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INDICE DE PLANOS

- PLANO N°1 - Procedimiento constructivo de los canales - Zonas de servicios normales en canales.
Area Copacabana-Banda de Lucero
- PLANO N°2 - Red de riego Copacabana
Canal Principal
Secundario: $S_1 - 1-7$ y $S_1 - C_{4-5}$
- PLANO N°3 - Red de riego Copacabana
Sección N°1 - Secundario $S_1 - 1-7$
Comuneros $S_1 - C_{7-11}$ y $S_1 - C_{8-9}$
- PLANO N°4 - Red de riego Copacabana
Canal principal C.P. $S_1 - S_2$ y $S_2 - S_3$
Comunero $S_1 - C_{8-9}$ y Terciario $C_2 - T_{1-4}$
- PLANO N°5 - Red de riego Copacabana
Sección N°2 - Terciario $S_2 - T_{1-4}$ y
Comunero $S_2 - C_{4-13}$
- PLANO N°6 - Red de riego Copacabana
Canal principal
Secundario $S_2 - C_{4-13}$ y $S_2 - C_{5-6}$
- PLANO N°7 - Red de riego Copacabana
Canal principal P.C. $S_3 - S_4$ y $S_4 - S_5$
- PLANO N°8 - Red de riego Copacabana
Sección N°1 - Comuneros
 $S_1 - C_{7-11}$ y $S_1 - C_{11-14}$

- PLANO N°9 - Red de riego Copacabana
Sección N°1 - Comunero: $S_1 - C_{11-20}$
- PLANO N°10 - Red de riego Copacabana
Sección N°2 - Comuneros:
 $S_2 - C_{1-20}$ y $S_2 - C_{20-28}$
- PLANO N°11 - Red de riego Copacabana
Sección N°2 - Comunero: $S_2 - C_{20-28}$
- PLANO N°12 - Red de riego Copacabana
Sección N°2 - Comuneros:
 $S_2 - C_{9-10}$; $S_2 - C_{8-12}$; $S_2 - C_{13-18}$ y $S_2 - C_{15-16}$
- PLANO N°13 - Red de riego Copacabana
Sección N°3 - Secundarios S_3 0-1 y S_3 1-2
Terciario $S_3 - T_{2-20}$
- PLANO N°14 - Red de riego Copacabana
Sección N°3 - Terciario $S_3 - T_{2-20}$
Comunero: $S_3 - C_{20-25}$
- PLANO N°15 - Red de riego Copacabana
Sección N°3 Comuneros:
 $S_3 - C_{25-33}$ y $S_3 - C_{25-29}$
- PLANO N°16 - Red de riego
Sección N°3 - Comunero: $S_3 - C_{2-8}$
- PLANO N°17 - Red de riego Copacabana
Sección N°3 - Comuneros:
 $S_3 - C_{16-19}$; $S_3 - C_{10-14}$ y $S_3 - C_{20}$

- PLANO N°18 - Red de riego Copacabana
Sección N°4 - Secundarios
 S_4 0-1 ; S_4 1-2 y Comunero: C_{2-4}
- PLANO N°19 - Red de riego Copacabana
Sección N°4 - Terciario S_4 - T_{2-5}
Comuneros S_4 - C_{5-6} y S_4 - C_{6-8}
- PLANO N°20 - Red de riego Copacabana
Sección N°5 - Terciario S_5 - T_{1-2}
Comuneros: S_5 - C_{2-6} ; S_5 - C_{2-5} y S_5 - C_{6-7}
- PLANO N°21 - Red de riego Banda de Lucero
Canal Principal
- PLANO N°22 - Red de riego Banda de Lucero
Canal Principal P.B.
 S_1 - S_2 y S_2 - S_3
- PLANO N°23 - Red de riego Banda de Lucero
Canal Principal P.B.
 S_3 - S_4 y S_4 - S_5
- PLANO N°24 - Red de riego Banda de Lucero
Sección N°1 - Secundario S_1
Comuneros: S_1 - C_{1-4} ; S_1 - C_{4-10} y S_1 - C_{4-7}
- PLANO N°25 - Red de riego Banda de Lucero
Sección N°2 - Secundario S_2 0-4
Comuneros: S_2 - C_{4-17} y S_2 - C_{17-23}

- PLANO N°26 - Red de riego Banda de Lucero
Sección N°2 - Comuneros:
 $S_2 - C_{17-23}$; $S_2 - C_{10-14}$ y $S_2 - C_{4-9}$
- PLANO N°27 - Red de riego Banda de Lucero
Sección N°3 - Comuneros:
 $S_3 - C_1 - 6_1$; $S_3 C_{6-13}$ y $S_3 C_{6-5}$
- PLANO N°28 - Red de riego Banda de Lucero
Sección N°3 - Comuneros:
 $S_3 C_1 - 20$; $S_3 - 15 - 32$ y $S_3 20-30$
- PLANO N°29 - Red de riego Banda de Lucero
Sección N°3 - Comunero $S_3 C_{20-25}$
- PLANO N°30 - Red de riego Banda de Lucero
Sección N°4 - Terclario $S_4 0-6$
Comunero $S_4 C_{7-9}$
- PLANO N°31 - Red de riego Banda de Lucero
Sección N°4 - Comuneros
 $S_4 C_6 - 13$; $S_4 C_{10-11}$ y $S_4 C_{13-17}$
- PLANO N°32 - Red de riego Banda de Lucero
Sección N°5 - Comunero $S_5 C_{2-9}$
- PLANO N°33 - Red de riego Banda de Lucero
Sección N°5 - Comunero: $S_5 C_{9-15}$
- PLANO N°34 - Red de riego Banda de Lucero
Sección N°5 - Terclario $S_5 T_{2-19}$
Comuneros: $S_5 C_{16-18}$; $S_5 C_{19-20}$ y $S_5 C_{19-23}$

- PLANO N°35 - Red de riego Banda de Lucero
Sección N°5 - Comuneros
 $S_5 C_{19-28}$; $S_5 C_{28-36}$

- PLANO N°36 - Infraestructura existente

- PLANO N°37 - Esquema general
Red de riego

- PLANO N°38 - Ubicación de préstamos y/o desagües

- PLANO N°39 - Ubicación de calicatas para estudios geotécnicos

- PLANO OA-1 - Transición sección rectangular trapecial y conducción rectangular en obras de arte

- PLANO OA-2 - Alcantarillas

- PLANO OA-3 - Estructura de compuertas

- PLANO OA-4 - Compuerta tipo CML

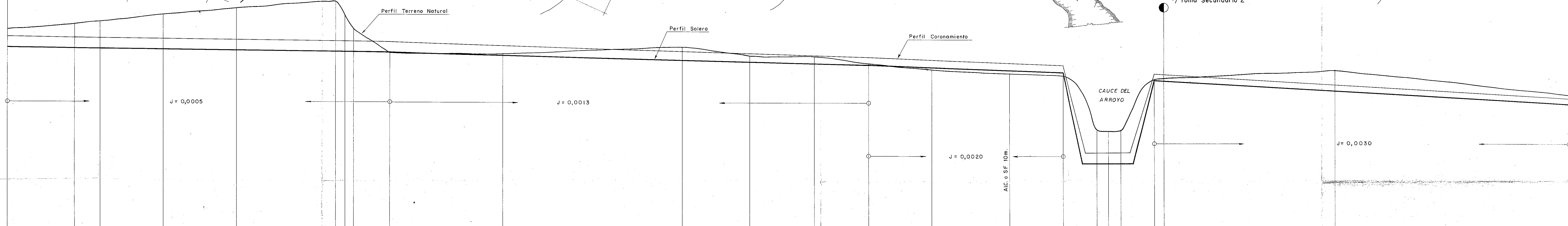
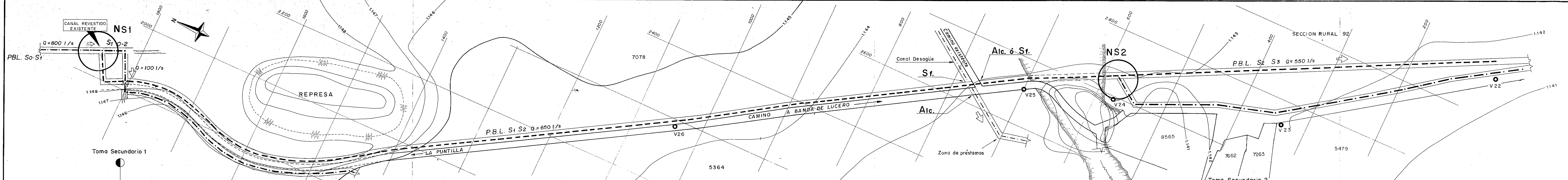
- PLANO OA-5 - Toma tipo T_I
Barrera tipo B_I

- PLANO OA-6 - Tomas tipo $T_{II} - T_{II}$ (DO)
Barrero tipo B_{II}
Entregas tipo ET - EC - EL

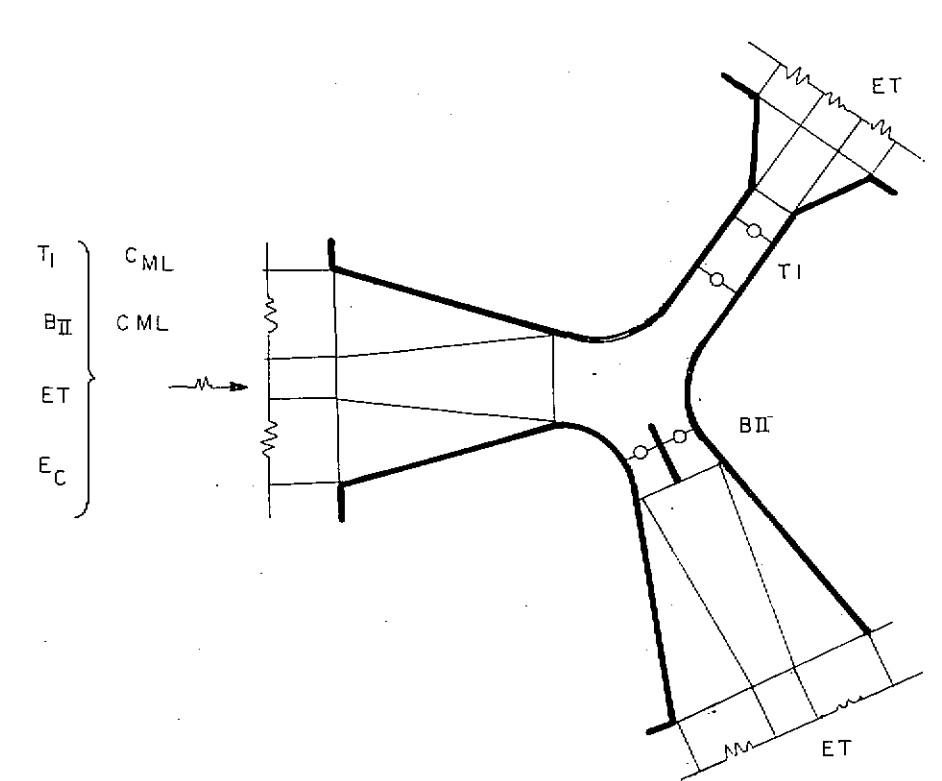
- PLANO OA-7 Tomas tipo T_{III} y T_{IV}
Barrera tipo B_{III}
Compuerta tipo C_{II}

PLANOS

- 0A-8 - Sifones y caños de hormigón armado
- 0A-9 - Partidor
 Tomas - Barreras y entregas tipo
- 0A-10 - Juntas - Especificaciones para hormigones
- 0A-11 - Ubicación de las obras de arte
- 0A-12 - Ubicación de las obras de arte
- 0A-13 - Red de riego Copacabana
 Dimensiones obras de arte
- 0A-14 - Red de riego Banda de Lucero
 Dimensiones obras de arte



| DISTANCIA PARCIAL | 000 | 92 | 36 | 86 | 100 | 136 | 12 | 12 | 50 | 154 | 246 | 92 | 88 | 74 | 86 | 106 | 74 | 46 | 16 | 16 | 46 | 13 | 233 | 320 |
|--------------------------|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|
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| | SOLERA | 114470 | 114545 | 114500 | 114600 | 114700 | 114750 | 114600 | 114400 | 114430 | 114424 | 114415 | 114412 | 114369 | 114327 | 114297 | 114284 | 11490 | 113902 | 113922 | 114300 | 114259 | 114225 | 114182 |
| ALINEACION | | | | | | | | | | | | | | | | | | | | | | | | |



NOTA
El radio de curvatura mínimo en los canales de riego con caudales Q ≤ 350 L/s será de R = 5,00m. Para caudales Q ≥ 450 L/s, el radio mínimo será de R = 10,0m.

REPUBLICA ARGENTINA

SUBSECRETARÍA DE RECURSOS HÍDRICOS
COMANDO EN JEFE FUERZAS ARMADAS
INSTITUTO NACIONAL DE CIENCIA Y TÉCNICA HÍDRICAS

PROYECTO NOA HIDRICO
SEGUNDA FASE

NACIONES UNIDAS

PROGRAMA DE LAS NACIONES UNIDAS PARA EL DESARROLLO
INSTITUTO NACIONAL DE CIENCIA Y TÉCNICA HÍDRICAS

ESCALA: 1:2000 H=1:2000 V=1:100

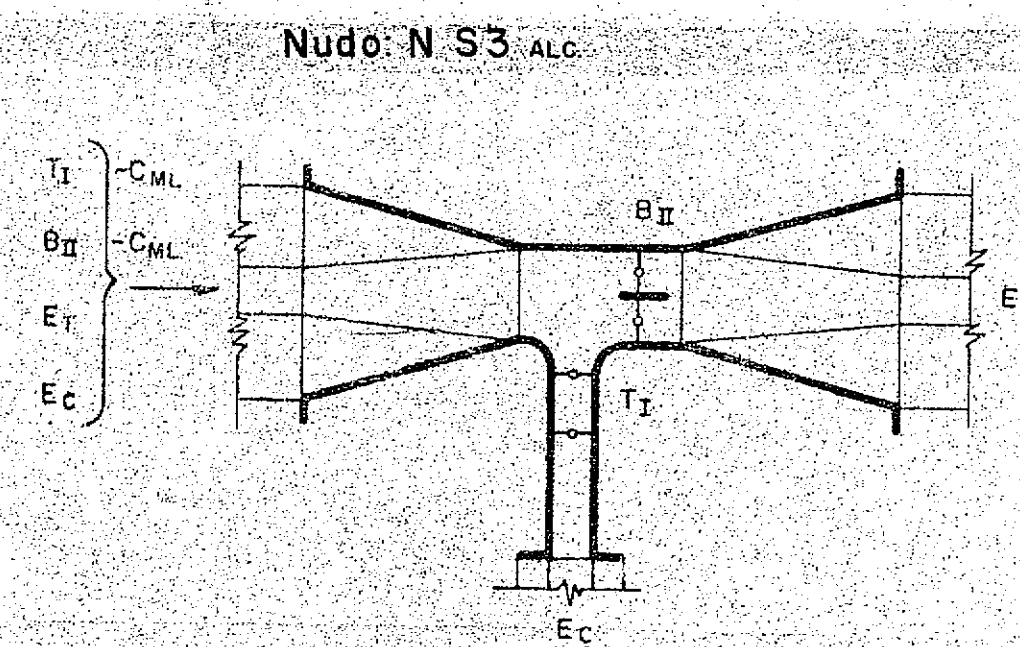
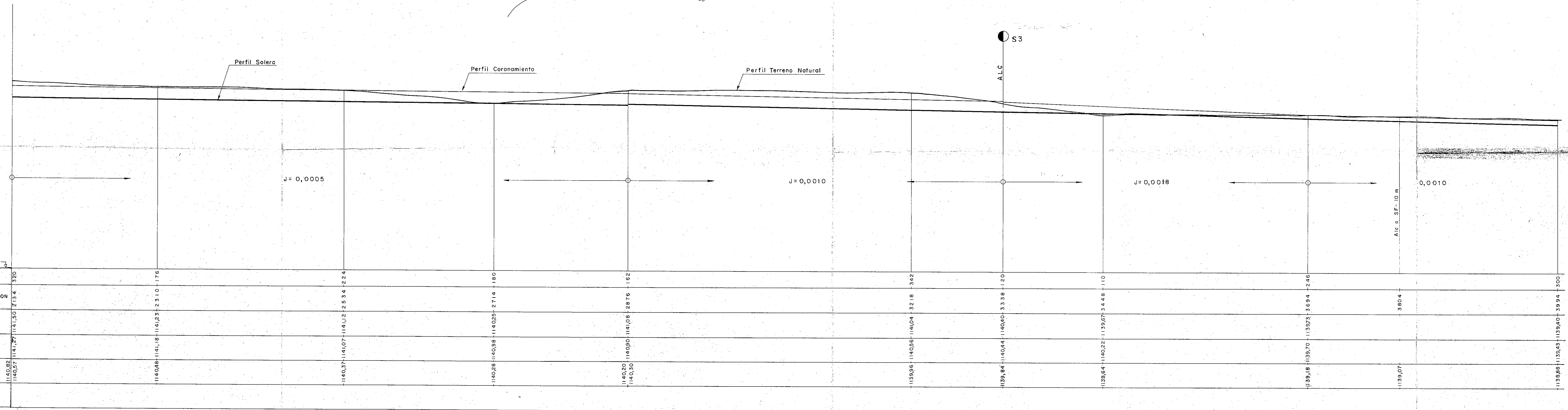
AUTOR: P. ROMAGNOLI
DIBUJO: V. GALIAN
REVISOR: C. ABDO
Vº Bº: E. A. LOPEZ
Nº DE ARCHIVO:
FECHA: SETIEMBRE 1981



RED DE RIEGO BANDA DE LUCERO

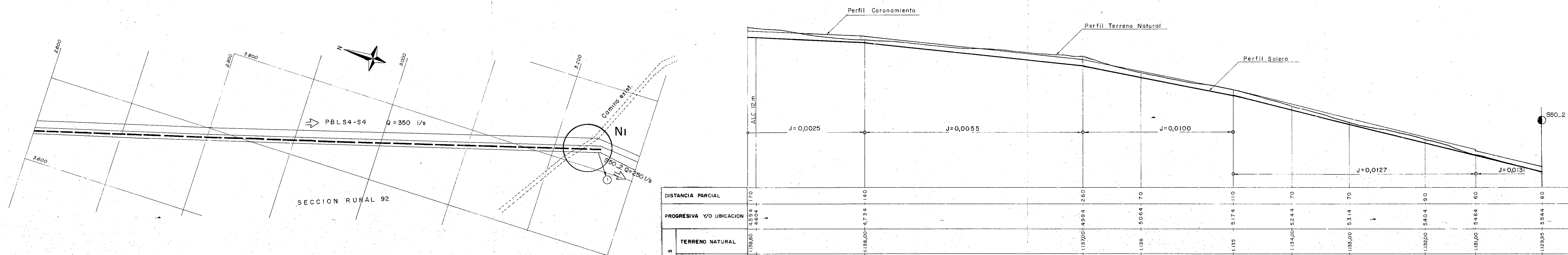
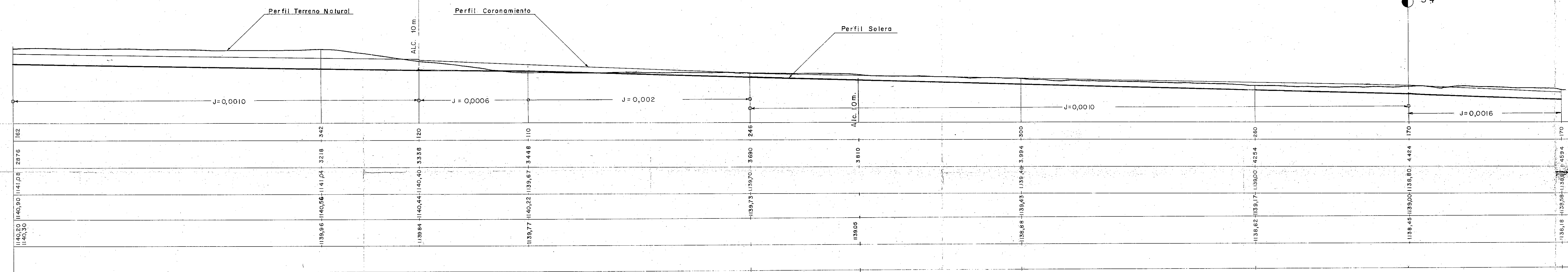
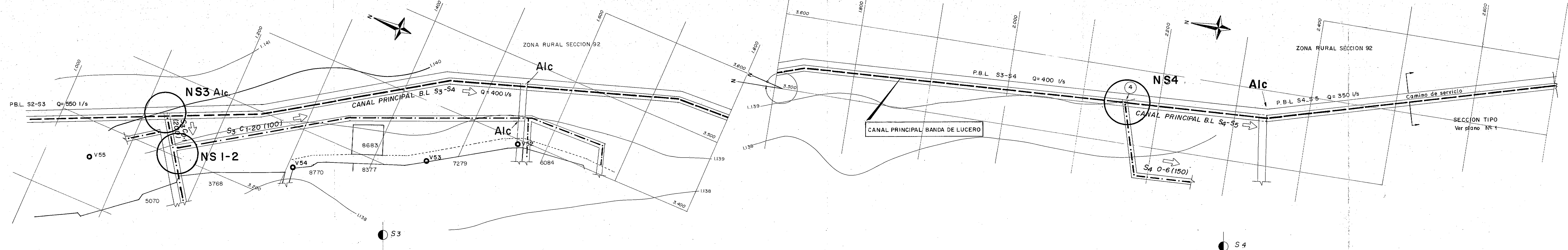
CANAL PRINCIPAL

Area: COPACABANA-BANDA DE LUCERO
Prov.: CATAMARCA

PLANO Nº 21

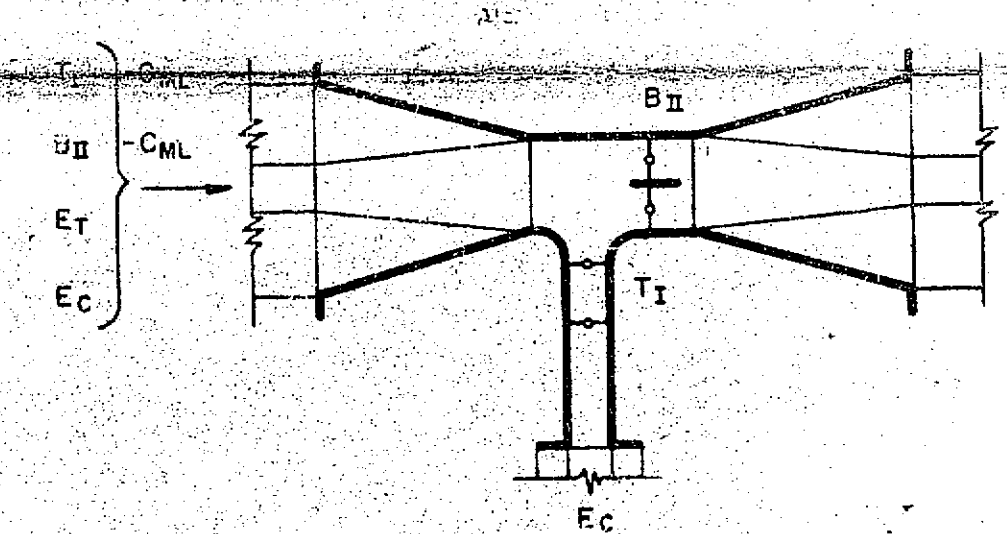


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|  REPUBLICA ARGENTINA | <h1 style="margin: 0;">PROYECTO NOA HIDRICO</h1> <h2 style="margin: 0;">SEGUNDA FASE</h2> |  NACIONES UNIDAS |
| SUBSECRETARIA DE RECURSOS HIDRICOS CONSEJO FEDERAL DE INVERSIONES INSTITUTO NACIONAL DE CIENCIA Y TECNICA HIDRICAS | PROGRAMA DE LAS NACIONES UNIDAS DE DESARROLLO AGUAS / FONDOS DE FIDUCIARIA (SICOMEX) - (ANEXO) | |
| ESCALA <div style="display: flex; justify-content: space-around; align-items: center;"> 1: 2000 H= 1:2000 V= 1:100 </div> | | |
| AUTOR: C. ABDO | RED DE RIEGO BANDA DE LUCERO | |
| DIBUJO: V. GALIAN | CANAL PRINCIPAL P.B | |
| REVISO: P. ROMAGNOLI | <div style="display: flex; justify-content: space-around; align-items: center;"> S1 S2 S2 - S3 </div> | |
| V* B* ING. E. LOPEZ | Area : COPACABANA-BANDA DE LUCERO | |
| N° DE ARCHIVO | Prov. : CATAMARCA | |
| FECHA SE TIEMBRE 1961 | | |

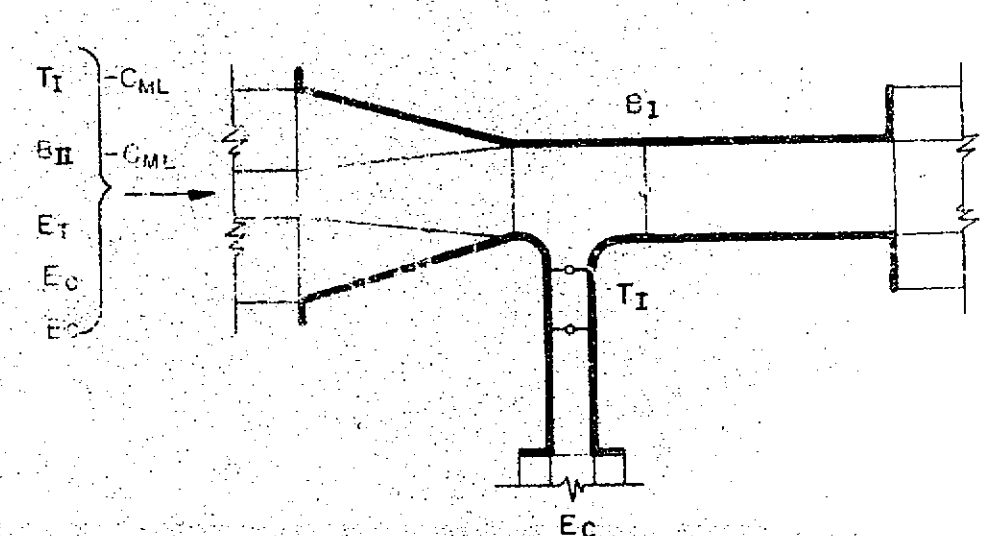


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Nudos: NS3 - NS4



Nudo: NS1-2



REPUBLICA ARGENTINA

SECRETARIA DE RECURSOS HIDRICOS

COMANDO EN JEFE FUERZA ARMADA ARGENTINA

INSTITUTO NACIONAL DE ENGENIERIA Y TECNICA HIDRICAS

PROYECTO NOA HIDRICO

SEGUNDA FASE

RED DE RIEGO BANDA DE LUCERO

CANAL PRINCIPAL P.B

S3-S4 S4-S5

Area: COPACABANA-BANDA DE LUCERO

Prov.: CATAMARCA

PLAN N°

23

ESCALA

1:2000 H=1:2000 V=1:100

AUTOR

C. ABDO

DIBUJO

S. VISTAS

REVISO

P. ROMAGNOLI

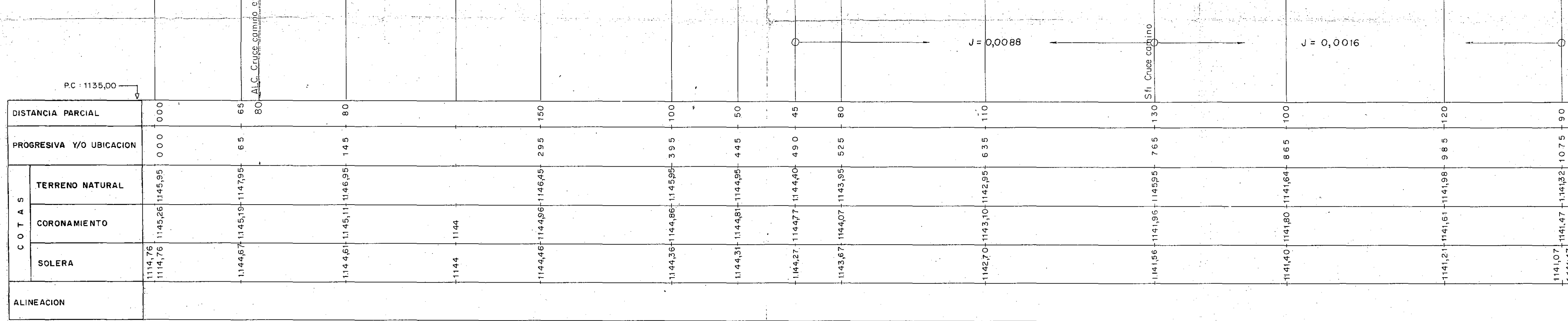
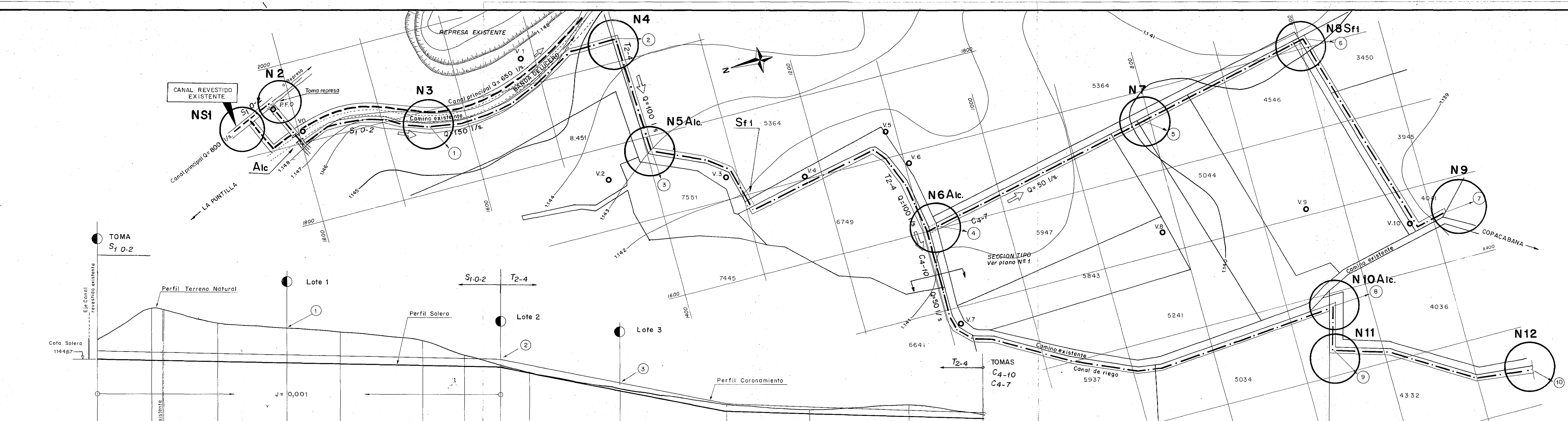
V° B°

