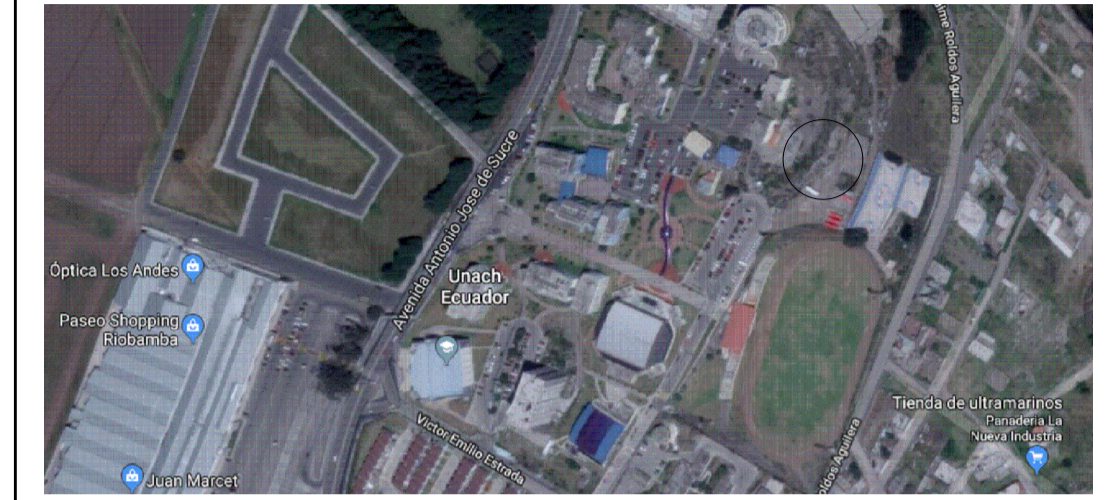


UBICACION:



SÍMBOLOS Y NOTAS TÉCNICAS:

CONTRATANTE:

UNIVERSIDAD NACIONAL DE CHIMBORAZO

PROYECTO:

ESTUDIOS Y DISEÑOS PARA LA CONSTRUCCION DEL LABORATORIO DE INGENIERIA UNACH 2018

CONTIENE:

- LOSA DE CIMENTACION N+0.20
- LOSA DE CIMENTACION N-2.50
- DETALLES

ESCALA:

LA INDICADA

FECHA:

DICIEMBRE DEL 2018

CODIGO:

ES

CONSULTOR:

ARQ. DAVID PATRICIO CARRASCO FALCONI

LAMINA:

1 DE 9

CONSULTOR:

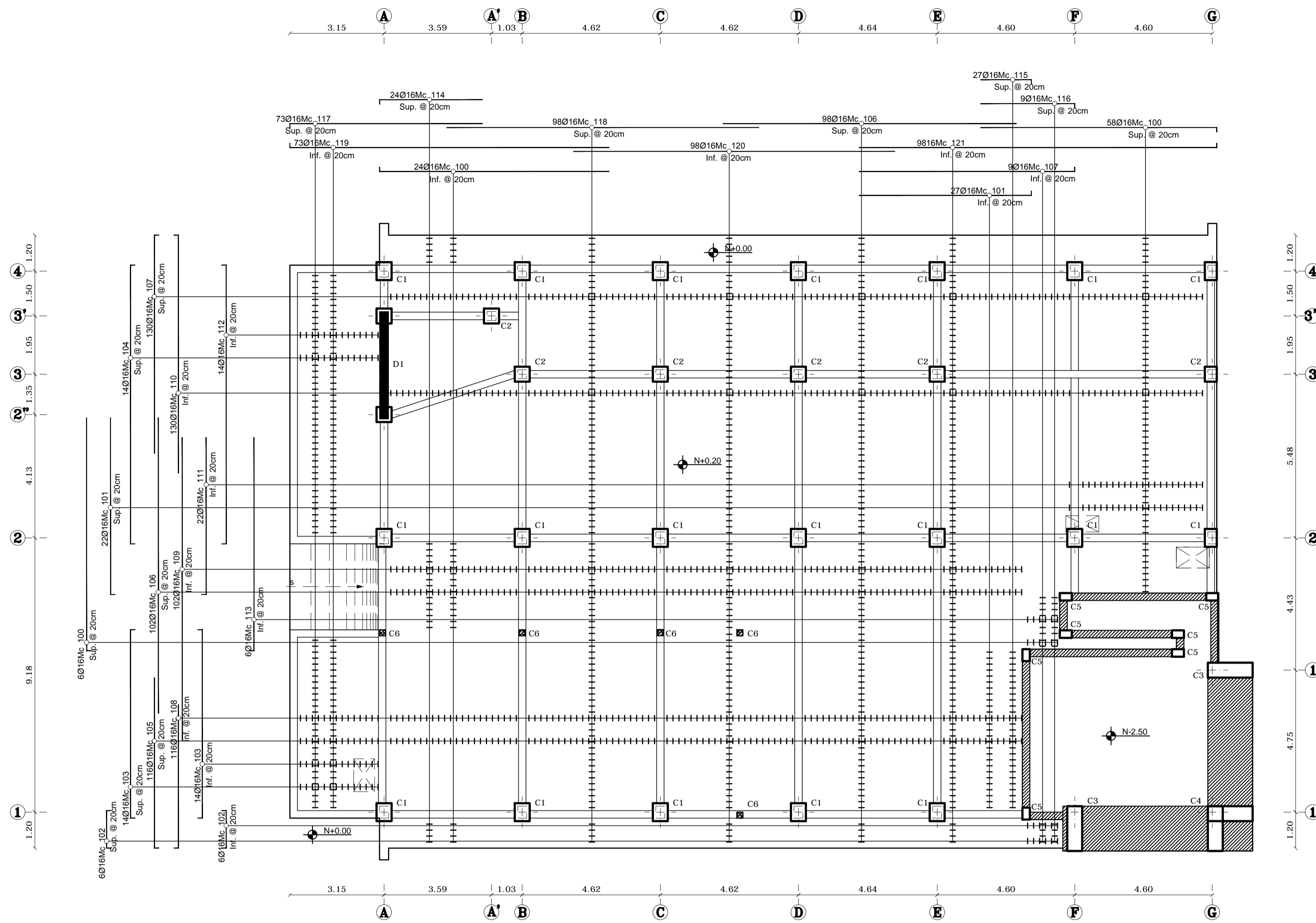
ARO DAVID CARRASCO F CONSULTOR

DISEÑO:

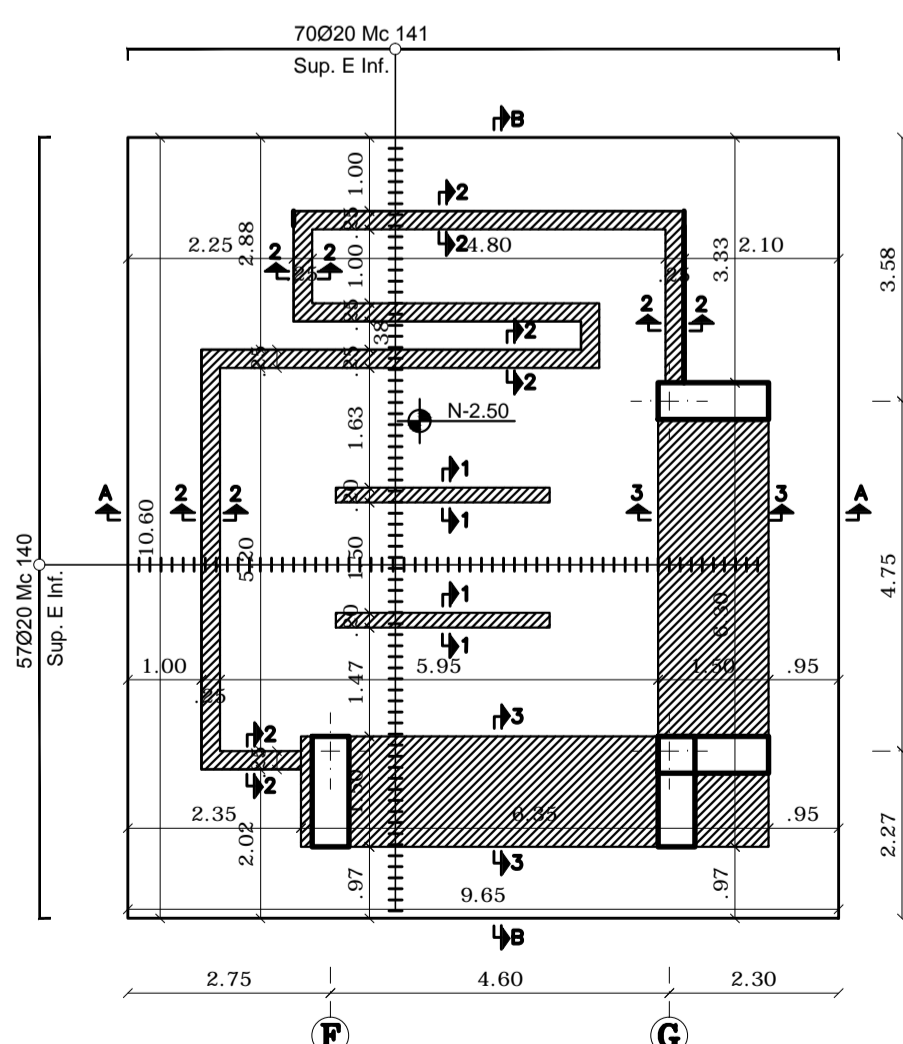
ING. RENATO MIÑO REG. SENECCYT 1019-07-795431

ADMINISTRADOR:

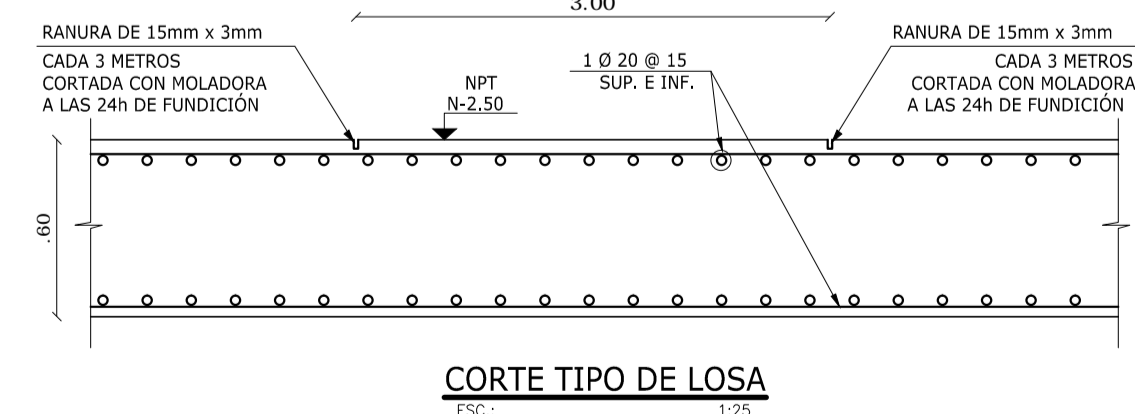
COORDINADOR DEL DEPARTAMENTO DE INFRAESTRUCTURA - UNACH



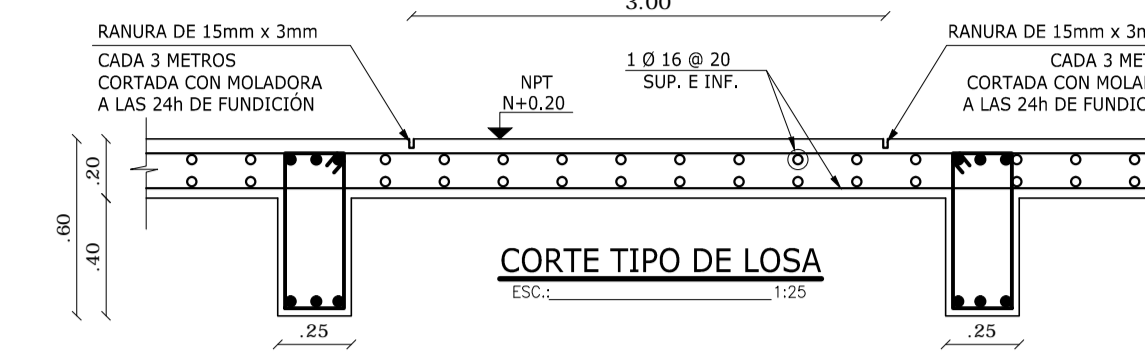
PLANTA DE CIMENTACION
Nv. +0.20
ESCALA: 1:100



PLANTA DE CIMENTACION
Nv. -2.50
ESCALA: 1:100



CORTE TIPO DE LOSA
ESCALA: 1/25

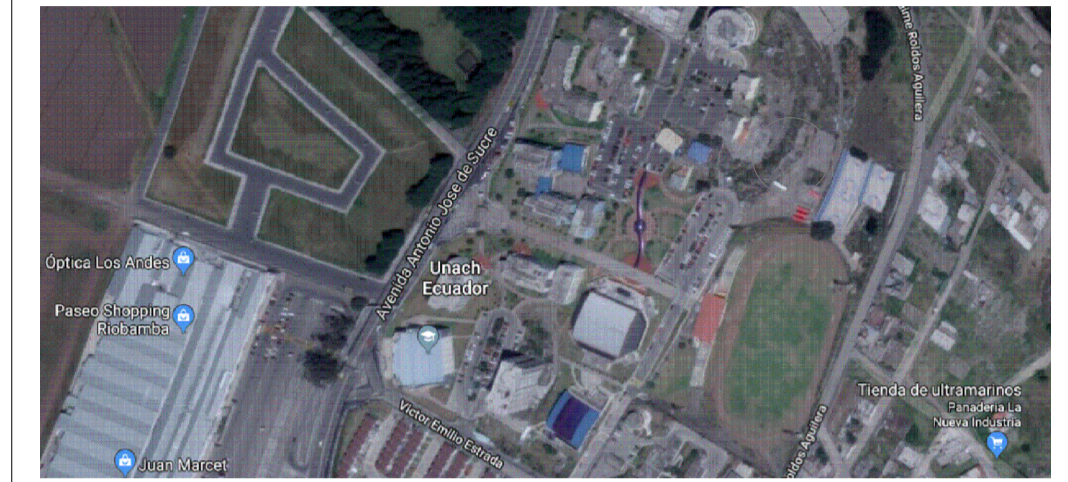


CORTE TIPO DE LOSA
ESCALA: 1/25

| PLANILLA DE MATERIALES | | | | | | | | |
|--------------------------------|----|------|-------------|-------|------|----------------|---|----------------|
| PLANILLA DE HIERROS | | | | | | | | |
| MC | Ø | TIPO | DIMENSIONES | | | LONGITUD CORTE | Nº | LONGITUD TOTAL |
| | | | a | b | c | | | |
| LOSA CIMENTACION N+0.20 | | | | | | | | |
| 100 | 16 | L | 7.80 | 0.30 | | 8.1 | 88 | 712.8 |
| 101 | 16 | L | 6.00 | 0.30 | | 6.3 | 49 | 308.7 |
| 102 | 16 | C | 1.30 | 0.30 | | 1.9 | 12 | 22.8 |
| 103 | 16 | C | 6.30 | 0.30 | | 6.9 | 28 | 193.2 |
| 104 | 16 | C | 9.40 | 0.30 | | 10.0 | 14 | 140.0 |
| 105 | 16 | L | 5.70 | 0.30 | | 6.0 | 11 | 66.0 |
| 106 | 16 | I | 10.00 | | | 10.0 | 200 | 2000.0 |
| 107 | 16 | L | 7.30 | 0.30 | | 7.6 | 139 | 1056.4 |
| 108 | 16 | L | 4.80 | 0.30 | | 5.1 | 116 | 591.6 |
| 109 | 16 | I | 10.20 | | | 10.2 | 102 | 1040.4 |
| 110 | 16 | L | 8.00 | 0.30 | | 8.3 | 130 | 1079.0 |
| 111 | 16 | L | 5.30 | 0.30 | | 5.6 | 22 | 123.2 |
| 112 | 16 | C | 9.40 | 0.30 | | 10.0 | 14 | 140.0 |
| 113 | 16 | L | 7.20 | 0.30 | | 7.5 | 6 | 45.0 |
| 114 | 16 | L | 3.50 | 0.30 | | 3.8 | 24 | 91.2 |
| 115 | 16 | L | 1.70 | 0.30 | | 2.0 | 27 | 54.0 |
| 116 | 16 | L | 3.20 | 0.30 | | 3.5 | 9 | 31.5 |
| 117 | 16 | L | 6.50 | 0.30 | | 6.8 | 73 | 496.4 |
| 118 | 16 | I | 10.50 | | | 10.5 | 98 | 1029.0 |
| 119 | 16 | L | 10.70 | 0.30 | | 11.0 | 73 | 803.0 |
| 120 | 16 | I | 10.80 | | | 10.8 | 98 | 1058.4 |
| 121 | 16 | L | 11.70 | 0.30 | | 12.0 | 98 | 1176.0 |
| LOSA CIMENTACION N-2.50 | | | | | | | | |
| 140 | 20 | C | 10.60 | 0.50 | | 11.6 | 114 | 1322.4 |
| 141 | 20 | C | 9.70 | 0.50 | | 10.7 | 140 | 1498.0 |
| RESUMEN DE MATERIALES | | | | | | | f_y = 4200 Kg/cm² | |
| ACERO | | | | | | | f_c = 210 Kg/cm² | |
| Ø (mm) | 8 | 10 | 12 | 16 | 20 | 18 | TOTAL | |
| Longitud (m) | 0 | 0 | 0 | 12259 | 2820 | 0 | | |
| Peso Neto (kg) | 0 | 0 | 0 | 19331 | 6949 | 0 | 26281 | |
| HORMIGON (M3) | | | | | | | f_c = 210 Kg/cm² | |
| LOSA CIMENTACION N+0.20 | | | | | | | 117.19 | |
| LOSA CIMENTACION N-2.50 | | | | | | | 61.37 | |
| TOTAL | | | | | | | 178.57 | |

| ESPECIFICACIONES TECNICAS | |
|--|-------------------------|
| CODIGOS/ESTANDARES UTILIZADOS | |
| - CODIGO ECUATORIANO DE LA CONSTRUCCION, NEC 2015 | |
| - MANUAL OF STEEL CONSTRUCTION AISI-360 Y AISI-341 | |
| - INSTITUTO AMERICANO DEL CONCRETO, ACI 2014 | |
| CARGAS DE DISEÑO | |
| 1.- CARGA MUERTA EN CUBIERTA | 400 Kg/m ² |
| 2.- CARGA VIVA EN CUBIERTA | 100 Kg/m ² |
| 3.- CARGA TOTAL EN CUBIERTA | 500 Kg/m ² |
| 4.- CARGA MUERTA DE ENTRESO | 300 Kg/m ² |
| 5.- CARGA VIVA | 500 Kg/m ² |
| 6.- CARGA TOTAL DE PISO | 800 Kg/m ² |
| 7.- CARGA DE VIENTO | 50 Kg/m ² |
| 8.- COEFICIENTE SISMICO NEC 2015 | 17% |
| 9.- ESFUERZO ADMISIBLE DE TRABAJO DE SUELO NATURAL | 12 T/m ² |
| 10.- ESFUERZO MAXIMO DE DISEÑO DEL SUELO | 12 T/m ² |
| ESFUERZOS DE DISEÑO DE MATERIALES UTILIZADOS | |
| 1.- RESISTENCIA CILINDRICA DEL HORMIGON A COMPRESION f _c | 210 Kg/cm ² |
| 2.- ESFUERZO DE FLUENCIA DEL REFUERZO (f _y) | 4200 Kg/cm ² |
| 3.- ESFUERZO DE FLUENCIA DEL ACERO ESTRUCTURAL | |
| a.- LAMINADO EN CALIENTE (f _y) | 3500 Kg/cm ² |
| b.- CONFORMADO EN FRO (f _y) | 2400 Kg/cm ² |
| 4.- RESISTENCIA A LA RUPURA POR COMPRESION DE LA MAMPORERA EN LAS PAREDES (f _c) | 30 Kg/cm ² |
| 5.- RESISTENCIA A LA RUPURA POR COMPRESION DE DEL MORTERO DE LAS PAREDES (f _c) | 140 Kg/cm ² |
| 6.- ESFUERZO DE FLUENCIA DEL HIERRO | 4200 Kg/cm ² |
| OBSERVACIONES | |
| 1.- TRANSAPES MÍNIMO DE VARILLAS DONDE NO SE ESPECIFIQUE = 60Ø. | |
| 2.- SE COLOCARA REPARTIDO DE 5 cm. COMO BASE DE LA CIMENTACION. | |
| 3.- EL NIVEL NATURAL DEL SUELO, ESPESOR DE RELLENOS CARACTERISTICAS DE COMPACTACION, TALUDES Y ALANQUES DE LOS CORTES Y RELLENOS DEL TERRENO SE ESPECIFICAN EN LAS LAMINAS INDICADAS | |
| 4.- REQUERIMIENTO MÍNIMO DEL REFUERZO PARA CIMENTOS 5 cm. | |
| 5.- ES RESPONSABILIDAD DEL CONSTRUCTOR VERIFICAR LAS CANTIDADES DEL MATERIAL. | |
| 6.- LA SUELDA A UTILIZARSE SERA 7018, 8018 Y 6011 | |
| 7.- LA SUELDA UTILIZADA SERA ESMERILADA HASTA IGUALARLA CON PERFILES. | |
| ESPECIFICACIONES | |
| LA LOSA SERA TERMINADA AL MISMO MOMENTO DE SU FUNDICION, CON EL REFUERZO SEÑALADO EN LOS PLANOS, ENLAZADO CON LA REGLA MAESTRA, SIN PROTUBERANCIAS NI DEPRESIONES. DADAS LAS CONDICIONES PARTICULARES DE ESTE TERRENO, SE TENDRA CUIDADO ESPECIAL EN COORDINAR PREVIAMENTE AL INICIO DE LA FUNDICION DEBERA VERIFICARSE AL ARMADO MISMO DE LA LOSA, LOS HIERROS PARA COLUMNAS Y MUROS, LAS INSTALACIONES EMPOTRADAS Y OTRAS CONDICIONES DE OBRA QUE SE DECIDAN REALIZAR. | |
| LA COLOCACION DEL HORMIGON DEBE HACERSE POR FRENTES CONTINUOS Y SUS CORTES SERAN NORMALES A LA SUPERFICIE DE APOYO Y EN LINEA RECTA. | |

UBICACION:



SIMBOLOS Y NOTAS TECNICAS:

CONTRATANTE:

UNIVERSIDAD NACIONAL DE CHIMBORAZO

PROYECTO:

ESTUDIOS Y DISEÑOS PARA LA CONSTRUCCION DEL LABORATORIO DE INGENIERIA UNACH 2018

CONTIENE:

- DETALLE DE MUROS
- CORTE DE LOSA CIMENTACION N-2.50

ESCALA:

LA INDICADA

FECHA:

DICIEMBRE DEL 2018

CODIGO:

ES

CONSULTOR:

ARQ. DAVID PATRICIO CARRASCO FALCONI

LAMINA:

2 DE 9

CONSULTOR:

