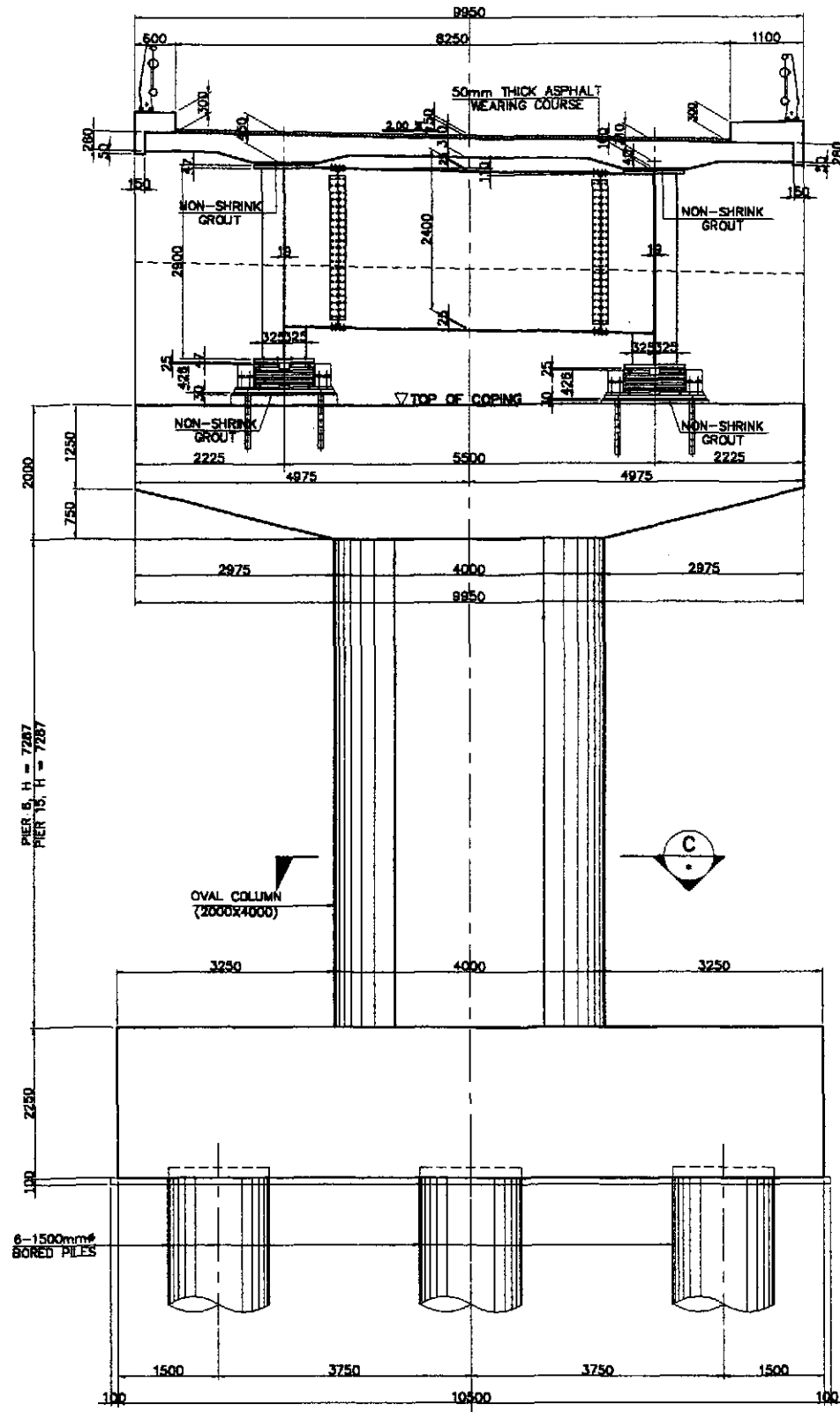
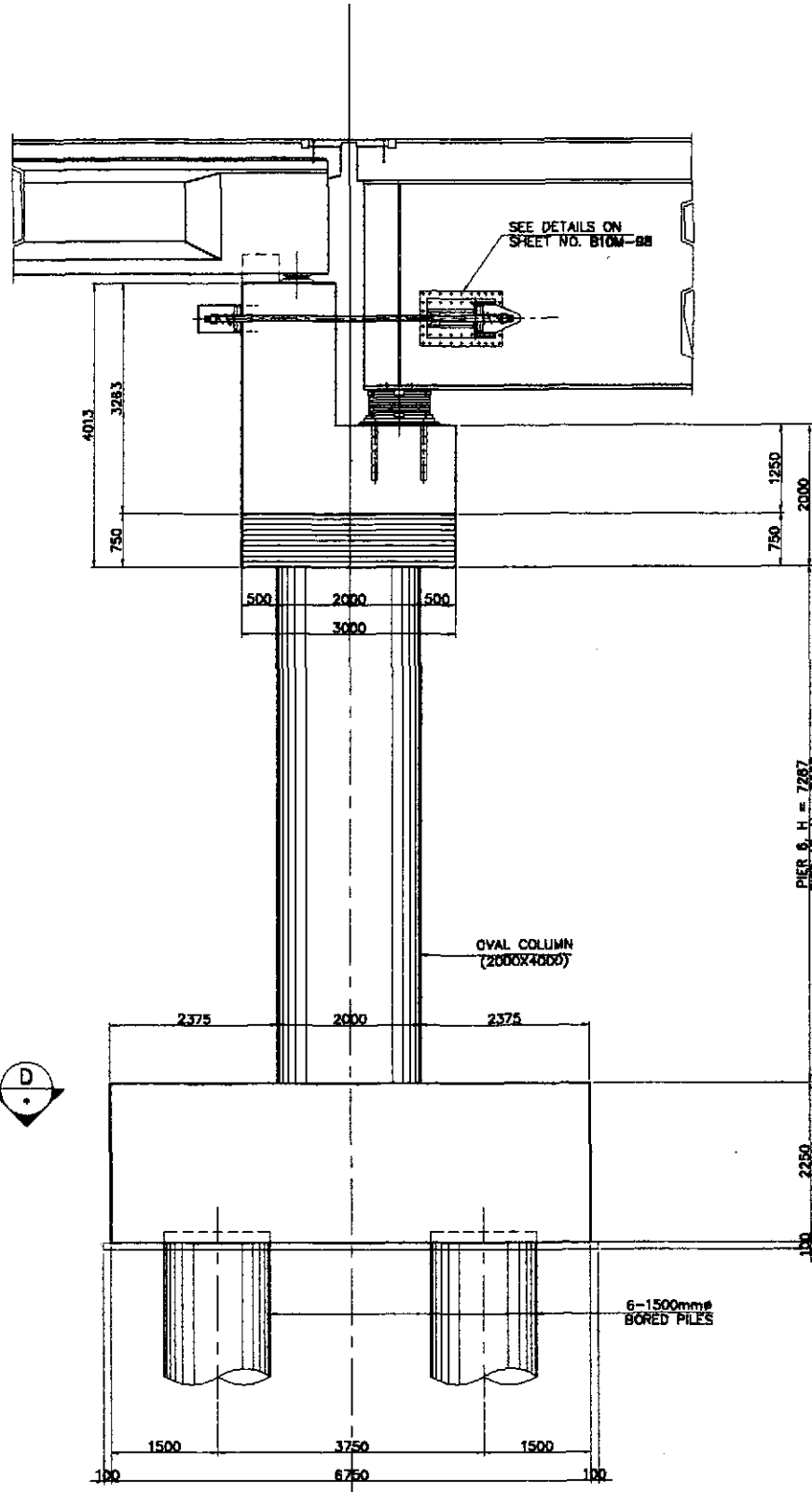


