

1 GENERAL PLAN
SCALE 1:200

A PLARIDEL BYPASS BRIDGE NO. 9 (STA. 49+355.321)
SCALE AS SHOWN

PERFECTO L. ZAPLAN JR.
OIC Chief, Hydraulic Division, BOD

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL

YEO YACHIYO ENGINEERING CO., LTD.

DATE	SIGNATURE
DESIGNED 9/24/02	<i>[Signature]</i>
CHECKED 9/27/02	<i>[Signature]</i>
SUBMITTED 7/24/02	<i>[Signature]</i>

BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: ADRIANO M. DORAY Chief, Bridges Division	Recommended By: GILBERTO S. REYES Director IV (OIC)	Recommended By: MANUEL M. BONDAN Undersecretary
		Approved By: SIMON A. DATUMANONG Secretary	

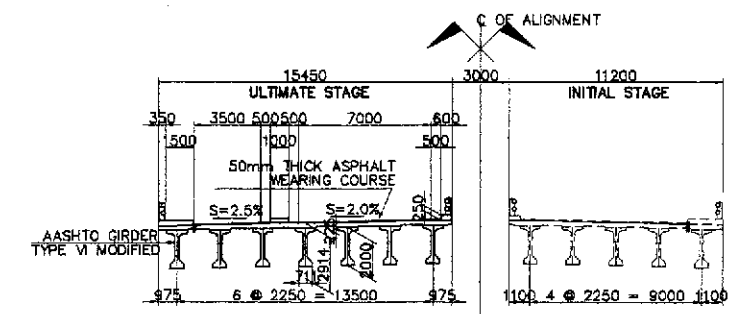
PROJECT AND LOCATION :
THE DETAILED DESIGN STUDY ON
UPGRADING INTER-URBAN HIGHWAY SYSTEM
ALONG THE PAN-PHILIPPINE HIGHWAY
(Plaridel, Cabanatuan and San Jose Bypasses)

PLARIDEL BYPASS - CONTRACT PACKAGE III

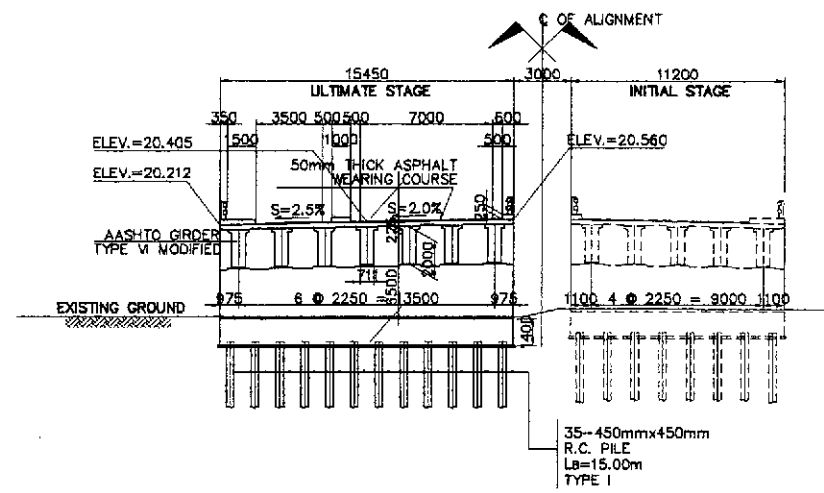
SCALE :
1 : 200
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO. 9
GENERAL PLAN
(ULTIMATE STAGE)

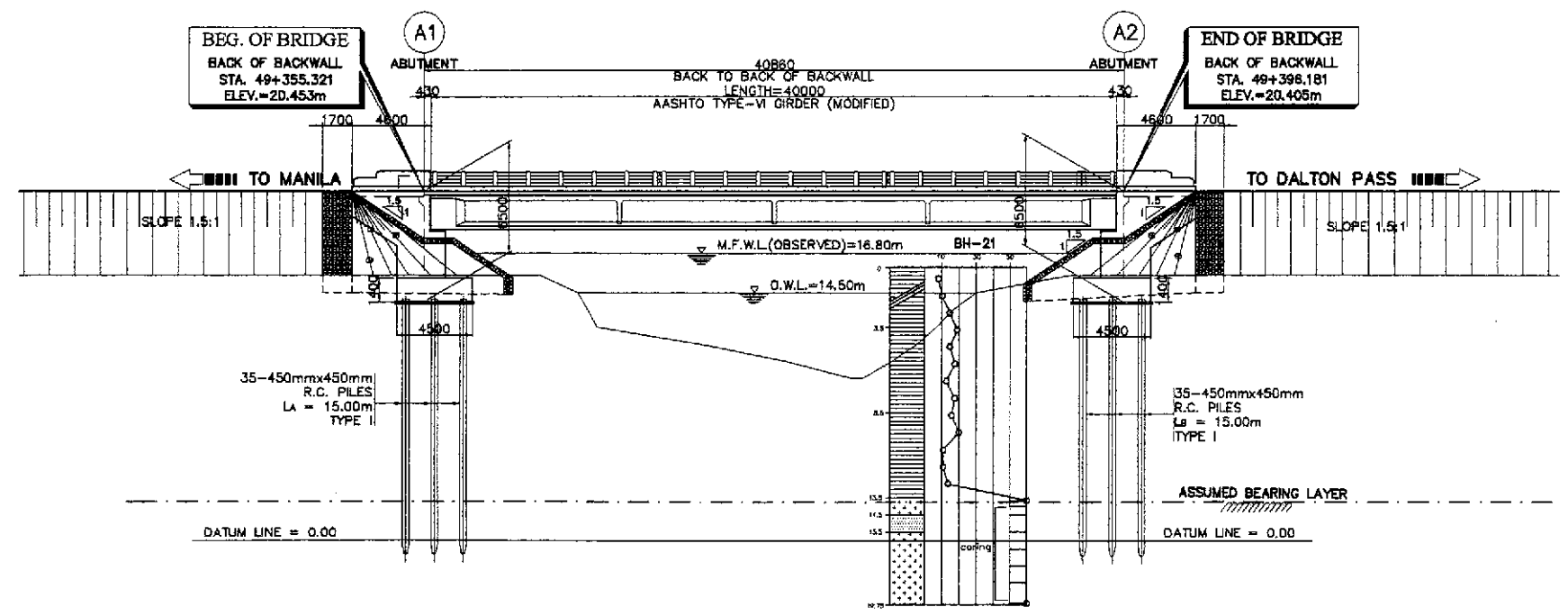
SHEET NO. :
B9-01



3 SECTION @ MIDSPAN
SCALE 1:200



4 SECTION @ ABUTMENT A2
SCALE 1:200



2 GENERAL ELEVATION
SCALE 1:200

HYDRAULIC DATA	
VELOCITY @ 50 YEARS, V_{50}	1.924 m/sec
DISCHARGE @ 50 YEARS, Q_{50}	119.800 cu.m/sec
CATCHMENT AREA, CA	11.650 sq. km

NOTE :
PRIOR TO CONSTRUCTION SOIL INVESTIGATION SHALL BE CONDUCTED FOR CONFIRMATION OF ASSUMED BEARING CAPACITY AND FOOTING ELEVATION.

THE PILE LENGTH RECOMMENDED ARE MINIMUM. SHOULD THE SOIL AT THE RECOMMENDED LENGTH BE INADEQUATE BEARING MATERIAL, LENGTH SHALL BE INCREASED. THE MINIMUM EMBEDMENT LENGTH INTO ADEQUATE SOIL FOR 400 x 400 R. C. PILE IS 1000mm WHILE FOR 450 x 450 R. C. PILE IS 1200mm.

A PLARIDEL BYPASS BRIDGE NO. 9 (STA. 49+355.321)
SCALE AS SHOWN

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OIC Chief, Hydraulics Division, BOD

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YEO YACHIYO ENGINEERING CO., LTD.

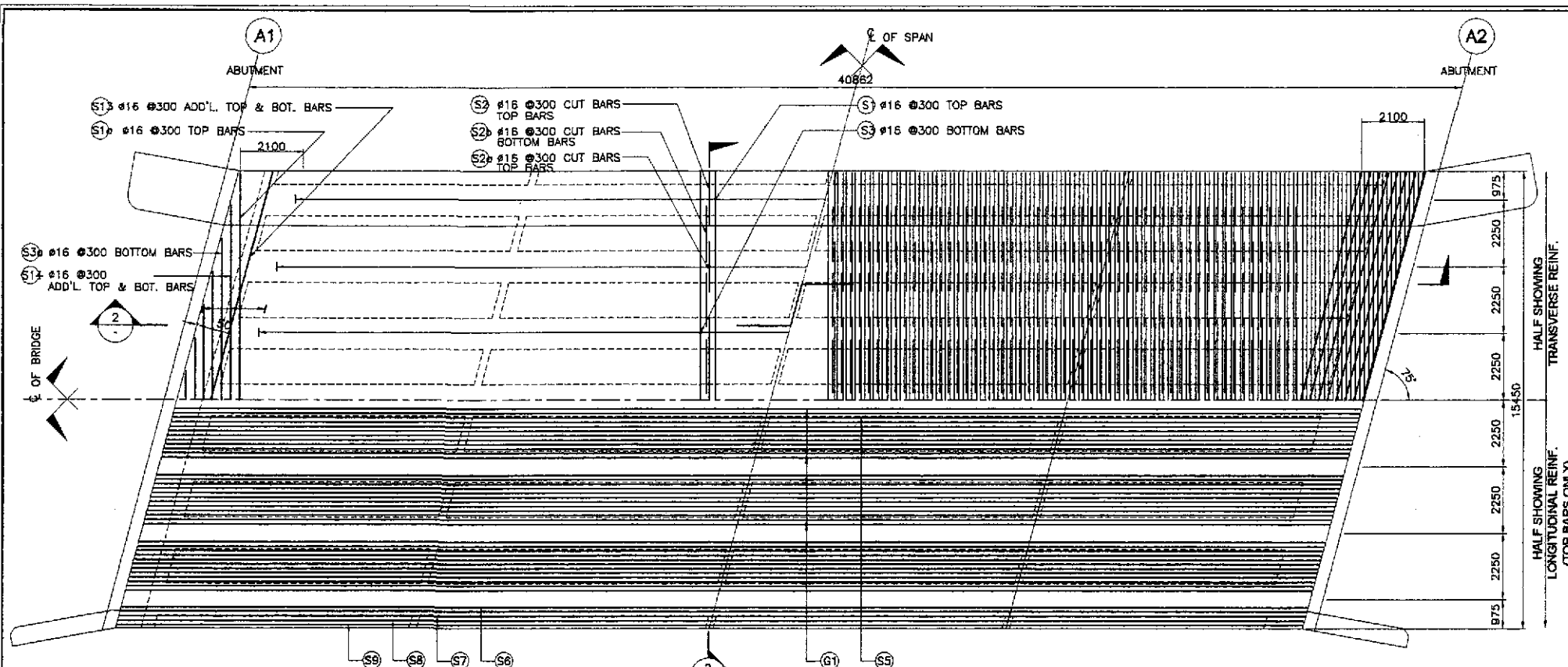
DESIGNED	CHECKED	SUBMITTED	DATE	SIGNATURE
			9/25/02	<i>[Signature]</i>
			9/27/02	<i>[Signature]</i>
			9/30/02	<i>[Signature]</i>

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

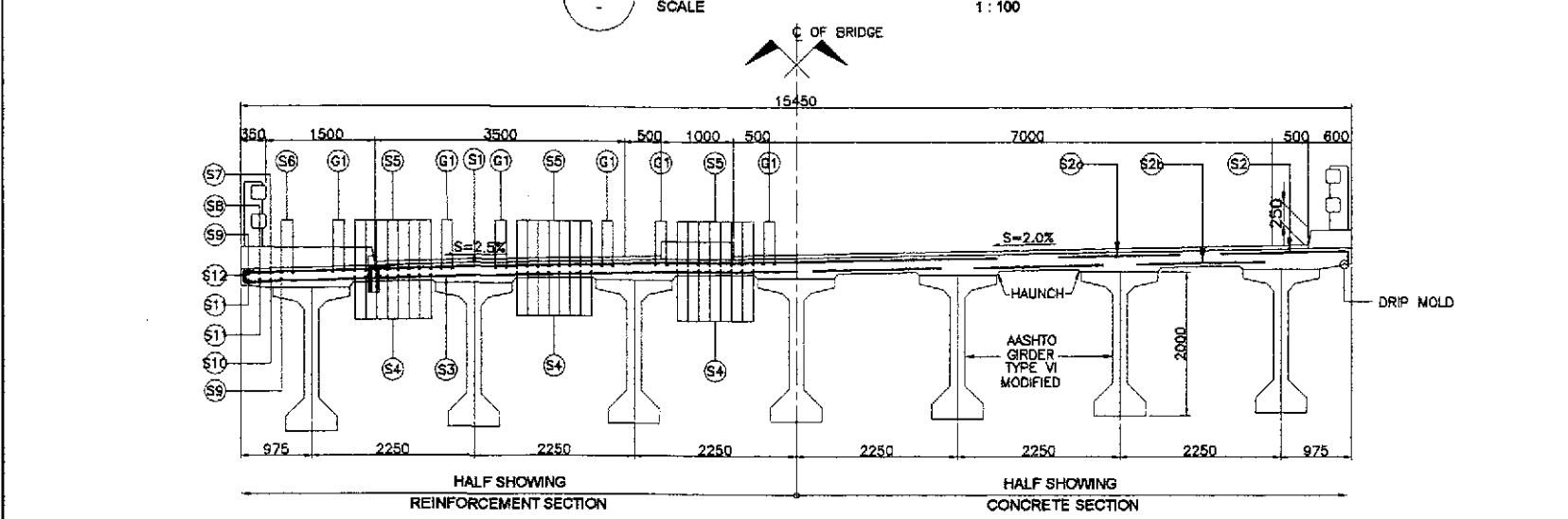
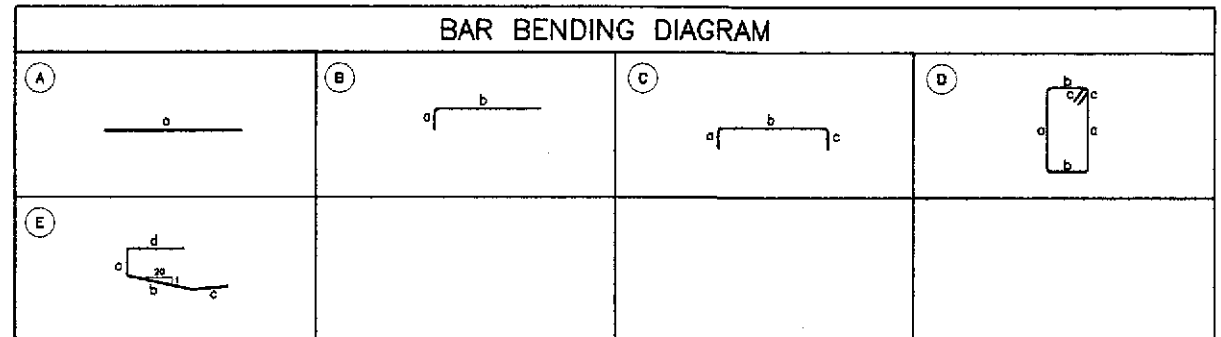
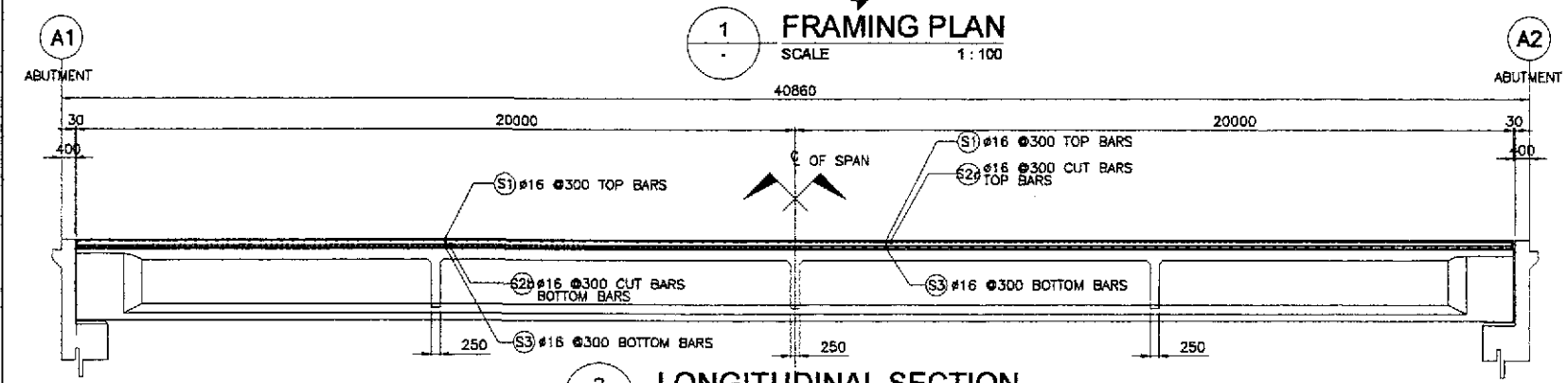
BUREAU OF DESIGN
Submitted By: DANILO C. TRAJANO (Project Director)
Reviewed By: ADRIANO M. DORAY (Chief, Bridges Division)
Recommended By: GILBERTO S. REYES (Director IV (DIC))

OFFICE OF THE SECRETARY
Recommended By: MANUEL M. BONOAN (Undersecretary)
Approved By: SIMEON A. DATUMANONG (Secretary)

PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	1 : 200 FULL SIZE A1	BRIDGE NO. 9 GENERAL ELEVATION AND SECTIONS (ULTIMATE STAGE)	B9-02

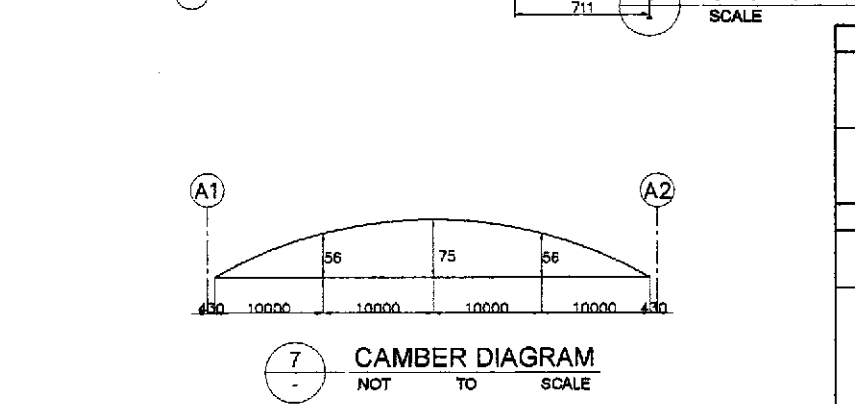
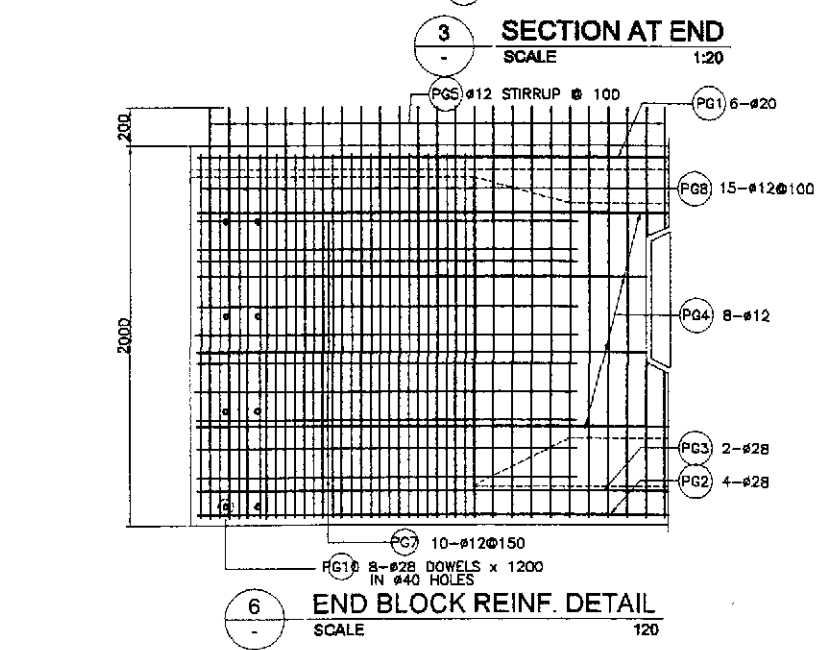
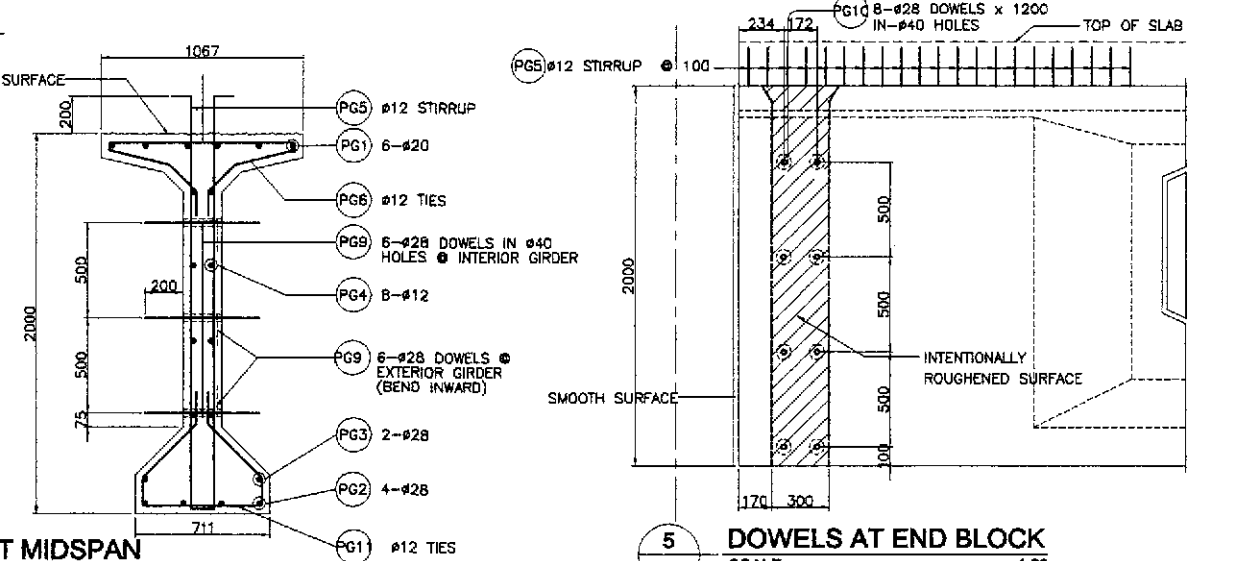
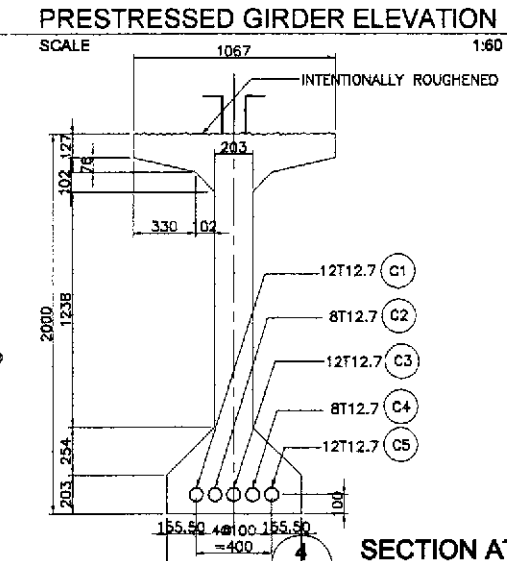
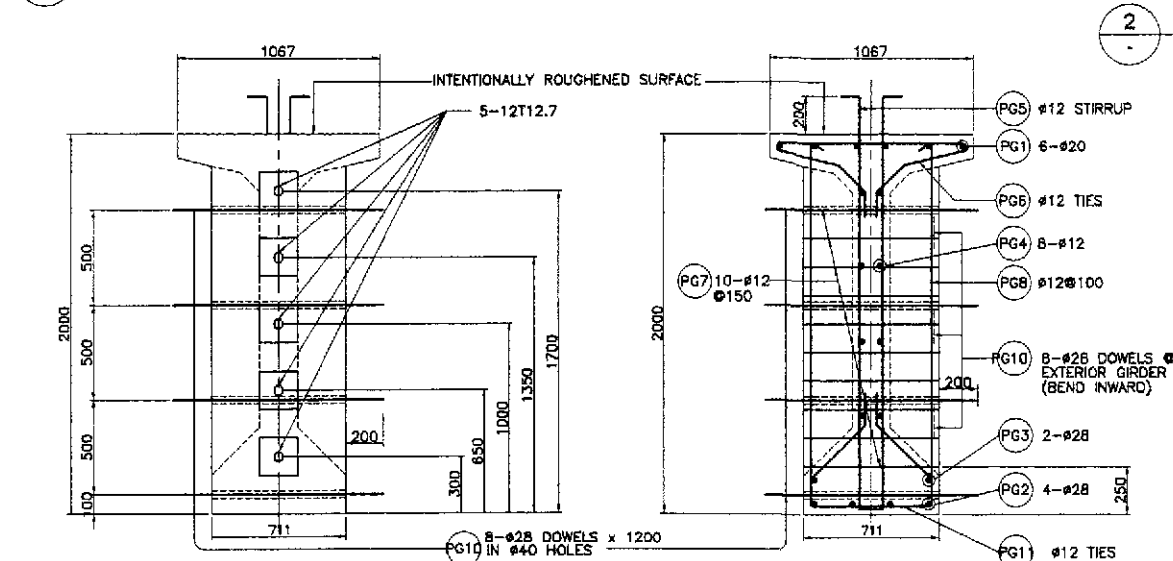
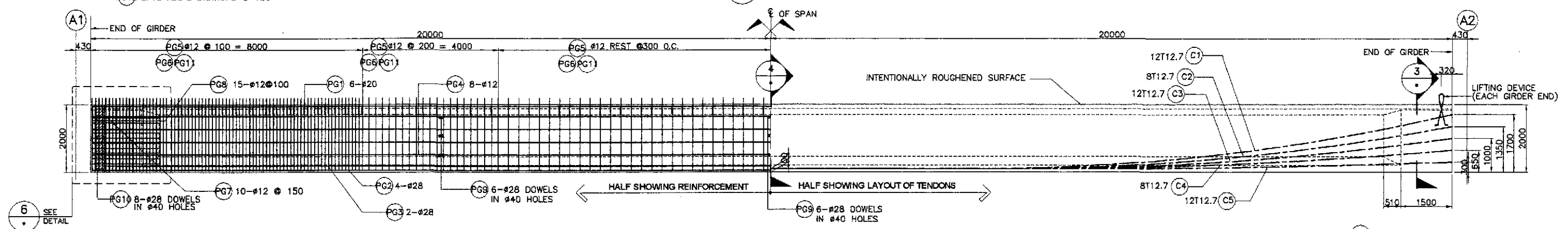
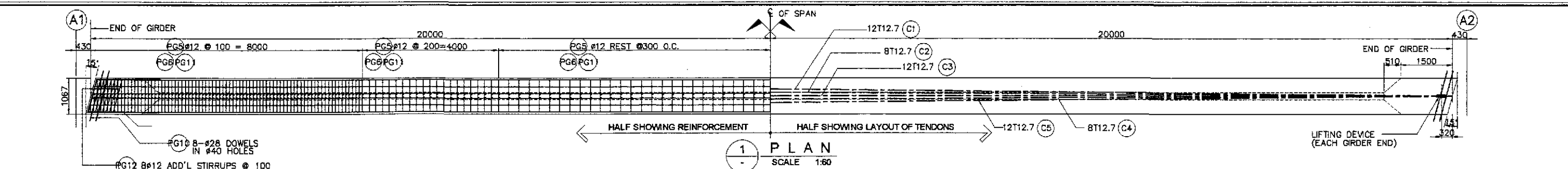


ESTIMATED QUANTITIES OF SUPERSTRUCTURE			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
404(1)a	REINFORCING STEEL GRADE 40	kg.	47916
	DECK SLAB		22493
	DIAPHRAGM		870
	GIRDER		18242
	SIDEWALK, RAILING, & POST		4584
	APPROACH SLAB		1734
404(1)b	REINFORCING STEEL GRADE 60	kg.	21956
	DECK SLAB		0
	DIAPHRAGM		2671
	GIRDER		13265
	SIDEWALK, RAILING, & POST		708
	APPROACH SLAB		5312
405(1)	STRUCTURAL CONCRETE	cu. m.	476.69
	DECK SLAB		154.69
	DIAPHRAGM		27.41
	GIRDER		224.49
	SIDEWALK, RAILING, & POST		24.50
	APPROACH SLAB		45.60

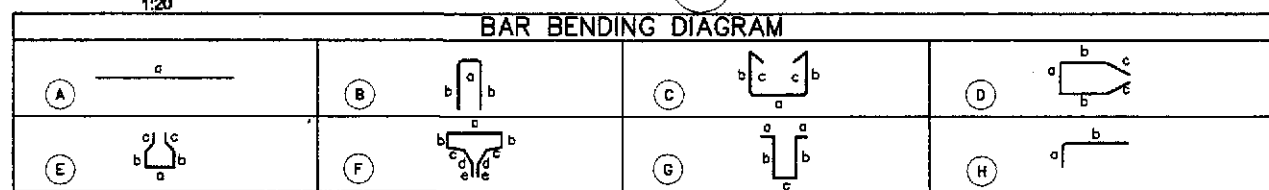


SCHEDULE OF REINFORCEMENT																
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				LENGTH EACH BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT IN (kg)	REBAR RATIO (kg/m ³)	REMARKS
							a	b	c	d						
DECK SLAB	154.69	G1	16	24	AS SHOWN	(A)	39920	-	-	-	39920	958.08	1.579	1513	141.53	
		S1	16	121	300	(C)	145	15350	145	-	15640	1892.44	1.579	2989		
		S1a	16	30	300	(C)	145	8280	145	-	8570	257.10	1.579	406		
		S2	16	242	300	(B)	145	1890	-	-	1945	470.69	1.579	744		
		S2a	16	605	300	(A)	1700	-	-	-	1700	1028.50	1.579	1625		
		S2b	16	726	300	(A)	1950	-	-	-	1950	1451.70	1.579	2236		
		S3	16	121	300	(C)	15350	-	-	-	15350	1857.35	1.579	2933		
		S3a	16	30	300	(C)	8280	-	-	-	8280	248.40	1.579	393		
		S4	16	48	150	(A)	39920	-	-	-	39920	1916.16	1.579	3026		
		S5	16	48	150	(A)	39920	-	-	-	39920	1916.16	1.579	3026		
		S7	16	2	AS SHOWN	(A)	39920	-	-	-	39920	79.84	1.579	127		
		S8	16	2	AS SHOWN	(A)	39920	-	-	-	39920	79.84	1.579	127		
		S9	16	4	AS SHOWN	(A)	39920	-	-	-	39920	159.68	1.579	253		
		S10	16	2	AS SHOWN	(A)	39920	-	-	-	39920	79.84	1.579	127		
S11	16	4	AS SHOWN	(A)	39920	-	-	-	39920	159.68	1.579	253				
S12	12	180	450	(E)	145	360	900	300	1705	306.90	0.888	273				
S13	16	32	300	(A)	15895	-	-	-	15895	508.64	1.579	804				
S14	16	60	300	(A)	8280	-	-	-	8280	496.80	1.579	785				
TOTAL	154.69															GRADE 40 TOTAL = 22,493 kgs

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS					PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/27/02	<i>[Signature]</i>		BUREAU OF DESIGN					THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 9 DECK FRAMING PLAN AND SECTION (ULTIMATE STAGE)	B9-03
	SUBMITTED	9/30/02	<i>[Signature]</i>		Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:	FULL SIZE A1			
			DANILO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridges Division	GILBERTO S. REYES Director IV (DC)	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary	PLARIDEL BYPASS - CONTRACT PACKAGE III					



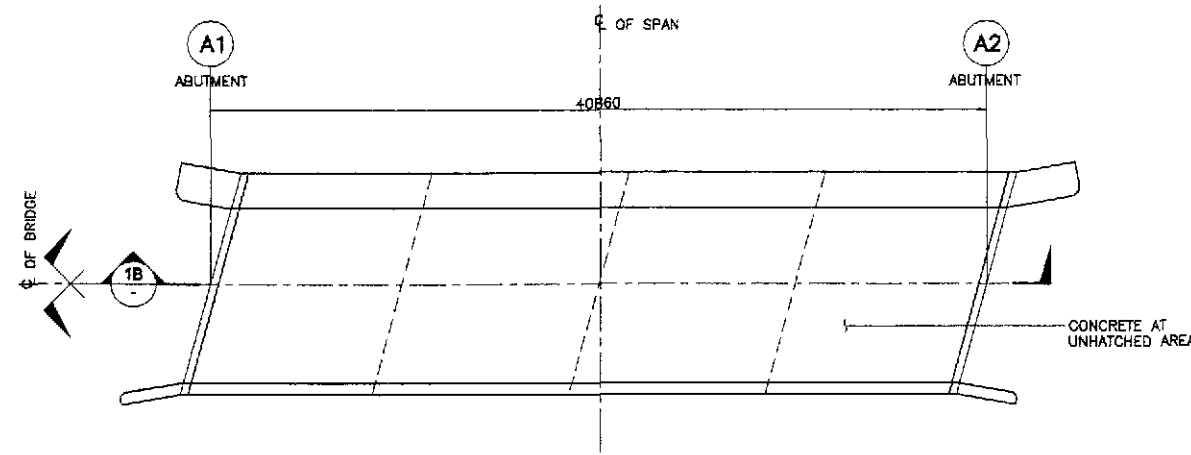
- NOTES :
- 1.) SEE GENERAL NOTES, -2, FOR GIRDER DESIGN GUIDE.
 - 2.) JACKING FORCE PER GIRDER, $P_j = 8261$ KN.
 - 3.) JACKING WILL BE DONE AT BOTH ENDS.
 - 4.) FINAL PRESTRESSING FORCE @ MIDSPAN, $F_{NET} = 5023$ KN.



STRUCTURE COMPONENT	BAR MARK	SIZE (mm)	QTY.	SPACING	BAR SHAPE	DIMENSION (mm)					LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONC. VOLUME (cu.m)	REBAR RATIO (kg/cu.m)	REMARKS
						a	b	c	d	e							
GIRDER	PG1	20	6	AS SHOWN	(A)	39920	-	-	-	-	39920	239.52	2.466	591			QUANTITIES ARE FOR ONE (1) GIRDER ONLY
	PG2	28	4	AS SHOWN	(A)	39920	-	-	-	-	39920	158.68	4.833	772			
	PG3	28	2	AS SHOWN	(A)	39920	-	-	-	-	39920	79.84	4.833	386			
	PG4	12	8	AS SHOWN	(A)	39920	-	-	-	-	39920	319.36	0.888	284			
	PG5	12	252	100	(G)	100	2150	103	-	-	4603	1159.96	0.888	1031			
	PG6	12	252	100	(F)	1000	50	340	200	150	2480	624.96	0.888	555			
	PG7	12	20	150	(D)	635	1450	550	-	-	4635	92.70	0.888	83	32.07	140.35	
	PG8	12	30	100	(C)	635	1950	150	-	-	4775	143.25	0.888	128			
	PG9	28	18	AS SHOWN	(A)	603	-	-	-	-	603	10.85	4.833	53			
	PG10	28	16	AS SHOWN	(A)	1200	-	-	-	-	1200	19.20	4.833	93			
	PG11	12	252	100	(E)	635	160	400	150	-	2055	517.86	0.888	460			
	PG12	12	16	100	(B)	635	1920	-	-	-	4475	71.60	0.888	64			

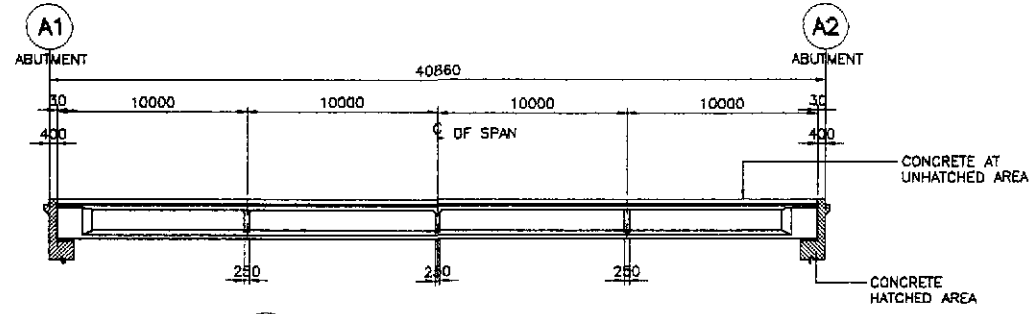
GRADE 40 TOTAL = 2,606 kgs
 GRADE 60 TOTAL = 1,895 kgs

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES			PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :		SHEET NO. :
	CHECKED	9/25/02	<i>[Signature]</i>		DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)			AS SHOWN	BRIDGE NO. 9 ASSHTO TYPE VI GIRDER (MODIFIED) DETAILS (ULTIMATE STAGE)		B9-04
SUBMITTED	9/30/02	<i>[Signature]</i>		BUREAU OF DESIGN			PLARIDEL BYPASS - CONTRACT PACKAGE III			FULL SIZE A1				



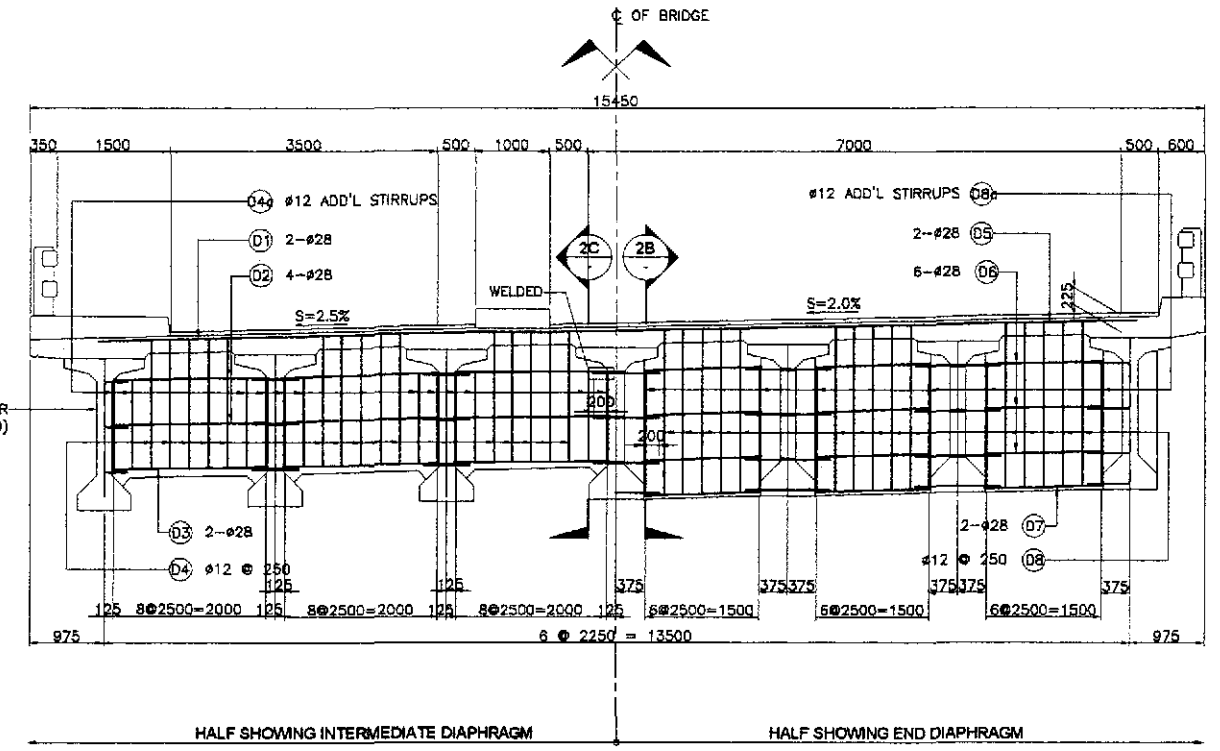
1A PLAN
SCALE 1:200

- NOTES:
1. CONCRETE AT MATCHED AREAS SHALL BE PLACED AT LEAST TWENTY ONE (21) DAYS AHEAD OF CONCRETE AT UNHATCHED AREAS.
 2. REINFORCEMENT SHALL BE CONTINUOUS AT CONSTRUCTION JOINTS.
 3. SEE GIRDER DETAIL FOR SPACING OF #28 DOWELS.

