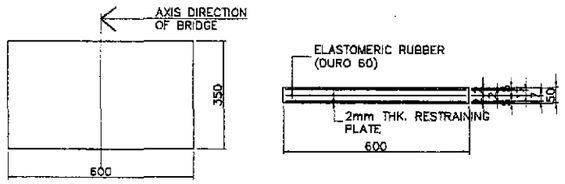
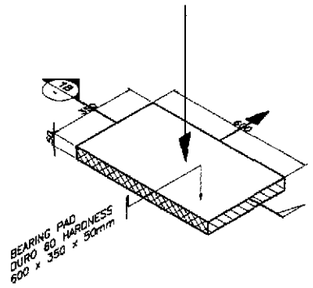
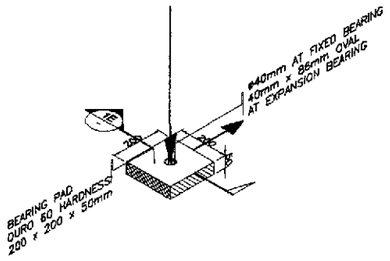


1A PLAN SCALE 1:10

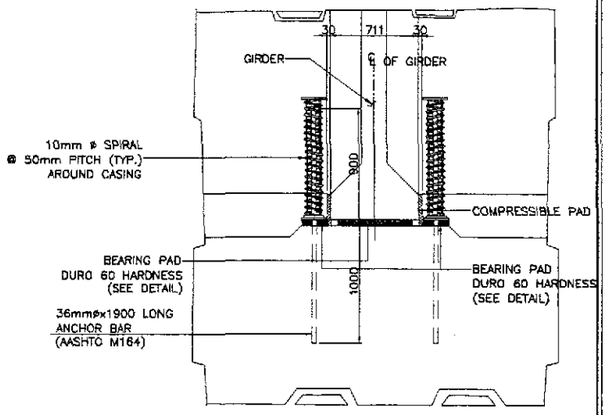
1B ELEVATION SCALE 1:10



1C ISOMETRIC VIEW N T S

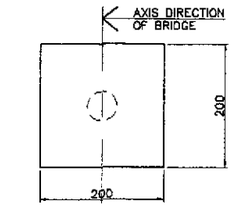


1F ISOMETRIC VIEW N T S

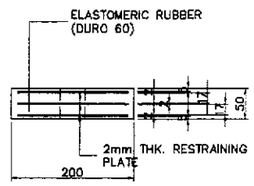


1 BEARING PAD DETAIL SCALE AS SHOWN

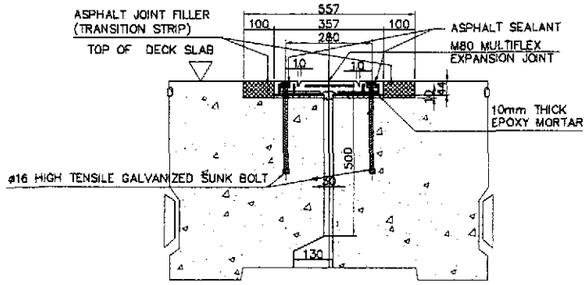
3A ANCHOR BAR SCALE 1:25



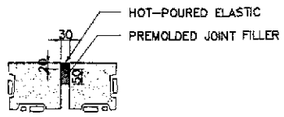
1D PLAN SCALE 1:5



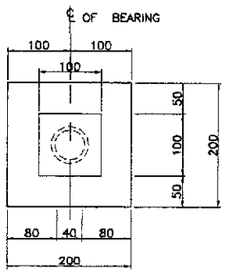
1E ELEVATION SCALE 1:5



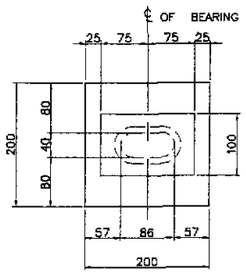
2B SECTION (TYPE A) SCALE 1:10



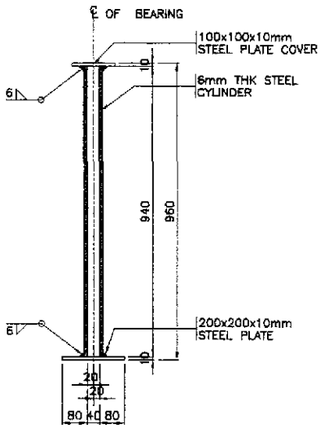
2C SECTION (TYPE B) SCALE 1:10



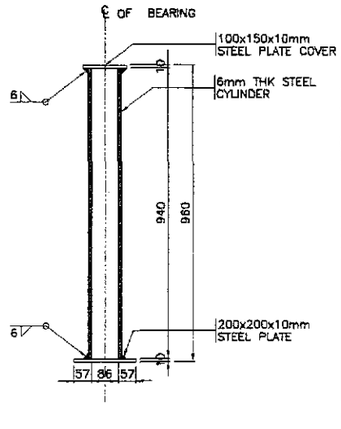
PLAN



PLAN



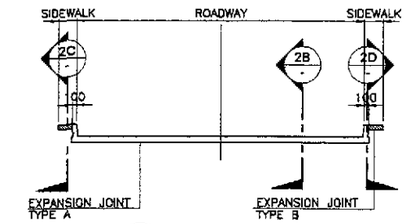
ELEVATION



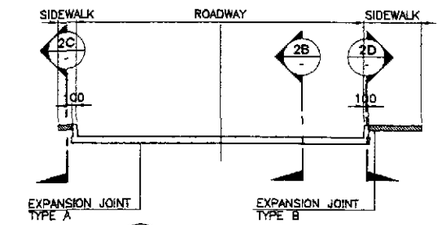
ELEVATION

3B FIXED BEARING SCALE 1:10

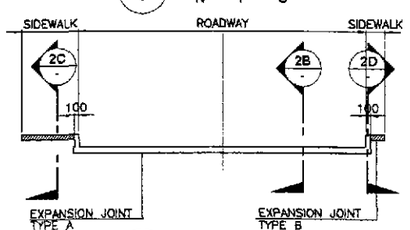
3C EXPANSION BEARING SCALE 1:10



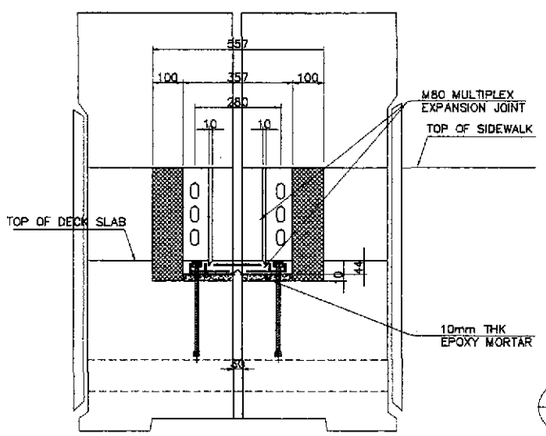
2A3 ELEVATION N T S



2A2 ELEVATION N T S



2A3 ELEVATION N T S



2D SECTION (TYPE A) SCALE 1:10

2 EXPANSION JOINT DETAIL SCALE AS SHOWN

3 BEARING SLEEVE AND ANCHOR BAR DETAIL SCALE AS SHOWN

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

1. EPOXY BEDDING
2. EPOXY NOSING
3. BOLT/NUTS
4. SEALANT

LOCATION	EXPANSION JOINT TYPE	MOVEMENT (mm)	LENGTH (m)
BRIDGE 10 LEFT BRIDGE	MULTIFLEX 80	30	24
BRIDGE 10 RIGHT FRONTAGE	MULTIFLEX 80	30	19
BRIDGE 10 LEFT FRONTAGE	MULTIFLEX 80	30	19

LOCATION	ELASTOMERIC BEARING PAD SIZE	QUANTITY
BRIDGE 10 LEFT BRIDGE	600x350x50	10 PCS.
	200x200x50	26 PCS.
BRIDGE 10 RIGHT FRONTAGE	600x350x50	8 PCS.
	200x200x50	6 PCS.
BRIDGE 10 LEFT FRONTAGE	600x350x50	8 PCS.
	200x200x50	6 PCS.

JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL — YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	9/28/02	E. AN SALLAN
CHECKED	9/30/02	
SUBMITTED	10/16/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

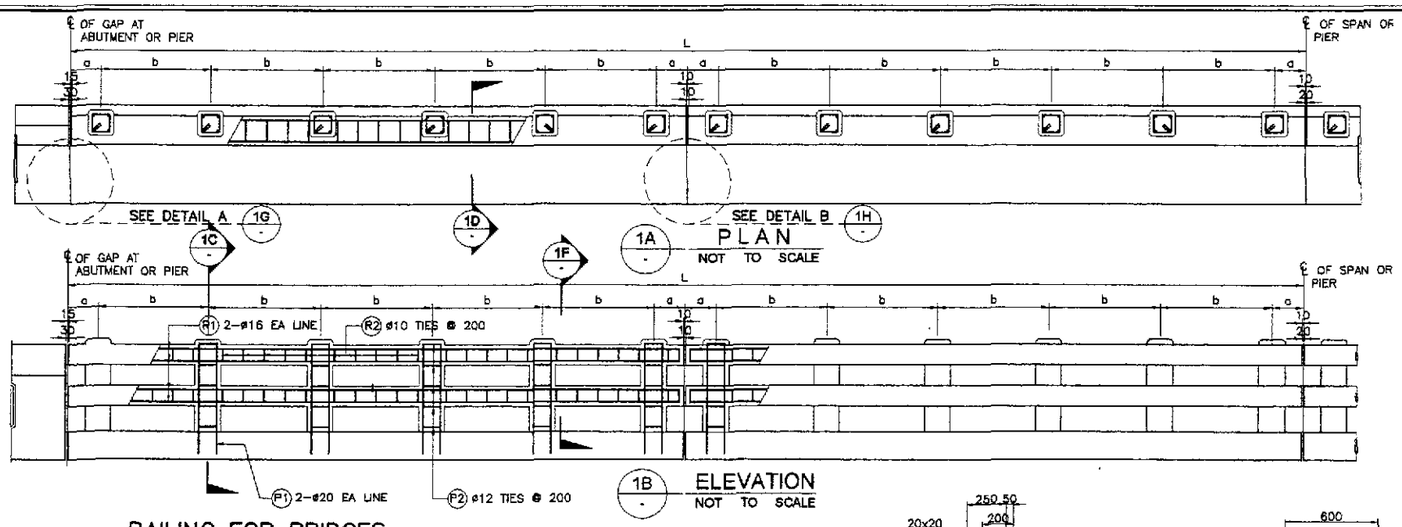
FJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	ADRIANO M. DOROY	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG
Project Director	Chief, Bridges Division	Director IV (OIC)	Undersecretary	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 IV

SCALE : AS SHOWN — FULL SIZE A1

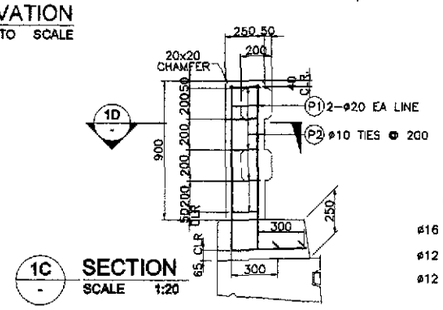
SHEET CONTENTS : BRIDGE NO. 10 — TYP. BEARING PAD, EXPANSION JOINT, BEARING SLEEVE & ANCHOR BAR DET. (ULTIMATE STAGE, LEFT & RIGHT FRONTAGE)

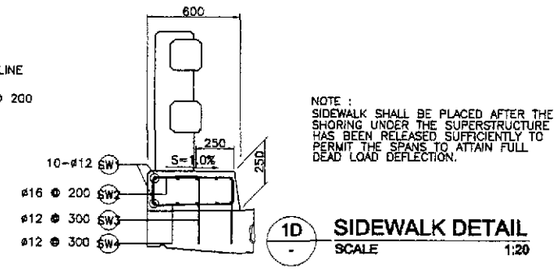
SHEET NO. : BS-01



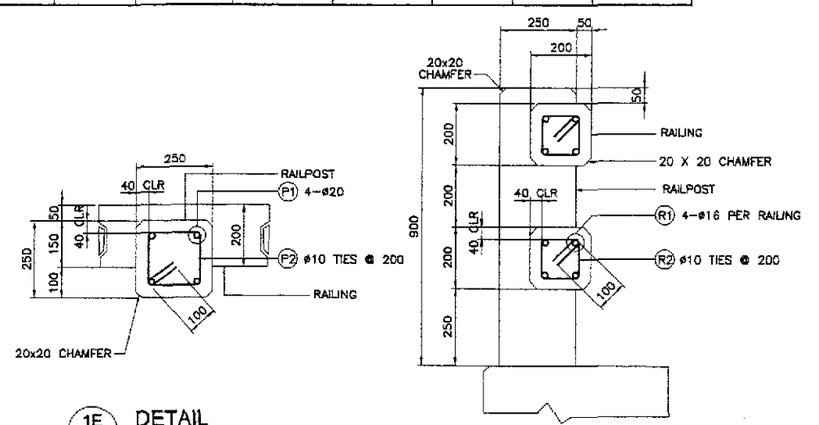
RAILING FOR BRIDGES

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)
BR. 10 (LEFT BRIDGE) LEFT & RIGHT FRONTAGE)	36.00	3	6	48	18015	250	1702

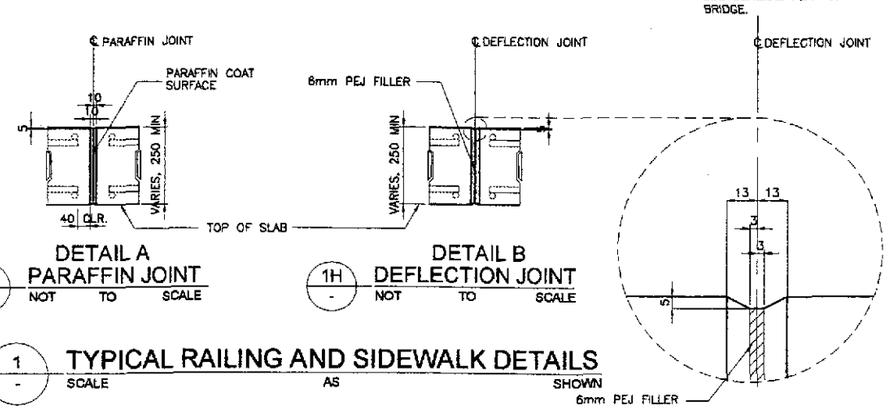




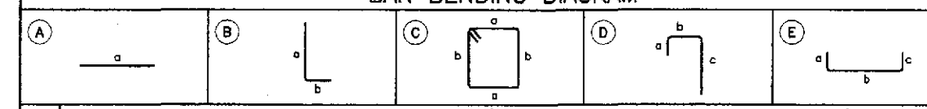
NOTE :
SIDEWALK SHALL BE PLACED AFTER THE SHORING UNDER THE SUPERSTRUCTURE HAS BEEN RELEASED SUFFICIENTLY TO PERMIT THE SPANS TO ATTAIN FULL DEAD LOAD DEFLECTION.



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

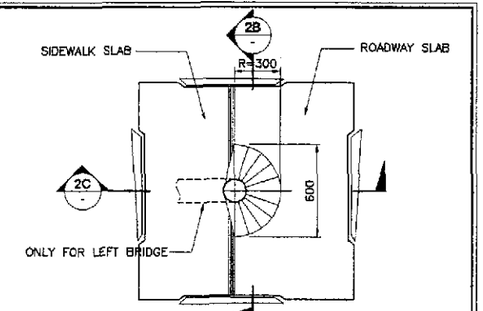


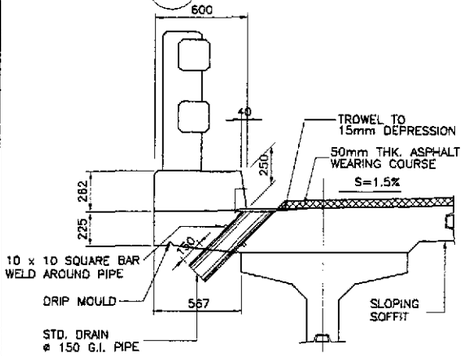
BAR BENDING DIAGRAM

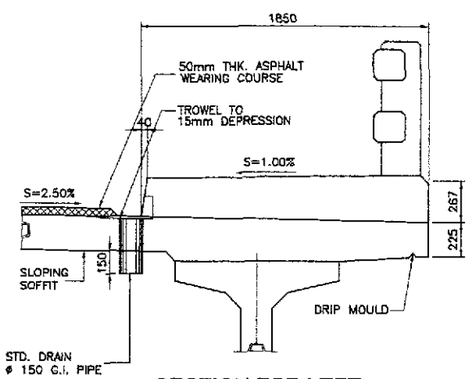


SCHEDULE OF REINFORCEMENT (POST, RAILING AND SIDEWALK)

	LOCATION	CONCRETE VOLUME (m³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT a	b	c	d	e	LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m)
BRIDGE 10 (LEFT BRIDGE)	POST	2.70	P1	20	192	AS SHOWN	B	1045	450	–	–	–	1495	287.04	2.466	708	
			P2	10	240	200	C	170	170	100			880	211.20	0.616	131	
															GRADE 40 TOTAL = 131 kgs. GRADE 60 TOTAL = 708 kgs.		310.74
	RAILING	5.76	R1	16	16	AS SHOWN	A	36000	–	–	–	–	36000	576.00	1.579	910	
			R2	10	640	200	C	120	120 (ave.)	100	–	–	680	435.20	0.616	269	
															GRADE 40 TOTAL = 1,179 kgs.		204.69
	SIDEWALK	10.80	SW1	12	20	AS SHOWN	A	36000	–	–	–	–	36000	720.00	0.888	640	
			SW2	16	362	200	D	170	480	400	–	–	1050	352.56	1.579	601	
			SW3	12	242	300	B	400	250	–	–	–	650	157.30	0.888	140	
			SW4	12	242	300	E	170	520	170	–	–	860	208.12	0.888	185	
															GRADE 40 TOTAL = 1,566 kgs.		145.00
	TOTAL	19.26													GRADE 40 GRAND TOTAL = 2,876 kgs. GRADE 60 GRAND TOTAL = 708 kgs.		
BRIDGE 10 (LEFT & RIGHT FRONTAGE)	POST	2.70	P1	20	192	AS SHOWN	B	1045	450	–	–	–	1495	287.04	2.466	708	
			P2	10	240	200	C	170	170	100			880	211.20	0.616	131	
															GRADE 40 TOTAL = 131 kgs. GRADE 60 TOTAL = 708 kgs.		310.74
	RAILING	5.76	R1	16	16	AS SHOWN	A	36000	–	–	–	–	36000	576.00	1.579	910	
			R2	10	640	200	C	120	120	100	–	–	680	435.20	0.616	269	
															GRADE 40 TOTAL = 1,179 kgs.		204.69
	SIDEWALK	22.80	SW1	12	38	AS SHOWN	A	36000	–	–	–	–	36000	1368.00	0.888	1215	
			SW2	16	181	200	D	170	1730	400	–	–	2280	416.30	1.579	658	
			SW2a	16	181	200	D	170	480	400	–	–	1050	190.05	1.579	301	
			SW3	12	605	300	B	400	250	–	–	–	650	393.25	0.888	350	
			SW4	12	121	300	E	170	1770	170	–	–	2110	255.31	0.888	227	
			SW4a	12	121	300	E	170	520	170	–	–	860	104.06	0.888	93	
															GRADE 40 TOTAL = 2,844 kgs.		124.74
	TOTAL	31.26													GRADE 40 GRAND TOTAL = 4,154 kgs. GRADE 60 GRAND TOTAL = 708 kgs.		