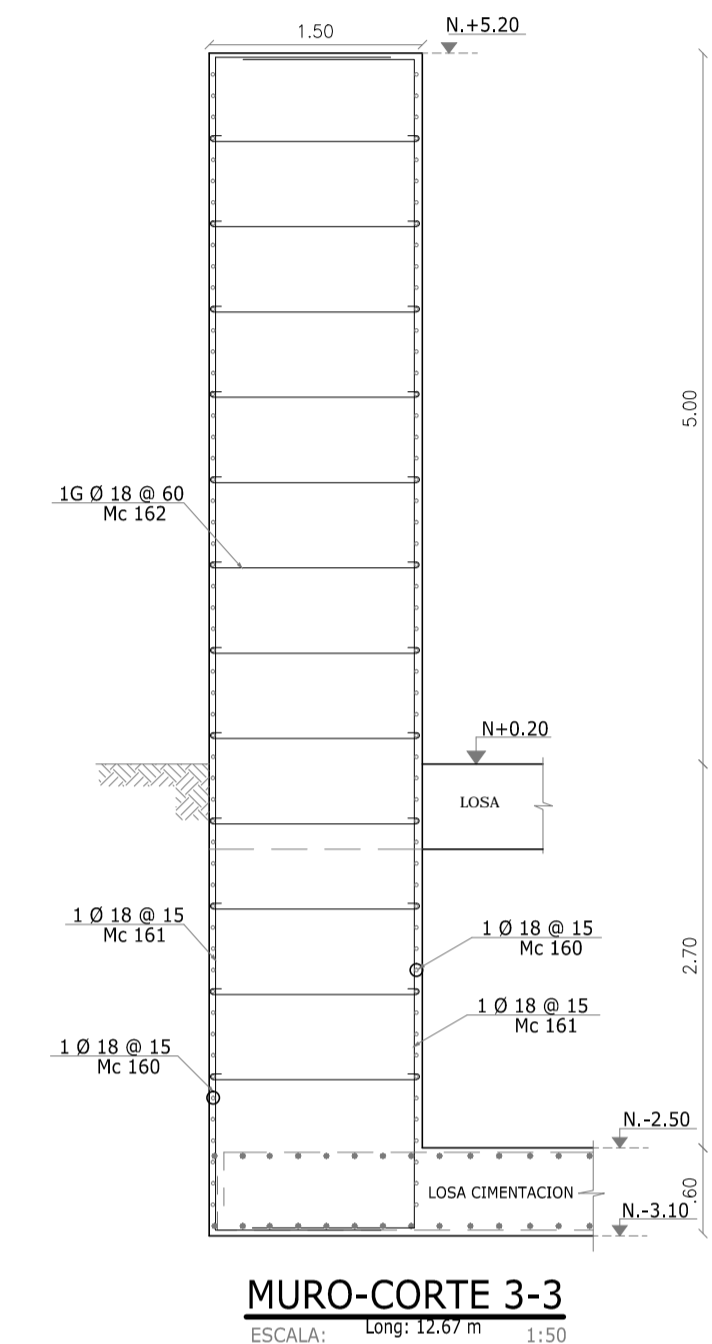
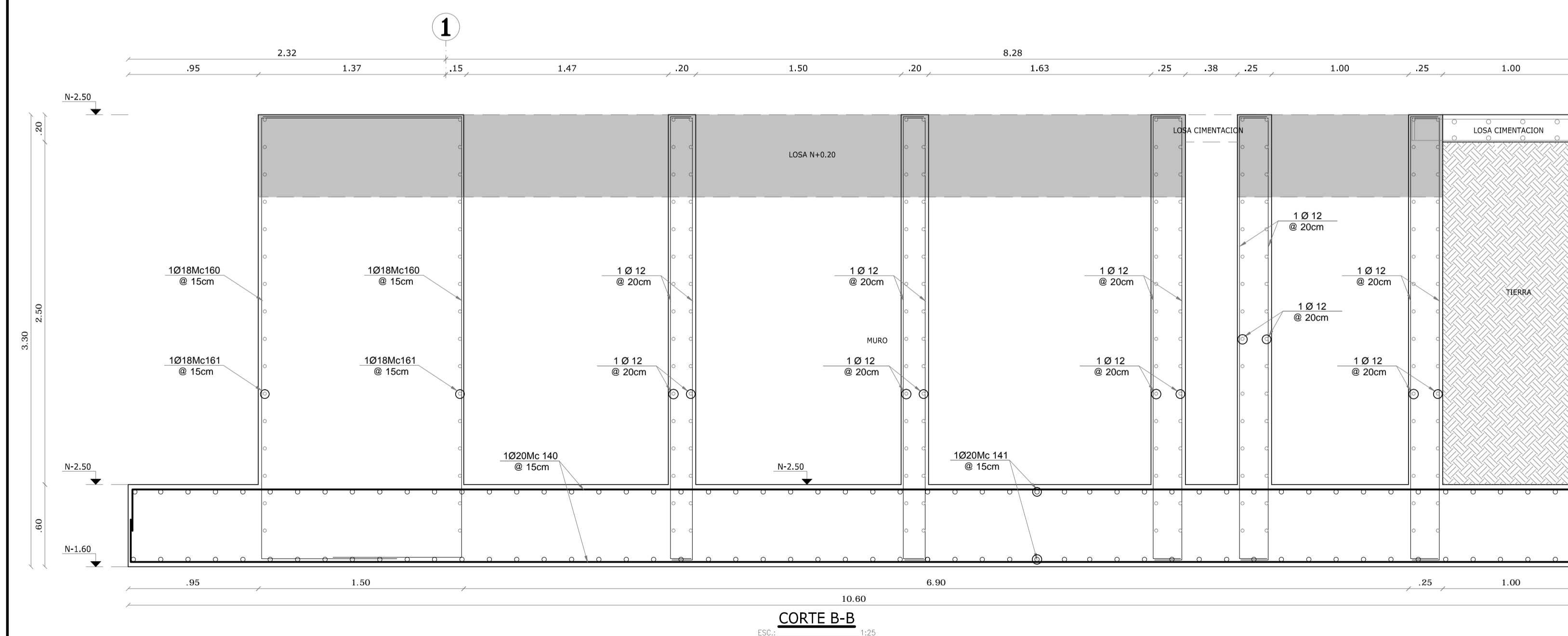
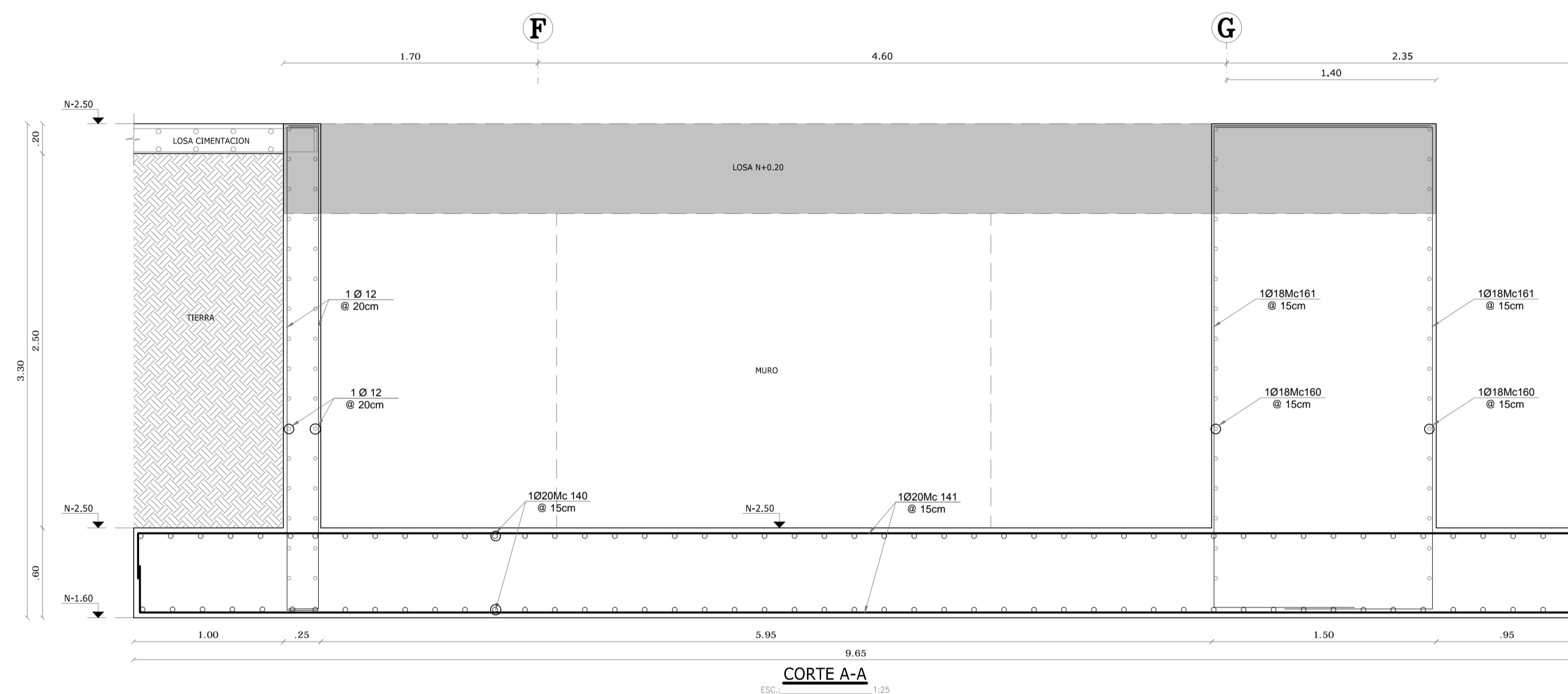
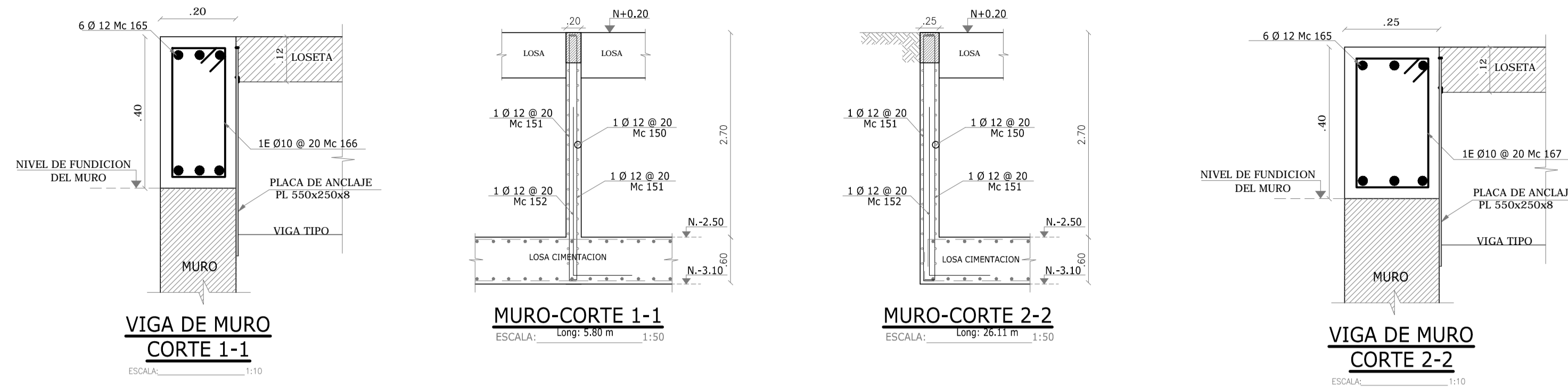
DISEÑO:

ADMINISTRADOR:

ARQ DAVID CARRASCO F CONSULTOR

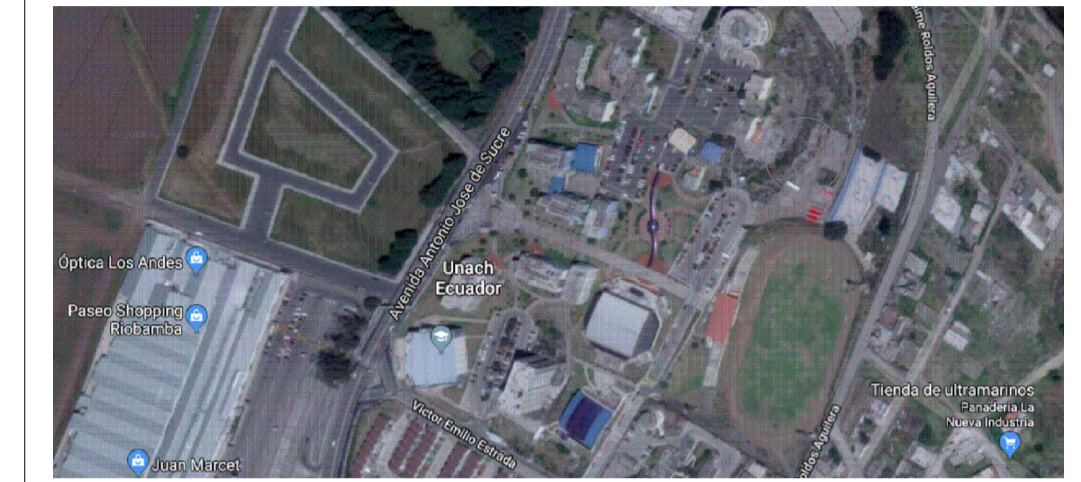
ING. RENATO MIÑO REG. SENEYCIT 1019-07-795431

COORDINADOR DEL DEPARTAMENTO DE INFRAESTRUCTURA - UNACH



| PLANILLA DE MATERIALES | | | | | | | | |
|--------------------------------------|----|------|-------------|------|------|----------------|---------------|----------------|
| PLANILLA DE HIERROS | | | | | | | | |
| MC | Ø | TIPO | DIMENSIONES | | | LONGITUD CORTE | Nº | LONGITUD TOTAL |
| | | | a | b | c | | | |
| MURO-CORTE 1-1 | | | | | | | | |
| 150 | 12 | I | VARIA | | | 12.0 | 17.0 | 204.0 |
| 151 | 12 | C | 3.20 | 0.20 | | 3.6 | 58 | 208.8 |
| 152 | 12 | L | 2.20 | 0.80 | | 3.0 | 29 | 87.0 |
| MURO-CORTE 2-2 | | | | | | | | |
| 150 | 12 | I | VARIA | | | 12.0 | 77.0 | 924.0 |
| 151 | 12 | C | 3.20 | 0.20 | | 3.6 | 261 | 940.0 |
| 152 | 12 | L | 2.20 | 0.80 | | 3.0 | 131 | 391.8 |
| MURO-CORTE 3-3 | | | | | | | | |
| 160 | 18 | I | VARIA | | | 12.0 | 122.0 | 1464.0 |
| 161 | 18 | C | 8.30 | 0.20 | | 8.7 | 169 | 1469.4 |
| 162 | 18 | G | 1.50 | | 0.10 | 1.7 | 364 | 618.8 |
| VIGAS DE MURO | | | | | | | | |
| 165 | 12 | I | VARIA | | | 12.0 | 17 | 204.0 |
| 166 | 10 | O | 0.35 | 0.15 | | 0.10 | 29 | 34.8 |
| 167 | 10 | O | 0.35 | 0.20 | | 0.10 | 131 | 169.8 |
| RESUMEN DE MATERIALES | | | | | | | | |
| ACERO fy=4200 Kg/cm2 | | | | | | | | |
| O(mm) | 8 | 10 | 12 | 14 | 16 | 18 | TOTAL | |
| Longitud (m) | 0 | 205 | 2960 | 0 | 0 | 0 | 3552 | |
| Peso Neto (kg) | 0 | 126 | 2625 | 0 | 0 | 0 | 7090 | 9841 |
| HORMIGON (M3) fe = 210 kg/cm2 | | | | | | | | |
| MUROS | | | | | | | 167.23 | |
| TOTAL | | | | | | | 167.23 | |

UBICACION:



SIMBOLOS Y NOTAS TECNICAS:

CONTRATANTE:

UNIVERSIDAD NACIONAL DE CHIMBORAZO

PROYECTO:

ESTUDIOS Y DISEÑOS PARA LA CONSTRUCCION DEL LABORATORIO DE INGENIERIA UNACH 2018

CONTIENE:

- VIGAS DE CIMENTACION
- DETALLES

ESCALA:

LA INDICADA

FECHA:

DICIEMBRE DEL 2018

CODIGO:

ES

CONSULTOR:

ARQ. DAVID PATRICIO CARRASCO FALCONI

LAMINA:

3 DE 9

CONSULTOR:

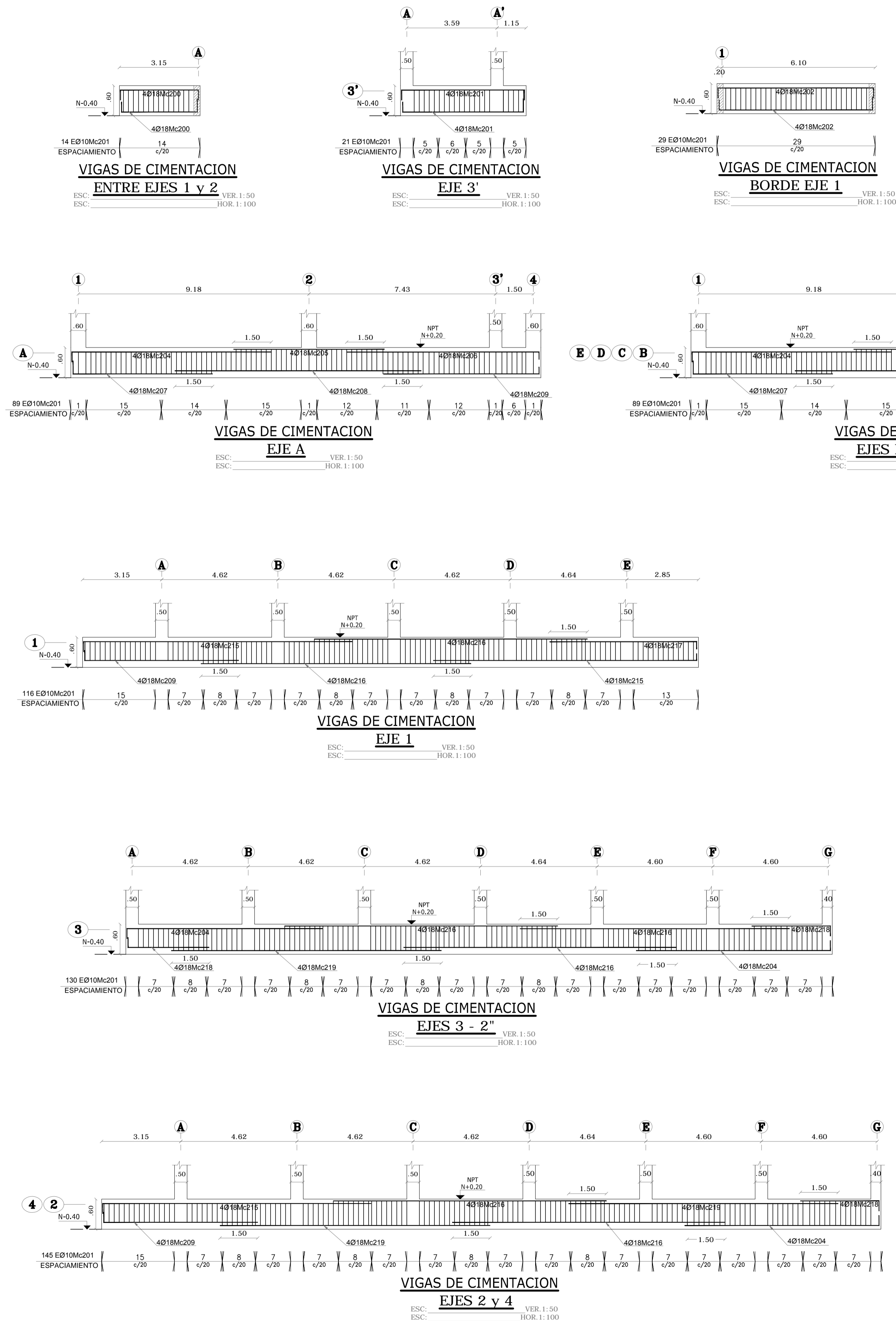
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ADMINISTRADOR:

