0.000	13.217	0.000	569.387	13704.434	55724.373
6+080	0.000	15.255	0.000	618.252	13704.434	56342.624
6+120	0.000	15.658	0.000	614.127	13704.434	56956.751
6+160	0.000	15.048	0.000	591.579	13704.434	57548.330
6+200	0.000	14.531	0.000	578.939	13704.434	58127.269
6+240	0.000	14.416	0.000	574.382	13704.434	58701.652
6+280	0.000	14.303	0.000	558.491	13704.434	59260.143
6+320	0.000	13.622	0.000	536.720	13704.434	59796.863
6+360	0.000	13.214	0.000	521.077	13704.434	60317.939
6+400	0.000	12.839	0.000	487.244	13704.434	60805.184
6+440	0.000	11.523	0.000	466.657	13704.434	61271.840
6+480	0.000	11.810	0.000	466.068	13704.434	61737.909
6+520	0.000	11.493	0.000	466.171	13704.434	62204.080
6+560	0.000	11.815	0.000	477.860	13704.434	62681.940
6+600	0.000	12.078	0.000	489.305	13704.434	63171.244
6+640	0.000	12.388	0.000	493.052	13704.434	63664.296
6+680	0.000	12.265	0.000	490.119	13704.434	64154.416
6+720	0.000	12.241	0.000	482.130	13704.434	64636.546
6+760	0.000	11.866	0.000	468.854	13704.434	65105.399
6+800	0.000	11.577	0.000	481.565	13704.434	65586.964
6+840	0.000	12.501	0.000	505.478	13704.434	66092.442
6+880	0.000	12.773	0.000	532.569	13704.434	66625.011
6+920	0.000	13.856	0.000	564.728	13704.434	67189.738
6+960	0.000	14.381	0.000	585.782	13704.434	67775.520
7+000	0.000	14.908	0.000	608.672	13704.434	68384.193
7+040	0.000	15.525	0.000	643.992	13704.434	69028.185
7+080	0.000	16.674	0.000	660.812	13704.434	69688.997
7+120	0.000	16.366	0.000	678.195	13704.434	70367.193
7+160	0.000	17.544	0.000	731.547	13704.434	71098.740
7+200	0.000	19.034	0.000	789.962	13704.434	71888.702
7+240	0.000	20.464	0.000	832.525	13704.434	72721.226
7+280	0.000	21.162	0.000	882.531	13704.434	73603.757
7+320	0.000	22.965	0.000	919.121	13704.434	74522.878
7+360	0.000	22.991	0.000	958.818	13704.434	75481.696
7+400	0.000	24.950	0.000	1034.988	13704.434	76516.684
7+440	0.000	26.800	0.000	1036.334	13704.434	77553.018
7+480	0.000	25.017	0.000	983.153	13704.434	78536.171
7+520	0.000	24.141	0.000	923.519	13704.434	79459.690
7+560	0.000	22.035	0.000	826.988	13704.434	80286.678
7+600	0.000	19.314	0.000	751.882	13704.434	81038.560
7+640	0.000	18.280	0.000	657.497	13704.434	81696.057
7+680	0.000	14.595	0.000	569.324	13704.434	82265.381
7+720	0.000	13.871	0.000	532.240	13704.434	82797.621
7+760	0.000	12.741	0.000	496.646	13704.434	83294.267
7+800	0.000	12.091	0.000	493.451	13704.434	83787.717
7+840	0.000	12.581	0.000	500.644	13704.434	84288.351
7+880	0.000	12.451	0.000	503.748	13704.434	84792.109
7+920	0.000	12.736	0.000	520.158	13704.434	85312.268
7+960	0.000	13.272	0.000	482.281	13704.434	85794.549
8+000	0.000	10.842	0.000	490.454	13704.434	86285.003
8+040	0.000	13.680	0.000	529.278	13704.434	86814.280
8+080	0.000	12.784	0.000	519.018	13704.434	87333.299
8+120	0.000	13.167	0.000	536.438	13704.434	87869.737
8+160	0.000	13.655	0.000	543.178	13704.434	88412.915
8+200	0.000	13.504	0.000	525.983	13704.434	88938.898
8+240	0.000	12.795	0.000	500.031	13704.434	89438.930
8+280	0.000	12.207	0.000	496.181	13704.434	89935.111
8+320	0.000	12.602	0.000	496.557	13704.434	90431.668
8+360	0.000	12.225	0.000	471.291	13704.434	90902.959
8+400	0.000	11.339	0.000	430.070	13704.434	91333.029
8+440	0.000	10.164	0.000	398.393	13704.434	91731.422
8+480	0.000	9.755	0.000	412.982	13704.434	92144.404
8+520	0.000	10.894	0.000	430.800	13704.434	92575.204
8+560	0.000	10.646	0.000	441.056	13704.434	93016.260
8+600	0.000	11.407	0.000	453.775	13704.434	93470.036
8+640	0.000	11.282	0.000	473.329	13704.434	93943.365
8+680	0.000	12.384	0.000	507.139	13704.434	94450.503
8+720	0.000	12.973	0.000	499.742	13704.434	94950.246
8+760	0.000	12.014	0.000	542.779	13704.434	95493.024
8+800	0.000	15.124	0.000	584.948	13704.434	96077.972
8+840	0.000	14.123	0.000	576.258	13704.434	96654.230
8+880	0.000	14.690	0.000	567.846	13704.434	97222.076
8+920	0.000	13.702	0.000	520.741	13704.434	97742.818
8+960	0.000	12.335	0.000	507.747	13704.434	98250.565
9+000	0.000	13.053	0.000	505.553	13704.434	98756.118
9+040	0.000	12.225	0.000	522.424	13704.434	99278.541
9+080	0.000	13.896	0.000	544.457	13704.434	99822.999
9+120	0.000	13.327	0.000	569.897	13704.434	100392.896
9+160	0.000	15.168	0.000	621.555	13704.434	101014.451
9+200	0.000	15.910	0.000	595.894	13704.434	101610.345
9+240	0.000	13.885	0.000	529.486	13704.434	102139.831
9+280	0.000	12.589	0.000	496.169	13704.434	102636.000
9+320	0.000	12.219	0.000	498.890	13704.434	103134.891
9+360	0.000	12.725	0.000	505.310	13704.434	103640.201
9+400	0.000	12.540	0.000	521.755	13704.434	104161.956
9+440	0.000	13.548	0.000	537.215	13704.434	104699.171
9+480	0.000	13.313	0.000	560.662	13704.434	105259.833
9+520	0.000	14.720	0.000	598.753	13704.434	105858.586
9+560	0.000	15.218	0.000	597.097	13704.434	106455.683
9+600	0.000	14.637	0.000	601.443	13704.434	107057.126
9+640	0.000	15.435	0.000	584.628	13704.434	107641.754
9+680	0.000	13.796	0.000	542.496	13704.434	108184.250
9+720	0.000	13.329	0.000	535.375	13704.434	108719.625
9+760	0.000	13.440	0.000	560.076	13704.434	109279.701
9+800	0.000	14.564	0.000	589.540	13704.434	109869.240
9+840	0.000	14.913	0.000	548.321	13704.434	110417.562
9+880	0.000	12.503	0.000	522.906	13704.434	110940.468
9+920	0.000	13.643	0.000	517.096	13704.434	111457.564
9+960	0.000	12.212	0.000	484.667	13704.434	111942.231
10+000	0.000	12.021	0.000	551.503	13704.434	112493.734

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CONSULTORA DE INGENIERIA
Y GESTION VIAL
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

REFERENCIAS

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REPUBLICA DEL PARAGUAY

MINISTERIO DE OBRAS PÚBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PÚBLICAS Y COMUNICACIONES

DIRECCIÓN DE VIALIDAD

ESTUDIOS DE FACTIBILIDAD TÉCNICO, ECONÓMICO Y AMBIENTAL Y

DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO:
FILADELFIA - LOMA PLATA

SECCIONES TRANSVERSALES

CUADRO DE VOLUMENES

ESCALAS: SIN ESCALA

LAMINA Nº: ST - 25

MOPC
MAPA DEL PARAGUAY
BOLIVIA
BRASIL
ZONA DE PROYECTO
ARGENTINA

PROG.	CORTE m2	CARGA m2	CORTE m3	CARGA m3	CORTE ACUM. m3	CARGA ACUM. m3
0+000	10.618	0.000	142.808	9.966	142.808	9.966
0+020	3.662	0.997	145.062	10.730	287.870	20.697
0+040	10.844	0.076	202.463	1.339	490.333	22.036
0+060	9.403	0.058	188.704	1.124	679.037	23.160
0+080	9.468	0.055	188.434	1.452	867.471	24.612
0+100	9.376	0.090	180.117	0.903	1047.588	25.515
0+120	8.636	0.000	154.827	1.225	1202.414	26.740
0+140	6.847	0.122	128.774	6.565	1331.189	33.305
0+160	6.031	0.534	112.709	13.246	1443.898	46.552
0+180	5.240	0.791	94.587	19.426	1538.484	65.978
0+200	4.219	1.152	92.172	17.464	1630.656	83.442
0+220	4.998	0.594	104.139	13.396	1734.795	96.838
0+240	5.415	0.745	113.219	15.496	1848.014	112.334
0+260	5.906	0.804	148.810	8.048	1996.824	120.381
0+280	8.975	0.000	127.345	11.636	2124.169	132.017
0+300	3.760	1.163	80.954	20.140	2205.123	152.157
0+320	4.335	0.851	74.928	19.701	2280.051	171.859
0+340	3.157	1.119	60.872	24.656	2340.923	196.515
0+360	2.930	1.346	65.578	40.899	2406.502	237.414
0+380	3.628	2.744	145.407	27.436	2551.908	264.850
0+400	10.913	0.000	212.773	1.322	2764.682	266.172
0+420	10.365	0.132	135.262	16.340	2899.944	282.513
0+440	3.161	1.502	86.666	20.296	2986.610	302.808
0+460	5.505	0.528	131.917	6.423	3118.527	309.232
0+480	7.687	0.115	190.962	3.334	3309.489	312.566
0+500	11.410	0.219	242.230	2.382	3551.719	314.948
0+520	12.813	0.019	295.820	0.193	3847.539	315.140
0+540	16.769	0.000	332.610	0.000	4180.149	315.140
0+560	16.492	0.000	326.331	0.003	4506.480	315.143
0+580	16.141	0.000	298.165	0.003	4804.645	315.146
0+600	13.676	0.000	250.528	0.005	5055.173	315.152
0+620	11.377	0.001	222.595	0.122	5277.768	315.274
0+640	10.883	0.012	205.651	0.324	5483.419	315.598
0+660	9.683	0.021	193.436	0.208	5676.856	315.806
0+680	9.661	0.000	171.398	1.524	5848.253	317.330
0+700	7.479	0.152	165.044	1.618	6013.297	318.948
0+720	9.026	0.009	189.525	0.822	6202.822	319.770
0+740	9.927	0.073	186.859	2.142	6389.680	321.912
0+760	8.759	0.141	173.349	1.950	6563.029	323.862
0+780	8.576	0.054	156.365	2.063	6719.394	325.926
0+800	7.061	0.153	143.794	2.773	6863.188	328.699
0+820	7.319	0.125	151.328	4.267	7014.517	332.966
0+840	7.814	0.302	162.721	3.432	7177.238	336.398
0+860	8.458	0.041	160.302	2.423	7337.540	338.821
0+880	7.572	0.201	158.505	2.561	7496.045	341.382
0+900	8.278	0.055	177.521	0.745	7673.566	342.127
0+920	9.474	0.020	176.291	1.413	7849.857	343.539
0+940	8.155	0.122	167.044	1.547	8016.901	345.087
0+960	8.549	0.033	175.361	1.321	8192.262	346.407
0+980	8.987	0.099	179.856	1.564	8372.118	347.971
1+000	8.998	0.057	169.203	1.284	8541.321	349.255
1+020	7.922	0.071	187.439	1.027	8728.760	350.282
1+040	10.822	0.032	227.591	0.318	8956.351	350.600
1+060	11.937	0.000	242.901	0.000	9199.252	350.600
1+080	12.353	0.000	255.643	0.000	9454.895	350.600
1+100	13.211	0.000	258.744	0.000	9713.639	350.600
1+120	12.663	0.000	260.621	0.000	9974.260	350.600
1+140	13.399	0.000	281.443	0.363	10255.703	350.964
1+160	14.745	0.036	246.117	6.977	10501.820	357.940
1+180	9.866	0.661	204.519	6.754	10706.339	364.694
1+200	11.458	0.150	216.719	5.032	10923.058	369.726
1+220	10.213	0.353	188.331	15.140	11111.389	384.867
1+240	8.620	1.161	178.408	14.482	11289.797	399.349
1+260	9.221	0.287	174.185	7.658	11463.981	407.007
1+280	8.197	0.479	138.180	12.159	11602.162	419.166
1+300	5.621	0.737	102.799	18.760	11704.960	437.927
1+320	4.659	1.139	90.138	24.284	11795.099	462.210
1+340	4.355	1.289	109.901	14.447	11905.000	476.657
1+360	6.354	0.090	141.506	2.533	12046.506	479.190
1+380	7.286	0.160	152.218	6.295	12198.724	485.486
1+400	7.320	0.464	151.409	9.476	12350.133	494.962
1+420	7.821	0.484	160.599	5.357	12510.732	500.319
1+440	8.239	0.052	184.008	0.521	12694.740	500.840
1+460	10.162	0.000	184.002	0.000	12878.742	500.840
1+480	8.238	0.000	182.708	0.000	13061.450	500.840
1+500	10.032	0.000	179.062	0.000	13240.512	500.840
1+520	7.874	0.000	91.430	0.000	13331.941	500.840
1+540	1.269	0.000	77.954	0.000	13409.896	500.840
1+560	6.526	0.000	121.664	0.000	13531.560	500.840
1+580	5.640	0.000	84.160	0.000	13615.721	500.840
1+600	2.776	0.000	72.116	4.948	13687.836	505.788
1+640	0.830	0.247	16.598	45.216	13704.434	551.004
1+680	0.000	2.013	0.000	100.456	13704.434	651.460
1+720	0.000	3.009	0.000	135.451	13704.434	786.911
1+760	0.000	3.763	0.000	189.390	13704.434	976.301
1+800	0.000	5.706	0.000	257.036	13704.434	1233.337
1+840	0.000	7.145	0.000	299.293	13704.434	1532.630
1+880	0.000	7.819	0.000	411.759	13704.434	1944.388
1+920	0.000	12.769	0.000	534.892	13704.434	2479.281
1+960	0.000	13.976	0.000	577.651	13704.434	3056.932
2+000	0.000	14.907	0.000	571.347	13704.434	3628.278

PROG.	CORTE m2	CARGA m2	CORTE m3	CARGA m3	CORTE ACUM. m3	CARGA ACUM. m3
2+000	0.000	14.907	0.000	571.347	13704.434	3628.278
2+040	0.000	13.661	0.000	547.891	13704.434	4176.169
2+080	0.000	13.734	0.000	554.898	13704.434	4731.067
2+120	0.000	14.011	0.000	564.763	13704.434	5295.830
2+160	0.000	14.227	0.000	569.345	13704.434	5865.175
2+200	0.000	14.240	0.000	562.780	13704.434	6427.954
2+240	0.000	13.899	0.000	572.429	13704.434	7000.383
2+280	0.000	14.723	0.000	592.736	13704.434	7593.119
2+320	0.000	14.914	0.000	585.967	13704.434	8179.086
2+360	0.000	14.384	0.000	582.480	13704.434	8761.566
2+400	0.000	14.740	0.000	584.080	13704.434	9345.646
2+440	0.000	14.464	0.000	587.244	13704.434	9932.889
2+480	0.000	14.898	0.000	591.257	13704.434	10524.147
2+520	0.000	14.665	0.000	556.977	13704.434	11081.124
2+560	0.000	13.184	0.000	538.725	13704.434	11619.849
2+600	0.000	13.752	0.000	533.332	13704.434	12153.182
2+640	0.000	12.915	0.000	508.394	13704.434	12661.576
2+680	0.000	12.505	0.000	516.240	13704.434	13177.815
2+720	0.000	13.307	0.000	517.013	13704.434	13694.828
2+760	0.000	12.544	0.000	476.808	13704.434	14171.636
2+800	0.000	11.297	0.000	482.174	13704.434	14653.810
2+840	0.000	12.812	0.000	505.759	13704.434	15159.569
2+880	0.000	12.476	0.000	525.023	13704.434	15684.592
2+920	0.000	13.775	0.000	537.427	13704.434	16222.020
2+960	0.000	13.096	0.000	538.093	13704.434	16760.112
3+000	0.000	13.809	0.000	562.622	13704.434	17322.734
3+040	0.000	14.322	0.000	515.551	13704.434	17838.284
3+080	0.000	11.455	0.000	469.356	13704.434	18307.640
3+120	0.000	12.013	0.000	482.687	13704.434	18790.327
3+160	0.000	12.122	0.000	483.551	13704.434	19273.878
3+200	0.000	12.056	0.000	465.989	13704.434	19739.867
3+240	0.000	11.243	0.000	458.584	13704.434	20198.451
3+280	0.000	11.686	0.000	469.422	13704.434	20667.873
3+320	0.000	11.785	0.000	462.372	13704.434	21130.245
3+360	0.000	11.333	0.000	474.962	13704.434	21605.207
3+400	0.000	12.415	0.000	516.747	13704.434	22121.955
3+440	0.000	13.422	0.000	527.133	13704.434	22649.087
3+480	0.000	12.934	0.000	523.117	13704.434	23172.204
3+520	0.000	13.222	0.000	508.949	13704.434	23681.153
3+560	0.000	12.226	0.000	508.046	13704.434	24189.199
3+600	0.000	13.177	0.000	518.852	13704.434	24708.051
3+640	0.000	12.766	0.000	500.714	13704.434	25208.765
3+680	0.000	12.270	0.000	532.024	13704.434	25740.789
3+720	0.000	14.332	0.000	556.635	13704.434	26297.424
3+760	0.000	13.500	0.000	521.538	13704.434	26818.962
3+800	0.000	12.577	0.000	495.939	13704.434	27314.900
3+840	0.000	12.220	0.000	518.887	13704.434	27833.787
3+880	0.000	13.724	0.000	519.989	13704.434	28353.776
3+920	0.000	12.275	0.000	519.926	13704.434	28873.702
3+960	0.000	13.721	0.000	591.952	13704.434	29465.654
4+000	0.000	15.877	0.000	637.850	13704.434	30103.504
4+040	0.000	16.016	0.000	656.526	13704.434	30760.030
4+080	0.000	16.810	0.000	674.288	13704.434	31434.318
4+120	0.000	16.904	0.000	669.675	13704.434	32103.993
4+160	0.000	16.580	0.000	671.062	13704.434	32775.055
4+200	0.000	16.973	0.000	623.431	13704.434	33398.486
4+240	0.000	14.198	0.000	559.583	13704.434	33958.069
4+280	0.000	13.781	0.000	561.032	13704.434	34519.101
4+320	0.000	14.271	0.000	530.713	13704.434	35049.814
4+360	0.000	12.265	0.000	476.349	13704.434	35526.162
4+400	0.000	11.552	0.000	478.667	13704.434	36004.829
4+440	0.000	12.381	0.000	461.528	13704.434	36466.357
4+480	0.000	10.695	0.000	460.096	13704.434	36926.453
4+520	0.000	12.309	0.000	492.082	13704.434	37418.536
4+560	0.000	12.295	0.000	534.499	13704.434	37953.035
4+600	0.000	14.430	0.000	568.428	13704.434	38521.463
4+640	0.000	13.991	0.000	559.496	13704.434	39080.958
4+680	0.000	13.984	0.000	581.803	13704.434	39662.761
4+720	0.000	15.107	0.000	584.070	13704.434	40246.831
4+760	0.000	14.097	0.000	506.097	13704.434	40752.928
4+800	0.000	11.208	0.000	427.151	13704.434	41180.079
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4+920	0.000	9.797	0.000	388.242	13704.434	42402.890
4+960	0.000	9.615	0.000	356.944	13704.434	42759.834
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REFERENCIAS

ACOMEPA
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SECCIONES TRANSVERSALES
CUADRO DE VOLUMENES

ESCALAS: SIN ESCALA

LAMINA Nº: ST - 24

MOPC

MAPA DEL PARAGUAY

INGEVIAS
CONSULTORA DE INGENIERÍA Y GESTION VIAL
Tel.: 575 824
Marcelina Insfrán Nº 151 c/ 10 de Ag...