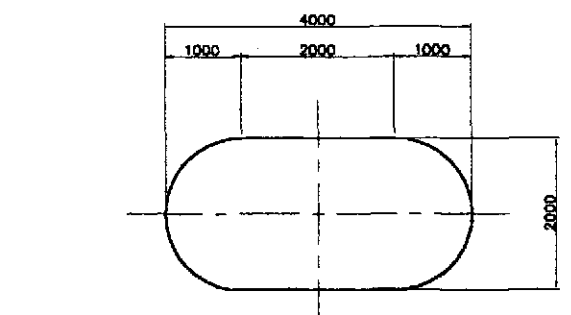
# **SUBSTRUCTURE**



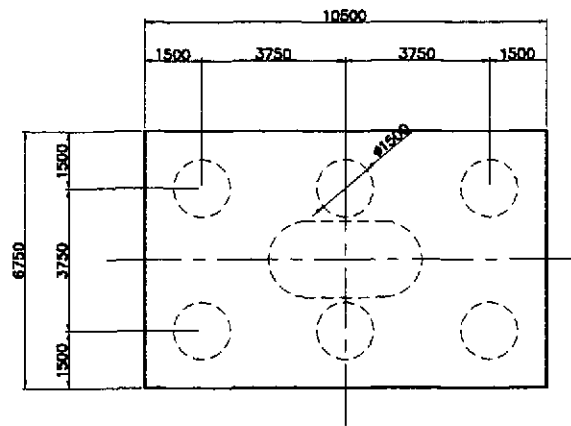
**A FRONT ELEVATION**  
SCALE 1:50



**B SIDE ELEVATION**  
SCALE 1:50



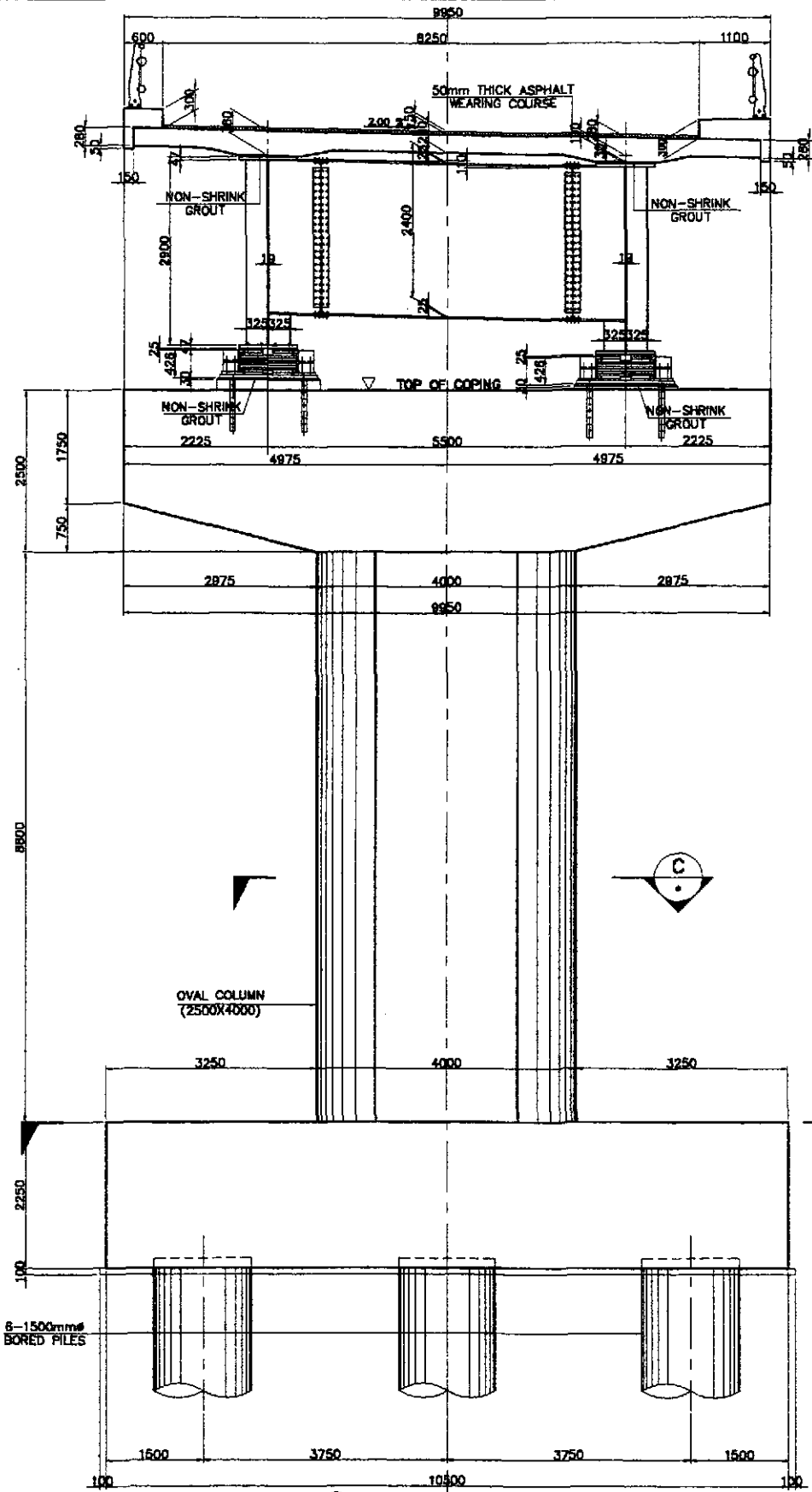
**C SECTION**  
SCALE 1:50



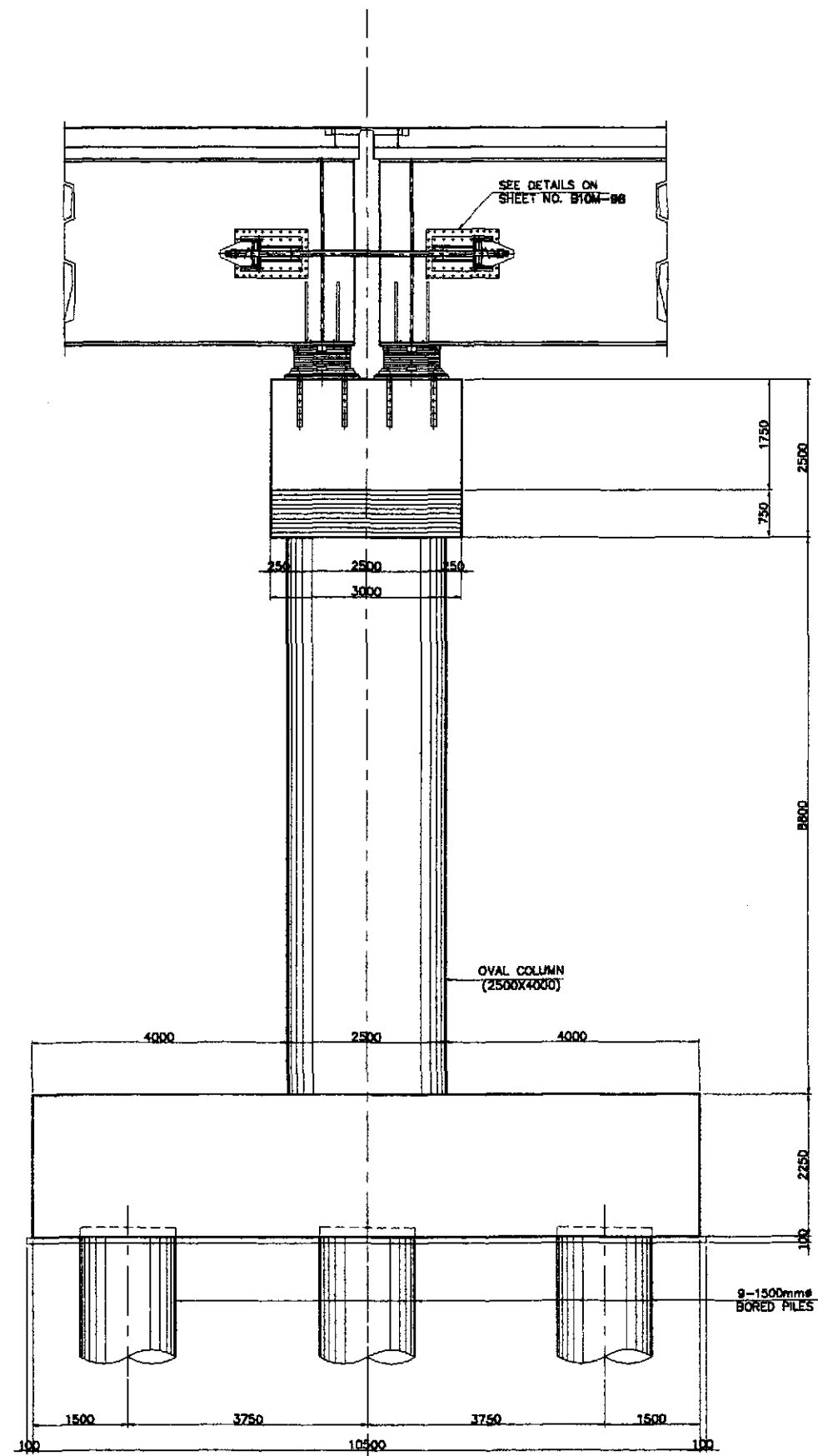
**D SECTION**  
SCALE 1:100

**1 PIER LAYOUT AND DIMENSION (PIER 6 AND PIER 15)**  
SCALE AS SHOWN

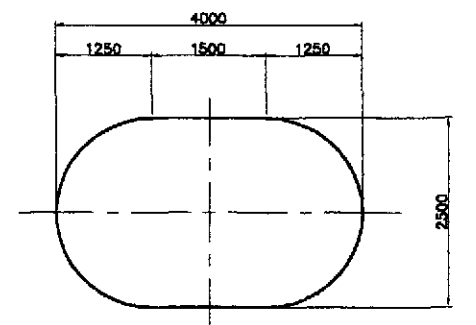
	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	10/17/02	F. M. SALAS		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)			AS SHOWN	BRIDGE NO. 10 PAMPANGA RIVER BRIDGE PIER LAYOUT AND DIMENSIONS (PIER 6 & PIER 15) (INITIAL STAGE)	<b>B10M-51</b>	
	SUBMITTED	10/19/02	TEAM LEADER		CABANATUAN BYPASS - CONTRACT PACKAGE III			FULL SIZE A1			
Submitted By: DANILO C. TRAJANO, Project Director				Reviewed By: ADRIANO M. DOROY, Chief, Bridge Division			Recommended By: GILBERTO S. REYES, Director IV (OIC)			Office of the Secretary: Recommended By: MANUEL M. BONDAM, Undersecretary Approved By: SIMEON A. DATUMANONG, Secretary	



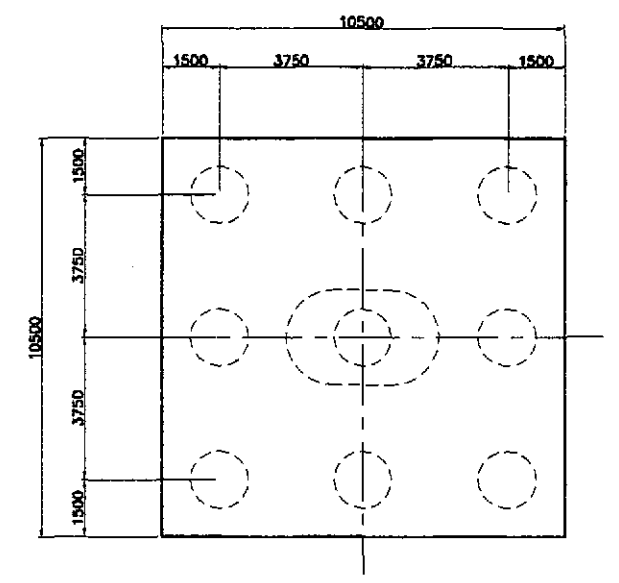
**A FRONT ELEVATION**  
SCALE 1:50



**B SIDE ELEVATION**  
SCALE 1:50



**C SECTION**  
SCALE 1:50



**D SECTION**  
SCALE 1:100

**1 PIER LAYOUT AND DIMENSION (PIER 11)**  
SCALE AS SHOWN

**JICA**  
JAPAN INTERNATIONAL COOPERATION AGENCY

**KATAHIRA & ENGINEERS**  
INTERNATIONAL

**YEO** YACHYO ENGINEERING CO., LTD.

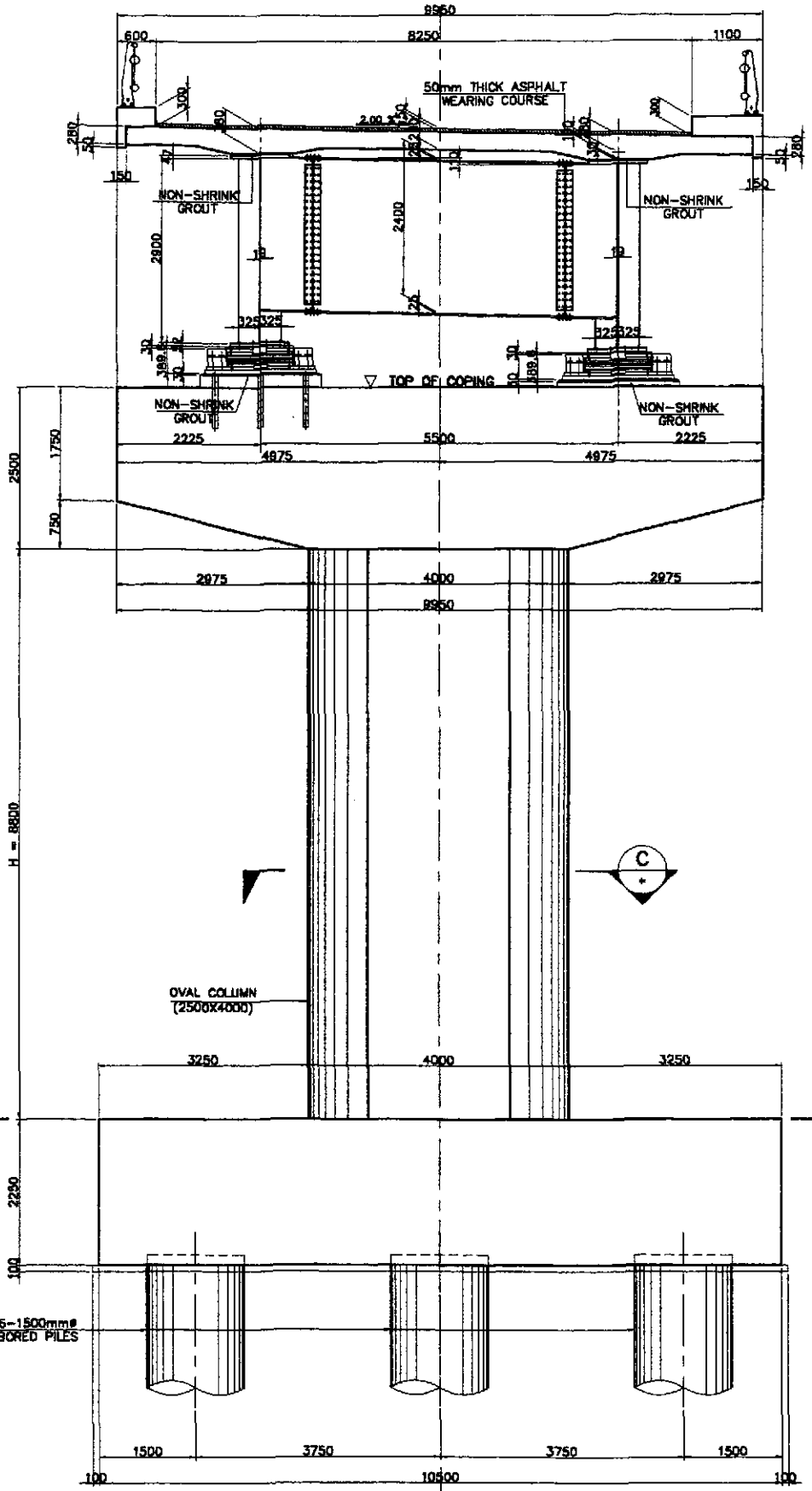
DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				
DESIGNED 10/8/02	F. M. SILAS	BUREAU OF DESIGN		OFFICE OF THE SECRETARY		
CHECKED 10/17/02	J. C. SANTIAGO	Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:
SUBMITTED 10/19/02	Ms. Burch	DANLO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridge Division	GILBERTO S. REYES Director IV (DC)	MANUEL H. BONGON 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 III

