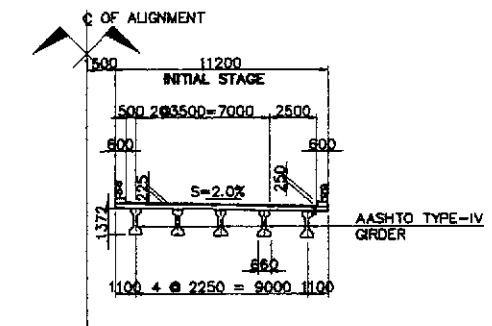
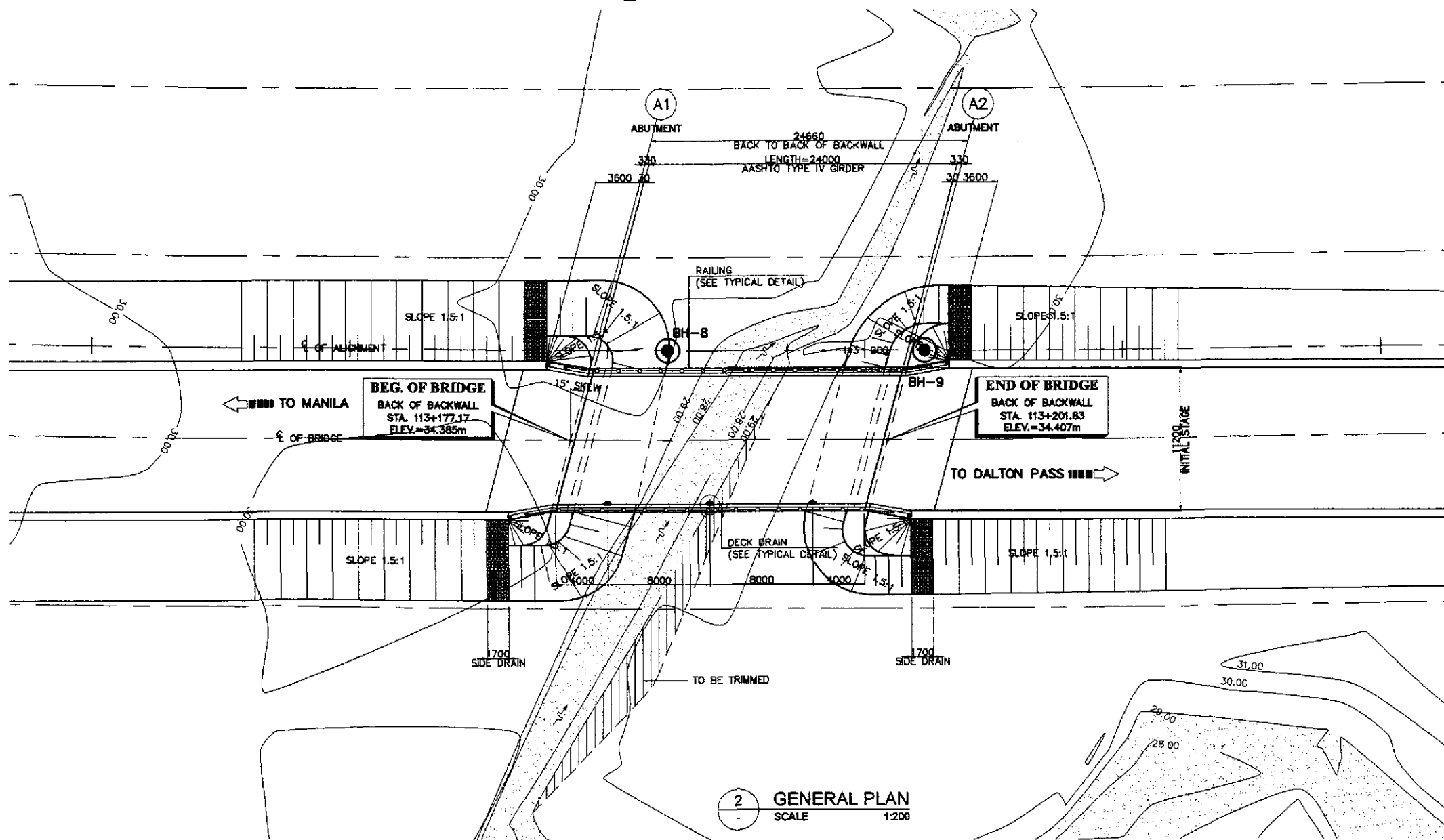


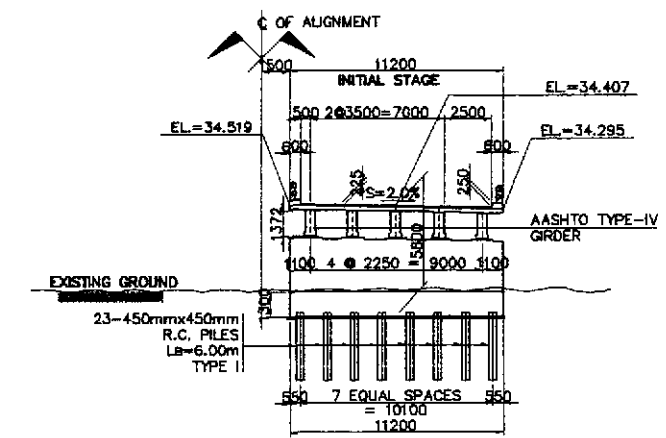
1 GENERAL ELEVATION
SCALE 1:200



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}	2.726 m/sec.
DISCHARGE @ 50 YEARS, Q_{50}	99.700 cu. m/sec.
CATCHMENT AREA, CA	22.225 sq. km

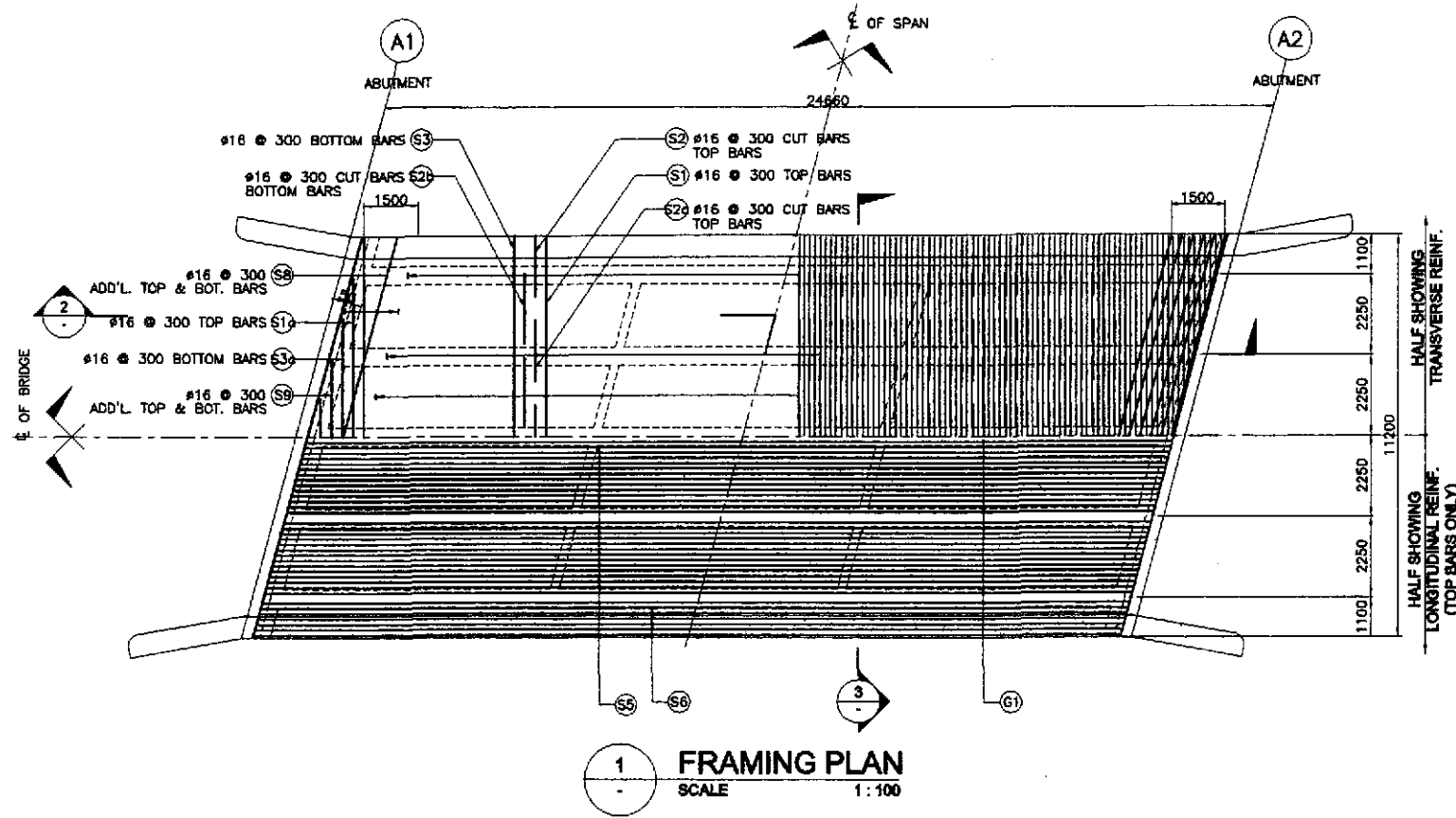
NOTE :
PRIOR TO CONSTRUCTION SOIL INVESTIGATION SHALL BE CONDUCTED FOR CONFIRMATION OF ASSUMED BEARING CAPACITY AND FOOTING ELEVATION.

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.

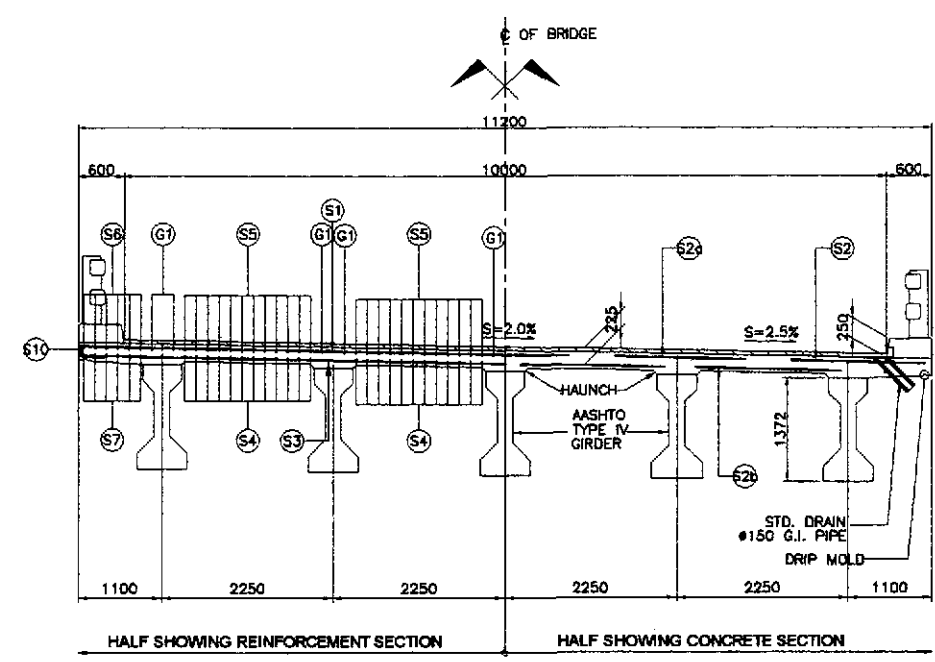
A CABANATUAN BYPASS BRIDGE NO.4 (STA.113+177.17)
SCALE AS SHOWN

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

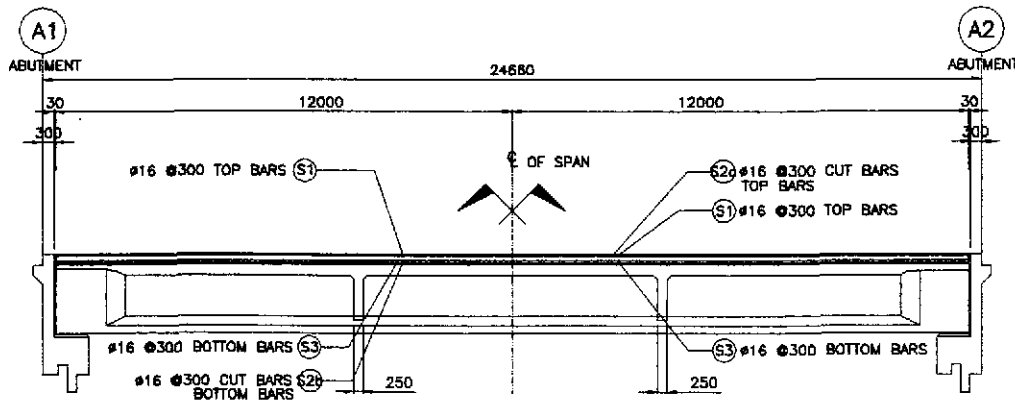
	DESIGNED	10/4/02			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/16/02	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	1:200	BRIDGE NO. 4 GENERAL PLAN, ELEVATION AND SECTIONS (INITIAL STAGE)	B4-01
SUBMITTED 10/18/02		BUREAU OF DESIGN Submitted By: DANILO C. TRAJANO Project Director		OFFICE OF THE SECRETARY Recommended By: ADRIANO M. DORGY Chief, Bridge Division		CABANATUAN BYPASS - CONTRACT PACKAGE II FULL SIZE A1		



1 FRAMING PLAN
SCALE 1:100

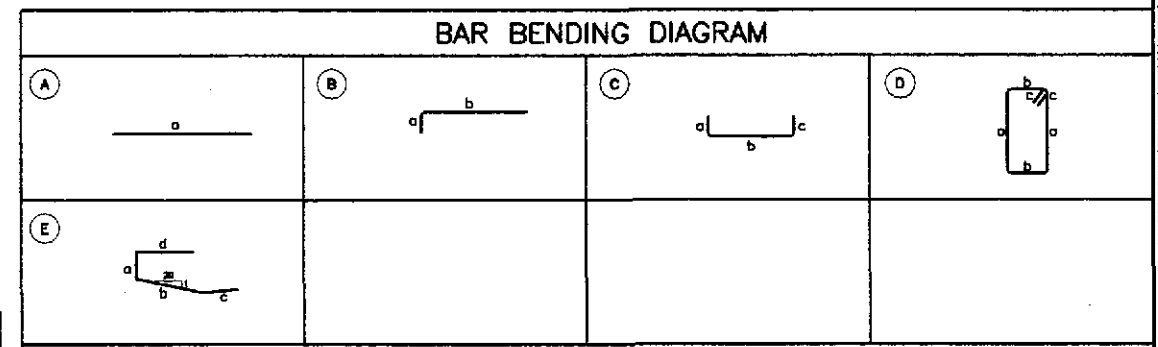


3 TYPICAL CROSS-SECTION
SCALE 1:50



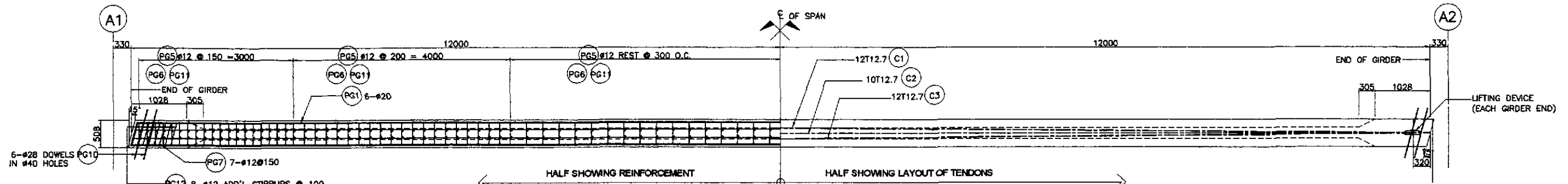
2 LONGITUDINAL SECTION
SCALE 1:100

ESTIMATED QUANTITIES OF SUPERSTRUCTURE			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
404(1)a	REINFORCING STEEL GRADE 40	kgm.	18,887.00
	DECK SLAB	10803.00	
	DIAPHRAGM	340.00	
	GIRDER	4450.00	
	SIDEWALK, RAILING, & POST	1920.00	
	APPROACH SLAB	1374.00	
404(1)b	REINFORCING STEEL GRADE 60	kgm.	11,515.00
	DECK SLAB	0	
	DIAPHRAGM	1087.00	
	GIRDER	5675.00	
	SIDEWALK, RAILING, & POST	443.00	
	APPROACH SLAB	4310.00	
405(1)	STRUCTURAL CONCRETE	cu. m.	185.73
	DECK SLAB	63.83	
	DIAPHRAGM	10.61	
	GIRDER	63.35	
	SIDEWALK, RAILING, & POST	12.73	
	APPROACH SLAB	35.21	

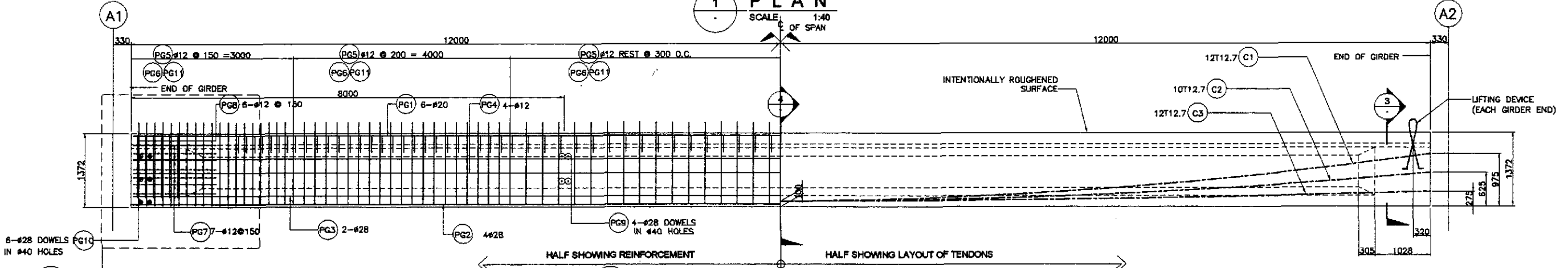


SCHEDULE OF REINFORCEMENT															
LOCATION	CONCRETE VOLUME (m³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) CUT TO CUT				LENGTH EACH BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT IN (kg)	REBAR RATIO (kg/m³)
							a	b	c	d					
DECK SLAB	63.83	G1	16	20	AS SHOWN	(A)	23900	-	-	-	23900	239.00	1.579	378	169.25
		S1	16	71	300	(C)	145	11100	145	-	11390	808.69	1.579	1277	
		S1a	16	22	300	(C)	145	6150	145	-	6440	141.68	1.579	224	
		S2	16	142	300	(B)	145	1800	-	-	1945	276.19	1.579	437	
		S2a	16	213	300	(A)	1700	-	-	-	1700	362.10	1.579	572	
		S2b	16	284	300	(A)	1950	-	-	-	1950	553.80	1.579	875	
		S3	16	71	300	(A)	11100	-	-	-	11100	788.10	1.579	1245	
		S3a	16	22	300	(A)	6150	-	-	-	6150	135.30	1.579	214	
		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	16	24	AS SHOWN	(A)	11500	-	-	-	11500	276.00	1.579	436			
S9	16	44	AS SHOWN	(A)	6150	-	-	-	6150	270.60	1.579	428			
S10	12	108	450	(E)	145	900	600	300	1945	210.06	0.888	187			
TOTAL	63.83														GRADE 40 TOTAL = 10,803 Kgm.

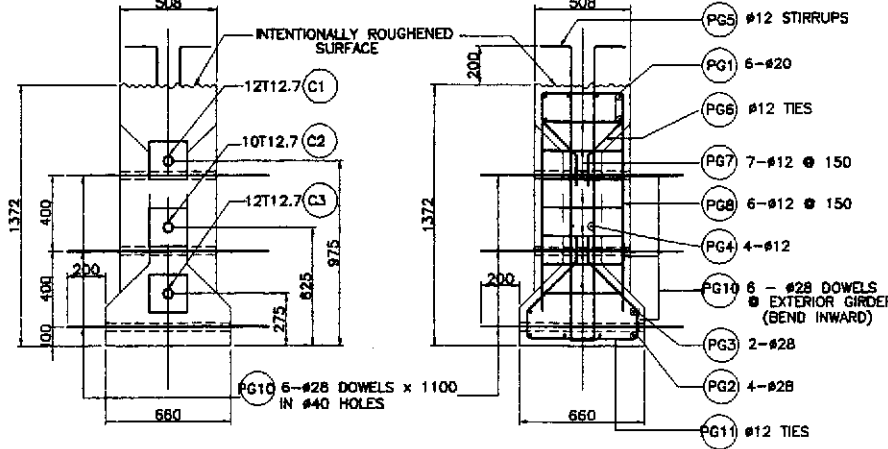
	DESIGNED	10/14/02	E. N. SALLAN		PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/14/02	[Signature]		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Florida, Cabanatuan and San Jose Bypasses)		AS SHOWN	BRIDGE NO. 4 & 5 DECK FRAMING PLAN AND SECTIONS (INITIAL STAGE)	B4-02
	SUBMITTED	10/15/02	[Signature]		CABANATUAN BYPASS - CONTRACT PACKAGE II		FULL SIZE A1		
JICA JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL YACHYO ENGINEERING CO., LTD.				REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY				PROJECT AND LOCATION : SCALE : SHEET CONTENTS : SHEET NO. :	



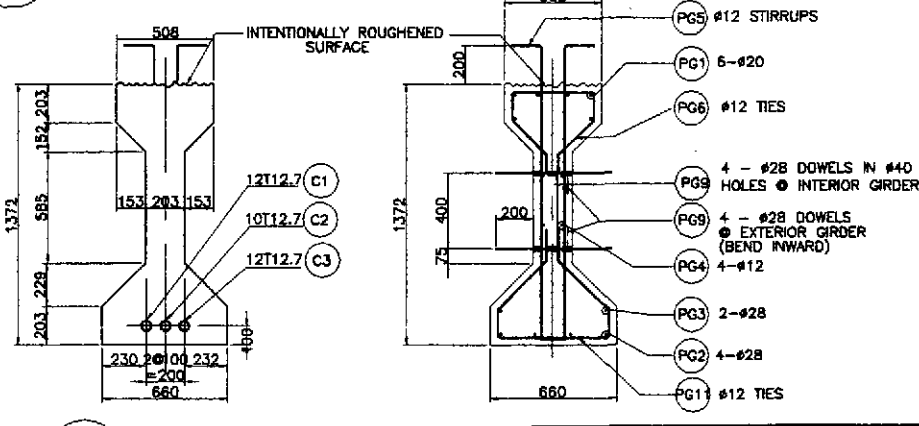
1 PLAN
SCALE 1:40



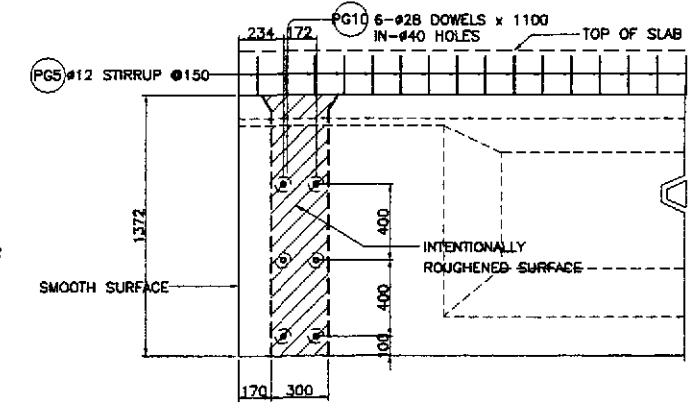
2 PRESTRESSED GIRDER ELEVATION
SCALE 1:40



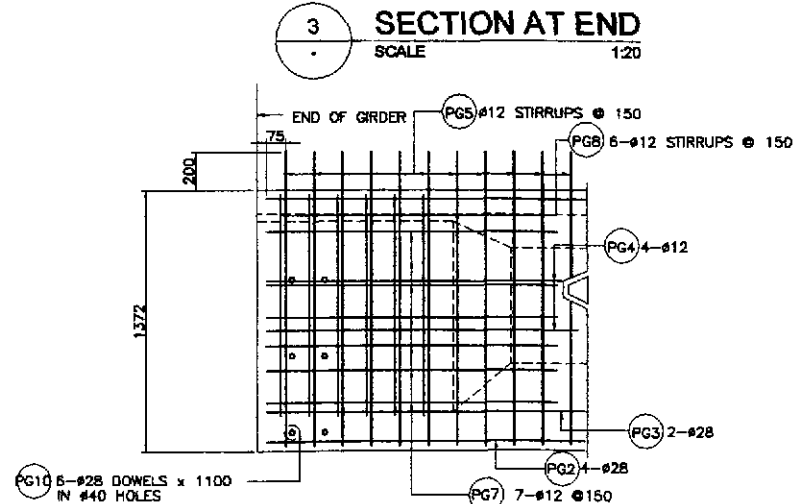
3 SECTION AT END
SCALE 1:20



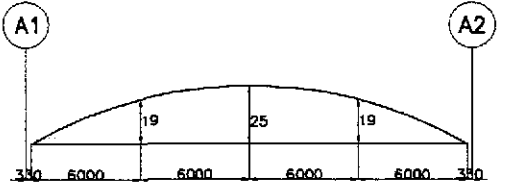
4 SECTION AT MIDSPAN
SCALE 1:20



5 DOWELS @ END BLOCK
SCALE 1:20



6 END BLOCK REINF. DETAIL
SCALE 1:20



7 CAMBER DIAGRAM
NOT TO SCALE

- NOTES:
- 1.) SEE GENERAL NOTES, -2, FOR GIRDER DESIGN GUIDE.
 - 2.) JACKING FORCE PER GIRDER, $P_j = 4,681$ KN.
 - 3.) JACKING WILL BE DONE AT BOTH ENDS.
 - 4.) FINAL PRESTRESSING FORCE @ MIDSPAN, $F_{net} = 4,201$ KN

BAR BENDING DIAGRAM

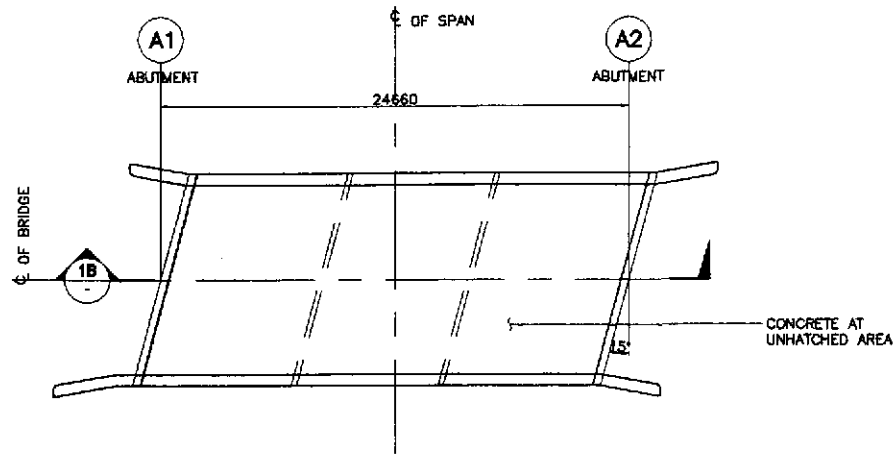
A	B	C	D
E	F	G	H

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 RATIO (kg/cu.m)	REMARKS
						a	b	c	d	e							
GIRDER	PG1	20	6	AS SHOWN	(A)	23920	-	-	-	-	23920	143.52	2,466	354	12.67	159.78	QUANTITIES ARE FOR ONE (1) GIRDER ONLY
	PG2	28	4	AS SHOWN	(A)	23920	-	-	-	-	23920	95.86	4,833	463			
	PG3	28	2	AS SHOWN	(A)	23920	-	-	-	-	23920	47.84	4,833	232			
	PG4	12	4	AS SHOWN	(A)	23920	-	-	-	-	23920	95.66	0,888	85			
	PG5	12	112	150	(C)	100	1540	103	-	-	3383	378.90	0,888	337			
	PG6	12	112	150	(E)	430	160	150	280	-	1570	175.84	0,888	157			
	PG7	12	14	150	(D)	430	1000	550	-	-	3530	49.42	0,888	44			
	PG8	12	12	150	(C)	430	1230	150	-	-	3190	38.28	0,888	34			
	PG9	28	8	AS SHOWN	(A)	603	-	-	-	-	603	4.82	4,833	24			
	PG10	28	12	AS SHOWN	(A)	1060	-	-	-	-	1060	12.72	4,833	62			
	PG11	12	112	150	(E)	580	160	150	360	-	1920	215.04	0,888	191			
	PG12	12	16	100	(B)	430	1230	-	-	-	2890	46.24	0,888	42			

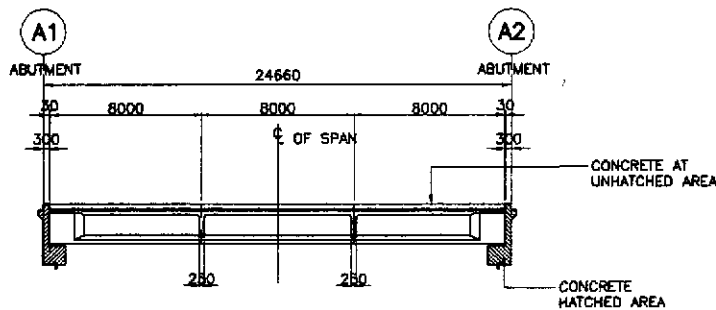
GRADE 40 TOTAL = 890 Kgs.
GRADE 60 TOTAL = 1,135 Kgs.

	DESIGNED	DATE	SIGNATURE		PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED				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 & 5 AASHTO TYPE IV GIRDER (INITIAL STAGE)	B4-03
	SUBMITTED				CABANATUAN BYPASS - CONTRACT PACKAGE II FULL SIZE A1			



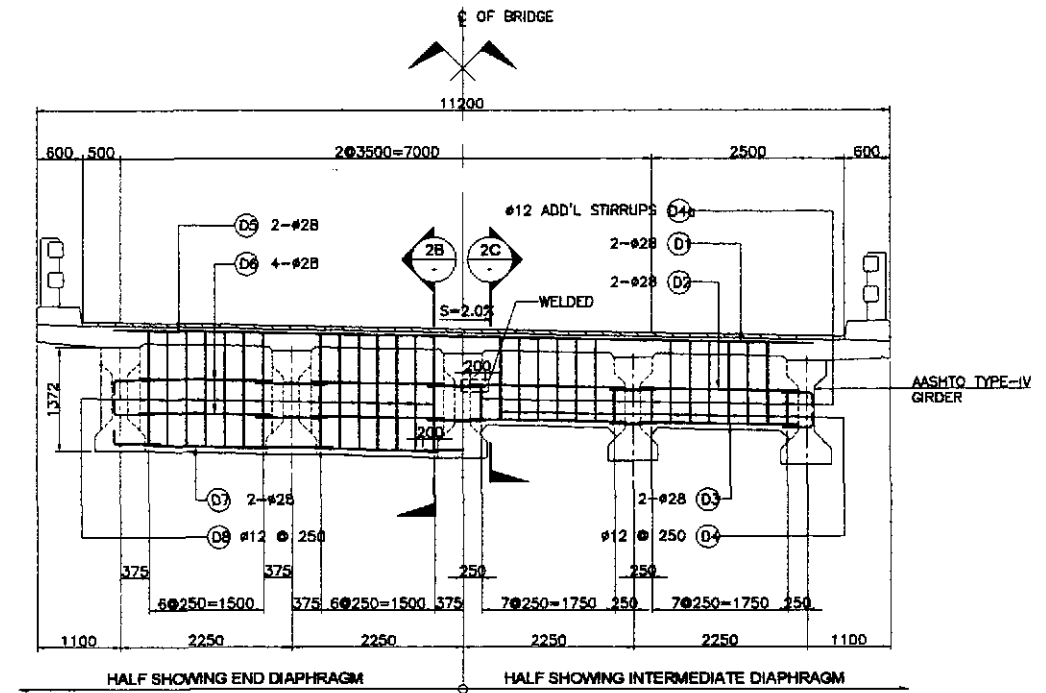
1A PLAN
SCALE 1:200

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

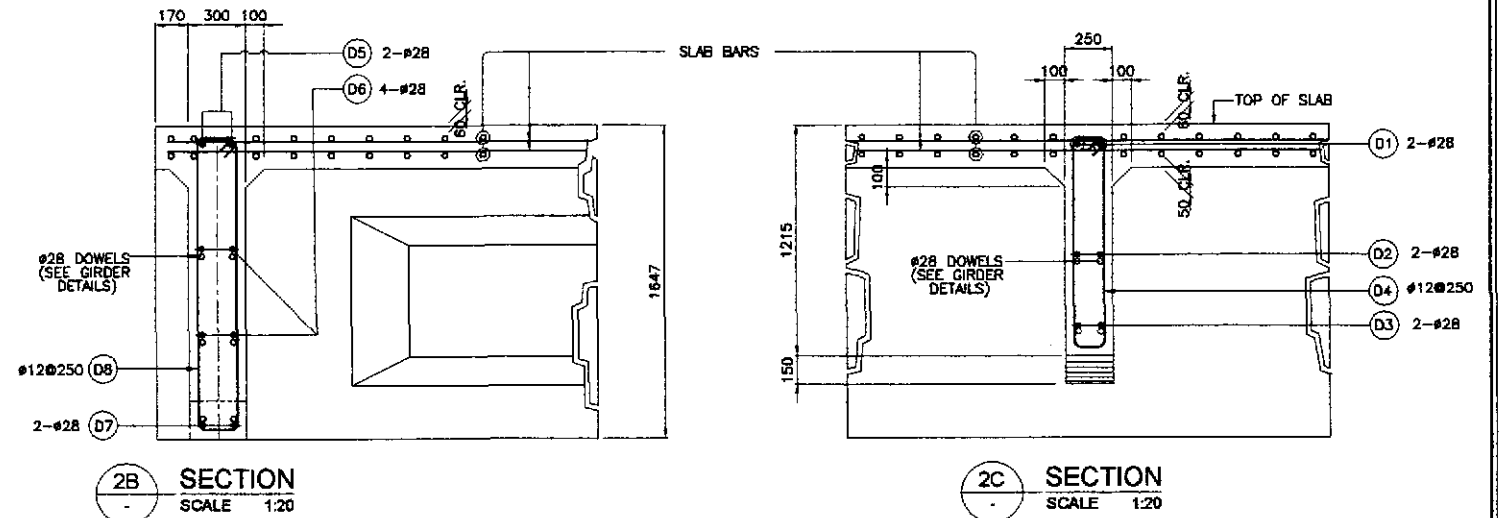


1B LONGITUDINAL SECTION
SCALE 1:200

1 CONCRETE POURING SEQUENCE
SCALE 1:200



2A ELEVATION
SCALE 1:50



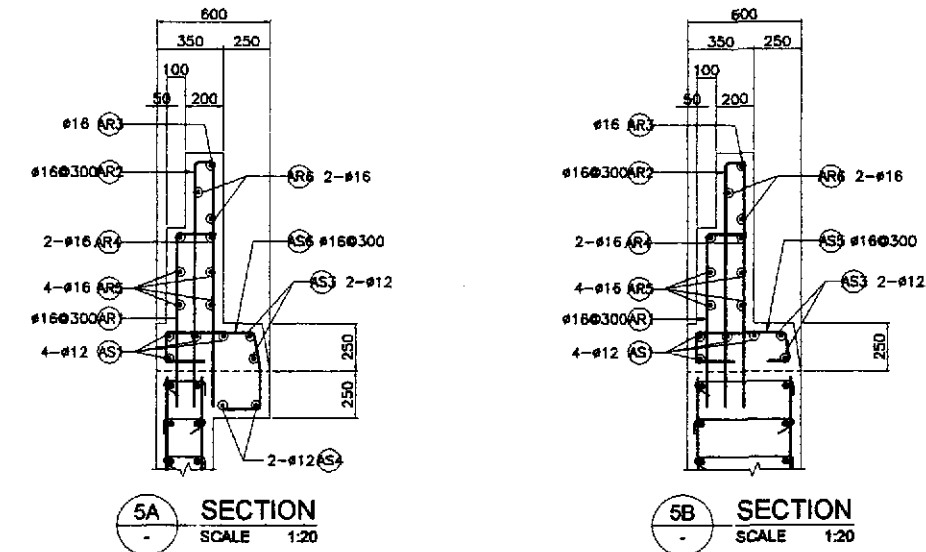
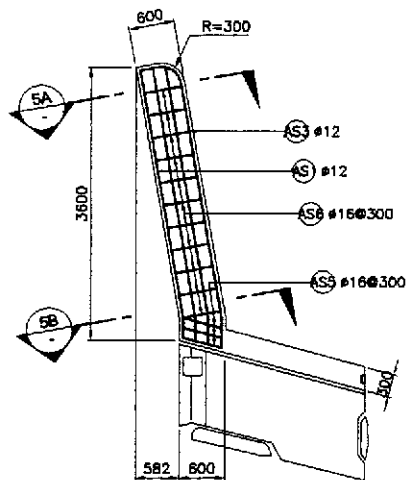
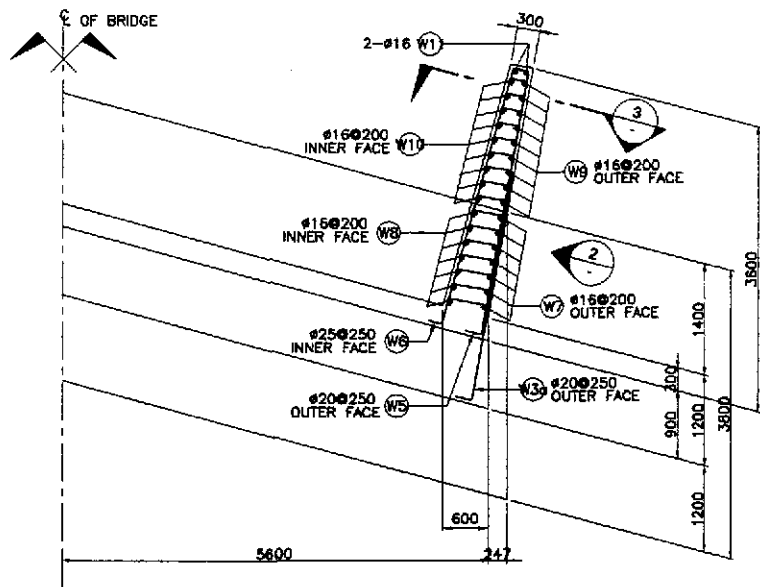
2B SECTION
SCALE 1:20