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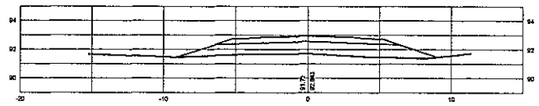

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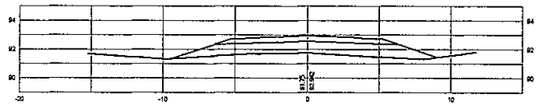

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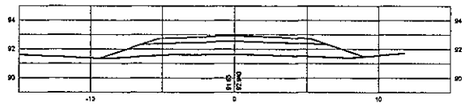

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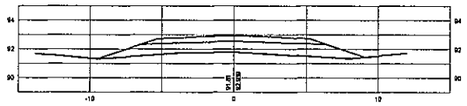

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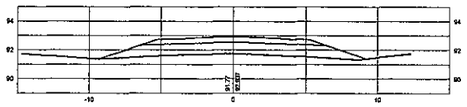

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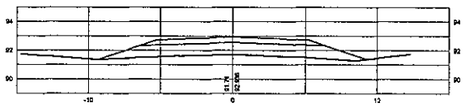

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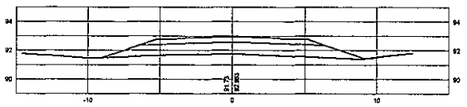

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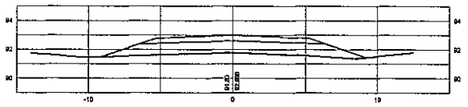

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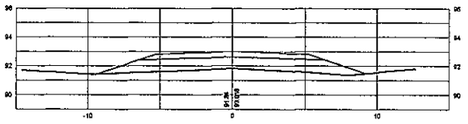

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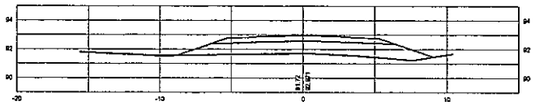

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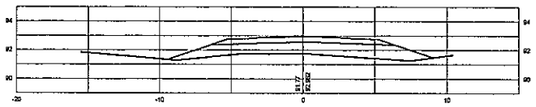

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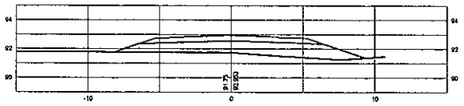

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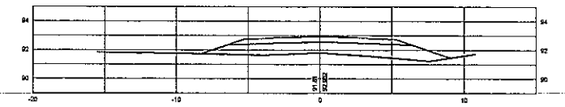

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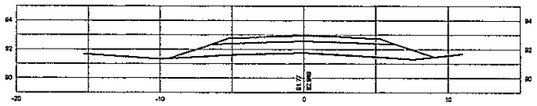

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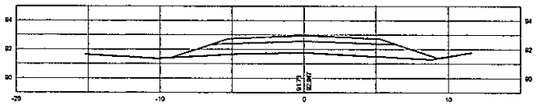

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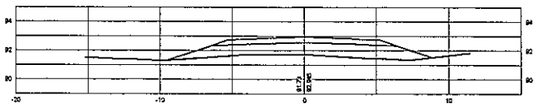

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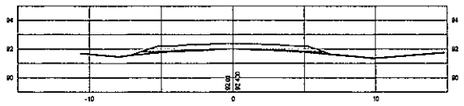

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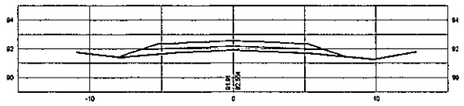

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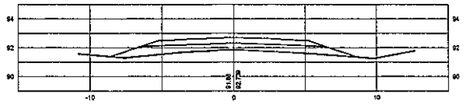

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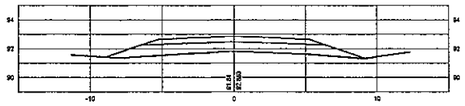

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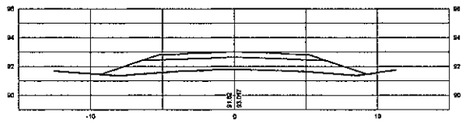

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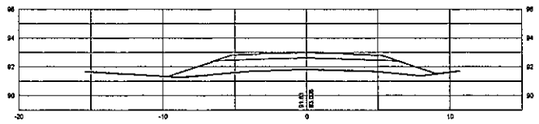

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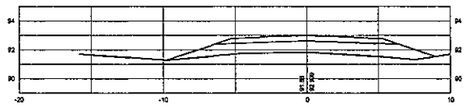

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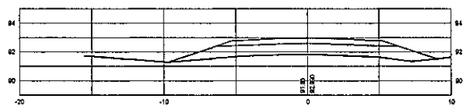

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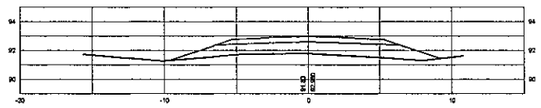

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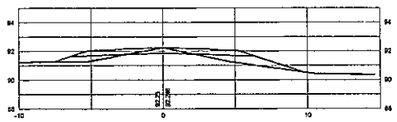

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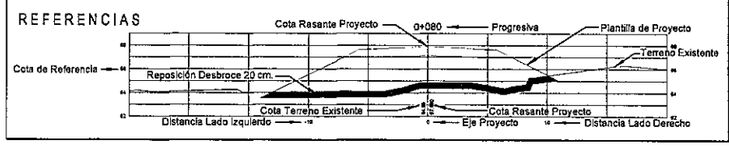
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

REFERENCIAS



ACOMEPA
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SECCIONES TRANSVERSALES
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MAPA DEL PARAGUAY

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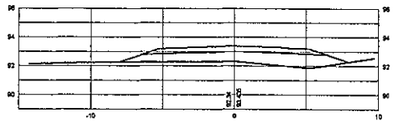

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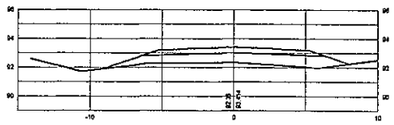

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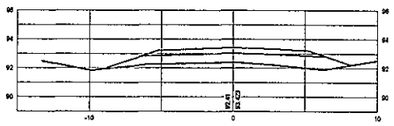

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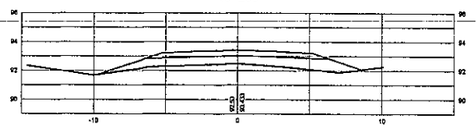

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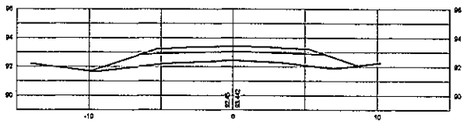

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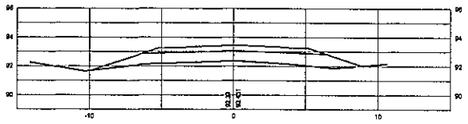

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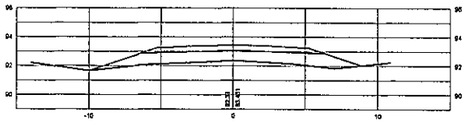

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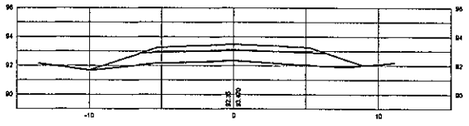

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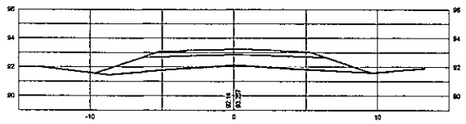

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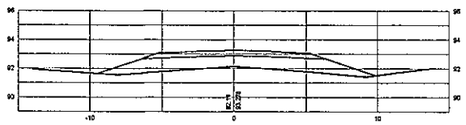

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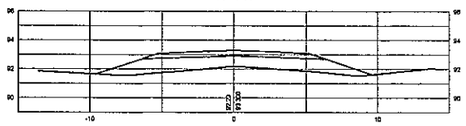

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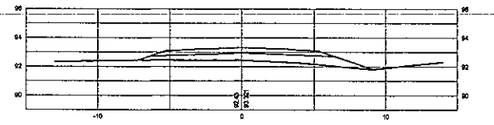

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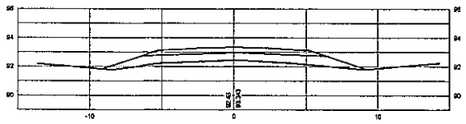

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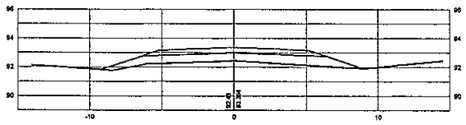

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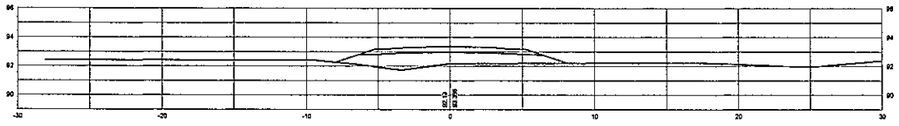

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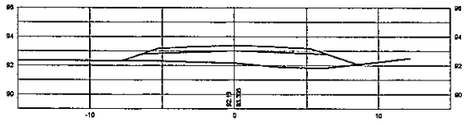

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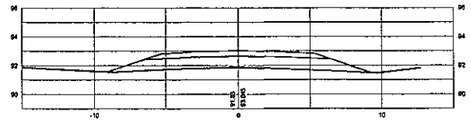

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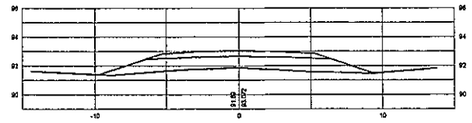

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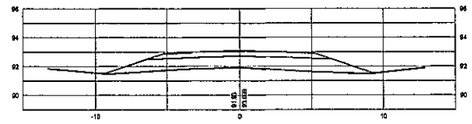

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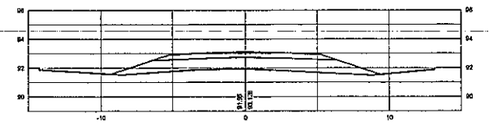

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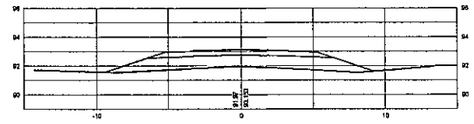

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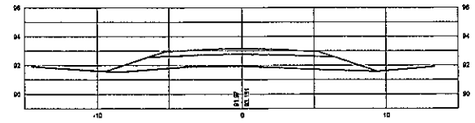

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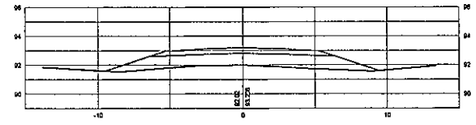

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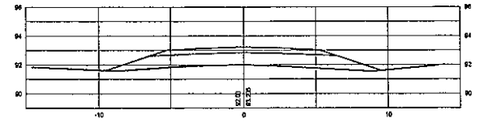

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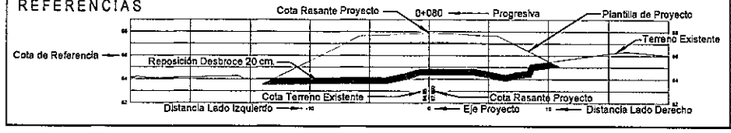
Y GESTION VIAL
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

REFERENCIAS



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SECCIONES TRANSVERSALES

PROG. 19+120 A PROG 20+040

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LAMINA Nº:
ST - 22

MOPC
MAPA DEL PARAGUAY

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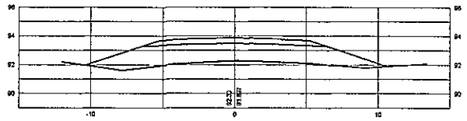

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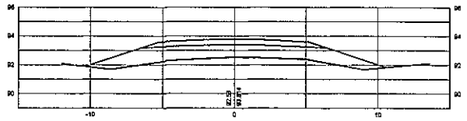

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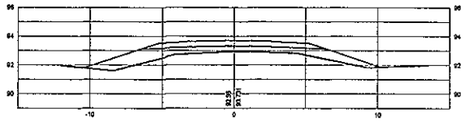

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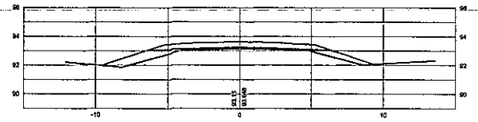

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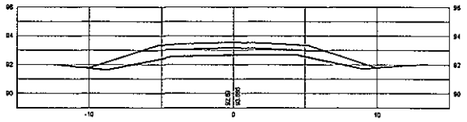

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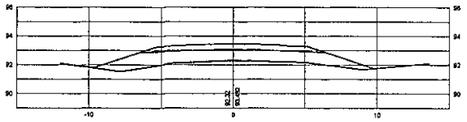

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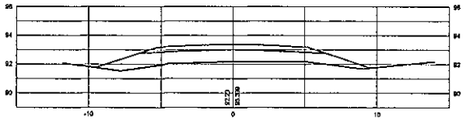

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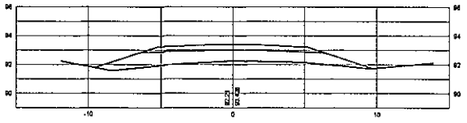

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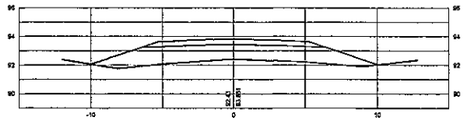

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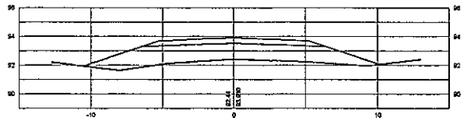

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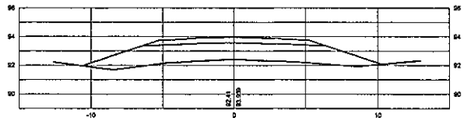

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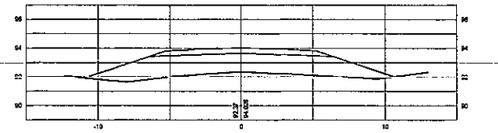

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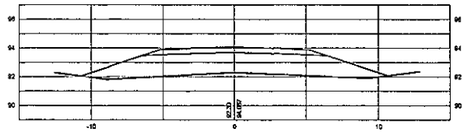

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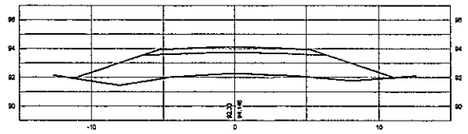

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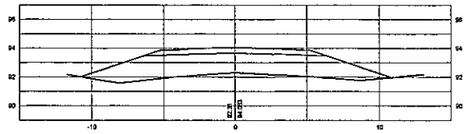

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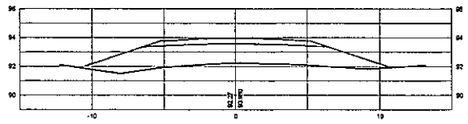

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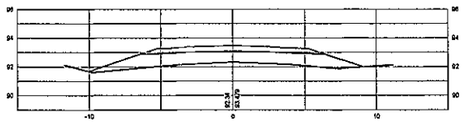

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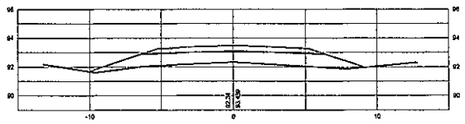

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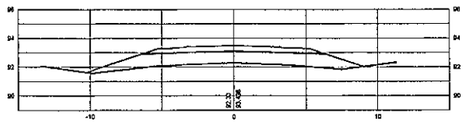

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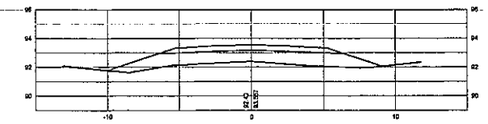

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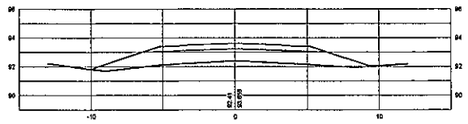

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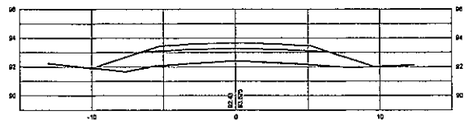

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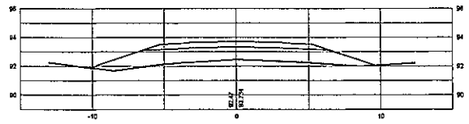

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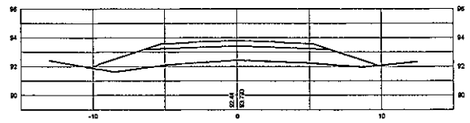

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Marcelina Insfrán N° 151 c/ 10 de Agosto

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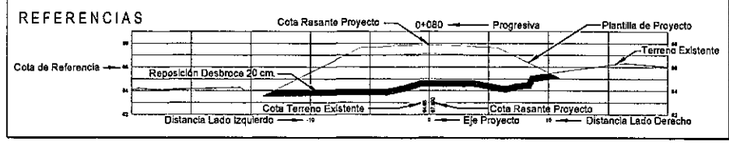

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SECCIONES TRANSVERSALES
PROG. 18+160 A PROG 19+080

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MAPA DEL PARAGUAY

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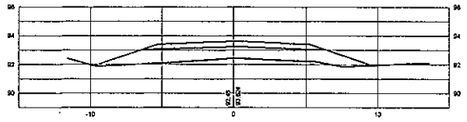

