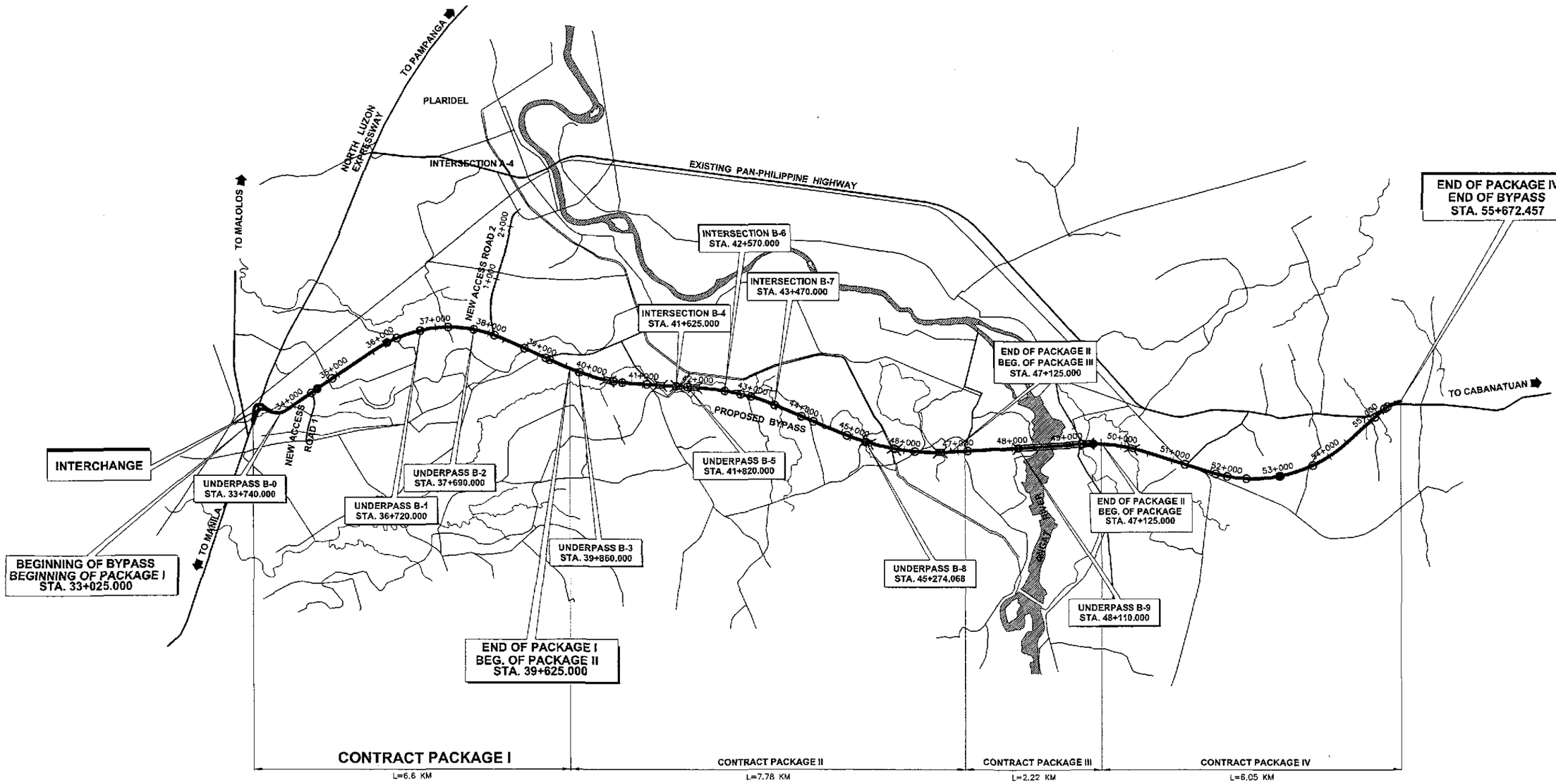
UNDERPASS CROSSING (BOX CULVERT)

LEGEND:

- ○ Intersection Type A (At grade)
- ⊕ Intersection Type B (Underpass)
- ● Intersection Type C (Only access to frontage roads)
- Bridge



A / UP-01 SITE DEVELOPMENT PLAN - UNDERPASSES ALONG BYPASS

SCALE 1:40,000

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

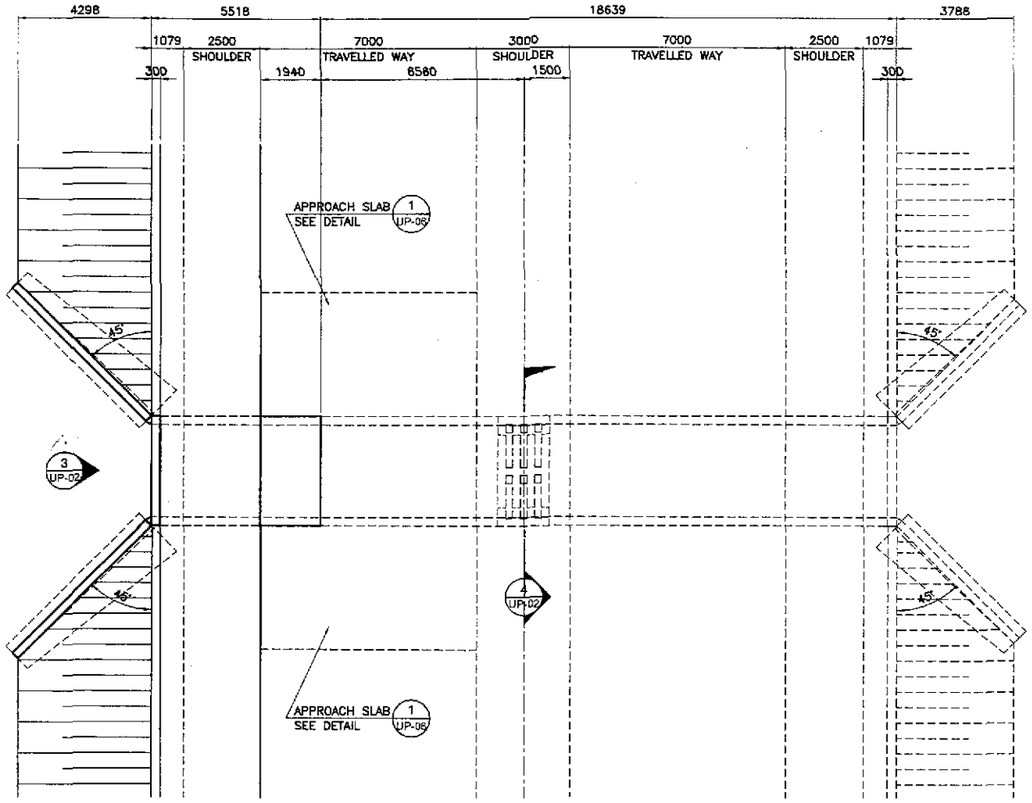
KATAHIRA & ENGINEERS INTERNATIONAL
YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	9/19/02	A. CHAUDHRY
CHECKED	9/21/02	A. HAKIM
SUBMITTED	9/20/02	TEAM LEADER

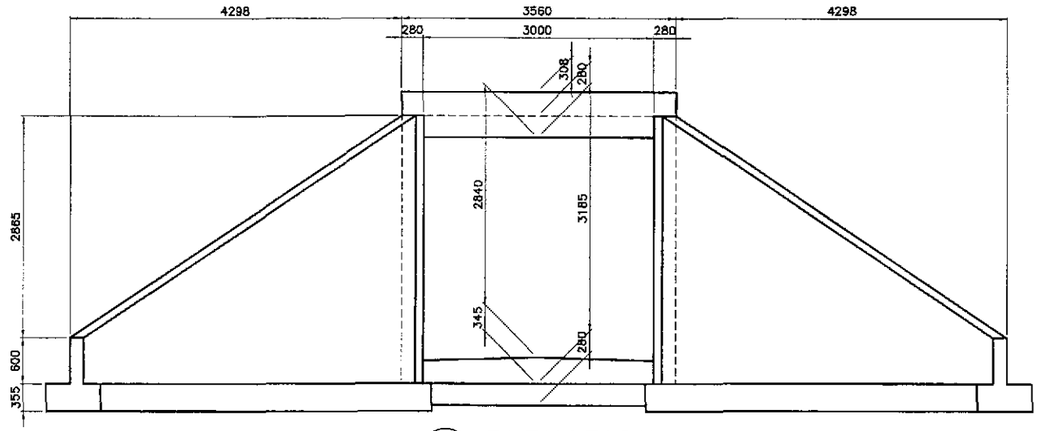
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL – FMO	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	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG
Project Director	Chief, Highways 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)	1:40,000	SITE DEVELOPMENT PLAN UNDERPASSES ALONG BYPASS	UP-01
PLARIDEL BYPASS - CONTRACT PACKAGE I	FULL SIZE A1		



1 UP-02 GENERAL PLAN
SCALE 1:100



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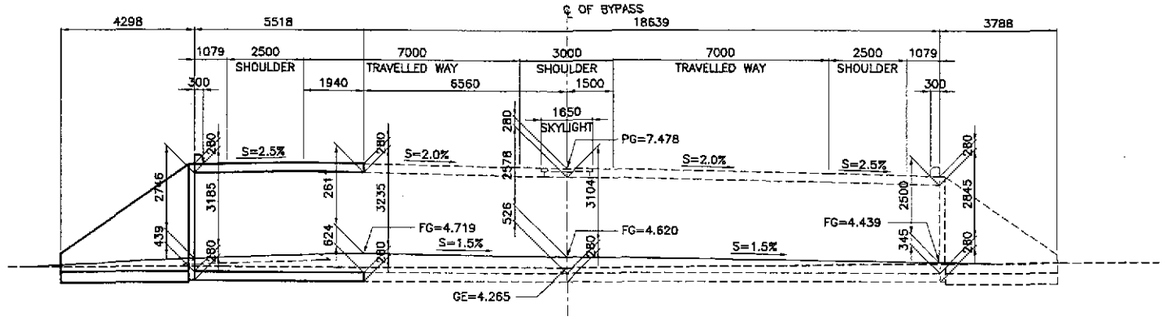
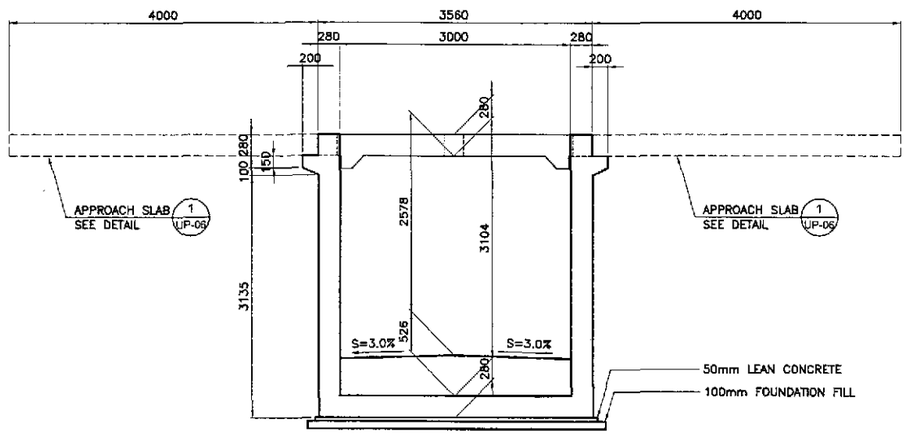
SCALE 1:40



2 UP-02 GENERAL ELEVATION
SCALE 1:100



4 UP-02 SECTION
SCALE 1:40

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL YACHIYO ENGINEERING CO., LTD.			REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				
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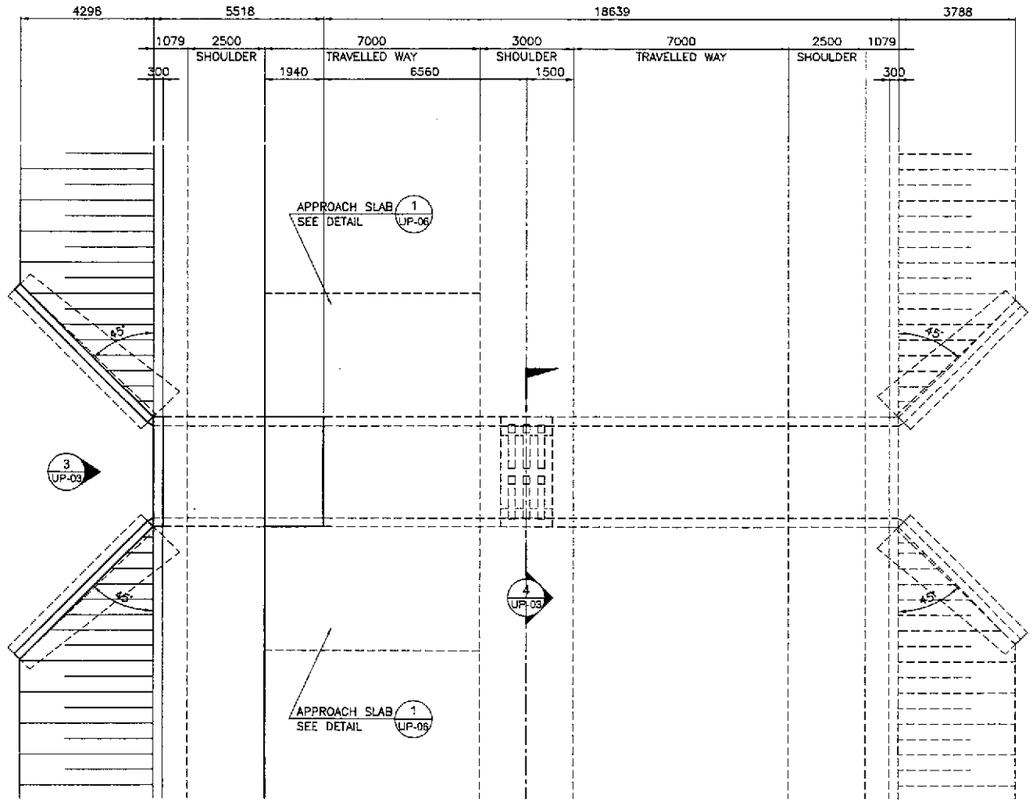
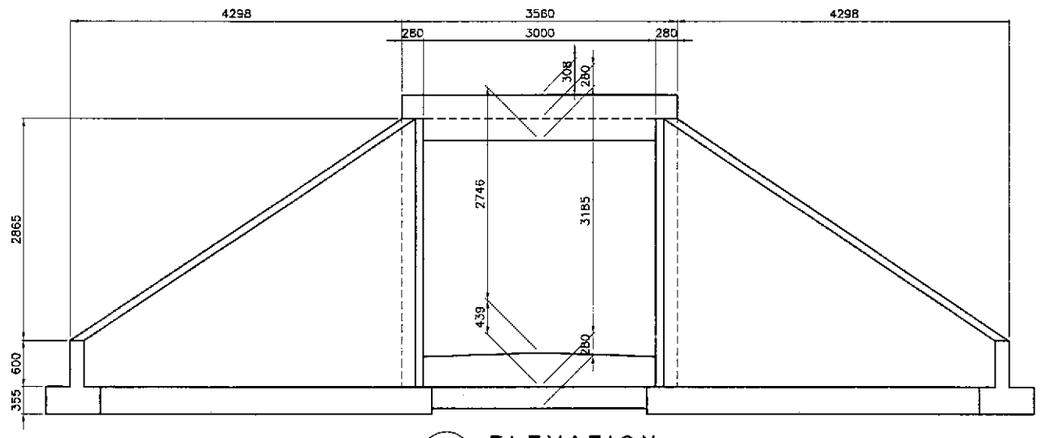
DESIGNED	9/19/02		Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
CHECKED	9/21/02		DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONOAN Undersecretary	SIMEON A. DATUMANONG Secretary
SUBMITTED	9/23/02	M. KIUCHI TEAM LEADER					

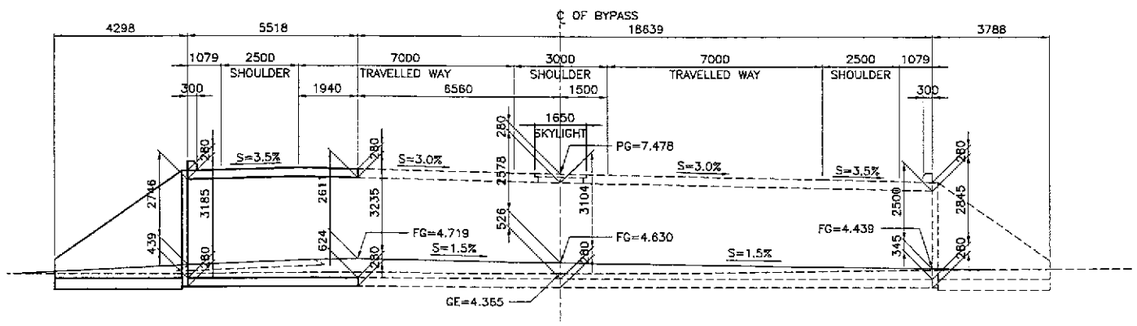
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE I	AS SHOWN FULL SIZE A1	BOX CULVERT GENERAL PLAN, ELEVATION & SECTION (ULTIMATE STAGE) B-1 (STA. 36+720.00)	UP-02



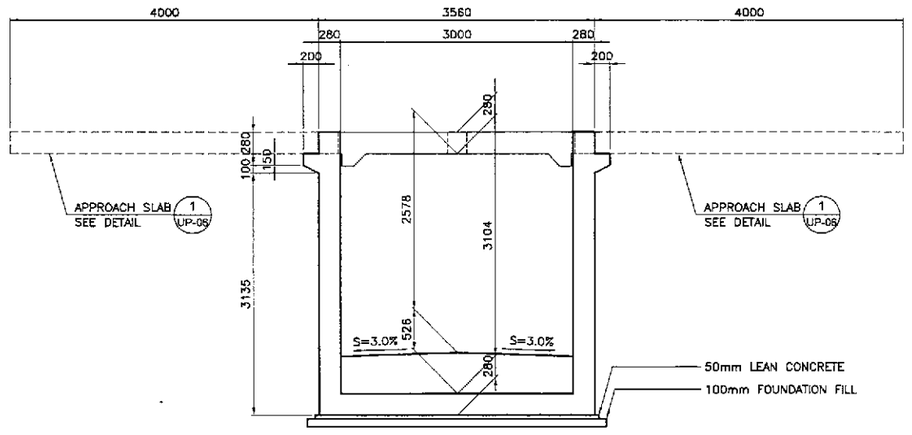
1 / UP-03 GENERAL PLAN
SCALE 1:100



3 / UP-03 ELEVATION
SCALE 1:40



3 / UP-03 GENERAL ELEVATION
SCALE 1:100



4 / UP-03 SECTION
SCALE 1:40

JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL

YACHIYO ENGINEERING CO., LTD.

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REPUBLIC OF THE PHILIPPINES
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Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary

PROJECT AND LOCATION :
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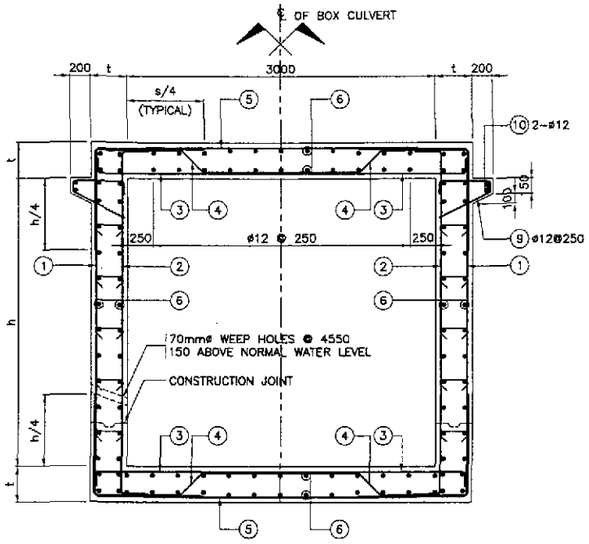
PLARIDEL BYPASS - CONTRACT PACKAGE I

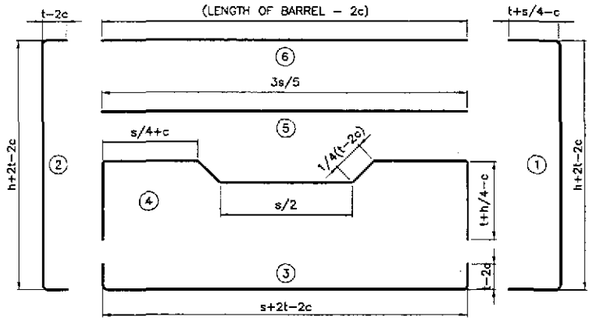
SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BOX CULVERT
GENERAL PLAN, ELEVATION & SECTION
(ULTIMATE STAGE)
B-2 (STA. 37+690.00)

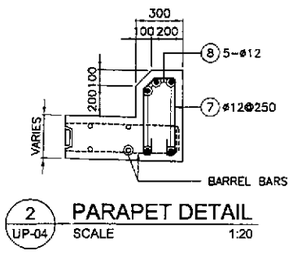
SHEET NO. : UP-03



1 UP-04 SECTION - SINGLE BARREL
NOT TO SCALE



3 UP-04 BAR BENDING DIAGRAM - SINGLE BARREL
NOT TO SCALE

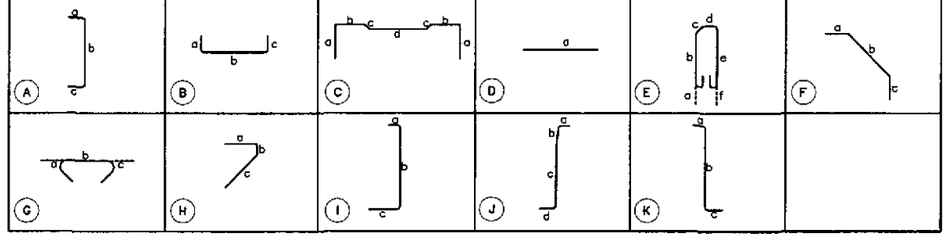


2 UP-04 PARAPET DETAIL
SCALE 1:20

BAR SCHEDULE SINGLE BARREL BOX CULVERT

NAME	S	h	t	BAR 1		BAR 2		BAR 3		BAR 4		BAR 5		BAR 6		BAR 7		REMARKS
	SPAN	HEIGHT	THICKNESS	ø	SPACING	ø	SPACING	ø	SPACING	ø	SPACING	ø	SPACING	ø	SPACING	ø	SPACING	
B-1	3000	3200	280	16	200	16	180	16	200	16	200	13	200	12	250	-	-	FLUSHED TO ROADWAY
B-2	3000	3200	280	16	200	16	180	16	200	16	200	12	200	12	250	-	-	FLUSHED TO ROADWAY

BAR BENDING DIAGRAM



SCHEDULE OF REINFORCEMENTS (B1 - STA. 36+700.000)

