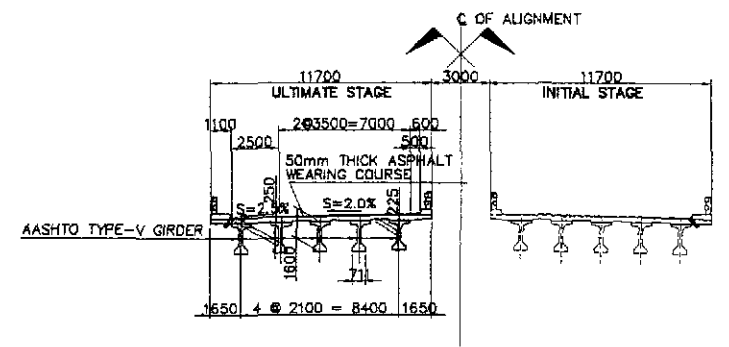
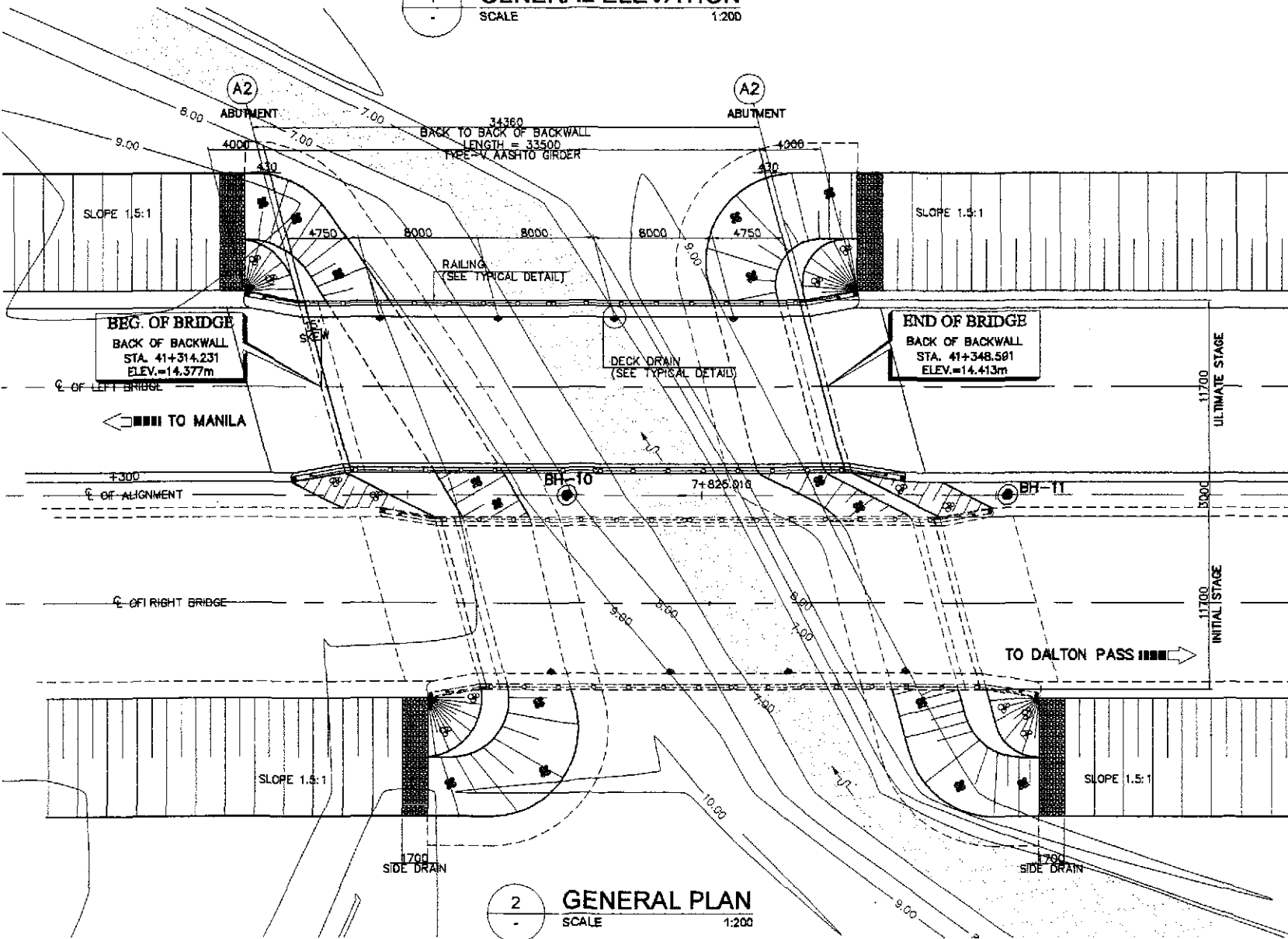


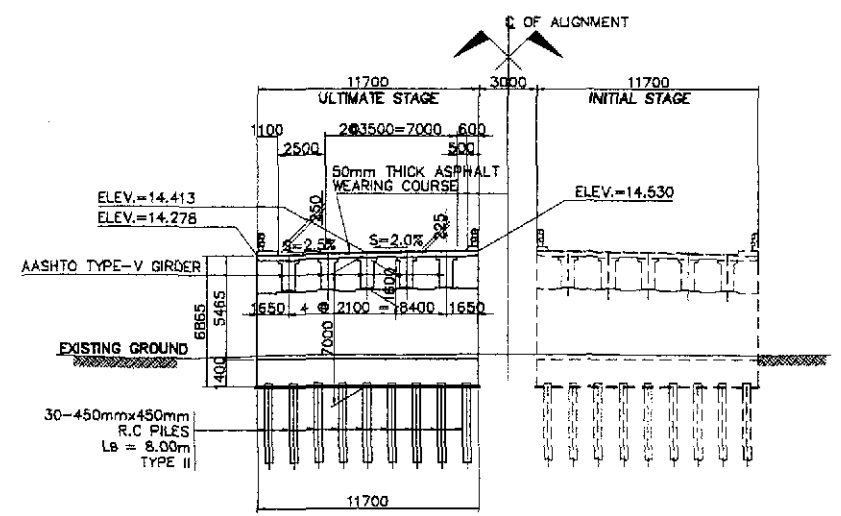
1 GENERAL ELEVATION
SCALE 1:200



3 SECTION @ MID SPAN
SCALE 1:200



2 GENERAL PLAN
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.

A PLARIDEL BYPASS BRIDGE NO. 2 (STA. 41+314.231)
SCALE AS SHOWN

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

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

DESIGNED	DATE	SIGNATURE
	10/21/02	P. GONZALES
CHECKED	10/25/02	[Signature]
SUBMITTED	10/27/02	[Signature]

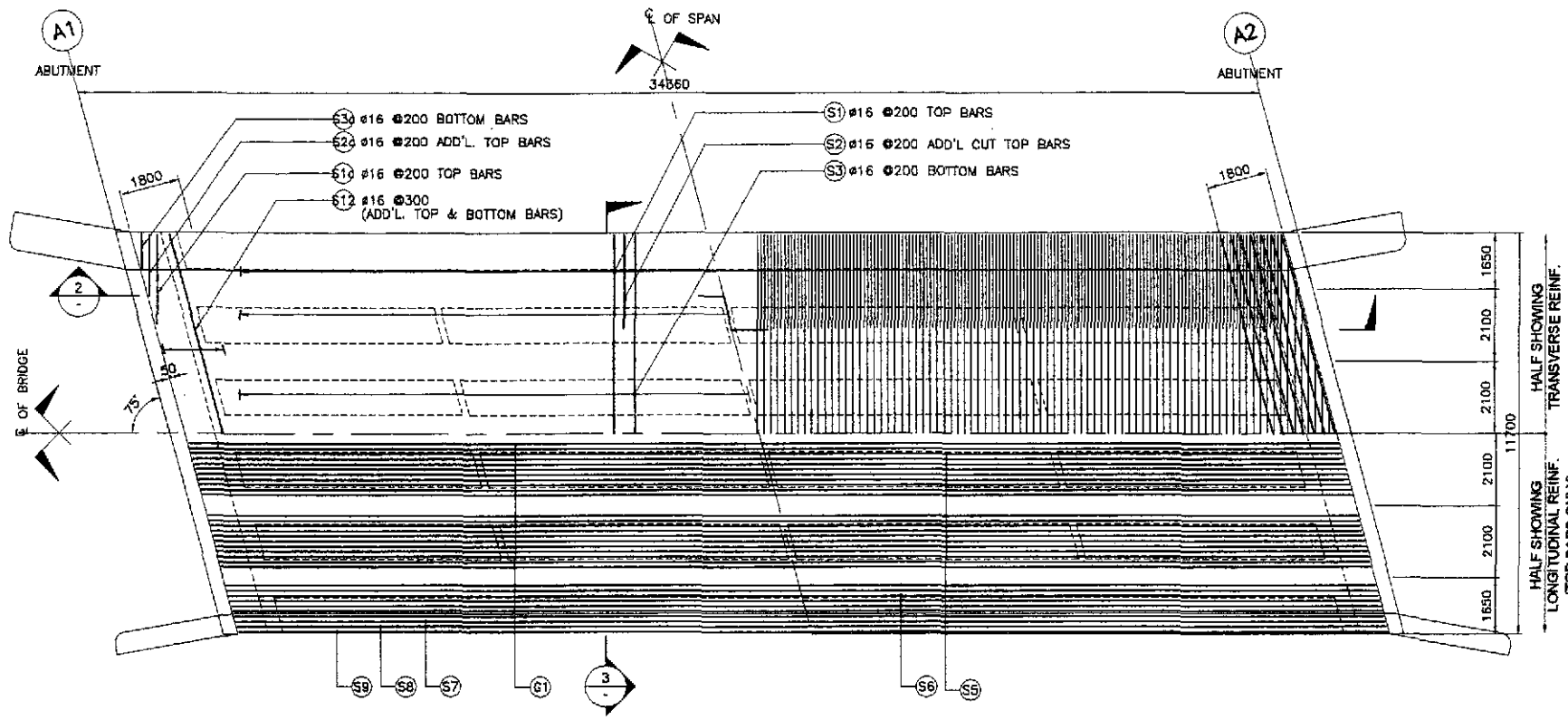
REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	
BUREAU OF DESIGN	
Submitted By:	DANILO C. TRAJANO Project Director
Reviewed By:	ADRIANO M. DORCY Chief, Bridges Division
Recommended By:	GILBERTO S. REYES Director IV (OIC)
Approved By:	MANUEL M. BONDAN Undersecretary
Approved By:	SIMEON 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)
PLARIDEL BYPASS - CONTRACT PACKAGE II

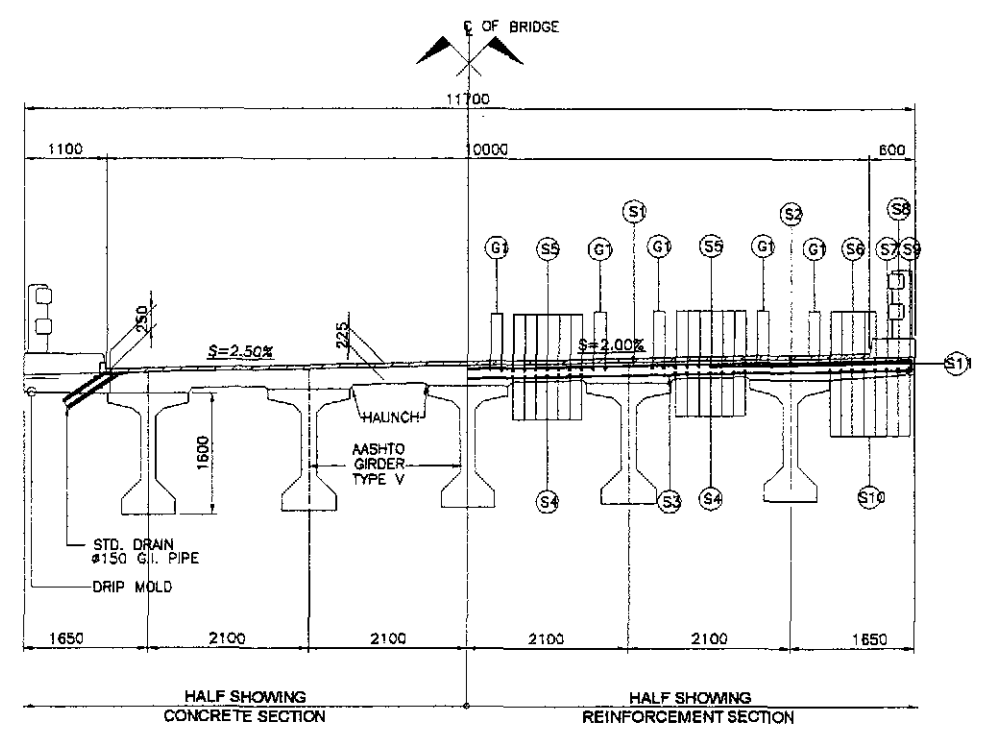
SCALE :
1:200
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO. 2
GENERAL PLAN, ELEVATION
AND SECTIONS
(ULTIMATE STAGE)

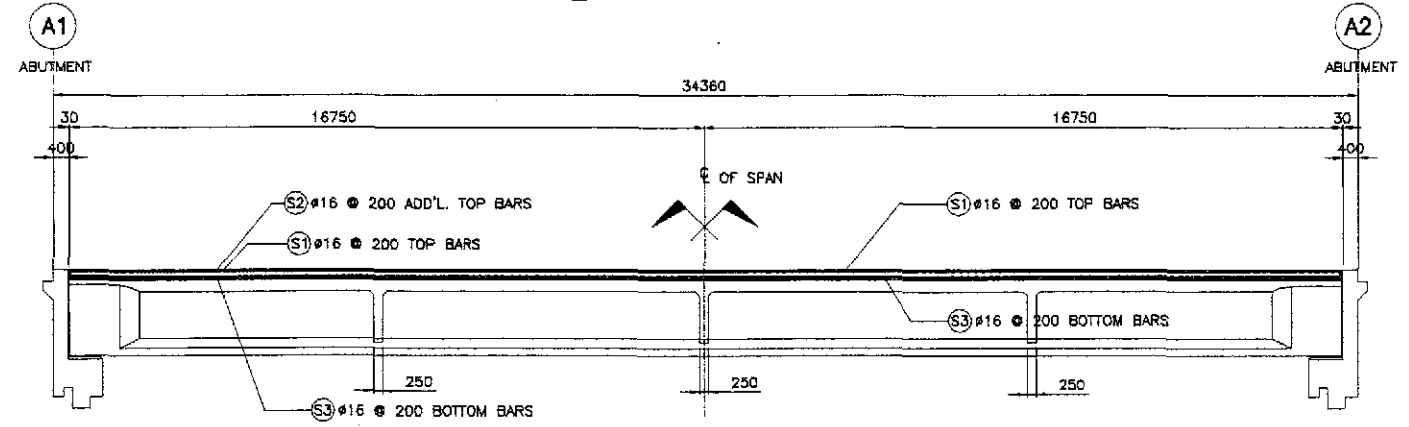
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B2-01



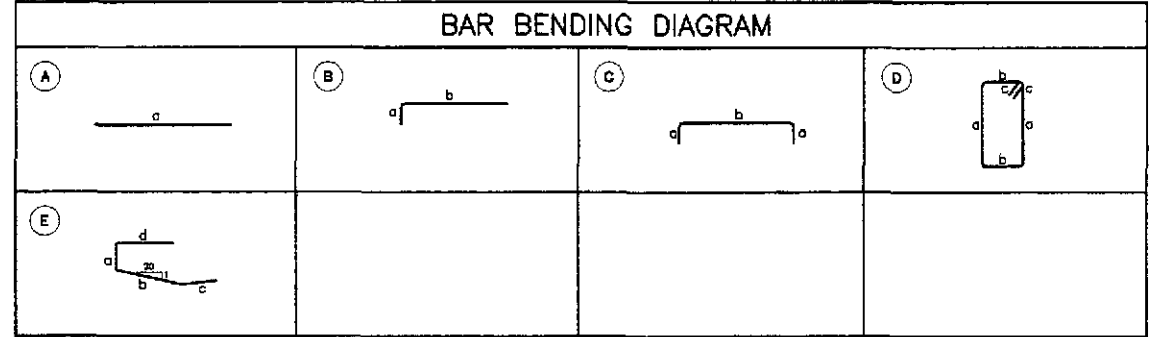
1 FRAMING PLAN
SCALE 1:100



3 TYPICAL CROSS-SECTION
SCALE 1:50



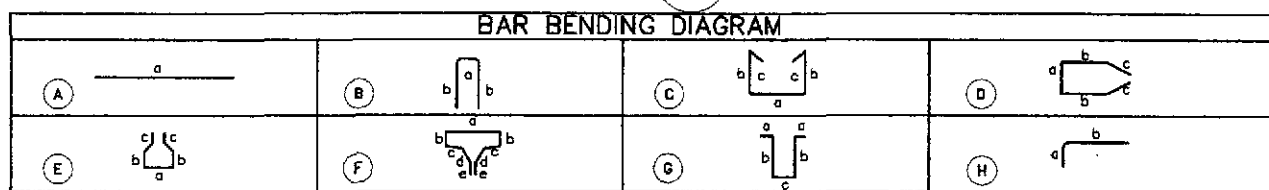
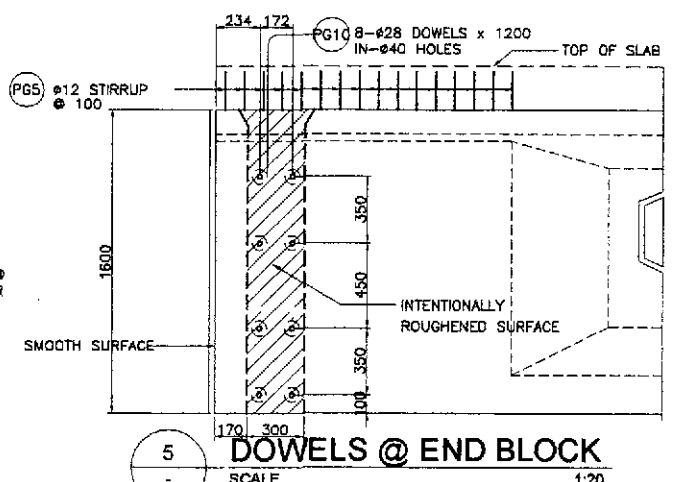
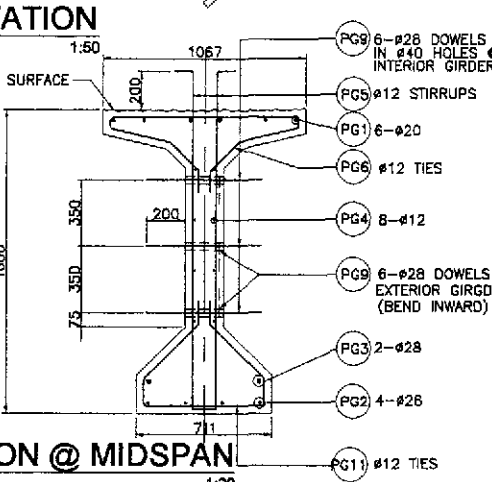
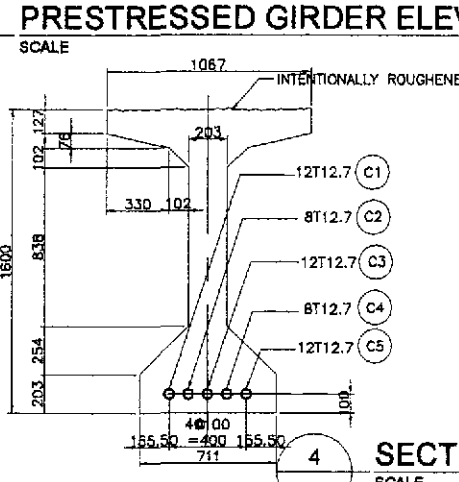
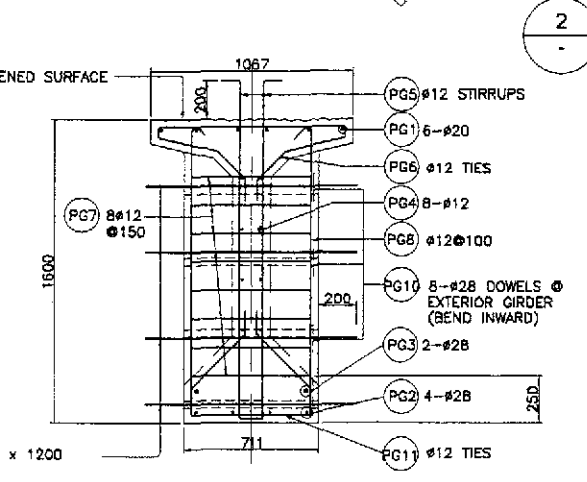
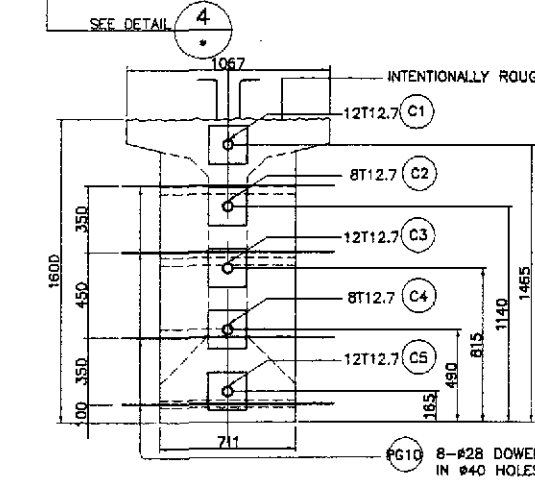
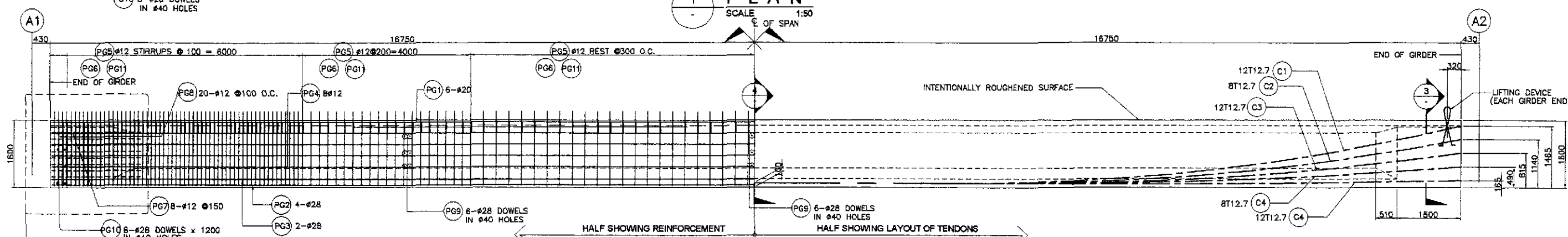
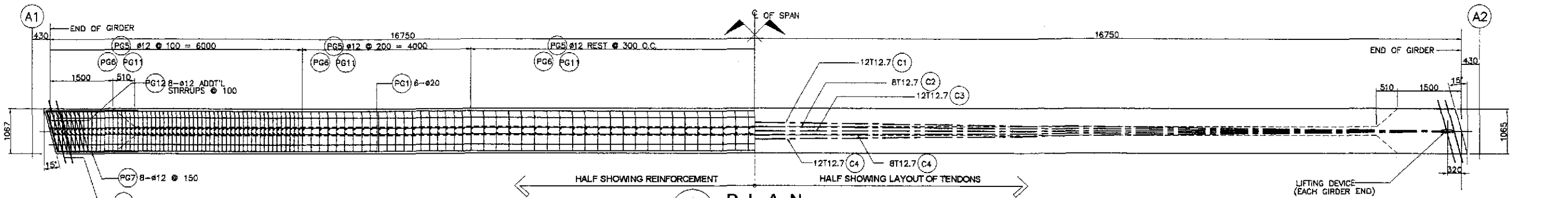
2 LONGITUDINAL SECTION
SCALE 1:100



ESTIMATED QUANTITIES OF SUPERSTRUCTURE			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
404(1)a	REINFORCING STEEL GRADE 40	kg.	28275
	DECK SLAB	14486	
	DIAPHRAGM	442	
	GIRDER	9875	
	SIDEWALK, RAILING, & POST	3094	
	APPROACH SLAB	1378	
404(1)b	REINFORCING STEEL GRADE 60	kg.	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	22.3	
	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	668.00	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	-	-	-	12000	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														

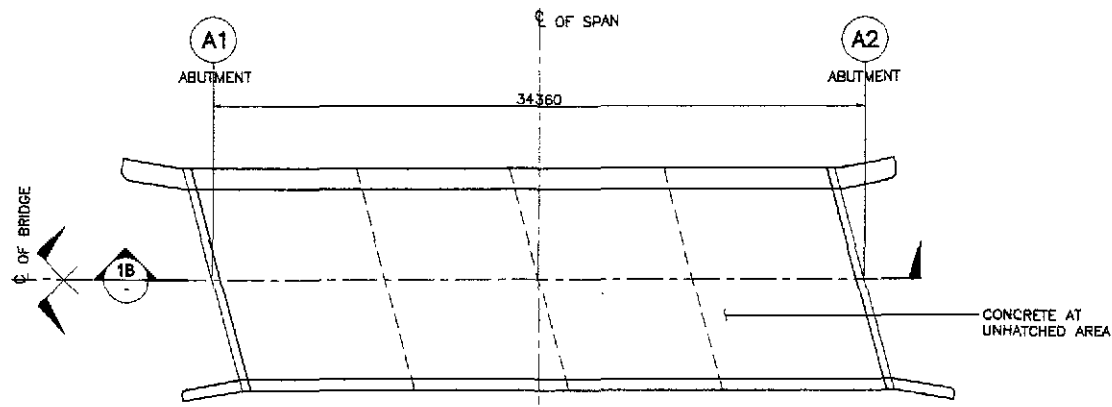
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	CHECKED	10/21/12	<i>[Signature]</i>		BUREAU OF DESIGN					THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 2 & 5 DECK FRAMING PLAN AND SECTIONS (ULTIMATE STAGE)	B2-02
	SUBMITTED	10/27/12	<i>[Signature]</i>		Submitted By:	Reviewed By:	Recommended By:	Approved By:	PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1			



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 RA/100 (kg/cu.m)	REMARKS
						a	b	c	d	e							
GIRDER	PG1	20	6	AS SHOWN	(A)	33420	-	-	-	-	33420	200.52	2.466	495			QUANTITIES ARE FOR ONE (1) GIRDER ONLY
	PG2	28	4	AS SHOWN	(A)	33420	-	-	-	-	33420	133.68	4.833	647			
	PG3	28	2	AS SHOWN	(A)	33420	-	-	-	-	33420	66.84	4.833	324			
	PG4	12	8	AS SHOWN	(A)	33420	-	-	-	-	33420	267.36	0.888	238			
	PG5	12	204	100	(G)	100	1750	103	-	-	3803	775.81	0.888	689			
	PG6	12	204	100	(F)	1000	50	340	200	150	2480	505.92	0.888	450			
	PG7	12	16	150	(D)	635	1450	550	-	-	4635	74.16	0.888	66	23.56	152.25	
	PG8	12	30	100	(C)	635	1520	150	-	-	3975	119.25	0.888	106			
	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	204	100	(E)	635	160	400	150	-	2055	419.22	0.888	373			
	PG12	12	16	100	(B)	635	1520	-	-	-	5675	58.80	0.888	53			

- NOTES :
- SEE GENERAL NOTES, -2, FOR GIRDER DESIGN GUIDE.
 - JACKING FORCE PER GIRDER, $P_j = 7160$ KN.
 - JACKING WILL BE DONE AT BOTH ENDS.
 - FINAL PRESTRESSING FORCE @ MIDSPAN, $F_{NET} = 5302$ KN.

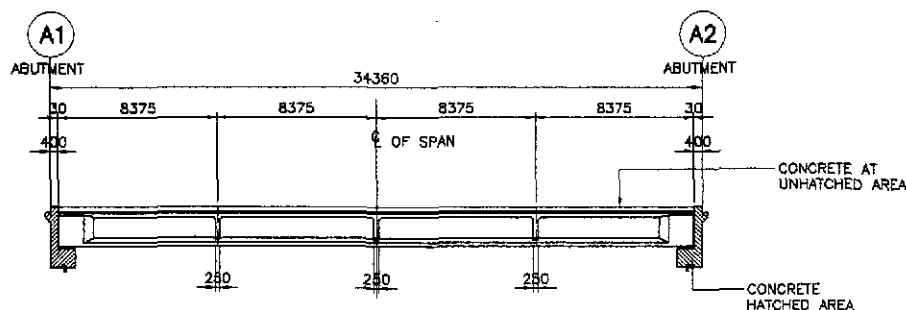
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	CHECKED	10/21/02	<i>[Signature]</i>		BUREAU OF DESIGN					THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 2 & 5 AASHTO TYPE V GIRDER (ULTIMATE STAGE)	B2-03
	SUBMITTED	10/27/02	<i>[Signature]</i>		Submitted By:	Reviewed By:	Recommended By:	Approved By:	PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1			



1A PLAN
SCALE 1:200

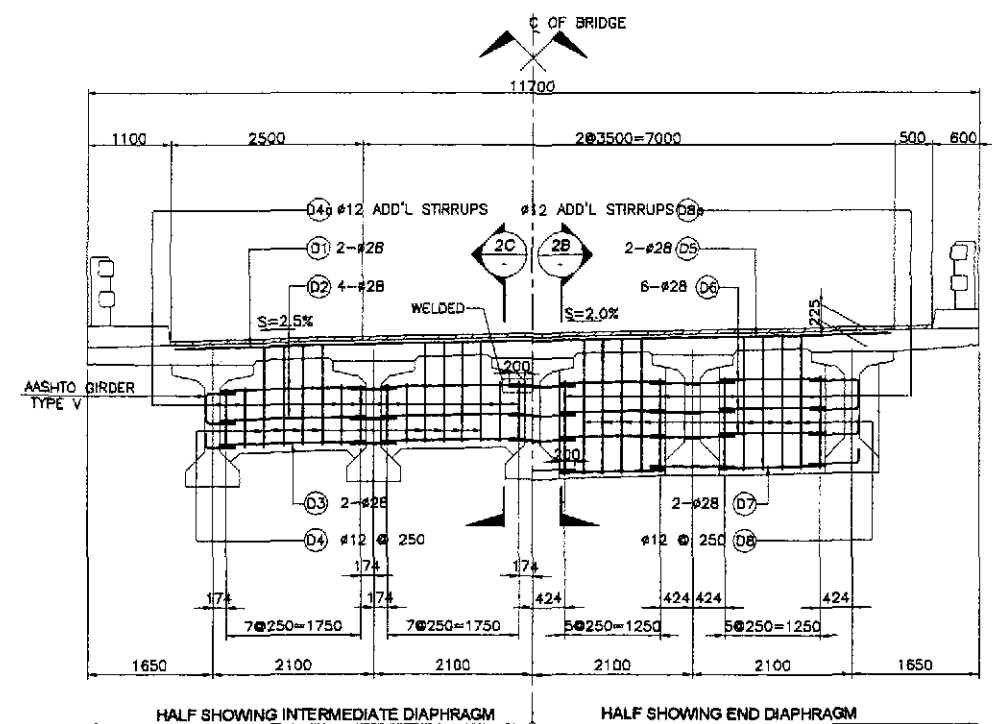
NOTES:

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.



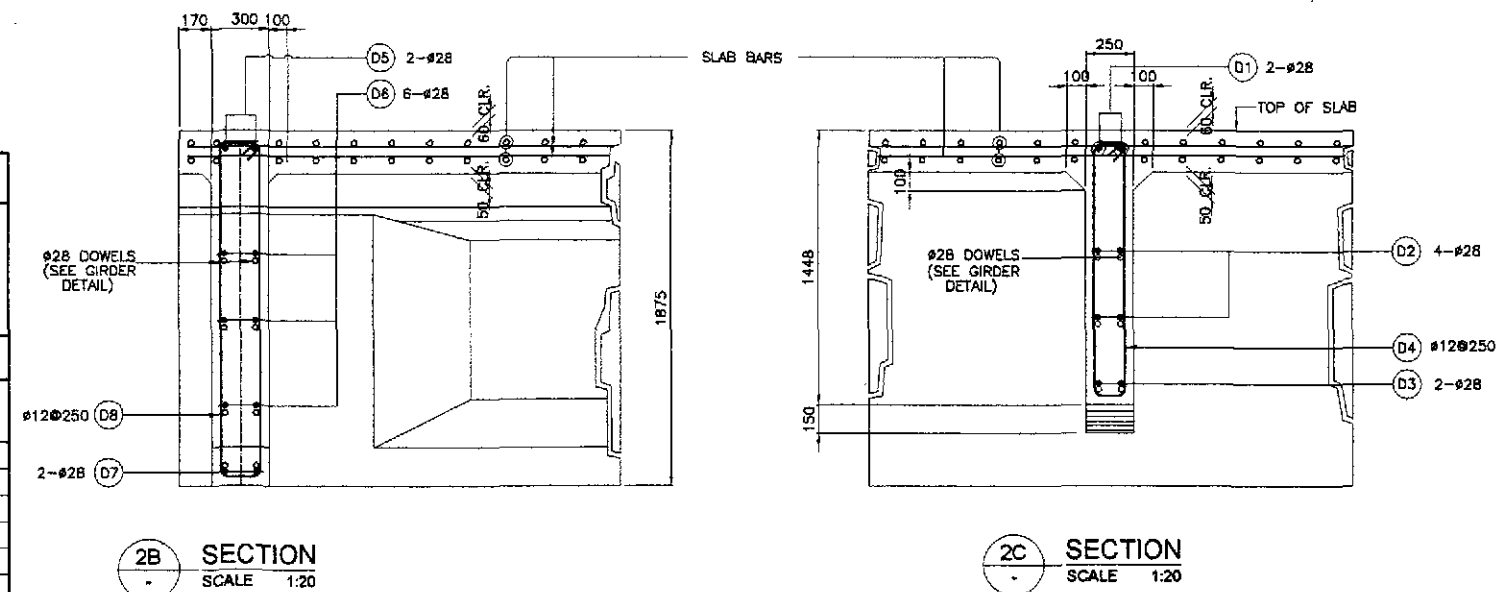
1B LONGITUDINAL SECTION
SCALE 1:200

1 CONCRETE POURING SEQUENCE
SCALE 1:200



2A ELEVATION
SCALE 1:25

BAR BENDING DIAGRAM															
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	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(AVE)	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	5.50	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	950(AVE)	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 BARS
TOTAL			13.31												

