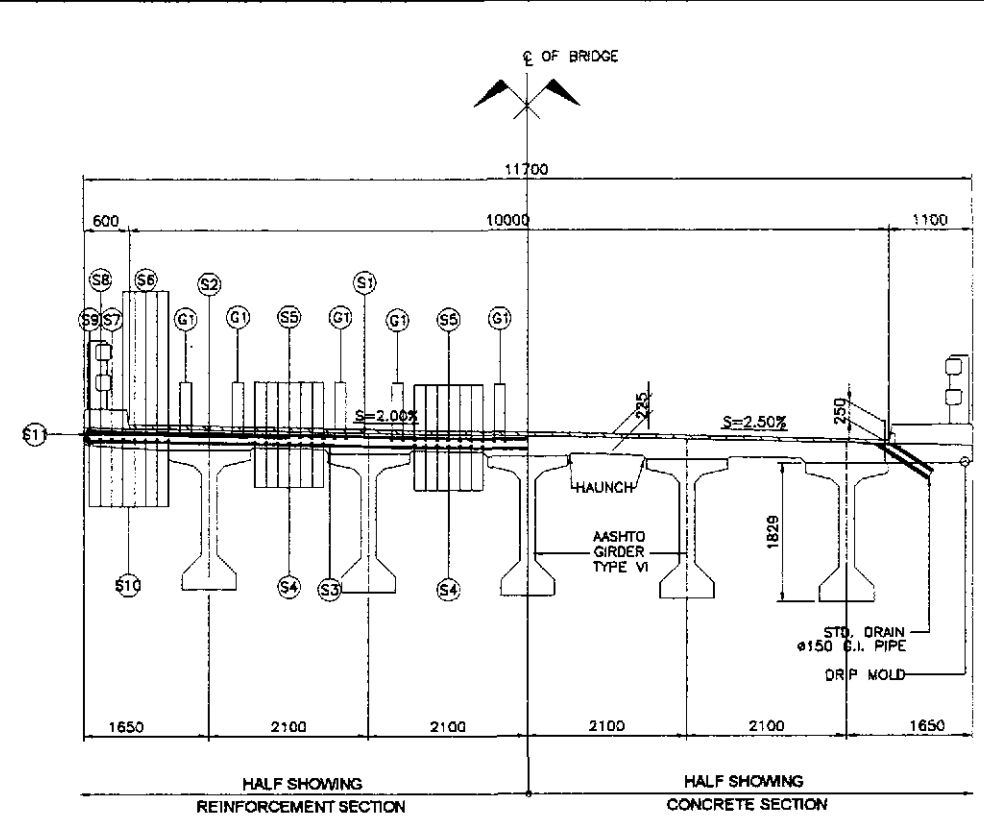
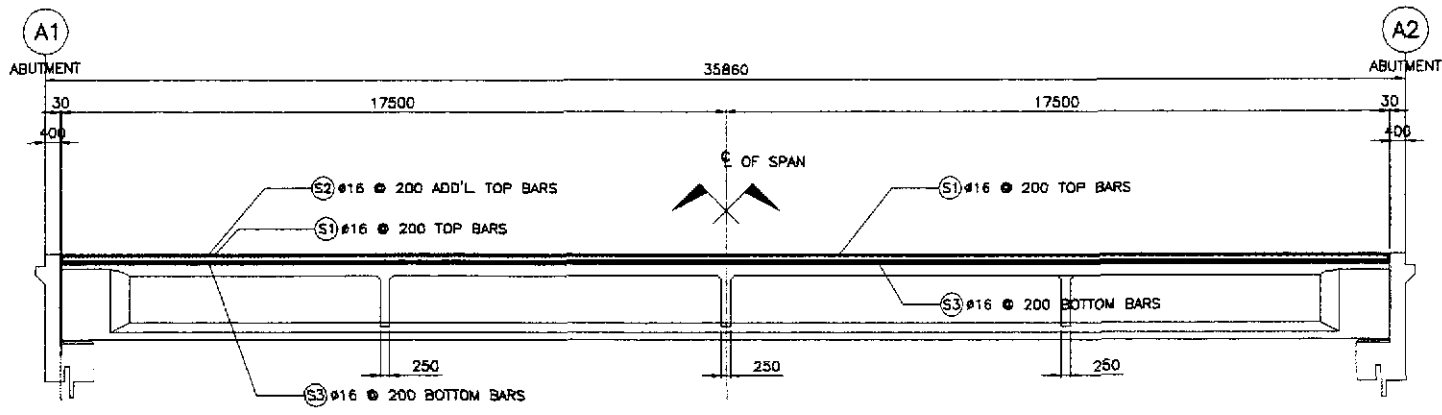


1 FRAMING PLAN
SCALE 1:100

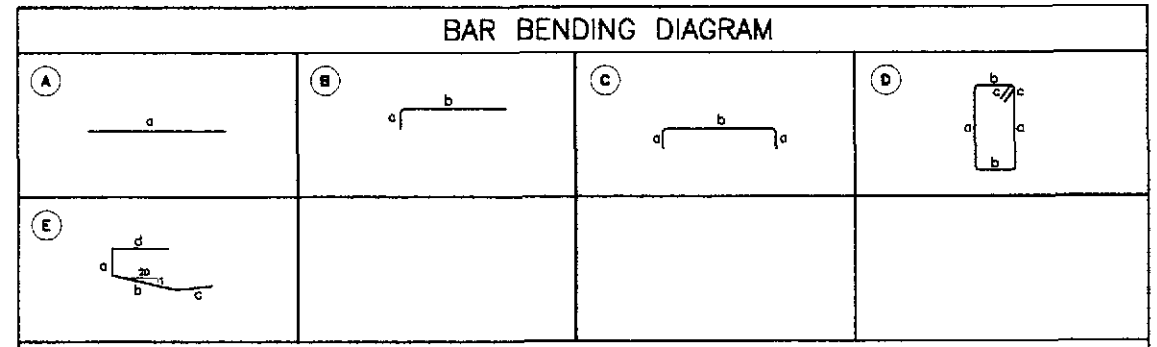


3 TYPICAL CROSS-SECTION
SCALE 1:50



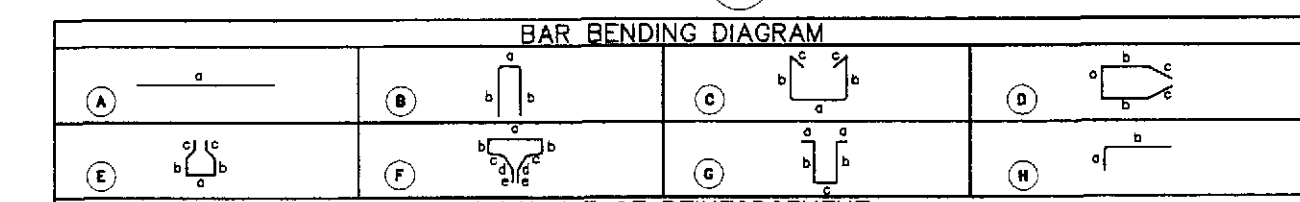
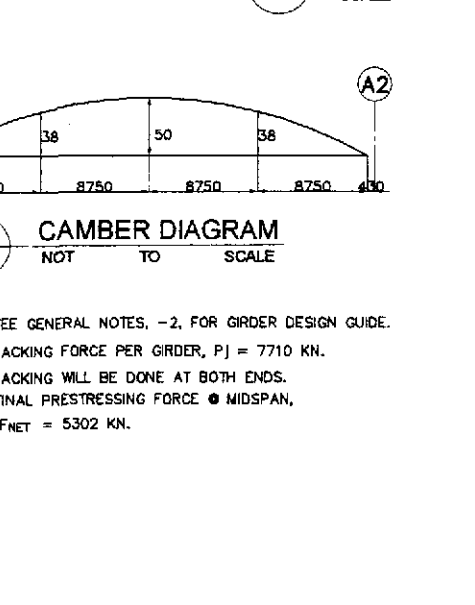
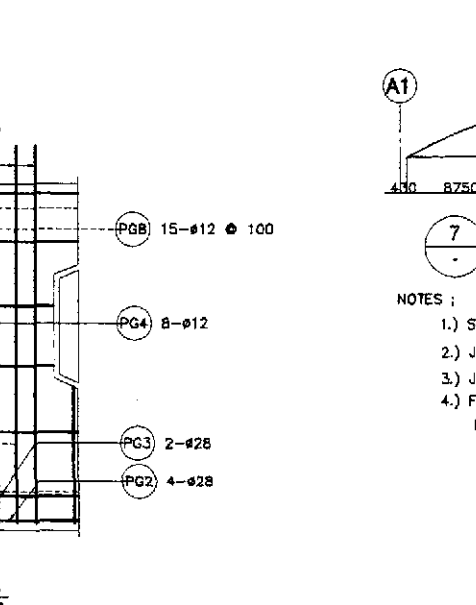
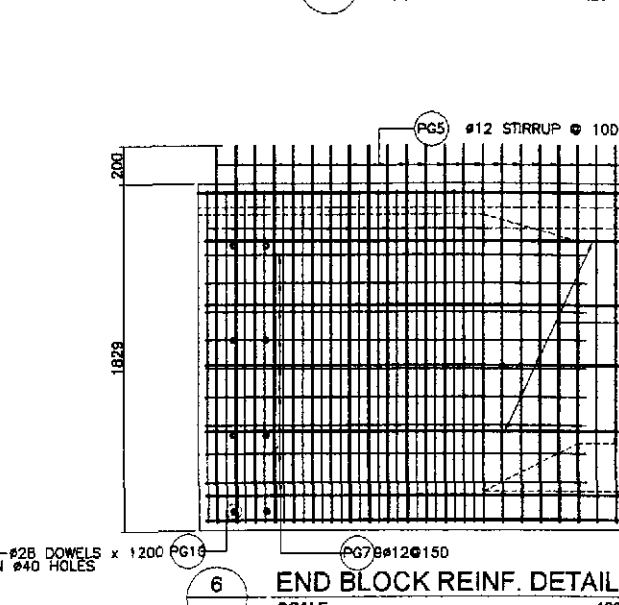
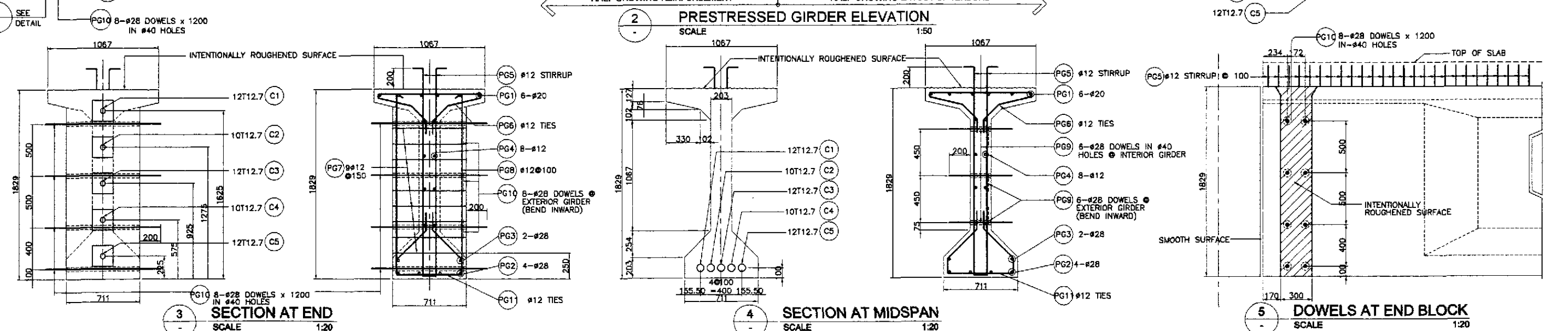
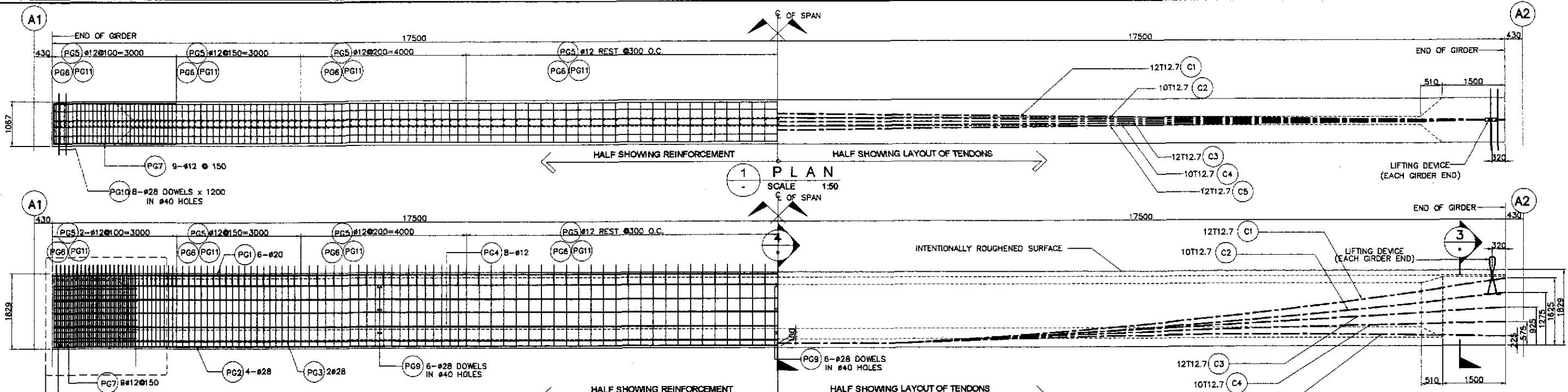
2 LONGITUDINAL SECTION
SCALE 1:100

ESTIMATED QUANTITIES OF SUPERSTRUCTURE			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
404(1)a	REINFORCING STEEL GRADE 40	kgm.	29219
	DECK SLAB	14503	
	DIAPHRAGM	442	
	GIRDER	9680	
	SIDEWALK, RAILING, & POST	3252	
	APPROACH SLAB	1342	
404(1)b	REINFORCING STEEL GRADE 60	kgm.	15011
	DECK SLAB	0	
	DIAPHRAGM	1702	
	GIRDER	8385	
	SIDEWALK, RAILING, & POST	708	
	APPROACH SLAB	4216	
405(1)	STRUCTURAL CONCRETE	cu. m.	316.61
	DECK SLAB	101.90	
	DIAPHRAGM	15.32	
	GIRDER	132.75	
	SIDEWALK, RAILING, & POST	23.18	
	APPROACH SLAB	35.36	

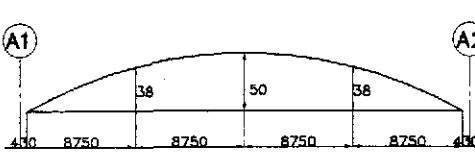


SCHEDULE OF REINFORCEMENT															
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				LENGTH EACH BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT IN (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d					
DECK SLAB	101.91	G1	16	20	AS SHOWN	(A)	34900	-	-	-	34900	698.00	1.579	1103	142.31
		S1	16	176	200	(C)	145	11800	145	-	11890	2092.64	1.579	3305	
		S2	16	352	200	(B)	145	2650	-	-	2795	983.84	1.579	1554	
		S3	16	176	200	(C)	145	11800	145	-	11890	2092.64	1.579	3305	
		S4	16	28	150	(A)	34900	-	-	-	34900	977.20	1.579	1543	
		S5	16	28	150	(A)	34900	-	-	-	34900	977.20	1.579	1543	
		S6	16	10	AS SHOWN	(A)	34900	-	-	-	34900	349.00	1.579	552	
		S7	16	2	AS SHOWN	(A)	34900	-	-	-	34900	69.80	1.579	111	
		S8	16	2	AS SHOWN	(A)	34900	-	-	-	34900	69.80	1.579	111	
		S9	16	2	AS SHOWN	(A)	34900	-	-	-	34900	69.80	1.579	111	
		S10	16	16	AS SHOWN	(A)	34900	-	-	-	34900	558.40	1.579	882	
TOTAL	101.91														GRADE 40 = 14,503 kgm

	DESIGNED	9/18/02	<i>[Signature]</i> C. N. SALLAN		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	OFFICE OF THE SECRETARY	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Iralde, Cabanatuan and San Jose Bypasses)						AS SHOWN	BRIDGE NO. 1 DECK FRAMING PLAN AND SECTION (INITIAL STAGE)	B1-02
	SUBMITTED	9/23/02	<i>[Signature]</i>		Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:	PLARIDEL BYPASS - CONTRACT PACKAGE II					



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)	34920	-	-	-	-	34920	209.52	2.466	517			QUANTITIES ARE FOR ONE (1) GIRDER ONLY		
	PG2	28	4	AS SHOWN	(A)	34920	-	-	-	-	34920	139.68	4.833	676					
	PG3	28	2	AS SHOWN	(A)	34920	-	-	-	-	34920	69.84	4.833	338					
	PG4	12	8	AS SHOWN	(A)	34920	-	-	-	-	34920	279.36	0.888	249					
	PG5	12	190	100	(C)	100	2000	103	-	-	4303	817.57	0.888	727					
	PG6	12	190	100	(F)	1000	50	340	200	150	2480	471.20	0.888	419					
	PG7	12	18	150	(D)	635	1450	550	-	-	4635	83.43	0.888	75	26.55	136.09			
	PG8	12	30	100	(C)	635	1750	150	-	-	4435	133.05	0.888	119					
	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	180	100	(E)	635	160	400	150	-	2055	390.45	0.888	347					
													GRADE 40 TOTAL	1,936					
													GRADE 60 TOTAL	1,677	26.55				



NOTES:
 1.) SEE GENERAL NOTES, -2, FOR GIRDER DESIGN GUIDE.
 2.) JACKING FORCE PER GIRDER, PJ = 7710 KN.
 3.) JACKING WILL BE DONE AT BOTH ENDS.
 4.) FINAL PRESTRESSING FORCE @ MIDSPAN, FNET = 5302 KN.

REPUBLIC OF THE PHILIPPINES
 DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
 BUREAU OF DESIGN
 OFFICE OF THE SECRETARY

Submitted By: DANILLO C. TRAJANO
 Project Director

Reviewed By: ADRIANO M. DORCY
 Chief, Bridge Division

Recommended By: GILBERTO S. REYES
 Director IV (GIC)

Approved By: MANUEL M. BONDAN
 Undersecretary

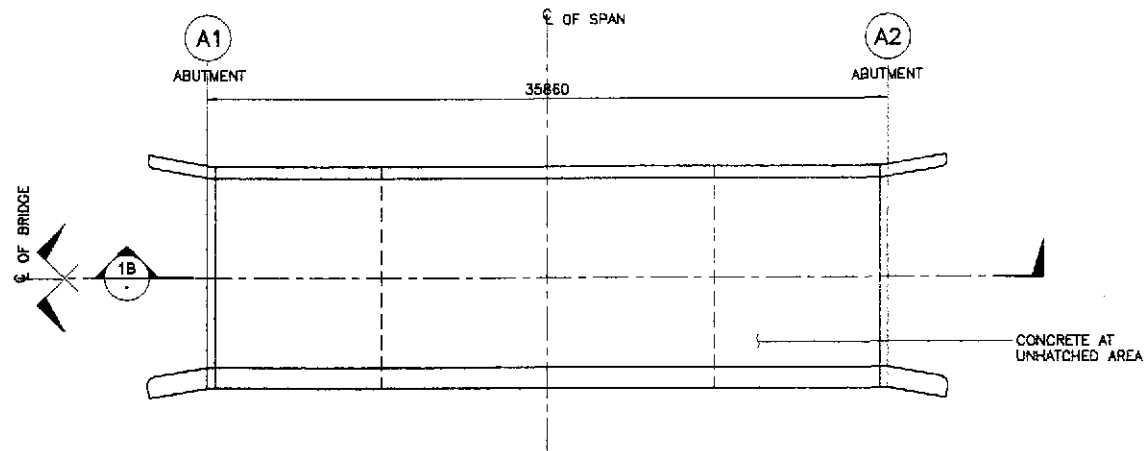
Approved By: SIMON A. DATUMANONG
 Secretary

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

SCALE :
 AS SHOWN

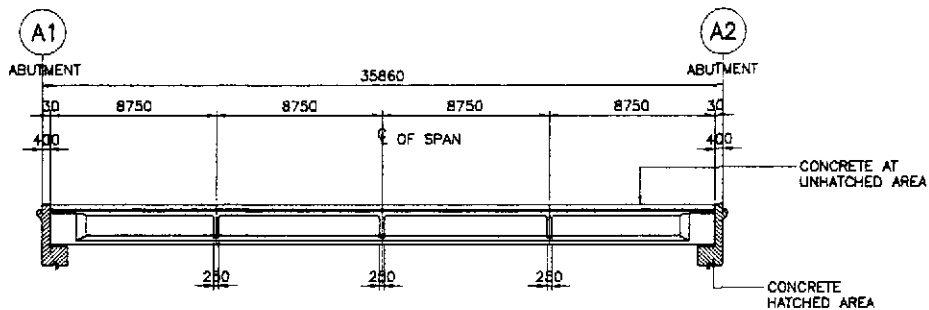
SHEET CONTENTS :
 BRIDGE NO. 1
 AASHTO TYPE VI
 GIRDER
 (INITIAL STAGE)

SHEET NO. :
 B1-03



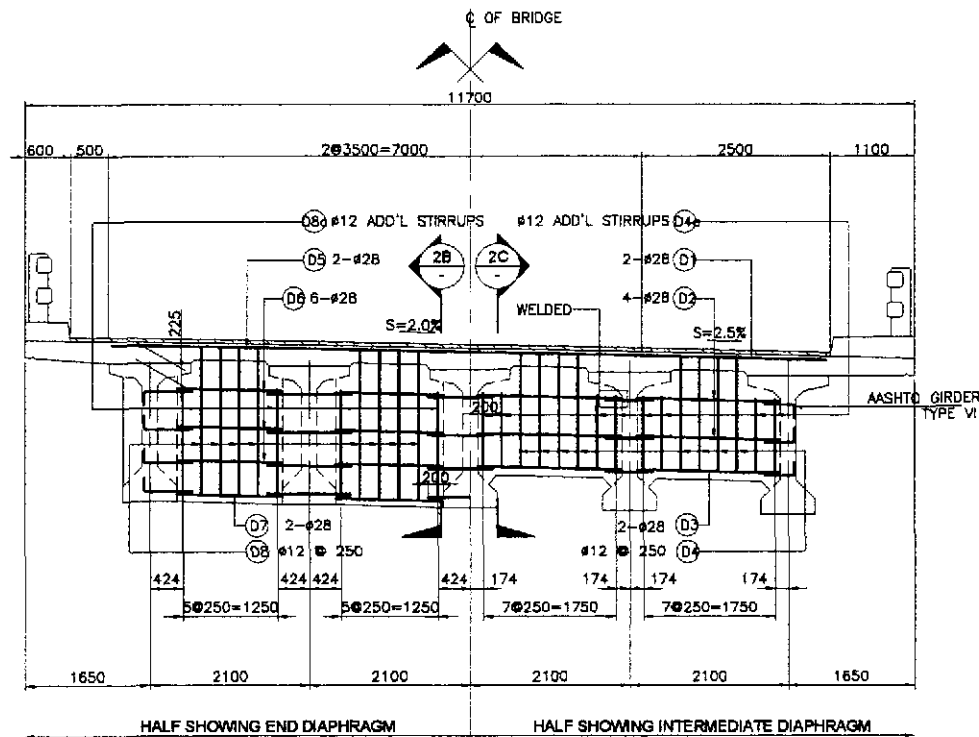
1A PLAN
SCALE 1:200

- 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.



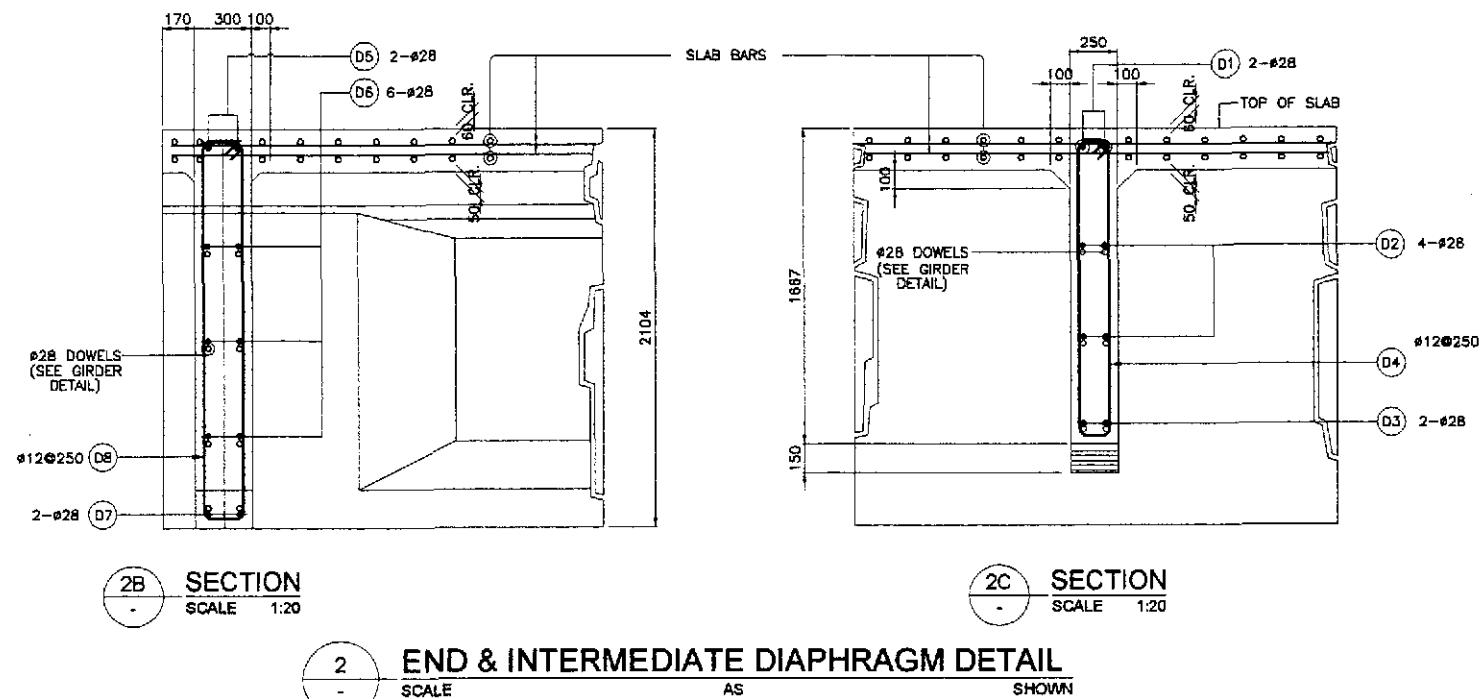
1B LONGITUDINAL SECTION
SCALE 1:200

1 CONCRETE POURING SEQUENCE
SCALE 1:200



2A ELEVATION
SCALE 1:25

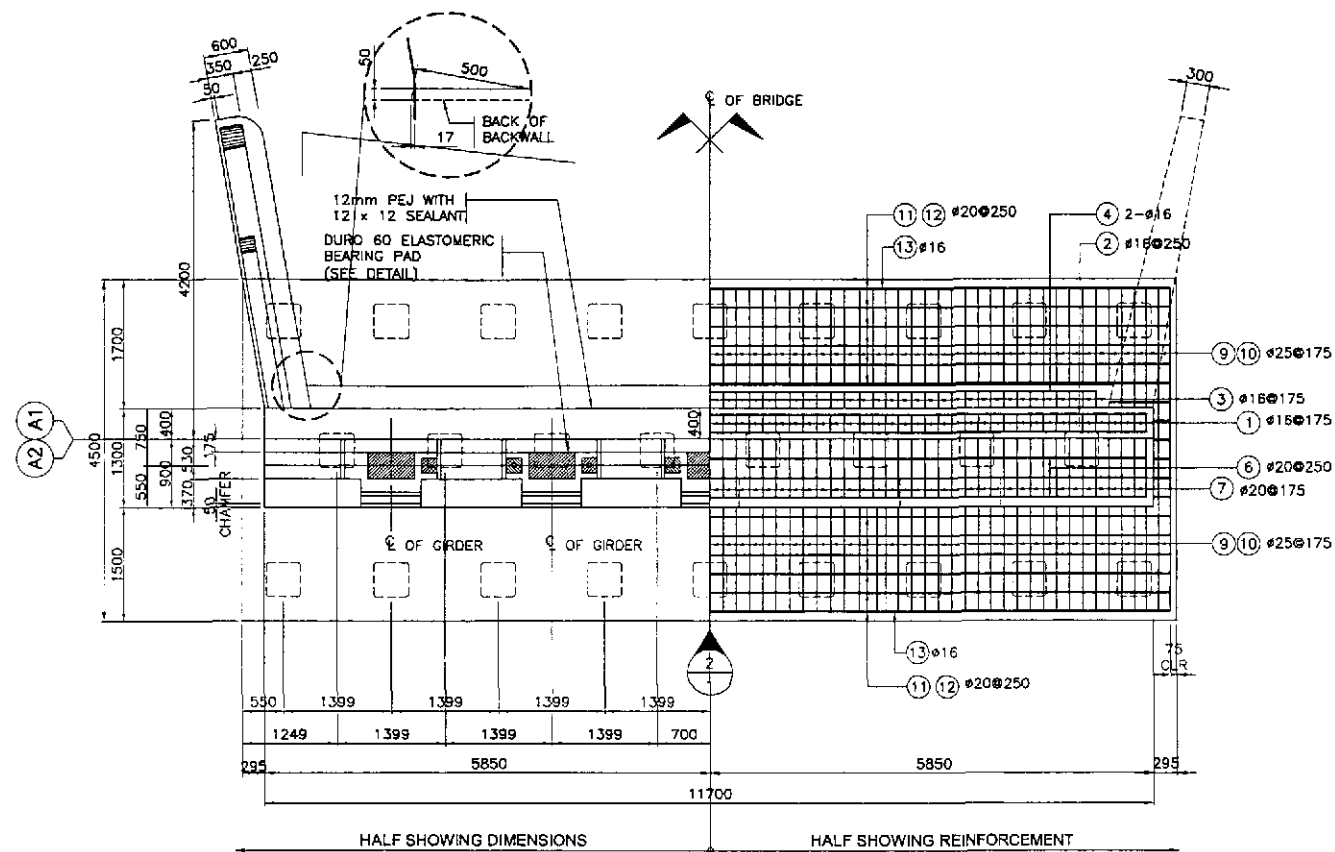
BAR BENDING DIAGRAM																	
A		B															
SCHEDULE OF REINFORCEMENT																	
STRUCTURE COMPONENT	LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	TOTAL WEIGHT IN (kg)	REBAR RATIO (kg/m ³)	REMARKS
DIAPHRAGM	INTERMEDIATE DIAPHRAGM	9.06	D1	28	6	AS SHOWN	A	9400				9400	56.40	4.833	273	131.79	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	1500	150	3600	172.80	0.888	154	STIRRUPS		
			D4a	12	48	200	B	150	950	150	2500	120.00	0.888	107	ADD'L. STIRRUPS		
	END DIAPHRAGM	6.26	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	1950	150	4600	147.20	0.888	131	STIRRUPS		
			D8a	12	16	AS SHOWN	B	200	1400	150	3500	56.00	0.888	50	ADD'L. STIRRUPS		
TOTAL		15.32															GRADE 60 TOTAL = 1702 kgs. GRADE 40 TOTAL = 442 kgs.



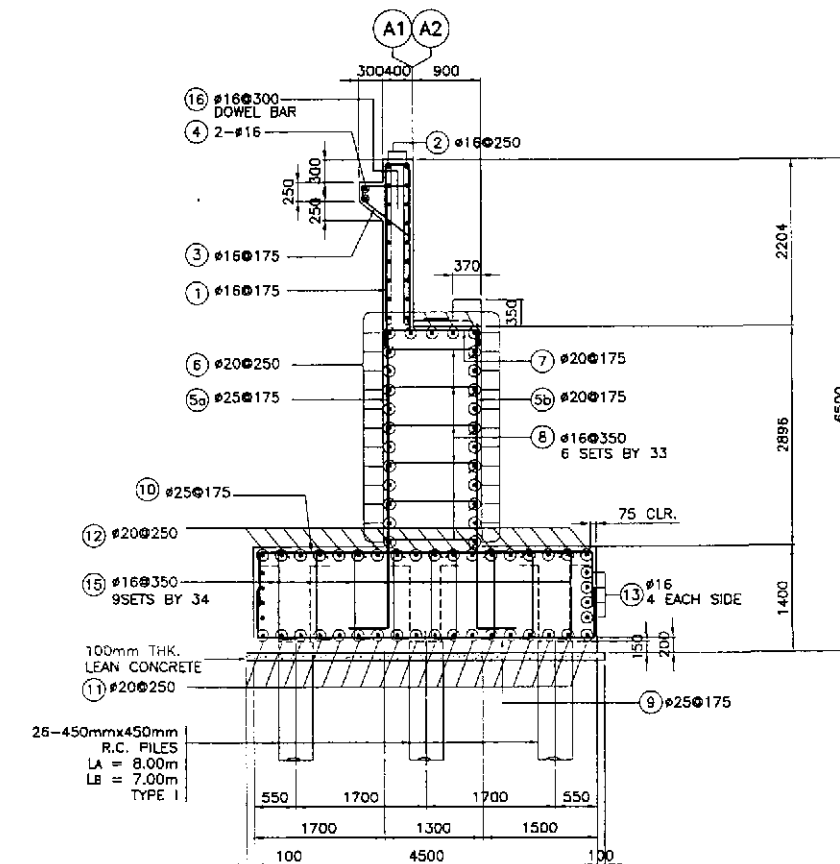
2B SECTION
SCALE 1:20

2C SECTION
SCALE 1:20

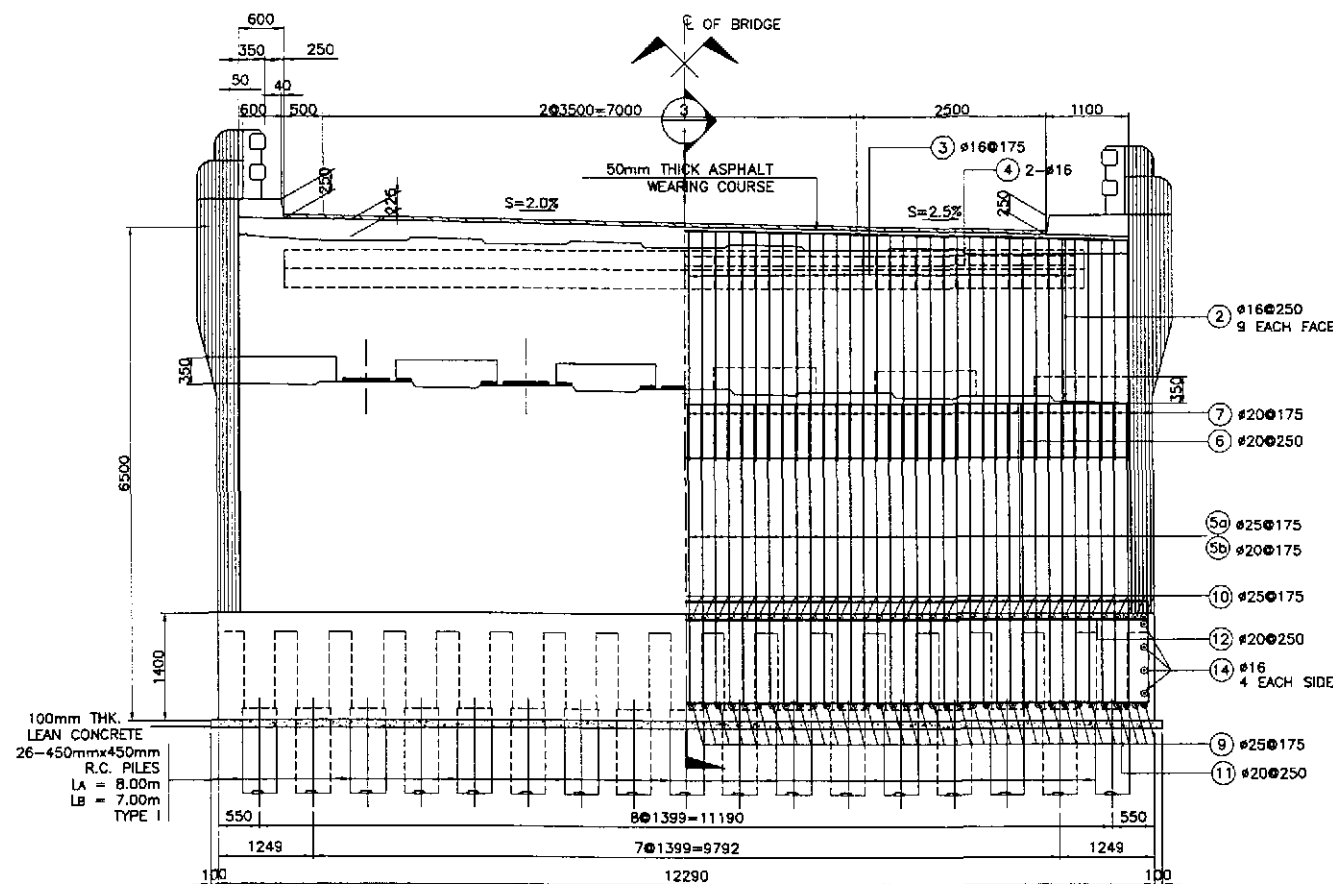
2 END & INTERMEDIATE DIAPHRAGM DETAIL
SCALE AS SHOWN



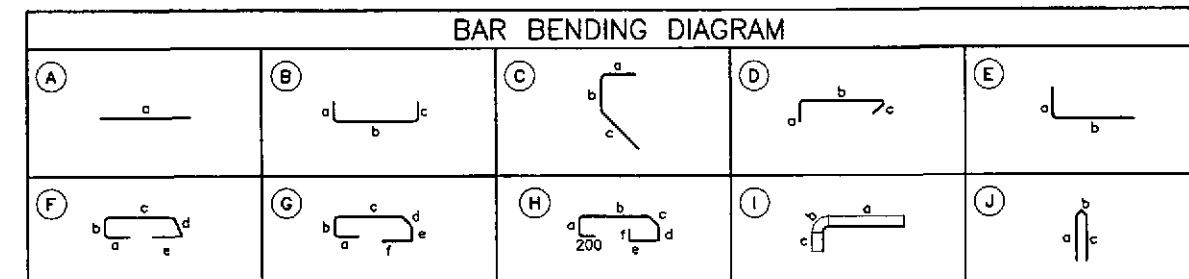
1 PLAN
SCALE 1:50



3 SECTION
SCALE 1:50



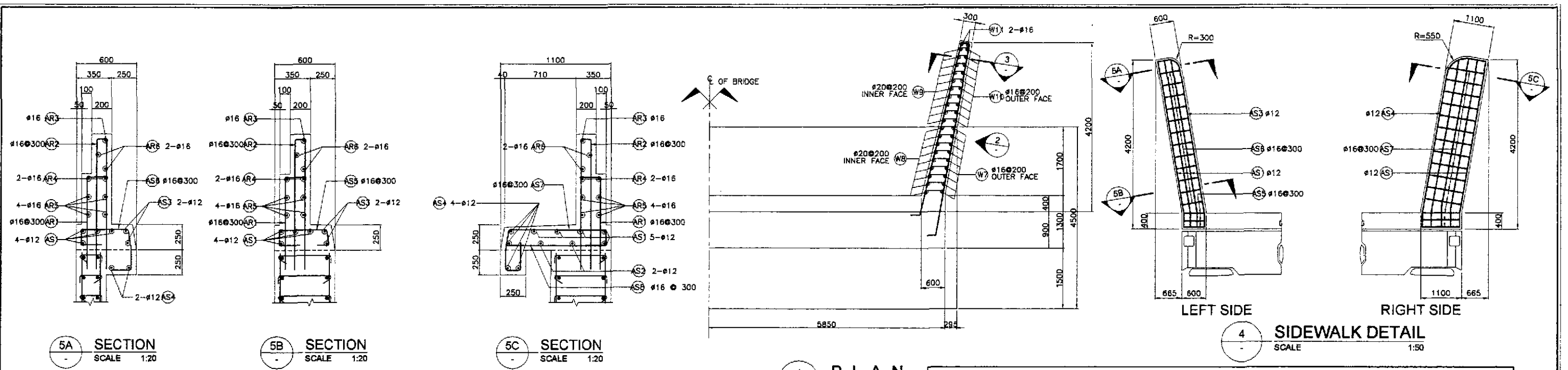
2 ELEVATION
SCALE 1:50



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 (m)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e						f
BACKWALL	11.44	1	16	68	175	(B)	2300	300	2300	-	-	-	4900	333.20	1.579	527	89.77
		2	16	18	250	(A)	11600	-	-	-	-	-	11600	208.80	1.579	330	
		3	16	58	175	(C)	600	150	750	-	-	-	1500	87.00	1.579	138	
		4	16	2	AS SHOWN	(A)	9900	-	-	-	-	-	9900	19.80	1.579	32	
MAINWALL	44.05	5a	25	68	175	(E)	400	4050	-	-	-	4450	302.60	3.854	1167	79.57	
		5b	20	68	175	(E)	400	4050	-	-	-	4450	302.60	2.466	747		
		6	20	27	250	(A)	11600	-	-	-	-	-	11600	313.20	2.466		773
		7	20	68	175	(B)	250	1200	250	-	-	-	1700	115.60	2.466		286
FOOTING	77.43	8	16	198	350	(D)	250	1200	250	-	-	-	1700	336.60	1.579	532	69.27
		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	12150	700	-	-	-	13550	243.90	2.466	602	
DOWEL	132.91	12	20	18	250	(B)	700	12150	700	-	-	-	13550	243.90	2.466	602	69.27
		13	16	8	AS SHOWN	(A)	12150	-	-	-	-	-	12150	97.20	1.579	154	
		14	16	8	AS SHOWN	(A)	4350	-	-	-	-	-	4350	34.80	1.579	55	
TOTAL	132.91	15	16	306	350	(D)	250	1250	250	-	-	-	1750	535.50	1.579	846	69.27
		16	16	34	300	(E)	650	500	-	-	-	-	1150	39.10	1.579	62	

GRADE 40 TOTAL = 2,676 kgs.
GRADE 60 TOTAL = 7,281 kgs.