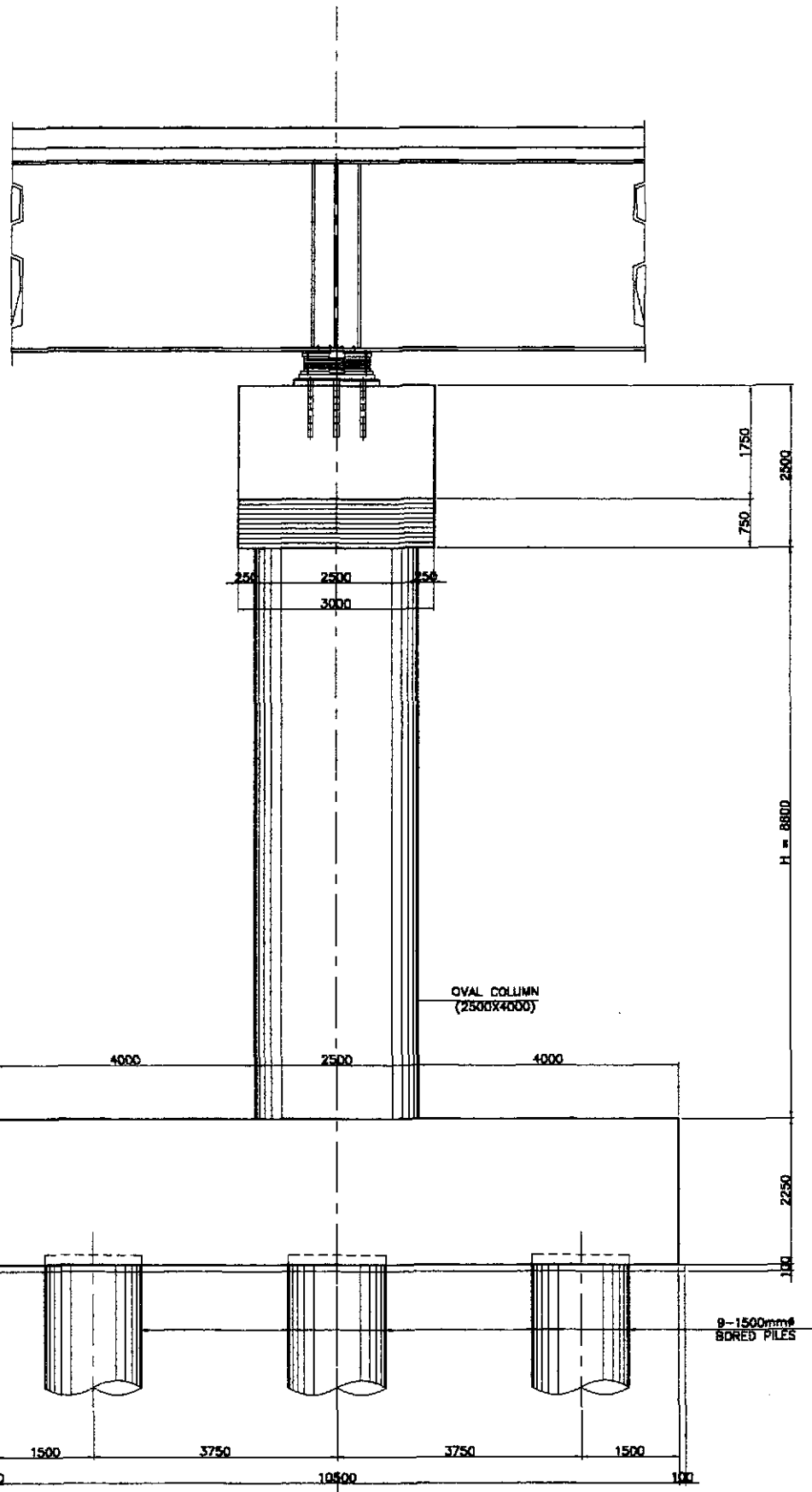
SCALE :  
AS SHOWN  
FULL SIZE A1

SHEET CONTENTS :  
BRIDGE NO. 10 PAMPANGA RIVER BRIDGE  
PIER LAYOUT AND DIMENSION  
(PIER 11)  
(INITIAL STAGE)

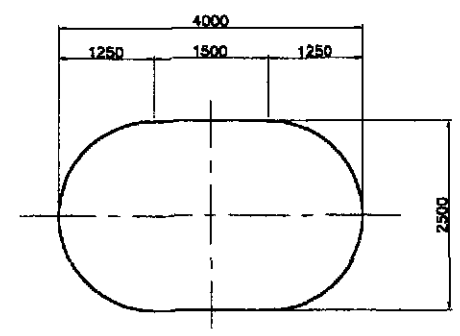
SHEET NO. :  
**B10M-52**



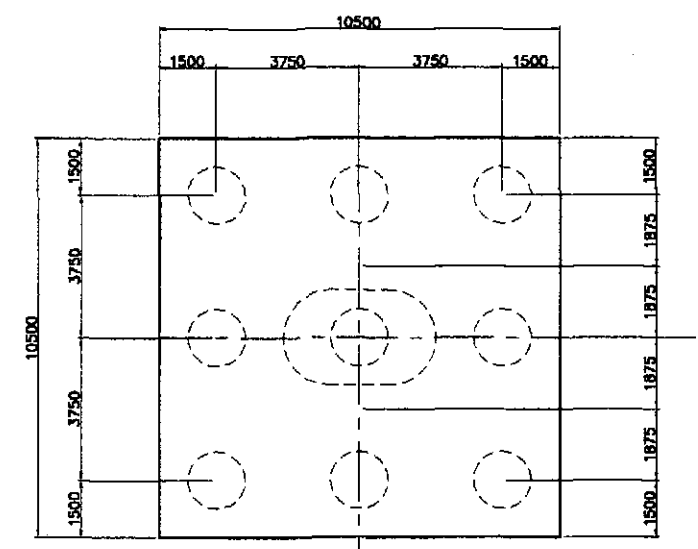
**A FRONT ELEVATION**  
SCALE 1:50



**B SIDE ELEVATION**  
SCALE 1:50



**C SECTION**  
SCALE 1:50



**D SECTION**  
SCALE 1:100

SCHEDULE OF DIMENSIONS	
LOCATION	H
PIER 7	8800
PIER 8	8800
PIER 9	8800
PIER 10	8800
PIER 12	8800
PIER 13	8800
PIER 14	8800

**1 PIER LAYOUT AND DIMENSION (PIER 7 TO PIER 10 AND PIER 12 TO PIER 14)**  
SCALE AS SHOWN

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

DESIGNED	10/18/02	<i>[Signature]</i> F. M. SALAS
CHECKED	10/17/02	<i>[Signature]</i> M. LUCHI
SUBMITTED	10/17/02	<i>[Signature]</i> M. LUCHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

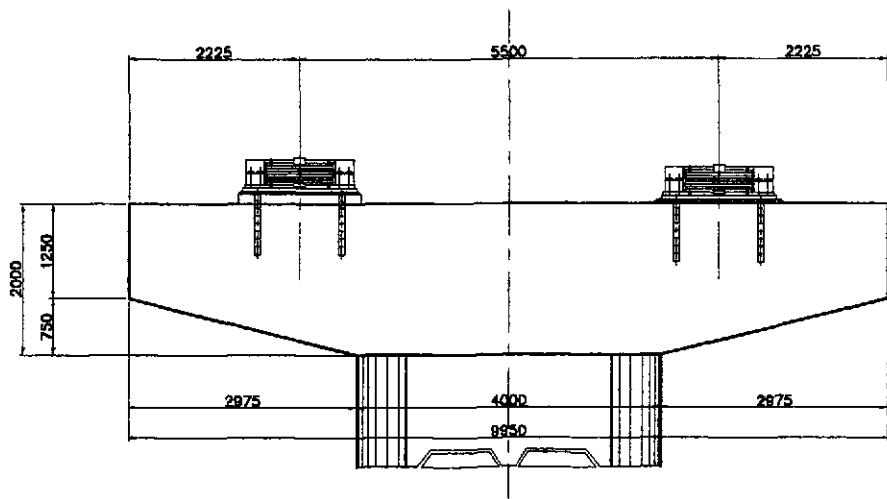
BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Approved By:
DANILO C. TRAJANO Project Director	ADRIANO M. DORCY Chief, Bridge Division	GILBERTO S. REYES Director IV (OC)	MANUEL M. BONJAN Undersecretary
		SILVON A. DATUMANONG Secretary	