E. A. LOPEZ

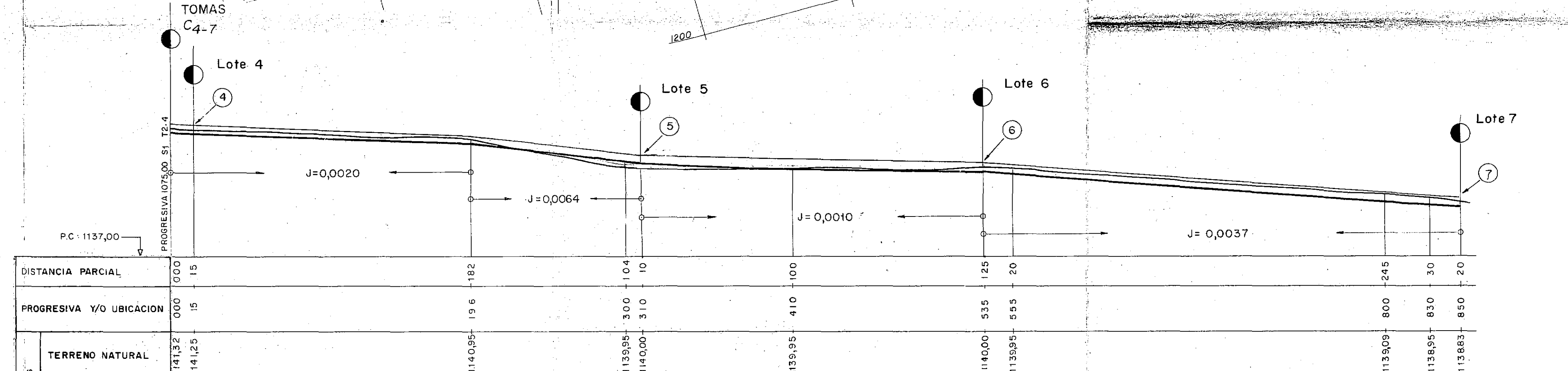
N° DE ARCHIVO

FECHA

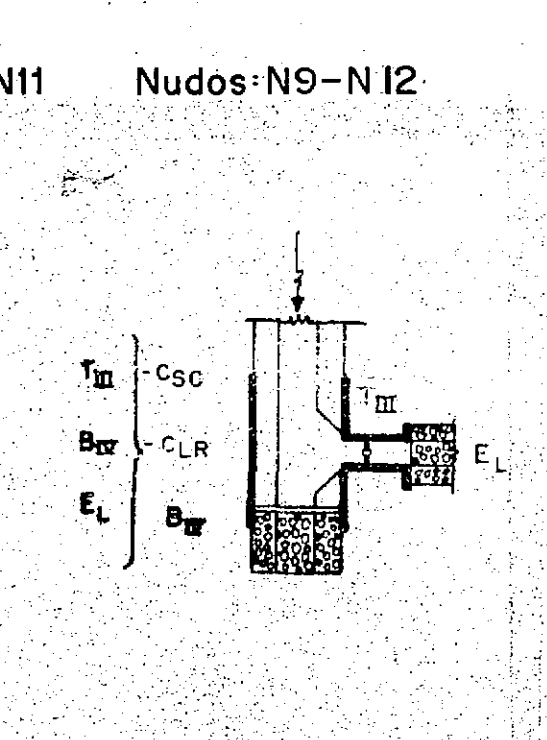
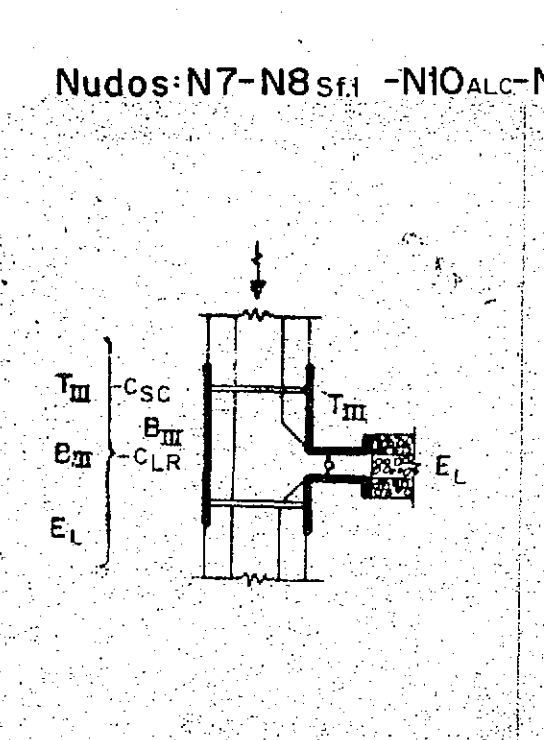
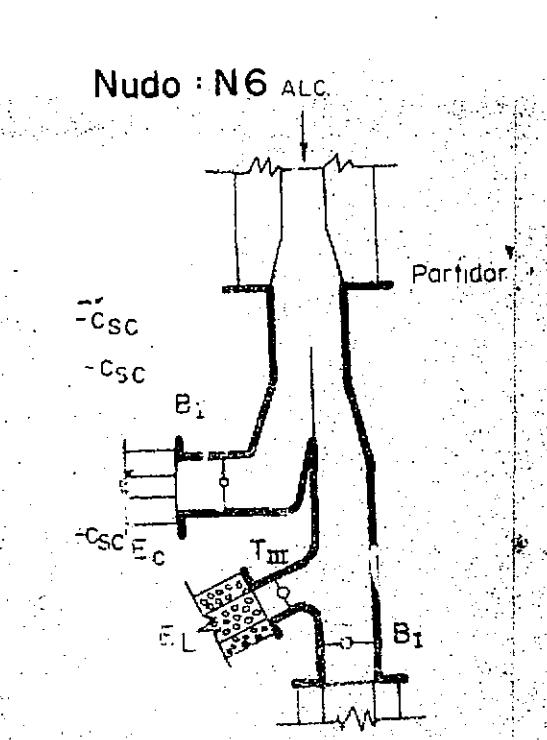
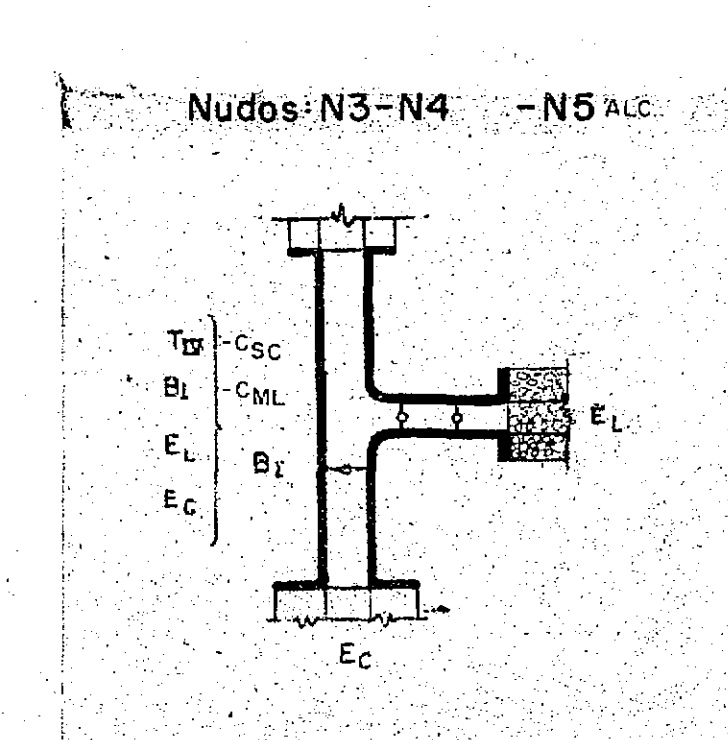
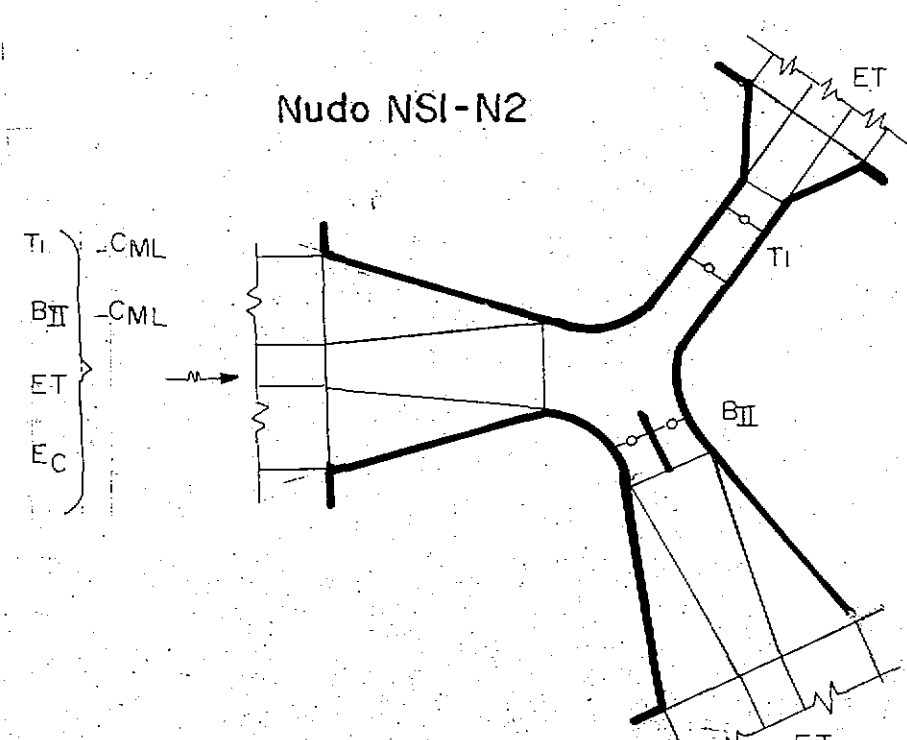
SEPTIEMBRE/81



| COTAS | | ALINEACION | |
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| 1141.17 | 1141.17 | 1114.76 | 1114.76 |



| COTAS | | ALINEACION | |
|-------------------|--------------------------|-----------------|--------------|
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| 555 | 555 | 1114.76 | 1114.76 |
| 800 | 800 | 1114.76 | 1114.76 |
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| 850 | 850 | 1114.76 | 1114.76 |
| 1138.66 | 1138.66 | 1114.76 | 1114.76 |
| 1139.05 | 1139.05 | 1114.76 | 1114.76 |
| 1139.65 | 1139.65 | 1114.76 | 1114.76 |
| 1139.77 | 1139.77 | 1114.76 | 1114.76 |



REPUBLICA ARGENTINA

SECRETARIA DE RECURSOS HIDRICOS

INSTITUTO NACIONAL DE CIENCIA Y TECNICA HIDRICAS

PROYECTO NOA HIDRICO

SEGUNDA FASE

ESCALA

1:2000 H=1:2000 V=1:100

AUTOR

C. ABDO

DIBUJO

V. GALIAN

REVISOR

P. ROMAGNOLI

Vº Bº

ING. E. LOPEZ

Nº DE ARCHIVO

RED DE RIEGO

SECCION Nº1-SECUNDARIO S1

COMUNEROS S1C1-4 S1C4-10 S1C4-7

Area: COPACABANA-BANDA DE LUCERO

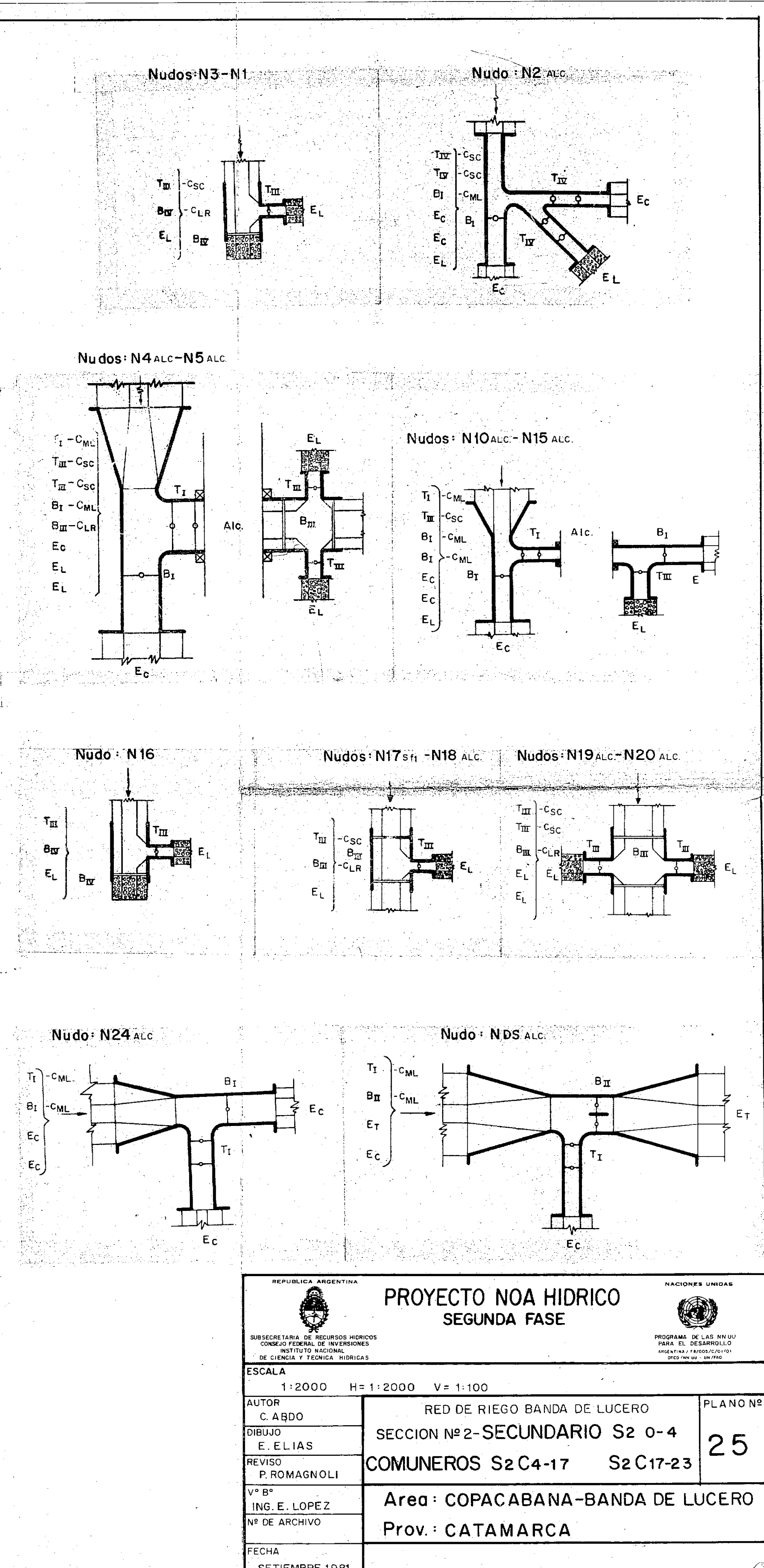
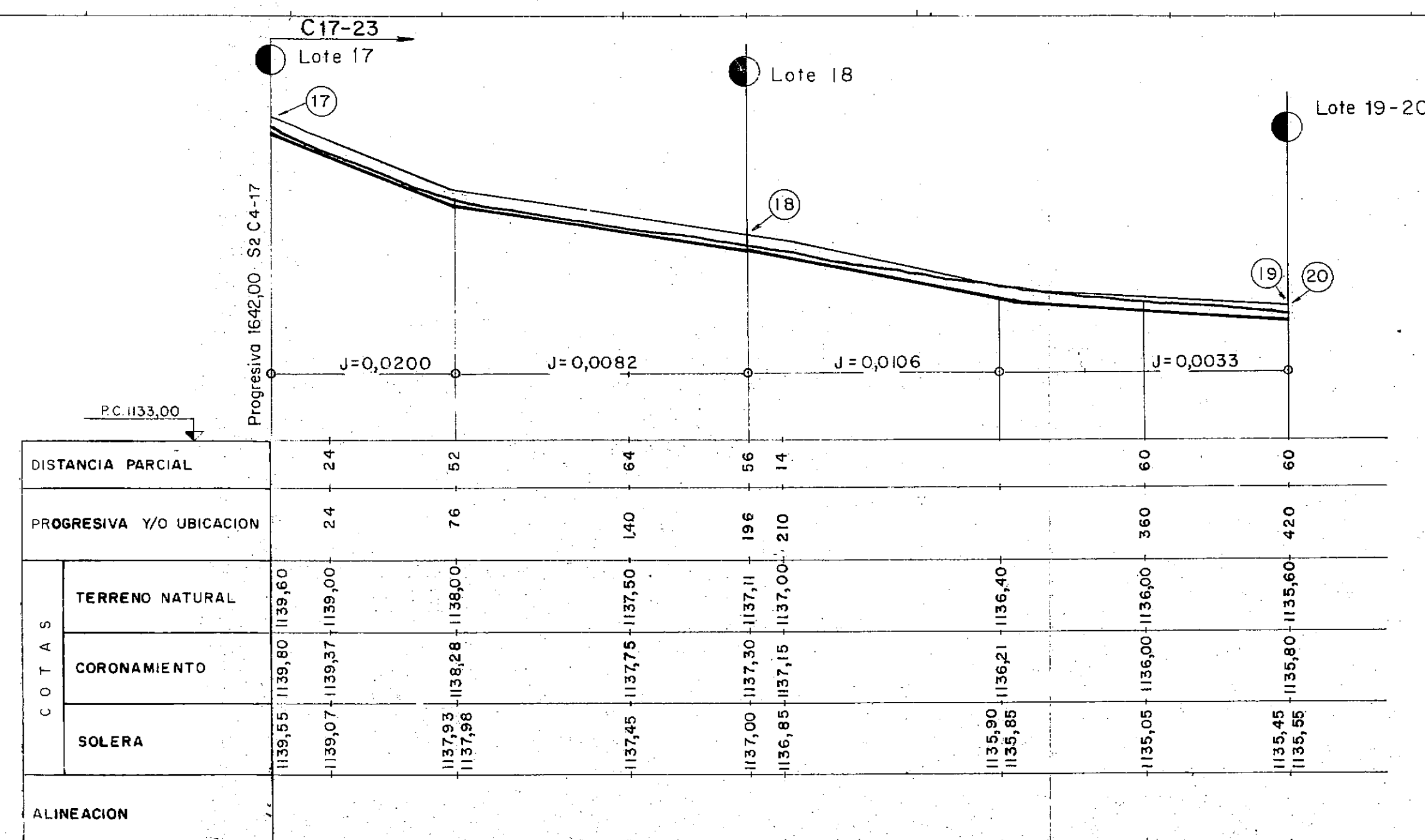
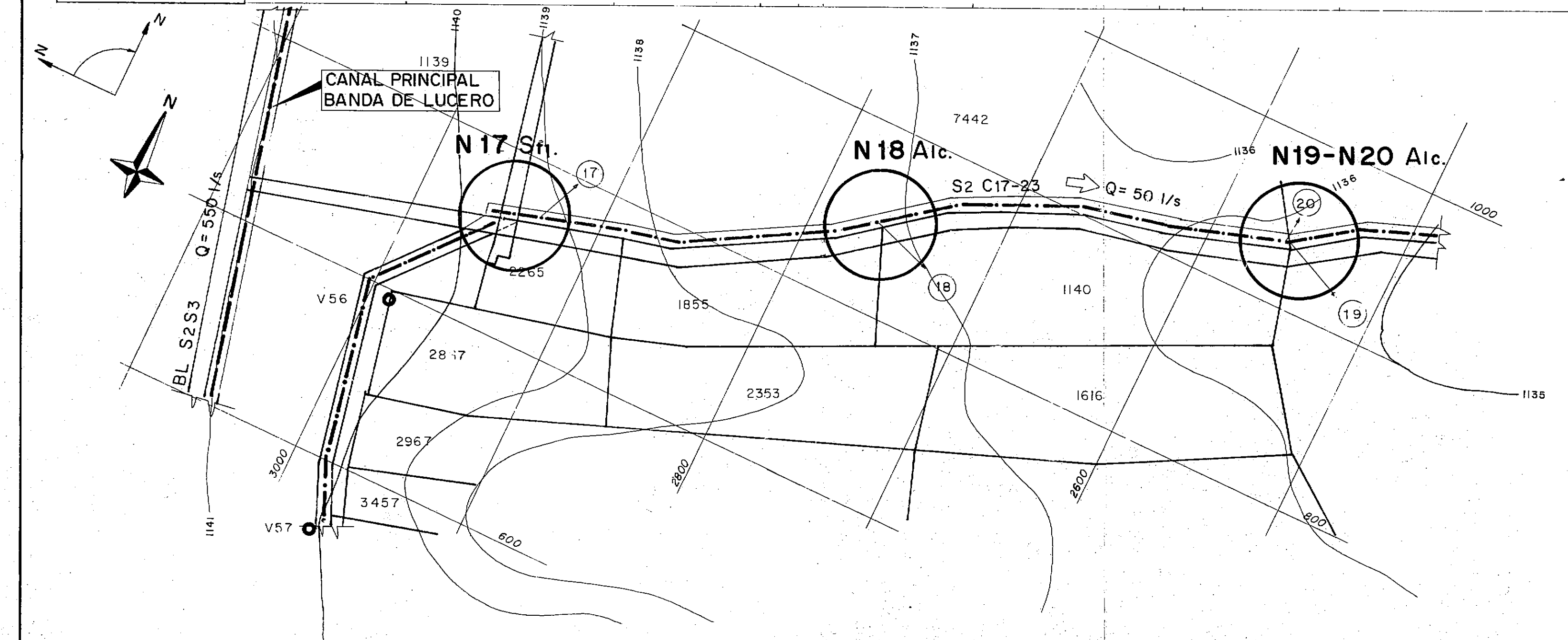
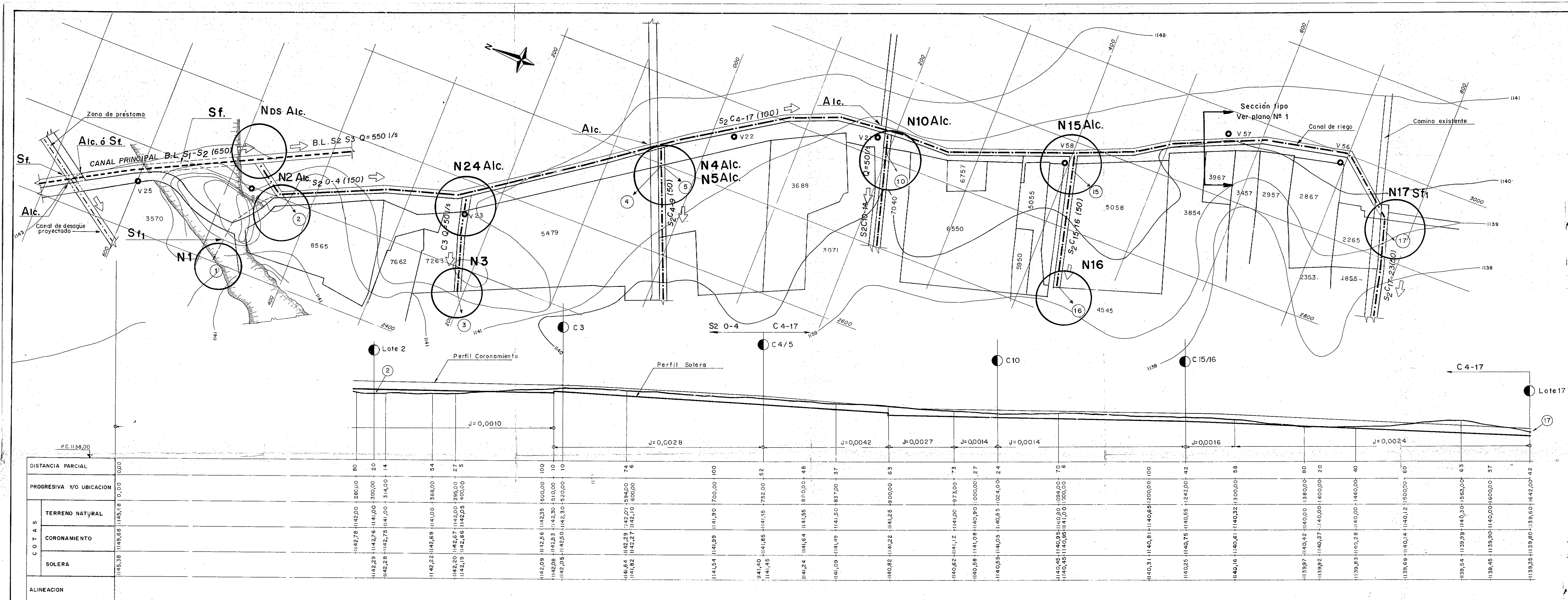
Prov.: CATAMARCA

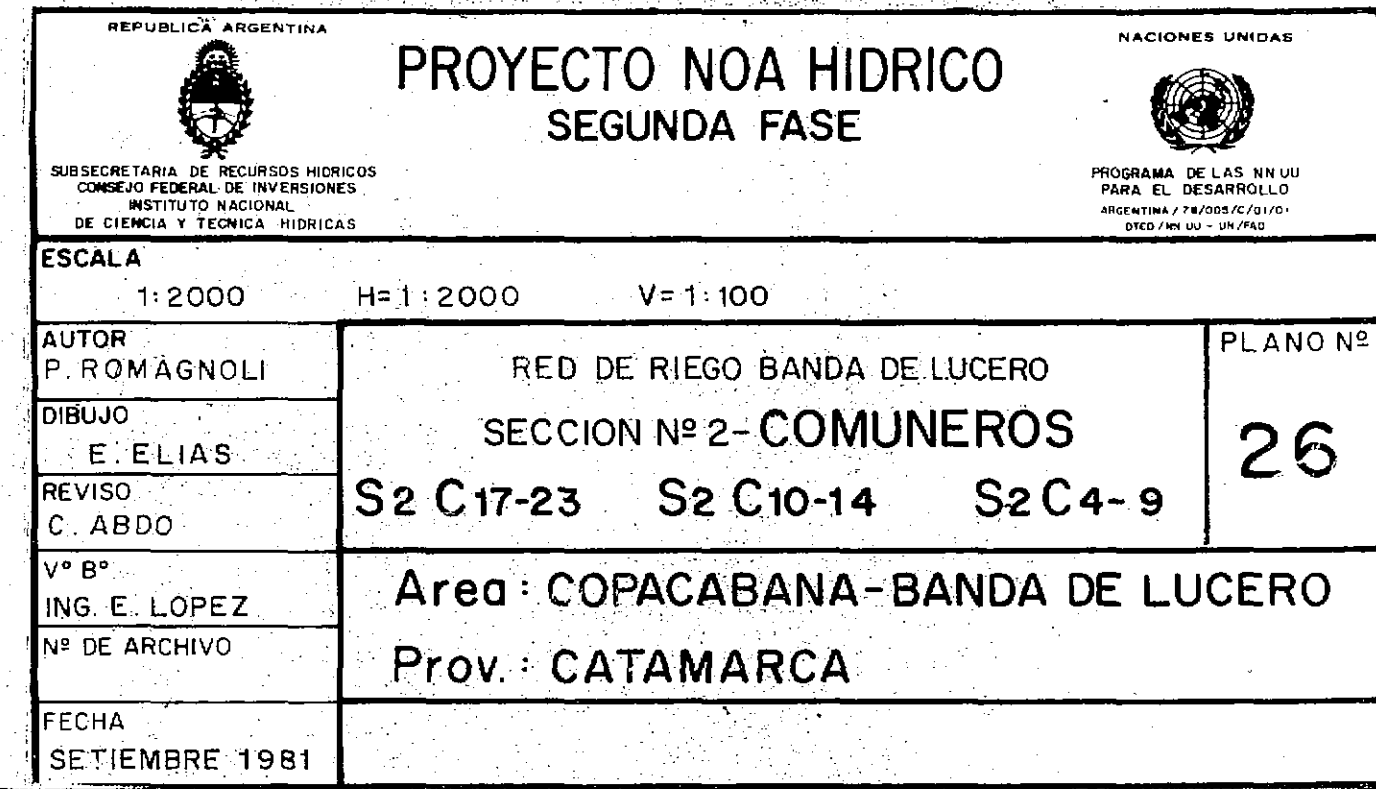
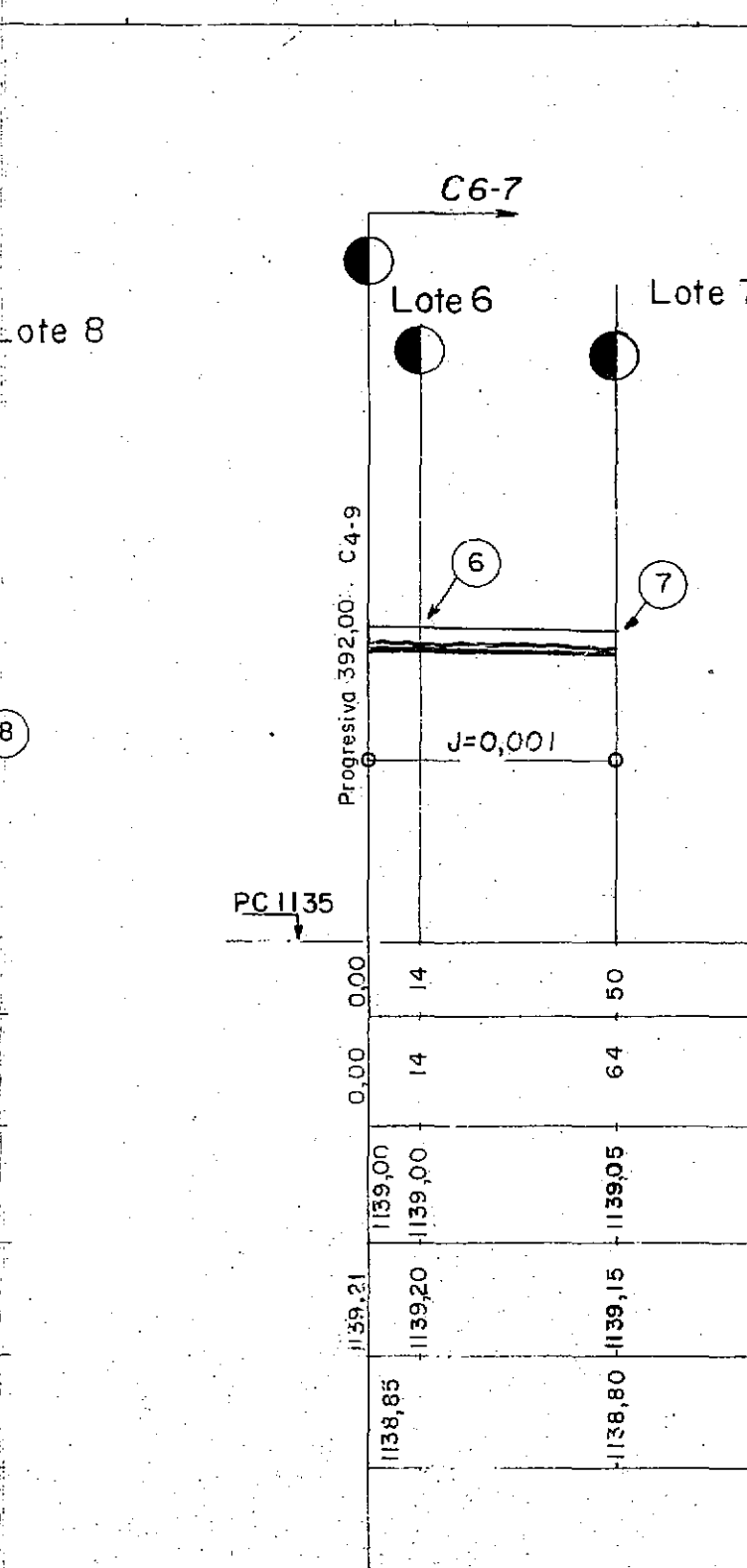
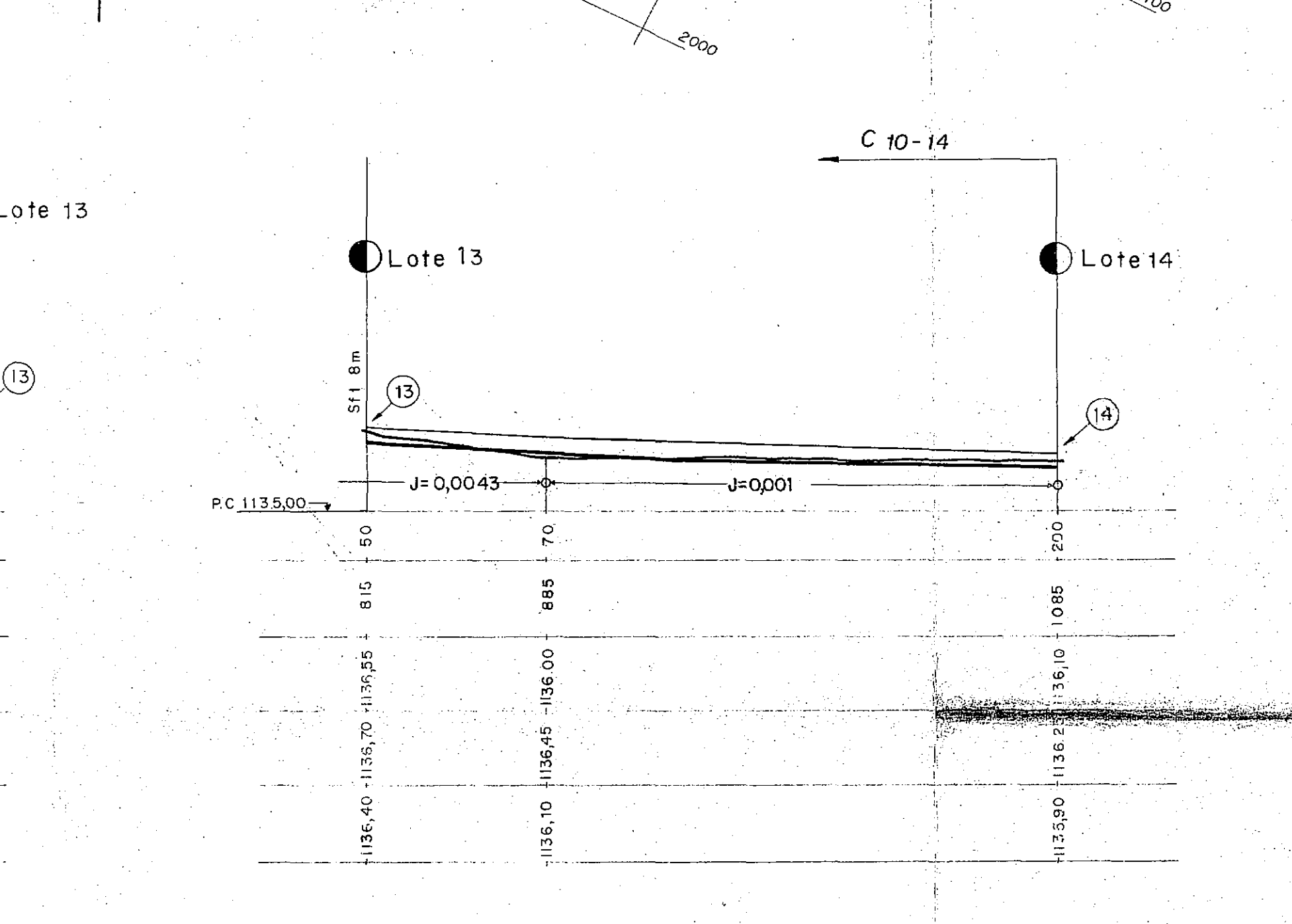
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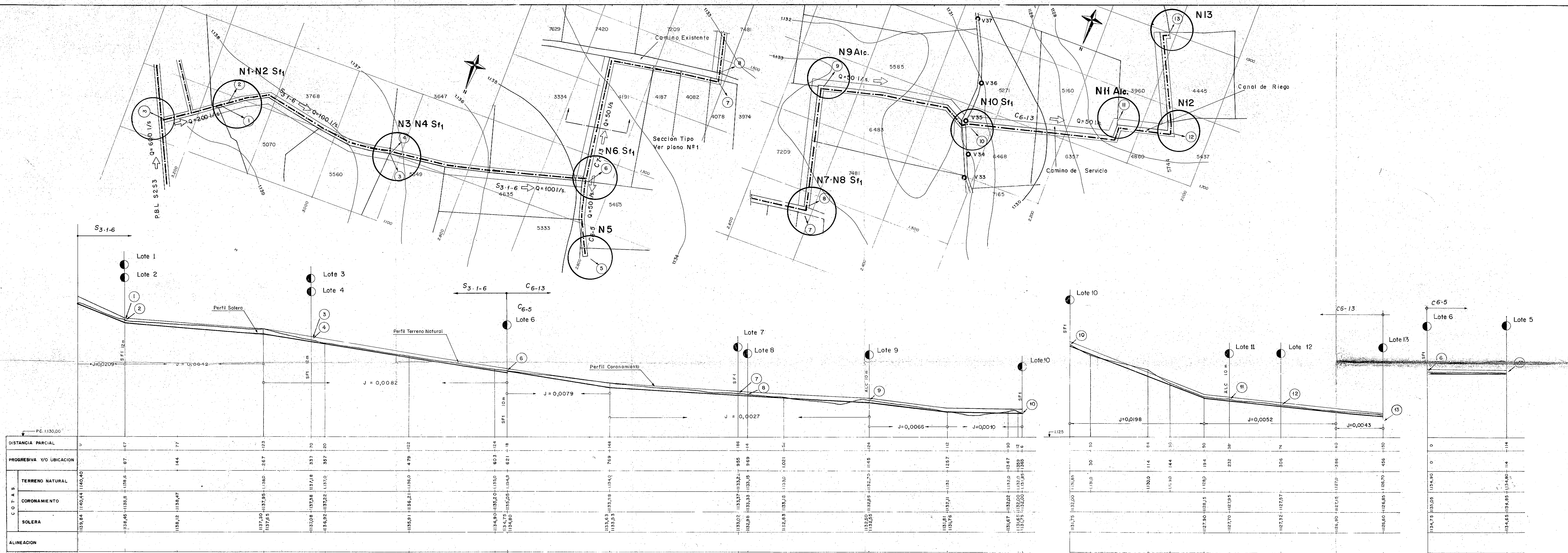
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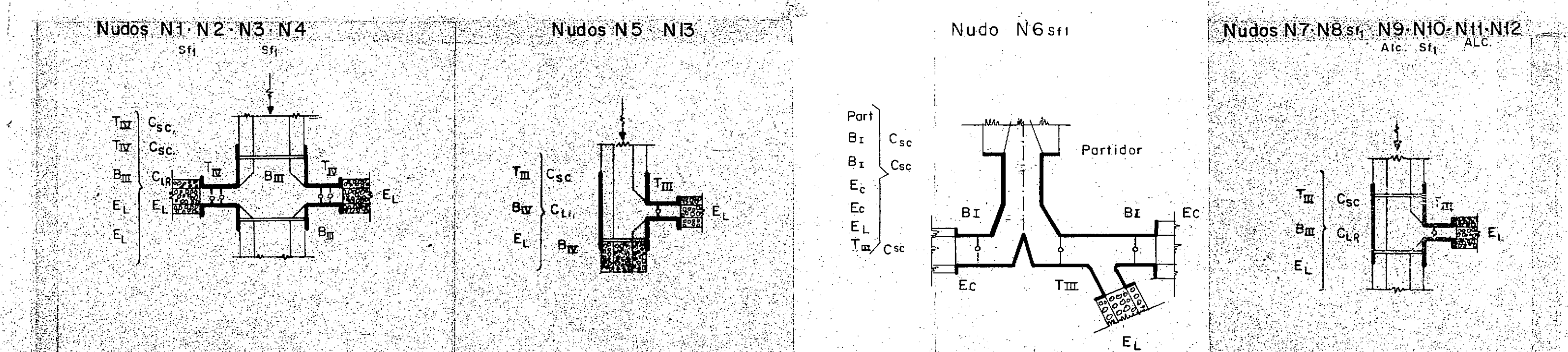
SEPTIEMBRE 1981