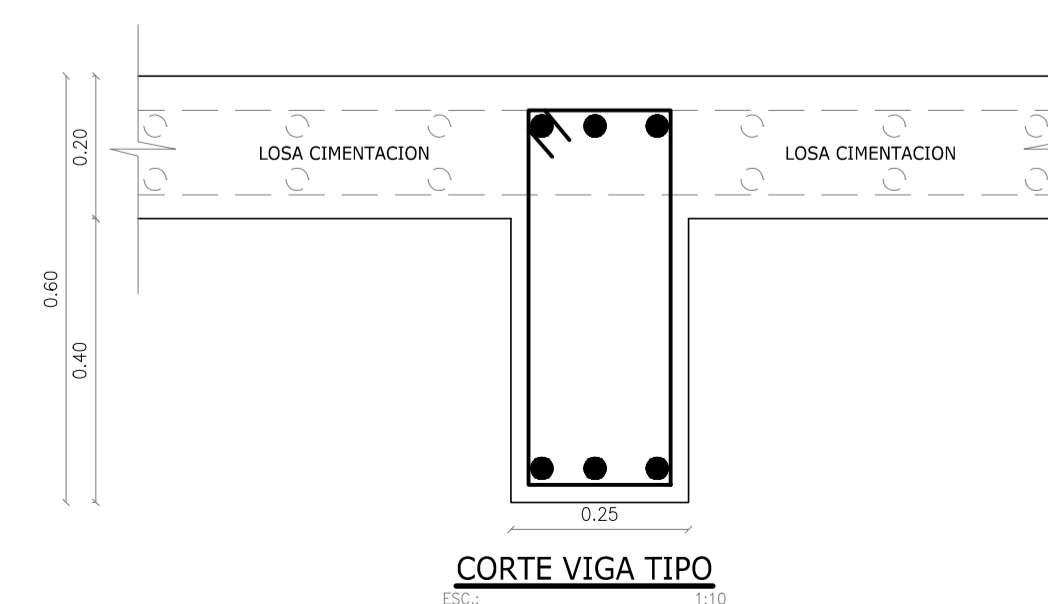
ARQ DAVID CARRASCO F
CONSULTOR

ING. RENATO MIÑO
REG. SENEYCIT 1019-07-795431

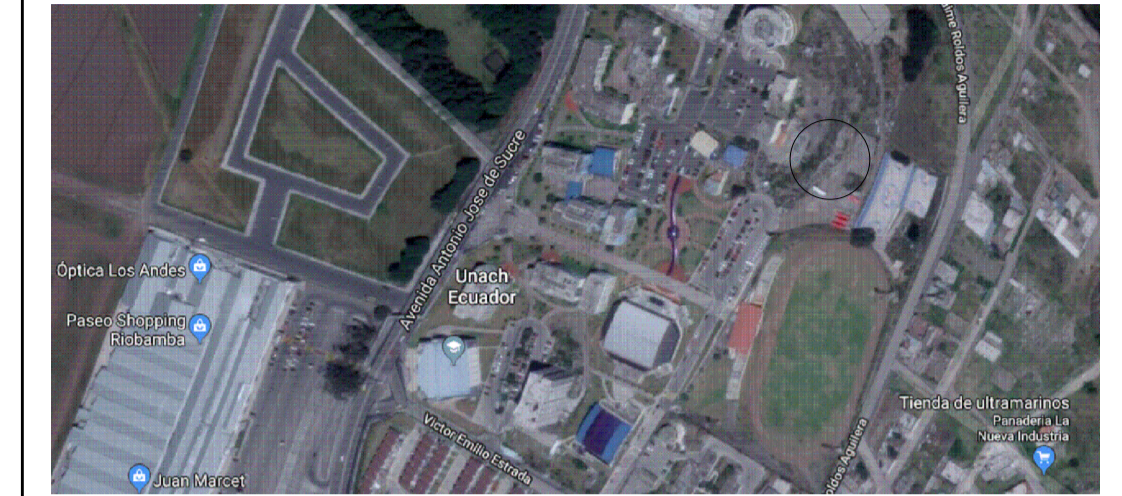
COORDINADOR DEL DEPARTAMENTO DE
INFRAESTRUCTURA - UNACH



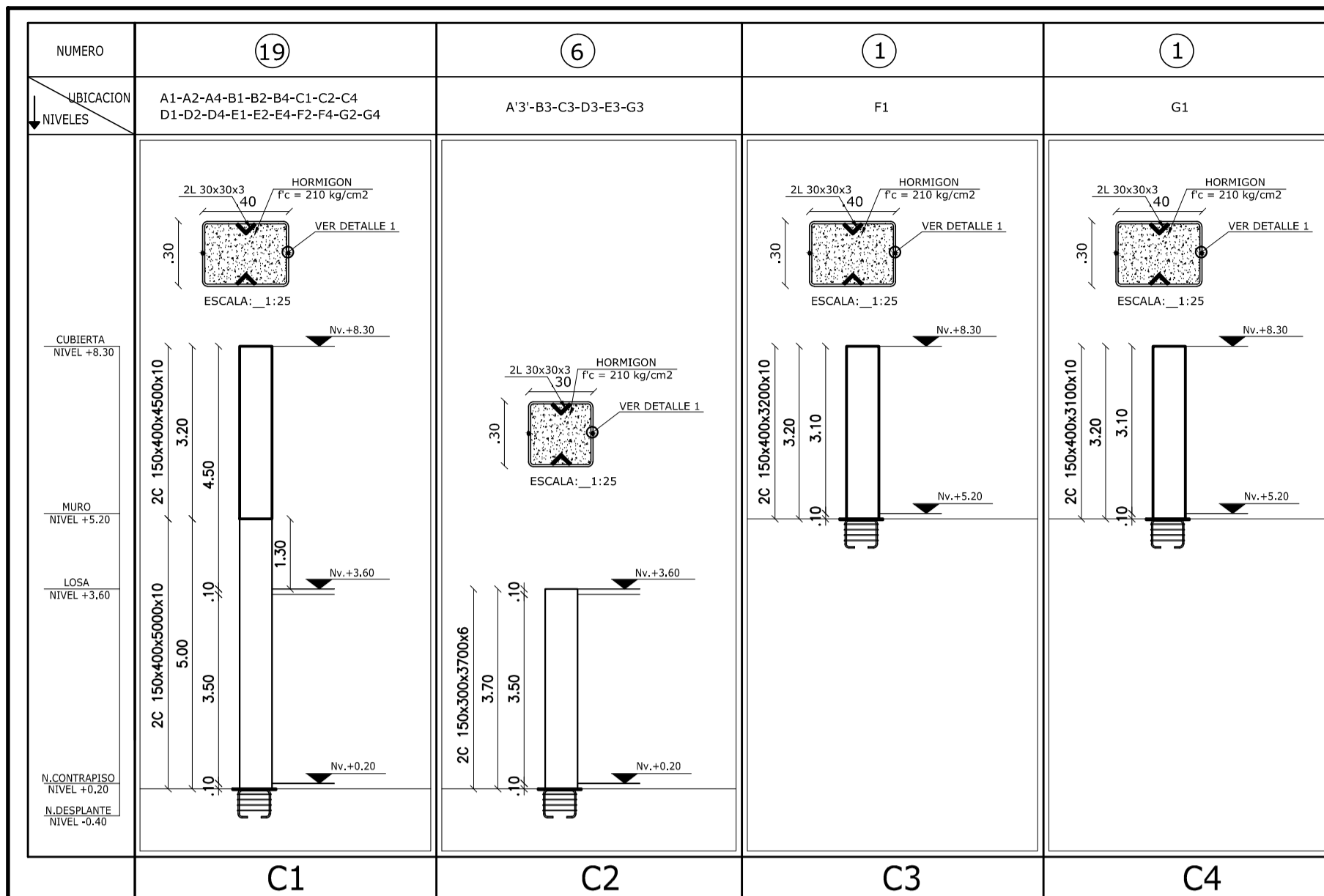
| PLANILLA DE MATERIALES | | | | | | | | | | |
|--|------|------|-------------|------|----|------|----------------|--------------|----------------|--|
| PLANILLA DE HIERROS | | | | | | | | | | |
| MC | Ø | TIPO | DIMENSIONES | | | | LONGITUD CORTE | Nº | LONGITUD TOTAL | |
| | | | a | b | c | g | | | | |
| VIGAS DE CIMENTACIÓN | | | | | | | | | | |
| 200 | 18 | C | 3.10 | 0.40 | | | 3.9 | 8 | 31.2 | |
| 201 | 18 | C | 4.80 | 0.40 | | | 5.6 | 8 | 44.8 | |
| 202 | 18 | C | 6.20 | 0.40 | | | 7.0 | 8 | 56.0 | |
| 203 | 18 | C | 9.20 | 0.40 | | | 10.0 | 8 | 80.0 | |
| 204 | 18 | L | 8.00 | 0.40 | | | 8.4 | 36 | 302.4 | |
| 205 | 18 | I | 6.00 | 0.40 | | | 6.0 | 4 | 24.0 | |
| 206 | 18 | L | 7.60 | 0.40 | | | 8.0 | 4 | 32.0 | |
| 207 | 18 | L | 5.60 | 0.40 | | | 6.0 | 20 | 120.0 | |
| 208 | 18 | I | 10.00 | 0.40 | | | 10.0 | 4 | 40.0 | |
| 209 | 18 | L | 6.20 | 0.40 | | | 6.6 | 16 | 105.6 | |
| 210 | 18 | I | 11.50 | 0.40 | | | 11.5 | 16 | 184.0 | |
| 211 | 18 | L | 2.20 | 0.40 | | | 2.6 | 16 | 41.6 | |
| 212 | 18 | I | 9.00 | 0.40 | | | 9.0 | 16 | 144.0 | |
| 213 | 18 | L | 7.10 | 0.40 | | | 7.5 | 16 | 120.0 | |
| 214 | 18 | C | 11.00 | 0.40 | | | 11.8 | 16 | 188.8 | |
| 215 | 18 | L | 10.60 | 0.40 | | | 11.0 | 16 | 176.0 | |
| 216 | 18 | I | 11.00 | 0.40 | | | 11.0 | 36 | 396.0 | |
| 217 | 18 | L | 6.00 | 0.40 | | | 6.4 | 4 | 25.6 | |
| 218 | 18 | L | 3.20 | 0.40 | | | 3.6 | 16 | 57.6 | |
| 219 | 18 | I | 10.70 | 0.40 | | | 10.7 | 20 | 214.0 | |
| 220 | 10 | O | 0.20 | 0.75 | | 0.10 | 2.1 | 1163 | 2442.3 | |
| RESUMEN DE MATERIALES | | | | | | | | | | |
| ACERO $f_y = 4200 \text{ Kg/cm}^2$ | | | | | | | | | | |
| Ø(mm) | 10 | 12 | 16 | 18 | 20 | 32 | TOTAL | | | |
| Longitud (m) | 2442 | 0 | 0 | 2384 | 0 | 0 | | | | |
| Peso Neto (kg) | 1504 | 0 | 0 | 4757 | 0 | 0 | | | 6262 | |
| HORMIGON (M3) $f_c = 210 \text{ kg/cm}^2$ | | | | | | | | | | |
| VIGAS DE CIMENTACIÓN | | | | | | | | 25.41 | | |
| TOTAL | | | | | | | | 25.41 | | |



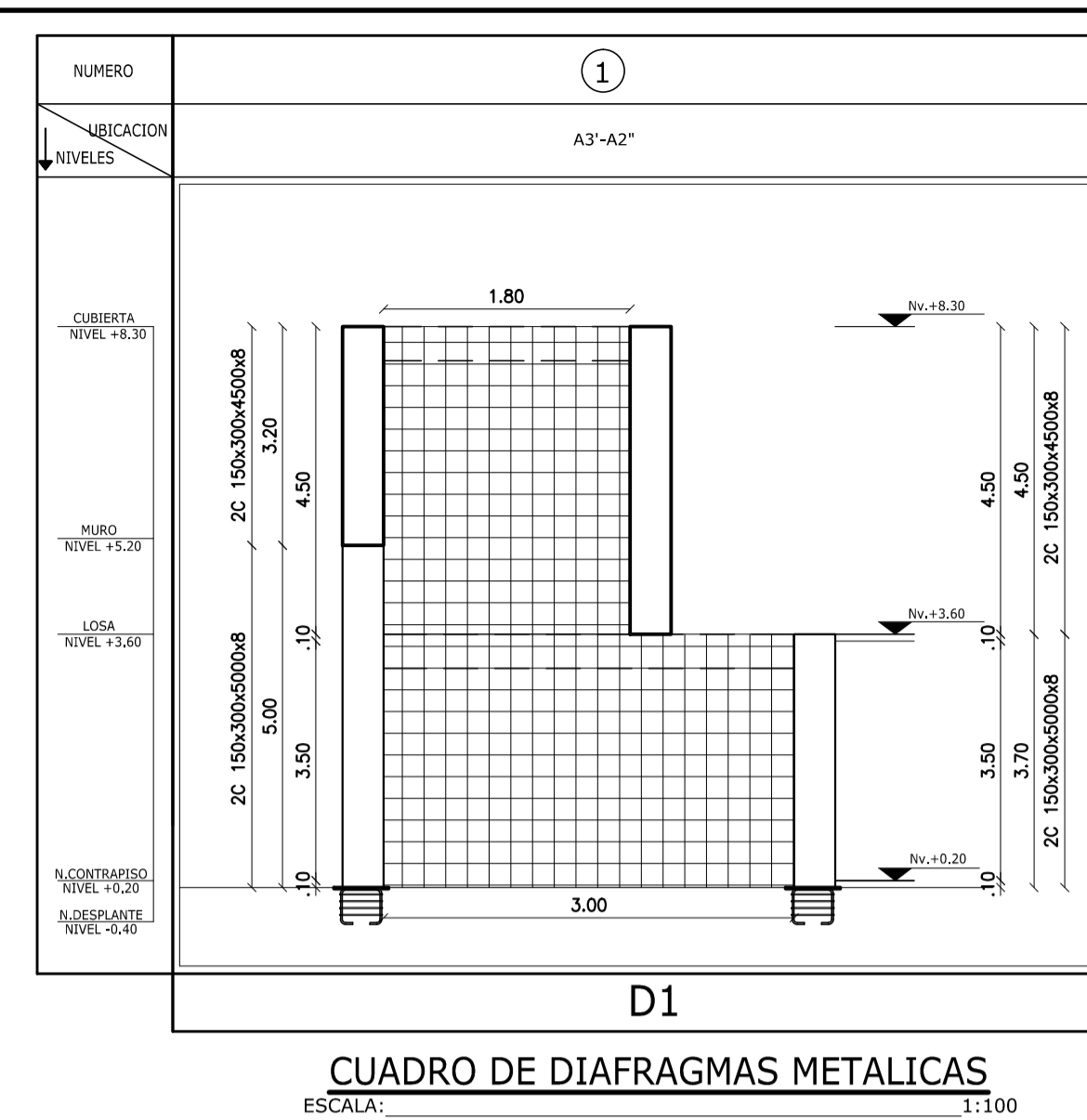
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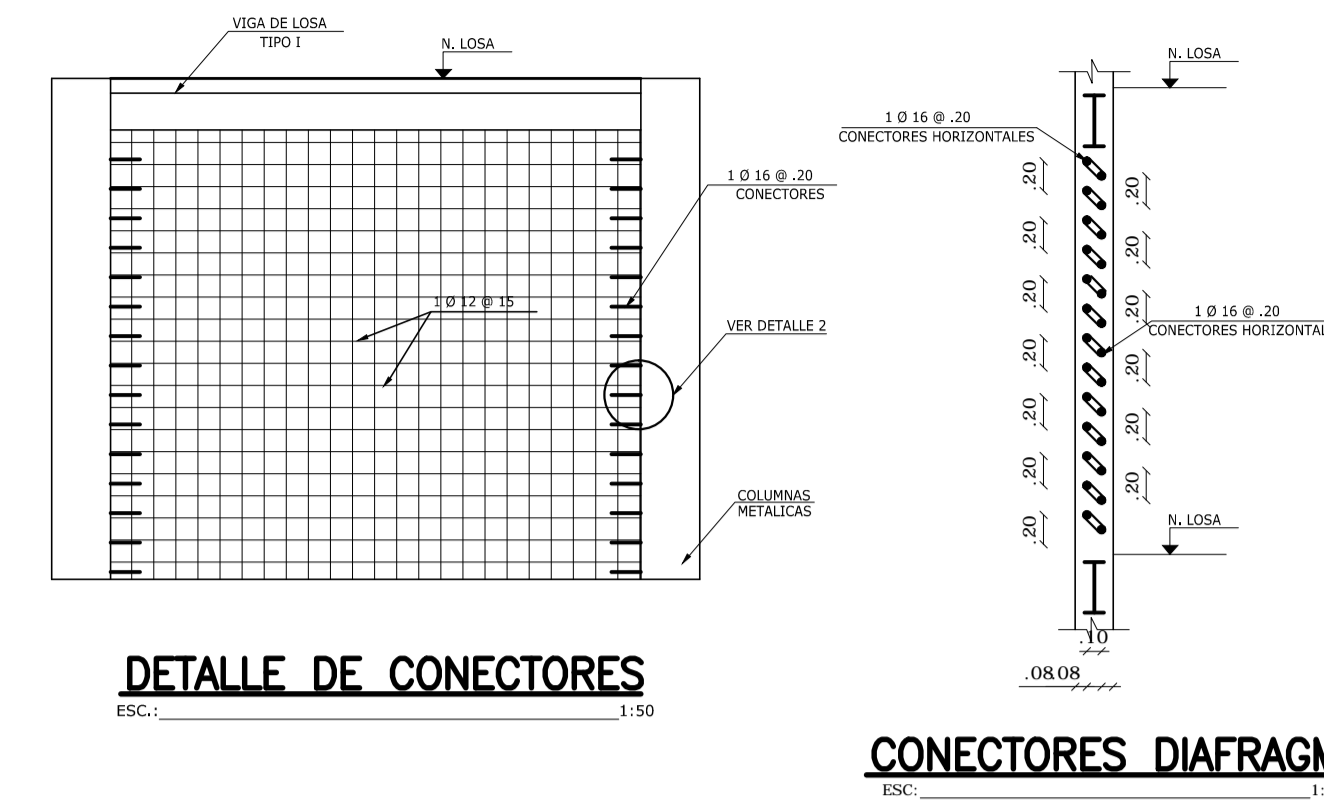
SIMBOLOS Y NOTAS TECNICAS:



CUADRO DE COLUMNAS METALICAS
ESCALA: 1:100



CUADRO DE DIAFRAGMAS METALICAS
ESCALA: 1:100

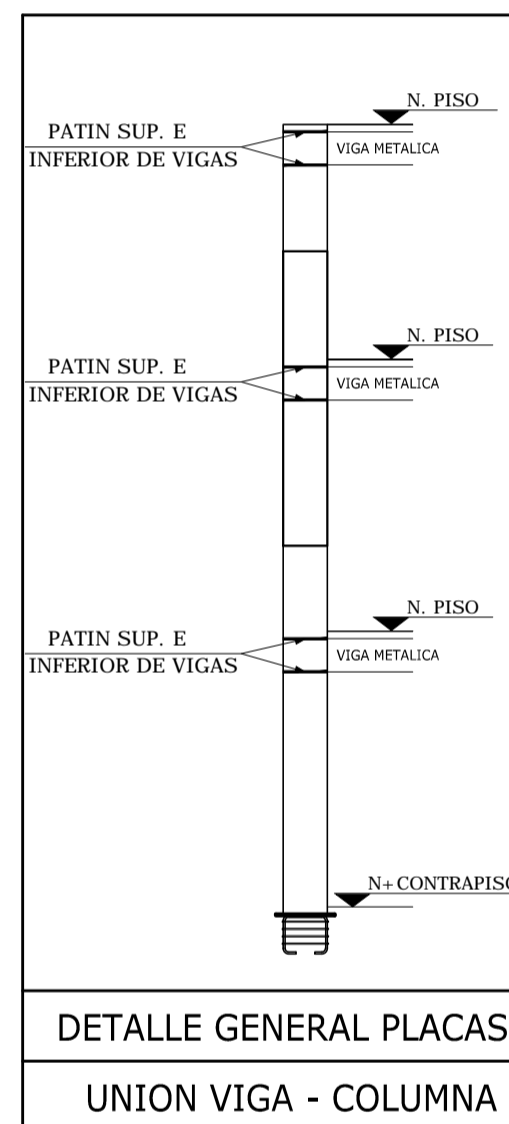


DETALLE DE CONECTORES

CONECTORES DIAFRAGMA

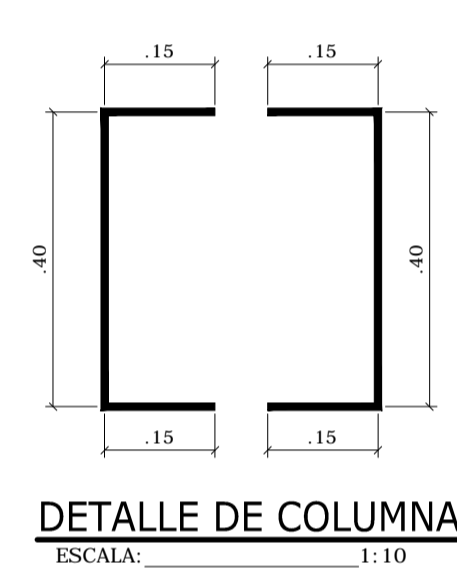
| PLANILLA DE MATERIALES | | | | | | | | | |
|--|----|------|-------------|------|---|---|----------------|------|----------------|
| PLANILLA DE HIERROS | | | | | | | | | |
| MC | Ø | TIPO | DIMENSIONES | | | | LONGITUD CORTE | Nº | LONGITUD TOTAL |
| | | | a | b | c | g | | | |
| DIAFRAGMAS | | | | | | | | | |
| 280 | 12 | I | VARIA | | | | 12,0 | 22,0 | 264,0 |
| 281 | 12 | I | 3,00 | | | | 3,0 | 48 | 144,0 |
| 282 | 12 | I | 1,80 | | | | 1,8 | 10 | 18,0 |
| 283 | 16 | U | 0,10 | 0,40 | | | 0,9 | 84 | 75,6 |
| RESUMEN DE MATERIALES | | | | | | | | | |
| f _y = 4200 Kg/cm ² | | | | | | | | | |
| Ø (mm) | 8 | 10 | 12 | 14 | | | 16 | 18 | TOTAL |
| Longitud (m) | 0 | 0 | 426 | 0 | 0 | 0 | 76 | 0 | |
| Peso Neto (kg) | 0 | 0 | 378 | 0 | 0 | 0 | 119 | 0 | 497 |
| HORMIGON (M3) | | | | | | | | | |
| f _c = 210 kg/cm ² | | | | | | | | | |
| DIAFRAGMAS | | | | | | | | | |
| TOTAL | | | | | | | | | |

| PLANILLA DE MATERIALES | | | | | | | | | |
|--|----|------|-------------|------|---|------|----------------|------|----------------|
| PLANILLA DE HIERROS | | | | | | | | | |
| MC | Ø | TIPO | DIMENSIONES | | | | LONGITUD CORTE | Nº | LONGITUD TOTAL |
| | | | a | b | c | g | | | |
| COLUMNAS DE MURO | | | | | | | | | |
| 250 | 20 | C | 8,40 | 0,30 | | | 9,0 | 92,0 | 828,0 |
| 251 | 16 | C | 3,40 | 0,30 | | | 4,0 | 56,0 | 224,0 |
| 252 | 12 | C | 4,00 | 0,30 | | | 4,6 | 24,0 | 110,4 |
| 255 | 12 | O | 0,45 | 1,45 | | 0,10 | 4,0 | 336 | 1344,0 |
| 256 | 12 | O | 0,45 | 0,85 | | 0,10 | 2,8 | 168 | 470,4 |
| 257 | 12 | O | 0,20 | 1,45 | | 0,10 | 3,5 | 336 | 1176,0 |
| 258 | 12 | G | 0,45 | | | 0,10 | 0,65 | 840 | 546,0 |
| 259 | 10 | O | 0,15 | 0,35 | | 0,10 | 1,2 | 231 | 277,2 |
| 260 | 10 | G | 0,15 | | | 0,10 | 0,35 | 462 | 161,7 |
| 261 | 10 | O | 0,15 | 0,15 | | 0,10 | 0,8 | 240 | 192,0 |
| RESUMEN DE MATERIALES | | | | | | | | | |
| f _y = 4200 Kg/cm ² | | | | | | | | | |
| Ø (mm) | 8 | 10 | 12 | 14 | | | 16 | 18 | TOTAL |
| Longitud (m) | 0 | 0 | 3647 | 0 | 0 | 0 | 224 | 0 | |
| Peso Neto (kg) | 0 | 0 | 3235 | 0 | 0 | 0 | 353 | 0 | 3588 |
| HORMIGON (M3) | | | | | | | | | |
| f _c = 210 kg/cm ² | | | | | | | | | |
| COLUMNAS | | | | | | | | | |
| COLUMNAS METÁLICAS | | | | | | | | | |
| TOTAL | | | | | | | | | |

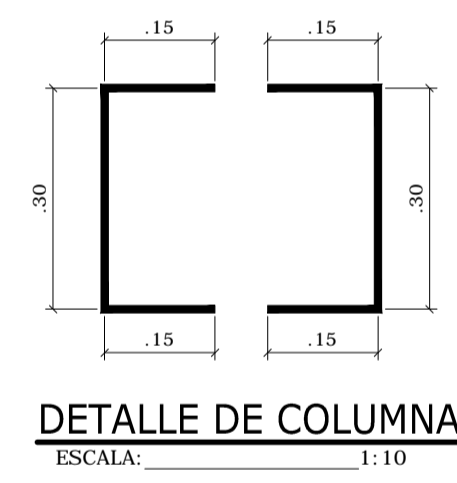


DETALLE GENERAL PLACAS
UNION VIGA - COLUMNA

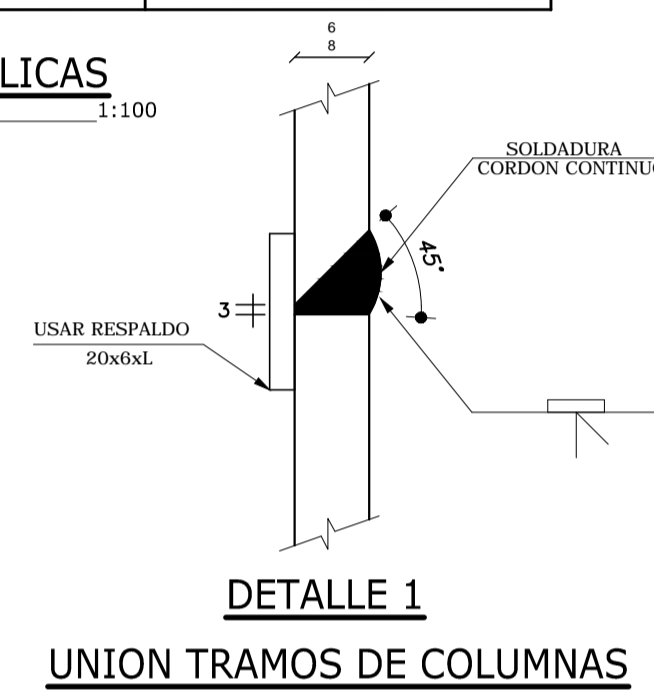
CUADRO DE COLUMNAS METALICAS
ESCALA: 1:100



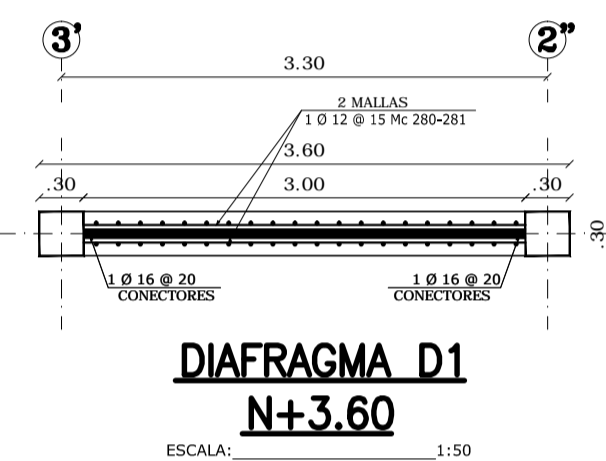
DETALLE DE COLUMNA
ESCALA: 1:10



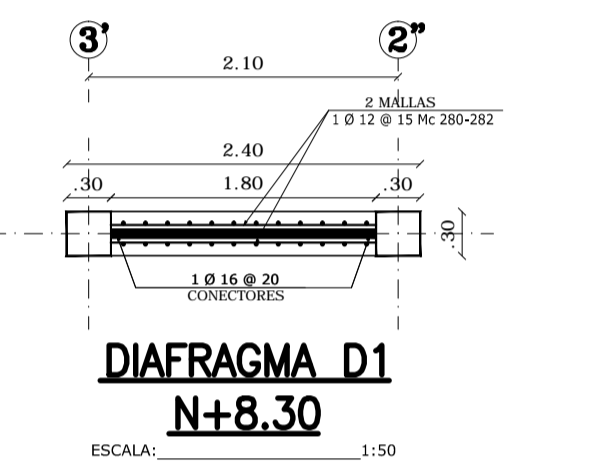
DETALLE DE COLUMNA
ESCALA: 1:10



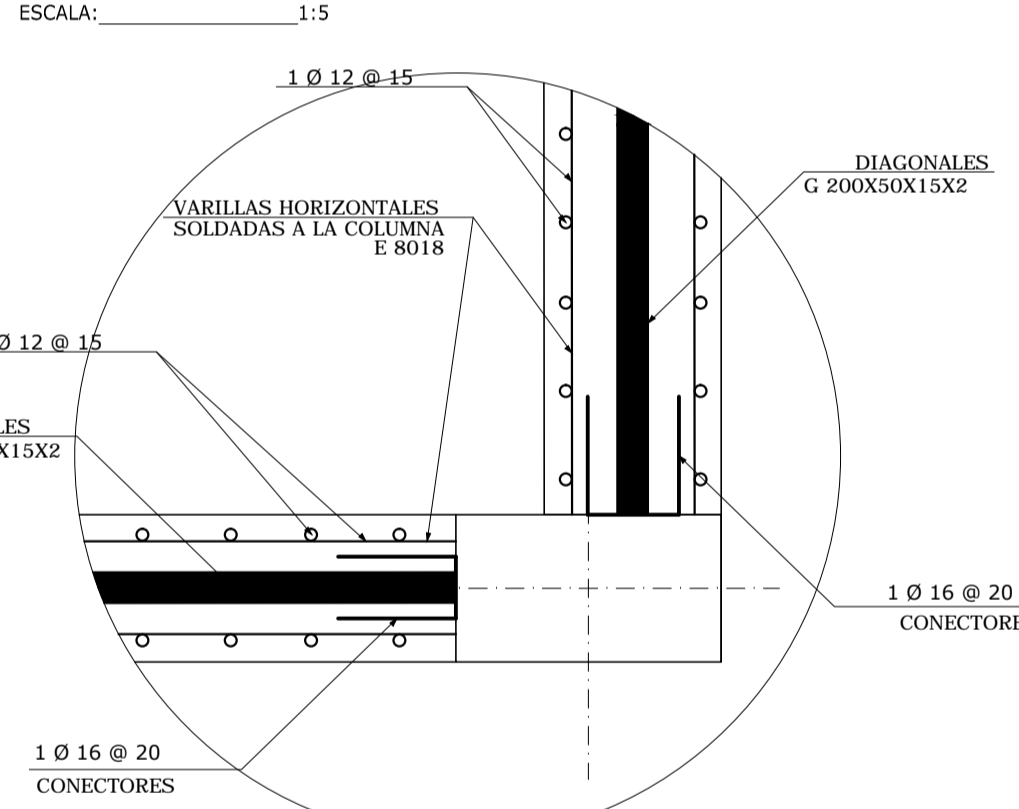
DETALLE 1
UNION TRAMOS DE COLUMNAS
ESCALA: 1:5