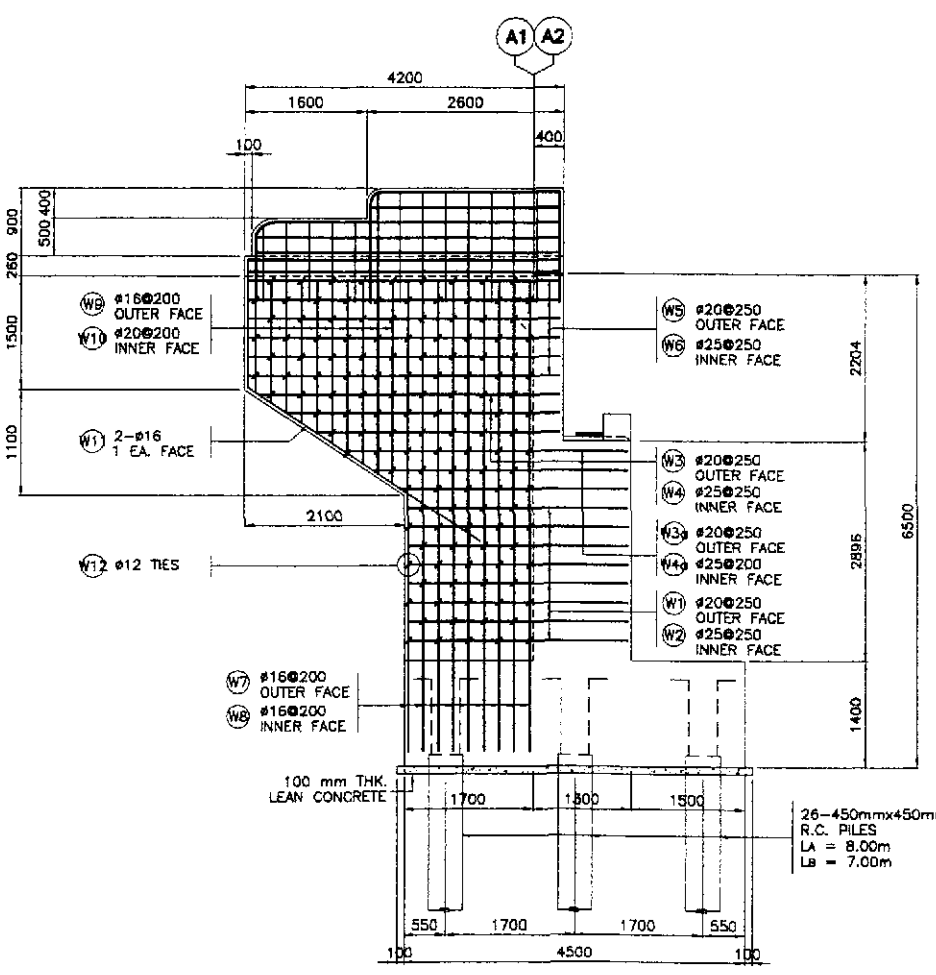
	DATE: 9/18/02 SIGNATURE: A. P. GONZALES DESIGNED: 9/20/02 CHECKED: 9/23/02 SUBMITTED: 9/23/02	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY Submitted By: DANILLO C. TRAJANO (Project Director) Reviewed By: ADRIANO M. DOROY (Chief, Bridges Division) Recommended By: GILBERTO S. REYES (Director IV (OC)) Recommended By: MANUEL M. BONDAN (Undersecretary) Approved By: SIMEON A. DATUMANONG (Secretary)	PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II	SCALE: AS SHOWN FULL SIZE A1	SHEET CONTENTS: BRIDGE NO. 1 ABUTMENT A1 & A2 MAINWALL REINFORCEMENT DETAILS (INITIAL STAGE)	SHEET NO.: B1-05
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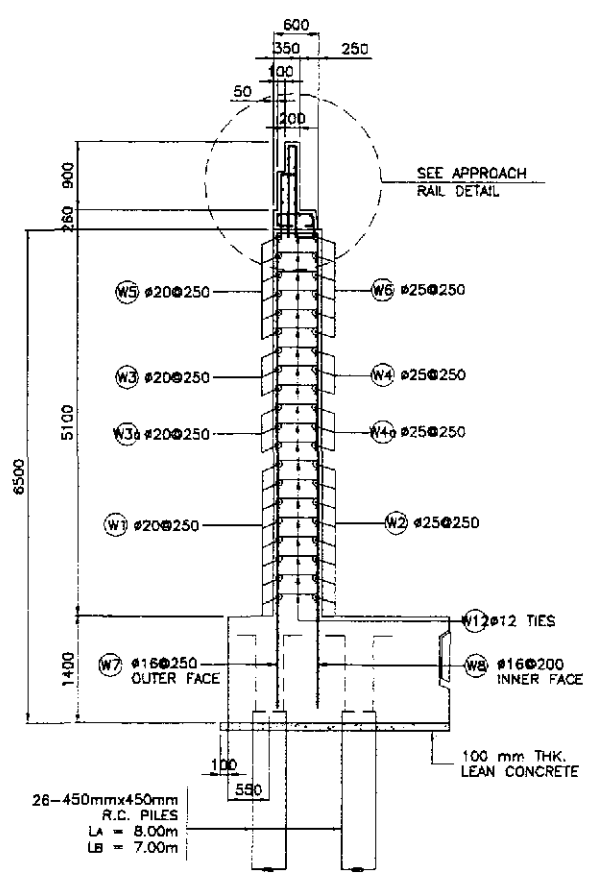
5 APPROACH RAIL DETAILS
SCALE 1:20

1 PLAN
SCALE 1:50

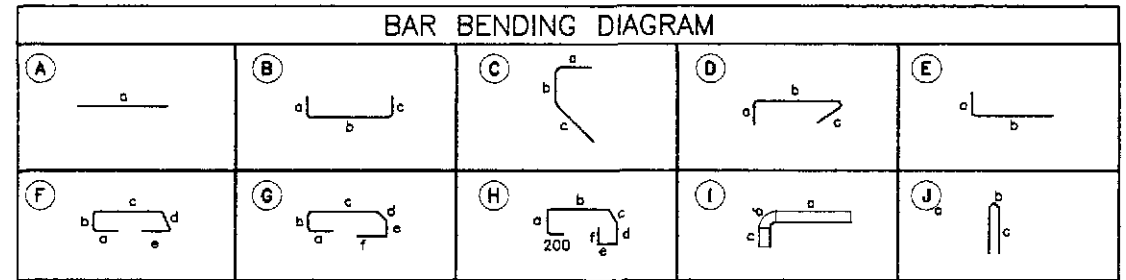
4 SIDEWALK DETAIL
SCALE 1:50



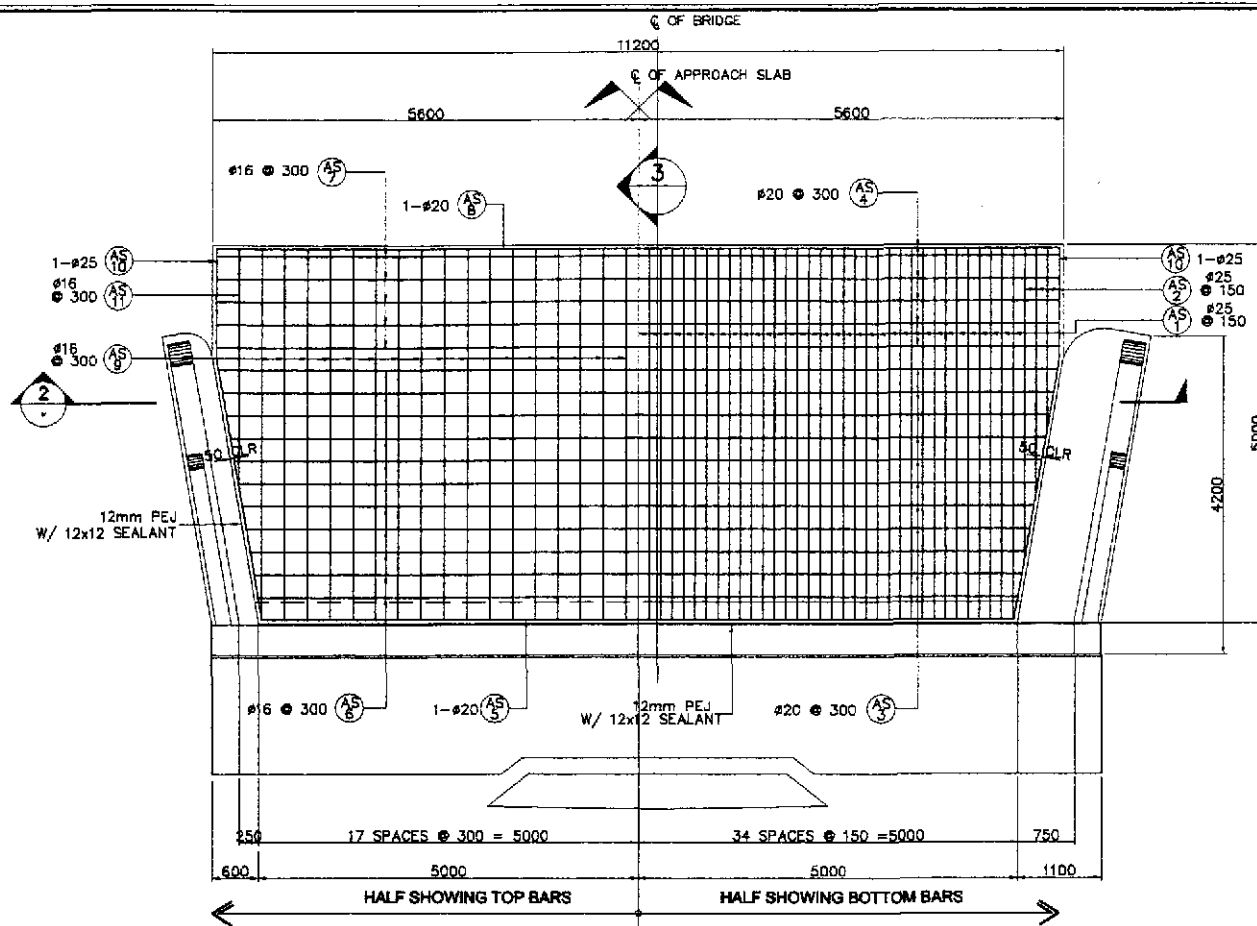
2 WINGWALL ELEVATION
SCALE 1:50



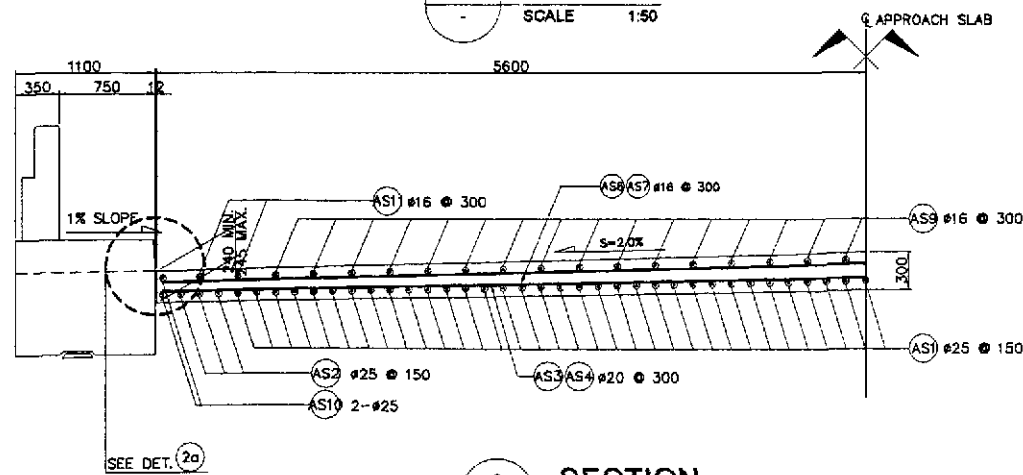
3 SECTION
SCALE 1:50



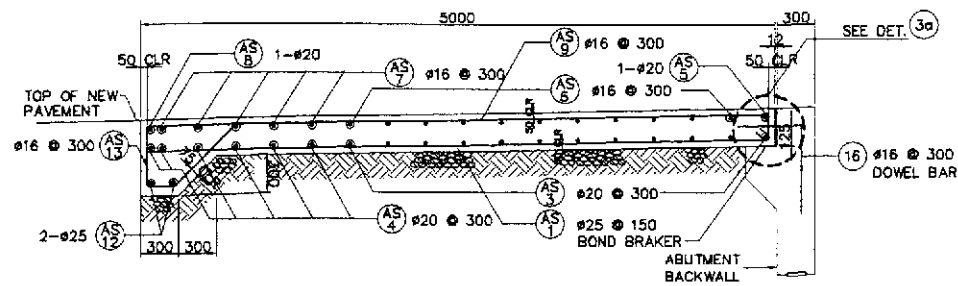
SCHEDULE OF REINFORCEMENT PER ABUTMENT																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm)					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e						f
WINGWALL	11.68	W1	20	16	250	(B)	400	2900	150	-	-	-	3450	55.20	2.466	137	
		W2	25	16	250	(B)	400	2900	150	-	-	-	3450	55.20	3.854	213	
		W3	20	6	250	(B)	400	3650	150	-	-	-	4200	25.20	2.466	63	
		W3a	20	6	250	(B)	400	3300	150	-	-	-	3850	23.10	2.466	57	
		W4	25	6	250	(B)	400	3650	150	-	-	-	4200	25.20	3.854	98	
		W4a	25	6	250	(B)	400	3300	150	-	-	-	3850	23.10	3.854	90	
		W5	20	12	250	(B)	400	4100	150	-	-	-	4650	55.80	2.466	138	
		W6	25	12	250	(B)	400	4100	150	-	-	-	4650	55.80	3.854	216	
		W7	16	18	200	(E)	250	6250	-	-	-	-	6500	117.00	1.579	185	
		W8	16	18	200	(E)	250	6250	-	-	-	-	6500	117.00	1.579	185	
		W9	16	20	250	(E)	250	2100	-	-	-	-	2350	47.00	1.579	75	
		W10	20	20	250	(E)	250	2100	-	-	-	-	2350	47.00	2.466	116	
W11	16	4	AS SHOWN	(C)	250	1500	3700	-	-	-	5450	21.80	1.579	35			
W12	12	268	AS SHOWN	(D)	170	450	170	-	-	-	790	211.72	0.888	189			
												GRADE 60 TOTAL = 1,128 kgs.					
												GRADE 40 TOTAL = 669 kgs.					
APPROACH RAILING AND SIDEWALK	4.12	AS1	12	9	AS SHOWN	(A)	4100	-	-	-	-	4100	36.90	0.888	33		
		AS2	12	2	AS SHOWN	(A)	4100	-	-	-	-	4100	8.20	0.888	8		
		AS3	12	2	AS SHOWN	(A)	4100	-	-	-	-	4100	8.20	0.888	8		
		AS4	12	6	AS SHOWN	(A)	4100	-	-	-	-	4100	24.60	0.888	22		
		AS5	16	4	300	(F)	200	170	480	200	200	-	1250	5.00	1.579	8	
		AS6	16	11	300	(G)	200	170	480	200	170	200	1420	15.62	1.579	25	
		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	10	300	(E)	200	900	-	-	-	-	1100	11.00	1.579	18	
		AR2	16	18	300	(J)	1300	120	1300	-	-	-	2720	48.96	1.579	78	
		AR3	16	2	AS SHOWN	(I)	2500	236	1300	-	-	-	4036	8.07	1.579	13	
		AR4	16	4	AS SHOWN	(I)	4000	236	900	-	-	-	5136	20.54	1.579	33	
AR5	16	8	AS SHOWN	(A)	4000	-	-	-	-	-	4000	32.00	1.579	51			
AR6	16	4	AS SHOWN	(A)	2500	-	-	-	-	-	2500	10.00	1.579	16			
												GRADE 60 TOTAL = 1,128 kgs.					
												GRADE 40 TOTAL = 1,062 kgs.					
TOTAL	15.80													GRADE 60 TOTAL = 1,128 kgs.			
												GRADE 40 TOTAL = 1,062 kgs.					



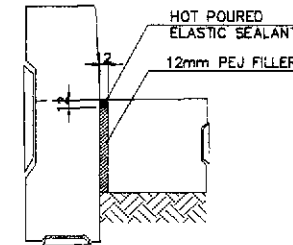
1 PLAN
SCALE 1:50



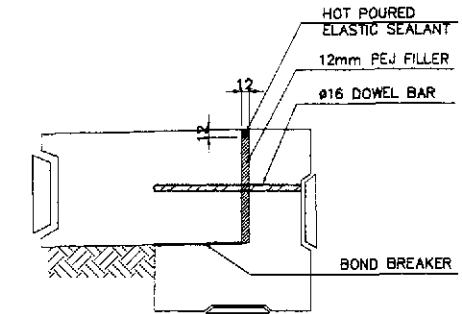
2 SECTION
SCALE 1:30



3 SECTION
SCALE 1:30



2a DETAIL
SCALE 1:10



3a DETAIL
SCALE 1:10

BAR BENDING DIAGRAM																	
A		B		C		D											
SCHEDULE OF REINFORCEMENT PER APPROACH SLAB																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/cu.m)	
APPROACH SLAB	17.68	AS1	25	68	150	(B)	4900	200	-	-	-	-	5100	346.80	3.854	1337	157.17
		AS2	25	6	150	(B)	3200	200	-	-	-	-	3400	20.40	3.854	79	
		AS3	20	12	300	(A)	10500	-	-	-	-	-	10500	126.00	2.466	311	
		AS4	20	6	300	(A)	11100	-	-	-	-	-	11100	66.60	2.466	165	
		AS5	20	1	AS SHOWN	(A)	9900	-	-	-	-	-	9900	9.90	2.466	25	
		AS6	16	11	300	(A)	10550	-	-	-	-	-	10550	116.05	1.579	184	
		AS7	16	5	300	(A)	11100	-	-	-	-	-	11100	55.50	1.579	88	
		AS8	20	1	AS SHOWN	(A)	11100	-	-	-	-	-	11100	11.10	2.466	28	
		AS9	16	34	300	(B)	4900	200	-	-	-	-	5100	173.40	1.579	274	
		AS10	25	4	AS SHOWN	(C)	1450	3500	-	-	-	-	4950	19.90	3.854	77	
		AS11	16	4	300	(B)	2300	200	-	-	-	-	2500	10.00	1.579	16	
		AS12	25	2	AS SHOWN	(A)	11100	-	-	-	-	-	11100	22.20	3.854	86	
		AS13	16	38	300	(D)	400	500	200	-	-	-	1800	68.40	1.579	109	
TOTAL	17.68											GRADE 40 TOTAL = 671 kgs. GRADE 60 TOTAL = 2108 kgs.					

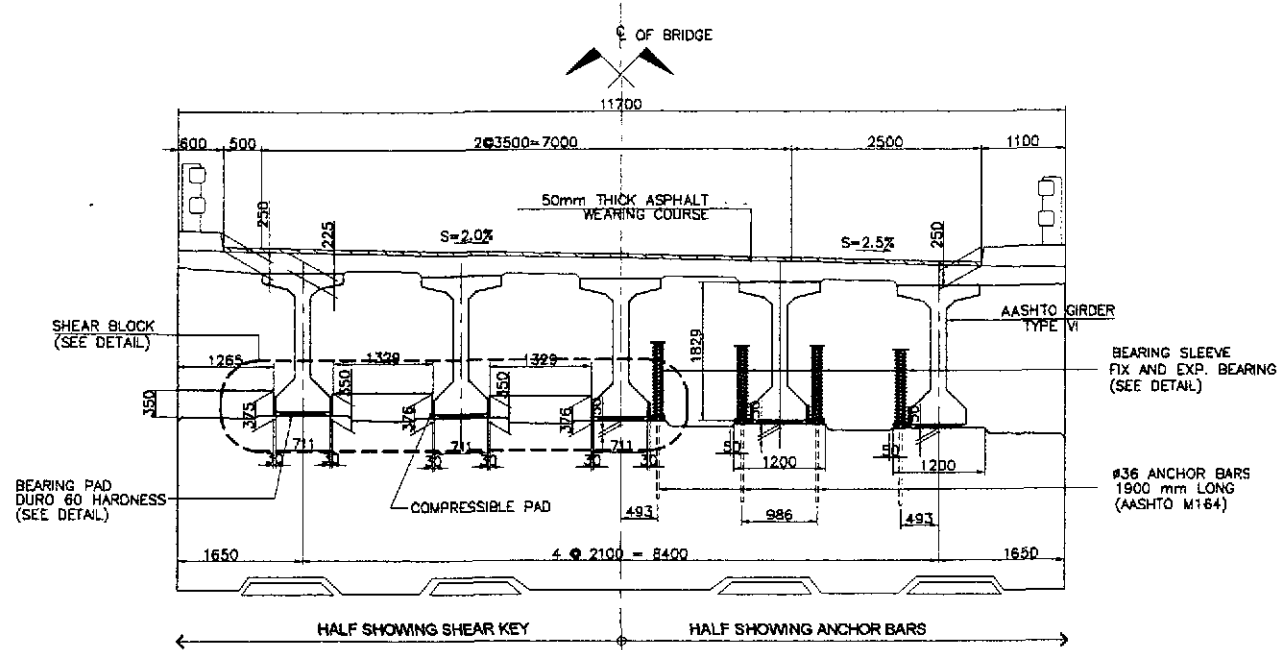
JICA
JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS
YACHIYO ENGINEERING CO., LTD.

DESIGNED: 9/10/02
CHECKED: 9/10/02
SUBMITTED: 9/23/02
DATE: 9/10/02
SIGNATURE: [Signature]
E. N. SALLAN
RUL - PMO
Submitted By: [Signature]
DANILO C. TRAJANO
Project Director

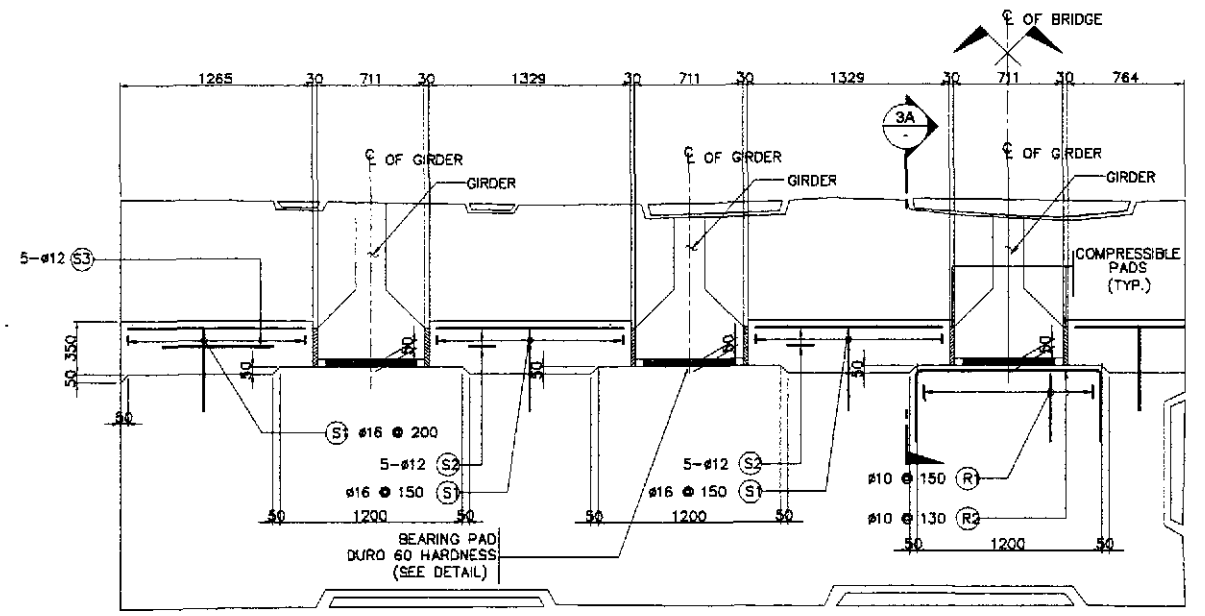
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
OFFICE OF THE SECRETARY
Reviewed By: [Signature]
Recommended By: [Signature]
Approved By: [Signature]

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

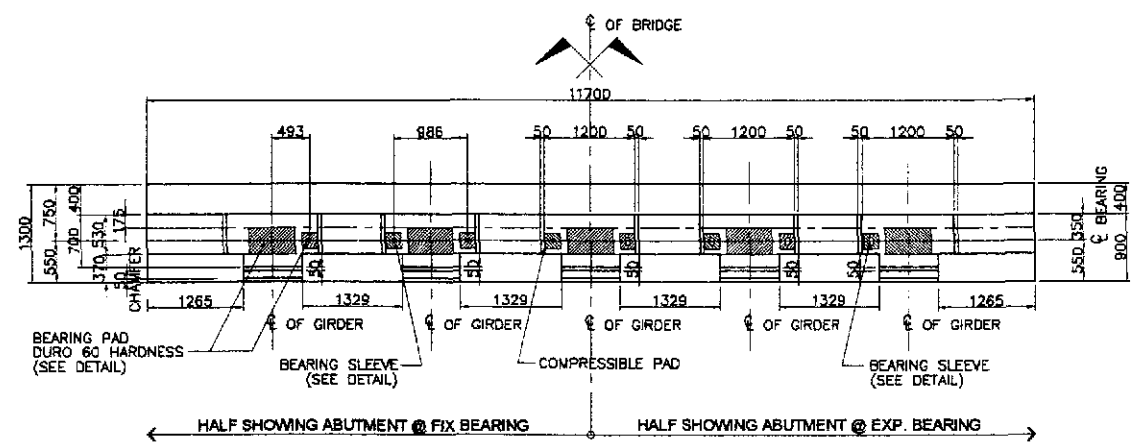
SCALE: AS SHOWN / FULL SIZE A1
SHEET CONTENTS: BRIDGE NO. 1 APPROACH SLAB PLAN, SECTION AND DETAILS (INITIAL STAGE)
SHEET NO.: B1-07



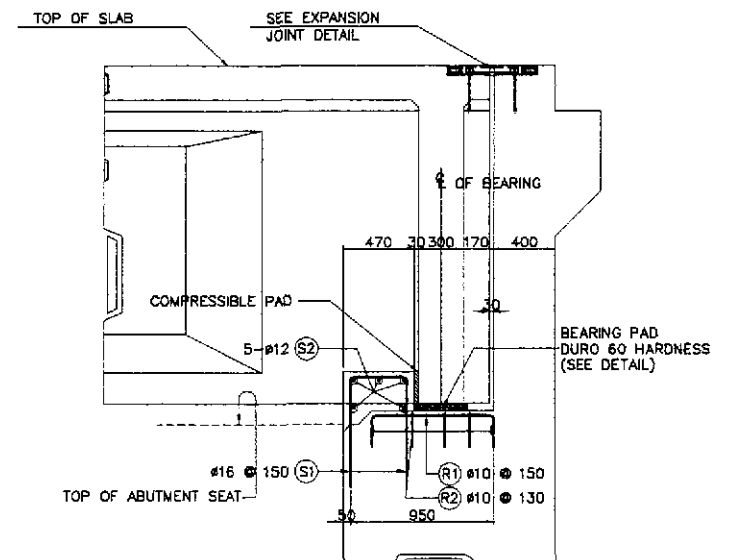
1 SECTION AT ABUTMENT SEAT
SCALE 1:50



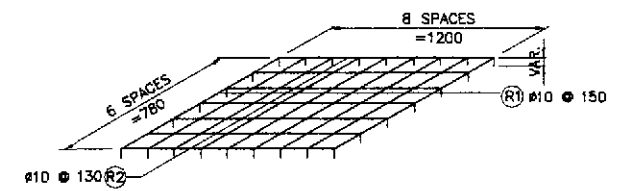
3 SHEAR BLOCK DETAIL
SCALE 1:25



2 PLAN AT ABUTMENT SEAT
SCALE 1:50



3A SECTION
SCALE 1:25



4 RISER REINFORCEMENT
NOT TO SCALE

BAR BENDING DIAGRAM

(A)

(B)

SCHEDULE OF REINFORCEMENT

LOCATION	CONCRETE VOLUME (m³)	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/m³)
							a	b	c	d	e					
SHEAR KEY & RISER	1.59	S1	16	54	200	(B)	560	290	560			1410	76.14	1.579	121	159.42
		S2	12	20	AS SHOWN	(A)	1250					1250	25.00	0.888	23	
		S3	12	10	AS SHOWN	(A)	1185					1185	11.85	0.888	11	
		R1	10	45	150	(B)	500	780	500			1780	80.10	0.616	50	
		R2	10	35	130	(B)	500	1200	500			2200	77.00	0.616	48	
TOTAL	1.59															GRADE 40 TOTAL = 253 kgs.

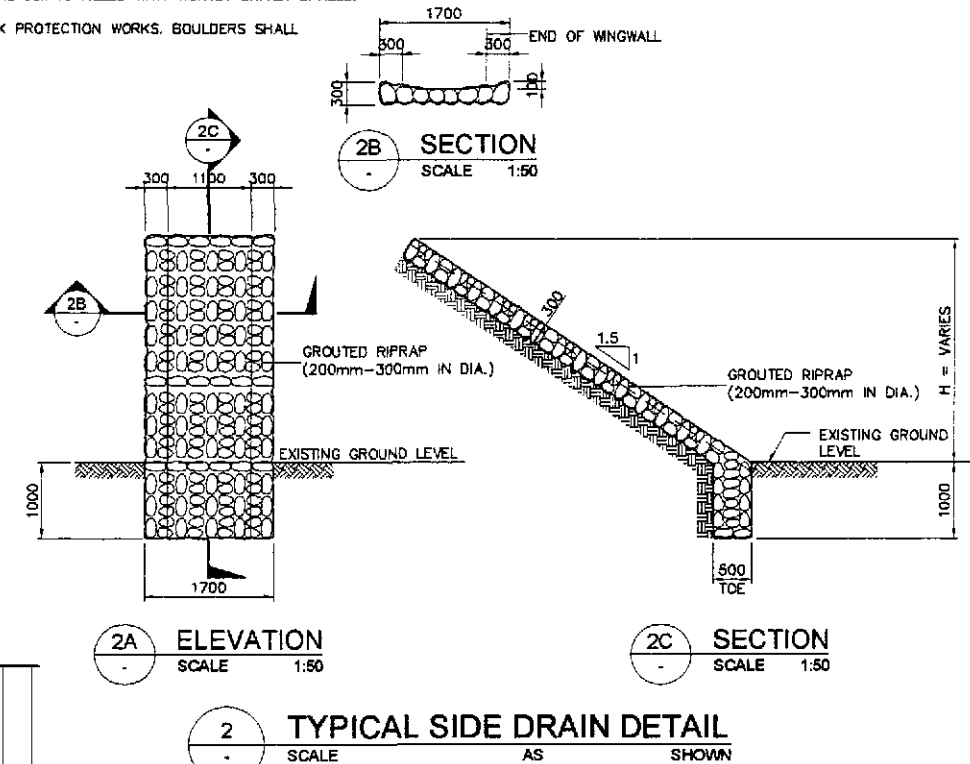
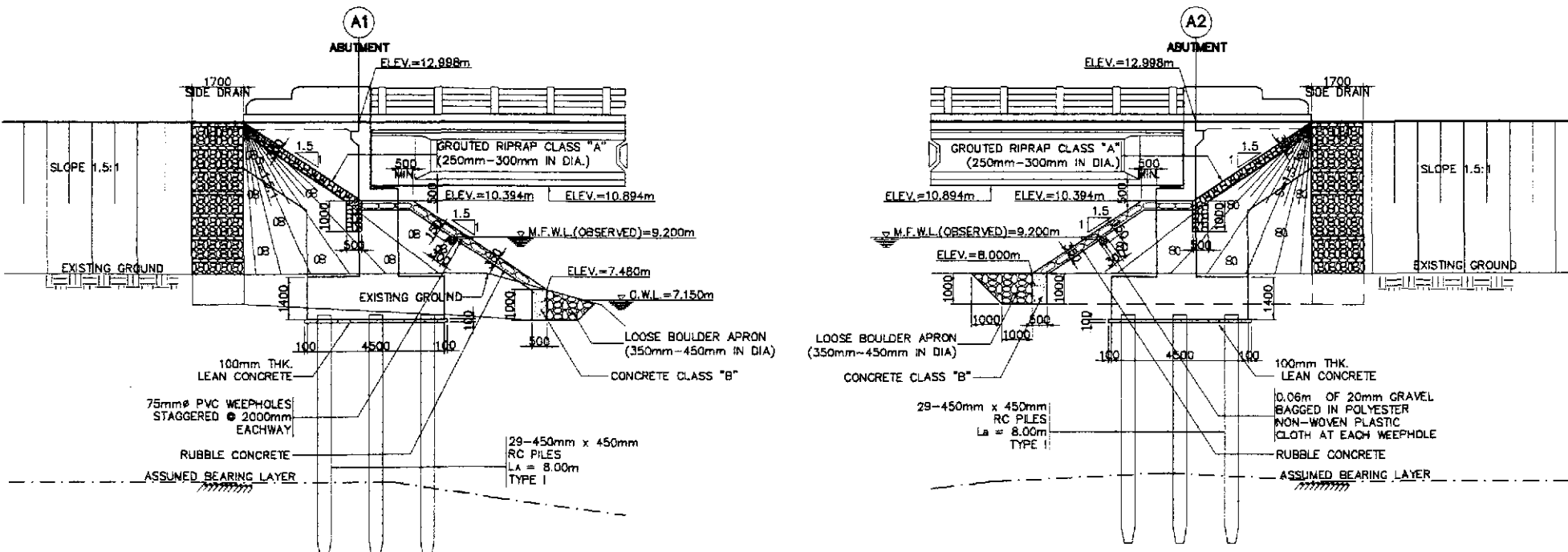
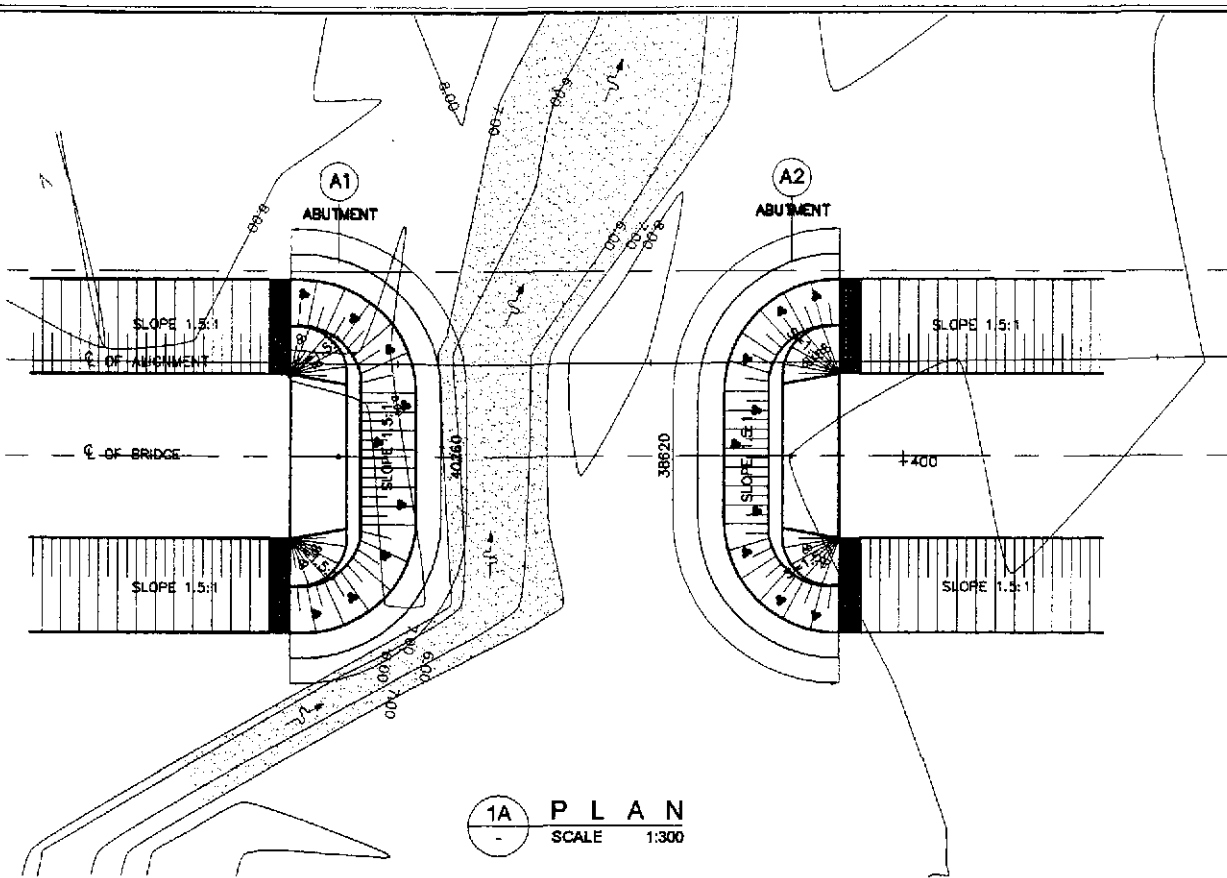
THE REINFORCEMENT SHOWN ON THIS TABLE IS FOR REFERENCE ONLY. THE CONTRACTOR SHOULD CHECKED AND VERIFY ALL DIMENSIONS, SIZES AND QUANTITIES OF REINFORCEMENT.

	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/20/02	<i>[Signature]</i>	BUREAU OF DESIGN	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 1 SHEAR KEY AND RISER DETAILS (INITIAL STAGE)	B1-08
	SUBMITTED	9/20/02	<i>[Signature]</i>	OFFICE OF THE SECRETARY	PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		

GENERAL NOTES:

1. GROUDED 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 BRUSH.
2. GEOTEXTILE
THE FOLLOWING SPECIFICATIONS ARE REQUIRED:

1. POLYESTER OR POLYPROPYLENE - 100%	5. THICKNESS UNDER PRESSURE - 0.80mm (MIN.)
2. MECHANICALLY BONDED/HEAT BONDED	6. WEIGHT - 200g/sq. m. (MIN.)
3. NON-WOVEN	7. CBR PUNCTURE STRENGTH - 400N (MIN.)
4. EFFECTIVE OPENING SIZE - 110 MICRONS (MAX.)	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. 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.
5. 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.
6. FOR THE LOOSE BOULDER APRON, BOULDERS 350-450mm 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.
7. 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.
8. NO CONCRETING UNDER WATER SHALL BE PERMITTED.
9. PROVIDE 1.0 m. BERM WHEN HEIGHT (H) IS > 4.0 m.

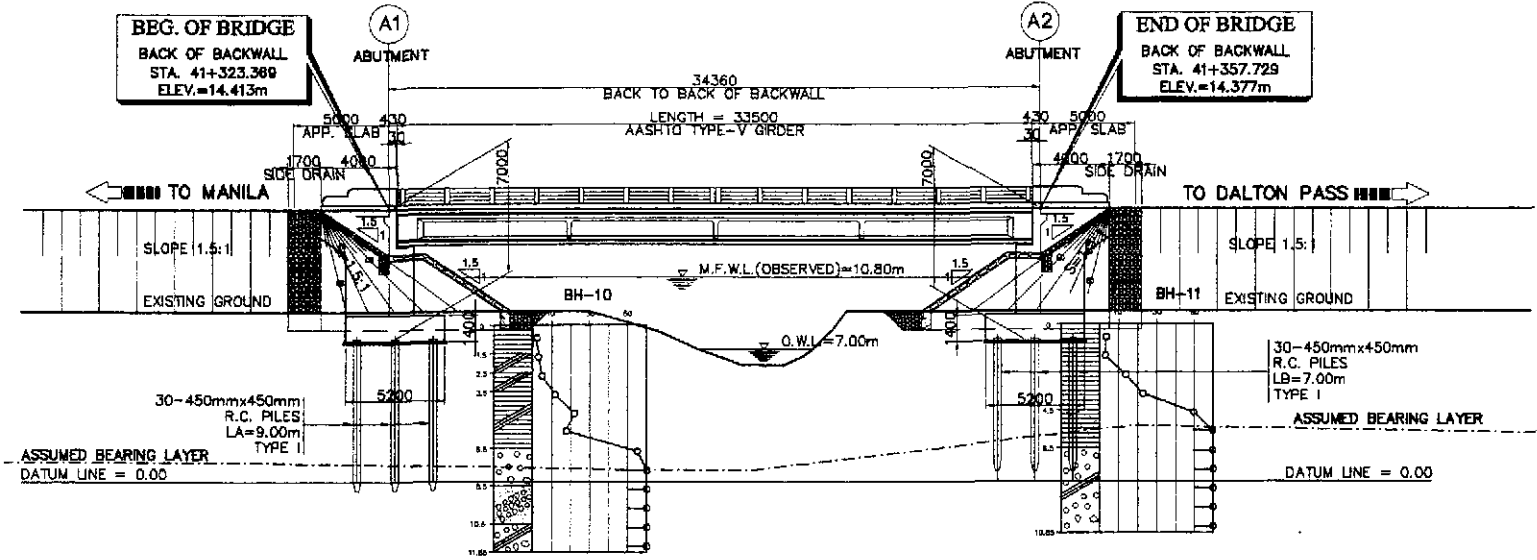


VELOCITY (m/sec)	ROCK SIZE (mm)	
	VERY TURBULENT FLOW	SMOOTH FLOW
1.00	40	-
1.50	135	-
2.00	170	-
2.50	255	137
3.00	370	197
3.50	515	270
4.00	690	350
4.50	825	425
5.00	>900	590

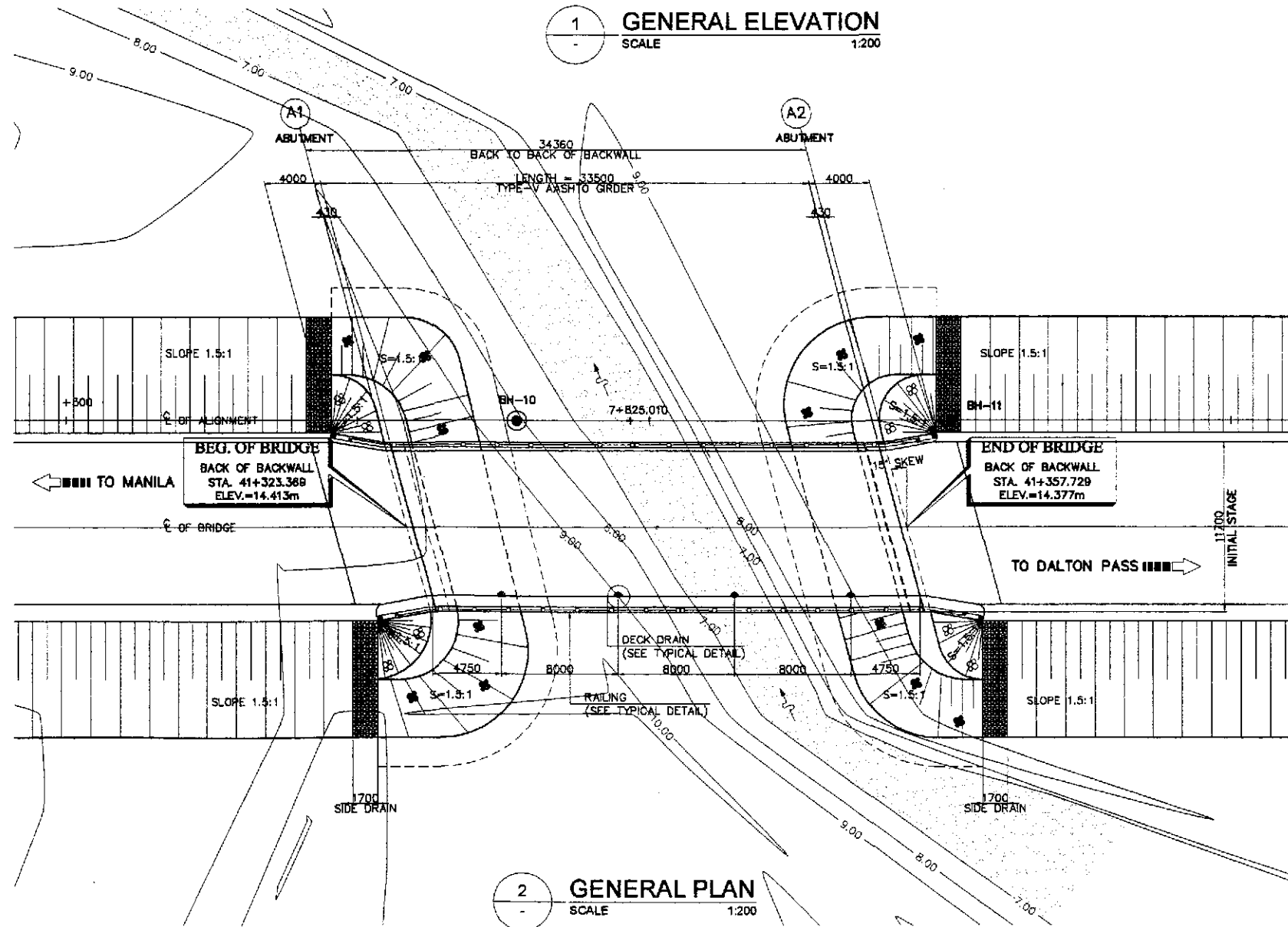
LOCATION	SIZES	QUANTITY	
		ABUT. A1	ABUT. A2
CONC. CLASS "B"	1000 x 500 x LENGTH	19.52 cu. m.	18.89 cu. m.
BOULDER APRON	350mm-450mm IN DIA.	58.55 cu. m.	56.66 cu. m.
RUBBLE CONCRETE	250mm-300mm IN DIA.	58.79 cu. m.	51.38 cu. m.
SIDE DRAIN	200mm-300mm IN DIA.	10.78 cu. m.	10.78 cu. m.
GROUDED RIPRAP	250mm-300mm IN DIA.	18.49 cu. m.	18.49 cu. m.

