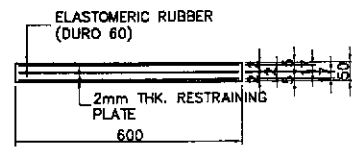
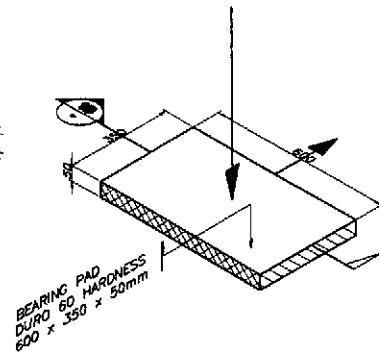


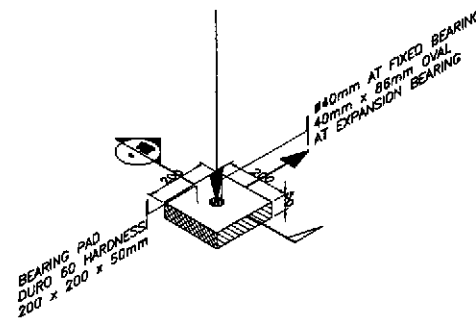
1A PLAN SCALE 1:10



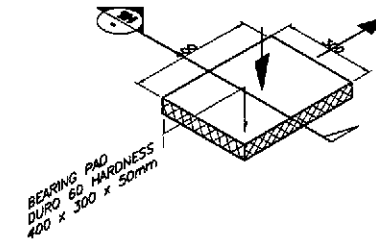
1B ELEVATION SCALE 1:10



1C ISOMETRIC VIEW

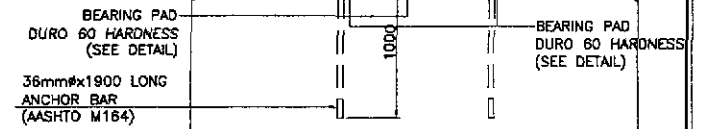


1F ISOMETRIC VIEW

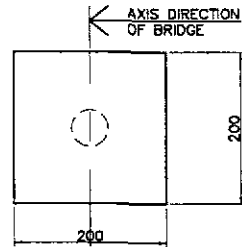


1I ISOMETRIC VIEW

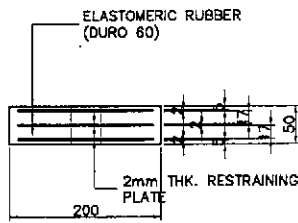
10mm # SPIRAL
50mm PITCH (TYP.)
AROUND CASING



3A ANCHOR BAR (FOR BR. 1 TO 6) SCALE 1:25



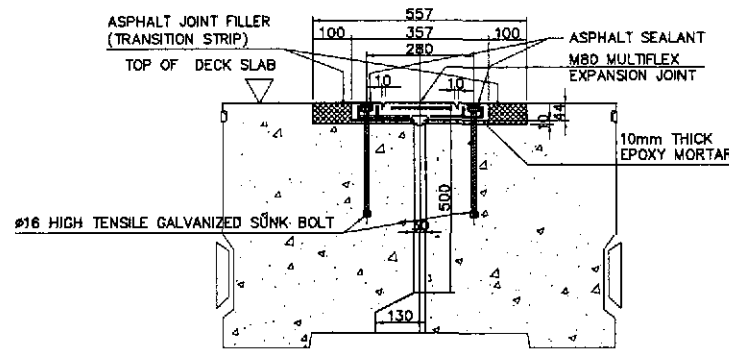
1D PLAN SCALE 1:5



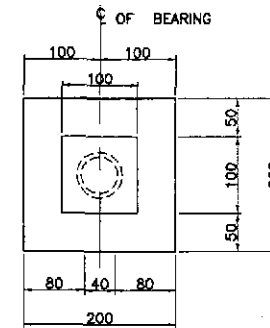
1E ELEVATION SCALE 1:5

1C ISOMETRIC VIEW

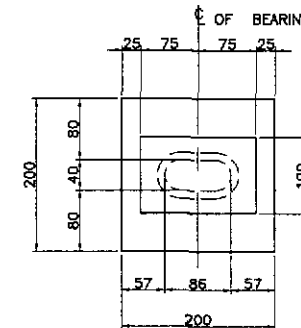
1 BEARING PAD DETAIL SCALE AS SHOWN



2B SECTION (TYPE A) SCALE 1:10



PLAN



PLAN

A.) QUALITY TESTING OF RUBBER COMPOUND

| PROPERTIES | SPECIFICATION |
|---------------------------------------------------------------|---------------|
| HARDNESS (SHORE A) | 50 ± 5 |
| TENSILE STRENGTH (MPa) | 13 MIN |
| ELONGATION AT BREAK (%) | 400 MIN |
| COMPRESSION SET (AFTER 22h AT 70°C) | 20% MAX |
| OZONE RESISTANCE (AFTER 72h AT 40°C, 20% STRAIN 100 pphm) | NO CRACK |
| OIL RESISTANCE IN ASTM NO. 3 OIL (168h AT 25°C VOLUME CHANGE) | 15% MAX |

B.) DIMENSION CHECK ON METAL PLATES

| DIMENSION | SPECIFICATION |
|-----------|---------------|
| LENGTH | ± 1 |
| WIDTH | 0 TO -1.5 MIN |
| THICKNESS | ±0.5 MIN |

C.) QUALITY CHECK

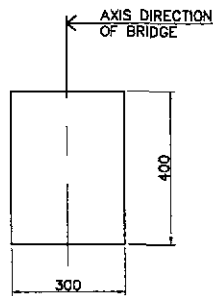
| PROPERTY | SPECIFICATION |
|---------------------------------|------------------------------|
| DIMENSION | ACCORDING TO PRODUCT DRAWING |
| SURFACE APPEARANCE | NO VISIBLE CRACK |
| RUBBER COVER HARDNESS (SHORE A) | 50 ± 5 |

INSTALLATION MATERIALS

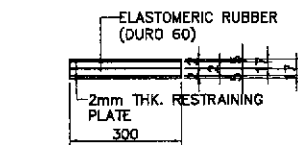
- EPOXY BEDDING
- EPOXY NOSING
- BOLT/NUTS
- SEALANT

| LOCATION | EXPANSION JOINT TYPE | MOVEMENT (mm) | LENGTH (m) |
|----------|----------------------|---------------|------------|
| BRIDGE 1 | MULTIFLEX 80 | 30 | 24 |
| BRIDGE 2 | MULTIFLEX 80 | 30 | 24 |
| BRIDGE 3 | MULTIFLEX 80 | 30 | 24 |
| BRIDGE 4 | MULTIFLEX 80 | 30 | 24 |
| BRIDGE 5 | MULTIFLEX 80 | 30 | 24 |
| BRIDGE 6 | MULTIFLEX 80 | 30 | 24 |
| BRIDGE 7 | MULTIFLEX 80 | 30 | 24 |

| LOCATION | ELASTOMERIC BEARING PAD SIZE | QUANTITY |
|----------|------------------------------|----------|
| BRIDGE 1 | 600x350x50 | 10 PCS. |
| | 200x200x50 | 18 PCS. |
| BRIDGE 2 | 600x350x50 | 10 PCS. |
| | 200x200x50 | 18 PCS. |
| BRIDGE 3 | 600x350x50 | 10 PCS. |
| | 200x200x50 | 18 PCS. |
| BRIDGE 4 | 400x350x50 | 16 PCS. |
| | 200x200x50 | 18 PCS. |
| BRIDGE 5 | 600x350x50 | 10 PCS. |
| | 200x200x50 | 18 PCS. |
| BRIDGE 6 | 600x350x50 | 10 PCS. |
| | 200x200x50 | 18 PCS. |
| BRIDGE 7 | 400x300x50 | 10 PCS. |
| | 200x200x50 | 18 PCS. |

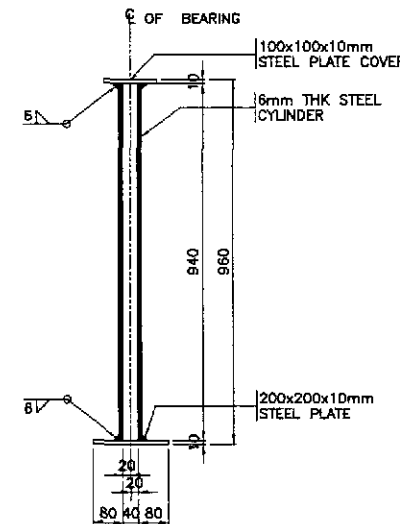


1G PLAN SCALE 1:5



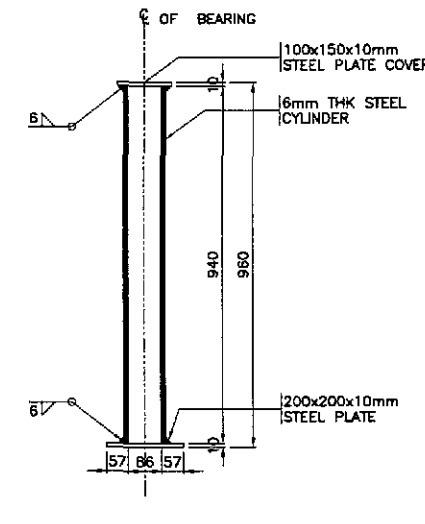
1H ELEVATION SCALE 1:5

2C SECTION (TYPE B) SCALE 1:10



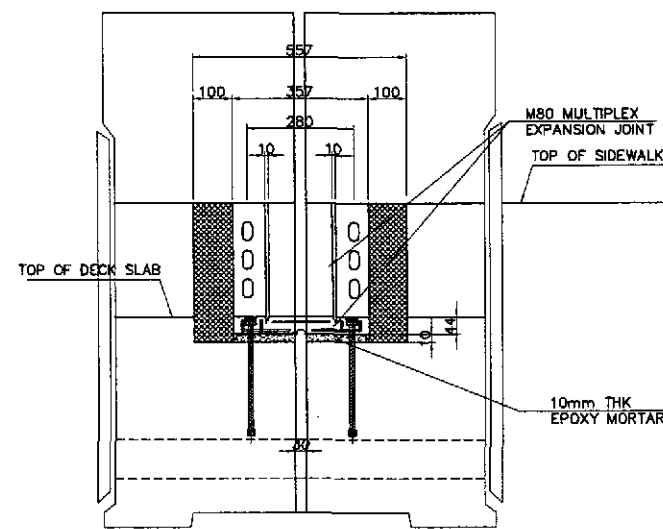
ELEVATION

3B FIXED BEARING SCALE 1:10



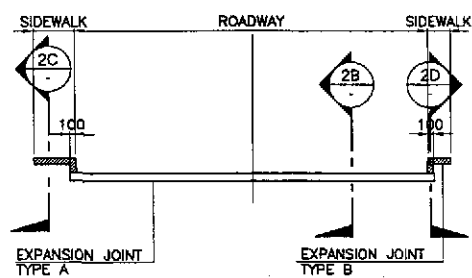
ELEVATION

3C EXPANSION BEARING SCALE 1:10



2D SECTION (TYPE A) SCALE 1:10

3 BEARING SLEEVE AND ANCHOR BAR DETAIL SCALE AS SHOWN



2A ELEVATION SCALE AS SHOWN

2 EXPANSION JOINT DETAIL SCALE AS SHOWN

3 BEARING SLEEVE AND ANCHOR BAR DETAIL SCALE AS SHOWN

JICA JAPAN INTERNATIONAL COOPERATION AGENCY
 KATAMURA & ENGINEERS INTERNATIONAL YEO YACHIYO ENGINEERING CO., LTD.

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
 BUREAU OF DESIGN OFFICE OF THE SECRETARY

PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)
 PLARIDEL BYPASS - CONTRACT PACKAGE II

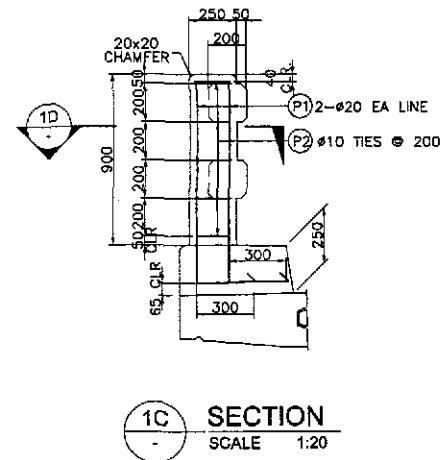
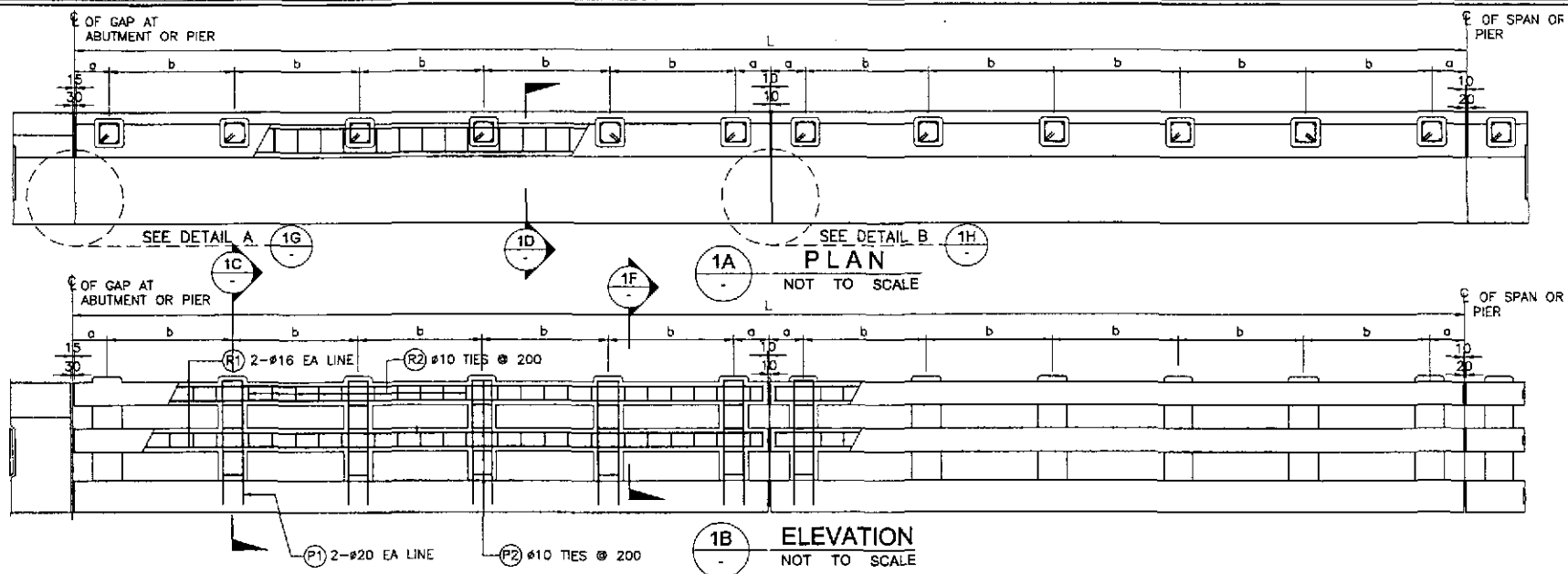
SCALE: AS SHOWN FULL SIZE A1

SHEET CONTENTS: BRIDGE NO. 1, 2, 3, 4, 5, 6 & 7 TYP. BEARING PAD, EXPANSION JOINT, BEARING SLEEVE & ANCHOR BAR DET. (ULTIMATE STAGE)

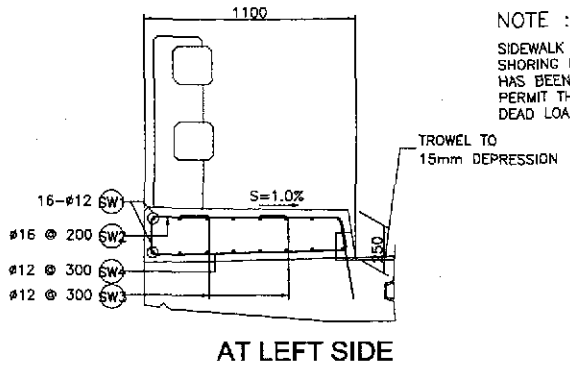
SHEET NO.: BS-01

DESIGNED: [Signature] DATE: [Date]
 CHECKED: [Signature]
 SUBMITTED: [Signature]

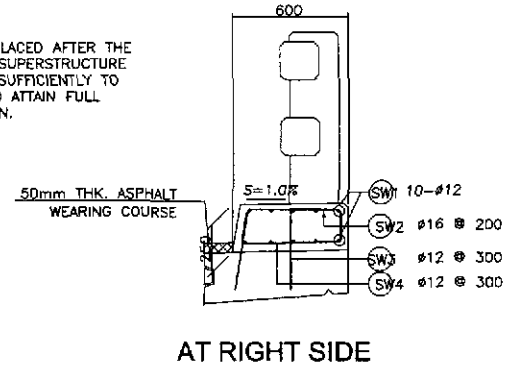
Submitted By: DANILO C. TRAJANO Project Director
 Reviewed By: ADRIANO M. DORCY Chief, Bridges Division
 Recommended By: GILBERTO S. REYES Director IV (OIC)
 Recommended By: MANUEL M. BONDAN Undersecretary
 Approved By: SIMON A. DATUMANONG Secretary



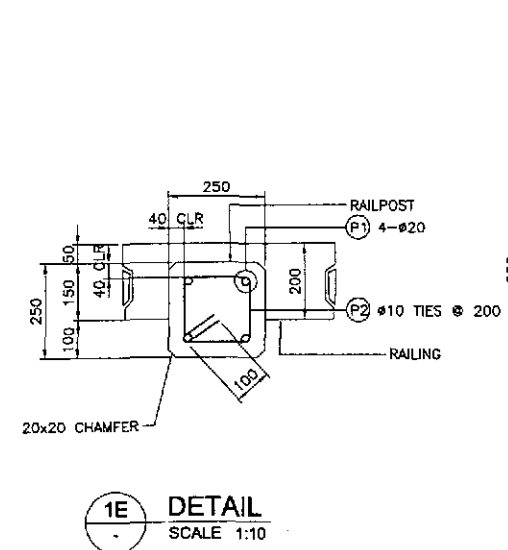
1C SECTION SCALE 1:20



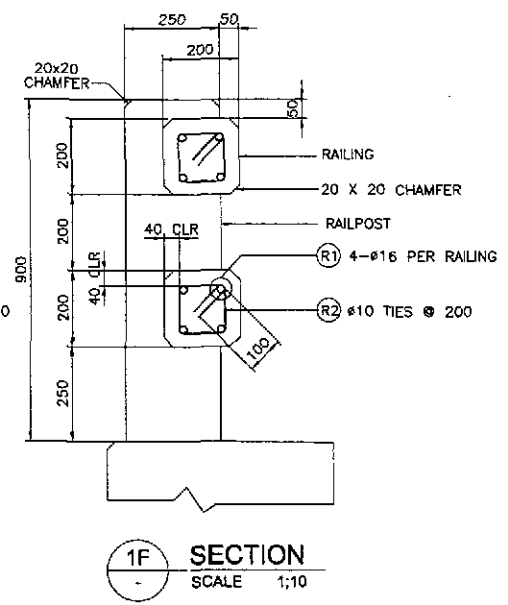
1D SIDEWALK DETAIL SCALE 1:20



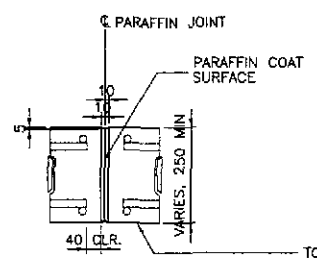
AT RIGHT SIDE



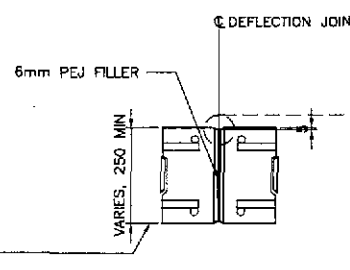
1E DETAIL SCALE 1:10



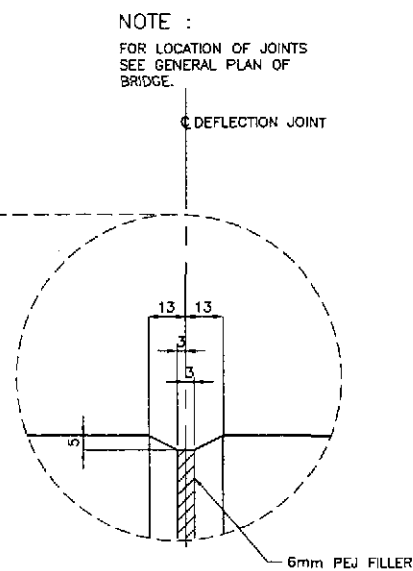
1F SECTION SCALE 1:10



DETAIL A PARAFFIN JOINT NOT TO SCALE

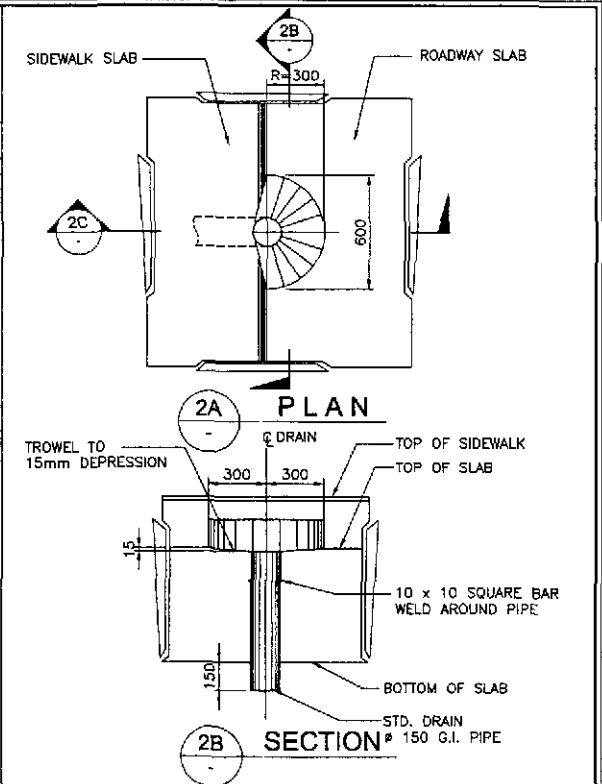


DETAIL B DEFLECTION JOINT NOT TO SCALE

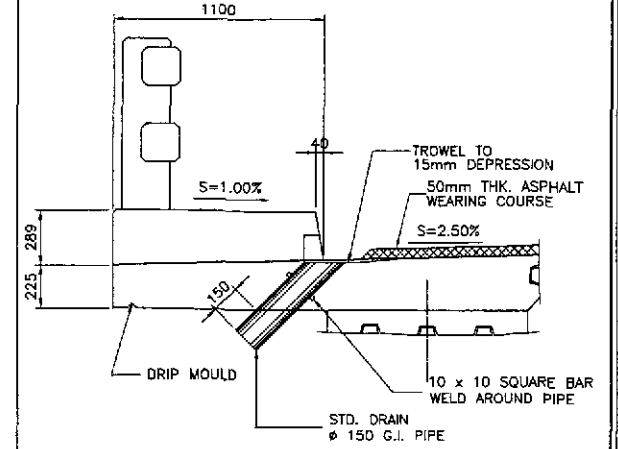


NOTE: FOR LOCATION OF JOINTS SEE GENERAL PLAN OF BRIDGE.

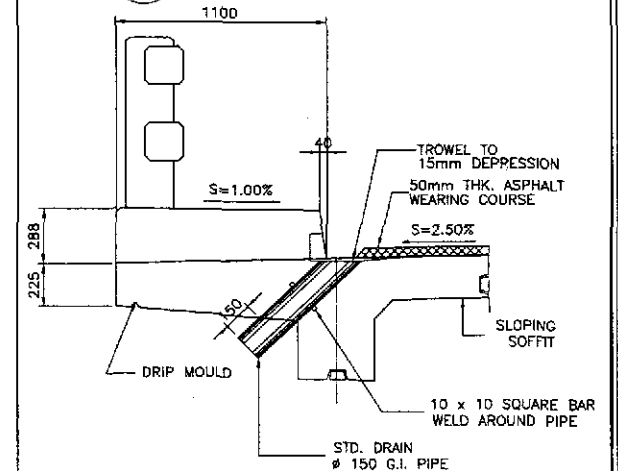
1 TYPICAL RAILING AND SIDEWALK DETAILS SCALE AS SHOWN



2A PLAN 2B SECTION



2C SECTION FOR BRIDGE 1 TO 6



2D SECTION FOR BRIDGE 7

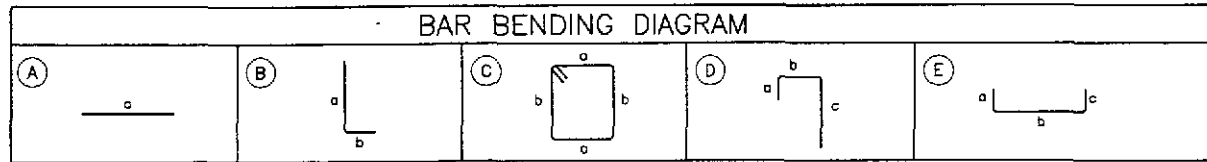
2 TYPICAL DRAIN DETAILS SCALE 1:20

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY
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YEO YACHIYO ENGINEERING CO., LTD.

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
OFFICE OF THE SECRETARY
Submitted By: DANILO C. TRAJANO, Project Director
Reviewed By: ADRIANO M. DORCY, Chief, Bridges Division
Recommended By: GILBERTO S. REYES, Director IV (CIC)
Approved By: MANUEL M. BONOAN, Undersecretary
Approved By: SIMEON A. DATUMANING, Secretary

PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)
PLARIDEL BYPASS - CONTRACT PACKAGE II
SCALE: AS SHOWN
FULL SIZE A1

SHEET CONTENTS: BRIDGE 1, 2, 3, 4, 5, 6 & 7
TYPICAL SIDEWALK, RAILING AND DRAIN DETAILS (ULTIMATE STAGE)
SHEET NO.: BS-02

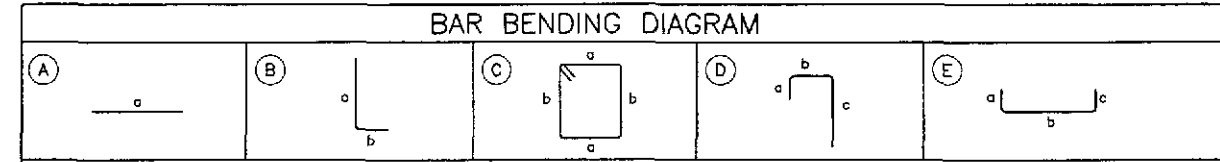


SCHEDULE OF REINFORCEMENT (POST, RAILING AND SIDEWALK)

| LOCATION | | CONCRETE VOLUME (m³) | BAR MARK | BAR SIZE | QTY. | SPACING | BAR SHAPE | DIMENSIONS (mm) OUT TO OUT | | | | | LENGTH EA. BAR (mm) | TOTAL LENGTH (m) | UNIT WEIGHT (kg/m) | WEIGHT (kg) | REBAR RATIO (kg/m³) | |
|------------------------|----------|----------------------|----------|----------|------|----------|-----------|----------------------------|------|-----|---|---|---------------------|------------------|--------------------|-------------|---------------------|--------|
| | | | | a | b | c | d | e | | | | | | | | | | |
| BRIDGE NO. 1, 2, 5 & 6 | POST | 2.70 | (P1) | 20 | 192 | AS SHOWN | (B) | 1045 | 450 | - | - | - | 1495 | 287.04 | 2.466 | 708 | 310.74 | |
| | | | (P2) | 10 | 240 | 200 | (C) | 170 | 170 | 100 | - | - | - | 880 | 211.20 | 0.616 | | 131 |
| BRIDGE NO. 3 | POST | 2.25 | (P1) | 20 | 160 | AS SHOWN | (B) | 1045 | 450 | - | - | - | 1495 | 239.20 | 2.466 | 590 | 310.67 | |
| | | | (P2) | 10 | 200 | 200 | (C) | 170 | 170 | 100 | - | - | - | 880 | 178.00 | 0.616 | | 109 |
| BRIDGE NO. 4 | POST | 1.69 | (P1) | 20 | 120 | AS SHOWN | (B) | 1045 | 450 | - | - | - | 1495 | 179.40 | 2.466 | 443 | 311.11 | |
| | | | (P2) | 10 | 150 | 200 | (C) | 170 | 170 | 100 | - | - | - | 880 | 132.00 | 0.616 | | 82 |
| BRIDGE NO. 7 | POST | 3.38 | (P1) | 20 | 240 | AS SHOWN | (B) | 1045 | 450 | - | - | - | 1495 | 358.80 | 2.466 | 885 | 331.85 | |
| | | | (P2) | 10 | 300 | 200 | (C) | 170 | 170 | 100 | - | - | - | 880 | 264.00 | 0.616 | | 235 |
| BRIDGE NO. 1 | RAILING | 5.50 | (R1) | 16 | 16 | AS SHOWN | (A) | 35000 | - | - | - | - | 35000 | 560.00 | 1.579 | 885 | 206.07 | |
| | | | (R2) | 10 | 640 | 200 | (C) | 120 | 120 | 100 | - | - | 680 | 435.20 | 0.616 | 269 | | |
| BRIDGE NO. 2 & 5 | RAILING | 5.36 | (R1) | 16 | 16 | AS SHOWN | (A) | 33500 | - | - | - | - | 33500 | 536.00 | 1.579 | 847 | 201.87 | |
| | | | (R2) | 10 | 560 | 200 | (C) | 120 | 120 | 100 | - | - | 680 | 380.80 | 0.616 | 235 | | |
| BRIDGE NO. 3 | RAILING | 4.80 | (R1) | 16 | 16 | AS SHOWN | (A) | 30000 | - | - | - | - | 30000 | 480.00 | 1.579 | 758 | 208.33 | |
| | | | (R2) | 10 | 576 | 200 | (C) | 120 | 120 | 100 | - | - | 680 | 391.68 | 0.616 | 242 | | |
| BRIDGE NO. 4 | RAILING | 3.84 | (R1) | 16 | 16 | AS SHOWN | (A) | 24000 | - | - | - | - | 24000 | 384.00 | 1.579 | 607 | 205.21 | |
| | | | (R2) | 10 | 432 | 200 | (C) | 120 | 120 | 100 | - | - | 680 | 293.76 | 0.616 | 181 | | |
| BRIDGE NO. 6 | RAILING | 6.40 | (R1) | 16 | 16 | AS SHOWN | (A) | 40000 | - | - | - | - | 40000 | 640.00 | 1.579 | 1011 | 205.16 | |
| | | | (R2) | 10 | 720 | 200 | (C) | 120 | 120 | 100 | - | - | 680 | 489.60 | 0.616 | 302 | | |
| BRIDGE NO. 7 | RAILING | 7.20 | (R1) | 16 | 16 | AS SHOWN | (A) | 45000 | - | - | - | - | 45000 | 1170.00 | 1.579 | 1848 | 306.94 | |
| | | | (R2) | 10 | 864 | 200 | (C) | 120 | 120 | 100 | - | - | 680 | 350.52 | 0.616 | 362 | | |
| BRIDGE NO. 1 | SIDEWALK | 14.88 | (SW1) | 12 | 26 | AS SHOWN | (A) | 35000 | - | - | - | - | 35000 | 910.00 | 0.888 | 809 | 132.24 | |
| | | | (SW2) | 16 | 176 | 200 | (D) | 170 | 980 | 400 | - | - | - | 1550 | 272.80 | 1.579 | | 431 |
| | | | (SW2a) | 16 | 176 | 200 | (D) | 170 | 480 | 400 | - | - | - | 1050 | 184.80 | 1.579 | | 292 |
| | | | (SW3) | 12 | 351 | 300 | (B) | 400 | 250 | - | - | - | - | 650 | 228.15 | 0.888 | | 203 |
| | | | (SW3a) | 12 | 117 | 300 | (E) | 170 | 1020 | 170 | - | - | - | 1360 | 159.12 | 0.888 | | 142 |
| BRIDGE NO. 2 & 5 | SIDEWALK | 14.24 | (SW4a) | 12 | 117 | 300 | (E) | 170 | 520 | 170 | - | - | - | 860 | 100.62 | 0.888 | 90 | 132.12 |
| | | | (SW) | 12 | 14 | AS SHOWN | (A) | 33500 | - | - | - | - | - | 33500 | 871.00 | 0.888 | 774 | |
| | | | (SW2) | 16 | 200 | 200 | (D) | 170 | 980 | 400 | - | - | - | 1550 | 260.40 | 1.579 | 412 | |
| | | | (SW2a) | 16 | 200 | 200 | (D) | 170 | 480 | 400 | - | - | - | 1050 | 176.40 | 1.579 | 279 | |
| | | | (SW3) | 12 | 200 | 300 | (B) | 400 | 250 | - | - | - | - | 650 | 218.40 | 0.888 | 194 | |
| | | | (SW3a) | 12 | 100 | 300 | (E) | 170 | 1020 | 170 | - | - | - | 1360 | 152.32 | 0.888 | 136 | |
| | | | (SW4a) | 12 | 8 | 300 | (E) | 170 | 520 | 170 | - | - | - | 860 | 96.32 | 0.888 | 86 | |

