

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.

A CABANATUAN BYPASS BRIDGE NO.6 (STA.115+312.526)
SCALE AS SHOWN

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

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

Submitted By: **DAVID C. TRAJANO** Project Director

Reviewed By: **ADRIANO M. DORDY** Chief, Bridge Division

Recommended By: **GILBERTO S. REYES** Director IV (OIC)

Manuel M. Bonan

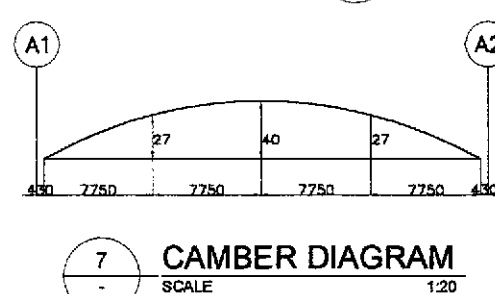
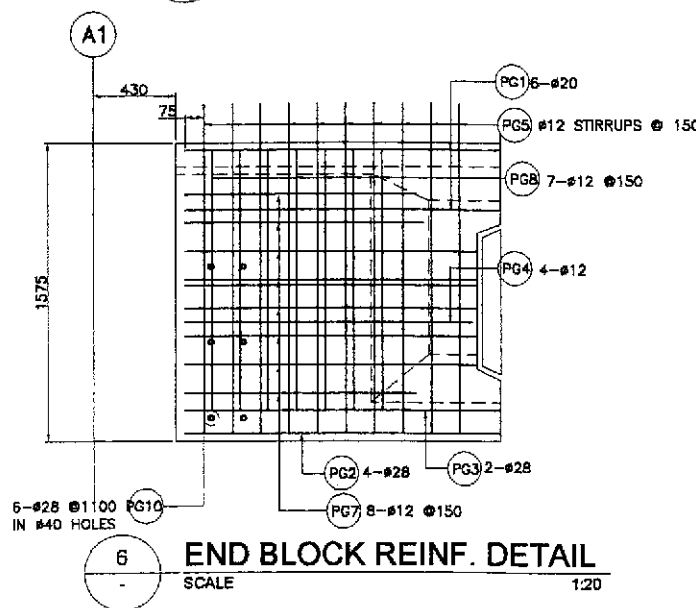
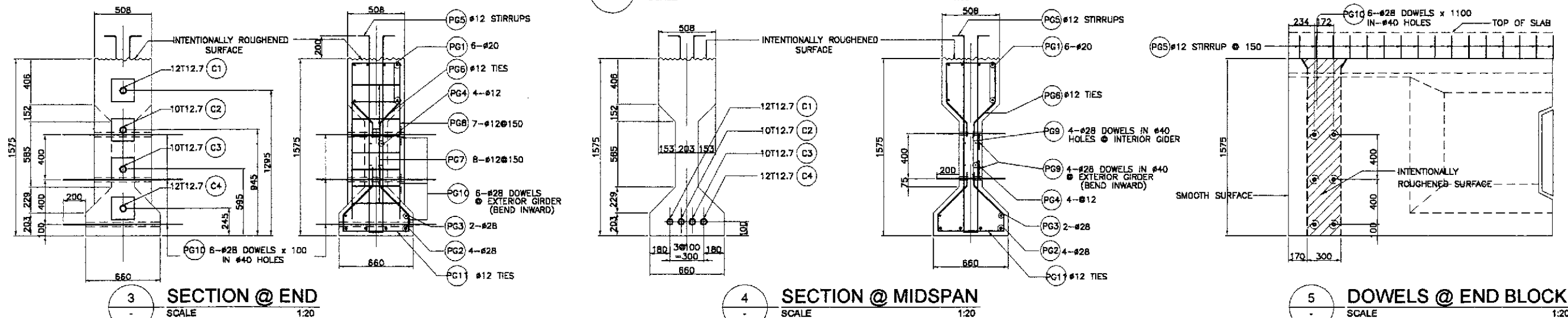
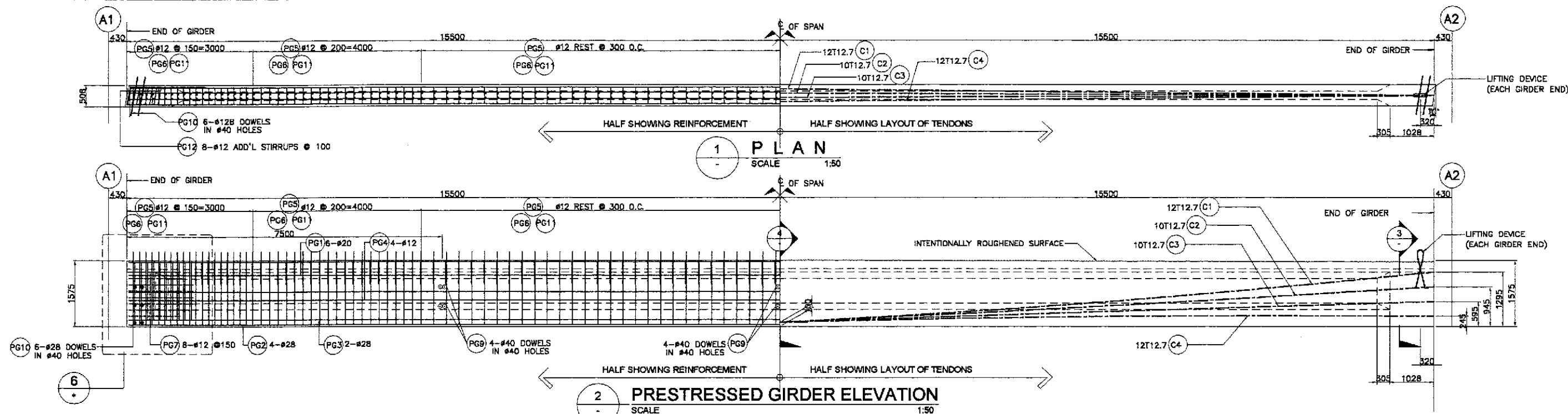
Simeon A. Datumanong

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









SCALE :
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FULL SIZE A1

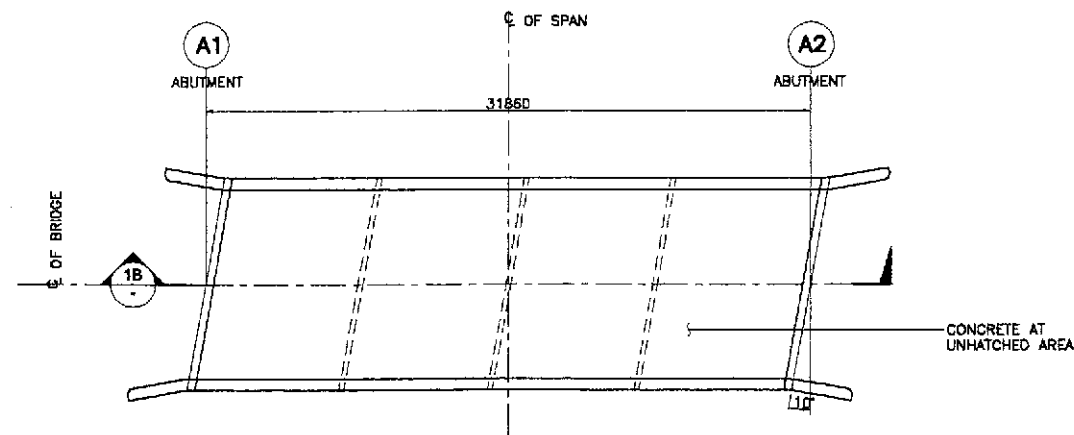
SHEET CONTENTS :
BRIDGE NO. 6
GENERAL ELEVATION AND SECTIONS (ULTIMATE STAGE)

SHEET NO. :
B6-02



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

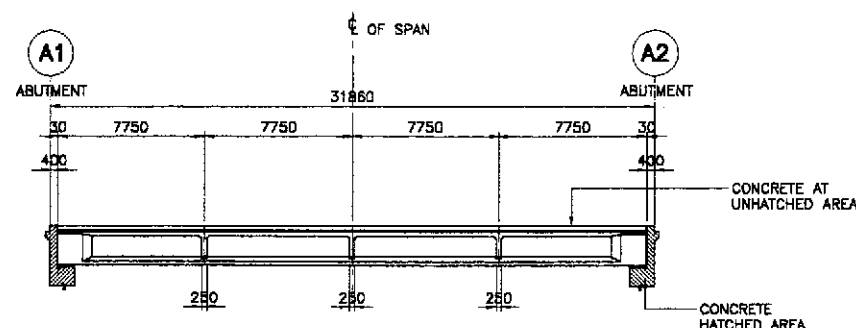
BAR BENDING DIAGRAM																	
A 			B 			C 			D 								
E 			F 			G 			H 								
SCHEDULE OF REINFORCEMENT																	
STRUCTURE COMPONENT	BAR MARK	SIZE (mm)	QTY.	SPACING	BAR SHAPE	DIMENSION (mm)					LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONC. VOLUME (cu.m)	REBAR RATIO (kg/cu.m)	REMARKS
						a	b	c	d	e							
GIRDER	PG1	20	6	AS SHOWN	A	30920	-	-	-	-	30920	185.52	2.466	458	19.43	136.42	QUANTITIES ARE FOR ONE (1) GIRDER ONLY
	PG2	28	4	AS SHOWN	A	30920	-	-	-	-	30920	123.68	4.833	598			
	PG3	28	2	AS SHOWN	A	30820	-	-	-	-	30820	61.84	4.833	298			
	PG4	12	4	AS SHOWN	A	30820	-	-	-	-	30820	123.68	0.888	110			
	PG5	12	138	150	G	100	1750	103	-	-	3803	524.81	0.888	467			
	PG6	12	138	150	E	430	350	150	260	-	1950	269.10	0.888	239			
	PG7	12	18	150	D	430	1000	550	-	-	3530	56.48	0.888	51			
	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	E	430	1500	-	-	-	3430	54.88	0.888	49			
													GRADE 40 TOTAL = 1,189 kgs. GRADE 60 TOTAL = 1,452 kgs.				



NOTES:

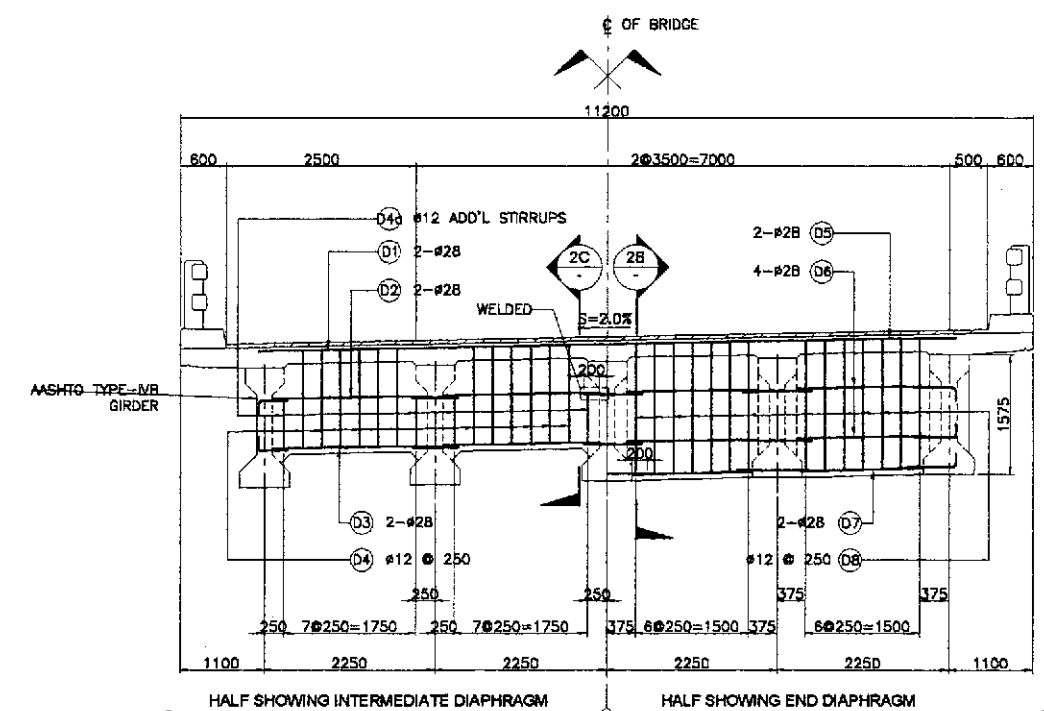
1. CONCRETE AT HATCHED AREAS SHALL BE PLACED AT LEAST TWENTY ONE (21) DAYS AHEAD OF CONCRETE AT UNHATCHED AREAS.
2. SEE GIRDER DETAIL FOR SPACING OF #28 DOWELS.

1A PLAN
SCALE 1:200

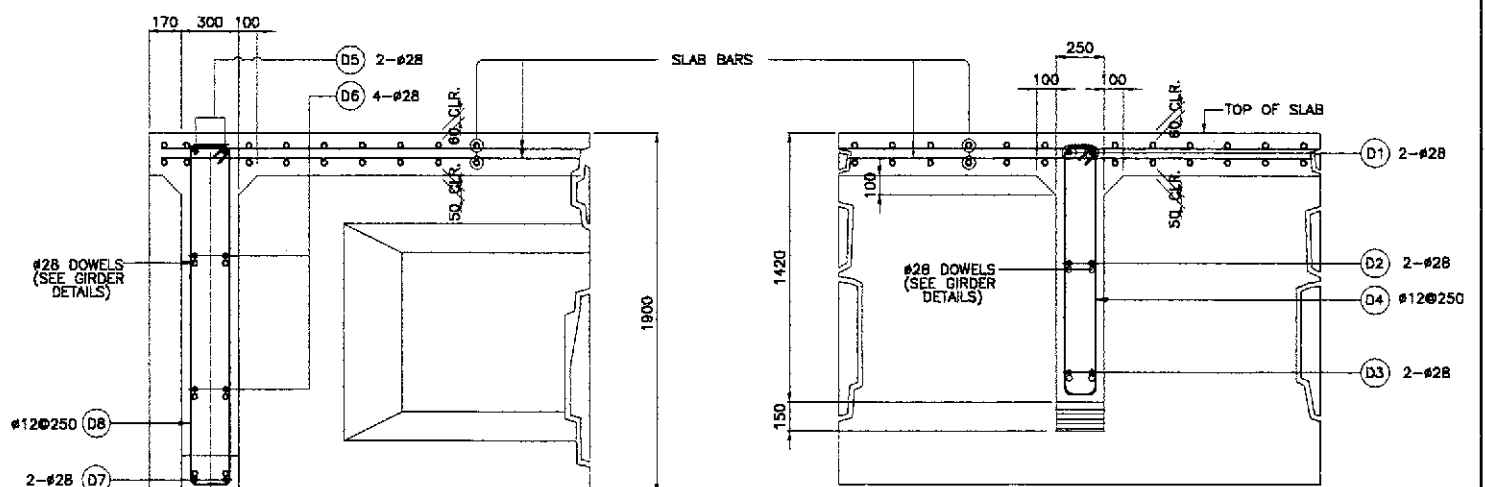


1B LONGITUDINAL SECTION
SCALE 1:200

1 CONCRETE POURING SEQUENCE
SCALE 1:200





2A ELEVATION
SCALE 1:50



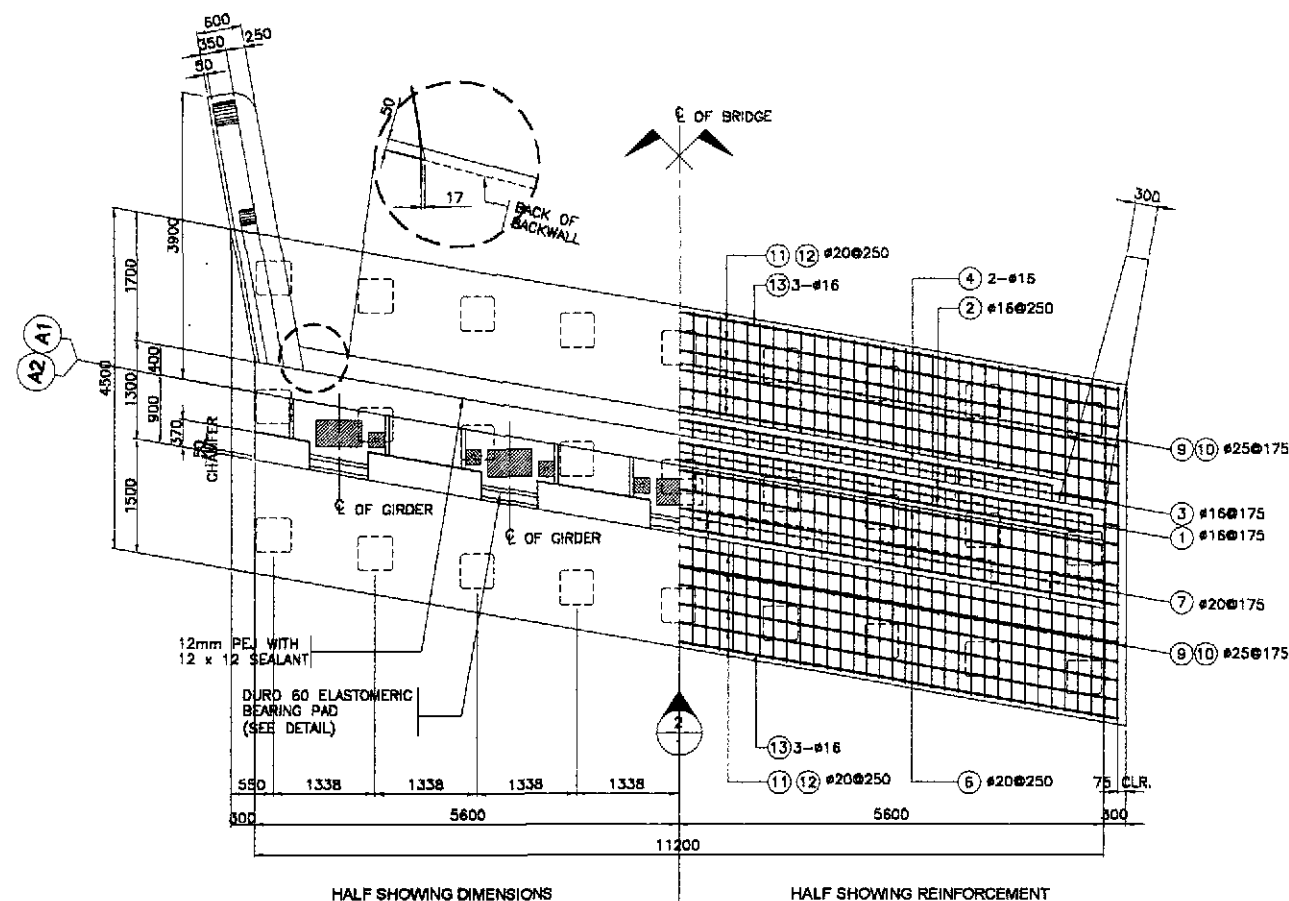
2B SECTION
SCALE 1:20

2C SECTION
SCALE 1:20

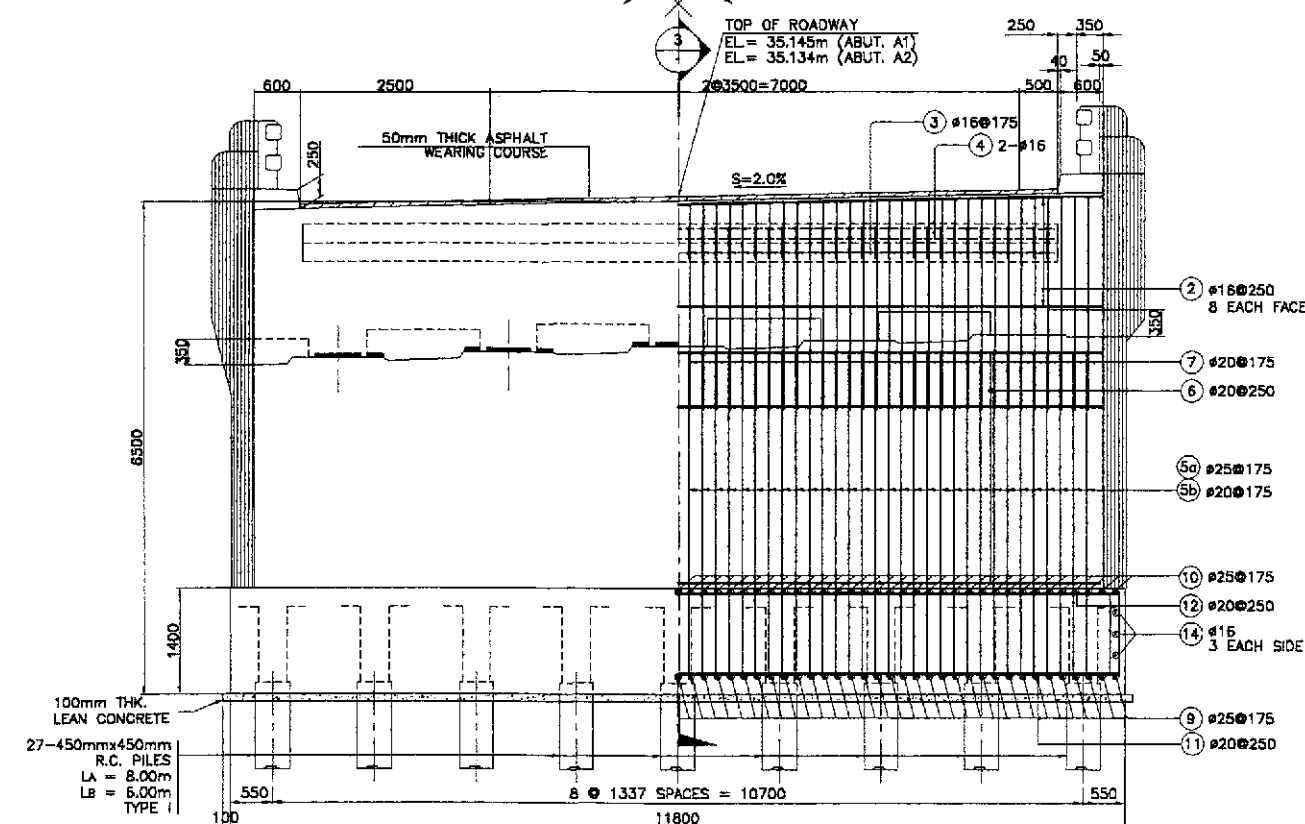
2 DETAIL OF END & INTERMEDIATE DIAPHRAGM
SCALE AS SHOWN

BAR BENDING DIAGRAM																
A							B									
																
SCHEDULE OF REINFORCEMENT																
STRUCTURE COMPONENT	LOCATION	CONCRETE VOLUME (m³)	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/m³)
								a	b	c	d					
DIAPHRAGM	INTERMEDIATE DIAPHRAGM	8.51	D1	28	6	AS SHOWN	A	9400				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	114.38		
	END DIAPHRAGM	7.00	D5	28	4	AS SHOWN	A	9400				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
D8			12	56	250	B	200	1800	150		4300	240.80	0.888	214		
TOTAL		15.51	GRADE 60 TOTAL = 1,336 kgs. GRADE 40 TOTAL = 468 kgs.													