2C SECTION
SCALE 1:20

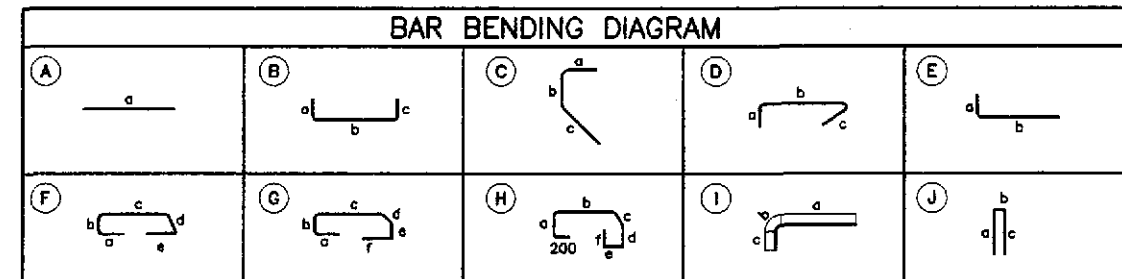
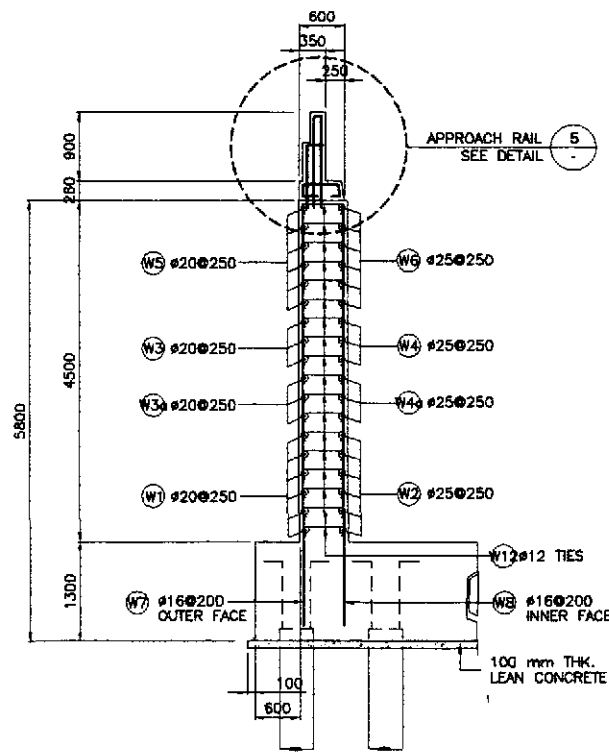
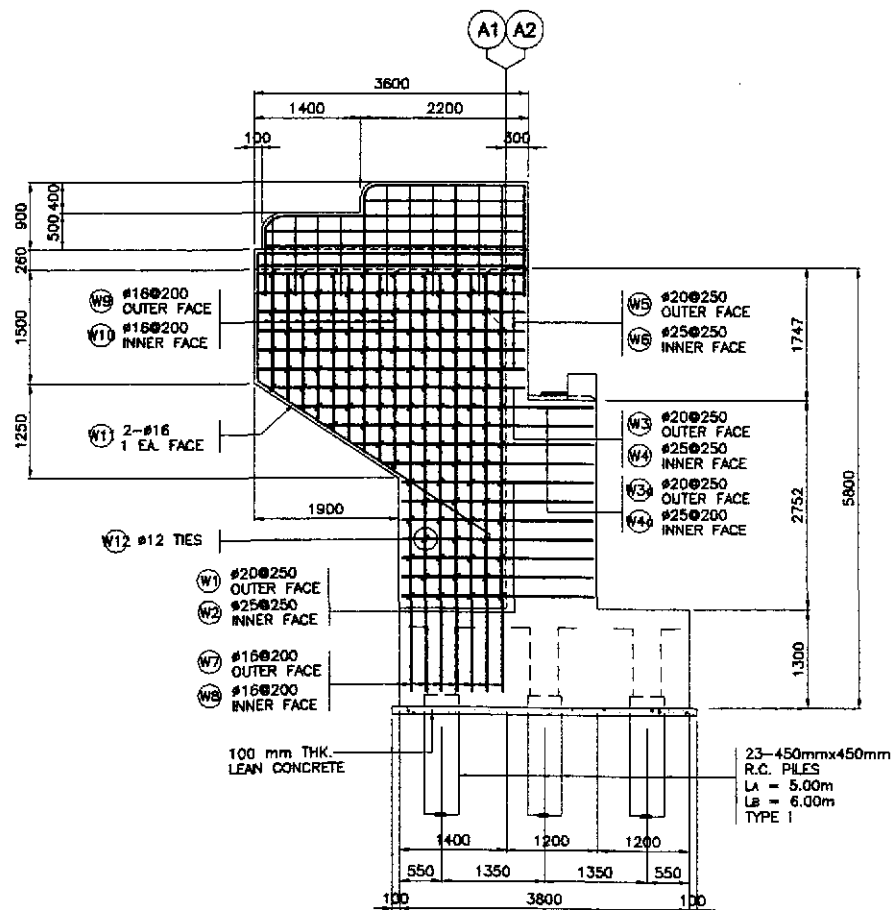
2 DETAIL OF END & INTERMEDIATE DIAPHRAGM
SCALE AS SHOWN

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)
								a	b	c	d					
DIAPHRAGM	INTERMEDIATE DIAPHRAGM	4.67	D1	28	4	AS SHOWN	A	9400				9400	37.60	4.833	182	139.49
			D2	28	16	AS SHOWN	A	2045				2045	32.72	4.833	159	
			D3	28	16	AS SHOWN	A	2045				2045	32.72	4.833	159	
			D4	12	48	250	B	150	1200	150	3000	144.00	0.888	128		
	END DIAPHRAGM	5.95	D5	28	4	AS SHOWN	A	9400				9400	37.60	4.833	182	130.53
			D6	28	32	AS SHOWN	A	1740				1740	55.68	4.833	270	
			D7	28	16	AS SHOWN	A	1740				1740	27.84	4.833	135	
			D8	12	56	250	B	200	1550	150	3800	212.80	0.888	189		
TOTAL	10.61	GRADE 60 TOTAL = 1,087 Kgs. GRADE 40 TOTAL = 340 Kgs.														

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/11/02	<i>[Signature]</i>		BUREAU OF DESIGN	OFFICE OF THE SECRETARY	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 4 & 5 CONCRETE POURING SEQUENCE AND DIAPHRAGM DETAILS (INITIAL STAGE)	B4-04	
	SUBMITTED	10/11/02	<i>[Signature]</i>		Submitted By:	Recommended By:	Recommended By:	CABANATUAN BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		
				DANILO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridges Division	GILBERTO S. REYES Director IV (DC)	MANUEL M. BONGON Undersecretary	SIMEON A. DATUMANONG Secretary			



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)					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	9.30	W1	20	14	250	(B)	400	2500	150	-	-	-	3050	42.70	2.466	106	
		W2	25	14	250	(B)	400	2500	150	-	-	-	3050	42.70	3.854	165	
		W3	20	2	250	(B)	400	3400	150	-	-	-	3950	7.90	2.466	20	
		W3a	20	8	250	(B)	400	3350	150	-	-	-	3900	31.20	2.466	77	
		W4	25	2	250	(B)	400	3400	150	-	-	-	3950	7.90	3.854	31	
		W4a	25	8	250	(B)	400	3350	150	-	-	-	3900	31.20	3.854	121	
		W5	20	12	250	(B)	400	3500	150	-	-	-	4050	48.80	2.466	120	
		W6	25	12	250	(B)	400	3500	150	-	-	-	4050	48.80	3.854	188	
		W7	16	14	200	(E)	250	5550	-	-	-	-	5800	81.20	1.579	129	
		W8	16	14	200	(E)	250	5550	-	-	-	-	5800	81.20	1.579	129	
		W9	16	18	200	(E)	250	2100	-	-	-	-	2350	42.30	1.579	67	
		W10	16	18	200	(E)	250	2100	-	-	-	-	2350	42.30	4.579	67	
W11	16	4	AS SHOWN	(C)	250	1500	3500	-	-	-	5250	21.00	1.579	34			
W12	12	206	AS SHOWN	(D)	170	450	170	-	-	-	790	162.74	0.888	145			
												GRADE 60 TOTAL = 828					
												GRADE 40 TOTAL = 571					
APPROACH RAILING AND SIDEWALK	3.03	AS	12	8	AS SHOWN	(A)	3500	-	-	-	-	3500	28.00	0.888	25		
		AS	12	4	AS SHOWN	(A)	3500	-	-	-	-	3500	14.00	0.888	13		
		AS	12	4	AS SHOWN	(A)	3500	-	-	-	-	3500	14.00	0.888	13		
		AS	16	6	300	(F)	200	170	480	200	200	-	1250	7.50	1.579	12	
		AS	16	22	300	(G)	200	170	480	200	170	200	1420	31.24	1.579	50	
		AR	16	8	300	(E)	200	900	-	-	-	-	1100	8.80	1.579	14	
		AR	16	16	300	(J)	1300	120	1300	-	-	-	2720	43.52	1.579	68	
		AR	16	2	AS SHOWN	(I)	2100	236	1300	-	-	-	3836	7.27	1.579	12	
		AR	16	4	AS SHOWN	(I)	3400	236	900	-	-	-	4536	18.14	1.579	28	
		AR	16	8	AS SHOWN	(A)	3400	-	-	-	-	-	3400	27.20	1.579	43	
AR	16	4	AS SHOWN	(A)	2100	-	-	-	-	-	2100	8.40	1.579	14			
												GRADE 60 TOTAL = 828 kgs.					
												GRADE 40 TOTAL = 665 kgs.					
TOTAL	12.33																

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

DESIGNED: 10/16/02, J. P. GONZALES
CHECKED: 10/16/02, [Signature]
SUBMITTED: 10/16/02, [Signature]

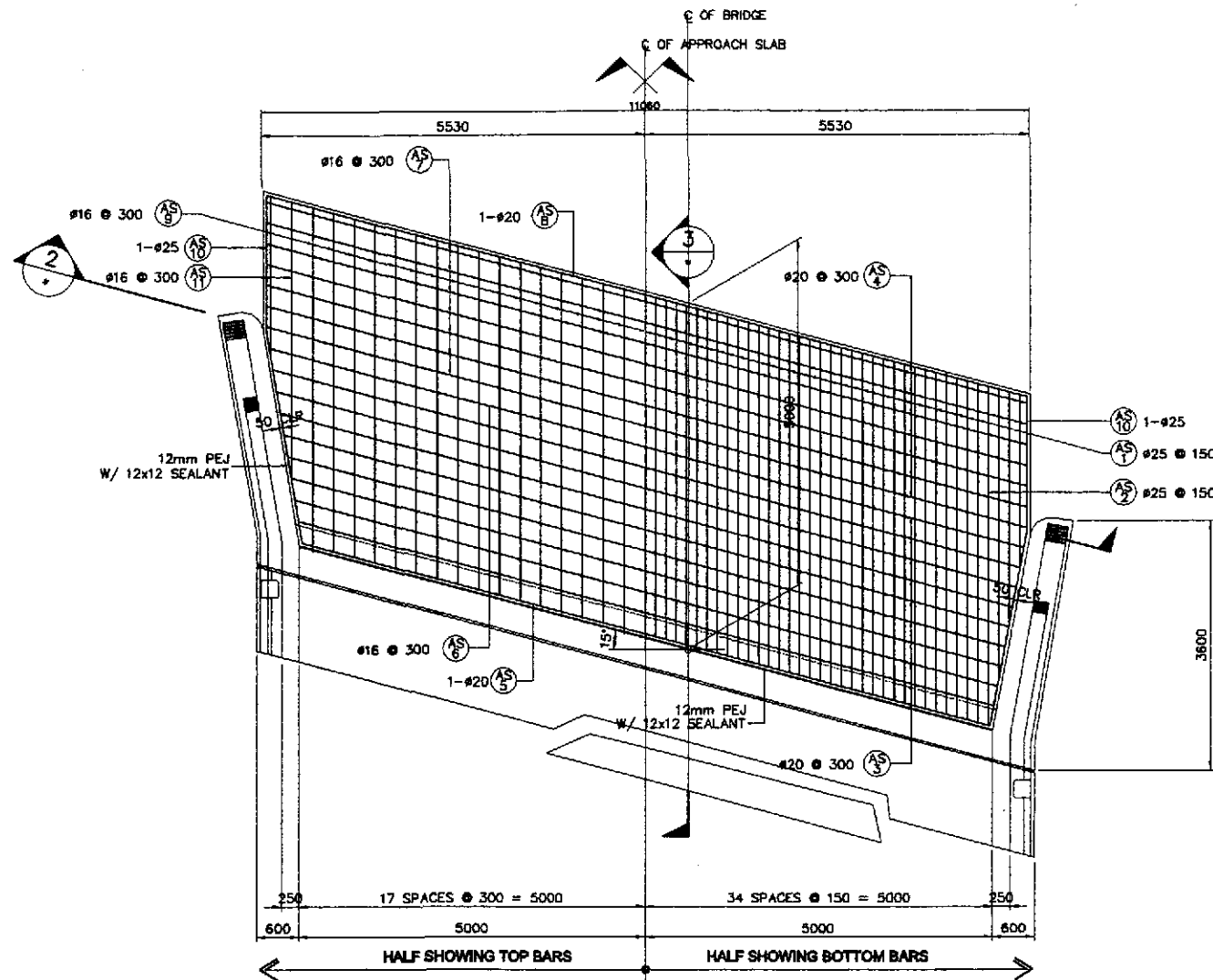
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
OFFICE OF THE SECRETARY
DANILO C. TRAJANO, Project Director
ADRIANO M. DORAY, Chief, Bridges Division
GILBERTO S. REYES, Director IV (GC)
MANUEL M. BONDAN, Undersecretary
SIMEON A. DATUMANONG, Secretary

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

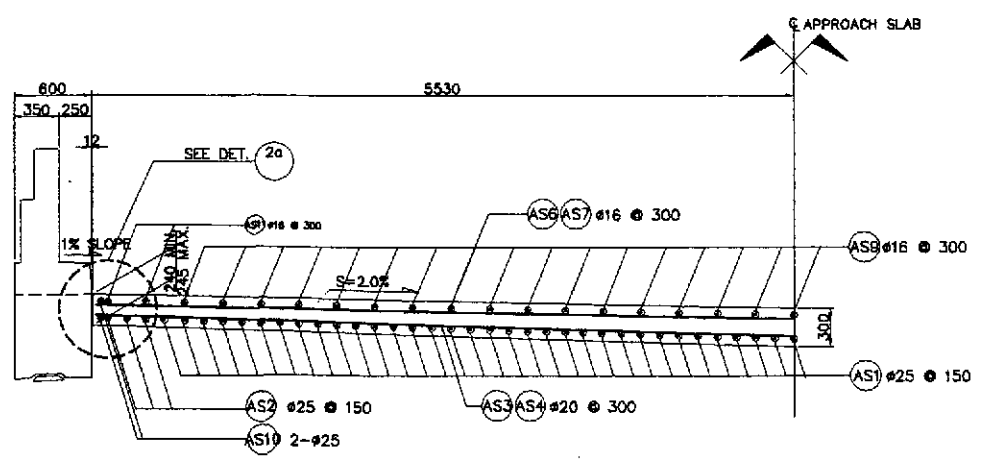
SCALE: AS SHOWN
FULL SIZE A1

SHEET CONTENTS: BRIDGE NO. 4 ABUTMENT A1 & A2 WINGWALL REINFORCEMENT DETAILS (INITIAL STAGE)

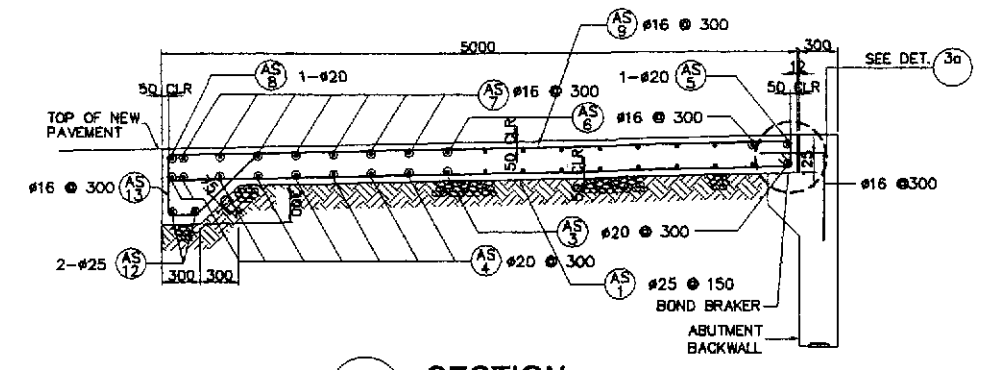
SHEET NO.: B4-06



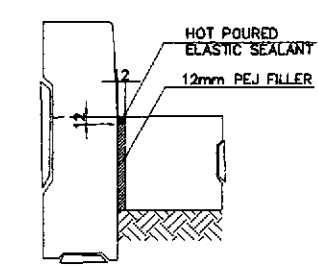
1 PLAN
SCALE 1:50



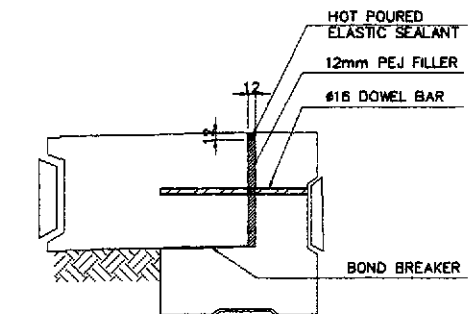
2 SECTION
SCALE 1:30



3 SECTION
SCALE 1:30



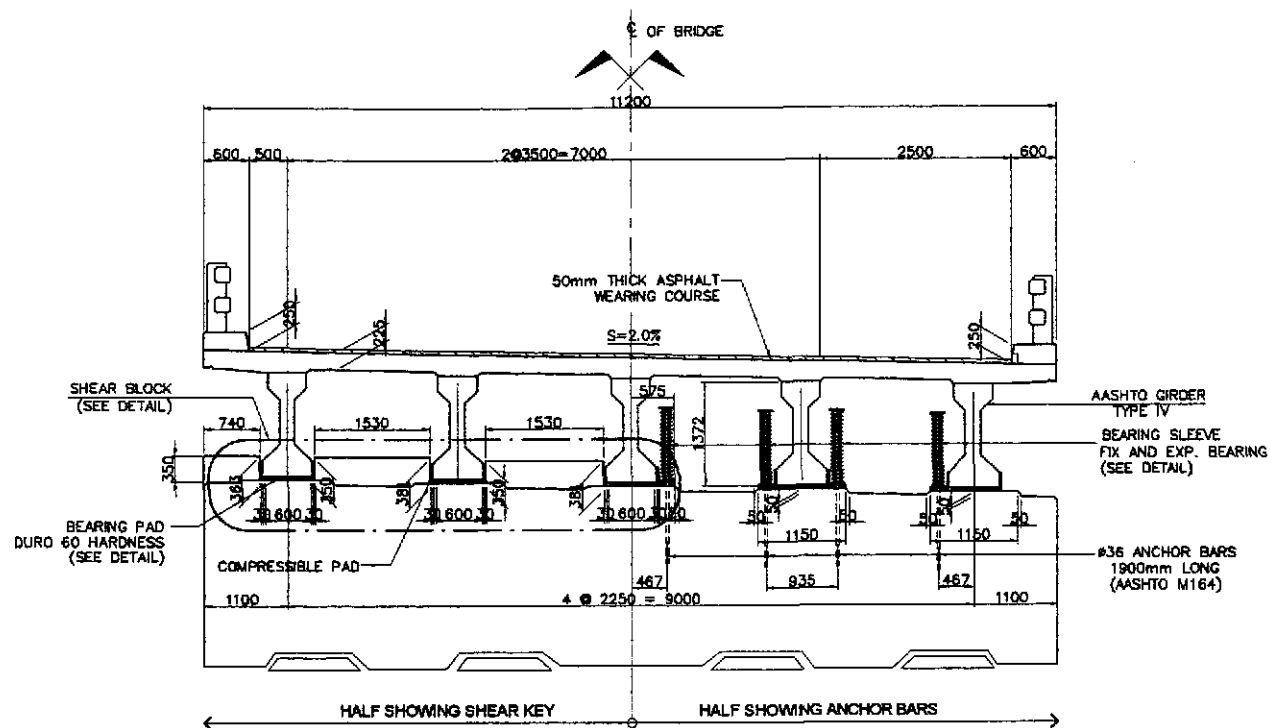
2a DETAIL
SCALE 1:10



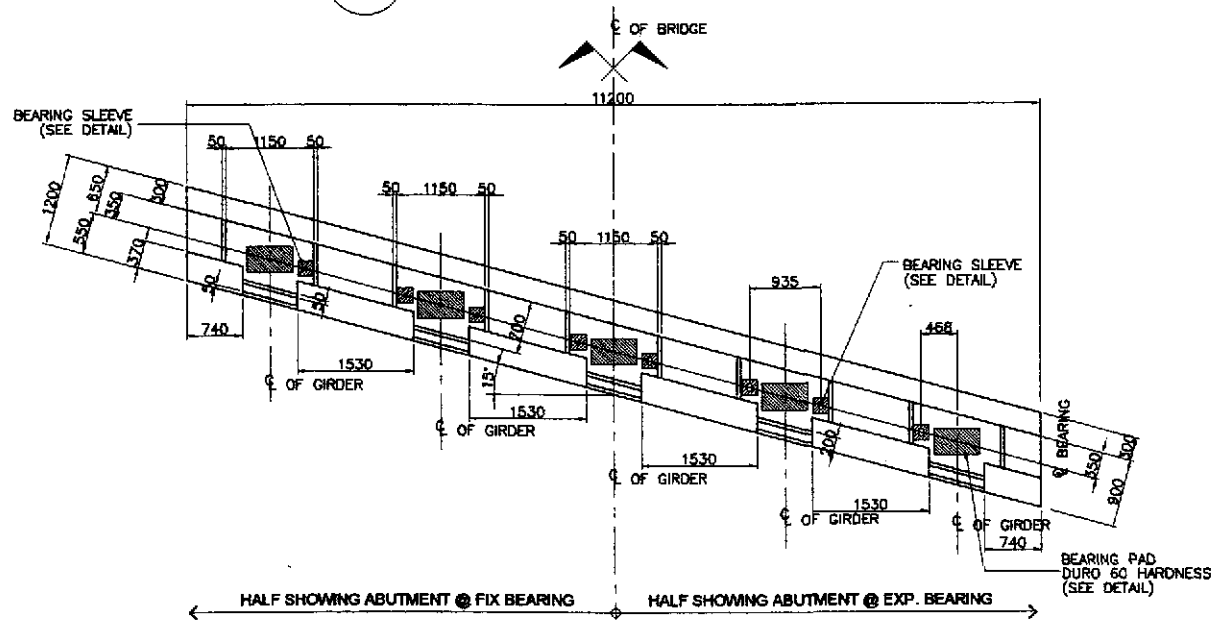
3a DETAIL
SCALE 1:10

BAR BENDING DIAGRAM																	
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	161.42
		AS2	25	6	150	(B)	3350	200	-	-	-	-	3550	21.30	3.854	83	
		AS3	20	10	300	(A)	11200	-	-	-	-	-	11200	112.00	2.466	277	
		AS4	20	8	300	(A)	11750	-	-	-	-	-	11750	94.00	2.466	232	
		AS5	20	1	AS SHOWN	(A)	10700	-	-	-	-	-	10700	10.70	2.466	27	
		AS6	16	9	300	(A)	11250	-	-	-	-	-	11250	101.25	1.579	160	
		AS7	16	7	300	(A)	11750	-	-	-	-	-	11750	82.25	1.579	130	
		AS8	20	1	AS SHOWN	(A)	11750	-	-	-	-	-	11750	11.75	2.466	29	
		AS9	16	34	300	(B)	4900	200	-	-	-	-	5100	173.40	1.579	274	
		AS10	25	4	AS SHOWN	(C)	2000	3100	-	-	-	-	5100	20.40	3.854	79	
		AS11	16	2	300	(B)	3950	200	-	-	-	-	4150	8.30	1.579	14	
		AS12	25	2	AS SHOWN	(A)	11750	-	-	-	-	-	11750	23.50	3.854	91	
		AS13	16	38	300	(D)	400	500	200	700	-	-	1800	68.40	1.579	109	
		TOTAL	17.61												GRADE 40 TOTAL = 887 kgs.		

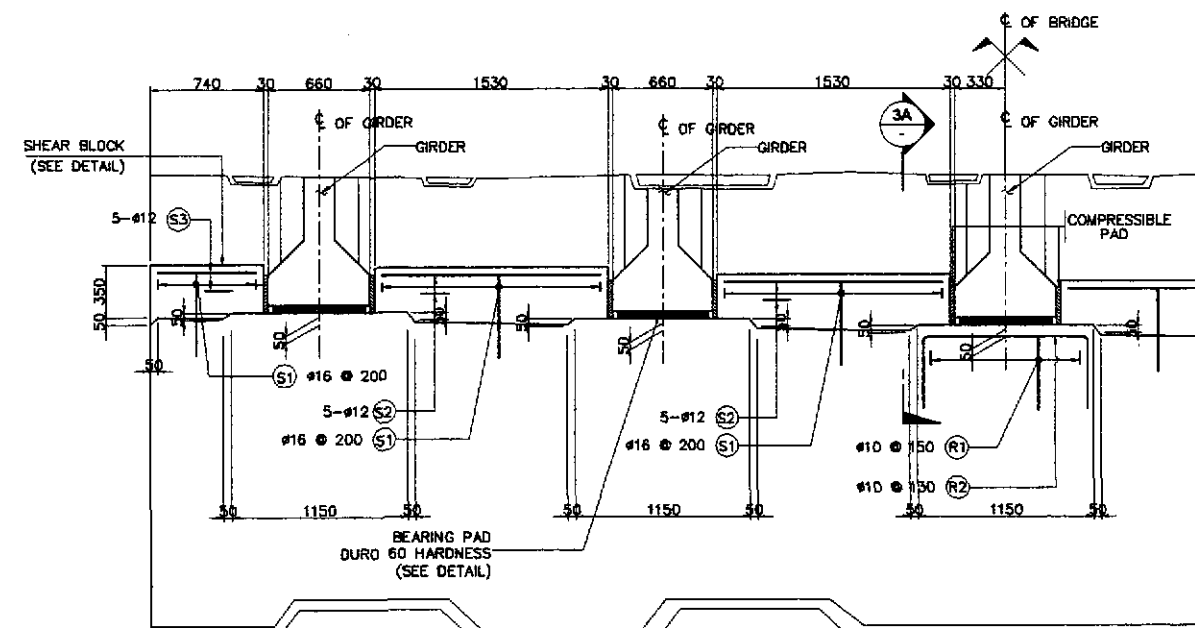
	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	DESIGNED	<i>[Signature]</i>	BUREAU OF DESIGN			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 4 & 5 APPROACH SLAB PLAN, SECTIONS AND DETAILS (INITIAL STAGE)	B4-07
	CHECKED	<i>[Signature]</i>	Submitted By:	Reviewed By:	Recommended By:	FULL SIZE A1			
SUBMITTED	<i>[Signature]</i>	<i>[Signature]</i>	DANILO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridges Division	GILBERTO S. REYES Director IV (OC)	MANUEL M. BONGAN Undersecretary	SIMEON A. DATUMANONG Secretary		



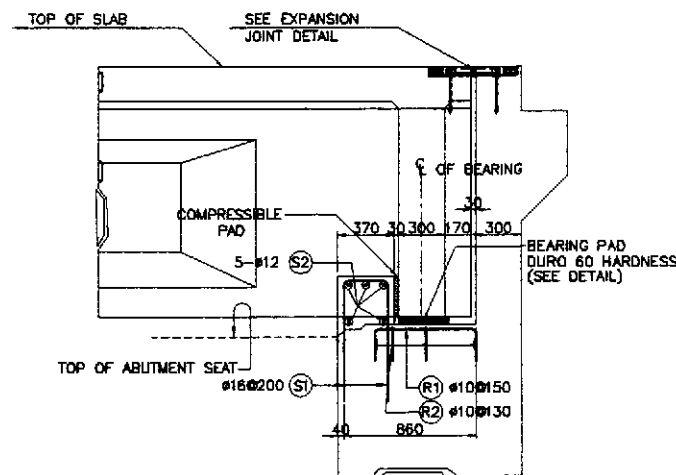
1 SECTION AT ABUTMENT SEAT
SCALE 1:50



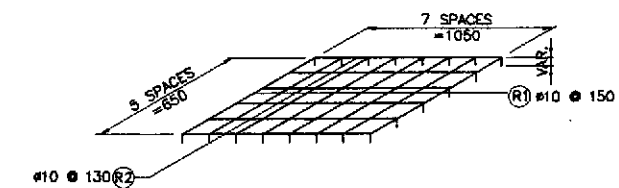
2 PLAN AT ABUTMENT SEAT
SCALE 1:50



3 SHEAR BLOCK DETAIL
SCALE 1:25



3A SECTION
SCALE 1:25

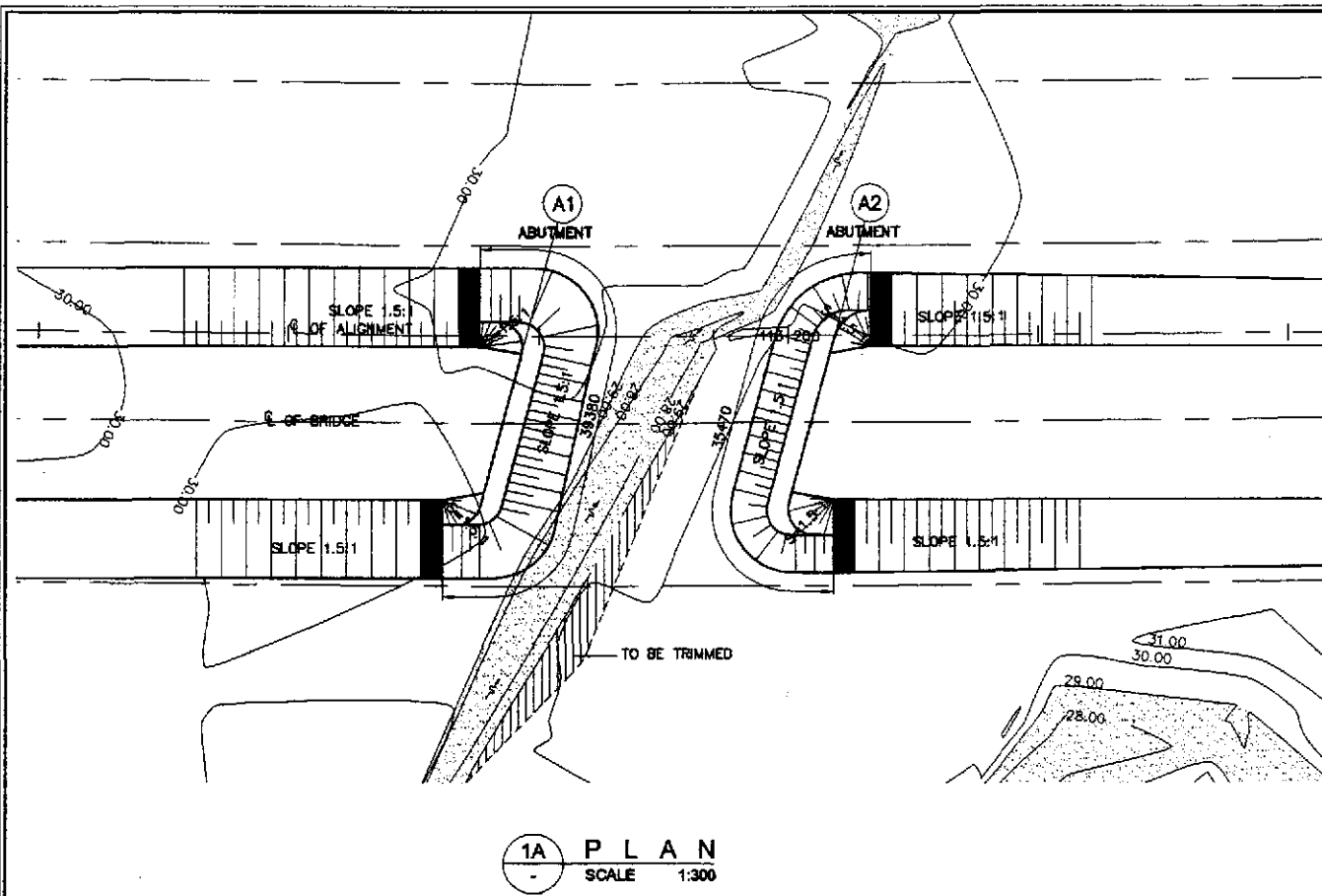


4 RISER REINFORCEMENT
NOT TO SCALE

BAR BENDING DIAGRAM																
A							B									
SCHEDULE OF REINFORCEMENT							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	1.42	S1	16	40	200	(B)	580	300	560			1420	56.80	1.579	90	144.83
		S2	12	20	AS SHOWN	(A)	1500					1450	30.00	0.888	26	
		S3	12	10	AS SHOWN	(A)	680					680	6.80	0.888	6	
		R1	10	40	150	(B)	500	670	500			1670	66.80	0.616	41	
		R2	10	30	130	(B)	500	1090	500			2090	62.70	0.616	38	
TOTAL	1.42						GRADE 40 TOTAL = 205 kgs.									