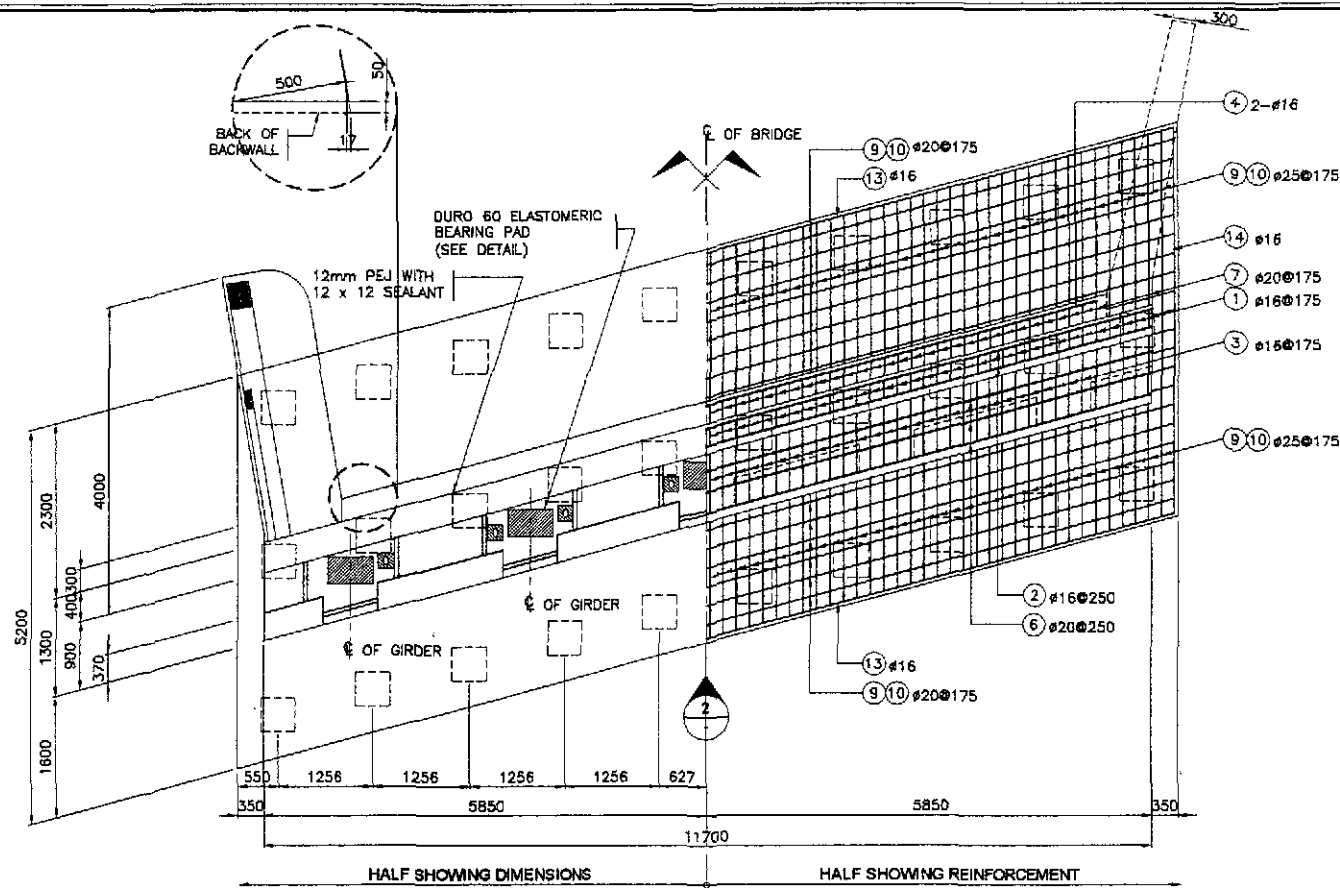


2B SECTION
SCALE 1:20

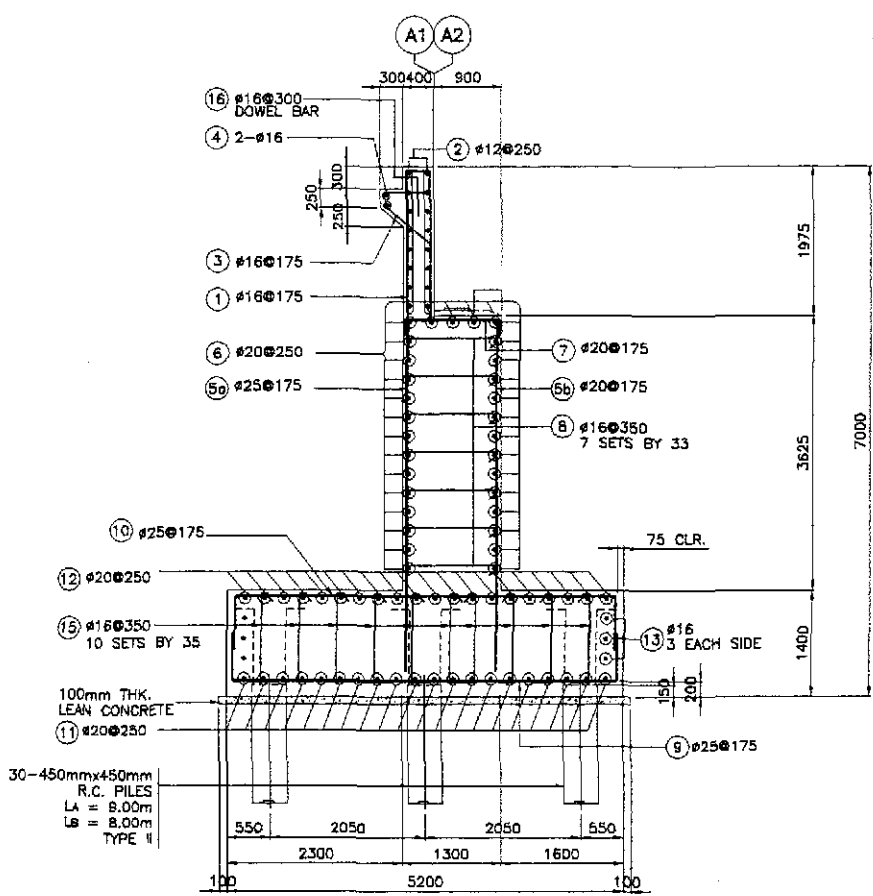
2C SECTION
SCALE 1:20

2 DETAIL OF END & INTERMEDIATE DIAPHRAGM
SCALE AS SHOWN

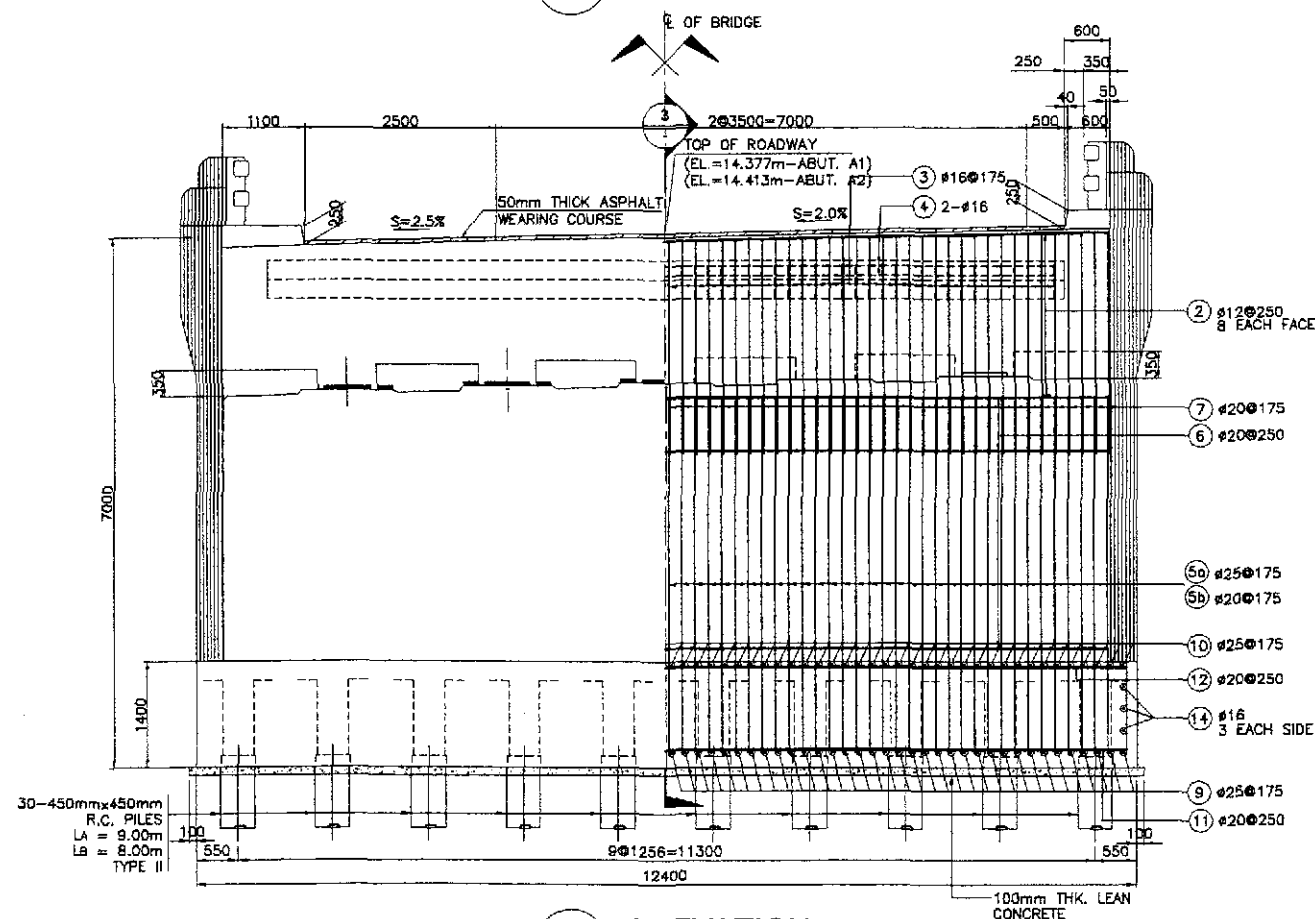
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	CHECKED	10/25/02	E. N. SALLAN		DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)		AS SHOWN	BRIDGE NO. 2 & 5 CONCRETE POURING SEQUENCE AND DIAPHRAGM DETAILS (ULTIMATE STAGE)		B2-04
	SUBMITTED	10/27/02	M. R. RIVERA		BUREAU OF DESIGN				PLARIDEL BYPASS - CONTRACT PACKAGE II		FULL SIZE A1			



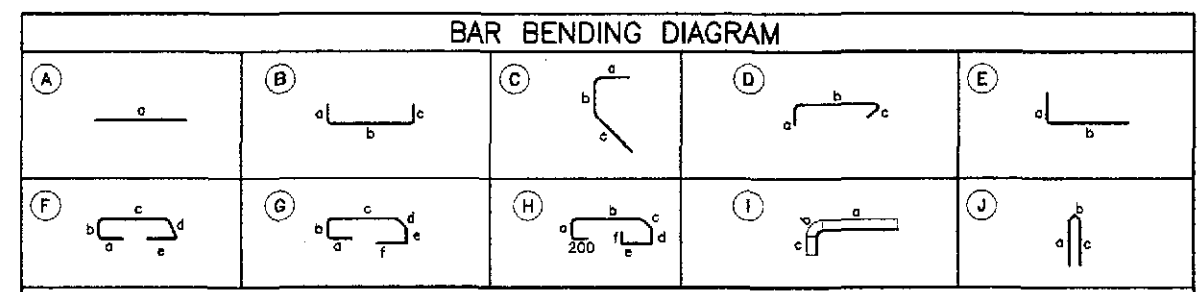
1 PLAN
SCALE 1:50



3 SECTION
SCALE 1:50



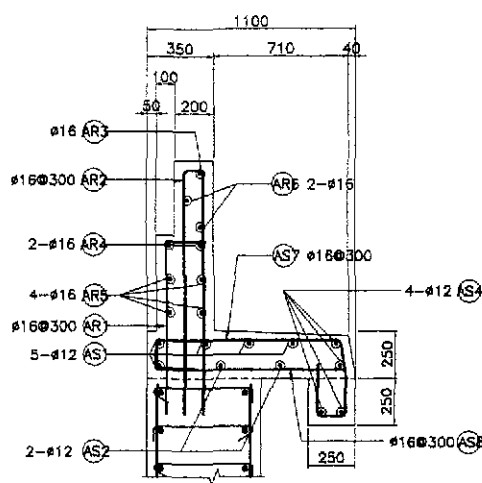
2 ELEVATION
SCALE 1:50



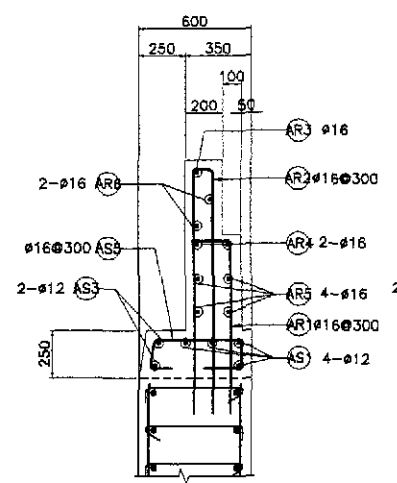
SCHEDULE OF REINFORCEMENT PER ABUTMENT																
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d	e					
BACKWALL	10.37	1	16	68	175	B	2300	300	2300	-	-	4900	335.20	1.579	527	83.82
		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	55.14	5a	25	68	175	E	400	4750	-	-	-	5150	350.20	3.854	1350	73.25
		5b	20	68	175	E	400	4750	-	-	-	5150	350.20	2.466	864	
		6	20	31	250	A	12000	-	-	-	-	12000	372.00	2.466	918	
		7	20	68	175	B	250	1200	250	-	-	1700	115.60	2.466	286	
		8	16	231	350	D	250	1200	250	-	-	1700	392.70	1.579	621	
		9	25	71	175	B	700	5050	700	-	-	6450	457.95	3.854	1765	
FOOTING	90.27	10	25	71	175	B	700	5050	700	-	-	6450	457.85	3.854	1765	67.27
		11	20	21	250	B	700	12700	700	-	-	14100	286.10	2.466	731	
		12	20	21	250	B	700	12700	700	-	-	14100	286.10	2.466	731	
		13	16	6	AS SHOWN	A	12700	-	-	-	-	12700	76.20	1.579	121	
		14	16	6	AS SHOWN	A	5050	-	-	-	-	5050	30.30	1.579	48	
		15	16	350	350	D	250	1150	250	-	-	1650	577.50	1.579	912	
DOWEL		16	16	34	300	E	650	500	-	-	1150	39.10	1.579	62		
TOTAL	155.78															

GRADE 40 TOTAL = 2,633 kgs.
GRADE 60 TOTAL = 8,410 kgs.

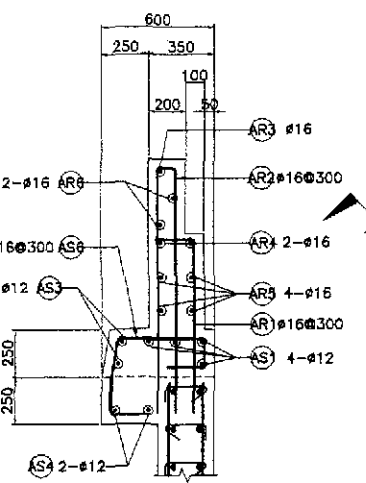
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	CHECKED				BUREAU OF DESIGN					THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 2 ABUTMENT - A1 & A2 MAINWALL REINFORCEMENT DETAILS (ULTIMATE STAGE)	B2-05
	SUBMITTED				OFFICE OF THE SECRETARY					FULL SIZE A1			
				Submitted By: DANILLO C. TRAJANO, Project Director Reviewed By: ADRIANO M. DORCY, Chief, Bridges Division Recommended By: GILBERTO S. REYES, Director IV (D/C) Recommended By: MANUEL M. BONJAN, Undersecretary Approved By: SIMEON A. DATUMANONG, Secretary					PLARIDEL BYPASS - CONTRACT PACKAGE II FULL SIZE A1				



5A SECTION
SCALE 1:20

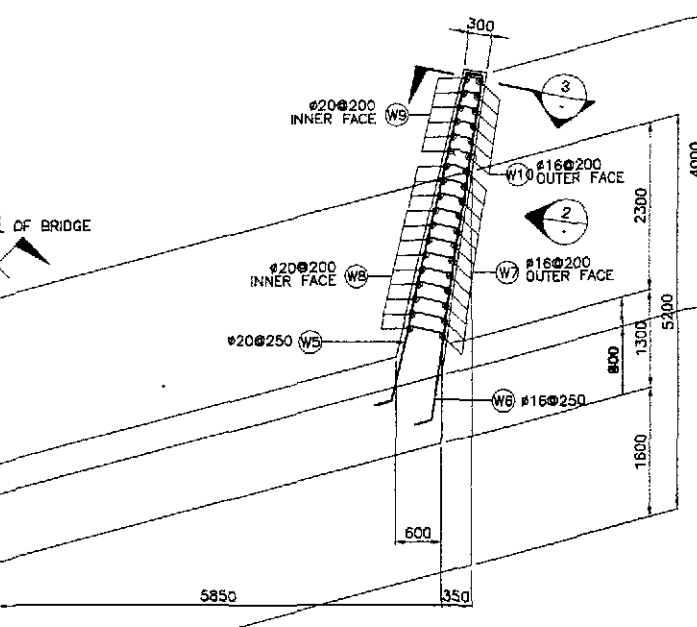


5B SECTION
SCALE 1:20

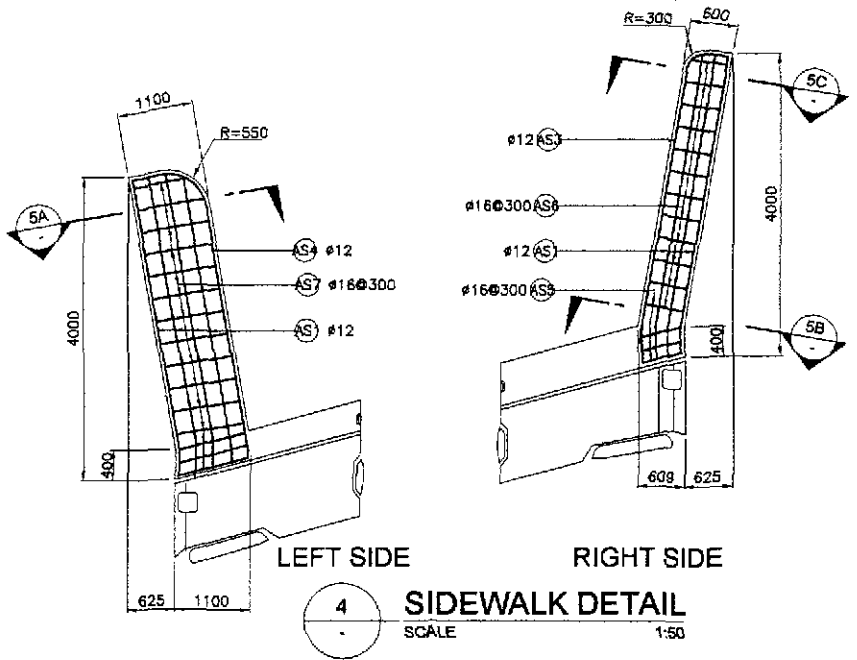


5C SECTION
SCALE 1:20

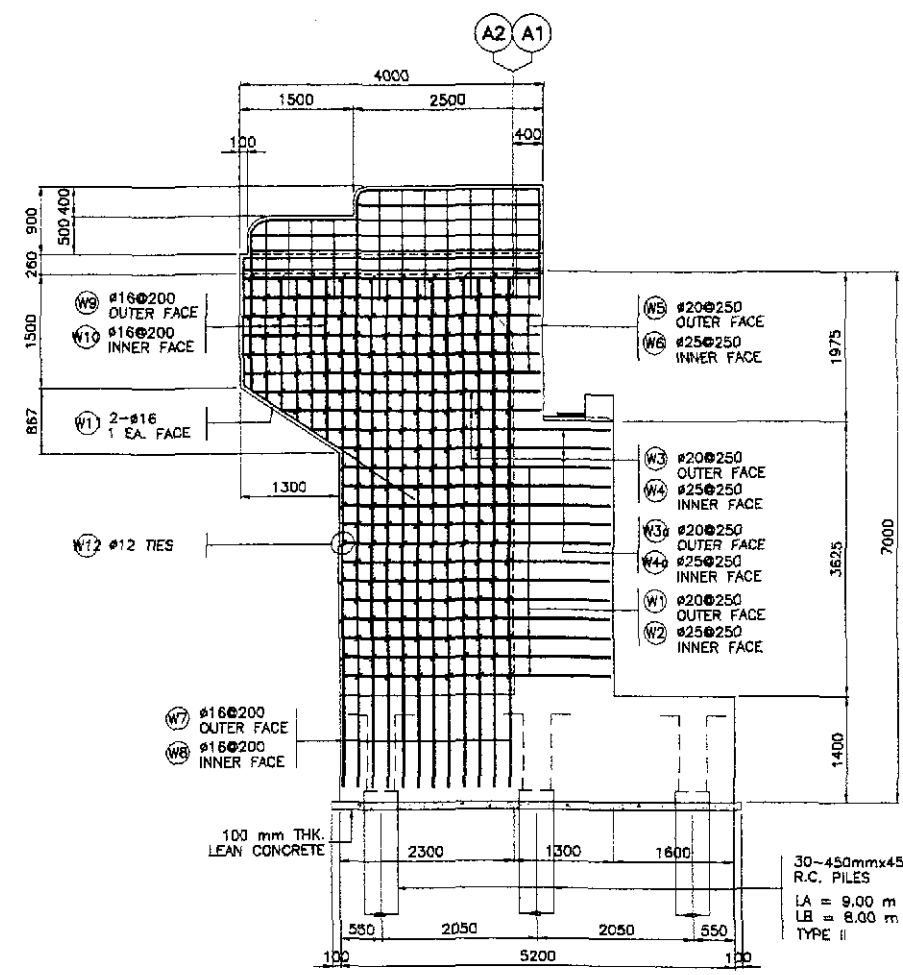
5 APPROACH RAIL DETAILS
SCALE 1:20



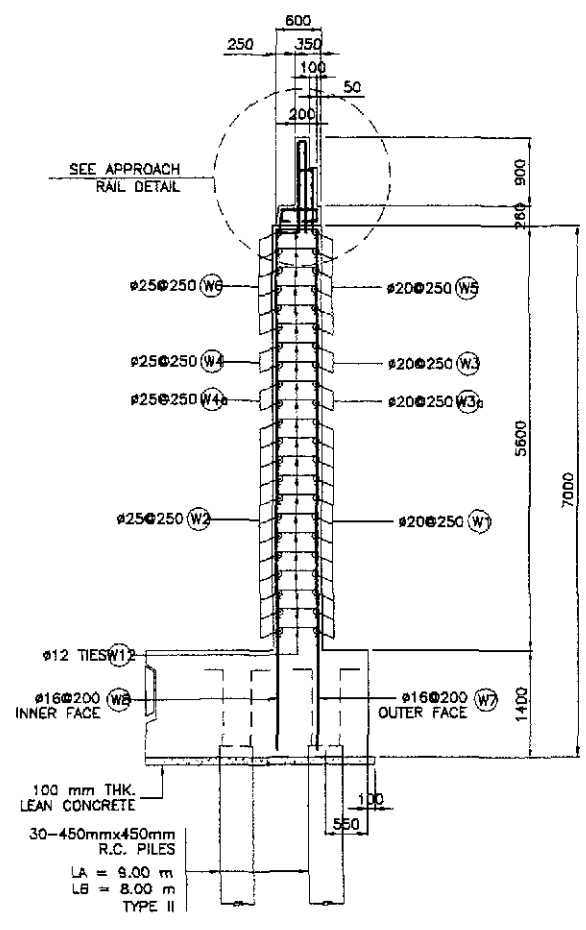
1 PLAN
SCALE 1:50



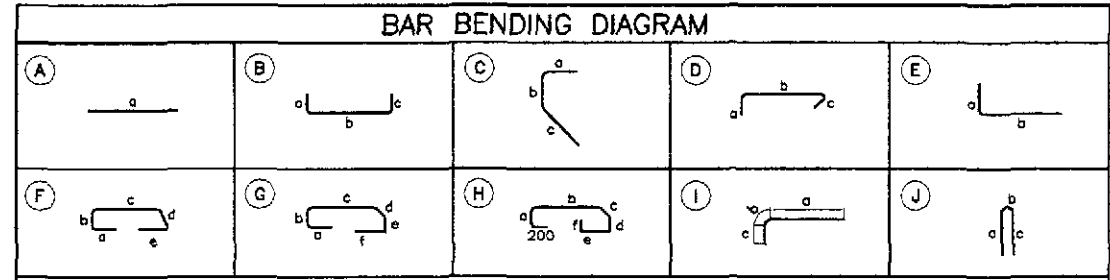
4 SIDEWALK DETAIL
SCALE 1:50



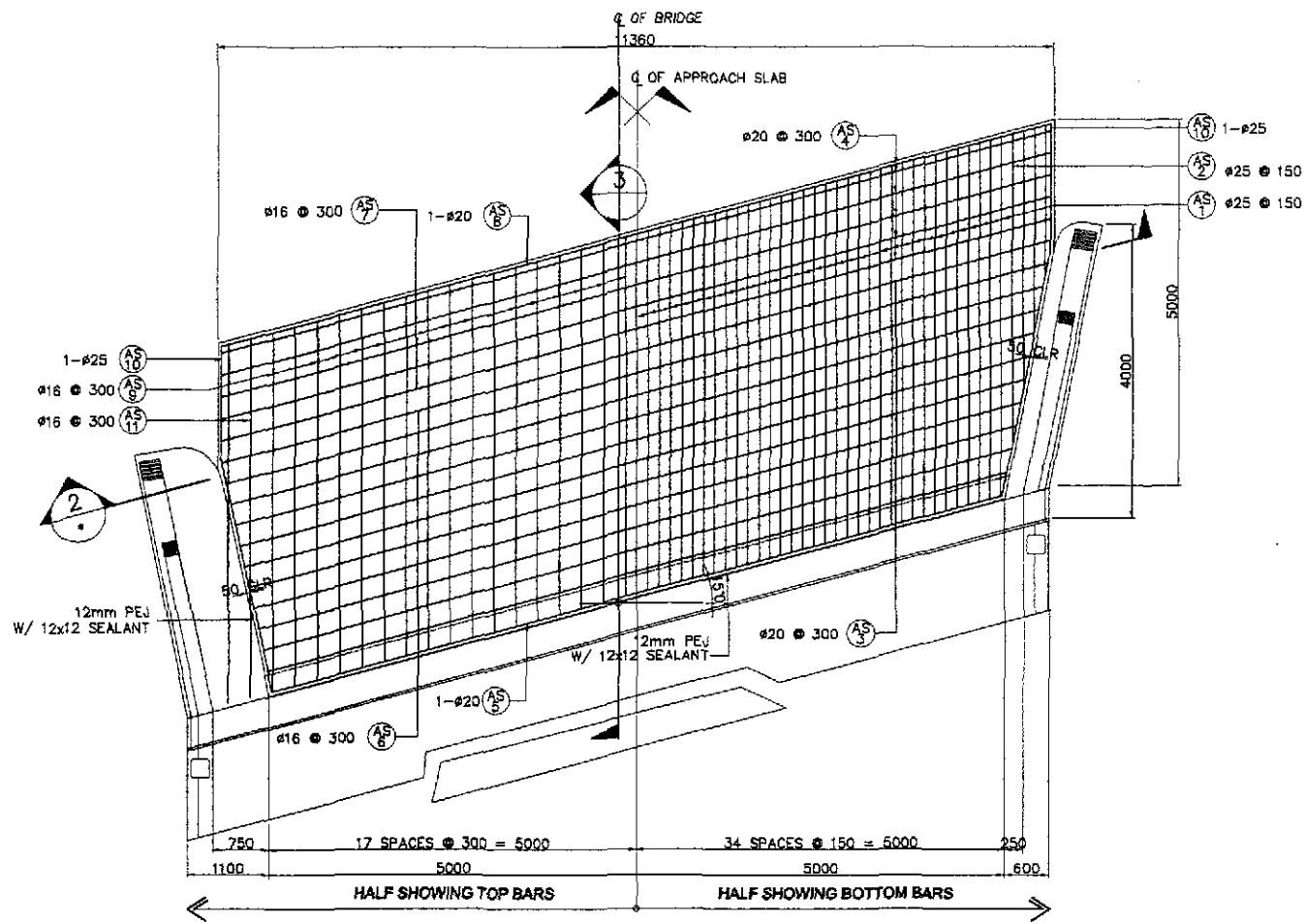
2 WINGWALL ELEVATION
SCALE 1:50



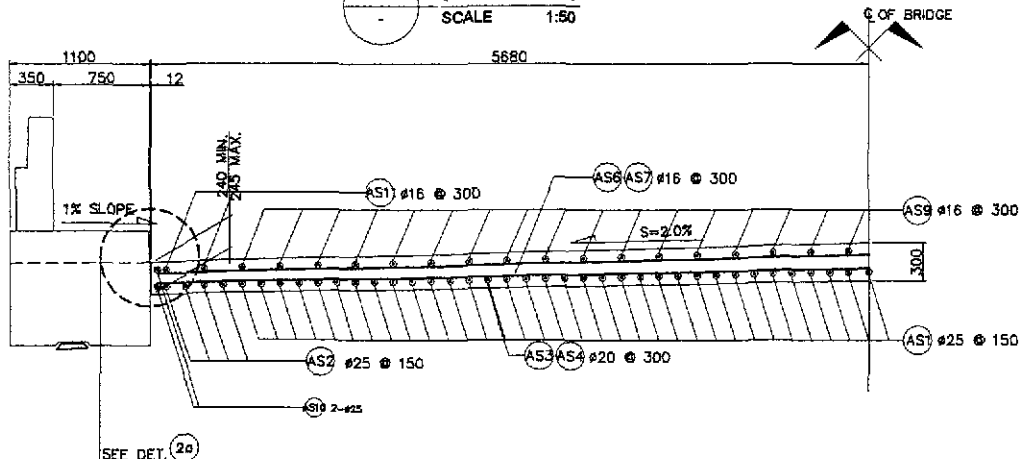
3 SECTION
SCALE 1:50



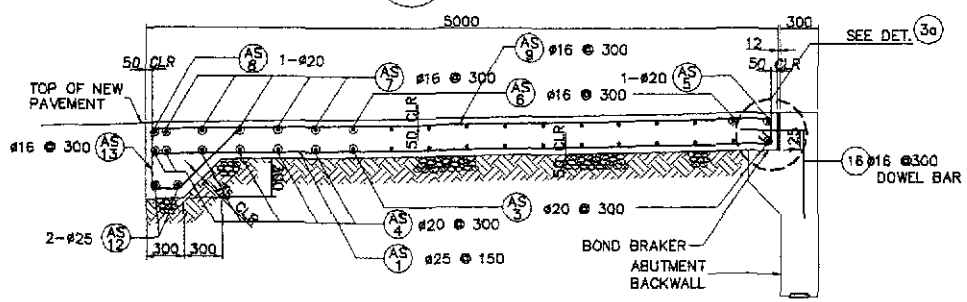
SCHEDULE OF REINFORCEMENT PER ABUTMENT																
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm)				LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d						
WINGWALL	13.85	W1	20	24	250	B	400	3500	150	-	-	4050	97.20	2.466	240	
		W2	25	24	250	B	400	3500	150	-	-	4050	97.20	3.854	375	
		W3	20	4	250	B	400	3600	150	-	-	4150	16.60	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	16.60	3.854	64	
		W4a	25	4	250	B	400	3700	150	-	-	4250	17.00	3.854	65	
		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	308	AS SHOWN	D	170	450	170	-	-	-	790	243.32	0.888	217		
											GRADE 60 TOTAL = 1,166Kgs.					
											GRADE 40 TOTAL = 856 Kgs.					
APPROACH RAILING AND SIDEWALK	3.93	AS	12	9	AS SHOWN	A	3900	-	-	-	-	3900	35.10	0.888	32	
		AS2	12	2	AS SHOWN	A	3900	-	-	-	-	3900	7.80	0.888	7	
		AS3	12	2	AS SHOWN	A	3900	-	-	-	-	3900	7.80	0.888	7	
		AS4	12	6	AS SHOWN	A	3900	-	-	-	-	3900	23.40	0.888	21	
		ASB	18	4	300	F	200	170	480	200	200	-	1250	5.00	1.579	8
		ASB	16	11	300	B	200	170	480	200	170	200	1420	15.62	1.579	25
		AS	16	15	300	E	200	170	980	200	170	200	2120	31.80	1.579	51
		ASB	16	15	300	E	200	1020	-	-	-	-	1220	16.30	1.579	29
		AR	16	8	300	E	200	900	-	-	-	-	1100	8.80	1.579	14
		AR2	16	18	300	J	1300	120	1300	-	-	-	2720	46.96	1.579	78
		AR3	16	2	AS SHOWN	I	2400	236	1300	-	-	-	3936	7.87	1.579	13
		AR4	16	4	AS SHOWN	L	3900	236	900	-	-	-	5036	20.14	1.579	32
AR5	16	8	AS SHOWN	A	3900	-	-	-	-	-	3900	31.20	1.579	50		
AR6	16	4	AS SHOWN	A	2400	-	-	-	-	-	2400	9.60	1.579	16		
											GRADE 40 TOTAL = 383 Kgs.					
TOTAL	17.78												GRADE 60 TOTAL = 1,166 Kgs.			
											GRADE 40 TOTAL = 1,239 Kgs.					



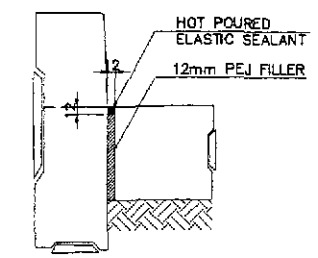
1 PLAN
SCALE 1:50



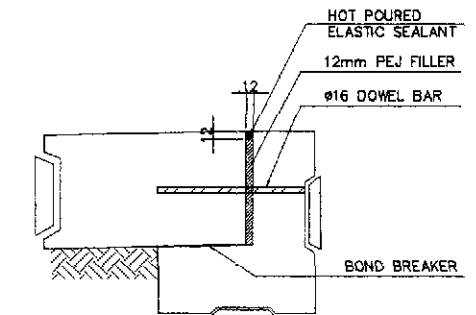
2 SECTION
SCALE 1:30



3 SECTION
SCALE 1:30



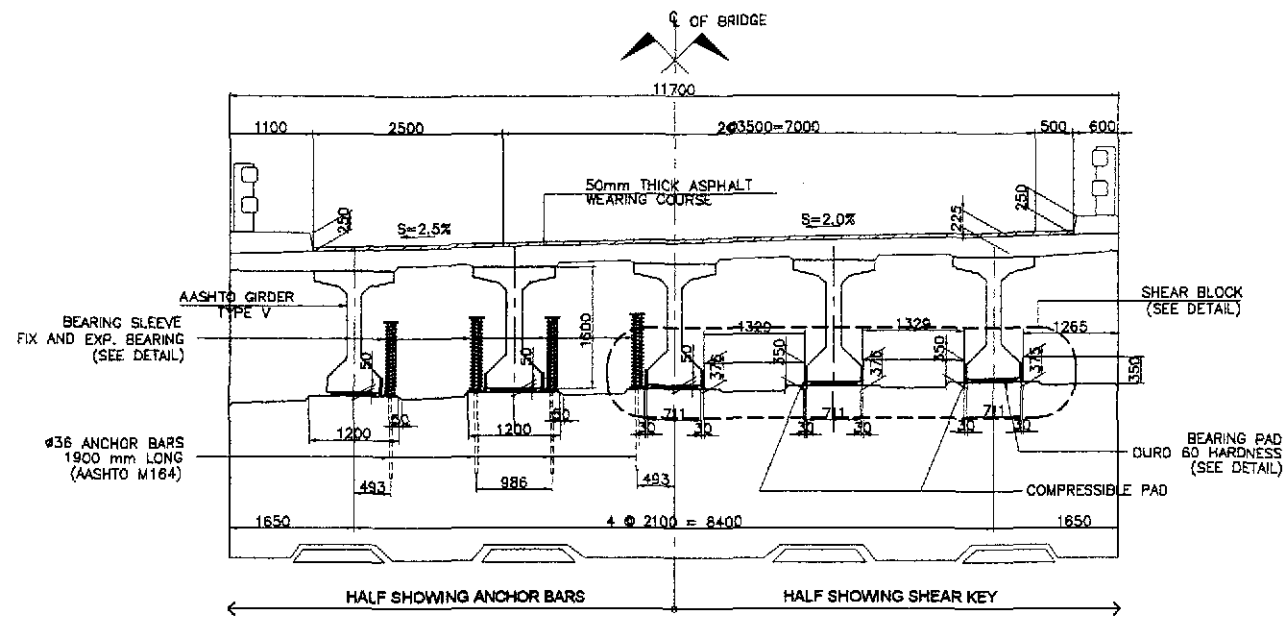
2a DETAIL
SCALE 1:10



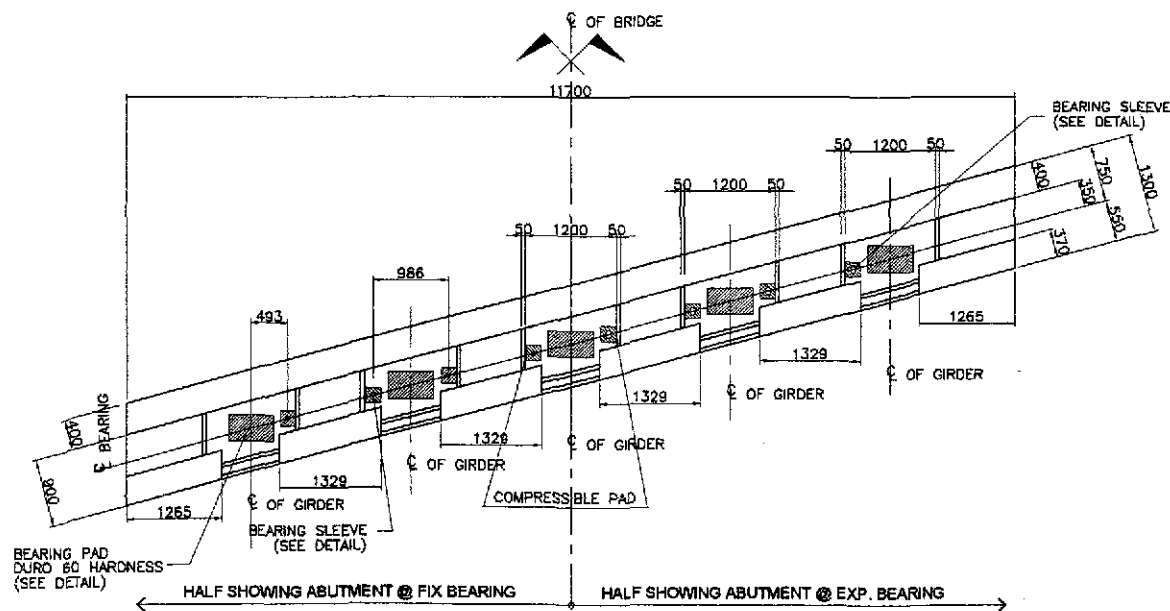
3a DETAIL
SCALE 1:10

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	17.88	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	18	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	94	
		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.					