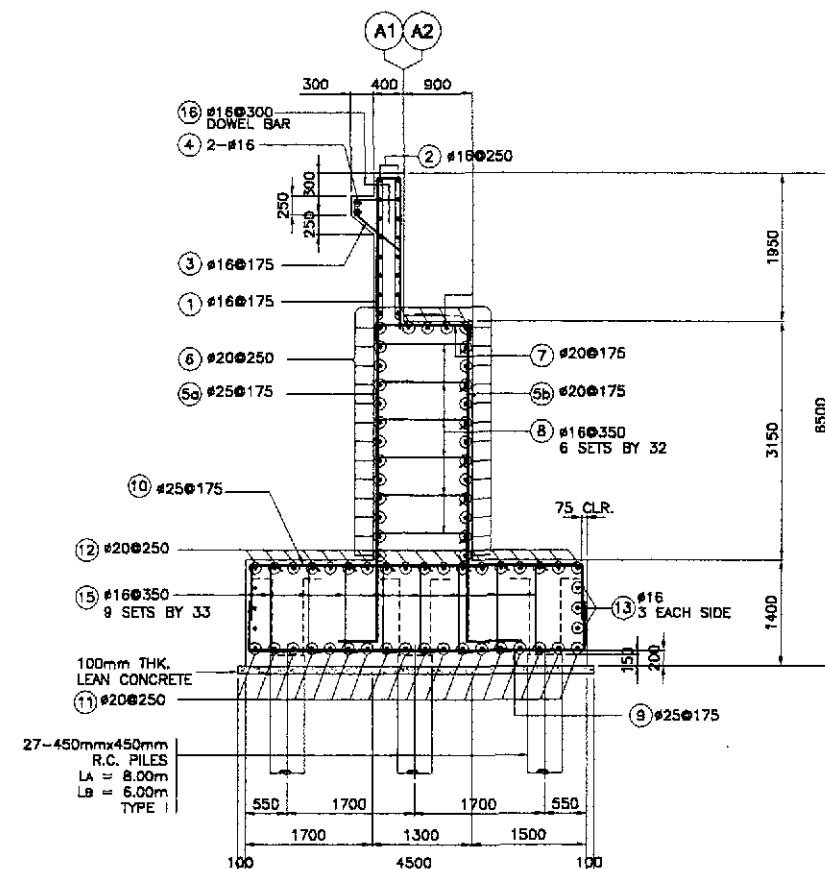
 JAPAN INTERNATIONAL COOPERATION AGENCY		 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS		PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)		SCALE : AS SHOWN		SHEET CONTENTS : BRIDGE NO. 6 CONCRETE POURING SEQUENCE AND DIAPHRAGM DETAILS (INITIAL STAGE)		SHEET NO. : B6-05	
KATAHIRA & ENGINEERS YACHIO ENGINEERING CO., LTD.		DESIGNED: 10/09/02 E. SALLAN CHECKED: 10/10/02 [Signature] SUBMITTED: 10/18/02 [Signature]		BUREAU OF DESIGN REVIEWED BY: ADRIANO M. DORAY RECOMMENDED BY: GILBERTO S. REYES MANUEL M. BONDAN		OFFICE OF THE SECRETARY APPROVED BY: SIMEON A. DATUMANONG		CABANATUAN BYPASS - CONTRACT PACKAGE II		FULL SIZE A1	



1 PLAN
SCALE 1:50
C. OF BRIDGE

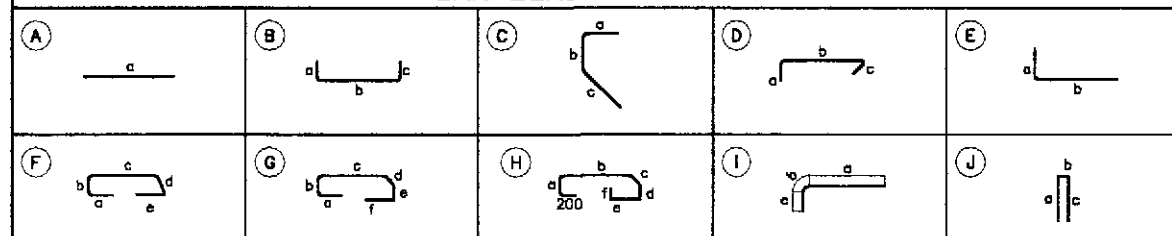


2 ELEVATION
SCALE 1:50



3 SECTION
SCALE 1:50

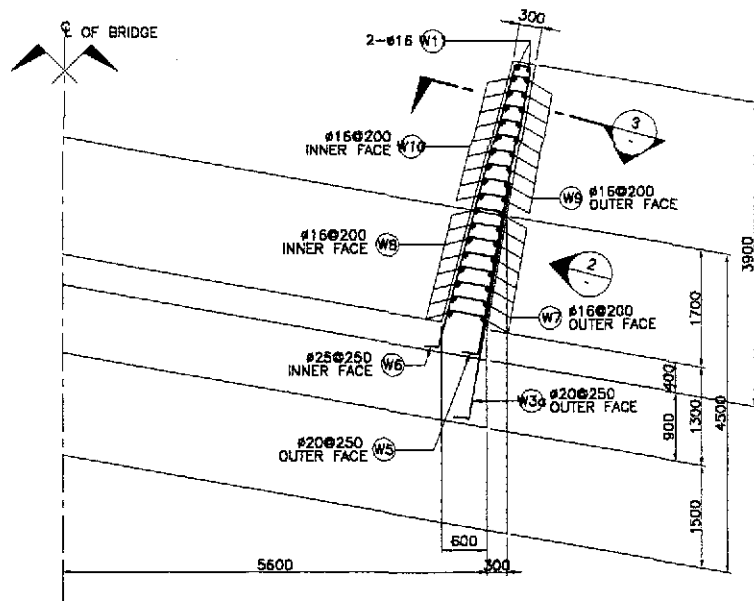
BAR BENDING DIAGRAM



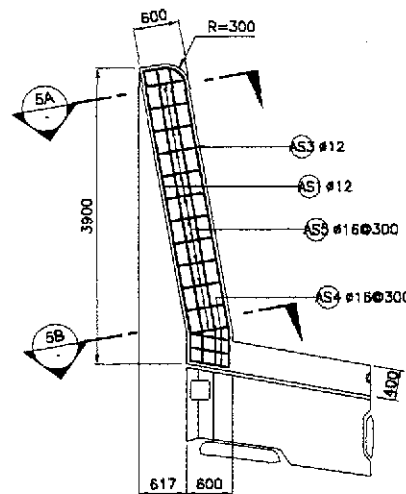
SCHEDULE OF REINFORCEMENT PER ABUTMENT

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)
BACKWALL	9.86	1	16	64	175	(B)	2200	300	2200	-	-	-	4700	300.80	1.579	475	94.41
		2	16	16	250	(A)	11300	-	-	-	-	-	11300	180.80	1.579	286	
		3	16	58	175	(C)	600	150	750	-	-	-	1450	84.10	1.579	133	
		4	16	2	AS SHOWN	(A)	10050	-	-	-	-	-	10050	20.10	1.579	32	
MAINWALL	45.86	5a	25	64	175	(E)	400	4300	-	-	-	-	4700	300.80	3.854	1180	76.23
		5b	20	64	175	(E)	400	4300	-	-	-	-	4700	300.80	2.466	742	
		6	20	29	250	(A)	11300	-	-	-	-	-	11300	305.10	2.466	809	
		7	20	64	175	(B)	250	1200	250	-	-	-	1700	108.80	2.466	269	
		8	16	192	350	(D)	250	1200	250	-	-	-	1700	326.40	1.579	516	
		9	25	68	175	(B)	700	4350	700	-	-	-	5750	391.00	3.854	1507	
FOOTING	74.34	10	25	68	175	(B)	700	4350	700	-	-	-	5750	391.00	3.854	1507	69.52
		11	20	18	250	(B)	700	11850	700	-	-	-	13250	238.50	2.466	589	
		12	20	18	250	(B)	700	11850	700	-	-	-	13250	238.50	2.466	589	
		13	16	6	AS SHOWN	(A)	11850	-	-	-	-	-	11850	71.10	1.579	113	
		14	16	6	AS SHOWN	(A)	4350	-	-	-	-	-	4350	26.10	1.579	42	
		15	16	297	350	(D)	250	1250	250	-	-	-	1750	518.75	1.579	821	
DOWEL		16	16	34	300	(E)	650	500	-	-	-	-	1150	39.10	1.579	62	
TOTAL	130.07																

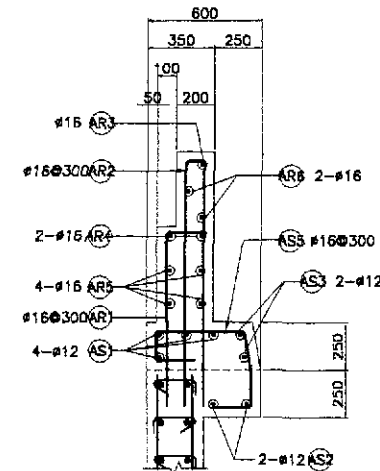
GRADE 40 TOTAL = 7,172 kgs.
GRADE 80 TOTAL = 2,485 kgs.



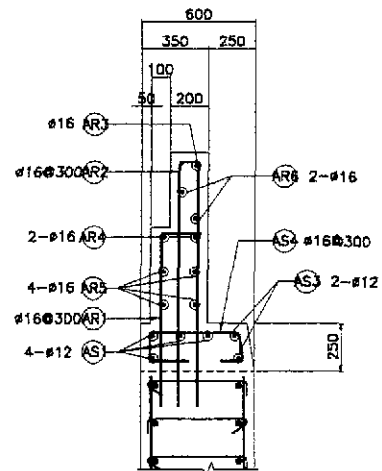
1 PLAN
SCALE 1:50



4 SIDEWALK DETAIL
SCALE 1:50

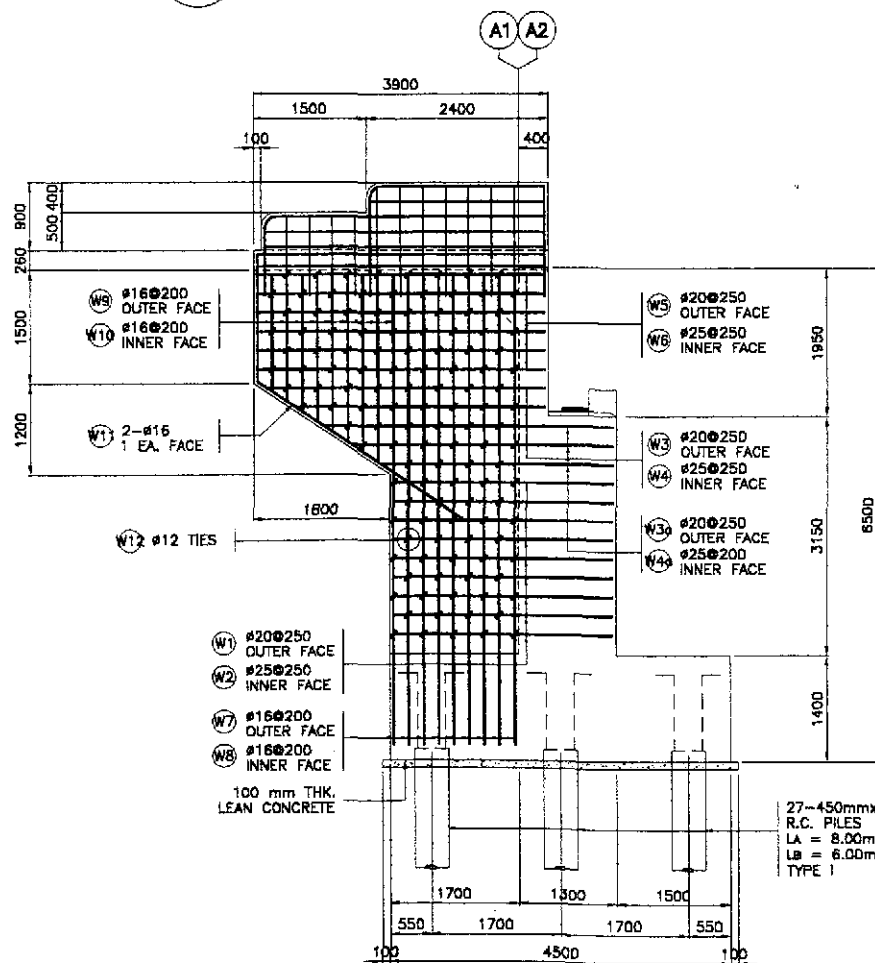


5A SECTION
SCALE 1:20

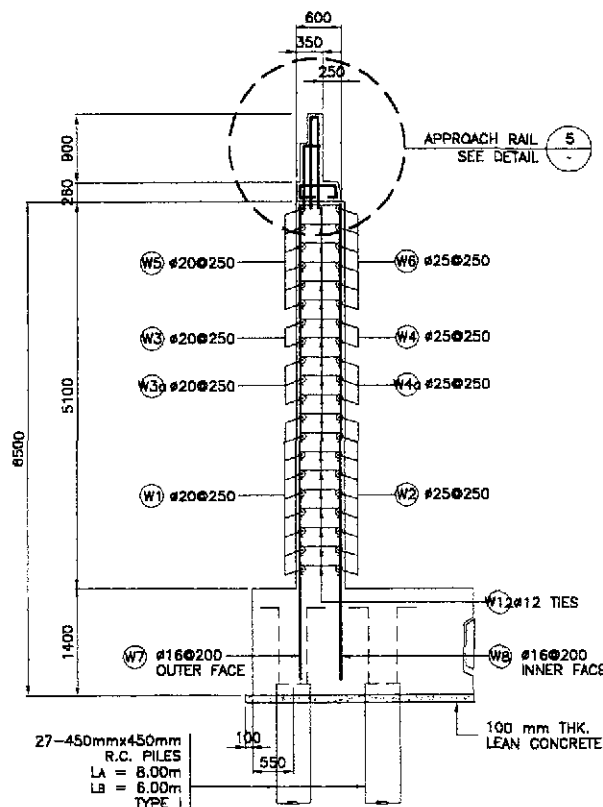


5B SECTION
SCALE 1:20

5 APPROACH RAIL DETAILS
SCALE 1:20

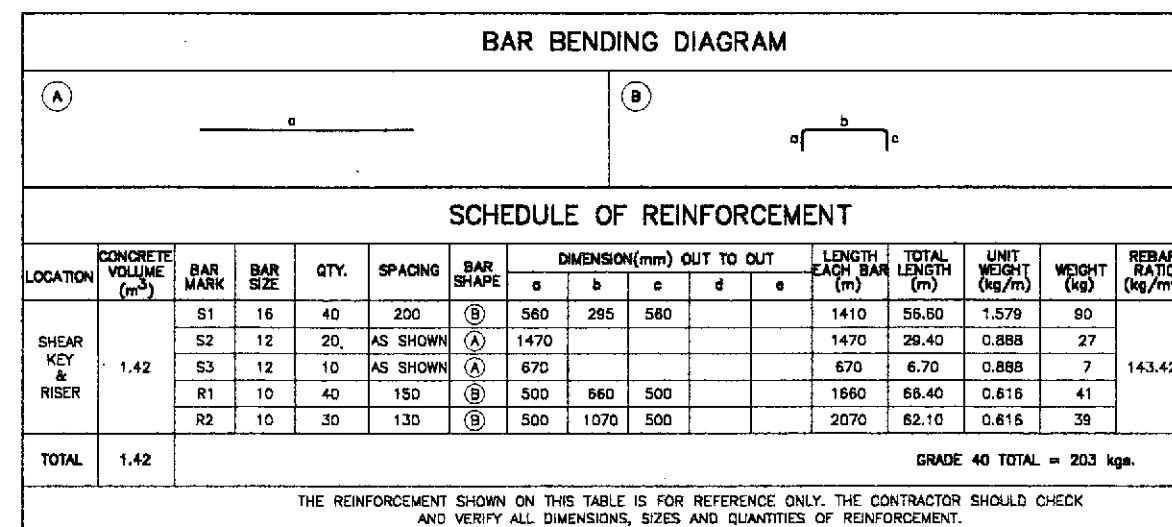


2 WINGWALL ELEVATION
SCALE 1:50



3 SECTION
SCALE 1:50

BAR BENDING DIAGRAM																	
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	11.21	W1	20	18	250	B	400	2900	150	-	-	-	3450	62.10	2.466	154	149.31
		W2	25	18	250	B	400	2900	150	-	-	-	3450	62.10	3.854	240	
		W3	20	4	250	B	400	3500	150	-	-	-	4050	16.20	2.466	40	
		W4	20	6	250	B	400	3450	150	-	-	-	4000	24.00	2.466	60	
		W5	25	4	250	B	400	3500	150	-	-	-	4050	16.20	3.854	63	
		W6	25	6	250	B	400	3450	150	-	-	-	4000	24.00	3.854	93	
		W7	20	12	250	B	400	3800	150	-	-	-	4350	52.20	2.466	129	
		W8	25	12	250	B	400	3800	150	-	-	-	4350	52.20	3.854	202	
		W9	16	18	200	E	250	6250	-	-	-	-	6500	117.00	1.579	185	
		W10	16	18	200	E	250	6250	-	-	-	-	6500	117.00	1.579	185	
		W11	16	16	200	E	250	2000	-	-	-	-	2250	36.00	1.579	57	
		W12	16	16	200	E	250	2000	-	-	-	-	2250	36.00	2.466	57	