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| ALINEACION | | | | | | | | | | | | | | | |



REPUBLICA ARGENTINA

SECRETARIA DE RECURSOS HIDRICOS

CONSEJO FEDERAL DE INVERSIONES

INSTITUTO NACIONAL DE CIENCIA Y TECNICA HIDRICAS

PROYECTO NOA HIDRICO

SEGUNDA FASE

NACIONES UNIDAS

PROGRAMA DE LAS NACIONES UNIDAS PARA EL DESARROLLO

AGENCIA PARA EL DESARROLLO ECONOMICO Y SOCIAL

ESCALA: 1:2.000 H=1:2.000 V=1:1000

AUTORE: C. ABDO

DIBUJO: S. VISTAS

REVISOR: P. ROMAGNOLI

Vº Bº: ING. E. LOPEZ

Nº DE ARCHIVO:

FECHA: AGOSTO 1981

RED DE RIEGO BANDA DE LUCERO

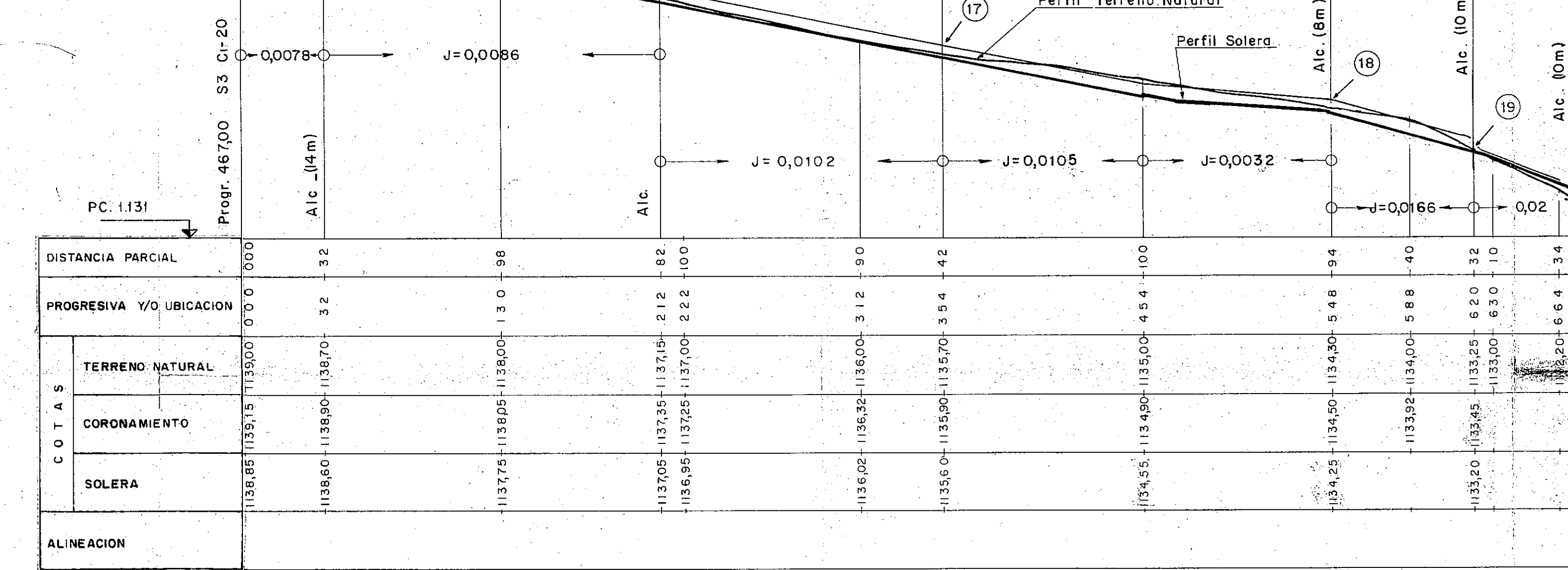
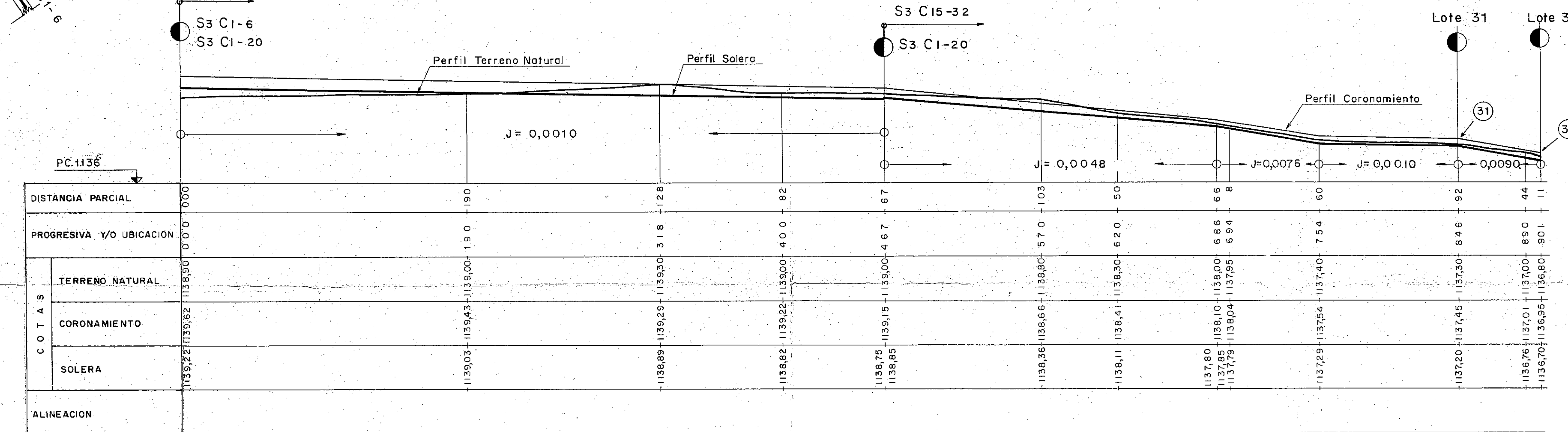
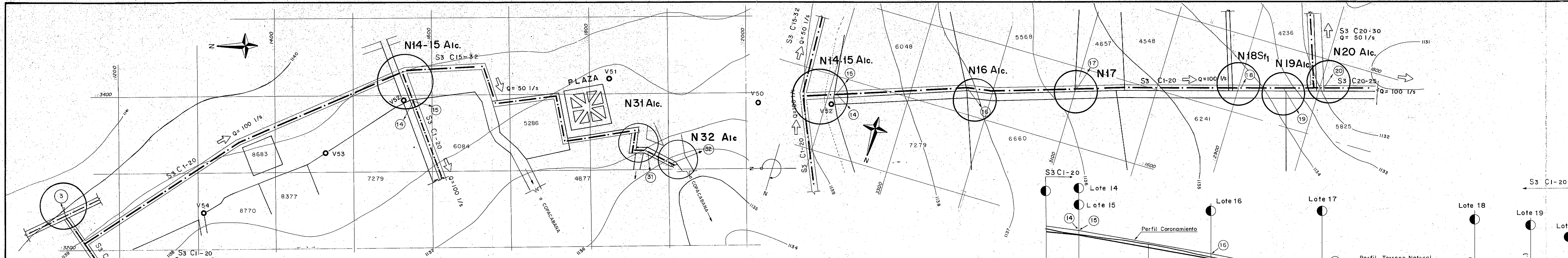
SECCION Nº 3- COMUNEROS

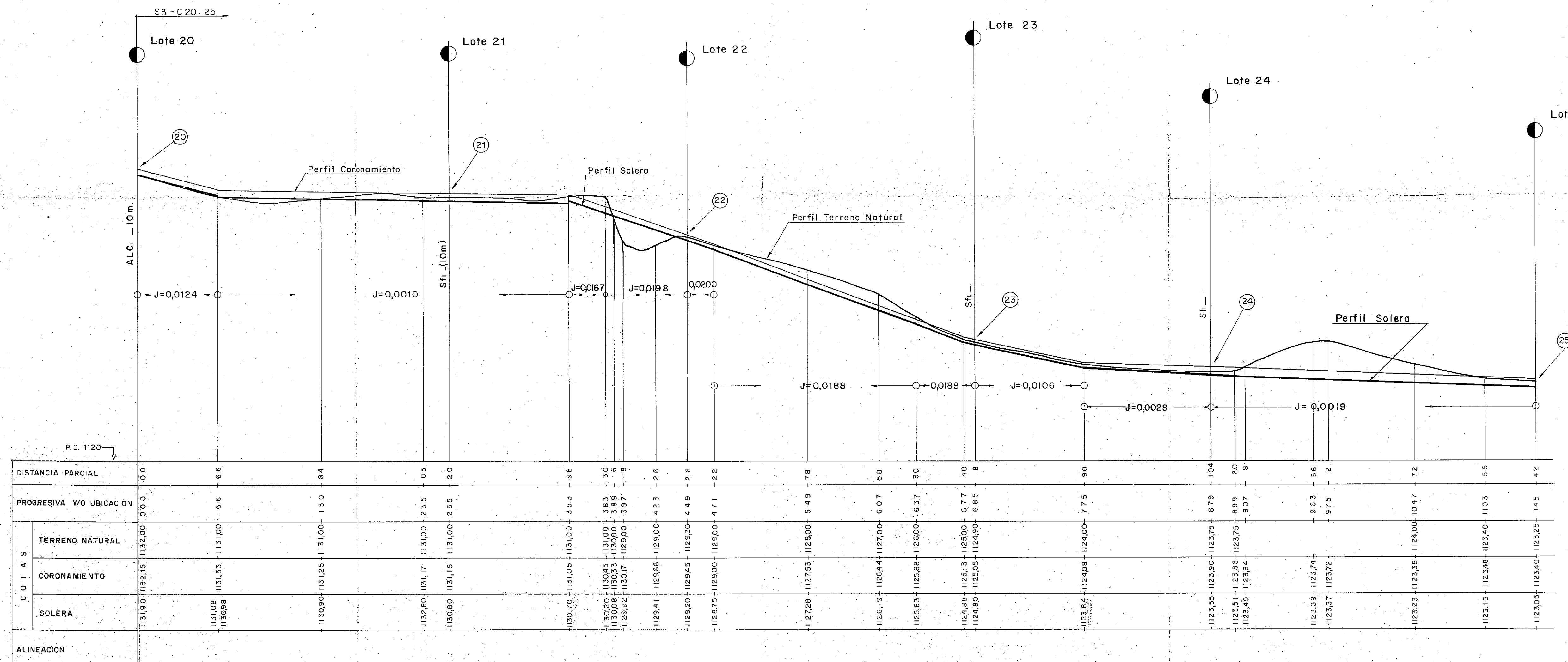
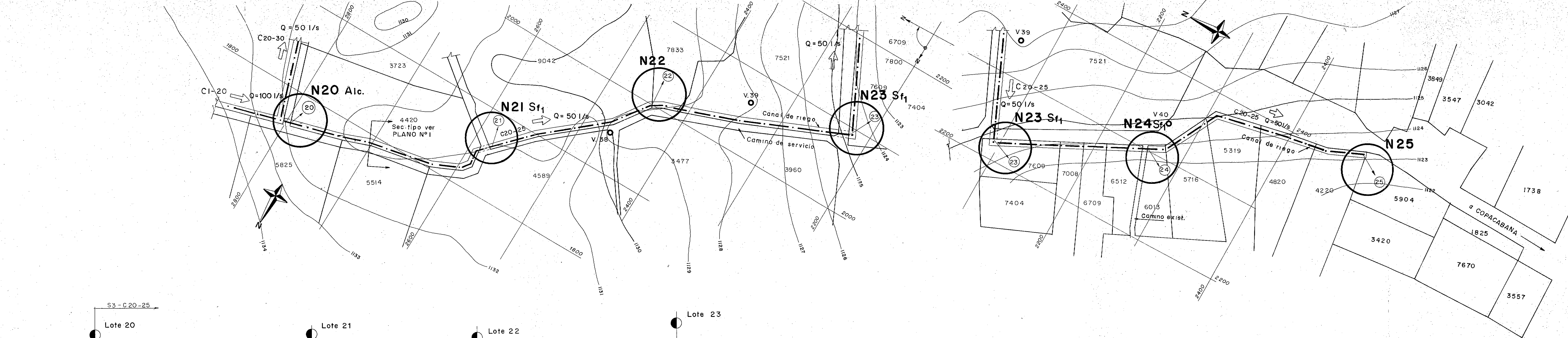
S3 C1-6 S3 C6-13 S3 C6-5

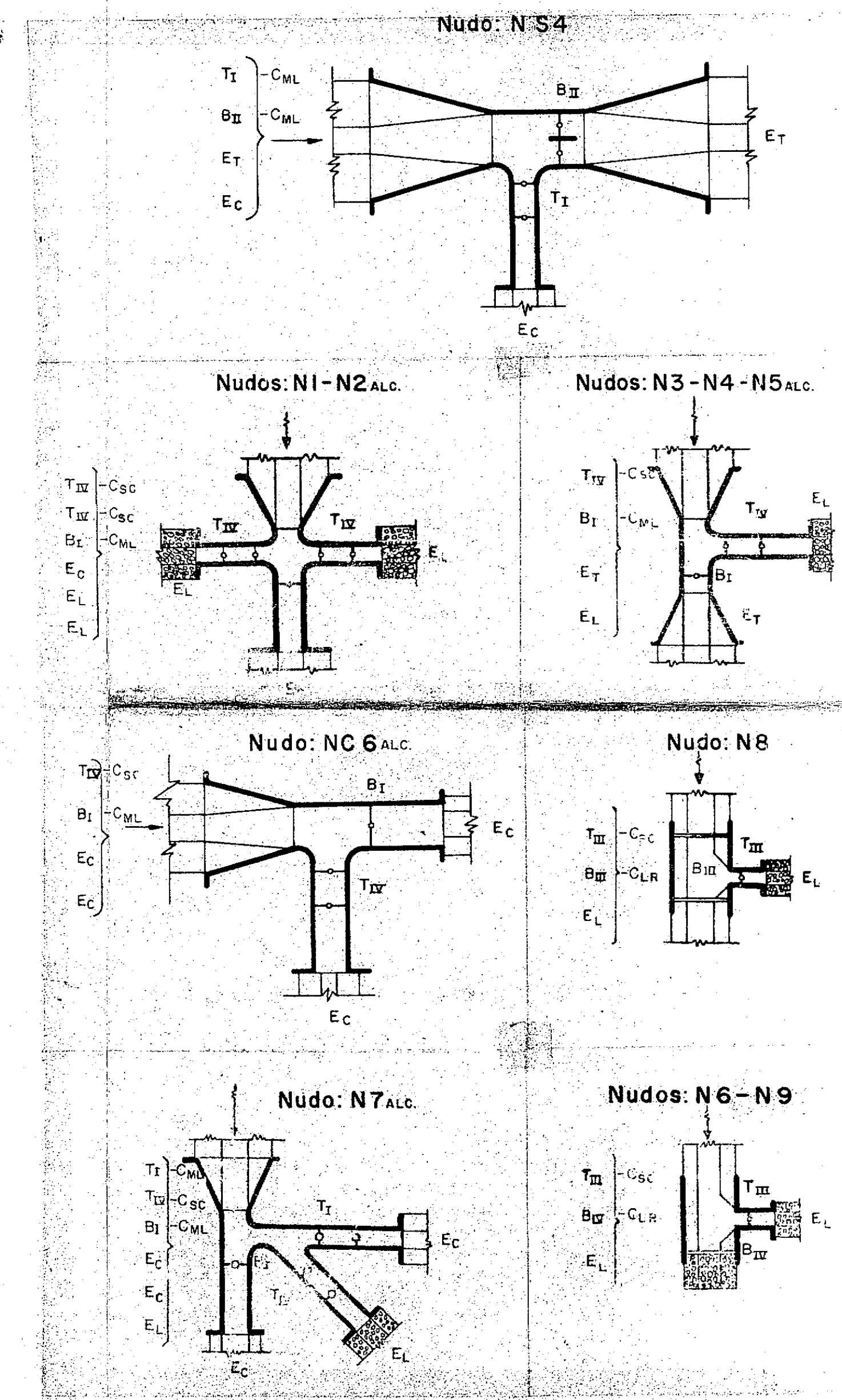
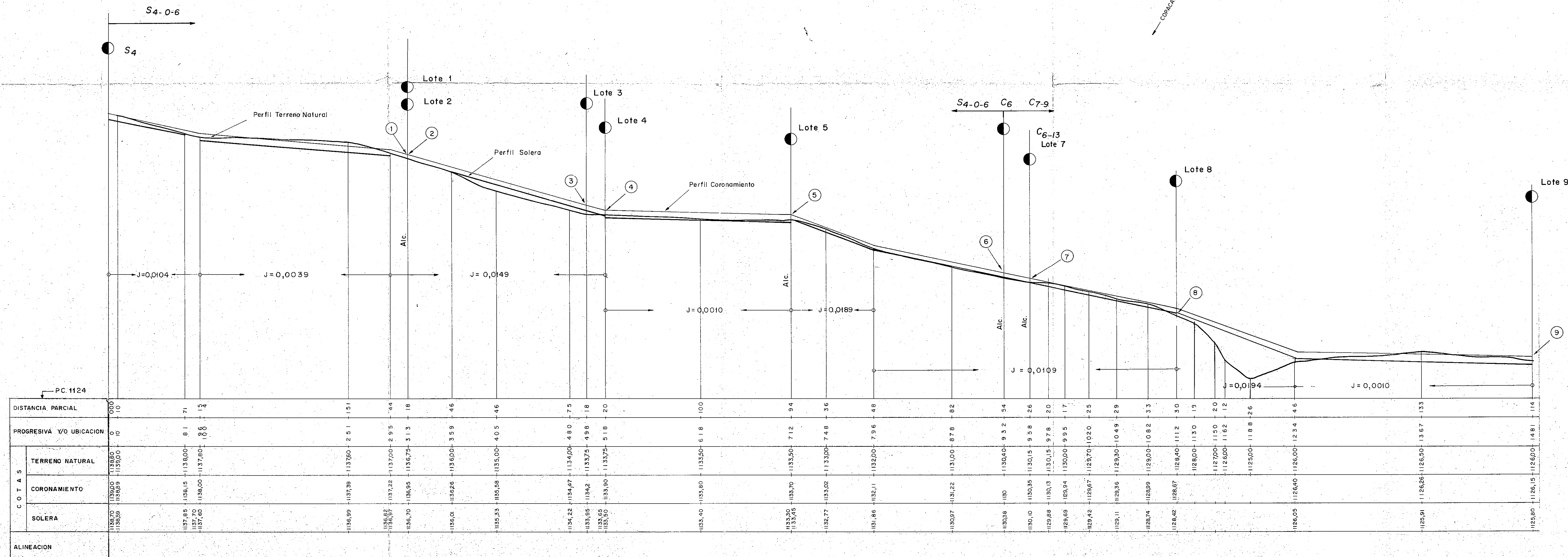
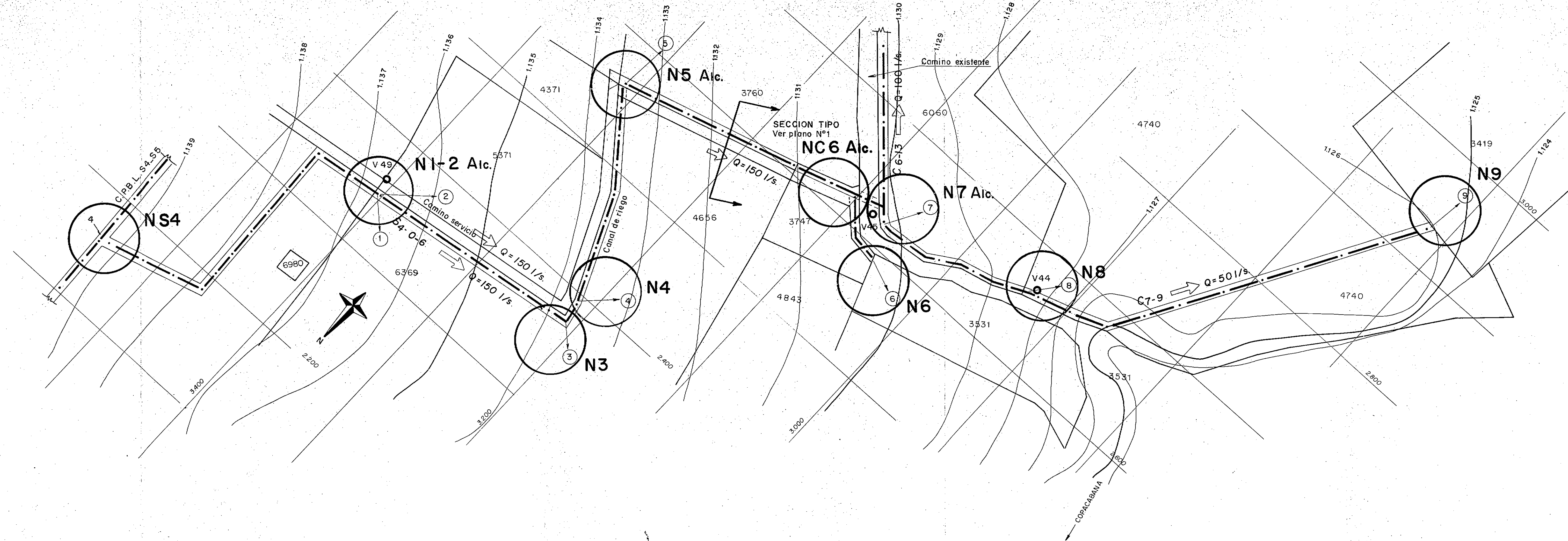
Area: COPACABANA-BANDA DE LUCERO

Prov.: CATAMARCA

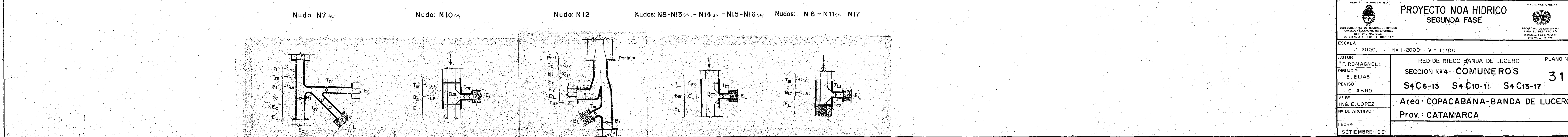
PLANO Nº 27

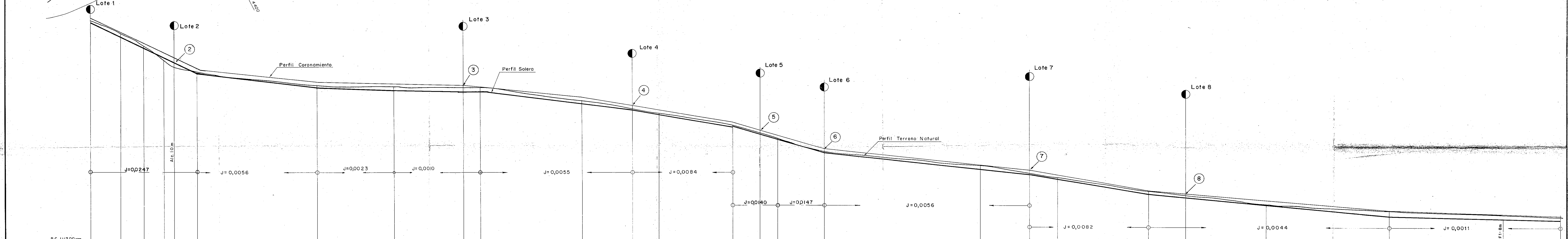
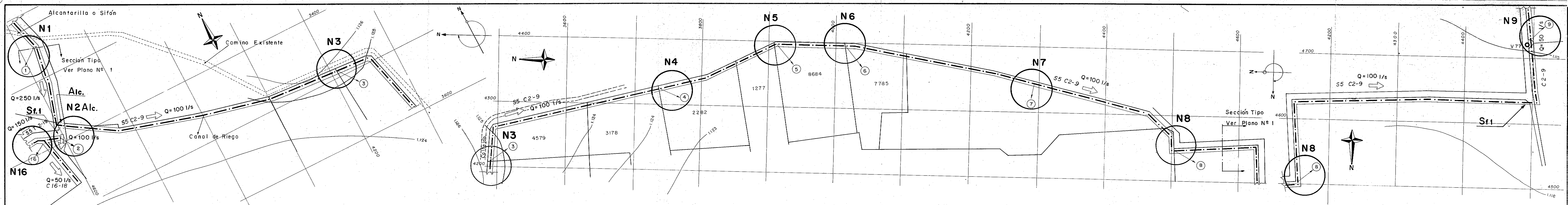




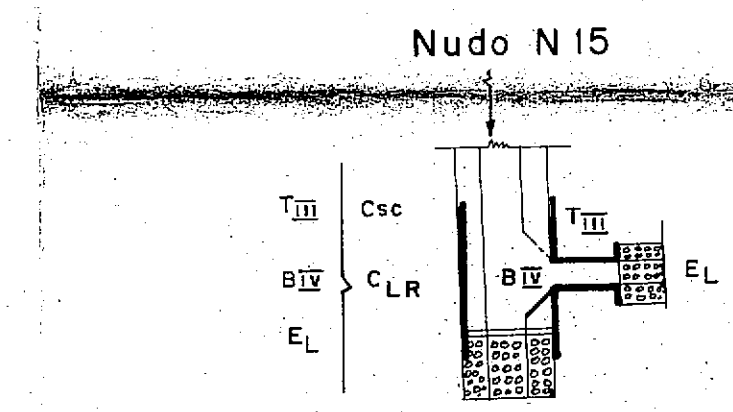
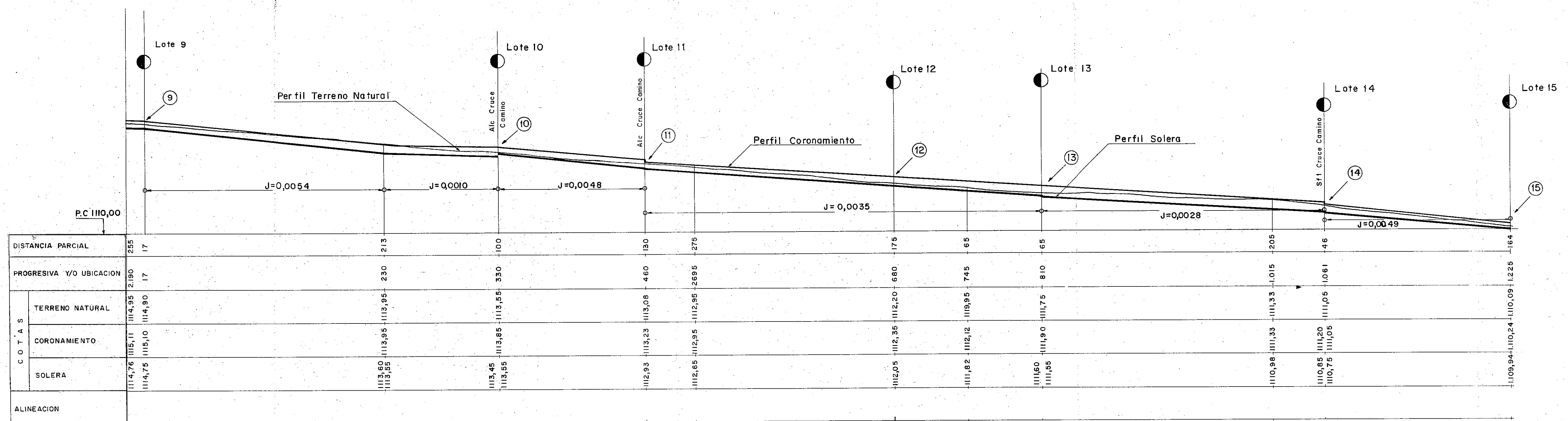
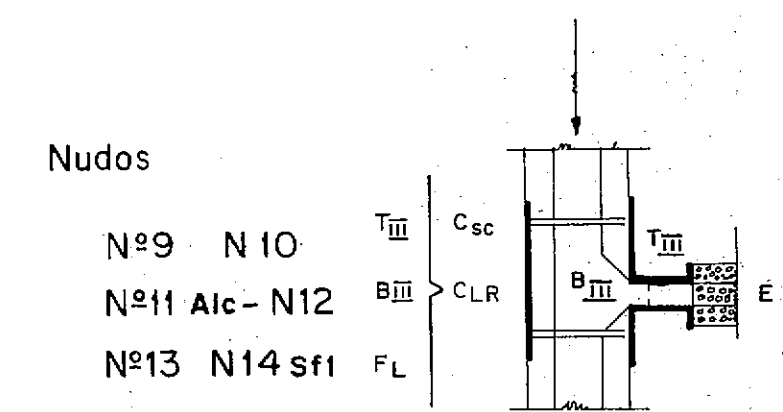
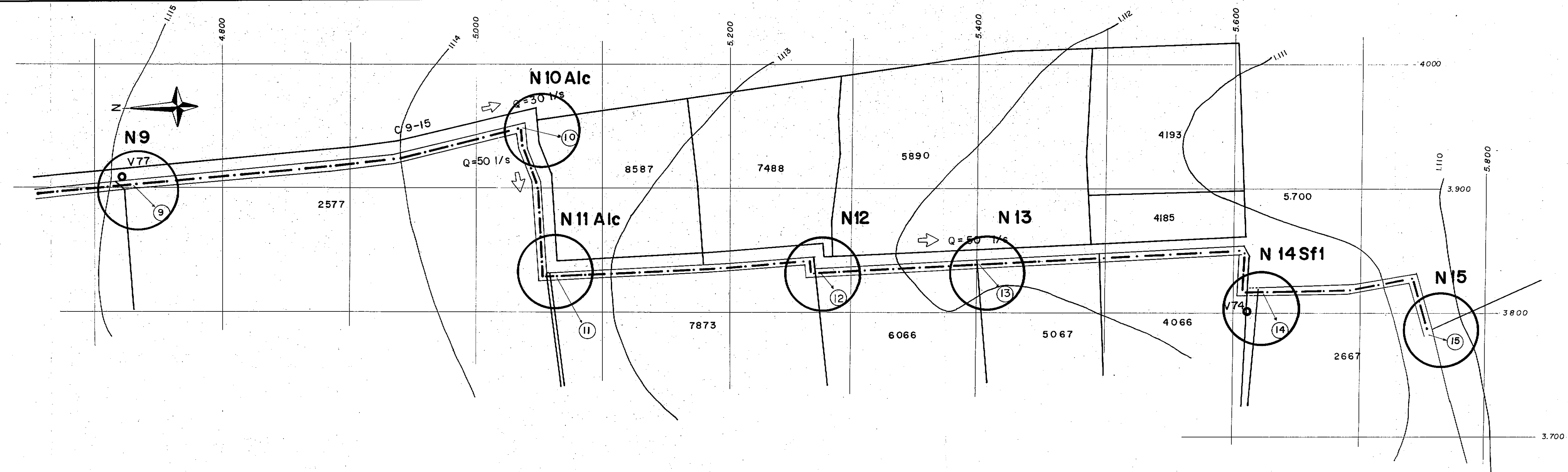


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| REPUBLICA ARGENTINA SUBSECRETARIA DE RECURSOS HIDRICOS COMANDO EN JEFE DE INGENIERIA INSTITUTO NACIONAL DE CIENCIAS Y TECNICAS HIDRICAS | | NACIONES UNIDAS PROGRAMA DE LAS AMERICAS PARA EL DESARROLLO INSTITUTO PANAMERICANO DE CIENCIAS Y TECNICAS HIDRICAS | |
| PROYECTO NOA HIDRICO SEGUNDA FASE | | | |
| ESCALA 1:2000 H=1:2000 V=1:100 | | | |
| AUTOR P. ROMAGNOLI DIBUJO V. GALIAN REVISOR C. ABDO | | PLANO Nº 30 RED DE RIEGO BANDA DE LUCERO SECCION Nº 4- TERCIARIO S4 0-6 COMUNERO S4 C7-9 | |
| Vº Bº ING. E. LOPEZ Nº DE ARCHIVO | | Área: COPACABANA-BANDA DE LUCERO Prov.: CATAMARCA | |
| FECHA SETIEMBRE 1981 | | | |