1 ABUTMENT SLOPE PROTECTION
SCALE AS SHOWN

		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) PLARIDEL BYPASS - CONTRACT PACKAGE II		SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : BRIDGE NO. 1 ABUTMENT PROTECTION AND SIDE DRAIN DETAILS (INITIAL STAGE)	SHEET NO. : B1-09
DESIGNED	DATE	SIGNATURE	Submitted By:	Reviewed By:	Recommended By:	Approved By:				
CHECKED	9/20/02	P. GONZALES	DANILO C. TRAJANO	PERFECTO L. ZAPLAN JR.	GILBERTO S. REYES	MANUEL M. BONDAN				
SUBMITTED	9/20/02	Team Leader	Project Director	Chief, Hydraulics Division (OC)	Director IV (GC)	Undersecretary				



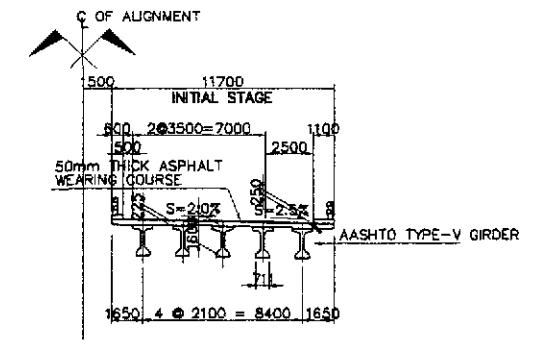
1 GENERAL ELEVATION
SCALE 1:200



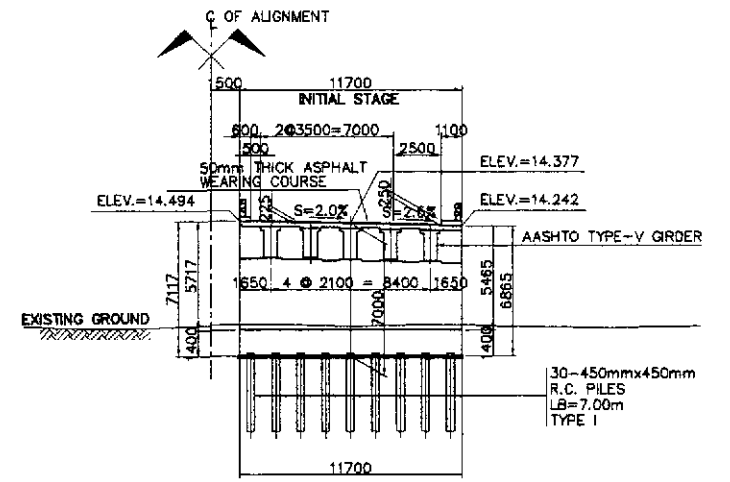
2 GENERAL PLAN
SCALE 1:200

A PLARIDEL BYPASS BRIDGE NO. 2 (STA. 41+323.369) AS SHOWN

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



3 SECTION @ MIDSPAN
SCALE 1:200



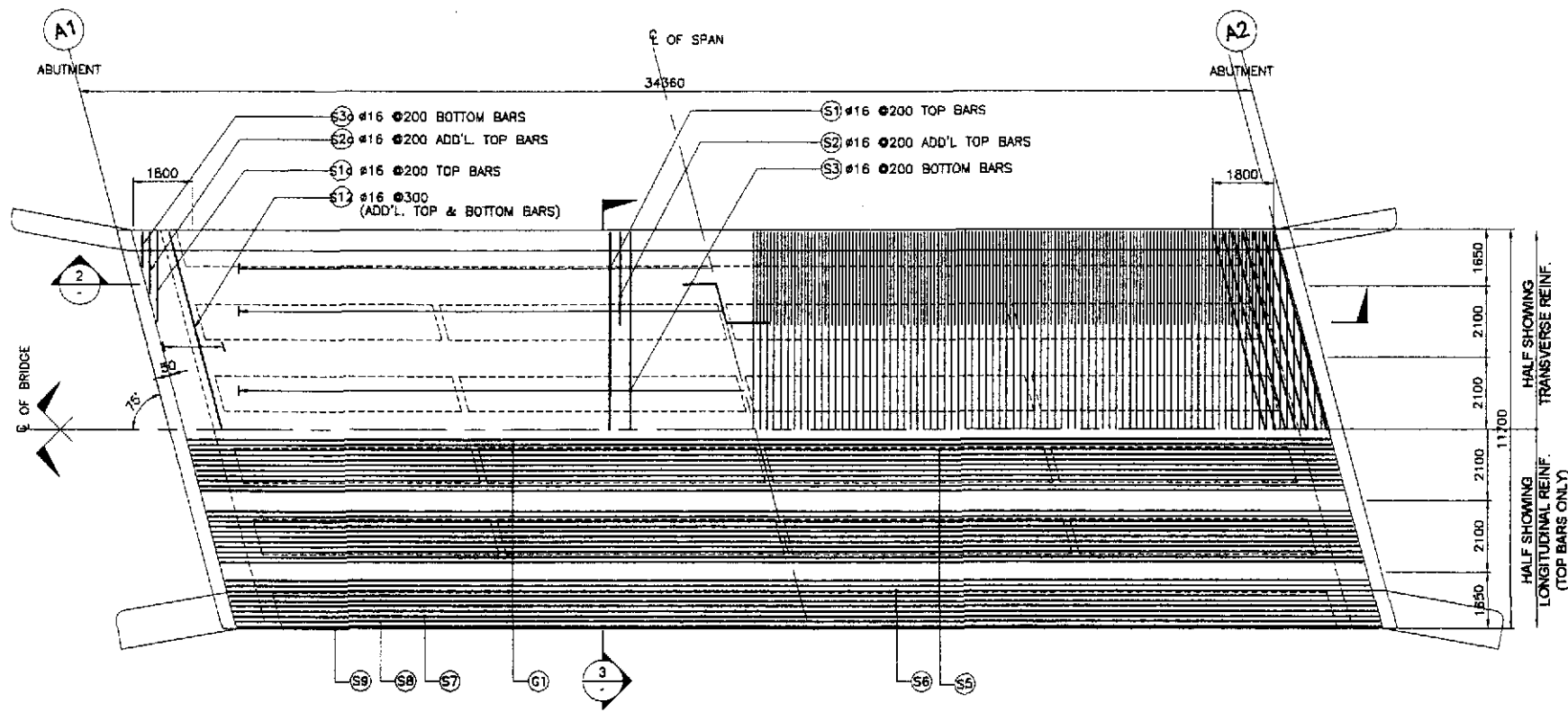
4 SECTION @ ABUTMENT A2
SCALE 1:200

HYDRAULIC DESIGN DATA	
VELOCITY @ 50 YEARS, V_{50}	2.798 m/sec
DISCHARGE @ 50 YEARS, Q_{50}	124.900 cu.m/sec
CATCHMENT AREA, CA	17.630 sq. km

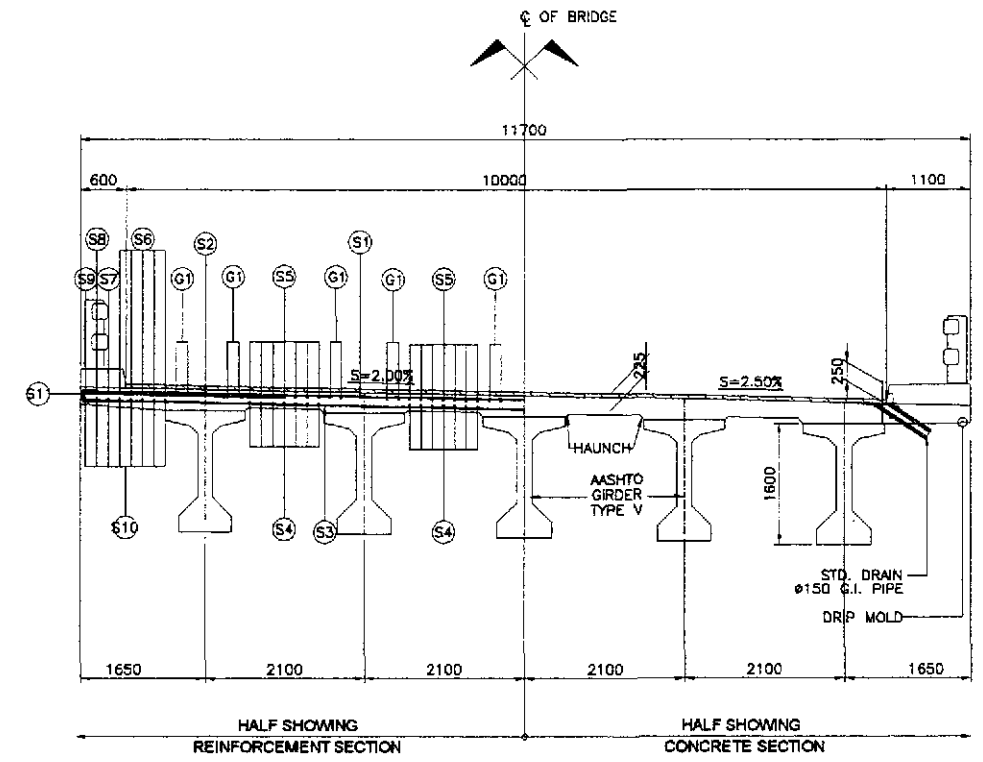
NOTE :
PRIOR TO CONSTRUCTION SOIL INVESTIGATION SHALL BE CONDUCTED FOR CONFIRMATION OF ASSUMED BEARING CAPACITY AND FOOTING ELEVATION.

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.

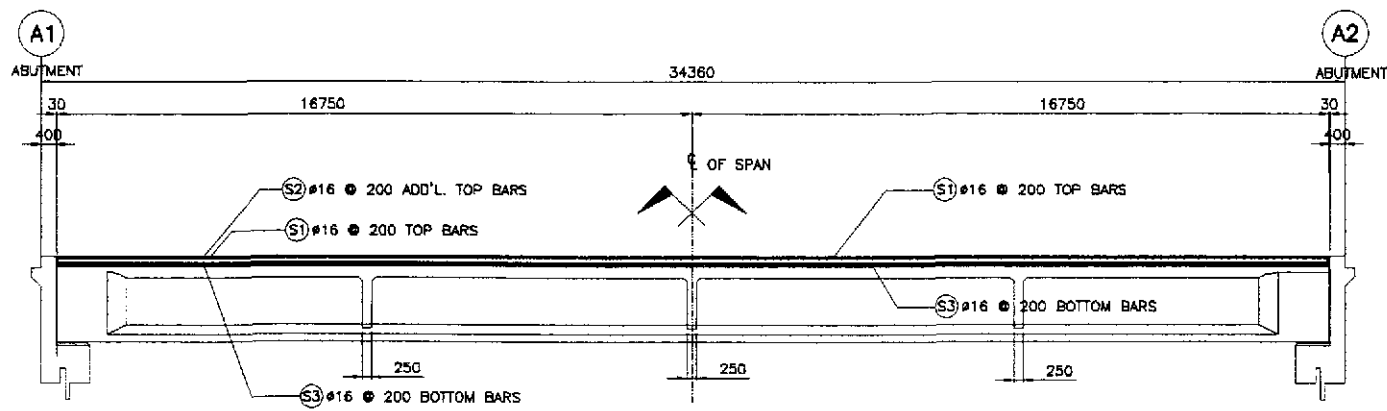
	DESIGNED	9/18/01	GONZALES		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	SCALE : 1:200 FULL SIZE A1	SHEET CONTENTS : BRIDGE NO. 2 GENERAL PLAN, ELEVATION AND SECTIONS (INITIAL STAGE)	SHEET NO. : B2-01
	CHECKED	9/20/01	[Signature]		BUREAU OF DESIGN Submitted By: DANILLO C. TRILANO Project Director	OFFICE OF THE SECRETARY Reviewed By: ADRIANO W. DOROS Chief, Bridge Division	Recommended By: GILBERTO S. REYES Director IV (SIC)				



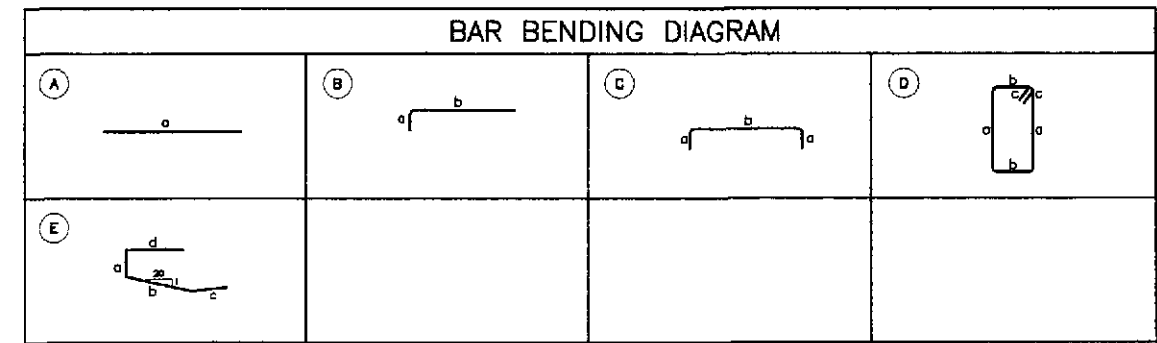
1 FRAMING PLAN
SCALE 1:100



3 TYPICAL CROSS-SECTION
SCALE 1:50



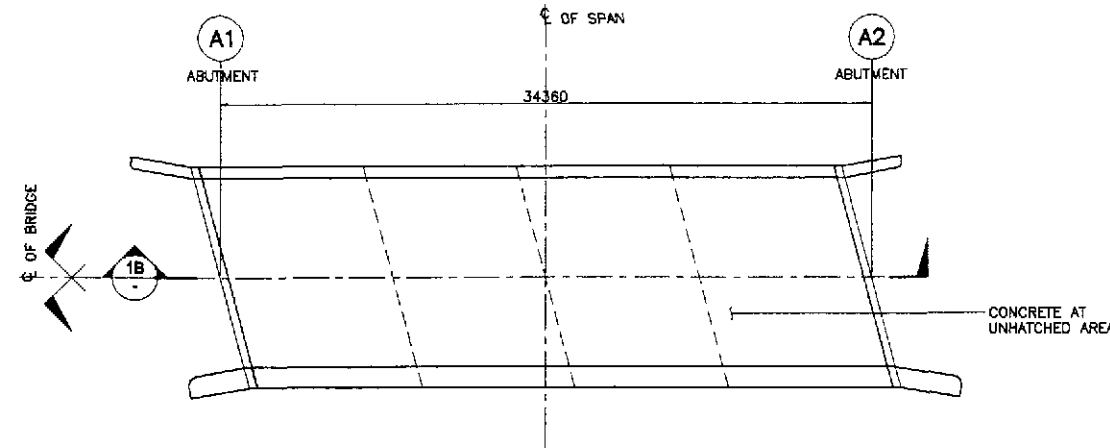
2 LONGITUDINAL SECTION
SCALE 1:100



ESTIMATED QUANTITIES OF SUPERSTRUCTURE			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
404(1)a	REINFORCING STEEL GRADE 40	kgs.	29275
	DECK SLAB	14486	
	DIAPHRAGM	442	
	GIRDER	9875	
	SIDEWALK, RAILING, & POST	3094	
	APPROACH SLAB	1398	
404(1)b	REINFORCING STEEL GRADE 60	kgs.	14838
	DECK SLAB	0	
	DIAPHRAGM	1702	
	GIRDER	8060	
	SIDEWALK, RAILING, & POST	708	
	APPROACH SLAB	4368	
405(1)	STRUCTURAL CONCRETE	cu. m.	286.71
	DECK SLAB	97.54	
	DIAPHRAGM	13.31	
	GIRDER	117.80	
	SIDEWALK, RAILING, & POST	22.30	
	APPROACH SLAB	35.76	

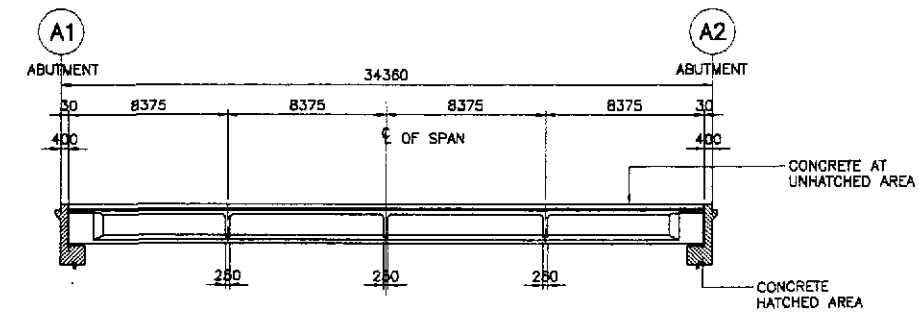
SCHEDULE OF REINFORCEMENT															
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				LENGTH EACH BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT IN (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d					
DECK SLAB	97.54	G1	16	20	AS SHOWN	(A)	33400	-	-	-	33400	688.00	1.579	1055	148.51
		S1	16	152	200	(C)	145	11600	145	-	11890	1807.30	1.579	2854	
		S1a	16	32	200	(C)	145	6400	145	-	12290	214.08	1.579	339	
		S2	16	324	200	(B)	145	2900	-	-	3045	986.58	1.579	1558	
		S2a	16	12	200	(B)	145	1490	-	-	1635	19.62	1.579	31	
		S3	16	152	200	(A)	11600	-	-	-	11600	1763.20	1.579	2785	
		S3a	16	32	200	(A)	6400	-	-	-	6400	204.80	1.579	324	
		S4	16	28	150	(A)	33400	-	-	-	33400	935.20	1.579	1477	
		S5	16	28	150	(A)	33400	-	-	-	33400	935.20	1.579	1477	
		S6	16	10	AS SHOWN	(A)	33400	-	-	-	33400	334.00	1.579	528	
		S7	16	2	AS SHOWN	(A)	33400	-	-	-	33400	66.80	1.579	106	
		S8	16	2	AS SHOWN	(A)	33400	-	-	-	33400	66.80	1.579	106	
		S9	16	2	AS SHOWN	(A)	33400	-	-	-	33400	66.80	1.579	106	
		S10	16	16	AS SHOWN	(A)	33400	-	-	-	33400	534.40	0.888	844	
S11	12	168	400	(E)	145	1100	900	300	2445	410.76	0.888	365			
S12	16	28	300	(A)	12000	-	-	-	12000	336.00	1.579	531			
TOTAL	97.54														GRADE 40 = 14,486 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	<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. 2 & 5 DECK FRAMING PLAN AND SECTION (INITIAL STAGE)	B2-02
	SUBMITTED	9/23/02	<i>[Signature]</i>		Submitted By:	Reviewed By:	Recommended By:	Approved By:	PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		



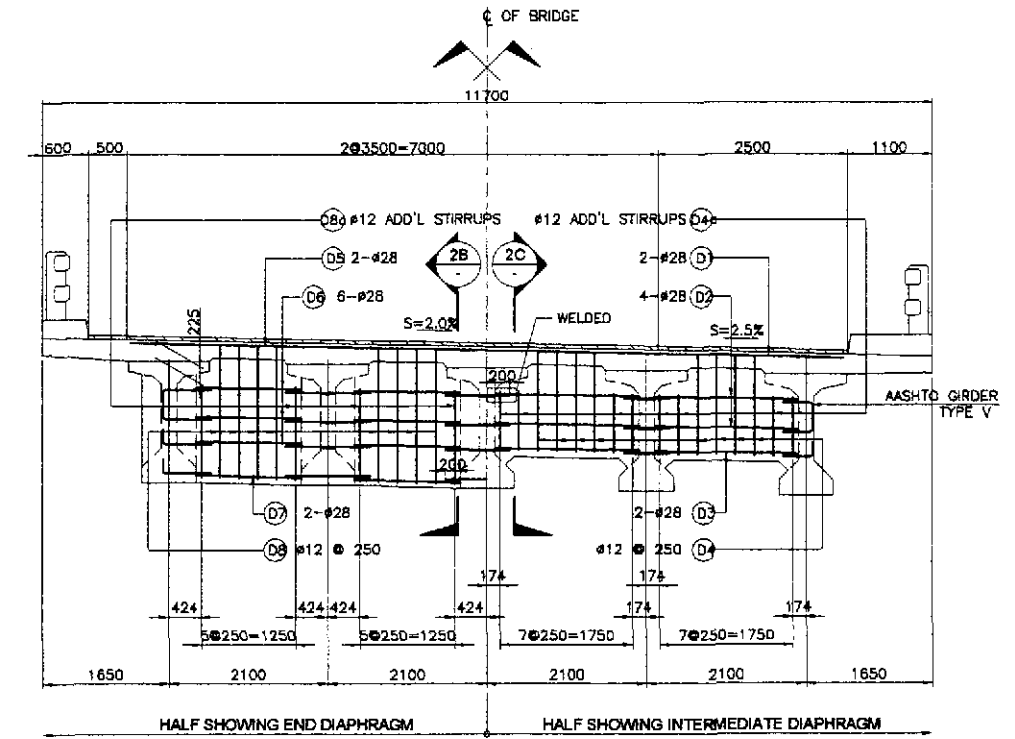
1A PLAN
SCALE 1:200

- 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.

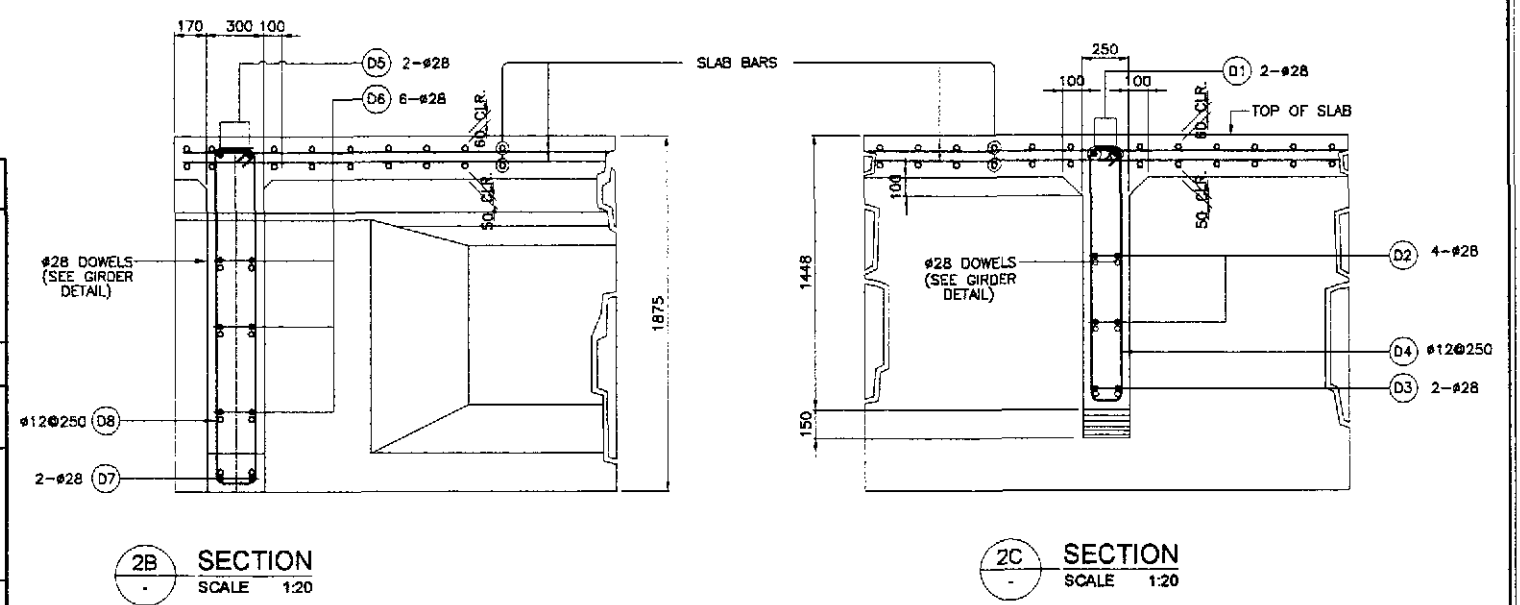


1B LONGITUDINAL SECTION
SCALE 1:200

1 CONCRETE POURING SEQUENCE
SCALE 1:200



2A ELEVATION
SCALE 1:25



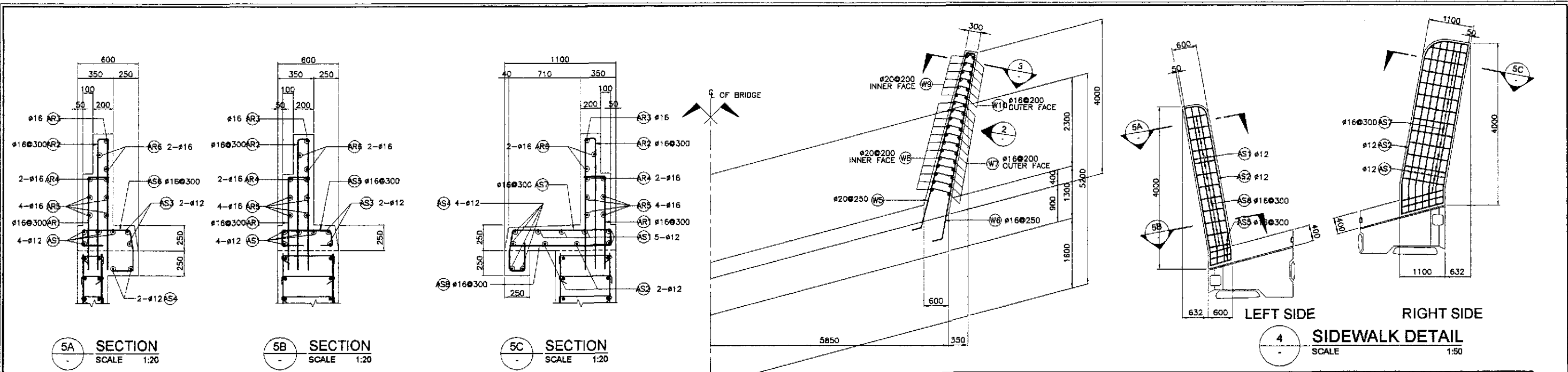
2B SECTION
SCALE 1:20

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	7.81	D1	28	6	AS SHOWN	A	9400				9400	56.40	4.833	273	152.81	b is ove	
			D2	28	48	AS SHOWN	A	1895				1895	90.96	4.833	440			
			D3	28	24	AS SHOWN	A	1895				1895	45.48	4.833	220			
			D4	12	48	250	B	150	1500	150		3600	172.80	0.888	154			
			D4a	12	48	200	B	150	950	150		2500	120.00	0.888	107			
	END DIAPHRAGM	5.50	D5	28	4	AS SHOWN	A	9400				9400	37.60	4.833	182		172.71	b is ove
			D6	28	48	AS SHOWN	A	1895				1895	90.96	4.833	440			
			D7	28	16	AS SHOWN	A	1895				1895	30.32	4.833	147			
			D8	12	32	250	B	200	1950	150		4600	147.20	0.888	131			
			D8a	12	16	AS SHOWN	B	200	1400	150		3500	56.00	0.888	50			
TOTAL		13.31												GRADE 60 TOTAL = 1702 kgs	GRADE 40 TOTAL = 442 kgs			

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/10/02	<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. 2 & 5 CONC. POURING SEQUENCE AND DIAPHRAGM DETAIL (INITIAL STAGE)	B2-04
	SUBMITTED	9/12/02	<i>[Signature]</i>		OFFICE OF THE SECRETARY				PLARIDEL BYPASS - CONTRACT PACKAGE II		FULL SIZE A1		
Submitted By:		Reviewed By:		Recommended By:		Approved By:		MANUEL M. BONDAN Undersecretary					



5A SECTION SCALE 1:20

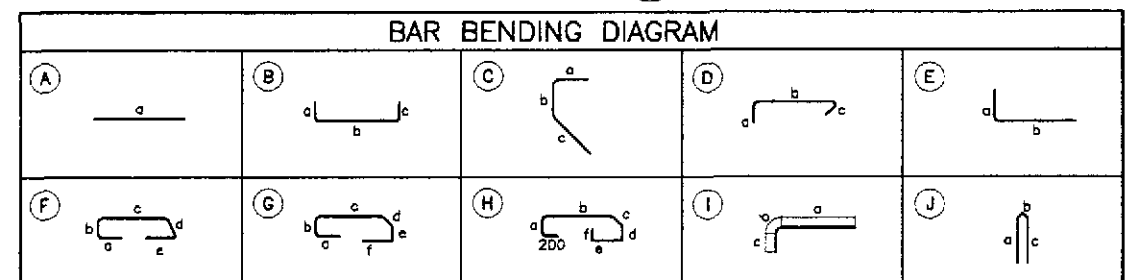
5B SECTION SCALE 1:20

5C SECTION SCALE 1:20

4 SIDEWALK DETAIL SCALE 1:50

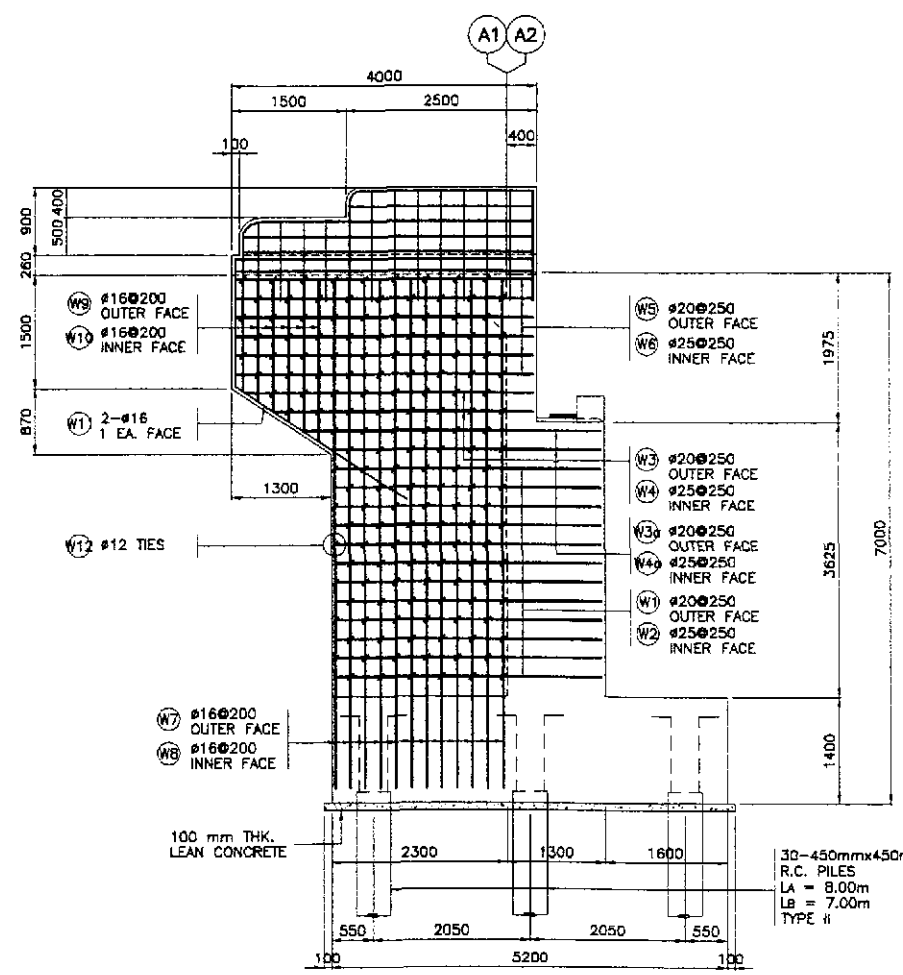
1 PLAN SCALE 1:50

5 APPROACH RAIL DETAILS SCALE 1:20

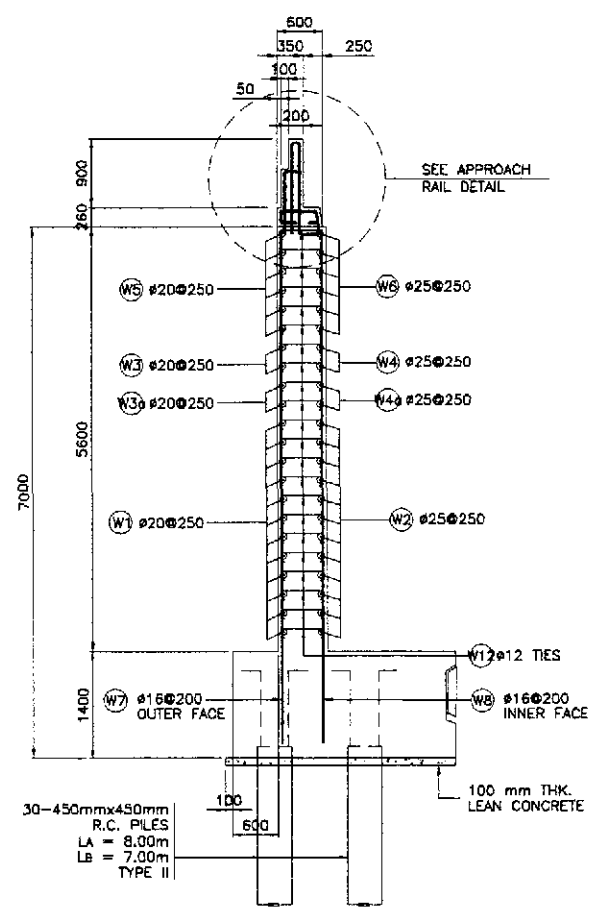


SCHEDULE OF REINFORCEMENT PER ABUTMENT

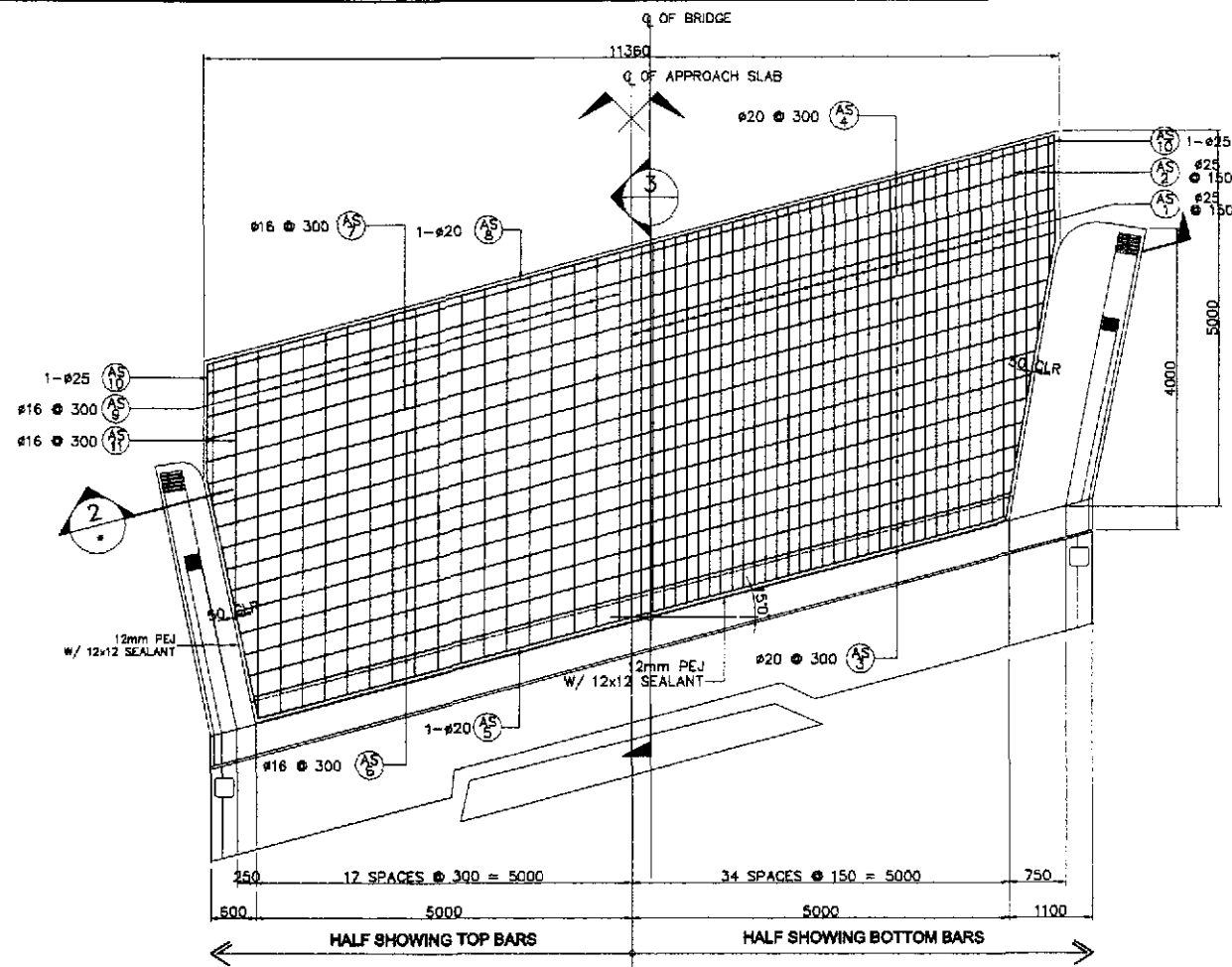
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e						f
WINGWALL	13.85	W1	20	24	250	(B)	400	3500	150	-	-	4050	97.20	2.466	240	145.95	
		W2	25	24	250	(B)	400	3500	150	-	-	4050	97.20	3.854	375		
		W3	20	4	250	(B)	400	3600	150	-	-	4150	16.80	2.466	41		
		W3A	20	4	250	(B)	400	3700	150	-	-	4250	17.00	2.466	42		
		W4	25	4	250	(B)	400	3600	150	-	-	4150	16.80	3.854	64		
		W4A	25	4	250	(B)	400	3700	150	-	-	4250	17.00	3.854	66		
		W5	20	12	250	(B)	400	3900	150	-	-	4450	53.40	2.466	132		
		W6	25	12	250	(B)	400	3900	150	-	-	4450	53.40	3.854	206		
		W7	16	24	200	(E)	250	6750	-	-	-	7000	168.00	1.579	266		
		W8	16	24	200	(E)	250	6750	-	-	-	7000	168.00	1.579	266		
		W9	16	12	200	(E)	250	1800	-	-	-	2050	24.60	1.579	39		
		W10	16	12	200	(E)	250	1800	-	-	-	2050	24.60	1.579	39		
W11	16	4	AS SHOWN	(C)	250	1500	2700	-	-	4450	17.80	1.579	29				
W12	12	30B	AS SHOWN	(D)	170	450	170	-	-	790	243.32	0.888	217				
												GRADE 60 TOTAL = 1,166 kgs					
												GRADE 40 TOTAL = 856 kgs					
APPROACH RAILING AND SIDEWALK	3.93	AS1	12	9	AS SHOWN	(A)	3900	-	-	-	-	3900	35.10	0.888	32	94.77	
		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 60 TOTAL = 1,166 kgs					
												GRADE 40 TOTAL = 1,228 kgs					
TOTAL	17.78													GRADE 60 TOTAL = 1,166 kgs			
												GRADE 40 TOTAL = 1,228 kgs					



