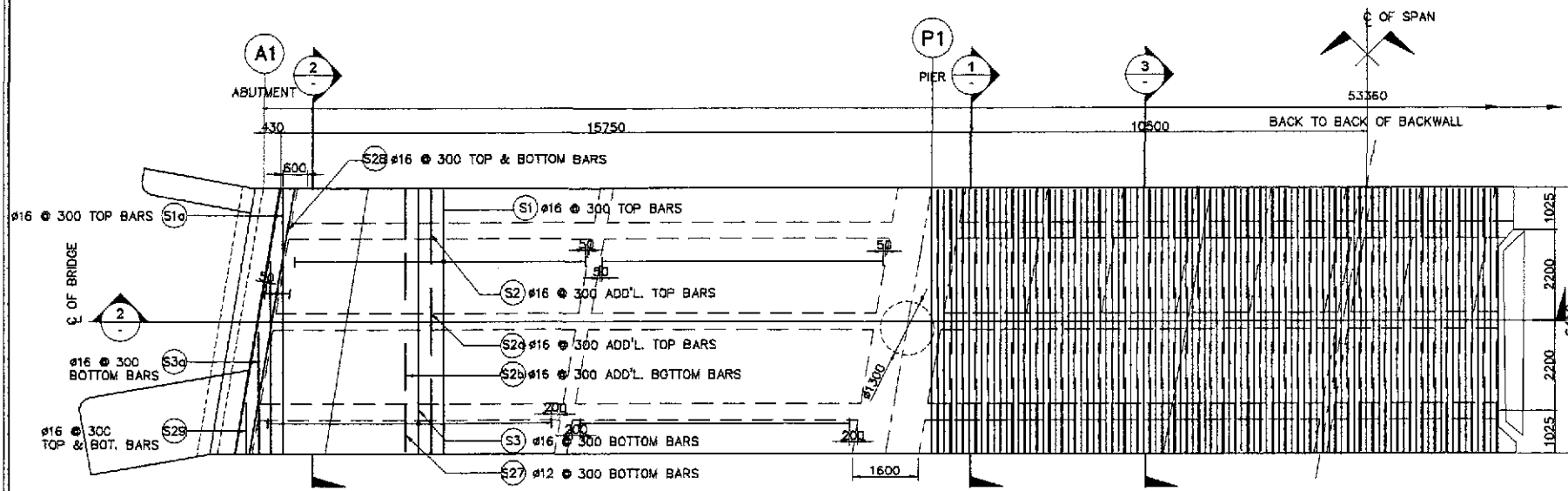


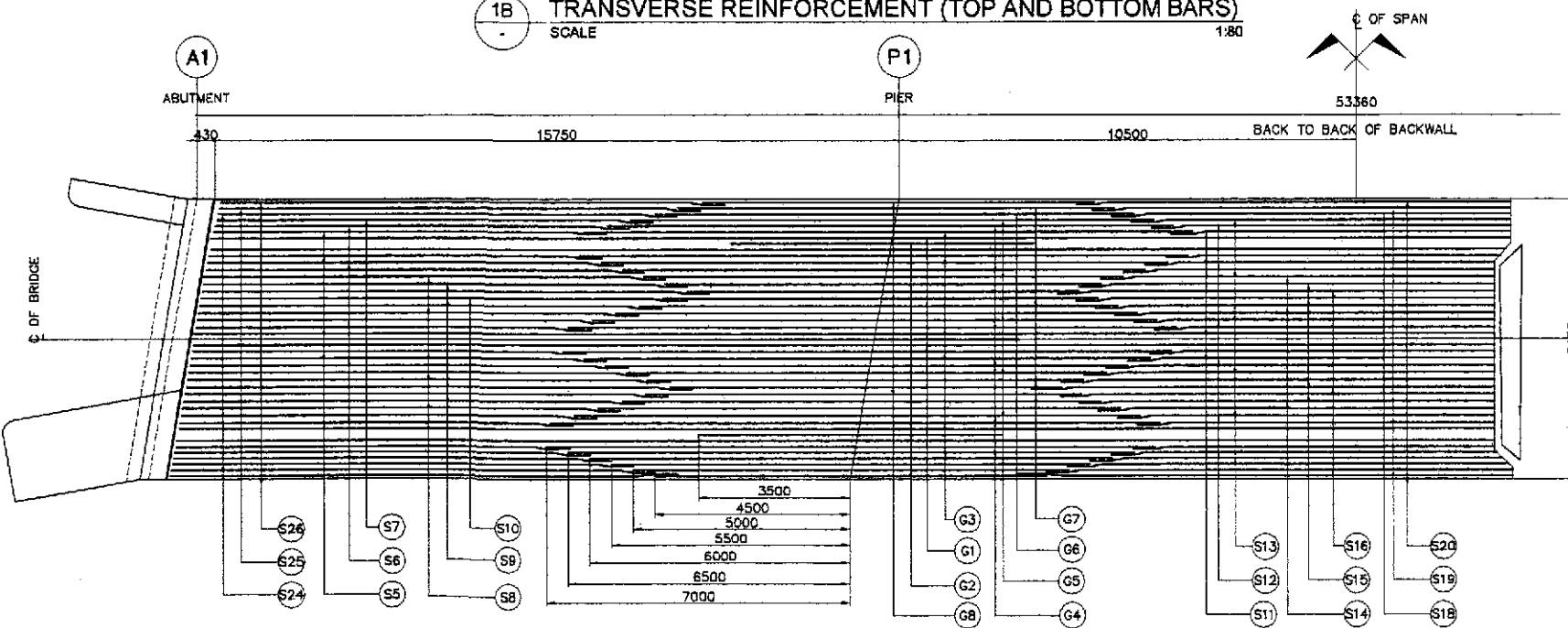
NOTES:
PRIOR TO CONSTRUCTION SOIL INVESTIGATION AT PIER P1 SHALL BE CONDUCTED FOR CONFIRMATION OF ASSUMED BEARING CAPACITY AND FOOTING ELEVATION.
THE PILE LENGTH RECOMMENDED ARE MINIMUM. SHOULD THE SOIL AT THE RECOMMENDED LENGTH IS NOT ADEQUATE BEARING MATERIAL, LENGTH SHALL BE INCREASED. THE MINIMUM SOCKET LENGTH INTO ADEQUATE SOIL FOR 400 x 400 RC PILE IS 1000 mm.

HYDRAULIC DATA	
VELOCITY @ 50 YEARS, V ₅₀	3.448 m/sec
DISCHARGE @ 50 YEARS, Q ₅₀	166,000 cu.m/sec
CATCHMENT AREA, CA	14,250 sq. km

		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 (Paridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS		SCALE: AS SHOWN FULL SIZE A1	SHEET CONTENTS: BRIDGE NO. 4 GENERAL PLAN, ELEVATION AND SECTIONS (ULTIMATE STAGE)	SHEET NO. : B4-01
DESIGNED	DATE	SIGNATURE	PROJECT MANAGER	DESIGNED BY	REVIEWED BY	RECOMMENDED BY	RECOMMENDED BY	APPROVED BY		
CHECKED	9/10/2011	[Signature]	Submitted By:	DANILO C. TRAJANO Project Director	ADRIANO N. DOROS Chief, Bridges Division	GILBERTO S. REYES Director IV (DC)	MANUEL M. BONGAN Undersecretary	SIMEON A. DATUMANONG Secretary		
SUBMITTED	9/10/2011	[Signature]	TEAM LEADER							

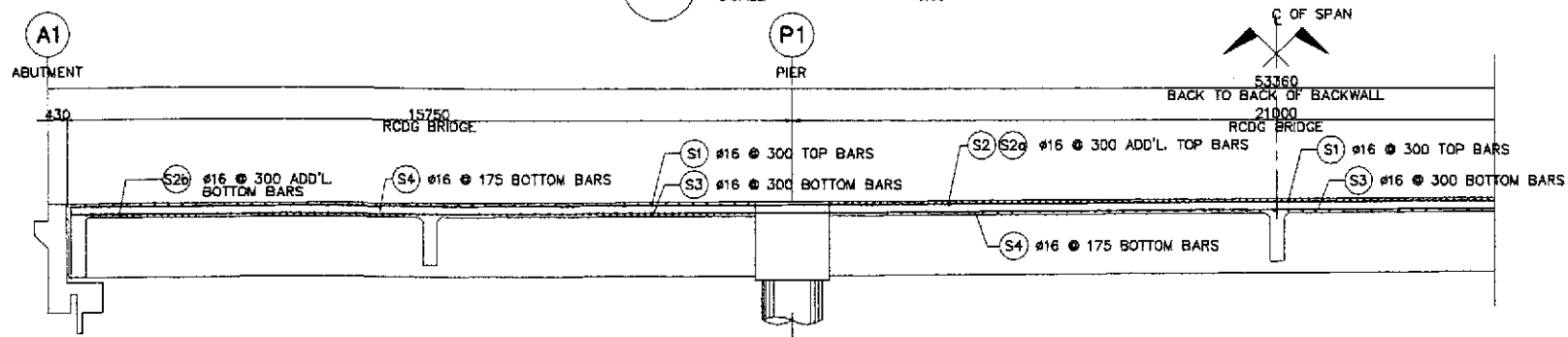


1B TRANSVERSE REINFORCEMENT (TOP AND BOTTOM BARS)
SCALE 1:80

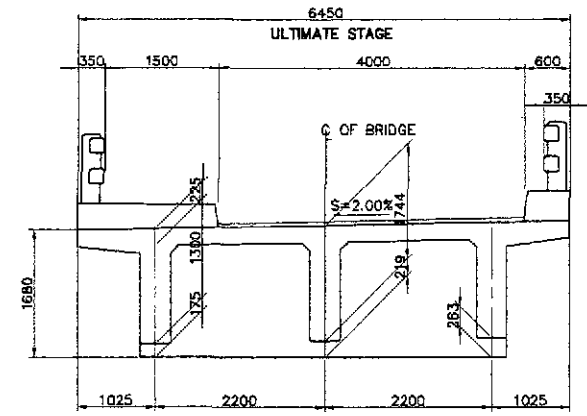


1A LONGITUDINAL REINFORCEMENT (TOP BARS ONLY)
SCALE 1:80

1 FRAMING PLAN
SCALE 1:80

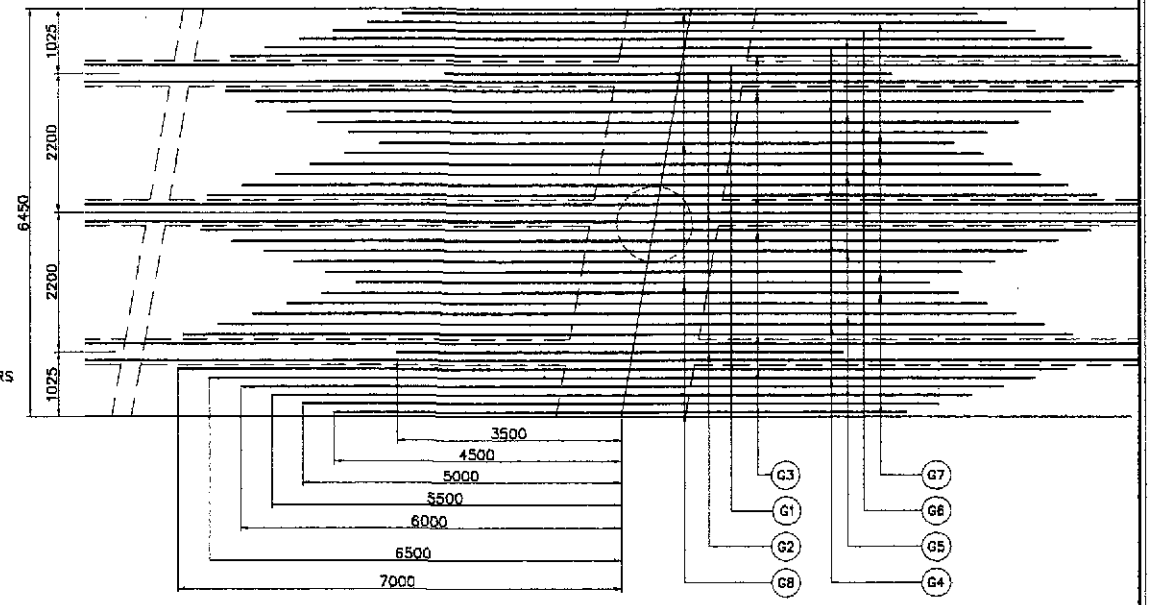


2 LONGITUDINAL SECTION
SCALE 1:80



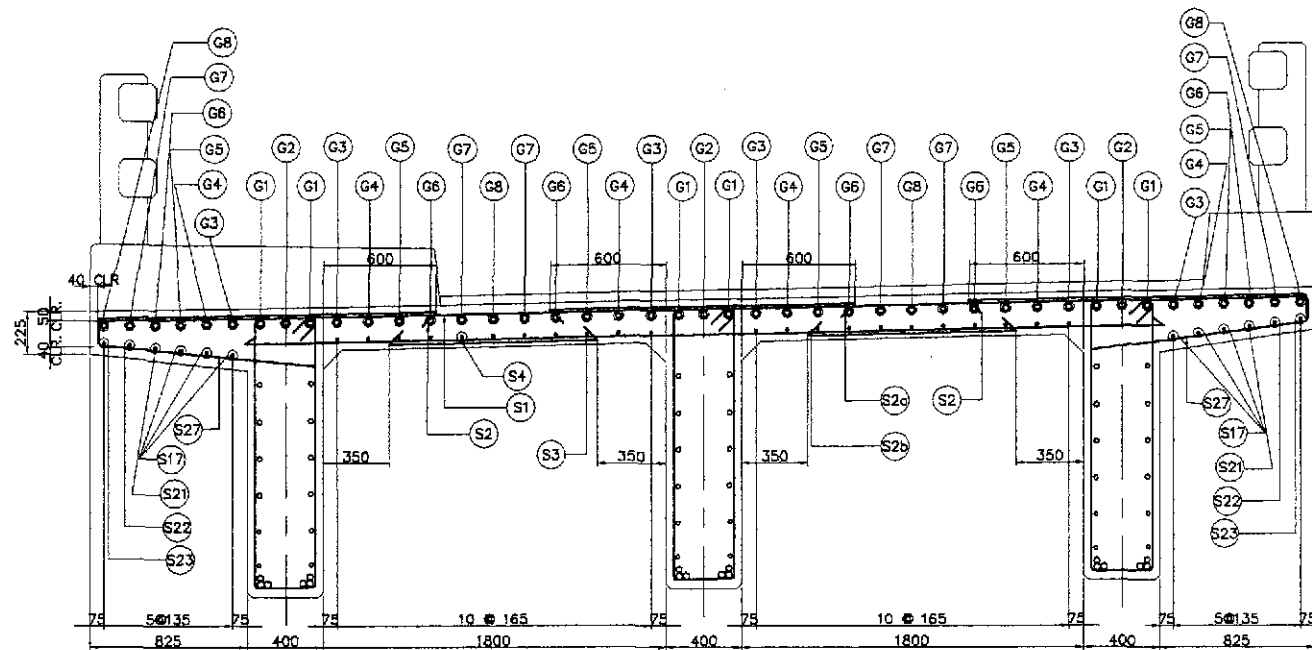
3 TYPICAL CROSS SECTION
SCALE 1:80

ESTIMATED QUANTITIES OF SUPERSTRUCTURE			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
404(1)a	REINFORCING STEEL GRADE 40	kgs.	
	DECK SLAB		10365
	DIAPHRAGM		648
	GIRDER		3432
	SIDEWALK, POST, RAILING		6866
	APPROACH SLAB		530
404(1)b	REINFORCING STEEL GRADE 60	kgs.	21541
	DECK SLAB		0
	DIAPHRAGM		524
	GIRDER		17777
	SIDEWALK, POST, RAILING		1062
	APPROACH SLAB		2178
405(1)	STRUCTURAL CONCRETE	cu. m.	
	DECK SLAB		83.59
	DIAPHRAGM		5.64
	GIRDER		81.90
	SIDEWALK		32.16
	APPROACH SLAB		13.82

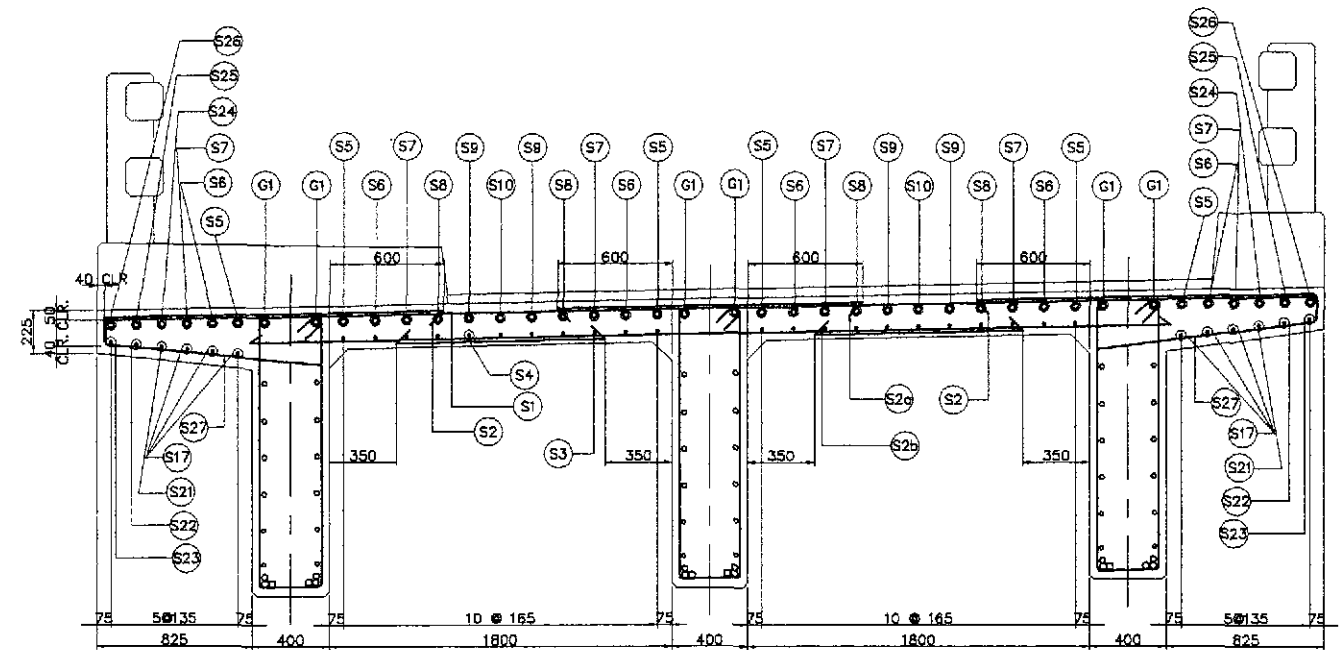


4 REINFORCEMENT OVER PIER
SCALE 1:80

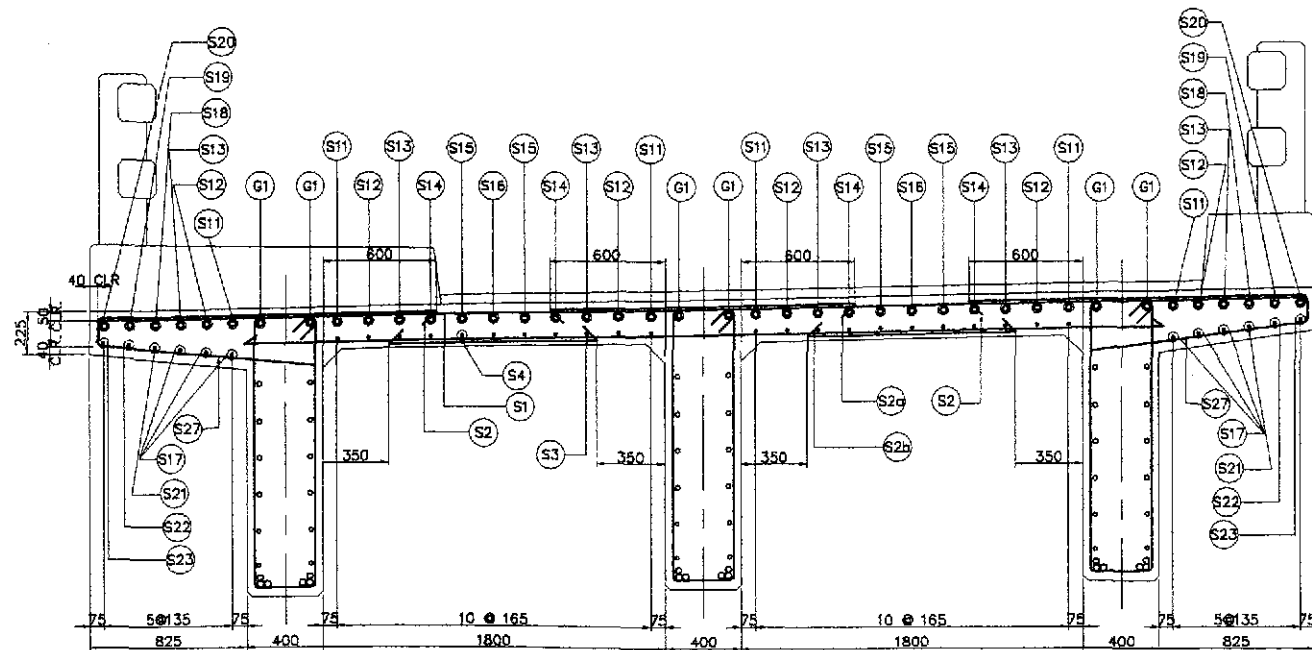
	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	9/9/02	E. N. SALLAN	BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON	AS SHOWN	BRIDGE NO. 4	B4-02
	CHECKED	9/9/02	[Signature]	OFFICE OF THE SECRETARY				UPGRADING INTER-URBAN HIGHWAY SYSTEM	FULL SIZE A1	SLAB REINFORCEMENT DETAILS	
	SUBMITTED	9/11/02	[Signature]	Recommended By: (See cover sheet for Signatures) Approved By: (See cover sheet for Signatures/Approval)				ALONG THE PAN-PHILIPPINE HIGHWAY		(LONGITUDINAL SECTION)	
			Submitted By: DANILO C. TRAJANO, Project Director Reviewed By: ADRIANO M. DORCY, Chief, Bridges Division Recommended By: GILBERTO S. REYES, Director IV (DC) Approved By: MANUEL M. BONOAN, Undersecretary SIMEON A. DATUMANONG, Secretary				(Plaridel, Cabanatuan and San Jose Bypasses)		(ULTIMATE STAGE)		
SAN JOSE BYPASS											



1 TRANSVERSE SECTION NEAR PIER SUPPORT
SCALE 1:20

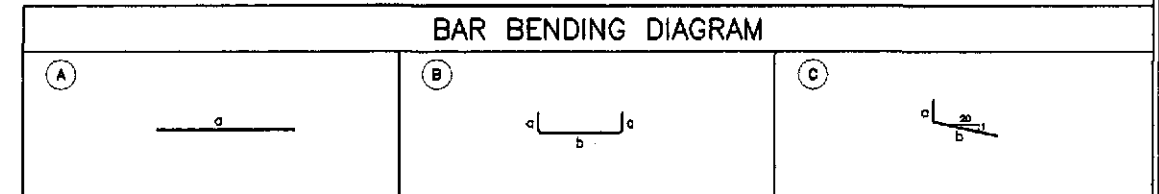


2 TRANSVERSE SECTION NEAR ABUTMENT
SCALE 1:20



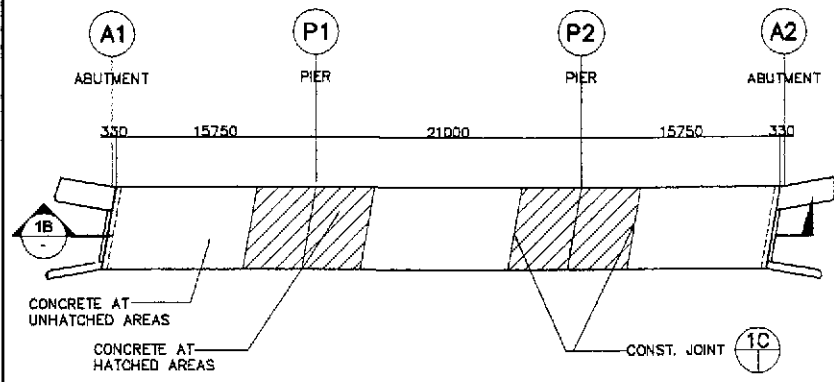
3 TRANSVERSE SECTION @ MIDSPAN OF SPAN 2
SCALE 1:20

A TYPICAL 3-SPAN RCDG SUPERSTRUCTURE DETAILS
SCALE AS SHOWN



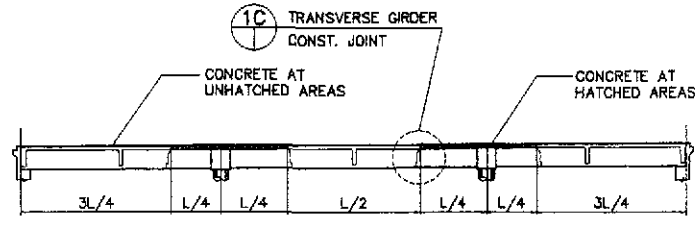
SCHEDULE OF REINFORCEMENT																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				L _e (mm)	LENGTH EACH BAR (mm)	TOTAL LENGTH (m)	UNIT WT (Kg/m)	WEIGHT IN (Kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d							
DECK SLAB	83.59	S1	16	172	300	(B)	145	6370	-	-	-	6660	1145.52	1.579	1809	124.00	
		S1c	16	10	300	(B)	145	4070	-	-	-	4380	43.80	1.579	69		
		S2	16	344	300	(A)	1825	-	-	-	-	-	1825	527.80	1.579		992
		S2a	16	172	300	(A)	1600	-	-	-	-	-	1600	275.20	1.579		435
		S2b	16	344	300	(A)	1100	-	-	-	-	-	1100	376.40	1.579		548
		S3	16	172	300	(A)	4800	-	-	-	-	-	4800	825.60	1.579		1304
		S3a	16	10	300	(A)	4070	-	-	-	-	-	4070	40.70	1.579		65
		S4	16	22	AS SHOWN	(A)	53080	-	-	-	-	-	53080	1167.76	1.579		1844
		S5	16	12	AS SHOWN	(A)	8750	-	-	-	-	-	8750	105.00	1.579		166
		S6	16	12	AS SHOWN	(A)	9250	-	-	-	-	-	9250	111.00	1.579		176
		S7	16	12	AS SHOWN	(A)	9750	-	-	-	-	-	9750	117.00	1.579		185
		S8	16	8	AS SHOWN	(A)	10250	-	-	-	-	-	10250	82.00	1.579		130
		S9	16	8	AS SHOWN	(A)	10750	-	-	-	-	-	10750	86.00	1.579		136
		S10	16	4	AS SHOWN	(A)	11250	-	-	-	-	-	11250	45.00	1.579		72
		S11	16	6	AS SHOWN	(A)	7000	-	-	-	-	-	7000	42.00	1.579		67
		S12	16	6	AS SHOWN	(A)	8000	-	-	-	-	-	8000	48.00	1.579		76
		S13	16	6	AS SHOWN	(A)	9000	-	-	-	-	-	9000	54.00	1.579		86
		S14	16	4	AS SHOWN	(A)	10000	-	-	-	-	-	10000	40.00	1.579		64
		S15	16	4	AS SHOWN	(A)	11000	-	-	-	-	-	11000	44.00	1.579		70
		S16	16	2	AS SHOWN	(A)	12000	-	-	-	-	-	12000	24.00	1.579		38
		S17	16	6	AS SHOWN	(A)	53080	-	-	-	-	-	53080	318.48	1.579		503
		S18	16	2	AS SHOWN	(A)	10000	-	-	-	-	5500	10000	20.00	1.579		32
		S19	16	2	AS SHOWN	(A)	11000	-	-	-	-	5000	11000	22.00	1.579		35
		S20	16	2	AS SHOWN	(A)	12000	-	-	-	-	4500	12000	24.00	1.579		38
		S21	16	2	AS SHOWN	(A)	53080	-	-	-	-	-	53080	106.16	1.579		168
		S22	16	2	AS SHOWN	(A)	53080	-	-	-	-	-	53080	106.16	1.579		168
		S23	16	2	AS SHOWN	(A)	53080	-	-	-	-	-	53080	106.16	1.579		168
		S24	16	4	AS SHOWN	(A)	11000	-	-	-	-	5500	11000	44.00	1.579		70
S25	16	4	AS SHOWN	(A)	10000	-	-	-	-	5000	10000	40.00	1.579	64			
S26	16	4	AS SHOWN	(A)	9000	-	-	-	-	4500	9000	36.00	1.579	57			
S27	12	342	300	(C)	145	1220	-	-	-	-	1365	468.83	0.888	415			
S28	16	12	300	(A)	6470	-	-	-	-	-	6470	77.64	1.579	123			
S28	16	16	300	(A)	4070	-	-	-	-	-	4070	65.12	1.579	103			
TOTAL	83.59															GRADE 40 TOTAL = 10,365.00 Kgs.	

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/1/02	E. SALLAN		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. 4 SLAB REINFORCEMENT DETAILS (TRANSVERSE SECTIONS) (ULTIMATE STAGE)	B4-03
	SUBMITTED	9/1/02	M. M. MORALES		OFFICE OF THE SECRETARY	SAN JOSE BYPASS				FULL SIZE A1		

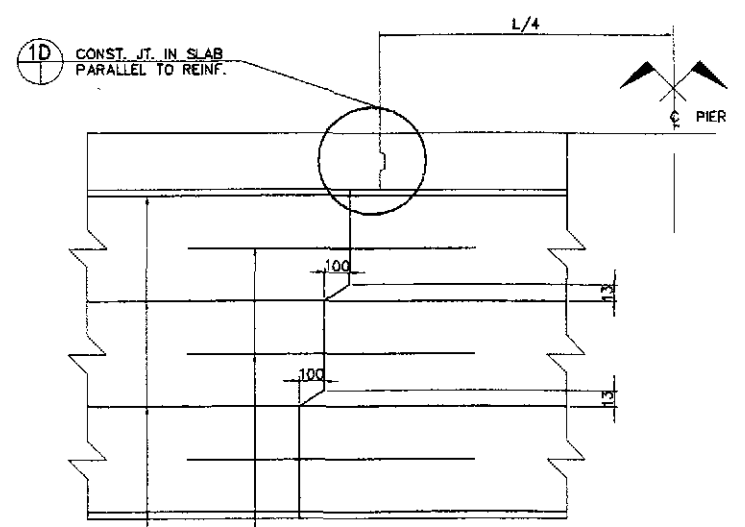


1A PLAN NOT TO SCALE

- NOTE :
1. CONCRETE AT UNHATCHED AREAS SHALL BE PLACED AT LEAST ONE DAY AHEAD OF CONCRETE AT HATCHED AREAS.
 2. REINFORCEMENT SHALL BE CONTINUOUS AT CONSTRUCTION JOINTS.

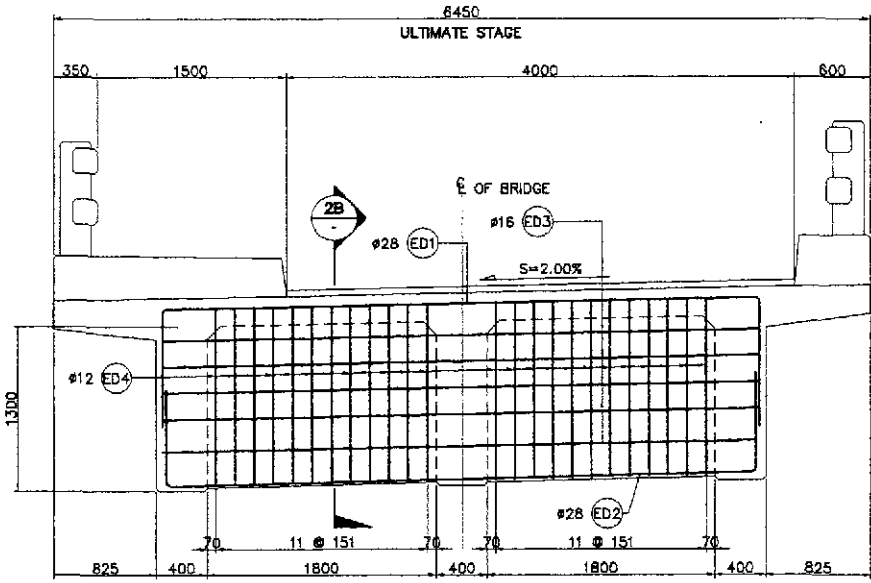


1B SECTION NOT TO SCALE

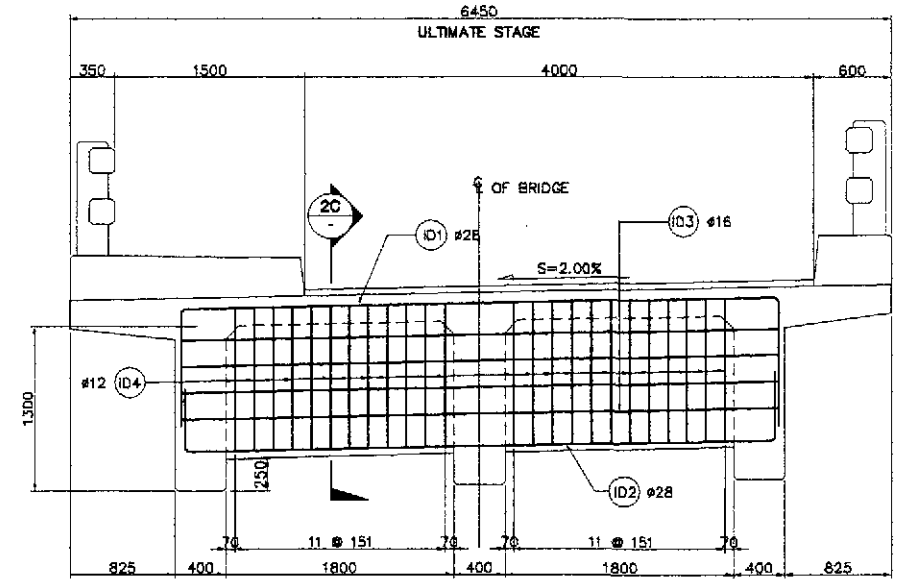


1C TRANSVERSE GIRDER CONST. JOINT NOT TO SCALE

1 CONCRETE POURING SEQUENCE NOT TO SCALE



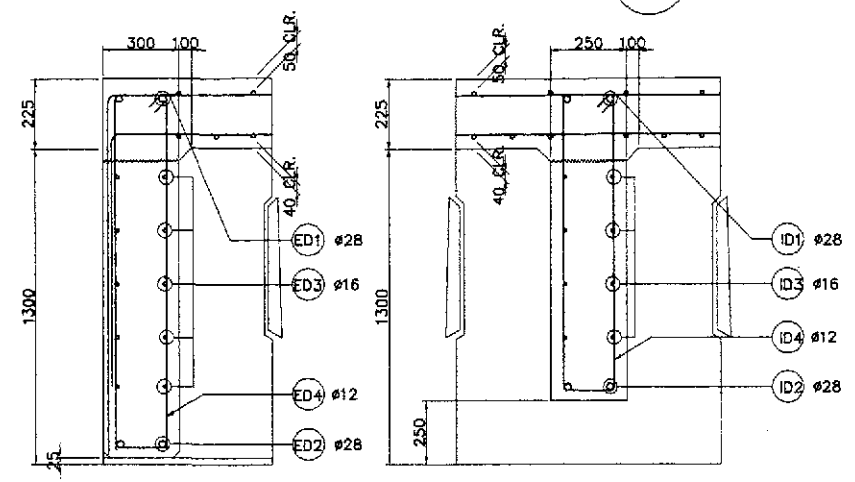
END DIAPHRAGM



INTERMEDIATE DIAPHRAGM

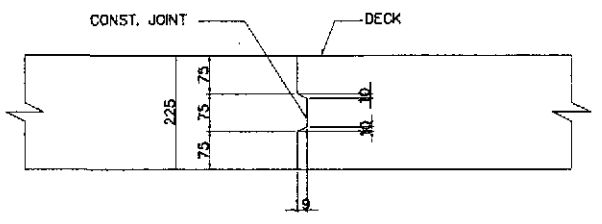
2A ELEVATION NOT TO SCALE

2 INTERMEDIATE AND END DIAPHRAGM DETAIL NOT TO SCALE

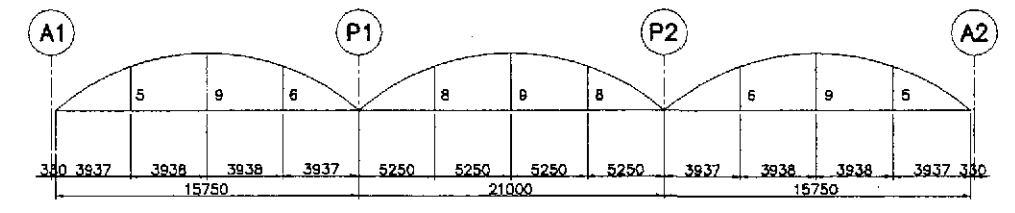


2B SECTION NOT TO SCALE

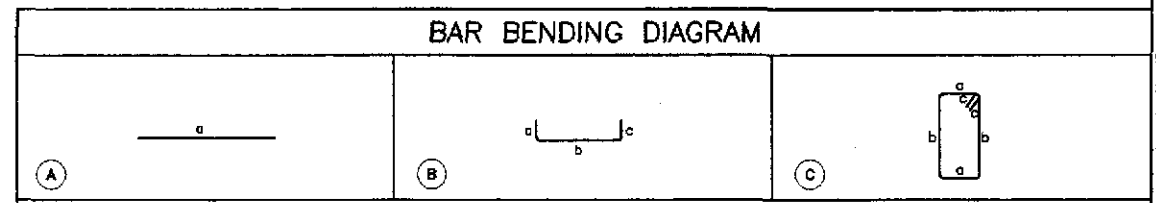
2C SECTION NOT TO SCALE



1D DETAIL NOT TO SCALE



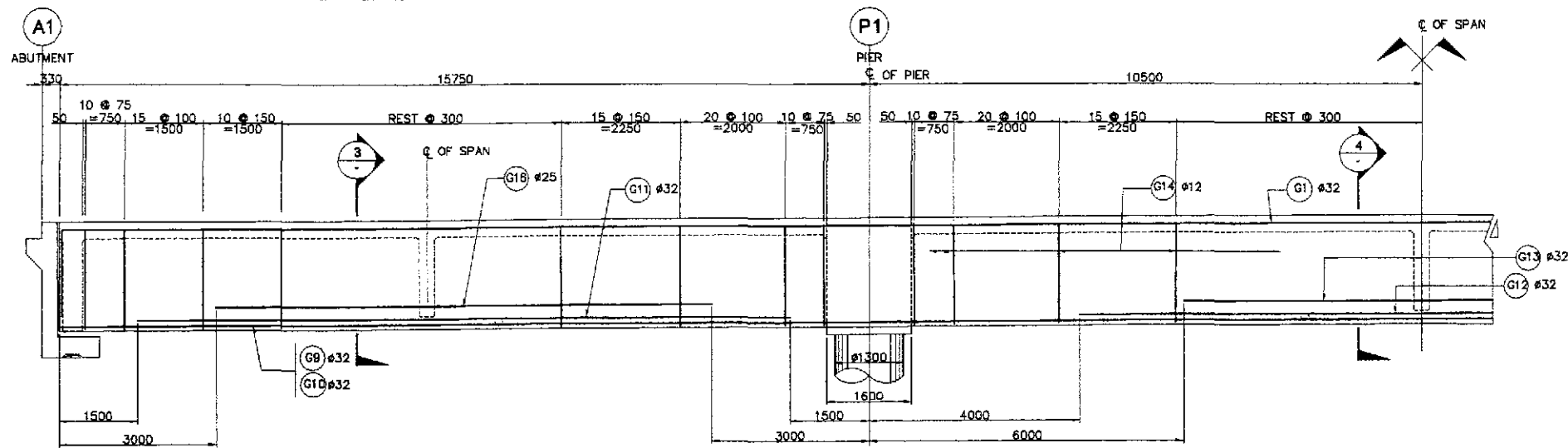
3 CAMBER DIAGRAM NOT TO SCALE



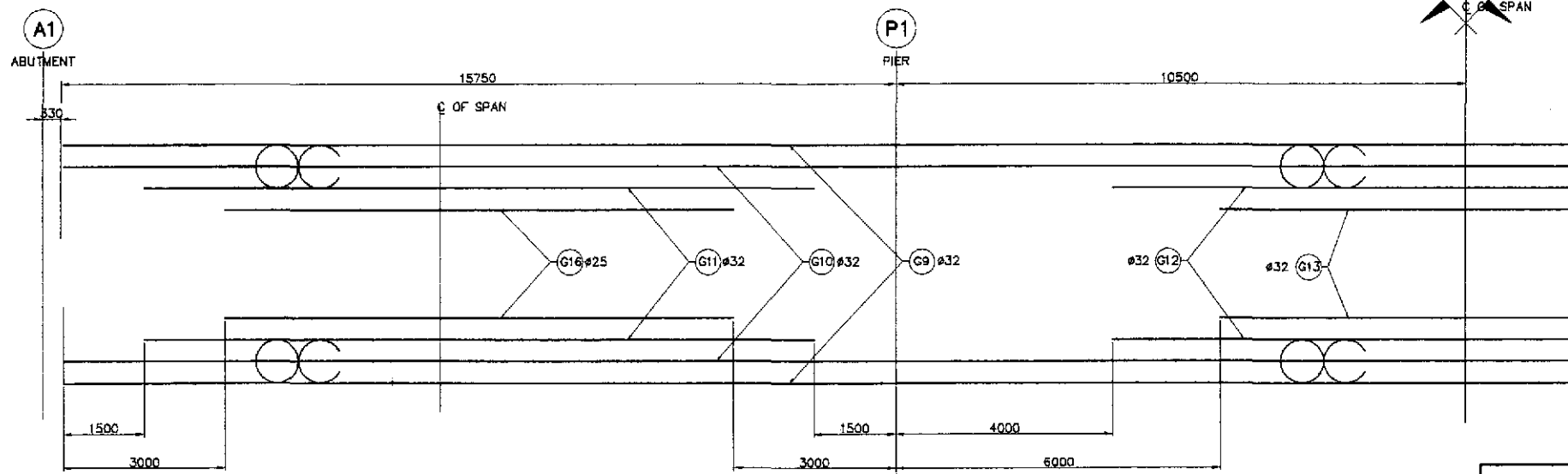
SCHEDULE OF REINFORCEMENT

LOCATION	CONC. VOL. (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				L _c (mm)	LENGTH EACH BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	TOTAL WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d						
END DIAPHRAGM	2.81	ED1	28	4	AS SHOWN	(B)	350	4700	350	-	-	5400	21.60	4.833	105	178.65
		ED2	28	4	AS SHOWN	(B)	350	4700	350	-	-	5400	21.60	4.833	105	
		ED3	16	20	AS SHOWN	(A)	4700	-	-	-	-	4700	94.00	1.579	149	
		ED4	12	44	AS SHOWN	(C)	220	1450	150	-	-	3640	160.16	0.888	143	
INTERMEDIATE DIAPHRAGM	2.84	ID1	28	6	AS SHOWN	(B)	350	4700	350	-	-	5400	32.40	4.833	157	235.92
		ID2	28	6	AS SHOWN	(B)	350	4700	350	-	-	5400	32.40	4.833	157	
		ID3	16	24	AS SHOWN	(A)	4700	-	-	-	-	4700	112.80	1.579	179	
		ID4	12	66	AS SHOWN	(C)	170	1190	150	-	-	3020	199.32	0.888	177	
TOTAL	5.64															
														GRADE 40 TOTAL = 648 kgs.		
														GRADE 60 TOTAL = 524 kgs.		