2 — TYPICAL DRAIN DETAILS — SCALE 1:20

JAPAN INTERNATIONAL COOPERATION AGENCY

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	DATE	SIGNATURE
DESIGNED	9/28/12	E. M. SALLAN
CHECKED	9/30/12	M. KUNDI
SUBMITTED	10/16/12	M. KUNDI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PUHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	ADRIANO M. DOROY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Bridges Division	Director IV (OIC)	Undersecretary	Secretary

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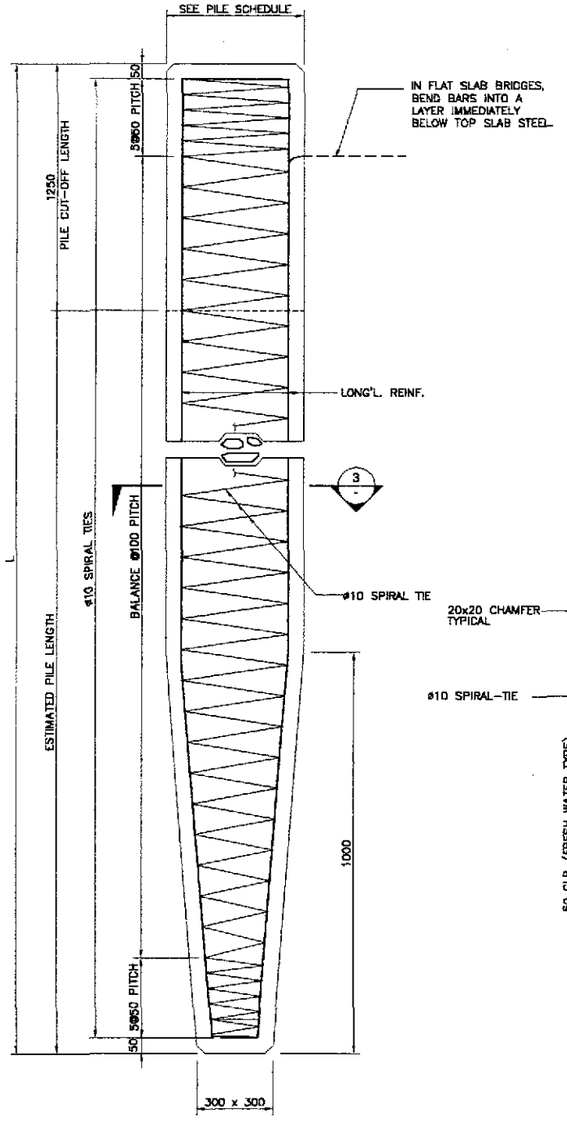
PLARIDEL BYPASS - CONTRACT PACKAGE IV

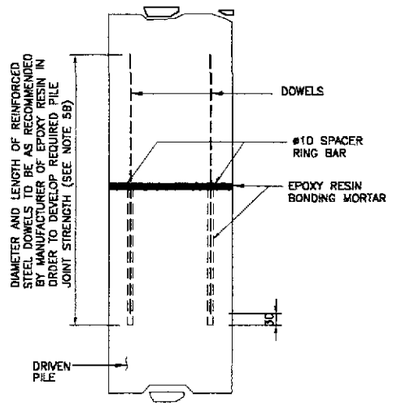
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
BRIDGE 10
TYPICAL SIDEWALK, RAILING AND DRAIN DETAILS (ULTIMATE STAGE, LEFT & RIGHT FRONTAGE)

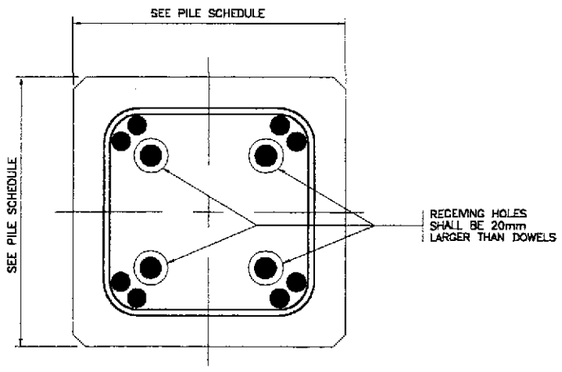
SHEET NO. : BS-02



1 PILE ELEVATION
NOT TO SCALE

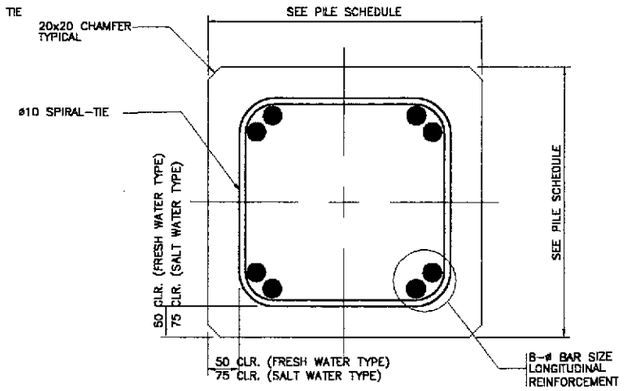


2A ELEVATION
NTS

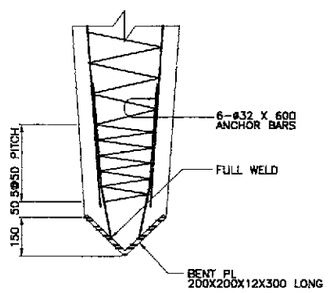


2B SECTION
NTS

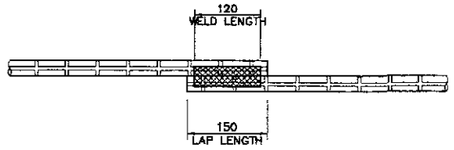
2 PILE SPLICE DETAIL
NOT TO SCALE



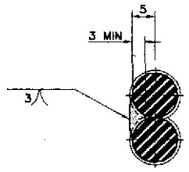
3 SECTION
NOT TO SCALE



4 PILE TIP FOR HARD DRIVING
NOT TO SCALE



5A ELEVATION
NTS



5B SECTION
NTS

5 WELDED SPIRAL TIE SPLICE DETAIL
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

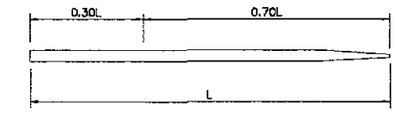
NOTES

1. CONCRETE :
   CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF CLASS AA CONCRETE. WITH 28 MPa CYLINDER STRENGTH AND 19.0mm MAXIMUM AGGREGATE SIZE.
2. REINFORCEMENT :
   A. ALL REINFORCING STEEL SHALL BE DEFORMED BARS COMFORMING TO ASSHTO M31 (ASTM A615) GRADE 40 AND 60.
   B. SPLICES OF ADJACENT LONGITUDINAL STEEL SHALL BE STAGGERRED 100 BAR DIAMETERS APART. LENGTH OF SPLICES SHALL BE 1000mm FOR ø25 AND 1300mm FOR ø28 AND 1700mm FOR ø32.
   C. SPIRAL-TIES SHALL BE WELDED AT SPLICES.
3. 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.
4. 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.
5. 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.
6. ALLOWABLE PILE BEARING CAPACITY : (SEE PILE SCHEDULE)
7. MINIMUM HAMMER ENERGY RATING = 55 kN-m
8. BASIS FOR COMPUTING ALLOWABLE PILE BEARING CAPACITY:

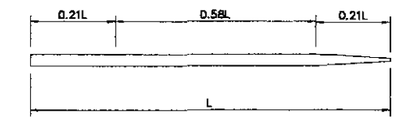
$$Pall = \left(\frac{187\ eh\ Eh}{S + 2.54}\right)\left(\frac{Wr + 0.1\,8\ Wp}{Wr + Wp}\right)$$

WHERE:
Pall = ALLOWABLE PILE BEARING CAPACITY (kN)
eh = HAMMER EFFICIENCY
Eh = HAMMER ENERGY RATING (kN-m)
Wr = WEIGHT OF RAM (kN)
Wp = WEIGHT OF PILE AND OTHER DRIVEN WEIGHTS (kN)
S = AVERAGE PENETRATION PER BLOW FOR THE LAST 150mm OF DRIVING (mm)

9. 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.
10. PICK-UP POINTS :
    PICK-UP POINTS SHALL BE MARKED ON ALL PILES AND ALL LIFTING SHALL BE DONE AT THESE POINTS.



1-POINT PICK-UP



2-POINT PICK-UP

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

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KATAHIRA & ENGINEERS INTERNATIONAL
YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	9/25/02	E. N. SALLAN
CHECKED	9/30/02	K. KOMATSUZAKI
SUBMITTED	10/16/02	M. KUDOH TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PUHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	ADRIANO M. DOROY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Bridges Division	Director IV (OIC)	Undersecretary	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 IV

SCALE : AS SHOWN FULL SIZE A1

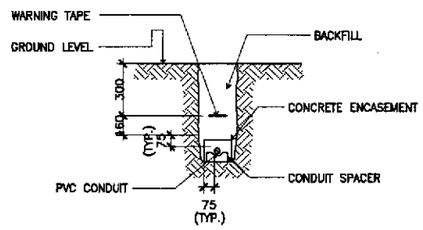
SHEET CONTENTS :
BRIDGE NO. 10
TYPICAL PRECAST CONCRETE PILE DETAILS
(ULTIMATE STAGE,RIGHT & LEFT FRONTAGE)

SHEET NO. : BS-03

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
———	UNDERGROUND CONDUIT WITH CONCRETE ENVELOPE
~~	UNDERGROUND CONDUIT WITH STEEL REINFORCED CONCRETE ENVELOPE
——→	CIRCUIT HOMERUN
//////	UNDERGROUND CONDUIT TO BE ABANDONED



1 / ES-01 TYPICAL DUCT SECTION
NOT TO SCALE

NOTES:

1. UNLESS OTHERWISE SPECIFIED, TOP OF CONCRETE ENVELOPE SHALL NOT BE LESS THAN 480mm 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 PS GRADE 227, FY=227MPa (33,000PSI)
5. MAXIMUN SPACING OF PRECAST SPACER SHALL BE 1.5 METERS.
6. ALL DIMENSIONS ARE IN MILLIMETER, UNLESS OTHERWISE SPECIFIED.

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 ENGINEERS 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. BRANDS 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 2–3.5mm² THW & 1–3.5mm² TW(GND) INSIDE STEEL POLE.
6. UNLESS OTHERWISE INDICATED ALL CONDUIT PIPES SHALL BE UNPLASTICIZED POLYVINYL CHLORIDE CONDUIT SCHEDULE 40 OR POLYTHELENE PIPE AS MANUFACTURED BY MOLDEX, NELTEX OR APPROVED EQUAL. 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. UNPROTECTED CONDUIT RISERS AND EXPOSED CONDUIT RUNS SHALL BE RIGID STEEL CONDUIT.
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 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
PTR. NO. 7403684 P.E.E. NO. 2913
ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
T.I.N. 109-382-378

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

	DATE	SIGNATURE
DESIGNED	9/28/02	E. M. ANTIOQUIA
CHECKED	9/30/02	E. M. ANTIOQUIA
SUBMITTED	10/16/02	M. KIUCHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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DANILO C. TRAJANO	FE M. BARRIENTOS	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Mechanical–Elect'l Div.	OIC, Director IV	Undersecretary	Secretary

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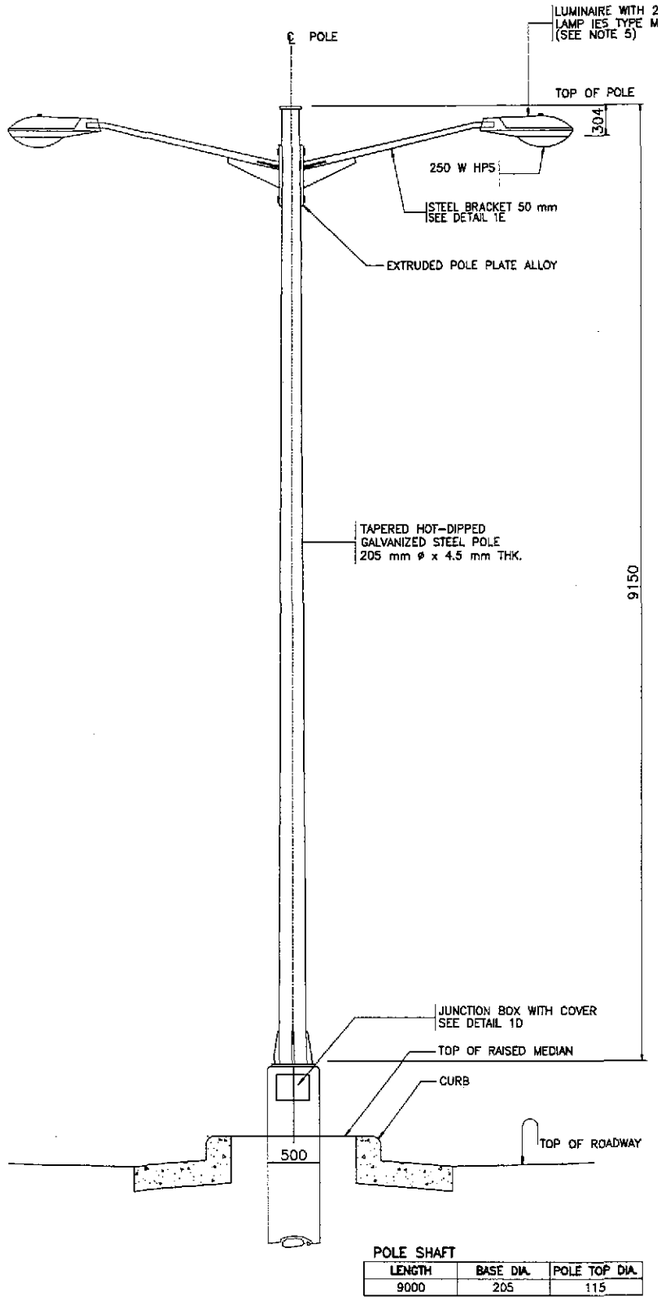
PLARIDEL BYPASS - CONTRACT PACKAGE IV

SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS : NOTES & LEGENDS AND DUCT SECTION (ULTIMATE STAGE)

SHEET NO. : ES-01

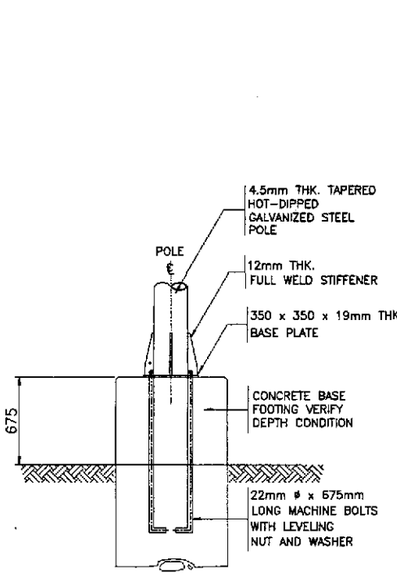


POLE SHAFT

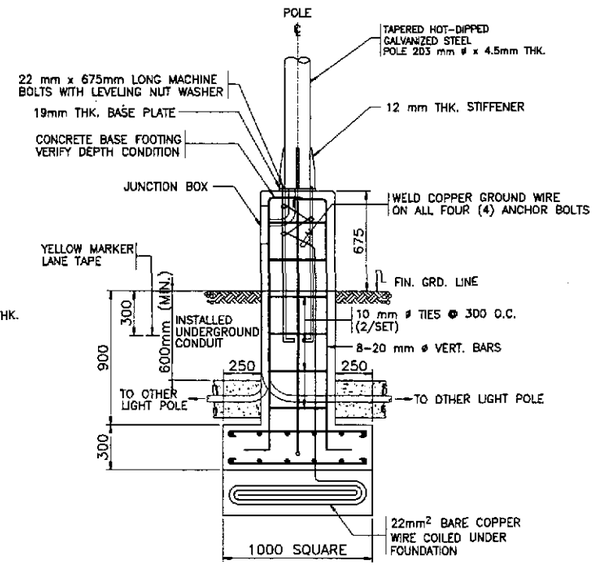
LENGTH	BASE DIA.	POLE TOP DIA.
9000	205	115

NOTES:

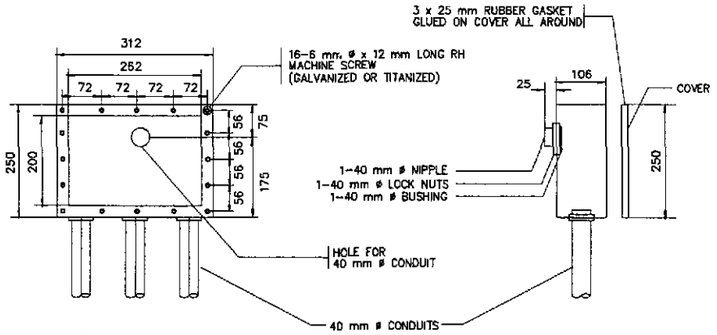
1. CONCRETE MIXTURE SHOULD BE 211 kg./cm (3000 PSI)
2. PAINT ALL JOINTS IN BOX AND CONDUIT WITH RED LEAD PRIMER BEFORE POURING CONCRETE.
3. FOR CONDUIT LARGER THAN 40mm ø, KNOCKOUTS AND HOLES SHALL HAVE TO BE WIDENED BY THE USER TO THE DESIRED DIAMETER.
4. FOR LOAM AND MUDDY SOIL, REFER TO CIVIL ENGINEERING 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.



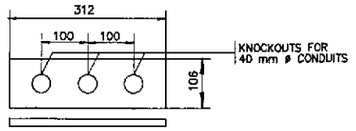
ELEVATION



ELEVATION



ELEVATION SECTION



SECTION

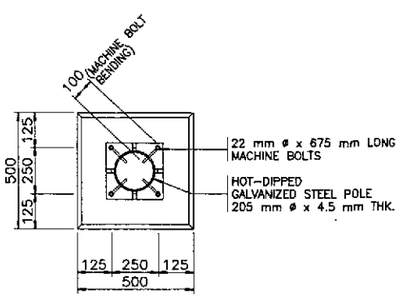
MATERIAL:

JUNCTION BOX - 50 mm THICK CAST ALUMINUM FOR BOX AND COVER
ANCHOR BOLT - ASTM A-36

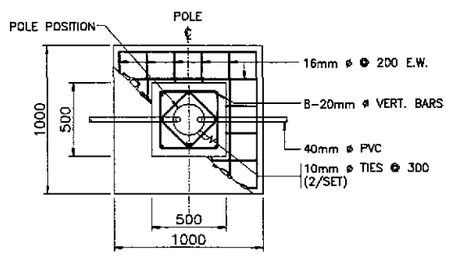
FINISH:

ANCHOR BOLT - ASTM A-153

1D ES-02 JUNCTION BOX DETAILS



PLAN



PLAN

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

1A ES-02 ELEVATION

1B ES-02 BASE PLATE DETAILS

1C ES-02 STANDARD FOOTING DETAILS

1E ES-02 MAST ARM ELEVATION

1 ES-02 STREET LIGHT POLE DETAILS 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

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

	DATE	SIGNATURE
DESIGNED	9/28/02	E. M. ANTIOQUIA
CHECKED	9/30/02	E. M. ANTIOQUIA
SUBMITTED	10/16/02	M. KINOSHITA TEAM LEADER

REPUBLIC OF THE PHILIPPINES
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Project Director	Chief, Mechanical-Elect'l Div.	OIC, Director IV	Undersecretary	Secretary

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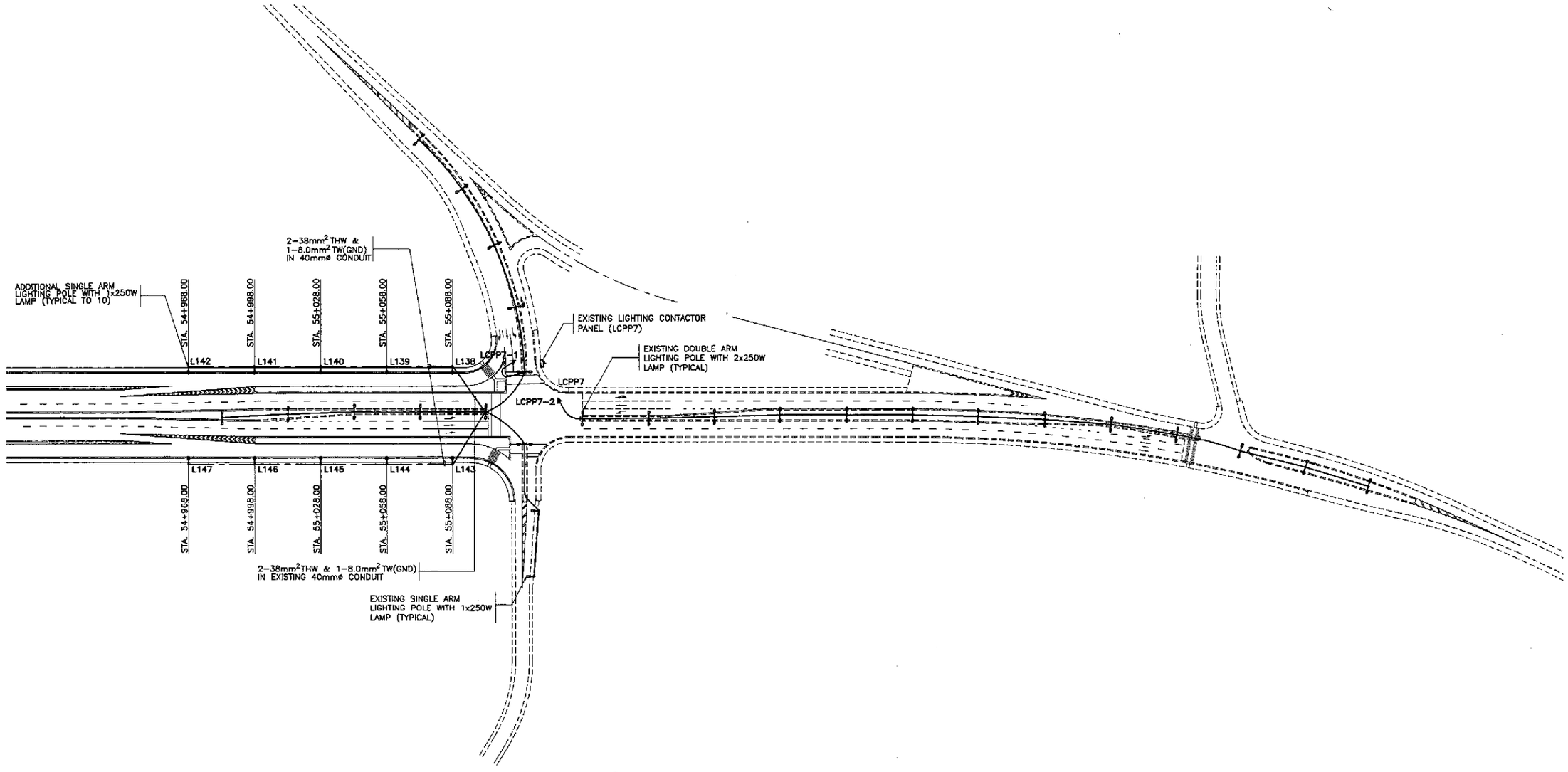
PLARIDEL BYPASS - CONTRACT PACKAGE IV

SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS : STREET LIGHT POLE DETAILS (ULTIMATE STAGE)

SHEET NO. : ES-02



1 / EI-01 ROADWAY LIGHTING PLAN
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.