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

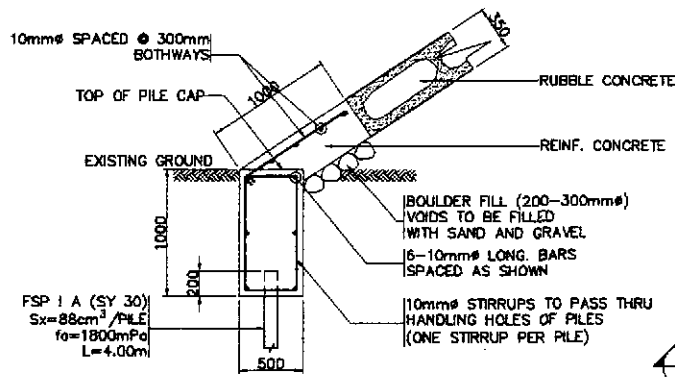
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/10/07	E. N. SALLAN		BUREAU OF DESIGN	OFFICE OF THE SECRETARY	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 4 & 5 SHEAR KEY AND RISER DETAILS AT ABUTMENT (INITIAL STAGE)	B4-08	
	SUBMITTED	10/10/07	TEAM LEADER		Project Director	Director IV (GC)	Undersecretary	FULL SIZE A1			



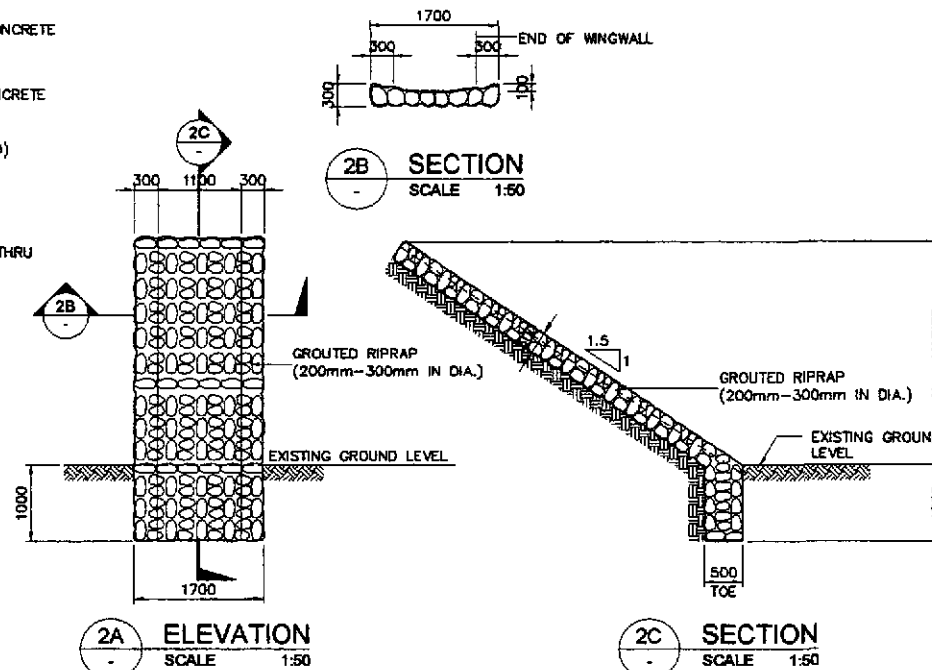
1A PLAN SCALE 1:300

GENERAL NOTES:

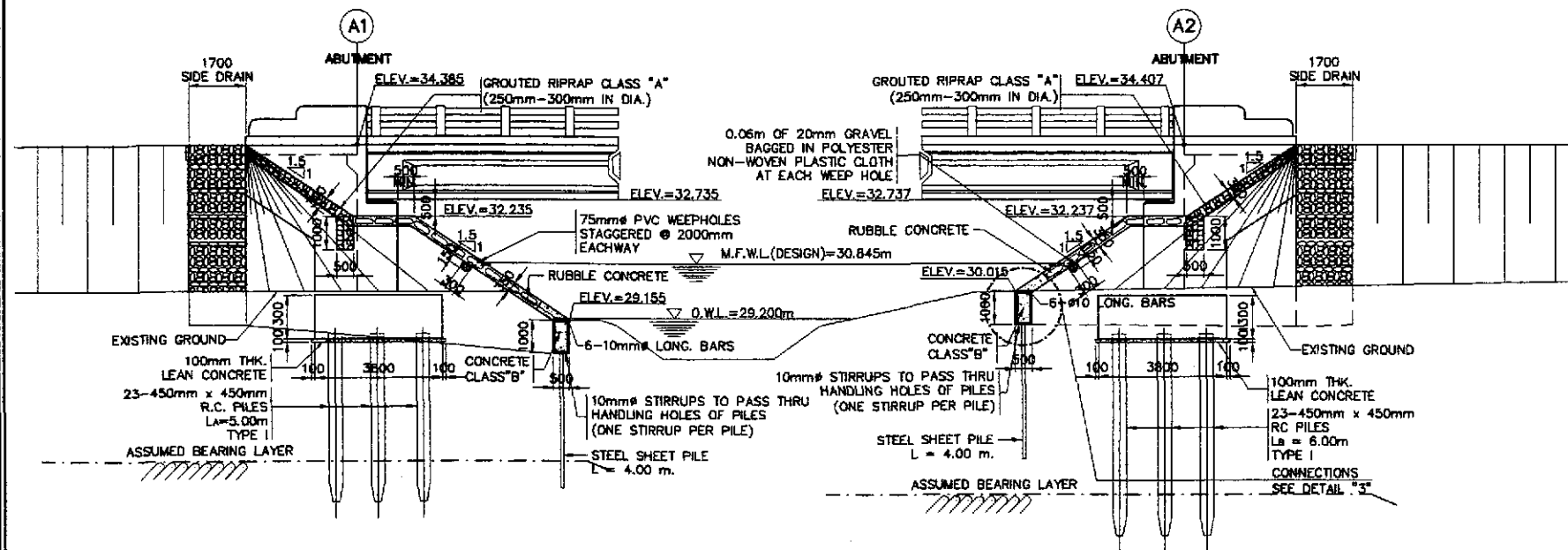
1. GROUTED RIPRAP (250mm-300mm DIA.) SHALL BE USED FOR THE FACING AND SHALL BE CAREFULLY HANDLAID WITH THE LONGEST DIMENSIONS PERPENDICULAR TO THE SLOPE AND FIRMLY BEDDED INTO THE SLOPE AND ADJACENT TO THE ADJOINING BOULDERS SPACED BETWEEN THE BOULDERS. THE SPACE BETWEEN THE BOULDERS SHALL BE COMPLETELY 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 BRUSH.
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. 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 AND 60% BOULDERS.
5. NO CONCRETING UNDER WATER SHALL BE PERMITTED.
6. PROVIDE 1.0 m. BERM WHEN HEIGHT (H) IS > 4.0 m.



3 CAPPING AND SHEET PILE CONNECTIONS SCALE 1:30



2 TYPICAL SIDE DRAIN DETAIL AS SHOWN SCALE 1:50



1B ELEVATION SCALE 1:100

1 ABUTMENT SLOPE PROTECTION AS SHOWN SCALE 1:300

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	18.17 cu. m.	16.75 cu. m.
REBAR	10mm#, GRADE 40	274.00 kgs.	252.00 kgs.
RUBBLE CONCRETE	250mm-300mm #N DIA.	56.99 cu. m.	40.82 cu. m.
SHEET PILE	85 x 400 x 8mm THK.	80.00 pcs.	73.00 pcs.
SIDE DRAIN	200mm-300mm #N DIA.	9.30 cu. m.	8.82 cu. m.
GROUTED RIPRAP	250mm-300mm #N DIA.	8.87 cu. m.	11.96 cu. m.

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

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

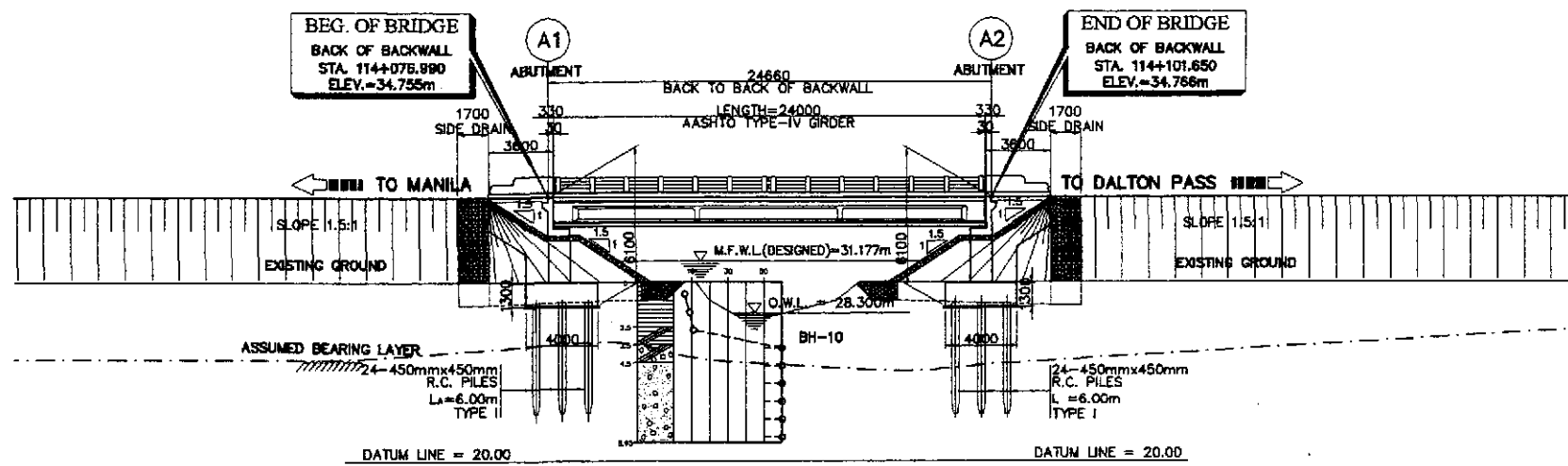
REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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

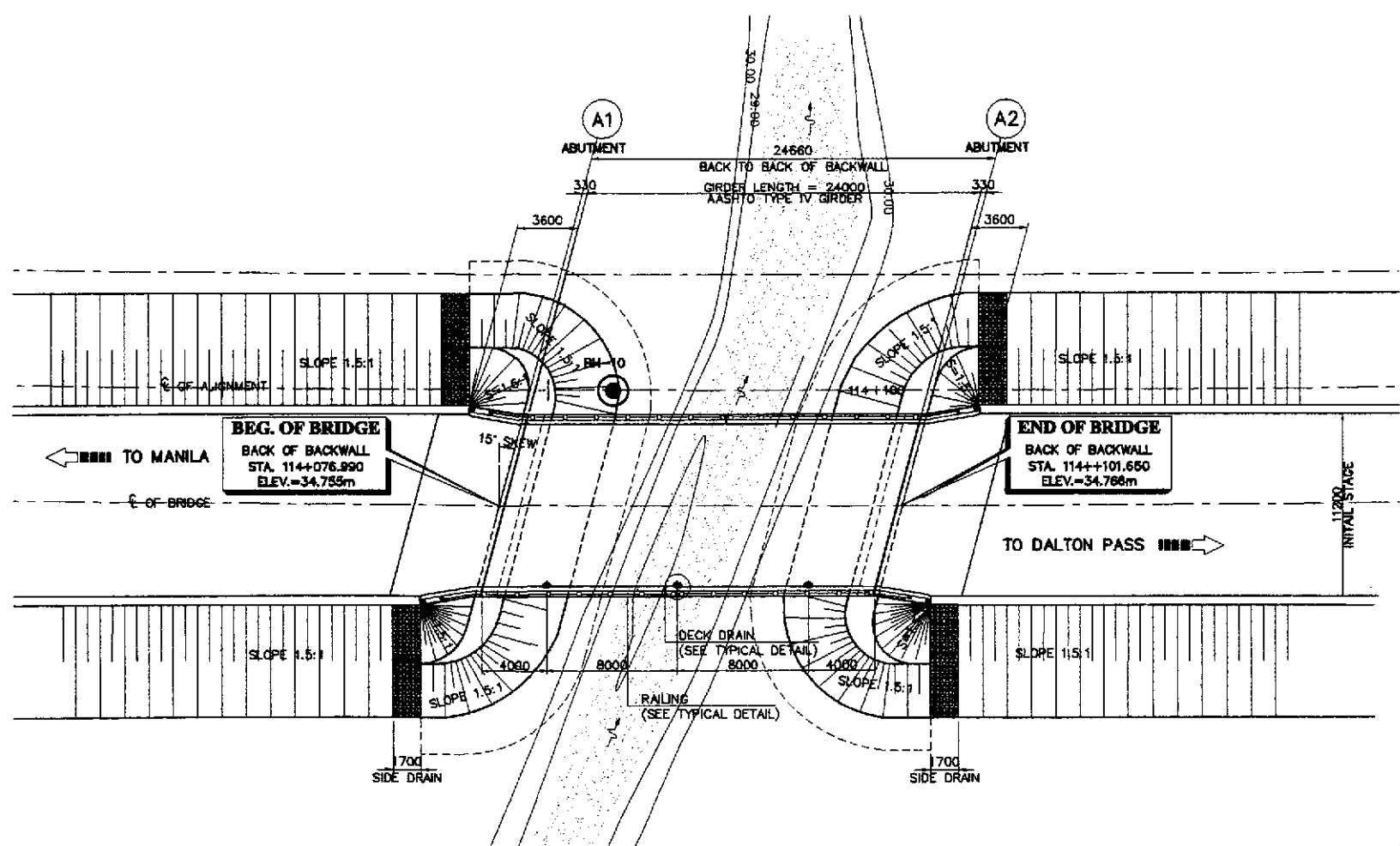
SCALE: AS SHOWN SHEET CONTENTS: BRIDGE NO. 4 ABUTMENT PROTECTION AND SIDE DRAIN DETAILS (INITIAL STAGE) SHEET NO.: B4-09

DESIGNED: 10/11/02 A.P. GONZALES CHECKED: 10/14/02 SUBMITTED: 10/18/02

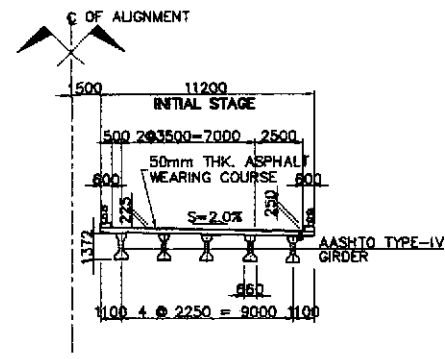
APPROVED BY: DANILLO C. TRAJANO, PERFECTO L. ZAPLAN JR., GILBERTO S. REYES, MANUEL M. BONOAN, SIMEON A. DATLIMANONG



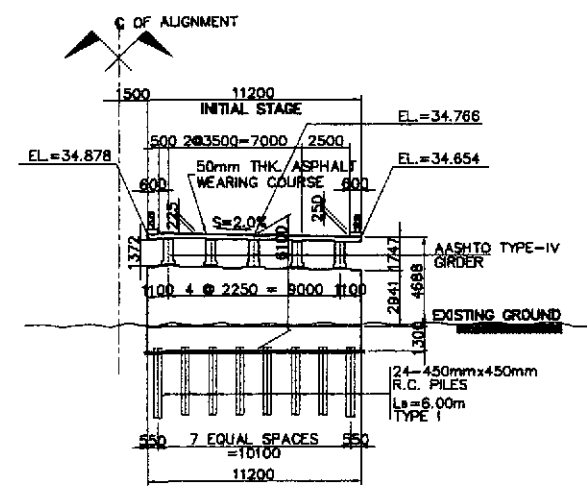
1 GENERAL ELEVATION
SCALE 1:200



2 GENERAL PLAN
SCALE 1:200



3 SECTION @ MIDSPAN
SCALE 1:200



4 SECTION @ ABUTMENT A2
SCALE 1:200

HYDRAULIC DESIGN DATA	
VELOCITY @ 50 YEARS, V_{50}	1.937 m/sec
DISCHARGE @ 50 YEARS, Q_{50}	63.400 cu.m/sec
CATCHMENT AREA, CA	17.650 sq. km

NOTE :
PRIOR TO CONSTRUCTION SOIL INVESTIGATION AT ABUTMENT A2 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 CABANATUAN BYPASS BRIDGE NO.5 (STA.114+076.990)
SCALE AS SHOWN

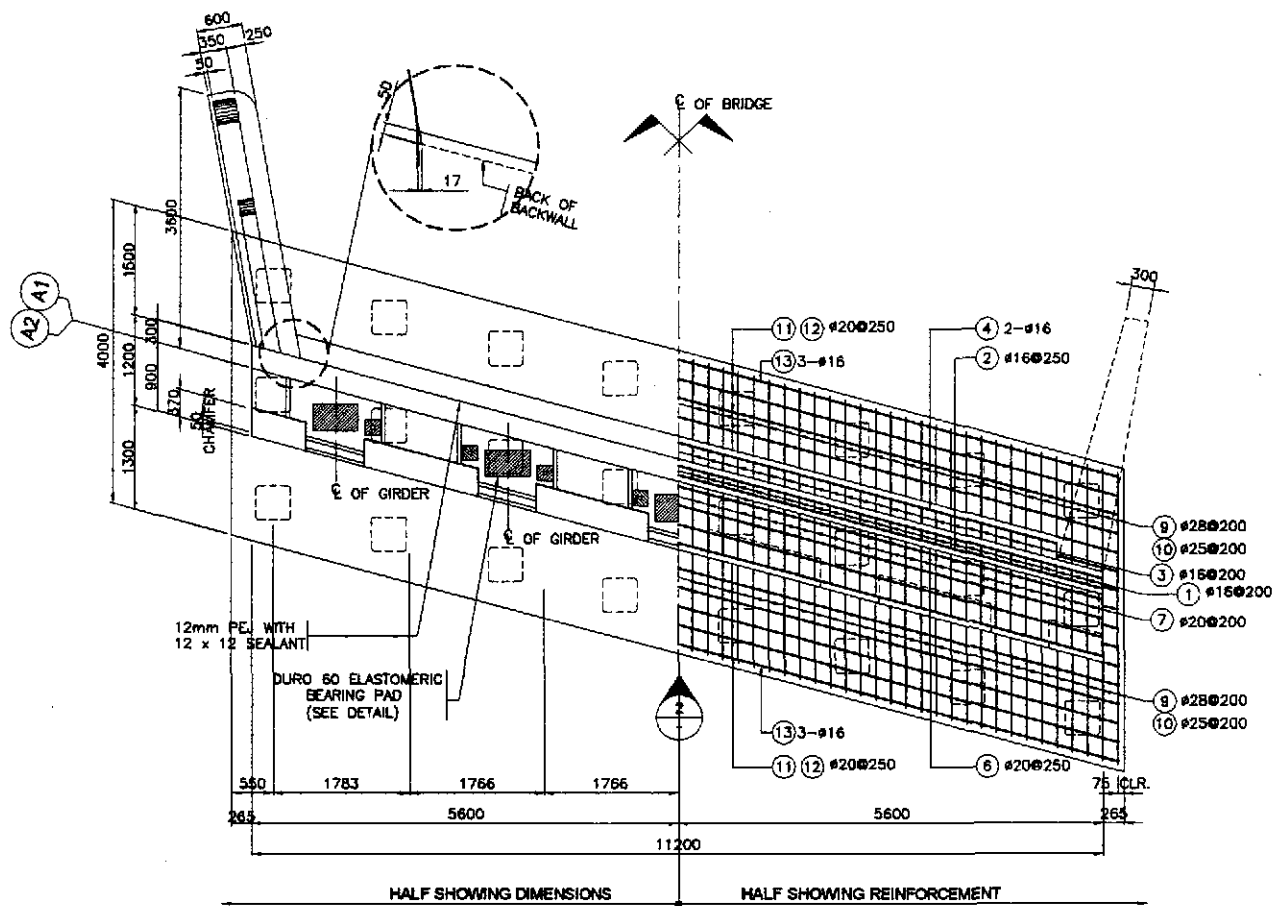
PERFECTO L. ZAPLAN JR.
OIC Chief, Hydraulics Division, BOD

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

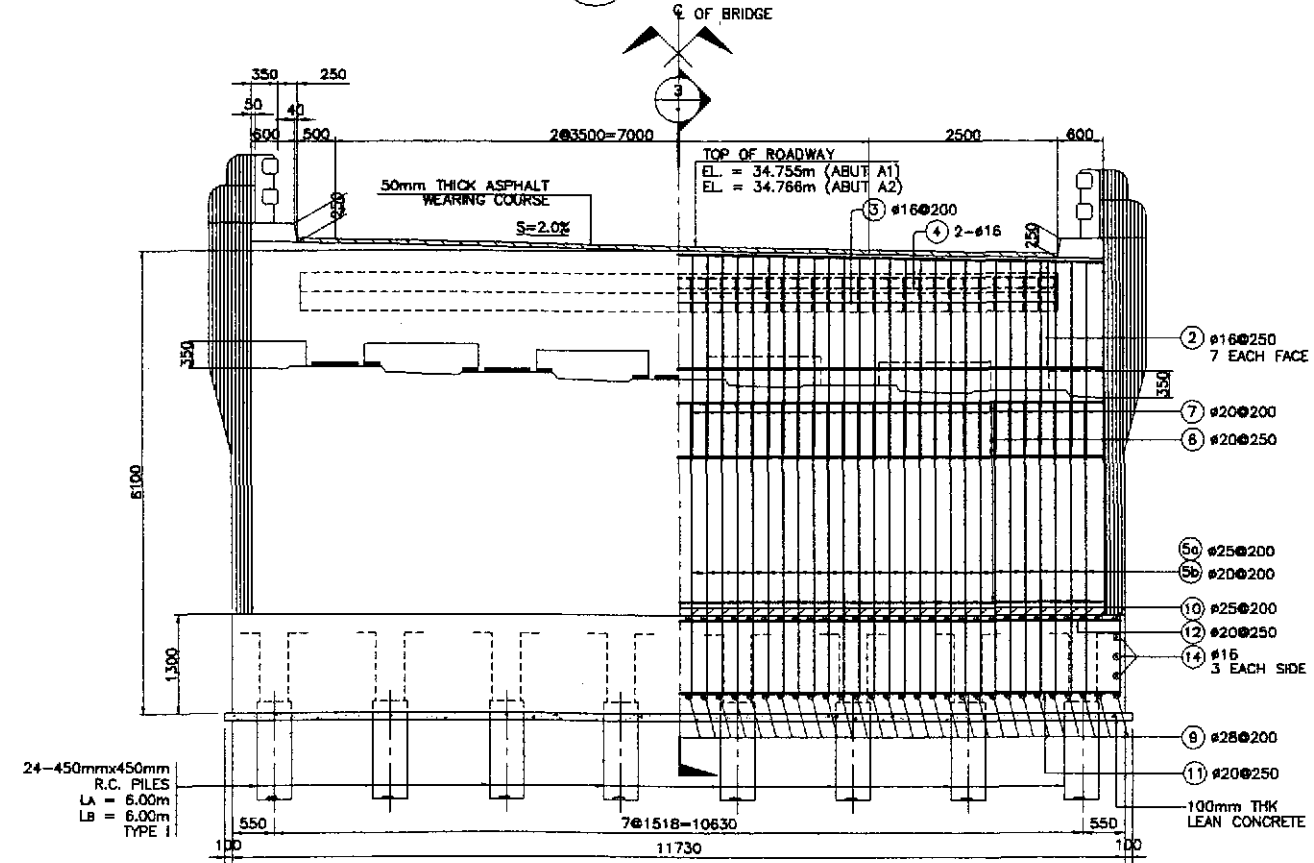
DATE	SIGNATURE
DESIGNED 10/4/02	F. GONZALES
CHECKED 10/10/02	[Signature]
SUBMITTED 10/18/02	[Signature]

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	
BUREAU OF DESIGN	
OFFICE OF THE SECRETARY	
Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: ADRIANO M. DOROY Chief, Bridges Division
Recommended By: GILBERTO S. REYES Director IV (OIC)	Recommended By: MANUEL M. BONGJAN Undersecretary
Approved By: [Signature]	Approved By: SIMEON A. DATUMANONG Secretary

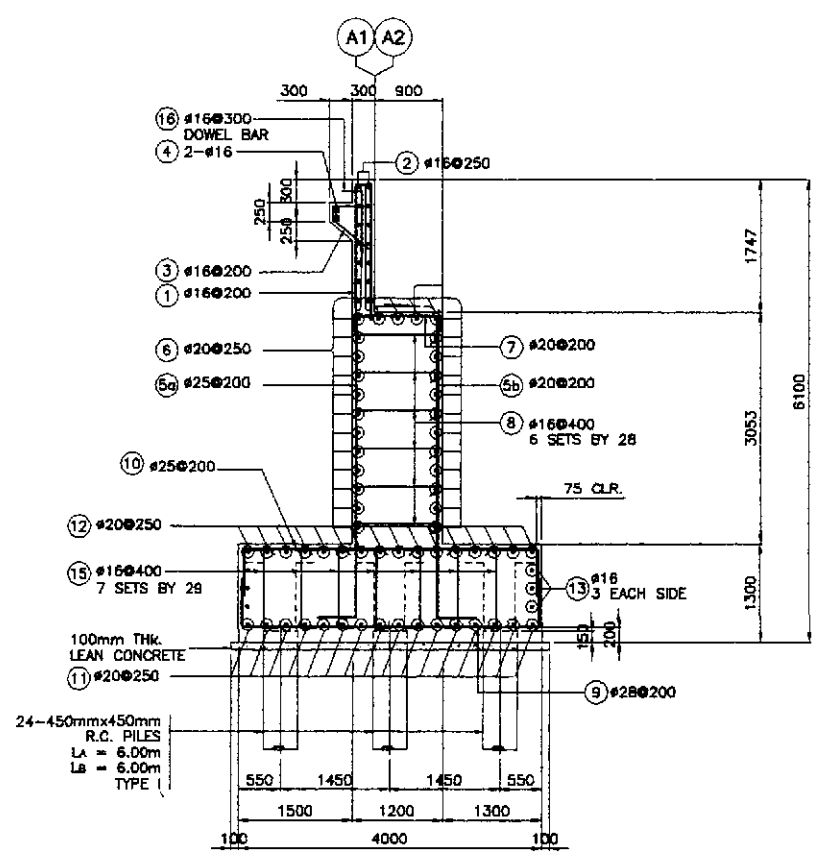
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pardel, Cabanatuan and San Jose Bypasses)	1:200 FULL SIZE A1	BRIDGE NO. 5 GENERAL PLAN, ELEVATION AND SECTIONS (INITIAL STAGE)	B5-01
CABANATUAN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



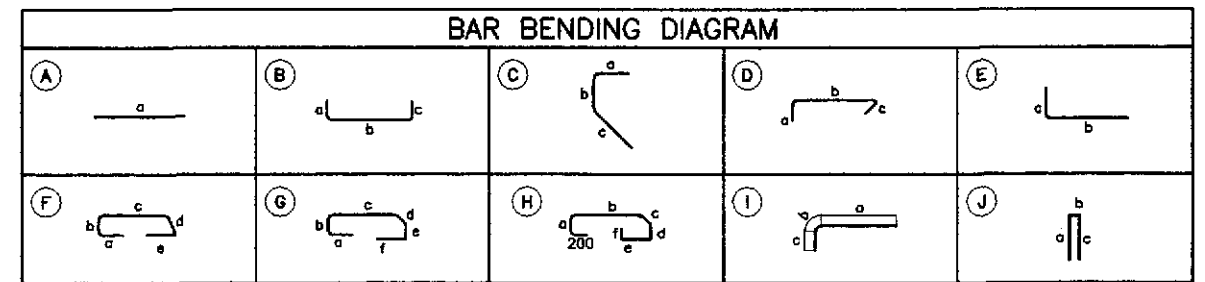
1 PLAN
SCALE 1:50



2 ELEVATION
SCALE 1:50

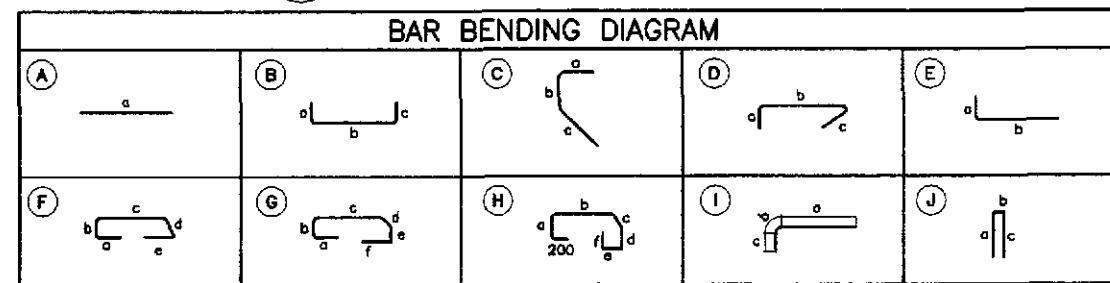
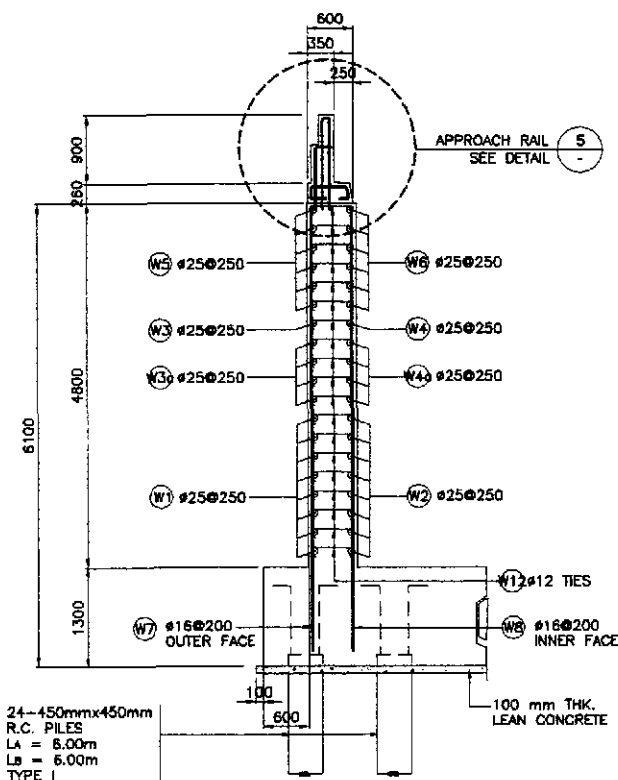
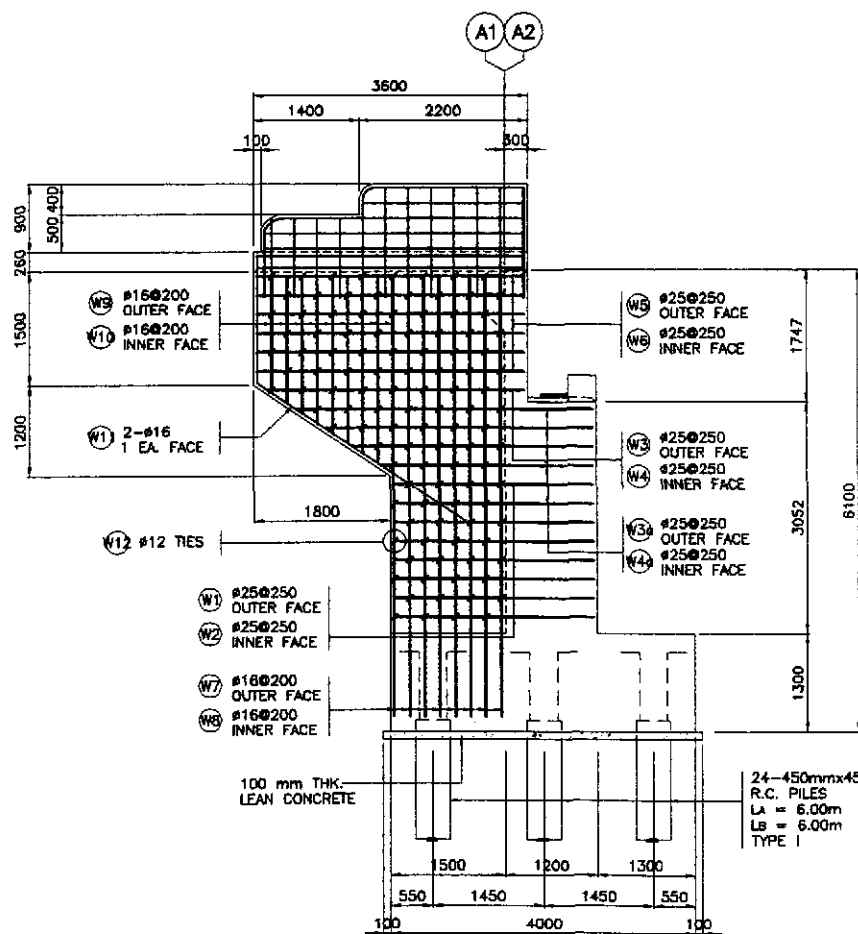
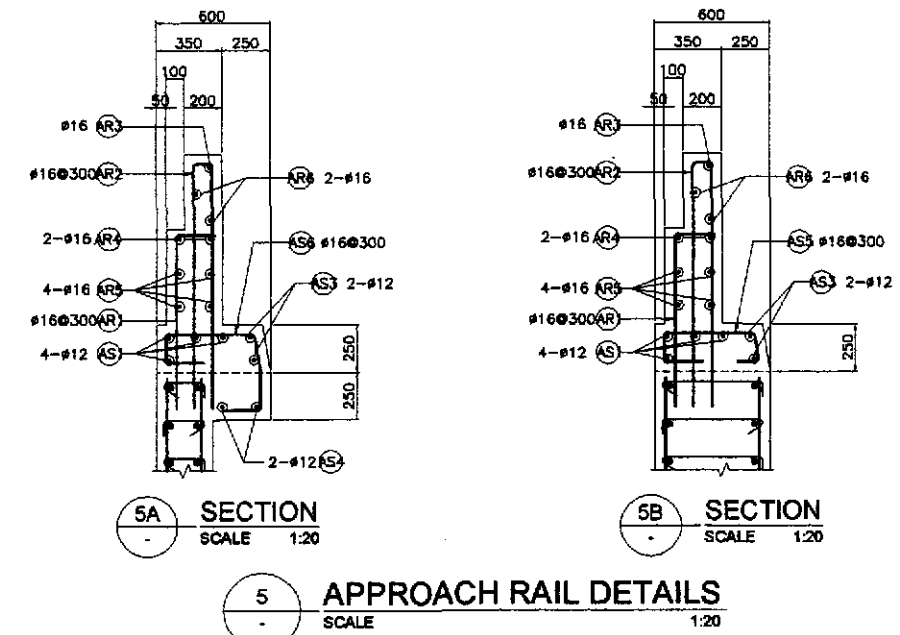
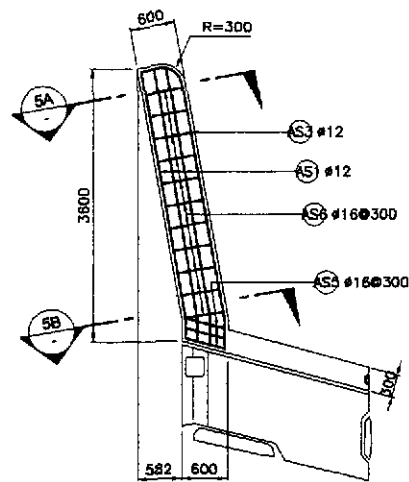
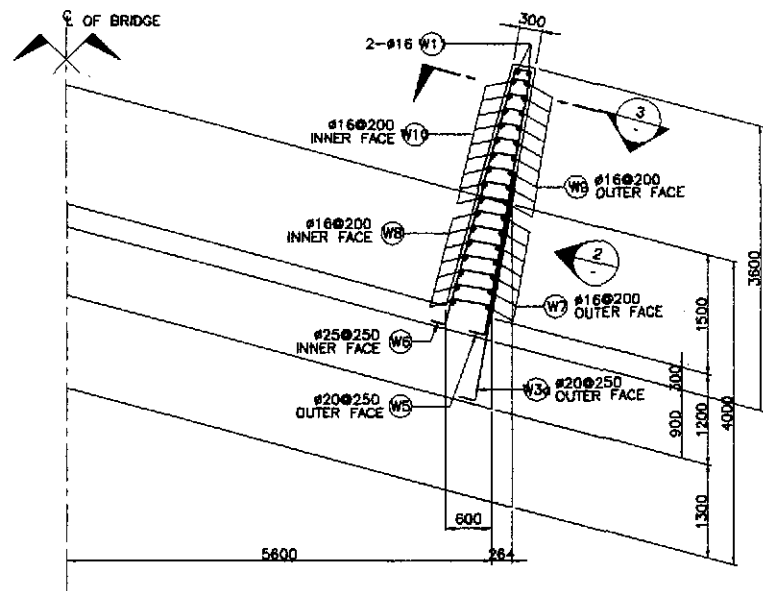


3 SECTION
SCALE 1:50



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	6.99	①	16	57	200	(B)	2000	200	2000	-	-	-	4200	239.40	1.579	379	112.65	
		②	16	14	250	(A)	11500	-	-	-	-	-	11500	161.00	1.579	255		
		③	16	51	200	(C)	600	150	750	-	-	-	1500	76.50	1.579	121		
		④	16	2	AS SHOWN	(A)	10250	-	-	-	-	-	10250	20.50	1.579	33		
MAINWALL	41.03	⑤a	25	57	200	(E)	400	4100	-	-	-	4500	256.50	3.854	989	74.04		
		⑤b	20	57	200	(E)	400	4100	-	-	-	4500	256.50	2.466	633			
		⑥	20	27	250	(A)	11500	-	-	-	-	-	11500	310.50	2.466		786	
		⑦	20	57	200	(B)	250	1100	250	-	-	-	1600	91.20	2.466		225	
FOOTING	61.00	⑧	16	168	400	(D)	250	1100	250	-	-	-	1600	268.80	1.579	425	72.63	
		⑨	28	59	200	(B)	700	3850	700	-	-	-	5250	309.75	4.833	1498		
		⑩	25	59	200	(B)	700	3850	700	-	-	-	5250	309.75	3.854	1194		
		⑪	20	16	250	(B)	700	12000	700	-	-	-	13400	214.40	2.466	529		
		⑫	20	16	250	(B)	700	12000	700	-	-	-	13400	214.40	2.466	529		
DOWEL		⑬	16	6	AS SHOWN	(A)	12000	-	-	-	-	-	12000	72.00	1.579	114		
		⑭	16	6	AS SHOWN	(A)	3850	-	-	-	-	-	3850	23.10	1.579	37		
		⑮	16	203	400	(D)	250	1150	250	-	-	-	1650	334.95	1.579	529		
⑯	16	34	300	(E)	650	500	-	-	-	-	1150	39.10	1.579	62				
TOTAL	109.02																	
GRADE 40 TOTAL = 1,855 kgs.																		
GRADE 60 TOTAL = 6,363 kgs.																		