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

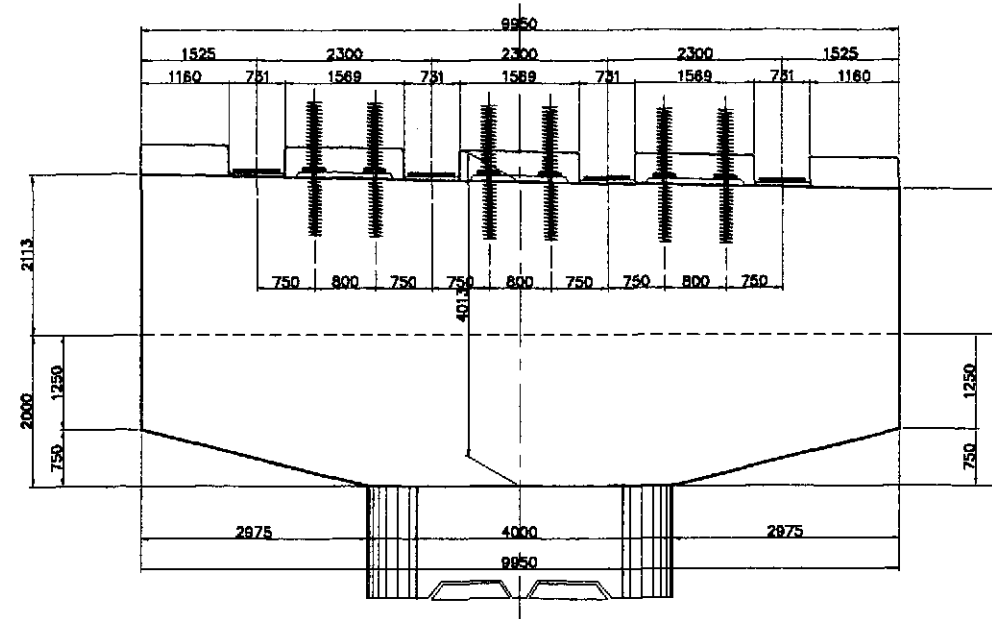
SCALE :  
AS SHOWN  
FULL SIZE A1

SHEET CONTENTS :  
BRIDGE NO. 10 PAMPANGA RIVER BRIDGE  
PIER LAYOUT AND DIMENSIONS  
(P7 to P10 & P12 to P14)  
(INITIAL STAGE)

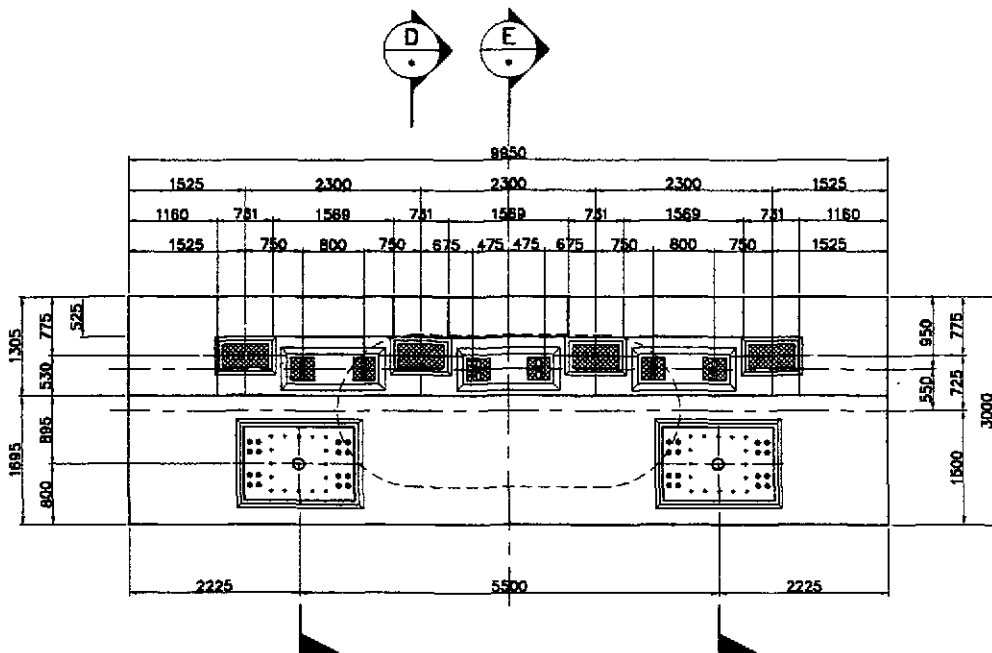
SHEET NO. :  
**B10M-53**



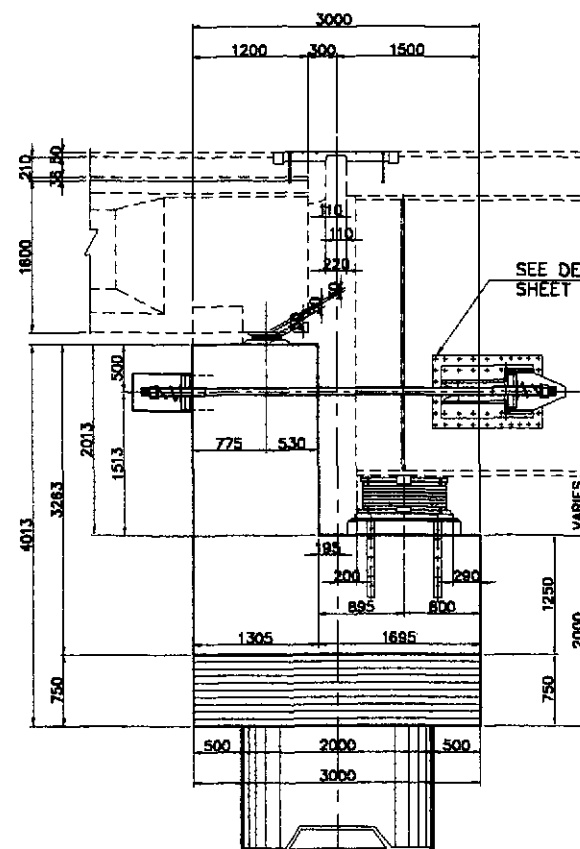
**B** ELEVATION @ PLATE GIRDER SIDE  
SCALE 1:50



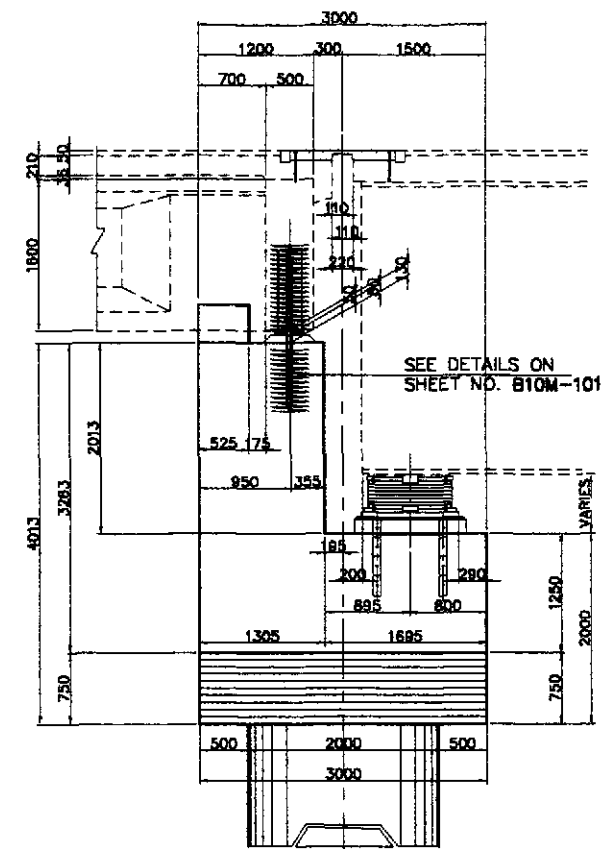
**C** ELEVATION @ AASHTO GIRDER SIDE  
SCALE 1:50