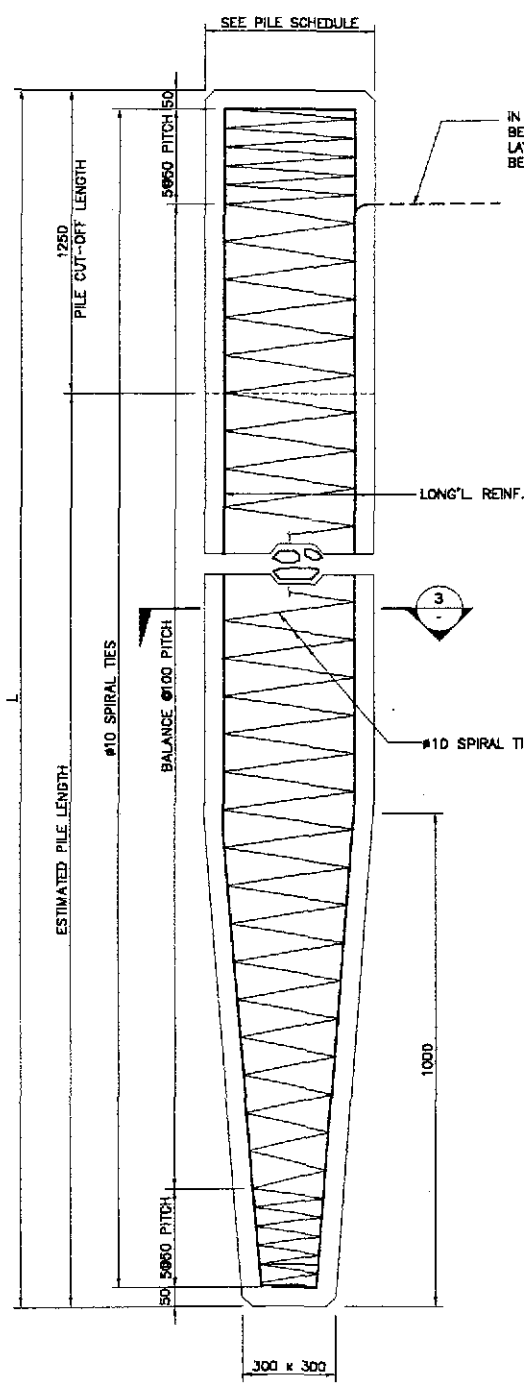
RAILING FOR BRIDGES

| BRIDGE NO. | SPAN LENGTH (m) | NO. OF EXP. JT. INSIDE SPAN | NO. OF POST W/IN EXP. JT. | NO. OF RAIL POST PER SPAN | L (mm) | a (mm) | b (mm) |
|------------|-----------------|-----------------------------|---------------------------|---------------------------|--------|--------|--------|
| 1 | 35.00 | 3 | 6 | 48 | 17515 | 250 | 1652 |
| 2 & 5 | 33.50 | 3 | 6 | 48 | 16765 | 250 | 1577 |
| 3 | 30.00 | 3 | 5 | 40 | 15015 | 250 | 1752 |
| 4 | 24.00 | 2 | 4 | 30 | 12015 | 250 | 1836 |
| 6 | 40.00 | 3 | 6 | 48 | 20015 | 250 | 1902 |
| 7 | 15.00 | 1 | 5 | 40 | 15015 | 250 | 1752 |
| | 15.00 | 1 | 5 | 20 | 15000 | 250 | 1750 |



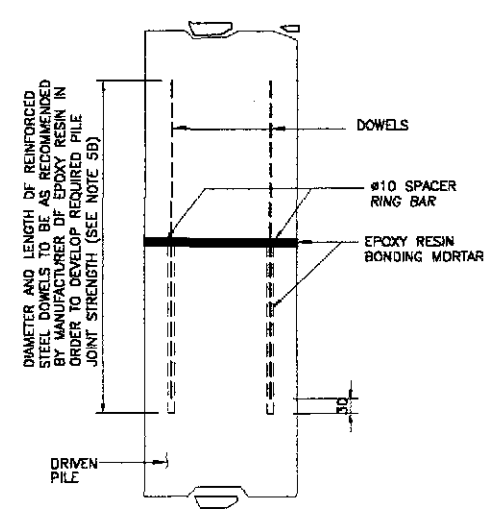
SCHEDULE OF REINFORCEMENT (POST, RAILING AND SIDEWALK)

| LOCATION | | CONCRETE VOLUME (m³) | BAR MARK | BAR SIZE | QTY. | SPACING | BAR SHAPE | DIMENSIONS (mm) OUT TO OUT | | | | | LENGTH EA. BAR (mm) | TOTAL LENGTH (m) | UNIT WEIGHT (kg/m) | WEIGHT (kg) | REBAR RATIO (kg/m³) | |
|--------------|----------|----------------------|----------|----------|------|----------|-----------|----------------------------|------|-----|---|---|---------------------|------------------|--------------------|-----------------------------|---------------------|--------|
| | | | | a | b | c | d | e | | | | | | | | | | |
| BRIDGE NO. 3 | SIDEWALK | 12.75 | (SW1) | 12 | 26 | AS SHOWN | (A) | 30000 | - | - | - | - | 30000 | 780.00 | 0.888 | 693 | 132.47 | |
| | | | (SW2) | 16 | 151 | 200 | (D) | 170 | 980 | 400 | - | - | - | 1550 | 234.05 | 1.579 | | 370 |
| | | | (SW2a) | 16 | 151 | 200 | (D) | 170 | 480 | 400 | - | - | - | 1050 | 158.55 | 1.579 | | 251 |
| | | | (SW3) | 12 | 303 | 300 | (B) | 400 | 250 | - | - | - | - | 650 | 196.95 | 0.888 | | 175 |
| | | | (SW3a) | 12 | 101 | 300 | (E) | 170 | 1020 | 170 | - | - | - | 1360 | 137.36 | 0.888 | | 122 |
| BRIDGE NO. 4 | SIDEWALK | 10.20 | (SW4a) | 12 | 101 | 300 | (E) | 170 | 520 | 170 | - | - | - | 860 | 86.86 | 0.888 | 78 | 132.75 |
| | | | (SW1) | 12 | 26 | AS SHOWN | (A) | 24000 | - | - | - | - | - | 24000 | 624.00 | 0.888 | 555 | |
| | | | (SW2) | 16 | 121 | 200 | (D) | 170 | 980 | 400 | - | - | - | 1550 | 187.00 | 1.579 | 297 | |
| | | | (SW2a) | 16 | 121 | 200 | (D) | 170 | 480 | 400 | - | - | - | 1050 | 127.00 | 1.579 | 201 | |
| | | | (SW3) | 12 | 243 | 300 | (B) | 400 | 250 | - | - | - | - | 650 | 157.00 | 0.888 | 141 | |
| BRIDGE NO. 6 | SIDEWALK | 17.00 | (SW3a) | 12 | 81 | 300 | (E) | 170 | 1020 | 170 | - | - | - | 1360 | 110.00 | 0.888 | 98 | 132.00 |
| | | | (SW4a) | 12 | 81 | 300 | (E) | 170 | 520 | 170 | - | - | - | 860 | 69.66 | 0.888 | 62 | |
| | | | (SW1) | 12 | 26 | AS SHOWN | (A) | 40000 | - | - | - | - | - | 40000 | 1040.00 | 0.888 | 924 | |
| | | | (SW2) | 16 | 200 | 200 | (D) | 170 | 980 | 400 | - | - | - | 1550 | 310.00 | 1.579 | 490 | |
| | | | (SW2a) | 16 | 200 | 200 | (D) | 170 | 480 | 400 | - | - | - | 1050 | 210.00 | 1.579 | 332 | |
| BRIDGE NO. 7 | SIDEWALK | 14.88 | (SW3) | 12 | 402 | 300 | (B) | 400 | 250 | - | - | - | 650 | 261.30 | 0.888 | 233 | 132.24 | |
| | | | (SW3a) | 12 | 134 | 300 | (E) | 170 | 1020 | 170 | - | - | - | 1360 | 182.24 | 0.888 | | 162 |
| | | | (SW4a) | 12 | 134 | 300 | (E) | 170 | 520 | 170 | - | - | - | 860 | 115.24 | 0.888 | | 103 |
| | | | (SW1) | 12 | 26 | AS SHOWN | (A) | 45000 | - | - | - | - | - | 45000 | 1107.00 | 0.888 | | 1039 |
| | | | (SW2) | 16 | 226 | 200 | (D) | 170 | 980 | 400 | - | - | - | 1550 | 350.30 | 1.579 | | 554 |
| | | | (SW2a) | 16 | 226 | 200 | (D) | 170 | 480 | 400 | - | - | - | 1050 | 237.30 | 1.579 | 375 | |
| | | | (SW3) | 12 | 453 | 300 | (B) | 400 | 250 | - | - | - | 650 | 294.45 | 0.888 | 262 | | |
| | | | (SW3a) | 12 | 151 | 300 | (E) | 170 | 1020 | 170 | - | - | - | 1360 | 205.36 | 0.888 | 183 | |
| | | | (SW4a) | 12 | 151 | 300 | (E) | 170 | 520 | 170 | - | - | - | 860 | 129.86 | 0.888 | 116 | |
| BRIDGE NO. 1 | TOTAL | 23.18 | | | | | | | | | | | | | | GRADE 40 TOTAL = 3,960 kgs. | | |
| BRIDGE NO. 2 | TOTAL | 22.30 | | | | | | | | | | | | | | GRADE 40 TOTAL = 3,802 kgs. | | |
| BRIDGE NO. 3 | TOTAL | 19.80 | | | | | | | | | | | | | | GRADE 40 TOTAL = 3,388 kgs. | | |
| BRIDGE NO. 4 | TOTAL | 15.73 | | | | | | | | | | | | | | GRADE 40 TOTAL = 2,667 kgs. | | |
| BRIDGE NO. 5 | TOTAL | 22.30 | | | | | | | | | | | | | | GRADE 40 TOTAL = 3,802 kgs. | | |
| BRIDGE NO. 6 | TOTAL | 26.10 | | | | | | | | | | | | | | GRADE 40 TOTAL = 4,396 kgs. | | |
| BRIDGE NO. 7 | TOTAL | 25.46 | | | | | | | | | | | | | | GRADE 40 TOTAL = 5,859 kgs. | | |

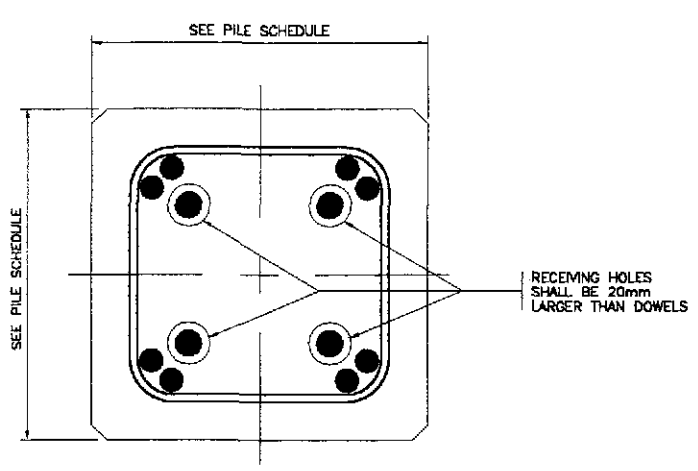


1 PILE ELEVATION
NOT TO SCALE

| PILE SCHEDULE | | | | |
|---------------|-----------|---------------------|----------|---------------------------------|
| TYPE | SIZE (mm) | LONGITUDINAL REINF. | | ALLOWABLE BEARING CAPACITY (kN) |
| | | QTY. | BAR SIZE | |
| I | 450 x 450 | 8 | 28 | 680 |
| II | 450 x 450 | 8 | 32 | 680 |
| III | 400 x 400 | 8 | 28 | 490 |

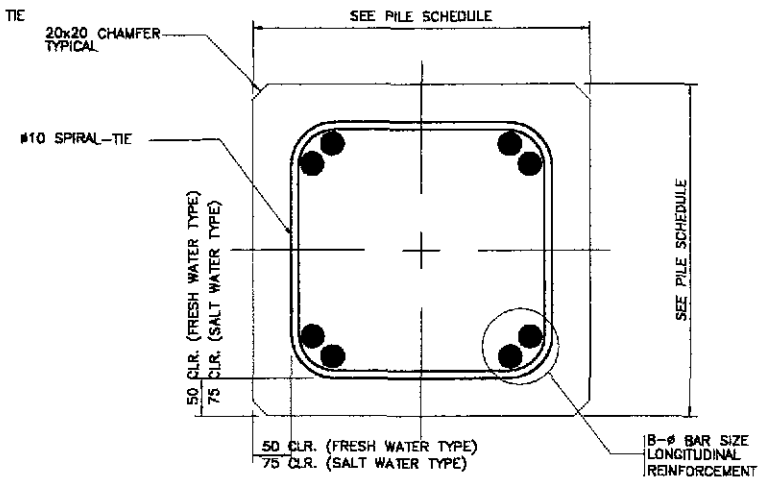


2A ELEVATION
N T S

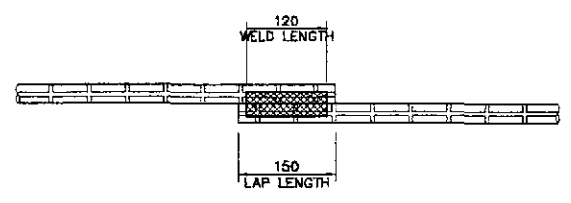


2B SECTION
N T S

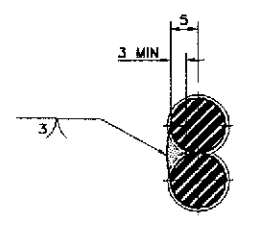
2 PILE SPICE DETAIL
NOT TO SCALE



3 SECTION
NOT TO SCALE

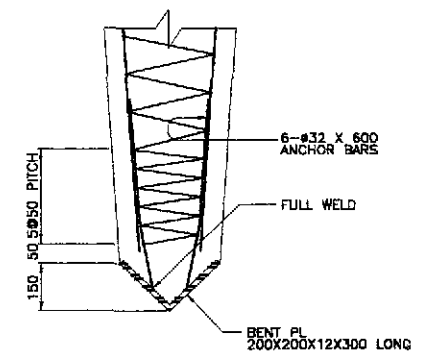


5A ELEVATION
N T S



5B SECTION
N T S

5 WELDED SPIRAL TIE SPLICE DETAIL
NOT TO SCALE



4 PILE TIP FOR HARD DRIVING
NOT TO SCALE

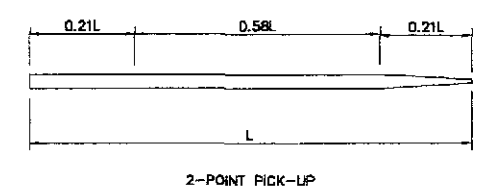
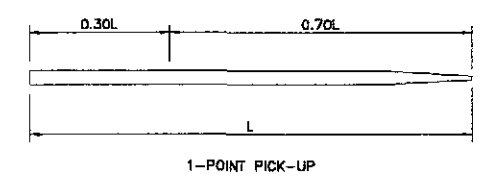
NOTES

- CONCRETE :
CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF CLASS AA CONCRETE WITH 28 MPa CYLINDER STRENGTH AND 19.0mm MAXIMUM AGGREGATE SIZE.
- REINFORCEMENT :
A. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASSHTO M31 (ASTM A615) GRADE 40 AND 60.
B. SPLICES OF ADJACENT LONGITUDINAL STEEL SHALL BE STAGGERED 100 BAR DIAMETERS APART. LENGTH OF SPLICES SHALL BE 1000mm FOR #25 AND 1300mm FOR #28 AND 1700mm FOR #32.
C. SPIRAL-TIES SHALL BE WELDED AT SPLICES.
- DRIVING :
A. PILE HEADS SHALL BE PROTECTED FROM DIRECT IMPACT OF THE HAMMER BY CUSHION BLOCKS CONSISTING OF SEVERAL BLOCKS OF WOOD OR OF OTHER APPROVED MATERIALS.
B. PILES SHALL BE DRIVEN TO A DEPTH THAT WILL PRODUCE THE REQUIRED ALLOWABLE BEARING CAPACITY.
- PILE FOUNDATION DESIGN:
A. IN PILE-BENT PIERS, PILE LENGTHS SHALL BE DETERMINED BY THE ENGINEER/CONSULTANT BASED ON THE ALLOWABLE PILE BEARING CAPACITY SPECIFIED BELOW.
B. IN COLUMN-BENT PIERS, THE NUMBER, LOCATION AND LENGTH OF PILES SHALL BE DETERMINED BY THE ENGINEER/CONSULTANT BASED ON THE LOADING INFORMATION GIVEN IN THE PIER DETAILS.
- PILE SPLICE :
A. PILES MAY BE SPLICED ONLY IF STRICTLY NECESSARY AND APPROVED BY THE ENGINEER/CONSULTANT. PILE SPLICES SHALL BE LOCATED AT LEAST 10m BELOW THE EXISTING GROUND LEVEL.
B. PILE SPLICE SHALL DEVELOP 100% AXIAL AND 50% BENDING OF THE CAPACITY OF THE PILE SECTION WHERE THE SPLICE IS LOCATED.
- ALLOWABLE PILE BEARING CAPACITY : (SEE PILE SCHEDULE)
- MINIMUM HAMMER ENERGY RATING = 55 kN-m
- BASIS FOR COMPUTING ALLOWABLE PILE BEARING CAPACITY:

$$P_{all} = \left(\frac{167 e_h E_h}{S + 2.54} \right) \left(\frac{W_r + 0.16 W_p}{W_r + W_p} \right)$$

WHERE:
 P_{all} = ALLOWABLE PILE BEARING CAPACITY (kN)
 e_h = HAMMER EFFICIENCY
 E_h = HAMMER ENERGY RATING (kN-m)
 W_r = WEIGHT OF RAM (kN)
 W_p = WEIGHT OF PILE AND OTHER DRIVEN WEIGHTS (kN)
 S = AVERAGE PENETRATION PER BLOW FOR THE LAST 150mm OF DRIVING (mm)

- TEST PILES
TEST PILES SHALL BE DRIVEN WITH THE SAME HAMMER USED FOR DRIVING REGULAR PILES AND MAY BE PART OF FOUNDATION IF APPROVED BY THE ENGINEER/CONSULTANT.
- PICK-UP POINTS :
PICK-UP POINTS SHALL BE MARKED ON ALL PILES AND ALL LIFTING SHALL BE DONE AT THESE POINTS.



THE USE OF SPECIAL EMBEDDED OR ATTACHED LIFTING DEVICES SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER/CONSULTANT.

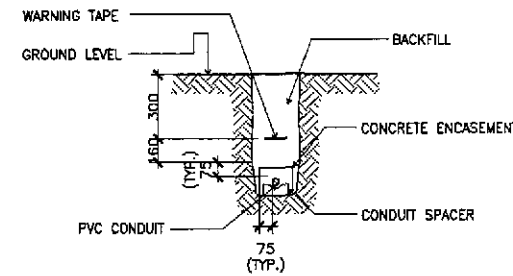
ELECTRICAL

LEGEND AND SYMBOLS:

- STREET LIGHTING POLE WITH 1 x 250 WATTS, 240 VOLTS HIGH PRESSURE SODIUM LUMINAIRE SINGLE BRACKET / SINGLE ARM, LOCATED AT 180° ON CENTER IES TYPE III MEDIUM SEMI CUT-OFF, SIMILAR TO GE M250A2
- -DITTO- EXCEPT DOUBLE ARM LIGHT POLE WITH 2 x 250 WATTS HPS LAMP
- ▣ SERVICE ENTRANCE AND METERING PEDESTAL WITH LIGHTING CONTACTOR PANEL AS SHOWN IN THE DRAWINGS.
- UNDERGROUND CONDUIT WITH CONCRETE ENVELOPE
- ▨ UNDERGROUND CONDUIT WITH REINFORCED CONCRETE ENVELOPE
- Ⓜ KILOWATT HOUR METER, PHASE, VOLTAGE AND RATING AS SHOWN.
- CIRCUIT HOMERUN
- ////// UNDERGROUND CONDUIT TO BE ABANDONED

NOTES:


1. UNLESS OTHERWISE SPECIFIED, TOP OF CONCRETE ENVELOPE SHALL NOT BE LESS THAN 460mm BELOW FINISHED GRADE LINE EXCEPT, THAT UNDER ROAD AND PAVEMENT, IT SHALL BE NOT LESS THAN 600mm.
2. PROVIDE STEEL REBAR REINFORCEMENT ON PAVED AREA.
3. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE F'_c SHALL BE 13.8MPa (2000PSI)
4. REINFORCING BARS SHALL CONFORM TO P5 GRADE 227, $F_y=227MPa$ (33,000PSI)
5. MAXIMUM SPACING OF PRECAST SPACER SHALL BE 1.5 METERS.
6. ALL DIMENSIONS ARE IN MILLIMETER, UNLESS OTHERWISE SPECIFIED.






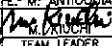


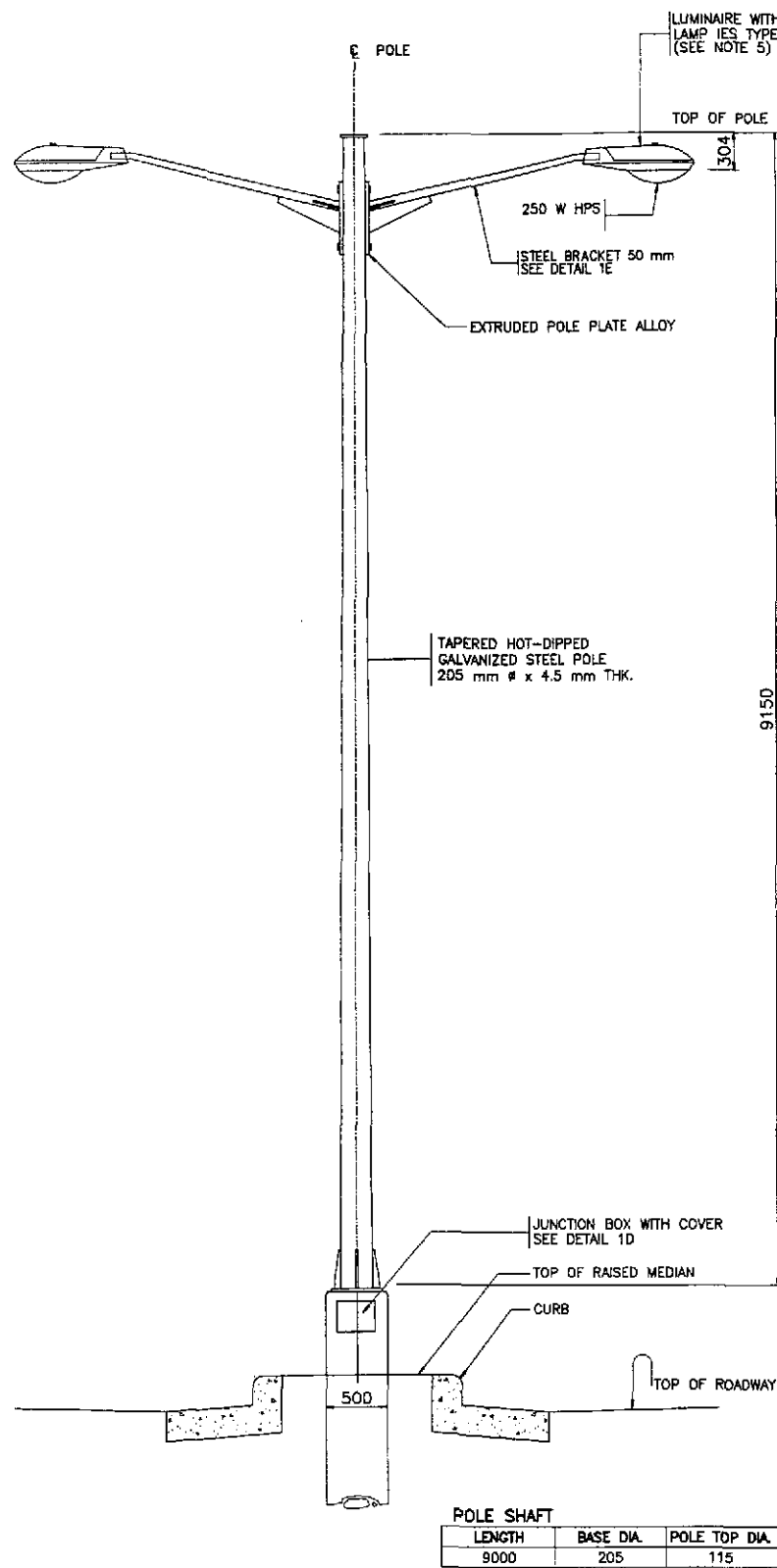
1 TYPICAL DUCT SECTION
ES-01 NOT TO SCALE

GENERAL NOTES:

1. ALL ELECTRICAL WORKS SHALL BE DONE IN ACCORDANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, THE LAWS AND ORDINANCES OF THE LOCAL CODE, ENFORCING AUTHORITIES AND THE REQUIREMENTS OF THE LOCAL POWER COMPANY. THE ELECTRICAL WORK SHALL BE DONE UNDER THE DIRECT SUPERVISION OF A DULY REGISTERED ELECTRICAL ENGINEER.
2. THE CONTRACTOR SHALL SECURE ALL PERMITS AND PAY ALL FEES REQUIRED FOR THE WORK AND FURNISH THE OWNER, THROUGH THE ENGINEER'S FINAL CERTIFICATES OF ELECTRICAL INSPECTION AND APPROVAL FROM PROPER GOVERNMENT AUTHORITIES FOR COMPLETED WORK.
3. THE POWER SERVICE VOLTAGE SHALL BE 240V, 1ϕ, 2W, 60 Hz. UNLESS OTHERWISE INDICATED, ALL MATERIALS TO BE USED AND EQUIPMENT TO BE INSTALLED SHALL BE BRAND NEW AND MUST BE OF THE APPROVED TYPES FOR THE PARTICULAR LOCATION AND PURPOSE INTENDED.
4. ALL WIRES SHALL BE COPPER, THERMOPLASTIC INSULATED TYPE THW, 600V, UNLESS OTHERWISE INDICATED. BRAND SHALL BE PHELPS DODGE, DURAFLEX OR APPROVED EQUAL.
5. UNLESS OTHERWISE INDICATED, THE MINIMUM SIZE OF CIRCUIT CONDUCTORS FROM STEEL POLE JUNCTION BOX/HANDHOLE TO EACH LUMINAIRE SHALL BE 2-3.5mm²THW & 1-3.5mm²TW(GND) INSIDE STEEL POLE.
6. RIGID STEEL CONDUIT SHALL BE USED FOR ALL EXPOSED AND CONCEALED CONDUIT RUN AND UNPLASTICIZED POLYVINYL CHLORIDE CONDUIT, SCHEDULE 40 FOR UNDERGROUND CONDUIT. THE CONDUIT SIZE INDICATED IS THE INSIDE DIAMETER OF CONDUIT.
7. ALL NON-CURRENT CARRYING PARTS OF EVERY ELECTRICAL EQUIPMENT/FIXTURE SHALL BE GROUNDED EFFECTIVELY.
8. UNDERGROUND CONDUIT RUN SHALL BE BURIED A MINIMUM OF 460mm BELOW GROUND LEVEL UNLESS OTHERWISE INDICATED, CONDUIT RUN CROSSING STREET SHALL BE ENCASED IN STEEL REINFORCED 2500 PSI CONCRETE WITH MINIMUM OF 75mm (3 INCHES) THICKNESS COVERED ALL AROUND.
9. ALL CONDUIT RUNS SHALL BE PROVIDED WITH AN 8.0mm TW COPPER GROUND WIRE. THIS GROUND WIRE SHALL BE TERMINATED AT THE PANELBOARD LOCATION. ALL METAL SURFACES SHALL LIKEWISE BE GROUNDED.
10. ALL STREET LUMINAIRE ASSEMBLY INCLUDING POLE AND FOUNDATION SHALL WITHSTAND WINDS UP TO 250 KPH PER HOUR GUSTING WITHOUT PERMANENT DEFORMATION.
11. DO NOT INSTALL POLE WITHOUT COMPLETE INSTALLATION/CONNECTION OF THE LUMINAIRE ASSEMBLY.
12. CONCRETE HANDHOLES OR OUTDOOR TYPE PULLBOXES OF CODE 1.61mm (GAGE 16) MINIMUM SHALL BE PROVIDED BY THE CONTRACTOR, WHENEVER NECESSARY, TO FACILITATE WIRE PULLING EVEN IF THESE ITEMS ARE NOT SHOWN IN THE PLANS.

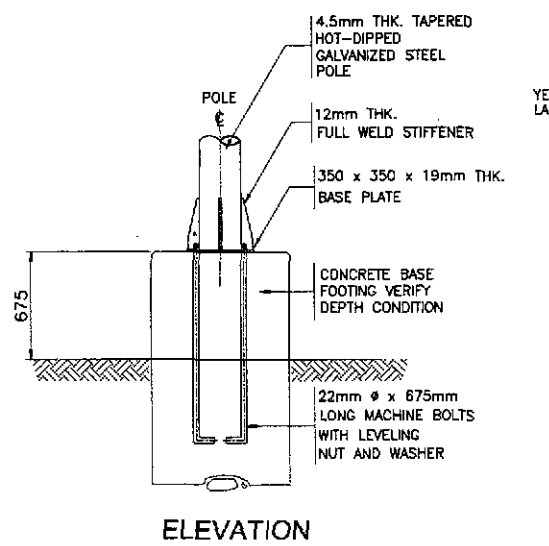

ERNESTO M. ANTIOQUIA
 ENGINEER
 P.R. NO. 7403694 P.E.E. NO. 2913
 ISSUED ON 07/02/2002 ISSUED AT CEBU, CEBU
 T.W. 199-382-379

| | | | | | | | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------|------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------------------------------------------------------|-------|
|  JAPAN INTERNATIONAL COOPERATION AGENCY  KATAHIRA & ENGINEERS INTERNATIONAL  YACHIO ENGINEERING CO., LTD. | DATE | SIGNATURE | REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS | | | | PROJECT AND LOCATION : | SCALE : | SHEET CONTENTS : | SHEET NO. : | |
| | DESIGNED | 9/21/02 |  | BUREAU OF DESIGN | | OFFICE OF THE SECRETARY | | THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II | NOT TO SCALE | NOTES & LEGENDS AND DUCT SECTION ALL INTERSECTIONS (ULTIMATE STAGE) | ES-01 |
| | CHECKED | 9/25/02 |  | Submitted By: | Reviewed By: | Recommended By: | Approved By: | | | | |
| SUBMITTED | 9/27/02 |  | DANILO C. TRAJANO Project Director | FE. M. BARRIENTOS Chief, Mechanical-Electr. Div. | GILBERTO S. REYES OIC, Director IV | MANUEL M. BONOAN Undersecretary | SIMEON A. DATUMANONG Secretary | | | | |

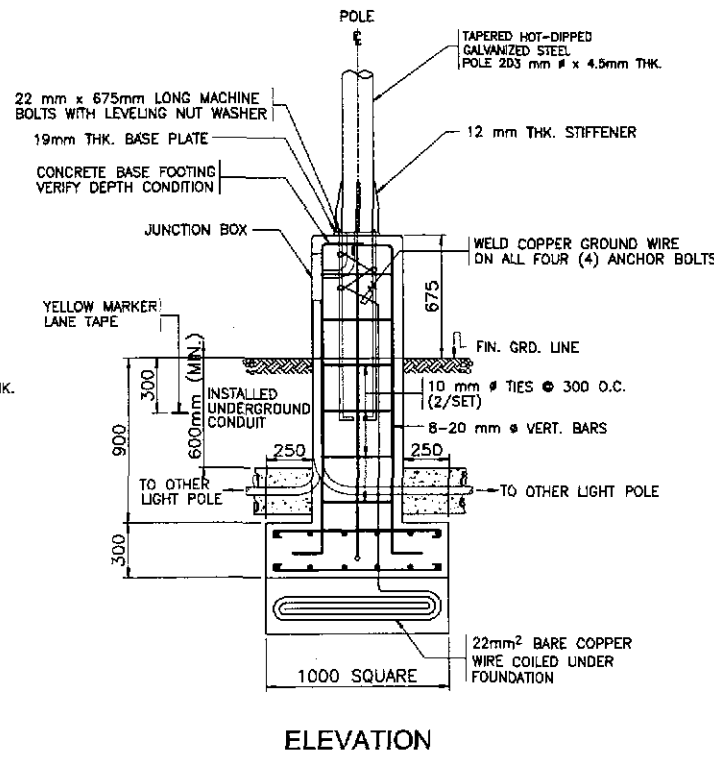


1A ELEVATION
ES-02

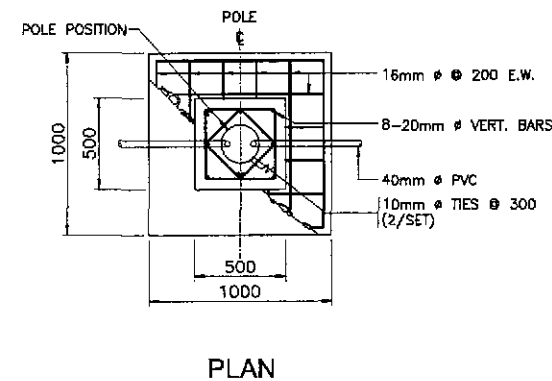
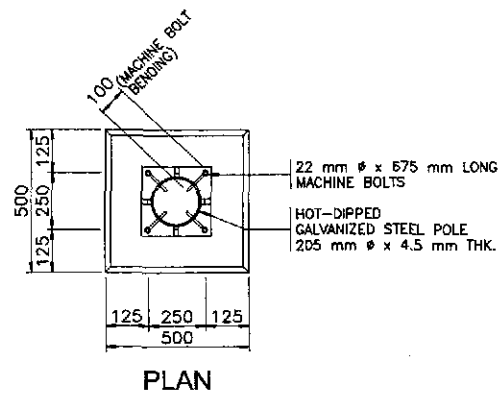
- NOTES:
1. CONCRETE MIXTURE SHOULD BE 211 kg./cm (3000 PSI)
 2. PAINT ALL JOINTS IN BOX AND CONDUIT WITH RED LEAD PRIMER BEFORE POURING CONCRETE.
 3. FOR CONDUIT LARGER THAN 40mm ϕ , KNOCKOUTS AND HOLES SHALL HAVE TO BE WIDENED BY THE USER TO THE DESIRED DIAMETER.
 4. FOR LOAM AND MUDDY SOIL, REFER TO CIVIL ENGINEERING FOR PROPER FOUNDATION DEPTH.
 5. LUMINAIRE LAMP SHALL BE 250W HIGH PRESSURE SODIUM WITH DIFFUSE FINISH AND INITIAL LUMENS OF 26,000. BALLAST SHALL BE UL LISTED, CONSTANT WATTAGE TRANSFORMER CWA OR REGULATOR, HIGH POWER FACTOR TYPE RATED 240V, 60 Hz WITH ALLOWABLE LINE VOLTAGE VARIATION OF $\pm 10\%$.
 6. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.