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/14/02	P. GONZALES		BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Palarke, Cabanatuan and San Jose Bypasses)	1:50	BRIDGE NO. 5 ABUTMENT A1 & A2 MAINWALL REINFORCEMENT DETAILS (INITIAL STAGE)	B5-05
	SUBMITTED	10/18/02	M. M. BONDAN		OFFICE OF THE SECRETARY				CABANATUAN BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		
			Submitted By:	Reviewed By:		Recommended By:		Approved By:				
			DANILO C. TRAJANO Project Director	ADRIANO M. DOROS Chief, Bridge Division		GILBERTO S. REYES Director IV (GIC)		MANUEL M. BONDAN Undersecretary		SIMEON A. DATUMANONG Secretary		



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	9.88	W1	25	16	250	(B)	400	2800	150	-	-	3150	50.40	3.854	185	170.31		
		W2	25	16	250	(B)	400	2800	150	-	-	3150	50.40	3.854	185			
		W3	25	2	250	(B)	400	3350	150	-	-	3900	7.80	3.854	31			
		W3a	25	8	250	(B)	400	3350	150	-	-	3900	31.20	3.854	121			
		W4	25	2	250	(B)	400	3350	150	-	-	3900	7.80	3.854	31			
		W4a	25	8	250	(B)	400	3350	150	-	-	3900	31.20	3.854	121			
		W5	25	12	250	(B)	400	3500	150	-	-	4050	48.60	3.854	188			
		W6	25	12	250	(B)	400	3500	150	-	-	4050	48.60	3.854	188			
		W7	16	16	200	(E)	250	5850	-	-	-	6100	97.60	1.579	155			
		W8	16	16	200	(E)	250	5850	-	-	-	6100	97.60	1.579	155			
		W9	16	16	200	(E)	250	2000	-	-	-	2250	36.00	1.579	57			
		W10	16	16	200	(E)	250	2000	-	-	-	2250	36.00	1.579	57			
W11	16	4	AS SHOWN	(C)	250	1500	3500	-	-	5250	21.00	1.579	34					
W12	12	220	AS SHOWN	(D)	170	450	170	-	-	790	173.80	0.888	155					
													GRADE 60 TOTAL = 1,070 kgs.					
													GRADE 40 TOTAL = 613 kgs.					
APPROACH RAILING AND SIDEWALK	3.03	AS	12	8	AS SHOWN	(A)	3500	-	-	-	-	3500	28.00	0.888	25	97.16		
		AS	12	4	AS SHOWN	(A)	3500	-	-	-	-	3500	14.00	0.888	13			
		AS	12	4	AS SHOWN	(A)	3500	-	-	-	-	3500	14.00	0.888	13			
		ASa	16	6	300	(F)	200	170	480	200	200	1250	7.50	1.579	12			
		ASb	16	22	300	(G)	200	170	480	200	170	200	1420	31.24	1.579		50	
		AR	16	8	300	(E)	200	900	-	-	-	1100	8.80	1.579	14			
		AR2	16	16	300	(J)	1300	120	1300	-	-	-	2720	43.52	1.579		69	
		AR3	16	2	AS SHOWN	(I)	2100	236	1300	-	-	-	3636	7.27	1.579		12	
AR4	16	4	AS SHOWN	(I)	3400	236	900	-	-	-	4536	18.14	1.579	29				
AR5	16	8	AS SHOWN	(A)	3400	-	-	-	-	-	3400	27.20	1.579	43				
AR6	16	4	AS SHOWN	(A)	2100	-	-	-	-	-	2100	8.40	1.579	14				
													GRADE 40 TOTAL = 294 kgs.					
TOTAL	12.91														GRADE 60 TOTAL = 1,070 kgs.			
													GRADE 40 TOTAL = 907 kgs.					

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

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

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

SCALE: AS SHOWN FULL SIZE A1

SHEET CONTENTS: BRIDGE NO. 5 ABUTMENT A1 & A2 WINGWALL REINFORCEMENT DETAILS (INITIAL STAGE)

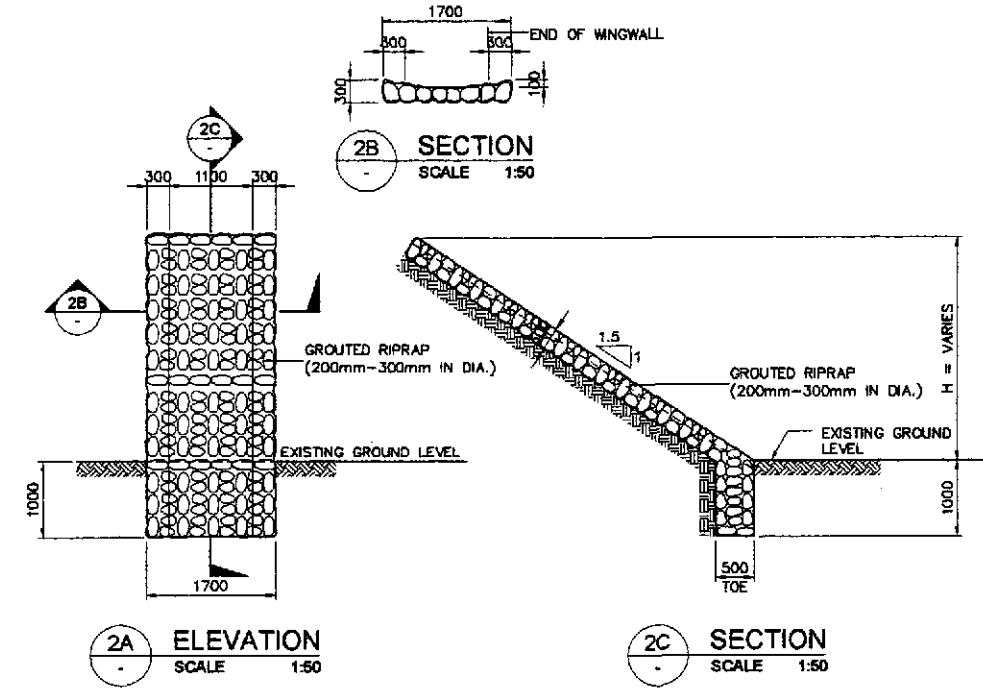
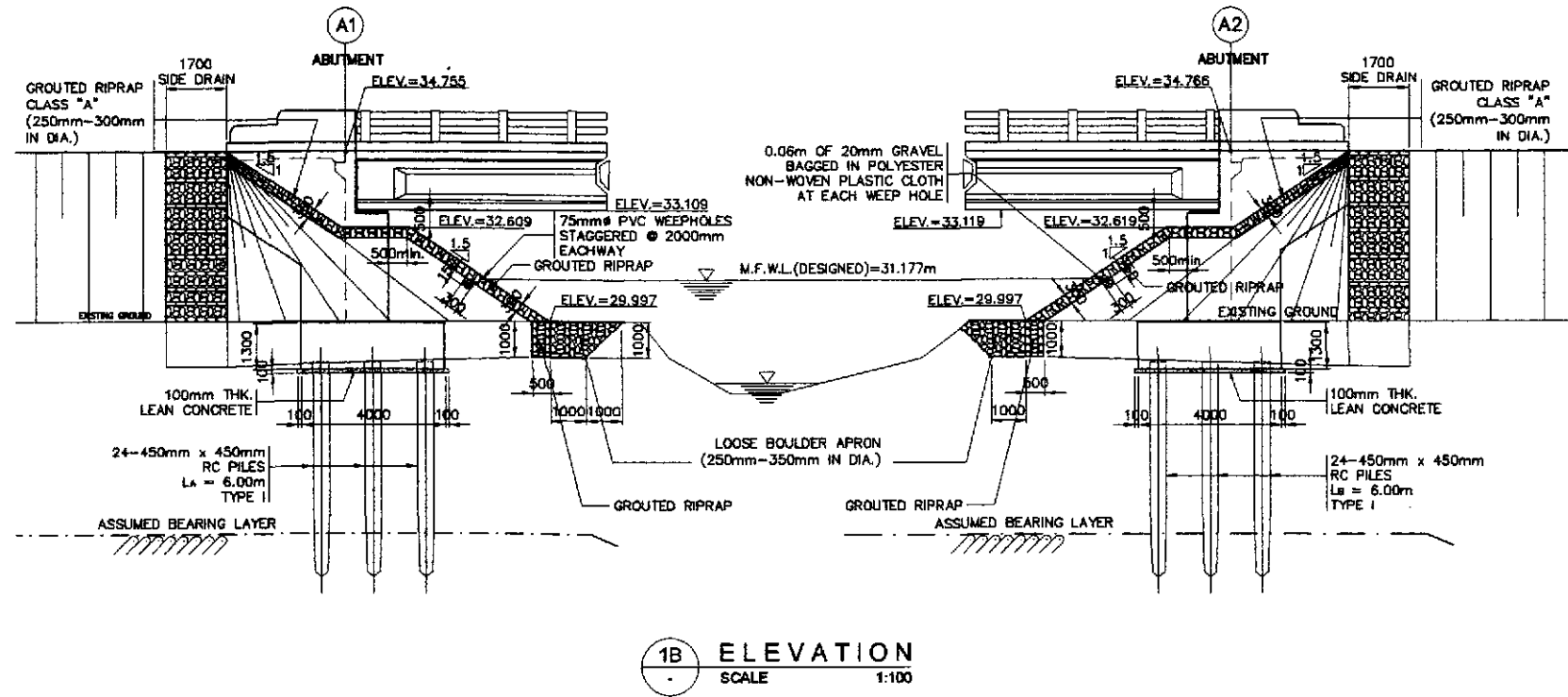
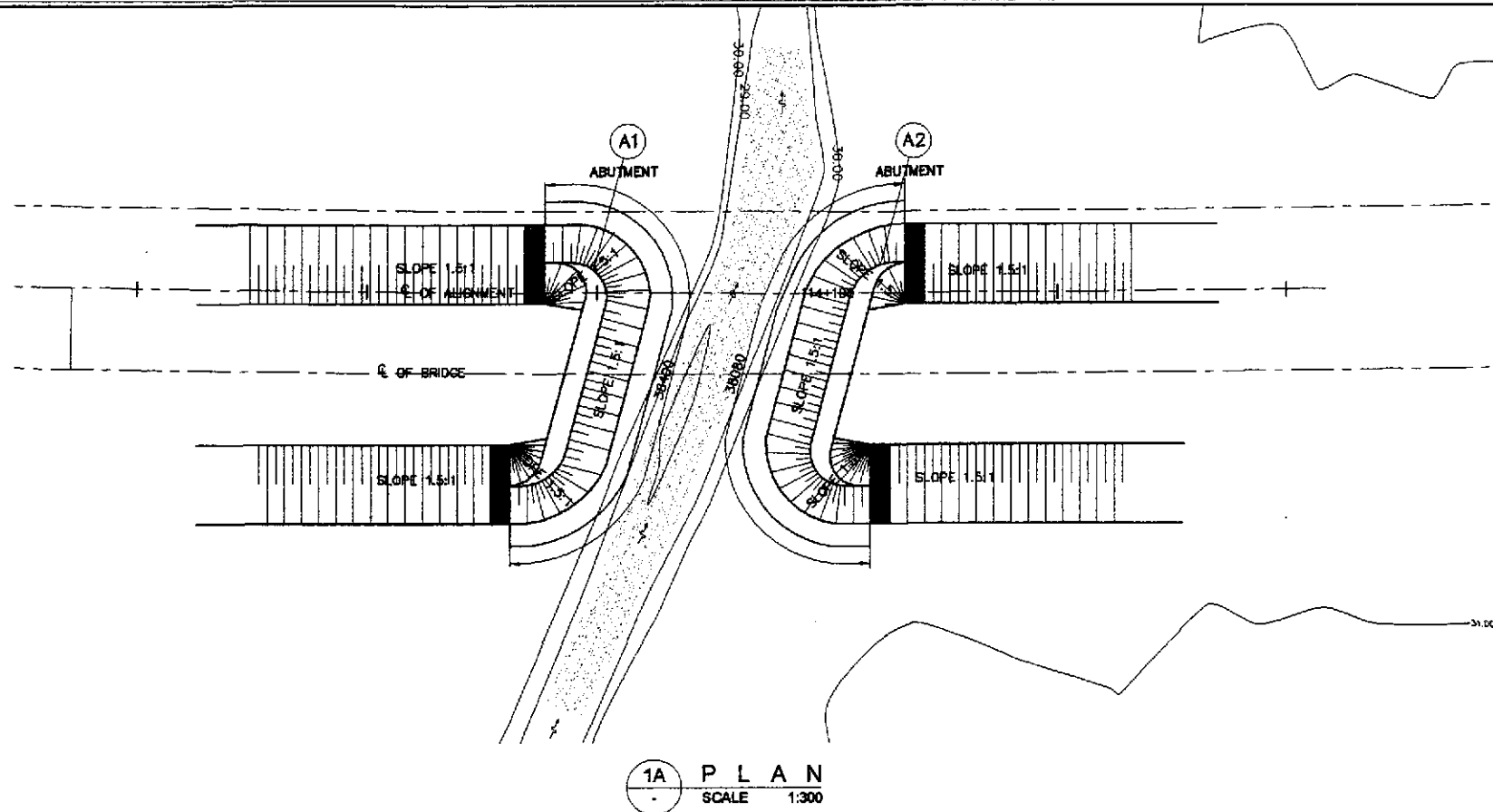
SHEET NO.: B5-06

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

Reviewed By: DANILLO C. TRAJANO Project Director
ADRIANO M. DOROS Chief, Bridges Division
Recommended By: GILBERTO S. REYES Director IV (OC)
Manuel M. Bononan Undersecretary
Simeon A. Datumanong Secretary

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.
- FOR THE LOOSE BOULDER APRON, BOULDERS 250-350mm# SHALL BE HAND-LAID, CLOSE TOGETHER AND SHALL BE FIRMLY BEDDED. ALL VOIDS BETWEEN BOULDERS SHALL BE FILLED WITH GRAVEL AND THE JOINTS FILLED WITH TIGHTLY DRIVEN SPALLS.
- CURTAIN WALLS SHALL BE USED AT BOTH ENDS OF THE LOOSE BOULDER APRON BANK PROTECTION WORKS. BOULDERS SHALL BE CAREFULLY HAND-LAID AND EMBEDDED INTO THE CONCRETE SECTION.
- NO CONCRETING UNDER WATER SHALL BE PERMITTED.
- PROVIDE 1.0 m. BERM WHEN HEIGHT (H) IS > 4.0 m.

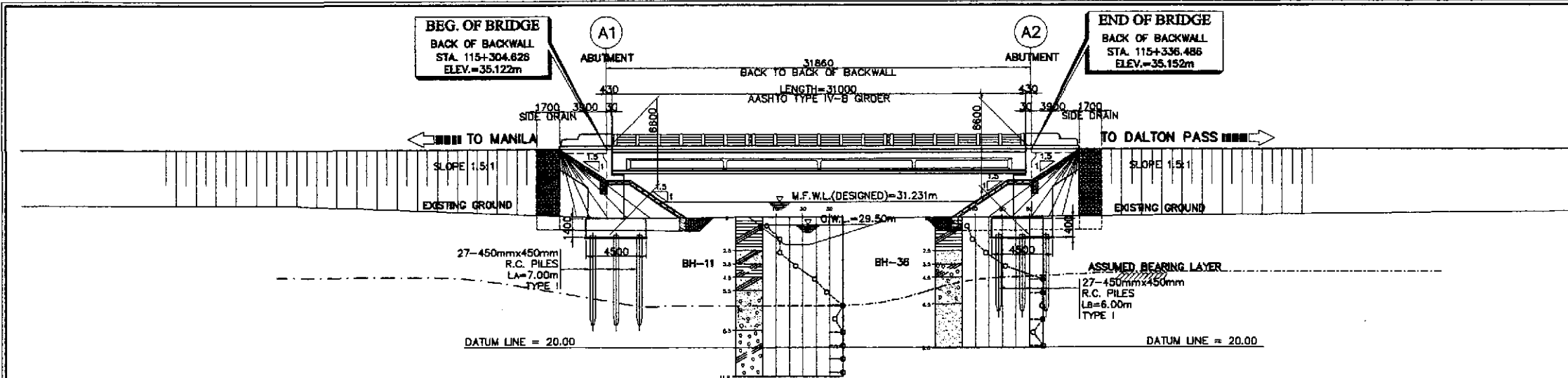


VELOCITY (m/sec)	ROCK SIZE (mm)	
	VERY TURBULENT FLOW	SMOOTH FLOW
1.00	40	-
1.50	135	-
2.00	170	-
2.50	255	137
3.00	370	197
3.50	515	270
4.00	680	350
4.50	825	425
5.00	>900	590

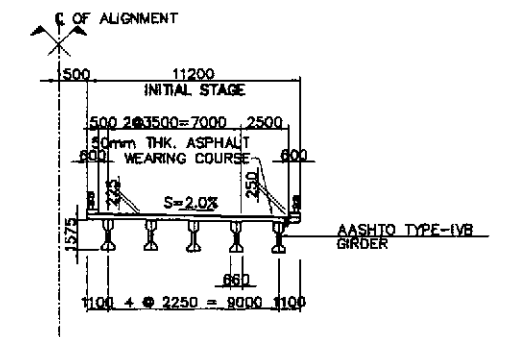
LOCATION	SIZES	QUANTITY	
		ABUT. A1	ABUT. A2
BOULDER APRON	250mm-350mm IN DIA.	54.50 cu. m.	54.50 cu. m.
SIDE DRAIN	200mm-300mm IN DIA.	10.04 cu. m.	10.04 cu. m.
GROUTED RIPRAP	250mm-300mm IN DIA.	78.58 cu. m.	78.58 cu. m.

1 ABUTMENT SLOPE PROTECTION
SCALE AS SHOWN

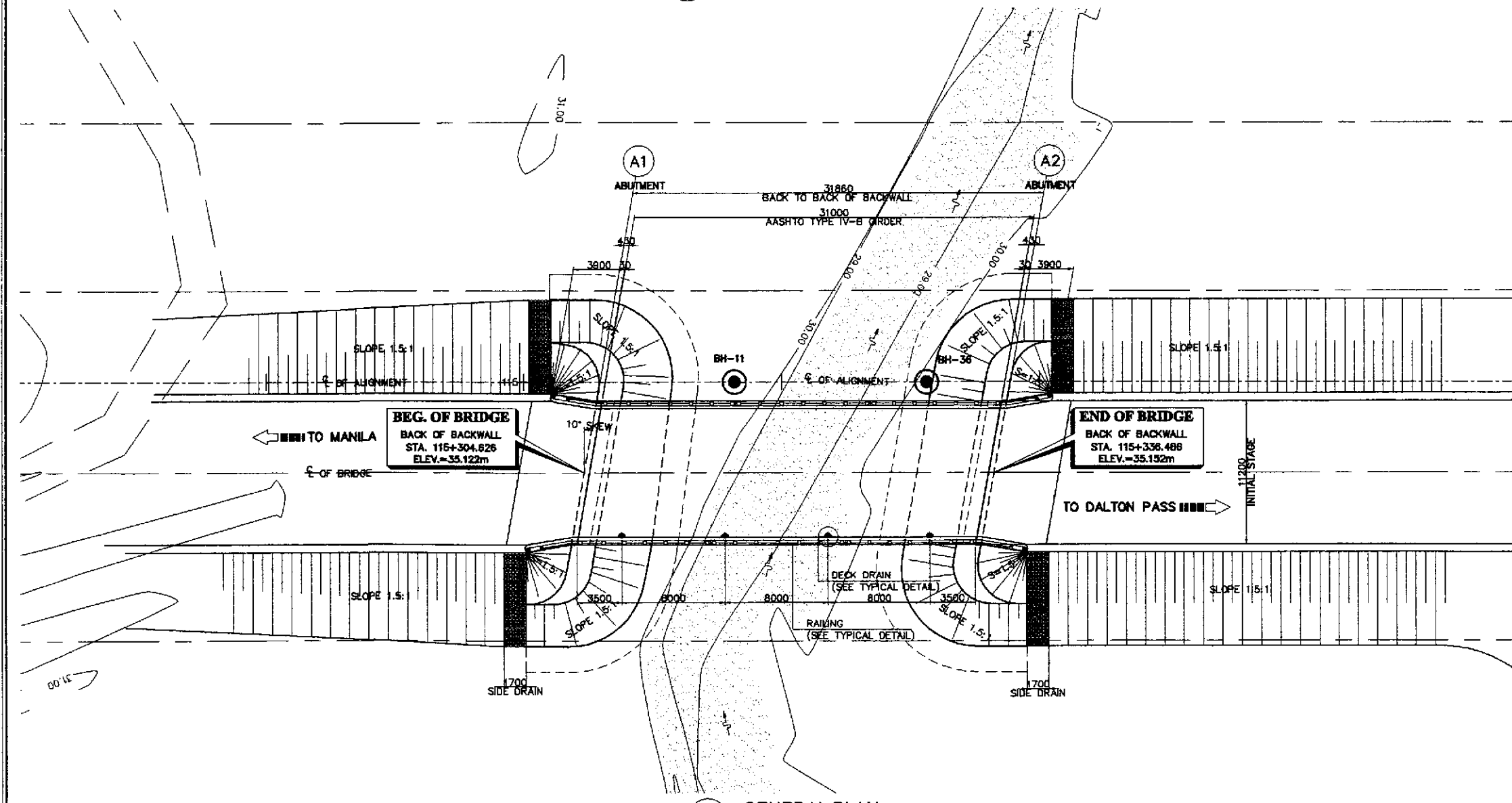
	DATE: 10/10/18 SIGNATURE: P. GONZALES DESIGNED: P. GONZALES CHECKED: P. GONZALES SUBMITTED: P. GONZALES	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY	PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE: AS SHOWN FULL SIZE A1	SHEET CONTENTS: BRIDGE NO. 5 ABUTMENT PROTECTION AND SIDE DRAIN DETAILS (INITIAL STAGE)	SHEET NO.: B5-09
	Submitted By: DANILLO C. TRAJANO, Project Director Reviewed By: PERFECTO L. ZAFLAN 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					



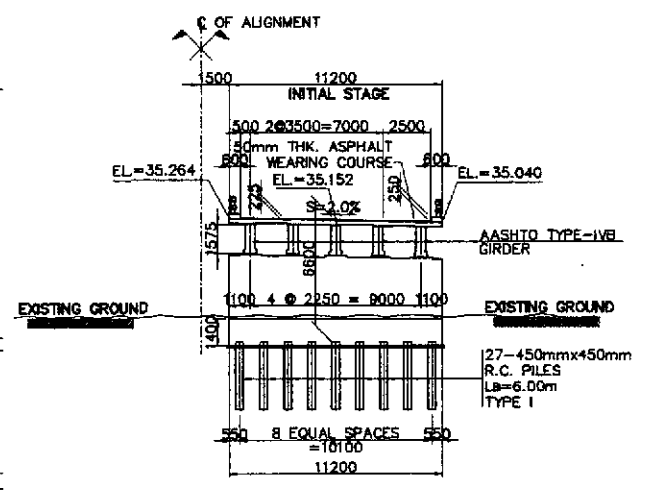
1 GENERAL ELEVATION
SCALE 1:200



3 SECTION @ MIDSPAN
SCALE 1:200



2 GENERAL PLAN
SCALE 1:200



4 SECTION @ ABUTMENT A2
SCALE 1:200

A CABANATUAN BYPASS BRIDGE NO.6 (STA.115+304.626)
SCALE AS SHOWN

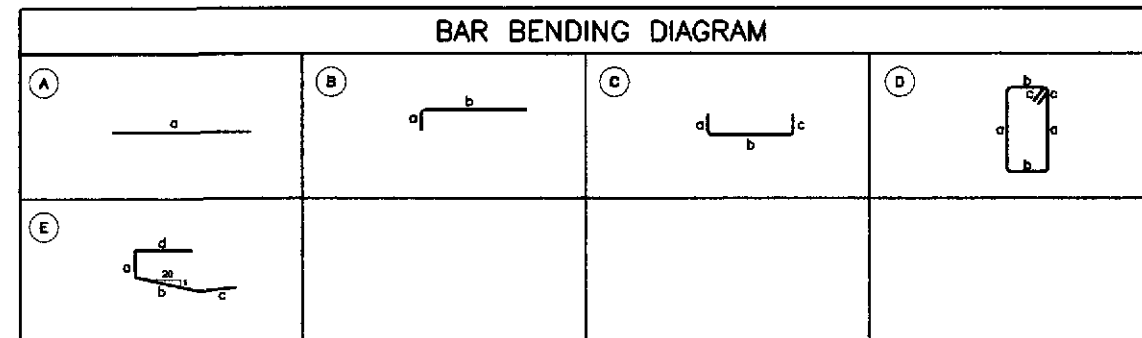
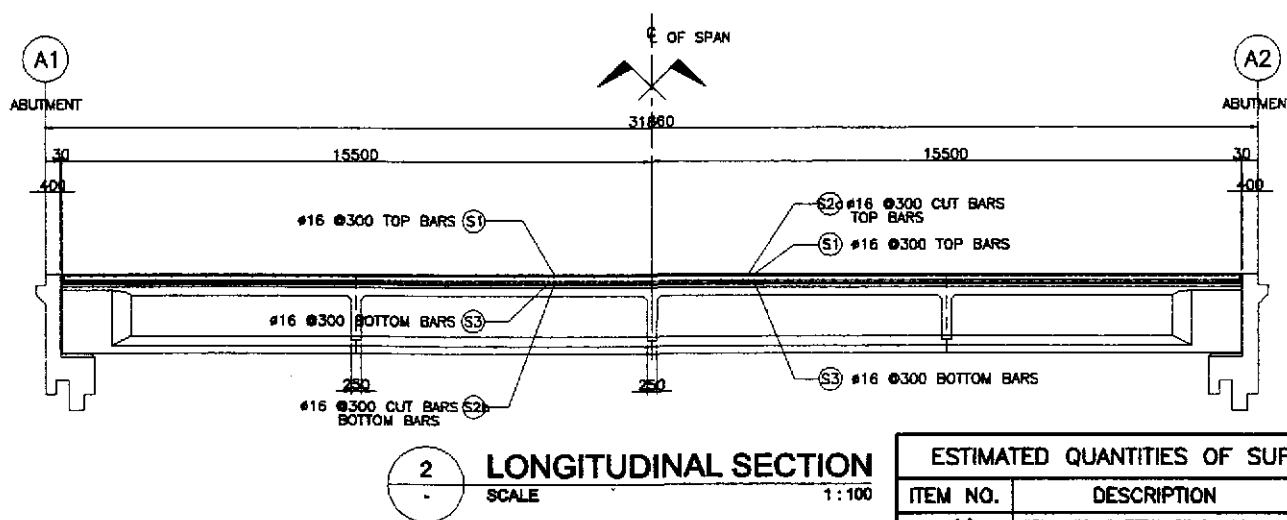
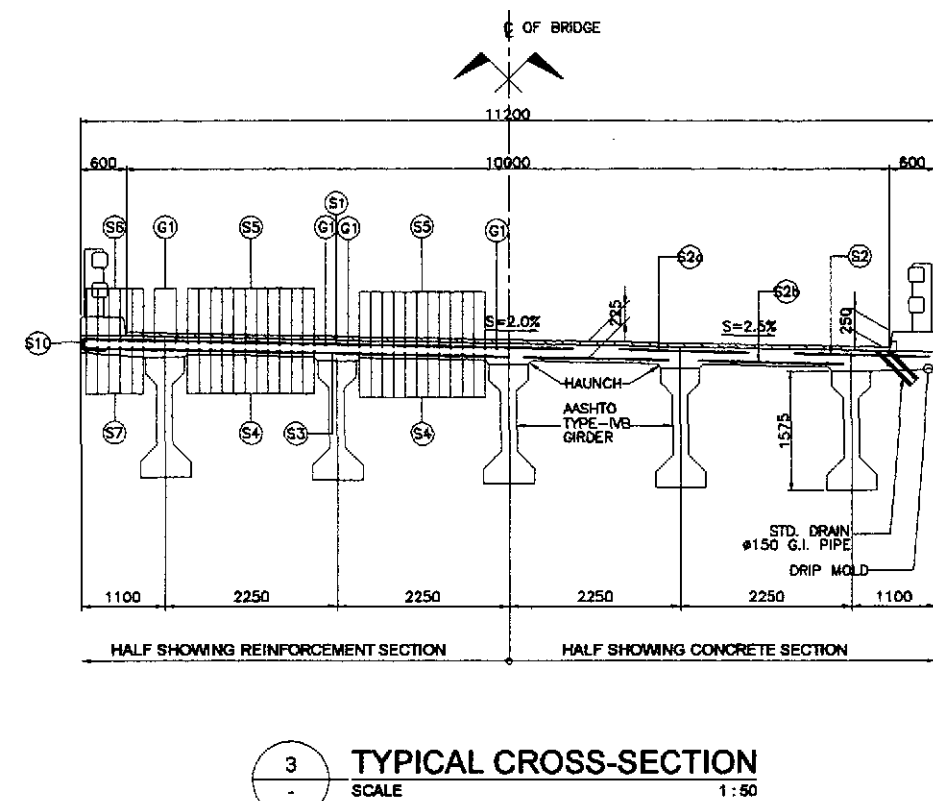
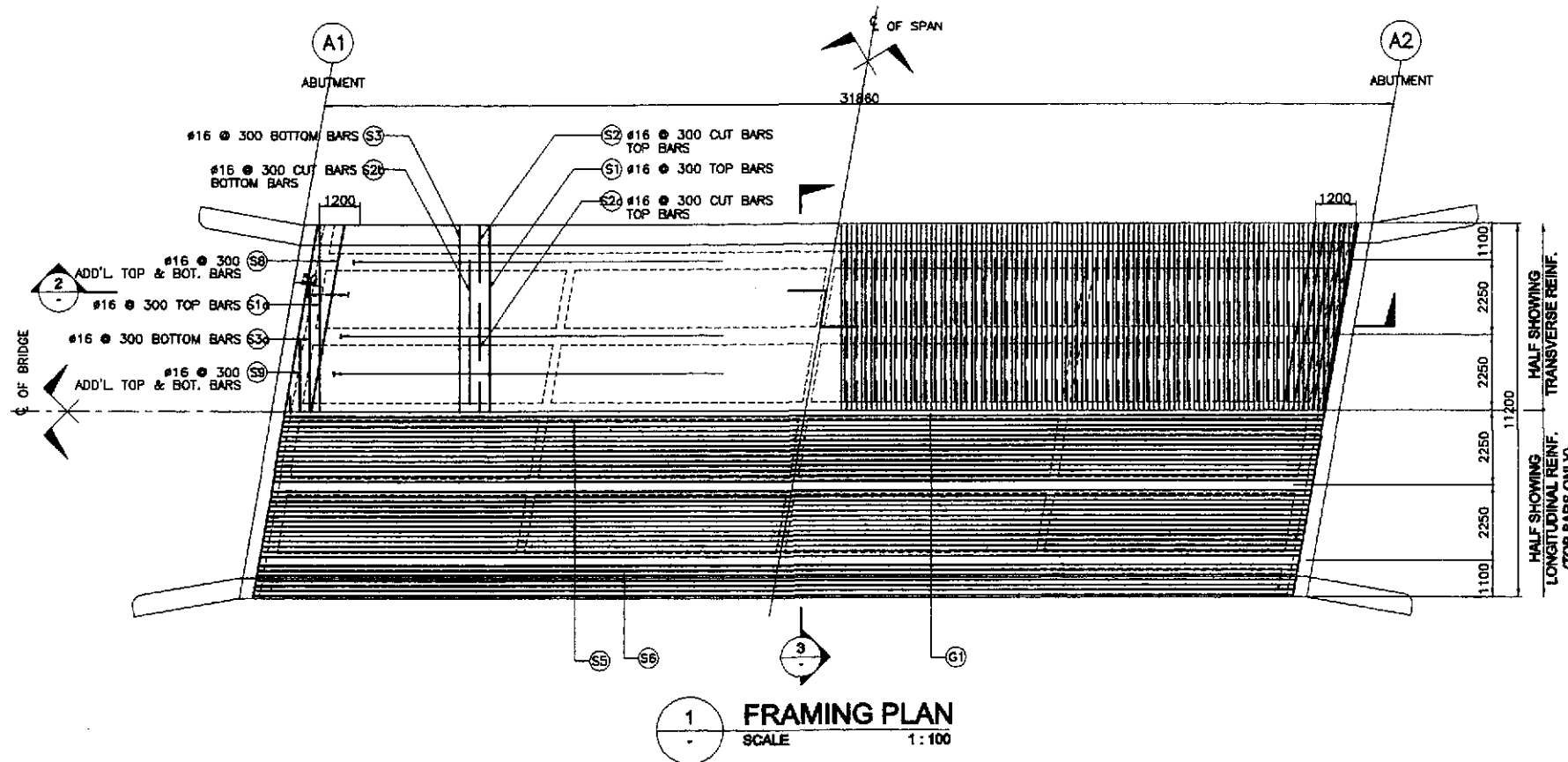
HYDRAULIC DESIGN DATA	
VELOCITY @ 50 YEARS, V_{50}	2.900 m/sec.
DISCHARGE @ 50 YEARS, Q_{50}	69.000 cu./sec.
CATCHMENT AREA, CA	10.425 sq. km

NOTE :
PRIOR TO CONSTRUCTION SOIL INVESTIGATION AT ABUTMENT A1 AND A2 SHALL BE CONDUCTED FOR CONFIRMATION OF ASSUMED BEARING CAPACITY AND FOOTING ELEVATION.