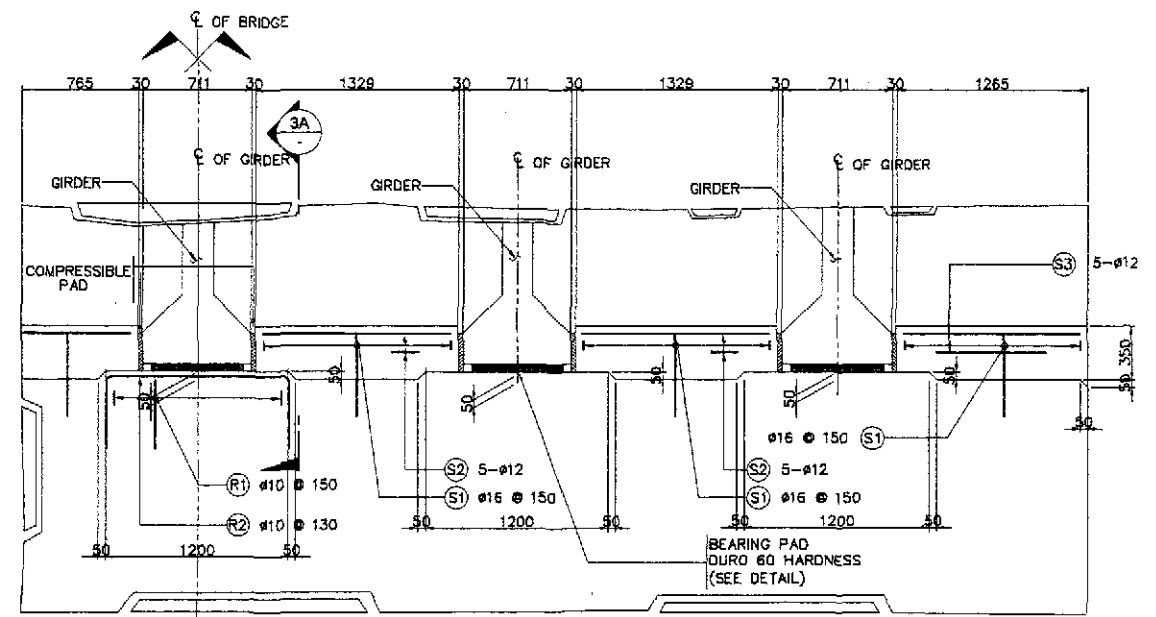
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/21/02	E. N. SALLAN		BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 2, 5, 6 & 7 APPROACH SLAB PLAN, SECTION AND DETAILS (ULTIMATE STAGE)	B2-07
	SUBMITTED	10/27/02	M. MILLER TEAM LEADER		Submitted By:	Reviewed By:	Recommended By:	Recommended By:	PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		



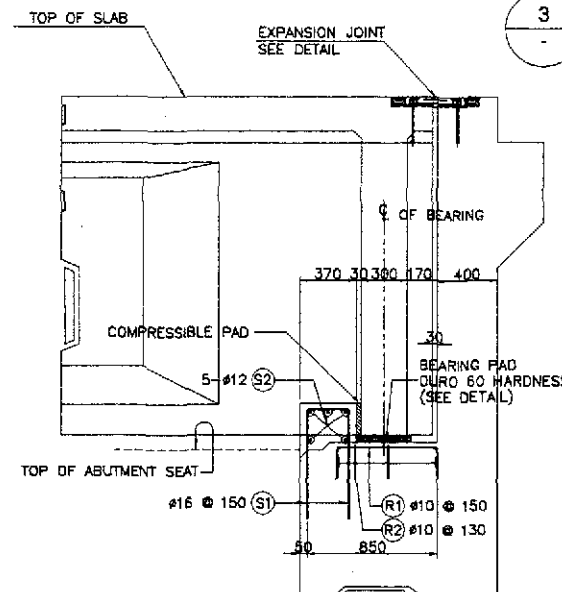
1 SECTION AT ABUTMENT SEAT
SCALE 1:50



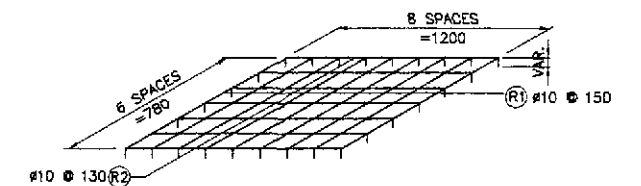
2 PLAN AT ABUTMENT SEAT
SCALE 1:50



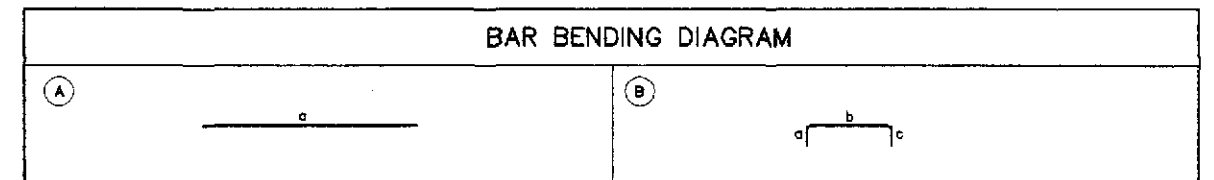
3 SHEAR BLOCK DETAIL
SCALE 1:25



3A SECTION
SCALE 1:25



4 RISER REINFORCEMENT
NOT TO SCALE



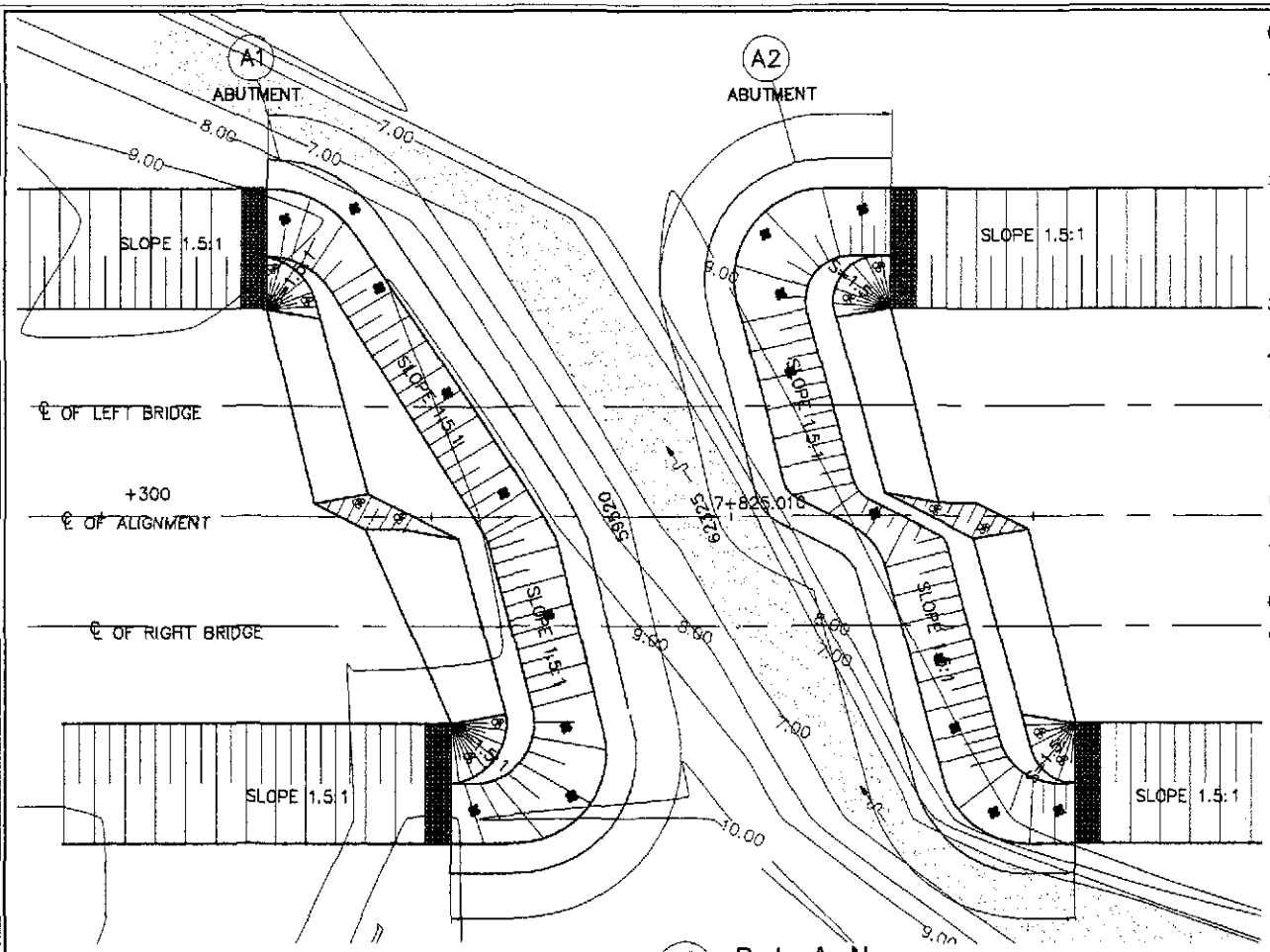
SCHEDULE OF REINFORCEMENT																
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSION (mm) OUT TO OUT					LENGTH EACH BAR (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d	e					
SHEAR KEY & RISER	1.59	S1	16	54	150	(B)	560	290	560			1410	76.14	1.579	121	160.68
		S2	12	20	AS SHOWN	(A)	1295					1295	25.90	0.888	23	
		S3	12	10	AS SHOWN	(A)	1230					1230	12.30	0.888	11	
		R1	10	45	150	(B)	500	810	500			1810	81.45	0.616	51	
		R2	10	35	130	(B)	500	1250	500			2250	78.75	0.616	49	
TOTAL	1.59															GRADE 40 TOTAL = 255 kgs.

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

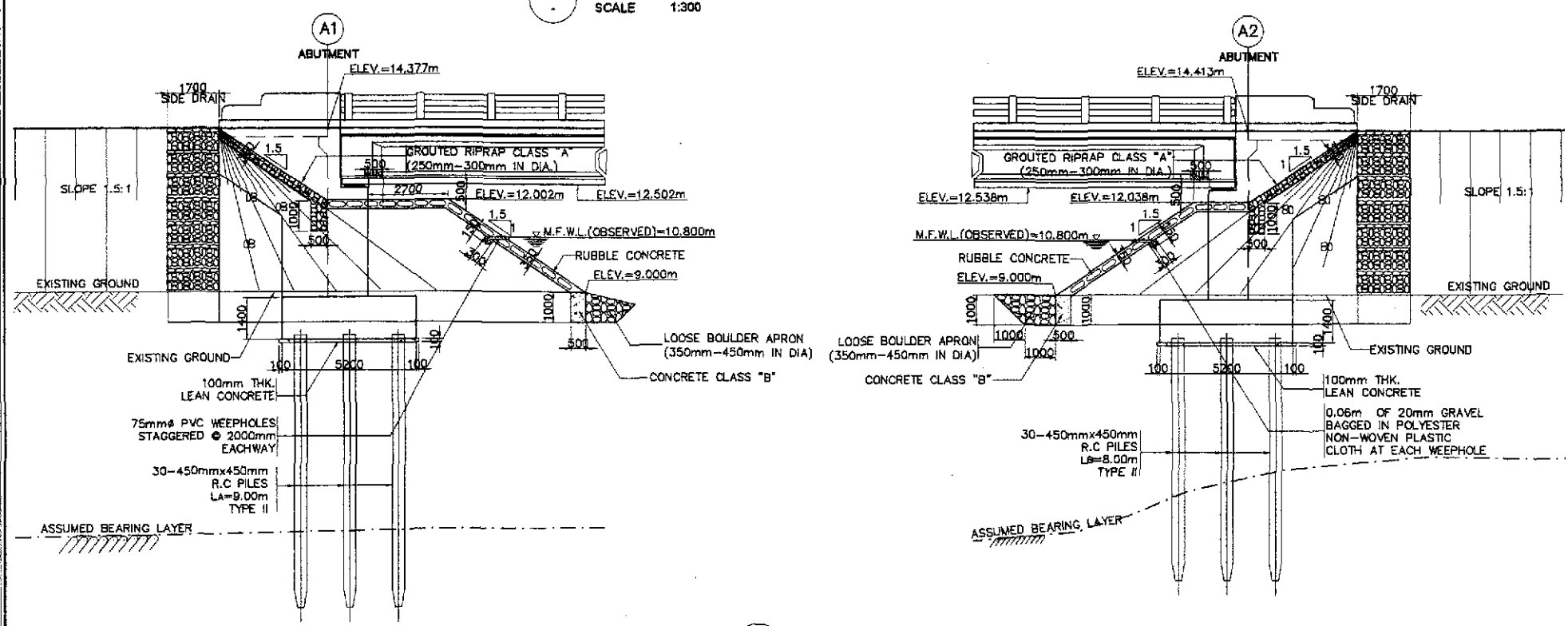
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES			DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/21/2012	E. N. SALLAN		BUREAU OF DESIGN			OFFICE OF THE SECRETARY			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)		AS SHOWN	BRIDGE NO. 2 & 5 SHEAR KEY AND RISER DETAILS (ULTIMATE STAGE)	B2-08
	SUBMITTED	10/29/2012	M. M. M. M.		Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:	Approved By:	PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1			

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 0.01 cu. 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# 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# 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.

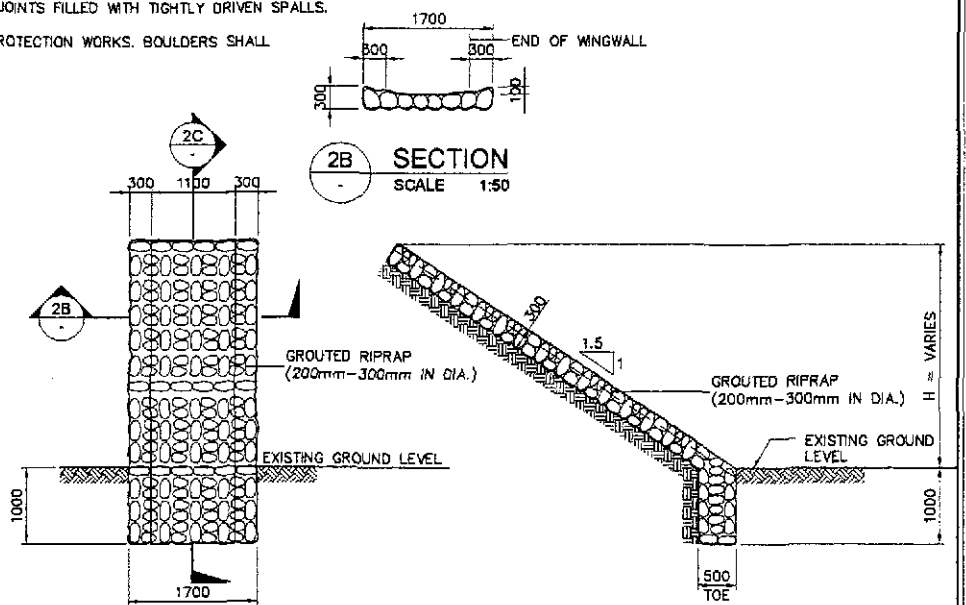


1A PLAN
SCALE 1:300



1B ELEVATION
SCALE 1:100

1 ABUTMENT SLOPE PROTECTION
SCALE AS SHOWN



2A ELEVATION
SCALE 1:50

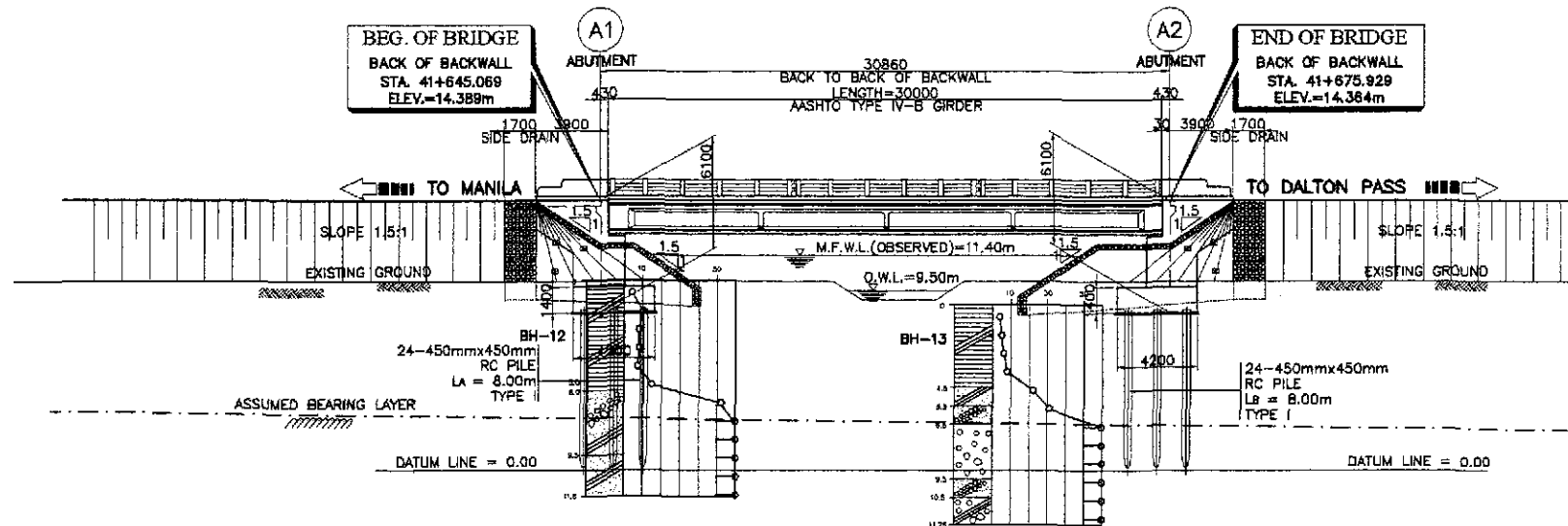
2C SECTION
SCALE 1:50

2 TYPICAL SIDE DRAIN DETAIL
SCALE AS SHOWN

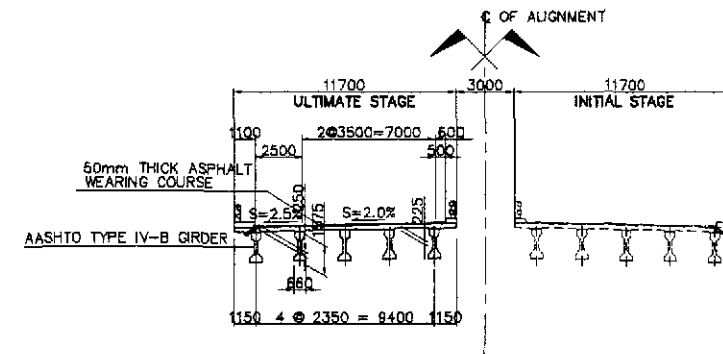
VELOCITY (m/sec)	ROCK SIZE (mm)	
	VERY TURBULENT FLOW	SMOOTH FLOW
1.00	40	-
1.50	135	-
2.00	170	-
2.50	255	137
3.00	370	197
3.50	515	270
4.00	690	350
4.50	825	425
5.00	>900	590

LOCATION	SIZES	QUANTITY	
		ABUT. A1	ABUT. A2
CONC. CLASS "B"	1000 x 500 x LENGTH	14.42 cu. m.	14.42 cu. m.
BOULDER APRON	350mm-450mm IN DIA.	43.26 cu. m.	43.26 cu. m.
RUBBLE CONCRETE	200mm-300mm IN DIA.	53.28 cu. m.	49.78 cu. m.
SIDE DRAIN	200mm-300mm IN DIA.	5.75 cu. m.	5.75 cu. m.
GROUTED RIPRAP	250mm-300mm IN DIA.	13.93 cu. m.	14.80 cu. m.

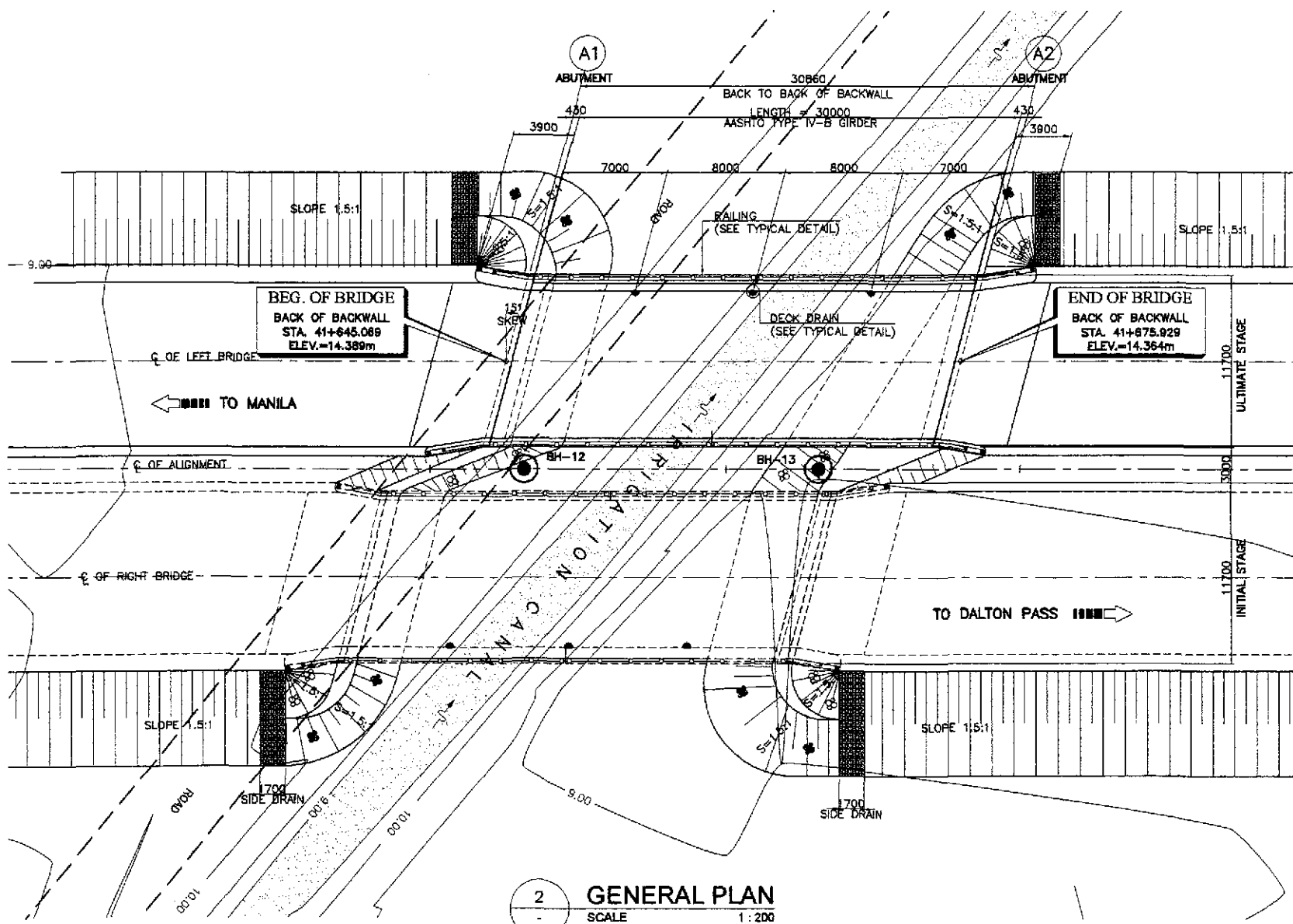
	DESIGNED: 10/11/12 P. GONZALES	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	SCALE: AS SHOWN	SHEET CONTENTS: BRIDGE NO. 2 ABUTMENT PROTECTION AND SIDE DRAIN DETAILS (ULTIMATE STAGE)	SHEET NO.: B2-09
	CHECKED: 10/25/12	BUREAU OF DESIGN				PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		
	SUBMITTED: 11/27/12	OFFICE OF THE SECRETARY							
	Submitted By: DANILO C. TRAJANO Project Director	Reviewed By: PERFECTO L. ZAPLAN JR. Chief, Hydraulics Division (CIC)	Recommended By: GILBERTO S. REYES Director IV (CIC)	Recommended By: MANUEL M. BONDAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary				



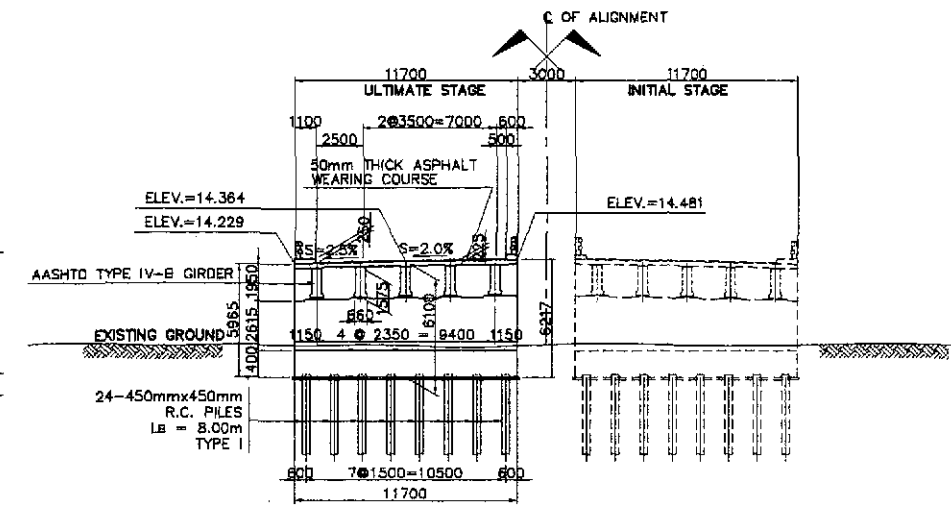
1 GENERAL ELEVATION
SCALE 1:200



3 SECTION @ MIDSPAN
SCALE 1:200



2 GENERAL PLAN
SCALE 1:200



4 SECTION @ ABUTMENT A2
SCALE 1:200

HYDRAULIC DESIGN DATA	
IRRIGATION CANAL	-

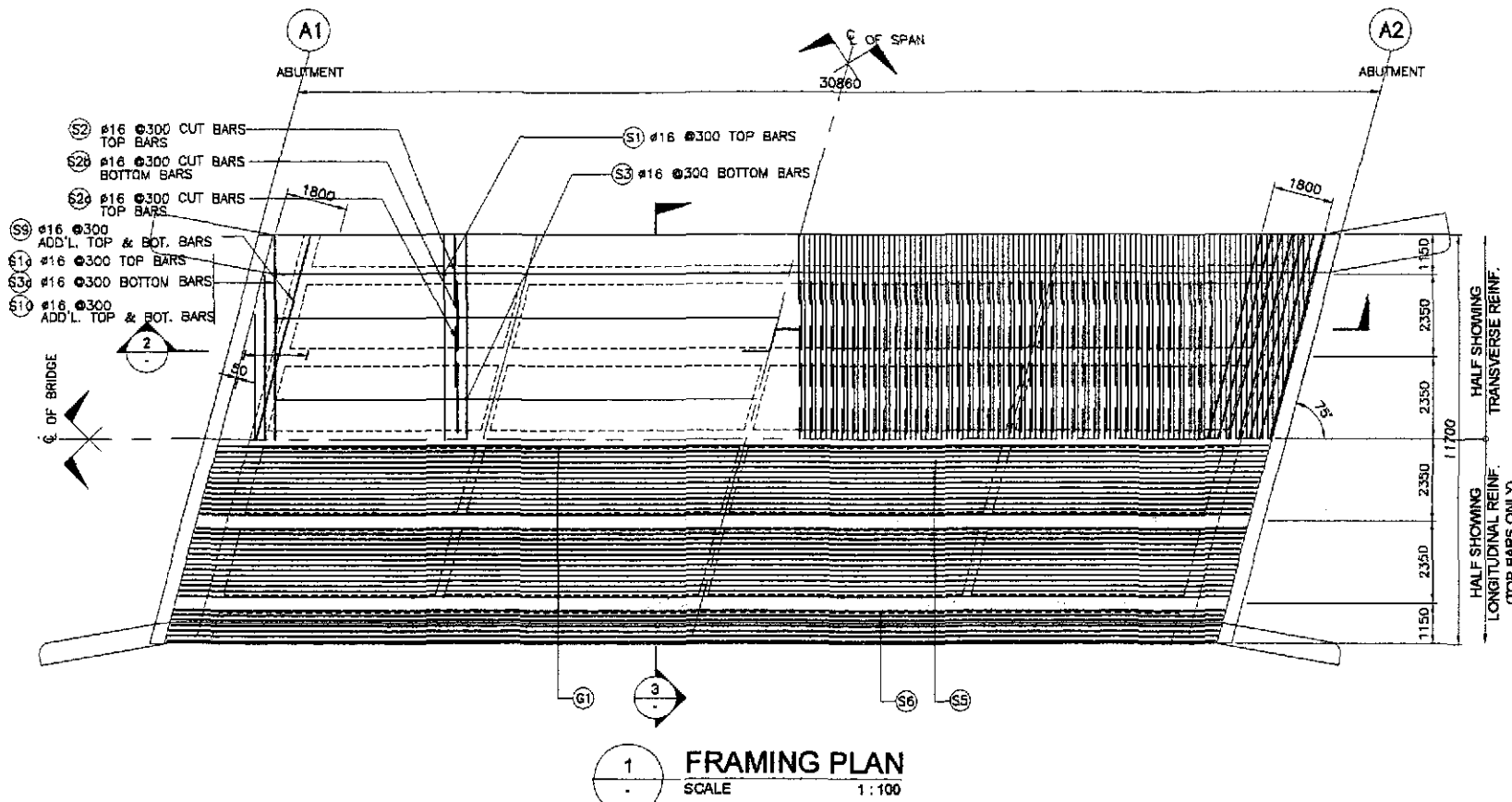
NOTE :
PRIOR TO CONSTRUCTION SOIL INVESTIGATION SHALL BE CONDUCTED FOR CONFIRMATION OF ASSUMED BEARING CAPACITY AND FOOTING ELEVATION.

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

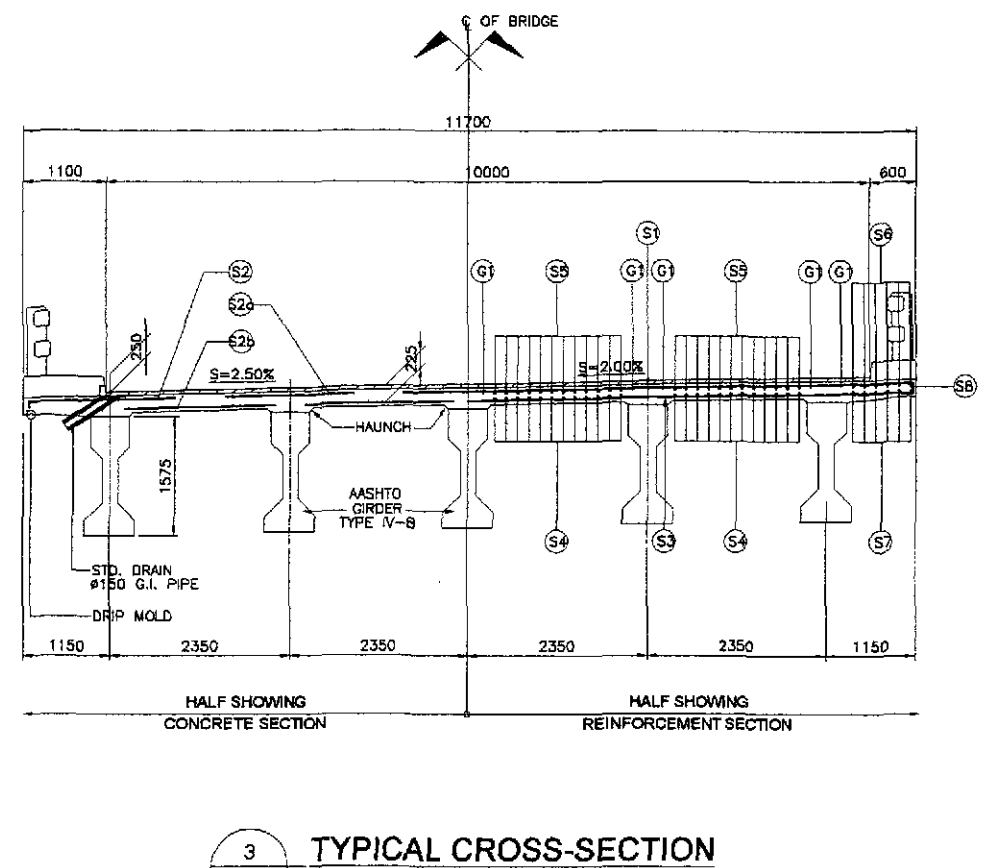
A PLARIDEL BYPASS BRIDGE NO. 3 (STA. 41+645.069)
SCALE 1:200

PERFECTO L. ZAPLAN JR.
OIC Chief, Hydraulics Division, 800

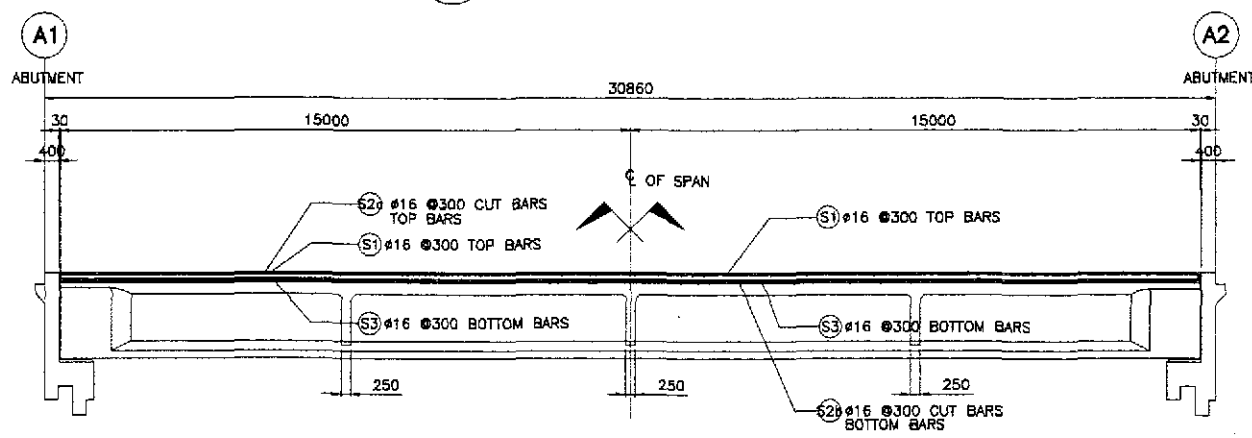
	DESIGNED: 10/21/02 CHECKED: 10/25/02 SUBMITTED: 10/27/02	SIGNATURE: <i>[Signature]</i> E. N. SALLAN Submitted By: DANILLO C. TRAJANO Project Director	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN Reviewed By: ADRIANO M. DORCY Chief, Bridges Division	OFFICE OF THE SECRETARY Recommended By: GILBERTO S. REYES Director IV (OIC) 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 : 1:200 FULL SIZE A1	SHEET CONTENTS : BRIDGE NO. 3 GENERAL PLAN, ELEVATION AND SECTIONS (ULTIMATE STAGE)	SHEET NO. : B3-01
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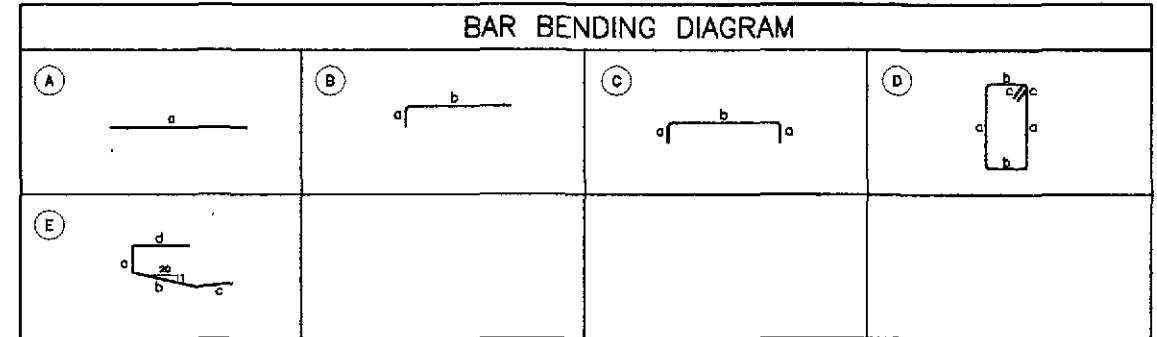
1 FRAMING PLAN
SCALE 1:100



3 TYPICAL CROSS-SECTION
SCALE 1:50



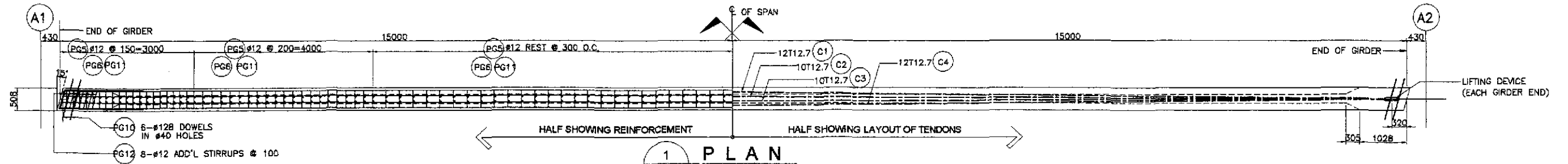
2 LONGITUDINAL SECTION
SCALE 1:100



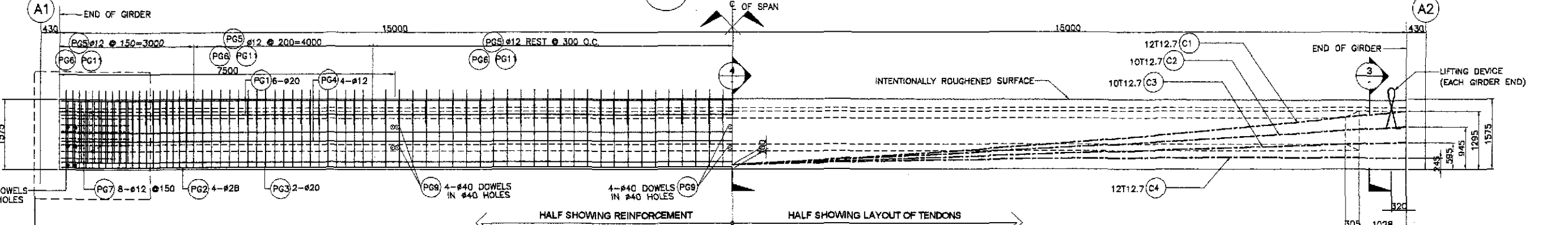
ESTIMATED QUANTITIES OF SUPERSTRUCTURE			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
404(1)a	REINFORCING STEEL GRADE 40	kgs.	24065
	DECK SLAB	13603	
	DIAPHRAGM	482	
	GIRDER	5780	
	SIDEWALK, RAILING, & POST	2798	
	APPROACH SLAB	1402	
404(1)b	REINFORCING STEEL GRADE 60	kgs.	13454
	DECK SLAB	0	
	DIAPHRAGM	1431	
	GIRDER	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	19.8	
	APPROACH SLAB	35.41	

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)	29900	-	-	-	29900	1435.20	1.579	2267	
		S5	16	48	150	(A)	29900	-	-	-	29900	1435.20	1.579	2267	
		S6	16	12	AS SHOWN	(A)	29900	-	-	-	29900	358.80	1.579	567	
		S7	16	12	AS SHOWN	(A)	29900	-	-	-	29900	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 = 13,603 kgs.