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ENGINEER
PTR. NO. 7403664 P.E.E. NO. 2913
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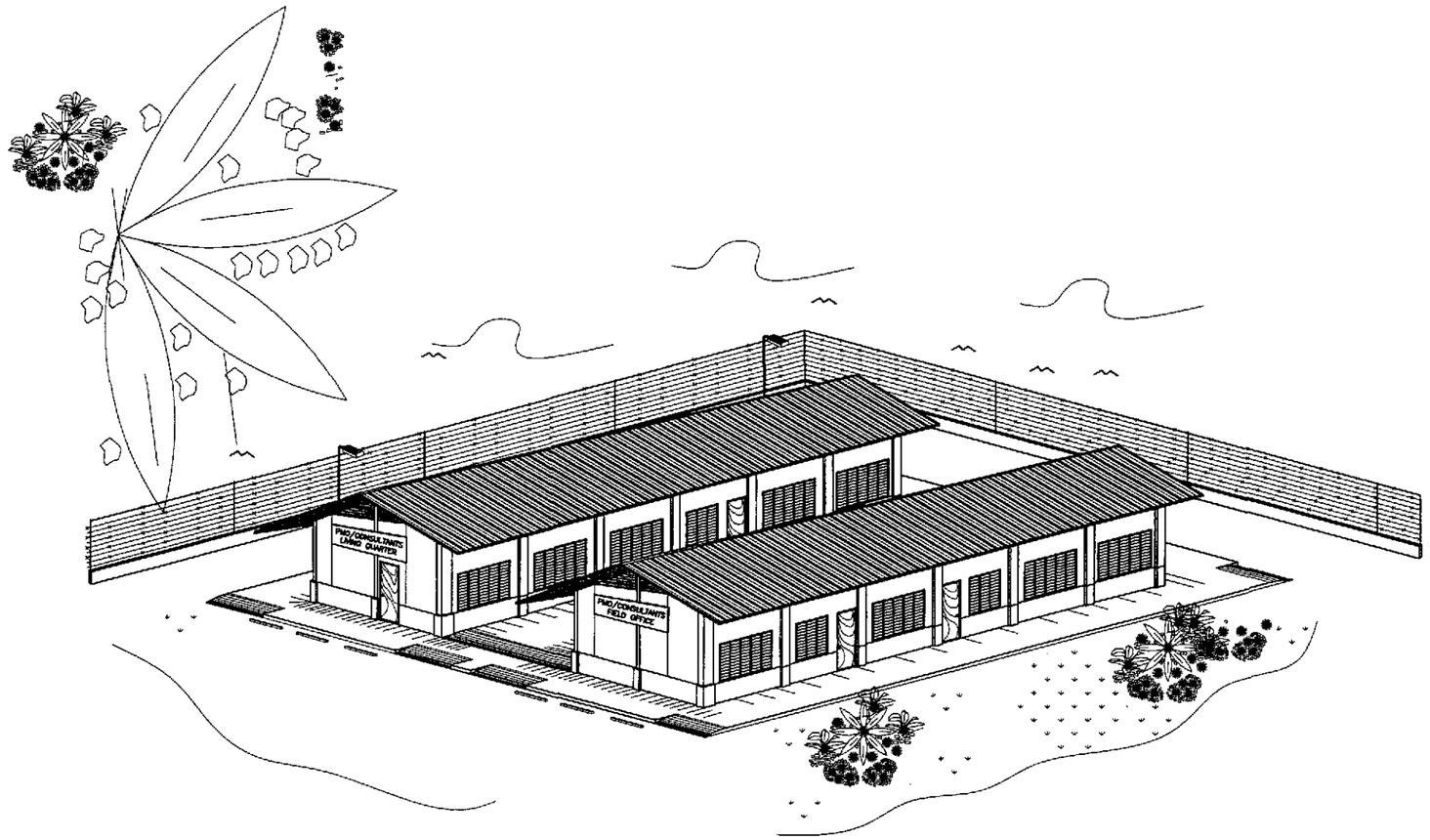
ALONG THE PAN-PHILIPPINE HIGHWAY
(Plaridel, Cabanatuan and San Jose Bypasses)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

SCALE : 1:1000 FULL SIZE A1

SHEET CONTENTS :
PLARIDEL BYPASS
ROADWAY LIGHTING PLAN
INTERSECTION A-22 (ULTIMATE STAGE)

SHEET NO. : EI-01

ENGR'S FIELD OFFICE & LIVING QUARTERS



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.

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

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ELECT'L. SYMBOLS & GEN. NOTES

02 ENGINEER'S LIVING QUARTERS
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REPUBLIC OF THE PHILIPPINES
OFFICE OF THE MUNICIPAL / CITY ENGINEER / BUILDING OFFICIAL

CITY / DISTRICT / MUNICIPALITY

LAND USE and ZONING

LINE and GRADE

ARCHITECTURAL

STRUCTURAL

SANITARY

ELECTRICAL

MECHANICAL

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.

JICA
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SUBMITTED	10/16/01	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
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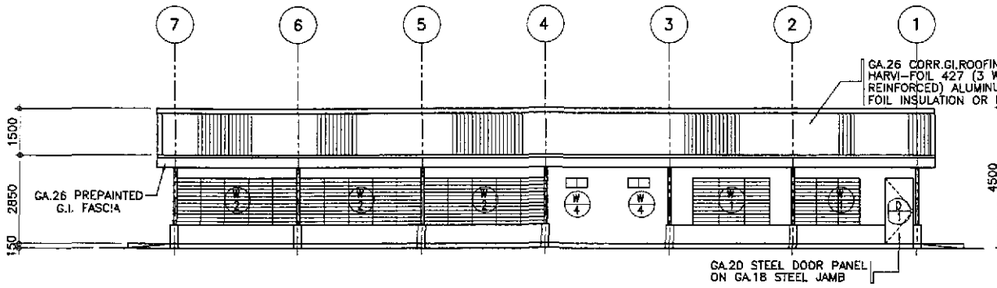
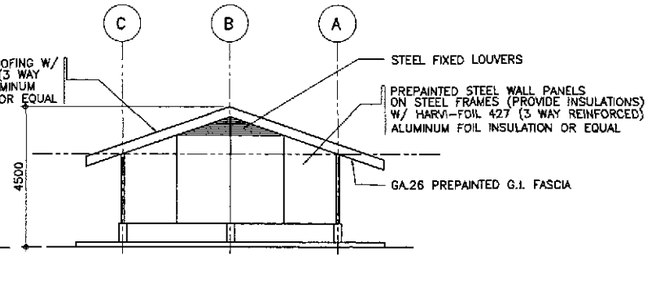
SCALE :
NOT TO SCALE
FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S FIELD OFFICE
AND LIVING QUARTERS
PERSPECTIVE AND
TABLE OF CONTENTS

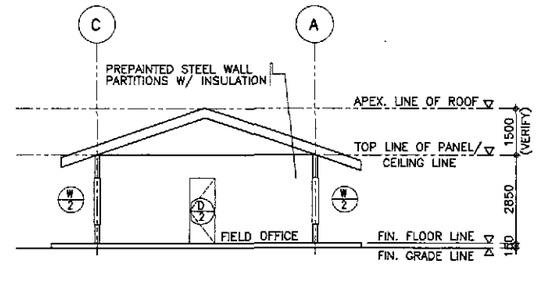
SHEET NO. :
FA-01



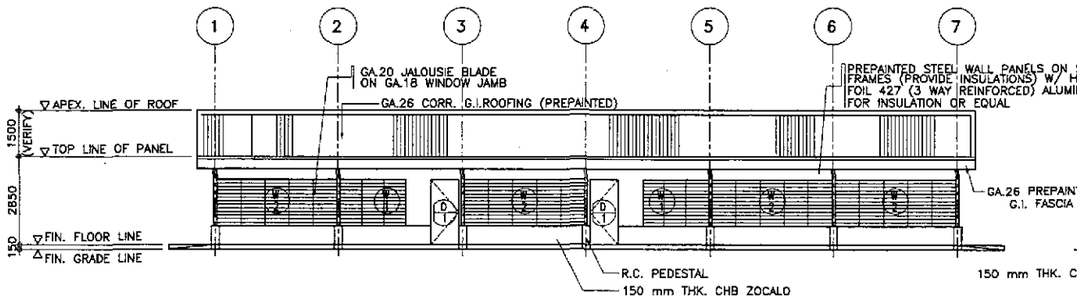
3 FA-02 **REAR ELEVATION**
SCALE 1:100



5 FA-02 **LEFT SIDE ELEVATION**
SCALE 1:100



8 FA-02 **CROSS SECTION**
SCALE 1:100



2 FA-02 **FRONT ELEVATION**
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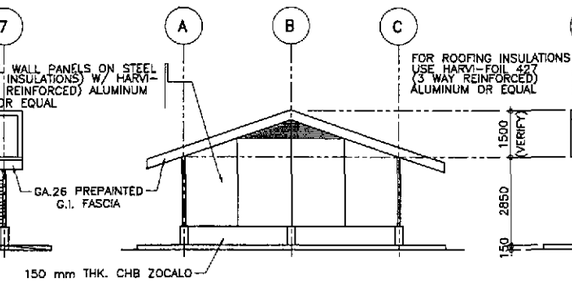
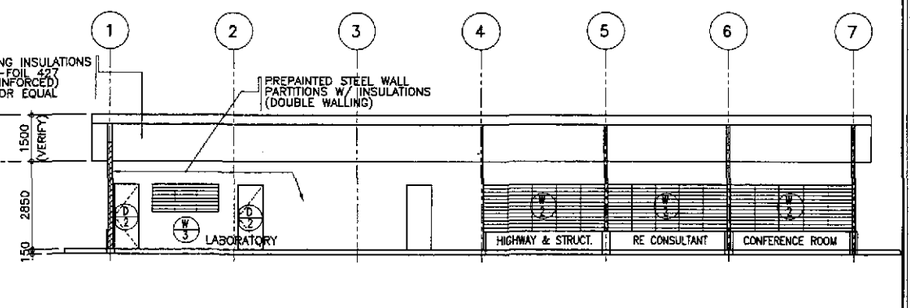
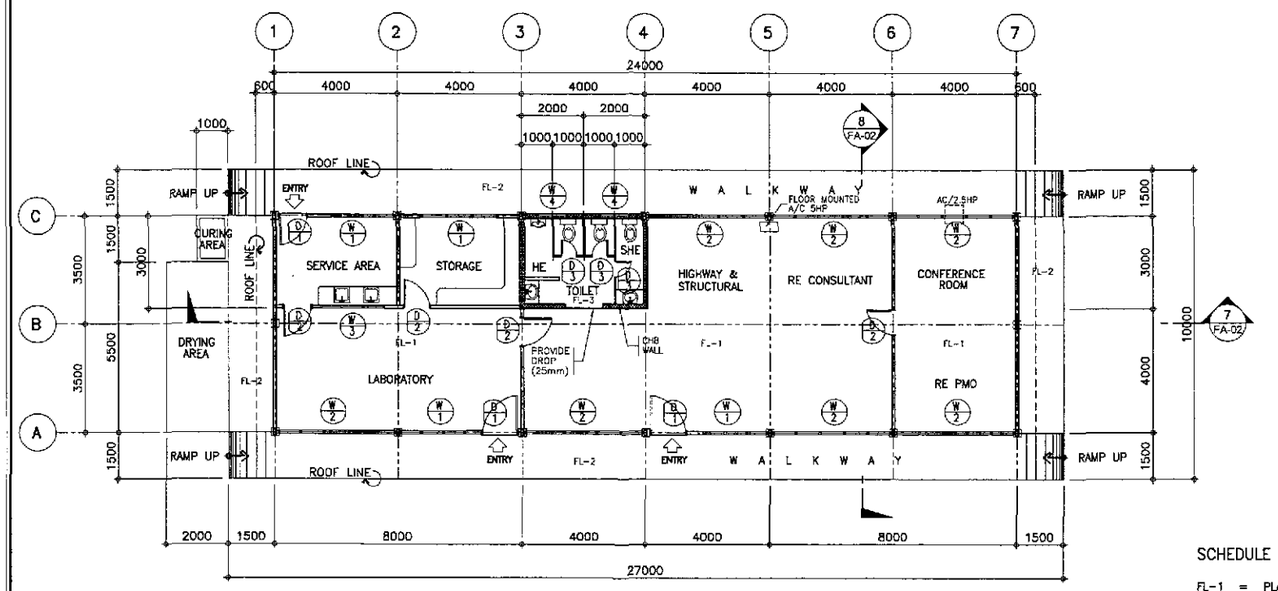


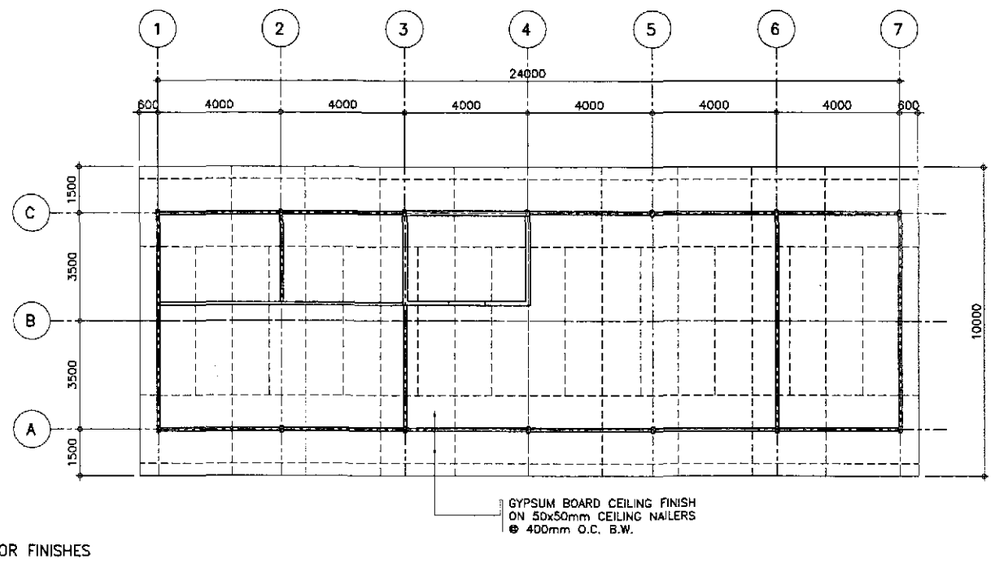
4 FA-02 **RIGHT SIDE ELEVATION**
SCALE 1:100



7 FA-02 **LONGITUDINAL SECTION**
SCALE 1:100



1 FA-02 **FLOOR PLAN FOR ENGINEER'S FIELD OFFICE/LABORATORY**
SCALE 1:100



6 FA-02 **REFLECTED CEILING PLAN**
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

ARNEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-582
ISSUED AT SAN JUAN,M.M.

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

	DATE	SIGNATURE
DESIGNED	9/28/02	A. P. GONZALES
CHECKED	9/30/02	A. P. GONZALES
SUBMITTED	10/16/02	A. M. KUDERA TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

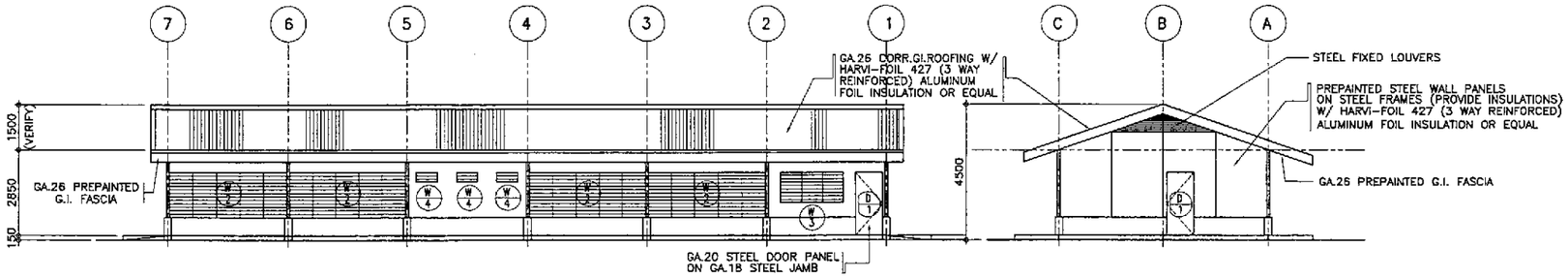
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	EMMANUEL P. CUNTAPAY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Architectural Division	OIC, Director IV	Undersecretary	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 IV

SCALE : AS SHOWN FULL SIZE A1

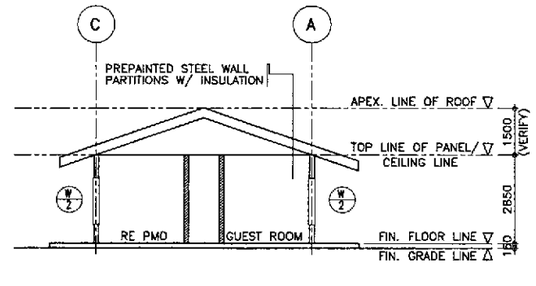
SHEET CONTENTS :
ENGR'S FIELD OFFICE / LABORATORY
FLOOR PLAN, ELEVATIONS, CROSS-SECTIONS AND REFLECTED CEILING PLAN

SHEET NO. :
FA-02

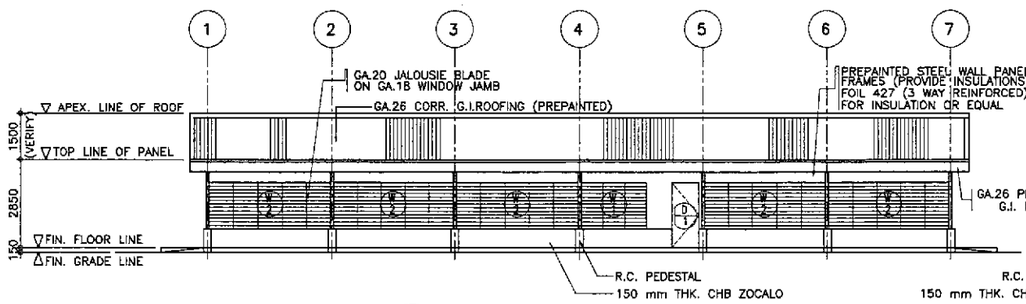


3 FA-03 REAR ELEVATION
SCALE 1:100

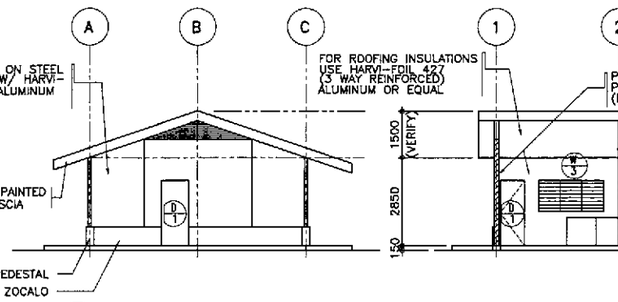
5 FA-03 LEFT SIDE ELEVATION
SCALE 1:100



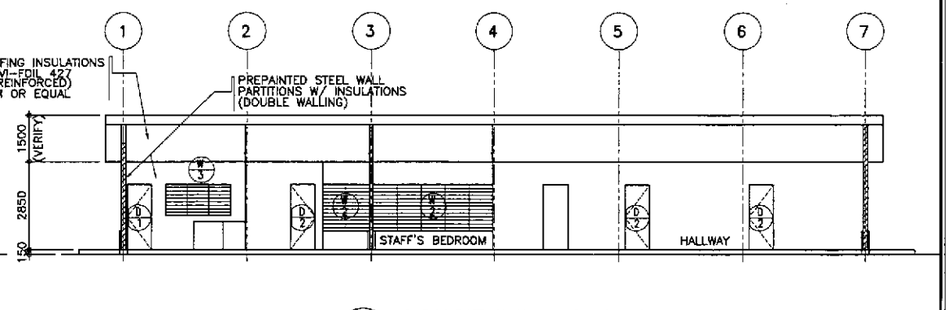
8 FA-03 CROSS SECTION
SCALE 1:100



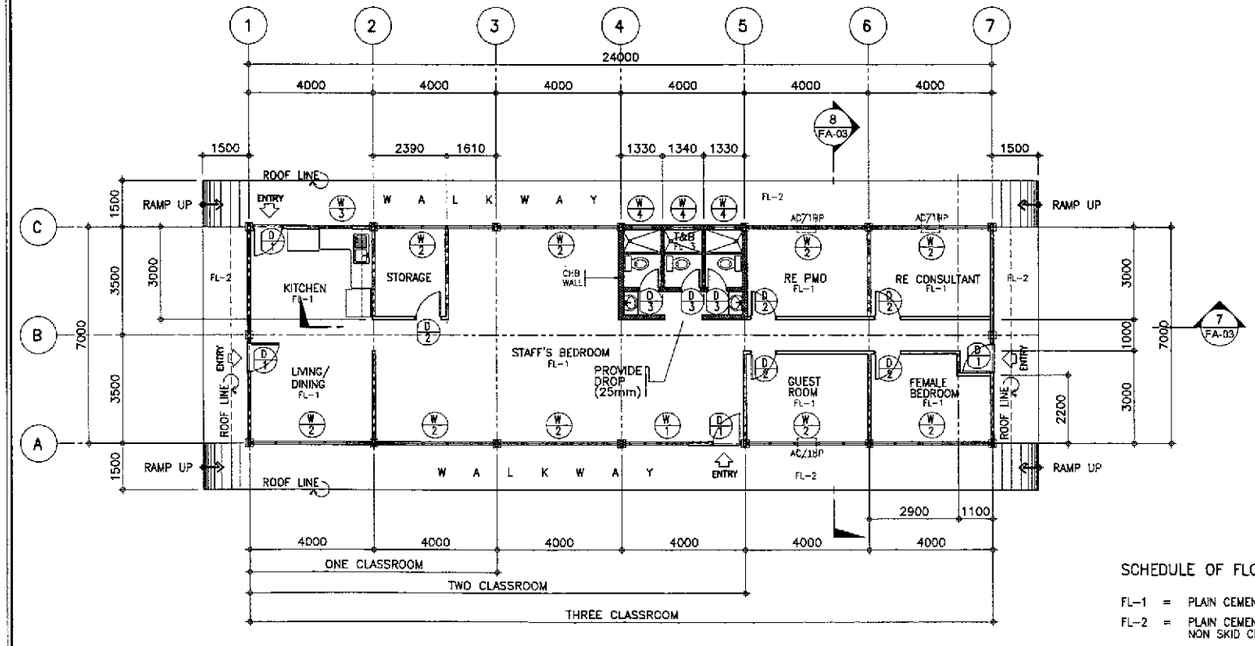
2 FA-03 FRONT ELEVATION
SCALE 1:100



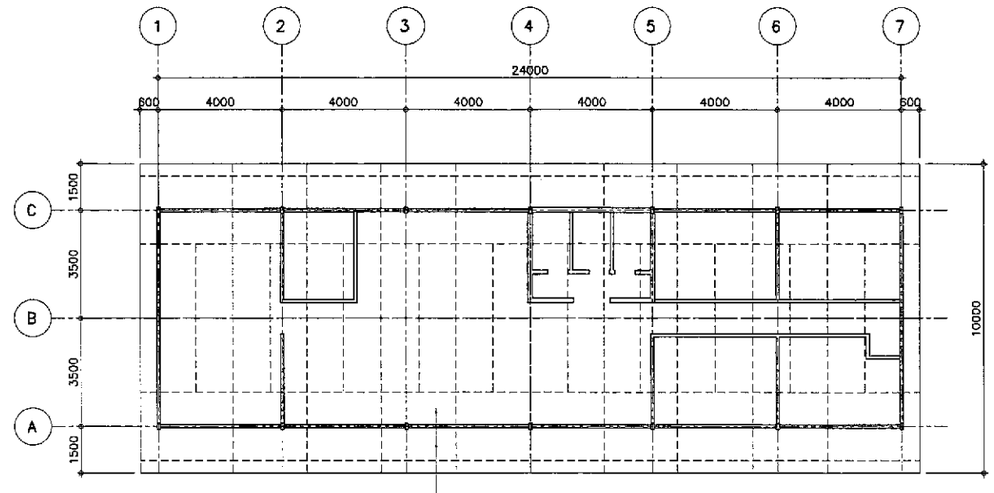
4 FA-03 RIGHT SIDE ELEVATION
SCALE 1:100