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

PERFECTO L. ZAPLAN JR.
OIC Chief, Hydraulics Division, B00

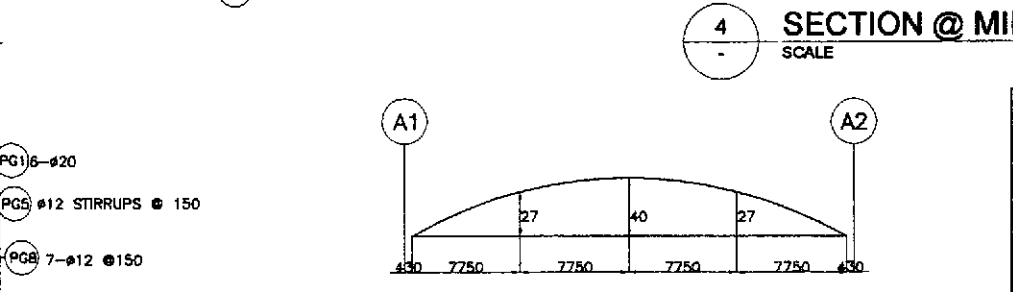
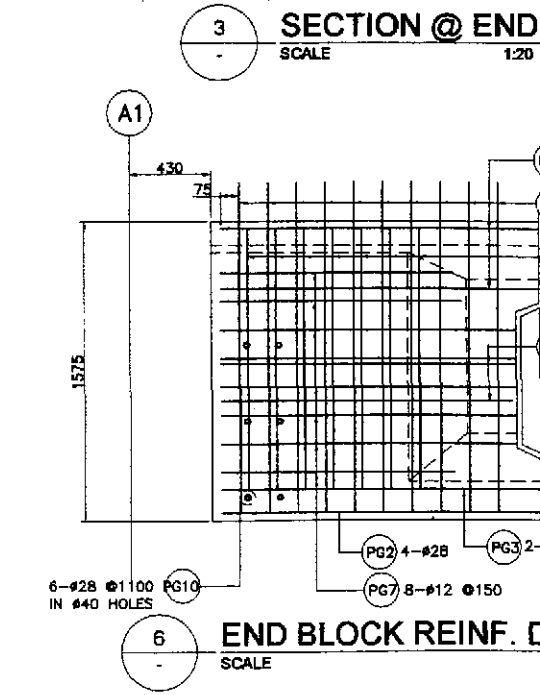
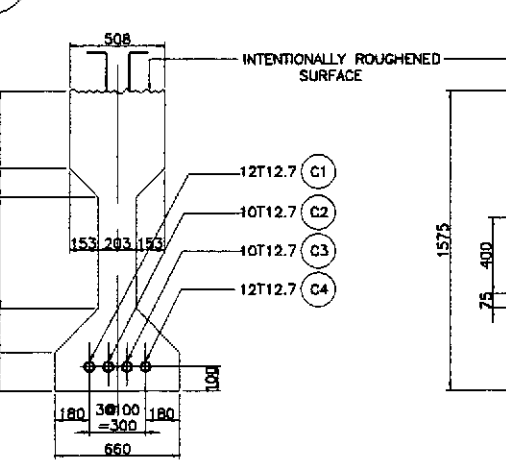
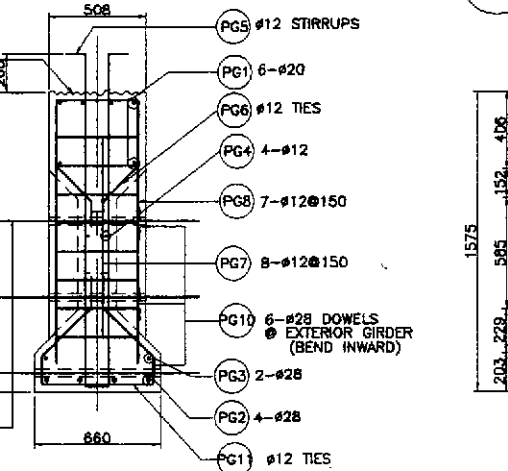
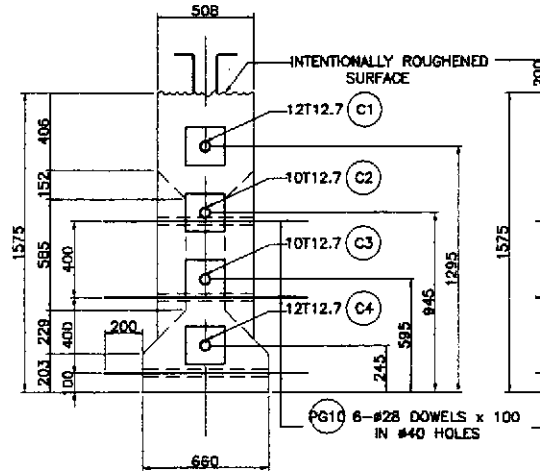
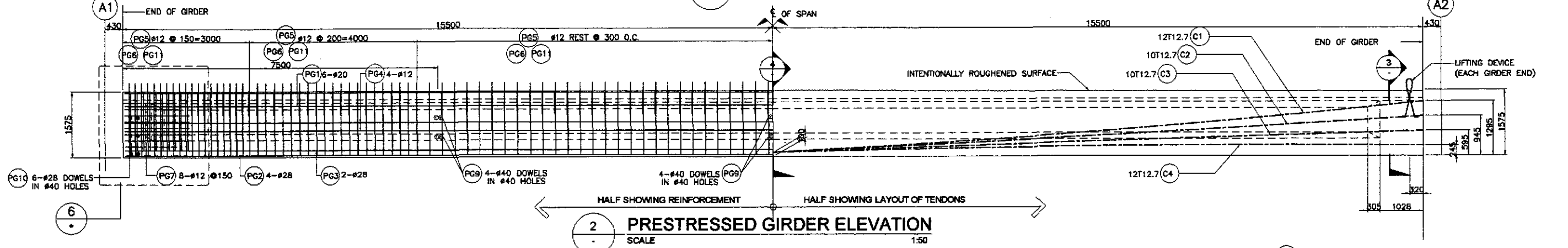
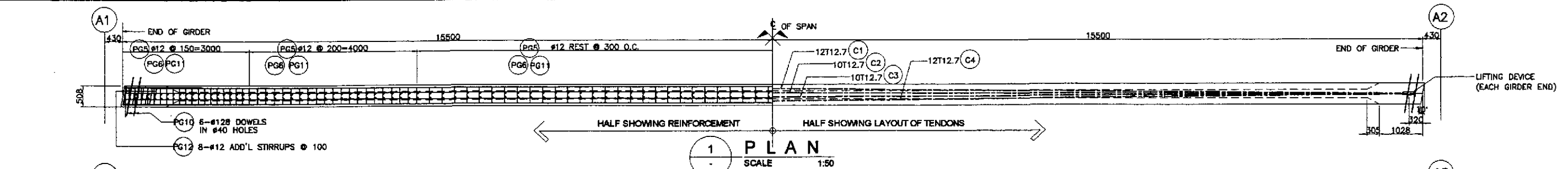
	DESIGNED	10/10/02			REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE :	1 : 200	SHEET CONTENTS : BRIDGE NO. 6 GENERAL PLAN, ELEVATION AND SECTIONS (INITIAL STAGE)	SHEET NO. :	B6-01			
	CHECKED	10/16/02			Submitted By:	DANILO C. TRAJANO Project Director	Reviewed By:		ADRIANO M. DORCY Chief, Bridge Division	Recommended By:		GILBERTO S. REYES Director IV (OC)	Approved By:	MANUEL M. BONDAN Undersecretary	Approved By:	SIMEON A. DATUMANONG Secretary
	SUBMITTED	10/18/02			Team Leader											



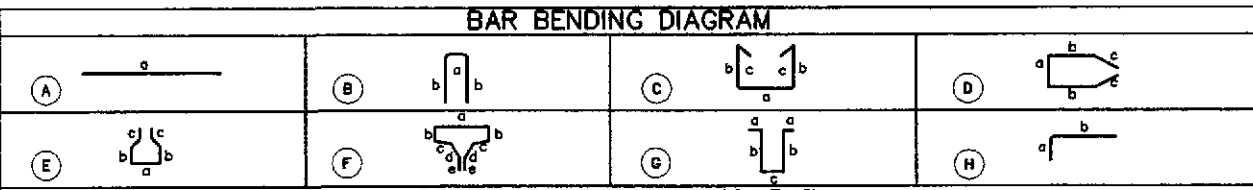
ESTIMATED QUANTITIES OF SUPERSTRUCTURE			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
404(1)a	REINFORCING STEEL GRADE 40	kgs.	23889
	DECK SLAB	13574	
	DIAPHRAGM	468	
	GIRDER	5895	
	SIDEWALK, RAILING, & POST	2482	
	APPROACH SLAB	1370	
404(1)b	REINFORCING STEEL GRADE 60	kgs.	13444
	DECK SLAB	0	
	DIAPHRAGM	1336	
	GIRDER	7280	
	SIDEWALK, RAILING, & POST	590	
	APPROACH SLAB	4258	
405(1)	STRUCTURAL CONCRETE	cu. m.	246.63
	DECK SLAB	82.44	
	DIAPHRAGM	15.15	
	GIRDER	97.16	
	SIDEWALK, RAILING, & POST	16.51	
	APPROACH SLAB	35.37	

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	82.44	G1	16	10	AS SHOWN	(A)	30900	-	-	-	30900	309.00	1.579	488	164.64
		S1	16	98	300	(C)	145	11100	145	-	11380	1116.22	1.579	1763	
		S1a	16	14	300	(C)	145	6150	145	-	6440	90.16	1.579	143	
		S2	16	196	300	(B)	145	1800	-	-	1945	381.22	1.579	602	
		S2a	16	294	300	(A)	1700	-	-	-	1700	489.80	1.579	790	
		S2b	16	392	300	(A)	1950	-	-	-	1950	764.40	1.579	1207	
		S3	16	98	300	(A)	11100	-	-	-	11100	1087.80	1.579	1718	
		S3a	16	14	300	(A)	6150	-	-	-	6150	86.10	1.579	136	
		S4	16	48	150	(A)	30900	-	-	-	30900	1483.20	1.579	2342	
		S5	16	48	150	(A)	30900	-	-	-	30900	1483.20	1.579	2342	
		S6	16	12	AS SHOWN	(A)	30900	-	-	-	30900	370.80	1.579	586	
		S7	16	12	AS SHOWN	(A)	30900	-	-	-	30900	370.20	1.579	586	
		S8	16	20	AS SHOWN	(A)	11275	-	-	-	11275	225.50	1.579	357	
		S9	16	28	AS SHOWN	(A)	6150	-	-	-	6150	172.20	1.579	272	
		S10	12	140	450	(E)	145	900	600	300	1945	272.30	0.888	242	
		TOTAL	82.44												

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED				DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				THE DETAILED DESIGN STUDY ON	AS SHOWN	BRIDGE NO. 6	B6-02
	SUBMITTED				BUREAU OF DESIGN				UPGRADING INTER-URBAN HIGHWAY SYSTEM	FULL SIZE A1	DECK FRAMING PLAN AND SECTIONS (INITIAL STAGE)	
			Submitted By:	Reviewed By:		Recommended By:		Approved By:		CABANATUAN BYPASS - CONTRACT PACKAGE II		



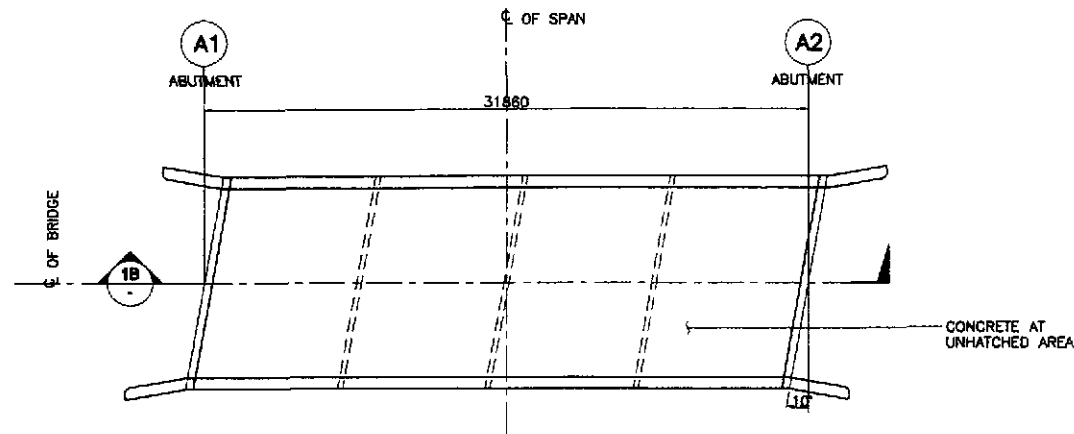
NOTES:
 1.) SEE GENERAL NOTES, -2, FOR GIRDER DESIGN GUIDE.
 2.) JACKING FORCE PER GIRDER, $P_j = 6,058$ KN.
 3.) JACKING WILL BE DONE AT BOTH ENDS.
 4.) FINAL PRESTRESSING FORCE @ MIDSPAN,
 $F_{int} = 4,783$ KN



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)	30920	-	-	-	-	30920	185.52	2.466	458			QUANTITIES ARE FOR ONE (1) GIRDER ONLY
	PG2	28	4	AS SHOWN	(A)	30920	-	-	-	-	30920	123.68	4.833	588			
	PG3	28	2	AS SHOWN	(A)	30920	-	-	-	-	30920	61.84	4.833	299			
	PG4	12	4	AS SHOWN	(A)	30920	-	-	-	-	30920	123.68	0.888	110			
	PG5	12	138	150	(C)	100	1750	103	-	-	3803	524.81	0.888	467			
	PG6	12	138	150	(E)	430	350	150	260	-	1950	289.10	0.888	239			
	PG7	12	16	150	(D)	430	1000	550	-	-	3530	56.48	0.888	51	19.43	136.42	
	PG8	12	14	150	(C)	430	1500	150	-	-	3730	52.22	0.888	47			
	PG9	28	12	AS SHOWN	(A)	603	-	-	-	-	603	7.24	4.833	35			
	PG10	28	12	AS SHOWN	(A)	1060	-	-	-	-	1060	12.72	4.833	62			
	PG11	12	138	150	(E)	580	160	150	360	-	1920	264.96	0.888	236			
	PG12	12	16	100	(B)	430	1500	-	-	-	3430	54.88	0.888	49			

GRADE 40 TOTAL = 1,199 kgs.
 GRADE 60 TOTAL = 1,452 kgs.

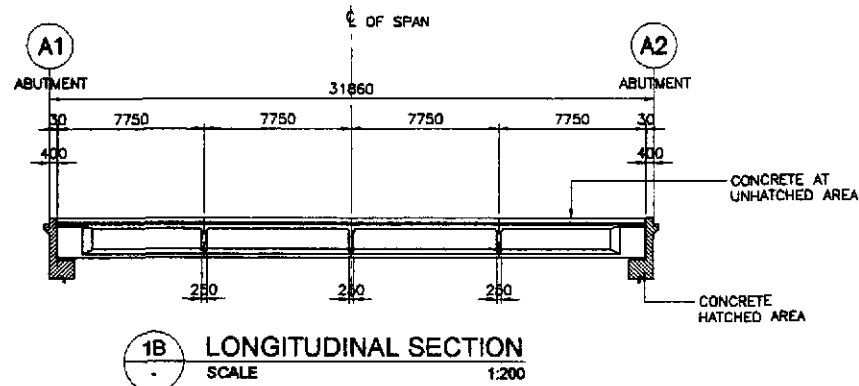
	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	10/16/12	E. N. SALLAN	BUREAU OF DESIGN			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 6 AASHTO TYPE IV-B GIRDER (INITIAL STAGE)	B6-03
	CHECKED	10/16/12	[Signature]	Reviewed By:	Recommended By:	Recommended By:	FULL SIZE A1			
SUBMITTED	10/17/12	[Signature]	DANILO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridge Division	GILBERTO S. REYES Director IV (DC)	CABANATUAN BYPASS - CONTRACT PACKAGE II				



1A PLAN
SCALE 1:200

NOTES:

- CONCRETE AT HATCHED AREAS SHALL BE PLACED AT LEAST TWENTY ONE (21) DAYS AHEAD OF CONCRETE AT UNHATCHED AREAS.
- SEE GIRDER DETAIL FOR SPACING OF #28 DOWELS.

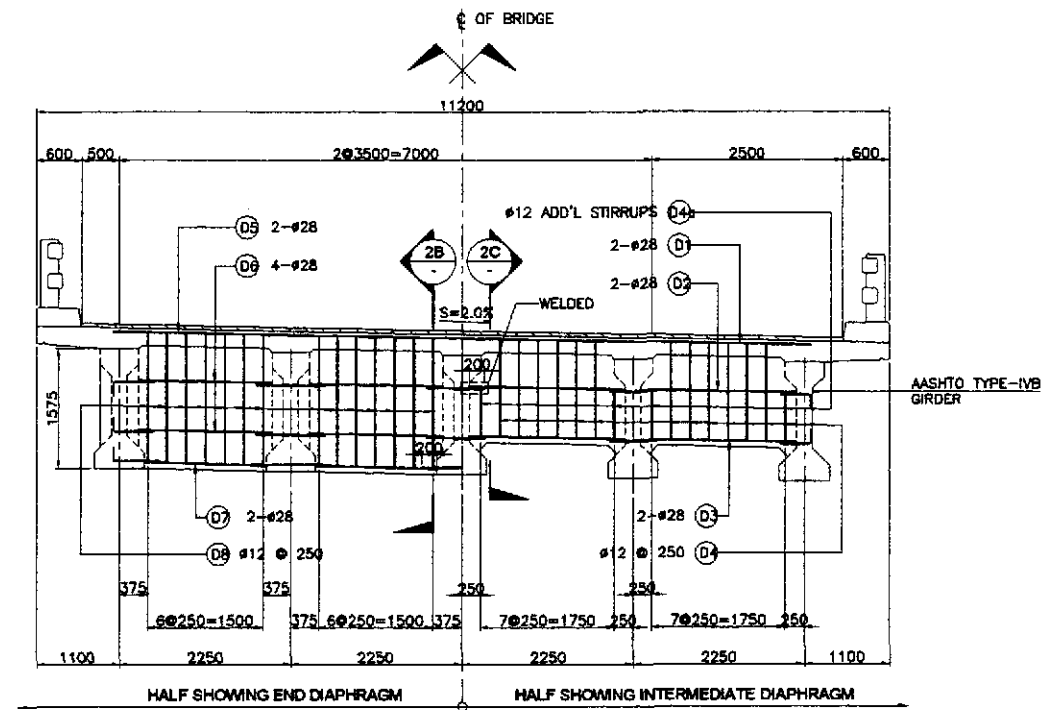


1B LONGITUDINAL SECTION
SCALE 1:200

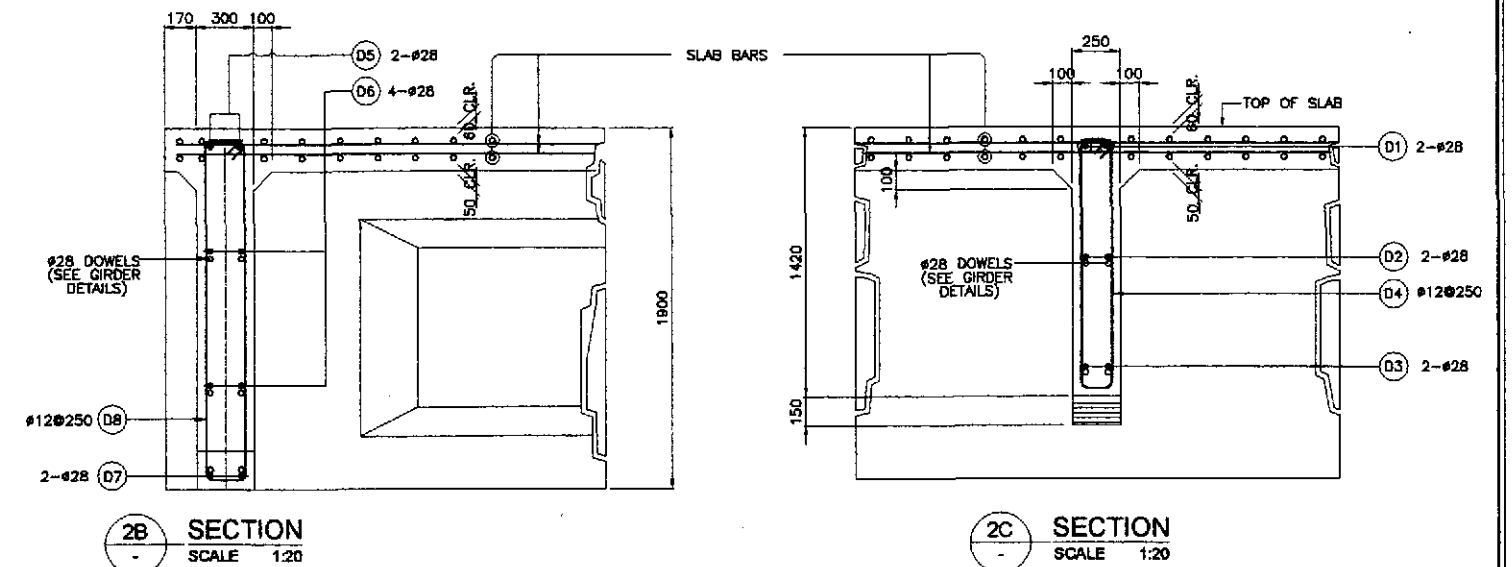
1 CONCRETE POURING SEQUENCE
SCALE 1:200

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)
DIAPHRAGM	INTERMEDIATE DIAPHRAGM	8.51	D1	28	6	AS SHOWN	A	8400				9400	56.40	4.833	273	117.93
			D2	28	24	AS SHOWN	A	2045				2045	49.08	4.833	238	
			D3	28	24	AS SHOWN	A	2045				2045	49.08	4.833	238	
			D4	12	72	250	B	150	1350	150	3300	237.60	0.888	211		
	D4a	12	24	AS SHOWN	B	150	700	150	2000	48.00	0.888	43				
	D5	28	4	AS SHOWN	A	8400				9400	37.60	4.833	182			
	D6	28	32	AS SHOWN	A	1740				1740	55.68	4.833	270			
	D7	28	16	AS SHOWN	A	1740				1740	27.84	4.833	135			
END DIAPHRAGM	7.00	D8	12	56	250	B	200	1800	150	4300	240.80	0.888	214	114.38		
		D8a	12	24	AS SHOWN	B	200	1800	150	2000	48.00	0.888	43			
TOTAL		15.51														

GRADE 60 TOTAL = 1,336 kgs.
GRADE 40 TOTAL = 488 kgs.



2A ELEVATION
SCALE 1:50

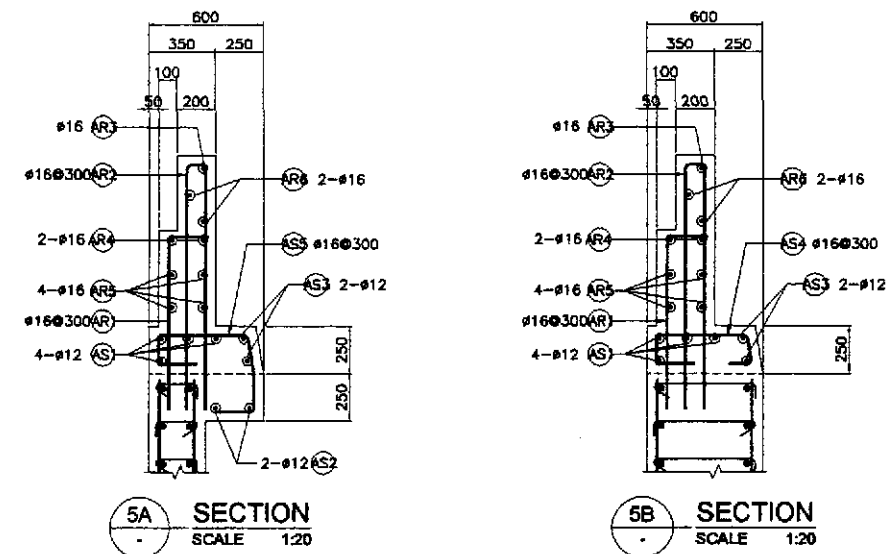
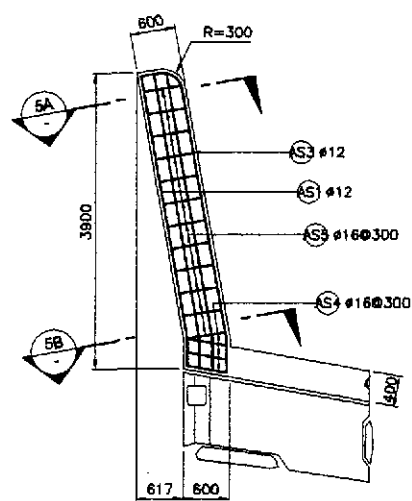
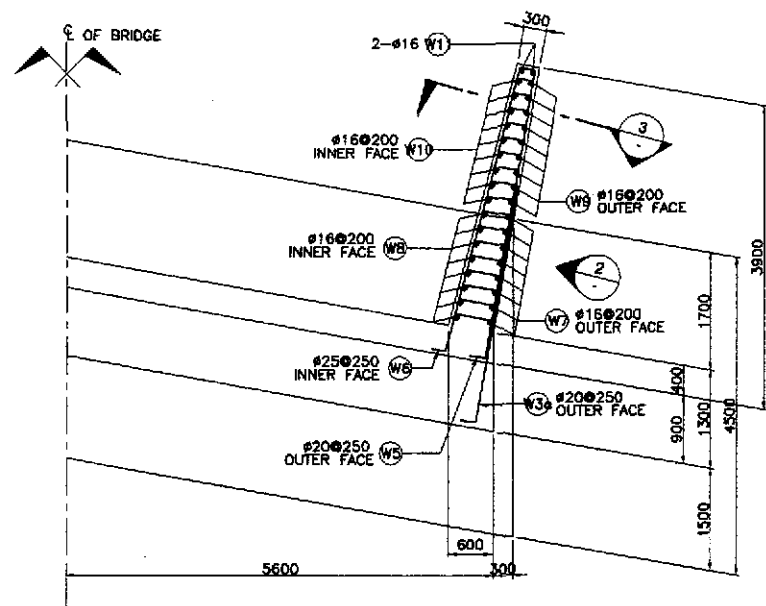


2B SECTION
SCALE 1:20

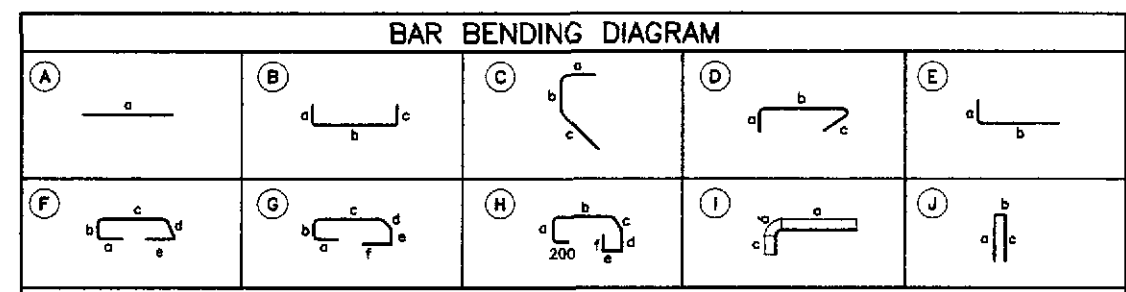
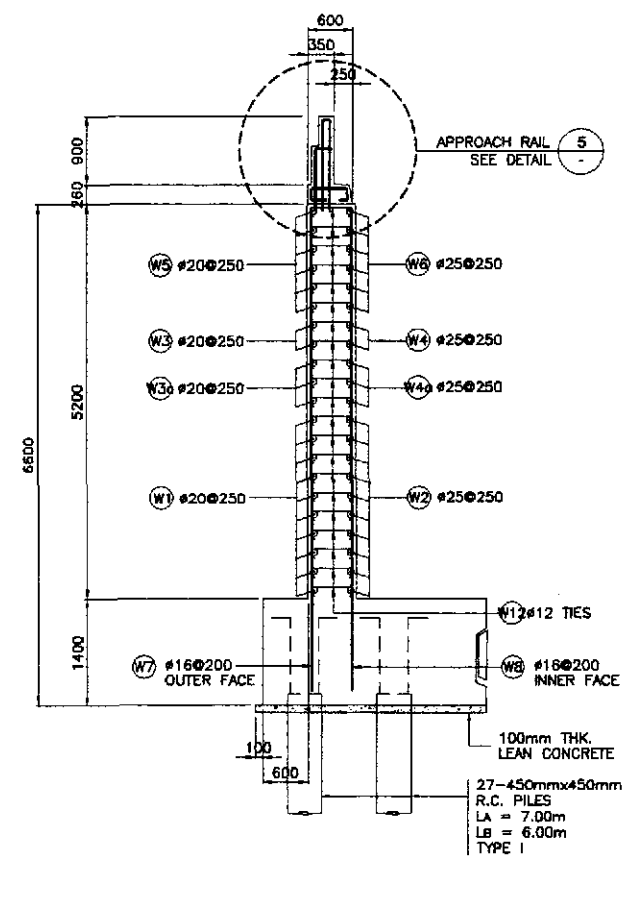
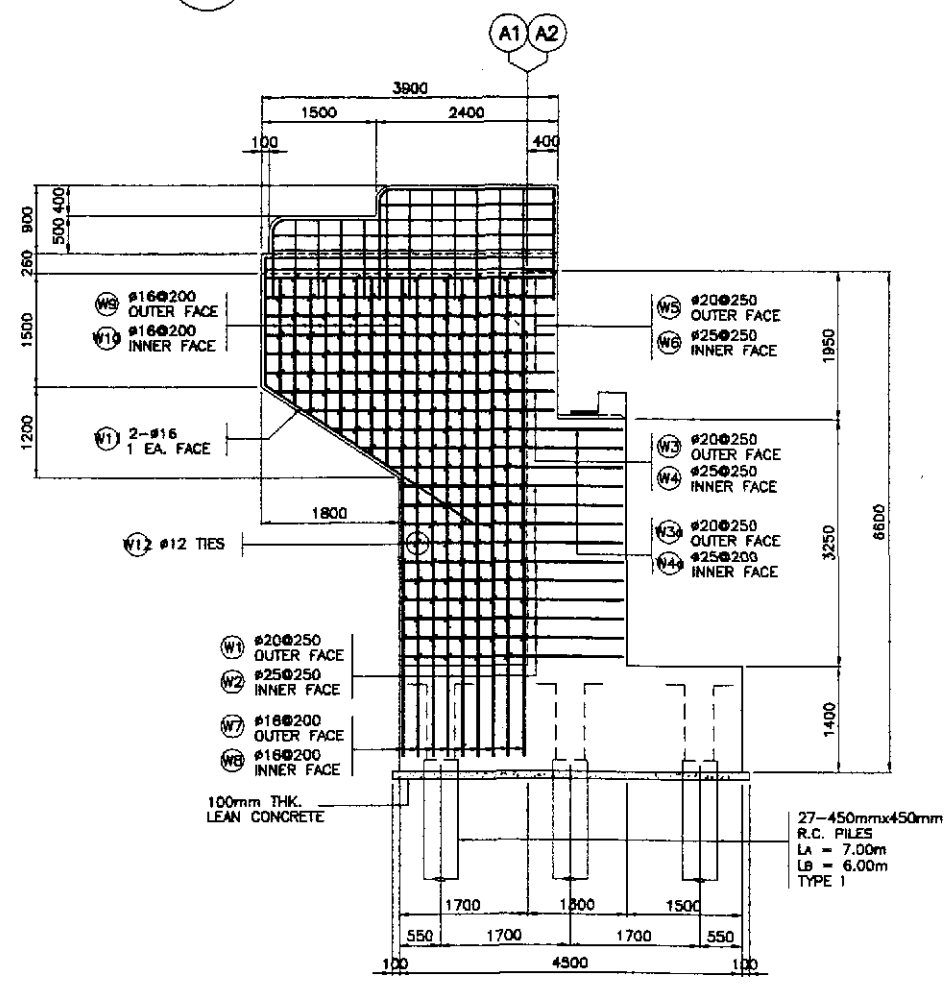
2C SECTION
SCALE 1:20

2 DETAIL OF END & INTERMEDIATE DIAPHRAGM
SCALE AS SHOWN

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/16/02	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. 6 CONCRETE POURING SEQUENCE AND DIAPHRAGM DETAILS (INITIAL STAGE)	B6-04
	SUBMITTED	10/18/02	TEAM LEADER		OFFICE OF THE SECRETARY				CABANATUAN BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		
Submitted By:		Reviewed By:		Recommended By:		Approved By:						
DANILO C. TRAJANO Project Director		ADRIANO M. DOROY Chief, Bridges Division		GILBERTO S. REYES Director IV (OC)		MANUEL M. BONDIAN Undersecretary		SIMEON A. DATUMANONG Secretary				

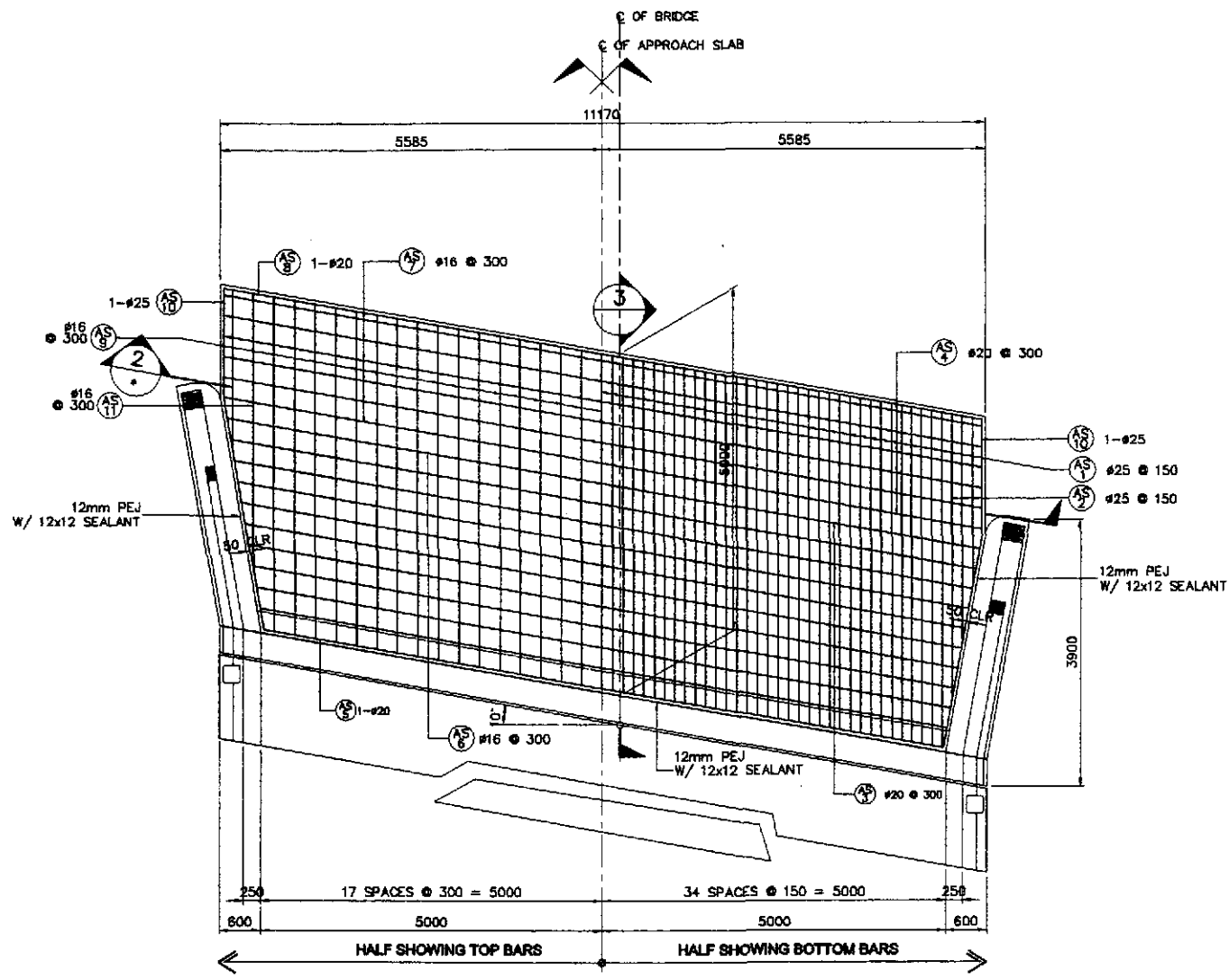


5 APPROACH RAIL DETAILS
SCALE 1:20

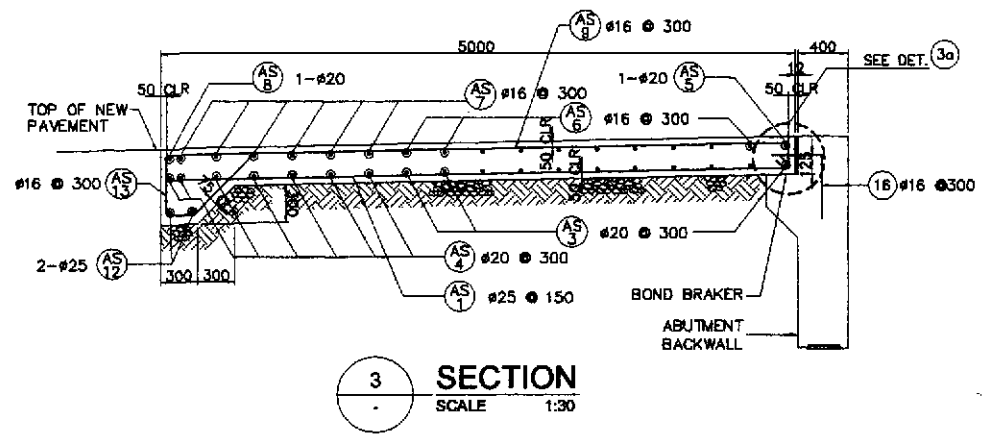


LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)		
							a	b	c	d	e						f	
WINGWALL	11.36	W1	20	20	250	(B)	400	2900	150	-	-	-	3450	69.00	2.466	171	152.14	
		W2	25	20	250	(B)	400	2800	150	-	-	-	3450	69.00	3.854	266		
		W3	20	4	250	(B)	400	3500	150	-	-	-	4050	16.20	2.466	40		
		W3a	20	6	250	(B)	400	3450	150	-	-	-	4000	24.00	2.466	60		
		W4	25	4	250	(B)	400	3500	150	-	-	-	4050	16.20	3.854	63		
		W4a	25	6	250	(B)	400	3450	150	-	-	-	4000	24.00	3.854	93		
		W5	20	12	250	(B)	400	3800	150	-	-	-	4350	52.20	2.466	129		
		W5a	25	12	250	(B)	400	3800	150	-	-	-	4350	52.20	3.854	202		
		W7	16	18	200	(E)	250	6350	-	-	-	-	6600	118.80	1.579	188		
		W8	16	18	200	(E)	250	6350	-	-	-	-	6600	118.80	1.579	188		
		W9	16	16	200	(E)	250	2000	-	-	-	-	2250	36.00	1.579	57		
		W10	16	16	200	(E)	250	2000	-	-	-	-	2250	36.00	2.466	57		
W11	16	4	AS SHOWN	(C)	250	1500	3500	-	-	-	5250	21.00	1.579	34				
W12	12	256	AS SHOWN	(D)	170	450	170	-	-	-	790	202.24	0.888	180				
												GRADE 60 TOTAL = 1,024 kgs.		GRADE 40 TOTAL = 704 kgs.				
APPROACH RAILING AND SIDEWALK	3.28	AS	12	8	AS SHOWN	(A)	3800	-	-	-	-	3800	30.40	0.888	27	94.48		
		AS2	12	4	AS SHOWN	(A)	3800	-	-	-	-	3800	15.20	0.888	14			
		AS3	12	4	AS SHOWN	(A)	3800	-	-	-	-	3800	15.20	0.888	14			
		AS4	16	6	300	(F)	200	170	480	200	200	-	1250	7.50	1.579		12	
		AS5	16	24	300	(G)	200	170	480	200	170	200	1420	34.08	1.579		54	
		AR1	16	8	300	(E)	200	900	-	-	-	-	1100	8.80	1.579		14	
		AR2	16	16	300	(J)	1300	120	1300	-	-	-	2720	43.52	1.579		69	
		AR3	16	2	AS SHOWN	(I)	2300	236	1300	-	-	-	3836	7.67	1.579		13	
		AR4	16	4	AS SHOWN	(I)	3700	236	900	-	-	-	4836	19.34	1.579		31	
AR5	16	8	AS SHOWN	(A)	3700	-	-	-	-	-	3700	29.60	1.579	47				
AR6	16	4	AS SHOWN	(A)	2300	-	-	-	-	-	2300	9.20	1.579	15				
												GRADE 40 TOTAL = 310 kgs.						
TOTAL	14.64													GRADE 60 TOTAL = 1,024 kgs.		GRADE 40 TOTAL = 1,014 kgs.		