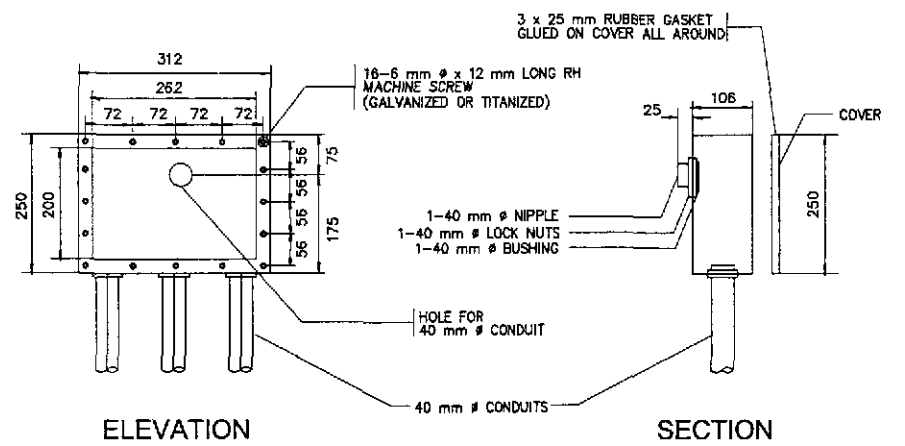
1B BASE PLATE DETAILS
ES-02



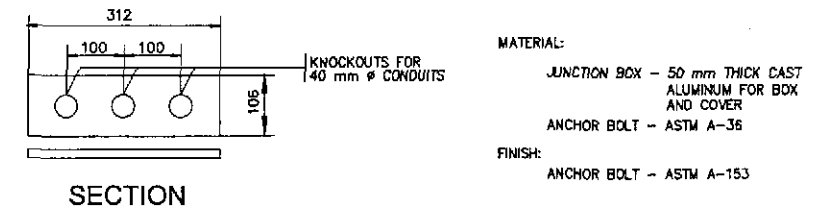
1C STANDARD FOOTING DETAILS
ES-02



1 STREET LIGHT POLE DETAILS
NOT TO SCALE

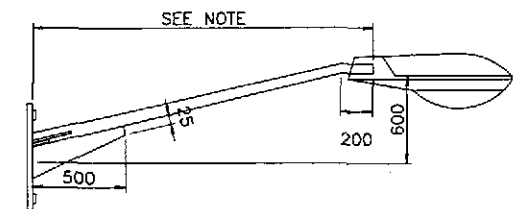


ELEVATION SECTION



SECTION MATERIAL:
JUNCTION BOX - 50 mm THICK CAST ALUMINUM FOR BOX AND COVER
ANCHOR BOLT - ASTM A-36
FINISH:
ANCHOR BOLT - ASTM A-153

1D JUNCTION BOX DETAILS
ES-02

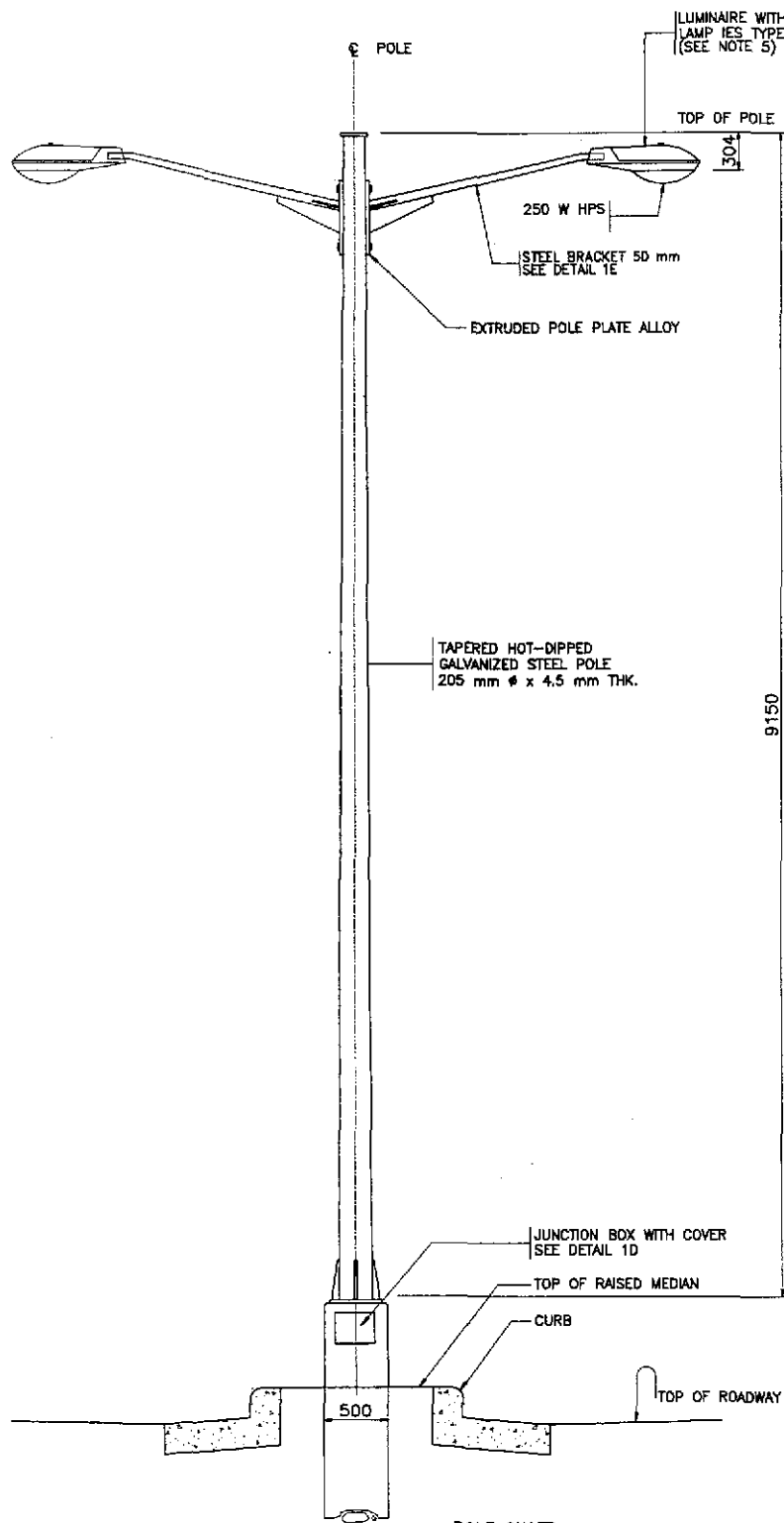


- NOTE:
ARM LENGTH SHALL BE 3000mm UNLESS OTHERWISE INDICATED IN THE PLAN.
- MATERIAL:
MAST ARM - B.I. PIPE AS PER PMS 26: 1984 (MEDIUM SERIES)
POLE SHAFT AS PER ASTM A-53 MOUNTING PLATE AND STIFFENERS
MACHINE BOLT - ANSI-C135.
- FINISH:
HOT-DIP GALVANIZED PER LATEST EDITION OF ASTM A-123
MACHINE BOLT - ASTM A-153

1E MAST ARM ELEVATION
ES-02

| | | | | | | | | | | | |
|--|--|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------------------------------------------------------|---------------------|
| | | DATE: 9/21/02 SIGNATURE: E. M. ANTOQUILA DESIGNED: 9/25/02 CHECKED: 9/25/02 SUBMITTED: 9/27/02 | P.H.L. - PMD Submitted By: DANILO C. TRAJANO Project Director | BUREAU OF DESIGN Reviewed By: FE M. BARRIENTOS Chief, Mechanical-Elect. Div. | OFFICE OF THE SECRETARY Recommended By: GILBERTO S. REYES Director IV | Approved By: MANUEL M. BONOAN Undersecretary | Approved By: SIMEON A. DATUMANONG Secretary | PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II | SCALE: AS SHOWN FULL SIZE A1 | SHEET CONTENTS: STREET LIGHT POLE DETAILS ALL INTERSECTIONS (ULTIMATE STAGE) | SHEET NO.: ES-02 |
|--|--|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------------------------------------------------------|---------------------|

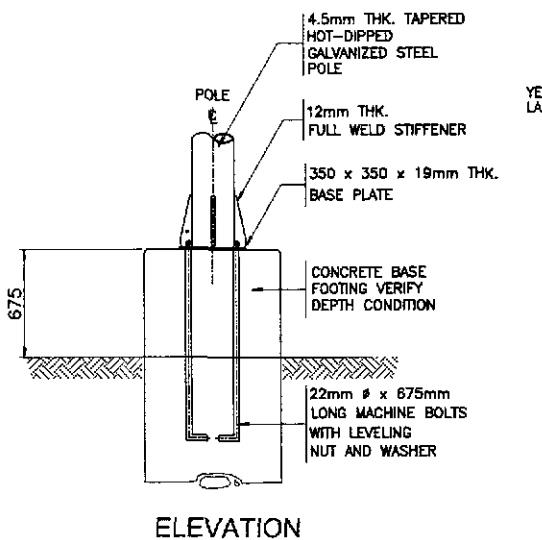
ERNESTO M. ANTOQUIA
 ENGINEER
 P.M. NO. 7403684 P.E.E. NO. 2813
 ISSUED ON 01/02/2002 ISSUED AT CAGAYAN DE ORO
 T.A.N. 109-382-379



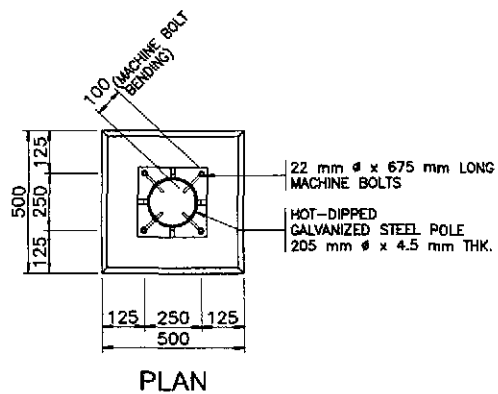
1A ELEVATION
ES-03

| POLE SHAFT | | |
|------------|-----------|---------------|
| LENGTH | BASE DIA. | POLE TOP DIA. |
| 9000 | 205 | 115 |

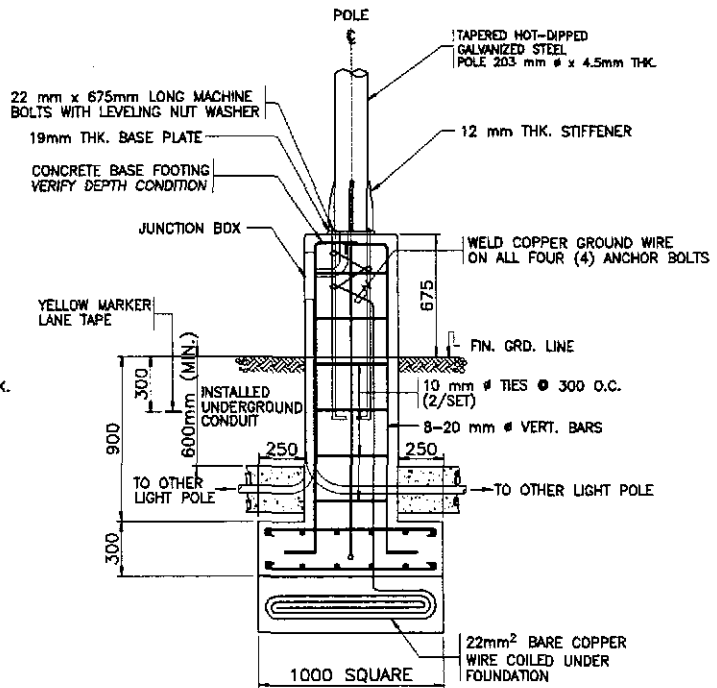
- NOTES:
1. CONCRETE MIXTURE SHOULD BE 211 kg./cm (3000 PSI)
 2. PAINT ALL JOINTS IN BOX AND CONDUIT WITH RED LEAD PRIMER BEFORE POURING CONCRETE.
 3. FOR CONDUIT LARGER THAN 40mm Ø, KNOCKOUTS AND HOLES SHALL HAVE TO BE WIDENED BY THE USER TO THE DESIRED DIAMETER.
 4. FOR LOAM AND MUDDY SOIL, REFER TO CIVIL ENGINEERING FOR PROPER FOUNDATION DEPTH.
 5. LUMINAIRE LAMP SHALL BE 250W HIGH PRESSURE SODIUM WITH DIFFUSE FINISH AND INITIAL LUMENS OF 26,000. BALLAST SHALL BE UL LISTED, CONSTANT WATTAGE TRANSFORMER CWA OR REGULATOR, HIGH POWER FACTOR TYPE RATED 240V, 60 Hz WITH ALLOWABLE LINE VOLTAGE VARIATION OF ±10%.
 6. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.



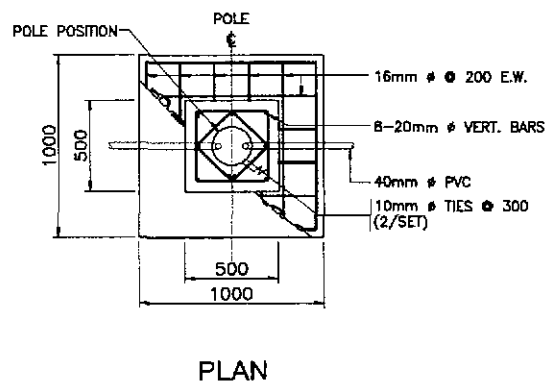
1B BASE PLATE DETAILS
ES-03



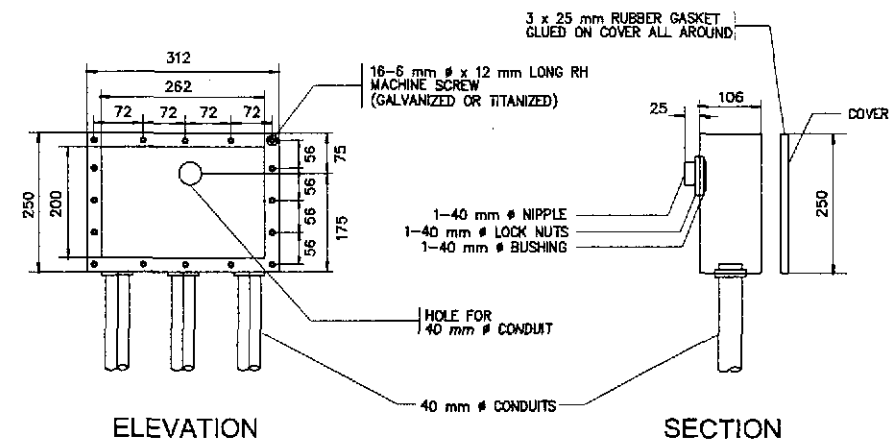
PLAN



1C STANDARD FOOTING DETAILS
ES-03

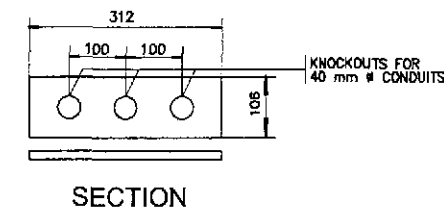


PLAN



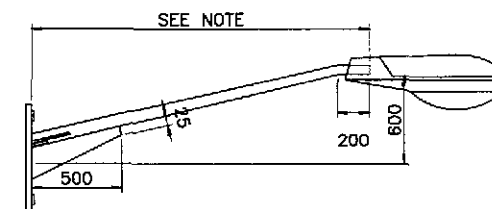
ELEVATION

SECTION



SECTION

1D JUNCTION BOX DETAILS
ES-03



NOTE:
ARM LENGTH SHALL BE 3000mm UNLESS OTHERWISE INDICATED IN THE PLAN.

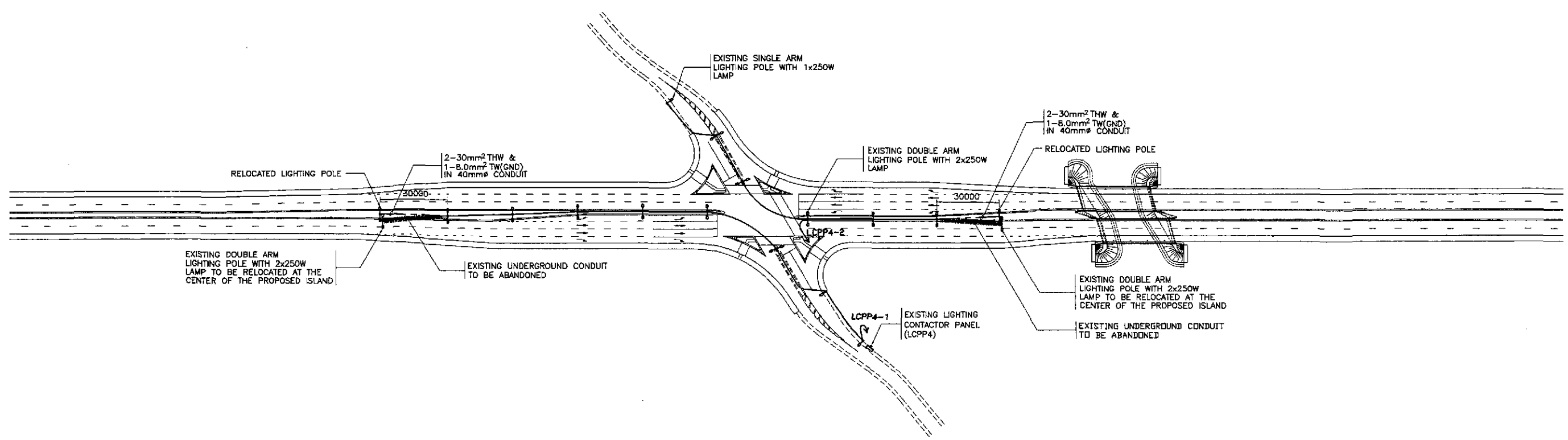
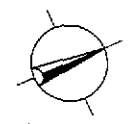
MATERIAL:
MAST ARM - B.I. PIPE AS PER PNS 26: 1984 (MEDIUM SERIES)
POLE SHAFT AS PER ASTM A-53 MOUNTING PLATE AND STIFFENERS
MACHINE BOLT - ANSI-C135.

FINISH:
HOT-DIP GALVANIZED PER LATEST EDITION OF ASTM A-123
MACHINE BOLT - ASTM A-153

1E MAST ARM ELEVATION
ES-03

1 STREET LIGHT POLE DETAILS
ES-03 NOT TO SCALE

ERNESTO M. ANTIOQUIA
ENGINEER
PR. NO. 7403864 P.E.E. NO. 2913
ISSUED ON 01/12/2002 ISSUED AT CAGAYAN LARANG
LAL 128-382-379

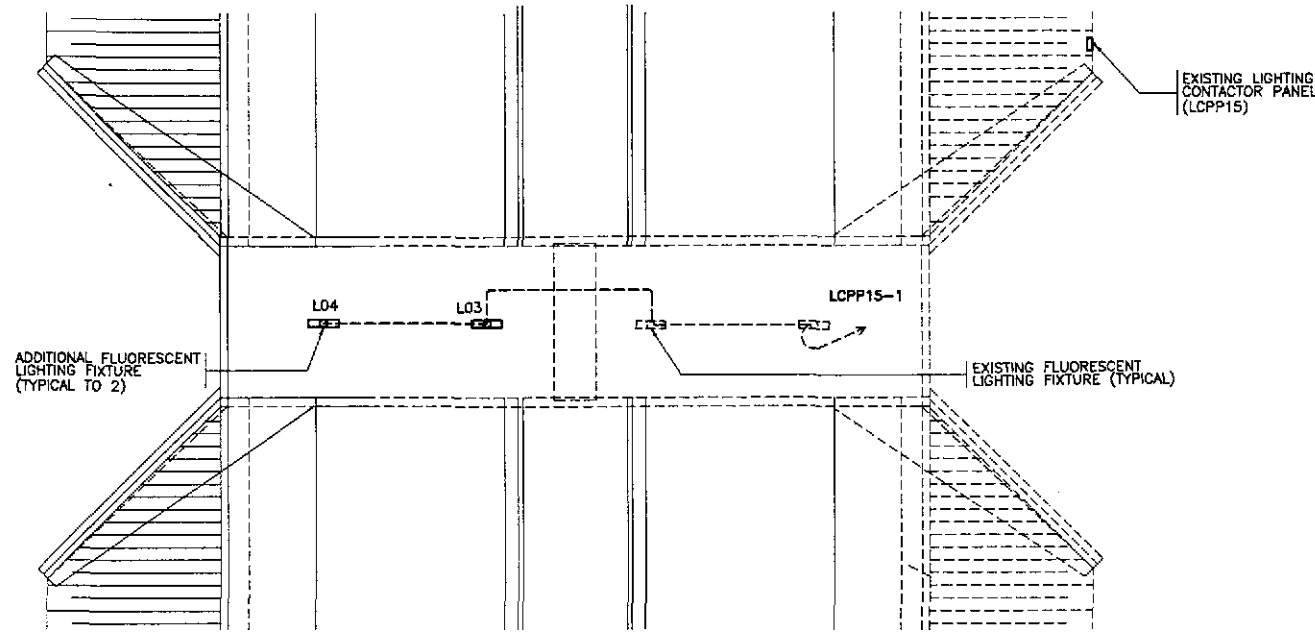


1 ROADWAY LIGHTING PLAN
 EI-01 SCALE 1:1000

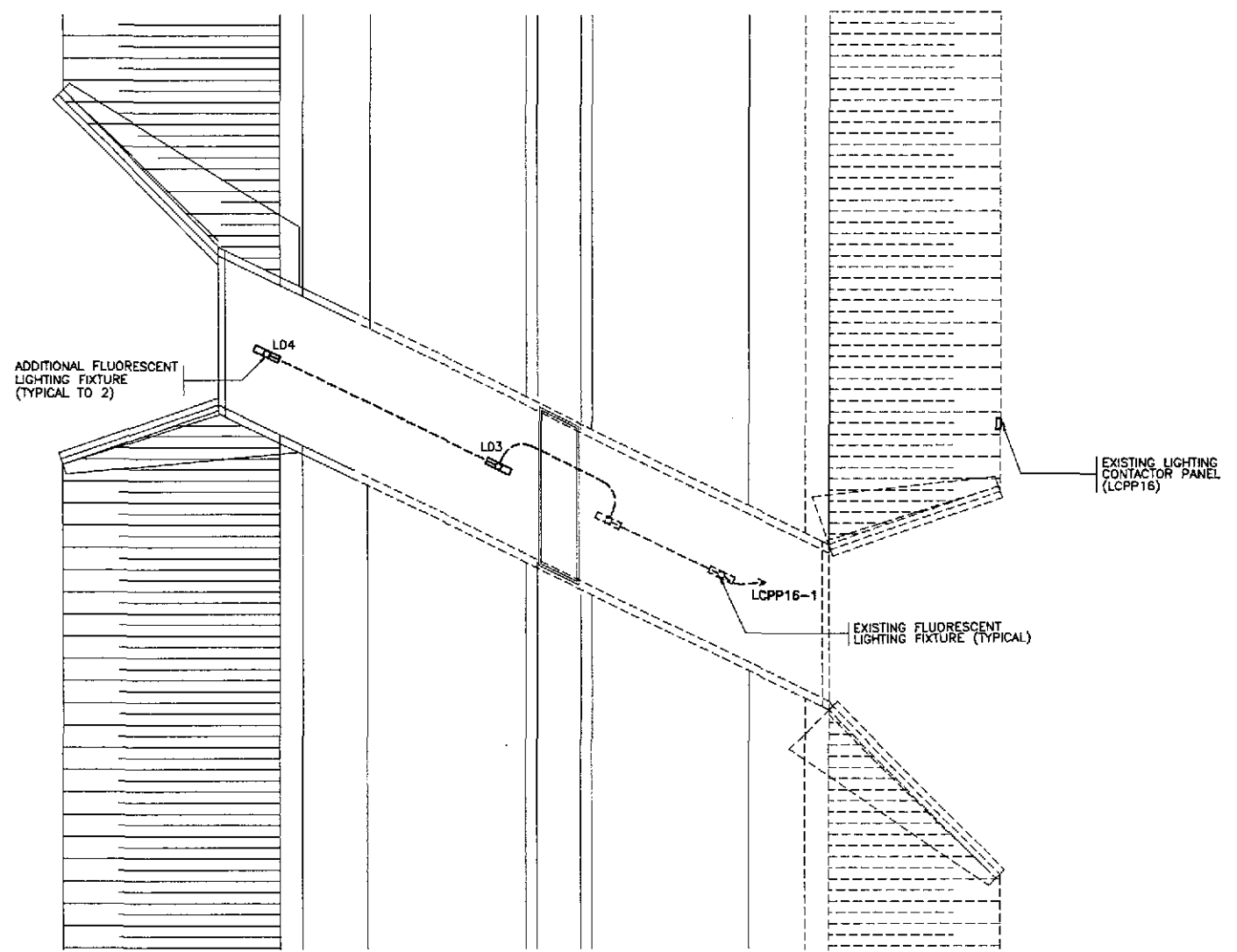
- NOTES:
1. ALL ITEMS SHOWN IN LIGHT LINE ARE EXISTING INSTALLATIONS (INCLUDED ALREADY IN THE INITIAL STAGE). ALL ITEMS SHOWN IN HEAVY LINE ARE NEW INSTALLATIONS (ULTIMATE STAGE).
 2. THE CONTRACTOR SHALL PROVIDE NEW CONCRETE FOUNDATION FOR THE RELOCATED LIGHTING POLE.
 3. UNLESS OTHERWISE INDICATED, THE MINIMUM SIZE OF CIRCUIT CONDUCTORS FROM STEEL POLE JUNCTION BOX/HANDHOLE TO EACH LUMINAIRE SHALL BE 2-3.5 mm² THW AND 1-3.5 mm² TW(Gnd) INSIDE STEEL POLE.

EMX
 ERNESTO M. ANTIOQUIA
 ENGINEER
 PTR. NO. 7453664 P.E.L. NO. 2813
 ISSUED ON 05/05/2002 ISSUED AT CEBU, CEBU, CEBU
 T.M. 109-382-372

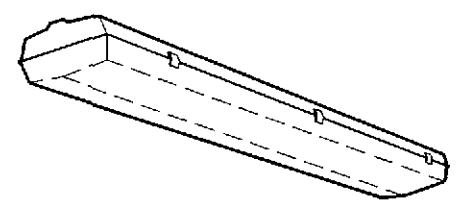
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|--|-----------|---------|-----------------------|---------------------------------------|------------------------------------------------------------------------|---------------------------------------|------------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------|
| | DESIGNED | DATE | SIGNATURE | | REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS | | | | PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II | SCALE : 1:1000 FULL SIZE A1 | SHEET CONTENTS : ROADWAY LIGHTING PLAN INTERSECTION A-9 (ULTIMATE STAGE) | SHEET NO. : EI-01 |
| | CHECKED | 7/25/02 | <i>E.M. ANTIOQUIA</i> | | BUREAU OF DESIGN | | OFFICE OF THE SECRETARY | | | | | |
| | SUBMITTED | 7/27/02 | <i>M. RUCAN</i> | | Submitted By: | Reviewed By: | Recommended By: | Approved By: | | | | |
| | | | | DANILO C. TRAJANO Project Director | FE M. BARRIENTOS Chief, Mechanical-Elect ¹ Div. | GILBERTO S. REYES DIC, Director IV | MANUEL M. BONOAN Undersecretary | SIMEON A. DATUMANONG Secretary | | | | |



1 LIGHTING LAYOUT
B-4 (STA. 41+625.000)
EI-03 NOT TO SCALE



2 LIGHTING LAYOUT
B-8 (STA. 45+274.068)
EI-03 NOT TO SCALE



CEILING LUMINAIRE, SURFACE MOUNTED, IP56 (MINIMUM). HOUSING SHALL BE MADE FROM GLASS FIBRE REINFORCED POLYESTER RESIN. PATTERNED COVER SHALL BE MADE FROM POLYCARBONATE DIFFUSER. BALLAST SHALL BE UL LISTED, RAPID START HIGH POWER FACTOR TYPE.

NOTES:
1. ALL ITEMS SHOWN IN LIGHT LINE ARE EXISTING INSTALLATIONS (INCLUDED ALREADY IN THE INITIAL STAGE). ALL ITEMS SHOWN IN HEAVY LINE ARE NEW INSTALLATIONS (ULTIMATE STAGE).

| | | | |
|--------|------|---------------------|----------|
| | 220 | 1 x 4DW FLUORESCENT | SURFACE |
| SYMBOL | VOLT | LAMP | MOUNTING |

3 LIGHTING FIXTURE SCHEDULE
EI-03 NOT TO SCALE

ERNESTO M. ANTIOQUIA
DESIGNER
P.R. NO. 7403694 P.E.C. NO. 2813
ISSUED ON 01/02/2002 ISSUED AT CAGAYAN LAGUNA
T.M. 109-382-379

| | | | | | | | | | | | |
|-----------|----------|---------|----------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| | DESIGNED | DATE | SIGNATURE | | REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS | | | PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) | SCALE : NOT TO SCALE FULL SIZE A1 | SHEET CONTENTS : LIGHTING LAYOUT, LOAD SCHEDULE & LIGHTING FIXTURE SCHEDULE BOX CULVERT B-4 & BOX CULVERT B-8 (ULTIMATE STAGE) | SHEET NO. : EI-03 |
| | CHECKED | 7/25/02 | | | BUREAU OF DESIGN Submitted By: PJHL - PW0 Reviewed By: FE M. BARRIENTOS Chief, Mechanical-Elect Dv. | OFFICE OF THE SECRETARY Recommended By: GILBERTO S. REYES OIC, Director IV | Recommended By: MANUEL M. BONOAN Undersecretary | | | | |
| SUBMITTED | 7/29/02 | | DANILO C. TRAJANO Project Director | | | | PLARIDEL BYPASS - CONTRACT PACKAGE II | | | | |

ENGR'S FIELD OFFICE & LIVING QUARTERS

TABLE OF CONTENTS

CITY / DISTRICT / MUNICIPALITY

ARCHITECTURAL :

FA-01 PERSPECTIVE TABLE OF CONTENTS

02 ENGINEER'S FIELD OFFICE/LABORATORY FLOOR PLAN FRONT & REAR ELEV. LEFT & RIGHT SIDE ELEV. LONGITUDINAL & CROSS SECT. REFLECTED CEILING PLAN

03 ENGINEER'S LIVING QUARTERS FLOOR PLAN FRONT & REAR ELEV. LEFT & RIGHT SIDE ELEV. LONGITUDINAL & CROSS SECT. REFLECTED CEILING PLAN

04 ENGINEER'S FIELD OFFICE/LABORATORY ROOF PLAN DET. CROSS SECTION SCHEDULE OF DOORS & WINDOWS

05 ENGINEER'S LIVING QUARTERS ROOF PLAN DET. CROSS SECTION SCHEDULE OF DOORS & WINDOWS

STRUCTURAL :

FA-06 FOUNDATION PLAN, R.C. RAMP DETAIL DET. OF F-1, P-1, WF-1 DESIGN CRITERIA

07 ENGINEER'S FIELD OFFICE/LABORATORY ELEV. OF STEEL STUD FRAMES FRAMES SCHEMATIC DIAGRAMS

08 ENGINEER'S LIVING QUARTERS ELEV. OF STEEL STUD FRAMES FRAMES SCHEMATIC DIAGRAMS

09 ENGINEER'S FIELD OFFICE/LABORATORY REAR AND LEFT SIDE ELEVATION OF STEEL STUD FRAMES, AND SCHEMATIC DIAGRAMS

10 ENGINEER'S LIVING QUARTERS REAR AND LEFT SIDE ELEVATION OF STEEL STUD FRAME, AND SCHEMATIC DIAGRAMS

11 DETAIL CONNECTIONS, DETAILS 1 TO 15

12 ROOF FRAMING PLAN SCHEM. DIAGRAM (INT. WALLS) PURLIN CONNECTION CROSS BRACING CONNECTION

ELECTRICAL :

FE-01 ENGINEER'S FIELD OFFICE/LABORATORY LIGHTING LAYOUT POWER LAYOUT ELECT'L. SYMBOLS & GEN. NOTES

02 ENGINEER'S LIVING QUARTERS LIGHTING LAYOUT POWER LAYOUT ELECT'L. SYMBOLS & GEN. NOTES

03 SCHEDULE OF LOADS AND COMPUTATIONS ELECT'L. RISER DIAGRAMS

PLUMBING :

FP-01 SEWER AND WATER LINE LAYOUT ISOMETRIC DIAGRAM

02 SEPTIC TANK DETAILS

EXTERNAL :

FX-01 PLOT PLAN ELEV - FENCE & GATE FOUNDATION DETAIL

LAND USE and ZONING

LINE and GRADE

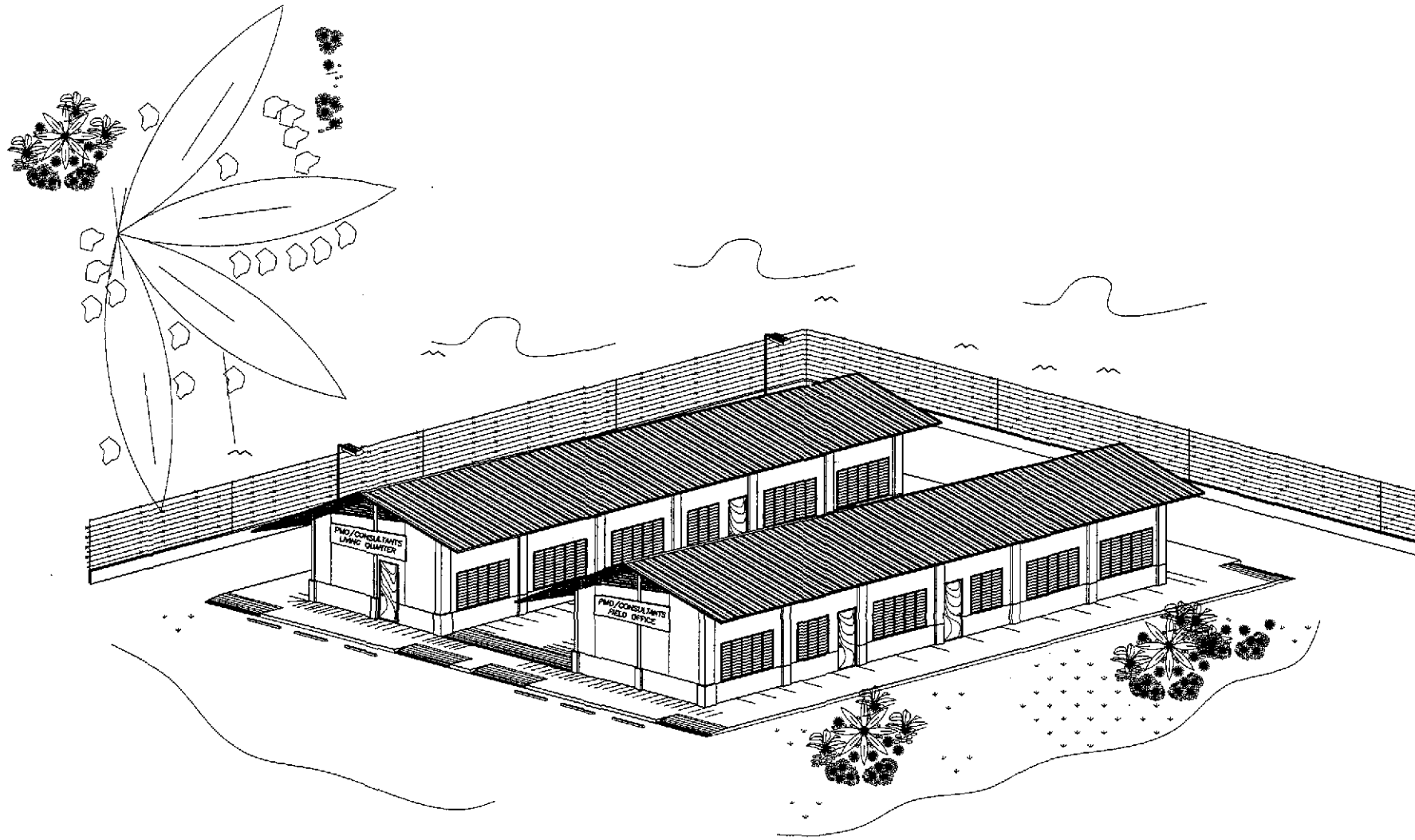
ARCHITECTURAL

STRUCTURAL

SANITARY

ELECTRICAL

MECHANICAL



PERSPECTIVE

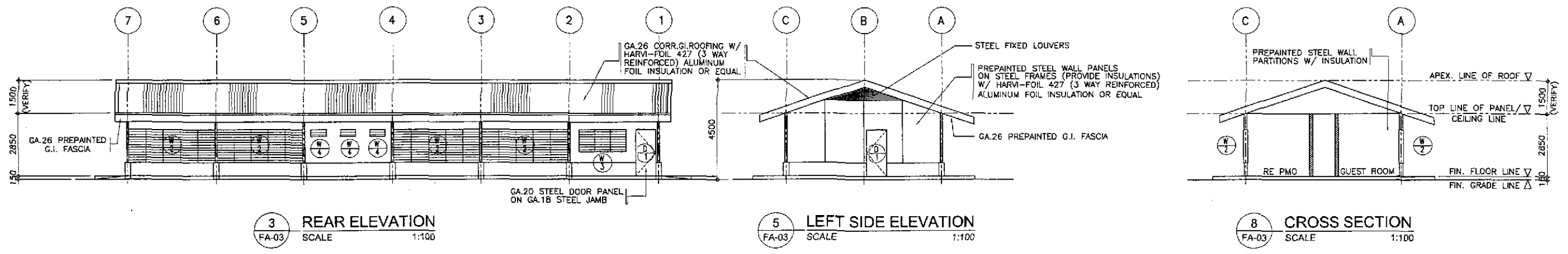
GENERAL NOTES :

IT IS THE INTENTION OF THE DPWH THAT AFTER COMPLETION OF THE PROJECTS ALL PRE-FABRICATED METAL FIELD OFFICES WITH LABORATORY AND ENGINEER'S QUARTERS BUILDINGS BE DONATED TO THE NEAREST PUBLIC SCHOOL. THESE AFOREMENTIONED BUILDINGS SHOULD THEREFORE BE LOCATED WITHIN A PUBLIC SCHOOL COMPOUND OR ON A GOVERNMENT LOT THAT COULD BE EASILY ACQUIRED BY THE DEPARTMENT OF EDUCATION. FOR NEW SCHOOL SITE, IF NONE IS AVAILABLE, THEN THE PRE-FABRICATED METAL COMPONENTS SHALL BE DISMANTLED AFTER COMPLETION OF THE PROJECT FOR DONATION TO THE NEAREST PUBLIC SCHOOL AUTHORITIES OR TO THE LOCAL GOVERNMENT UNIT WHERE SAID PROJECT IS LOCATED.