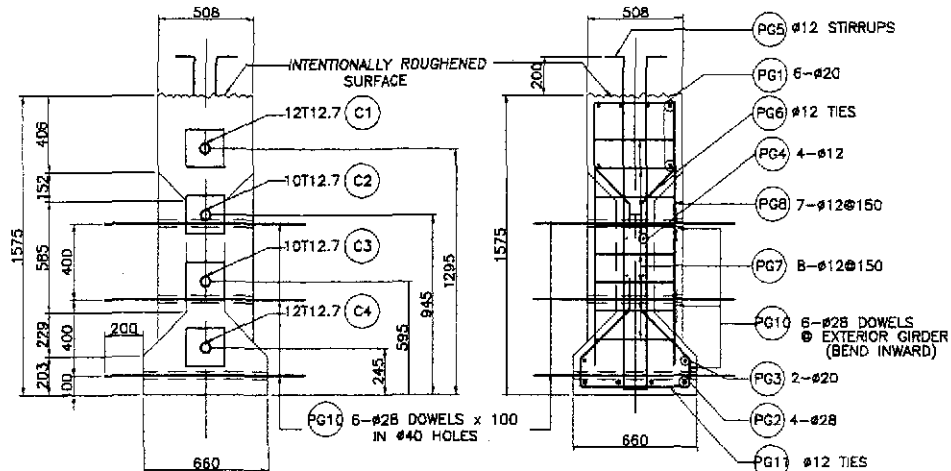
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/21/02	E. N. SALLAN		BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 3 DECK FRAMING PLAN AND SECTIONS (ULTIMATE STAGE)	B3-02
	SUBMITTED	10/27/02	MANUEL M. BONOAN		OFFICE OF THE SECRETARY				PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		



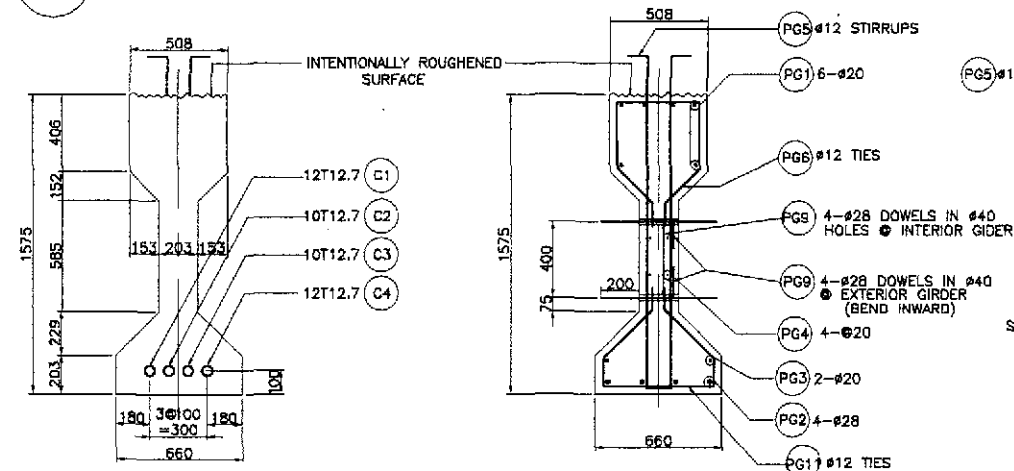
1 PLAN
SCALE 1:50



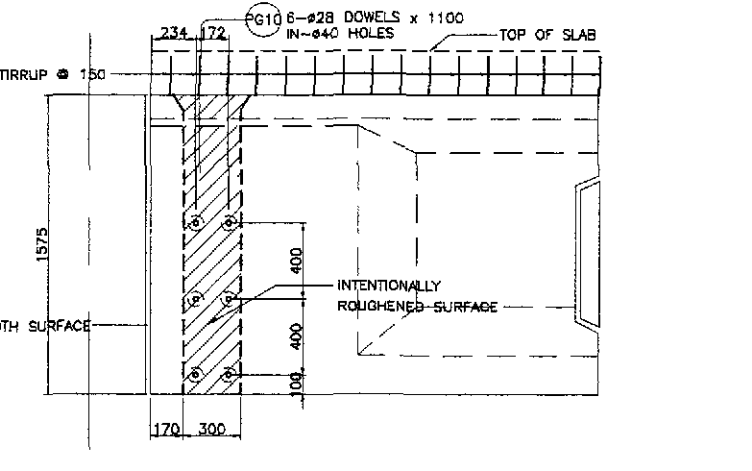
2 PRESTRESSED GIRDER ELEVATION
SCALE 1:50



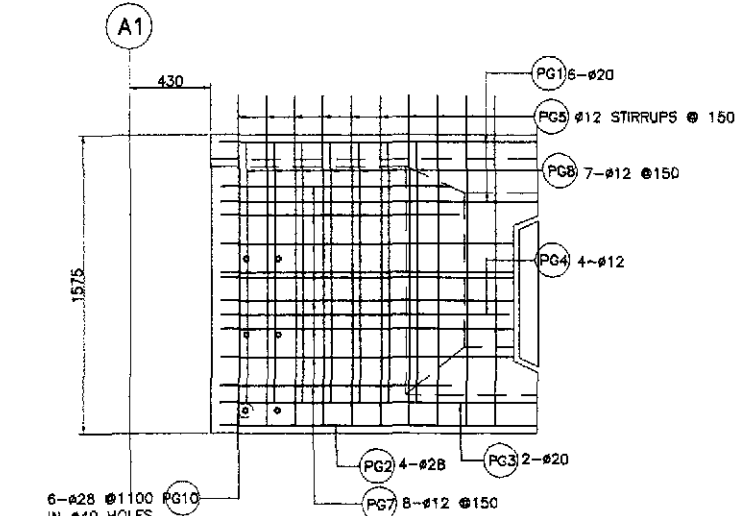
3 SECTION @ END
SCALE 1:20



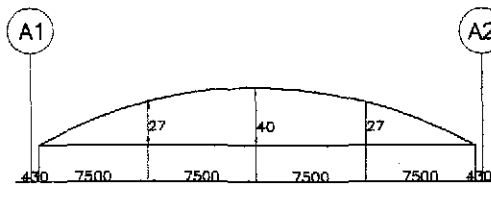
4 SECTION @ MIDSPAN
SCALE 1:20



5 DOWELS @ END BLOCK
SCALE 1:20

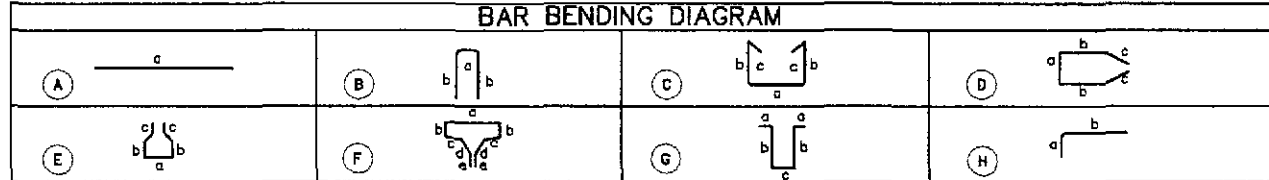


6 END BLOCK REINF. DETAIL
SCALE 1:20



7 CAMBER DIAGRAM
SCALE 1:20

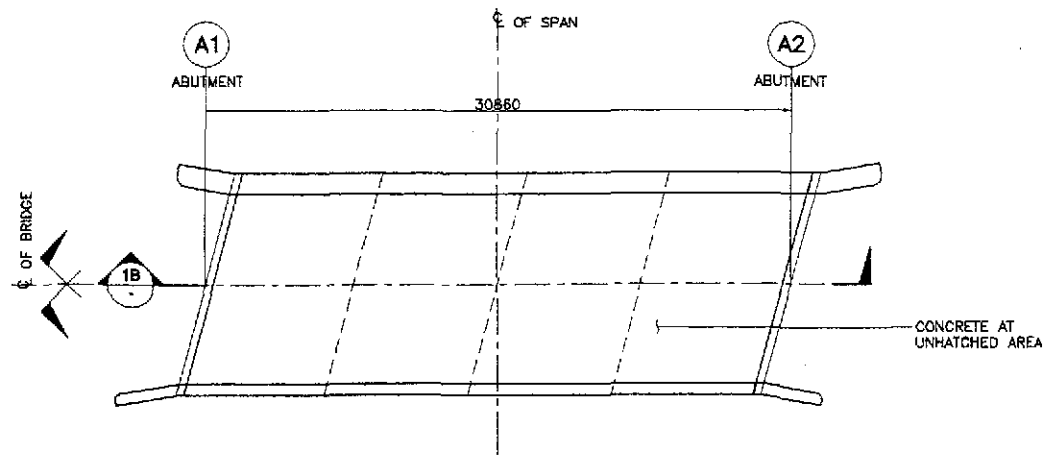
- NOTES :
- 1.) SEE GENERAL NOTES, -2, FOR GIRDER DESIGN GUIDE.
 - 2.) JACKING FORCE PER GIRDER, $P_j = 6058 \text{ KN}$.
 - 3.) JACKING WILL BE DONE AT BOTH ENDS.
 - 4.) FINAL PRESTRESSING FORCE @ MIDSPAN, $F_{NET} = 4649 \text{ KN}$.



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	178.52	2.466	443			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			
	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	254.80	0.888	227			
	PG12	12	16	100	(B)	425	1530	-	-	-	3285	52.56	0.888	47			

GRADE 40 TOTAL = 1,156 kgs.
GRADE 60 TOTAL = 1,417 kgs.

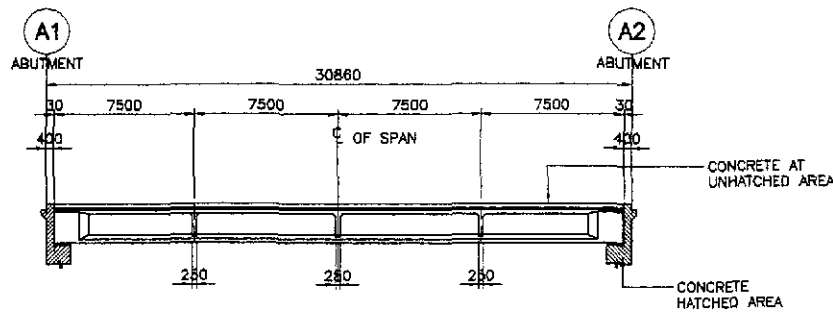
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED				BUREAU OF DESIGN			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 3 AASHTO TYPE IV-B GIRDER (ULTIMATE STAGE)	B3-03
	SUBMITTED				OFFICE OF THE SECRETARY			PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		



1A PLAN
SCALE 1:200

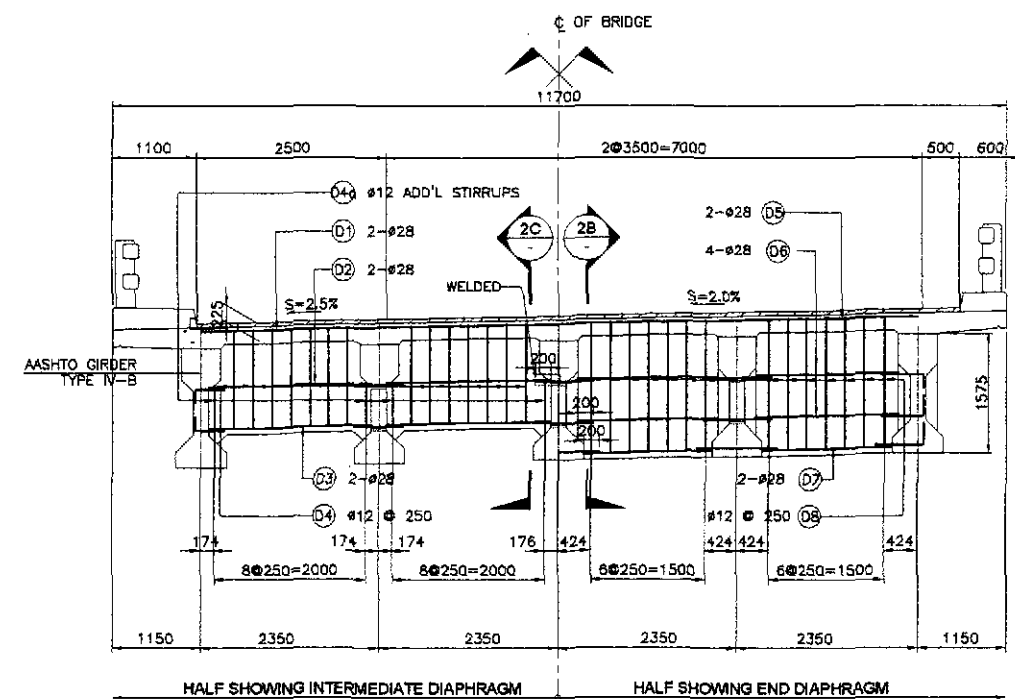
NOTES:

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 DETAILS FOR SPACING OF #28 DOWELS.

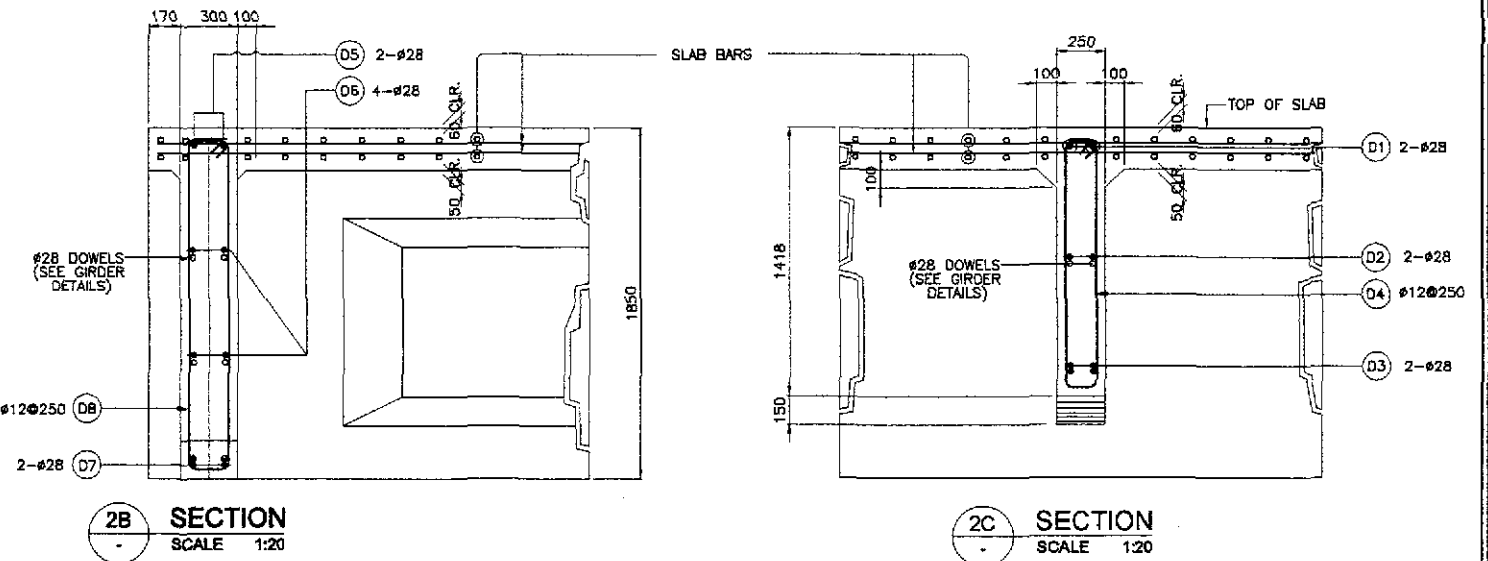


1B LONGITUDINAL SECTION
SCALE 1:200

1 CONCRETE POURING SEQUENCE
SCALE 1:200



2A ELEVATION
SCALE 1:25



2B SECTION
SCALE 1:20

2C SECTION
SCALE 1:20

2 DETAIL OF END & INTERMEDIATE DIAPHRAGM
SCALE AS SHOWN

BAR BENDING DIAGRAM																				
A		B																		
SCHEDULE OF REINFORCEMENT																				
STRUCTURE COMPONENT	LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	TOTAL WEIGHT IN (kg)	REBAR RATIO (kg/m ³)	REMARKS			
DIAPHRAGM	INTERMEDIATE DIAPHRAGM	8.85	D1	28	6	AS SHOWN	A	9400				9400	56.40	4.833	273		TOP BARS			
			D2	28	24	AS SHOWN	A	2145				2145	51.48	4.833	249		DIST. BARS			
			D3	28	24	AS SHOWN	A	2145				2145	51.48	4.833	249		BOTTOM BARS			
			D4	12	84	250	B	150	1300(AVE)	150		3200	268.80	0.888	239		STIRRUPS			
	END DIAPHRAGM	6.59	D5	28	4	AS SHOWN	A	9400				9400	37.60	4.833	182		TOP BARS			
			D6	28	32	AS SHOWN	A	2145				2145	68.64	4.833	332		DIST. BARS			
			D7	28	18	AS SHOWN	A	2145				2145	34.32	4.833	166		BOTT. BARS			
			D8	12	56	250	B	200	1700(AVE)	150		4100	229.60	0.888	204		STIRRUPS			
TOTAL		15.24													GRADE 80 TOTAL = 1451 kgs					
												GRADE 40 TOTAL = 482 kgs								

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

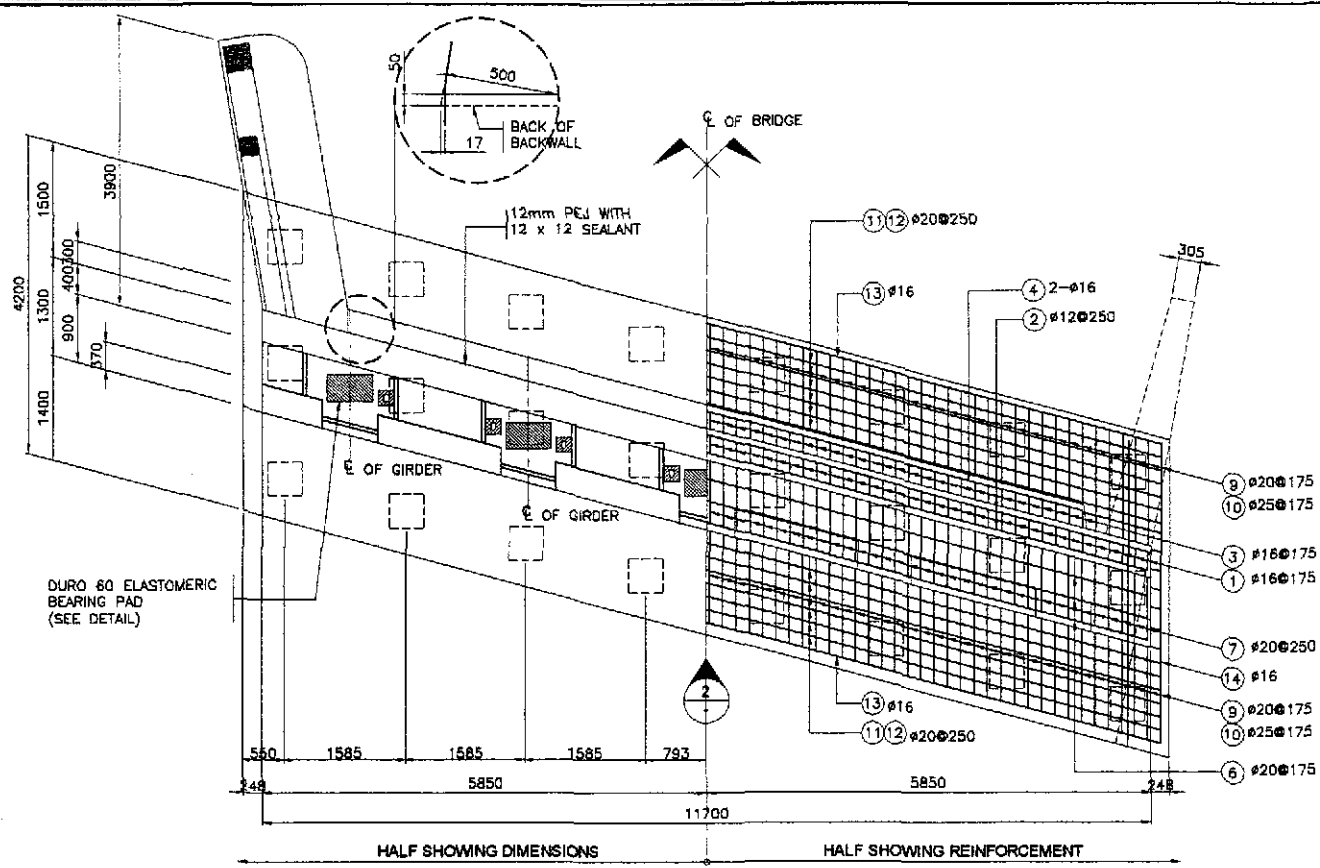
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
OFFICE OF THE SECRETARY
Submitted By: DANILO C. TRAJANO, Project Director
Reviewed By: ADRIANO M. DOROY, Chief, Bridges Division
Recommended By: GILBERTO S. REYES, Director IV (D/C)
Recommended By: MANUEL M. BONGAN, 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

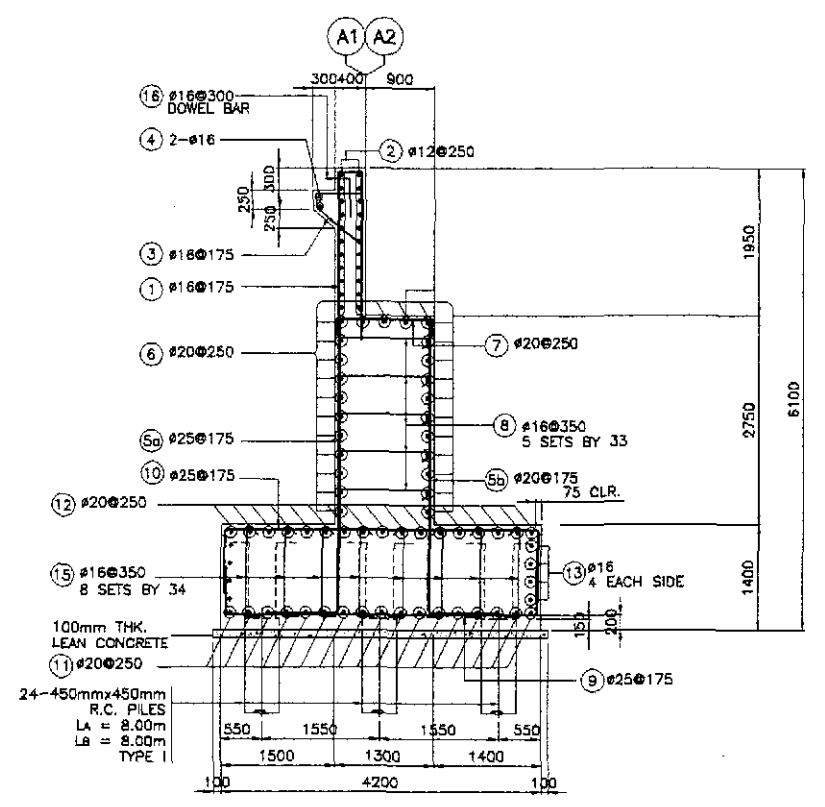
SCALE :
AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO. 3
CONCRETE POURING SEQUENCE
AND DIAPHRAGM DETAILS
(ULTIMATE STAGE)

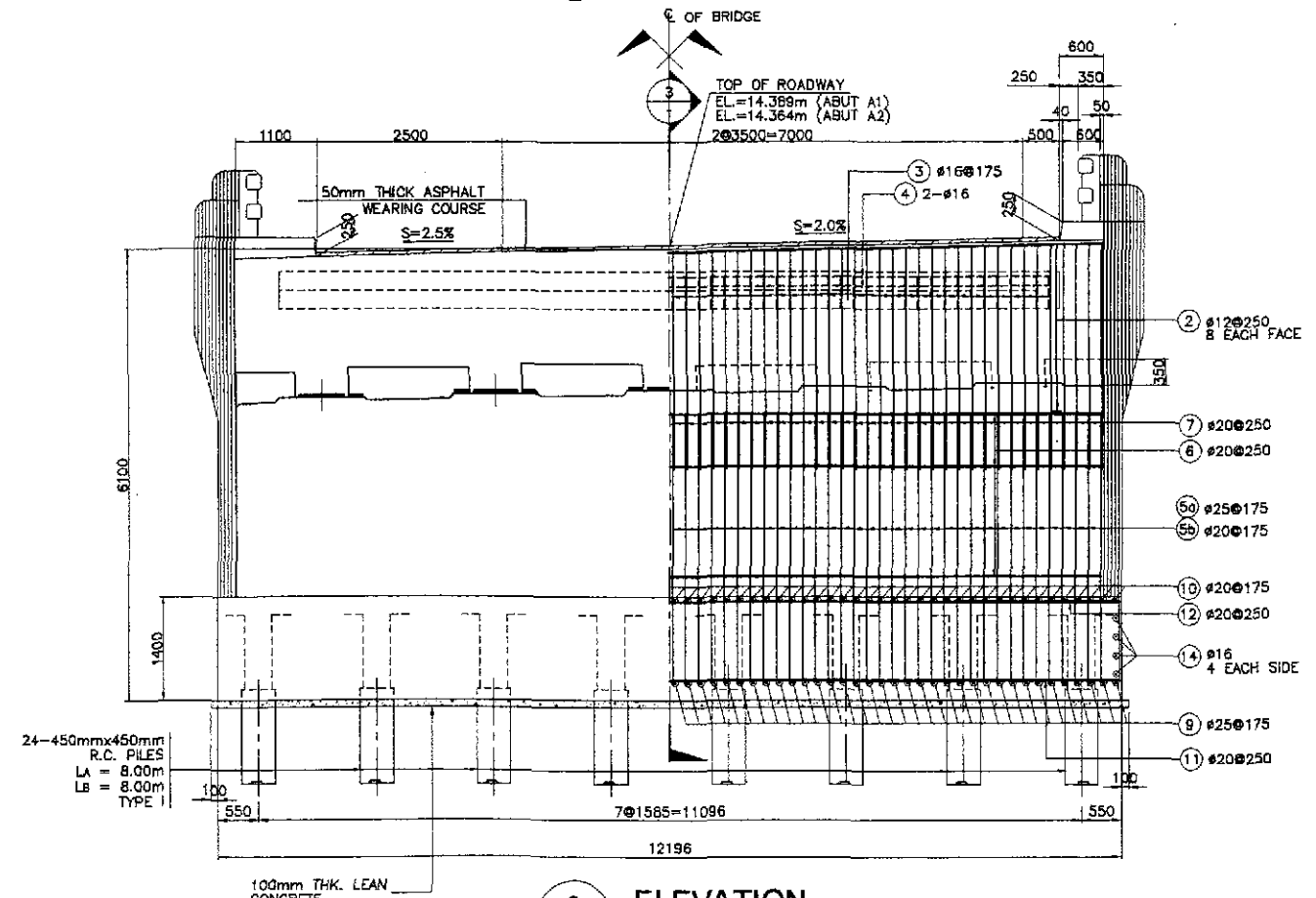
SHEET NO. :
B3-04



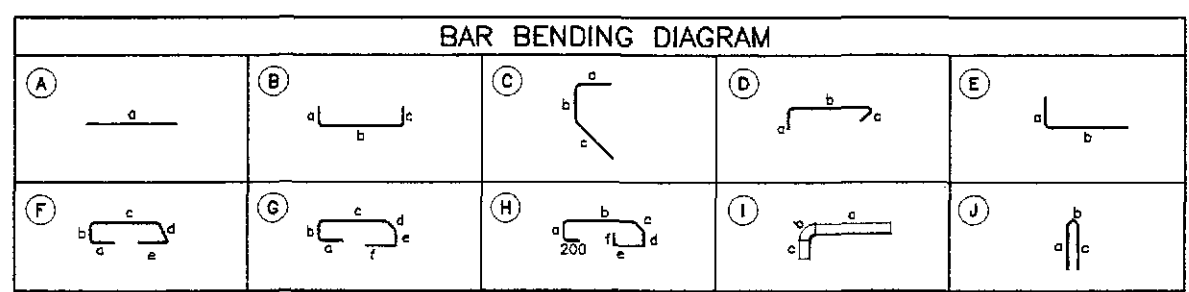
1 PLAN SCALE 1:50



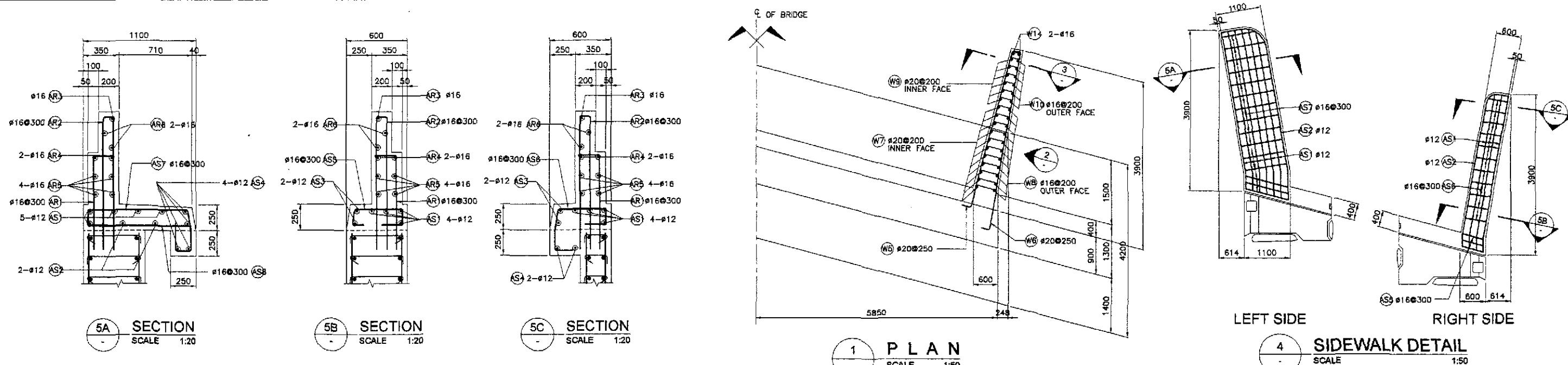
3 SECTION SCALE 1:50



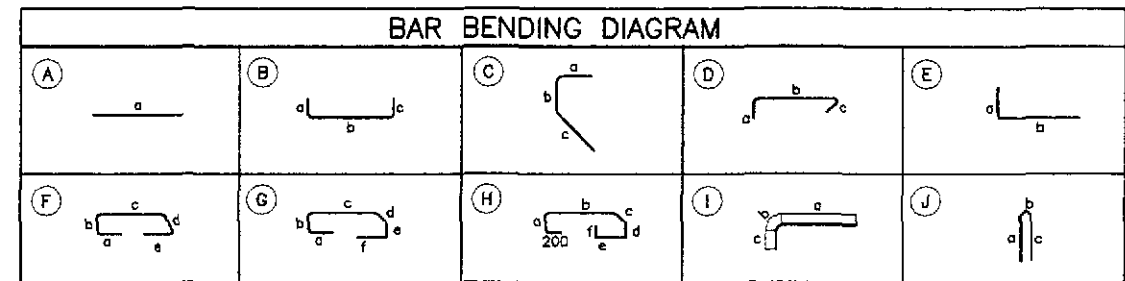
2 ELEVATION SCALE 1:50



SCHEDULE OF REINFORCEMENT PER ABUTMENT																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e						f
BACKWALL	10.25	1	16	68	175	B	2200	300	2200	-	-	-	4700	319.60	1.579	505	88.87
		2	12	22	250	A	2000	-	-	-	-	-	12000	264.00	0.888	235	
		3	16	58	175	C	800	150	750	-	-	-	1500	87.00	1.579	138	
		4	16	2	AS SHOWN	A	10250	-	-	-	-	-	10250	20.5	1.579	33	
MAINWALL	41.83	5a	25	68	175	E	400	4000	-	-	-	-	4400	299.20	3.854	1154	78.35
		5b	20	68	175	E	400	4000	-	-	-	-	4400	299.20	2.466	738	
		6	20	25	250	A	12000	-	-	-	-	-	12000	300.00	2.466	740	
		7	20	48	250	B	250	1200	250	-	-	-	1700	81.60	2.466	202	
		8	16	165	350	D	250	1200	250	-	-	-	1700	280.50	1.579	443	
		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	-	-	-	5450	381.50	3.854	1471	70.38
		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	99.80	1.579	158	
		14	16	8	AS SHOWN	A	4050	-	-	-	-	-	4050	32.40	1.579	52	
DOWEL		15	16	272	350	D	250	1200	250	-	-	-	1700	462.40	1.579	731	
		16	16	30	300	E	650	500	-	-	-	-	1150	39.10	1.579	62	
TOTAL	123.79																GRADE 40 TOTAL = 2,357 kgs. GRADE 60 TOTAL = 6,840 kgs.