7 FA-03 LONGITUDINAL SECTION
SCALE 1:100



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



6 FA-03 REFLECTED CEILING PLAN
SCALE 1:100

SCHEDULE OF FLOOR FINISHES

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

	DATE	SIGNATURE
DESIGNED	9/26/02	A. P. GONZALES
CHECKED	9/26/02	A. P. GONZALES
SUBMITTED	10/16/02	[illegible] TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	EMMANUEL P. CUNTAPAY	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG
Project Director	Chief, Architectural Division	OIC, Director IV	Undersecretary	Secretary

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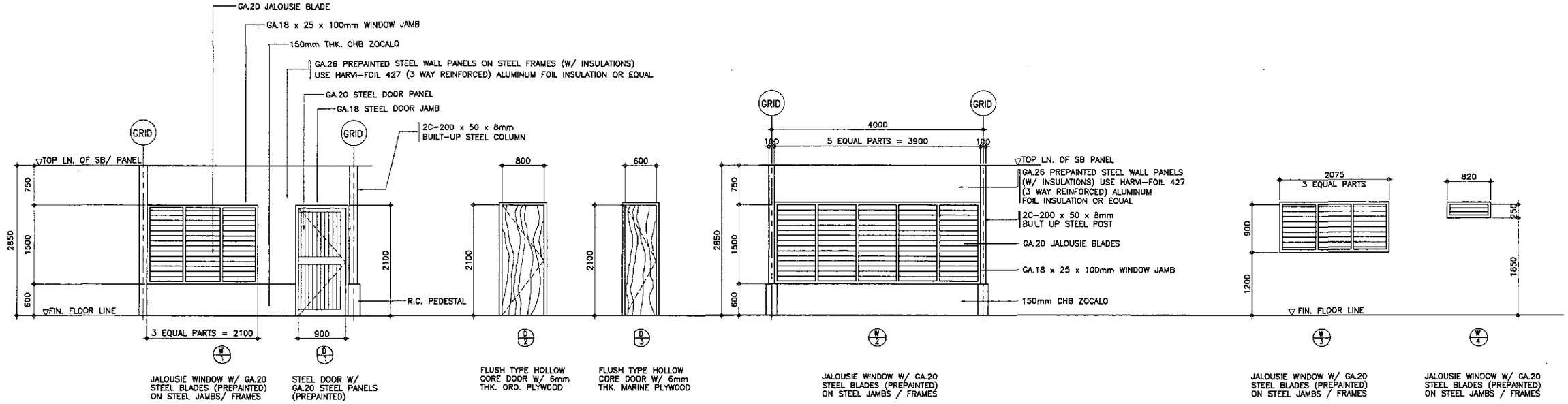
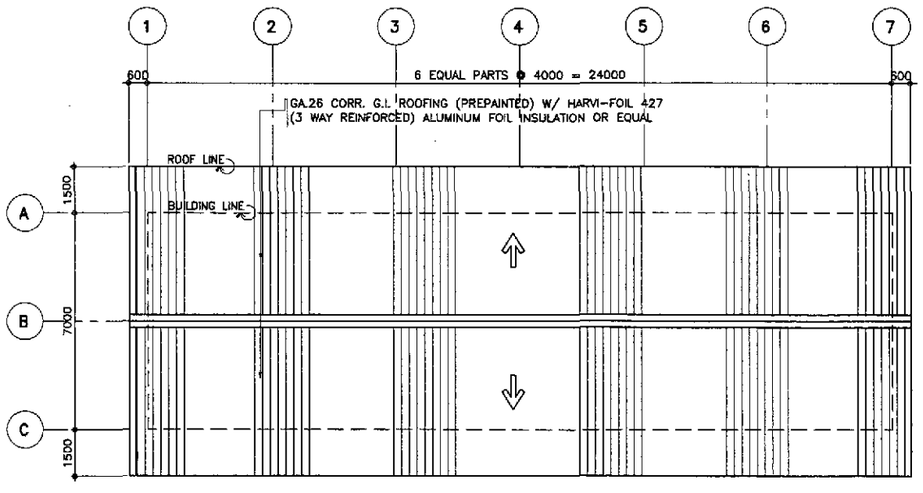
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S LIVING QUARTERS
FLOOR PLAN, ELEVATIONS, CROSS-SECTION AND REFLECTED CEILING PLAN

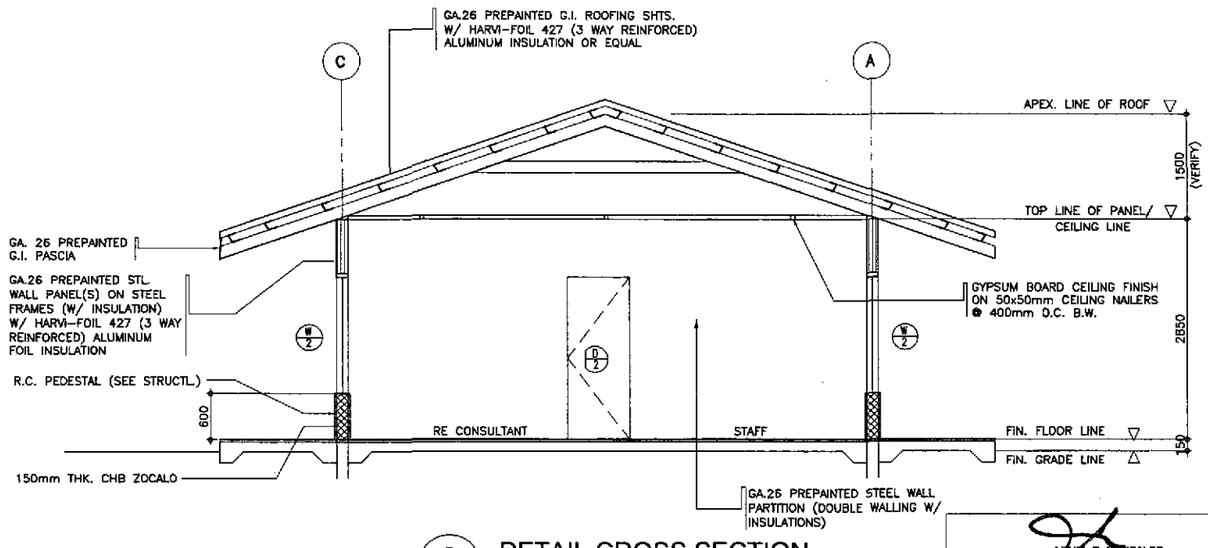
SHEET NO. :
FA-03



3 / FA-04 — FOR ENGINEER'S FIELD OFFICE
SCHEDULE OF DOORS & WINDOWS
SCALE 1:40



1 / FA-04 — ROOF PLAN
SCALE 1:100



2 / FA-04 — DETAIL CROSS SECTION
SCALE 1:40

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

	DATE	SIGNATURE
DESIGNED	9/25/02	A. P. GONZALES
CHECKED	9/30/02	A. P. GONZALES
SUBMITTED	10/16/02	M. KIDOKORO TEAM LEADER

REPUBLIC OF THE PHILIPPINES
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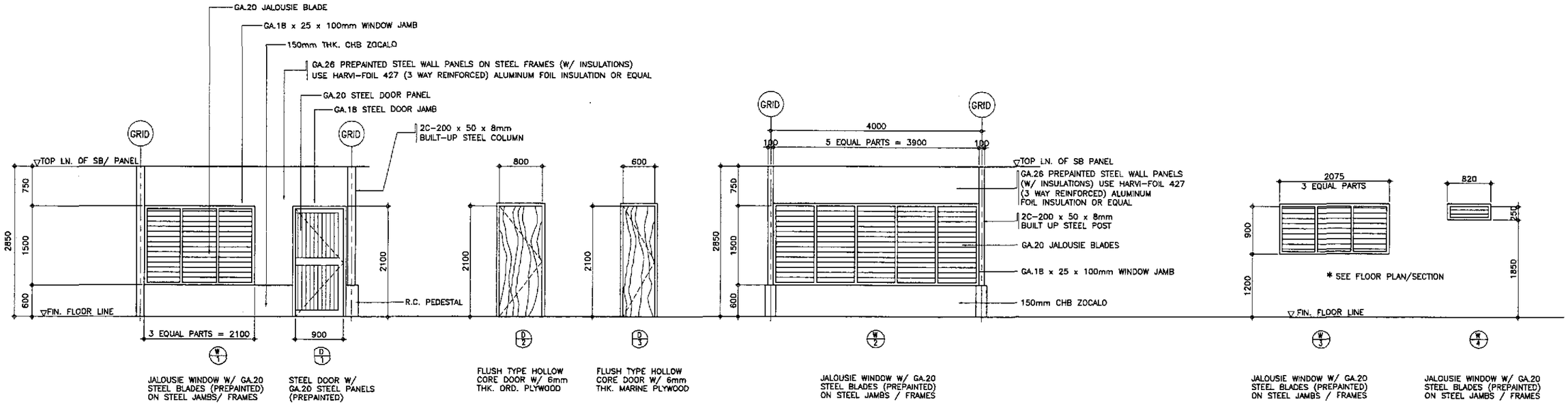
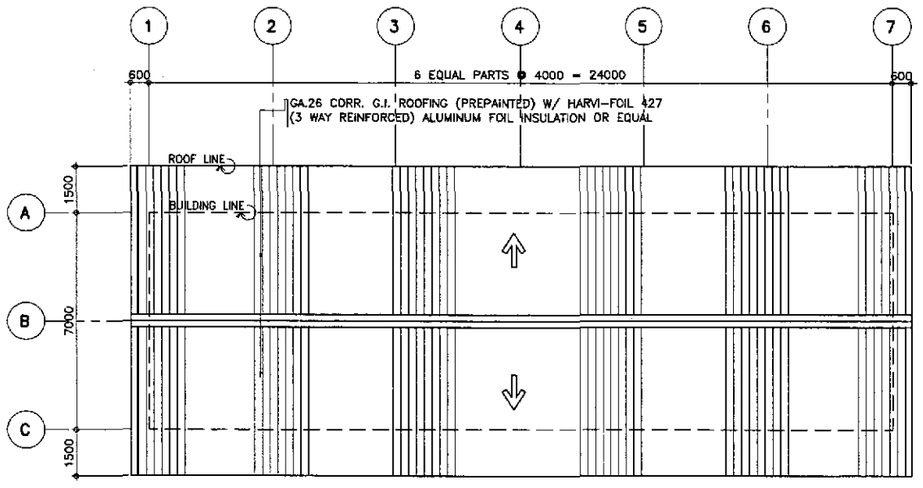
SCALE : AS SHOWN — FULL SIZE A1

SHEET CONTENTS :
ENGR'S FIELD OFFICE / LABORATORY
ROOF PLAN, CROSS-SECTION AND SCHEDULE OF DOORS & WINDOWS

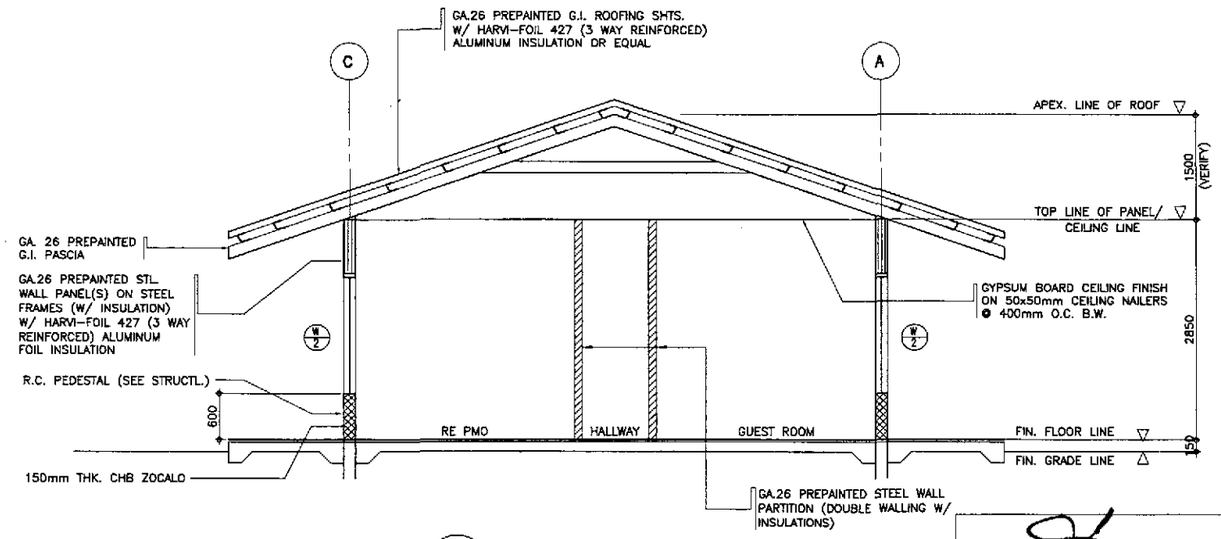
SHEET NO. : FA-04



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



1 / FA-05 — ROOF PLAN
SCALE 1:100



2 / FA-05 — DETAIL CROSS SECTION
SCALE 1:40

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PTR. NO. 5846340 P.R.C. NO. 53457
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ISSUED AT SAN JUAN, M.M.

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

	DATE	SIGNATURE
DESIGNED	9/23/02	A. P. GONZALES
CHECKED	9/30/02	A. P. GONZALES
SUBMITTED	10/16/02	K. KIUCHI, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	JOSEFINA M. ALAGAR, Chief, Highways Division	GILBERTO S. REYES, OIC, Director IV	MANUEL M. BONDAN, Undersecretary	SIMEON A. DATUMANONG, Secretary

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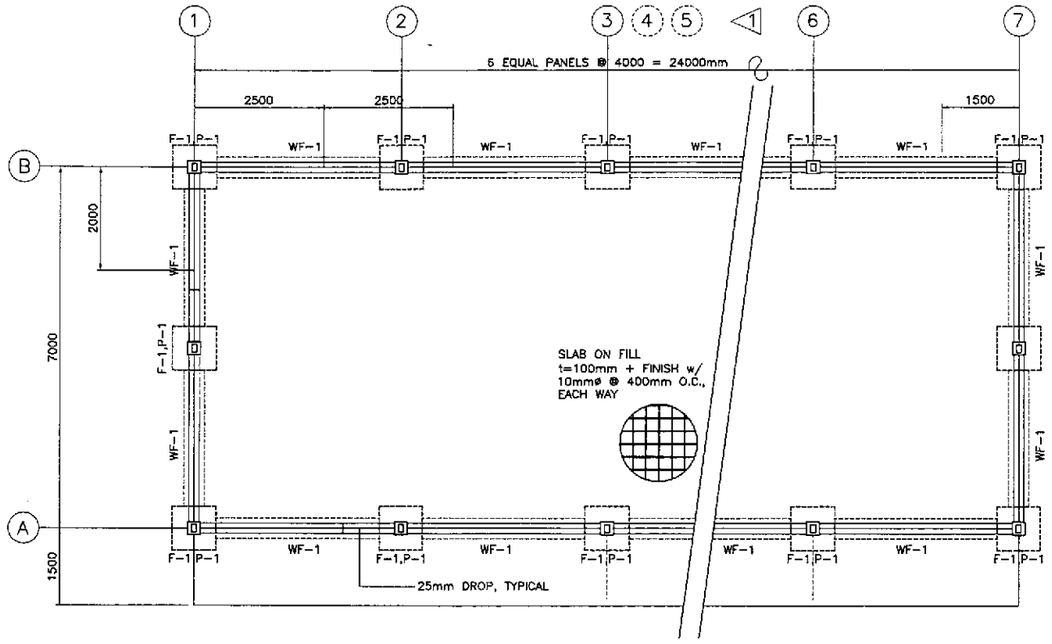
PLARIDEL BYPASS - CONTRACT PACKAGE IV

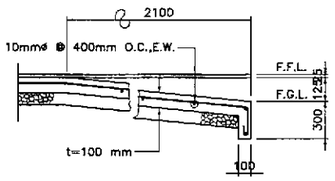
SCALE : AS SHOWN — FULL SIZE A1

SHEET CONTENTS :
ENGRINEER'S LIVING QUARTERS
ROOF PLAN, CROSS-SECTION AND SCHEDULE OF DOORS & WINDOWS

SHEET NO. : FA-05



1 / FA-06 — **FOUNDATION PLAN** — SCALE 1:25



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

DESIGN CRITERIA :

I. LIVE LOAD

ROOF	0.58 KPa
OFFICE/LABORATORY	2.40 KPa

II. DEAD LOAD

CONCRETE	24 KN/m^3
STEEL	76.10 KN/m^3
CHB	2.73 KPa

III. WIND LOAD

$p = Ce\ Cq\ Qs\ I$

WHERE :

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

IV. ALLOWABLE STRESSES

1. CONCRETE (ALLOWABLE COMPRESSIBLE STRENGTH @ 28 DAYS)
   a.) FOR FOOTINGS AND PEDESTAL COLUMN
   fc' = 20.70 mpa fc = 9.31mpa
   b.) FOR SLAB ON FILL
   fc' = 17.26 mpa fc = 7.76mpa
2. REINFORCING STEEL BARS (STRUCTURAL GRADE 33 DEFORMED BARS)
   fy = 227.0 mpa fst = 124.02 mpa
3. STRUCTURAL LIGHT GAGE COLD FORMED STEEL
   STIFFENED LIGHT GAGE CHANNEL FOR RAFTERS, STUD & WALLS
   fs = 124.0 mpa (18,000 psi)
4. STRUCTURAL BUILT-UP STEEL PLATES (ASTM A-36)
   FOR STEEL BOX COLUMN
   fy = 248.0 mpa (36,000 psi)
5. WELDS
   USE E-60 XX ELECTRODES
   fv = 93.76 mpa
6. BOLTS (ASTM A-307)
   fv = 69 mpa fst = 96.60 mpa
7. CONCRETE MASONRY UNITS (NON-LOAD BEARING CHB)
   fm' = 3.41 mpa (500 psi)
8. ASSUMED ALLOWABLE SOIL BEARING CAPACITY OF 95.76 KPa (2,000 psf)

NOTES ON FOUNDATION :

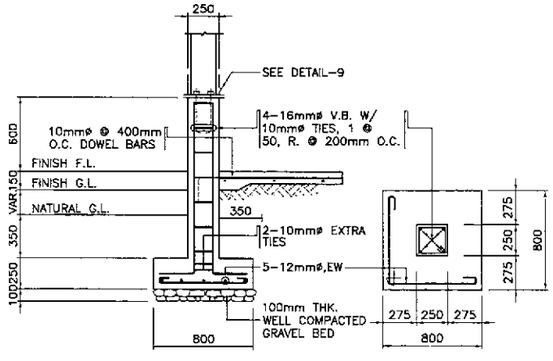
1. IN CASE THE ACTUAL SOIL BEARING PRESSURE IS FOUND LESS THAN THE ASSUMED VALUE OF 95.76 KPa, NOTIFY THE DIRECTOR, BUREAU OF DESIGN FOR PROPER REVISION OF FOOTINGS.
2. NO FOOTINGS SHALL REST ON FILL.

MATERIAL SPECIFICATIONS :

1. FOR ROOFING SHEETS :
   0.6mm THICK (GA.26) PREPAINTED CORRUGATED G.I. ROOFING SHEET, LONG SPAN.
2. 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.
3. 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.
4. 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.