Arnel P. Gonzales
ARNEL P. GONZALES
ENGINEER

PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN, M.M.

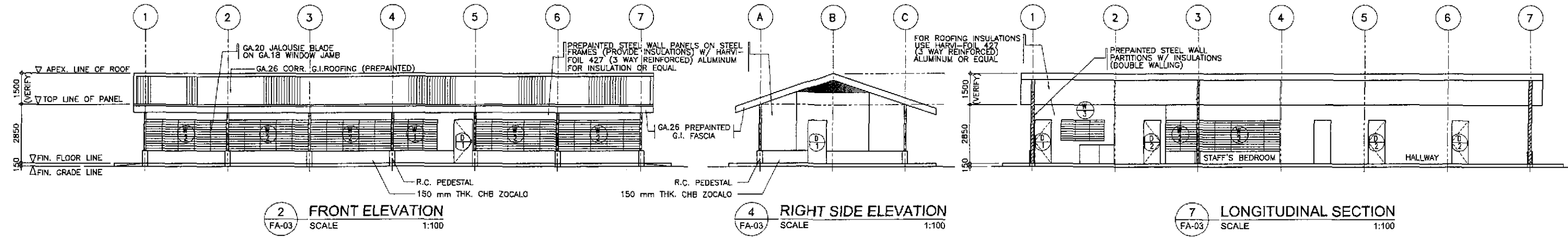
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|--|-----------|---------|---------------------------------------|------------------------------------------------------------------------|---------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------------------------------------------------------------------|--------------|
| | DESIGNED | DATE | SIGNATURE | REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS | | | PROJECT AND LOCATION : | SCALE : | SHEET CONTENTS : | SHEET NO. : |
| | CHECKED | 7/25/02 | A. P. GONZALES | BUREAU OF DESIGN | | | THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) | NOT TO SCALE | ENGINEER'S FIELD OFFICE AND LIVING QUARTERS PERSPECTIVE AND TABLE OF CONTENTS | FA-01 |
| | SUBMITTED | 7/29/02 | A. P. GONZALES | Submitted By: | Reviewed By: | Recommended By: | | | | |
| | | | DANILO C. TRAJANO Project Director | EMMANUEL P. CUNTAPAY Chief, Architecture Division | GILBERTO S. REYES OIC, Director IV | MANUEL M. BONDAN Undersecretary | SIMEON A. DATUMANONG Secretary | PLARIDEL BYPASS - CONTRACT PACKAGE II | | FULL SIZE A1 |



3 REAR ELEVATION
FA-03 SCALE 1:100

5 LEFT SIDE ELEVATION
FA-03 SCALE 1:100

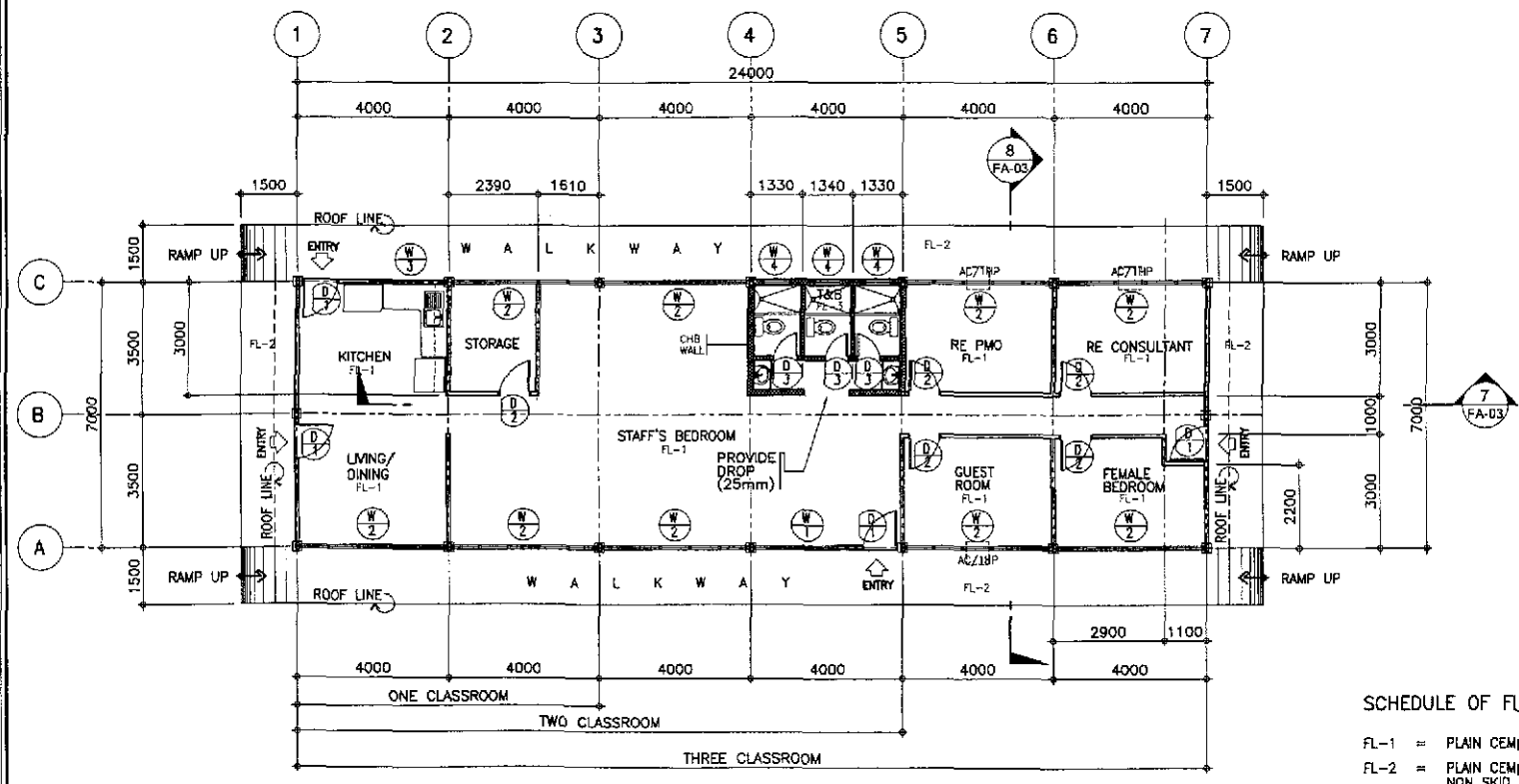
8 CROSS SECTION
FA-03 SCALE 1:100



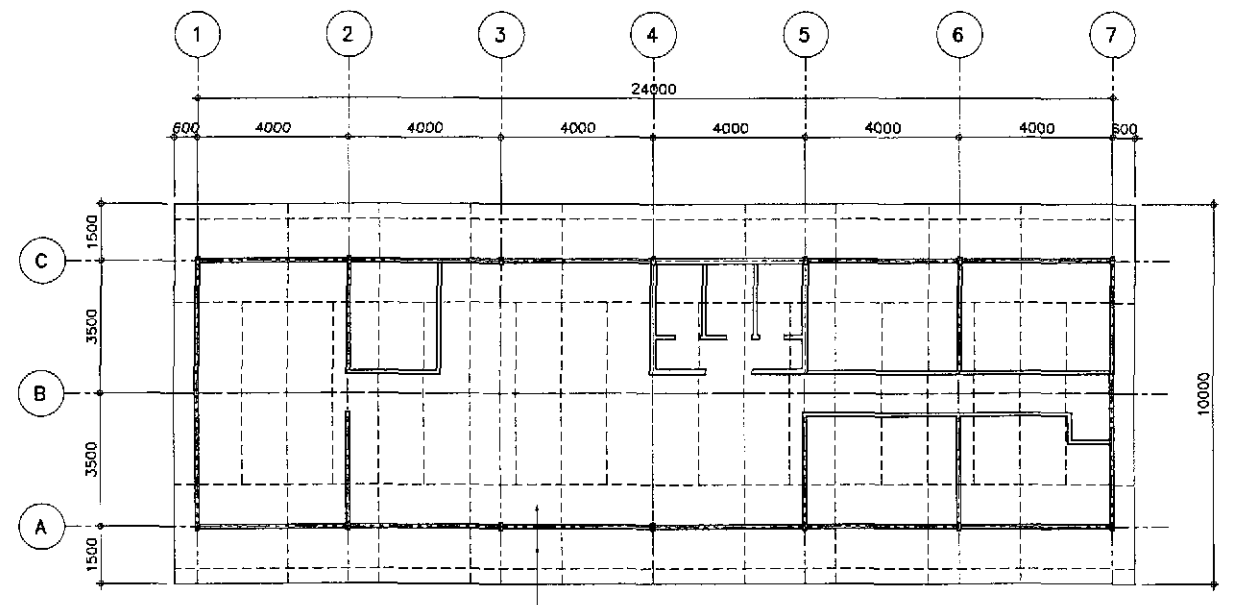
2 FRONT ELEVATION
FA-03 SCALE 1:100

4 RIGHT SIDE ELEVATION
FA-03 SCALE 1:100

7 LONGITUDINAL SECTION
FA-03 SCALE 1:100



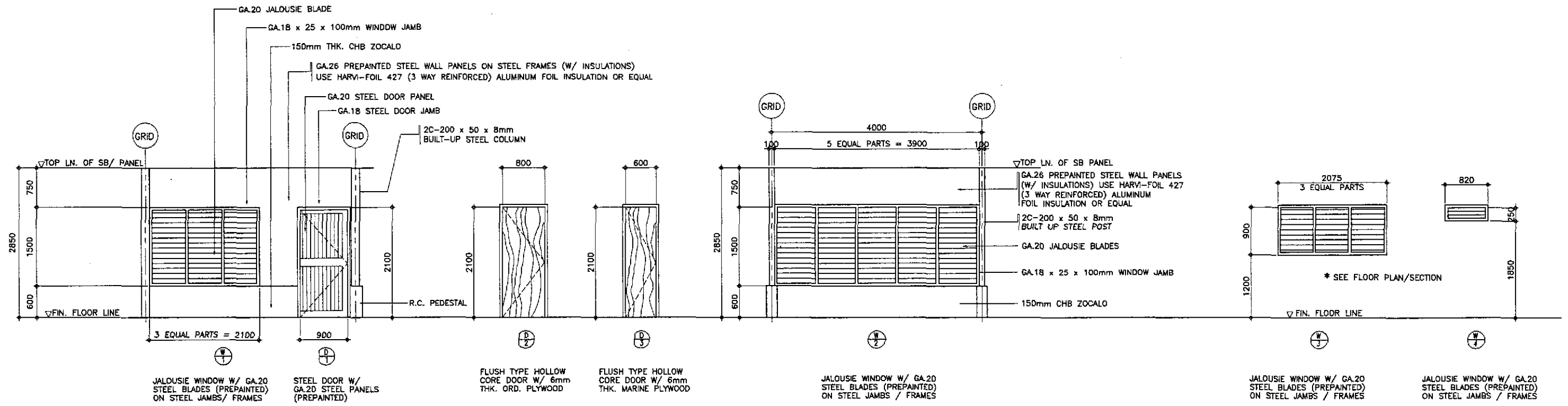
1 FLOOR PLAN FOR ENGINEER'S LIVING QUARTER
FA-03 SCALE 1:100



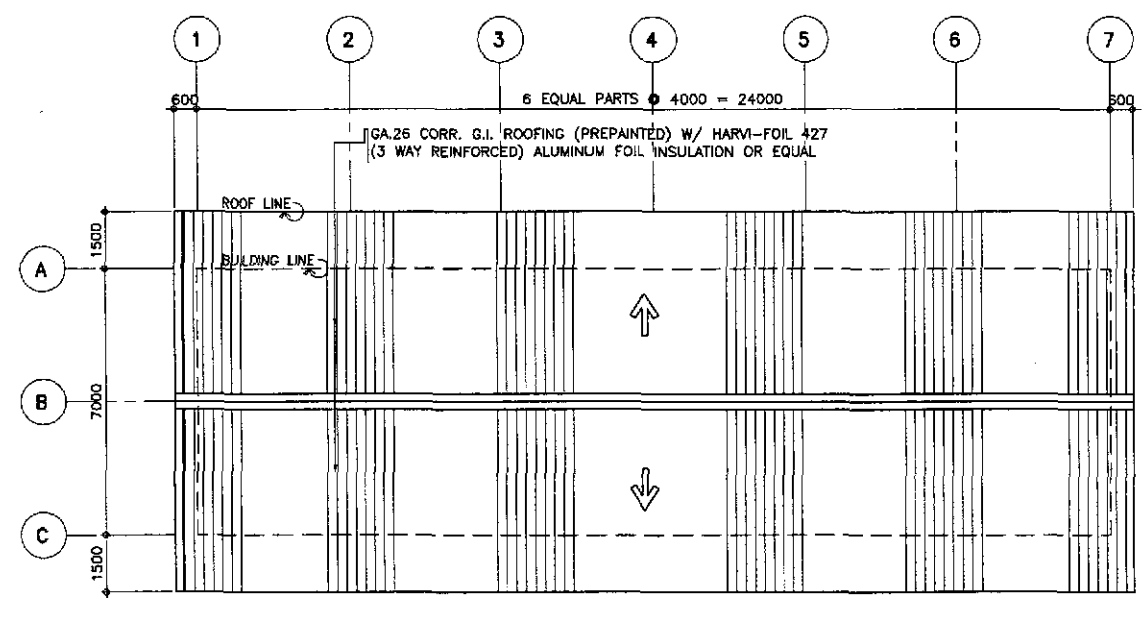
6 REFLECTED CEILING PLAN
FA-03 SCALE 1:100

SCHEDULE OF FLOOR FINISHES
 FL-1 = PLAIN CEMENT FLOOR FINISH
 FL-2 = PLAIN CEMENT FLOOR FINISH WITH NON SKID CEMENT WITH GROOVE LINES
 FL-3 = UNGLAZED TILE FINISH, 200x200mm

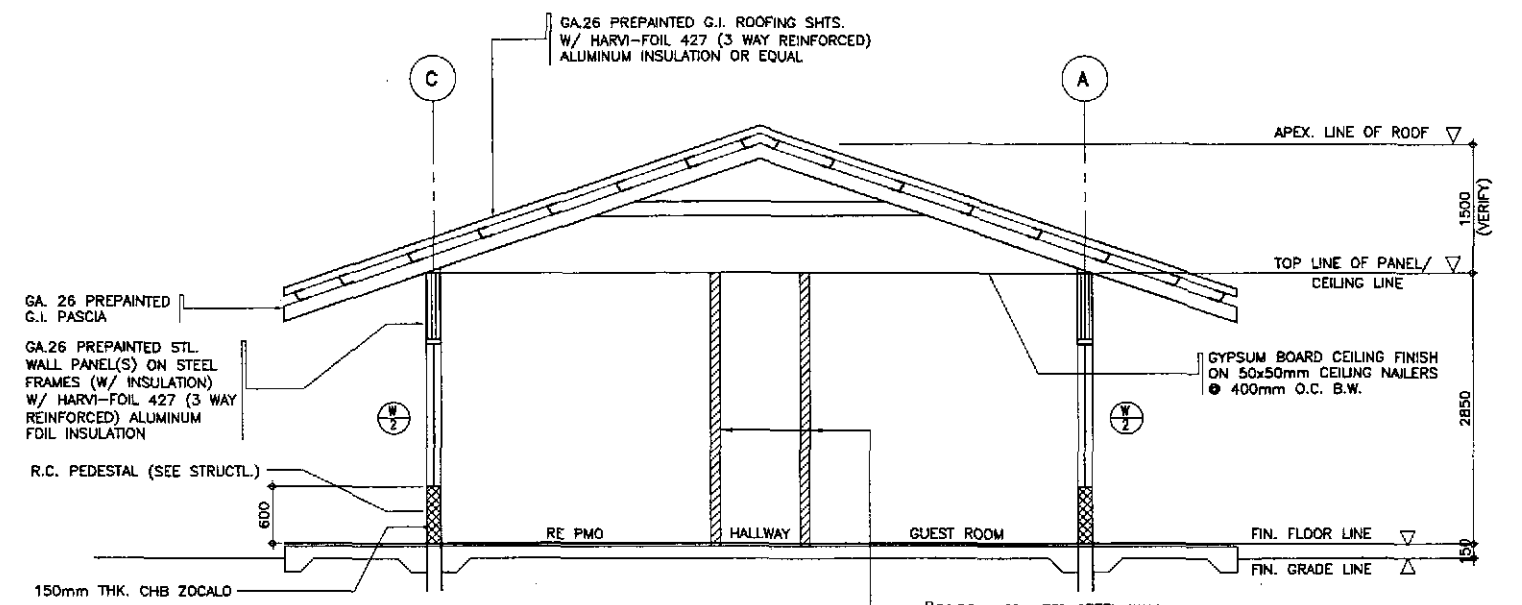
MANUEL P. GONZALES
ENGINEER
 PTR. NO. 5846340 P.R.C. NO. 53457
 ISSUED ON 04/26/2002 T.I.N. 138-062-682
 ISSUED AT SAN JUAN, M.M.



3 FOR ENGINEER'S LIVING QUARTERS
 SCHEDULE OF DOORS & WINDOWS
 FA-05 SCALE 1:40



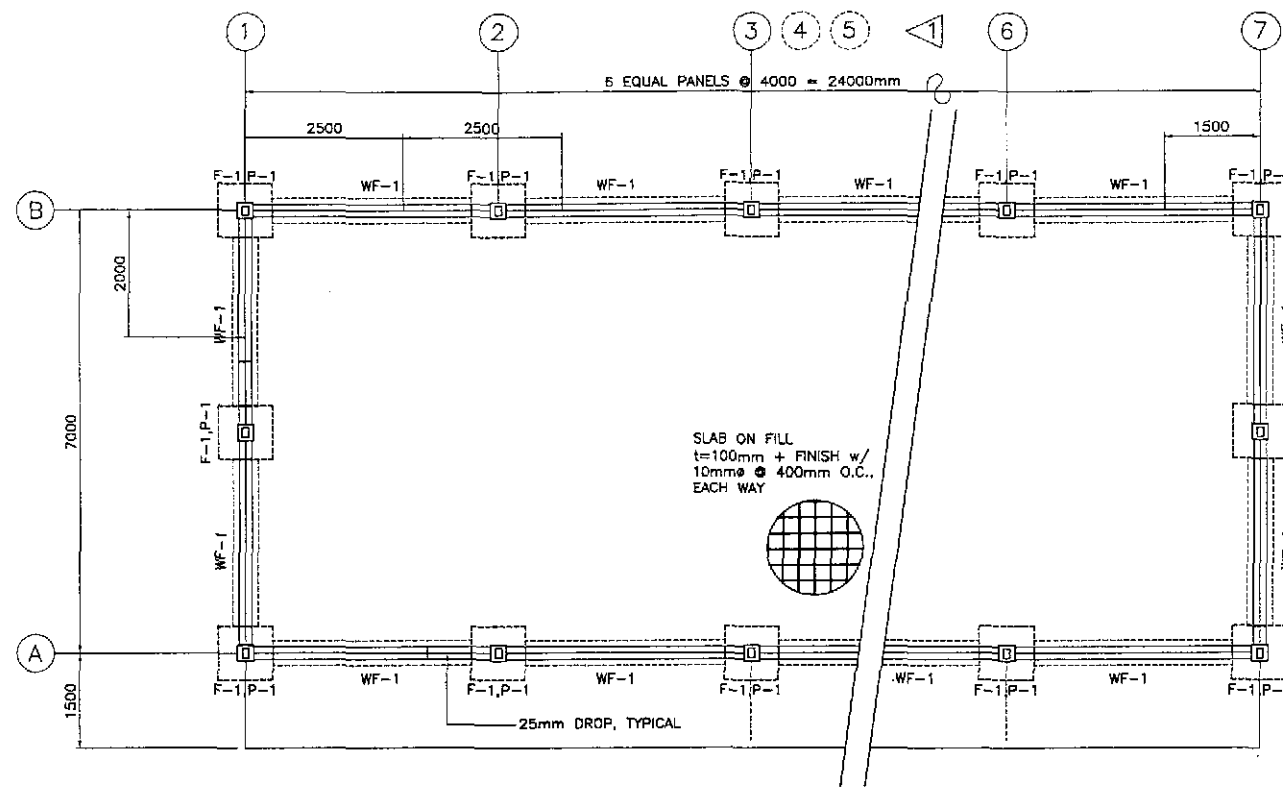
1 ROOF PLAN
 FA-05 SCALE 1:100



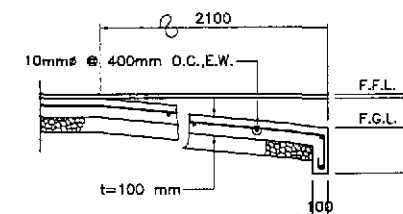
2 DETAIL CROSS SECTION
 FA-05 SCALE 1:40

ARNEL P. GONZALES
 ENGINEER
 PTR. NO. 864634D P.R.C. NO. 53457
 ISSUED ON 04/26/2002 T.I.N. 138-062-682
 ISSUED AT SAN JUAN, M.M.

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|--|-----------|---------|----------------|--------------------------------|-----------------------------------------|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------|
| | DESIGNED | DATE | SIGNATURE | | REPUBLIC OF THE PHILIPPINES | | | PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) | SCALE : AS SHOWN FULL SIZE A1 | SHEET CONTENTS : ENGINEER'S LIVING QUARTERS ROOF PLAN, CROSS-SECTION AND SCHEDULE OF DOORS & WINDOWS | SHEET NO. : FA-05 |
| | CHECKED | 7/25/02 | A. P. GONZALES | | DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS | | | | | | |
| | SUBMITTED | 7/29/02 | A. P. GONZALES | | BUREAU OF DESIGN | | | | | | |
| | | | | OFFICE OF THE SECRETARY | | | | | | | |
| | | | | SUBMITTED BY: | | | | | | | |
| | | | | REVIEWED BY: | | | | | | | |
| | | | | RECOMMENDED BY: | | | | | | | |
| | | | | APPROVED BY: | | | | | | | |
| | | | | PROJECT DIRECTOR: | | | | | | | |
| | | | | CHIEF, ARCHITECTURAL DIVISION: | | | | | | | |
| | | | | DIRECTOR IV: | | | | | | | |
| | | | | UNDERSECRETARY: | | | | | | | |
| | | | | SECRETARY: | | | | | | | |



1 FOUNDATION PLAN
FA-06 SCALE 1:25



4 R.C. RAMP DETAIL
FA-06 SCALE 1:25

DESIGN CRITERIA :

I. LIVE LOAD

ROOF 0.58 KPa
OFFICE/LABORATORY 2.40 KPa

II. DEAD LOAD

CONCRETE 24 KN/m³
STEEL 76.10 KN/m³
CHB 2.73 KPa

III. WIND LOAD

$$p = C_e C_q Q_s I$$

WHERE :

p = ACTUAL WIND PRESSURE
C_e = GUST FACTOR COEFFICIENT (EXPOSURE B=0.63)
C_q = PRESSURE COEFFICIENT
Q_s = 1.50 KPa FOR ZONE 2&3, Q_s=1.92 FOR ZONE 1
I = OCCUPANCY IMPORTANCE = 1.00

IV. ALLOWABLE STRESSES

- CONCRETE (ALLOWABLE COMPRESSIBLE STRENGTH @ 28 DAYS)
 - FOR FOOTINGS AND PEDESTAL COLUMN
f_c' = 20.70 mpa f_c = 9.31 mpa
 - FOR SLAB ON FILL
f_c' = 17.26 mpa f_c = 7.76 mpa
- REINFORCING STEEL BARS (STRUCTURAL GRADE 33 DEFORMED BARS)
f_y = 227.0 mpa f_{st} = 124.02 mpa
- STRUCTURAL LIGHT GAGE COLD FORMED STEEL
STIFFENED LIGHT GAGE CHANNEL FOR RAFTERS, STUD & WALLS
f_s = 124.0 mpa (18,000 psi)
- STRUCTURAL BUILT-UP STEEL PLATES (ASTM A-36)
FOR STEEL BOX COLUMN
f_y = 248.0 mpa (36,000 psi)
- WELDS
USE E-60 XX ELECTRODES
f_v = 93.76 mpa
- BOLTS (ASTM A-307)
f_v = 69 mpa f_{st} = 96.60 mpa
- CONCRETE MASONRY UNITS (NON-LOAD BEARING CHB)
f_m' = 3.41 mpa (500 psi)
- ASSUMED ALLOWABLE SOIL BEARING CAPACITY OF 95.76 KPa (2,000 psf)

NOTES ON FOUNDATION :

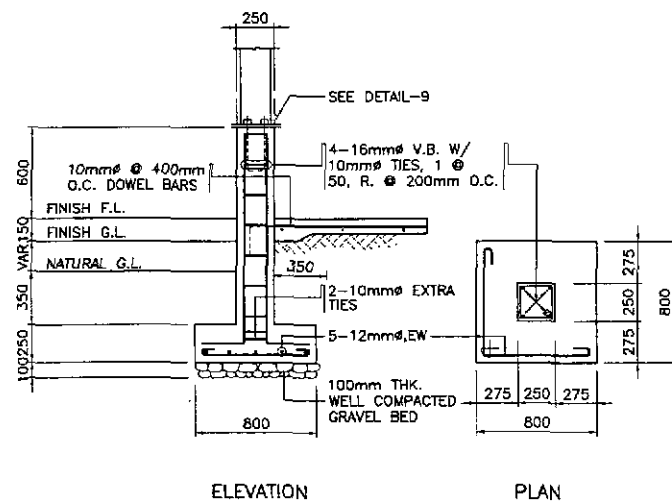
- IN CASE THE ACTUAL SOIL BEARING PRESSURE IS FOUND LESS THAN THE ASSUMED VALUE OF 95.76 KPa, NOTIFY THE DIRECTOR, BUREAU OF DESIGN FOR PROPER REVISION OF FOOTINGS.
- NO FOOTINGS SHALL REST ON FILL.

MATERIAL SPECIFICATIONS :

- FOR ROOFING SHEETS :
0.6mm THICK (GA-26) PREPAINTED CORRUGATED G.I. ROOFING SHEET, LONG SPAN.
- FOR WALLING SHEETS : USE ALUMINUM FOIL INSULATION HARVI-FOIL 427 (3-WAY REINFORCED OR EQUAL). DOUBLE WALL 0.6mm THICK (GA-26) HIGH TENSILE STEEL SHEET WALLING/CLADDING W/ ALUMINUM FOIL FOR INSULATION. HARVI-FOIL 427 (3-WAY REINFORCED OR EQUAL). BASE STEEL WITH 550 MPa YIELD STRESS.
- THE VERTICAL AND HORIZONTAL STUDS AND RAFTERS SHALL CONFORM WITH THE AMERICAN IRON AND STEEL INSTITUTE (AISI), SPECIFICATION OF LIGHT GAGE COLD-FORMED STEEL STRUCTURAL MEMBERS AS PER ASTM A246-LIGHT GAGE STRUCTURAL QUALITY FLAT ROLLED CARBON STEEL SHEET.
- ALL METAL PARTS SHALL BE GIVEN TWO(2) COATS OF ANTI-CORROSIVE PAINT OF APPROVED QUALITY WITH A MINIMUM TOTAL THICKNESS OF 3mm. FINISHING PAINT SHALL BE 2-COATS OF GLOSS OF APPROVED QUALITY, WEATHER RESISTANT AND OF THE SAME COLOR AS THE PREPAINTED SHEETINGS. BASE OF SIDINGS AND DOOR AND WINDOW JAMBS SHALL BE GIVEN ANOTHER TWO COATS OF BROWN OR MAHOGANY COLORED ENAMEL PAINT.

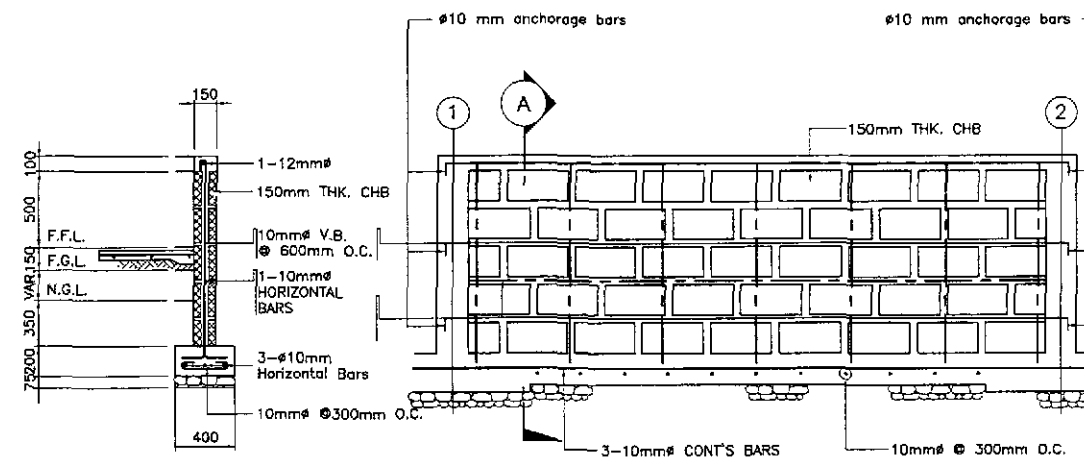
NOTES :

- ALL LOCATION OF ANCHOR BOLTS AND BOLT HOLES SHALL BE VERIFIED ON THE SITE PRIOR TO INSTALLATION / ASSEMBLY.
- HOLES FOR ALL BOLTS SHALL BE 1.6mm LARGER IN DIAMETER THAN BOLTS. BOLTS SHALL BE FITTED WITH STANDARD NUTS AND WASHERS TO ENSURE TIGHT FIT.
- THE STEEL MANUFACTURER / FABRICATOR / CONTRACTOR SHALL SUBMIT SHOP / FABRICATION DRAWINGS TO INCLUDE MATERIAL SCHEDULES, ASSEMBLY PROCEDURE, CONNECTIONS AND SPLICES AS PER APPROVED PLANS FOR REVIEW AND APPROVAL OF THE DIRECTOR, BUREAU OF DESIGN.