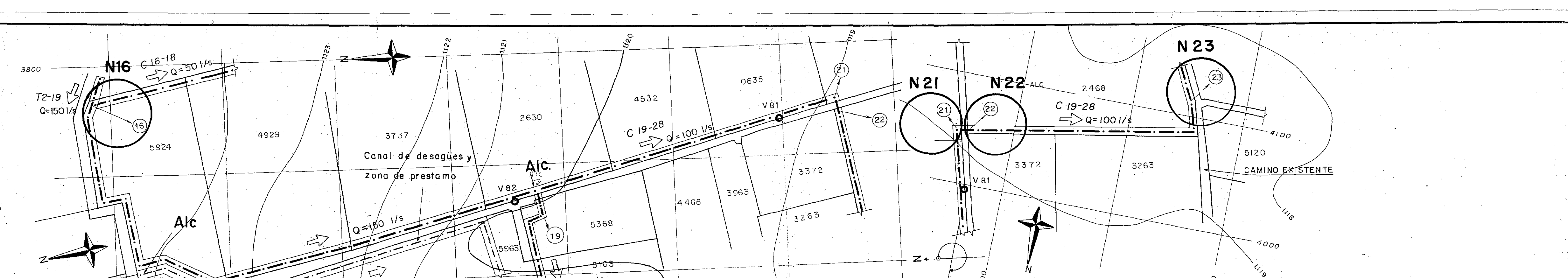
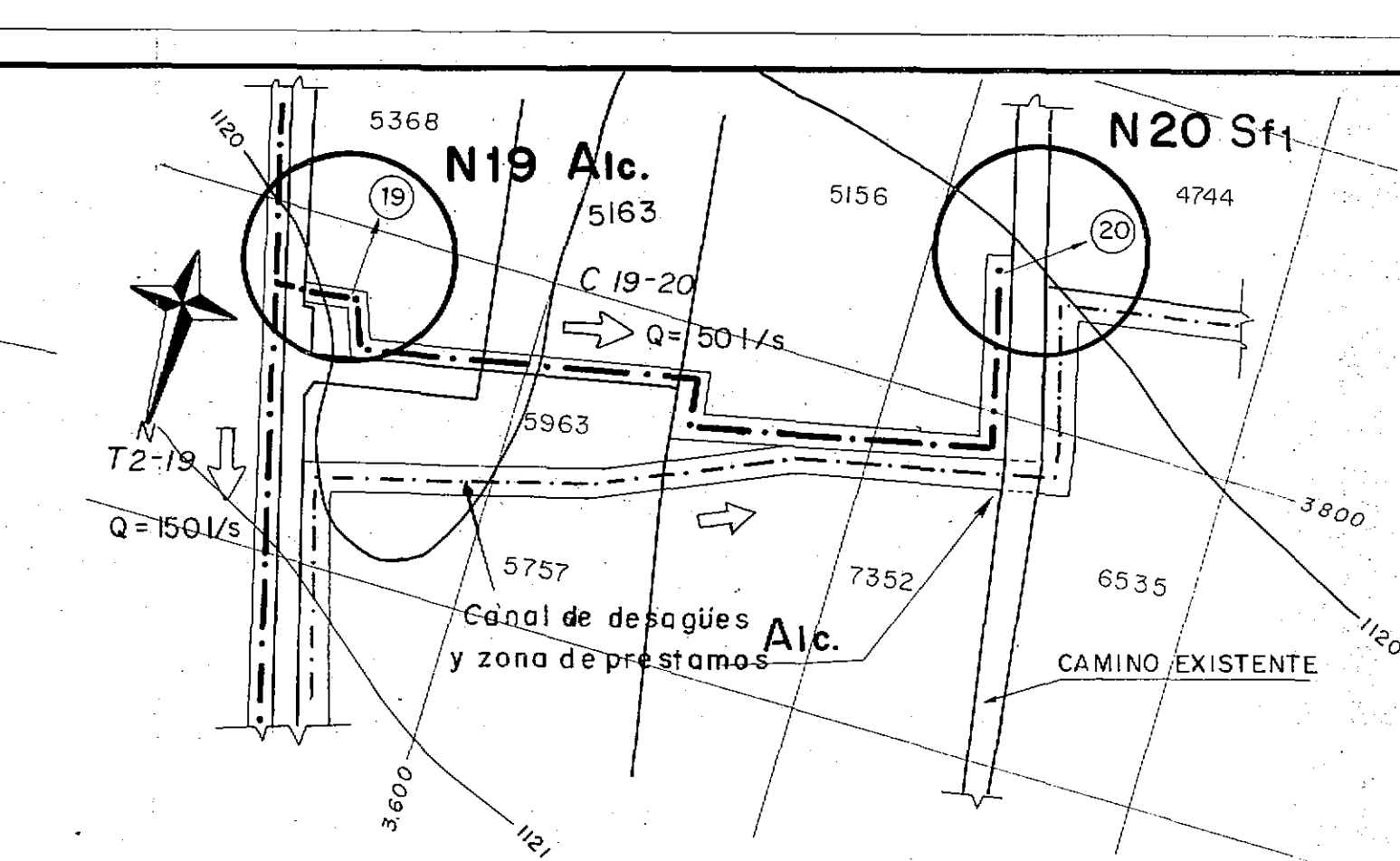
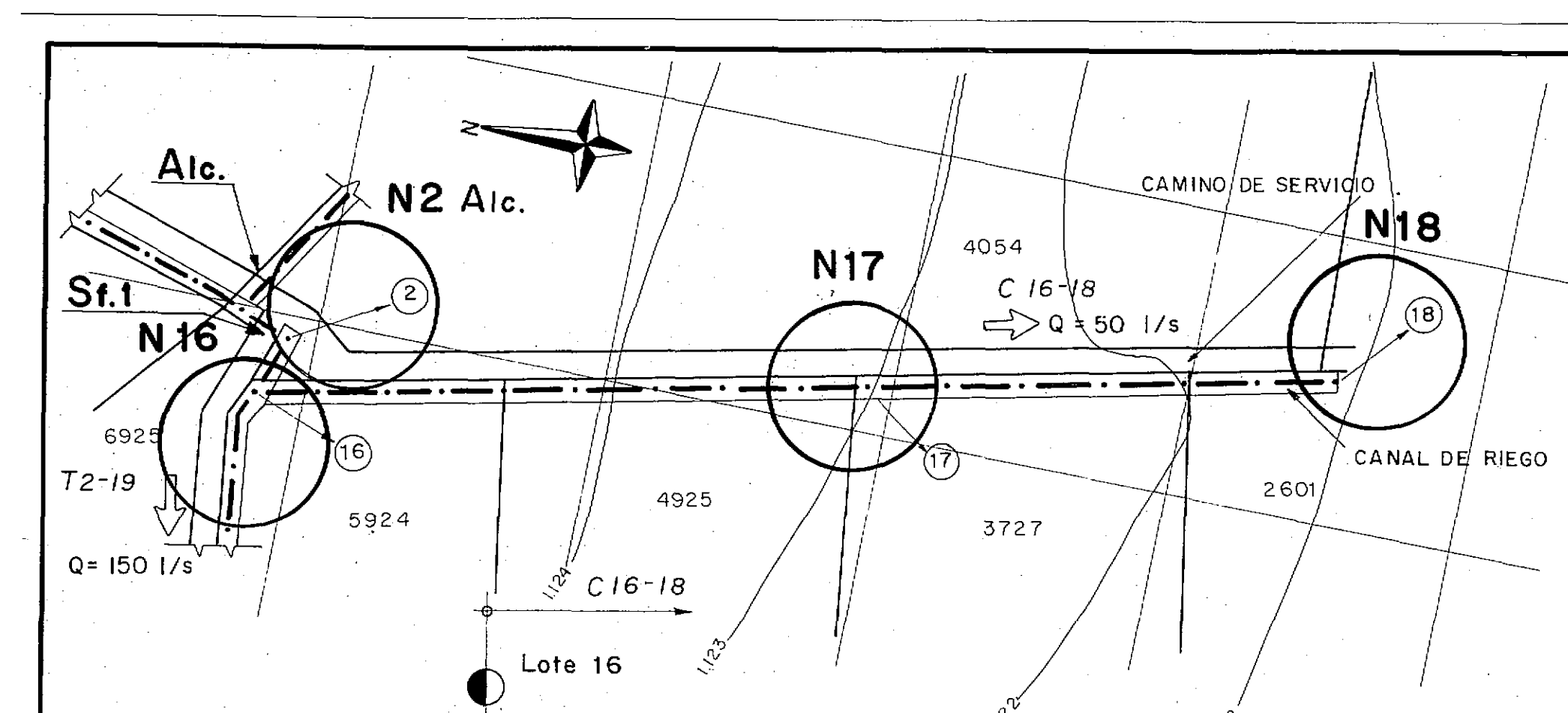




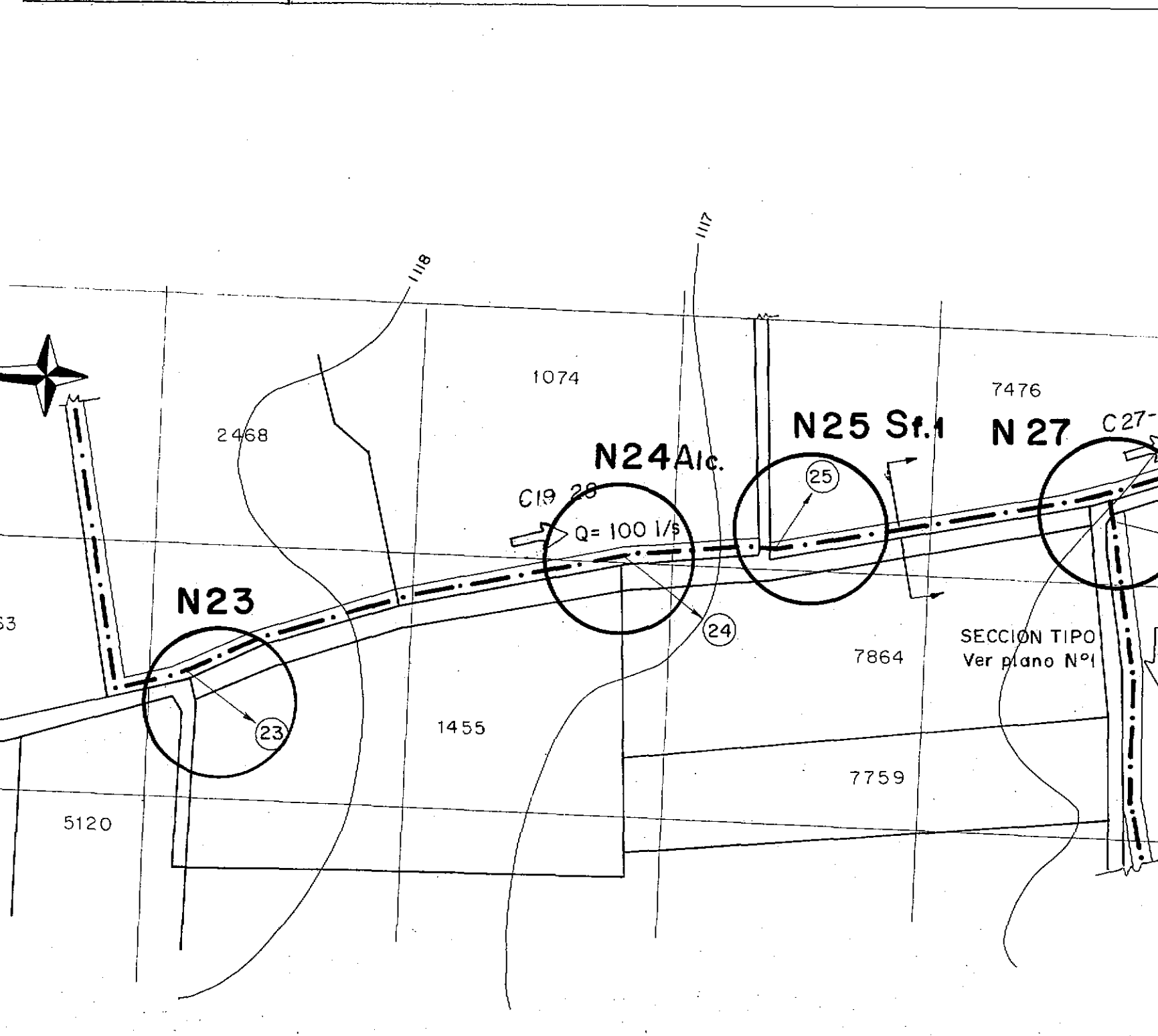
| ALINEACION | C O T A S | | | PROGRESIVA | Y/O UBICACION | DISTANCIA PARCIAL |
|------------|-----------|--------------|-----------------|------------|---------------|-------------------|
| | SOLERA | CORONAMIENTO | TERRENO NATURAL | | | |
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| 1123,82 | 1130,12 | 1123,95 | 000 | 000 | | |
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| 1128,71 | | 1128,95 | 45 | 45 | | |
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| 1127,84 | | 1127,95 | 80 | 55 | | |
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| 1127,10 | | 1126,95 | 110 | 50 | | |
| | | | | | | |
| 1126,73 | | 1126,35 | 125 | 15 | | |
| | | | | | | |
| 1125,87 | | 1126,22 | 125,95 | 160 | 35 | |
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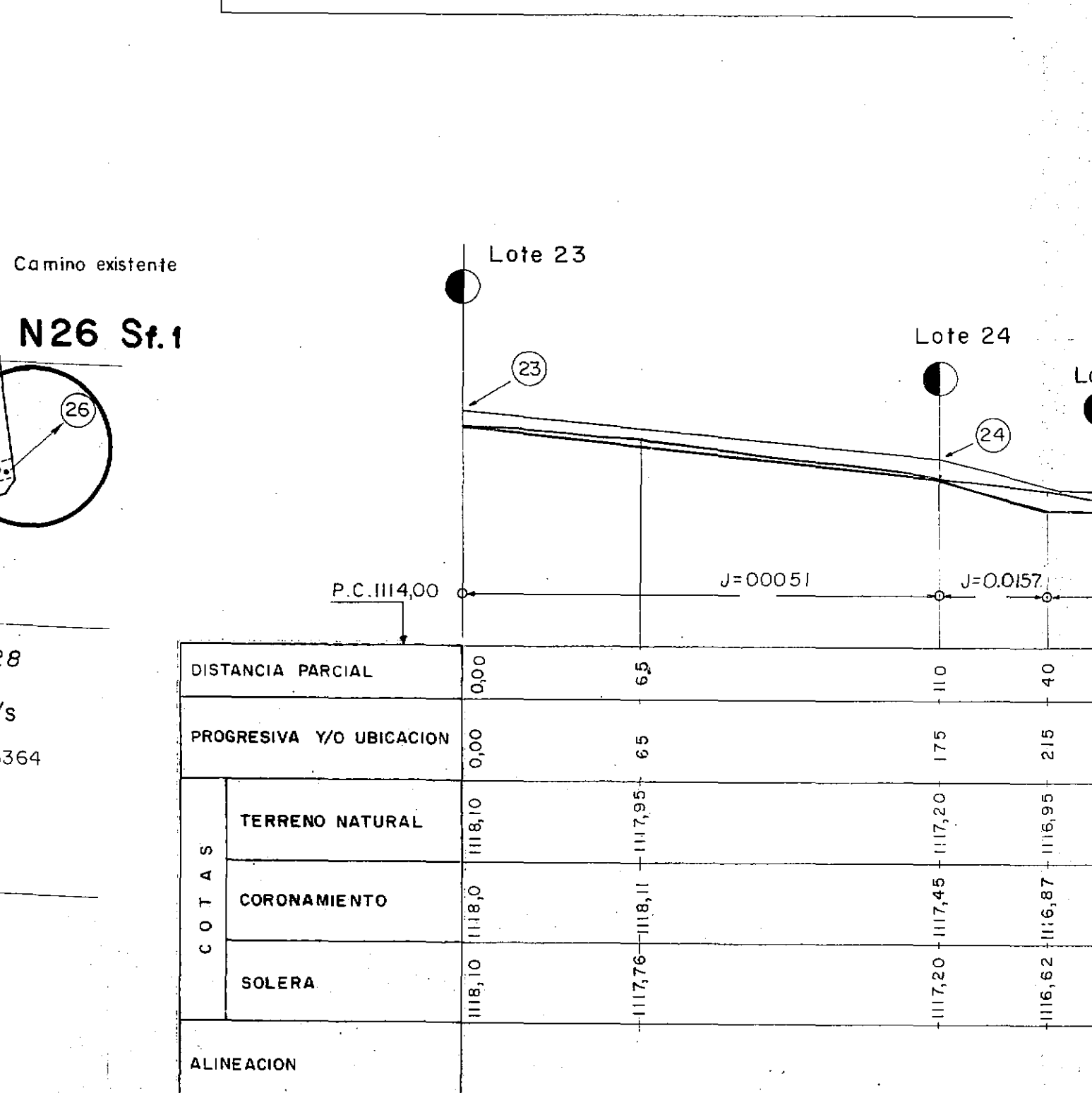
| | | |
|---|--|-------------------------|
| PROYECTO NOA HIDRICO SEGUNDA FASE | | |
| <small>SECRETARIA DE RECURSOS HIDRICOS COMANDO EN JEFE FUERZAS ARMADAS INSTITUTO NACIONAL DE CIENCIA Y TECNICA HIDRICAS</small> | | |
| ESCALA 1:2000 H=1:2000 V=1:100 | | |
| AUTOR C. ABDO DIBUJO E. E. ELIAS REVISOR P. ROMAGNOLI Vº Bº ING. E. LOPEZ Nº DE ARCHIVO | RED DE RIEGO BANDA DE LUCERO SECCION Nº 5 - COMUNERO S5 C9-15 | PLANONº 33 |
| AREA: COPACABANA BANDA DE LUCERO PROV.: CATAMARCA | | FECHA SETIEMBRE 1981 |



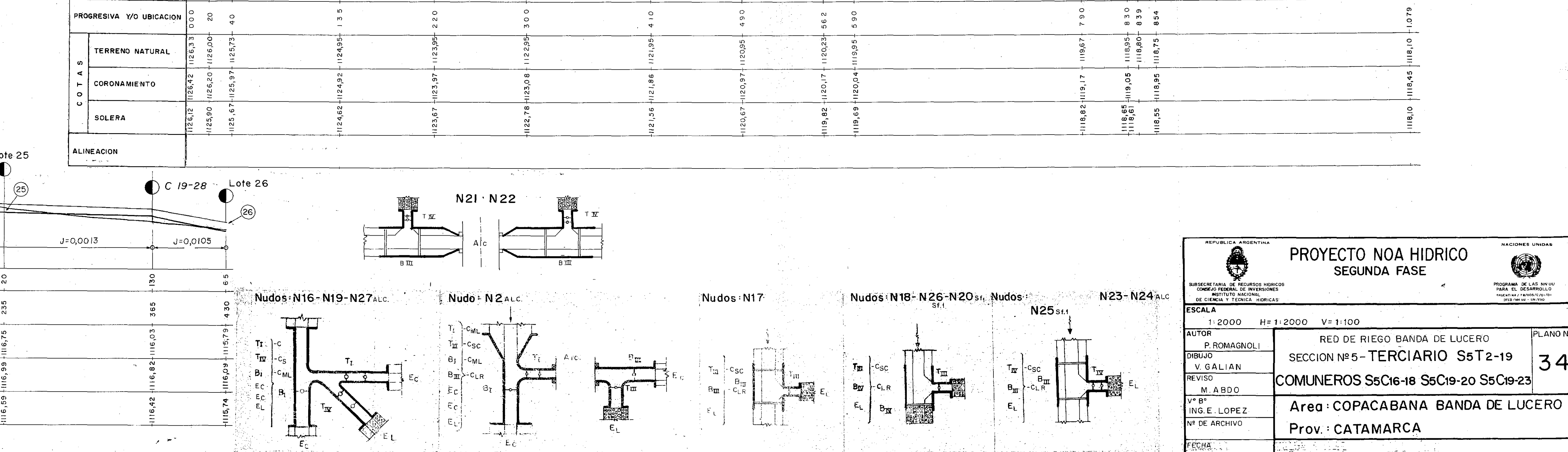
| COTAS | | Lote 16 | | Lote 17 | | Lote 18 | |
|--------------------------|--|---------|---------|---------|---------|---------|---------|
| ALINEACION | | 1124,63 | 1125,88 | 1124,26 | 1123,10 | 1122,95 | 1120,90 |
| CORONAMIENTO | | 1124,63 | 1125,88 | 1124,26 | 1123,10 | 1122,95 | 1120,90 |
| TERRENO NATURAL | | 1124,63 | 1125,88 | 1124,26 | 1123,10 | 1122,95 | 1120,90 |
| SOLERA | | 1124,63 | 1125,88 | 1124,26 | 1123,10 | 1122,95 | 1120,90 |
| PROGRESIVA Y/O UBICACION | | 0,00 | 50 | 125 | 215 | 290 | 326 |
| DISTANCIA PARCIAL | | 0,00 | 50 | 75 | 90 | 75 | 36 |



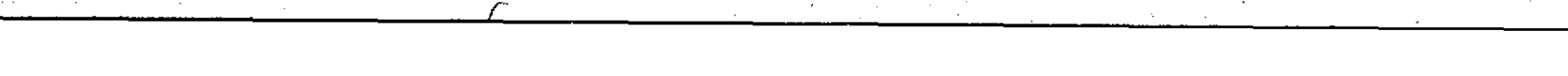
| COTAS | | Lote 19 | | Lote 20 | |
|--------------------------|--|---------|---------|---------|---------|
| ALINEACION | | 1119,87 | 1120,17 | 1119,80 | 1119,30 |
| CORONAMIENTO | | 1119,87 | 1120,17 | 1119,80 | 1119,30 |
| TERRENO NATURAL | | 1119,87 | 1120,17 | 1119,80 | 1119,30 |
| SOLERA | | 1119,87 | 1120,17 | 1119,80 | 1119,30 |
| PROGRESIVA Y/O UBICACION | | 0,00 | 15 | 63 | 170 |
| DISTANCIA PARCIAL | | 0,00 | 15 | 63 | 170 |



| COTAS | | Lote 2 | | Lote 21 | | Lote 22 | | Lote 23 | |
|--------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|
| ALINEACION | | 1119,87 | 1120,17 | 1119,80 | 1119,30 | 1119,80 | 1119,30 | 1119,80 | 1119,30 |
| CORONAMIENTO | | 1119,87 | 1120,17 | 1119,80 | 1119,30 | 1119,80 | 1119,30 | 1119,80 | 1119,30 |
| TERRENO NATURAL | | 1119,87 | 1120,17 | 1119,80 | 1119,30 | 1119,80 | 1119,30 | 1119,80 | 1119,30 |
| SOLERA | | 1119,87 | 1120,17 | 1119,80 | 1119,30 | 1119,80 | 1119,30 | 1119,80 | 1119,30 |
| PROGRESIVA Y/O UBICACION | | 0,00 | 20 | 40 | 220 | 260 | 300 | 340 | 380 |
| DISTANCIA PARCIAL | | 0,00 | 20 | 40 | 220 | 260 | 300 | 340 | 380 |



| COTAS | | Lote 23 | | Lote 24 | | Lote 25 | | Lote 26 | |
|--------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|
| ALINEACION | | 1118,10 | 1118,10 | 1117,20 | 1117,20 | 1116,50 | 1116,50 | 1115,70 | 1115,70 |
| CORONAMIENTO | | 1118,10 | 1118,10 | 1117,20 | 1117,20 | 1116,50 | 1116,50 | 1115,70 | 1115,70 |
| TERRENO NATURAL | | 1118,10 | 1118,10 | 1117,20 | 1117,20 | 1116,50 | 1116,50 | 1115,70 | 1115,70 |
| SOLERA | | 1118,10 | 1118,10 | 1117,20 | 1117,20 | 1116,50 | 1116,50 | 1115,70 | 1115,70 |
| PROGRESIVA Y/O UBICACION | | 0,00 | 65 | 110 | 175 | 215 | 235 | 335 | 430 |
| DISTANCIA PARCIAL | | 0,00 | 65 | 110 | 175 | 215 | 235 | 335 | 430 |



| COTAS | | Lote 27 | | Lote 28 | | Lote 29 | |
|--------------------------|--|---------|---------|---------|---------|---------|---------|
| ALINEACION | | 1117,20 | 1117,20 | 1116,50 | 1116,50 | 1115,70 | 1115,70 |
| CORONAMIENTO | | 1117,20 | 1117,20 | 1116,50 | 1116,50 | 1115,70 | 1115,70 |
| TERRENO NATURAL | | 1117,20 | 1117,20 | 1116,50 | 1116,50 | 1115,70 | 1115,70 |
| SOLERA | | 1117,20 | 1117,20 | 1116,50 | 1116,50 | 1115,70 | 1115,70 |
| PROGRESIVA Y/O UBICACION | | 0,00 | 65 | 110 | 175 | 215 | 235 |
| DISTANCIA PARCIAL | | 0,00 | 65 | 110 | 175 | 215 | 235 |

| COTAS | | Lote 30 | | Lote 31 | | Lote 32 | |
|--------------------------|--|---------|---------|---------|---------|---------|---------|
| ALINEACION | | 1116,50 | 1116,50 | 1115,70 | 1115,70 | 1114,90 | 1114,90 |
| CORONAMIENTO | | 1116,50 | 1116,50 | 1115,70 | 1115,70 | 1114,90 | 1114,90 |
| TERRENO NATURAL | | 1116,50 | 1116,50 | 1115,70 | 1115,70 | 1114,90 | 1114,90 |
| SOLERA | | 1116,50 | 1116,50 | 1115,70 | 1115,70 | 1114,90 | 1114,90 |
| PROGRESIVA Y/O UBICACION | | 0,00 | 65 | 110 | 175 | 215 | 235 |
| DISTANCIA PARCIAL | | 0,00 | 65 | 110 | 175 | 215 | 235 |

| COTAS | | Lote 33 | | Lote 34 | | Lote 35 | |
|--------------------------|--|---------|---------|---------|---------|---------|---------|
| ALINEACION | | 1115,70 | 1115,70 | 1114,90 | 1114,90 | 1114,10 | 1114,10 |
| CORONAMIENTO | | 1115,70 | 1115,70 | 1114,90 | 1114,90 | 1114,10 | 1114,10 |
| TERRENO NATURAL | | 1115,70 | 1115,70 | 1114,90 | 1114,90 | 1114,10 | 1114,10 |
| SOLERA | | 1115,70 | 1115,70 | 1114,90 | 1114,90 | 1114,10 | 1114,10 |
| PROGRESIVA Y/O UBICACION | | 0,00 | 65 | 110 | 175 | 215 | 235 |
| DISTANCIA PARCIAL | | 0,00 | 65 | 110 | 175 | 215 | 235 |

| COTAS | | Lote 36 | | Lote 37 | | Lote 38 | |
|--------------------------|--|---------|---------|---------|---------|---------|---------|
| ALINEACION | | 1114,90 | 1114,90 | 1114,10 | 1114,10 | 1113,30 | 1113,30 |
| CORONAMIENTO | | 1114,90 | 1114,90 | 1114,10 | 1114,10 | 1113,30 | 1113,30 |
| TERRENO NATURAL | | 1114,90 | 1114,90 | 1114,10 | 1114,10 | 1113,30 | 1113,30 |
| SOLERA | | 1114,90 | 1114,90 | 1114,10 | 1114,10 | 1113,30 | 1113,30 |
| PROGRESIVA Y/O UBICACION | | 0,00 | 65 | 110 | 175 | 215 | 235 |
| DISTANCIA PARCIAL | | 0,00 | 65 | 110 | 175 | 215 | 235 |

| COTAS | | Lote 39 | | Lote 40 | | Lote 41 | |
|--------------------------|--|---------|---------|---------|---------|---------|---------|
| ALINEACION | | 1114,10 | 1114,10 | 1113,30 | 1113,30 | 1112,50 | 1112,50 |
| CORONAMIENTO | | 1114,10 | 1114,10 | 1113,30 | 1113,30 | 1112,50 | 1112,50 |
| TERRENO NATURAL | | 1114,10 | 1114,10 | 1113,30 | 1113,30 | 1112,50 | 1112,50 |
| SOLERA | | 1114,10 | 1114,10 | 1113,30 | 1113,30 | 1112,50 | 1112,50 |
| PROGRESIVA Y/O UBICACION | | 0,00 | 65 | 110 | 175 | 215 | 235 |
| DISTANCIA PARCIAL | | 0,00 | 65 | 110 | 175 | 215 | 235 |

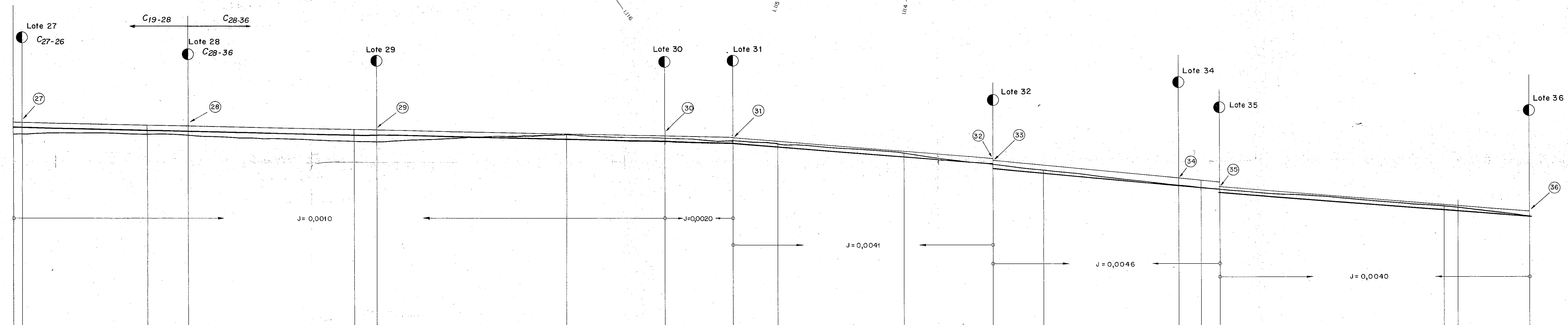
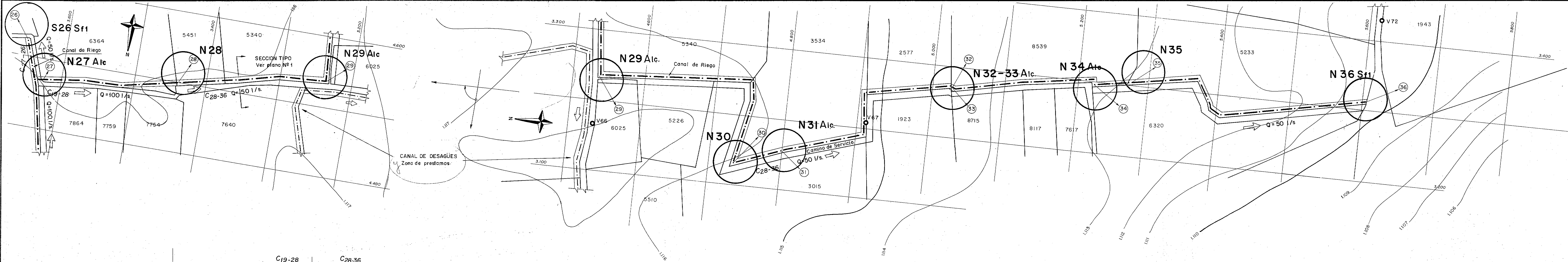
| COTAS | | Lote 42 | | Lote 43 | | Lote 44 | |
|--------------------------|--|---------|---------|---------|---------|---------|---------|
| ALINEACION | | 1113,30 | 1113,30 | 1112,50 | 1112,50 | 1111,70 | 1111,70 |
| CORONAMIENTO | | 1113,30 | 1113,30 | 1112,50 | 1112,50 | 1111,70 | 1111,70 |
| TERRENO NATURAL | | 1113,30 | 1113,30 | 1112,50 | 1112,50 | 1111,70 | 1111,70 |
| SOLERA | | 1113,30 | 1113,30 | 1112,50 | 1112,50 | 1111,70 | 1111,70 |
| PROGRESIVA Y/O UBICACION | | 0,00 | 65 | 110 | 175 | 215 | 235 |
| DISTANCIA PARCIAL | | 0,00 | 65 | 110 | 175 | 215 | 235 |

| COTAS | | Lote 45 | | Lote 46 | | Lote 47 | |
|--------------------------|--|---------|---------|---------|---------|---------|---------|
| ALINEACION | | 1112,50 | 1112,50 | 1111,70 | 1111,70 | 1110,90 | 1110,90 |
| CORONAMIENTO | | 1112,50 | 1112,50 | 1111,70 | 1111,70 | 1110,90 | 1110,90 |
| TERRENO NATURAL | | 1112,50 | 1112,50 | 1111,70 | 1111,70 | 1110,90 | 1110,90 |
| SOLERA | | 1112,50 | 1112,50 | 1111,70 | 1111,70 | 1110,90 | 1110,90 |
| PROGRESIVA Y/O UBICACION | | 0,00 | 65 | 110 | 175 | 215 | 235 |
| DISTANCIA PARCIAL | | 0,00 | 65 | 110 | 175 | 215 | 235 |

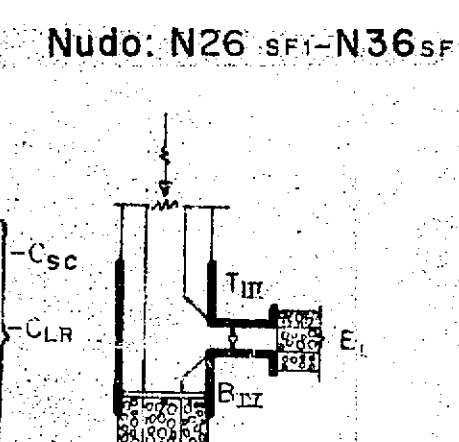
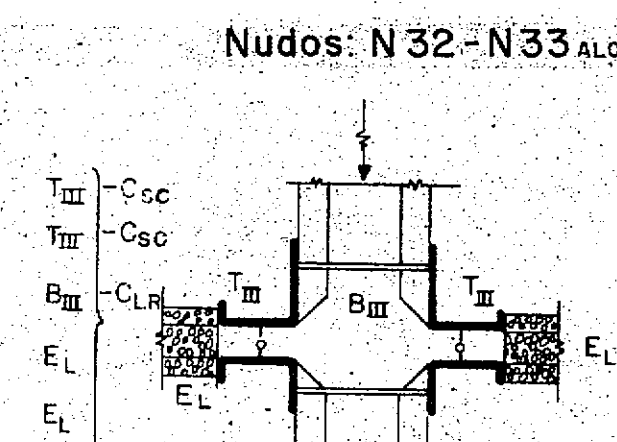
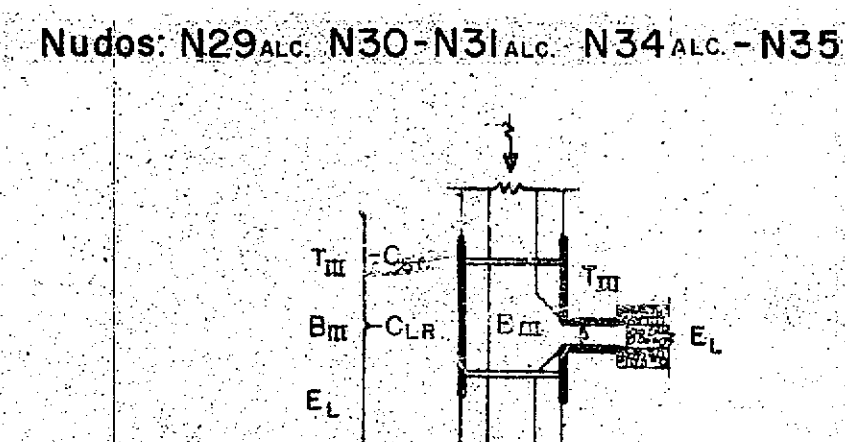
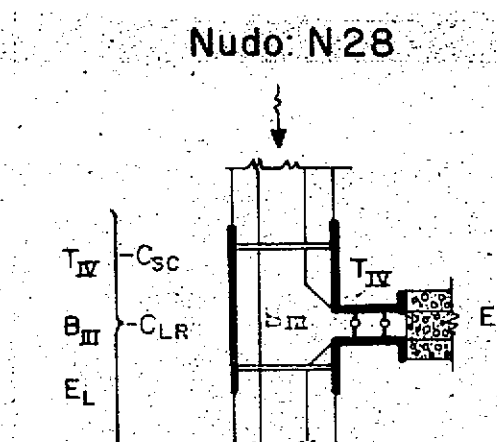
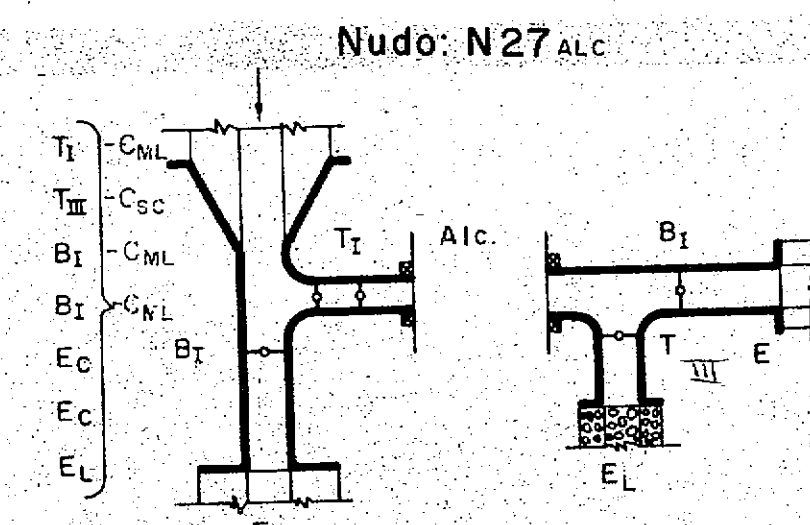
| COTAS | | Lote 48 | | Lote 49 | | Lote 50 | |
|--------------------------|--|---------|---------|---------|---------|---------|---------|
| ALINEACION | | 1111,70 | 1111,70 | 1110,90 | 1110,90 | 1110,10 | 1110,10 |
| CORONAMIENTO | | 1111,70 | 1111,70 | 1110,90 | 1110,90 | 1110,10 | 1110,10 |
| TERRENO NATURAL | | 1111,70 | 1111,70 | 1110,90 | 1110,90 | 1110,10 | 1110,10 |
| SOLERA | | 1111,70 | 1111,70 | 1110,90 | 1110,90 | 1110,10 | 1110,10 |
| PROGRESIVA Y/O UBICACION | | 0,00 | 65 | 110 | 175 | 215 | 235 |
| DISTANCIA PARCIAL | | 0,00 | 65 | 110 | 175 | 215 | 235 |

| COTAS | | Lote 51 | | Lote 52 | | Lote 53 | |
|--------------------------|--|---------|---------|---------|---------|---------|---------|
| ALINEACION | | 1110,90 | 1110,90 | 1110,10 | 1110,10 | 1109,30 | 1109,30 |
| CORONAMIENTO | | 1110,90 | 1110,90 | 1110,10 | 1110,10 | 1109,30 | 1109,30 |
| TERRENO NATURAL | | 1110,90 | 1110,90 | 1110,10 | 1110,10 | 1109,30 | 1109,30 |
| SOLERA | | 1110,90 | 1110,90 | 1110,10 | 1110,10 | 1109,30 | 1109,30 |
| PROGRESIVA Y/O UBICACION | | 0,00 | 65 | 110 | 175 | 215 | 235 |
| DISTANCIA PARCIAL | | 0,00 | 65 | 110 | 175 | 215 | 235 |