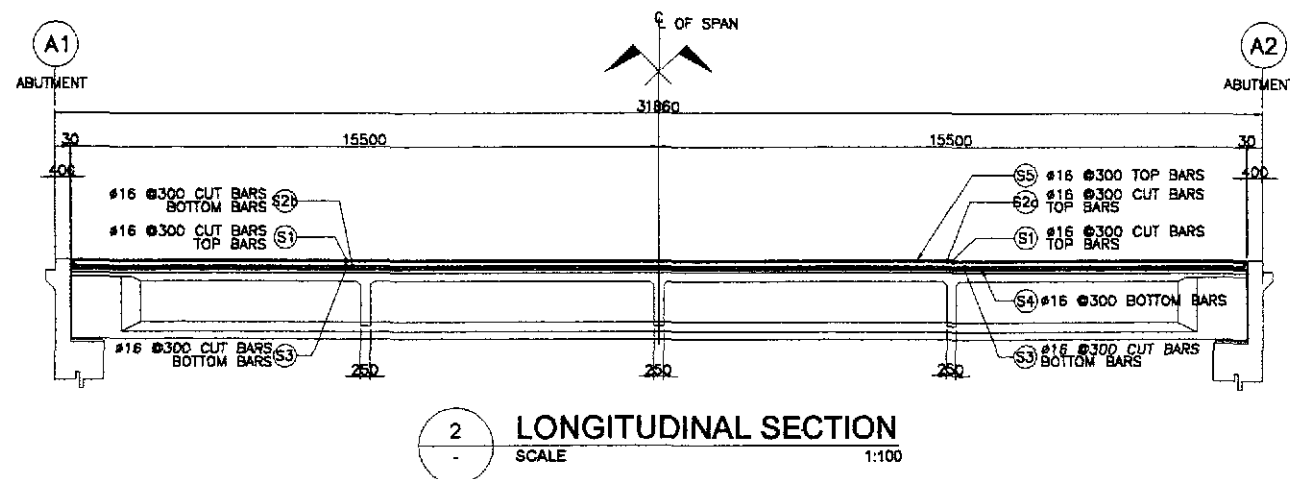
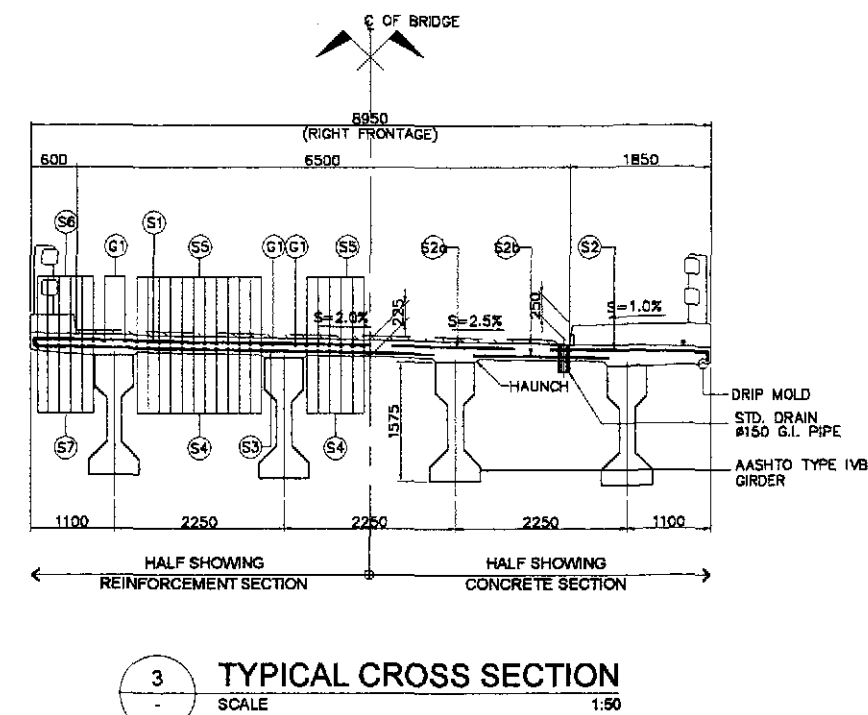
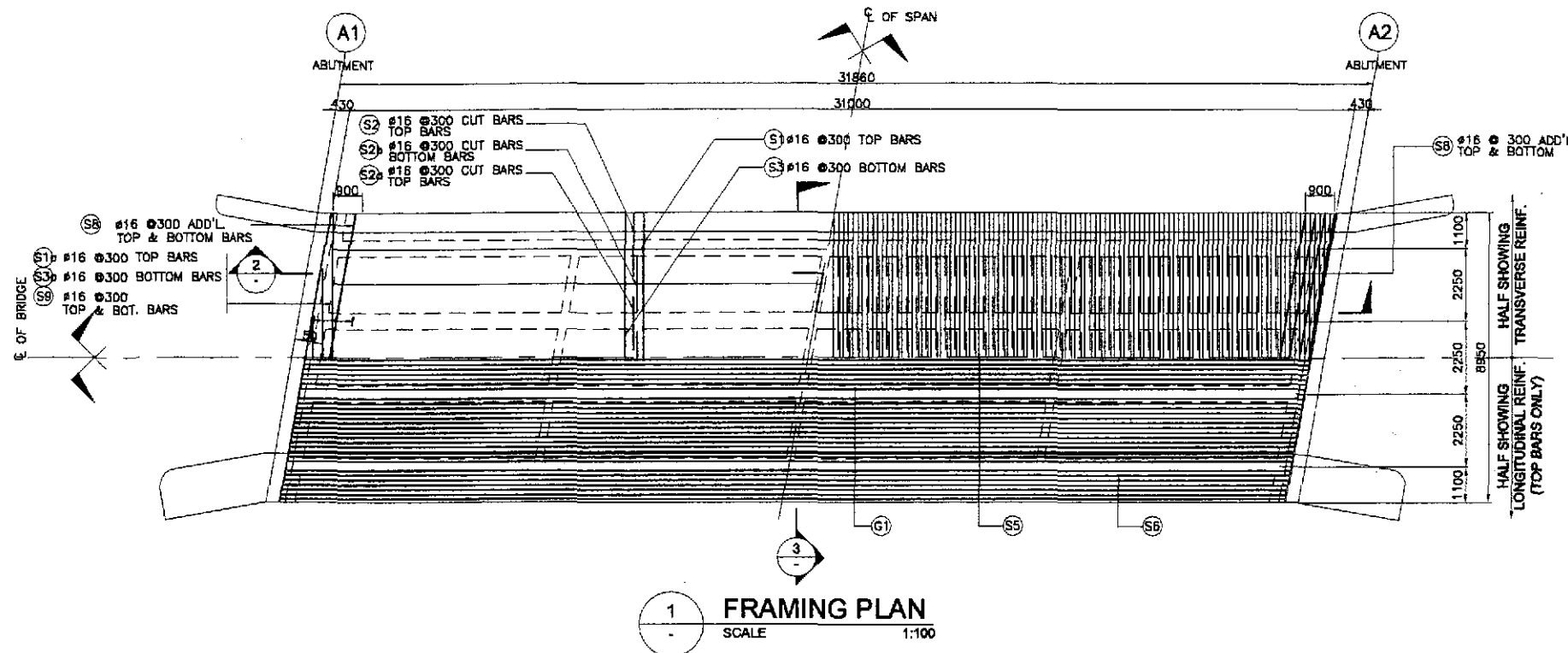


1 ABUTMENT SLOPE PROTECTION

[illegible]

2 TYPICAL SIDE DRAIN DETAIL

PER ABUTMENT			
LOCATION	SIZES	QUANTITY	
		ABUT. A1	ABUT. A2
CONC. CLASS "B"	1000 x 500 x LENGTH	31.90 cu. m.	31.93 cu. m.
BOULDER APRON	350mm-450mm IN DIA.	95.68 cu. m.	95.79 cu. m.
RUBBLE CONCRETE	250mm-300mm IN DIA.	114.93 cu. m.	120.72 cu. m.
SIDE DRAIN	200mm-300mm IN DIA.	8.32 cu. m.	9.64 cu. m.
GROUTED RIPRAP	250mm-300mm IN DIA.	27.47 cu. m.	30.64 cu. m.



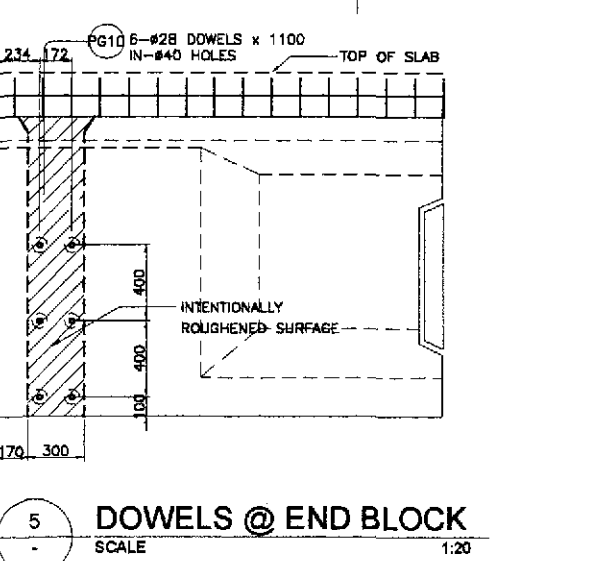
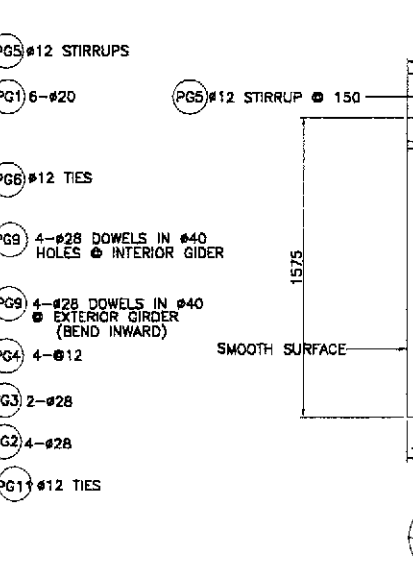
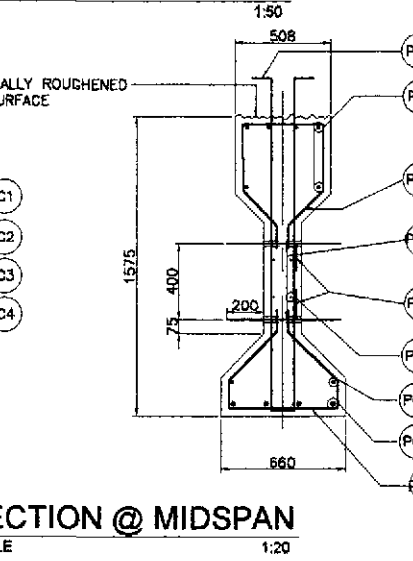
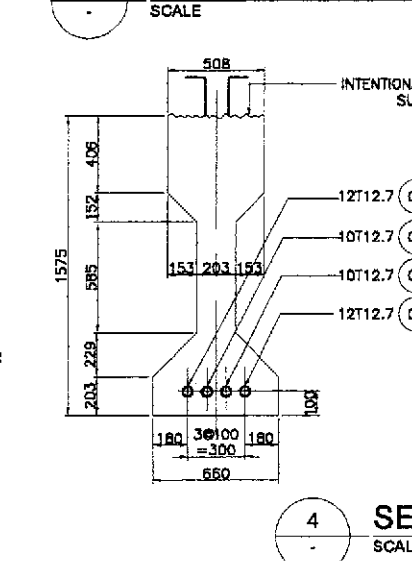
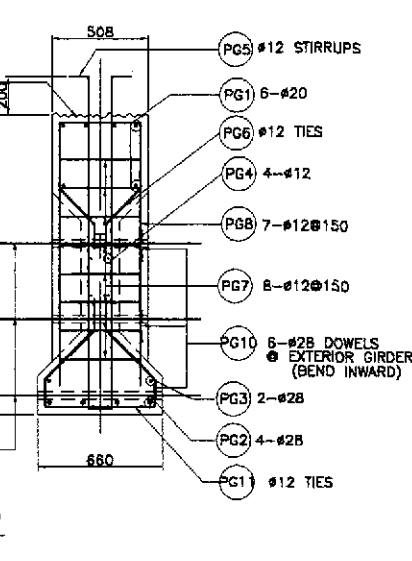
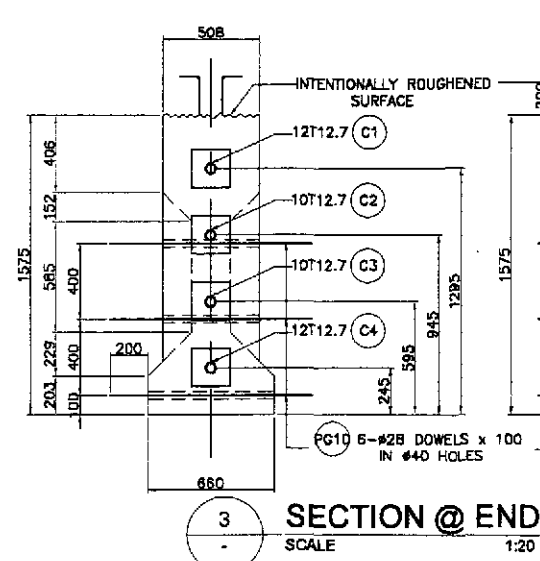
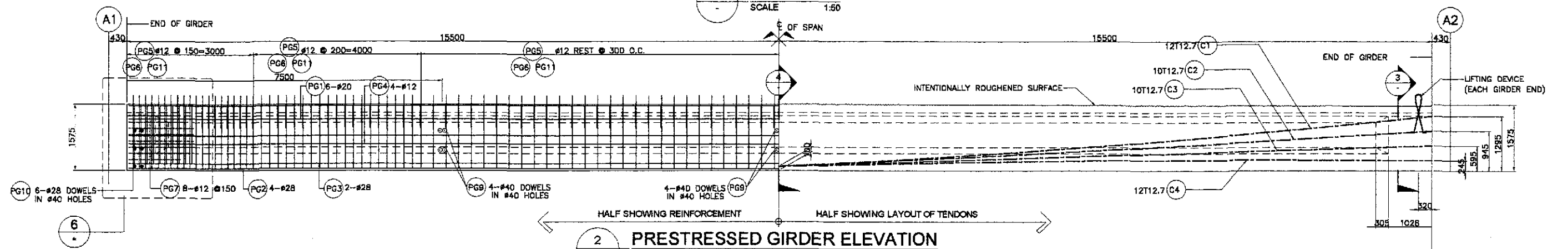
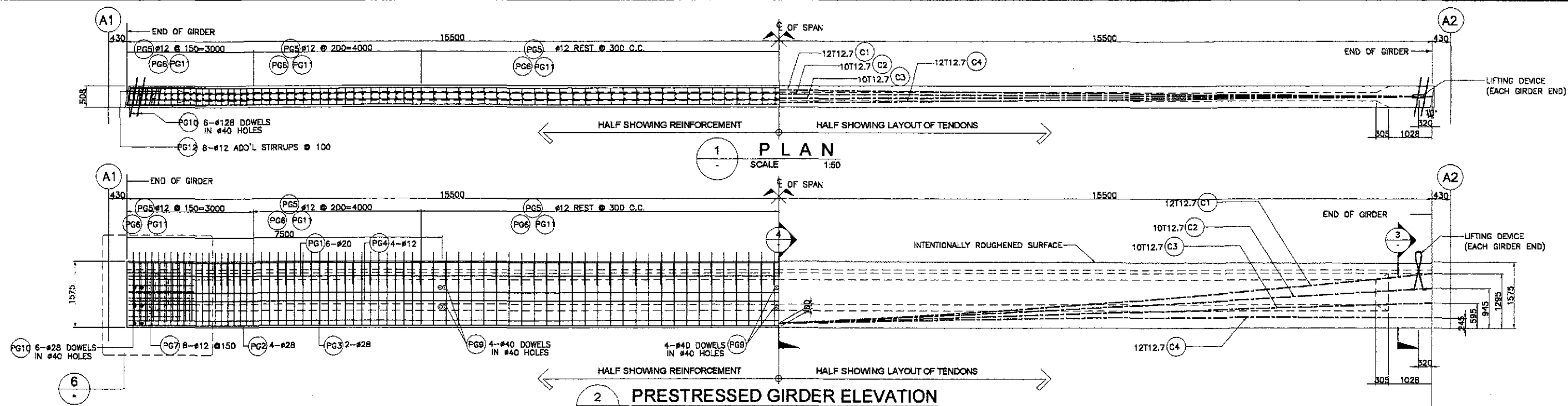
NOTE :
FOR LEFT FRONTAGE - IT IS THE MIRROR IMAGE OF THE CROSS-SECTION.
FRAMING PLAN OF RIGHT FRONTAGE.

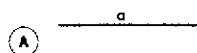
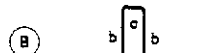

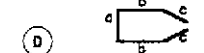
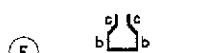
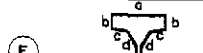
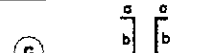
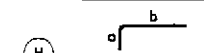
ESTIMATED QUANTITIES OF SUPERSTRUCTURE				
ITEM NO.	DESCRIPTION	UNIT	TOTAL	
404(1)a	REINFORCING STEEL GRADE 40	kgs.	20557	
	DECK SLAB	10843		
	DIAPHRAGM	383		
	GIRDER	4796		
	SIDEWALK, RAILING, & POST	3578		
	APPROACH SLAB	956		
404(1)b	REINFORCING STEEL GRADE 60	kgs.	10577	
	DECK SLAB	0		
	DIAPHRAGM	1203		
	GIRDER	5808		
	SIDEWALK, RAILING, & POST	580		
	APPROACH SLAB	2876		
405(1)	STRUCTURAL CONCRETE	cu. m.	206.00	
	DECK SLAB	65.89		
	DIAPHRAGM	11.45		
	GIRDER	77.73		
	SIDEWALK, RAILING, & POST	26.20		
	APPROACH SLAB	23.84		

BAR BENDING DIAGRAM

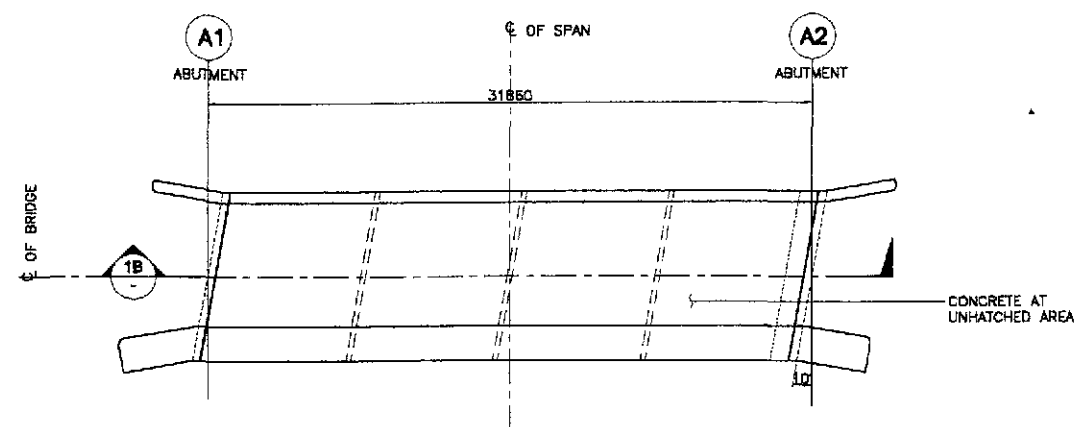
SCHEDULE OF REINFORCEMENT

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)	REMARKS
DECK SLAB	65.89	G1	16	8	AS SHOWN	(A)	30900	-	-	-	30900	247.20	1.579	391	154.57	
		S1	16	99	300	(C)	145	8850	145	-	9140	904.86	1.579	1429		
		S1a	16	12	300	(C)	145	5350	145	-	5640	67.68	1.579	107		
		S2	16	198	300	(B)	145	2000	-	-	2145	424.71	1.579	671		
		S2a	16	198	300	(A)	1700	-	-	-	1700	336.60	1.579	532		
		S2b	16	297	300	(A)	1850	-	-	-	1850	549.45	1.579	868		
		S3	16	99	300	(A)	8850	-	-	-	8850	876.15	1.579	1384		
		S3a	16	12	300	(A)	5350	-	-	-	5350	84.20	1.579	102		
		S4	16	36	150	(A)	30900	-	-	-	30900	1112.00	1.579	1757		
		S5	16	36	150	(A)	30900	-	-	-	30900	1112.00	1.579	1757		
TOTAL	65.89	S6	16	12	AS SHOWN	(A)	30900	-	-	-	30900	370.80	1.579	586	GRADE 40 TOTAL = 10,843 kgs.	
		S7	16	12	AS SHOWN	(A)	30900	-	-	-	30900	370.80	1.579	586		
		S8	16	16	300	(A)	9000	-	-	-	9000	144.00	1.579	228		
		S9	16	24	300	(A)	5350	-	-	-	5350	128.40	1.579	203		
		S10	12	140	450	(A)	145	900	600	300	1945	272.30	0.888	242		



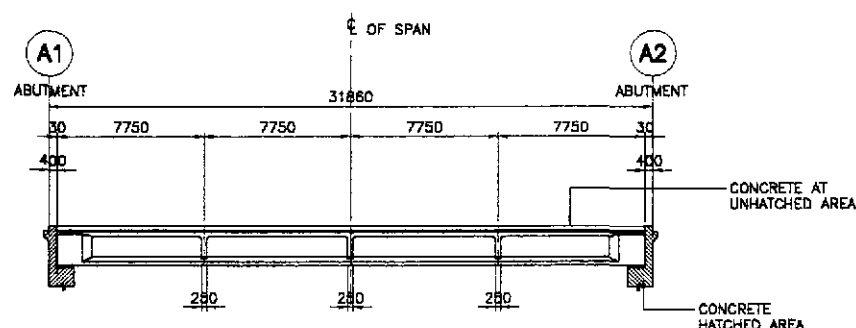
BAR BENDING DIAGRAM																		
																		
																		
SCHEDULE OF REINFORCEMENT																		
STRUCTURE COMPONENT	BAR MARK	SIZE (mm)	QTY.	SPACING	BAR SHAPE	DIMENSION (mm)					LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	TOTAL WEIGHT (kg)	CONC. VOLUME (cu.m)	REBAR RATIO (kg/cu.m)	REMARKS	
						a	b	c	d	e								
GIRDER	PG1	20	6	AS SHOWN	(A)	30920	-	-	-	-	30920	185.52	2.488	458	19.43	136.42	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	298				
	PG4	12	4	AS SHOWN	(A)	30920	-	-	-	-	30920	123.68	0.888	110				
	PG5	12	138	150	(G)	100	1750	103	-	-	3803	524.81	0.888	467				
	PG6	12	138	150	(E)	430	350	150	280	-	1950	289.10	0.888	239				
	PG7	12	16	150	(D)	430	1000	550	-	-	3530	56.48	0.888	51				
	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 = 1,189 kgs.				
														GRADE 80 TOTAL = 1,452 kgs.				

- NOTES :
- 1.) SEE GENERAL NOTES, -2, FOR GIRDER DESIGN GUIDE.
 - 2.) JACKING FORCE PER GIRDER, $P_j = 4681$ KN.
 - 3.) JACKING WILL BE DONE AT BOTH ENDS.
 - 4.) FINAL PRESTRESSING FORCE @ MIDSPAN, $F_{NET} = 3,413$ KN



1A PLAN
SCALE 1:200

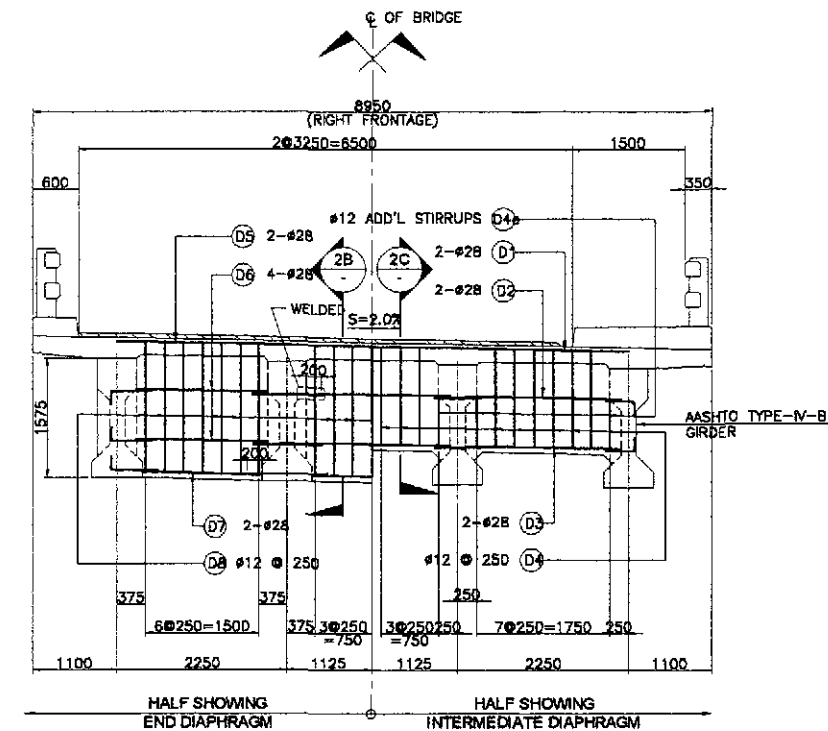
- NOTES:
1. CONCRETE AT HATCHED AREAS SHALL BE PLACED AT LEAST TWENTY ONE (21) DAYS AHEAD OF CONCRETE AT UNHATCHED AREAS.
 2. SEE GIRDER DETAIL FOR SPACING OF #28 DOWELS.