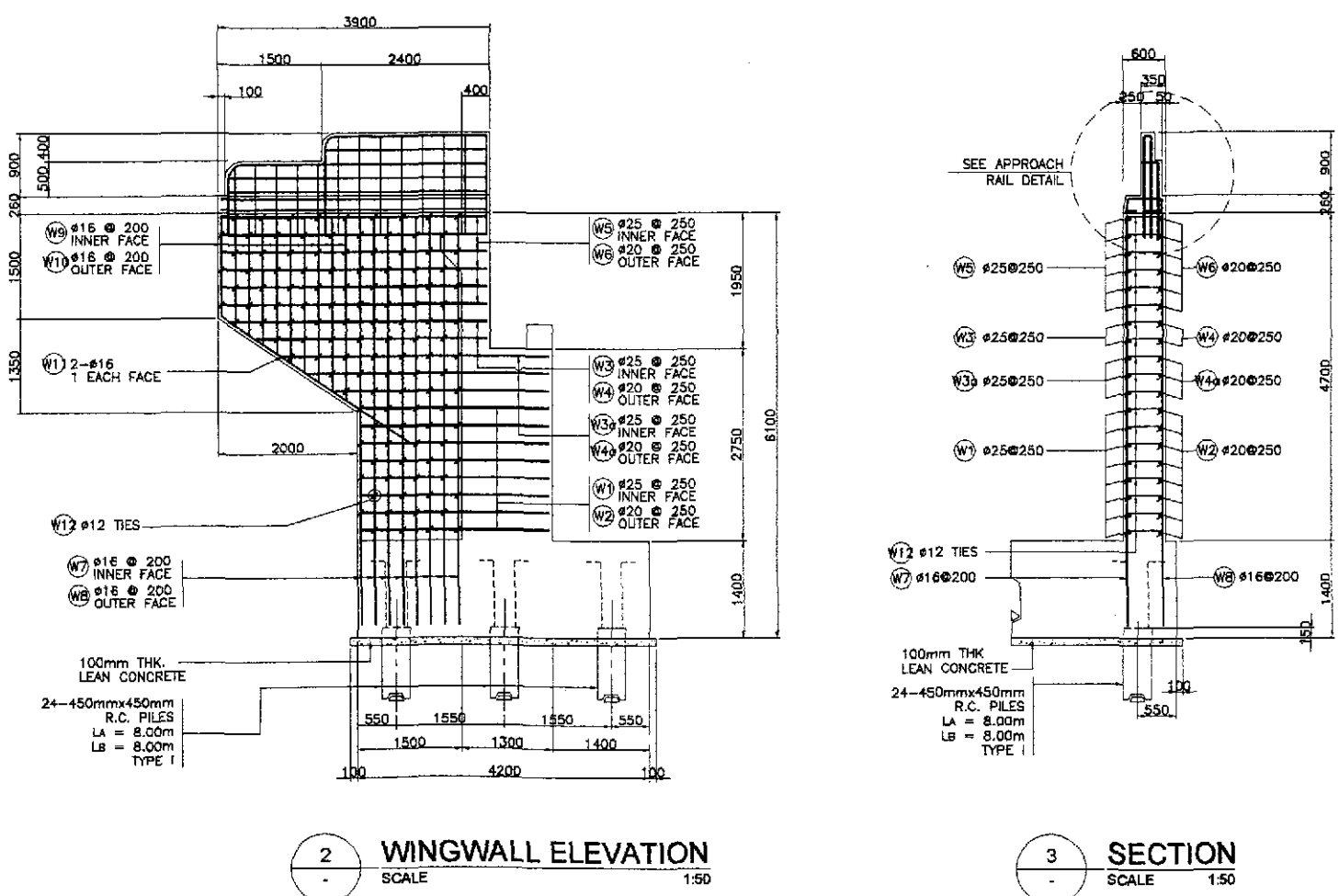


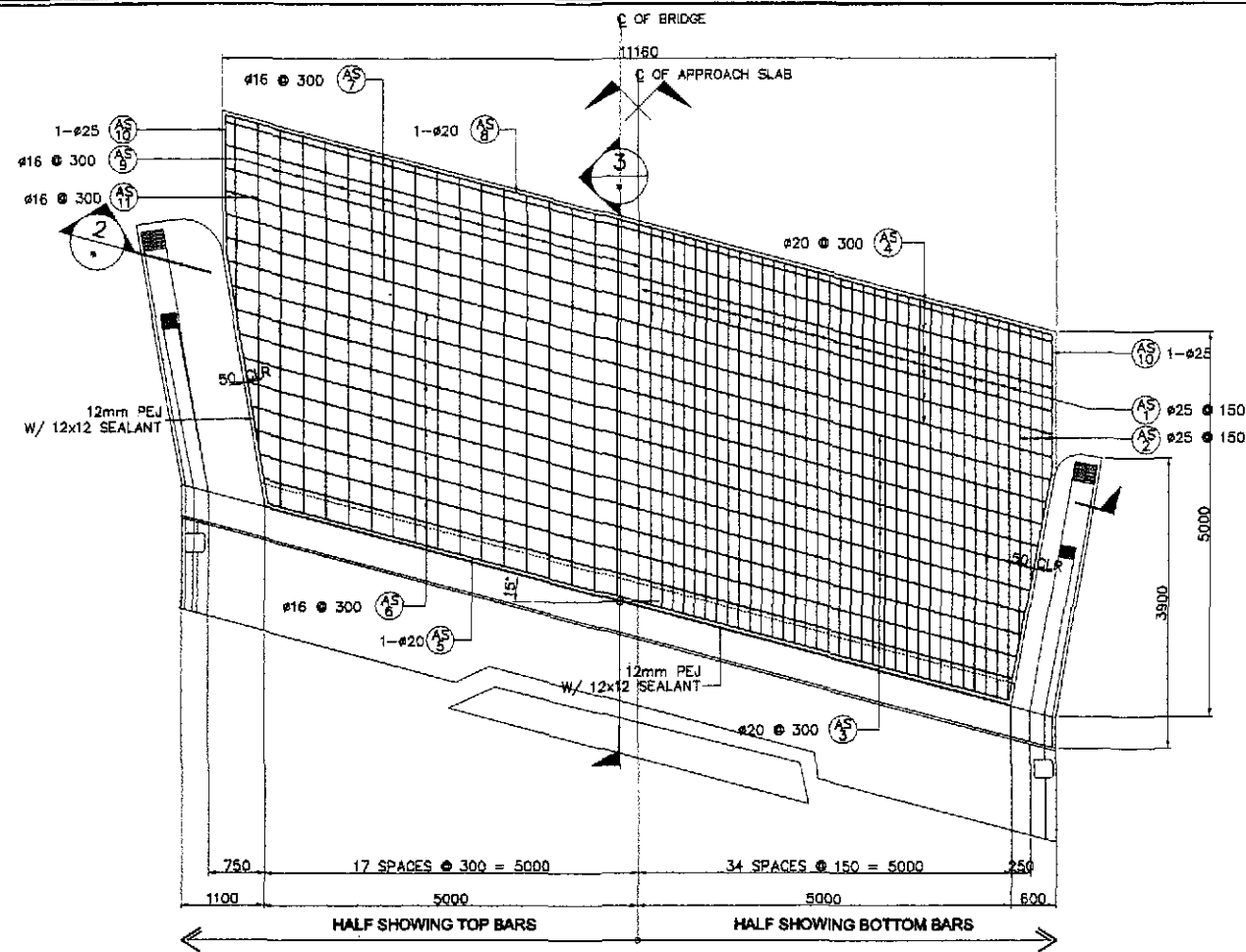
5 APPROACH RAIL DETAILS SCALE 1:20



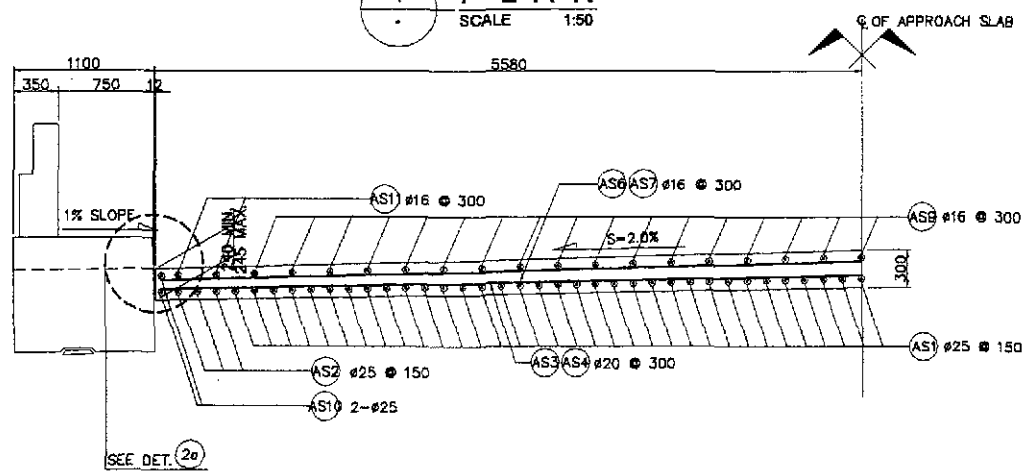
SCHEDULE OF REINFORCEMENT PER ABUTMENT

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	10.26	W1	25	16	250	B	400	2700	150	-	-	-	3250	52.00	3,854	201	
		W2	20	16	250	B	400	2700	150	-	-	-	3250	52.00	2,466	129	
		W3	25	4	250	B	400	3600	150	-	-	-	4150	16.60	3,854	84	
		W3a	25	6	250	B	400	3600	150	-	-	-	4150	24.90	3,854	96	
		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	5850	-	-	-	-	6100	97.60	1,579	155	
		W8	16	16	200	E	250	5850	-	-	-	-	6100	97.60	1,579	155	
		W9	16	18	200	E	250	2100	-	-	-	-	2350	47.00	1,579	75	
		W10	16	18	200	E	250	2100	-	-	-	-	2350	47.00	1,579	75	
W11	16	4	AS SHOWN	C	250	1500	3300	-	-	-	5050	20.20	1,579	32			
W12	12	244	AS SHOWN	D	170	450	170	-	-	-	790	192.76	0,888	172			
												GRADE 60 TOTAL =	921	kg.			
												GRADE 40 TOTAL =	664	kg.			
APPROACH RAILING AND SIDEWALK	3.82	AS	12	9	AS SHOWN	A	3800	-	-	-	-	3800	34.20	0,888	31		
		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	11	300	C	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	800	-	-	-	-	1100	11.00	1,579	18	
		AR2	16	16	300	J	1300	120	1300	-	-	-	2720	43.52	1,579	66	
		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 40 TOTAL =	375	Kgs.			
TOTAL	14.08													GRADE 60 TOTAL =	921	kg.	
												GRADE 40 TOTAL =	1,039	kg.			

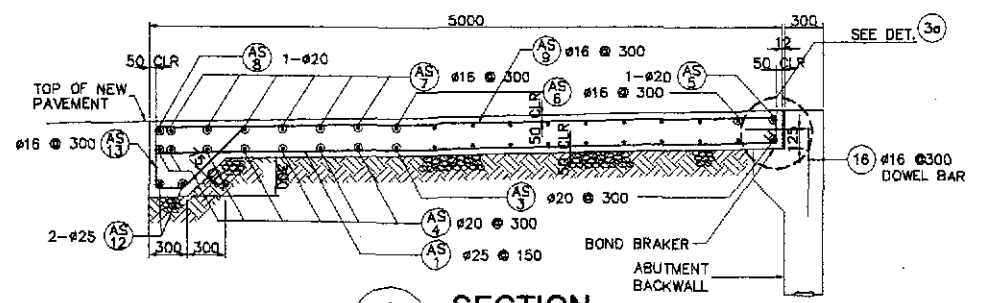




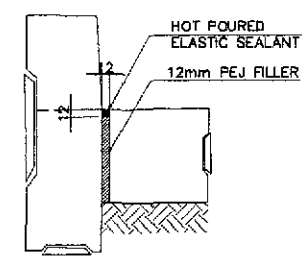
1 PLAN
SCALE 1:50



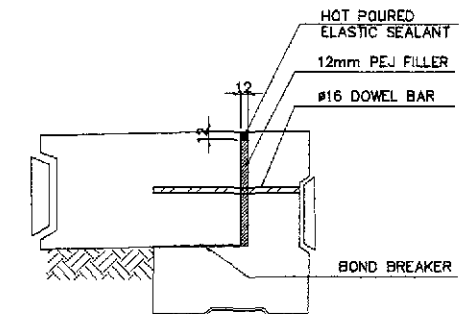
2 SECTION
SCALE 1:30



3 SECTION
SCALE 1:30



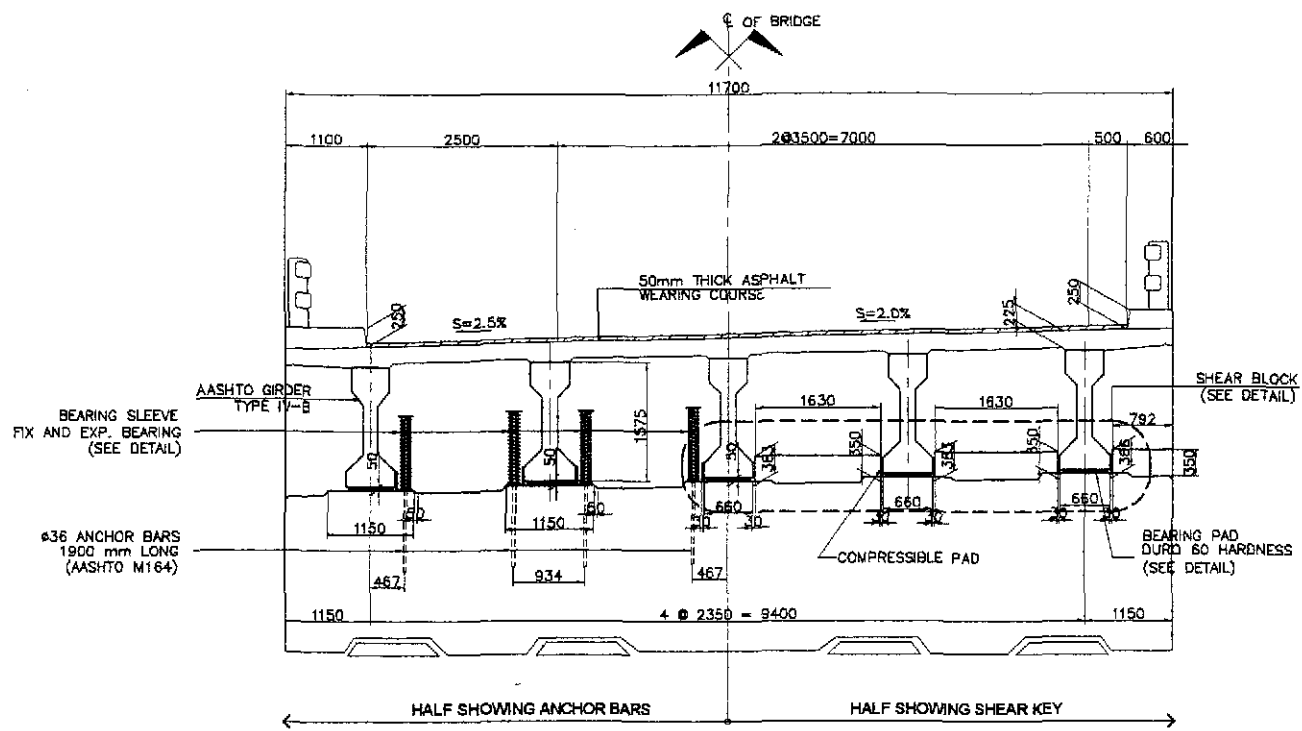
2a DETAIL
SCALE 1:10



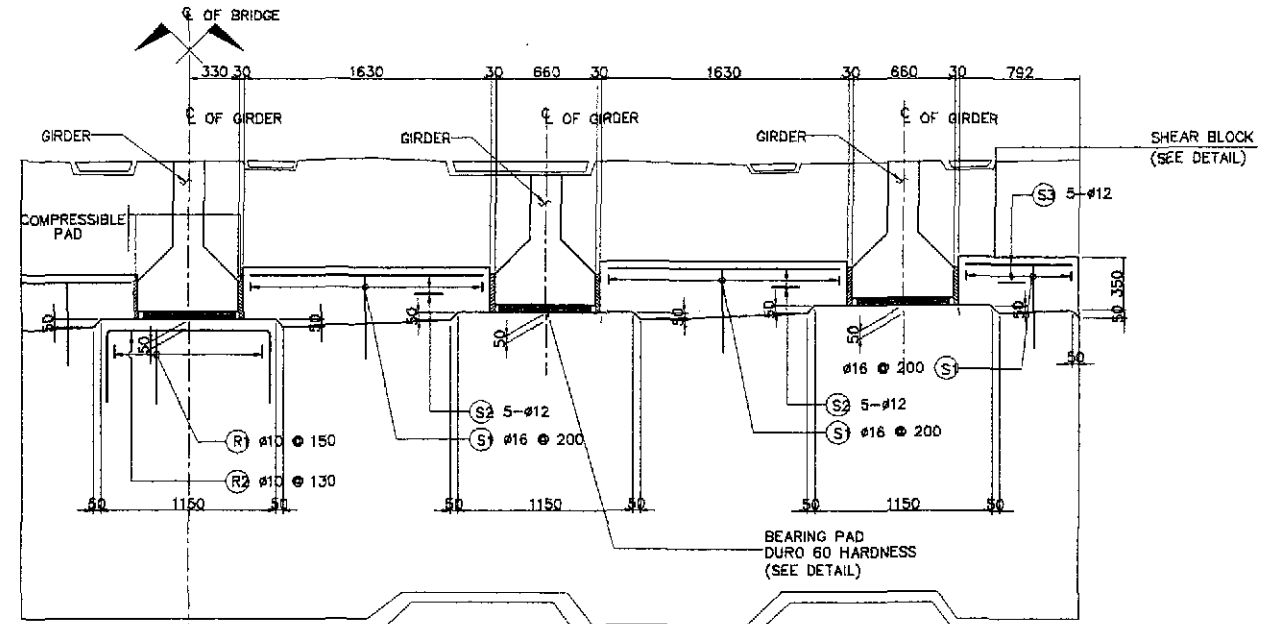
3a DETAIL
SCALE 1:10

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	17.71	AS1	25	68	150	(B)	4900	200	-	-	-	-	5100	346.80	3.854	1337	161.80
		AS2	25	6	150	(B)	3450	200	-	-	-	-	3650	21.90	3.854	85	
		AS3	20	11	300	(A)	11250	-	-	-	-	-	11250	123.75	2.466	306	
		AS4	20	7	300	(A)	11850	-	-	-	-	-	11850	82.95	2.466	205	
		AS5	20	1	AS SHOWN	(A)	10600	-	-	-	-	-	10600	10.60	2.466	27	
		AS6	16	10	300	(A)	11350	-	-	-	-	-	11350	113.50	1.579	180	
		AS7	16	6	300	(A)	11850	-	-	-	-	-	11850	71.10	1.579	113	
		AS8	20	1	AS SHOWN	(A)	11450	-	-	-	-	-	11450	11.85	2.466	30	
		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)	11850	-	-	-	-	-	11850	23.70	3.854	92	
AS13	16	39	300	(D)	400	500	200	700	-	-	1800	70.20	1.579	111			
TOTAL	17.71											GRADE 40 TOTAL = 701 kgs.		GRADE 60 TOTAL = 2164 kgs.			

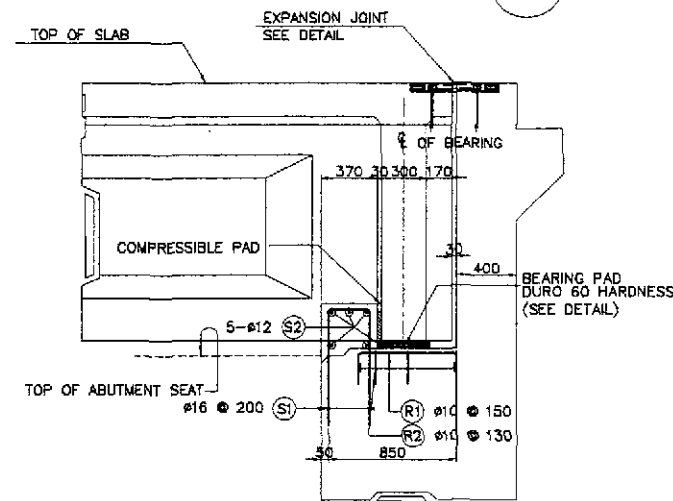
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES			PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :		SHEET NO. :
	CHECKED	10/21/07	E. N. SALLAN		DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			THE DETAILED DESIGN STUDY ON			AS SHOWN	BRIDGE NO. 3		B3-07
	SUBMITTED	10/27/07	Project Director		BUREAU OF DESIGN			UPGRADING INTER-URBAN HIGHWAY SYSTEM			FULL SIZE A1	APPROACH SLAB PLAN, SECTIONS AND DETAILS (ULTIMATE STAGE)		
				OFFICE OF THE SECRETARY			ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)							
				DANILG C. TRAJANO Chief, Bridges Division			PLARIDEL BYPASS - CONTRACT PACKAGE II							



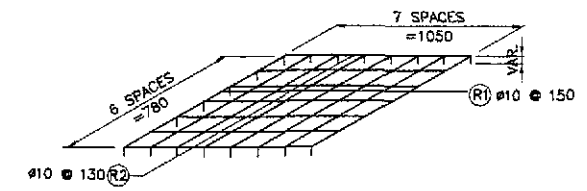
1 SECTION AT ABUTMENT SEAT
SCALE 1:50



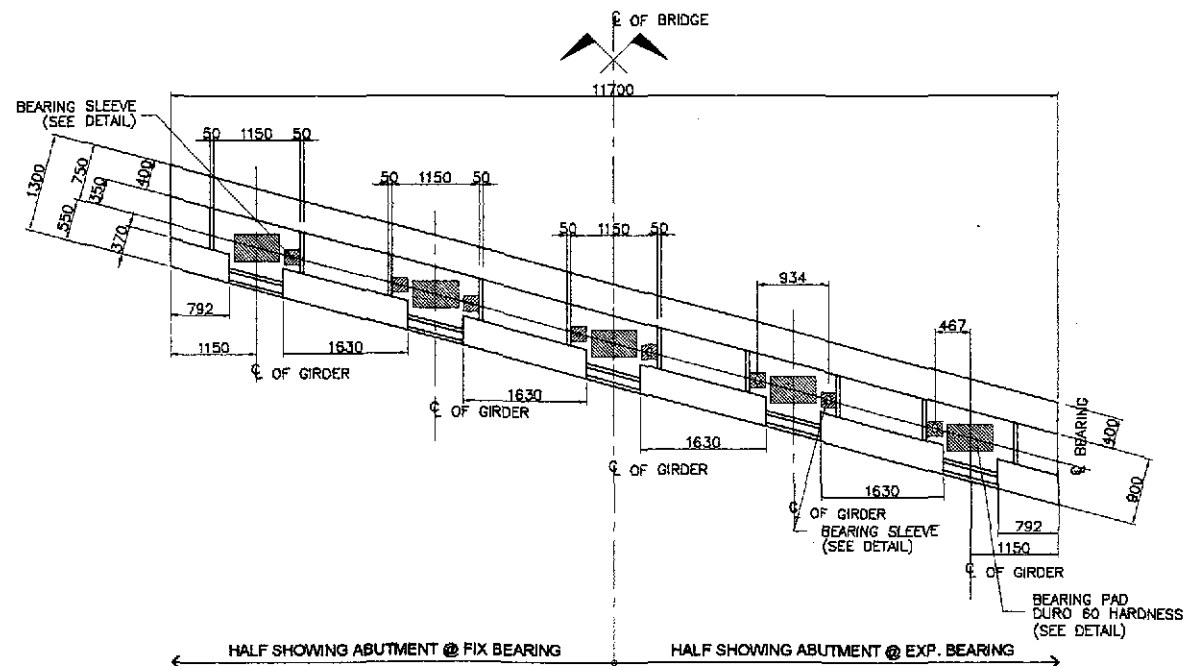
3 SHEAR BLOCK DETAIL
SCALE 1:25



3A SECTION
SCALE 1:25



4 RISER REINFORCEMENT
NOT TO SCALE

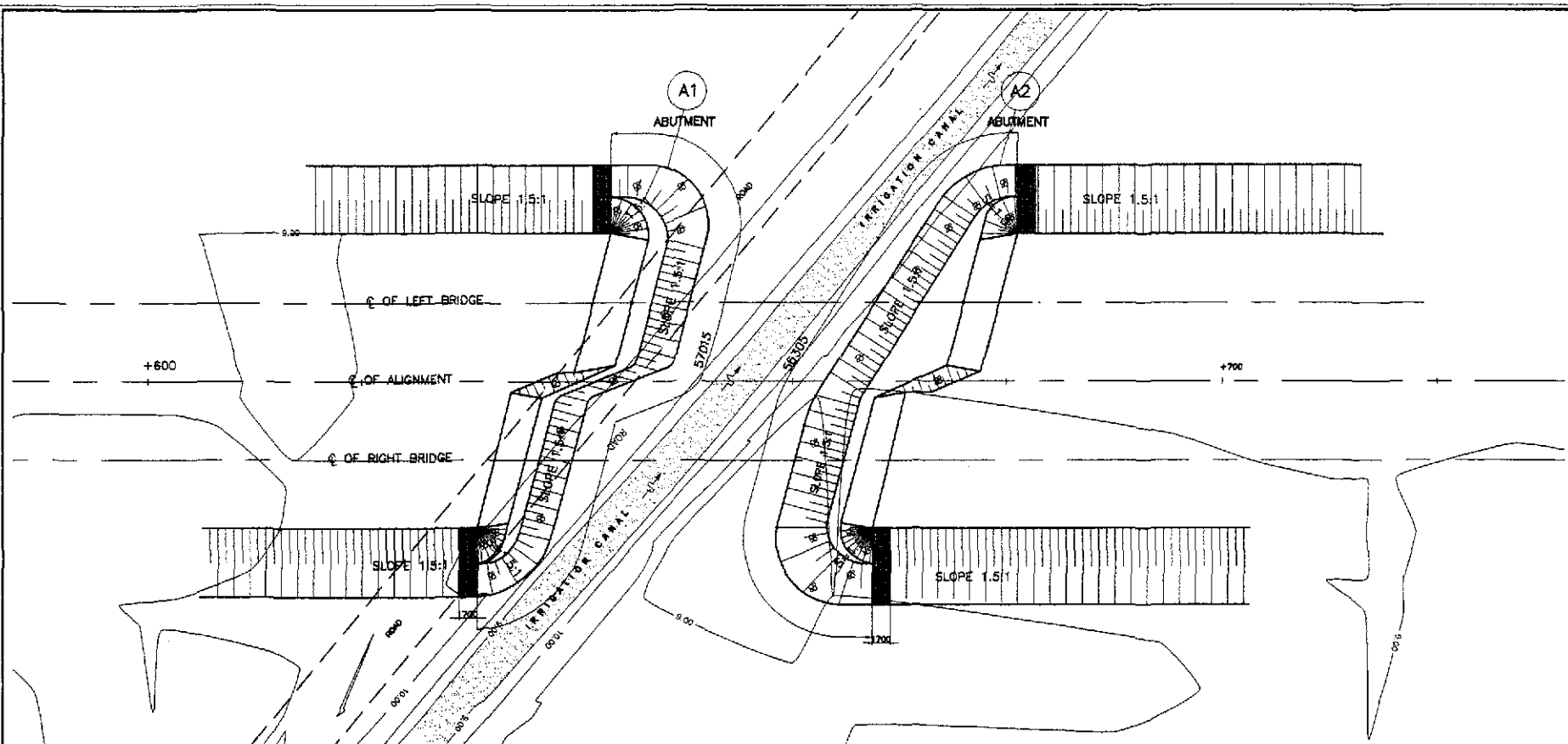


2 PLAN AT ABUTMENT SEAT
SCALE 1:50

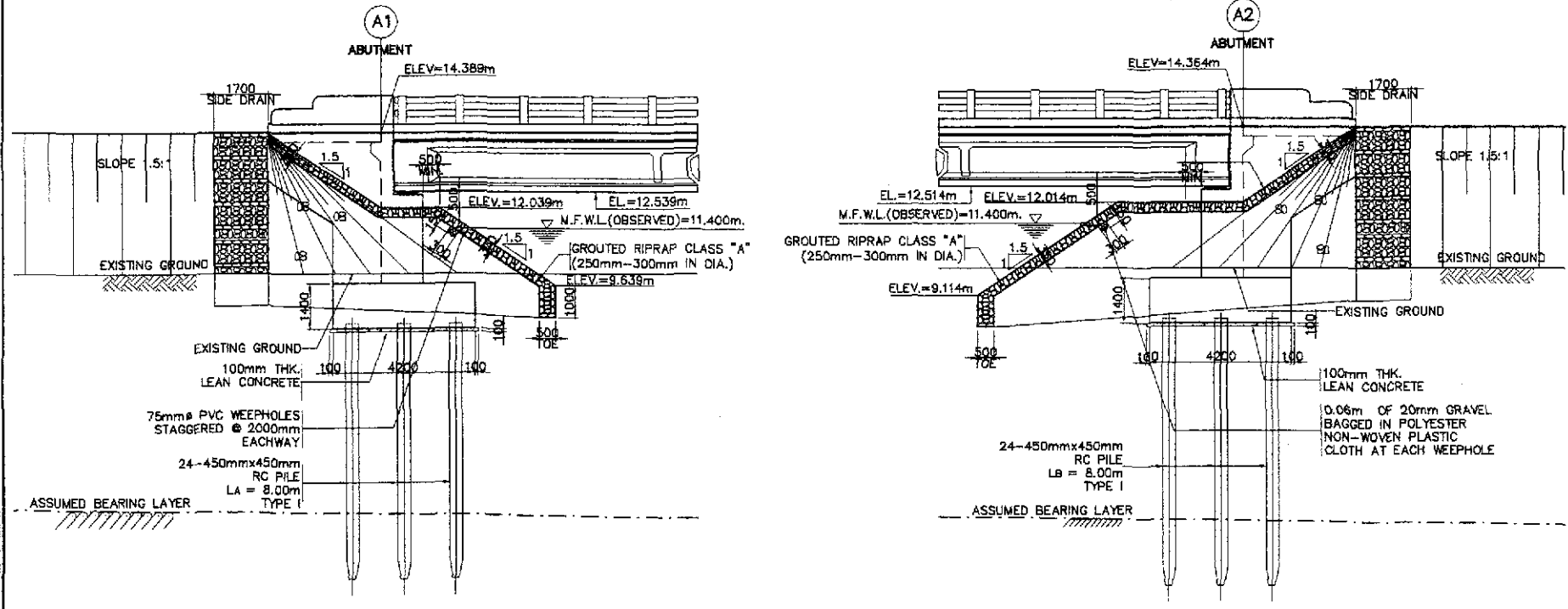
BAR BENDING DIAGRAM																
A						B										
[Diagram A]						[Diagram B]										
SCHEDULE OF REINFORCEMENT																
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSION(mm) OUT TO OUT					LENGTH EACH BAR (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d	e					
SHEAR KEY & RISER	1.56	S1	16	46	200	(B)	560	280	560			1410	64.86	1.578	103	147.87
		S2	12	20	AS SHOWN	(A)	1610					1610	32.20	0.888	29	
		S3	12	10	AS SHOWN	(A)	740					740	7.40	0.888	7	
		R1	10	40	150	(B)	500	810	500			1810	72.40	0.616	45	
		R2	10	35	130	(B)	500	1090	500		2040	73.15	0.616	46		
TOTAL	1.56															GRADE 40 TOTAL = 230 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	10/21/22	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 (ULTIMATE STAGE)	B3-08												
	SUBMITTED	10/27/22	[Signature]		OFFICE OF THE SECRETARY					PLARIDEL BYPASS - CONTRACT PACKAGE II				FULL SIZE A1														
				Submitted By: DANILO C. TRAJANG, Project Director					Reviewed By: ADRIANO M. DOROY, Chief, Bridges Division					Recommended By: GILBERTO S. REYES, Director IV (CIC)					Approved By: MANUEL M. BONDAN, Undersecretary					Approved By: SIMEON A. DATUMANONG, Secretary				



1A PLAN
SCALE 1:300

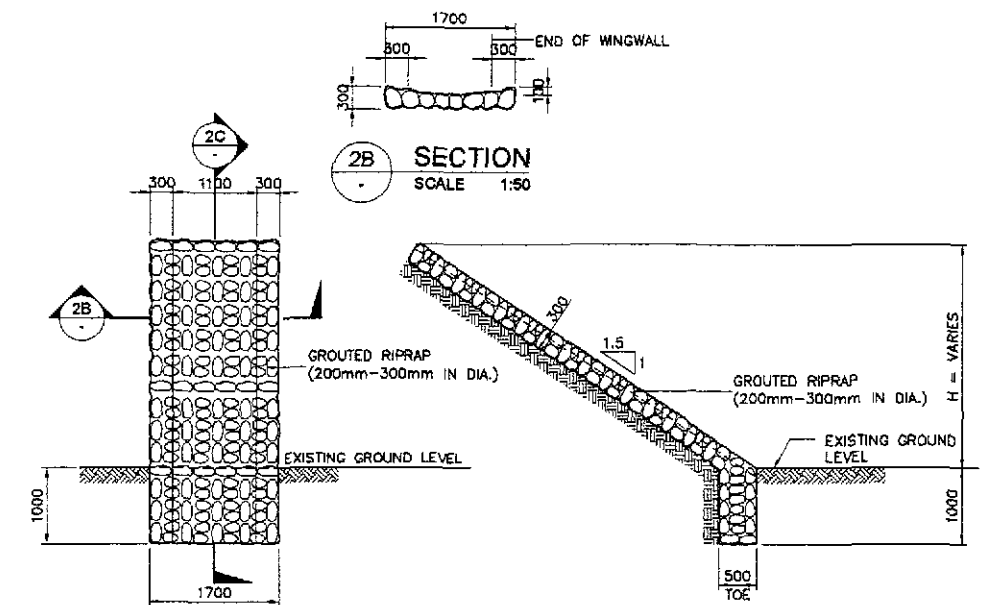


1B ELEVATION
SCALE 1:100

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

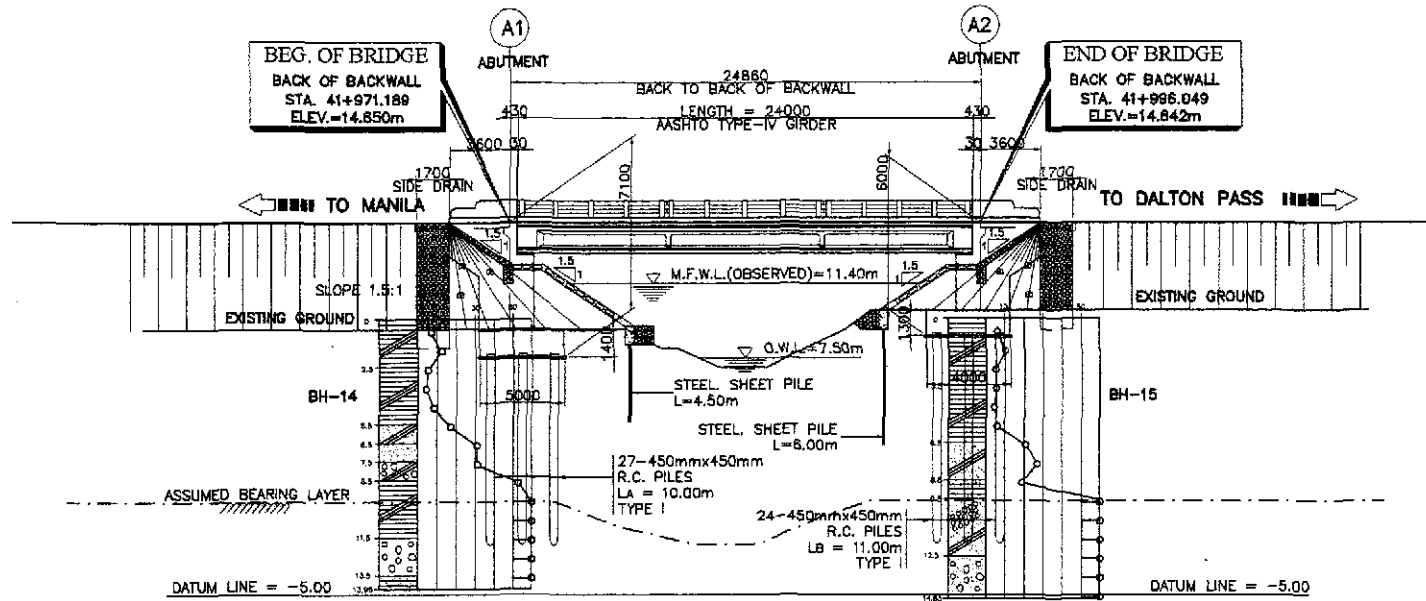
2C SECTION
SCALE 1:50

2 TYPICAL SIDE DRAIN DETAIL
SCALE AS SHOWN

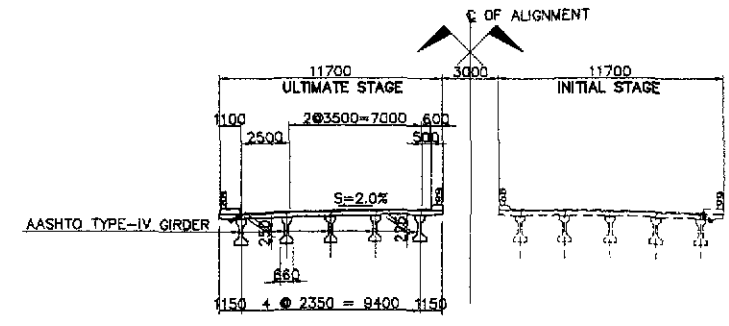
VELOCITY (m/sec)	ROCK SIZE (mm)	
	VERY TURBULENT FLOW	SMOOTH FLOW
1.00	40	-
1.50	135	-
2.00	170	-
2.50	255	137
3.00	370	197
3.50	515	270
4.00	690	350
4.50	825	425
5.00	>900	590

LOCATION	SIZES	QUANTITY	
		ABUT. A1	ABUT. A2
SIDE DRAIN	200mm-300mm IN DIA.	4.71 cu. m.	4.71 cu. m.
GROUTED RIPRAP	250mm-300mm IN DIA.	56.59 cu. m.	75.02 cu. m.