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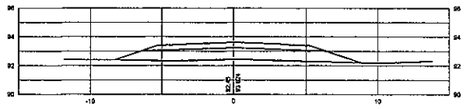

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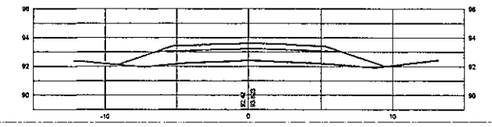

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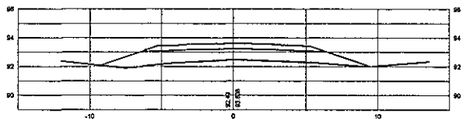

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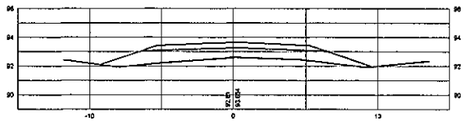

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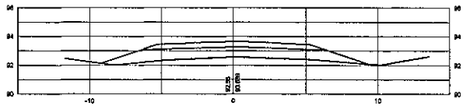

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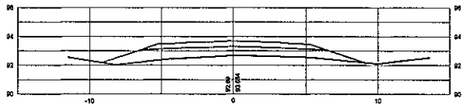

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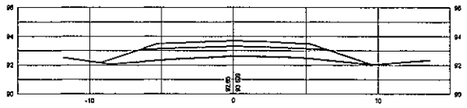

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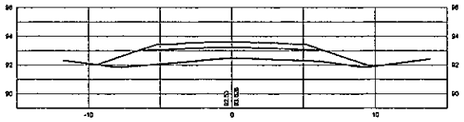

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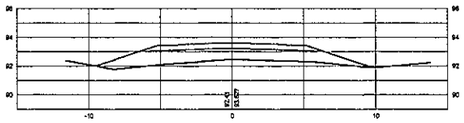

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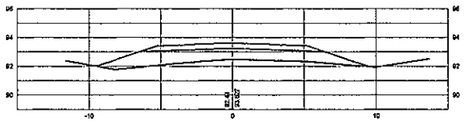

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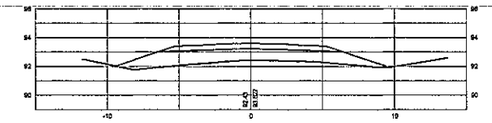

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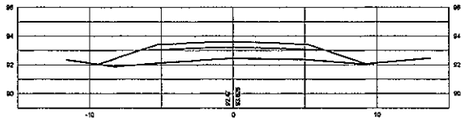

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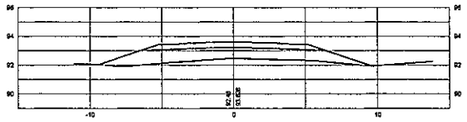

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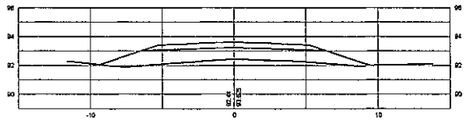

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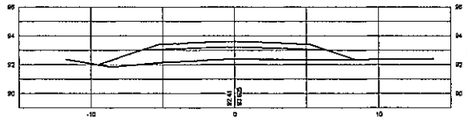

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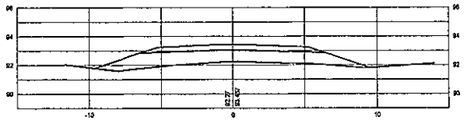

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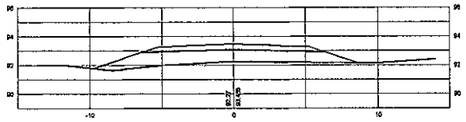

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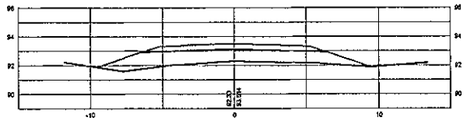

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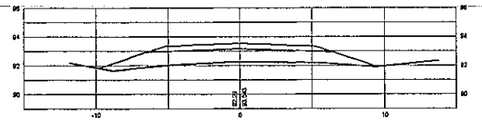

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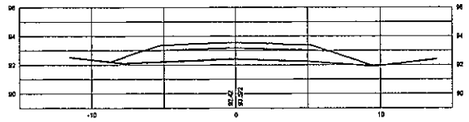

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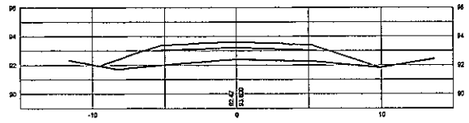

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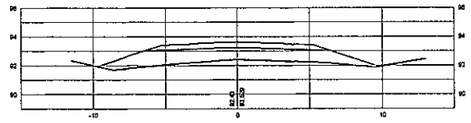

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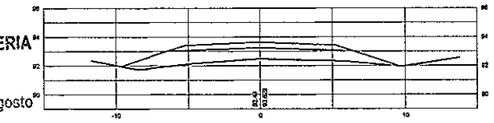

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Tel. 575 824
Marcelina Insfran N° 151 c/ 10 de Agosto

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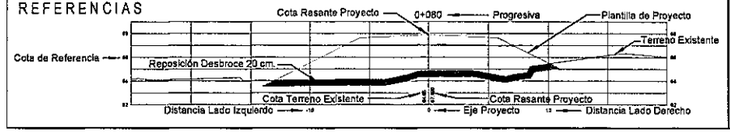

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SECCIONES TRANSVERSALES
PROG. 16+160 A PROG 17+160

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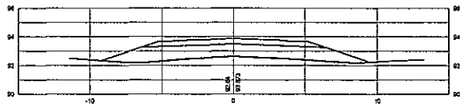

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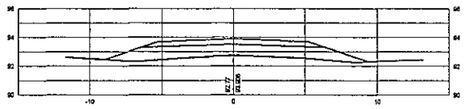

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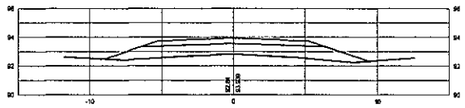

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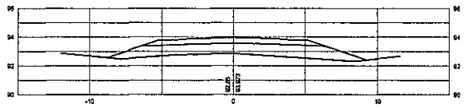

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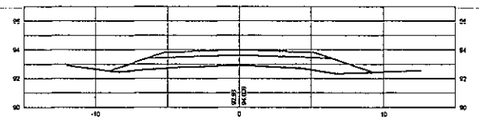

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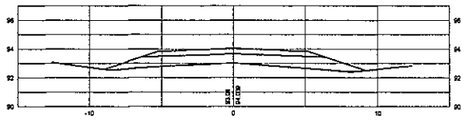

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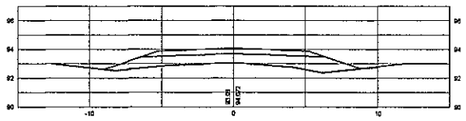

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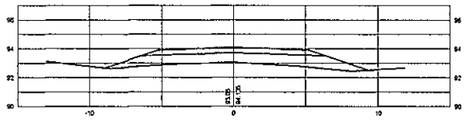

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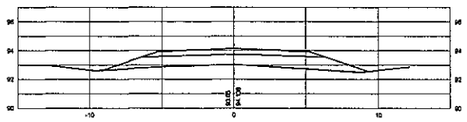

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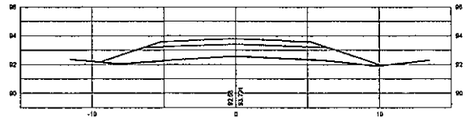

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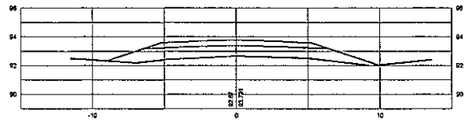

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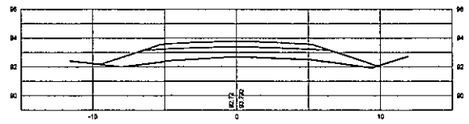

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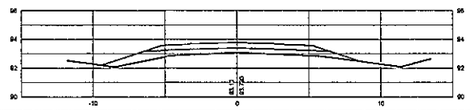

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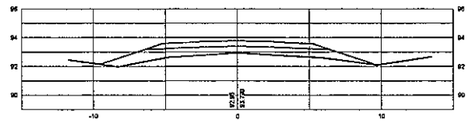

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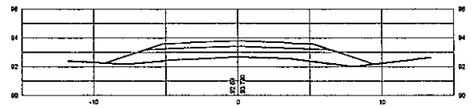

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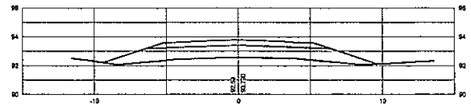

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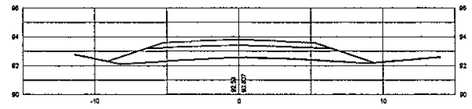

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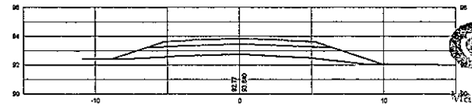

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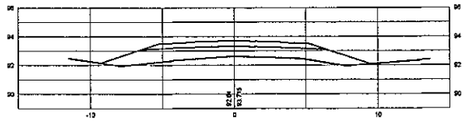

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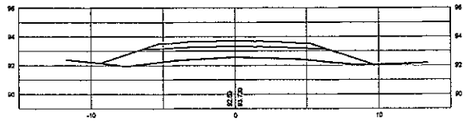

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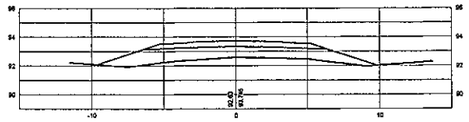

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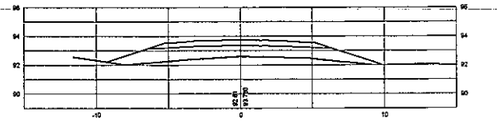

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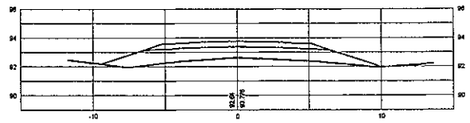

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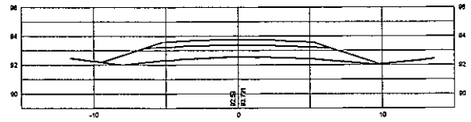

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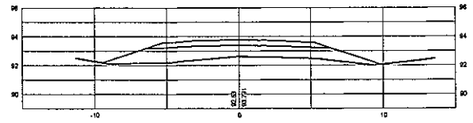

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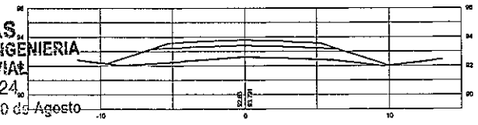

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Marcelina Insfrán N° 151 c/ 10 de Agosto

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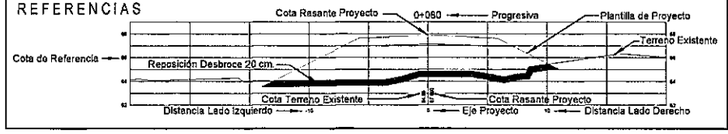

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SECCIONES TRANSVERSALES
PROG. 16+160 A PROG 17+160

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MOPC
MAPA DEL PARAGUAY

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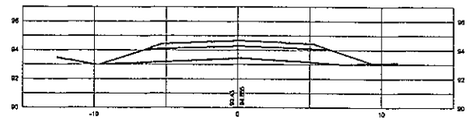

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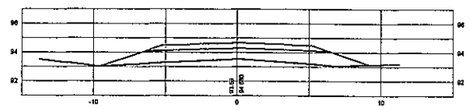

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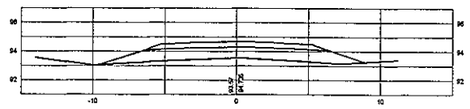

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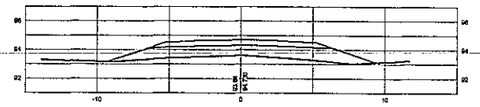

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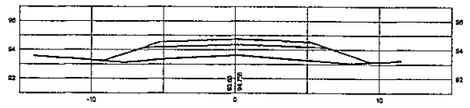

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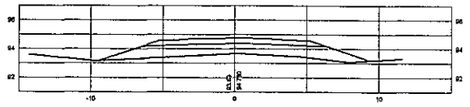

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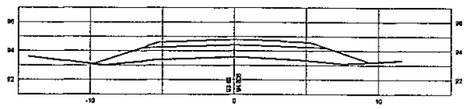

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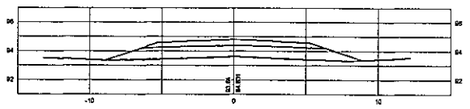

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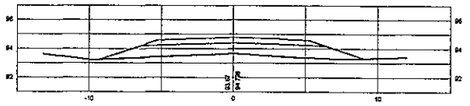

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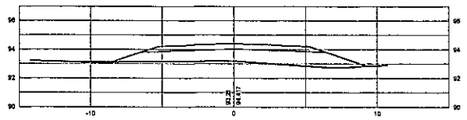

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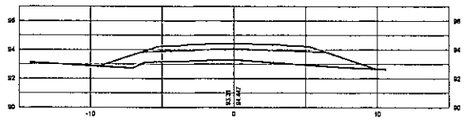

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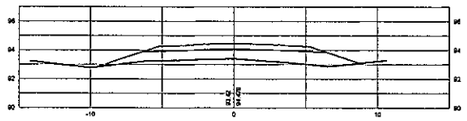

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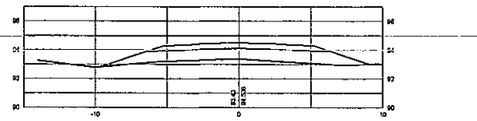

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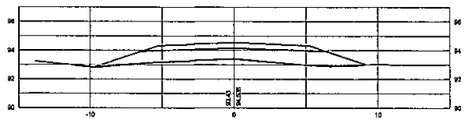

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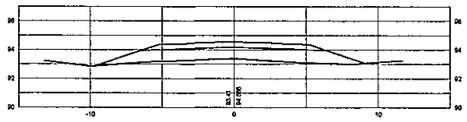

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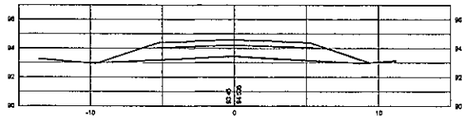

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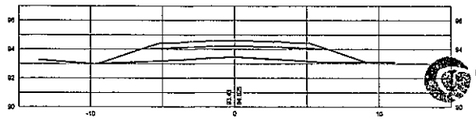

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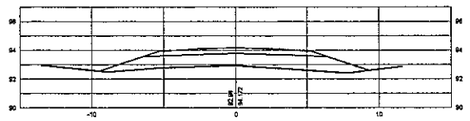

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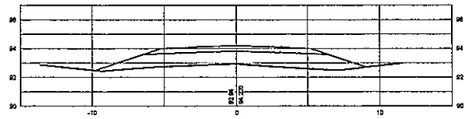

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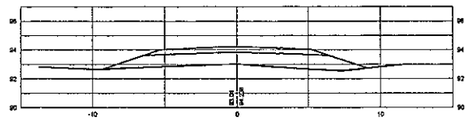

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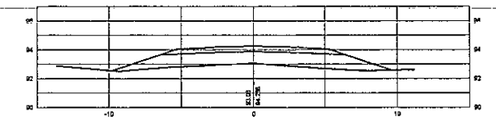

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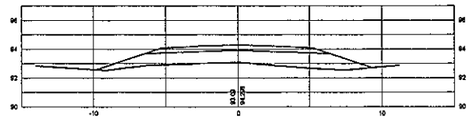

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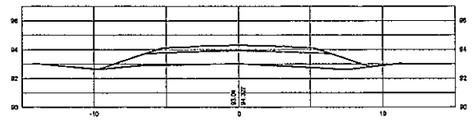

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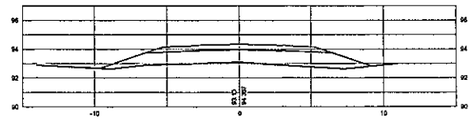

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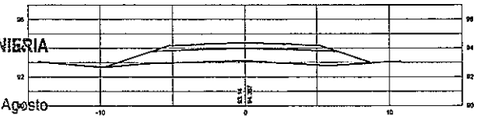

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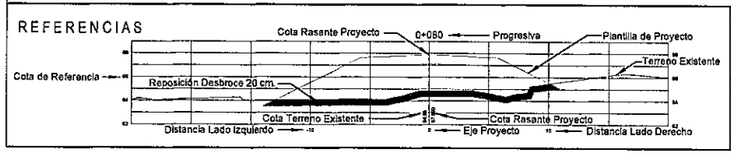
Tel. 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

REFERENCIAS



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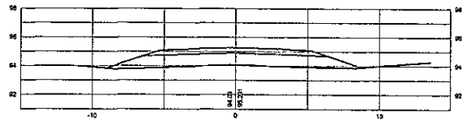

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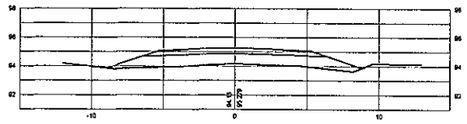

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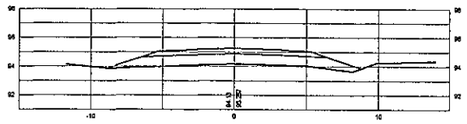

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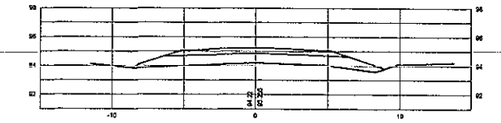

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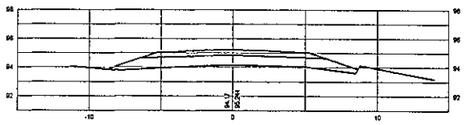

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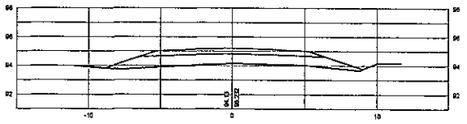

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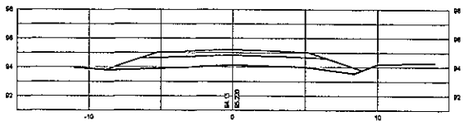

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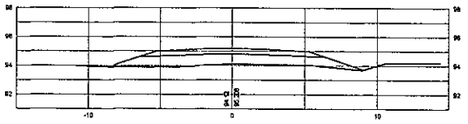

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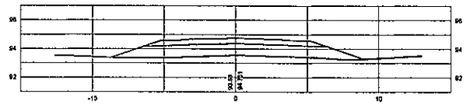

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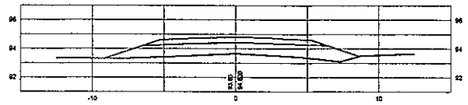

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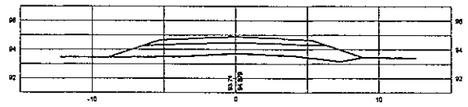