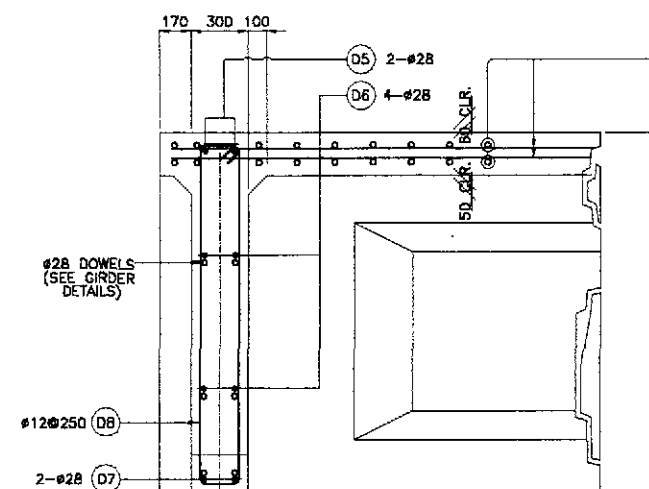
1B LONGITUDINAL SECTION
SCALE 1:200

1 CONCRETE POURING SEQUENCE
SCALE 1:200

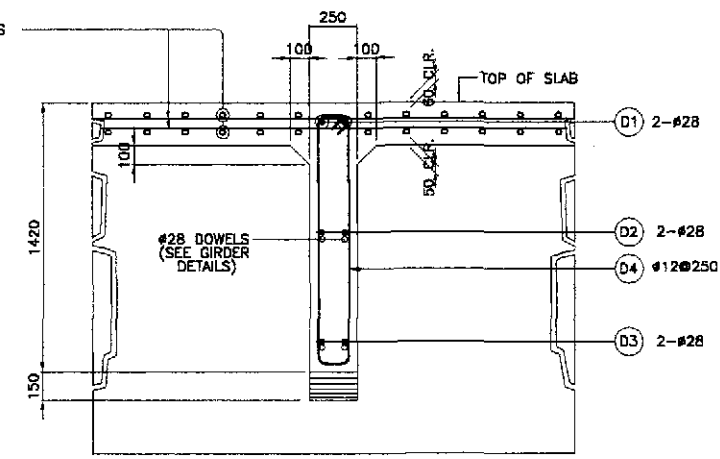
BAR BENDING DIAGRAM																
<div><div>A</div><div></div></div>										<div><div>B</div><div></div></div>						
SCHEDULE OF REINFORCEMENT																
STRUCTURE COMPONENT	LOCATION	CONCRETE VOLUME (m³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT				LENGTH PER BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	TOTAL WEIGHT IN (kg)	REBAR RATIO (kg/m³)
								a	b	c	d					
DIAPHRAGM	INTERMEDIATE DIAPHRAGM	6.19	D1	28	6	AS SHOWN	A	6750	—	—		6750	40.50	4.833	196	116.55
			D2	28	18	AS SHOWN	A	2045	—	—		2045	36.81	4.833	178	
			D3	28	18	AS SHOWN	A	2045	—	—		2045	36.81	4.833	178	
			D4	12	54	250	B	150	1200	150		3000	162.00	0.888	144	
	D4a	12	18	AS SHOWN	B	150	500	150		1600	28.80	0.888	26	154.50		
	END DIAPHRAGM	5.25	D5	28	6	AS SHOWN	A	6750	—	—		6750	40.50		4.833	186
			D6	28	36	AS SHOWN	A	1740	—	—		1740	62.64		4.833	303
			D7	28	18	AS SHOWN	A	1740	—	—		1740	31.32		4.833	152
D8			12	63	250	B	200	1550	150		3800	239.40	0.888	213		
TOTAL		11.45											GRADE 60 TOTAL = 1,203 kgs. GRADE 40 TOTAL = 383 kgs.			



2A ELEVATION
SCALE 1:50



2B SECTION
SCALE 1:20

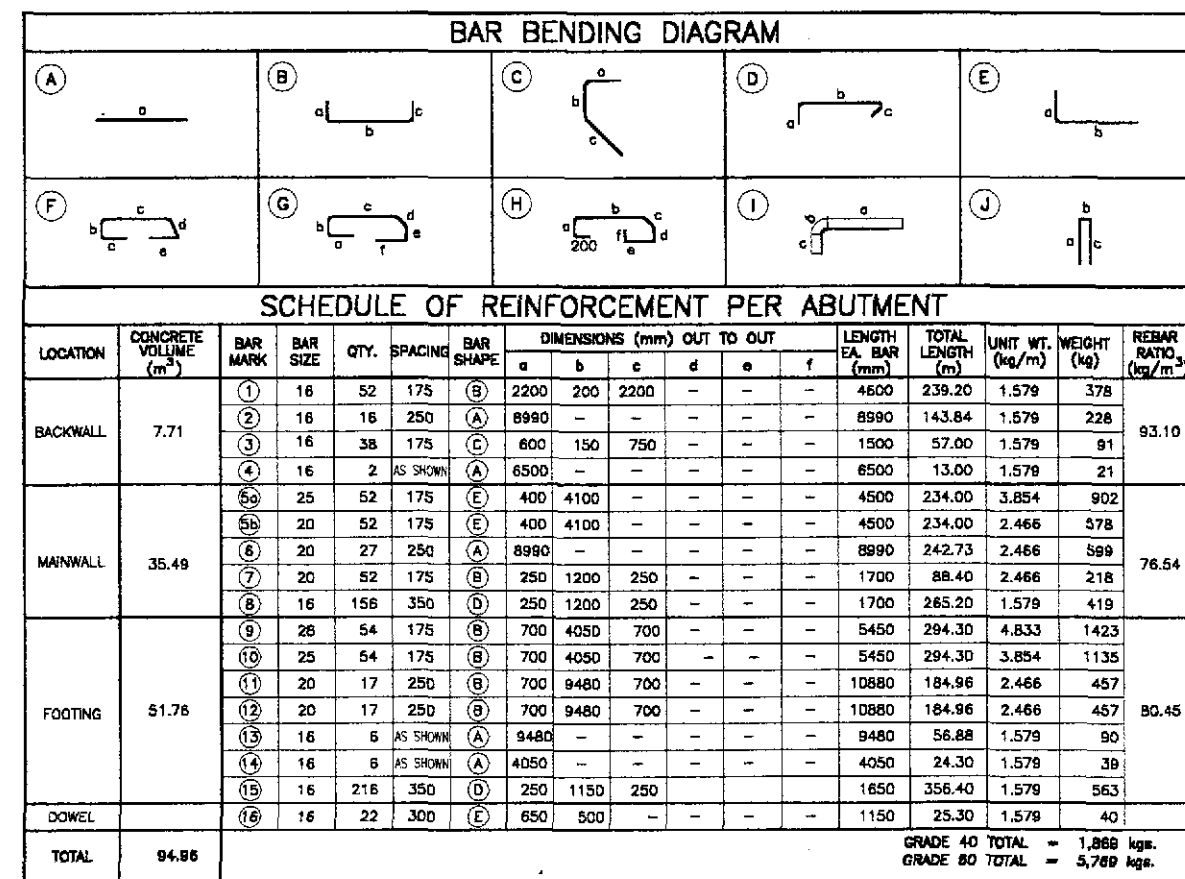
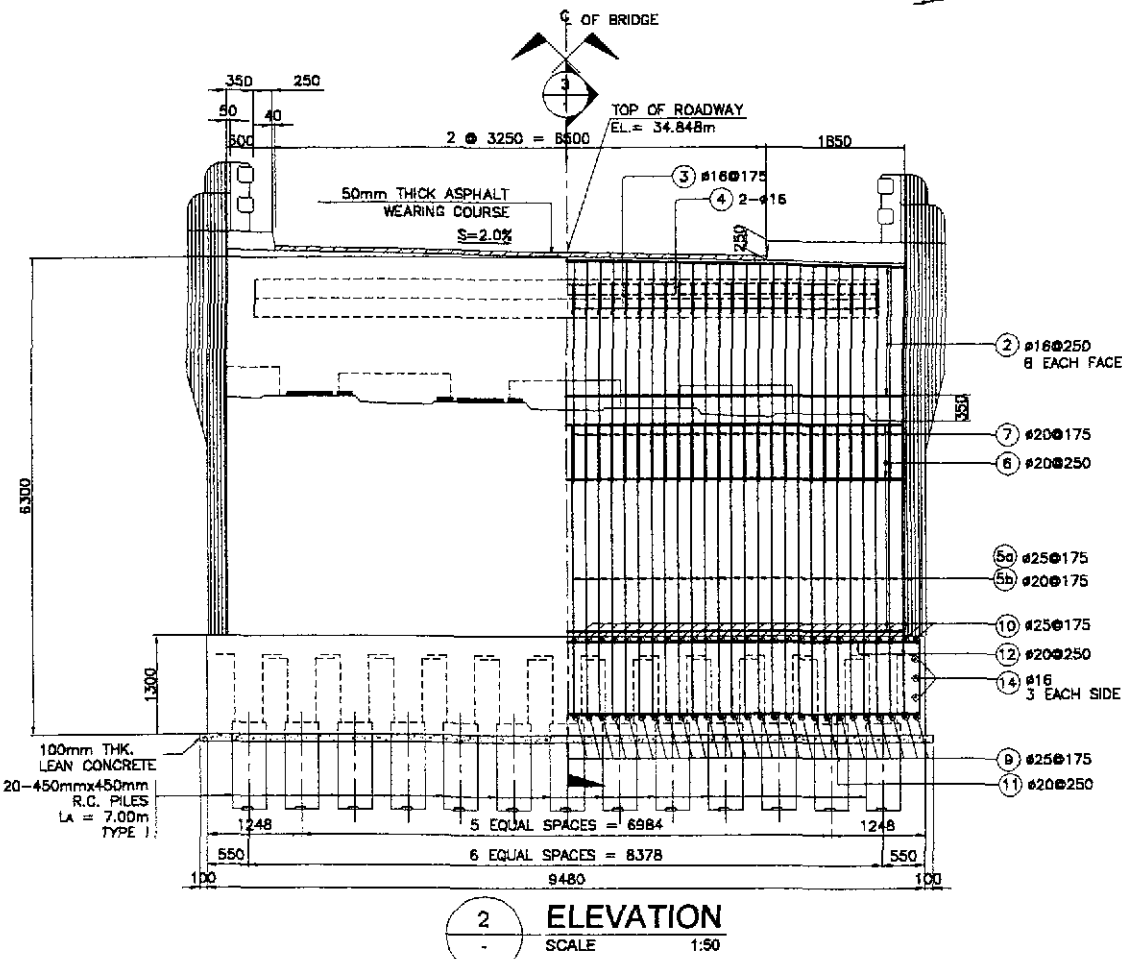


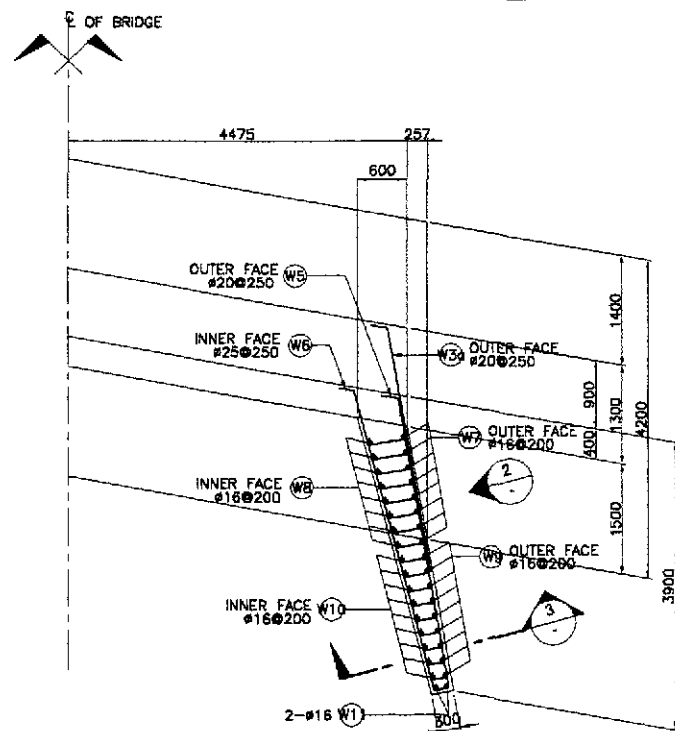
2C SECTION
SCALE 1:20

2 DETAIL OF END & INTERMEDIATE DIAPHRAGM
SCALE AS SHOWN

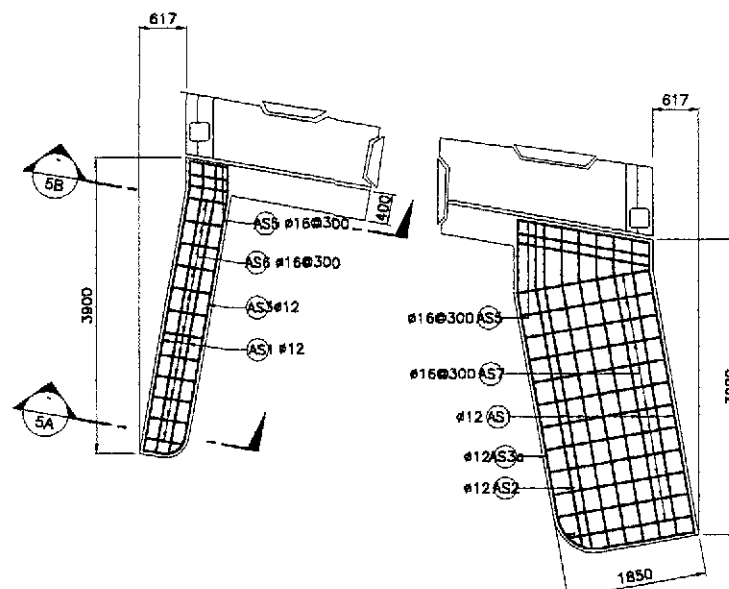
NOTE:
FOR LEFT FRONTAGE - IT IS THE MIRROR IMAGE OF THE PLAN, ELEVATION OF RIGHT FRONTAGE.

<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p>		<p>KATAHIRA & ENGINEERS INTERNATIONAL</p>		<p>YACHIYO ENGINEERING CO., LTD.</p>		<p>DATE: 10/09/02</p> <p>SIGNATURE: [Signature]</p> <p>DESIGNED: [Signature]</p>		<p>DATE: 10/10/02</p> <p>SIGNATURE: [Signature]</p> <p>CHECKED: [Signature]</p>		<p>DATE: 10/16/02</p> <p>SIGNATURE: [Signature]</p> <p>SUBMITTED: [Signature]</p>		<p>DATE: 10/16/02</p> <p>SIGNATURE: [Signature]</p> <p>TEAM LEADER: [Signature]</p>		<p>DATE: 10/16/02</p> <p>SIGNATURE: [Signature]</p> <p>PROJECT DIRECTOR: [Signature]</p>		<p>DATE: 10/16/02</p> <p>SIGNATURE: [Signature]</p> <p>CHIEF, BRIDGES DIVISION: [Signature]</p>		<p>DATE: 10/16/02</p> <p>SIGNATURE: [Signature]</p> <p>DIRECTOR IV (OIC): [Signature]</p>		<p>DATE: 10/16/02</p> <p>SIGNATURE: [Signature]</p> <p>UNDERSECRETARY: [Signature]</p>		<p>DATE: 10/16/02</p> <p>SIGNATURE: [Signature]</p> <p>SECRETARY: [Signature]</p>		<p>PROJECT AND LOCATION:</p> <p>THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pardel, Cabanatuan and San Jose Bypasses)</p> <p>CABANATUAN BYPASS - CONTRACT PACKAGE II</p>		<p>SCALE:</p> <p>AS SHOWN</p> <p>FULL SIZE A1</p>		<p>SHEET CONTENTS:</p> <p>BRIDGE NO. 6</p> <p>CONCRETE POURING SEQUENCE AND DIAPHRAGM DETAILS</p> <p>RIGHT & LEFT FRONTAGE (ULTIMATE STAGE)</p>		<p>SHEET NO.:</p> <p>B6-13</p>	
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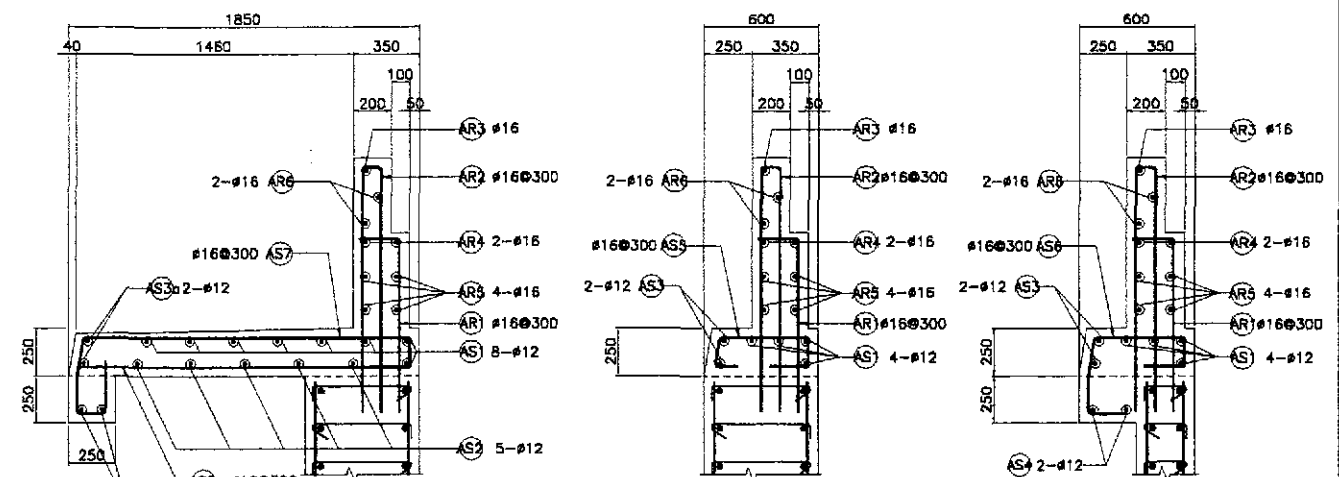