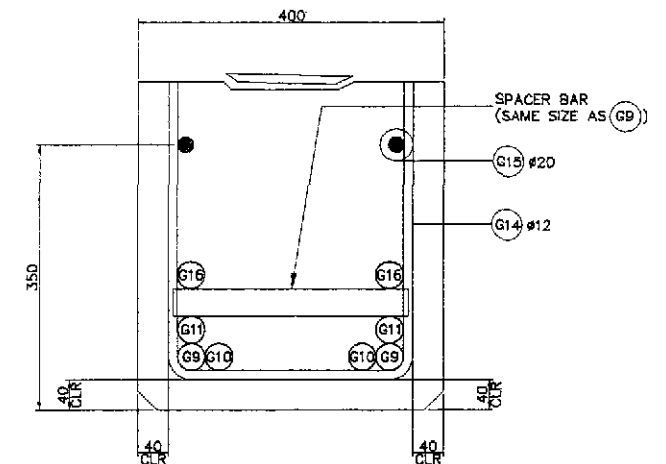
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS					PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/19/02	E. N. SALLAN		BUREAU OF DESIGN					THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pierdel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 4 CONCRETE POURING SEQUENCE, DIAPHRAGM DETAIL & CAMBER DIAGRAM (ULTIMATE STAGE)	B4-04
	SUBMITTED	9/14/02	MANUEL M. BONDAN		OFFICE OF THE SECRETARY					FULL SIZE A1			
				Submitted By: DANILLO C. TRAJANO, Project Director Reviewed By: ADRIANO M. DORAY, Chief, Bridges Division Recommended By: GILBERTO S. REYES, Director IV (DID) Recommended By: MANUEL M. BONDAN, Undersecretary Approved By: SIMEON A. DATUMANONG, Secretary					SAN JOSE BYPASS				



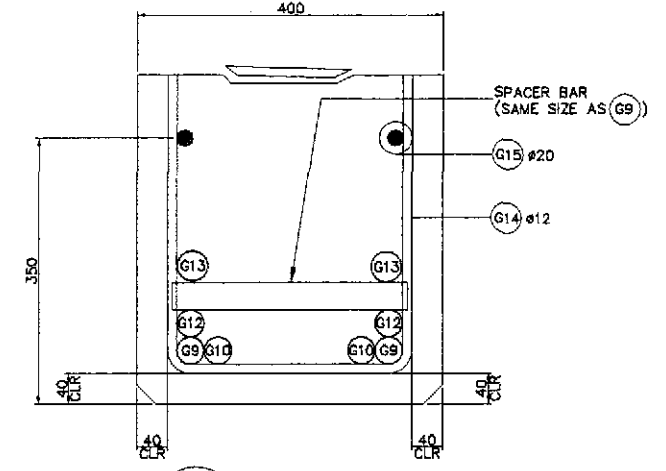
1 GIRDER ELEVATION
NOT TO SCALE



2 BOTTOM BAR SCHEMATIC DIAGRAM
NOT TO SCALE

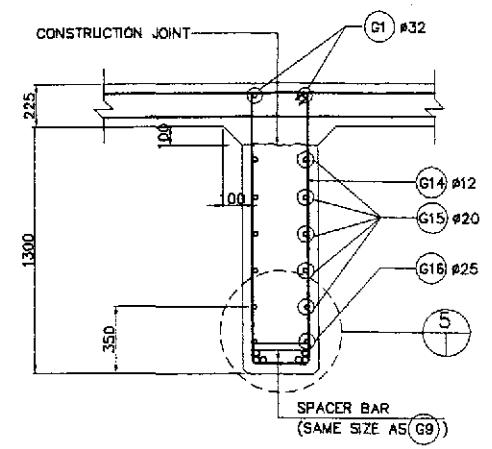


5 DETAIL
SCALE 1:5

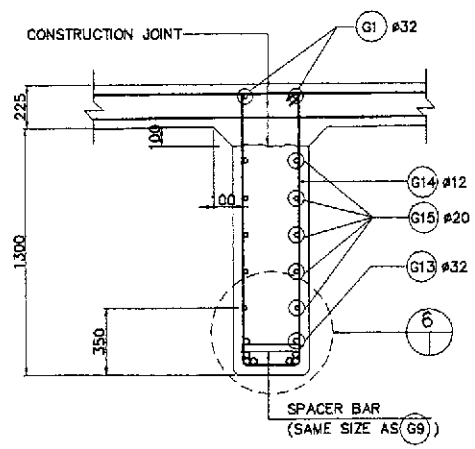


6 DETAIL
SCALE 1:5

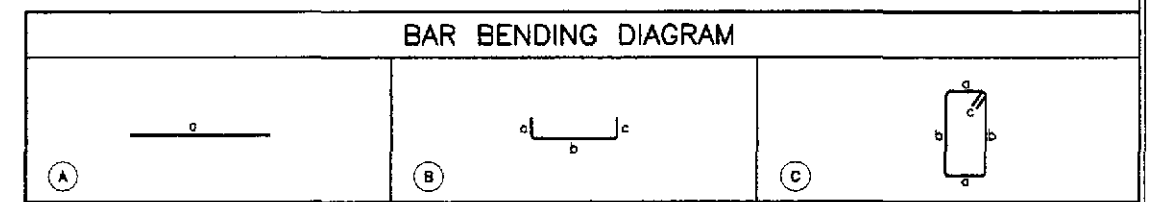
NOTE: CONCRETE CHAMFER AT BOTTOM OF GIRDER IS 25mm.



3 SECTION AT MIDSPAN (SPAN 1 & 3)
SCALE 1:20



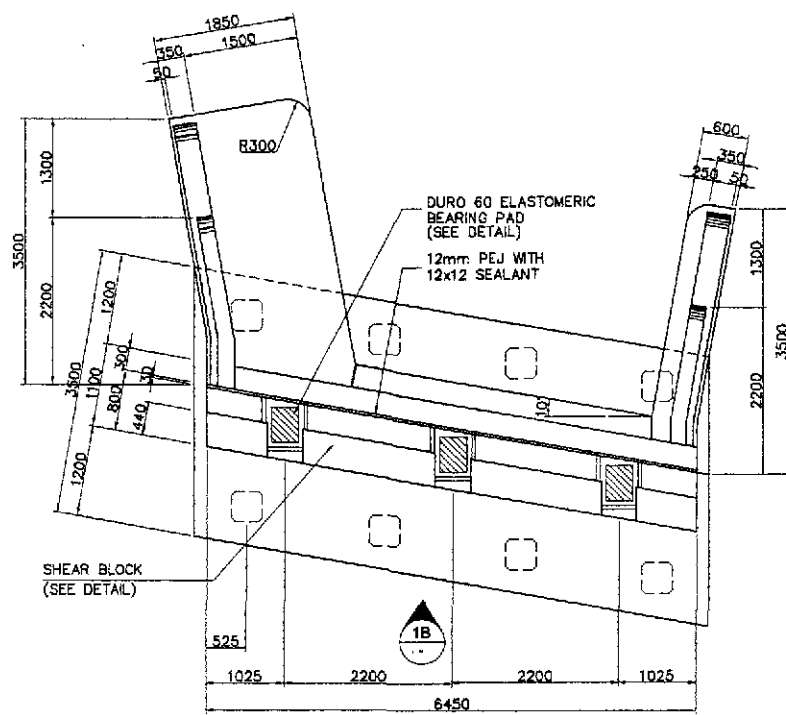
4 SECTION AT MIDSPAN (SPAN 2)
SCALE 1:20



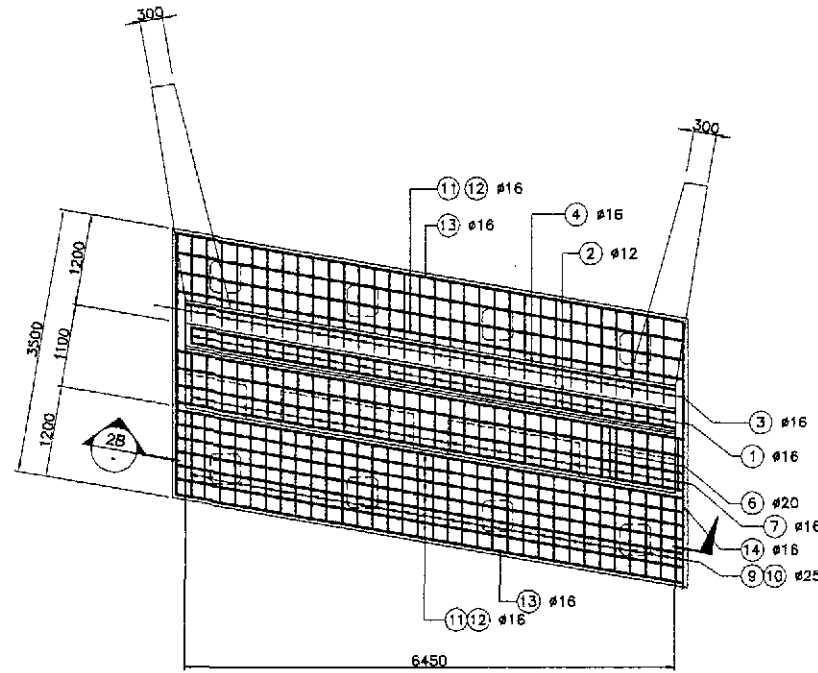
SCHEDULE OF REINFORCEMENT FOR THREE GIRDERS																
LOCATION	CONC. VOL. (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				L _s (mm)	LENGTH EACH BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	TOTAL WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d						
GIRDER (W/ FILLET) 81.90		G1	32	6	AS SHOWN	(B)	1300	53080	1300	-	-	-	55680	334.08	6.313	2110
		G2	32	6	AS SHOWN	(A)	7000	-	-	-	3500	7000	42.00	6.313	266	
		G3	32	12	AS SHOWN	(A)	14000	-	-	-	7000	14000	168.00	6.313	1061	
		G4	32	12	AS SHOWN	(A)	13000	-	-	-	6500	13000	158.00	6.313	985	
		G5	32	12	AS SHOWN	(A)	12000	-	-	-	6000	12000	144.00	6.313	910	
		G6	32	12	AS SHOWN	(A)	11000	-	-	-	5500	11000	132.00	6.313	834	
		G7	32	12	AS SHOWN	(A)	10000	-	-	-	5000	10000	120.00	6.313	758	
		G8	32	8	AS SHOWN	(A)	9000	-	-	-	4500	9000	72.00	6.313	455	
		G9	32	6	AS SHOWN	(B)	1300	53080	1300	-	-	-	55680	334.08	6.313	2110
		G10	32	6	AS SHOWN	(B)	1300	53080	1300	-	-	-	55680	334.08	6.313	2110
		G11	32	12	AS SHOWN	(A)	12750	-	-	-	1500	12750	153.00	6.313	966	
		G12	32	6	AS SHOWN	(A)	13000	-	-	-	4000	13000	78.00	6.313	493	
		G13	32	6	AS SHOWN	(A)	9000	-	-	-	6000	9000	54.00	6.313	341	
		G14	12	1050	AS SHOWN	(C)	320	1370	150	-	-	-	3680	3864.00	0.888	3432
		G15	20	30	AS SHOWN	(A)	53080	-	-	-	-	-	53080	1592.40	2.466	3927
		G16	25	12	AS SHOWN	(A)	9750	-	-	-	-	-	9750	117.00	3.854	451
TOTAL	81.90															

GRADE 40 TOTAL = 3,432 kgs.
GRADE 60 TOTAL = 17,777 kgs.

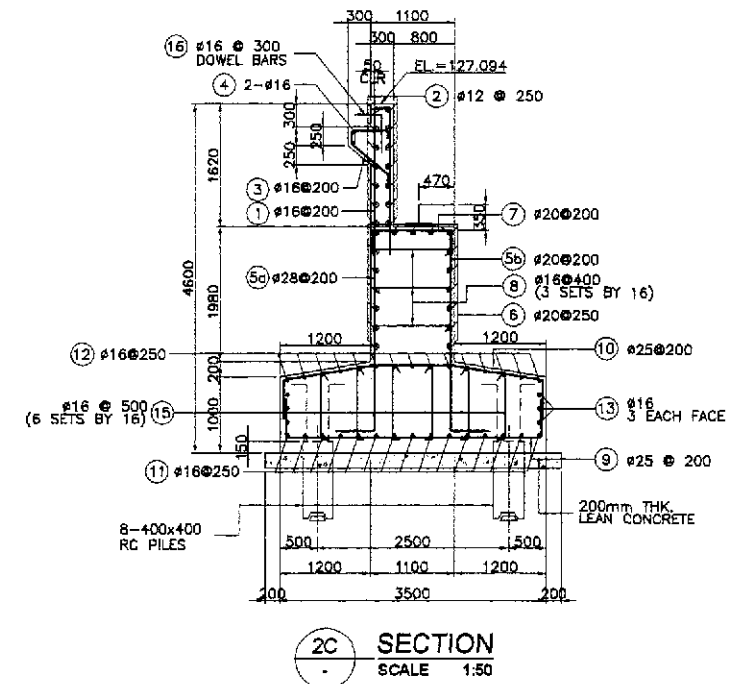
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS					PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : BRIDGE NO. 4 GIRDER ELEVATION, BOTTOM BAR LAYOUT AND SECTIONS (ULTIMATE STAGE)	SHEET NO. : B4-05
	CHECKED	DATE	SIGNATURE		BUREAU OF DESIGN								
	SUBMITTED	DATE	SIGNATURE		Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: ADRIANO M. DOROY Chief, Bridges Division	Recommended By: GILBERTO S. REYES Director IV (OIC)	Recommended By: MANUEL M. BONDAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary				



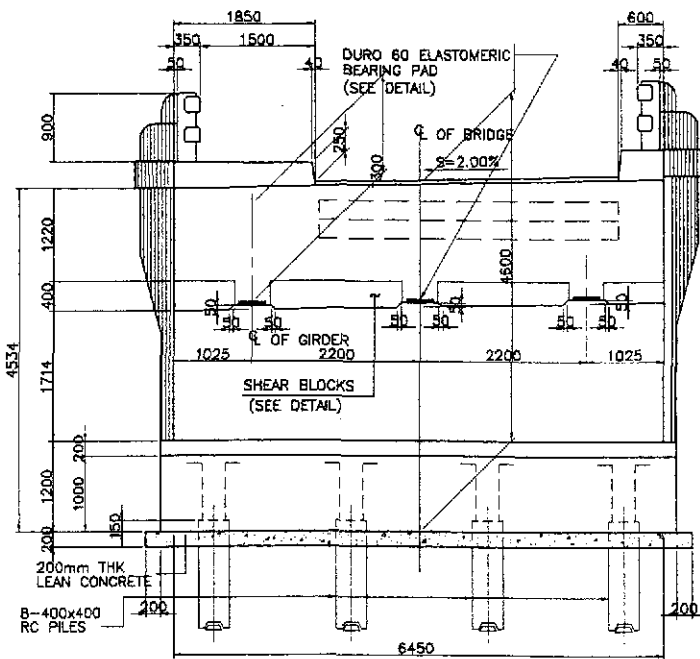
1A PLAN SCALE 1:50



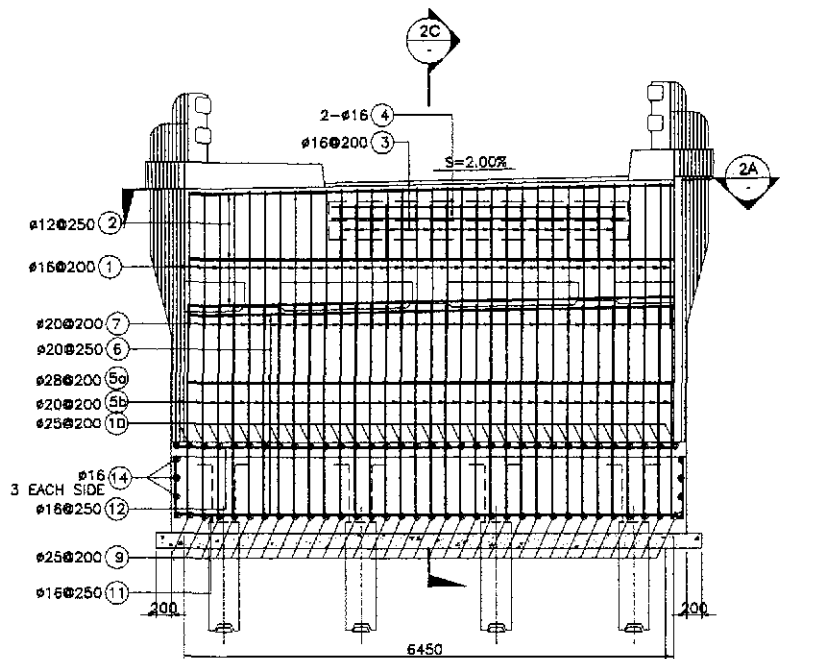
2A SECTION SCALE 1:50



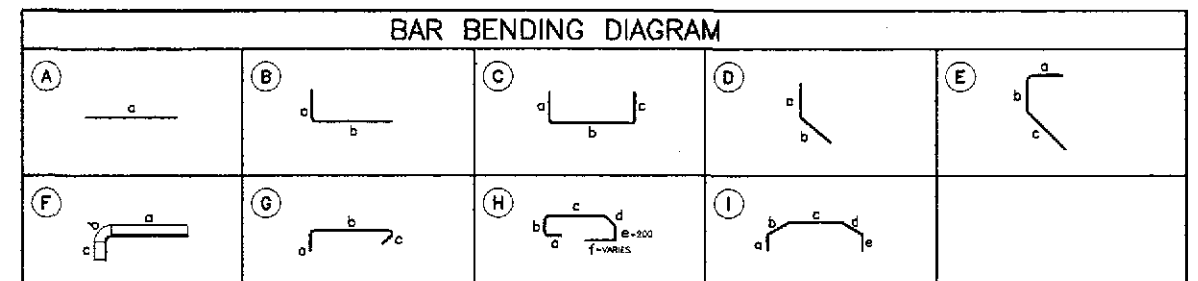
2C SECTION SCALE 1:50



1B ELEVATION SCALE 1:50



2B SECTION SCALE 1:50

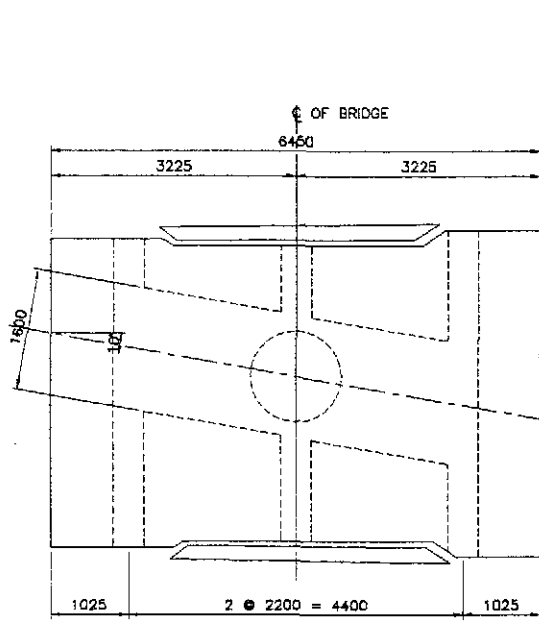


SCHEDULE OF REINFORCEMENT PER ABUTMENT

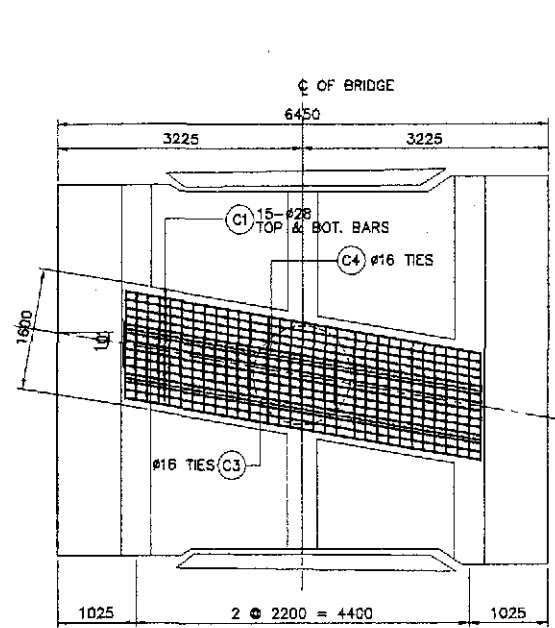
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)		
							a	b	c	d	e						f	
BACKWALL	3.60	1	16	33	200	C	1870	200	1870	-	-	-	3940	130.02	1.579	206	95.28	
		2	12	14	250	A	6350	-	-	-	-	-	6350	88.90	0.888	79		
		3	16	21	200	E	500	150	700	-	-	-	1350	28.35	1.579	45		
		4	16	2	AS SHOWN	A	4000	-	-	-	-	-	4000	8.00	1.579	13		
MAINWALL	15.79	5a	28	32	200	B	500	2990	-	-	-	3490	111.68	4.833	540	86.01		
		5b	20	32	200	B	500	2990	-	-	-	3480	111.68	2.446	276			
		6	20	19	250	A	6350	-	-	-	-	-	6350	120.65	2.466		298	
		7	20	32	200	C	255	1100	-	-	-	-	1610	51.52	2.466		128	
		8	16	48	400	G	250	1100	170	-	-	-	1520	72.96	1.579		116	
		9	25	32	200	C	575	3350	575	-	-	-	4500	144.00	3.854		555	
FOOTING	22.58	10	25	32	200	I	575	1200	1000	1200	575	-	4550	145.60	3.854	562	89.24	
		11	16	14	250	C	575	6450	575	-	-	-	76.00	106.40	1.579	169		
		12	16	14	250	C	575	6450	575	-	-	-	76.00	106.40	1.579	169		
		13	16	6	AS SHOWN	A	6450	-	-	-	-	-	6450	38.70	1.579	62		
		14	16	6	AS SHOWN	A	3350	-	-	-	-	-	3350	20.10	1.579	32		
DOWEL		15	16	210	AS SHOWN	250	985 (ave.)	170	-	-	-	1405	285.05	1.579	466			
TOTAL	41.97																	

GRADE 40 TOTAL = 1,316 kgs.
GRADE 60 TOTAL = 2,359 kgs.

	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) SAN JOSE BYPASS	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	DATE	SIGNATURE		DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS					
SUBMITTED			DATE	SIGNATURE	BUREAU OF DESIGN		FULL SIZE A1			
SUBMITTED			DATE	SIGNATURE	OFFICE OF THE SECRETARY					

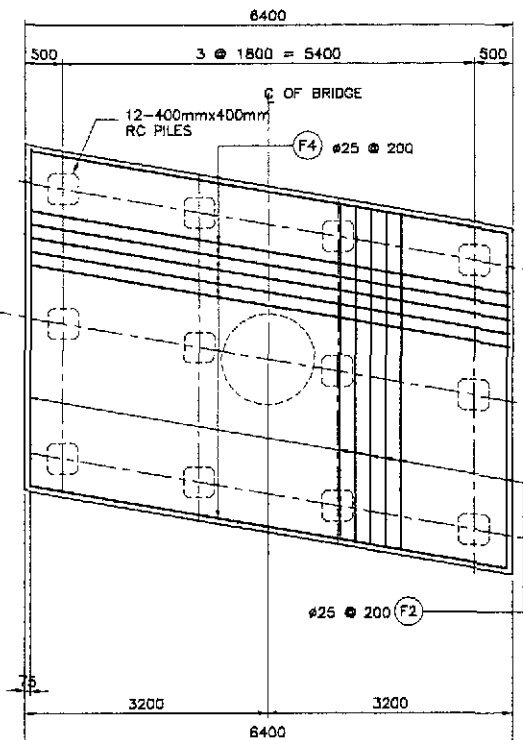


1A SHOWING DIMENSIONS
SCALE 1:50

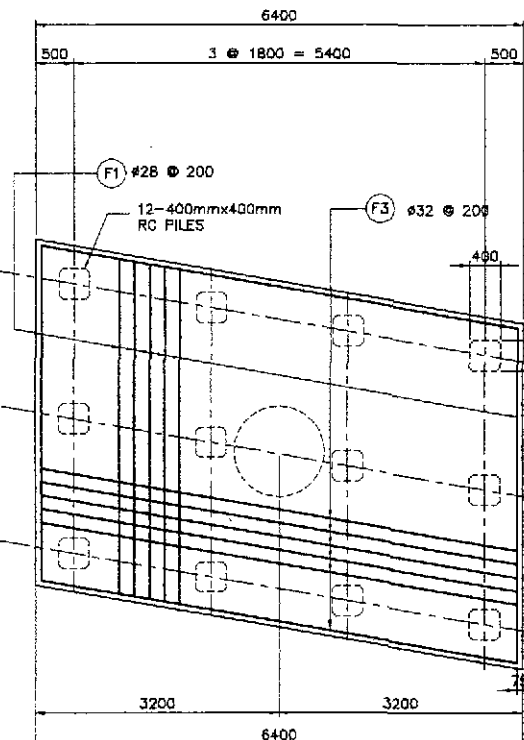


1B SHOWING REINFORCEMENTS
SCALE 1:50

1 COPING PLAN
SCALE AS SHOWN

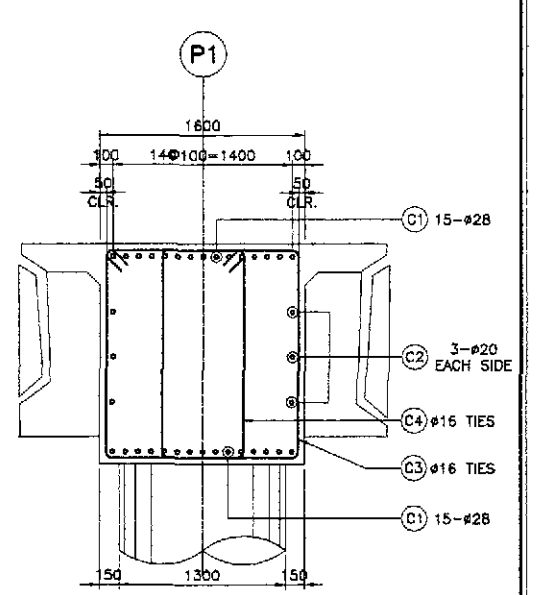


3A TOP BAR REINFORCEMENT
SCALE 1:50

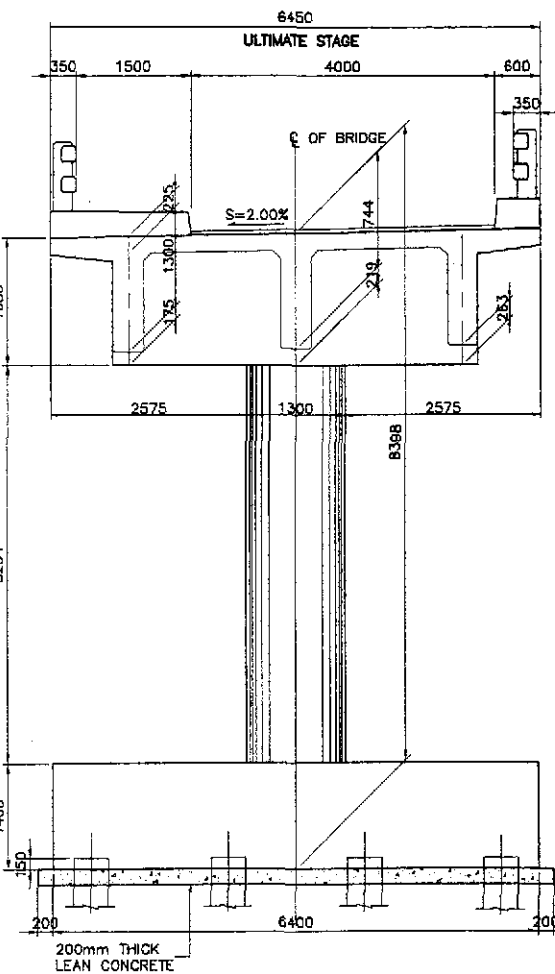


3B BOTTOM BAR REINFORCEMENT
SCALE 1:50

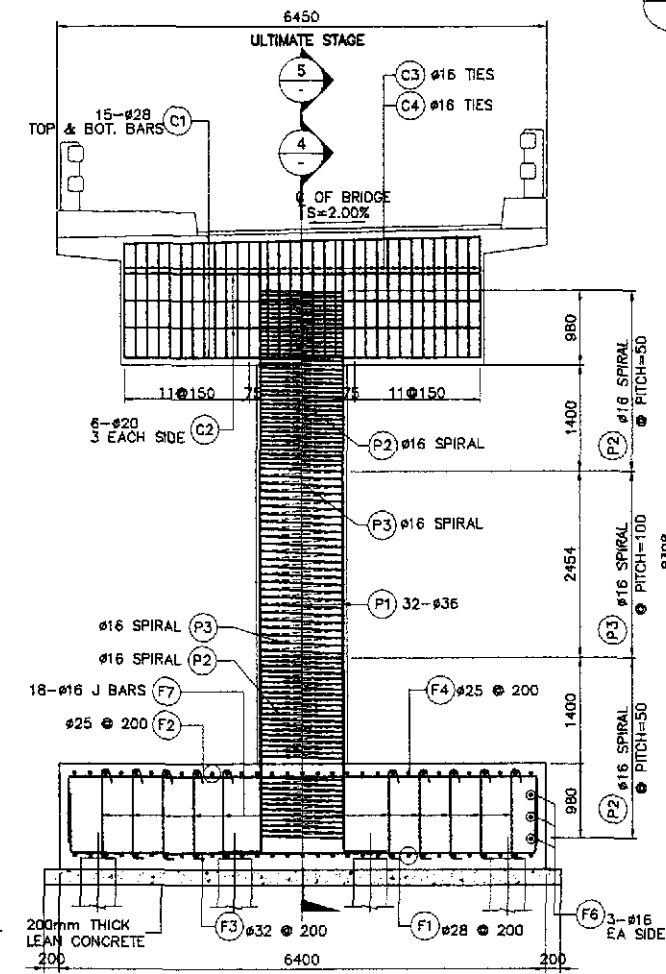
3 FOOTING PLAN
SCALE AS SHOWN



5 SECTION
SCALE 1:30

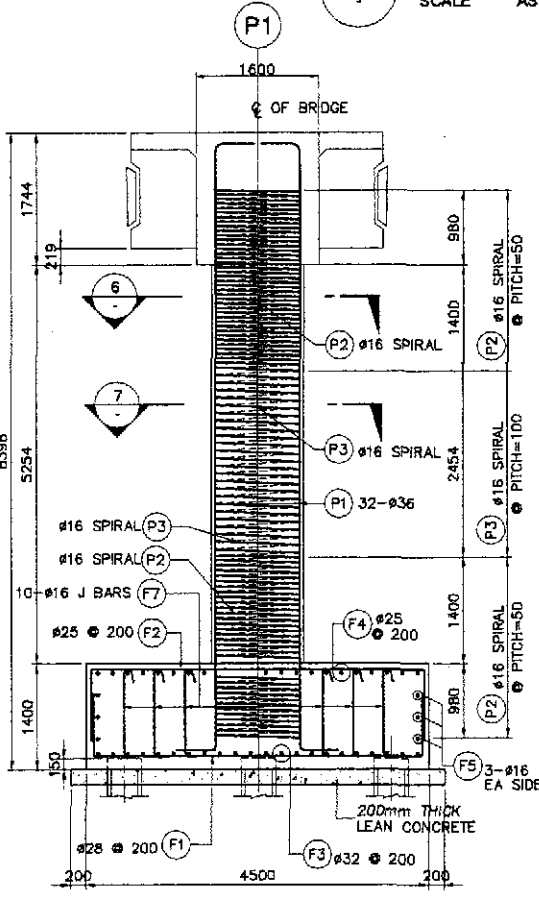


2A SHOWING DIMENSIONS
SCALE 1:50

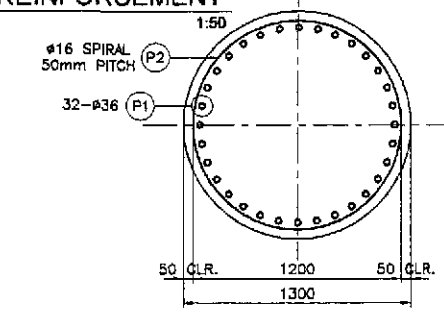


2B SHOWING REINFORCEMENTS
SCALE 1:50

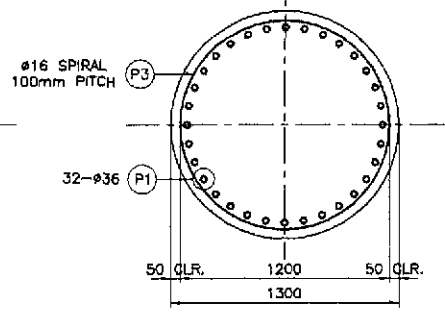
2 SECTIONAL ELEVATION
SCALE AS SHOWN



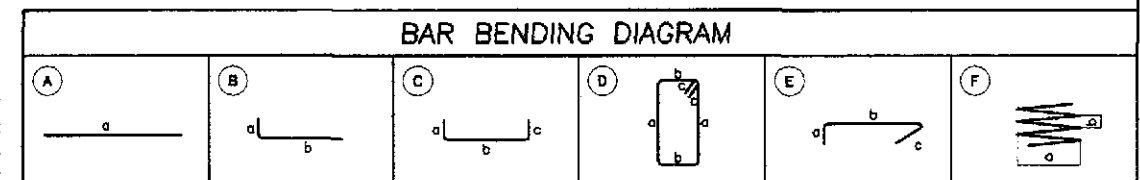
4 SECTION
SCALE 1:50



6 SECTION
SCALE 1:20



7 SECTION
SCALE 1:20



SCHEDULE OF REINFORCEMENT FOR ONE PIER															
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)	TOTAL WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d					
COPING	14.00	C1	28	30	AS SHOWN	(C)	1350	4900	1350	-	7600	228.00	4.833	1102	119.72
		C2	20	6	AS SHOWN	(A)	4900	-	-	-	4900	29.40	2.466	73	
		C3	16	28	AS SHOWN	(D)	1500	1690	100	-	6580	184.24	1.579	291	
		C4	16	28	AS SHOWN	(D)	580	1690	100	-	4740	132.72	1.579	210	
COLUMN	6.97	P1	36	32	AS SHOWN	(B)	500	7800	-	-	8800	281.60	7.891	2251	426.40
		P2	16	96	50	(F)	1200	50	-	-	3770	361.92	1.579	572	
		P3	16	25	100	(F)	1200	100	-	-	3770	94.25	1.579	149	
FOOTING	40.32	F1	28	32	200	(C)	1125	4350	1125	-	6600	211.20	4.833	1021	117.84
		F2	25	32	200	(C)	1125	4350	1125	-	6600	211.20	3.854	814	
		F3	32	23	200	(C)	1125	6250	1125	-	8500	195.50	6.313	1235	
		F4	25	23	200	(C)	1125	6250	1125	-	8500	195.50	3.854	754	
		F5	16	6	AS SHOWN	(A)	6250	-	-	-	6250	37.50	1.579	80	
		F6	16	6	AS SHOWN	(A)	4350	-	-	-	4350	26.10	1.579	42	
		F7	16	180	AS SHOWN	(E)	200	1100	150	-	2900	522.00	1.579	825	
TOTAL	61.29														

GRADE 40 TOTAL = 2,148 kgs.
GRADE 80 TOTAL = 7,250 kgs.

