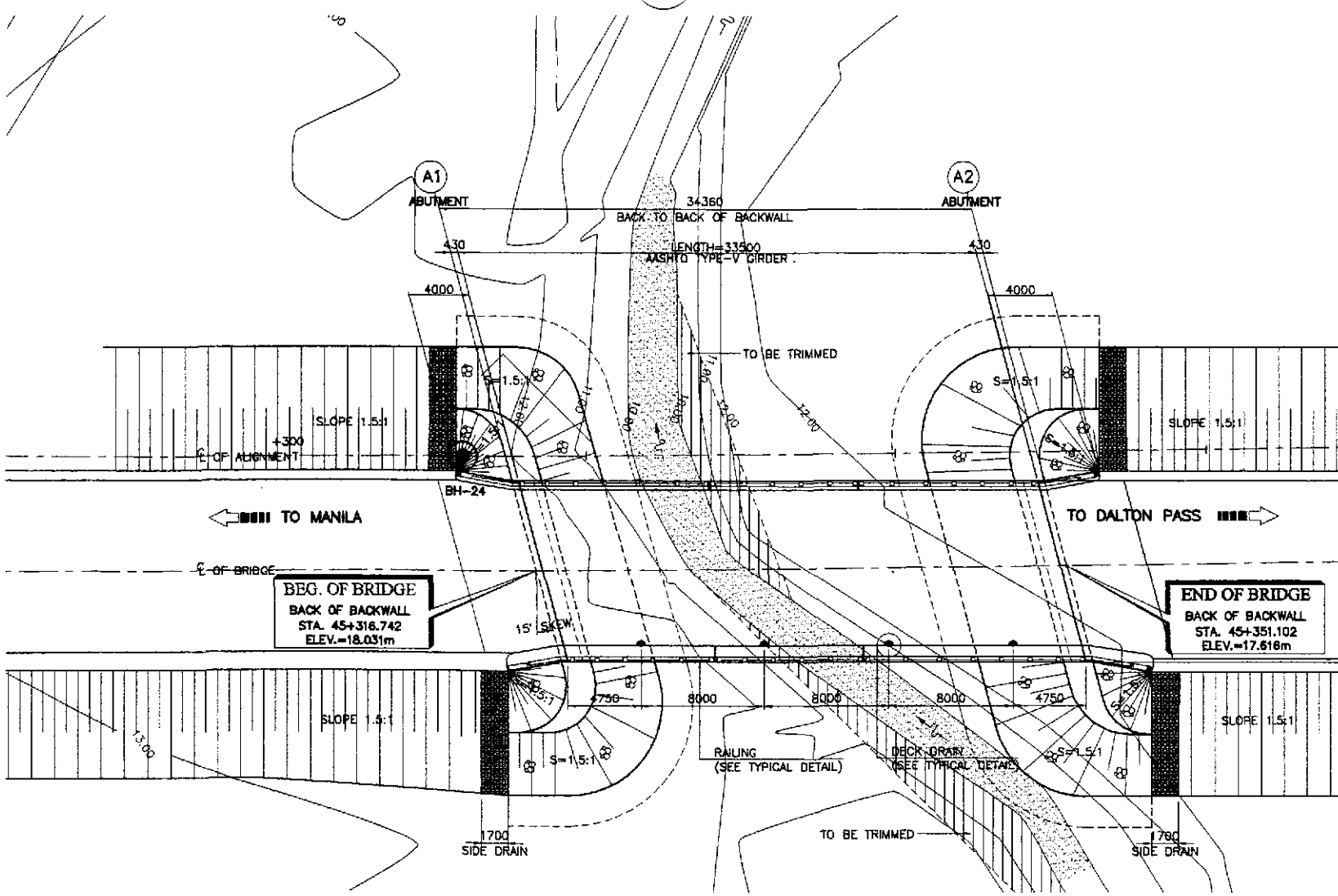
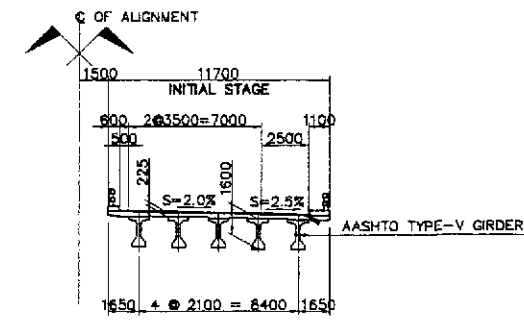


1 GENERAL ELEVATION
SCALE 1:200

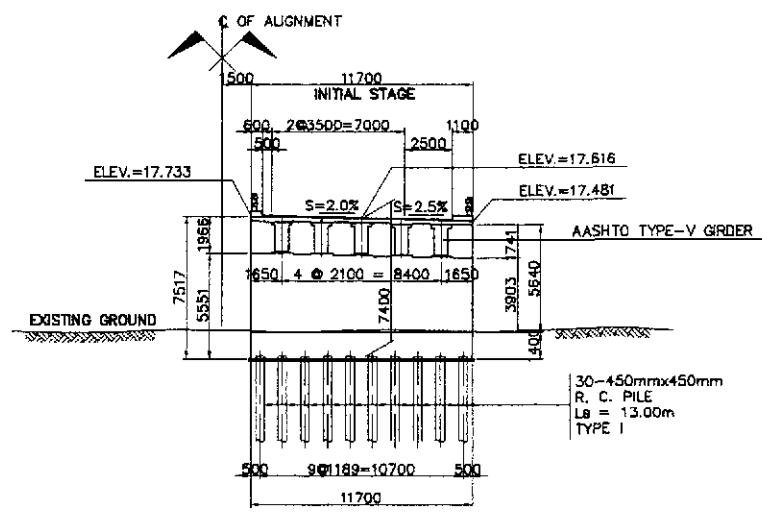


2 GENERAL PLAN
SCALE 1:200

A PLARIDEL BYPASS BRIDGE NO.5 (STA. 45+316.742)
SCALE AS SHOWN



3 SECTION @ MIDSPAN
SCALE 1:200



4 SECTION @ ABUTMENT A2
SCALE 1:200

HYDRAULIC DESIGN DATA	
VELOCITY @ 50 YEARS, V_{50}	1.298 m/sec
DISCHARGE @ 50 YEARS, Q_{50}	85.600 cu.m/sec
CATCHMENT AREA, CA	7.175 sq. km

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

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

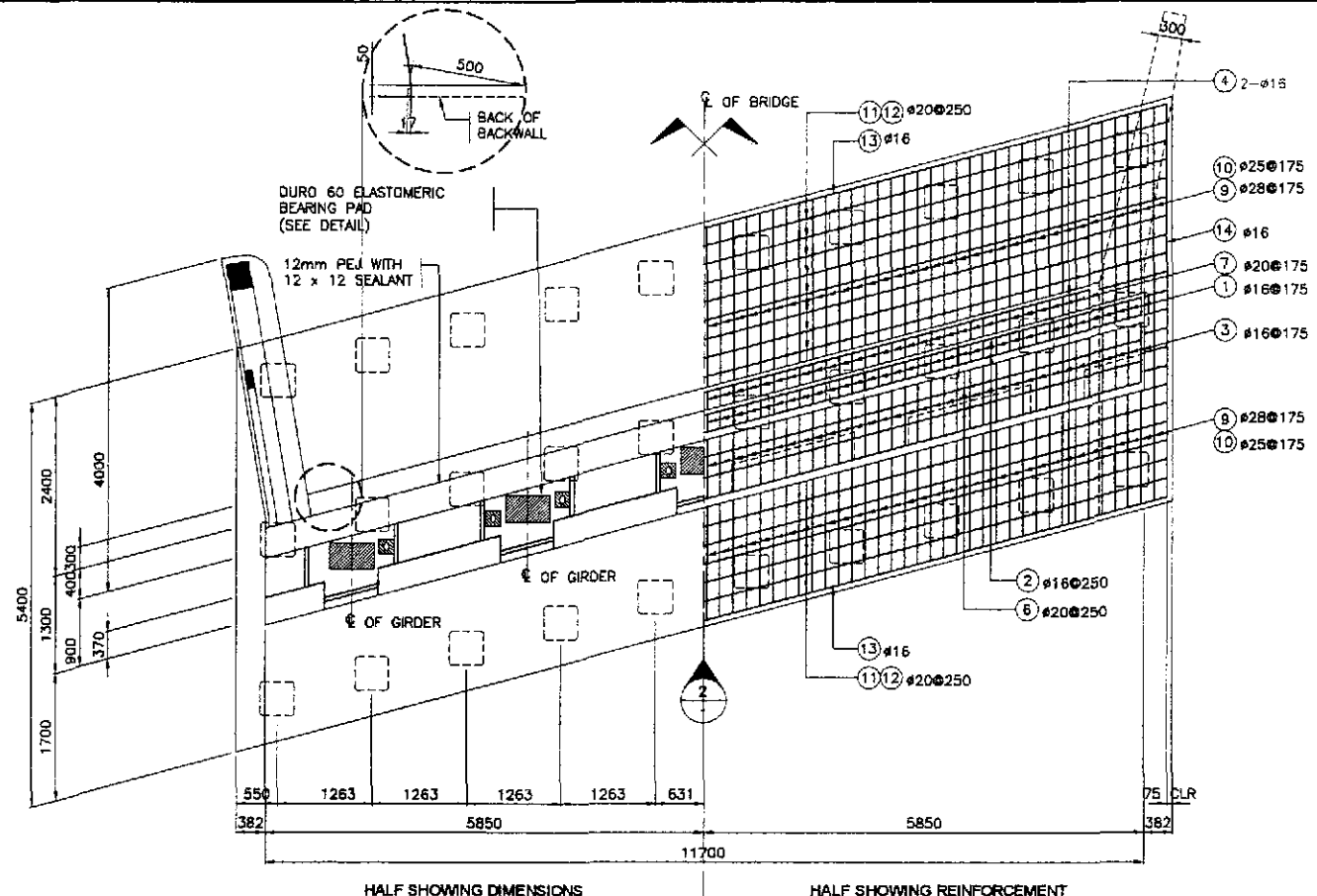
PERFECTO L. ZAPLAN JR.
OIC Chief, Hydraulics Division, BOD

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

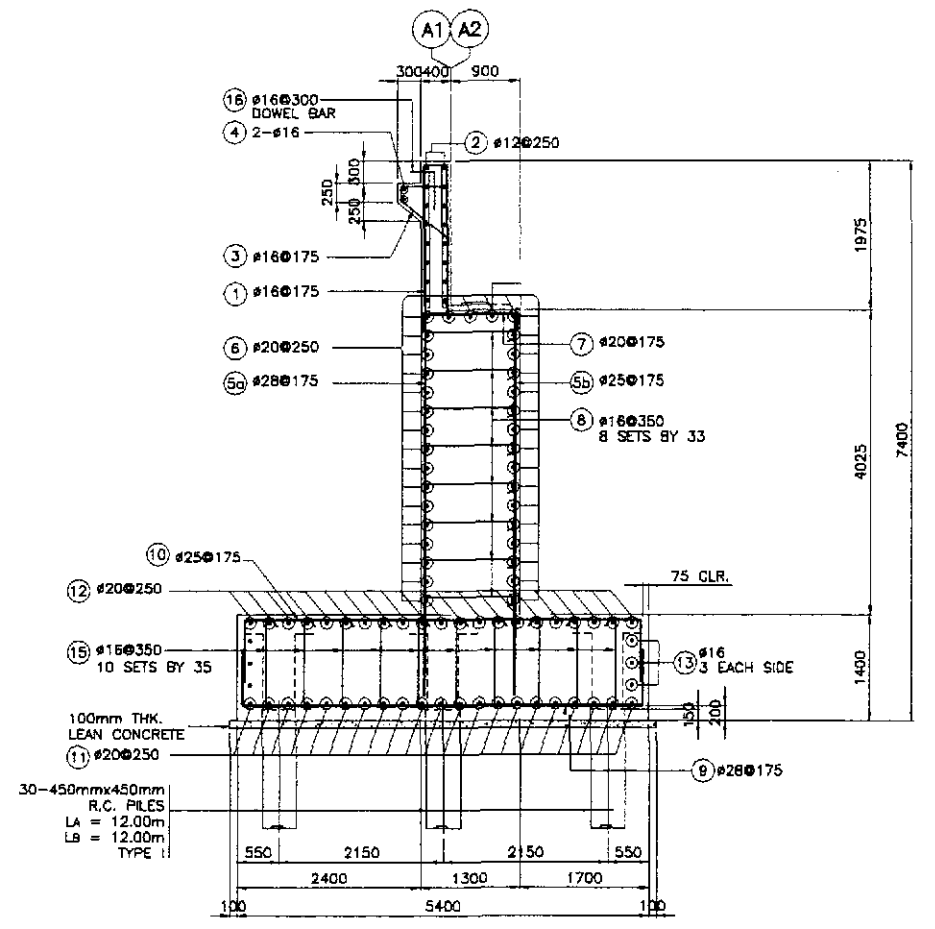
KATAHIRA & ENGINEERS INTERNATIONAL
YEO YACHIYO ENGINEERING CO., LTD.

DESIGNED		CHECKED		SUBMITTED	
DATE	SIGNATURE	DATE	SIGNATURE	DATE	SIGNATURE
9/18/02	<i>[Signature]</i>	9/20/02	<i>[Signature]</i>	9/23/02	<i>[Signature]</i>
<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p> <p>BUREAU OF DESIGN OFFICE OF THE SECRETARY</p> <p>Submitted By: DANILLO C. TRAJANO Project Director</p> <p>Reviewed By: ADRIANO M. DORCY Chief, Bridge Division</p> <p>Recommended By: GILBERTO S. REYES Director IV (GIC)</p> <p>Recommended By: MANUEL N. BONDAN Undersecretary</p> <p>Approved By: SIMON A. DATUMANONG Secretary</p>					

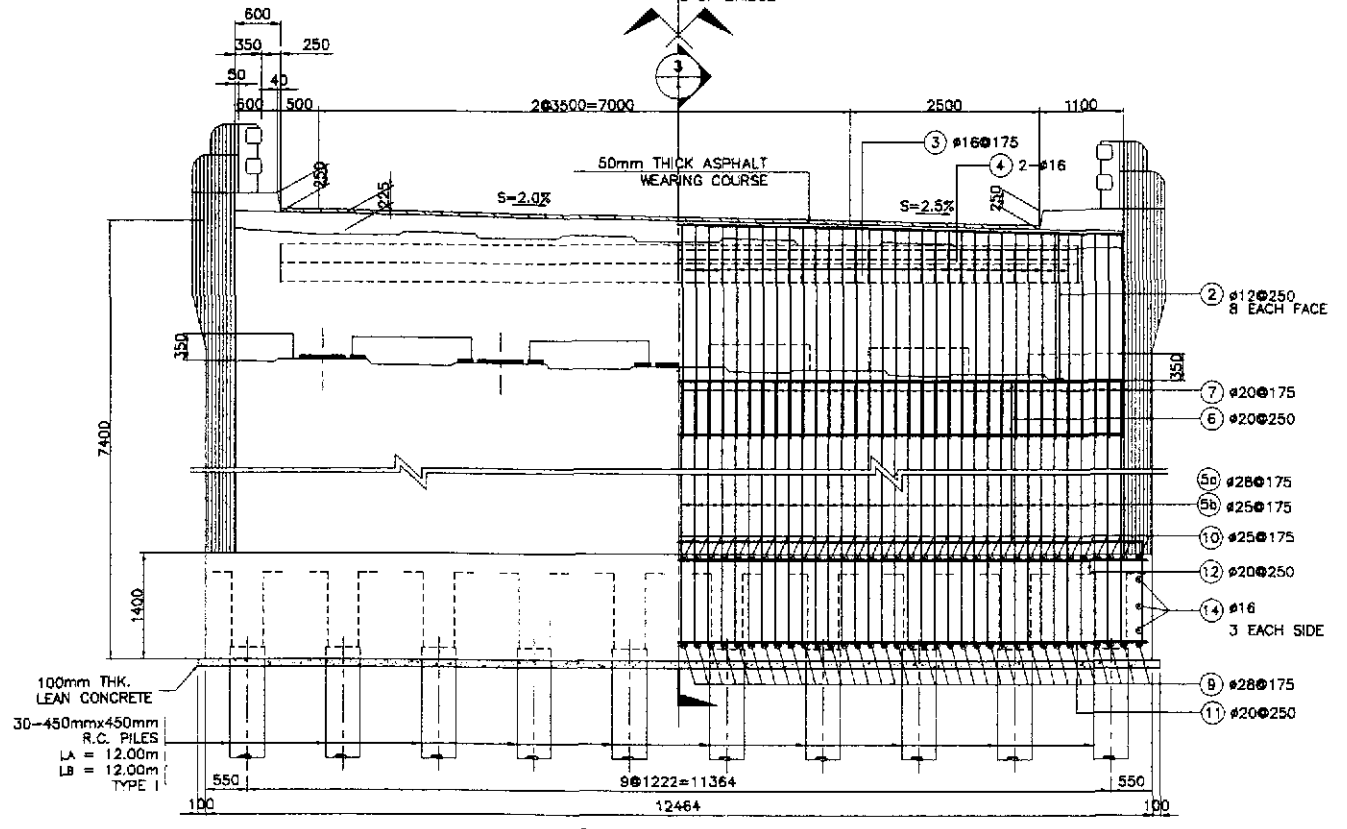
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	1:200 FULL SIZE A1	BRIDGE NO. 5 GENERAL PLAN, ELEVATION AND SECTIONS (INITIAL STAGE)	B5-01
PLARIDEL BYPASS - CONTRACT PACKAGE II			



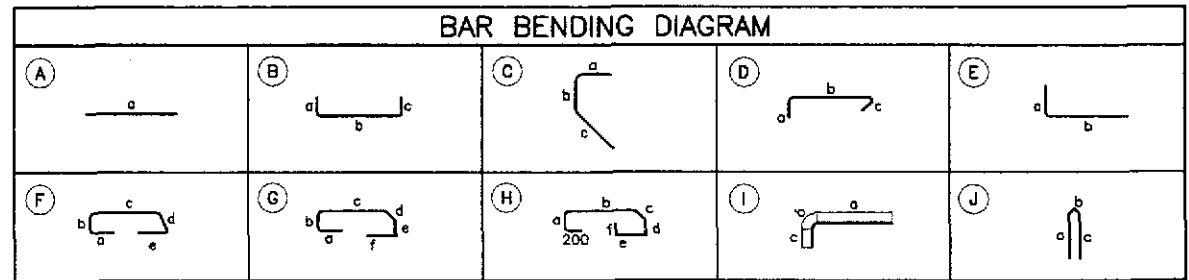
1 PLAN
SCALE 1:50



3 SECTION
SCALE 1:50

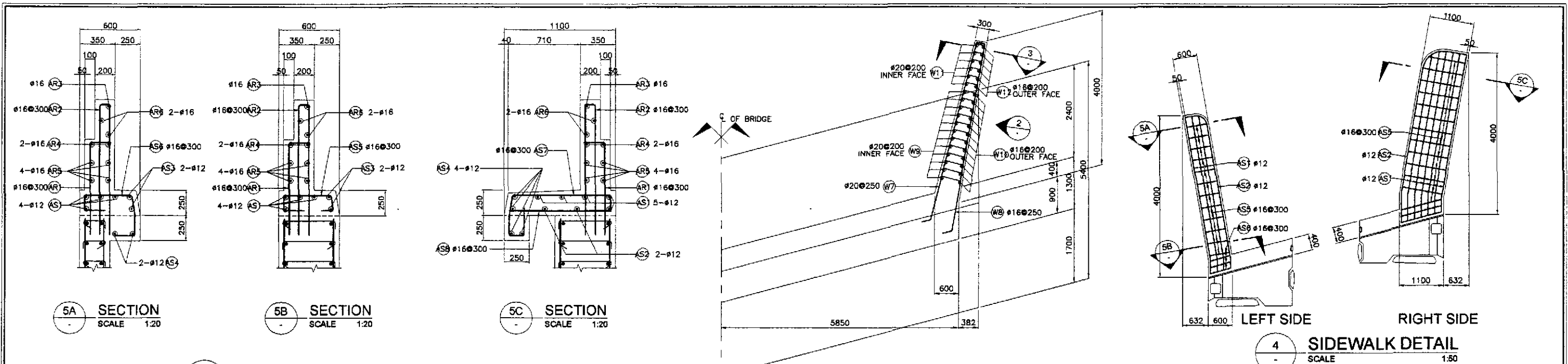


2 ELEVATION
SCALE 1:50



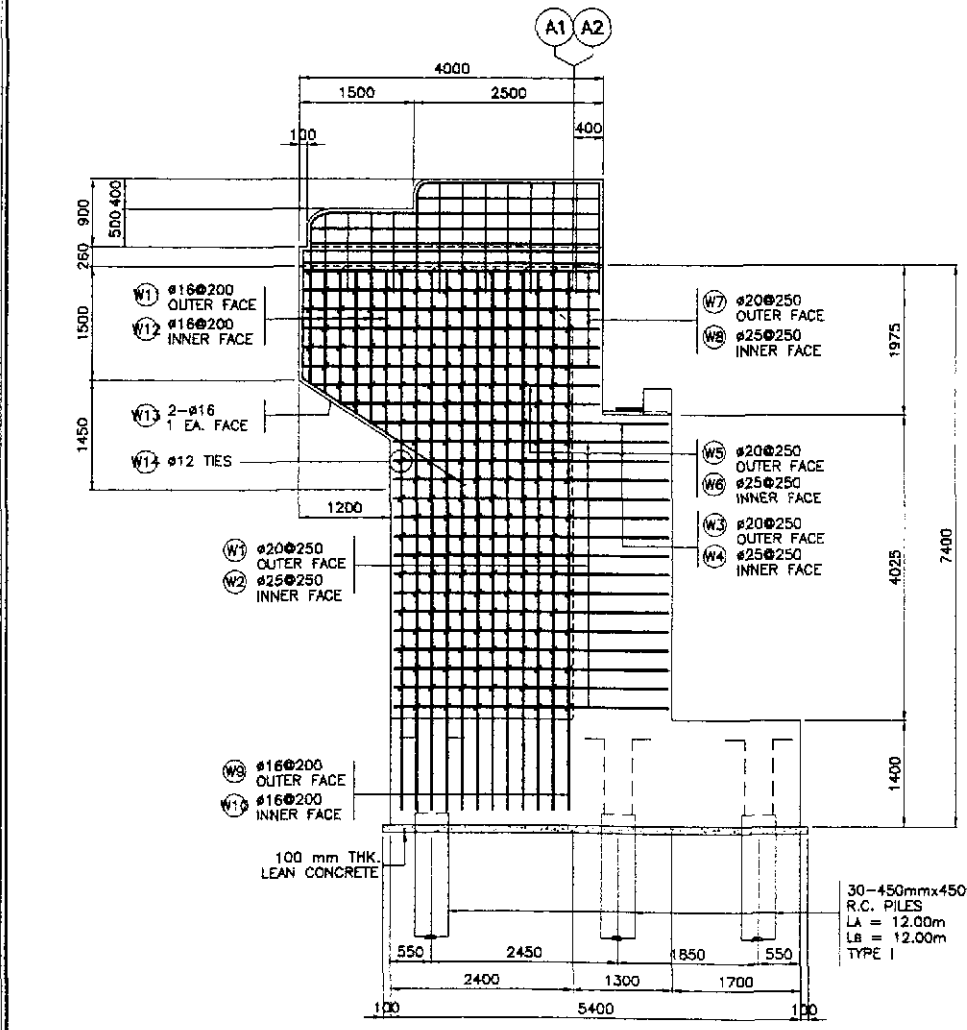
SCHEDULE OF REINFORCEMENT PER ABUTMENT																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e						f
BACKWALL	10.37	①	16	68	175	(B)	2100	300	2100	-	-	-	4500	306.00	1,579	484	79.67
		②	12	16	250	(A)	12000	-	-	-	-	-	12000	185.60	0.888	171	
		③	16	58	175	(C)	600	150	750	-	-	-	1500	87.00	1,579	136	
		④	16	2	AS SHOWN	(A)	10250	-	-	-	-	-	10250	19.80	1,579	33	
MAINWALL	61.22	5a	28	68	175	(E)	400	5150	-	-	-	-	5550	377.40	4,833	1824	86.74
		5b	25	68	175	(E)	400	5150	-	-	-	-	5550	377.40	3,854	1455	
		⑥	20	35	250	(A)	12000	-	-	-	-	-	12000	420.00	2,486	1036	
		⑦	20	68	175	(B)	250	1200	250	-	-	-	1700	115.60	2,466	286	
FOOTING	94.23	⑧	16	264	350	(D)	250	1200	250	-	-	-	1700	448.80	1,579	708	71.92
		⑨	28	71	175	(B)	700	5250	700	-	-	-	6650	472.15	4,833	2282	
		⑩	25	71	175	(B)	700	5250	700	-	-	-	6650	472.15	3,854	1820	
		⑪	20	22	250	(B)	700	12750	700	-	-	-	14150	311.30	2,466	768	
		⑫	20	22	250	(B)	700	12750	700	-	-	-	14150	311.30	2,466	768	
TOTAL	165.82	⑬	16	6	AS SHOWN	(A)	12750	-	-	-	-	-	12750	76.50	1,579	121	
		⑭	16	6	AS SHOWN	(A)	5250	-	-	-	-	-	5250	31.50	1,579	50	
		⑮	16	350	350	(D)	250	1150	250	-	-	-	1650	612.50	1,579	968	
		⑯	16	34	300	(E)	650	500	-	-	-	-	1150	78.20	1,579	62	
														GRADE 40 TOTAL = 2,736 kgs.		GRADE 60 TOTAL = 10,239 kgs.	

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/20/02	P. GONZALES		Submitted By:	BUREAU OF DESIGN	OFFICE OF THE SECRETARY	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 5 ABUTMENT A1 & A2 MAINWALL REINFORCEMENT DETAILS (INITIAL STAGE)	B5-05	
SUBMITTED	9/23/02	Y. KAWA	Team Leader	DANILO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridges Division	GILBERTO S. REYES Director IV (CIC)	MANUEL M. BONGAN Undersecretary	SIMON A. DATUMANONG Secretary	FULL SIZE A1			
PLARIDEL BYPASS - CONTRACT PACKAGE II												

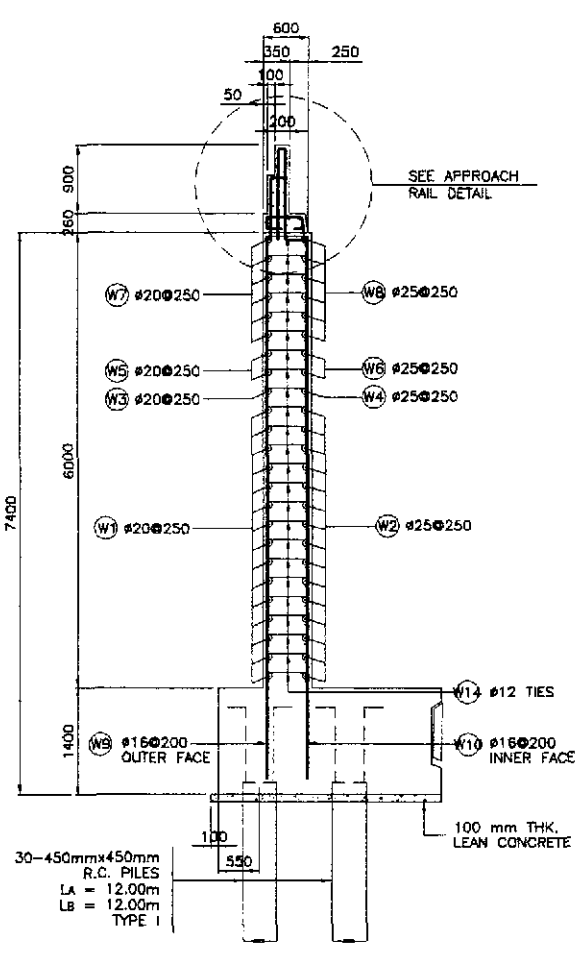


5 APPROACH RAIL DETAILS
SCALE 1:20

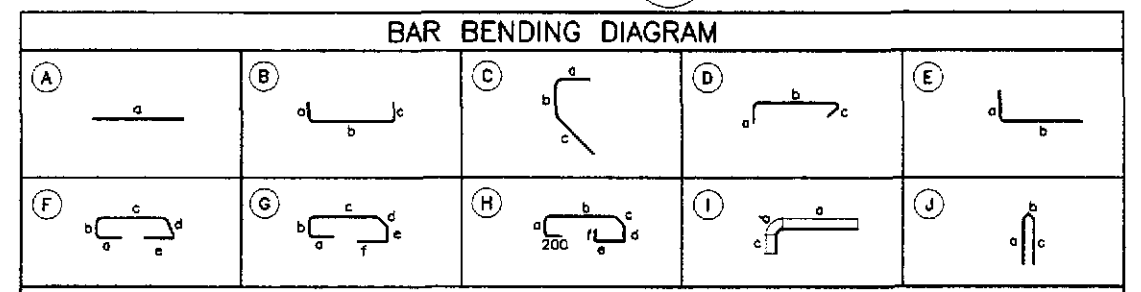
1 PLAN
SCALE 1:50



2 WINGWALL ELEVATION
SCALE 1:50



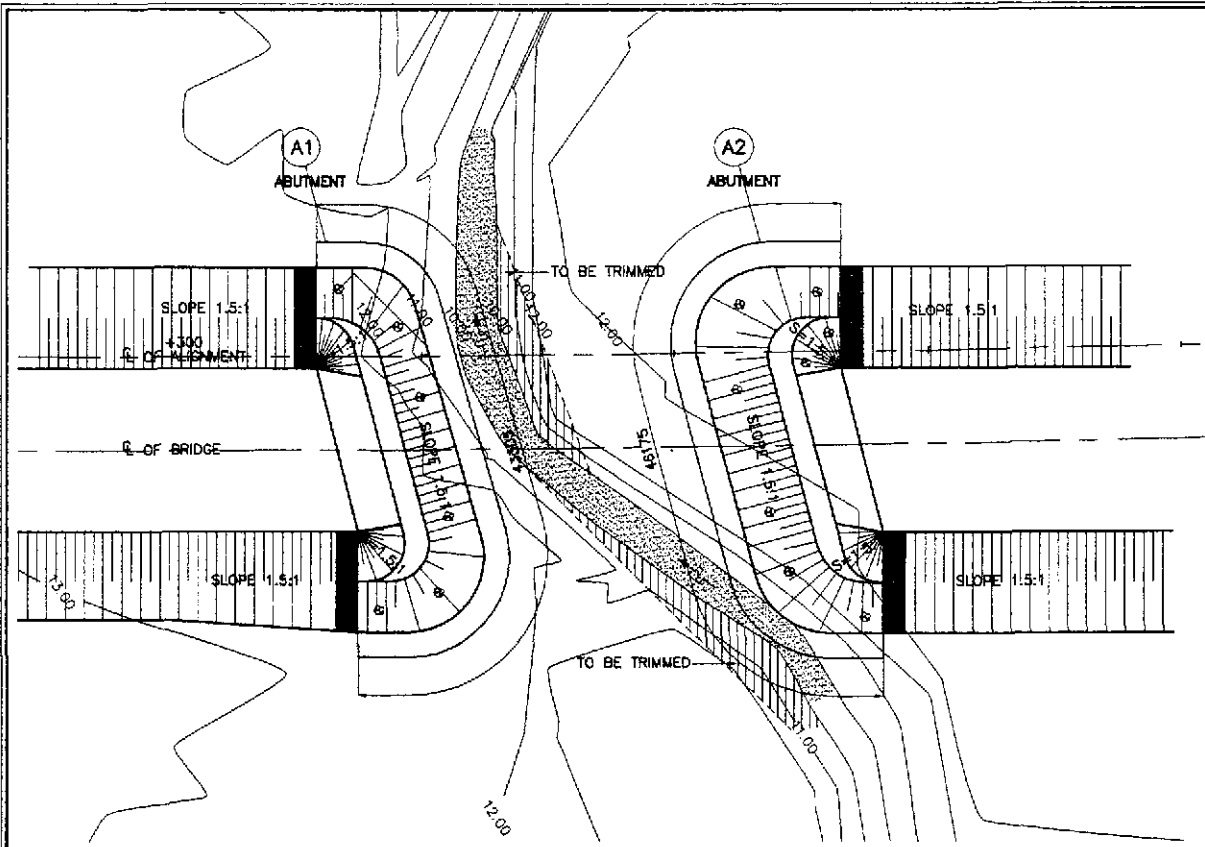
3 SECTION
SCALE 1:50



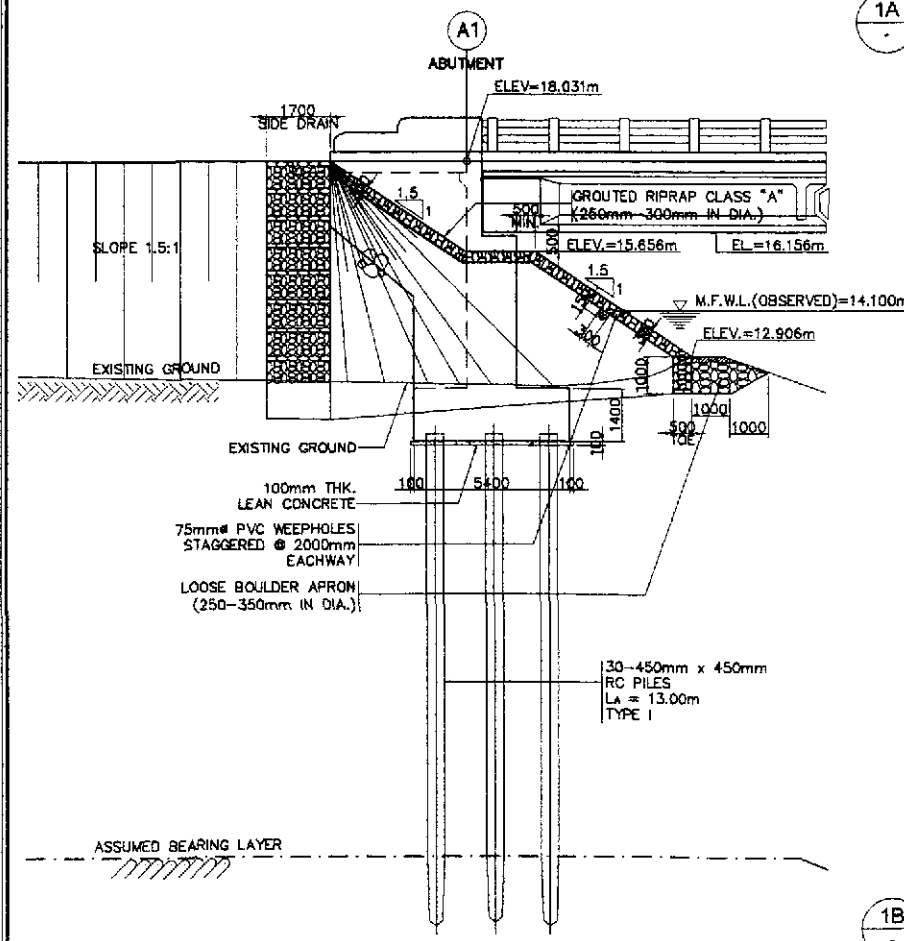
SCHEDULE OF REINFORCEMENT PER ABUTMENT																		
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)		
							a	b	c	d	e						f	
WINGWALL	15.36	W1	20	30	250	B	400	3600	150	-	-	-	4150	124.50	2.466	308		
		W2	25	30	250	B	400	3600	150	-	-	-	4150	124.50	3.854	480		
		W3	20	2	250	B	400	3900	150	-	-	-	4450	8.90	2.466	22		
		W4	25	2	250	B	400	3900	150	-	-	-	4450	8.90	3.854	35		
		W5	20	4	250	B	400	3600	150	-	-	-	4150	16.60	2.466	41		
		W6	25	4	250	B	400	3600	150	-	-	-	4150	16.60	3.854	64		
		W7	20	12	250	B	400	3900	150	-	-	-	4450	53.40	2.466	132		
		W8	25	12	250	B	400	3900	150	-	-	-	4450	53.40	3.854	206		
		W9	16	24	200	E	250	7150	-	-	-	-	7400	177.60	1.579	281		
		W10	16	24	200	E	250	7150	-	-	-	-	7400	177.60	1.579	281		
		W11	16	12	200	E	250	2000	-	-	-	-	2250	27.00	1.579	43		
		W12	16	12	200	E	250	2000	-	-	-	-	2250	27.00	1.579	43		
		W13	16	4	AS SHOWN	C	250	1500	3700	-	-	-	5450	21.80	1.579	35		
		W14	12	332	AS SHOWN	D	170	450	170	-	-	-	790	262.28	0.888	233		
													GRADE 60	= 1,288 kgs.				
													GRADE 40	= 916 kgs.				
APPROACH RAILING AND SIDEWALK	3.93	AS1	12	9	AS SHOWN	A	3900	-	-	-	-	3900	35.10	0.888	32			
		AS2	12	2	AS SHOWN	A	3900	-	-	-	-	3900	7.80	0.888	7			
		AS3	12	2	AS SHOWN	A	3900	-	-	-	-	3900	7.80	0.888	7			
		AS4	12	6	AS SHOWN	A	3900	-	-	-	-	3900	23.40	0.888	21			
		AS5	16	4	300	F	200	170	480	200	200	-	1250	5.00	1.579	8		
		AS6	16	10	300	G	200	170	480	200	170	200	1420	14.20	1.579	23		
		AS7	16	15	300	H	200	170	980	200	170	200	2120	31.80	1.579	51		
		AS8	16	15	300	E	200	1020	-	-	-	-	1220	18.30	1.579	29		
		AR1	16	8	300	E	200	900	-	-	-	-	1100	8.80	1.579	14		
		AR2	16	16	300	J	1300	120	1300	-	-	-	2720	43.52	1.579	69		
		AR3	16	2	AS SHOWN	I	2400	236	1300	-	-	-	3936	7.87	1.579	13		
		AR4	16	4	AS SHOWN	I	3900	236	900	-	-	-	5036	20.14	1.579	32		
AR5	16	8	AS SHOWN	A	3900	-	-	-	-	-	3900	31.20	1.579	50				
AR6	16	4	AS SHOWN	A	2400	-	-	-	-	-	2400	9.60	1.579	16				
													GRADE 40	= 372 kgs.				
TOTAL	19.29														GRADE 60 TOTAL	= 1,288 kgs.		
													GRADE 40 TOTAL	= 1,288 kgs.				