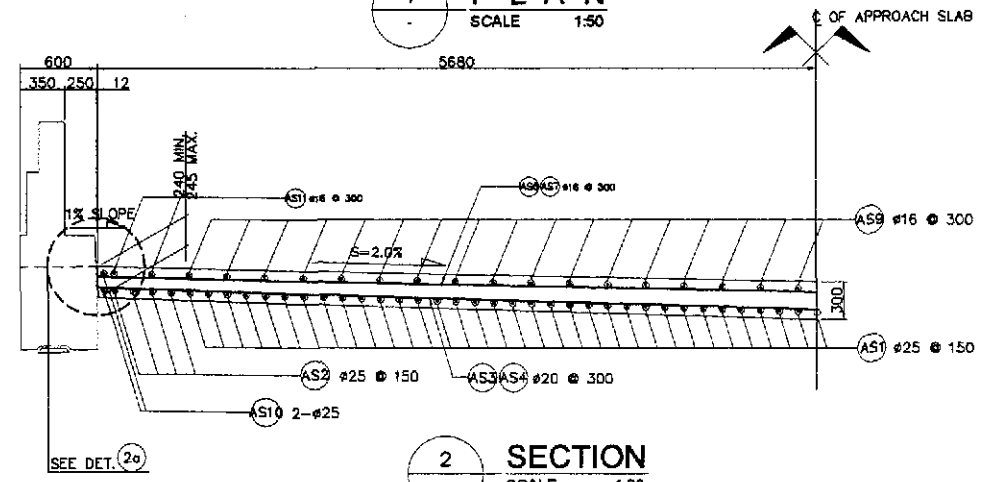
2 WINGWALL ELEVATION SCALE 1:50



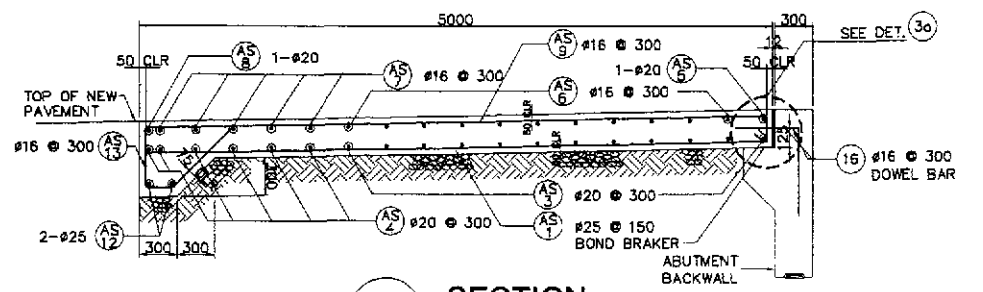
3 SECTION SCALE 1:50



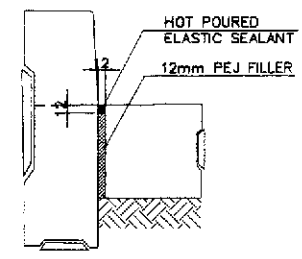
1 PLAN
SCALE 1:50



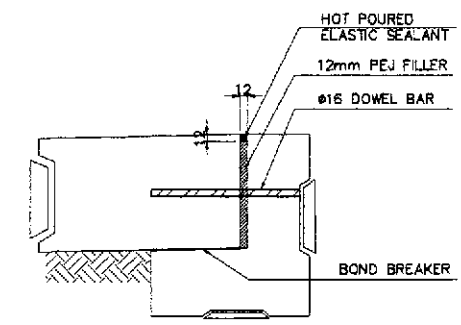
2 SECTION
SCALE 1:30



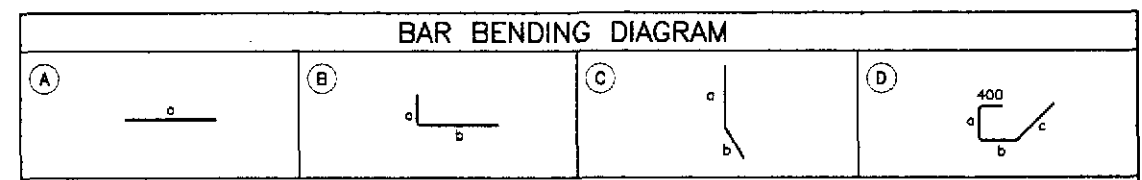
3 SECTION
SCALE 1:30



2a DETAIL
SCALE 1:10



3a DETAIL
SCALE 1:10

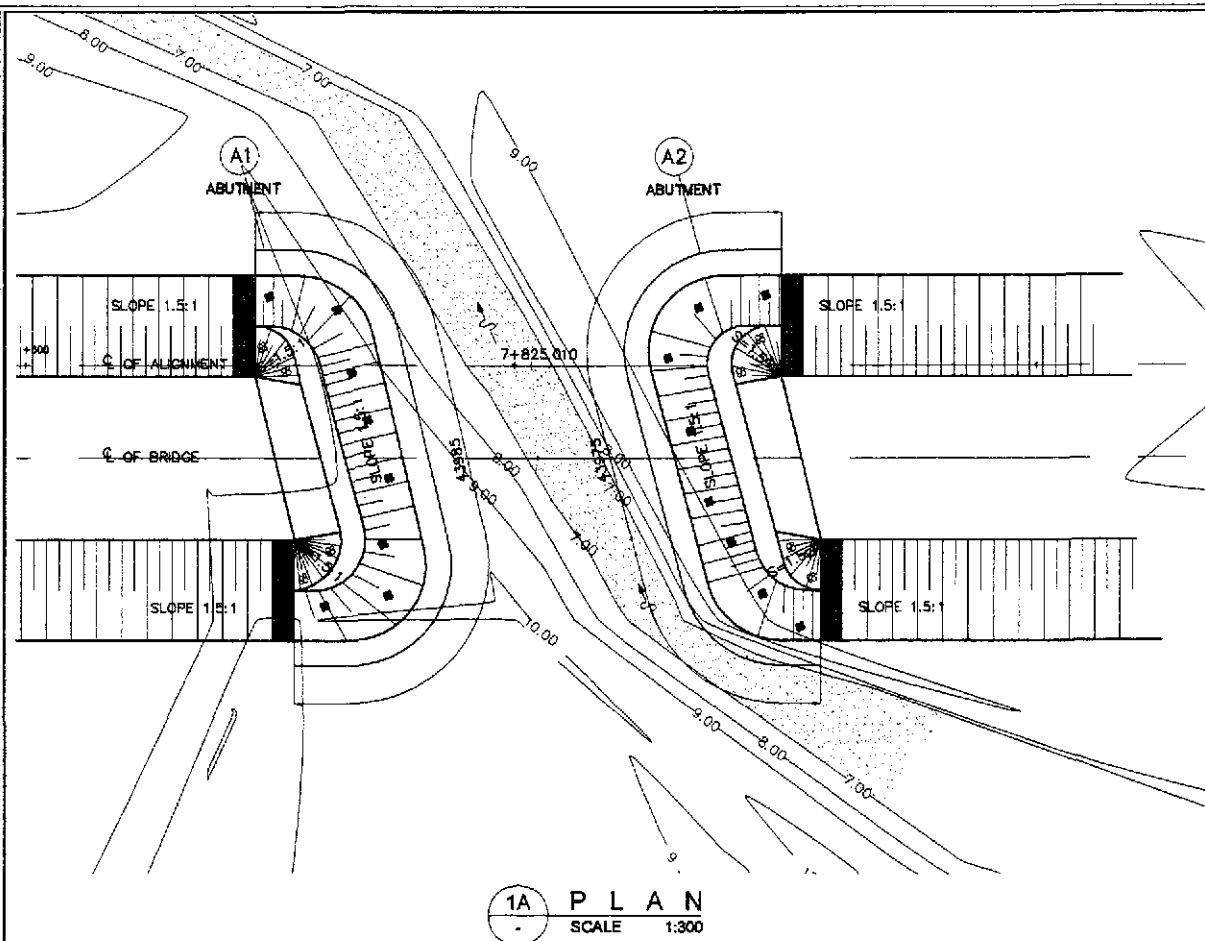


SCHEDULE OF REINFORCEMENT PER APPROACH SLAB																
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/cu.m)
							a	b	c	d	e					
APPROACH SLAB	17.88	AS1	25	68	150	B	4900	200	-	-	-	5100	346.80	3.854	1337	161.24
		AS2	25	8	150	B	3000	200	-	-	-	3200	25.60	3.854	99	
		AS3	20	12	300	A	11350	-	-	-	-	11350	136.20	2.466	336	
		AS4	20	6	300	A	12100	-	-	-	-	12100	72.60	2.466	180	
		AS5	20	1	AS SHOWN	A	10600	-	-	-	-	10600	10.60	2.466	27	
		AS6	16	11	300	A	11450	-	-	-	-	11450	125.95	1.579	199	
		AS7	16	5	300	A	12100	-	-	-	-	12100	60.50	1.579	96	
		AS8	20	1	AS SHOWN	A	12100	-	-	-	-	12100	12.10	2.466	30	
		AS9	16	34	300	B	4900	200	-	-	-	5100	173.40	1.579	274	
		AS10	25	4	AS SHOWN	C	1400	3800	-	-	-	5200	20.80	3.854	81	
		AS11	16	4	300	B	2650	200	-	-	-	2850	11.40	1.579	19	
		AS12	25	2	AS SHOWN	A	12100	-	-	-	-	12100	24.20	3.854	91	
		AS13	16	39	300	D	400	500	200	700	-	1800	70.20	1.579	111	
TOTAL	17.88															
													GRADE 40 TOTAL = 699 kgs.			
													GRADE 60 TOTAL = 2184 kgs.			

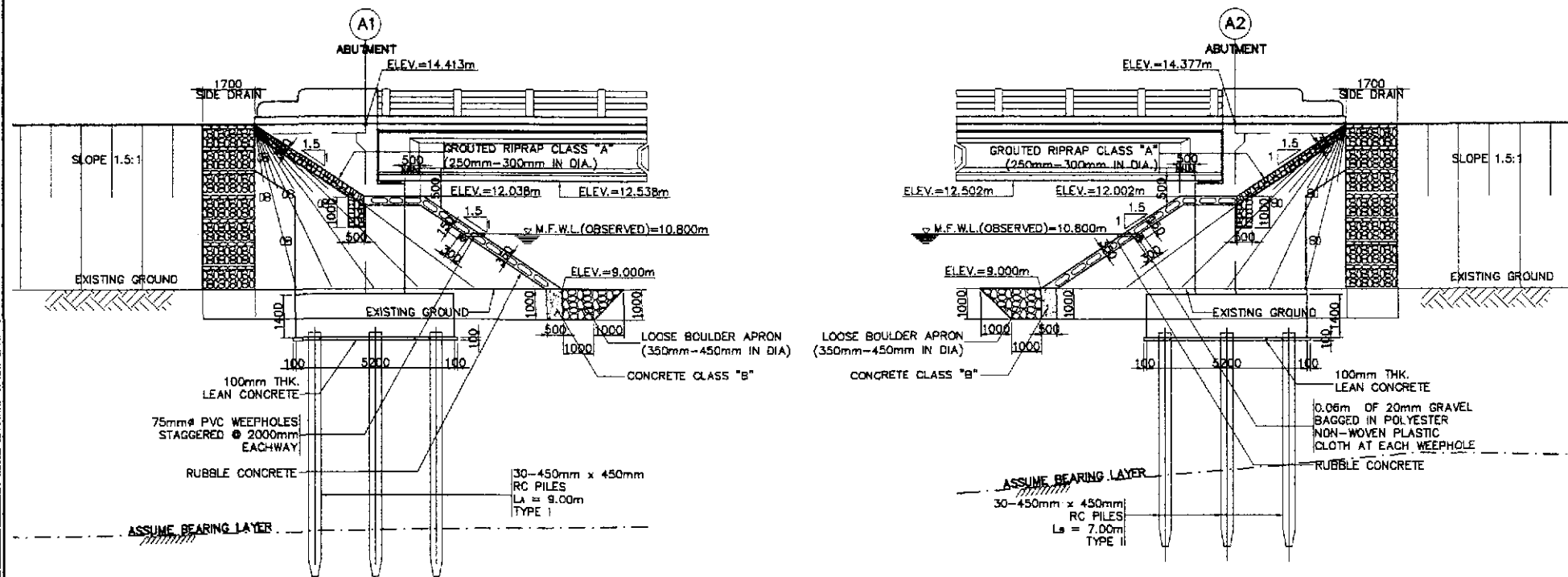
	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	9/19/02	<i>[Signature]</i>	BUREAU OF DESIGN			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 2, 5, 6 & 7 APPROACH SLAB PLAN SECTIONS AND DETAILS (INITIAL STAGE)	B2-07
	CHECKED	9/20/02	<i>[Signature]</i>	Submitted By:	Reviewed By:	Recommended By:	PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		
SUBMITTED	9/23/02	<i>[Signature]</i>	DANILO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridge Division	GILBERTO S. REYES Director IV (CIC)	MANUEL M. BONGAN Undersecretary	SIMEON A. DATUMANONG Secretary			

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. 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.
5. 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.
6. FOR THE LOOSE BOULDER APRON, BOULDERS 350-450mm 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.
7. 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.
8. NO CONCRETING UNDER WATER SHALL BE PERMITTED.
9. PROVIDE 1.0 m. BERM WHEN HEIGHT (H) IS > 4.0 m.

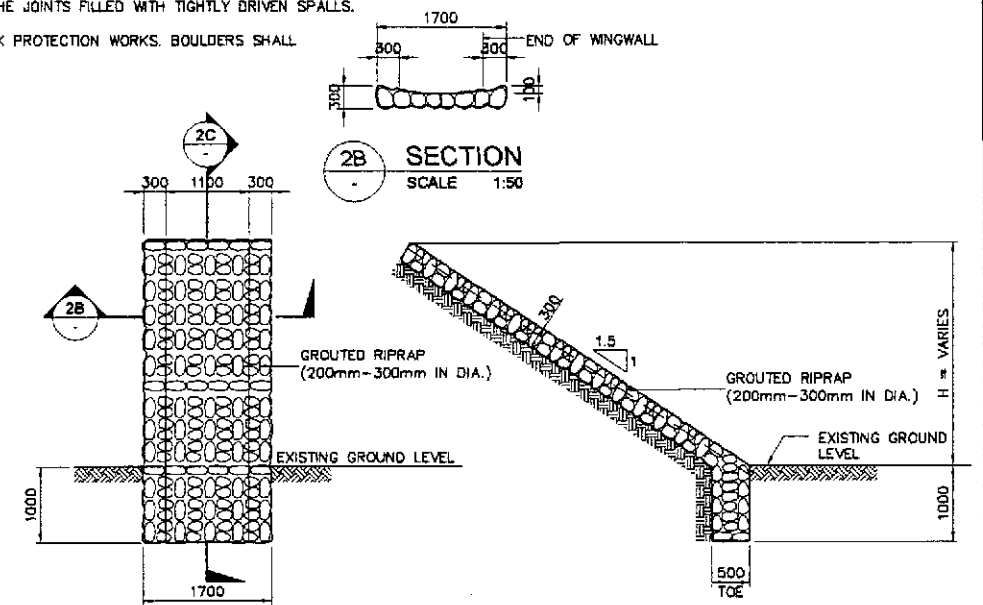


1A PLAN
SCALE 1:300



1B ELEVATION
SCALE 1:100

1 ABUTMENT SLOPE PROTECTION
SCALE AS SHOWN



2A ELEVATION
SCALE 1:50

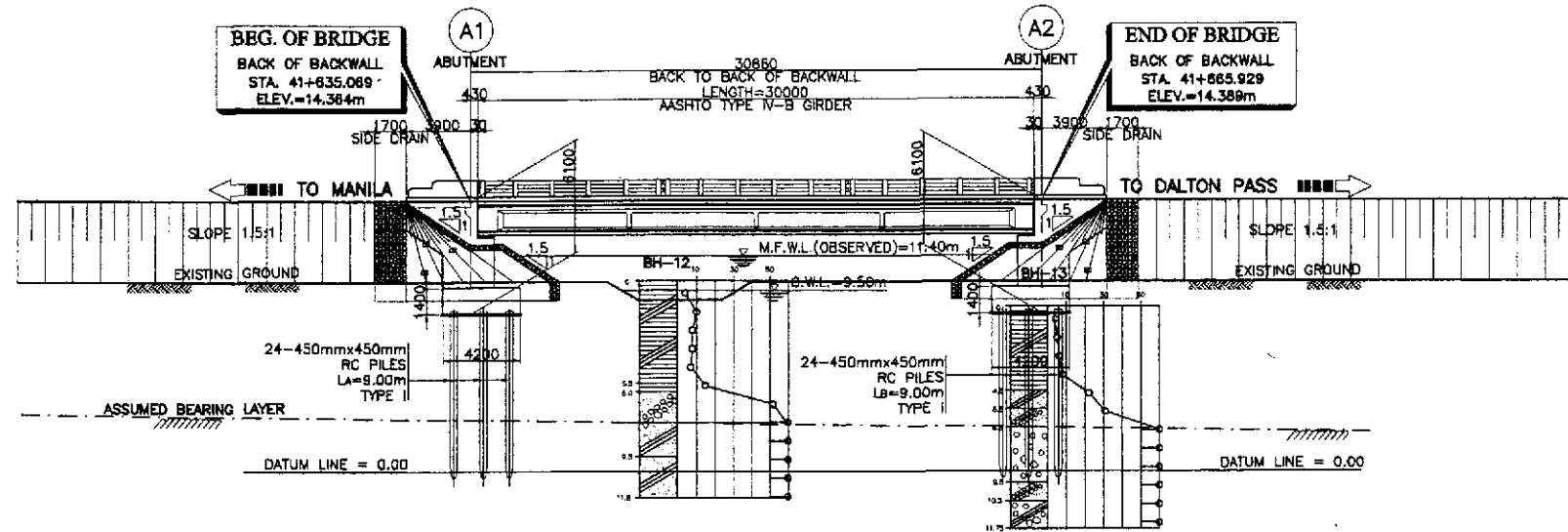
2C SECTION
SCALE 1:50

2 TYPICAL SIDE DRAIN DETAIL
SCALE AS SHOWN

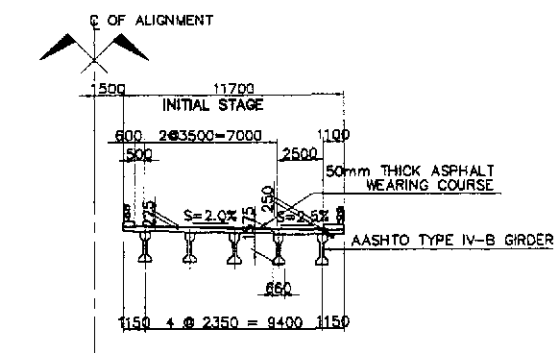
VELOCITY (m/sec)	ROCK SIZE (mm)	
	VERY TURBULENT FLOW	SMOOTH FLOW
1.00	40	-
1.50	135	-
2.00	170	-
2.50	255	137
3.00	370	197
3.50	515	270
4.00	690	350
4.50	825	425
5.00	>900	590

LOCATION	SIZES	QUANTITY	
		ABUT. A1	ABUT. A2
CONC. CLASS "B"	1000 x 500 x LENGTH	20.10 cu. m.	19.99 cu. m.
BOULDER APRON	350mm-450mm IN DIA.	60.31 cu. m.	59.96 cu. m.
RUBBLE CONCRETE	250mm-300mm IN DIA.	66.42 cu. m.	64.97 cu. m.
SIDE DRAIN	200mm-300mm IN DIA.	11.50 cu. m.	11.50 cu. m.
GROUTED RIPRAP	250mm-300mm IN DIA.	15.78 cu. m.	15.78 cu. m.

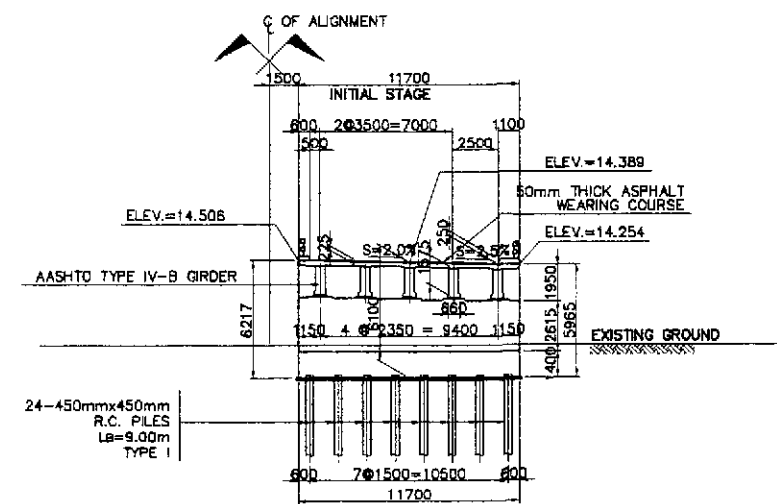
	DESIGNED	9/18/02	A.P. GONZALES		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II	SCALE :	AS SHOWN	SHEET CONTENTS : BRIDGE NO. 2 ABUTMENT PROTECTION AND SIDE DRAIN DETAILS (INITIAL STAGE)	SHEET NO. :	B2-09
	CHECKED	9/20/02	M. B. B. B.		Submitted By:	Reviewed By:	Recommended By:		Approved By:	FULL SIZE A1			
	SUBMITTED	9/23/02	M. B. B. B.		DANILO C. TRAJANO Project Director	PERFECTO L. ZAPLAN JR. Chief, Hydrolica Division (HC)	GILBERTO S. REYES Director IV (GIC)		MANUEL M. BONOAN Undersecretary	SIMEON A. DATUMANONG Secretary			



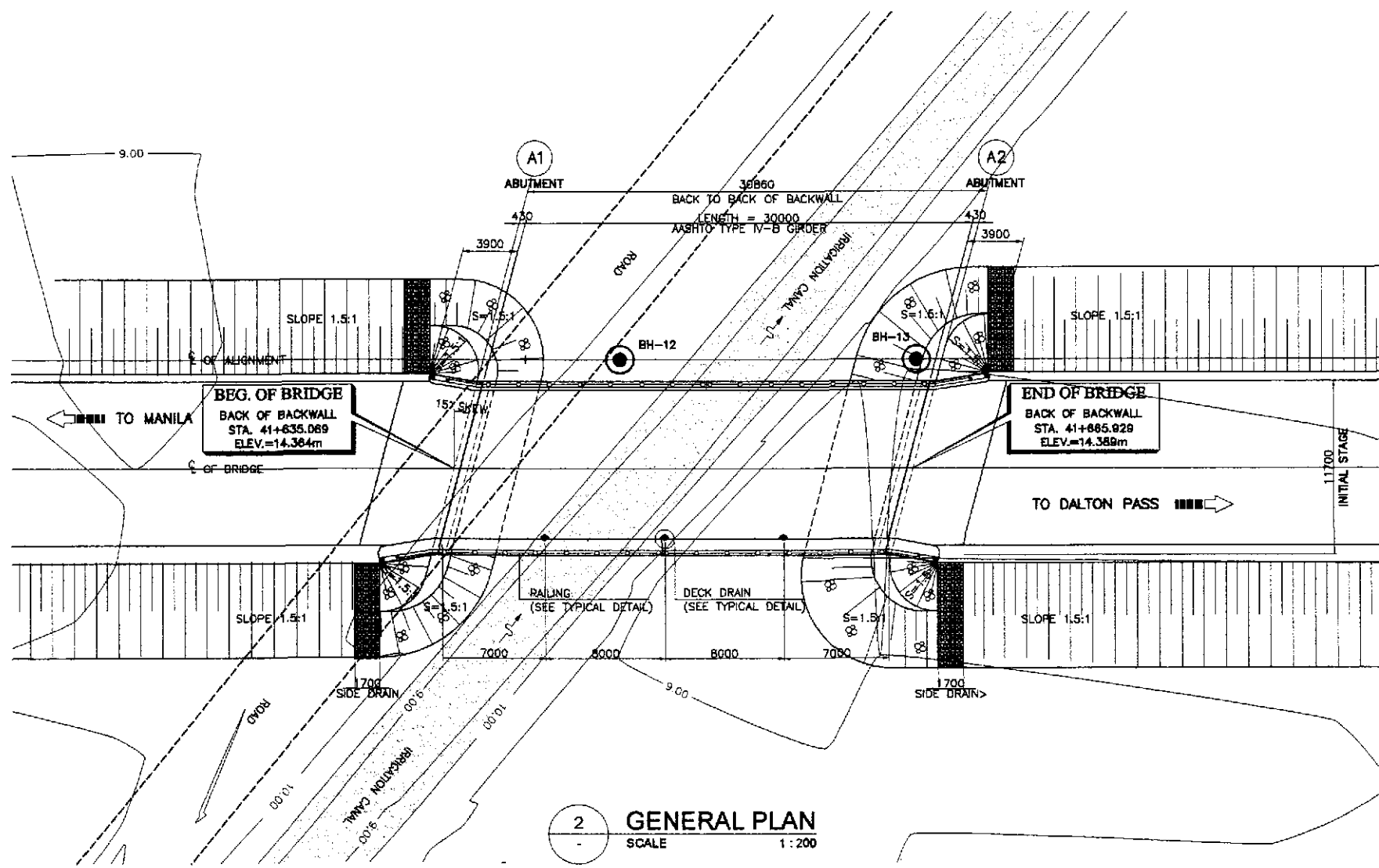
1 GENERAL ELEVATION
SCALE 1:200



3 SECTION @ MIDSPAN
SCALE 1:200



4 SECTION @ ABUTMENT A2
SCALE 1:200



2 GENERAL PLAN
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.

A PLARIDEL BYPASS BRIDGE NO. 3 (STA. 41+635.069)
SCALE AS SHOWN

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

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

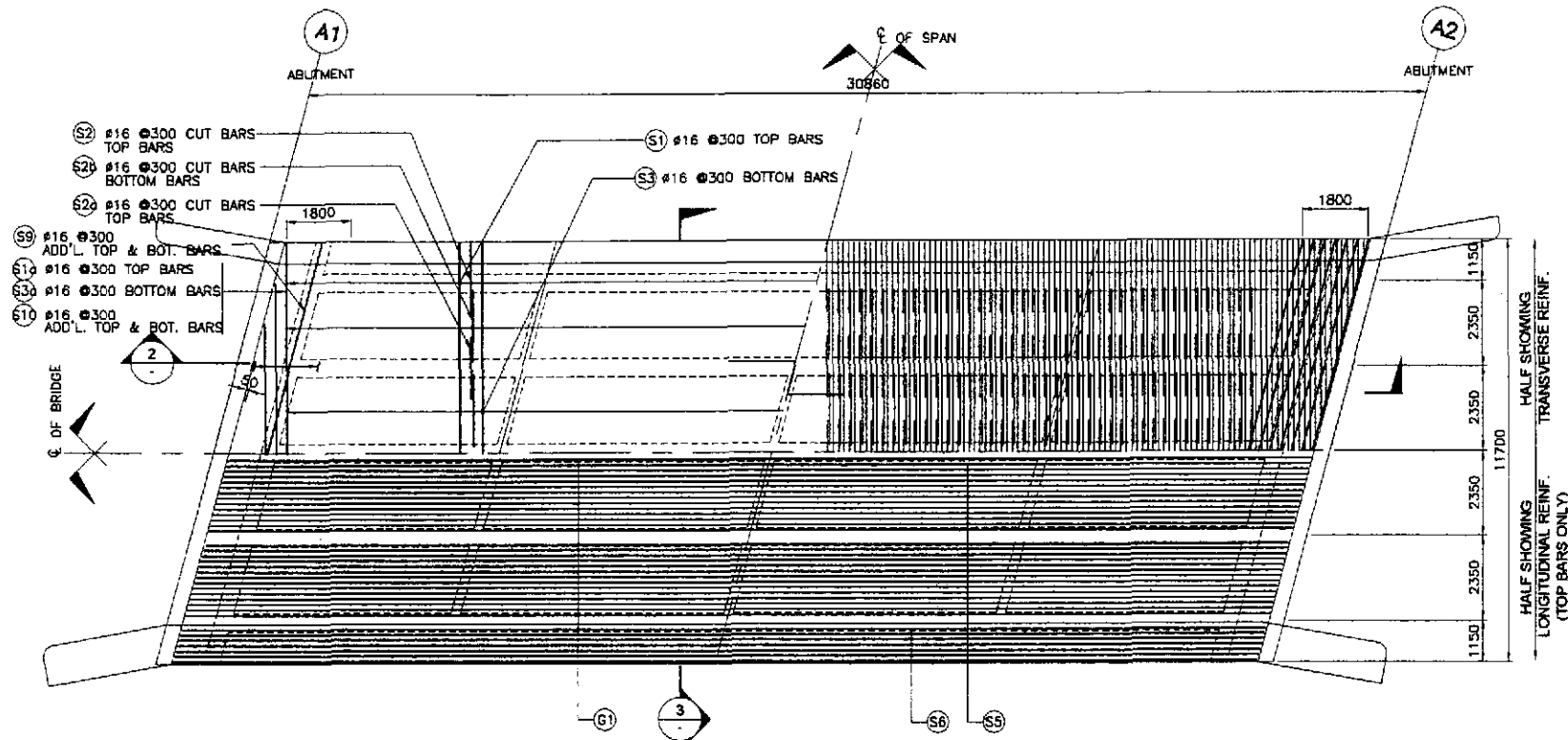
KATAHIRA & ENGINEERS
KATAHIRA & ENGINEERS INTERNATIONAL

YEO YACHYO ENGINEERING CO., LTD.

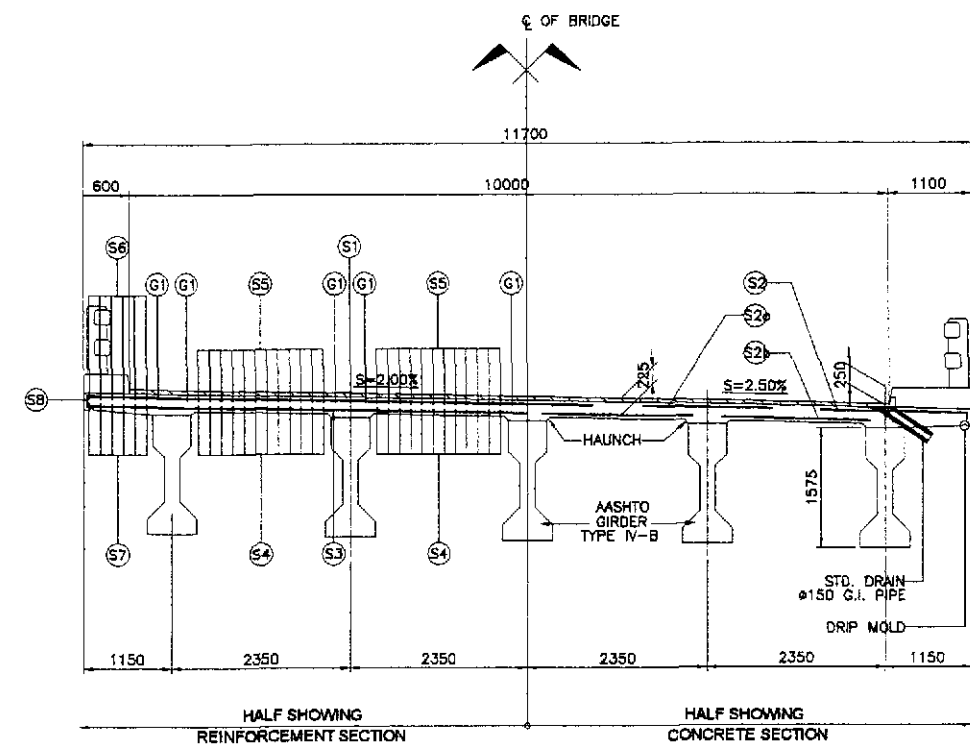
DATE	SIGNATURE	REMARKS
9/10/01	<i>[Signature]</i>	DESIGNED
9/20/01	<i>[Signature]</i>	CHECKED
9/22/01	<i>[Signature]</i>	SUBMITTED

Submitted By:	Reviewed 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

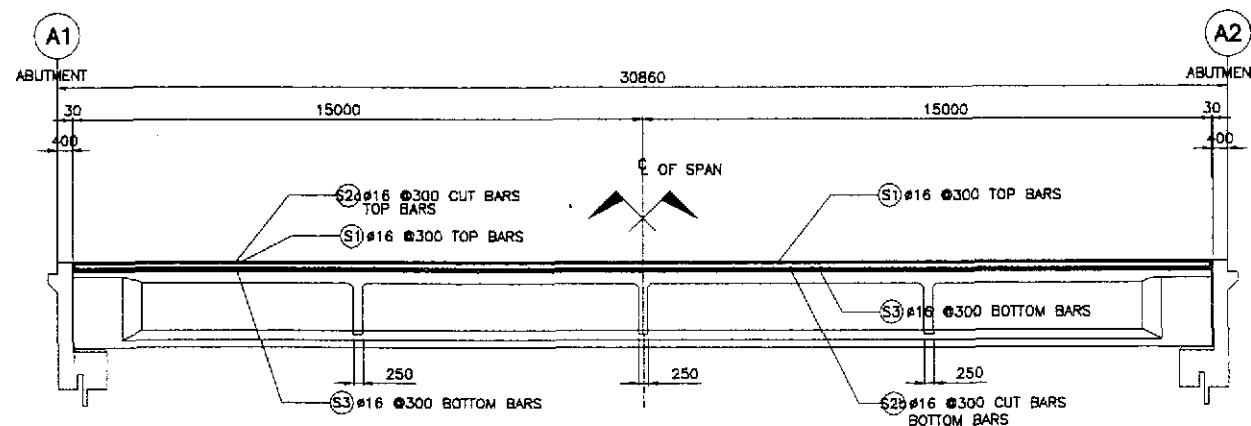
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	1:200	BRIDGE NO. 3 GENERAL PLAN, ELEVATION AND SECTIONS (INITIAL STAGE)	B3-01
PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		



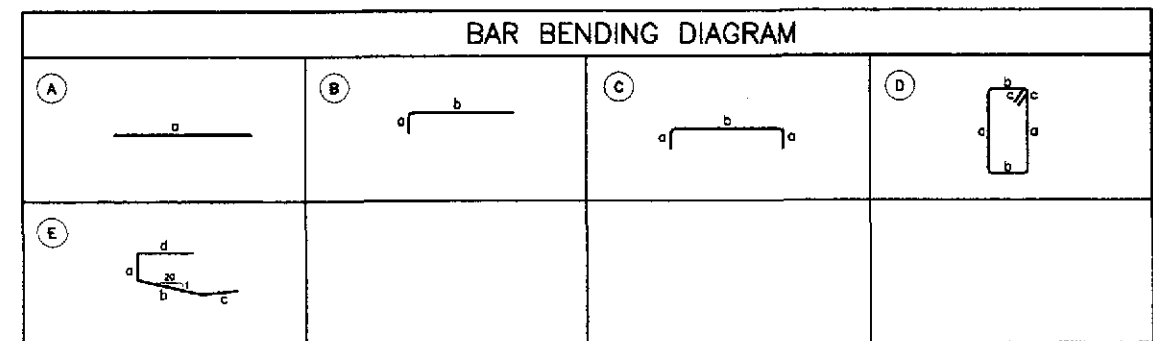
1 FRAMING PLAN
SCALE 1:100



3 TYPICAL CROSS-SECTION
SCALE 1:50



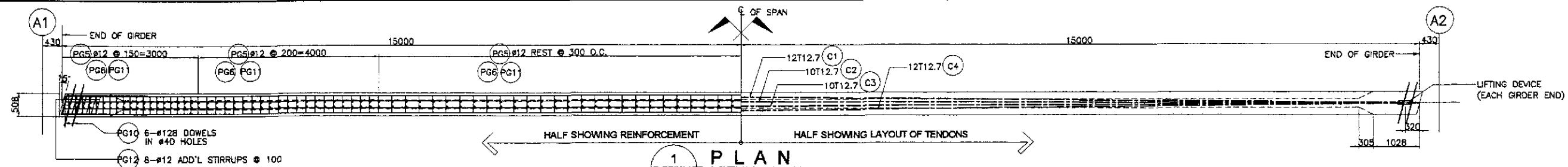
2 LONGITUDINAL SECTION
SCALE 1:100



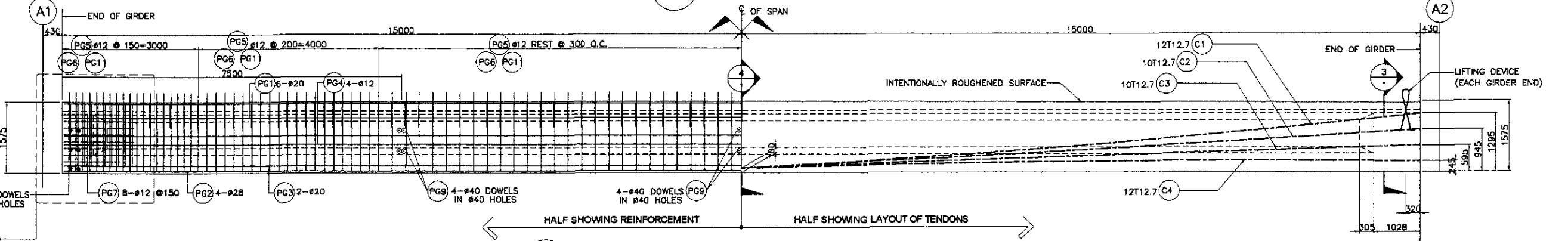
ESTIMATED QUANTITIES OF SUPERSTRUCTURE			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
404(1)a	REINFORCING STEEL GRADE 40	kg.	24055
	DECK SLAB	13603	
	DIAPHRAGM	482	
	GIRDER	5780	
	SIDEWALK, RAILING, & POST	2798	
	APPROACH SLAB	1402	
404(1)b	REINFORCING STEEL GRADE 60	kg.	13454
	DECK SLAB	0	
	DIAPHRAGM	1451	
	GIRDER	7085	
	SIDEWALK, RAILING, & POST	590	
	APPROACH SLAB	4328	
405(1)	STRUCTURAL CONCRETE	cu. m.	247
	DECK SLAB	83.16	
	DIAPHRAGM	15.24	
	GIRDER	93.04	
	SIDEWALK, RAILING, & POST	19.80	
	APPROACH SLAB	35.42	

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	83.16	G1	16	10	AS SHOWN	(A)	29900	-	-	-	29900	299.00	1.579	473	163.58	
		S1	16	90	300	(C)	145	11600	145	-	-	11890	1070.10	1.579		1690
		S1a	16	22	300	(C)	145	6400	145	-	-	6690	147.18	1.579		233
		S2	16	182	300	(B)	145	2000	-	-	-	2145	390.39	1.579		617
		S2a	16	273	300	(A)	1700	-	-	-	-	1700	464.10	1.579		733
		S2b	16	364	300	(A)	1950	-	-	-	-	1950	709.80	1.579		1121
		S3	16	90	300	(A)	11600	-	-	-	-	11600	1044.00	1.579		1649
		S3a	16	22	300	(A)	6400	-	-	-	-	6400	140.80	1.579		223
		S4	16	48	150	(A)	28900	-	-	-	-	28900	1435.20	1.579		2267
		S5	16	48	150	(A)	28900	-	-	-	-	28900	1435.20	1.579		2267
		S6	16	12	AS SHOWN	(A)	28900	-	-	-	-	28900	358.80	1.579		567
		S7	16	12	AS SHOWN	(A)	28900	-	-	-	-	28900	358.80	1.579		567
		S8	12	134	450	(E)	145	900	500	300	1845	247.23	0.888	220		
		S9	16	28	300	(A)	12000	-	-	-	-	12000	336.00	1.579		531
S10	16	44	300	(A)	6400	-	-	-	-	6400	281.60	1.579	445			
TOTAL	83.16													GRADE 40 TOTAL = 13,803 kg		

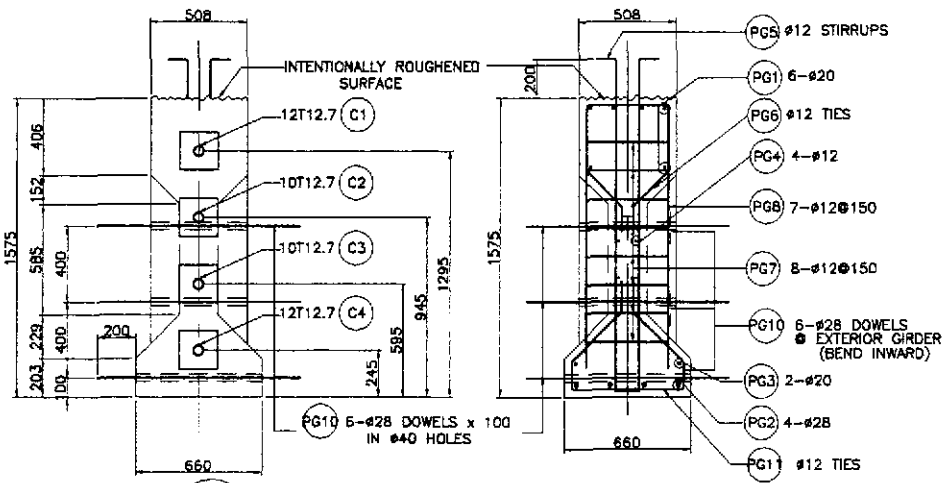
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	9/20/02	<i>E. N. SALLAN</i>		BUREAU OF DESIGN	OFFICE OF THE SECRETARY				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 3 DECK FRAMING PLAN AND SECTION (INITIAL STAGE)	B3-02
	SUBMITTED	9/23/02	<i>Manuel M. Bondan</i>		Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: ADRIANO M. DORCOY Chief, Bridges Division	Recommended By: GILBERTO S. REYES Director IV (D/C)	Approved By: MANUEL M. BONDAN Undersecretary	Approved By: SIMEON A. DATUNANDING Secretary	FULL SIZE A1			



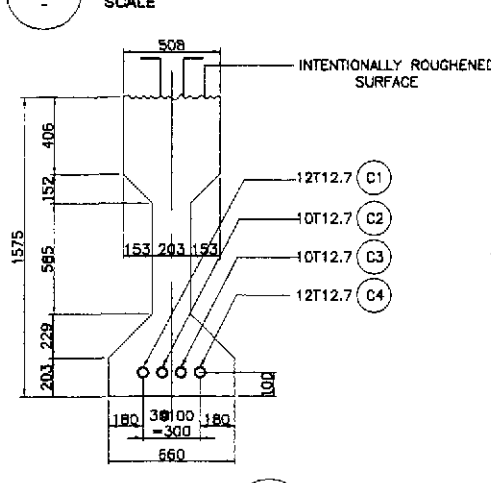
1 PLAN
SCALE 1:50



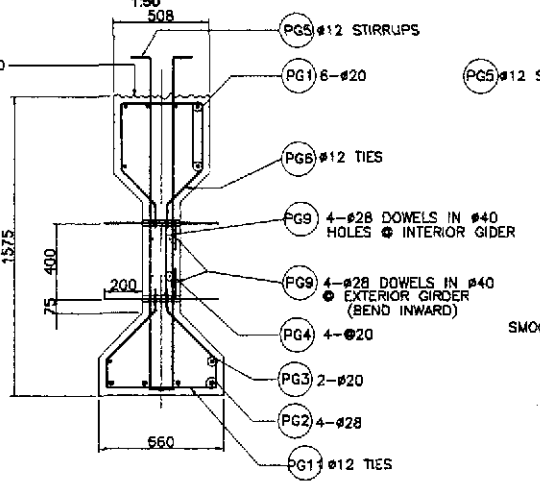
2 PRESTRESSED GIRDER ELEVATION
SCALE 1:50



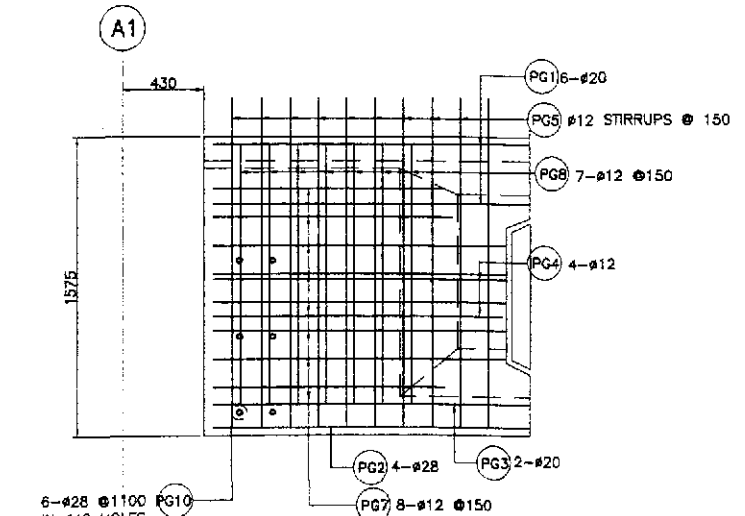
3 SECTION @ END
SCALE 1:20



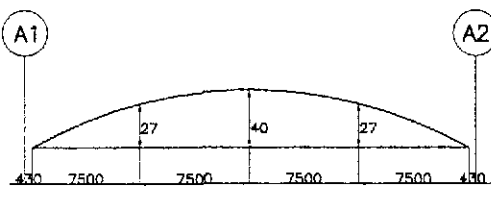
4 SECTION @ MIDSPAN
SCALE 1:20



5 DOWELS @ END BLOCK
SCALE 1:20

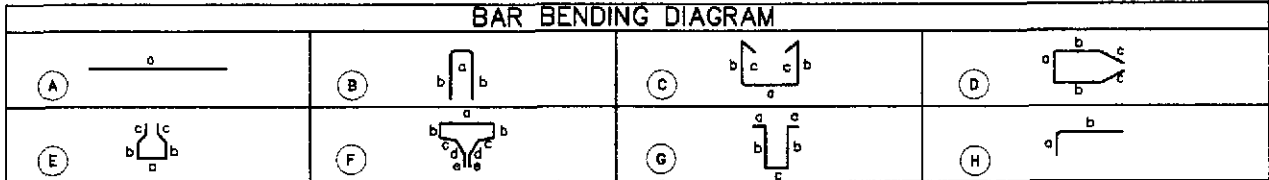


6 END BLOCK REINF. DETAIL
SCALE 1:20



7 CAMBER DIAGRAM
SCALE 1:20

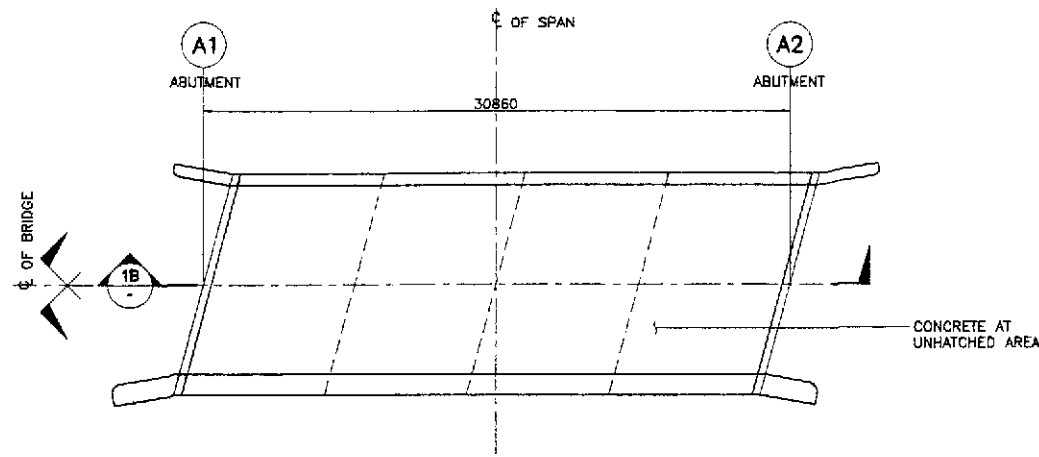
- NOTES :
- 1.) SEE GENERAL NOTES, -2, FOR GIRDER DESIGN GUIDE.
 - 2.) JACKING FORCE PER GIRDER, P_j = 6058 KN.
 - 3.) JACKING WILL BE DONE AT BOTH ENDS.
 - 4.) FINAL PRESTRESSING FORCE @ MIDSPAN, F_{NET} = 4649 KN.