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS
INTERNATIONAL

YEO YACHYO ENGINEERING CO., LTD.

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

BUREAU OF DESIGN

OFFICE OF THE SECRETARY

DESIGNED: P. GONZALES
CHECKED: M. KAWASHI
SUBMITTED: M. KAWASHI

Submitted By: DANILLO C. TRAJANO
Project Director

Reviewed By: ADRIANO M. DORAY
Chief, Bridge Division

Recommended By: GILBERTO S. REYES
Director IV (D/C)

Recommended By: MANUEL M. BONJAN
Undersecretary

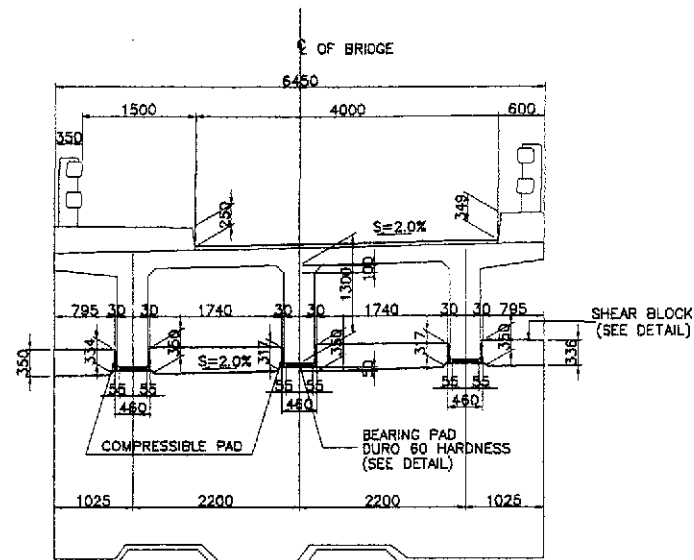
Approved By: SIMON A. DATUMANONG
Secretary

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

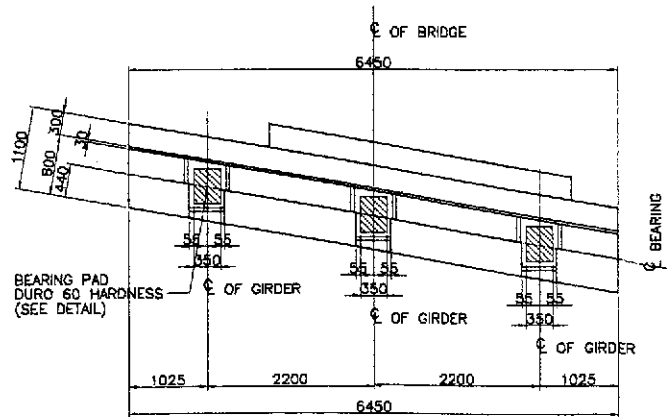
SCALE :
AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO. 4
PIER P1 & PIER P2
BAR ARRANGEMENT DETAILS
(ULTIMATE STAGE)

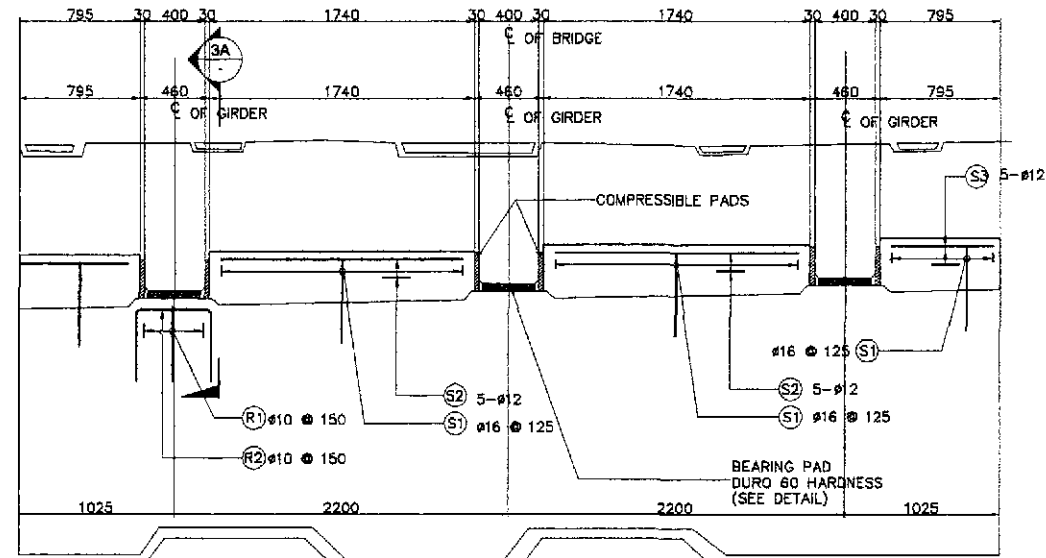
SHEET NO. :
B4-09



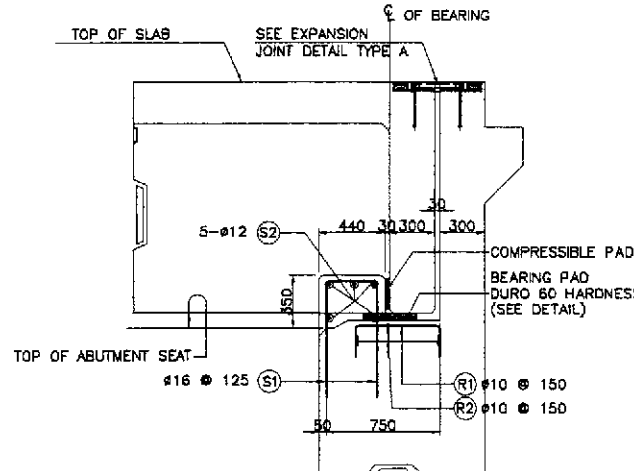
1 SECTION @ ABUTMENT SEAT
SCALE 1:100



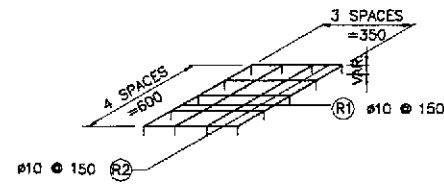
2 PLAN @ ABUTMENT SEAT
SCALE 1:100



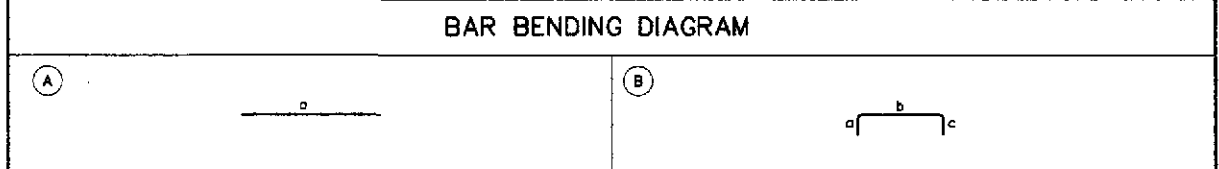
3 SHEAR BLOCK DETAIL
SCALE 1:50



3A SECTION
SCALE 1:50



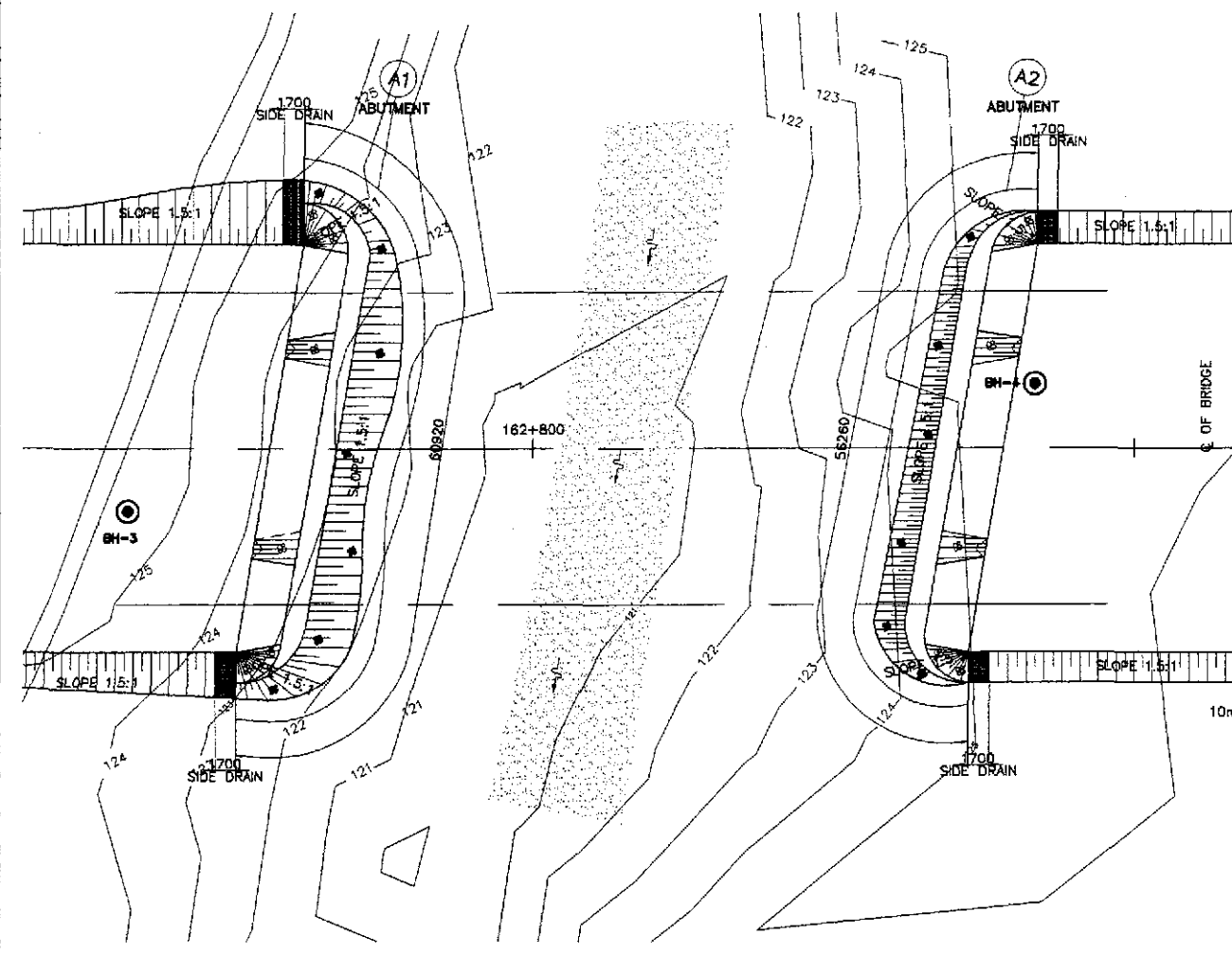
5 RISER REINFORCEMENT
NOT TO SCALE



SCHEDULE OF REINFORCEMENT																
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSION(mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d	e					
SHEAR KEY & RISER	0.83	S1	16	46	125	(B)	560	370	560			1480	68.54	1.579	109	191.57
		S2	12	10	AS SHOWN	(A)	1740					1740	17.40	0.888	16	
		S3	12	10	AS SHOWN	(A)	795					795	7.95	0.888	8	
		R1	10	12	150	(B)	500	450	500			1450	17.40	0.616	11	
		R2	10	15	150	(B)	500	600	500			1800	24.00	0.616	15	
TOTAL	0.83															GRADE 40 TOTAL = 158 Kgs

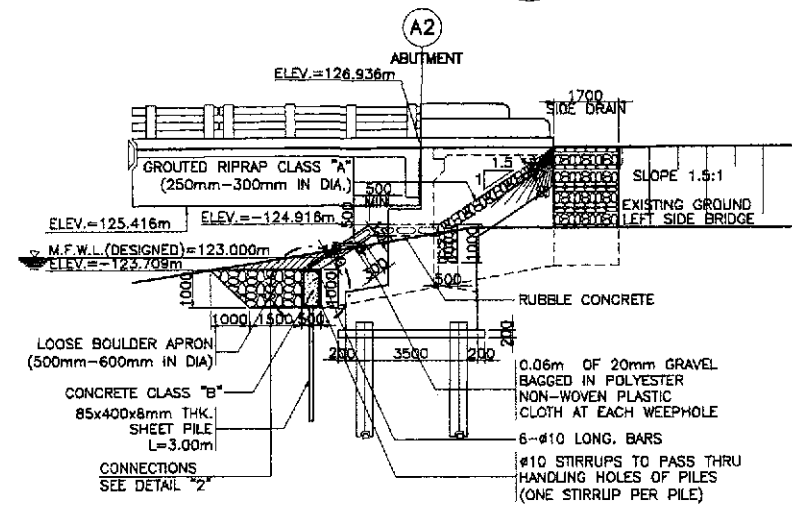
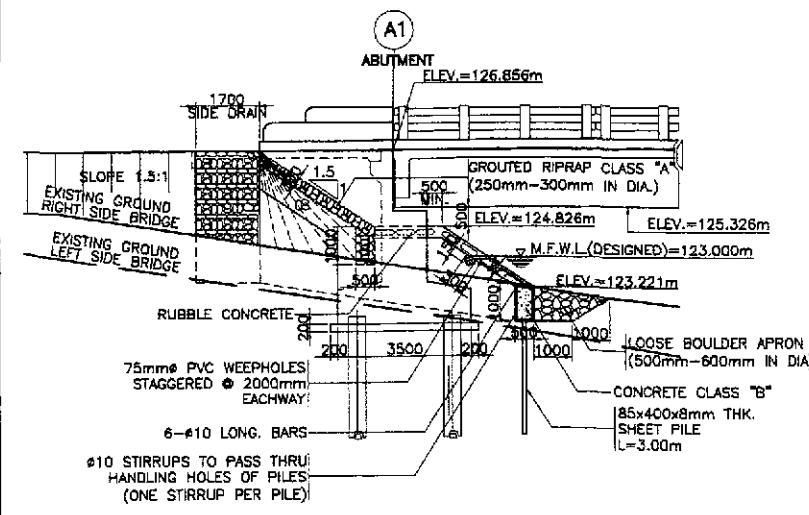
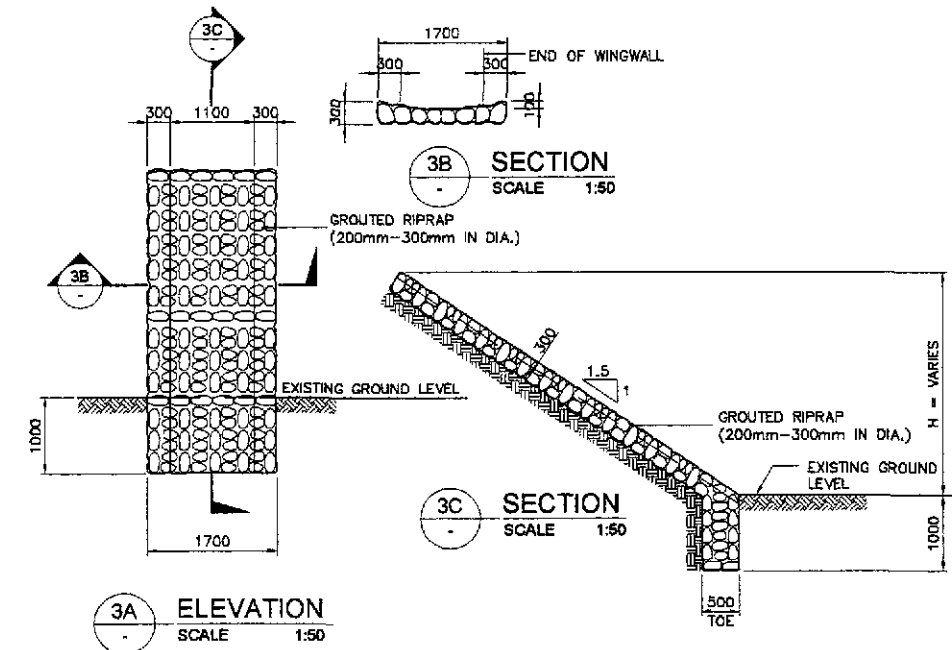
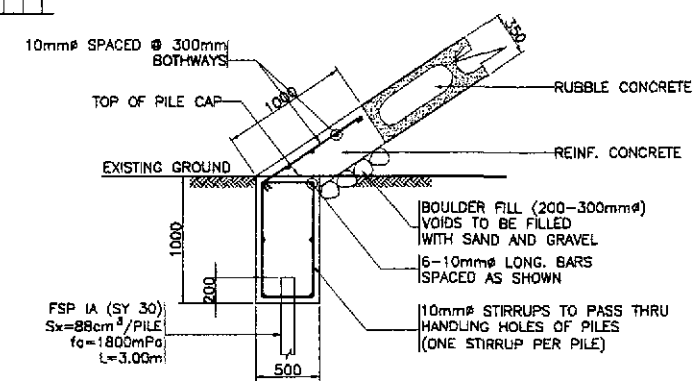
THE REINFORCEMENT SHOWN ON THIS TABLE IS FOR REFERENCE ONLY. THE CONTRACTOR SHOULD CHECKED AND VERIFY ALL DIMENSIONS, SIZES AND QUANTITIES OF REINFORCEMENT.

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS					PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/19/02	E. N. SALLAN		BUREAU OF DESIGN					THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pardol, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO.4 SHEAR KEY AND RISER DETAILS (ULTIMATE STAGE)	B4-10
	SUBMITTED	9/11/02	M. N. MURCIA		Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:	PULL SIZE A1			



- NOTES FOR RUBBLE CONCRETE:**
- RUBBLE CONCRETE SHALL BE CLASS "B" (1:2.5:5) MIX CONCRETE WITH BOULDERS EMBEDDED THEREIN. BOULDERS 250-300mm ϕ SHALL BE CAREFULLY HAND-LAID WITHIN THE CONCRETE SECTION. THE BOULDERS SHALL BE THOROUGHLY INCORPORATED INTO THE CONCRETE MASS WITH A COVER OF 30mm AND NOT LESS THAN 30mm APART. THE RUBBLE CONCRETE SHALL BE COMPOSED OF 40% CLASS "B" CONCRETE 60% BOULDERS.
 - FOR THE LOOSE BOULDER APRON, BOULDERS 500-600mm ϕ SHALL BE HAND-LAID, CLOSE TOGETHER AND SHALL BE FIRMLY BEDDED. ALL VOIDS BETWEEN BOULDERS SHALL BE FILLED WITH GRAVEL AND THE JOINTS FILLED WITH TIGHTLY DRIVEN SPALLS.
 - CURTAIN WALLS SHALL BE USED AT BOTH ENDS OF THE LOOSE BOULDER APRON BANK PROTECTION WORKS. BOULDERS SHALL BE CAREFULLY HAND-LAID AND EMBEDDED INTO THE CONCRETE SECTION.
 - NO CONCRETING UNDER WATER SHALL BE PERMITTED.
 - PROVIDE 1.0 m. BERM WHEN HEIGHT (H) IS > 4.0 m.

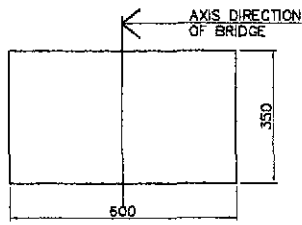
- GENERAL NOTES:**
- GROUTED RIPRAP (250mm-300mm DIA.) SHALL BE USED FOR THE FACING AND SHALL BE CAREFULLY HANDLAID WITH THE LONGEST DIMENSIONS PERPENDICULAR TO THE SLOPE AND FIRMLY BEDDED INTO THE SLOPE AND ADJACENT TO THE ADJOINING BOULDERS SPACED BETWEEN THE BOULDERS. THE SPACE BETWEEN THE BOULDERS 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.
 - WIRE MESH GABIONS
 - WIRE-THE WIRE MESH SHALL BE MADE OF GALVANIZED STEEL HAVING A MINIMUM SIZE OF 3.40mm DIAMETER (U.S. WIRE GAUGE NO.11) THE TENSILE STRENGTH OF THE WIRE SHALL BE IN THE RANGE OF 413.70 TO 586.10 MPa. (60,000 TO 85,000 Psi) THE MINIMUM ZINC COATING OF THE WIRE SHALL BE 22.70 GRAMS PER 0.0929m² OF UNCOATED WIRE SURFACES AS DETERMINED BY TEST CONDUCTED IN ACCORDANCE WITH AASHTO T85.
 - ROCK FILL - ROCK USED IN THE GABIONS SHALL CONSIST OF HARD, DURABLE ROCK PIECES THAT WILL NOT DETERIORATE WHEN SUBMERGED IN WATER OR EXPOSED TO SEVERE WEATHER CONDITIONS. ROCK PIECES SHALL BE GENERALLY UNIFORMLY GRADED IN SIZES RANGING FROM 100mm TO 200mm. FILLED GABIONS SHALL HAVE A MINIMUM DENSITY OF 1,400kg./m³. VOIDS SHALL BE EVENLY DISTRIBUTED. THE ROCKS SHALL MEET THE REQUIREMENTS OF AASHTO M63 EXCEPT THAT THE SODIUM SULFATE SOUNDNESS LOSS SHALL NOT EXCEED 9% AFTER 5 CYCLES.
 - 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
 - ROCK 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.



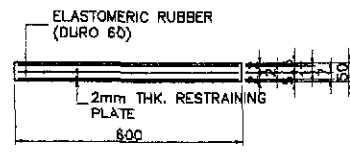
1 ABUTMENT SLOPE PROTECTION DETAIL
SCALE AS SHOWN

VELOCITY (m/sec)	ROCK SIZE (mm)		LOCATION	SIZES	PER ABUTMENT QUANTITY	
	VERY TURBULENT FLOW	SMOOTH FLOW			ABUT. A1	ABUT. A2
1.00	40	-	CONC. CLASS "B"	1000 x 500 x LENGTH	19.88 cu. m.	17.46 cu. m.
1.50	135	-	GROUTED RIPRAP	250mm - 300mm IN DIA.	24.62 cu. m.	22.03 cu. m.
2.00	170	-	BOULDER APRON	500mm - 600mm IN DIA.	59.57 cu. m.	52.38 cu. m.
2.50	255	137	RUBBLE CONCRETE	250mm - 300mm IN DIA.	49.34 cu. m.	27.89 cu. m.
3.00	370	197	SHEET PILE	85 x 400 x 8mm THK.	87 pcs.	76 pcs.
3.50	515	270	SIDE DRAIN	200mm ~ 300mm IN DIA.	7.34 cu. m.	4.88 cu. m.
4.00	690	350				
4.50	825	425				
5.00	>900	590				

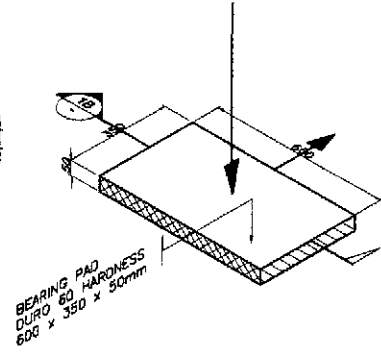
		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : BRIDGE NO. 4 ABUTMENT PROTECTION AND SIDE DRAIN DETAILS (ULTIMATE STAGE)	SHEET NO. : B4-11
DESIGNED	DATE	SIGNATURE	Submitted By:	Reviewed By:	Recommended By:	Approved By:			
CHECKED	9/5/02	P. GONZALES	DANILLO C. TRAJANO	PERFECTO L. ZAPLAN JR.	GILBERTO S. REYES	MANUEL M. BONDAN			
SUBMITTED	7/11/02	M. KUICK	Project Director	Chief, Hydraulics Division (RC)	Director IV (OIC)	SIMEON A. DATUMANONG			



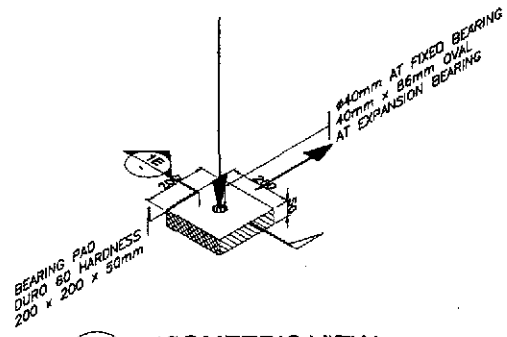
1A PLAN SCALE 1:10



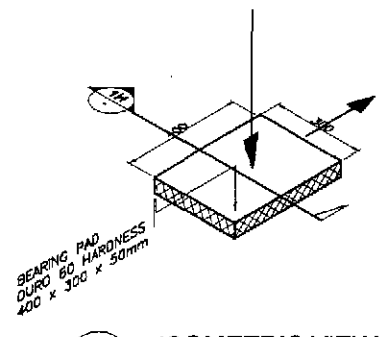
1B ELEVATION SCALE 1:10



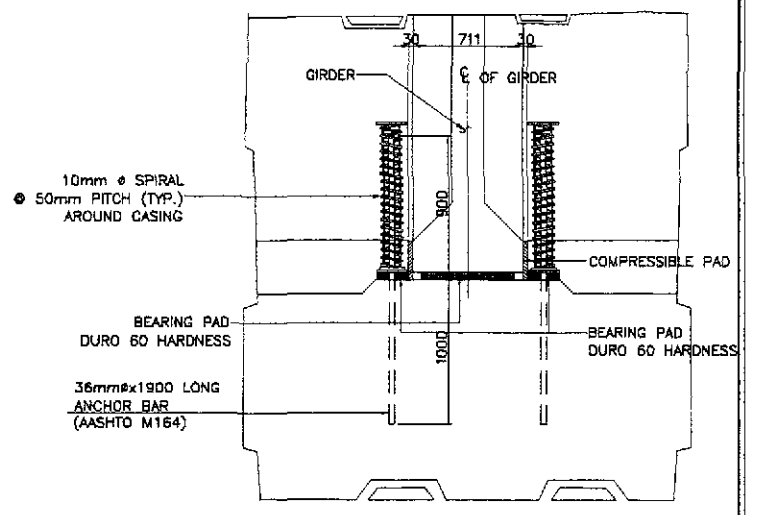
1C ISOMETRIC VIEW



1F ISOMETRIC VIEW

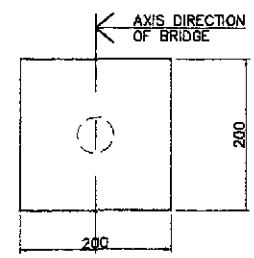


1I ISOMETRIC VIEW

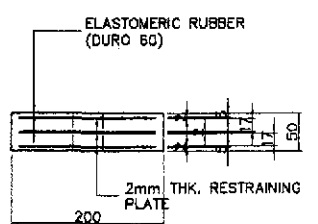


3A ANCHOR BAR SCALE 1:25

1 BEARING PAD DETAIL SCALE AS SHOWN

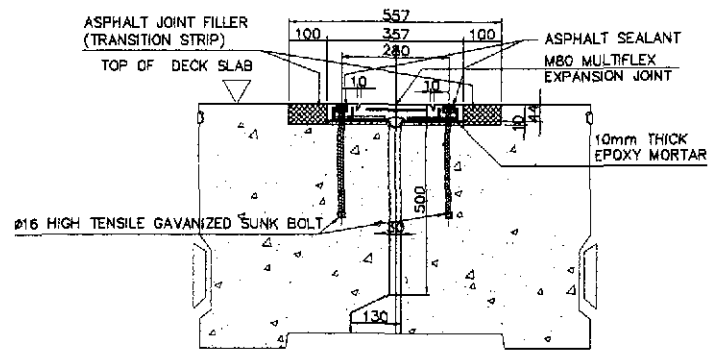


1D PLAN SCALE 1:5

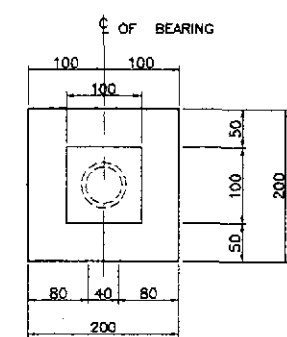


1E ELEVATION SCALE 1:5

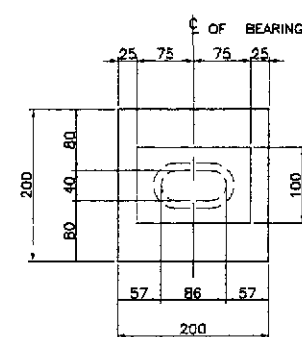
1C ISOMETRIC VIEW



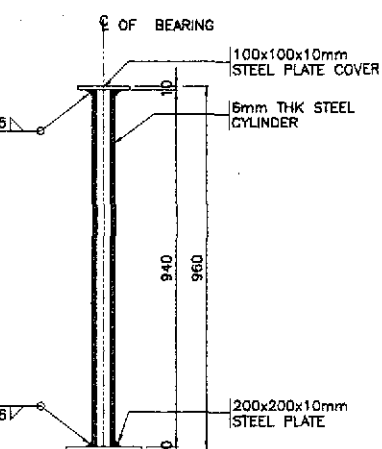
2B SECTION (TYPE A) SCALE 1:10



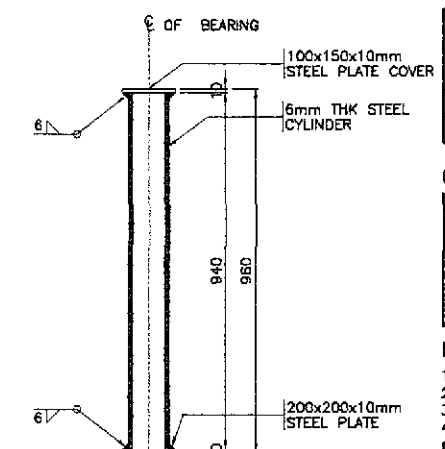
3B PLAN



3C PLAN



3B FIXED BEARING SCALE 1:10



3C EXPANSION BEARING 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

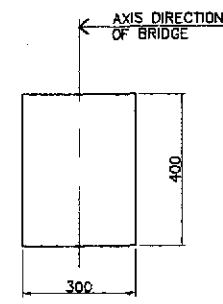
PROPERTY	SPECIFICATION
DIMENSION	ACCORDING TO PRODUCT DRAWING
SURFACE APPEARANCE	NO VISIBLE CRACK
RUBBER COVER HARDNESS (SHORE A)	50 ± 5

INSTALLATION MATERIALS

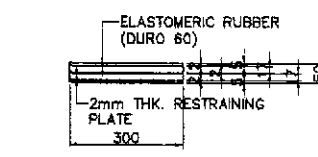
- EPOXY BEDDING
- EPOXY NOSING
- BOLT/NUTS
- SEALANT

LOCATION	EXPANSION JOINT TYPE	MOVEMENT (mm)	LENGTH (m)
BRIDGE 1	MULTIFLEX 80	30	26
BRIDGE 2	MULTIFLEX 80	30	26
BRIDGE 3	MULTIFLEX 80	30	26
BRIDGE 4	MULTIFLEX 80	30	26

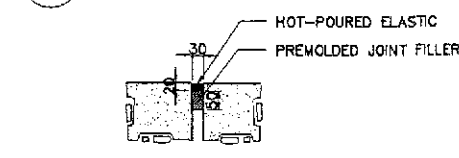
LOCATION	ELASTOMERIC BEARING PAD SIZE	QUANTITY
BRIDGE 1	600x350x50	12 PCS.
BRIDGE 2	600x350x50	12 PCS.
BRIDGE 3	600x350x50	12 PCS.
BRIDGE 4	400x300x50	12 PCS.



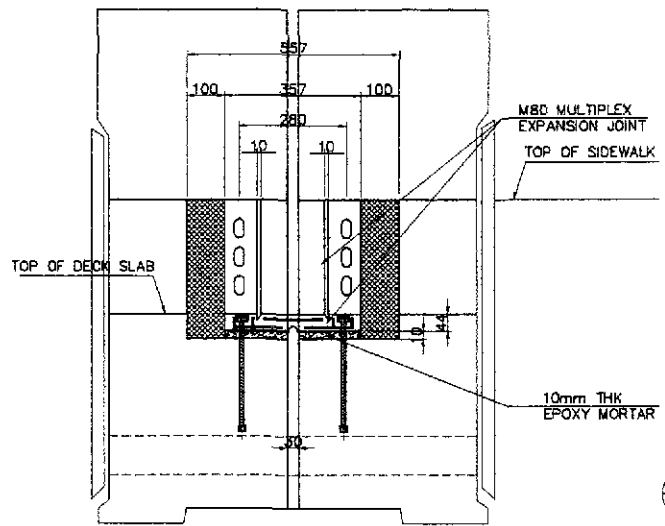
1G PLAN SCALE 1:5



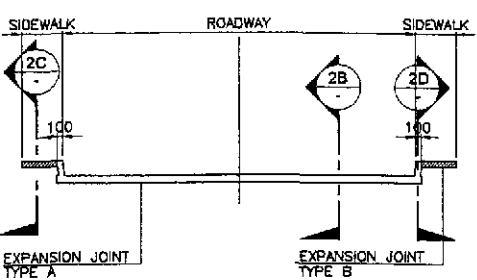
1H ELEVATION SCALE 1:5



2C SECTION (TYPE B) SCALE 1:10



2D SECTION (TYPE A) SCALE 1:10



2A ELEVATION

2 EXPANSION JOINT DETAIL SCALE AS SHOWN

3 BEARING SLEEVE AND ANCHOR BAR DETAIL SCALE AS SHOWN

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL
YACHIO ENGINEERING CO., LTD.