STRUCTURE COMMENT	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) a	b	c	d	e	f	LENGTH EA. BAR	TOTAL LENGTH	UNIT WT. (KG/M)	WEIGHT IN (KG)	VOLUME OF CONC. (m^3)
BARREL L=5.818m.	1	16	60	200	A	980	3562	980	-	-	-	5522	331.34	1.579	524	22.53
	2	16	64	180	A	180	3562	180	-	-	-	3922	251.02	1.579	397	
	3	16	60	200	B	180	3460	180	-	-	-	3820	229.2	1.579	362	
	4	16	58	200	C	1006	800	255	1500	-	-	5620	325.97	1.579	515	
	5	12	60	200	D	2000	-	-	-	-	-	2000	120	0.888	107	
	6	12	120	250	D	5718	-	-	-	-	-	5718	686.16	0.888	610	
	7	12	30	250	E	114	380	71	150	480	114	1309	39.26	0.888	35	
	8	12	10	AS DWG	D	3460	-	-	-	-	-	3460	34.6	0.888	31	
	9	12	58	250	H	430	70	608	-	-	-	1108	64.27	0.888	58	
	10	12	4	AS DWG	D	6900	-	-	-	-	-	6900	27.6	0.888	25	
WINGWALLS (h+t)=3.382m.	W1	12	4	AS DWG	D	600	7665	-	-	-	-	8265	33.06	0.888	30	17.03
	W2	12	22	300	D	3767 (one)	-	-	-	-	-	3767	82.86	0.888	74	
	W3a	25	26	200	I	1195	3033 (one)	150	-	-	-	4378	113.82	3.854	439	
	W3b	16	16	250	I	735	1989 (one)	150	-	-	-	2874	45.99	1.579	73	
	W3c	12	8	350	I	685	1178 (one)	150	-	-	-	2013	16.1	0.888	15	
	W4	12	44	300	I	203	2221 (one)	150	-	-	-	2574	113.26	0.888	101	
	W5a	25	12	400	D	1801 (one)	-	-	-	-	-	1801	21.62	3.854	84	
	W5b	16	16	250	D	1220 (one)	-	-	-	-	-	1220	19.51	1.579	31	
	W5c	12	8	350	D	818 (one)	-	-	-	-	-	818	6.54	0.888	6	
	W6	12	14	AS DWG	D	6628	-	-	-	-	-	6628	92.79	0.888	83	
													GRAND TOTAL =		3600 KG	39.6

SCHEDULE OF REINFORCEMENTS (B2 - STA. 37+690.000)

STRUCTURE COMMENT	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) a	b	c	d	e	f	LENGTH EA. BAR	TOTAL LENGTH	UNIT WT. (KG/M)	WEIGHT IN (KG)	VOLUME OF CONC. (m^3)
BARREL L=5.818m.	1	16	60	200	A	980	3562	980	-	-	-	5522	331.34	1.579	524	22.53
	2	16	64	180	A	180	3562	180	-	-	-	3922	251.02	1.579	397	
	3	16	60	200	B	180	3460	180	-	-	-	3820	229.20	1.579	362	
	4	16	58	200	C	1006	800	255	1500	-	-	5620	325.97	1.579	515	
	5	12	60	200	D	2000	-	-	-	-	-	2000	120.00	0.888	107	
	6	12	120	250	D	5718	-	-	-	-	-	5718	686.16	0.888	610	
	7	12	30	250	E	114	380	71	150	480	114	1309	39.26	0.888	35	
	8	12	10	AS DWG	D	3460	-	-	-	-	-	3460	34.6	0.888	31	
	9	12	58	250	H	430	70	608	-	-	-	1108	64.27	0.888	58	
	10	12	4	AS DWG	D	6900	-	-	-	-	-	6900	27.6	0.888	25	
WINGWALLS (h+t)=3.382m.	W1	12	4	AS DWG	D	600	7665	-	-	-	-	8265	33.06	0.888	30	17.03
	W2	12	22	300	D	3767 (one)	-	-	-	-	-	3767	82.86	0.888	74	
	W3a	25	26	200	I	1195	3033 (one)	150	-	-	-	4378	113.82	3.854	439	
	W3b	16	16	250	I	735	1989 (one)	150	-	-	-	2874	45.99	1.579	73	
	W3c	12	8	350	I	685	1178 (one)	150	-	-	-	2013	16.1	0.888	15	
	W4	12	44	300	I	203	2221 (one)	150	-	-	-	2574	113.26	0.888	101	
	W5a	25	12	400	D	1801 (one)	-	-	-	-	-	1801	21.62	3.854	84	
	W5b	16	16	250	D	1220 (one)	-	-	-	-	-	1220	19.51	1.579	31	
	W5c	12	8	350	D	818 (one)	-	-	-	-	-	818	6.54	0.888	6	
	W6	12	14	AS DWG	D	6628	-	-	-	-	-	6628	92.79	0.888	83	
													GRAND TOTAL =		3600 KG	39.6

DESIGN NOTES :

SPECIFICATIONS:
DESIGN:
BRIDGE DESIGN SPECIFICATION (1992 AASHTO SPECIFICATIONS)

LOAD FACTORS:
1.5 D 1.5 E + 2.5 (L + I)
1.3 (D + 1.67 LL + 1.00 E)
1.3 (D + 1.67 LL + 0.50 E)

WHERE:
D - DEAD LOAD
E - EARTH LOAD
L - LIVE LOAD
I - IMPACT
CAPACITY REDUCTION FACTOR IS INCLUDED.

LOADING:
LIVE LOAD:
HS20-44 TRUCK
APPLY IMPACT ONLY TO THE ROOF SLAB.

EARTH COVER (mm)	IMPACT (%)
Up to 300	30
301 to 600	20
601 to 900	10
Over 900	0

NO SURCHARGE ON WALL DUE TO LIVE LOAD.

EARTH LOAD:
EARTH PRESSURE FOR CONDITIONS:
18.8 KPa/m VERTICAL
9.4 KPa/M HORIZONTAL

UNIT STRESSES:
f'c = 28 MPa
fy = 276 MPa

DISTRIBUTION "d" BARS:
UP TO AND INCLUDING 3.0M COVER EXPRESSED AS A PERCENT OF MAIN POSITIVE REINFOCEMENT REQUIRED:
$\frac{55}{\sqrt{S}}$, MAX. 50%

OVER 3.0 COVER
#12 @ 450 mm MAXIMUM.

SHEAR:
MAXIMUM ALLOWABLE SHEAR, y = $0.291\sqrt{f'c}$ MPa

EXCLUSIONS:
COMPRESSIVE REINFORCEMENT AND NEGATIVE-MOMENT REDUCTION (FOR CONTINUITY) DO NOT APPLY.
AXIAL LOADING ON MEMBERS HAS NOT BEEN CONSIDERED.

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

	DATE	SIGNATURE
DESIGNED	9/6/02	TEAM LEADER
CHECKED	9/6/02	CHIEF, PJHL
SUBMITTED	9/20/02	TEAM LEADER

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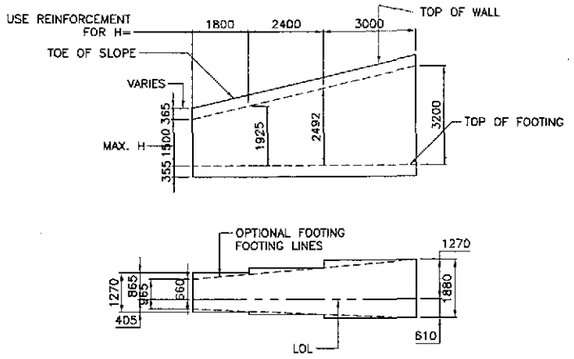
PLARIDEL BYPASS - CONTRACT PACKAGE I

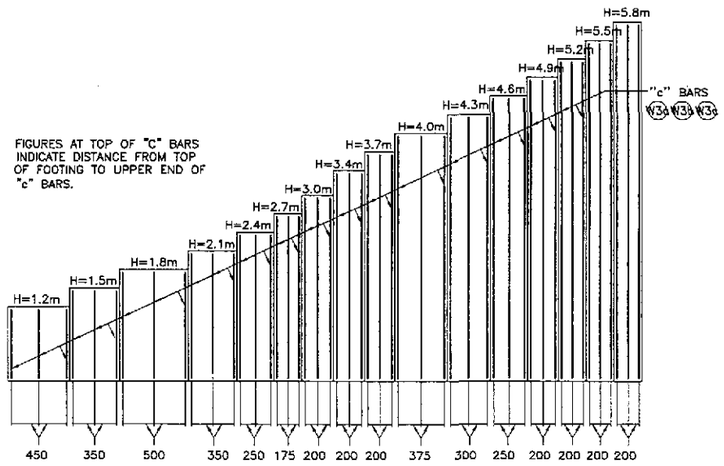
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS : BOX CULVERT BARREL DETAILS (ULTIMATE STAGE)

SHEET NO. : UP-04



1 UP-05 **TYPICAL LAYOUT EXAMPLE**
SCALE 1:100



REINFORCED CONCRETE WINGWALLS																
H	1200	1500	1800	2100	2400	2700	3000	3400	3700	4000	4300	4600	4900	5200	5500	5800
W	965	1120	1270	1420	1575	1730	1880	2030	2185	2335	2490	2640	2795	2945	3050	3150
C	305	355	405	455	510	560	610	660	710	760	815	865	915	965	1015	1065
B	660	765	865	965	1065	1170	1270	1370	1475	1575	1675	1775	1880	1980	2035	2085
F	355	355	355	355	355	355	355	355	355	355	355	355	355	355	355	355
Batter	None	None	None	None	None	None	None	None	None	1:25	1:25	1:25	1:25	1:25	1:26	1:27
S	305	305	305	305	305	305	305	305	305	465	475	490	500	500	500	500
"c" Bars	12@450	12@350	12@275	16@350	16@250	16@175	20@200	25@200	25@200	32@375	32@300	32@250	32@200	32@175	32@200	32@200
"d" Bars	12@450	12@350	12@275	16@350	16@250	20@350	25@400	25@400	25@400	25@375	25@300	25@250	25@200	25@175	28@200	28@200

NOTES

UNIT STRESSES: f_c =165 MPa, f =9 MPa, n=10

MAXIMUM TOE PRESSURE = 150 kPa

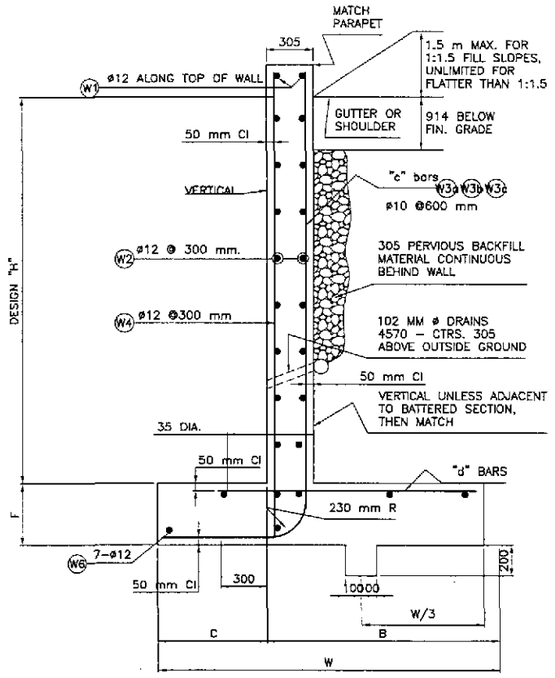
ELEVATIONS, LENGTH AND ANGLE OF FLARE OF WINGS MAY BE VARIED BY THE ENGINEER TO SUIT CONDITIONS ENCOUNTERED IN THE FIELD. WALLS DESIGNED FOR 600 mm LIVELOAD SURCHARGE, 1 : 1.5 SLOPING SURCHARGE NOT TO EXCEED 1.5 m IN ELEVATION PLUS 600 mm LIVELOAD SURCHARGE, OR UNLIMITED 1:2 SURCHARGE

DIMENSIONS "H", "L","M","N", ELEVATION "a" AND "ANGLE OF FLARES" (AS APPLY) ARE SHOWN ON THE PLANS

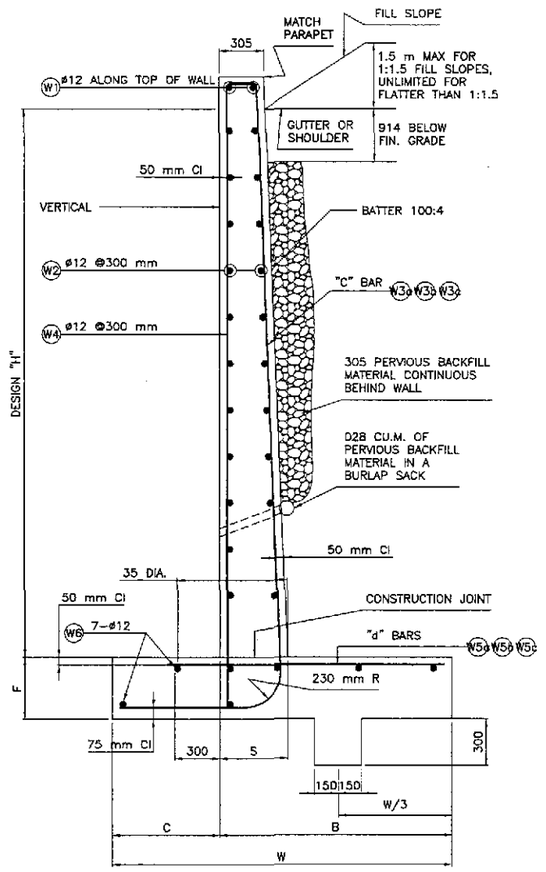
WALL HEIGHT MAY BE EXCEEDED BY 150 mm BEFORE GOING TO NEXT GREATER "H".

ELIMINATE CUTOFF WALL IF ADJACENT CHANNEL IS PAVED AND SKEW IS 20°MAXIMUM

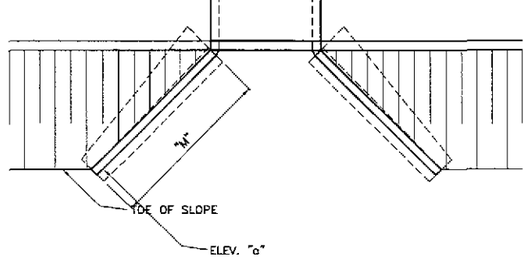
FOR WALL OFFSET VALUES, SEE STANDARD PLAN B3-8



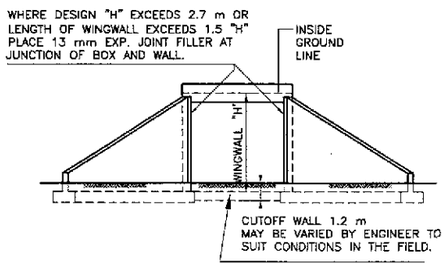
2 UP-05 **TYPICAL SECTION H=1.2 m THRU 3.7 m**
SCALE 1:20



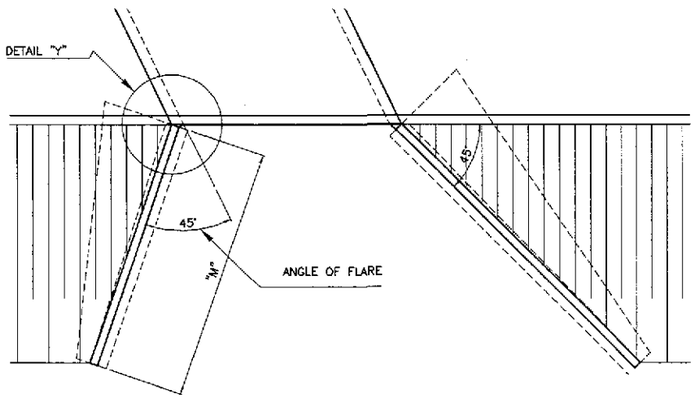
3 UP-05 **TYPICAL SECTION H=4.0 m THRU 4.9 m**
SCALE 1:20



4 UP-05 **P L A N**
SCALE 1:100



5 UP-05 **END ELEVATION**
SCALE 1:100



6 UP-05 **P L A N**
SCALE 1:100

JAPAN INTERNATIONAL COOPERATION AGENCY

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

	DATE	SIGNATURE
DESIGNED	9/19/02	
CHECKED	9/21/02	A. HAKIM
SUBMITTED	9/23/02	M. KUCHI, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

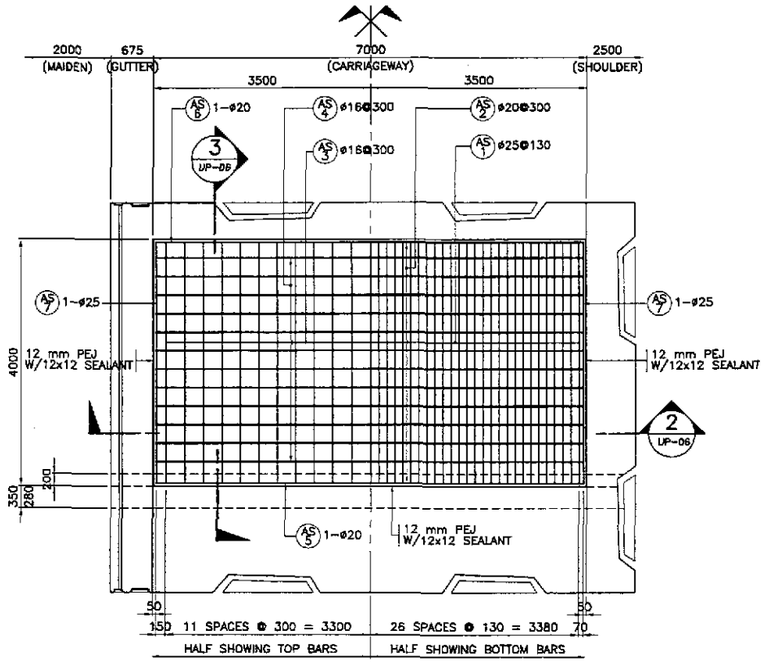
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	JOSEFINA M. ALAGAR, Chief, Highways Division	GILBERTO S. REYES, OIC,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

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 I

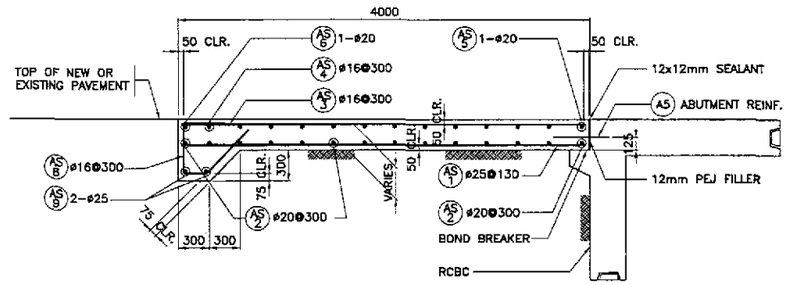
SCALE : AS SHOWN — FULL SIZE A1

SHEET CONTENTS : **BOX CULVERT** WINGWALL DETAIL (ULTIMATE STAGE)

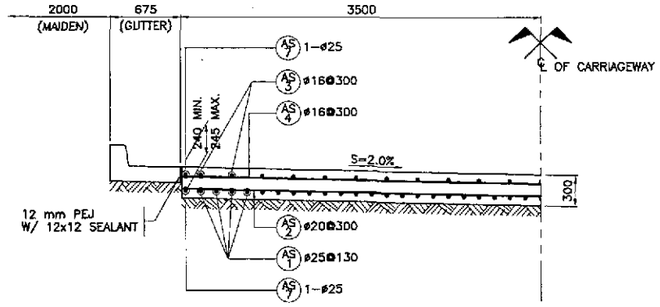
SHEET NO. : **UP-05**



1 UP-06 PLAN SCALE 1:50



3 UP-06 SECTION SCALE 1:30



2 UP-06 SECTION SCALE 1:30

REINFORCEMENT SCHEDULE & ESTIMATED QUANTITIES FOR TWO LANES APPROACH SLABS

BENDING DIAGRAM (DIMENSIONS ARE OUT TO OUT OF REBARS)	REINFORCEMENT MARK	SIZE (mm)	QUANTITY	SPACING (mm)	SHAPE	BAR DIMENSIONS (mm) a	b	c	LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONCRETE VOLUME (m^3)	REMARKS
a (A)	AS 1	25	69	130	B	3900	150	–	4050	226.80	3.853	874		1. QUANTITIES ARE FOR ONE (1) APPROACH SLAB
	AS 2	20	14	300	A	7900	–	–	7900	55.30	2.465	136		
	AS 3	16	25	300	B	3900	150	–	4050	101.25	1.578	160		
a (B) b	AS 4	16	12	300	A	7900	–	–	7900	47.40	1.578	75		
	AS 5	20	1	AS SHOWN	A	7200	–	–	7200	7.20	2.466	18		
	AS 6	20	1	AS SHOWN	A	7900	–	–	4050	53.20	1.578	84	9.58	
400 a c b (C)	AS 7	25	4	AS SHOWN	A	1965	1985	–	3930	15.72	3.853	61		
	AS 8	16	27	300	C	415 MIN. 475 MAX.	250	650	1745	47.11	1.578	74		
	AS 8	25	2	AS SHOWN	A	7900	–	–	7900	15.80	3.853	61		
											GRAND TOTAL =	1543	9.58	

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YEC YACHIYO ENGINEERING CO., LTD.

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SUBMITTED	9/23/02	TEAM LEADER

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PLARIDEL BYPASS - CONTRACT PACKAGE I

SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS : BOX CULVERT APPROACH SLAB DETAIL (ULTIMATE STAGE)

SHEET NO. : UP-06

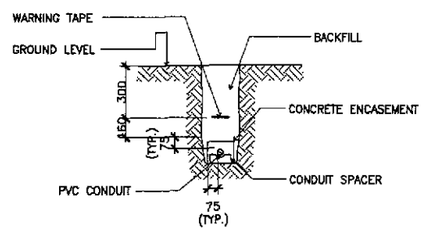
ELECTRICAL

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 II 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

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, 1ø, 2W, 60 Hz. 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, UNLESS OTHERWISE INDICATED.
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 2-3.5mm^{2}THW & 1-3.5mm^{2}TW(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.



1 / ES-01 TYPICAL DUCT SECTION NOT TO SCALE

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 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.