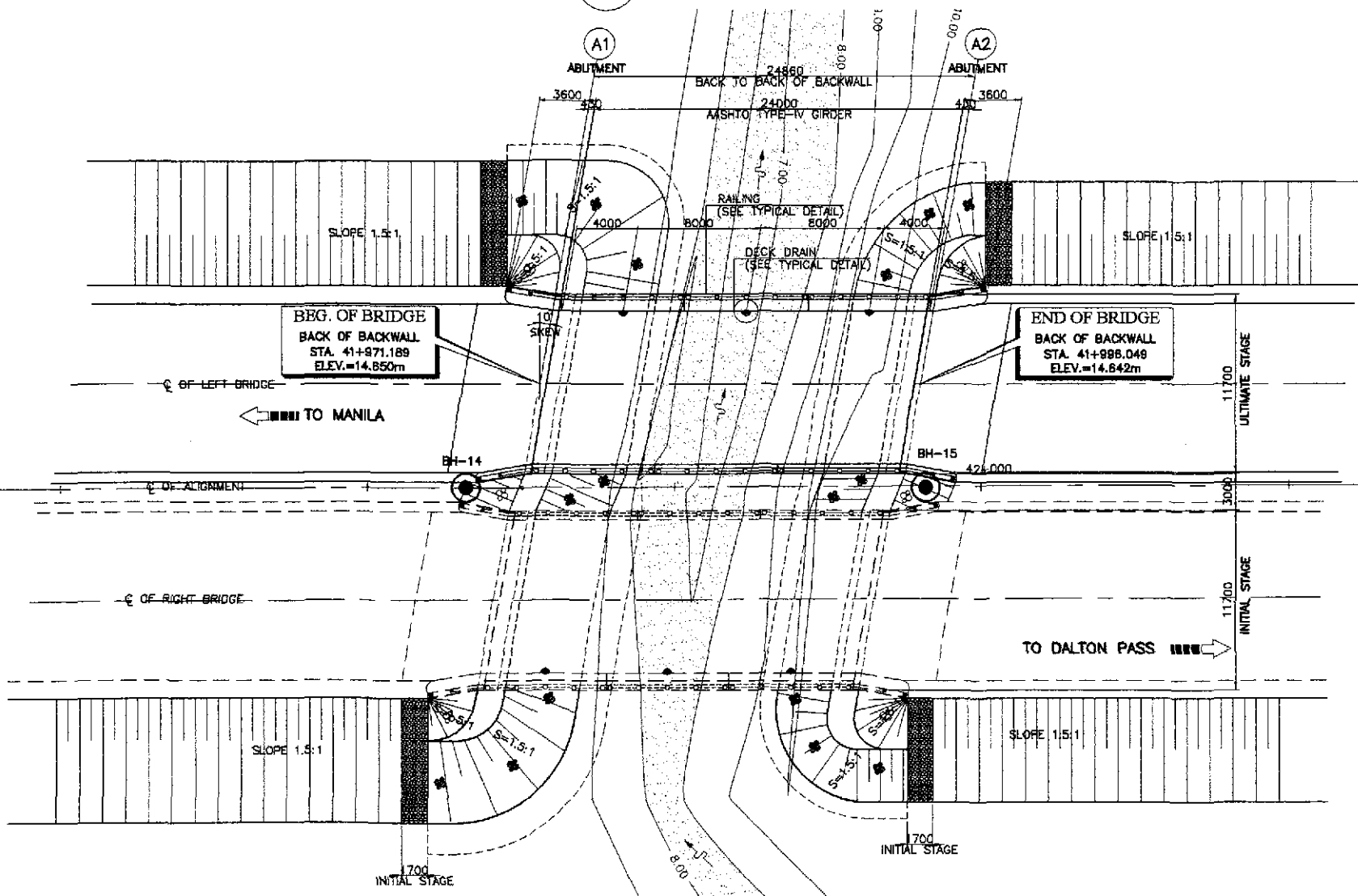
	DESIGNED: <i>[Signature]</i> P. GONZALES	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	SCALE: AS SHOWN	SHEET CONTENTS: BRIDGE NO. 3 ABUTMENT PROTECTION AND SIDE DRAIN DETAILS (ULTIMATE STAGE)	SHEET NO.:
	CHECKED: <i>[Signature]</i>	BUREAU OF DESIGN			OFFICE OF THE SECRETARY	FULL SIZE A1		B3-09
	SUBMITTED: 9/27/02	Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: PERFECTO L. ZAPLAN JR. Chief, Hydraulics Division (CH)	Recommended By: GILBERTO S. REYES Director IV (DR)	Approved By: MANUEL M. BONGAN Undersecretary			



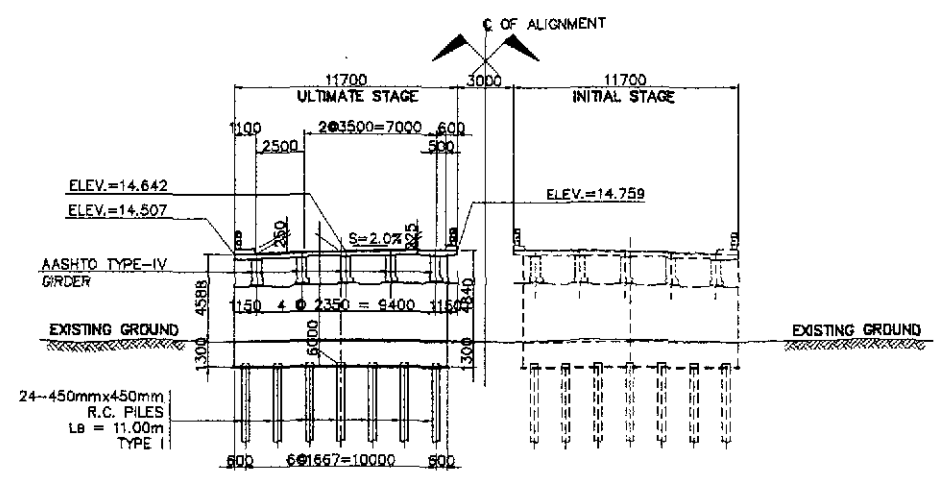
1 GENERAL ELEVATION
SCALE 1:200



3 SECTION @ MIDSPAN
SCALE 1:200



2 GENERAL PLAN
SCALE 1:200



4 SECTION @ ABUTMENT A2
SCALE 1:200

HYDRAULIC DESIGN DATA	
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.

A PLARIDEL BYPASS BRIDGE NO. 4 (STA. 41+971.189)
SCALE AS SHOWN

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

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

DESIGNED: [Signature]
CHECKED: [Signature]
SUBMITTED: 9/27/12

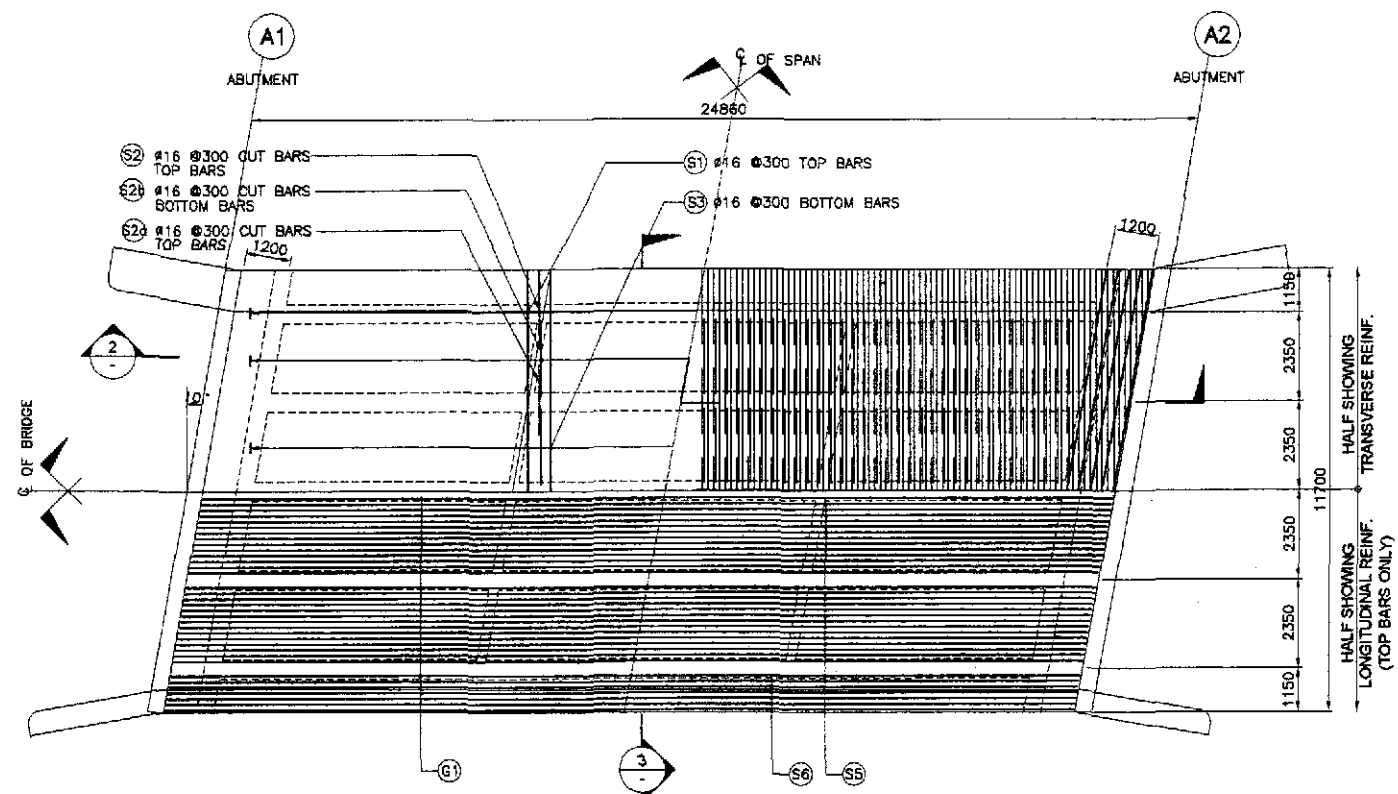
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
OFFICE OF THE SECRETARY
Submitted By: DANILLO C. TRAJANO, Project Director
Reviewed By: ADRIANO M. DORNY, Chief, Bridges Division
Recommended By: GILBERTO S. REYES, Director IV (OIC)
Approved By: MANUEL M. BONGAN, Undersecretary
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

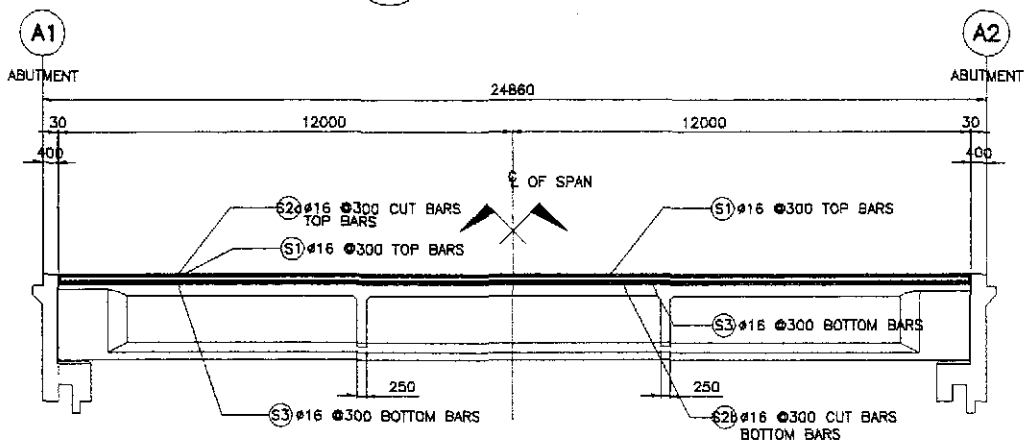
SCALE :
1:200
FULL SIZE A1

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

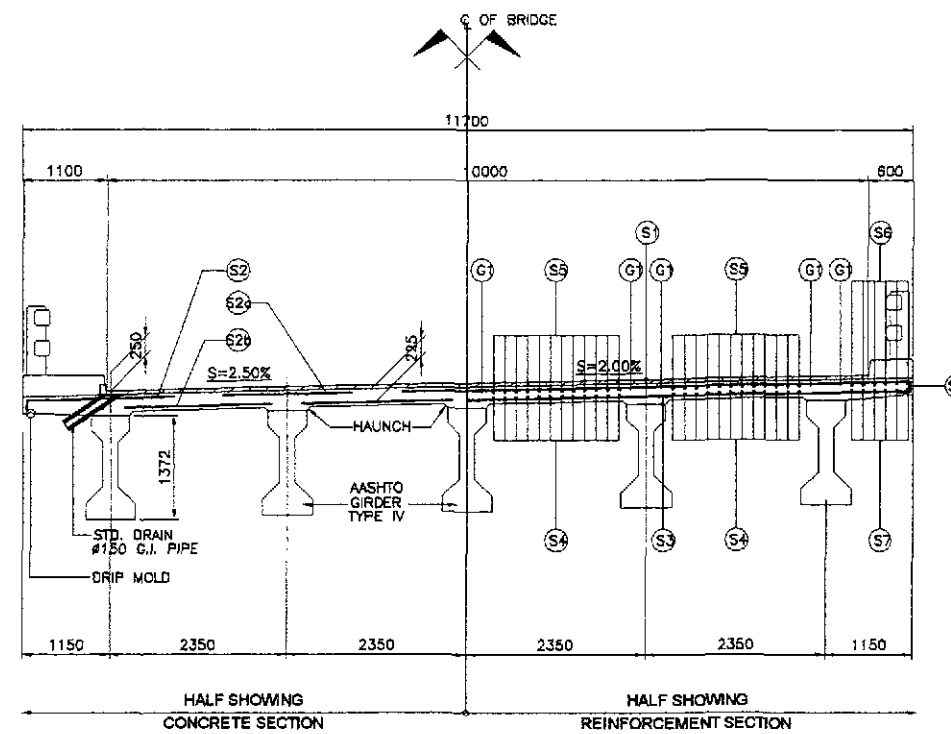
SHEET NO. :
B4-01



1 FRAMING PLAN
SCALE 1:100

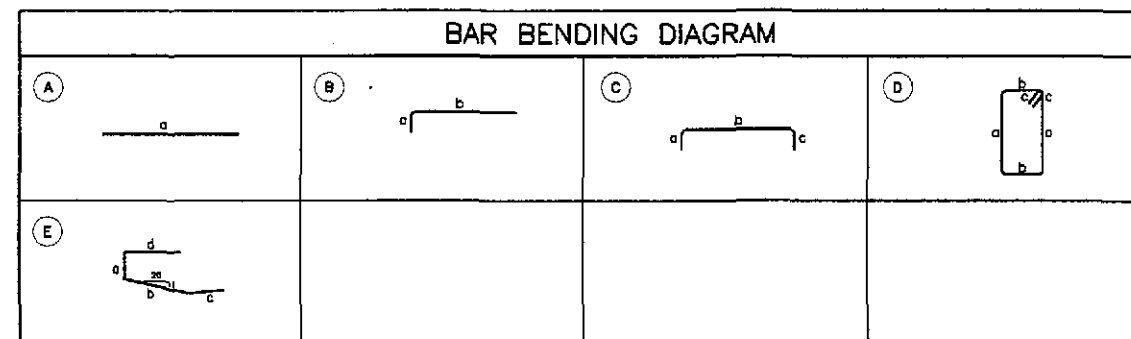


2 LONGITUDINAL SECTION
SCALE 1:100



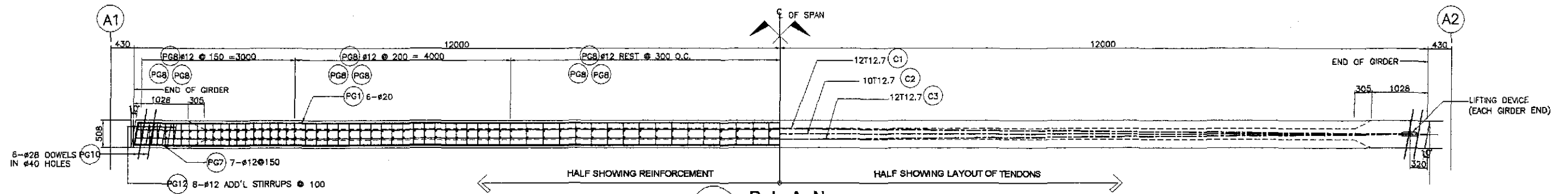
3 TYPICAL CROSS-SECTION
SCALE 1:80

ESTIMATED QUANTITIES OF SUPERSTRUCTURE			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
404(1)a	REINFORCING STEEL GRADE 40	kgs.	19141
	DECK SLAB	10805	
	DIAPHRAGM	347	
	GIRDER	4395	
	SIDEWALK, RAILING, & POST	2224	
	APPROACH SLAB	1370	
404(1)b	REINFORCING STEEL GRADE 60	kgs.	11661
	DECK SLAB	0	
	DIAPHRAGM	1194	
	GIRDER	5770	
	SIDEWALK, RAILING, & POST	443	
	APPROACH SLAB	4254	
405(1)	STRUCTURAL CONCRETE	cu. m.	190.76
	DECK SLAB	66.53	
	DIAPHRAGM	10.66	
	GIRDER	62.61	
	SIDEWALK, RAILING, & POST	15.73	
	APPROACH SLAB	35.23	

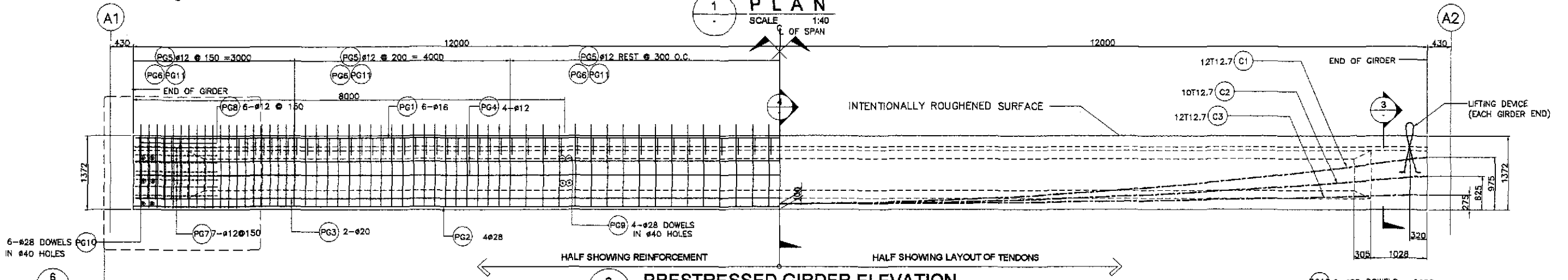


SCHEDULE OF REINFORCEMENT															
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				LENGTH EACH BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT IN (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d					
DECK SLAB	66.53	G1	16	10	AS SHOWN	(A)	23900	-	-	-	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	596	
		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 Kgs.

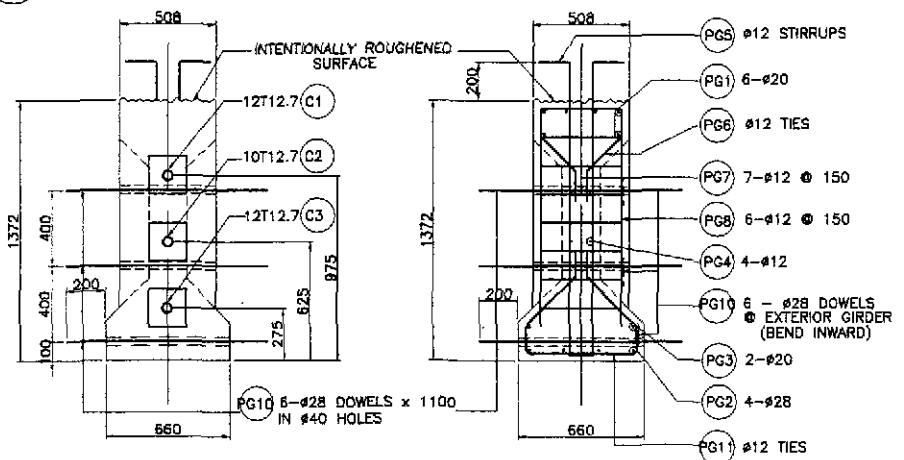
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	CHECKED	7/2/02	E. N. SALLAN		DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			THE DETAILED DESIGN STUDY ON		AS SHOWN	BRIDGE NO. 4 DECK FRAMING PLAN AND SECTIONS (ULTIMATE STAGE)	B4-02
SUBMITTED	7/2/02		BUREAU OF DESIGN			UPGRADING INTER-URBAN HIGHWAY SYSTEM		FULL SIZE A1				
				OFFICE OF THE SECRETARY			ALONG THE PAN-PHILIPPINE HIGHWAY					
				Submitted By: DANILLO C. TRAJANO			(Plaridel, Cabanatuan and San Jose Bypasses)					
				Reviewed By: ADRIANO M. DOROY			PLARIDEL BYPASS - CONTRACT PACKAGE II					
				Recommended By: GILBERTO S. REYES								
				Approved By: MANUEL M. BONGAN								
				Approved By: SIMEON A. DATUMANONG								



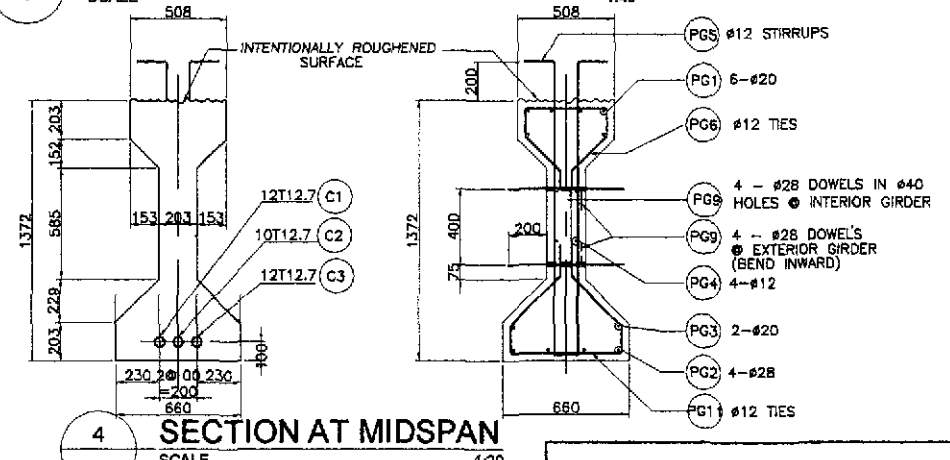
1 PLAN
SCALE 1:40



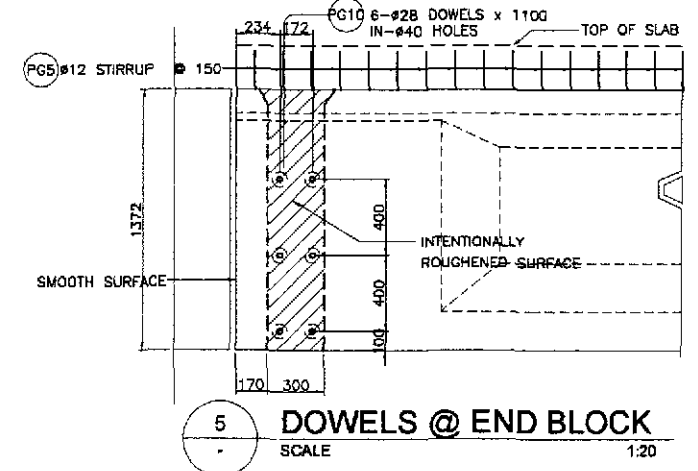
2 PRESTRESSED GIRDER ELEVATION
SCALE 1:40



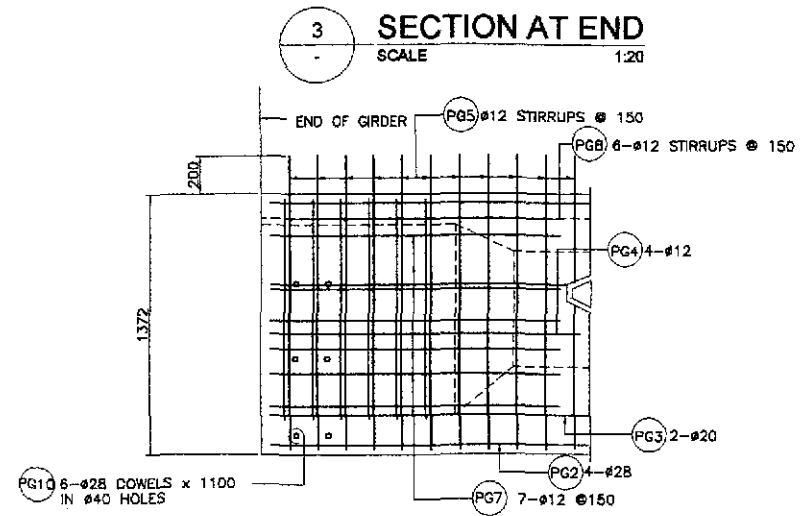
3 SECTION AT END
SCALE 1:20



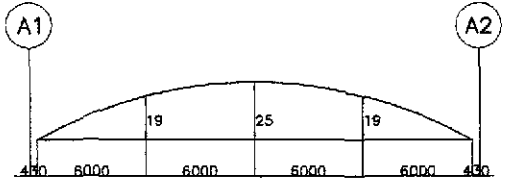
4 SECTION AT MIDSPAN
SCALE 1:20



5 DOWELS @ END BLOCK
SCALE 1:20



6 END BLOCK REINF. DETAIL
SCALE 1:20



5 CAMBER DIAGRAM
NOT TO SCALE

- 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.

BAR BENDING DIAGRAM

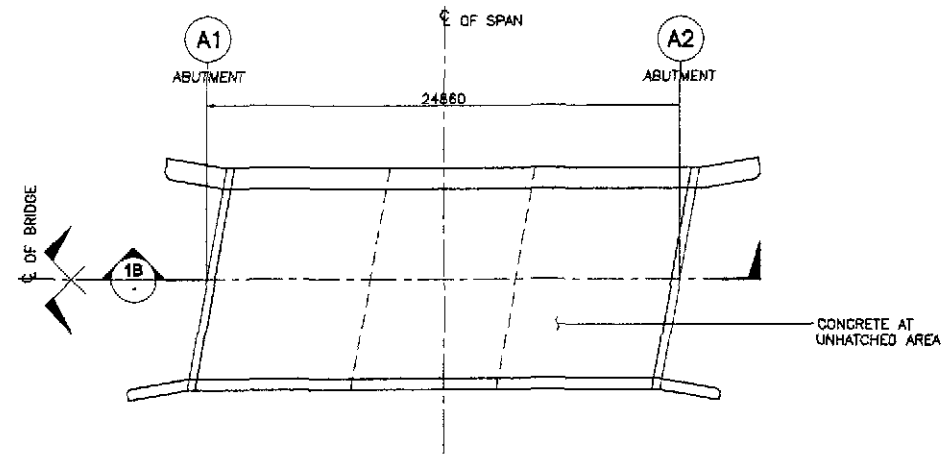
A	B	C	D
E	F	G	H

SCHEDULE OF REINFORCEMENT

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 BRAND	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	(B)	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			

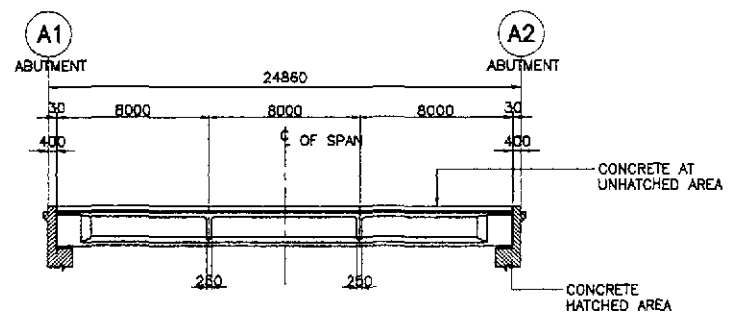
GRADE 40 TOTAL = 879 kgs
GRADE 60 TOTAL = 1,154 kgs

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/25/02	<i>[Signature]</i>		Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: ADRIANO M. DOROY Chief, Bridges Division	Recommended By: GILBERTO S. REYES Director IV (CIC)	Recommended By: MANUEL M. BONDAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 4 AASHTO TYPE IV GIRDER (ULTIMATE STAGE)
PLARIDEL BYPASS - CONTRACT PACKAGE II FULL SIZE A1												



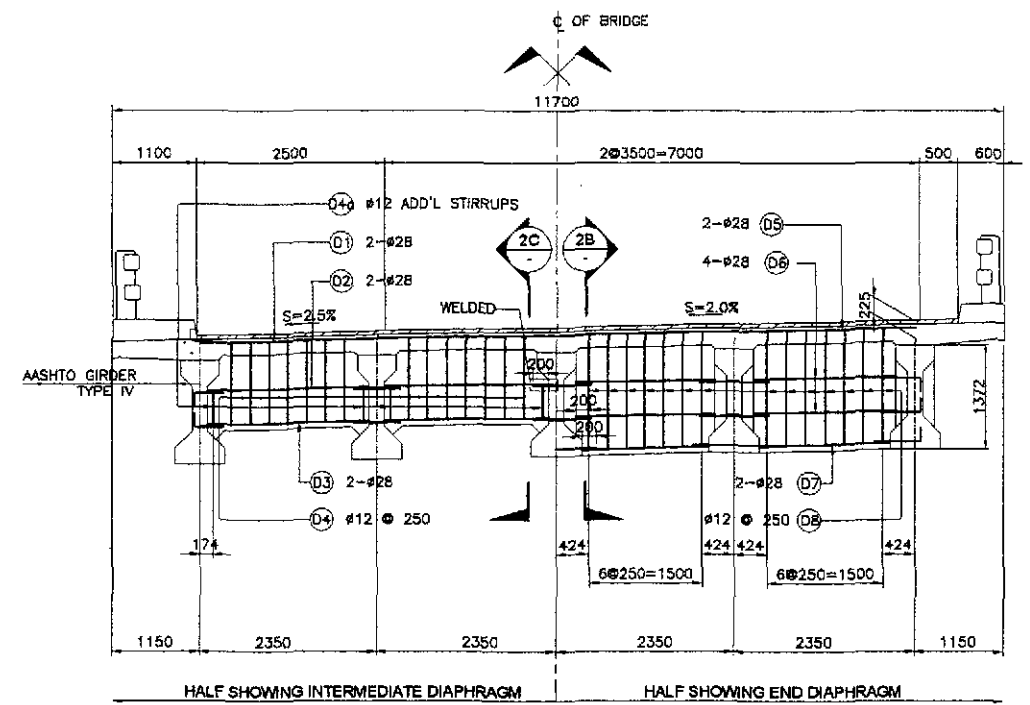
1A PLAN
SCALE 1:200

- 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 DETAILS FOR SPACING OF #28 DOWELS.



1B LONGITUDINAL SECTION
SCALE 1:200

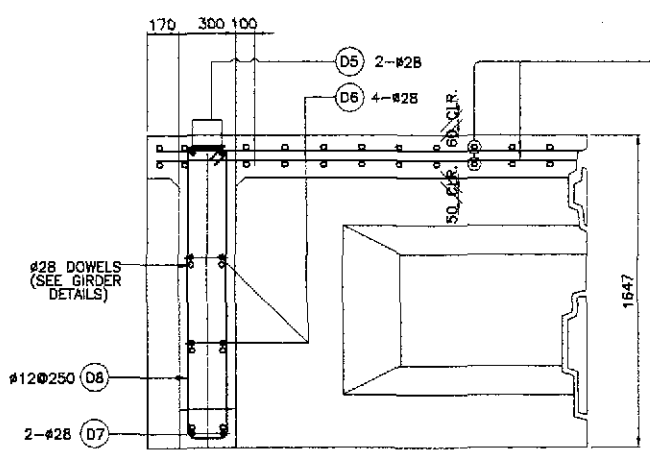
1 CONCRETE POURING SEQUENCE
SCALE 1:200



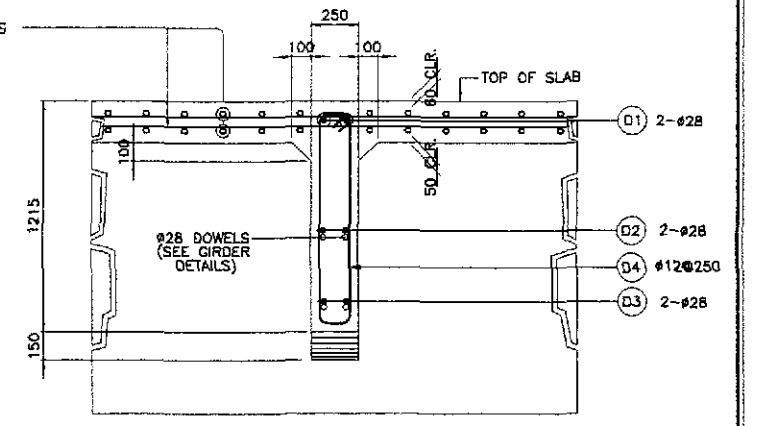
2A ELEVATION
SCALE 1:25

BAR BENDING DIAGRAM																	
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	4.80	D1	28	4	AS SHOWN	A	9400				9400	37.60	4.833	182	138.30	TOP BARS
			D2	28	16	AS SHOWN	A	2145				2145	34.32	4.833	166		DIST. BARS
			D3	28	16	AS SHOWN	A	2145				2145	34.32	4.833	166		BOTTOM BARS
			D4	12	56	250	B	150	1100(AVE)	150	2800	156.80	0.888	140	STIRRUPS		
	END DIAPHRAGM	5.77	D5	28	4	AS SHOWN	A	9400				9400	37.60	4.833	182		TOP BARS
			D6	28	32	AS SHOWN	A	2145				2145	68.64	4.833	332		DIST. BARS
			D7	28	16	AS SHOWN	A	2145				2145	34.32	4.833	166		BOTTOM BARS
			D8	12	56	250	B	200	1500(AVE)	150	3700	207.20	0.888	184	STIRRUPS		
TOTAL		10.87															

GRADE 60 TOTAL = 1,194 kgs
GRADE 40 TOTAL = 347 kgs



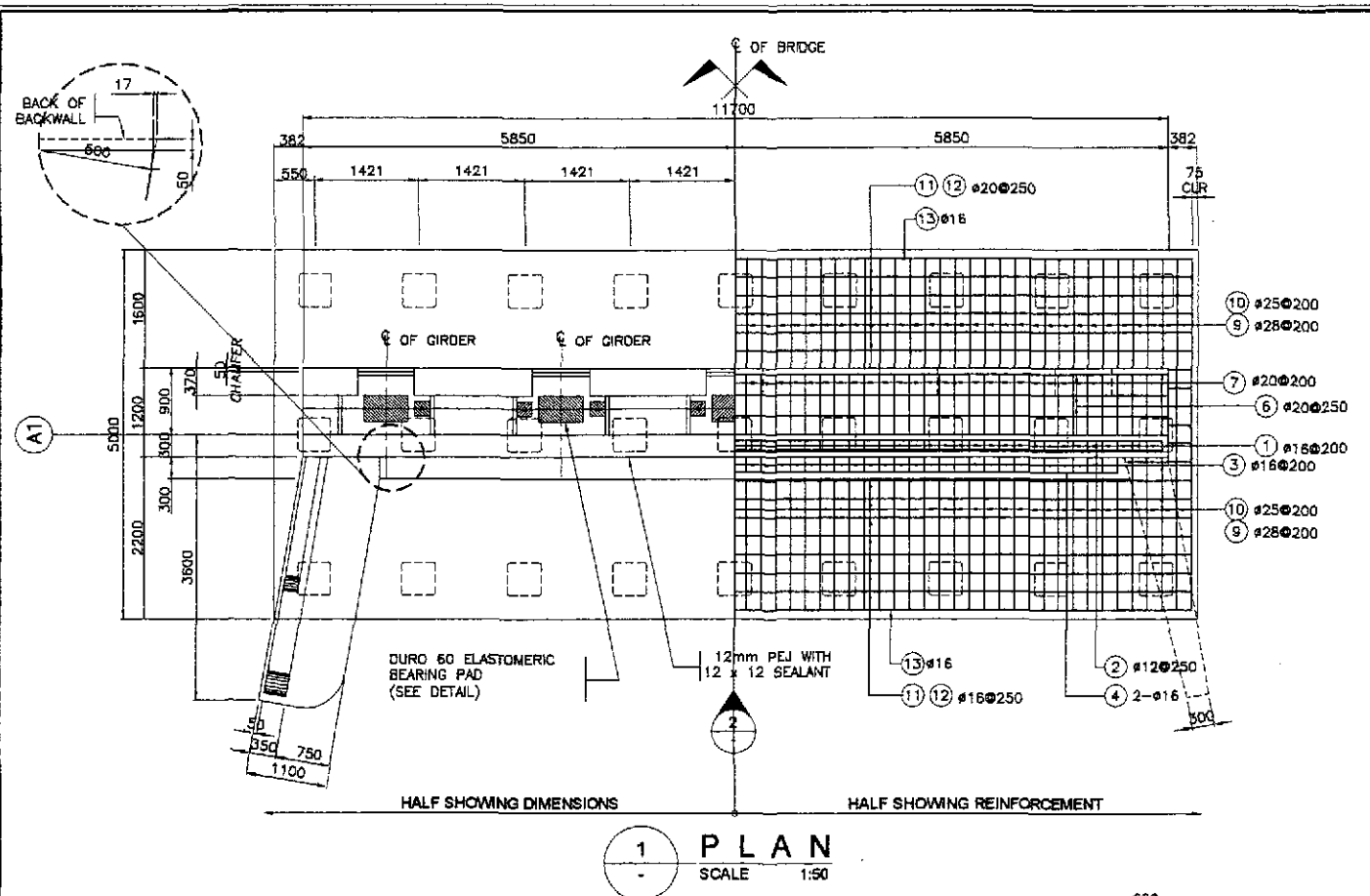
2B SECTION
SCALE 1:20



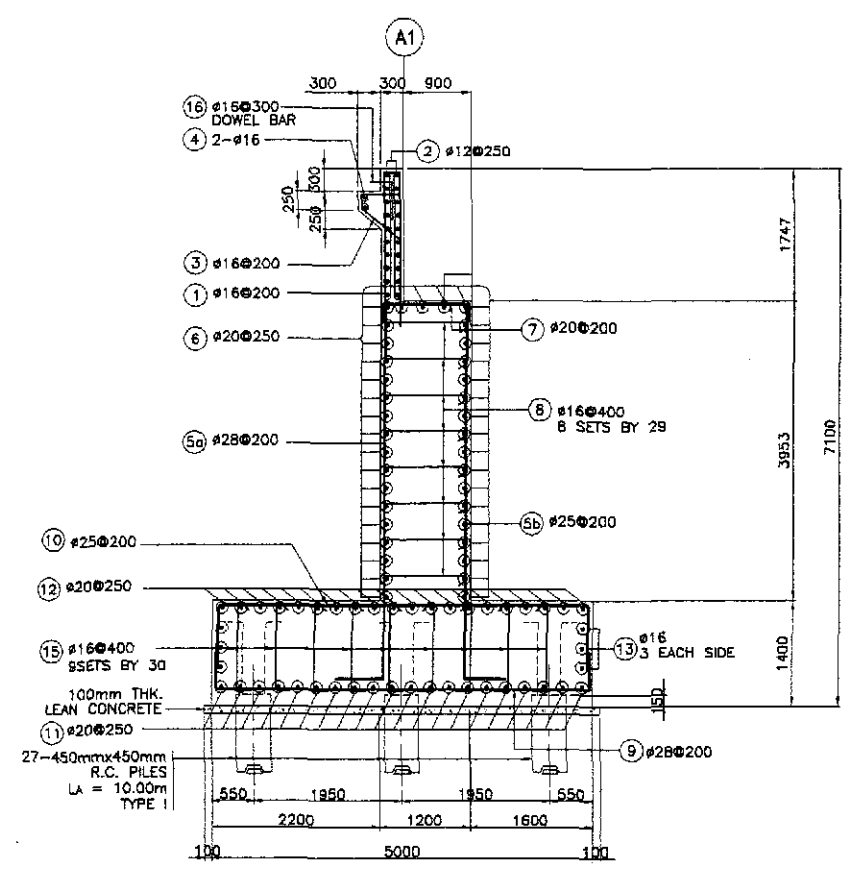
2C SECTION
SCALE 1:20

2 DETAIL OF END & INTERMEDIATE DIAPHRAGM
SCALE AS SHOWN

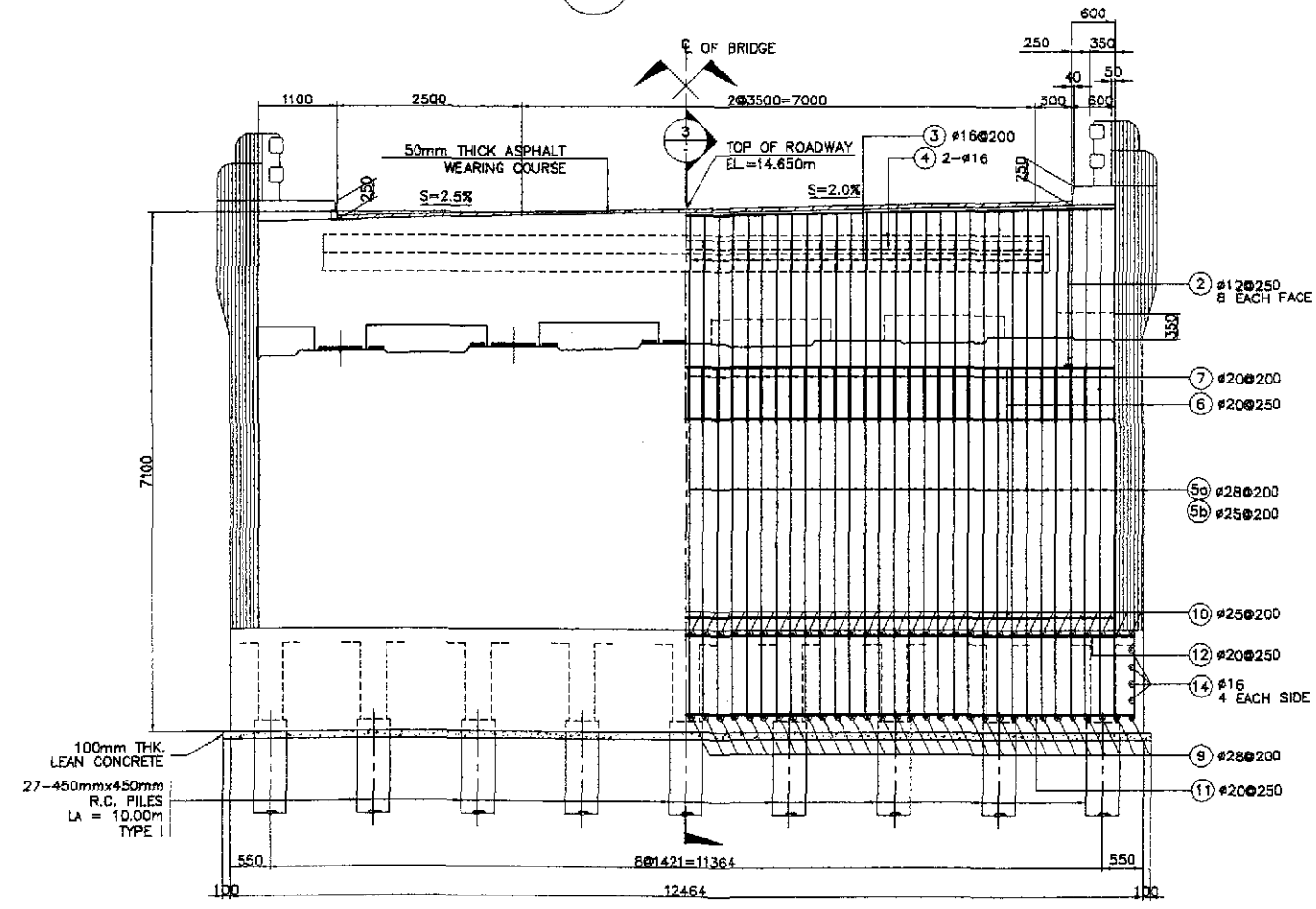
	DATE: 9/21/02 DESIGNED: E. N. SALLAN CHECKED: 9/25/02 SUBMITTED: 9/27/02	SIGNATURE: E. N. SALLAN TEAM LEADER	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY	PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II	SCALE: AS SHOWN FULL SIZE A1	SHEET CONTENTS: BRIDGE NO. 4 CONCRETE POURING SEQUENCE AND DIAPHRAGM DETAILS (ULTIMATE STAGE)	SHEET NO.: B4-04	
	Submitted By: DANILO C. TRAJANO Project Director	Reviewed By: ADRIANO M. COROY Chief, Bridge Division	Recommended By: GILBERTO S. REYES Director IV (D/C)	Recommended By: MANUEL M. BONOAN Undersecretary	Approved By: SIMON A. DATUMANONG Secretary			
	PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II				SCALE: AS SHOWN FULL SIZE A1	SHEET CONTENTS: BRIDGE NO. 4 CONCRETE POURING SEQUENCE AND DIAPHRAGM DETAILS (ULTIMATE STAGE)	SHEET NO.: B4-04	