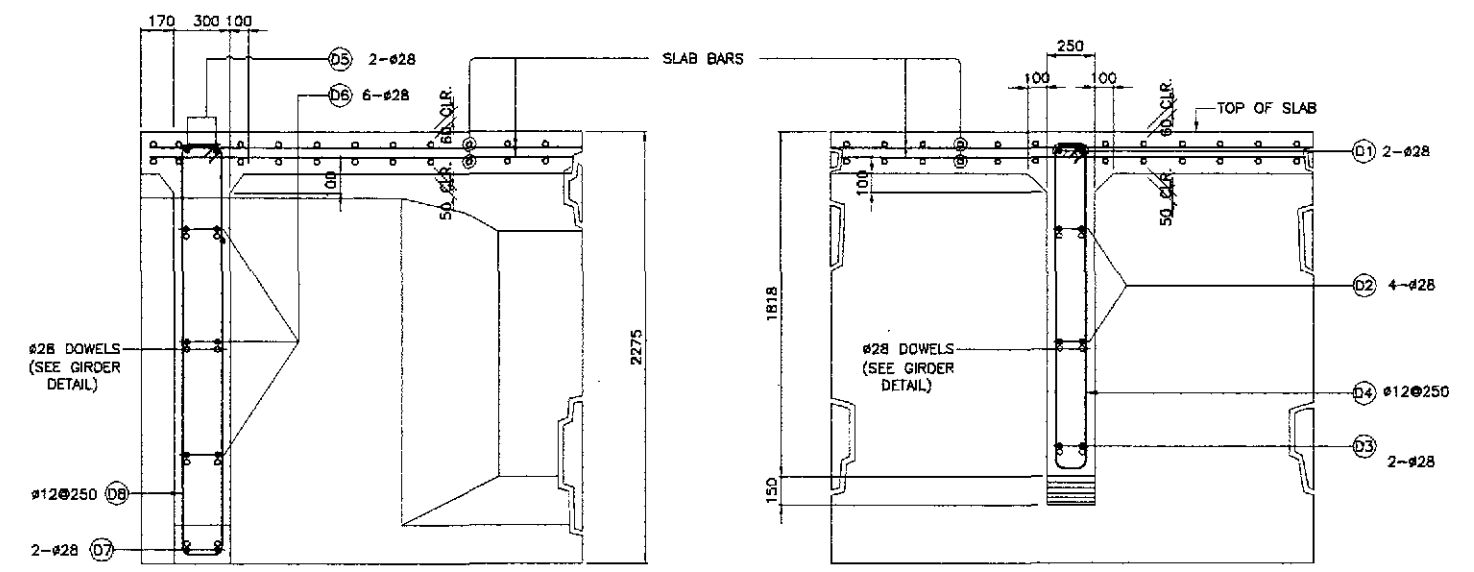


1B LONGITUDINAL SECTION
SCALE 1:200

1 CONCRETE POURING SEQUENCE
SCALE 1:200



2A ELEVATION
SCALE 1:25



2B SECTION
SCALE 1:20

2C SECTION
SCALE 1:20

2 DETAIL OF END & INTERMEDIATE DIAPHRAGM
SCALE AS SHOWN

BAR BENDING DIAGRAM																	
A		B															
SCHEDULE OF REINFORCEMENT																	
STRUCTURE COMPONENT	LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	TOTAL WEIGHT IN (kg)	REBAR RATIO (kg/m ³)	REMARKS
DIAPHRAGM	INTERMEDIATE DIAPHRAGM	16.06	D1	28	6	AS SHOWN	A	13500				13500	81.00	4.833	392	122.82	TOP BARS
			D2	28	72	AS SHOWN	A	2045				2045	147.24	4.833	712		DIST. BARS
			D3	28	36	AS SHOWN	A	2045				2045	73.62	4.833	356		BOTT. BARS
			D4	12	90	250	B	150	1700 (gvs.)	150	4000	360.00	0.888	320	STIRRUPS		
	D4a	12	72	AS SHOWN	B	150	1200	150	3000	216.00	0.888	192	ADD'L STIRRUPS				
	D5	28	4	AS SHOWN	A	13500				13500	54.00	4.833	261	TOP BARS			
	D6	28	72	AS SHOWN	A	2045				2045	147.24	4.833	712	DIST. BARS			
	D7	28	24	AS SHOWN	A	2045				2045	49.08	4.833	238	BOTT. BARS			
END DIAPHRAGM	11.36	D8	12	60	250	B	200	2175	150	5050	303.00	0.888	270	STIRRUPS	138.14		
		D8a	12	24	AS SHOWN	B	200	1700 (gvs.)	150	4100	98.40	0.888	88	ADD'L STIRRUPS			
TOTAL		27.42													GRADE 60 TOTAL = 2,871 kgs	GRADE 40 TOTAL = 870 kgs	

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

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

DESIGNED: 9/29/02
CHECKED: 9/27/02
SUBMITTED: 9/29/02

SIGNATURE: [Signature]
E. N. SALLAN
[Signature]
[Signature]

Submitted By: DANILO C. TRAJANO, Project Director
Reviewed By: ADRIANO M. OORCOY, Chief, Bridges Division
Recommended By: GILBERTO S. REYES, Director IV (DIC)

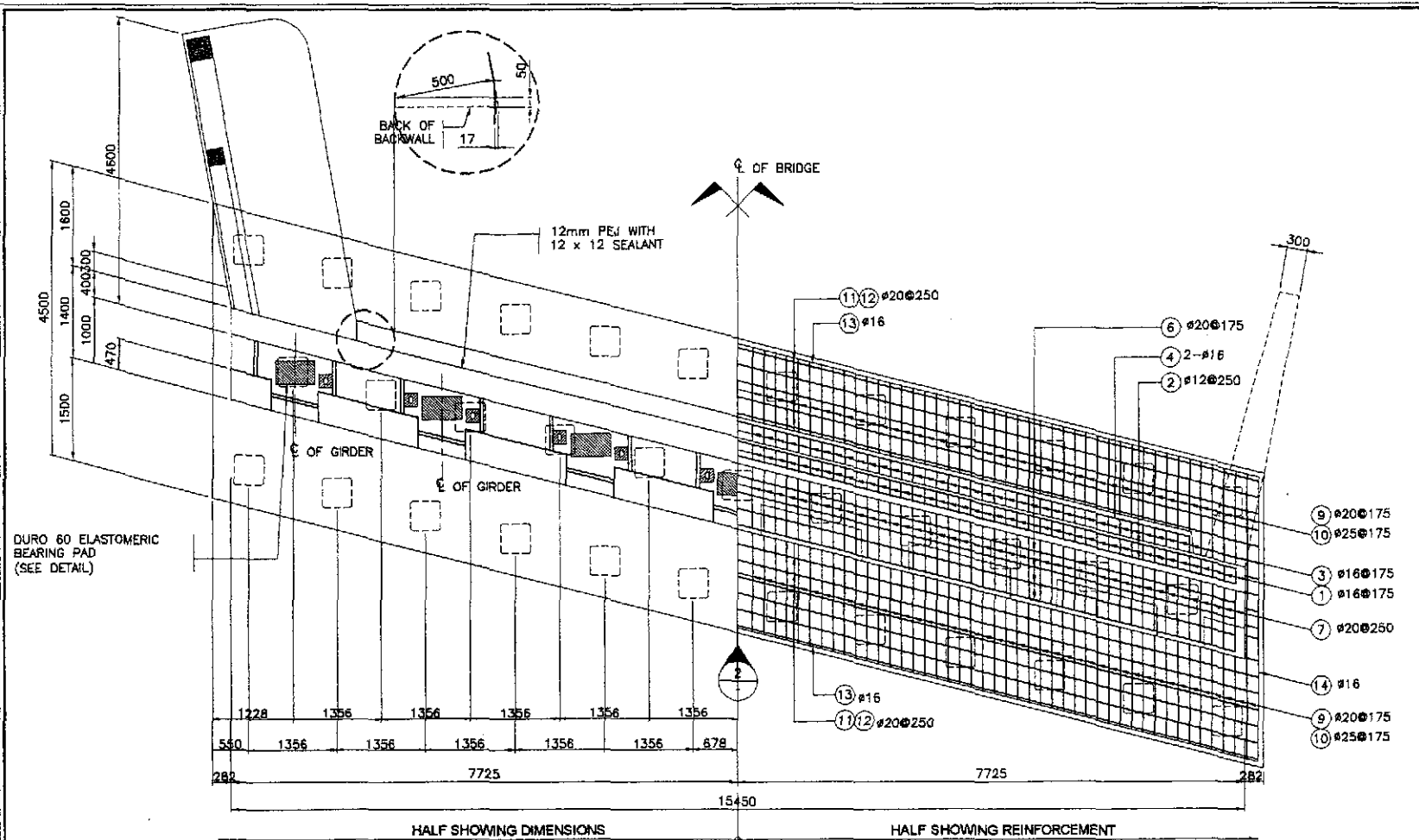
OFFICE OF THE SECRETARY
Recommended By: MANUEL M. BONDAN, Undersecretary
Approved By: SIMEON A. DATUMANONG, Secretary

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

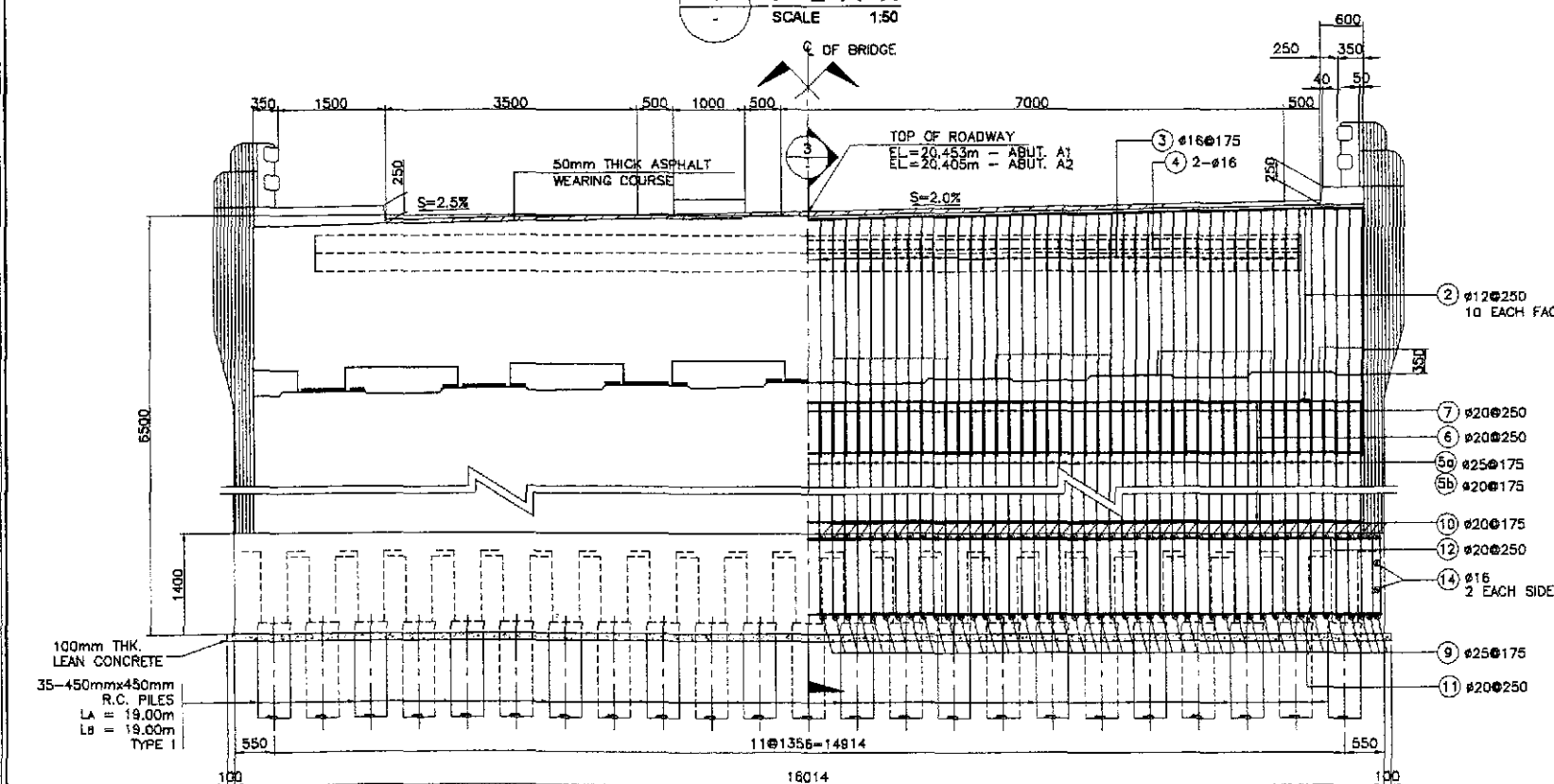
SCALE: AS SHOWN / FULL SIZE A1

SHEET CONTENTS: BRIDGE NO. 9 CONCRETE POURING SEQUENCE AND DIAPHRAGM DETAILS (ULTIMATE STAGE)

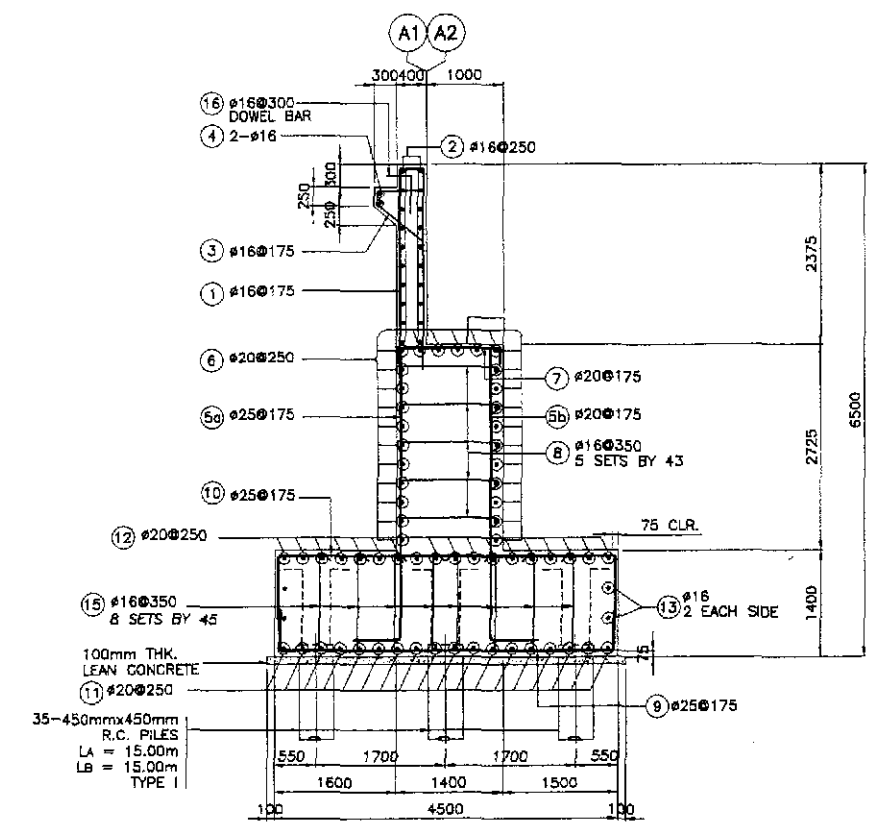
SHEET NO.: B9-05



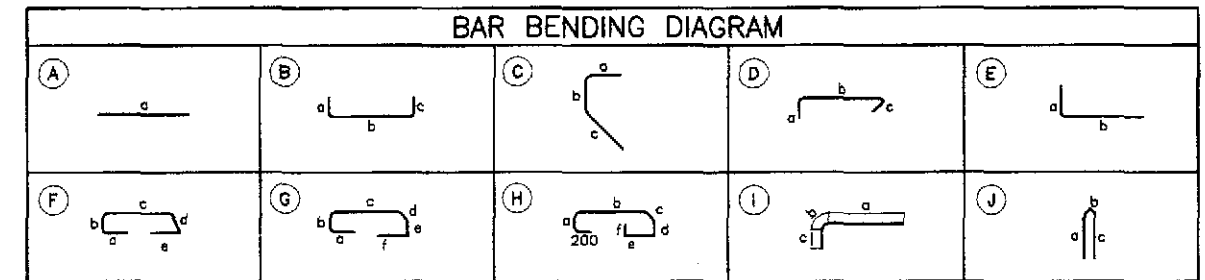
1 PLAN SCALE 1:50



2 ELEVATION SCALE 1:50

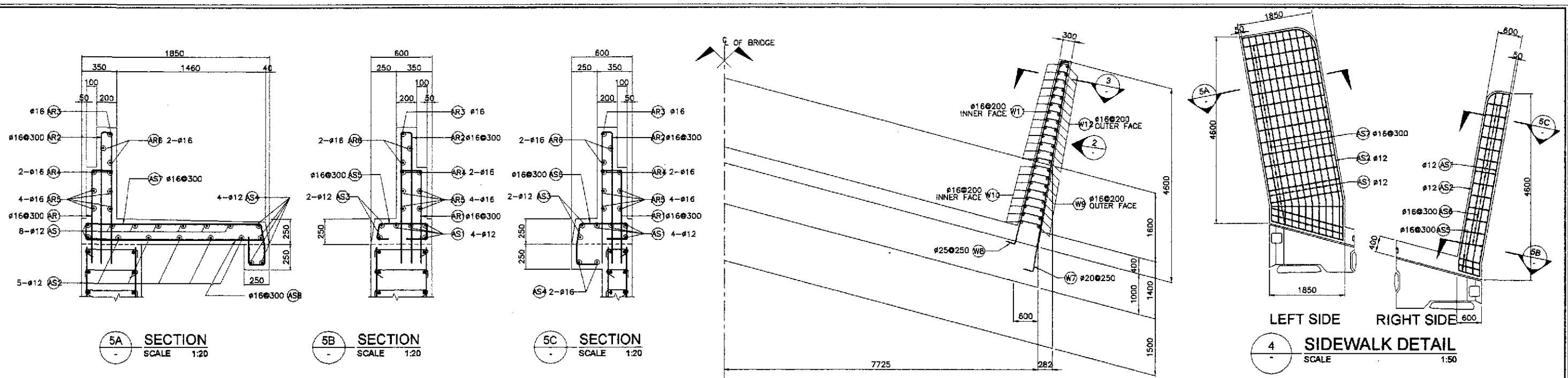


3 SECTION SCALE 1:50



SCHEDULE OF REINFORCEMENT PER ABUTMENT																
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
BACKWALL	16.14	1	16	89	175	B	2800	300	2800	-	-	5900	525.10	1,579	830	96.22
		2	16	20	250	A	15890	-	-	-	-	15890	317.8	1,579	502	
		3	16	75	175	C	600	150	750	-	-	1500	112.50	1,579	178	
		4	16	2	AS SHOWN	A	3355	-	-	-	-	15890	26.71	1,579	43	
MAINWALL	58.94	5	25	89	175	E	400	3950	-	-	-	4350	387.15	3,854	7493	75.92
		5a	20	89	175	E	400	3950	-	-	-	4350	387.15	2,466	955	
		6	20	26	250	A	15890	-	-	-	-	15890	413.14	2,466	1019	
		7	20	89	175	B	250	1300	250	-	-	1800	160.20	2,466	396	
		8	16	215	350	D	250	1300	250	-	-	1800	387.00	1,579	612	
		9	25	92	175	B	700	4350	700	-	-	5750	529.00	3,854	2039	
FOOTING	100.89	10	25	92	175	B	700	4350	700	-	-	5750	529.00	3,854	2039	66.99
		11	20	18	250	B	700	6420	700	-	-	17820	320.76	2,466	791	
		12	20	18	250	B	700	6420	700	-	-	17820	320.76	2,466	791	
		13	16	4	AS SHOWN	A	16420	-	-	-	-	16420	65.68	1,579	104	
		14	16	4	AS SHOWN	A	4350	-	-	-	-	4350	17.40	1,579	28	
DOWEL		15	16	360	350	D	250	1200	250	-	-	1700	612.00	1,579	967	
TOTAL	175.97															GRADE 40 TOTAL = 9,523 kgs. GRADE 60 TOTAL = 3,344 kgs.

	DESIGNED	DATE	SIGNATURE		PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/27/02	A. P. GONZALES		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 8 ABUTMENT - A1 & A2 MAINWALL REINFORCEMENT DETAILS (ULTIMATE STAGE)	B9-06
	SUBMITTED	9/30/02	M. K. KUNDI		PLARIDEL BYPASS - CONTRACT PACKAGE III	FULL SIZE A1		



5A SECTION SCALE 1:20

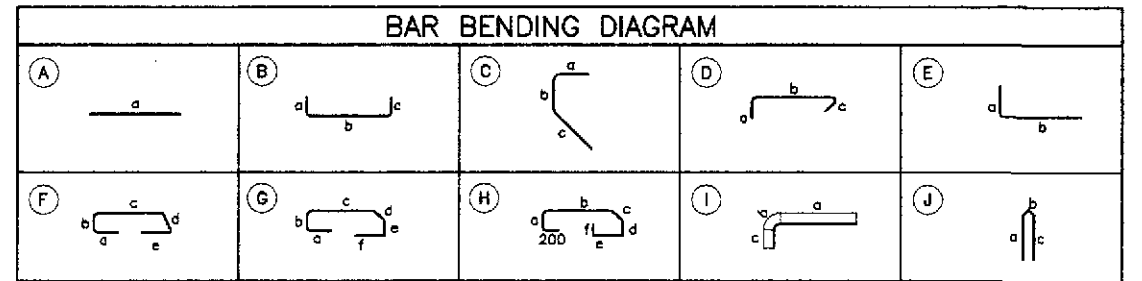
5B SECTION SCALE 1:20

5C SECTION SCALE 1:20

4 LEFT SIDE RIGHT SIDE SCALE 1:50

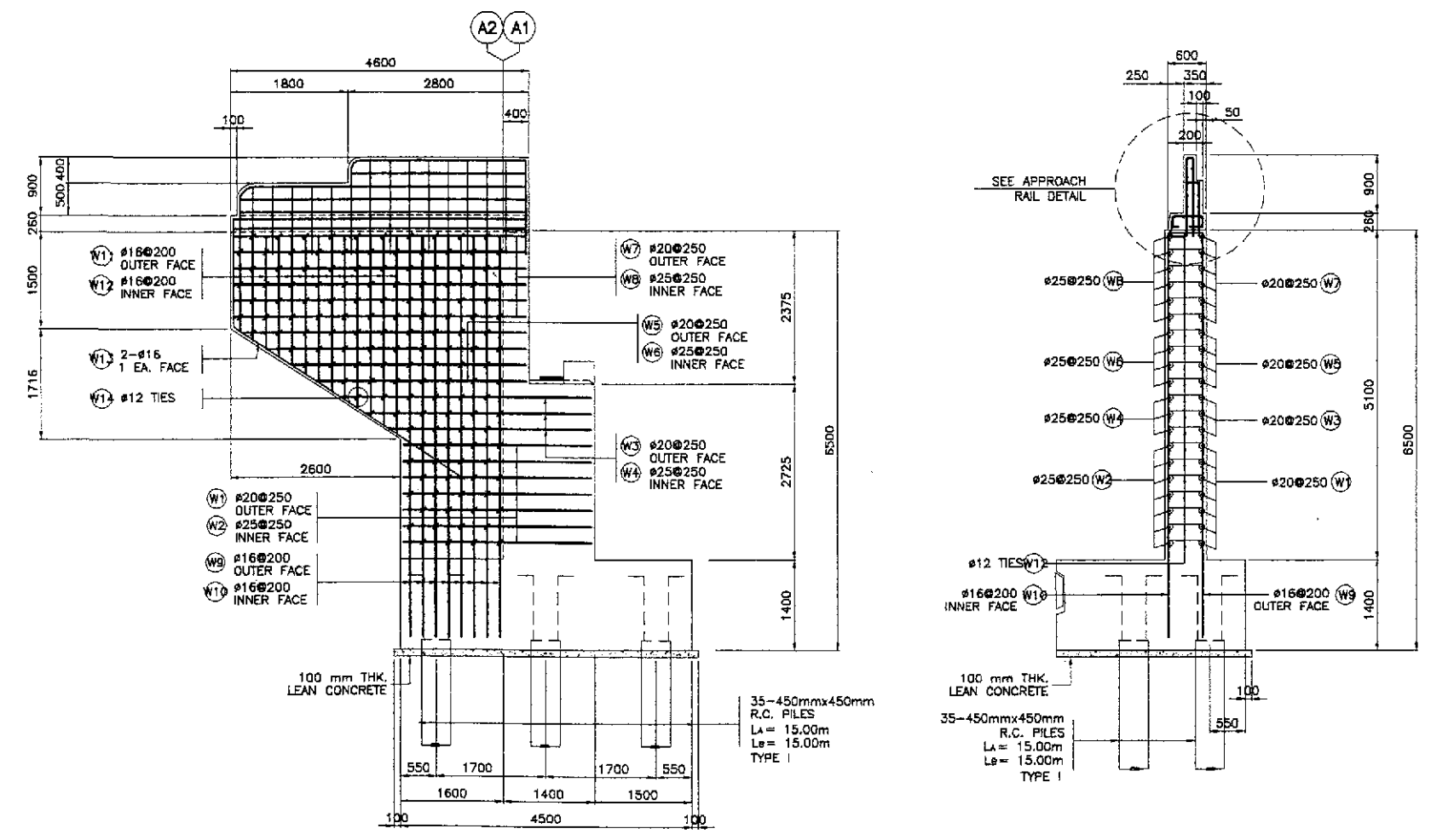
5 APPROACH RAIL DETAILS SCALE 1:20

1 PLAN SCALE 1:50



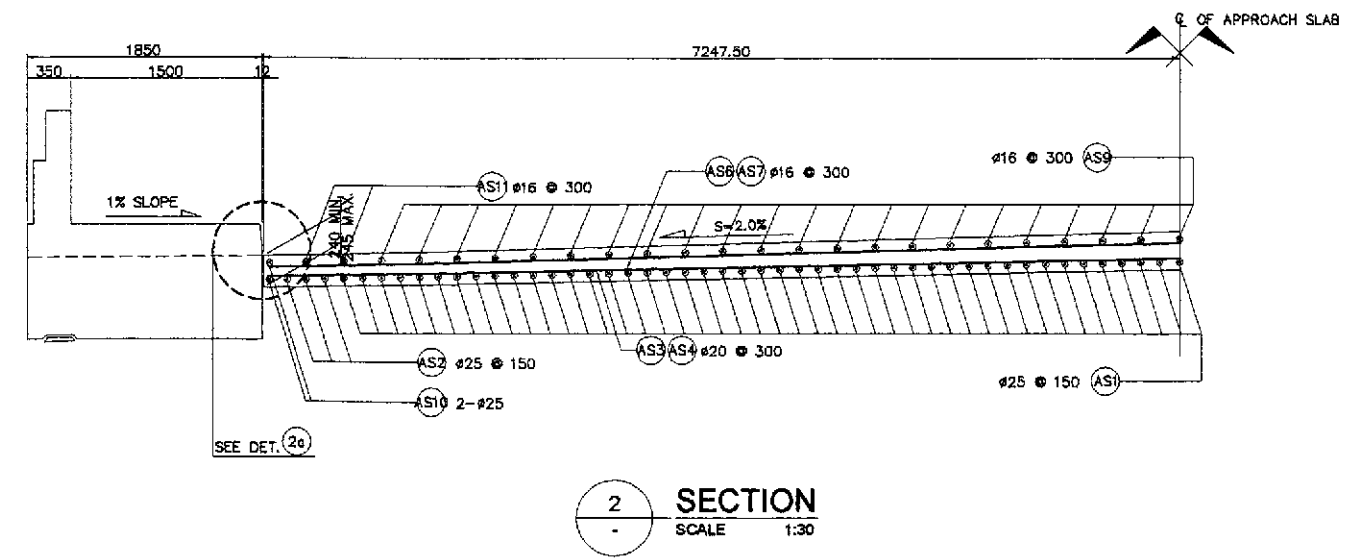
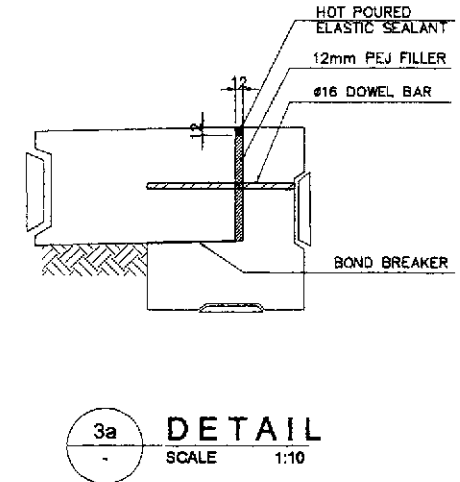
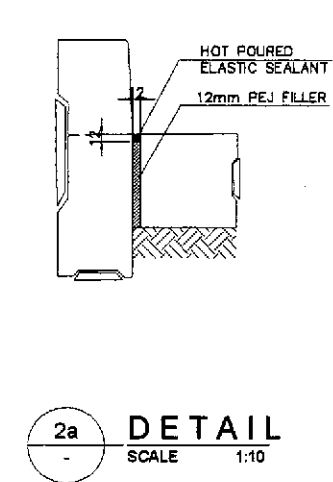
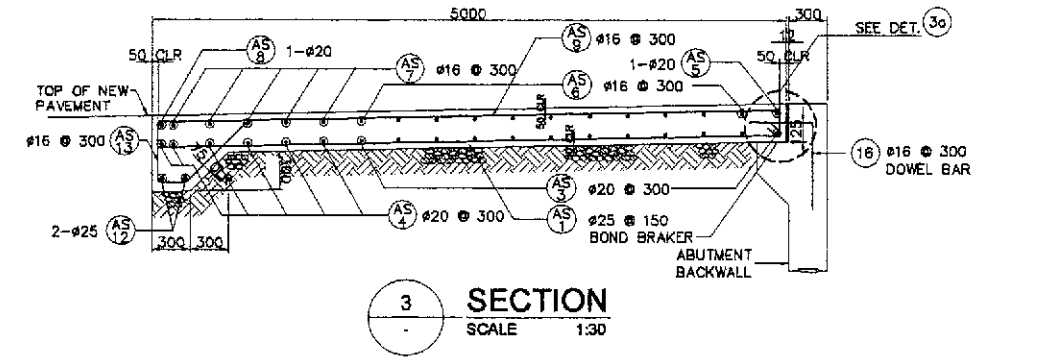
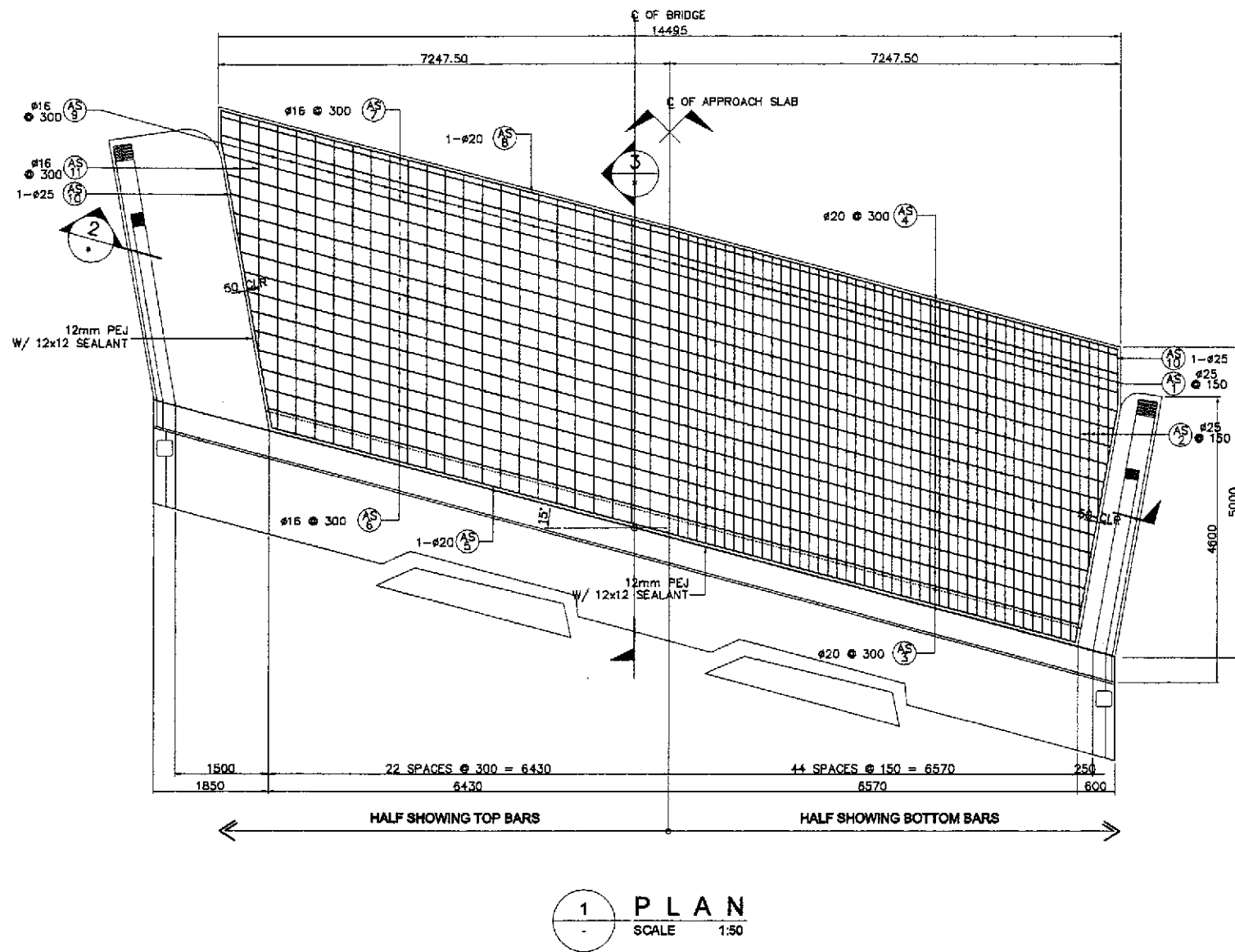
SCHEDULE OF REINFORCEMENT PER ABUTMENT

LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT						LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e	f						
WINGWALL	12.86	W1	20	14	250	(B)	400	2900	150	-	-	-	3450	48.30	2.466	120	143.63	
		W2	25	14	250	(B)	400	2900	150	-	-	-	3450	48.30	3.854	187		
		W3	20	6	250	(B)	400	3450	150	-	-	-	4000	24.00	2.466	60		
		W4	25	6	250	(B)	400	3450	150	-	-	-	4000	24.00	3.854	93		
		W5	20	8	250	(B)	400	3750	150	-	-	-	4300	34.40	2.466	85		
		W6	25	8	250	(B)	400	3750	150	-	-	-	4300	34.40	3.854	133		
		W7	20	12	250	(B)	400	4500	150	-	-	-	5050	60.60	2.466	150		
		W8	25	12	250	(B)	400	4500	150	-	-	-	5050	60.60	3.854	234		
		W9	18	16	200	(E)	250	6300	-	-	-	-	6550	104.80	1.579	166		
		W10	16	16	200	(E)	250	6300	-	-	-	-	6550	104.80	1.579	166		
		W11	16	26	200	(E)	250	2350	-	-	-	-	2600	67.60	1.579	107		
		W12	16	26	200	(E)	250	2350	-	-	-	-	2600	67.60	1.579	107		
		W13	16	4	AS SHOWN	(C)	250	1500	4700	-	-	-	6450	25.80	1.579	41		
		W14	12	282	AS SHOWN	(D)	170	450	170	-	-	-	790	222.78	0.888	198		
													GRADE 60 TOTAL = 1,062 kgs					
													GRADE 40 TOTAL = 785 kgs					
APPROACH RAILING AND SIDEWALK	5.47	AS	12	12	AS SHOWN	(A)	4500	-	-	-	-	4500	54.00	0.888	48	89.58		
		AS2	12	5	AS SHOWN	(A)	4500	-	-	-	-	4500	22.50	0.888	20			
		AS3	12	2	AS SHOWN	(A)	4500	-	-	-	-	4500	9.00	0.888	8			
		AS4	12	6	AS SHOWN	(G)	4500	-	-	-	-	4500	27.00	0.888	24			
		AS5	16	13	300	(F)	200	170	480	200	200	1250	16.25	1.579	26			
		AS6	16	3	300	(A)	200	170	480	200	170	200	1420	4.26	1.579		7	
		AS7	16	18	300	(G)	200	170	1730	200	170	200	2870	51.66	1.579		82	
		AS8	16	18	300	(F)	200	1770	-	-	-	-	1970	35.46	1.579		56	
		AR	16	10	300	(E)	200	900	-	-	-	-	1100	11.00	1.579		18	
		AR2	16	18	300	(J)	1300	120	1300	-	-	-	2720	48.86	1.579		78	
		AR3	16	2	AS SHOWN	(I)	2700	236	1300	-	-	-	4236	8.47	1.579		14	
		AR4	16	4	AS SHOWN	(I)	4400	236	900	-	-	-	5536	22.14	1.579		35	
AR5	16	8	AS SHOWN	(A)	4400	-	-	-	-	-	4400	35.20	1.579	56				
AR6	18	4	AS SHOWN	(A)	2700	-	-	-	-	-	2700	10.80	1.579	18				
													GRADE 40 TOTAL = 490 kgs					
TOTAL	18.33														GRADE 60 TOTAL = 1,062 kgs.		GRADE 40 TOTAL = 1,275 kgs.	



2 WINGWALL ELEVATION SCALE 1:50

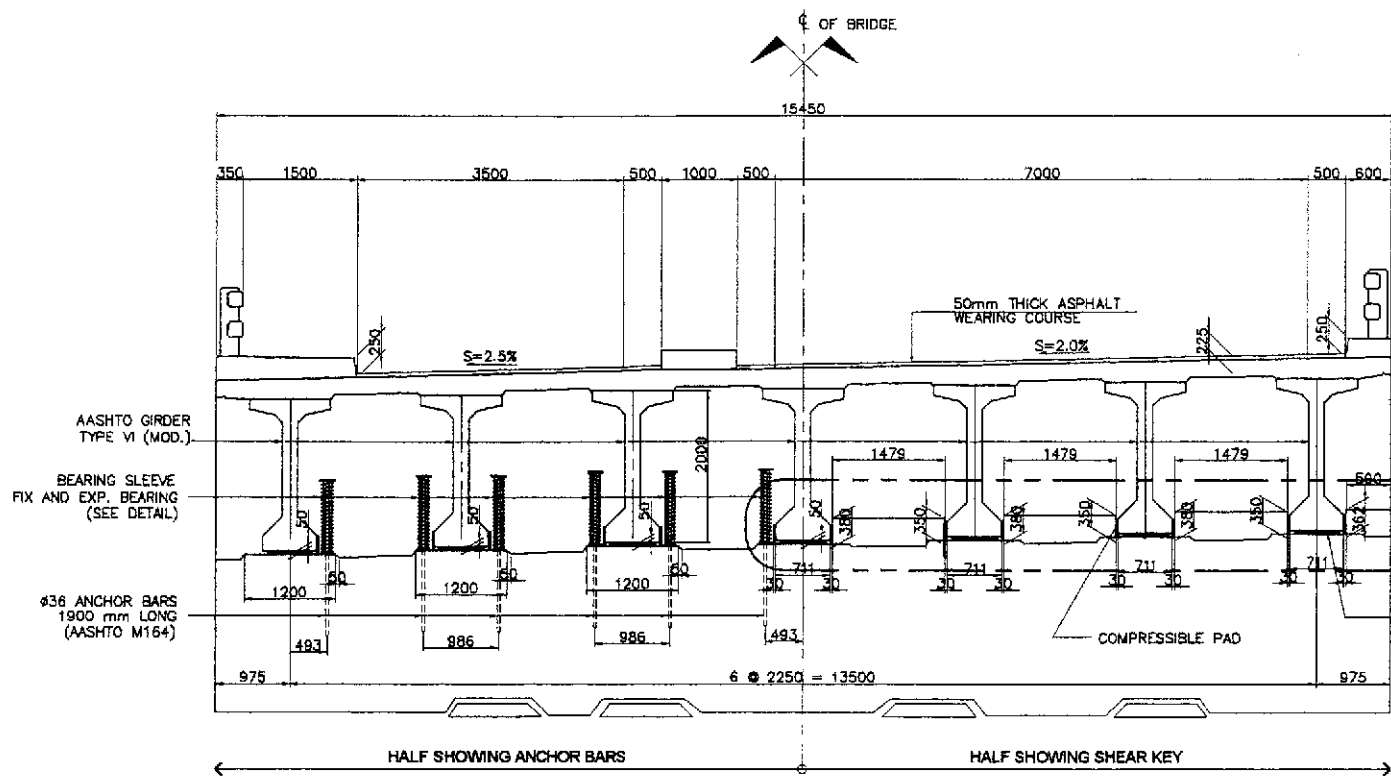
3 SECTION SCALE 1:50



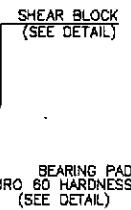
BAR BENDING DIAGRAM

LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/cu.m)		
							a	b	c	d	e	f						
APPROACH SLAB	22.80	AS1	25	88	150	(B)	4900	200	-	-	-	-	5100	448.80	3.854	1730	154.50	
		AS2	25	8	150	(B)	3400	200	-	-	-	-	3600	28.80	3.854	111		
		AS3	20	14	300	(A)	13350	-	-	-	-	-	-	13350	186.90	2.466		461
		AS4	20	4	300	(A)	14900	-	-	-	-	-	-	14900	59.60	2.466		147
		AS5	20	1	AS SHOWN	(A)	14100	-	-	-	-	-	-	14100	14.10	2.466		35
		AS6	16	13	300	(A)	14100	-	-	-	-	-	-	14100	183.30	1.579		290
		AS7	16	3	300	(A)	14900	-	-	-	-	-	-	14900	44.70	1.579		71
		AS8	20	1	AS SHOWN	(A)	14900	-	-	-	-	-	-	14900	14.80	2.466		37
		AS9	16	44	300	(B)	4900	200	-	-	-	-	-	5100	224.40	1.579		355
		AS10	25	1	AS SHOWN	(C)	1000	4000	-	-	-	-	-	5000	5.00	3.854		20
		AS11	16	2	300	(B)	3000	200	-	-	-	-	-	3200	6.40	1.579		11
		AS12	25	2	AS SHOWN	(A)	14900	-	-	-	-	-	-	14900	28.80	3.854		115
		AS13	16	49	300	(D)	400	500	200	700	-	-	-	1800	88.20	1.579		140
TOTAL	22.80																GRADE 40 TOTAL = 867 kgs. GRADE 60 TOTAL = 2,856 kgs.	

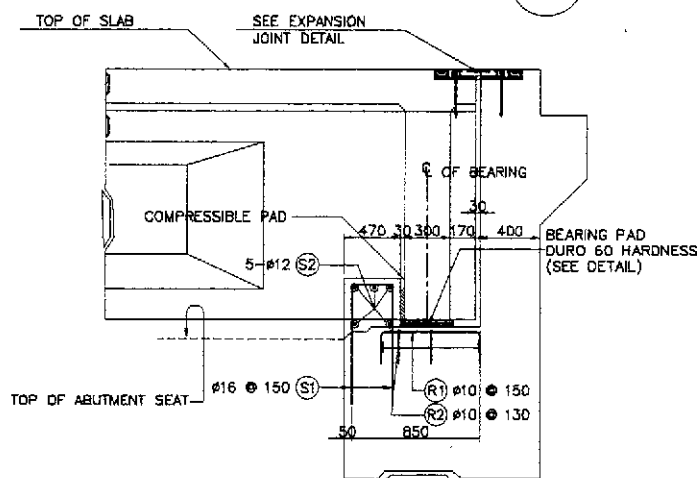
	DESIGNED: 9/25/02 CHECKED: 9/27/02 SUBMITTED: 9/30/02	DATE: 9/25/02 SIGNATURE: [Signature] E. N. SALLAN PROJECT DIRECTOR		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN	PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE III	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : BRIDGE NO. 9 APPROACH SLAB PLAN, SECTIONS AND DETAILS (ULTIMATE STAGE)	SHEET NO. : B9-08												
	Submitted By: DANILLO C. TRAJANO, Project Director				Reviewed By: ADRIANO M. DOROY, Chief, Bridges Division				Recommended By: GILBERTO S. REYES, Director IV (GIC)				Recommended By: MANUEL M. BONDAN, Undersecretary				Approved By: SIMEON A. DATUMANONG, Secretary			
	JICA JAPAN INTERNATIONAL COOPERATION AGENCY				KATAHIRA & ENGINEERS INTERNATIONAL				YEO YACHIYO ENGINEERING CO., LTD.											