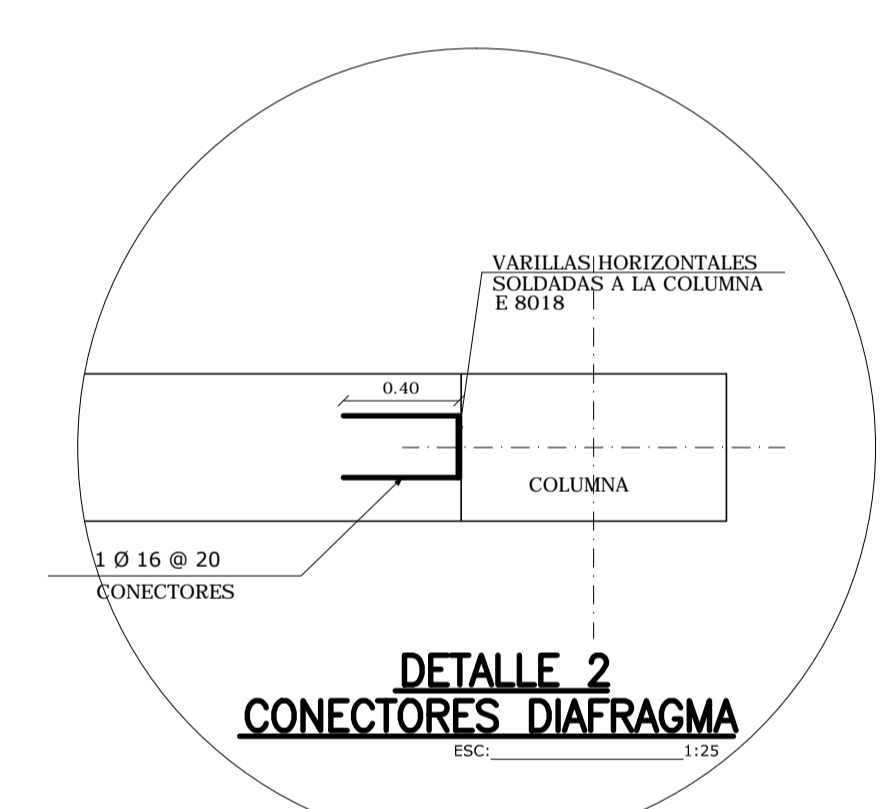
DIAFRAGMA D1
N+3.60
ESCALA: 1:50



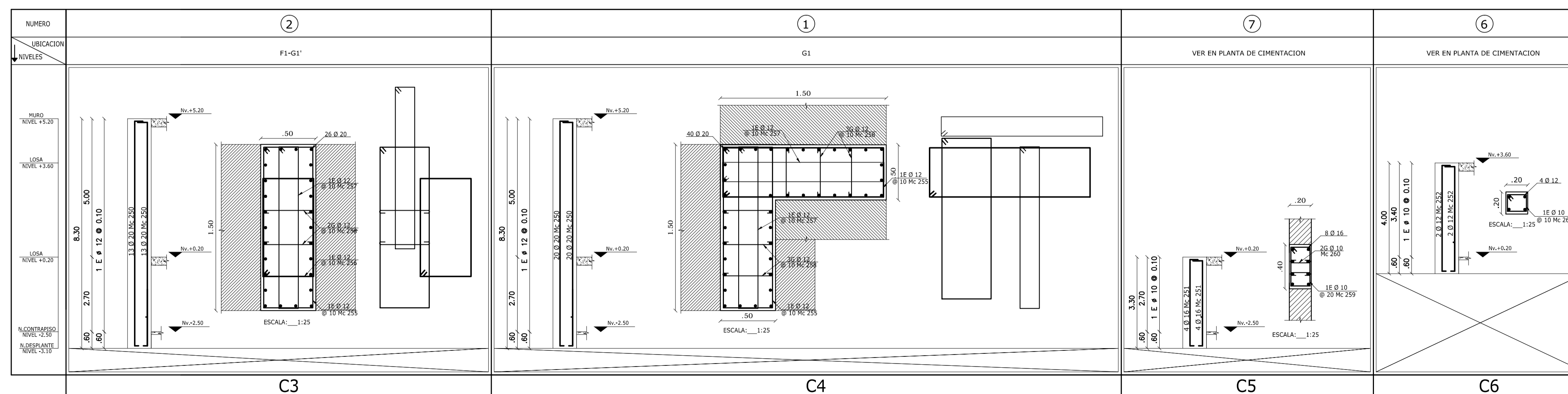
DIAFRAGMA D1
N+8.30
ESCALA: 1:50



DETALLE 1
CONECTORES DIAFRAGMA
ESCALA: 1:25



DETALLE 2
CONECTORES DIAFRAGMA
ESCALA: 1:25



CUADRO DE COLUMNAS EN HORMIGON
ESCALA: 1:100

CONTRATANTE:

UNIVERSIDAD NACIONAL DE CHIMBORAZO

PROYECTO:

ESTUDIOS Y DISEÑOS PARA LA CONSTRUCCION DEL LABORATORIO DE INGENIERIA UNACH 2018

CONTIENE:

- CUADRO DE COLUMNAS
- DETALLES

ESCALA:

LA INDICADA

FECHA:

DICIEMBRE DEL 2018

CODIGO:

ES

CONSULTOR:

ARQ. DAVID PATRICIO CARRASCO FALCONI

LAMINA:

4 DE 9

CONSULTOR:

DISEÑO:

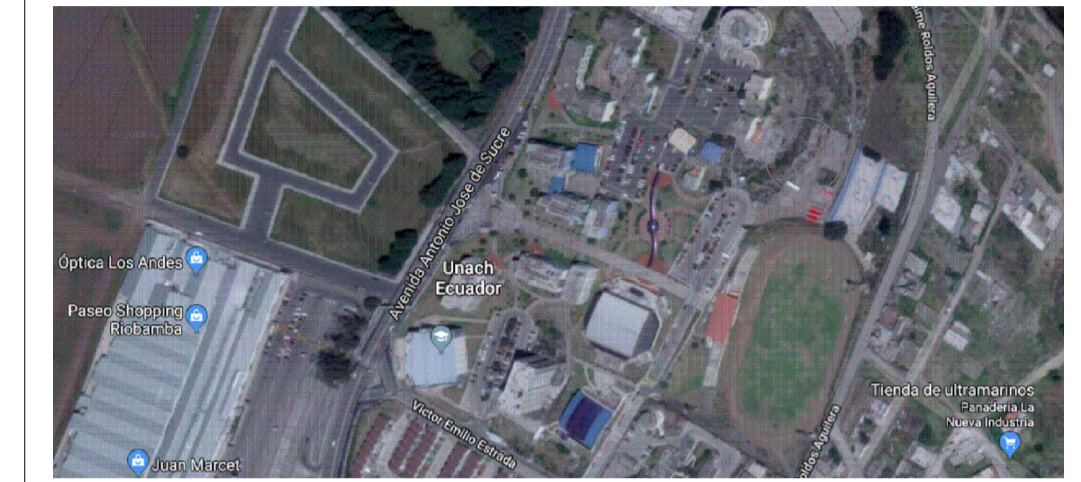
ADMINISTRADOR:

ARO DAVID CARRASCO F CONSULTOR

ING. RENATO MIÑO REG. SENECYT 1019-07-795431

COORDINADOR DEL DEPARTAMENTO DE INFRAESTRUCTURA - UNACH

UBICACION:



SIMBOLOS Y NOTAS TECNICAS:

CONTRATANTE:

UNIVERSIDAD NACIONAL DE CHIMBORAZO

PROYECTO:

ESTUDIOS Y DISEÑOS PARA LA CONSTRUCCION DEL LABORATORIO DE INGENIERIA UNACH 2018

CONTIENE:

- ANCLAJES Y PLACAS BASE
- LOSA N+0.20
- VIGAS N+0.20
- DETALLES
- DETALLES MUROS DE REACCION

ESCALA:

LA INDICADA

FECHA:

DICIEMBRE DEL 2018

CODIGO:

ES

CONSULTOR:

ARQ. DAVID PATRICIO CARRASCO FALCONI

LAMINA:

5 DE 9

CONSULTOR:

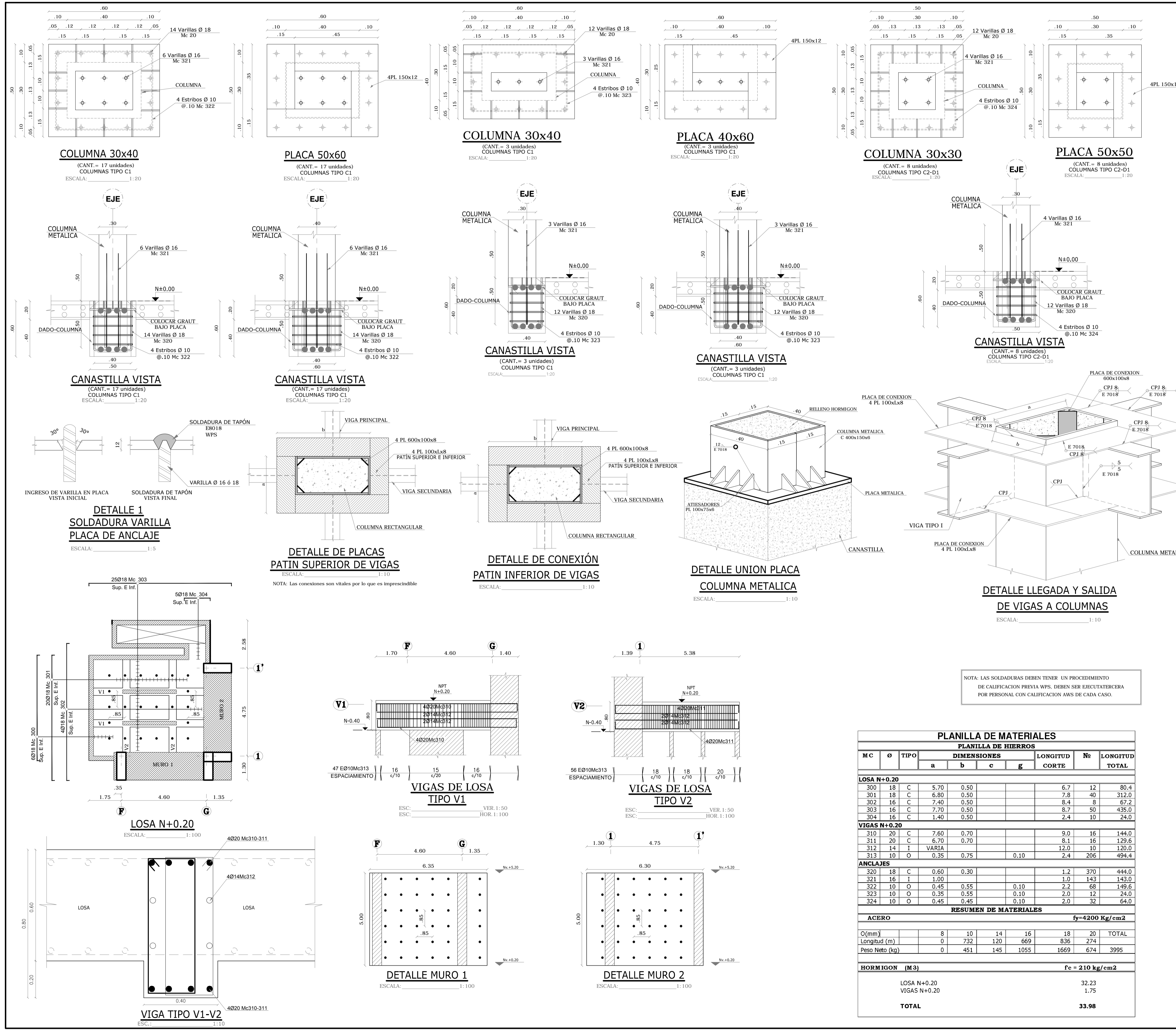
DISEÑO:

ADMINISTRADOR:

ARQ DAVID CARRASCO F CONSULTOR

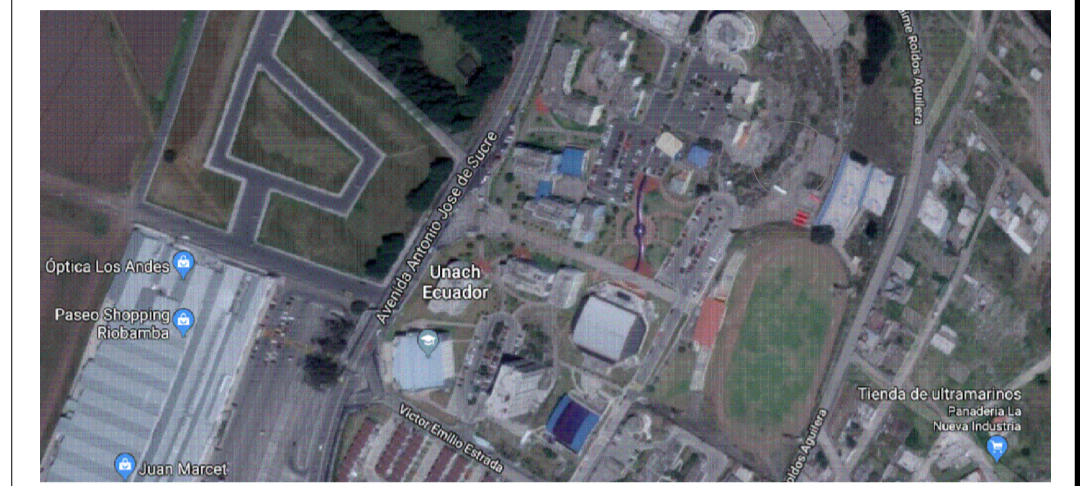
ING. RENATO MIÑO REG. SENECYT 1019-07-795431

COORDINADOR DEL DEPARTAMENTO DE INFRAESTRUCTURA - UNACH



| PLANILLA DE MATERIALES | | | | | | | | | |
|--|----|------|-------------|------|-----|------|----------------|-----|----------------|
| PLANILLA DE HIERROS | | | | | | | | | |
| MC | Ø | TIPO | DIMENSIONES | | | | LONGITUD CORTE | Nº | LONGITUD TOTAL |
| | | | a | b | c | g | | | |
| LOSA N+0.20 | | | | | | | | | |
| 300 | 18 | C | 5.70 | 0.50 | | | 6.7 | 12 | 80.4 |
| 301 | 18 | C | 6.80 | 0.50 | | | 7.8 | 40 | 312.0 |
| 302 | 16 | C | 7.40 | 0.50 | | | 8.4 | 8 | 67.2 |
| 303 | 16 | C | 7.70 | 0.50 | | | 8.7 | 50 | 435.0 |
| 304 | 16 | C | 1.40 | 0.50 | | | 2.4 | 10 | 24.0 |
| VIGAS N+0.20 | | | | | | | | | |
| 310 | 20 | C | 7.60 | 0.70 | | | 9.0 | 16 | 144.0 |
| 311 | 20 | C | 6.70 | 0.70 | | | 8.1 | 16 | 129.6 |
| 312 | 14 | I | VARIA | | | | 12.0 | 10 | 120.0 |
| 313 | 10 | O | 0.35 | 0.75 | | 0.10 | 2.4 | 206 | 494.4 |
| ANCLAJES | | | | | | | | | |
| 320 | 18 | C | 0.60 | 0.30 | | | 1.2 | 370 | 444.0 |
| 321 | 16 | I | 1.00 | | | | 1.0 | 143 | 143.0 |
| 322 | 10 | O | 0.45 | 0.55 | | 0.10 | 2.2 | 68 | 149.6 |
| 323 | 10 | O | 0.35 | 0.55 | | 0.10 | 2.0 | 12 | 24.0 |
| 324 | 10 | O | 0.45 | 0.45 | | 0.10 | 2.0 | 32 | 64.0 |
| RESUMEN DE MATERIALES | | | | | | | | | |
| ACERO $f_y = 4200 \text{ Kg/cm}^2$ | | | | | | | | | |
| Ø (mm) | | | 8 | 10 | 14 | 16 | 18 | 20 | TOTAL |
| Longitud (m) | | | 0 | 732 | 120 | 669 | 836 | 274 | |
| Peso Neto (kg) | | | 0 | 451 | 145 | 1055 | 1669 | 674 | 3995 |
| HORMIGON (M3) $f_c = 210 \text{ kg/cm}^2$ | | | | | | | | | |
| LOSA N+0.20 | | | | | | | | | 32.23 |
| VIGAS N+0.20 | | | | | | | | | 1.75 |
| TOTAL | | | | | | | | | 33.98 |

UBICACION:



SIMBOLOS Y NOTAS TECNICAS:

CONTRATANTE:

UNIVERSIDAD NACIONAL DE CHIMBORAZO

PROYECTO:

ESTUDIOS Y DISEÑOS PARA LA CONSTRUCCION DEL LABORATORIO DE INGENIERIA UNACH 2018

CONTIENE:

- LOSA N+3.60
- DETALLES

ESCALA:

LA INDICADA

FECHA:

DICIEMBRE DEL 2018

CODIGO:

ES

CONSULTOR:

ARQ. DAVID PATRICIO CARRASCO FALCONI

LAMINA:

6 DE 9

CONSULTOR:

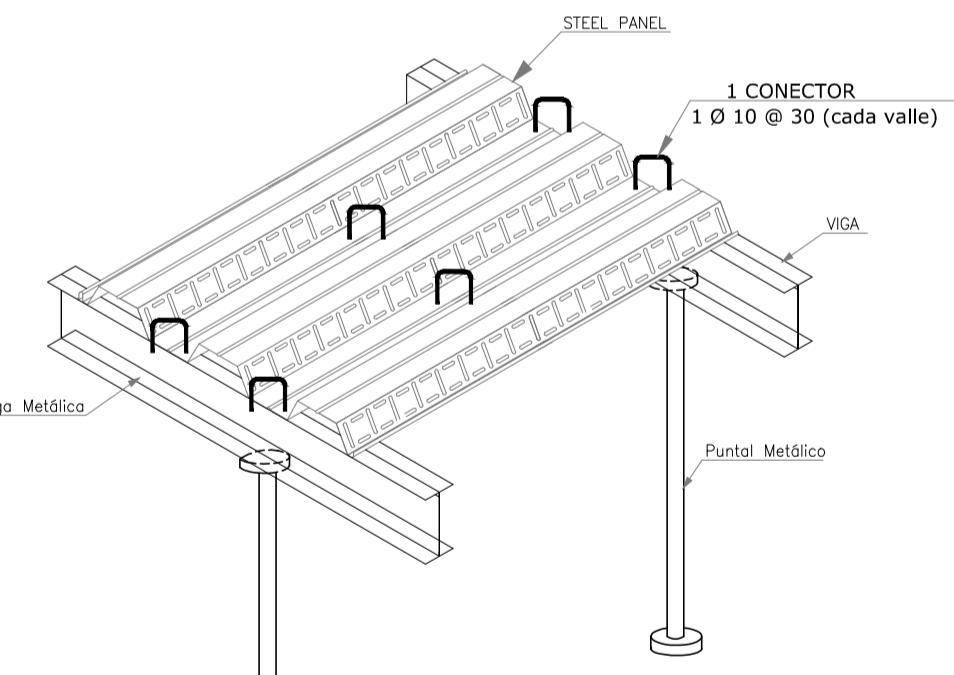
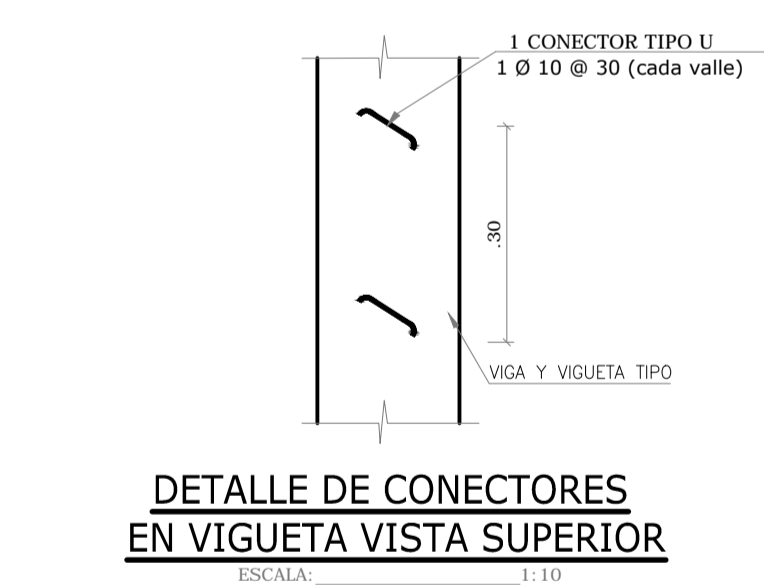
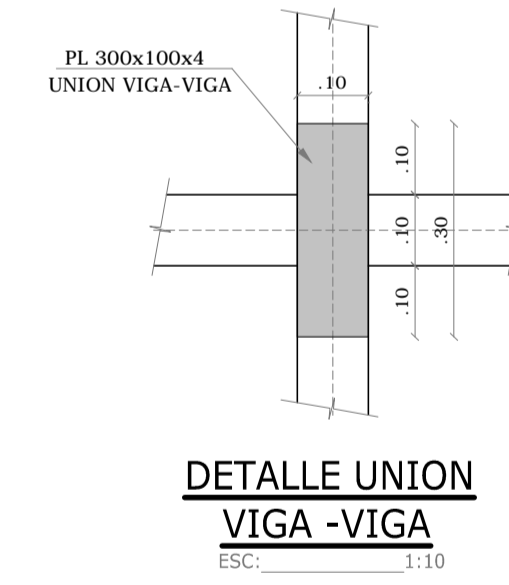
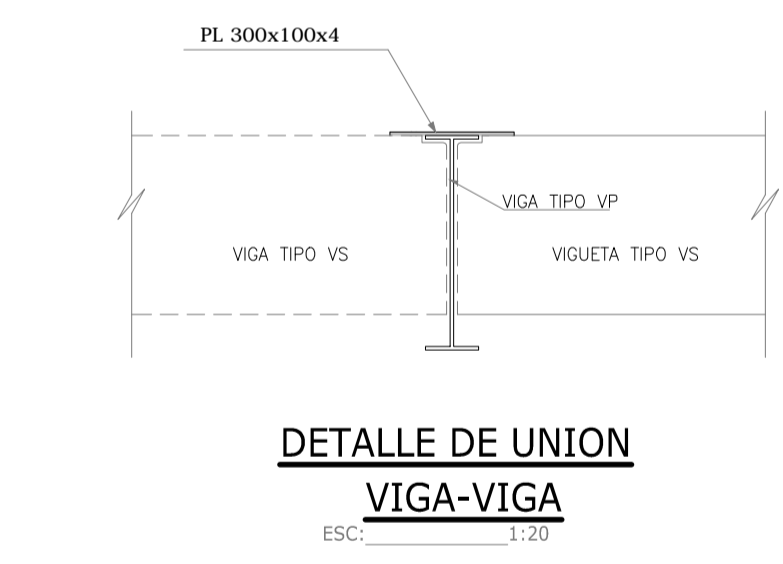
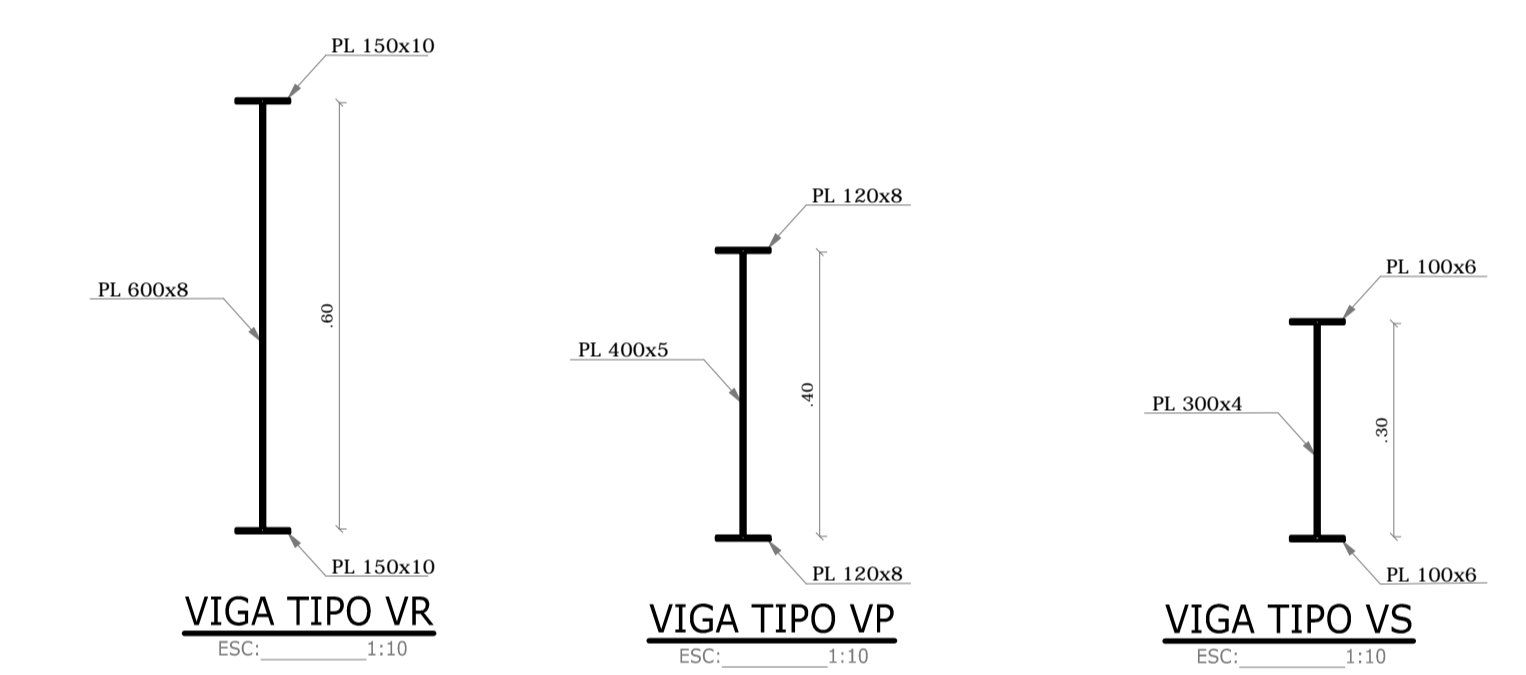
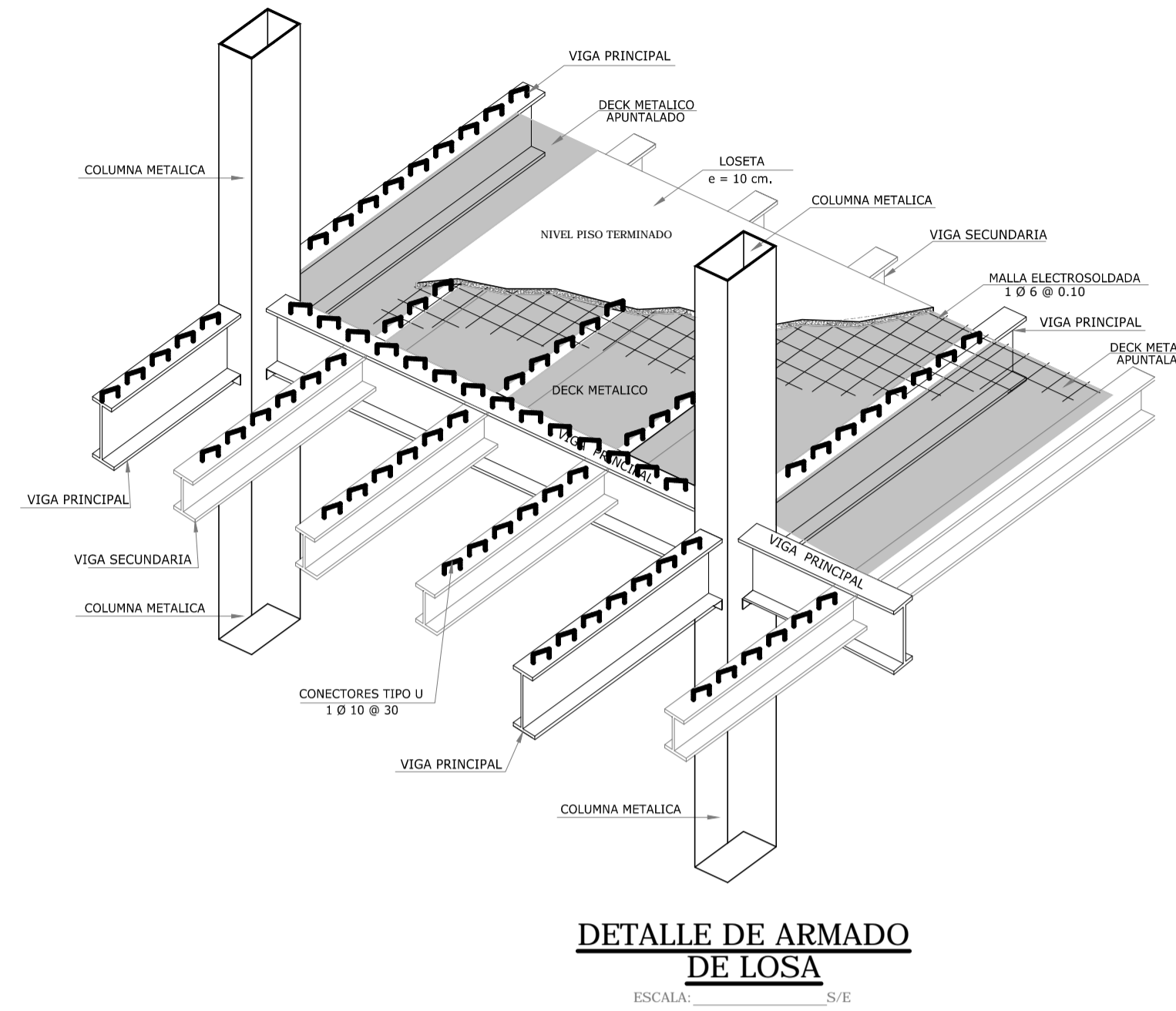
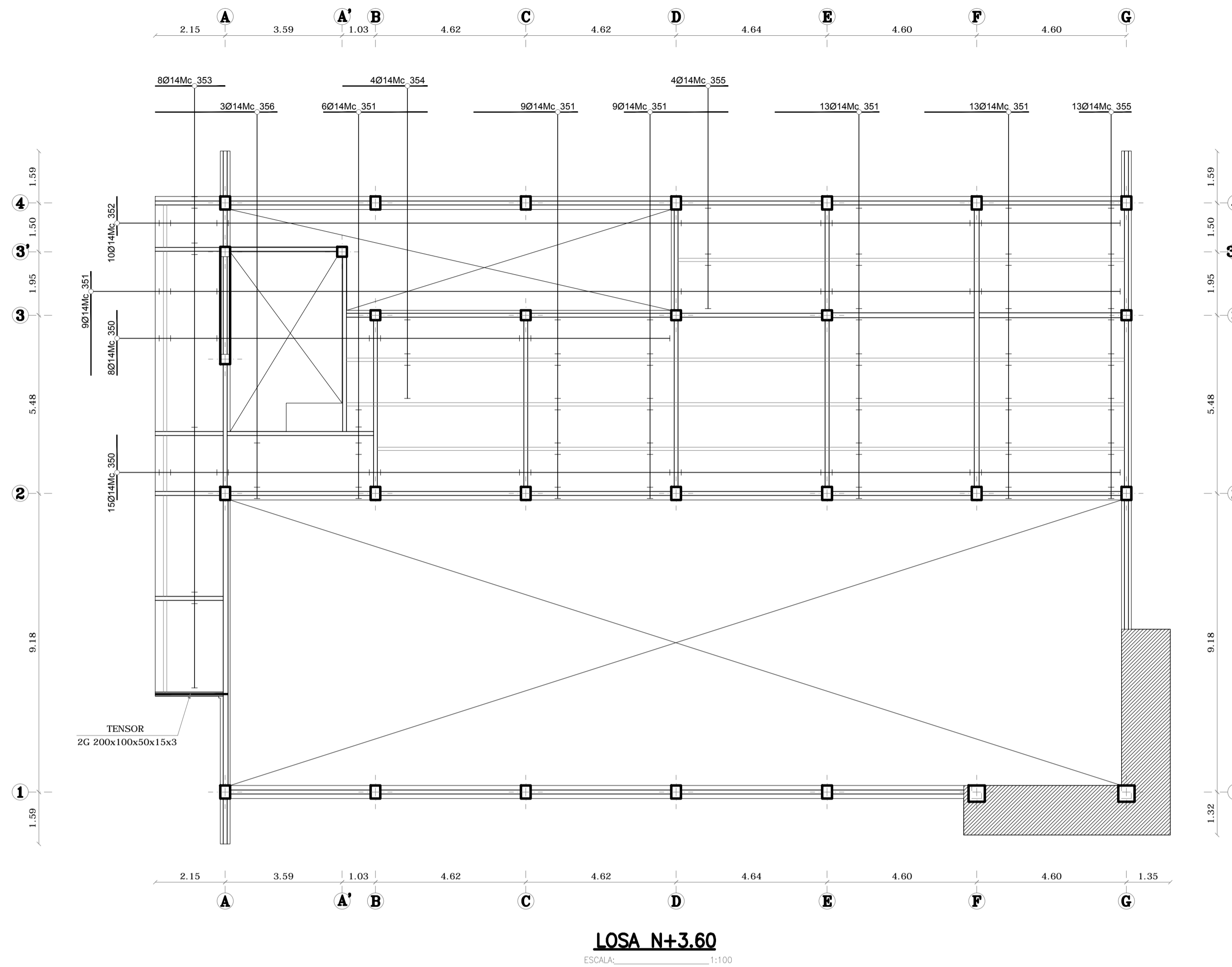
ARQ DAVID CARRASCO F CONSULTOR

DISEÑO:

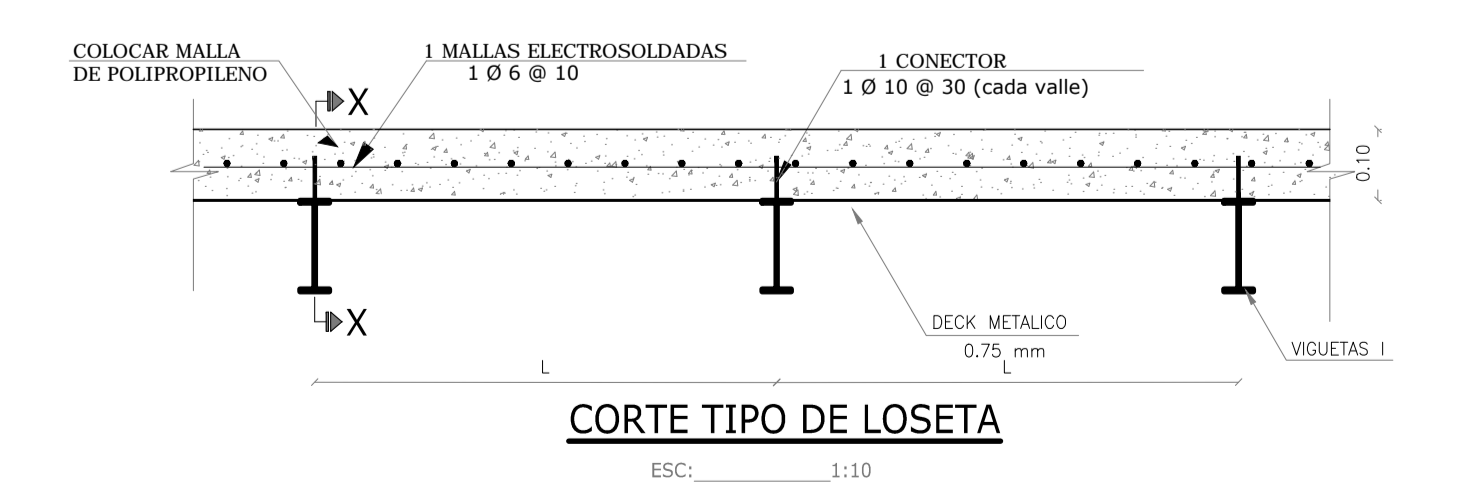
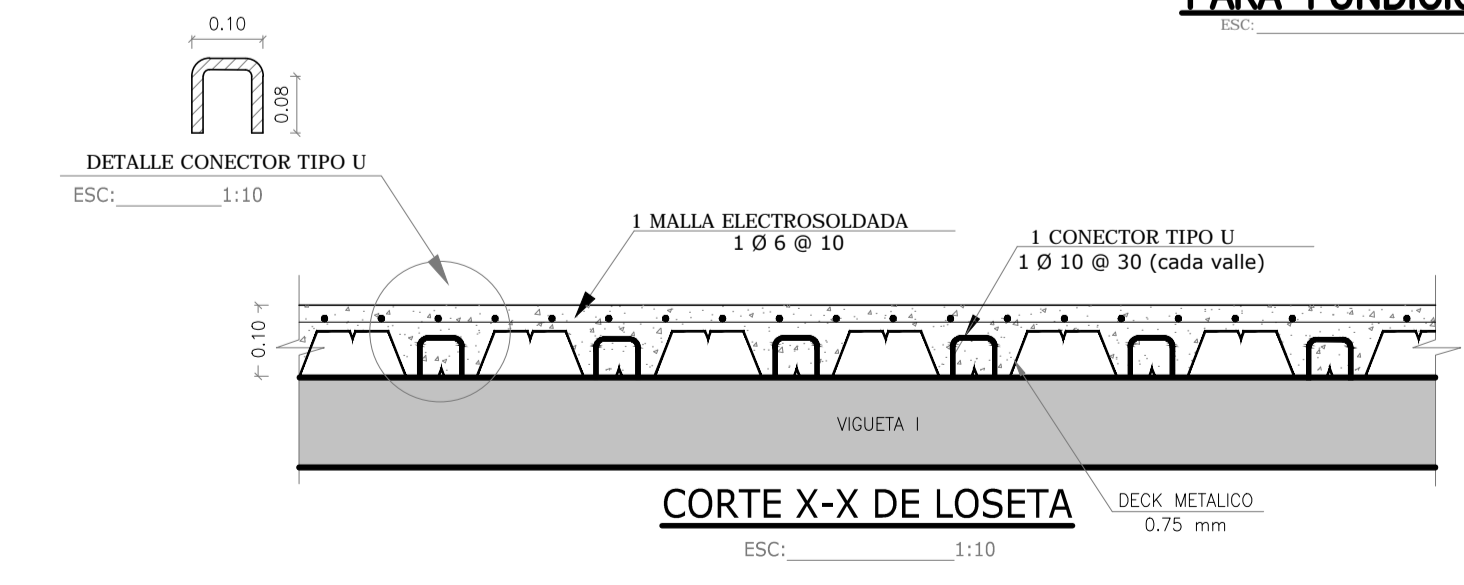
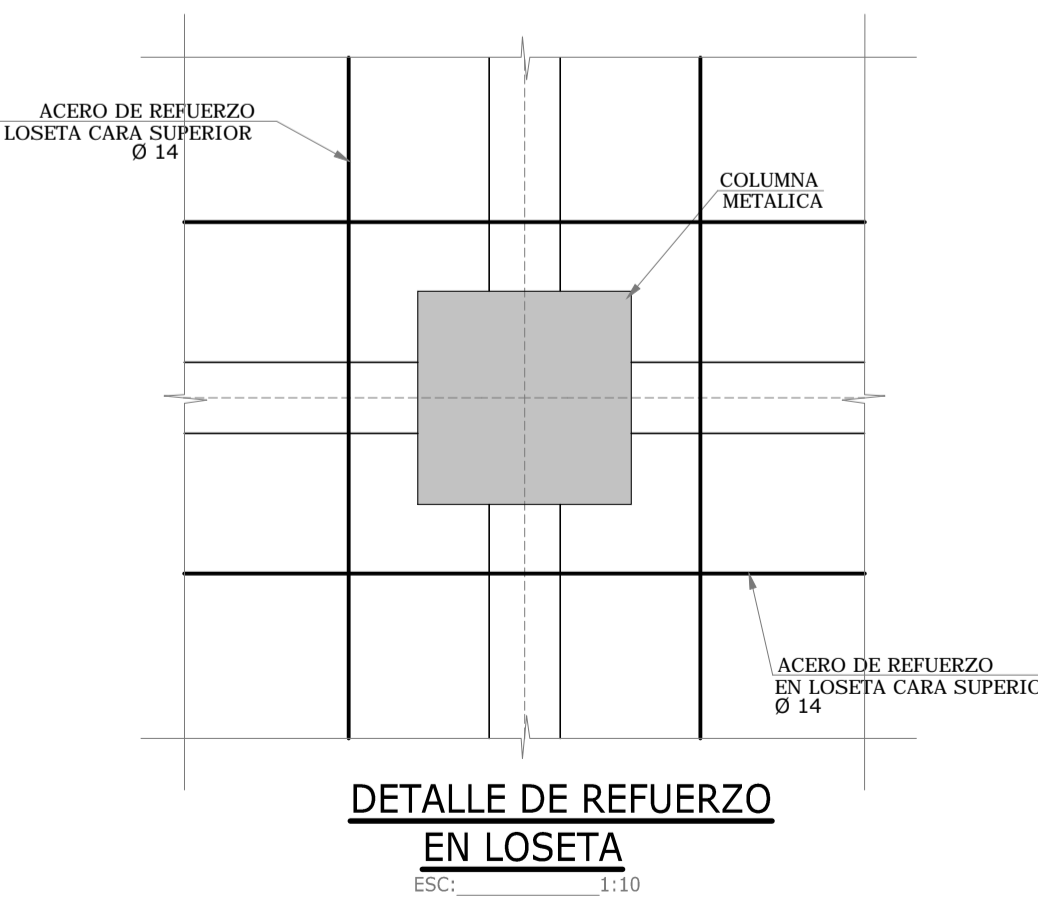
ING. RENATO MIÑO REG. SENEYCIT 1019-07-795431

ADMINISTRADOR:

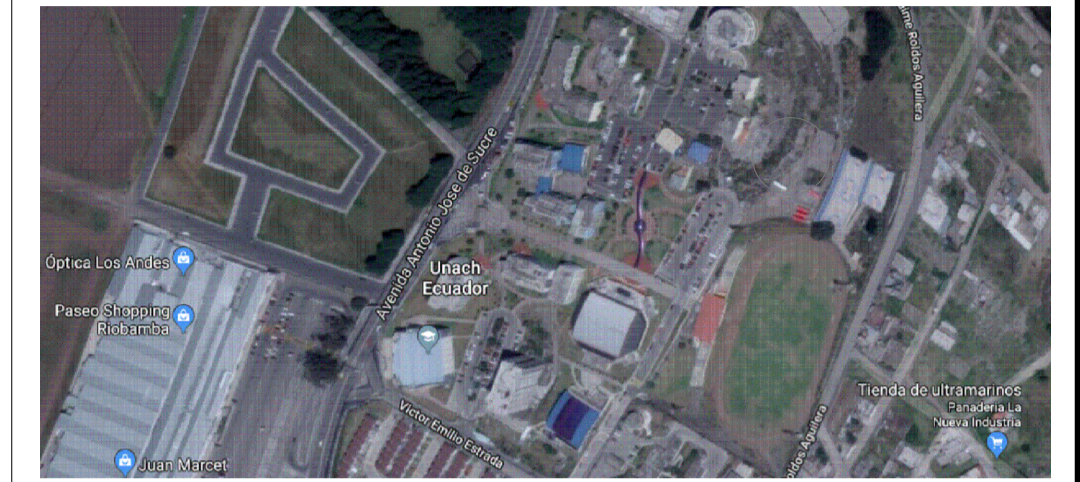
COORDINADOR DEL DEPARTAMENTO DE INFRAESTRUCTURA - UNACH



| PLANILLA DE MATERIALES | | | | | | | | | |
|--|----|------|-------------|----|----|-----|----------|----------------------|----------------|
| PLANILLA DE HIERROS | | | | | | | | | |
| MC | Ø | TIPO | DIMENSIONES | | | | LONGITUD | Nº | LONGITUD TOTAL |
| | | | a | b | c | g | | | |
| LOSA Nv. +3.60 | | | | | | | | | |
| 350 | 14 | I | 2.00 | | | | 2.0 | 23 | 46.0 |
| 351 | 14 | I | 3.20 | | | | 3.2 | 59 | 188.8 |
| 352 | 14 | I | 1.20 | | | | 1.2 | 10 | 12.0 |
| 353 | 14 | I | 2.20 | | | | 2.2 | 8 | 17.6 |
| 354 | 14 | I | 2.60 | | | | 2.6 | 4 | 10.4 |
| 355 | 14 | I | 1.60 | | | | 1.6 | 17 | 27.2 |
| 356 | 14 | I | 3.80 | | | | 3.8 | 3 | 11.4 |
| RESUMEN DE MATERIALES | | | | | | | | | |
| ACERO $f_y=4200 \text{ Kg/cm}^2$ | | | | | | | | | |
| O(mm) | | | 8 | 10 | 12 | 14 | 16 | 18 | TOTAL |
| Longitud (m) | | | 0 | 0 | 0 | 313 | 0 | 0 | 0 |
| Peso Neto (kg) | | | 0 | 0 | 0 | 378 | 0 | 0 | 378 |
| HORMIGON (M3) $f_c = 210 \text{ kg/cm}^2$ | | | | | | | | | |
| LOSA Nv. +3.60 | | | | | | | | 25.91 | |
| TOTAL | | | | | | | | 25.91 | |
| MALLA ELECTROSOLDADA 1 Ø 6 @ 10 | | | | | | | | CANTIDAD=21 UNIDADES | |



UBICACION:



SIMBOLOS Y NOTAS TECNICAS:

CONTRATANTE:

UNIVERSIDAD NACIONAL DE CHIMBORAZO

PROYECTO:

ESTUDIOS Y DISEÑOS PARA LA CONSTRUCCION DEL LABORATORIO DE INGENIERIA UNACH 2018

CONTIENE:

- VIGAS N+3.60
- PLANTA DE ESCALERAS
- CORTES DE GRADAS
- DETALLES

ESCALA:

LA INDICADA

FECHA:

DICIEMBRE DEL 2018

CODIGO:

ES

CONSULTOR:

ARQ. DAVID PATRICIO CARRASCO FALCONI

LAMINA:

7 DE 9

CONSULTOR:

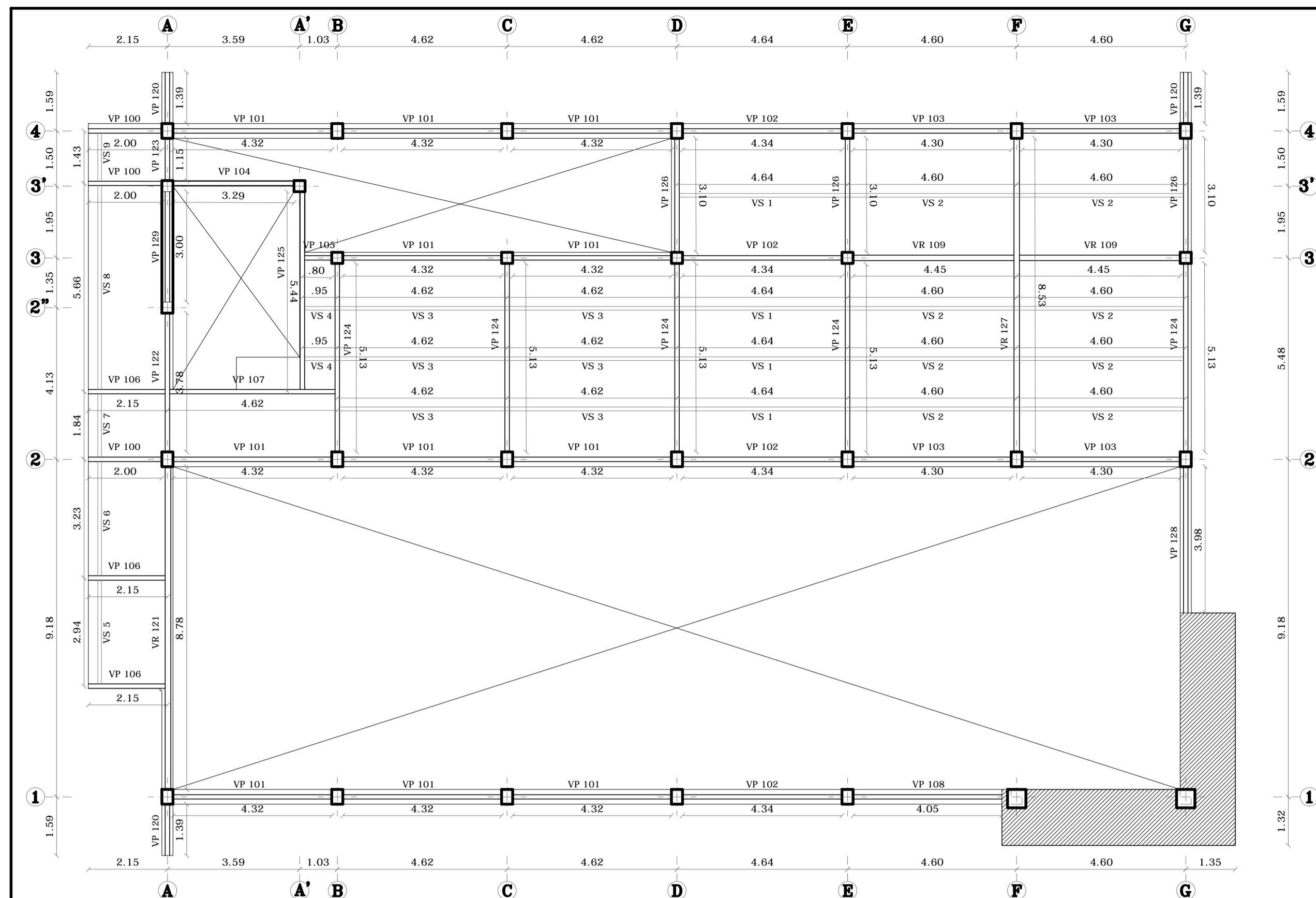
ARQ. DAVID CARRASCO F CONSULTOR

DISEÑO:

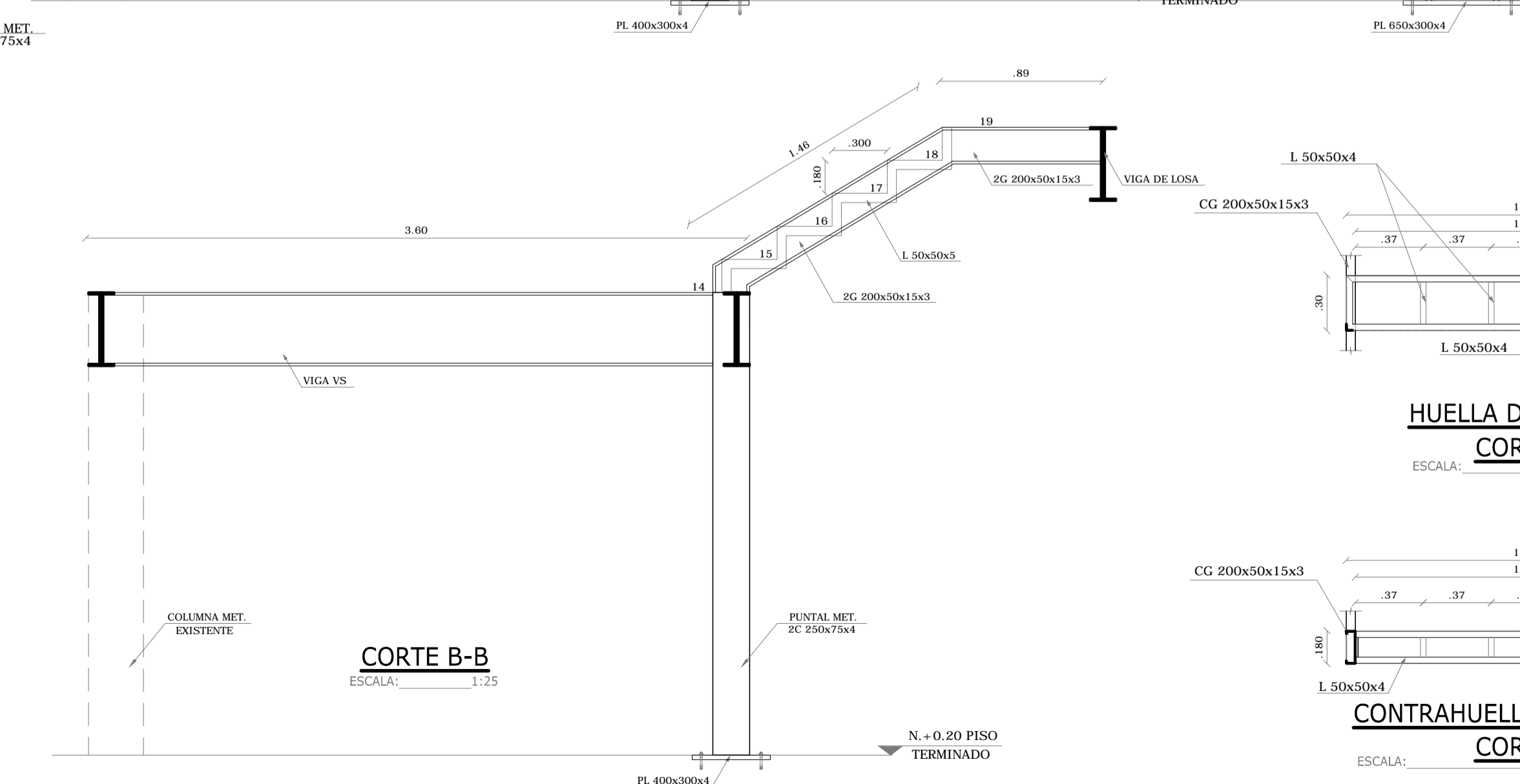
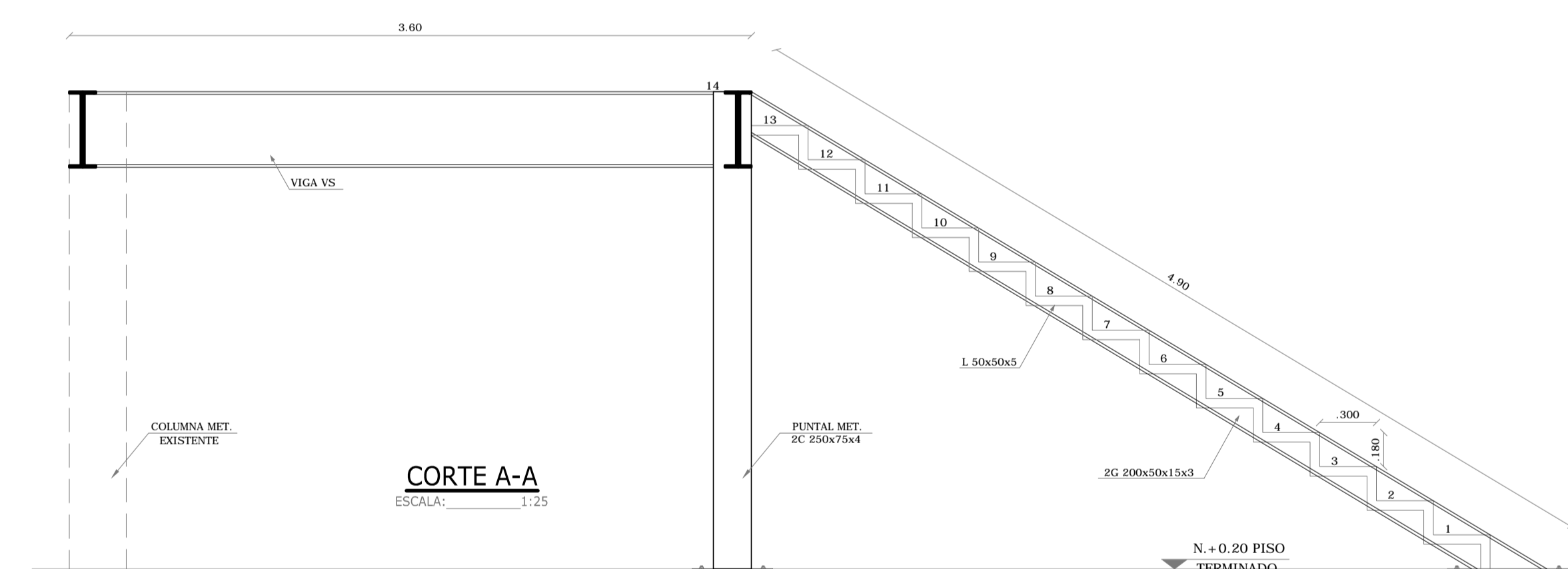
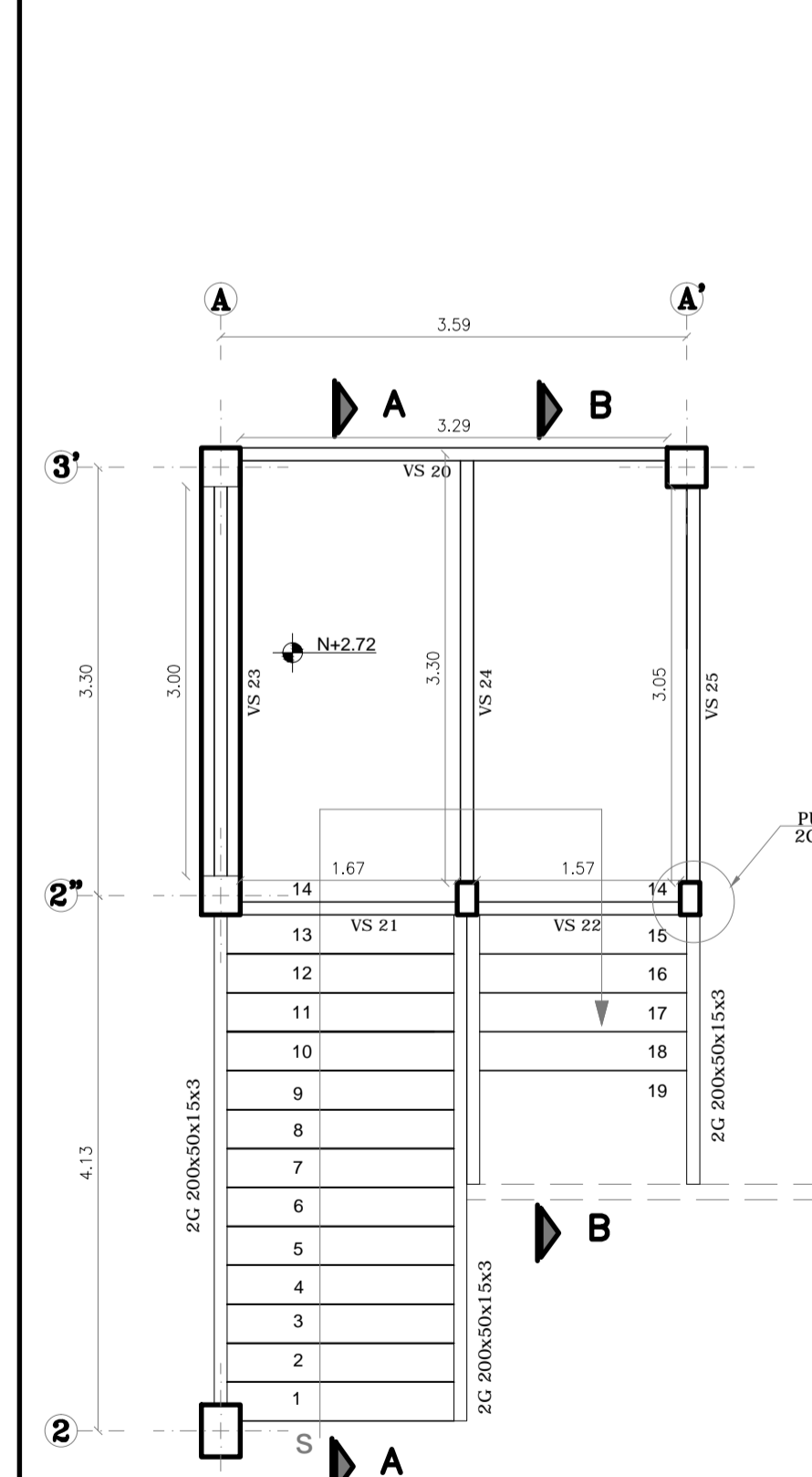
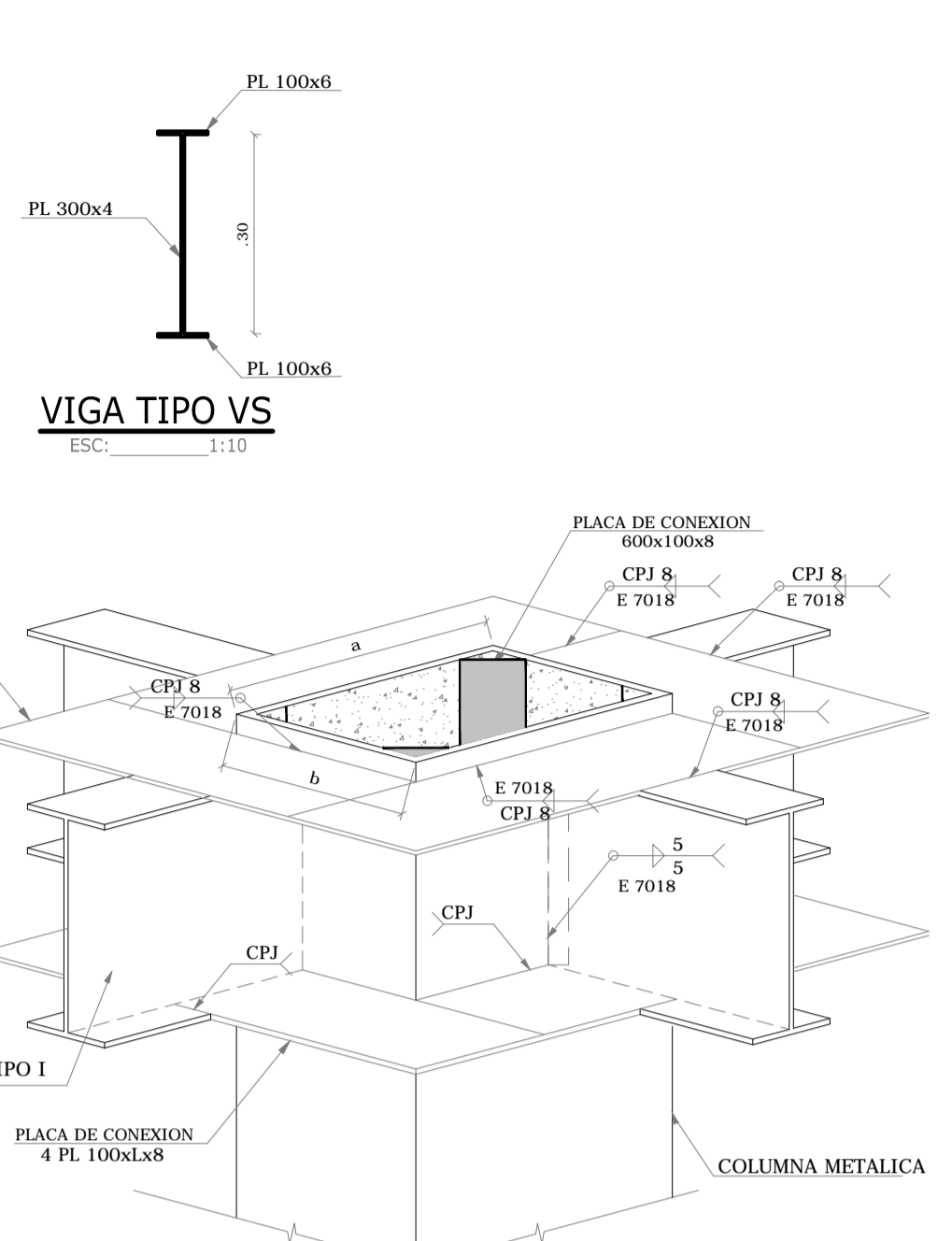
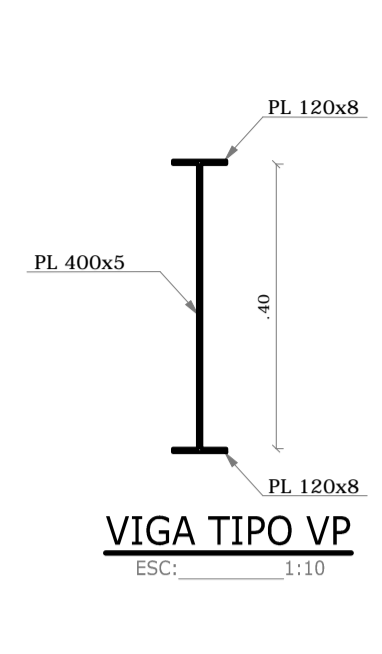
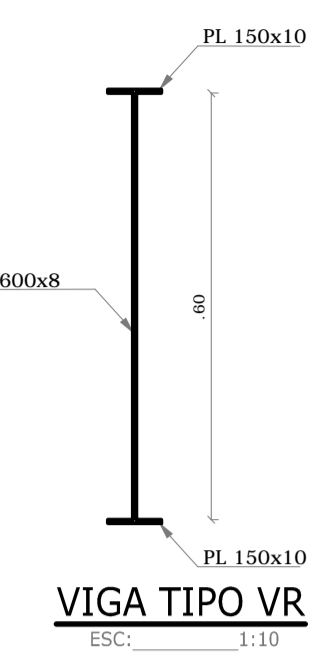
ING. RENATO MIÑO
REG. SENECCYT 1019-07-795431

ADMINISTRADOR:

COORDINADOR DEL DEPARTAMENTO DE INFRAESTRUCTURA - UNACH

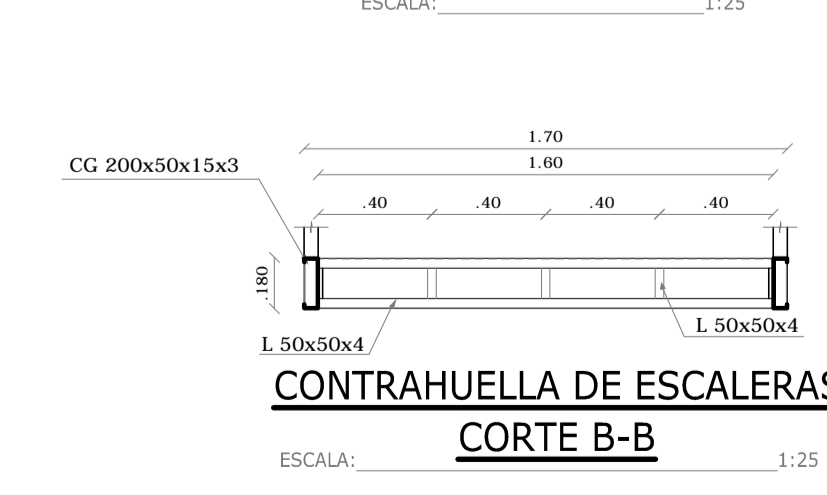
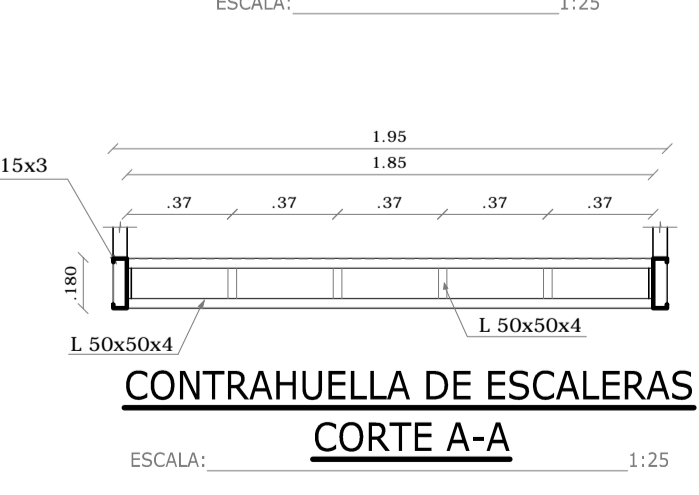
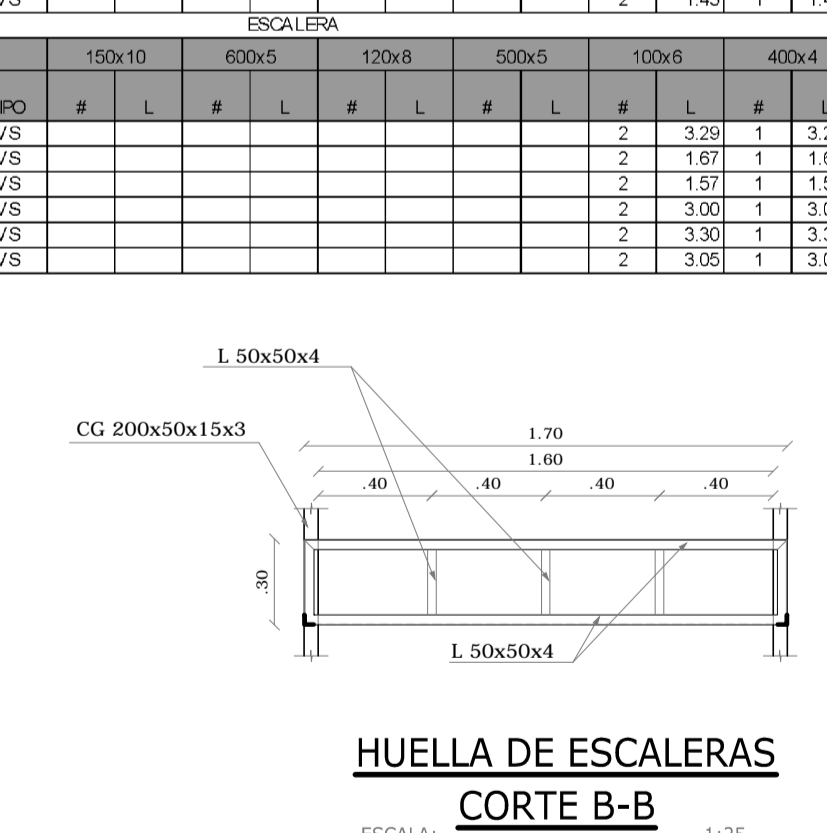
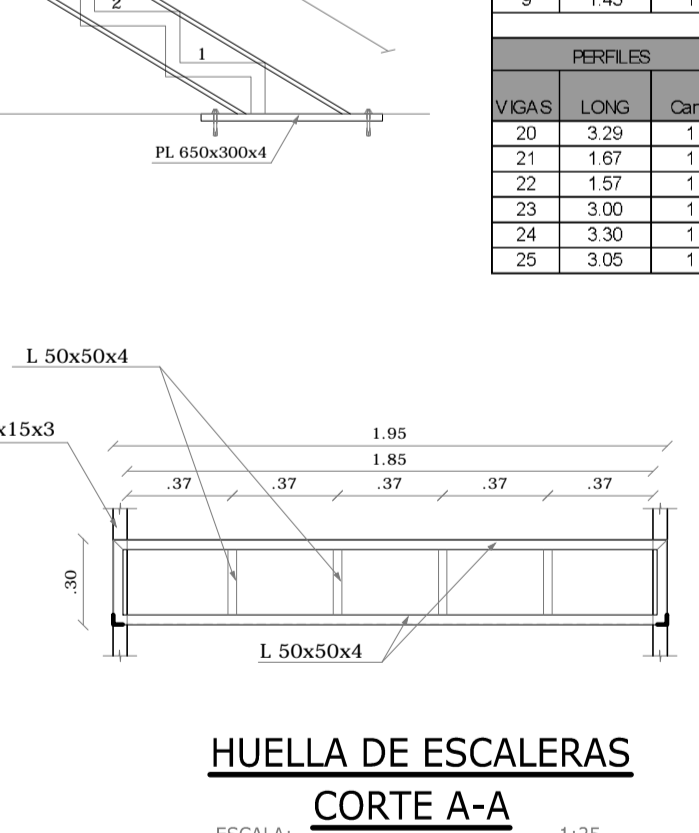