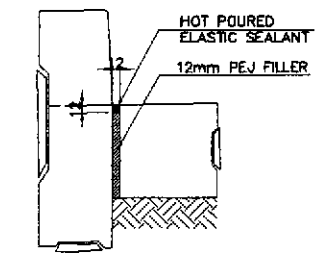
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : BRIDGE NO. 6 ABUTMENT A1 & A2 WINGWALL REINFORCEMENT DETAILS (INITIAL STAGE)	SHEET NO. : B6-06
	CHECKED				DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS						
SUBMITTED				Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: ADRIANO M. DOROS Chief, Bridges Division	Recommended By: GILBERTO S. REYES Director IV (IC)	Recommended By: MANUEL M. BONGAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary			



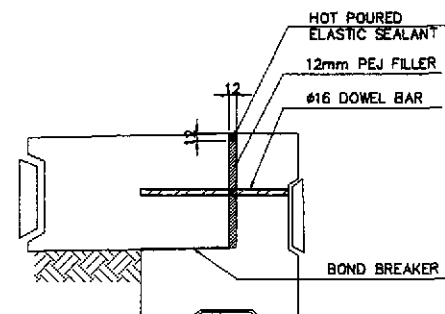
1 PLAN
SCALE 1:50



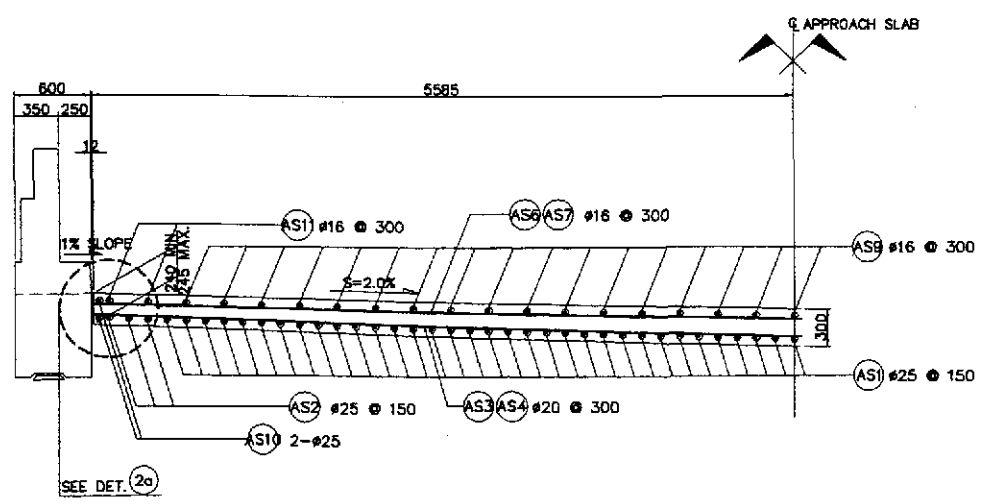
3 SECTION
SCALE 1:30



2a DETAIL
SCALE 1:10



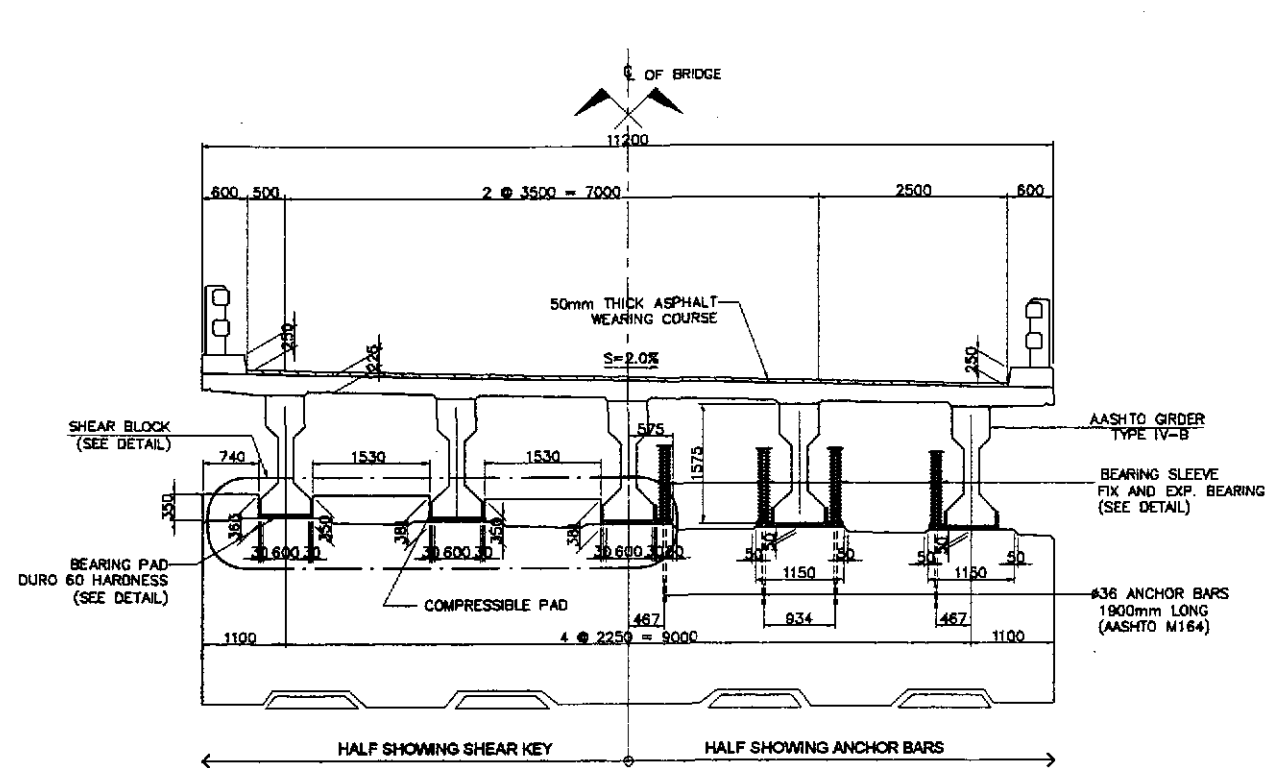
3a DETAIL
SCALE 1:10



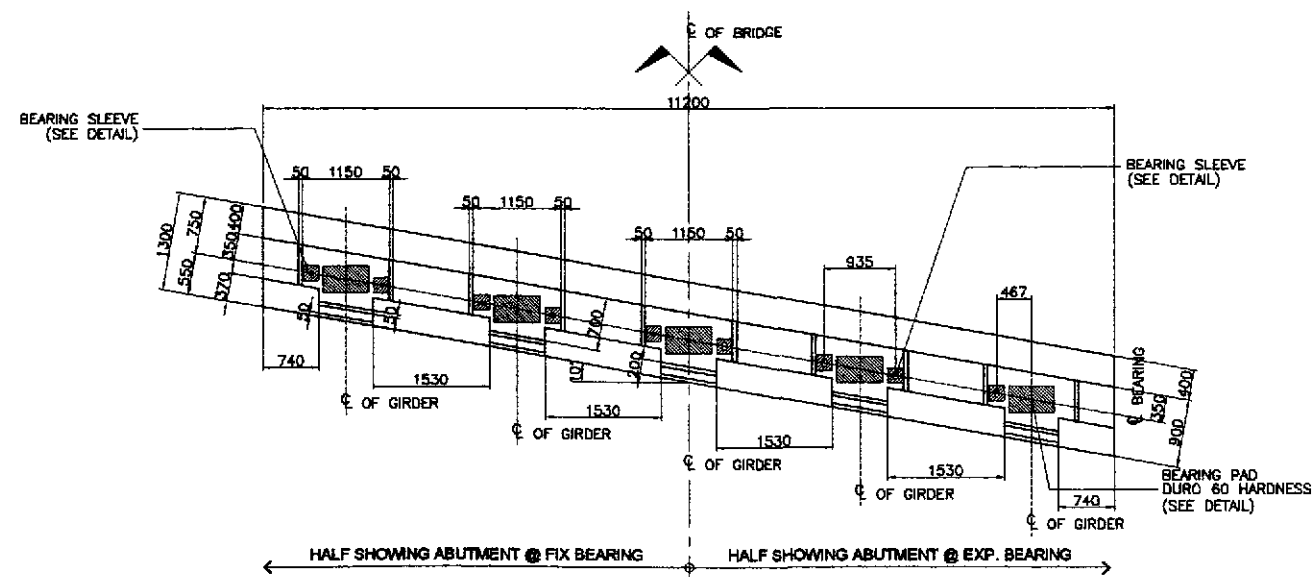
2 SECTION
SCALE 1:30

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	17.68	AS1	25	68	150	B	4900	200	-	-	-	-	5100	346.80	3.854	1337	159.13
		AS2	25	6	150	B	3300	200	-	-	-	-	3500	21.00	3.854	81	
		AS3	20	11	300	A	10750	-	-	-	-	-	10750	115.50	2.466	292	
		AS4	20	7	300	A	11400	-	-	-	-	-	11400	77.70	2.466	197	
		AS5	20	1	AS SHOWN	A	10150	-	-	-	-	-	10150	9.90	2.466	26	
		AS6	16	10	300	A	10800	-	-	-	-	-	10800	105.50	1.579	171	
		AS7	16	6	300	A	11400	-	-	-	-	-	11400	66.60	1.579	109	
		AS8	20	1	AS SHOWN	A	11400	-	-	-	-	-	11400	11.10	2.466	29	
		AS9	16	34	300	B	4900	200	-	-	-	-	5100	173.40	1.579	274	
		AS10	25	4	AS SHOWN	C	1600	3500	-	-	-	-	51000	20.00	3.854	79	
		AS11	16	4	300	B	3150	200	-	-	-	-	3150	13.20	1.579	22	
		AS12	25	2	AS SHOWN	A	11400	-	-	-	-	-	11100	22.20	3.854	88	
		AS13	16	38	300	D	400	500	200	700	-	-	11400	68.40	1.579	109	
		TOTAL	17.68												GRADE 40 TOTAL = 685 kgs.		

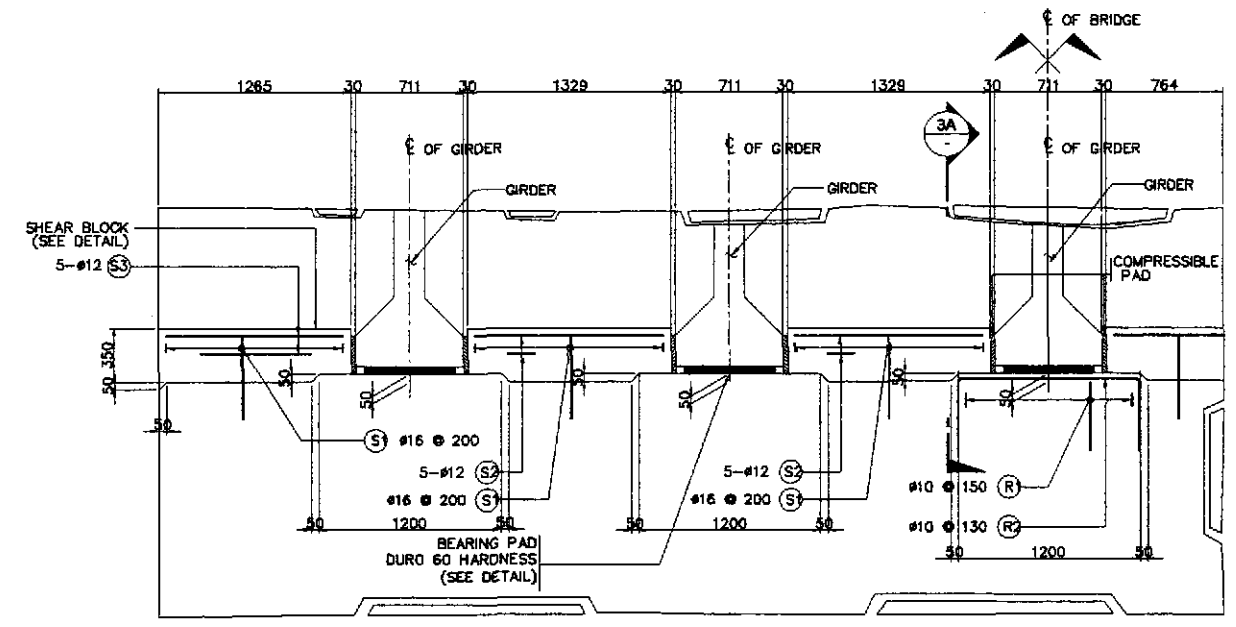
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	CHECKED	10/16/10	E. M. SALLAN		BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 6 APPROACH SLAB PLAN, SECTIONS AND DETAILS (INITIAL STAGE)	B6-07
	SUBMITTED	10/18/10	TEAM LEADER		OFFICE OF THE SECRETARY				CABANATUAN BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		



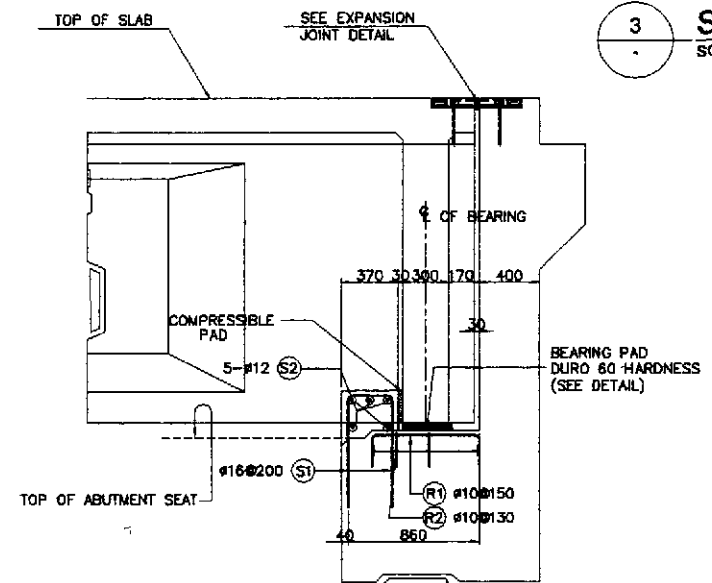
1 SECTION AT ABUTMENT SEAT
SCALE 1:50



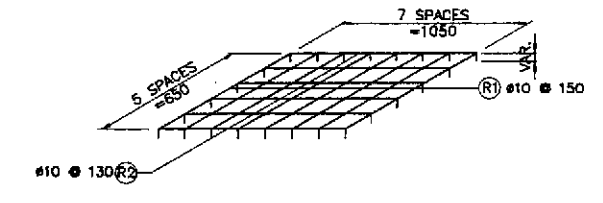
2 PLAN AT ABUTMENT SEAT
SCALE 1:50



3 SHEAR BLOCK DETAIL
SCALE 1:25



3A SECTION
SCALE 1:25

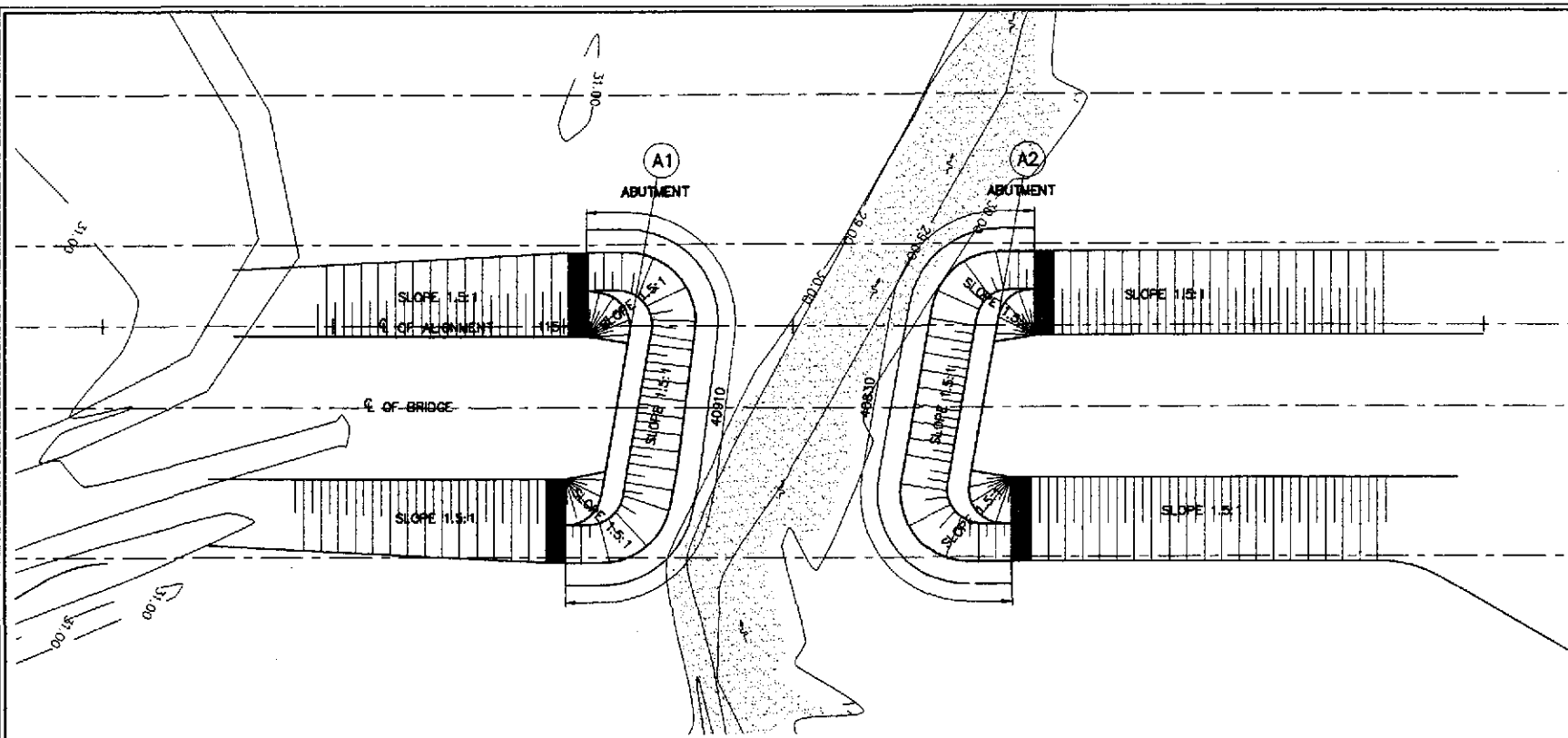


4 RISER REINFORCEMENT
NOT TO SCALE

BAR BENDING DIAGRAM																
A							B									
a							b c									
SCHEDULE OF REINFORCEMENT																
LOCATION	CONCRETE VOLUME (m³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSION (mm) OUT TO OUT					LENGTH EACH BAR (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m³)
SHEAR KEY & RISER	1.42	S1	16	40	200	(B)	a	b	c	d	e					
		S2	12	20	AS SHOWN	(A)										
		S3	12	10	AS SHOWN	(A)										
		R1	10	40	150	(B)										
		R2	10	30	130	(B)										
TOTAL	1.42													GRADE 40 TOTAL = 203 kgs.		

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

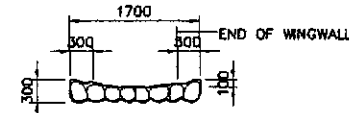
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	CHECKED	10/18/02	E. N. SALLAN		BUREAU OF DESIGN					THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 6 SHEAR KEY AND RISER DETAILS AT ABUTMENT (INITIAL STAGE)	B6-08
	SUBMITTED	10/18/02	M. RIVERA		OFFICE OF THE SECRETARY					CABANATUAN BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		
Submitted By:		Reviewed By:		Recommended By:		Approved By:							
DANILO C. TRAJANO Project Director		ADRIANO M. DOROY Chief, Bridges Division		GILBERTO S. REYES Director IV (GIC)		MANUEL M. BONOAN Undersecretary		SIMEON A. DATUMANONG Secretary					



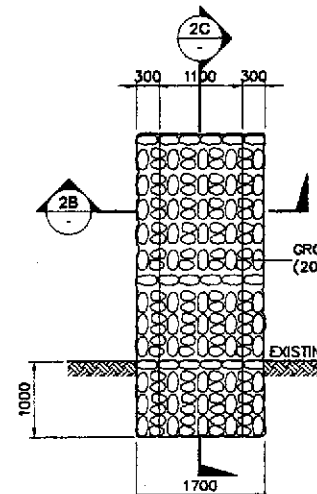
1A PLAN
SCALE 1:300

GENERAL NOTES:

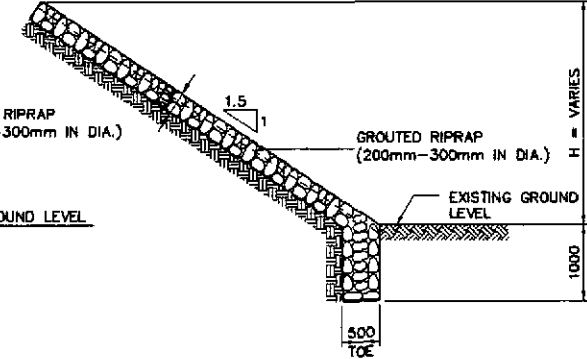
- GROUTED RIPRAP (250mm-300mm DIA.) SHALL BE USED FOR THE FACING AND SHALL BE CAREFULLY HANDLAID WITH THE LONGEST DIMENSIONS PERPENDICULAR TO THE SLOPE AND FIRMLY BEDDED INTO THE SLOPE AND ADJACENT TO THE ADJOINING BOULDERS SPACED BETWEEN THE BOULDERS. THE SPACE BETWEEN THE BOULDERS SHALL BE COMPLETELY 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.
- RUBBLE CONCRETE SHALL BE CLASS "B" (1:2.5:5) MIX CONCRETE WITH BOULDERS EMBEDDED THEREIN. BOULDERS 250-300mm ϕ SHALL BE CAREFULLY HAND-LAID WITHIN THE CONCRETE SECTION. THE BOULDERS SHALL BE THOROUGHLY INCORPORATED INTO THE CONCRETE MASS WITH A COVER OF 30mm AND NOT LESS THAN 30mm APART. THE RUBBLE CONCRETE SHALL BE COMPOSED OF 40% CLASS "B" CONCRETE AND 60% BOULDERS.
- FOR THE LOOSE BOULDER APRON, BOULDERS 350-450mm ϕ SHALL BE HAND-LAID, CLOSE TOGETHER AND SHALL BE FIRMLY BEDDED. ALL VOIDS BETWEEN BOULDERS SHALL BE FILLED WITH GRAVEL AND THE JOINTS FILLED WITH TIGHTLY DRIVEN SPALLS.
- CURTAIN WALLS SHALL BE USED AT BOTH ENDS OF THE LOOSE BOULDER APRON BANK PROTECTION WORKS. BOULDERS SHALL BE CAREFULLY HAND-LAID AND EMBEDDED INTO THE CONCRETE SECTION.
- NO CONCRETING UNDER WATER SHALL BE PERMITTED.
- PROVIDE 1.0 m. BERM WHEN HEIGHT (H) IS > 4.0 m.



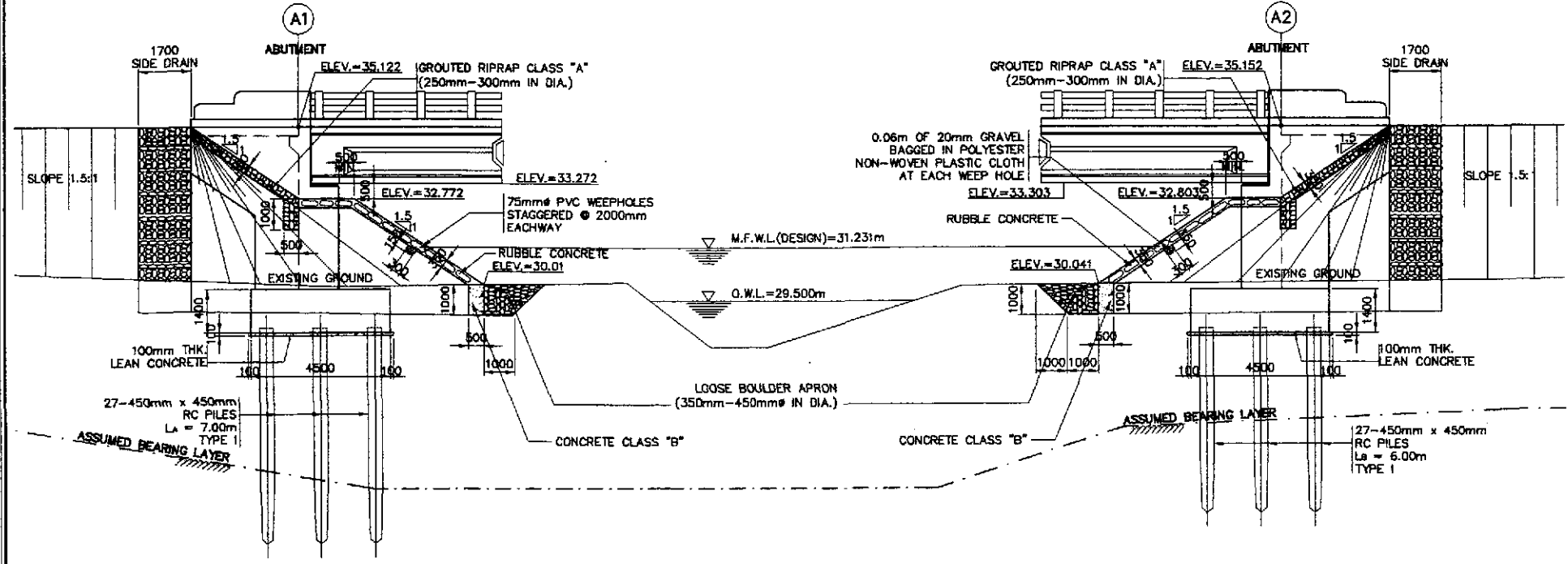
2B SECTION
SCALE 1:50



2A ELEVATION
SCALE 1:50



2C SECTION
SCALE 1:50



1B ELEVATION
SCALE 1:100

1 ABUTMENT SLOPE PROTECTION
SCALE AS SHOWN

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	19.03 cu. m.	18.87 cu. m.
BOULDER APRON	350mm-450mm IN DIA.	57.09 cu. m.	56.62 cu. m.
RUBBLE CONCRETE	250mm-300mm IN DIA.	58.44 cu. m.	57.46 cu. m.
SIDE DRAIN	200mm-300mm IN DIA.	10.52 cu. m.	10.52 cu. m.
GROUTED RIPRAP	250mm-300mm IN DIA.	15.43 cu. m.	15.43 cu. m.

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JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL
YACHIO ENGINEERING CO., LTD.

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

DESIGNED: 10/17/02, R. P. GONZALES
CHECKED: 10/16/02, M. M. BONOAN
SUBMITTED: 10/18/02, M. M. BONOAN

PROJECT DIRECTOR: DANILLO C. TRAJANO
CHIEF, HYDRAULICS DIVISION (CIC): PERFECTO L. ZAPLAN JR.

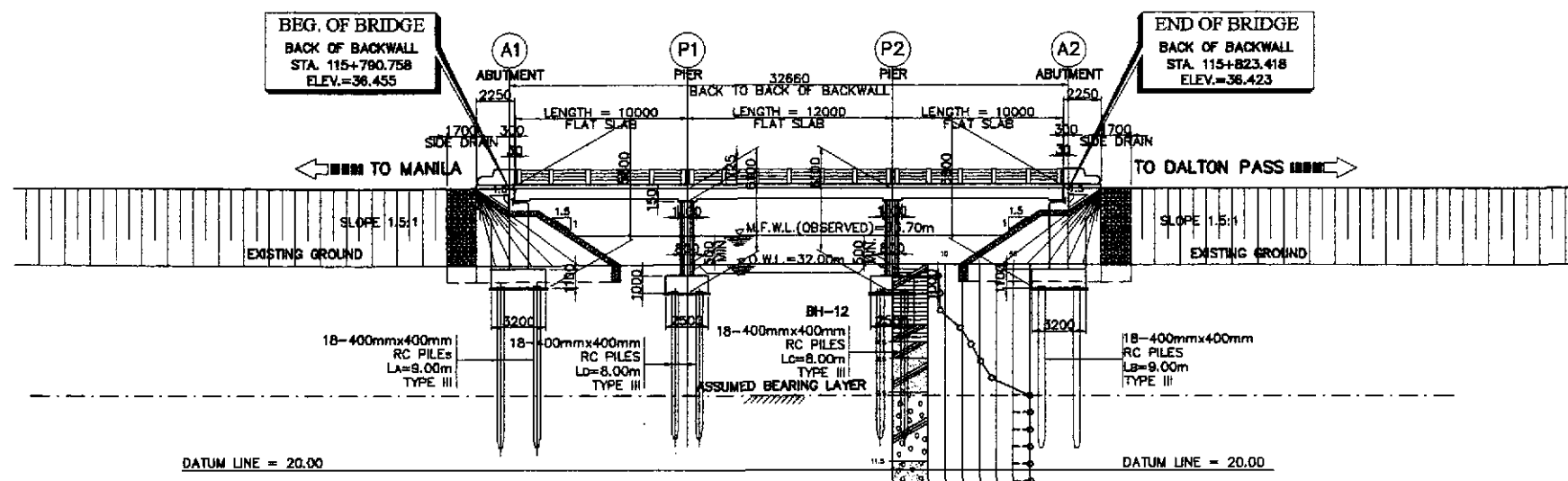
BUREAU OF DESIGN
RECOMMENDED BY: GILBERTO S. REYES, Director IV (CIC)

OFFICE OF THE SECRETARY
RECOMMENDED BY: MANUEL M. BONOAN, Undersecretary

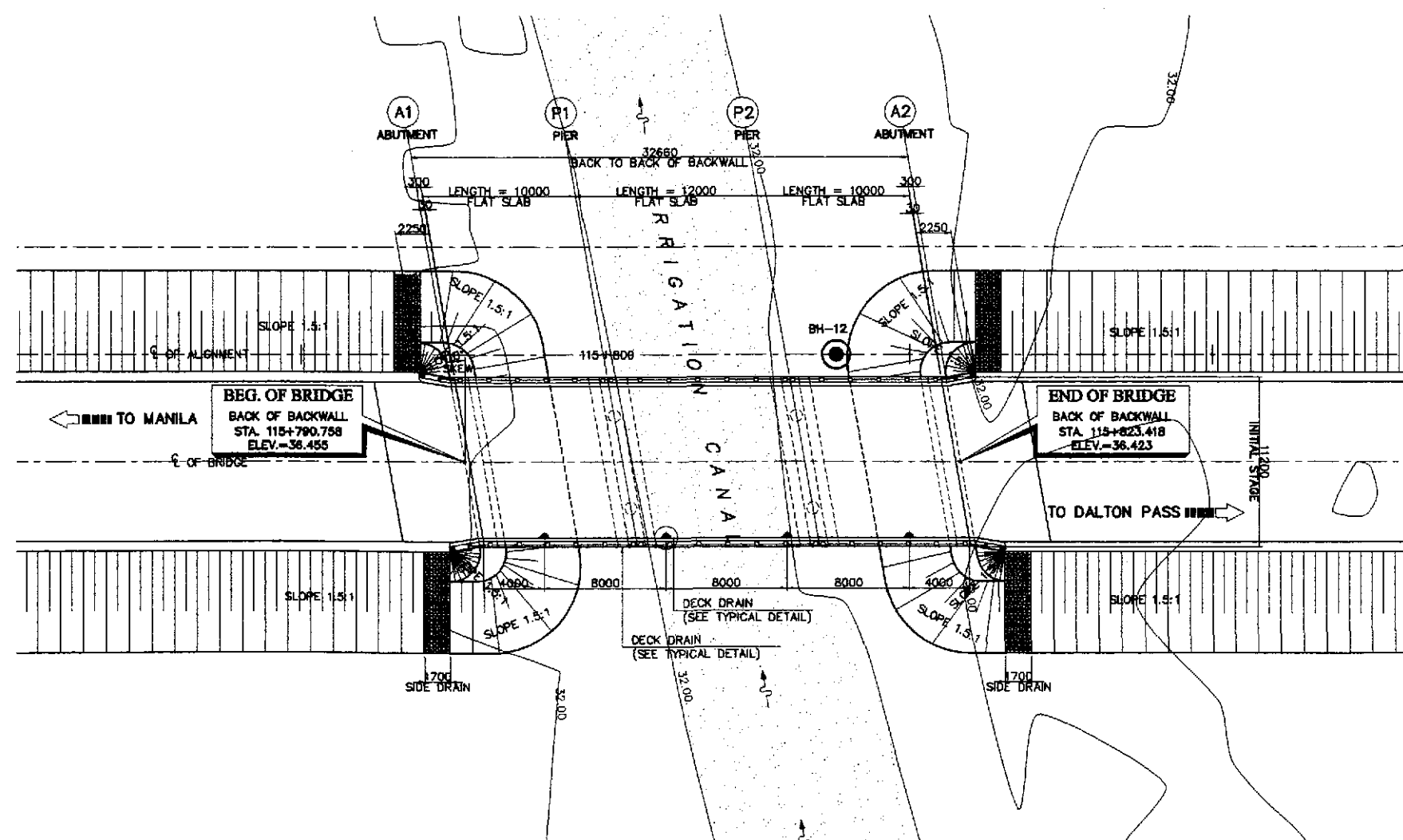
PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)

SCALE: AS SHOWN
SHEET CONTENTS: BRIDGE NO. 6 ABUTMENT PROTECTION AND SIDE DRAIN DETAILS (INITIAL STAGE)

SHEET NO.: B6-09

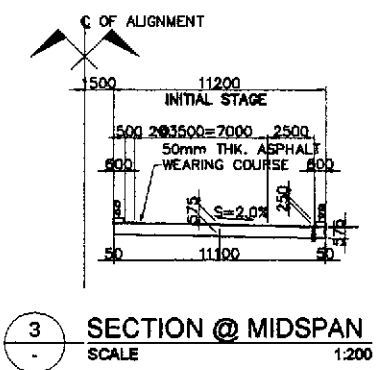


1 GENERAL ELEVATION
SCALE 1:200

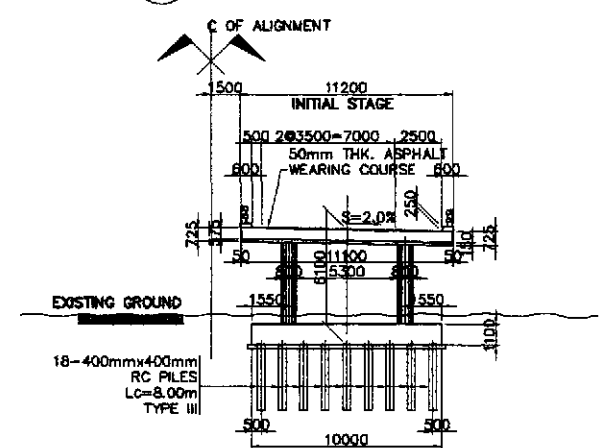


2 GENERAL PLAN
SCALE 1:200

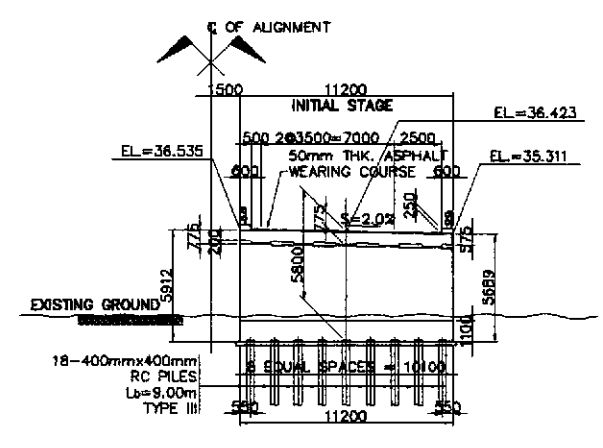
A CABANATUAN BYPASS BRIDGE NO.7 (STA.115+790.758)
SCALE AS SHOWN



3 SECTION @ MIDSPAN
SCALE 1:200



4 SECTION @ PIER P2
SCALE 1:200



5 SECTION @ ABUTMENT A2
SCALE 1:200

HYDRAULIC DESIGN DATA	
IRRIGATION CANAL	-

NOTE :
PRIOR TO CONSTRUCTION SOIL INVESTIGATION AT ABUTMENT A2 AND PIER P1 SHALL BE CONDUCTED FOR CONFIRMATION OF ASSUMED BEARING CAPACITY AND FOOTING ELEVATION.