GENERAL NOTES:

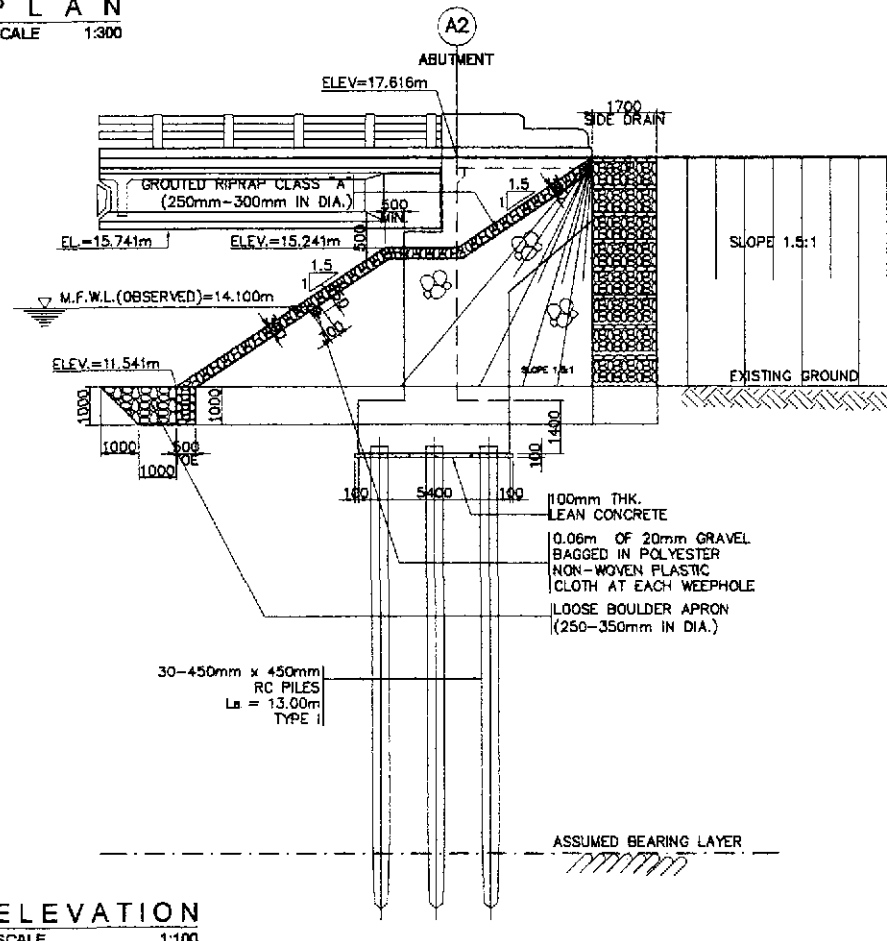
- GROUTED RIPRAP (250mm-300mm DIA.) SHALL BE USED FOR THE FACING AND SHALL BE CAREFULLY HANDLAID WITH THE LONGEST DIMENSIONS PERPENDICULAR TO THE SLOPE AND FIRMLY BEDDED INTO THE SLOPE AND ADJACENT TO THE ADJOINING BOULDERS SPACED BETWEEN THE BOULDERS. THE SPACE BETWEEN THE BOULDERS SHALL BE COMPLETELY 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.
- GEOTEXTILE
THE FOLLOWING SPECIFICATIONS ARE REQUIRED:
 - POLYESTER OR POLYPROPYLENE - 100%
 - MECHANICALLY BONDED/HEAT BONDED
 - NON-WOVEN
 - EFFECTIVE OPENING SIZE - 110 MICRONS (MAX.)
 - THICKNESS UNDER PRESSURE - 0.80mm (MIN.)
 - WEIGHT - 200g/sq. m. (MIN.)
 - CBR PUNCTURE STRENGTH - 400N (MIN.)
 - MULTI-DIRECTIONAL TENSILE STRENGTH - 13KN/m
- GRAVEL FILTER SHALL BE COARSE AGGREGATES MATERIALS WHICH SATISFY THE REQUIREMENTS FOR ITEM 405, STRUCTURAL CONCRETE, GRADING B OF TABLE 405.1 AS REVISED.
- HAND-LAID ROCK SHALL BE MORE THAN 0.015cu.m. IN VOLUME AND SHALL CONSISTS OF HARD AND DURABLE STONES. ALL SHALL BE LAID FLAT AND SECURELY PLACED WITH LARGER STONES GENERALLY LOCATED IN THE LOWER PART OF THE STRUCTURE.
- FOR THE LOOSE BOULDER APRON, BOULDERS 250-350mm 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.



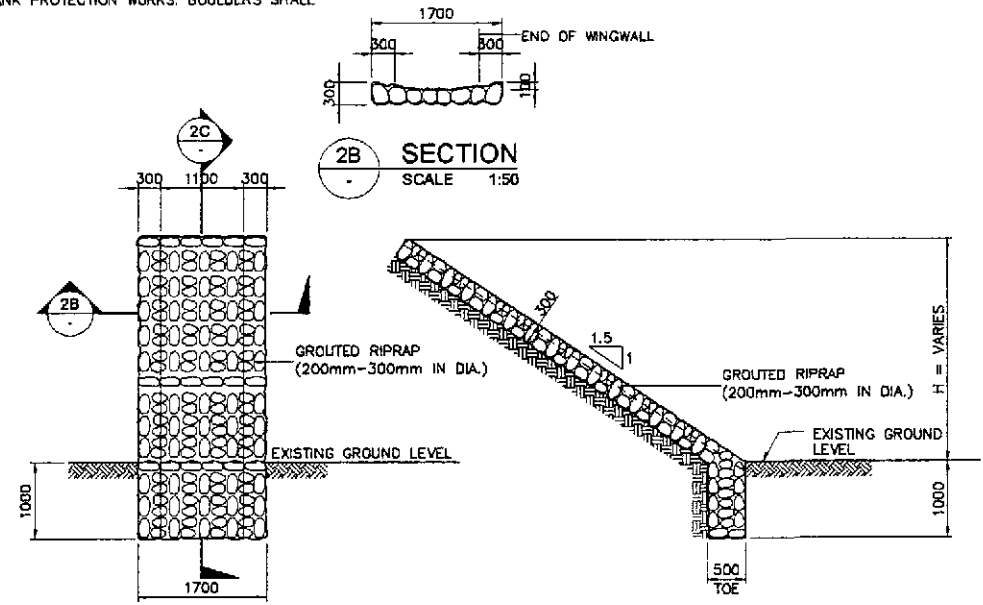
1A PLAN
SCALE 1:300



1B ELEVATION
SCALE 1:100



1 ABUTMENT SLOPE PROTECTION
SCALE AS SHOWN



2A ELEVATION
SCALE 1:50

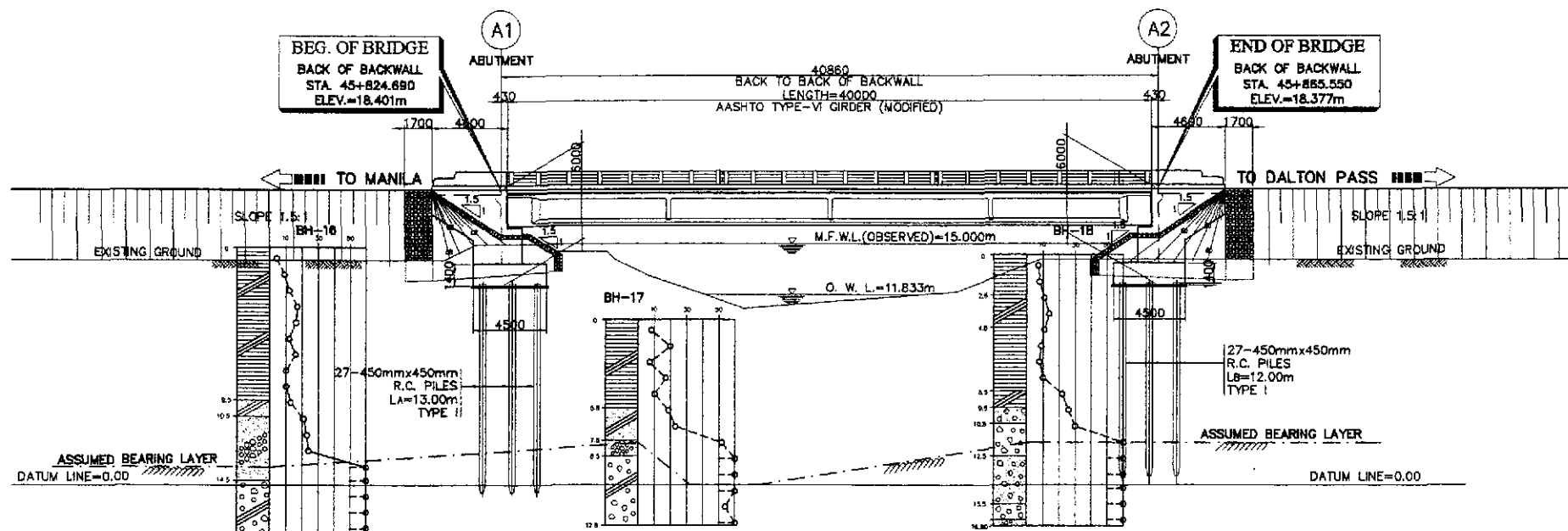
2C SECTION
SCALE 1:50

2 TYPICAL SIDE DRAIN DETAIL
SCALE AS SHOWN

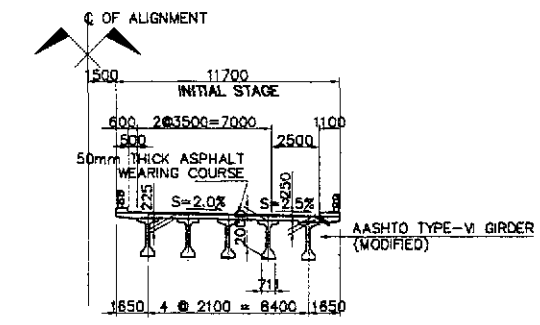
VELOCITY (m/sec)	ROCK SIZE (mm)	
	VERY TURBULENT FLOW	SMOOTH FLOW
1.00	40	-
1.50	135	-
2.00	170	-
2.50	255	137
3.00	370	197
3.50	515	270
4.00	690	350
4.50	825	425
5.00	>900	590

LOCATION	SIZES	PER ABUTMENT QUANTITY	
		ABUT. A1	ABUT. A2
BOULDER APRON	250mm-350mm IN DIA.	59.02 cu. m.	62.79 cu. m.
SIDE DRAIN	200mm-300mm IN DIA.	11.50 cu. m.	11.50 cu. m.
GROUTED RIPRAP	250mm-300mm IN DIA.	90.59 cu. m.	107.30 cu. m.

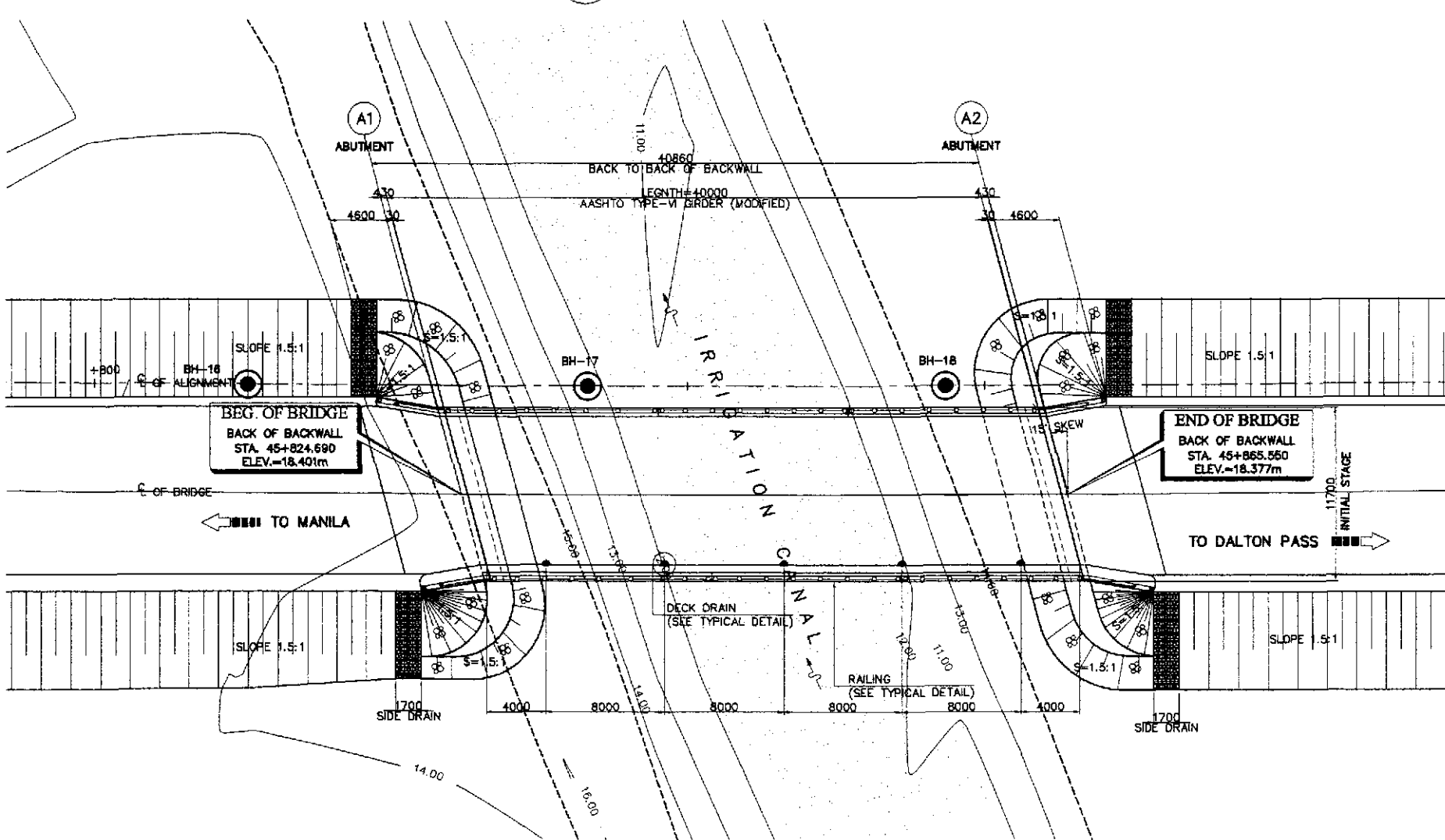
	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	9/21/02	P. GONZALES		OFFICE OF THE SECRETARY	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 5 ABUTMENT PROTECTION AND SIDE DRAIN DETAILS (INITIAL STAGE)	B5-09
	SUBMITTED	9/23/02	M. BONDAN		Approved By:	PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		



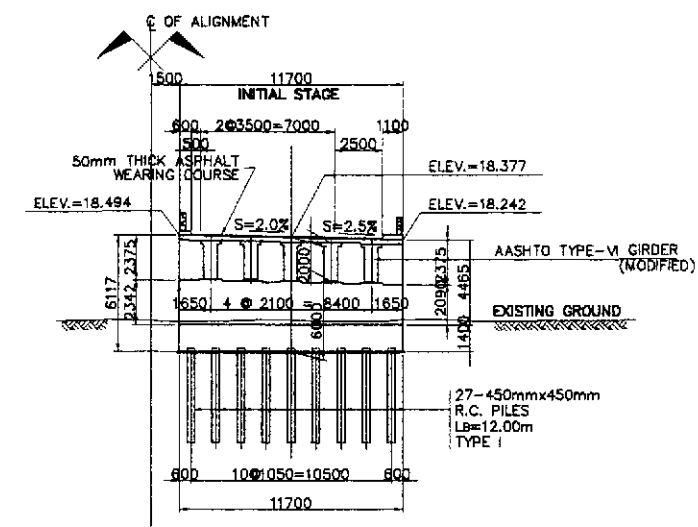
1 GENERAL ELEVATION
SCALE 1:200



3 SECTION @ MIDSPAN
SCALE 1:200



2 GENERAL PLAN
SCALE 1:200



4 SECTION @ ABUTMENT A2
SCALE 1:200

HYDRAULIC DESIGN DATA	
IRRIGATION CANAL	-

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

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

PLARIDEL BYPASS BRIDGE NO.6 (STA. 45+824.690)
SCALE AS SHOWN

PERFECTO L. ZAPLAN JR.
OIC Chief, Hydraulics Division, BGD

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS
INTERNATIONAL

YEO YACHIYO ENGINEERING
CO., LTD.

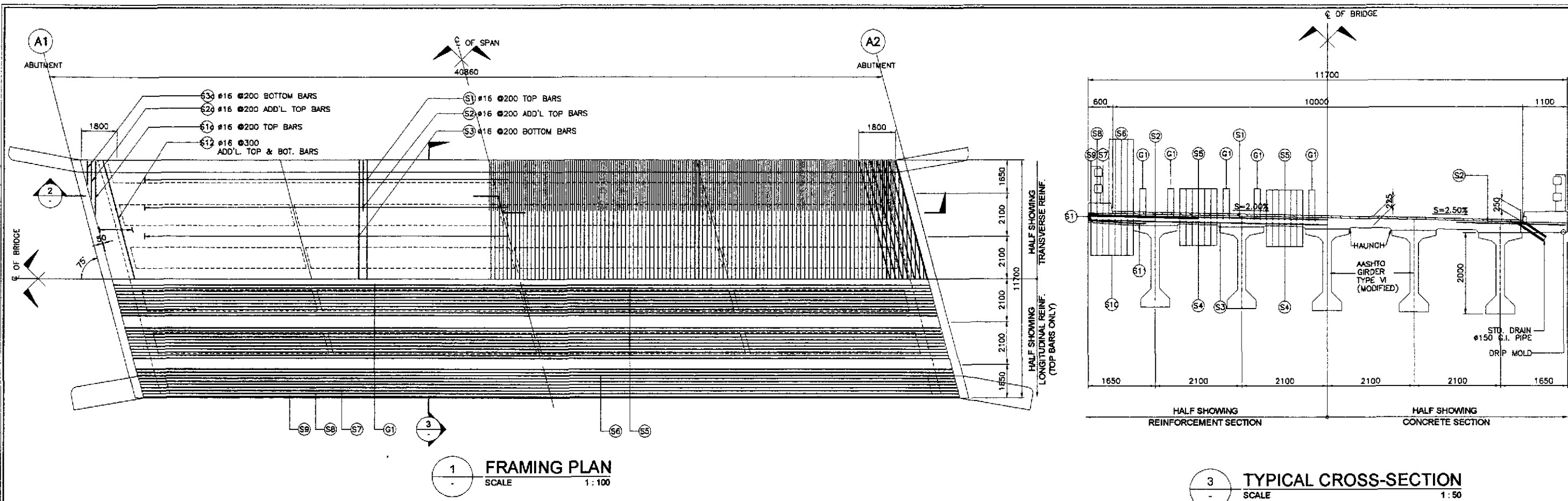
DATE	SIGNATURE
9/18/02	[Signature]
9/20/02	[Signature]
9/23/02	[Signature]

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	
DESIGNED: P.J.H. - P.W.O.	APPROVED: [Signature]
CHECKED: [Signature]	RECOMMENDED: [Signature]
SUBMITTED: [Signature]	APPROVED: [Signature]

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

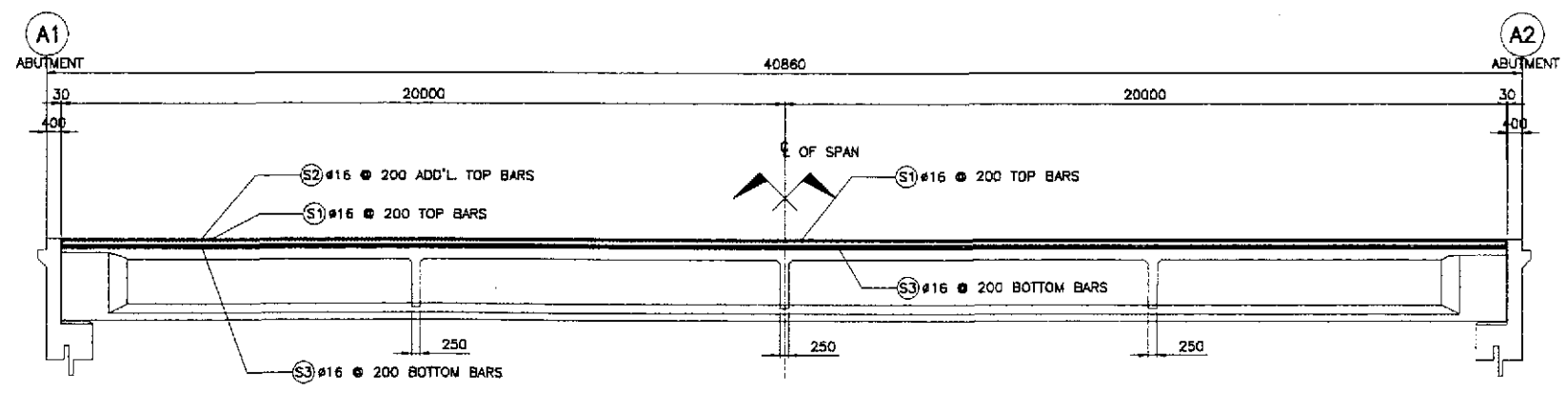
PLARIDEL BYPASS - CONTRACT PACKAGE II

SCALE :	SHEET CONTENTS :	SHEET NO. :
1 : 200 FULL SIZE A1	BRIDGE NO. 6 GENERAL PLAN, ELEVATION AND SECTIONS (INITIAL STAGE)	B6-01

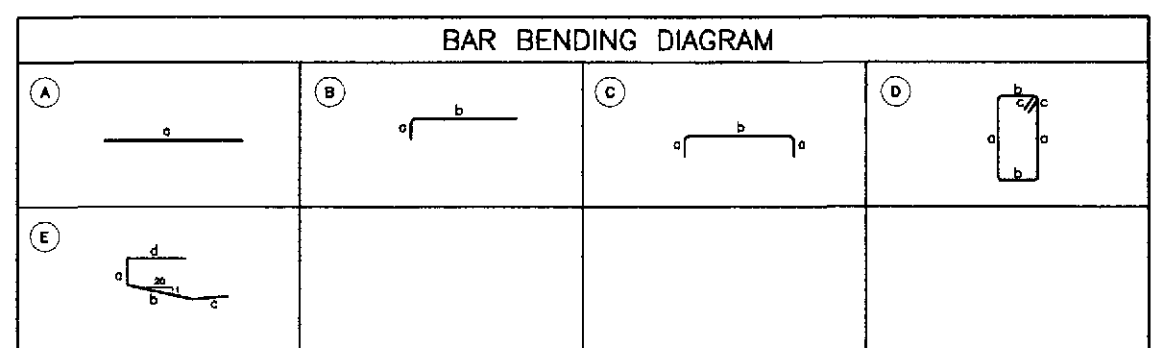


1 FRAMING PLAN
SCALE 1:100

3 TYPICAL CROSS-SECTION
SCALE 1:50

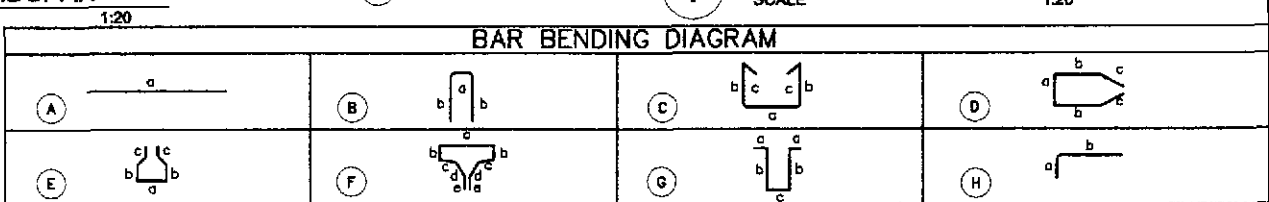
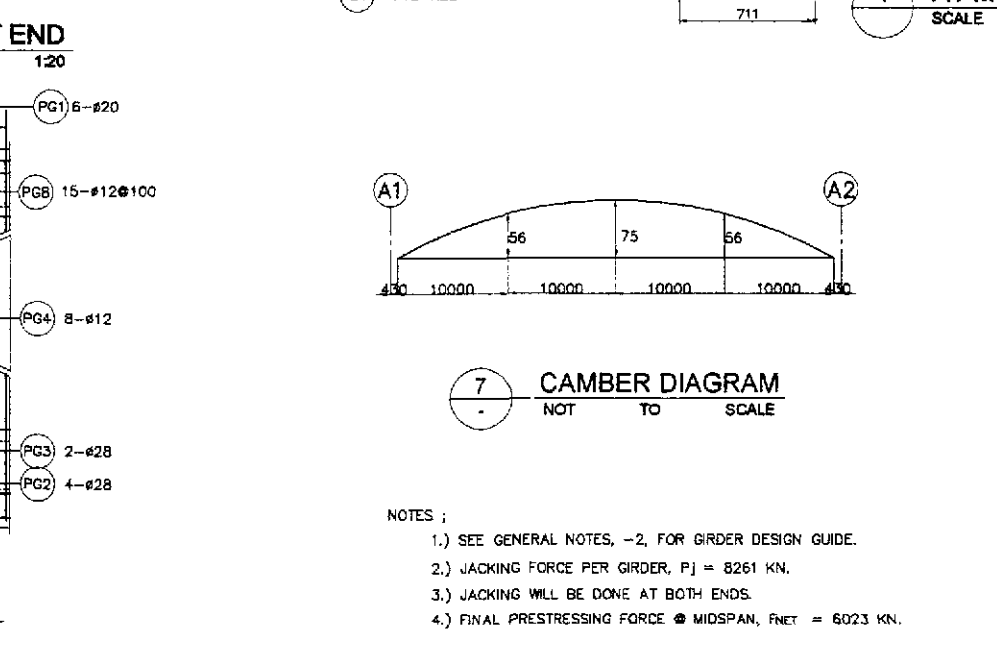
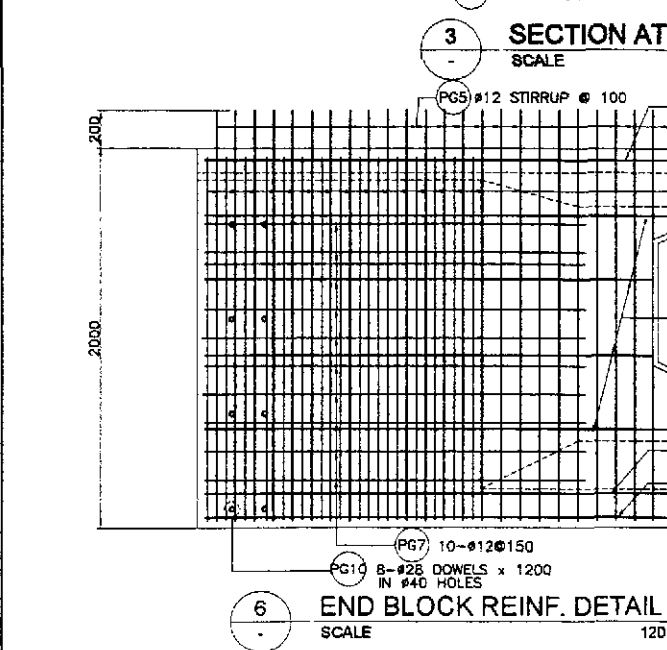
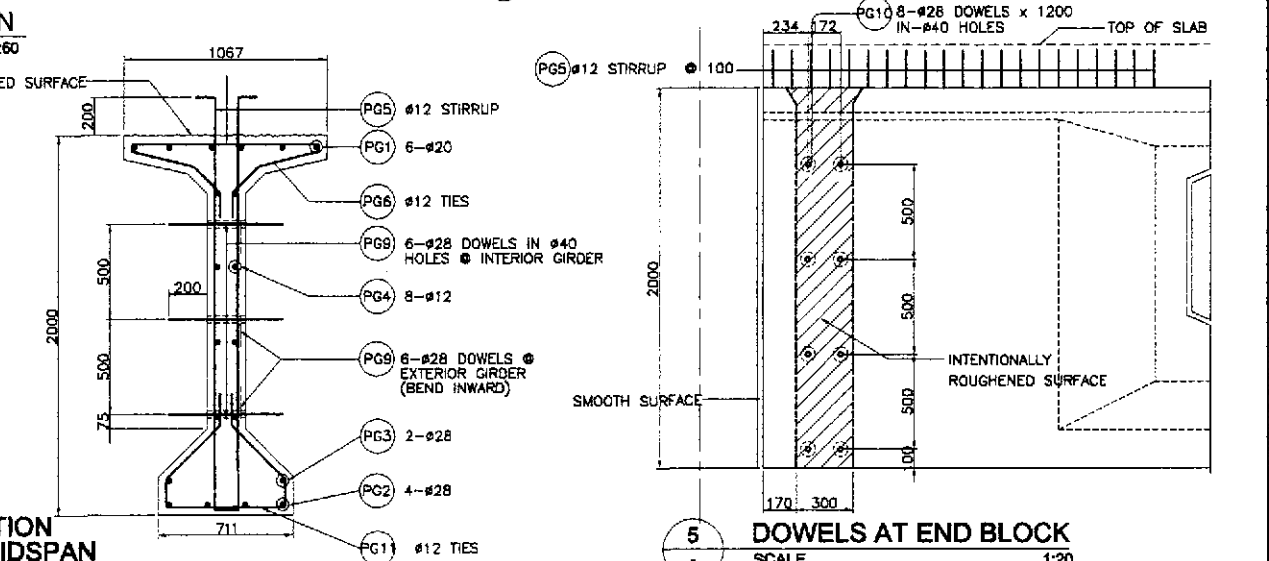
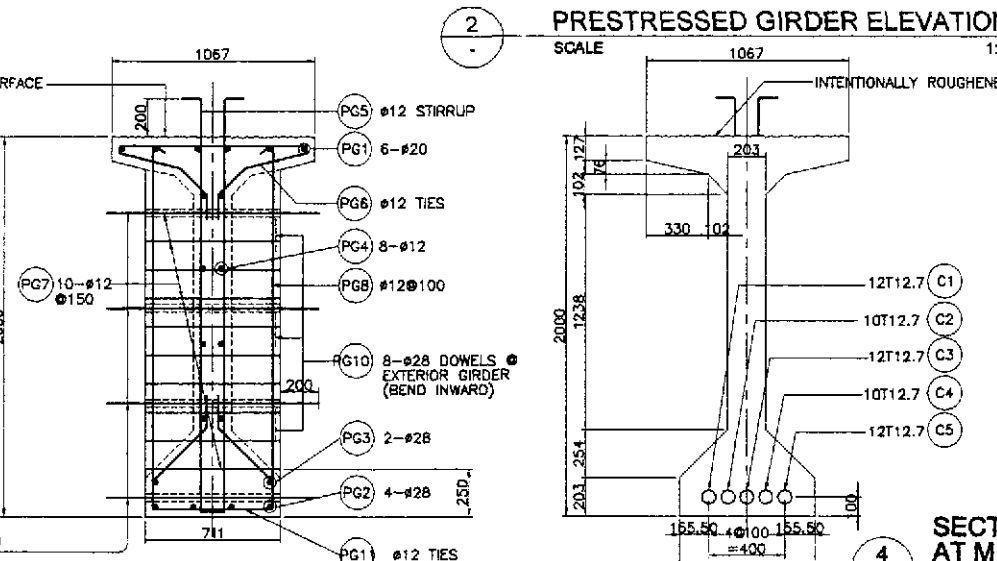
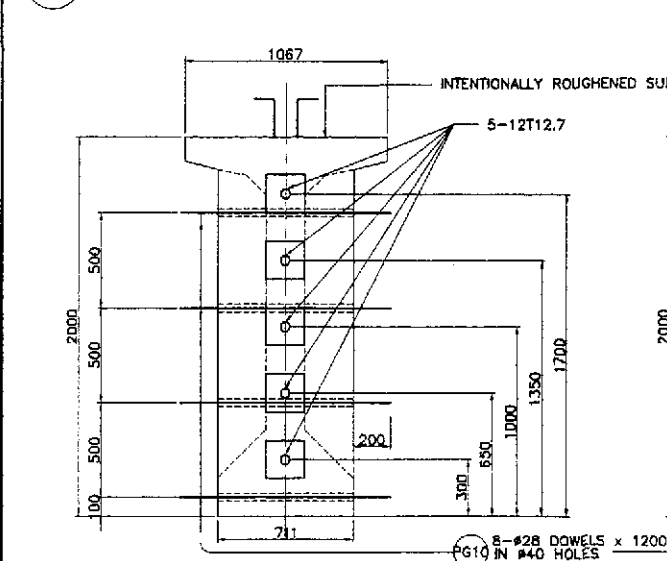
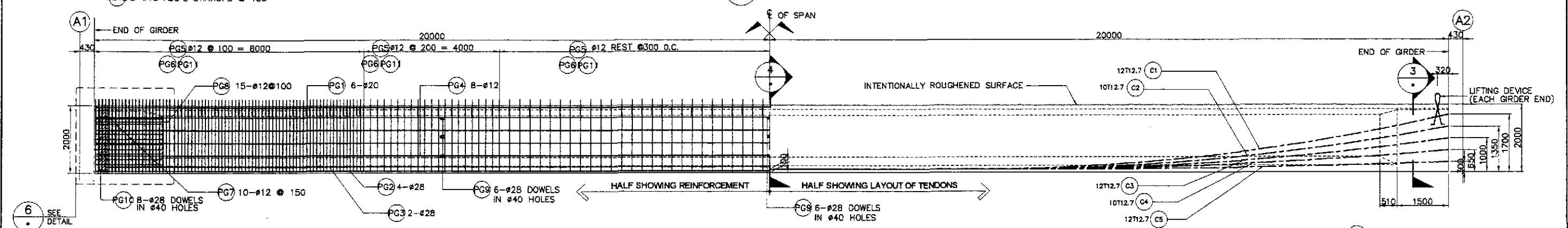
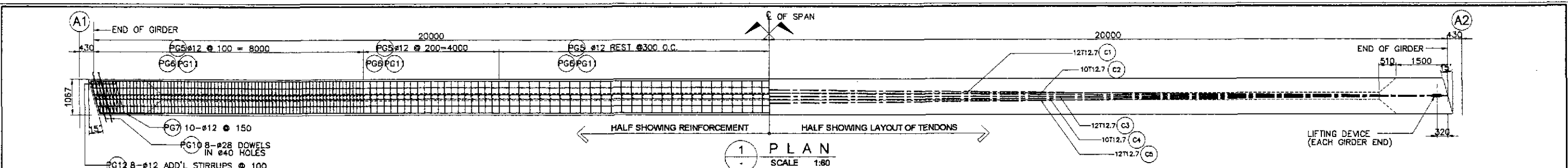