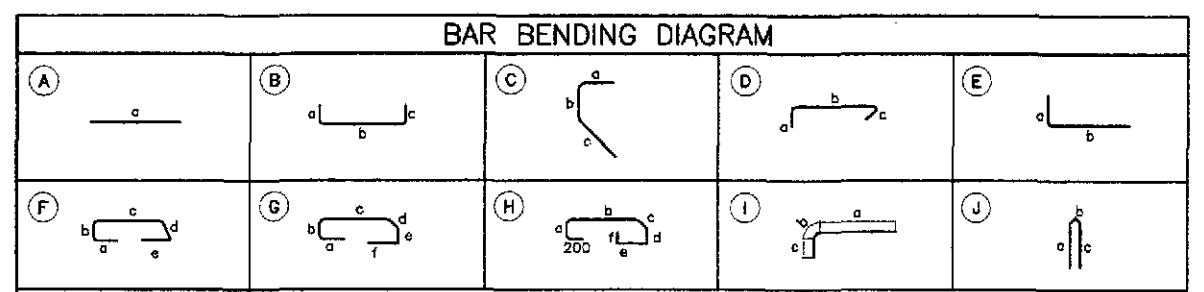
1 PLAN
SCALE 1:50



3 SECTION
SCALE 1:50

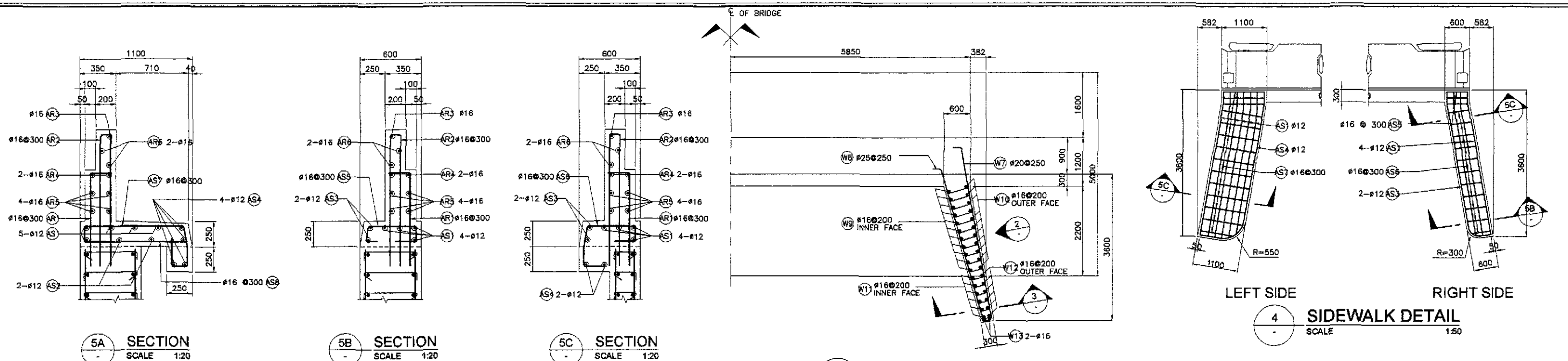


2 ELEVATION
SCALE 1:50



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	200	2000	-	-	-	4200	247.80	1.579	392	104.04
		②	12	20	250	(A)	1800	-	-	-	-	-	11800	236.00	0.888	210	
		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	84.14	
		⑤b	25	59	200	(E)	400	5100	-	-	-	5500	324.50	3.854	1251		
		⑥	20	37	250	(A)	11800	-	-	-	-	-	11600	436.80	2.466		1077
		⑦	20	47	200	(B)	250	1100	250	-	-	-	1600	75.20	2.466		186
		⑧	16	232	400	(D)	250	1100	250	-	-	-	1600	371.20	1.579		587
		⑨	28	63	200	(B)	700	4850	700	-	-	-	6250	393.75	4.833		1903
FOOTING	87.25	⑩	25	63	200	(B)	700	4850	700	-	-	6250	393.75	3.854	1518	65.32	
		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	18	6	AS SHOWN	(A)	12500	-	-	-	-	-	12500	75.00	1.579		119
		⑭	16	8	AS SHOWN	(A)	4850	-	-	-	-	-	4850	38.80	1.579		62
		⑮	16	270	400	(D)	250	1200	250	-	-	-	1700	459.00	1.579		725
DOWEL		⑯	16	34	300	(E)	650	500	-	-	-	1150	39.00	1.579	62		
TOTAL	150.01																GRADE 40 TOTAL = 8,876 kgs. GRADE 60 TOTAL = 2,310 kgs.

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	7/21/07	A. P. GONZALES		BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 4 ABUTMENT - A1 MAINWALL REINFORCEMENT DETAILS (ULTIMATE STAGE)	B4-05
	SUBMITTED	7/27/07	MANUEL M. BONDAN		OFFICE OF THE SECRETARY				FULL SIZE A1			
				Submitted By: DANILLO C. TRAJANO, Project Director Reviewed By: ADRIANO M. DOROS, Chief, Bridge Division Recommended By: GILBERTO S. REYES, Director IV (DC) Recommended By: MANUEL M. BONDAN, Undersecretary Approved By: SIMON A. DATUMANONG, Secretary				PLARIDEL BYPASS - CONTRACT PACKAGE II				



5A SECTION SCALE 1:20

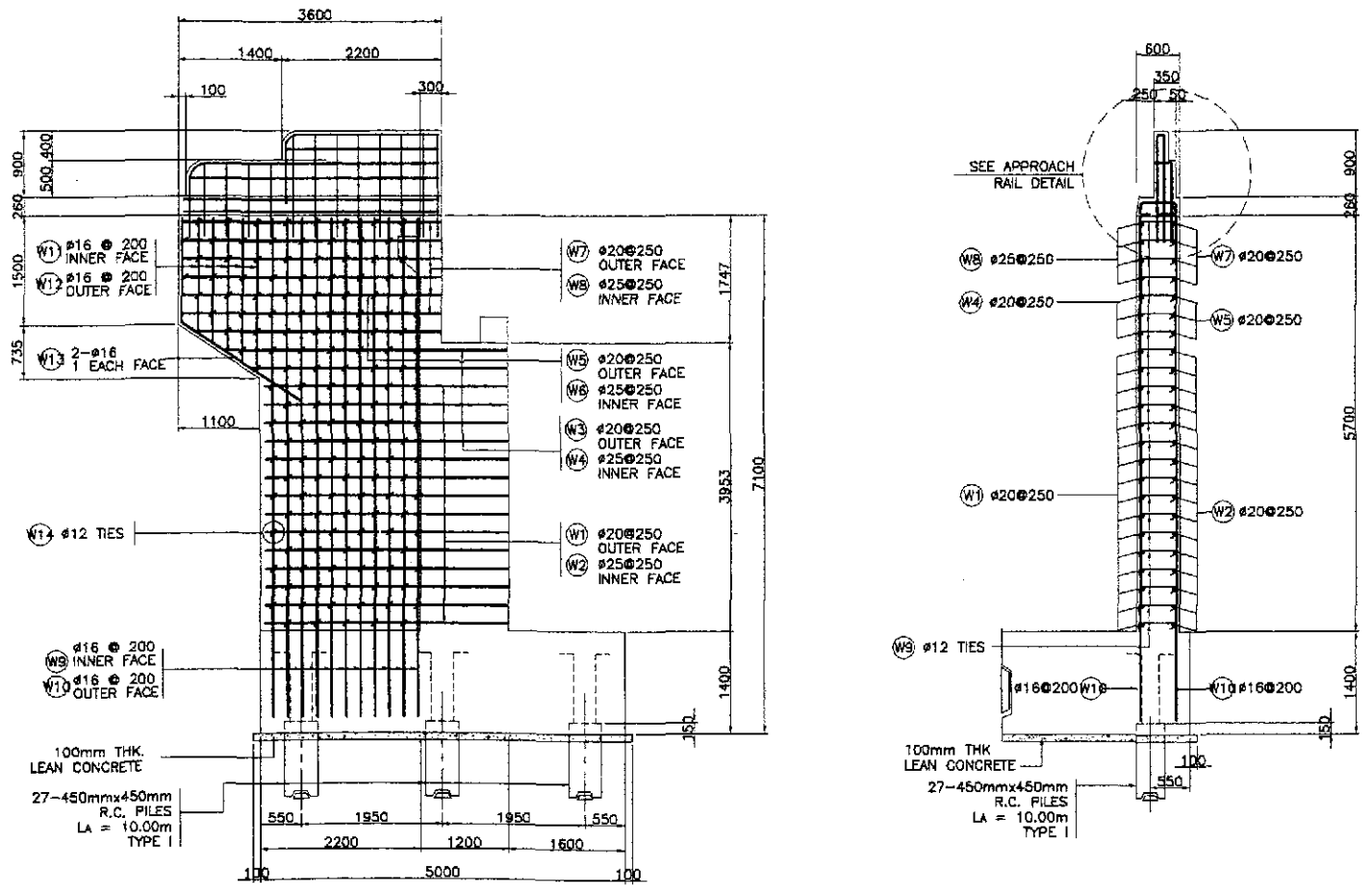
5B SECTION SCALE 1:20

5C SECTION SCALE 1:20

1 PLAN SCALE 1:50

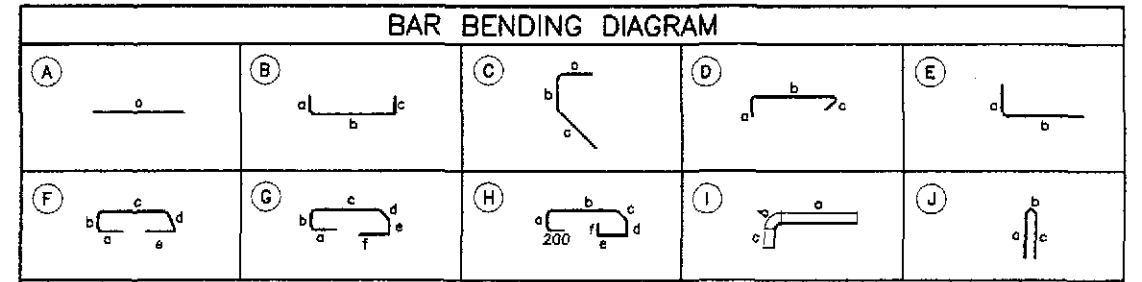
5 APPROACH RAIL DETAILS SCALE 1:20

4 LEFT SIDE RIGHT SIDE SIDEWALK DETAIL SCALE 1:50

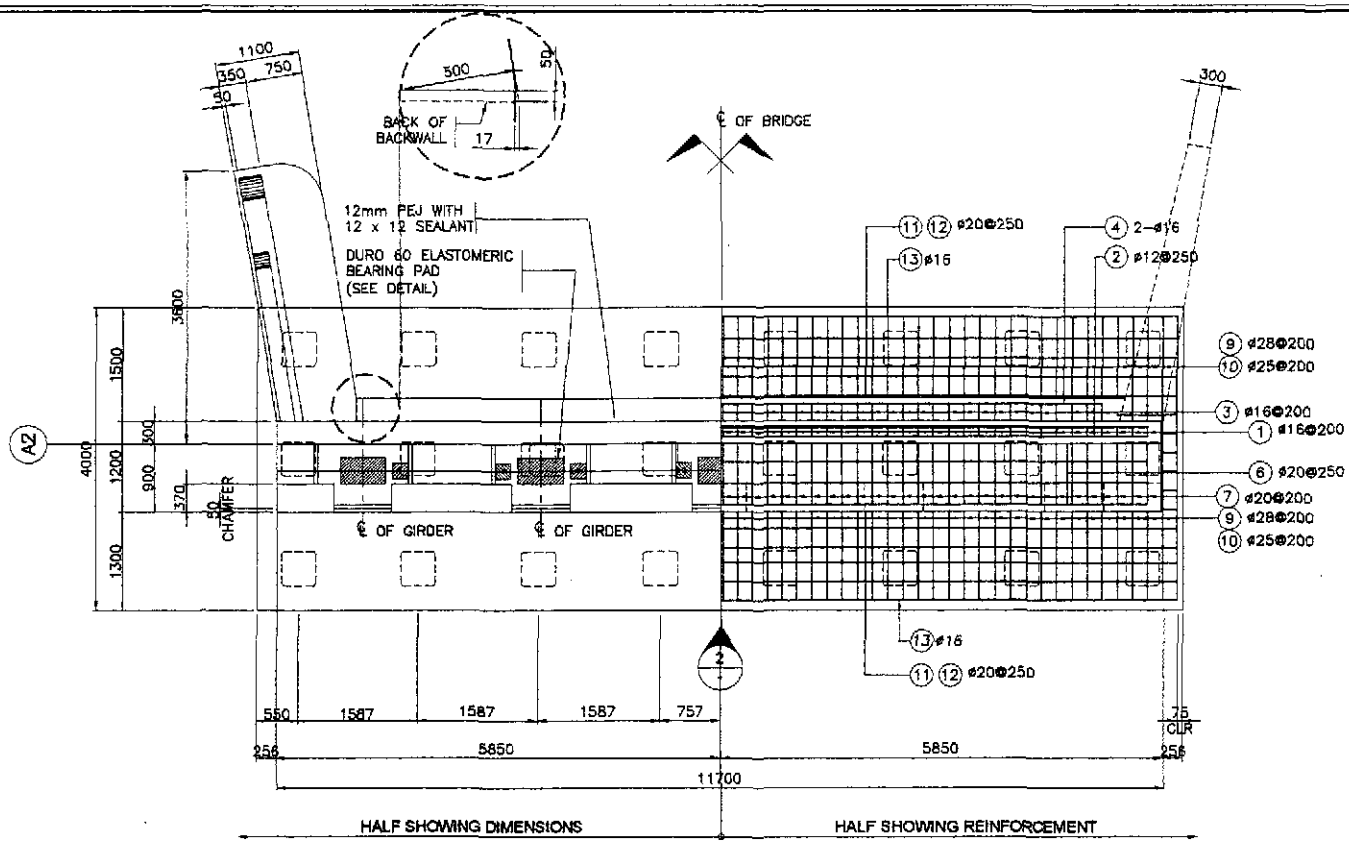


2 WINGWALL ELEVATION SCALE 1:50

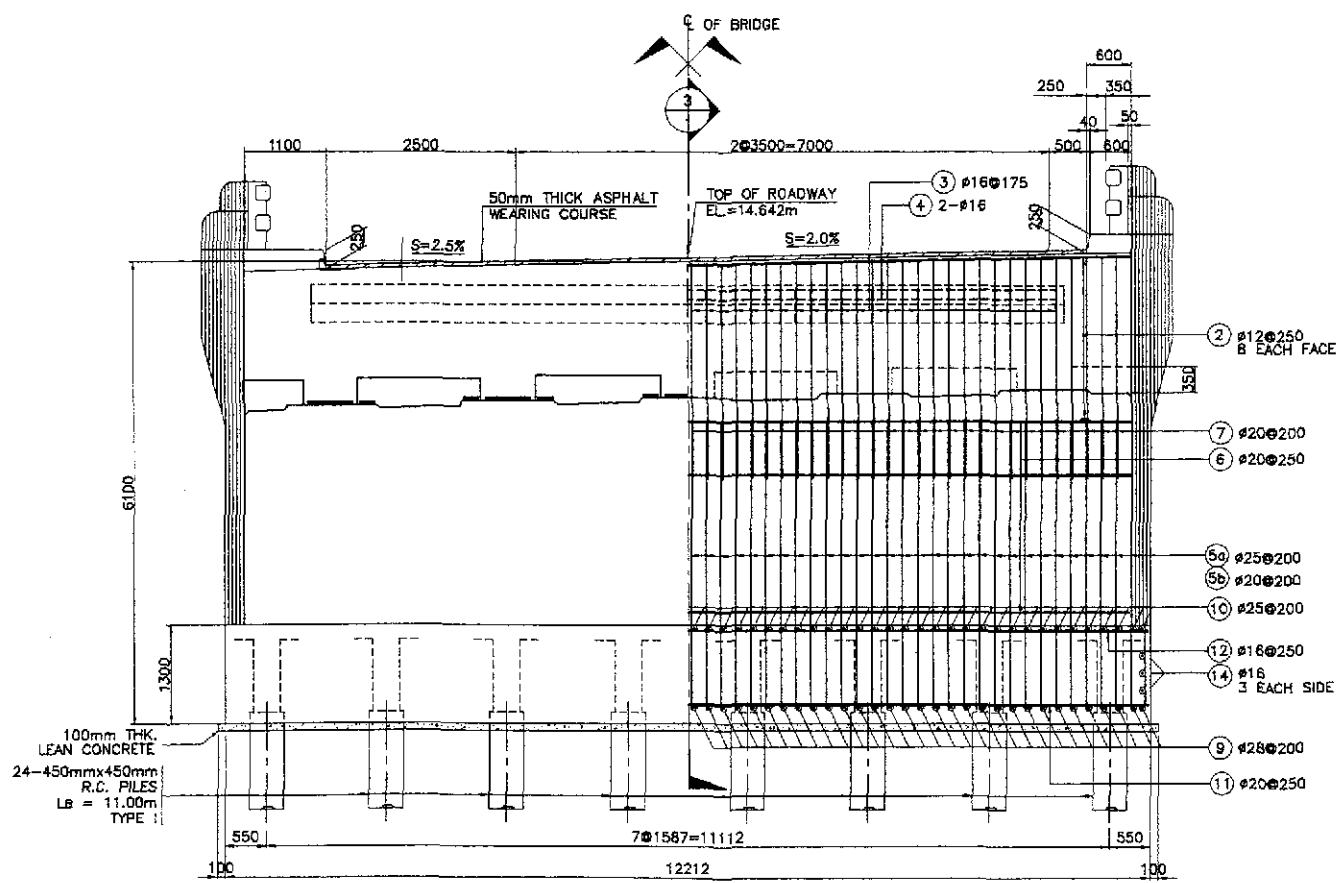
3 SECTION SCALE 1:50



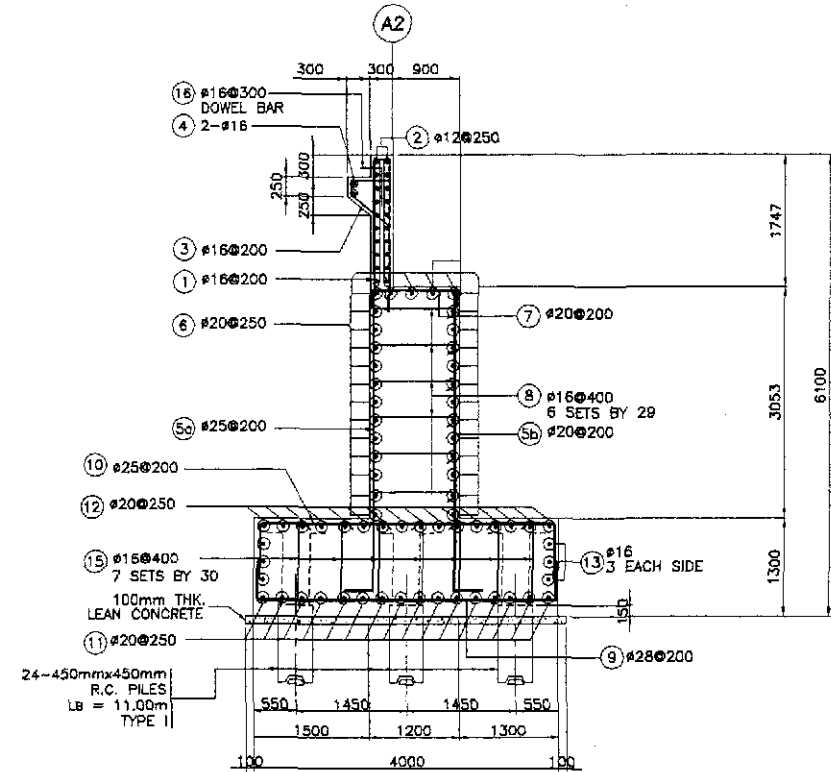
SCHEDULE OF REINFORCEMENT PER ABUTMENT																		
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)		
							a	b	c	d	e	f						
WINGWALL	13.13	W1	20	28	250	(B)	400	3300	150	-	-	-	-	3850	107.80	2.466	266	
		W2	25	28	250	(B)	400	3300	150	-	-	-	-	3850	107.80	3.854	416	
		W3	20	4	250	(B)	400	3600	150	-	-	-	-	4150	16.60	2.466	41	
		W4	25	4	250	(B)	400	3600	150	-	-	-	-	4150	16.60	3.854	64	
		W5	20	2	250	(C)	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	22	200	(E)	250	6900	-	-	-	-	-	7150	157.30	1.579	249	
		W10	16	22	200	(E)	250	6900	-	-	-	-	-	7150	157.30	1.579	249	
		W11	16	10	200	(E)	250	1750	-	-	-	-	-	2000	20.00	1.579	32	
		W12	16	10	200	(E)	250	1750	-	-	-	-	-	2000	20.00	1.579	32	
		W13	16	4	AS SHOWN	(C)	250	1500	2000	-	-	-	-	3750	15.00	1.579	24	
		W14	12	292	AS SHOWN	(D)	170	450	170	-	-	-	-	790	230.68	0.888	205	
													GRADE 60 TOTAL =	1144	kg			
													GRADE 40 TOTAL =	562	kg			
APPROACH RAILING AND SIDEWALK	3.53	AS1	12	9	AS SHOWN	(A)	3500	-	-	-	-	-	3500	31.50	0.888	28		
		AS2	12	2	AS SHOWN	(A)	3500	-	-	-	-	-	3500	7.00	0.888	7		
		AS3	12	2	AS SHOWN	(A)	3500	-	-	-	-	-	3500	7.00	0.888	7		
		AS4	12	6	AS SHOWN	(A)	3500	-	-	-	-	-	3500	21.00	0.888	19		
		AS5	16	3	300	(F)	200	170	480	200	200	-	-	1250	3.75	1.579	6	
		AS6	16	9	300	(G)	200	170	480	200	170	200	-	1420	12.78	1.579	21	
		AS7	16	12	300	(H)	200	170	980	200	170	200	-	2120	25.44	1.579	41	
		AS8	16	12	300	(E)	200	1020	-	-	-	-	-	1220	14.64	1.579	24	
		AR1	16	8	300	(E)	200	900	-	-	-	-	-	1100	8.80	1.579	14	
		AR2	16	14	300	(J)	1300	120	1300	-	-	-	-	2720	38.08	1.579	61	
		AR3	16	2	AS SHOWN	(I)	2100	236	1300	-	-	-	-	3636	7.27	1.579	12	
		AR4	16	4	AS SHOWN	(I)	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 40 TOTAL =	329	kg			
TOTAL	16.66														GRADE 60 TOTAL =	1144	kg	
													GRADE 40 TOTAL =	891	kg			



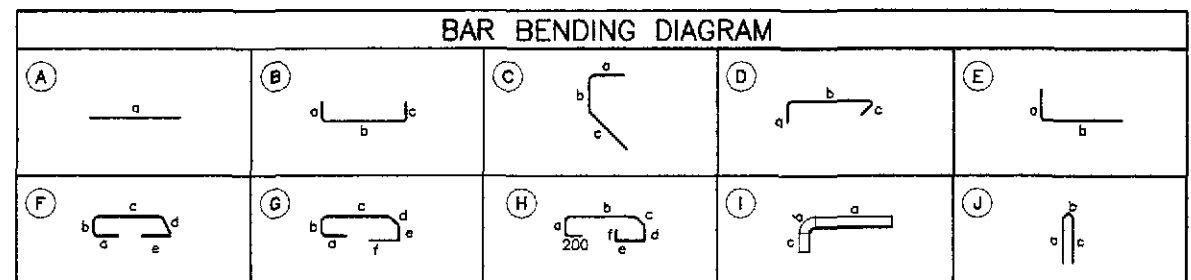
1 PLAN
SCALE 1:50



2 ELEVATION
SCALE 1:50



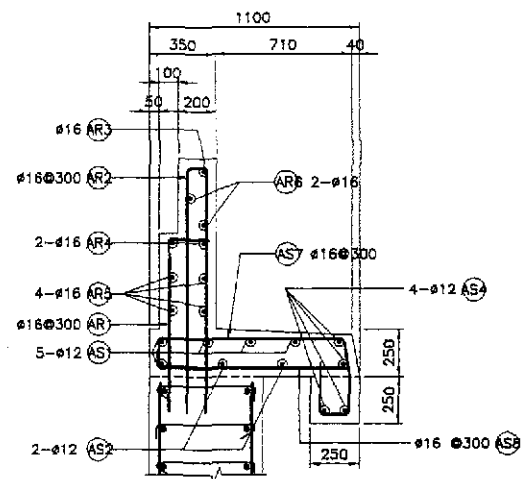
3 SECTION
SCALE 1:50



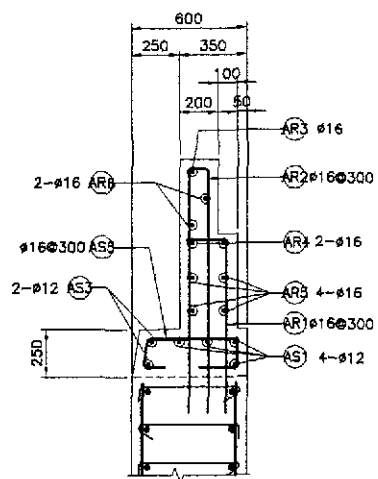
SCHEDULE OF REINFORCEMENT PER ABUTMENT																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e						f
BACKWALL	7.25	①	16	59	200	(B)	2000	200	2000	-	-	-	4200	247.80	1.579	392	103.62
		②	12	20	250	(A)	11800	-	-	-	-	-	11800	236.00	0.888	207	
		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	42.86	⑤a	25	59	200	(E)	400	4100	-	-	-	-	4500	265.50	3.854	1024	73.14
		⑤b	20	59	200	(E)	400	4100	-	-	-	-	4500	285.50	2.466	655	
		⑥	20	29	250	(A)	11800	-	-	-	-	-	11800	342.20	2.466	830	
		⑦	20	47	200	(B)	250	1100	250	-	-	-	1600	75.20	2.466	186	
FOOTING	63.50	⑧	16	174	350	(D)	250	1100	250	-	-	-	1800	278.40	1.579	440	71.59
		⑨	28	61	200	(B)	700	3850	700	-	-	-	5250	320.25	4.833	1548	
		⑩	25	61	200	(B)	700	3850	700	-	-	-	5250	320.25	3.854	1235	
		⑪	20	16	250	(B)	700	12250	700	-	-	-	13650	218.40	2.466	539	
		⑫	20	16	250	(B)	700	12250	700	-	-	-	13650	218.40	2.466	539	
DWEL		⑬	16	6	AS SHOWN	(A)	12250	-	-	-	-	-	12250	73.50	1.579	117	71.59
		⑭	16	6	AS SHOWN	(A)	3850	-	-	-	-	-	3850	23.10	1.579	37	
		⑮	16	210	400	(D)	250	1100	250	-	-	-	1600	336.00	1.579	531	
TOTAL	113.62																

GRADE 40 TOTAL = 6,570 kgs.
GRADE 80 TOTAL = 1,842 kgs.

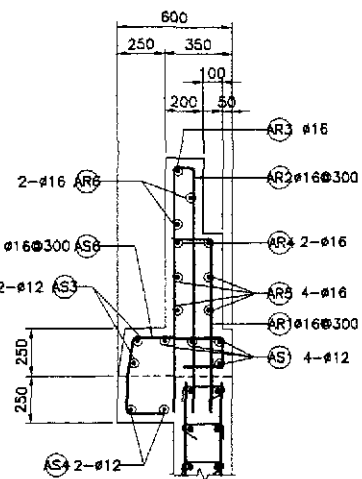
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	7/25/02	F. GONZALES		BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 4 ABUTMENT - A2 MAINWALL REINFORCEMENT DETAILS (ULTIMATE STAGE)	B4-07
	SUBMITTED	7/27/02	M. RIVERA		OFFICE OF THE SECRETARY				FULL SIZE A1			
				Submitted By: DANILLO C. TRAJANO, Project Director Reviewed By: ADRIANO M. DOROY, Chief, Bridges Division Recommended By: GILBERTO S. REYES, Director IV (CIC) Recommended By: MANUEL M. BONDAN, Undersecretary Approved By: SIMEON A. DATUMANONG, Secretary				PLARDEL BYPASS - CONTRACT PACKAGE II				