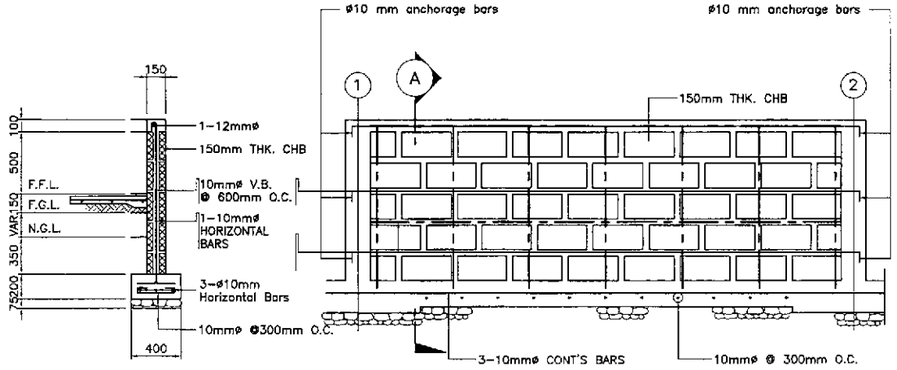
NOTES :

1. ALL LOCATION OF ANCHOR BOLTS AND BOLT HOLES SHALL BE VERIFIED ON THE SITE PRIOR TO INSTALLATION / ASSEMBLY.
2. 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.
3. 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 / FA-06 — **F-1, P-1** — SCALE 1:25



SECTION A

TYP. ELEVATION

3 / FA-06 — **WF - 1** — SCALE 1:25

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

	DATE	SIGNATURE
DESIGNED	4/26/02	A. P. GONZALES
CHECKED	4/30/02	A. P. GONZALES
SUBMITTED	5/14/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	WILFREDO S. LOPEZ	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Structural Division	OIC, Director IV	Undersecretary	Secretary

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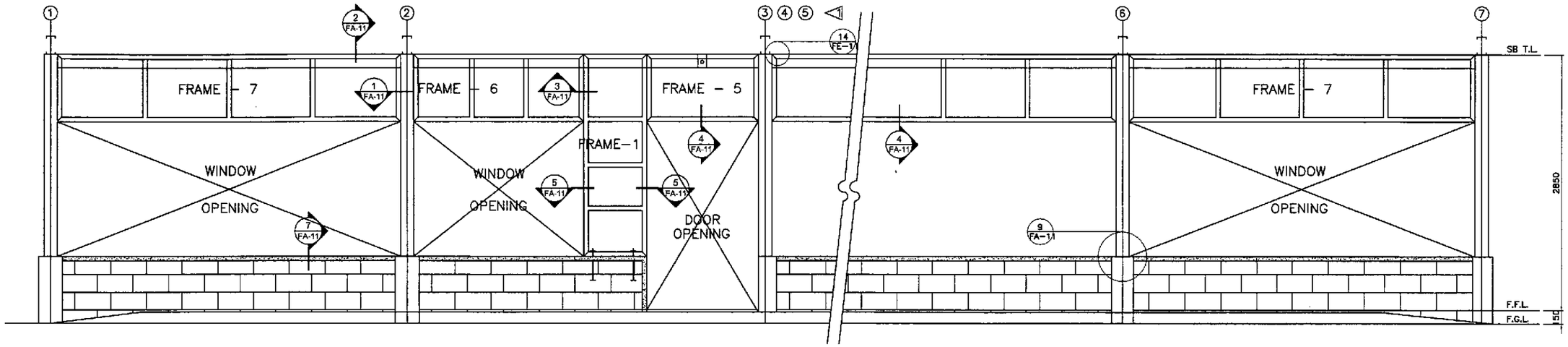
PLARIDEL BYPASS - CONTRACT PACKAGE IV

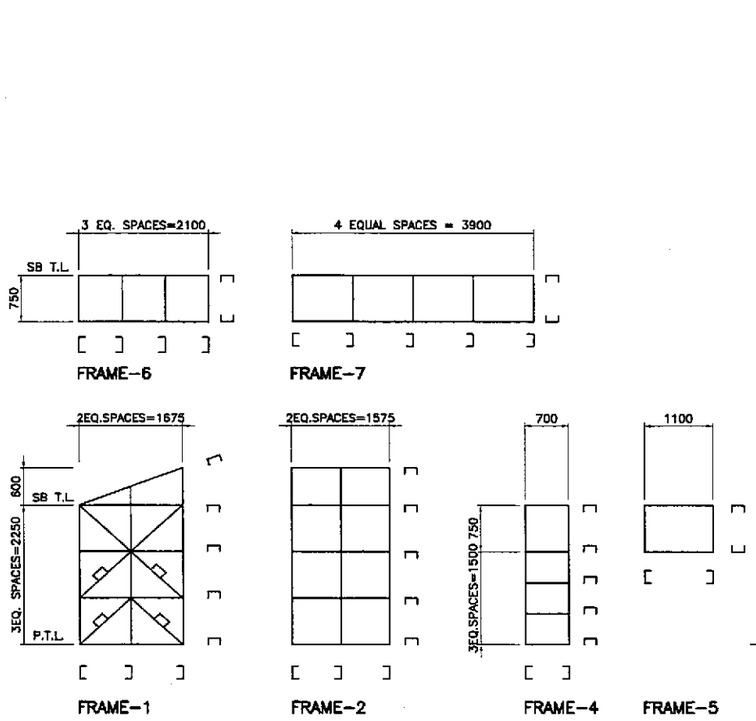
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S FIELD OFFICE AND LIVING QUARTERS
FOUNDATION PLAN, R.C. RAMP, DETAILS OF F1, P-1 & WF1 AND DESIGN CRITERIA

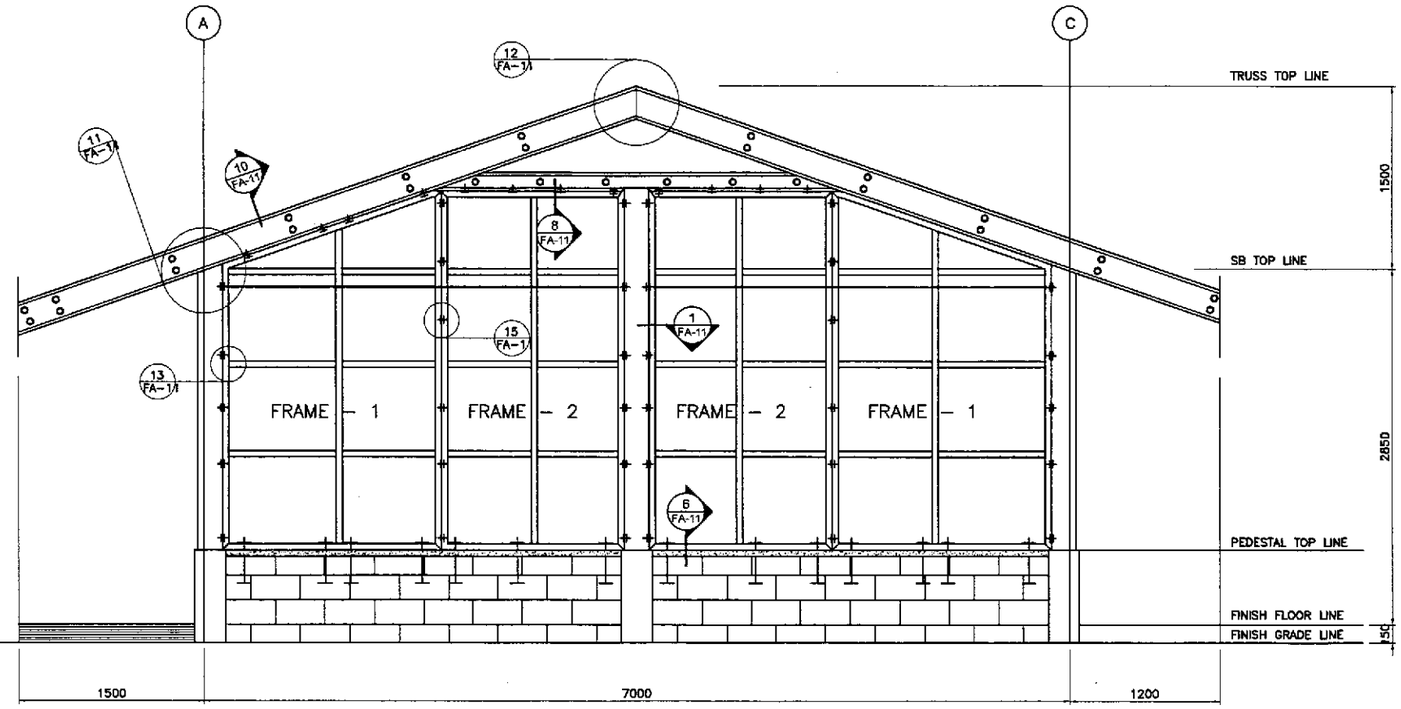
SHEET NO. : FA-06



2 FA-07 **FRONT ELEVATION**
SCALE 1:25



1 FA-07 **FRAMES SCHEMATIC DIAGRAMS**
SCALE 1:50



3 FA-07 **RIGHT SIDE ELEVATION**
SCALE 1:25

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JAPAN INTERNATIONAL COOPERATION AGENCY

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	DATE	SIGNATURE
DESIGNED	9/20/02	A. P. GONZALES
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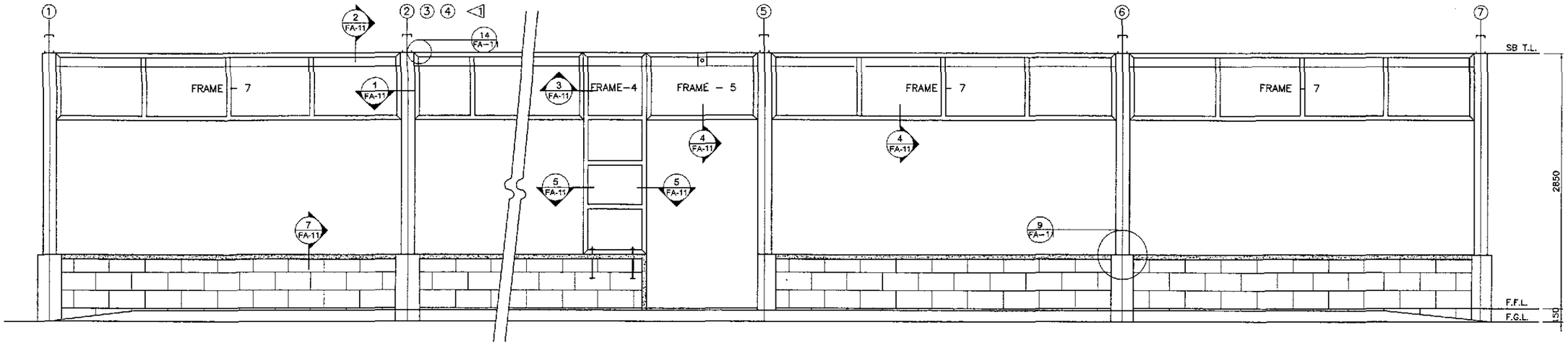
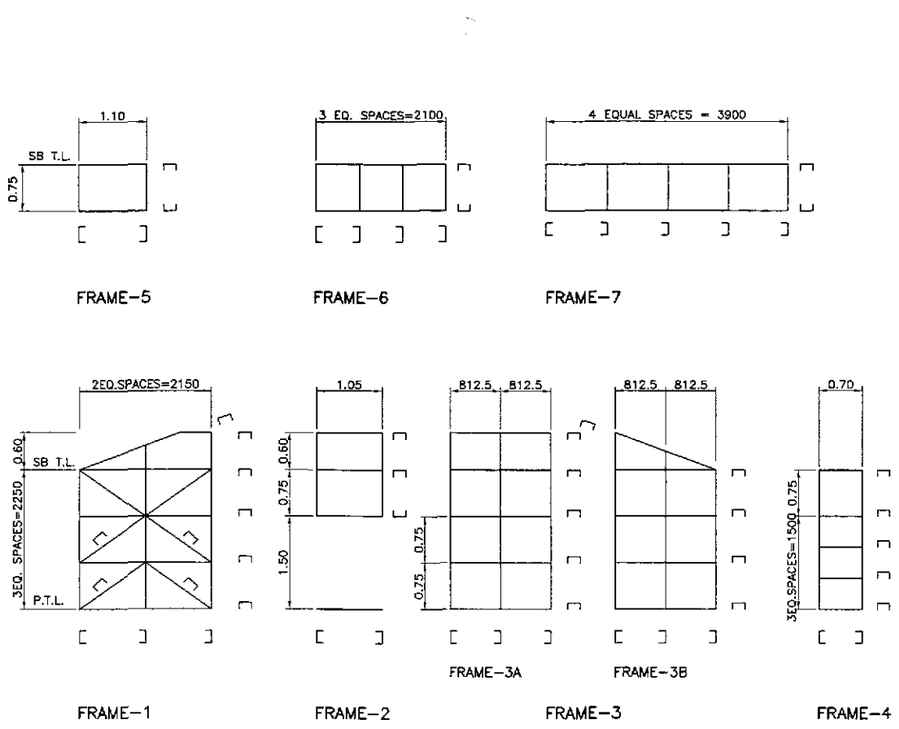
SHEET CONTENTS :
ENGR'S FIELD OFFICE / LABORATORY
FRONT AND RIGHT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAM

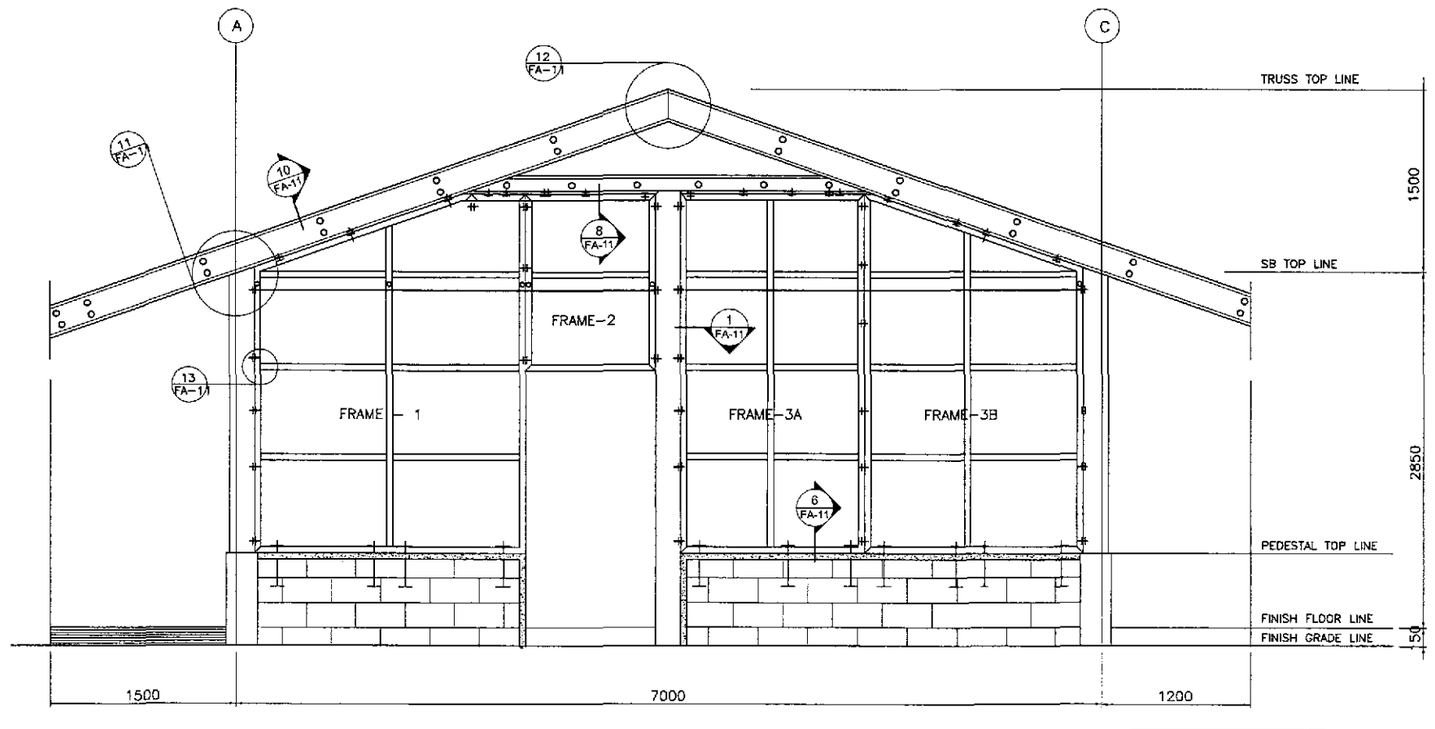
SHEET NO. : FA-07



2 / FA-08 **FRONT ELEVATION**
SCALE 1:25



1 / FA-08 **FRAMES SCHEMATIC DIAGRAMS**
SCALE 1:50



3 / FA-08 **RIGHT SIDE ELEVATION**
SCALE 1:25

ARNEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-052-582
ISSUED AT SAN JUAN,M.M.

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

	DATE	SIGNATURE
DESIGNED	9/25/01	A. L. GONZALES
CHECKED	9/26/01	A. L. GONZALES
SUBMITTED	9/26/01	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

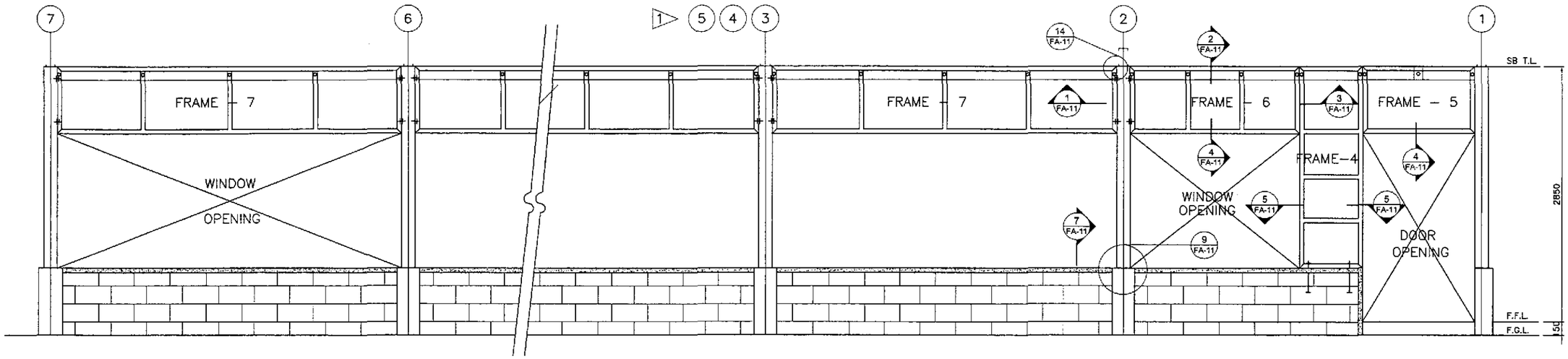
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	WILFREDO S. LOPEZ	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Structural Division	OIC, Director IV	Undersecretary	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 IV

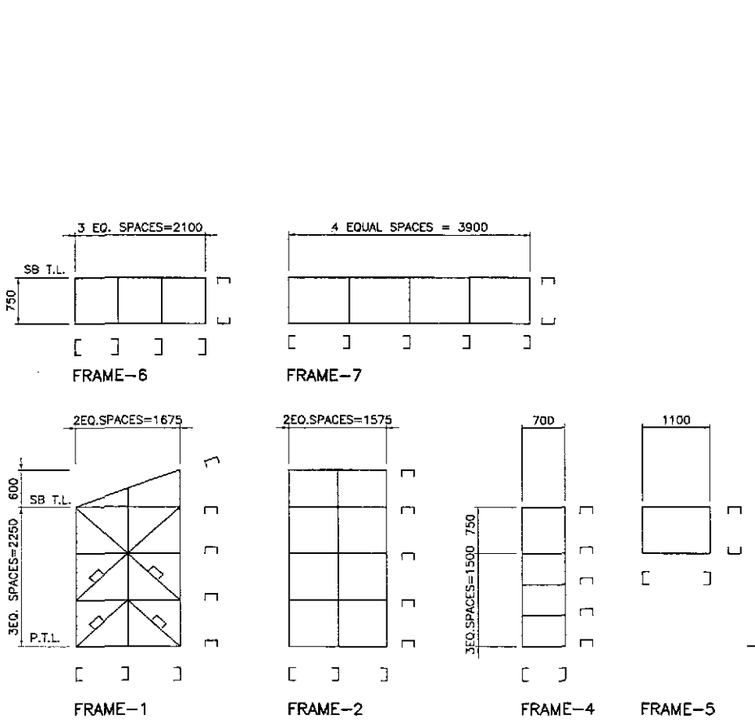
SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S LIVING QUARTERS
FRONT AND RIGHT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAM

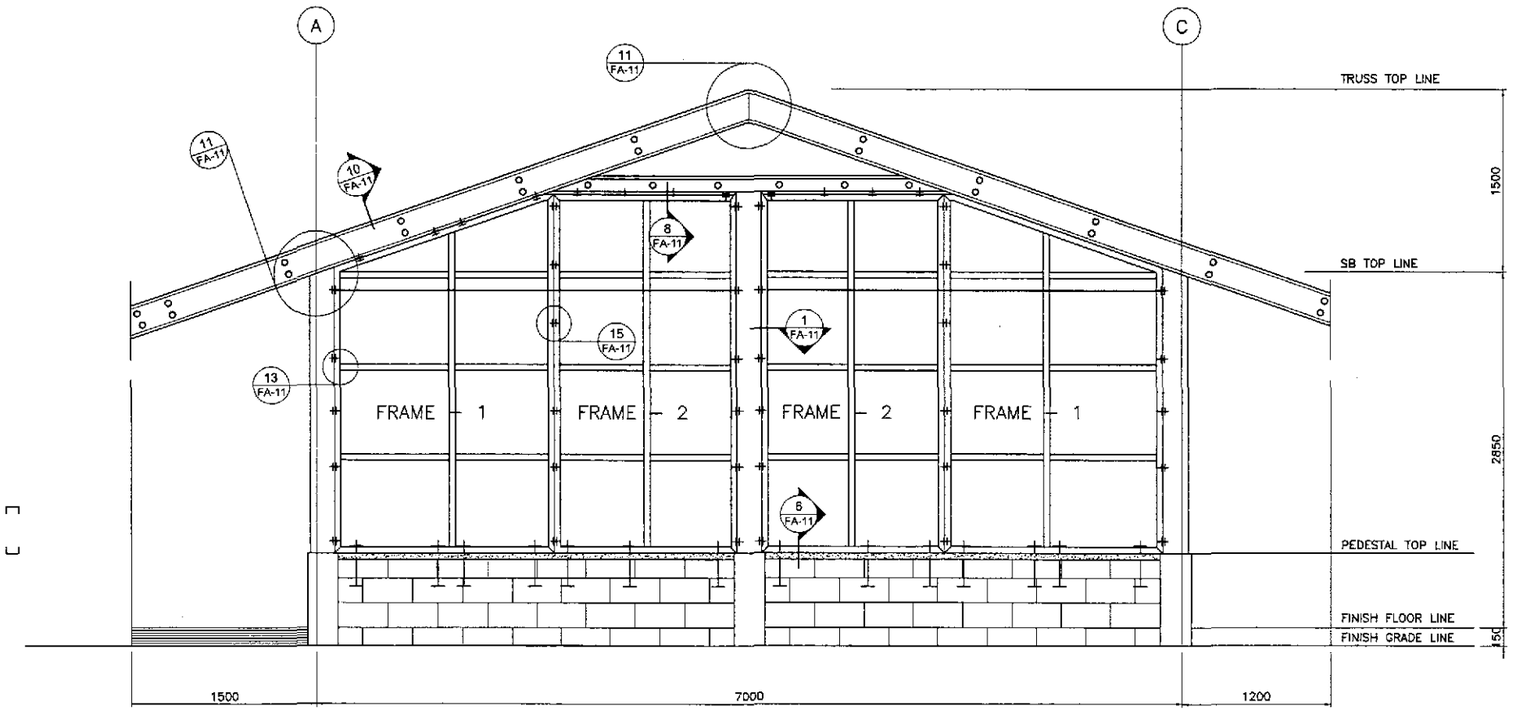
SHEET NO. :
FA-08



2 / FA-09 **REAR ELEVATION**
SCALE 1:25



1 / FA-09 **FRAMES SCHEMATIC DIAGRAMS**
SCALE 1:50



3 / FA-09 **LEFT SIDE ELEVATION**
SCALE 1:25

ARNEL P. GONZALES
ENGINEER

PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-082-682
ISSUED AT SAN JUAN,M.M.