2 LONGITUDINAL SECTION
SCALE 1:100



ESTIMATED QUANTITIES OF SUPERSTRUCTURE			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
404(1)a	REINFORCING STEEL GRADE 40	kg.	35679
	DECK SLAB	17061	
	DIAPHRAGM	502	
	GIRDER	13030	
	SIDEWALK, RAILING, & POST	3688	
	APPROACH SLAB	1398	
404(1)b	REINFORCING STEEL GRADE 60	kg.	16253
	DECK SLAB	0	
	DIAPHRAGM	1702	
	GIRDER	9475	
	SIDEWALK, RAILING, & POST	708	
	APPROACH SLAB	4368	
405(1)	STRUCTURAL CONCRETE	cu. m.	347
	DECK SLAB	116.47	
	DIAPHRAGM	16.75	
	GIRDER	160.35	
	SIDEWALK, RAILING, & POST	17	
	APPROACH SLAB	36	

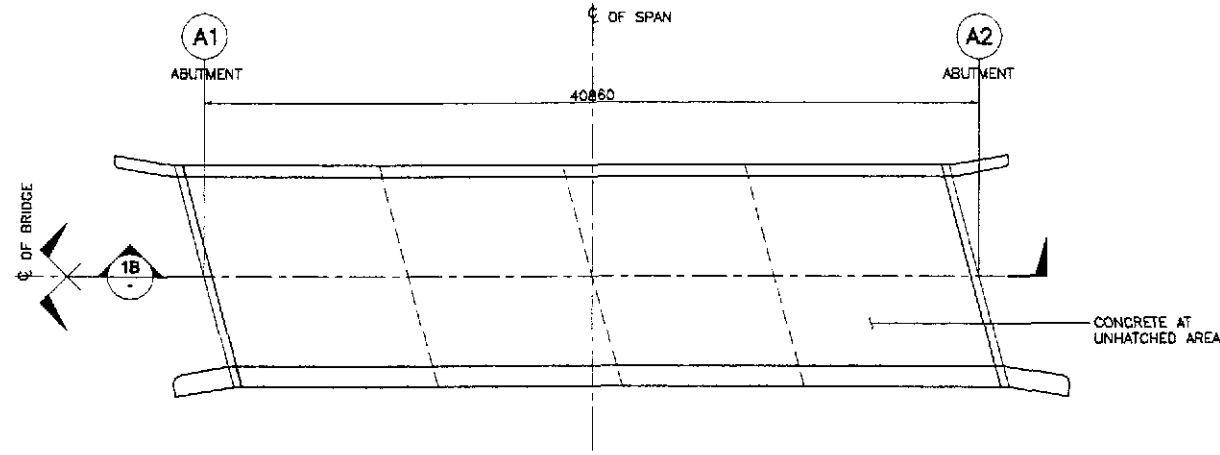
SCHEDULE OF REINFORCEMENT															
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				LENGTH EACH BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT IN (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d					
DECK SLAB	116.47	G1	16	20	AS SHOWN	(A)	39920	-	-	-	-	39920	798.40	1.579	1261
		S1	16	185	200	(C)	145	11600	145	-	-	11890	2199.65	1.579	3474
		S1a	16	32	200	(C)	145	6400	145	-	-	6690	214.08	1.579	339
		S2	16	390	200	(B)	145	2850	-	-	-	2795	1090.05	1.579	1722
		S2a	16	12	200	(B)	145	1850	-	-	-	2795	19.62	1.579	31
		S3	16	185	200	(A)	11600	12000	145	-	-	11600	2146.00	1.579	3389
		S3a	16	32	200	(A)	12000	6400	-	-	-	6400	204.80	1.579	324
		S4	16	28	150	(A)	39920	-	-	-	-	39920	1117.76	1.579	1765
		S5	16	28	150	(A)	39920	-	-	-	-	39920	1117.76	1.579	1765
		S6	16	10	AS SHOWN	(A)	39920	-	-	-	-	39920	399.20	1.579	631
		S7	16	2	AS SHOWN	(A)	39920	-	-	-	-	39920	79.84	1.579	127
		S8	16	2	AS SHOWN	(A)	39920	-	-	-	-	39920	79.84	1.579	127
S9	16	2	AS SHOWN	(A)	39920	-	-	-	-	39920	79.84	1.579	127		
S10	16	16	AS SHOWN	(A)	39920	-	-	-	-	39920	638.72	1.579	1009		
S11	12	202	400	(E)	145	1100	900	300	2445	483.89	1.579	439			
S12	16	28	300	(A)	12000	-	-	-	-	12000	336.00	1.579	531		
TOTAL	116.47														GRADE 40 TOTAL = 17,081 kgs



STRUCTURE COMPONENT	BAR MARK	SIZE (mm)	QTY.	SPACING	BAR SHAPE	DIMENSION (mm)					LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONC. VOLUME (cu.m)	REBAR RATIO (kg/cu.m)	REMARKS
						a	b	c	d	e							
GIRDER	PG1	20	6	AS SHOWN	(A)	39920	-	-	-	-	39920	239.52	2.466	591			QUANTITIES ARE FOR ONE (1) GIRDER ONLY
	PG2	28	4	AS SHOWN	(A)	39920	-	-	-	-	39920	159.68	4.833	772			
	PG3	28	2	AS SHOWN	(A)	39920	-	-	-	-	39920	79.84	4.833	386			
	PG4	12	8	AS SHOWN	(A)	39920	-	-	-	-	39920	319.36	0.888	284			
	PG5	12	252	100	(G)	100	2150	103	-	-	4603	1159.96	0.888	1031			
	PG6	12	252	100	(F)	1000	50	340	200	150	2480	624.96	0.888	555			
	PG7	12	20	150	(D)	635	1450	550	-	-	4635	92.70	0.888	83			
	PG8	12	30	100	(C)	635	1920	150	-	-	4775	143.25	0.888	129			
	PG9	28	18	AS SHOWN	(A)	603	-	-	-	-	603	10.85	4.833	53			
	PG10	28	16	AS SHOWN	(A)	1200	-	-	-	-	1200	19.20	4.833	93			
	PG11	12	252	100	(E)	635	180	400	150	-	2055	517.86	0.888	460			
	PG12	12	16	100	(B)	635	1920	-	-	-	4475	71.80	0.888	64			
													GRADE 40 TOTAL = 2,606 kgs				
													GRADE 60 TOTAL = 1,895 kgs				

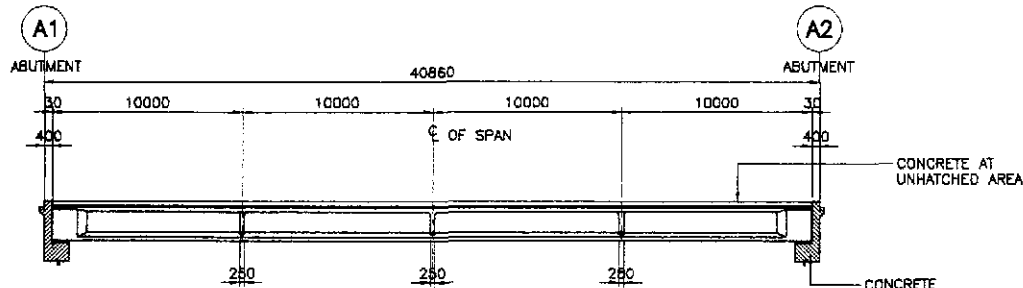
- NOTES :
- SEE GENERAL NOTES, -2, FOR GIRDER DESIGN GUIDE.
 - JACKING FORCE PER GIRDER, $P_j = 8261$ KN.
 - JACKING WILL BE DONE AT BOTH ENDS.
 - FINAL PRESTRESSING FORCE @ MIDSPAN, $F_{NET} = 6023$ KN.

	DATE: 9/16/02 DESIGNED: E. R. SALLAN CHECKED: 9/20/02 SUBMITTED: 9/25/02	SIGNATURE: <i>[Signature]</i> RHL - PMO Submitted By: DANILLO C. TRAJANO Project Director	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN Reviewed By: ADRIANO M. DOROS Chief, Bridges Division	OFFICE OF THE SECRETARY Recommended By: GILBERTO S. REYES Director IV (GIC)	Approved By: MANUEL M. BONDAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary	PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : BRIDGE NO. 6 AASHTO TYPE VI GIRDER (MODIFIED) (INITIAL STAGE)	SHEET NO. : B6-03
	PLARIDEL BYPASS - CONTRACT PACKAGE II									



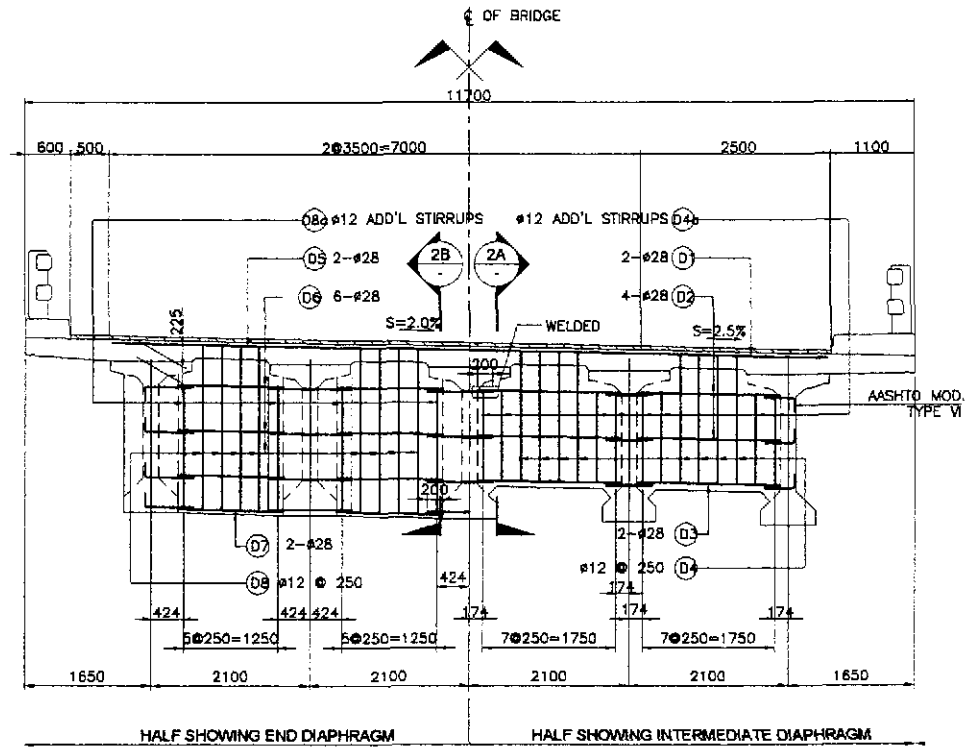
1A PLAN
SCALE 1:200

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

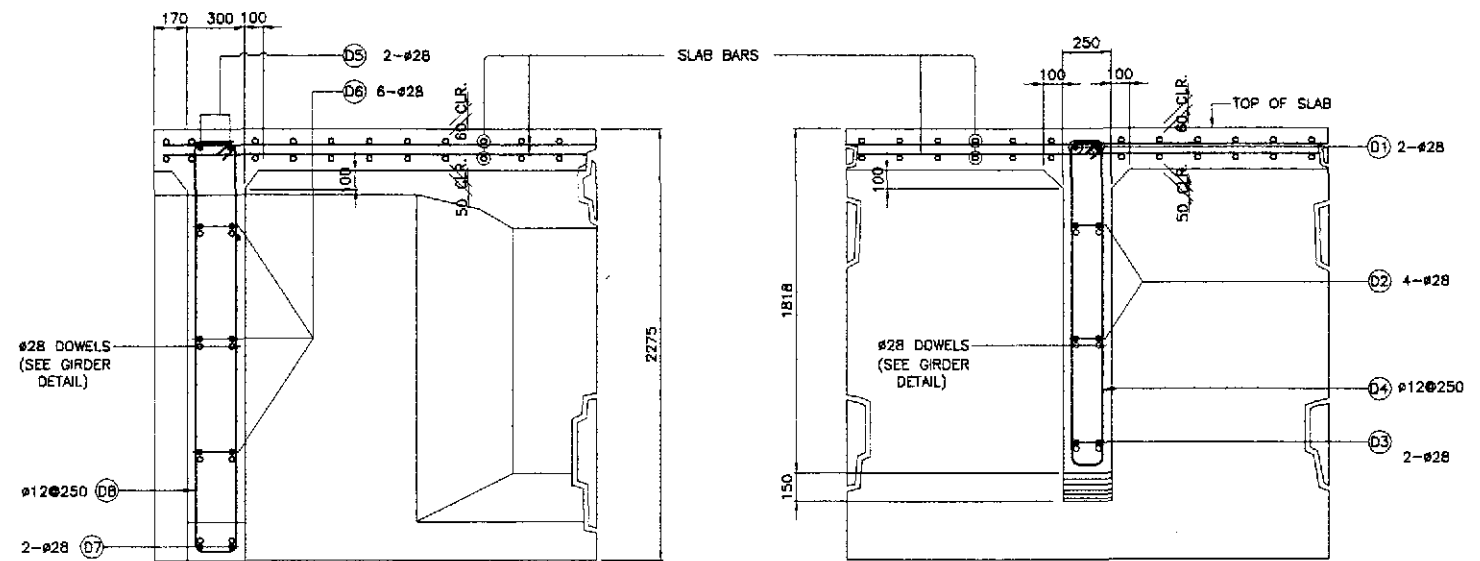


1B LONGITUDINAL SECTION
SCALE 1:200

1 CONCRETE POURING SEQUENCE
SCALE 1:200



2A ELEVATION
SCALE 1:25



2B SECTION
SCALE 1:20

2C SECTION
SCALE 1:20

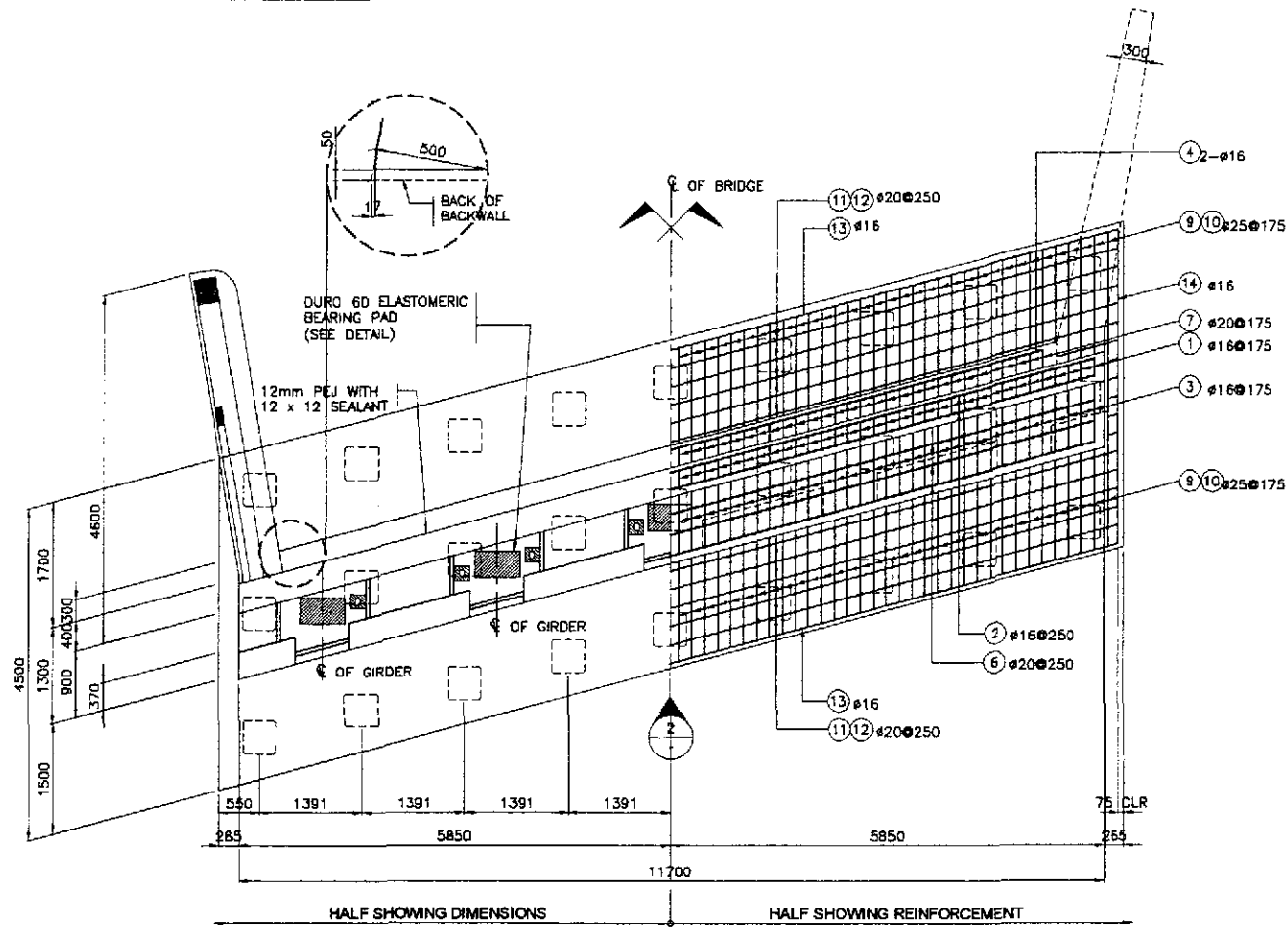
2 END & INTERMEDIATE DIAPHRAGM DETAIL
SCALE AS SHOWN

BAR BENDING DIAGRAM																	
A		B															
SCHEDULE OF REINFORCEMENT																	
STRUCTURE COMPONENT	LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	TOTAL WEIGHT IN (kg)	REBAR RATIO (kg/m ³)	REMARKS
DIAPHRAGM	INTERMEDIATE DIAPHRAGM	9.92	D1	28	6	AS SHOWN	A	9400				9400	56.40	4.833	273	124.20	TOP BARS
			D2	28	48	AS SHOWN	A	1895				1895	90.96	4.833	440		DIST. BARS
			D3	28	24	AS SHOWN	A	1895				1895	45.48	4.833	220		BOTT. BARS
			D4	12	48	250	B	150	1700 (ave.)	150	4000	192.00	0.888	171	STIRRUPS		
			D4-g	12	48	200	B	150	1200	150	3000	144.00	0.888	128	ADD'L. STIRRUPS		
	END DIAPHRAGM	6.63	D5	28	4	AS SHOWN	A	9400				9400	37.60	4.833	182		TOP BARS
			D6	28	48	AS SHOWN	A	1895				1895	90.96	4.833	440		DIST. BARS
			D7	28	16	AS SHOWN	A	1895				1895	30.32	4.833	147		BOTT. BARS
			D8	12	32	250	B	200	2175	150	5050	161.60	0.888	144	STIRRUPS		
			D8-g	12	16	AS SHOWN	B	200	1700 (ave.)	150	4100	65.60	0.888	59	ADD'L. STIRRUPS		
TOTAL		16.75														GRADE 60 TOTAL = 1702 kgs. GRADE 40 TOTAL = 602 kgs.	

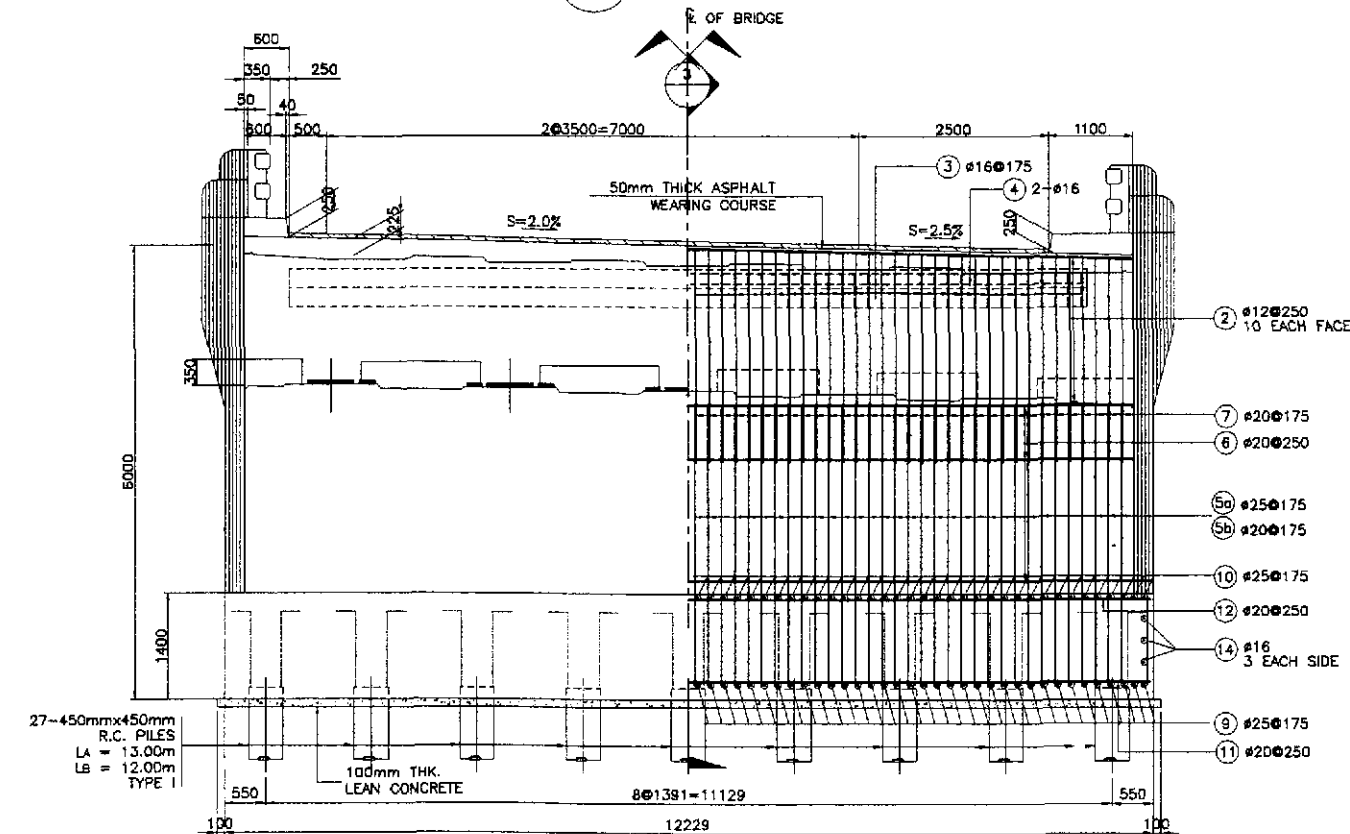
JICA
JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS
YACHIYO ENGINEERING CO., LTD.

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
OFFICE OF THE SECRETARY
DESIGNED: 9/18/02
CHECKED: 9/20/02
SUBMITTED: 9/23/02
DATE: 9/18/02
SIGNATURE: E. N. SALLAN
FURL - PMO
Submitted By: DANILO C. TRAJANO
Reviewed By: ADRIANO M. DOROS
Recommended By: GILBERTO S. REYES
MANUEL M. BONOAN
Approved By: SIMON A. DATUMANONG

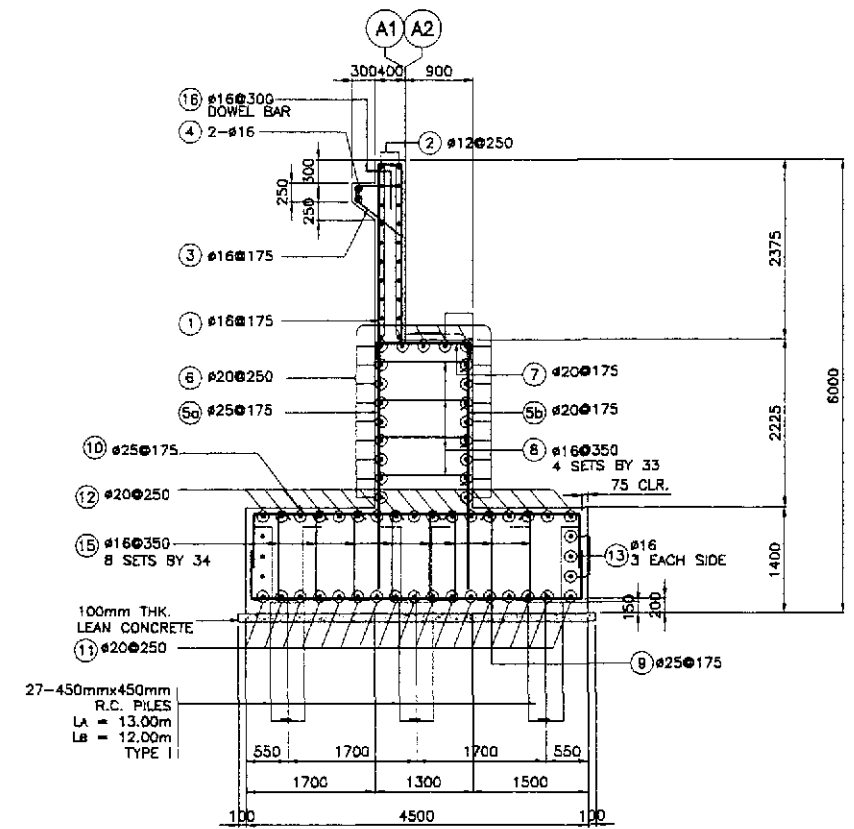
PROJECT AND LOCATION :
THE DETAILED DESIGN STUDY ON
UPGRADING INTER-URBAN HIGHWAY SYSTEM
ALONG THE PAN-PHILIPPINE HIGHWAY
(Plaridel, Cabanatuan and San Jose Bypasses)
PLARIDEL BYPASS - CONTRACT PACKAGE II
SCALE :
AS SHOWN
FULL SIZE A1
SHEET CONTENTS :
BRIDGE NO. 6
CONCRETE POURING SEQUENCE
AND DIAPHRAGM DETAIL
(INITIAL STAGE)
SHEET NO. :
B6-04



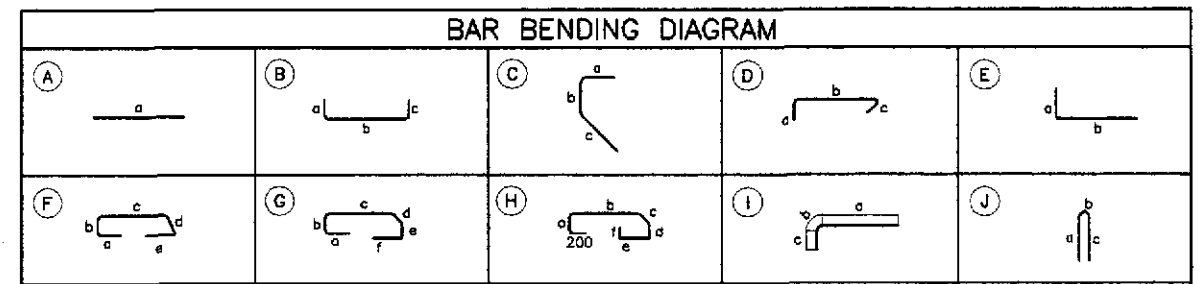
1 PLAN
SCALE 1:50



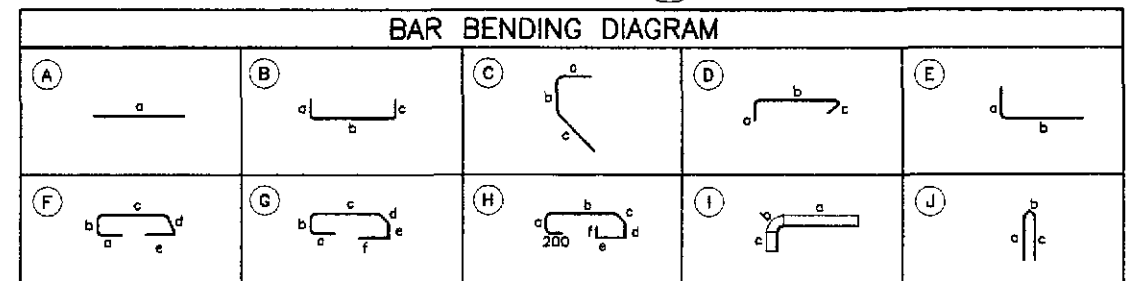
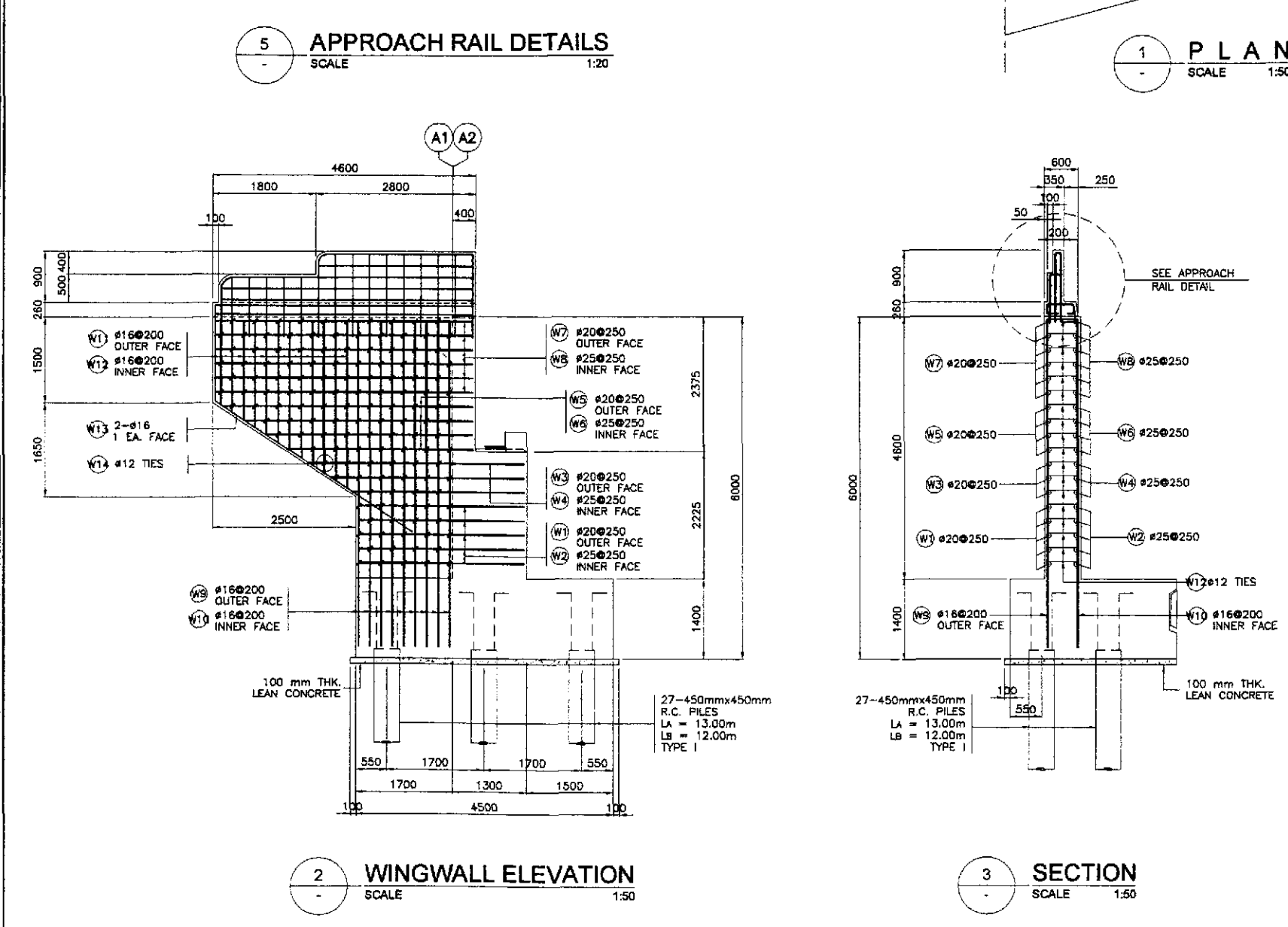
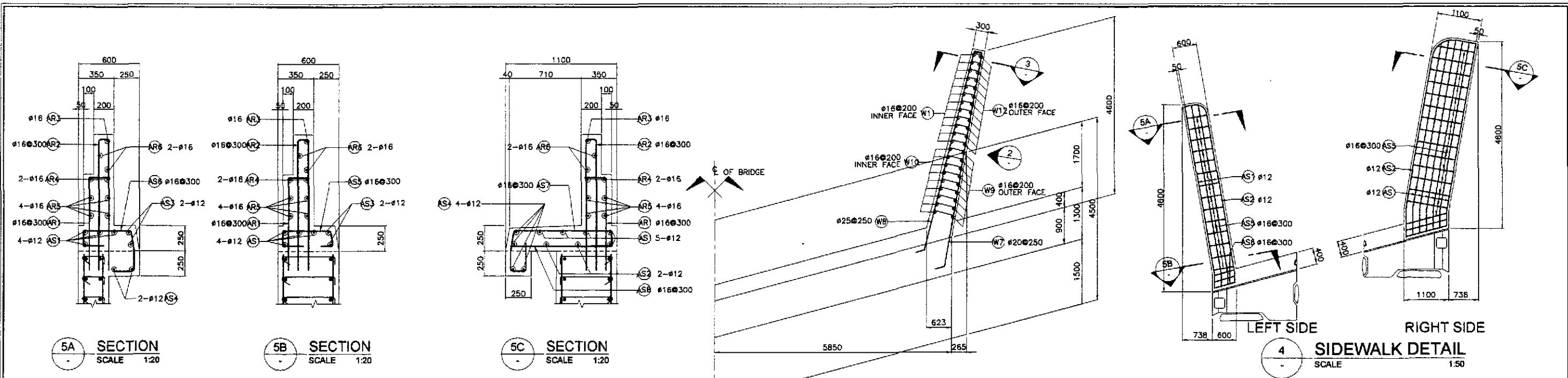
2 ELEVATION
SCALE 1:50



3 SECTION
SCALE 1:50

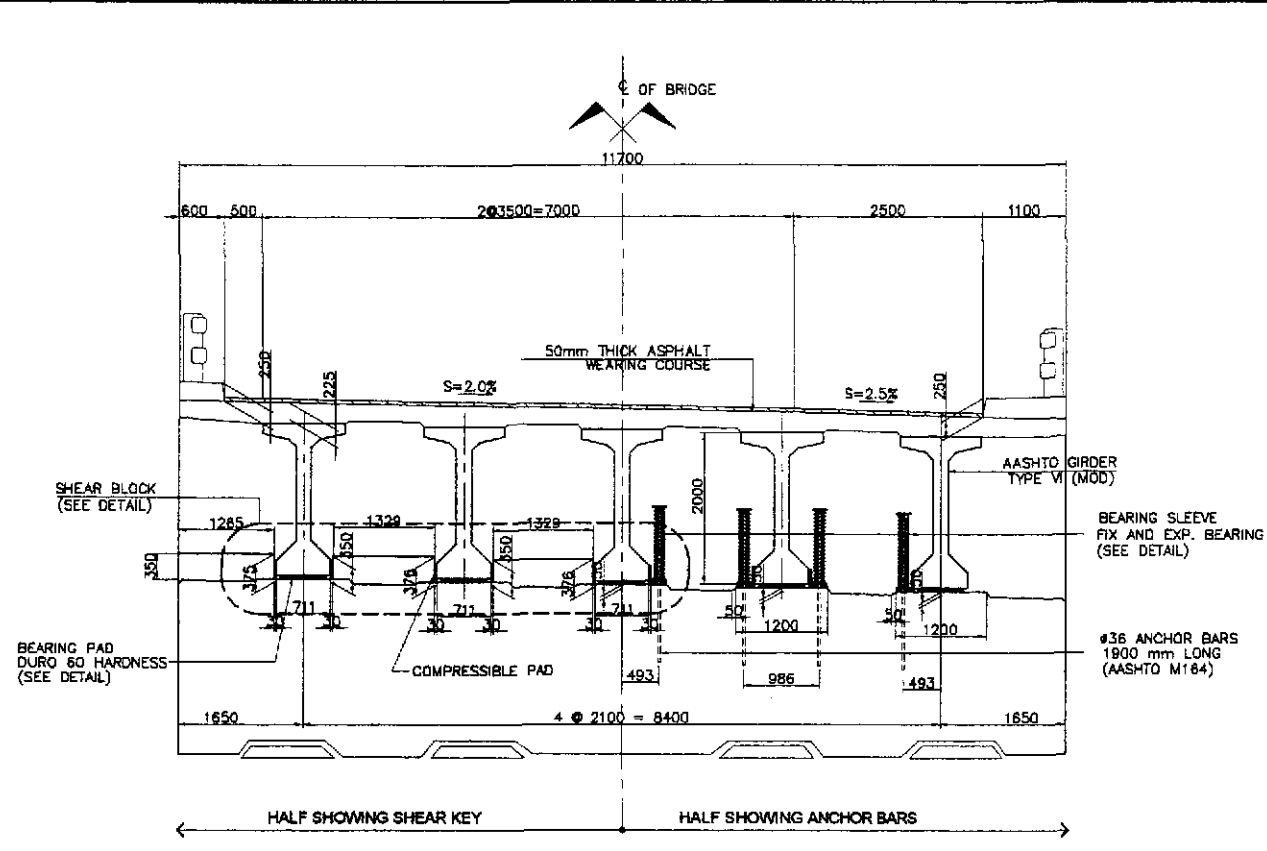


SCHEDULE OF REINFORCEMENT PER ABUTMENT																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e						f
BACKWALL	12.24	①	16	68	175	(B)	2500	300	2500	--	--	--	5300	360.40	1.579	570	78.02
		②	12	20	250	(A)	12000	--	--	--	--	--	12000	240.00	0.888	214	
		③	16	58	175	(C)	600	150	750	--	--	--	1500	87.00	1.579	138	
		④	16	2	AS SHOWN	(A)	0250	--	--	--	--	--	10250	20.50	1.579	33	
MAINWALL	33.84	⑤a	25	68	175	(E)	400	3350	--	--	--	--	3750	255.00	3.854	983	84.95
		⑤b	20	68	175	(E)	400	3350	--	--	--	--	3750	255.00	2.466	629	
		⑥	20	21	250	(A)	12000	--	--	--	--	--	10250	252.00	2.466	622	
		⑦	20	68	175	(B)	250	1200	250	--	--	--	1700	115.60	2.466	286	
FOOTING	77.05	⑧	16	132	350	(D)	250	1200	250	--	--	--	1700	224.40	1.579	355	68.20
		⑨	25	70	175	(B)	700	4350	700	--	--	--	5750	402.50	3.854	1552	
		⑩	25	70	175	(B)	700	4350	700	--	--	--	5750	402.50	3.854	1552	
		⑪	20	18	250	(B)	700	12530	700	--	--	--	13930	250.74	2.466	619	
		⑫	20	18	250	(B)	700	12530	700	--	--	--	13930	250.74	2.466	619	
		⑬	16	6	AS SHOWN	(A)	12530	--	--	--	--	--	12530	75.18	1.579	118	
DOWEL		⑭	16	6	AS SHOWN	(A)	4350	--	--	--	--	--	4350	26.10	1.579	42	
		⑮	16	272	350	(D)	250	1250	250	--	--	--	1750	476.00	1.579	752	
TOTAL	123.13																GRADE 40 TOTAL = 2,285 kgs. GRADE 60 TOTAL = 6,882 kgs.