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

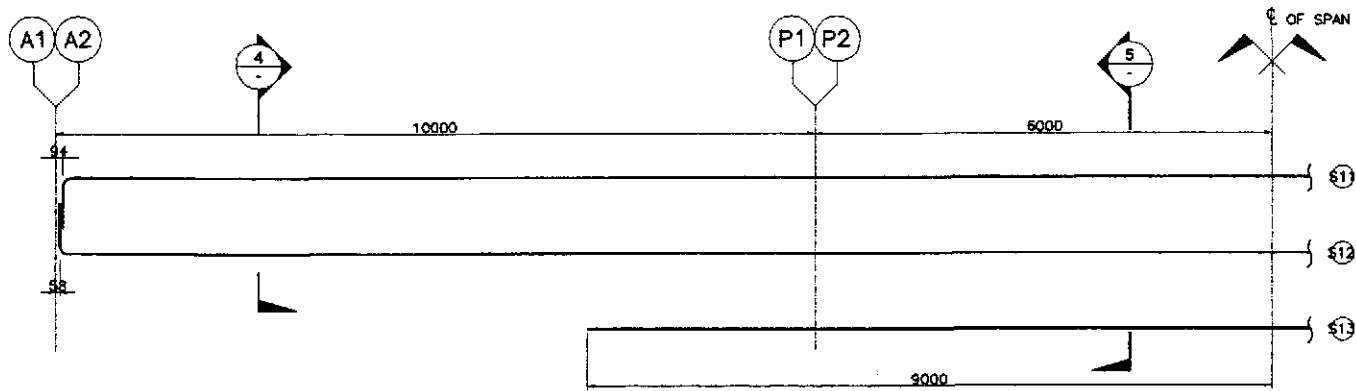
PERFECTO L. ZAPLAN JR.
GIC Chief, Hydraulics Division, BOD

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

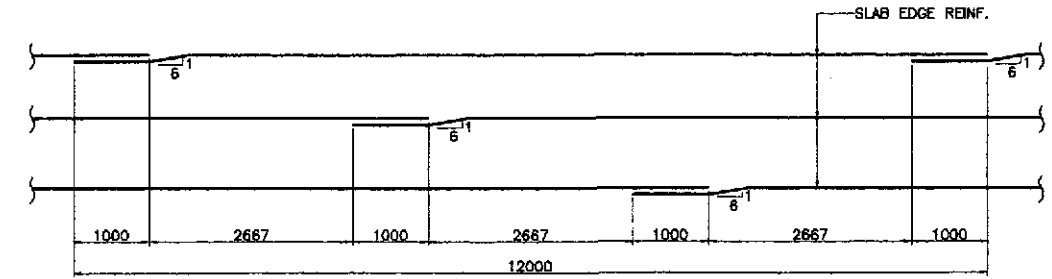
DESIGNED		CHECKED		SUBMITTED		BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
DATE	SIGNATURE	DATE	SIGNATURE	DATE	SIGNATURE	Submitted By:	Reviewed By:	Recommended By:	Approved By:
10/17/01	P. GONZALES	10/18/01	[Signature]	10/18/01	[Signature]	DAHILO C. TRAJANO Project Director	ADRIANO M. DOROS Chief, Bridges Division	GILBERTO S. REYES Director IV (GIC)	MANUEL M. BONGAON Undersecretary

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

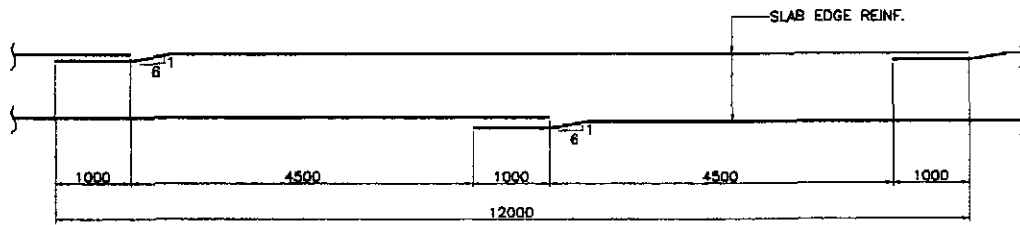
SCALE :	SHEET CONTENTS :	SHEET NO. :
1:200 FULL SIZE A1	BRIDGE NO.7 GENERAL PLAN, ELEVATION AND SECTIONS (INITIAL STAGE)	B7-01



1 SCHEMATIC LAYOUT OF FLATSLAB EDGE REINF.
SCALE 1:50

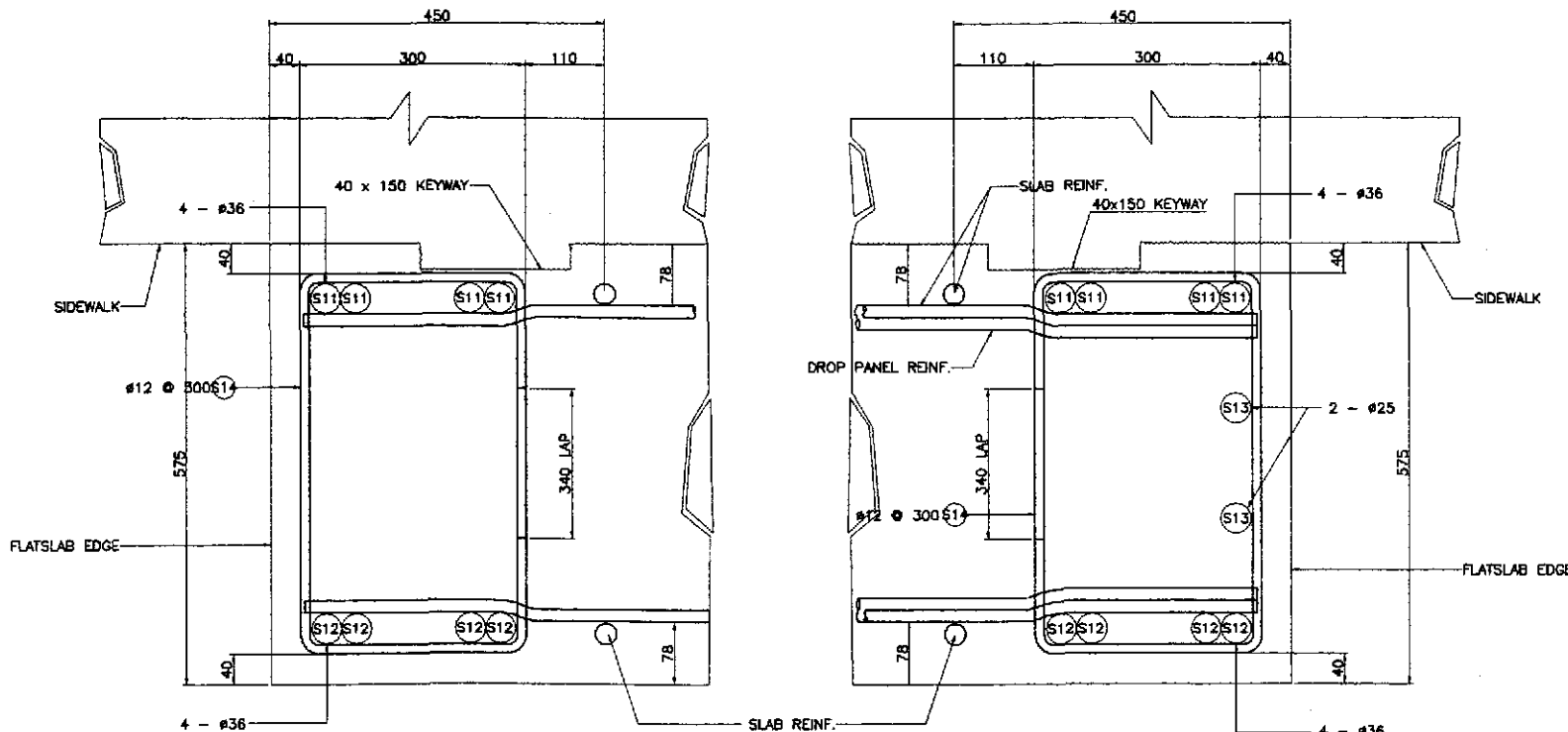


3 TYPICAL SPLICE LAYOUT OF 3-BAR BUNDLE
SCALE 1:50



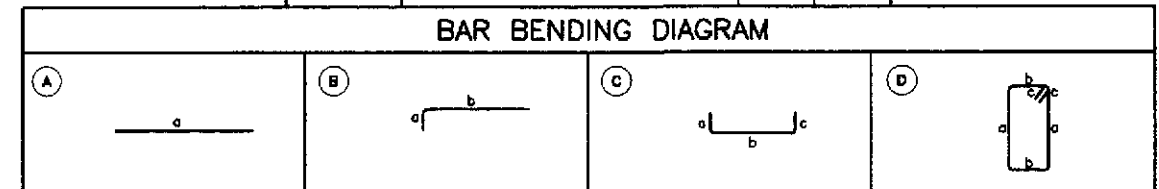
2 TYPICAL SPLICE LAYOUT OF 2-BAR BUNDLE
SCALE 1:50

ESTIMATED QUANTITIES OF SUPERSTRUCTURE			
ITEM NO.	DESCRIPTION	UNIT	TOTAL
404(1)a	REINFORCING STEEL GRADE 40	kgm.	10200
	DECK SLAB	6320	
	SIDEWALK, RAILING, & POST	2556	
	APPROACH SLAB	1324	
404(1)b	REINFORCING STEEL GRADE 60	kgm.	24019
	DECK SLAB	19233	
	SIDEWALK, RAILING, & POST	590	
	APPROACH SLAB	4196	
405(1)	STRUCTURAL CONCRETE	cu. m.	257.40
	DECK SLAB	206.13	
	SIDEWALK, RAILING, & POST	16.97	
	APPROACH SLAB	34.3	

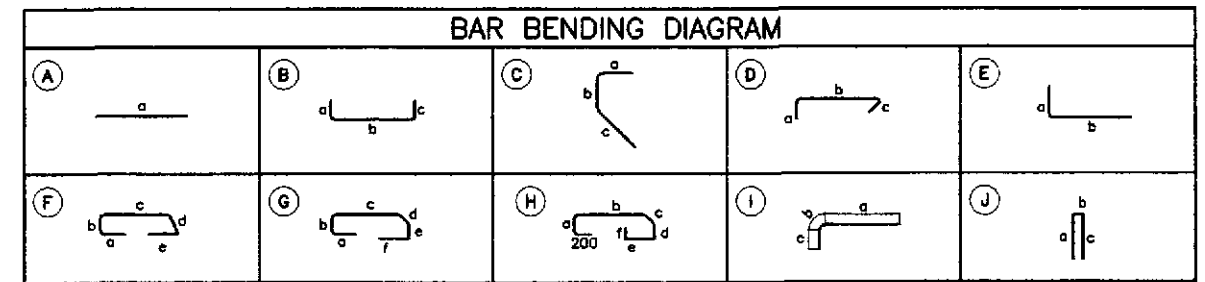
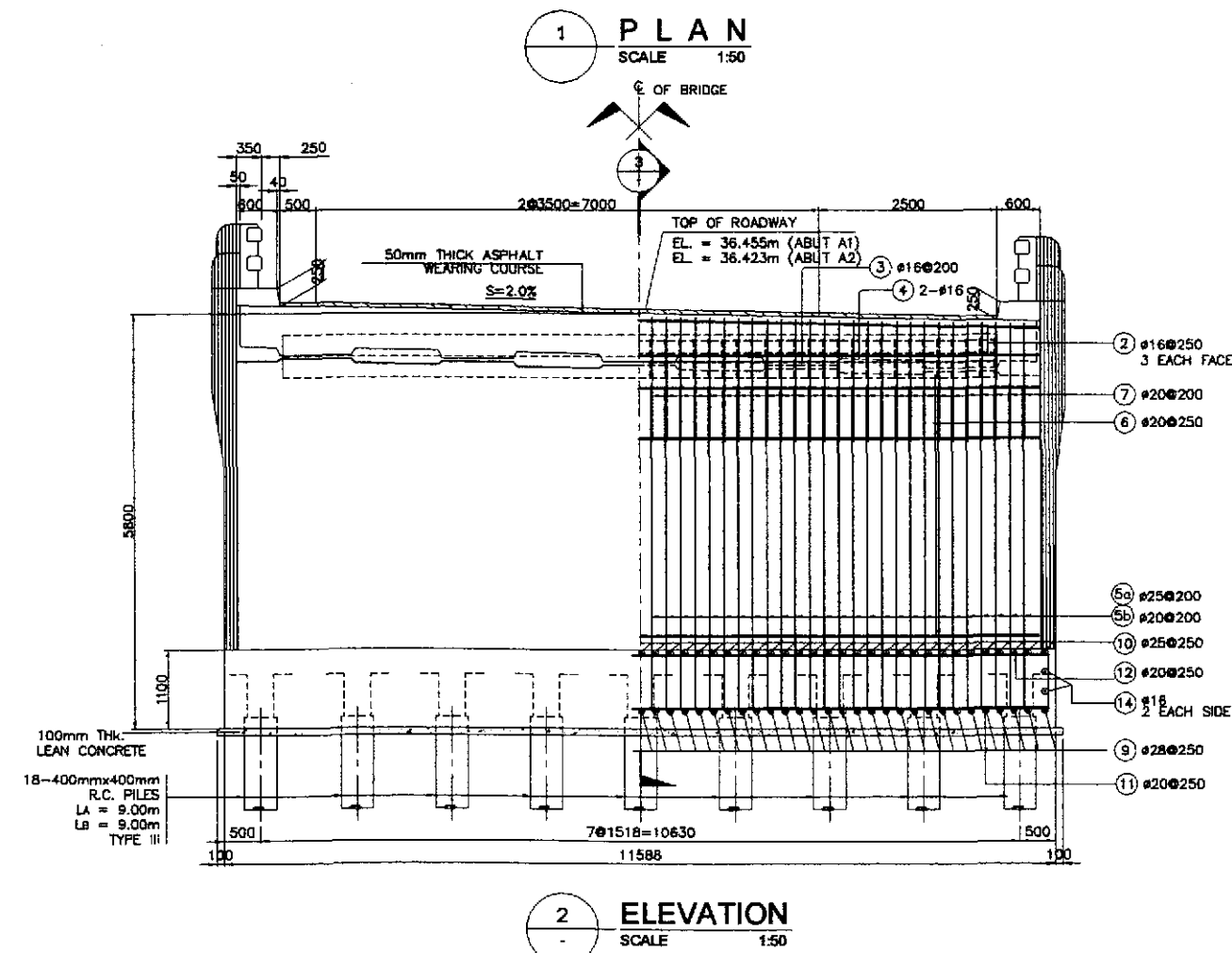
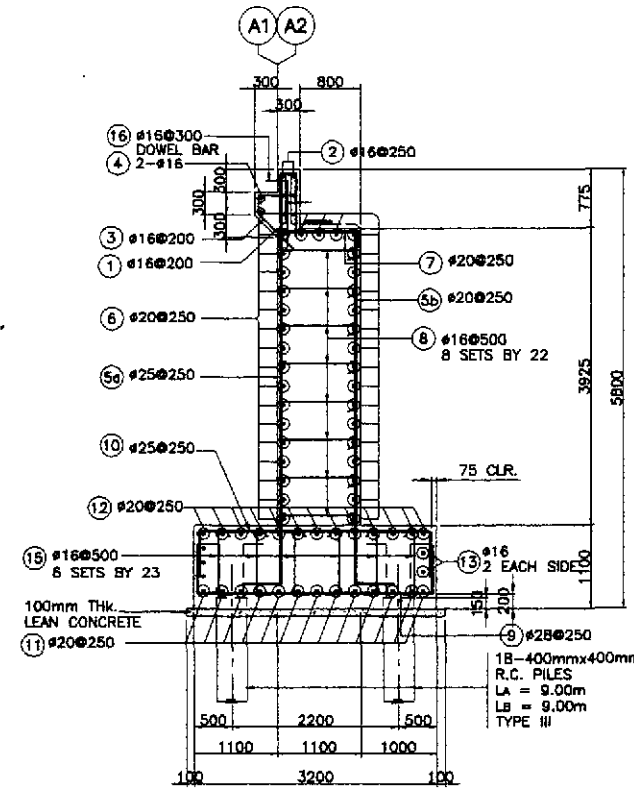
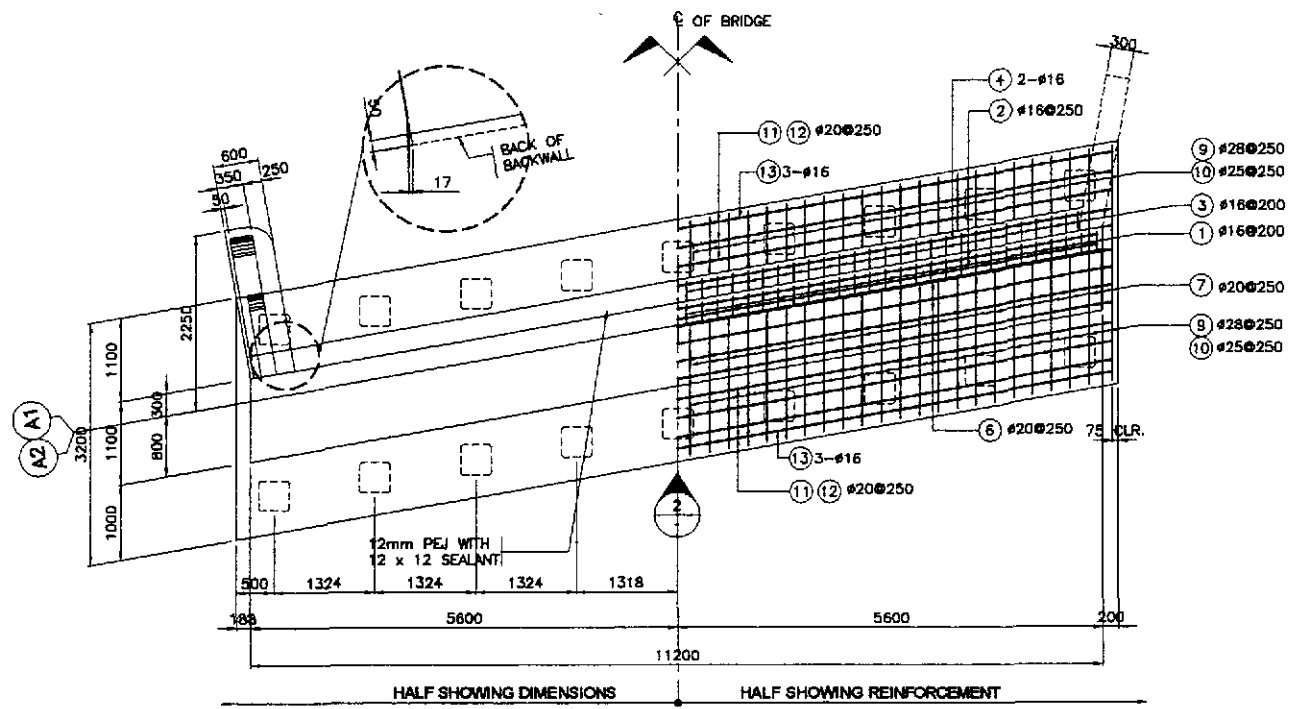


4 SECTION NOT TO SCALE

5 SECTION NOT TO SCALE

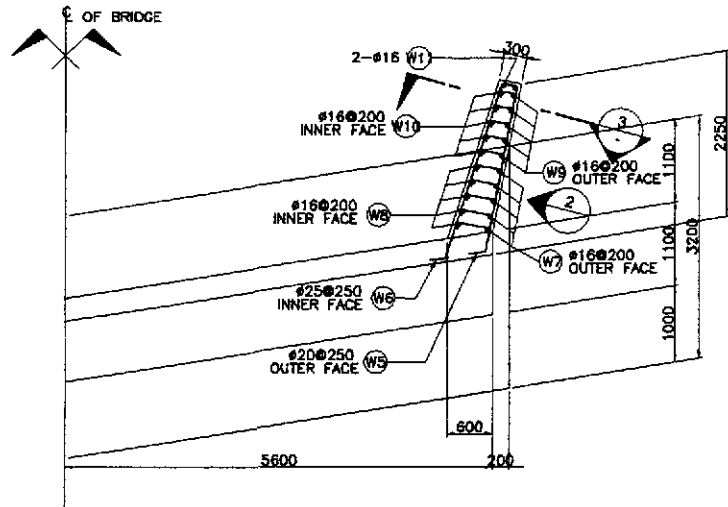


SCHEDULE OF REINFORCEMENT															
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				LENGTH EACH BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT IN (kg)	REBAR RATIO (kg/m ³)
DECK SLAB	191.45	S1	28	23	450	(C)	450	31900	450	-	32800	754.40	4.833	3647	128.87
		S2	28	44	450	(A)	8000	-	-	-	8000	352.00	4.833	1702	
		S3	28	44	450	(A)	5800	-	-	-	5800	255.20	4.833	1234	
		S4	28	23	450	(C)	450	31900	450	-	32800	754.40	4.833	3647	
		S5	28	44	450	(B)	450	8950	-	-	9400	413.60	4.833	1999	
		S6	28	44	450	(A)	5100	-	-	-	5100	224.40	4.833	1085	
		S7	28	22	450	(A)	9200	-	-	-	9200	202.40	4.833	979	
		S8	28	22	450	(A)	4400	-	-	-	4400	96.80	4.833	468	
		S9	16	258	250	(A)	11100	-	-	-	11100	2863.80	1.579	4522	
		S9a	16	32	250	(A)	6150	-	-	-	6150	196.80	1.579	311	
		S10	16	24	250	(A)	11275	-	-	-	11275	270.60	1.579	428	
		S11	36	8	AS SHOWN	(C)	450	31900	450	-	32800	262.40	7.991	2097	
		S12	36	8	AS SHOWN	(C)	450	31900	450	-	32800	262.40	7.991	2097	
		S13	25	4	AS SHOWN	(A)	18000	-	-	-	18000	72.00	3.854	278	
		S14	12	214	300	(D)	500	220	150	-	1740	372.36	0.888	331	
S15	16	384	AS SHOWN	(E)	150	415	70	-	1200	460.8	1.579	728			
TOTAL	191.45											GRADE 40 TOTAL = 6,320 kgm.	GRADE 60 TOTAL = 19,233 kgm.		

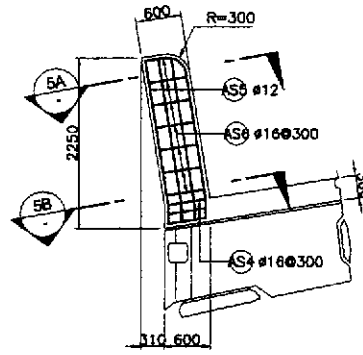


SCHEDULE OF REINFORCEMENT PER ABUTMENT																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e						f
BACKWALL	3.95	①	16	57	200	(B)	1050	200	1050	-	-	-	2300	131.10	1.579	208	119.63
		②	16	6	250	(A)	11300	-	-	-	-	-	11300	67.80	1.579	108	
		③	16	51	200	(C)	600	200	750	-	-	-	1550	79.05	1.579	125	
		④	16	2	AS SHOWN	(A)	10050	-	-	-	-	-	10050	20.10	1.579	32	
MAINWALL	48.36	⑤a	25	45	250	(E)	400	4950	-	-	-	-	5350	240.75	3.854	928	63.74
		⑤b	20	45	250	(E)	400	4950	-	-	-	-	5350	240.75	2.466	594	
		⑥	20	35	250	(A)	11300	-	-	-	-	-	11300	395.50	2.466	976	
		⑦	20	45	250	(B)	250	1000	250	-	-	-	1500	67.50	2.466	167	
FOOTING	40.52	⑧	16	176	500	(D)	250	1000	250	-	-	-	1500	284.00	1.579	417	74.54
		⑨	28	46	250	(B)	700	3050	700	-	-	-	4450	204.70	4.833	990	
		⑩	25	46	250	(B)	700	3050	700	-	-	-	4450	204.70	3.854	789	
		⑪	20	13	250	(B)	700	11550	700	-	-	-	12950	168.35	2.466	416	
		⑫	20	13	250	(B)	700	11550	700	-	-	-	12950	168.35	2.466	416	
DOWEL	92.83	⑬	16	4	AS SHOWN	(A)	11550	-	-	-	-	-	11550	46.2	1.579	73	74.54
		⑭	16	4	AS SHOWN	(A)	3050	-	-	-	-	-	3050	12.20	1.579	20	
		⑮	16	138	500	(D)	250	950	250	-	-	-	1450	200.10	1.579	316	
		⑯	16	34	300	(E)	650	500	-	-	-	1150	39.10	1.579	62		
													GRADE 40 TOTAL = 1361 kgs.		GRADE 60 TOTAL = 5276 kgs.		

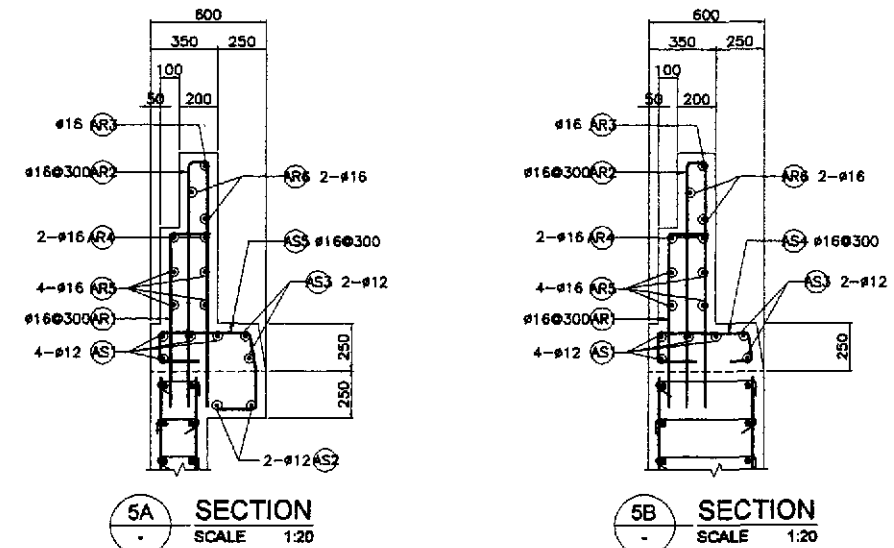
	DESIGNED	10/4/02	P. GONZALES		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : 1:50 FULL SIZE A1	SHEET CONTENTS : BRIDGE NO. 7 ABUTMENT A1 & A2 MAINWALL REINFORCEMENT DETAILS (INITIAL STAGE)	SHEET NO. : B7-04	
	CHECKED	10/16/02	[Signature]		Submitted By:	Reviewed By:	Recommended By:					Approved By:
	SUBMITTED	10/18/02	[Signature]		DANILO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridges Division	GILBERTO S. REYES Director IV (DC)					MANUEL M. BONDAN Undersecretary



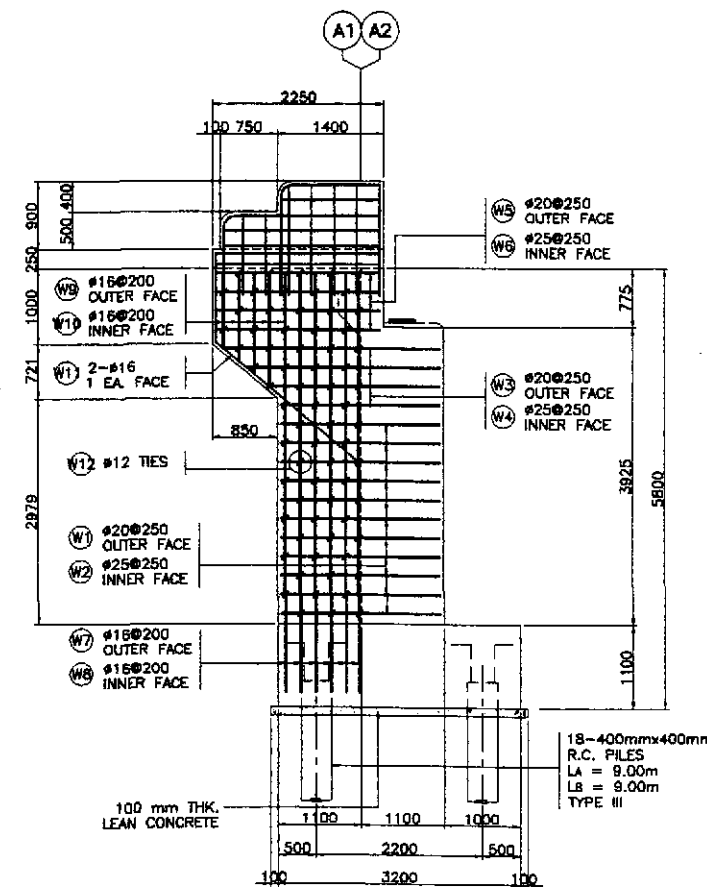
1 PLAN SCALE 1:50



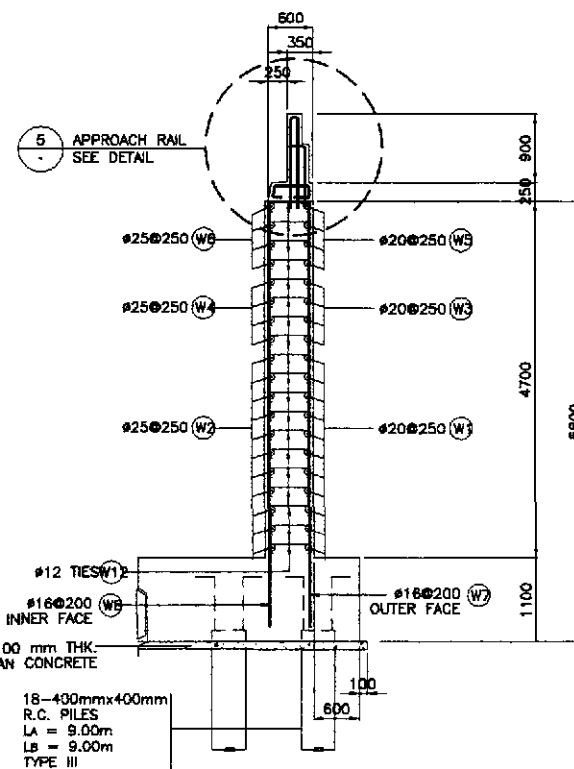
4 SIDEWALK DETAIL SCALE 1:50



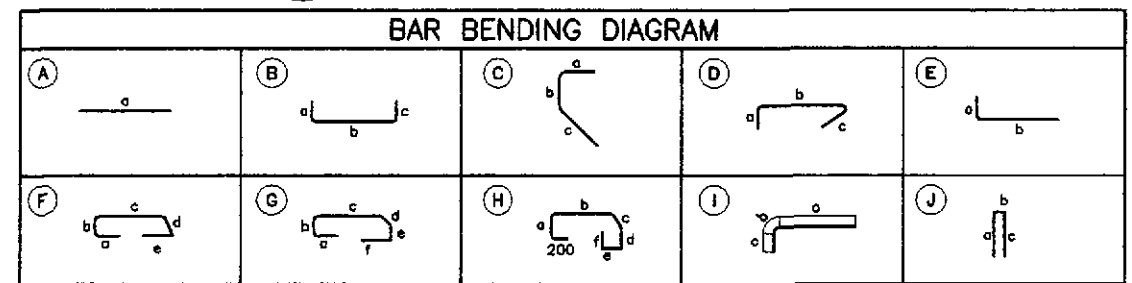
5A SECTION SCALE 1:20
5B SECTION SCALE 1:20
5 APPROACH RAIL DETAILS SCALE 1:20



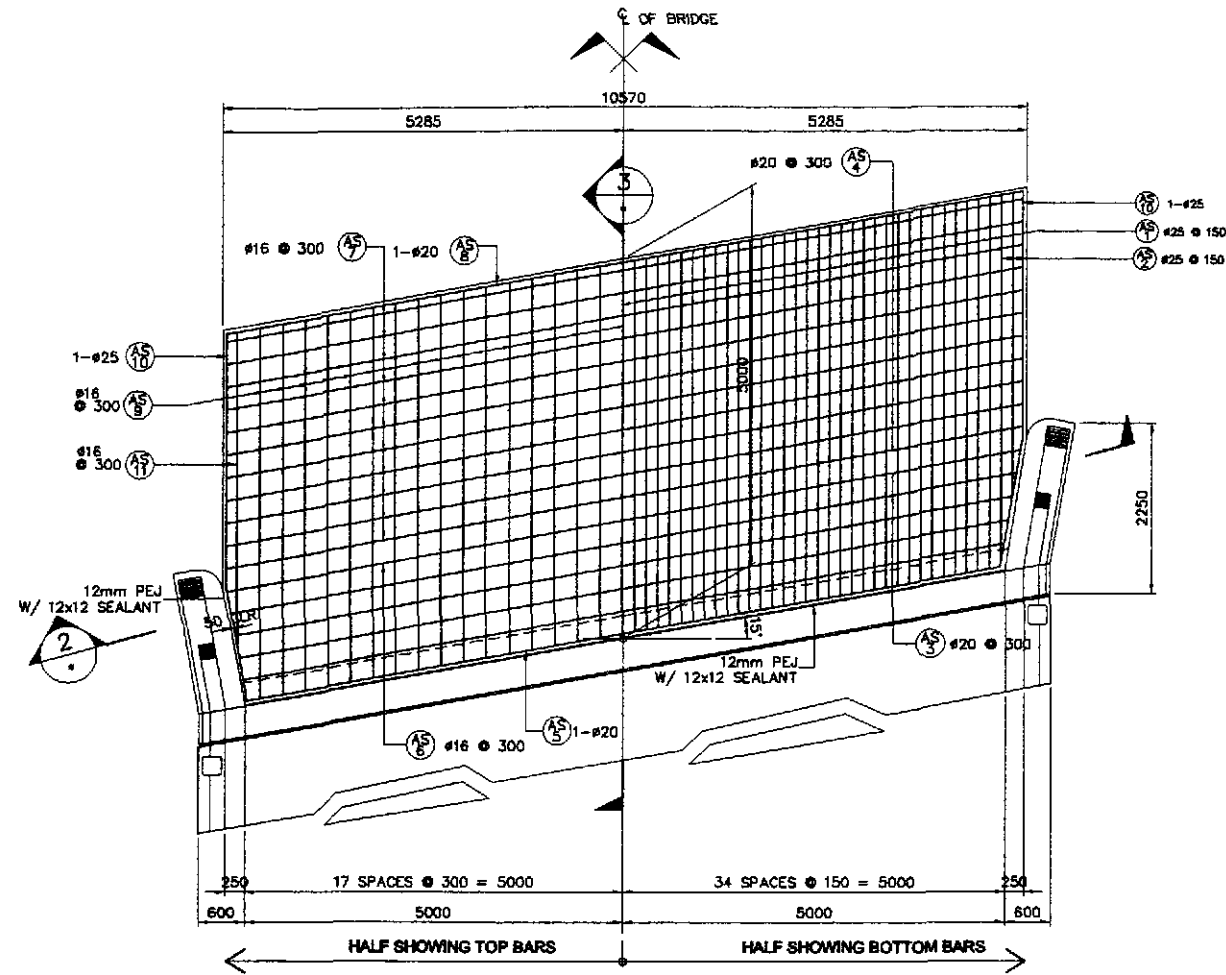
2 WINGWALL ELEVATION SCALE 1:50



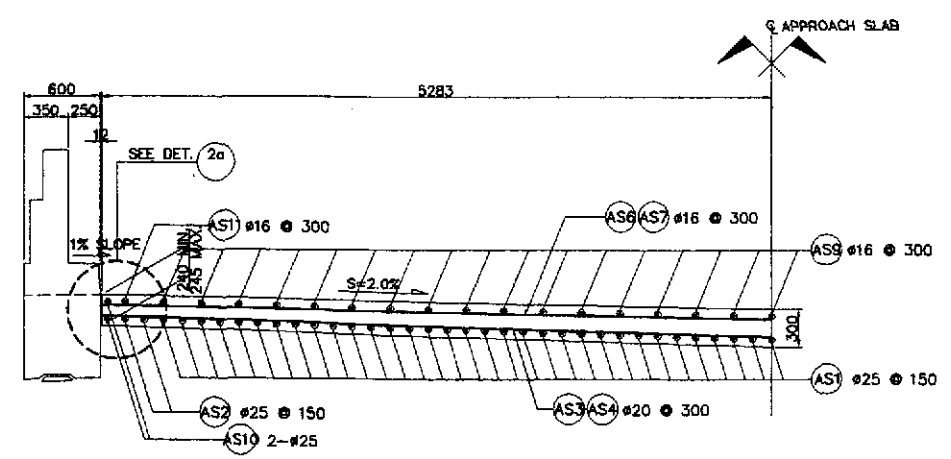
3 SECTION SCALE 1:50



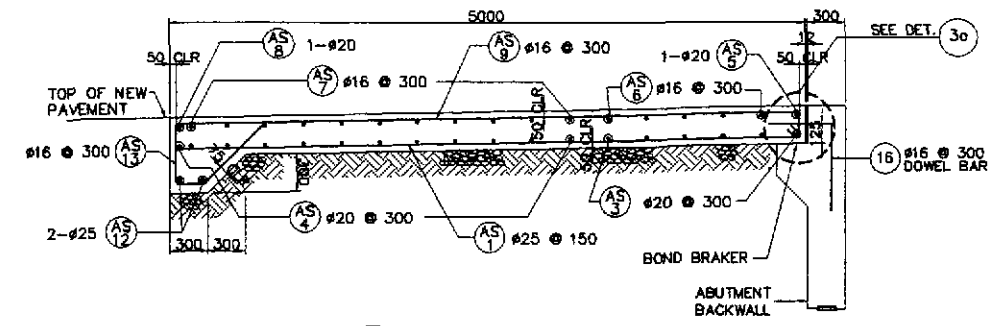
SCHEDULE OF REINFORCEMENT PER ABUTMENT																	
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm)					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e						f
WINGWALL	5.77	W1	20	22	250	(B)	400	2100	150	-	-	-	2650	58.30	2.466	144	
		W2	25	22	250	(B)	400	2100	150	-	-	-	2650	58.30	3.854	225	
		W3	20	8	250	(B)	400	2400	150	-	-	-	2950	23.60	2.466	59	
		W4	25	8	250	(B)	400	2400	150	-	-	-	2950	23.60	3.854	91	
		W5	20	8	250	(B)	400	2150	150	-	-	-	2700	21.60	2.466	54	
		W6	25	8	250	(B)	400	2150	150	-	-	-	2700	21.60	3.854	84	
		W7	16	10	200	(E)	250	5550	-	-	-	-	5800	58.00	1.579	92	
		W8	16	10	200	(E)	250	5550	-	-	-	-	5800	58.00	1.579	92	
		W9	16	10	200	(E)	250	1350	-	-	-	-	1600	16.00	1.579	26	
		W10	16	10	200	(E)	250	1350	-	-	-	-	1600	16.00	1.579	26	
		W11	16	4	AS SHOWN	(C)	250	1000	2500	-	-	-	3750	15.00	1.579	24	
		W12	12	128	AS SHOWN	(D)	170	450	170	-	-	-	790	99.54	0.888	89	
												GRADE 60 TOTAL =	657 kgs.				
												GRADE 40 TOTAL =	349 kgs.				
APPROACH RAILING AND SIDEWALK	1.89	AS	12	8	AS SHOWN	(A)	2150	-	-	-	-	2150	17.20	0.888	16		
		AS	12	4	AS SHOWN	(A)	2150	-	-	-	-	2150	8.60	0.888	8		
		AS	12	4	AS SHOWN	(A)	2150	-	-	-	-	2150	8.60	0.888	8		
		AS	16	6	300	(F)	200	170	480	200	200	-	1250	7.50	1.579	12	
		AS	16	12	300	(G)	200	170	480	200	170	200	1420	17.04	1.579	27	
		AR	16	4	300	(E)	200	900	-	-	-	-	1100	4.40	1.579	7	
		AR	16	10	300	(J)	1300	120	1300	-	-	-	2720	27.20	1.579	43	
		AR	16	2	AS SHOWN	(I)	1300	236	1300	-	-	-	2836	5.67	1.579	9	
		AR	16	4	AS SHOWN	(I)	2050	236	900	-	-	-	3186	12.74	1.579	21	
		AR	16	8	AS SHOWN	(A)	2050	-	-	-	-	-	2050	16.40	1.579	26	
AR	16	4	AS SHOWN	(A)	1300	-	-	-	-	-	1300	5.20	1.579	9			
												GRADE 40 TOTAL =	312				
TOTAL	7.66													GRADE 60 TOTAL =	657 kgs.		
												GRADE 40 TOTAL =	535 kgs.				