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

DESIGNED: 9/5/12 E.N. SALLAN
CHECKED: 9/12/12
SUBMITTED: 9/11/12

PROJECT DIRECTOR: DANILLO C. TRAJANO
CHIEF, BRIDGES DIVISION: ADRIANO M. DOROY
DIRECTOR IV (OIC): GILBERTO S. REYES

OFFICE OF THE SECRETARY
RECOMMENDED BY: MANUEL M. BONDAN
APPROVED BY: SIMEON A. DATUMANONG

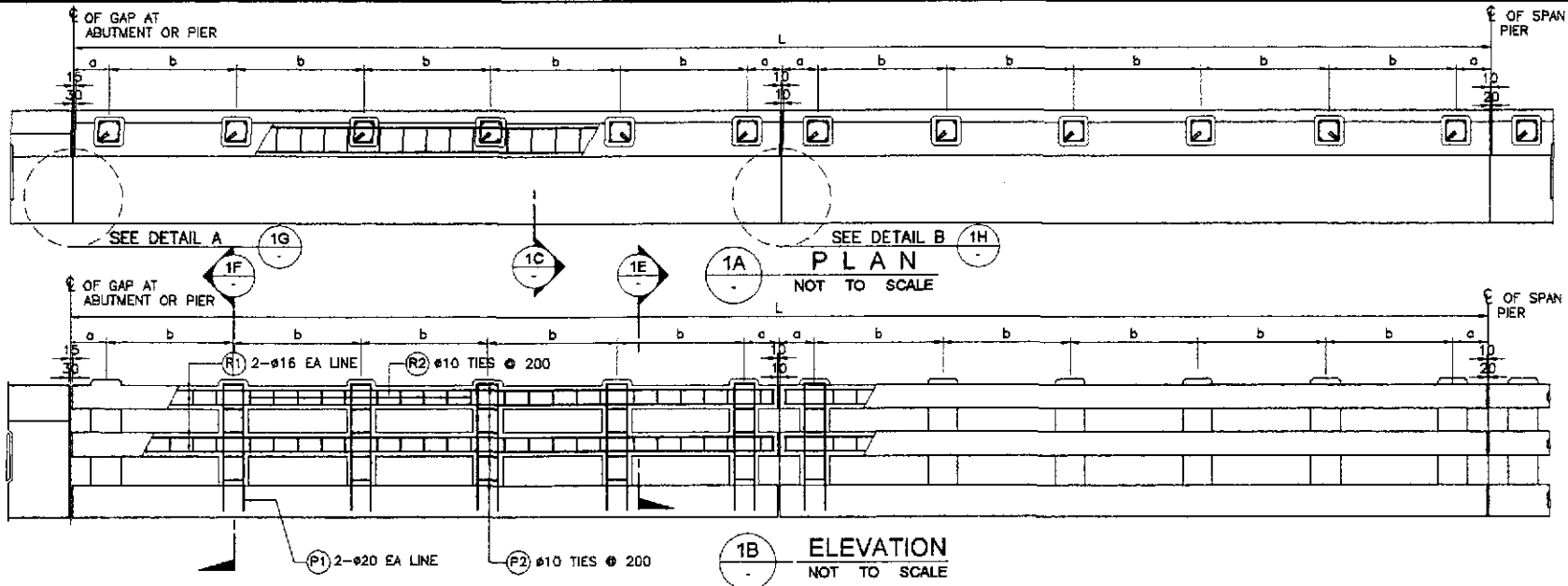
PROJECT AND LOCATION:
THE DETAILED DESIGN STUDY ON
UPGRADING INTER-URBAN HIGHWAY SYSTEM
ALONG THE PAN-PHILIPPINE HIGHWAY
(Plaridel, Cabanatuan and San Jose Bypasses)

SAN JOSE BYPASS

SCALE: AS SHOWN / FULL SIZE A1

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

SHEET NO.: BS-01



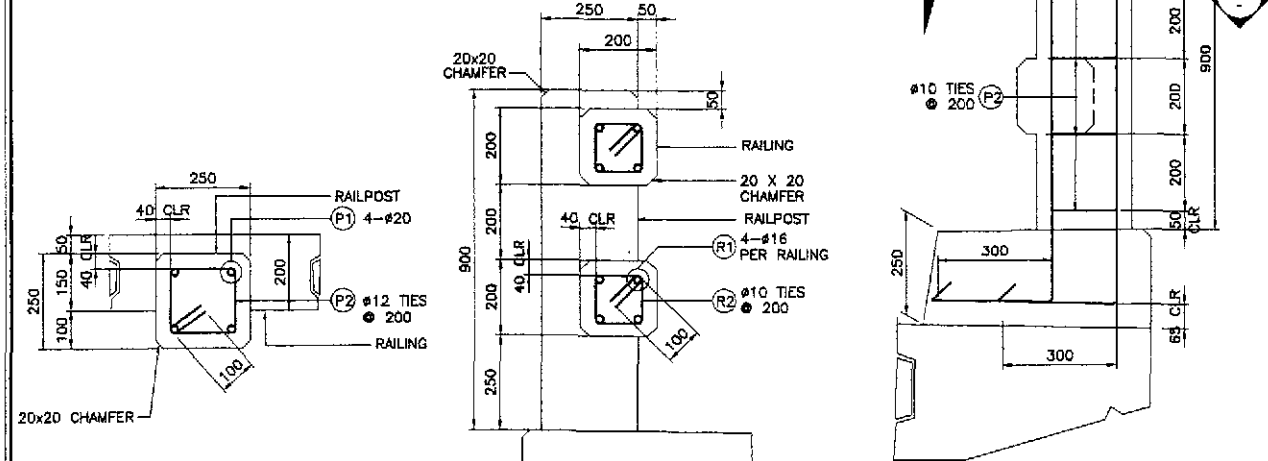
BAR BENDING DIAGRAM

SCHEDULE OF REINFORCEMENT (POST, RAILING AND SIDEWALK)

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)		
							a	b	c	d	e						
POST	2.70	P1	20	192	AS SHOWN	B	1045	450	-	-	-	1495	287.04	2.466	708		
		P2	12	240	200	C	170	170	100	-	-	880	211.20	0.888	181		
													GRADE 40 TOTAL = 181 kgs.				
RAILING	6.40	R1	16	16	AS SHOWN	A	41200	-	-	-	-	41200	659.20	1.579	1041		
		R2	10	720	200	C	120	120	100	-	-	680	489.60	0.616	302		
													GRADE 40 TOTAL = 1,343 kgs.				
SIDEWALK	24.50	SW1	12	14	AS SHOWN	A	41200	-	-	-	-	41200	576.80	0.888	513		
		SW2	16	200	200	B	170	1730	400	-	-	2300	460.00	1.579	727		
		SW3	12	200	400	B	400	250	-	-	-	650	130.00	0.888	116		
		SW4	12	100	400	E	170	1730	170	-	-	2110	211.00	0.688	188		
		SW5	12	8	AS SHOWN	A	41200	-	-	-	-	-	41200	320.60	0.888	293	
		SW6	16	200	200	D	170	480	400	-	-	1050	210.00	1.579	332		
		SW7	12	100	400	E	170	520	170	-	-	860	86.00	0.888	77		
													GRADE 40 TOTAL = 2,248 kgs.				
TOTAL	33.60														GRADE 40 GRAND TOTAL = 3,770 kgs.		
													GRADE 60 GRAND TOTAL = 708 kgs.				

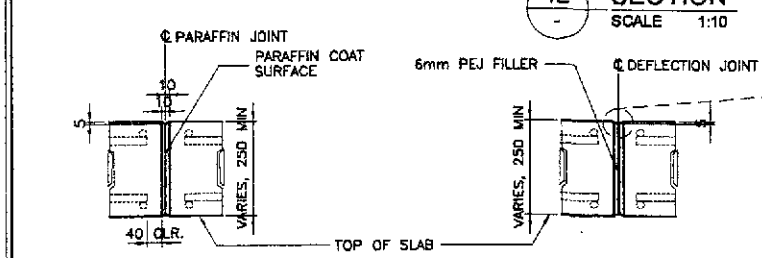
RAILING FOR BRIDGES

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.1 L&R BR.2 L&R BR.3 L	40.00	3	6	48	20075	250	1902
BR. 3 R	15.75	1	5	20	15765	250	1846
	24.00	2	5	30	24000	250	1875
BR. 4 L&R	15.75	1	5	20	15765	250	1846
	21.00	2	5	30	21000	250	1625



1D DETAIL SCALE 1:10

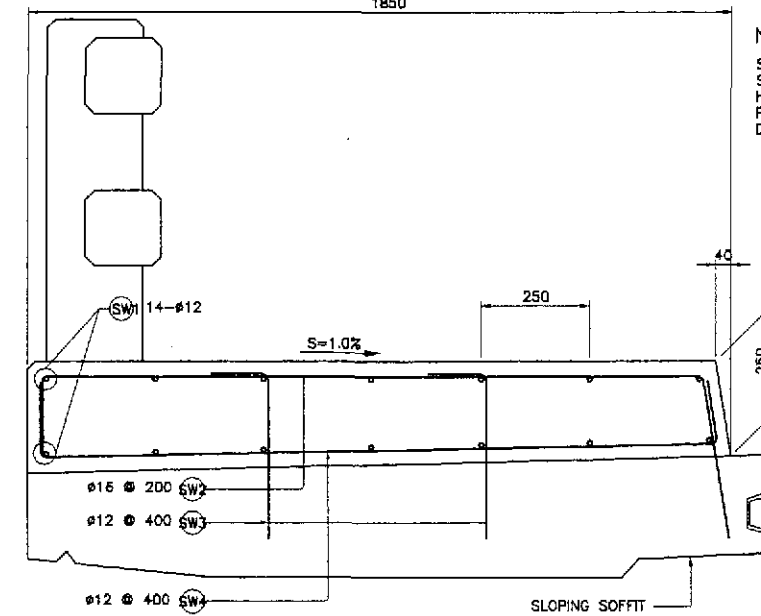
1F SECTION SCALE 1:10



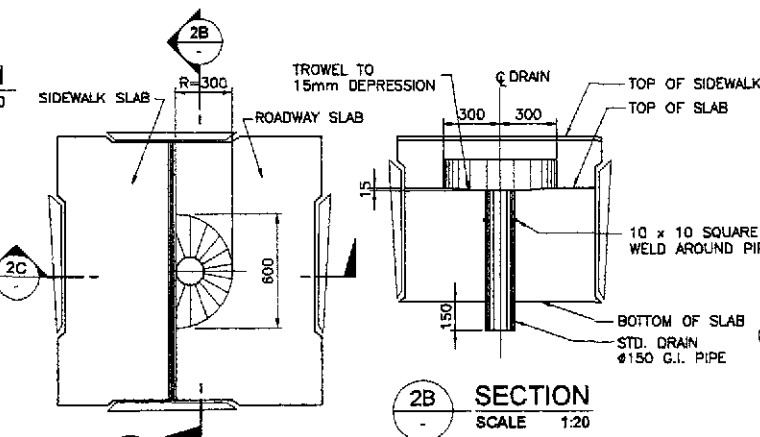
1G DETAIL A PARAFFIN JOINT NOT TO SCALE

1H DETAIL B DEFLECTION JOINT NOT TO SCALE

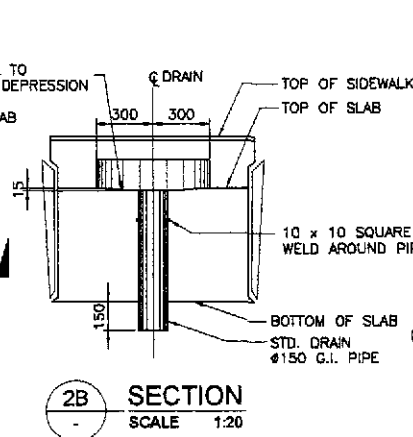
1 TYPICAL RAILING AND SIDEWALK DETAILS SCALE AS SHOWN



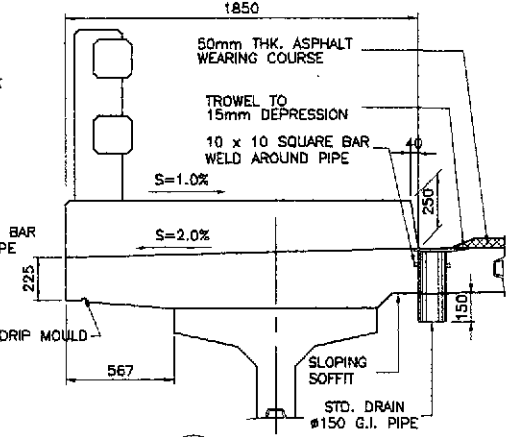
1C SIDEWALK DETAIL SCALE 1:10



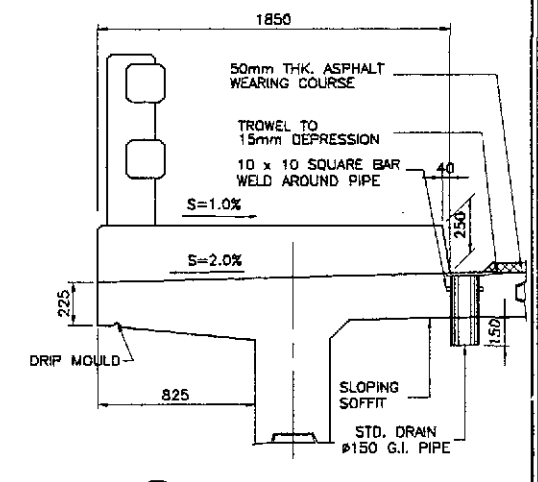
2A SECTION SCALE 1:20



2B SECTION SCALE 1:20



2C SECTION FOR BRIDGE 1 TO 3 SCALE 1:20

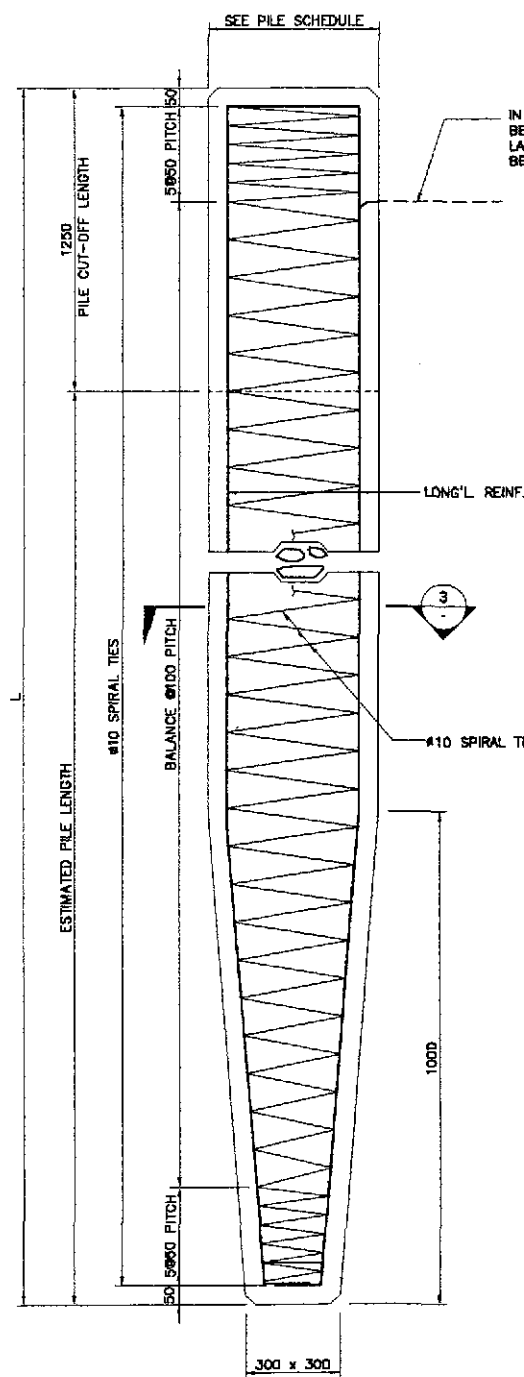


2D SECTION FOR BRIDGE 4 SCALE 1:20

2 TYPICAL DRAIN DETAILS SCALE 1:20

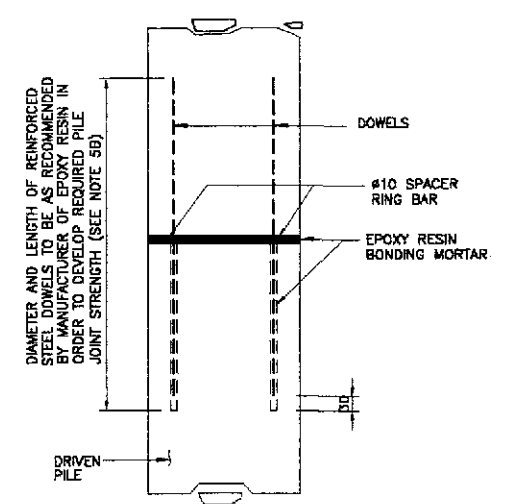
NOTE :
SIDEWALK SHALL BE PLACED AFTER THE SHORING UNDER THE SUPERSTRUCTURE HAS BEEN RELEASED SUFFICIENTLY TO PERMIT THE SPANS TO ATTAIN FULL DEAD LOAD DEFLECTION.

		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 : BRIDGE NO. 1,2,3 & 4 TYPICAL SIDEWALK, RAILING AND DRAINAGE DETAILS (ULTIMATE STAGE)	SHEET NO. : BS-02
DESIGNED : <i>[Signature]</i> CHECKED : <i>[Signature]</i> SUBMITTED : <i>[Signature]</i>	DATE : 9/5/02	SIGNATURE : <i>[Signature]</i>	DESIGNED BY : FJHL - PMO	REVIEWED BY : DANILO C. TRAJANO Project Director	RECOMMENDED BY : ADRIANO M. DORDY Chief, Bridges Division	RECOMMENDED BY : GILBERTO S. REYES Director IV (D/C)	RECOMMENDED BY : MANUEL M. BONOAN Undersecretary	APPROVED BY : SIMEON A. DATUMANONG Secretary	FULL SIZE A1	

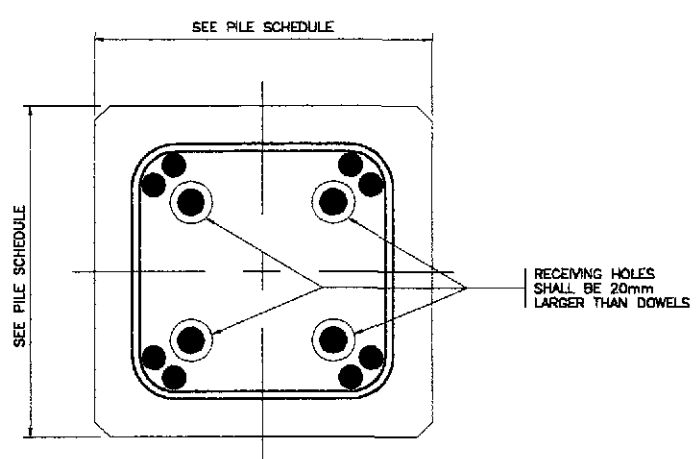


1 PILE ELEVATION
NOT TO SCALE

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

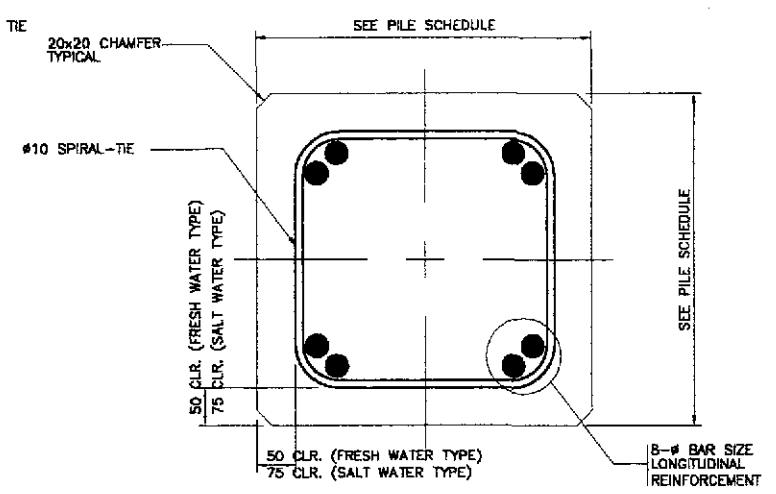


2A ELEVATION
N T S

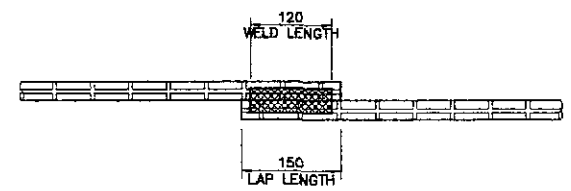


2B SECTION
N T S

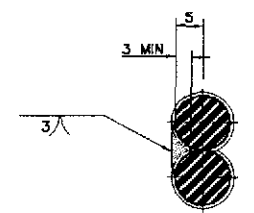
2 PILE SPLICE DETAIL
NOT TO SCALE



3 SECTION
NOT TO SCALE

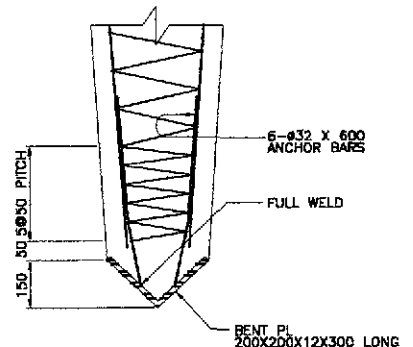


5A ELEVATION
N T S



5B SECTION
N T S

5 WELDED SPIRAL TIE SPLICE DETAIL
NOT TO SCALE



4 PILE TIP FOR HARD DRIVING
NOT TO SCALE

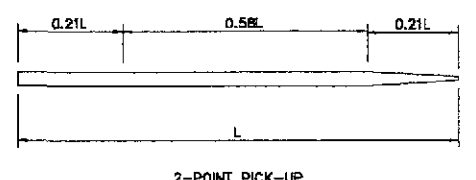
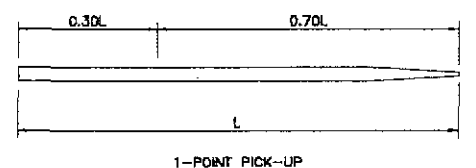
NOTES

- CONCRETE :
CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF CLASS AA CONCRETE WITH 28 MPa CYLINDER STRENGTH AND 19.0mm MAXIMUM AGGREGATE SIZE.
- REINFORCEMENT :
A. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASSHTM #31 (ASTM A815) GRADE 40 AND 60.
B. SPLICES OF ADJACENT LONGITUDINAL STEEL SHALL BE STAGGERED 100 BAR DIAMETERS APART. LENGTH OF SPLICES SHALL BE 1000mm FOR #25 AND 1300mm FOR #28 AND 1700mm FOR #32.
C. SPIRAL-TIES SHALL BE WELDED AT SPLICES.
- DRIVING :
A. PILE HEADS SHALL BE PROTECTED FROM DIRECT IMPACT OF THE HAMMER BY CUSHION BLOCKS CONSISTING OF SEVERAL BLOCKS OF WOOD OR OF OTHER APPROVED MATERIALS.
B. PILES SHALL BE DRIVEN TO A DEPTH THAT WILL PRODUCE THE REQUIRED ALLOWABLE BEARING CAPACITY.
- PILE FOUNDATION DESIGN:
A. IN PILE-BENT PIERS, PILE LENGTHS SHALL BE DETERMINED BY THE ENGINEER/CONSULTANT BASED ON THE ALLOWABLE PILE BEARING CAPACITY SPECIFIED BELOW.
B. IN COLUMN-BENT PIERS, THE NUMBER, LOCATION AND LENGTH OF PILES SHALL BE DETERMINED BY THE ENGINEER/CONSULTANT BASED ON THE LOADING INFORMATION GIVEN IN THE PIER DETAILS.
- PILE SPLICE :
A. PILES MAY BE SPLICED ONLY IF STRICTLY NECESSARY AND APPROVED BY THE ENGINEER/CONSULTANT. PILE SPLICES SHALL BE LOCATED AT LEAST 10m BELOW THE EXISTING GROUND LEVEL.
B. PILE SPLICE SHALL DEVELOP 100% AXIAL, AND 50% BENDING OF THE CAPACITY OF THE PILE SECTION WHERE THE SPLICE IS LOCATED.
- ALLOWABLE PILE BEARING CAPACITY : (SEE PILE SCHEDULE)
- MINIMUM HAMMER ENERGY RATING = 55 kN-m
- BASIS FOR COMPUTING ALLOWABLE PILE BEARING CAPACITY:

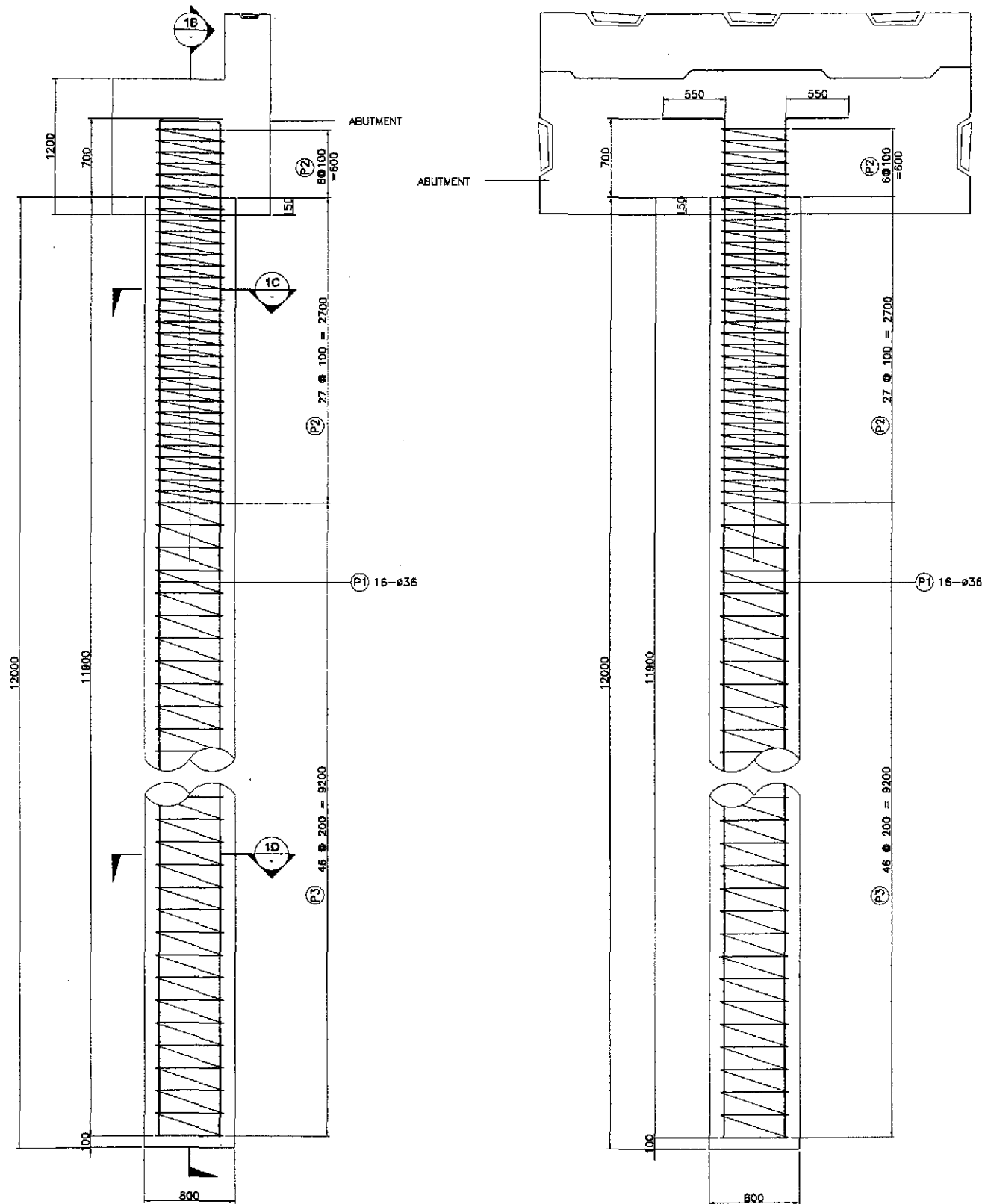
$$P_{all} = \left(\frac{167 e_h E_h}{S + 2.54} \right) \left(\frac{W_r + 0.18 W_p}{W_r + W_p} \right)$$

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)

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



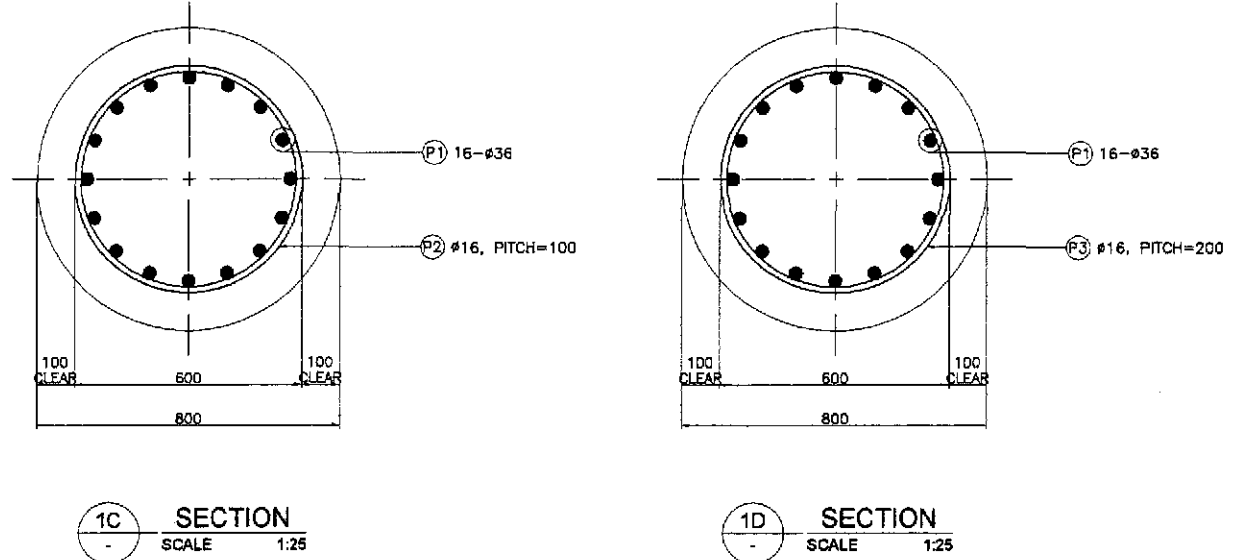
THE USE OF SPECIAL EMBEDDED OR ATTACHED LIFTING DEVICES SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER/CONSULTANT.



1A ELEVATION
SCALE 1:25

1B SECTION
SCALE 1:25

1 ABUTMENT BORED PILE REINFORCEMENT DETAILS
SCALE AS SHOWN



1C SECTION
SCALE 1:25

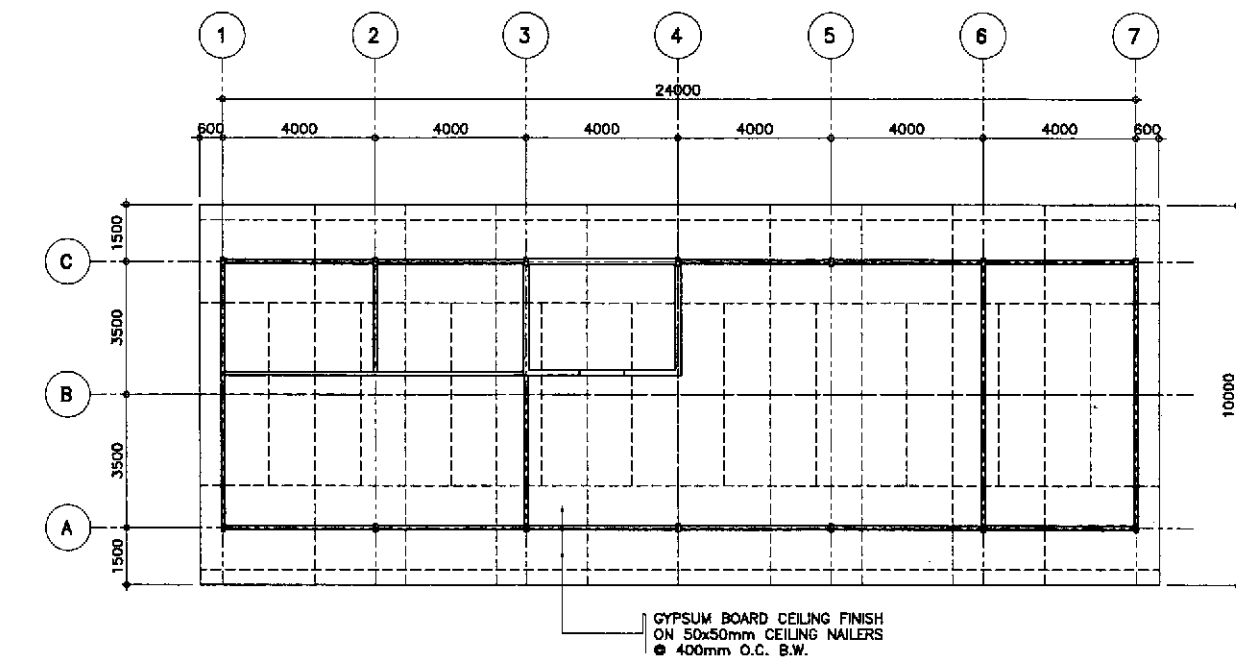
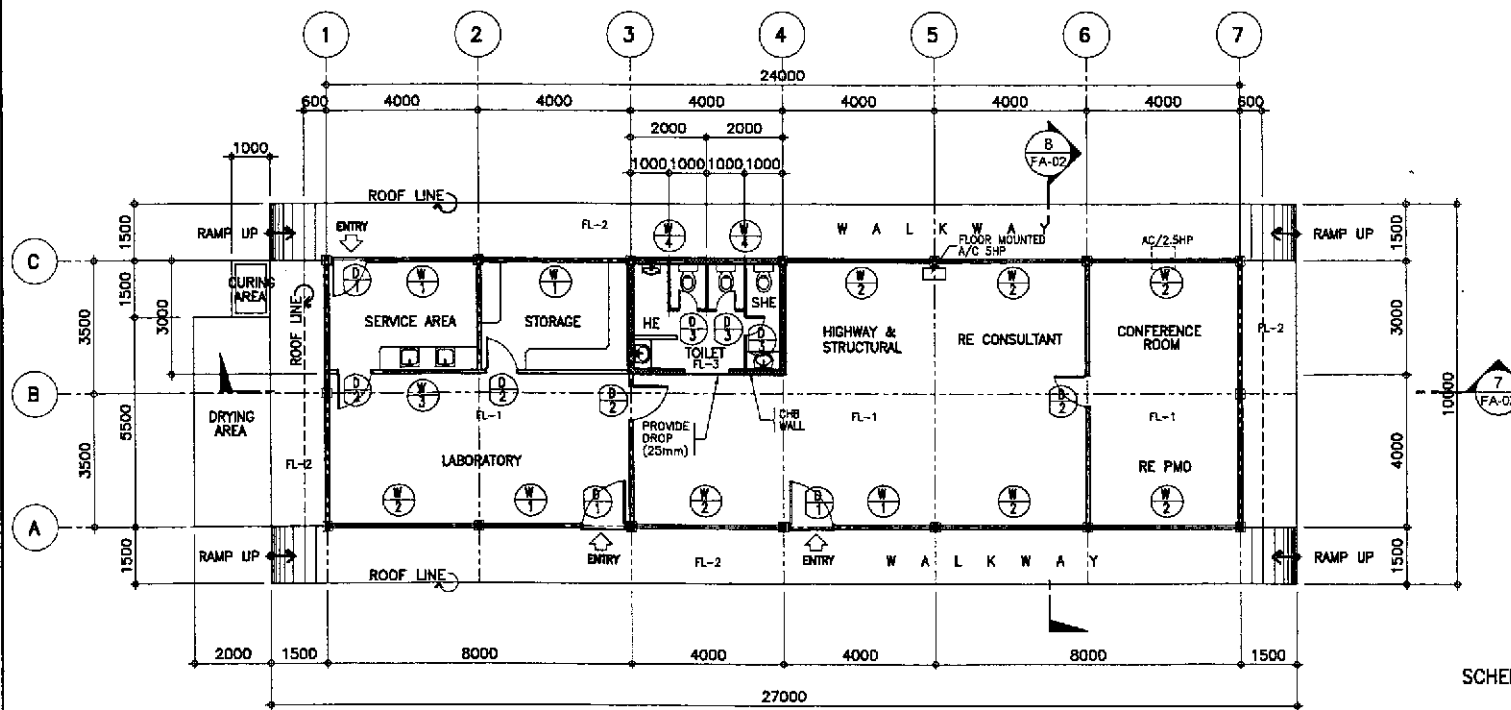
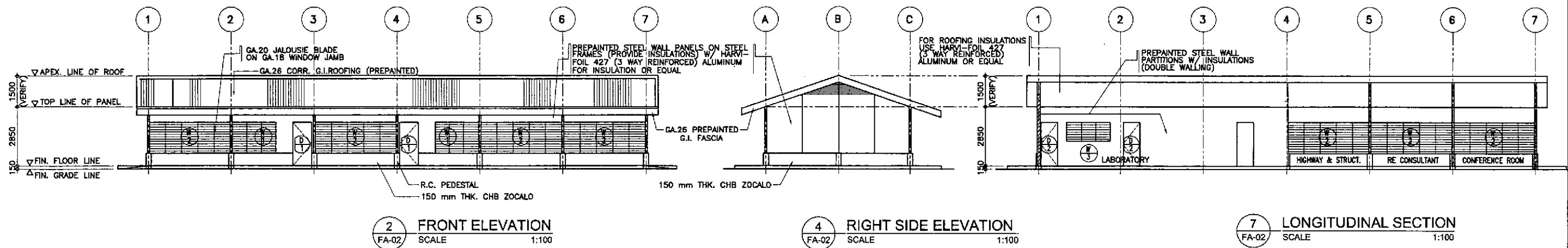
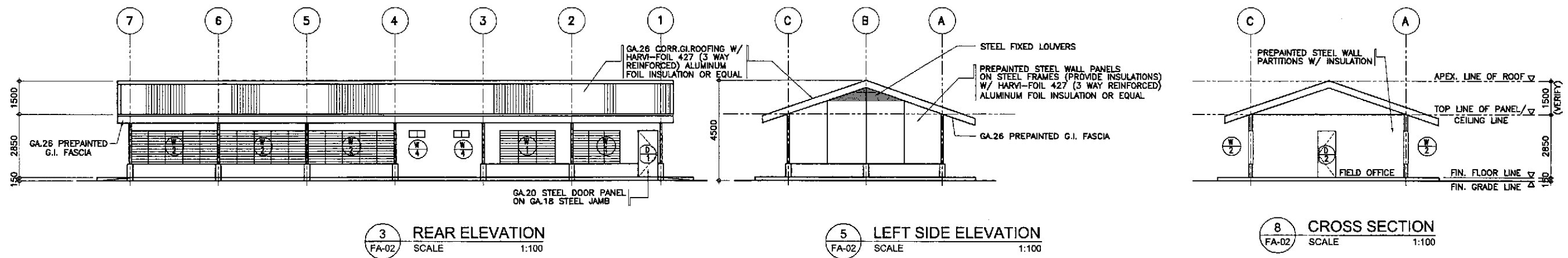
1D SECTION
SCALE 1:25

NOTES ON BORED PILE:
 BOTTOM OF PILES SHALL BE EMBEDDED AT LEAST FOUR TIMES THE PILE DIAMETER (4D) INTO HARD STRATA WITH AN ULTIMATE BEARING CAPACITY OF 2600 kN FOR BOTH ABUTMENTS.
 INTEGRITY TESTING SHALL BE CONDUCTED IN AT LEAST 50% OF THE TOTAL NUMBER OF PILES TO VERIFY/CHECKED THE CONCRETE HOMOGENEITY AND TO LOCATE/EVALUATE FOR ANY POSSIBLE IRREGULARITIES IN THE COMPLETED BORED PILE. HIGH STRAIN DYNAMIC TEST PILE SHALL BE CONDUCTED PER BRIDGE TO DETERMINE/CHECK THE ACTUAL BEARING CAPACITY OF THE COMPLETED BORED PILES.