**A** COPING PLAN  
SCALE 1:50



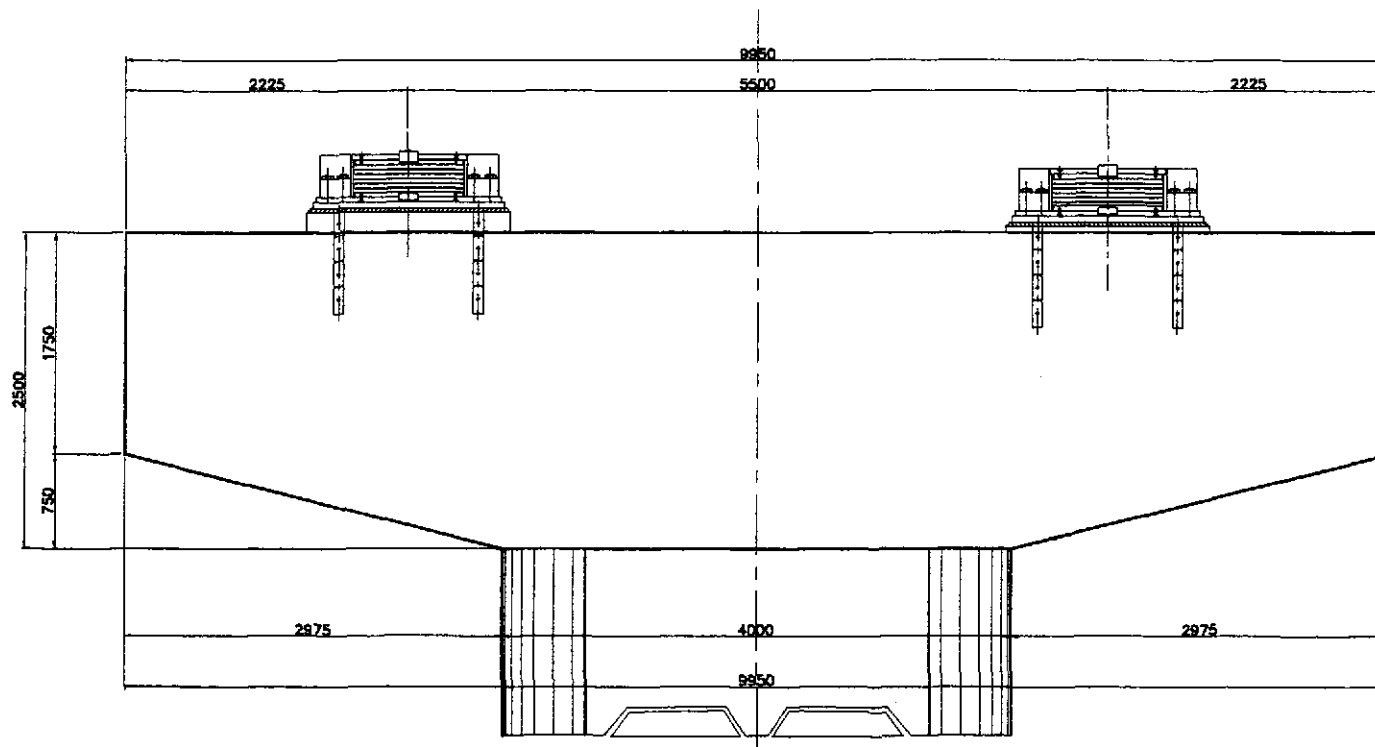
**D** SECTION  
SCALE 1:40



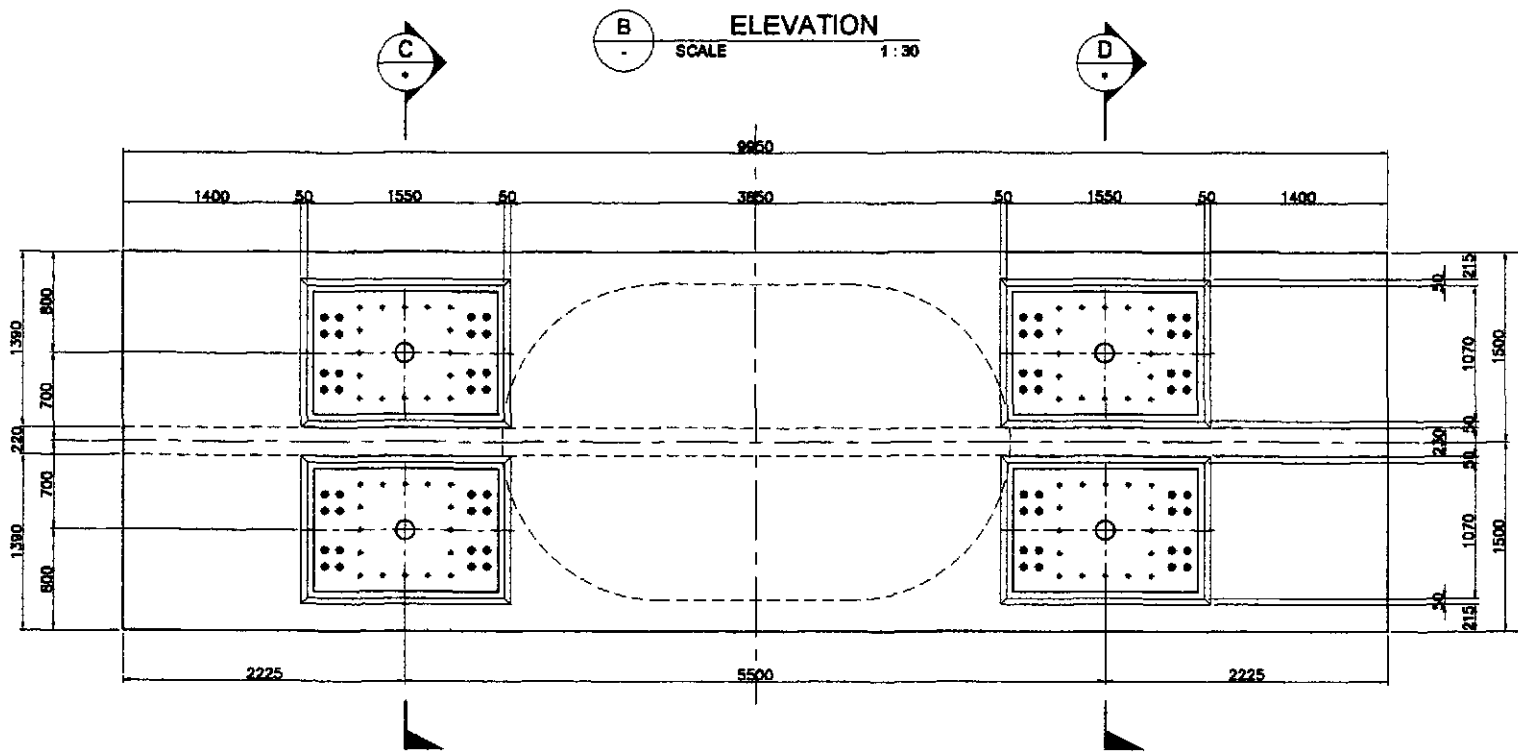
**E** SECTION  
SCALE 1:40

**1** COPING LAYOUT AND DIMENSIONS (PIER 6 & PIER 15)  
SCALE AS SHOWN

	DESIGNED	10/31/02	<i>[Signature]</i> F. M. SALAS		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/17/02	<i>[Signature]</i> R. TOBER TEAM LEADER		Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Office of the Secretary	AS SHOWN	FULL SIZE A1	BRIDGE NO. 10 PAMPANGA RIVER BRIDGE COPING LAYOUT AND DIMENSIONS (PIER 6 & PIER 15) (INITIAL STAGE)
SUBMITTED	10/19/02		DANILO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridges Division	GILBERTO S. REYES Director IV (DC)	MANUEL M. BONJON Undersecretary	SIMEON A. DATUMANONG Secretary	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)				
CABANATUAN BYPASS - CONTRACT PACKAGE III												