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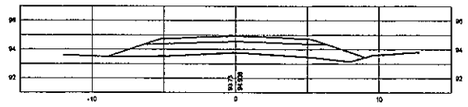

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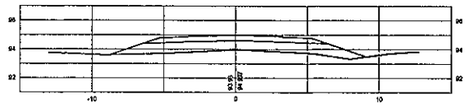

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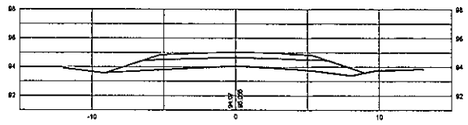

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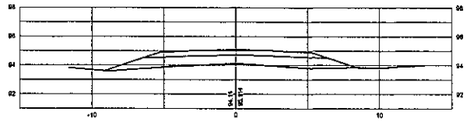

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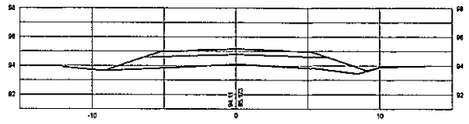

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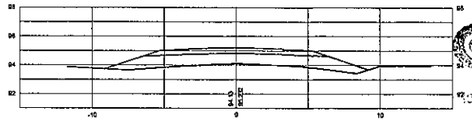

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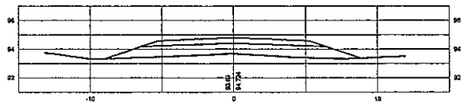

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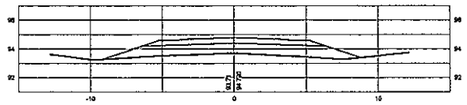

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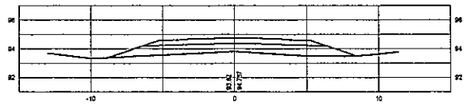

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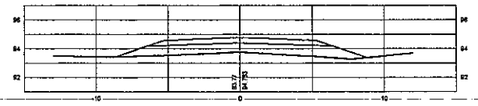

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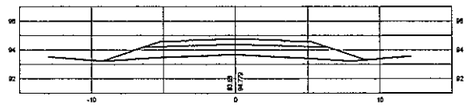

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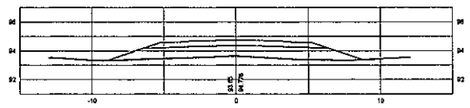

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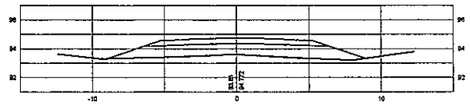

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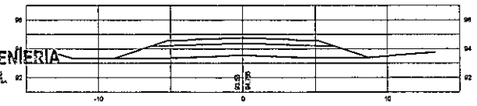

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Mercelina Instran Nº 151 c/ 10 de Agosto

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MAPA DEL PARAGUAY

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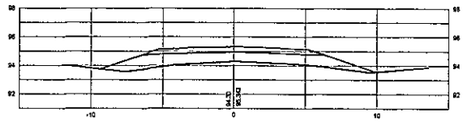

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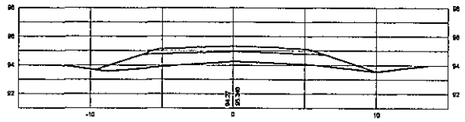

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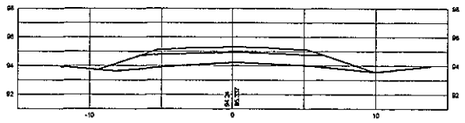

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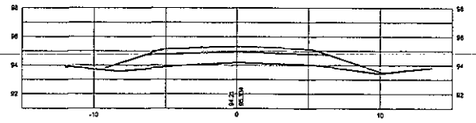

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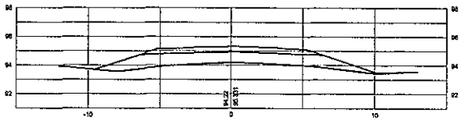

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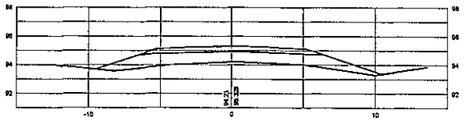

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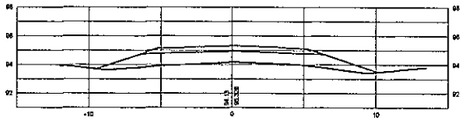

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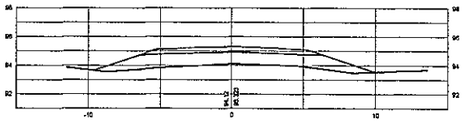

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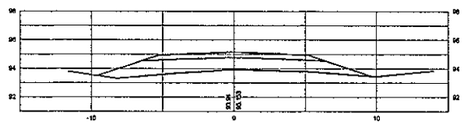

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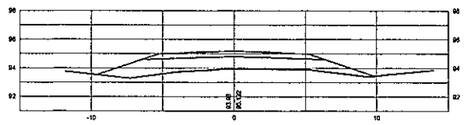

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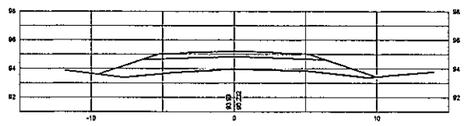

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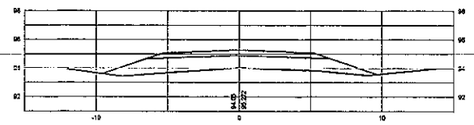

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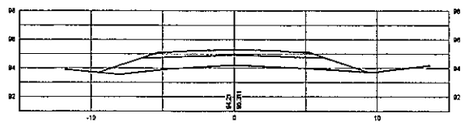

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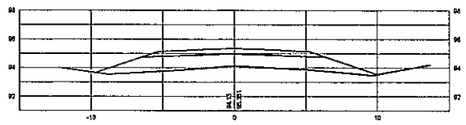

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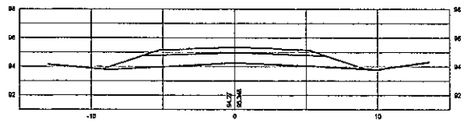

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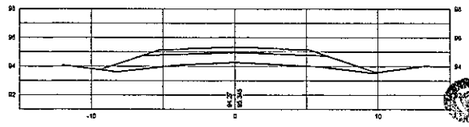

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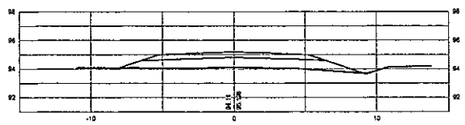

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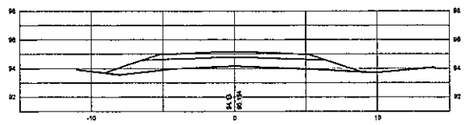

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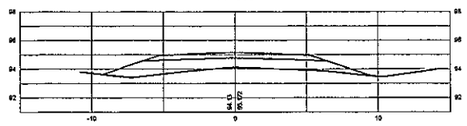

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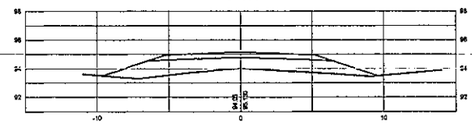

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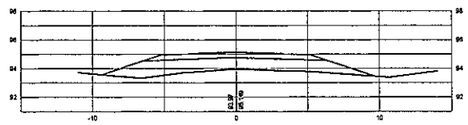

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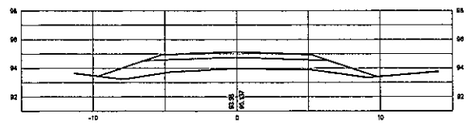

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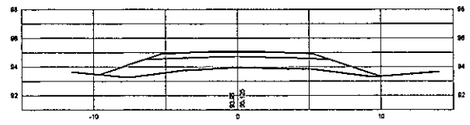

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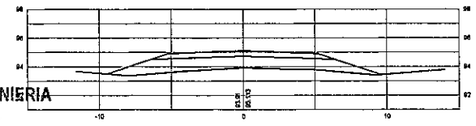

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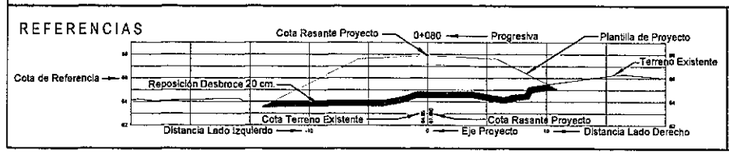
Tel. 575 824
Marcelina Insfran N° 151 c/ 10 de Agosto

REFERENCIAS



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SECCIONES TRANSVERSALES
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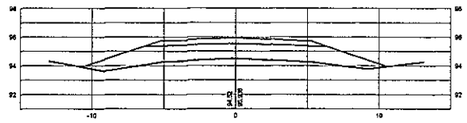

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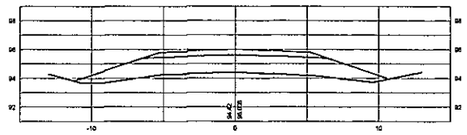

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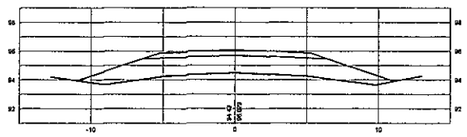

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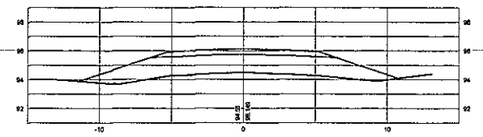

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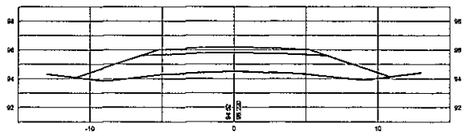

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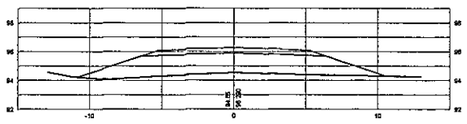

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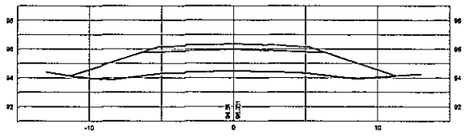

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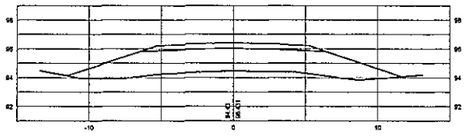

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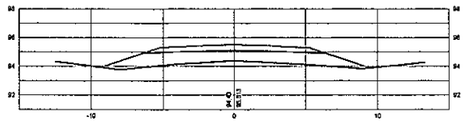

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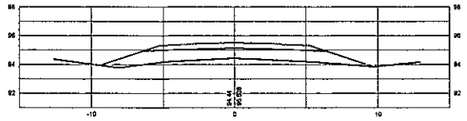

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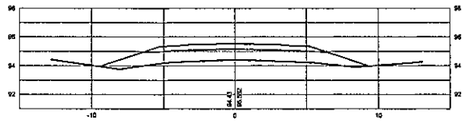

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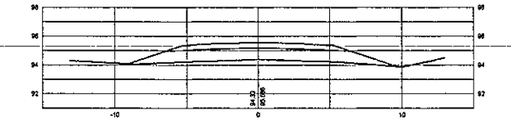

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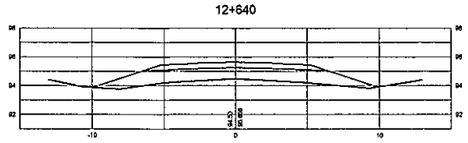

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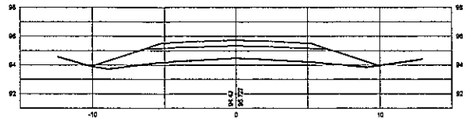

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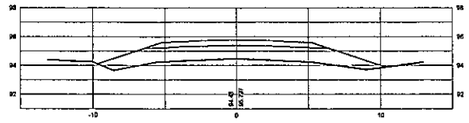

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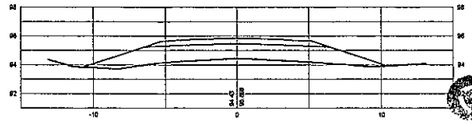

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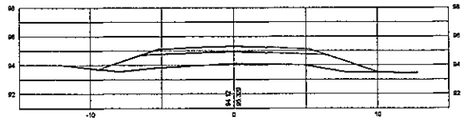

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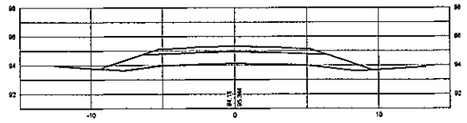

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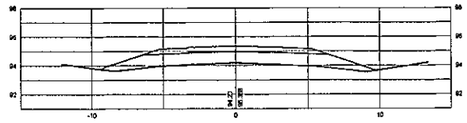

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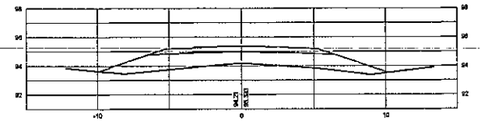

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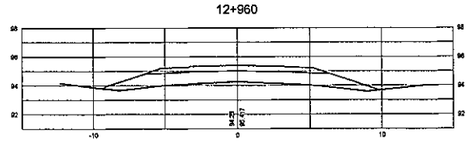

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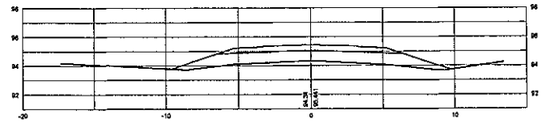

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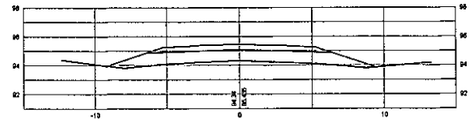

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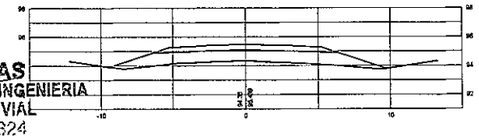

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Marcelina Insfrán N° 151 c/ 10 de Agosto

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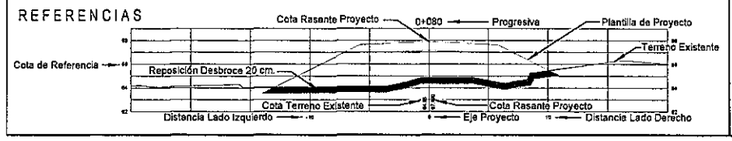

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SECCIONES TRANSVERSALES
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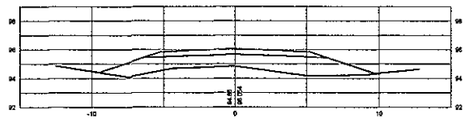

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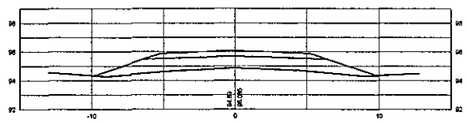

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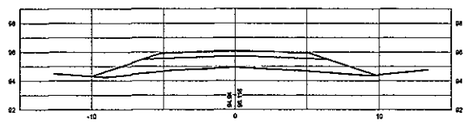

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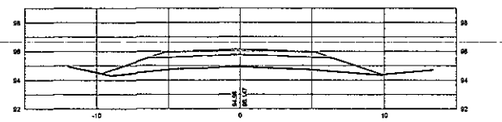

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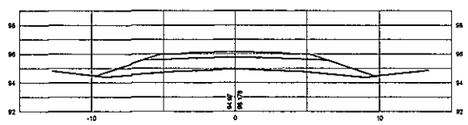

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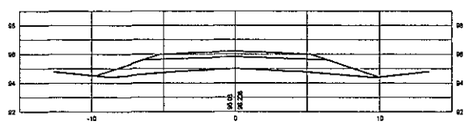

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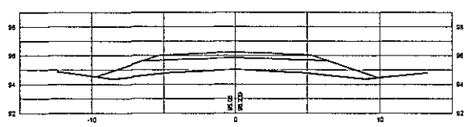

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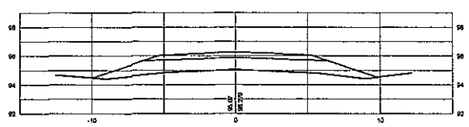

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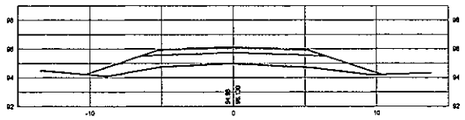

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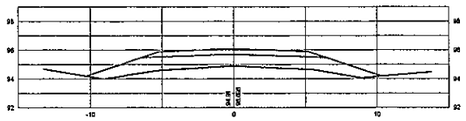

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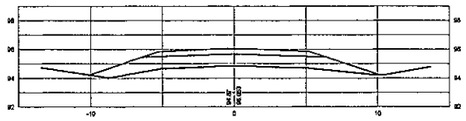

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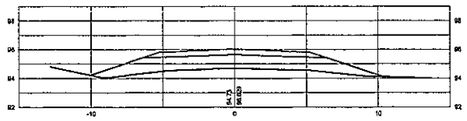

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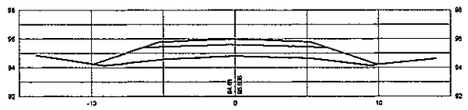

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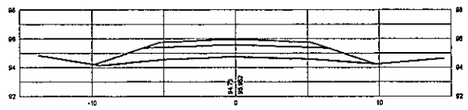

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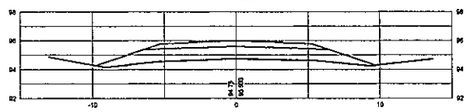

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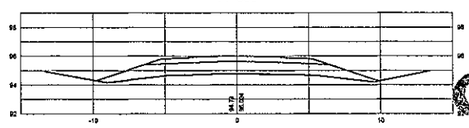

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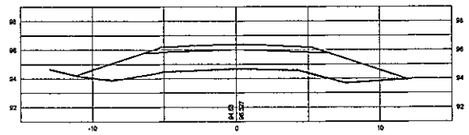

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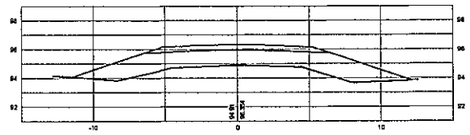

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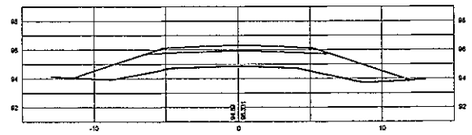

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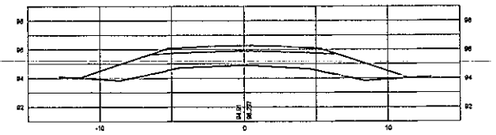

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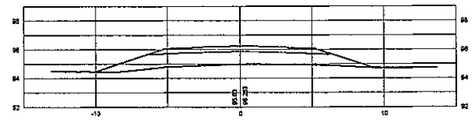

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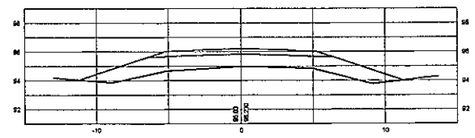