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

	DATE	SIGNATURE
DESIGNED	9/28/07	A. P. GONZALES
CHECKED	9/30/07	A. P. GONZALES
SUBMITTED	10/16/07	M. KUCHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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Project Director	Chief, Structural Division	DIC, Director IV	Undersecretary	Secretary

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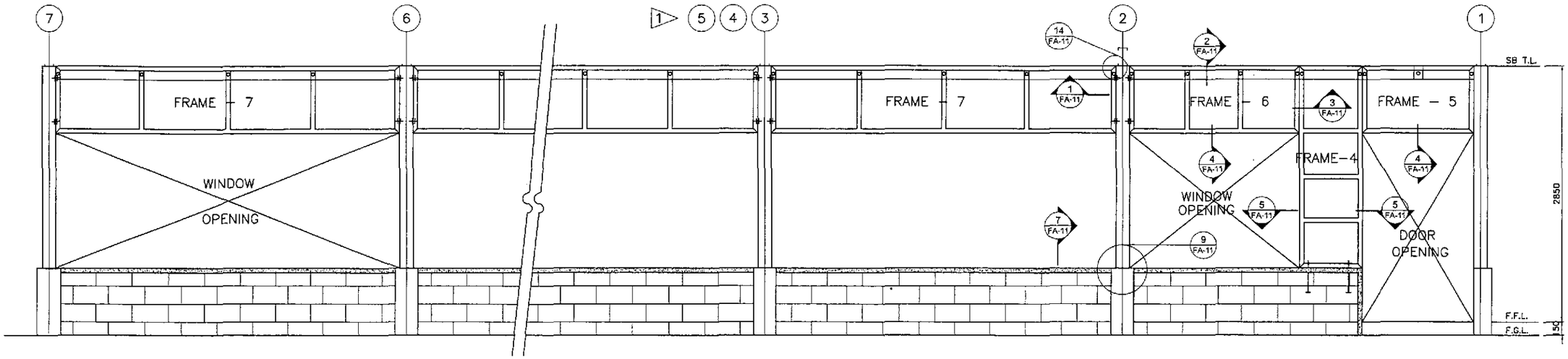
PLARIDEL BYPASS - CONTRACT PACKAGE IV

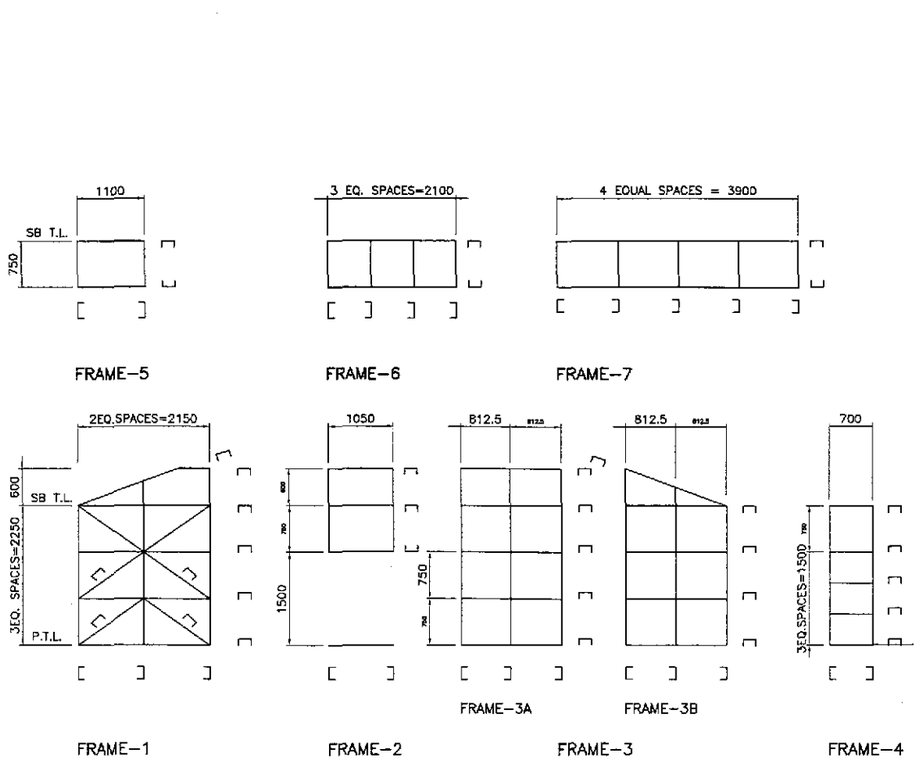
SCALE :
AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
ENGR'S FIELD OFFICE / LABORATORY
REAR AND LEFT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAM

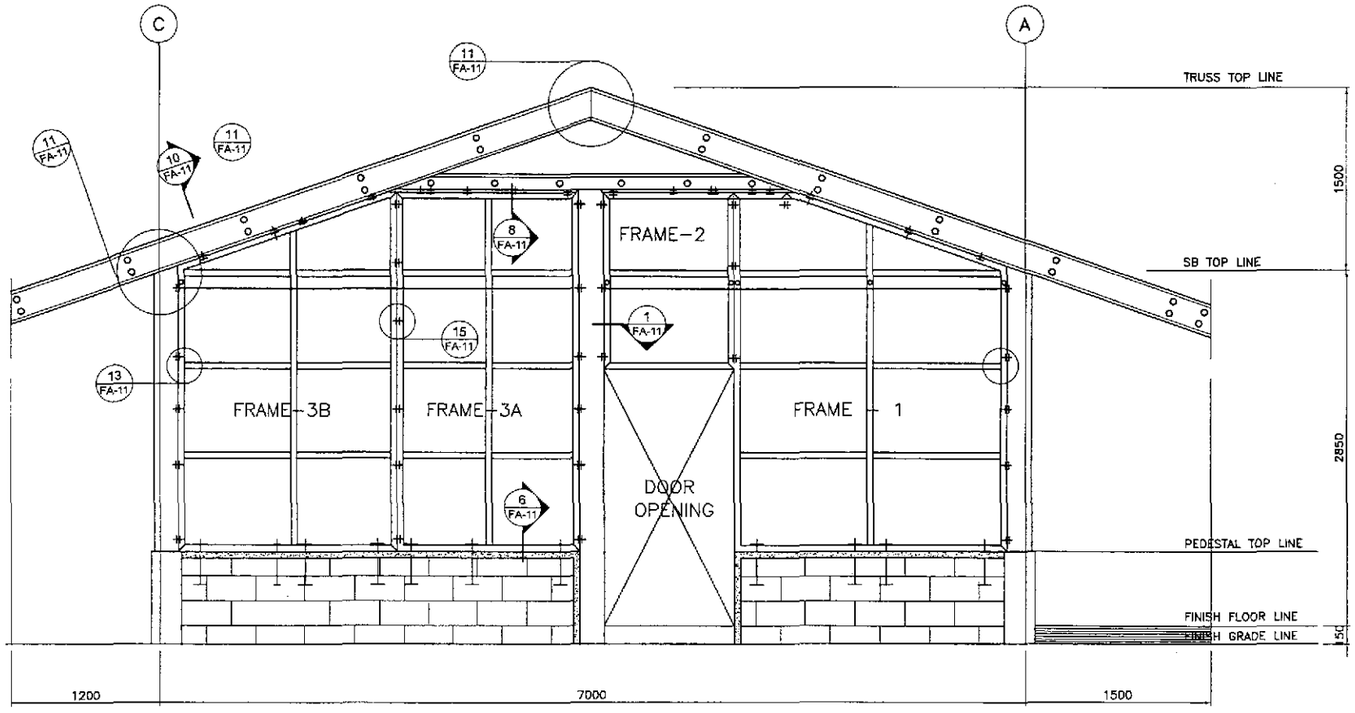
SHEET NO. :
FA-09



2 FA-10 **REAR ELEVATION**
SCALE 1:25



1 FA-10 **FRAMES SCHEMATIC DIAGRAMS**
SCALE 1:50



3 FA-10 **LEFT SIDE ELEVATION**
SCALE 1:25

ARNEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-882
ISSUED AT SAN JUAN,M.M.

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

	DATE	SIGNATURE
DESIGNED	9/2/01	A.P. GONZALES
CHECKED	9/30/01	A. P. GONZALES
SUBMITTED	10/16/01	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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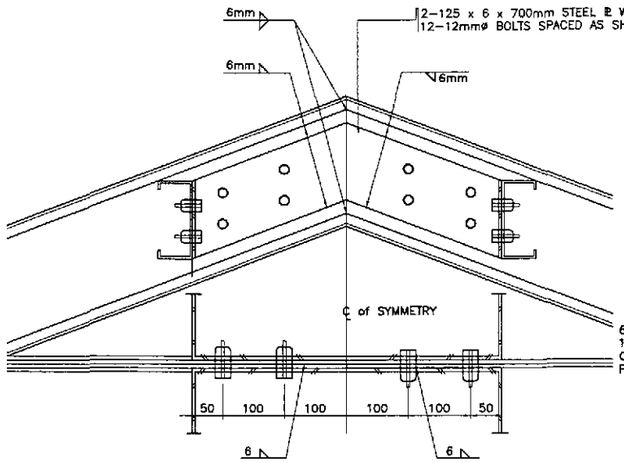
PLARIDEL BYPASS - CONTRACT PACKAGE IV

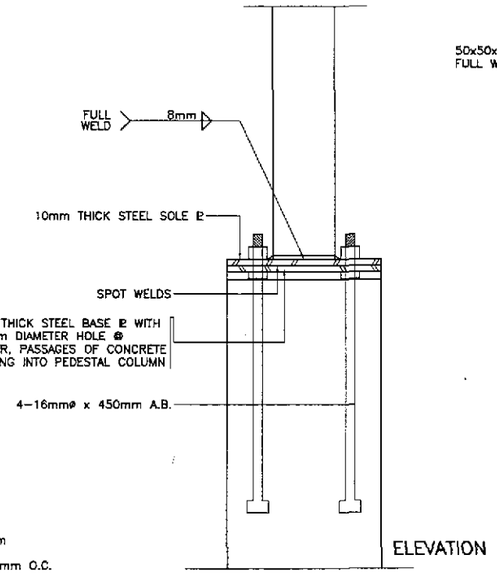
SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S LIVING QUARTERS
REAR AND LEFT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAMS

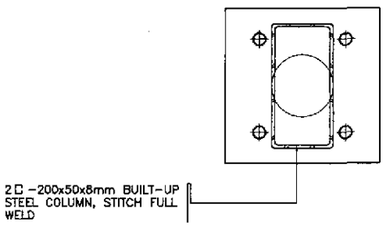
SHEET NO. :
FA-10



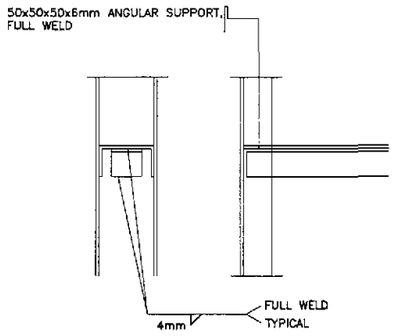
3 FA-11 **DETAIL - 12** SCALE 1:5



ELEVATION



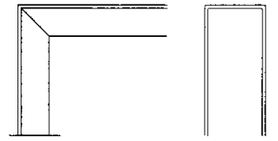
PLAN



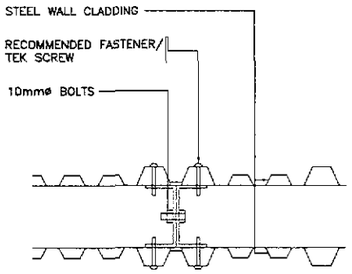
SECTION ELEVATION

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.



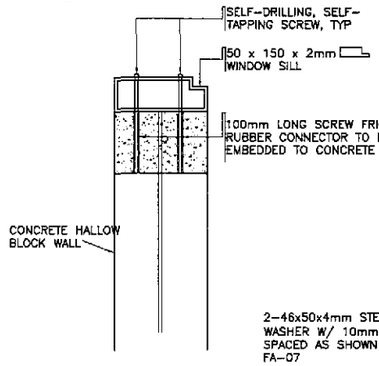
ELEVATION SECTION

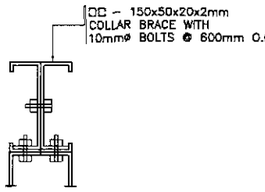


10 FA-11 **DETAIL - 13** SCALE 1:5

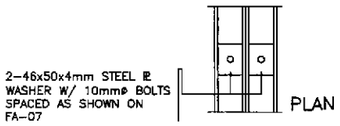
13 FA-11 **DETAIL - 14** SCALE 1:5

15 FA-11 **DETAIL - 15** SCALE 1:5





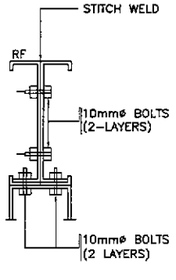
SECTION



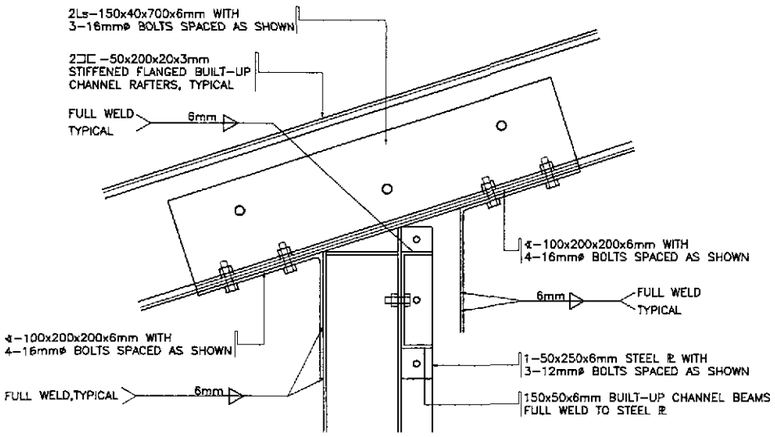
PLAN

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

5 FA-11 **DETAIL - 8** SCALE 1:5

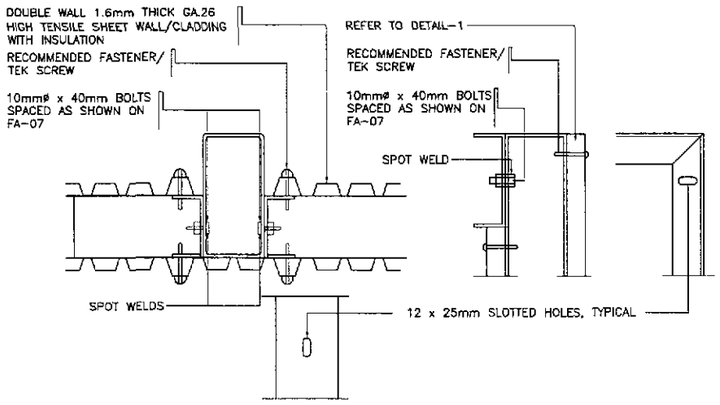


7 FA-11 **DETAIL - 9** SCALE 1:5



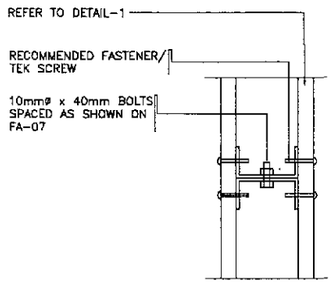
9 FA-11 **DETAIL - 10** SCALE 1:5

12 FA-11 **DETAIL - 11** SCALE 1:5

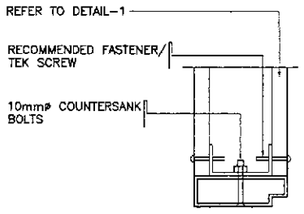


1 FA-11 **DETAIL - 1** SCALE 1:5

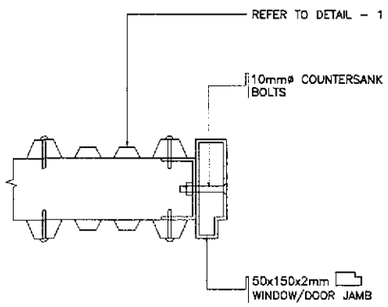
4 FA-11 **DETAIL - 2** SCALE 1:5



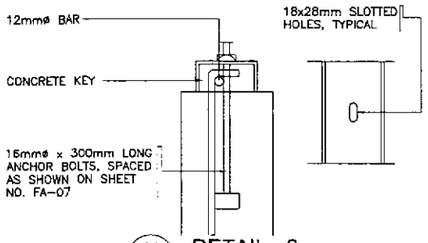
6 FA-11 **DETAIL - 3** SCALE 1:5



8 FA-11 **DETAIL - 4** SCALE 1:5



11 FA-11 **DETAIL - 5** SCALE 1:5



14 FA-11 **DETAIL - 6** SCALE 1:5

ARNEL P. GONZALES
ENGINEER

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ISSUED ON 04/25/2002 T.I.N. 138–062–682
ISSUED AT SAN JUAN,M.M.

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JAPAN INTERNATIONAL COOPERATION AGENCY
KEI KATAHIRA & ENGINEERS INTERNATIONAL
YEC YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	9/26/02	A. P. GONZALES
CHECKED	9/30/02	A. P. GONZALES
SUBMITTED	10/16/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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Project Director	Chief, Structural Division	O/C, Director IV	Undersecretary	Secretary

PROJECT AND LOCATION :
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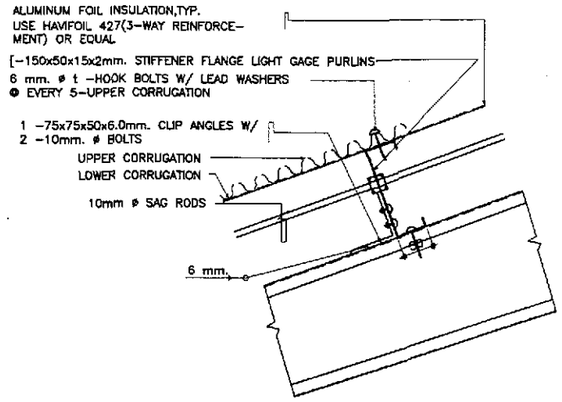
PLARIDEL BYPASS - CONTRACT PACKAGE IV

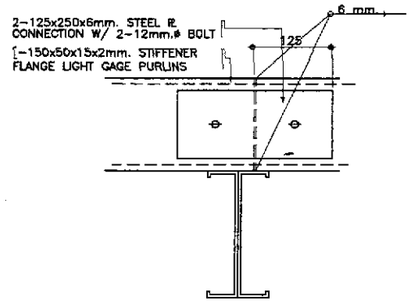
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S FIELD OFFICE AND LIVING QUARTERS
DETAILS OF CONNECTIONS
DETAIL 1 TO 15

SHEET NO. : FA-11

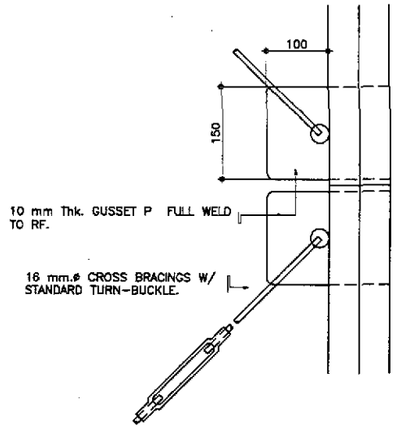


ELEVATION

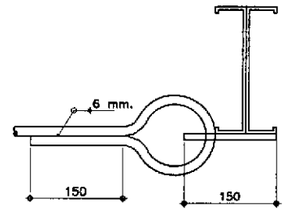


SECTION , SPLICE CONNECTION

2 / FA-12 — PURLIN CONNECTION
SCALE 1:5

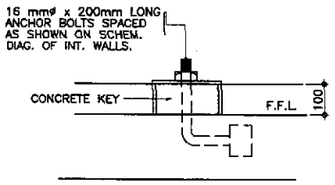


P L A N

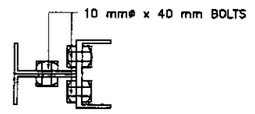


SECTION

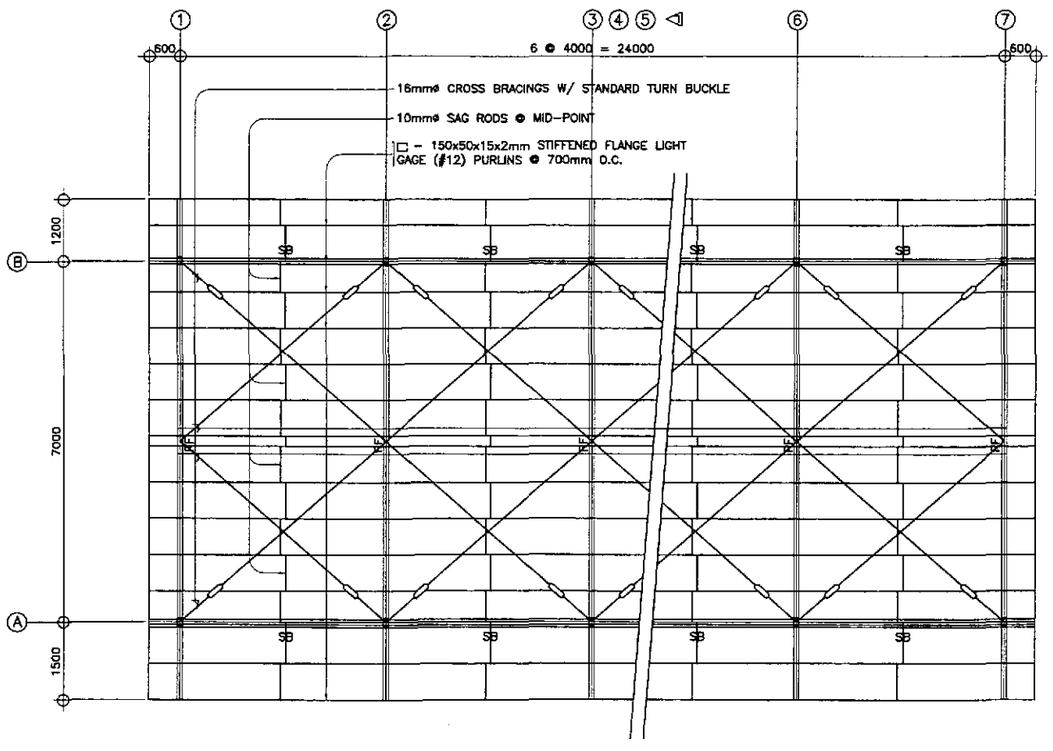
4 / FA-12 — CROSS-BRACING CONNECTION
SCALE 1:5