STRUCTURE COMPONENT	BAR MARK	SIZE (mm)	QTY.	SPACING	BAR SHAPE	DIMENSION (mm)					LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONC. VOLUME (cu.m)	REBAR RATIO (kg/cu.m)	REMARKS
						a	b	c	d	e							
GIRDER	PG1	20	6	AS SHOWN	(A)	29920	-	-	-	-	29920	179.52	2.466	44.3			QUANTITIES ARE FOR ONE (1) GIRDER ONLY
	PG2	28	4	AS SHOWN	(A)	29920	-	-	-	-	29920	119.68	4.833	579			
	PG3	28	2	AS SHOWN	(A)	29920	-	-	-	-	29920	59.84	4.833	280			
	PG4	12	4	AS SHOWN	(A)	29920	-	-	-	-	29920	119.68	0.888	107			
	PG5	12	134	150	(G)	100	1750	103	-	-	3803	509.60	0.888	453	18.61	138.28	
	PG6	12	134	150	(E)	425	350	260	150	-	1945	260.63	0.888	232			
	PG7	12	16	150	(D)	425	1000	350	-	-	3125	50.00	0.888	45			
	PG8	12	14	150	(C)	425	1430	150	-	-	3585	50.19	0.888	45			
	PG9	28	12	AS SHOWN	(A)	603	-	-	-	-	603	7.24	4.833	35			
	PG10	28	12	AS SHOWN	(A)	1200	-	-	-	-	1200	14.40	4.833	70			
	PG11	12	134	150	(E)	580	150	360	150	-	1900	254.60	0.888	227			
	PG12	12	16	100	(B)	425	1430	-	-	-	3285	52.56	0.888	47			

GRADE 40 TOTAL = 1,156 kgs.
GRADE 80 TOTAL = 1,417 kgs.

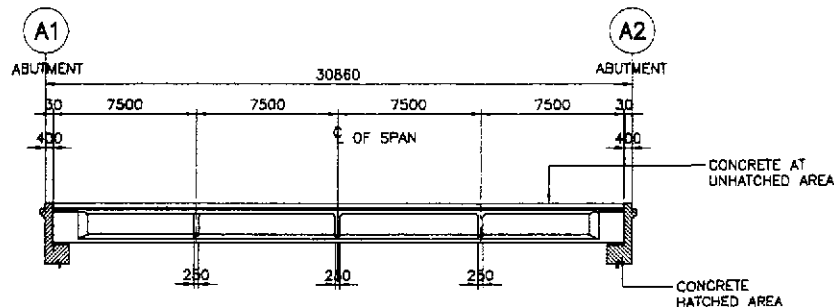
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/20/02	<i>E.N. SALLAN</i>		BUREAU OF DESIGN	OFFICE OF THE SECRETARY	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Flaridel, Cabanatuan and San Jose Bypasses)		AS SHOWN	BRIDGE NO. 3 AASHTO TYPE IV-B GIRDER (INITIAL STAGE)		B3-03
SUBMITTED	9/23/02	<i>Mr. Rando</i>	Project Director	Chief, Bridges Division	Director, N (GIC)	Undersecretary	Secretary	FULL SIZE A1				



1A PLAN
SCALE 1:200

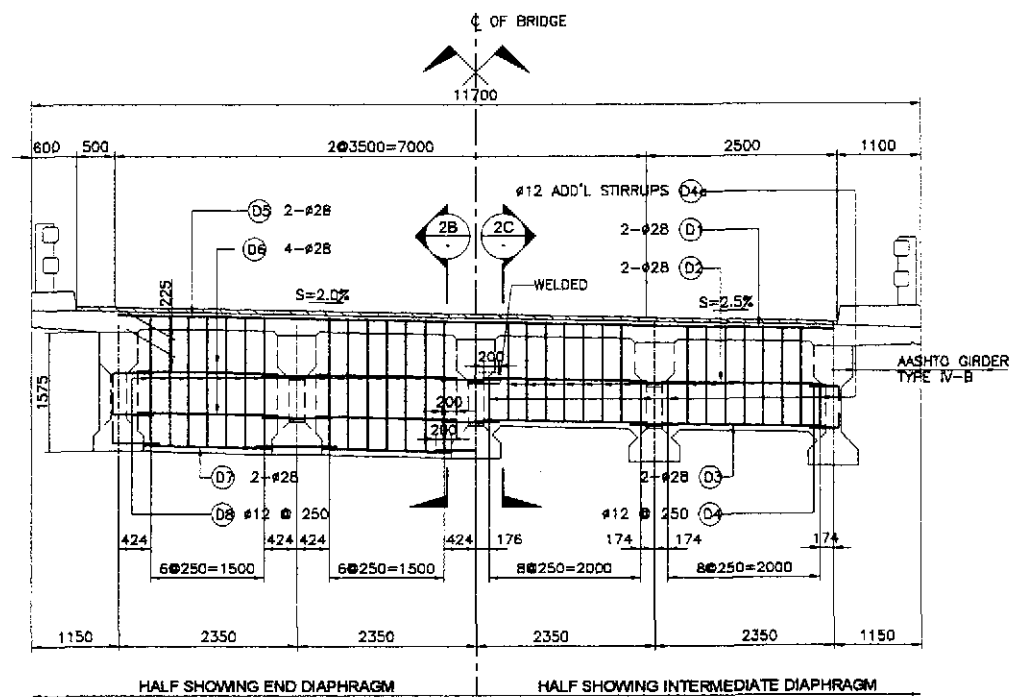
NOTES:

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 DETAILS FOR SPACING OF #28 DOWELS.

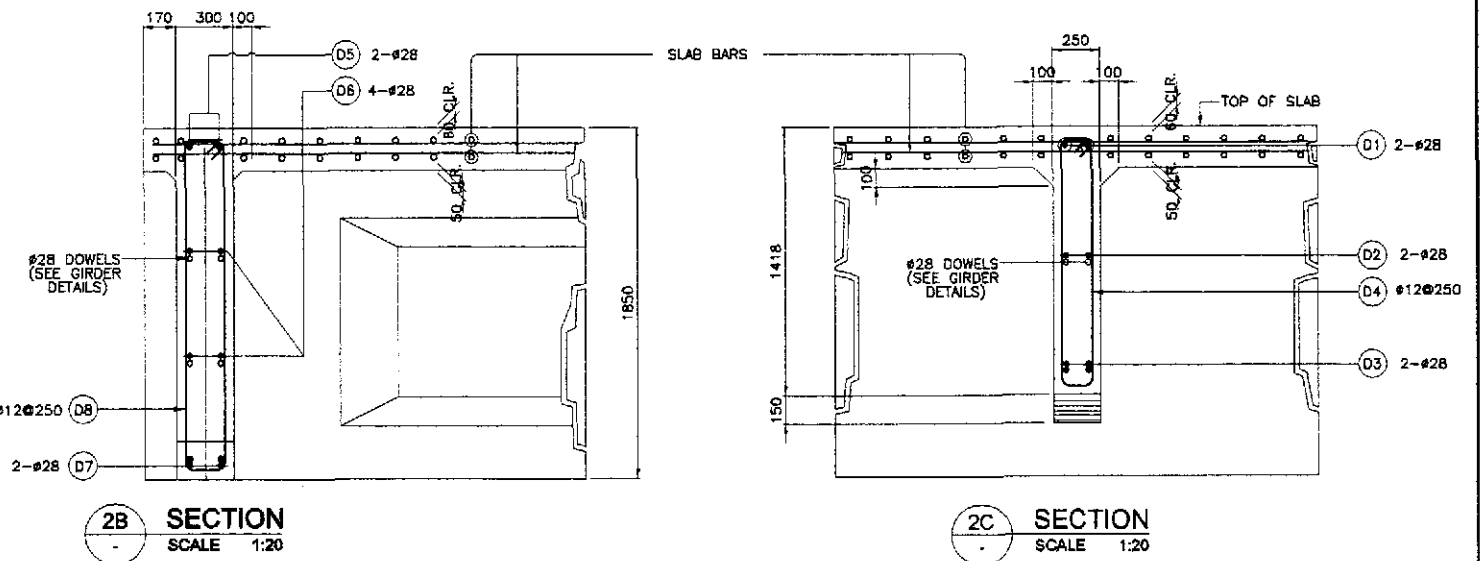


1B LONGITUDINAL SECTION
SCALE 1:200

1 CONCRETE POURING SEQUENCE
SCALE 1:200



2A ELEVATION
SCALE 1:25



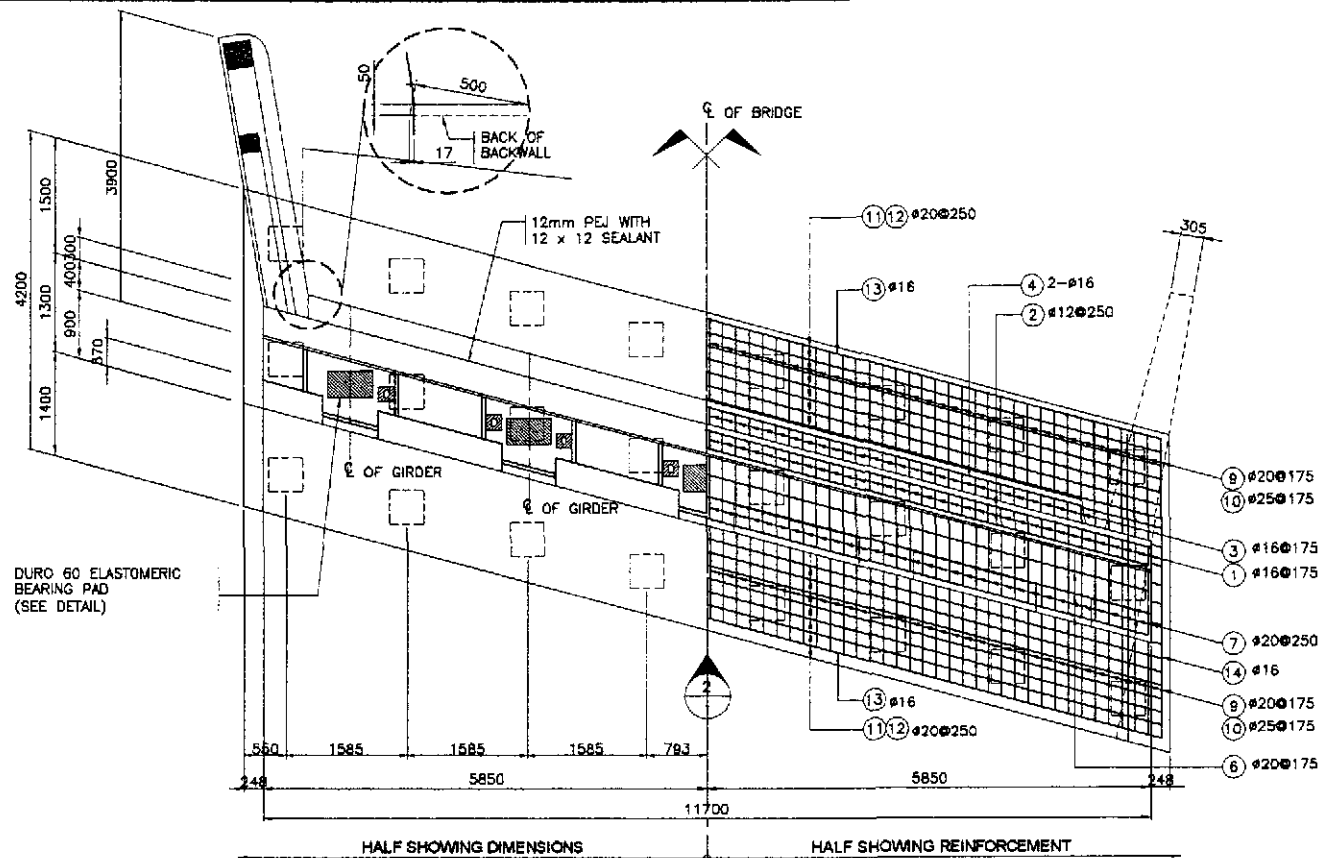
2B SECTION
SCALE 1:20

2C SECTION
SCALE 1:20

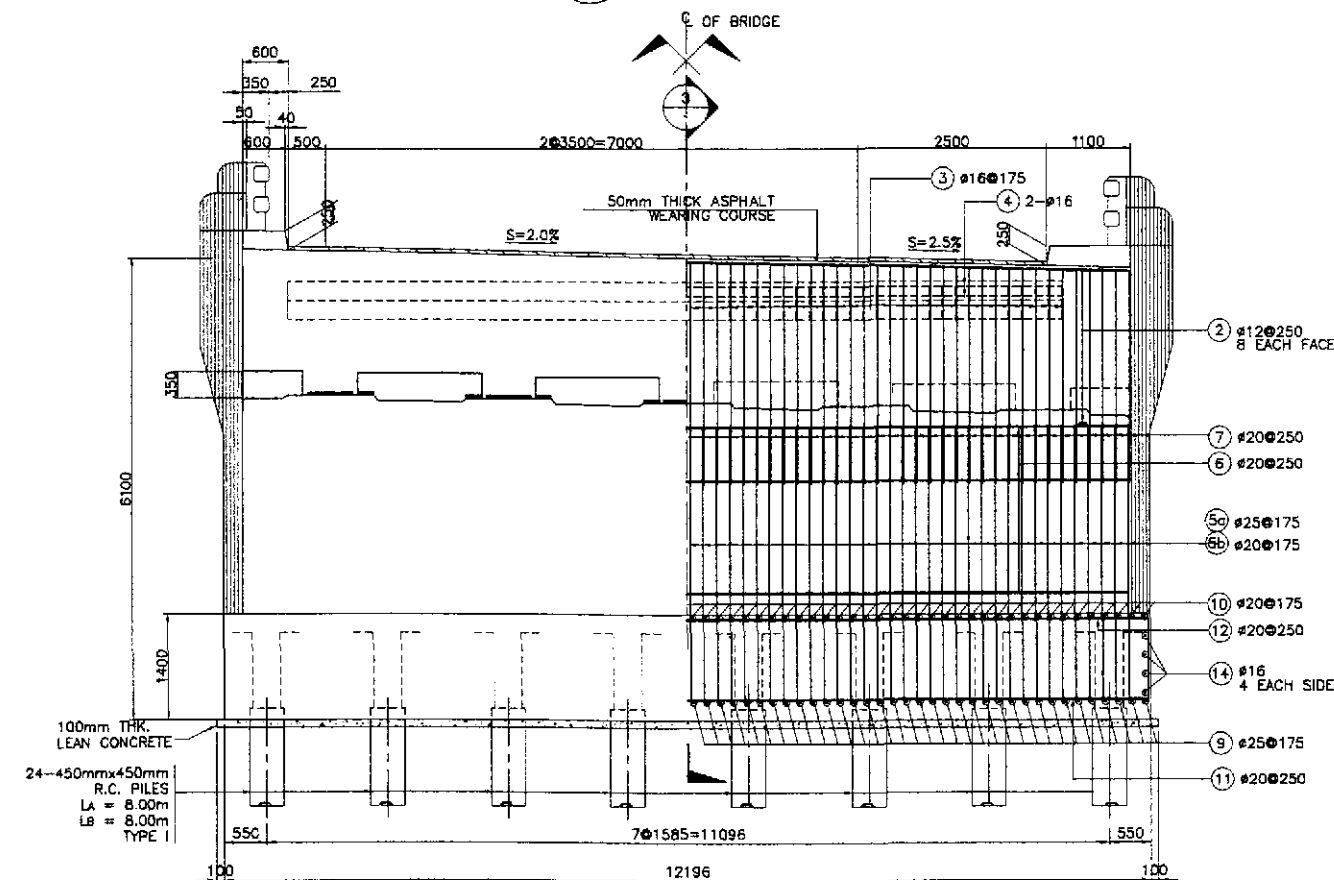
2 END & INTERMEDIATE DIAPHRAGM DETAIL
SCALE AS SHOWN

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	8.65	D1	2B	6	AS SHOWN	A	9400				9400	56.40	4.833	273	121.27	TOP BARS
			D2	2B	24	AS SHOWN	A	2145				2145	51.48	4.833	249		DIST. BARS
			D3	2B	24	AS SHOWN	A	2145				2145	51.48	4.833	249		BOTT. BARS
			D4	12	84	250	B	150	300 (eve)	150		3200	268.80	0.888	239		STIRRUPS
	END DIAPHRAGM	6.59	D5	2B	4	AS SHOWN	A	9400				9400	37.60	4.833	182		TOP BARS
			D6	2B	32	AS SHOWN	A	2145				2145	68.64	4.833	332		DIST. BARS
			D7	2B	16	AS SHOWN	A	2145				2145	34.32	4.833	166		BOTT. BARS
			D8	12	56	250	B	200	1700 (eve)	150		4100	229.60	0.888	204		STIRRUPS
TOTAL		15.24												GRADE 60 TOTAL = 1451 kgs	GRADE 40 TOTAL = 482 kgs		

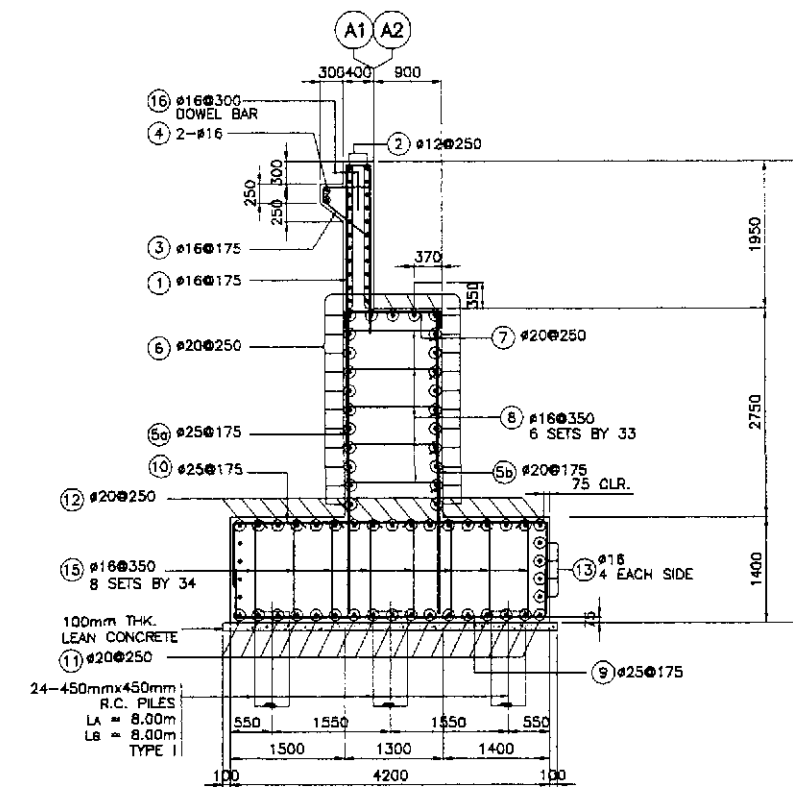
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/20/02	E. N. SALLAN		BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)			AS SHOWN	BRIDGE NO. 3 CONC. POURING SEQUENCE AND DIAPHRAGM DETAIL (INITIAL STAGE)	B3-04
	SUBMITTED	9/23/02	M. B. BONDAN		Submitted By:	Reviewed By:	Recommended By:	Approved By:	PLARIDEL BYPASS - CONTRACT PACKAGE II			FULL SIZE A1		



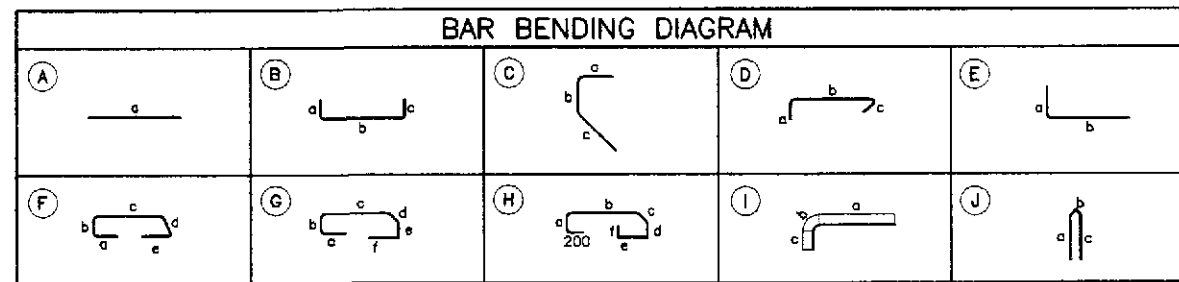
1 PLAN
SCALE 1:50



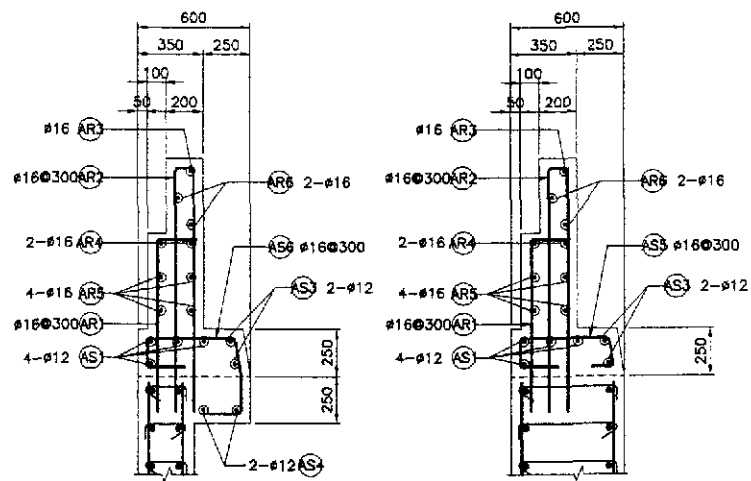
2 ELEVATION
SCALE 1:50



3 SECTION
SCALE 1:50

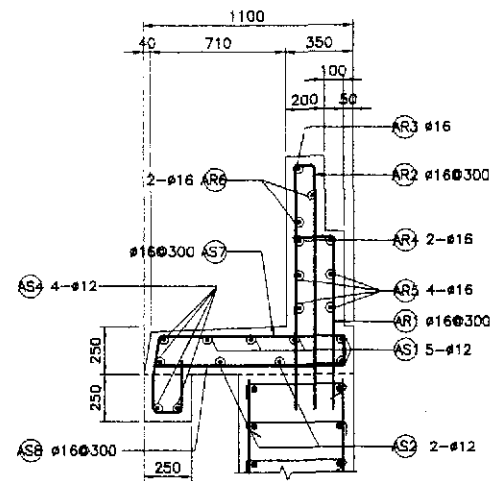


SCHEDULE OF REINFORCEMENT PER ABUTMENT																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT						LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d	e	f					
BACKWALL	10.25	1	16	68	175	(B)	2100	300	2100	-	-	-	4500	306.00	1.579	484	80.58
		2	12	16	250	(A)	12000	-	-	-	-	-	12000	192.00	0.888	171	
		3	16	58	175	(C)	600	150	750	-	-	-	1500	87.00	1.579	138	
		4	16	2	AS SHOWN	(A)	10250	-	-	-	-	-	10250	20.50	1.579	33	
MAINWALL	41.83	5a	25	68	175	(E)	400	4100	-	-	-	4500	306.00	3.854	1180	82.91	
		5b	20	68	175	(E)	400	4100	-	-	-	4500	306.00	2.466	785		
		6	20	27	250	(A)	12000	-	-	-	-	-	12000	324.00	2.466		799
		7	20	48	250	(B)	250	1200	250	-	-	-	1700	81.60	2.466		202
		8	16	198	350	(D)	250	1200	250	-	-	-	1700	336.60	1.579		532
		9	25	70	175	(B)	700	4050	700	-	-	-	5450	381.50	3.854		1471
FOOTING	71.71	10	25	70	175	(B)	700	4050	700	2700	800	5450	381.50	3.854	1471	70.67	
		11	20	17	250	(B)	700	12475	700	-	-	-	13875	235.88	2.466		582
		12	20	17	250	(B)	700	12475	700	-	-	-	13875	235.88	2.466		582
		13	16	8	AS SHOWN	(A)	12475	-	-	-	-	-	12475	98.40	1.579		153
		14	16	8	AS SHOWN	(A)	4050	-	-	-	-	-	4050	32.40	1.579		52
		15	16	272	350	(D)	250	1250	250	-	-	-	1750	476.00	1.579		752
DOWEL		16	16	34	300	(E)	650	500	-	-	-	1150	78.20	1.579	124		
TOTAL	123.79																GRADE 40 TOTAL = 2,382 kgs. GRADE 60 TOTAL = 7,042 kgs.

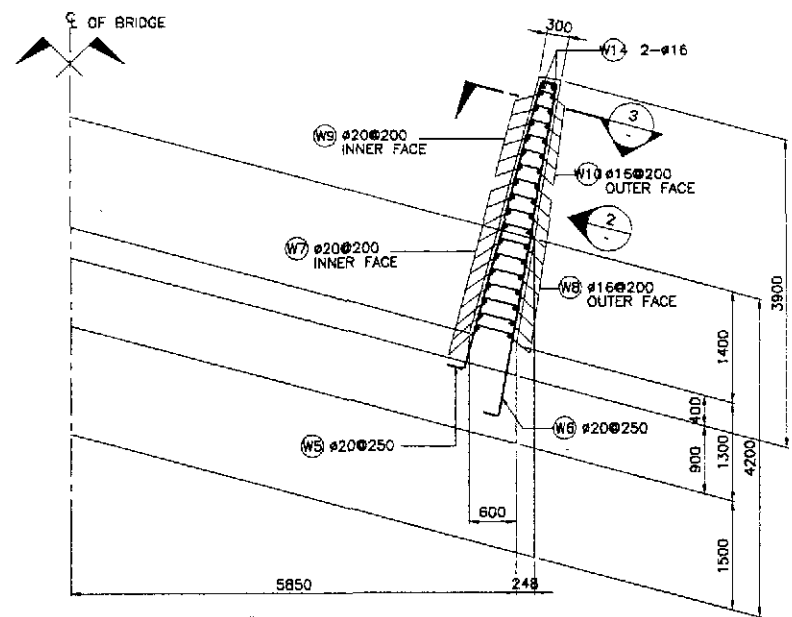


5A SECTION SCALE 1:20

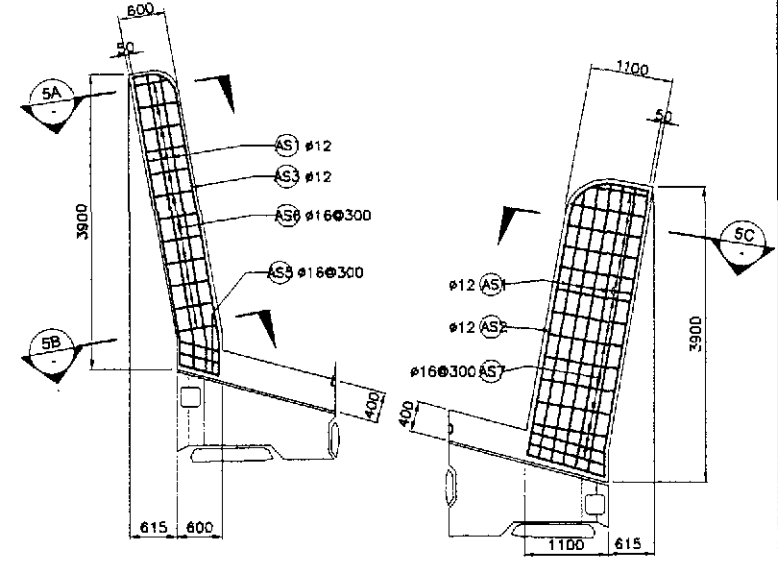
5B SECTION SCALE 1:20



5C SECTION SCALE 1:20

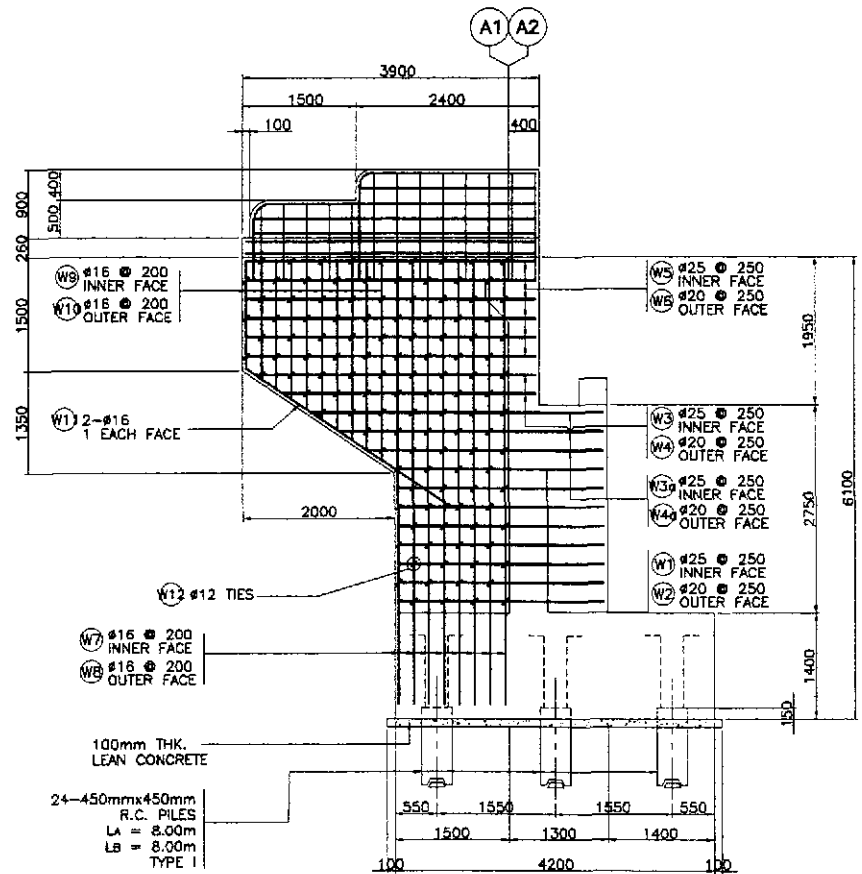


1 PLAN SCALE 1:50

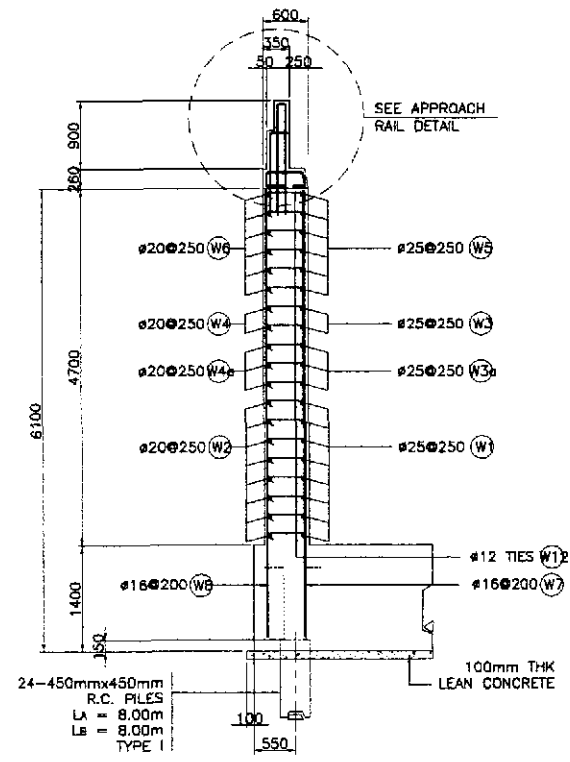


4 SIDEWALK DETAIL SCALE 1:50

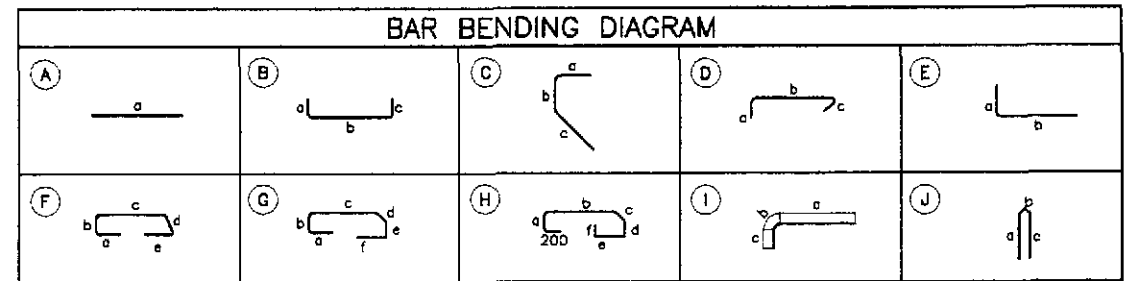
5 APPROACH RAIL DETAILS SCALE 1:20



2 WINGWALL ELEVATION SCALE 1:50



3 SECTION SCALE 1:50



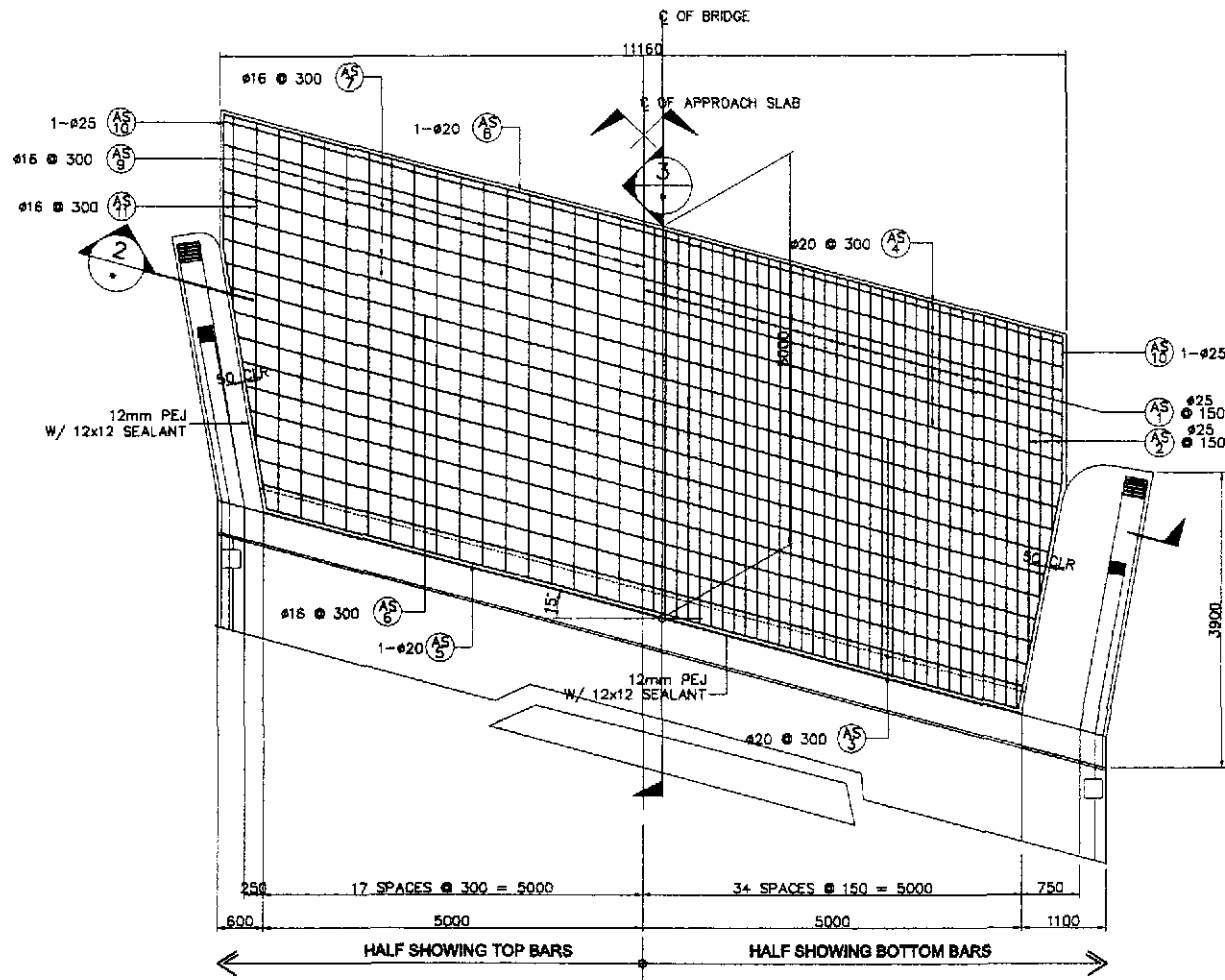
SCHEDULE OF REINFORCEMENT PER ABUTMENT																			
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)			
							a	b	c	d	e						f		
WINGWALL	10.26	W1	25	16	250	(B)	400	2700	150	-	-	-	3250	52.00	3.854	201	152.34		
		W2	20	16	250	(B)	400	2700	150	-	-	-	3250	52.00	2.466	129			
		W3	25	4	250	(B)	400	3500	150	-	-	-	4050	16.20	3.854	63			
		W3A	25	6	250	(B)	400	3500	150	-	-	-	4050	24.30	3.854	94			
		W4	20	4	250	(B)	400	3500	150	-	-	-	4050	16.20	2.466	40			
		W4A	20	6	250	(B)	400	3500	150	-	-	-	4050	24.30	2.466	60			
		W5	25	12	250	(B)	400	3800	150	-	-	-	4350	52.20	3.854	202			
		W6	20	12	250	(B)	400	3800	150	-	-	-	4350	52.20	2.466	129			
		W7	16	16	200	(E)	250	5900	-	-	-	-	6150	98.40	1.579	156			
		W8	16	16	200	(E)	250	5900	-	-	-	-	6150	98.40	1.579	156			
		W9	16	18	200	(E)	250	2100	-	-	-	-	2350	42.30	1.579	67			
		W10	16	18	200	(E)	250	2100	-	-	-	-	2350	42.30	1.579	67			
W11	16	4	AS SHOWN	(C)	250	1500	3300	-	-	-	5050	20.20	1.579	32					
W12	12	238	AS SHOWN	(D)	170	450	170	-	-	-	790	188.02	0.888	167					
														GRADE 60 TOTAL = 918 kgs.		GRADE 40 TOTAL = 645 kgs.			
APPROACH RAILING AND SIDEWALK	3.82	AS	12	9	AS SHOWN	(A)	3800	-	-	-	-	3800	34.20	0.888	31	96.54			
		AS2	12	2	AS SHOWN	(A)	3800	-	-	-	-	3800	7.60	0.888	7				
		AS3	12	2	AS SHOWN	(A)	3800	-	-	-	-	3800	7.60	0.888	7				
		AS4	12	6	AS SHOWN	(A)	3800	-	-	-	-	3800	22.80	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	18.36	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	300	(I)	2300	236	1300	-	-	-	3836	7.67	1.579	13					
AR4	16	4	AS SHOWN	(I)	3800	236	900	-	-	-	4936	19.74	1.579	32					
AR5	16	8	AS SHOWN	(A)	3800	-	-	-	-	-	3800	30.40	1.579	49					
AR6	16	4	AS SHOWN	(A)	2300	-	-	-	-	-	2300	9.20	1.579	15					
														GRADE 60 TOTAL = 918 kgs.		GRADE 40 TOTAL = 1,014 kgs.			
TOTAL	14.08															GRADE 60 TOTAL = 918 kgs.		GRADE 40 TOTAL = 1,014 kgs.	