ERNESTO M. ANTIOQUIA
ENGINEER
PTR NO. 7403864 P.E.E. NO. 2813
ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
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JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL — YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	9/19/02	E.M. ANTIOQUIA
CHECKED	9/21/02	E.M. ANTIOQUIA
SUBMITTED	9/23/02	TEAM LEADER

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DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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Project Director	Chief, Mechanical-Electl Div.	OIC, Director IV	Undersecretary	Secretary

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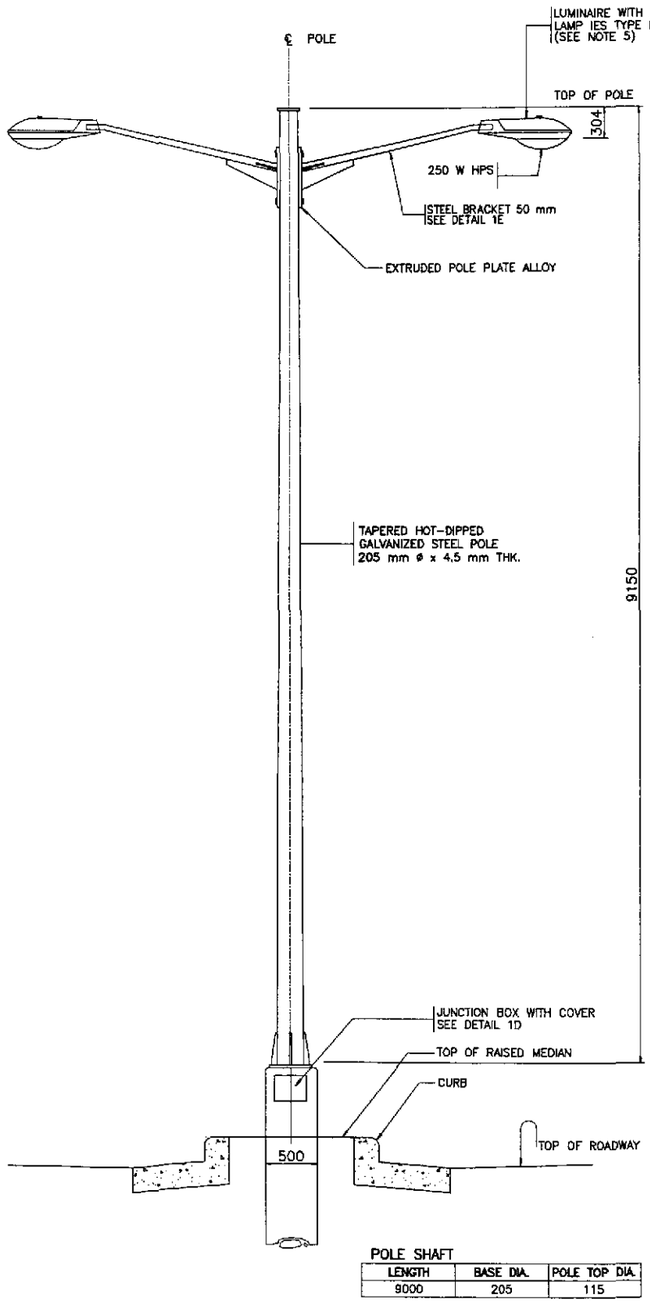
PLARIDEL BYPASS - CONTRACT PACKAGE I

SCALE : AS SHOWN FULL SIZE A1

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

SHEET NO. : ES-01



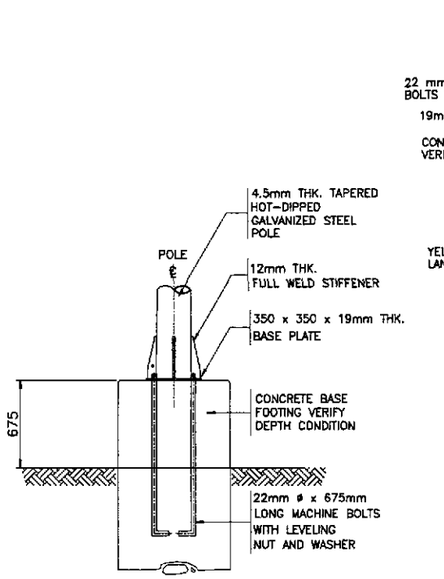
POLE SHAFT

LENGTH	BASE DIA.	POLE TOP DIA.
9000	205	115

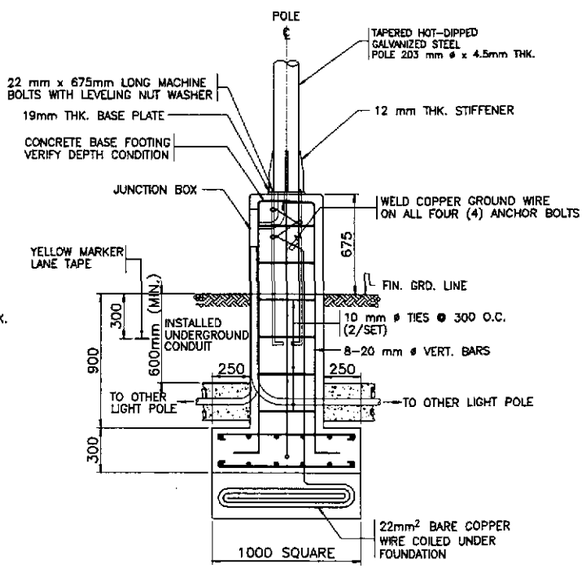
1A ES-02 ELEVATION

NOTES:

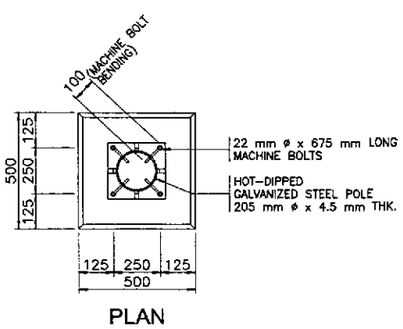
1. CONCRETE MIXTURE SHOULD BE 211 kg./cm (3000 PSI)
2. PAINT ALL JOINTS IN BOX AND CONDUIT WITH RED LEAD PRIMER BEFORE POURING CONCRETE.
3. FOR CONDUIT LARGER THAN 40mm ø, KNOCKOUTS AND HOLES SHALL HAVE TO BE WIDENED BY THE USER TO THE DESIRED DIAMETER.
4. FOR LOAM AND MUDDY SOIL, REFER TO CIVIL ENGINEERING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

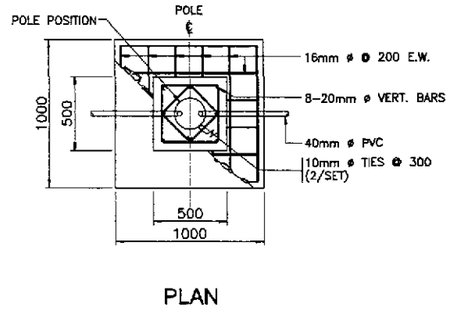


ELEVATION



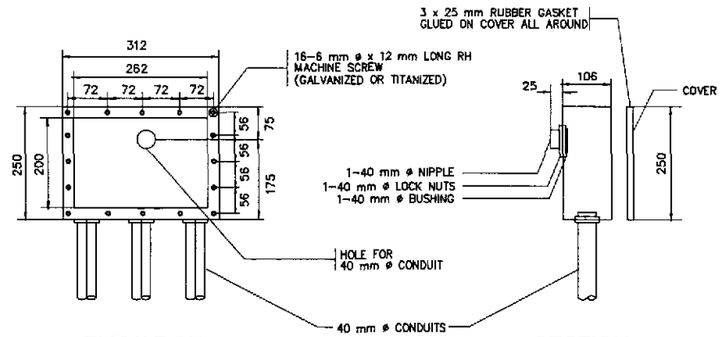
PLAN

1B ES-02 BASE PLATE DETAILS

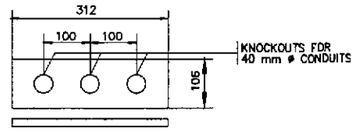


PLAN

1C ES-02 STANDARD FOOTING DETAILS



ELEVATION SECTION



SECTION

MATERIAL:

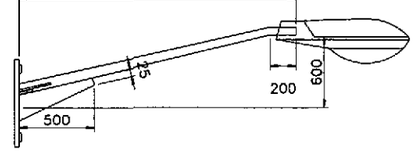
JUNCTION BOX - 50 mm THICK CAST ALUMINUM FOR BOX AND COVER

ANCHOR BOLT - ASTM A-36

FINISH:

ANCHOR BOLT - ASTM A-153

1D ES-02 JUNCTION BOX DETAILS



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 ES-02 MAST ARM ELEVATION

1 ES-02 STREET LIGHT POLE DETAILS NOT TO SCALE

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YEC YACHIYO ENGINEERING CO., LTD.

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SUBMITTED	9/23/02	TEAM LEADER

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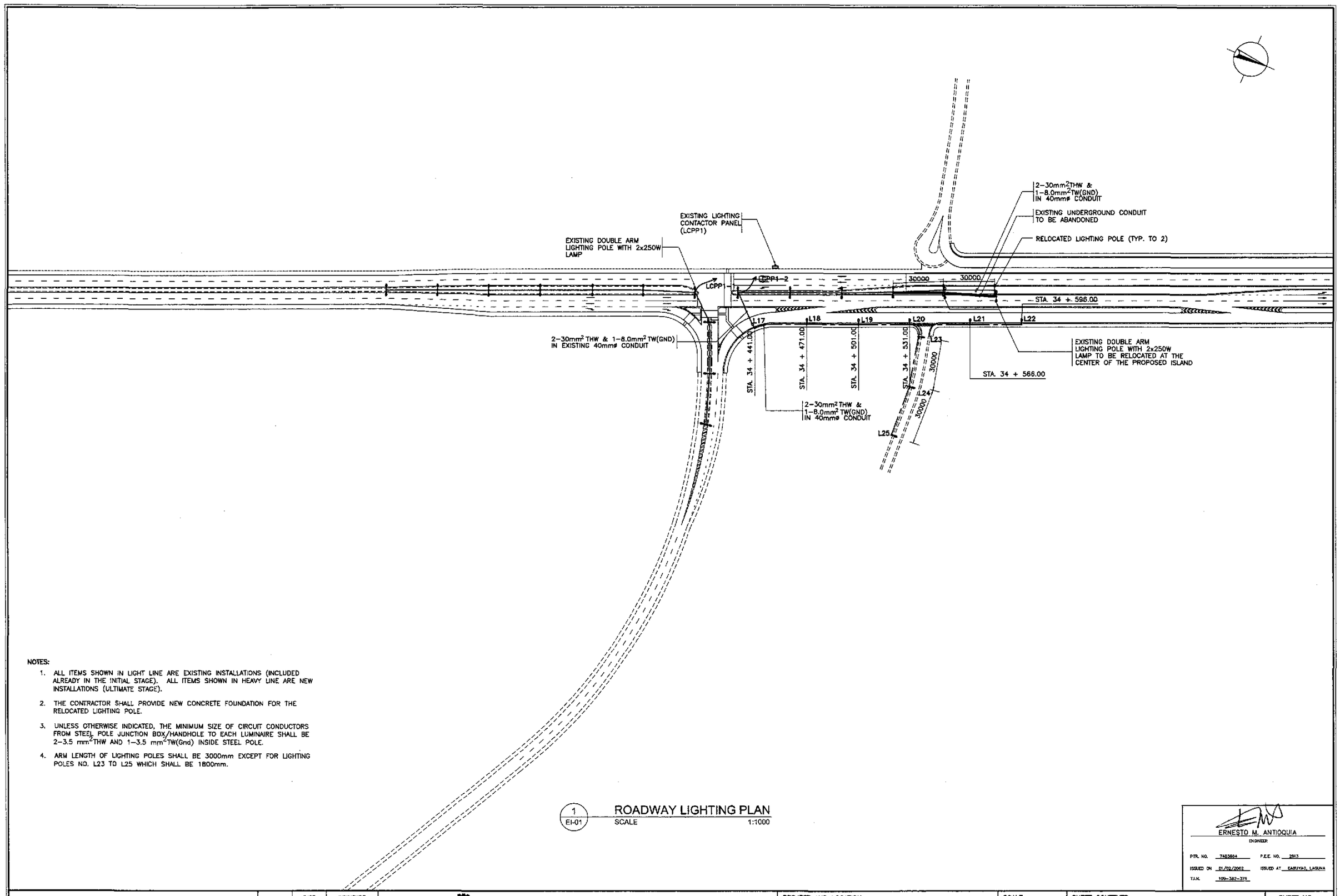
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE I	AS SHOWN FULL SIZE A1	STREET LIGHT POLE DETAILS (ULTIMATE STAGE)	ES-02



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 mm^2THW AND 1-3.5 mm^2TW(Gnd) INSIDE STEEL POLE.
4. ARM LENGTH OF LIGHTING POLES SHALL BE 3000mm EXCEPT FOR LIGHTING POLES NO. L23 TO L25 WHICH SHALL BE 1800mm.

1 / EI-01 ROADWAY LIGHTING PLAN
SCALE 1:1000

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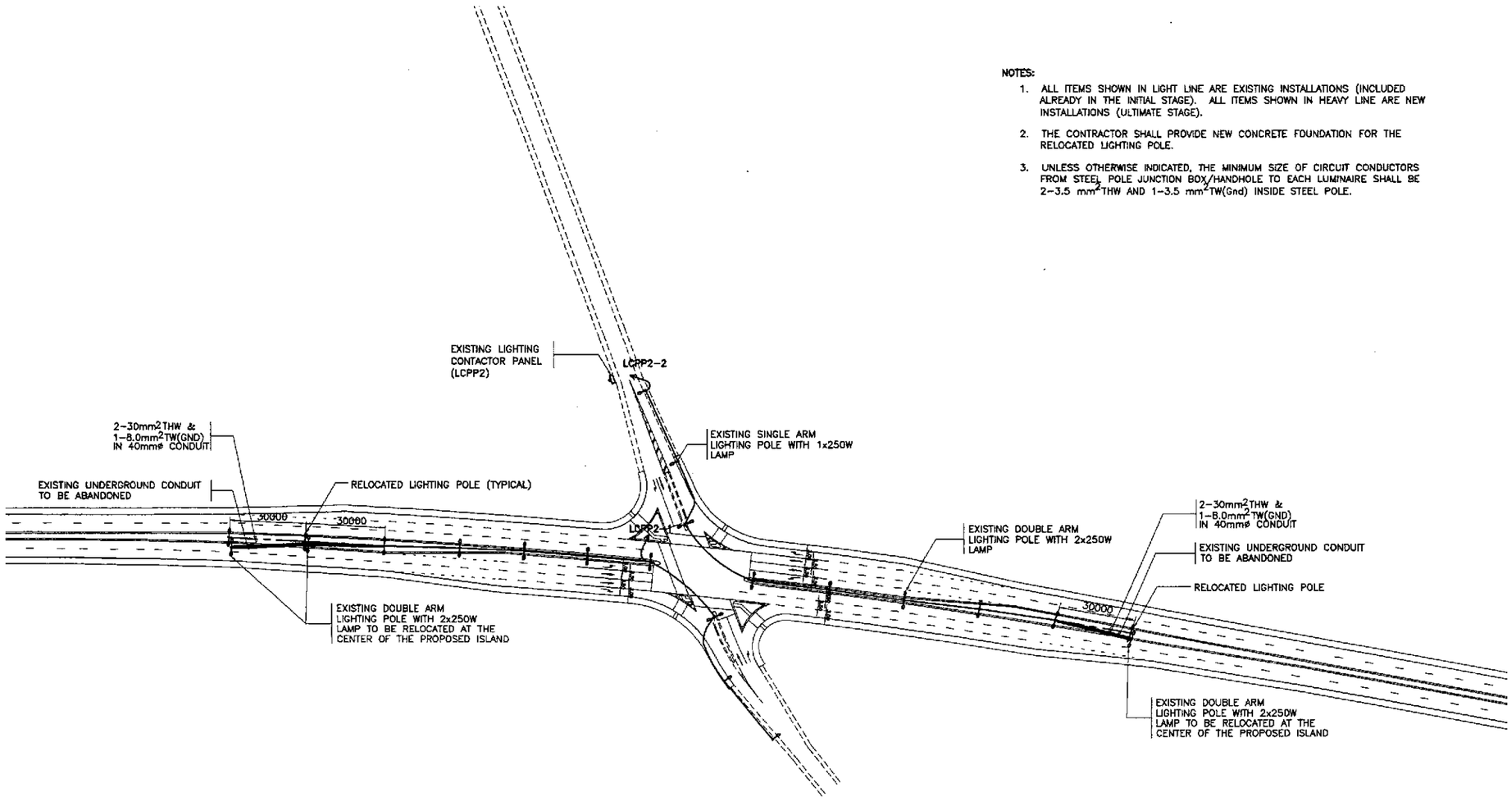
PLARIDEL BYPASS - CONTRACT PACKAGE I

SCALE : 1:1000 FULL SIZE A1

SHEET CONTENTS :
ROADWAY LIGHTING PLAN AND LOAD SCHEDULE
INTERSECTION A-1 & C-1L (ULTIMATE STAGE)

SHEET NO. : EI-01



1 / EI-02 ROADWAY LIGHTING PLAN
SCALE 1:1000

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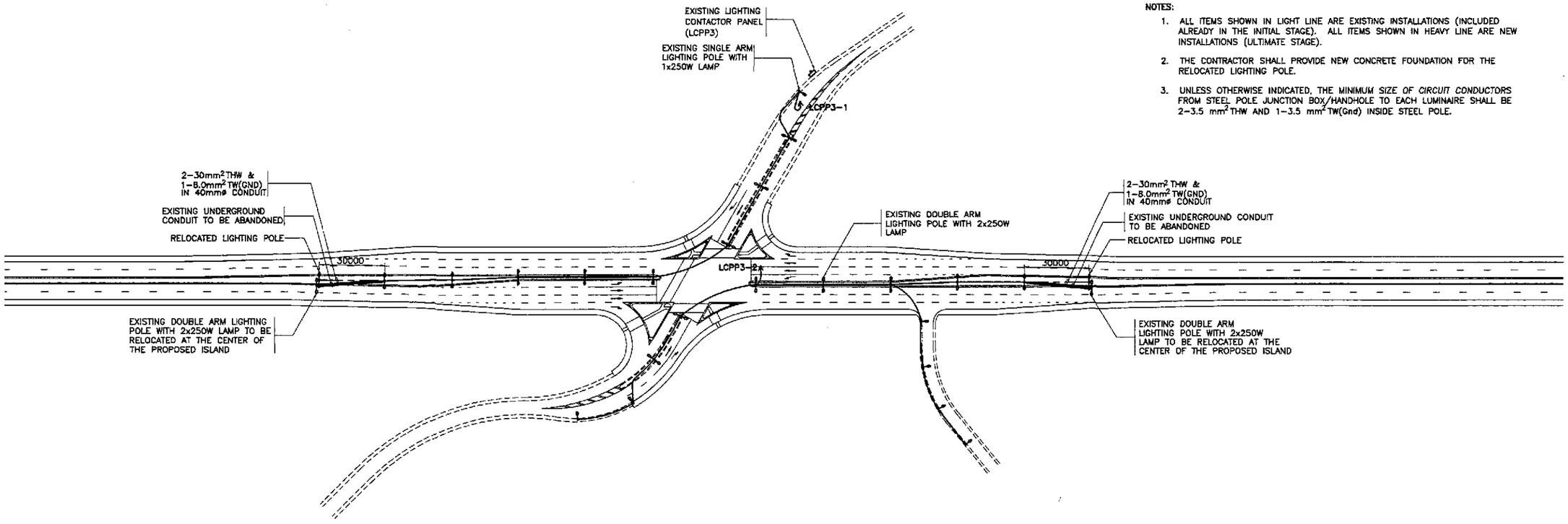
SCALE : 1:1000 FULL SIZE A1

SHEET CONTENTS :
ROADWAY LIGHTING PLAN AND LOAD SCHEDULE
INTERSECTION A-5 (ULTIMATE STAGE)

SHEET NO. : EI-02



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1 / EI-03 ROADWAY LIGHTING PLAN
SCALE 1:1000

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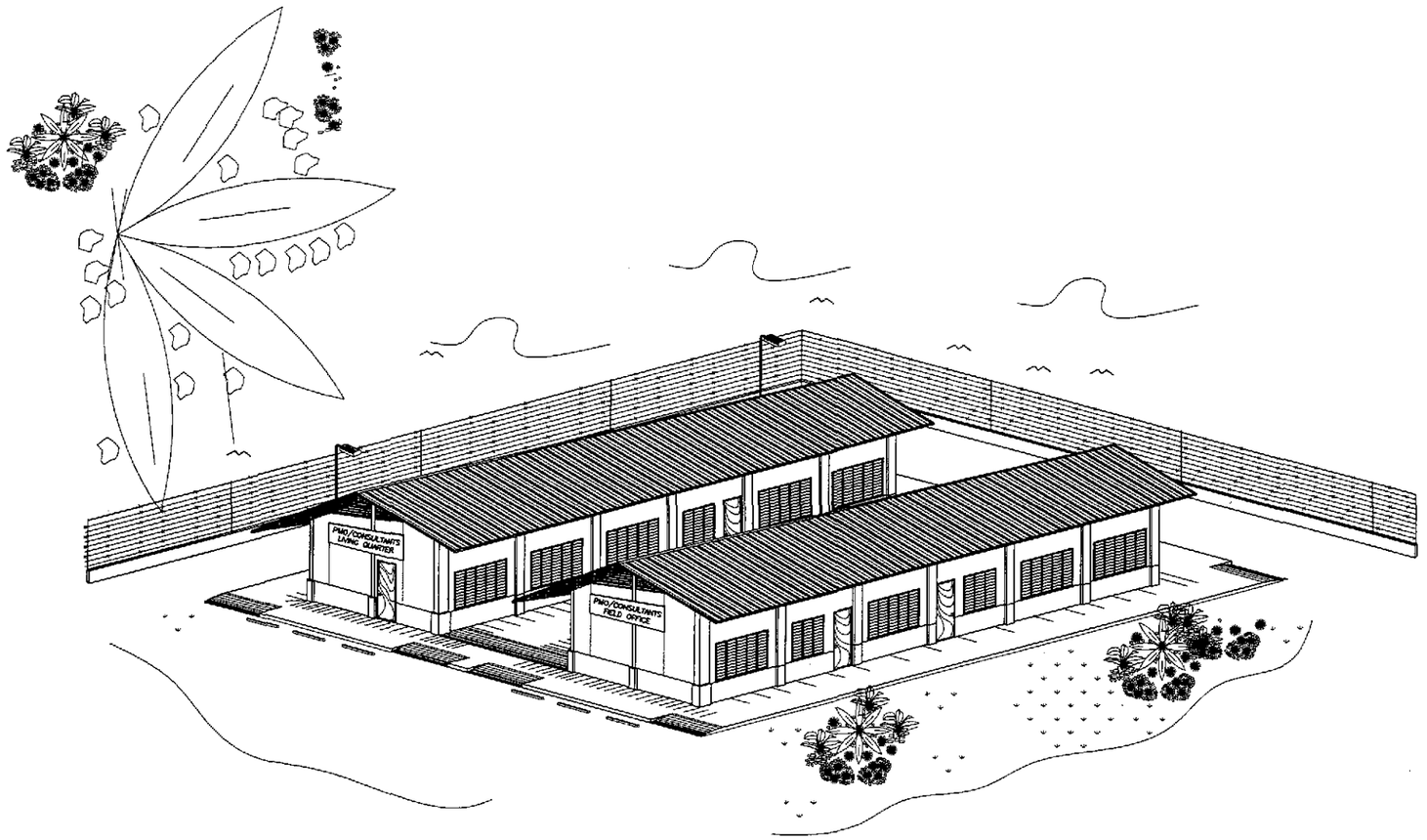
DANILO C. TRAJANO	FE M. BARRIENTOS	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Mechanical-Elect'l Div.	OIC, Director IV	Undersecretary	Secretary

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 I	1:1000 FULL SIZE A1	ROADWAY LIGHTING PLAN AND LOAD SCHEDULE INTERSECTION A-7 (ULTIMATE STAGE)	EI-03

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.

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.