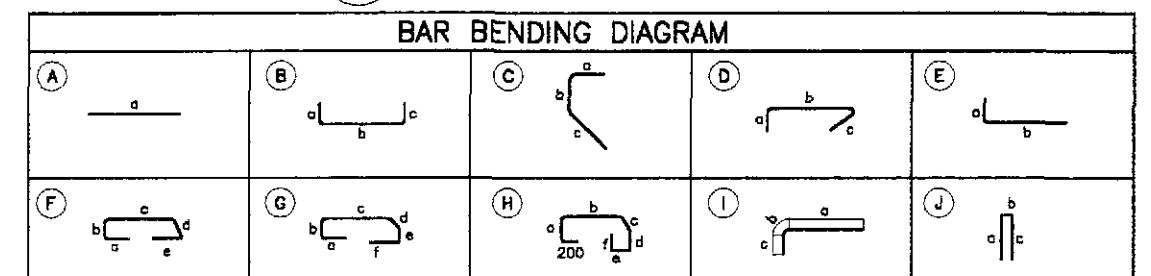
1 PLAN
SCALE 1:50



4 SIDEWALK DETAIL
SCALE 1:50

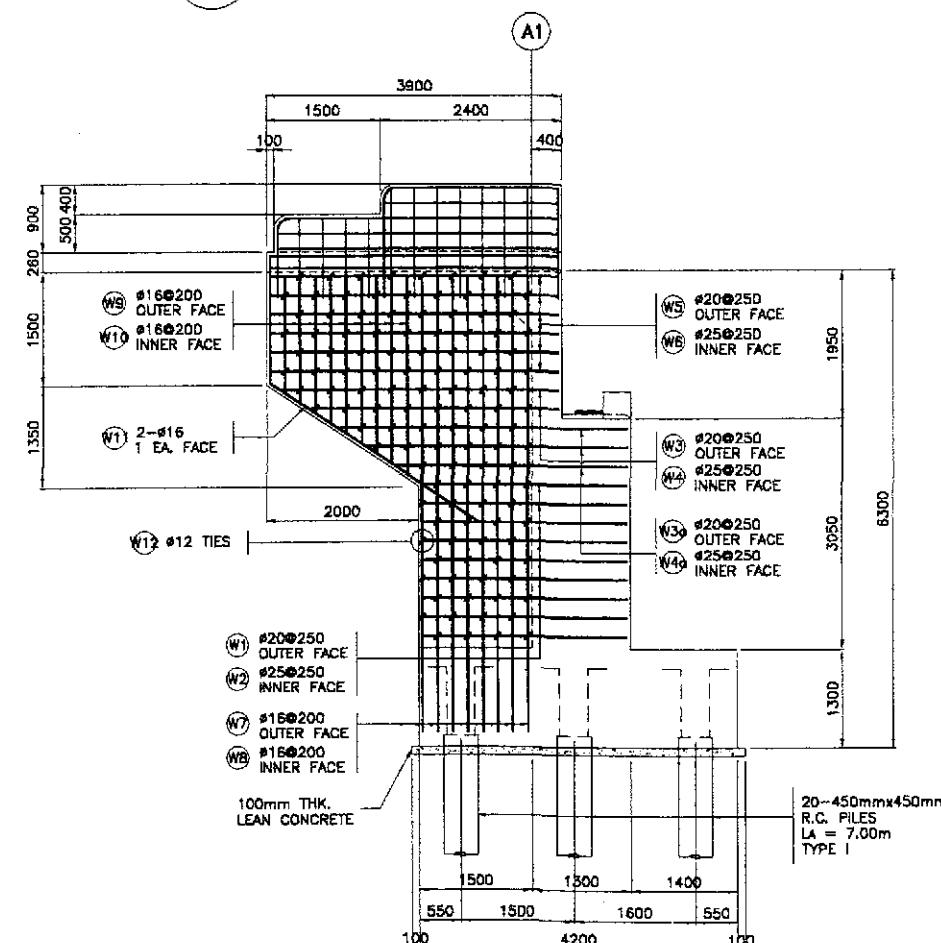


5A SECTION SCALE 1:20
5B SECTION SCALE 1:20
5C SECTION SCALE 1:20
5 APPROACH RAIL DETAILS
SCALE 1:20

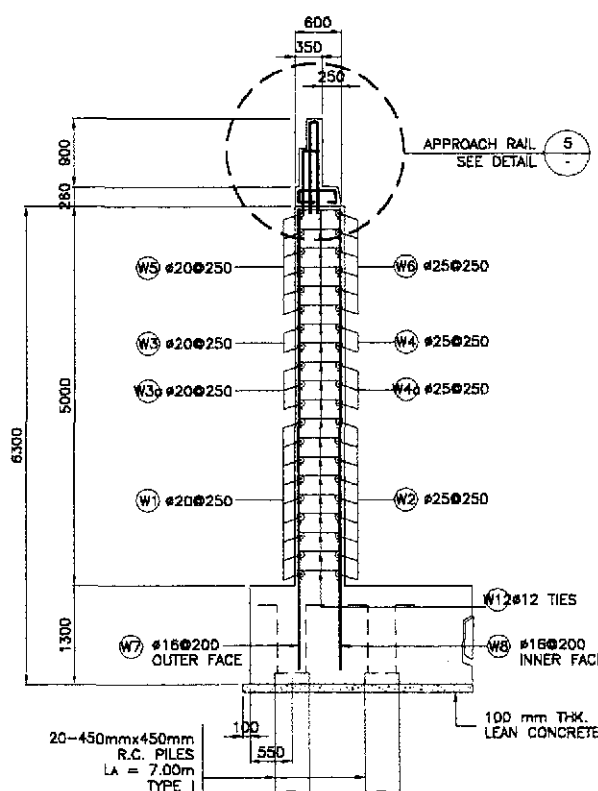


SCHEDULE OF REINFORCEMENT PER ABUTMENT

LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm)					OUT TO OUT			LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)	
							a	b	c	d	e	f								
WINGWALL	10.67	W1	20	18	250	(B)	400	2700	150	-	-	-	3250	58.50	2.468	145	147.49			
		W2	25	18	250	(B)	400	2700	150	-	-	-	3250	58.50	3.854	226				
		W3	20	4	250	(B)	400	3500	150	-	-	-	4050	16.20	2.468	40				
		W3a	20	6	250	(B)	400	3450	150	-	-	-	4000	24.00	2.468	60				
		W4	25	4	250	(B)	400	3500	150	-	-	-	4050	16.20	3.854	63				
		W4a	25	16	250	(B)	400	3450	150	-	-	-	4000	24.00	3.854	93				
		W5	20	12	250	(B)	400	3800	150	-	-	-	4350	52.20	2.468	129				
		W6	25	12	250	(B)	400	3800	150	-	-	-	4350	52.20	3.854	202				
		W7	16	14	200	(E)	250	6050	-	-	-	-	6300	88.20	1.579	140				
		W8	16	14	200	(E)	250	6050	-	-	-	-	6300	88.20	1.579	140				
		W9	16	18	200	(E)	250	2100	-	-	-	-	2350	42.30	1.579	67				
		W10	16	18	200	(E)	250	2100	-	-	-	-	2350	42.30	1.579	67				
W11	16	4	AS SHOWN	(C)	250	1500	3500	-	-	-	-	5250	21.00	1.579	34					
W12	12	238	AS SHOWN	(D)	170	450	170	-	-	-	-	780	188.02	0.888	167					
													GRADE 60 TOTAL = 858 kgs.							
													GRADE 40 TOTAL = 615 kgs.							
APPROACH RAILING AND SIDEWALK	4.65	AS1	12	12	AS SHOWN	(A)	3800	-	-	-	-	-	3800	45.60	0.888	41	90.49			
		AS2	12	5	AS SHOWN	(A)	3800	-	-	-	-	-	3800	19.00	0.888	17				
		AS3	12	4	AS SHOWN	(A)	3800	-	-	-	-	-	3800	15.20	0.888	14				
		AS4	16	4	AS SHOWN	(A)	3800	-	-	-	-	-	3800	15.20	1.579	14				
		AS5	16	3	300	(G)	200	170	480	200	170	200	1420	4.26	1.579	7				
		AS6	16	12	300	(G)	200	150	480	200	200	-	1250	15.00	1.579	24				
		AS7	16	15	300	(H)	200	170	1730	200	170	-	2870	43.05	1.579	68				
		AS8	16	15	300	(E)	200	1770	-	-	-	-	1870	28.55	1.579	47				
		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	28.60	1.579	47				
		AR6	16	4	AS SHOWN	(A)	2300	-	-	-	-	-	2300	9.20	1.579	15				
															GRADE 40 TOTAL = 421 kgs.					
		TOTAL	15.32												GRADE 60 TOTAL = 958 kgs.					
													GRADE 40 TOTAL = 1036 kgs.							



2 WINGWALL ELEVATION
SCALE 1:50



3 SECTION
SCALE 1:50

1 PLAN
SCALE 1:50
C OF BRIDGE

2
-
ELEVATION
SCALE 1:50

3 SECTION
SCALE 1:50

BAR BENDING DIAGRAM

(A)		(B)		(C)		(D)		(E)	
(F)		(G)		(H)		(I)		(J)	

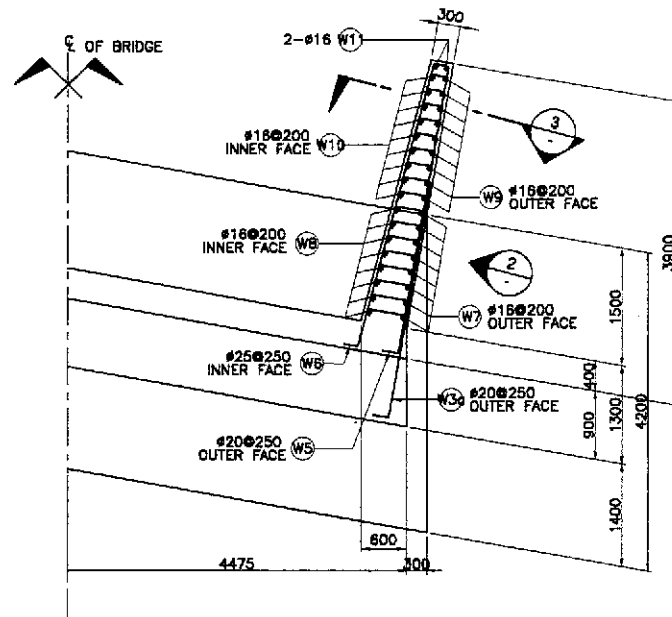
SCHEDULE OF REINFORCEMENT PER ABUTMENT

LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT						LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg.)	REBAR RATIO (kg/m ³)
							a	b	c	d	e	f					
BACKWALL	7.71	(1)	16	52	175	(B)	2200	200	2200	-	-	-	4600	239.20	1.579	378	93.10
		(2)	16	16	250	(A)	8990	-	-	-	-	-	8990	143.84	1.579	228	
		(3)	16	38	175	(C)	800	150	750	-	-	-	1500	57.00	1.579	91	
		(4)	16	2	AS SHOWN	(A)	6500	-	-	-	-	-	6500	13.00	1.579	21	
MAINWALL	34.32	(5a)	25	52	175	(E)	400	4000	-	-	-	-	4400	228.80	3.854	882	78.17
		(5b)	20	52	175	(E)	400	4000	-	-	-	-	4400	228.80	2.466	565	
		(6)	20	27	250	(A)	8990	-	-	-	-	-	8990	247.73	2.466	599	
		(7)	20	52	175	(B)	250	1200	250	-	-	-	1700	88.40	2.466	218	
		(8)	16	156	400	(D)	250	1200	250	-	-	-	1700	265.20	1.579	419	
		(9)	28	54	175	(B)	700	4050	3650	-	-	-	5450	294.30	4.833	1423	
FOOTING	51.76	(10)	25	54	175	(B)	700	4050	700	-	-	-	5450	294.30	3.854	1135	80.45
		(11)	20	17	250	(B)	700	9480	700	-	-	-	10880	184.96	2.466	457	
		(12)	20	17	250	(B)	700	9480	700	-	-	-	10880	184.96	2.466	457	
		(13)	16	6	AS SHOWN	(A)	9480	-	-	-	-	-	9480	55.88	1.579	90	
		(14)	16	6	AS SHOWN	(A)	4050	-	-	-	-	-	4050	24.30	1.579	39	
		(15)	16	216	400	(D)	250	1150	250	-	-	-	1650	356.40	1.579	563	
		(16)	16	22	300	(E)	650	500	-	-	-	-	1150	25.30	1.579	40	
DOWEL		(16)	16	22	300	(E)	650	500	-	-	-	-	1150	25.30	1.579	40	
TOTAL	93.80																
														GRADE 40 TOTAL = 1,869 kgs.			
														GRADE 80 TOTAL = 5,736 kgs.			

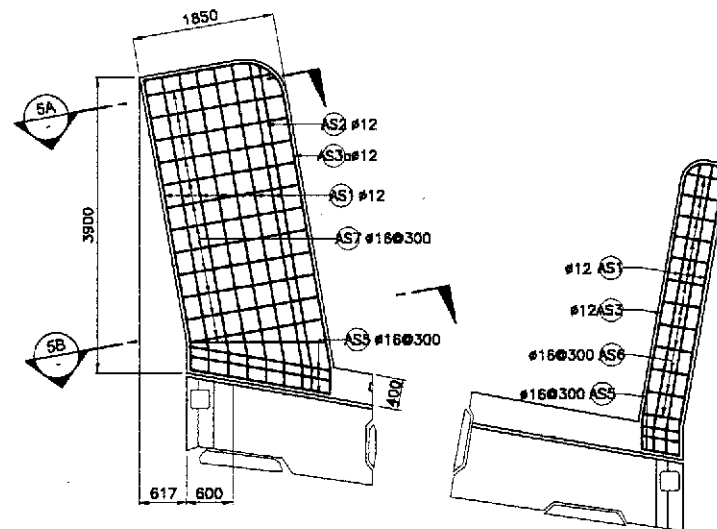


LOCATION	CONCRETE VOLUME (m³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT						LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m³)
							a	b	c	d	e	f					
WINGWALL	10.53	W1	20	18	250	B	400	2700	150	-	-	-	3250	58.50	2.466	145	152.61
		W2	25	18	250	B	400	2700	150	-	-	-	3250	58.50	3.854	226	
		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	-	-	-	4250	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	
		W6	25	12	250	B	400	3800	150	-	-	-	4350	52.20	3.854	202	
		W7	16	16	200	E	250	5950	-	-	-	-	6200	99.20	1.579	157	
		W8	16	16	200	E	250	5950	-	-	-	-	6200	99.20	1.579	157	
		W9	16	18	200	E	250	2100	-	-	-	-	2350	42.30	1.579	67	
		W10	16	18	200	E	250	2100	-	-	-	-	2350	42.30	1.579	67	
W11	16	4	AS SHOWN	C	250	1500	3500	-	-	-	5250	21.00	1.579	34			
W12	12	238	AS SHOWN	D	170	450	170	-	-	-	790	188.02	0.888	167			
													GRADE 60 TOTAL = 958 kgs.				
													GRADE 40 TOTAL = 649 kgs.				
APPROACH RAILING AND SIDEWALK	4.85	AS1	12	12	AS SHOWN	A	3800	-	-	-	-	-	3800	45.60	0.888	41	90.49
		AS2	12	5	AS SHOWN	A	3800	-	-	-	-	-	3800	19.00	0.888	17	
		AS3	12	4	AS SHOWN	A	3800	-	-	-	-	-	3800	15.20	0.888	14	
		AS4	12	4	AS SHOWN	A	3800	-	-	-	-	-	3800	15.20	0.888	14	
		AS5	16	3	300	G	200	170	480	200	170	200	1420	4.26	1.579	7	
		AS6	16	12	300	F	200	170	480	200	200	-	1250	15.00	1.579	24	
		AS7	16	15	300	H	200	170	1730	200	170	200	2870	43.05	1.579	68	
		AS8	16	15	300	E	200	1770	-	-	-	-	1970	29.55	1.579	47	
		AR1	16	8	300	E	200	900	-	-	-	-	1100	6.80	1.579	14	
		AR2	16	16	300	J	1300	120	1300	-	-	-	2720	43.52	1.579	68	
		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 = 421 kgs.				
TOTAL	15.05												GRADE 60 TOTAL = 958 kgs.				
													GRADE 40 TOTAL = 1,070 kgs.				

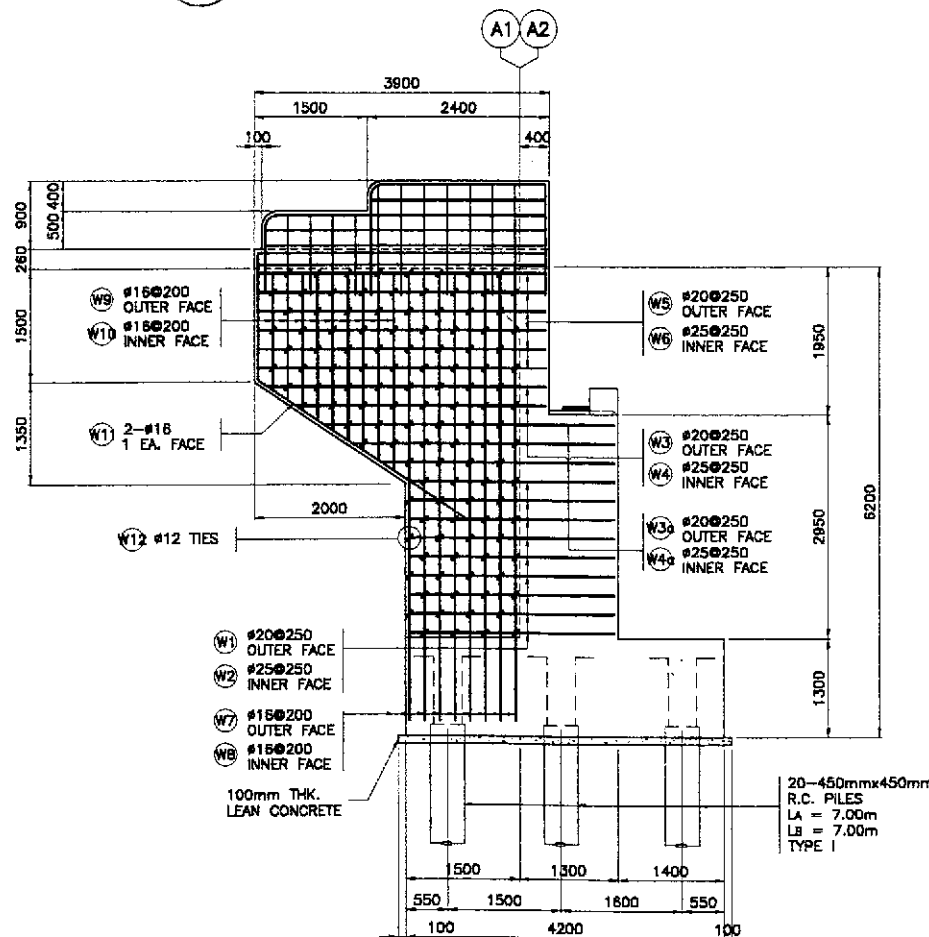




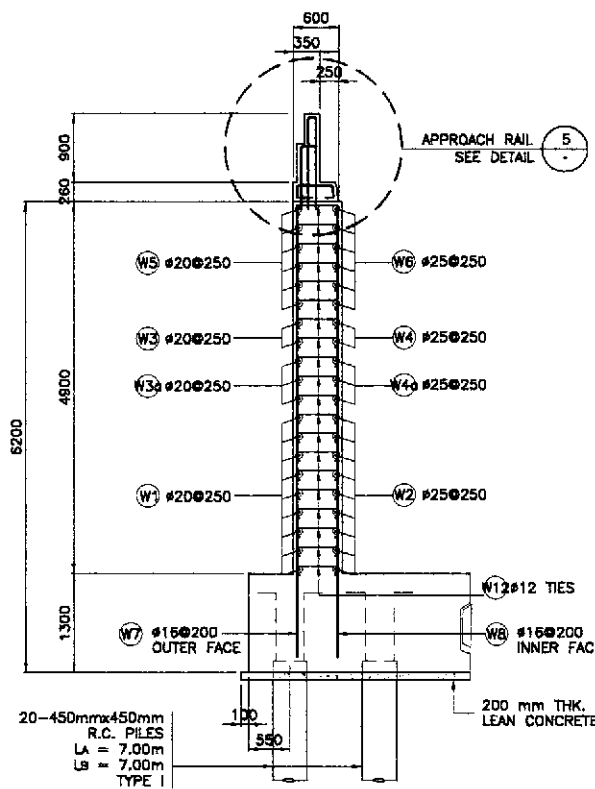
1 PLAN
SCALE 1:50



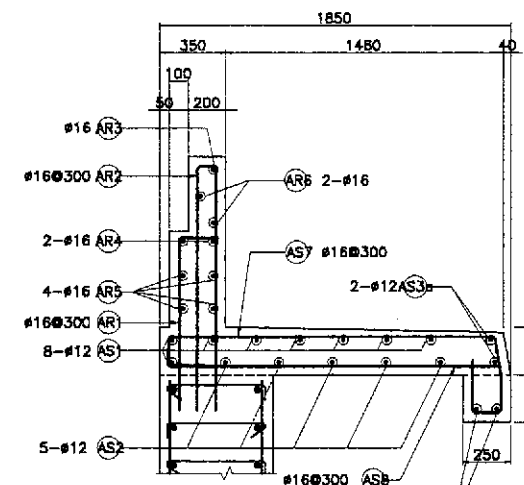
4 SIDEWALK DETAIL
SCALE 1:50



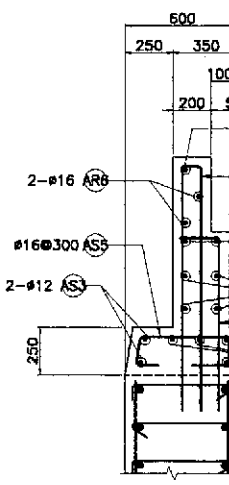
2 WINGWALL ELEVATION
SCALE 1:50



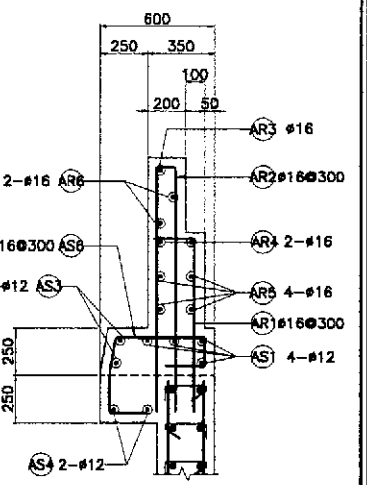
3 SECTION
SCALE 1:50



5A SECTION
SCALE 1:20



5B SECTION
SCALE 1:20



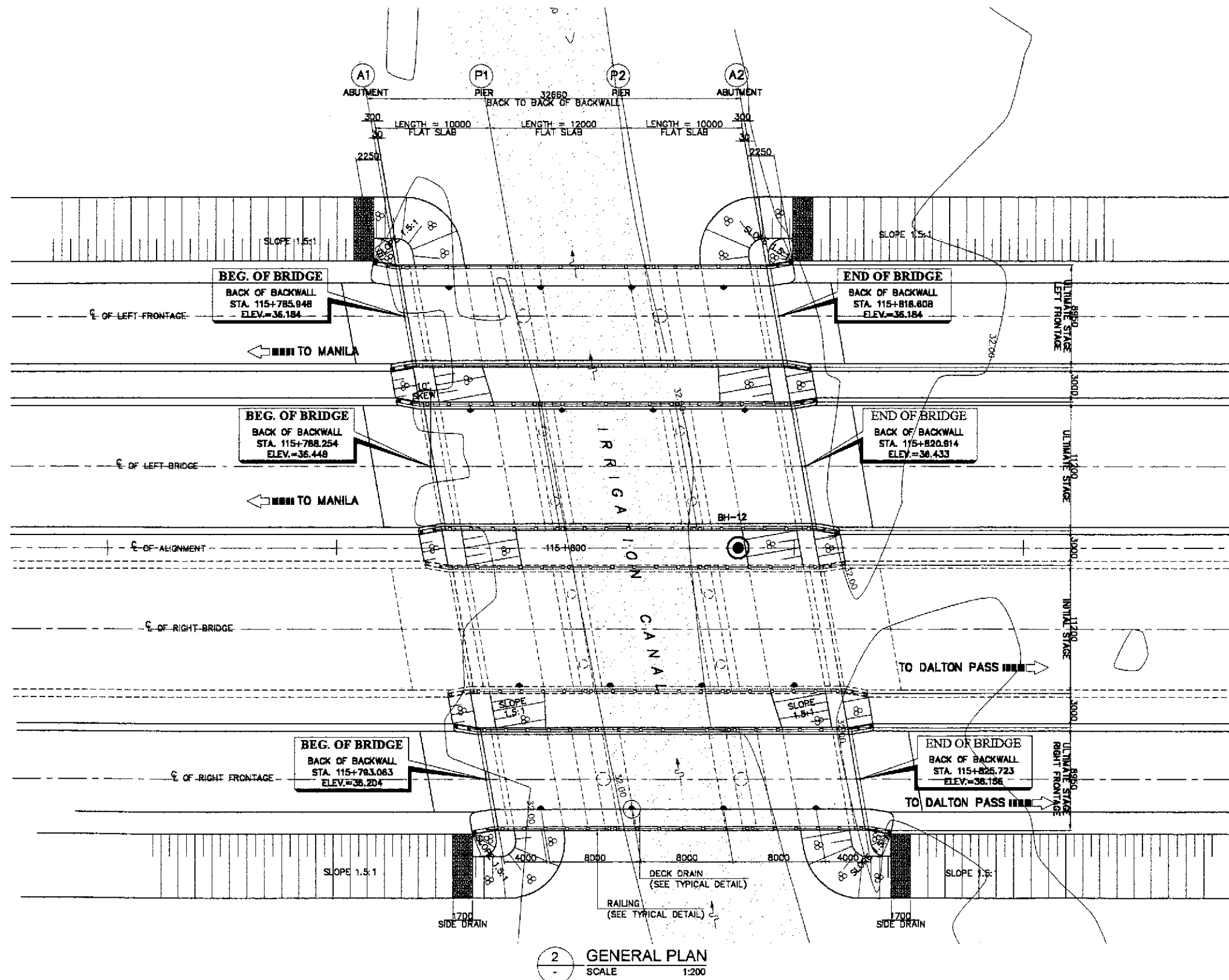
5C SECTION
SCALE 1:20

5 APPROACH RAIL DETAILS
SCALE 1:20

BAR BENDING DIAGRAM				
(A)	(B)	(C)	(D)	(E)
(F)	(G)	(H)	(I)	(J)