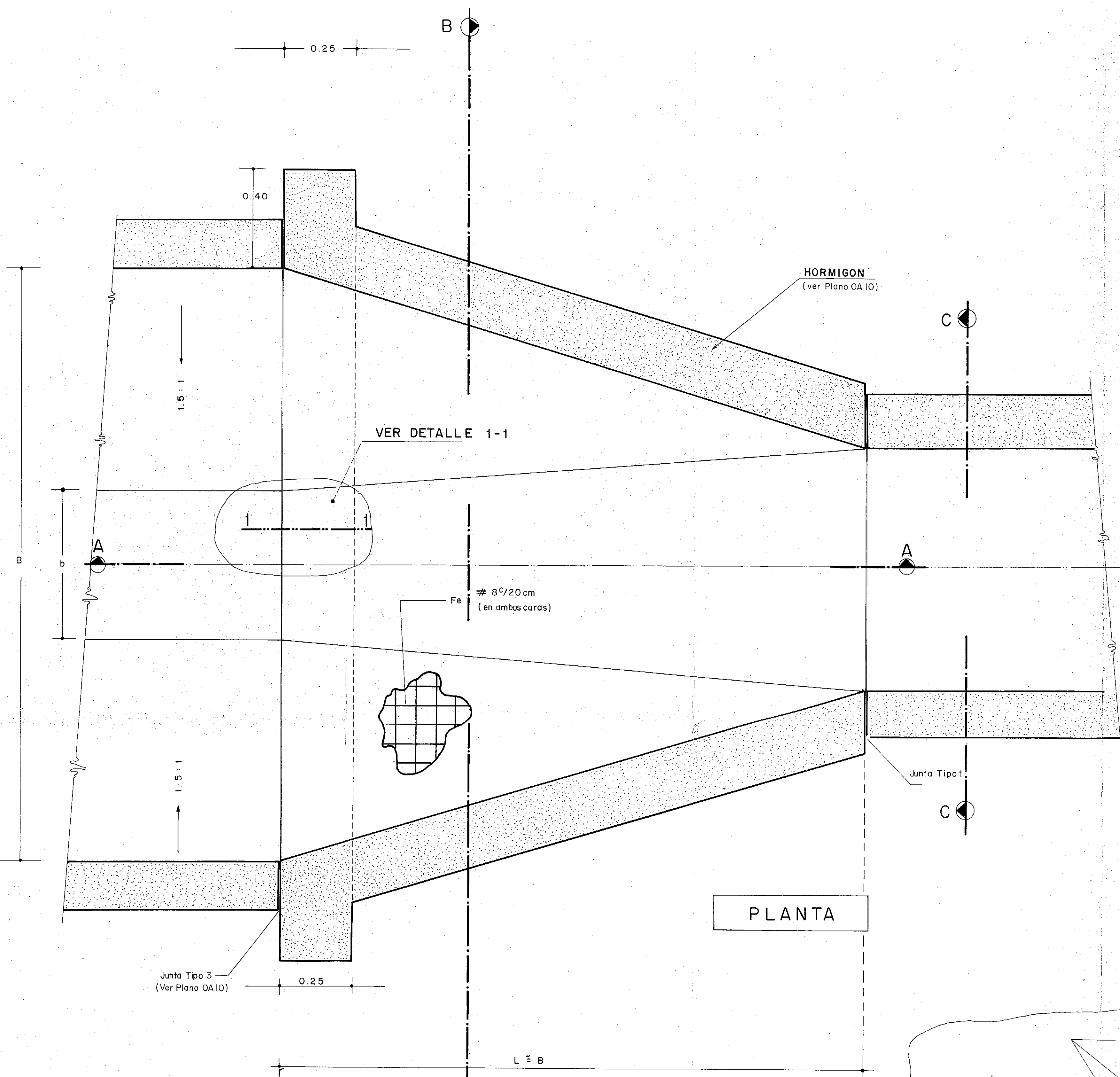
| COTAS | | Lote 54 | | Lote 55 | | Lote 56 | |
|------------|--|---------|---------|---------|---------|---------|---------|
| ALINEACION | | 1110,10 | 1110,10 | 1109,30 | 1109,30 | 1108,50 | 1108,50 |
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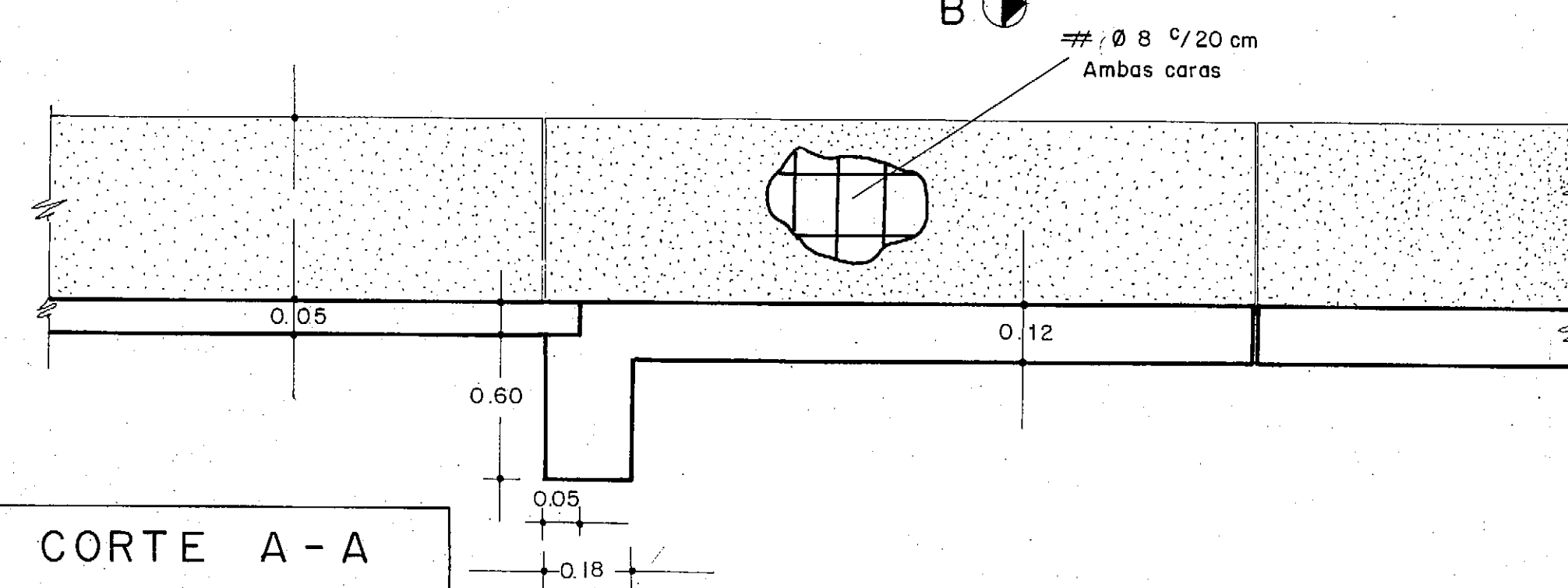
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| PC. 1105 | | | | | | | | | | | | | | |
| DISTANCIA PARCIAL | | 000 | | | | | | | | | | | | |
| PROGRESIVA Y/O UBICACION | | 150 | | | | | | | | | | | | |
| C O T A S | TERRENO NATURAL | | | | | | | | | | | | | |
| | CORONAMIENTO | 1116,72 | | | | | | | | | | | | |
| | SOLERA | 1116,37 | | | | | | | | | | | | |
| ALINEACION | | | | | | | | | | | | | | |
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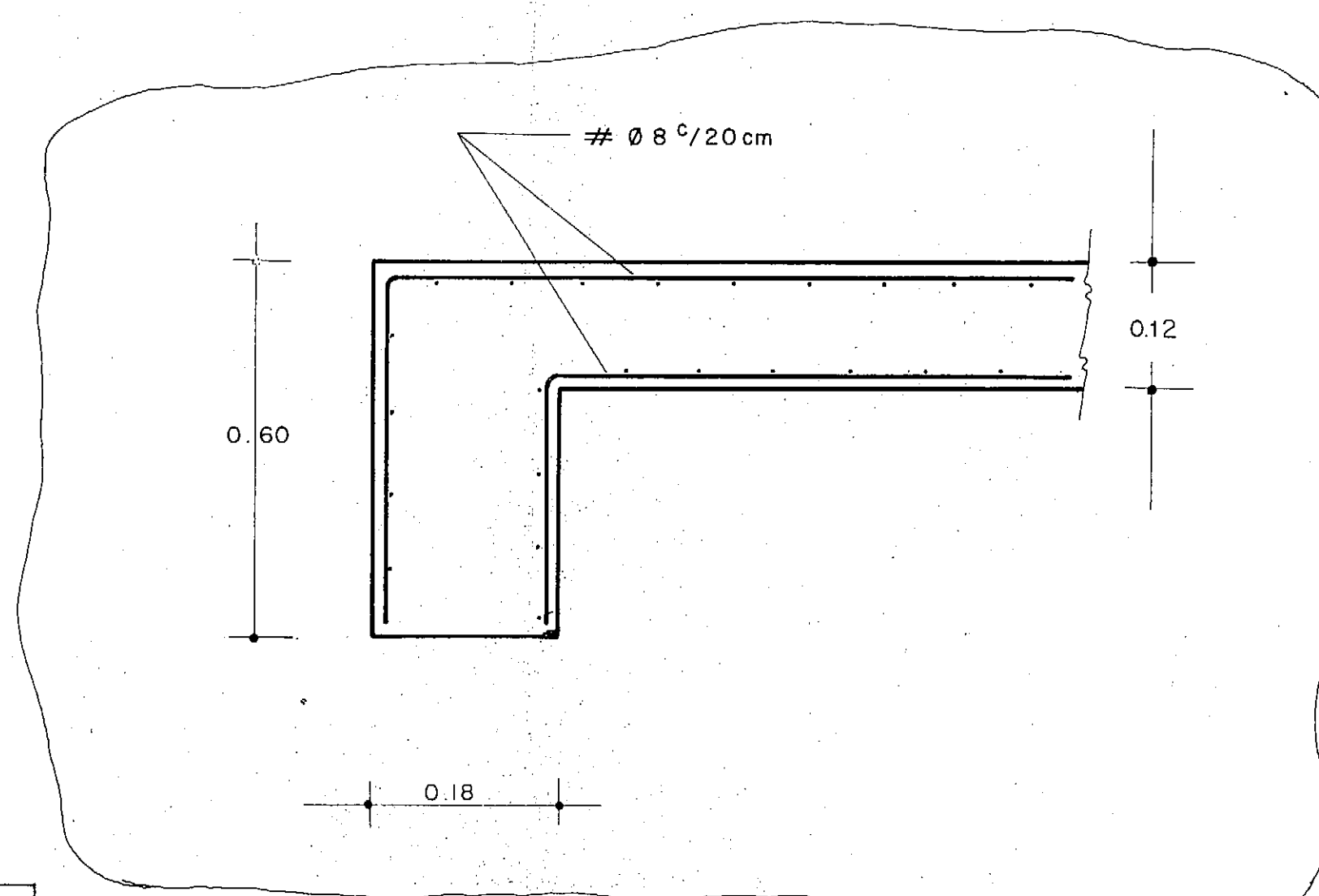
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|---|--|---|--|-----------------------|
| | | PROYECTO NOA HIDRICO SEGUNDA FASE | | |
| <small> SUBSECRETARIA DE RECURSOS HIDRICOS CONSEJO FEDERAL DE INVERSIONES INSTITUTO NACIONAL DE CIENCIA Y TECNICA, HORICAS PROGRAMA DE LAS MILITARIAS PARA EL DESARROLLO INGENIERIA Y PLANIFICACION 1981-1982 </small> | | | | |
| ESCALA 1:2000 H=1:2000 V=1:100 | | RED DE RIEGO BANDA DE LUCERO SECCION Nº 5 - COMUNEROS S5C19-28 S5C28-36 | | PLANO Nº 35 |
| AUTOR C. ARDO DIBUJO V. GALIAN REVISOR P. ROMAGNOLI Vº Bº ING. E. LOPEZ Nº DE ARCHIVO | | Area: COPACABANA-BANDA DE LUCERO Prov.: CATAMARCA | | |
| FECHA SETIEMBRE 1981 | | | | |



PLANTA

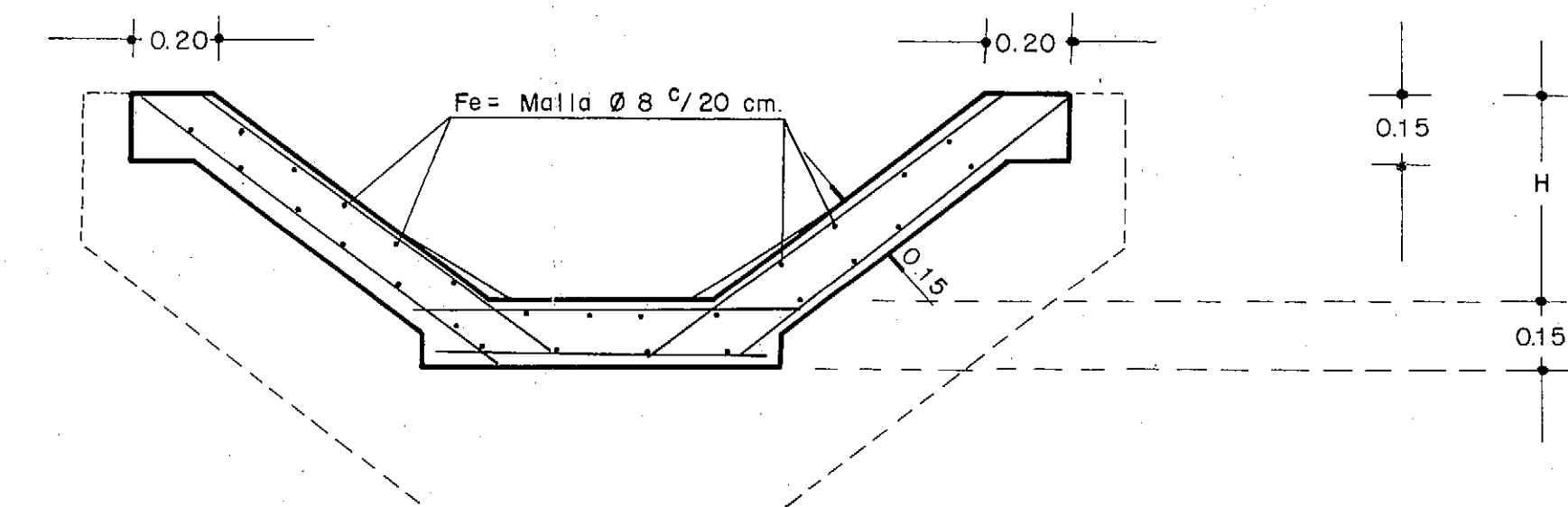


CORTE A - A

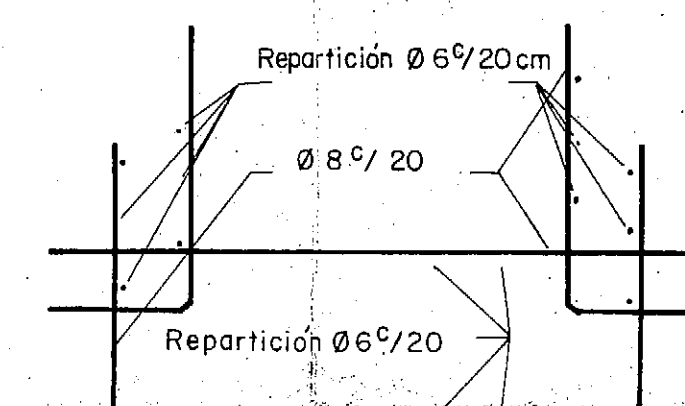
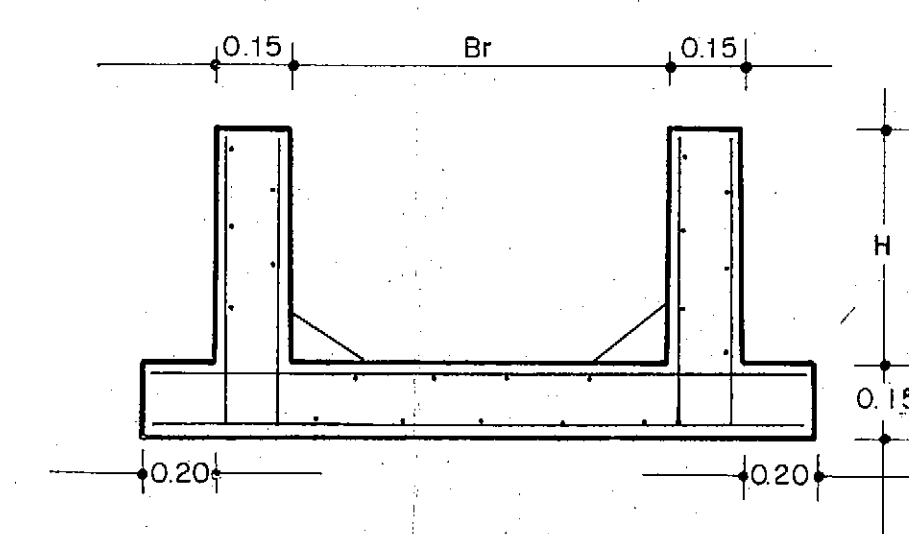


DETALLE 1-1

CORTE B - B



CORTE C - C

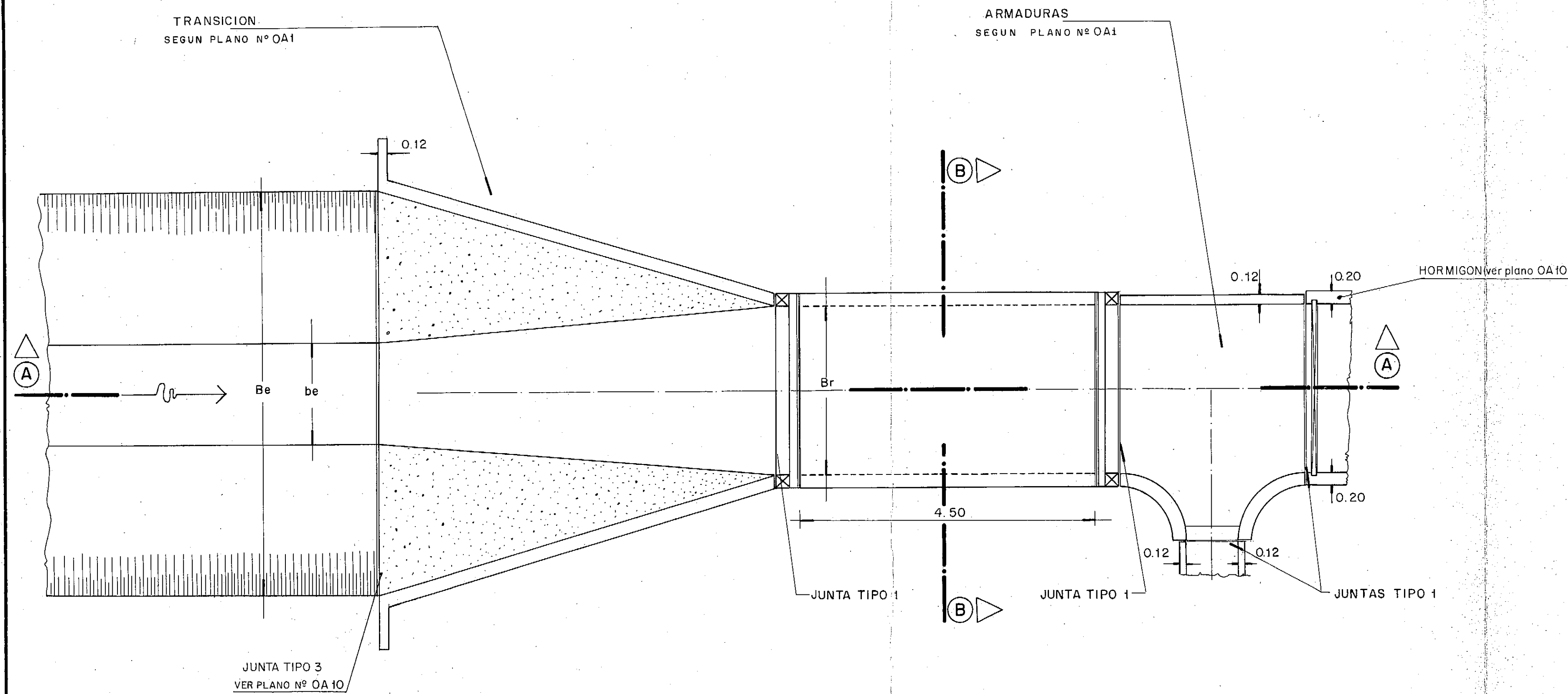


DESPIECE ARMADURAS

HORMIGÓN: R 28 mín. = 240 Kg/cm²
 HIERRO: $\sigma_k \geq 4500$ Kg/cm²
 JUNTAS: Ver Plano N° OA 10

B = Be = Bs = Ancho coronamiento entrada o salida (sección trapezoidal)
 b = be = bs = Ancho solera entrada o salida (sección trapezoidal)
 Br = Ancho (sección rectangular)

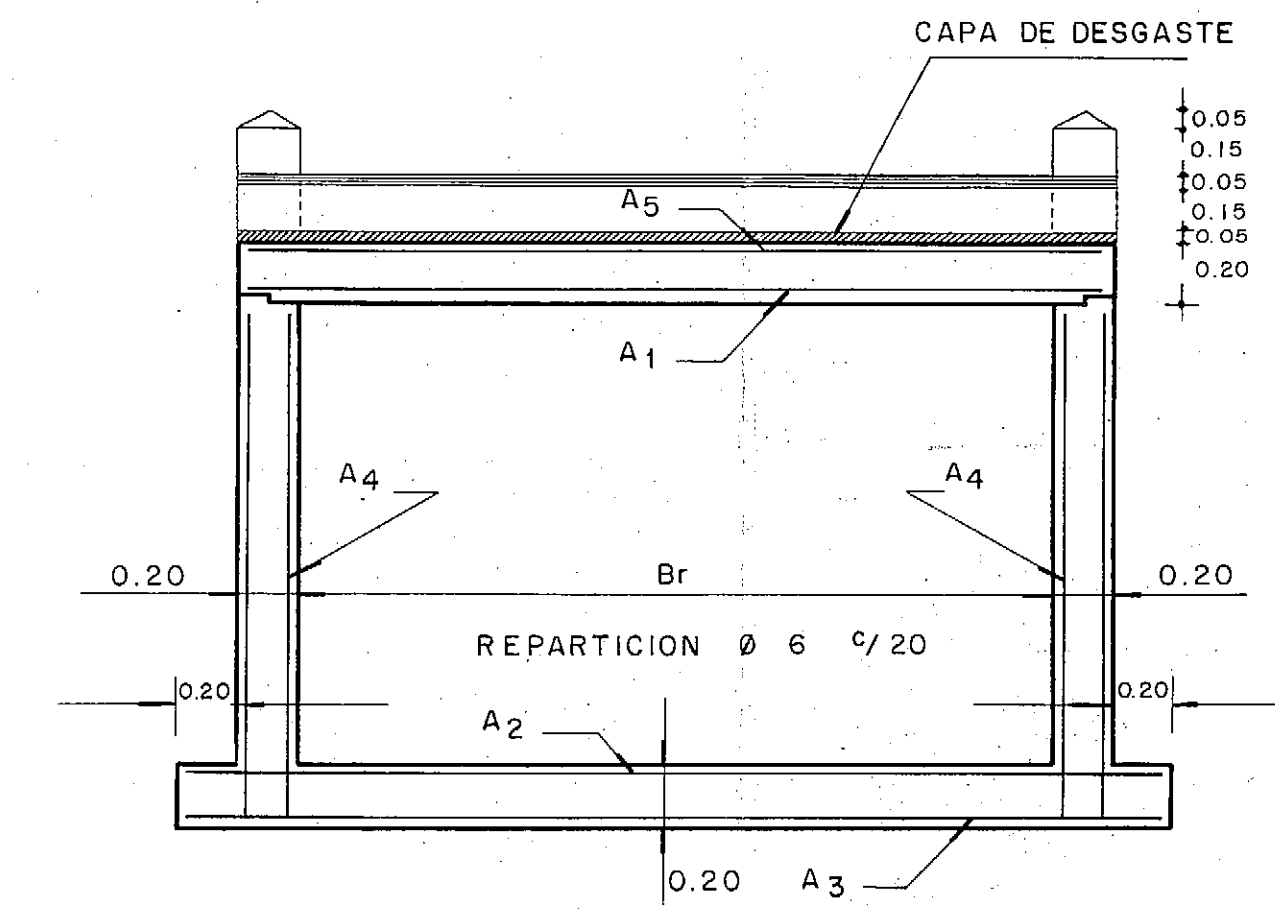
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|---|------------------------------------|--|------|
| REPUBLICA ARGENTINA SUBSECRETARIA DE RECURSOS HIDRICOS CONSEJO FEDERAL DE INVERSIONES INSTITUTO NACIONAL DE CIENCIA Y TECNICA HIDRICAS | | NACIONES UNIDAS PROGRAMA DE LAS NN UU PARA EL DESARROLLO ARGENTINA / FODOS/CID/100 PROYECTO NOA HIDRICO SEGUNDA FASE | |
| ESCALA | | | |
| AUTOR | TRANSICION SECCION RECTANGULAR | | OA 1 |
| DIBUJO | TRAPEZIAL Y CONDUCCION RECTANGULAR | | |
| REVISO | EN OBRAS DE ARTE | | |
| V° B° | Area COPACABANA BANDA DE LUCERO | | |
| N° DE ARCHIVO | Prov. CATAMARCA | | |
| FECHA | | | |



PLANTA

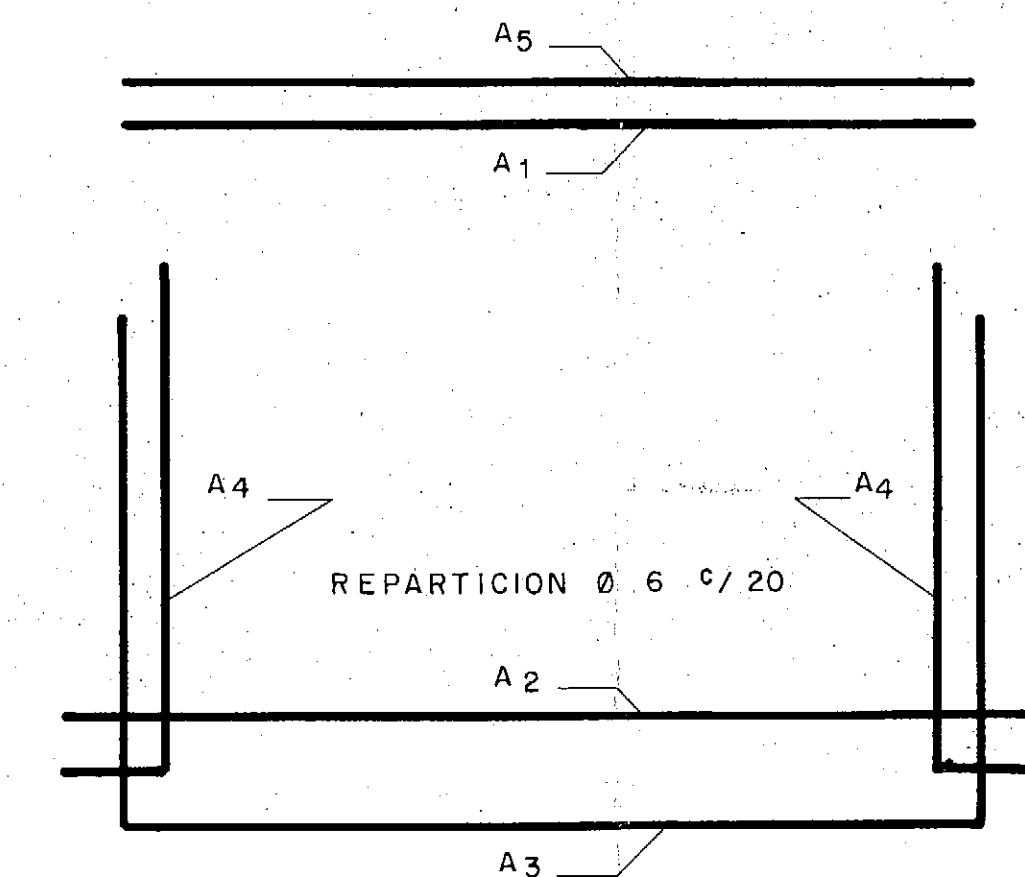
ESCALA 1 : 50

| TIPO | Br(m) | A1 | A2 | A3 | A4 | A5 | Observaciones |
|------|-------|-----------|-----------|-----------|----------|----------|----------------------|
| A | 3.00 | Ø 16 c/17 | Ø 12 c/22 | Ø 12 c/22 | Ø 8 c/20 | Ø 8 c/20 | REPARTICION Ø 6 c/20 |
| B | 2.50 | Ø 16 c/21 | Ø 10 c/24 | Ø 10 c/24 | Ø 8 c/20 | Ø 8 c/20 | |
| C | 2.00 | Ø 16 c/25 | Ø 8 c/20 | Ø 8 c/20 | Ø 8 c/20 | Ø 8 c/20 | |
| D | 1.50 | Ø 14 c/25 | Ø 8 c/20 | Ø 8 c/20 | Ø 8 c/20 | Ø 8 c/20 | |
| E | 1.00 | Ø 12 c/23 | Ø 8 c/20 | Ø 8 c/20 | Ø 8 c/20 | Ø 8 c/20 | |
| F | 0.80 | Ø 10 c/20 | Ø 8 c/20 | Ø 8 c/20 | Ø 8 c/20 | Ø 8 c/20 | |
| G | 0.60 | Ø 10 c/25 | Ø 8 c/20 | Ø 8 c/20 | Ø 8 c/20 | Ø 8 c/20 | |