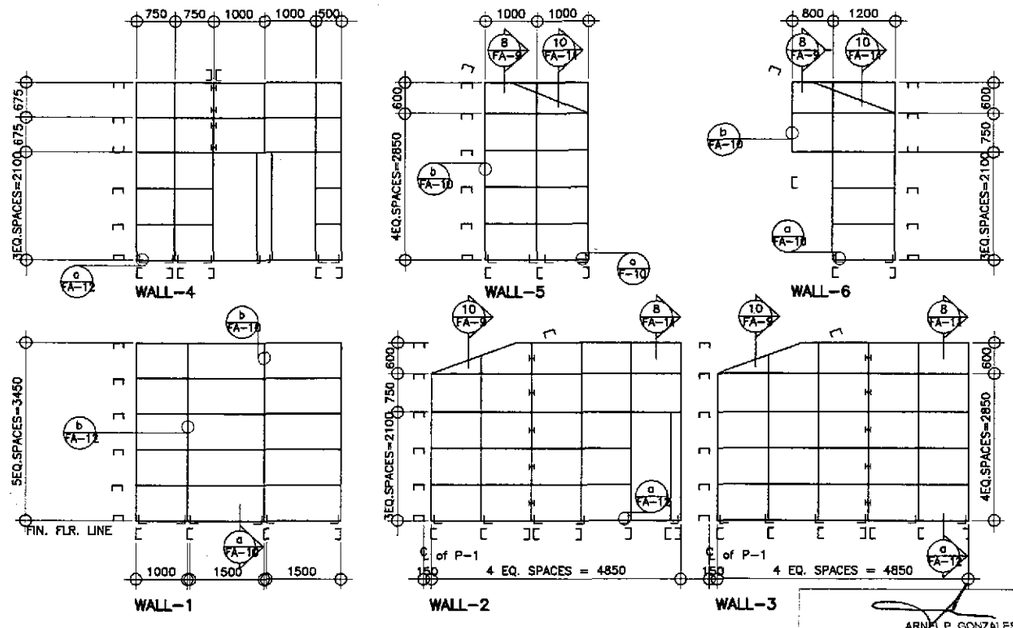
5 / FA-12 — DETAIL - a
SCALE 1:5



6 / FA-12 — DETAIL - b
SCALE 1:5



1 / FA-12 — ROOF FRAMING PLAN
SCALE 1:60



3 / FA-12 — SCHEMATIC DIAGRAMS OF INTERIOR WALLS
SCALE 1:60

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ENGINEER
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CHECKED	4/30/02	A. P. GONZALES
SUBMITTED	10/16/02	M. KIUCHI TEAM LEADER

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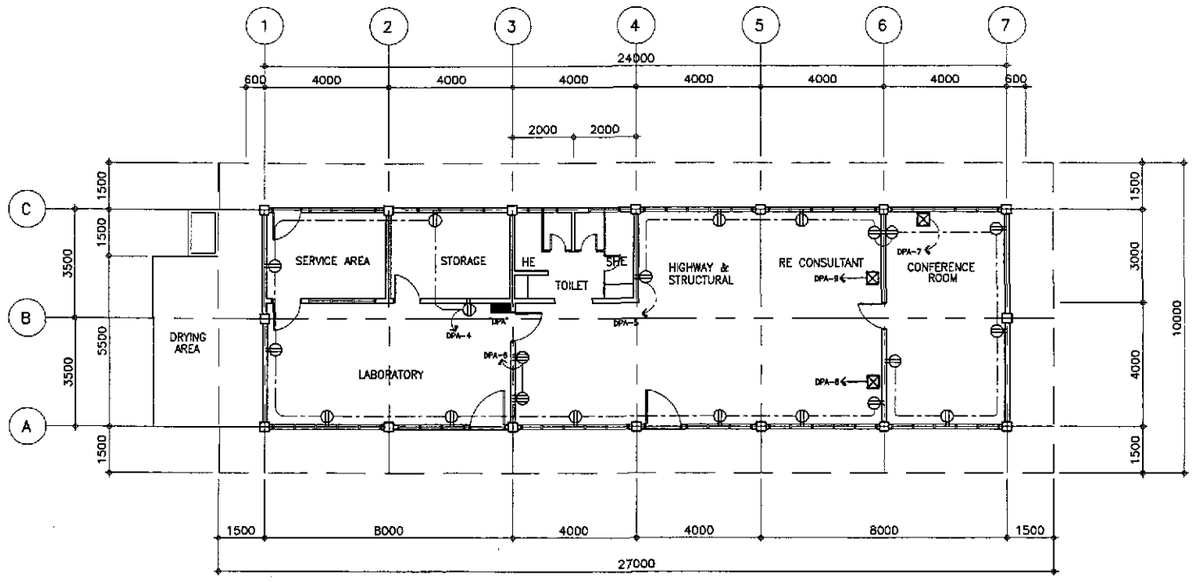
PLARIDEL BYPASS - CONTRACT PACKAGE IV

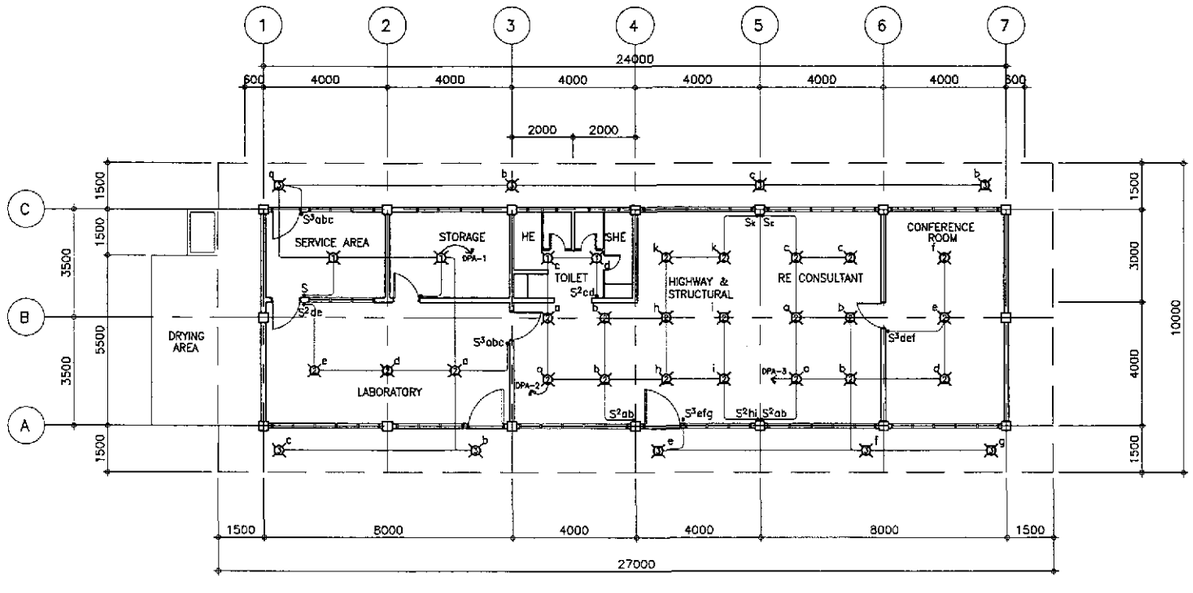
SCALE : AS SHOWN FULL SIZE A1

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

SHEET NO. : FA-12



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



2 / FE-01 LIGHTING LAYOUT OF THE ENGINEER'S FIELD OFFICE / LABORATORY
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 FLOOD LEVEL, UNLESS OTHERWISE NOTED.

   A. WALL SWITCHES .....1200 mm
   B. CONVENIENCE OUTLETS .....300 mm
   C. AIR CONDITIONING OUTLETS ....AT 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
- S^2 2 ONE–WAY WALL SWITCHES ON ONE–GANG PLATE, 15A, 250V
- S^3 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
- (m) 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. 2913
ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
T.I.N. 109–382–379

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

	DATE	SIGNATURE
DESIGNED	9/28/02	E.M. ANTIOQUIA
CHECKED	9/30/02	E.M. ANTIOQUIA
SUBMITTED	10/14/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

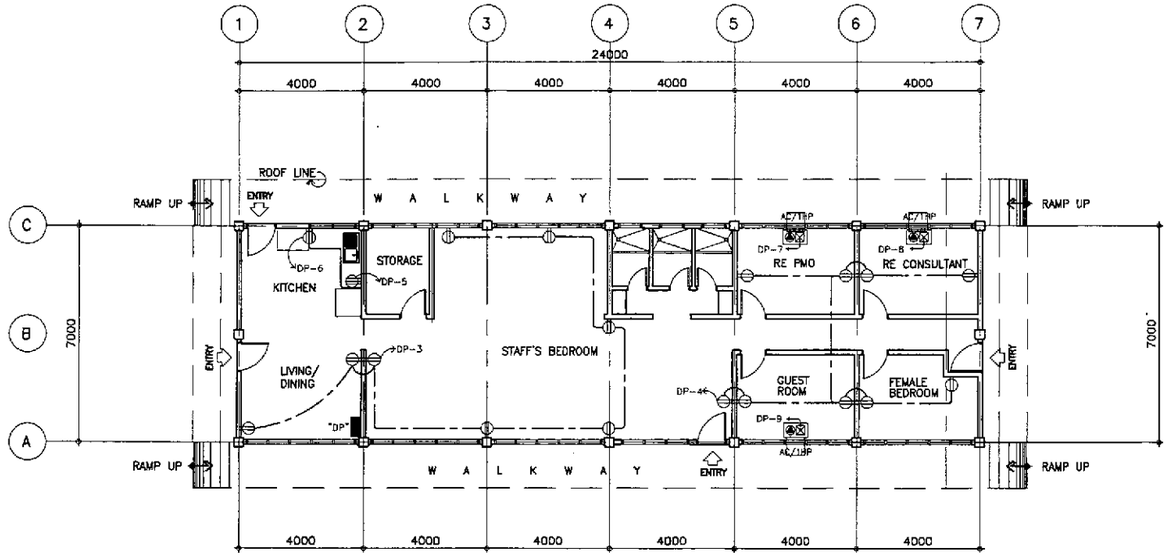
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	FE M. BARRIENTOS	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Mechanical–Elect'l Div.	OIC, Director IV	Undersecretary	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 IV

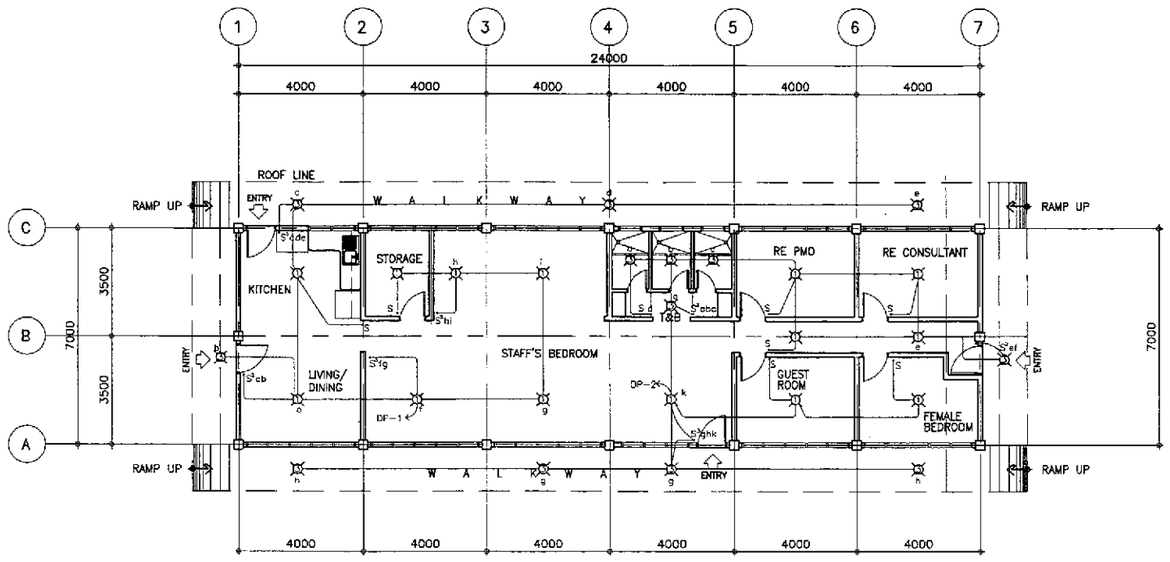
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGR'S FIELD OFFICE / LABORATORY
LIGHTING LAYOUT, POWER LAYOUT
ELECTRICAL SYMBOLS & GENERAL NOTES

SHEET NO. : FE-01



2 FE-02 **POWER LAYOUT FOR ENGINEER'S LIVING QUARTER**
SCALE 1:100



1 FE-02 **LIGHTING LAYOUT FOR ENGINEER'S LIVING QUARTER**
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 FLOOD LEVEL, UNLESS OTHERWISE NOTED.

   A. WALL SWITCHES .....1200 mm
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   C. AIR CONDITIONING OUTLETS ....AT 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.
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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
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S^3	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. 2913
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JICA
JAPAN INTERNATIONAL COOPERATION AGENCY
KEI KATAHIRA & ENGINEERS INTERNATIONAL
YEC YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	9/27/12	E.M. ANTIOQUIA
CHECKED	9/30/12	E.M. ANTIOQUIA
SUBMITTED	10/5/12	M. KAWACHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
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Project Director	Chief, Mechanical–Elect'l Div.	DIC, Director IV	Undersecretary	Secretary

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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 IV

SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S LIVING QUARTERS
LIGHTING LAYOUT, POWER LAYOUT
ELECTRICAL SYMBOLS & GENERAL NOTES

SHEET NO. : **FE-02**

SCHEDULE OF LOADS AND COMPUTATIONS

PANELBOARD "DP" — MAIN A.C.B. : 100AF,2P, 250V 100 AT, 18 KAIC W/SOLID NEUTRAL

CRT. NO.	LOAD DESCRIPTION	VA	RATING OF BRANCH BREAKER VOLTS	AF	P	AT	SIZE OF HOMERUN WIRES IN CONDUIT
1	LIGHT OUTLETS	455	220	50	2	15	2-3.5mm TW^2in 15mmøC
2	LIGHT OUTLETS	640	220	50	2	15	2-3.5mm TW^2in 15mmøC
3	CONVENIENCE OUTLET	1440	220	50	2	20	2-3.5mm TW^2in 15mmøC
4	CONVENIENCE OUTLET	1620	220	50	2	20	2-3.5mm TW^2in 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,1ϕ WDO,TYPE ACU	1980	220	50	2	30	2-5.5mm^2 THW+1-3.5mm^2 TW(G) IN 20mmøC
8	1hp,1ϕ WDO,TYPE ACU	1980	220	50	2	30	2-5.5mm^2 THW+1-3.5mm^2 TW(G) IN 20mmøC
9	1hp,1ϕ 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					

Iv @ 90% D.F. = $\frac{18095}{220}$ (0.90)+0.25(8)= 76.03 Amps

$I_B = \frac{18095}{220}$ (0.90)+1.5(8)= 86.03 Amps

MAIN ACB: 100AF,2P,250 V,100AT,15KAIC

USE : 2-38mm^2 THW + 1-14mm^2 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

PANELBOARD "DPA" — MAIN A.C.B. : 225AF,2P, 250V 200 AT, 18 KAIC W/SOLID NEUTRAL

CRT. NO.	LOAD DESCRIPTION	VA	RATING OF BRANCH BREAKER VOLTS	AF	P	AT	SIZE OF HOMERUN WIRES IN CONDUIT
1	LIGHT OUTLETS	590	220	50	2	15	2-3.5mm TW^2in 15mmøC
2	LIGHT OUTLETS	1210	220	50	2	15	2-3.5mm TW^2in 15mmøC
3	LIGHT OUTLETS	1065	220	50	2	15	2-3.5mm TW^2in 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	PHOTOCOPY 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 PERIMETER 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					

Iv @ 95% D.F. = $\frac{37575(0.95)}{220}$ +0.25(23)= 168 Amps

USE : 2-100mm^2 THW + 1-30mm^2 TW IN 50mmø RSC

I_B=162.25567+1.5(23)=196.75 Amps.

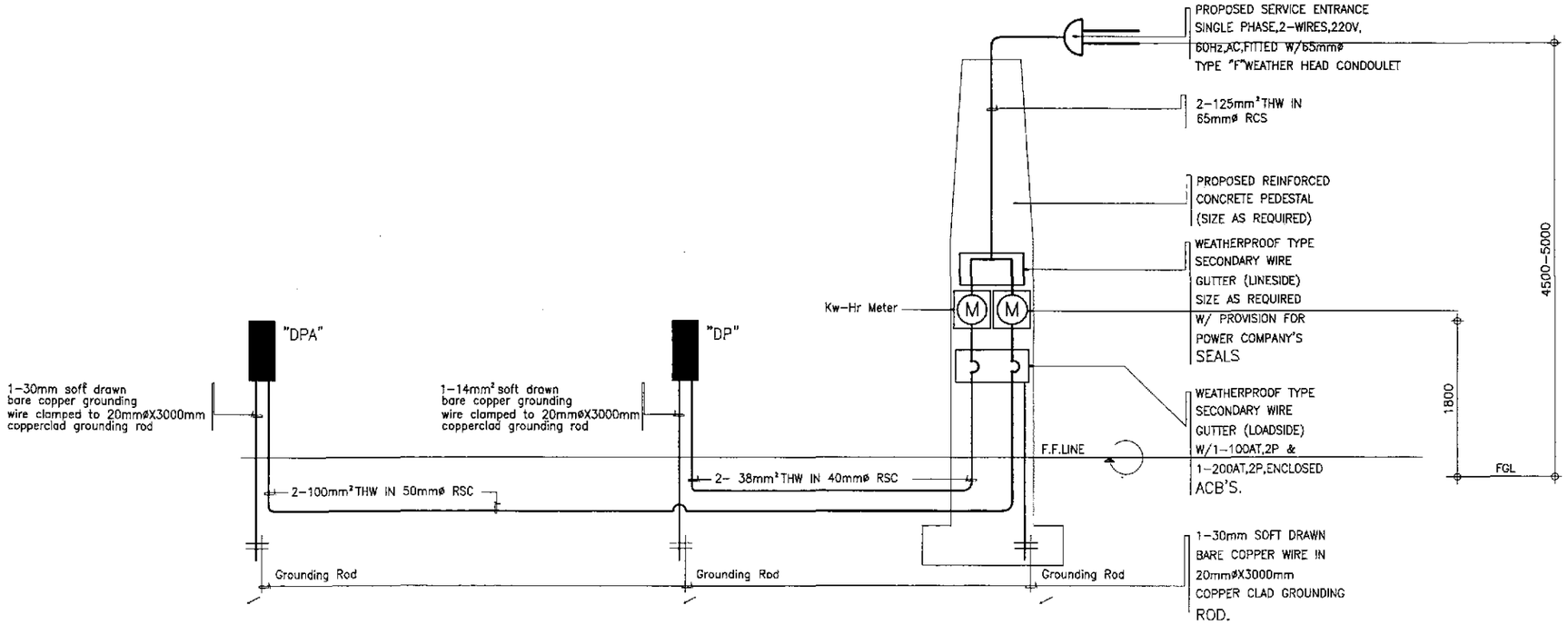
MAIN ACB: 225AF,2P,250 V,200AT,18 KAIC

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



1 / FE-03 ELECTRICAL RISER DIAGRAMS
NOT TO SCALE

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 Amps.

USE : 2-125 mm^2 THW IN 65 mmø RSC

ERNESTO M. ANTIOQUIA
ENGINEER

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

	DATE	SIGNATURE
DESIGNED	9/28/01	E.M. ANTIOQUIA
CHECKED	9/28/01	E.M. ANTIOQUIA
SUBMITTED	10/16/01	M. SUDA TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
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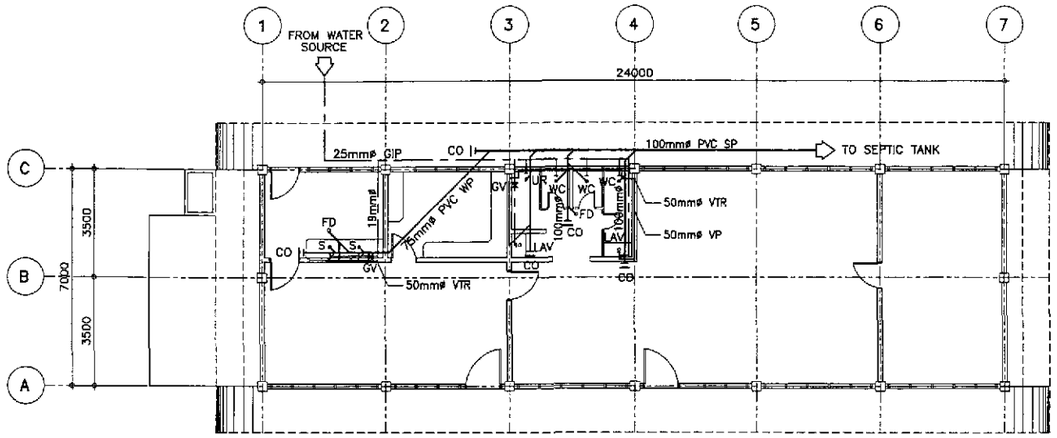
PLARIDEL BYPASS - CONTRACT PACKAGE IV

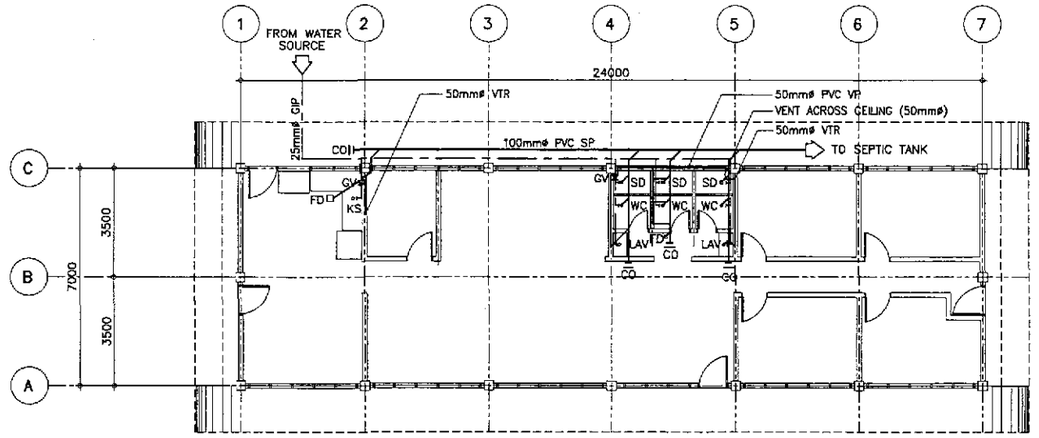
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S FIELD OFFICE AND LIVING QUARTERS
SCHEDULE OF LOADS AND COMPUTATIONS
ELECTRICAL RISER DIAGRAM