BAR BENDING DIAGRAM																	
A		B															
SCHEDULE OF REINFORCEMENT PER BORED PILE																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE (DIA.)	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)	
BORED PILE	6.04	P1	36	16	AS SHOWN	A	12600	550	-	-	-	-	13150	210.40	7.991	1682	341.40
		P2	16	33	AS SHOWN	B	600	100	-	-	-	-	1900	62.70	1.579	100	
		P3	18	92	AS SHOWN	B	600	200	-	-	-	-	1900	174.80	1.579	277	
TOTAL	6.04											GRADE 40 TOTAL = 377 kgs		GRADE 60 TOTAL = 1682 kgs			

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/5/02	E. N. SALLAN		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.1, 2 & 3 ABUTMENT BORED PILE REINF. DETAILS (LEFT AND RIGHT PORTION) (ULTIMATE STAGE)	BS-04
	SUBMITTED	9/16/02	MANUEL M. BONDAN		OFFICE OF THE SECRETARY				FULL SIZE A1			
Submitted By:		Reviewed By:		Recommended By:		Approved By:						
DANILO C. TRAJANO Project Director		ADRIANO M. DOROY Chief, Bridges Division		GILBERTO S. REYES Director IV (DIC)		MANUEL M. BONDAN Undersecretary		SIMEON A. DATUMANONG Secretary				

ENGR'S FIELD OFFICE & LIVING QUARTERS



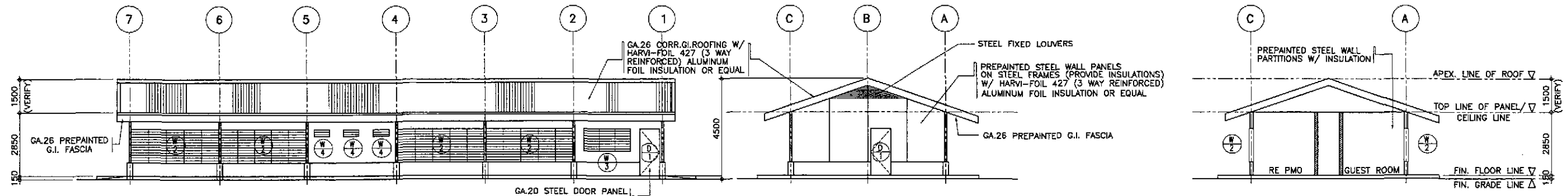
SCHEDULE OF FLOOR FINISHES

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

ARNEL P. GONZALES
ENGINEER

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

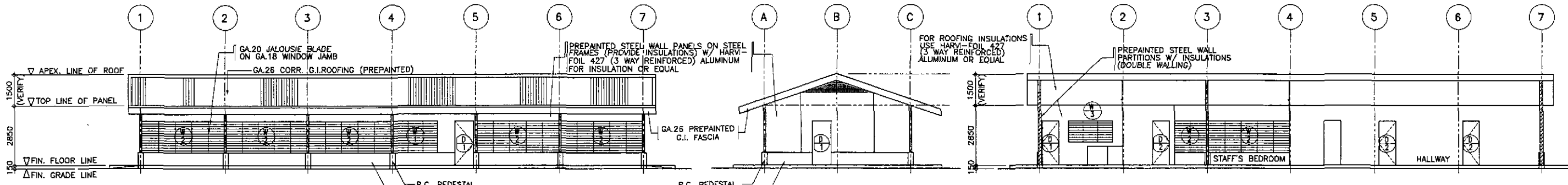
	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	9/10/02	A.P. GONZALES		BUREAU OF DESIGN Submitted By: FJHL - PMD Reviewed By: EMANUEL P. CUNTAPAY Recommended By: GILBERTO S. REYES Recommended By: MANUEL M. BONDAN Approved By: SIMEDON A. DATUMANONG	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	AS SHOWN	ENGR'S FIELD OFFICE / LABORATORY FLOOR PLAN, ELEVATIONS, CROSS-SECTIONS AND REFLECTED CEILING PLAN	FA-02
	SUBMITTED	9/10/02	TEAM LEADER		DANLO C. TRAJANO Project Director EMANUEL P. CUNTAPAY Chief, Architectural Division GILBERTO S. REYES OIC, Director IV MANUEL M. BONDAN Undersecretary SIMEDON A. DATUMANONG Secretary	FULL SIZE A1			



3 REAR ELEVATION
FA-03 SCALE 1:100

5 LEFT SIDE ELEVATION
FA-03 SCALE 1:100

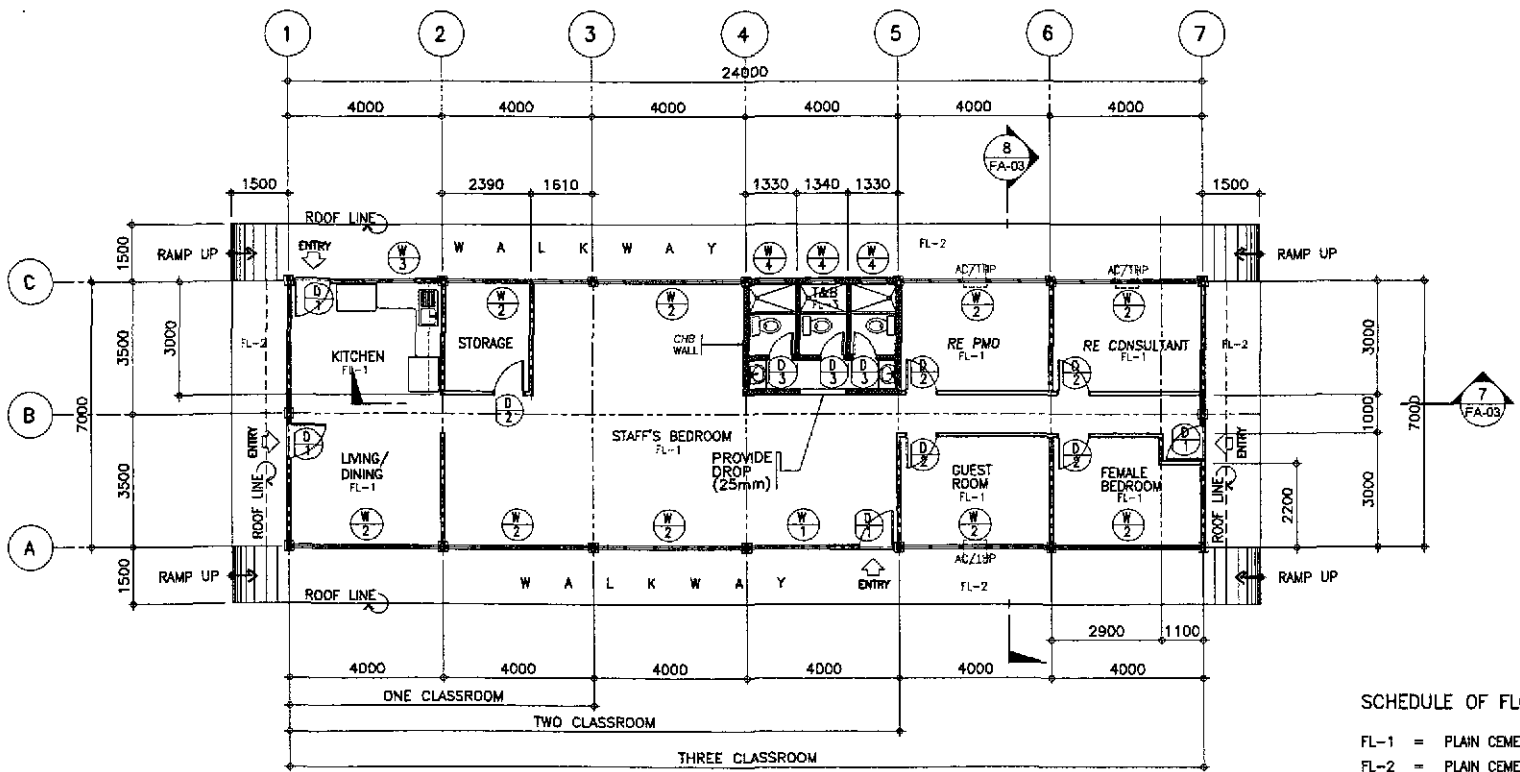
8 CROSS SECTION
FA-03 SCALE 1:100



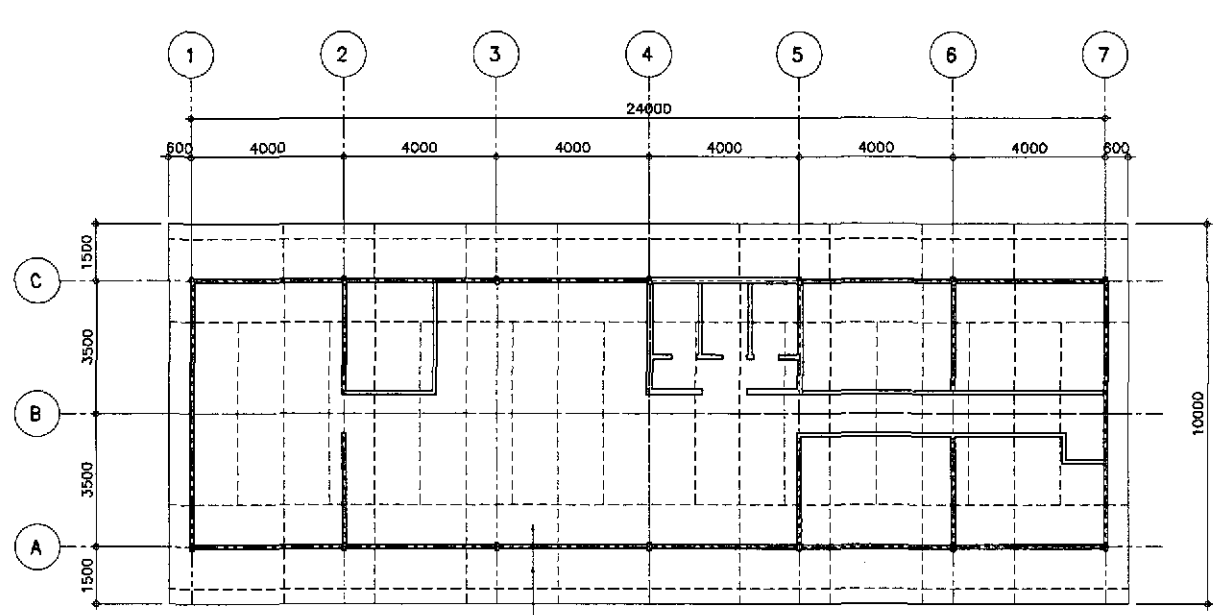
2 FRONT ELEVATION
FA-03 SCALE 1:100

4 RIGHT SIDE ELEVATION
FA-03 SCALE 1:100

7 LONGITUDINAL SECTION
FA-03 SCALE 1:100



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



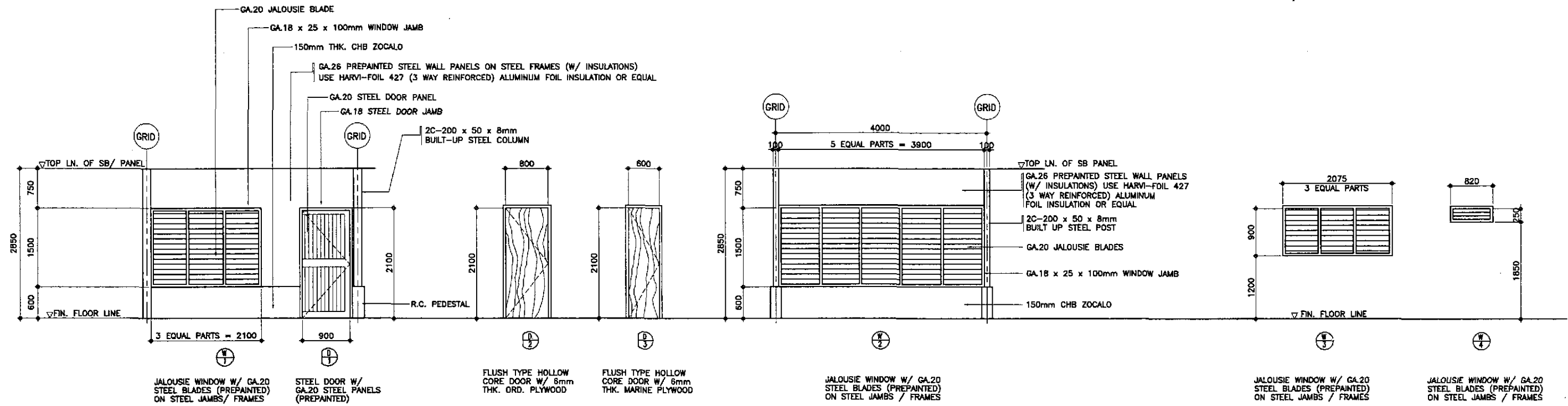
6 REFLECTED CEILING PLAN
FA-03 SCALE 1:100

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

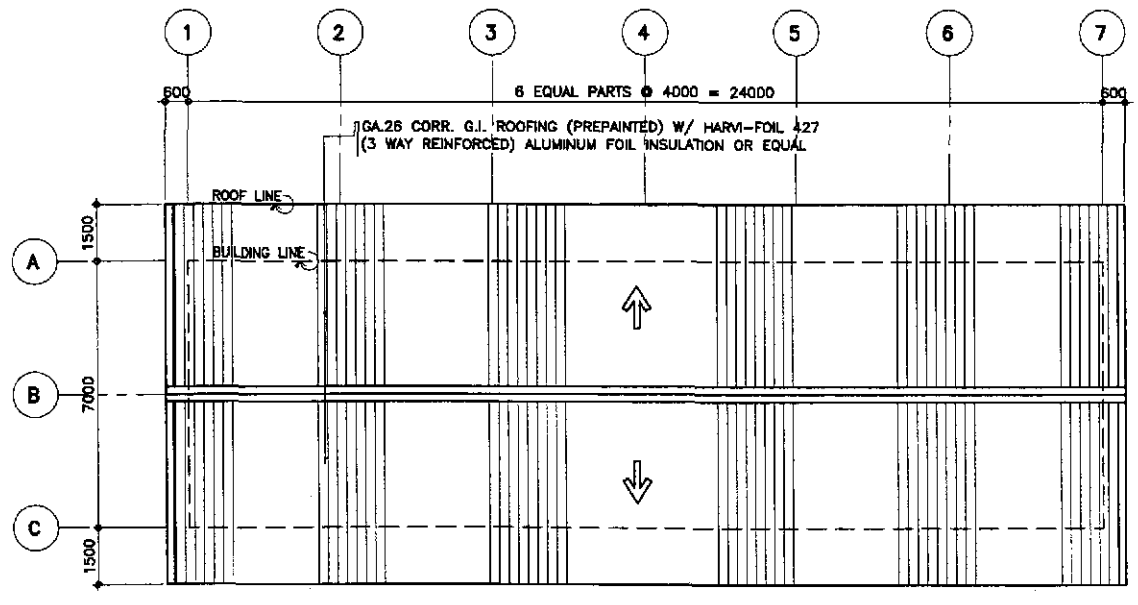
GYPSUM BOARD CEILING FINISH
 DN 50x50mm CEILING NAILERS
 @ 400mm O.C. B.W.

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.

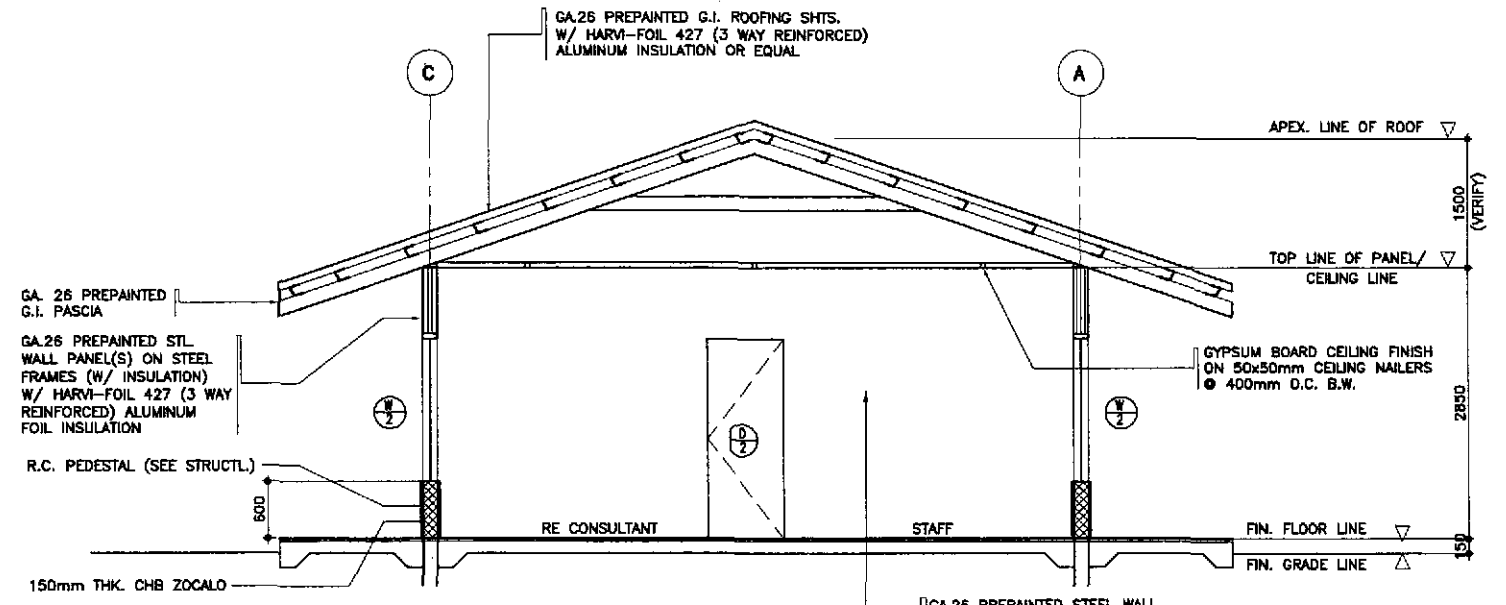
	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :		
	DESIGNED	9/15/02	P. GONZALES	BUREAU OF DESIGN			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	AS SHOWN FULL SIZE A1	ENGINEER'S LIVING QUARTERS FLOOR PLAN, ELEVATIONS, CROSS-SECTION AND REFLECTED CEILING PLAN	FA-03	
	CHECKED	9/16/02	P. GONZALES	Submitted By:	Reviewed By:	Recommended By:					Approved By:
	SUBMITTED	9/16/02	P. GONZALES	DANILO C. TRAJANO Project Director	EMMANUEL P. CUNTAPAY Chief, Architectural Division	GILBERTO S. REYES DIC, Director IV					MANUEL M. BONDAN Undersecretary



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



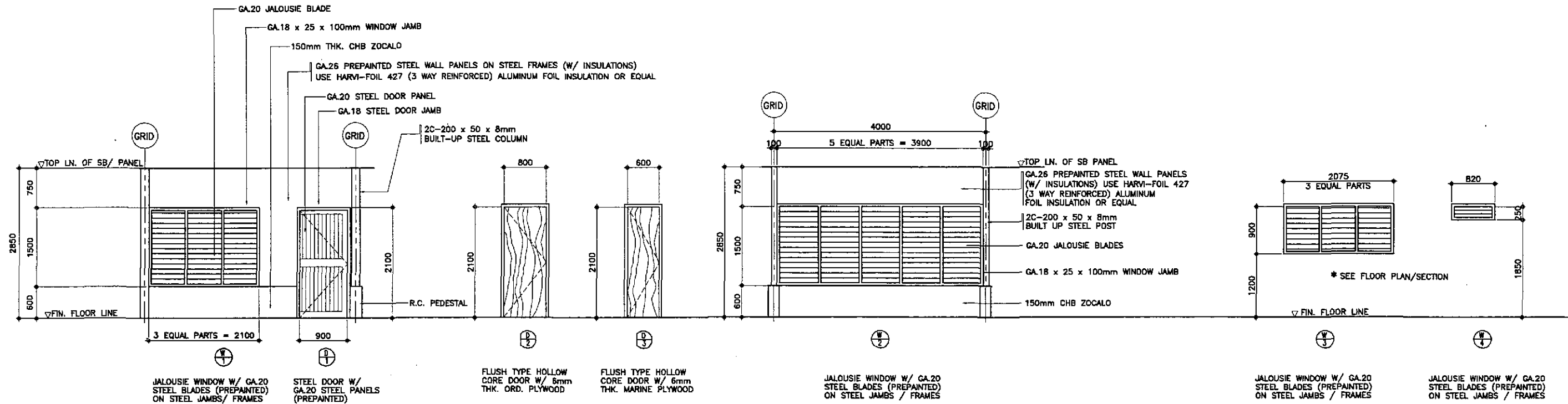
1 **ROOF PLAN**
 FA-04 SCALE 1:100



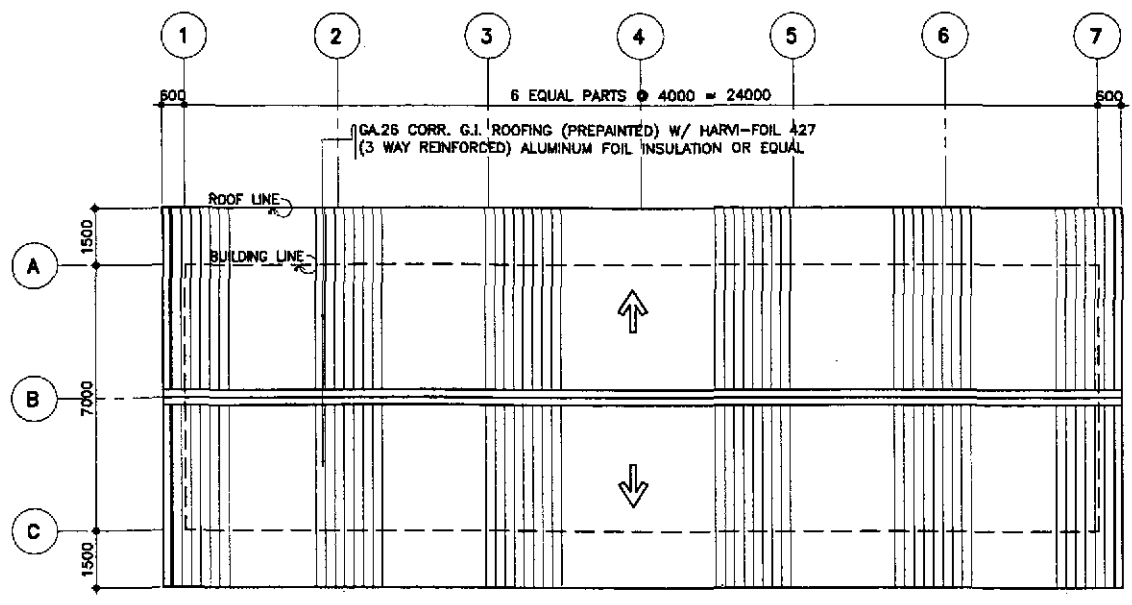
2 **DETAIL CROSS SECTION**
 FA-04 SCALE 1:40

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

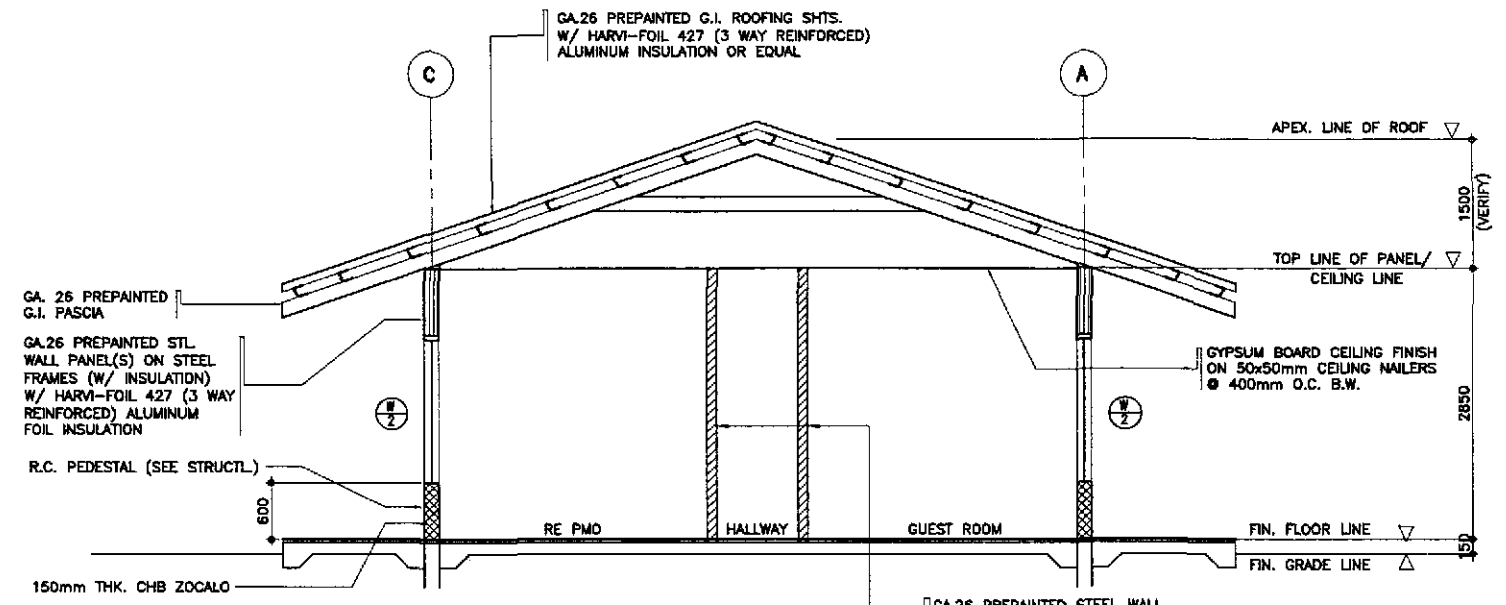
	DESIGNED: <i>9/5/02</i> A. P. GONZALES CHECKED: <i>9/9/02</i> A. P. GONZALES SUBMITTED: <i>9/10/02</i>	DATE: <i>9/5/02</i> SIGNATURE: <i>[Signature]</i>		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY	PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	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
	Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: EMMANUEL P. CUNTAPAY Chief, Architectural Division	Recommended By: GILBERTO S. REYES OC, Director IV	Recommended By: MANUEL M. BONGAN Undersecretary	Approved By: SMEDON A. DATUMANONG Secretary	JICA KATAHIRA & ENGINEERS YEO YACHIYO ENGINEERING CO., LTD.	ENGR'S FIELD OFFICE / LABORATORY ROOF PLAN, CROSS-SECTION AND SCHEDULE OF DOORS & WINDOWS	SHEET NO. : FA-04
	JICA JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS YEO YACHIYO ENGINEERING CO., LTD.							



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



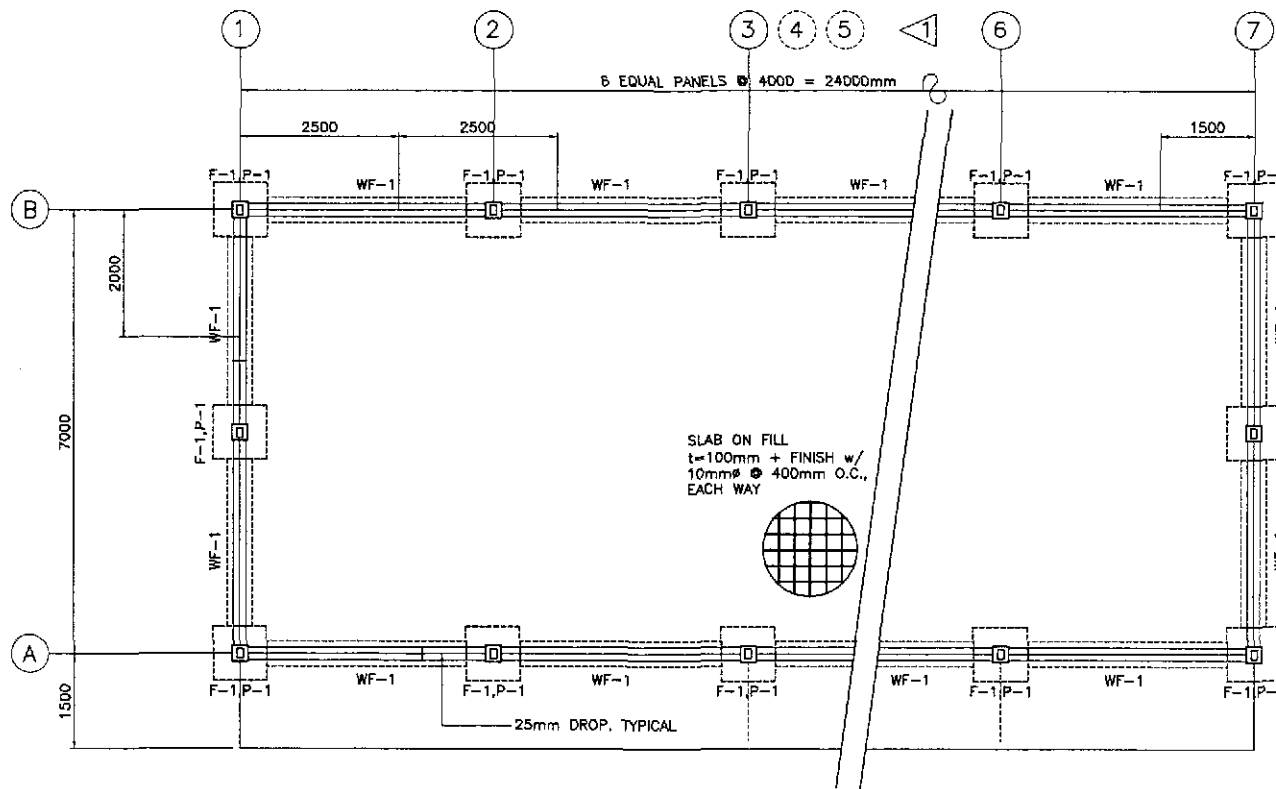
1 ROOF PLAN
 SCALE 1:100



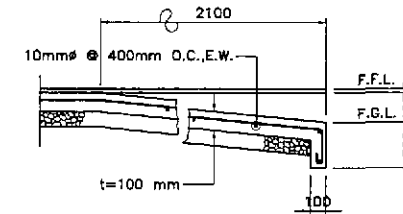
2 DETAIL CROSS SECTION
 SCALE 1:40

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

	DATE: 9/5/02 SIGNATURE: A. P. GONZALES DESIGNED: A. P. GONZALES CHECKED: P. GONZALES SUBMITTED: 9/14/02	P.H.L. - PMO Submitted By: DANILLO C. TRAJANO Project Director	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN Reviewed By: EMMANUEL P. CUNTAPAY Chief, Architectural Division	OFFICE OF THE SECRETARY Recommended By: GILBERTO S. REYES Dir., Director IV Recommended By: MANUEL M. BONGAN 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 (Pinarid, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	SCALE: AS SHOWN FULL SIZE A1	SHEET CONTENTS: ENGINEER'S LIVING QUARTERS ROOF PLAN, CROSS-SECTION AND SCHEDULE OF DOORS & WINDOWS	SHEET NO.: FA-05
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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

$p = C_e C_q O_s I$

WHERE :

- p = ACTUAL WIND PRESSURE
- C_e = GUST FACTOR COEFFICIENT (EXPOSURE B=0.63)
- C_q = PRESSURE COEFFICIENT
- O_s = 1.50 KPa FOR ZONE 2&3, O_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' = 17.28 mpa f_c = 7.78 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} = 98.60 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 :

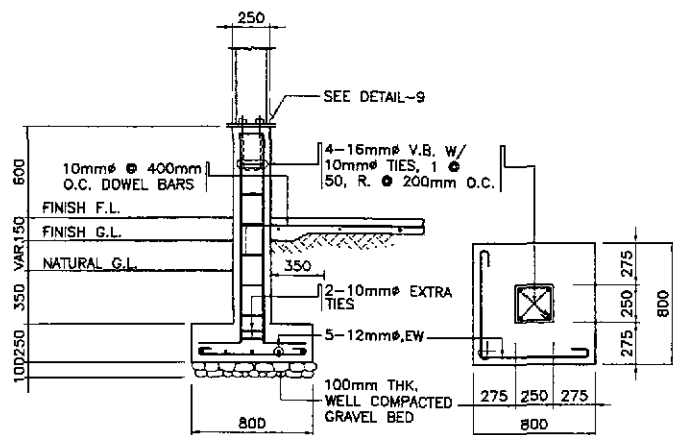
1. IN CASE THE ACTUAL SOIL BEARING PRESSURE IS FOUND LESS THAN THE ASSUMED VALUE OF 95.76 KPa, NOTIFY THE DIRECTOR, BUREAU OF DESIGN FOR PROPER REVISION OF FOOTINGS.
2. NO FOOTINGS SHALL REST ON FILL.

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.
4. ALL METAL PARTS SHALL BE GIVEN TWO(2) COATS OF ANTI-CORRODIVE PAINT OF APPROVED QUALITY WITH A MINIMUM TOTAL THICKNESS OF 3mm. FINISHING PAINT SHALL BE 2-COATS OF GLOSS OF APPROVED QUALITY, WEATHER RESISTANT AND OF THE SAME COLOR AS THE PREPAINTED SHEETINGS. BASE OF SIDINGS AND DOOR AND WINDOW JAMBS SHALL BE GIVEN ANOTHER TWO COATS OF BROWN OR MAHOGANY COLORED ENAMEL PAINT.

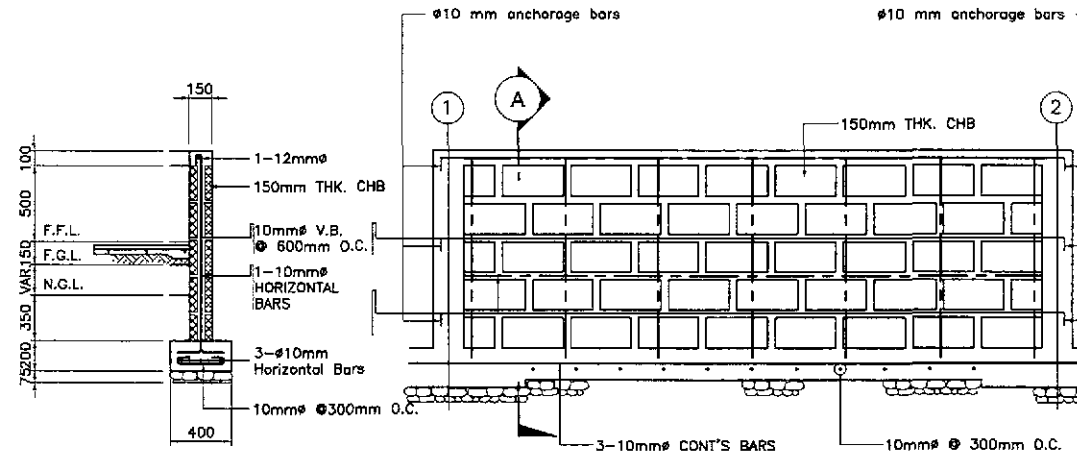
NOTES :

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



ELEVATION PLAN

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

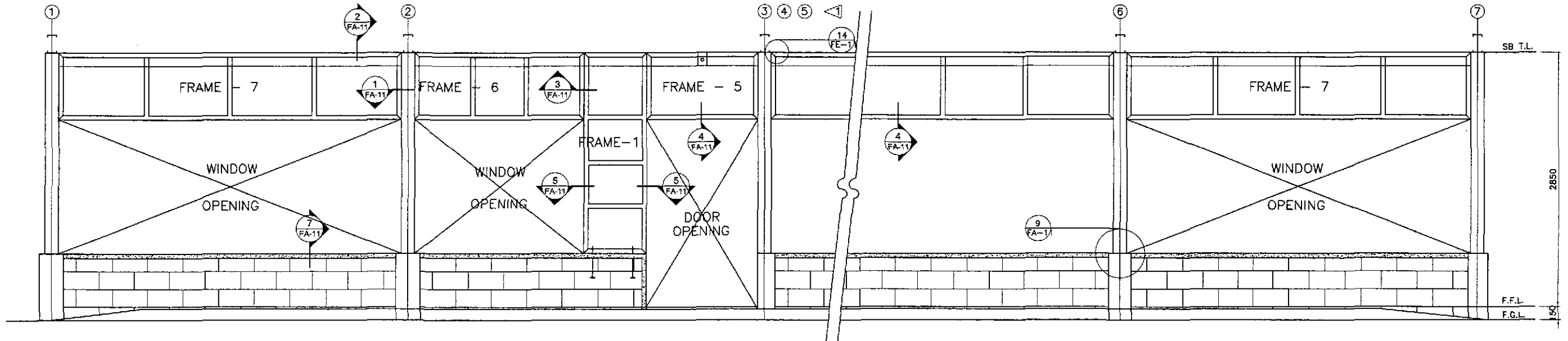


SECTION A TYP. ELEVATION

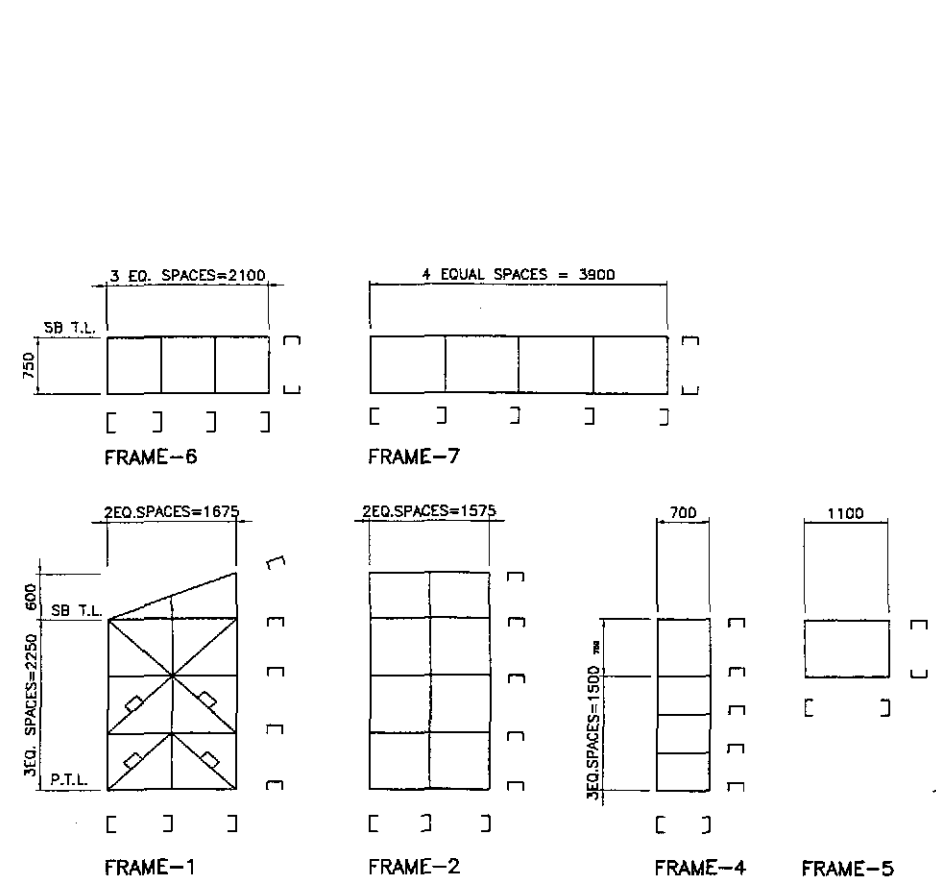
3 WF-1
FA-06 SCALE 1:25

ARNEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/25/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN, M.M.