ELEVATION PLAN

2 F-1, P-1
FA-06 SCALE 1:25

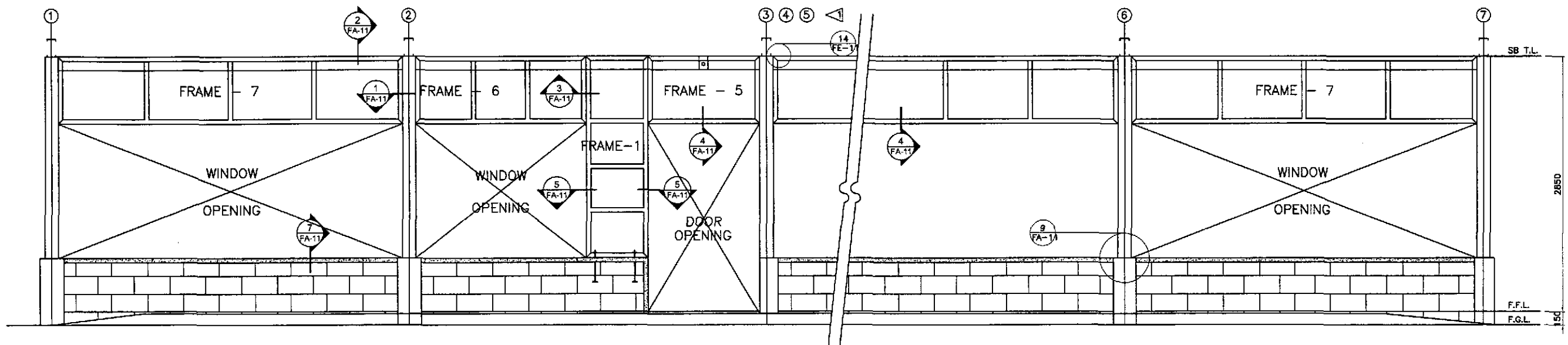


SECTION A TYP. ELEVATION

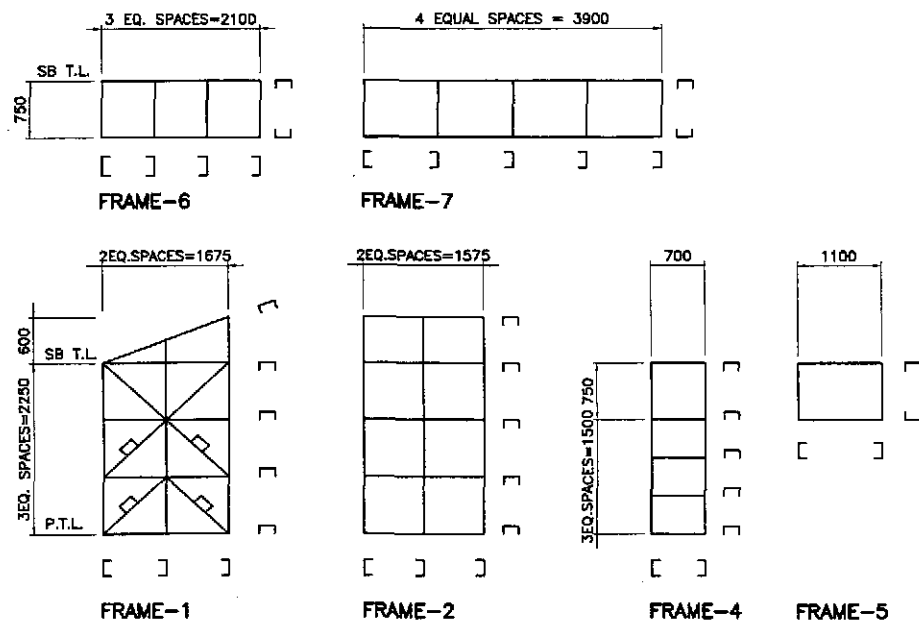
3 WF - 1
FA-06 SCALE 1:25

ARNEL P. GONZALES
ENGINEER
PTR. NO. 2846340 P.R.C. NO. 53457
ISSUED ON 04/28/2002 T.I.N. 138-062-582
ISSUED AT SAN JUAN, M.M.

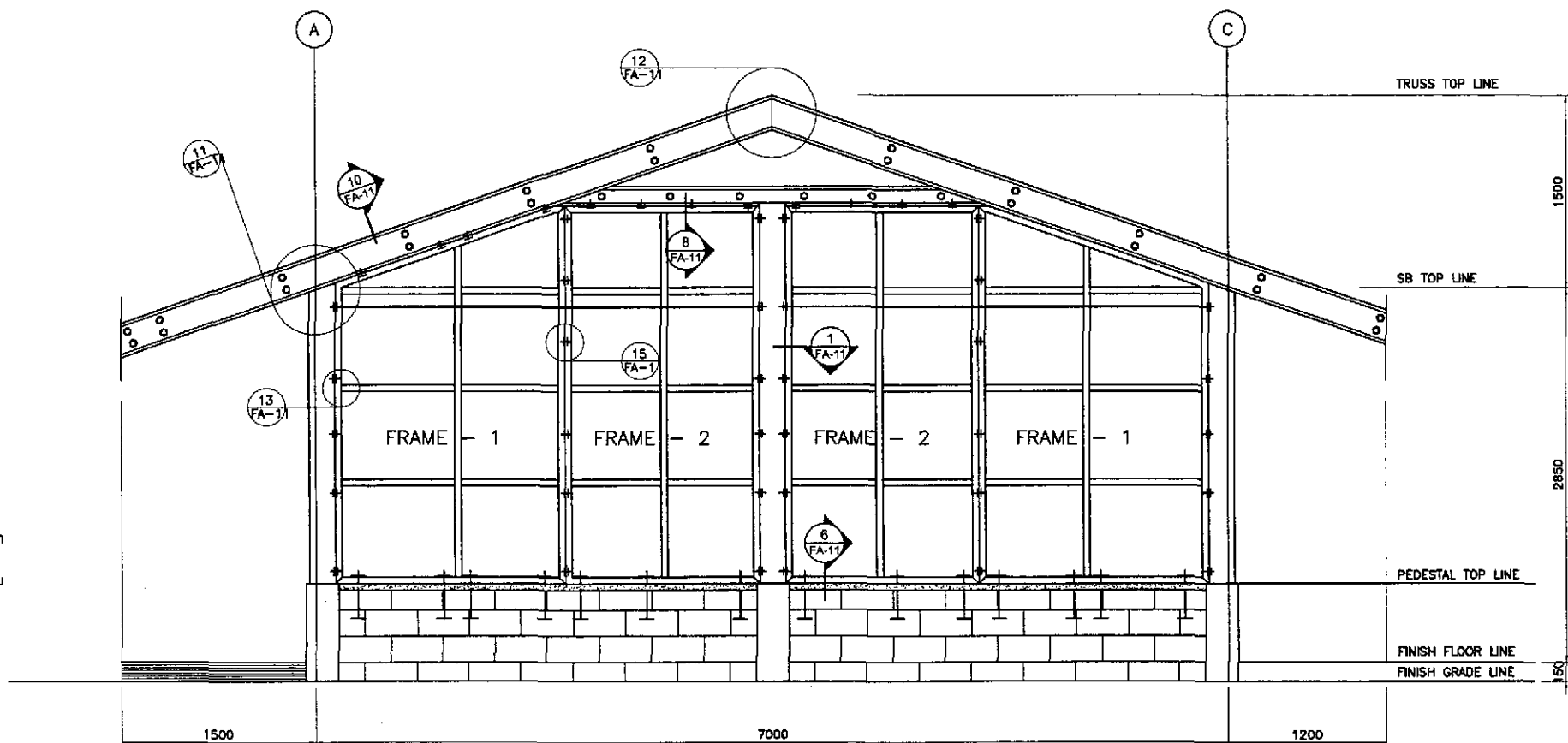
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|--|-----------|------|---------------------------------------|-------------------------------------------------|------------------------------------------------------------------------|------------------------------------|-----------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| | DESIGNED | DATE | SIGNATURE | | REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS | | | | PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II | SCALE : | SHEET CONTENTS : ENGINEER'S FIELD OFFICE AND LIVING QUARTERS FOUNDATION PLAN, R.C. RAMP, DETAILS OF F1, P-1 & WF1 AND DESIGN CRITERIA | SHEET NO. : |
| | CHECKED | DATE | SIGNATURE | | BUREAU OF DESIGN | | | | | AS SHOWN | | FA-06 |
| | SUBMITTED | DATE | SIGNATURE | | Submitted By: | Reviewed By: | Recommended By: | Approved By: | | FULL SIZE A1 | | |
| | | | DANILO C. TRAJANO Project Director | WILFREDO S. LOPEZ Chief, Structural Division | GILBERTO S. REYES OIC, Director IV | MANUEL M. BONGON Undersecretary | SIMEON A. DATUMANONG Secretary | | | | | |



2 FRONT ELEVATION
FA-07 SCALE 1:25



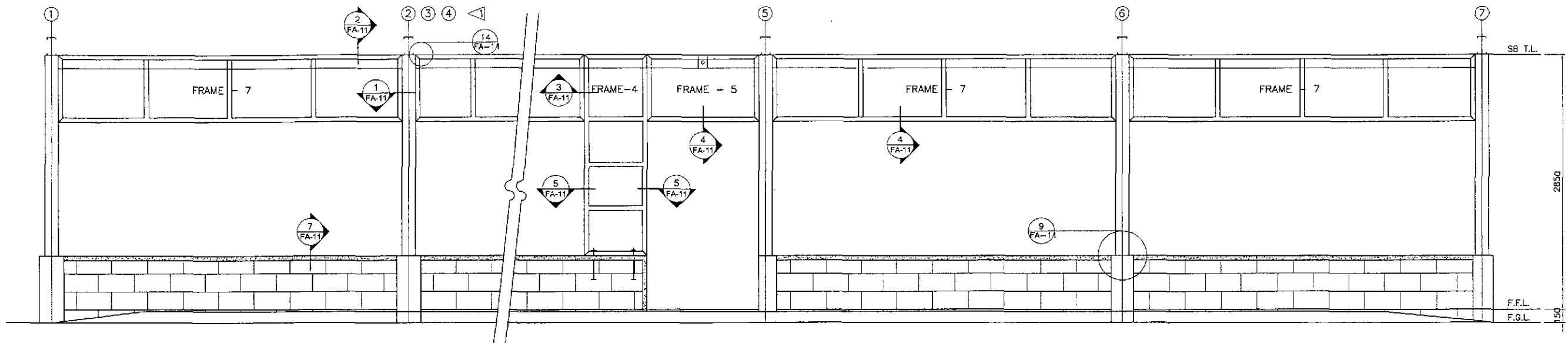
1 FRAMES SCHEMATIC DIAGRAMS
FA-07 SCALE 1:50



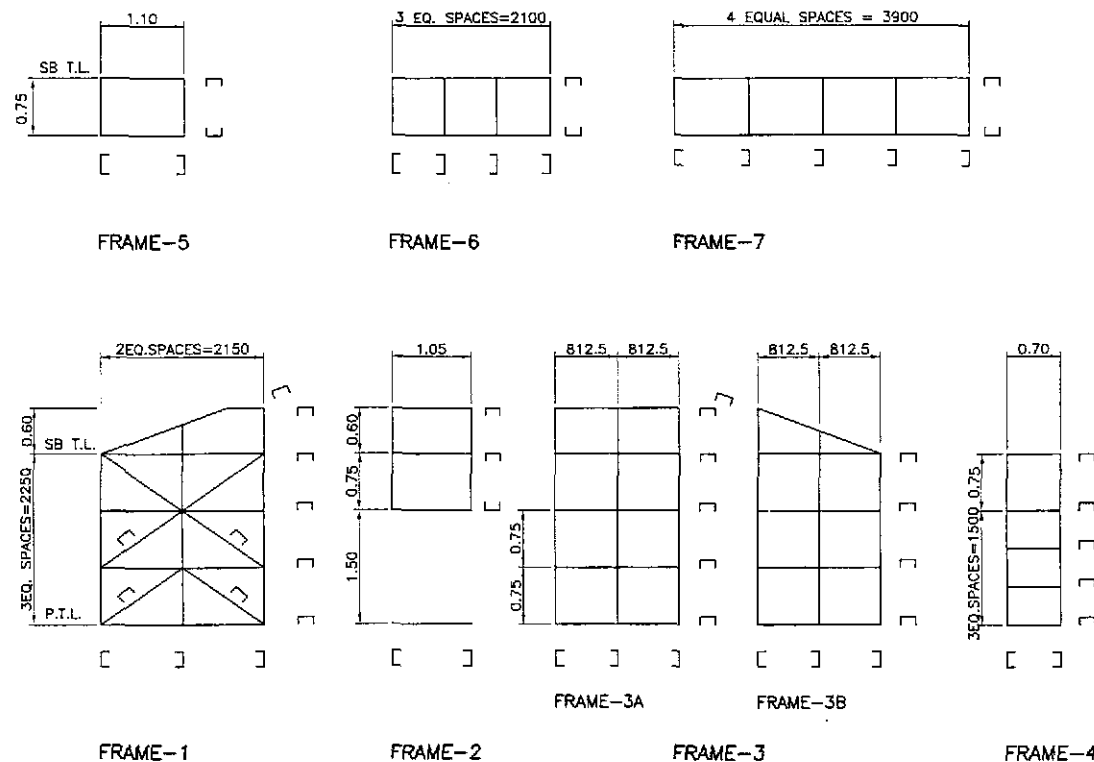
3 RIGHT SIDE ELEVATION
FA-07 SCALE 1:25

ARNEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/28/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN, M.M.

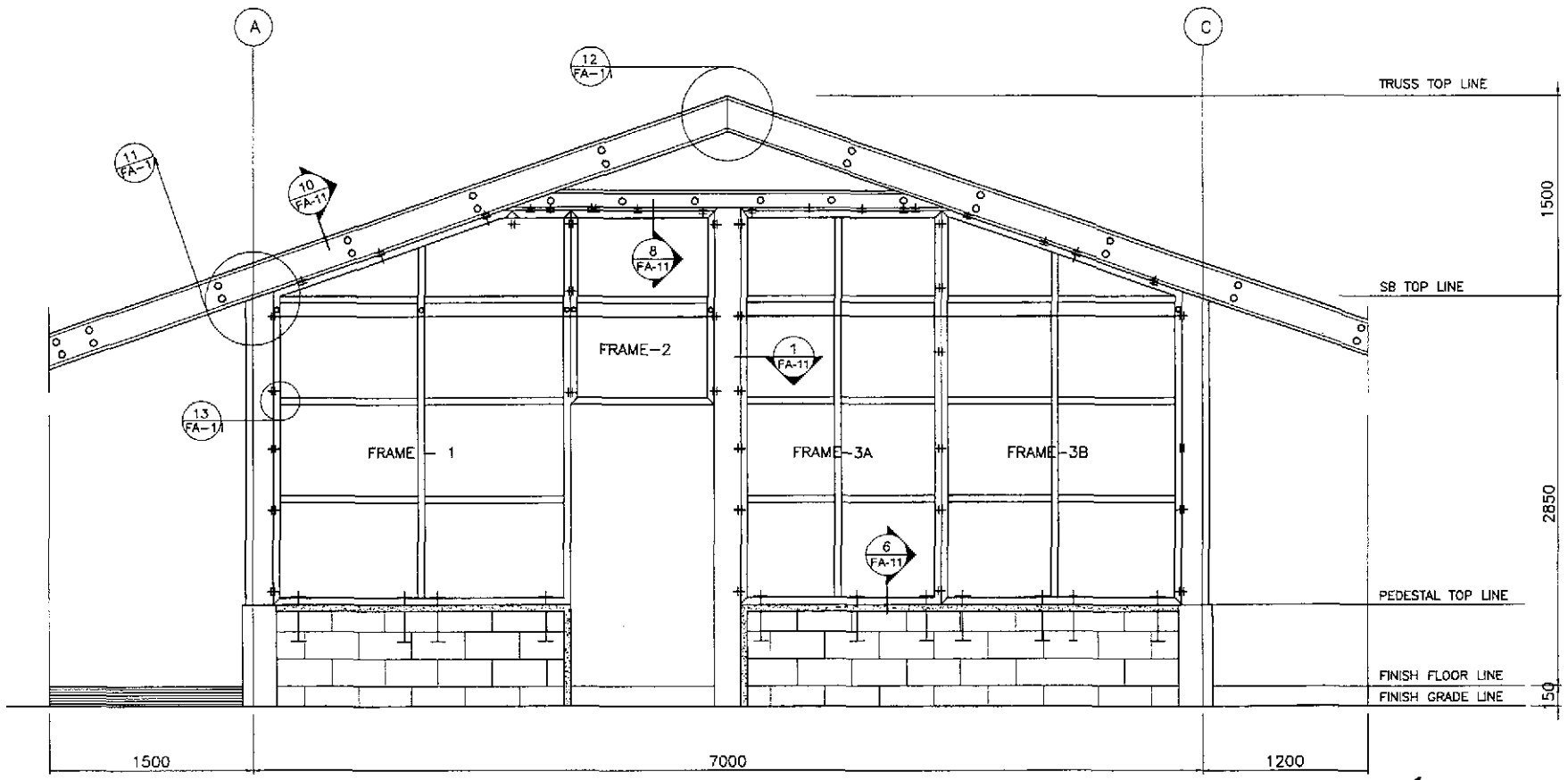
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| | | REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS | | | | PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II | | SCALE : AS SHOWN FULL SIZE A1 | SHEET CONTENTS : ENGR'S FIELD OFFICE / LABORATORY FRONT AND RIGHT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAM | SHEET NO. : FA-07 |
| DESIGNED | DATE | SIGNATURE | Submitted By: | Reviewed By: | Recommended By: | Recommended By: | Approved By: | | | |
| CHECKED | 9/25/02 | A.P. GONZALES | DANILO C. TRAJANO Project Director | WILFREDO S. LOPEZ Chief, Structural Division | GILBERTO S. REYES OC, Director IV | MANUEL M. BONGAN Undersecretary | SIMEON A. DATUMANONG Secretary | | | |
| SUBMITTED | 9/27/02 | A.P. GONZALES TEAM LEADER | | | | | | | | |



2 FRONT ELEVATION
FA-08 SCALE 1:25



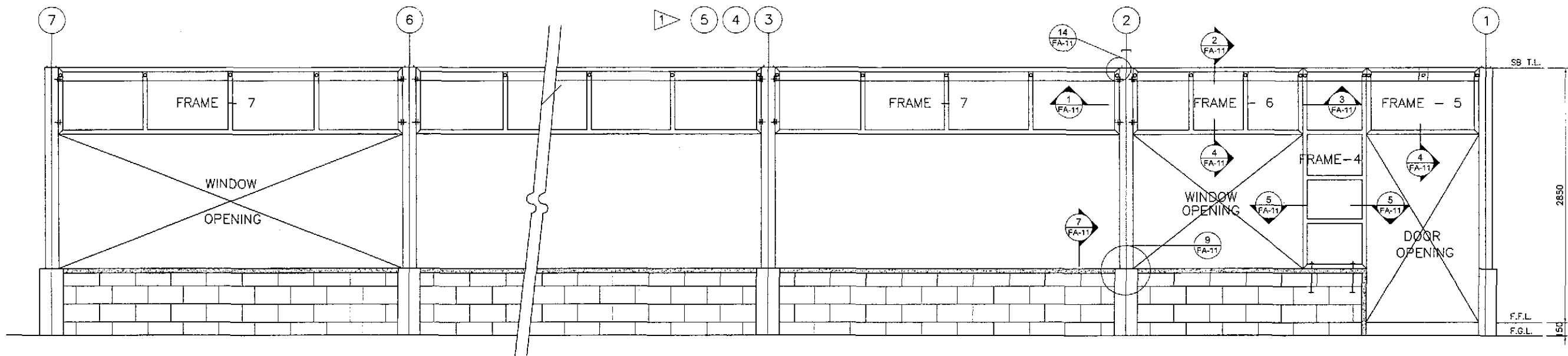
1 FRAMES SCHEMATIC DIAGRAMS
FA-08 SCALE 1:50



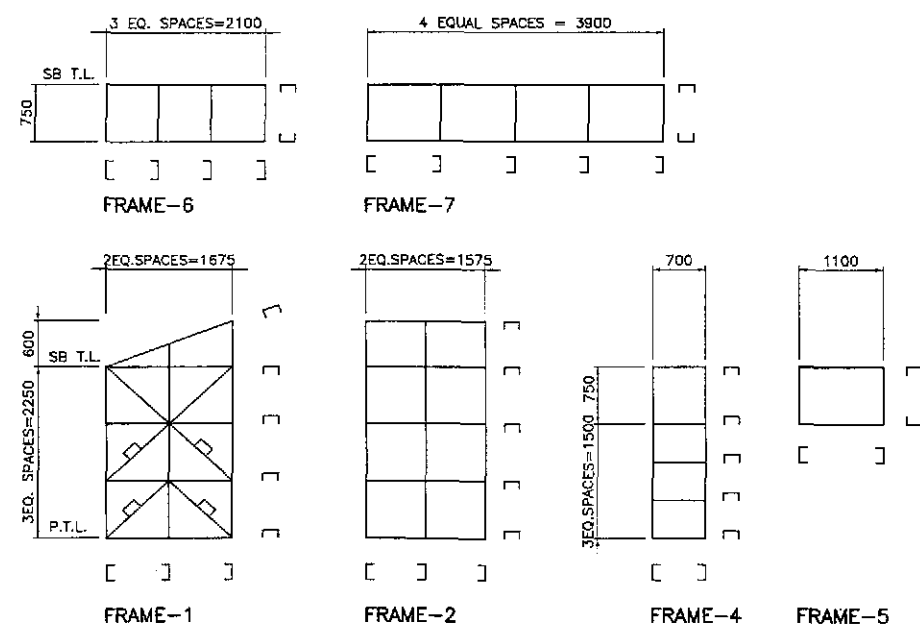
3 RIGHT SIDE ELEVATION
FA-08 SCALE 1:25

J.P. Gonzales
ARNEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN, M.M.

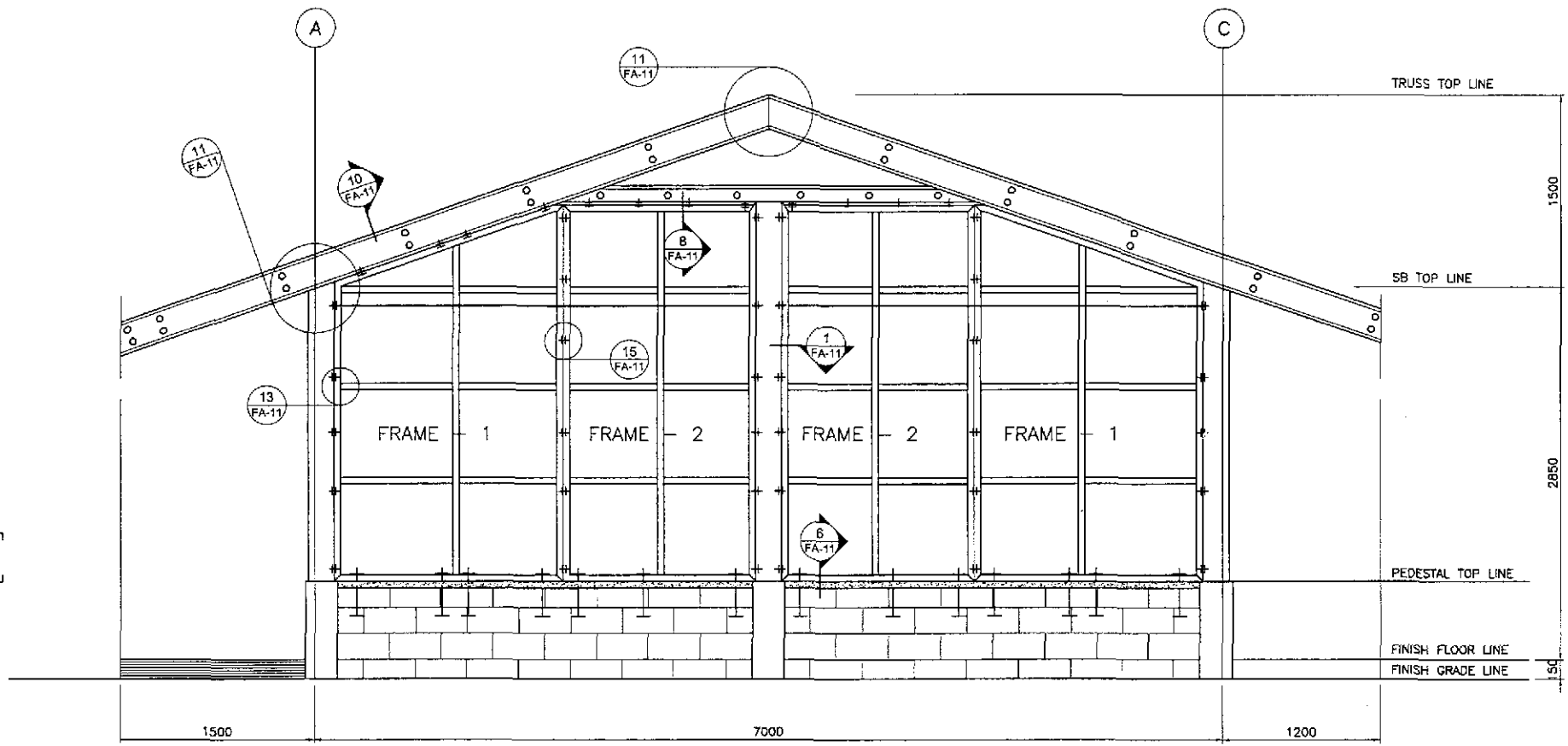
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|-----------|----------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------|
| | DESIGNED | DATE | SIGNATURE | | PROJECT AND LOCATION : | SCALE : | SHEET CONTENTS : | SHEET NO. : |
| | CHECKED | 9/12/02 | J.P. GONZALES | | REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY | THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II | AS SHOWN | ENGINEER'S LIVING QUARTERS FRONT AND RIGHT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAM |
| SUBMITTED | 9/12/02 | J.P. GONZALES | Submitted By: DANILLO C. TRAJANO Project Director Reviewed By: WILFREDO S. LOPEZ Chief, Structural Division Recommended By: GILBERTO S. REYES OIC, Director IV Recommended By: MANUEL M. BONDAN Undersecretary Approved By: SIMEON A. DATUMANONG Secretary | Submitted By: DANILLO C. TRAJANO Project Director Reviewed By: WILFREDO S. LOPEZ Chief, Structural Division Recommended By: GILBERTO S. REYES OIC, Director IV Recommended By: MANUEL M. BONDAN Undersecretary Approved By: SIMEON A. DATUMANONG Secretary | FULL SIZE A1 | FULL SIZE A1 | FULL SIZE A1 | FULL SIZE A1 |



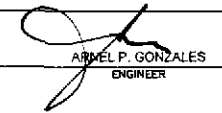
2 REAR ELEVATION
FA-09 SCALE 1:25





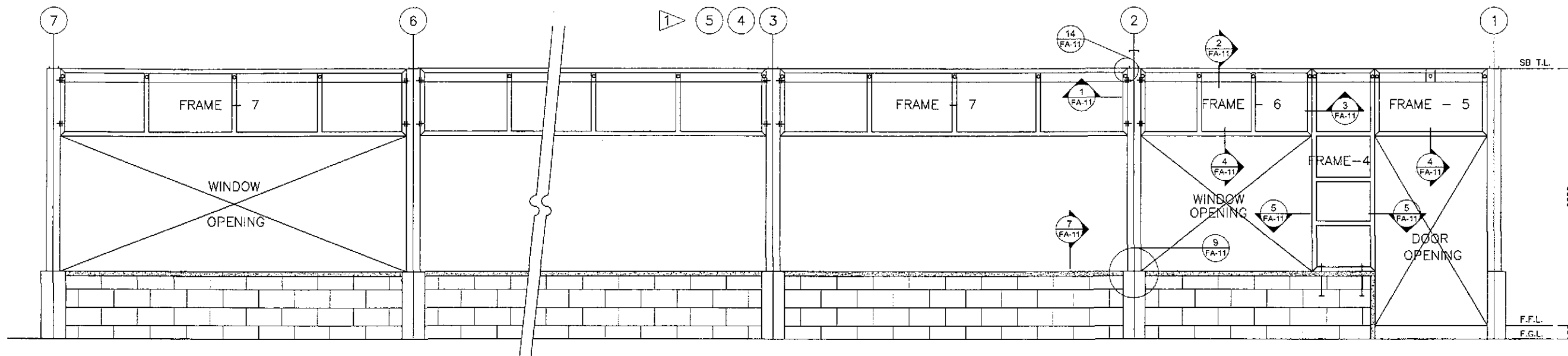
1 FRAMES SCHEMATIC DIAGRAMS
FA-09 SCALE 1:50



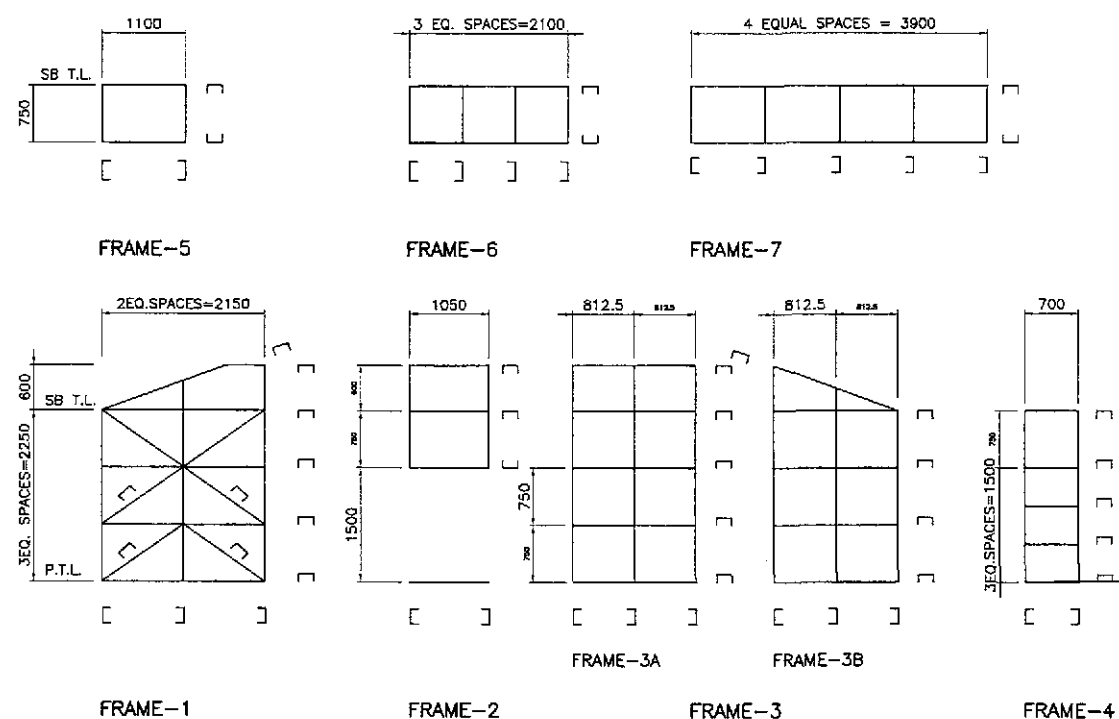
3 LEFT SIDE ELEVATION
FA-09 SCALE 1:25


 ARNEL P. GONZALES
 ENGINEER
 PTR. NO. 5846340 P.R.C. NO. 53457
 ISSUED ON 04/25/2002 T.I.N. 138-062-582
 ISSUED AT SAN JUAN, M.M.

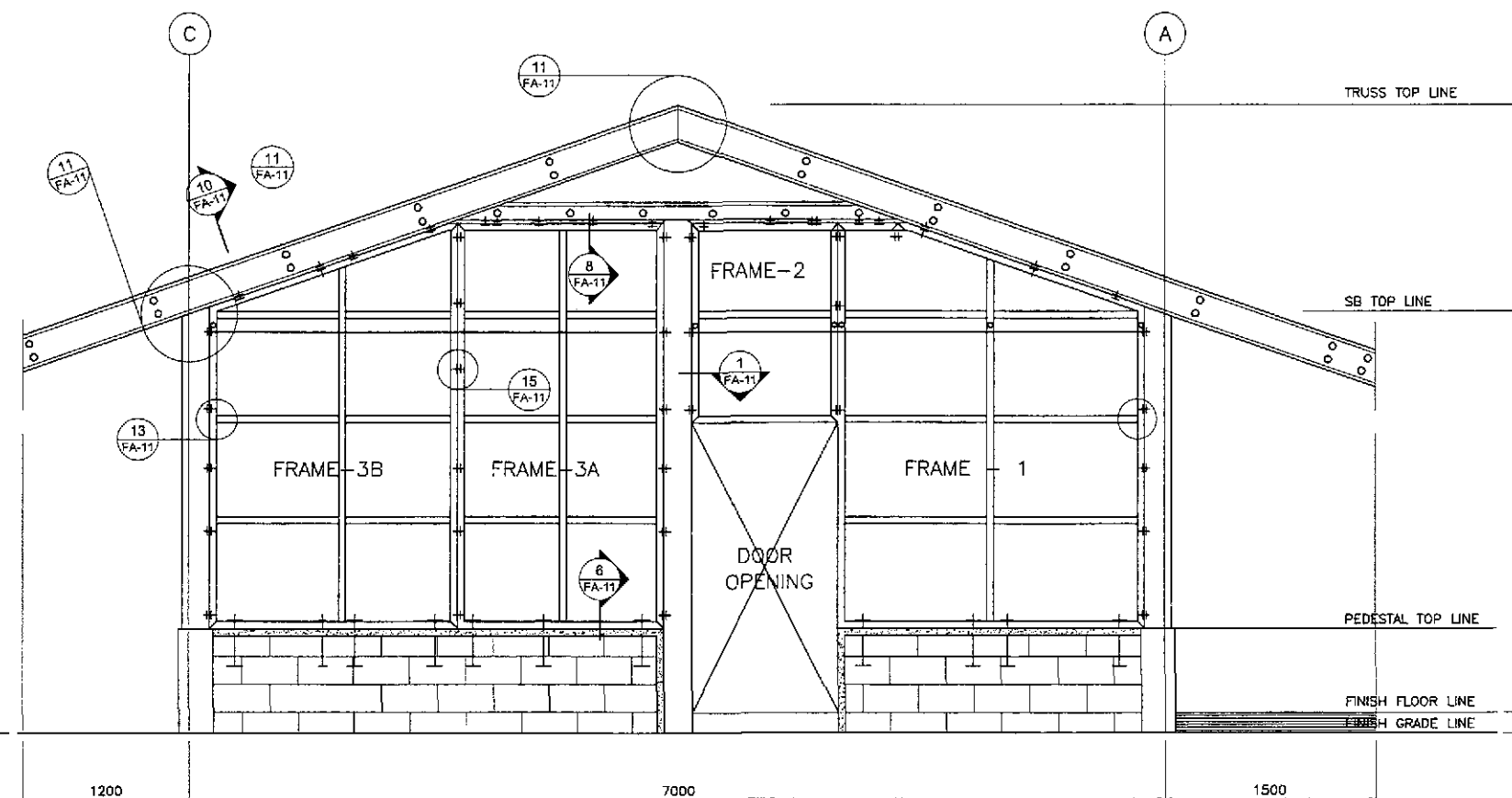
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|  | DESIGNED | DATE | SIGNATURE |  REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN | PROJECT AND LOCATION : | SCALE : | SHEET CONTENTS : | SHEET NO. : | |
| | CHECKED | 9/25/02 | A. F. GONZALES | | Submitted By: | THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) | AS SHOWN | ENGR'S FIELD OFFICE / LABORATORY REAR AND LEFT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAM | FA-09 |
| | SUBMITTED | 9/29/02 | M. K. KASARI | | Reviewed By: | PLARIDEL BYPASS - CONTRACT PACKAGE II | FULL SIZE A1 | | |
| | | | | | Project Director | Chief, Structural Division | QIC, Director IV | Undersecretary | Secretary |



2 REAR ELEVATION
FA-10 SCALE 1:25



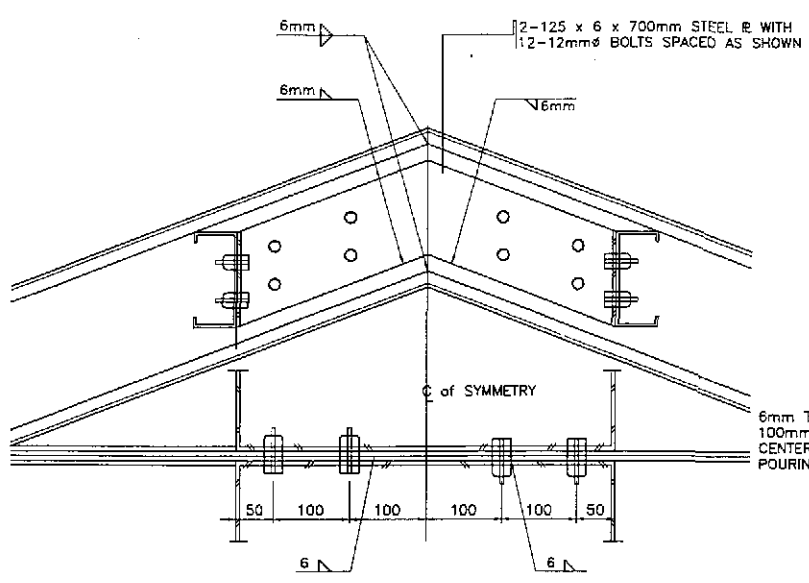
1 FRAMES SCHEMATIC DIAGRAMS
FA-10 SCALE 1:50



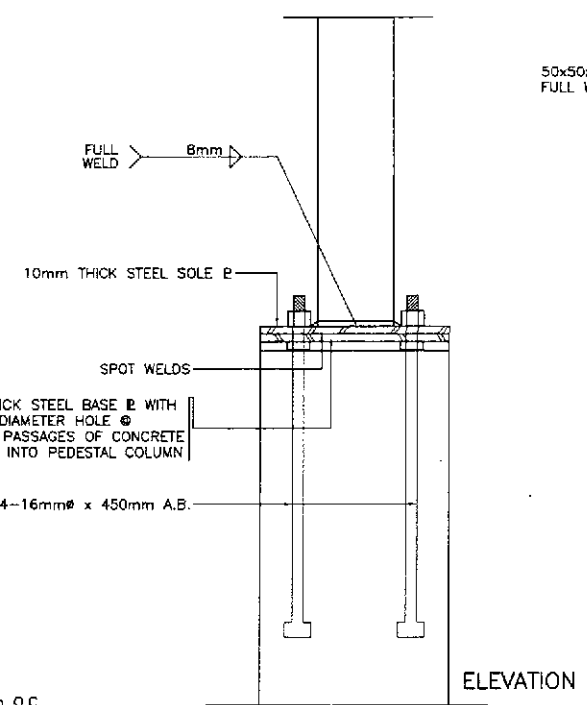
3 LEFT SIDE ELEVATION
FA-10 SCALE 1:25

ARNEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/28/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN, M.M.