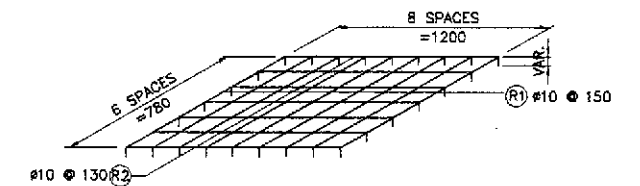
1 SECTION AT ABUTMENT SEAT
SCALE 1:50



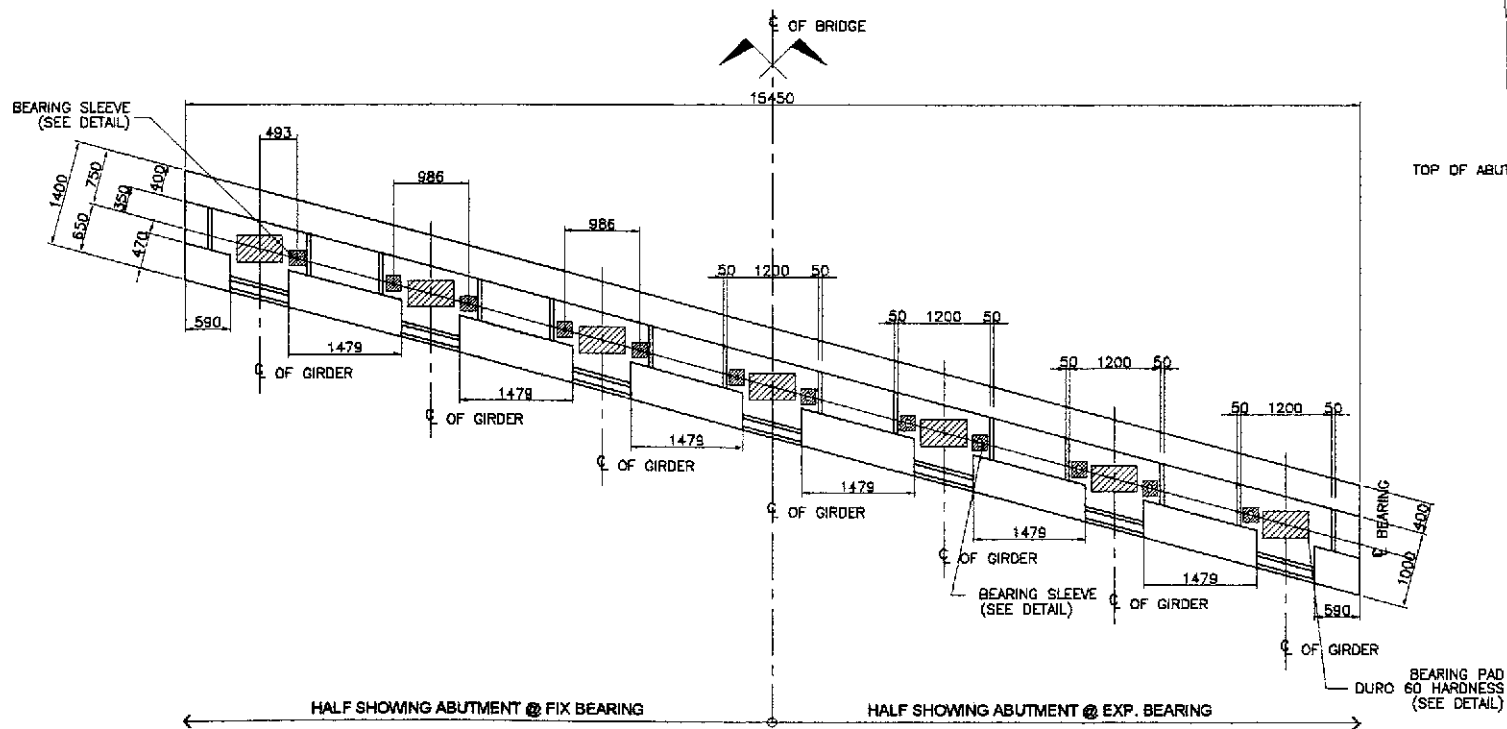
3 SHEAR BLOCK DETAIL
SCALE 1:25



3A SECTION
SCALE 1:25



4 RISER REINFORCEMENT
NOT TO SCALE



2 PLAN AT ABUTMENT SEAT
SCALE 1:50

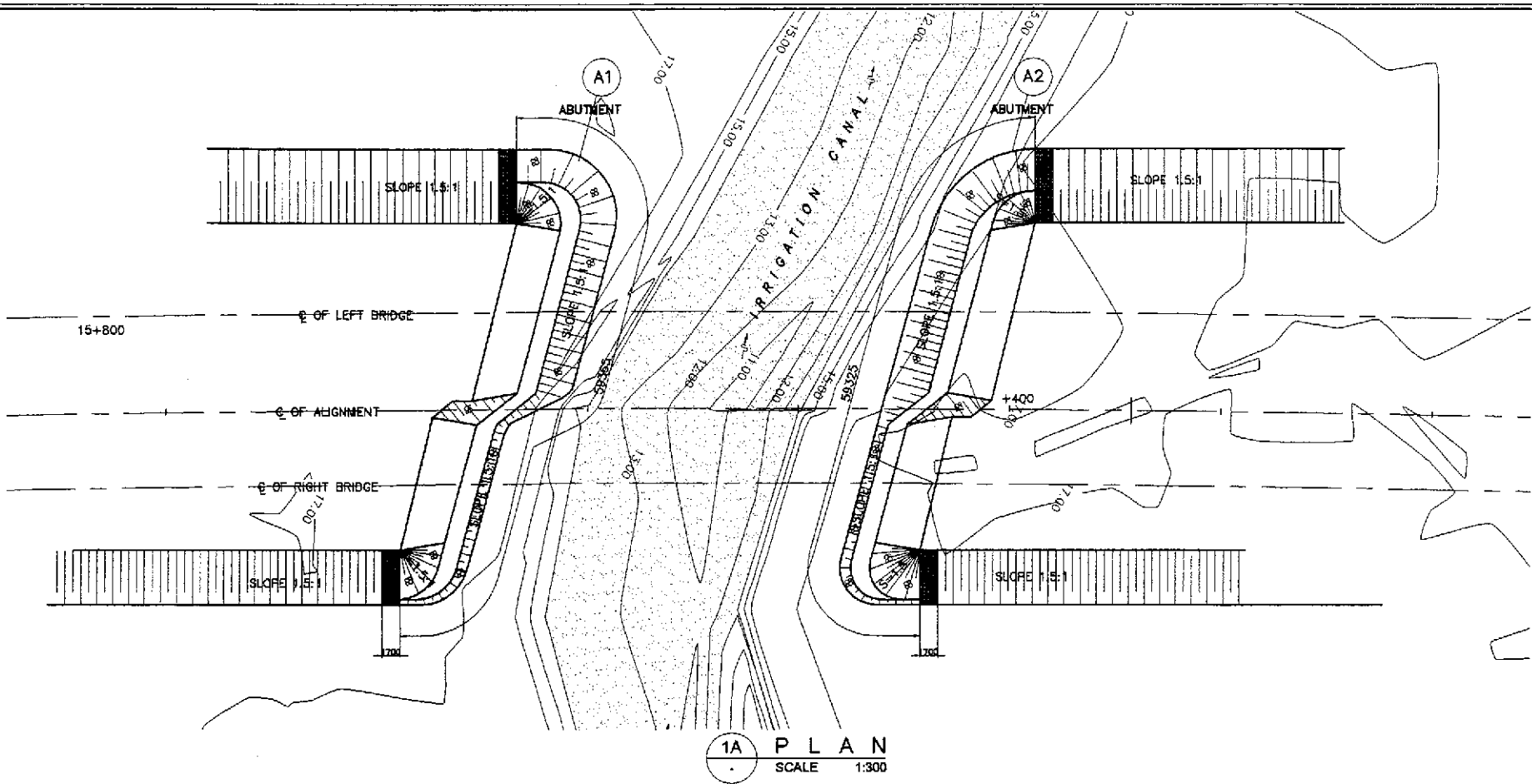
BAR BENDING DIAGRAM																
A						B										
a						b										
SCHEDULE OF REINFORCEMENT																
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSION (mm) OUT TO OUT					LENGTH EACH BAR (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)
SHEAR KEY & RISER	2.45	S1	16	68	200	(B)	560	390	560			1510	102.68	1.579	163	140.98
		S2	12	30	AS SHOWN	(A)	1450					1450	43.50	0.888	39	
		S3	12	10	AS SHOWN	(A)	530					530	5.10	0.888	5	
		R1	10	63	150	(B)	500	810	500			1810	114.03	0.616	71	
		R2	10	48	130	(B)	500	1250	500			2250	110.25	0.616	68	
TOTAL	2.45															GRADE 40 TOTAL = 346 kgs.

THE REINFORCEMENT SHOWN ON THIS TABLE IS FOR REFERENCE ONLY. THE CONTRACTOR SHOULD CHECKED AND VERIFY ALL DIMENSIONS, SIZES AND QUANTITIES OF REINFORCEMENT.

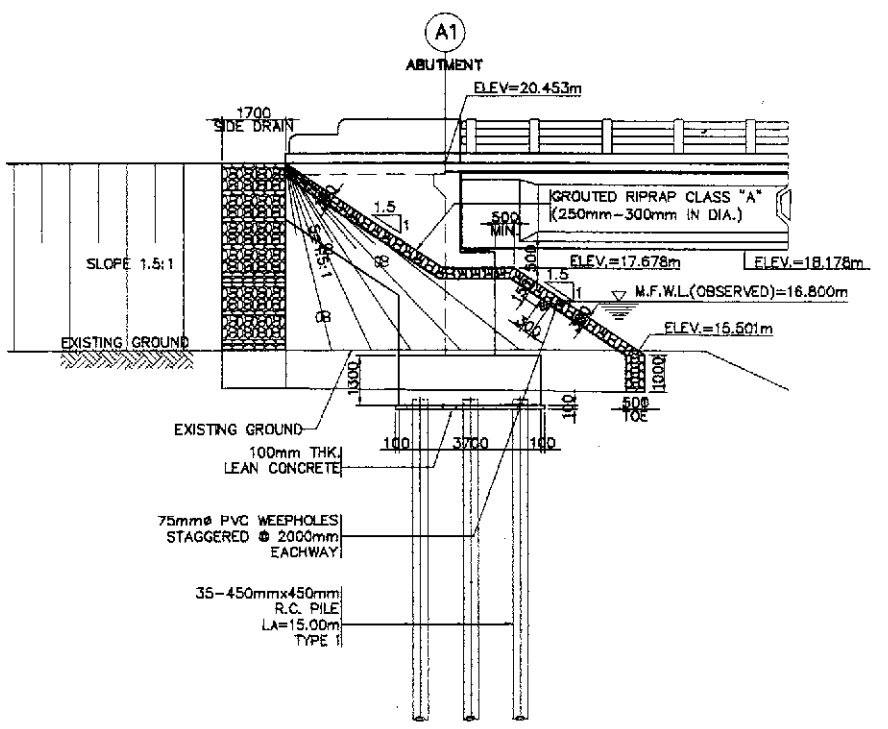
JICA
JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS
YEO YACHIRO ENGINEERING CO., LTD.

DESIGNED: 9/25/02
CHECKED: 9/27/02
SUBMITTED: 9/30/02
DATE: 9/25/02
SIGNATURE: [Signature]
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
OFFICE OF THE SECRETARY
Submitted By: DANILLO C. TRAJANO
Reviewed By: ADRIANO M. DORAY
Recommended By: GILBERTO S. REYES
Approved By: MANUEL M. BONDAN
SIMEON A. DATUMANONG

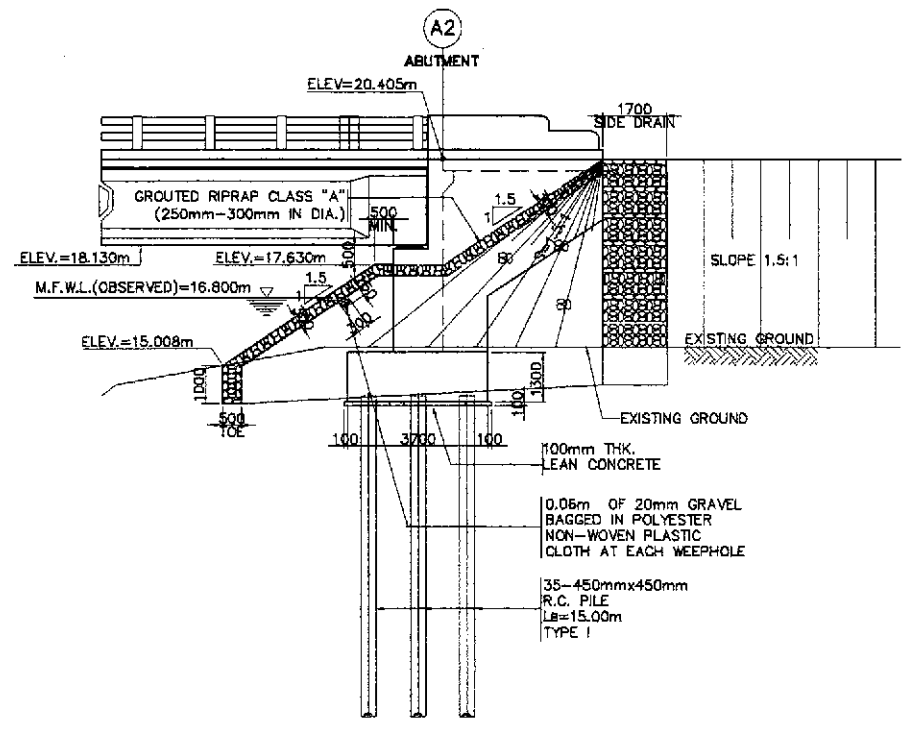
PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)
SCALE: AS SHOWN
SHEET CONTENTS: BRIDGE NO. 9 SHEARKEY AND RISER DETAILS (ULTIMATE STAGE)
SHEET NO.: B9-09
PLARIDEL BYPASS - CONTRACT PACKAGE III
FULL SIZE A1



1A PLAN SCALE 1:300



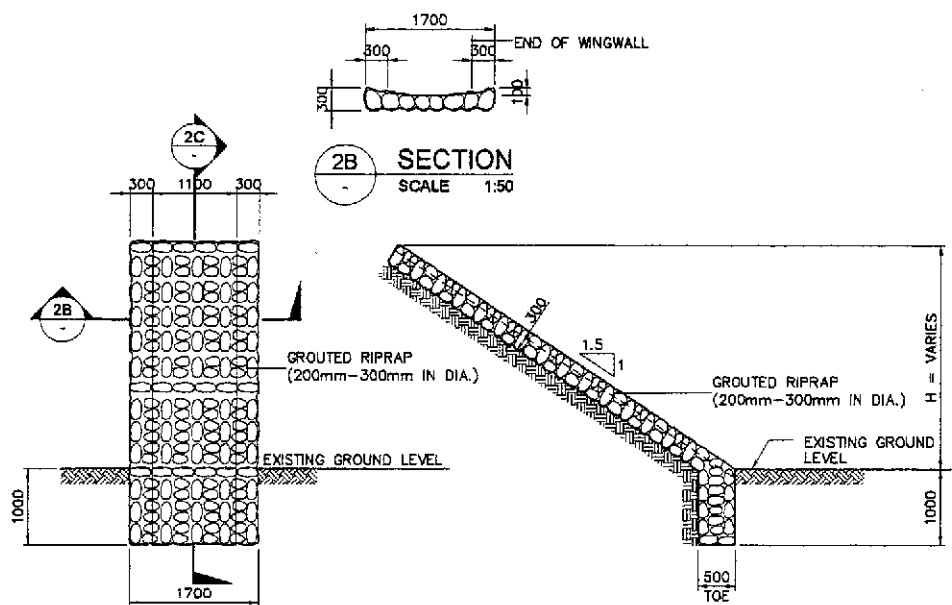
1B ELEVATION SCALE 1:100



1 ABUTMENT SLOPE PROTECTION SCALE AS SHOWN

GENERAL NOTES:

- GROUTED RIPRAP (250mm-300mm DIA.) SHALL BE USED FOR THE FACING AND SHALL BE CAREFULLY HANDLAID WITH THE LONGEST DIMENSIONS PERPENDICULAR TO THE SLOPE AND FIRMLY BEDDED INTO THE SLOPE AND ADJACENT TO THE ADJOINING BOULDERS SPACED BETWEEN THE BOULDERS SHALL BE COMPLETELY FILLED WITH MORTAR. THE OUTSIDE SURFACE OF THE BOULDERS SHALL BE LEFT EXPOSED AND THE SURFACE OF THE MORTAR SHALL BE SWEEPED WITH A STIFF BROOM.
- GEOTEXTILE THE FOLLOWING SPECIFICATIONS ARE REQUIRED:
 - POLYESTER OR POLYPROPYLENE - 100%
 - MECHANICALLY BONDED/HEAT BONDED
 - NON-WOVEN
 - EFFECTIVE OPENING SIZE - 110 MICRONS (MAX.)
 - THICKNESS UNDER PRESSURE - 0.80mm (MIN.)
 - WEIGHT - 200g/sq. m. (MIN.)
 - CBR PUNCTURE STRENGTH - 400N (MIN.)
 - MULTI-DIRECTIONAL TENSILE STRENGTH - 13kN/m
- GRAVEL FILTER SHALL BE COARSE AGGREGATES MATERIALS WHICH SATISFY THE REQUIREMENTS FOR ITEM 405, STRUCTURAL CONCRETE, GRADING B OF TABLE 405.1 AS REVISED.
- HAND-LAID ROCK SHALL BE MORE THAN 0.015cu.m. IN VOLUME AND SHALL CONSISTS OF HARD AND DURABLE STONES. ALL SHALL BE LAID FLAT AND SECURELY PLACED WITH LARGER STONES GENERALLY LOCATED IN THE LOWER PART OF THE STRUCTURE.
- NO CONCRETING UNDER WATER SHALL BE PERMITTED.
- PROVIDE 1.0m BERM WHEN HEIGHT (H) IS > 4.0m.



2A ELEVATION SCALE 1:50

2B SECTION SCALE 1:50

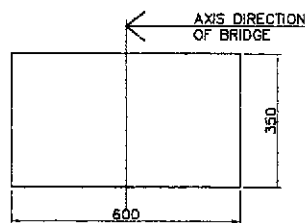
2C SECTION SCALE 1:50

2 TYPICAL SIDE DRAIN DETAIL SCALE AS SHOWN

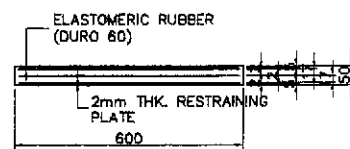
VELOCITY (m/sec)	ROCK SIZE (mm)	
	VERY TURBULENT FLOW	SMOOTH FLOW
1.00	40	-
1.50	135	-
2.00	170	-
2.50	255	137
3.00	370	197
3.50	515	270
4.00	690	350
4.50	825	425
5.00	>900	590

LOCATION	SIZES	PER ABUTMENT QUANTITY	
		ABUT. A1	ABUT. A2
SIDE DRAIN	200mm-300mm IN DIA.	5.39 cu. m.	5.39 cu. m.
GROUTED RIPRAP	250mm-300mm IN DIA.	72.72 cu. m.	79.72 cu. m.

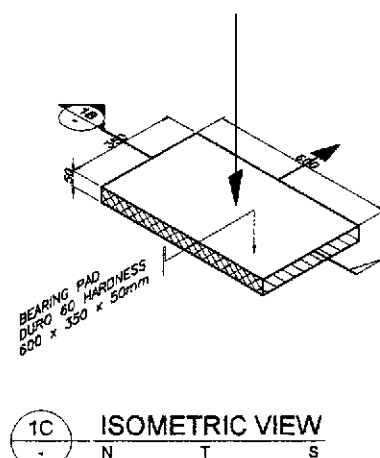
	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	9/28/20	P. GONZALES		BUREAU OF DESIGN	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 9 ABUTMENT PROTECTION AND SIDE DRAIN DETAILS (ULTIMATE STAGE)	B9-10
	SUBMITTED	9/30/20	MANUEL M. BONGAN		OFFICE OF THE SECRETARY	PLARIDEL BYPASS - CONTRACT PACKAGE III	FULL SIZE A1		
Submitted By: DANILO C. TRAJANO, Project Director Reviewed By: PERFECTO L. ZAFLAN JR., Chief, Hydraulic Division (DIC) Recommended By: GILBERTO S. REYES, Director IV (DIC) Recommended By: MANUEL M. BONGAN, Undersecretary Approved By: SIMEON A. DATUMANONG, Secretary									



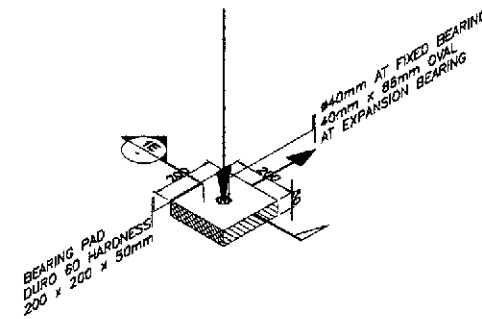
1A PLAN SCALE 1:10



1B ELEVATION SCALE 1:10

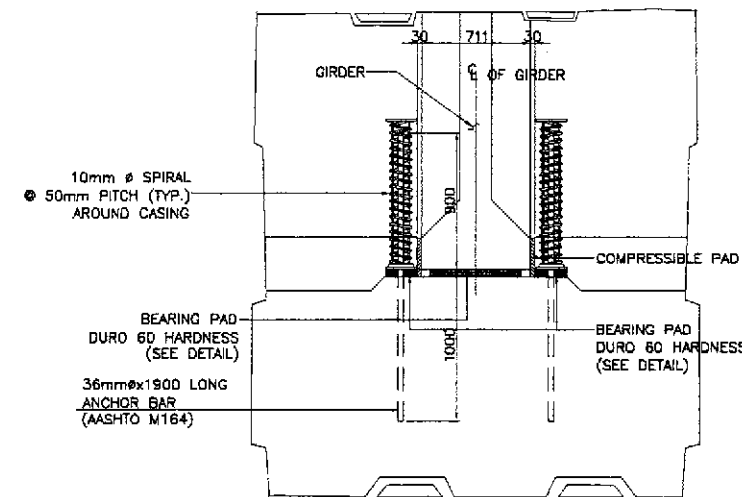


1C ISOMETRIC VIEW

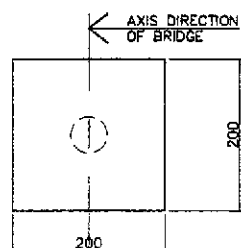


1F ISOMETRIC VIEW

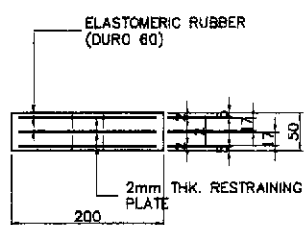
1 BEARING PAD DETAIL SCALE AS SHOWN



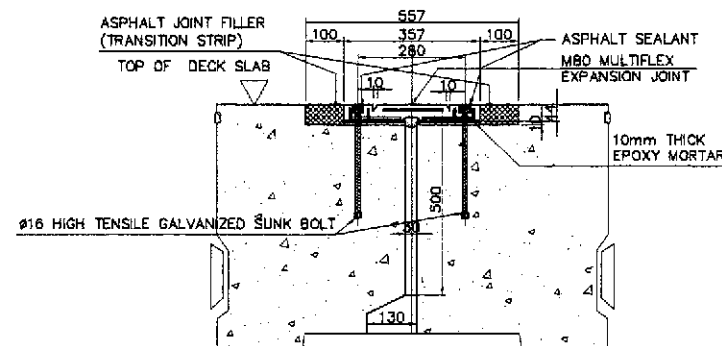
3A ANCHOR BAR SCALE 1:25



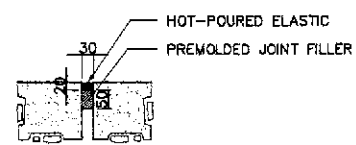
1D PLAN SCALE 1:5



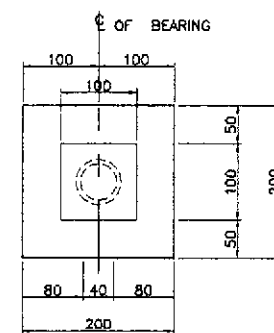
1E ELEVATION SCALE 1:5



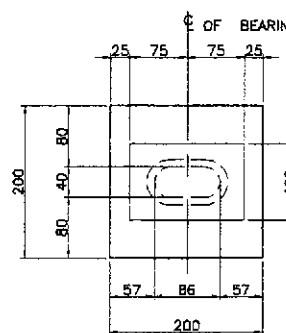
2B SECTION (TYPE A) SCALE 1:10



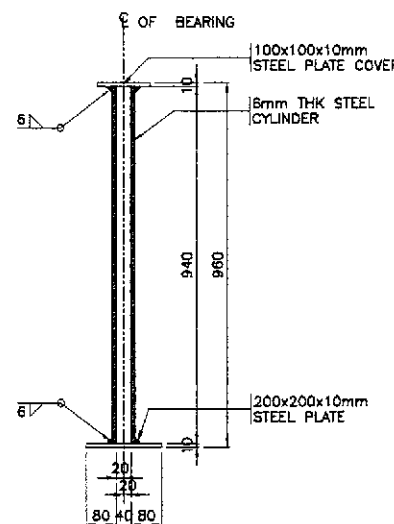
2C SECTION (TYPE B) SCALE 1:10



PLAN

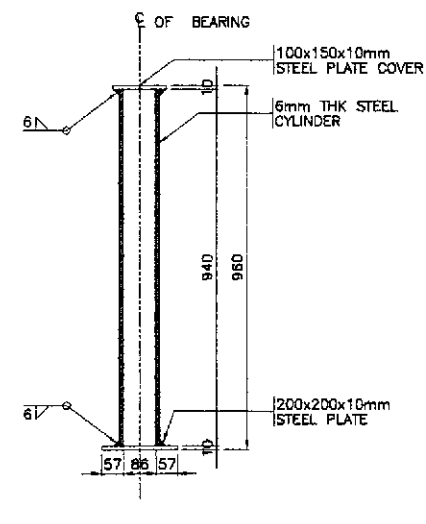


PLAN



ELEVATION

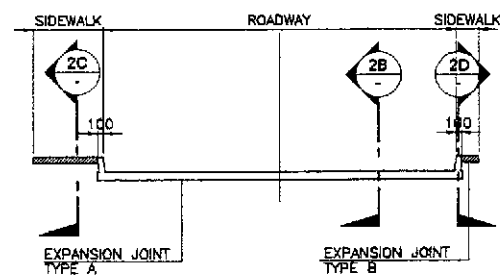
3B FIXED BEARING SCALE 1:10



ELEVATION

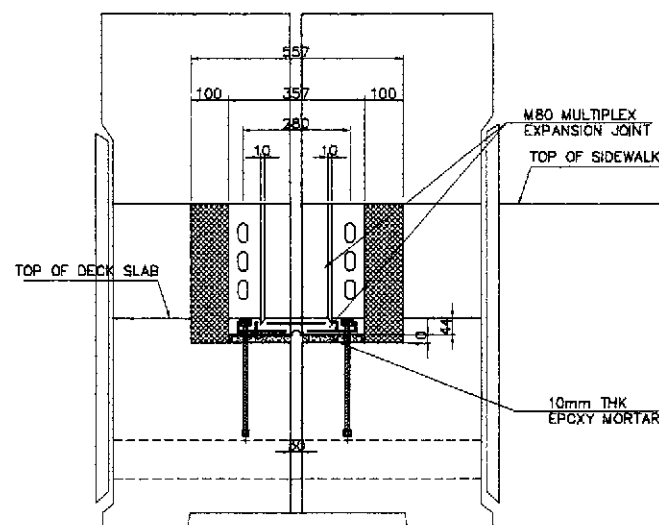
3C EXPANSION BEARING SCALE 1:10

3 BEARING SLEEVE AND ANCHOR BAR DETAIL SCALE AS SHOWN



2A ELEVATION

2 EXPANSION JOINT DETAIL SCALE AS SHOWN



2D SECTION (TYPE A) SCALE 1:10

A.) QUALITY TESTING OF RUBBER COMPOUND

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

B.) DIMENSION CHECK ON METAL PLATES

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

C.) QUALITY CHECK

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

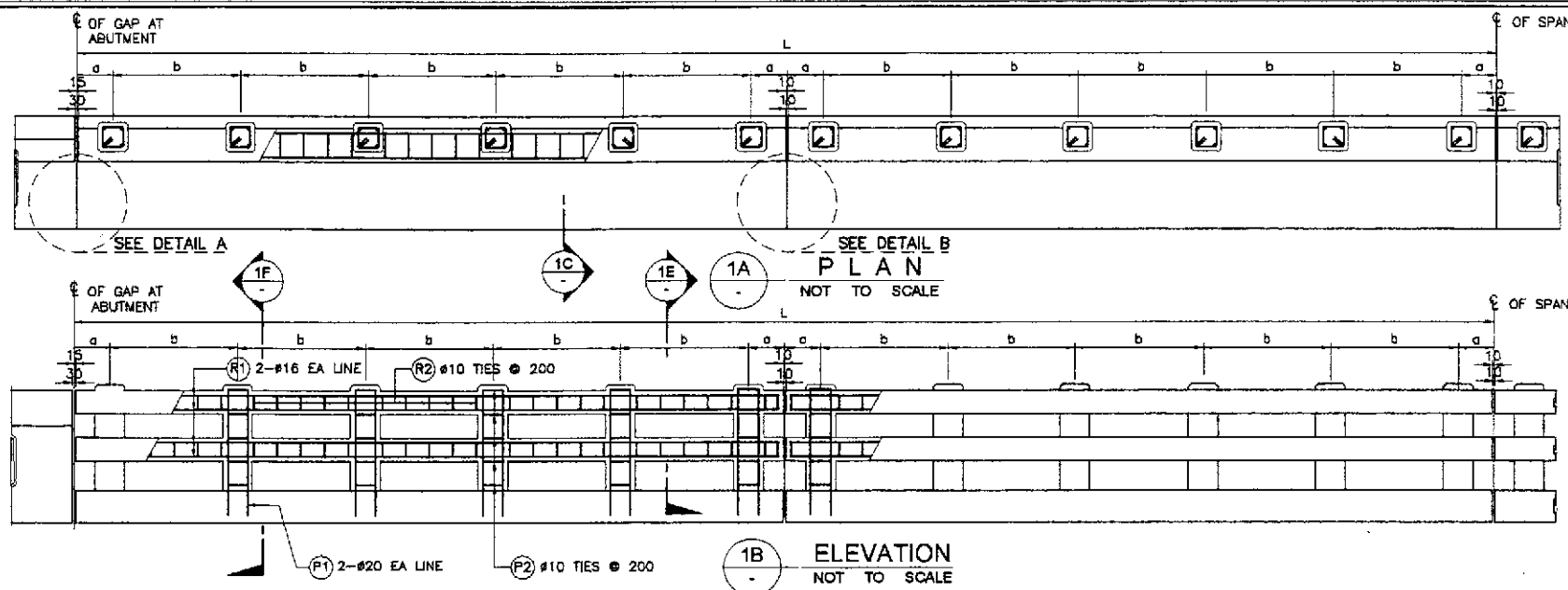
INSTALLATION MATERIALS

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

LOCATION	EXPANSION JOINT TYPE	MOVEMENT (mm)	LENGTH (m)
BRIDGE 9	MULTIFLEX 80	30	26

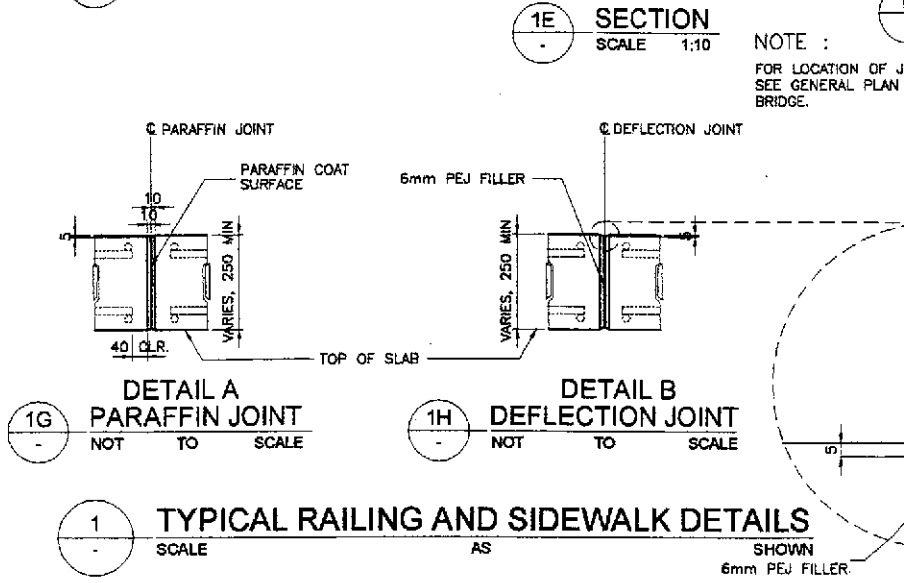
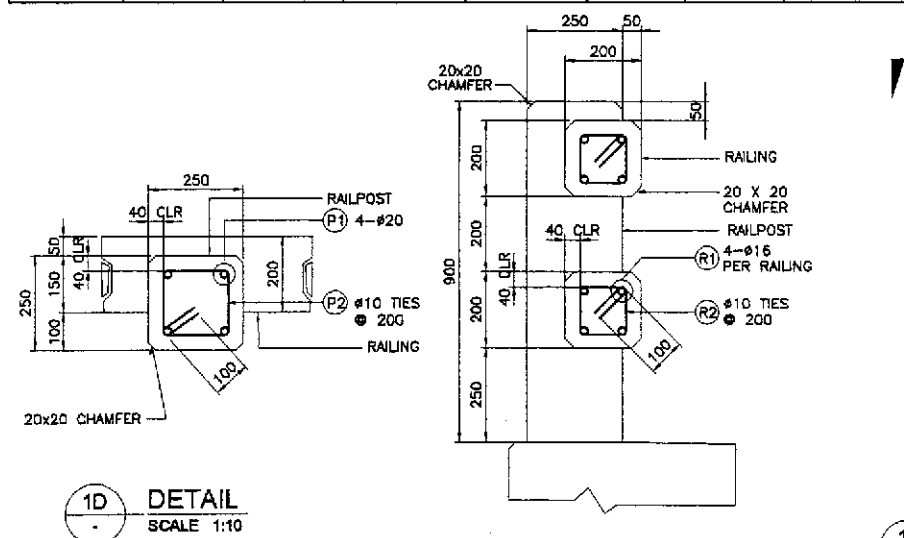
LOCATION	ELASTOMERIC BEARING PAD SIZE	QUANTITY
BRIDGE 9	600x350x50	14 PCS.
	200x200x50	24 PCS.

	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	DESIGNED	9/25/02	E. N. SALLAN	BUREAU OF DESIGN			AS SHOWN	BRIDGE NO. 9 TYP. BEARING PAD, EXPANSION JOINT, BEARING SLEEVE & ANCHOR BAR DET. (ULTIMATE STAGE)	BS-01
	CHECKED	9/27/02	[Signature]	OFFICE OF THE SECRETARY			FULL SIZE A1		
	SUBMITTED	9/30/02	[Signature]	Submitted By:	Reviewed By:	Recommended By:	PLARIDEL BYPASS - CONTRACT PACKAGE III		
			DANILO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridges Division	GILBERTO S. REYES Director IV (OIC)	MANUEL M. BONOAN Undersecretary	SIMEON A. DATUMANONG Secretary		



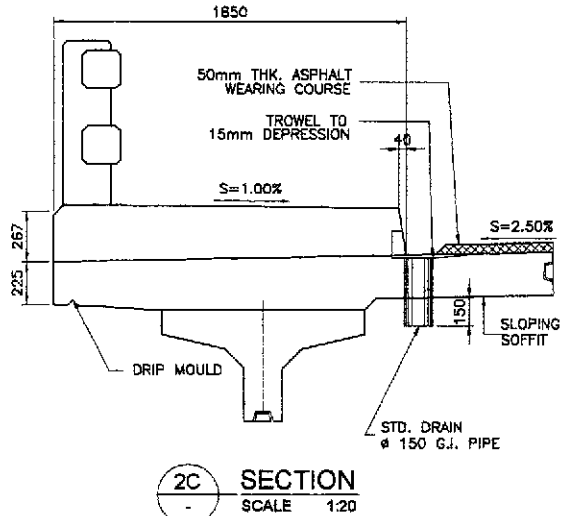
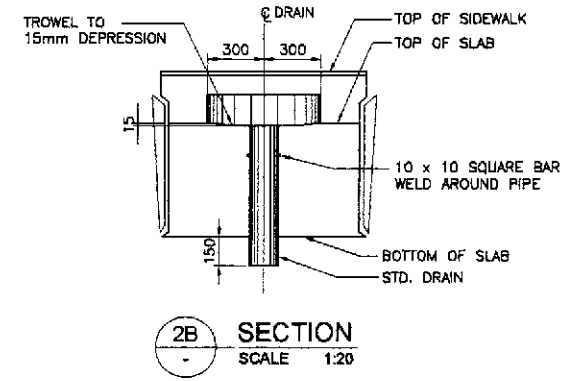
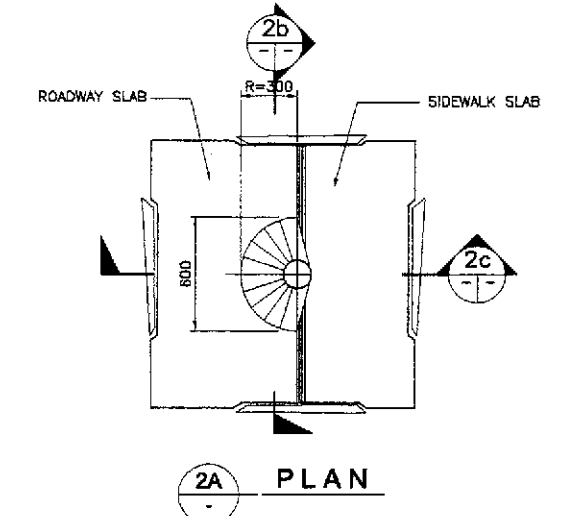
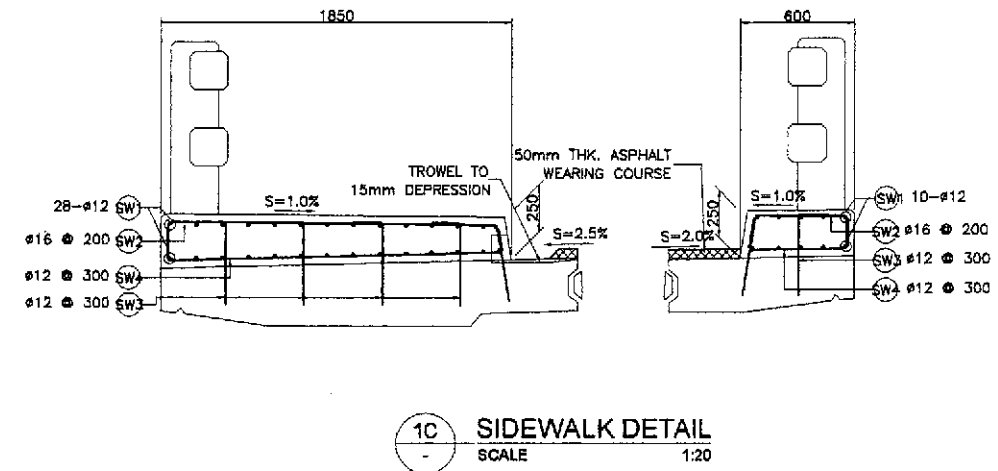
RAILING FOR BRIDGES

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.9	40.00	3	6	48	20015	250	1902



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.



BAR BENDING DIAGRAM

LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m)	REMARKS
POST	2.70	(P1)	20	192	AS SHOWN	(B)	1045	450	-	-	-	1495	287.04	2.466	708.00		
		(P2)	10	240	200	(C)	170	170	100	-	-	880	211.20	0.616	131.00		
GRADE 40 TOTAL = 131.00 kgs. 310.74																	
RAILING	6.40	(R1)	16	16	AS SHOWN	(A)	4000	-	-	-	-	4000	640.00	1.579	1011.00		
		(R2)	10	720	200	(C)	120	120	100	-	-	680	489.60	0.616	302.00		b is ave.
GRADE 40 TOTAL = 1,313.00kgs. 205.16																	
SIDEWALK	24.50	(SW1)	12	38	AS SHOWN	(A)	4000	-	-	-	-	4000	1520.00	0.888	1350.00		
		(SW2)	16	201	200	(D)	170	1710	400	-	-	2280	458.28	1.579	724.00		
		(SW3)	16	201	200	(D)	170	480	400	-	-	1030	207.03	1.579	327.00		
		(SW4)	12	670	300	(B)	400	250	-	-	-	650	435.50	0.888	387.00		
		(SW5)	12	134	300	(E)	170	1750	170	-	-	2090	280.06	0.888	249.00		
GRADE 40 TOTAL = 3,140.00 kgs. 128.16																	
TOTAL	24.50																
GRADE 40 GRAND TOTAL = 4,532.00 kgs. 708.00kgs.																	

	DESIGNED: 9/28/02 CHECKED: 9/27/02 SUBMITTED: 9/27/02	DATE: 9/28/02 SIGNATURE: [Signature] E.N. SALLAN Project Director	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN Submitted By: DANILLO C. TRAJANO Chief, Bridges Division	OFFICE OF THE SECRETARY Recommended By: ADRIANO M. DORDY Chief, Bridges Division Approved By: MANUEL M. BONONAN Undersecretary	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 III	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : BRIDGE NO. 9 TYPICAL PSCG SIDEWALK, RAILING AND DRAIN DETAILS (ULTIMATE STAGE)	SHEET NO. : BS-02
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NOTES

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

$$P_{all} = \left(\frac{167 e_h E_h}{S + 2.54} \right) \left(\frac{W_r + 0.18 W_p}{W_r + W_p} \right)$$

WHERE:

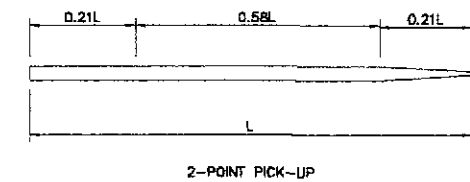
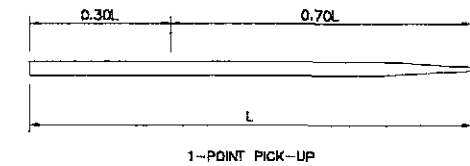
- P_{all} = ALLOWABLE PILE BEARING CAPACITY (kN)
- e_h = HAMMER EFFICIENCY
- E_h = HAMMER ENERGY RATING (kN-m)
- W_r = WEIGHT OF RAM (kN)
- W_p = WEIGHT OF PILE AND OTHER DRIVEN WEIGHTS (kN)
- S = AVERAGE PENETRATION PER BLOW FOR THE LAST 150mm OF DRIVING (mm)

9. TEST PILES

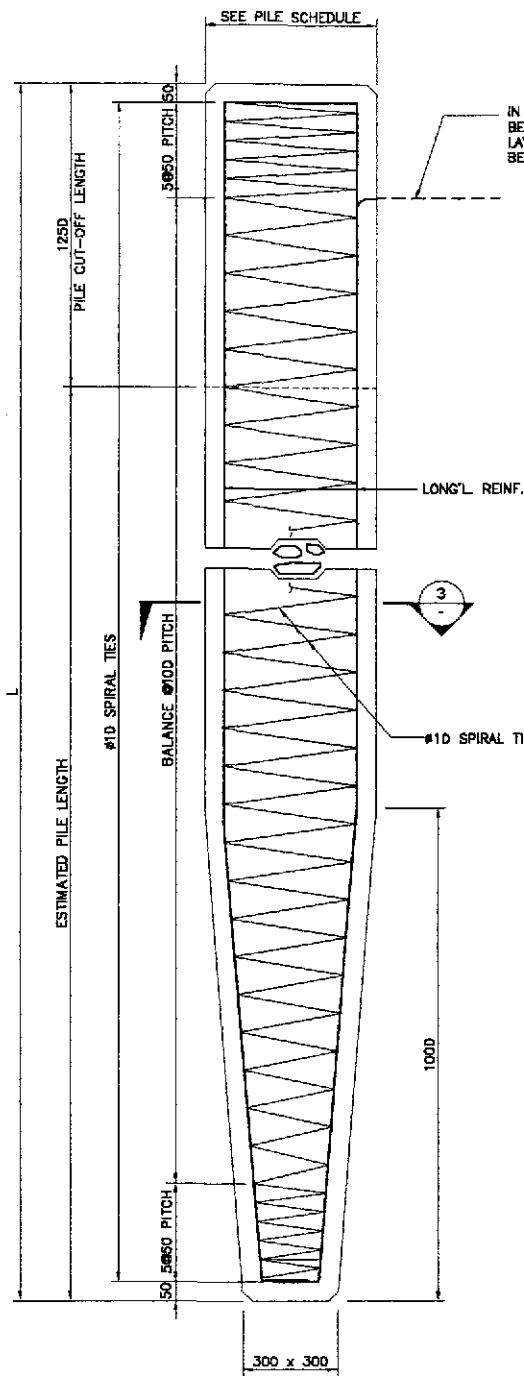
TEST PILES SHALL BE DRIVEN WITH THE SAME HAMMER USED FOR DRIVING REGULAR PILES AND MAY BE PART OF FOUNDATION IF APPROVED BY THE ENGINEER/CONSULTANT.

10. PICK-UP POINTS :

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

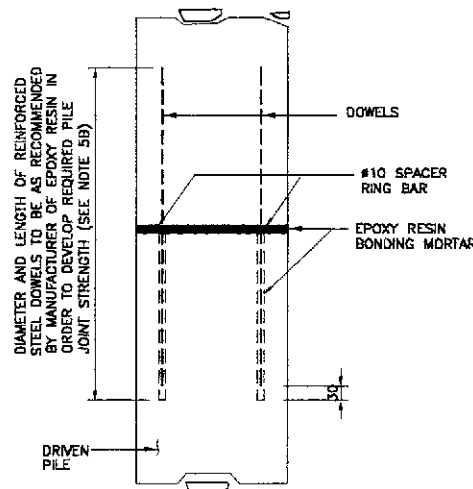


THE USE OF SPECIAL EMBEDDED OR ATTACHED LIFTING DEVICES SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER/CONSULTANT.