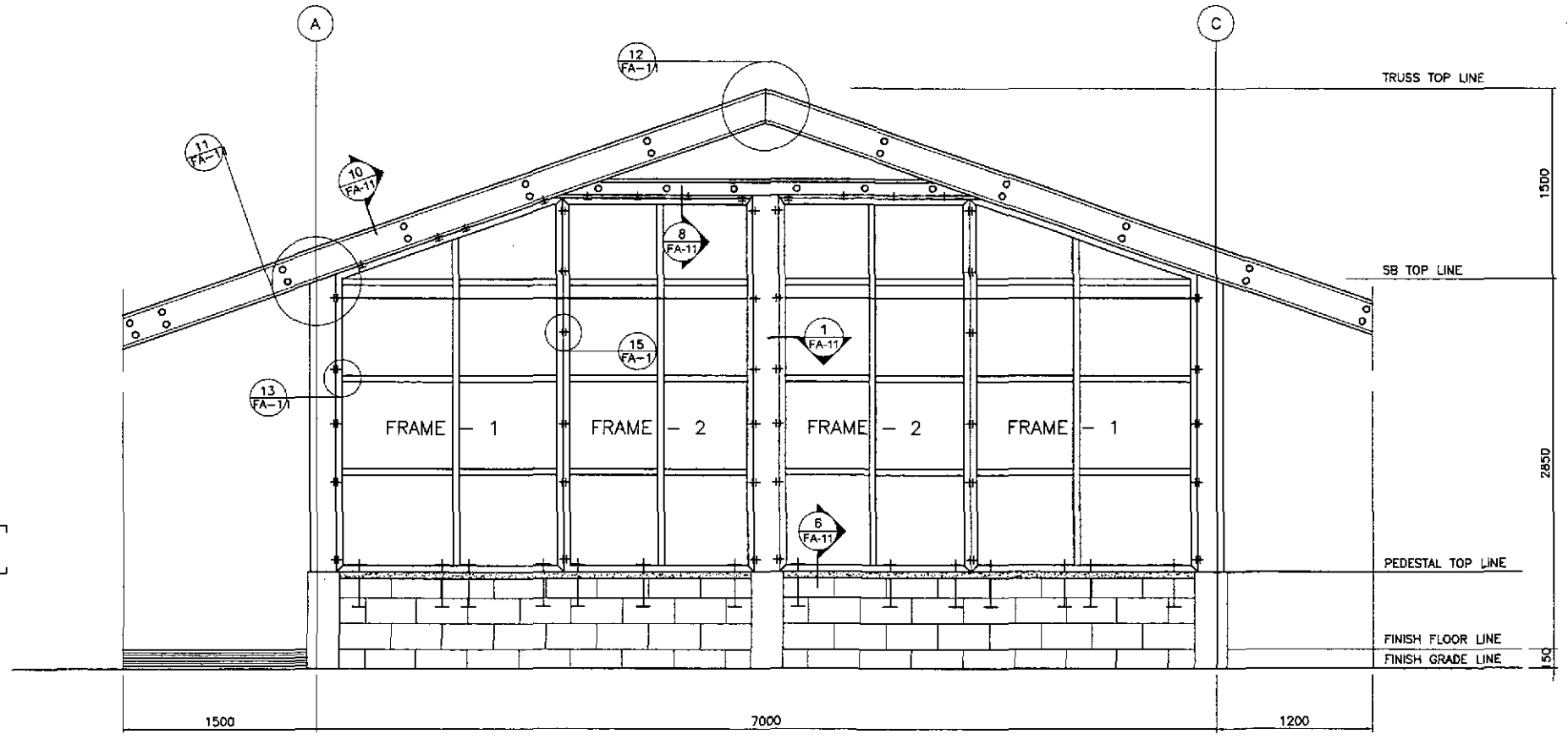
	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	DESIGNED	<i>[Signature]</i>	BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	AS SHOWN	ENGINEER'S FIELD OFFICE AND LIVING QUARTERS FOUNDATION PLAN, R.C. RAMP, DETAILS OF F1, P-1 & WF1 AND DESIGN CRITERIA	FA-06
	CHECKED	<i>[Signature]</i>	OFFICE OF THE SECRETARY							
SUBMITTED	<i>[Signature]</i>	Submitted By:	Reviewed By:	Recommended By:	Approved By:					
	9/18/02	AL P. GONZALES TEAM LEADER	DANILO C. TRAJANO Project Director	WILFREDO S. LOPEZ Chief, Structural Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONGAN Undersecretary	SIMEON A. DATUMANONG Secretary			



2 FRONT ELEVATION
FA-07 SCALE 1:25



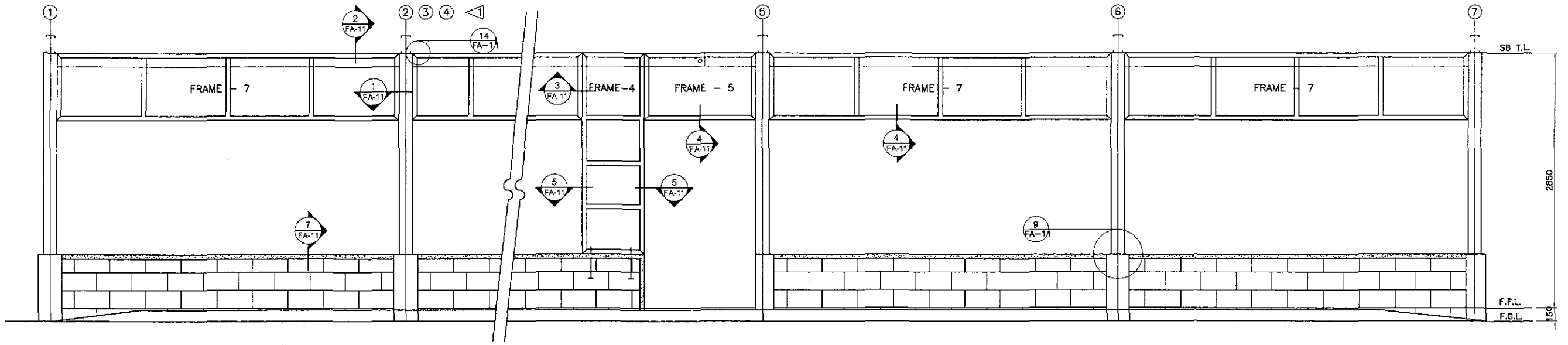
1 FRAMES SCHEMATIC DIAGRAMS
FA-07 SCALE 1:50



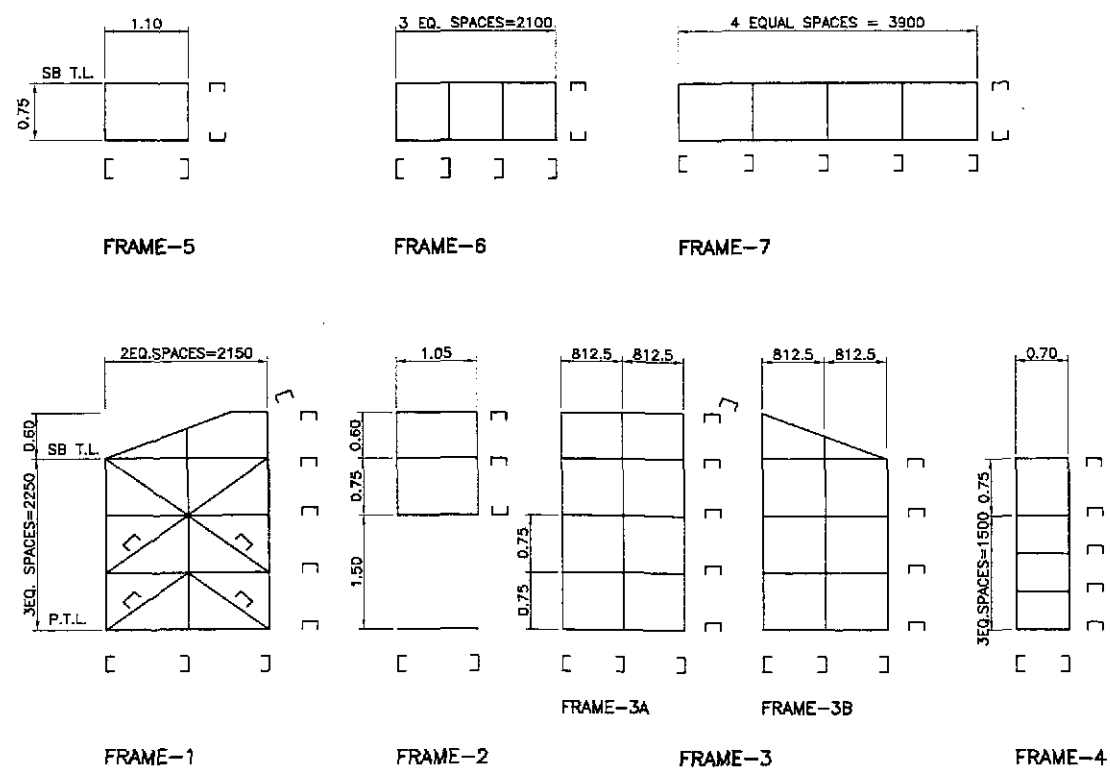
3 RIGHT SIDE ELEVATION
FA-07 SCALE 1:25

ARDEL P. GONZALES
ENGINEER
PTR. NO. 5848340 P.R.C. NO. 53457
ISSUED ON 04/28/2002 T.J.N. 138-082-682
ISSUED AT SAN JUAN, M.M.

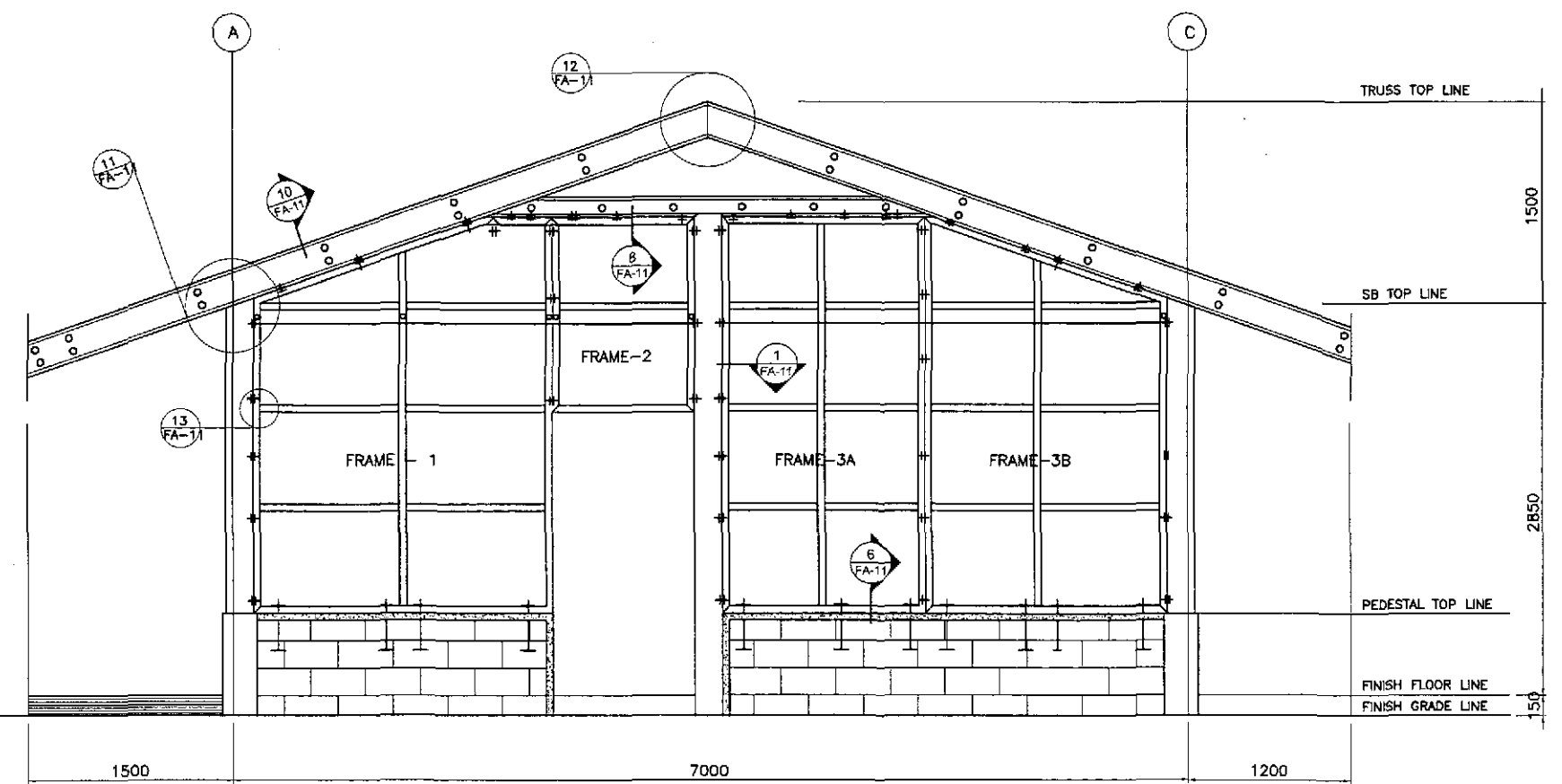
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/19/02	A. P. GONZALES		Submitted By:	BUREAU OF DESIGN OFFICE OF THE SECRETARY				AS SHOWN	ENGR'S FIELD OFFICE / LABORATORY FRONT AND RIGHT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAM	FA-07
SUBMITTED	9/10/02	A. P. GONZALES	TEAM LEADER	DANILO C. TRAJANO Project Director WILFREDO S. LOPEZ Chief, Structural Division GILBERTO S. REYES OIC, Director IV MANUEL M. RONDOAN Undersecretary SIMEON A. DATUMANONG Secretary	Approved By: (See cover sheet for Signature/Address) SIMEON A. DATUMANONG Secretary				FULL SIZE A1			



2 FRONT ELEVATION
FA-08 SCALE 1:25



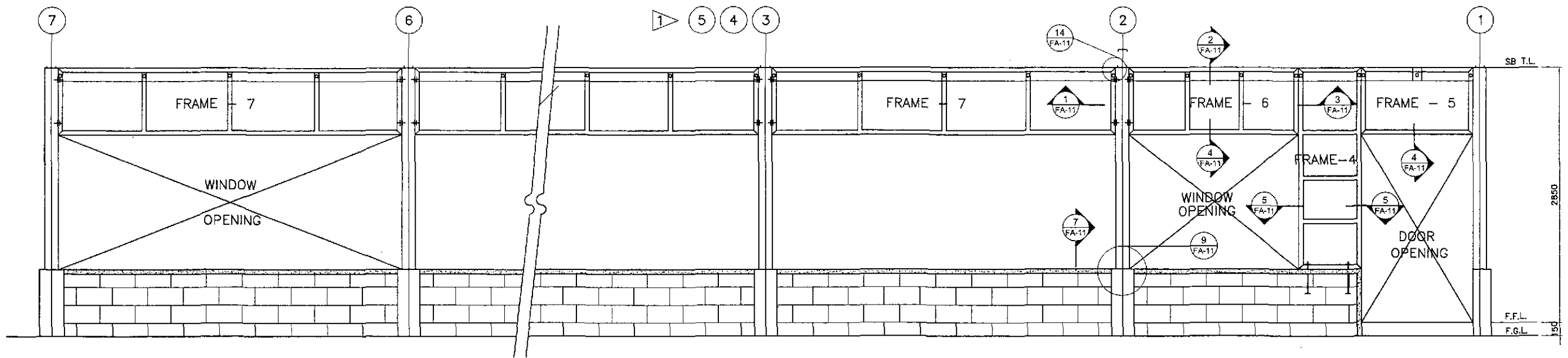
1 FRAMES SCHEMATIC DIAGRAMS
FA-08 SCALE 1:50



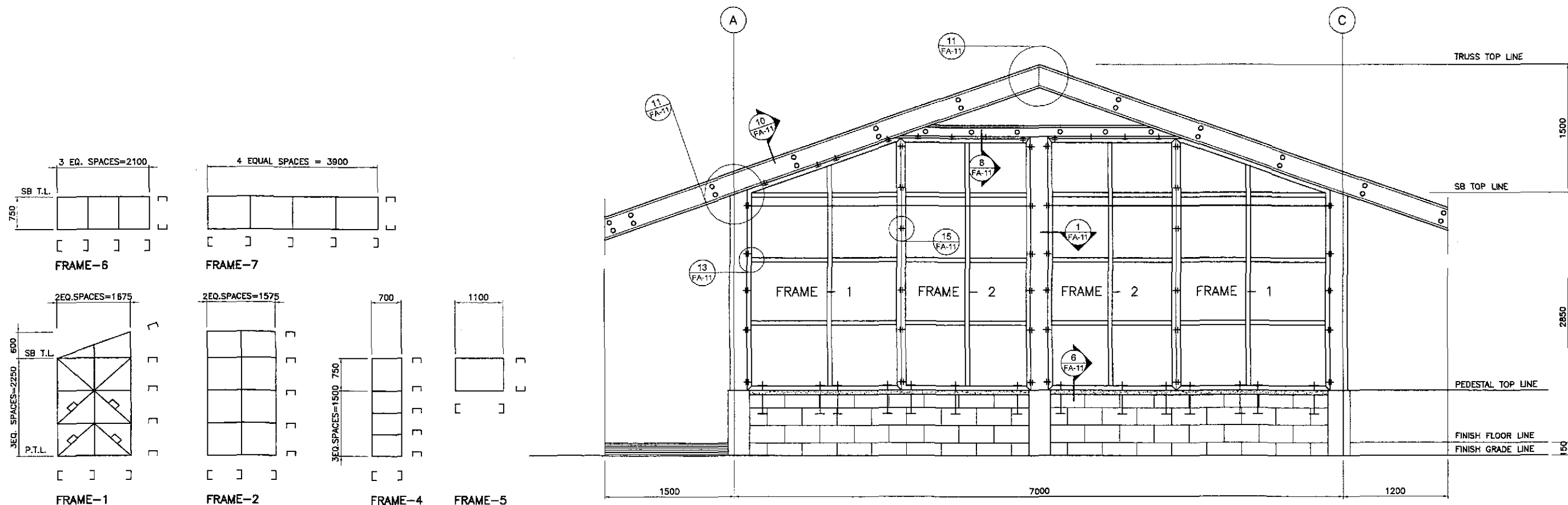
3 RIGHT SIDE ELEVATION
FA-08 SCALE 1:25

ARNEL P. GONZALES
ENGINEER
PTR. NO. 5846348 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	9/2/02	P. GONZALES		BUREAU OF DESIGN	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Flaridel, Cabanatuan and San Jose Bypasses)			AS SHOWN	ENGINEER'S LIVING QUARTERS FRONT AND RIGHT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAM	FA-08
	SUBMITTED	9/11/02	P. GONZALES		OFFICE OF THE SECRETARY	SAN JOSE BYPASS			FULL SIZE A1		
			Submitted By:	Reviewed By:	Recommended By:	Approved By:					
			DANILO C. TRAJANO Project Director	WILFREDO S. LOPEZ Chief, Structural Division	GILBERTO S. REYES DIC, Director IV	MANUEL M. BONDAN Underscretary	SIMEON A. DATUMANONG Secretary				



2 RIGHT ELEVATION
FA-09 SCALE 1:25

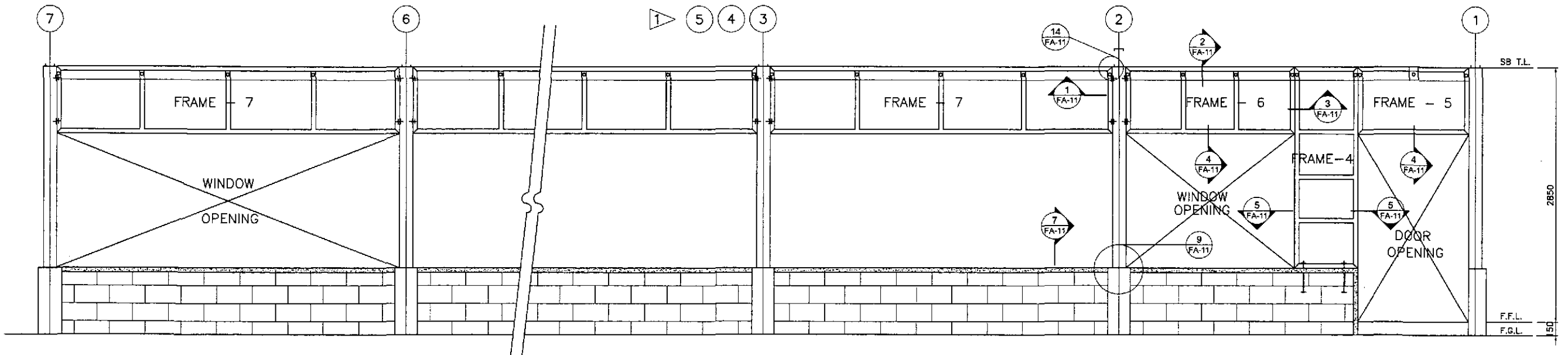


1 FRAMES SCHEMATIC DIAGRAMS
FA-09 SCALE 1:50

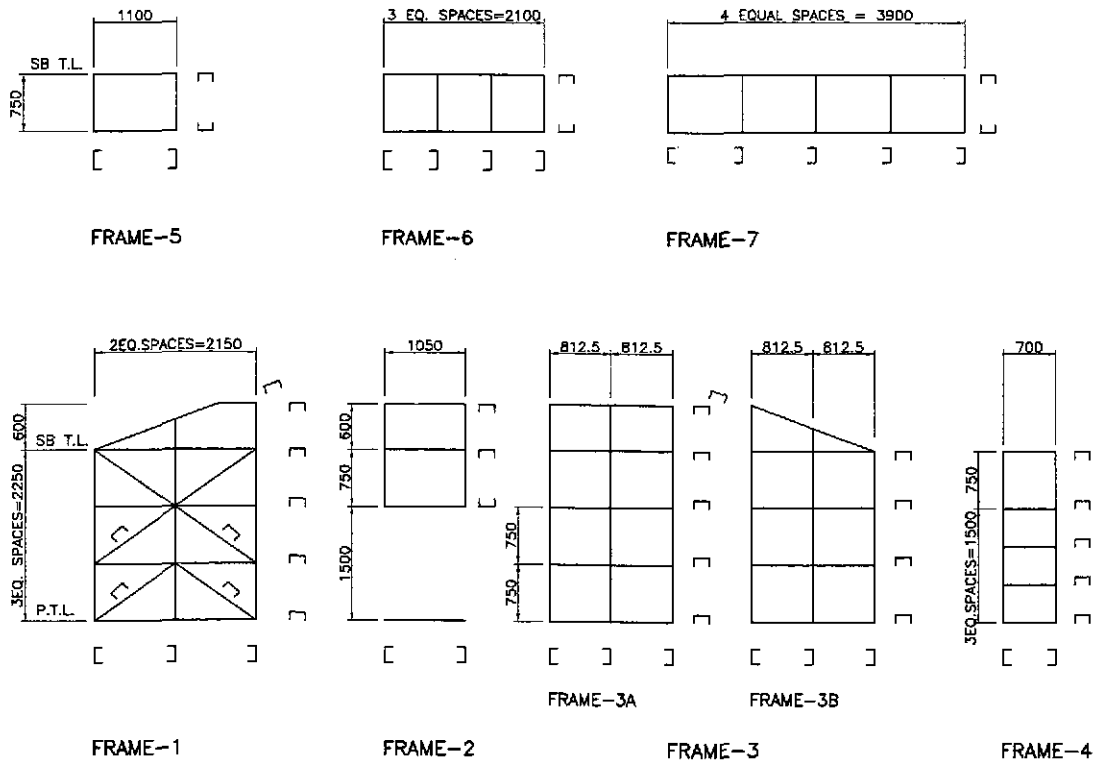
3 LEFT SIDE ELEVATION
FA-09 SCALE 1:25

ARNEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/25/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN, M.M.

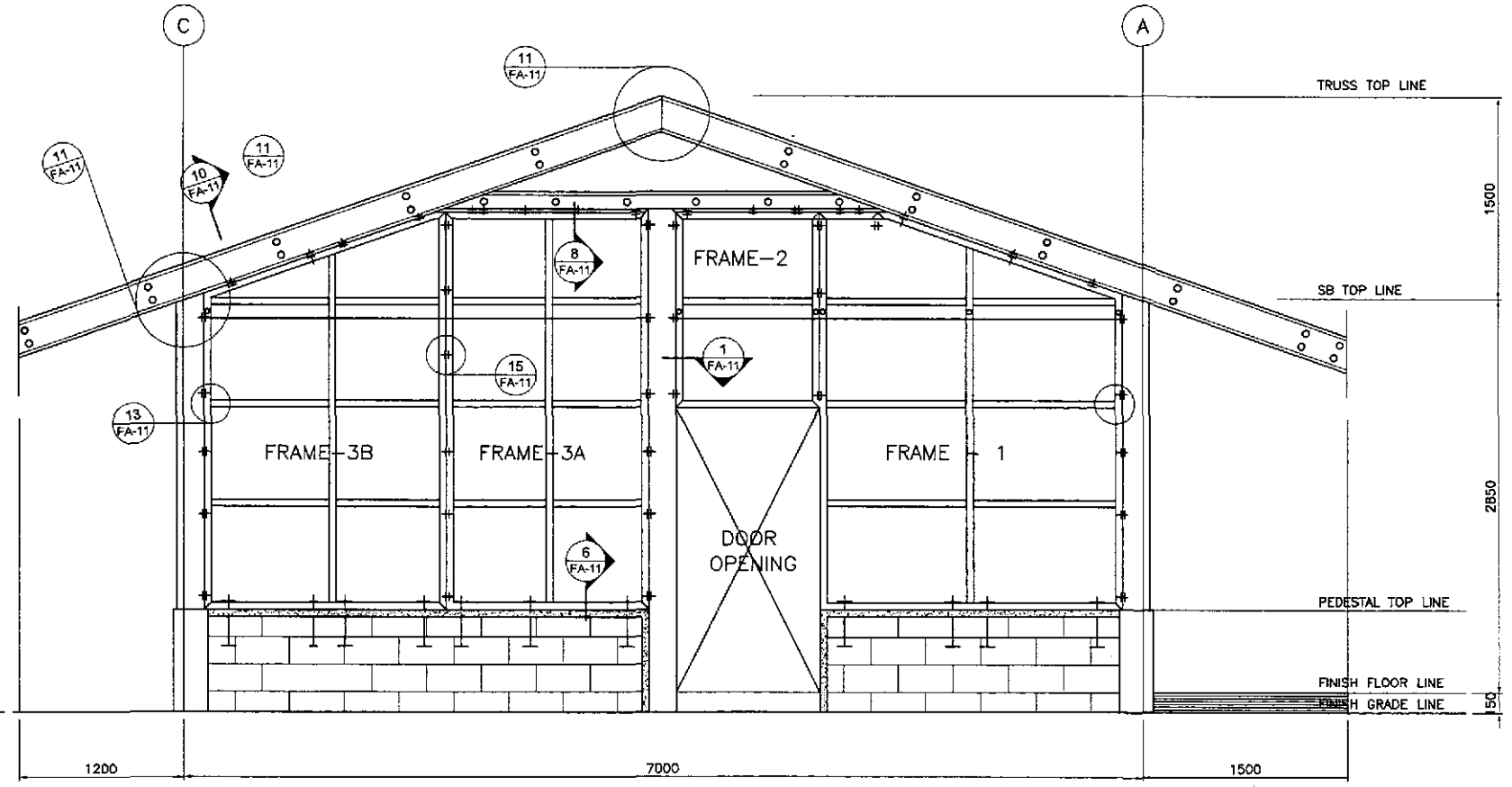
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	DESIGNED	<i>[Signature]</i>	BUREAU OF DESIGN			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	AS SHOWN	ENGR'S FIELD OFFICE / LABORATORY REAR AND LEFT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAM	FA-09
	CHECKED	<i>[Signature]</i>	OFFICE OF THE SECRETARY						
SUBMITTED	<i>[Signature]</i>	Submitted By: DANILO C. TRAJANO Project Director	Reviewed By: WILFREDO S. LOPEZ Chief, Structural Division	Recommended By: GILBERTO S. REYES OIC, Director IV	Approved By: MANUEL M. BONOAN Undersecretary				



2 REAR ELEVATION
FA-10 SCALE 1:25



1 FRAMES SCHEMATIC DIAGRAMS
FA-10 SCALE 1:50



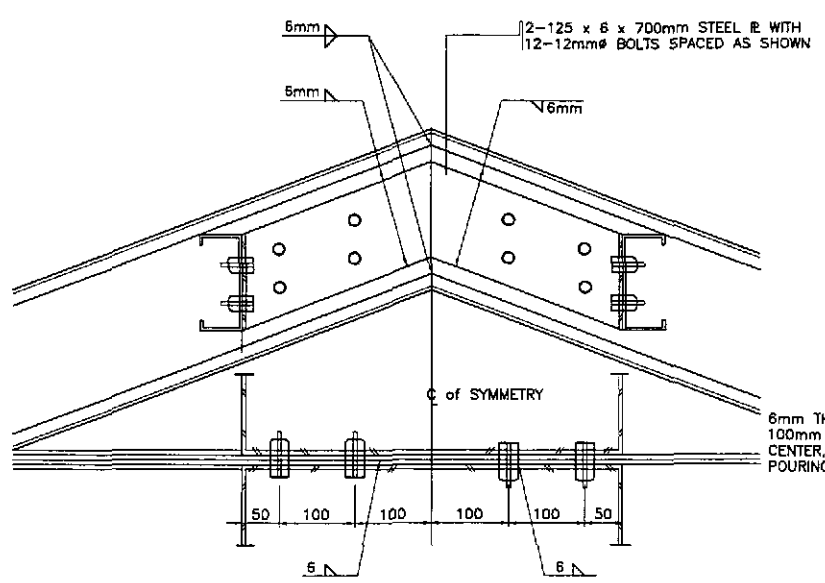
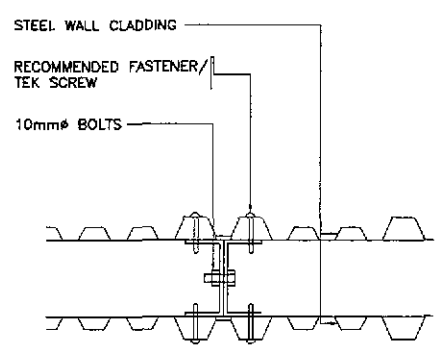
3 LEFT SIDE ELEVATION
FA-10 SCALE 1:25

ARNEL P. GONZALES
ENGINEER
PTR. NO. 584634D P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN, M.M.

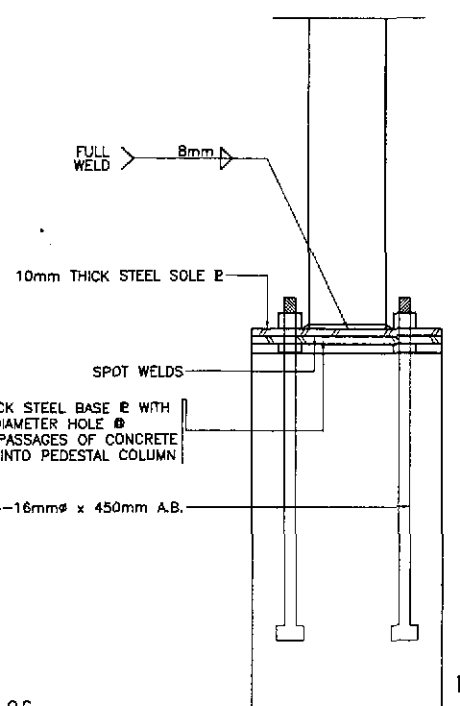
	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	9/2/02	A. G. GONZALES	BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	AS SHOWN	ENGINEER'S LIVING QUARTERS REAR AND LEFT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAMS	FA-10
	CHECKED	9/9/02	A. G. GONZALES	Submitted By:	Reviewed By:	Recommended By:	Office of the Secretary				
SUBMITTED	9/11/02	A. G. GONZALES	DANILO C. TRAJANO Project Director	WILFREDO S. LOPEZ Chief, Structural Division	GILBERTO S. REYES DC, Director IV	Manuel M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary				

NOTES :

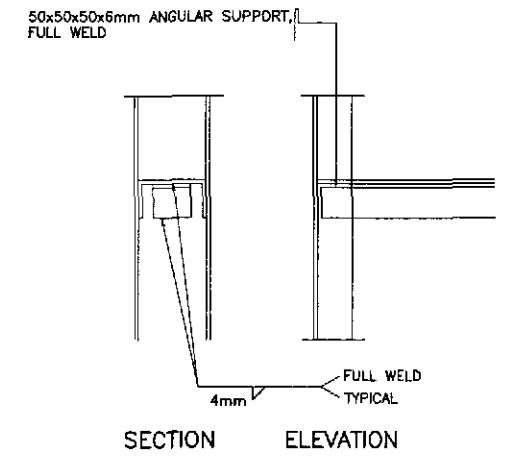
1. ALL VERTICAL AND HORIZONTAL STUDS SHALL BE 100x50x2mm UNSTIFFENED FLANGED UNLESS OTHERWISE SPECIFIED.
2. HORIZONTAL STUDS MUST BE INSERTED TO AND WELDED IN THE VERTICAL STUDS UNLESS OTHERWISE SPECIFIED.
3. REVISION IN THE ATTACHMENT/ CONNECTIONS THAT WILL IMPROVE DESIGN MAYBE DONE W/ PRIOR APPROVAL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