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

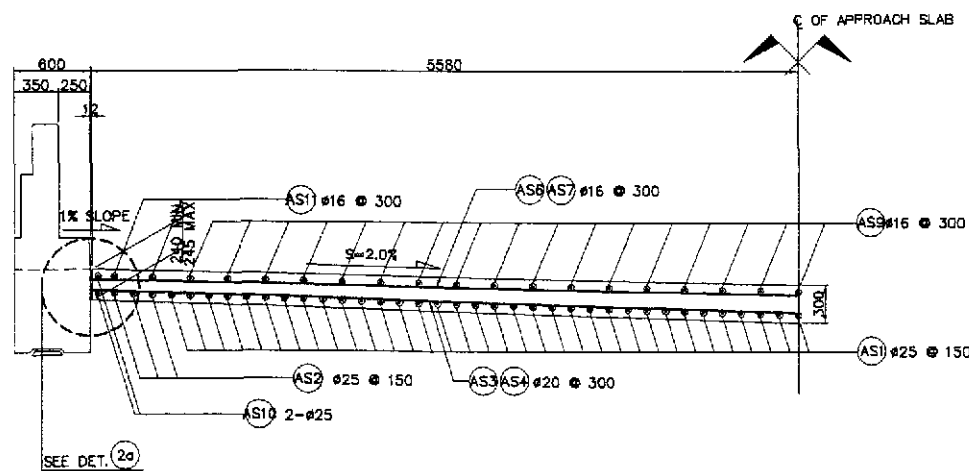
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
OFFICE OF THE SECRETARY
Submitted By: DANILLO C. TRAJANO
Reviewed By: ADRIANO M. DORDY
Recommended By: GILBERTO S. REYES
Approved By: MANUEL M. BONJAN
SIMEON A. DATUMANONG

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

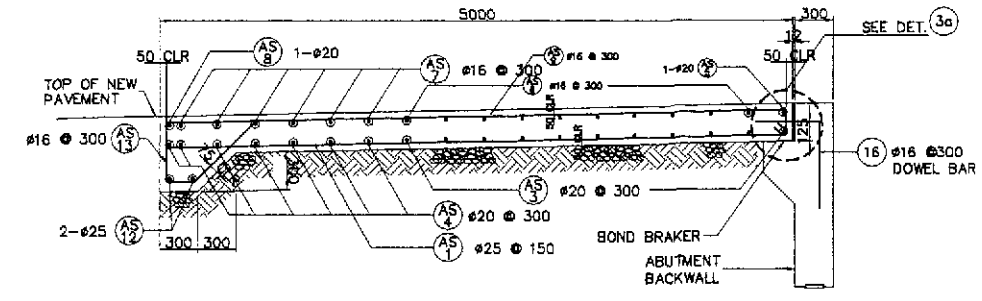
SCALE : AS SHOWN
SHEET CONTENTS : BRIDGE NO. 3
ABUTMENT A1 & A2
WINGWALL REINFORCEMENT DETAILS
(INITIAL STAGE)
SHEET NO. : B3-06



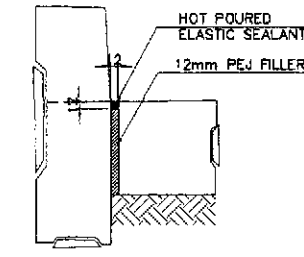
1 PLAN
SCALE 1:50



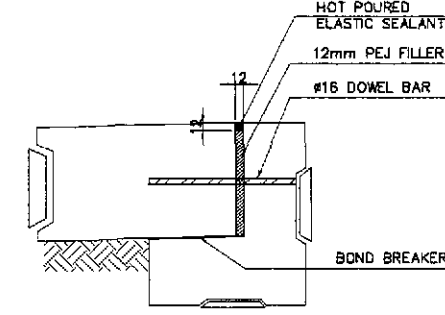
2 SECTION
SCALE 1:30



3 SECTION
SCALE 1:30



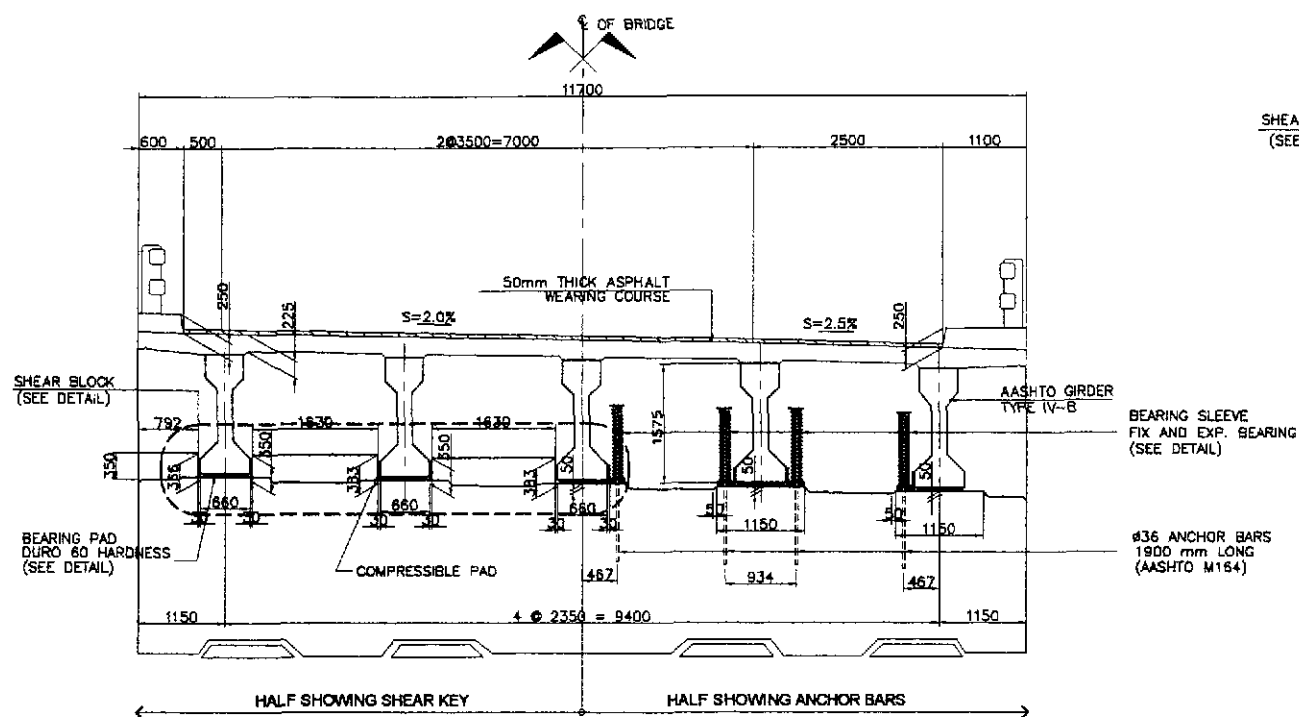
2a DETAIL
SCALE 1:10



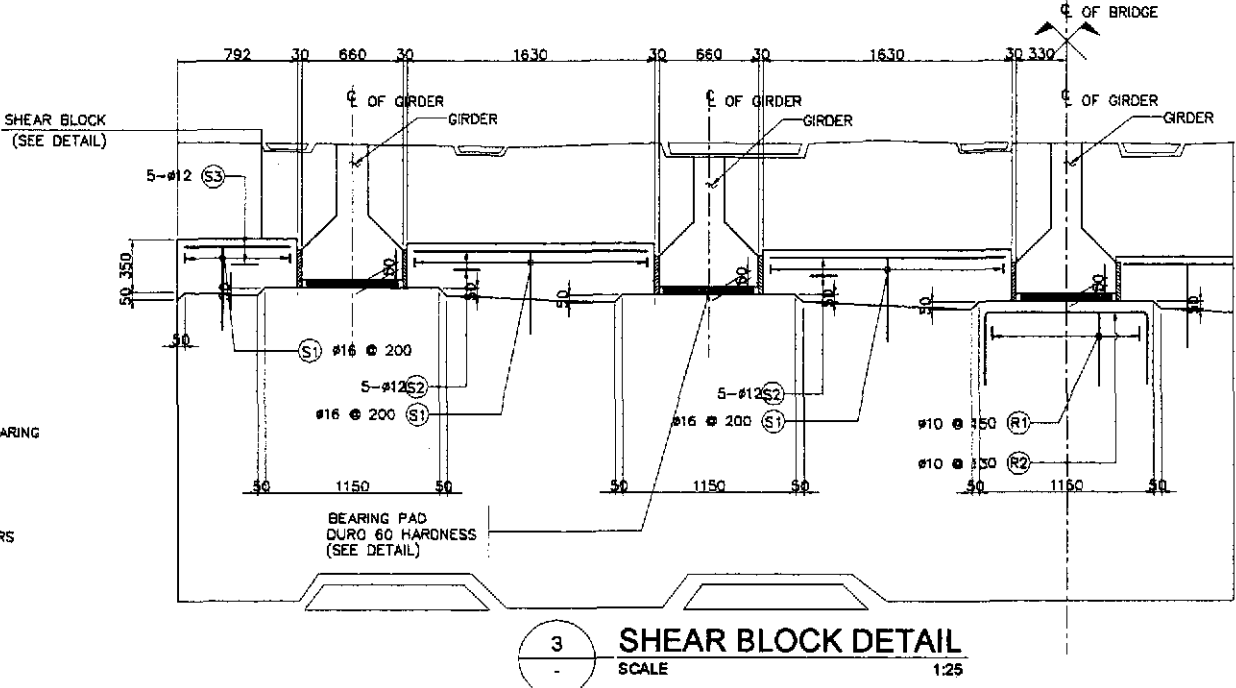
3a DETAIL
SCALE 1:10

BAR BENDING DIAGRAM

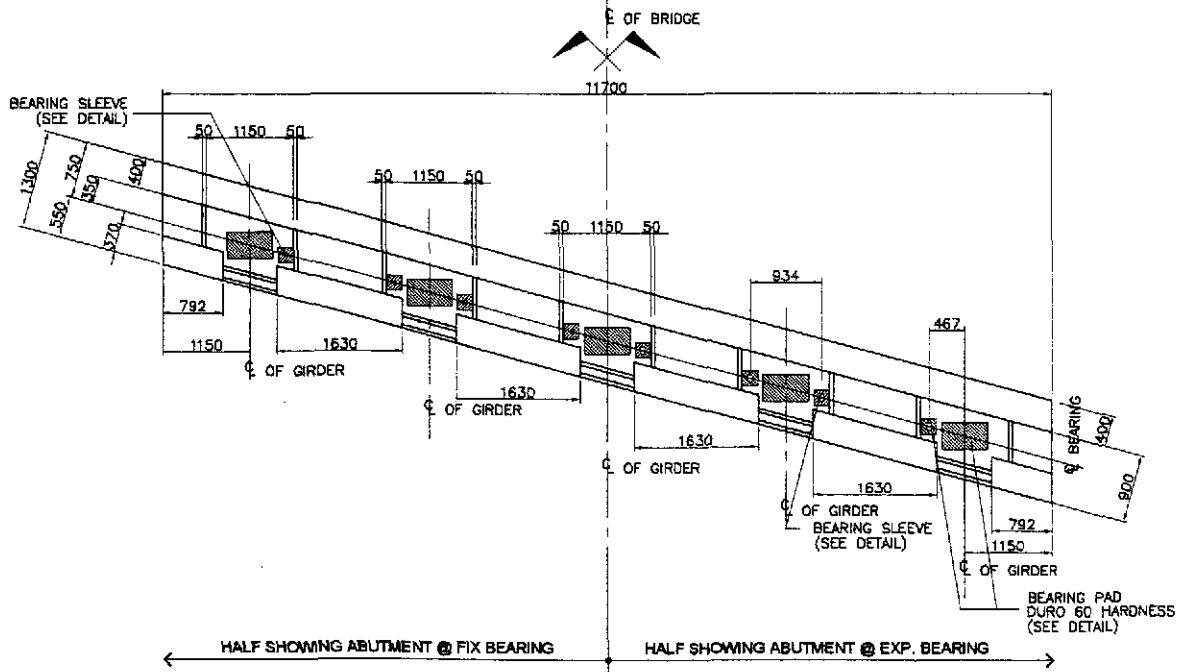
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT						LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/cu.m)	
							a	b	c	d	e	f						
APPROACH SLAB	17.71	AS1	25	68	150	(B)	4900	200	-	-	-	-	5100	346.80	3.854	1337	159.88	
		AS2	25	6	150	(B)	3450	200	-	-	-	-	3650	21.90	3.854	85		
		AS3	20	11	300	(A)	10850	-	-	-	-	-	-	10850	119.35	2.466		285
		AS4	20	7	300	(A)	11450	-	-	-	-	-	-	11450	80.15	2.466		198
		AS5	20	1	AS SHOWN	(A)	10250	-	-	-	-	-	-	10250	10.25	2.466		26
		AS6	16	10	300	(A)	10950	-	-	-	-	-	-	10950	109.50	1.579		173
		AS7	16	6	300	(A)	11450	-	-	-	-	-	-	11450	68.70	1.579		109
		AS8	20	1	AS SHOWN	(A)	11450	-	-	-	-	-	-	11450	11.45	2.466		29
		AS9	16	34	300	(B)	4900	200	-	-	-	-	-	5100	173.40	1.579		274
		AS10	25	4	AS SHOWN	(C)	1800	3500	-	-	-	-	-	5300	21.20	3.854		82
		AS11	16	4	300	(B)	3350	200	-	-	-	-	-	3550	14.20	1.579		23
		AS12	25	2	AS SHOWN	(A)	11450	-	-	-	-	-	-	11450	22.90	3.854		89
		AS13	16	39	300	(D)	400	500	200	700	-	-	-	1800	70.20	1.579		111
TOTAL	17.71																GRADE 40 TOTAL = 690.00 kgs. GRADE 60 TOTAL = 2141.00 kgs.	



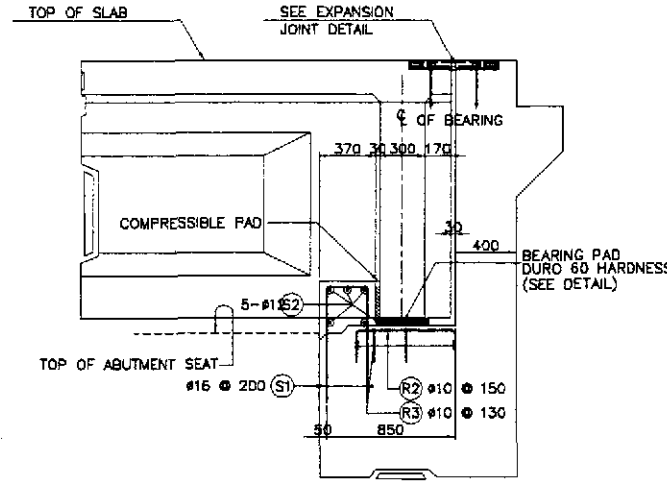
1 SECTION AT ABUTMENT SEAT
SCALE 1:50



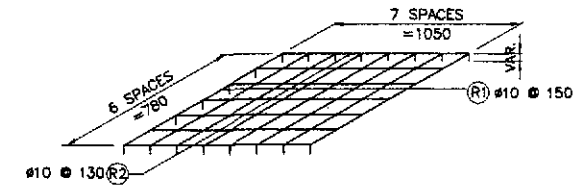
3 SHEAR BLOCK DETAIL
SCALE 1:25



2 PLAN AT ABUTMENT SEAT
SCALE 1:50



3A SECTION
SCALE 1:25

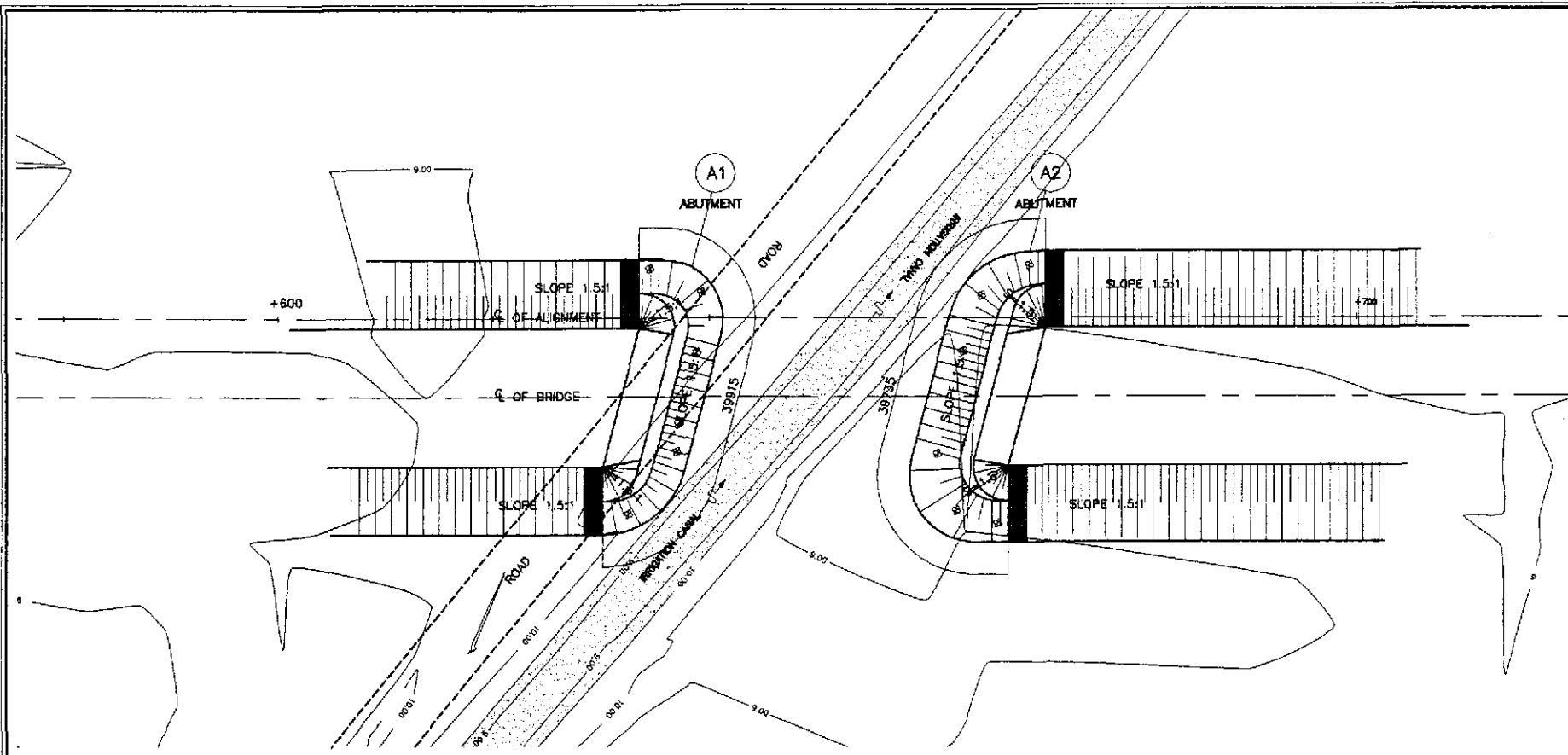


4 RISER REINFORCEMENT
NOT TO SCALE

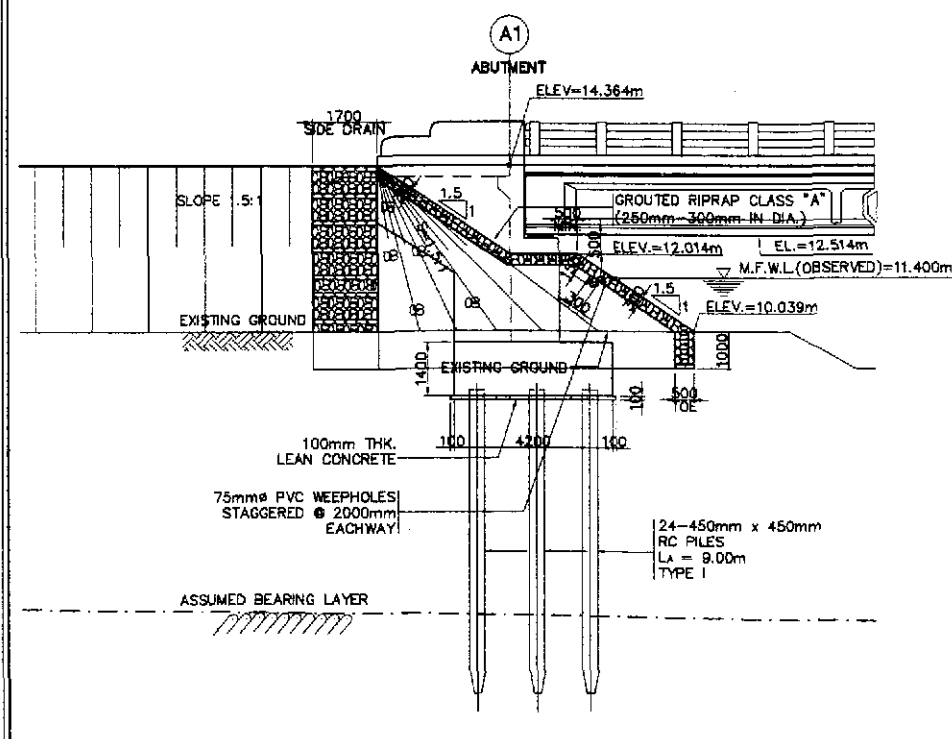
BAR BENDING DIAGRAM																
A							B									
SCHEDULE OF REINFORCEMENT																
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSION (mm) OUT TO OUT					LENGTH EACH BAR (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d	e					
SHEAR KEY & RISER	1.56	S1	16	46	200	(B)	560	290	560			1410	64.86	1.579	103.00	145.94
		S2	12	20	AS SHOWN	(A)	1550					1550	31.00	0.888	28.00	
		S3	12	10	AS SHOWN	(A)	715					715	7.15	0.888	7.00	
		R1	10	40	150	(B)	500	780	500			1780	71.20	0.616	44.00	
		R2	10	35	130	(B)	500	1050	500		2050	71.75	0.616	45.00		
TOTAL	1.56															GRADE 40 TOTAL = 227.00 kgs.

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

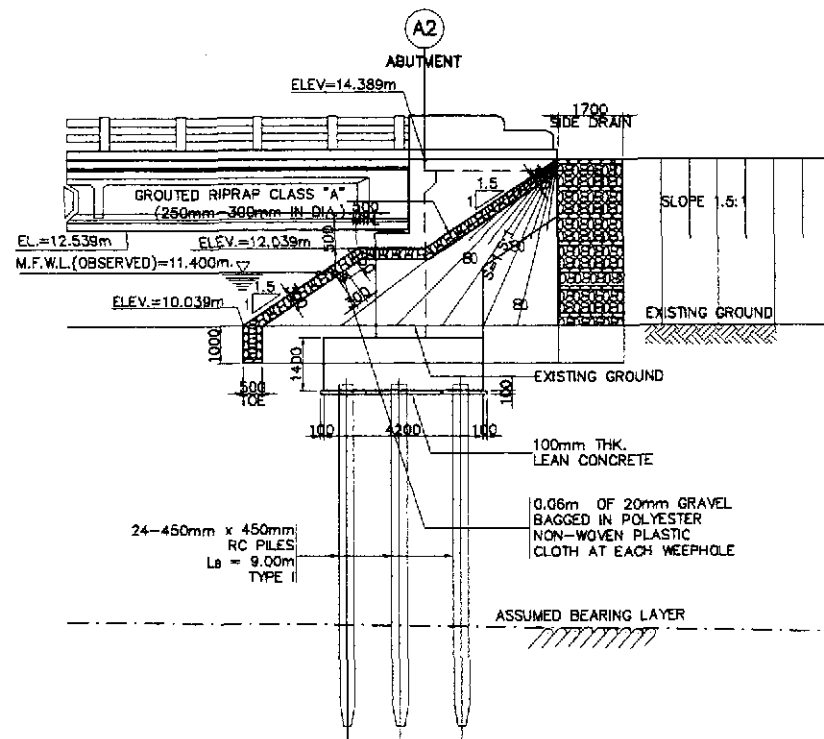
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS					PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/20/02	E. N. SALLAN		BUREAU OF DESIGN					THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 3 SHEAR KEY AND RISER DETAILS (INITIAL STAGE)	B3-08
	SUBMITTED	9/23/02	M. KIUCHI TEAM LEADER		Submitted By:	Reviewed By:	Recommended By:	Approved By:	PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1			



1A PLAN SCALE 1:300



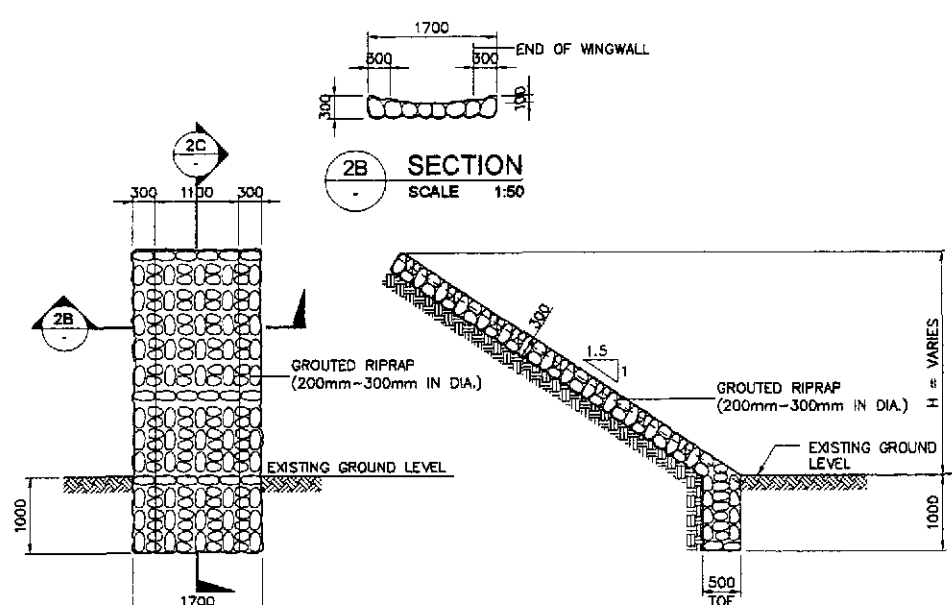
1B ELEVATION SCALE 1:100



1 ABUTMENT SLOPE PROTECTION SCALE AS SHOWN

GENERAL NOTES:

- GROUTED RIPRAP (250mm-300mm DIA.) SHALL BE USED FOR THE FACING AND SHALL BE CAREFULLY HANDLAID WITH THE LONGEST DIMENSIONS PERPENDICULAR TO THE SLOPE AND FIRMLY BEDDED INTO THE SLOPE AND ADJACENT TO THE ADJOINING BOULDERS SPACED BETWEEN THE BOULDERS. 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.
- NO CONCRETING UNDER WATER SHALL BE PERMITTED.
- 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	PER ABUTMENT QUANTITY	
		ABUT. A1	ABUT. A2
SIDE DRAIN	200mm-300mm IN DIA.	9.42 cu. m.	10.28 cu. m.
GROUTED RIPRAP	250mm-300mm IN DIA.	66.22 cu. M.	87.42 cu. M.

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REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

BUREAU OF DESIGN
OFFICE OF THE SECRETARY

DESIGNED: P. GONZALES
CHECKED: [Signature]
SUBMITTED: [Signature]

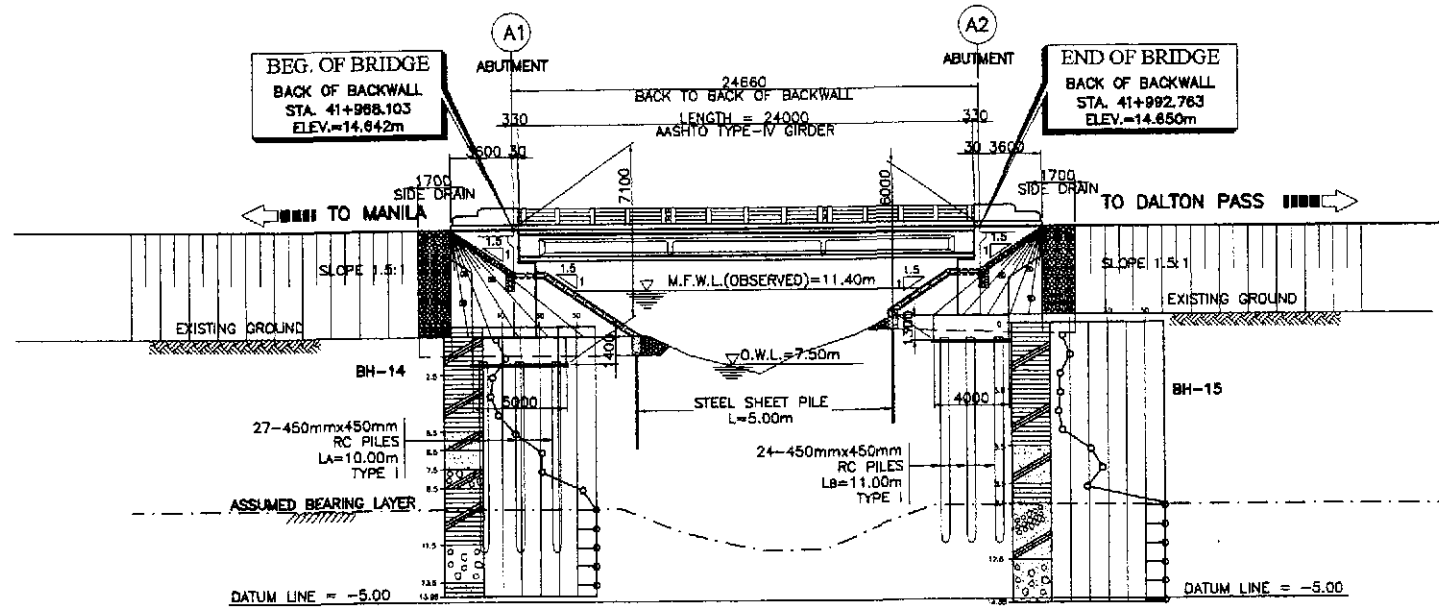
Submitted By: DANILLO C. TRAJANO, Project Director
Reviewed By: PERFECTO L. ZAPLAN JR., Chief, Hydraulic Division (303)
Recommended By: GILBERTO S. REYES, Director IV (302)
Recommended By: MANUEL M. BONDAN, Undersecretary
Approved By: SIMEON A. DATUMANONG, Secretary

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

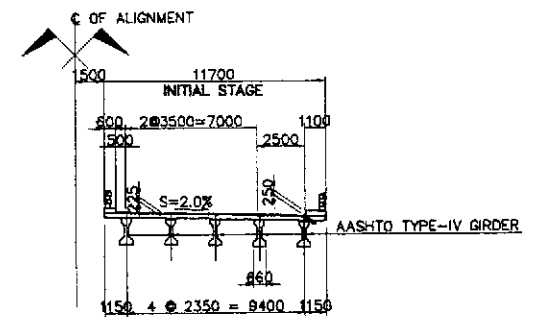
SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO. 3
ABUTMENT PROTECTION AND SIDE DRAIN DETAILS (INITIAL STAGE)

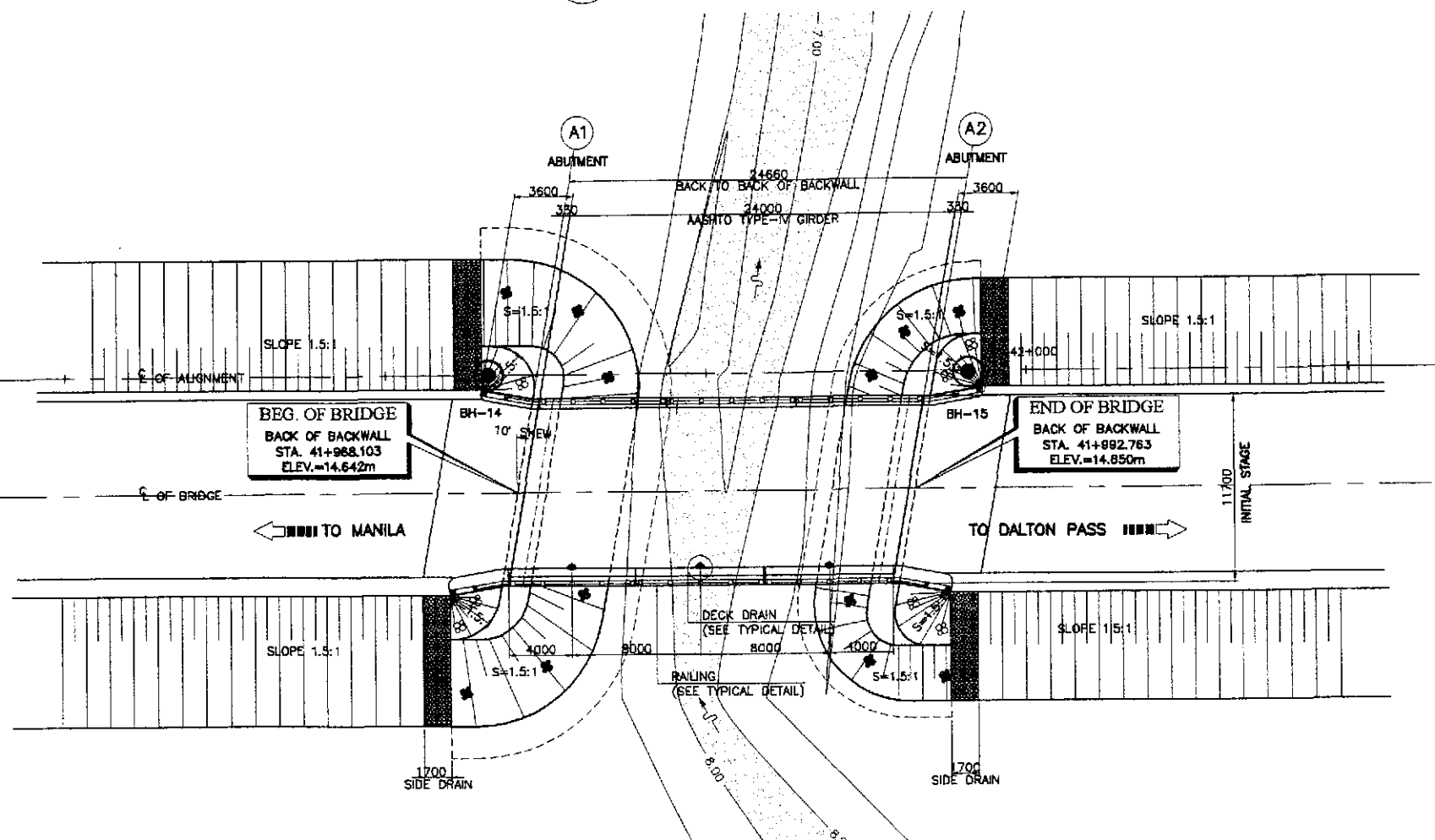
SHEET NO. : B3-09



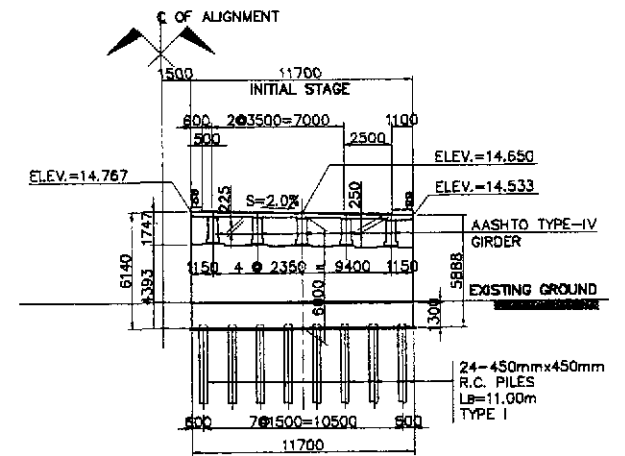
1 GENERAL ELEVATION
SCALE 1:200



3 SECTION @ MIDSPAN
SCALE 1:200



2 GENERAL PLAN
SCALE 1:200



4 SECTION @ ABUTMENT A2
SCALE 1:200

A PLARIDEL BYPASS BRIDGE NO. 4 (STA. 41+968.103)
SCALE AS SHOWN

HYDRAULIC DESIGN DATA	
VELOCITY @ 50 YEARS, V_{50}	3.624 m/sec
DISCHARGE @ 50 YEARS, Q_{50}	109.200 cu.m/sec
CATCHMENT AREA, CA	14.350 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, BDO

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YEO YACHYO ENGINEERING CO., LTD.

DESIGNED: 9/18/02
CHECKED: 9/20/02
SUBMITTED: 9/23/02

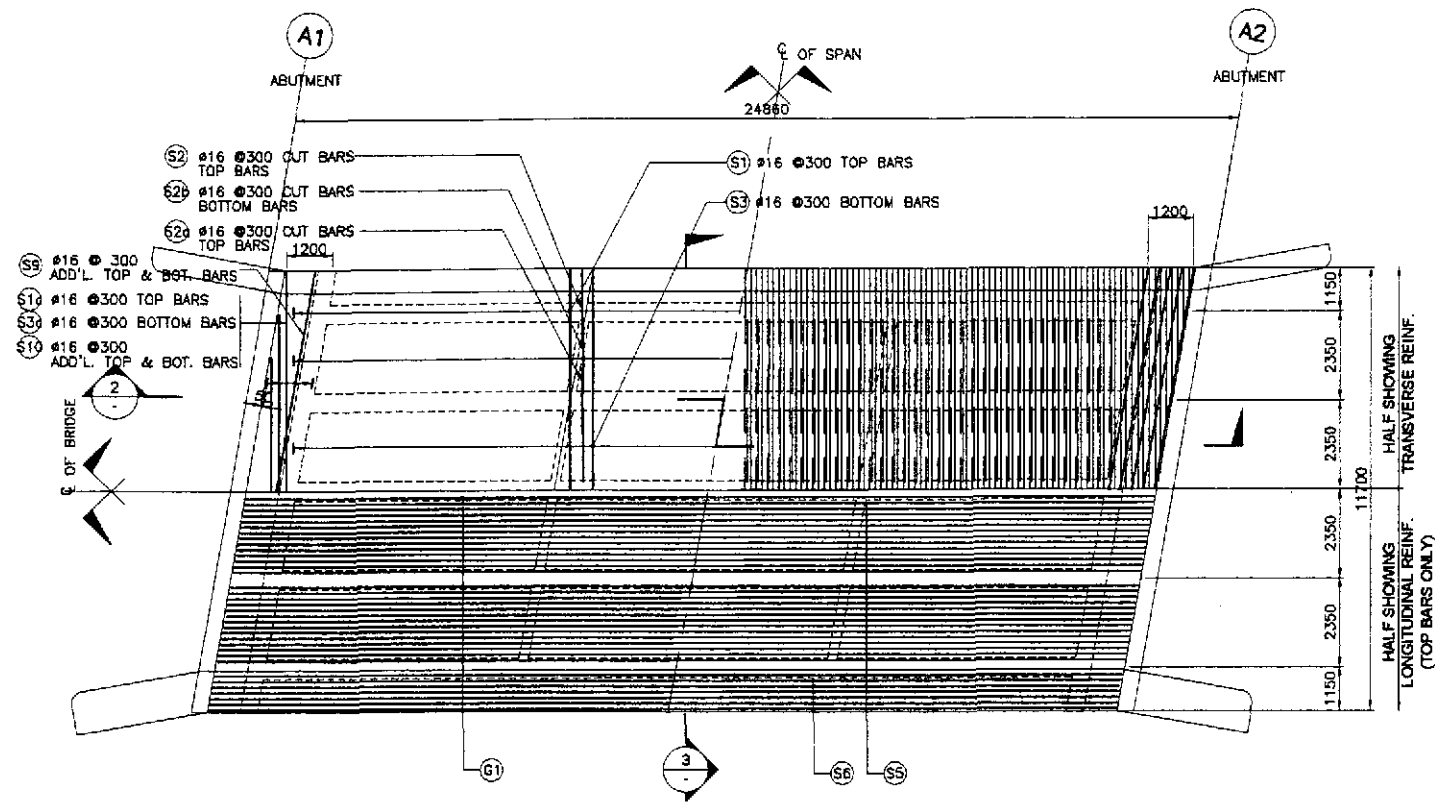
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
OFFICE OF THE SECRETARY
Submitted By: DANILLO C. TRAJANO
Reviewed By: ADRIANO M. DORGY
Recommended By: GILBERTO S. REYES
Approved By: MANUEL M. SONGON
SIMEON A. DATUMANONG

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

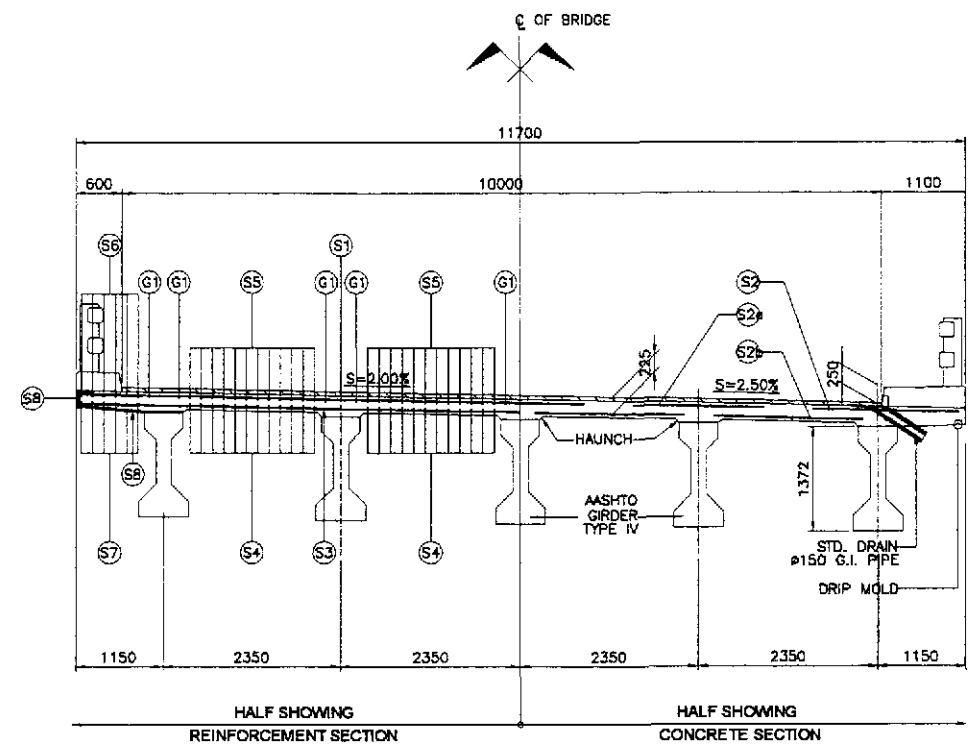
SCALE :
1:200
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO. 4
GENERAL PLAN, ELEVATION AND SECTIONS (INITIAL STAGE)