SHEET NO. : FE-03



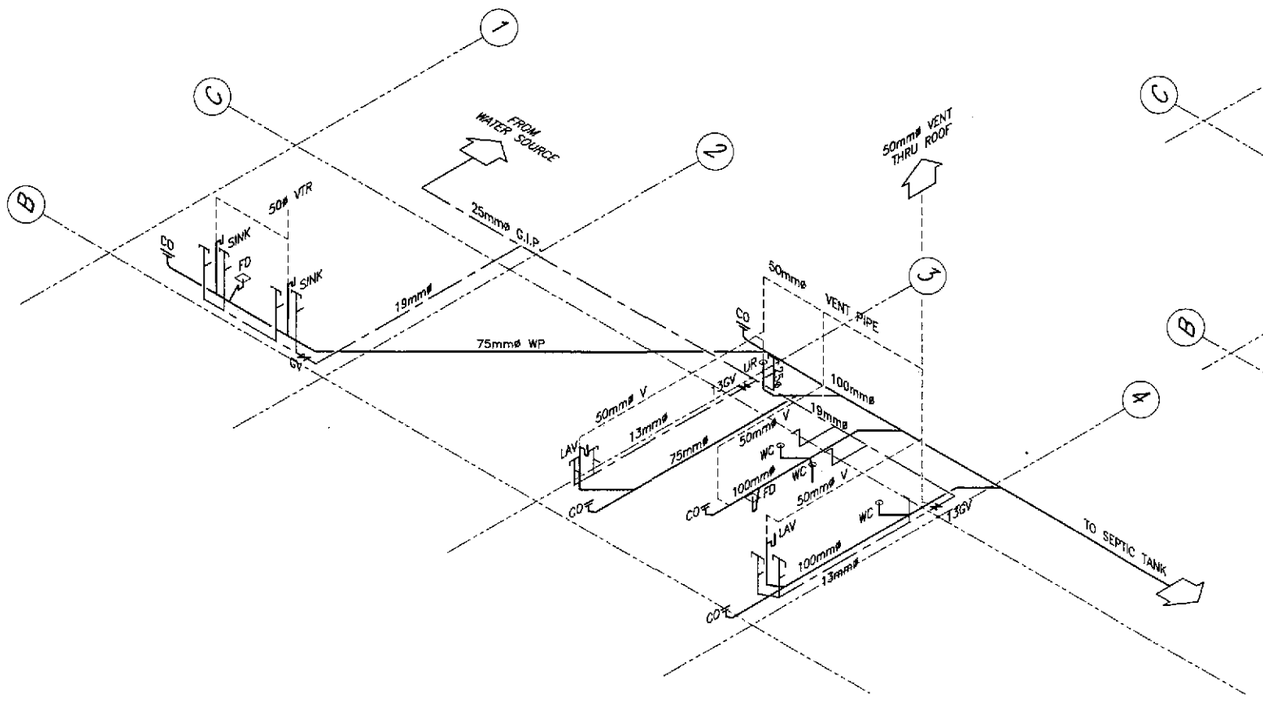
1 FP-01 ENGINEER'S FIELD OFFICE
SEWER AND WATER LINE LAYOUT
SCALE 1:100



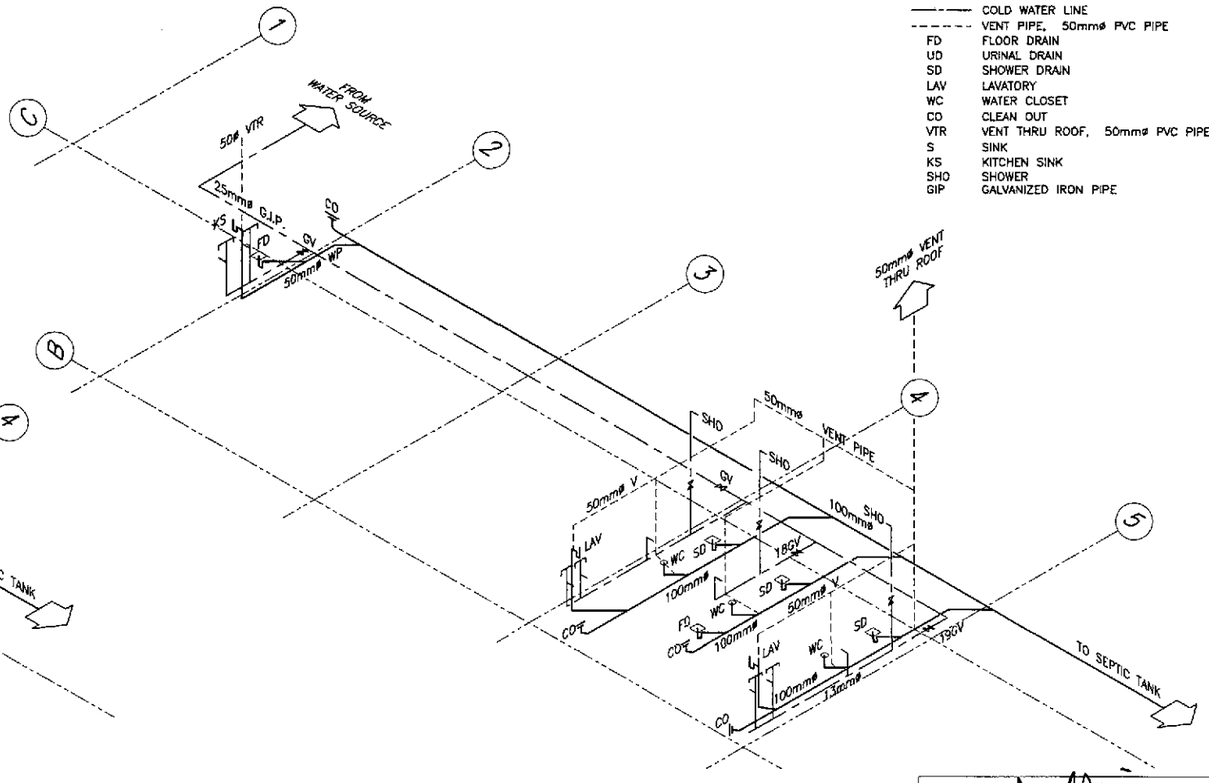
2 FP-01 ENGINEER'S LIVING QUARTER
SEWER AND WATER LINE LAYOUT
SCALE 1:100

LEGEND :

———	SEWER LINE
—·—·—	COLD WATER LINE
- - - - -	VENT PIPE, 50mmø PVC PIPE
FD	FLOOR DRAIN
UD	URINAL DRAIN
SD	SHOWER DRAIN
LAV	LAVATORY
WC	WATER CLOSET
CO	CLEAN OUT
VTR	VENT THRU ROOF, 50mmø 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

FAUSTINO A. STA. MARIA
SANITARY ENGINEER

PTR. NO. 0083138 P.R.C. NO. 0000695
ISSUED ON 03/26/2002 T.I.N. 119-878-225
ISSUED AT SAN MATEO, RIZAL

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

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DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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CHECKED	9/30/02		DANILO C. TRAJANO	EMMANUEL P. CUNTAPAY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
SUBMITTED	10/14/02		Project Director	Chief, Architectural Division	OIC, Director IV	Undersecretary	Secretary

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SHEET CONTENTS :
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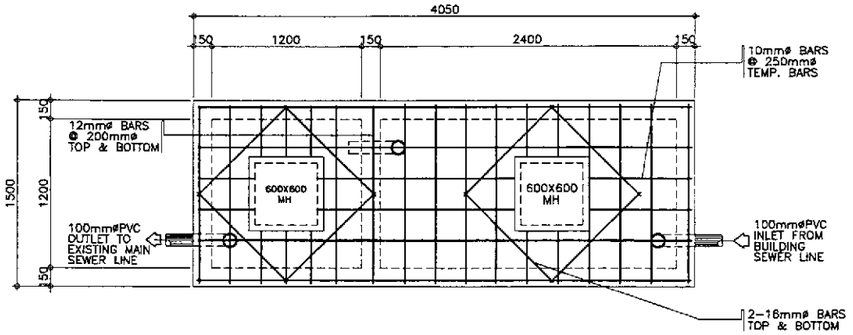
SEWER AND WATER LINE LAYOUT AND ISOMETRIC DIAGRAM

SHEET NO. : FP-01



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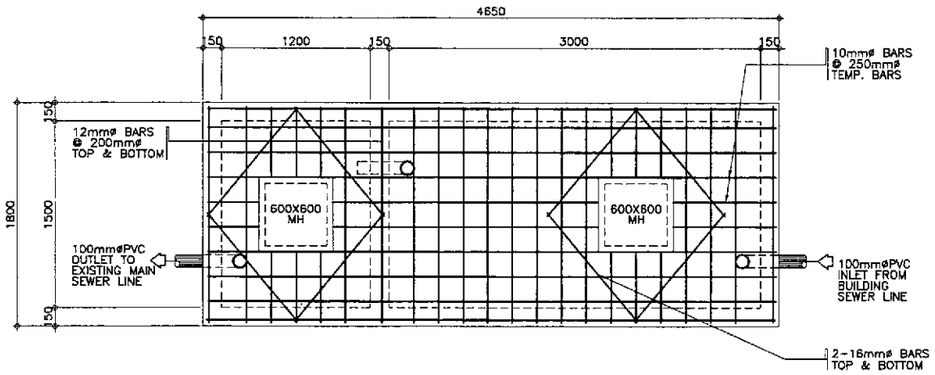
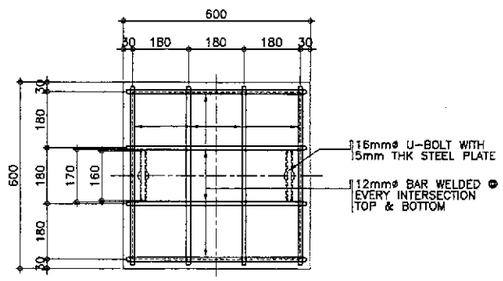
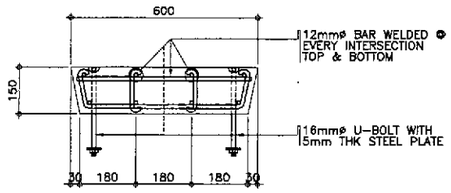


1C FP-02 PLAN SCALE 1:20

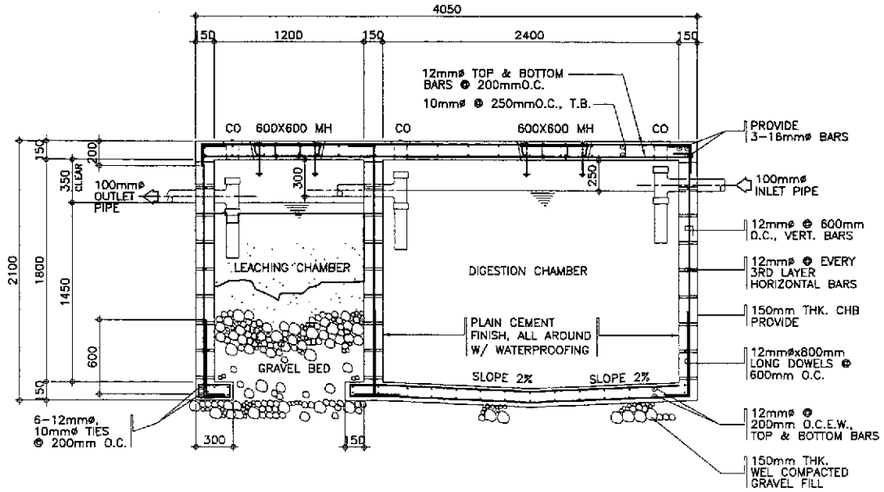


2A FP-02 PLAN SCALE 1:20



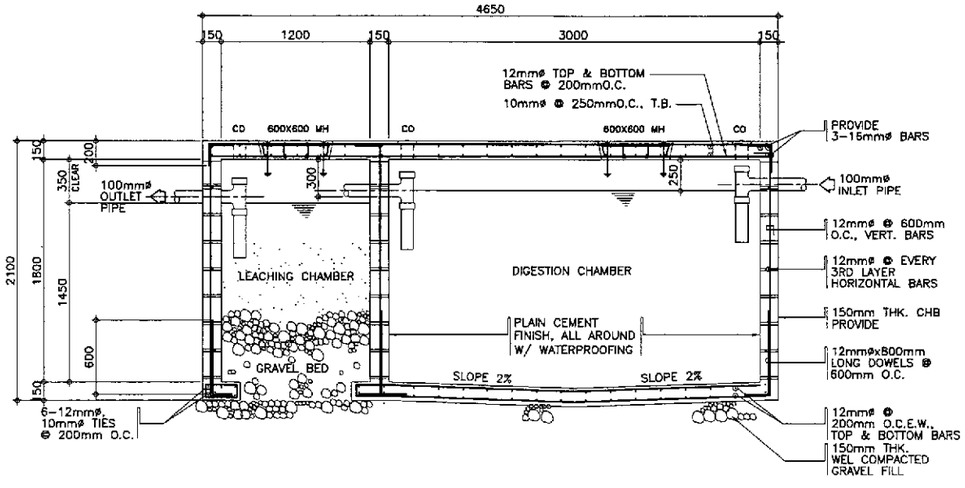
2B FP-02 SECTION SCALE 1:20

2 FP-02 CONCRETE COVER DETAIL SCALE AS SHOWN



1B FP-02 SECTION SCALE 1:20

ENGINEER'S FIELD OFFICE



1D FP-02 SECTION SCALE 1:20

ENGINEER'S LIVING QUARTER

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 BURRIED 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 75mmø (3") UNLESS OTHERWISE SPECIFIED.

1 FP-02 SEPTIC TANK DETAILS SCALE AS SHOWN

FAUSTINO [illegible] SANITARY ENGINEER

PTR. NO. 0083138 P.R.C. NO. 0000695
ISSUED ON 03/26/2002 T.I.N. 119-878-225
ISSUED AT SAN MATEO, RIZAL

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

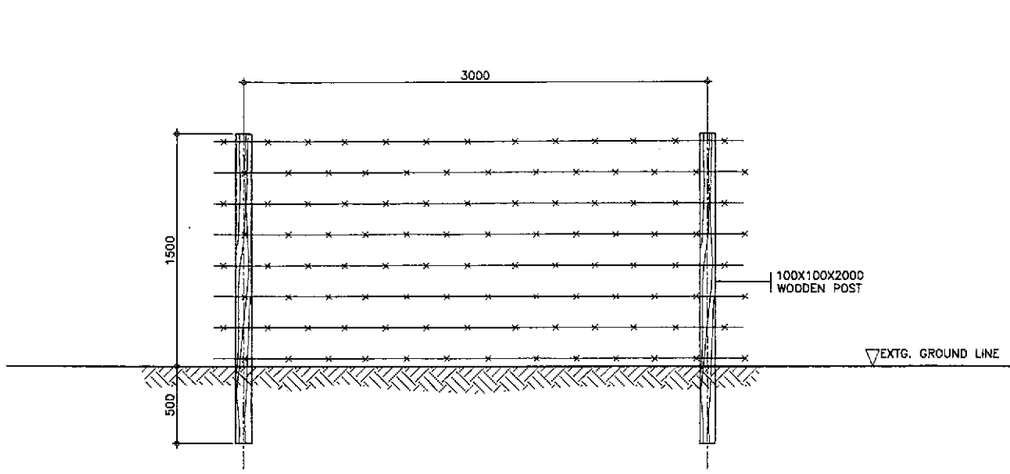
KEI KATAHIRA & ENGINEERS INTERNATIONAL — YEC YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	9/28/02	
CHECKED	9/30/02	
SUBMITTED	10/16/02	TEAM LEADER

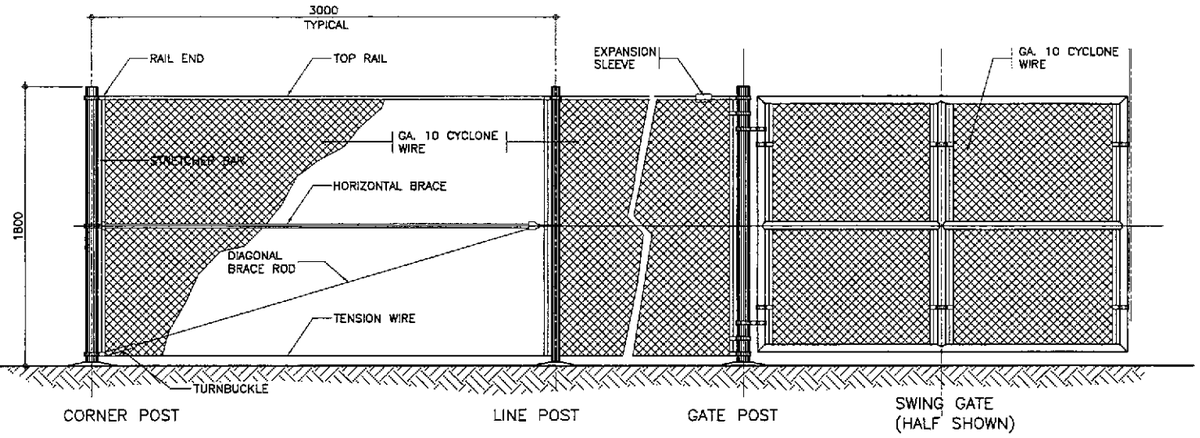
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	EMMANUEL P. CUNTAPAY	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG
Project Director	Chief, Architectural Division	OIC, Director IV	Undersecretary	Secretary

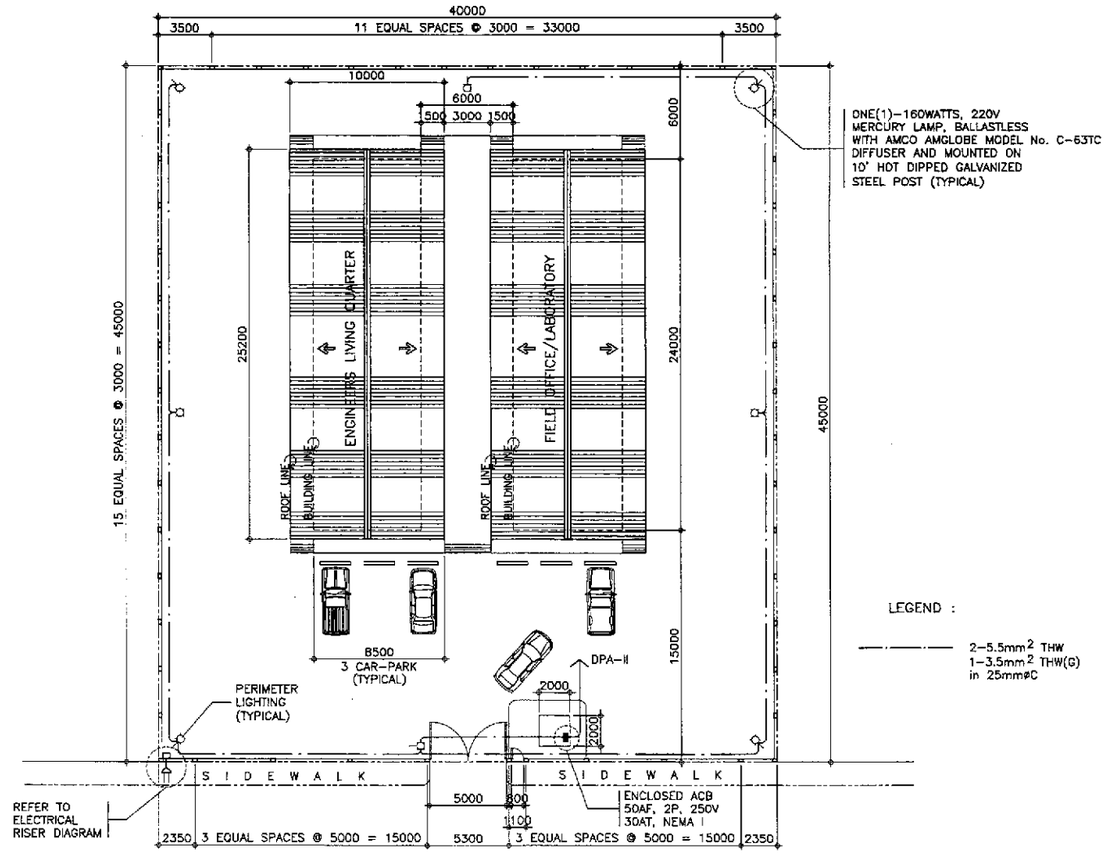
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE IV	AS SHOWN FULL SIZE A1	ENGINEER'S FIELD OFFICE AND LIVING QUARTERS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



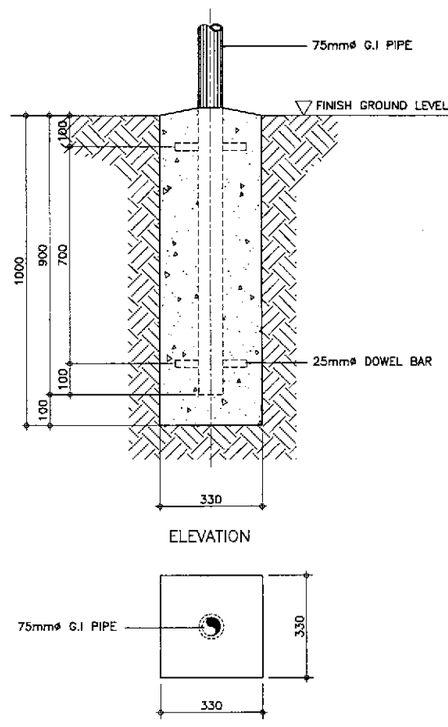
3 FX-01 **TYPICAL ELEVATION FENCE (REAR & SIDE)**
SCALE 1:20

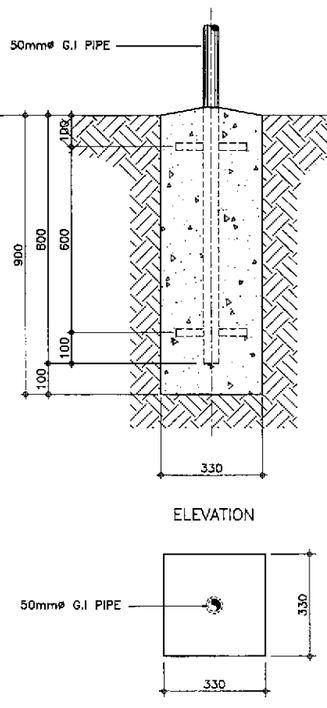


2 FX-01 **TYPICAL ELEVATION - FENCE AND GATE**
SCALE 1:20



1 FX-01 **PLOT PLAN**
SCALE 1:200





4 FX-01 **TYPICAL FOUNDATION DETAIL**
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.

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

	DATE	SIGNATURE
DESIGNED	04/26/02	A. P. GONZALES
CHECKED	04/26/02	A. P. GONZALES
SUBMITTED	04/26/02	M. KOCHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
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PLARIDEL BYPASS - CONTRACT PACKAGE IV

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