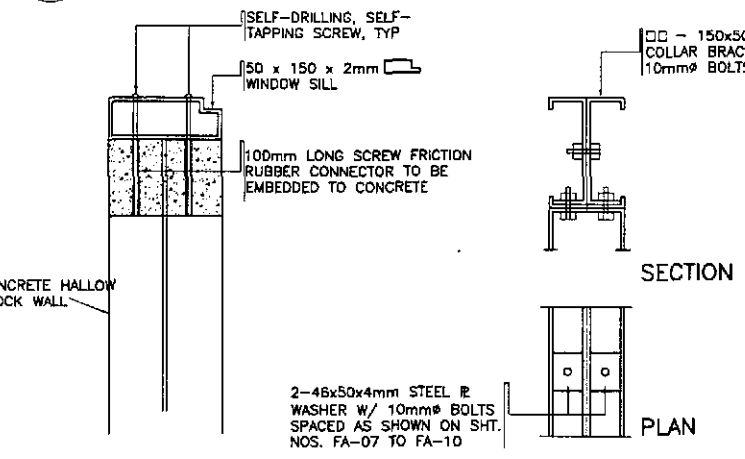
3 DETAIL - 12
FA-11 SCALE 1:5



10 DETAIL - 13
FA-11 SCALE 1:5

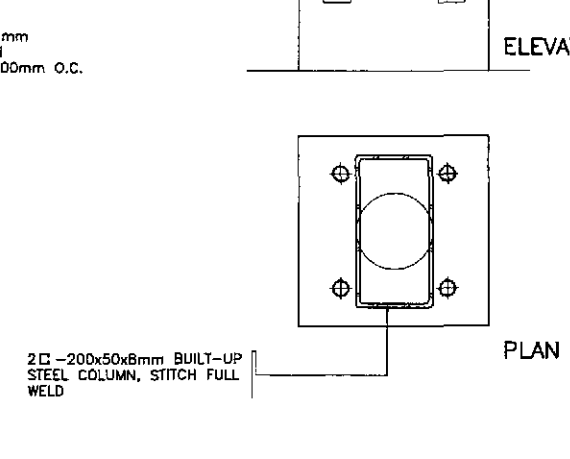


13 DETAIL - 14
FA-11 SCALE 1:5

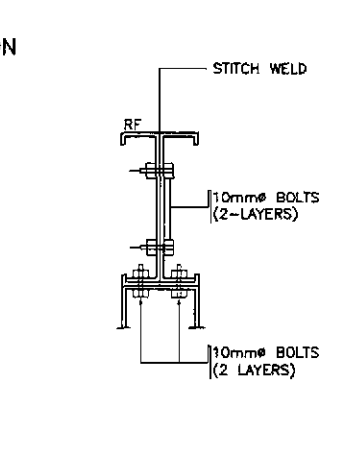


2 DETAIL - 7
FA-11 SCALE 1:5

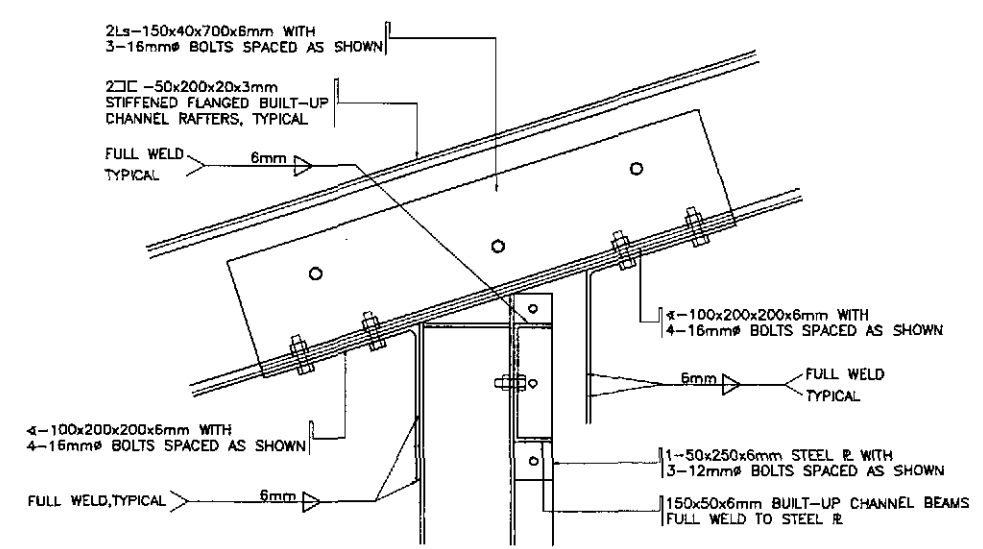
5 DETAIL - 8
FA-11 SCALE 1:5



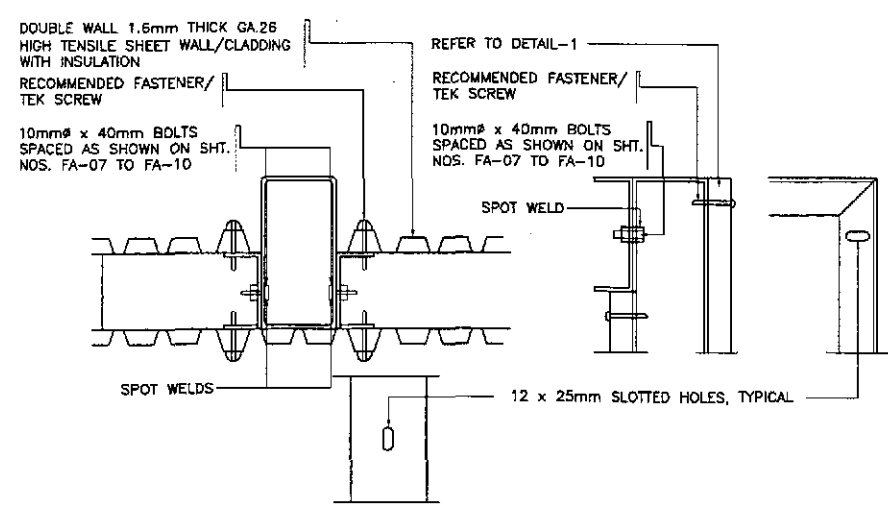
7 DETAIL - 9
FA-11 SCALE 1:5



9 DETAIL - 10
FA-11 SCALE 1:5

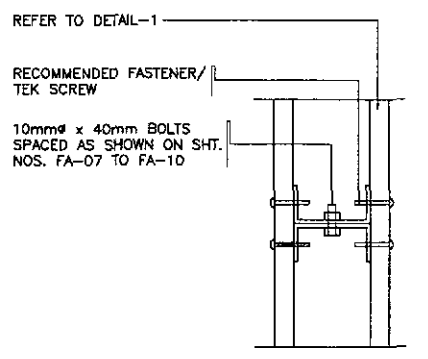


12 DETAIL - 11
FA-11 SCALE 1:5

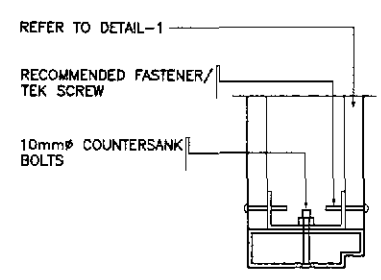


1 DETAIL - 1
FA-11 SCALE 1:5

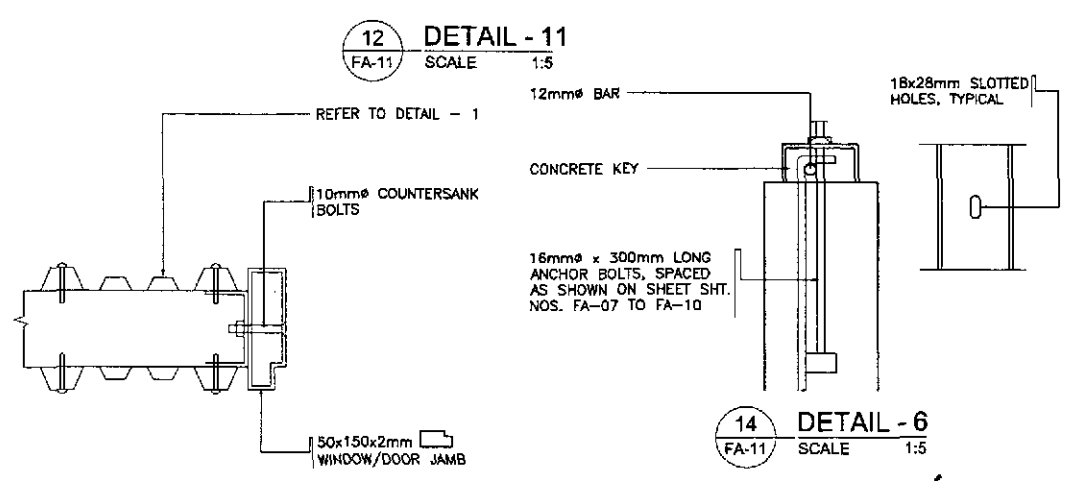
4 DETAIL - 2
FA-11 SCALE 1:5



6 DETAIL - 3
FA-11 SCALE 1:5



8 DETAIL - 4
FA-11 SCALE 1:5



14 DETAIL - 6
FA-11 SCALE 1:5

11 DETAIL - 5
FA-11 SCALE 1:5

ARMEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/28/2002 T.I.N. 138-082-682
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	9/2/02	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)			AS SHOWN	ENGINEER'S FIELD OFFICE AND LIVING QUARTERS DETAILS OF CONNECTIONS DETAIL 1 TO 15	FA-11
	SUBMITTED	9/10/02	A. P. GONZALES		OFFICE OF THE SECRETARY	SAN JOSE BYPASS			FULL SIZE A1		
				Submitted By: DANILLO C. TRAJANO, Project Director	Reviewed By: WILFREDO S. LOPEZ, Chief, Structural Division	Recommended By: GILBERTO S. REYES, OIC, Director IV	Recommended By: MANUEL M. BONDAN, Undersecretary	Approved By: SIMEON A. DATUMANONG, Secretary			

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

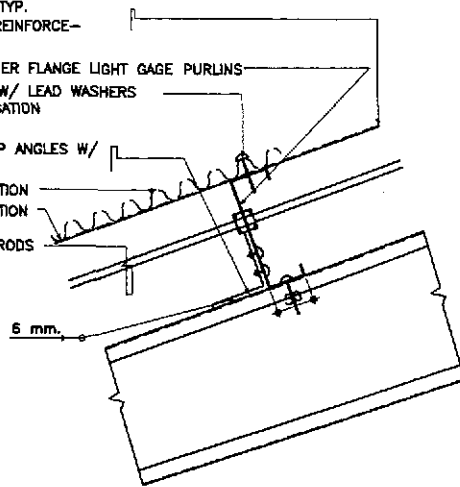
[-150x50x15x2mm. STIFFENER FLANGE LIGHT GAGE PURLINS
6 mm. # 1 -HOOK BOLTS W/ LEAD WASHERS
EVERY 5-UPPER CORRUGATION

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

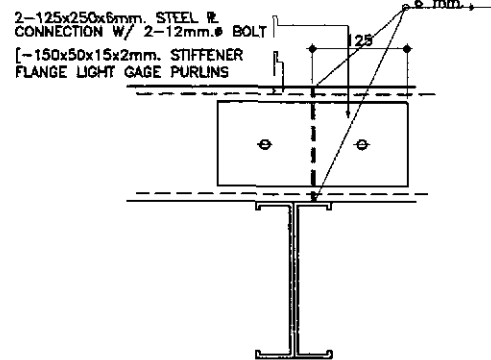
UPPER CORRUGATION
LOWER CORRUGATION

10mm # SAG RODS

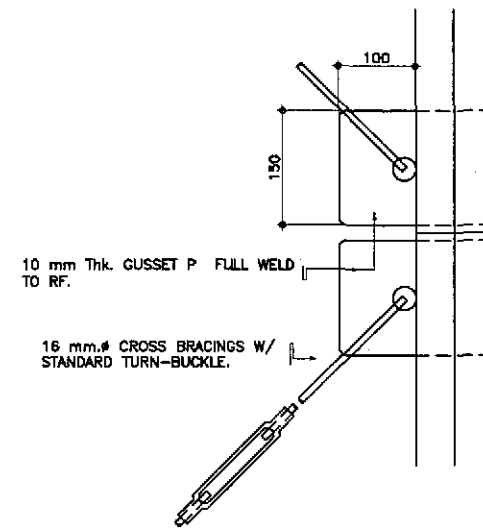
6 mm.



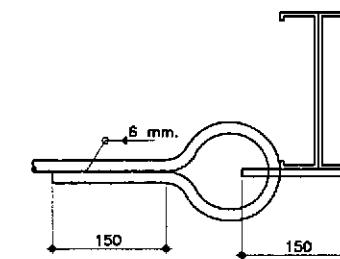
ELEVATION



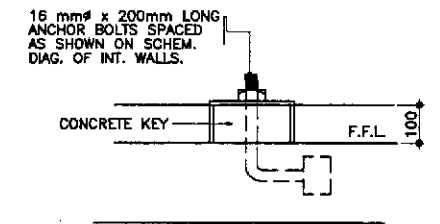
SECTION, SPLICE CONNECTION



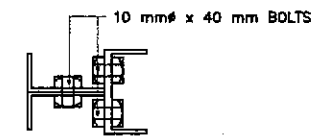
P L A N



SECTION



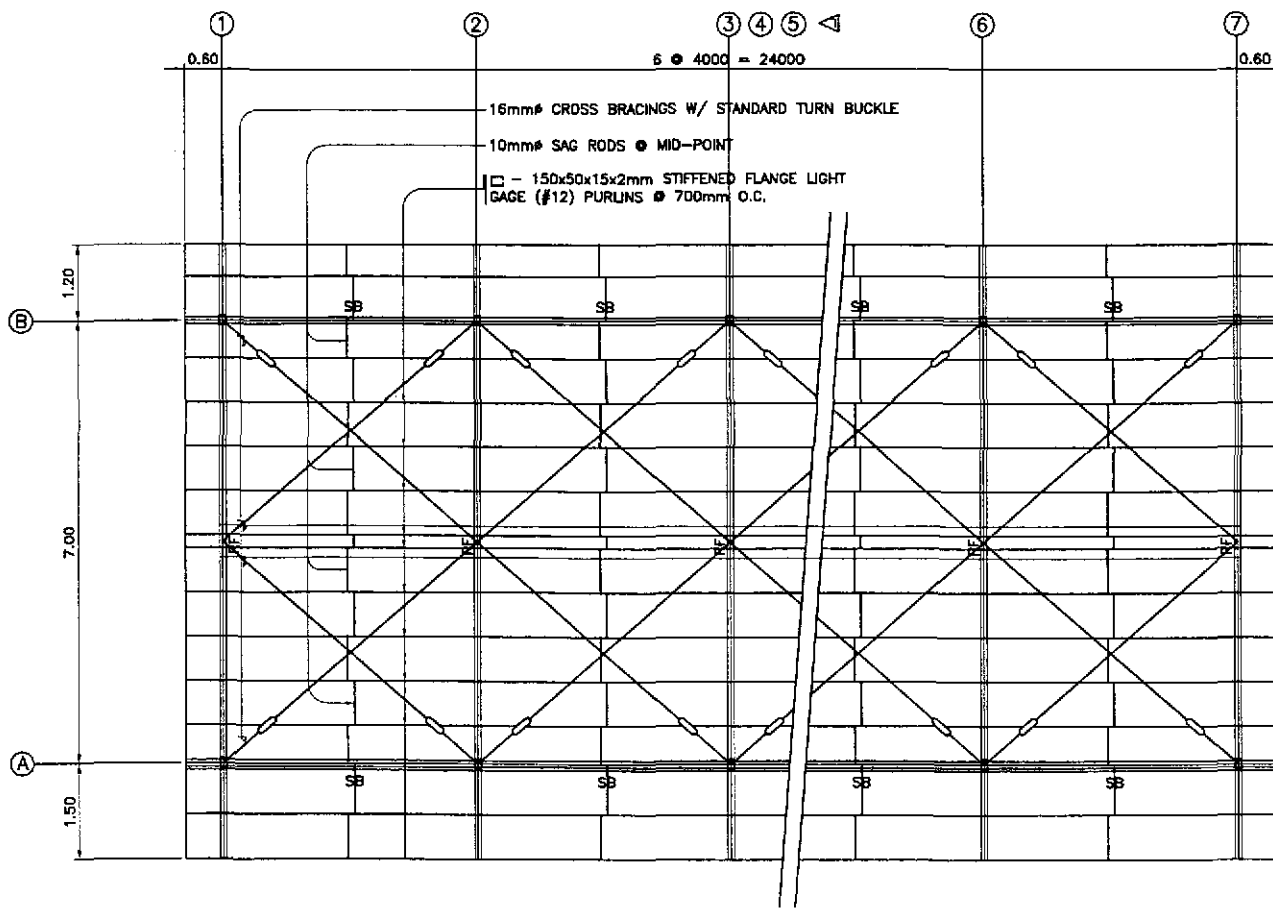
5 DETAIL - a
FA-12 SCALE 1:5



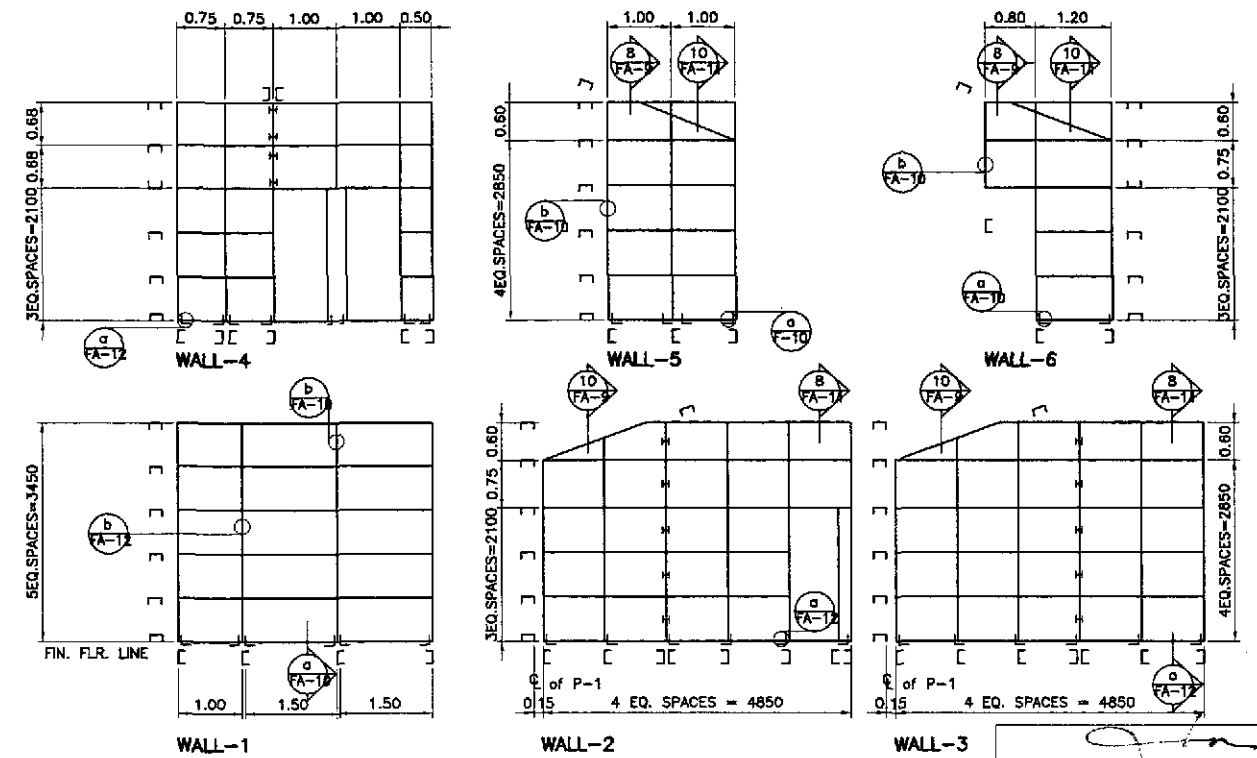
6 DETAIL - b
FA-12 SCALE 1:5

2 PURLIN CONNECTION
FA-12 SCALE 1:5

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



1 ROOF FRAMING PLAN
FA-12 SCALE 1:80



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

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

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

DESIGNED	DATE	SIGNATURE
CHECKED		
SUBMITTED		

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

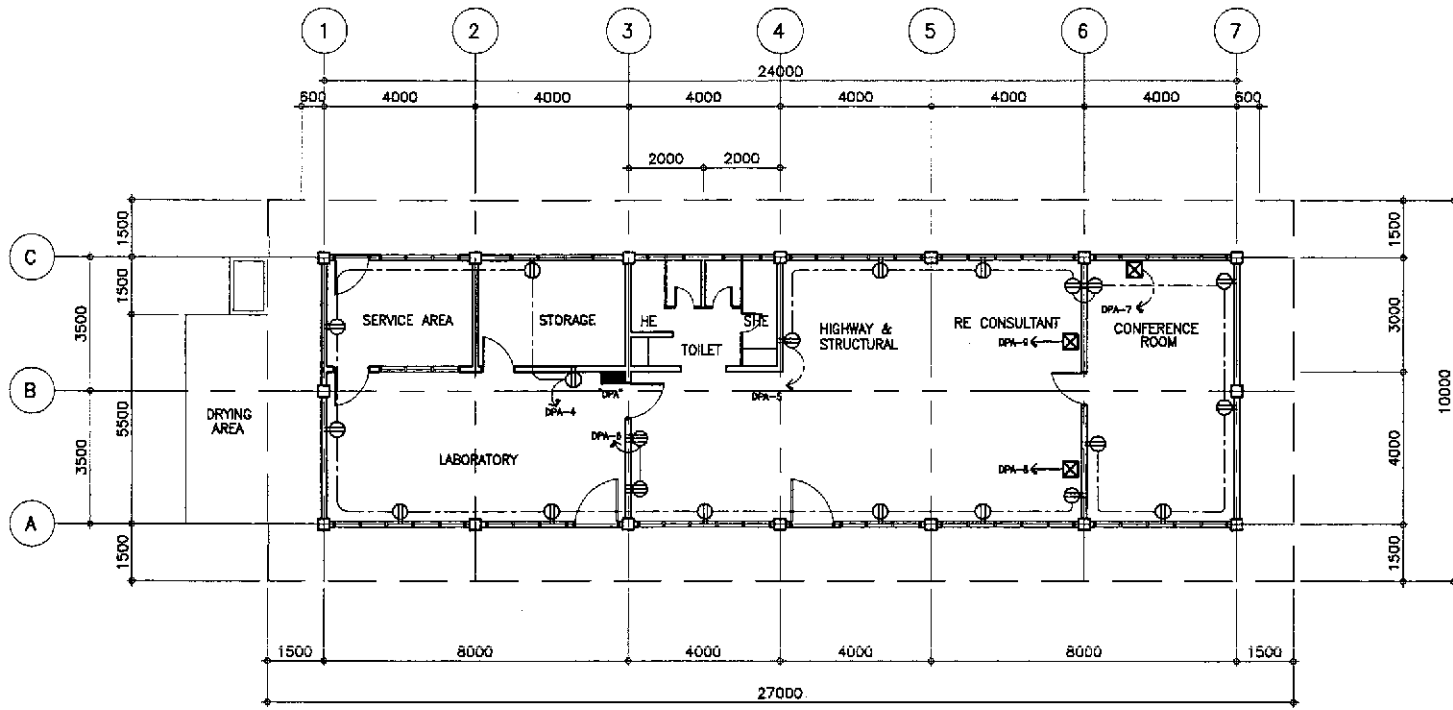
Submitted By:	Reviewed By:	Recommended By:	Approved By:
DANILO C. TRAJANO Project Director	WILFREDO S. LOPEZ Chief, Structural Division	GILBERTO S. REYES OIC, Director IV	SIMON A. DATUMANONG Secretary

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

SCALE :
AS SHOWN
FULL SIZE AT

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

SHEET NO. :
FA-12



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

GENERAL NOTES:

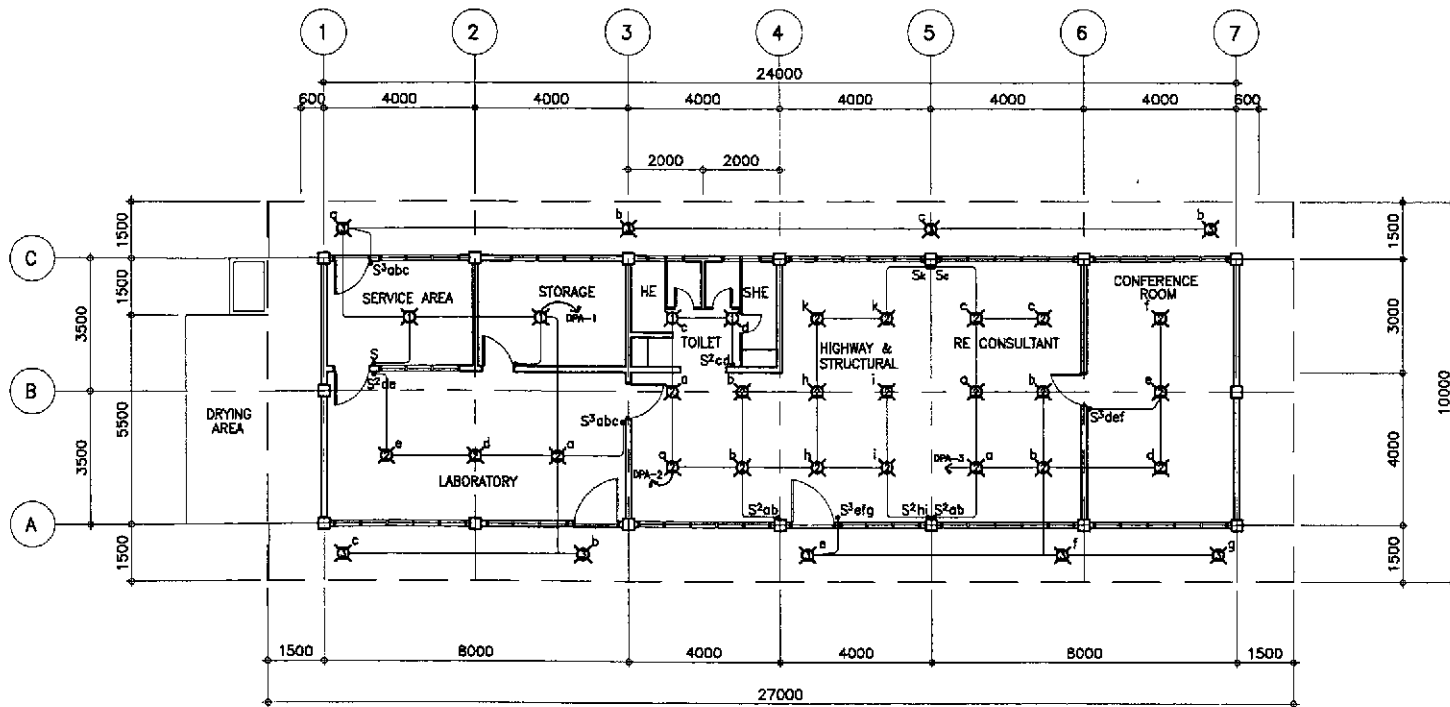
- ALL ELECTRICAL WORKS SHALL BE DONE IN STRICT COMPLIANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE PHIL. ELECT. CODE, EXISTING APPLICABLE ORDINANCES, RULES AND REGULATIONS OF THE LOCAL GOVERNMENT AND THE REQUIREMENTS OF THE POWER COMPANY.
- THE TYPE OF POWER SERVICE TO USED SHALL BE SINGLE-PHASE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

NOTE:

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

ELECTRICAL SYMBOLS:

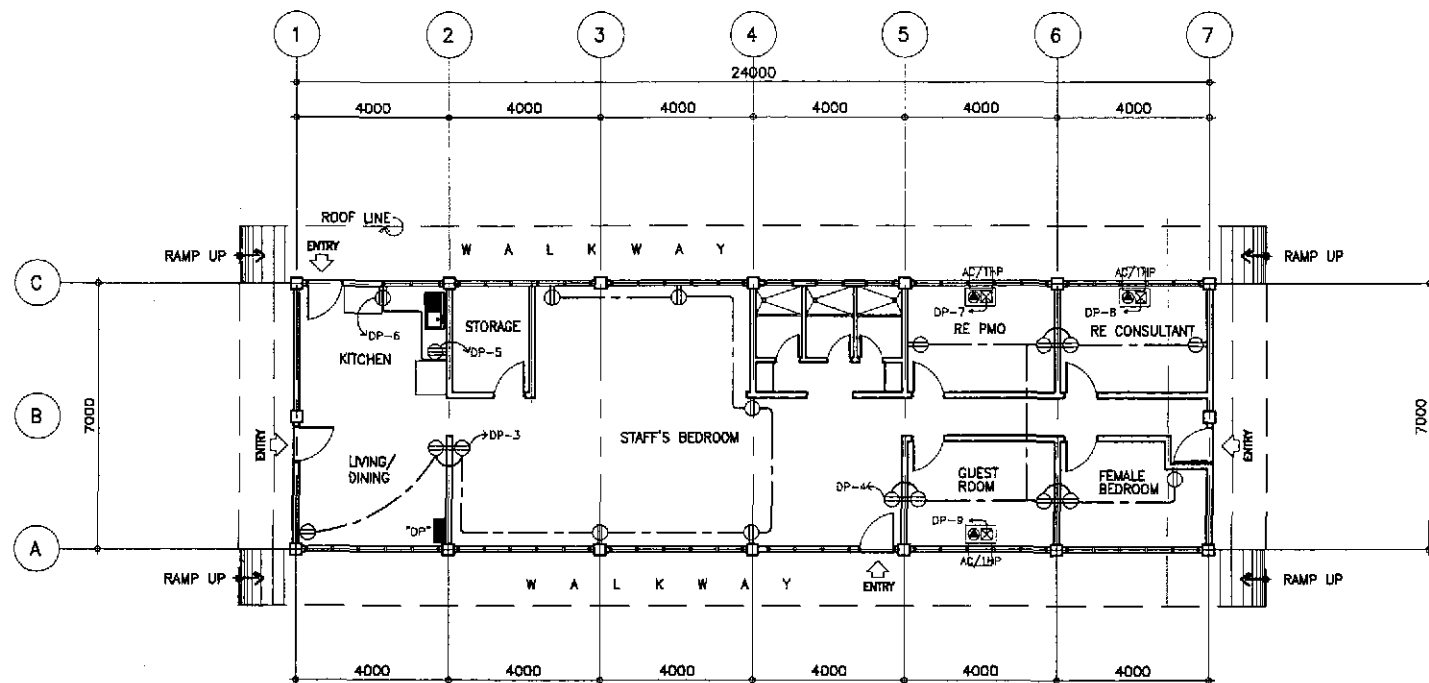
- CEILING LIGHT; REFER TO SCHEDULE OF LIGHTING FIXTURES AND LAMPS
- ELECTRICAL RISER
- ONE-WAY WALL SWITCH, 15A, 250V
- 2 ONE-WAY WALL SWITCHES ON ONE-GANG PLATE, 15A, 250V
- 3 ONE-WAY WALL SWITCHES ON ONE-GANG PLATE, 15A, 250V
- DUPLEX CONVENIENCE OUTLET, GROUNDING TYPE, 20A, 250V
- HEAVY DUTY CONVENIENCE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



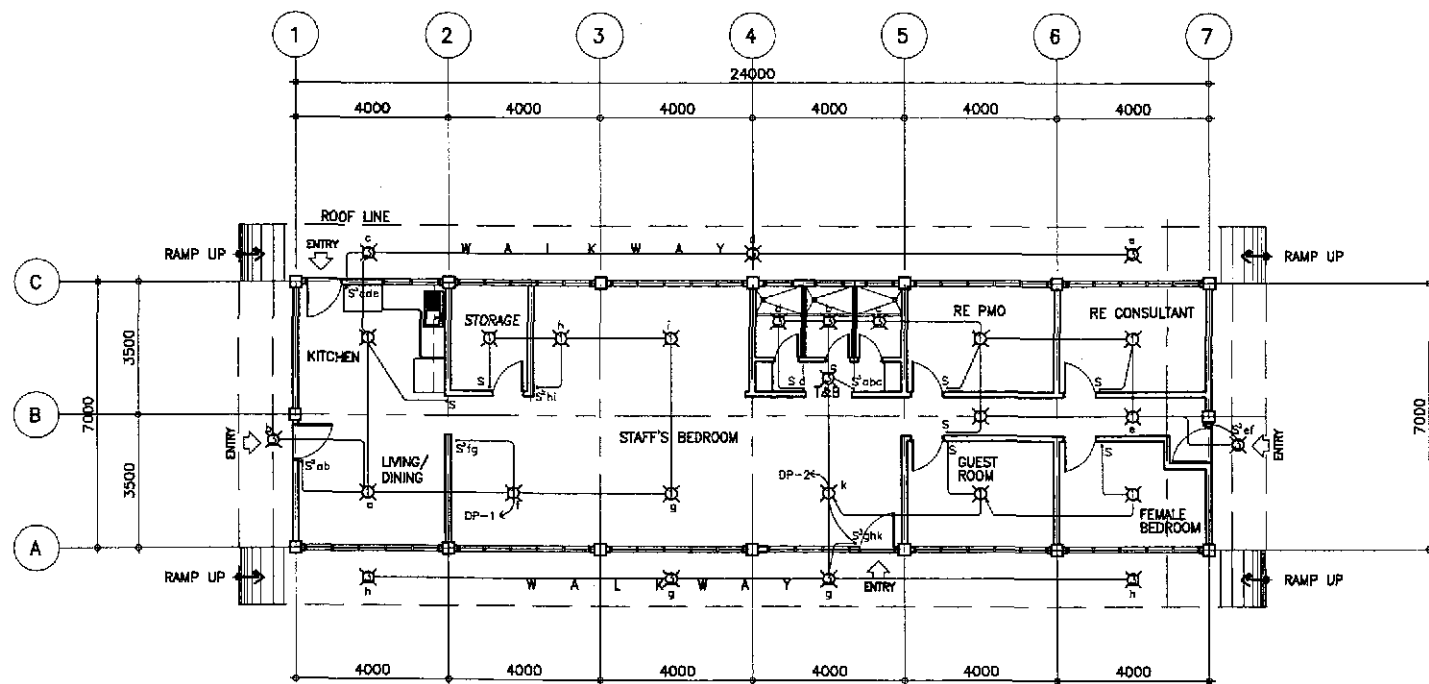
2 LIGHTING LAYOUT OF THE ENGINEER'S FIELD OFFICE / LABORATORY
FE-01 SCALE 1:100

ERNESTO M. ANTIOQUIA
 ENGINEER
 PTR. NO. 7403684 P.E.E. NO. 2913
 ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
 T.I.N. 109-382-379

	DESIGNED	9/2/02	DATE	9/2/02	SIGNATURE	E.M. ANTIOQUIA	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :								
	CHECKED	9/9/02	SUBMITTED	9/11/02	Submitted By:	DANILO C. TRAJANO Project Director		Reviewed By:	FE. M. BARRIENTOS Chief, Mech/Elect Division	Recommended By:	GILBERTO S. REYES OIC, Director IV	Recommended By:	(See cover sheet for Signature/Approval) MANUEL M. BONDAN Undersecretary	Approved By:	(See cover sheet for Signature/Approval) SIMEON A. DATUMANONG Secretary	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
									PROJECT AND LOCATION :	FULL SIZE A1			SAN JOSE BYPASS						



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:

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

NOTE:

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

ELECTRICAL SYMBOLS:

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

EM
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

 JICA JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL YACHIYO ENGINEERING CO., LTD.	DESIGNED	DATE	SIGNATURE	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/11/02	<i>EM</i>	BUREAU OF DESIGN Submitted By: PUHL - PMO Reviewed By: DANILO C. TRAJANO Project Director	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	AS SHOWN	ENGINEER'S LIVING QUARTERS LIGHTING LAYOUT, POWER LAYOUT ELECTRICAL SYMBOLS & GENERAL NOTES	FE-02
	SUBMITTED	9/11/02	<i>EM</i>	OFFICE OF THE SECRETARY Recommended By: FE. M. BARRIENTOS Chief, Mech-Elect Division Recommended By: GILBERTO S. REYES OC, Director IV Recommended By: MANUEL M. BONGGAN Undersecretary Approved By: SIMEON A. DATUMANONG Secretary	FULL SIZE A1			

SCHEDULE OF LOADS AND COMPUTATIONS

PANELBOARD "DP"						MAIN A.C.B. : 100AF, 2P, 250V 100 AT, 18 KAIC W/SOLID NEUTRAL	
CRT. NO.	LOAD DESCRIPTION	VA	RATING OF BRANCH BREAKER			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 ² C	
2	LIGHT OUTLETS	640	220	50	2 15	2-3.5mm ² TW ² in 15mm ² C	
3	CONVENIENCE OUTLET	1440	220	50	2 20	2-3.5mm ² TW ² in 15mm ² C	
4	CONVENIENCE OUTLET	1620	220	50	2 20	2-3.5mm ² TW ² in 15mm ² C	
5	REFRIGERATOR	500	220	50	2 20	2-3.5mm ² TW ² + 1-20mm ² TW(G) IN 15mm ² C	
6	ELECTRIC STOVE	3000	220	50	2 30	2-5.5mm ² THW+1-3.5mm ² TW(G) IN 20mm ² 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 ² 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 ² 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 ² 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					

$I_v @ 90\% \text{ D.F.} = \frac{18095}{220} (0.90) + 0.25(8) = 78.03 \text{ Amps}$
 $I_B = \frac{18095}{220} (0.90) + 1.5(8) = 86.03 \text{ Amps}$
 MAIN ACB: 100AF, 2P, 250 V, 100AT, 15KAIC
 USE : 2-38mm² THW + 1-14mm² TW(G) IN 40mm² RSC

SCHEDULE OF LIGHTING FIXTURES & LAMPS

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

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

ENGINEER'S LIVING QUARTERS

SCHEDULE OF LOADS AND COMPUTATIONS

PANELBOARD "DPA"						MAIN A.C.B. : 225AF, 2P, 250V 200 AT, 18 KAIC W/SOLID NEUTRAL	
CRT. NO.	LOAD DESCRIPTION	VA	RATING OF BRANCH BREAKER			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 ² C	
2	LIGHT OUTLETS	1210	220	50	2 15	2-3.5mm ² TW ² in 15mm ² C	
3	LIGHT OUTLETS	1065	220	50	2 15	2-3.5mm ² TW ² in 15mm ² C	
4	CONVENIENCE OUTLETS	1800	220	50	2 20	2-3.5mm ² TW ² + 1-2.0mm ² TW(G) IN 15mm ² C	
5	CONVENIENCE OUTLETS	1620	220	50	2 20	2-3.5mm ² TW ² + 1-2.0mm ² TW(G) IN 15mm ² C	
6	PHOTOCOPIY MACHINE /HEAVY DUTY CO.	2500	220	50	2 20	2-3.5mm ² TW ² + 1-2.0mm ² TW(G) IN 15mm ² 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 ² 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 ² 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 ² 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 ² C	
12	SPARE	1500	220	50	2 20	-	
TOTAL		37,575					

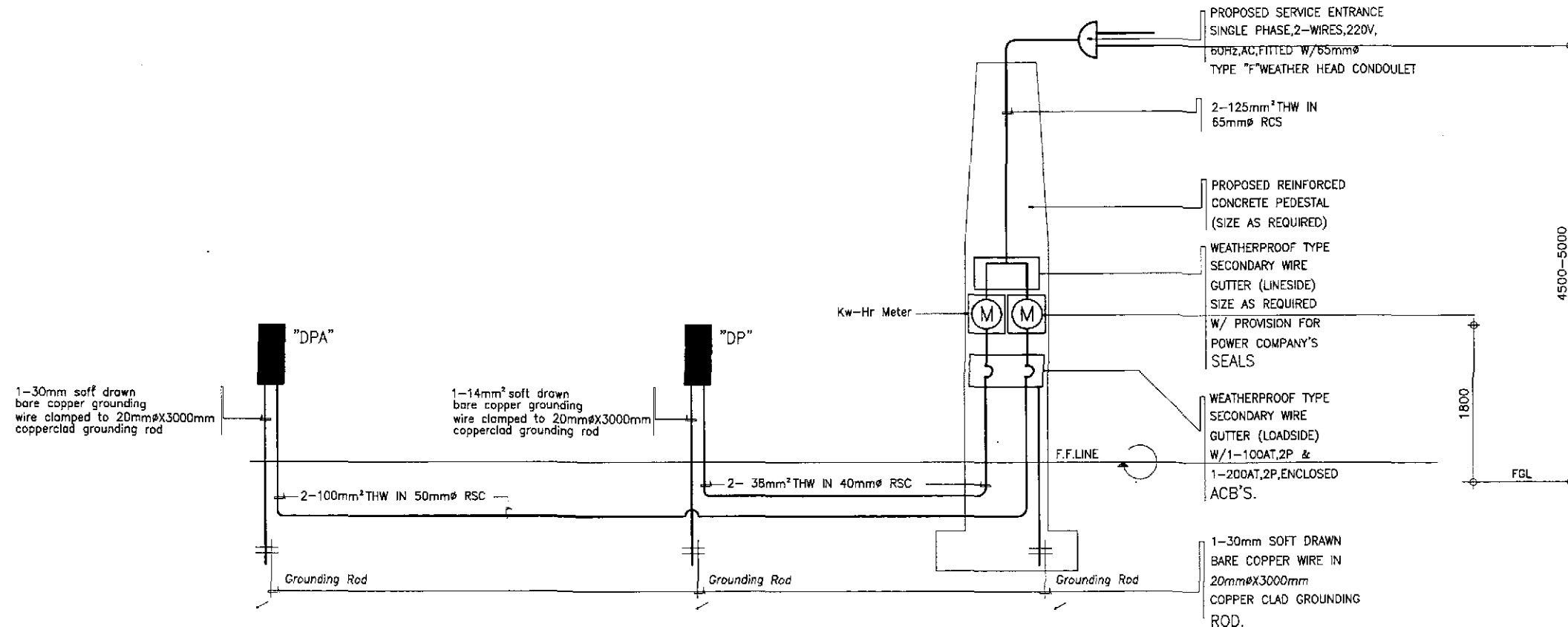
$I_v @ 95\% \text{ D.F.} = \frac{37575(0.95)}{220} + 0.25(23) = 168 \text{ Amps}$
 USE : 2-100mm² THW + 1-30mm² TW IN 50mm² RSC
 $I_B = 162.25567 + 1.5(23) = 196.75 \text{ Amps.}$
 MAIN ACB: 225AF, 2P, 250 V, 200AT, 18 KAIC