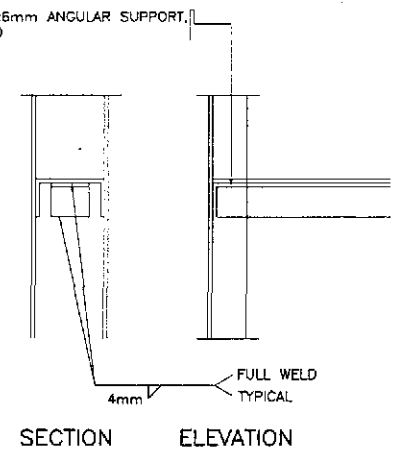
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| | DESIGNED | DATE | SIGNATURE | | REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS | | | | PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II | SCALE : | SHEET CONTENTS : ENGINEER'S LIVING QUARTERS REAR AND LEFT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAMS | SHEET NO. : |
| | CHECKED | | | | BUREAU OF DESIGN | | | | | AS SHOWN | | FA-10 |
| | SUBMITTED | | | | Submitted By: | Reviewed By: | Recommended By: | Approved By: | | FULL SIZE A1 | | |
| | | | | | DANILO C. TRAJANO Project Director | WILFREDO S. LOPEZ Chief, Structural Division | GILBERTO S. REYES OIC, Director IV | MANUEL M. BONGAN Undersecretary | | SIMEON A. DATUMANONG Secretary | | |



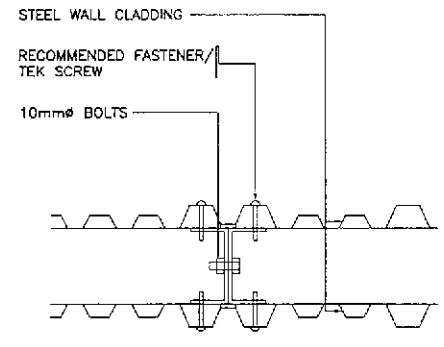
3 DETAIL - 12
FA-11 SCALE 1:5



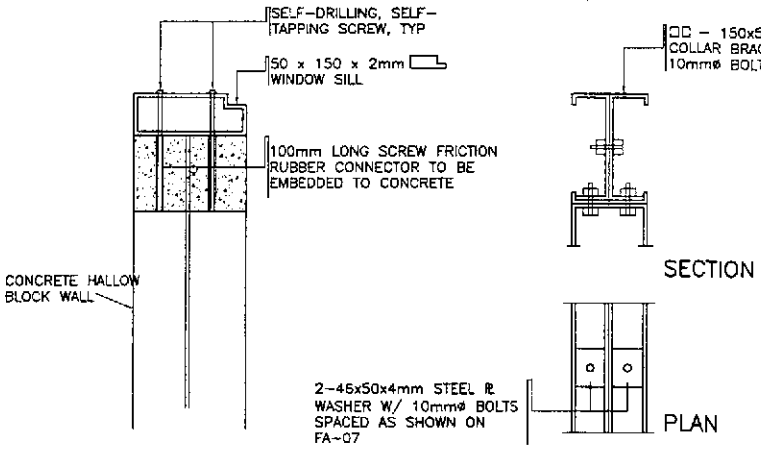
10 DETAIL - 13
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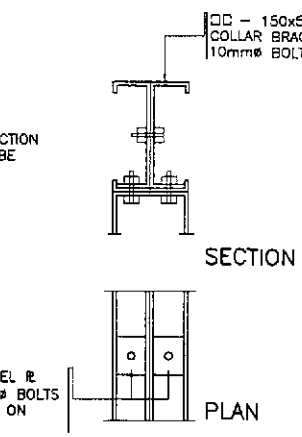
13 DETAIL - 14
FA-11 SCALE 1:5



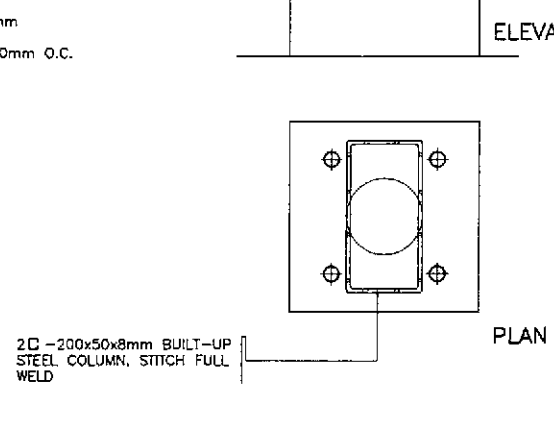
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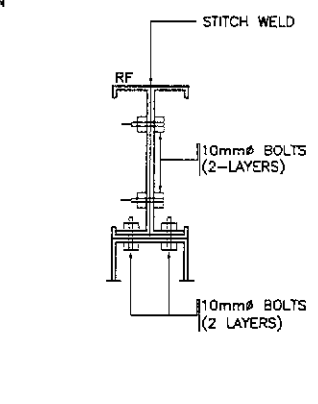
2 DETAIL - 7
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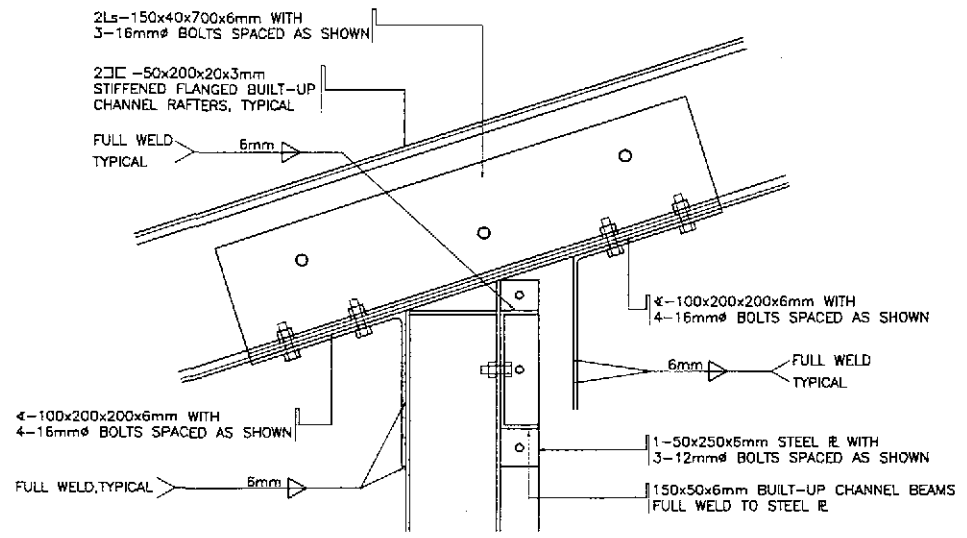
5 DETAIL - 8
FA-11 SCALE 1:5



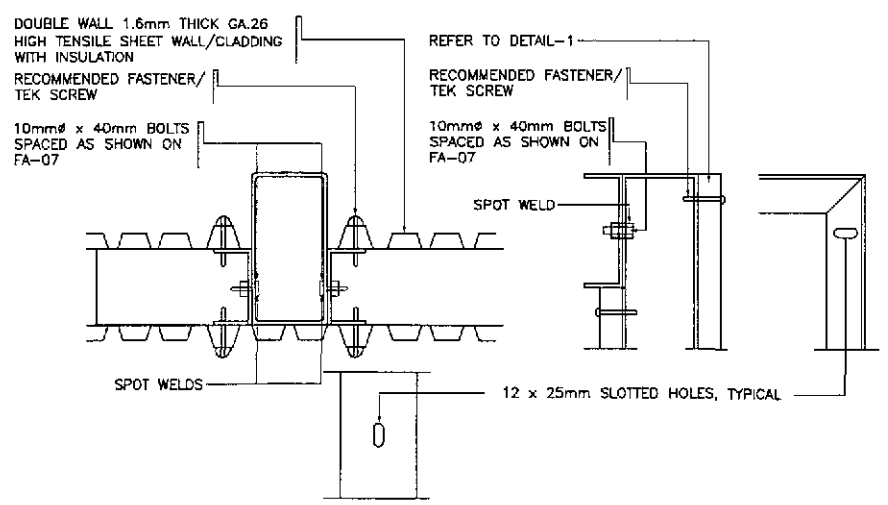
7 DETAIL - 9
FA-11 SCALE 1:5



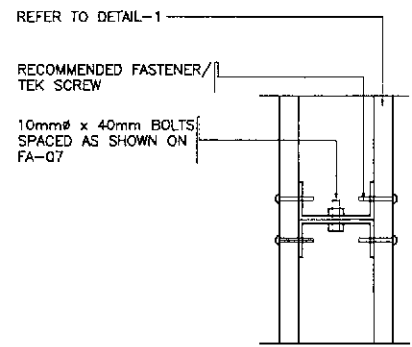
9 DETAIL - 10
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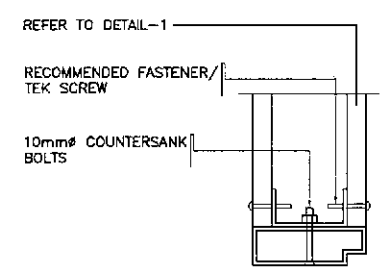
12 DETAIL - 11
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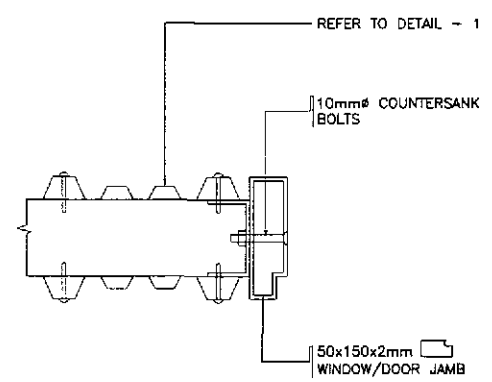
1 DETAIL - 1
FA-11 SCALE 1:5



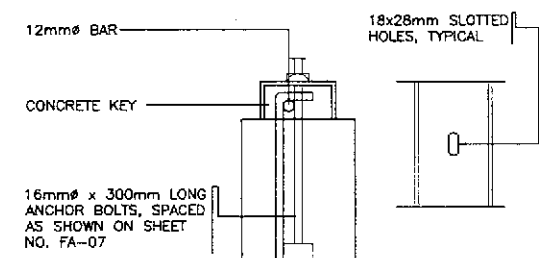
6 DETAIL - 3
FA-11 SCALE 1:5



8 DETAIL - 4
FA-11 SCALE 1:5



11 DETAIL - 5
FA-11 SCALE 1:5



14 DETAIL - 6
FA-11 SCALE 1:5

NOTES :

1. ALL VERTICAL AND HORIZONTAL STUDS SHALL BE 100x50x2mm UNSTIFFENED FLANGED UNLESS OTHERWISE SPECIFIED.
2. HORIZONTAL STUDS MUST BE INSERTED TO AND WELDED IN THE VERTICAL STUDS UNLESS OTHERWISE SPECIFIED.
3. REVISION IN THE ATTACHMENT/ CONNECTIONS THAT WILL IMPROVE DESIGN MAYBE DONE W/ PRIOR APPROVAL OF FABRICATION DRAWINGS.

ARMEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN, M.M.

| | | | | | | | | | |
|--|-----------|---------|------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------|-------|
| | DESIGNED | DATE | SIGNATURE | | PROJECT AND LOCATION : | SCALE : | SHEET CONTENTS : | SHEET NO. : | |
| | CHECKED | 9/21/02 | A.P. GONZALES | | REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS | THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) | AS SHOWN | ENGINEER'S FIELD OFFICE AND LIVING QUARTERS DETAILS OF CONNECTIONS DETAIL 1 TO 15 | FA-11 |
| | SUBMITTED | 9/27/02 | A.P. GONZALES TEAM LEADER | | Submitted By: DANILO C. TRAJANO Project Director Reviewed By: WILFREDO S. LOPEZ Chief, Structural Division Recommended By: GILBERTO S. REYES O.C., Director IV Recommended By: MANUEL M. BONGON Undersecretary Approved By: SIMEON A. DATUMANONG Secretary | PLARIDEL BYPASS - CONTRACT PACKAGE II | FULL SIZE A1 | | |

ALUMINUM FOIL INSULATION, TYP.
USE HAVIFOIL 427(3-WAY REINFORCE-
MENT) OR EQUAL

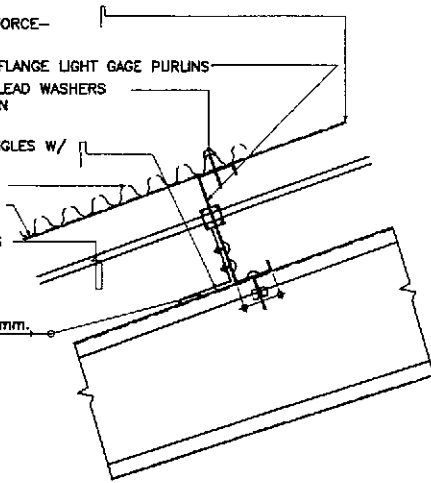
[-150x50x15x2mm. STIFFENER FLANGE LIGHT GAGE PURLINS
6 mm. # t -HOOK BOLTS W/ LEAD WASHERS
EVERY 5-UPPER CORRUGATION

1 -75x75x50x6.0mm. CLIP ANGLES W/
2 -10mm. # BOLTS

UPPER CORRUGATION
LOWER CORRUGATION

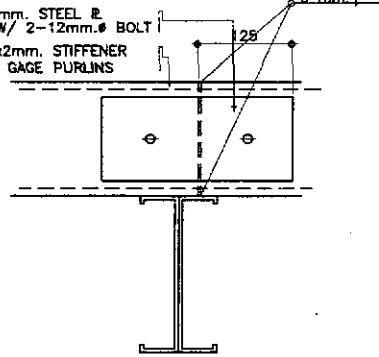
10mm # SAG RODS

6 mm.



ELEVATION

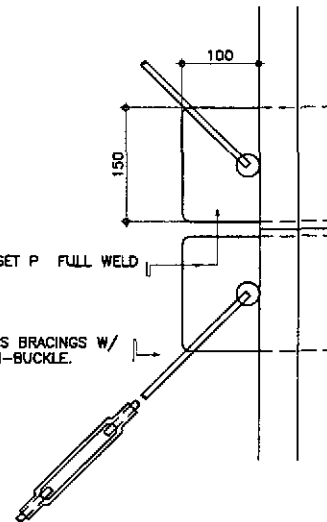
2-125x250x6mm. STEEL # CONNECTION W/ 2-12mm. # BOLT
[-150x50x15x2mm. STIFFENER FLANGE LIGHT GAGE PURLINS



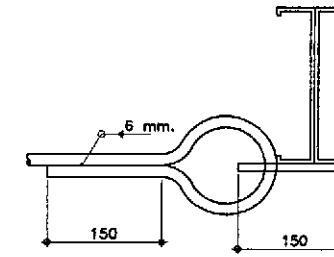
SECTION, SPLICE CONNECTION

10 mm Thk. GUSSET P FULL WELD TO RF.

16 mm. # CROSS BRACINGS W/ STANDARD TURN-BUCKLE.

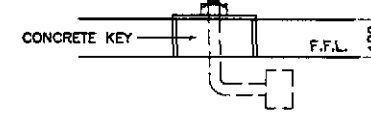


P L A N

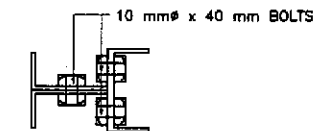


SECTION

16 mm # x 200mm LONG ANCHOR BOLTS SPACED AS SHOWN ON SCHEM. DIAG. OF INT. WALLS.



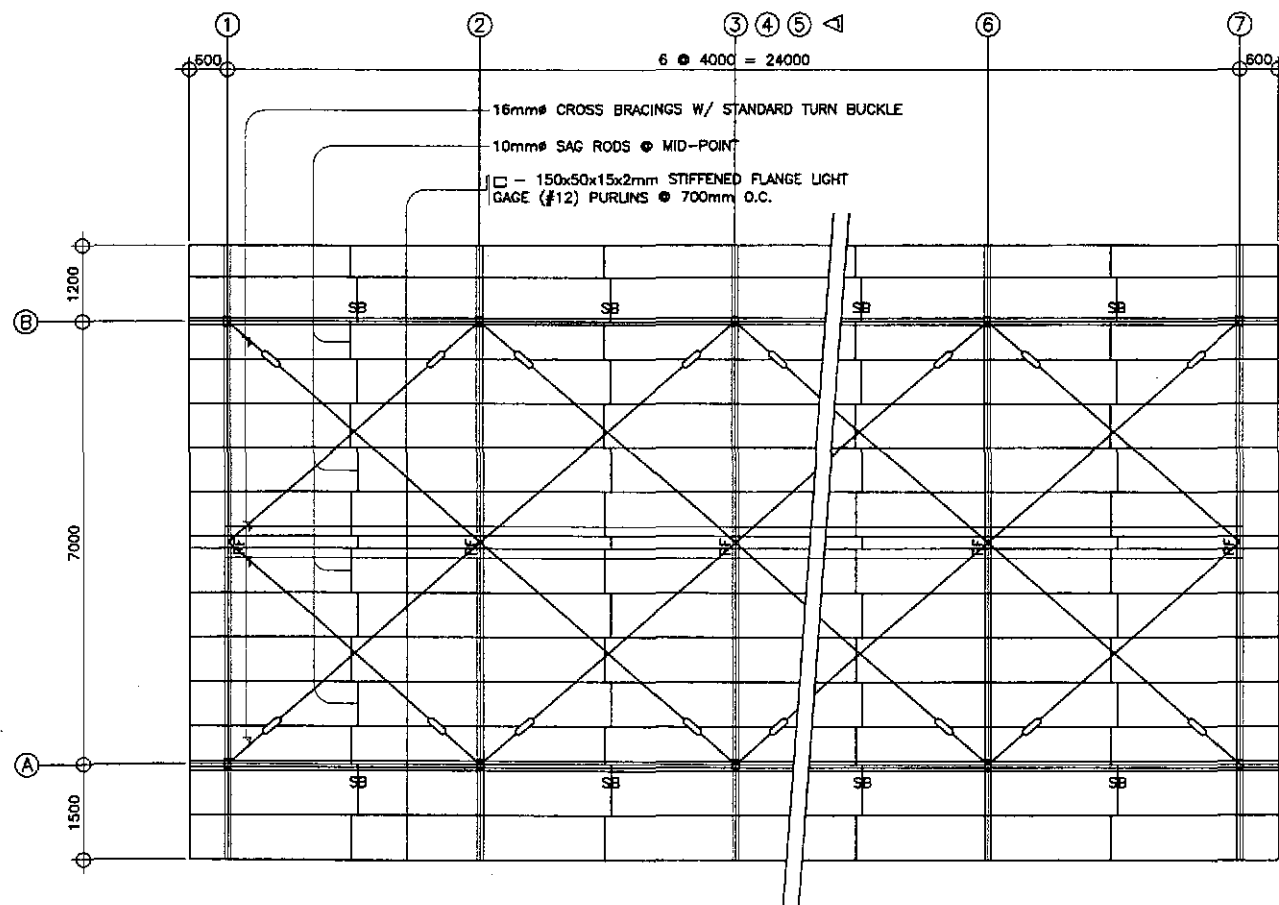
5 DETAIL - a
FA-12 SCALE 1:5



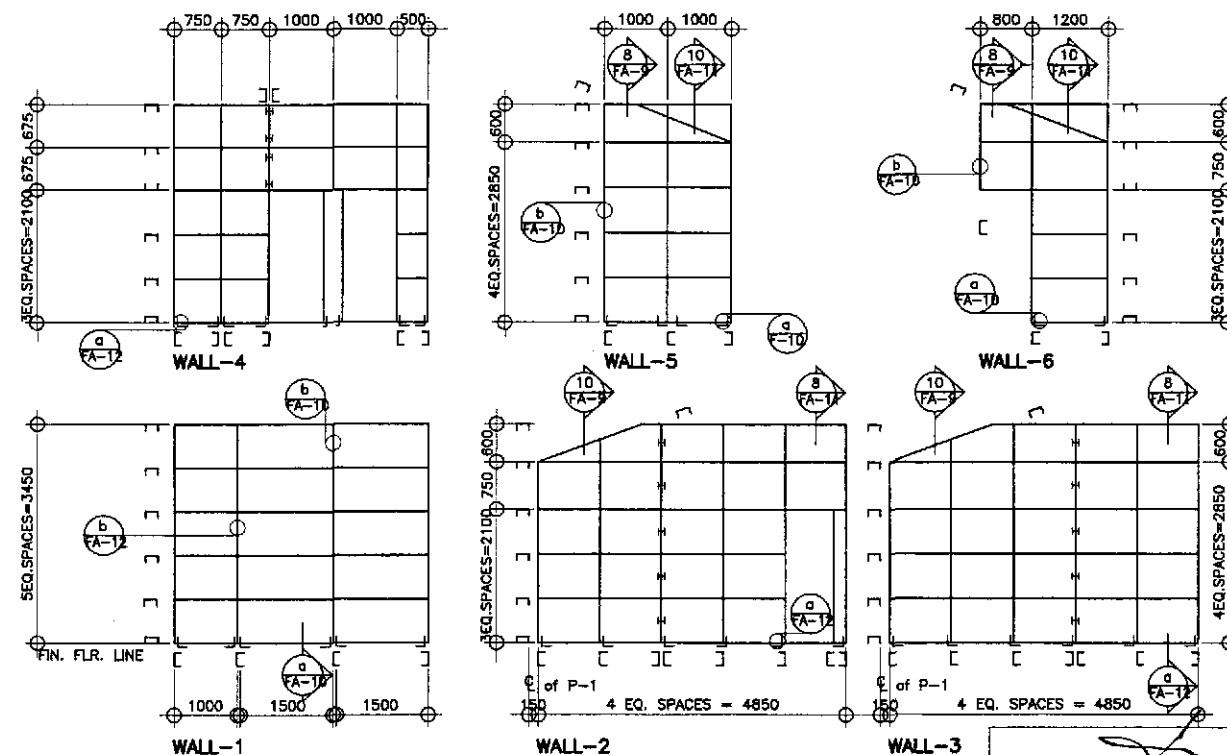
6 DETAIL - b
FA-12 SCALE 1:5

2 PURLIN CONNECTION
FA-12 SCALE 1:5

4 CROSS-BRACING CONNECTION
FA-12 SCALE 1:5



1 ROOF FRAMING PLAN
FA-12 SCALE 1:80



3 SCHEMATIC DIAGRAMS OF INTERIOR WALLS
FA-12 SCALE 1:80

ARMEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN, M.M.

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
YEO YACHIYO ENGINEERING CO., LTD.

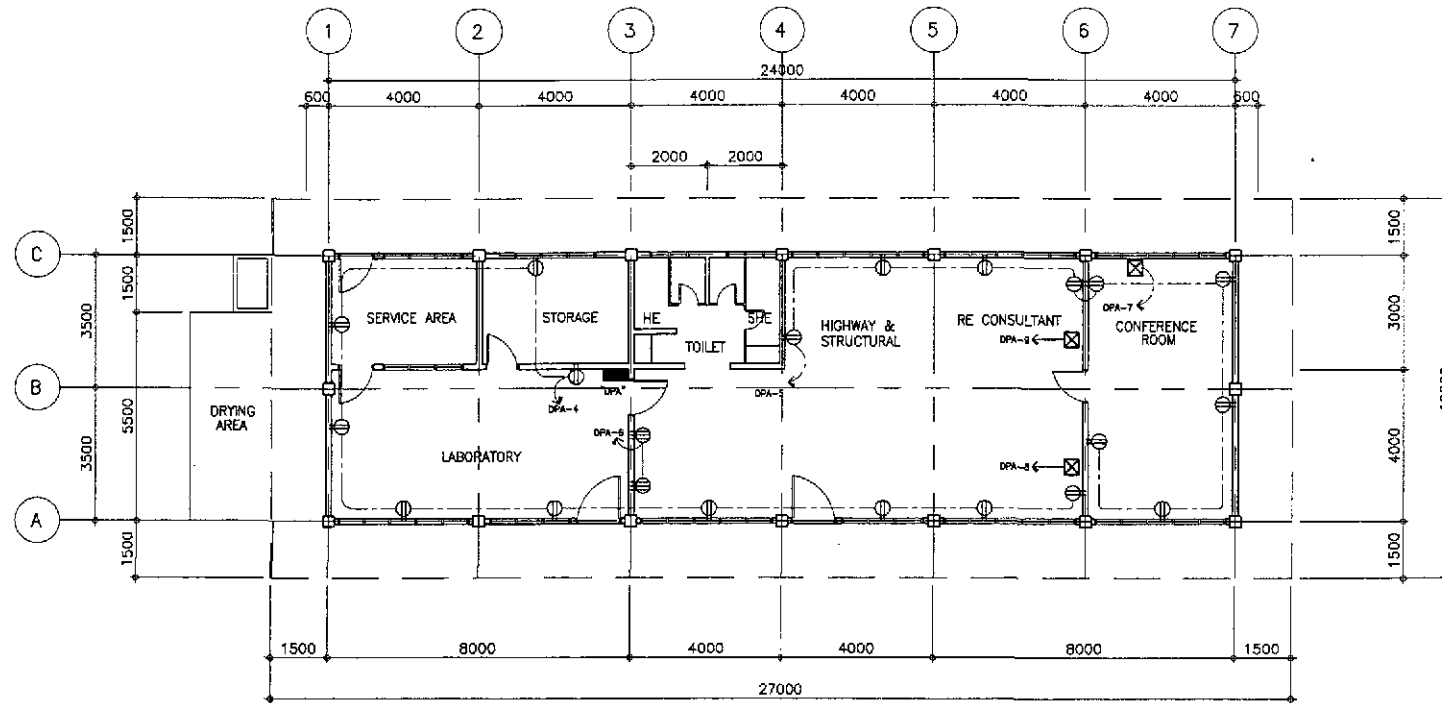
| DATE | SIGNATURE | REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS | | | | |
|-------------------|---------------|------------------------------------------------------------------------|-------------------------------------------------|---------------------------------------|------------------------------------|-----------------------------------|
| DESIGNED 9/21/02 | A.P. GONZALES | BUREAU OF DESIGN | | OFFICE OF THE SECRETARY | | |
| CHECKED 9/25/02 | A.P. GONZALES | Submitted By: | Reviewed By: | Recommended By: | Recommended By: | Approved By: |
| SUBMITTED 9/27/02 | A.P. GONZALES | DANILO C. TRAJANO Project Director | WILFREDO S. LOPEZ Chief, Structural Division | GILBERTO S. REYES OIC, Director IV | MANUEL M. BONDAN Undersecretary | SIMEON A. DATUMANONG Secretary |

PROJECT AND LOCATION :
THE DETAILED DESIGN STUDY ON
UPGRADING INTER-URBAN HIGHWAY SYSTEM
ALONG THE PAN-PHILIPPINE HIGHWAY
(Plaridel, Cabanatuan and San Jose Bypasses)
PLARIDEL BYPASS - CONTRACT PACKAGE II

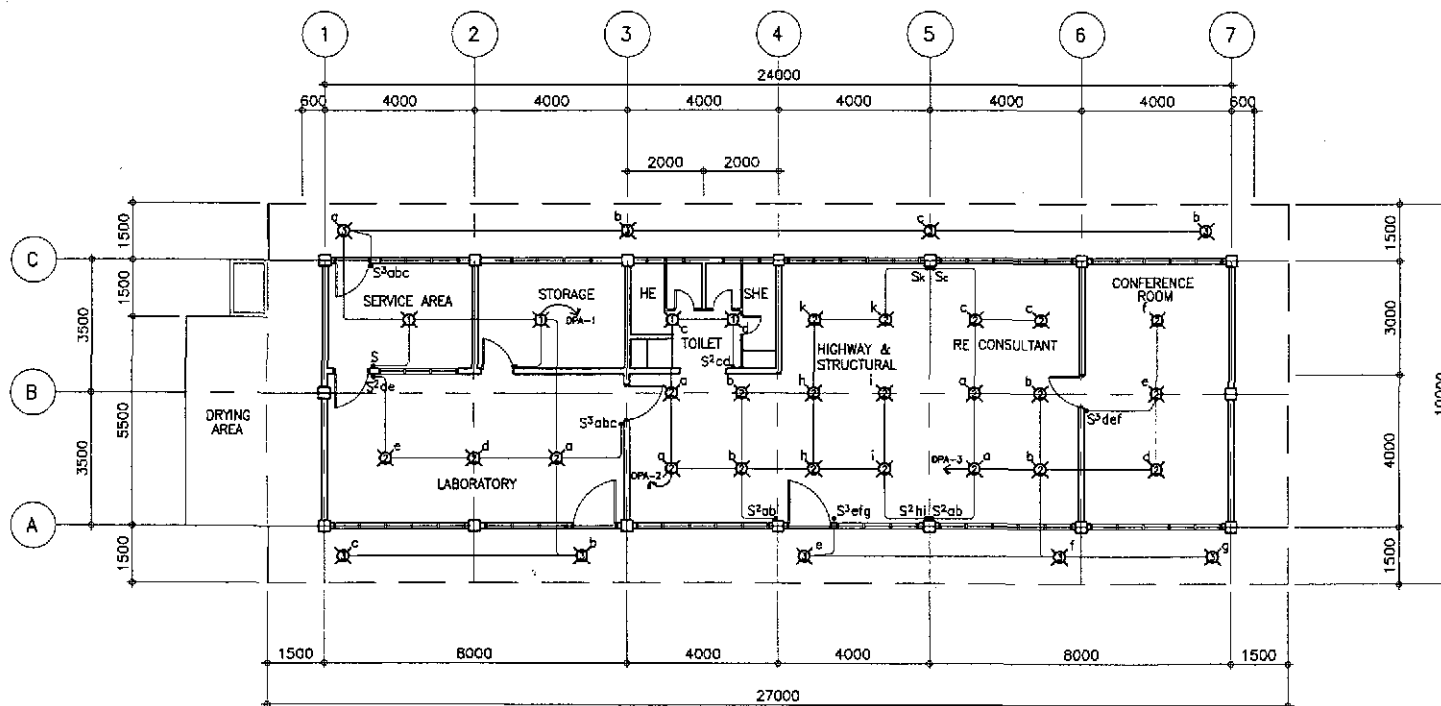
SCALE :
AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S FIELD OFFICE
AND LIVING QUARTERS
ROOF FRAMING PLAN, SCHEMATIC DIAGRAM
PURLIN CONN. & CROSS-BRACING CONN.