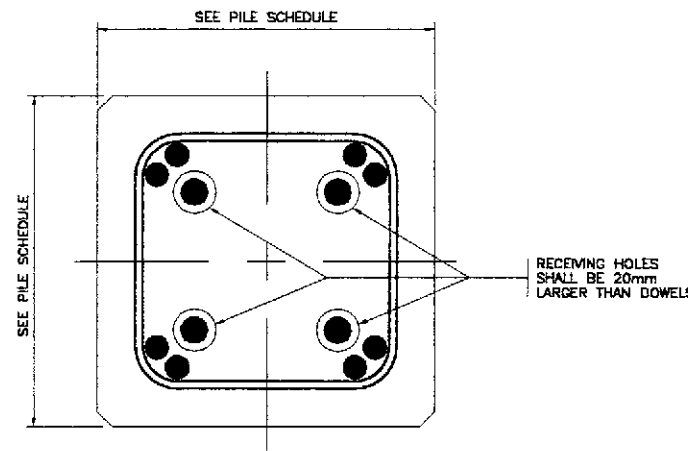


1 PILE ELEVATION
NOT TO SCALE

PILE SCHEDULE				
TYPE	SIZE (mm)	LONGITUDINAL REINF.		ALLOWABLE BEARING CAPACITY (kN)
		QTY.	BAR SIZE	
I	450 x 450	8	28	680
II	450 x 450	8	32	680
III	400 x 400	8	28	480

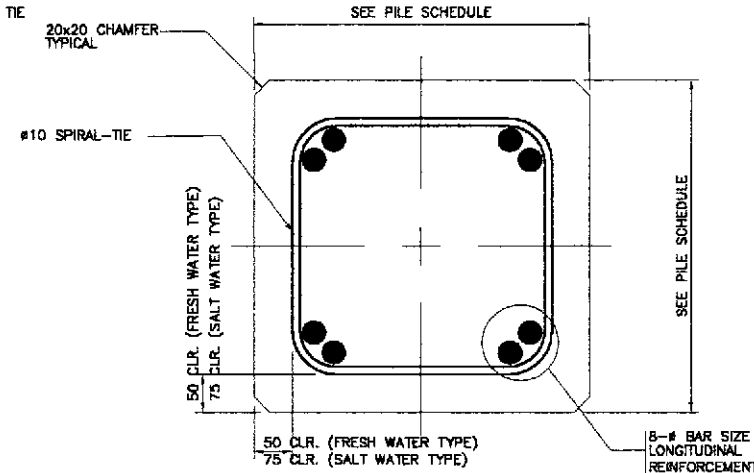


2A ELEVATION
N T S

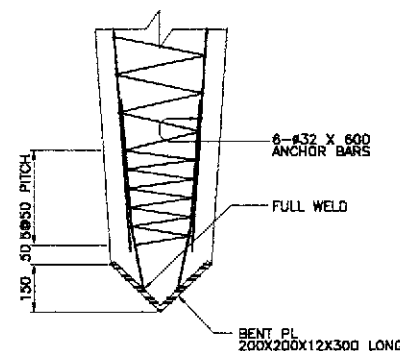


2B SECTION
N T S

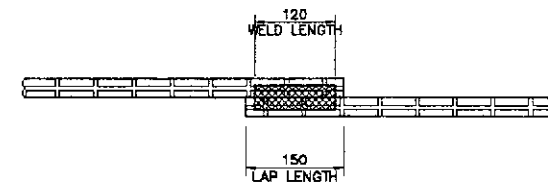
2 PILE SPLICE DETAIL
NOT TO SCALE



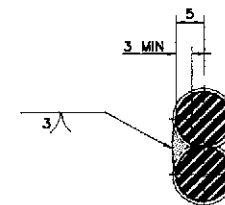
3 SECTION
NOT TO SCALE



4 PILE TIP FOR HARD DRIVING
NOT TO SCALE



5A ELEVATION
N T S



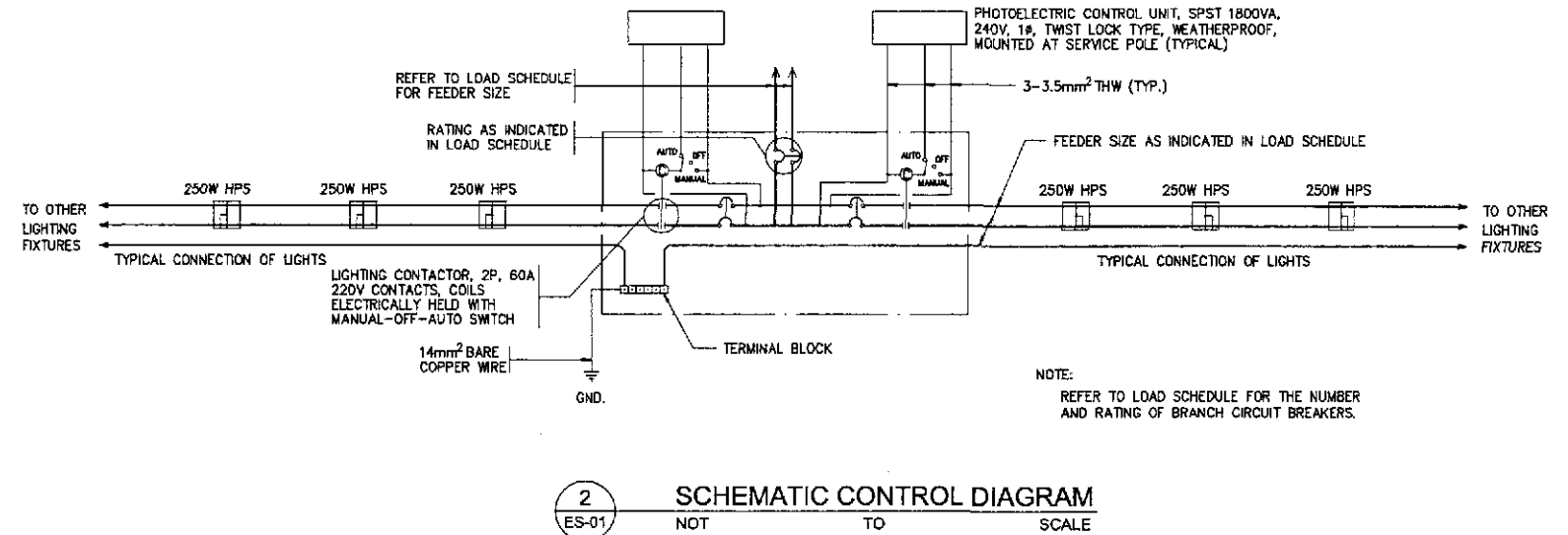
5B SECTION
N T S

5 WELDED SPIRAL TIE SPLICE DETAIL
NOT TO SCALE

ELECTRICAL

LEGEND AND SYMBOLS:

- STREET LIGHTING POLE WITH 1 x 250 WATTS, 240 VOLTS HIGH PRESSURE SODIUM LUMINAIRE SINGLE BRACKET / SINGLE ARM, LOCATED AT 180° ON CENTER IES TYPE III MEDIUM SEMI CUT-OFF, SIMILAR TO GE M250A2
- DITTO- EXCEPT DOUBLE ARM LIGHT POLE WITH 2 x 250 WATTS HPS LAMP
- SERVICE ENTRANCE AND METERING PEDESTAL WITH LIGHTING CONTACTOR PANEL AS SHOWN IN THE DRAWINGS.
- CIRCUIT BREAKER, RATING AS SHOWN
- 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



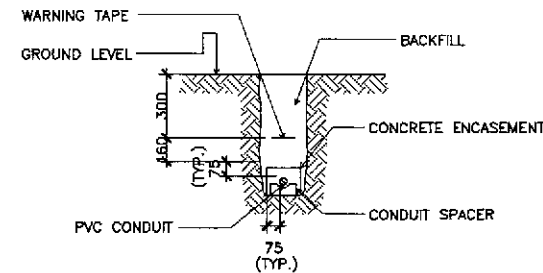
2 SCHEMATIC CONTROL DIAGRAM
ES-01 NOT TO SCALE

GENERAL NOTES:

1. ALL ELECTRICAL WORKS SHALL BE DONE IN ACCORDANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, THE LAWS AND ORDINANCES OF THE LOCAL CODE, ENFORCING AUTHORITIES AND THE REQUIREMENTS OF THE LOCAL POWER COMPANY. THE ELECTRICAL WORK SHALL BE DONE UNDER THE DIRECT SUPERVISION OF A DULY REGISTERED ELECTRICAL ENGINEER.
2. THE CONTRACTOR SHALL SECURE ALL PERMITS AND PAY ALL FEES REQUIRED FOR THE WORK AND FURNISH THE OWNER, THROUGH THE ENGINEER'S FINAL CERTIFICATES OF ELECTRICAL INSPECTION AND APPROVAL FROM PROPER GOVERNMENT AUTHORITIES FOR COMPLETED WORK.
3. THE POWER SERVICE VOLTAGE SHALL BE 240V, 1#, 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, 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 2-3.5mm² THW & 1-3.5mm² 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. THE CONTRACTOR SHALL VERIFY AND COORDINATE TO LOCAL UTILITY COMPANY THE ACTUAL LOCATION OF THE SERVICE ENTRANCE FOR CONNECTION TO THE POWER SUPPLY. LIKEWISE, THE CONCRETE PEDESTAL SHALL BE PROVIDED BY THE CONTRACTOR.
8. ALL NON-CURRENT CARRYING PARTS OF EVERY ELECTRICAL EQUIPMENT/FIXTURE SHALL BE GROUNDED EFFECTIVELY.
9. 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.
10. 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.
11. ALL PANELBOARD ENCLOSURES SHALL BE RAIN-TIGHT, NEMA 4X ENCLOSURE (1.5mm THICK MINIMUM GAUGE 14 FOR BOX AND COVER) WITH CONCEALED HINGE AND FLUSH LOCK KEY.
12. ALL STREET LUMINAIRE ASSEMBLY INCLUDING POLE AND FOUNDATION SHALL WITHSTAND WINDS UP TO 250 KPH PER HOUR GUSTING WITHOUT PERMANENT DEFORMATION.
13. DO NOT INSTALL POLE WITHOUT COMPLETE INSTALLATION/CONNECTION OF THE LUMINAIRE ASSEMBLY.
14. ALL CIRCUIT BREAKERS SHALL BE UL LISTED AS SWD (SWITCHING DUTY) SUITABLE FOR HIGH INITIAL INRUSH CURRENT FOR SWITCHING THE PRESSURE SODIUM LUMINAIRES. SIEMENS-ITE, SQUARE D, WESTINGHOUSE BRANDS SHALL BE USED OR APPROVED EQUIVALENT.
15. 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.

NOTES:

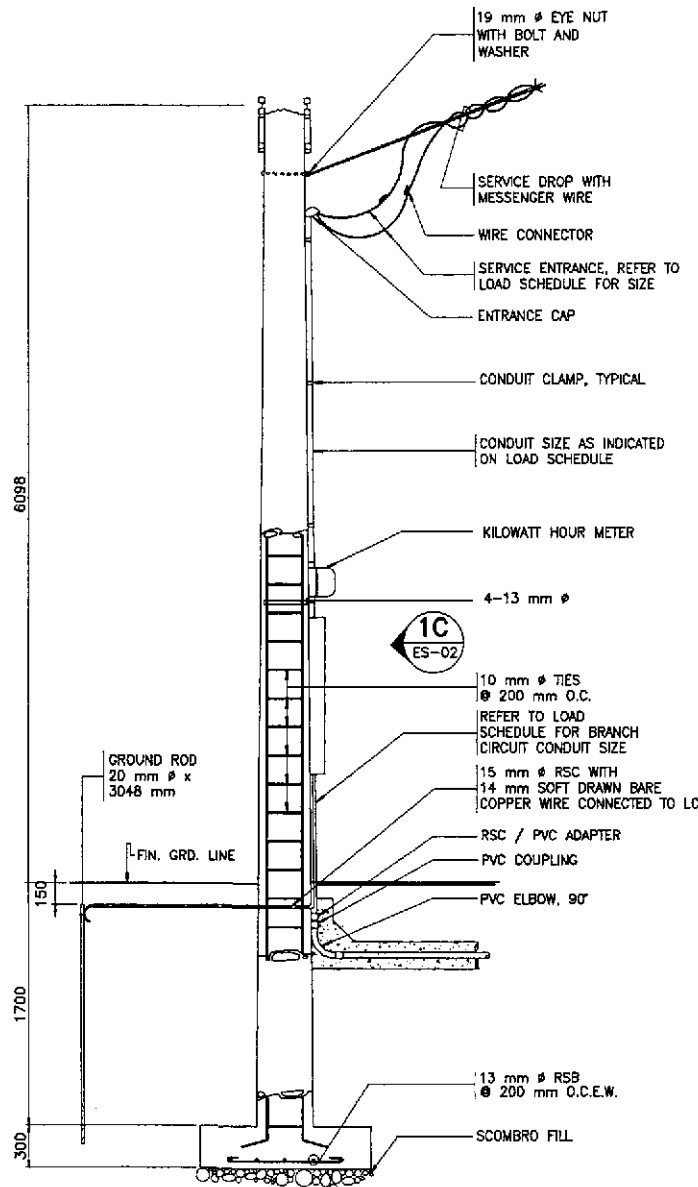
1. UNLESS OTHERWISE SPECIFIED, TOP OF CONCRETE ENVELOPE SHALL NOT BE LESS THAN 460mm BELOW FINISHED GRADE LINE EXCEPT, THAT UNDER ROAD AND PAVEMENT, IT SHALL BE NOT LESS THAN 600mm.
2. PROVIDE STEEL REBAR REINFORCEMENT ON PAVED AREA.
3. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE F_c SHALL BE 13.8MPa (2000PSI)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



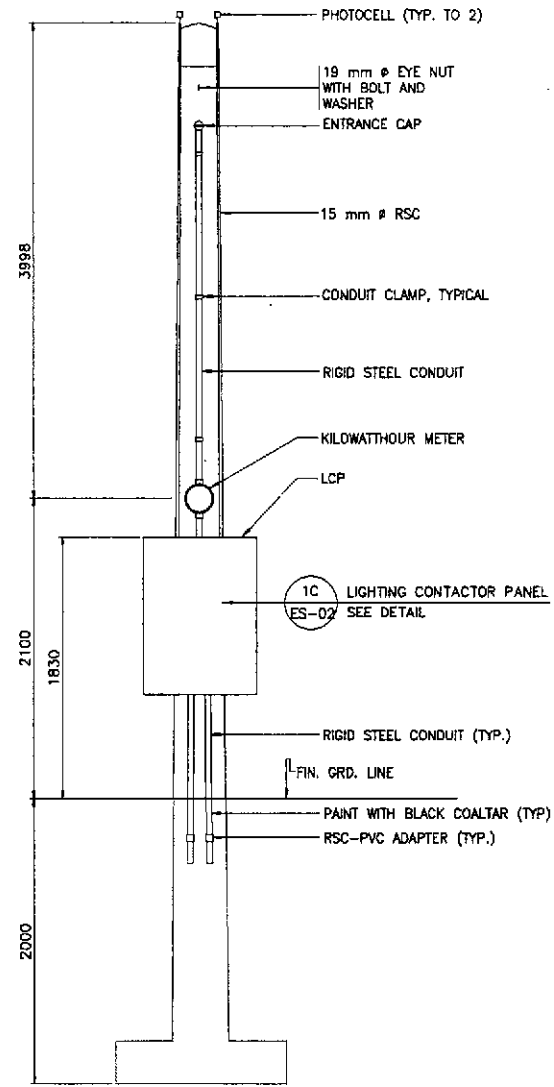
1 TYPICAL DUCT SECTION
ES-01 NOT TO SCALE

Ernesto M. Antioquia
ERNESTO M. ANTIOQUIA
 ENGINEER
 P.E. NO. 7400884 P.E.E. NO. 2013
 ISSUED ON 07/02/2002 ISSUED AT CAGAYAS, LAOAG
 T.A.M. 109-382-378

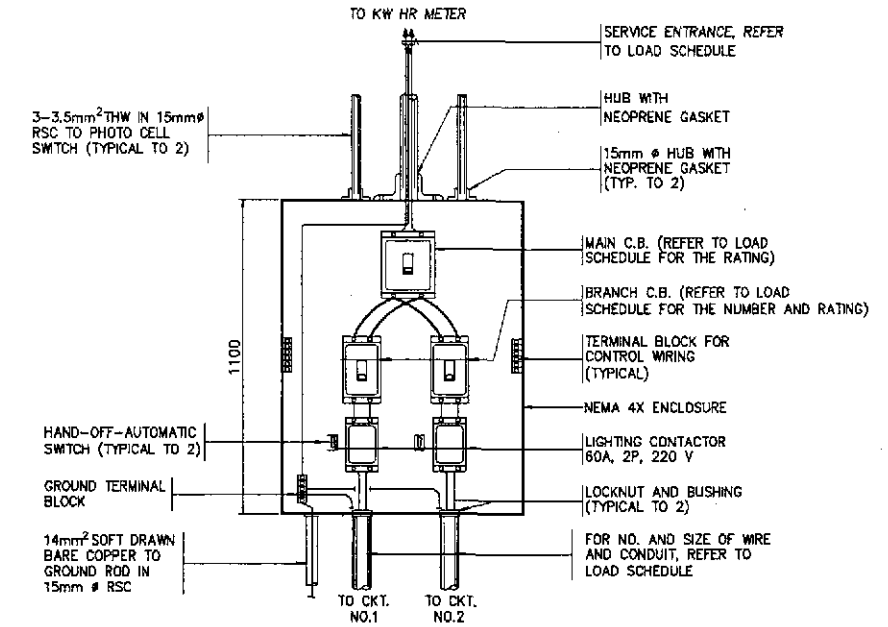
	DESIGNED	9/25/02	<i>Ernesto M. Antioquia</i>	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY	PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE III	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : NOTES & LEGENDS, SCHEMATIC CONTROL DIAG. & DUCT SECTION (ULTIMATE STAGE)	SHEET NO. : ES-01					
	CHECKED	9/27/02	<i>Ernesto M. Antioquia</i>						Submitted By: DANILO C. TRAJANO Project Director	Reviewed By: FE M. BARRIENTOS Chief, Mechanical-Elect. Div.	Recommended By: GILBERTO S. REYES DIC, Director IV	Recommended By: MANUEL M. BONDAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary
	SUBMITTED	9/30/02	<i>Ernesto M. Antioquia</i>						TEAM LEADER				



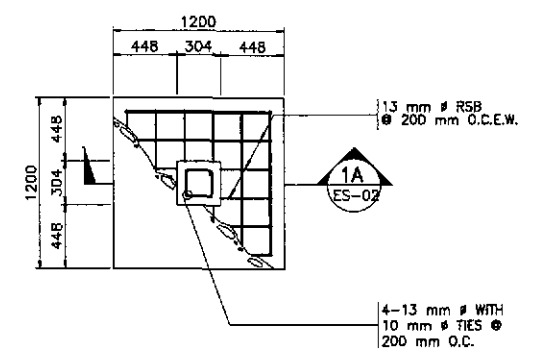
1A SECTION
ES-02



1B ELEVATION
ES-02



1C DETAIL
ES-02 SCALE 1:20



1D FOOTING PLAN
ES-02

1 SERVICE POLE DETAILS
ES-02 SCALE 1:20

EM
ERNESTO M. ANTOQUIA
ENGINEER
P.R. NO. 7402884 P.E.L. NO. 2913
ISSUED ON 01/02/2002 ISSUED AT CEBUYAG, LAGUNA
T.M. 109-282-372

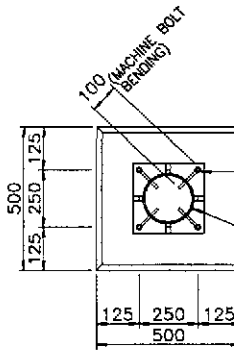
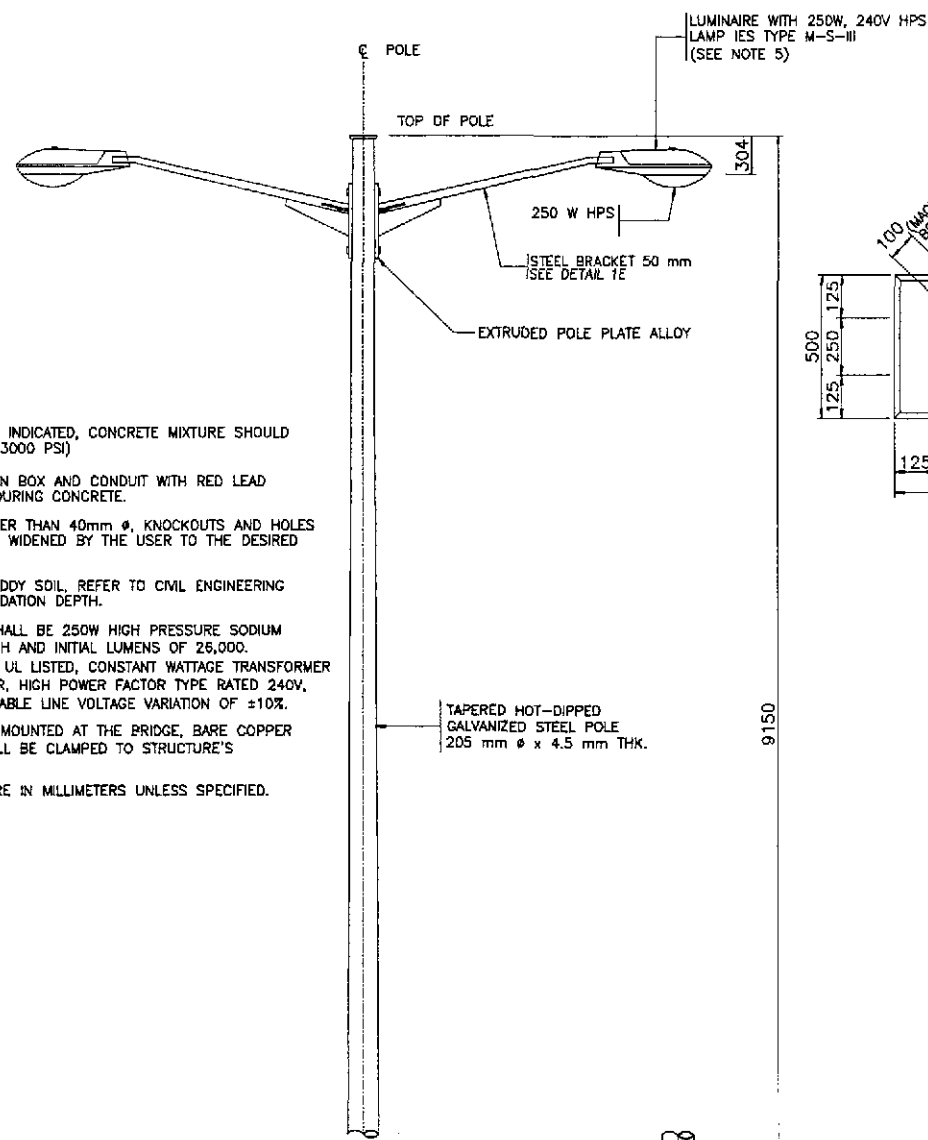
JICA
JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
YEO YACHIYO ENGINEERING CO., LTD.

DESIGNED	9/25/02	<i>EM</i>	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				
CHECKED	9/27/02	<i>EM</i>	BUREAU OF DESIGN				
SUBMITTED	9/30/02	<i>EM</i>	OFFICE OF THE SECRETARY				
DATE	SIGNATURE		Submitted By:	Reviewed By:	Recommended By:	Approved By:	
			DANILO C. TRAJANO Project Director	FE M. BARRIENTOS Chief, Mechanical-Elect. Div.	GILBERTO S. REYES D.C. Director IV	MANUEL M. BONOAN Undersecretary	SIMEON A. DATUMANONG Secretary

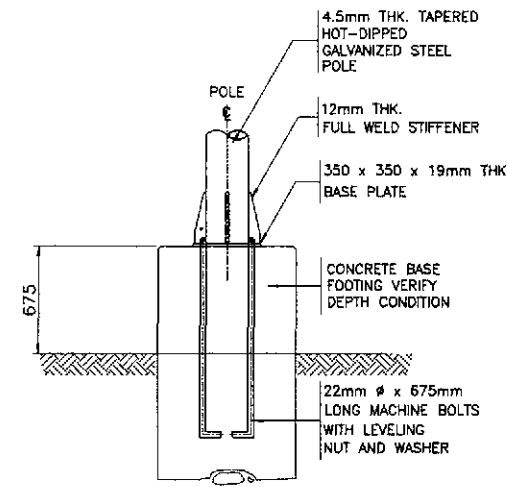
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	SERVICE POLE DETAILS (ULTIMATE STAGE)	ES-02
PLARIDEL BYPASS - CONTRACT PACKAGE III	FULL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

NOTES:

- UNLESS OTHERWISE INDICATED, CONCRETE MIXTURE SHOULD BE 211 kg./cm³ (3000 PSI)
- PAINT ALL JOINTS IN BOX AND CONDUIT WITH RED LEAD PRIMER BEFORE POURING CONCRETE.
- FOR CONDUIT LARGER THAN 40mm Ø, KNOCKOUTS AND HOLES SHALL HAVE TO BE WIDENED BY THE USER TO THE DESIRED DIAMETER.
- FOR LOAM AND MUDDY SOIL, REFER TO CIVIL ENGINEERING FOR PROPER FOUNDATION DEPTH.
- 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%.
- FOR STEEL POLES MOUNTED AT THE BRIDGE, BARE COPPER GROUND WIRE SHALL BE CLAMPED TO STRUCTURE'S REINFORCING BAR.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SPECIFIED.

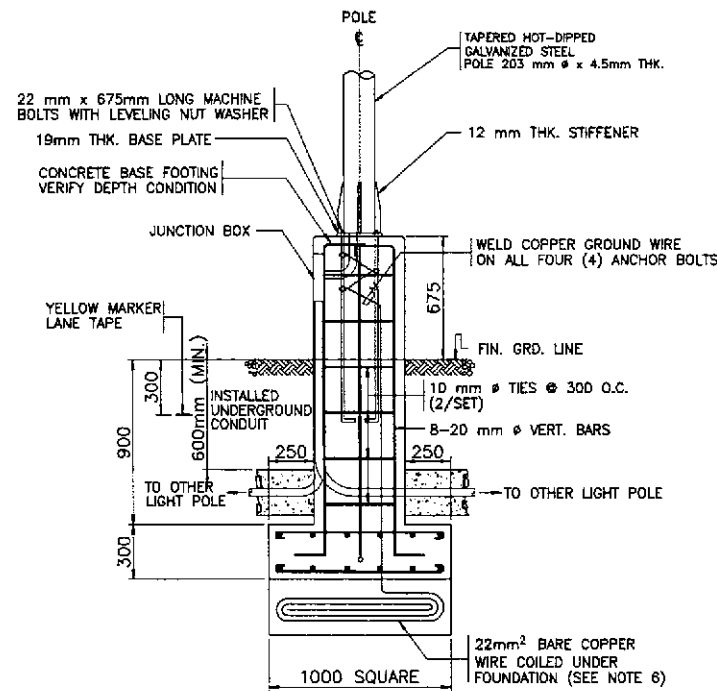


PLAN

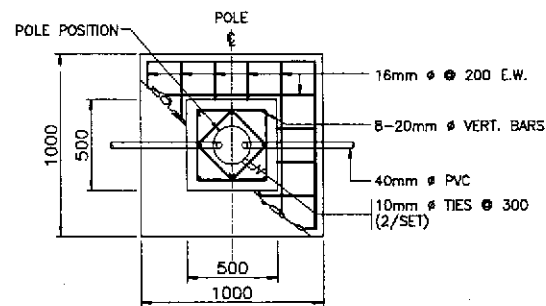


ELEVATION

1B BASE PLATE DETAIL ES-03



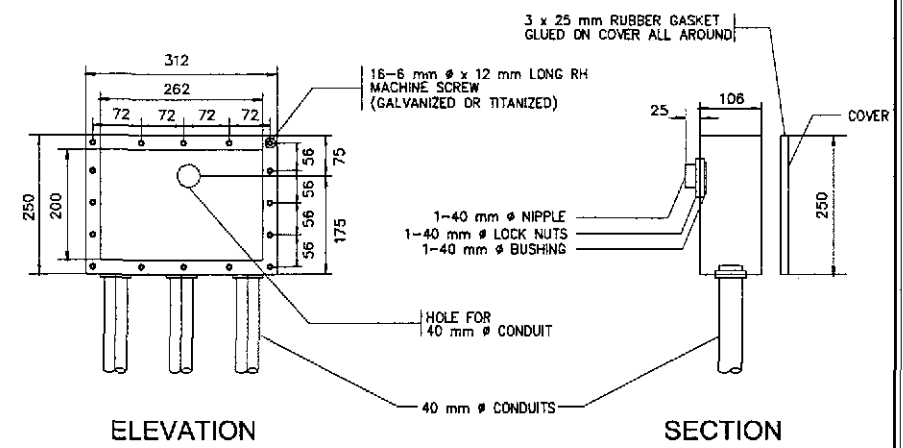
ELEVATION



PLAN

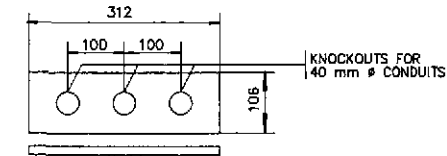
1C STANDARD FOOTING DETAIL ES-03

1 STREET LIGHT POLE DETAILS I ES-03 NOT TO SCALE



ELEVATION

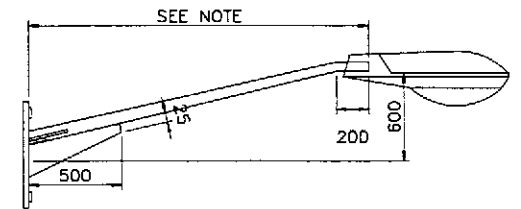
SECTION



SECTION

1D JUNCTION BOX DETAILS ES-03

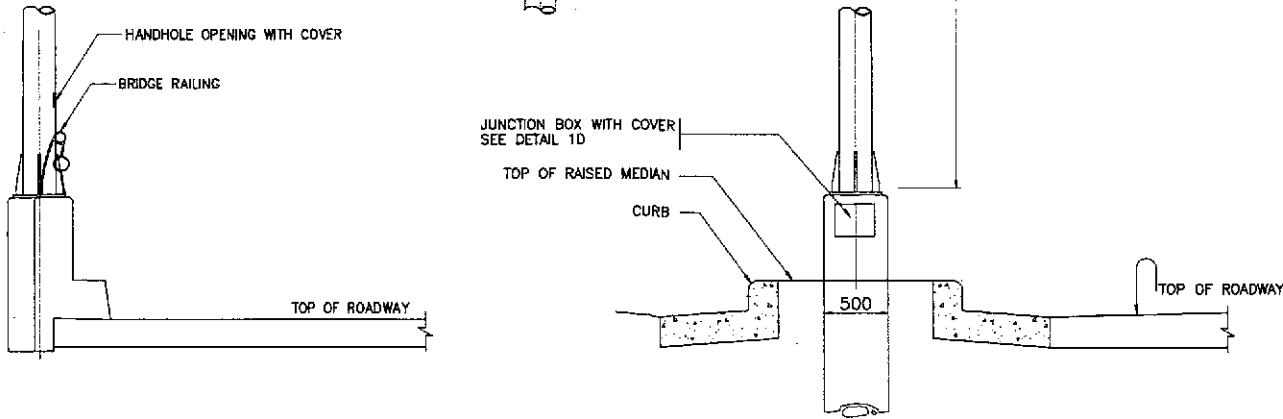
MATERIAL:
 JUNCTION BOX - 50 mm THICK CAST ALUMINUM FOR BOX AND COVER
 ANCHOR BOLT - ASTM A-36
FINISH:
 ANCHOR BOLT - ASTM A-153



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

MATERIAL:
 MAST ARM - B.I. PIPE AS PER PNS 26: 1984 (MEDIUM SERIES)
 POLE SHAFT AS PER ASTM A-53 MOUNTING PLATE AND STIFFENERS
 MACHINE BOLT - ANSI-C135.
FINISH:
 HOT-DIP GALVANIZED PER LATEST EDITION OF ASTM A-123
 MACHINE BOLT - ASTM A-153

1E MAST ARM DETAILS ES-03



BRIDGE LEVEL

GROUND LEVEL

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

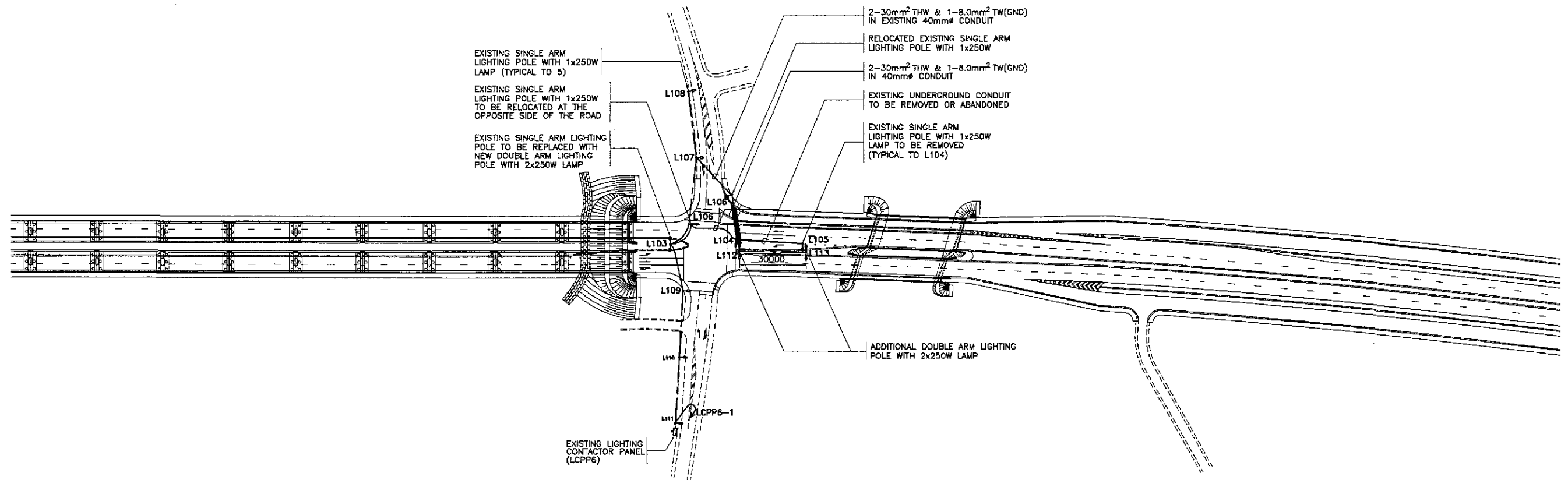
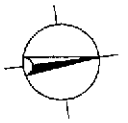
1A ELEVATION ES-03

1C STANDARD FOOTING DETAIL ES-03

1E MAST ARM DETAILS ES-03

ERNESTO M. ANTOQUIA
 ENGINEER
 PIR. NO. 7404664 P.E.C. NO. 2913
 ISSUED ON 01/02/2002 ISSUED AT CANTAYAG, LAJUNA
 T.O.N. 109-382-379

<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p>		<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>		<p>PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)</p>		<p>SCALE : AS SHOWN</p>	<p>SHEET CONTENTS : STREET LIGHT POLE DETAILS (ULTIMATE STAGE)</p>	<p>SHEET NO. : ES-03</p>	
<p>DESIGNED: 9/2/02</p>	<p>CHECKED: 9/2/02</p>	<p>SUBMITTED: 9/2/02</p>	<p>Submitted By: DANILLO C. TRAJANO Project Director</p>	<p>Reviewed By: FE M. BARRIENTOS Chief, Mechanical-Electrical Div.</p>	<p>Recommended By: GILBERTO S. REYES OIC, Director IV</p>	<p>Approved By: MANUEL M. BONDAN Undersecretary</p>	<p>Approved By: SIMEON A. DATUMANONG Secretary</p>	<p>PLARIDEL BYPASS - CONTRACT PACKAGE III</p>	<p>FULL SIZE A1</p>



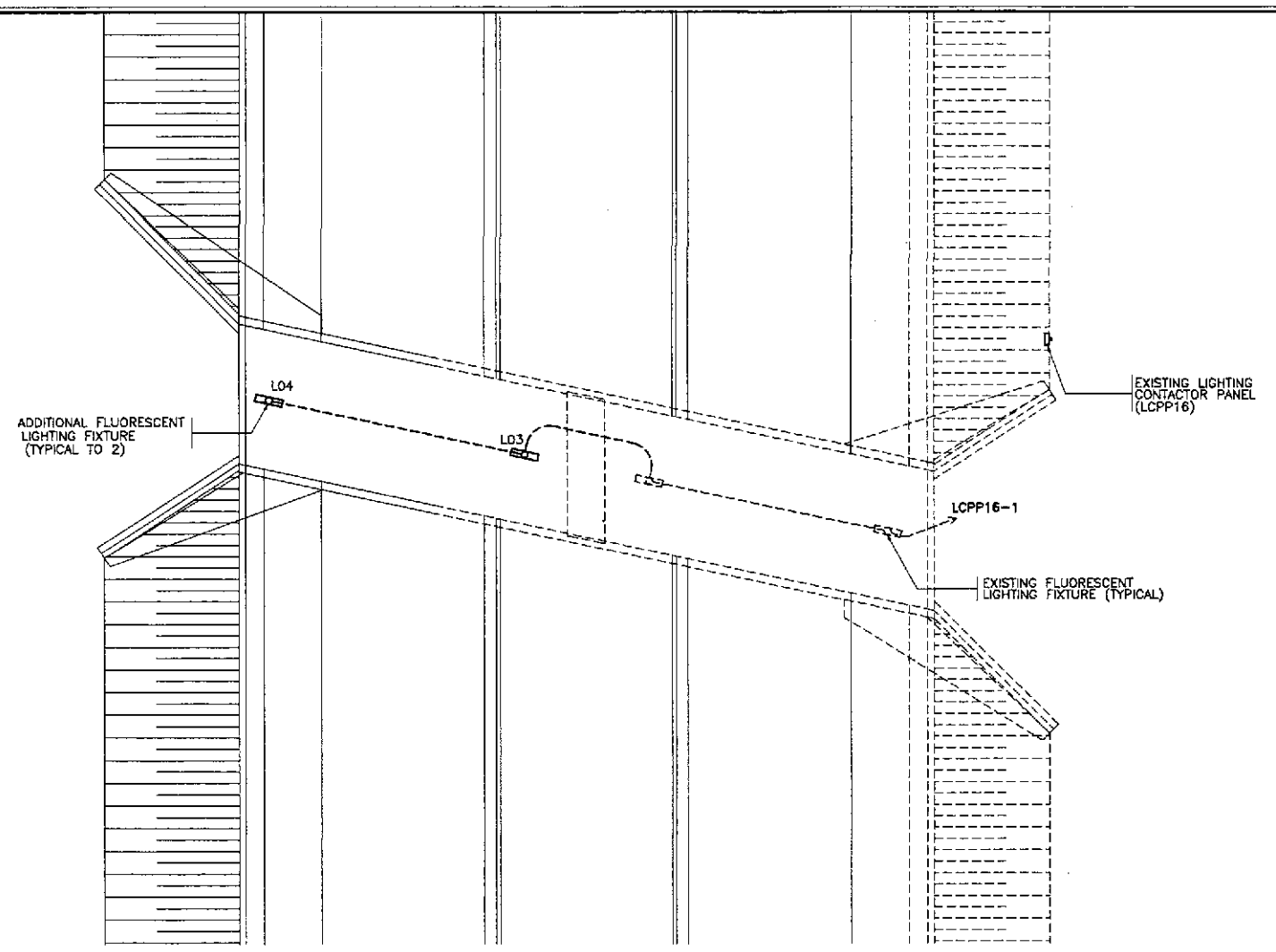
1 ROADWAY LIGHTING PLAN
EI-01 SCALE 1:1000

- NOTES:
1. ALL ITEMS SHOWN IN LIGHT LINE ARE EXISTING INSTALLATIONS (INCLUDED ALREADY IN THE INITIAL STAGE). ALL ITEMS SHOWN IN HEAVY LINE ARE NEW INSTALLATIONS (ULTIMATE STAGE).
 2. THE CONTRACTOR SHALL PROVIDE NEW CONCRETE FOUNDATION FOR THE RELOCATED LIGHTING POLE.
 3. UNLESS OTHERWISE INDICATED, THE MINIMUM SIZE OF CIRCUIT CONDUCTORS FROM STEEL POLE JUNCTION BOX/HANDHOLE TO EACH LUMINAIRE SHALL BE 2-3.5 mm² THW AND 1-3.5 mm² TW(Gnd) INSIDE STEEL POLE.
 4. UNLESS OTHERWISE INDICATED, ALL EXISTING INSTALLATIONS THAT WILL BE DISTURBED DUE TO MODIFICATION WORK, SHALL BE RESTORED BACK TO THEIR ORIGINAL USAGE.
 5. UNLESS OTHERWISE INDICATED, ALL UNDERGROUND CONDUITS AND CONCRETE PEDESTAL THAT WILL NOT BE USED SHALL BE REMOVED OR ABANDONED.

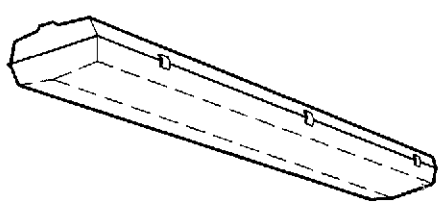
EM
ERNESTO M. ANTIOQUIA
 ENGINEER

PR. NO. 7463864 P.E.L. NO. 2913
 ISSUED ON 01/02/2002 ISSUED AT CAGAYAN, LAZUNA
 T.A.N. 109-282-372

	DESIGNED	9/25/02	<i>[Signature]</i>	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	9/27/02	<i>[Signature]</i>		Submitted By:	Reviewed By:	Recommended By:	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	1:1000	ROADWAY LIGHTING PLAN AND LOAD SCHEDULE INTERSECTION A-17 (ULTIMATE STAGE)	EI-01
	SUBMITTED	9/30/02	<i>[Signature]</i>		DANILO C. TRAJANO Project Director	FE M. BARRIENTOS Chief, Mechanical-Electr. Div.	GILBERTO S. REYES DIC, Director IV				



1 LIGHTING LAYOUT
B-9 (STA. 48+110.000)
EI-04 NOT TO SCALE



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

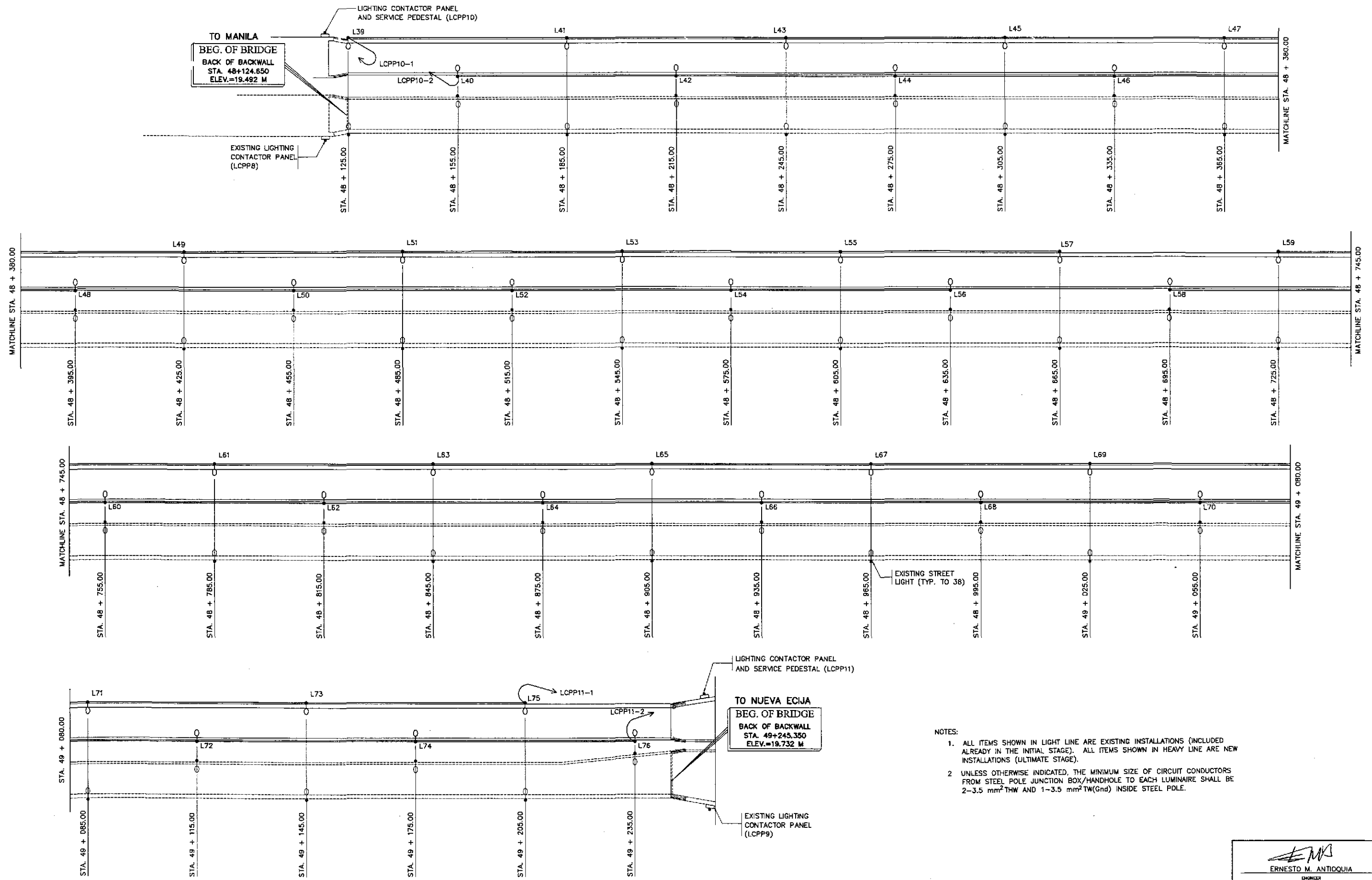
	220	1 x 40W FLUORESCENT	SURFACE
SYMBOL	VOLT	LAMP	MOUNTING

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 LIGHTING FIXTURE SCHEDULE
EI-04 NOT TO SCALE

ERNESTO M. ANTIOQUIA
ENGINEER
P.T.E. NO. 7463864 P.E.E. NO. 2613
ISSUED ON 05/02/2002 ISSUED AT CEBU/TAO, LARINA
T.M. 109-302-379

	DESIGNED	9/25/02		 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	9/27/02			Submitted By:	Reviewed By:	Recommended By:	Approved By:			NOT TO SCALE
	SUBMITTED	9/28/02			DANILO C. TRAJANO Project Director	FE M. BARRENTOS Chief, Mechanical-Electr. Div.	GILBERTO S. REYES O/C, Director IV	MANUEL M. BONDAN Undersecretary			SIMEON A. DATUMANDING Secretary



- 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. 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.