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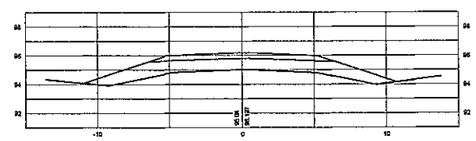

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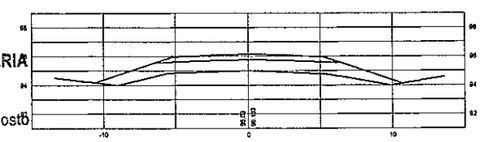

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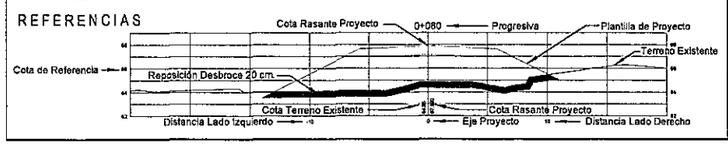
Y GESTION VIAL
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

REFERENCIAS



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DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

SECCIONES TRANSVERSALES
PROG. 11+240 A PROG 12+160

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LAMINA Nº:
ST - 14

MOPC
MAPA DEL PARAGUAY

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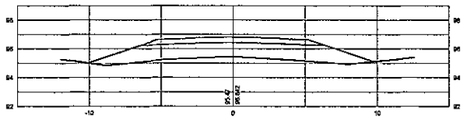

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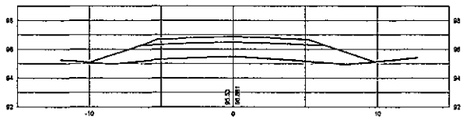

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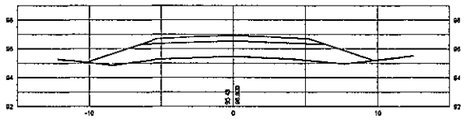

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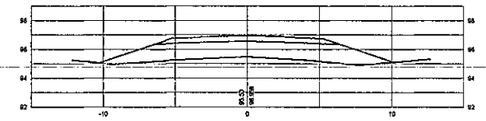

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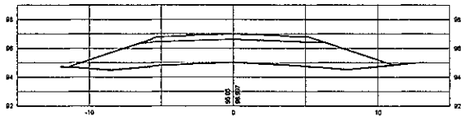

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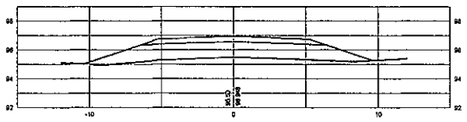

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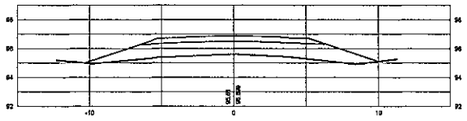

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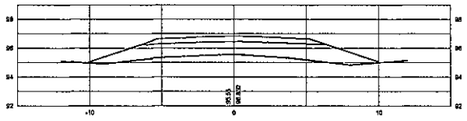

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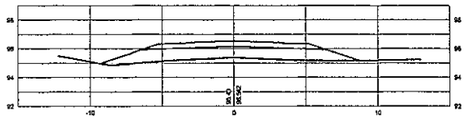

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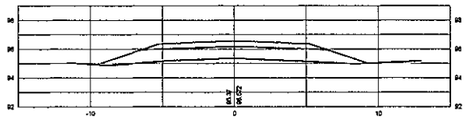

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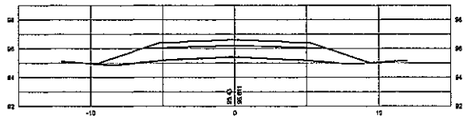

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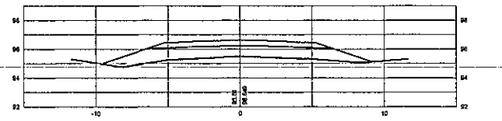

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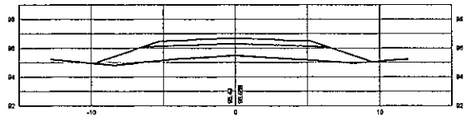

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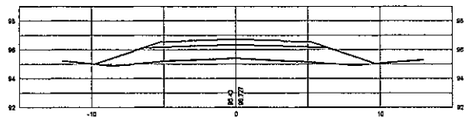

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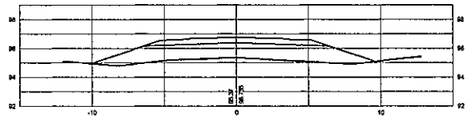

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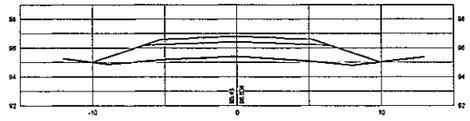

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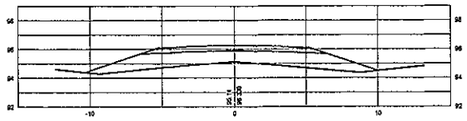

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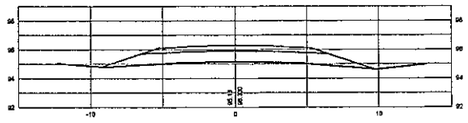

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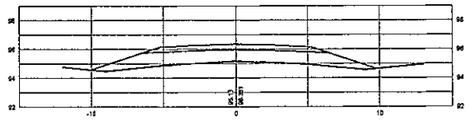

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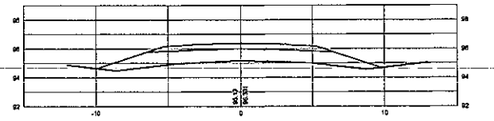

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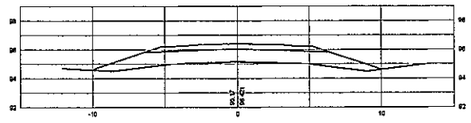

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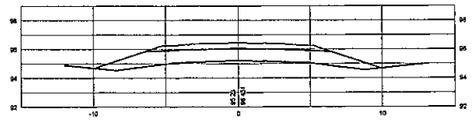

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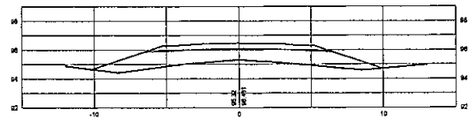

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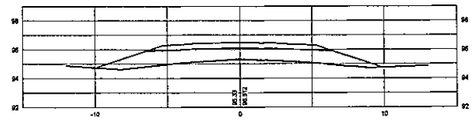

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Tel. 575 824
Resolución Inscrita N° 151 de 10 de Agosto

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SECCIONES TRANSVERSALES
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MAPA DEL PARAGUAY

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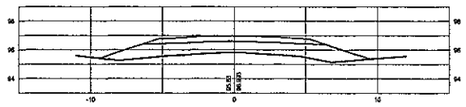

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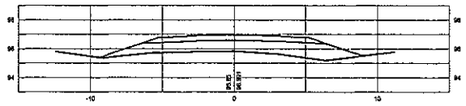

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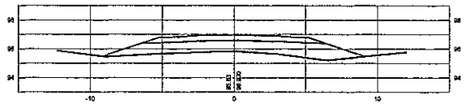

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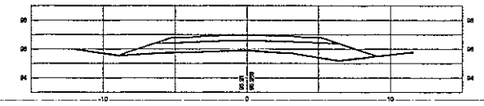

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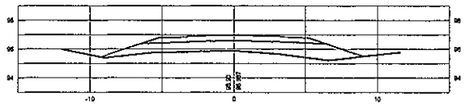

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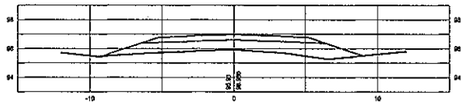

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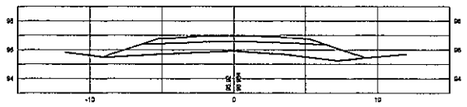

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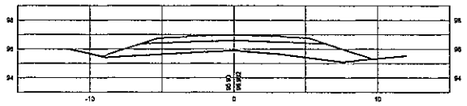

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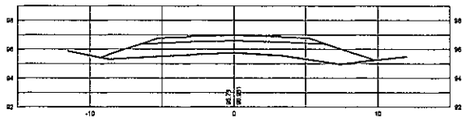

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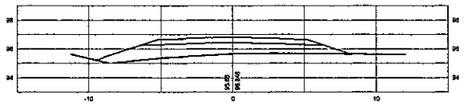

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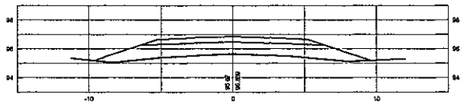

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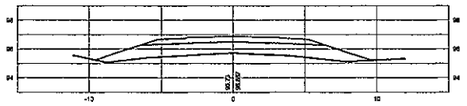

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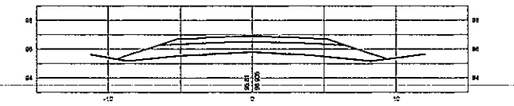

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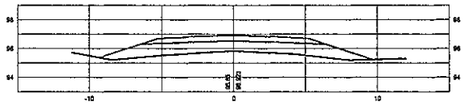

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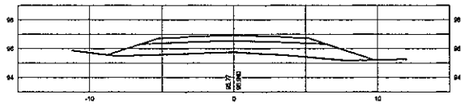

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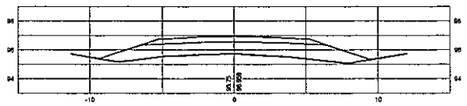

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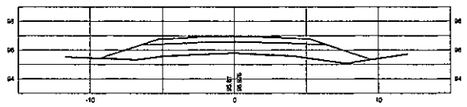

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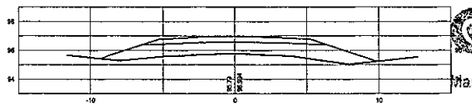

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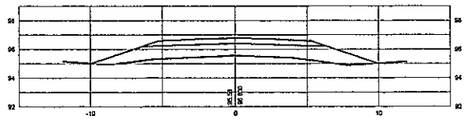

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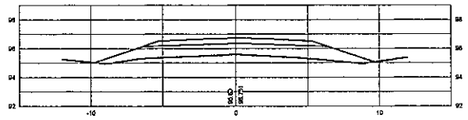

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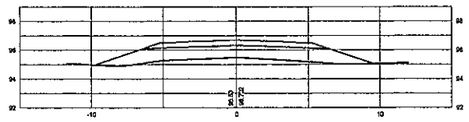

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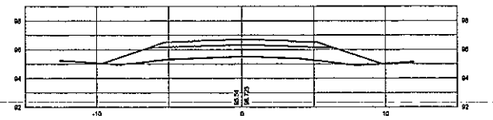

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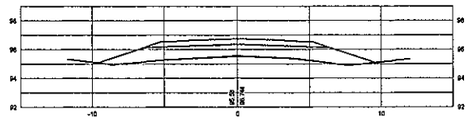

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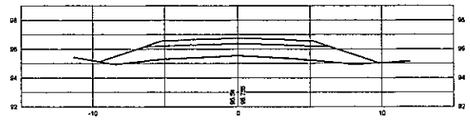

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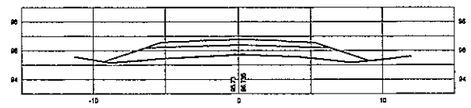

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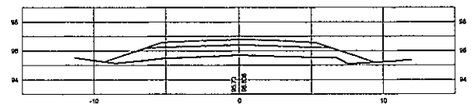

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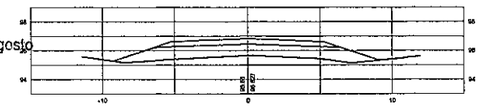

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SECCIONES TRANSVERSALES
PROG. 09+200 A PROG 10+240

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LAMINA N°:
ST - 12

MOPC
MAPA DEL PARAGUAY

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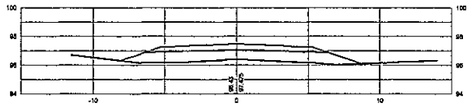

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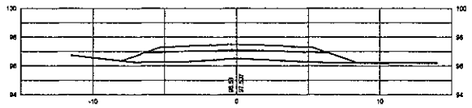

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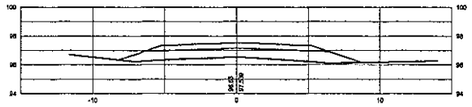

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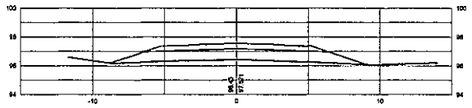

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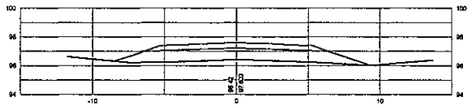

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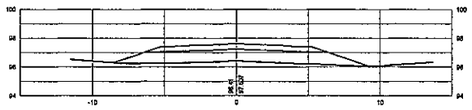

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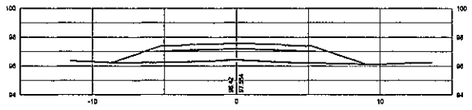

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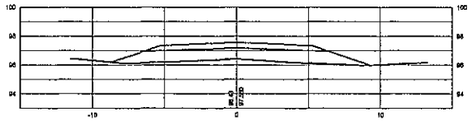

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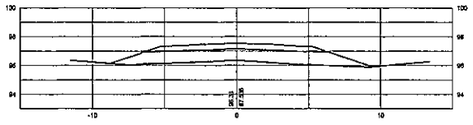

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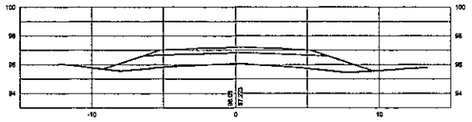

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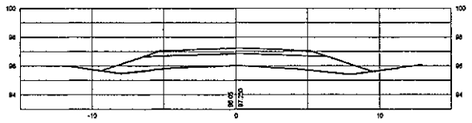

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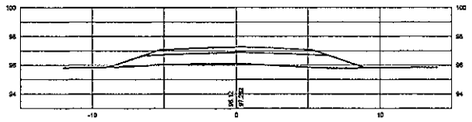

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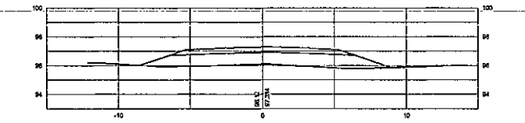

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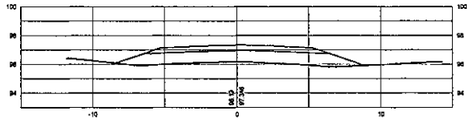

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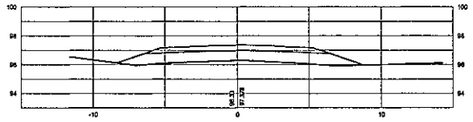

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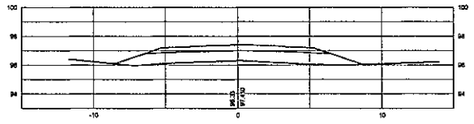

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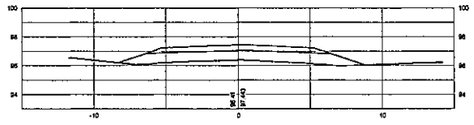

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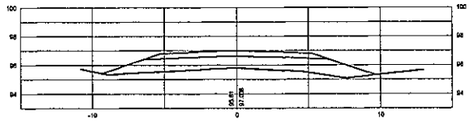

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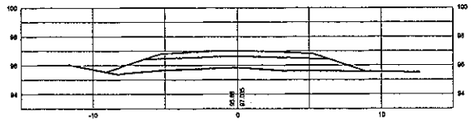

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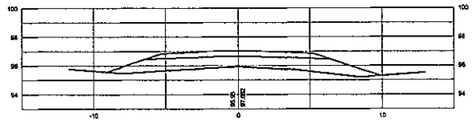

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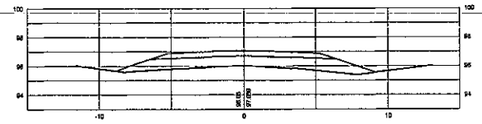

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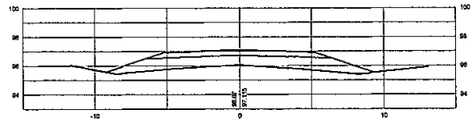

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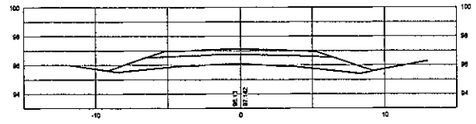

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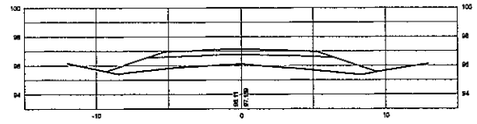

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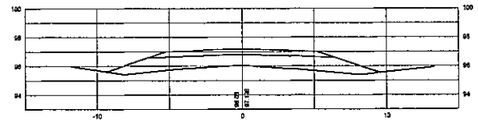

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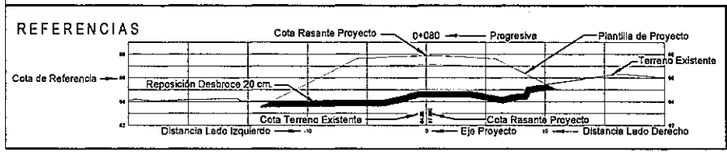

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SECCIONES TRANSVERSALES
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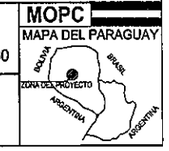
LAMINA Nº:
ST - 11

MOPC
MAPA DEL PARAGUAY



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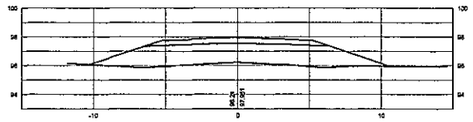

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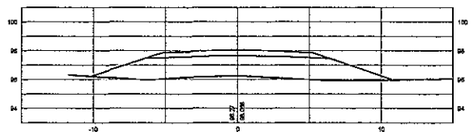

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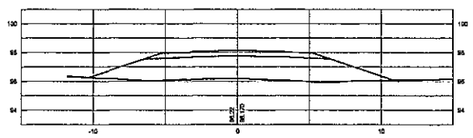

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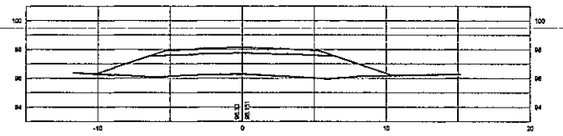

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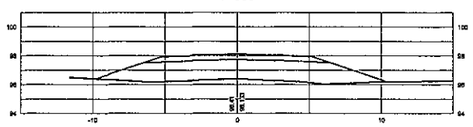

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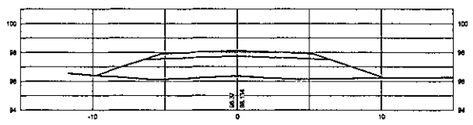

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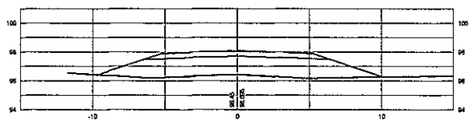