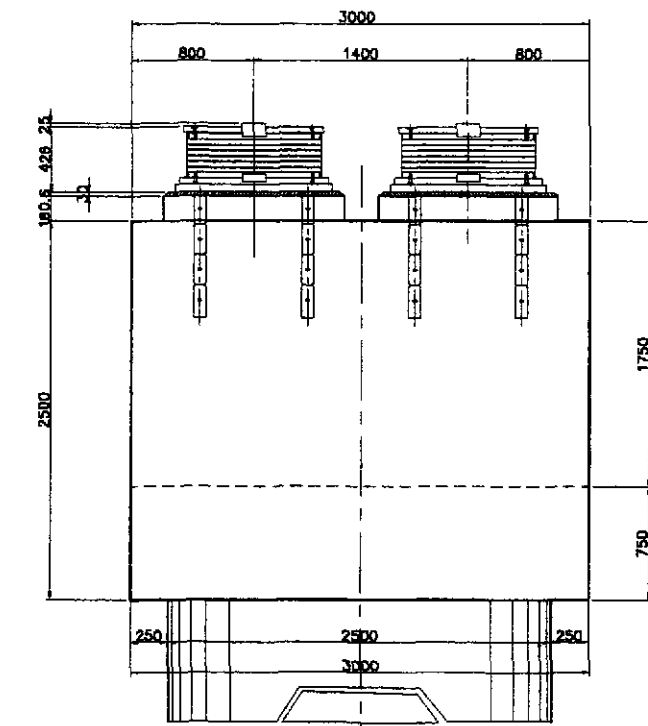


**B** ELEVATION  
SCALE 1:30

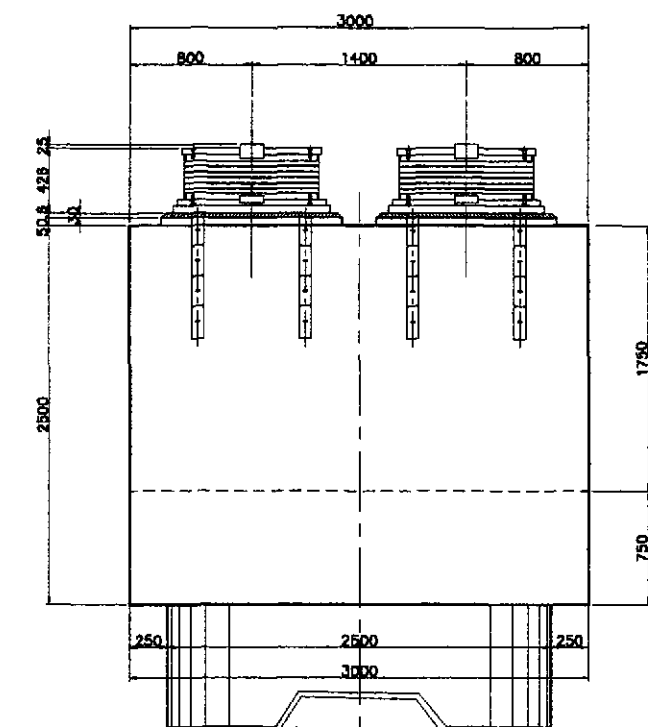


**A** COPING PLAN  
SCALE 1:30

**1** COPING LAYOUT AND DIMENSIONS (PIER 11)  
SCALE AS SHOWN

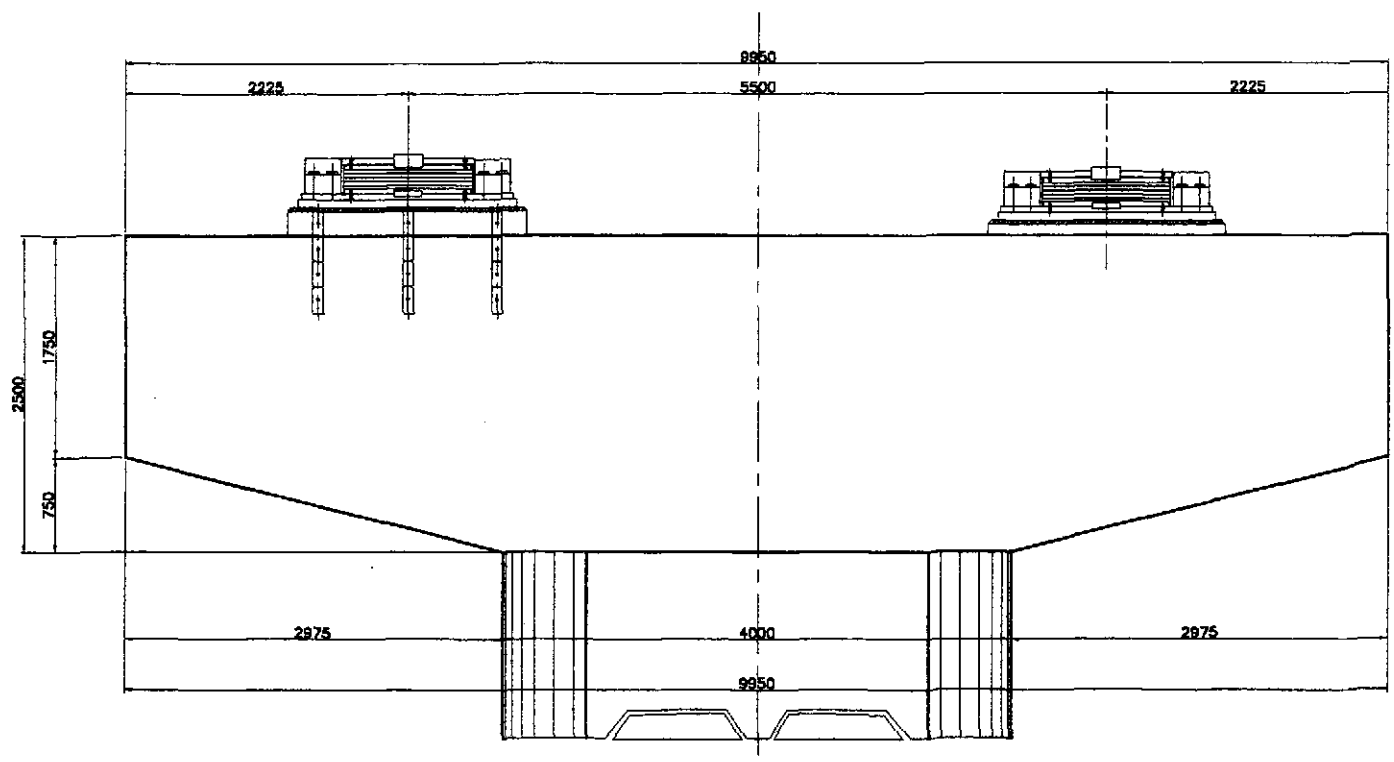


**C** SECTION  
SCALE 1:25

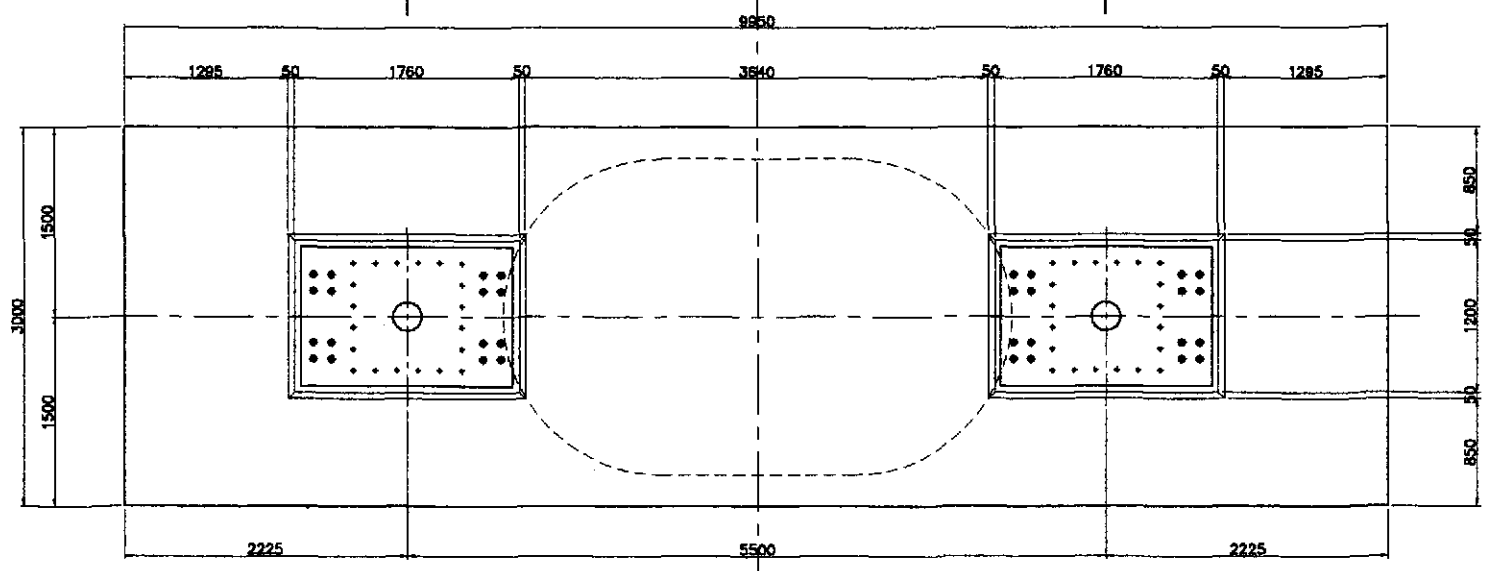


**D** SECTION  
SCALE 1:25

	DESIGNED	DATE	SIGNATURE	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/19/02	F. M. SALAS		BUREAU OF DESIGN Submitted By: DANILO C. TRAJANO (Project Director) Reviewed By: ADRIANO M. DORAY (Chief, Bridges Division) Recommended By: GILBERTO S. REYES (Director IV (OC))	OFFICE OF THE SECRETARY Approved By: MANUEL M. BONDAN (Undersecretary) SIMEON A. DATUMANONG (Secretary)	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE III	AS SHOWN FULL SIZE A1	BRIDGE NO. 10 PAMPANGA RIVER BRIDGE COPING LAYOUT AND DIMENSIONS (PIER 11) (INITIAL STAGE)

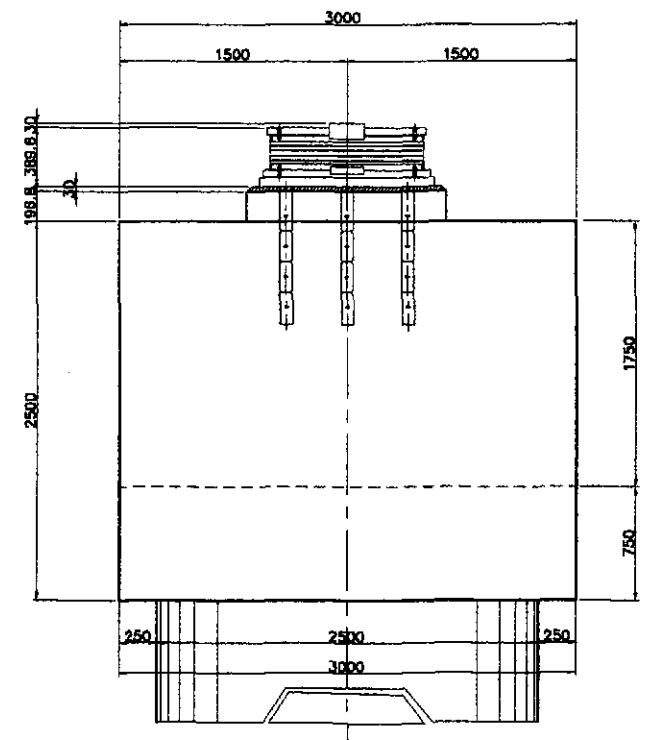


**B ELEVATION**  
SCALE 1:30

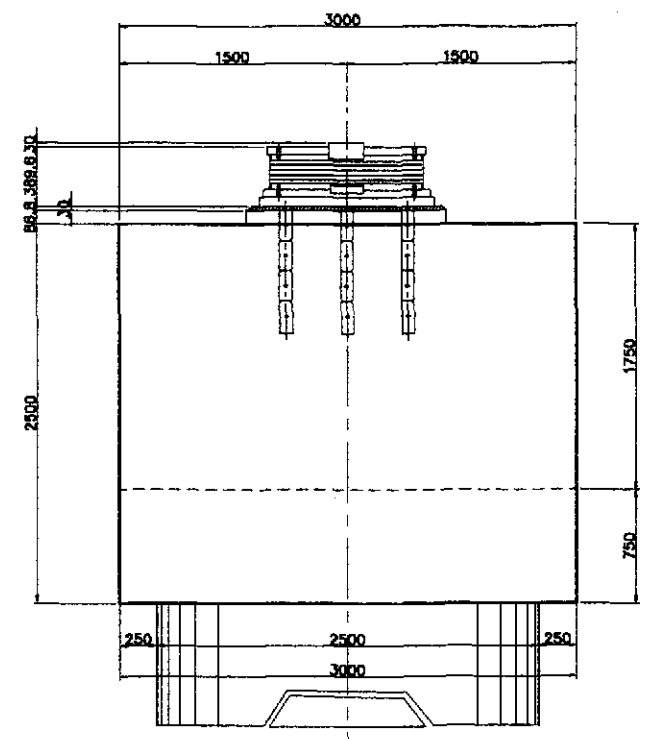


**A COPING PLAN**  
SCALE 1:30

**1 COPING LAYOUT AND DIMENSIONS (FIXED PIERS)**  
SCALE AS SHOWN



**C SECTION**  
SCALE 1:25



**D SECTION**  
SCALE 1:25

**JICA**  
JAPAN INTERNATIONAL COOPERATION AGENCY

**KATAHIRA & ENGINEERS**  
INTERNATIONAL

**YEO YACHYO ENGINEERING**  
CO., LTD.

DESIGNED	10/18/02	<i>[Signature]</i> F. M. SANS
CHECKED	10/17/02	J. C. SANTIAGO
SUBMITTED	10/19/02	<i>[Signature]</i> TEAM LEADER

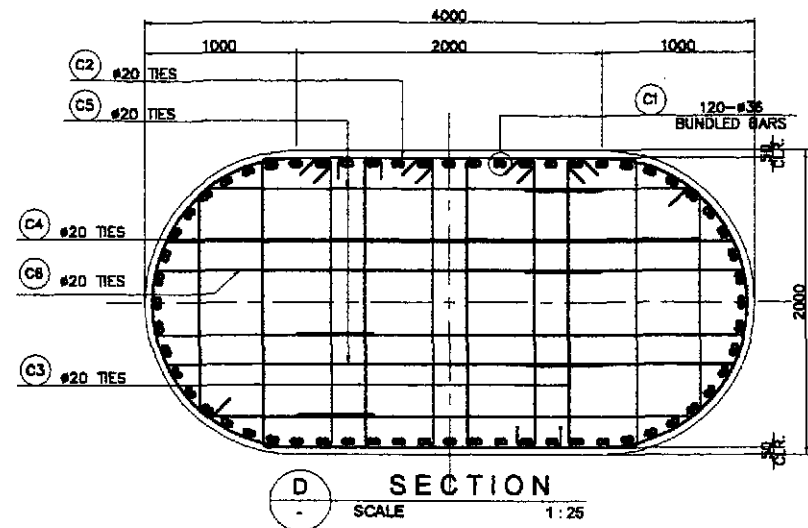
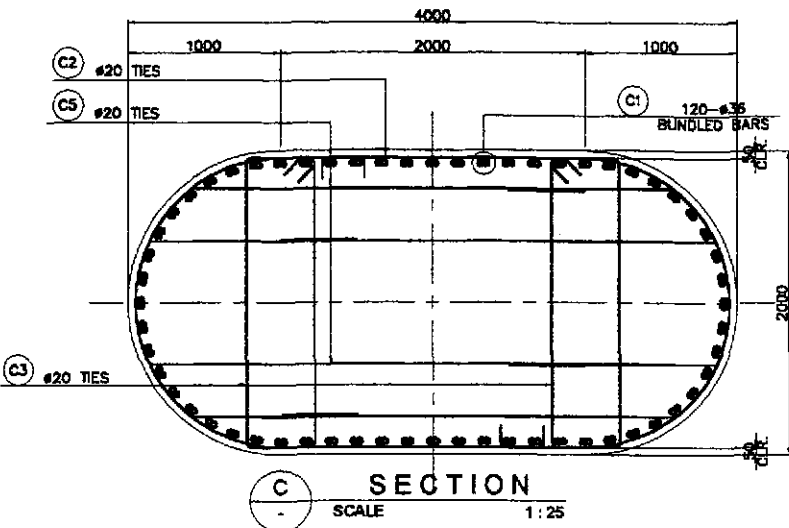
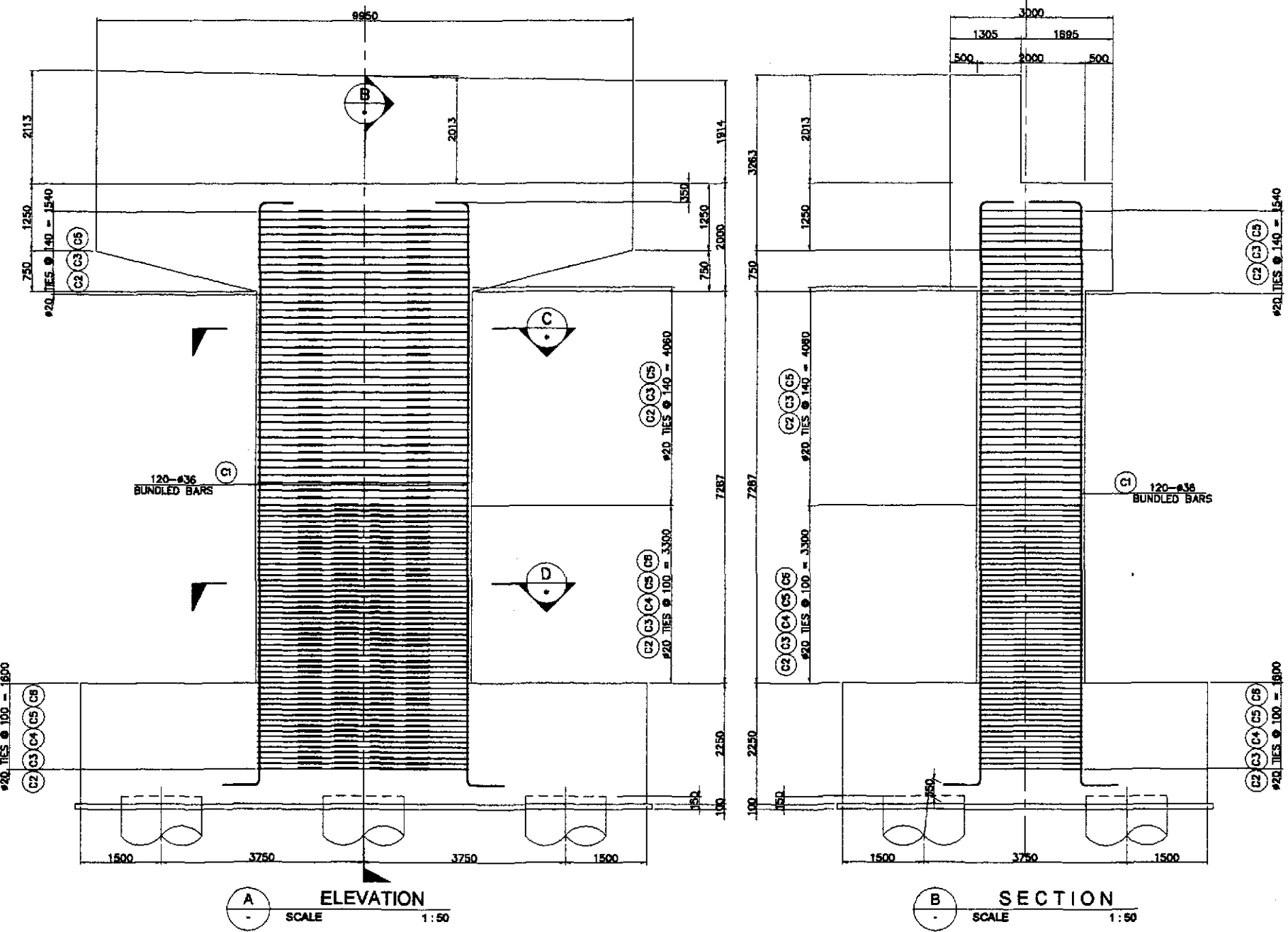
REPUBLIC OF THE PHILIPPINES <b>DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</b>	
BUREAU OF DESIGN Submitted By: <b>DANILO C. TRAJANO</b> Project Director	OFFICE OF THE SECRETARY Recommended By: <b>ADRIANO M. DORON</b> Chief, Bridges Division <b>GILBERTO S. REYES</b> Director IV (DC) <b>MANUEL M. BONDAN</b> Undersecretary <b>SIMEON A. DATUMANONG</b> 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 III**