1 LIGHTING LAYOUT
 EI-02 SCALE 1:500

EM
 ERNESTO M. ANTIOQUIA
 ENGINEER

PR. NO. 740266 P.E.E. NO. 2913
 ISSUED ON 07/07/2002 ISSUED AT CAGAYAS, LAOAG
 T.I.N. 106-342-379


JICA JAPAN INTERNATIONAL COOPERATION AGENCY		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	SCALE : NOT TO SCALE	SHEET CONTENTS : ROADWAY LIGHTING PLAN BRIDGE NO. 8 ANGAT RIVER BRIDGE (ULTIMATE STAGE)	SHEET NO. : EB-01
DESIGNED 9/25/02	CHECKED 9/27/02	SUBMITTED 9/30/02	PJHL - PWD Submitted By: DANILLO C. TRAJANO Project Director	BUREAU OF DESIGN Reviewed By: FE M. BARRIENTOS Chief, Mechanical-Elect' Div.	OFFICE OF THE SECRETARY Recommended By: GILBERTO S. REYES OIC, Director IV	Approved By: MANUEL M. BONDAN Undersecretary	FULL SIZE A1		
KATAHIRA & ENGINEERS INTERNATIONAL		YEO YACHIYO ENGINEERING CO., LTD.							





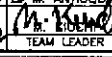

NOTE:

- 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.

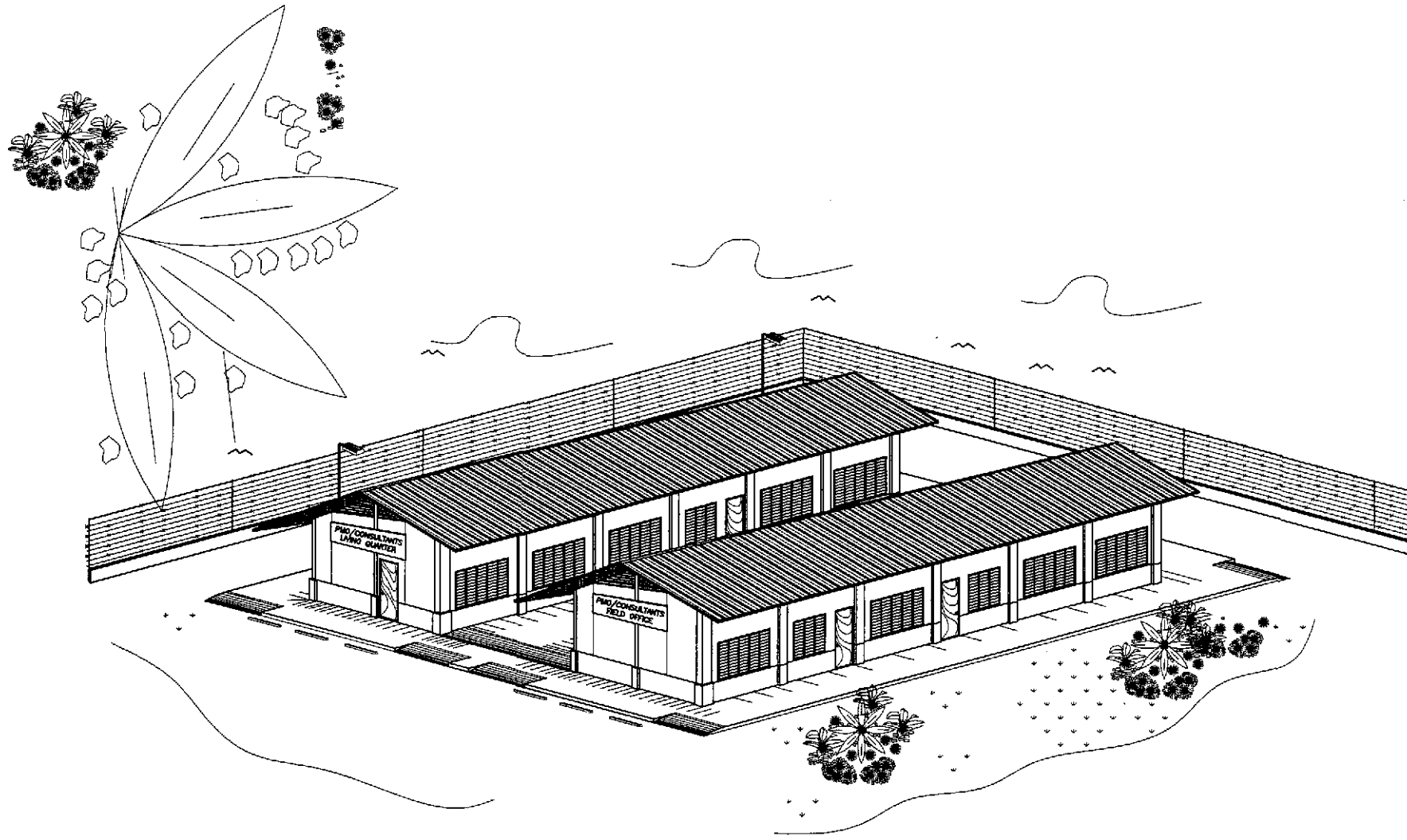
LOAD SCHEDULES

LIGHTING CONTACTOR PANEL NO.10						LIGHTING CONTACTOR PANEL NO.11											
PANEL ID : LCPP10		ENCLOSURE : NEMA 4X		PANEL ID : LCPP11		ENCLOSURE : NEMA 4X											
FEED : TOP		MIN. KAIC : 10		FEED : TOP		MIN. KAIC : 10											
MOUNTING : SURFACE		MAIN CB : 40 AT, 100 AF, 2P		MOUNTING : SURFACE		MAIN CB : 40 AT, 100 AF, 2P											
CKT. NO.	LOAD DESCRIPTION	VOLTS	CONNECTED LOAD		NO. & SIZE OF WIRES & CONDUIT	PROTECTION			CKT. NO.	LOAD DESCRIPTION	VOLTS	CONNECTED LOAD		NO. & SIZE OF WIRES & CONDUIT	PROTECTION		
			(VA)	AMPERE		AT	AF	P				(VA)	AMPERE		AT	AF	P
1	L39 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1				1	L75 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L41 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L73 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L43 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L71 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L45 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L69 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L47 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L67 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L49 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L65 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L51 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L63 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L53 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L61 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L55 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L59 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L57 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1												
	SUB-TOTAL		3100	14.1	2-30 mm ² THW & 1-8.0 mm ² TW(G) IN 40 mm ^ø CONDUIT	30	100	2		SUB-TOTAL		2790	12.69	2-30 mm ² THW & 1-8.0 mm ² TW(G) IN 40 mm ^ø CONDUIT	30	100	2
2	L40 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1				2	L76 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L42 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L74 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L44 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L72 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L46 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L70 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L48 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L68 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L50 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L66 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L52 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L64 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L54 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L62 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L56 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1					L60 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	SUB-TOTAL		2790	12.69	2-30 mm ² THW & 1-8.0 mm ² TW(G) IN 40 mm ^ø CONDUIT	30	100	2		SUB-TOTAL		3100	14.1	2-30 mm ² THW & 1-8.0 mm ² TW(G) IN 40 mm ^ø CONDUIT	30	100	2
	TOTAL		5890	26.79	2-38 mm ² THW IN 40 mm ^ø CONDUIT	40	100	2		TOTAL		5890	26.79	2-38 mm ² THW IN 40 mm ^ø CONDUIT	40	100	2


ERNESTO M. ANTOQUIA
 ENGINEER
 PPL NO. 7463684 P.E.E. NO. 2812
 ISSUED ON 07/22/2002 ISSUED AT CAGUYAO, LAAGNA
 T.A.N. 109-382-373

 JAPAN INTERNATIONAL COOPERATION AGENCY  KATAHIRA & ENGINEERS INTERNATIONAL  YEC YACHIYO ENGINEERING CO., LTD.	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	9/25/02		BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	NOT TO SCALE	LOAD SCHEDULE BRIDGE NO. 8 (ULTIMATE STAGE)	EB-02
	CHECKED	9/27/02		Submitted By:	Reviewed By:	Recommended By:	Approved By:	FULL SIZE A1			
SUBMITTED	9/30/02		DANILO C. TRAJANO Project Director	FE M. BARRIENTOS Chief, Mechanical-Elect. Div.	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONGAN Undersecretary	SIMEÓN A. DATUMANONG Secretary				

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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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

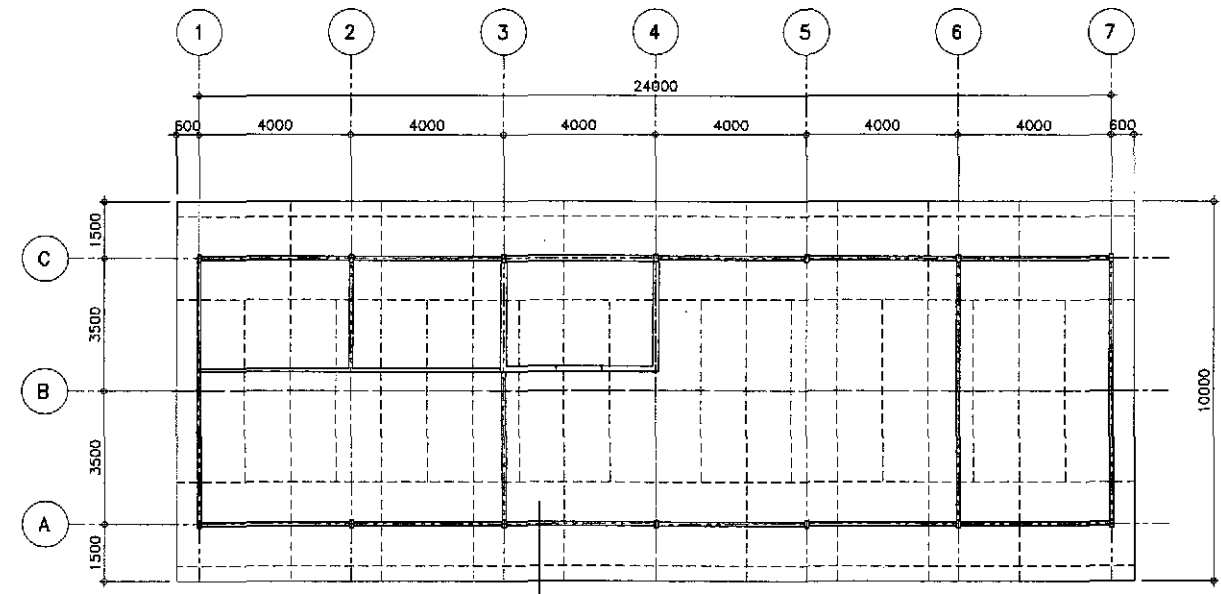
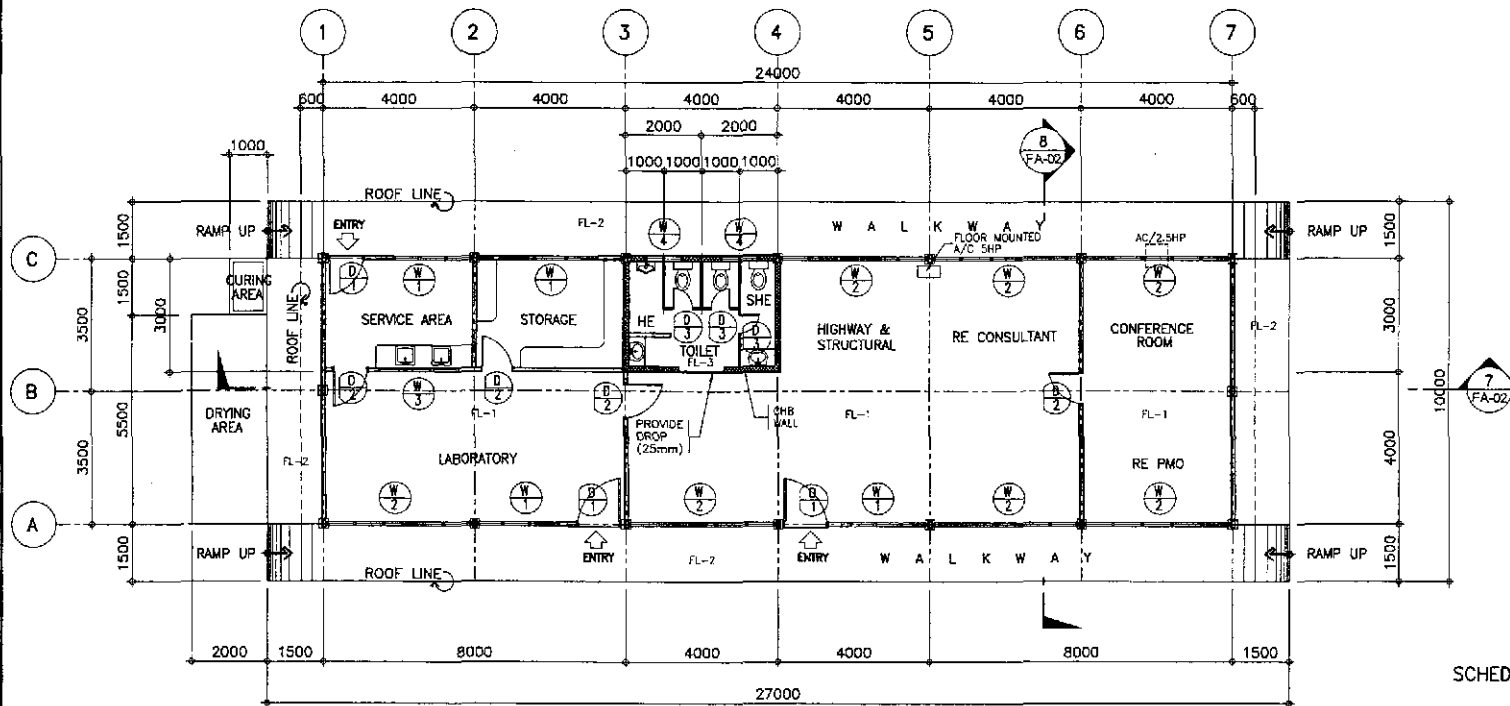
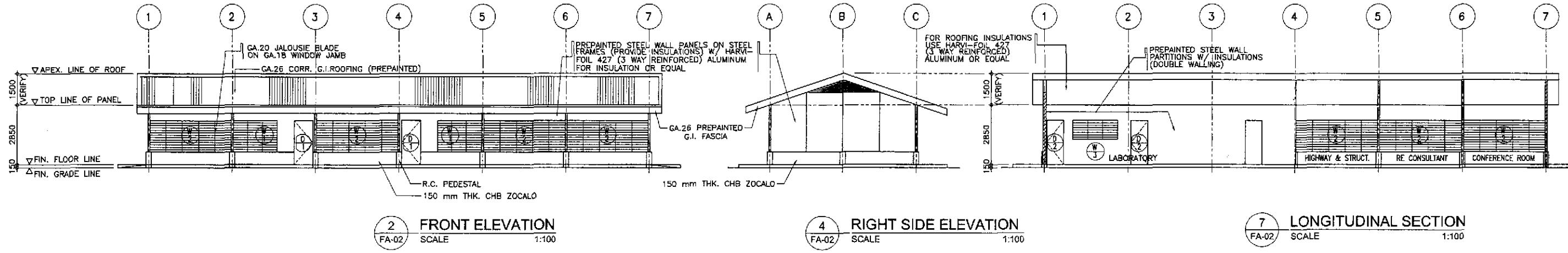
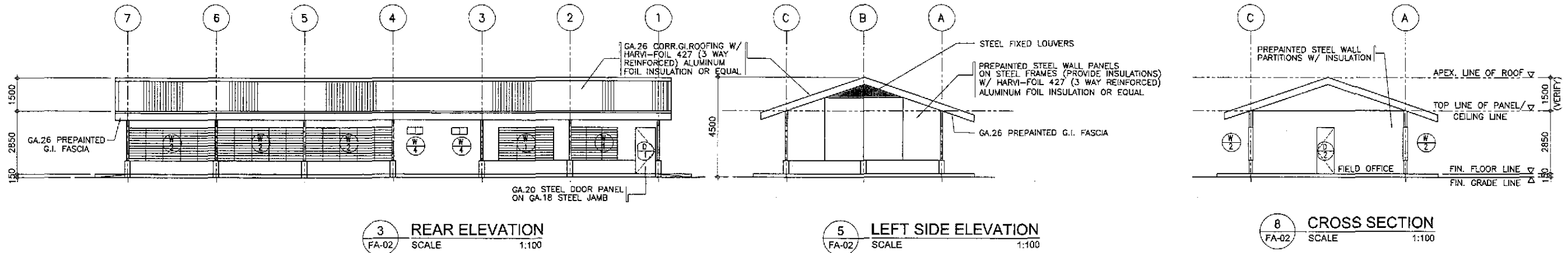
ELECTRICAL

MECHANICAL

Armel P. Gonzales
ARMEL P. GONZALES
ENGINEER

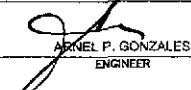
PTR. NO. 5246340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN, M.M.

	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE III	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
	CHECKED	9/2/02	P. GONZALES	BUREAU OF DESIGN OFFICE OF THE SECRETARY							
	SUBMITTED	9/20/02	ARMEL P. GONZALES	Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: EMMANUEL P. CUNTAPAY Chief, Architectural Division	Recommended By: GILBERTO S. REYES Dir., Director IV	Recommended By: MANUEL M. BONGAN Undersecretary				




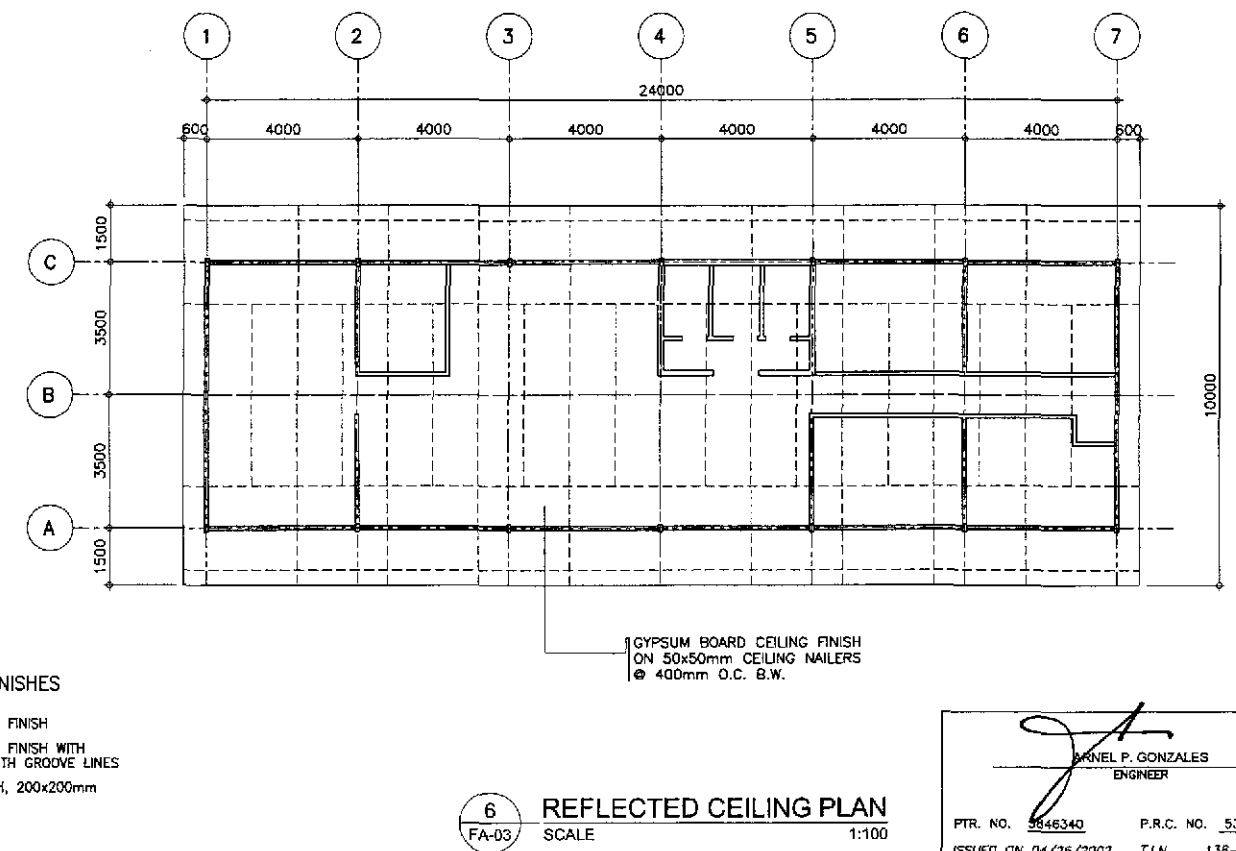
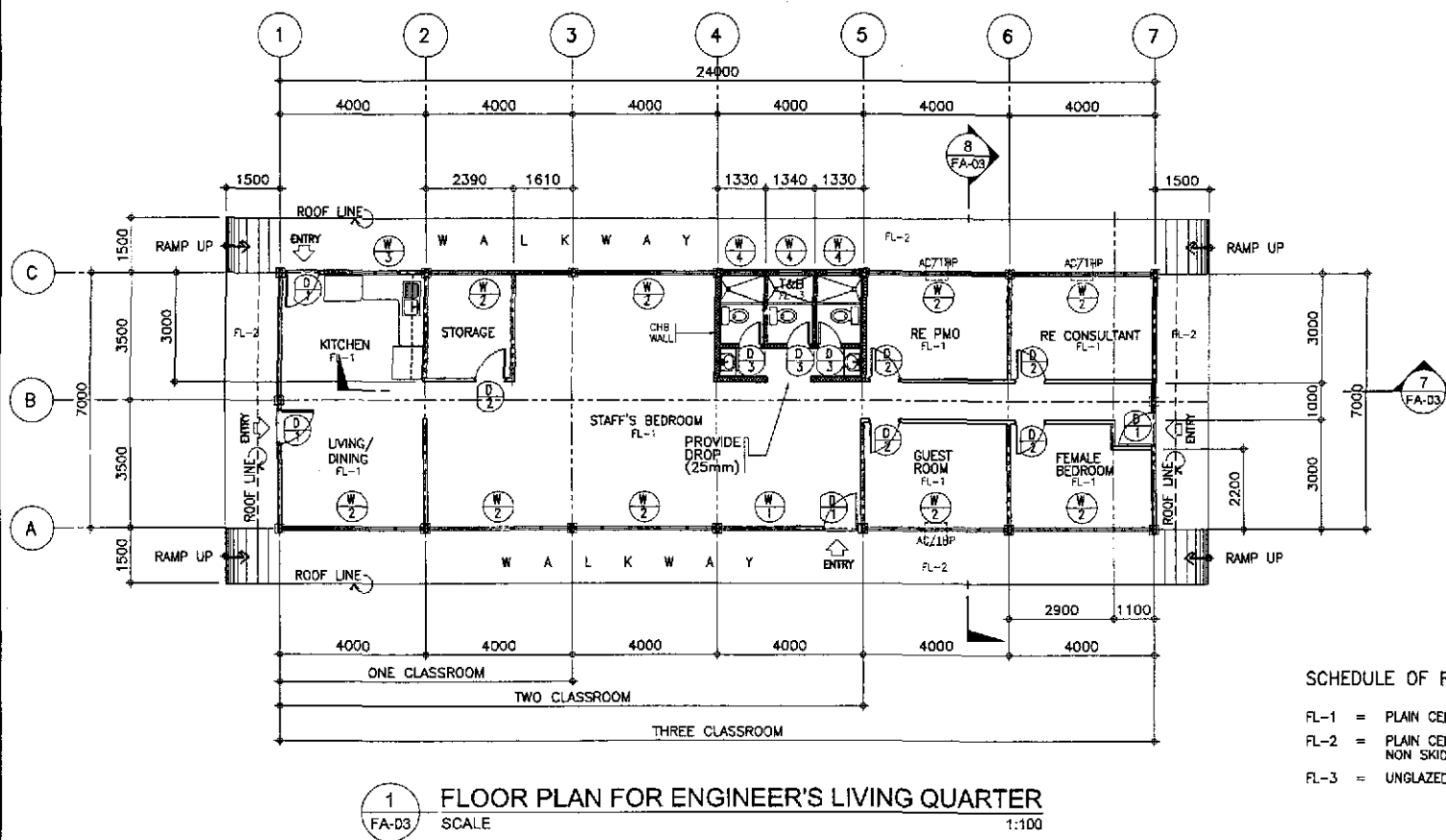
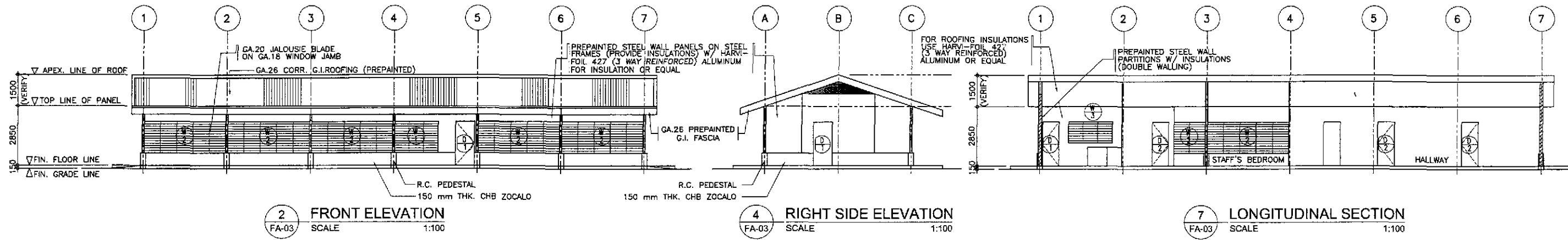
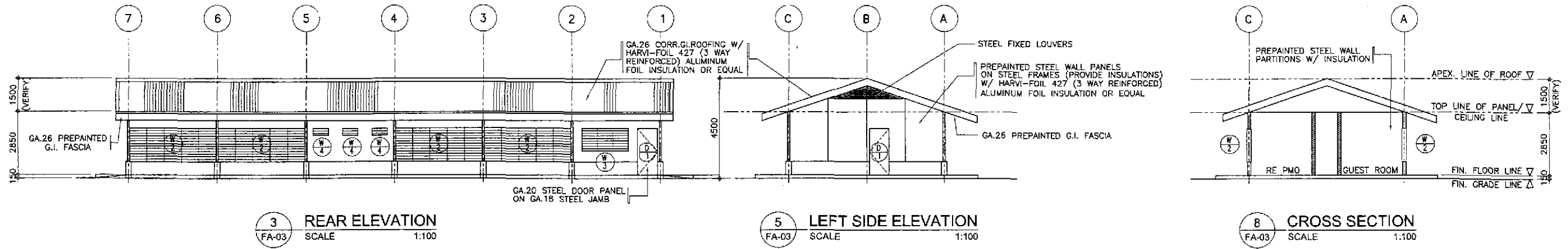
SCHEDULE OF FLOOR FINISHES

- 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. 5845340 P.R.C. NO. 53457
 ISSUED ON 04/26/2002 T.I.N. 138-062-682
 ISSUED AT SAN JUAN, M.M.

	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	ARNEL P. GONZALES	PJHL - PMO	BUREAU OF DESIGN			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	ENGR'S FIELD OFFICE / LABORATORY FLOOR PLAN, ELEVATIONS, CROSS-SECTIONS AND REFLECTED CEILING PLAN	FA-02
	CHECKED	ARNEL P. GONZALES	Submitted By:	Reviewed By:	Recommended By:	Recommended By:	PLARIDEL BYPASS - CONTRACT PACKAGE III	FULL SIZE A1		
SUBMITTED	ARNEL P. GONZALES	DANILO C. TRAJANO Project Director	EMMANUEL P. CUNTIAPAY Chief, Architectural Division	GILBERTO S. REYES O.C., Director IV	MANUEL M. BONGAN Undersecretary					



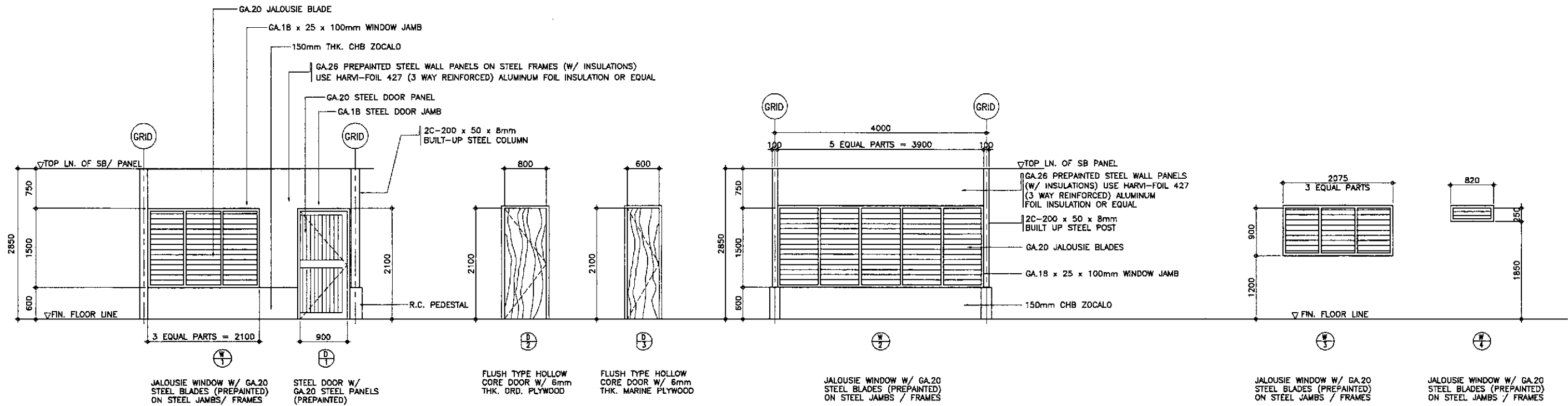
SCHEDULE OF FLOOR FINISHES

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

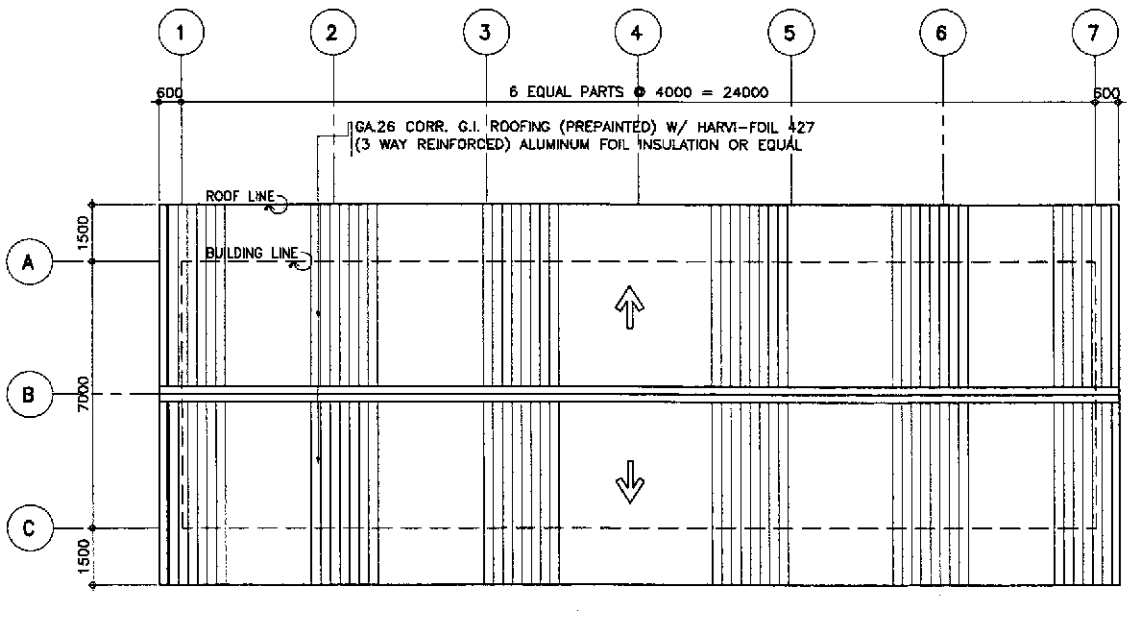
MANUEL P. GONZALES
ENGINEER

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

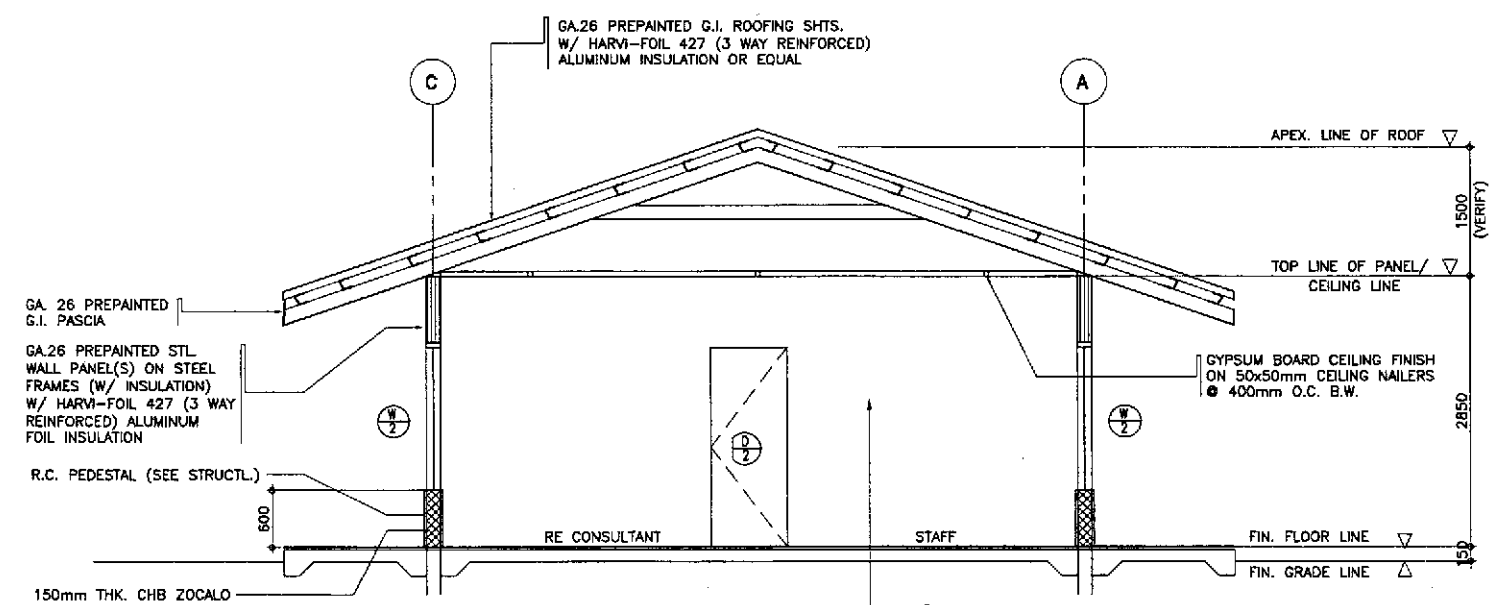
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	CHECKED: 9/25/02 M. GONZALES	BUREAU OF DESIGN OFFICE OF THE SECRETARY			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	ENGINEER'S LIVING QUARTERS FLOOR PLAN, ELEVATIONS, CROSS-SECTION AND REFLECTED CEILING PLAN	FA-03
SUBMITTED: 9/25/02 M. GONZALES	Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: EMMANUEL P. CUNTAPAY Chief, Architectural Division	Recommended By: GILBERTO S. REYES OIC, Director IV	Approved By: MANUEL M. BONGAN Undersecretary	PLARIDEL BYPASS - CONTRACT PACKAGE III	FULL SIZE A1		



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



1 ROOF PLAN
 FA-04 SCALE 1:100

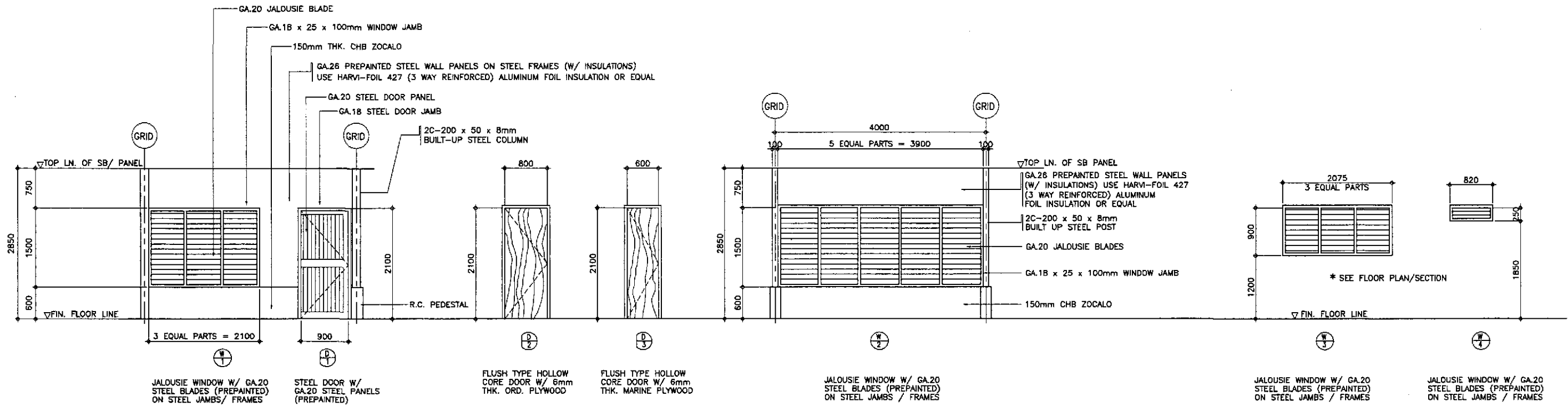


2 DETAIL CROSS SECTION
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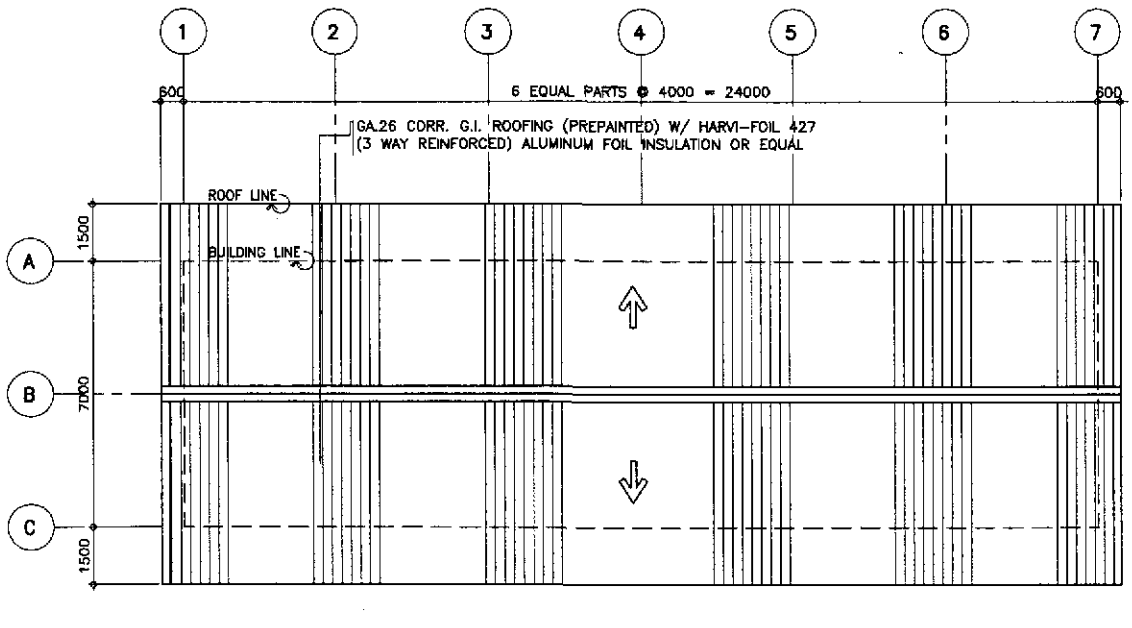
APRIL P. GONZALES
 ENGINEER

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

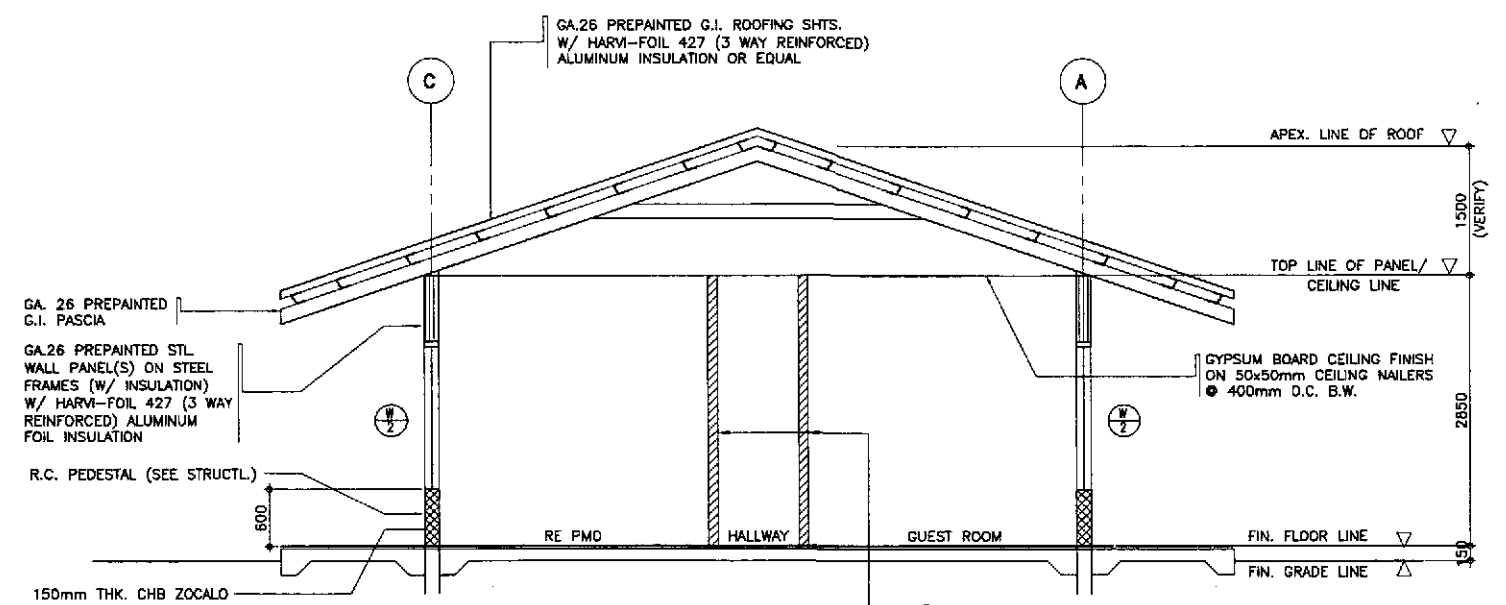
	DESIGNED	9/25/02	A. P. GONZALES	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY	PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE III	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					
	CHECKED	9/27/02	P. GONZALES						Submitted By: DANILO C. TRAJANO Project Director	Reviewed By: EMMANUEL P. CUNTAPAY Chief, Architectural Division	Recommended By: GILBERTO S. REYES OIC, Director IV	Recommended By: MANUEL M. BONDAN Undersecretary	Approved By: SIMON A. DATUMANONG Secretary
	SUBMITTED	9/29/02	M. KROCH						Submitted By: DANILO C. TRAJANO Project Director	Reviewed By: EMMANUEL P. CUNTAPAY Chief, Architectural Division	Recommended By: GILBERTO S. REYES OIC, Director IV	Recommended By: MANUEL M. BONDAN Undersecretary	Approved By: SIMON A. DATUMANONG Secretary



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



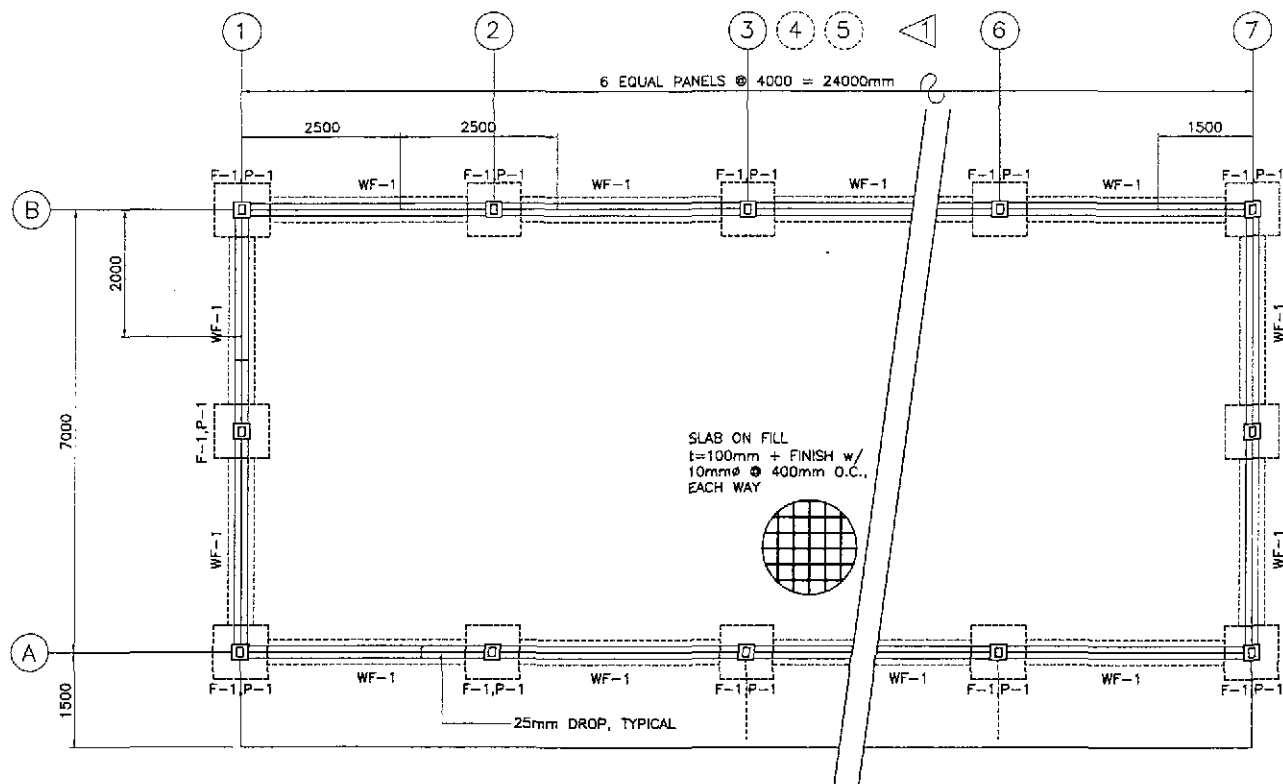
1 ROOF PLAN
 FA-05 SCALE 1:100



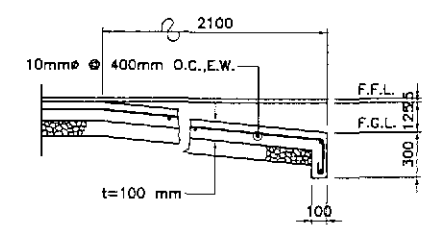
2 DETAIL CROSS SECTION
 FA-05 SCALE 1:40

ARUEL 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.