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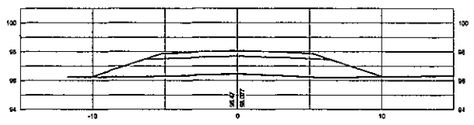

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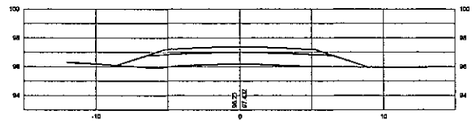

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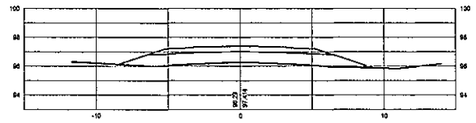

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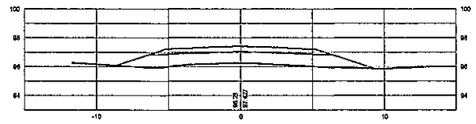

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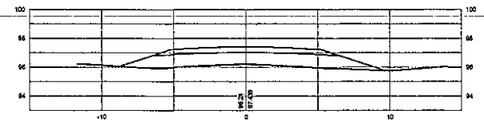

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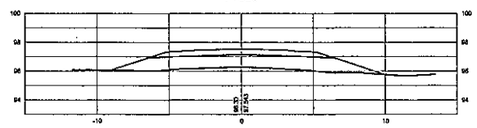

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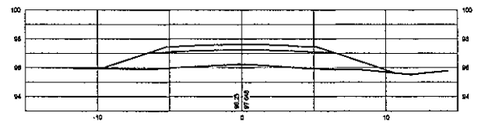

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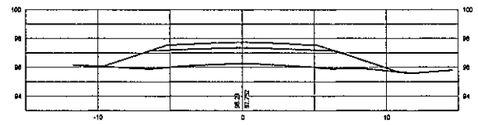

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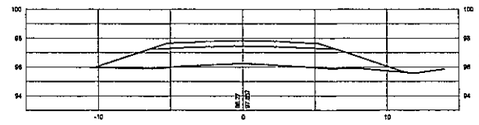

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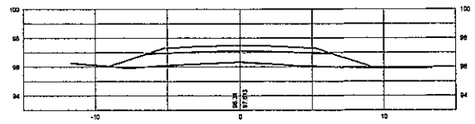

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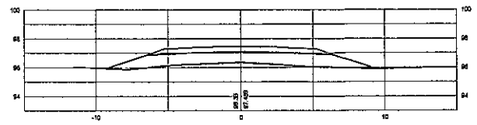

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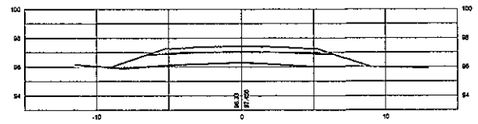

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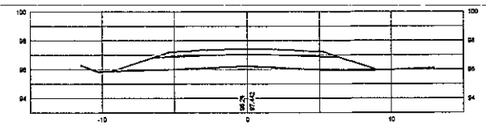

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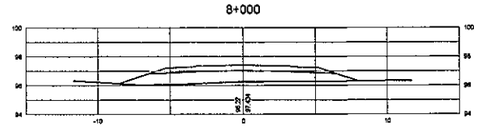

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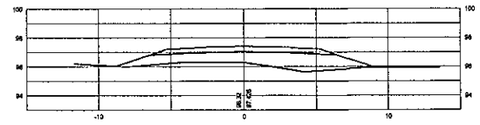

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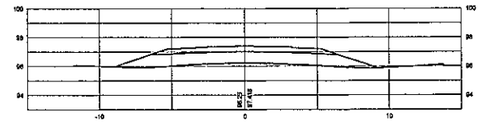

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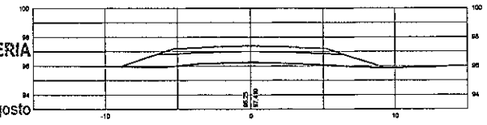

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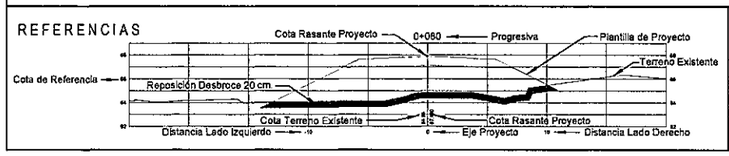
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

REFERENCIAS



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SECCIONES TRANSVERSALES
PROG. 07+240 A PROG 08+160

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LAMINA N°:
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MOPC
MAPA DEL PARAGUAY

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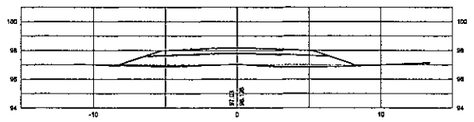

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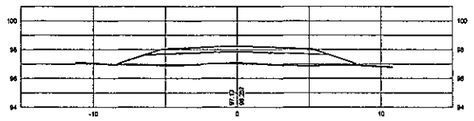

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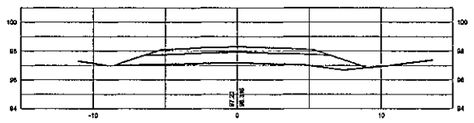

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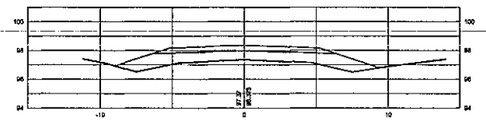

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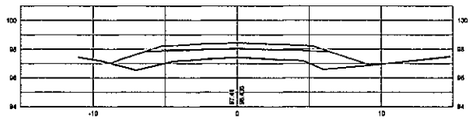

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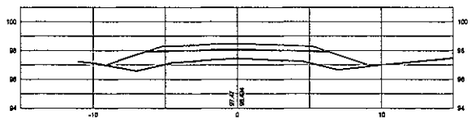

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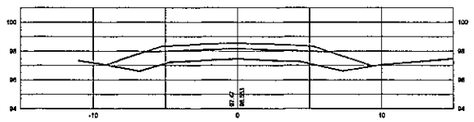

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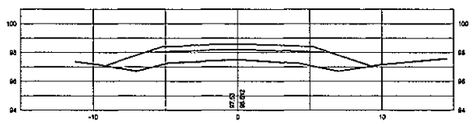

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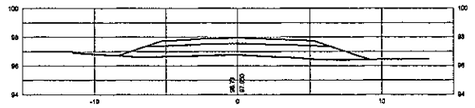

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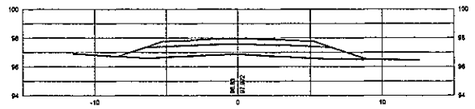

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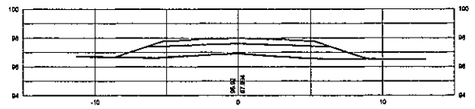

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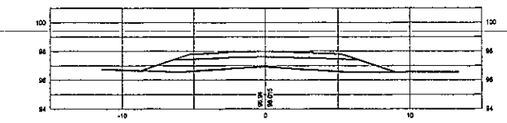

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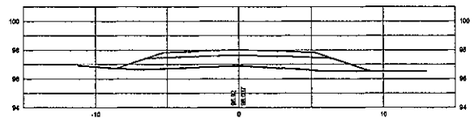

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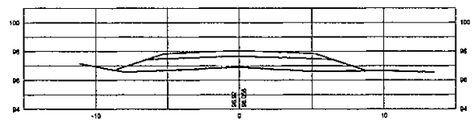

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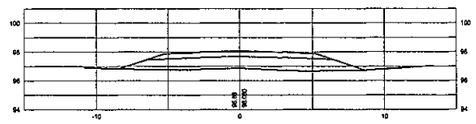

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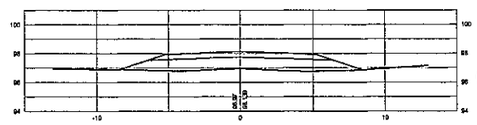

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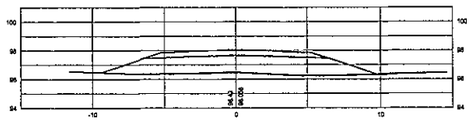

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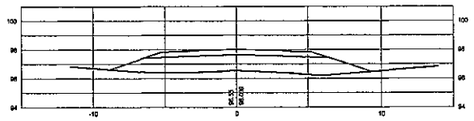

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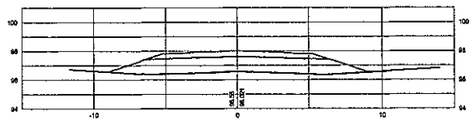

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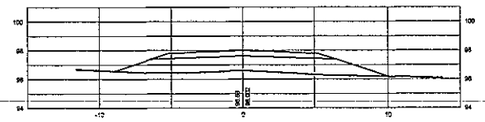

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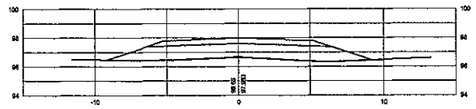

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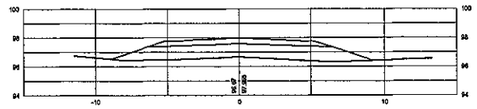

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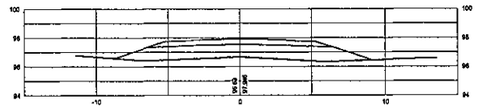

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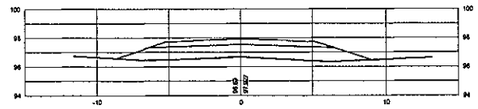

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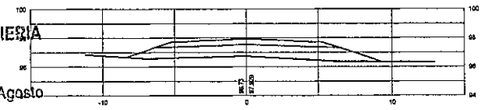

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SECCIONES TRANSVERSALES
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MOPC
MAPA DEL PARAGUAY

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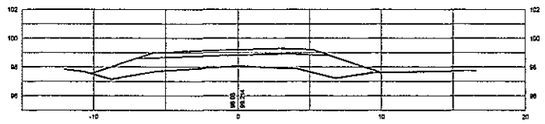

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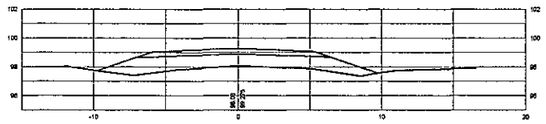

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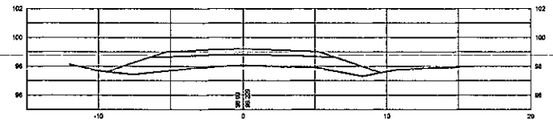

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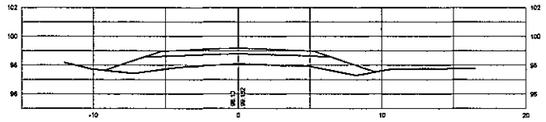

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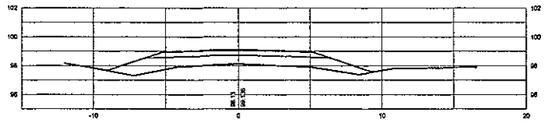

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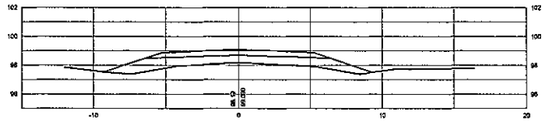

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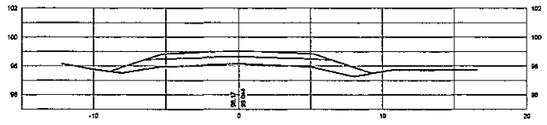

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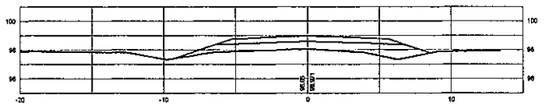

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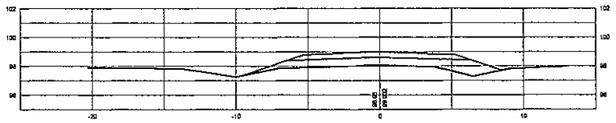

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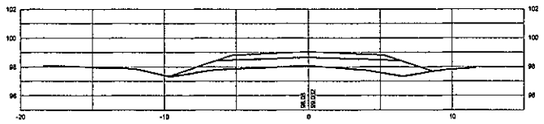

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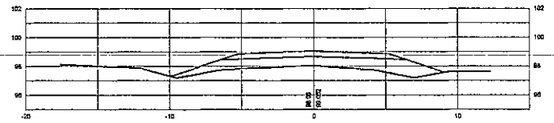

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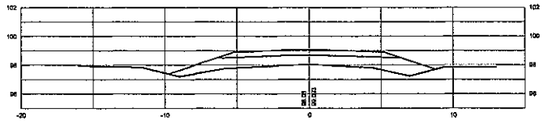

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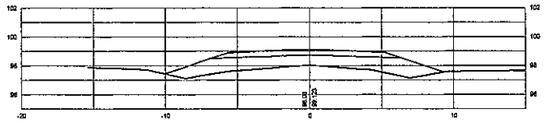

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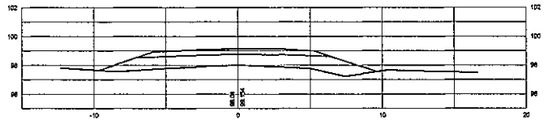

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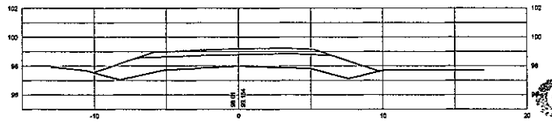

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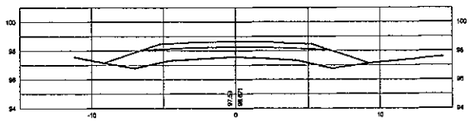

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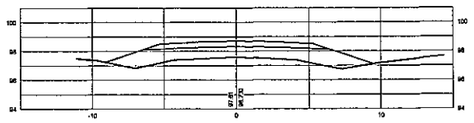

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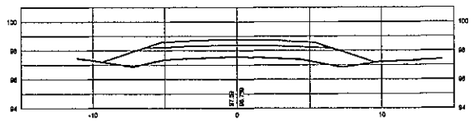

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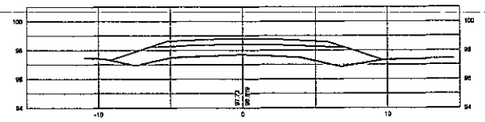

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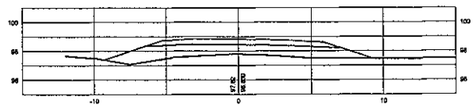

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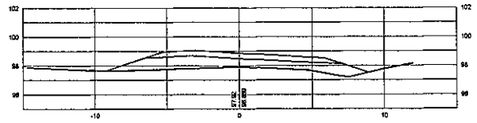

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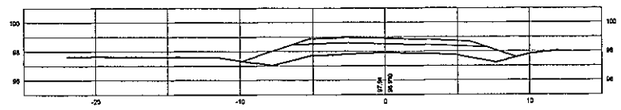

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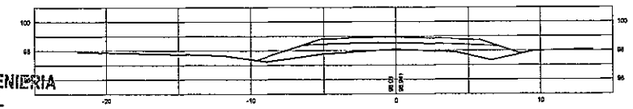

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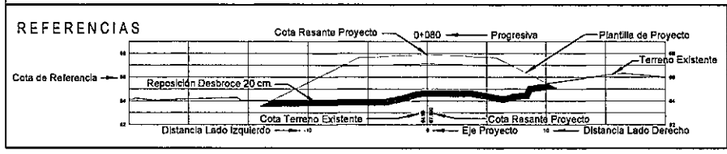
Tel 575 824
Teresina Insfrán N° 151 c/ 15 de Agosto

REFERENCIAS



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SECCIONES TRANSVERSALES
PROG. 05+280 A PROG 06+200

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V:1:400

LAMINA Nº:
ST - 08

MOPC
MAPA DEL PARAGUAY

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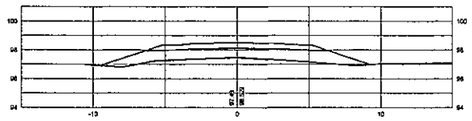

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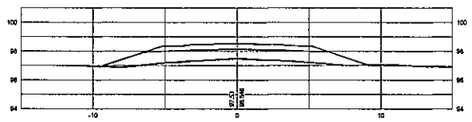

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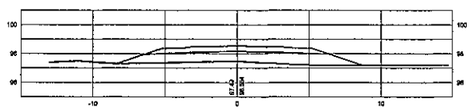

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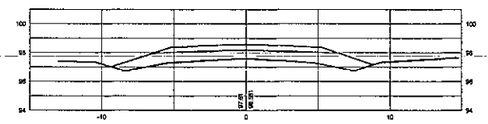

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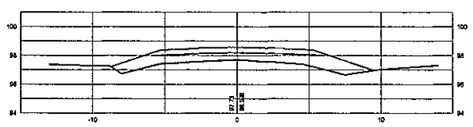

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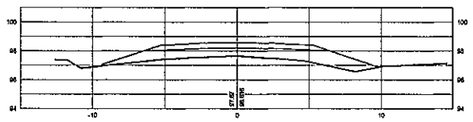

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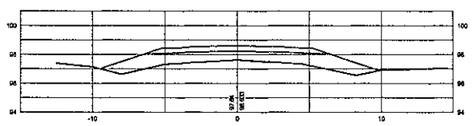

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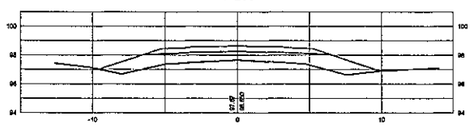

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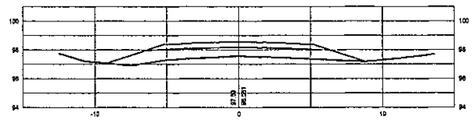

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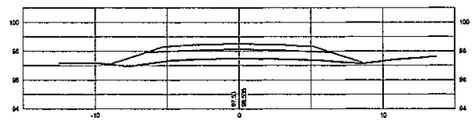

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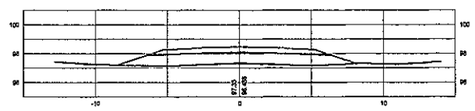

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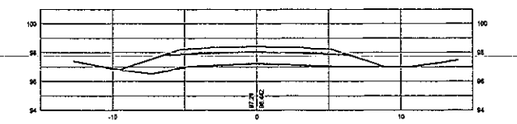

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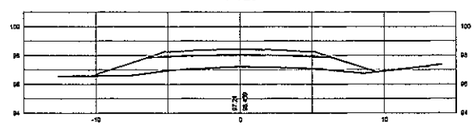

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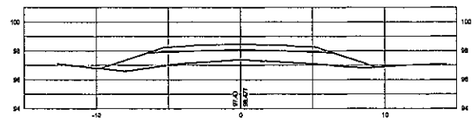