LOSA N+3.60
ESCALA: 1:100

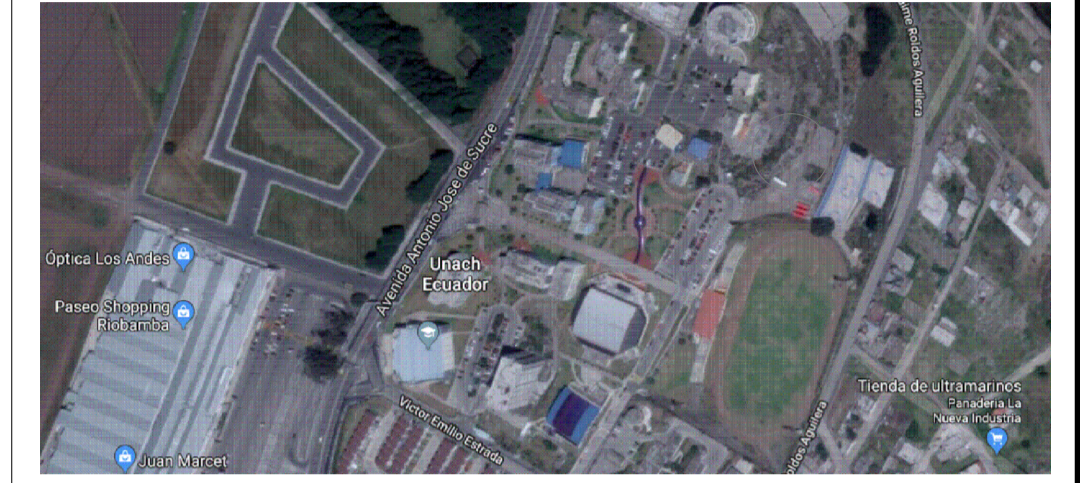


| LOSA N+3.60 | | | | | | | | | | | | | |
|-------------|------|--------|------|---|-------|---|------|-------|------|---|-------|---|------|
| PERFILES | | 150x10 | | | 600x5 | | | 120x8 | | | 400x5 | | |
| VIGAS | LONG | Quant. | TIPO | # | L | # | L | # | L | # | L | L | |
| 100 | 2.00 | 3 | VP | | | 2 | 2.00 | 1 | 2.00 | | | | |
| 101 | 4.32 | 11 | VP | | | 2 | 4.32 | 1 | 4.32 | | | | |
| 102 | 4.34 | 4 | VP | | | 2 | 4.34 | 1 | 4.34 | | | | |
| 103 | 4.30 | 4 | VP | | | 2 | 4.30 | 1 | 4.30 | | | | |
| 104 | 3.29 | 1 | VP | | | 2 | 3.29 | 1 | 3.29 | | | | |
| 105 | 0.80 | 1 | VP | | | 2 | 0.80 | 1 | 0.80 | | | | |
| 106 | 2.15 | 3 | VP | | | 2 | 2.15 | 1 | 2.15 | | | | |
| 107 | 4.62 | 1 | VP | | | 2 | 4.62 | 1 | 4.62 | | | | |
| 108 | 4.05 | 1 | VP | | | 2 | 4.05 | 1 | 4.05 | | | | |
| 109 | 4.45 | 2 | VR | 2 | 4.45 | 1 | 4.45 | | | | | | |
| 120 | 1.39 | 3 | VP | | | 2 | 1.39 | 1 | 1.39 | | | | |
| 121 | 8.78 | 1 | VR | 2 | 8.78 | 1 | 8.78 | | | | | | |
| 122 | 3.78 | 1 | VP | | | 2 | 3.78 | 1 | 3.78 | | | | |
| 123 | 1.15 | 1 | VP | | | 2 | 1.15 | 1 | 1.15 | | | | |
| 124 | 5.13 | 5 | VP | | | 2 | 5.13 | 1 | 5.13 | | | | |
| 125 | 5.44 | 1 | VP | | | 2 | 5.44 | 1 | 5.44 | | | | |
| 126 | 3.10 | 3 | VP | | | 2 | 3.10 | 1 | 3.10 | | | | |
| 127 | 8.53 | 1 | VR | 2 | 8.53 | 1 | 8.53 | | | | | | |
| 128 | 3.98 | 1 | VP | | | 2 | 3.98 | 1 | 3.98 | | | | |
| 129 | 3.00 | 1 | VP | | | 2 | 3.00 | 1 | 3.00 | | | | |
| 1 | 4.64 | 4 | VS | | | | | | | 2 | 4.64 | 1 | 4.64 |
| 2 | 4.60 | 8 | VS | | | | | | | 2 | 4.60 | 1 | 4.60 |
| 3 | 4.62 | 6 | VS | | | | | | | 2 | 4.62 | 1 | 4.62 |
| 4 | 0.25 | 2 | VS | | | | | | | 2 | 0.25 | 1 | 0.25 |
| 5 | 2.94 | 1 | VS | | | | | | | 2 | 2.94 | 1 | 2.94 |
| 6 | 3.23 | 1 | VS | | | | | | | 2 | 3.23 | 1 | 3.23 |
| 7 | 1.84 | 1 | VS | | | | | | | 2 | 1.84 | 1 | 1.84 |
| 8 | 5.66 | 1 | VS | | | | | | | 2 | 5.66 | 1 | 5.66 |
| 9 | 1.43 | 1 | VS | | | | | | | 2 | 1.43 | 1 | 1.43 |

| ESCALERA | | | | | | | | | | | | | |
|----------|------|--------|------|---|-------|---|------|-------|------|---|-------|---|--|
| PERFILES | | 150x10 | | | 600x5 | | | 120x8 | | | 500x5 | | |
| VIGAS | LONG | Quant. | TIPO | # | L | # | L | # | L | # | L | L | |
| 20 | 3.29 | 1 | VS | | | 2 | 3.29 | 1 | 3.29 | | | | |
| 21 | 1.67 | 1 | VS | | | 2 | 1.67 | 1 | 1.67 | | | | |
| 22 | 1.57 | 1 | VS | | | 2 | 1.57 | 1 | 1.57 | | | | |
| 23 | 3.00 | 1 | VS | | | 2 | 3.00 | 1 | 3.00 | | | | |
| 24 | 3.30 | 1 | VS | | | 2 | 3.30 | 1 | 3.30 | | | | |
| 25 | 3.05 | 1 | VS | | | 2 | 3.05 | 1 | 3.05 | | | | |



UBICACION:



SIMBOLOS Y NOTAS TECNICAS:

CONTRATANTE:

UNIVERSIDAD NACIONAL DE CHIMBORAZO

PROYECTO:

ESTUDIOS Y DISEÑOS PARA LA CONSTRUCCION DEL LABORATORIO DE INGENIERIA UNACH 2018

CONTIENE:

- DETALLE DE CUBIERTA
- CERCHA TIPO
- DETALLES

ESCALA:

LA INDICADA

FECHA:

DICIEMBRE DEL 2018

CODIGO:

ES

CONSULTOR:

ARQ. DAVID PATRICIO CARRASCO FALCONI

LAMINA:

8 DE 9

CONSULTOR:

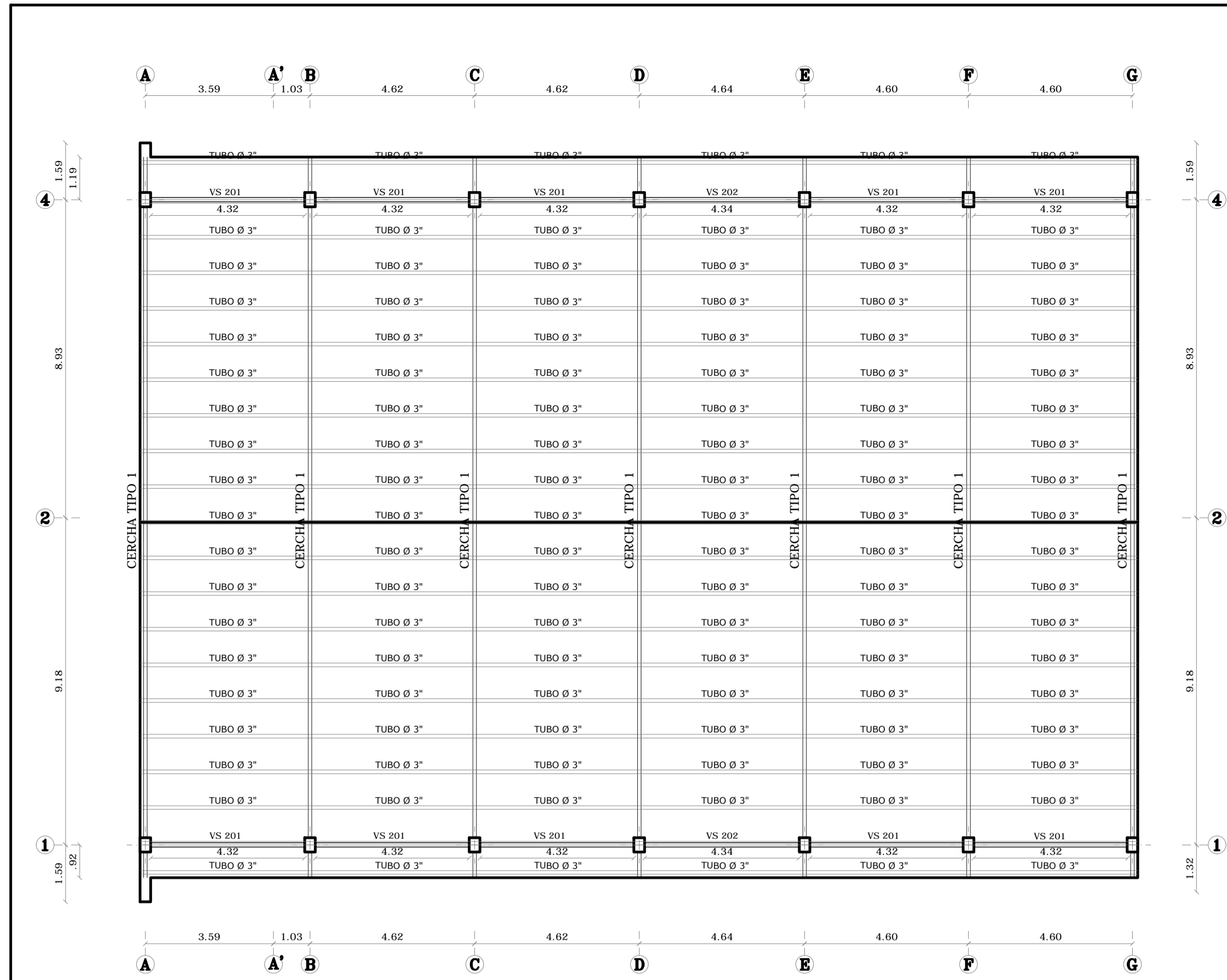
ARO DAVID CARRASCO F CONSULTOR

DISEÑO:

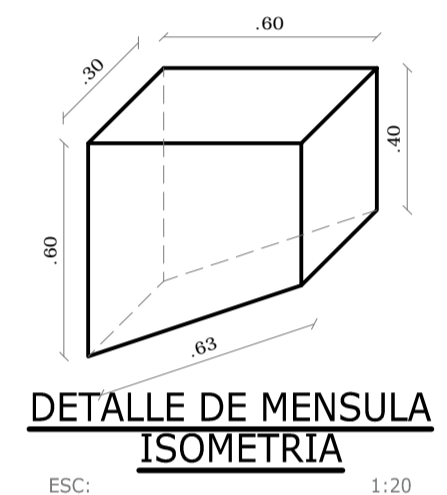
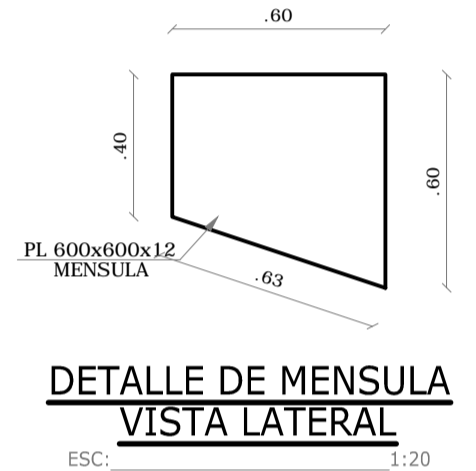
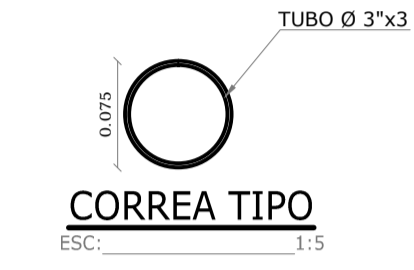
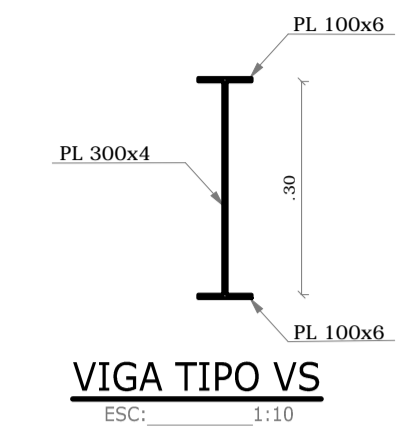
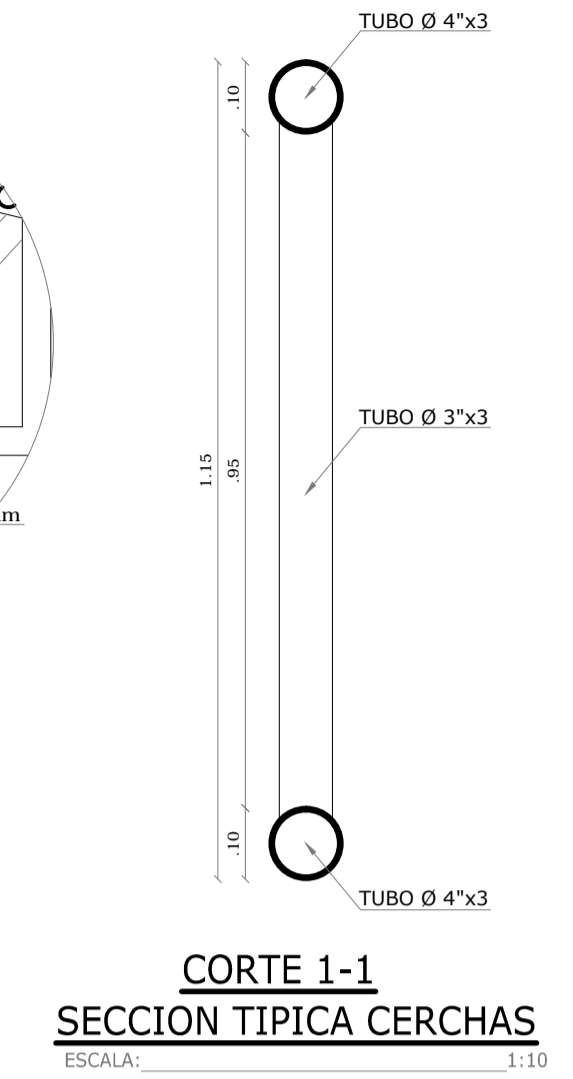
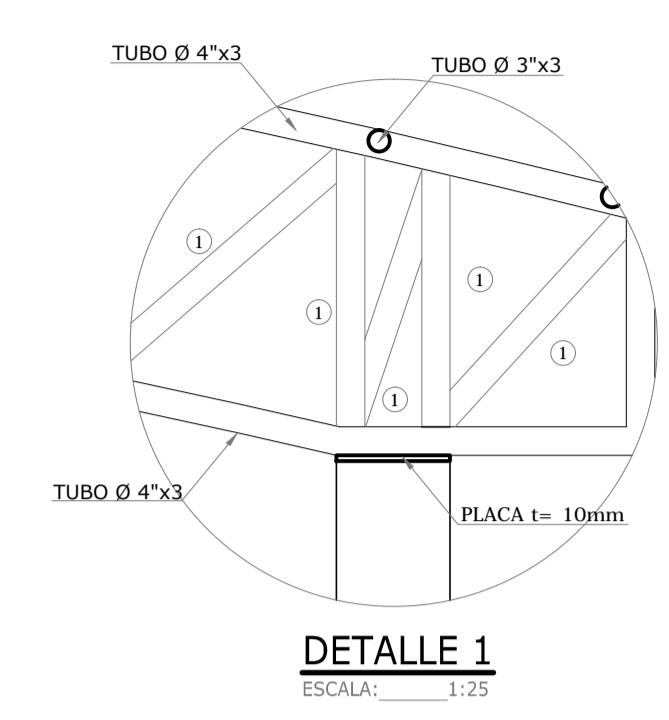
ING. RENATO MIÑO
REG. SENECYT 1019-07-795431

ADMINISTRADOR:

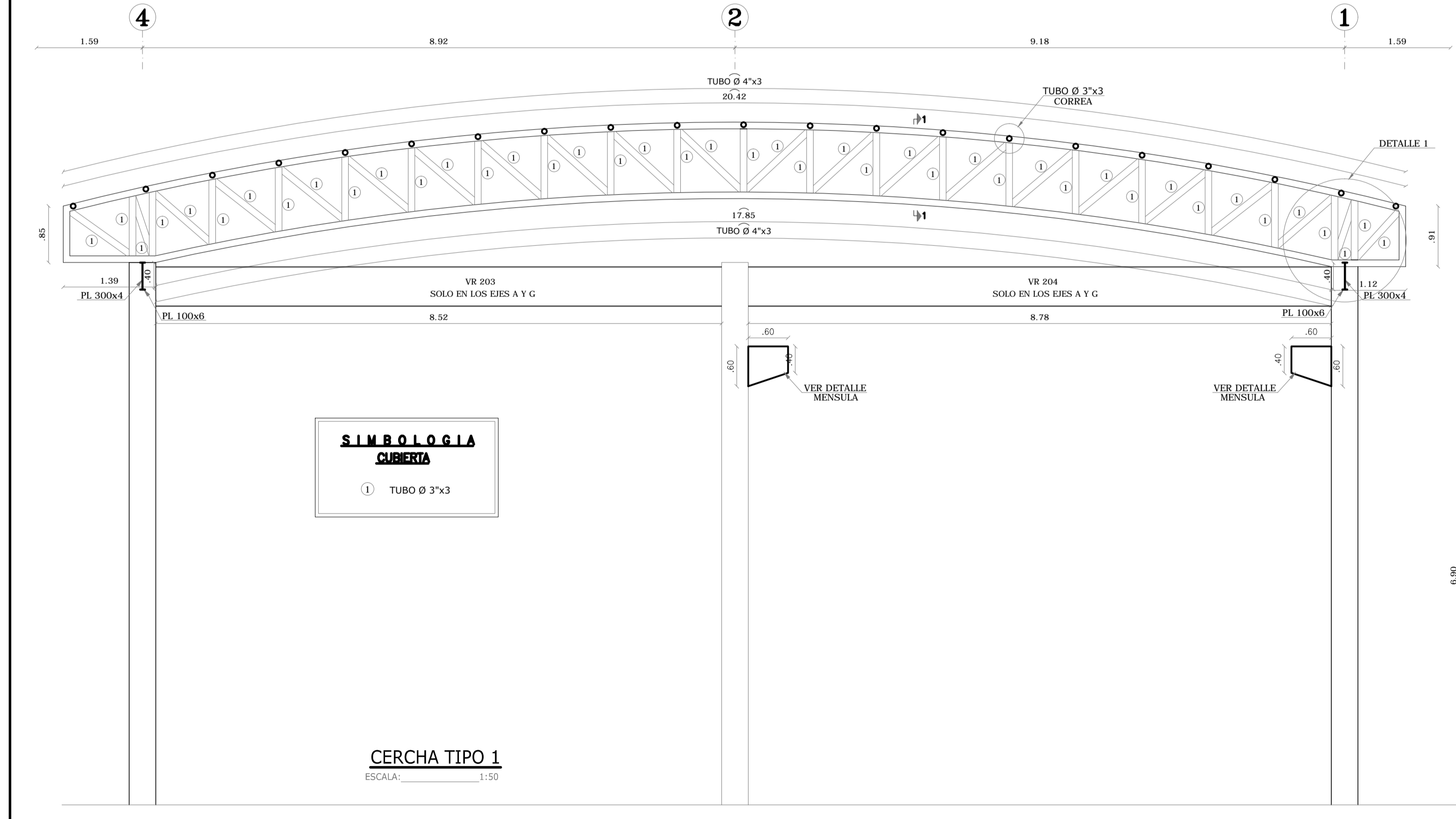
COORDINADOR DEL DEPARTAMENTO DE INFRAESTRUCTURA - UNACH



CUBIERTA N+8.30
ESCALA: 1:100



| VIGAS N+8.30 | | | | | | | | | | | |
|--------------|------|--------|------|-------|------|-------|------|-------|------|---|------|
| PERFILES | | 150x10 | | 600x8 | | 100x6 | | 300x4 | | | |
| VIGAS | LONG | Cant. | TIPO | # | L | # | L | # | L | # | L |
| 201 | 4.32 | 10 | VS | | | | | 2 | 4.32 | 1 | 4.32 |
| 202 | 4.34 | 2 | VS | | | | | 2 | 4.34 | 1 | 4.34 |
| 203 | 8.52 | 2 | VR | 2 | 8.52 | 1 | 8.52 | | | | |
| 204 | 8.78 | 2 | VR | 2 | 8.78 | 1 | 8.78 | | | | |



SIMBOLOGIA

CUBIERTA

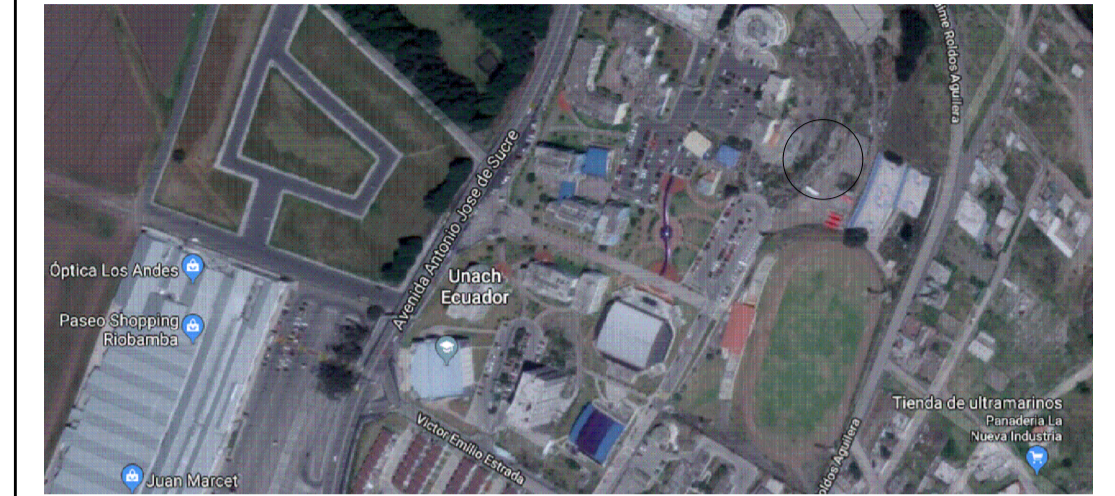
① TUBO Ø 3"x3"

CERCHA TIPO 1
ESCALA: 1:50

PLANILLA METALICA

| VIGAS | | | | | |
|----------------------------|---------|-------|----------|-------|-----------------|
| ELEMENTO | ESPESOR | ACERO | CANTIDAD | kg/m | kg |
| 150 | 10 | A50 | 21 | 11.78 | 1483.7 |
| 600 | 8 | A50 | 11 | 37.68 | 2486.9 |
| 120 | 8 | A50 | 57 | 7.54 | 2577.3 |
| 450 | 5 | A50 | 29 | 15.70 | 2731.3 |
| 100 | 6 | A50 | 68 | 4.71 | 1639.1 |
| 300 | 4 | A50 | 29 | 9.42 | 1639.1 |
| 100 | 4 | A50 | 2 | 3.14 | 37.7 |
| SUBTOTAL (kg): | | | | | 12567.0 |
| COLUMNAS | | | | | |
| ELEMENTO | ESPESOR | ACERO | CANTIDAD | kg/m | kg |
| 400x150x10 | | A36 | 3 | 55.0 | 164.3 |
| 300x150x6 | | A36 | 8 | 26.3 | 135.6 |
| 300x150x8 | | A36 | 6 | 37.7 | 135.6 |
| L 30x3 | | A36 | 64 | 1.3 | 499.2 |
| PL 100x8 | | A36 | 40 | 6.3 | 1507.2 |
| SUBTOTAL (kg): | | | | | 23192.0 |
| PLACAS | | | | | |
| ELEMENTO | ESPESOR | ACERO | CANTIDAD | kg/m | kg |
| 150 | 12 | A50 | 8 | 14.1 | 678.2 |
| 250 | 10 | A50 | 1 | 19.6 | 117.8 |
| SUBTOTAL (kg): | | | | | 796.0 |
| GRADAS | | | | | |
| ELEMENTO | ESPESOR | ACERO | CANTIDAD | kg/m | kg |
| G 200x150x15x3 | | A36 | 3 | 7.31 | 131.8 |
| L 50x4 | | A36 | 22 | 3.06 | 403.9 |
| SUBTOTAL (kg): | | | | | 535.5 |
| * DEBE SER LLEVADO A OBRA. | | | | | |
| CUBIERTA | | | | | |
| ELEMENTO | ESPESOR | ACERO | CANTIDAD | kg/m | kg |
| TUBO 4" | 3 | A36 | 52 | 7.29 | 2274.5 |
| TUBO 3" | 3 | A36 | 158 | 5.42 | 5138.2 |
| SUBTOTAL (kg): | | | | | 7412.8 |
| SUMA TOTAL (kg): | | | | | 44484.49 |