	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	9/25/02	A. P. GONZALES	BUREAU OF DESIGN			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE III	AS SHOWN	ENGINEER'S LIVING QUARTERS ROOF PLAN, CROSS-SECTION AND SCHEDULE OF DOORS & WINDOWS	FA-05
	CHECKED	9/27/02	P. BONZALE	OFFICE OF THE SECRETARY						
SUBMITTED	9/27/02	MANUEL M. BONOAN	Submitted By: DANLO C. TRAJANO (Project Director) Reviewed By: EMMANUEL P. CUNTAPAY (Chief, Architectural Division) Recommended By: GILBERTO S. REYES (OIC, Director IV) Approved By: MANUEL M. BONOAN (Undersecretary) Approved By: SIMON A. DATUMANONG (Secretary)							



1 FOUNDATION PLAN
FA-06 SCALE 1:25



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

DESIGN CRITERIA :

- I. LIVE LOAD
 - ROOF 0.58 KPa
 - OFFICE/LABORATORY 2.40 KPa
- II. DEAD LOAD
 - CONCRETE 24 KN/m³
 - STEEL 76.10 KN/m³
 - CHB 2.73 KPa
- III. WIND LOAD
 - $p = C_e C_q Q_s I$
 - WHERE :
 - p = ACTUAL WIND PRESSURE
 - C_e = GUST FACTOR COEFFICIENT (EXPOSURE B=0.63)
 - C_q = PRESSURE COEFFICIENT
 - Q_s = 1.50 KPa FOR ZONE 2&3, $Q_s=1.92$ FOR ZONE 1
 - I = OCCUPANCY IMPORTANCE = 1.00
- IV. ALLOWABLE STRESSES
 1. CONCRETE (ALLOWABLE COMPRESSIBLE STRENGTH @ 28 DAYS)
 - a.) FOR FOOTINGS AND PEDESTAL COLUMN
 - $f_c = 20.70$ mpa $f_c = 9.31$ mpa
 - b.) FOR SLAB ON FILL
 - $f_c = 17.26$ mpa $f_c = 7.76$ mpa
 2. REINFORCING STEEL BARS (STRUCTURAL GRADE 33 DEFORMED BARS)
 - $f_y = 227.0$ mpa $f_{st} = 124.02$ mpa
 3. STRUCTURAL LIGHT GAGE COLD FORMED STEEL
 - STIFFENED LIGHT GAGE CHANNEL FOR RAFTERS, STUD & WALLS
 - $f_s = 124.0$ mpa (18,000 psi)
 4. STRUCTURAL BUILT-UP STEEL PLATES (ASTM A-36)
 - FOR STEEL BOX COLUMN
 - $f_y = 248.0$ mpa (36,000 psi)
 5. WELDS
 - USE E-60 XX ELECTRODES
 - $f_v = 93.76$ mpa
 6. BOLTS (ASTM A-307)
 - $f_v = 69$ mpa $f_{st} = 96.60$ mpa
 7. CONCRETE MASONRY UNITS (NON-LOAD BEARING CHB)
 - $f_m = 3.41$ mpa (500 psi)
 8. ASSUMED ALLOWABLE SOIL BEARING CAPACITY OF 95.76 KPa (2,000 psf)

NOTES ON FOUNDATION :

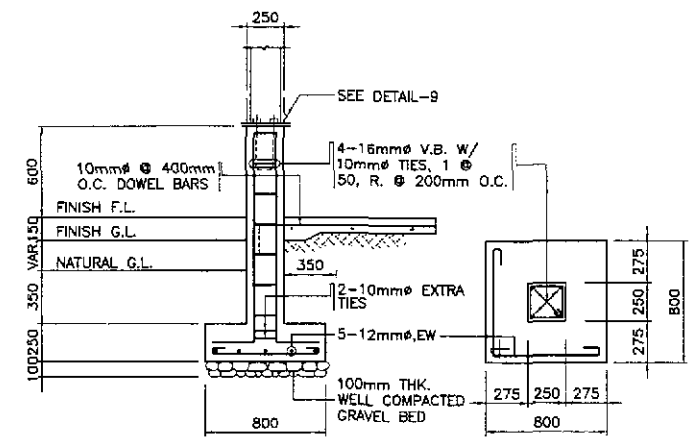
1. IN CASE THE ACTUAL SOIL BEARING PRESSURE IS FOUND LESS THAN THE ASSUMED VALUE OF 95.76 KPa, NOTIFY THE DIRECTOR, BUREAU OF DESIGN FOR PROPER REVISION OF FOOTINGS.
2. NO FOOTINGS SHALL REST ON FILL.

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. 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.
3. 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 JAMBES SHALL BE GIVEN ANOTHER TWO COATS OF BROWN OR MAHOGANY COLORED ENAMEL PAINT.

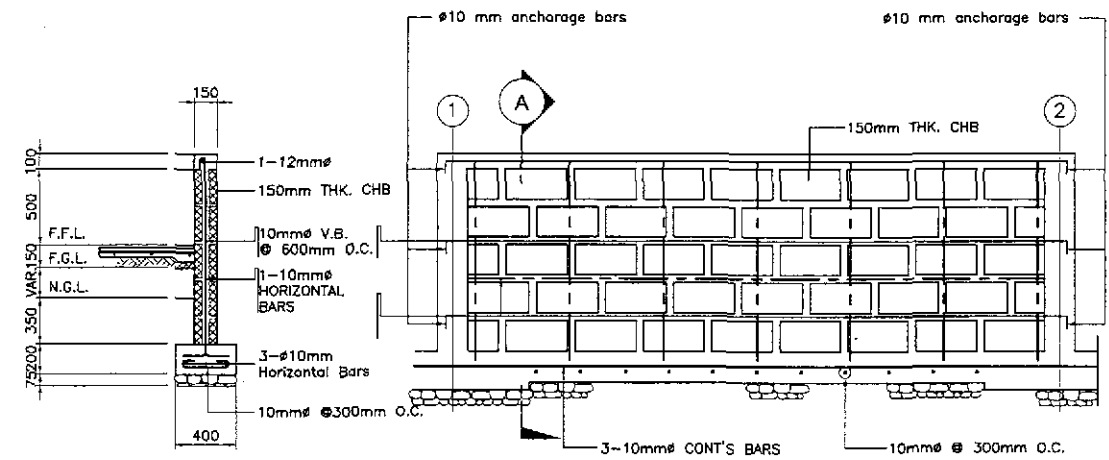
NOTES :

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

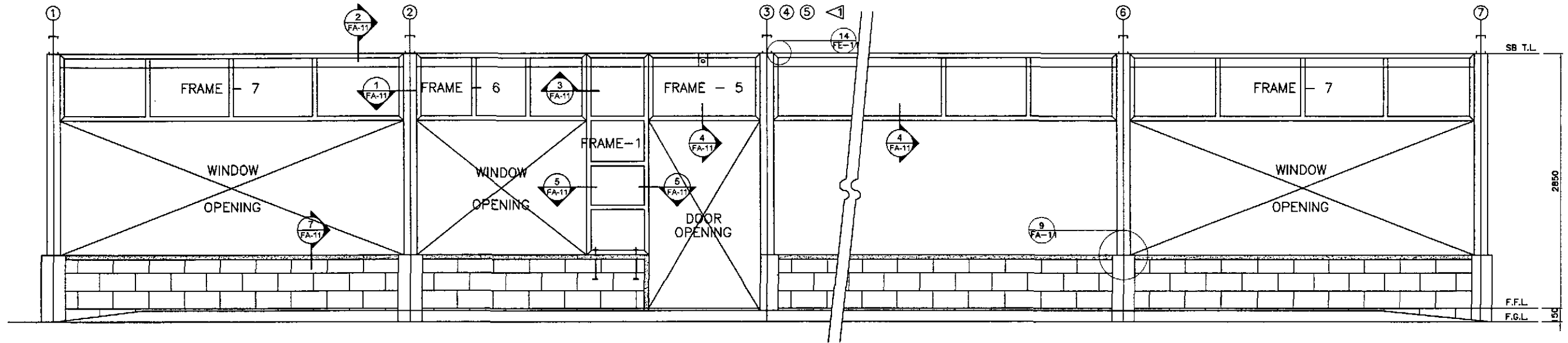


SECTION A TYP. ELEVATION

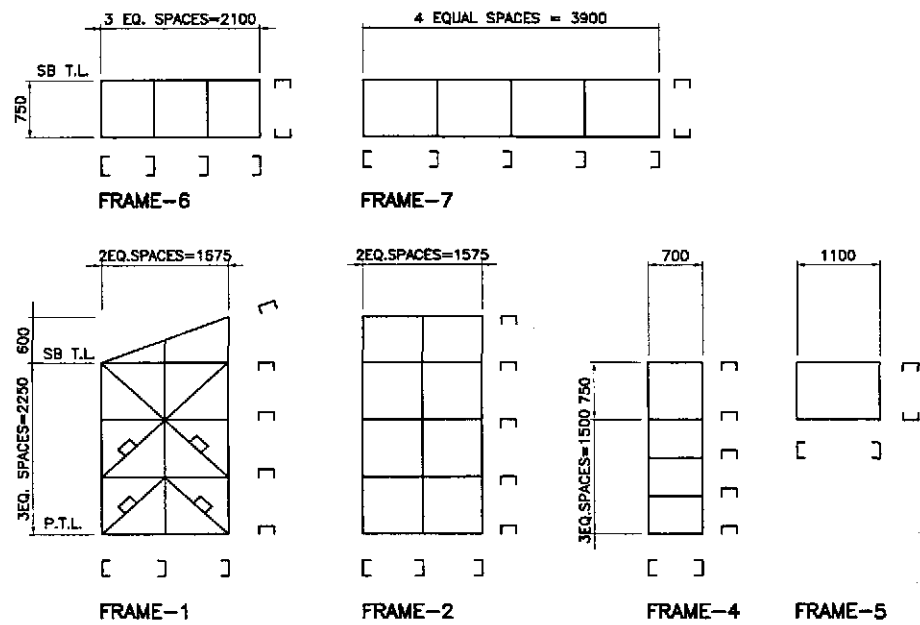
3 WF - 1
FA-06 SCALE 1:25

ARMEL 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.

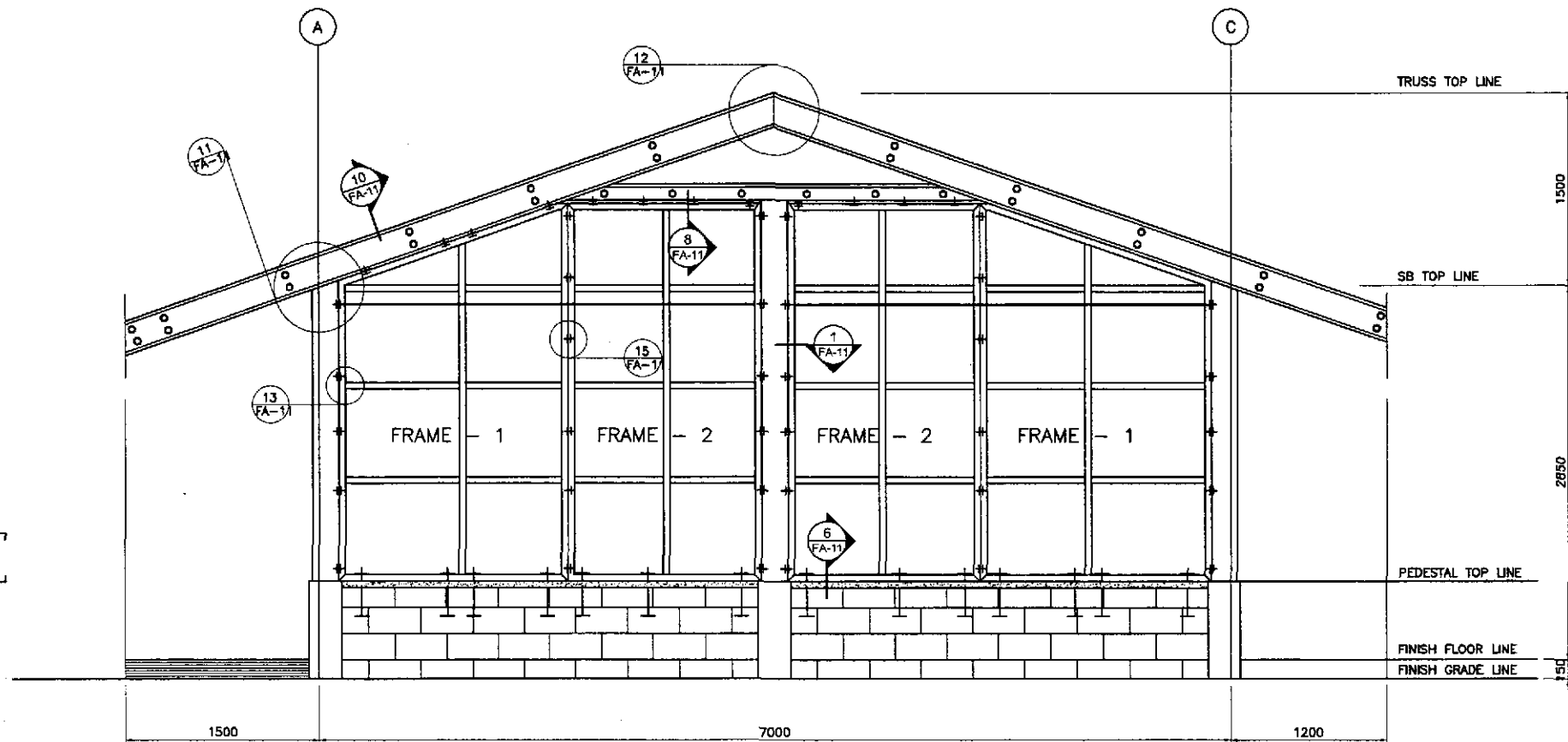
	DESIGNED: <i>[Signature]</i> CHECKED: <i>[Signature]</i> SUBMITTED: <i>[Signature]</i>	DATE: 9/25/02 SIGNATURE: <i>[Signature]</i> TEAM LEADER		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE III	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
	BUREAU OF DESIGN Submitted By: DANILO C. TRAJANO, Project Director Reviewed By: WILFREDO S. LOPEZ, Chief, Structural Division Recommended By: GILBERTO S. REYES, GIC, Director IV Recommended By: MANUEL M. BONGAON, Undersecretary Approved By: SIMEON A. DATUMANONG, Secretary				OFFICE OF THE SECRETARY			
	JICA KATAHIRA & ENGINEERS INTERNATIONAL YEC YACHIYO ENGINEERING CO., LTD.							



2 FRONT ELEVATION
FA-07 SCALE 1:25



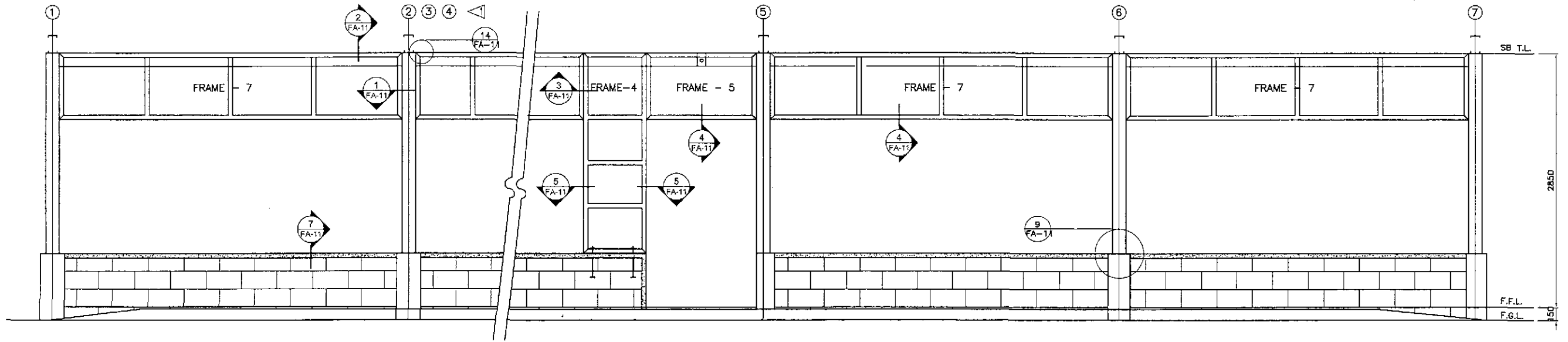
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FA-07 SCALE 1:50



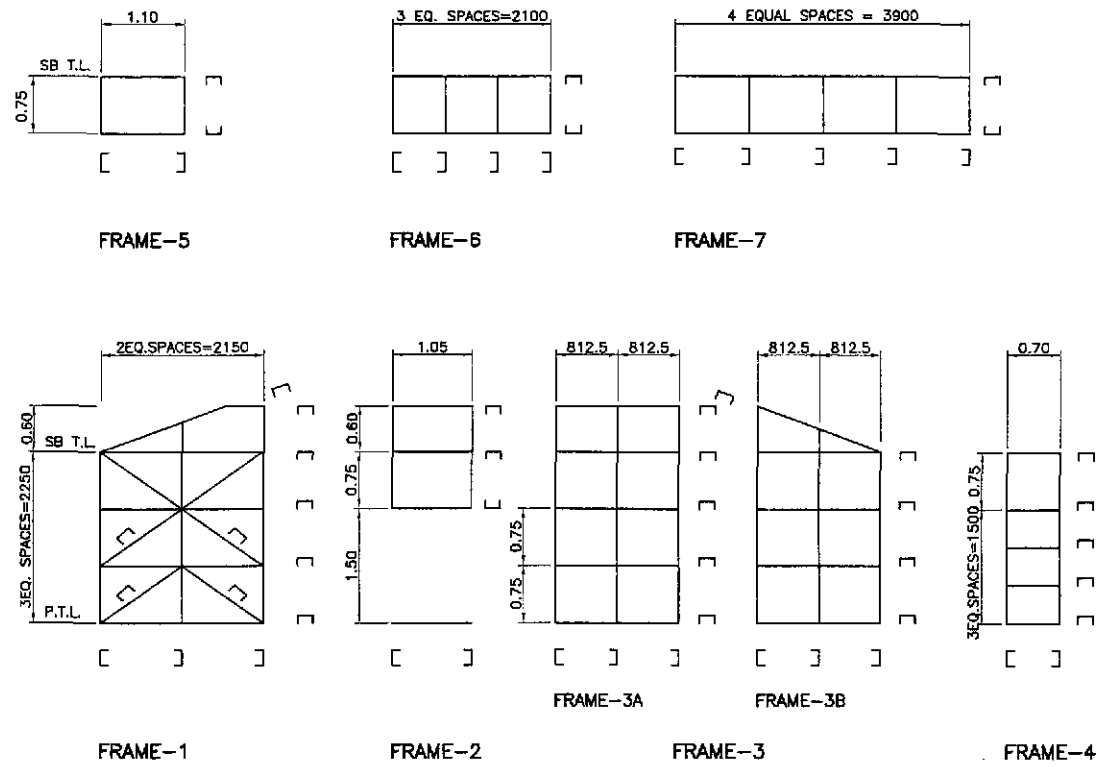
3 RIGHT SIDE ELEVATION
FA-07 SCALE 1:25

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

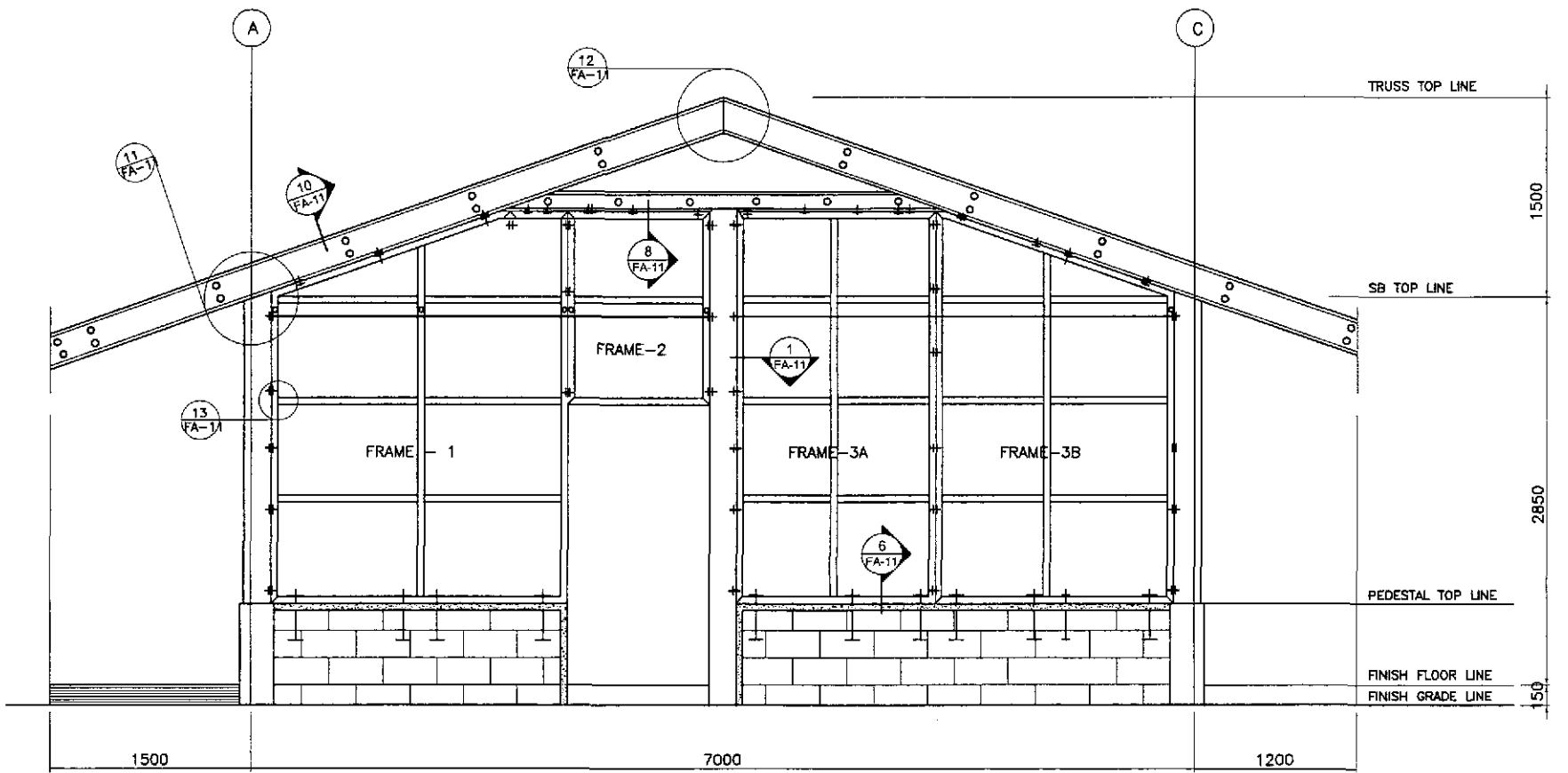
JICA JAPAN INTERNATIONAL COOPERATION AGENCY		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)		SCALE : AS SHOWN 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
KATAHIRA & ENGINEERS INTERNATIONAL	YACHIYO ENGINEERING CO., LTD.	DESIGNED: 9/25/02 CHECKED: 9/27/02 SUBMITTED: 9/28/02	P.I.H.L. - P.W.D. Submitted By: DANILO C. TRAJANO Project Director	BUREAU OF DESIGN Reviewed By: WILFREDO S. LOPEZ Chief, Structural Division	OFFICE OF THE SECRETARY Recommended By: DILBERTO S. REYES DIC, Director IV	Approved By: MANUEL M. BONGAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary			



2 FRONT ELEVATION
FA-08 SCALE 1:25



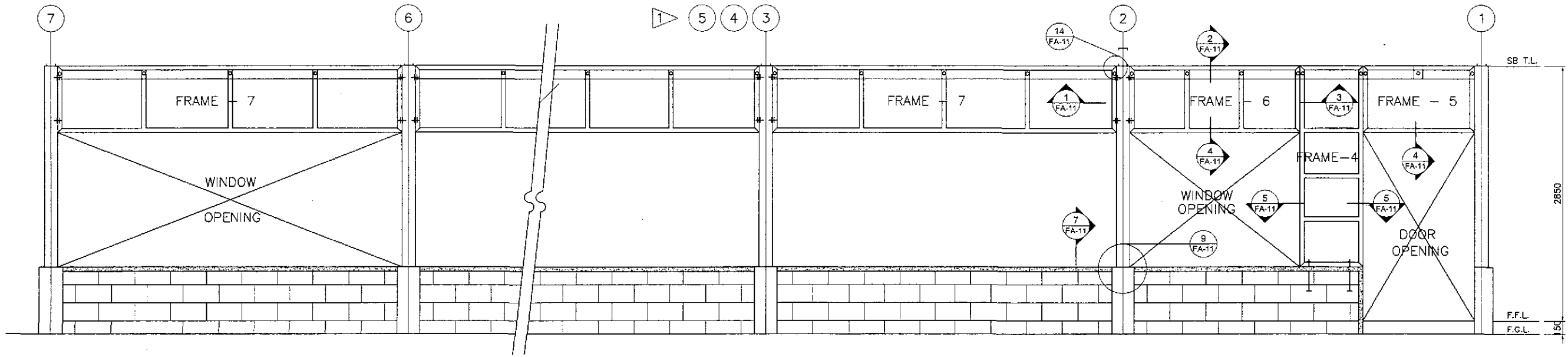
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FA-08 SCALE 1:50



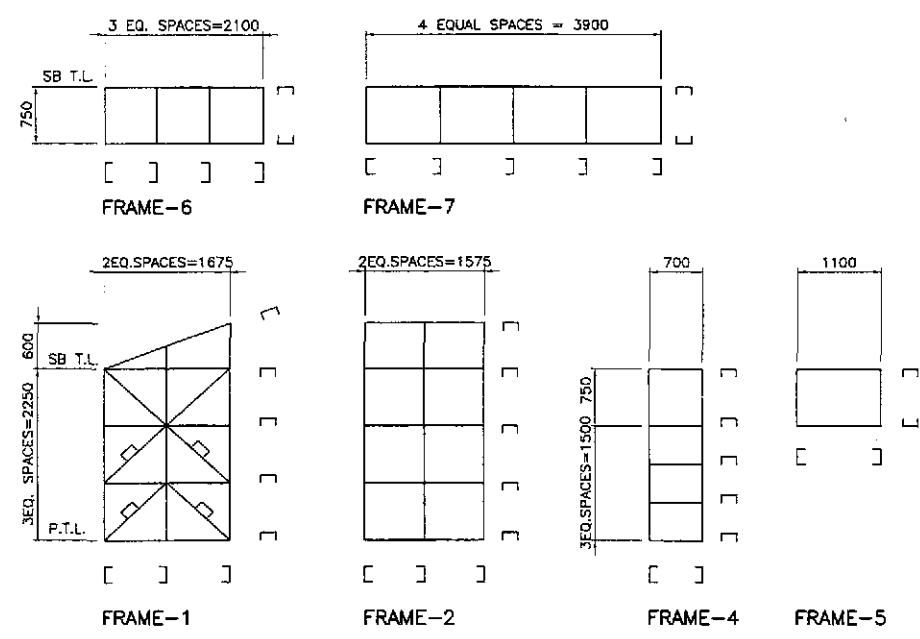
3 RIGHT SIDE ELEVATION
FA-08 SCALE 1:25

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.

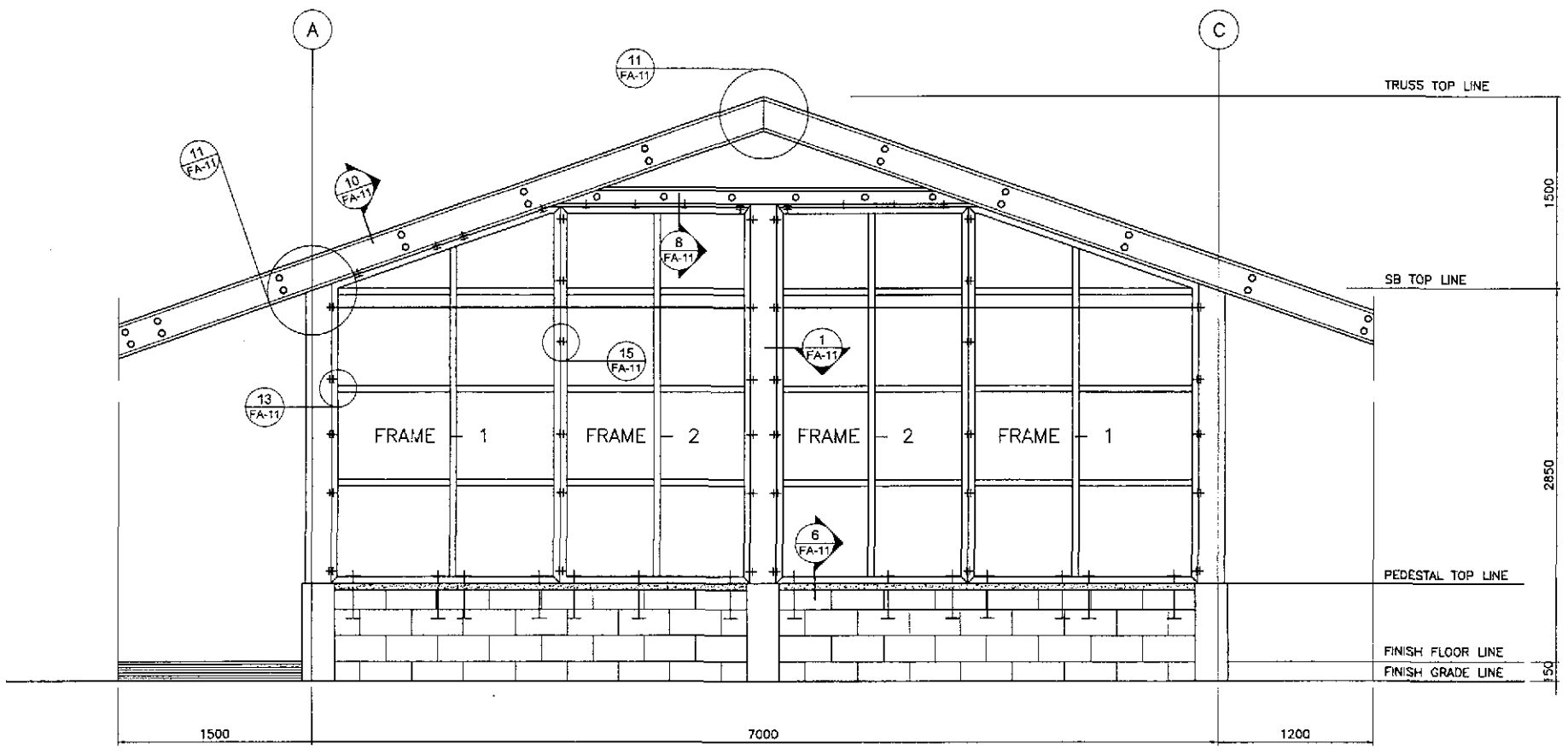
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE III	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
	CHECKED				Submitted By: DANILO C. TRAJANO Project Director	Reviewed By: WILFREDO S. LOPEZ Chief, Structural Division	Recommended By: GILBERTO S. REYES OIC, Director IV	Recommended By: MANUEL M. BONOAN Undersecretary				



2 REAR ELEVATION
FA-09 SCALE 1:25



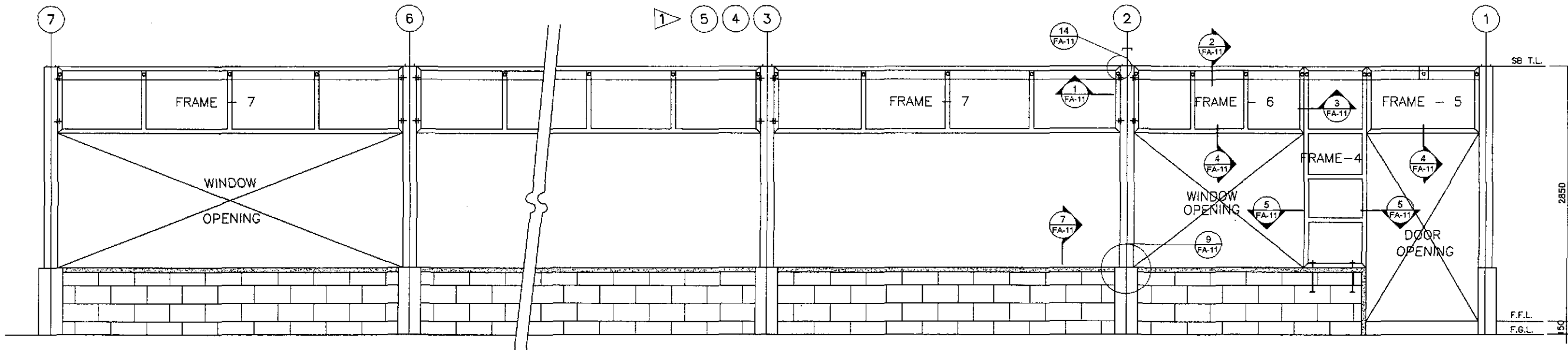
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FA-09 SCALE 1:50



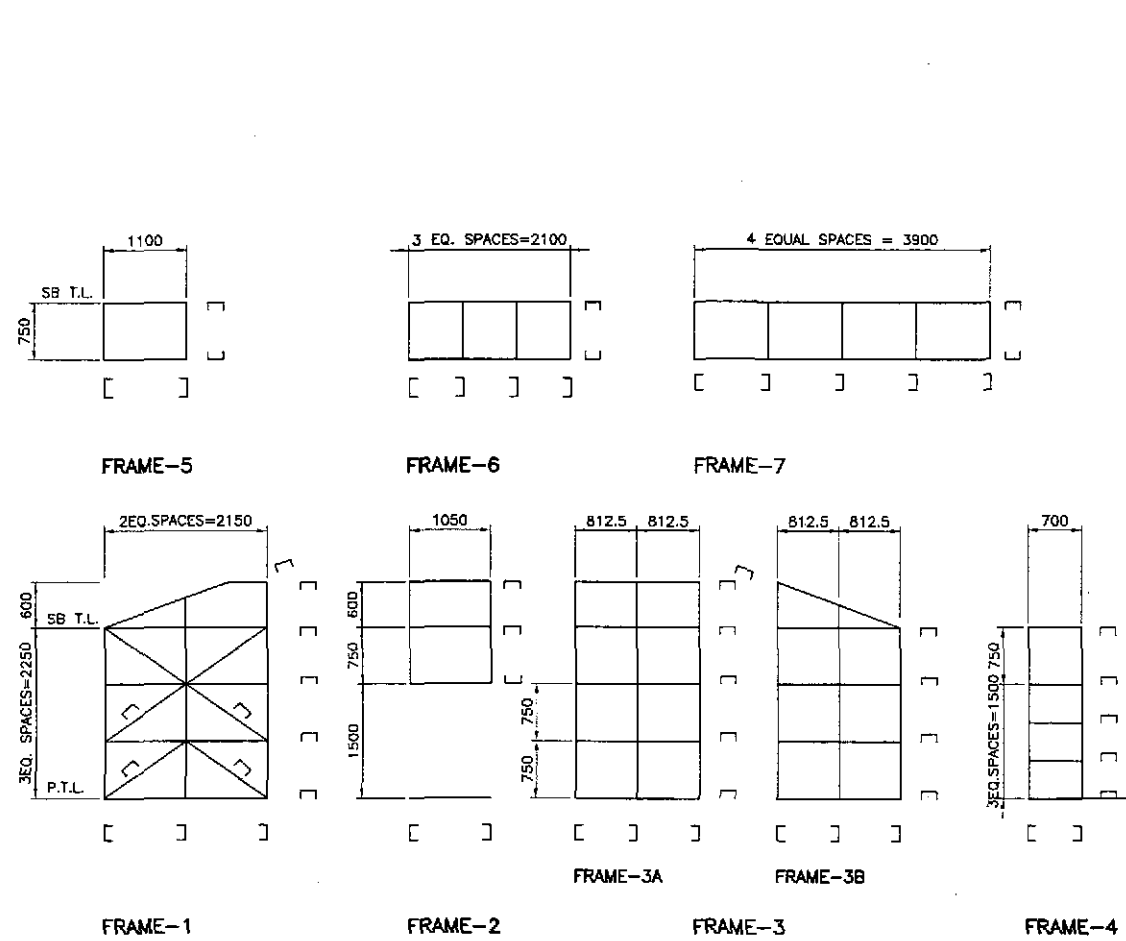
3 LEFT SIDE ELEVATION
FA-09 SCALE 1:25

ARNEL P. GONZALES
ENGINEER
PTR. NO. 5845340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-052-682
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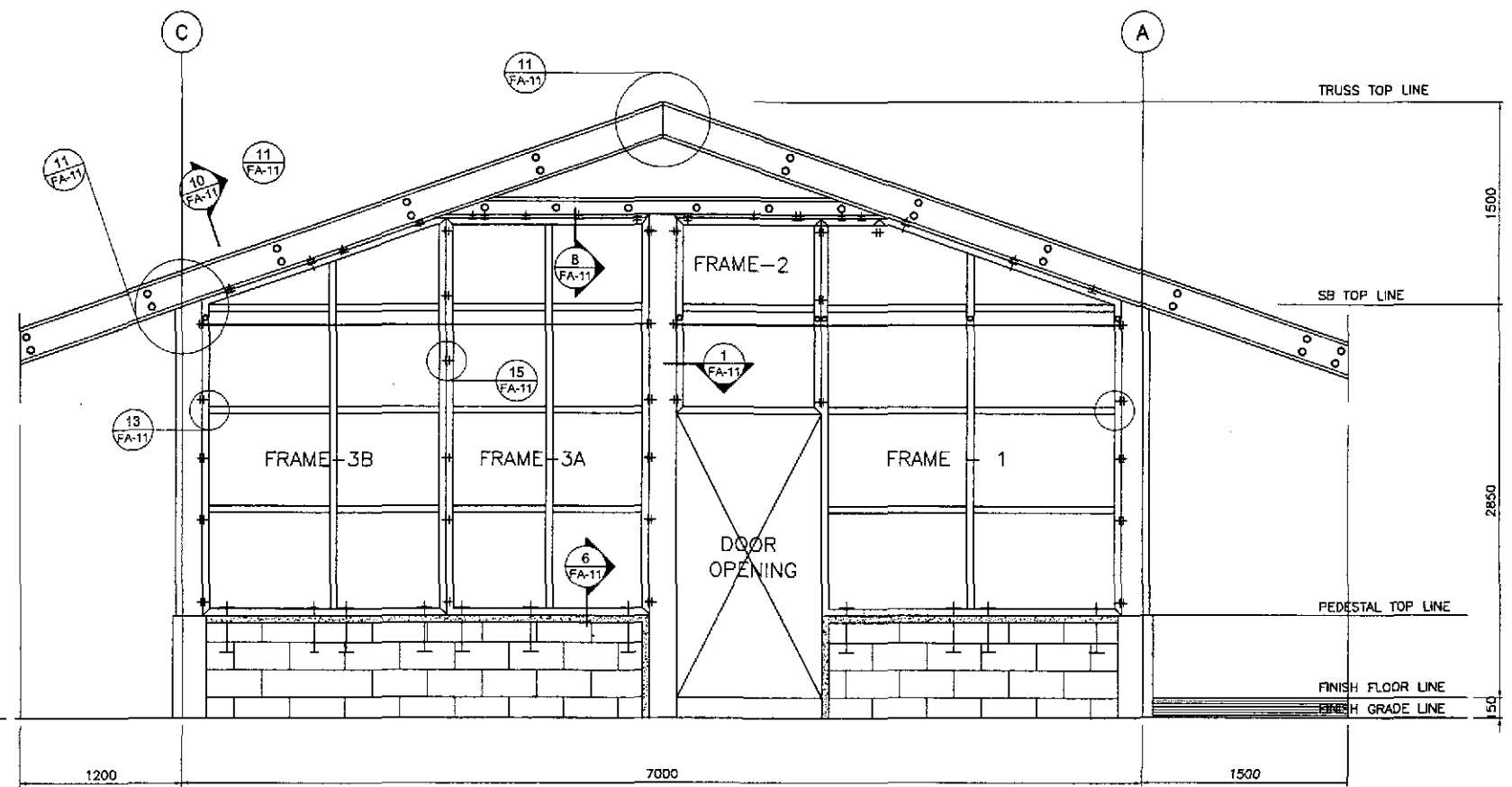
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE III	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
	CHECKED	9/25/02	F. GONZALES		BUREAU OF DESIGN OFFICE OF THE SECRETARY							
	SUBMITTED	9/25/02	ARNEL P. GONZALES TEAM LEADER	Submitted By:	Reviewed By:	Recommended By:	Approved By:					
				DANILO C. TRAJANO Project Director	WILFREDO S. LOPEZ Chief, Structural Division	GILBERTO S. REYES OC, Director IV	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary				