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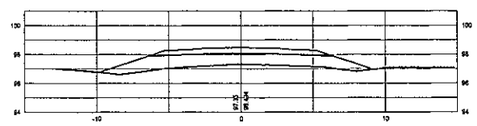

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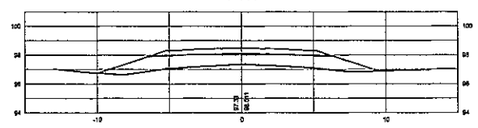

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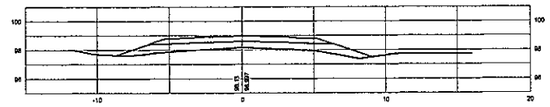

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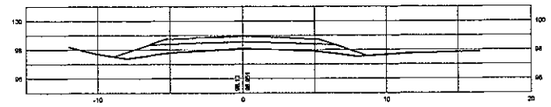

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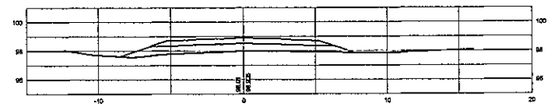

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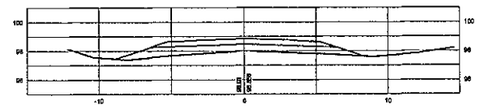

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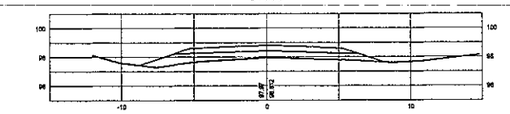

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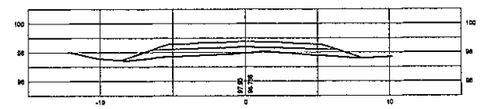

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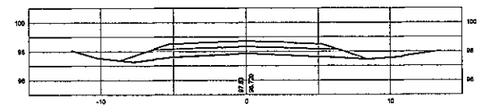

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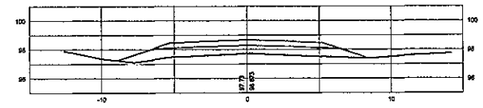

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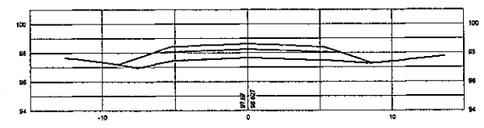

INGEVIAS
CONSULTORA DE INGENIERIA
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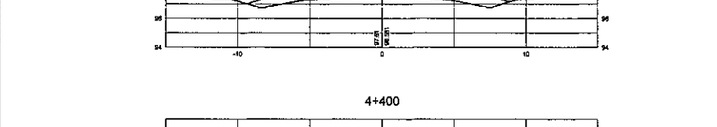
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

REFERENCIAS



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SECCIONES TRANSVERSALES
PROG. 04+280 A PROG 05+240

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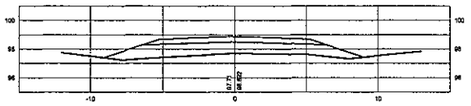
LAMINA Nº :
ST - 07

MOPC
MAPA DEL PARAGUAY

3+600



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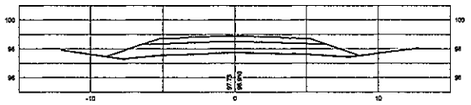

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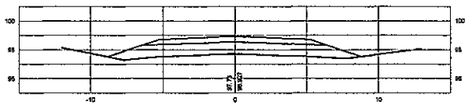

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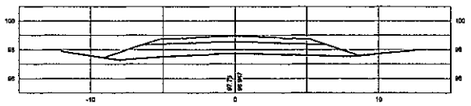

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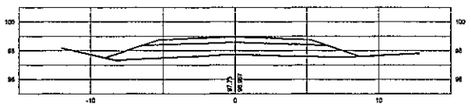

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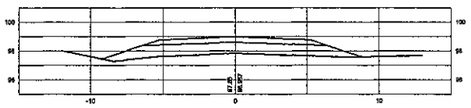

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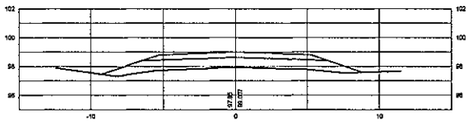

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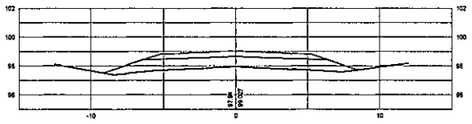

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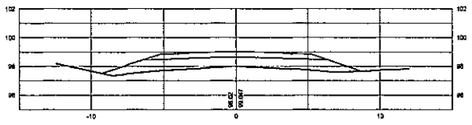

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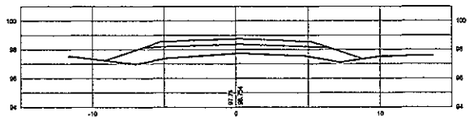

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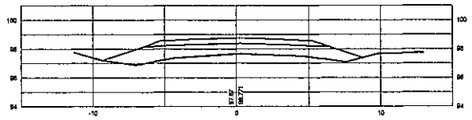

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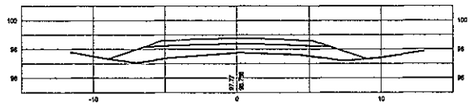

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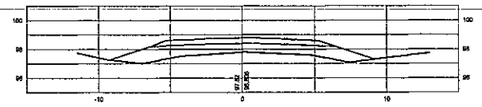

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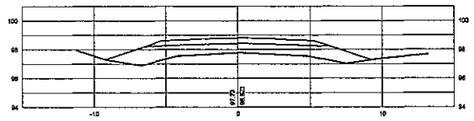

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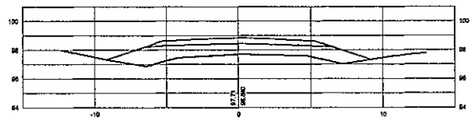

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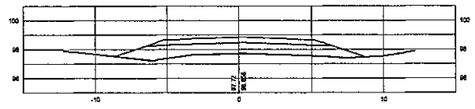

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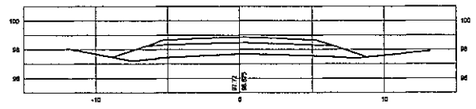

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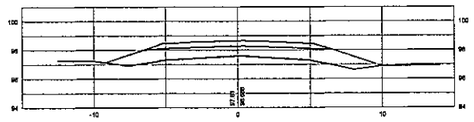

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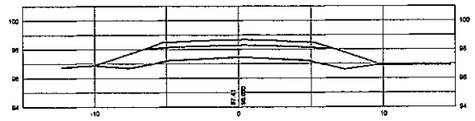

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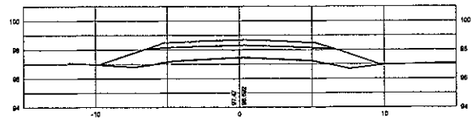

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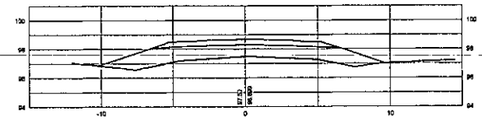

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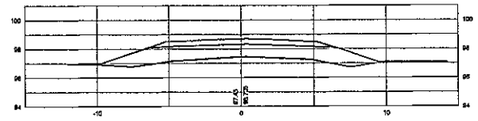

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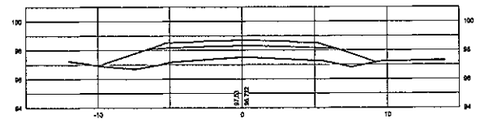

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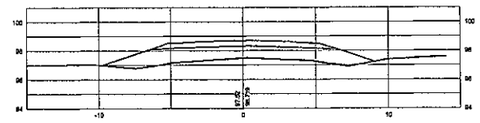

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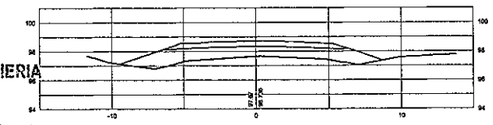

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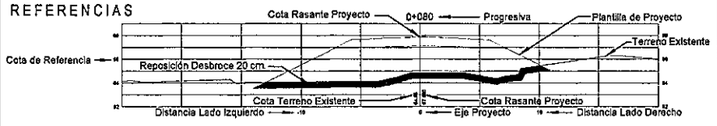
Tel.. 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

REFERENCIAS



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SECCIONES TRANSVERSALES
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LAMINA Nº:
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MOPC
MAPA DEL PARAGUAY

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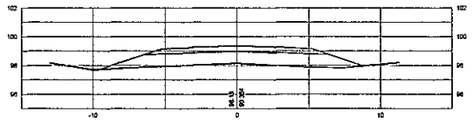

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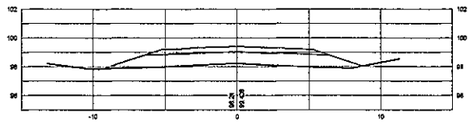

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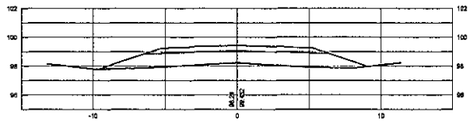

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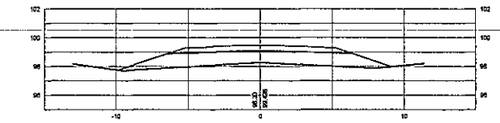

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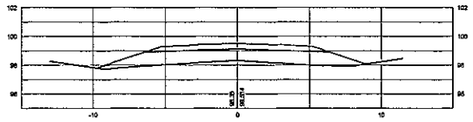

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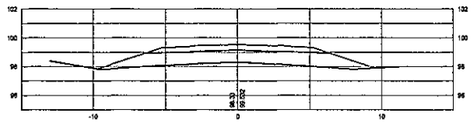

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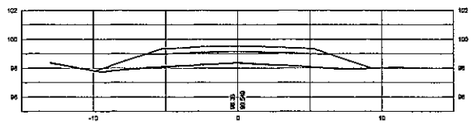

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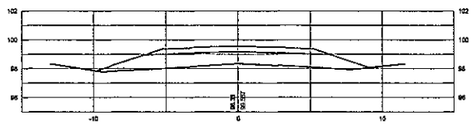

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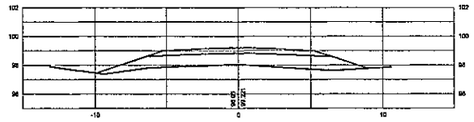

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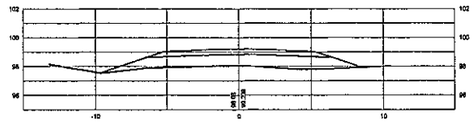

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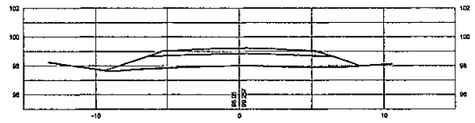

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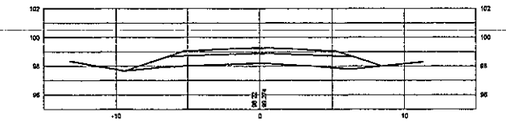

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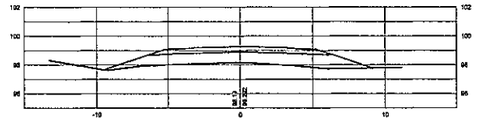

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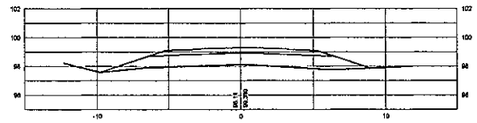

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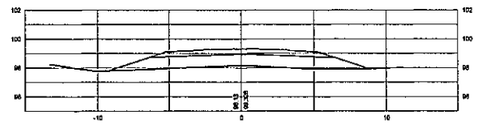

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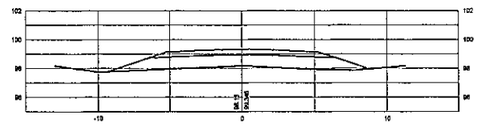

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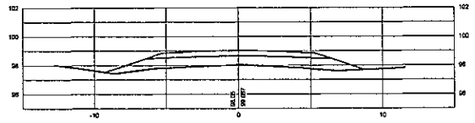

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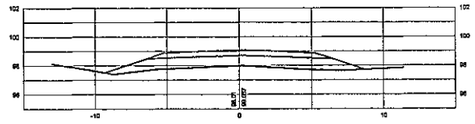

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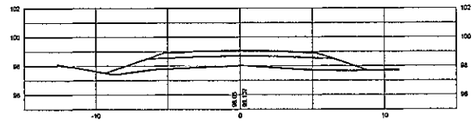

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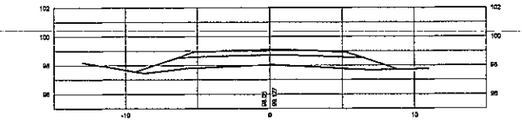

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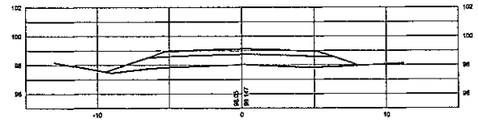

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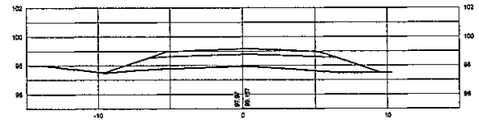

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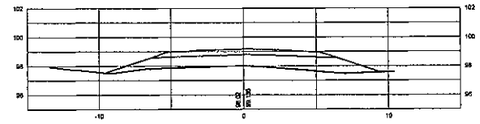

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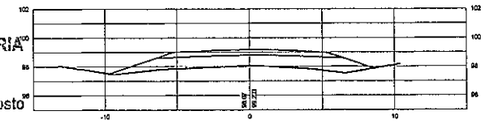

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SECCIONES TRANSVERSALES

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MAPA DEL PARAGUAY

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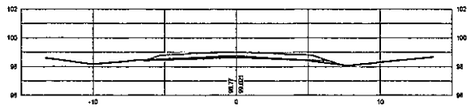

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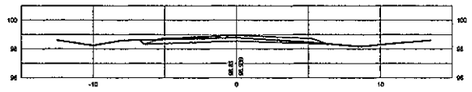

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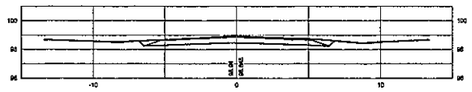

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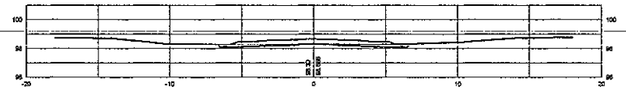

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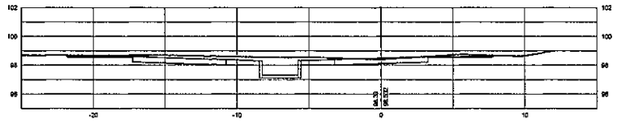

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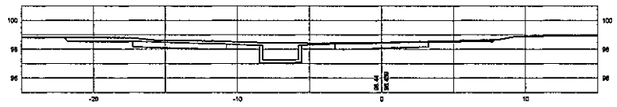

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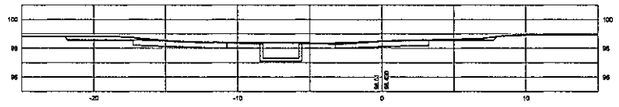

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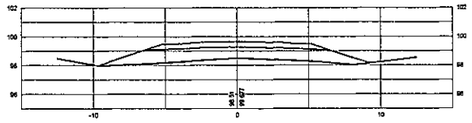

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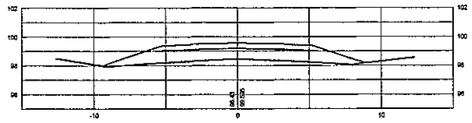

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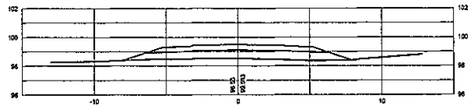

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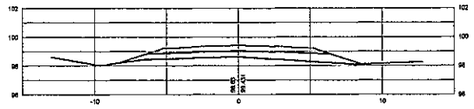

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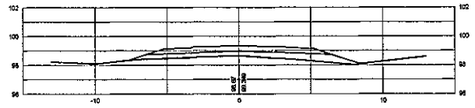

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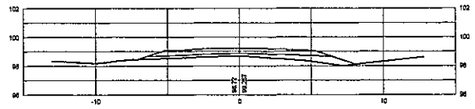

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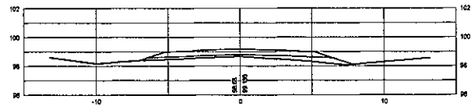

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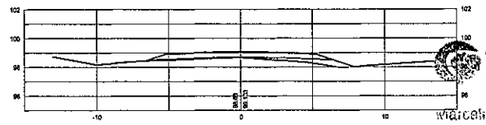

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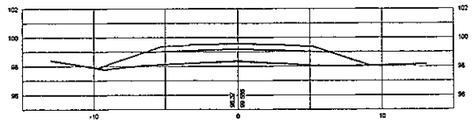

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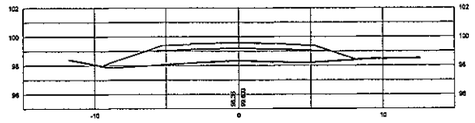

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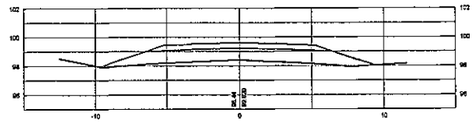

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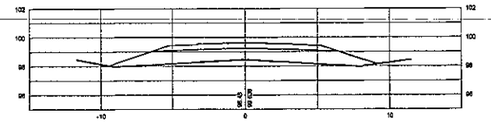

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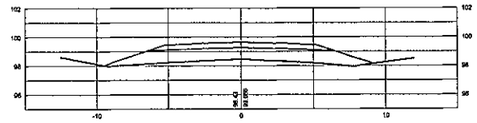

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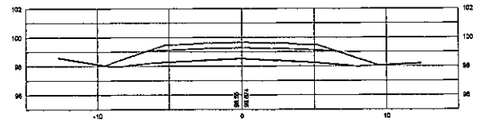

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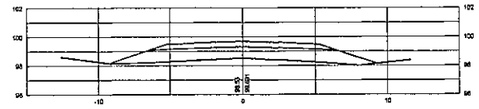

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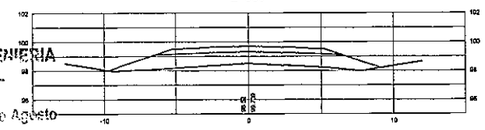

INGEVIAS
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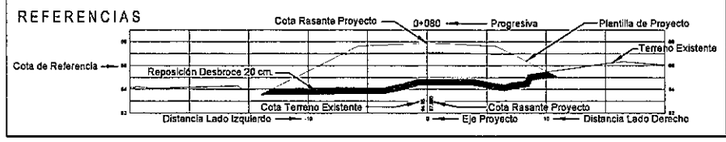
Tel. 573 824
Madrelina Insfran N° 151 c/ 15 de Agosto