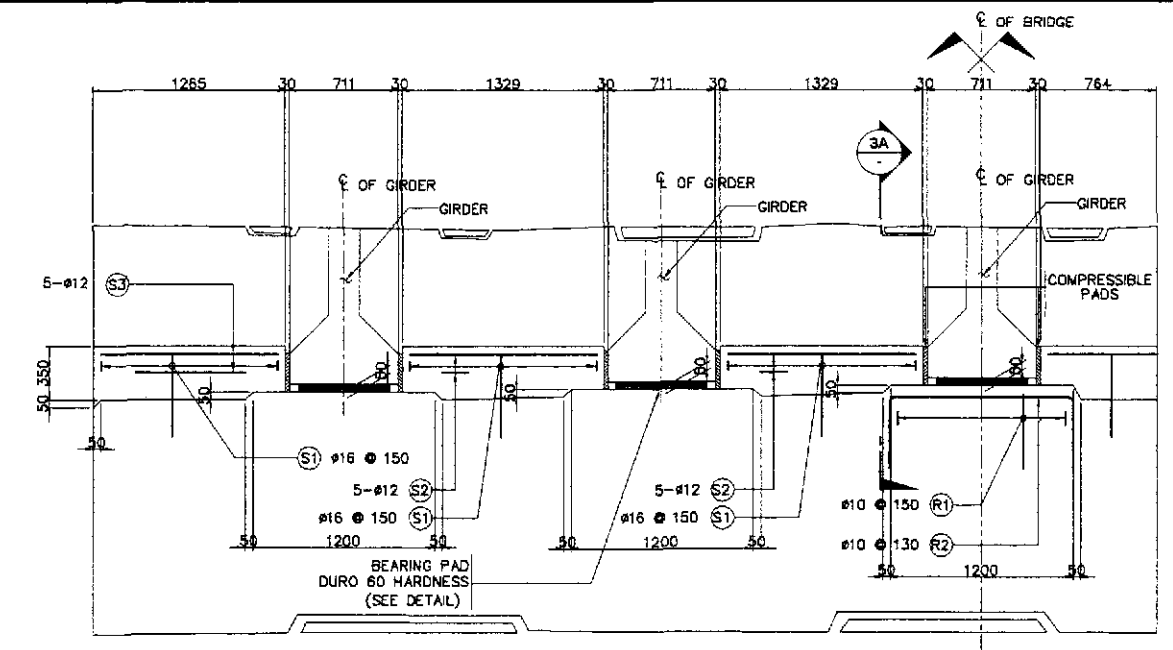


SCHEDULE OF REINFORCEMENT PER ABUTMENT

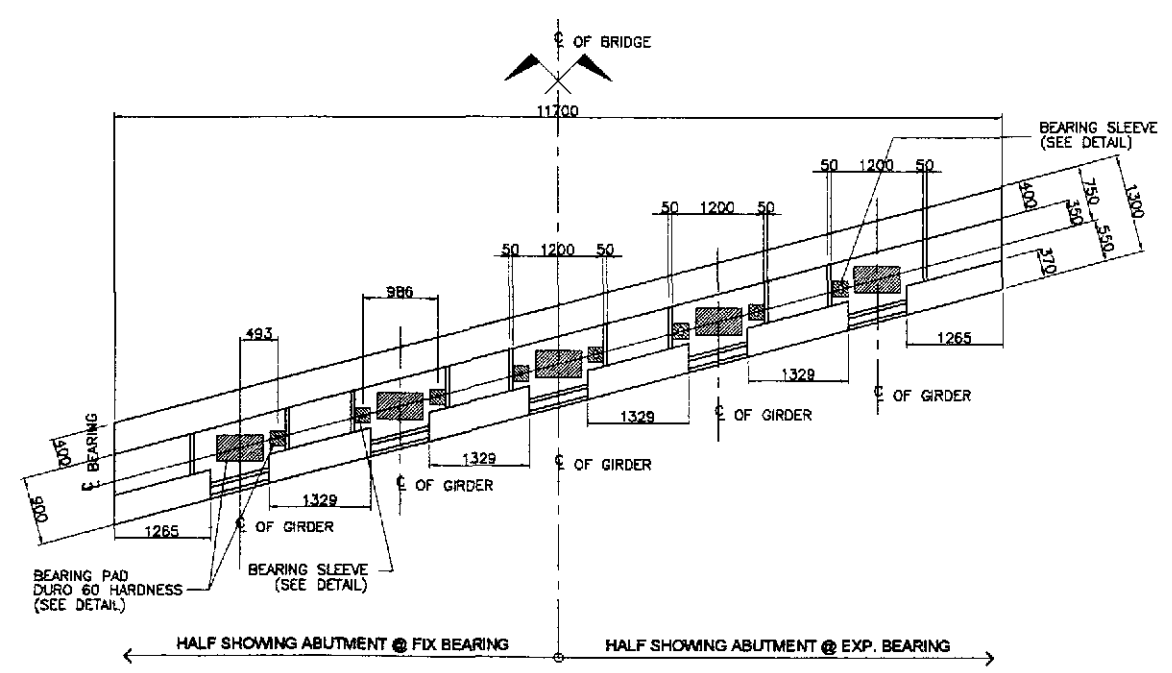
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT						LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d	e	f					
WINGWALL	12.27	W1	20	10	250	(B)	400	2900	150	-	-	-	-	3450	34.50	2.466	86
		W2	25	10	250	(B)	400	2900	150	-	-	-	-	3450	34.50	3.854	133
		W3	20	6	250	(B)	400	3400	150	-	-	-	-	3950	23.70	2.466	59
		W4	25	6	250	(B)	400	3400	150	-	-	-	-	3950	23.70	3.854	92
		W5	20	8	250	(B)	400	3800	150	-	-	-	-	4350	34.80	2.466	86
		W6	25	8	250	(B)	400	3800	150	-	-	-	-	4350	34.80	3.854	135
		W7	20	12	250	(B)	400	4500	150	-	-	-	-	5050	60.60	2.466	150
		W8	25	12	250	(B)	400	4500	150	-	-	-	-	5050	60.60	3.854	234
		W9	16	18	200	(E)	250	5750	-	-	-	-	6000	108.00	1.579	171	
		W10	16	18	200	(E)	250	5750	-	-	-	-	6000	108.00	1.579	171	
		W11	16	24	200	(E)	250	2200	-	-	-	-	2450	58.80	1.579	93	
		W12	16	24	200	(E)	250	2200	-	-	-	-	2450	58.80	1.579	93	
		W13	16	4	AS SHOWN	(C)	250	1500	4100	-	-	-	-	5850	23.40	1.579	37
		W14	12	272	AS SHOWN	(D)	170	450	170	-	-	-	-	790	214.88	0.888	191
													GRADE 60 TOTAL = 975 kgs				
													GRADE 40 TOTAL = 756 kgs				
APPROACH RAILING AND SIDEWALK	4.50	AS1	12	9	AS SHOWN	(A)	4500	-	-	-	-	-	4500	40.50	0.888	36	
		AS2	12	2	AS SHOWN	(A)	4500	-	-	-	-	-	4500	9.00	0.888	8	
		AS3	12	2	AS SHOWN	(A)	4500	-	-	-	-	-	4500	9.00	0.888	8	
		AS4	12	6	AS SHOWN	(A)	4500	-	-	-	-	-	4500	27.00	0.888	24	
		AS5	16	4	300	(F)	200	170	480	200	200	-	1250	5.00	1.579	8	
		AS6	16	13	300	(G)	200	170	480	200	170	200	1420	18.46	1.579	30	
		AS7	16	17	300	(H)	200	170	980	200	170	200	2120	36.04	1.579	57	
		AS8	16	17	300	(E)	200	1020	-	-	-	-	1220	20.74	1.579	33	
		AS9	16	10	300	(E)	200	900	-	-	-	-	1100	11.00	1.579	18	
		AS10	16	18	300	(J)	1300	120	1300	-	-	-	2720	48.96	1.579	78	
AR1	16	2	AS SHOWN	(I)	2700	236	1300	-	-	-	4236	8.47	1.579	14			
AR2	16	4	AS SHOWN	(I)	4400	236	900	-	-	-	5536	22.14	1.579	35			
AR3	16	8	AS SHOWN	(A)	4400	-	-	-	-	-	4400	35.20	1.579	56			
AR4	16	4	AS SHOWN	(A)	2700	-	-	-	-	-	2700	10.80	1.579	18			
													GRADE 40 TOTAL = 423				
TOTAL	16.77														GRADE 60 TOTAL = 975 kgs.		
													GRADE 40 TOTAL = 1,179 kgs.				



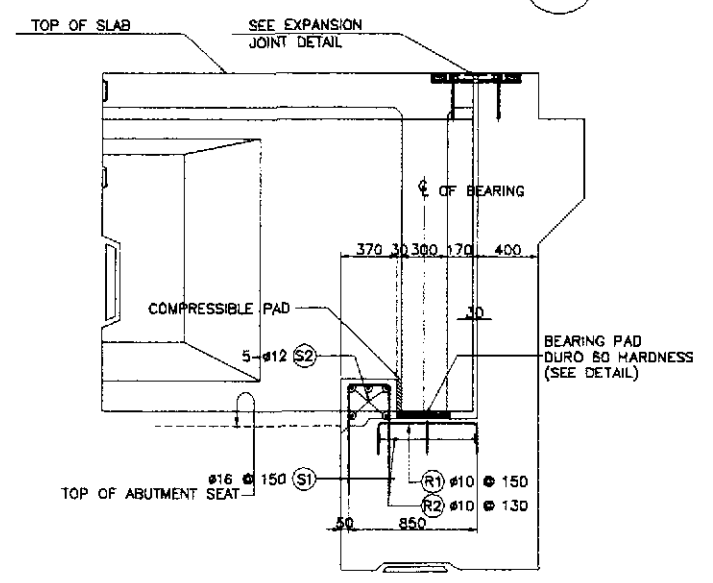
1 SECTION AT ABUTMENT SEAT
SCALE 1:50



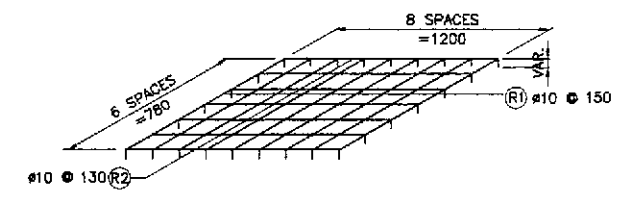
3 SHEAR BLOCK DETAIL
SCALE 1:25



2 PLAN AT ABUTMENT SEAT
SCALE 1:50



3A SECTION
SCALE 1:25



4 RISER REINFORCEMENT
NOT TO SCALE

BAR BENDING DIAGRAM																
A						B										
a						a b c										
SCHEDULE OF REINFORCEMENT																
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSION(mm) OUT TO OUT					LENGTH EACH BAR (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d	e					
SHEAR KEY & RISER	1.59	S1	16	54	150	(B)	580	290	580			1410	59.22	1,579	94	160.68
		S2	12	20	AS SHOWN	(A)	1295					1295	25.90	0,888	23	
		S3	12	10	AS SHOWN	(A)	1230					1230	12.30	0,888	11	
		R1	10	45	150	(B)	500	810	500			1810	81.45	0,616	51	
		R2	10	35	130	(B)	500	1250	500			2250	78.75	0,616	49	
TOTAL	1.59															GRADE 40 TOTAL = 255 kgs.

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

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

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

DESIGNED: 9/12/02
CHECKED: 9/20/02
SUBMITTED: 9/23/02

DATE: 9/12/02
SIGNATURE: [Signature]

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

BUREAU OF DESIGN
OFFICE OF THE SECRETARY

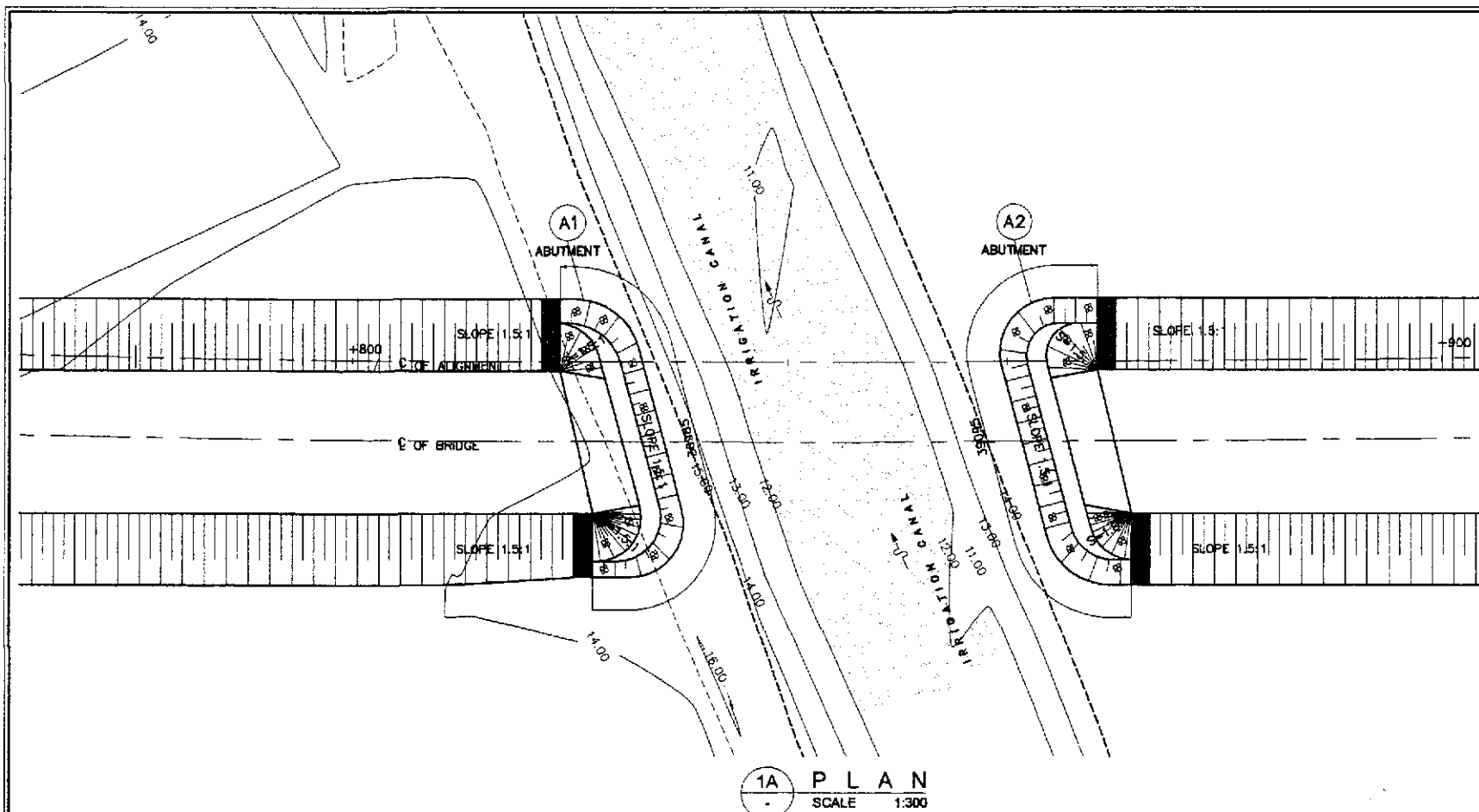
Submitted By: DANILLO C. TRAJANO
Reviewed By: ADRIANO M. DORON
Recommended By: GILBERTO S. REYES
Approved By: MANUEL M. BONOAN
SIMEON A. DATUMANONG

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

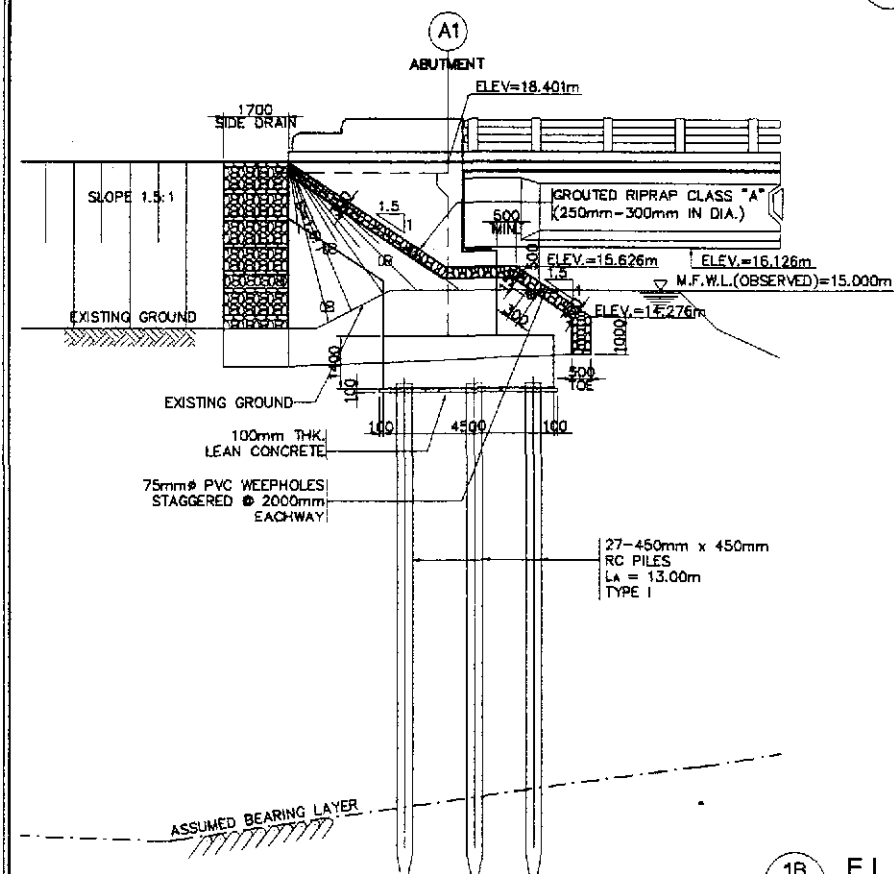
SCALE: AS SHOWN
FULL SIZE A1

SHEET CONTENTS: BRIDGE NO. 6
SHEAR KEY AND RISER DETAILS AT ABUTMENT (INITIAL STAGE)

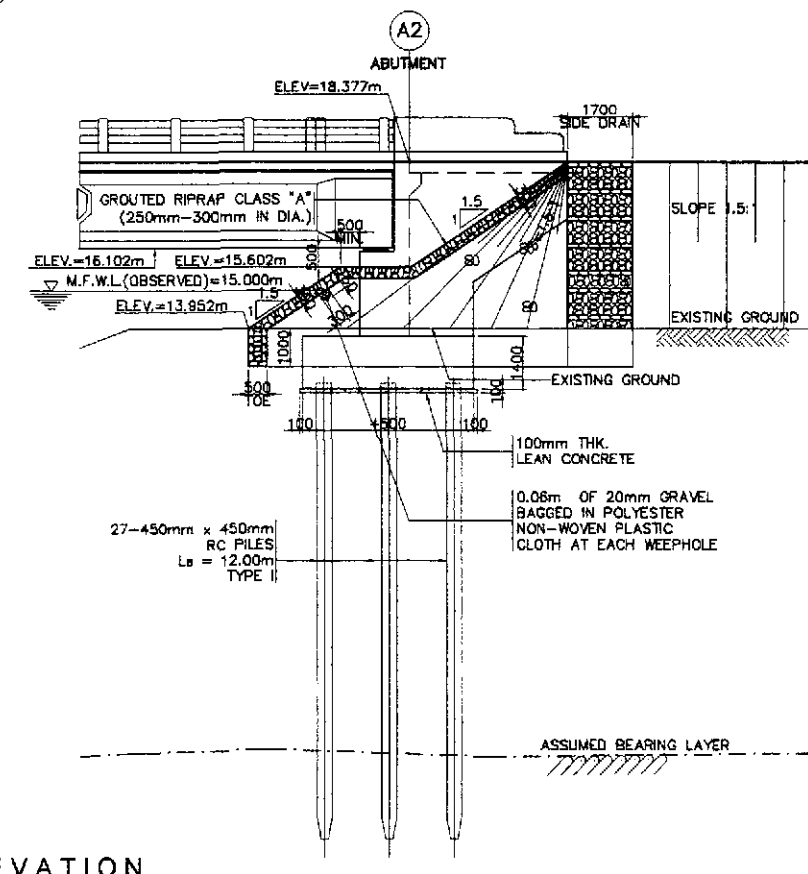
SHEET NO.: B6-08



1A PLAN SCALE 1:300



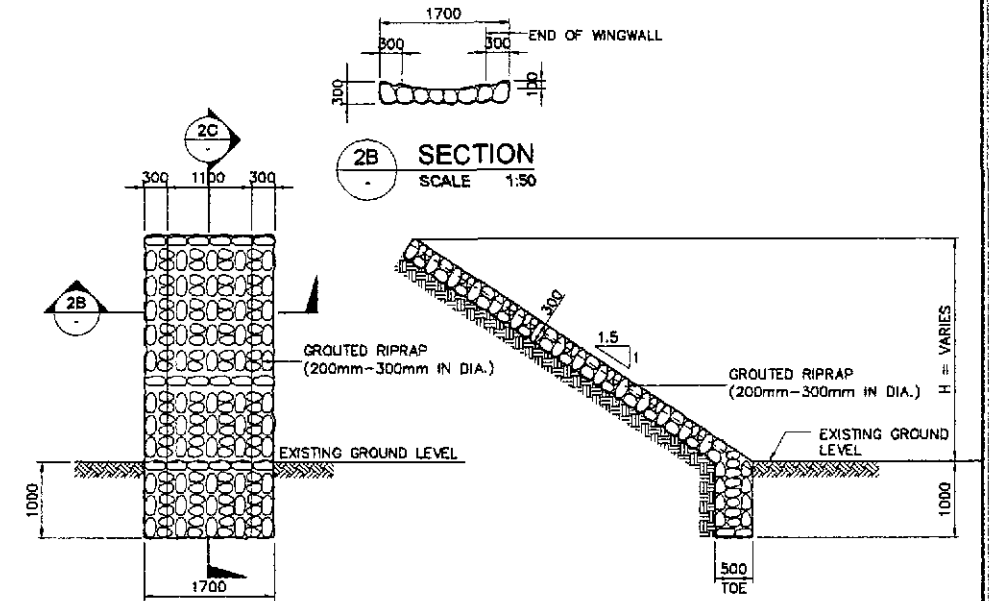
1B ELEVATION SCALE 1:100



1 ABUTMENT SLOPE PROTECTION SCALE AS SHOWN

GENERAL NOTES:

1. 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.
2. GEOTEXTILE
THE FOLLOWING SPECIFICATIONS ARE REQUIRED:
 1. POLYESTER OR POLYPROPYLENE - 100%
 2. MECHANICALLY BONDED/HEAT BONDED
 3. NON-WOVEN
 4. EFFECTIVE OPENING SIZE - 110 MICRONS (MAX.)
 5. THICKNESS UNDER PRESSURE - 0.80mm (MIN.)
 6. WEIGHT - 200g/sq. m. (MIN.)
 7. CBR PUNCTURE STRENGTH - 400N (MIN.)
 8. MULTI-DIRECTIONAL TENSILE STRENGTH - 13KN/m
3. GRAVEL FILTER SHALL BE COARSE AGGREGATES MATERIALS WHICH SATISFY THE REQUIREMENTS FOR ITEM 405, STRUCTURAL CONCRETE, GRADING B OF TABLE 405.1 AS REVISED.
4. NO CONCRETING UNDER WATER SHALL BE PERMITTED.
5. PROVIDE 1.0 m BERM WHEN HEIGHT (H) IS > 4.0 m.



2A ELEVATION SCALE 1:50

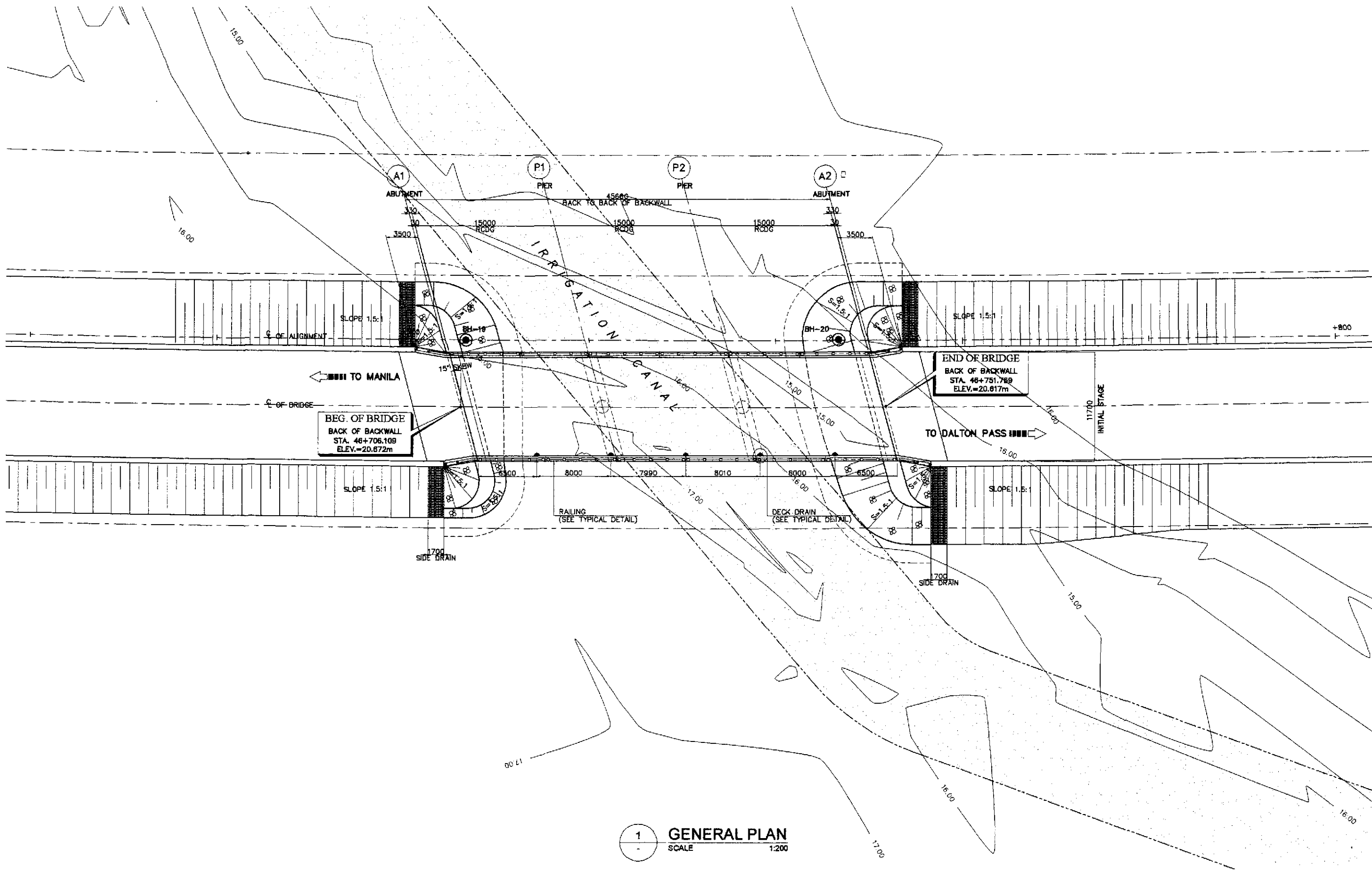
2C SECTION SCALE 1:50

2 TYPICAL SIDE DRAIN DETAIL SCALE AS SHOWN

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

LOCATION	SIZES	QUANTITY	
		ABUT. A1	ABUT. A2
SIDE DRAIN	200mm-300mm IN DIA.	9.30 cu. m.	9.66 cu. m.
GROUTED RIPRAP	250mm-300mm IN DIA.	58.19 cu. m.	66.61 cu. m.

	DATE: 9/18/02 DESIGNED: P. GONZALES CHECKED: [Signature] SUBMITTED: 9/18/02	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN	PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II	SCALE: AS SHOWN FULL SIZE A1	SHEET CONTENTS: BRIDGE NO. 8 ABUTMENT PROTECTION AND SIDE DRAIN DETAILS (INITIAL STAGE)	SHEET NO.: B6-09	
	Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: PERFECTO L. ZAPLAN JR. Chief, Hydraulics Division (DC)	Recommended By: GILBERTO S. REYES Director IV (DC)	Approved By: MANUEL N. BONDAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary		
	JICA JAPAN INTERNATIONAL COOPERATION AGENCY	KAHARA & ENGINEERS INTERNATIONAL YACHYO ENGINEERING CO., LTD.					



1 GENERAL PLAN
SCALE 1:200

A PLARIDEL BYPASS BRIDGE NO. 7 (STA. 46+706.109)
SCALE AS SHOWN

PERFECTO L. ZAPLAN JR.
GIC Chief, Hydraulics Division, BGD

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

DESIGNED	DATE	SIGNATURE
	9/10/02	<i>[Signature]</i>
CHECKED	9/20/02	<i>[Signature]</i>
SUBMITTED	9/23/02	<i>[Signature]</i>

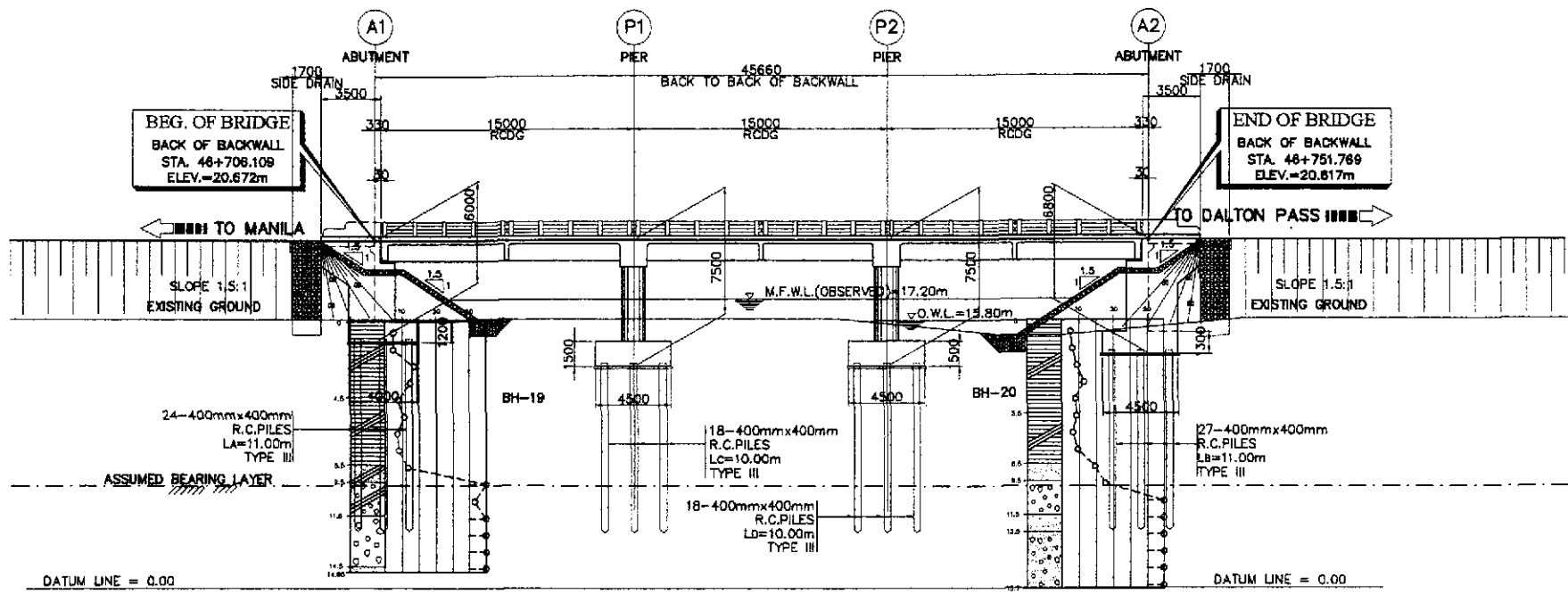
BUREAU OF DESIGN		OFFICE OF THE SECRETARY		
Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:
DANILO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridge Division	GILBERTO S. REYES Director IV (GIC)	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary

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

SCALE :
1:200
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO. 7
GENERAL PLAN
(INITIAL STAGE)

SHEET NO. :
B7-01

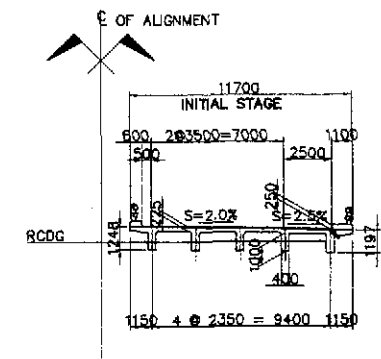


2 GENERAL ELEVATION
SCALE 1:200

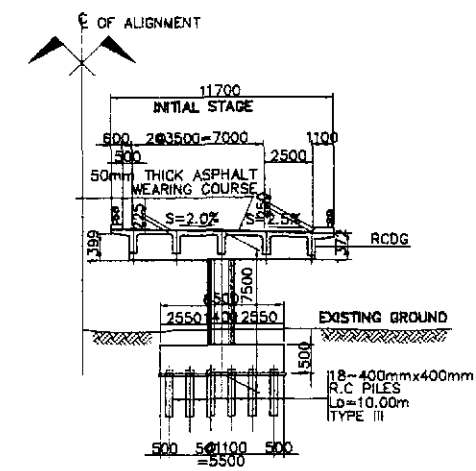
HYDRAULIC DESIGN DATA	
VELOCITY @ 50 YEARS, V_{50}	1.157 m/sec
DISCHARGE @ 50 YEARS, Q_{50}	14.700 cu.m/sec
CATCHMENT AREA, CA	11.650 sq. km

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

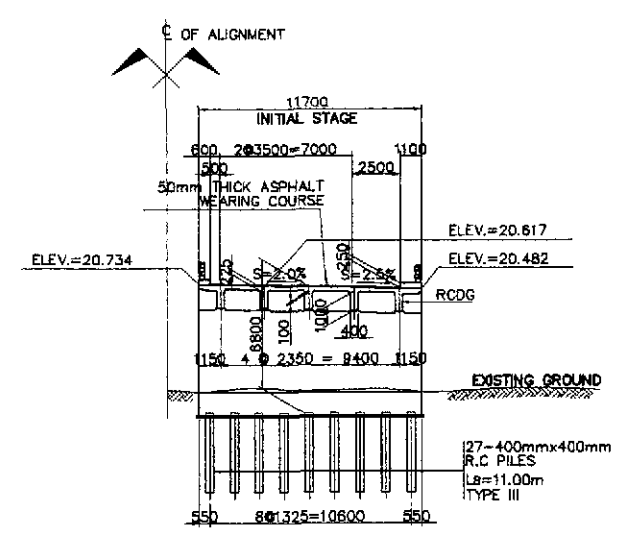
THE PILE LENGTH RECOMMENDED ARE MINIMUM. SHOULD THE SOIL AT THE RECOMMENDED LENGTH BE INADEQUATE BEARING MATERIAL, LENGTH SHALL BE INCREASED. THE MINIMUM EMBEDMENT LENGTH INTO ADEQUATE SOIL FOR 400 x 400 R. C. PILE IS 1000mm WHILE FOR 450 x 450 R. C. PILE IS 1200mm.