2 REAR ELEVATION
FA-10 SCALE 1:25



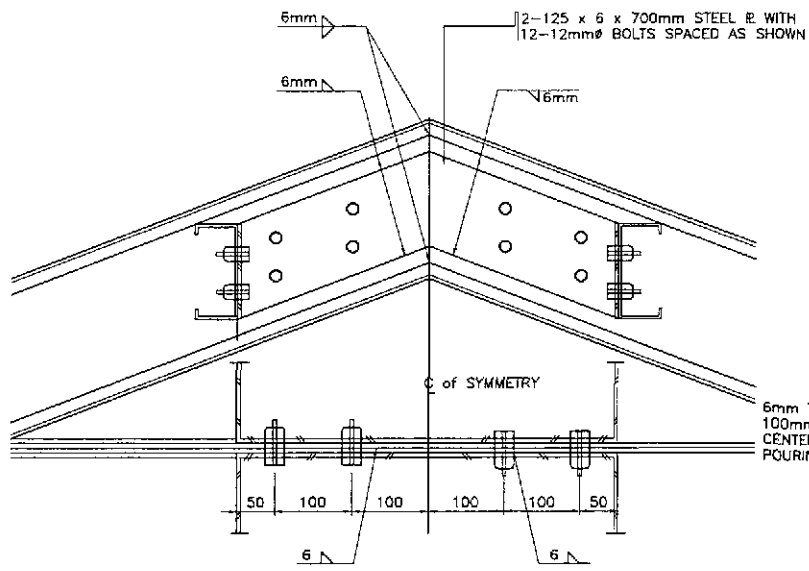
1 FRAMES SCHEMATIC DIAGRAMS
FA-10 SCALE 1:50



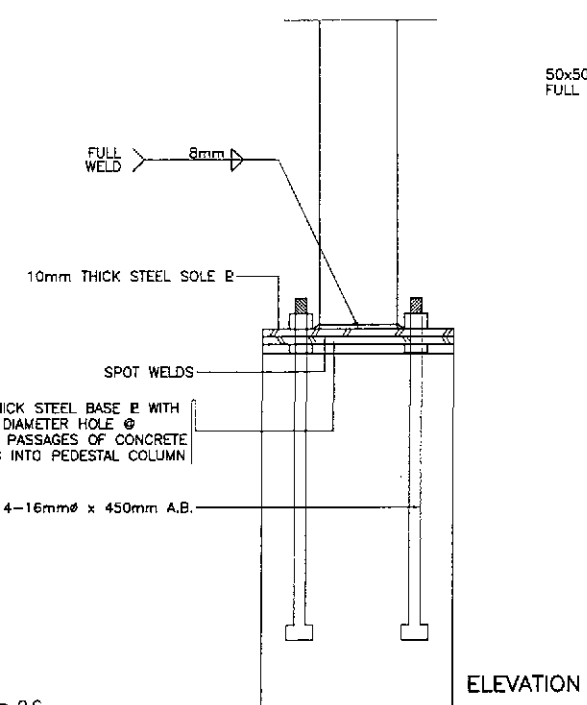
3 LEFT SIDE ELEVATION
FA-10 SCALE 1:25

ARMEL P. GONZALES
ENGINEER
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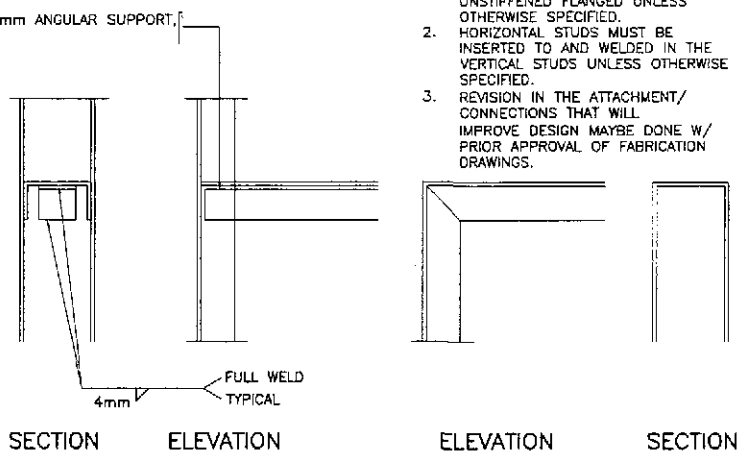
	DATE: <i>4/25/02</i> DESIGNED: <i>ARMEL P. GONZALES</i> CHECKED: <i>ARMEL P. GONZALES</i> SUBMITTED: <i>4/25/02</i> M. KIUCHI TEAM LEADER	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY Submitted By: DANILO C. TRAJANO Project Director Reviewed By: WILFREDO S. LOPEZ Chief, Structural Division Recommended By: GILBERTO S. REYES DIC, Director IV Recommended By: MAHUEL M. BONDAN Undersecretary Approved By: SIMEON A. DATUMANONG Secretary	PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE III	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
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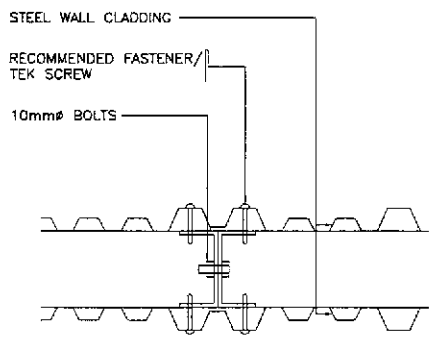
3 **DETAIL - 12**
FA-11 SCALE 1:5



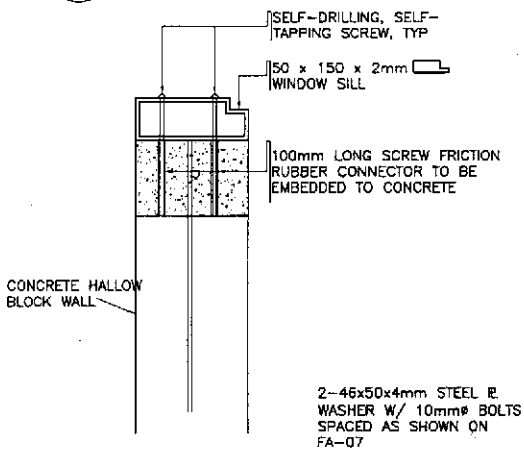
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FA-11 SCALE 1:5



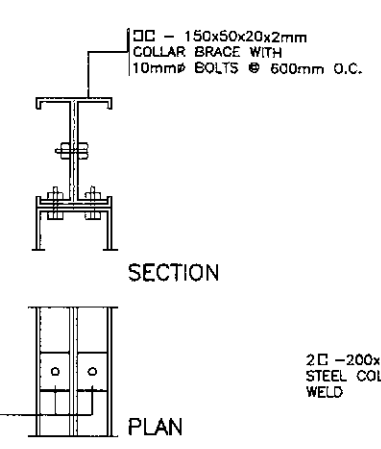
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FA-11 SCALE 1:5



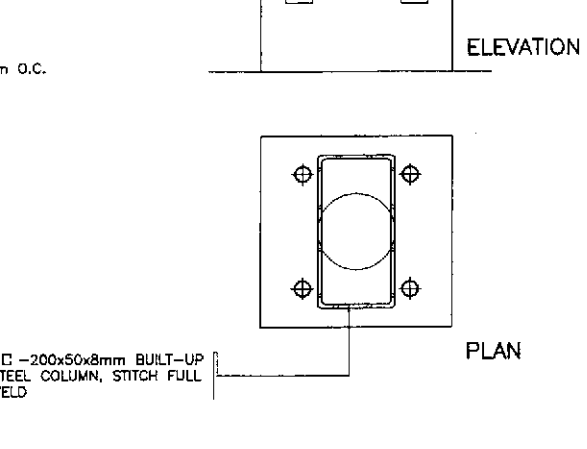
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FA-11 SCALE 1:5



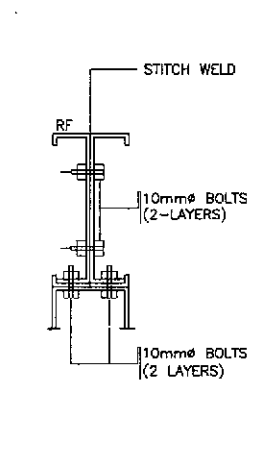
2 **DETAIL - 7**
FA-11 SCALE 1:5



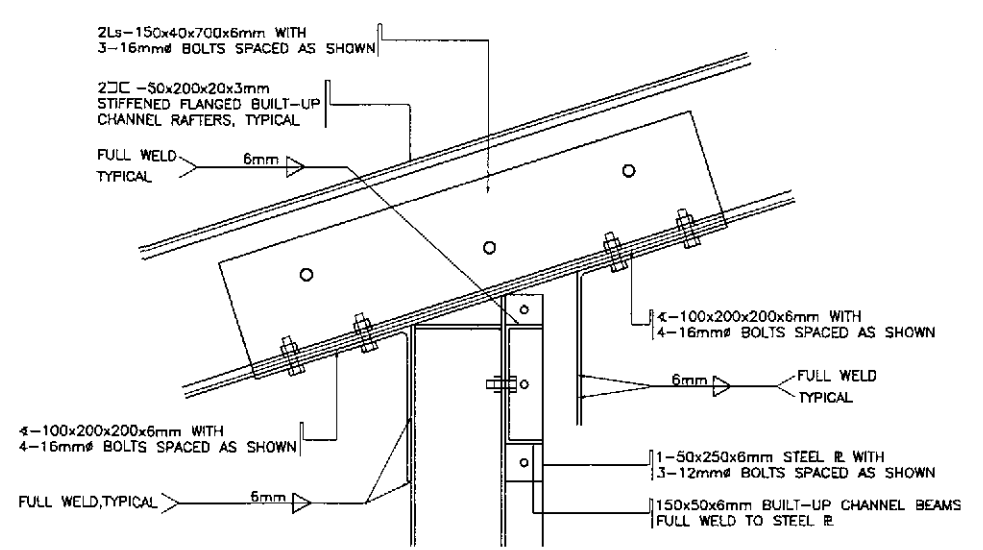
5 **DETAIL - 8**
FA-11 SCALE 1:5



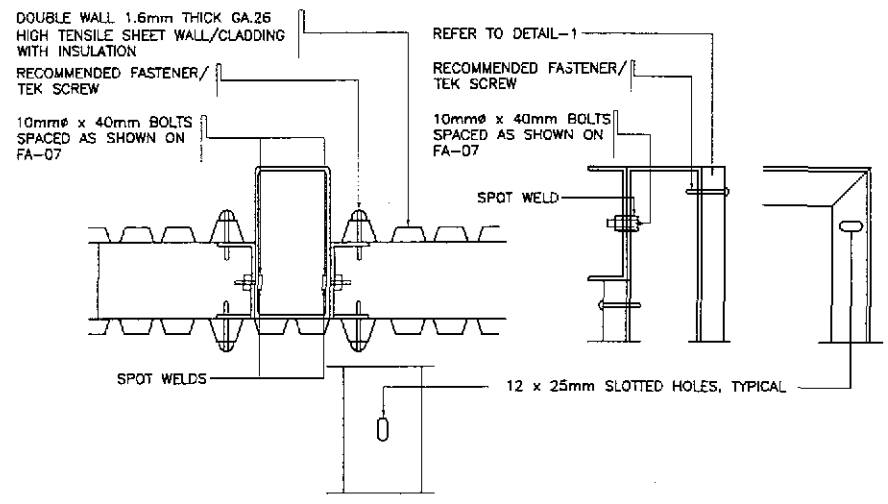
7 **DETAIL - 9**
FA-11 SCALE 1:5



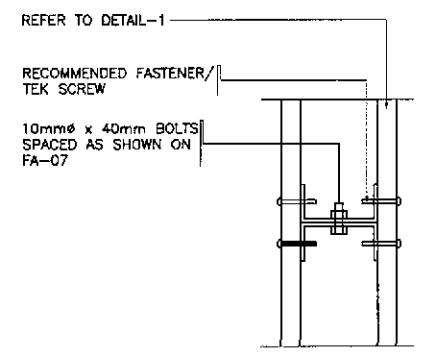
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FA-11 SCALE 1:5



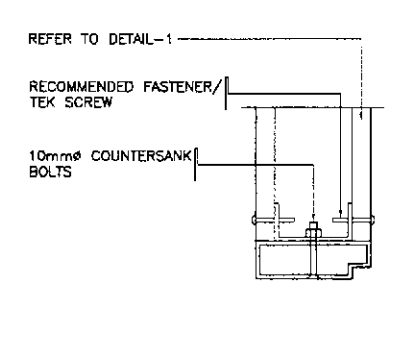
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FA-11 SCALE 1:5



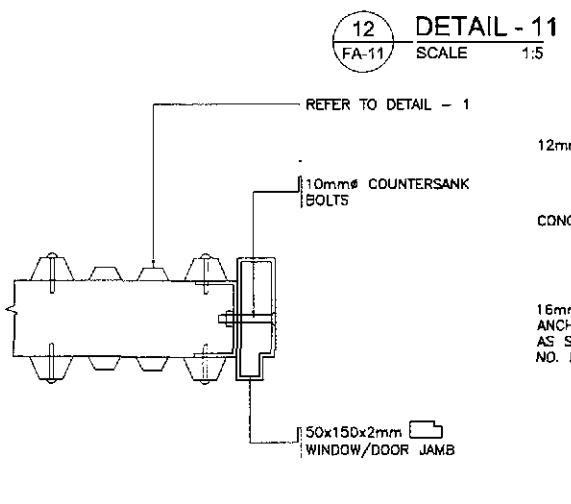
1 **DETAIL - 1**
FA-11 SCALE 1:5



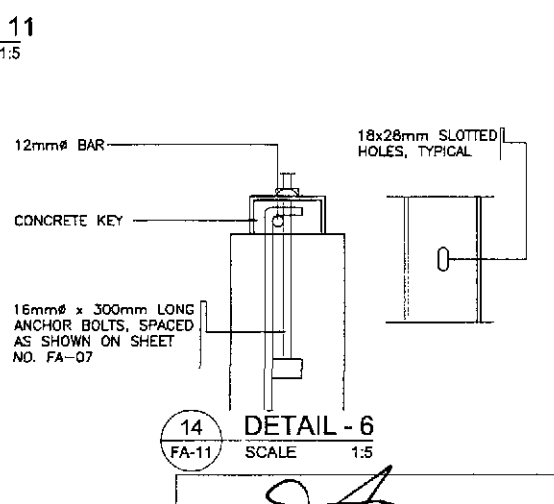
6 **DETAIL - 3**
FA-11 SCALE 1:5



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



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



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

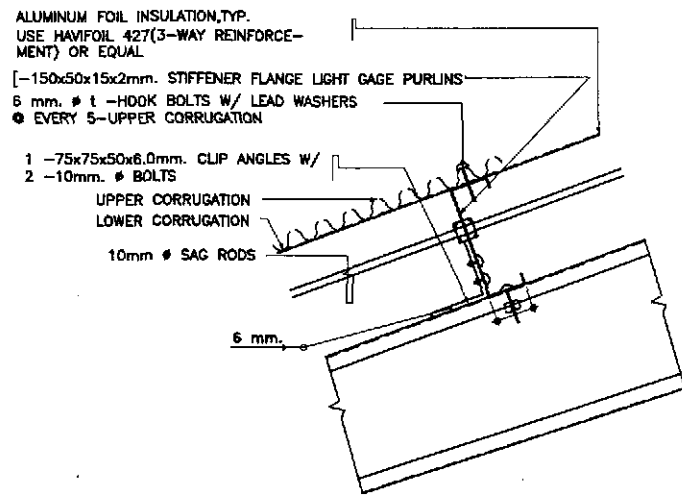
NOTES :

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

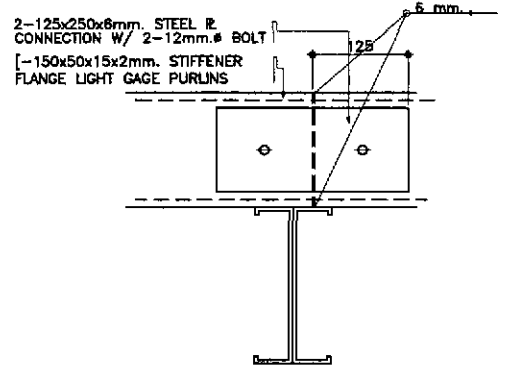
ARNEL P. GONZALES
ENGINEER

PTR. NO. 5845340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN, M.M.

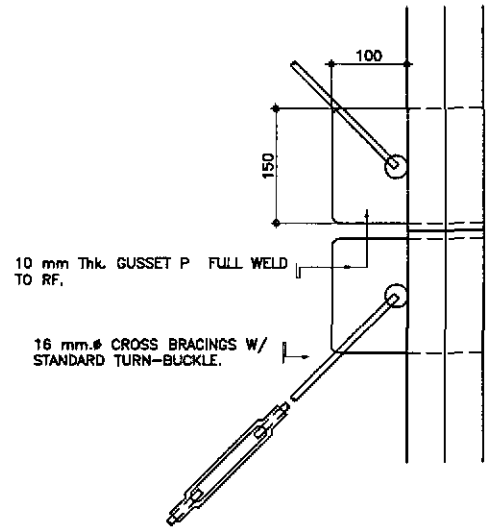
		<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>				<p>PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)</p>		<p>SCALE : AS SHOWN</p>	<p>SHEET CONTENTS : ENGINEER'S FIELD OFFICE AND LIVING QUARTERS DETAILS OF CONNECTIONS DETAIL 1 TO 15</p>	<p>SHEET NO. : FA-11</p>
DESIGNED	DATE	SIGNATURE	Submitted By:	Reviewed By:	Recommended By:	Approved By:	<p>PLARIDEL BYPASS - CONTRACT PACKAGE III</p>			
CHECKED	9/28/02	P. GONZALES	DANILO C. TRAJANO Project Director	WILFREDO S. LOPEZ Chief, Structural Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONCAN Undersecretary	<p>PLARIDEL BYPASS - CONTRACT PACKAGE III</p>			
SUBMITTED	9/28/02	M. K. K.	<p>SCALE : FULL SIZE A1</p>							



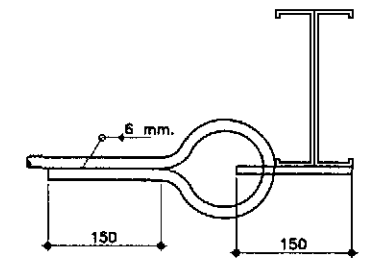
ELEVATION



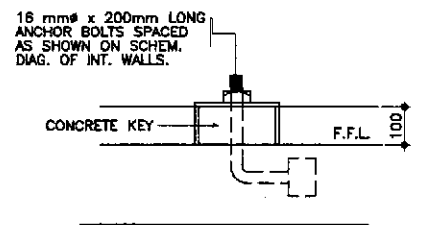
SECTION, SPLICE CONNECTION



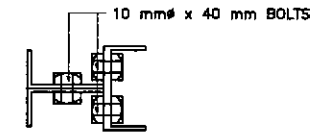
PLAN



SECTION



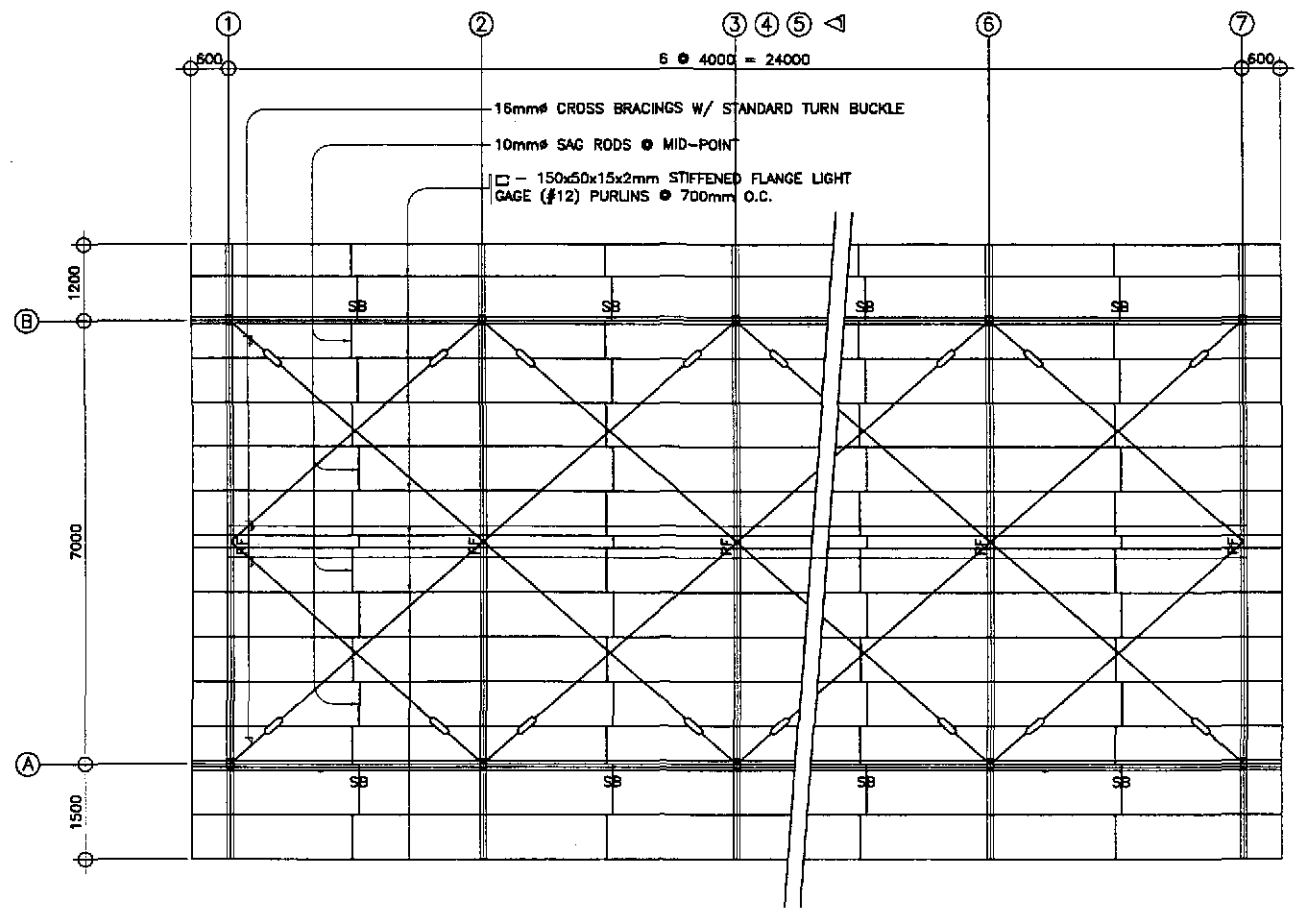
5 DETAIL - a
FA-12 SCALE 1:5



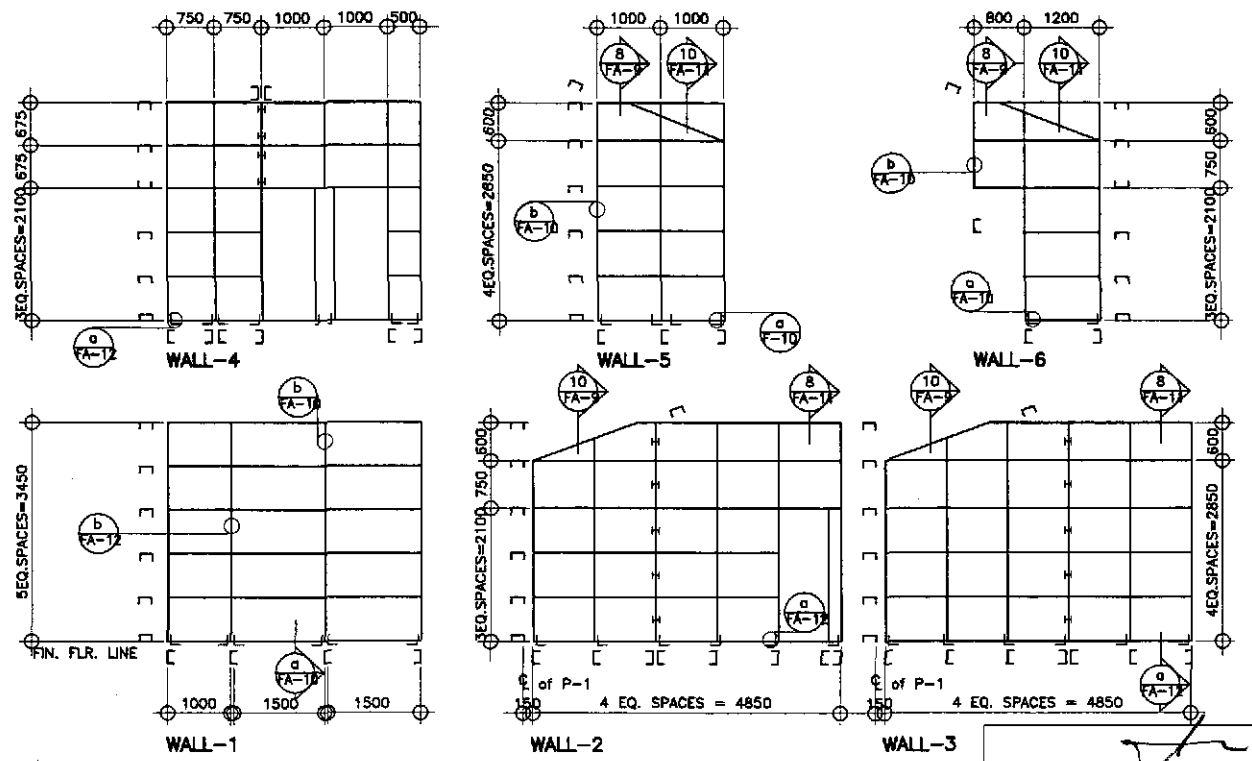
6 DETAIL - b
FA-12 SCALE 1:5

2 PURLIN CONNECTION
FA-12 SCALE 1:5

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



1 ROOF FRAMING PLAN
FA-12 SCALE 1:50

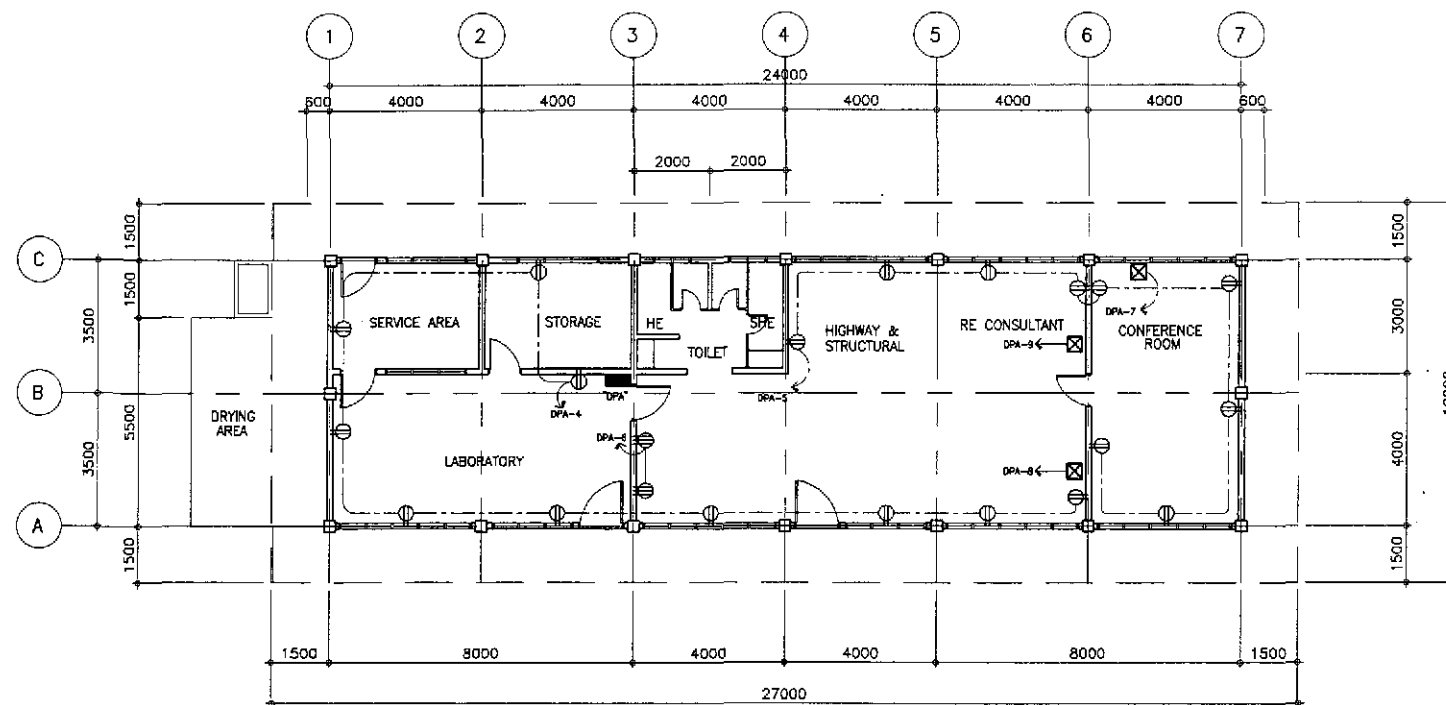


3 SCHEMATIC DIAGRAMS OF INTERIOR WALLS
FA-12 SCALE 1:50

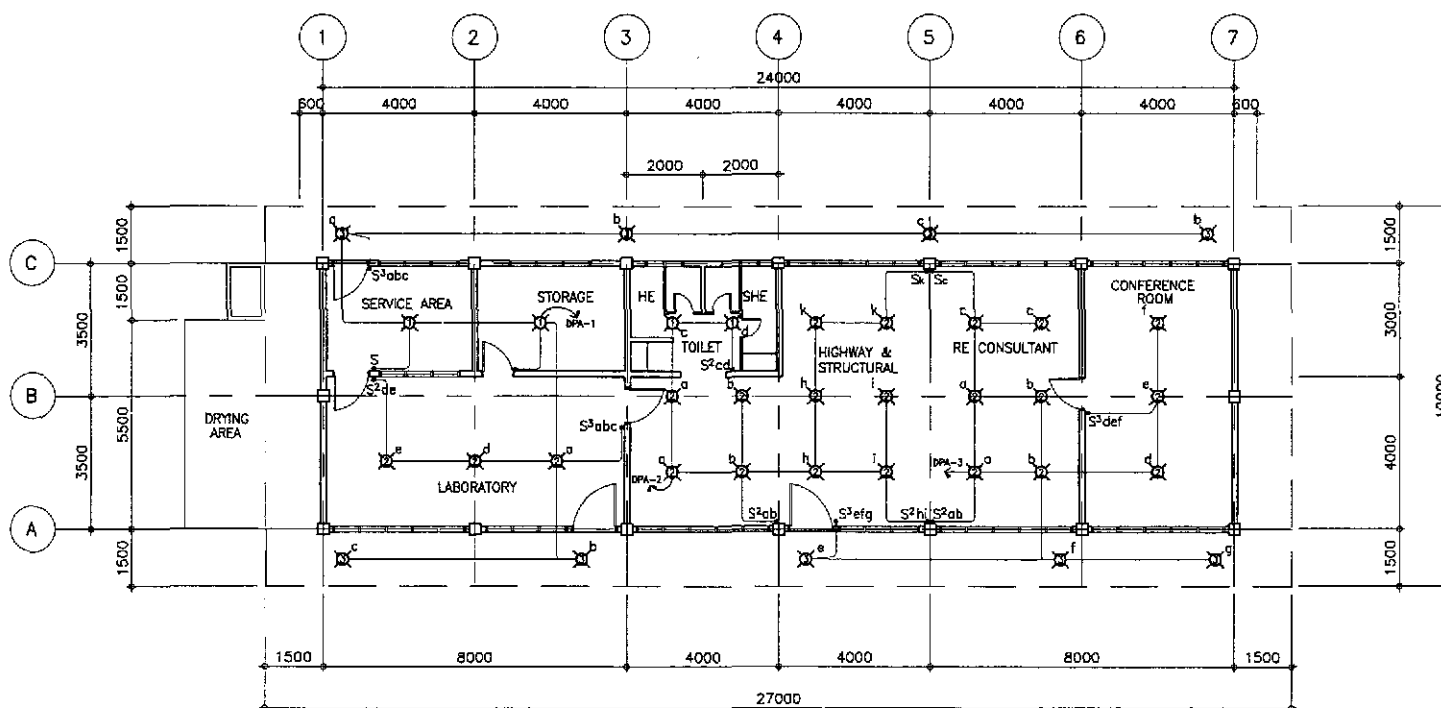
ARNEL P. GONZALES
ENGINEER

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

	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :				SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/27/02	A. P. GONZALES		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)				AS SHOWN	ENGINEER'S FIELD OFFICE AND LIVING QUARTERS ROOF FRAMING PLAN, SCHEMATIC DIAGRAM PURLIN CONN. & CROSS-BRACING CONN.	FA-12
	SUBMITTED	9/30/02	A. P. GONZALES		PLARIDEL BYPASS - CONTRACT PACKAGE III				FULL SIZE A1		
Submitted By: DANILLO C. TRAJANO, Project Director Reviewed By: WILFREDO S. LOPEZ, Chief, Structural Division Recommended By: GILBERTO S. REYES, D.C., Director M Recommended By: MANUEL M. BONDAN, Undersecretary Approved By: SIMON A. DATUMANONG, Secretary											



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



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

GENERAL NOTES:


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


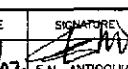
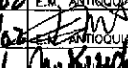

NOTE:

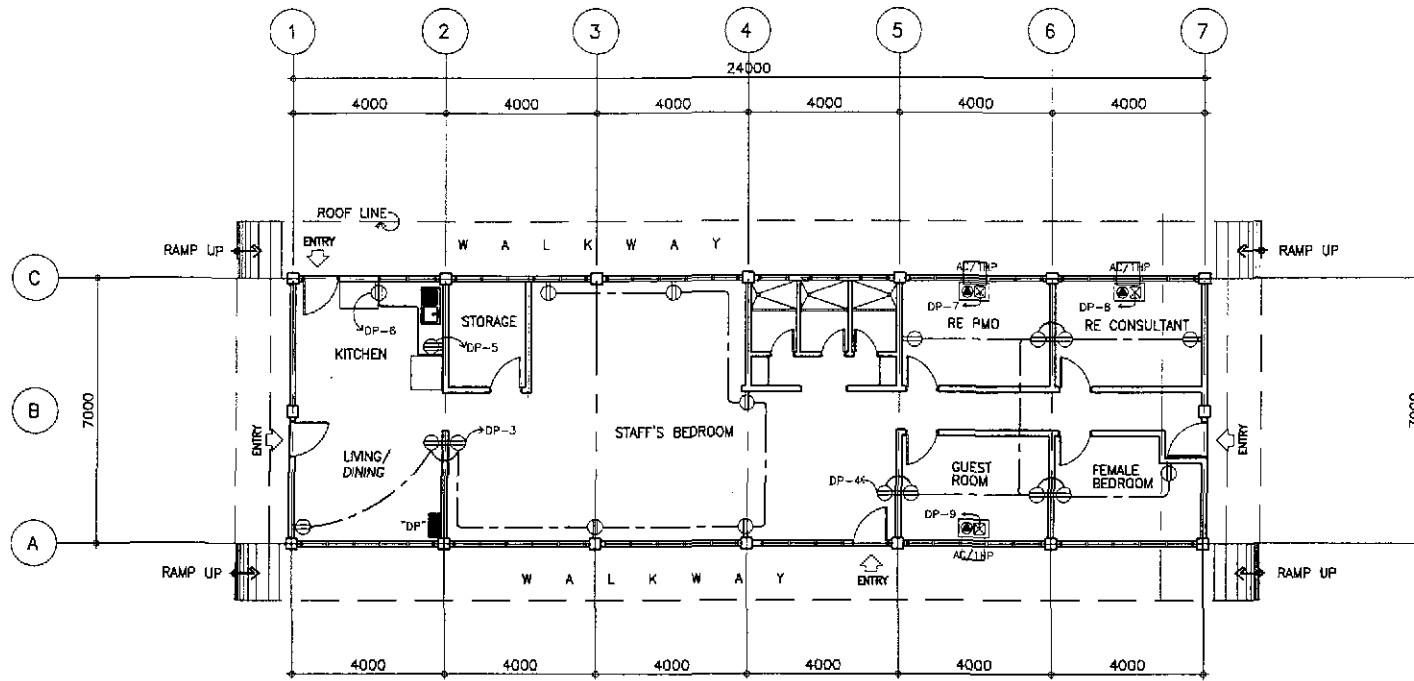
ALL FLUORESCENT LIGHTING FIXTURES SHALL BE EQUIPPED WITH A HIGH POWER FACTOR PRE-HEAT WITH STARTER TYPE BALLAST, COMPLETE WITH ALL NECESSARY ACCESSORIES, WIRED AND READY FOR SERVICE USED.

ELECTRICAL SYMBOLS:

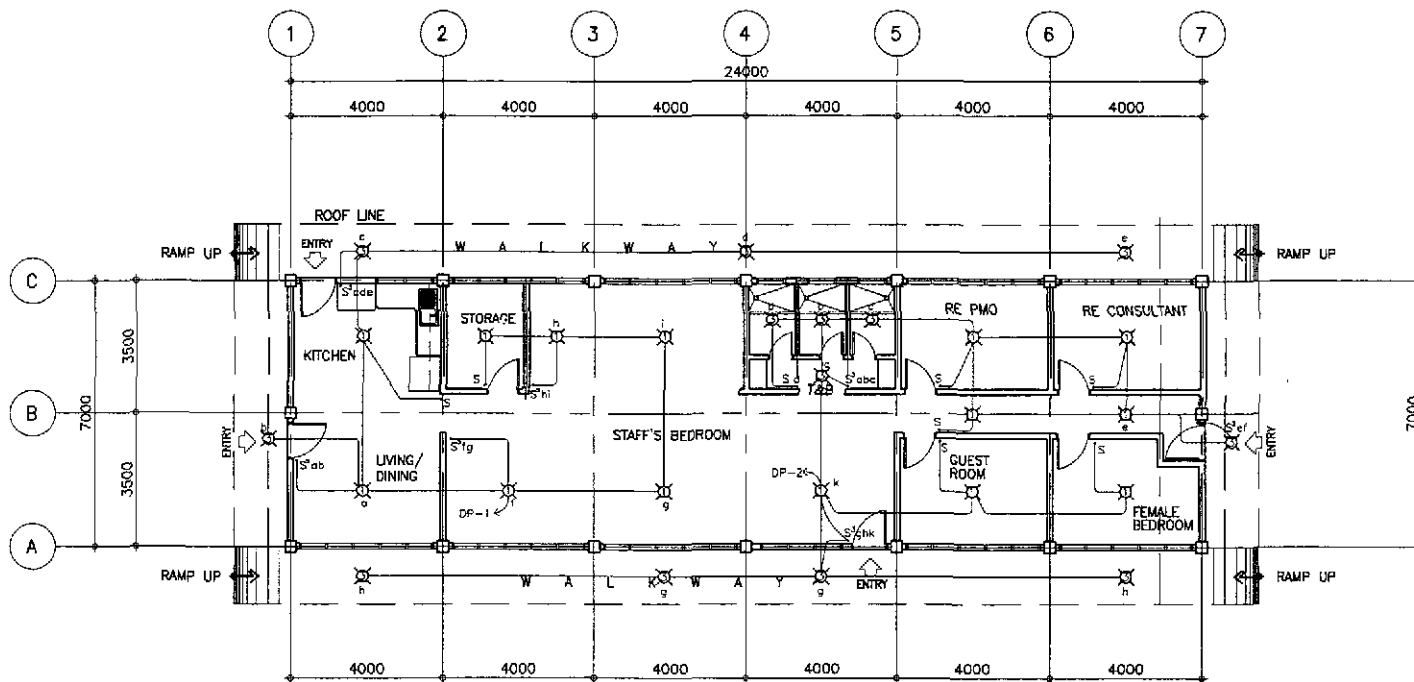
- ⊗ CEILING LIGHT; REFER TO SCHEDULE OF LIGHTING FIXTURES AND LAMPS
- ELECTRICAL RISER
- S ONE-WAY WALL SWITCH, 15A, 250V
- S² 2 ONE-WAY WALL SWITCHES ON ONE-GANG PLATE, 15A, 250V
- S³ 3 ONE-WAY WALL SWITCHES ON ONE-GANG PLATE, 15A, 250V
- ⊕ DUPLEX CONVENIENCE OUTLET, GROUNDING TYPE, 20A, 250V
- ⊕ HEAVY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


ERNESTO M. ANTIOQUIA
 ENGINEER
 PTR. NO. 7403864 P.E.E. NO. 2913
 ISSUED ON 01/02/2002 ISSUED AT CABUYAD, LAGUNA
 T.I.N. 109-382-379

	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	9/28/02		BUREAU OF DESIGN			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	ENGR'S FIELD OFFICE / LABORATORY LIGHTING LAYOUT, POWER LAYOUT ELECTRICAL SYMBOLS & GENERAL NOTES	FE-01
	CHECKED	9/29/02		OFFICE OF THE SECRETARY						
SUBMITTED	9/29/02		Submitted By:	Reviewed By:	Recommended By:	Approved By:				
			DANILO C. TRAJANO Project Director	FE M. BARRIENTOS Chief, Mechanical-Elect DW	GILBERTO S. REYES OK, Director IV	MANUEL M. BONGAN Undersecretary	SIMEON A. DATUMANONG Secretary	PLARIDEL BYPASS - CONTRACT PACKAGE III		FULL SIZE A1



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



1 LIGHTING LAYOUT FOR ENGINEER'S LIVING QUARTER
FE-02 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 WOODEN 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.
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8. ALL WALL OUTLETS SHALL BE INSTALLED AT THE FOLLOWING HEIGHT ABOVE THE FINISHED FLOOR LEVEL, UNLESS OTHERWISE NOTED.
A. WALL SWITCHES1200 mm
B. CONVENIENCE OUTLETS300 mm
C. AIR CONDITIONING OUTLETSAT CONVENIENT HEIGHT NEAR THE EQUIPMENT
9. STANDARD TYPE OF ACCESSORIES, SPLICING DEVICES, TERMINATORS AND OTHER APPURTENANCES FOR THE ENTIRE ELECTRICAL INSTALLATION SHALL BE USED.
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11. THE CONTRACTOR SHALL VERIFY AND ORIENT THE ACTUAL LOCATION OF THE SERVICE ENTRANCE FOR CONNECTION TO POWER COMPANY SERVICE POINT.
12. ALL ELECTRICAL WORKS SHALL BE DONE UNDER THE STRICT SUPERVISION OF A DULY REGISTERED ELECTRICAL ENGINEER.