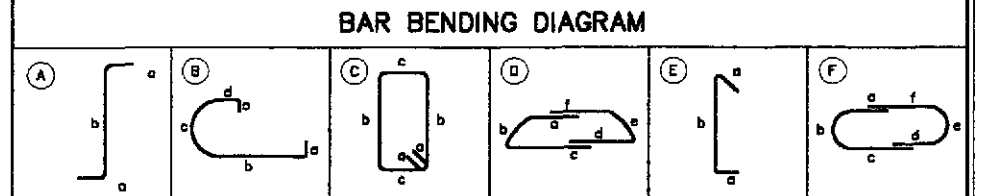
SCALE :  
 AS SHOWN  
 FULL SIZE A1

SHEET CONTENTS :  
**BRIDGE NO. 10 PAMPANGA RIVER BRIDGE  
 COPING LAYOUT AND DIMENSIONS  
 (P7 to P10 & P12 to P14)  
 (INITIAL STAGE)**

SHEET NO. :  
**B10M-56**



1 COLUMN REINFORCEMENT DETAILS (PIER 6 & PIER 15-EXP. PIERS) AS SHOWN

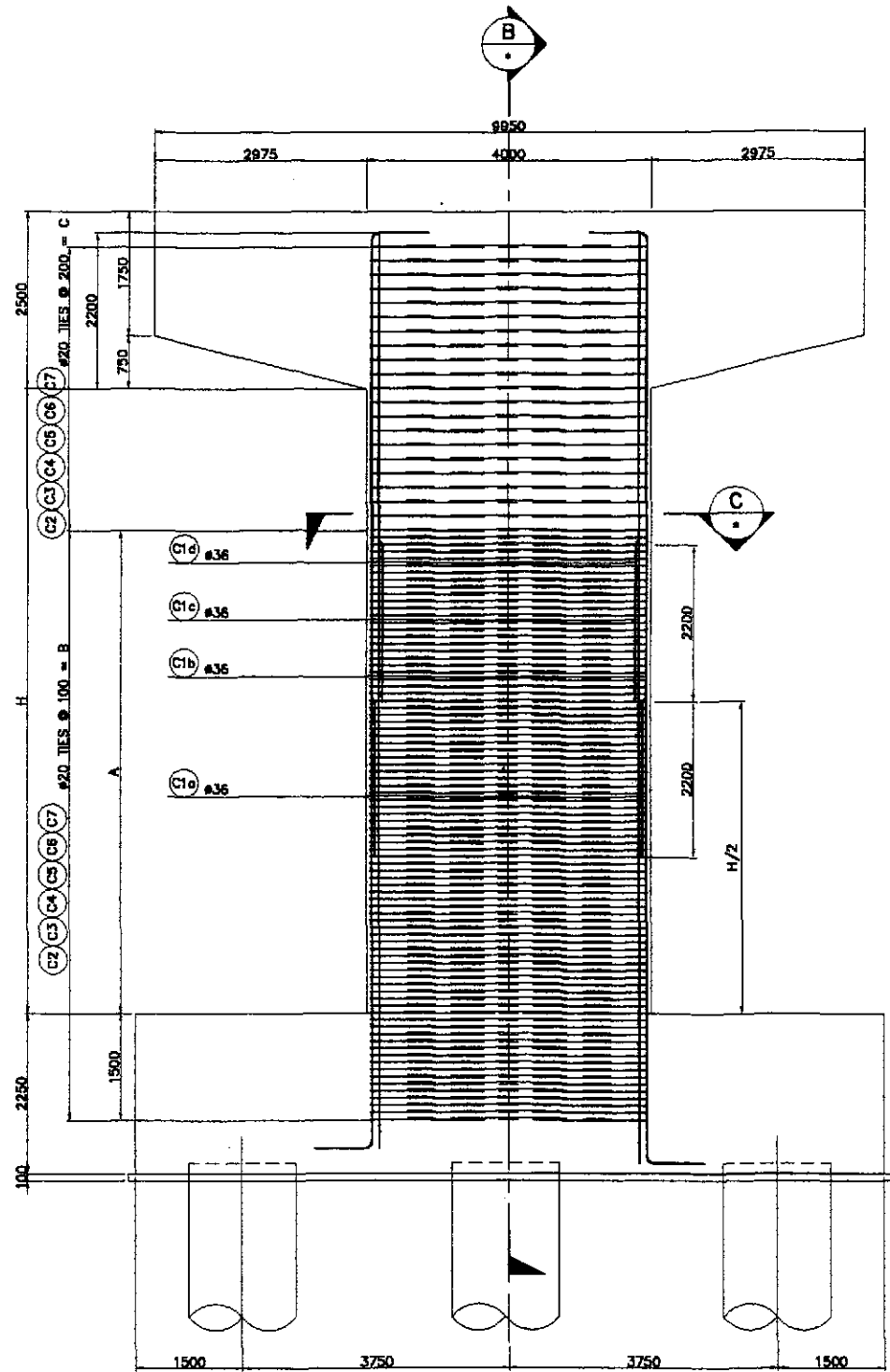


**SCHEDULE OF REINFORCEMENT**

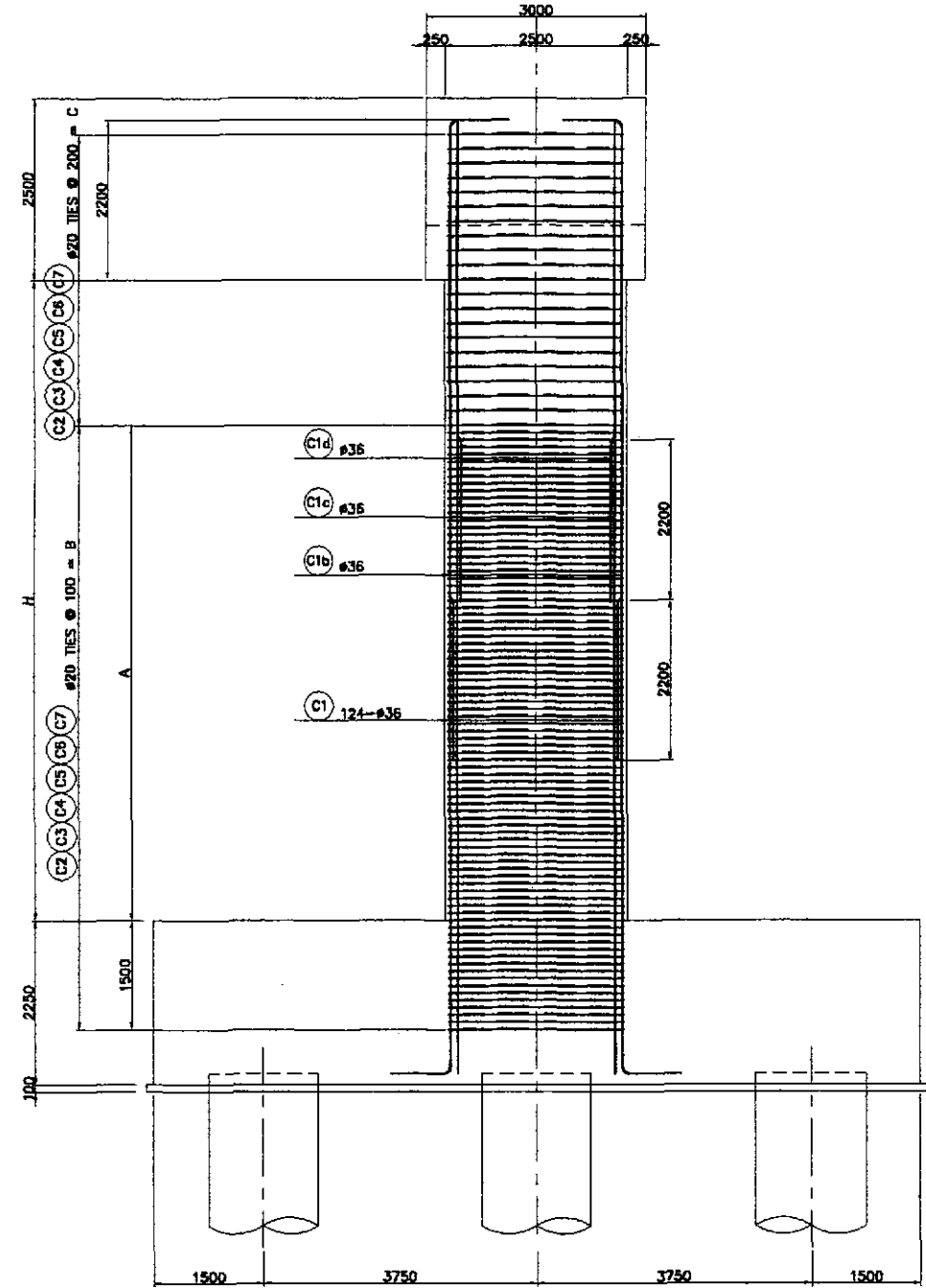
LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION (mm) OUT TO OUT						LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (kg)
				a	b	c	d	e	f				
PIER 6 & P15	C1	36	A	625	10750					12000	120	7.991	11507.04
	C2	20	B	400	1850	3000	425			6075	186	2.466	2786.46
	C3	20	C	260	1900	450				5220	372	2.466	4768.60
	C4	20	E	260	1500	480				4380	102	2.466	1101.71
	C5	20	F	1500	630	2900	1500	630	2900	10060	186	2.466	4614.28
	C6	20	D	2800	400	1200	2800	400	1200	8800	51	2.466	1106.74
TOTAL WEIGHT PER PIER =											25,904.83 Kgs.		
TOTAL WEIGHT FOR (2) PIERS =											51,809.66 Kgs.		