4 SECTION @ SUPERSTRUCTURE
SCALE 1:200



5 SECTION @ PIER P2
SCALE 1:200

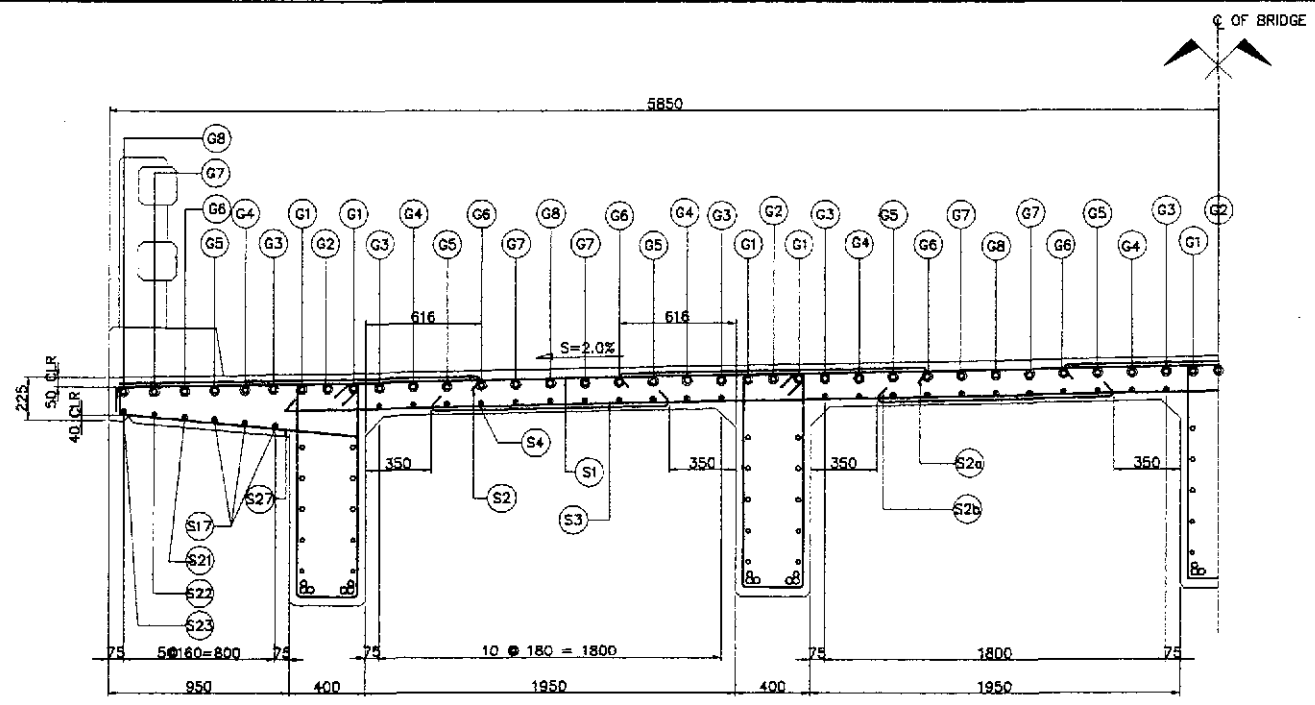


6 SECTION @ ABUTMENT A2
SCALE 1:200

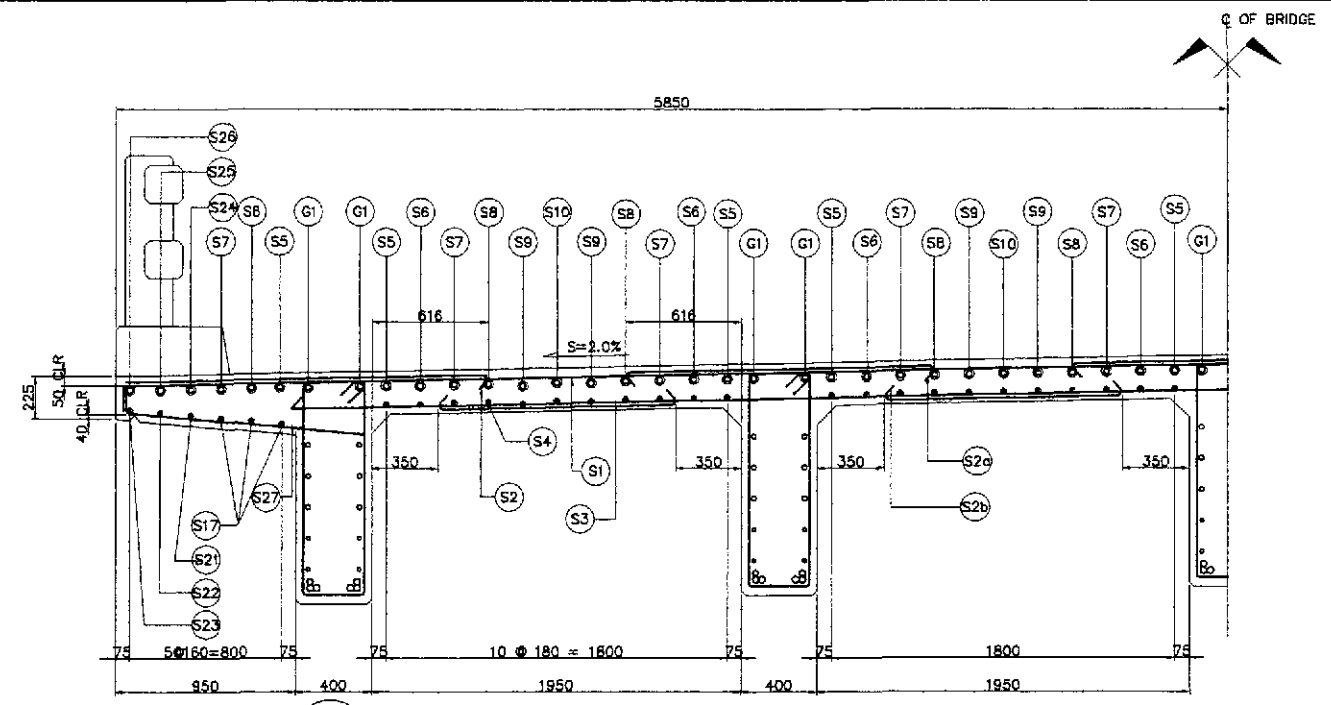
A PLARIDEL BYPASS BRIDGE NO.7 (STA. 46+706.109)
SCALE AS SHOWN

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

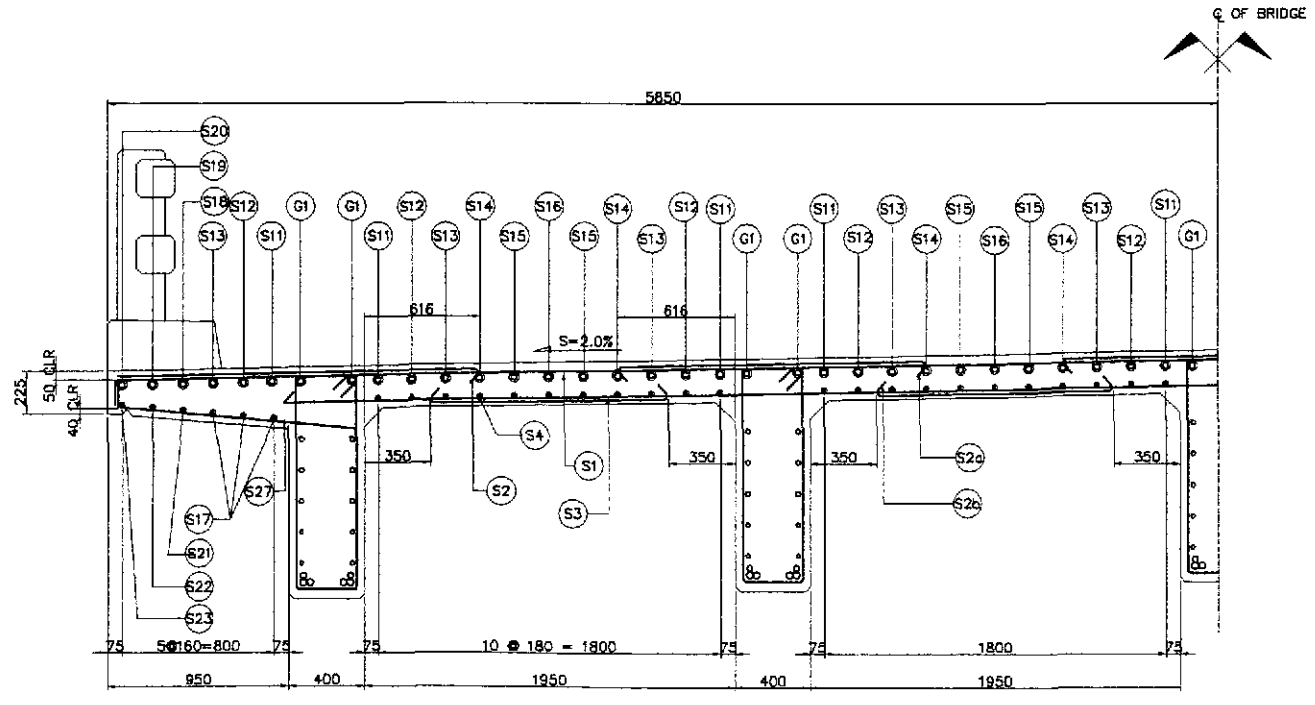
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	CHECKED	9/20/02	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	1:200	BRIDGE NO. 7 GENERAL ELEVATION AND SECTIONS (INITIAL STAGE)	B7-02
SUBMITTED	9/18/02	BUREAU OF DESIGN OFFICE OF THE SECRETARY			PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1			



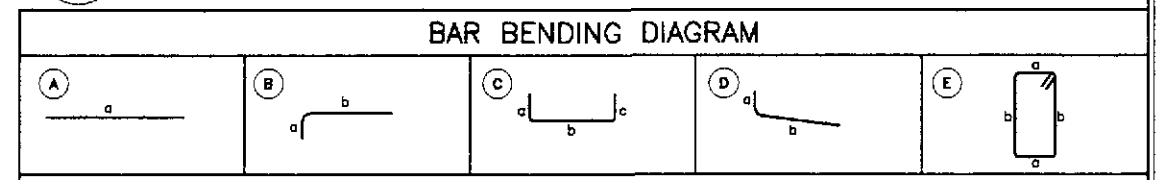
1 TRANSVERSE SECTION NEAR PIER SUPPORT
SCALE 1:20



3 TRANSVERSE SECTION NEAR ABUTMENT
SCALE 1:20



2 TRANSVERSE SECTION AT MIDSPAN OF SPAN 2
SCALE 1:20

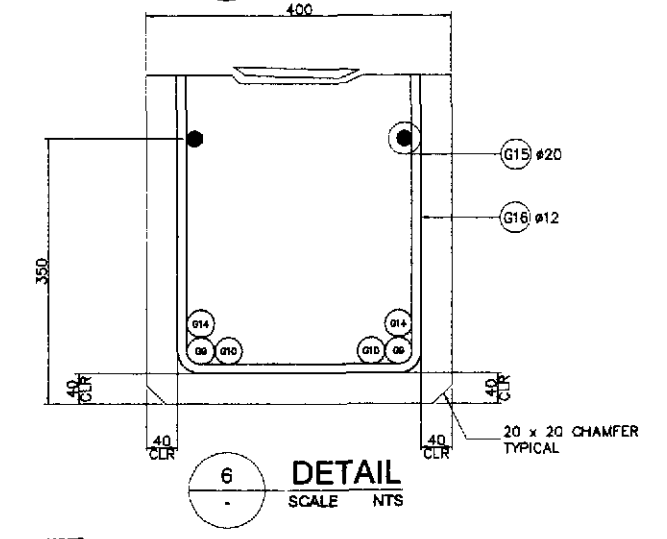
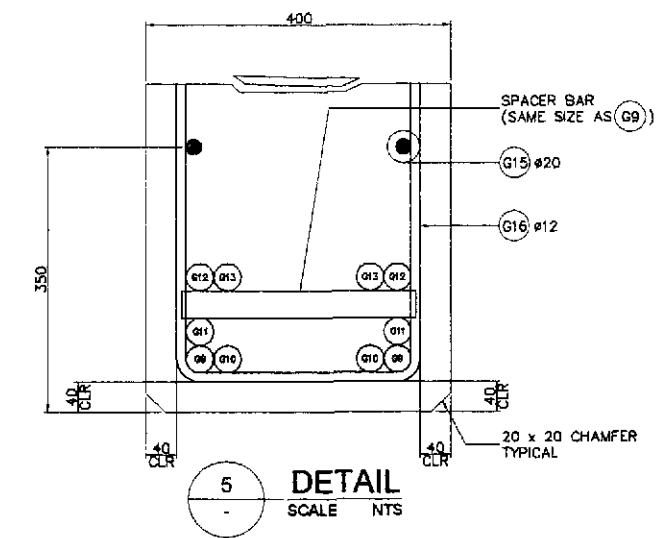
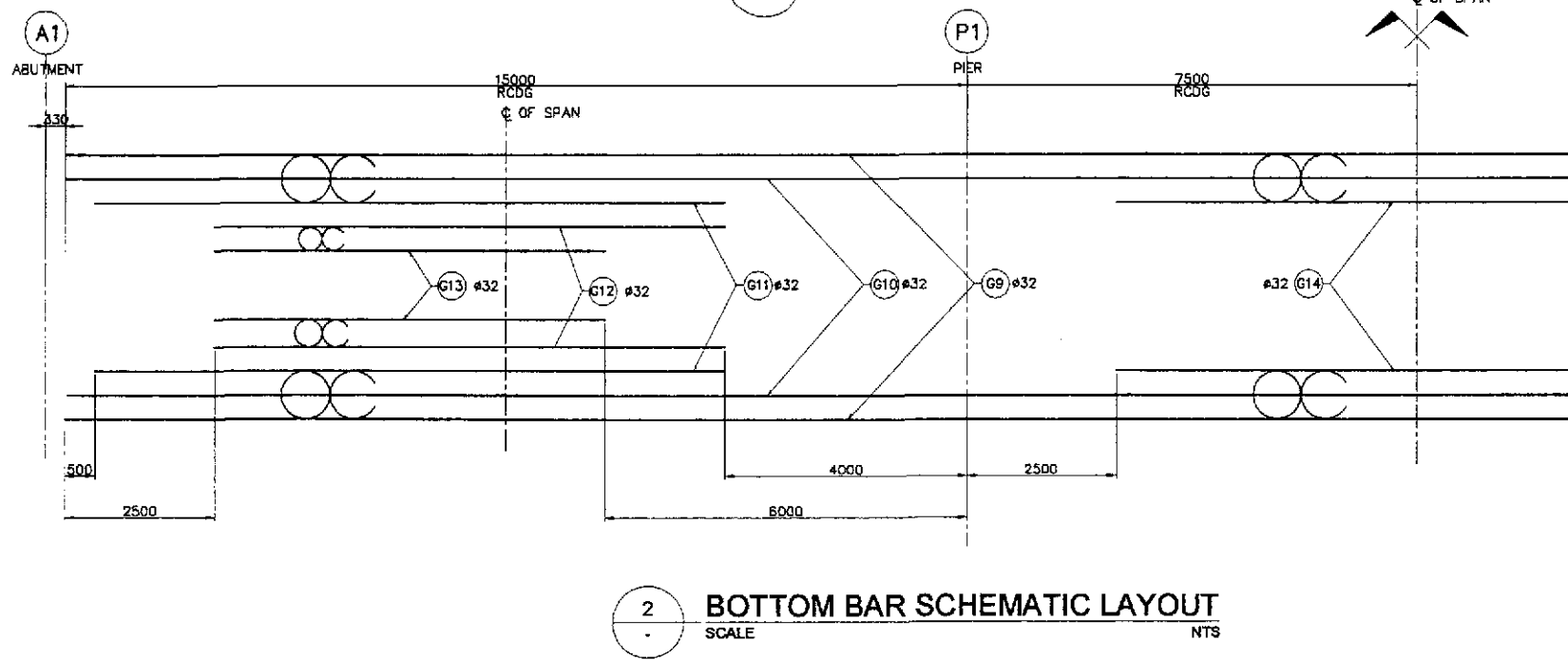
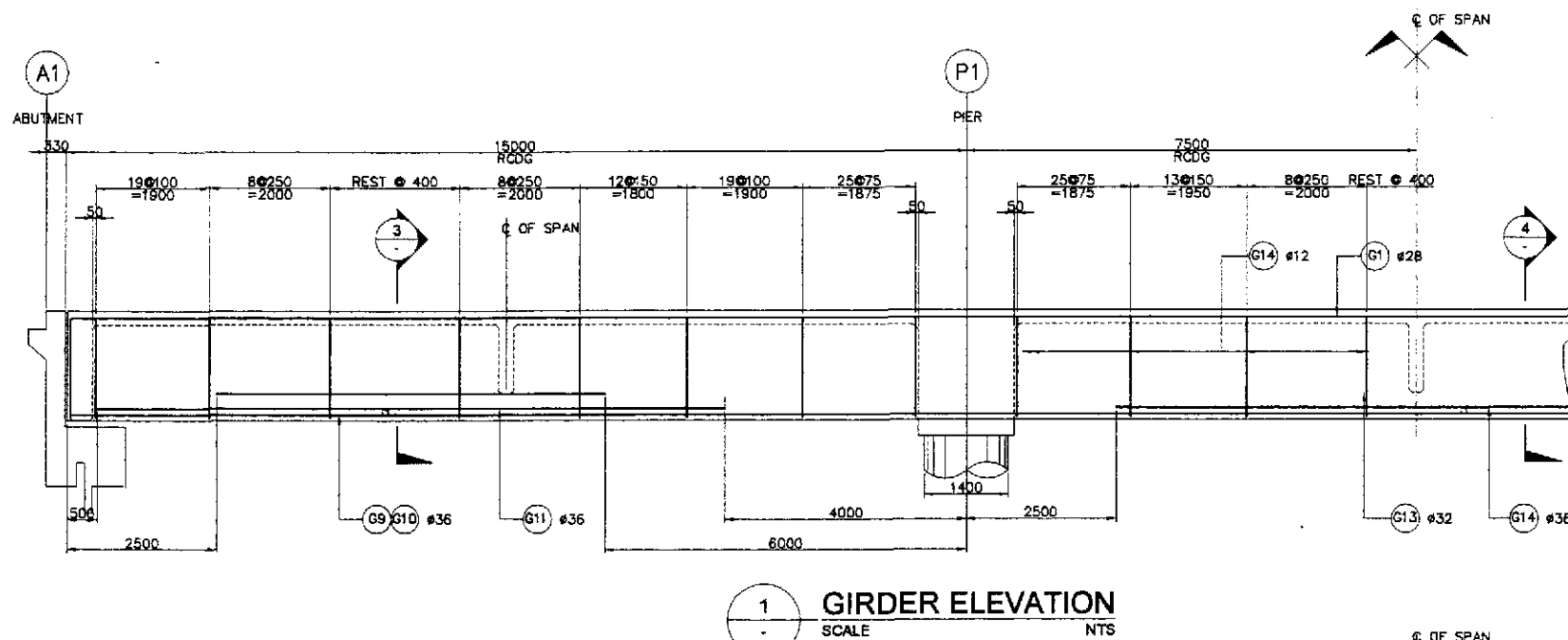


SCHEDULE OF REINFORCEMENT

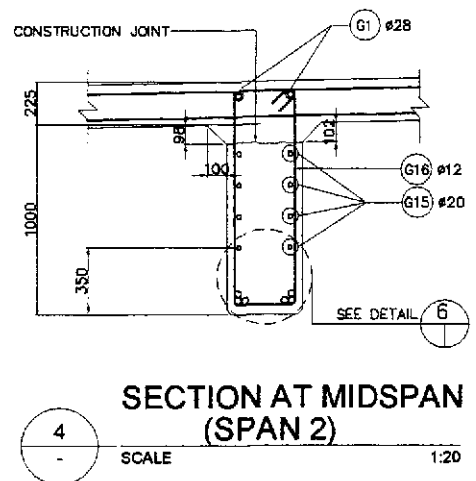
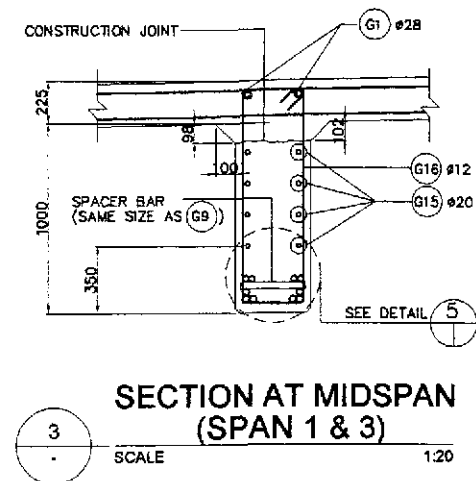
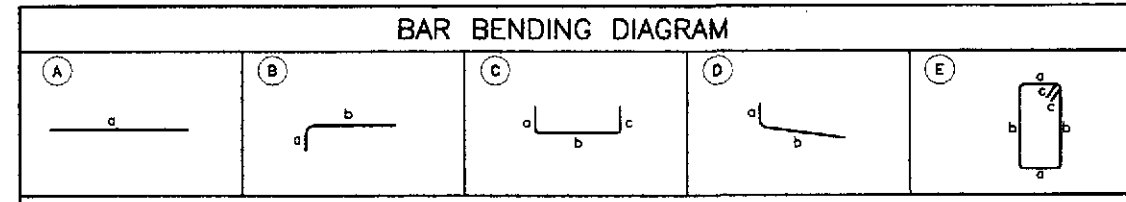
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				Lc (mm)	LENGTH EACH BAR (mm)	TOTAL LENGTH (m)	UNIT WT (Kg/m)	WEIGHT IN (Kg)	REBAR RATIO (kg/m ³)
							a	b	c	d						
DECK SLAB	128.91	S1	16	141	300	C	145	11800	145	-	-	11890	1676.49	1.579	2648	121.79
		S1a	16	22	300	C	145	6400	145	-	-	6690	147.18	1.579	233	
		S2	16	282	300	A	1950	-	-	-	-	1950	549.90	1.579	869	
		S2a	16	423	300	A	1850	-	-	-	-	1850	697.95	1.579	1003	
		S2b	16	564	300	A	1250	-	-	-	-	1250	705.00	1.579	1114	
		S3	16	141	300	A	9800	-	-	-	-	9800	1381.80	1.579	2182	
		S3a	16	22	300	A	5500	-	-	-	-	5500	121.00	1.579	182	
		S4	16	44	175	A	44920	-	-	-	-	44920	1976.48	1.579	3121	
		S5	16	20	AS SHOWN	A	8400	-	-	-	-	8400	168.00	1.579	266	
		S6	16	20	AS SHOWN	A	8900	-	-	-	-	8900	178.00	1.579	282	
		S7	16	20	AS SHOWN	A	9400	-	-	-	-	9400	188.00	1.579	297	
		S8	16	16	AS SHOWN	A	9900	-	-	-	-	9900	158.40	1.579	251	
		S9	16	16	AS SHOWN	A	10400	-	-	-	-	10400	166.40	1.579	283	
		S10	16	8	AS SHOWN	A	10900	-	-	-	-	10900	87.20	1.579	138	
		S11	16	10	AS SHOWN	A	1450	-	-	-	-	1450	14.50	1.579	23	
		S12	16	10	AS SHOWN	A	2450	-	-	-	-	2450	24.50	1.579	39	
		S13	16	10	AS SHOWN	A	3450	-	-	-	-	3450	34.50	1.579	55	
		S14	16	8	AS SHOWN	A	4450	-	-	-	-	4450	35.60	1.579	57	
		S15	16	8	AS SHOWN	A	5450	-	-	-	-	5450	43.60	1.579	69	
		S16	16	4	AS SHOWN	A	6450	-	-	-	-	6450	25.80	1.579	41	
		S17	16	6	AS SHOWN	A	44920	-	-	-	-	44920	269.52	1.579	426	
		S18	16	2	AS SHOWN	A	4450	-	-	-	5500	4450	8.90	1.579	15	
		S19	16	2	AS SHOWN	A	5450	-	-	-	5000	5450	10.90	1.579	18	
		S20	16	2	AS SHOWN	A	6450	-	-	-	4500	6450	12.90	1.579	21	
		S21	16	2	AS SHOWN	A	44920	-	-	-	-	44920	88.84	1.579	142	
		S22	16	2	AS SHOWN	A	44920	-	-	-	-	44920	89.84	1.579	142	
		S23	16	2	AS SHOWN	A	44920	-	-	-	-	44920	89.84	1.579	142	
		S24	16	4	AS SHOWN	A	9900	-	-	-	-	9900	39.60	1.579	63	
		S25	16	4	AS SHOWN	A	10400	-	-	-	-	10400	41.60	1.579	66	
S26	16	4	AS SHOWN	A	10900	-	-	-	-	10900	43.60	1.579	69			
S27	12	302	300	D	145	1260	-	-	-	1405	424.31	0.888	377			
S28	16	28	300	A	12000	-	-	-	-	12000	336.00	1.579	531			
S29	16	44	300	A	6400	-	-	-	-	6400	281.60	1.579	445			
TOTAL	128.91											GRADE 40 TOTAL = 15,701 kgs.				

A 3-SPAN RCDG SUPERSTRUCTURE DETAILS
SCALE AS SHOWN

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/12/02	P. GONZALES		BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 7 SLAB REINFORCEMENT DETAILS (TRANSVERSE SECTION) (INITIAL STAGE)	B7-04
	SUBMITTED	9/23/02	M. KINOSHITA		Submitted By:	Reviewed By:	Recommended By:	Recommended By:	PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		



NOTE: CONCRETE CHAMFER AT BOTTOM OF GIRDER IS 20mm.

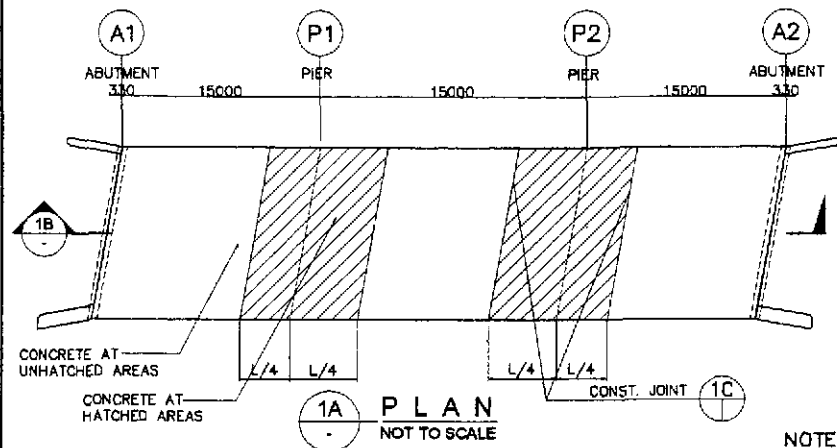


SCHEDULE OF REINFORCEMENT FOR FIVE GIRDERS

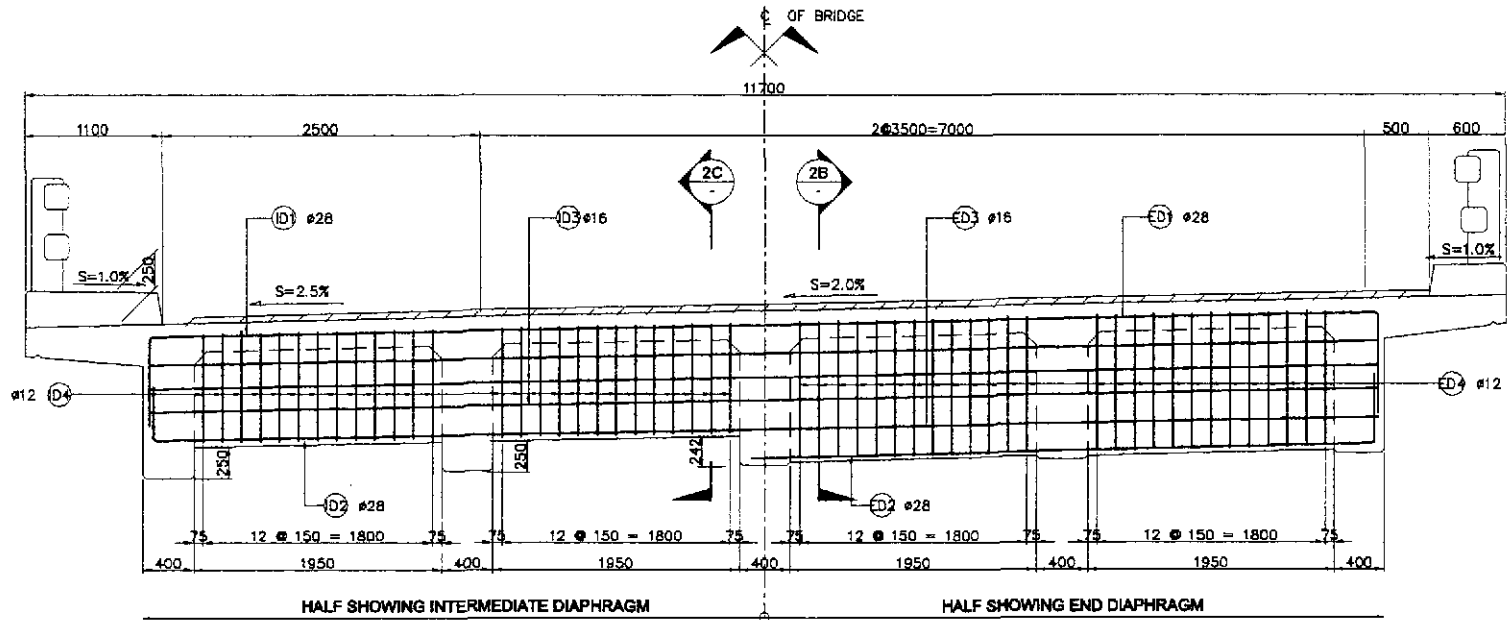
LOCATION	CONC. VOL (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				L _o (mm)	LENGTH EACH BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	TOTAL WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d						
GIRDER (W/ FILLET)	83.60	G1	28	10	AS SHOWN	(C)	1300	44920	1300	-	-	47520	475.20	4.833	2297	284.19
		G2	28	10	AS SHOWN	(A)	8000	-	-	-	4000	8000	80.00	4.833	387	
		G3	28	20	AS SHOWN	(A)	14000	-	-	-	7000	14000	280.00	4.833	1354	
		G4	28	20	AS SHOWN	(A)	13000	-	-	-	6500	13000	260.00	4.833	1257	
		G5	28	20	AS SHOWN	(A)	12000	-	-	-	6000	12000	240.00	4.833	1160	
		G6	28	20	AS SHOWN	(A)	11000	-	-	-	5500	11000	220.00	4.833	1064	
		G7	28	20	AS SHOWN	(A)	10000	-	-	-	5000	10000	200.00	4.833	967	
		G8	28	12	AS SHOWN	(A)	9000	-	-	-	4500	9000	108.00	4.833	522	
		G9	32	10	AS SHOWN	(C)	1300	44920	1300	-	-	47520	475.20	6.313	3000	
		G10	32	10	AS SHOWN	(C)	1300	44920	1300	-	-	47520	475.20	6.313	3000	
		G11	32	20	AS SHOWN	(A)	10500	-	-	-	-	10500	210.00	6.313	1326	
		G12	32	20	AS SHOWN	(A)	8500	-	-	-	-	8500	170.00	6.313	1074	
		G13	32	10	AS SHOWN	(A)	6500	-	-	-	-	6500	65.00	6.313	411	
		G14	32	10	AS SHOWN	(A)	10000	-	-	-	2500	10000	100.00	6.313	632	
		G15	20	40	AS SHOWN	(A)	44920	-	-	-	-	44920	1796.80	2.466	4431	
G16	12	310	AS SHOWN	(E)	320	1120	150	-	-	3180	985.80	0.888	876			
TOTAL	83.60															

GRADE 40 TOTAL = 877 kgs.
GRADE 60 TOTAL = 22,883.00 kgs.

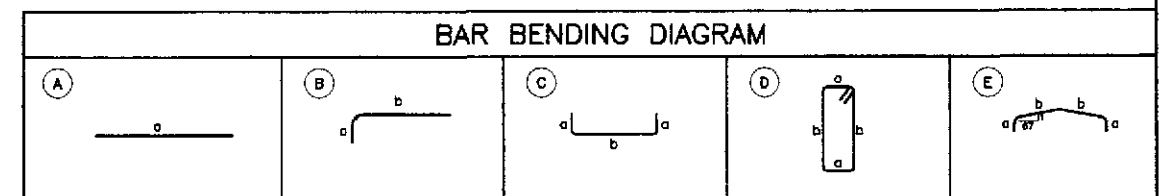
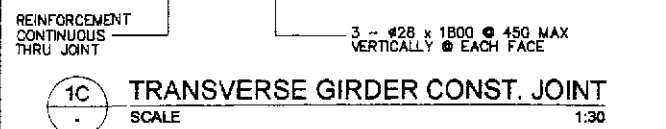
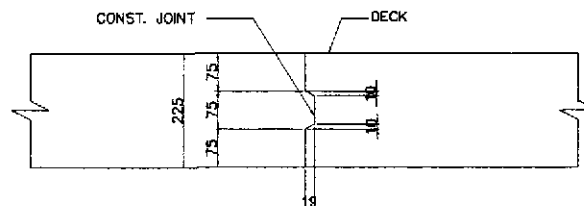
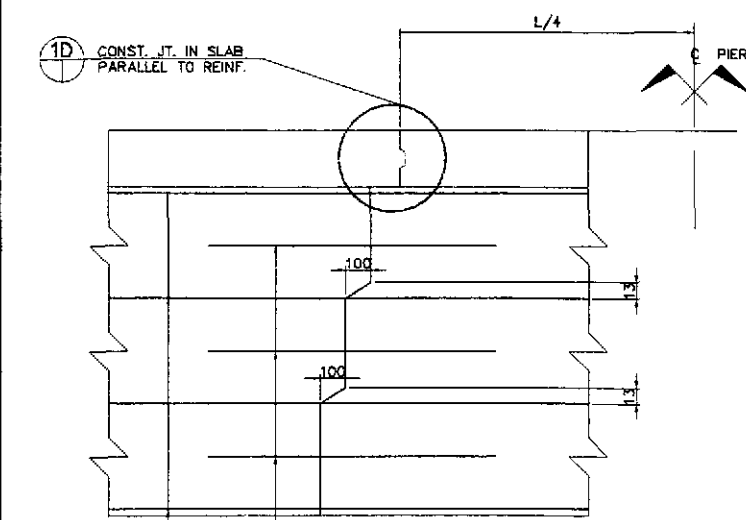
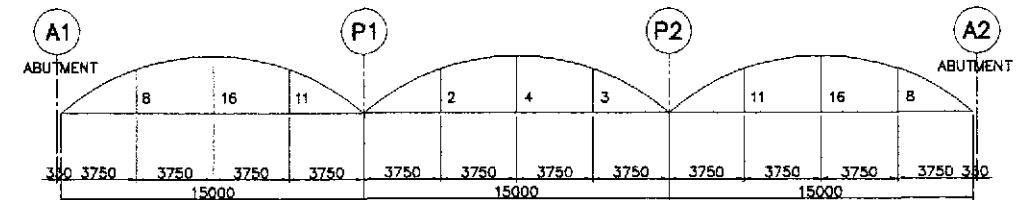
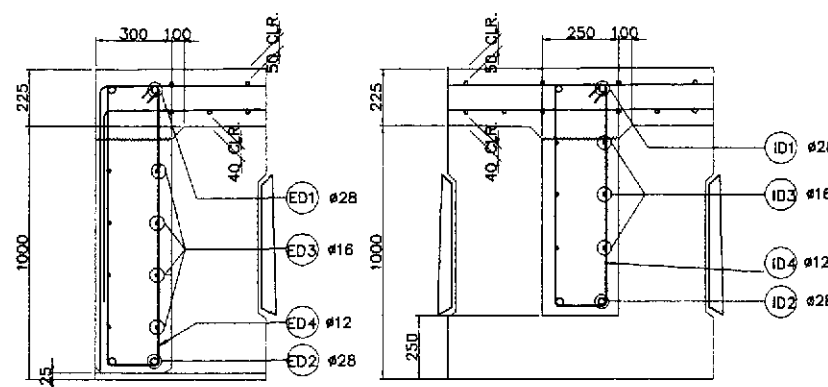
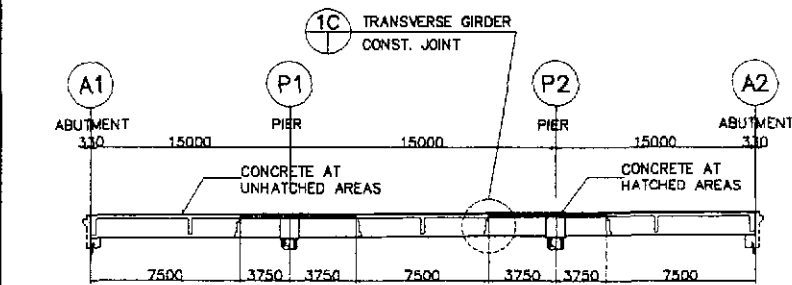
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	7/20/02	P. GONZALES		BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 7 GIRDER ELEVATION, BOTTOM REBAR LAYOUT AND SECTIONS (INITIAL STAGE)	B7-05
	SUBMITTED	7/23/02	M. RIVERA		OFFICE OF THE SECRETARY				FULL SIZE A1			



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.