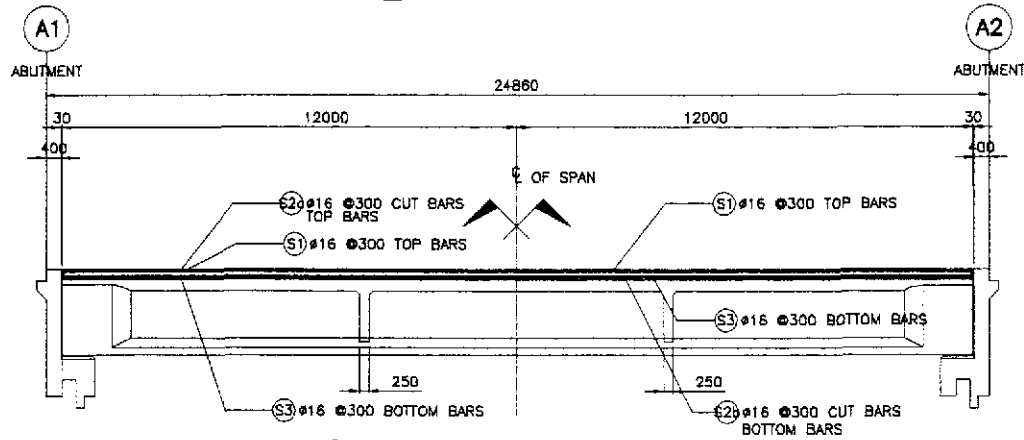
SHEET NO. :
B4-01



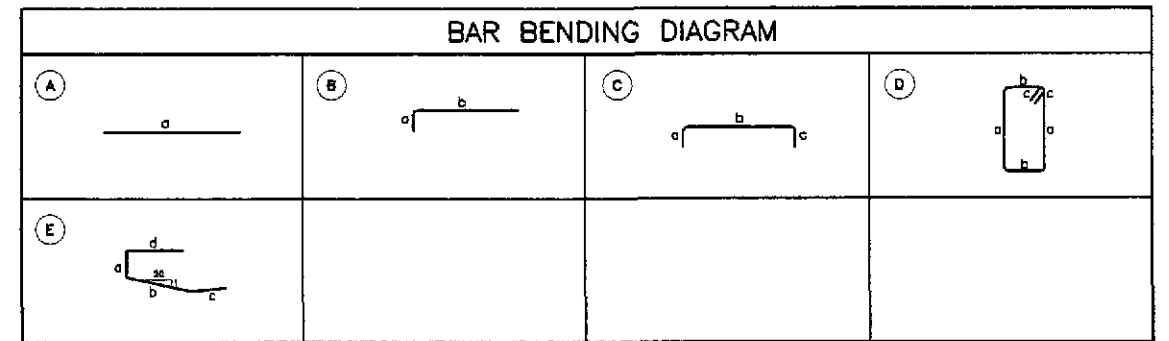
1 FRAMING PLAN
SCALE 1:100



3 TYPICAL CROSS-SECTION
SCALE 1:50



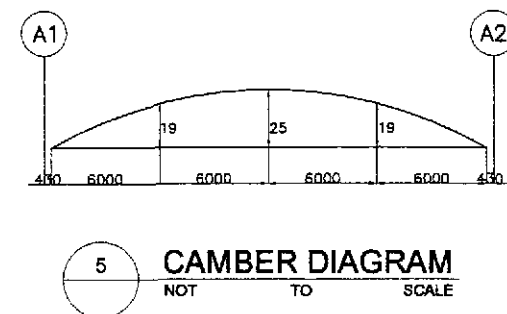
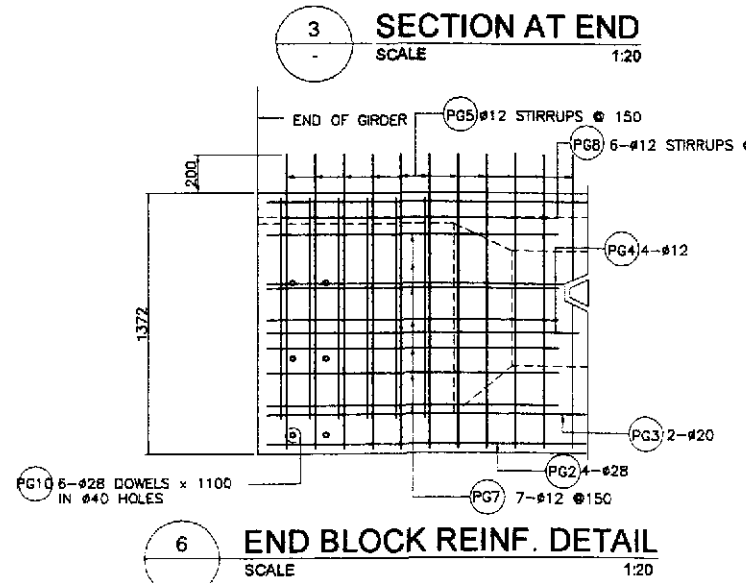
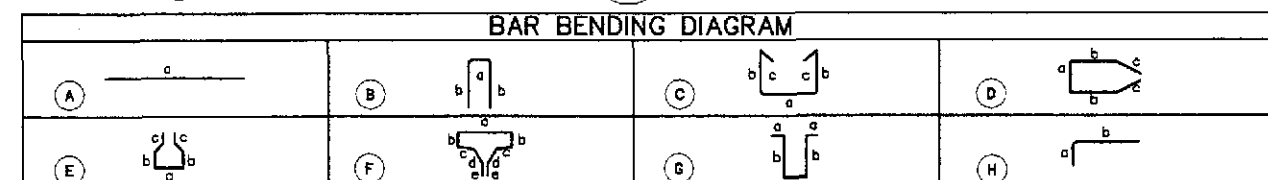
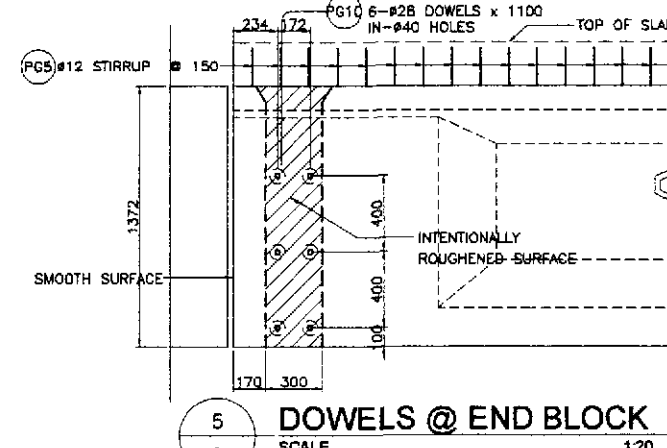
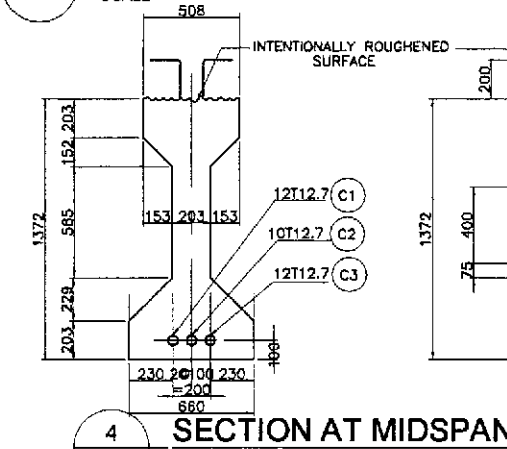
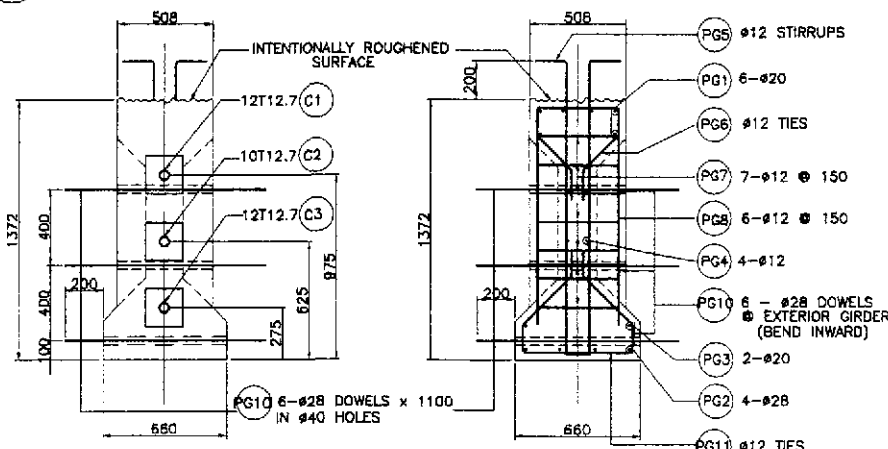
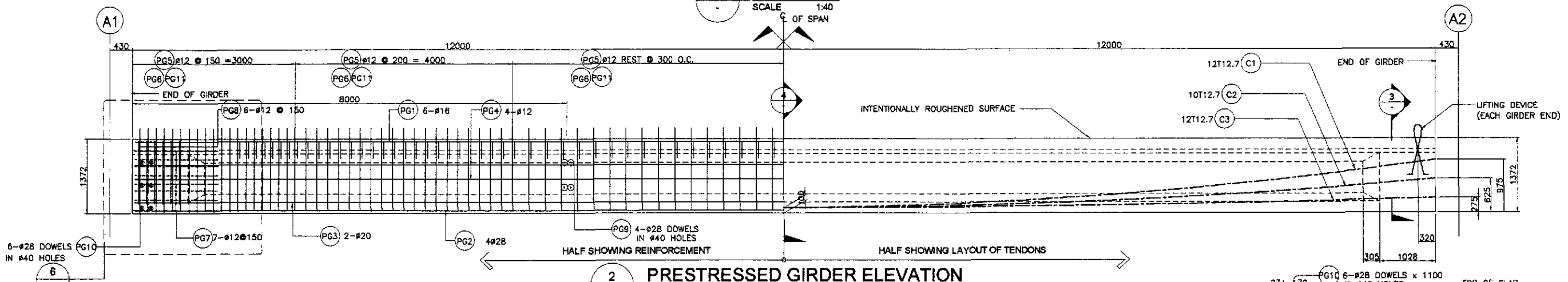
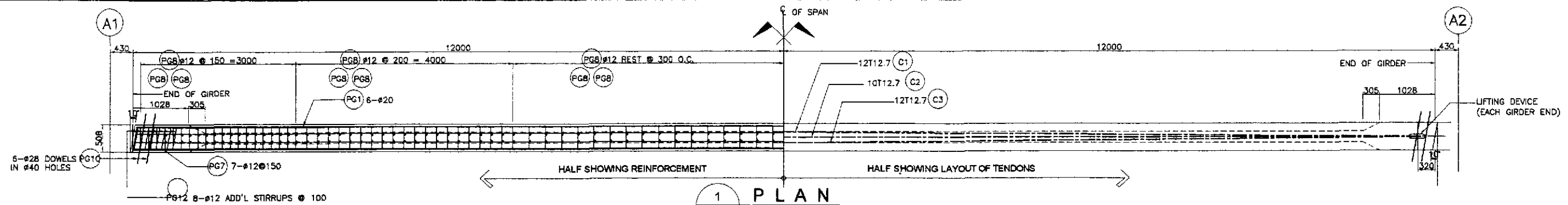
2 LONGITUDINAL SECTION
SCALE 1:100



ESTIMATED QUANTITIES OF SUPERSTRUCTURE			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
404(1)a	REINFORCING STEEL GRADE 40	kg.	19141
	DECK SLAB	10805	
	DIAPHRAGM	347	
	GIRDER	4395	
	SIDEWALK, RAILING, & POST	2224	
	APPROACH SLAB	1370	
404(1)b	REINFORCING STEEL GRADE 60	kg.	11639
	DECK SLAB	0	
	DIAPHRAGM	1194	
	GIRDER	5770	
	SIDEWALK, RAILING, & POST	443	
	APPROACH SLAB	4254	
405(1)	STRUCTURAL CONCRETE	cu. m.	191
	DECK SLAB	66.53	
	DIAPHRAGM	10.66	
	GIRDER	62.61	
	SIDEWALK, RAILING, & POST	15.73	
	APPROACH SLAB	35.23	

SCHEDULE OF REINFORCEMENT															
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT IN (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d					
DECK SLAB	66.53	G1	16	10	AS SHOWN	(A)	23900	-	-	-	23900	239.00	1.579	378	162.41
		S1	16	74	300	(C)	145	11600	145	-	11890	879.86	1.579	1390	
		S1a	16	14	300	(C)	145	6590	145	-	6880	96.32	1.579	153	
		S2	16	148	300	(B)	145	2000	-	-	2145	317.46	1.579	502	
		S2a	16	222	300	(A)	1700	-	-	-	1700	377.40	1.579	586	
		S2b	16	296	300	(A)	1950	-	-	-	1950	577.20	1.579	912	
		S3	16	74	300	(A)	11600	-	-	-	11600	858.40	1.579	1356	
		S3a	16	14	300	(A)	6590	-	-	-	6590	92.26	1.579	146	
		S4	16	48	150	(A)	23900	-	-	-	23900	1147.20	1.579	1812	
		S5	16	48	150	(A)	23900	-	-	-	23900	1147.20	1.579	1812	
S6	16	12	AS SHOWN	(A)	23900	-	-	-	23900	286.80	1.579	453			
S7	16	12	AS SHOWN	(A)	23900	-	-	-	23900	286.80	1.579	453			
S8	12	108	450	(E)	145	900	500	300	1845	199.26	0.888	177			
S9	16	20	300	(A)	11780	-	-	-	11780	235.60	1.579	373			
S10	16	28	300	(A)	6590	-	-	-	6590	184.52	1.579	292			
TOTAL	66.53														GRADE 40 TOTAL = 10,805 kg.

	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	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. 4 DECK FRAMING PLAN AND SECTION (INITIAL STAGE)	B4-02
	SUBMITTED	9/23/02	M. KUCHE		OFFICE OF THE SECRETARY				PLARIDEL BYPASS - CONTRACT PACKAGE II	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 (GIC)		MANUEL M. BONDAN Undersecretary		SIMON A. DATUMANONG Secretary				



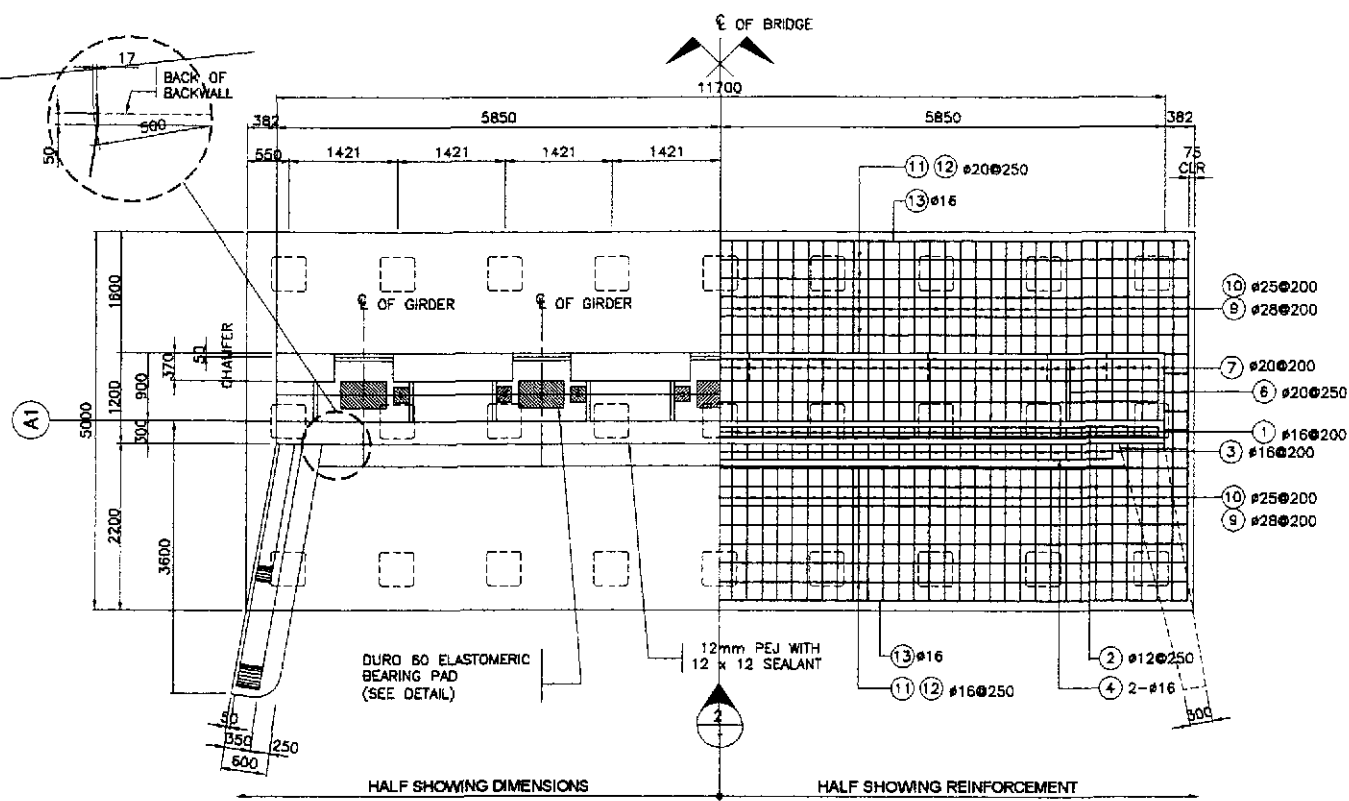
NOTES:
 1.) SEE GENERAL NOTES, -2, FOR GIRDER DESIGN GUIDE.
 2.) JACKING FORCE PER GIRDER, $P_j = 4681$ KN.
 3.) JACKING WILL BE DONE AT BOTH ENDS.
 4.) FINAL PRESTRESSING FORCE @ MIDSPAN, $F_{NET} = 3411$ KN.

STRUCTURE COMPONENT	BAR MARK	SIZE (mm)	QTY.	SPACING	BAR SHAPE	DIMENSION (mm)					LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONC. VOLUME (cu.m)	REBAR RATIO (kg/cu.m)	REMARKS
						a	b	c	d	e							
GIRDER	PG1	20	6	AS SHOWN	(A)	23920	-	-	-	-	23920	143.52	2.466	354			QUANTITIES ARE FOR ONE (1) GIRDER ONLY
	PG2	28	4	AS SHOWN	(A)	23920	-	-	-	-	23920	95.68	4.833	463			
	PG3	28	2	AS SHOWN	(A)	23920	-	-	-	-	23920	47.84	4.833	232			
	PG4	12	4	AS SHOWN	(A)	23920	-	-	-	-	23920	95.68	0.888	85			
	PG5	12	112	150	(G)	100	1540	103	-	-	3383	378.90	0.888	337			
	PG6	12	112	150	(E)	425	150	260	150	-	1545	173.04	0.888	154			
	PG7	12	14	150	(D)	425	1000	350	-	-	3125	43.75	0.888	39			
	PG8	12	12	150	(C)	425	1230	150	-	-	3185	38.22	0.888	34			
	PG9	28	12	AS SHOWN	(A)	603	-	-	-	-	603	7.24	4.833	35			
	PG10	28	12	AS SHOWN	(A)	1200	-	-	-	-	1200	14.40	4.833	70			
	PG11	12	112	150	(E)	580	150	360	150	-	1900	212.80	0.888	189			
	PG12	12	16	100	(B)	425	1230	-	-	-	2885	46.16	0.888	41			
GRADE 40 TOTAL													879 kgs				
GRADE 60 TOTAL													1,154 kgs				

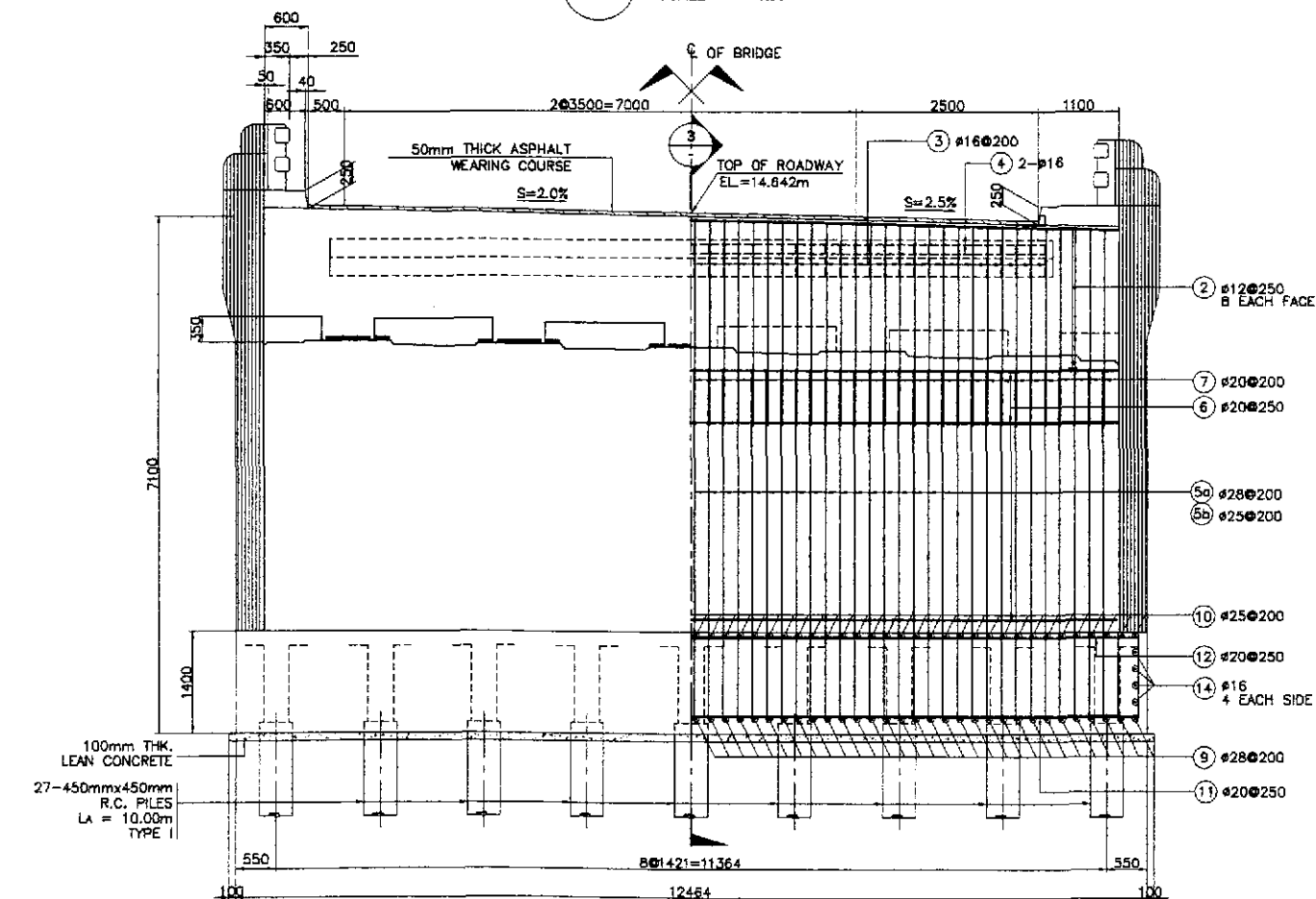
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 KATAHIRA & ENGINEERS INTERNATIONAL
 YEO YACHIYO ENGINEERING CO., LTD.

REPUBLIC OF THE PHILIPPINES
 DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
 BUREAU OF DESIGN
 OFFICE OF THE SECRETARY
 DESIGNED: 9/10/02
 CHECKED: 9/20/02
 SUBMITTED: 9/20/02
 DATE: 9/10/02
 SIGNATURE: E. M. SALLAN
 PROJECT DIRECTOR: DANILLO C. TRILANO
 CHIEF, BRIDGE DIVISION: ADRIANO M. DOROY
 DIRECTOR IV (CG): GILBERTO S. REYES
 UNDERSECRETARY: MANUEL M. BONDAN
 SECRETARY: SIMEON A. DATUMANONG

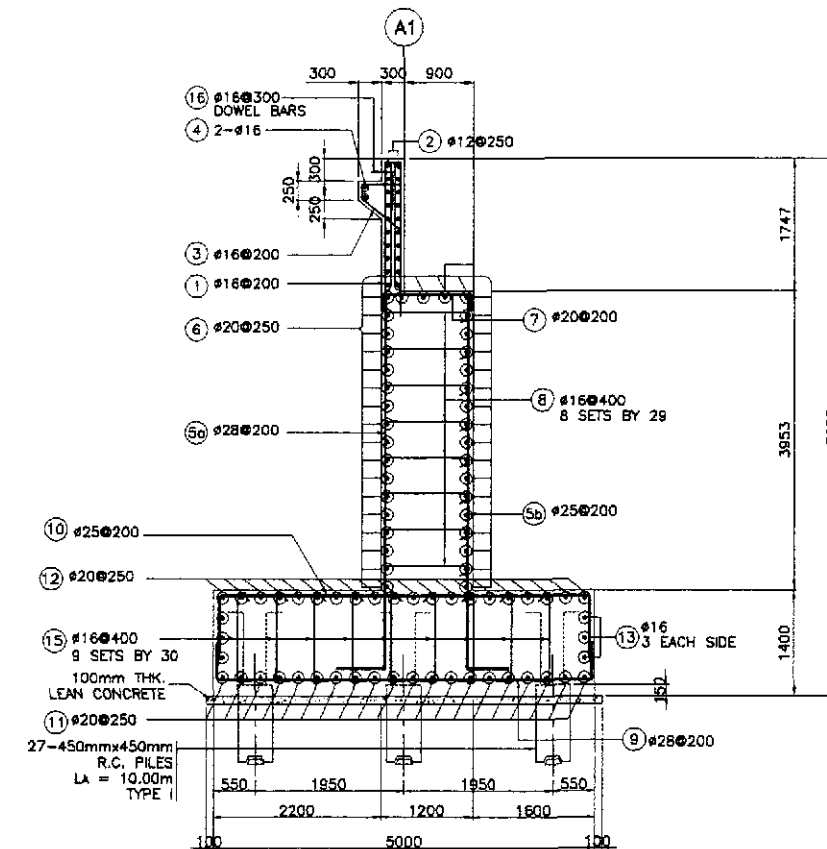
PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)
 SCALE: AS SHOWN
 SHEET CONTENTS: BRIDGE NO. 4 AASHTO TYPE IV GIRDER (INITIAL STAGE)
 SHEET NO.: B4-03
 PLARIDEL BYPASS - CONTRACT PACKAGE II
 FULL SIZE A1



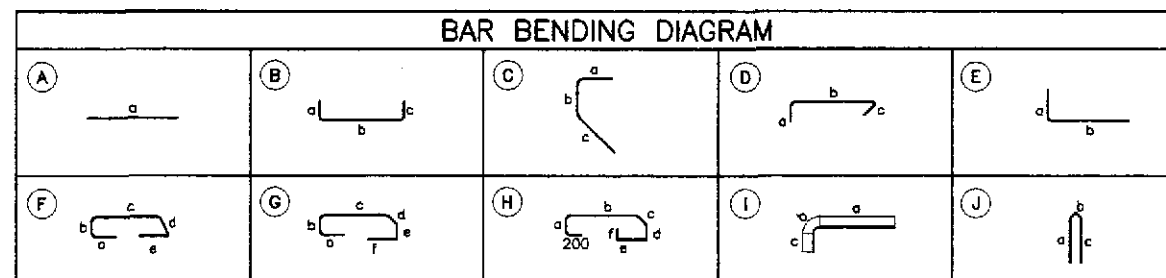
1 PLAN
SCALE 1:50



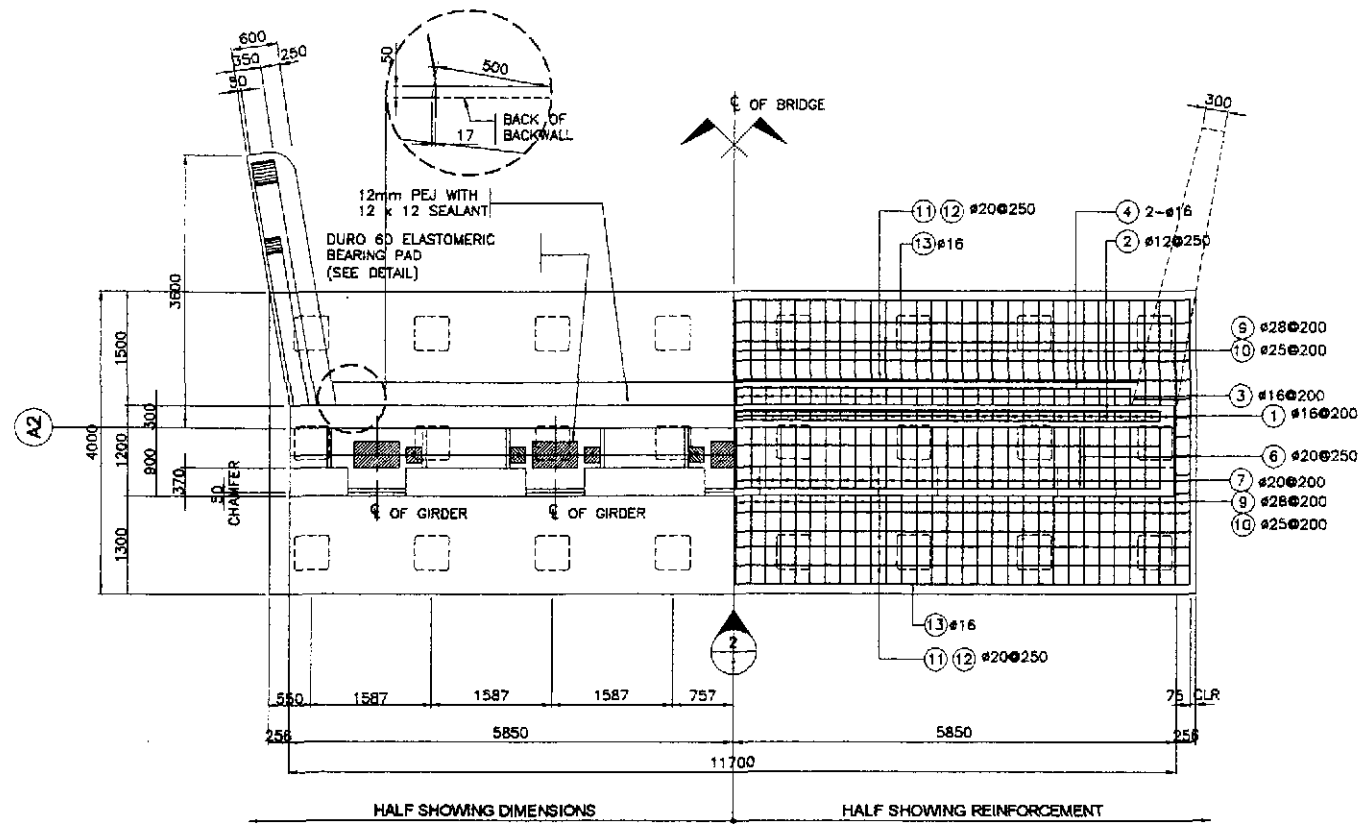
2 ELEVATION
SCALE 1:50



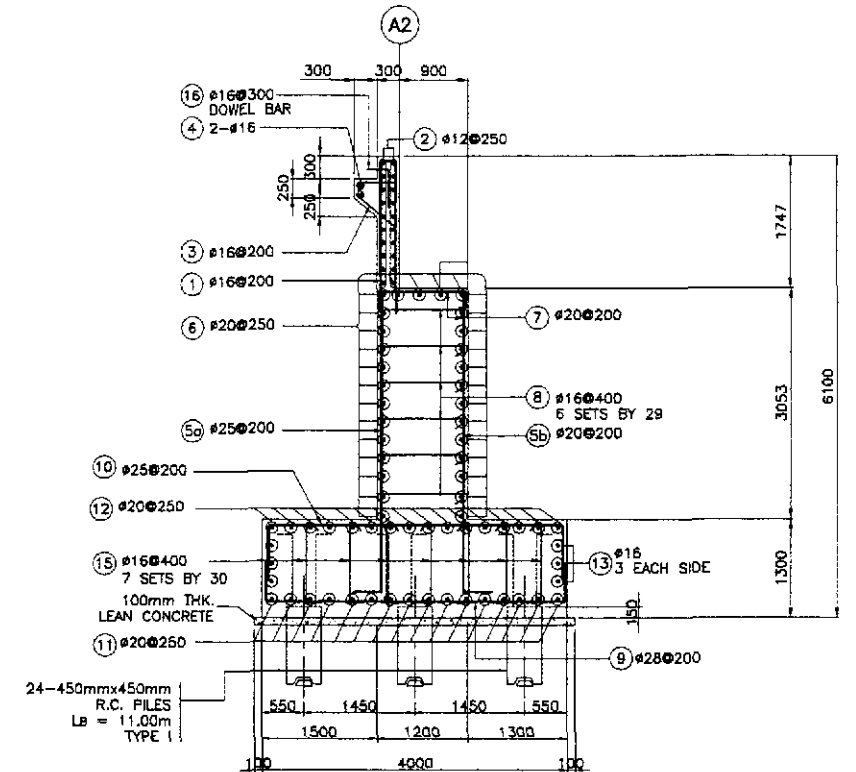
3 SECTION
SCALE 1:50



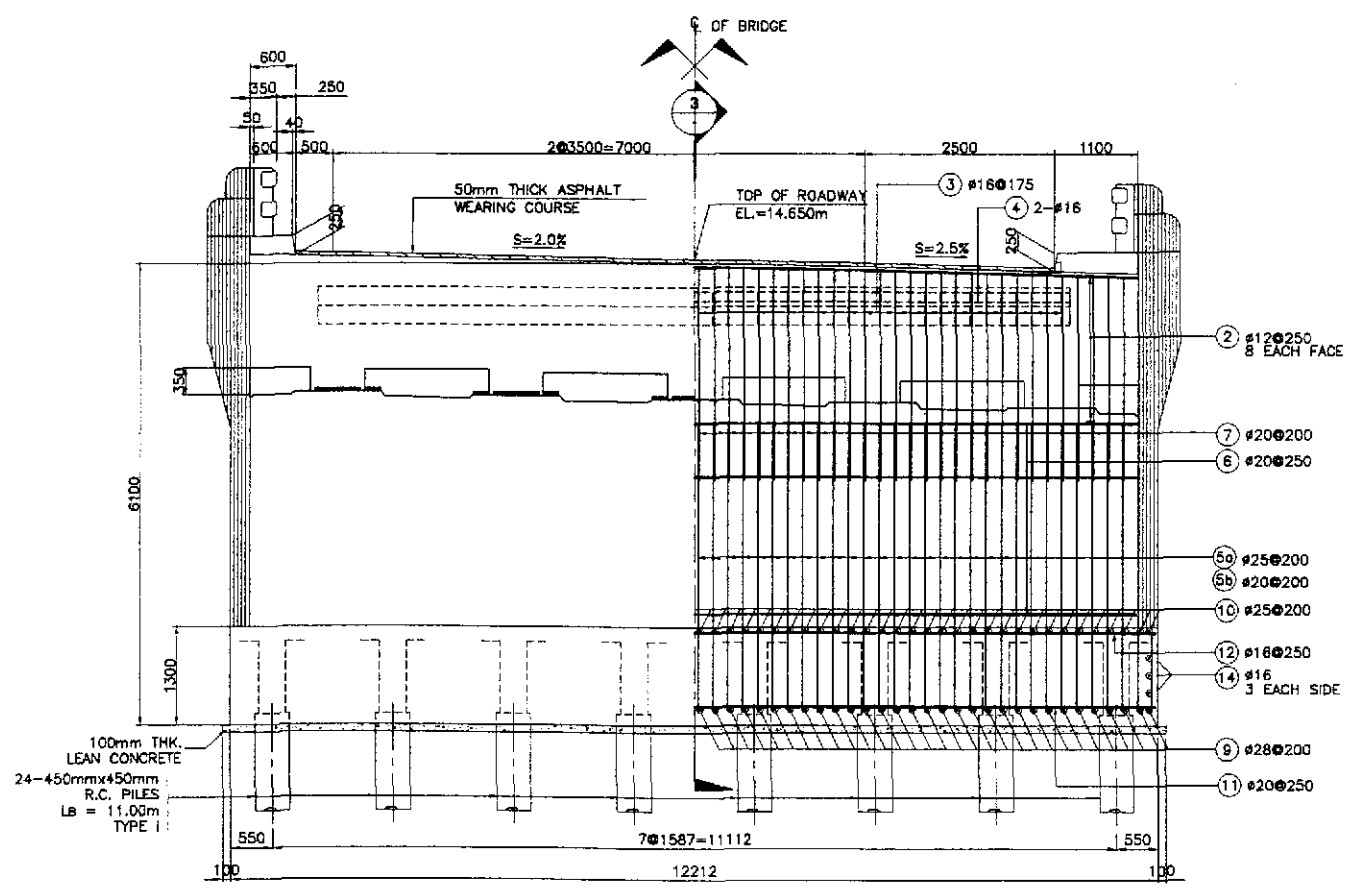
SCHEDULE OF REINFORCEMENT PER ABUTMENT																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e						f
BACKWALL	7.26	1	16	59	200	(B)	2000	300	2000	-	-	-	4300	253.70	1.579	401	99.49
		2	12	16	250	(A)	11800	-	-	-	-	-	11800	188.80	0.888	168	
		3	16	51	200	(C)	600	150	750	-	-	-	1500	76.50	1.579	121	
		4	16	2	AS SHOWN	(A)	10100	-	-	-	-	-	10100	20.20	1.579	32	
MAINWALL	55.50	5a	28	59	200	(E)	400	5100	-	-	-	5500	324.50	4.833	1569	84.99	
		5b	25	59	200	(E)	400	5100	-	-	-	5500	324.50	3.854	1251		
		6	20	37	250	(A)	11800	-	-	-	-	-	11800	436.60	2.466		1077
		7	20	59	200	(B)	250	1100	250	-	-	-	1800	94.40	2.466		233
FOOTING	87.25	8	16	232	400	(D)	250	1100	250	-	-	1600	376.20	1.579	587	65.57	
		9	28	63	200	(B)	700	4850	700	-	-	-	6250	393.75	4.833		1903
		10	25	63	200	(B)	700	4850	700	-	-	-	6250	393.75	3.854		1518
		11	20	20	250	(B)	700	12500	700	-	-	-	13900	278.00	2.466		686
		12	20	20	250	(B)	700	12500	700	-	-	-	13900	278.00	2.466		686
		13	16	6	AS SHOWN	(A)	12500	-	-	-	-	-	12500	73.80	1.579		117
DOWEL		14	16	8	AS SHOWN	(A)	4850	-	-	-	-	4850	38.80	1.579	62		
		15	16	270	400	(D)	250	1250	250	-	-	-	1750	472.5	1.579		747
TOTAL	150.01																GRADE 40 TOTAL = 2,298 kgs. GRADE 60 TOTAL = 8,923 kgs.



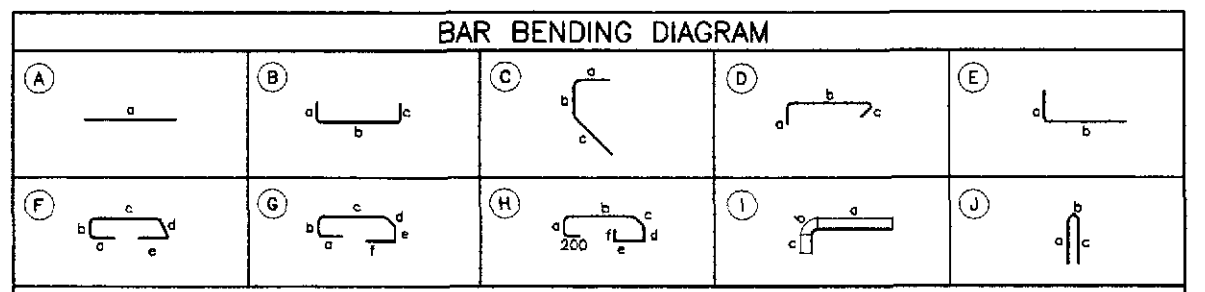
1 PLAN
SCALE 1:50



3 SECTION
SCALE 1:50

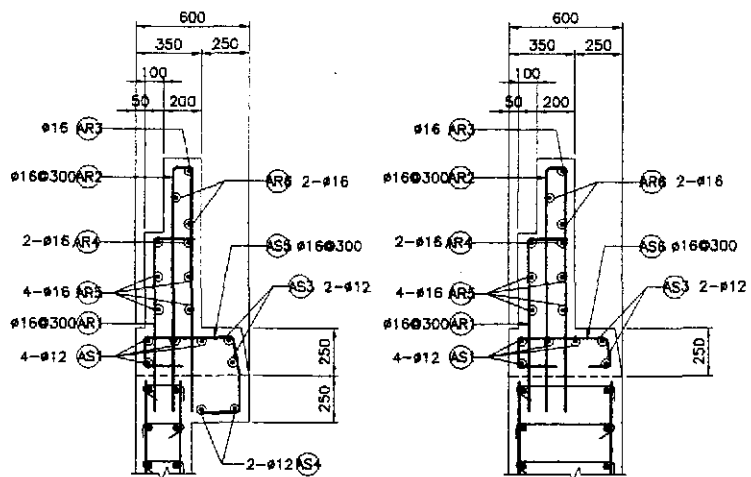


2 ELEVATION
SCALE 1:50



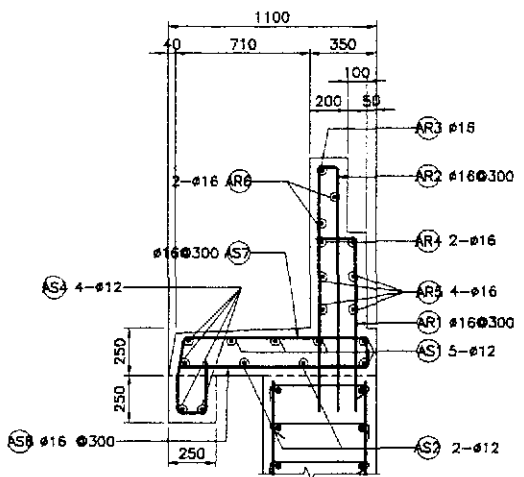
SCHEDULE OF REINFORCEMENT PER ABUTMENT																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e						f
BACKWALL	7.26	1	16	59	200	(B)	2000	300	2000	-	-	-	4300	253.70	1.579	401	99.49
		2	12	16	250	(A)	11800	-	-	-	-	-	11800	188.80	0.888	168	
		3	16	51	200	(C)	600	150	750	-	-	-	1500	76.50	1.579	121	
		4	16	2	AS SHOWN	(A)	0100	-	-	-	-	-	10100	20.20	1.579	32	
MAINWALL	42.86	5a	25	59	200	(E)	400	4100	-	-	-	4500	265.50	3.854	1024	71.92	
		5b	20	59	200	(E)	400	4100	-	-	-	4500	265.50	2.466	655		
		6	20	29	250	(A)	11800	-	-	-	-	-	11800	342.20	2.466		844
		7	20	59	200	(B)	250	1100	250	-	-	-	1800	94.40	2.466		233
		8	16	174	400	(D)	250	1100	250	-	-	-	1600	278.40	1.579		440
		9	28	61	200	(B)	700	3850	700	-	-	-	5250	320.25	4.833		1548
FOOTING	63.50	10	25	61	200	(B)	700	3850	700	-	-	-	5250	320.25	3.854	1235	71.92
		11	20	16	250	(B)	700	12300	700	-	-	-	13700	219.20	2.466	541	
		12	20	16	250	(B)	700	12300	700	-	-	-	13700	219.20	2.466	541	
		13	16	6	AS SHOWN	(A)	12300	-	-	-	-	-	12300	73.80	1.579	115	
		14	16	6	AS SHOWN	(A)	3850	-	-	-	-	-	3850	23.10	1.579	37	
		15	16	210	400	(D)	250	1150	250	-	-	-	1650	346.50	1.579	548	
DOWEL		16	16	34	300	(E)	650	500	-	-	-	1150	39.10	1.579	52		
TOTAL	113.62																GRADE 40 TOTAL = 1,926 kgs. GRADE 60 TOTAL = 6,621 kgs.