TABLE OF CONTENTS

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

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

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

	DATE	SIGNATURE
DESIGNED	9/19/02	A. P. GONZALES
CHECKED	9/21/02	A. P. GONZALES
SUBMITTED	9/23/02	M. MORI TEAM LEADER

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PLARIDEL BYPASS - CONTRACT PACKAGE I

SCALE :
NOT TO SCALE
FULL SIZE A1

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

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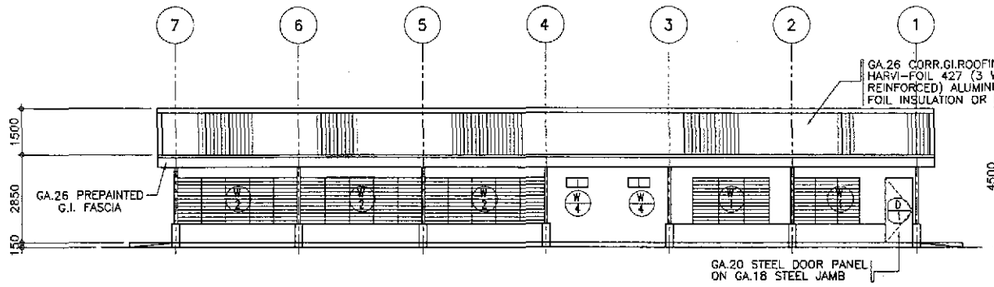

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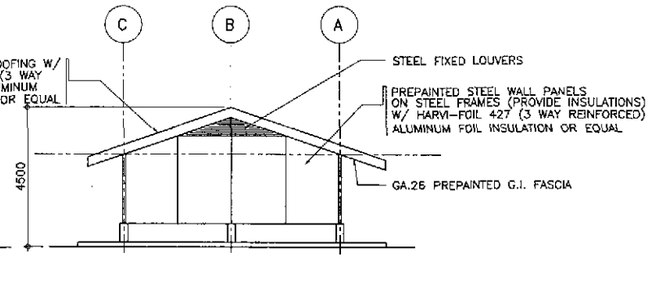

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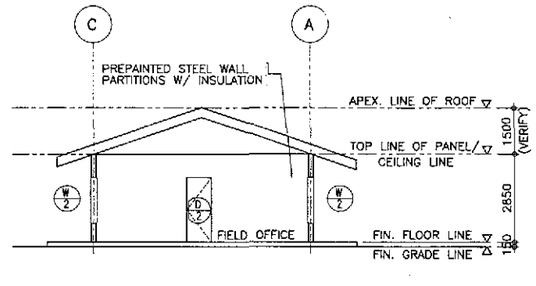

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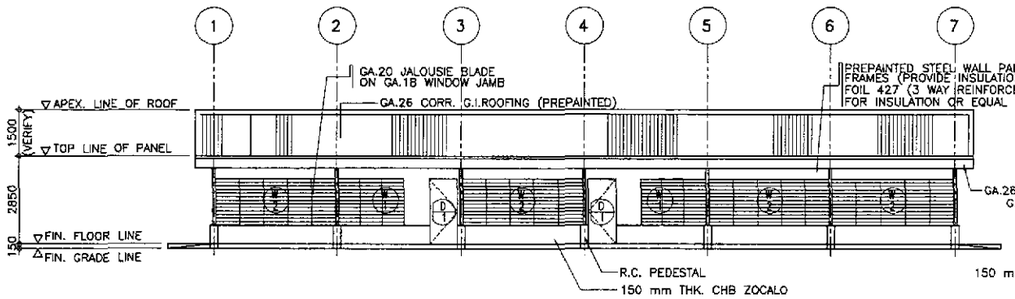

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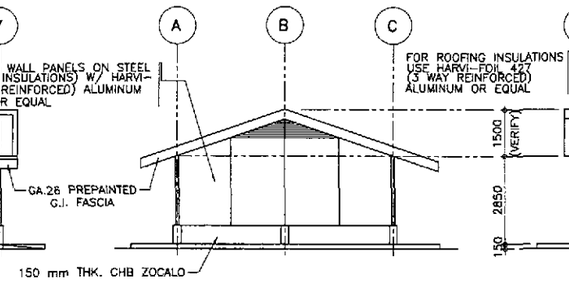
SCALE 1:100



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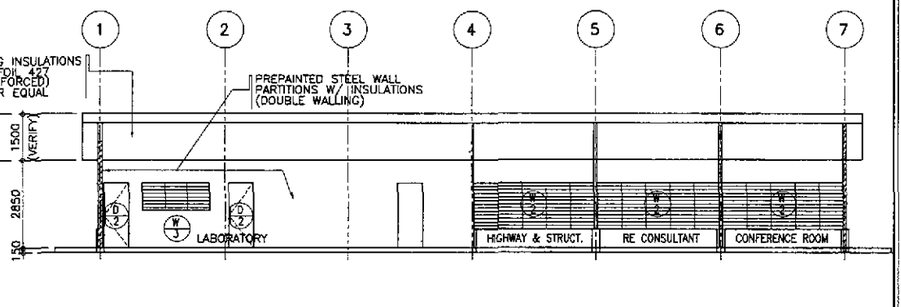

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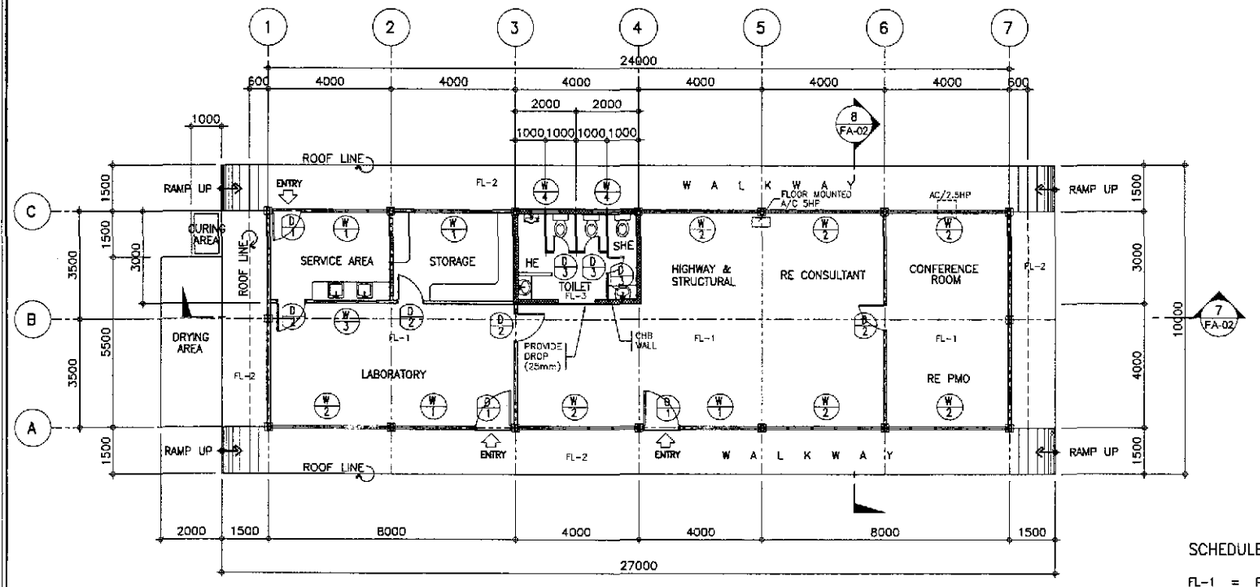

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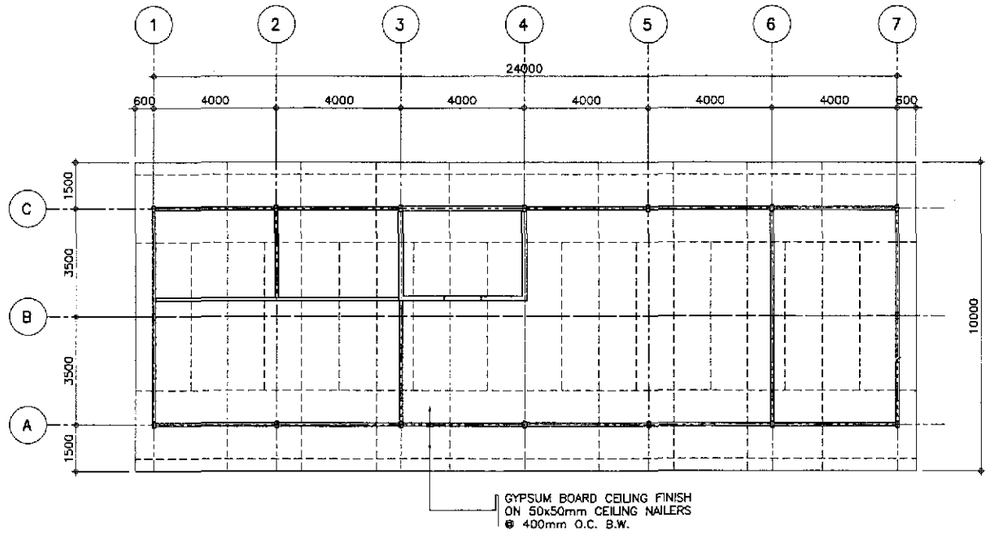

6 / FA-02 REFLECTED CEILING PLAN
SCALE 1:100

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. 138-062-682
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JICA
JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
YACHIYO ENGINEERING CO., LTD.

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CHECKED	9/21/02	A. P. GONZALES
SUBMITTED	9/23/02	TEAM LEADER

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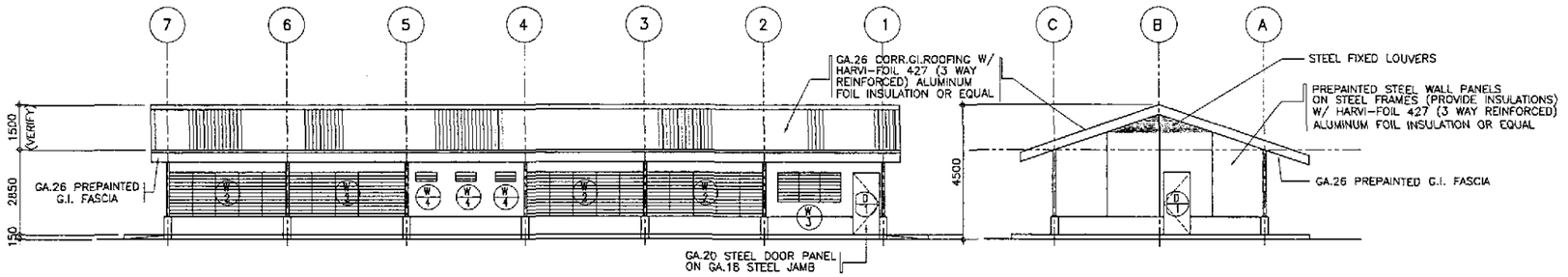
SCALE : AS SHOWN
FULL SIZE A1

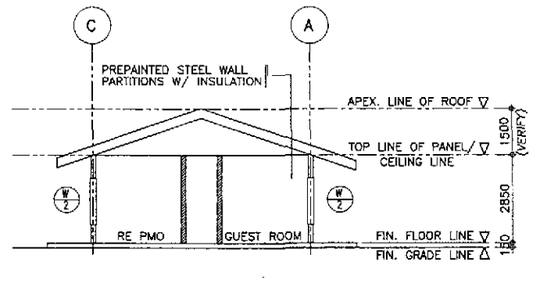
SHEET CONTENTS :
ENGR'S FIELD OFFICE / LABORATORY
FLOOR PLAN, ELEVATIONS, CROSS-SECTIONS AND REFLECTED CEILING PLAN

SHEET NO. : FA-02



3 FA-03 REAR ELEVATION
SCALE 1:100

5 FA-03 LEFT SIDE ELEVATION
SCALE 1:100



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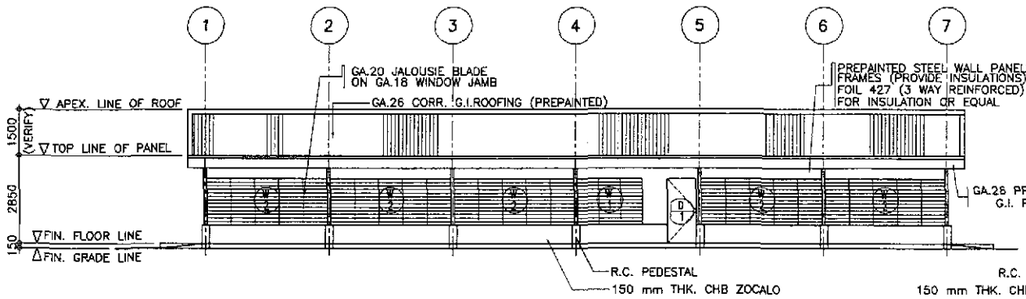

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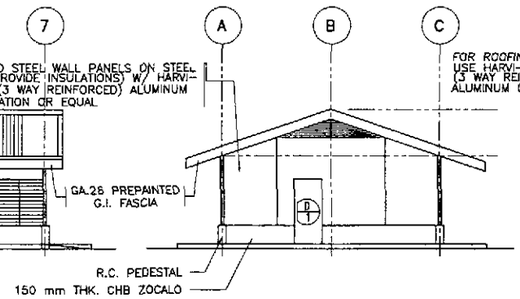
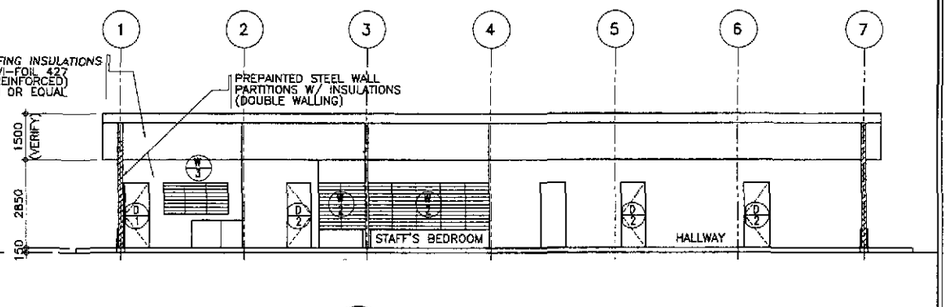


4 FA-03 RIGHT SIDE ELEVATION
SCALE 1:100



7 FA-03 LONGITUDINAL SECTION
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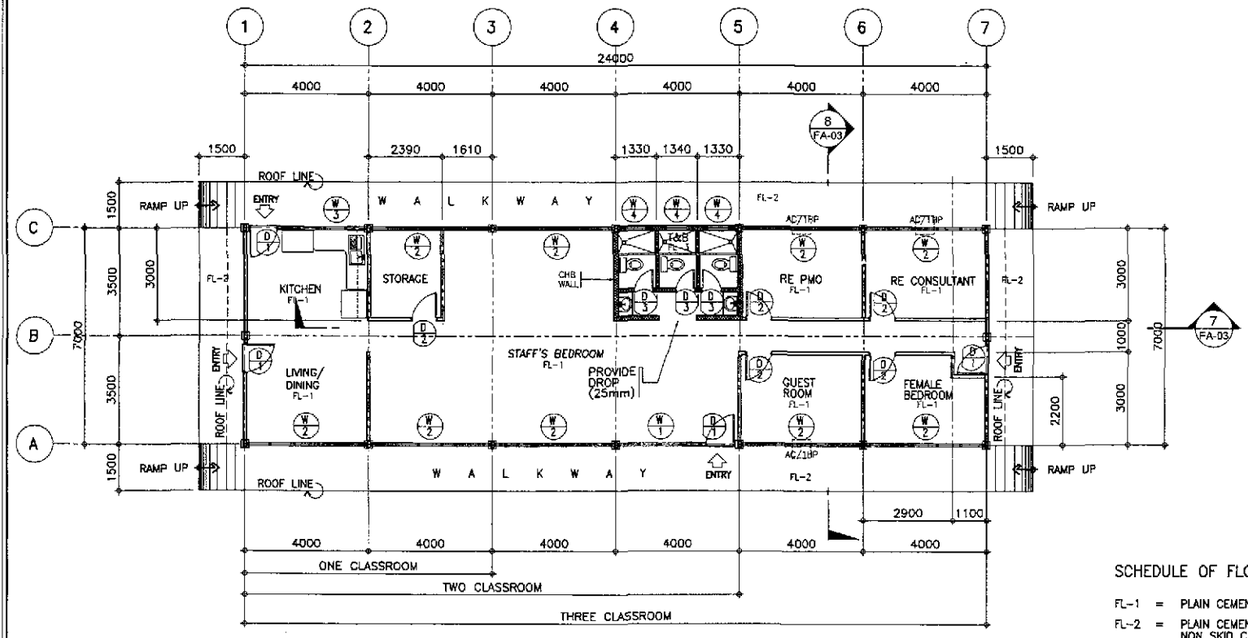
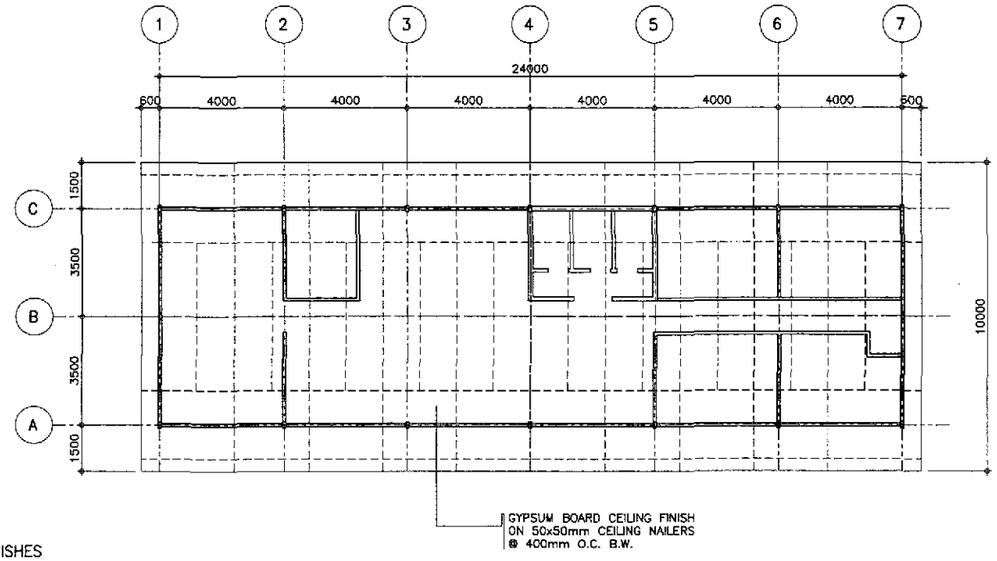


1 FA-03 FLOOR PLAN FOR ENGINEER'S LIVING QUARTER
SCALE 1:100



6 FA-03 REFLECTED CEILING PLAN
SCALE 1:100

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ENGINEER

PTR. NO. 5646340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-582
ISSUED AT SAN JUAN,M.M.

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

	DATE	SIGNATURE
DESIGNED	9/19/02	A. P. GONZALES
CHECKED	9/24/02	A. P. GONZALES
SUBMITTED	9/25/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
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Project Director	Chief, Architectural Division	OIC, Director IV	Undersecretary	Secretary

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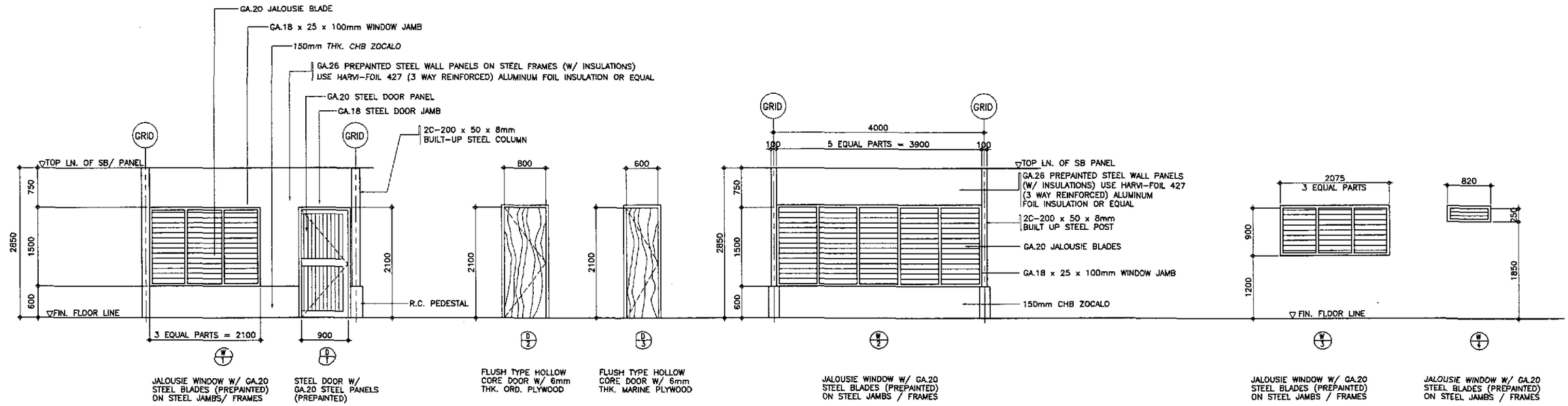
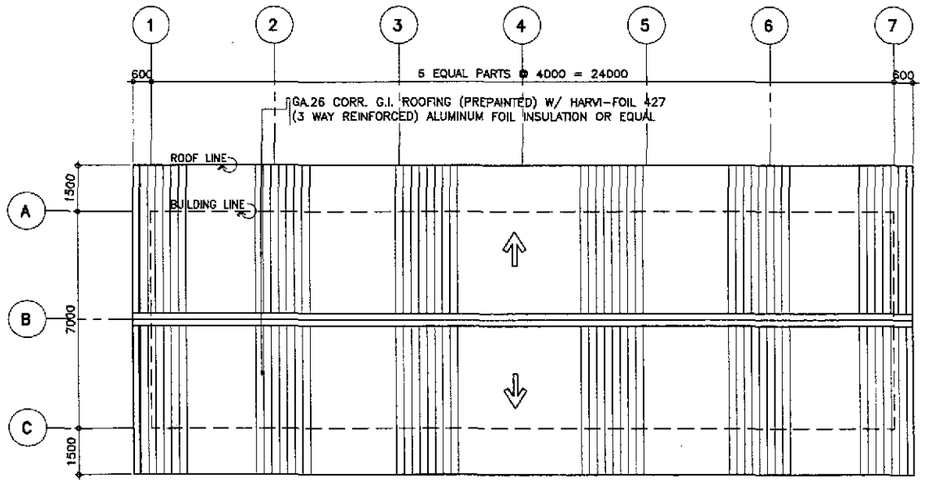
SCALE : AS SHOWN FULL SIZE A1

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
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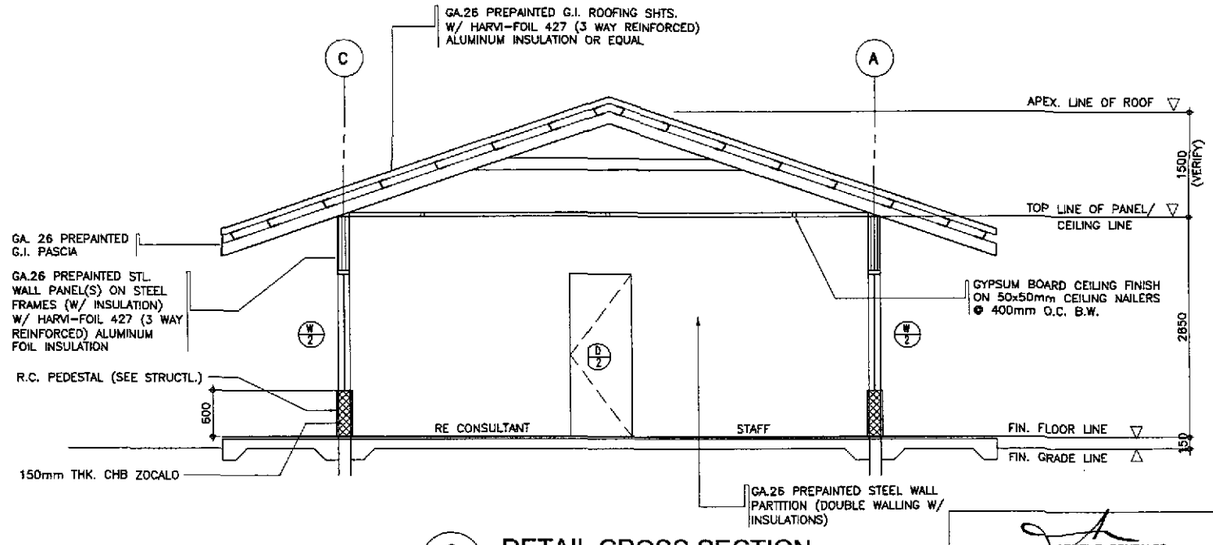