UBICACION:



SIMBOLOS Y NOTAS TECNICAS:

CONTRATANTE:

UNIVERSIDAD NACIONAL DE CHIMBORAZO

PROYECTO:

ESTUDIOS Y DISEÑOS PARA LA CONSTRUCCION DEL LABORATORIO DE INGENIERIA UNACH 2018

CONTIENE:

- SOLDADURAS EN GENERAL
- DETALLES

ESCALA:

LA INDICADA

FECHA:

DICIEMBRE DEL 2018

CODIGO:

ES

CONSULTOR:

ARQ. DAVID PATRICIO CARRASCO FALCONI

LAMINA:

9 DE 9

CONSULTOR:

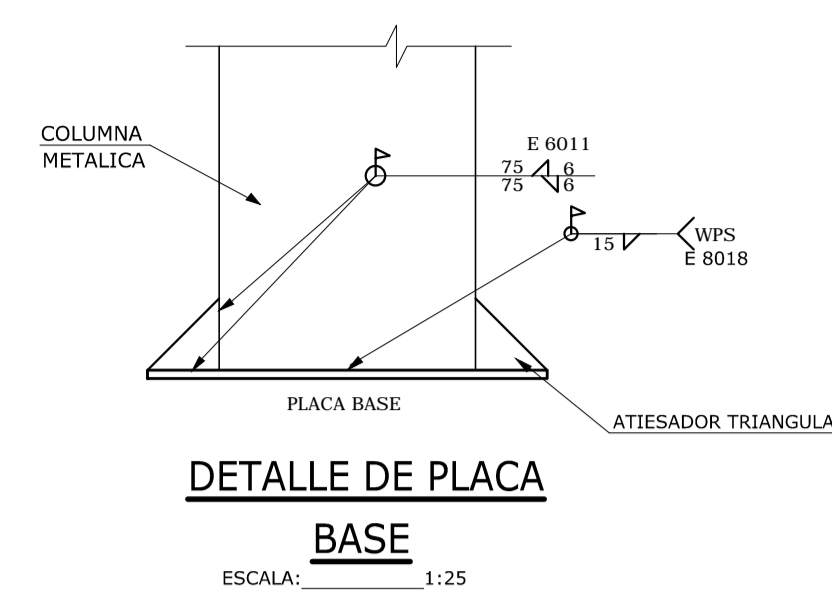
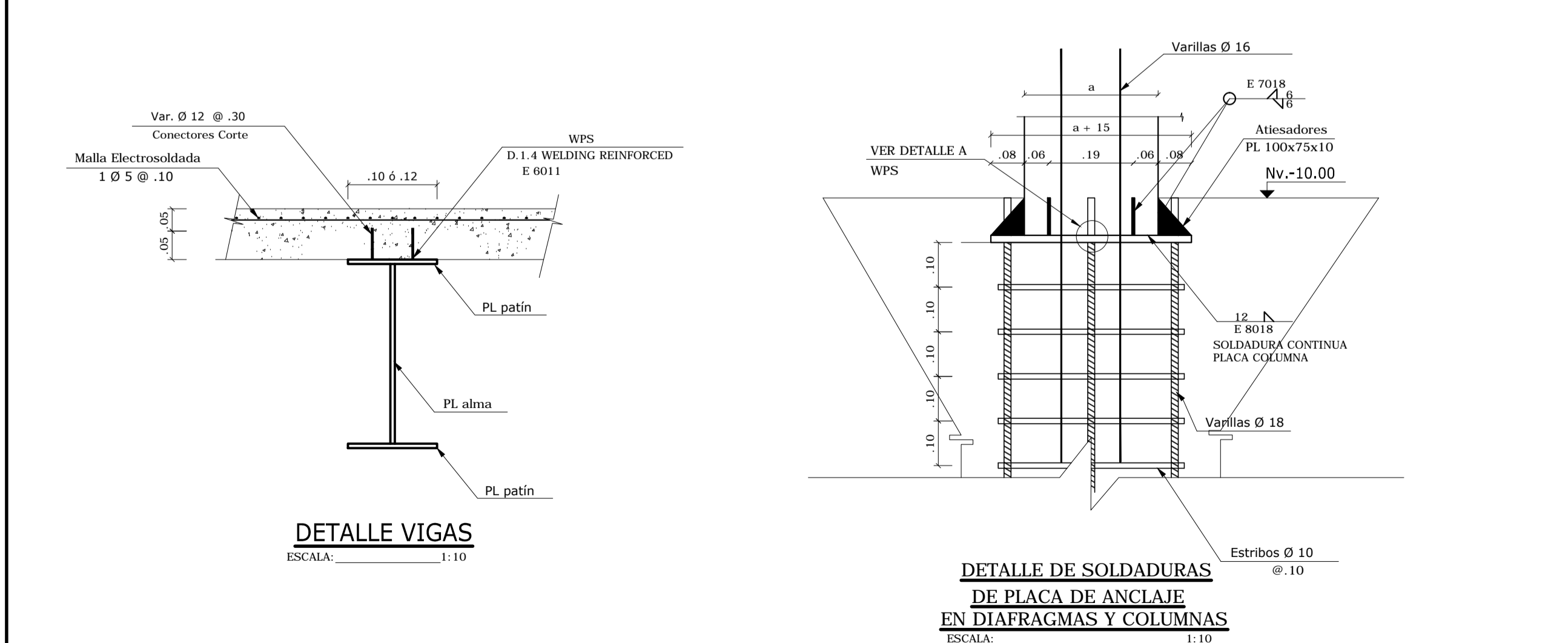
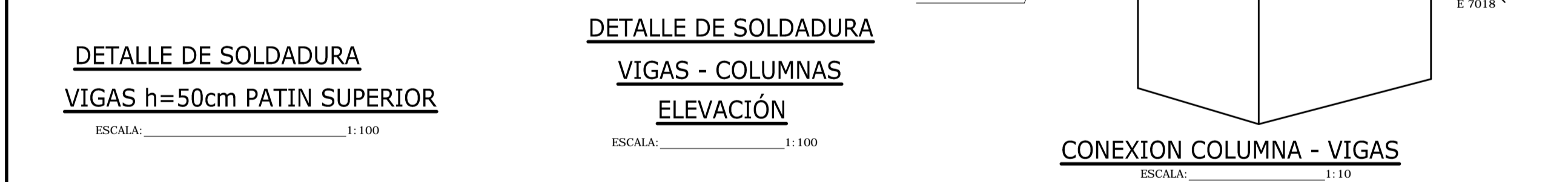
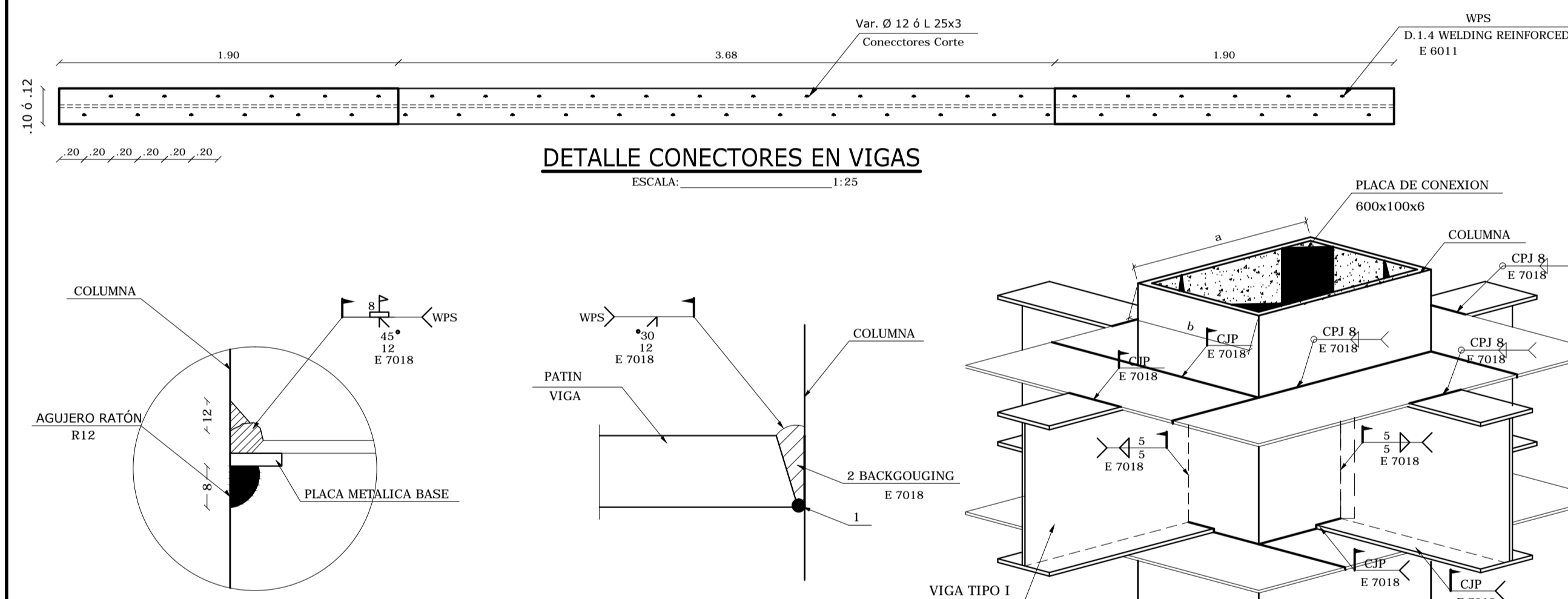
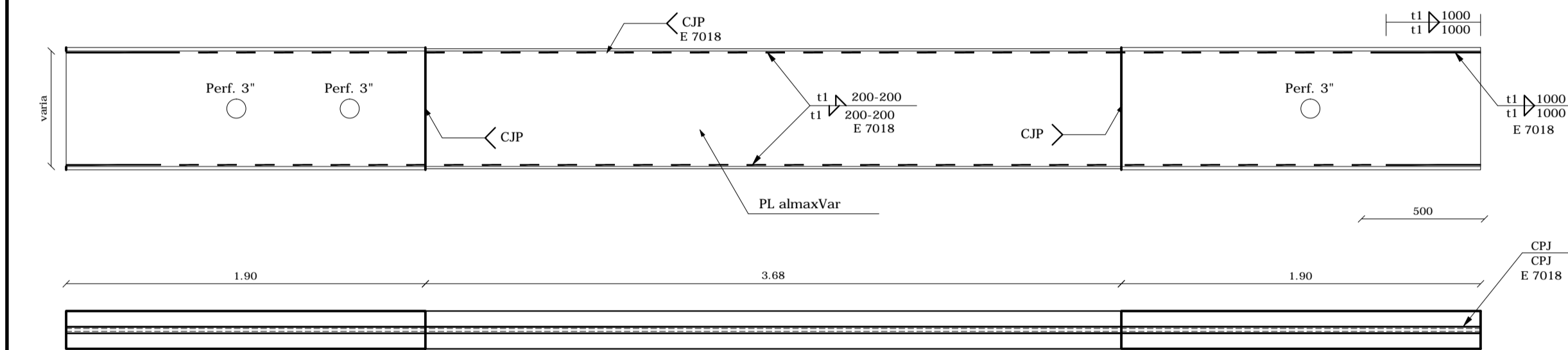
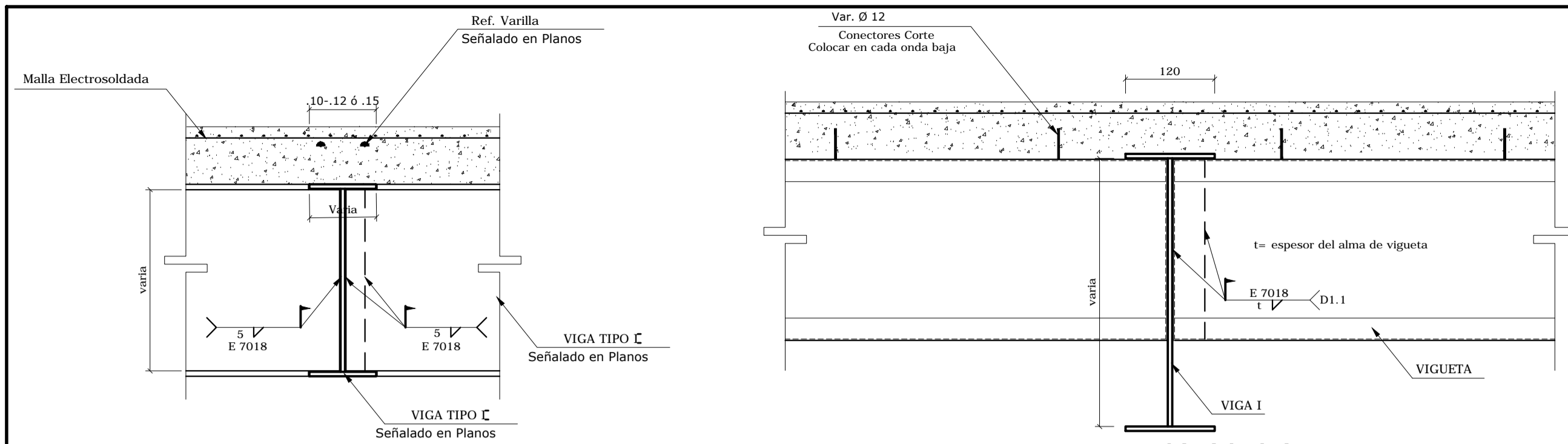
ARO DAVID CARRASCO F CONSULTOR

DISEÑO:

ING. RENATO MIÑO REG. SENECTY 1019-07-795431

ADMINISTRADOR:

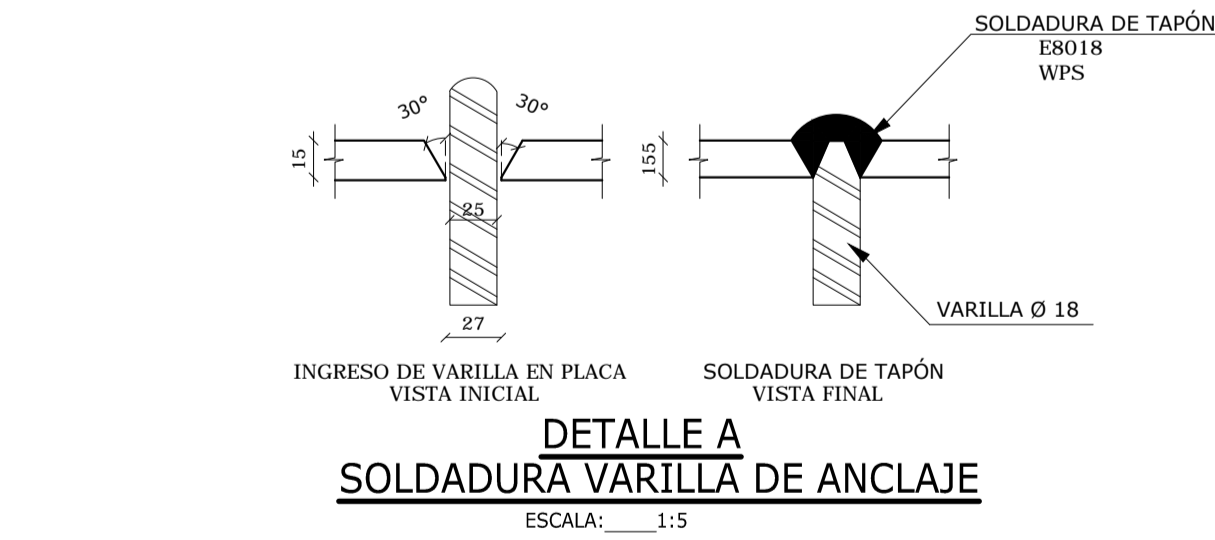
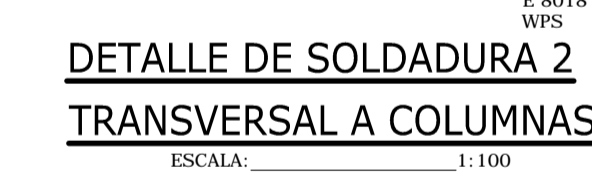
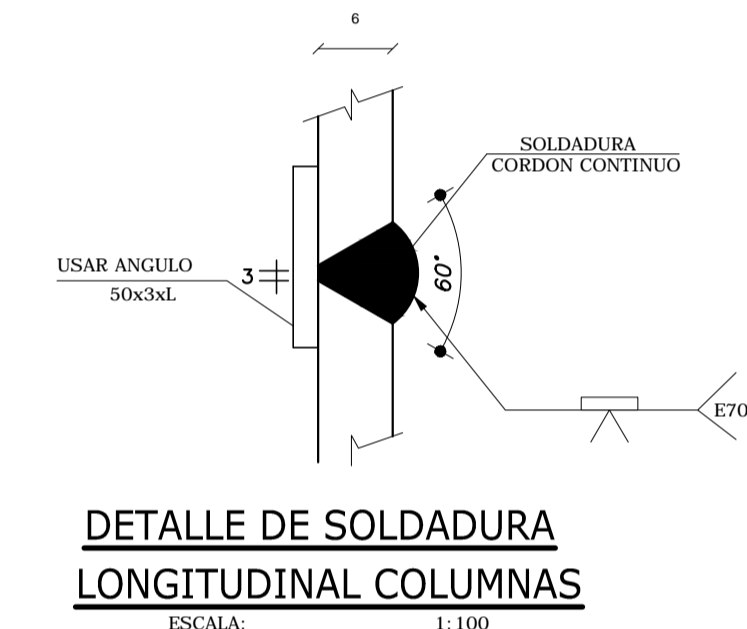
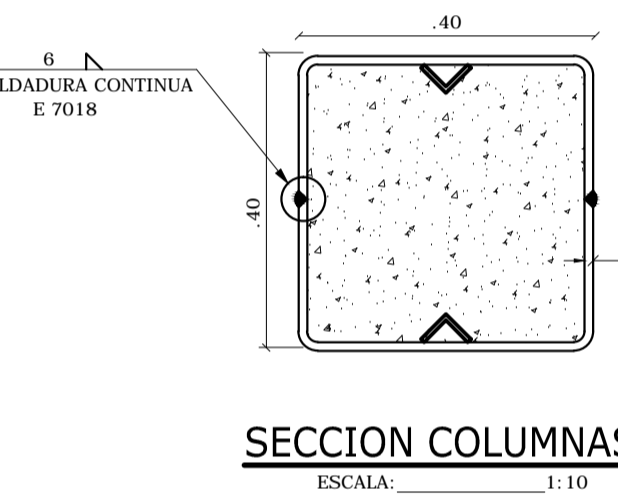
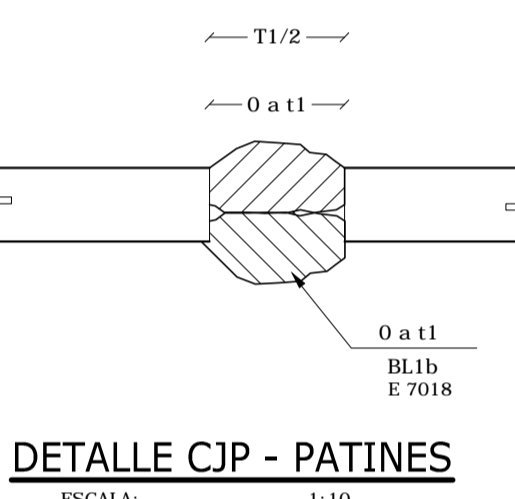
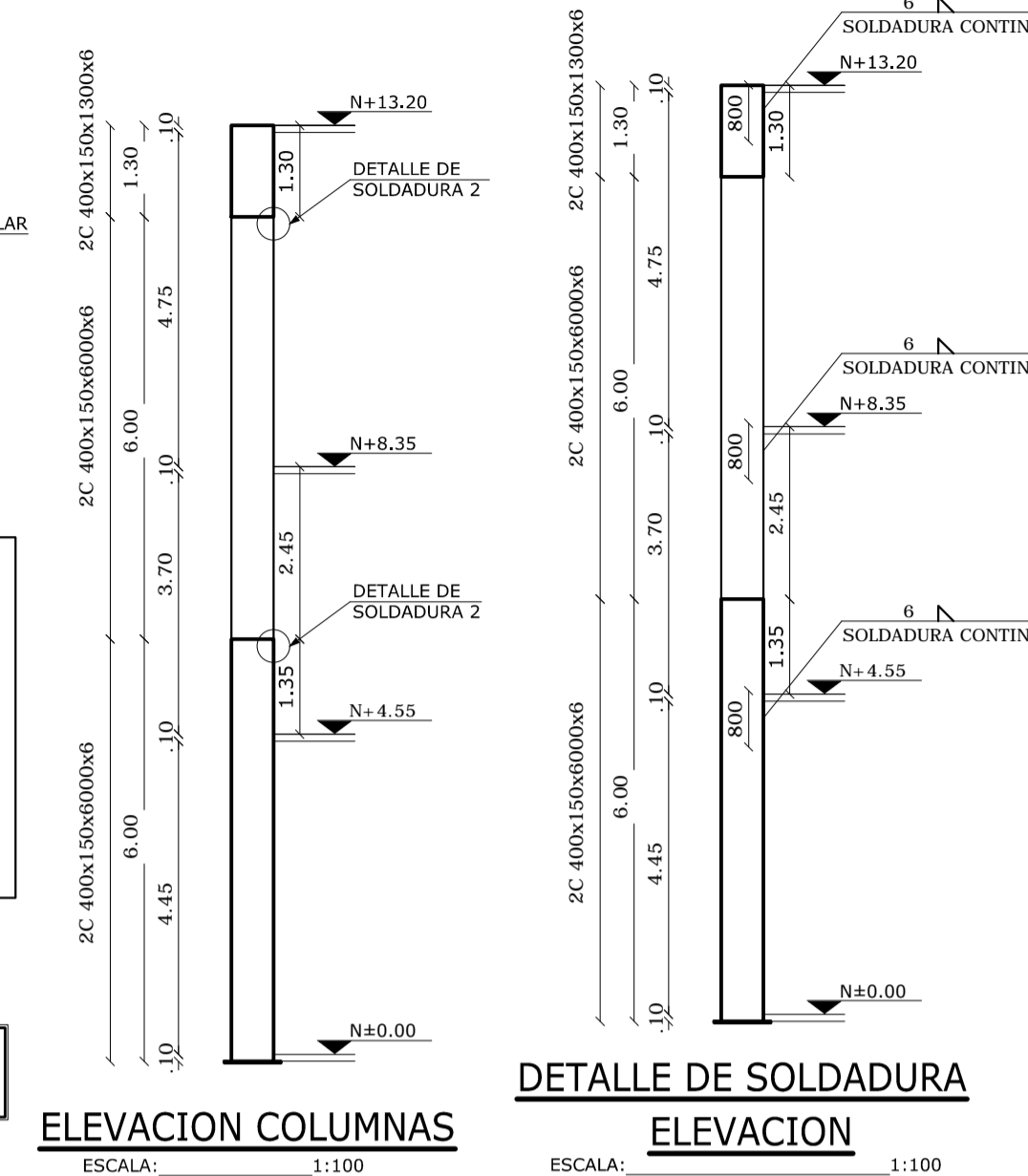
COORDINADOR DEL DEPARTAMENTO DE INFRAESTRUCTURA - UNACH



ESPECIFICACIONES TECNICAS DE SOLDADURA

- 1.- CODIGOS/ESTANDARES UTILIZADOS
_ CODIGO AWS
- 2.- SE UTILIZARA ELECTRODOS E-7018 EN TODO CON LOS SIGUIENTES DIAMETROS : Ø 3/32, Ø 1/8, Ø 5/32

NOTA: LAS SOLDADURAS DEBEN TENER UN PROCEDIMIENTO DE CALIFICACION PREVIA WPS, DEBEN SER EJECUTADOS POR PERSONAL CON CALIFICACION AWS DE CADA CASO.



ESPECIFICACIONES TECNICAS DE SOLDADURA

- Se deberán elaborar y aprobarse los Procedimientos Calificativos de Fabricación, WPS para los diversos tipos de sueldas de fabricación de vigas y columnas tanto en patines, almas y canales. En ellos se fijaran todas las variables para el proceso y el tipo de Soldadura, electrodo, tamaño y técnicas adicionales que requiere la fabricación de elementos estructurales de acuerdo a la norma AWS. Es obligatorio aplicar la norma AWS para construcciones sismo-resistentes.
- Se deberá calificar a los soldadores de taller de acuerdo a la norma AWS.
- Se deberá chequear durante la elaboración que la soldadura ejecutada en taller y en obra cumpla con los requerimientos de calidad mediante técnicas de tintas penetrantes, ultrasonido y/o rayos X, de acuerdo a la norma AWS, para proceder a la aprobación de la ejecución.