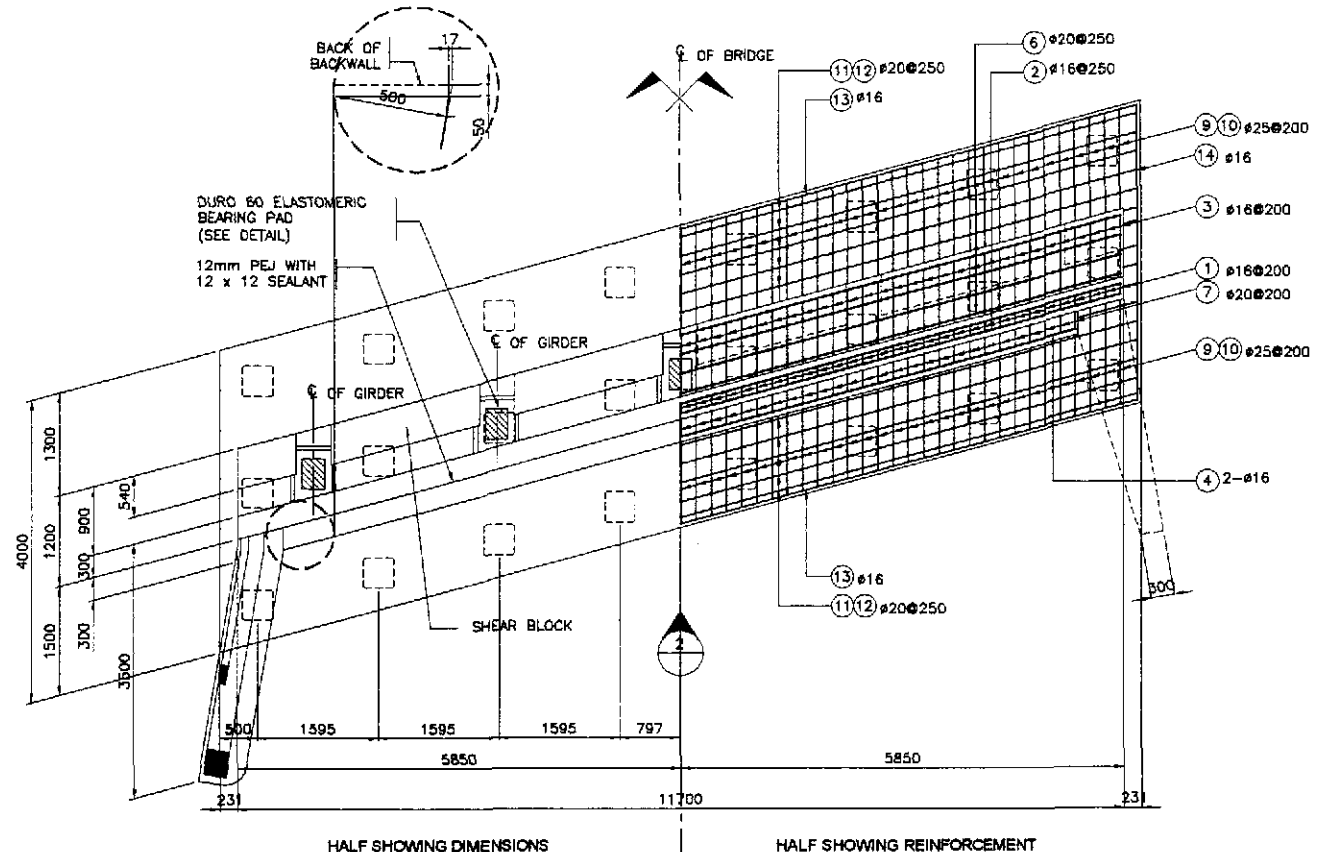
2 INTERMEDIATE AND END DIAPHRAGM DETAIL
SCALE AS SHOWN



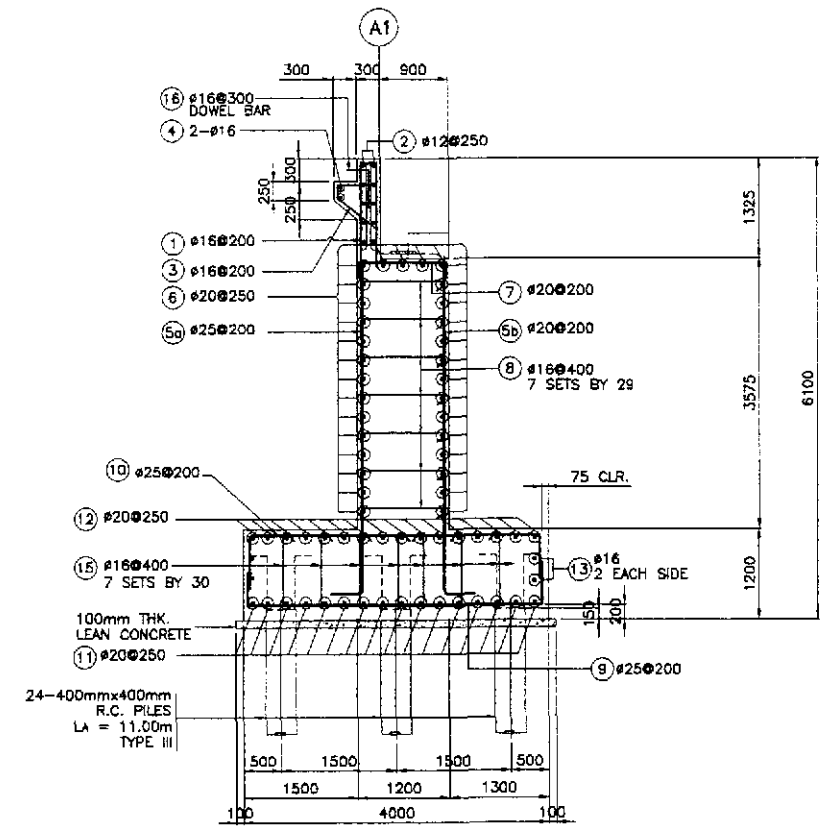
SCHEDULE OF REINFORCEMENT																
LOCATION	CONC. VOL (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				Lc (mm)	LENGTH EACH BAR (mm)	TOTAL LENGTH (m)	UNIT WT (kg/m)	TOTAL WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d						
END DIAPHRAGM	4.68	ED1	28	4	AS SHOWN	C	350	9700	-	-	-	10400	41.60	4.833	202	197.01
		ED2	28	4	AS SHOWN	C	350	9700	-	-	-	10400	41.60	4.833	202	
		ED3	16	16	AS SHOWN	A	9700	-	-	-	-	9700	155.20	1.578	246	
		ED4	12	104	150	D	220	1100	150	-	-	2940	305.76	0.888	272	
INTERMEDIATE DIAPHRAGM	4.39	ID1	28	6	AS SHOWN	C	350	9700	-	-	-	10400	62.40	4.833	302	275.78
		ID2	28	6	AS SHOWN	C	350	9700	-	-	-	10400	62.40	4.833	302	
		ID3	16	18	AS SHOWN	A	9700	-	-	-	-	9700	174.60	1.579	276	
		ID4	12	156	AS SHOWN	D	170	870	150	-	-	2380	371.28	0.888	330	
TOTAL	9.07															

GRADE 40 TOTAL = 1,124 kgs.
 GRADE 60 TOTAL = 1,008 kgs.

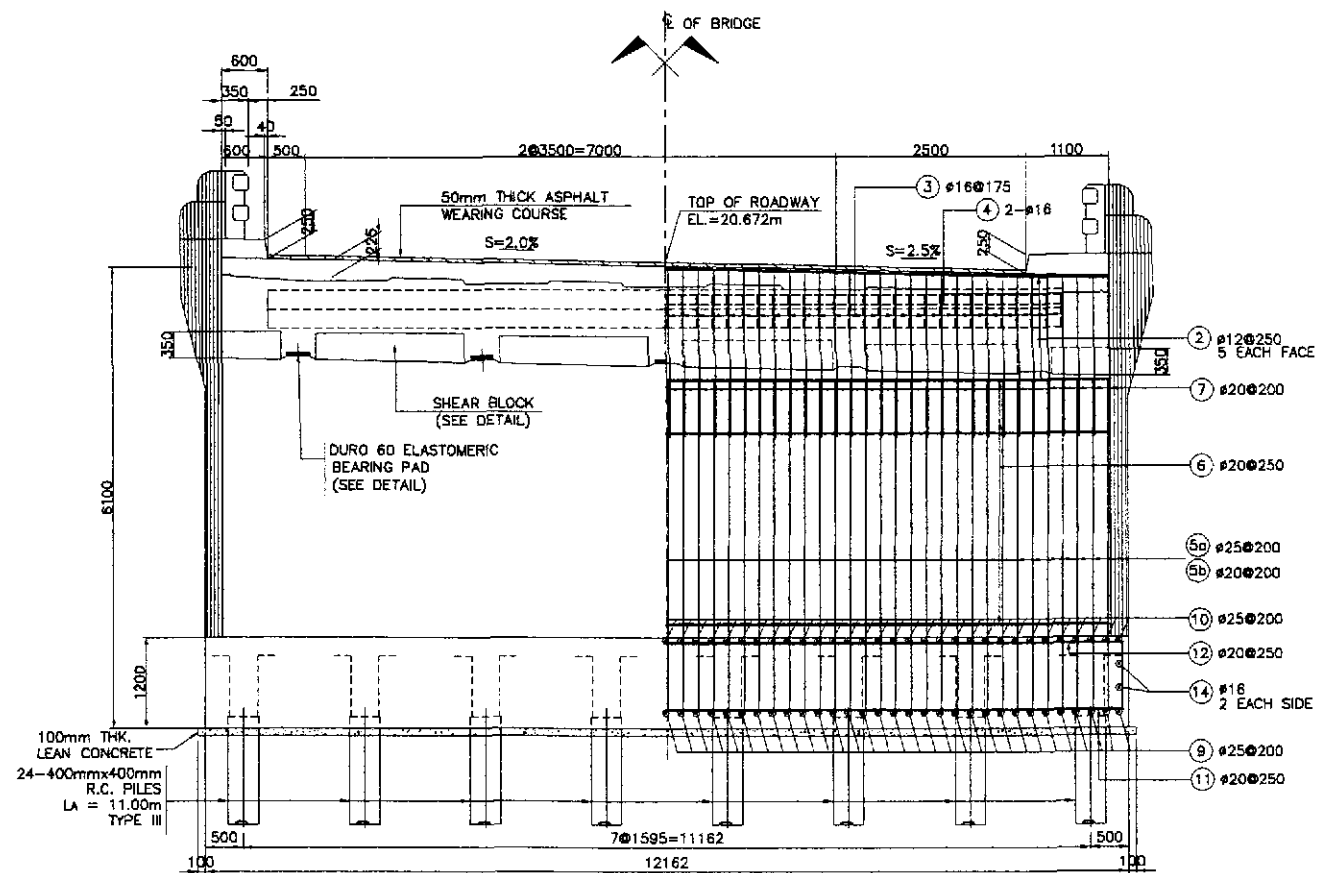
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/12/02	E. M. SALLAN		BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 7 CONCRETE POURING SEQUENCE, DIAPHRAGM DET. & CAMBER DIAGRAM (INITIAL STAGE)	B7-06
	SUBMITTED	9/13/02	M. M. REYES		Submitted By:	Reviewed By:	Recommended By:	Recommended By:	PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		



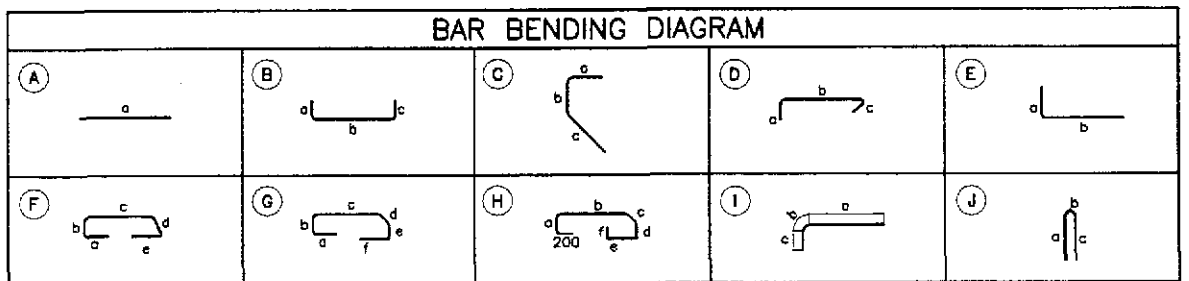
1 PLAN
SCALE 1:50



3 SECTION
SCALE 1:50

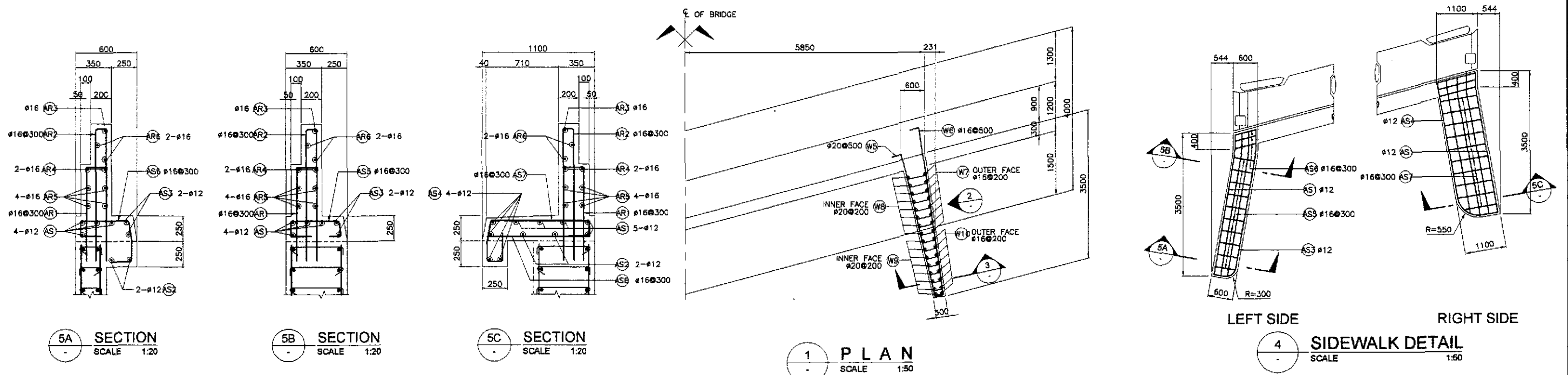


2 ELEVATION
SCALE 1:50

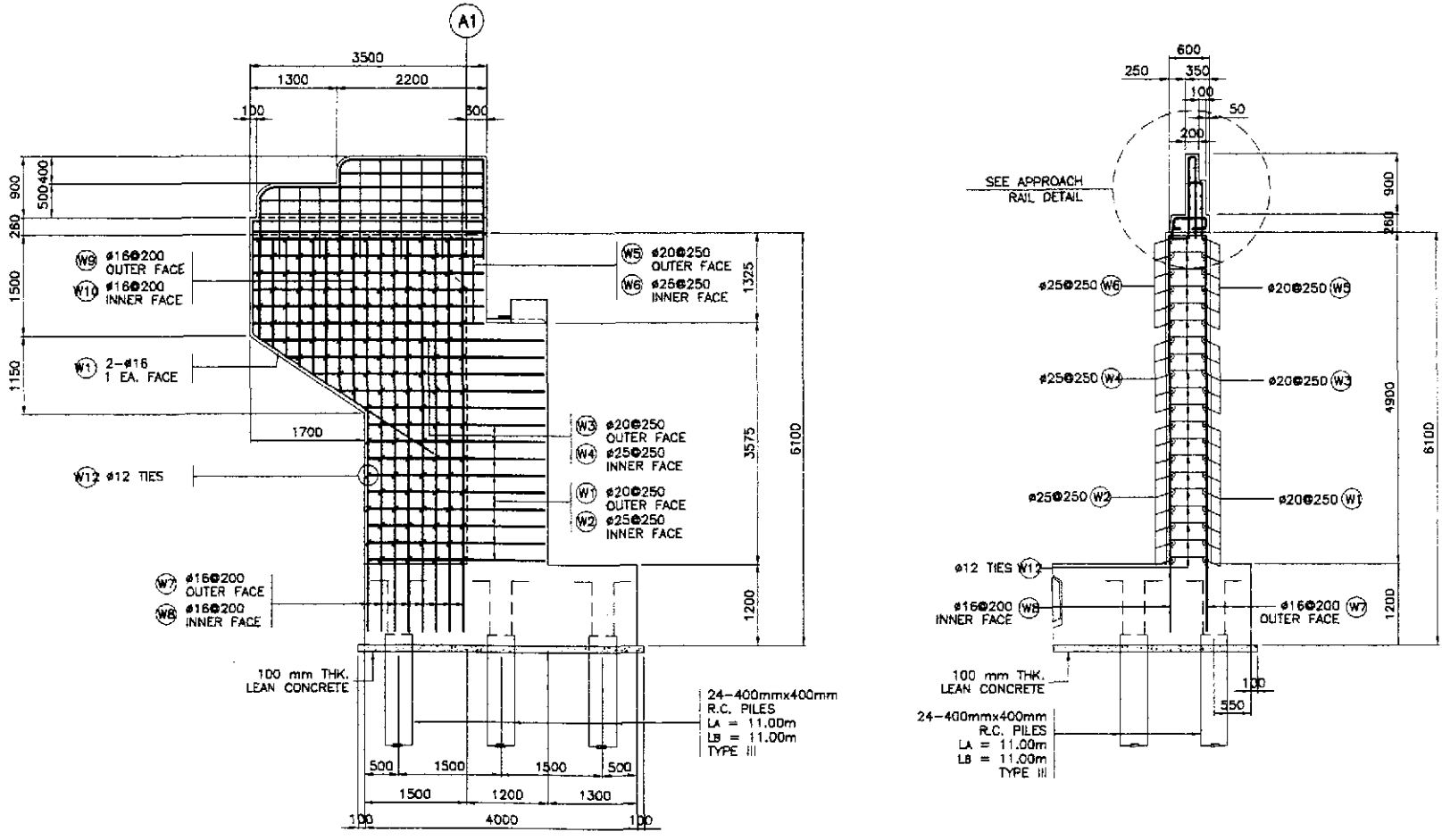


SCHEDULE OF REINFORCEMENT PER ABUTMENT																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e						f
BACKWALL	5.78	1	16	59	200	(B)	1400	200	1400	-	-	-	3000	177.00	1.579	280	90.20
		2	12	10	250	(A)	11600	-	-	-	-	-	11600	116.00	0.888	104	
		3	16	51	200	(C)	450	150	700	-	-	-	1300	66.30	1.579	105	
		4	16	2	AS SHOWN	(A)	9900	-	-	-	-	-	9900	19.80	1.579	32	
MAINWALL	50.19	5a	25	59	200	(E)	500	4500	-	-	-	5000	295.00	3.854	1137	69.19	
		5b	20	59	200	(E)	500	4500	-	-	-	5000	295.00	2.466	728		
		6	20	31	250	(A)	11600	-	-	-	-	-	11600	359.80	2.466		887
		7	20	59	200	(B)	250	1100	250	-	-	-	1600	94.40	2.466		233
FOOTING	58.38	8	16	203	400	(D)	250	1100	170	-	-	-	1520	308.56	1.579	488	68.86
		9	25	61	200	(B)	575	3850	575	-	-	-	5000	305.00	3.854	1176	
		10	25	61	200	(B)	575	3850	575	-	-	-	5000	305.00	3.854	1176	
		11	20	16	250	(B)	575	12475	575	-	-	-	13625	218.00	2.466	538	
		12	20	16	250	(B)	575	12475	575	-	-	-	13625	218.00	2.466	538	
		13	16	4	AS SHOWN	(A)	12475	-	-	-	-	-	12475	48.20	1.579	79	
DOWEL		14	16	4	AS SHOWN	(A)	3850	-	-	-	-	-	3850	15.40	1.579	25	
		15	16	210	400	(D)	250	1050	170	-	-	-	1470	308.70	1.579	488	
		16	16	34	300	(E)	650	500	-	-	-	-	1150	78.20	1.579	62	
TOTAL	114.35															GRADE 40 TOTAL = 1,863 kgs. GRADE 60 TOTAL = 6,413 kgs.	

	DESIGNED: <i>[Signature]</i> CHECKED: <i>[Signature]</i> SUBMITTED: <i>[Signature]</i>	DATE: 9/18/01 9/20/01 9/23/01	SIGNATURE: P. GONZALES <i>[Signature]</i> M. RIVERA	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY	PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II	SCALE: AS SHOWN FULL SIZE A1	SHEET CONTENTS: BRIDGE NO. 7 ABUTMENT A1 MAINWALL REINFORCEMENT DETAILS (INITIAL STAGE)	SHEET NO.: B7-07
	Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: ADRIANO M. DOROS Chief, Bridges Division	Recommended By: GILBERTO S. REYES Director IV (DC)	Recommended By: MANUEL M. BONOAN Undersecretary	Approved By: SIMONE A. DATUMANONG Secretary	SCALE: AS SHOWN FULL SIZE A1	SHEET CONTENTS: BRIDGE NO. 7 ABUTMENT A1 MAINWALL REINFORCEMENT DETAILS (INITIAL STAGE)	SHEET NO.: B7-07
	JICA JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS YEO YACHIYO ENGINEERING CO., LTD. VEI INTERNATIONAL							

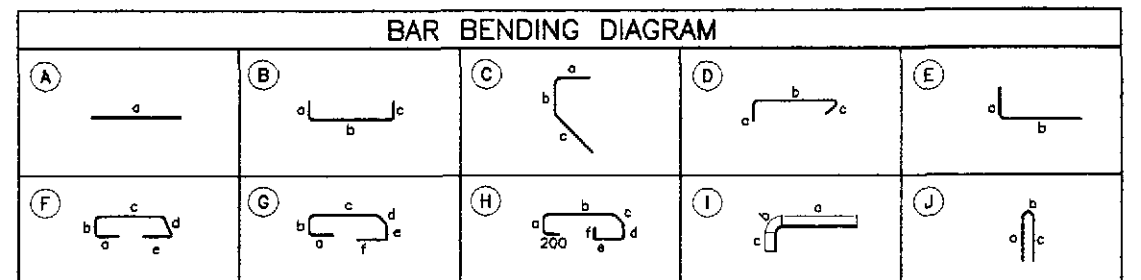


5 APPROACH RAIL DETAILS
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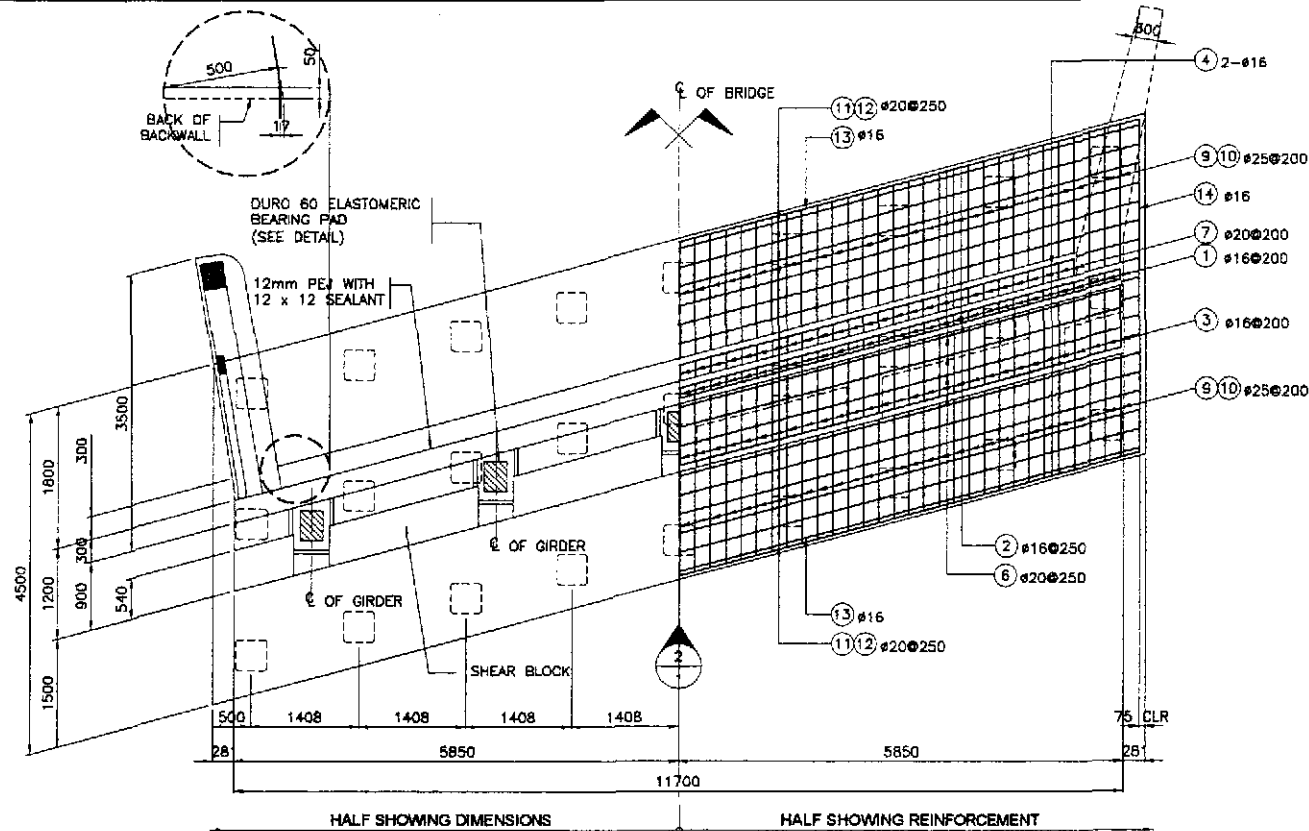


2 WINGWALL ELEVATION
SCALE 1:50

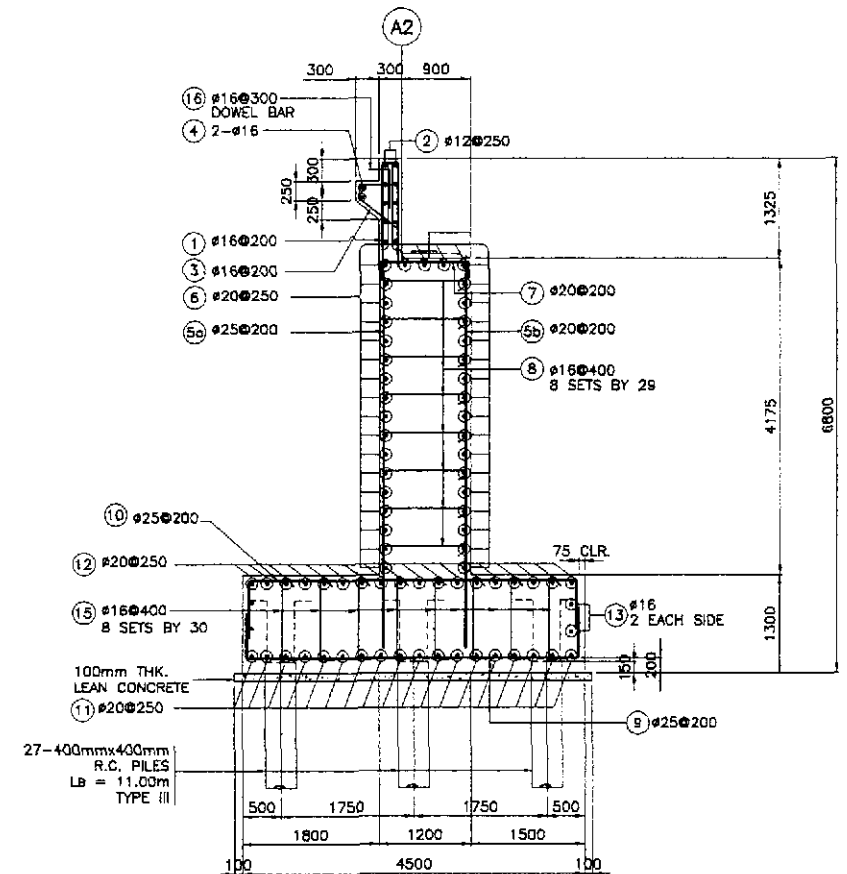
3 SECTION
SCALE 1:50



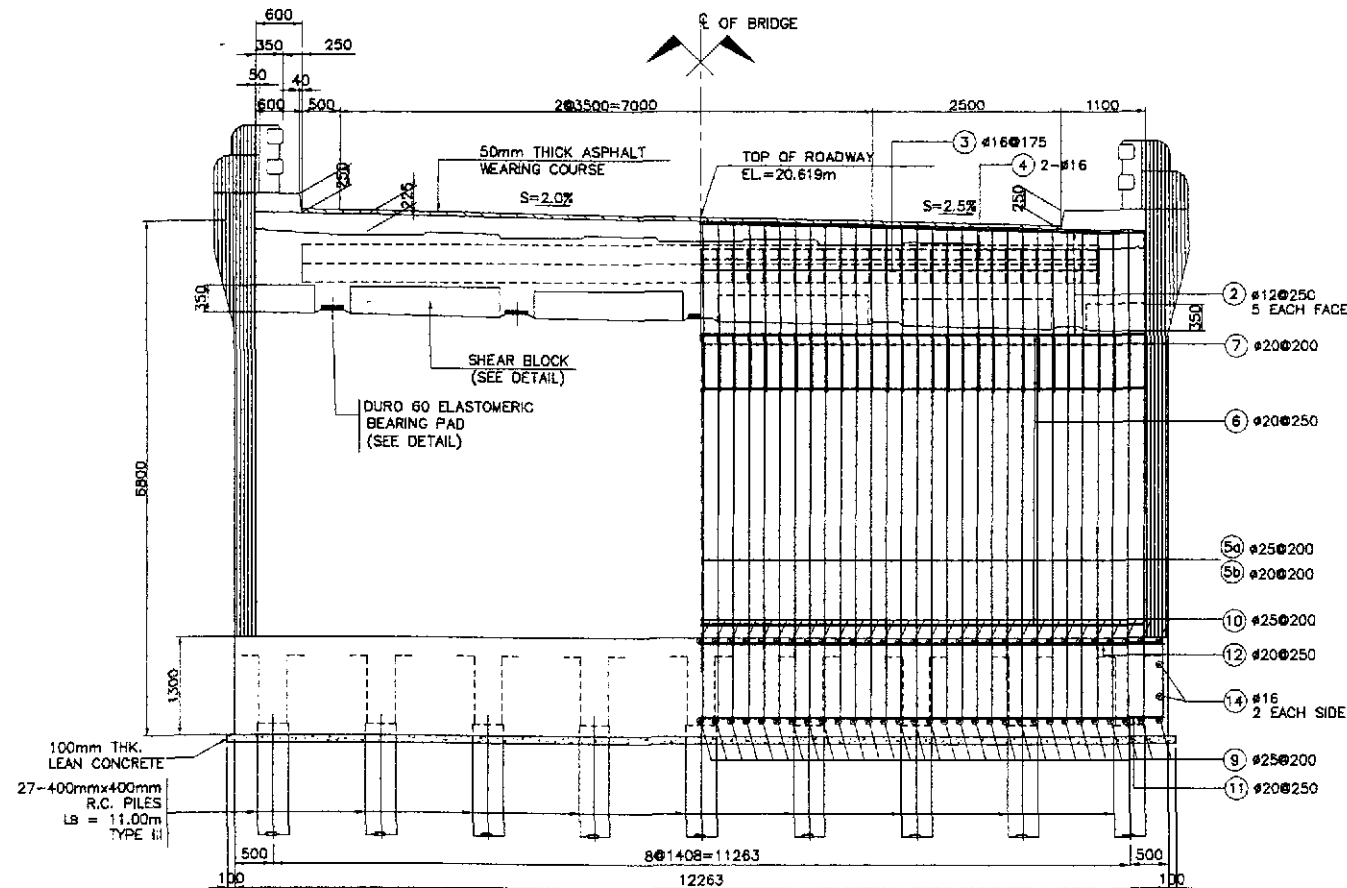
SCHEDULE OF REINFORCEMENT PER ABUTMENT																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm)					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e						f
WINGWALL	10.33	W1	20	18	250	B	400	2600	150	-	-	-	3150	56.70	2.466	140	
		W2	25	18	250	B	400	2600	150	-	-	-	3150	56.70	3.854	219	
		W3	20	10	250	B	400	3400	150	-	-	-	3950	39.50	2.466	98	
		W4	25	10	250	B	400	3400	150	-	-	-	3950	39.50	3.854	153	
		W5	20	12	250	B	400	3400	150	-	-	-	3950	47.40	2.466	117	
		W6	25	12	250	B	400	3400	150	-	-	-	3950	47.40	3.854	183	
		W7	16	16	200	E	250	5850	-	-	-	-	6100	97.60	1.579	155	
		W8	16	16	200	E	250	5850	-	-	-	-	6100	97.60	1.579	155	
		W9	16	16	200	E	250	1950	-	-	-	-	2200	35.20	1.579	56	
		W10	16	16	200	E	250	1950	-	-	-	-	2200	35.20	1.579	56	
		W11	16	4	AS SHOWN	C	250	1500	3200	-	-	-	4950	19.80	1.579	32	
		W12	12	224	AS SHOWN	D	170	450	100	-	-	-	720	161.28	0.888	144	
												GRADE 60 TOTAL = 910 kgs					
												GRADE 40 TOTAL = 588 kgs					
APPROACH RAILING AND SIDEWALK	3.44	AS1	12	9	AS SHOWN	A	3400	-	-	-	-	-	3400	30.60	0.888	28	
		AS2	12	2	AS SHOWN	A	3400	-	-	-	-	-	3400	6.80	0.888	7	
		AS3	12	2	AS SHOWN	A	3400	-	-	-	-	-	3400	6.80	0.888	7	
		AS4	12	6	AS SHOWN	A	3400	-	-	-	-	-	3400	20.40	0.888	19	
		AS5	16	4	300	F	200	170	480	200	200	-	1250	5.00	1.579	8	
		AS6	16	8	300	G	200	170	480	200	170	200	1420	11.36	1.579	18	
		AS7	16	12	300	H	200	170	980	200	170	200	2120	25.44	1.579	41	
		AS8	16	12	300	E	200	1020	-	-	-	-	1220	14.64	1.579	24	
		AR1	16	6	300	E	200	900	-	-	-	-	1100	6.60	1.579	11	
		AR2	16	14	300	J	1300	120	1300	-	-	-	2720	36.08	1.579	61	
AR3	16	2	AS SHOWN	I	2100	236	1300	-	-	-	3636	7.27	1.579	12			
AR4	16	4	AS SHOWN	I	3300	236	900	-	-	-	4436	17.74	1.579	29			
AR5	16	8	AS SHOWN	A	3300	-	-	-	-	-	3300	26.40	1.579	42			
AR6	16	4	AS SHOWN	A	2100	-	-	-	-	-	2100	8.40	1.579	14			
												GRADE 60 TOTAL = 910 kgs					
												GRADE 40 TOTAL = 919 kgs					
TOTAL	13.77													GRADE 60 TOTAL = 910 kgs			
												GRADE 40 TOTAL = 919 kgs					