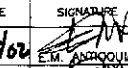

NOTE:

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

ELECTRICAL SYMBOLS:

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


ERNESTO M. ANTIOQUIA
 ENGINEER
 PTR. NO. 7403864 P.E.E. NO. 2813
 ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
 T.I.N. 109-382-379

	DATE 9/24/02	SIGNATURE 	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	SCALE : AS SHOWN	SHEET CONTENTS : ENGINEER'S LIVING QUARTERS LIGHTING LAYOUT, POWER LAYOUT ELECTRICAL SYMBOLS & GENERAL NOTES	SHEET NO. : FE-02	
	DESIGNED 9/24/02	SUBMITTED BY 9/24/02	P.W. - PMO DANILLO C. TRAJANO Project Director	BUREAU OF DESIGN FE. M. BARRIENTOS Chief, Mechanical-Elect Div.	OFFICE OF THE SECRETARY MANUEL M. BONDAN Undersecretary	APPROVED BY SIMEON A. DATUMANONG Secretary	FULL SIZE A1	
	CHECKED 9/24/02	TEAM LEADER 						

SCHEDULE OF LOADS AND COMPUTATIONS

CRT. NO.	LOAD DESCRIPTION	VA	RATING OF BRANCH BREAKER			SIZE OF HOMERUN WIRES IN CONDUIT
			VOLTS	AF	P AT	
1	LIGHT OUTLETS	455	220	50	2 15	2-3.5mm ² TW ² in 15mm [∅] C
2	LIGHT OUTLETS	640	220	50	2 15	2-3.5mm ² TW ² in 15mm [∅] C
3	CONVENIENCE OUTLET	1440	220	50	2 20	2-3.5mm ² TW ² in 15mm [∅] C
4	CONVENIENCE OUTLET	1620	220	50	2 20	2-3.5mm ² TW ² in 15mm [∅] C
5	REFRIGERATOR	500	220	50	2 20	2-3.5mm ² TW ² + 1-20mm ² TW(G) IN 15mm [∅] C
6	ELECTRIC STOVE	3000	220	50	2 30	2-5.5mm ² THW+1-3.5mm ² TW(G) IN 20mm [∅] C
7	1hp, 1 ϕ WDO, TYPE ACU	1980	220	50	2 30	2-5.5mm ² THW+1-3.5mm ² TW(G) IN 20mm [∅] C
8	1hp, 1 ϕ WDO, TYPE ACU	1980	220	50	2 30	2-5.5mm ² THW+1-3.5mm ² TW(G) IN 20mm [∅] C
9	1hp, 1 ϕ WDO, TYPE ACU	1980	220	50	2 30	2-5.5mm ² THW+1-3.5mm ² TW(G) IN 20mm [∅] C
10	SPARE	1500	220	50	2 20	-
11	SPARE	1500	220	50	2 20	-
12	SPARE	1500	220	50	2 20	-
TOTAL		18,095				

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

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

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

MAIN ACB: 100AF, 2P, 250 V, 100AT, 15KAIC
USE : 2-38mm² THW + 1-14mm² TW(G) IN 40mm[∅] RSC

SCHEDULE OF LIGHTING FIXTURES & LAMPS

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

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

ENGINEER'S LIVING QUARTERS

SCHEDULE OF LOADS AND COMPUTATIONS

CRT. NO.	LOAD DESCRIPTION	VA	RATING OF BRANCH BREAKER			SIZE OF HOMERUN WIRES IN CONDUIT
			VOLTS	AF	P AT	
1	LIGHT OUTLETS	590	220	50	2 15	2-3.5mm ² TW ² in 15mm [∅] C
2	LIGHT OUTLETS	1210	220	50	2 15	2-3.5mm ² TW ² in 15mm [∅] C
3	LIGHT OUTLETS	1065	220	50	2 15	2-3.5mm ² TW ² in 15mm [∅] C
4	CONVENIENCE OUTLETS	1800	220	50	2 20	2-3.5mm ² TW ² + 1-2.0mm ² TW(G) IN 15mm [∅] C
5	CONVENIENCE OUTLETS	1620	220	50	2 20	2-3.5mm ² TW ² + 1-2.0mm ² TW(G) IN 15mm [∅] C
6	PHOTOCOPY MACHINE /HEAVY DUTY CO.	2500	220	50	2 20	2-3.5mm ² TW ² + 1-2.0mm ² TW(G) IN 15mm [∅] C
7	3TR, 1 ϕ , SPLIT TYPE ACU	6930	220	100	2 70	2-8mm ² THW + 1-5.5mm ² TW(G) IN 25mm [∅] C
8	3TR, 1 ϕ , SPLIT TYPE ACU	6930	220	100	2 70	2-8mm ² THW + 1-5.5mm ² TW(G) IN 25mm [∅] C
9	3TR, 1 ϕ , SPLIT TYPE ACU	6930	220	100	2 70	2-8mm ² THW + 1-5.5mm ² TW(G) IN 25mm [∅] C
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 25mm [∅] C
12	SPARE	1500	220	50	2 20	-
TOTAL		37,575				

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

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

$$I_B = \frac{37575(0.95)}{220} + 1.5(23) = 196.75 \text{ Amps}$$

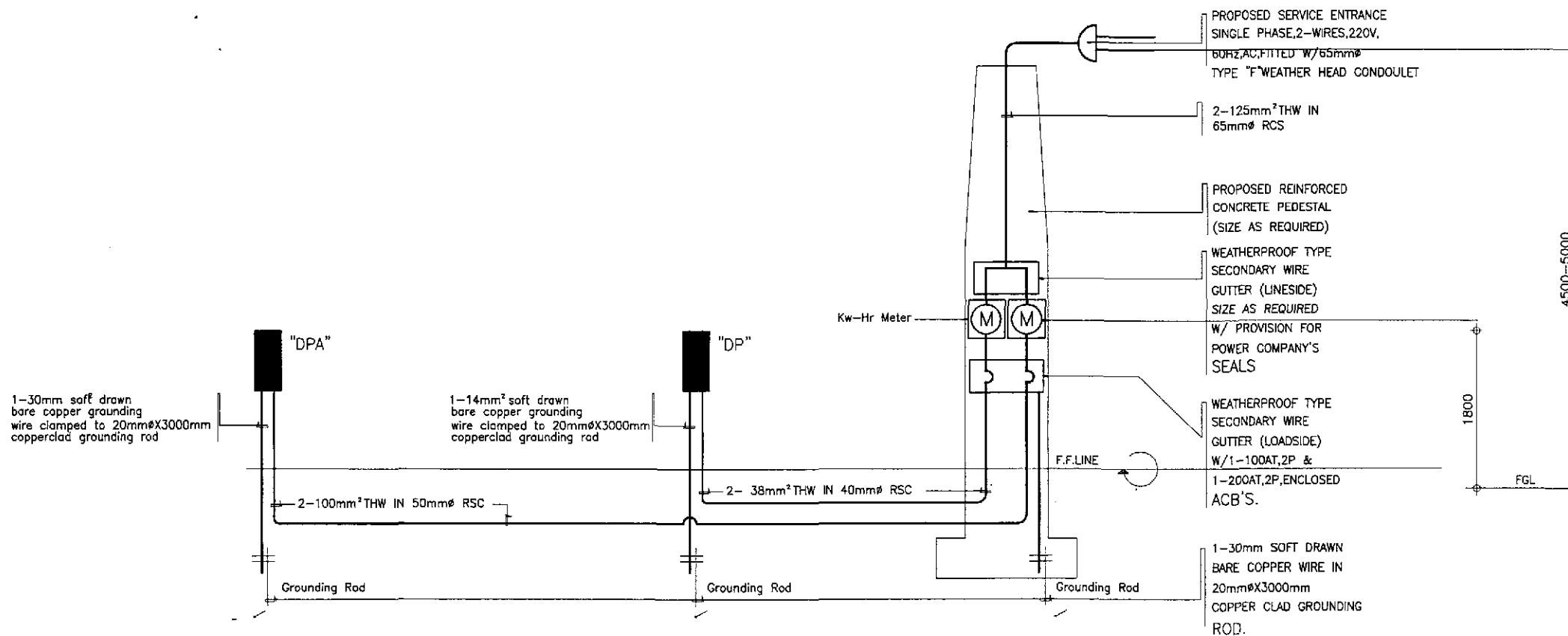
MAIN ACB: 225AF, 2P, 250 V, 200AT, 18 KAIC

SCHEDULE OF LIGHTING FIXTURES & LAMPS

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

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

ENGINEER'S FIELD OFFICE/LABORATORY



COMPUTATION FOR REQUIRED SIZE OF MAIN SERVICE ENTRANCE FEEDER:

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

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

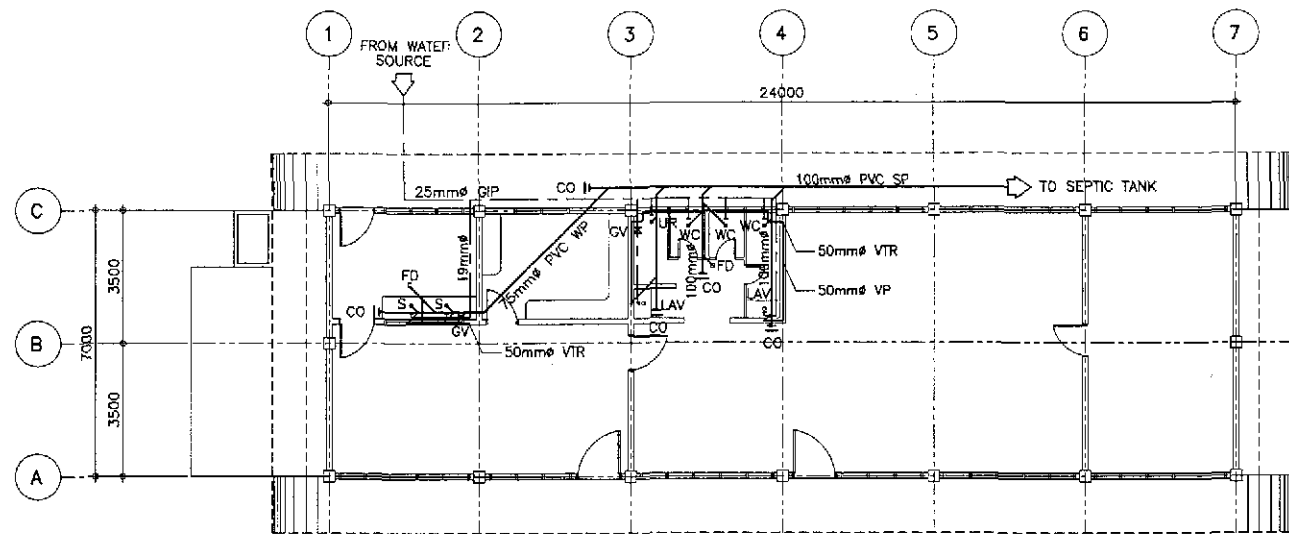
$$I_T = 220.83 \text{ Amps}$$

USE : 2-125 mm² THW IN 65 mm[∅] RSC

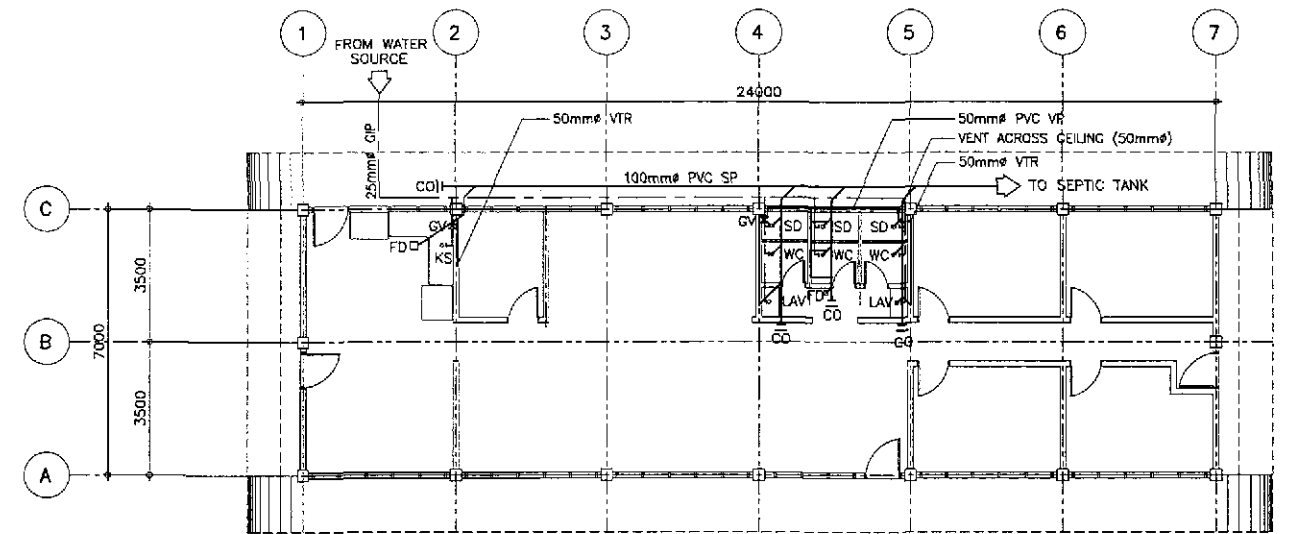
1 ELECTRICAL RISER DIAGRAMS
FE-03 NOT TO SCALE

ERNesto M. Antioquia
ENGINEER

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

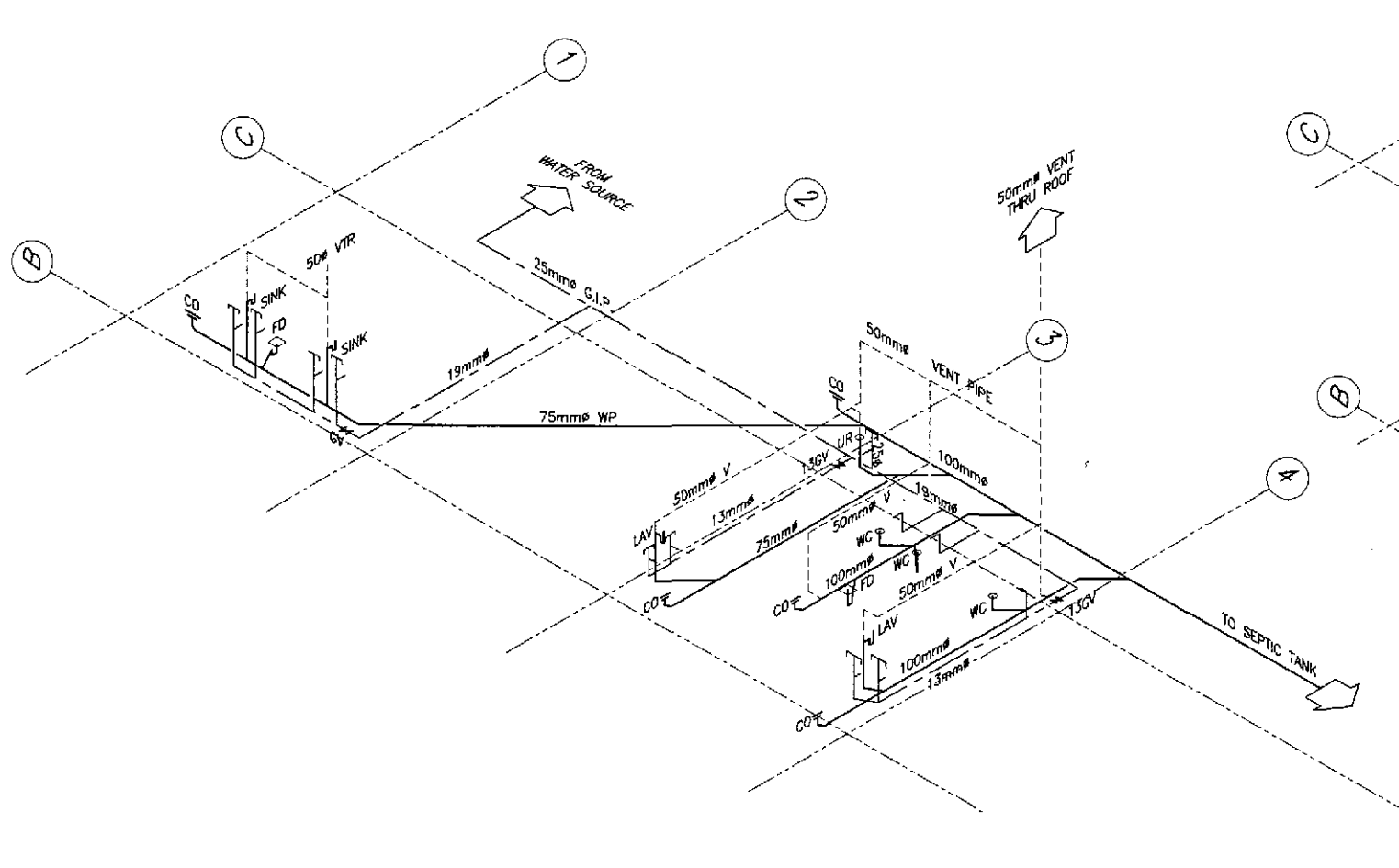


1
FP-01
ENGINEER'S FIELD OFFICE
SEWER AND WATER LINE LAYOUT
SCALE 1:100

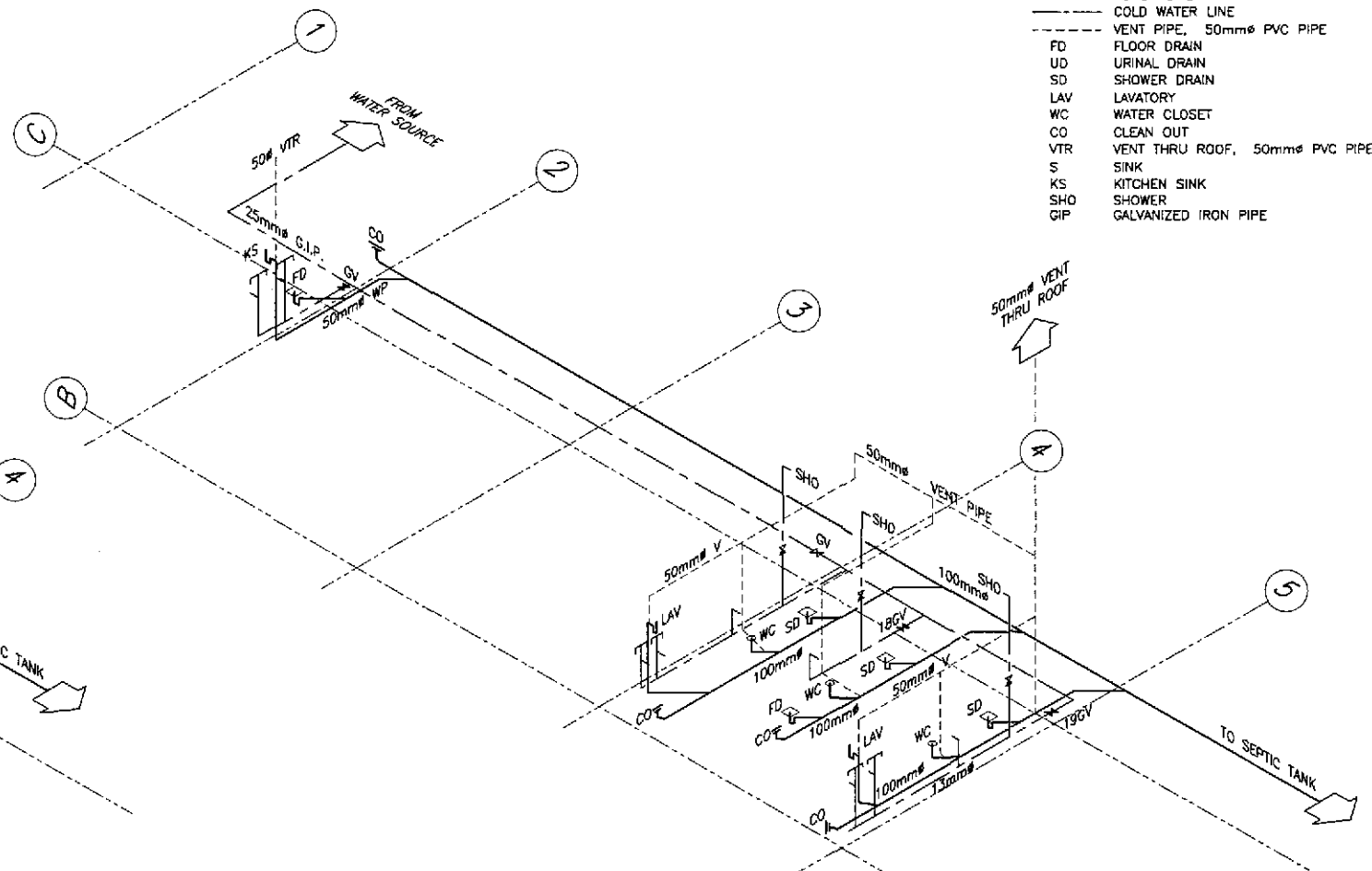


2
FP-01
ENGINEER'S LIVING QUARTER
SEWER AND WATER LINE LAYOUT
SCALE 1:100

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



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

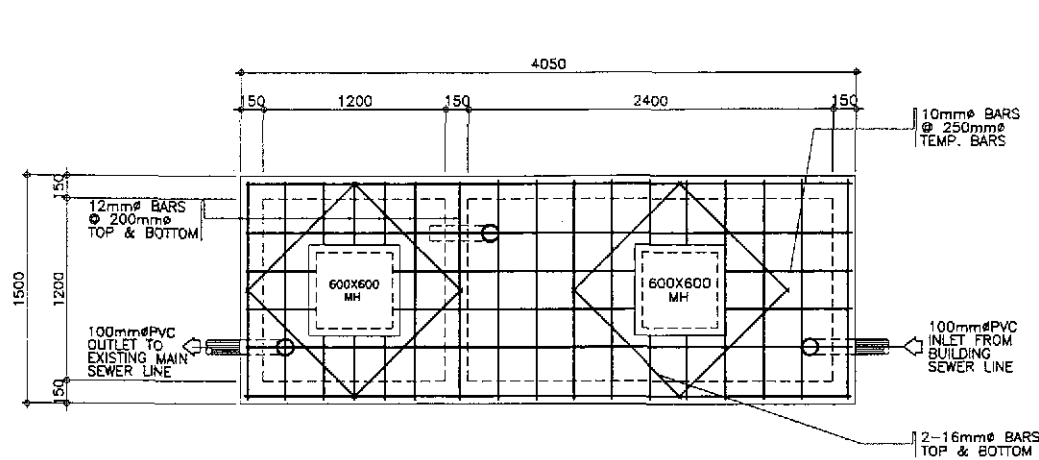


4
FP-01
(SHOWING SEWER AND WATER LINE)
ISOMETRIC DIAGRAM
SCALE 1:50

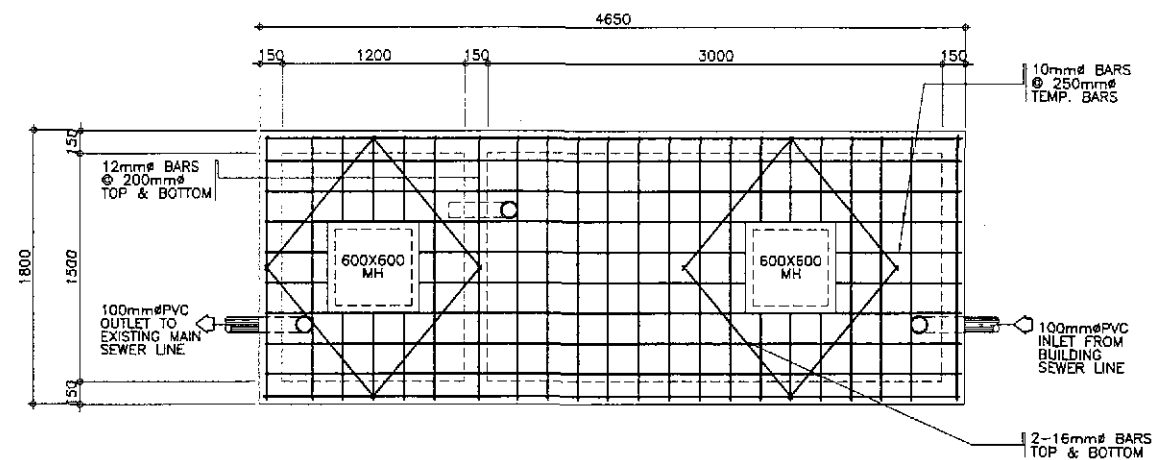
Manuel M. Bongan
SANITARY ENGINEER

PTR. NO. 0083138 P.R.C. NO. 0000695
ISSUED ON 03/26/2002 T.I.N. 119-878-223
ISSUED AT SAN MATEO, RIZAL

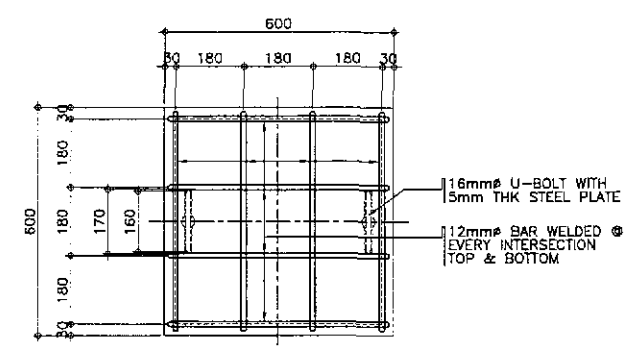
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	9/27/02	<i>[Signature]</i>		DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	ENGINEER'S FIELD OFFICE AND LIVING QUARTERS SEWER AND WATER LINE LAYOUT AND ISOMETRIC DIAGRAM	FP-01	
	SUBMITTED	9/30/02	<i>[Signature]</i>		BUREAU OF DESIGN							PLARIDEL BYPASS - CONTRACT PACKAGE III
				OFFICE OF THE SECRETARY								
				Submitted By:			Recommended By:	Recommended By:	Approved By:			
				DANILO C. TRILIANO Project Director			EMMANUEL P. CUNTAPAY Chief, Architectural Division	GILBERTO S. REYES GIC, Director IV	MANUEL M. BONGAN Undersecretary	SIMEON A. DATUMANGING Secretary		



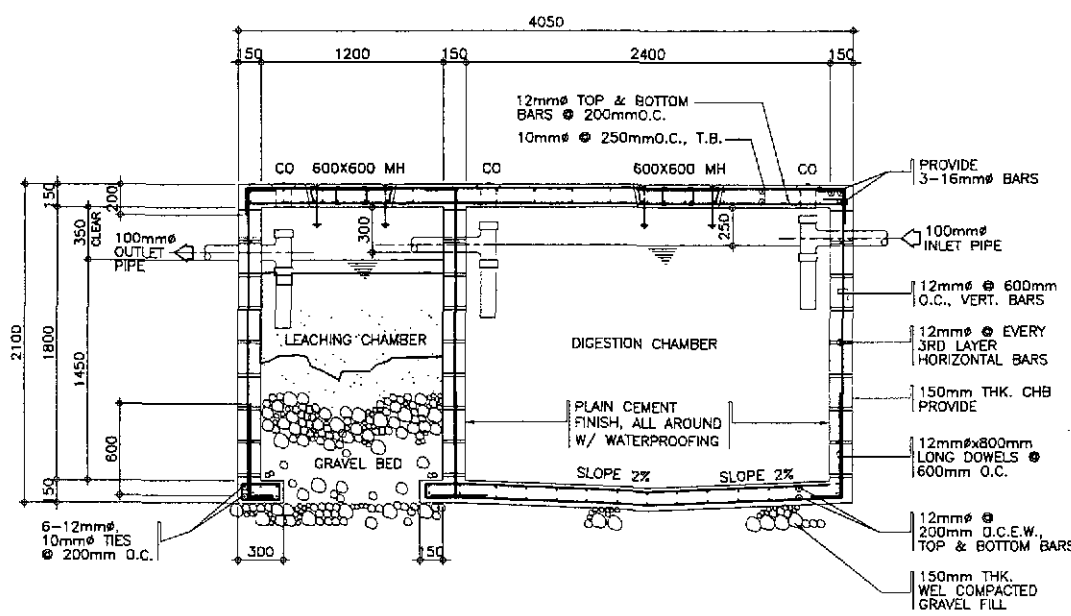
1A PLAN
FP-02 SCALE 1:20



1C PLAN
FP-02 SCALE 1:20

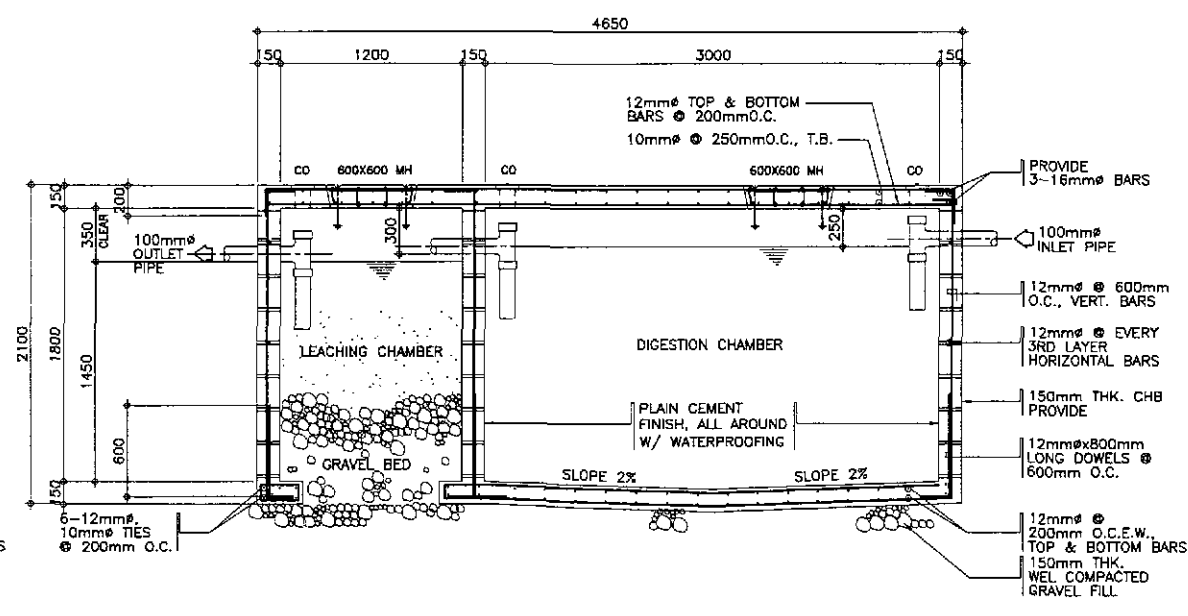


2A PLAN
FP-02 SCALE 1:20



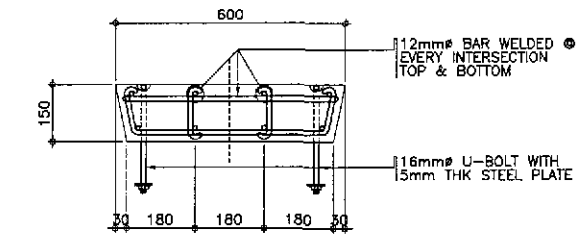
1B SECTION
FP-02 SCALE 1:20

ENGINEER'S FIELD OFFICE



1D SECTION
FP-02 SCALE 1:20

ENGINEER'S LIVING QUARTER



2B SECTION
FP-02 SCALE 1:20

2 CONCRETE COVER DETAIL
FP-02 SCALE AS SHOWN

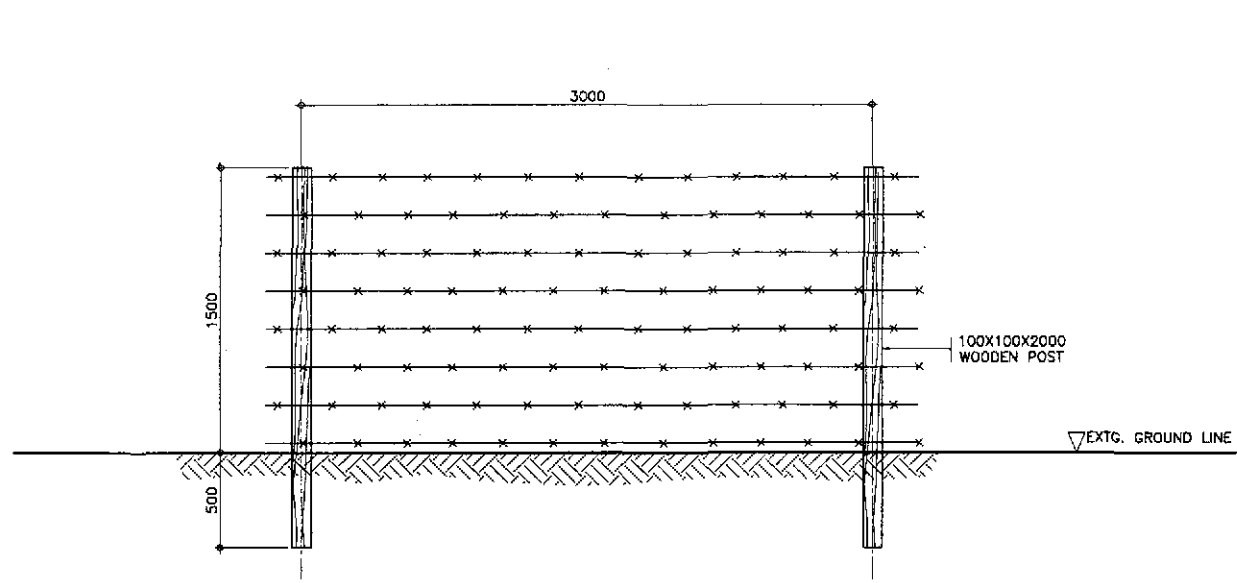
- GENERAL NOTES:**
- ALL PLUMBING WORKS INCLUDED HEREIN EXECUTED ACCORDING TO THE PROVISIONS AND REQUIREMENTS OF THE PHILIPPINE NATIONAL PLUMBING CODE.
 - SOIL AND WASTE PIPE LINE SHALL BE PVC, SIZE AS IN DRAWING.
 - ALL WATER LINES SHALL BE G.I. PIPE SCHEDULE 40 AND SIZE OF PIPES TO THE FIXTURES SHALL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

1 SEPTIC TANK DETAILS
FP-02 SCALE AS SHOWN

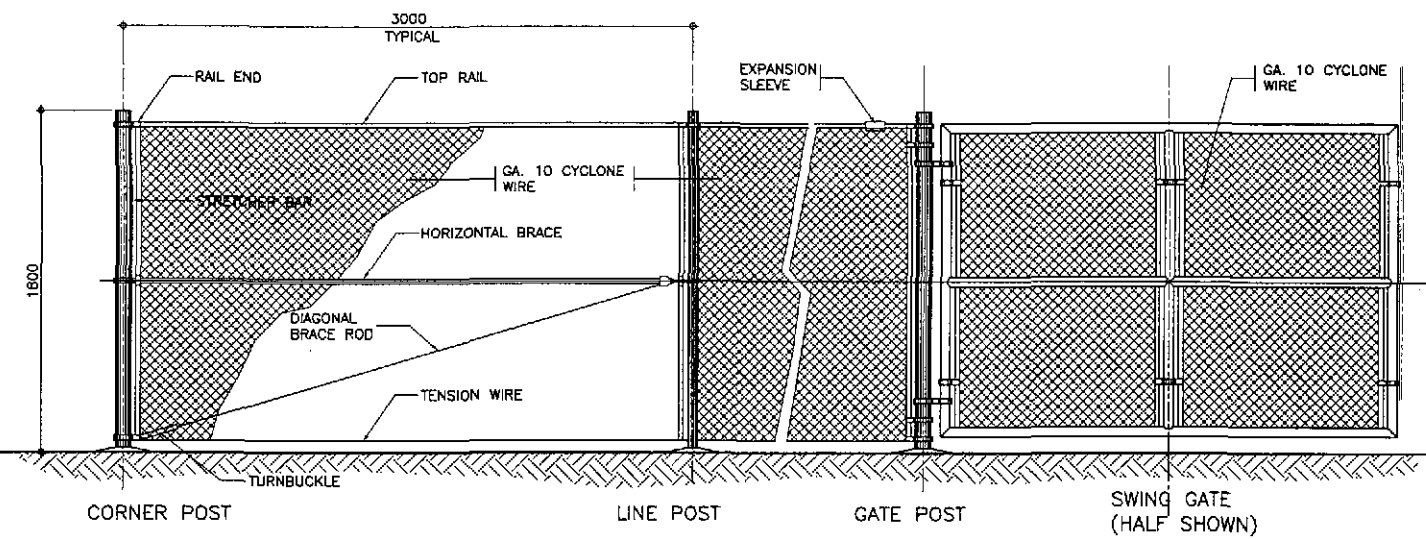
Manuel M. Bongan
SANITARY ENGINEER

PTR. NO. 0083138 P.R.C. NO. 000695
ISSUED ON 03/26/2002 T.I.N. 119-878-225
ISSUED AT SAN MATEO, RIZAL

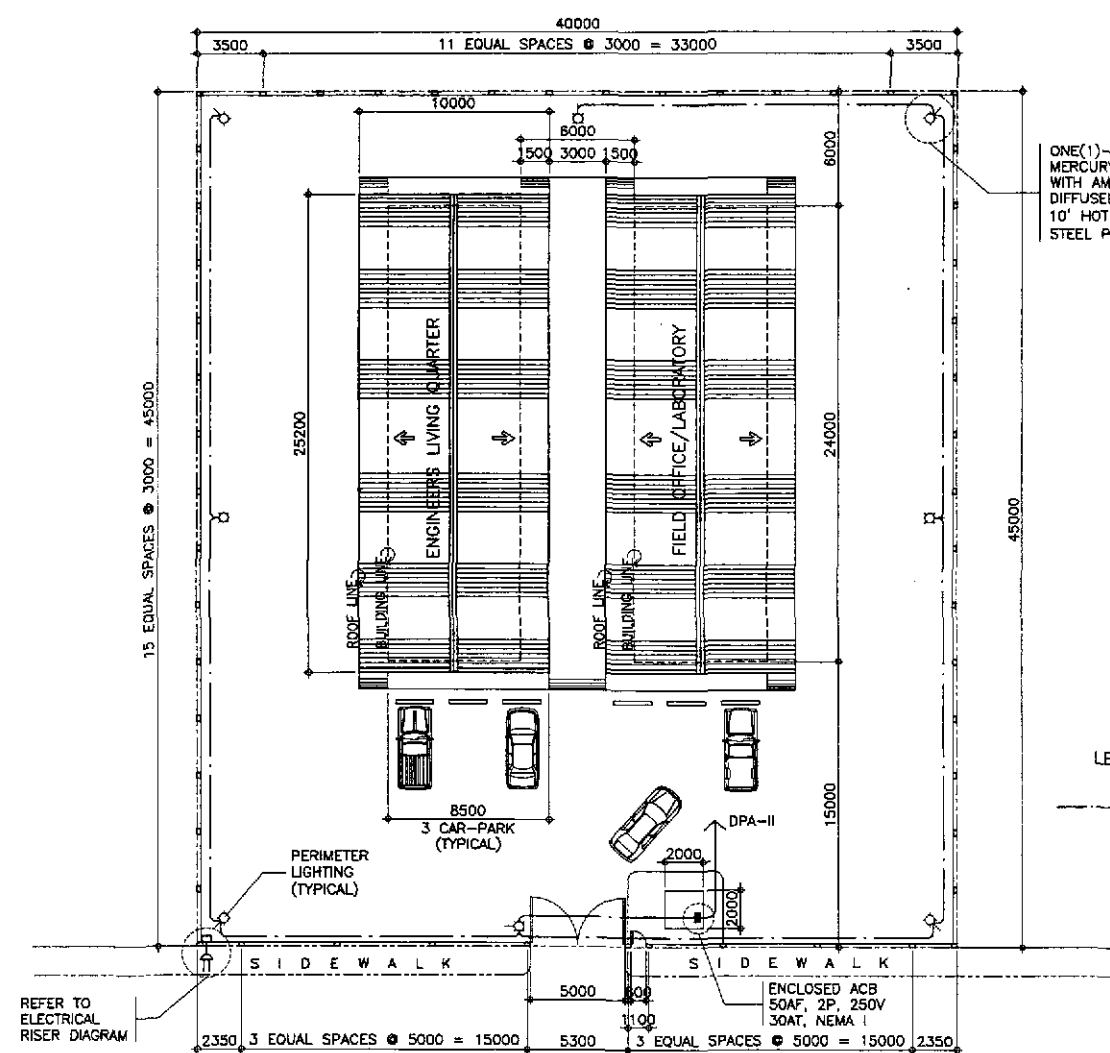
	DESIGNED: <i>[Signature]</i> CHECKED: <i>[Signature]</i> SUBMITTED: <i>[Signature]</i>	DATE: <i>[Date]</i> SIGNATURE: <i>[Signature]</i> TEAM LEADER	PUHL - PMO Submitted By: <i>[Signature]</i> Project Director	BUREAU OF DESIGN Reviewed By: <i>[Signature]</i> Chief, Architectural Division	OFFICE OF THE SECRETARY Recommended By: <i>[Signature]</i> Undersecretary	Approved By: <i>[Signature]</i> 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 III	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : ENGINEER'S FIELD OFFICE AND LIVING QUARTERS SEPTIC TANK DETAILS	SHEET NO. : FP-02
	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS						PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE III	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : ENGINEER'S FIELD OFFICE AND LIVING QUARTERS SEPTIC TANK DETAILS	SHEET NO. : FP-02
	JICA KATAHIRA & ENGINEERS YEO YACHIYO ENGINEERING CO., LTD.						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 III	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : ENGINEER'S FIELD OFFICE AND LIVING QUARTERS SEPTIC TANK DETAILS	SHEET NO. : FP-02



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



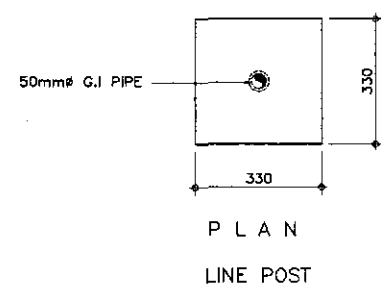
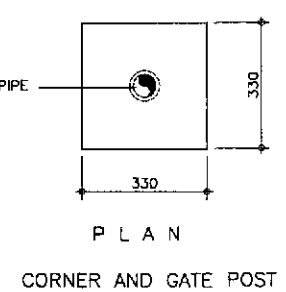
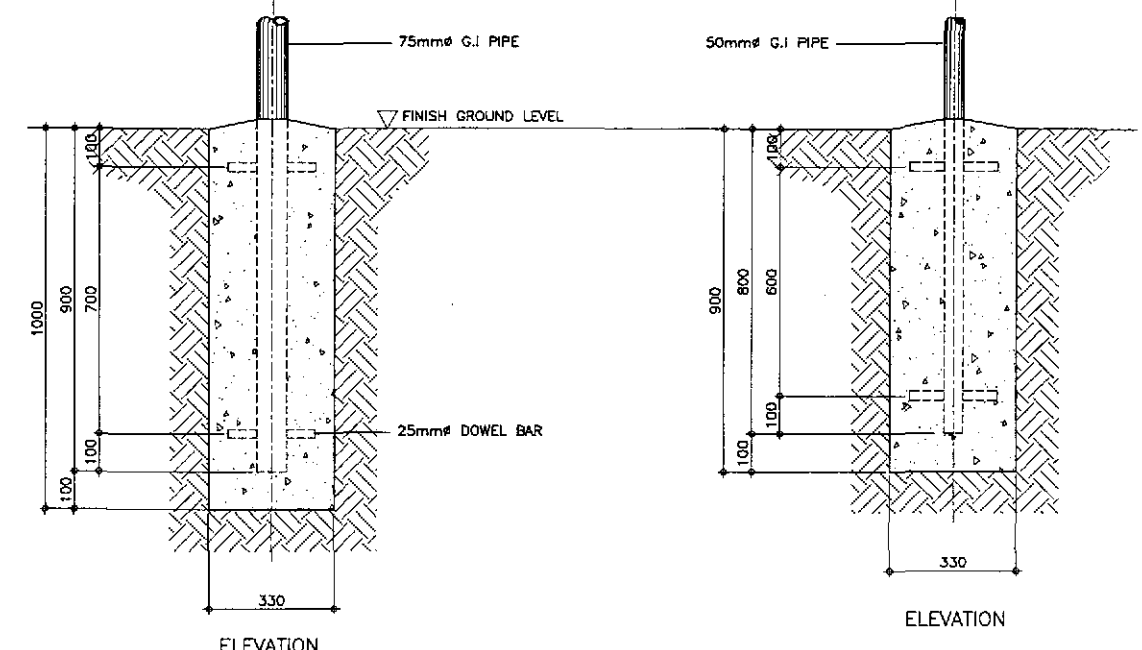
2 TYPICAL ELEVATION - FENCE AND GATE
 FX-01 SCALE 1:20



1 PLOT PLAN
 FX-01 SCALE 1:200

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

LEGEND :
 - - - - - 2-5.5mm² THW
 - - - - - 1-3.5mm² THW(G) in 25mm#C



4 TYPICAL FOUNDATION DETAIL
 FX-01 SCALE 1:10

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

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE III	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : ENGINEER'S FIELD OFFICE AND LIVING QUARTERS PLOT PLAN, ELEVATION OF FENCE & GATE TYPICAL FOUNDATION DETAILS	SHEET NO. : FX-01
	CHECKED				DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS						
	SUBMITTED				BUREAU OF DESIGN						
					Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:		
					DANILO C. TRAJANO Project Director	EMMANUEL P. CUNTAFAV Chief, Architectural Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONGAN Undersecretary	SIMEON A. DATUMANONG Secretary		