SHEET NO. :
FA-12



2 POWER LAYOUT OF THE ENGINEER'S FIELD OFFICE / LABORATORY
FE-01 SCALE 1:100



2 LIGHTING LAYOUT OF THE ENGINEER'S FIELD OFFICE / LABORATORY
FE-01 SCALE 1:100

GENERAL NOTES:


1. ALL ELECTRICAL WORKS SHALL BE DONE IN STRICT COMPLIANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE PHIL. ELECT. CODE, EXISTING APPLICABLE ORDINANCES, RULES AND REGULATIONS OF THE LOCAL GOVERNMENT AND THE REQUIREMENTS OF THE POWER COMPANY.
2. THE TYPE OF POWER SERVICE TO USED SHALL BE SINGLE-PHASE 2-WIRE, 240 VOLTS, 60Hz, AC.
3. ALL WIRINGS SHALL BE INSTALLED IN STANDARD GALVANIZED RIGID STEEL CONDUIT, RUN EMBEDDED INSIDE THE CONCRETE AND HOLLOW BLOCK STRUCTURES, SLABS, COLUMNS, WALLS PARTITIONS AND/OR RUN BETWEEN DOUBLE WALL WOODED PARTITIONS OR INSIDE THE CEILING SPACES.
4. ALL LIGHTING CIRCUIT HOMERUNS AND CONVENIENCE OUTLETS SHALL BE WIRED WITH NOT LESS THAN 3.5mm IN SIZE.
5. THE MINIMUM SIZES OF WIRE AND CONDUIT TO BE USED SHALL BE 2.0mm² AND 15mm NOMINAL DIAMETER, RESPECTIVELY.
6. ALL NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT SHALL BE PROPERLY GROUNDED IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE IV OF THE PHIL. ELECT. CODE, PART I, LATEST EDITION.
7. WHENEVER REQUIRED AND NECESSARY, PULL BOXES OF PROPER SIZES SHALL BE INSTALLED AT CONVENIENT AND INCONSPICUOUS LOCATIONS, ALTHOUGH SUCH BOXES ARE NOT SHOWN ON THE PLAN IS NOR MENTIONED IN THE SPECIFICATIONS.
8. ALL WALL OUTLETS SHALL BE INSTALLED AT THE FOLLOWING HEIGHT ABOVE THE FINISHED FLOOR LEVEL, UNLESS OTHERWISE NOTED.
A. WALL SWITCHES1200 mm
B. CONVENIENCE OUTLETS300 mm
C. AIR CONDITIONING OUTLETSAT CONVENIENT HEIGHT NEAR THE EQUIPMENT
9. STANDARD TYPE OF ACCESSORIES, SPLICING DEVICES, TERMINATORS AND OTHER APPURTENANCES FOR THE ENTIRE ELECTRICAL INSTALLATION SHALL BE USED.
10. ALL MATERIALS TO BE USED SHALL BE BRAND NEW AND OF THE APPROVED TYPE FOR THE LOCATION AND PURPOSE.
11. THE CONTRACTOR SHALL VERIFY AND ORIENT THE ACTUAL LOCATION OF THE SERVICE ENTRANCE FOR CONNECTION TO POWER COMPANY SERVICE POINT.
12. ALL ELECTRICAL WORKS SHALL BE DONE UNDER THE STRICT SUPERVISION OF A DULY REGISTERED ELECTRICAL ENGINEER.


NOTE:

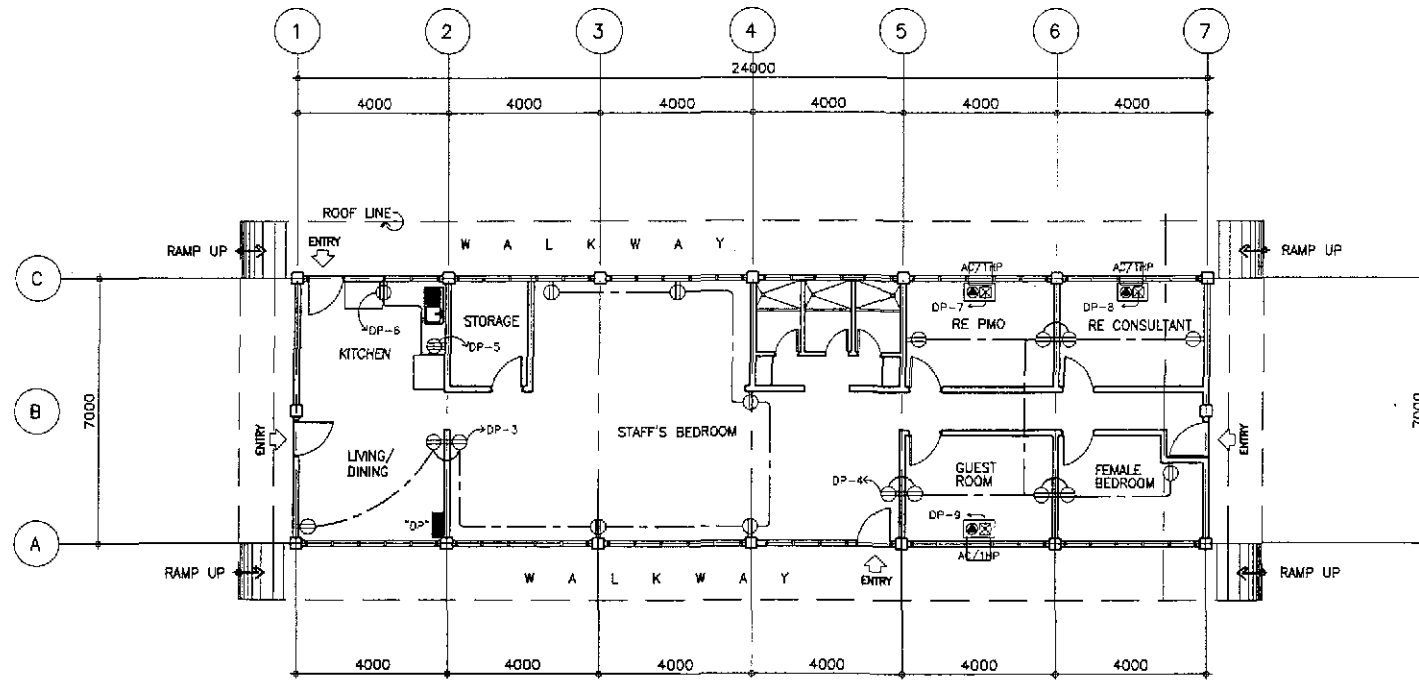
ALL FLUORESCENT LIGHTING FIXTURES SHALL BE EQUIPPED WITH A HIGH POWER FACTOR PRE-HEAT WITH STARTER TYPE BALLAST, COMPLETE WITH ALL NECESSARY ACCESSORIES, WIRED AND READY FOR SERVICE USED.

ELECTRICAL SYMBOLS:

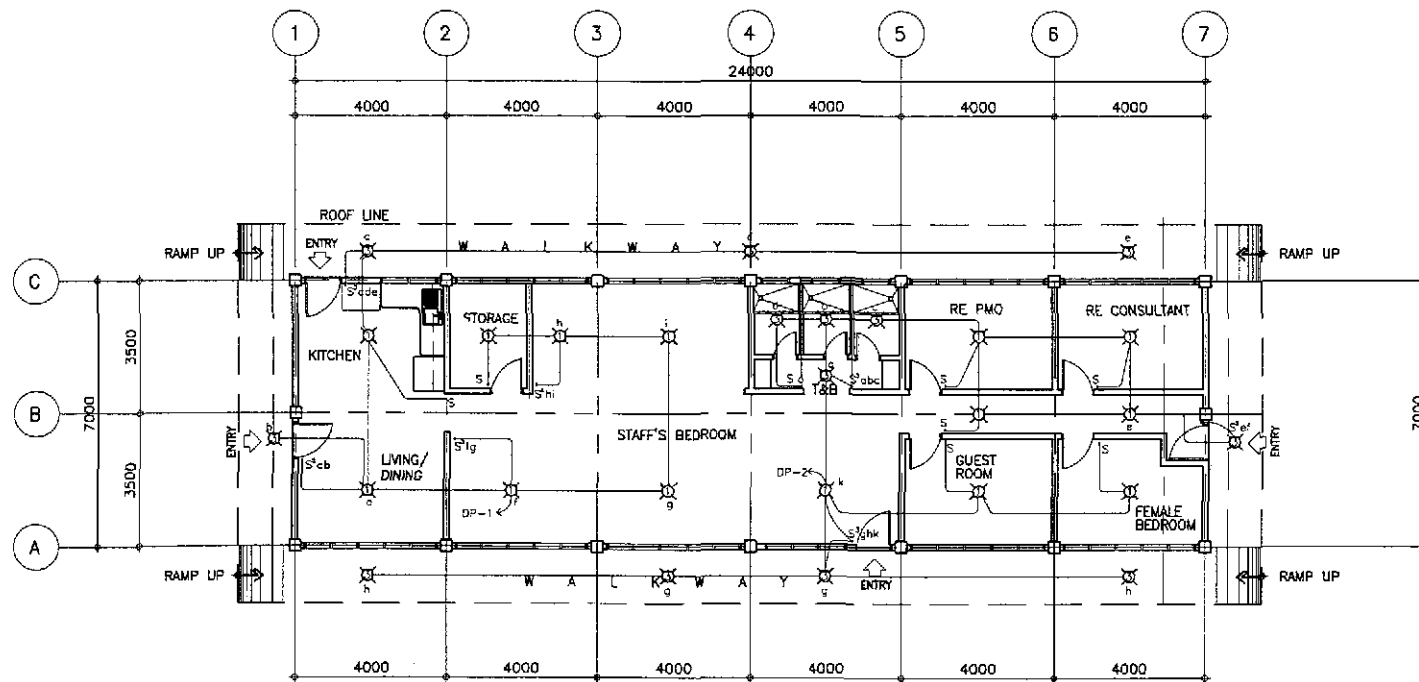
- ☒ CEILING LIGHT; REFER TO SCHEDULE OF LIGHTING FIXTURES AND LAMPS
- ELECTRICAL RISER
- S ONE-WAY WALL SWITCH, 15A, 250V
- S² 2 ONE-WAY WALL SWITCHES ON ONE-GANG PLATE, 15A, 250V
- S³ 3 ONE-WAY WALL SWITCHES ON ONE-GANG PLATE, 15A, 250V
- ⊖ DUPLEX CONVENIENCE OUTLET, GROUNDING TYPE, 20A, 250V
- ⊕ HEAVY DUTY CONVENIENCE OUTLETS, SINGLE-GROUNDING TYPE, 30A, 250V
- ☒ AIR CONDITIONING OUTLET GROUNDING TYPE WITH AUTOMATIC CIRCUIT BREAKER IN ONE ENCLOSURE
- ☒ ENCLOSED AUTOMATIC CIRCUIT BREAKER (ACB) 70AT, 100AF, 2P, 240V
- DISTRIBUTION PANEL BOARD
- PULL BOX OR JUNCTION BOX
- ⊕ ELECTRIC SERVICE METER
- PROPOSED SERVICE ENTRANCE WITH CAP
- CONCEALED OR EMBEDDED CONDUIT RUN
- UNDERGROUND OR UNDER FLOOR CONDUIT RUN
- CIRCUIT HOMERUN TO PANEL BOARD


 ERNESTO M. ANTIOQUIA
 ENGINEER
 PTR. NO. 7403664 P.E.E. NO. 2913
 ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
 T.I.N. 109-382-378

| | | | | | | | | | |
|-------------------------------------------------------------------------------------|----------|-----------|-------------------------|-----------------------------------------|------------------------|---------------------------------------|----------------------------------|------------------|-------------|
|  | | DATE | SIGNATURE | REPUBLIC OF THE PHILIPPINES | | PROJECT AND LOCATION : | SCALE : | SHEET CONTENTS : | SHEET NO. : |
| | DESIGNED | 7/21/02 | E.M. ANTIOQUIA | DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS | PROJECT AND LOCATION : | AS SHOWN | ENGR'S FIELD OFFICE / LABORATORY | FE-01 | |
| | CHECKED | 9/25/02 | E.M. ANTIOQUIA | BUREAU OF DESIGN | PROJECT AND LOCATION : | FULL SIZE A1 | ENGR'S FIELD OFFICE / LABORATORY | FE-01 | |
| SUBMITTED | 9/29/02 | M. BONDAN | OFFICE OF THE SECRETARY | PROJECT AND LOCATION : | | ENGR'S FIELD OFFICE / LABORATORY | FE-01 | | |
| | | | | BUREAU OF DESIGN | PROJECT AND LOCATION : | PLARIDEL BYPASS - CONTRACT PACKAGE II | | | |
| | | | | OFFICE OF THE SECRETARY | PROJECT AND LOCATION : | PLARIDEL BYPASS - CONTRACT PACKAGE II | | | |
| | | | | OFFICE OF THE SECRETARY | PROJECT AND LOCATION : | PLARIDEL BYPASS - CONTRACT PACKAGE II | | | |



2 POWER LAYOUT FOR ENGINEER'S LIVING QUARTER
SCALE 1:100



1 LIGHTING LAYOUT FOR ENGINEER'S LIVING QUARTER
SCALE 1:100

GENERAL NOTES:

- ALL ELECTRICAL WORKS SHALL BE DONE IN STRICT COMPLIANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE PHIL. ELECT. CODE, EXISTING APPLICABLE ORDINANCES, RULES AND REGULATIONS OF THE LOCAL GOVERNMENT AND THE REQUIREMENTS OF THE POWER COMPANY.
- THE TYPE OF POWER SERVICE TO USED SHALL BE SINGLE-PHASE 2-WIRE, 240 VOLTS, 60Hz, AC.
- ALL WIRINGS SHALL BE INSTALLED IN STANDARD GALVANIZED RIGID STEEL CONDUIT, RUN EMBEDDED INSIDE THE CONCRETE AND HOLLOW BLOCK STRUCTURES, SLABS, COLUMNS, WALLS PARTITIONS AND/OR RUN BETWEEN DOUBLE WALL WOODED PARTITIONS OR INSIDE THE CEILING SPACES.
- ALL LIGHTING CIRCUIT HOMERUNS AND CONVENIENCE OUTLETS SHALL BE WIRED WITH NOT LESS THAN 3.5mm IN SIZE.
- THE MINIMUM SIZES OF WIRE AND CONDUIT TO BE USED SHALL BE 2.0mm² AND 15mm NOMINAL DIAMETER, RESPECTIVELY.
- ALL NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT SHALL BE PROPERLY GROUNDED IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE IV OF THE PHIL. ELECT. CODE, PART I, LATEST EDITION.
- WHENEVER REQUIRED AND NECESSARY, PULL BOXES OF PROPER SIZES SHALL BE INSTALLED AT CONVENIENT AND INCONSPICUOUS LOCATIONS, ALTHOUGH SUCH BOXES ARE NOT SHOWN ON THE PLAN IS NOR MENTIONED IN THE SPECIFICATIONS.
- ALL WALL OUTLETS SHALL BE INSTALLED AT THE FOLLOWING HEIGHT ABOVE THE FINISHED FLOOR LEVEL, UNLESS OTHERWISE NOTED.
A. WALL SWITCHES1200 mm
B. CONVENIENCE OUTLETS300 mm
C. AIR CONDITIONING OUTLETSAT CONVENIENT HEIGHT NEAR THE EQUIPMENT
- STANDARD TYPE OF ACCESSORIES, SPlicing DEVICES, TERMINATORS AND OTHER APPURTENANCES FOR THE ENTIRE ELECTRICAL INSTALLATION SHALL BE USED.
- ALL MATERIALS TO BE USED SHALL BE BRAND NEW AND OF THE APPROVED TYPE FOR THE LOCATION AND PURPOSE.
- THE CONTRACTOR SHALL VERIFY AND ORIENT THE ACTUAL LOCATION OF THE SERVICE ENTRANCE FOR CONNECTION TO POWER COMPANY SERVICE POINT.
- ALL ELECTRICAL WORKS SHALL BE DONE UNDER THE STRICT SUPERVISION OF A DULY REGISTERED ELECTRICAL ENGINEER.

NOTE:

ALL FLUORESCENT LIGHTING FIXTURES SHALL BE EQUIPPED WITH A HIGH POWER FACTOR PRE-HEAT WITH STARTER TYPE BALLAST, COMPLETE WITH ALL NECESSARY ACCESSORIES, WIRED AND READY FOR SERVICE USED.

ELECTRICAL SYMBOLS:

- CEILING LIGHT; REFER TO SCHEDULE OF LIGHTING FIXTURES AND LAMPS
- ELECTRICAL RISER
- ONE-WAY WALL SWITCH, 15A, 250V
- 2 ONE-WAY WALL SWITCHES ON ONE-GANG PLATE, 15A, 250V
- 3 ONE-WAY WALL SWITCHES ON ONE-GANG PLATE, 15A, 250V
- DUPLEX CONVENIENCE OUTLET, GROUNDING TYPE, 20A, 250V
- HEAVY DUTY CONVENIENCE OUTLETS, SINGLE-GROUNDING TYPE, 30A, 250V
- AIR CONDITIONING OUTLET GROUNDING TYPE WITH AUTOMATIC CIRCUIT BREAKER IN ONE ENCLOSURE
- ENCLOSED AUTOMATIC CIRCUIT BREAKER (ACB) 70AT, 100AF, 2P, 240V
- DISTRIBUTION PANEL BOARD
- PULL BOX OR JUNCTION BOX
- ELECTRIC SERVICE METER
- PROPOSED SERVICE ENTRANCE WITH CAP
- CONCEALED OR EMBEDED CONDUIT RUN
- UNDERGROUND OR UNDER FLOOR CONDUIT RUN
- CIRCUIT HOMERUN TO PANEL BOARD

ERNESTO M. ANTIOQUIA
ENGINEER

PTR. NO. 7403664 P.E.E. NO. 2813
ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
T.I.N. 109-382-379

| | | | | | | | | | | |
|--|----------|---------|-----------|--|------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------|
| | | DATE | SIGNATURE | | PROJECT AND LOCATION : | SCALE : | SHEET CONTENTS : | SHEET NO. : | | |
| | DESIGNED | 9/21/02 | | | REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS | BUREAU OF DESIGN | OFFICE OF THE SECRETARY | AS SHOWN | ENGINEER'S LIVING QUARTERS LIGHTING LAYOUT, POWER LAYOUT ELECTRICAL SYMBOLS & GENERAL NOTES | FE-02 |
| | CHECKED | | | | Submitted By: DANILLO C. TRAJANO Project Director | Reviewed By: FE M. BARRIENTOS Chief, Mechanical-Electl Div | Recommended By: GILBERTO S. REYES OIC, Director IV | Recommended By: MANUEL M. BONDAN Undersecretary | Approved By: SIMEON A. DATUMANONG Secretary | FULL SIZE A1 |

SCHEDULE OF LOADS AND COMPUTATIONS

| CRT. NO. | LOAD DESCRIPTION | VA | RATING OF BRANCH BREAKER | | | SIZE OF HOMERUN WIRES IN CONDUIT | |
|----------|-----------------------|--------|------------------------------------------------------------------|----|---|----------------------------------|---------------------------------------------------------------|
| | | | VOLTS | AF | P | | AT |
| | | | MAIN A.C.B. : 100AF, 2P, 250V 100 AT, 18 KAIC W/SOLID NEUTRAL | | | | |
| 1 | LIGHT OUTLETS | 455 | 220 | 50 | 2 | 15 | 2-3.5mm TW ² in 15mmØC |
| 2 | LIGHT OUTLETS | 640 | 220 | 50 | 2 | 15 | 2-3.5mm TW ² in 15mmØC |
| 3 | CONVENIENCE OUTLET | 1440 | 220 | 50 | 2 | 20 | 2-3.5mm TW ² in 15mmØC |
| 4 | CONVENIENCE OUTLET | 1620 | 220 | 50 | 2 | 20 | 2-3.5mm TW ² in 15mmØC |
| 5 | REFRIGERATOR | 500 | 220 | 50 | 2 | 20 | 2-3.5mm TW ² + 1-20mm ² TW(G) IN 15mmØC |
| 6 | ELECTRIC STOVE | 3000 | 220 | 50 | 2 | 30 | 2-5.5mm ² THW+1-3.5mm ² TW(G) IN 20mmØC |
| 7 | 1hp, 1Ø WDO, TYPE ACU | 1980 | 220 | 50 | 2 | 30 | 2-5.5mm ² THW+1-3.5mm ² TW(G) IN 20mmØC |
| 8 | 1hp, 1Ø WDO, TYPE ACU | 1980 | 220 | 50 | 2 | 30 | 2-5.5mm ² THW+1-3.5mm ² TW(G) IN 20mmØC |
| 9 | 1hp, 1Ø WDO, TYPE ACU | 1980 | 220 | 50 | 2 | 30 | 2-5.5mm ² THW+1-3.5mm ² TW(G) IN 20mmØC |
| 10 | SPARE | 1500 | 220 | 50 | 2 | 20 | - |
| 11 | SPARE | 1500 | 220 | 50 | 2 | 20 | - |
| 12 | SPARE | 1500 | 220 | 50 | 2 | 20 | - |
| TOTAL | | 18,095 | | | | | |

$I_v @ 90\% D.F. = \frac{18095}{220} (0.90) + 0.25(8) = 76.03 \text{ Amps}$
 $I_B = \frac{18095}{220} (0.90) + 1.5(8) = 86.03 \text{ Amps}$
 MAIN ACB: 100AF, 2P, 250 V, 100AT, 15KAIC
 USE : 2-38mm² THW + 1-14mm² TW(G) IN 40mmØ RSC

SCHEDULE OF LIGHTING FIXTURES & LAMPS

| SYMBOLS | DESCRIPTION | MOUNTING & INSTALLATION |
|---------|------------------------------------------------------------------------|-------------------------|
| ① | ONE (1) 40 WATTS, 220V, FLUORESCENT LIGHTING FIXTURES, BOX TYPE | SURFACE CEILING MOUNTED |
| ② | ONE (2) 40 WATTS, 220V, FLUORESCENT LIGHTING FIXTURES, BOX TYPE | SURFACE CEILING MOUNTED |
| ③ | ONE (1)-SL-18 LAMP WITH HEXLESS TYPE, MEDIUM BASE PORCELAIN RECEPTACLE | SURFACE CEILING MOUNTED |

NOTE:
ALL FLUORESCENT LIGHTING FIXTURES SHALL BE EQUIPPED WITH A HIGH POWER FACTOR PRE-HEAT WITH STARTER TYPE BALLAS, COMPLETE WITH ALL NECESSARY ACCESSORIES, WIRED AND READY FOR USE.

ENGINEER'S LIVING QUARTERS

SCHEDULE OF LOADS AND COMPUTATIONS

| CRT. NO. | LOAD DESCRIPTION | VA | RATING OF BRANCH BREAKER | | | SIZE OF HOMERUN WIRES IN CONDUIT | |
|----------|------------------------------------|--------|------------------------------------------------------------------|-----|---|----------------------------------|-----------------------------------------------------------------|
| | | | VOLTS | AF | P | | AT |
| | | | MAIN A.C.B. : 225AF, 2P, 250V 200 AT, 18 KAIC W/SOLID NEUTRAL | | | | |
| 1 | LIGHT OUTLETS | 590 | 220 | 50 | 2 | 15 | 2-3.5mm TW ² in 15mmØC |
| 2 | LIGHT OUTLETS | 1210 | 220 | 50 | 2 | 15 | 2-3.5mm TW ² in 15mmØC |
| 3 | LIGHT OUTLETS | 1065 | 220 | 50 | 2 | 15 | 2-3.5mm TW ² in 15mmØC |
| 4 | CONVENIENCE OUTLETS | 1800 | 220 | 50 | 2 | 20 | 2-3.5mm TW ² + 1-2.0mm ² TW(G) IN 15mmØC |
| 5 | CONVENIENCE OUTLETS | 1620 | 220 | 50 | 2 | 20 | 2-3.5mm TW ² + 1-2.0mm ² TW(G) IN 15mmØC |
| 6 | PHOTOCOPIY MACHINE /HEAVY DUTY CO. | 2500 | 220 | 50 | 2 | 20 | 2-3.5mm TW ² + 1-2.0mm ² TW(G) IN 15mmØC |
| 7 | 3TR, 1Ø, SPLIT TYPE ACU | 6930 | 220 | 100 | 2 | 70 | 2-8mm ² THW + 1-5.5mm ² TW(G) IN 25mmØC |
| 8 | 3TR, 1Ø, SPLIT TYPE ACU | 6930 | 220 | 100 | 2 | 70 | 2-8mm ² THW + 1-5.5mm ² TW(G) IN 25mmØC |
| 9 | 3TR, 1Ø, SPLIT TYPE ACU | 6930 | 220 | 100 | 2 | 70 | 2-8mm ² THW + 1-5.5mm ² TW(G) IN 25mmØC |
| 10 | SPARE | 5000 | 220 | 100 | 2 | 70 | - |
| 11 | SPARE FOR PERMETER LIGHTS | 1500 | 220 | 50 | 2 | 30 | 2-5.5mm ² THW + 1-3.5mm ² TW(G) IN 25mmØC |
| 12 | SPARE | 1500 | 220 | 50 | 2 | 20 | - |
| TOTAL | | 37,575 | | | | | |

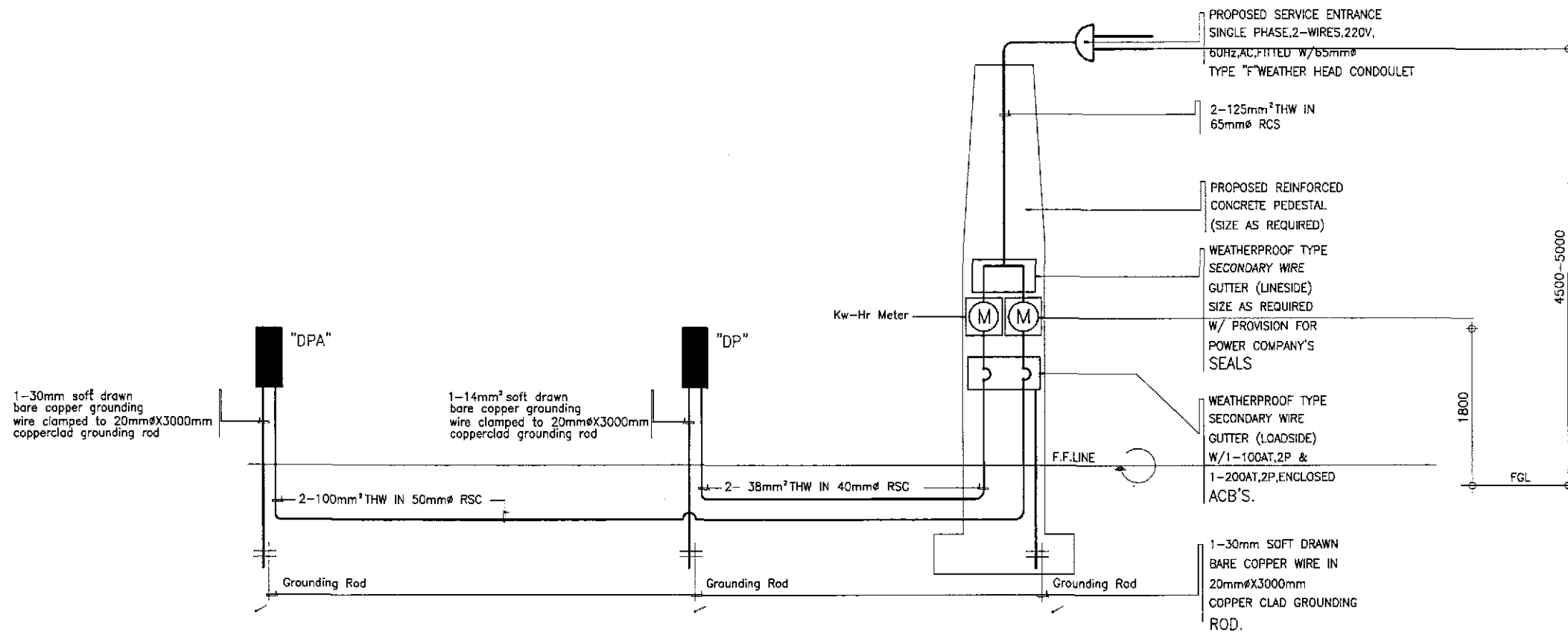
$I_v @ 95\% D.F. = \frac{37575(0.95)}{220} + 0.25(23) = 168 \text{ Amps}$
 USE : 2-100mm² THW + 1-30mm² TW IN 50mmØ RSC
 $I_B = 162.25567 + 1.5(23) = 196.75 \text{ Amps.}$
 MAIN ACB: 225AF, 2P, 250 V, 200AT, 18 KAIC

SCHEDULE OF LIGHTING FIXTURES & LAMPS

| SYMBOLS | DESCRIPTION | MOUNTING & INSTALLATION |
|---------|------------------------------------------------------------------------|-------------------------|
| ① | ONE (1) 40 WATTS, 220V, FLUORESCENT LIGHTING FIXTURES, BOX TYPE | SURFACE CEILING MOUNTED |
| ② | ONE (2) 40 WATTS, 220V, FLUORESCENT LIGHTING FIXTURES, BOX TYPE | SURFACE CEILING MOUNTED |
| ③ | ONE (1)-SL-18 LAMP WITH HEXLESS TYPE, MEDIUM BASE PORCELAIN RECEPTACLE | SURFACE CEILING MOUNTED |

NOTE:
ALL FLUORESCENT LIGHTING FIXTURES SHALL BE EQUIPPED WITH A HIGH POWER FACTOR PRE-HEAT WITH STARTER TYPE BALLAS, COMPLETE WITH ALL NECESSARY ACCESSORIES, WIRED AND READY FOR USE.

ENGINEER'S FIELD OFFICE/LABORATORY



COMPUTATION FOR REQUIRED
SIZE OF MAIN SERVICE ENTRANCE FEEDER:

$$I_T = \frac{VA^{DPA} + VA^{AP}}{220} @ 85\% DF + 0.25(I)$$

$$I_T = \frac{37575 + 18095}{220} (0.85) + 0.25(23)$$

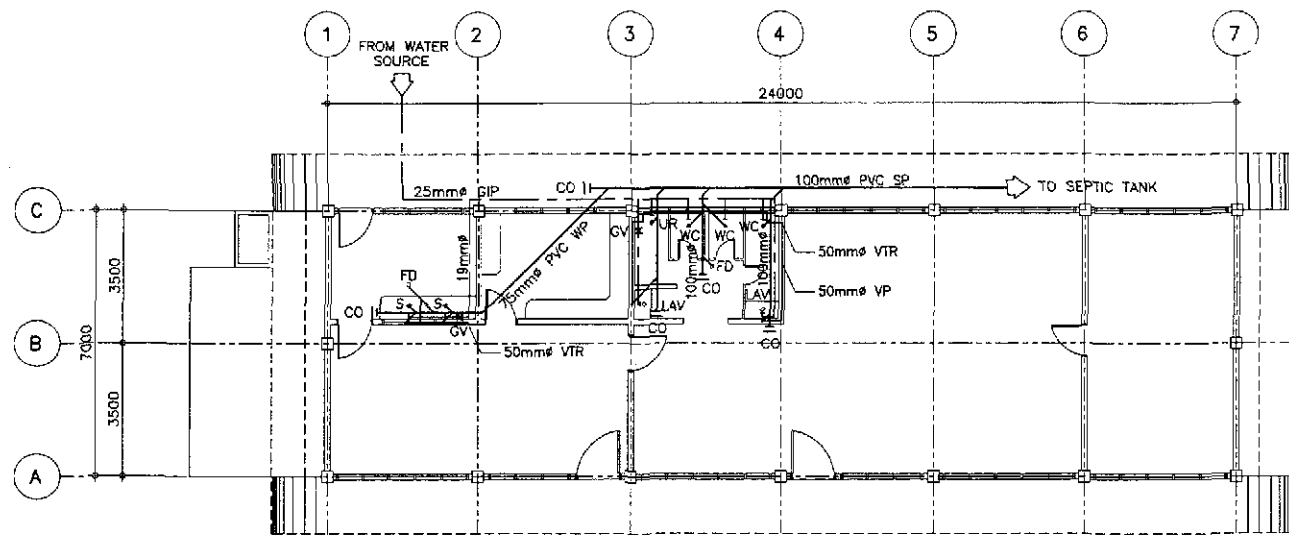
$$I_T = 220.83 \text{ Amps.}$$

USE : 2-125 mm² THW IN
65 mmØ RSC

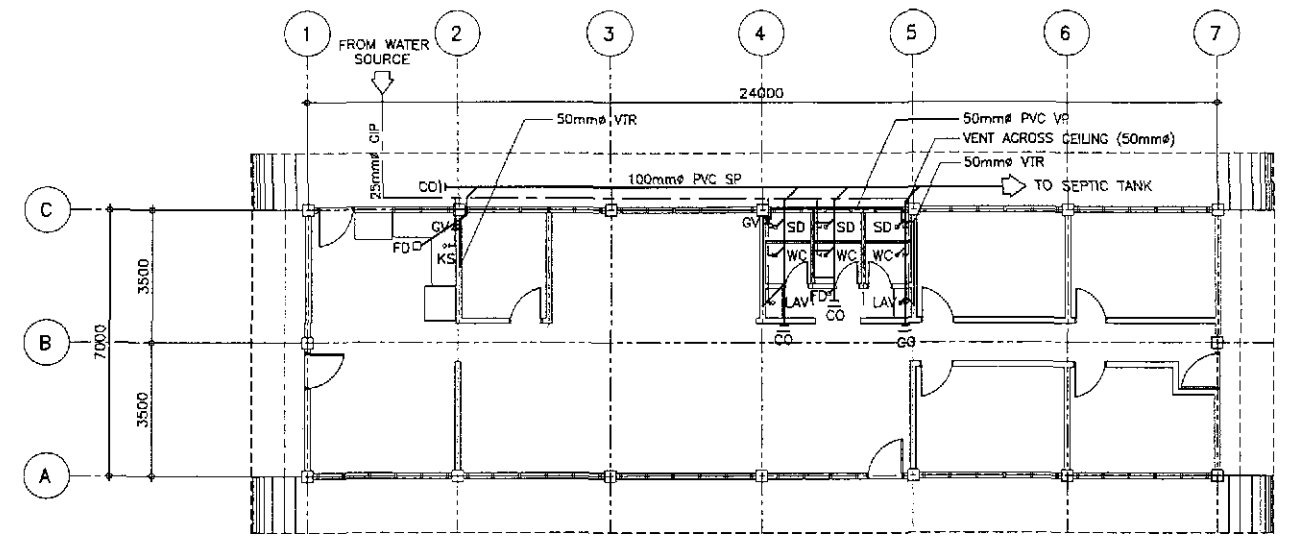
1 ELECTRICAL RISER DIAGRAMS
FE-03 NOT TO SCALE

ERNESTO M. ANTIOQUIA
ENGINEER

PTR. NO. 7403664 P.E.E. NO. 2913
ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
T.I.N. 109-382-379