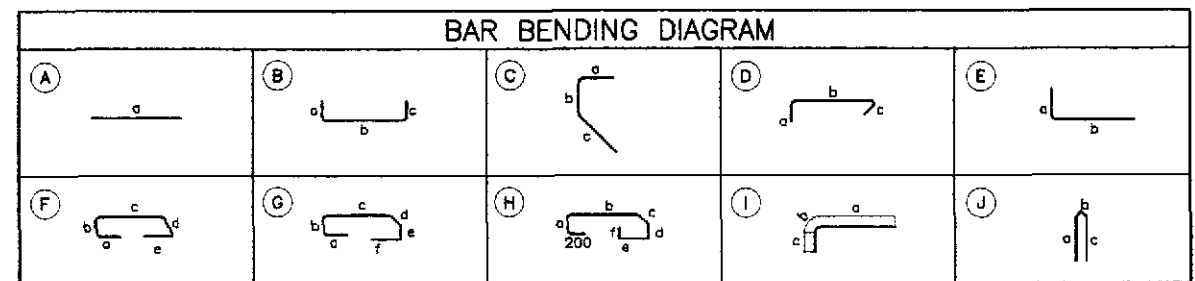
1 PLAN
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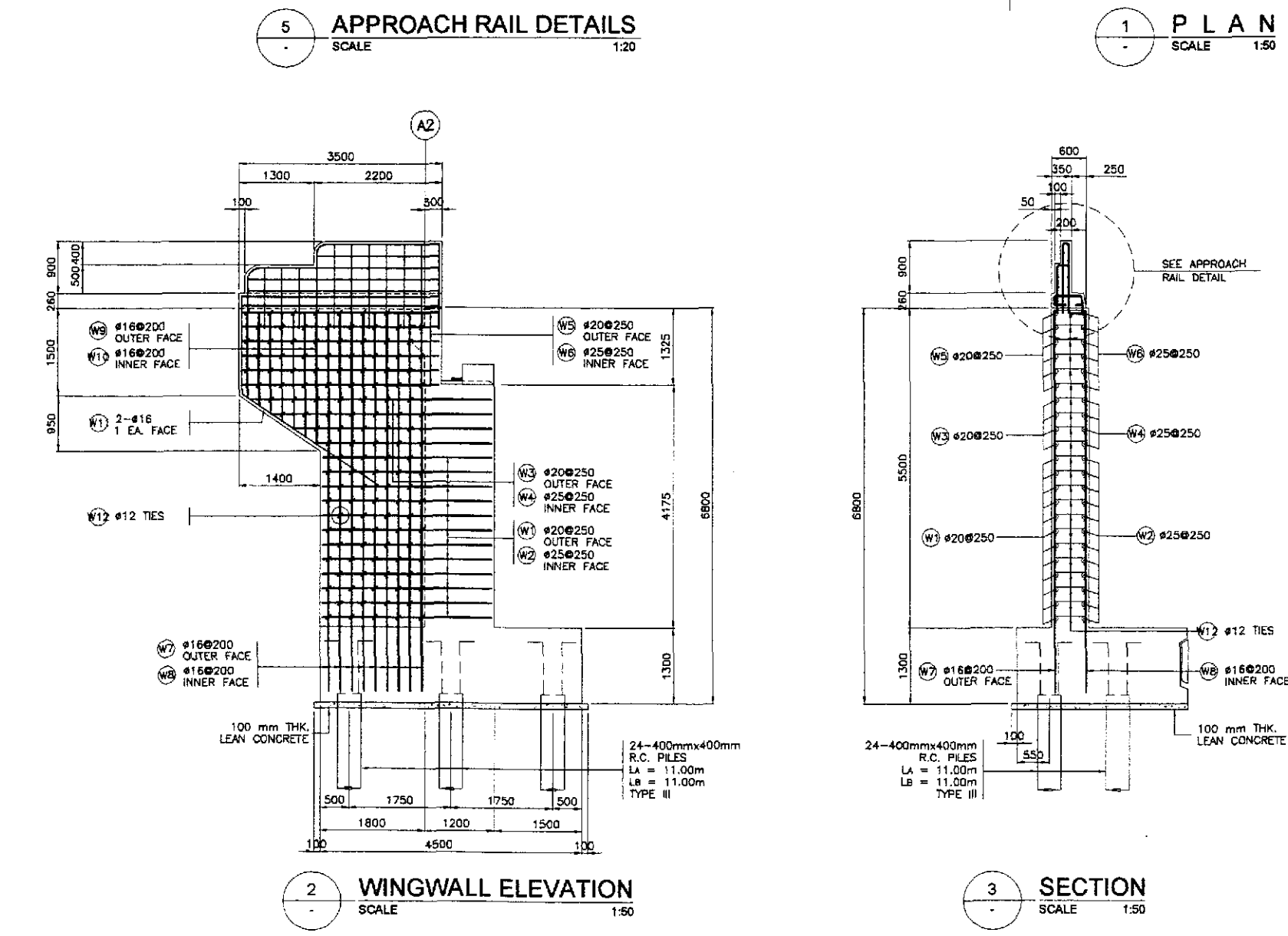
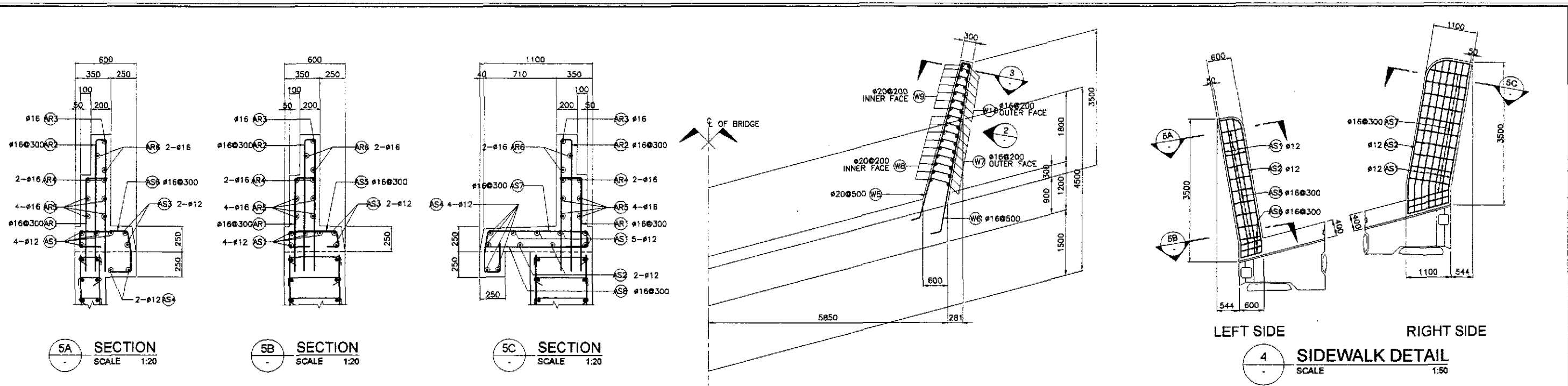
3 SECTION
SCALE 1:50



2 ELEVATION
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					
BACKWALL	5.78	1	16	59	200	B	1400	200	1400	-	-	3000	177.00	1.579	280	90.90
		2	12	10	250	A	12000	-	-	-	-	12000	120.00	0.888	107	
		3	16	51	200	C	450	150	700	-	-	1300	66.30	1.579	105	
		4	16	2	AS SHOWN	A	10250	-	-	-	-	10250	21.50	1.579	33	
MAINWALL	58.62	5a	25	59	200	E	500	5200	-	-	-	5700	336.30	3.854	1297	68.44
		5b	20	59	200	E	500	5200	-	-	-	5700	336.30	2.466	830	
		6	20	37	250	A	12000	-	-	-	-	12000	444.00	2.466	1095	
		7	20	59	200	B	250	1100	250	-	-	1600	94.40	2.466	233	
		8	16	232	400	D	250	1100	170	-	-	1520	352.64	1.579	557	
		9	25	62	200	B	575	4350	575	-	-	5500	341.00	3.854	1315	
FOOTING	71.73	10	25	62	200	B	575	4350	575	-	-	5500	341.00	3.854	1315	63.47
		11	20	18	250	B	575	12580	575	-	-	13730	239.40	2.466	610	
		12	20	18	250	B	575	12580	575	-	-	13730	239.40	2.466	610	
		13	16	4	AS SHOWN	A	12580	-	-	-	-	12580	48.80	1.579	80	
		14	16	4	AS SHOWN	A	4350	-	-	-	-	4350	17.40	1.579	28	
		15	16	240	400	D	250	1150	170	-	-	1570	376.80	1.579	595	
DOWEL		16	16	34	300	E	650	500	-	-	1150	78.20	1.579	62		
TOTAL	136.13															GRADE 40 TOTAL = 1,847 kgs. GRADE 60 TOTAL = 7,305 kgs.

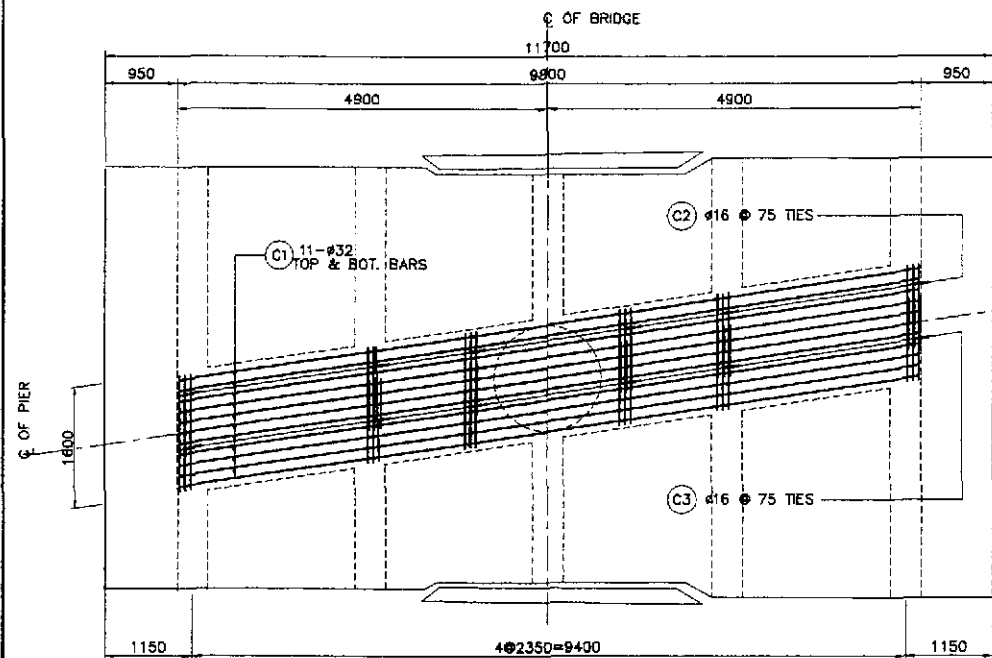


BAR BENDING DIAGRAM

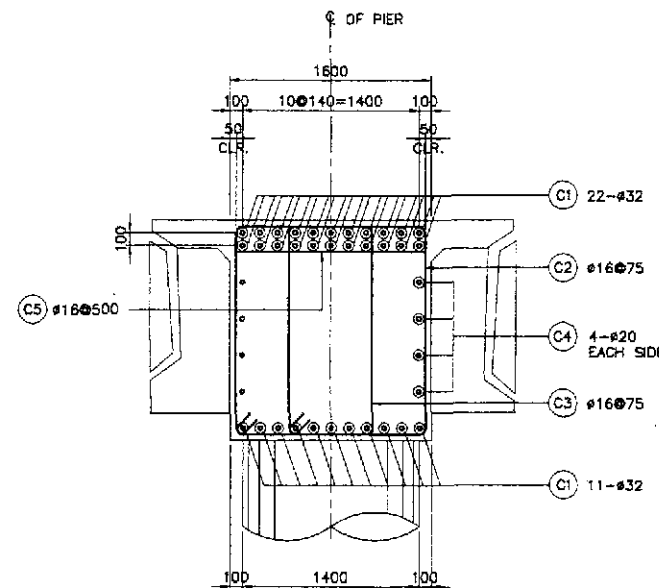
A	B	C	D	E
F	G	H	I	J

SCHEDULE OF REINFORCEMENT PER ABUTMENT

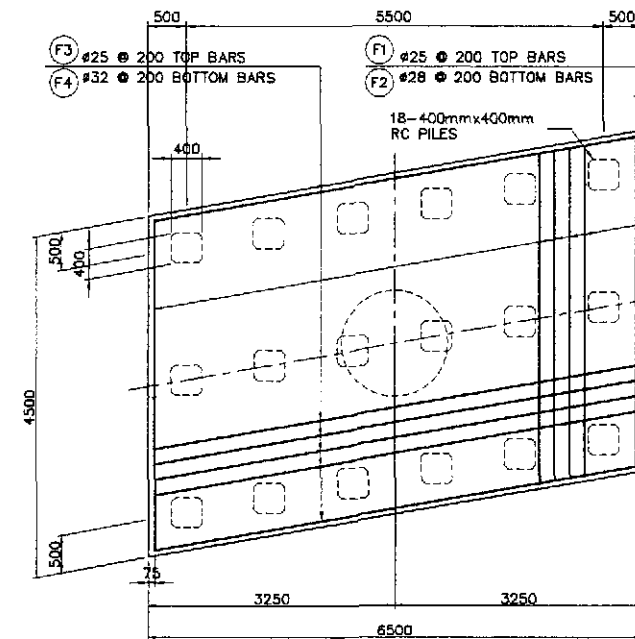
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT						LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e	f						
WINGWALL	12.03	W1	20	24	250	B	400	2900	150	-	-	-	3450	82.80	2.466	205	142.37	
		W2	25	24	250	B	400	2900	150	-	-	-	3450	82.80	3.854	320		
		W3	20	8	250	B	400	3600	150	-	-	-	4150	33.20	2.466	82		
		W4	25	8	250	B	400	3600	150	-	-	-	4150	33.20	3.854	128		
		W5	20	12	250	B	400	3400	150	-	-	-	3950	47.40	2.466	117		
		W6	25	12	250	B	400	3400	150	-	-	-	3950	47.40	3.854	183		
		W7	16	18	200	E	250	6550	-	-	-	-	6800	122.40	1.579	194		
		W8	16	18	200	E	250	6550	-	-	-	-	6800	122.40	1.579	194		
		W9	16	14	200	E	250	1900	-	-	-	-	2150	30.10	1.579	48		
		W10	16	14	200	E	250	1900	-	-	-	-	2150	30.10	1.579	48		
		W11	16	4	AS SHOWN	C	250	1500	2800	-	-	-	4550	18.20	1.579	29		
		W12	12	258	AS SHOWN	D	170	450	100	-	-	-	720	185.76	0.888	165		
													GRADE 60 TOTAL=1,035 kgs					
													GRADE 40 TOTAL= 678 kgs.					
APPROACH RAILING AND SIDEWALK	3.44	AS1	12	9	AS SHOWN	A	3400	-	-	-	-	-	3400	30.60	0.888	28	97.35	
		AS2	12	2	AS SHOWN	A	3400	-	-	-	-	-	3400	6.80	0.888	7		
		AS3	12	2	AS SHOWN	A	3400	-	-	-	-	-	3400	6.80	0.888	7		
		AS4	12	6	AS SHOWN	A	3400	-	-	-	-	-	3400	20.40	1.579	33		
		AS5	16	4	300	F	200	170	480	200	200	-	1250	5.00	1.579	8		
		AS6	16	8	300	G	200	170	480	200	170	200	1420	11.38	1.579	18		
		AS7	16	12	300	H	200	170	980	200	170	200	2120	25.44	1.579	41		
		AS8	16	12	300	E	200	1020	-	-	-	-	1220	14.64	1.579	24		
		AR1	16	6	300	E	200	900	-	-	-	-	1100	6.60	1.579	11		
		AR2	16	14	300	J	1300	120	1300	-	-	-	2720	38.08	1.579	61		
		AR3	16	2	AS SHOWN	I	2100	236	1300	-	-	-	3636	7.27	1.579	12		
		AR4	16	4	AS SHOWN	I	3300	236	900	-	-	-	4436	17.74	1.579	29		
AR5	16	8	AS SHOWN	A	3300	-	-	-	-	-	3300	26.40	1.579	42				
ARB	16	4	AS SHOWN	A	2100	-	-	-	-	-	2100	8.40	1.579	14				
													GRADE 40 TOTAL= 335 kgs.					
TOTAL	15.47														GRADE 60 TOTAL = 1,035 kgs.			
													GRADE 40 TOTAL = 1,013 kgs.					



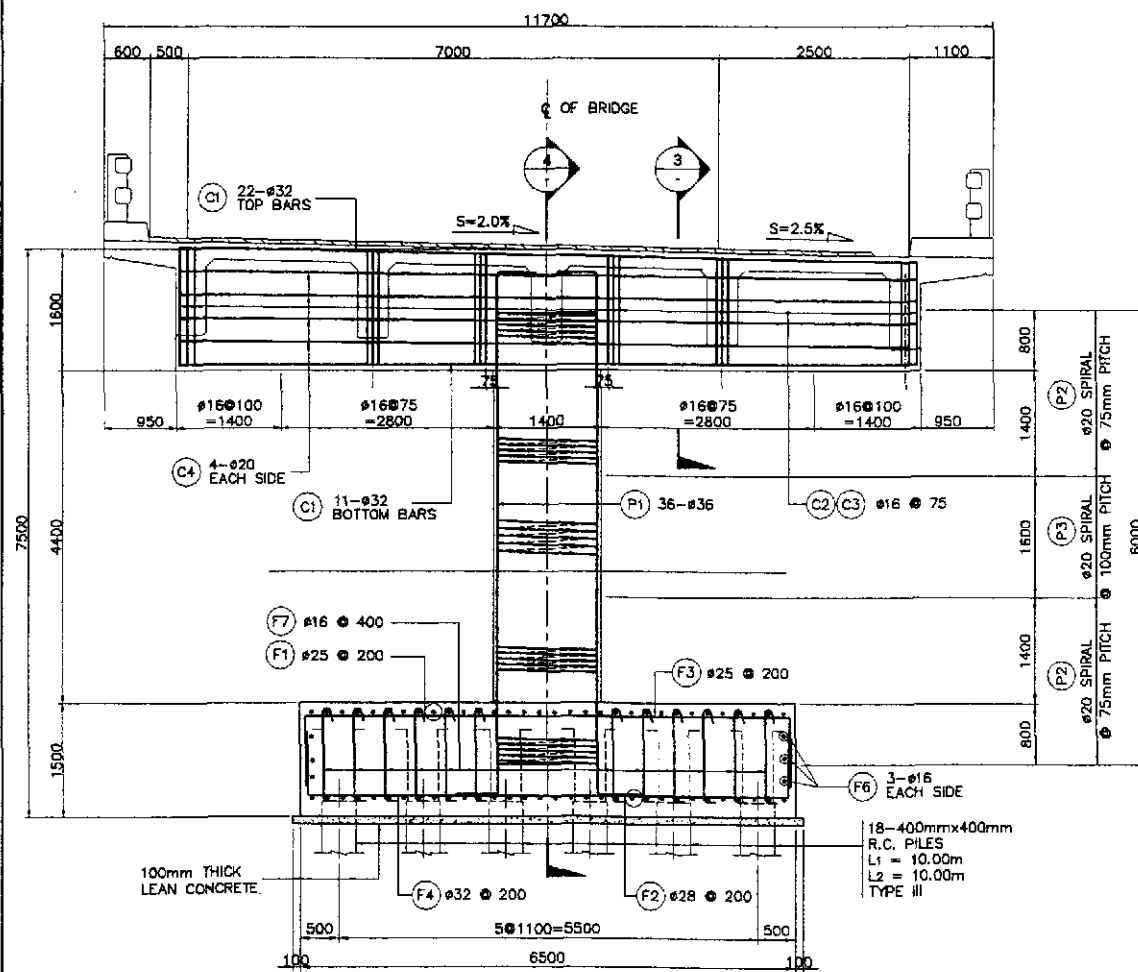
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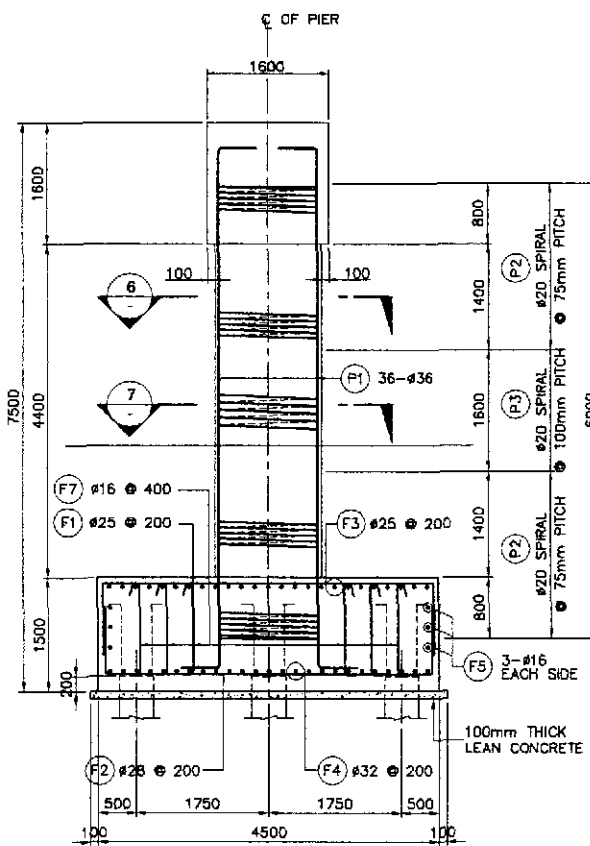
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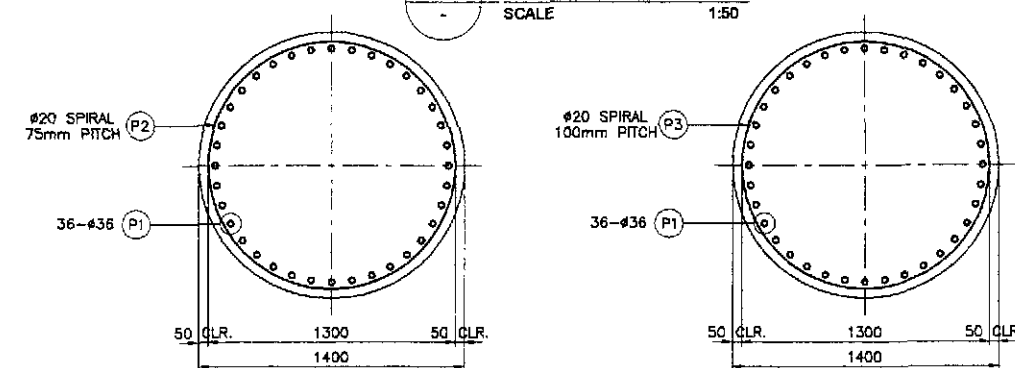
5 FOOTING PLAN
SCALE 1:50



2 ELEVATION
SCALE 1:50

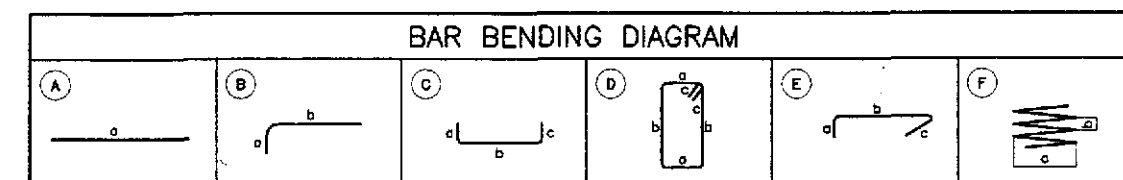


4 SECTION
SCALE 1:50

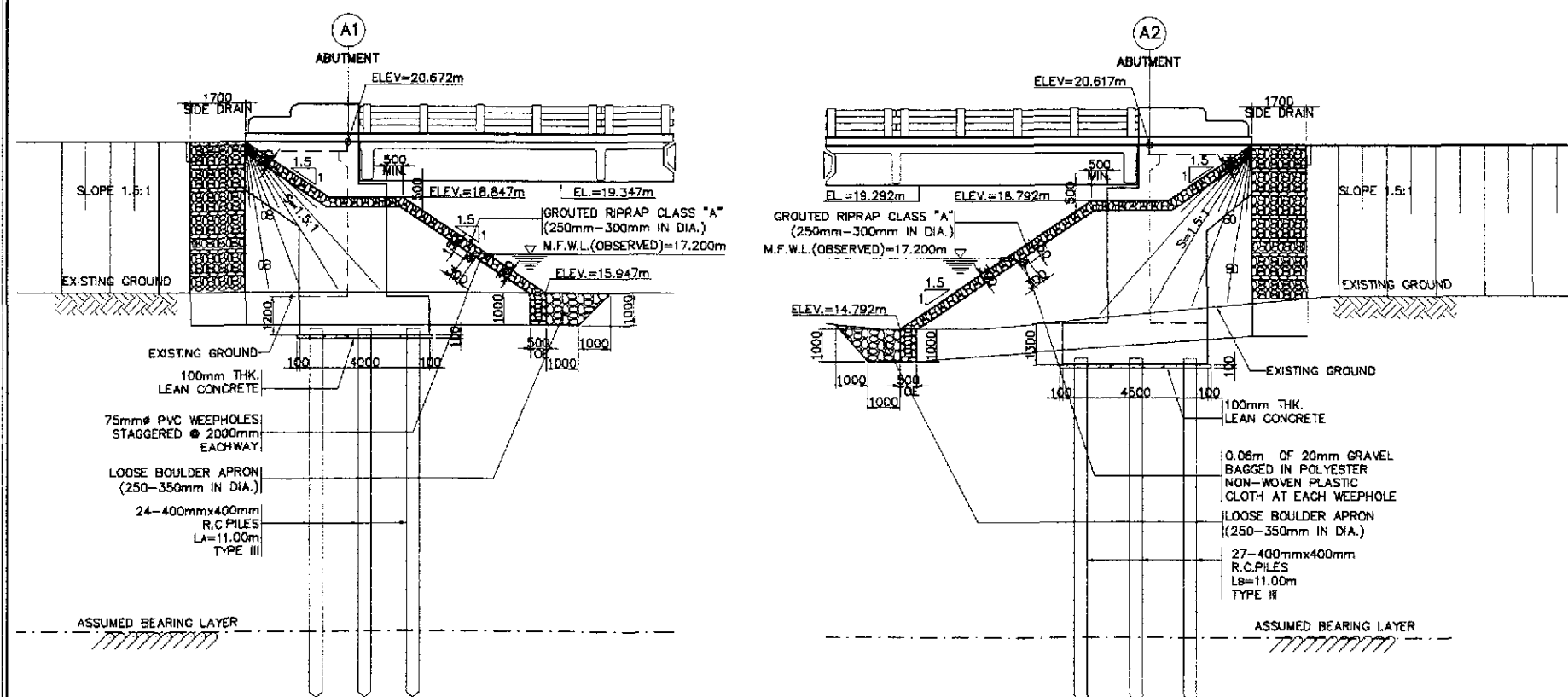
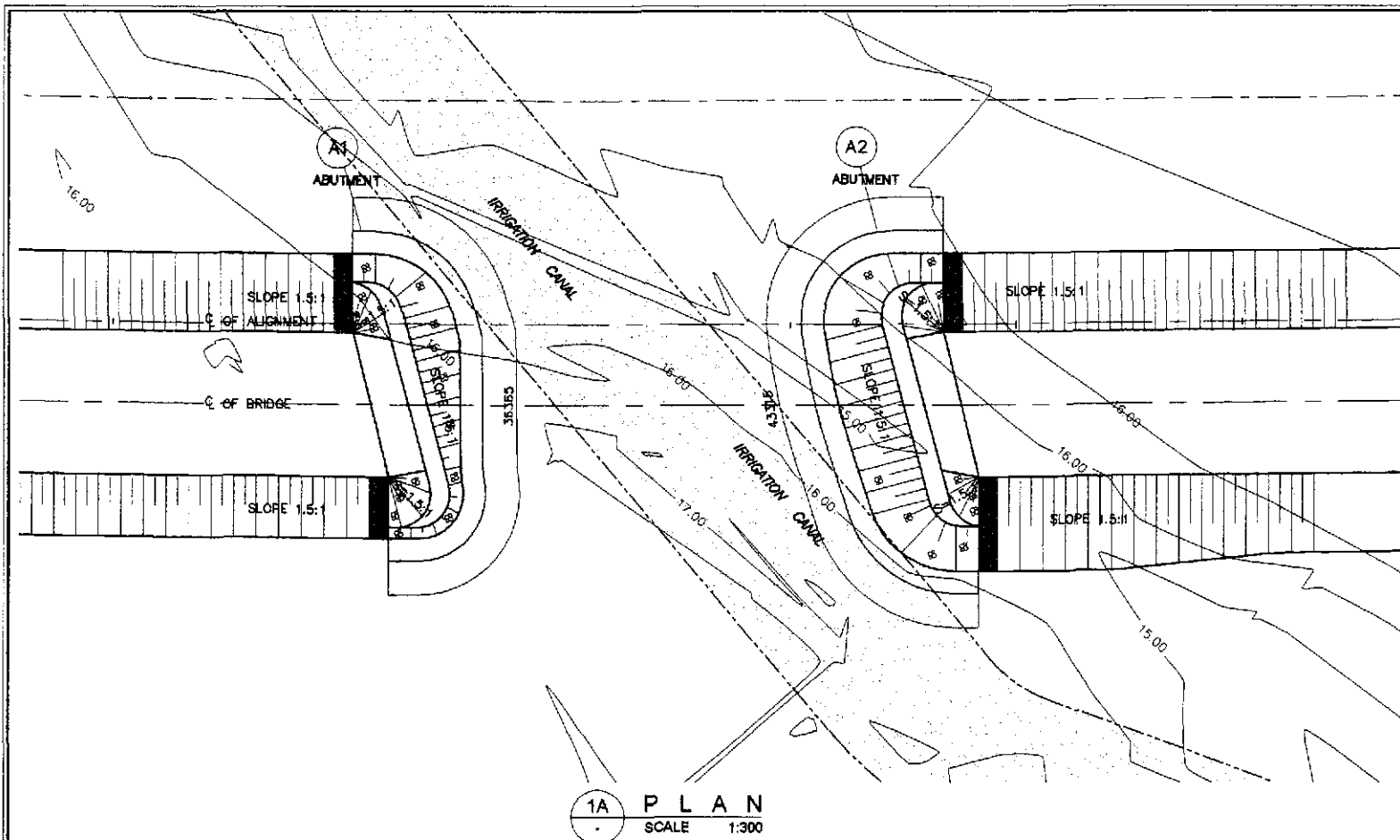


6 SECTION
SCALE 1:20

7 SECTION
SCALE 1:20

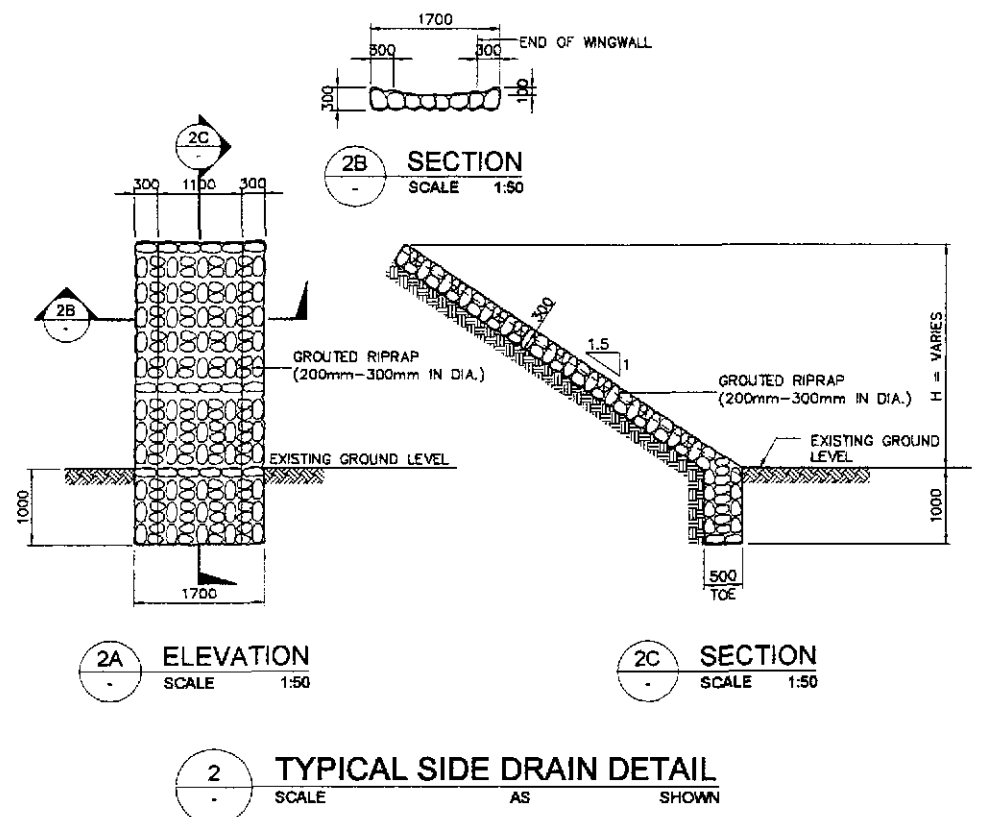


SCHEDULE OF REINFORCEMENT FOR ONE PIER															
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				LENGTH EACH BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	TOTAL WEIGHT (kg)	REBAR RATIO (kg/m ³)
COPING	25.09	C1	32	33	AS SHOWN	(C)	1000	10045	1000	-	12045	397.49	6.313	2510	180.88
		C2	16	104	75	(D)	1500	1500	150	-	6300	655.20	1.579	1035	
		C3	16	104	75	(D)	635	1500	150	-	4570	475.28	1.579	751	
		C4	20	8	AS SHOWN	(A)	10045	-	-	-	10045	81.36	2.466	199	
		C5	16	18	500	(A)	1500	-	-	-	1500	27.00	1.579	43	
COLUMN	6.77	P1	36	36	AS SHOWN	(B)	500	7000	-	-	7500	270.00	7.991	2158	431.84
		P2	20	80	75	(F)	1300	75	-	-	4084	245.04	2.466	605	
		P3	20	16	100	(F)	1300	100	-	-	4084	65.35	2.466	162	
FOOTING	43.88	F1	25	32	200	(C)	925	4350	925	-	6200	198.40	3.854	765	103.75
		F2	28	32	200	(C)	925	4350	925	-	6200	198.40	4.833	959	
		F3	25	23	200	(C)	925	6575	925	-	8425	193.78	3.854	747	
		F4	32	23	200	(C)	925	6575	925	-	8425	193.78	6.313	1224	
		F5	16	6	AS SHOWN	(A)	6575	-	-	-	6575	39.45	1.579	63	
		F6	16	6	AS SHOWN	(A)	4350	-	-	-	4350	26.10	1.579	42	
		F7	16	140	400	(E)	200	1350	150	-	3400	476.00	1.579	752	
TOTAL	75.74														GRADE 40 TOTAL = 2,686 kgs. GRADE 60 TOTAL = 9,329 kgs.