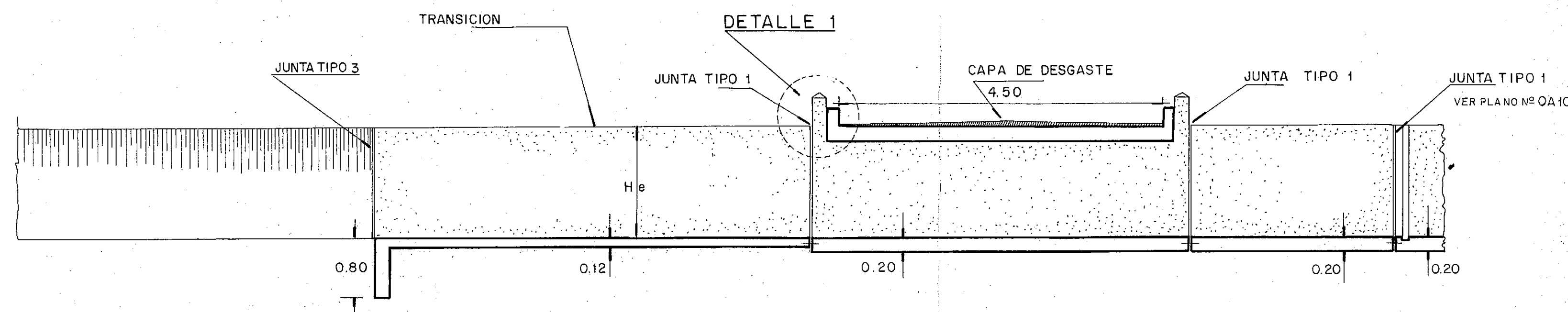


CORTE B - B

ESCALA 1 : 25

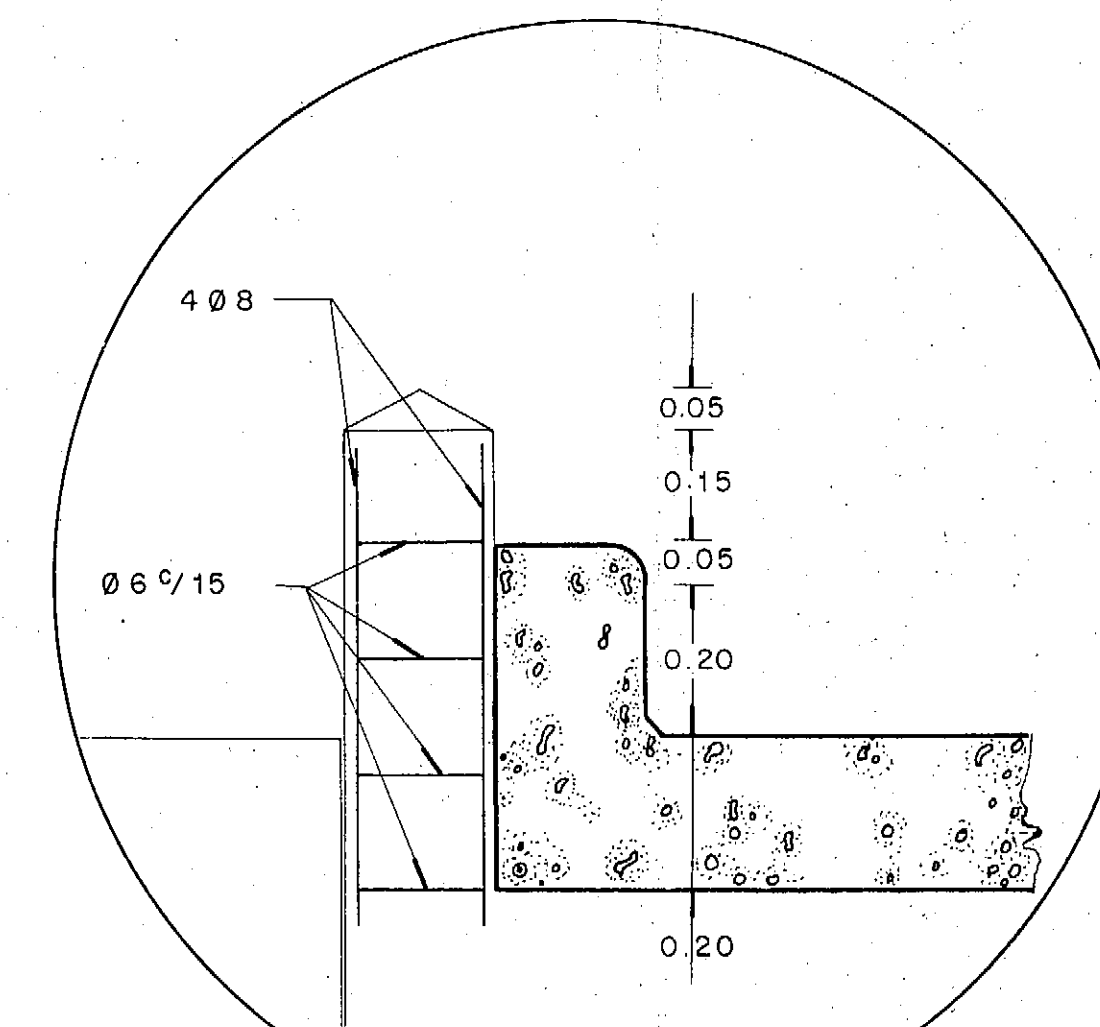


DETALLE DE ARMADURAS



CORTE A - A



ESCALA 1 : 50



DETALLE 1

ESCALA 1 : 10

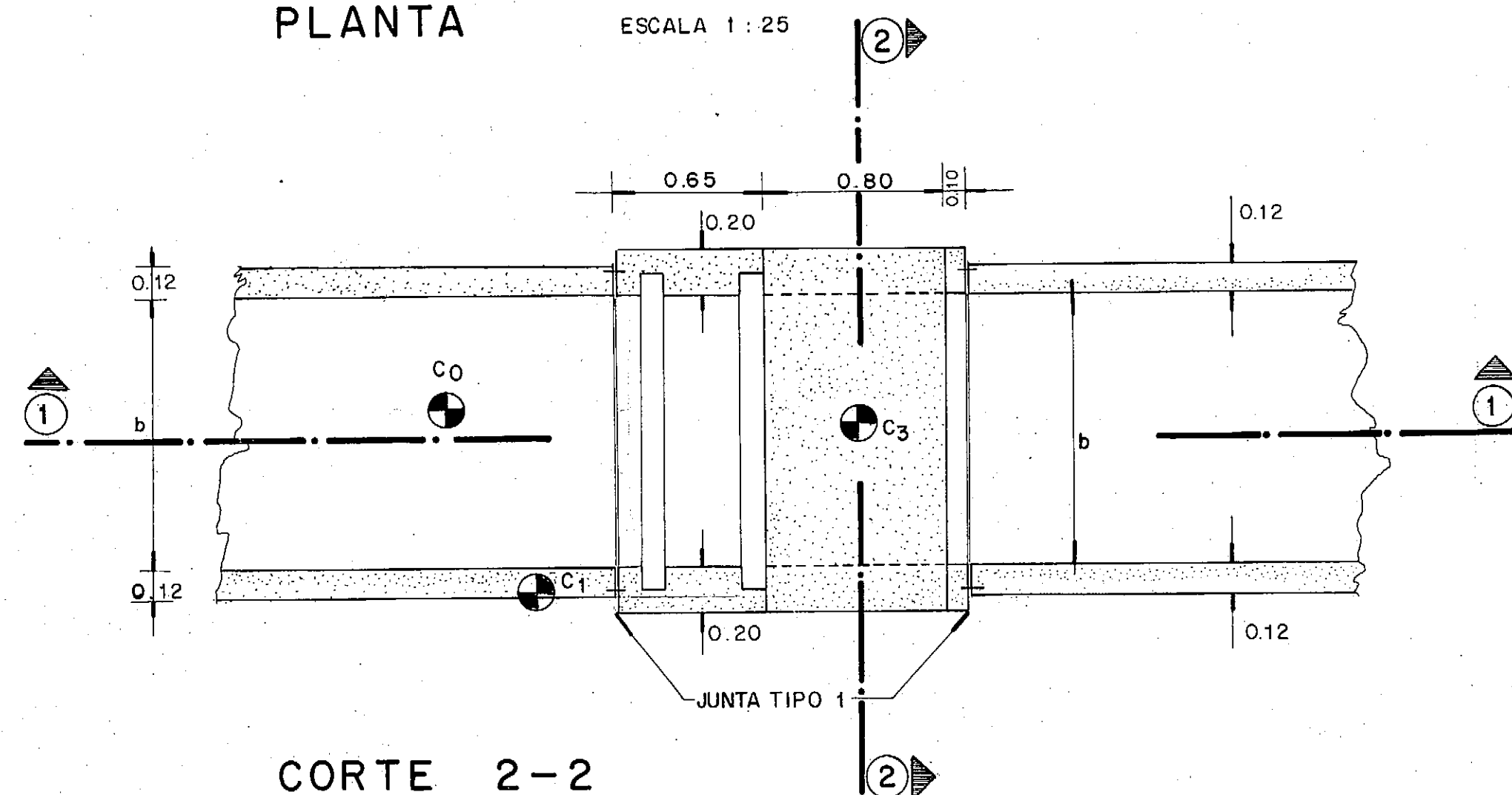
HORMIGON (p.obras de arte) : R 28 min 240 Kg / cm²
 HIERRO : $\sigma_{ek} \geq 4.500$ Kg / cm²
 HORMIGON CAPA DE DESGASTE : $\sigma_{bk} \geq 150$ Kg / cm²
 JUNTAS Y HORMIGON VER PLANO N° OA10

| | | |
|---|--|---|
|  PROYECTO NOA HIDRICO SEGUNDA FASE | |  |
| <small> SUBSECRETARIA DE RECURSOS HIDRICOS CONSEJO FEDERAL DE INVERSIONES INSTITUTO NACIONAL DE CIENCIA Y TECNICA HIDRICAS </small> | | |
| ESCALA | | |
| AUTOR | ALCANTARILLAS | |
| DIBUJO | | |
| REVISOR | | |
| V° B° | | |
| N° DE ARCHIVO | Area: COPACABANA BANDA DE LUCERO Prov.: CATAMARCA | |
| FECHA | | |

PLANO N°
OA
2

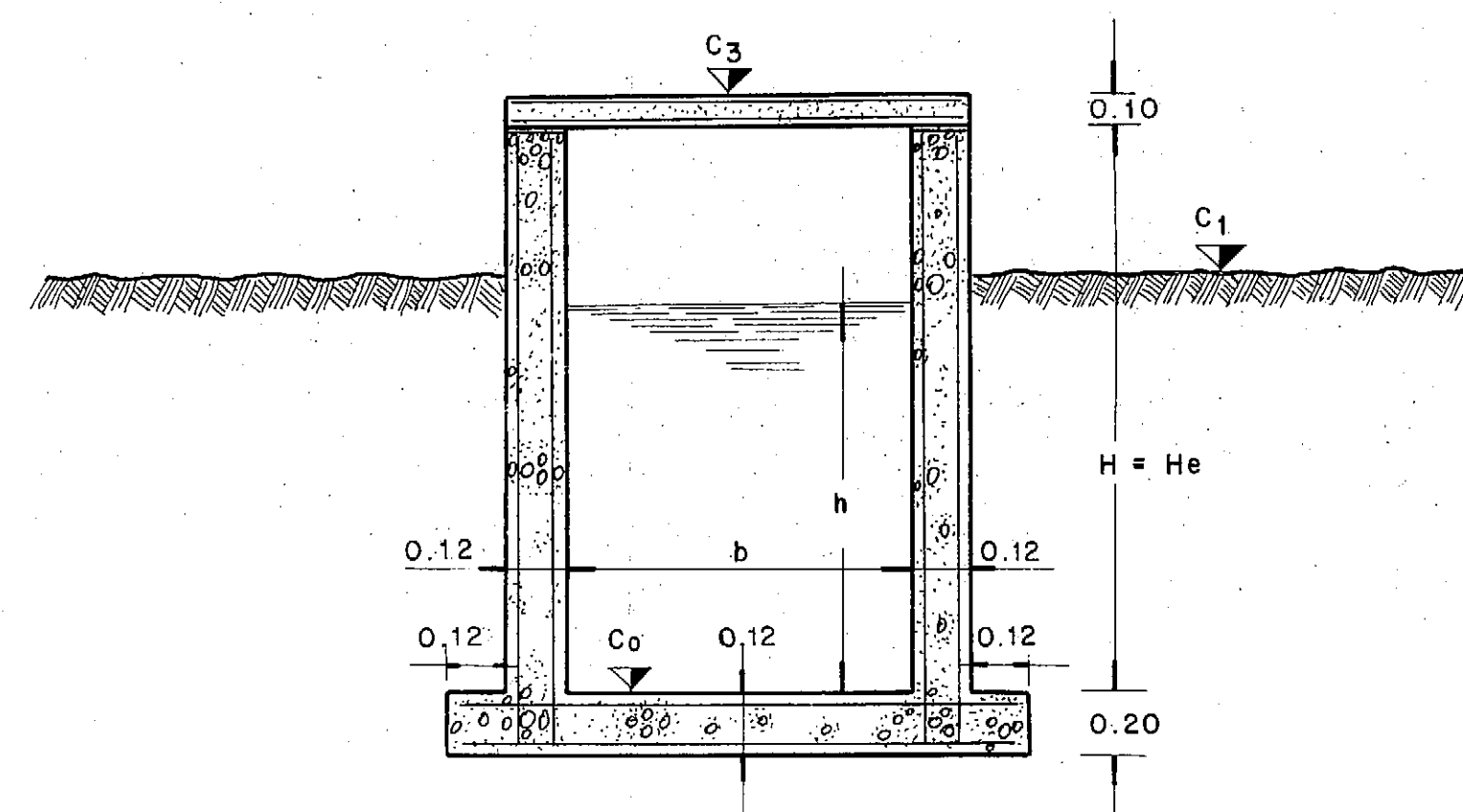
PLANTA

ESCALA 1:25



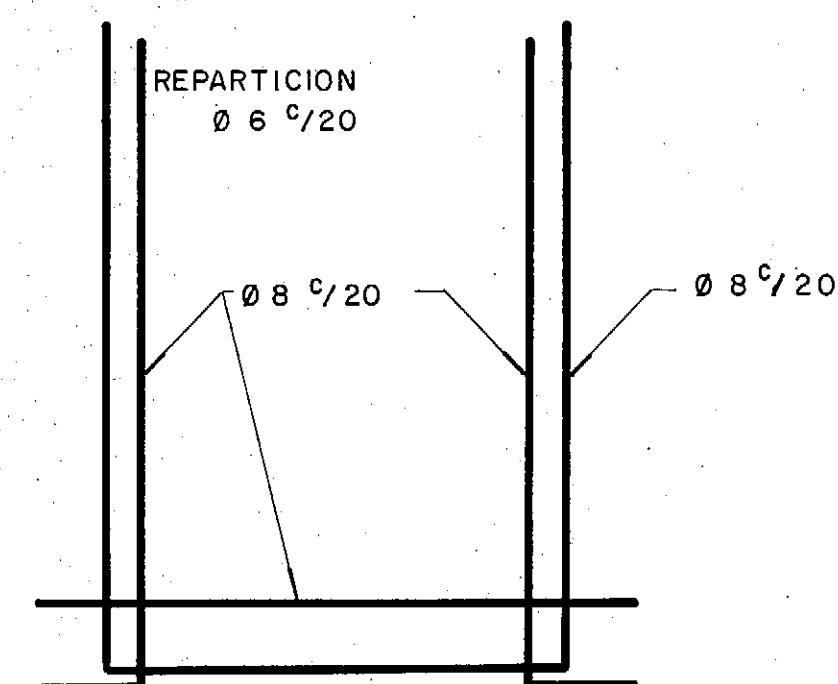
CORTE 2-2

ESCALA 1:25



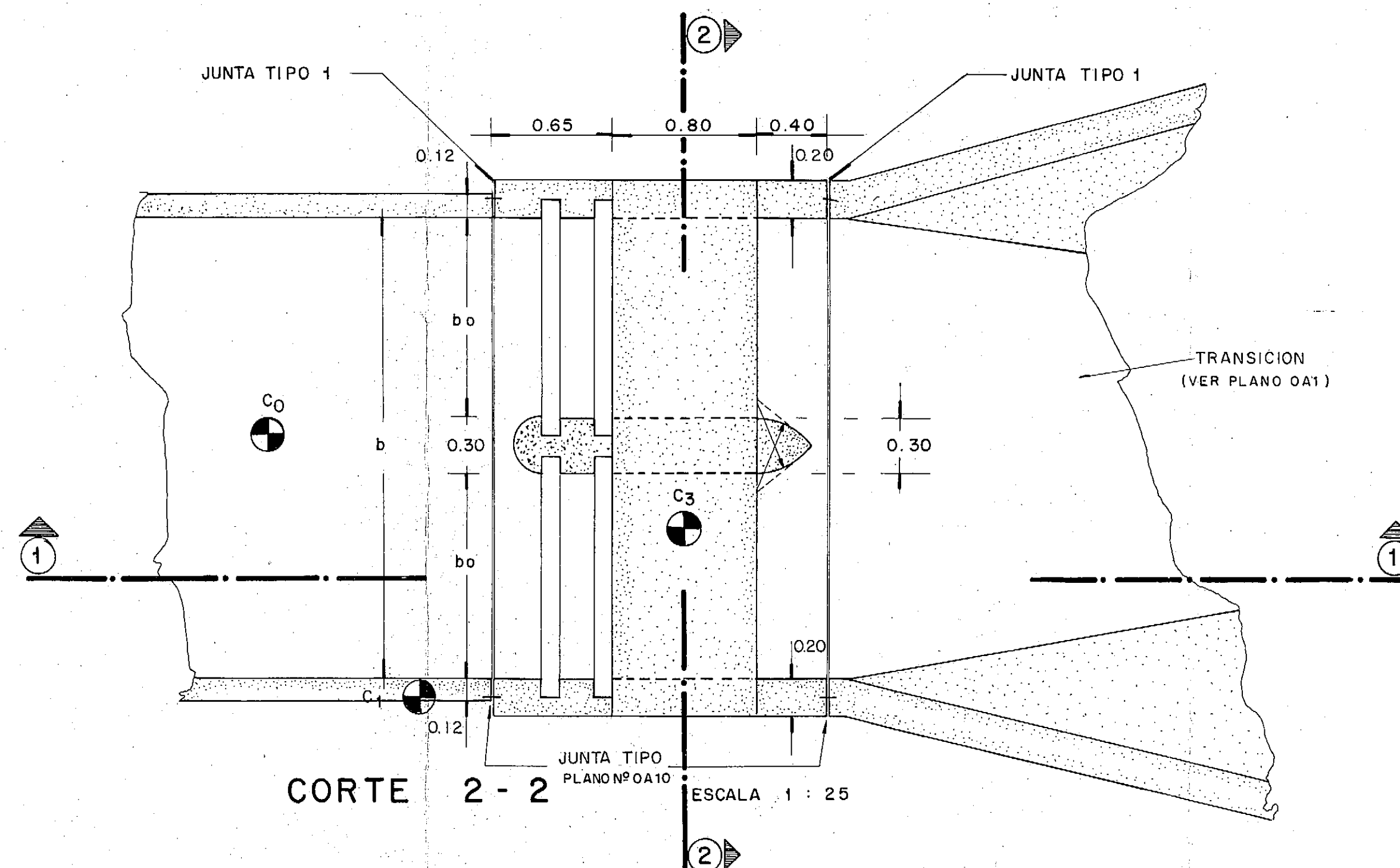
ESQUEMA DE DOBLADO DE HIERROS

ϕ 6 $\frac{c}{20}$ EN AMBAS CARAS



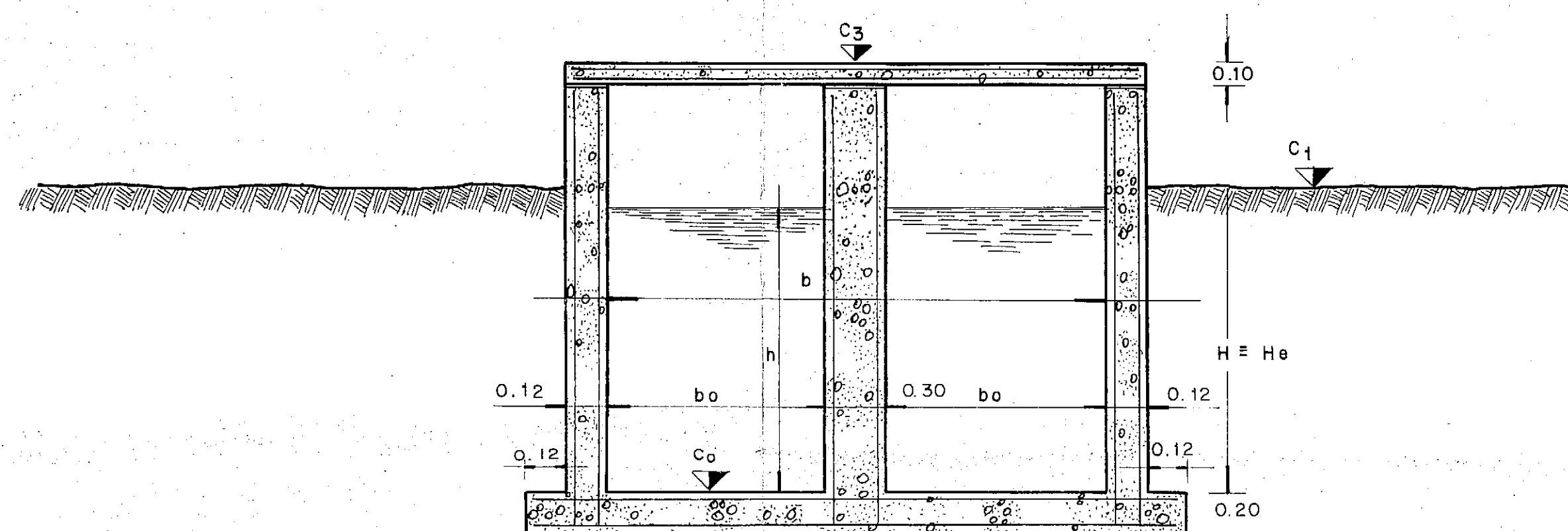
PLANTA

ESCALA 1:25



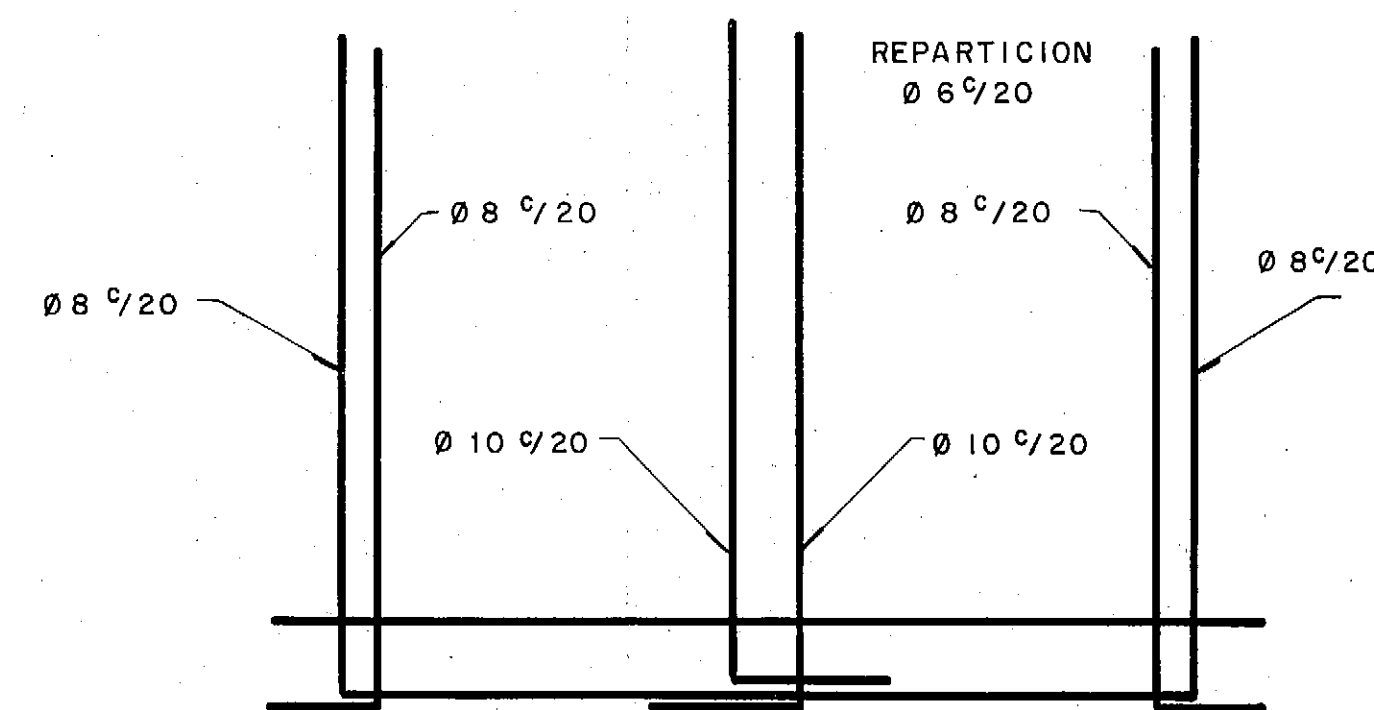
CORTE 2-2

ESCALA 1:25



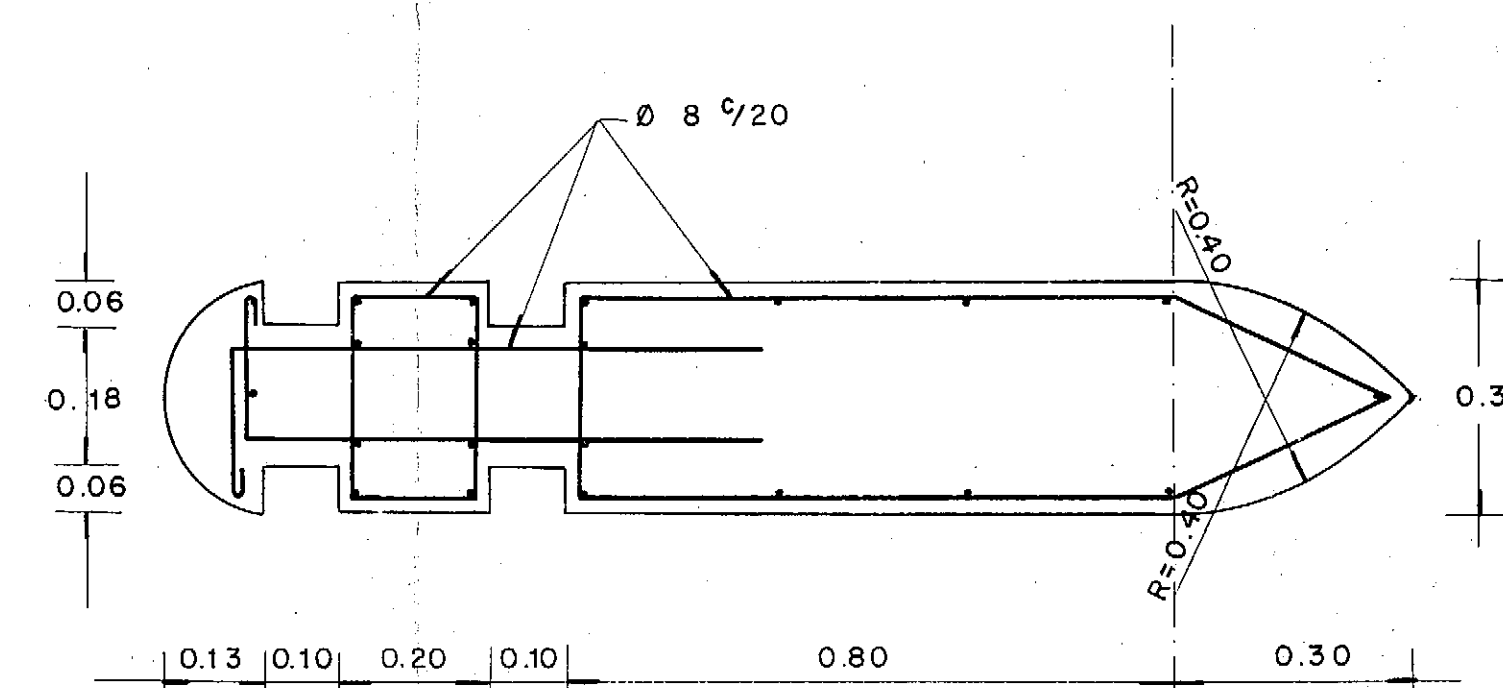
ESQUEMA DE DOBLADO DE HIERROS

ϕ 6 $\frac{c}{20}$ EN AMBAS CARAS

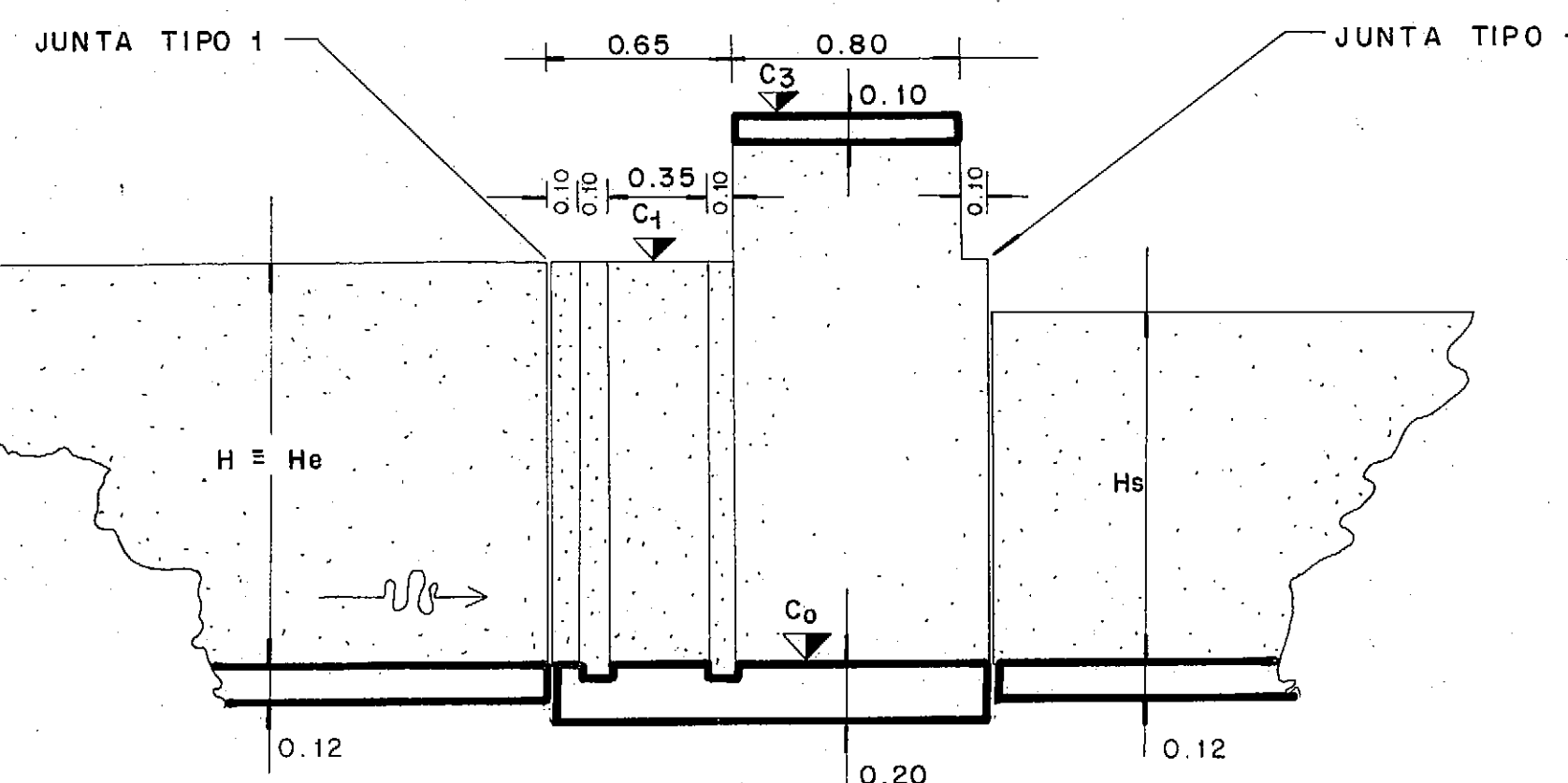


DETALLE PILA

ESCALA 1:10

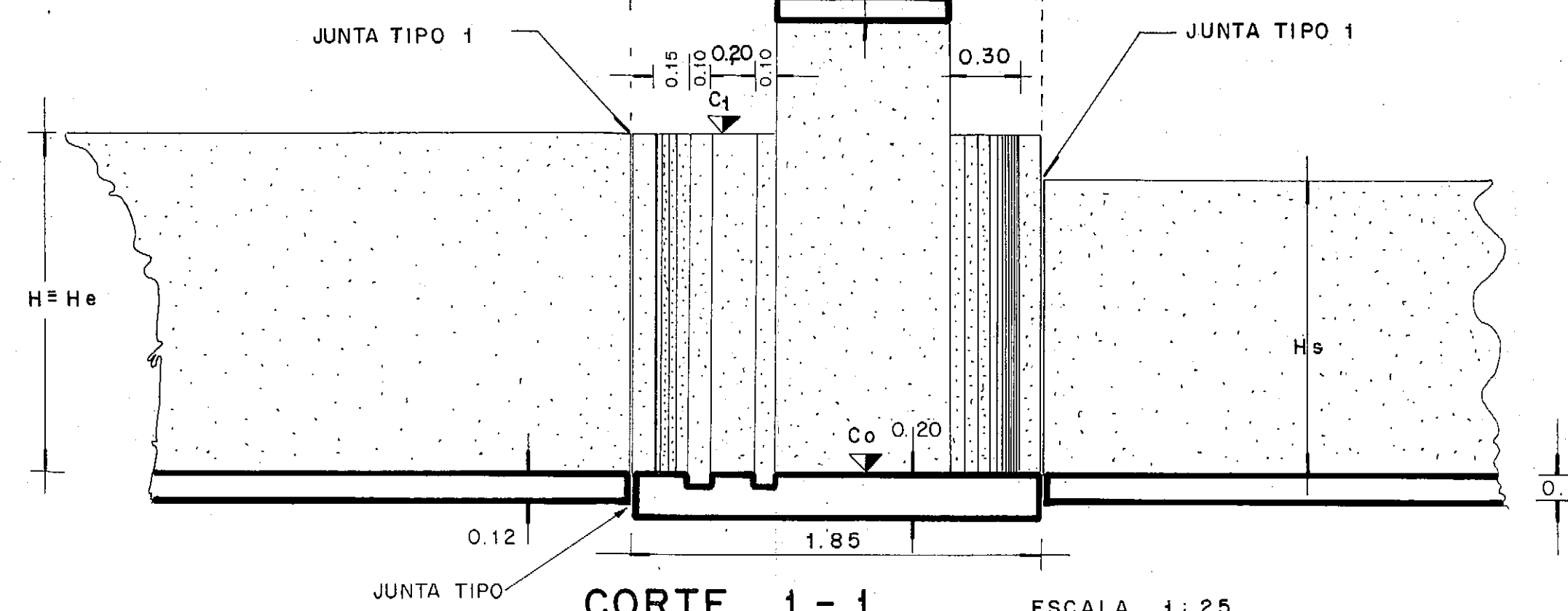


HORMIGON : $\sigma_{bmin} \geq 240 \text{ Kg. / cm}^2$
(PARA OBRA DE ARTE)
HIERRO : $\sigma_{ek} \geq 4500 \text{ Kg. / cm}^2$
VER PLANO N° 0A10



CORTE 1-1

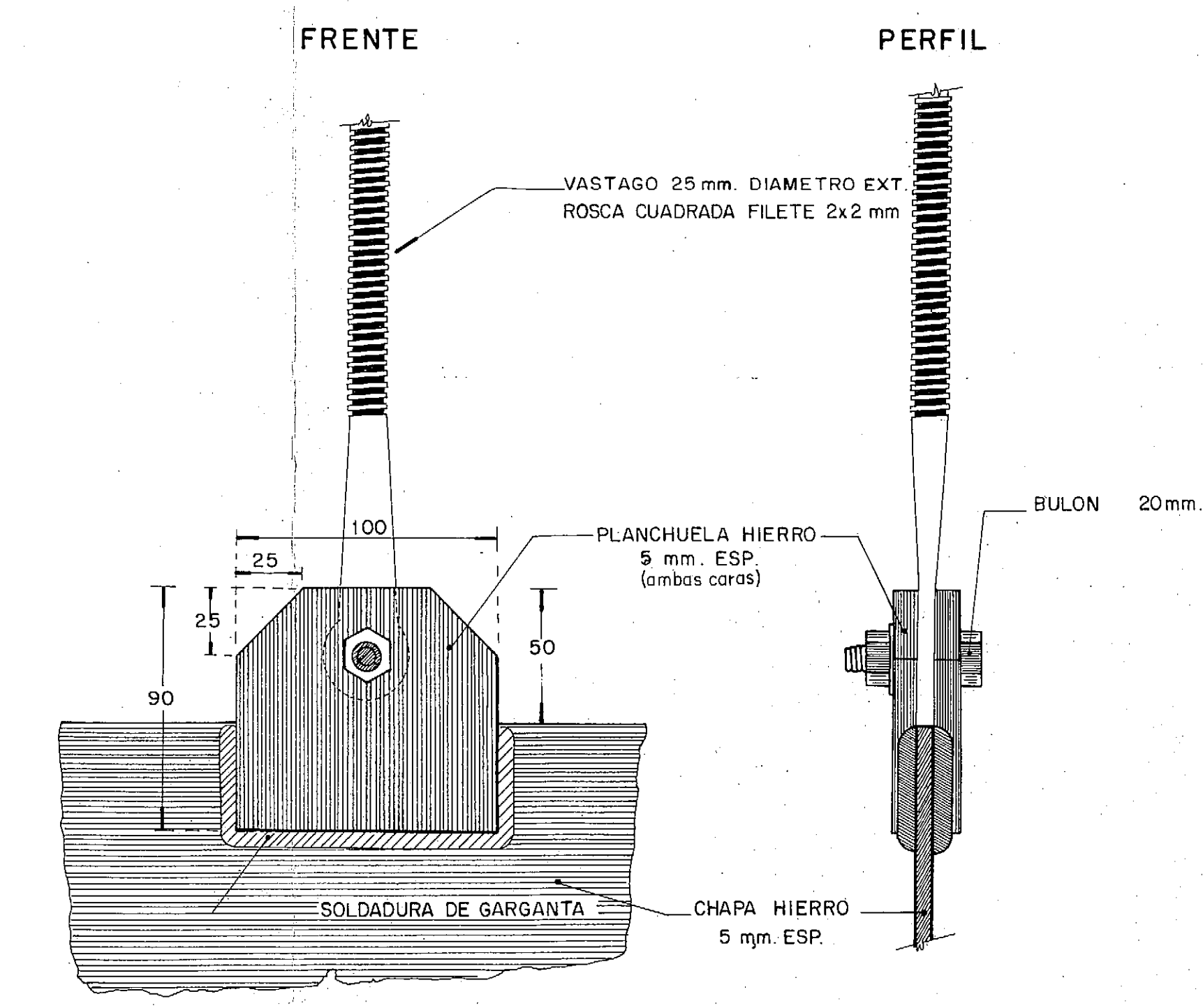
ESCALA 1:25



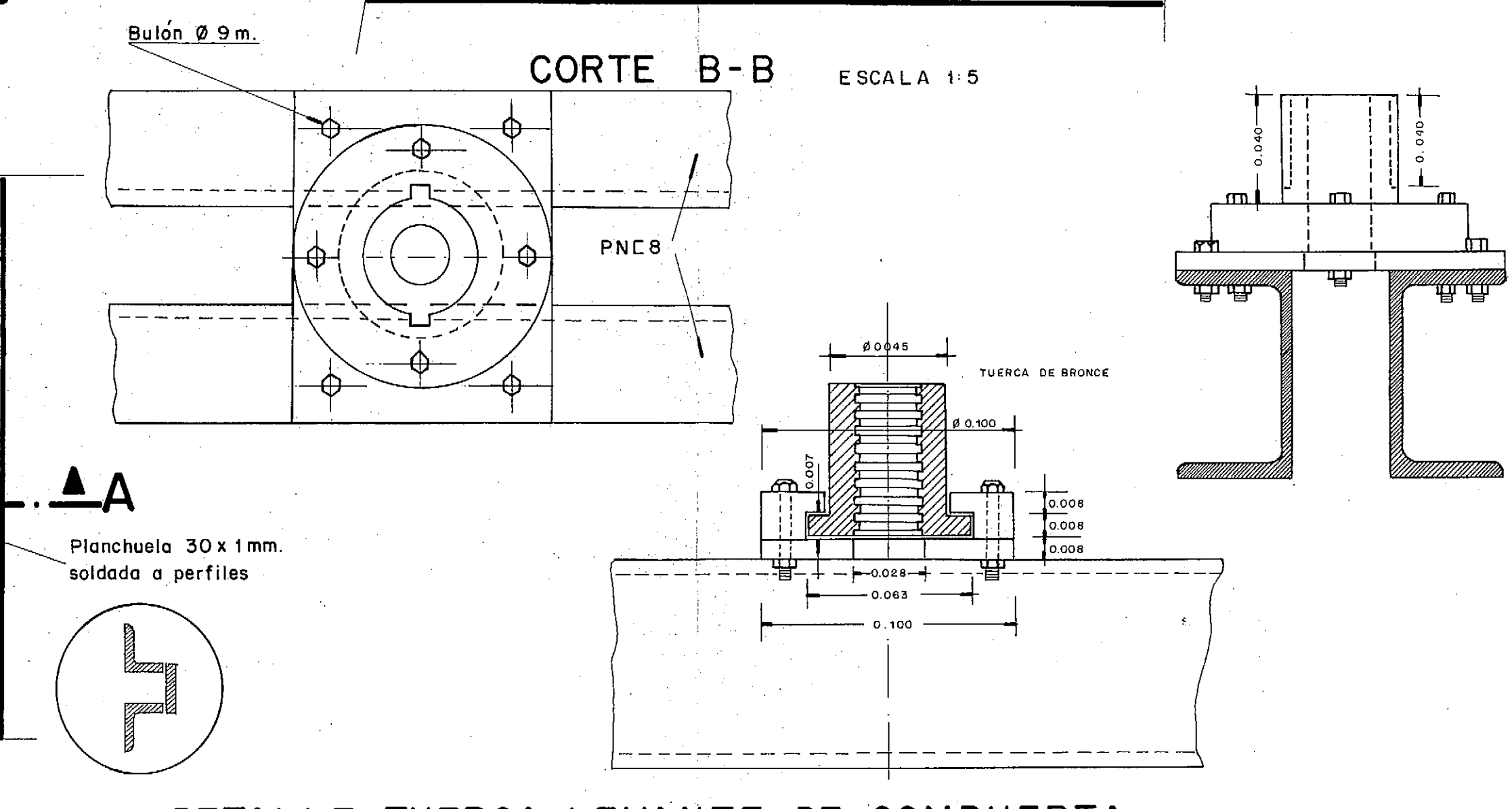
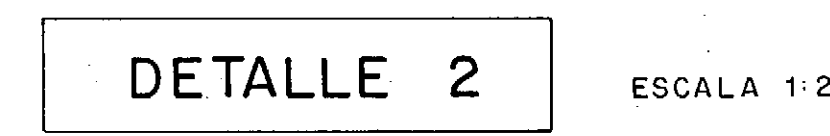
CORTE 1-1