SCHEDULE OF REINFORCEMENT PER ABUTMENT																		
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm)					OUT TO OUT		LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d	e	f						
WINGWALL	10.53	W1	20	18	250	(B)	400	2700	150	-	-	-	3250	58.50	2.466	145	152.42	
		W2	25	18	250	(B)	400	2700	150	-	-	-	3250	58.50	3.854	226		
		W3	20	4	250	(B)	400	3500	150	-	-	-	4050	18.20	2.466	40		
		W3a	20	6	250	(B)	400	3350	150	-	-	-	3900	23.40	2.466	58		
		W4	25	4	250	(B)	400	3500	150	-	-	-	4050	18.20	3.854	63		
		W4a	25	6	250	(B)	400	3350	150	-	-	-	3900	23.40	3.854	91		
		W5	20	12	250	(B)	400	3800	150	-	-	-	4350	52.20	2.466	129		
		W6	25	12	250	(B)	400	3800	150	-	-	-	4350	52.20	3.854	202		
		W7	16	16	200	(E)	250	5950	-	-	-	-	6200	99.20	1.579	157		
		W8	16	16	200	(E)	250	5950	-	-	-	-	6200	99.20	1.579	157		
		W9	16	18	200	(E)	250	2100	-	-	-	-	2350	42.30	1.579	67		
		W10	16	18	200	(E)	250	2100	-	-	-	-	2350	42.30	1.579	67		
		W11	16	4	AS SHOWN	(C)	250	1500	3400	-	-	-	5250	21.00	1.579	34		
W12	12	238	AS SHOWN	(D)	170	450	170	-	-	-	790	188.02	0.888	167				
													GRADE 60 TOTAL = 954 kgs. GRADE 40 TOTAL = 651 kgs.					
APPROACH RAILING AND SIDEWALK	4.52	AS1	12	12	AS SHOWN	(A)	3800	-	-	-	-	-	3800	45.60	0.888	41	93.04	
		AS2	12	5	AS SHOWN	(A)	3800	-	-	-	-	-	3800	19.00	0.888	17		
		AS3	12	4	AS SHOWN	(A)	3800	-	-	-	-	-	3800	15.20	0.888	14		
		AS4	12	4	AS SHOWN	(A)	3800	-	-	-	-	-	3800	15.20	0.888	14		
		AS5	16	3	300	(G)	200	170	480	200	170	200	14.20	4.26	1.579	7		
		AS6	16	12	300	(F)	200	170	480	200	200	-	1250	15.00	1.579	24		
		AS7	16	15	300	(H)	200	170	1730	200	170	200	2870	43.05	1.579	68		
		AS8	16	15	300	(E)	200	1770	-	-	-	-	1970	29.55	1.579	47		
		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	28.60	1.579	47		
		AR6	16	4	AS SHOWN	(A)	2300	-	-	-	-	-	2300	9.20	1.579	15		
															GRADE 40 TOTAL = 421 kgs.			
TOTAL	15.05												GRADE 60 TOTAL = 954 kgs. GRADE 40 TOTAL = 1,072 kgs.					

JICA JAPAN INTERNATIONAL COOPERATION AGENCY		KATAHIRA & ENGINEERS INTERNATIONAL		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)		SCALE : AS SHOWN FULL SIZE A1		SHEET CONTENTS : BRIDGE NO. 6 ABUTMENT A1 & A2 WINGWALL REINFORCEMENT DETAILS LEFT FRONTAGE (ULTIMATE STAGE)		SHEET NO. : B6-24	
DESIGNED	10/09/02	SIGNATURE	A. M. GONZALES	DATE	10/09/02	REVIEWED	10/10/02	APPROVED	10/10/02								
CHECKED	10/10/02	Submitted By:		Reviewed By:		Recommended By:		Approved By:									
SUBMITTED	10/10/02	DANILO C. TRAJANO Project Director		ADRIANO M. DORAY Chief, Bridges Division		GILBERTO S. REYES Director IV (OIC)		MANUEL M. BONDAN Undersecretary		SIMEON A. DATUMANONG Secretary							



A CABANATUAN BYPASS BRIDGE NO.7 (STA.115+788.254)
SCALE AS SHOWN

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

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

	DATE	SIGNATURE
DESIGNED	10/19/00	A. P. SANCHEZ
CHECKED	10/16/02	[Signature]
SUBMITTED	10/18/02	[Signature]

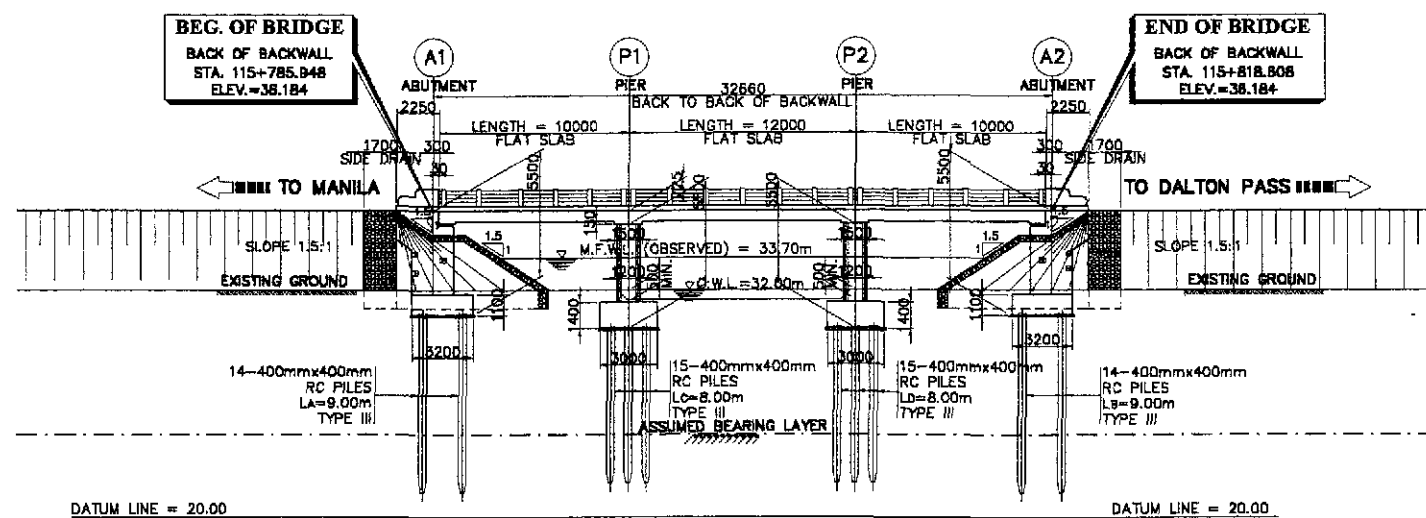
REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS					
BUREAU OF DESIGN		OFFICE OF THE SECRETARY			
Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Recommended By:	Approved By:
DANILLO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridges Division	GILBERTO S. REYES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

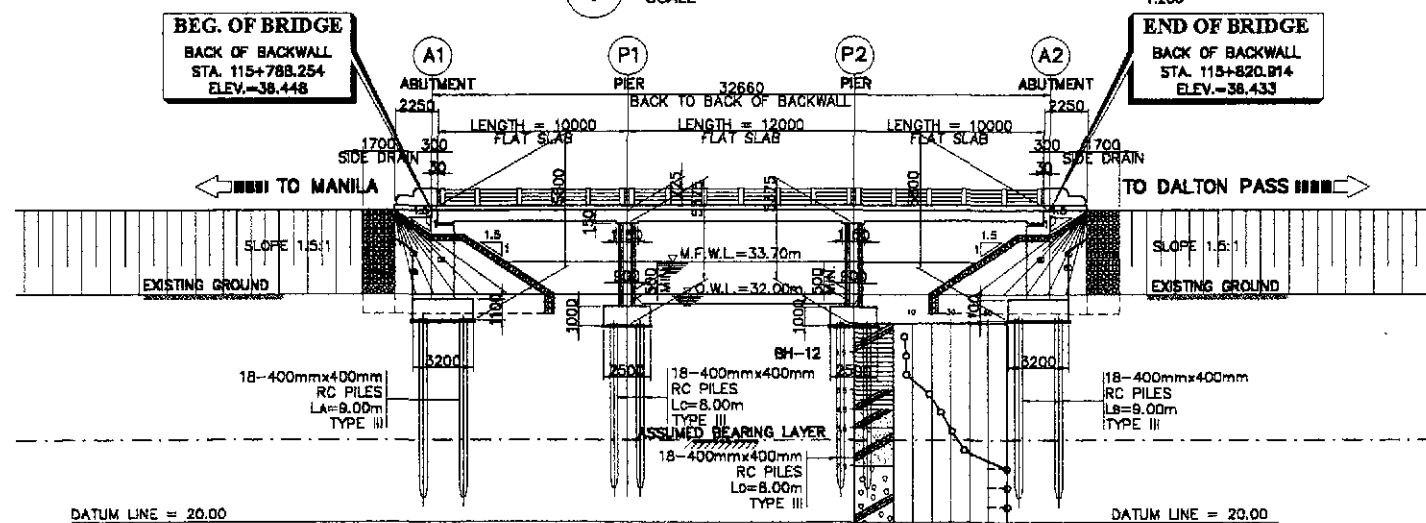
SCALE :
1:200
FULL SIZE A1

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

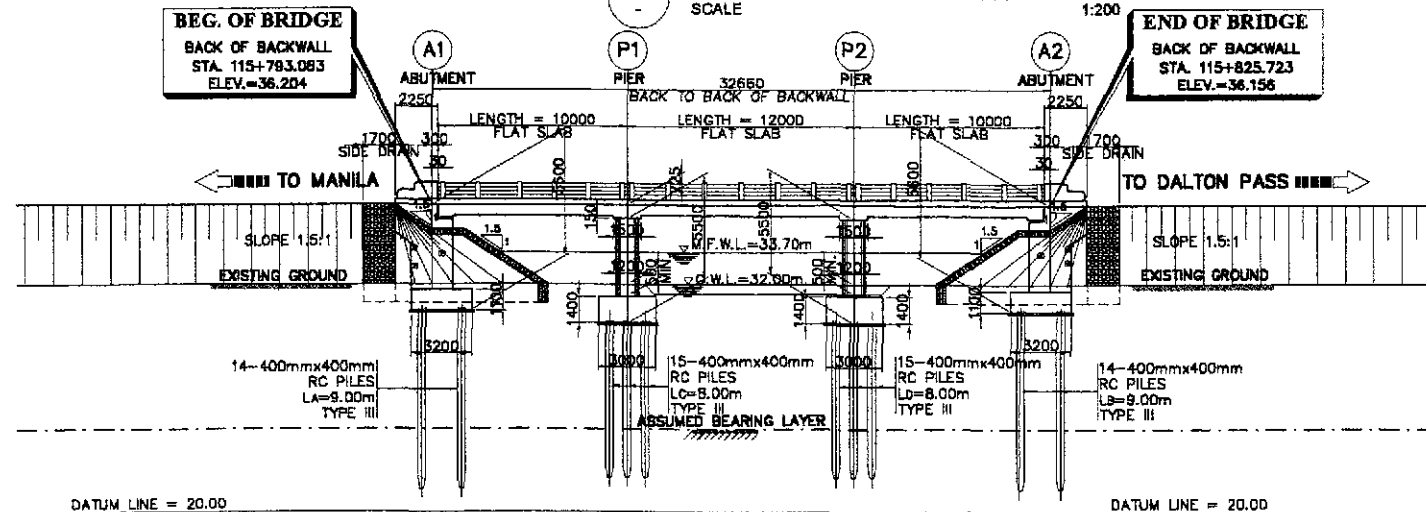
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B7-01



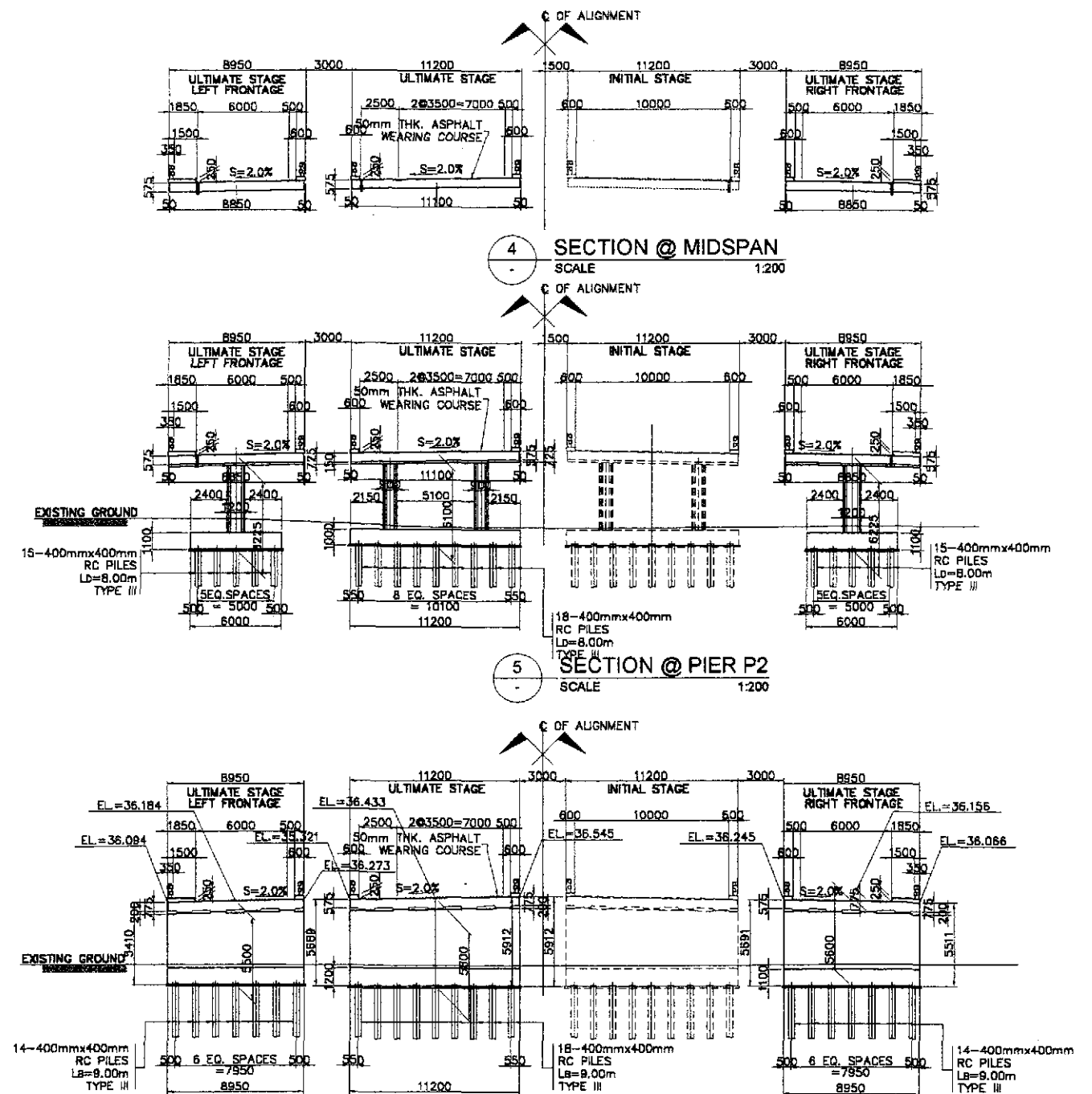
1 GENERAL ELEVATION @ LEFT FRONTAGE
SCALE 1:200



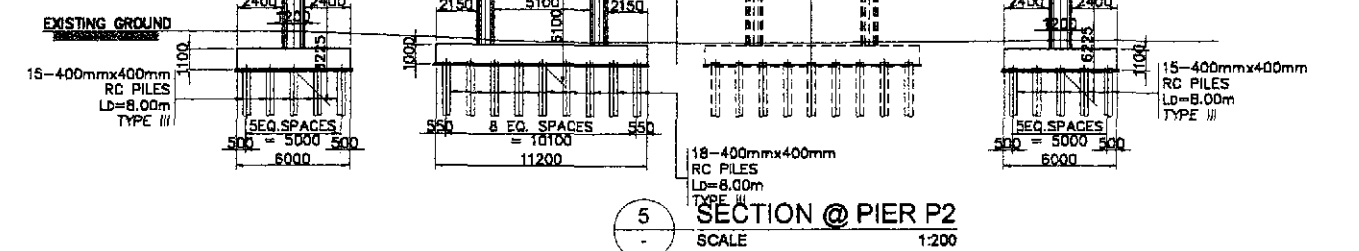
2 GENERAL ELEVATION (ULTIMATE)
SCALE 1:200



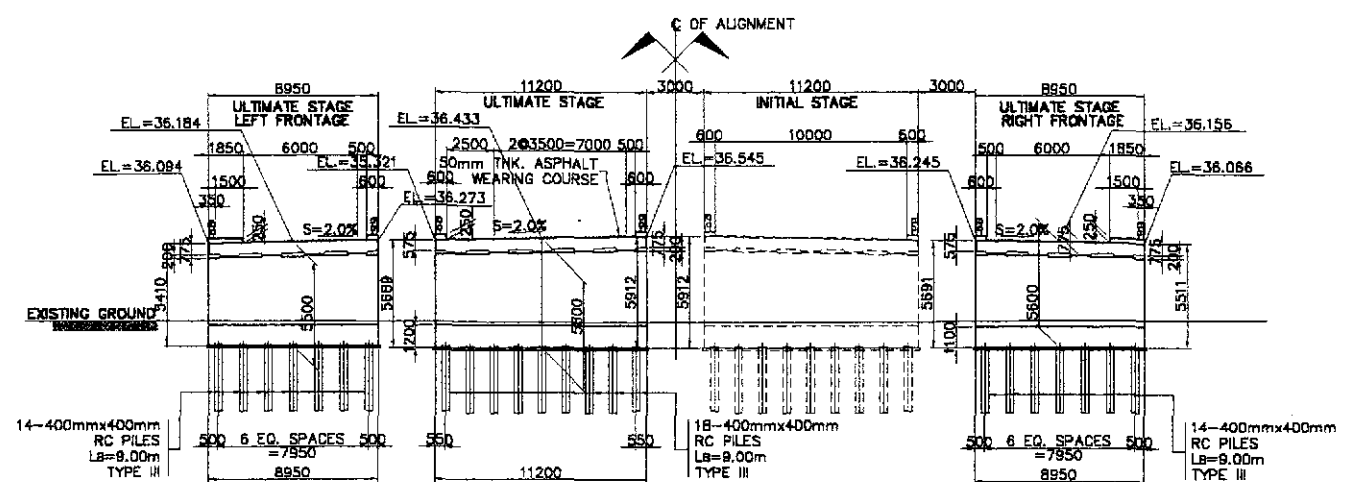
3 GENERAL ELEVATION @ RIGHT FRONTAGE
SCALE 1:200



4 SECTION @ MIDSPAN
SCALE 1:200



5 SECTION @ PIER P2
SCALE 1:200



6 SECTION @ ABUTMENT A2
SCALE 1:200

HYDRAULIC DESIGN DATA

IRRIGATION CANAL

NOTE :