2 / FA-04 — DETAIL CROSS SECTION
SCALE 1:40

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

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SUBMITTED	4/23/02	TEAM LEADER

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SCALE : AS SHOWN — FULL SIZE A1

SHEET CONTENTS :
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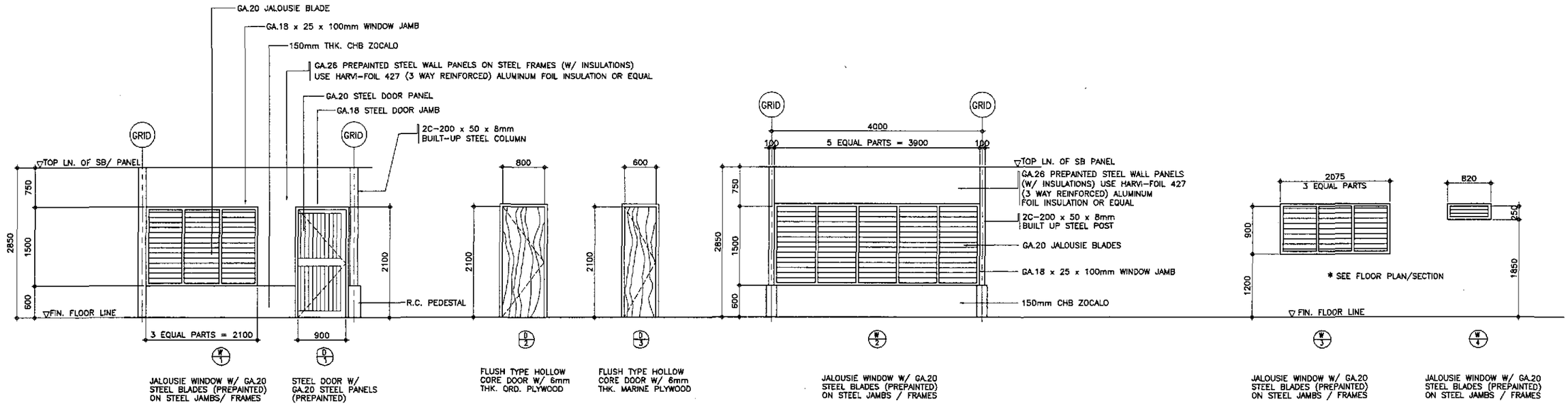
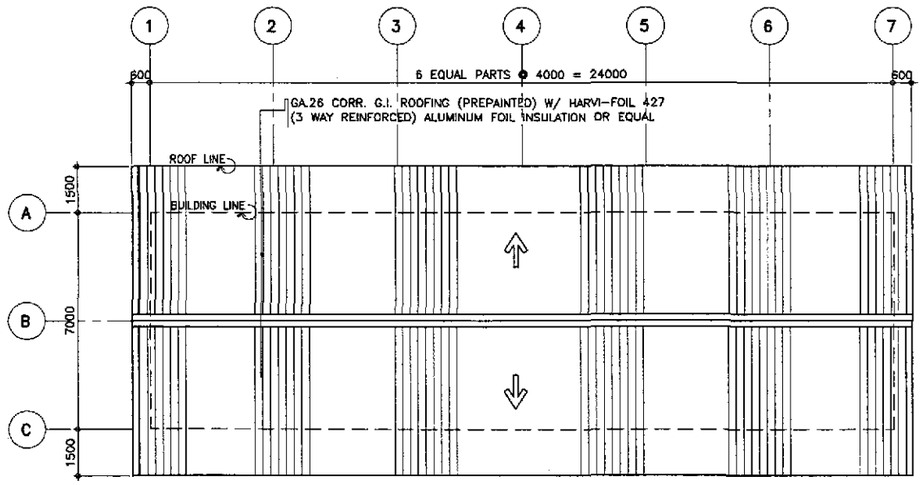
ROOF PLAN, CROSS-SECTION AND SCHEDULE OF DOORS & WINDOWS

SHEET NO. : FA-04



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



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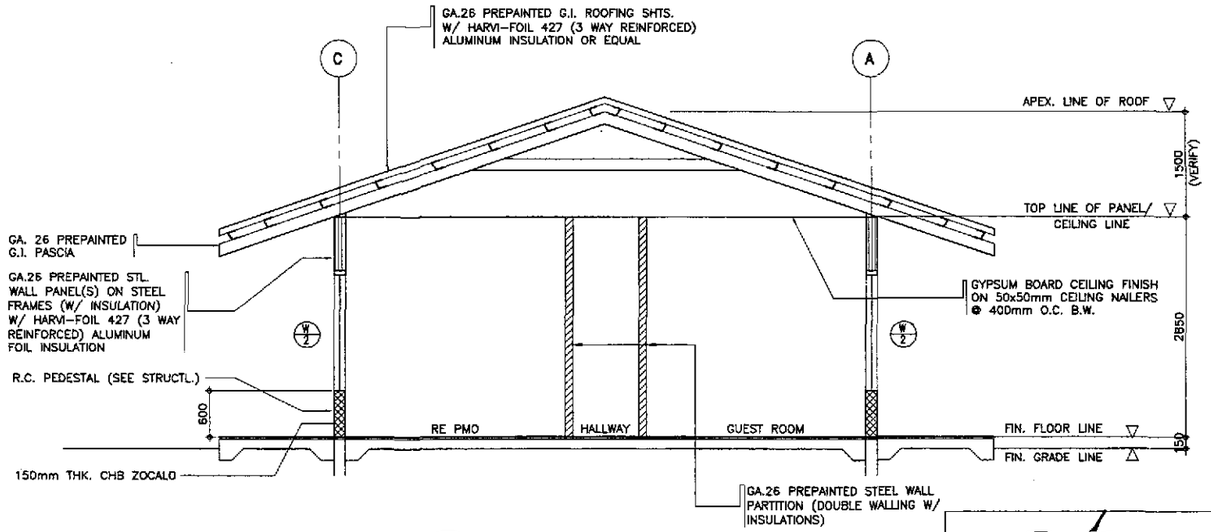

2 FA-05 DETAIL CROSS SECTION
SCALE 1:40

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CHECKED	9/23/02	A. B. GONZALES
SUBMITTED	9/26/02	M. KUDO TEAM LEADER

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PLARIDEL BYPASS - CONTRACT PACKAGE I

SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
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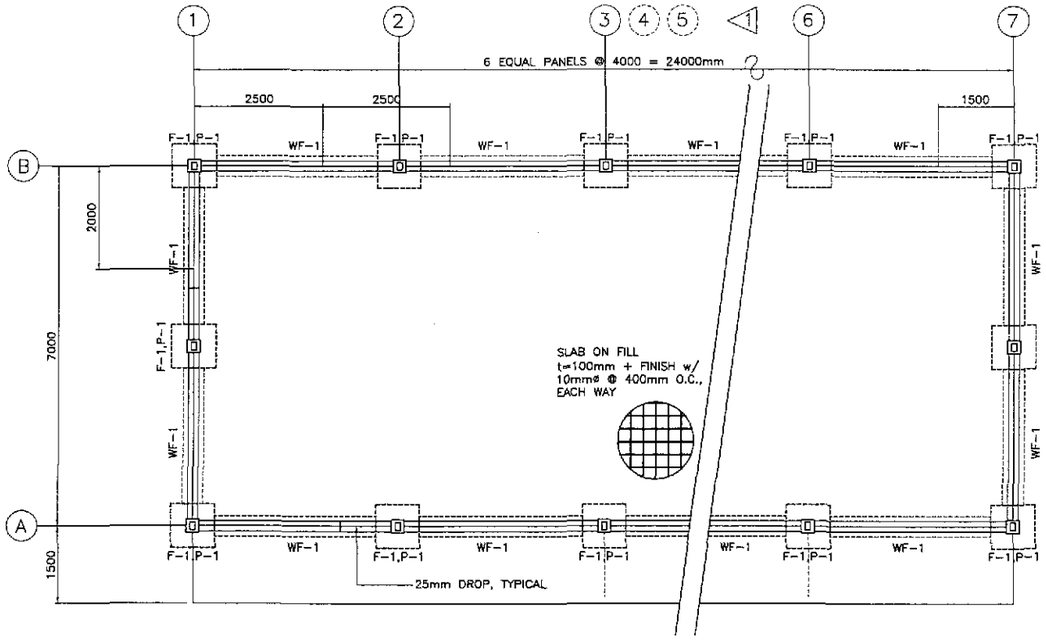
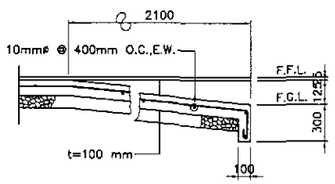
ROOF PLAN, CROSS-SECTION AND SCHEDULE OF DOORS & WINDOWS

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/m³
STEEL	76.10 KN/m³
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 :

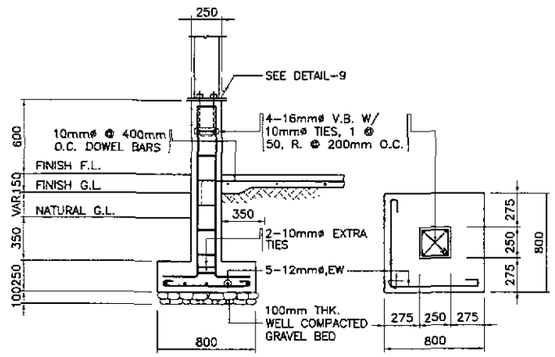
1. IN CASE THE ACTUAL SOIL BEARING PRESSURE IS FOUND LESS THAN THE ASSUMED VALUE OF 95.76 KPa, NOTIFY THE DIRECTOR, BUREAU OF DESIGN FOR PROPER REVISION OF FOOTINGS.
2. NO FOOTINGS SHALL REST ON FILL.

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 A-246-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.

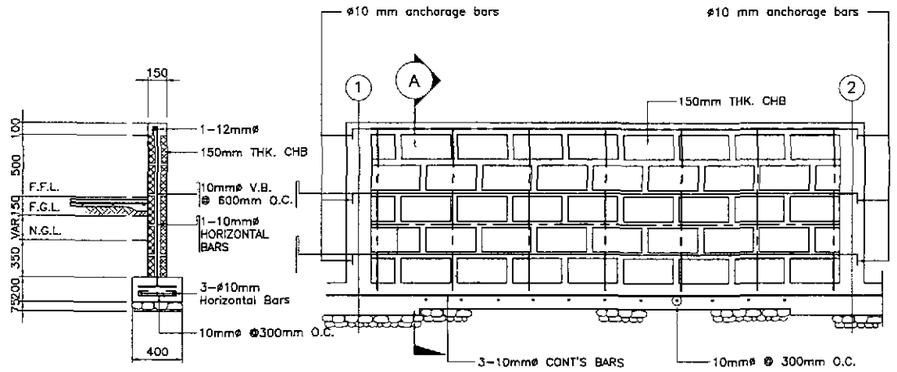
NOTES :

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

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	9/2/02	A. P. GONZALES
CHECKED	9/2/02	A. P. GONZALES
SUBMITTED	9/2/02	M. KUCHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

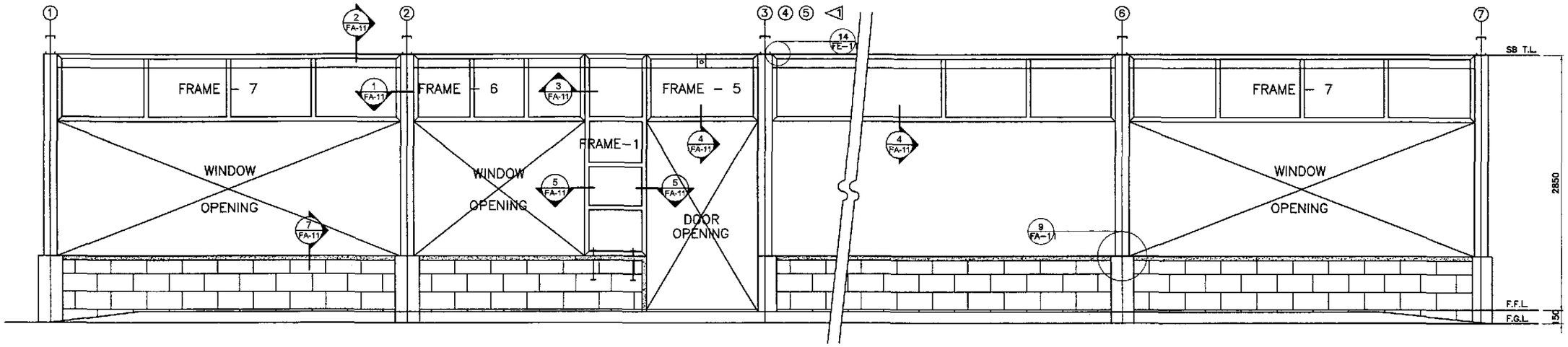
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	WILFREDO S. LOPEZ	GILBERTO S. REYES	MANUEL M. BONGAN	SIMEON A. DATUMANONG
Project Director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

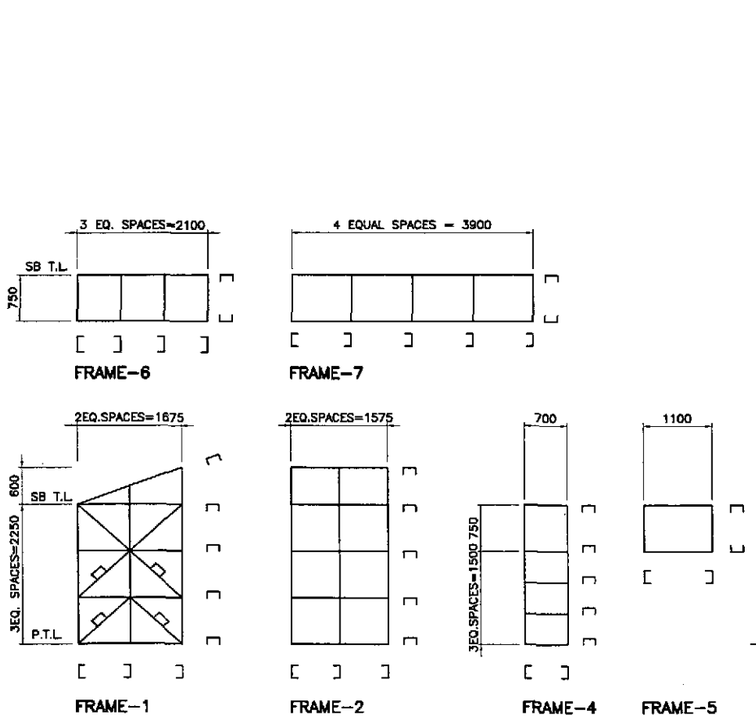
SCALE : AS SHOWN FULL SIZE A1

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

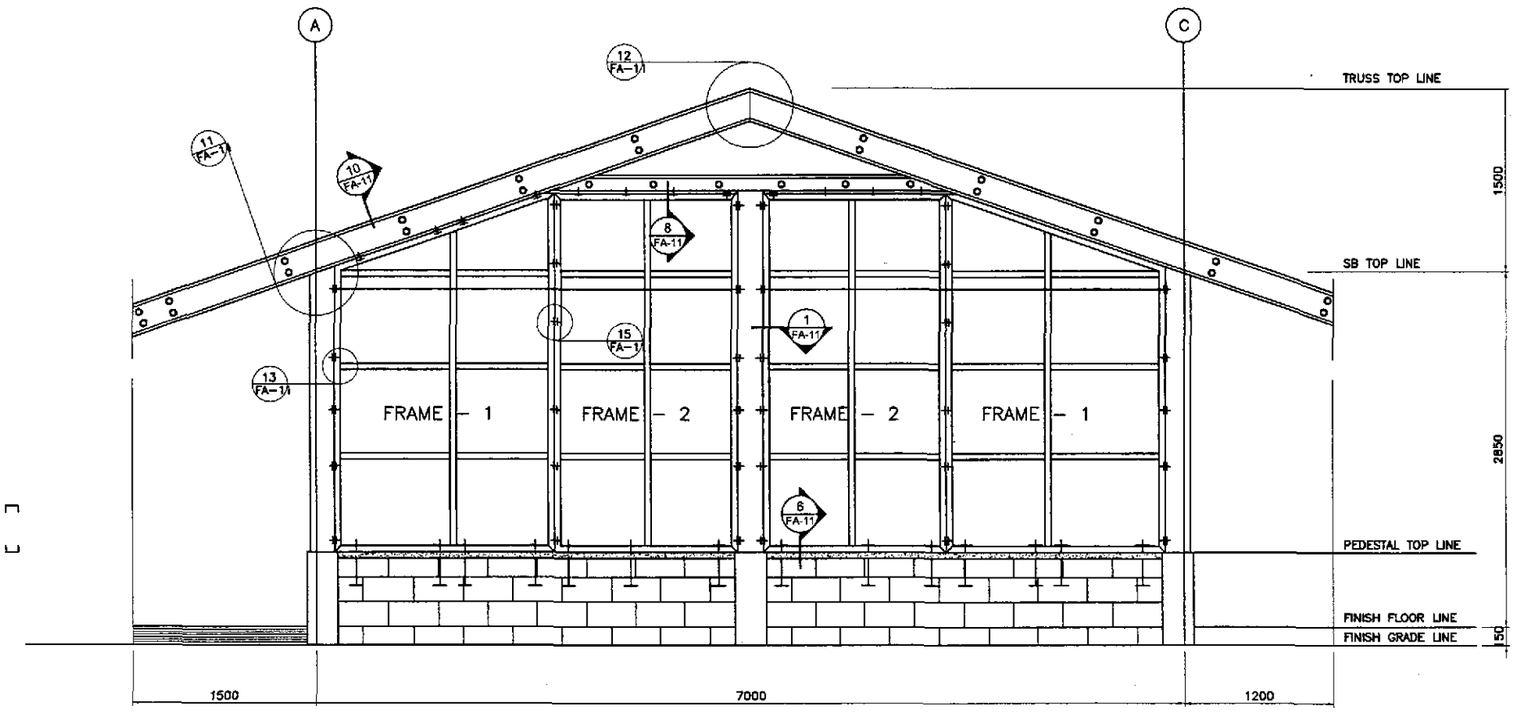
SHEET NO. : FA-06



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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ENGINEER

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

	DATE	SIGNATURE
DESIGNED	9/19/02	A. B. GONZALES
CHECKED	9/21/02	A. B. GONZALES
SUBMITTED	9/23/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
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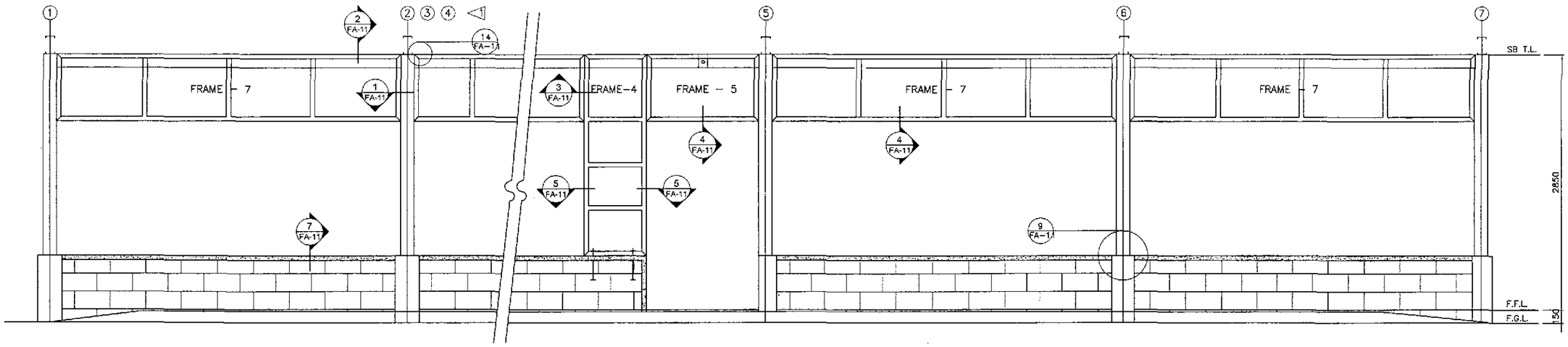
PLARIDEL BYPASS - CONTRACT PACKAGE I

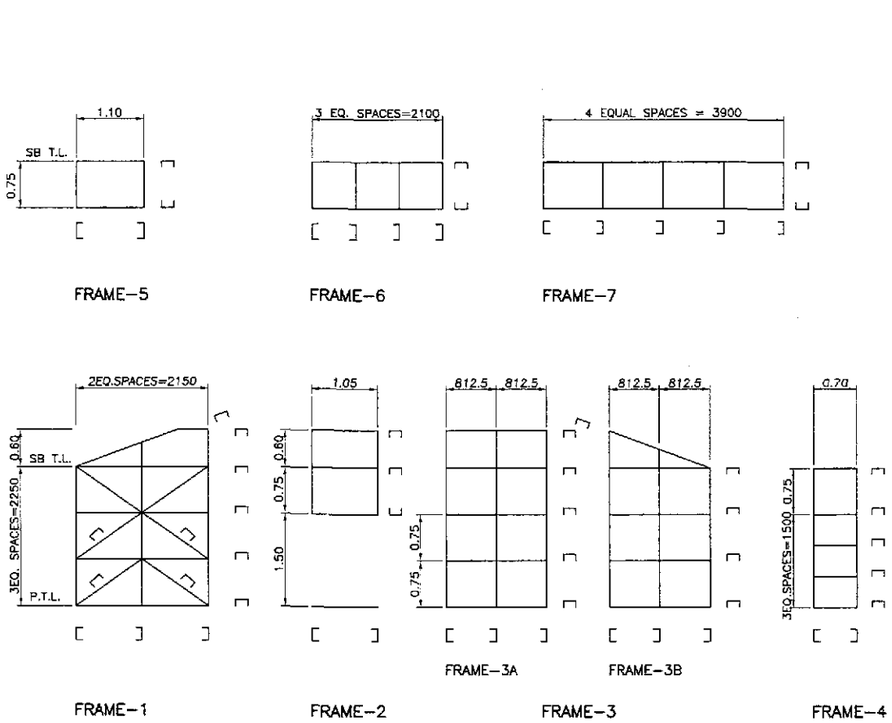
SCALE : AS SHOWN FULL SIZE A1

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

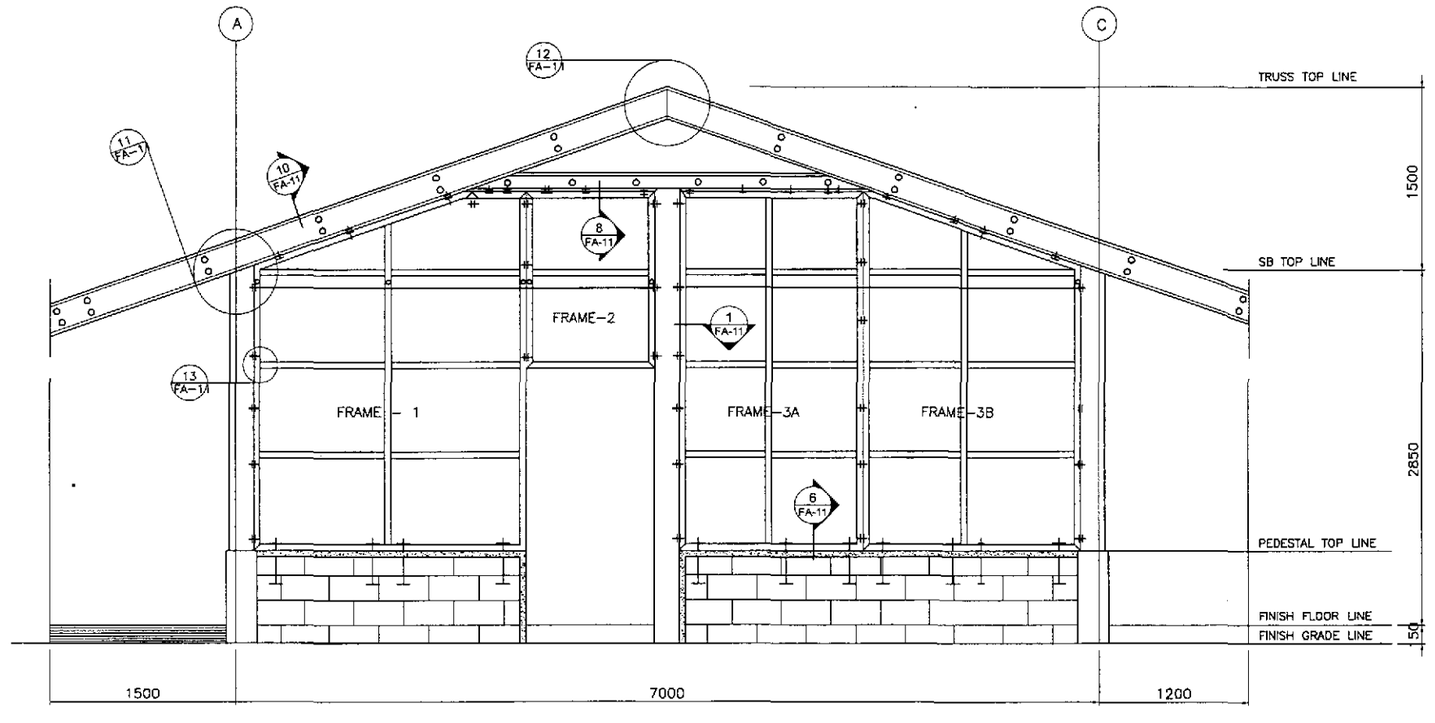
SHEET NO. : FA-07



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

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SUBMITTED	9/23/02	M. KUNO TEAM LEADER