ESCALA 1:25

| | | | | |
|--|--|----------------------------------|---|----------|
| <p>REPUBLICA ARGENTINA</p> <p>PROGRAMA DE LAS NACIONES UNIDAS PARA EL DESARROLLO</p> <p>SUBSECRETARIA DE RECURSOS HIDRICOS</p> <p>CONSEJO FEDERAL DE INVERSIONES</p> <p>INSTITUTO NACIONAL DE CIENCIA Y TECNICA HIDRICAS</p> | | | <p>PROYECTO NOA HIDRICO</p> <p>SEGUNDA FASE</p> | |
| AUTOR | | ESTRUCTURA DE COMPUERTAS | | PLANO N° |
| DIBUJO | | | | 0 A |
| REVISO | | | | 3 |
| V° B° | | Area: COPACABANA BANDA DE LUCERO | | |
| N° DE ARCHIVO | | Prov: CATAMARCA | | |
| FECHA | | | | |




SOLDADURA DE GARGANTA : TENSION ADMISIBLE PARA St 37= 910 (Kg/cm²)

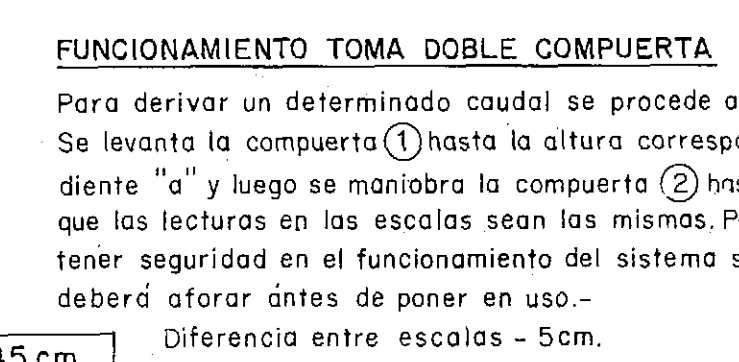
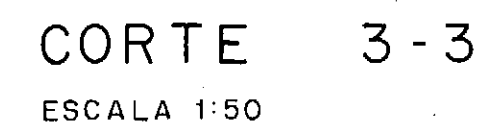
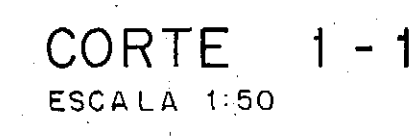
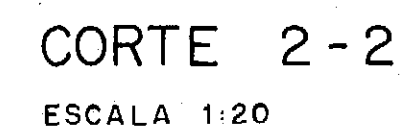
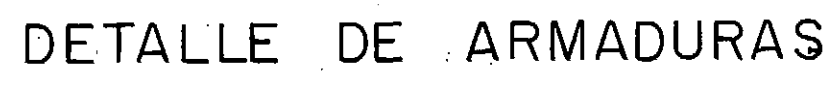


DETALLE TUERCA LEVANTE DE COMPUERTA



ESCALA 1:2

| | | | |
|---|--|--|----------|
| REPUBLICA ARGENTINA  | | NACIONES UNIDAS  | |
| SUBSECRETARIA DE RECURSOS HIDRICOS CONSEJO FEDERAL DE INVERSIONES INSTITUTO NACIONAL DE CIENCIA Y TECNICA HIDRICAS | | PROGRAMA DE LAS NUUU PARA EL DESARROLLO AMERICA / Paises de CU y BRIC / PAIS DE CU y UNPAID | |
| PROYECTO -NOA HIDRICO SEGUNDA FASE | | | |
| ESCALA | | | |
| AUTOR | COMPUERTA TIPO CML | | PLANO N° |
| DIBUJO | | | OA |
| REVISO | | | 4 |
| V° B° | | | |
| N° DE ARCHIVO | Area: COPACABANA BANDA DE LUCERO Prov.: CATAMARCA | | |
| FECHA | | | |

Technical drawing showing a vertical shaft or pipe assembly. The drawing includes a central vertical pipe with a flange at the top and a horizontal section labeled "Junta tipo 3". Dimensions are indicated: 0,12 for the width of the horizontal section and 0,12 for the width of the central pipe. A circular feature is shown on the central pipe. The drawing is labeled with a circled 3 and an arrow pointing right at the bottom.

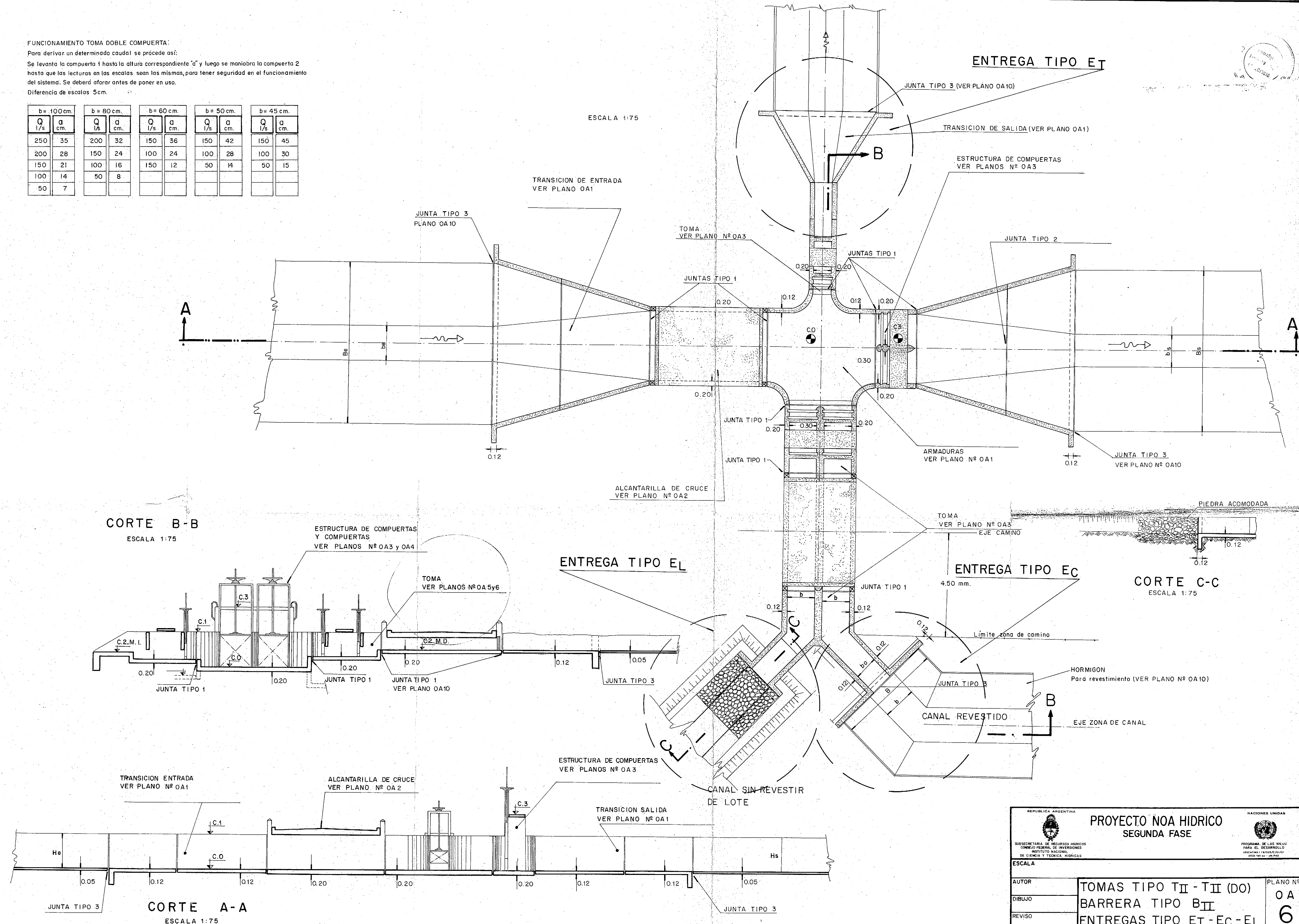


| b = 100 cm. | | b = 80 cm. | | b = 60 cm. | | b = 50 cm. | | b = 45 cm. | |
|-------------|-----|------------|-----|------------|-----|------------|-----|------------|-----|
| Q | a | Q | a | Q | a | Q | a | Q | a |
| l/seg. | cm. | l/seg. | cm. | l/seg. | cm. | l/seg. | cm. | l/seg. | cm. |
| 250 | 35 | 200 | 32 | 150 | 36 | 150 | 42 | 150 | 45 |
| 200 | 28 | 150 | 24 | 100 | 24 | 100 | 28 | 100 | 30 |
| 150 | 21 | 100 | 16 | 50 | 12 | 50 | 14 | 50 | 15 |
| 100 | 14 | | | | | | | | |
| 50 | 7 | | | | | | | | |


| | | |
|---|---|---|
| REPUBLICA ARGENTINA  SUBSECRETARIA DE RECURSOS HIDRICOS CONSEJO FEDERAL DE INVERSIONES INSTITUTO NACIONAL DE CIENCIA Y TECNICA HIDRICAS | <h1 style="margin: 0;">PROYECTO NOA HIDRICO</h1> <h2 style="margin: 0;">SEGUNDA FASE</h2> | NACIONES UNIDAS  PROGRAMA DE LAS NACIONES PARA EL DESARROLLO ARGENTINA / PROYECTO/181-01 3700 TEND. CO. - 10/7/60 |
| ESCALA | | |
| AUTOR | <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="font-size: 2em;">TOMA TIPO T I</div> <div style="font-size: 3em;">OA</div> </div> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="font-size: 2em;">BARRERA TIPO B I</div> <div style="font-size: 3em;">5</div> </div> | |
| DIBUJO | | |
| REVISO | <div style="font-size: 1.5em;">Area: COPACABANA BANDA DE LUCERO</div> <div style="font-size: 1.5em;">Prov.: CATAMARCA</div> | |
| V° B° | | |
| N° DE ARCHIVO | | |
| FECHA | | |

Diferencia de escalas 5cm.

| b = 100 cm. | | b = 80 cm. | | b = 60 cm. | | b = 50 cm. | | b = 45 cm. | |
|-------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|
| Q l/s | a cm. | Q l/s | a cm. | Q l/s | a cm. | Q l/s | a cm. | Q l/s | a cm. |
| 250 | 35 | 200 | 32 | 150 | 36 | 150 | 42 | 150 | 45 |
| 200 | 28 | 150 | 24 | 100 | 24 | 100 | 28 | 100 | 30 |
| 150 | 21 | 100 | 16 | 150 | 12 | 50 | 14 | 50 | 15 |
| 100 | 14 | 50 | 8 | | | | | | |
| 50 | 7 | | | | | | | | |



REPÚBLICA ARGENTINA




SUBSECRETARÍA DE RECURSOS HÍDRICOS
CONSEJO FEDERAL DE INVERSIONES
INSTITUTO NACIONAL
DE CIENCIA Y TÉCNICA HÍDRICAS

PROYECTO NOA HIDRICO

SEGUNDA FASE

NACIONES UNIDAS



PROGRAMA DE LAS NACIONES UNIDAS PARA EL DESARROLLO
ARGENTINA / PATAGONIA SUR
ESTADO SUR DE LOS ANDES

ESCALA

| | | |
|---------------|---|----------|
| AUTOR | TOMAS TIPO T _{II} - T _{II} (DO) | PLANO Nº |
| DIBUJO | BARRERA TIPO B _{II} | O A |
| REVISO | ENTREGAS TIPO ET - EC - EL | 6 |
| Vº Bº | Area : COPACABANA BANDA DE LUCERO | |
| Nº DE ARCHIVO | Prov. : CATAMARCA | |
| FECHA | | |



CORTE A-A
ESCALA 1:25



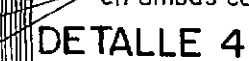
TOMA TIPO IV (PARA DERIVACION DE CAUDALES $Q = 50$ l/s
EN LOTES DESDE CANALES CON $Q = 50$ l/s



PLANTA

DETALLE DE PANTALLA DE H°A°

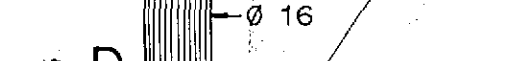
$h_o = 10 \text{ cm.}$
 $b_o = 15 \text{ cm.}$
 $h = 8 \text{ cm. para } Q = 50 \text{ l/s}$



CORTE E.F.



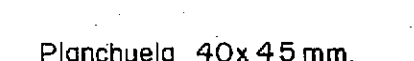
CORTE F-F



16



DETALLE 2



→ D
DETALLE 3



CORTE D-D



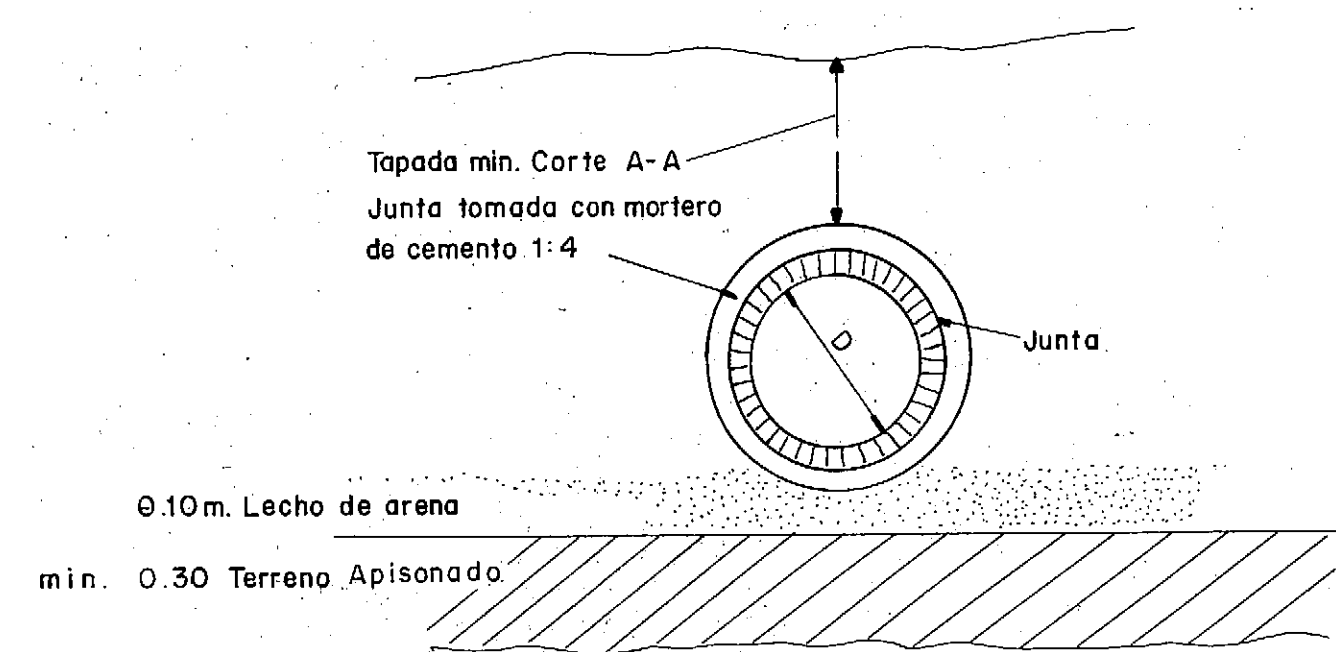
TOMA TIPO III a (PARA DERIVACION DE CAUDALES $Q=50$ l/s
EN LOTES DESDE CANALES CON $Q > 50$ l/s)

| b = 60 cm. | | b = 50 cm. | | b = 45 cm. | |
|------------|----------|------------|----------|------------|----------|
| Q l/s | a cm. | Q l/s | a cm. | Q l/s | a cm. |
| 150 | 36 | 150 | 42 | 150 | 45 |
| 100 | 24 | 100 | 28 | 100 | 30 |
| 50 | 12 | 50 | 14 | 50 | 15 |

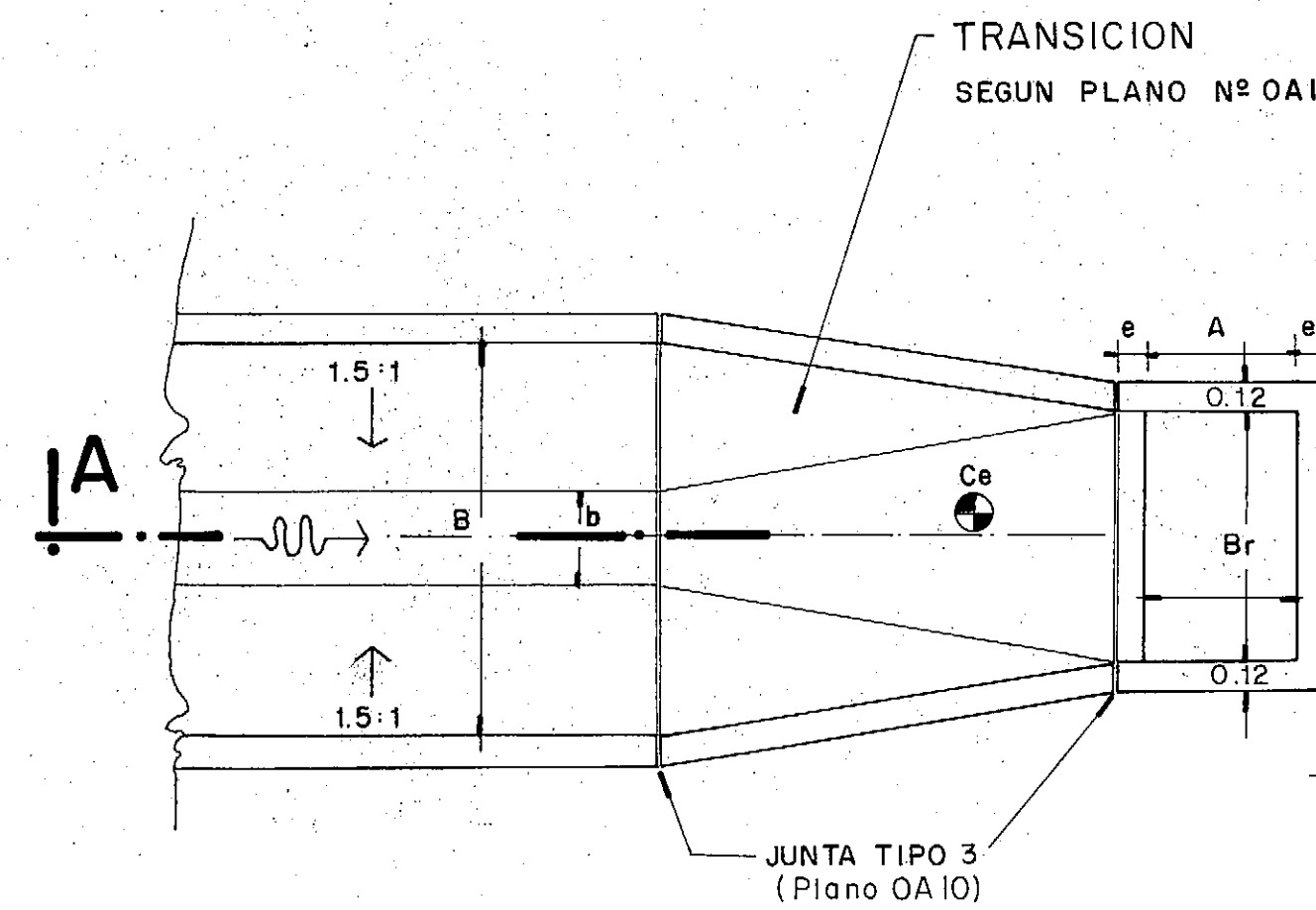
FUNCIONAMIENTO TOMA DOBLE COMPUERTA

Se levanta la compuerta 1 hasta la altura correspondiente "a" y luego se maniobra la compuerta 2 hasta que las lecturas en las escalas sean las mismas. Para tener seguridad en el funcionamiento del sistema se deberá aflojar antes de poner en uso la diferencia de escalas 5 cm.

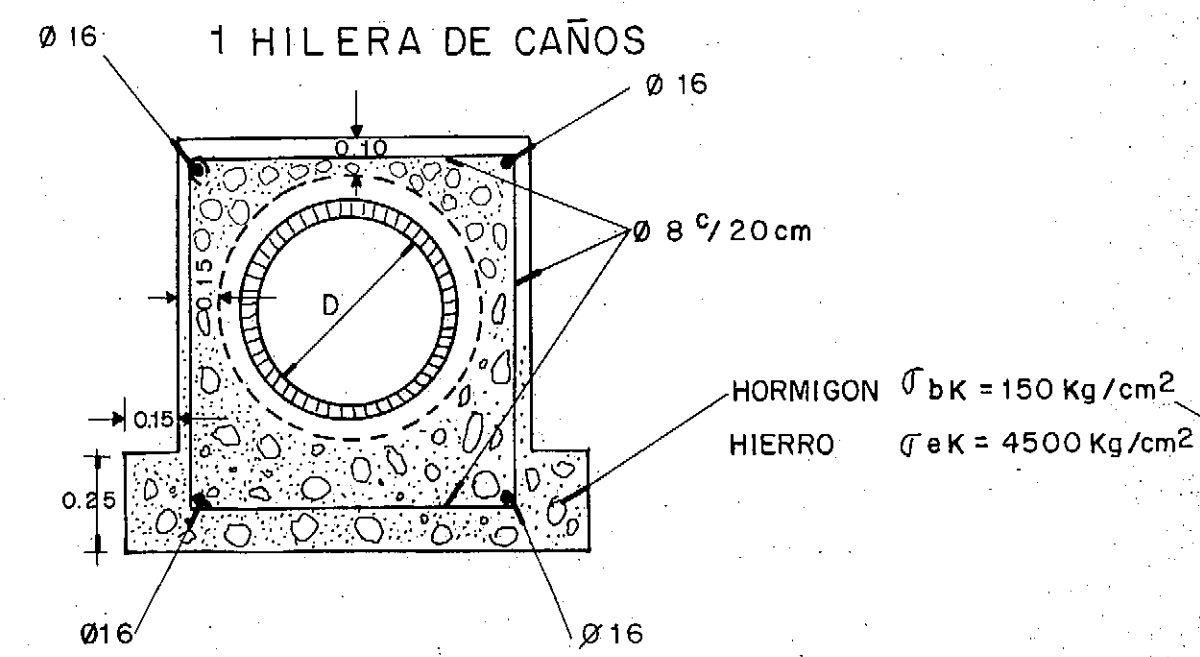
TIPO S₁



CORTE C-C BAJO CAMINOS O FERROCARRIL

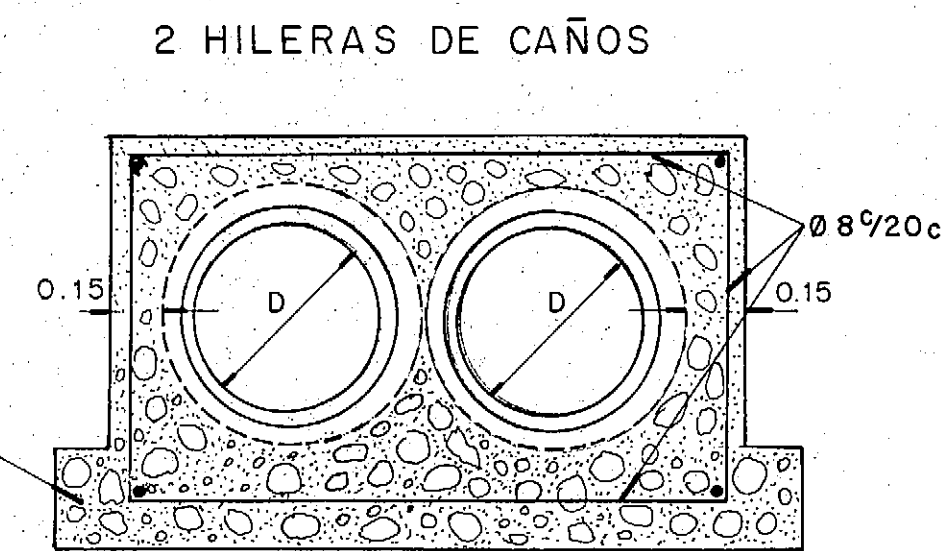


TIPO S₁(R)

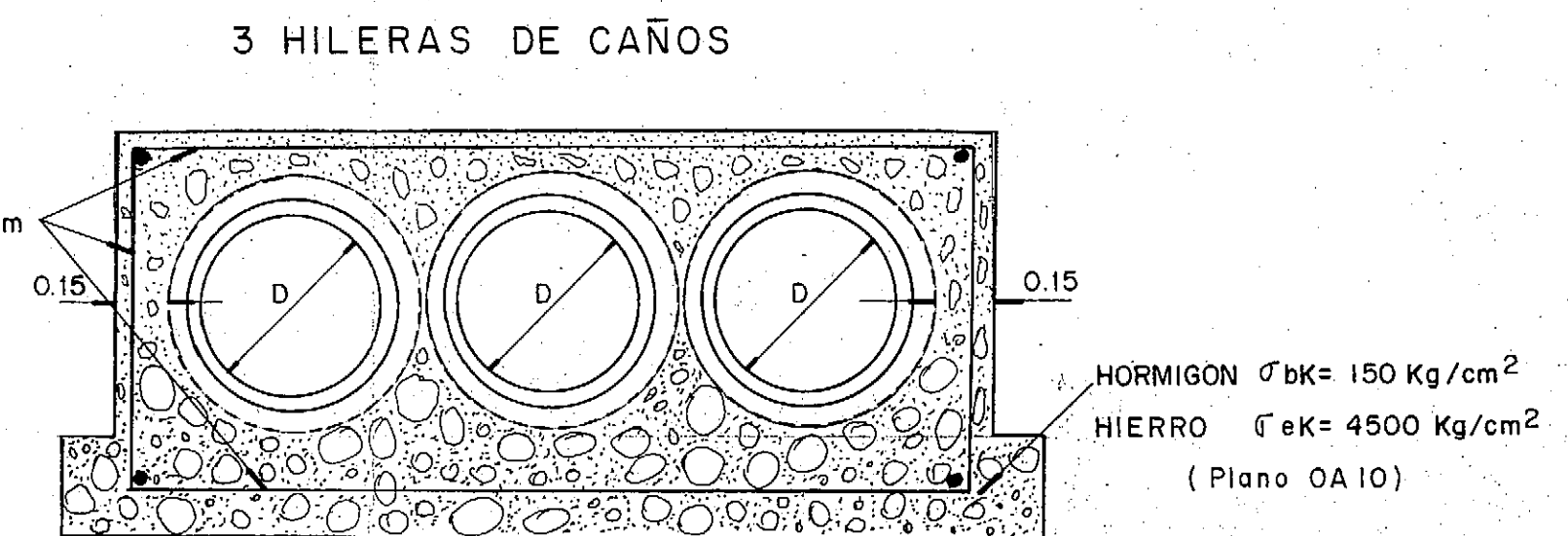


CORTE C-C BAJO CAUCES NATURALES

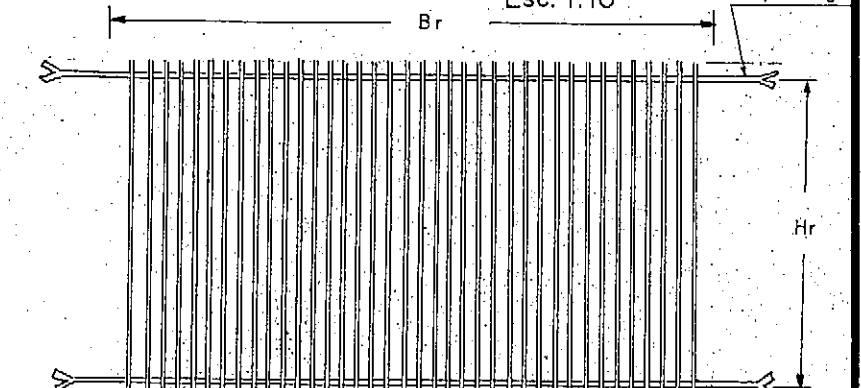
TIPO S₂ (R)



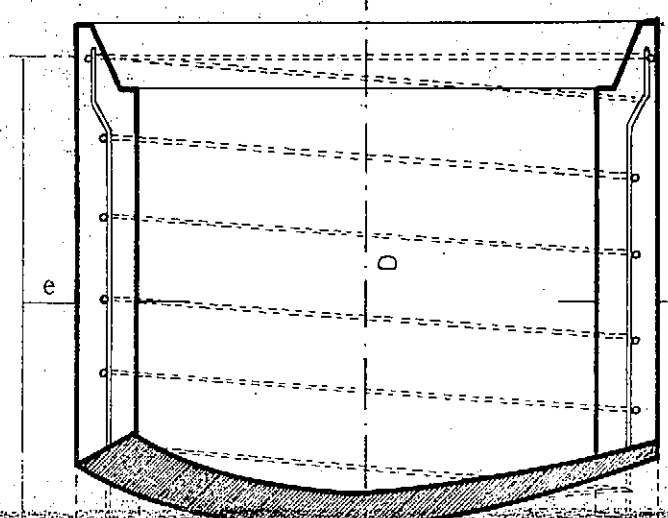
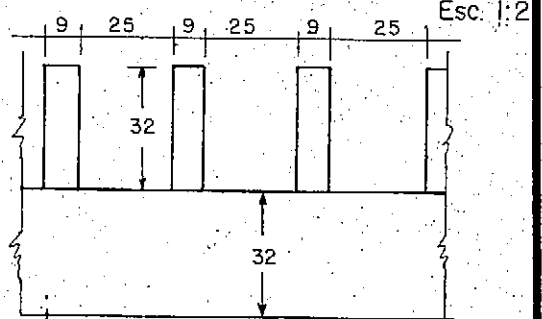
TIPO S₃ (R)



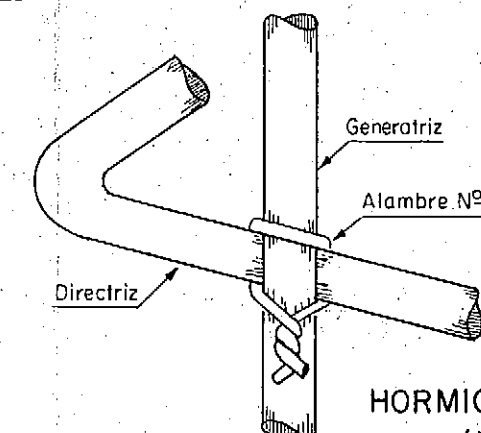
REJA Esc. 1:10



DETALLE Esc. 1:2

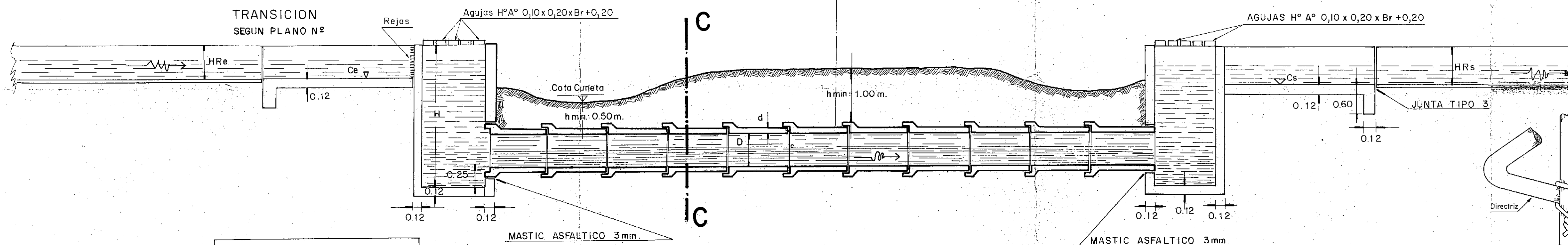


HORMIGON PARA CAÑOS (Plano 0A10)