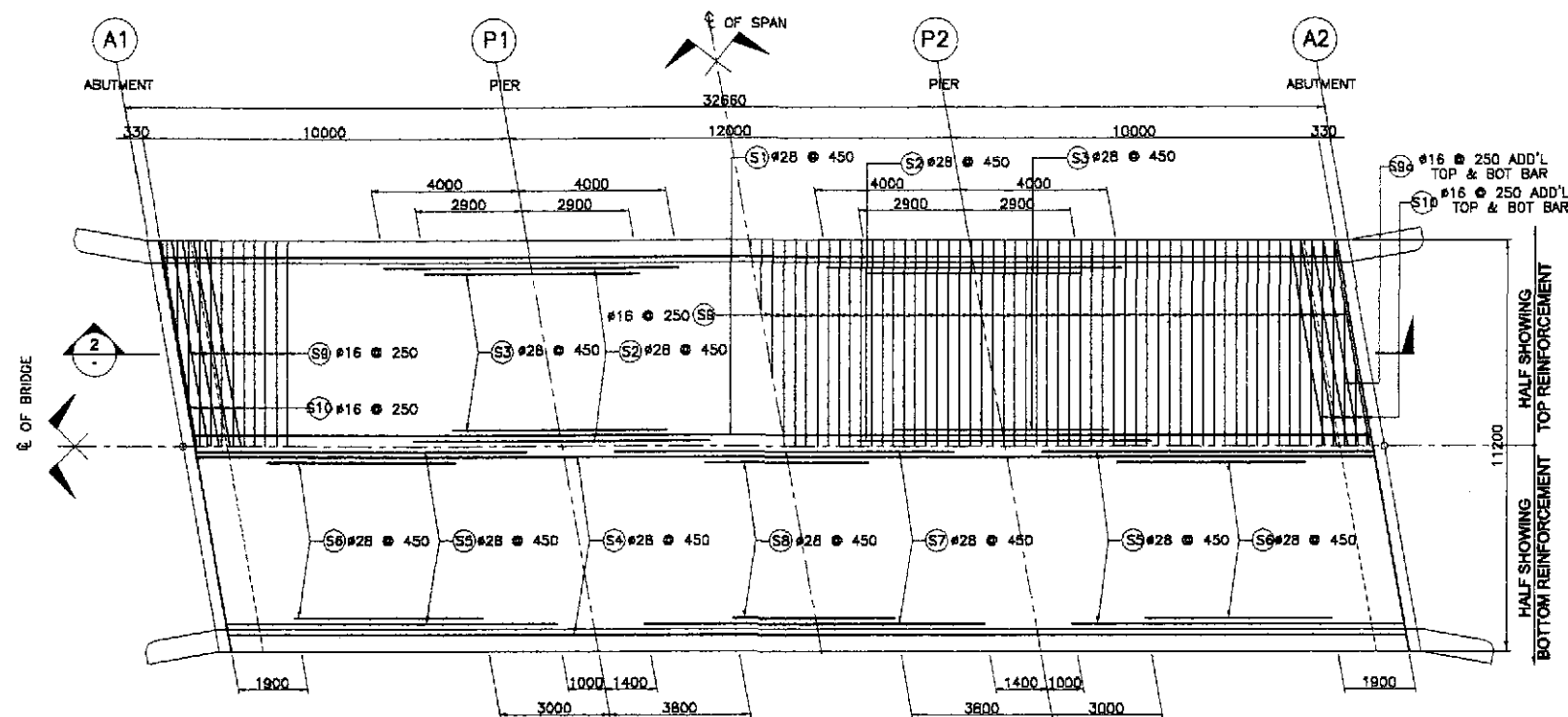
PRIOR TO CONSTRUCTION SOIL INVESTIGATION AT ABUTMENT A2 AND PIER P1 SHALL BE CONDUCTED FOR CONFIRMATION OF ASSUMED BEARING CAPACITY AND FOOTING ELEVATION.

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.

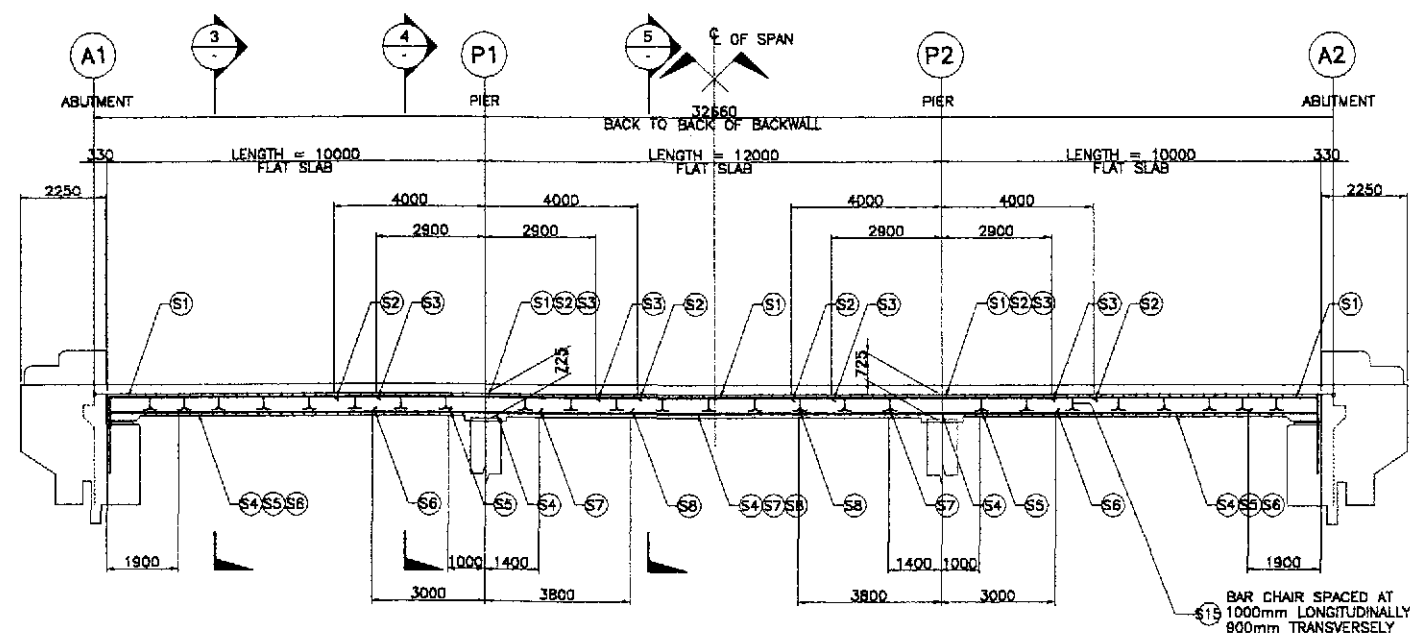
PERFECTO L. ZAPLAN JR.
OIC Chief, Hydraulics Division, BOD

A CABANATUAN BYPASS BRIDGE NO.7 (STA.115+788.254) SCALE AS SHOWN

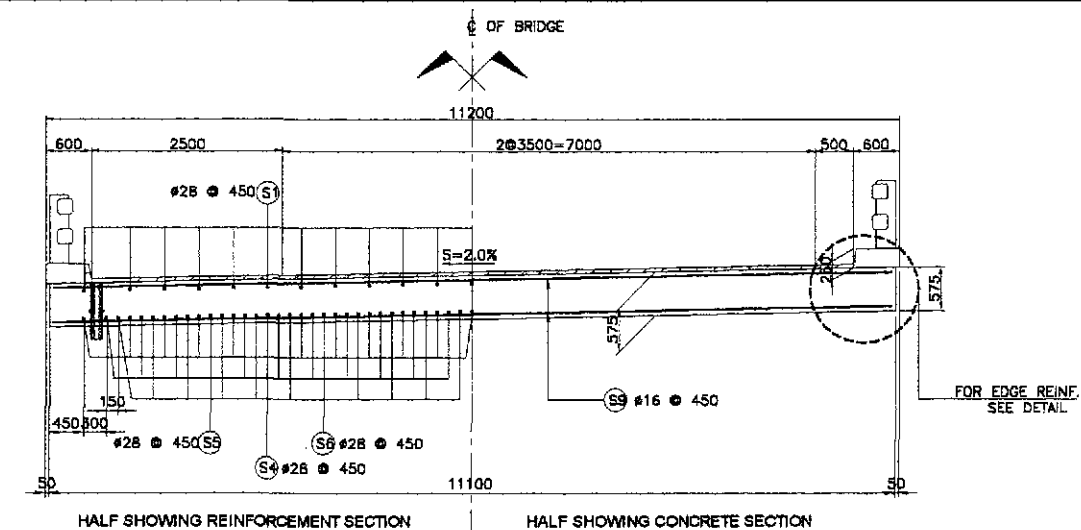
<p>JICA JAPAN INTERNATIONAL COOPERATION AGENCY</p>		<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>		<p>PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)</p>		<p>SCALE : 1 : 200 FULL SIZE A1</p>	<p>SHEET CONTENTS : BRIDGE NO. 7 GENERAL ELEVATION AND SECTIONS (ULTIMATE STAGE)</p>	<p>SHEET NO. : B7-02</p>
<p>DESIGNED : 19/01/02 CHECKED : 10/10/02 SUBMITTED : 10/10/02</p>	<p>SIGNATURE : A. P. BONZALES Submitted By: DANIL C. TRAJANO Project Director</p>	<p>BUREAU OF DESIGN Reviewed By: ADRIANO M. DOROS Chief, Bridges Division</p>	<p>OFFICE OF THE SECRETARY Recommended By: GILBERTO S. REYES Director IV (GIC) MANUEL M. BONDAN Undersecretary SIMEON A. DATUMANONG Secretary</p>	<p>CABANATUAN BYPASS - CONTRACT PACKAGE II</p>				



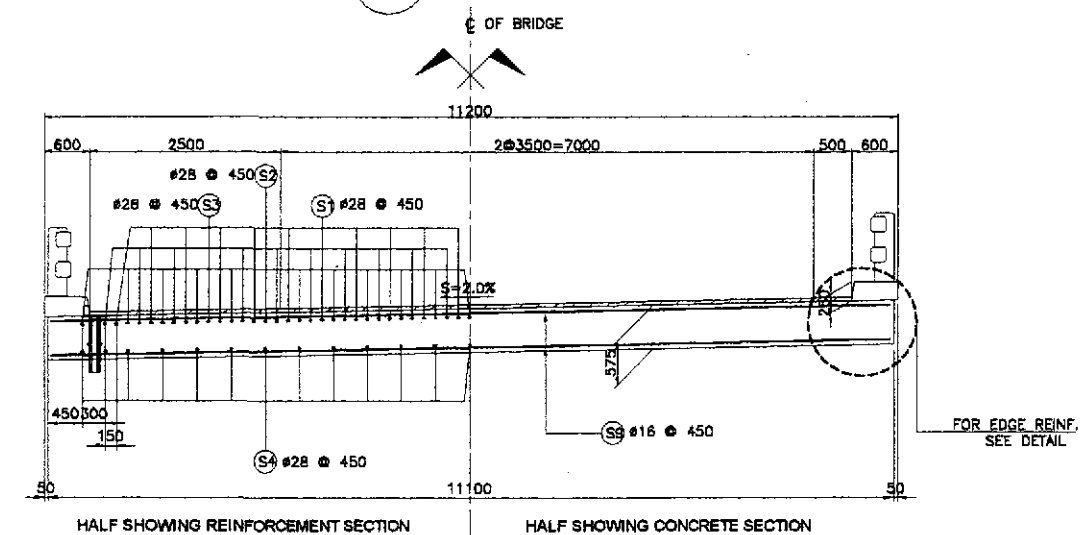
1 FRAMING PLAN
SCALE 1:100



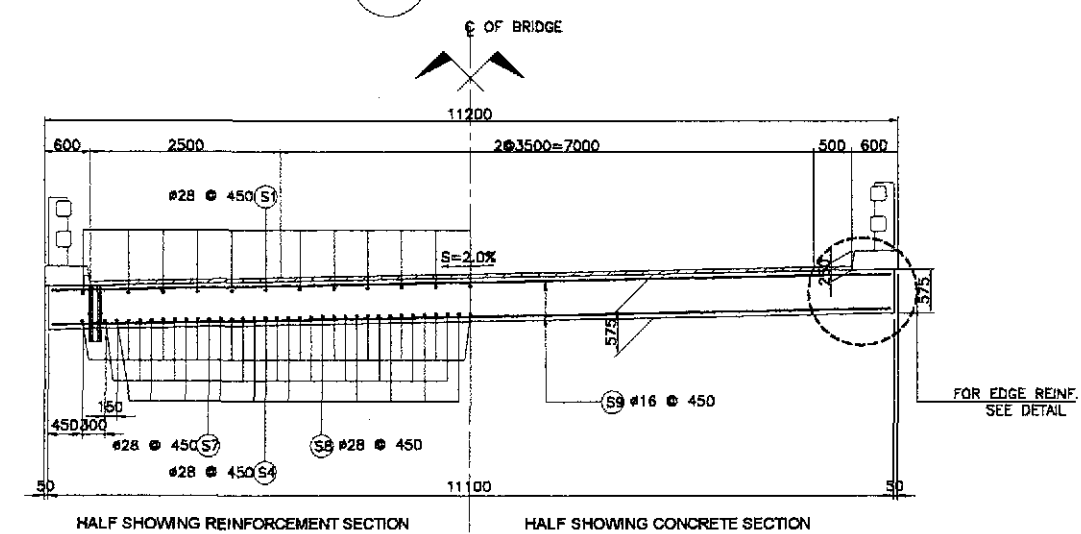
2 LONGITUDINAL SECTION
SCALE 1:100



3 SECTION
SCALE 1:50

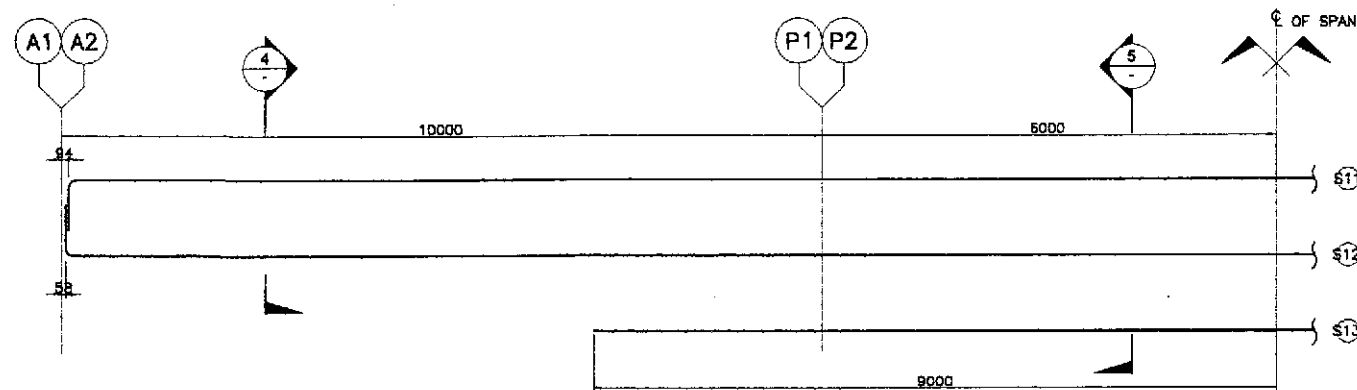


4 SECTION
SCALE 1:50

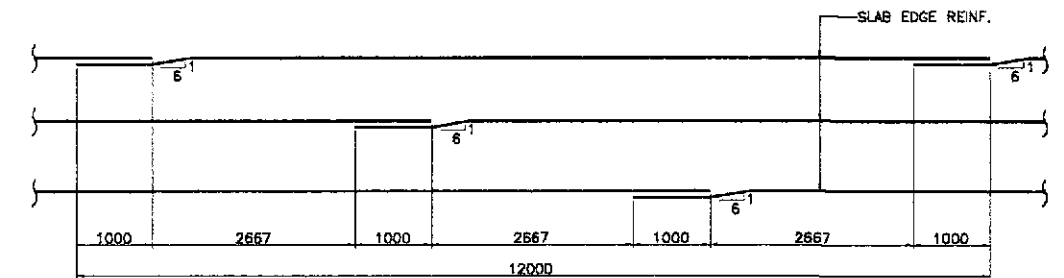


5 SECTION
SCALE 1:50

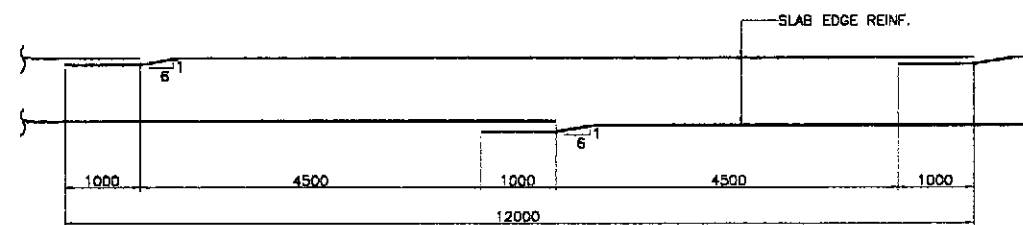
<p>JICA JAPAN INTERNATIONAL COOPERATION AGENCY</p>		<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>		<p>PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)</p>		<p>SCALE : AS SHOWN FULL SIZE A1</p>	<p>SHEET CONTENTS : BRIDGE NO. 7 DECK FRAMING PLAN AND SECTIONS (ULTIMATE STAGE)</p>	<p>SHEET NO. : B7-03</p>
<p>DESIGNED: 10/09/01 CHECKED: 10/10/01 SUBMITTED: 10/18/01</p>	<p>DATE: 10/09/01 SIGNATURE: [Signature] SUBMITTED: 10/18/01 TEAM LEADER: [Signature]</p>	<p>Submitted By: DANILLO C. TRAJANG Project Director</p>	<p>Reviewed By: ADRIANO M. DORDY Chief, Bridge Division</p>	<p>Recommended By: GILBERTO S. REYES Director IV (OIC)</p>	<p>Recommended By: MANUEL M. BONDAN Undersecretary</p>	<p>Approved By: SIMEON A. DATUMANDONG Secretary</p>		



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	kgs.	10200
	DECK SLAB	6320	
	SIDEWALK, RAILING, & POST	2556	
	APPROACH SLAB	1324	
404(1)b	REINFORCING STEEL GRADE 60	kgs.	24019
	DECK SLAB	19233	
	SIDEWALK, RAILING, & POST	590	
	APPROACH SLAB	4186	
405(1)	STRUCTURAL CONCRETE	cu. m.	257.40
	DECK SLAB	206.13	
	SIDEWALK, RAILING, & POST	16.97	
	APPROACH SLAB	34.3	

BAR BENDING DIAGRAM

(A)

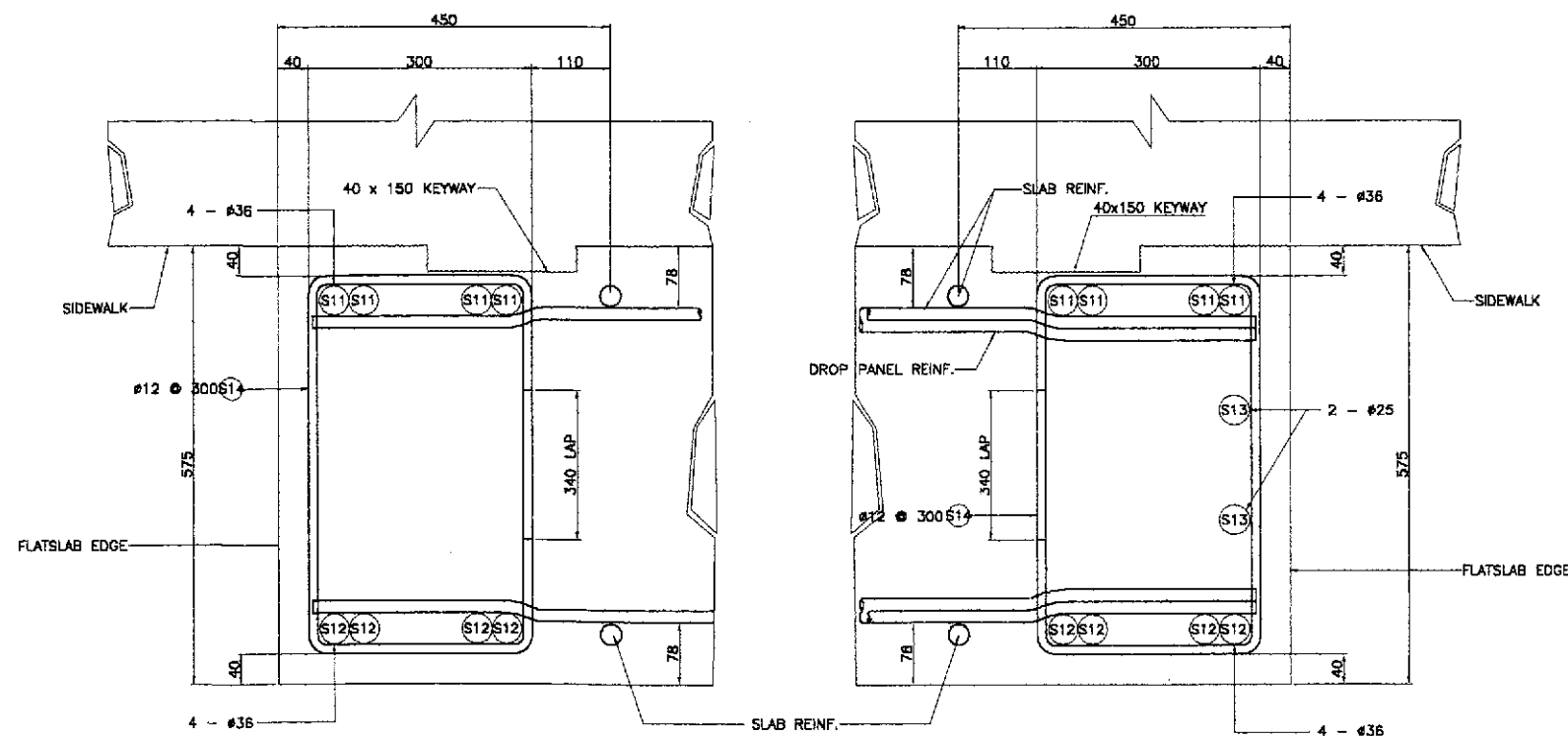
(B)