SCHEDULE OF LIGHTING FIXTURES & LAMPS

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

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

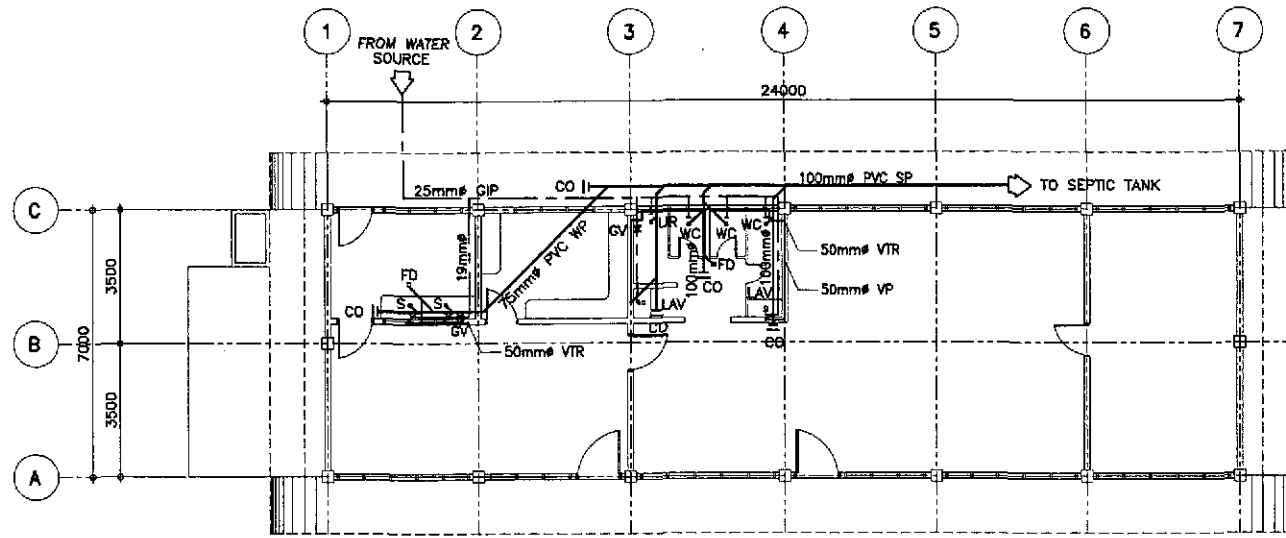
ENGINEER'S FIELD OFFICE/LABORATORY



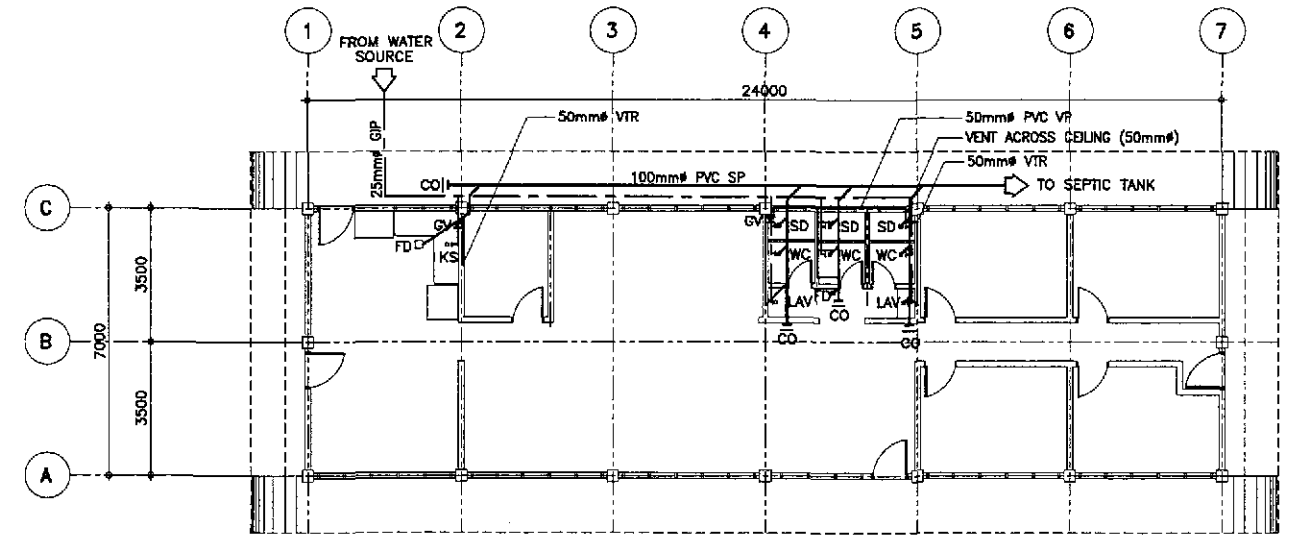
COMPUTATION FOR REQUIRED SIZE OF MAIN SERVICE ENTRANCE FEEDER:
 $I_T = \frac{VA^{DPA} + VA^{AP}}{220} @ 85\% \text{ DF} + 0.25(I)$
 $I_T = \frac{37575 + 18095}{220} (0.85) + 0.25(23)$
 $I_T = 220.83 \text{ Amps.}$
 USE : 2-125 mm² THW IN 65 mm² RSC

1 ELECTRICAL RISER DIAGRAMS
 FE-03 NOT TO SCALE

ERNESTO M. ANTIOQUIA
 ENGINEER
 PTR. NO. 7403684 P.E.E. NO. 2913
 ISSUED ON 01/02/2002 ISSUED AT CABUYAG, LAGUNA
 T.I.N. 109-382-379

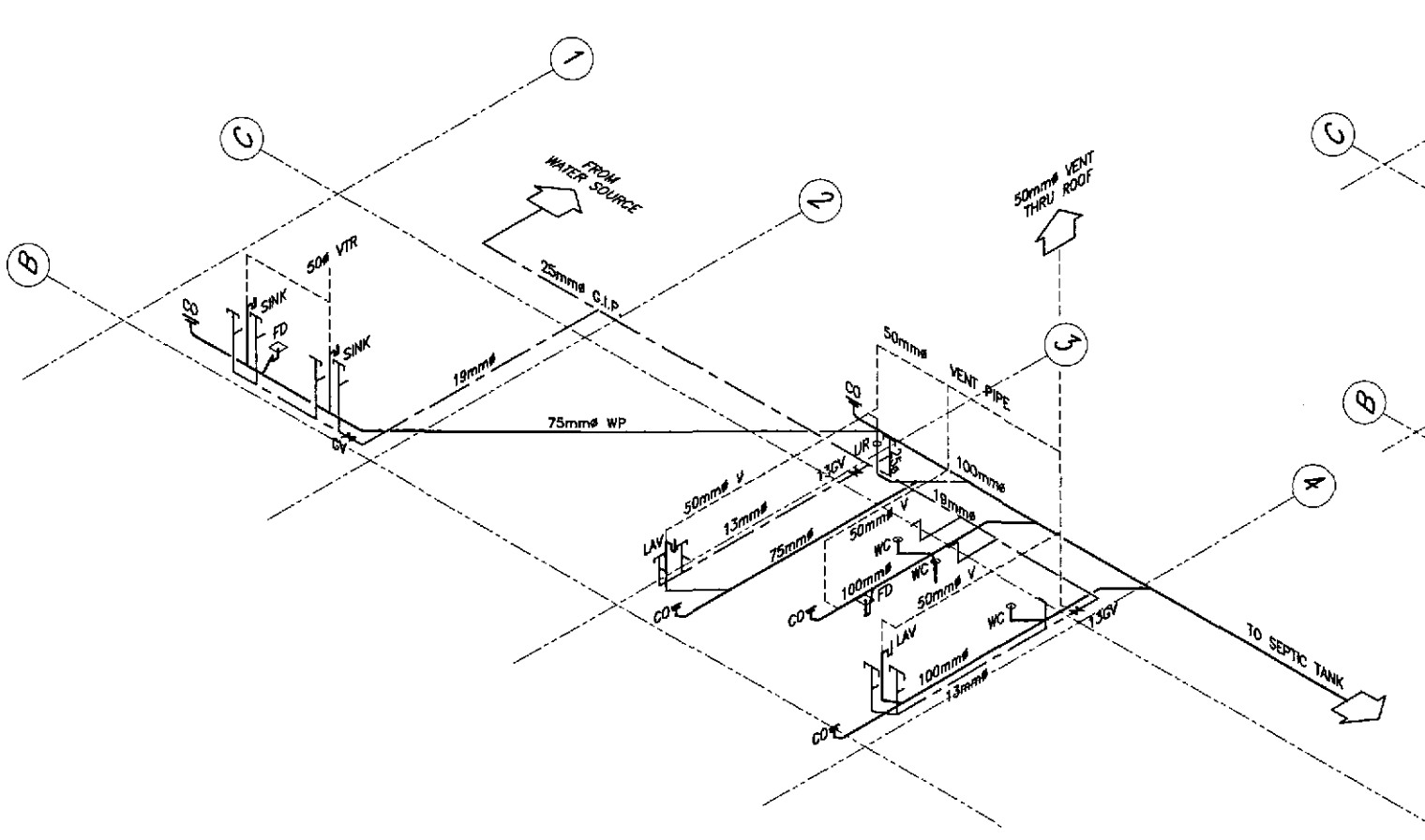


1 ENGINEER'S FIELD OFFICE
SEWER AND WATER LINE LAYOUT
FP-01 SCALE 1:100

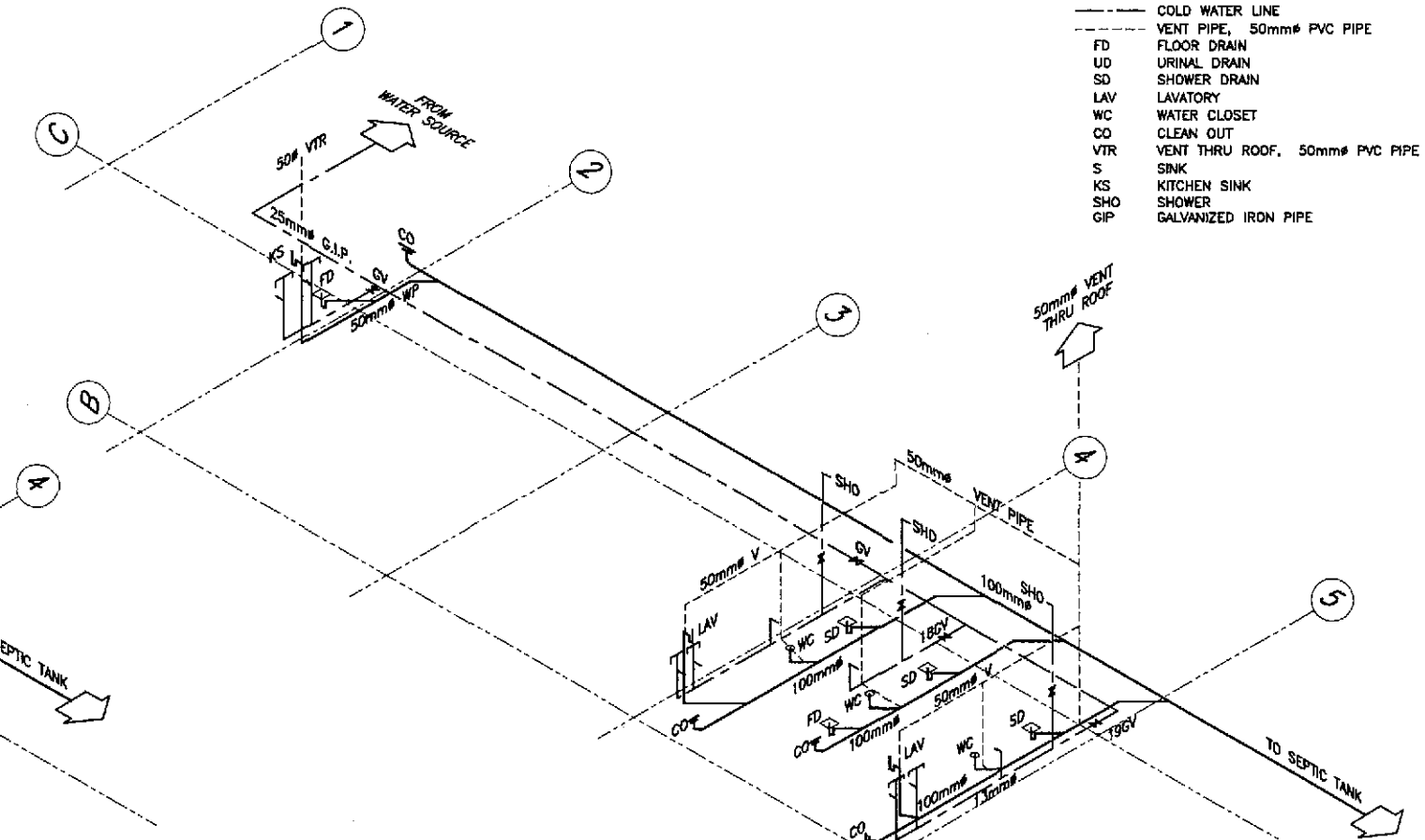


2 ENGINEER'S LIVING QUARTER
SEWER AND WATER LINE LAYOUT
FP-01 SCALE 1:100

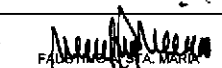
- LEGEND :
- SEWER LINE
 - COLD WATER LINE
 - - - VENT PIPE, 50mm# PVC PIPE
 - FD FLOOR DRAIN
 - UD URINAL DRAIN
 - SD SHOWER DRAIN
 - LAV LAVATORY
 - WC WATER CLOSET
 - CO CLEAN OUT
 - VTR VENT THRU ROOF, 50mm# PVC PIPE
 - S SINK
 - KS KITCHEN SINK
 - SHO SHOWER
 - GIP GALVANIZED IRON PIPE




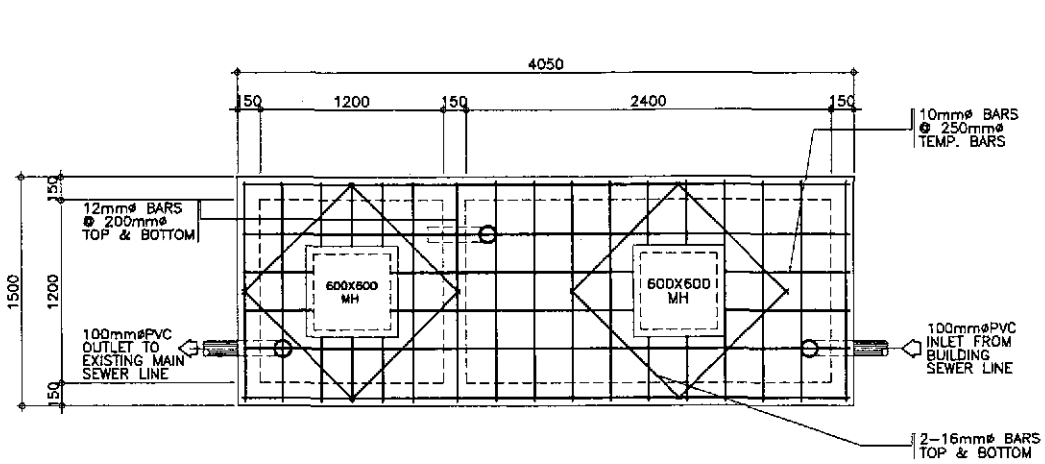
3 (SHOWING SEWER AND WATER LINE)
ISOMETRIC DIAGRAM
FP-01 SCALE 1:50



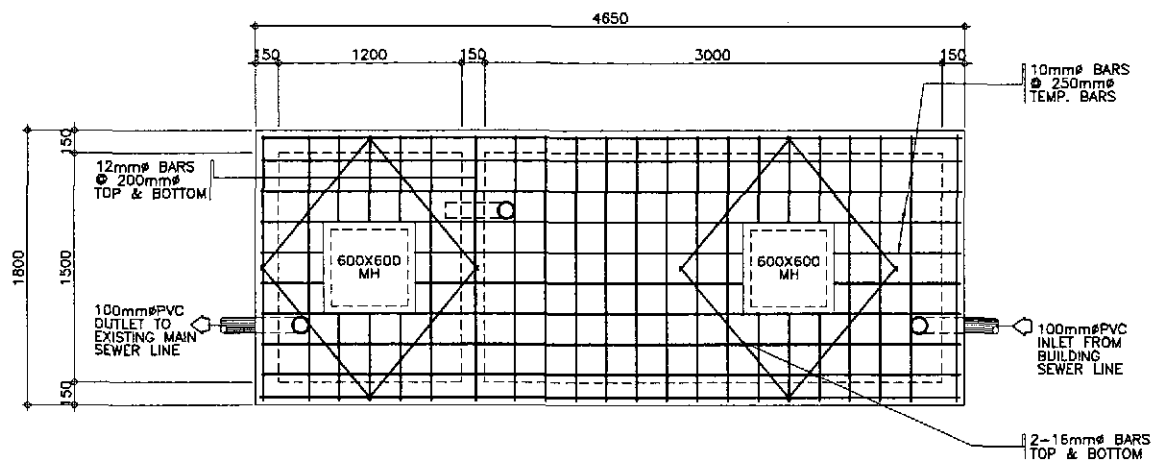
4 (SHOWING SEWER AND WATER LINE)
ISOMETRIC DIAGRAM
FP-01 SCALE 1:50


 FABIAN M. STA. MARIA
 SANITARY ENGINEER
 PTR. NO. 0083138 P.R.C. NO. 0002695
 ISSUED ON 03/26/2002 T.I.N. 119-878-225
 ISSUED AT SAN MATEO, RIZAL

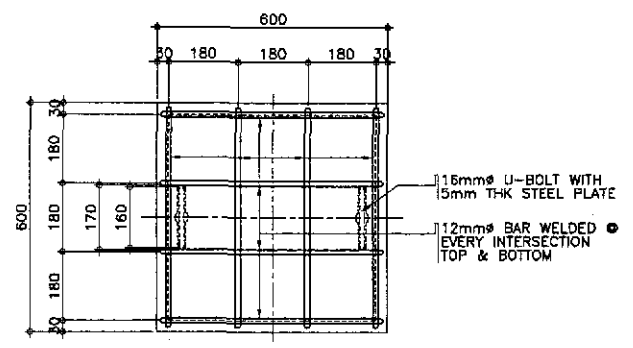
	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	<i>[Signature]</i>	P.U.L. - PMO	BUREAU OF DESIGN			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY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



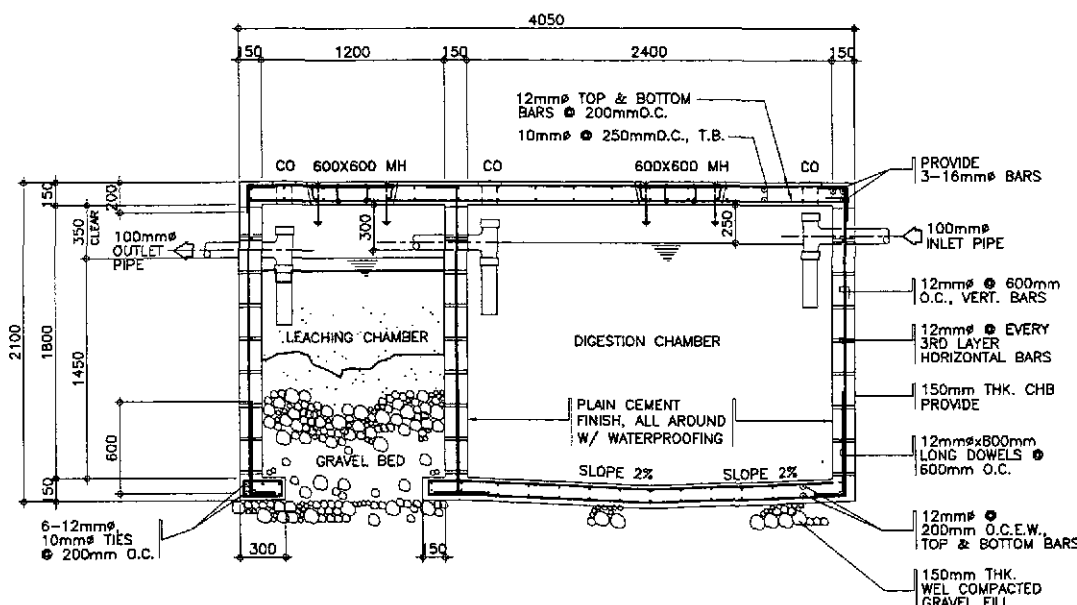
1A PLAN
FP-02 SCALE 1:20



1C PLAN
FP-02 SCALE 1:20

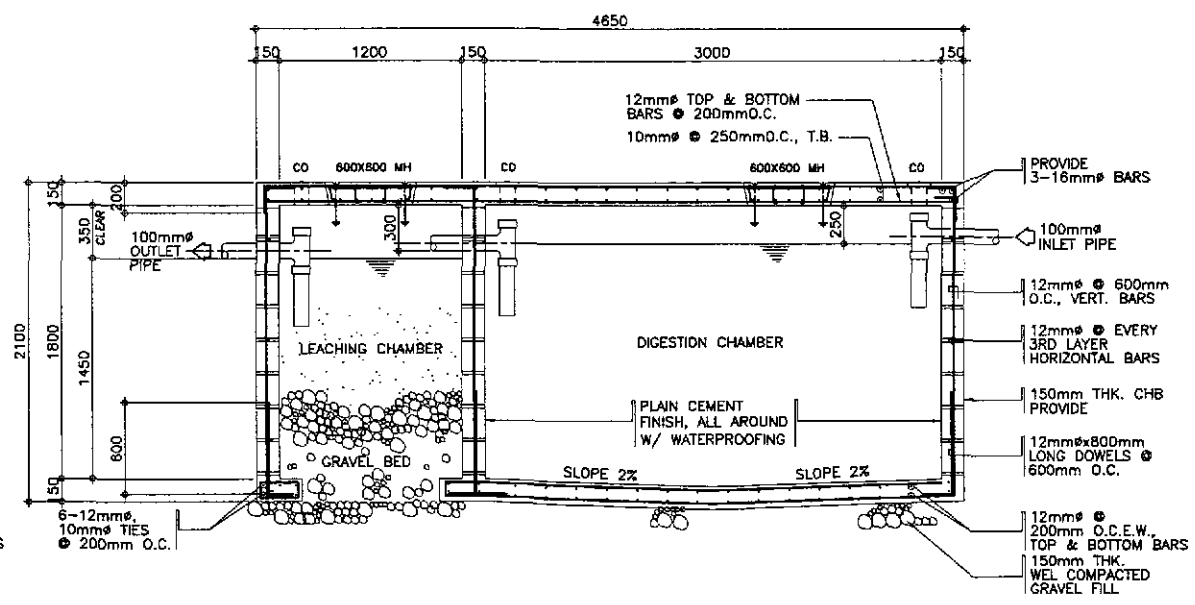


2A PLAN
FP-02 SCALE 1:20



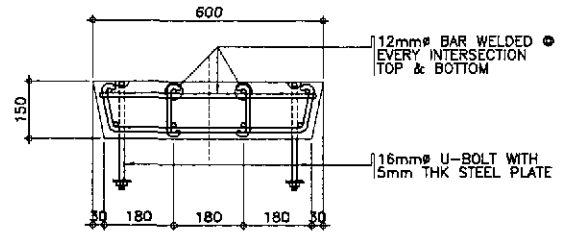
1B SECTION
FP-02 SCALE 1:20

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

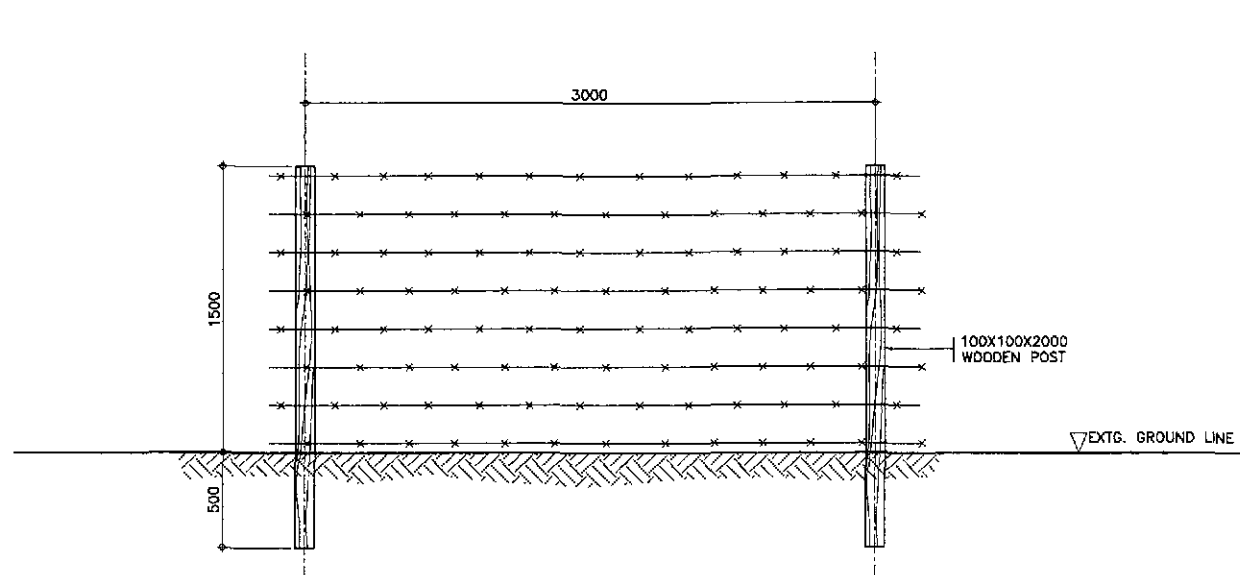
- GENERAL NOTES:**
- ALL PLUMBING WORKS INCLUDED HEREIN EXECUTED ACCORDING TO THE PROVISIONS AND REQUIREMENTS OF THE PHILIPPINE NATIONAL PLUMBING CODE.
 - SOIL AND WASTE PIPE LINE SHALL BE PVC, SIZE AS IN DRAWING.
 - ALL WATER LINES SHALL BE G.I. PIPE SCHEDULE 40 AND SIZE OF PIPES TO THE FIXTURES SHALL 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

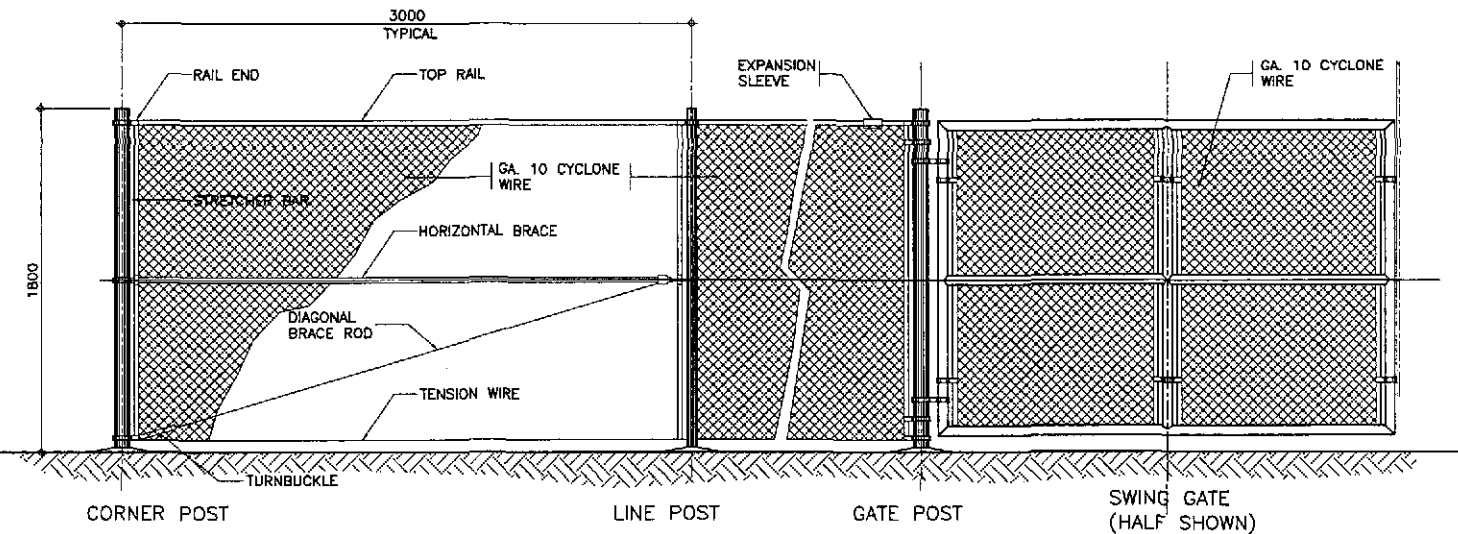
Manuel M. Bondan
SANITARY ENGINEER

PTR. NO. 0083138 P.R.C. NO. 0000695
ISSUED ON 03/26/2002 T.I.N. 118-878-225
ISSUED AT SAN MATEO, RIZAL

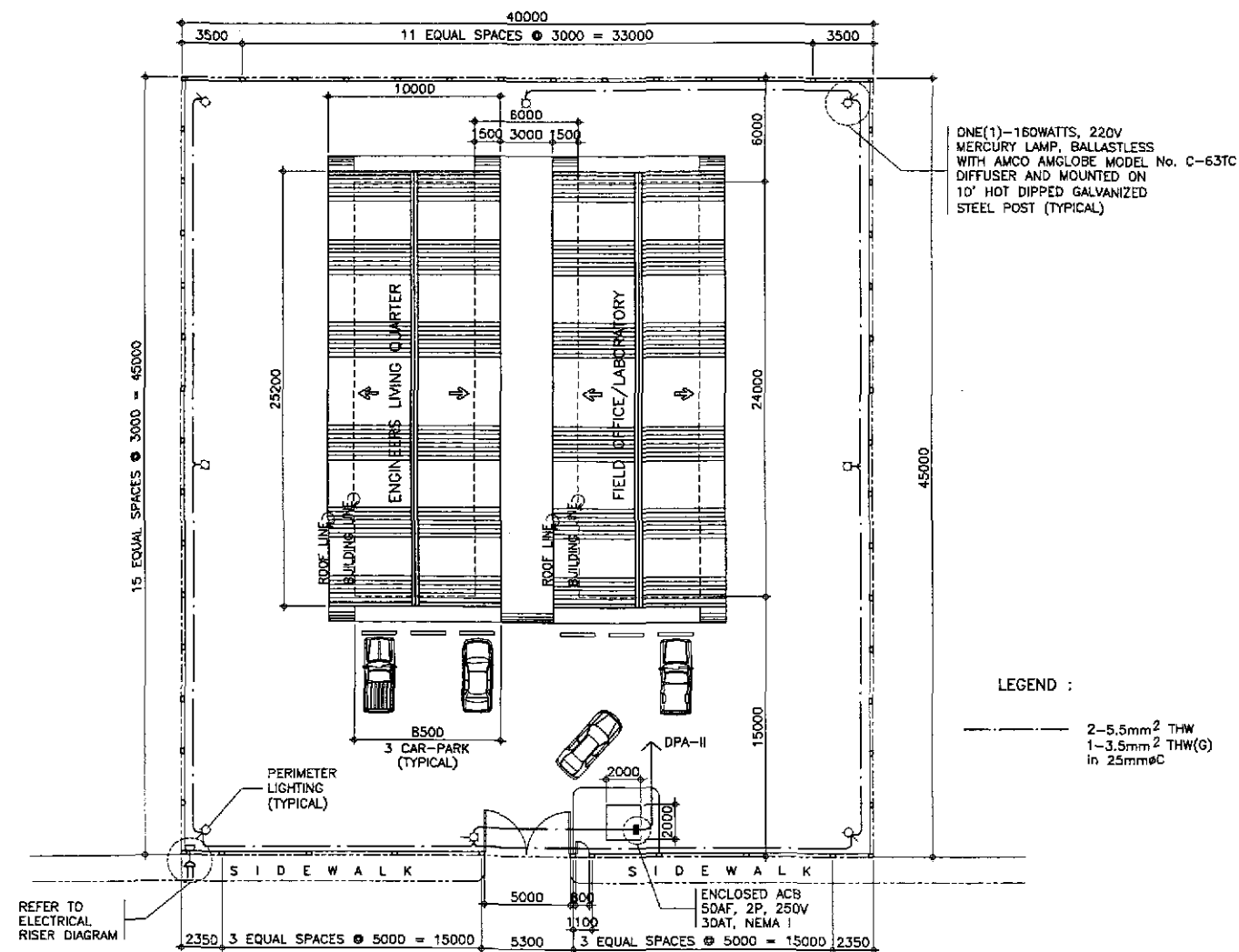
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/10/02	<i>Manuel M. Bondan</i>		DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	ENGINEER'S FIELD OFFICE AND LIVING QUARTERS SEPTIC TANK DETAILS	FP-02
	SUBMITTED	9/10/02	<i>Manuel M. Bondan</i>		BUREAU OF DESIGN	SAN JOSE BYPASS	FULL SIZE A1		
			Submitted By: <i>Manuel M. Bondan</i>	OFFICE OF THE SECRETARY	Recommended By: <i>Manuel M. Bondan</i>	Approved By: <i>Simeon A. Datumanong</i>			
			Project Director: <i>Daniilo C. Trajano</i>	Chief, Architectural Division: <i>Emmanuel P. Cuntapay</i>	OIC, Director IV: <i>Gilberto S. Reyes</i>	Secretary: <i>Simeon A. Datumanong</i>			



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



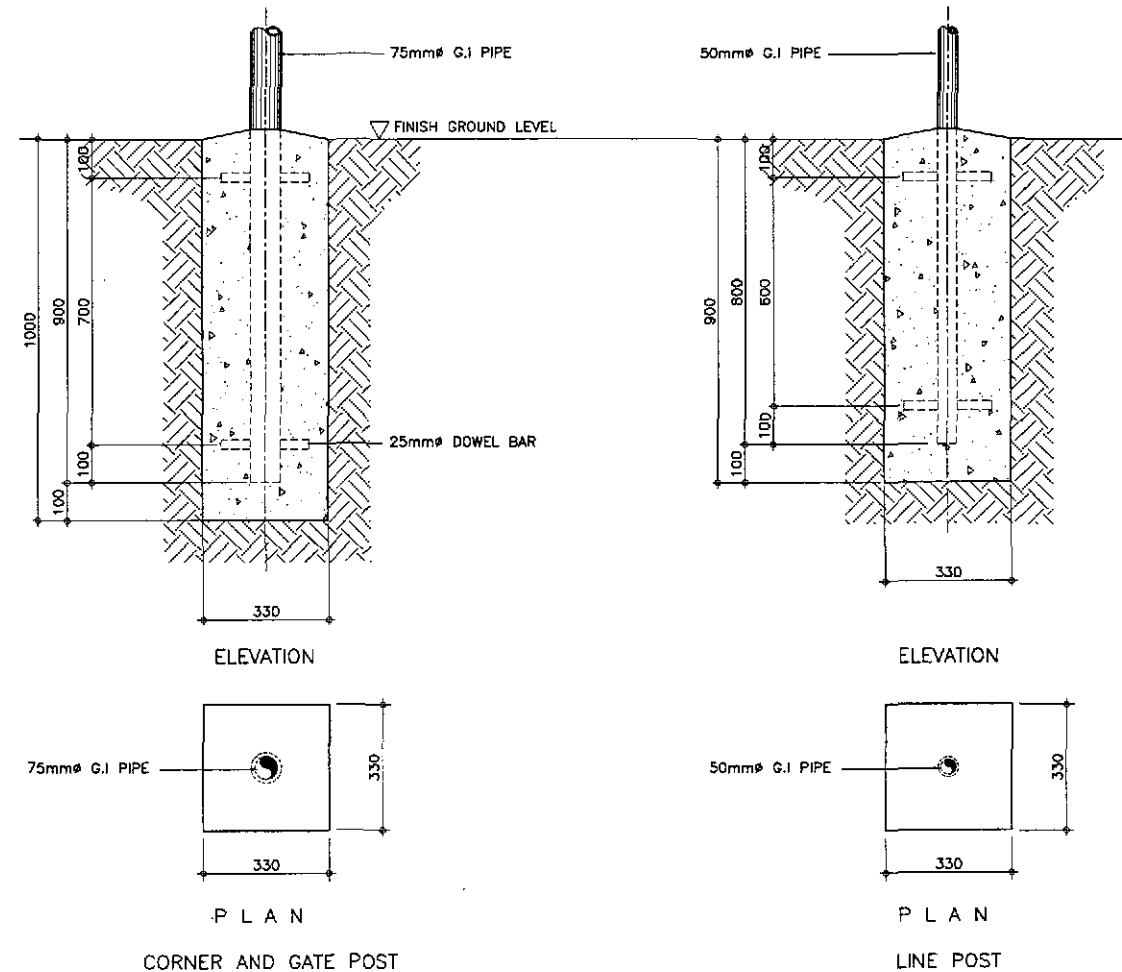
2 TYPICAL ELEVATION - FENCE AND GATE
 FX-01 SCALE 1:20



1 PLOT PLAN
 FX-01 SCALE 1:200

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

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



4 TYPICAL FOUNDATION DETAIL
 FX-01 SCALE 1:10

APRIL P. GONZALES
 ENGINEER
 PTR. NO. 584634D 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) SAN JOSE BYPASS	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	1/9/02	P. GONZALES		BUREAU OF DESIGN OFFICE OF THE SECRETARY Submitted By: DANIL D. TRAJANO, Project Director Reviewed By: EMMANUEL P. CUNTAPAY, Chief, Architectural Division Recommended By: GILBERTO S. REYES, OIC, Director IV Approved By: MANUEL M. BONDAN, Undersecretary SIMEON A. DATUMANONG, Secretary						