	DESIGNED: 9/10/02 CHECKED: 9/20/02 SUBMITTED: 9/23/02	DATE: 9/10/02 SIGNATURE: P. GONZALES TEAM LEADER		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: 1:50 FULL SIZE A1	SHEET CONTENTS: BRIDGE NO. 4 ABUTMENT A2 MAINWALL REINFORCEMENT DETAILS (INITIAL STAGE)	SHEET NO.: B4-07
	Submitted By: DANILO C. TRAJANO Project Director	Reviewed By: ADRIANO M. DOROY Chief, Bridges Division	Recommended By: GILBERTO S. REYES Director IV (D/C)	Recommended By: MANUEL M. BONDAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary			
	JICA JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL YEO YACHIYO ENGINEERING CO., LTD.							



5A SECTION SCALE 1:20

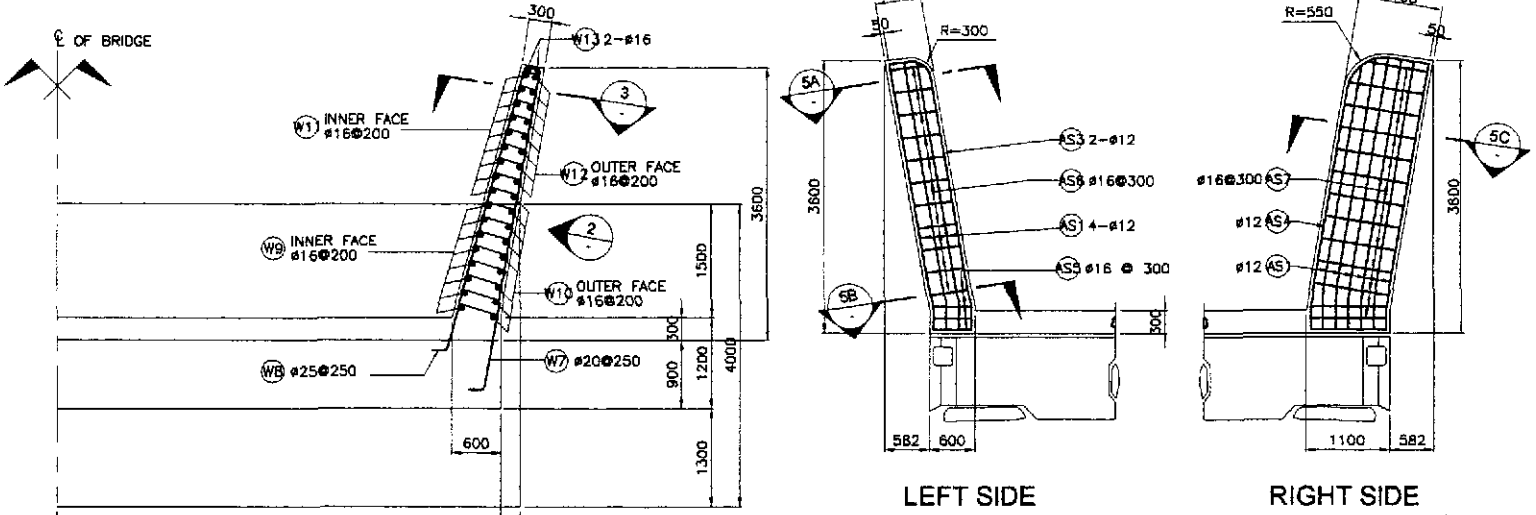
5B SECTION SCALE 1:20



5C SECTION SCALE 1:20

5 APPROACH RAIL DETAILS SCALE 1:20

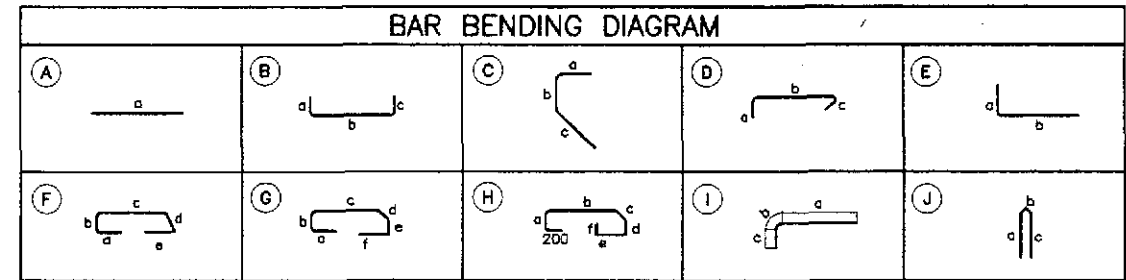
℄ OF BRIDGE



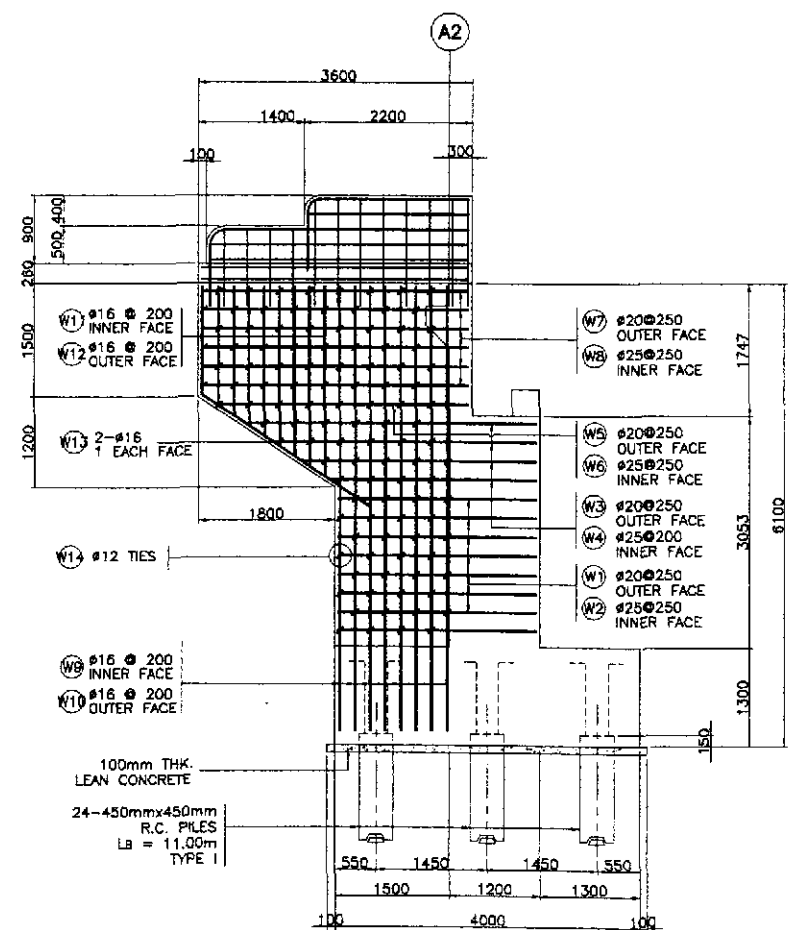
1 PLAN SCALE 1:50

LEFT SIDE RIGHT SIDE

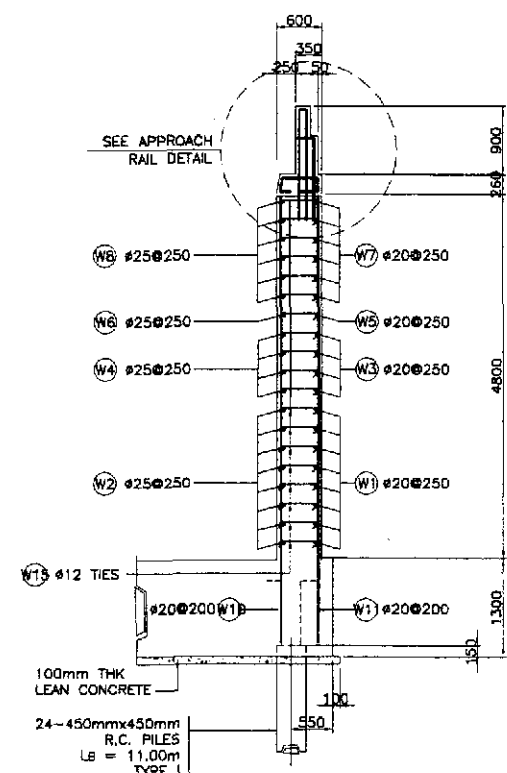
4 SIDEWALK DETAIL SCALE 1:50



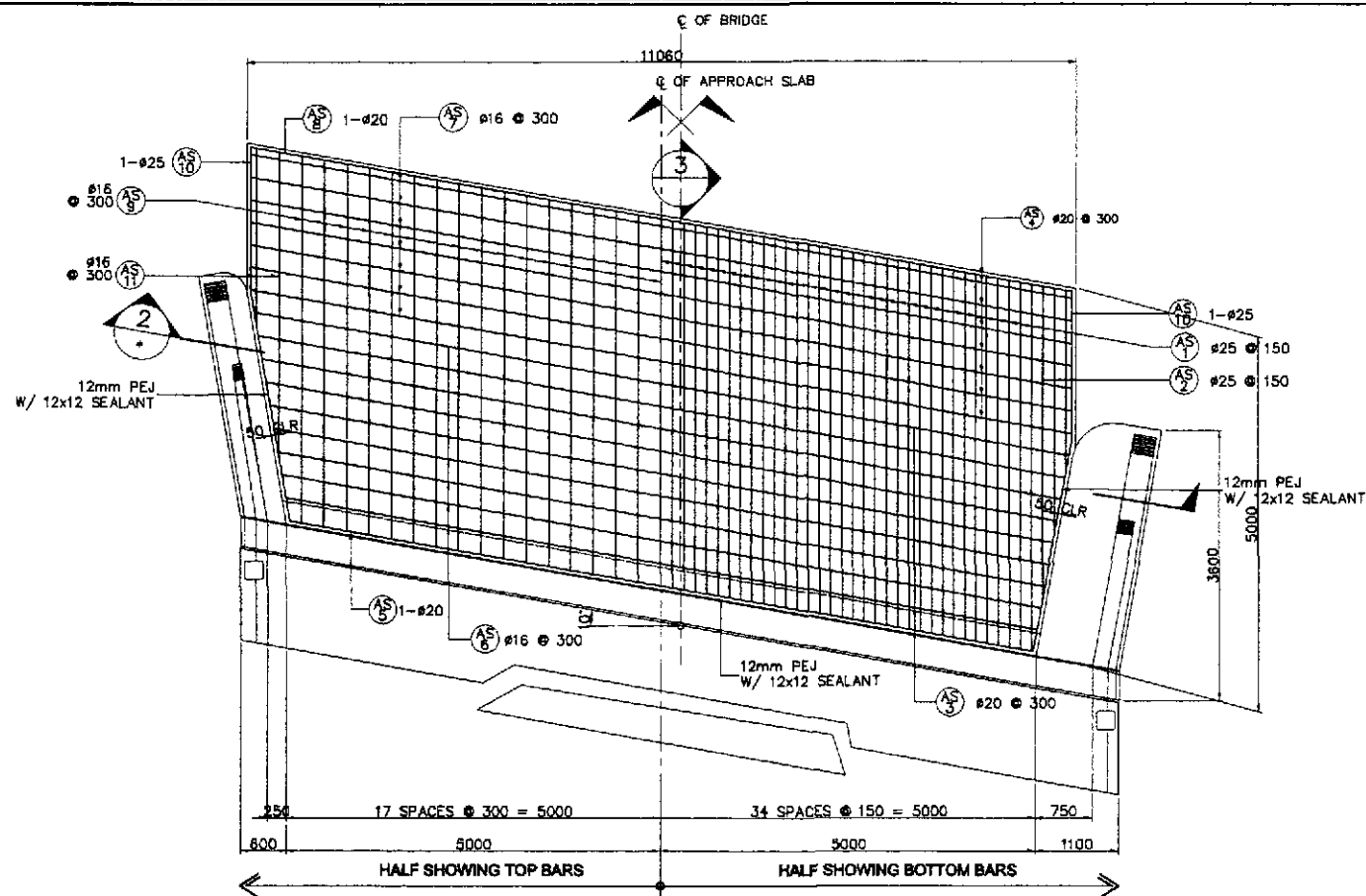
SCHEDULE OF REINFORCEMENT PER ABUTMENT																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm)					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e						f
WINGWALL	9.66	W1	20	16	250	(B)	400	2600	150	-	-	3150	50.40	2.466	125	152.69	
		W2	25	16	250	(B)	400	2600	150	-	-	3150	50.40	3.854	195		
		W3	20	8	250	(B)	400	3250	150	-	-	3800	30.40	2.466	75		
		W4	25	8	250	(B)	400	3250	150	-	-	3800	30.40	3.854	118		
		W5	20	2	250	(B)	400	3300	150	-	-	3850	7.70	2.466	19		
		W6	25	2	250	(B)	400	3300	150	-	-	3850	7.70	3.854	30		
		W7	20	12	250	(B)	400	3500	150	-	-	4050	48.60	2.466	120		
		W8	25	12	250	(B)	400	3500	150	-	-	4050	48.60	3.854	188		
		W9	16	16	200	(E)	250	5850	-	-	-	6100	97.60	1.579	155		
		W10	16	16	200	(E)	250	5850	-	-	-	6100	97.60	1.579	155		
		W11	16	16	200	(E)	250	1950	-	-	-	2200	35.20	1.579	56		
		W12	16	16	200	(E)	250	1950	-	-	-	2200	35.20	1.579	56		
		W13	16	4	AS SHOWN	(C)	250	1500	2700	-	-	4450	17.80	1.579	29		
		W14	12	226	AS SHOWN	(D)	170	450	170	-	-	790	178.54	0.888	159		
												GRADE 60 TOTAL =	870 kgs				
												GRADE 40 TOTAL =	610 kgs				
APPROACH RAILING AND SIDEWALK	3.53	S1	12	9	AS SHOWN	(A)	3500	-	-	-	3500	31.50	0.888	28	95.23		
		S2	12	2	AS SHOWN	(A)	3500	-	-	-	3500	7.00	0.888	7			
		S3	12	2	AS SHOWN	(A)	3500	-	-	-	3500	7.00	0.888	7			
		S4	12	6	AS SHOWN	(A)	3500	-	-	-	3500	21.00	0.888	19			
		S5	16	4	300	(F)	200	170	480	200	200	1250	5.00	1.579		8	
		S6	16	8	300	(G)	200	170	480	200	170	1420	11.36	1.579		18	
		S7	16	12	300	(H)	200	170	880	200	170	2120	25.44	1.579		41	
		S8	16	12	300	(E)	200	1020	-	-	-	1220	14.64	1.579		24	
		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)	2100	236	1300	-	-	3636	7.27	1.579		12	
		AR4	16	4	AS SHOWN	(I)	3500	236	900	-	-	4636	18.54	1.579		30	
AR5	16	8	AS SHOWN	(A)	3500	-	-	-	-	3500	28.00	1.579	45				
AR6	16	4	AS SHOWN	(A)	2100	-	-	-	-	2100	8.40	1.579	14				
												GRADE 60 TOTAL =	870 kgs				
												GRADE 40 TOTAL =	946 kgs				
TOTAL	13.22													GRADE 60 TOTAL =	870 kgs		
												GRADE 40 TOTAL =	946 kgs				



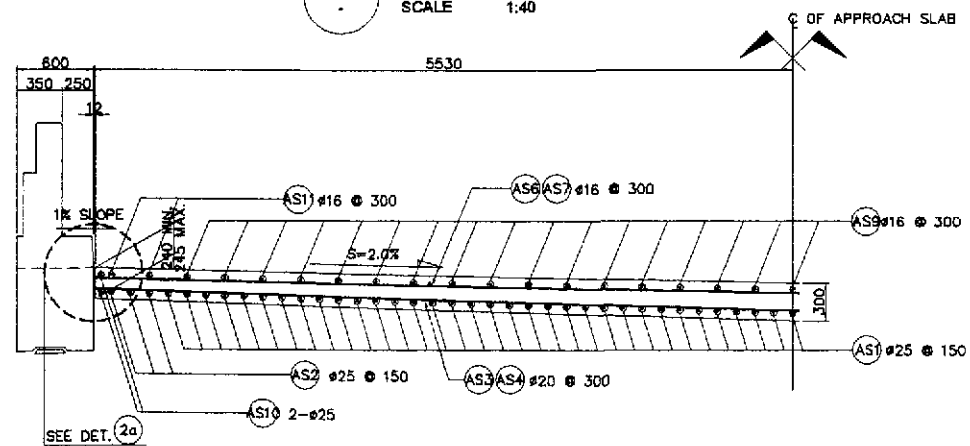
2 WINGWALL ELEVATION SCALE 1:50



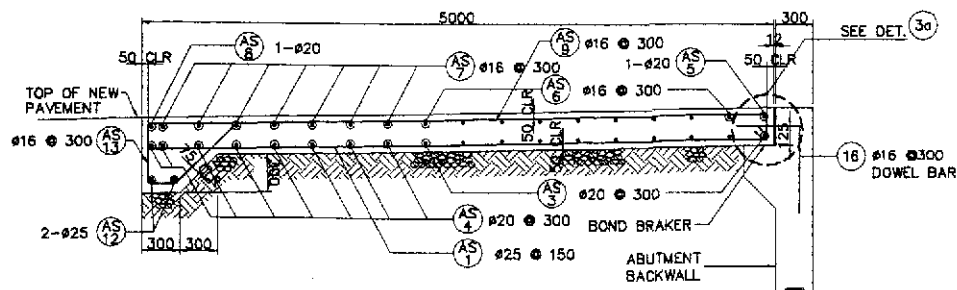
3 SECTION SCALE 1:50



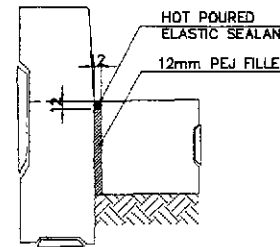
1 PLAN
SCALE 1:40



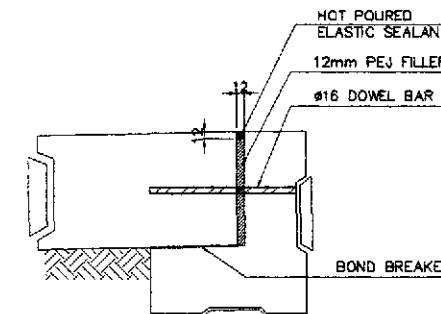
2 SECTION
SCALE 1:20



3 SECTION
SCALE 1:20

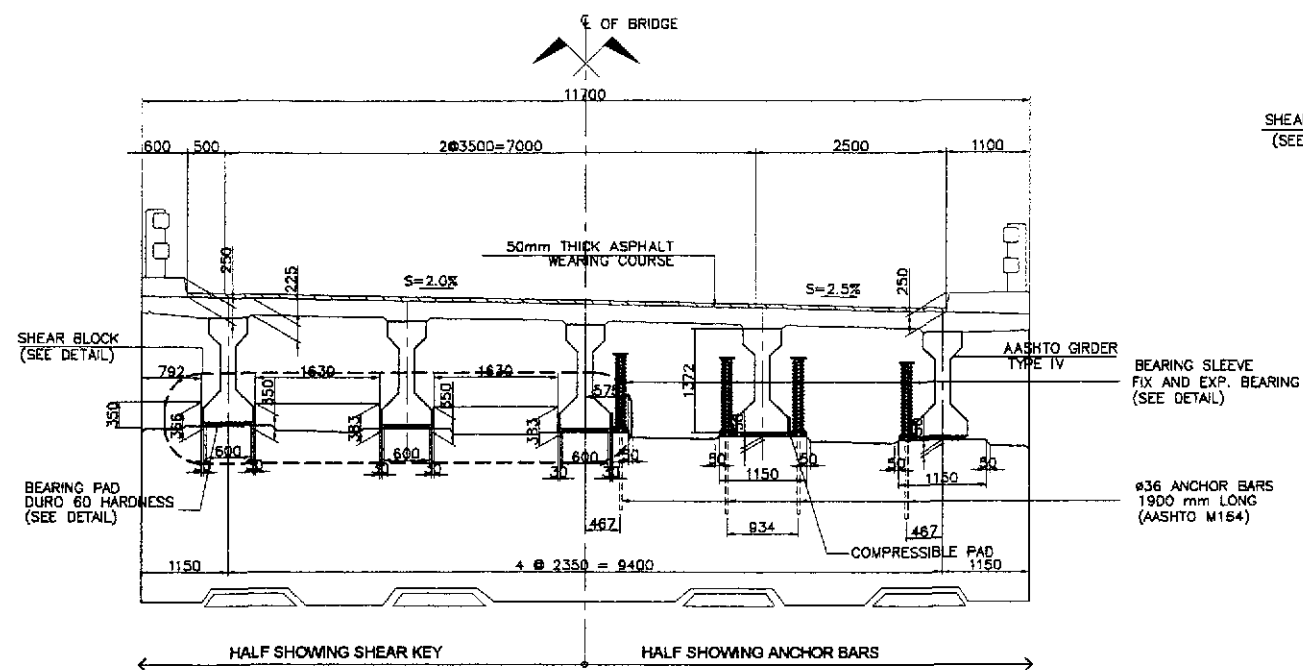


2a DETAIL
SCALE 1:10

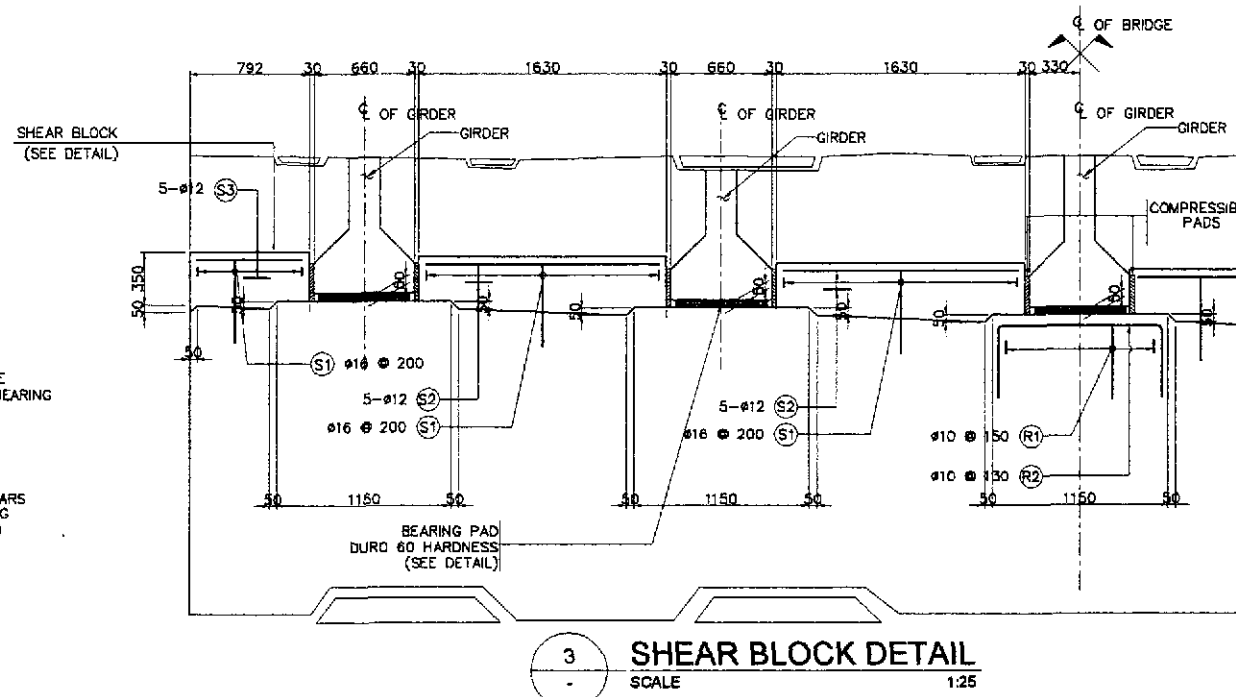


3a DETAIL
SCALE 1:10

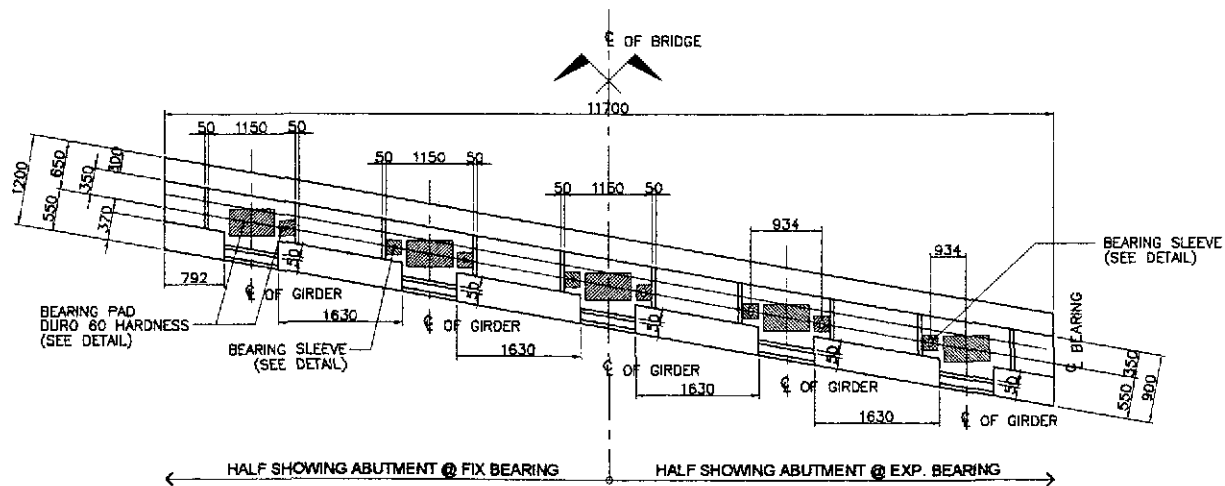
BAR BENDING DIAGRAM																
A		B		C		D										
SCHEDULE OF REINFORCEMENT PER APPROACH SLAB																
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/cu.m)
							a	b	c	d	e					
APPROACH SLAB	17.61	AS1	25	68	150	(B)	4900	200	-	-	-	5100	346.80	3.854	1337	159.65
		AS2	25	6	150	(B)	3250	200	-	-	-	3450	20.70	3.854	80	
		AS3	20	10	300	(A)	10750	-	-	-	-	10750	107.50	2.466	266	
		AS4	20	8	300	(A)	11350	-	-	-	-	11350	90.80	2.466	224	
		AS5	20	1	AS SHOWN	(A)	10200	-	-	-	-	10200	10.20	2.466	26	
		AS6	16	9	300	(A)	10800	-	-	-	-	10800	97.20	1.579	154	
		AS7	16	7	300	(A)	11350	-	-	-	-	11350	79.45	1.579	125	
		AS8	20	1	AS SHOWN	(A)	11350	-	-	-	-	11350	11.35	2.466	28	
		AS9	16	34	300	(B)	4900	200	-	-	-	5100	173.40	1.579	274	
		AS10	25	4	AS SHOWN	(C)	1900	3100	-	-	-	5000	20.00	3.854	78	
		AS11	16	4	300	(B)	3150	200	-	-	-	3350	13.40	1.579	22	
		AS12	25	2	AS SHOWN	(A)	11350	-	-	-	-	11350	22.70	3.854	88	
		AS13	16	38	300	(D)	400	500	200	700	-	1800	68.40	1.579	109	
TOTAL	17.61											GRADE 40 TOTAL = 685 kgs. GRADE 60 TOTAL = 2127 kgs.				



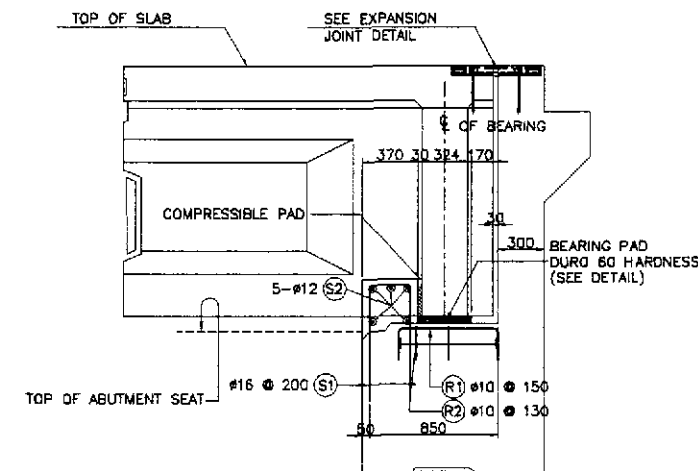
1 SECTION AT ABUTMENT SEAT
SCALE 1:50



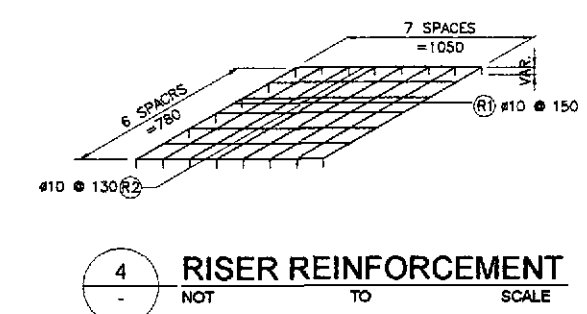
3 SHEAR BLOCK DETAIL
SCALE 1:25



2 PLAN AT ABUTMENT SEAT
SCALE 1:50



3A SECTION
SCALE 1:25



4 RISER REINFORCEMENT
NOT TO SCALE

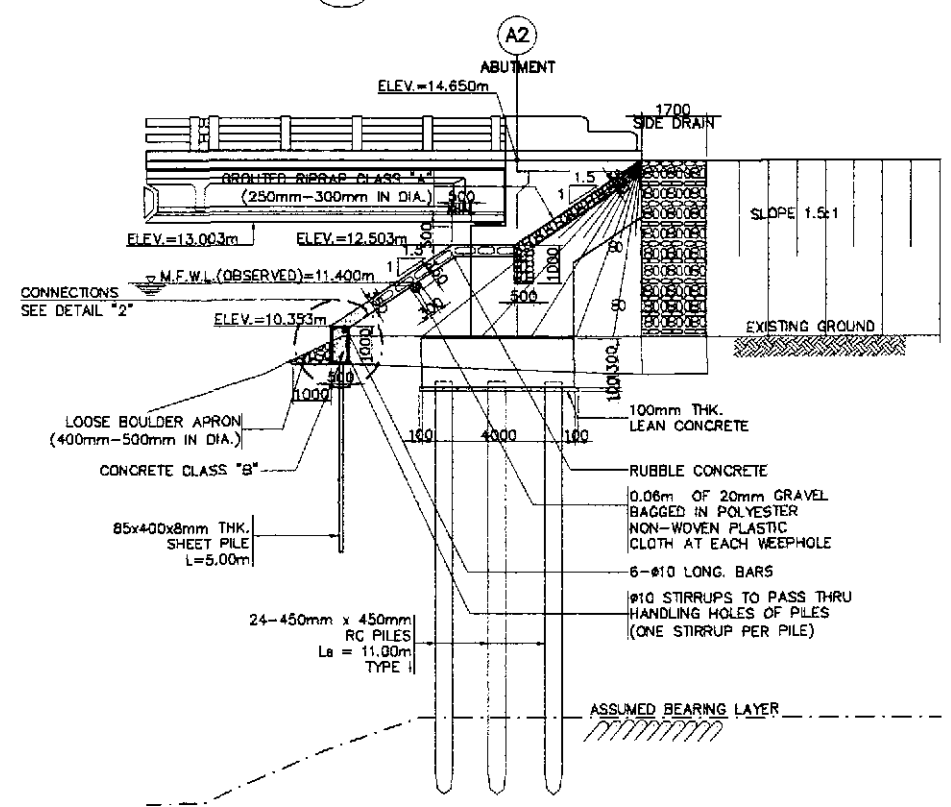
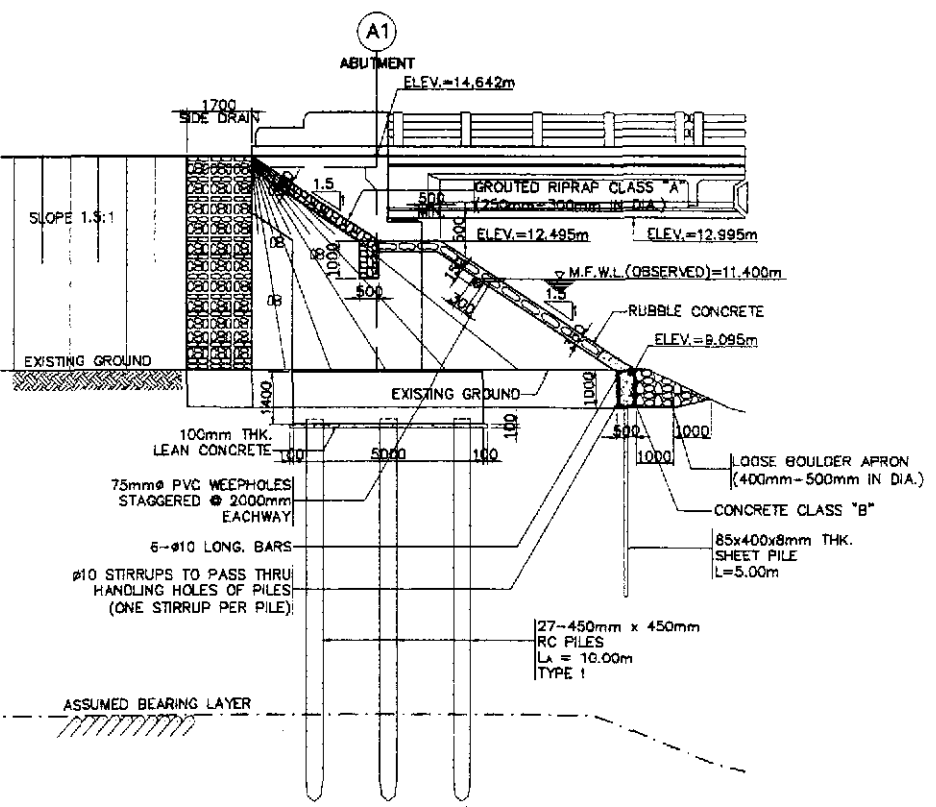
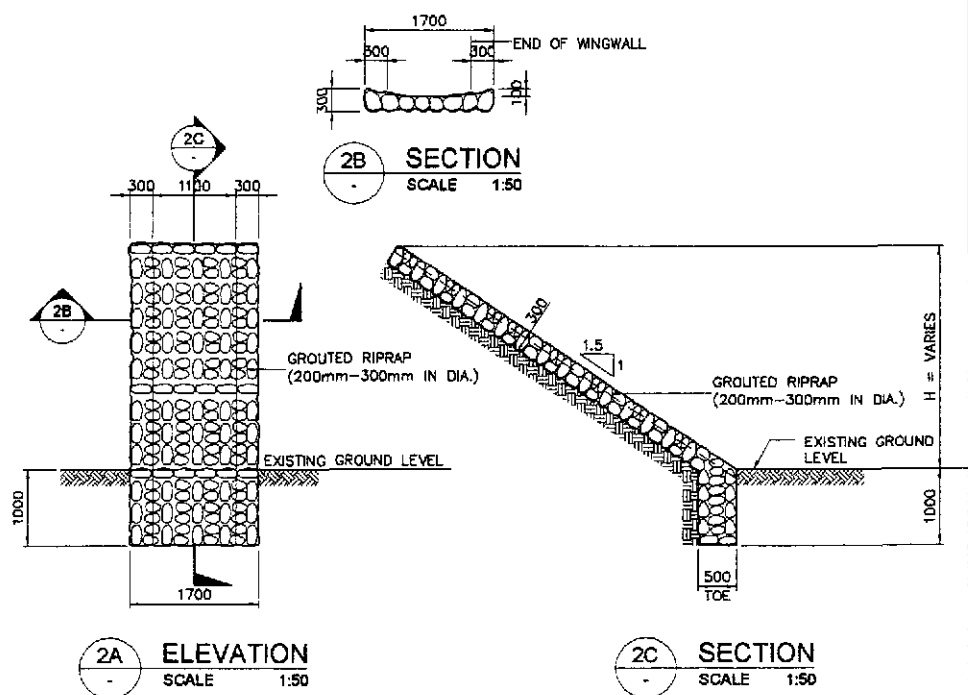
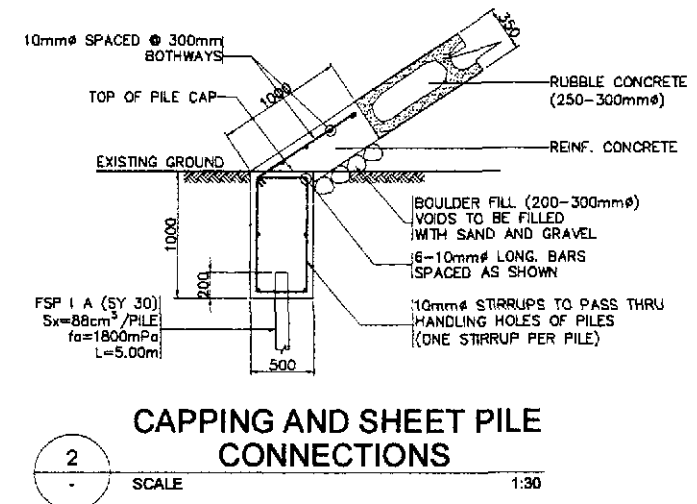
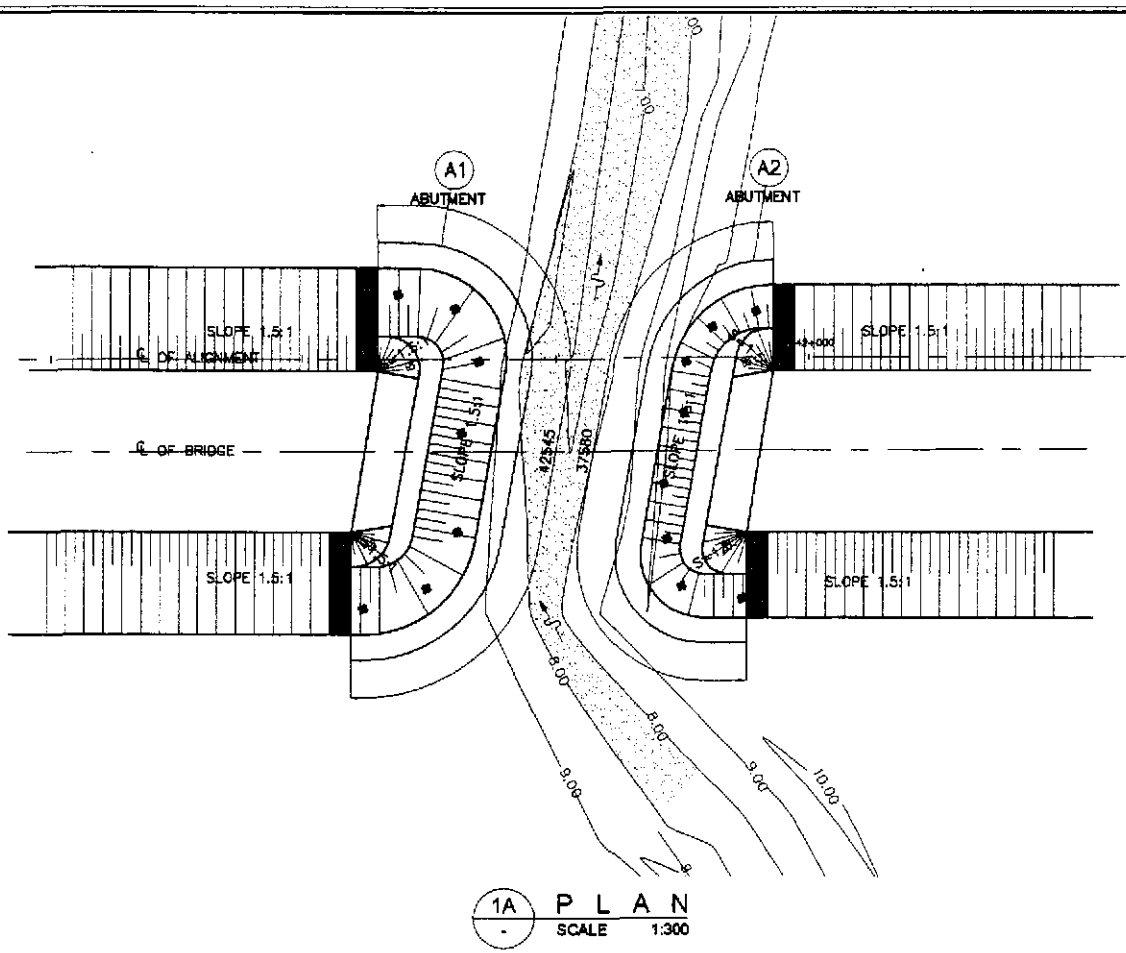
BAR BENDING DIAGRAM																
(A)						(B)										
c						a b c										
SCHEDULE OF REINFORCEMENT																
LOCATION	CONCRETE VOLUME (m³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSION(mm) OUT TO OUT					LENGTH EACH BAR (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m³)
							a	b	c	d	e					
SHEAR KEY & RISER	1.56	S1	16	46	200	(B)	560	290	560			1440	64.86	1.578	103	147.22
		S2	12	20	AS SHOWN	(A)	1580					1580	31.60	0.888	28	
		S3	12	10	AS SHOWN	(A)	730					715	7.15	0.888	7	
		R1	10	40	150	(B)	500	800	500			1800	72.00	0.616	45	
		R2	10	35	130	(B)	500	1070	500			2070	71.75	0.616	45	
TOTAL	1.58															GRADE 40 TOTAL = 229 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	9/10/02	<i>[Signature]</i>		BUREAU OF DESIGN	OFFICE OF THE SECRETARY	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 4 SHEAR KEY AND RISER DETAILS (INITIAL STAGE)	B4-10	
	SUBMITTED	9/12/02	<i>[Signature]</i>		Submitted By:	Reviewed By:	Recommended By:	PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		

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 BRUSH.
- 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
- 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.
- RUBBLE CONCRETE SHALL BE CLASS "B" (1:2.5:5) MIX CONCRETE WITH BOULDERS EMBEDDED THEREIN. BOULDERS 250-300mm# 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 400-500mm# 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.



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
CONC. CLASS "B"	1000 x 500 x LENGTH	19.99 cu. m.	17.71 cu. m.
REBAR	#10, GRADE 40	302.00 kgs.	265.00 kgs.
BOULDER APRON	400mm-500mm IN DIA.	59.96 cu. m.	53.13 cu. m.
RUBBLE CONCRETE	250mm-300mm IN DIA.	71.42 cu. m.	47.22 cu. m.
SHEET PILE	85x 400 x 8mm THK.	88.00 pcs.	76.00 pcs.
SIDE DRAIN	200mm-300mm IN DIA.	11.50 cu. m.	9.92 cu. m.
GROUTED RIPRAP	250mm-300mm IN DIA.	10.52 cu. m.	12.29 cu. m.

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

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
OFFICE OF THE SECRETARY

DESIGNED: P. GONZALES
CHECKED: [Signature]
SUBMITTED: [Signature]

Submitted By: DANILLO C. TRAJANO, Project Director
Reviewed By: PERFECTO L. ZAPLAN JR., Chief, Hydrological Division (OIC)
Recommended By: GILBERTO S. REYES, Director IV (OIC)
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
SHEET CONTENTS: BRIDGE NO. 4 ABUTMENT PROTECTION AND SIDE DRAIN DETAILS (INITIAL STAGE)
SHEET NO.: B4-11

PLARIDEL BYPASS - CONTRACT PACKAGE II
FULL SIZE A1