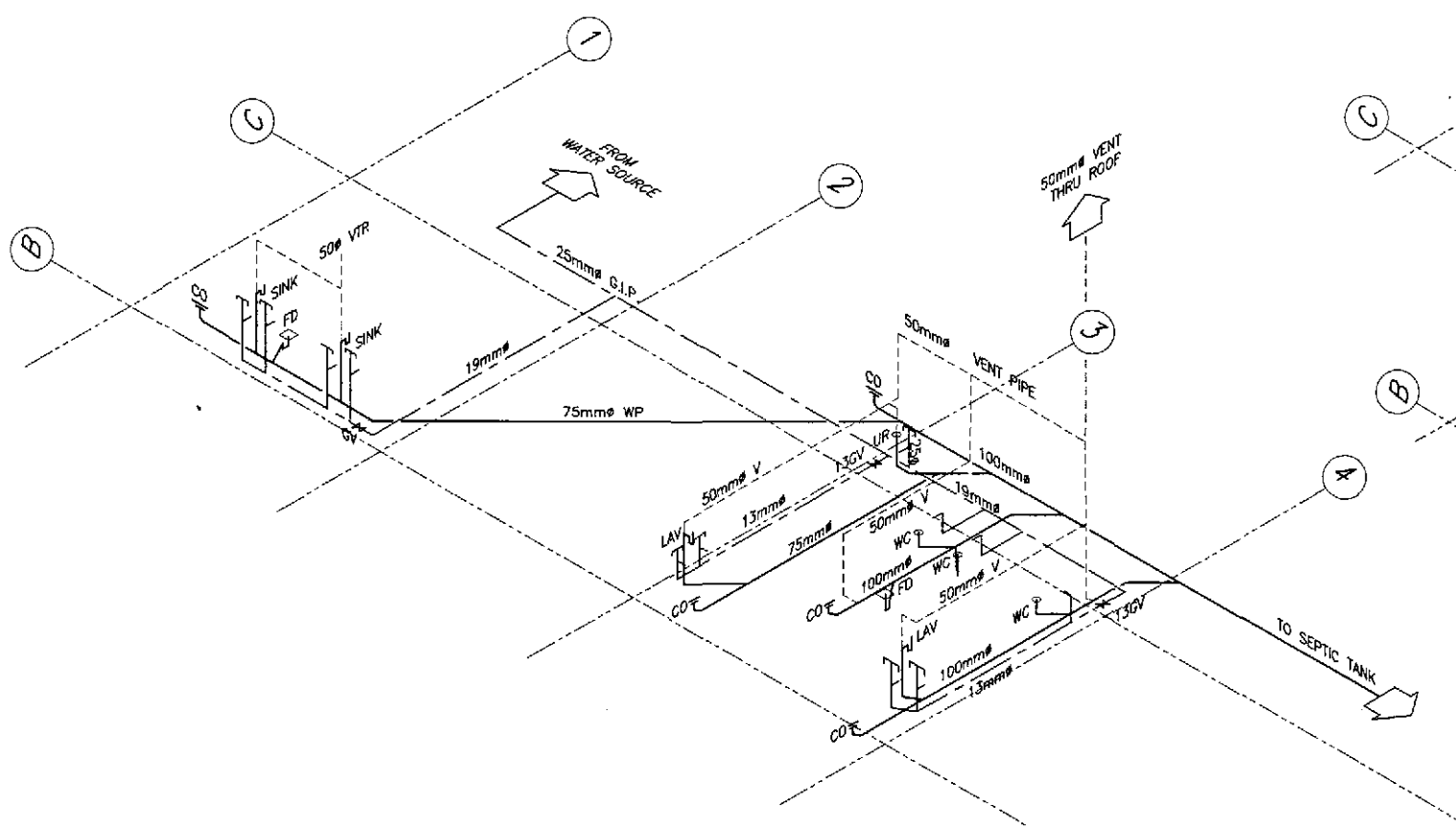


1
FP-01
ENGINEER'S FIELD OFFICE
SEWER AND WATER LINE LAYOUT
SCALE 1:100

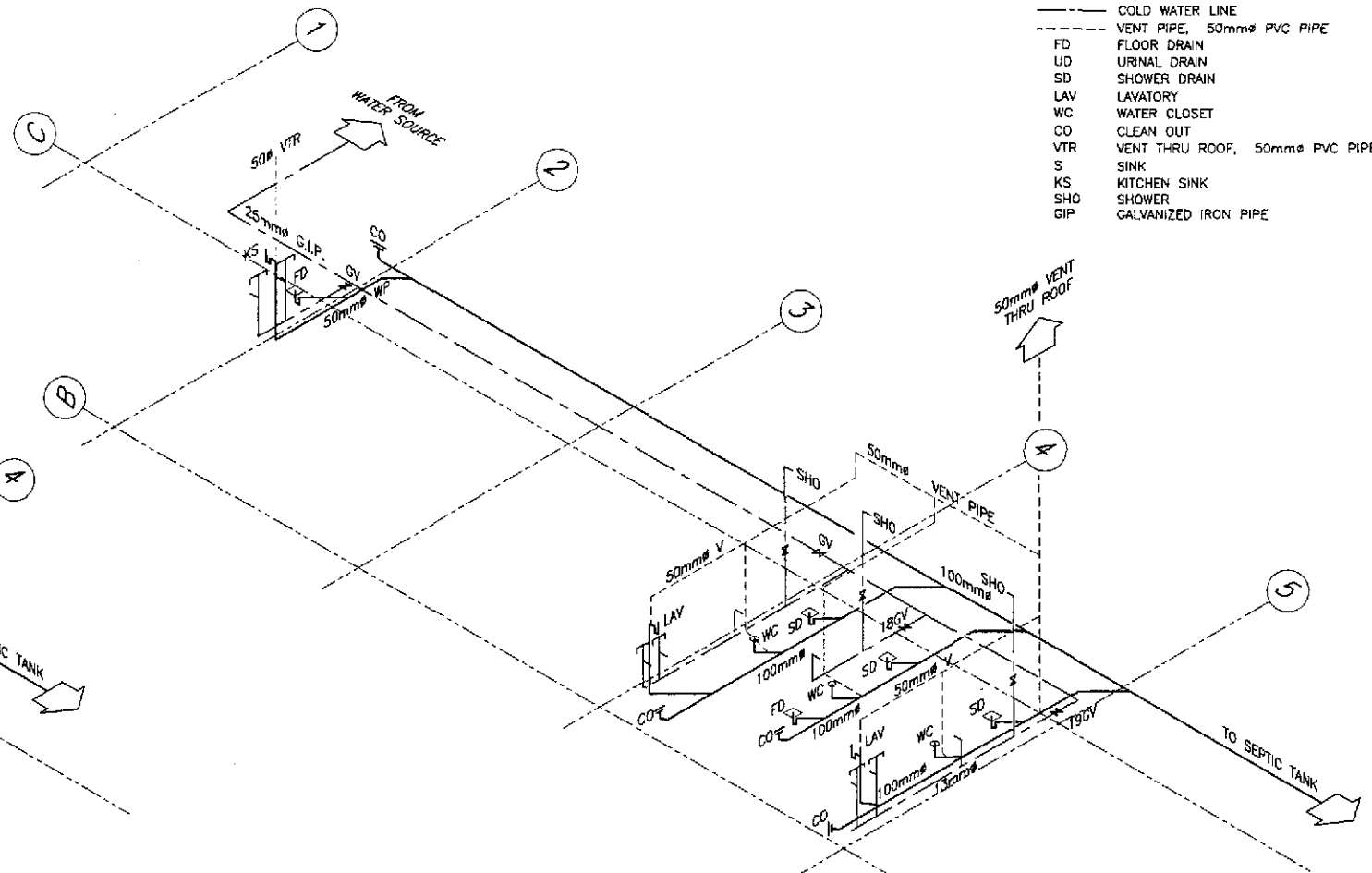


2
FP-01
ENGINEER'S LIVING QUARTER
SEWER AND WATER LINE LAYOUT
SCALE 1:100

- LEGEND :
- SEWER LINE
 - COLD WATER LINE
 - - - VENT PIPE, 50mm PVC PIPE
 - FD FLOOR DRAIN
 - UD URINAL DRAIN
 - SD SHOWER DRAIN
 - LAV LAVATORY
 - WC WATER CLOSET
 - CO CLEAN OUT
 - VTR VENT THRU ROOF, 50mm PVC PIPE
 - S SINK
 - KS KITCHEN SINK
 - SHO SHOWER
 - GIP GALVANIZED IRON PIPE



3
FP-01
(SHOWING SEWER AND WATER LINE)
ISOMETRIC DIAGRAM
SCALE 1:50

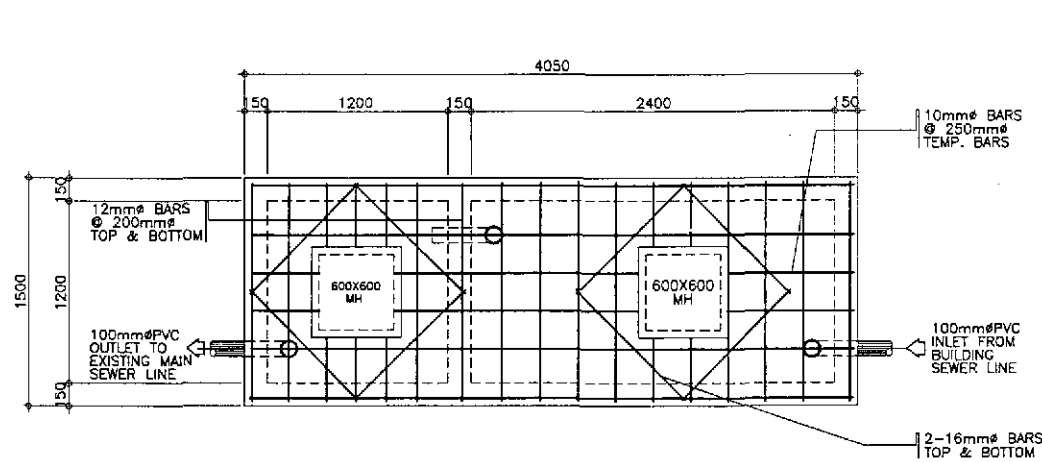


4
FP-01
(SHOWING SEWER AND WATER LINE)
ISOMETRIC DIAGRAM
SCALE 1:50

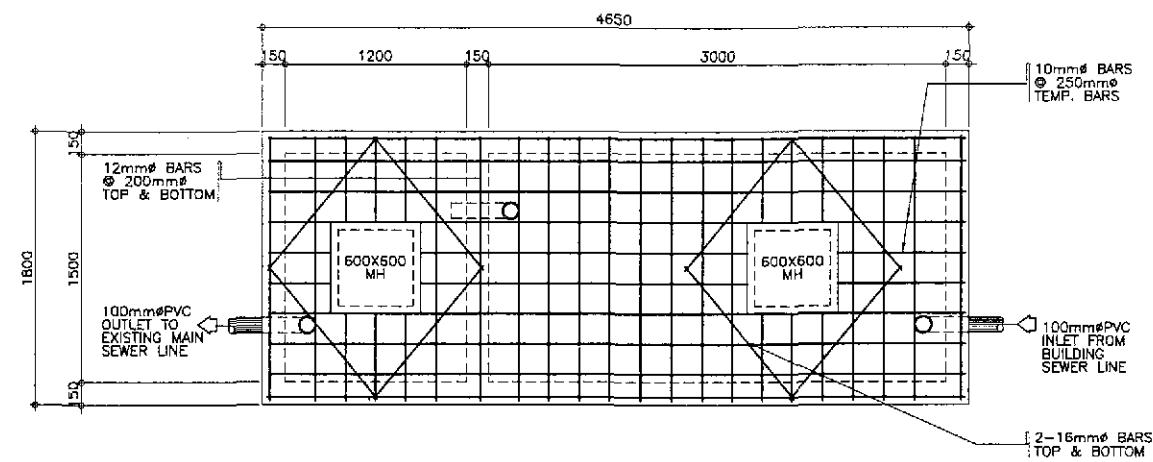
[Signature]
SANITARY ENGINEER

PTR. NO. 008313B P.R.C. NO. 0000685
ISSUED ON 03/26/2002 T.I.N. 119-878-225
ISSUED AT SAN MATEO, RIZAL

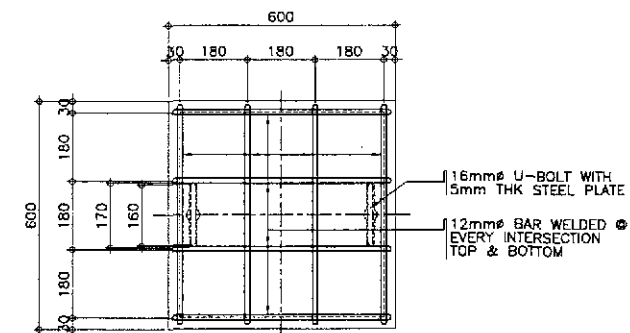
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|-----------|--------------------|---------------------------------------|------------------------------------------------------------------------|---------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------------------------|-----------------------------------|
| | DATE | SIGNATURE | REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS | | | PROJECT AND LOCATION : | SCALE : | SHEET CONTENTS : | SHEET NO. : |
| | DESIGNED | <i>[Signature]</i> | BUREAU OF DESIGN | | | THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabatuan and San Jose Bypasses) | AS SHOWN | ENGINEER'S FIELD OFFICE AND LIVING QUARTERS SEWER AND WATER LINE LAYOUT AND ISOMETRIC DIAGRAM | FP-01 |
| CHECKED | <i>[Signature]</i> | Submitted By: | Reviewed By: | Recommended By: | Approved By: | FULL SIZE A1 | | | |
| SUBMITTED | <i>[Signature]</i> | DANILO C. TRAJANO Project Director | EMMANUEL P. CUNTAPAY Chief, Architectural Division | GILBERTO S. REYES OIC, Director IV | MANUEL M. BONGAN Undersecretary | | | | SIMEON A. DATUMANONG Secretary |



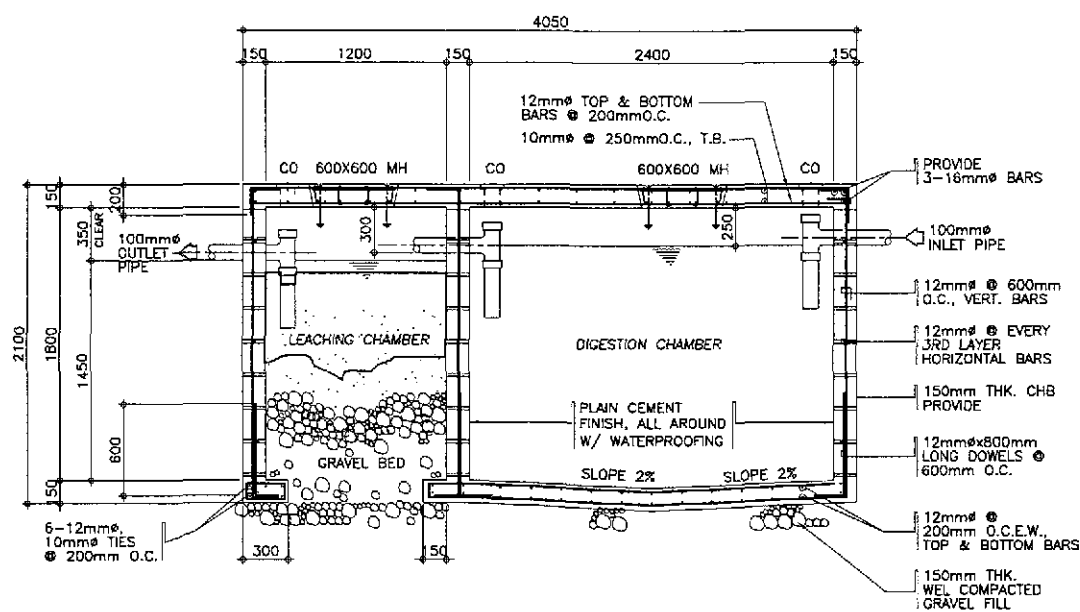
1A PLAN
FP-02 SCALE 1:20



1C PLAN
FP-02 SCALE 1:20

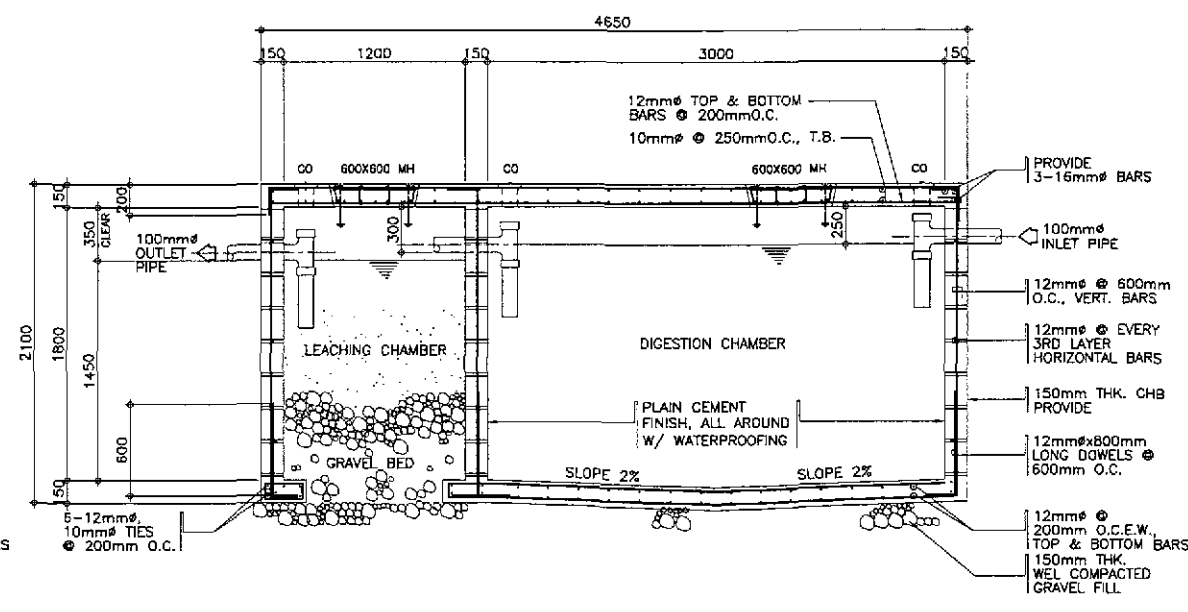


2A PLAN
FP-02 SCALE 1:20



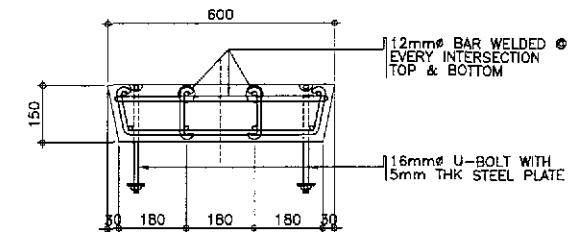
1B SECTION
FP-02 SCALE 1:20

ENGINEER'S FIELD OFFICE



1D SECTION
FP-02 SCALE 1:20

ENGINEER'S LIVING QUARTER



2B SECTION
FP-02 SCALE 1:20

2 CONCRETE COVER DETAIL
FP-02 SCALE AS SHOWN

GENERAL NOTES:

1. ALL PLUMBING WORKS INCLUDED HEREIN EXECUTED ACCORDING TO THE PROVISIONS AND REQUIREMENTS OF THE PHILIPPINE NATIONAL PLUMBING CODE.
2. SOIL AND WASTE PIPE LINE SHALL BE PVC, SIZE AS IN DRAWING.
3. ALL WATER LINES SHALL BE G.I. PIPE SCHEDULE 40 AND SIZE OF PIPES TO THE FIXTURES SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
4. PROVIDE 2% SLOPE FOR HOUSE AND SEWER LINES.
5. ALL G.I. PIPES AND FITTINGS BURIED UNDERGROUND SHALL BE LEAD COATED OR TAR COATED.
6. VENT THRU ROOF PIPE SHALL BE AT LEAST 0.30m ABOVE ROOF.
7. ALL DOWNSPOUTS SHALL BE PVC PIPES 75mm (3") UNLESS OTHERWISE SPECIFIED.

1 SEPTIC TANK DETAILS
FP-02 SCALE AS SHOWN

[Signature]
SANITARY ENGINEER

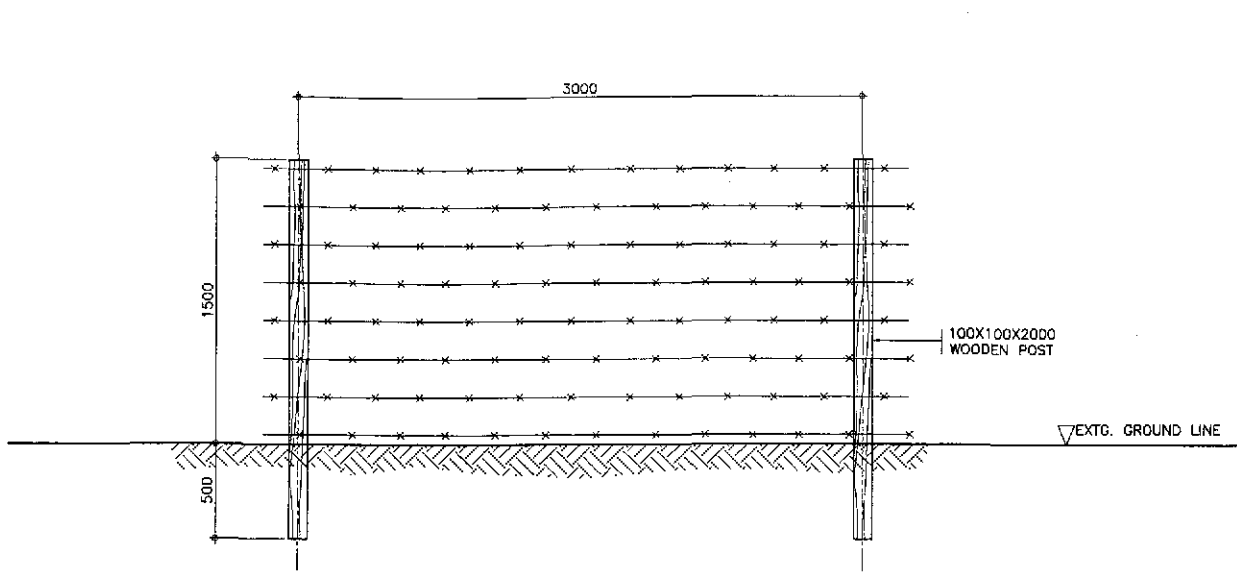
PTR. NO. 0083138 P.R.C. NO. 0000695
ISSUED ON 03/28/2002 T.J.N. 119-878-225
ISSUED AT SAN MATEO, RIZAL

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

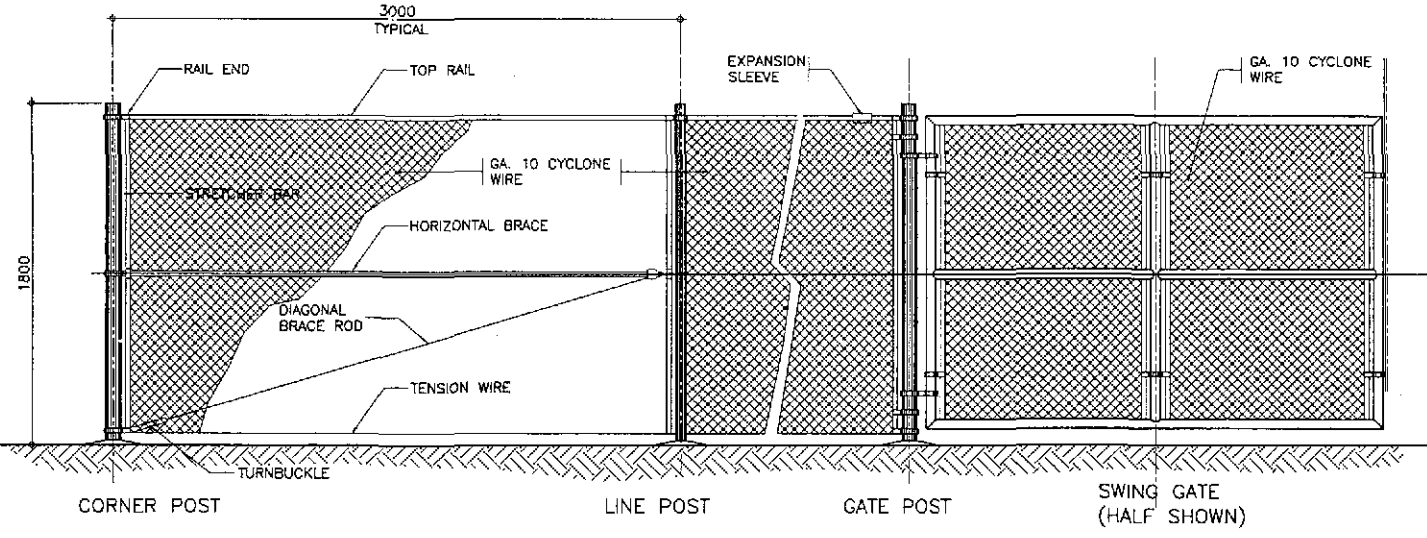
KAI KATAHIRA & ENGINEERS INTERNATIONAL
YEC YACHIYO ENGINEERING CO., LTD.

| DATE | SIGNATURE | REPUBLIC OF THE PHILIPPINES | DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS |
|-------------------|--------------------|---------------------------------------|-------------------------------------------------------|
| DESIGNED 9/24/02 | <i>[Signature]</i> | PJHL - PMO | BUREAU OF DESIGN |
| CHECKED 9/25/02 | <i>[Signature]</i> | Submitted By: | Reviewed By: |
| SUBMITTED 9/27/02 | <i>[Signature]</i> | DANILO C. TRAJANO Project Director | EMMANUEL P. CUNTAPAY Chief, Architectural Division |
| | | TEAM LEADER | |
| | | | GILBERTO S. REYES OIC, Director IV |
| | | | Recommended By: |
| | | | Recommended By: |
| | | | MANUEL M. BONGAN Undersecretary |
| | | | Approved By: |
| | | | SIMEON A. DATUMANONG Secretary |

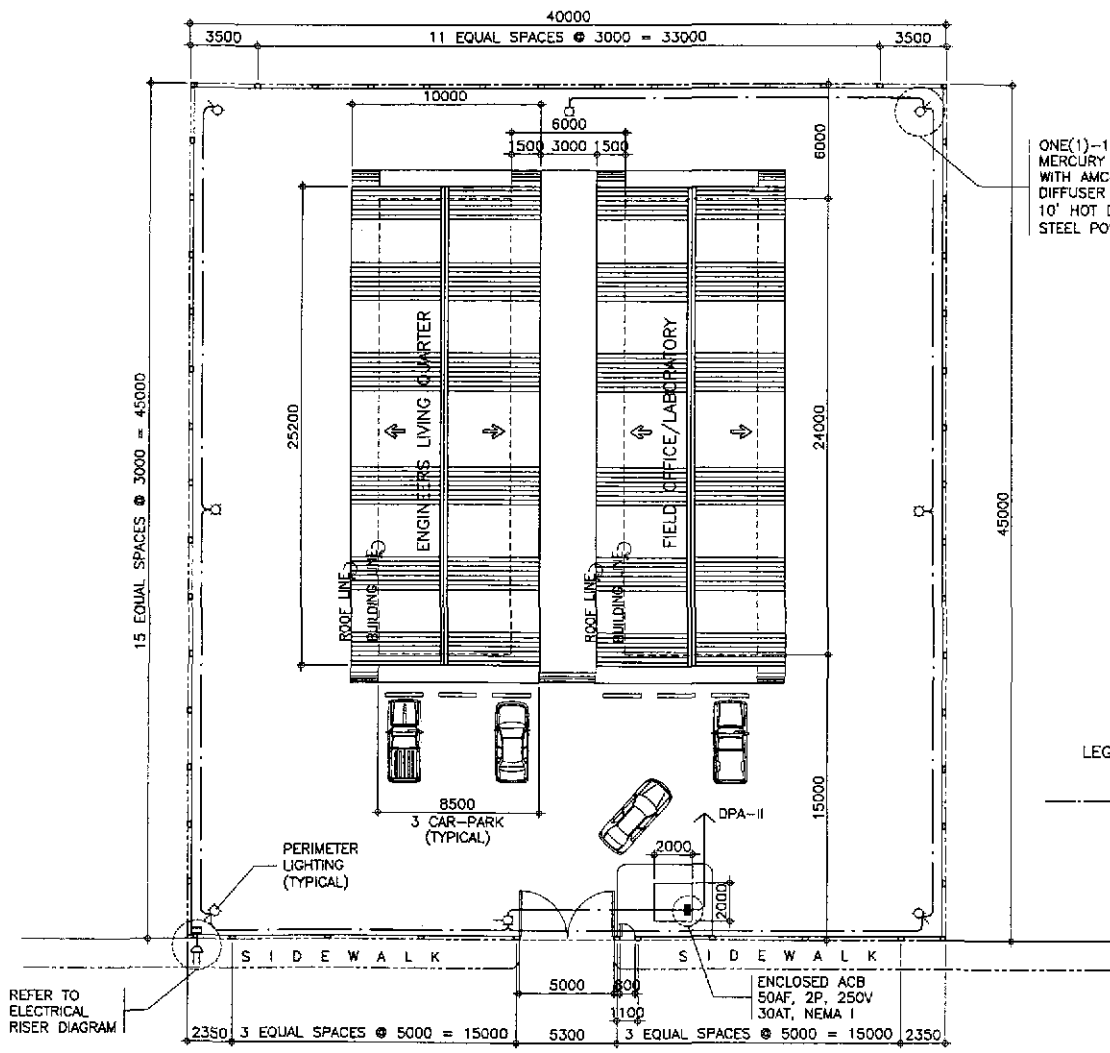
| PROJECT AND LOCATION : | SCALE : | SHEET CONTENTS : | SHEET NO. : |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------|-------------|
| THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) | AS SHOWN | ENGINEER'S FIELD OFFICE AND LIVING QUARTERS SEPTIC TANK DETAILS | FP-02 |
| PLARIDEL BYPASS - CONTRACT PACKAGE II | FULL SIZE A1 | | |



3 TYPICAL ELEVATION FENCE (REAR & SIDE)
 FX-01 SCALE 1:20



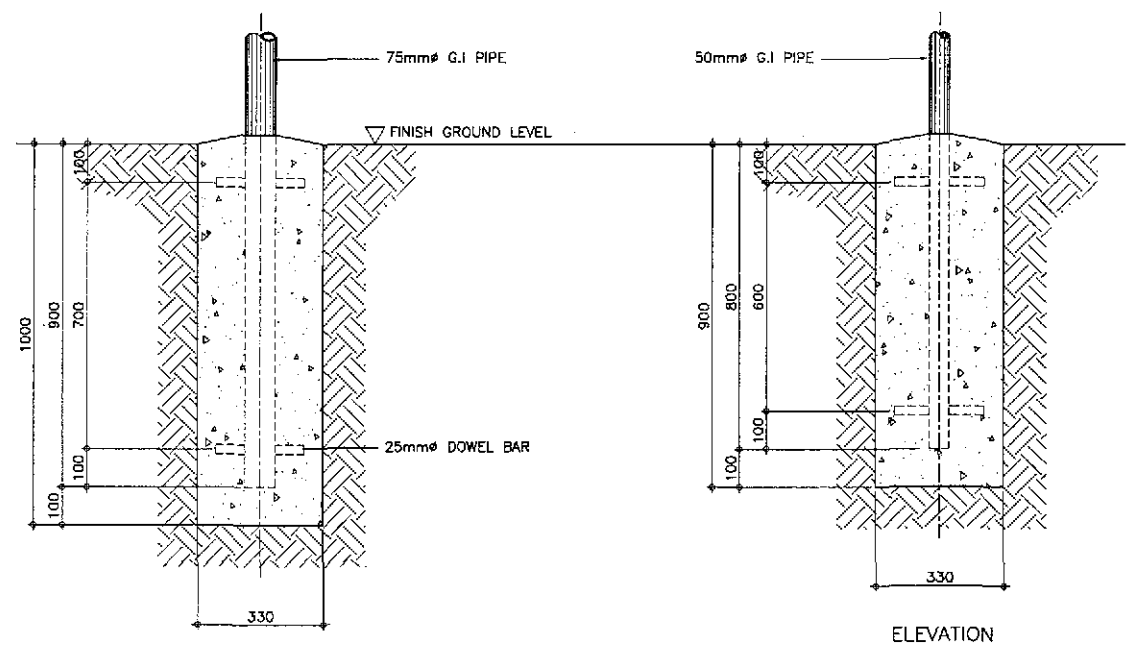
2 TYPICAL ELEVATION - FENCE AND GATE
 FX-01 SCALE 1:20



1 PLOT PLAN
 FX-01 SCALE 1:20

ONE(1)-160WATTS, 220V MERCURY LAMP, BALLASTLESS WITH AMCO AMGLOBE MODEL No. C-63TC DIFFUSER AND MOUNTED ON 10" HOT DIPPED GALVANIZED STEEL POST (TYPICAL)

LEGEND :
 - - - - - 2-5.5mm² THW
 - - - - - 1-3.5mm² THW(G)
 in 25mmØC



ELEVATION
 PLAN
 CORNER AND GATE POST

ELEVATION
 PLAN
 LINE POST

4 TYPICAL FOUNDATION DETAIL
 FX-01 SCALE 1:10

ARNEL P. GONZALES
 ENGINEER
 PTR. NO. 5846340 P.R.C. NO. 53457
 ISSUED ON 04/26/2002 T.I.N. 138-062-682
 ISSUED AT SAN JUAN, M.M.

| | | | | | | | | | | | |
|--|-----------|------|-----------|----------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| | DESIGNED | DATE | SIGNATURE | | REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS | | | PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II | SCALE : AS SHOWN FULL SIZE A1 | SHEET CONTENTS : ENGINEER'S FIELD OFFICE AND LIVING QUARTERS PLOT PLAN, ELEVATION OF FENCE & GATE TYPICAL FOUNDATION DETAILS | SHEET NO. : FX-01 |
| | CHECKED | | | | BUREAU OF DESIGN OFFICE OF THE SECRETARY | MANUEL M. BONGAN Undersecretary | SIMEON A. DATUMANONG Secretary | | | | |
| | SUBMITTED | | | P.J.H.L. - PMO DANILGO C. TRAJANO Project Director | BUREAU OF DESIGN OFFICE OF THE SECRETARY | GILBERTO S. REYES OIC, Director IV | Approved By: (See cover sheet for Signature/Approval) | | | | |