GENERAL NOTES:

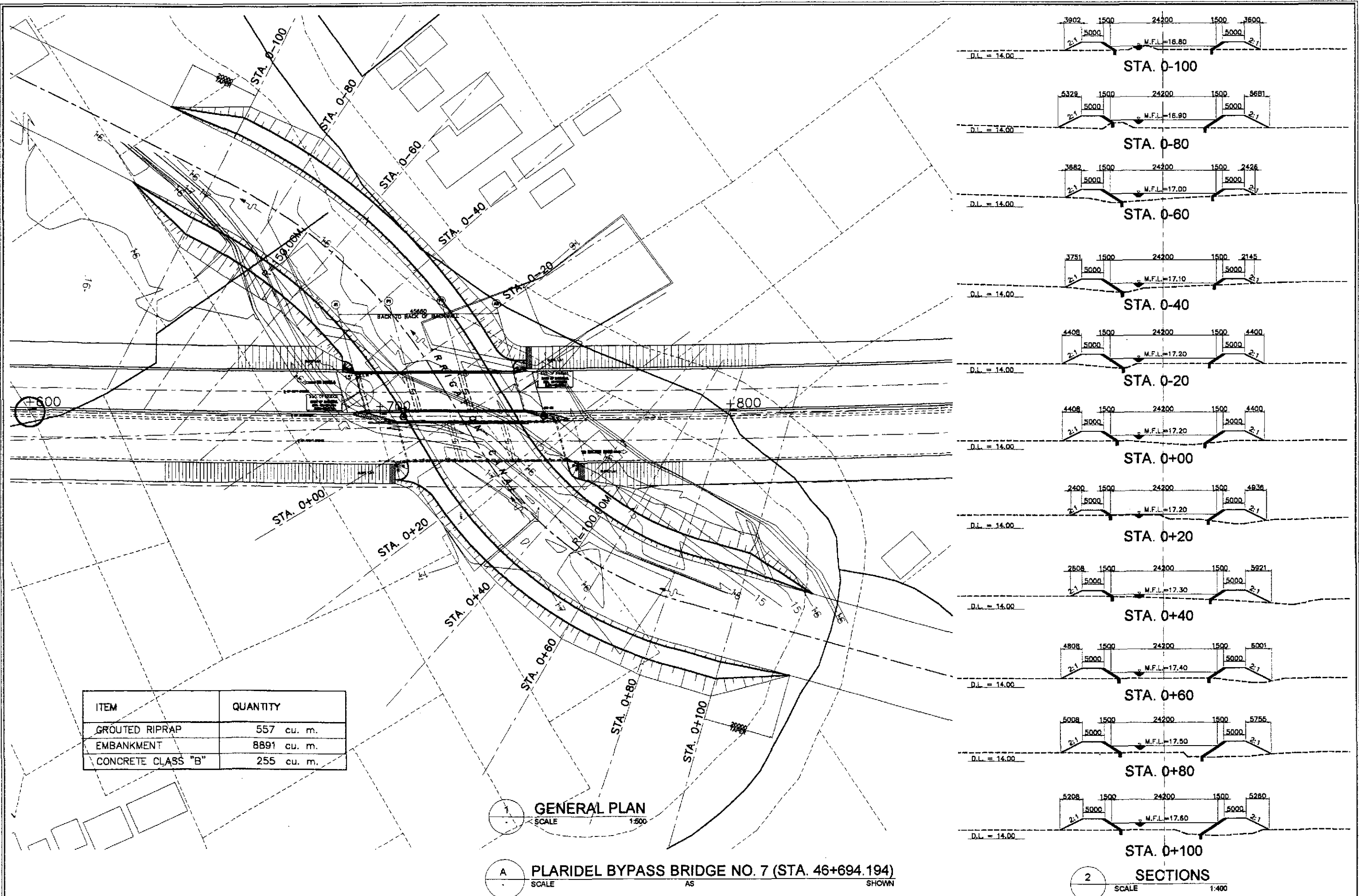
- GROUTED RIPRAP (250mm-300mm DIA.) SHALL BE USED FOR THE FACING AND SHALL BE CAREFULLY HANDLAID WITH THE LONGEST DIMENSIONS PERPENDICULAR TO THE SLOPE AND FIRMLY BEDDED INTO THE SLOPE AND ADJACENT TO THE ADJOINING BOULDERS SPACED BETWEEN THE BOULDERS. THE SPACE BETWEEN THE BOULDERS SHALL BE COMPLETELY 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.
- GEOTEXTILE
THE FOLLOWING SPECIFICATIONS ARE REQUIRED:
 - POLYESTER OR POLYPROPYLENE - 100%
 - MECHANICALLY BONDED/HEAT BONDED
 - NON-WOVEN
 - EFFECTIVE OPENING SIZE - 110 MICRONS (MAX.)
 - THICKNESS UNDER PRESSURE - 0.80mm (MIN.)
 - WEIGHT - 200g/sq. m. (MIN.)
 - CBR PUNCTURE STRENGTH - 400N (MIN.)
 - MULTI-DIRECTIONAL TENSILE STRENGTH - 13KN/m
- GRAVEL FILTER SHALL BE COARSE AGGREGATES MATERIALS WHICH SATISFY THE REQUIREMENTS FOR ITEM 405, STRUCTURAL CONCRETE, GRADING B OF TABLE 405.1 AS REVISED.
- HAND-LAID ROCK SHALL BE MORE THAN 0.015cu.m. IN VOLUME AND SHALL CONSISTS OF HARD AND DURABLE STONES. ALL SHALL BE LAID FLAT AND SECURELY PLACED WITH LARGER STONES GENERALLY LOCATED IN THE LOWER PART OF THE STRUCTURE.
- FOR THE LOOSE BOULDER APRON, BOULDERS 250-350mm 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.



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

LOCATION	SIZES	PER ABUTMENT QUANTITY	
		ABUT. A1	ABUT. A2
BOULDER APRON	250mm-350mm IN DIA.	57.36 cu. m.	60.55 cu. m.
SIDE DRAIN	200mm-300mm IN DIA.	8.30 cu. m.	11.02 cu. m.
GROUTED RIPRAP	250mm-300mm IN DIA.	66.36 cu. m.	100.08 cu. m.

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II	SCALE :	SHEET CONTENTS :	SHEET NO. :			
	CHECKED	9/20/2012	F. GONZALES		DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS							AS SHOWN	BRIDGE NO. 7	B7-14
	SUBMITTED	9/20/2012	M. BONDAN		BUREAU OF DESIGN									
				Submitted By:	Reviewed By:	Recommended By:	Office of the Secretary							
				DANILO C. TRAJANO	PERFECTO L. ZAPLAN JR.	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG						
				Project Director	Chief, Hydraulics Division (DC)	Director IV (DC)	Undersecretary	Secretary						



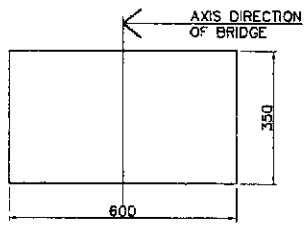
ITEM	QUANTITY
GROUTED RIPRAP	557 cu. m.
EMBANKMENT	8891 cu. m.
CONCRETE CLASS "B"	255 cu. m.

GENERAL PLAN
SCALE 1:500

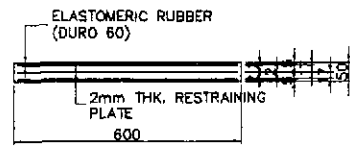
A PLARIDEL BYPASS BRIDGE NO. 7 (STA. 46+694.194)
SCALE AS SHOWN

2 SECTIONS
SCALE 1:400

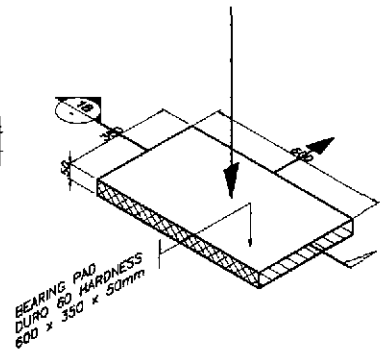
	DESIGNED: <i>[Signature]</i> DATE: 9/19/04 CHECKED: <i>[Signature]</i> DATE: 9/20/04 SUBMITTED: <i>[Signature]</i> DATE: 9/23/04	SIGNATURE: P. GONZALES TITLE: PMO SUBMITTED BY: DANILLO C. TRAJANO TITLE: Project Director	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY	PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II	SCALE: 1:400 FULL SIZE A1	SHEET CONTENTS: BRIDGE NO. 7 RIVER REALIGNMENT DETAILS (INITIAL STAGE)	SHEET NO.: B7-15
	REVIEWED BY: ADRIANO M. DORCY TITLE: Chief, Bridges Division	RECOMMENDED BY: GILBERTO S. REYES TITLE: Director IV (D/C)	RECOMMENDED BY: MANUEL M. BONDAN TITLE: Undersecretary	APPROVED BY: SIMEON A. DATUMANONG TITLE: 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)						



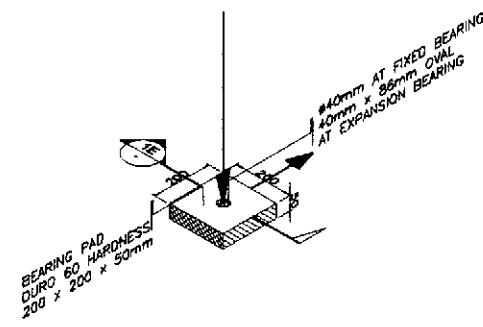
1A PLAN SCALE 1:10



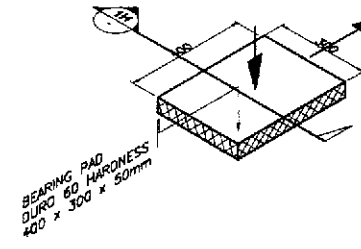
1B ELEVATION SCALE 1:10



1C ISOMETRIC VIEW SCALE AS SHOWN

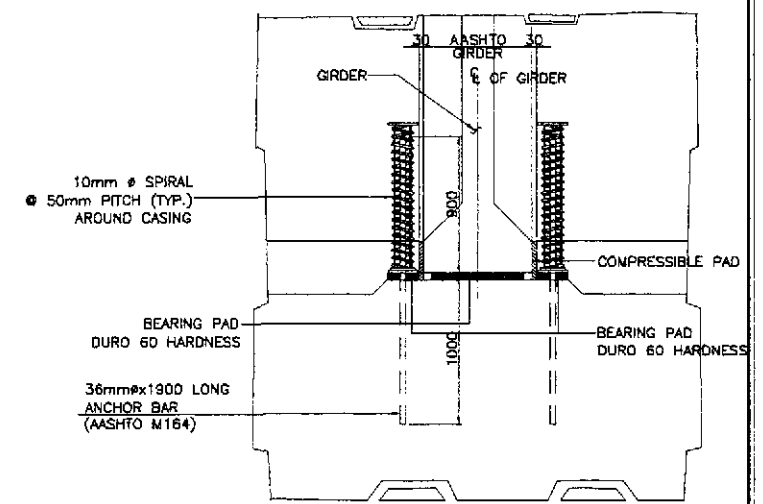


1F ISOMETRIC VIEW SCALE AS SHOWN

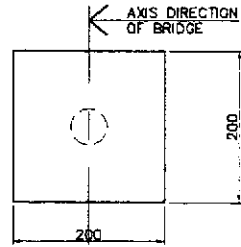


1I ISOMETRIC VIEW SCALE AS SHOWN

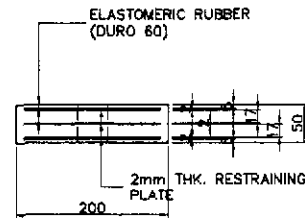
1 BEARING PAD DETAIL SCALE AS SHOWN



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

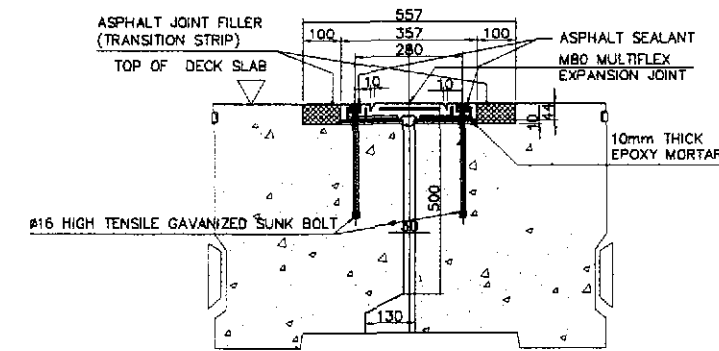


1D PLAN SCALE 1:5

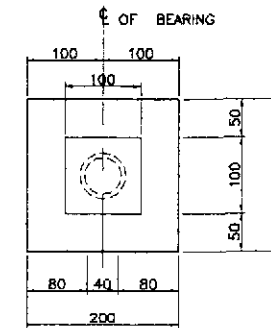


1E ELEVATION SCALE 1:5

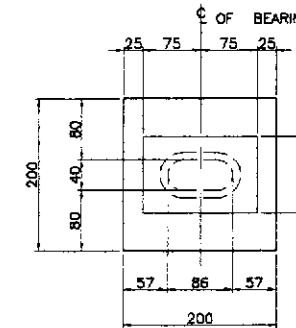
1C ISOMETRIC VIEW SCALE AS SHOWN



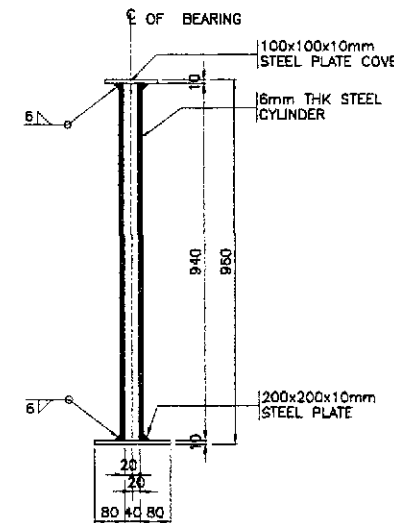
2B SECTION (TYPE A) SCALE 1:10



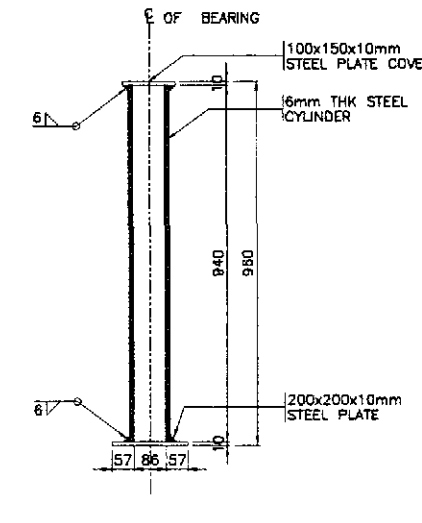
3B PLAN



3C PLAN



3B ELEVATION



3C ELEVATION

3B FIXED BEARING SCALE 1:10

3C EXPANSION BEARING SCALE 1:10

3 BEARING SLEEVE AND ANCHOR BAR DETAIL SCALE AS SHOWN

A.) QUALITY TESTING OF RUBBER COMPOUND

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

B.) DIMENSION CHECK ON METAL PLATES

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

C.) QUALITY CHECK

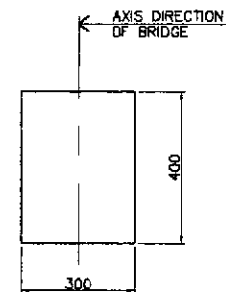
PROPERTY	SPECIFICATION
DIMENSION	ACCORDING TO PRODUCT DRAWING
SURFACE APPEARANCE	NO VISIBLE CRACK
RUBBER COVER HARDNESS (SHORE A)	50 ± 5

INSTALLATION MATERIALS

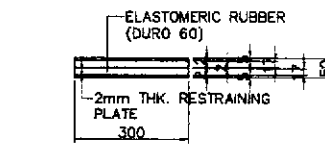
- EPOXY BEDDING
- EPOXY NOSING
- BOLT/NUTS
- SEALANT

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

LOCATION	ELASTOMERIC BEARING PAD SIZE	QUANTITY
BRIDGE 1	800x350x50	10 PCS.
	200x200x50	16 PCS.
BRIDGE 2	800x350x50	10 PCS.
	200x200x50	16 PCS.
BRIDGE 3	800x350x50	10 PCS.
	200x200x50	16 PCS.
BRIDGE 4	400x350x50	10 PCS.
	200x200x50	16 PCS.
BRIDGE 5	800x350x50	10 PCS.
	200x200x50	16 PCS.
BRIDGE 6	800x350x50	10 PCS.
	200x200x50	16 PCS.
BRIDGE 7	400x300x50	10 PCS.
	200x200x50	16 PCS.

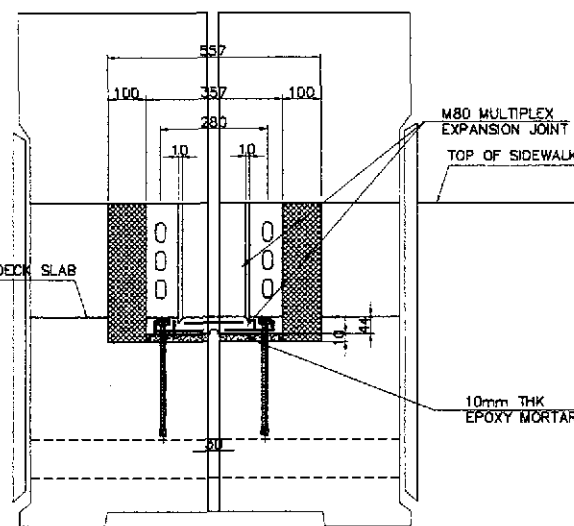


1G PLAN SCALE 1:5

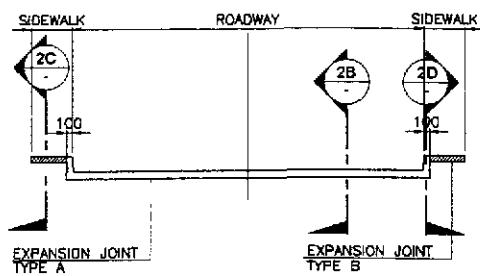


1H ELEVATION SCALE 1:5

2C SECTION (TYPE B) SCALE 1:10

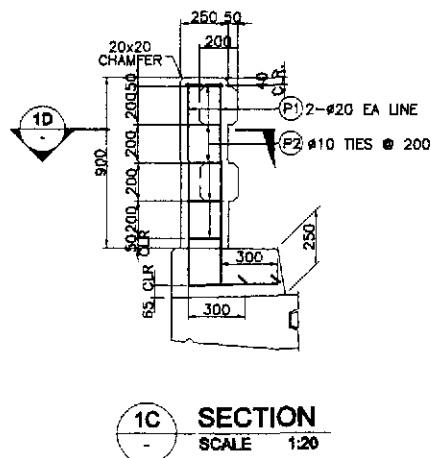
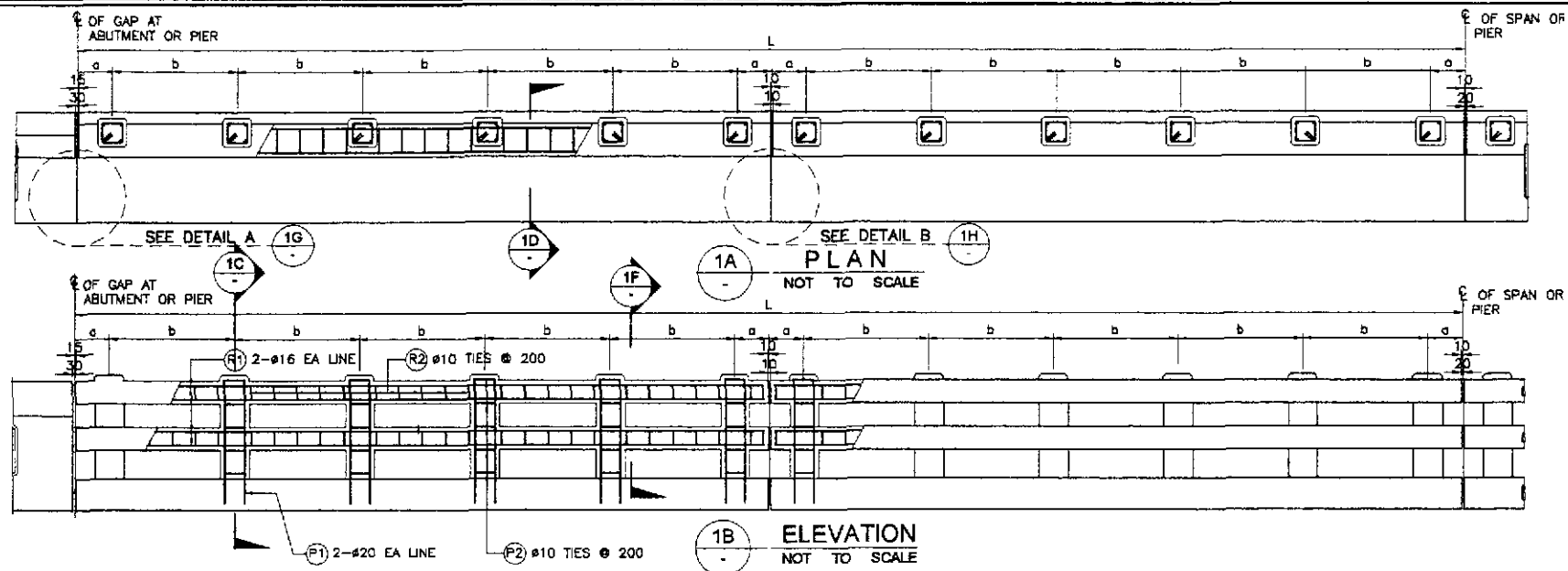


2D SECTION (TYPE A) SCALE 1:10

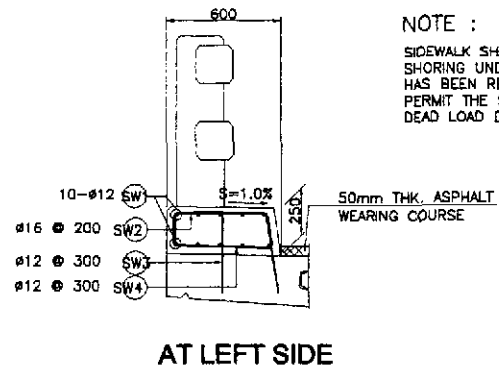


2A ELEVATION SCALE AS SHOWN

2 EXPANSION JOINT DETAIL SCALE AS SHOWN



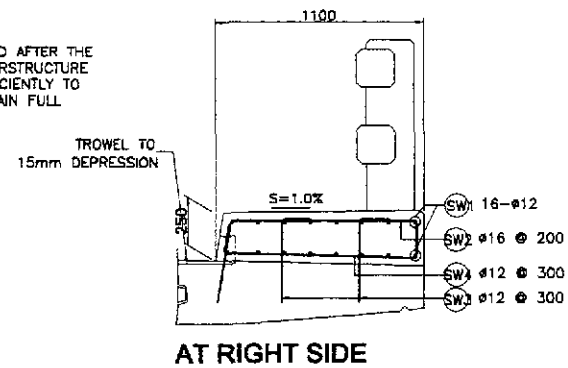
1C SECTION
SCALE 1:20



AT LEFT SIDE

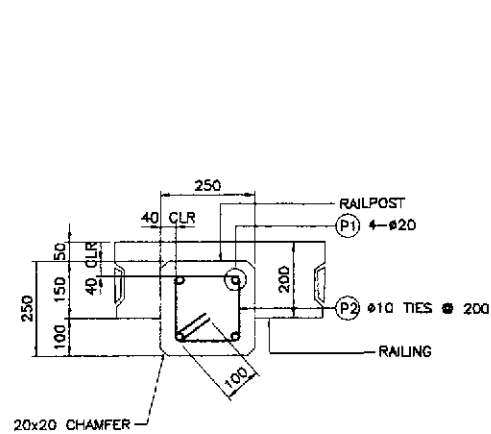
NOTE :

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

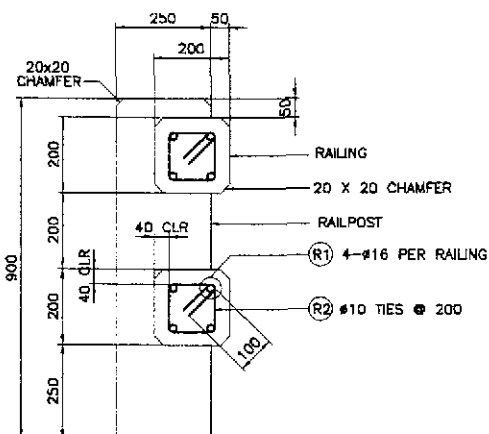


AT RIGHT SIDE

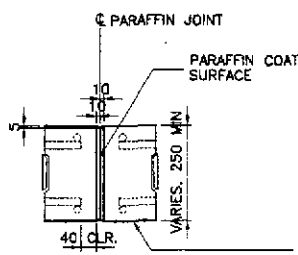
1D SIDEWALK DETAIL
SCALE 1:20



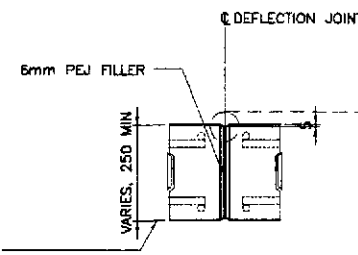
1E DETAIL
SCALE 1:10



1F SECTION
SCALE 1:10



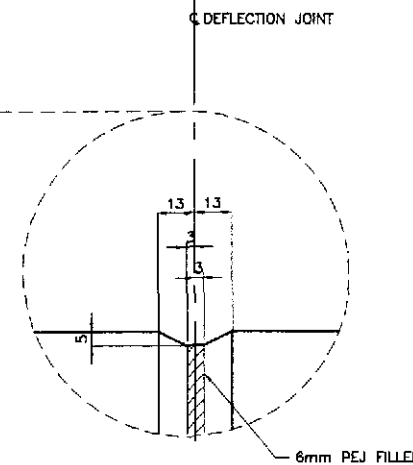
1G DETAIL A
PARAFFIN JOINT
NOT TO SCALE



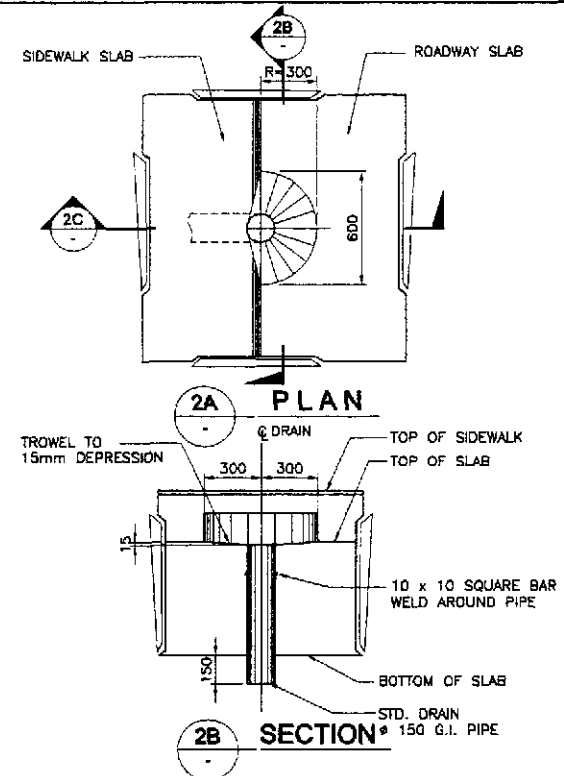
1H DETAIL B
DEFLECTION JOINT
NOT TO SCALE

NOTE :

FOR LOCATION OF JOINTS SEE GENERAL PLAN OF BRIDGE.

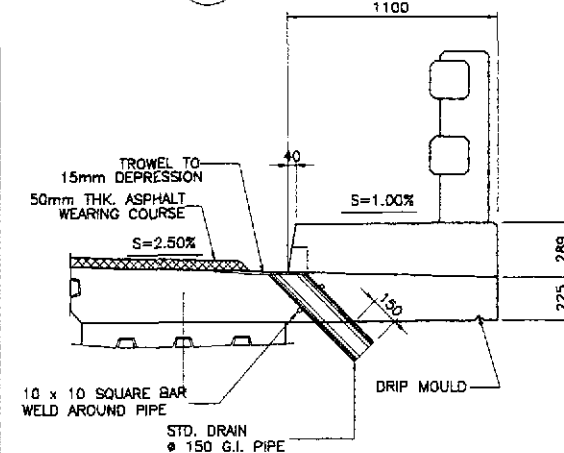


1 TYPICAL RAILING AND SIDEWALK DETAILS
SCALE AS SHOWN

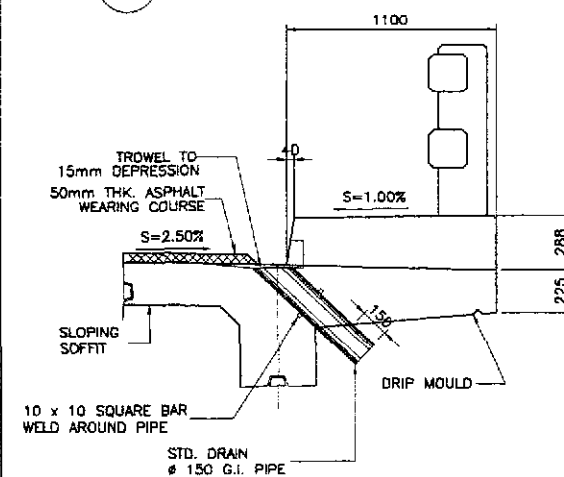


2A PLAN

2B SECTION



2C SECTION FOR BRIDGE 1 TO 6



2D SECTION FOR BRIDGE 7

2 TYPICAL DRAIN DETAILS
SCALE 1:20

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)					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d	e					
BRIDGE NO. 1,2,5&6 POST	2.70	P1	20	192	AS SHOWN	B	1045	450	-	-	-	1495	287.04	2.466	708	310.74
		P2	10	240	200	C	170	170	100	-	-	880	211.20	0.616	131	
BRIDGE NO. 3 POST	2.25	P1	20	180	AS SHOWN	B	1045	450	-	-	-	1495	239.20	2.466	590	310.67
		P2	10	200	200	C	170	170	100	-	-	880	176.00	0.616	109	
BRIDGE NO. 4 POST	1.89	P1	20	120	AS SHOWN	B	1045	450	-	-	-	1495	179.40	2.466	443	311.11
		P2	10	150	200	C	170	170	100	-	-	880	132.00	0.616	82	
BRIDGE NO. 7 POST	3.38	P1	20	240	AS SHOWN	B	1045	450	-	-	-	1495	358.80	2.466	885	331.85
		P2	10	300	200	C	170	170	100	-	-	880	264.00	0.616	235	
BRIDGE NO. 1 RAILING	5.60	R1	16	16	AS SHOWN	A	35000	-	-	-	-	35000	580.00	1.579	885	206.07
		R2	10	640	200	C	120	120	100	-	-	680	435.20	0.616	269	
BRIDGE NO. 2 & 5 RAILING	5.36	R1	16	16	AS SHOWN	A	33500	-	-	-	-	33500	536.00	1.579	847	201.87
		R2	10	560	200	C	120	120	100	-	-	680	380.80	0.616	235	
BRIDGE NO. 3 RAILING	4.80	R1	16	16	AS SHOWN	A	30000	-	-	-	-	30000	480.00	1.579	758	208.33
		R2	10	576	200	C	120	120	100	-	-	680	391.68	0.616	242	
BRIDGE NO. 4 RAILING	3.84	R1	16	16	AS SHOWN	A	24000	-	-	-	-	24000	384.00	1.579	607	205.21
		R2	10	432	200	C	120	120	100	-	-	680	293.76	0.616	181	
BRIDGE NO. 6 RAILING	6.40	R1	16	16	AS SHOWN	A	40000	-	-	-	-	40000	640.00	1.579	1011	205.16
		R2	10	720	200	C	120	120	100	-	-	680	489.60	0.616	302	
BRIDGE NO. 7 RAILING	7.20	R1	16	16	AS SHOWN	A	45000	-	-	-	-	45000	1170.00	1.579	1848	306.94
		R2	10	864	200	C	120	120	100	-	-	680	350.52	0.616	362	
BRIDGE NO. 1 SIDEWALK	14.88	SW1	12	26	AS SHOWN	A	35000	-	-	-	-	35000	910.00	0.888	809	132.24
		SW2	16	176	200	D	170	980	400	-	-	1550	272.80	1.579	431	
		SW2a	16	176	200	D	170	480	400	-	-	1050	184.80	1.579	292	
		SW3	12	351	300	B	400	250	-	-	-	650	228.15	0.888	203	
		SW3a	12	117	300	E	170	1020	170	-	-	1360	159.12	0.888	142	
BRIDGE NO. 2 & 5 SIDEWALK	14.24	SW4a	12	117	300	E	170	520	170	-	-	860	100.62	0.888	90	132.12
		SW1	12	14	AS SHOWN	A	33500	-	-	-	-	33500	871.00	0.888	774	
		SW2	16	200	200	D	170	980	400	-	-	1550	260.40	1.579	412	
		SW2a	16	200	200	D	170	480	400	-	-	1050	176.40	1.579	279	
		SW3	12	200	300	B	400	250	-	-	-	650	218.40	0.888	194	
BRIDGE NO. 7 SIDEWALK	14.88	SW4	12	100	300	E	170	1020	170	-	-	1360	152.32	0.888	136	132.24
		SW4a	12	8	300	E	170	520	170	-	-	860	96.32	0.888	86	
		SW4b	12	8	300	E	170	520	170	-	-	860	96.32	0.888	86	

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)					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d	e					
BRIDGE NO. 3 SIDEWALK	12.75	SW1	12	26	AS SHOWN	A	30000	-	-	-	-	30000	780.00	0.888	693	132.47
		SW2	16	151	200	D	170	980	400	-	-	1550	234.05	1.579	370	
		SW2a	16	151	200	D	170	480	400	-	-	1050	158.55	1.579	251	
		SW3	12	303	300	B	400	250	-	-	-	650	196.95	0.888	175	
		SW3a	12	101	300	E	170	1020	170	-	-	1360	137.36	0.888	122	
BRIDGE NO. 4 SIDEWALK	10.20	SW4a	12	101	300	E	170	520	170	-	-	860	86.86	0.888	78	132.75
		SW1	12	26	AS SHOWN	A	24000	-	-	-	-	24000	624.00	0.888	556	
		SW2	16	121	200	D	170	980	400	-	-	1550	187.00	1.579	297	
		SW2a	16	121	200	D	170	480	400	-	-	1050	127.00	1.579	201	
		SW3	12	243	300	B	400	250	-	-	-	650	157.00	0.888	141	
BRIDGE NO. 6 SIDEWALK	17.00	SW4a	12	81	300	E	170	1020	170	-	-	1360	110.00	0.888	98	132.00
		SW4b	12	81	300	E	170	520	170	-	-	860	69.66	0.888	62	
		SW1	12	26	AS SHOWN	A	40000	-	-	-	-	40000	1040.00	0.888	924	
		SW2	16	200	200	D	170	980	400	-	-	1550	310.00	1.579	480	
		SW2a	16	200	200	D	170	480	400	-	-	1050	210.00	1.579	332	
BRIDGE NO. 7 SIDEWALK	14.88	SW3	12	402	300	B	400	250	-	-	-	650	261.30	0.888	233	132.00
		SW3a	12	134	300	E	170	1020	170	-	-	1360	182.24	0.888	162	
		SW4a	12	134	300	E	170	520	170	-	-	860	115.24	0.888	103	
		SW1	12	26	AS SHOWN	A	45000	-	-	-	-	45000	1107.00	0.888	1039	
		SW2	16	226	200	D	170	980	400	-	-	1550	350.30	1.579	554	
BRIDGE NO. 7 SIDEWALK	14.88	SW2a	16	226	200	D	170	480	400	-	-	1050	237.30	1.579	375	132.24
		SW3	12	453	300	B	400	250	-	-	-	650	294.45	0.888	262	
		SW4a	12	151	300	E	170	1020	170	-	-	1360	205.36	0.888	183	
SW4b	12	151	300	E	170	520	170	-	-	860	129.86	0.888	116			
BRIDGE NO. 1 TOTAL	TOTAL	23.18													GRADE 40 TOTAL = 3,860 kgs.	
BRIDGE NO. 2 TOTAL	TOTAL	22.30													GRADE 40 TOTAL = 3,802 kgs.	
BRIDGE NO. 3 TOTAL	TOTAL	19.80													GRADE 40 TOTAL = 3,388 kgs.	
BRIDGE NO. 4 TOTAL	TOTAL	15.73													GRADE 40 TOTAL = 2,867 kgs.	
BRIDGE NO. 5 TOTAL	TOTAL	22.30													GRADE 40 TOTAL = 3,802 kgs.	
BRIDGE NO. 6 TOTAL	TOTAL	26.10													GRADE 40 TOTAL = 4,396 kgs.	
BRIDGE NO. 7 TOTAL	TOTAL	25.46													GRADE 40 TOTAL = 5,859 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)
1	35.00	3	6	48	17515	250	1652
2 & 5	33.50	3	6	48	16765	250	1577
3	30.00	3	5	40	15015	250	1752
4	24.00	2	4	30	12015	250	1836
6	40.00	3	6	48	20015	250	1902
7	15.00	1	5	40	15015	250	1752
	15.00	1	5	20	15000	250	1750

	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/20/02	<i>[Signature]</i>	BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 1,2,3,4,5,6 & 7 SCHEDULE OF REINFORCEMENT (POST, RAILING AND SIDEWALK) (INITIAL STAGE)	BS-02a
	SUBMITTED	9/23/02	<i>[Signature]</i>	Recommended By:	Reviewed By:	Recommended By:	Approved By:	FULL SIZE A1			
				DANILO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridges Division	GILBERTO S. REYES Director IV (CIC)	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary			