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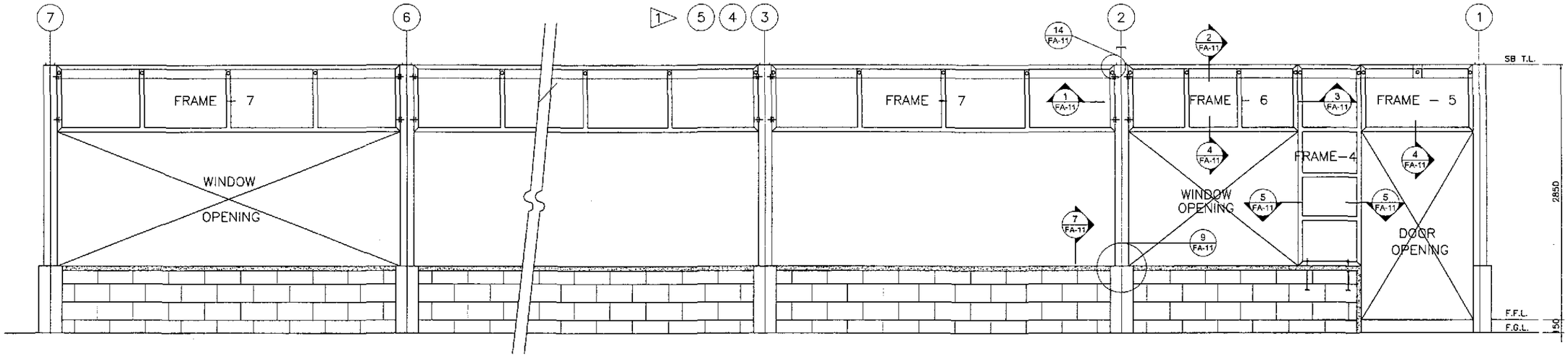
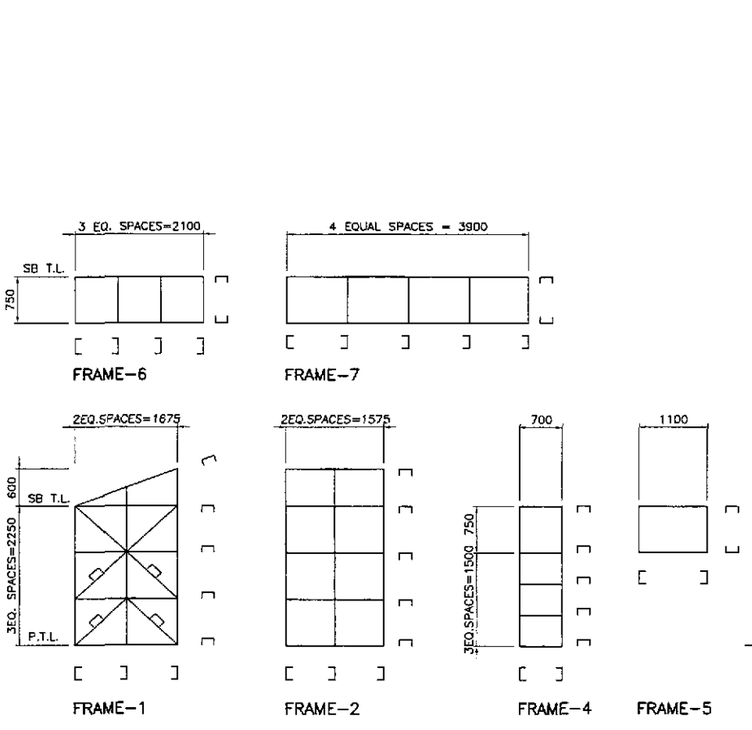
SCALE :
AS SHOWN
FULL SIZE A1

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

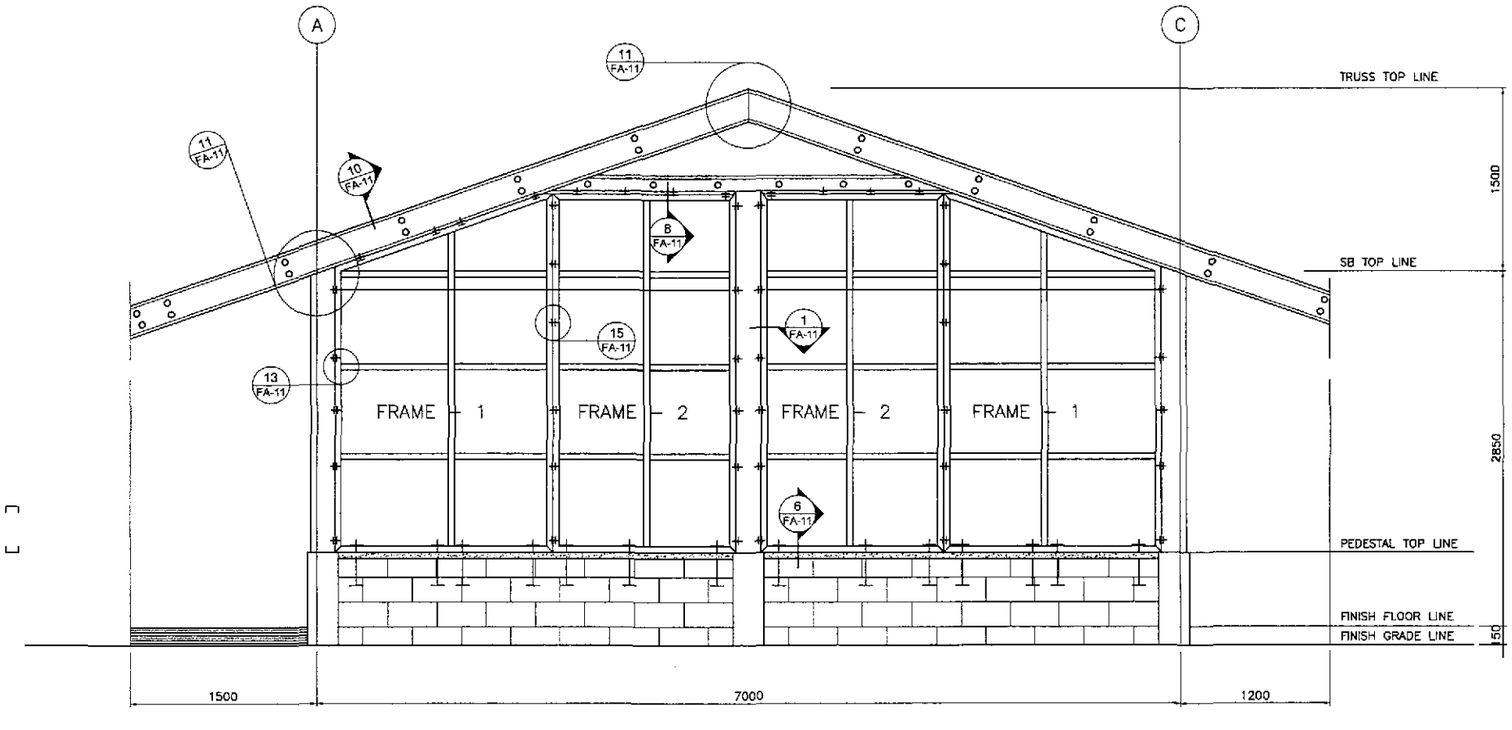
SHEET NO. :
FA-08



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

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PTR. NO. 5846340 P.R.C. NO. 53457
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JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
YACHIYO ENGINEERING CO., LTD.

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CHECKED	9/21/02	A. P. GONZALES
SUBMITTED	9/22/02	TEAM LEADER

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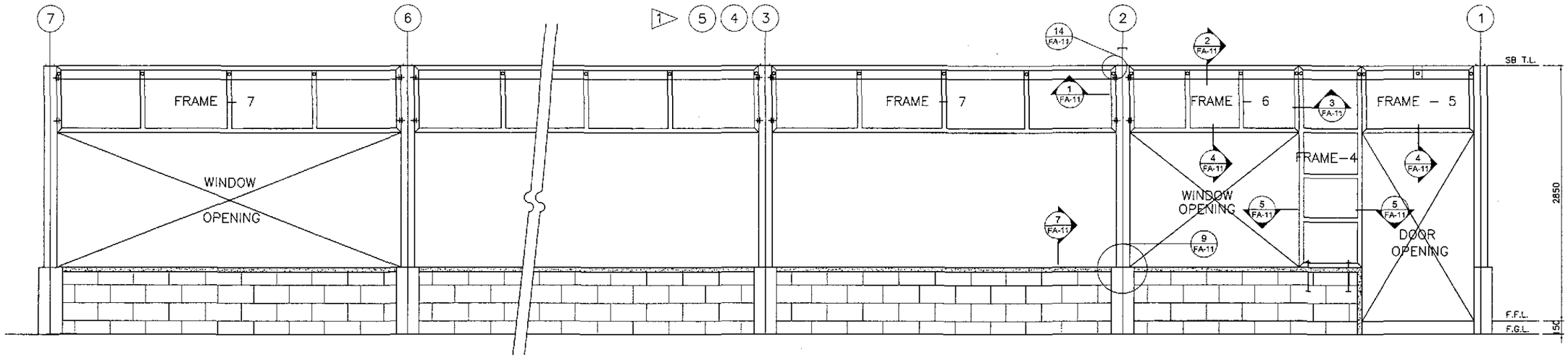
PLARIDEL BYPASS - CONTRACT PACKAGE I

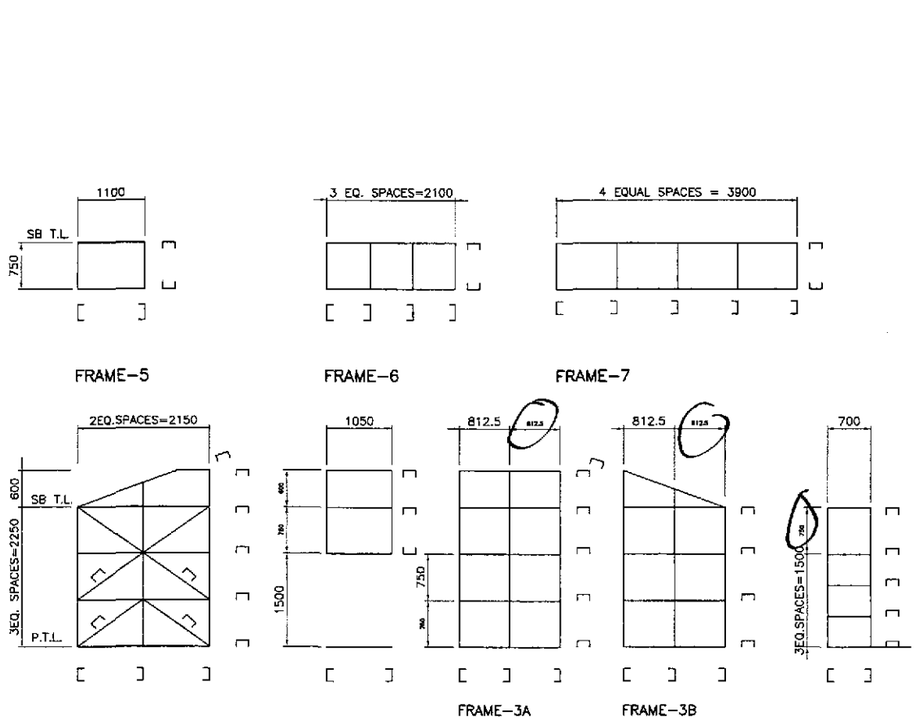
SCALE :
AS SHOWN
FULL SIZE A1

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

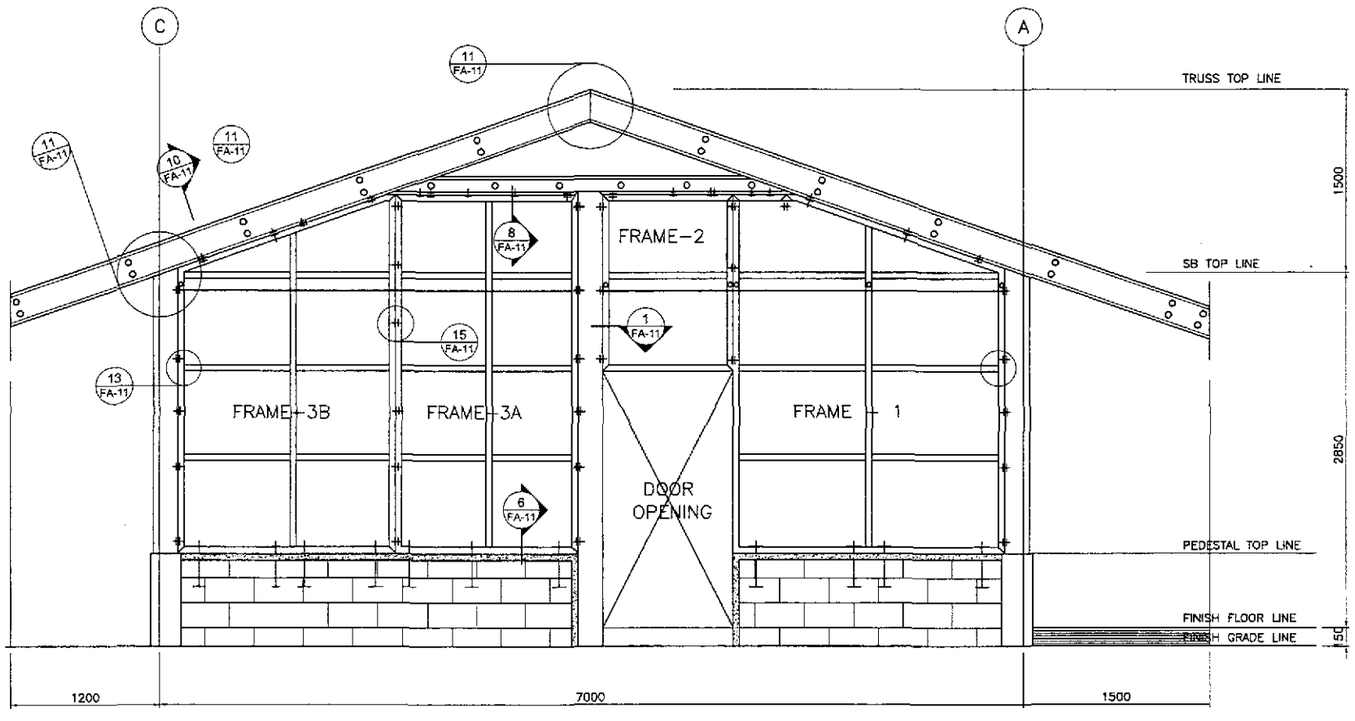
SHEET NO. :
FA-09



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

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PTR. NO. 5846340 P.R.C. NO. 53457
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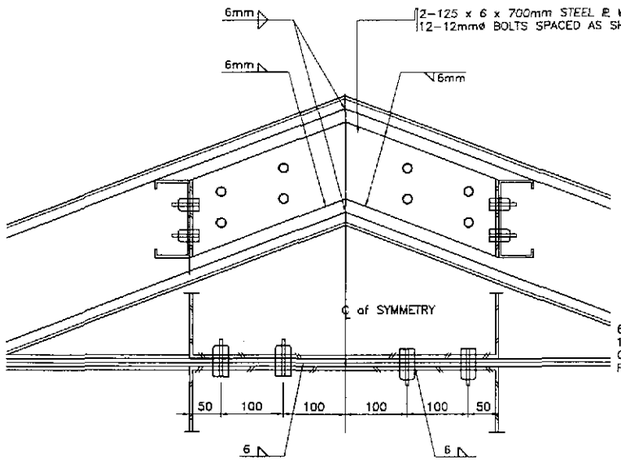
PLARIDEL BYPASS - CONTRACT PACKAGE I

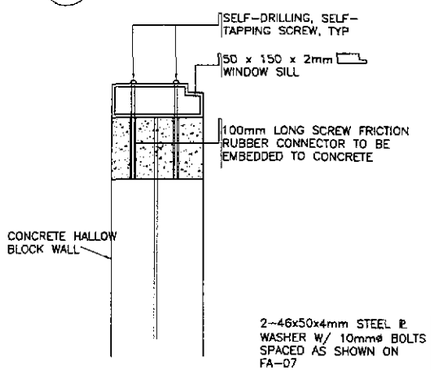
SCALE : AS SHOWN
FULL SIZE A1

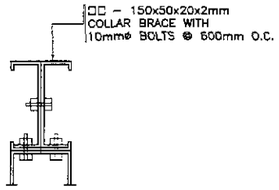
SHEET CONTENTS :
ENGINEER'S LIVING QUARTERS
REAR AND LEFT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAMS

SHEET NO. : FA-10

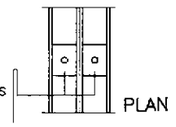


3 FA-11 **DETAIL - 12** SCALE 1:5





SECTION

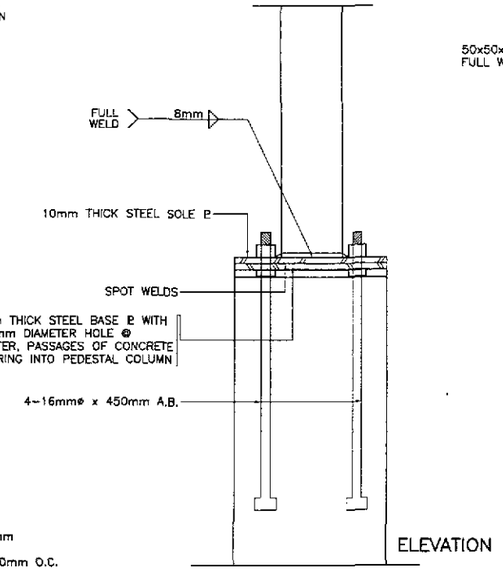


PLAN

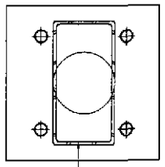
2–46x50x4mm STEEL ℞ WASHER W/ 10mmø BOLTS SPACED AS SHOWN ON FA–07

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

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



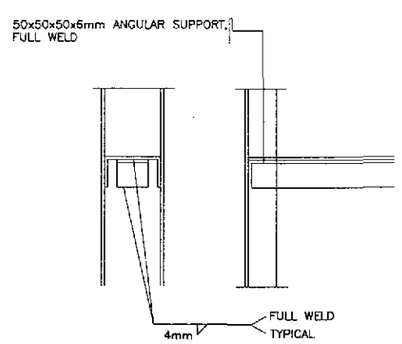
ELEVATION



PLAN

2□ –200x50x8mm BUILT–UP STEEL COLUMN, STITCH FULL WELD

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

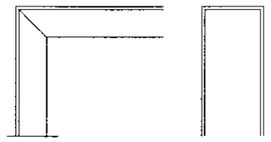


SECTION ELEVATION

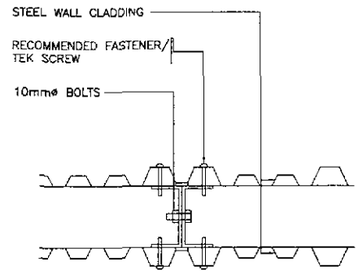
9 FA-11 **DETAIL - 10** SCALE 1:5

NOTES :

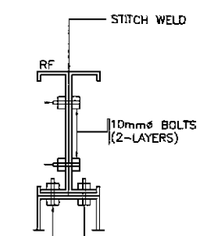
1. ALL VERTICAL AND HORIZONTAL *STUDS* SHALL BE 100x50x2mm UNSTIFFENED FLANGED UNLESS OTHERWISE SPECIFIED.
2. HORIZONTAL STUDS MUST BE INSERTED TO AND WELDED IN THE VERTICAL STUDS UNLESS OTHERWISE SPECIFIED.
3. REVISION IN THE ATTACHMENT/ CONNECTIONS THAT WILL IMPROVE DESIGN MAYBE DONE W/ PRIOR APPROVAL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