REFERENCIAS



ACOMEPA
ASOCIACIÓN DE COLONIAS MENNONITAS EN EL PARAGUAY

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DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO:
FILADELFIA - LOMA PLATA

SECCIONES TRANSVERSALES
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LAMINA Nº:
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MAPA DEL PARAGUAY

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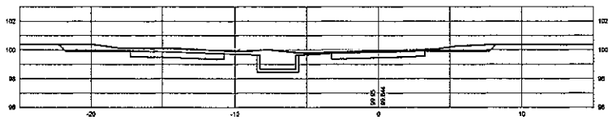

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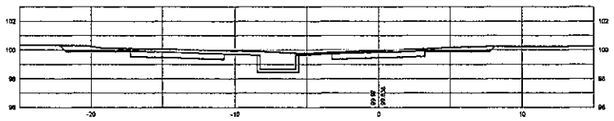

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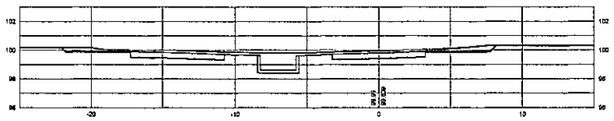

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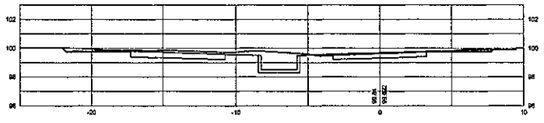

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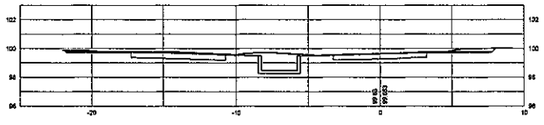

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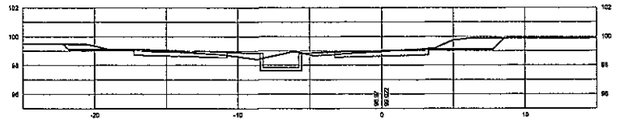

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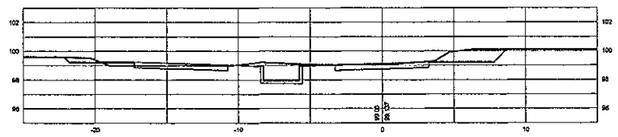

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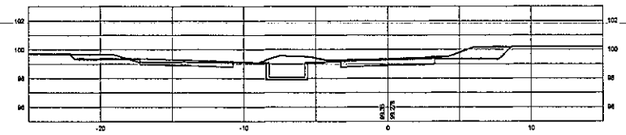

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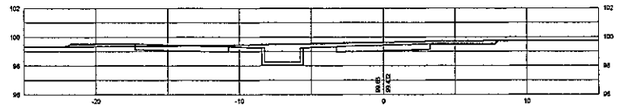

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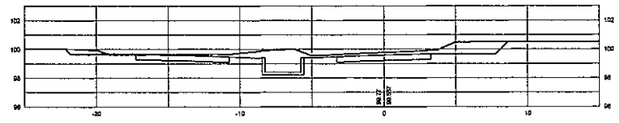

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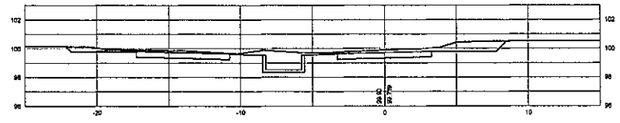

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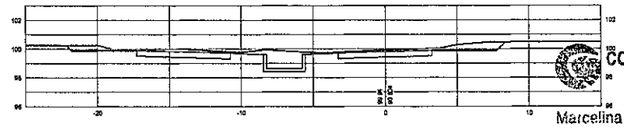

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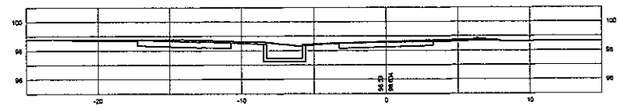

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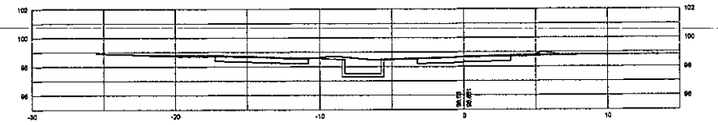

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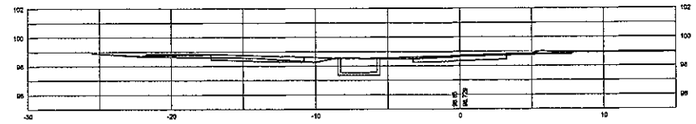

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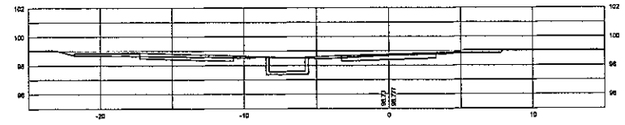

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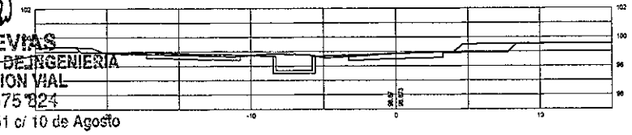

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SECCIONES TRANSVERSALES

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MAPA DEL PARAGUAY

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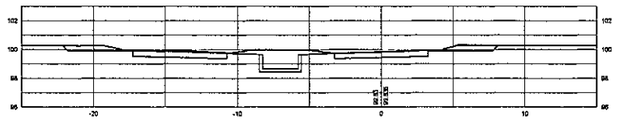

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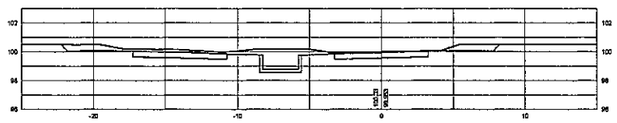

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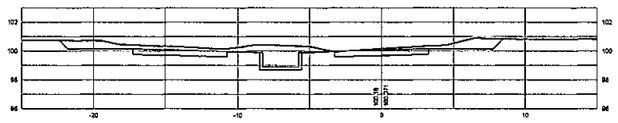

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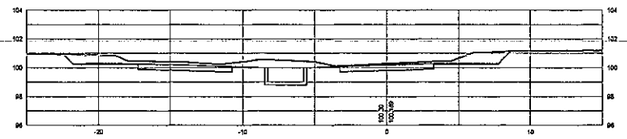

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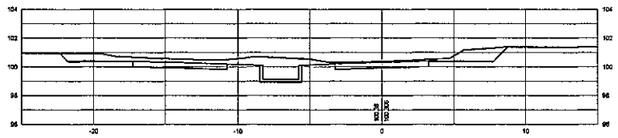

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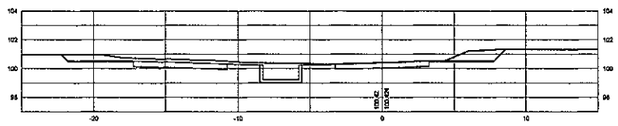

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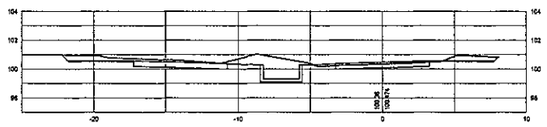

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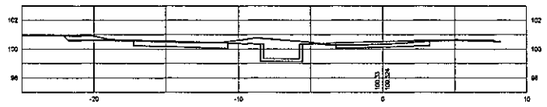

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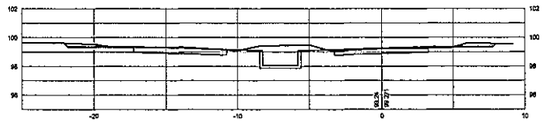

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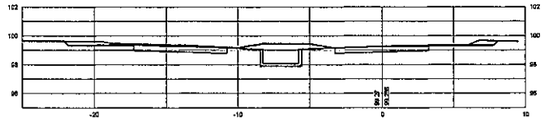

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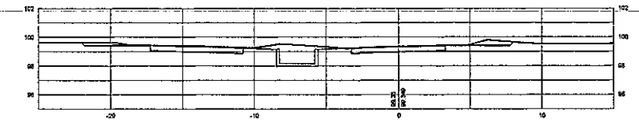

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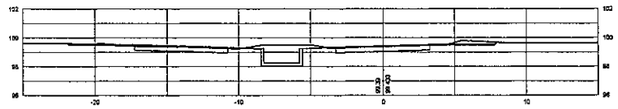

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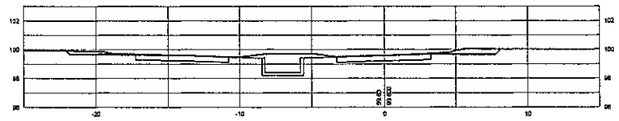

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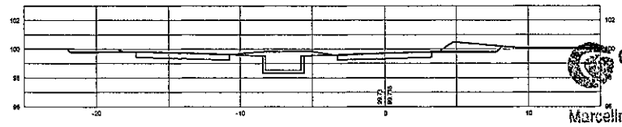

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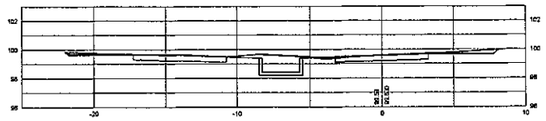

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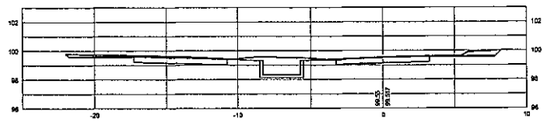

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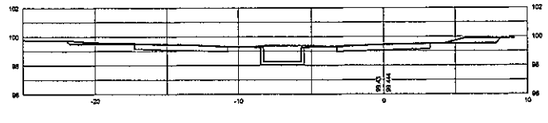

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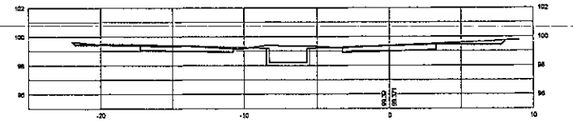

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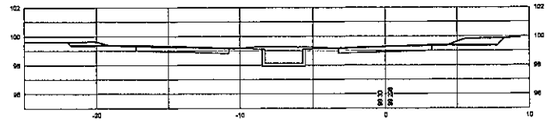

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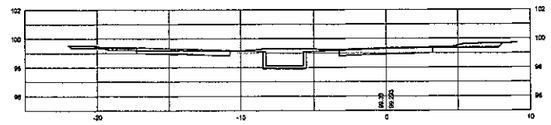

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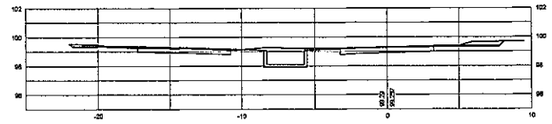

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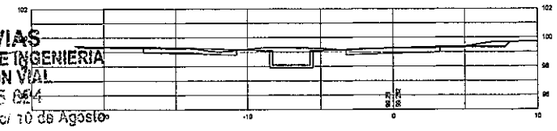

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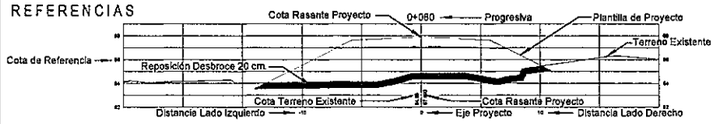
Tel.: 575 024
Marcelina Insfran N° 151 c/ 10 de Agosto

REFERENCIAS



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SECCIONES TRANSVERSALES
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MAPA DEL PARAGUAY

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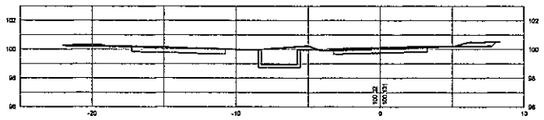

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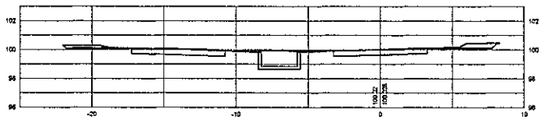

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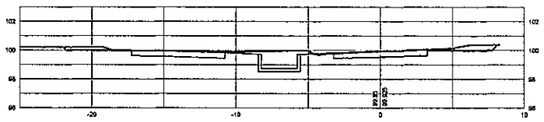

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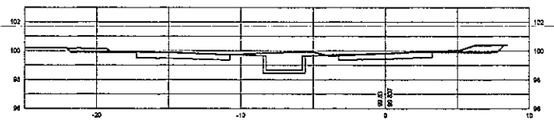

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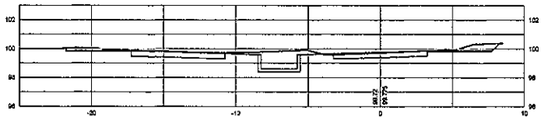

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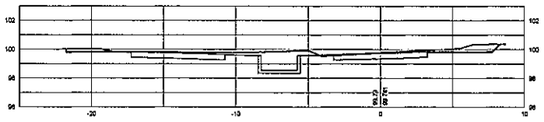

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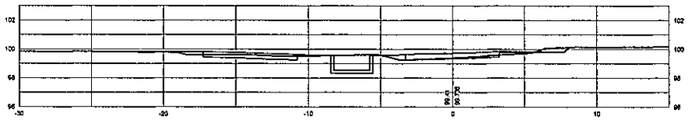

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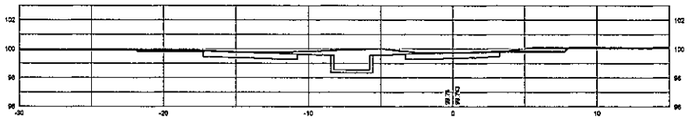

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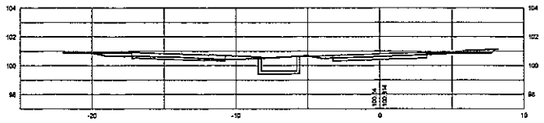

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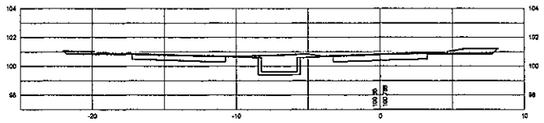

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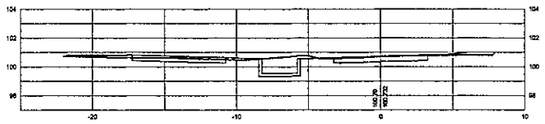

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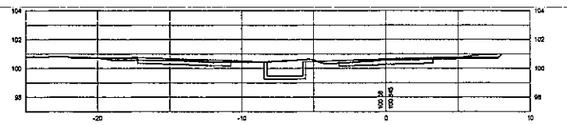

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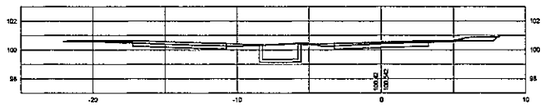

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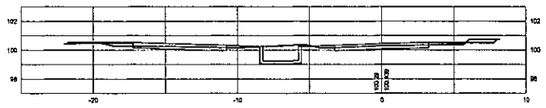

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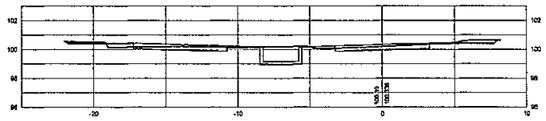

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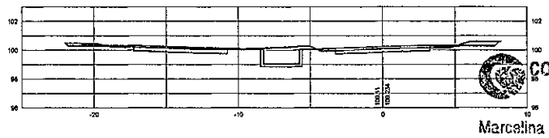

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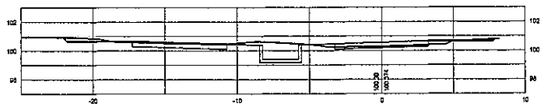

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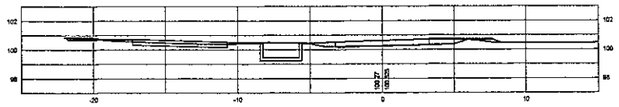

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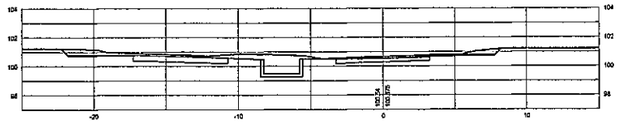

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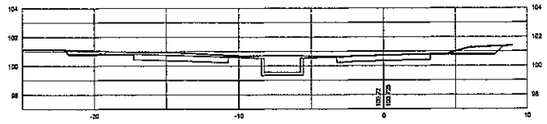

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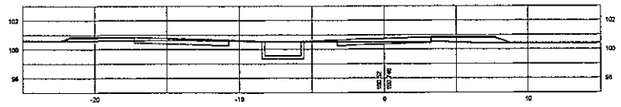

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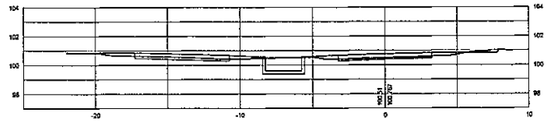

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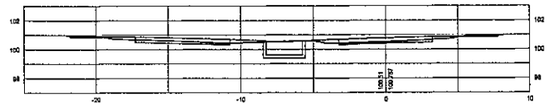

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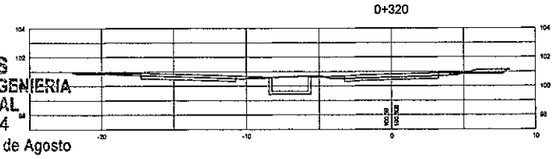
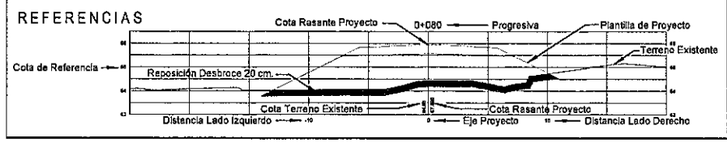


INGEVIAS
CONSULTORA DE INGENIERIA
Y GESTION VIAL
Tel.: 575 824
Marcelina Insfrán N° 151 c/ 10 de Agosto

REFERENCIAS



ACOMEPA
ASOCIACIÓN DE COLONIAS MENNONITAS EN EL PARAGUAY

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CONSULTORIA DE INGENIERÍA Y GESTIÓN VIAL

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MINISTERIO DE OBRAS PÚBLICAS Y COMUNICACIONES
GABINETE DEL VICEMINISTRO DE OBRAS PÚBLICAS Y COMUNICACIONES

DIRECCIÓN DE VIALIDAD

ESTUDIOS DE FACTIBILIDAD TÉCNICO, ECONÓMICO Y AMBIENTAL Y

DISEÑO FINAL DE INGENIERÍA PARA LA PAVIMENTACIÓN DEL TRAMO: FILADELFIA - LOMA PLATA

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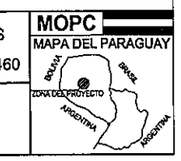
MOPC
MAPA DEL PARAGUAY