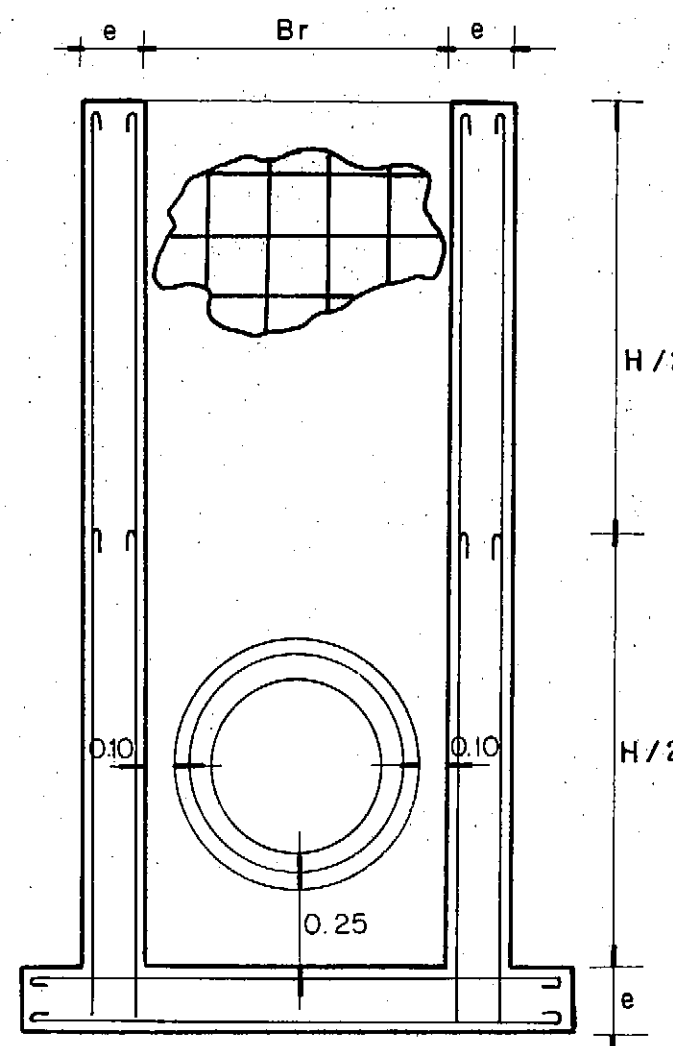
NOTA:
LOS ANTECEDENTES DEL CAÑO DE
HORMIGON FUERON TOMADOS DEL
PLANO A-249 Direc. Nac. de Vialidad

PLANTA



CORTE A-A

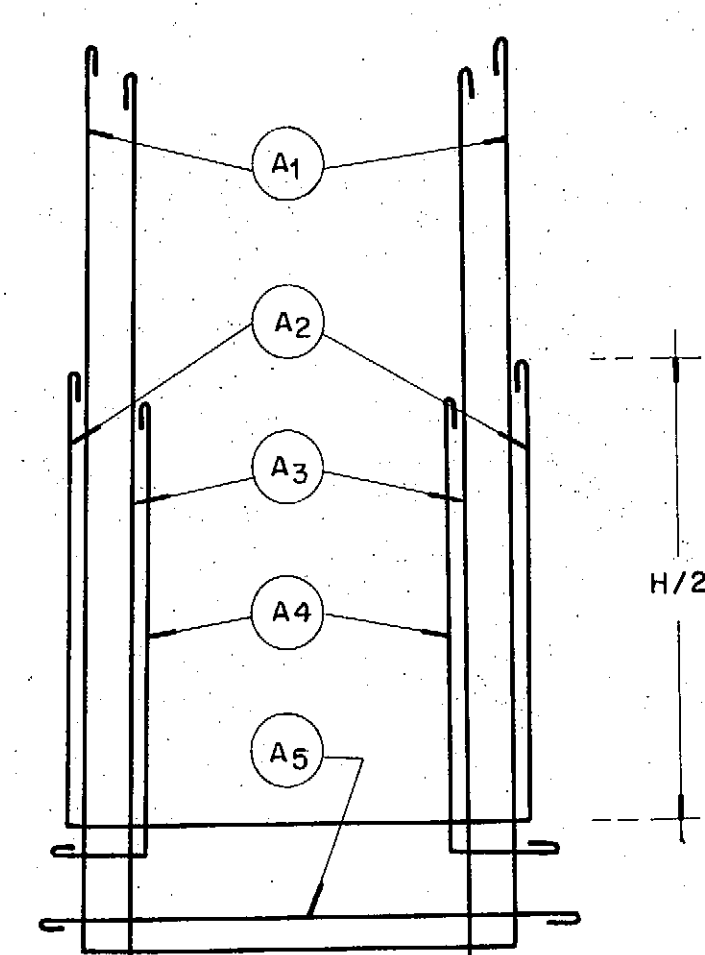
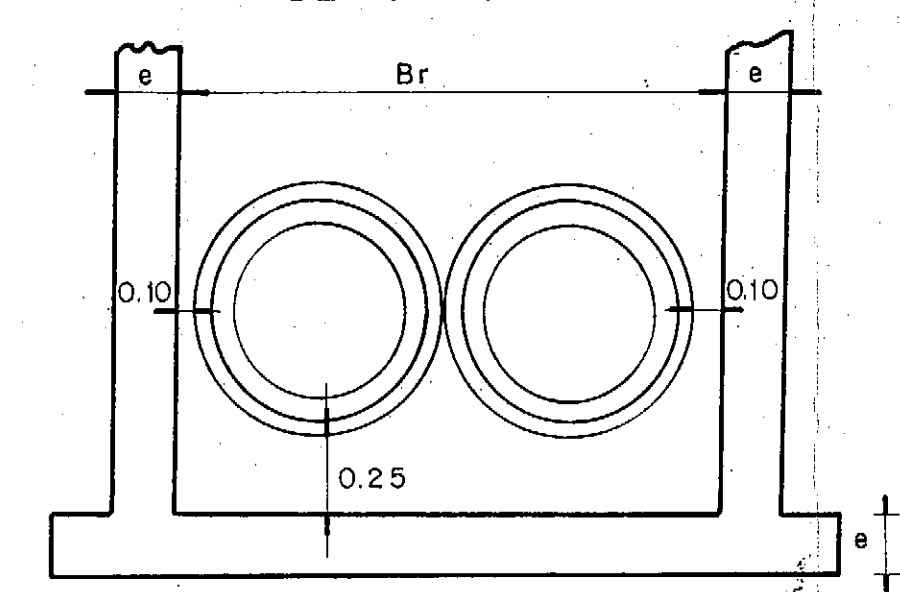
TIPO S₁
ESQUEMA PARA 1 HILERA
DE CAÑOS



CORTE B-B

TIPO S₂

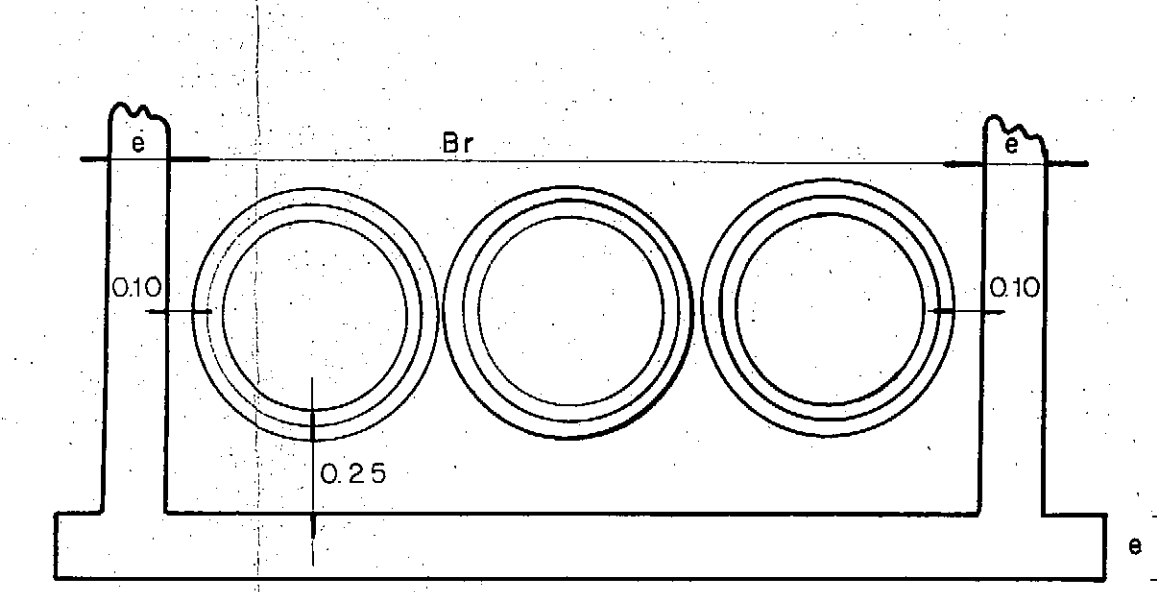
ESQUEMA PARA 2 HILERAS
DE CAÑOS



DESPIECE DE ARMADURAS

TIPO S₃

ESQUEMA PARA 3 HILERAS
DE CAÑOS



| Resistencia a la compresión de las probetas a las | Diámetro del caño | Espesor mínimo de la pared del caño | Largo útil del caño | ARMADURA | | | | Peso de la armadura | Volumen de hormigón |
|---|-------------------|-------------------------------------|---------------------|-------------------------------|-----------|-------|-------|---------------------|---------------------|
| | | | | Longitudinal separation (cm.) | ESPIRALES | | | | |
| | | | | | Diámetro | Paso | | | |
| | | | | | | | φ | | |
| (m.) | (m.) | (m.) | φ 8 | (m.m.) | (cm) | Kg | (m³) | | |
| 280 Kg. por cm² | 0,50 | 0,075 | 1,00 | 10 | 6 | 16 | 8,37 | 0,118 | |
| | 0,60 | 0,080 | 1,00 | 10 | 6 | 9,50 | 9,17 | 0,171 | |
| | 0,80 | 0,095 | 1,00 | 10 | 8 | 10,00 | 18,18 | 0,206 | |
| | 1,00 | 0,110 | 1,00 | 10 | 8 | 8,50 | 23,50 | 0,400 | |

CAÑOS DE HORMIGON ARMADO

PROYECTO NOA HIDRICO
SEGUNDA FASE



SUBSECRETARÍA DE RECURSOS HIDRICOS
CONSEJO FEDERAL DE INVERSIONES
INSTITUTO NACIONAL
DE CIENCIA Y TECNICA HIDRICAS

PROGRAMA DE LAS NACIONES UNIDAS PARA EL DESARROLLO
ARGENTINA Y REPOSICION
DE LOS RECURSOS HIDRICOS

ESCALA

AUTOR

DIBUJO

REVISO

Vº Bº

Nº DE ARCHIVO

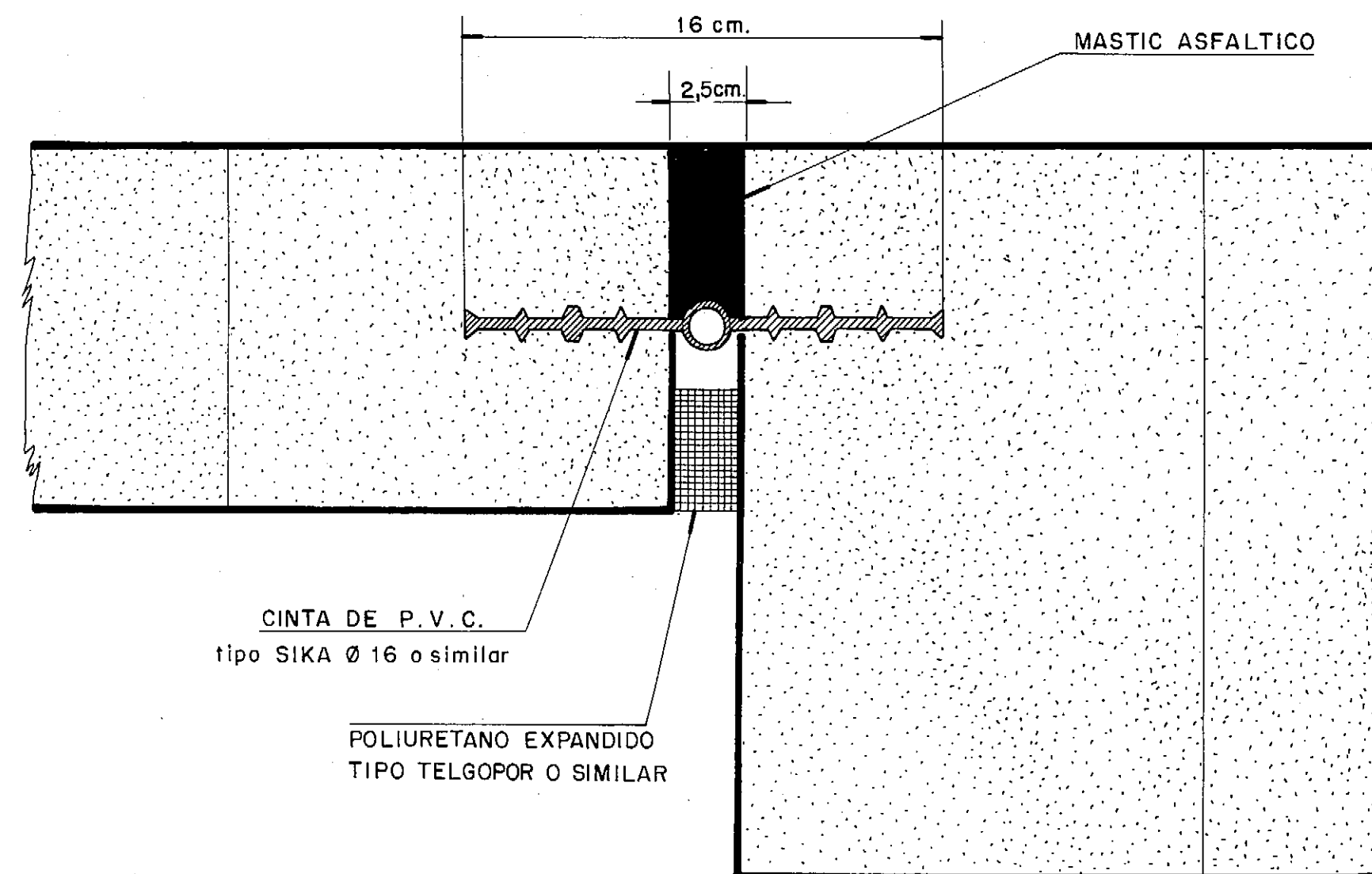
FECHA

SIFONES Y CAÑOS DE HORMIGON ARMADO

Area: CORDOBA BANDA DE LUCERO
Prov: CATAMARCA

8

TIPO-1- JUNTA ESTANCA DE DILATACION



Hormigón clase A
Para Revestimiento de canales

Tamaño máximo= 19 mm; Asentamiento= 5 a 7 cm; Agua cemento=0,55

A=(aprox) 175 l/m³; C=320 kg/m³; R₂₈ min=220 kg/cm²

Gradación de tamaños

| Criba o tamiz | 3/4" | 3/8" | 4" | 8" | 16" | 30" | 50" | 100" |
|---------------|------|-------|-------|-------|-------|------|-----|------|
| % que pasa | 100 | 75-60 | 50-35 | 35-20 | 23-13 | 15-7 | 9-3 | 4-1 |

Hormigón clase B

Para obras de arte

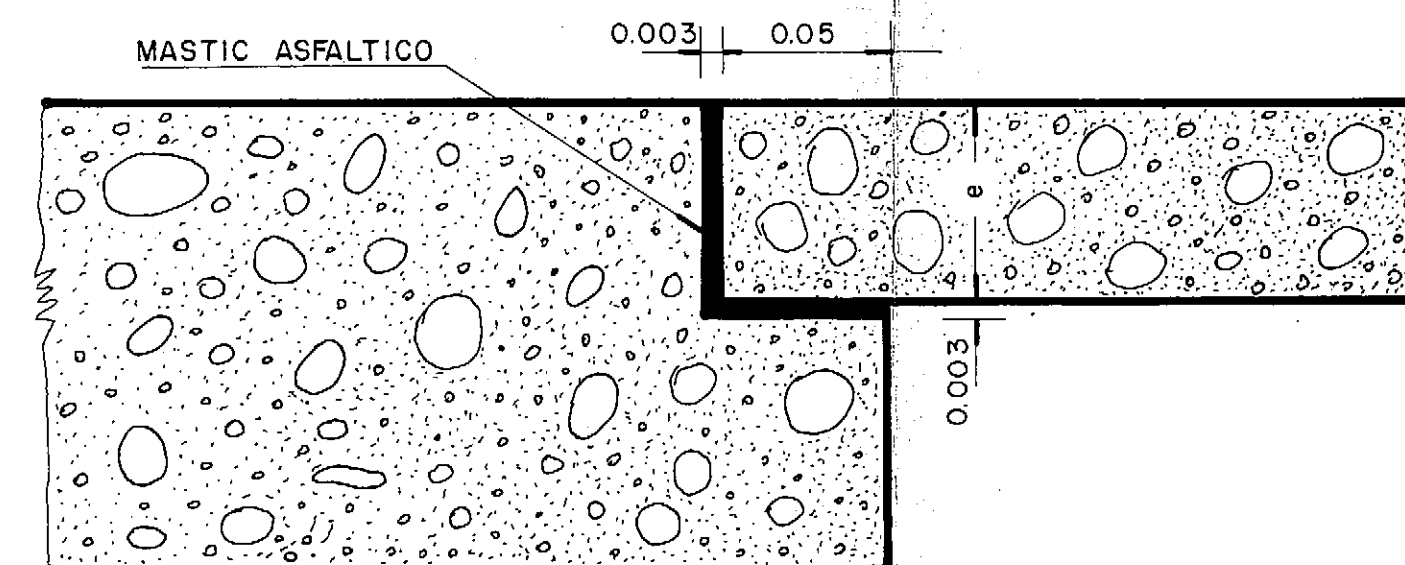
Tamaño máximo=38 mm; Asentamiento= 7 cm; Agua cemento= 0,50

A=(aprox) 150 l/m³; C=300 kg/m³; R₂₈ min= 240 kg/cm²

Gradación de tamaño

| Criba o tamiz | 1 1/2" | 3/4" | 3/8" | 4" | 8" | 16" | 30" | 50" | 100" |
|---------------|--------|-------|-------|-------|-------|-------|------|-----|-------|
| % que pasa | 100 | 80-70 | 55-45 | 48-30 | 25-18 | 17-12 | 11-7 | 6-3 | 2,5-1 |

TIPO-3- JUNTA RELLENA CON MASTIC-ASFALTICO ENTRE ESTRUCTURAS Y REVESTIMIENTO



Hormigón Clase C
Para alojamiento de caños en conductos.

Hormigones ciclópeos, confeccionados con el agregado de piedra de mayor tamaño, al hormigón B, en las siguientes proporciones en volumen:

- Piedras grandes 25%
- Hormigón clase B: 75 %

Hormigón Clase D

Para capa de desgaste sobre alcantarillas

Tamaño máximo=19 mm; Asentamiento = 5 a 7 cm; Agua: Cemento= 0,55

A = (aprox.) 115 l/m³; C = 260 Kg/m³; R₂₈ min.= 160 Kg/cm²

Gradación de tamaños:

| Criba o Tamiz | 3/4" | 3/8" | 4" | 8" | 16" | 30" | 50" | 100" |
|---------------|------|-------|-------|-------|-------|------|-----|------|
| % que pasa | 100 | 75-60 | 50-35 | 35-20 | 23-13 | 15-7 | 9-3 | 4-1 |

Hormigón clase E

Para pantallas y caños prefabricados

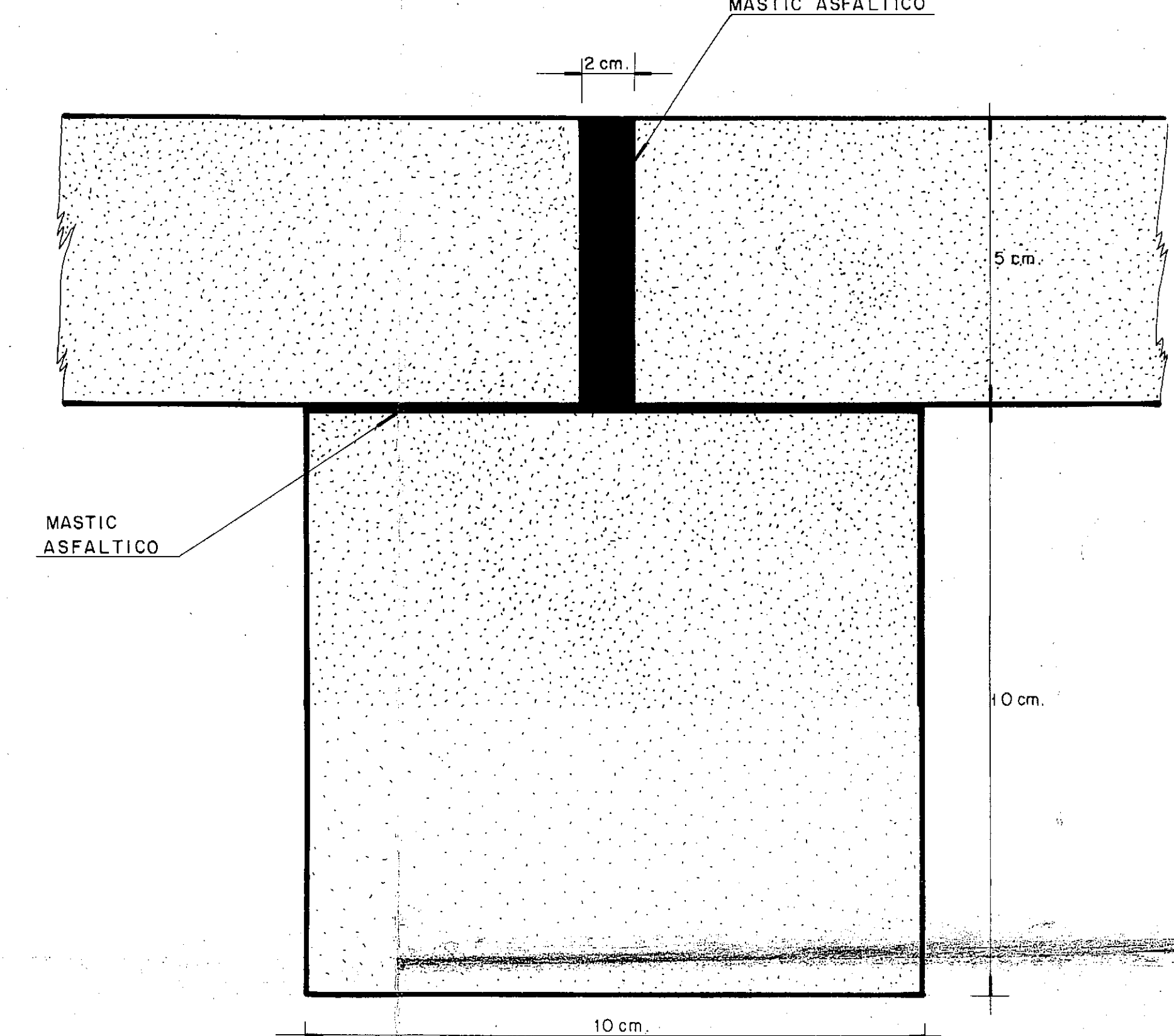
Tamaño máximo= 13 mm; Asentamiento= 5 cm; Agua cemento=0,55

A=(Aprox) 155 l/m³; C= 450 Kg/m³; R₂₈ min= 280 kg/cm²

Gradación de tamaño:

| Criba o tamiz | 3/4" | 3/8" | 3/4" | 8" | 16" | 30" | 50" | 100" |
|---------------|------|--------|-------|-------|-----|-----|-----|------|
| % que pasa | 100 | 90-100 | 40-70 | 10-15 | | | | |

TIPO-2- JUNTA RELLENA CON MASTIC-ASFALTICO EN REVESTIMIENTO DE HORMIGON



Clasificación de los hormigones de la obra a los fines de su Certificación.

Hormigón A1: Para revestimiento de canales

Hormigón B1: Para soleras en obras de arte.

Hormigón B2: Para elementos verticales y/o con caras encofradas en obras de arte.

Hormigón C1: Para elementos con dos caras planas encofradas. Cuerpo de conductos de caños.

Hormigón D1: Para capas de desgaste.

Hormigón E1: Para elementos prefabricados.



Aceros para hormigón armado (Clasificación del PRAEH)

Tipo III: Conformado para hormigón, torsionado en frío. Tensión característica mayor de 4.400 kg/cm²

| | | | | | |
|--|--|--|--|---|--|
| | | PROYECTO NOA HIDRICO SEGUNDA FASE | | | |
| <small> SUBSECRETARIA DE RECURSOS HIDRICOS CONSEJO FEDERAL DE INVERSIONES INSTITUTO NACIONAL DE CIENCIA Y TECNICA HIDRICAS PROGRAMA DE LAS NACIONES UNIDAS PARA EL DESARROLLO ARGENTINA / PROYECTO NOA 1972-1973-1974-1975 </small> | | | | | |
| ESCALA | | | | | |
| AUTOR | | JUNTAS-ESPECIFICACIONES PARA HORMIGONES | | PLANO N° 0A 10 | |
| DIBUJO | | | | | |
| REVISO | | | | | |
| Vº Bº | | | | | |
| Nº DE ARCHIVO | | Area: COPACABANA BANDA DE LUCERO Prov.: CATAMARCA | | | |
| FECHA | | | | | |

| SECCION | Plano N° | CANAL | CAUDAL l/s | PROGRESIVAS | NUDO | Caso | TOMAS | | | | BARRERAS | | | | ENTREGAS | | | COMPUERTAS | | | SIFONES | | | | | | ALCANTARILLAS | | | | | OBSERVACIONES | | | | | |
|-----------|---------------|---------------|------------|-------------|--------|------|-------|-----|------|-----|----------|-----|------|-----|----------|----|----|------------|-----|-----|---------|----|----|-----|-----|-----|---------------|---|---|---|---|---------------|---|---|--|--|--|
| | | | | | | | TI | TII | TIII | TIV | BI | BII | BIII | BIV | ET | EC | EL | CML | CSC | CLR | S1 | S2 | S3 | SIR | S2R | S3R | A | B | C | D | E | | F | G | | | |
| SECCION 1 | 24 | PBL S0-S1 | 800 | 0,00 | NS1 | | X | | | | | X | | | XX | X | | XX | | | | | | | | | | | | | | | | | | | |
| | " | Sec. S1 0-2 | 150 | 0,00 - 65 | N2 | | X | | | | | X | | | XX | X | | XX | | | | | | | | | | | | | | | | | | | |
| | " | Sec. S1 0-2 | 150 | 65 - 145 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | " | Sec. S1 0-2 | 150 | 145 - 295 | N3 | | | | | X | X | | | | | XX | X | X | XX | | | | | | | | | | | | | | | | | | |
| | " | Sec. S1 0-2 | 150 | 490 | N4 | | | | | X | X | | | | | XX | X | X | XX | | | | | | | | | | | | | | | | | | |
| | " | Ter. S1 2-4 | 100 | 635 | N5 | | | | | X | X | | | | | XX | X | X | XX | | | | | | | | | | | | | | | | | | |
| | " | Ter. S1 2-4 | 100 | 635 - 1075 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | " | Ter. S1 2-4 | 100 | 1075 | N6 | | | | X | | XX | | | | | XX | X | | X | XX | | | | | | | | | | | | | | | | | |
| | " | Com. S1 4-7 | 50 | 310 | N7 | | | | X | | | | X | | | | | X | | X | X | | | | | | | | | | | | | | | | |
| | " | Com. S1 4-7 | 50 | 535 | N8 | | | | X | | | | X | | | | | X | | X | X | | | | | | | | | | | | | | | | |
| | " | Com. S1 4-7 | 50 | 850 | N9 | | | | X | | | | X | | | | | X | | X | X | | | | | | | | | | | | | | | | |
| | " | Com. S1 4-10 | 50 | | N10 | | | | X | | | | X | | | | | X | | X | X | | | | | | | | | | | | | | | | |
| " | Com. S1 4-10 | 50 | | N11 | | | | X | | | | X | | | | | X | | X | X | | | | | | | | | | | | | | | | | |
| " | Com. S1 4-10 | 50 | | N12 | | | | X | | | | | | X | | | X | | X | X | | | | | | | | | | | | | | | | | |
| 21 | PBL S1-S2 | 650 | 1264-1444 | NC | | | | | | | | | | | | | | | | | | | | | | X | X | | | | | | | | | | |
| " | PBL S1-S2 | 650 | 1444-1568 | NC | | | | | | | | | | | | | | | | | | | | | | X | | | | | | | | | | | |
| " | PBL S1-S2 | 650 | 1581 | NS2 | | X | | | | | | X | | | XX | X | | XX | | | | | | | | | | | | | | | | | | | |
| SECCION 2 | 25 | Com. S2 2-1 | 50 | NI-N2 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | " | Com. S2 2-1 | 50 | NI | NI | | | | X | | | | | | | | | X | | X | | | | | | | | | | | | | | | | | |
| | " | Com. S2 0-4 | 150 | 300 | N2 | | | | | XX | X | | | | | | | XX | X | X | XX | | | | | | | | | | | | | | | | |
| | " | Com. S2 0-4 | 150 | 300-752 | N24 | | X | | | | | X | | | | | | X | XX | | XXX | | | | | | | | | | | | | | | | |
| | " | Com. S2 N24-3 | 50 | 520 | N3 | | | | X | | | | | | | | | X | | X | X | | | | | | | | | | | | | | | | |
| | " | Com. S2 0-4 | 150 | 752 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | " | Com. S2 4-9 | 50 | 752 | N4-5 | | X | | XX | | X | | X | | | | X | X | XX | X | XX | | | | | | | | | | | | | | | | |
| | " | Com. S2 4-17 | 100 | 1024 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | " | Com. S2 10-14 | 50 | 1024 | N10 | | X | | X | | XX | | | | | | | X | XX | X | XX | X | | | | | | | | | | | | | | | |
| | " | Com. S2 4-17 | 100 | 1242 | N15 | | X | | X | | XX | | | | | | | X | XX | X | XX | X | | | | | | | | | | | | | | | |
| | " | Com. S2 15-16 | 50 | N16 | N16 | | | | X | | | | | | | | | | X | | X | X | | | | | | | | | | | | | | | |
| | " | Com. S2 4-17 | 100 | 1642 | N17 | | | | X | | | | | | | | | | X | | X | X | X | | | | | | | | | | | | | | |
| | " | Com. S2 17-23 | 50 | 196 | N18 | | | | X | | | | | | | | | | X | | X | X | | | | | | | | | | | | | | | |
| | " | Com. S2 17-23 | 50 | 420 | N19-20 | | | | XX | | | | | | | | | | XX | | XX | X | | | | | | | | | | | | | | | |
| | 26 | Com. S2 17-23 | 50 | 286 | N21 | | | | X | | | | | | | | | | X | | X | X | X | | | | | | | | | | | | | | |
| | " | Com. S2 17-23 | 50 | 520 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | " | Com. S2 17-23 | 50 | 520 | N22-23 | | | | XX | | | | | | | | | | XX | | XX | X | | | | | | | | | | | | | | | |
| | " | Com. S2 10-14 | 50 | 0,00-340 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | " | Com. S2 10-14 | 50 | 340 | N11 | | | | X | | | | | | | | | | X | | X | X | | | | | | | | | | | | | | | |
| | " | Com. S2 10-14 | 50 | 540 | N12 | | | | X | | | | | | | | | | X | | X | X | | | | | | | | | | | | | | | |
| | " | Com. S2 10-14 | 50 | 540-815 | N6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | " | Com. S2 10-14 | 50 | 815 | N13 | | | | X | | | | | | | | | | X | | X | X | X | | | | | | | | | | | | | | |
| " | Com. S2 10-14 | 50 | 1085 | N14 | | | | X | | | | | | | | | | X | | X | X | | | | | | | | | | | | | | | | |
| " | Com. S2 4-9 | 50 | 392 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " | Com. S2 6-7 | 50 | 14 | N6 | | | | XX | | | | XX | | | | | | X | X | XX | XX | | | | | | | | | | | | | | | | |
| " | Com. S2 6-7 | 50 | 64 | N7 | | | | X | | | | | | | | | | X | | X | X | | | | | | | | | | | | | | | | |
| " | Com. S2 4-9 | 50 | 595 | N8 | | | | X | | | | | | | | | | X | | X | X | | | | | | | | | | | | | | | | |
| " | Com. S2 4-9 | 50 | N9 | N9 | | | | X | | | | | | | | | | X | | X | X | | | | | | | | | | | | | | | | |
| 22 | PBL S2-S3 | 600 | 3338 | NS3 | | X | | | | | | X | | | XX | X | | XX | | | | | | | | | | | | | | | | | | | |
| " | PBL S3 S4 | 400 | 3338-3994 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | Sec. S3 0-1 | 200 | NS 1-2 | NS 1-2 | | X | | | | | | X | | | | | | X | X | X | XX | | | | | | | | | | | | | | | | |
| 27 | Sec. S3 1-6 | 100 | 67 | N 1-2 | | | | | | XX | | X | | | | | | XX | | XX | X | X | | | | | | | | | | | | | | | |
| " | Sec. S3 1-6 | 100 | 337 | N 3-4 | | | | | | XX | | | | | | | | XX | | XX | X | X | | | | | | | | | | | | | | | |
| " | Sec. S3 1-6 | 100 | 621 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " | Sec. S3 1-6 | 100 | 621 | N6 | | | | | X | | XX | | | | | | | XX | X | XX | X | | | | | | | | | | | | | | | | |
| " | Com. S3 6-5 | 50 | 114 | N5 | | | | | X | | | | | | | | | X | | X | X | | | | | | | | | | | | | | | | |
| " | Com. 7-13 | 50 | 955 | N7 | | | | | X | | | | | | | | | X | | X | X | | | | | | | | | | | | | | | | |
| " | Com. 7-13 | 50 | 955 - 969 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " | Com. 7-13 | 50 | 969 | N8 | | | | | X | | | | | | | | | X | | X | X | | | | | | | | | | | | | | | | |

[illegible][illegible]

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| REPUBLICA ARGENTINA  SUBSECRETARIA DE RECURSOS HUMANOS COMISIÓN FEDERAL DE INVERSIÓN INSTITUTO NACIONAL DE CIENCIA Y TÉCNICA HUMANAS | | PROYECTO NOA HIDRICO SEGUNDA FASE | | NACIONES UNIDAS  PROGRAMA DE LAS NACIONES UNIDAS DE DESARROLLO HUMANAS / PROGRAM HUMAN DEVELOPMENT | |
| ESCALA | | | | | |
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| V.º B. Ing. E. LOPEZ | | Area : COPACABANA-BANDA DE LUCERO | | | |
| Nº DE ARCHIVO | | Prov. : CATA MARCA | | | |
| FECHA NOVIEMBRE 1961 | | | | | |

[illegible]

| Sec. | Plano | CANAL | Q | Pie | Prog. | Nudo | T O M A S | | | | | | | | | | | | | | | | | | | | OBSERVACIONES | S I F O N E S | | | | | | | | | | ALCANTARILLAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | B ₁ | B ₂ | B ₃ | B ₄ | B ₅ | B ₆ | B ₇ | B ₈ | B ₉ | B ₁₀ | B ₁₁ | B ₁₂ | B ₁₃ | B ₁₄ | B ₁₅ | B ₁₆ | B ₁₇ | B ₁₈ | B ₁₉ | B ₂₀ | | C 0 | C 1 | C 2 | C 3 | B | d | H _r | B _r | A | D | L | H | C _e | C _s | OBSERVACIONES | abro tipo | B _r | H _r | L | C 2 | OBSERVACIONES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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