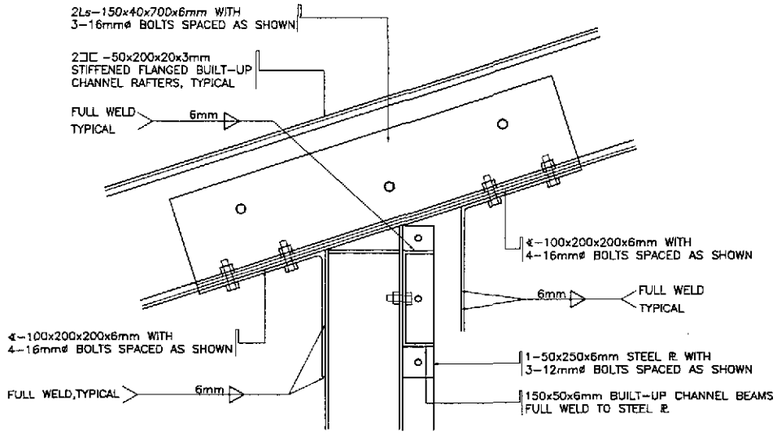
ELEVATION SECTION



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

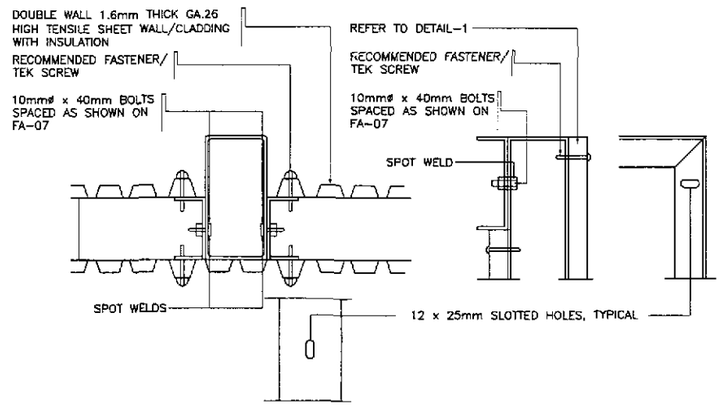


10 FA-11 **DETAIL - 13** SCALE 1:5



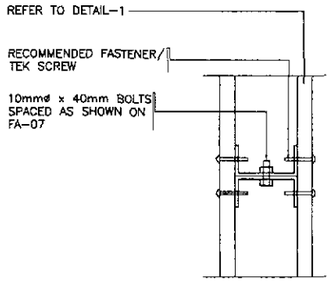
13 FA-11 **DETAIL - 14** SCALE 1:5

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

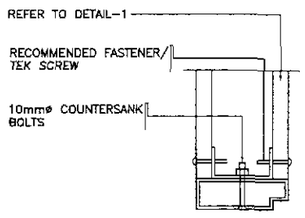


1 FA-11 **DETAIL - 1** SCALE 1:5

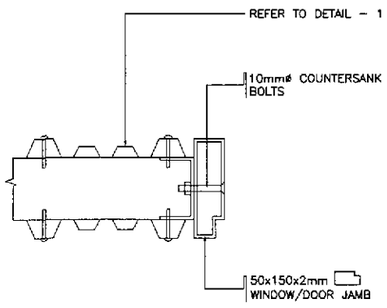
4 FA-11 **DETAIL - 2** SCALE 1:5



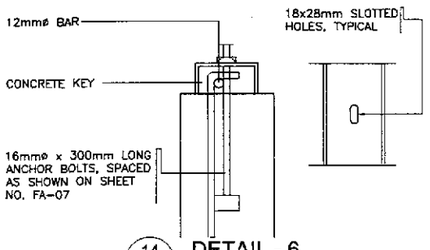
6 FA-11 **DETAIL - 3** SCALE 1:5



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



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



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

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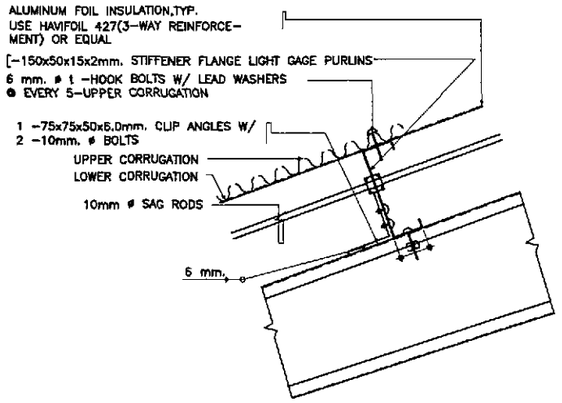
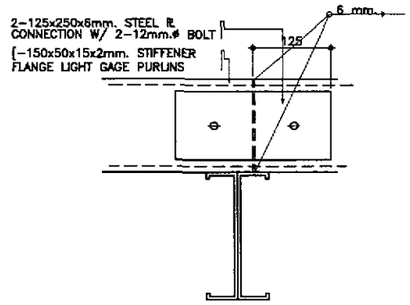
SHEET CONTENTS :
ENGINEER'S FIELD OFFICE AND LIVING QUARTERS
DETAILS OF CONNECTIONS
DETAIL 1 TO 15

SHEET NO. : FA-11

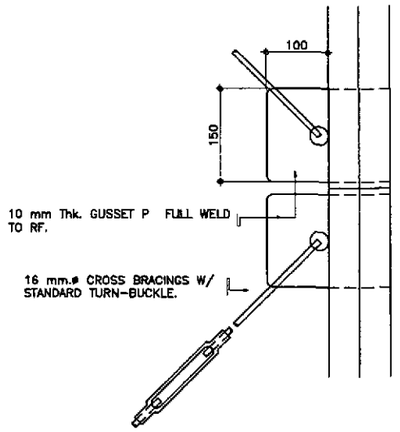


ELEVATION



SECTION , SPLICE CONNECTION

2 / FA-12 PURLIN CONNECTION
SCALE 1:5



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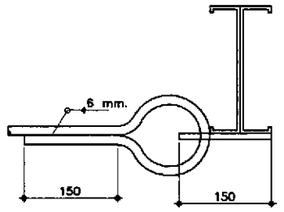
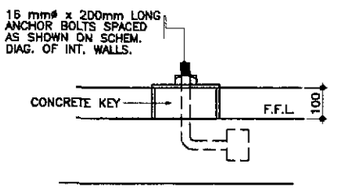
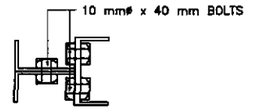


SECTION

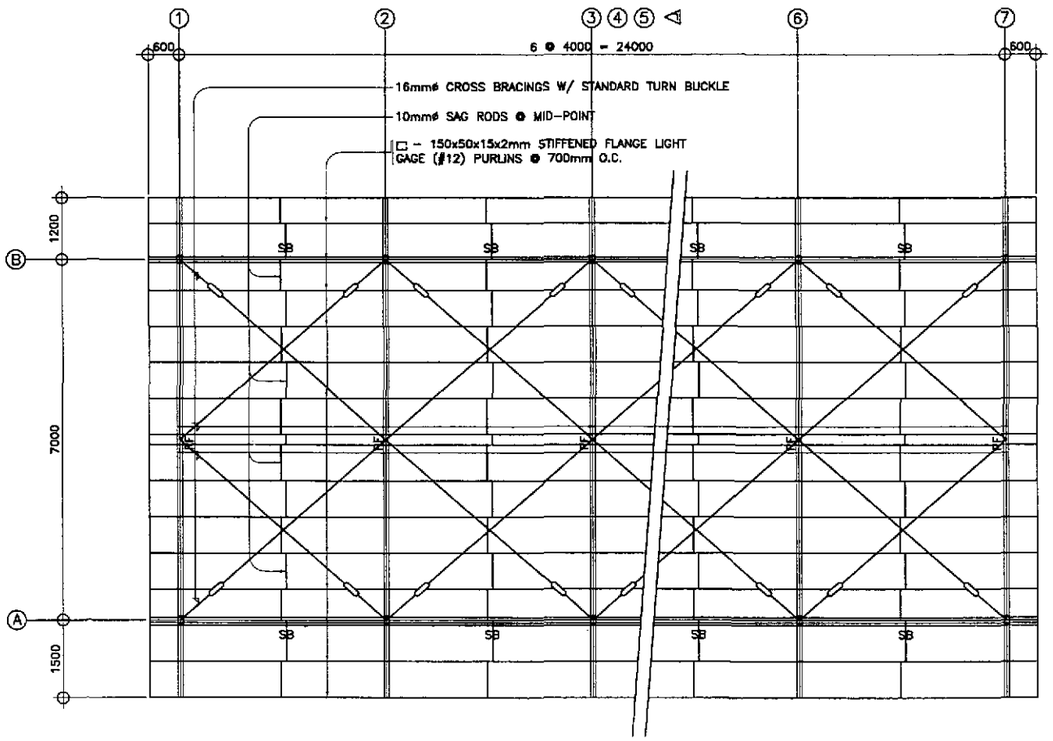
4 / FA-12 CROSS-BRACING CONNECTION
SCALE 1:5



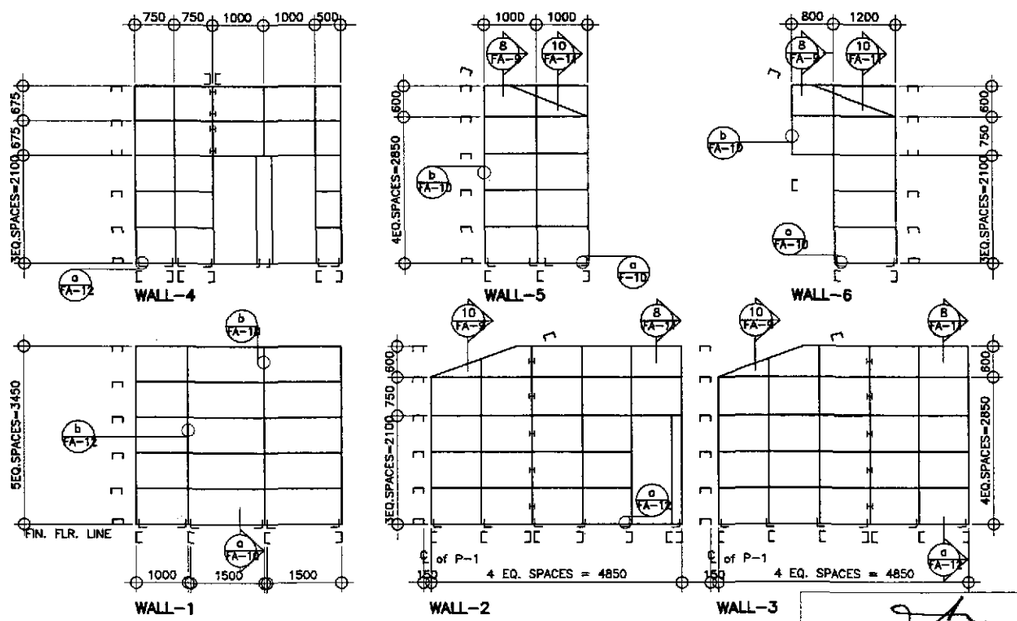
5 / FA-12 DETAIL - a
SCALE 1:5



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

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
KATAHIRA & ENGINEERS INTERNATIONAL
YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	9/19/02	A. P. GONZALES
CHECKED	9/21/02	A. P. GONZALES
SUBMITTED	9/23/02	M. KUSAKA TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

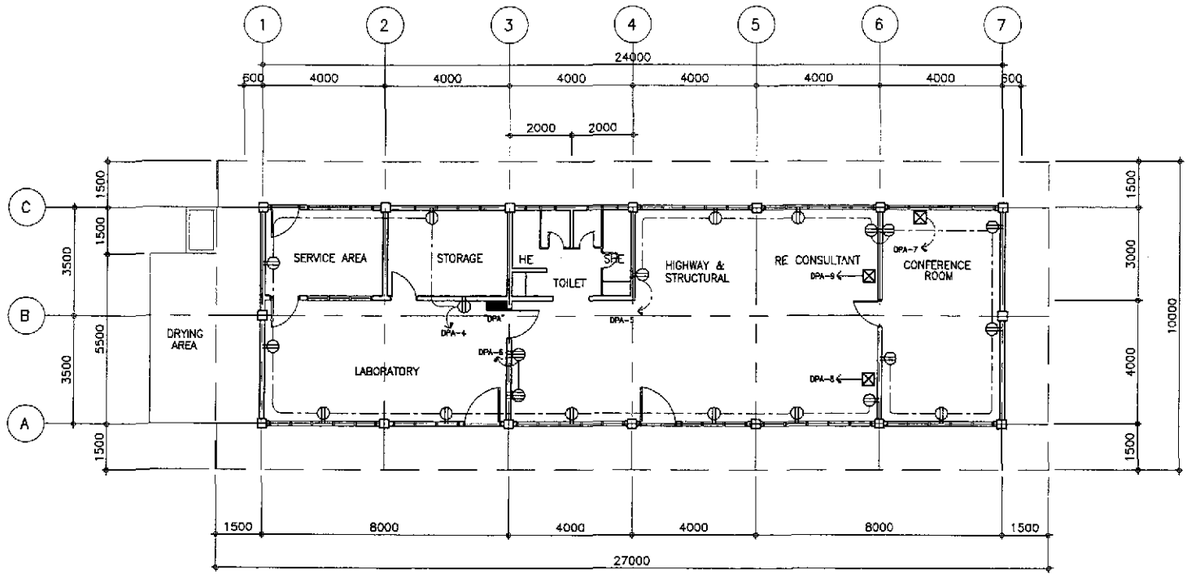
PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	WILFREDO S. LOPEZ	GILBERTO S. REYES	MANUEL M. BONGAN	SIMEON A. DATUMANONG
Project Director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

SCALE :
AS SHOWN
FULL SIZE A1

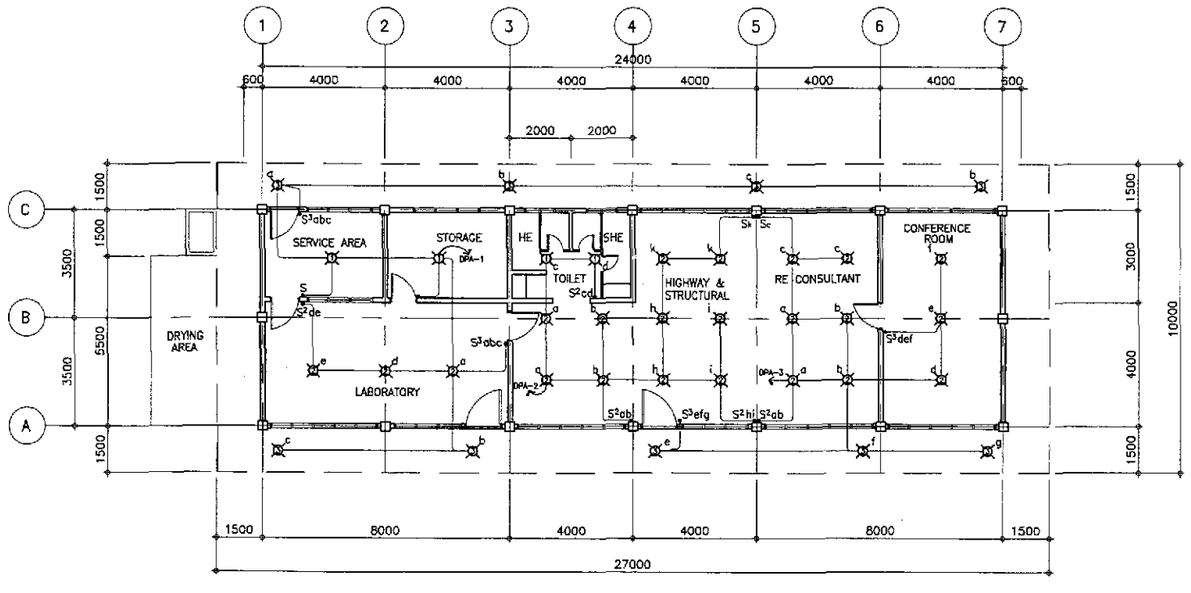
SHEET CONTENTS :
ENGINEER'S FIELD OFFICE AND LIVING QUARTERS
ROOF FRAMING PLAN, SCHEMATIC DIAGRAM PURLIN CONN. & CROSS-BRACING CONN.

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

KATAHIRA & ENGINEERS INTERNATIONAL
YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	9/19/02	E.M. ANTIOQUIA
CHECKED	9/21/02	E.M. ANTIOQUIA
SUBMITTED	9/26/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

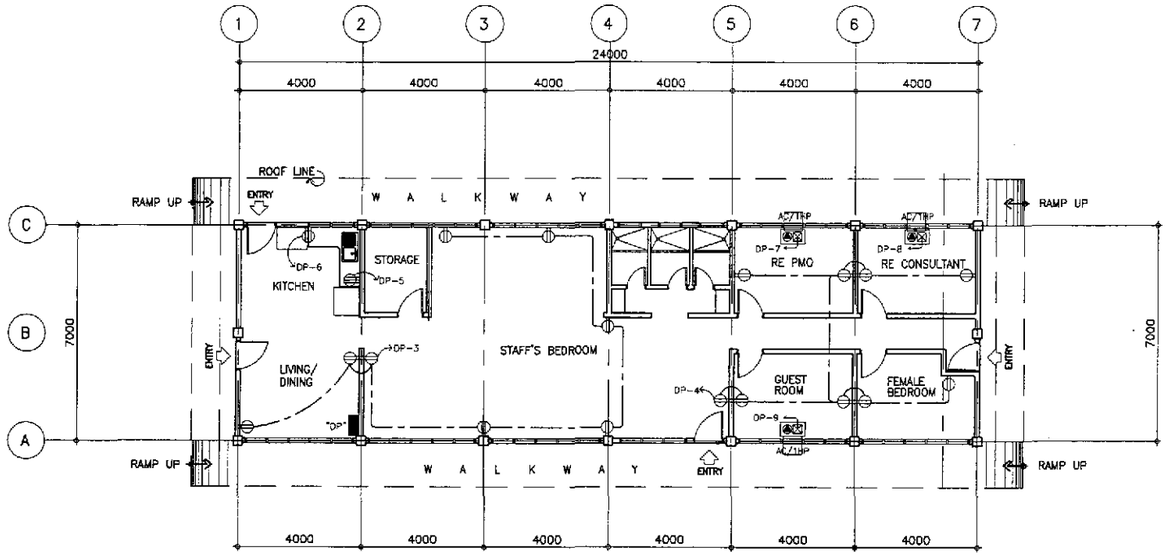
PUHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	FE M. BARRIENTOS	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	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 I

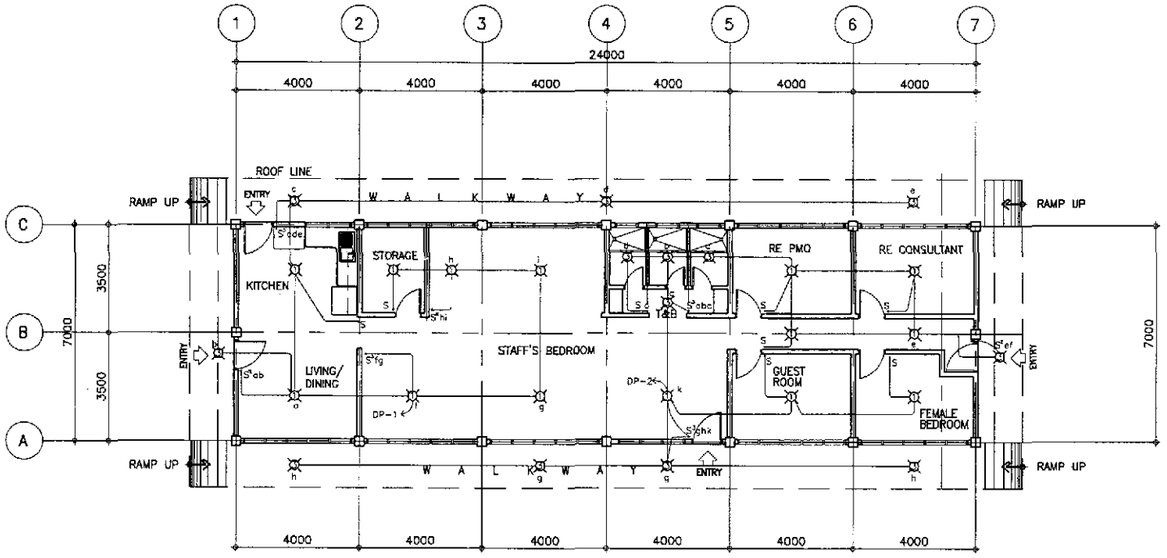
SCALE : AS SHOWN FULL SIZE A1

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.
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   A. WALL SWITCHES .....1200 mm
   B. CONVENIENCE OUTLETS .....300 mm
   C. AIR CONDITIONING OUTLETS ....AT CONVENIENT HEIGHT NEAR THE EQUIPMENT

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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	9/9/02	E.M. ANTIOQUIA
CHECKED	9/21/02	E.M. ANTIOQUIA
SUBMITTED	9/23/02	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

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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 I

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.

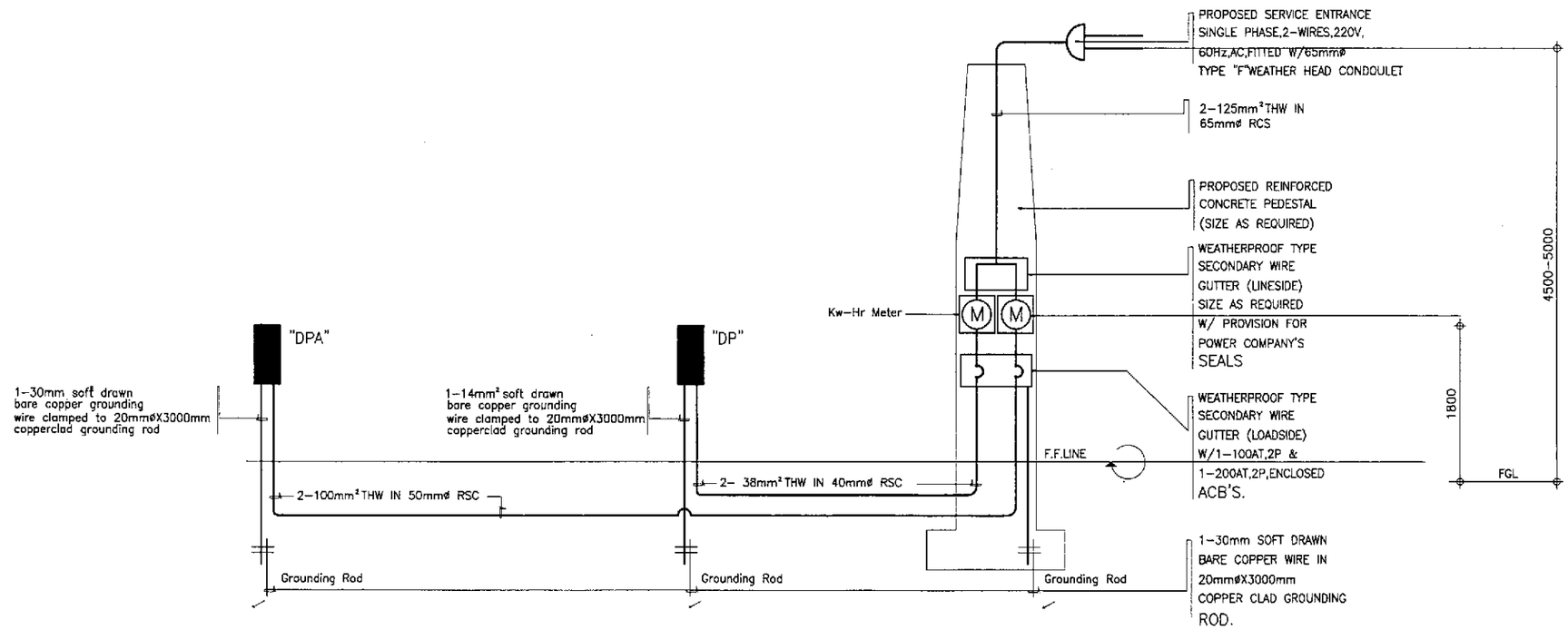
MAIN ACB: 225AF,2P,250 V,200AT,18 KAIC

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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ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
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	DATE	SIGNATURE
DESIGNED	9/19/02	E.M. ANTIOQUIA
CHECKED	9/12/02	E.M. ANTIOQUIA
SUBMITTED	9/23/02	TEAM LEADER

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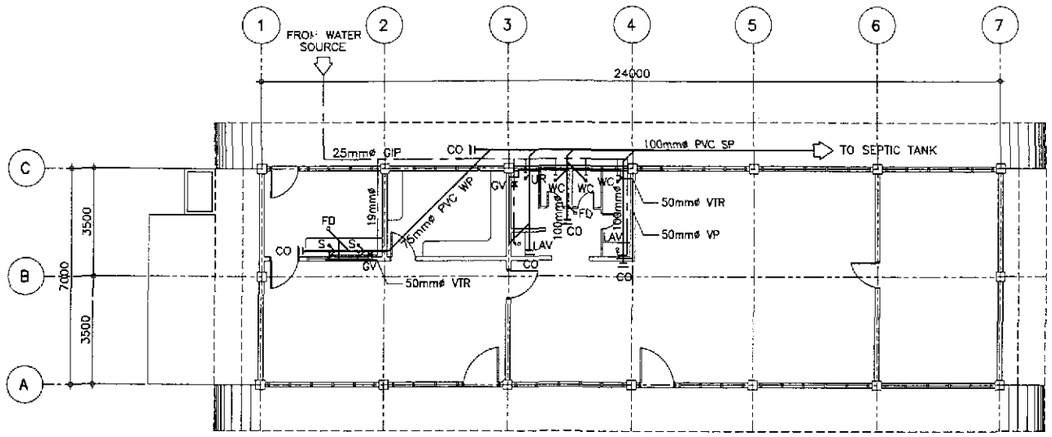
DANILO C. TRAJANO	FE M. BARRIENTOS	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Mechanical-Elect'l Div.	OIC, Director IV	Undersecretary	Secretary