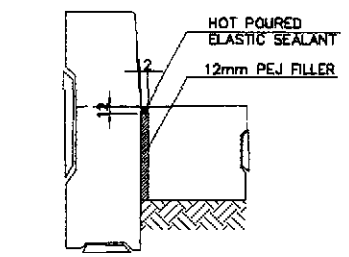
1 PLAN
SCALE 1:50



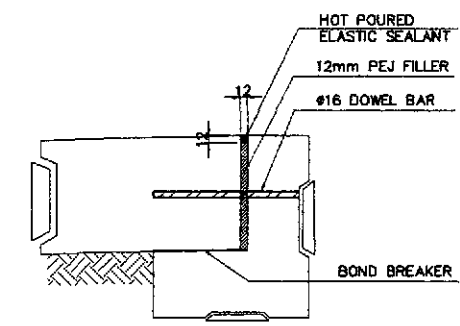
2 SECTION
SCALE 1:30



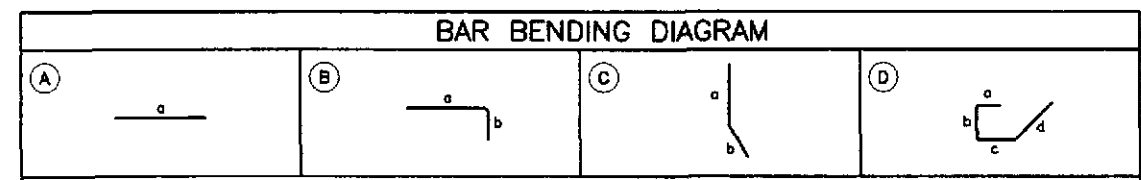
3 SECTION
SCALE 1:30



2a DETAIL
SCALE 1:10



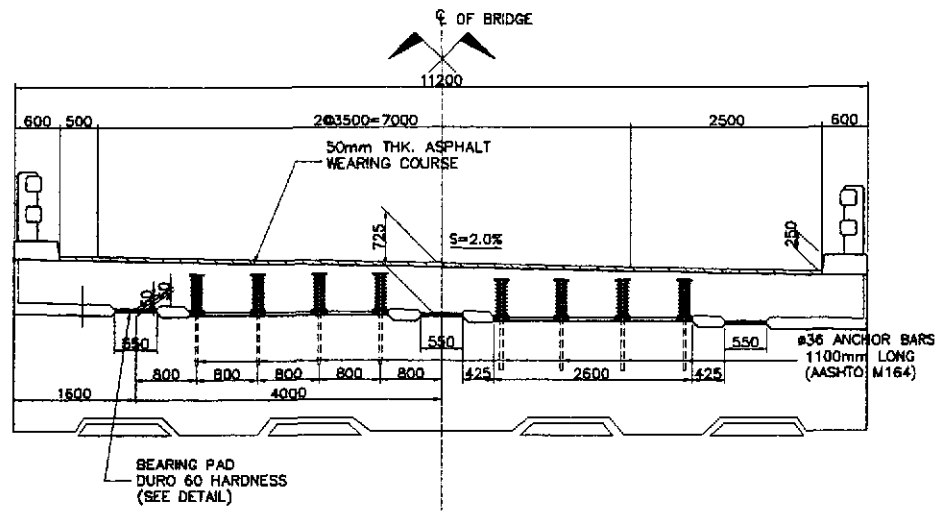
3a DETAIL
SCALE 1:10



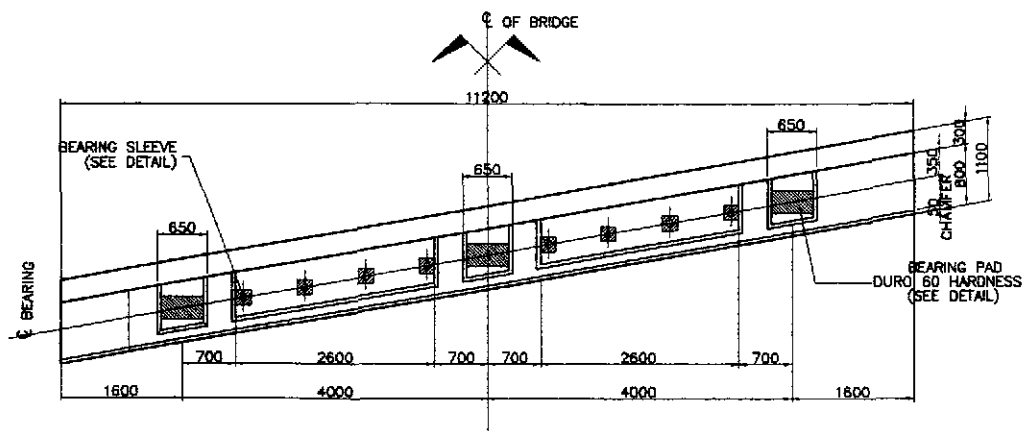
SCHEDULE OF REINFORCEMENT PER APPROACH SLAB																			
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT					LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/cu.m)			
							a	b	c	d	e						f		
APPROACH SLAB	17.15	AS1	25	68	150	(B)	4900	200	-	-	-	5100	346.80	3.854	1337	160.98			
		AS2	25	4	150	(B)	4400	200	-	-	-	4600	184	3.854	71				
		AS3	20	6	300	(A)	10450	-	-	-	-	10450	62.7	2.466	155				
		AS4	20	12	300	(A)	10800	-	-	-	-	10800	129.6	2.466	320				
		AS5	20	1	AS SHOWN	(A)	10150	-	-	-	-	10150	10.15	2.466	26				
		AS6	16	5	300	(A)	10500	-	-	-	-	10500	52.5	1.579	83				
		AS7	16	11	300	(A)	10800	-	-	-	-	10800	118.8	1.579	188				
		AS8	20	1	AS SHOWN	(A)	10800	-	-	-	-	10800	10.8	2.466	27				
		AS9	16	34	300	(B)	4900	200	-	-	-	5100	173.40	1.579	274				
		AS10	25	4	AS SHOWN	(C)	3400	1600	-	-	-	5000	20.00	3.854	78				
		AS11	16	2	300	(B)	4200	200	-	-	-	4400	8.80	1.579	14				
		AS12	25	2	AS SHOWN	(A)	10800	-	-	-	-	10800	21.6	3.854	84				
		AS13	16	36	300	(D)	400	500	200	700	-	1800	64.8	1.579	103				
		TOTAL	17.15																

GRADE 40 TOTAL = 662 kgs.
GRADE 60 TOTAL = 2098 kgs.

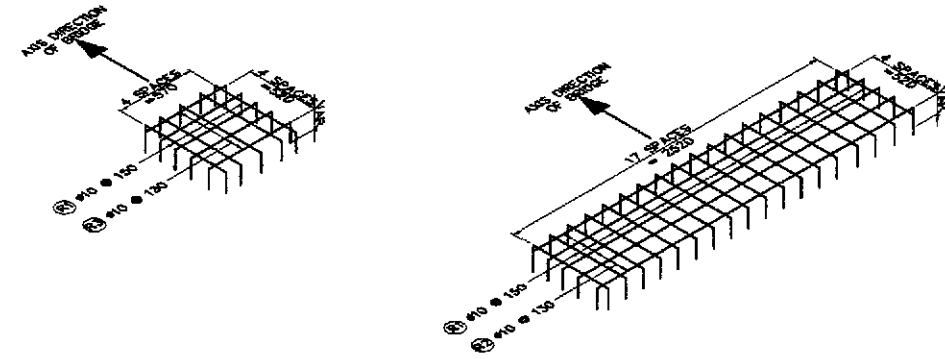
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/11/02	E. N. SALLAN		BUREAU OF DESIGN	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)				AS SHOWN	BRIDGE NO. 7 APPROACH SLAB PLAN, SECTIONS AND DETAILS (INITIAL STAGE)	B7-06
SUBMITTED	10/18/02	M. RUICH	TEAM LEADER	OFFICE OF THE SECRETARY	CABANATUAN BYPASS - CONTRACT PACKAGE II				FULL SIZE A1			



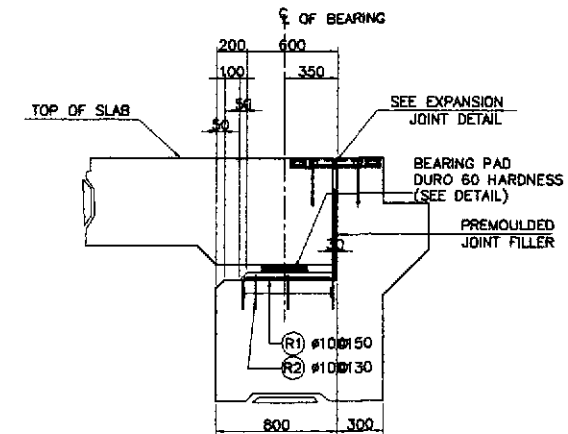
1 SECTION AT ABUTMENT SEAT
SCALE 1:50



2 PLAN AT ABUTMENT SEAT
SCALE



7 RISER REINFORCEMENT
NOT TO SCALE

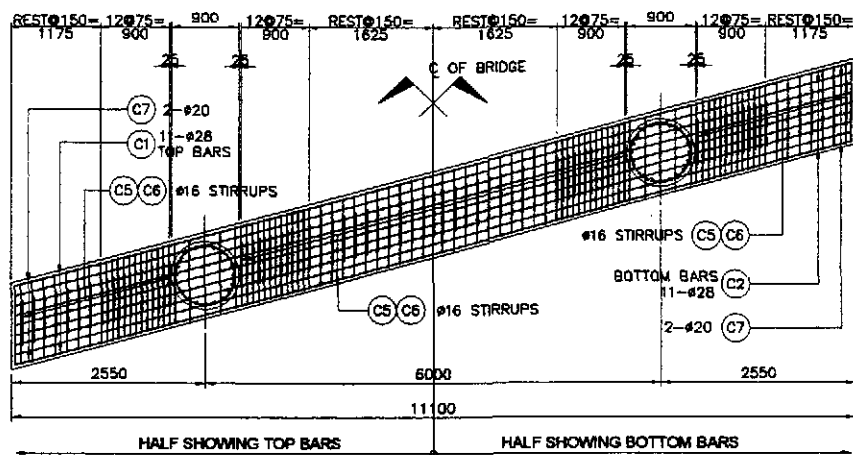


6 SECTION
SCALE 1:25

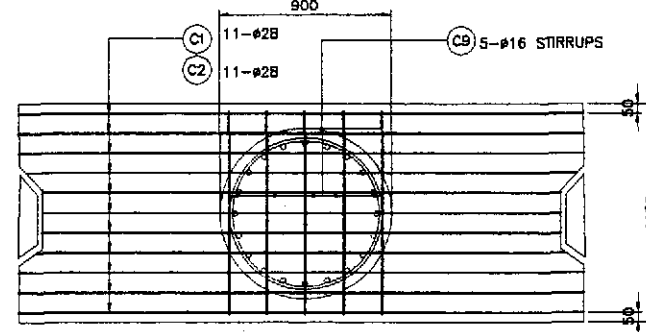
BAR BENDING DIAGRAM																
A							B									
d							a b c									
SCHEDULE OF REINFORCEMENT																
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSION(mm) OUT TO OUT					LENGTH EACH BAR (m)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)
RISER	0.22	R1	10	51	150	(B)	500	530	500			1530	104.04	0.616	65	575.54
		R2	10	10	130	(B)	500	2590	500			3590	35.8	0.616	23	
		R3	10	30	130	(B)	500	460	500			1460	58.4	0.616	30	
TOTAL	0.22												GRADE 40 TOTAL = 124 kgs.			

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

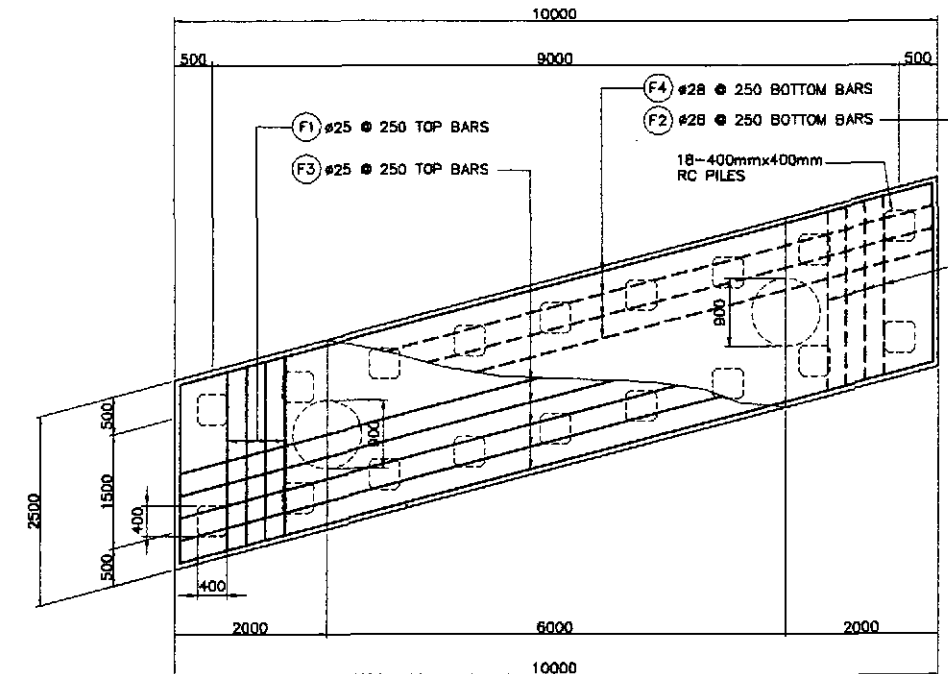
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/11/02	E. R. SALLAN		BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Planidel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 7 RISER DETAILS	B7-07
	SUBMITTED	10/12/02	TEAM LEADER		OFFICE OF THE SECRETARY				CABANATUAN BYPASS - CONTRACT PACKAGE II	FULL SIZE A1	(INITIAL STAGE)	
Submitted By:		Reviewed By:		Recommended By:		Approved By:						
DANILO C. TRAJANO Project Director		ADRIANO M. DOROY Chief, Bridges Division		GILBERTO S. REYES Director IV (DC)		MANUEL M. BONDAN Undersecretary		SIMEON A. DATUMANONG Secretary				



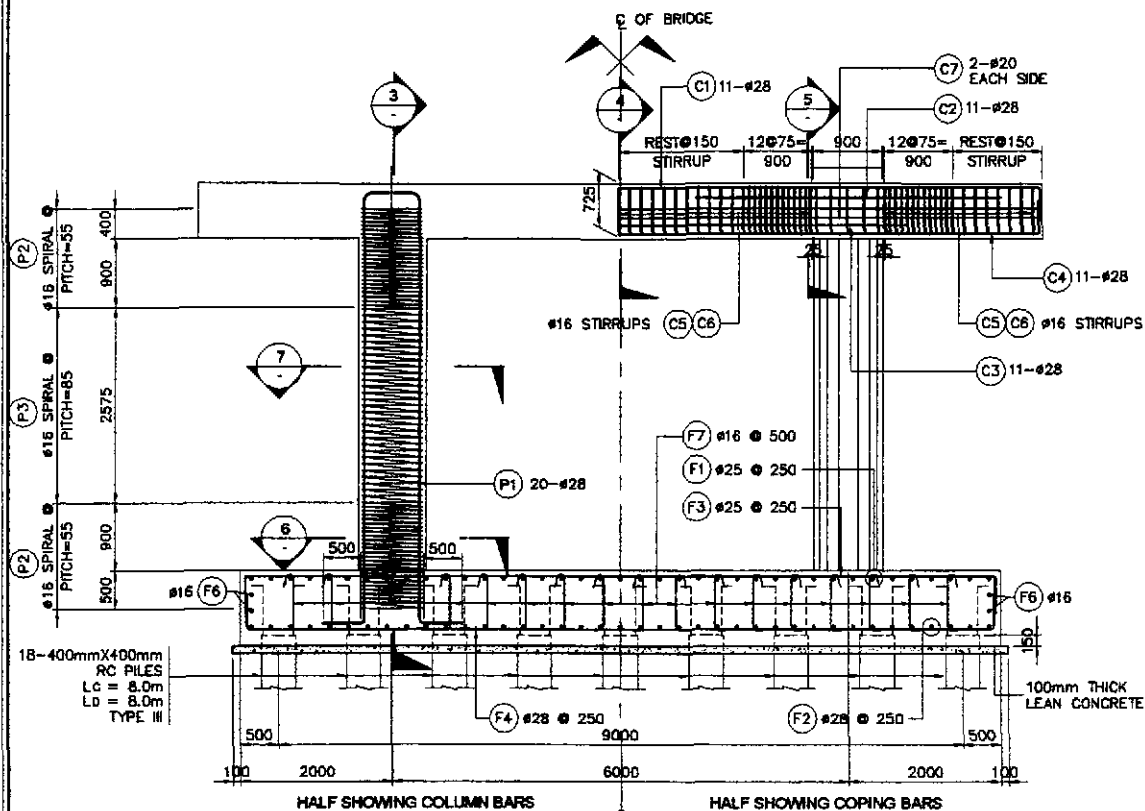
1 COPING PLAN
SCALE 1:50



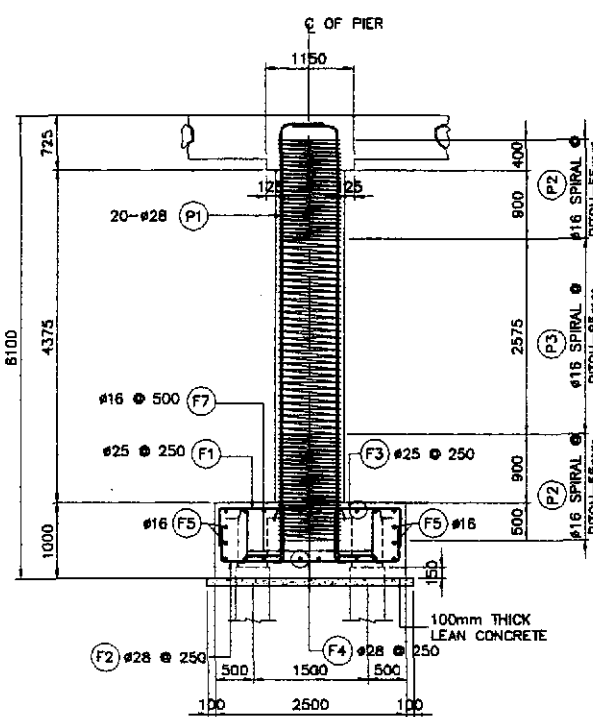
8 PLAN
SCALE 1:20



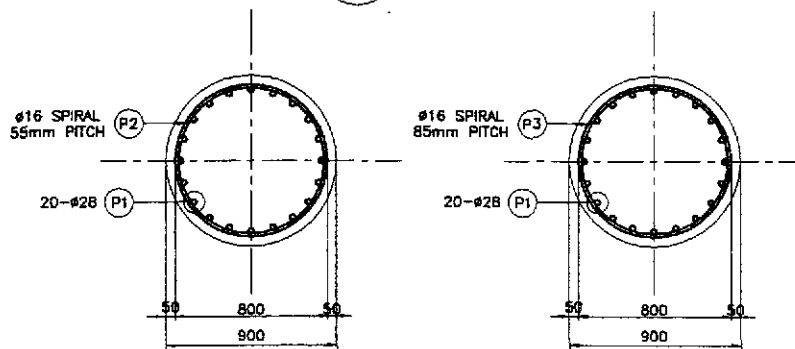
9 FOOTING PLAN
SCALE 1:50



2 ELEVATION
SCALE 1:50

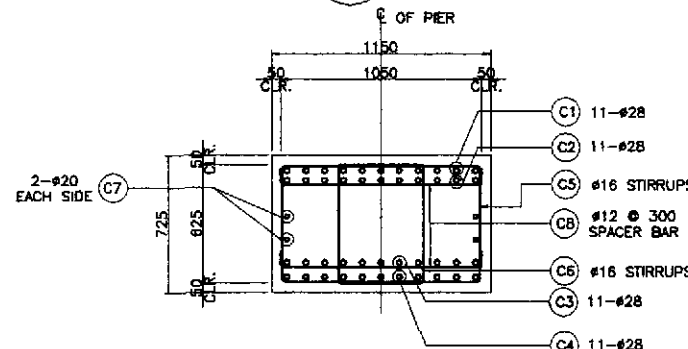


3 SECTION
SCALE 1:50

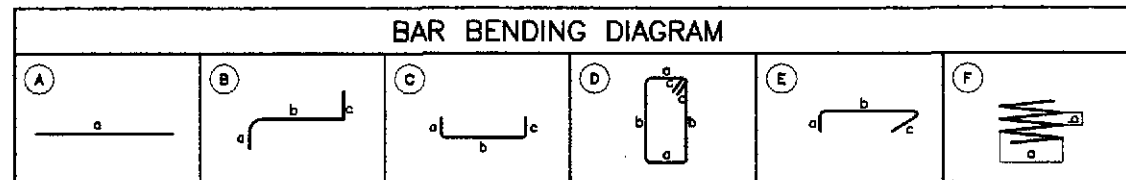


6 SECTION
SCALE 1:20

7 SECTION
SCALE 1:20

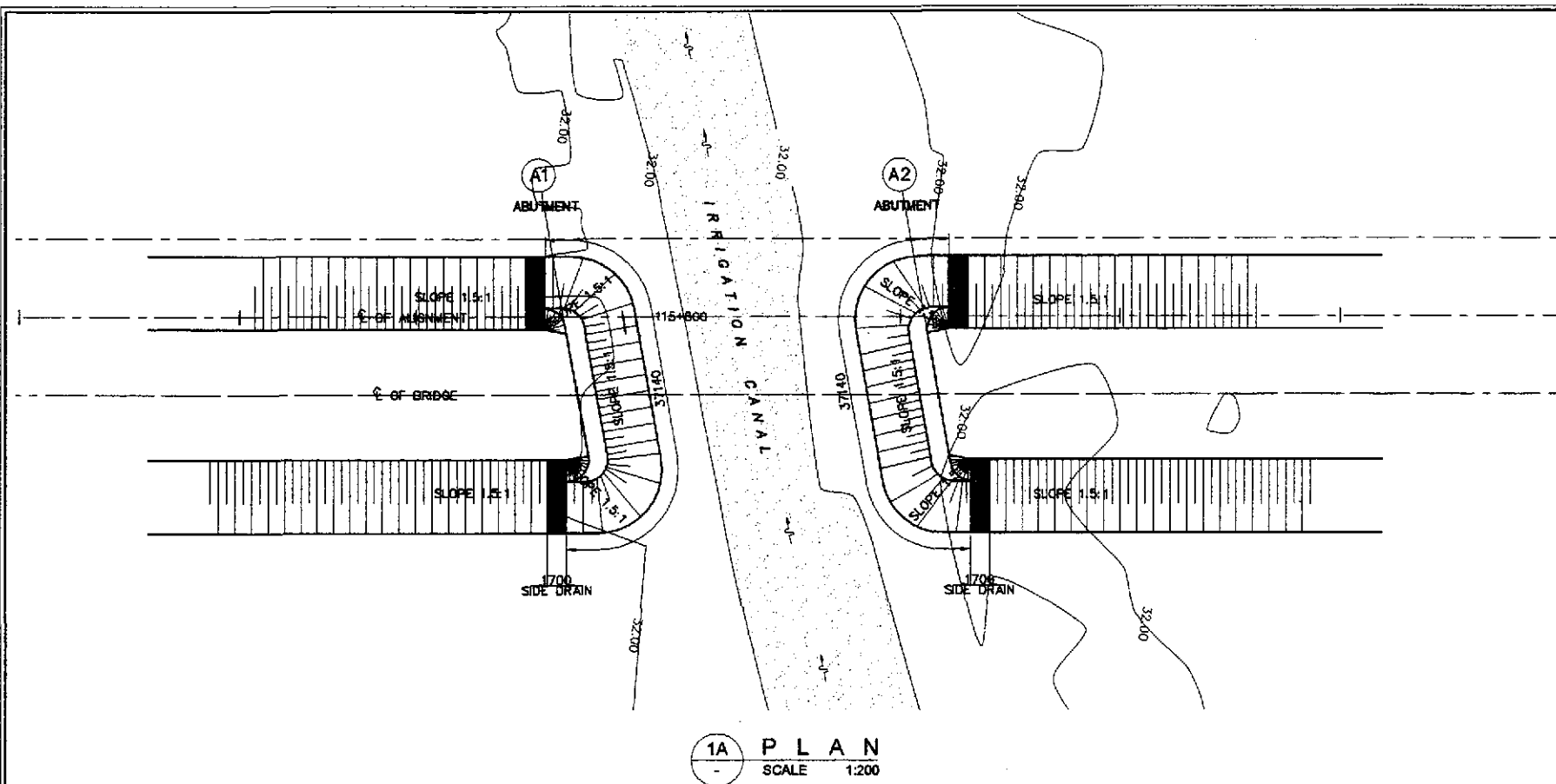


5 SECTION
SCALE 1:20

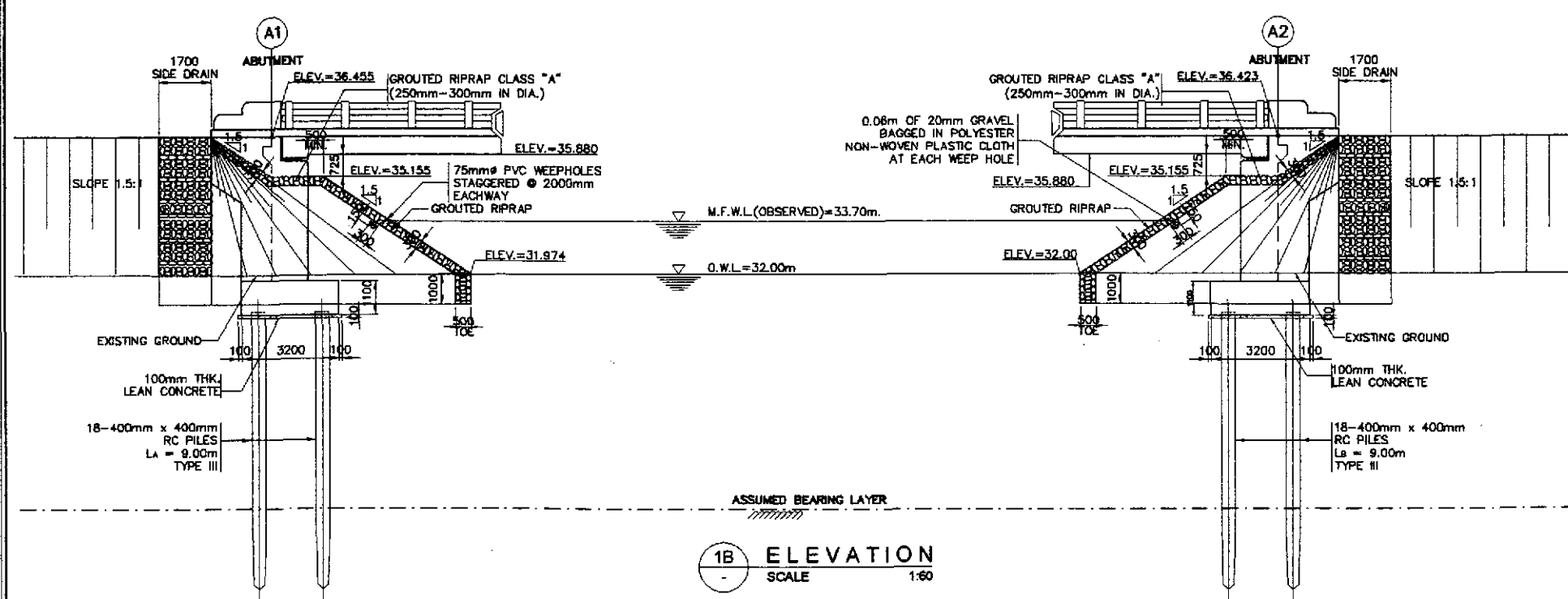


SCHEDULE OF REINFORCEMENT FOR ONE PIER															
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				LENGTH EACH BAR (mm)	TOTAL LENGTH (m)	UNIT WT (kg/m)	TOTAL WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d					
COPING	9.25	C1	28	11	AS SHOWN	(C)	500	11175	500	-	12175	133.93	4,833	648	330.05
		C2	28	11	AS SHOWN	(A)	4000	-	-	-	4000	44.00	4,833	213	
		C3	28	11	AS SHOWN	(A)	7500	-	-	-	7500	82.50	4,833	399	
		C4	28	11	AS SHOWN	(C)	500	11175	500	-	12175	133.93	4,833	648	
		C5	18	101	AS SHOWN	(D)	1050	625	150	-	3650	368.65	1,579	583	
		C6	16	101	AS SHOWN	(D)	550	625	150	-	2650	267.65	1,579	423	
		C7	20	2	AS SHOWN	(A)	11175	-	-	-	11175	22.35	2,466	56	
		C8	12	36	300	(C)	150	1050	150	-	1350	51.30	0,888	46	
		C9	16	10	AS SHOWN	(C)	625	1050	625	-	2300	23.00	1,579	37	
COLUMN	5.57	P1	28	40	AS SHOWN	(B)	500	5500	500	-	6600	264	4,833	1276	344.70
		P2	16	100	55	(F)	800	55	-	-	2513	251.30	1,579	397	
		P3	16	62	85	(F)	800	85	-	-	2513	155.82	1,579	247	
FOOTING	25.00	F1	25	40	250	(C)	575	2350	575	-	3500	140.00	3,854	540	105.76
		F2	28	40	250	(C)	575	2350	575	-	3500	140.00	4,833	677	
		F3	25	10	250	(C)	575	10000	575	-	11150	111.5	3,854	430	
		F4	28	10	250	(C)	575	10000	575	-	11150	111.5	4,833	539	
		F5	16	4	AS SHOWN	(A)	10000	-	-	-	10000	40	1,579	64	
		F6	16	4	AS SHOWN	(A)	2350	-	-	-	2350	9.40	1,579	15	
		F7	16	100	500	(E)	200	850	150	-	2400	240.00	1,579	379	
TOTAL	39.82														GRADE 40 TOTAL = 2,191 kgs. GRADE 60 TOTAL = 5,426 kgs.

	DATE	SIGNATURE				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	DESIGNED	<i>[Signature]</i>	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 7 PIER P1 AND PIER P2 BAR ARRANGEMENT (INITIAL STAGE)	B7-08
	CHECKED	<i>[Signature]</i>	BUREAU OF DESIGN OFFICE OF THE SECRETARY						
SUBMITTED	<i>[Signature]</i>	<i>[Signature]</i>	DANILLO C. TRAJANO Project Director	ADRIANO M. DOROS Chief, Bridge Division	GILBERTO S. REYES Director IV (OIC)	Recommended By: MANUEL M. BONGHAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary		



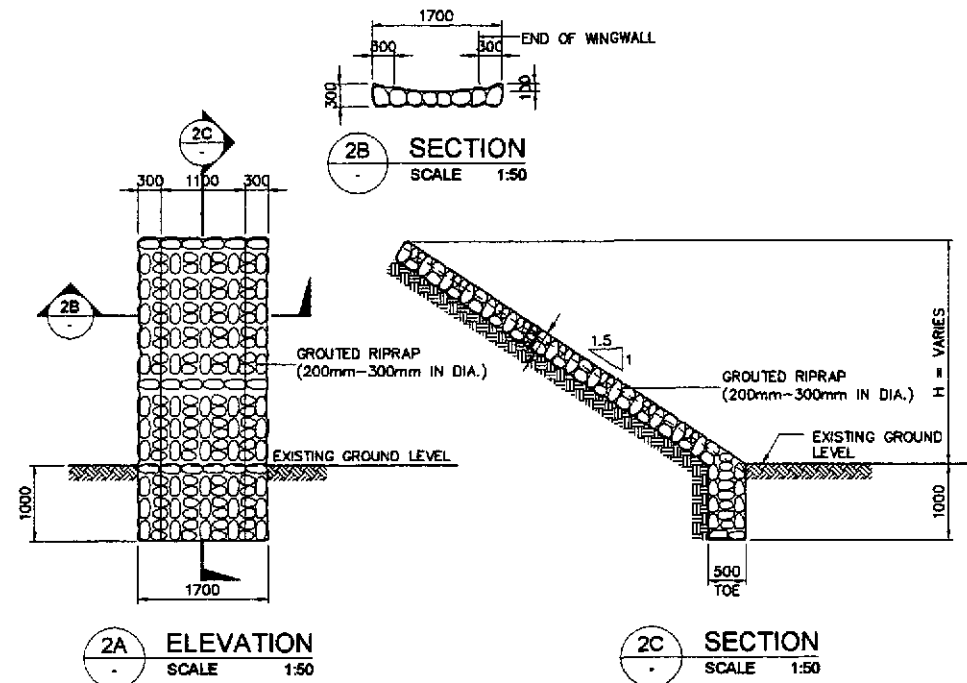
1A PLAN SCALE 1:200



1 ABUTMENT SLOPE PROTECTION SCALE AS SHOWN

GENERAL NOTES:

1. GROUTED RIPRAP (250mm-300mm DIA.) SHALL BE USED FOR THE FACING AND SHALL BE CAREFULLY HANDLAID WITH THE LONGEST DIMENSIONS PERPENDICULAR TO THE SLOPE AND FIRMLY BEDDED INTO THE SLOPE AND ADJACENT TO THE ADJOINING BOULDERS SPACED BETWEEN THE BOULDERS. THE SPACE BETWEEN THE BOULDERS SHALL BE COMPLETELY FILLED WITH MORTAR. THE OUTSIDE SURFACE OF THE BOULDERS SHALL BE LEFT EXPOSED AND THE SURFACE OF THE MORTAR SHALL BE SWEEPED WITH A STIFF BROOM.
2. GEOTEXTILE THE FOLLOWING SPECIFICATIONS ARE REQUIRED:
 1. POLYESTER OR POLYPROPYLENE - 100%
 2. MECHANICALLY BONDED/HEAT BONDED
 3. NON-WOVEN
 4. EFFECTIVE OPENING SIZE - 110 MICRONS (MAX.)
 5. THICKNESS UNDER PRESSURE - 0.80mm (MIN.)
 6. WEIGHT - 200g/sq. m. (MIN.)
 7. CBR PUNCTURE STRENGTH - 400N (MIN.)
 8. MULTI-DIRECTIONAL TENSILE STRENGTH - 13KN/m
3. GRAVEL FILTER SHALL BE COARSE AGGREGATES MATERIALS WHICH SATISFY THE REQUIREMENTS FOR ITEM 405, STRUCTURAL CONCRETE, GRADING B OF TABLE 405.1 AS REVISED.
4. NO CONCRETING UNDER WATER SHALL BE PERMITTED.
5. PROVIDE 1.0 m BERM WHEN HEIGHT (H) IS > 4.0 m.



2 TYPICAL SIDE DRAIN DETAIL SCALE AS SHOWN

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

LOCATION	SIZES	QUANTITY	
		ABUT. A1	ABUT. A2
SIDE DRAIN	200mm-300mm IN DIA.	9.80 cu. m.	9.80 cu. m.
GROUTED RIPRAP	250mm-300mm IN DIA.	77.23 cu. m.	77.23 cu. m.

	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	10/11/02	P. GONZALES		BUREAU OF DESIGN	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)					
	SUBMITTED	1/9/10/02	M. R. RIVERA		OFFICE OF THE SECRETARY	CABANATUAN BYPASS - CONTRACT PACKAGE II					AS SHOWN
Submitted By: DANILO C. TRAJANO, Project Director Reviewed By: PERFECTO L. ZAPLAN, JR., Chief, Hydraulic Division (SC) Recommended By: GILBERTO S. REYES, Director IV (SC) Recommended By: MANUEL M. BONDAN, Undersecretary Approved By: SINEON 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) CABANATUAN BYPASS - CONTRACT PACKAGE II			SCALE :	SHEET CONTENTS :	SHEET NO. :		