5A SECTION SCALE 1:20

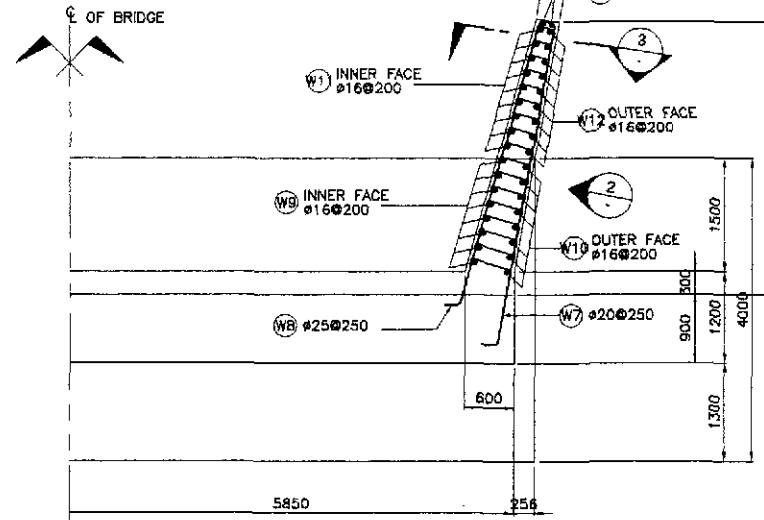


5B SECTION SCALE 1:20

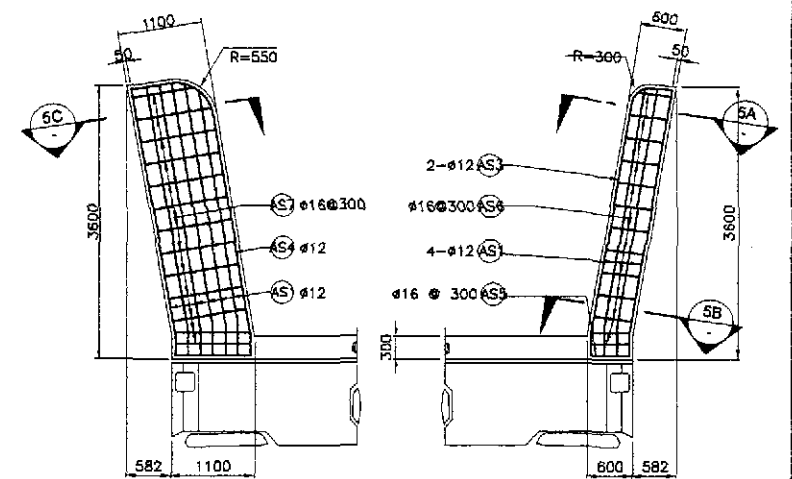


5C SECTION SCALE 1:20

5 APPROACH RAIL DETAILS SCALE 1:20

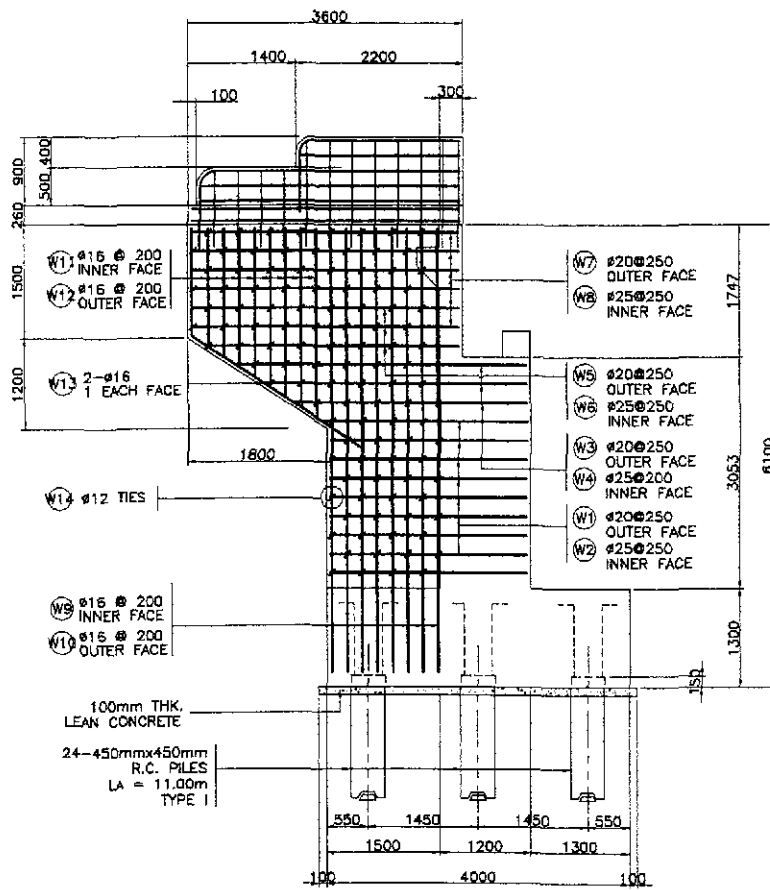


1 PLAN SCALE 1:50

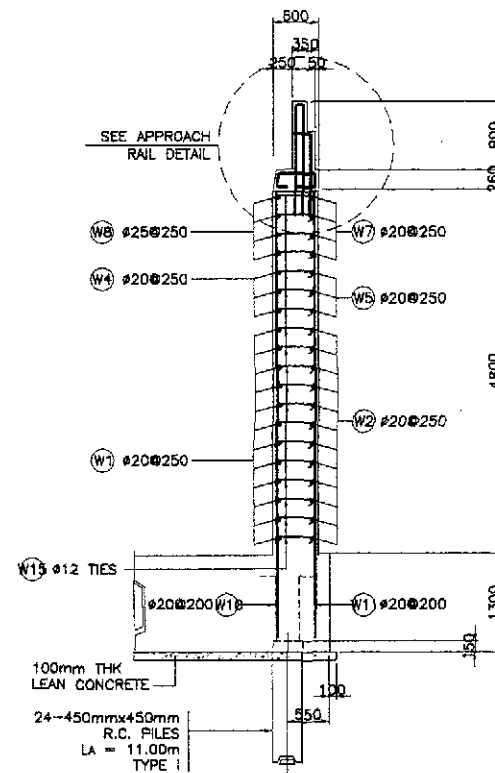


LEFT SIDE RIGHT SIDE

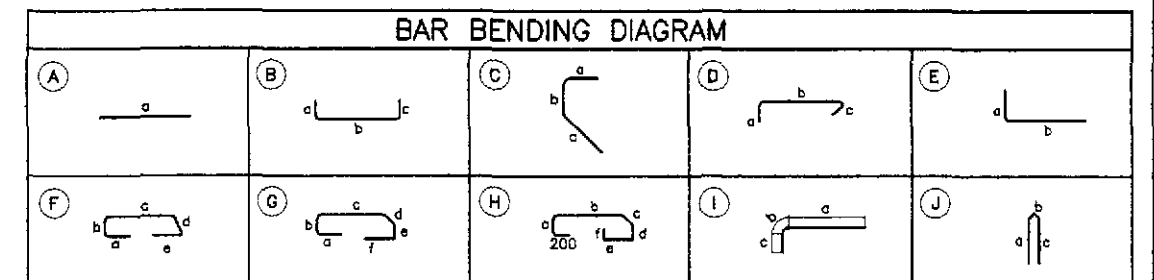
4 SIDEWALK DETAIL SCALE 1:50



2 WINGWALL ELEVATION SCALE 1:50

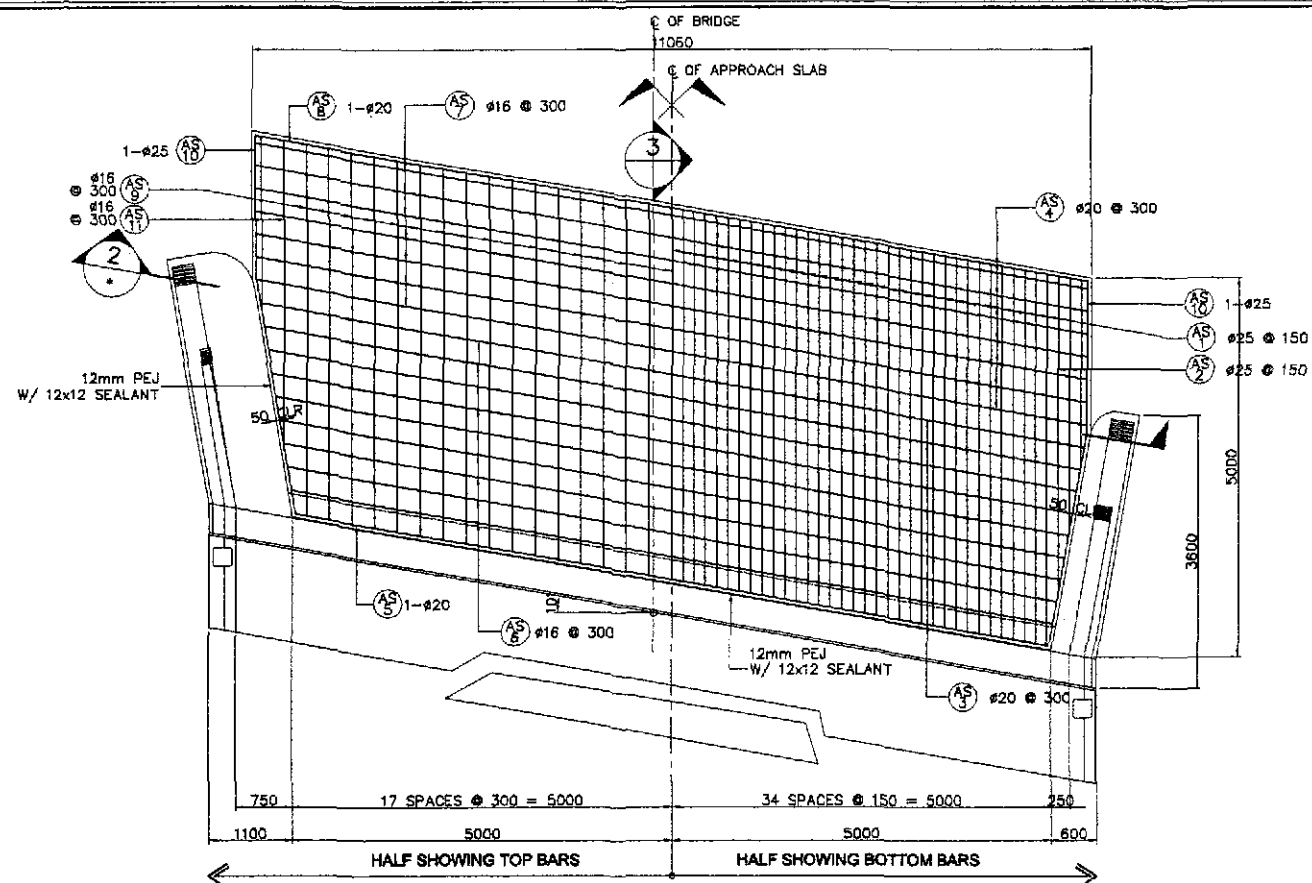


3 SECTION SCALE 1:50

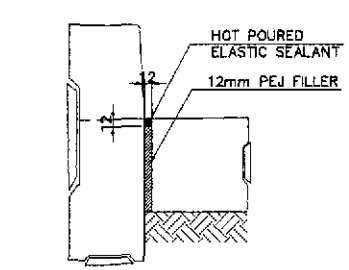


SCHEDULE OF REINFORCEMENT PER ABUTMENT

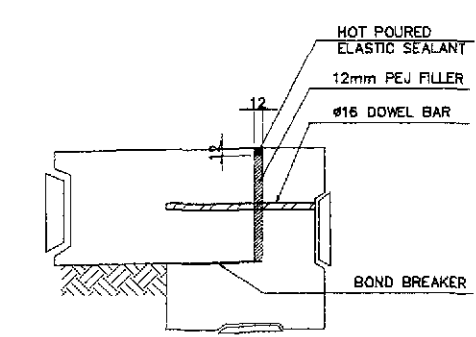
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm)					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)		
							a	b	c	d	e						f	
WINGWALL	9.88	W1	20	18	250	(B)	400	2600	150	-	-	-	3150	56.70	2.466	140	150.98	
		W2	25	18	250	(B)	400	2600	150	-	-	-	3150	56.70	3.854	219		
		W3	20	6	250	(B)	400	3500	150	-	-	-	4050	24.30	2.466	60		
		W4	25	6	250	(B)	400	3500	150	-	-	-	4050	24.30	3.854	94		
		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	5900	-	-	-	-	6150	98.40	1.579	156		
		W10	16	16	200	(E)	250	5900	-	-	-	-	6150	98.40	1.579	156		
		W11	16	18	200	(E)	250	2000	-	-	-	-	2250	40.50	1.579	64		
		W12	16	18	200	(E)	250	2000	-	-	-	-	2250	40.50	1.579	64		
		W13	16	4	AS SHOWN	(C)	250	1500	2700	-	-	-	4450	17.80	1.579	29		
		W14	12	21B	AS SHOWN	(D)	170	450	170	-	-	-	790	172.22	0.888	153		
												GRADE 60 TOTAL =	870 kgs.					
												GRADE 40 TOTAL =	622 kgs.					
APPROACH RAILING AND SIDEWALK	3.53	AS1	12	9	AS SHOWN	(A)	3500	-	-	-	-	3500	31.50	0.888	28	93.24		
		AS2	12	2	AS SHOWN	(A)	3500	-	-	-	-	3500	7.00	0.888	7			
		AS3	12	2	AS SHOWN	(A)	3500	-	-	-	-	3500	7.00	0.888	7			
		AS4	12	6	AS SHOWN	(A)	3500	-	-	-	-	3500	21.00	0.888	19			
		AS5	16	3	300	(F)	200	170	480	200	200	-	1250	3.75	1.579		6	
		AS6	16	9	300	(G)	200	170	480	200	170	200	1420	12.78	1.579		21	
		AS7	16	12	300	(H)	200	170	480	200	170	200	2120	25.44	1.579		41	
		AS8	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	14	300	(J)	1300	120	1300	-	-	-	2720	38.08	1.579		61	
		AR3	16	2	AS SHOWN	(I)	2100	236	1300	-	-	-	3636	7.27	1.579		12	
		AR4	16	4	AS SHOWN	(I)	3500	236	900	-	-	-	4836	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 40 TOTAL =	329 kgs.					
TOTAL	13.41													GRADE 60 TOTAL =	870 kgs.			
												GRADE 40 TOTAL =	951 kgs.					



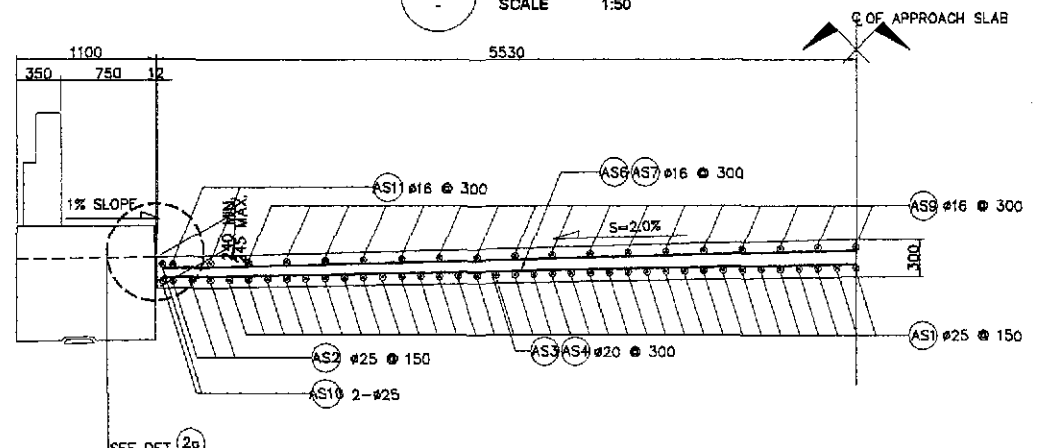
1 PLAN
SCALE 1:50



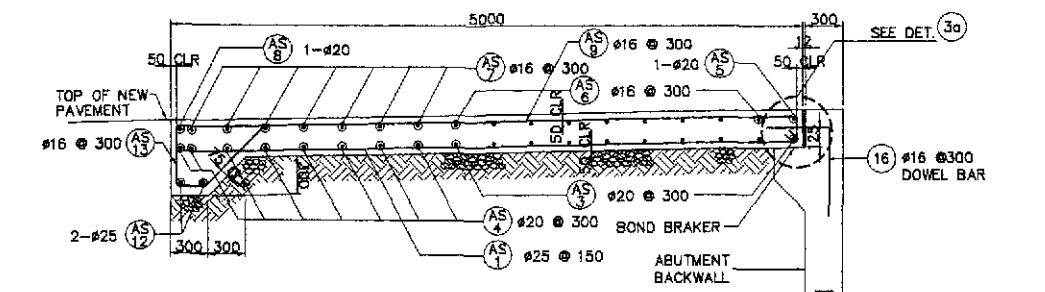
2a DETAIL
SCALE 1:10



3a DETAIL
SCALE 1:10



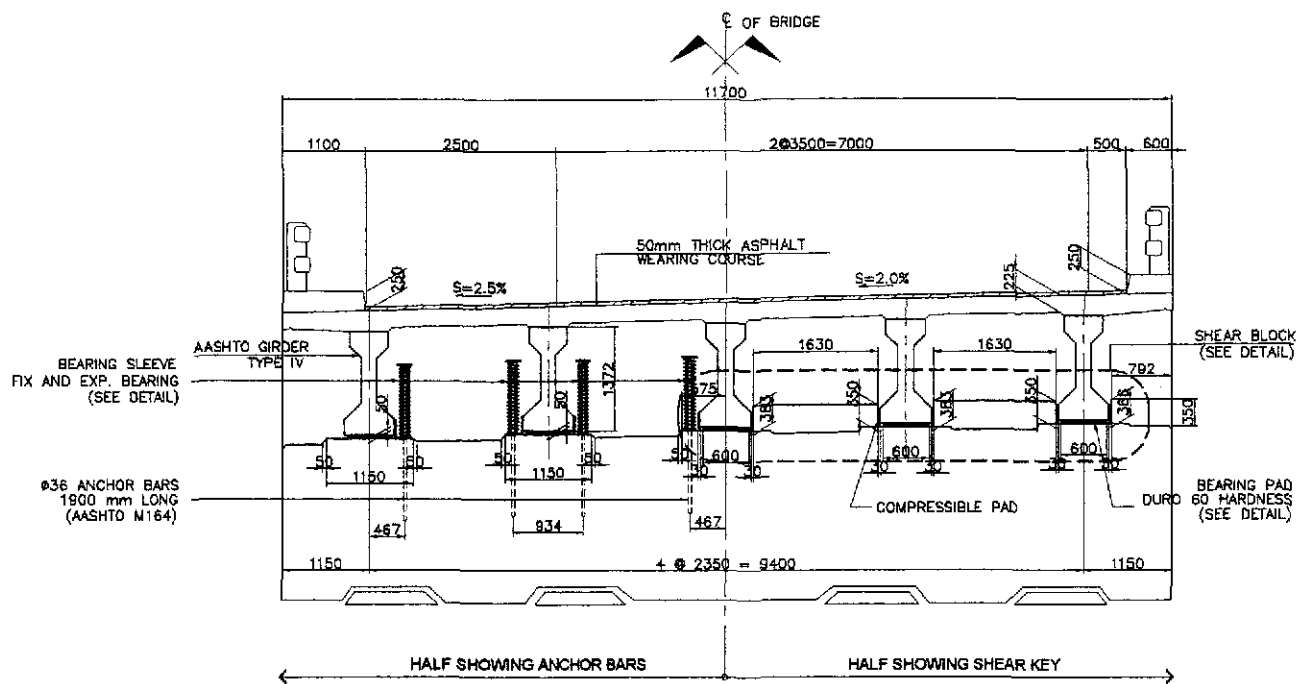
2 SECTION
SCALE 1:30



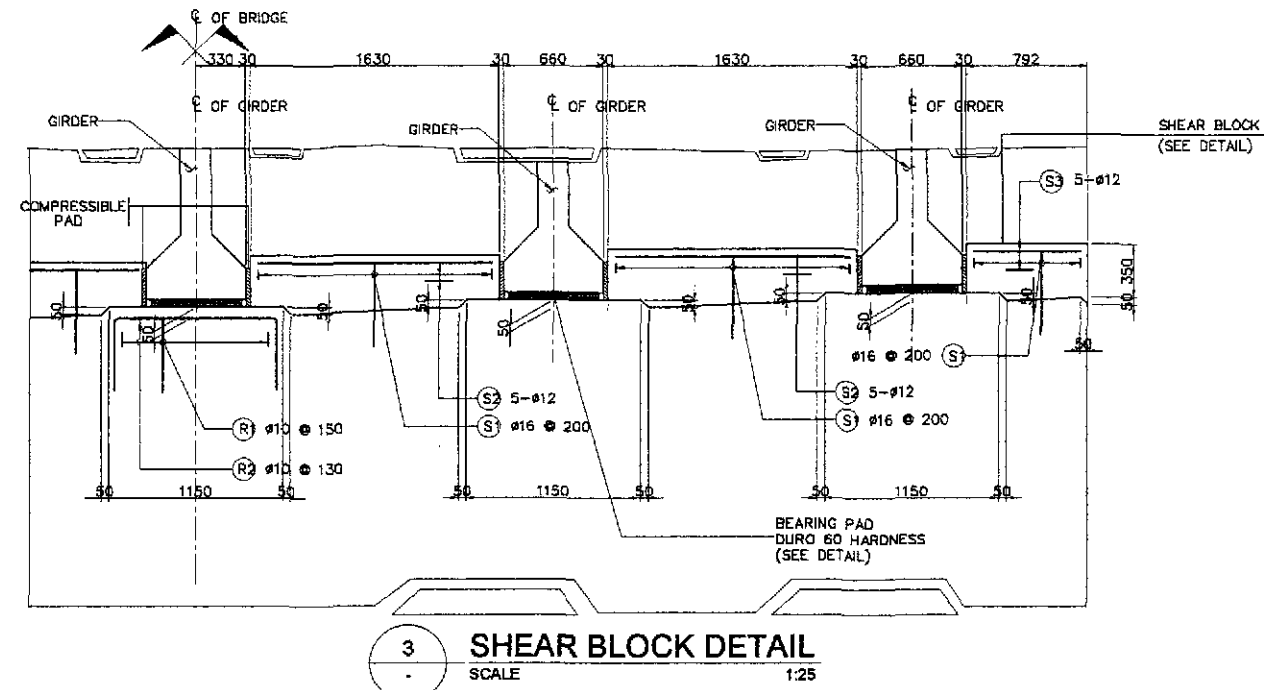
3 SECTION
SCALE 1:30

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	17.61	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		126
		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		190
TOTAL	17.61												GRADE 40 TOTAL = 685 kgs.		GRADE 60 TOTAL = 2,127 kgs.			

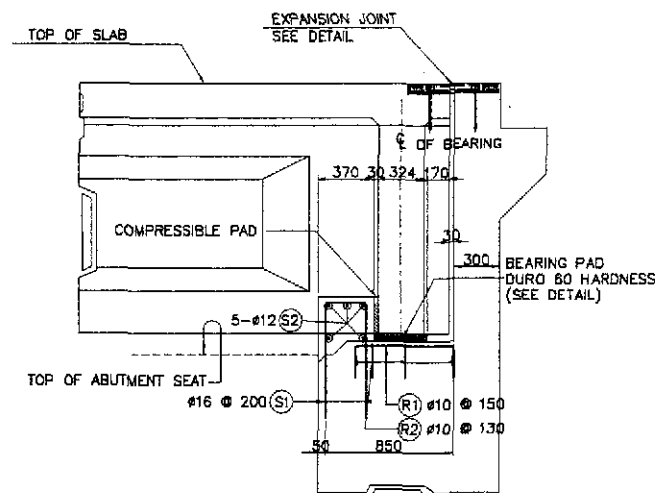
	DESIGNED: <i>g/hellor</i> CHECKED: <i>g/hellor</i> SUBMITTED: <i>g/hellor</i>	DATE: <i>1/29/02</i> SIGNATURE: <i>[Signature]</i> E.N. SALLAN M. KIUCHI TEAM LEADER	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE II	SCALE: AS SHOWN FULL SIZE A1	SHEET CONTENTS: BRIDGE NO. 4 APPROACH SLAB PLAN, SECTIONS AND DETAILS (ULTIMATE STAGE)	SHEET NO. : B4-09	
	BUREAU OF DESIGN OFFICE OF THE SECRETARY			Submitted By: DANILO C. TRAJANO Project Director	Reviewed By: ADRIANO M. DORCY Chief, Bridge Division	Recommended By: GILBERTO S. REYES Director IV (D/C)	Recommended By: MANUEL M. BONDAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary
	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS YEO YACHIYO ENGINEERING CO., LTD. VEI INTERNATIONAL							



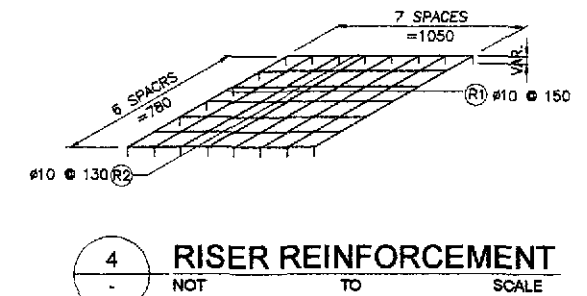
1 SECTION AT ABUTMENT SEAT
SCALE 1:50



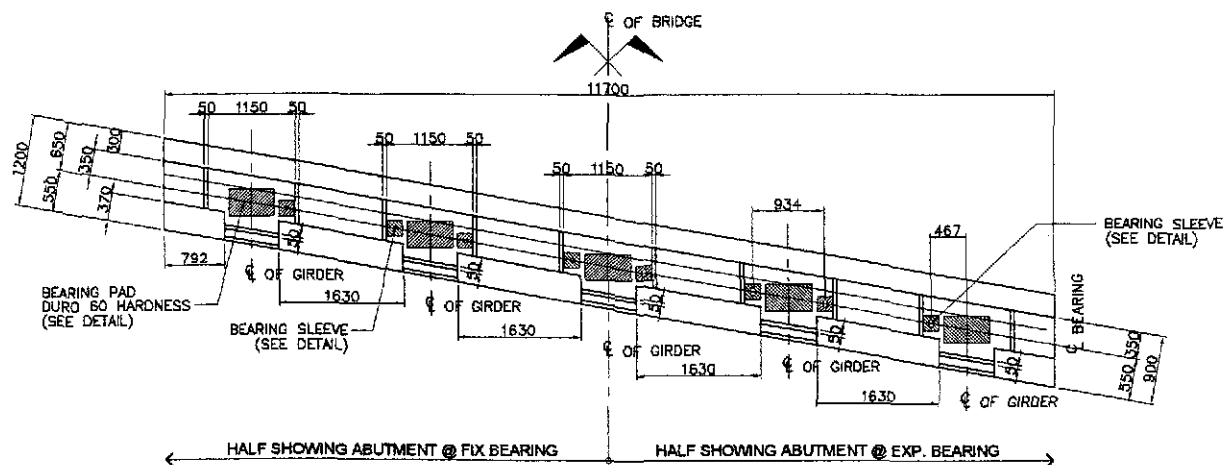
3 SHEAR BLOCK DETAIL
SCALE 1:25



3A SECTION
SCALE 1:25



4 RISER REINFORCEMENT
NOT TO SCALE

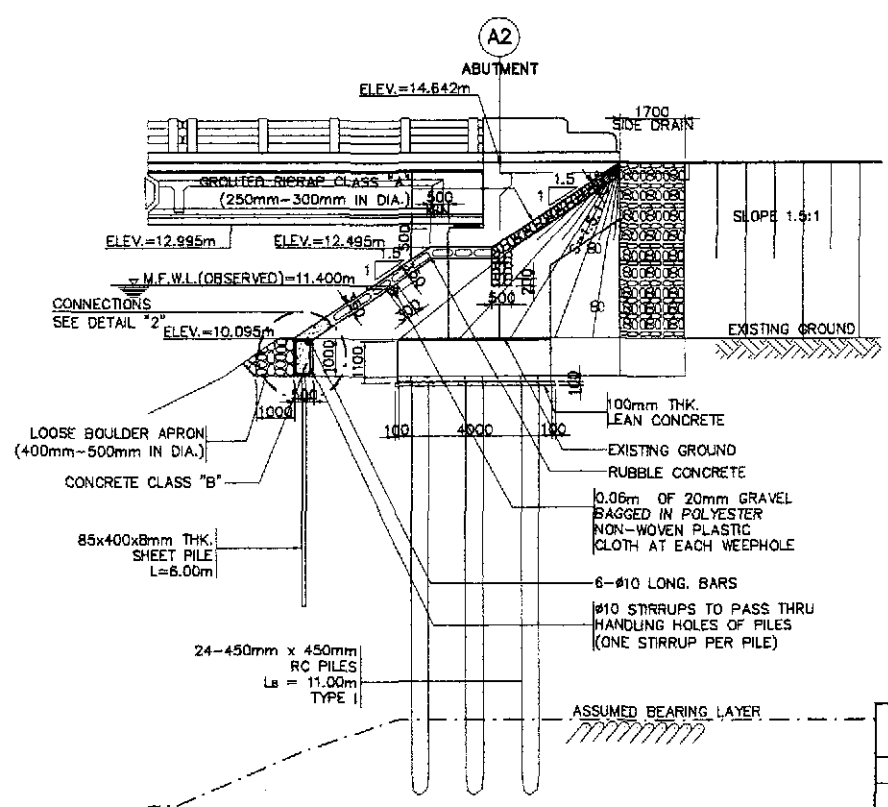
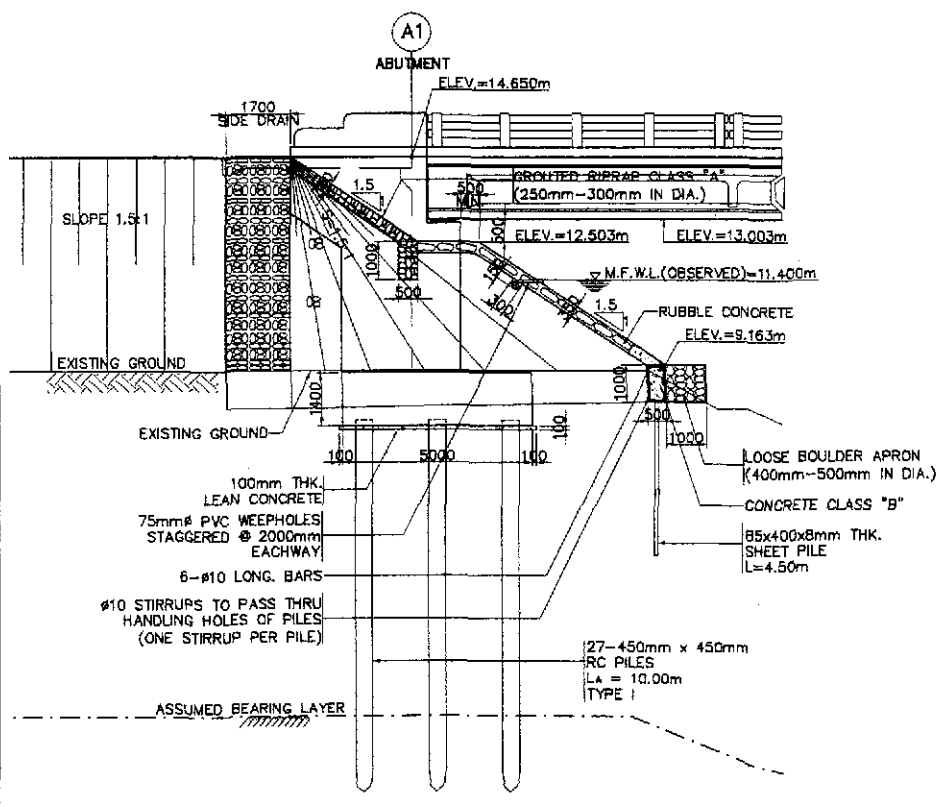
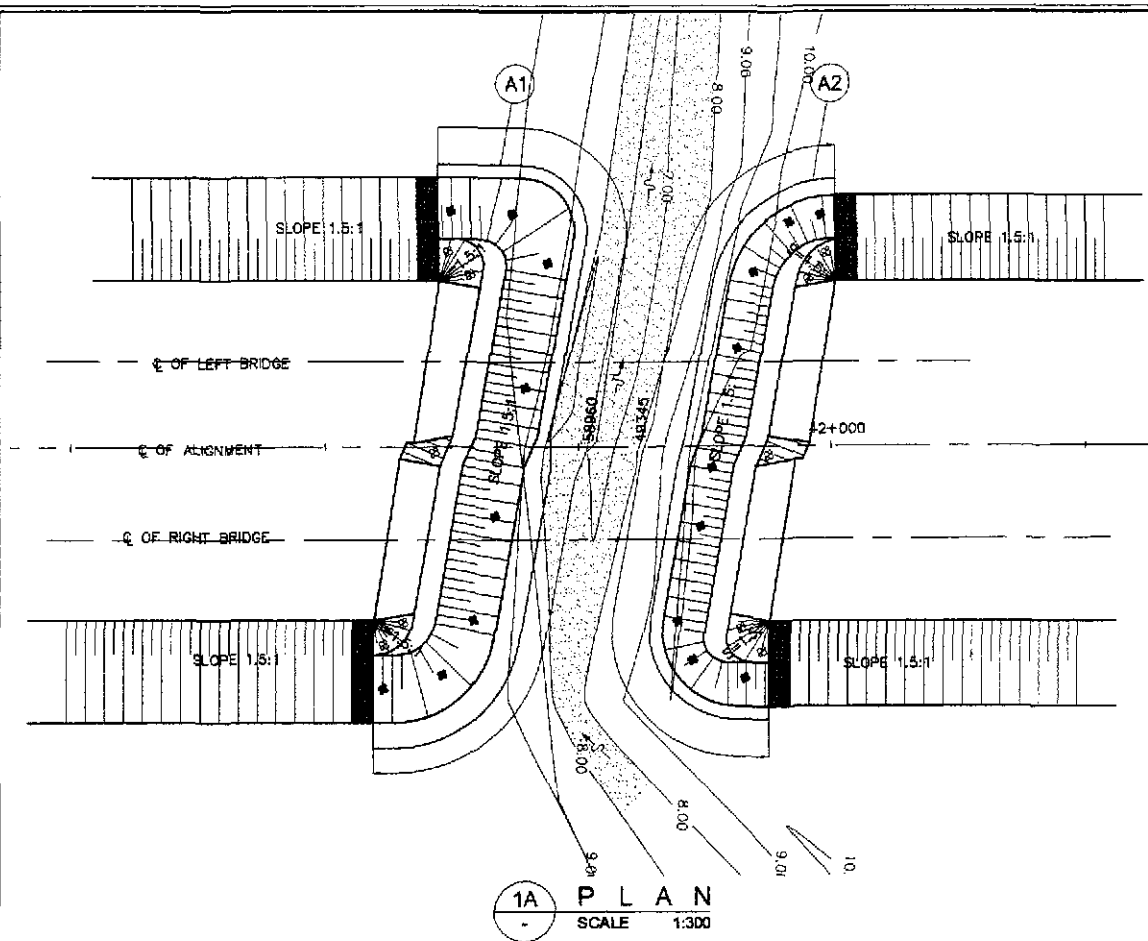


2 PLAN AT ABUTMENT SEAT
SCALE 1:50

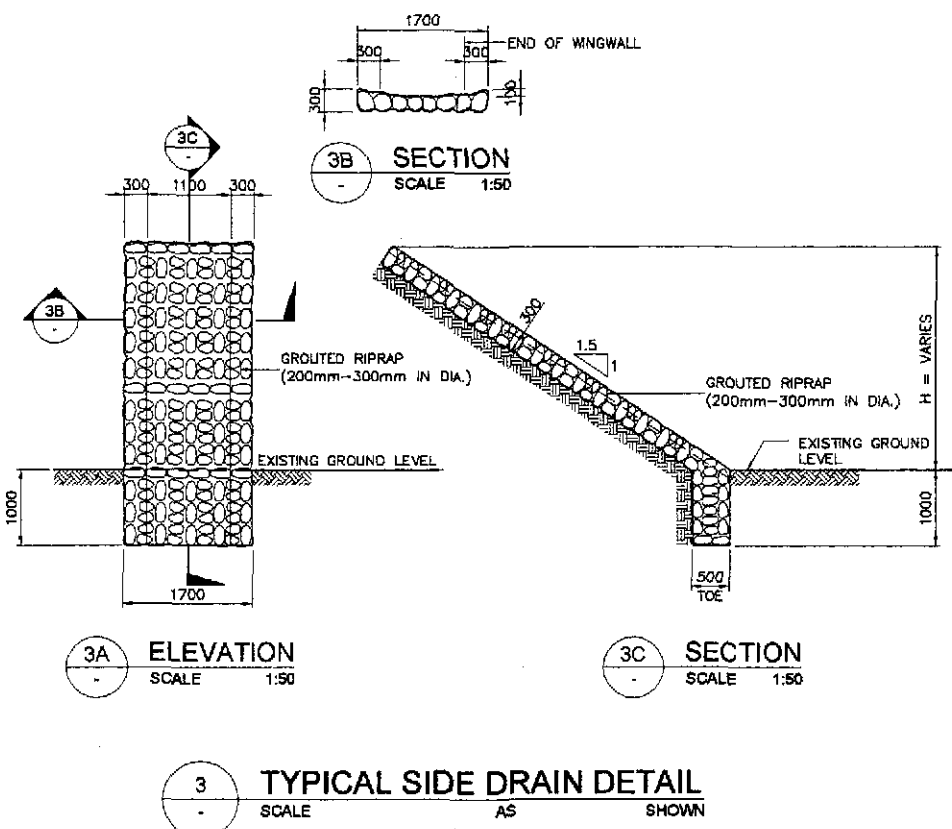
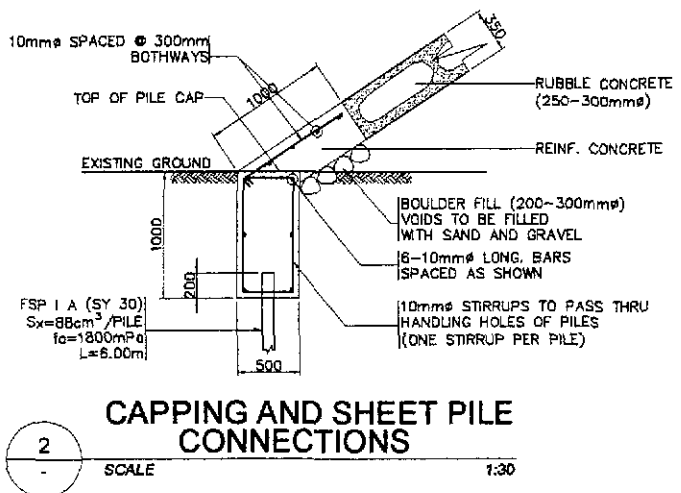
BAR BENDING DIAGRAM																
A						B										
a						a b c										
SCHEDULE OF REINFORCEMENT																
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSION (mm) OUT TO OUT					LENGTH EACH BAR (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)
SHEAR KEY & RISER	1.56	S1	16	46	200	(B)	560	290	560			1410	64.86	1.579	103	147.22
		S2	12	20	AS SHOWN	(A)	1580					1580	31.60	0.888	29	
		S3	12	10	AS SHOWN	(A)	730					730	7.30	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	72.45	0.616	45	
TOTAL	1.56															GRADE 40 TOTAL = 228 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				BUREAU OF DESIGN			OFFICE OF THE SECRETARY			AS SHOWN	BRIDGE NO. 4 SHEAR KEY AND RISER DETAILS (ULTIMATE STAGE)		B4-10													
	SUBMITTED				Submitted By:	Reviewed By:	Recommended By:	Approved By:	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)						FULL SIZE A1												
				DANILO C. TRAJANO Project Director			ADRIANO M. DORCY Chief, Bridge Division			GILBERTO S. REYES Director IV (D/C)			MANUEL M. BONDAN Undersecretary			SIMEON A. DATUMANONG Secretary			PLARIDEL BYPASS - CONTRACT PACKAGE II			FULL SIZE A1					



- 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 SWEEP 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 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 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.
 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)		LOCATION	SIZES	QUANTITY	
	VERY TURBULENT FLOW	SMOOTH FLOW			ABUT. A1	ABUT. A2
1.00	40	-	CONC. CLASS "B"	1000 x 500 x LENGTH	14.42 cu. m.	13.36 cu. m.
1.50	135	-	REBAR	Ø10, GRADE 40	215.00 kgs.	189.00 kgs.
2.00	170	-	BOULDER APRON	400mm-500mm IN DIA.	43.26 cu. m.	40.07 cu. m.
2.50	255	137	RUBBLE CONCRETE	250mm-300mm IN DIA.	51.78 cu. m.	38.80 cu. m.
3.00	370	197	SHEET PILE	85 x 400 x 8mm THK.	63.00 pcs.	59.00 pcs.
3.50	515	270				
4.00	690	350	SIDE DRAIN	200mm-300mm IN DIA.	5.75 cu. m.	4.96 cu. m.
4.50	825	425				
5.00	>900	590	GROUTED RIPRAP	250mm-300mm IN DIA.	13.17 cu. m.	11.43 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

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

SCALE: AS SHOWN FULL SIZE A1

SHEET CONTENTS: BRIDGE NO. 4 ABUTMENT PROTECTION AND SIDE DRAIN DETAILS (ULTIMATE STAGE)

SHEET NO.: B4-11

DESIGNED: P. GONZALES
CHECKED: R. B. B. B.
SUBMITTED: R. B. B. B.

REVIEWED BY: DANILLO C. TRAJANO (Project Director), PERFECTO L. ZAPLAN JR. (Chief, Hydraulics Division (GIC)), GILBERTO S. REYES (Director IV (GIC)), MANUEL M. BONDAN (Undersecretary), SIMEON A. DATUMANONG (Secretary)