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 I

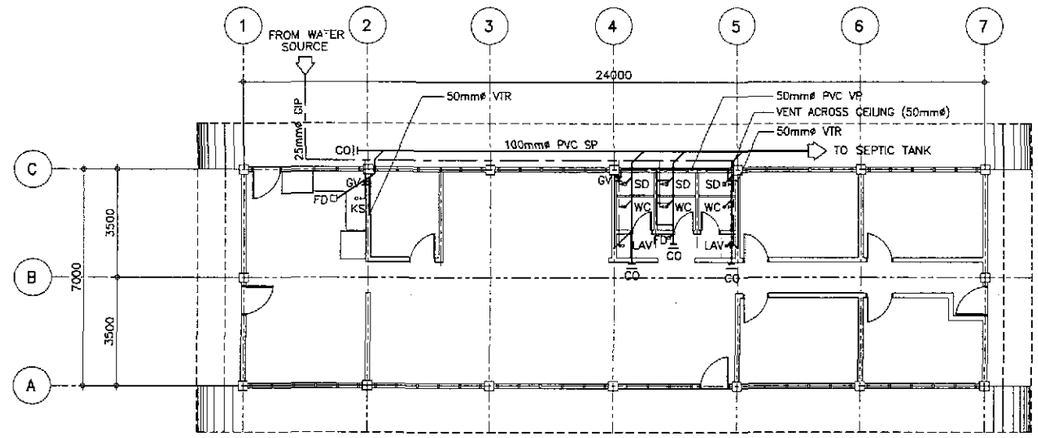
SCALE : AS SHOWN FULL SIZE A1

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

SHEET NO. : FE-03



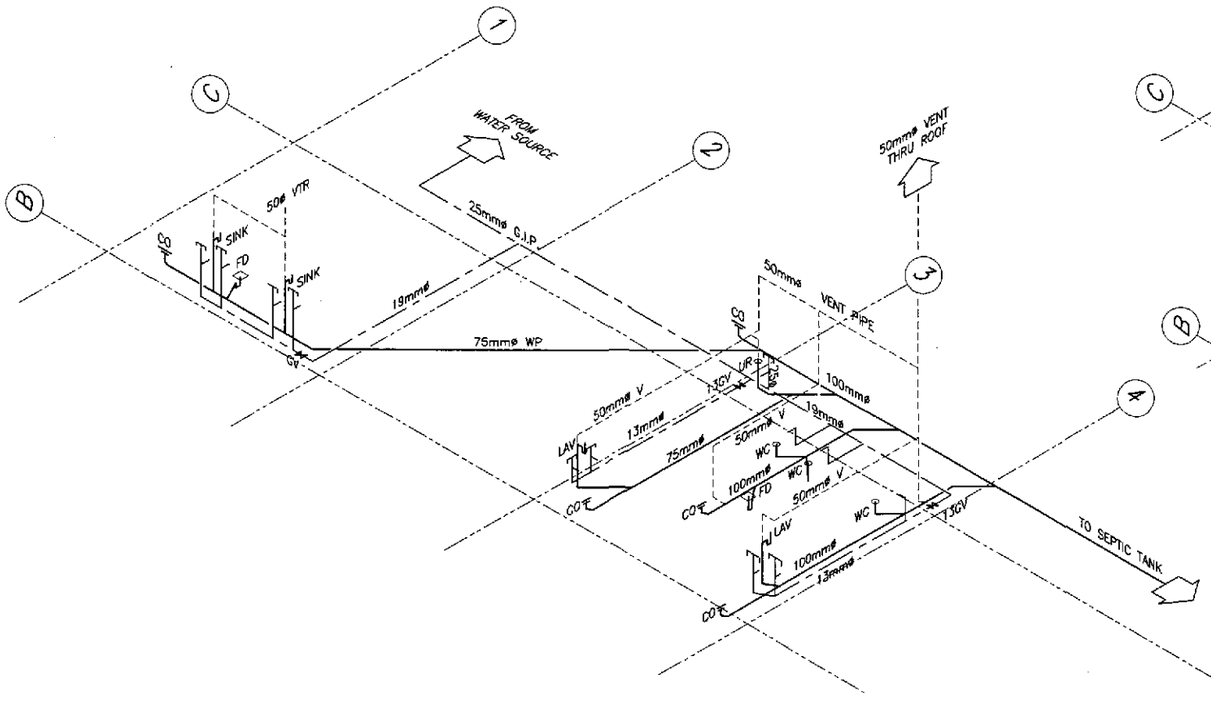
1 FP-01 ENGINEER'S FIELD OFFICE
SEWER AND WATER LINE LAYOUT
SCALE 1:100



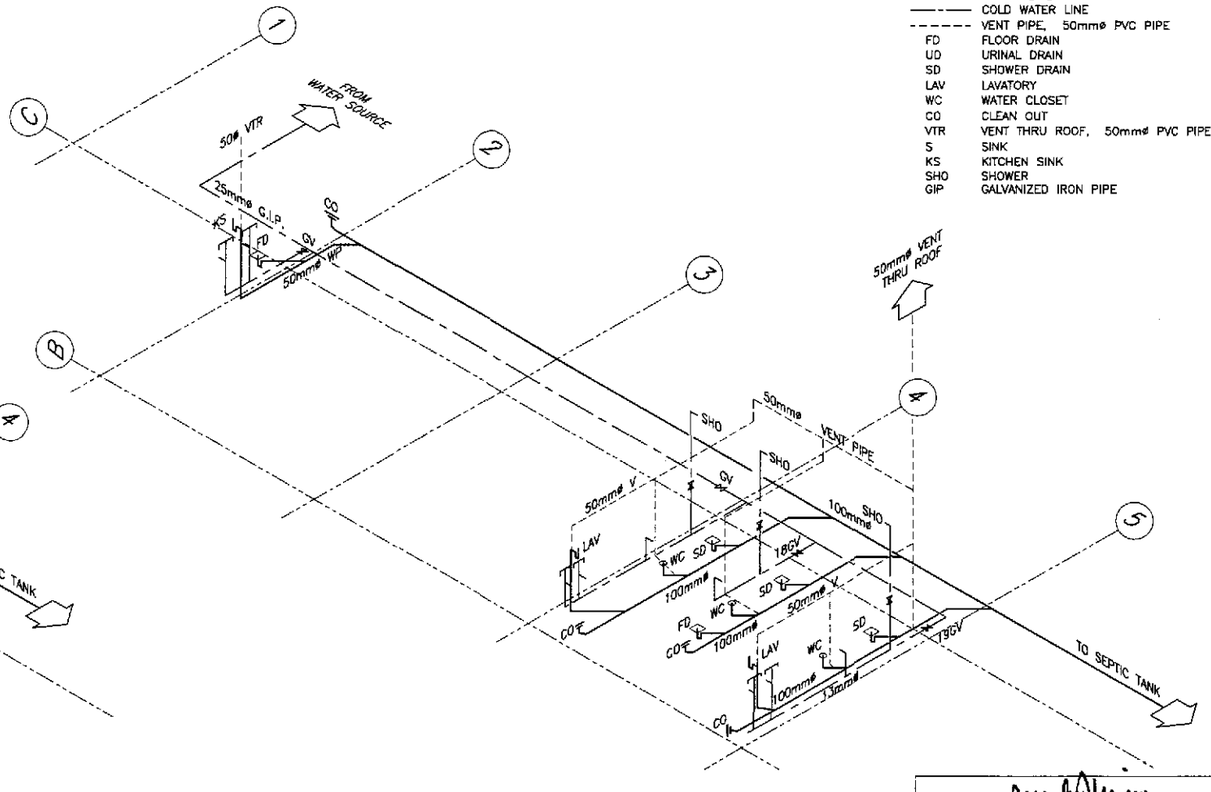
2 FP-01 ENGINEER'S LIVING QUARTER
SEWER AND WATER LINE LAYOUT
SCALE 1:100

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.

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

	DATE	SIGNATURE	PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
DESIGNED	9/19/02	F. STA. MARIA	Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
CHECKED	9/21/02	F. STA. MARIA					
SUBMITTED	9/23/02	TEAM LEADER	DANILO C. TRAJANO Project Director	EMMANUEL P. CUNTAPAY Chief, Architectural Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONOAN Undersecretary	SIMEON A. DATUMANONG Secretary

PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
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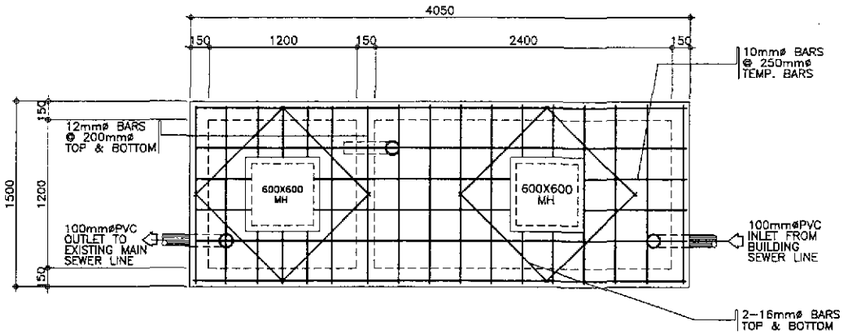
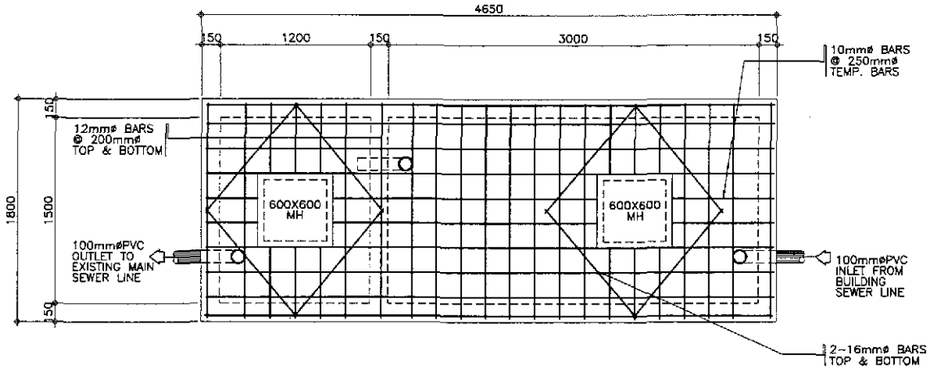
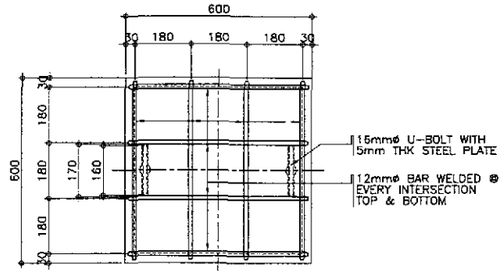


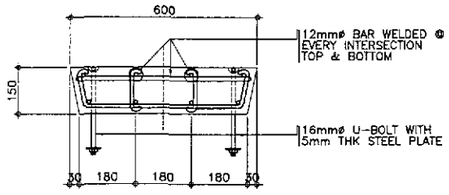
1A FP-02 PLAN SCALE 1:20



1C FP-02 PLAN SCALE 1:20

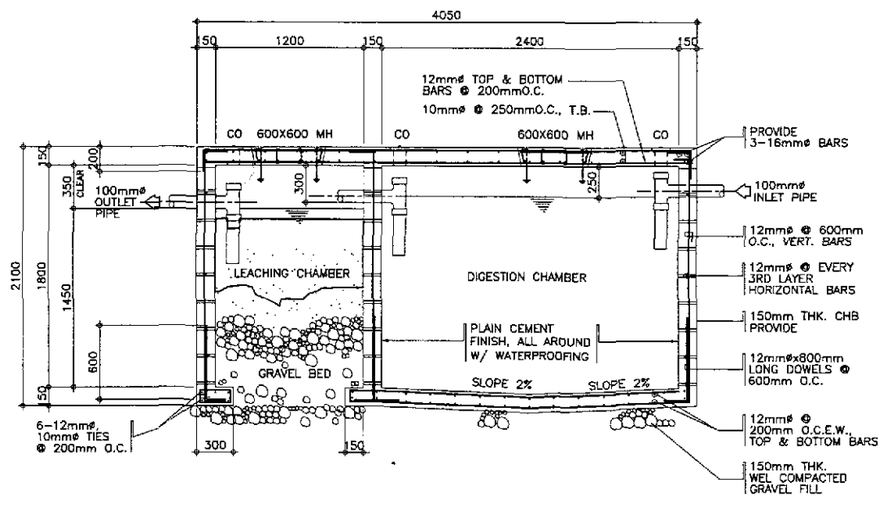


2A FP-02 PLAN SCALE 1:20



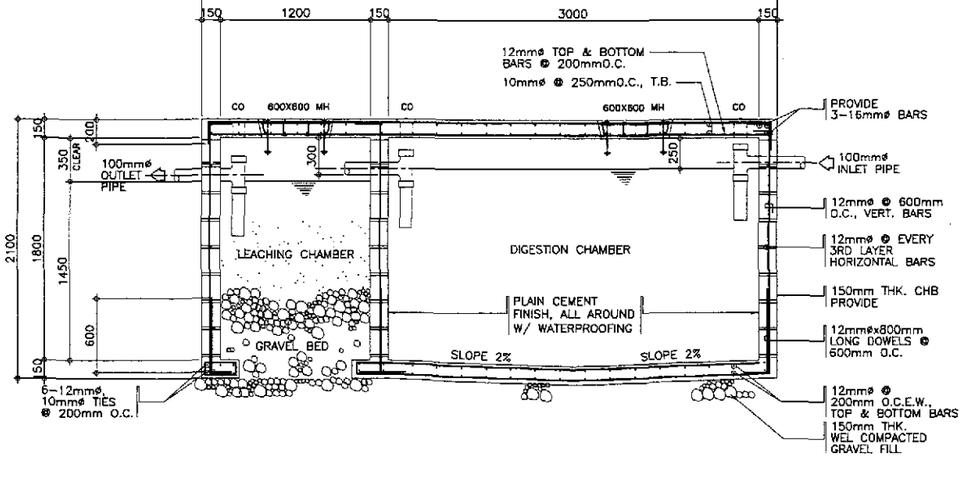
2B FP-02 SECTION SCALE 1:20

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

1 FP-02 SEPTIC TANK DETAILS 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 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.

FAUSTINO C. STA. MARIA
SANITARY ENGINEER

PTR. NO. 0083138 P.R.C. NO. 0000695
ISSUED ON 03/25/2002 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	9/12/02	F. S. STA. MARIA
CHECKED	9/21/02	F. S. STA. MARIA
SUBMITTED	9/23/02	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. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Architectural Division	OIC, Director IV	Undersecretary	Secretary

PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
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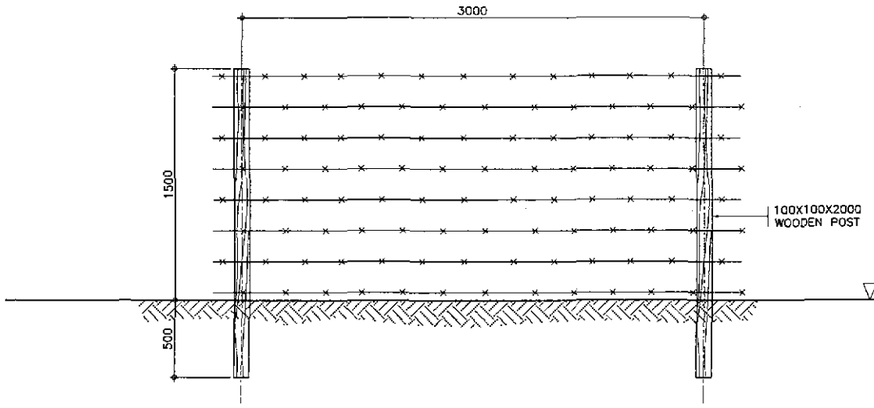
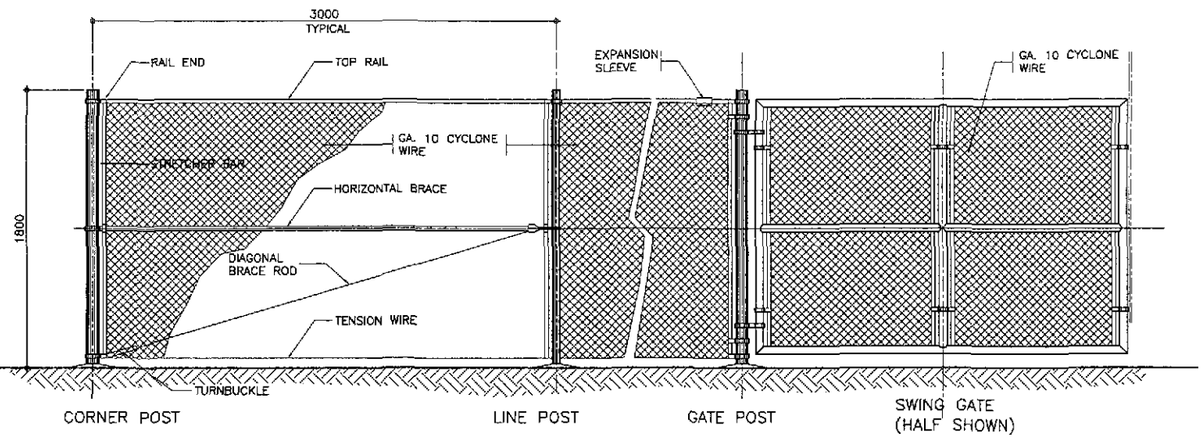
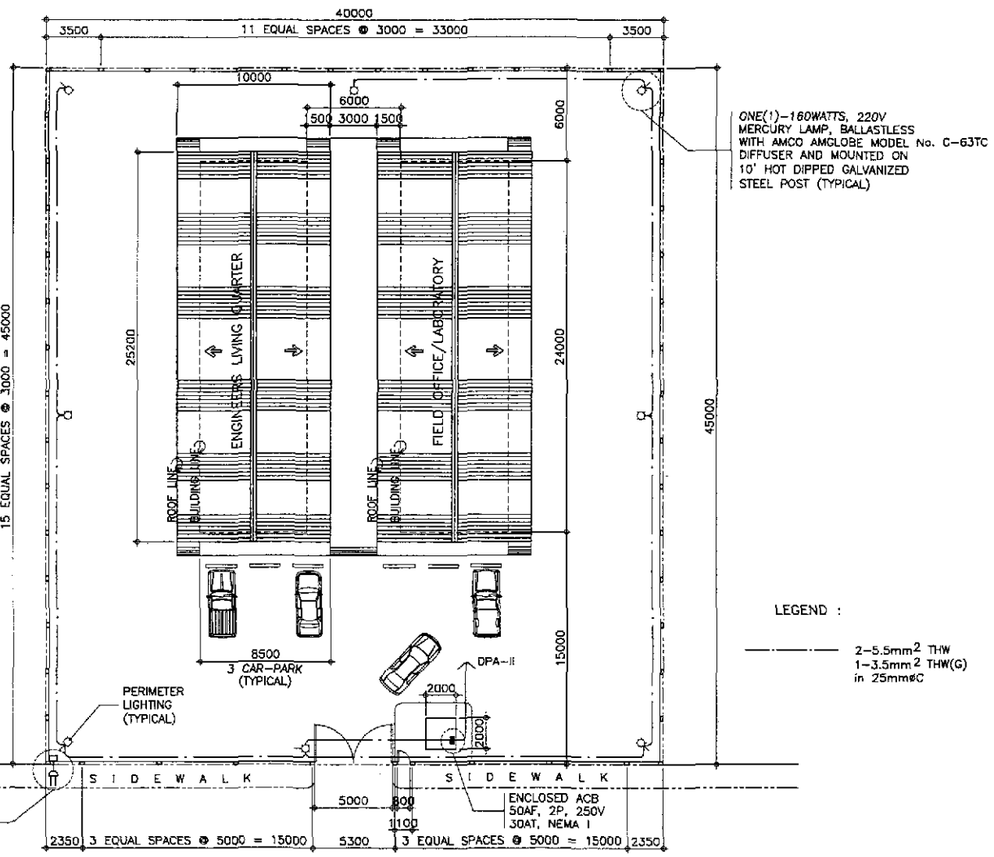
PLARIDEL BYPASS - CONTRACT PACKAGE I	FULL SIZE A1		



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



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

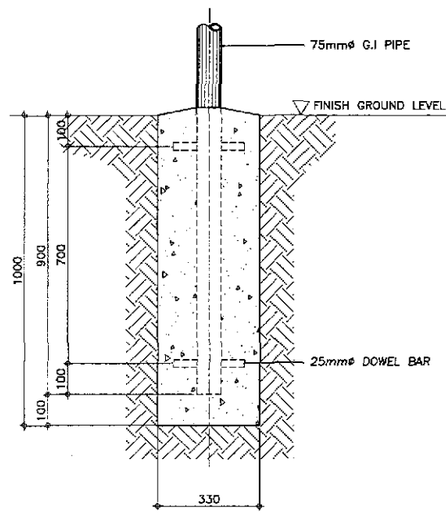


ONE(1)-160WATTS, 220V MERCURY LAMP, BALLASTLESS WITH AMCO AMGLOBE MODEL No. C-63TC DIFFUSER AND MOUNTED ON 10' HOT DIPPED GALVANIZED STEEL POST (TYPICAL)

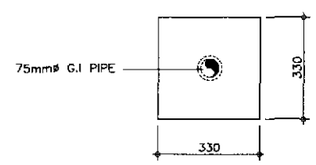
LEGEND :

2-5.5mm^2 THW
1-3.5mm^2 THW(G)
in 25mmøC

1 FX-01 PLOT PLAN
SCALE 1:200

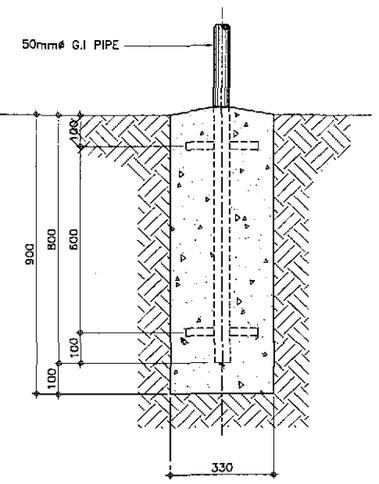


ELEVATION

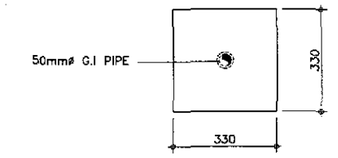


PLAN

CORNER AND GATE POST



ELEVATION



PLAN

LINE POST

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
KATAHIRA & ENGINEERS INTERNATIONAL
YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	9/19/02	A. P. GONZALES
CHECKED	9/21/02	P. GONZALES
SUBMITTED	9/23/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
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PLARIDEL BYPASS - CONTRACT PACKAGE I

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