(C)

(D)

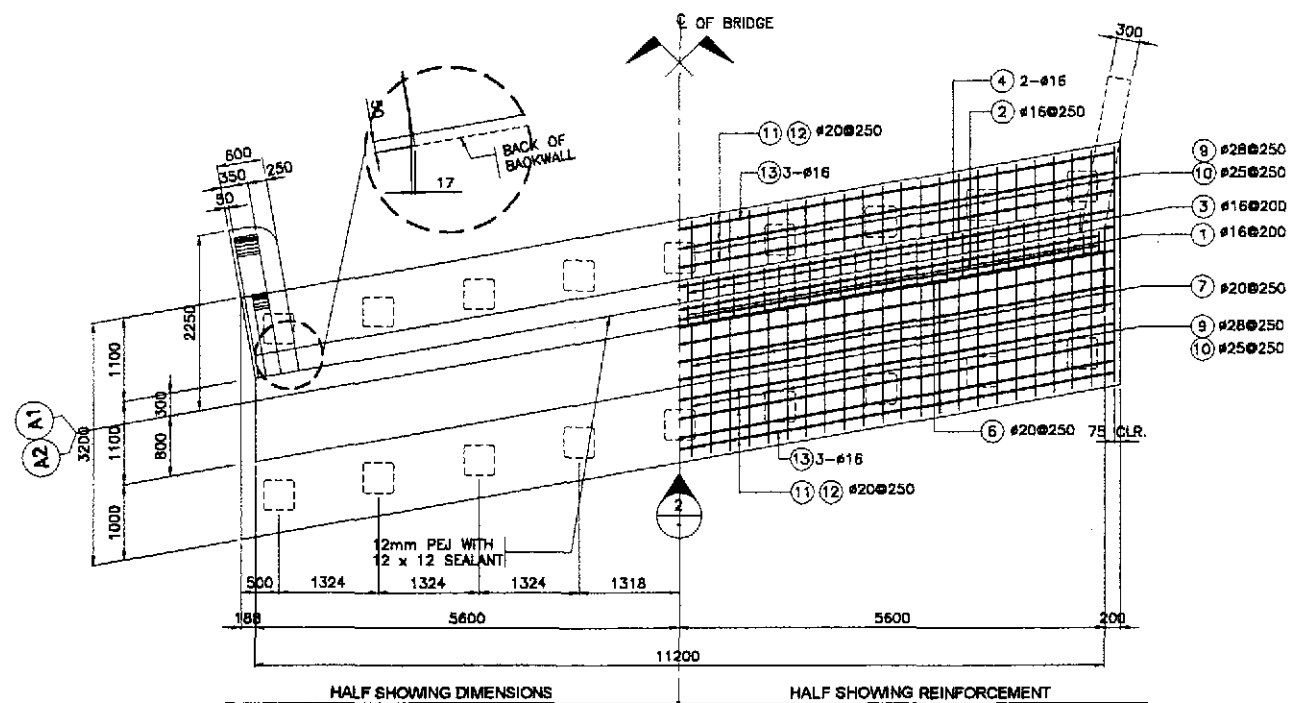
SCHEDULE OF REINFORCEMENT

LOCATION	CONCRETE VOLUME (m³)	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/m³)
							a	b	c	d					
DECK SLAB	191.45	S1	28	23	450	(C)	450	31900	450	—	32800	754.40	4.833	3647	128.67
		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 kgs.		GRADE 60 TOTAL = 19,233 kgs.	

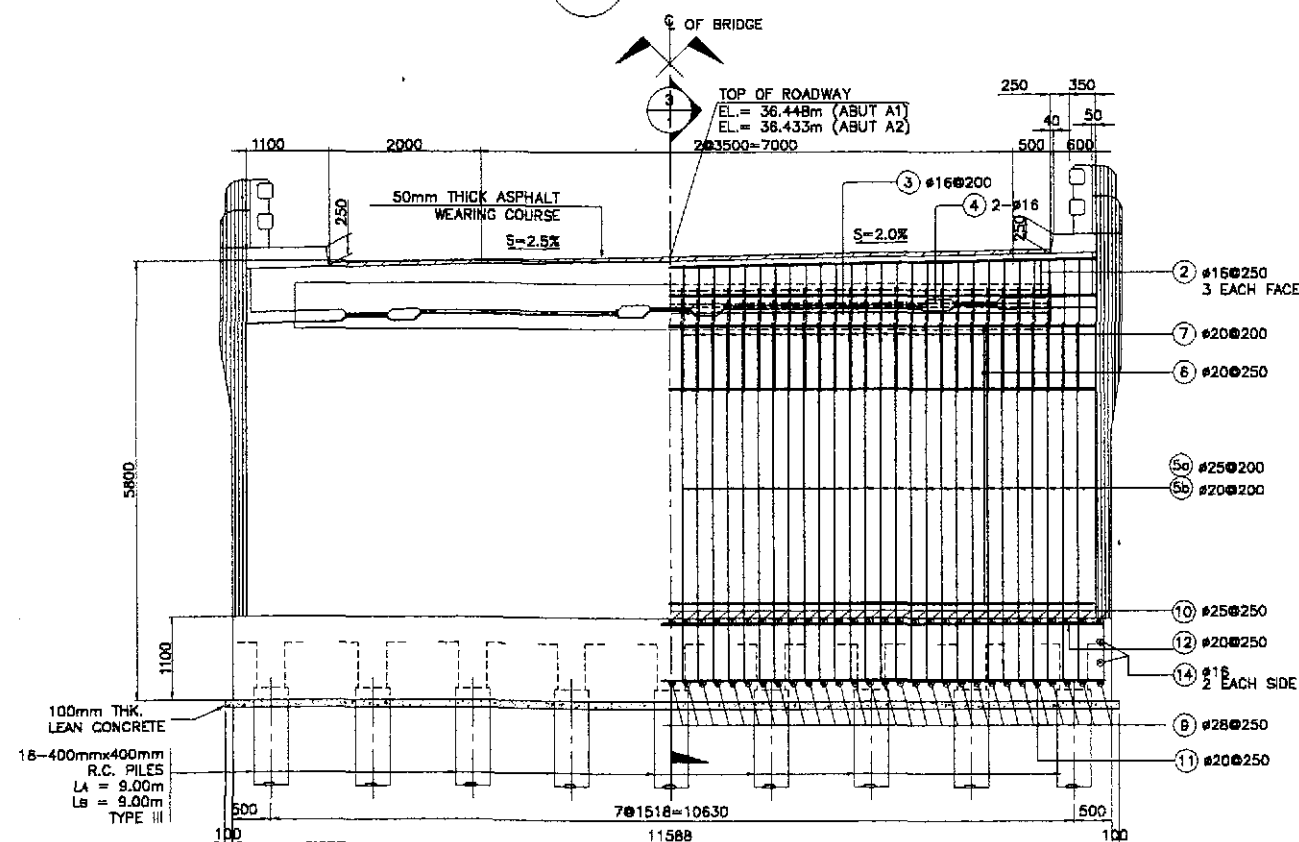


4 SECTION
NOT TO SCALE

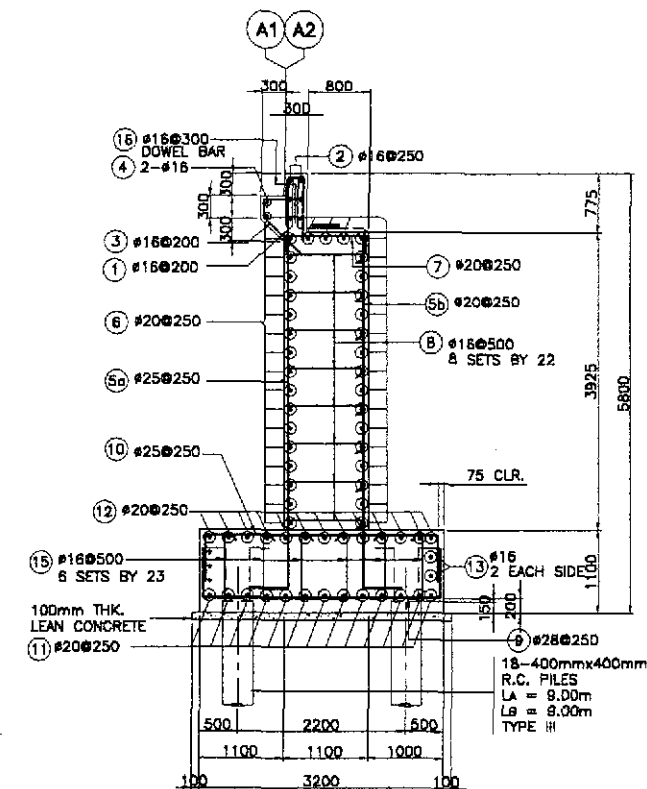
5 SECTION
NOT TO SCALE



1 PLAN
SCALE 1:50



2 ELEVATION
SCALE 1:50



3 SECTION
SCALE 1:50

BAR BENDING DIAGRAM

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	4850	-	-	-	-	5350	240.75	3.854	928	63.74
		(5b)	20	45	250	(E)	400	4850	-	-	-	-	5350	240.75	2.466	594	
		(6)	20	35	250	(A)	11300	-	-	-	-	-	11300	385.50	2.466	976	
		(7)	20	45	250	(B)	250	1000	250	-	-	-	1500	67.50	2.466	167	
		(8)	16	176	500	(D)	250	1000	250	-	-	-	1500	264.00	1.579	417	
		(9)	28	47	250	(B)	700	3050	700	-	-	-	4450	209.15	4.833	1011	
FOOTING	40.79	(10)	25	47	250	(B)	700	3050	700	-	-	-	4450	209.15	3.854	807	75.07
		(11)	20	13	250	(B)	700	11600	700	-	-	-	13000	188.00	2.466	417	
		(12)	20	13	250	(B)	700	11600	700	-	-	-	13000	188.00	2.466	417	
		(13)	16	4	AS SHOWN	(A)	11600	-	-	-	-	-	11600	45.50	1.579	74	
		(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	
DOWEL		(16)	16	34	300	(E)	650	500	-	-	-	-	1150	39.10	1.579	62	
TOTAL	83.10																
														GRADE 40 TOTAL = 1,362 kgs.			
														GRADE 60 TOTAL = 5,317 kgs.			

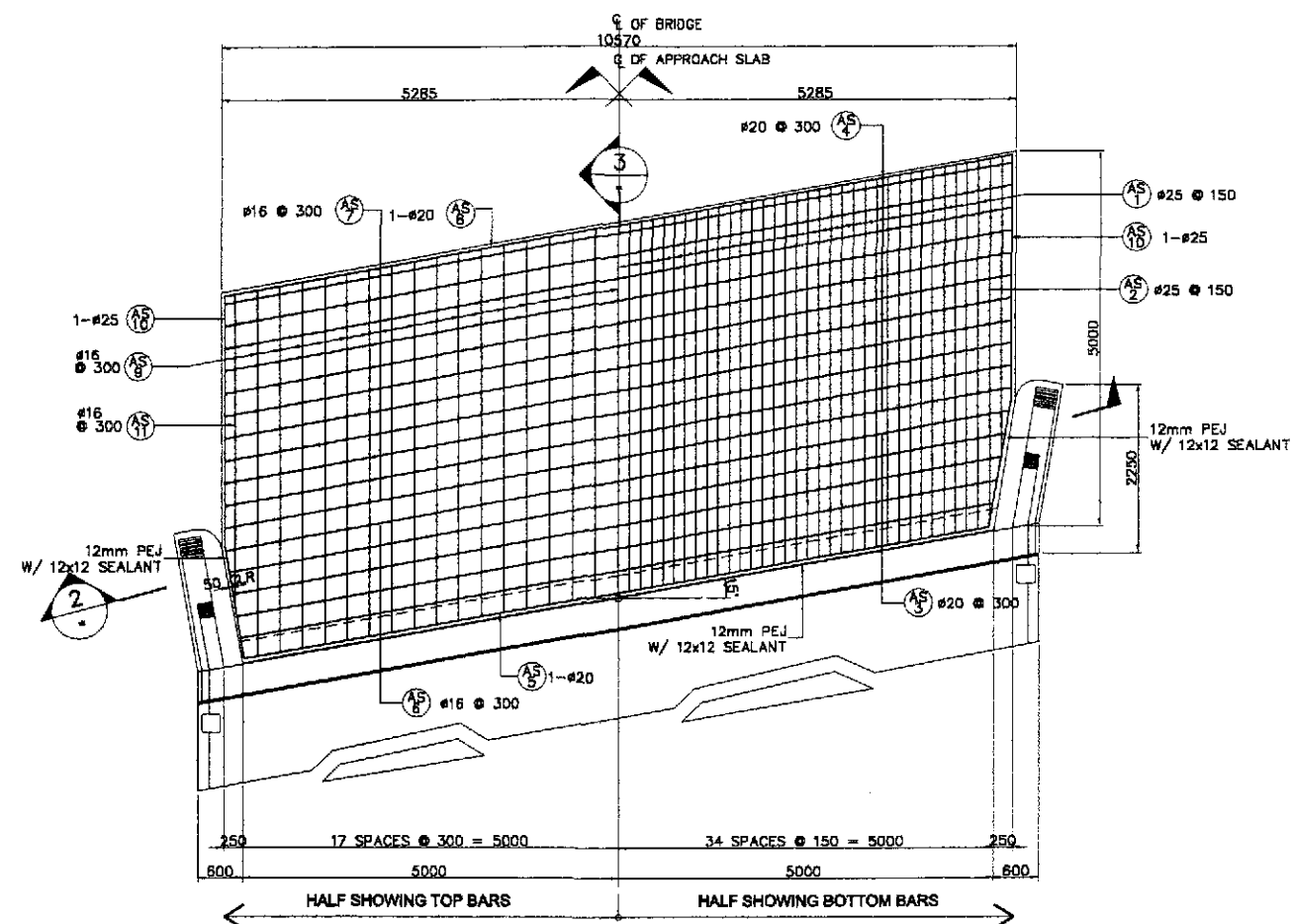
GRADE 40 TOTAL = 1,362 kgs.
GRADE 60 TOTAL = 5,317 kgs.



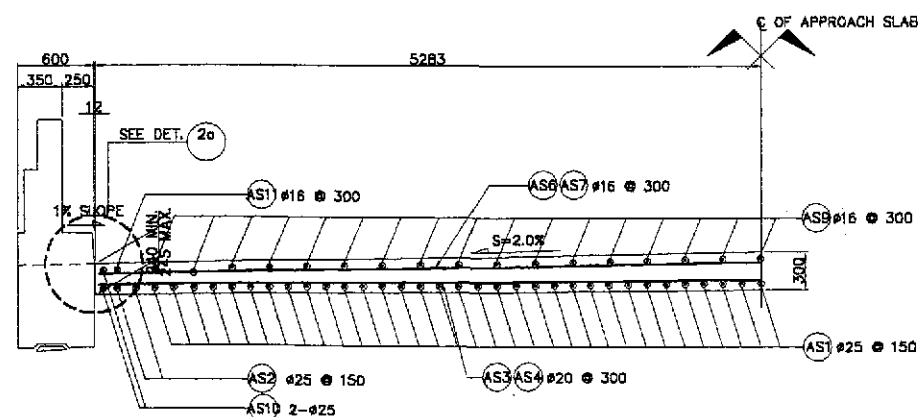
5. APPROACH RAIL DETAILS



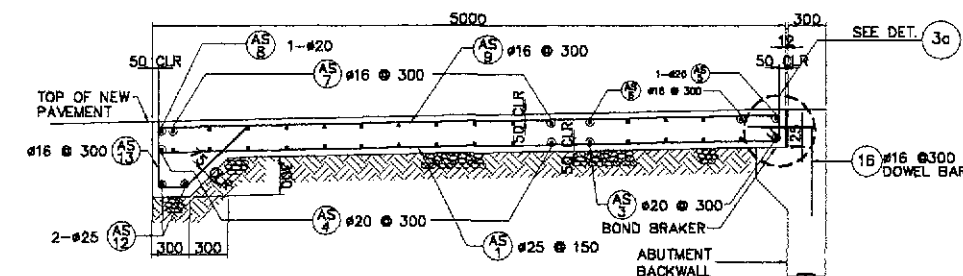
LOCATION	CONCRETE VOLUME (m ³)	BAR MARK	BAR SIZE	QTY.	SPACING	BAR SHAPE	DIMENSIONS (mm) OUT TO OUT						LENGTH EA. BAR (mm)	TOTAL LENGTH (m)	UNIT WT. (kg/m)	WEIGHT (kg)	REBAR RATIO (kg/m ³)
							a	b	c	d	e	f					
WINGWALL	5.69	W1	20	22	250	(B)	400	2100	150	-	-	-	2850	58.30	2.466	144	176.68
		W2	25	22	250	(B)	400	2100	150	-	-	-	2850	58.30	3.854	225	
		W3	20	8	250	(B)	400	2400	150	-	-	-	2850	23.60	2.466	58	
		W4	25	8	250	(B)	400	2400	150	-	-	-	2850	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	82	
		W8	16	10	200	(E)	250	5550	-	-	-	-	5800	58.00	1.579	82	
		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	126	AS SHOWN	(D)	170	450	170	-	-	-	790	99.54	0.888	88	
													GRADE 60 TOTAL = 657 kgs.				
													GRADE 40 TOTAL = 349 kgs.				
APPROACH RAILING AND SIDEWALK	1.89	AS1	12	8	AS SHOWN	(A)	2150	-	-	-	-	-	2150	17.20	0.888	16	98.19
		AS2	12	4	AS SHOWN	(A)	2150	-	-	-	-	-	2150	8.60	0.888	8	
		AS3	12	4	AS SHOWN	(A)	2150	-	-	-	-	-	2150	8.60	0.888	8	
		AS4	16	6	300	(F)	200	170	480	200	200	-	1250	7.50	1.579	12	
		AS5	16	12	300	(G)	200	170	480	200	170	200	1420	17.04	1.579	27	
		AR1	16	4	300	(E)	200	900	-	-	-	-	1100	4.40	1.579	7	
		AR2	16	10	300	(J)	1300	120	1300	-	-	-	2720	27.20	1.579	43	
		AR3	16	2	AS SHOWN	(I)	1300	236	1300	-	-	-	2836	5.67	1.579	9	
		AR4	16	4	AS SHOWN	(I)	2050	236	900	-	-	-	3186	12.74	1.579	21	
		AR5	16	8	AS SHOWN	(A)	2050	-	-	-	-	-	2050	16.40	1.579	26	
		AR6	16	4	AS SHOWN	(A)	1300	-	-	-	-	-	1300	5.20	1.579	9	
															GRADE 40 TOTAL = 186 kgs.		
TOTAL	7.58													GRADE 60 TOTAL = 657 kgs.			
														GRADE 40 TOTAL = 535 kgs.			



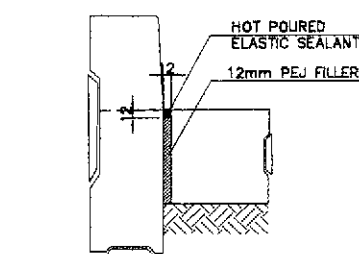
1 PLAN
SCALE 1:50



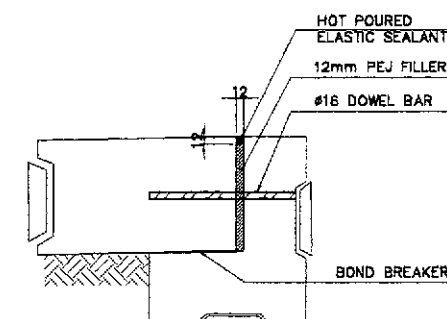
2 SECTION
SCALE 1:30







3 SECTION
SCALE 1:30



2a DETAIL
SCALE 1:10



3a DETAIL
SCALE 1:10

BAR BENDING DIAGRAM																	
(A) 				(B) 				(C) 				(D) 					
SCHEDULE OF REINFORCEMENT PER APPROACH SLAB																	
LOCATION	CONCRETE VOLUME (m³)	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	-	-	-	-	4800	18.80	3.854	71	
		AS3	20	6	300	(A)	10450	-	-	-	-	-	10450	62.70	2.466	155	
		AS4	20	12	300	(A)	10800	-	-	-	-	-	10800	129.60	2.466	320	
		AS5	20	1	AS SHOWN	(A)	10150	-	-	-	-	-	10150	10.15	2.466	26	
		AS6	16	5	300	(A)	10500	-	-	-	-	-	10500	52.50	1.579	83	
		AS7	16	11	300	(A)	10800	-	-	-	-	-	10800	118.80	1.579	188	
		AS8	20	1	AS SHOWN	(A)	10800	-	-	-	-	-	10800	10.80	2.466	27	
		AS9	16	34	300	(B)	4900	200	-	-	-	-	5100	173.40	1.579	274	
		AS10	25	4	AS SHOWN	(C)	3300	1700	-	-	-	-	5000	20.00	3.854	78	
		AS11	16	2	300	(B)	4100	200	-	-	-	-	4300	8.60	1.579	14	
		AS12	25	2	AS SHOWN	(A)	10800	-	-	-	-	-	10800	21.60	3.854	84	
		AS13	16	38	300	(D)	400	500	200	700	-	-	1800	64.80	1.579	103	
TOTAL	17.15												GRADE 40 TOTAL = 882 kgs. GRADE 60 TOTAL = 2,098 kgs.				