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





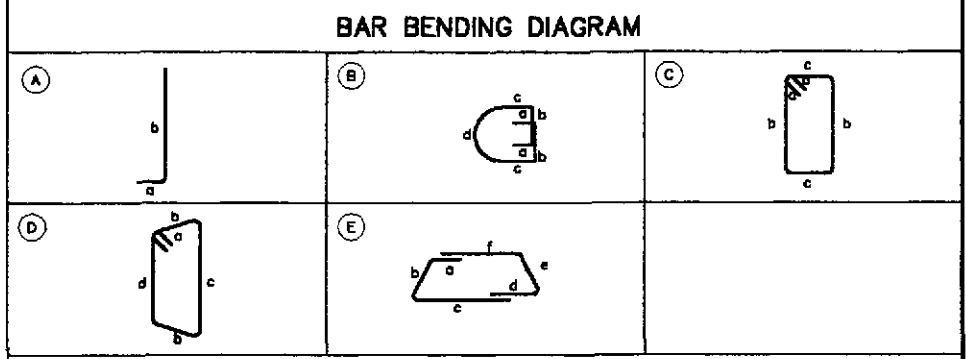
**A** ELEVATION  
SCALE 1:50



**B** SECTION  
SCALE 1:50

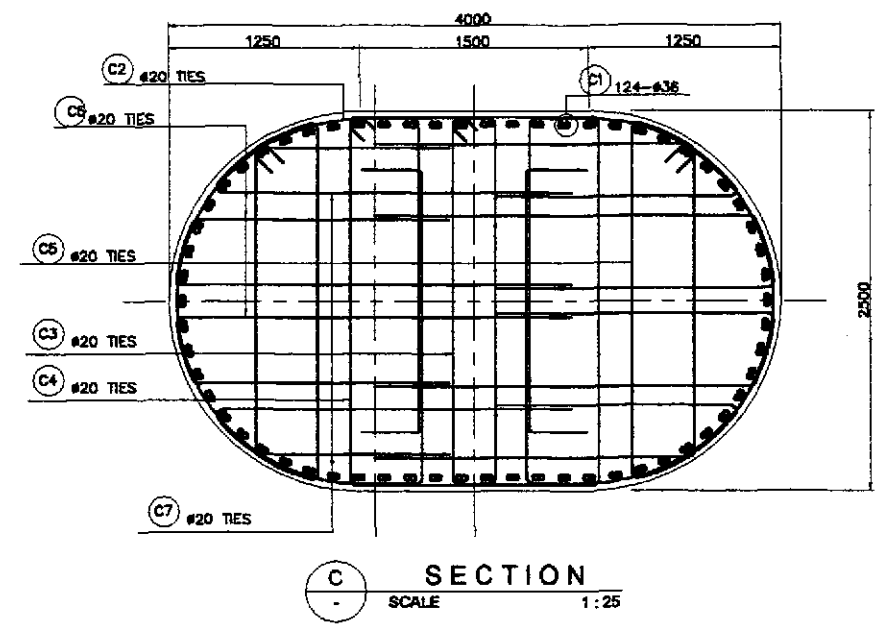
**1** COLUMN REINFORCEMENT DETAILS (PIER 7 TO PIER 14)  
SCALE AS SHOWN

SCHEDULE OF DIMENSIONS				
PIER	H (mm)	A (mm)	B (mm)	C (mm)
PIER 7	8800	6800	8300	4000
PIER 8	8800	6800	8300	4000
PIER 9	8800	6800	8300	4000
PIER 10	8800	6800	8300	4000
PIER 11	8800	6800	8300	4000
PIER 12	8800	6800	8300	4000
PIER 13	8800	6800	8300	4000
PIER 14	8800	6800	8300	4000



SCHEDULE OF REINFORCEMENT														
LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION (mm) OUT TO OUT						LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (kg)	
				a	b	c	d	e	f					
PIER 7, 8, 9, 10, 12, 13, 14	C1a	36	A	700	8300					7000	62	7.990	3,468	
	C1b	36	A	700	8800					9500	62	7.990	4,707	
	C1c	36	A	700	8500					9200	62	7.990	4,558	
	C1d	36	A	700	6600					7300	62	7.990	3,617	
	C2	20	B	350	2000	400	3700			9200	208	2.466	4,719	
	C3	20	C	260	2350	300				5820	208	2.466	1,483	
	C4	20	C	260	2350	1850	2000			8520	208	2.466	2,186	
	C5	20	D	260	400	2300				5620	208	2.466	2,883	
	C6	20	E	1800	450	2500	1800	450	2500	9500	208	2.466	4,873	
	C7	20	E	1350	400	2300	1600	450	2000	8050	208	2.466	4,130	
	TOTAL WEIGHT (1 PIER)											=	36,634	Kgs.
	TOTAL WEIGHT (7 PIERS)											=	256,438	Kgs.
	PIER 11	C1a	36	A	700	8300					7000	62	7.990	3,468
		C1b	36	A	700	8800					9500	62	7.990	4,707
C1c		36	A	700	8500					9200	62	7.990	4,558	
C1d		36	A	700	6600					7300	62	7.990	3,617	
C2		20	B	350	2000	400	3700			9200	208	2.466	4,719	
C3		20	C	260	2350	300				5820	208	2.466	1,483	
C4		20	C	260	2350	1850	2000			8520	208	2.466	2,186	
C5		20	D	260	400	2300				5620	208	2.466	2,883	
C6		20	E	1800	450	2500	1800	450	2500	9500	208	2.466	4,873	
C7		20	E	1350	400	2300	1600	450	2000	8050	208	2.466	4,130	
TOTAL WEIGHT (1 PIER)											=	36,634	Kgs.	

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



**C** SECTION  
SCALE 1:25

**JICA**  
JAPAN INTERNATIONAL COOPERATION AGENCY

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

REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

BUREAU OF DESIGN

OFFICE OF THE SECRETARY

DESIGNED: 10/18/02  
CHECKED: 10/17/02  
SUBMITTED: 10/19/02

DATE: 10/18/02

SIGNATURE: F. M. SALAS

Submitted By: DANILLO C. TRAJANO, Project Director

Reviewed By: ADRIANO M. DORCY, Chief, Bridges Division

Recommended By: GILBERTO S. REYES, Director IV (OC)

Approved By: MANUEL M. BORDAN, Undersecretary

Approved By: SIMONE A. DATAMANG, Secretary

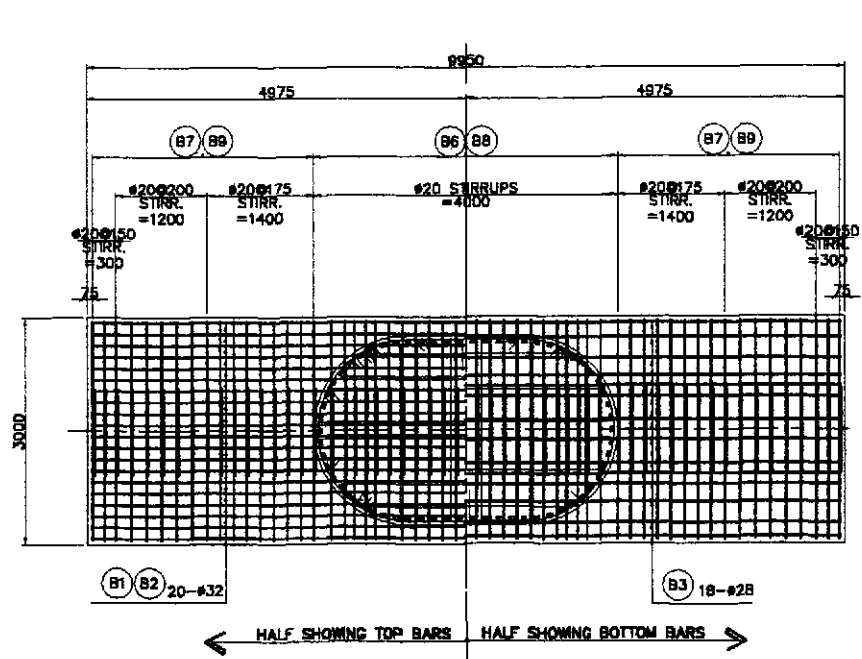
PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pinaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE III

SCALE: AS SHOWN, FULL SIZE A1

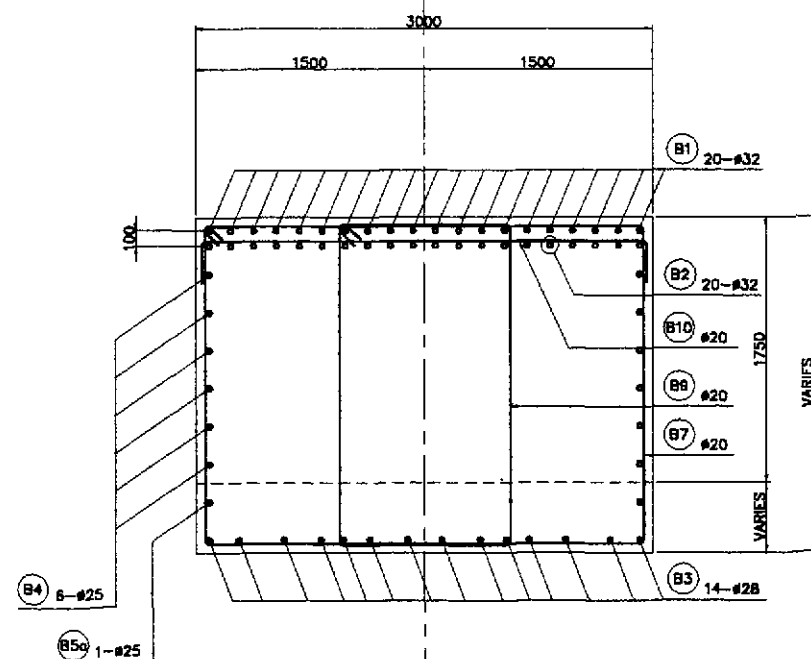
SHEET CONTENTS: BRIDGE NO. 10 PAMPANGA RIVER BRIDGE COLUMN REINFORCEMENT DETAILS (PIER 7 to PIER 14) (INITIAL STAGE)

SHEET NO.: B10M-58

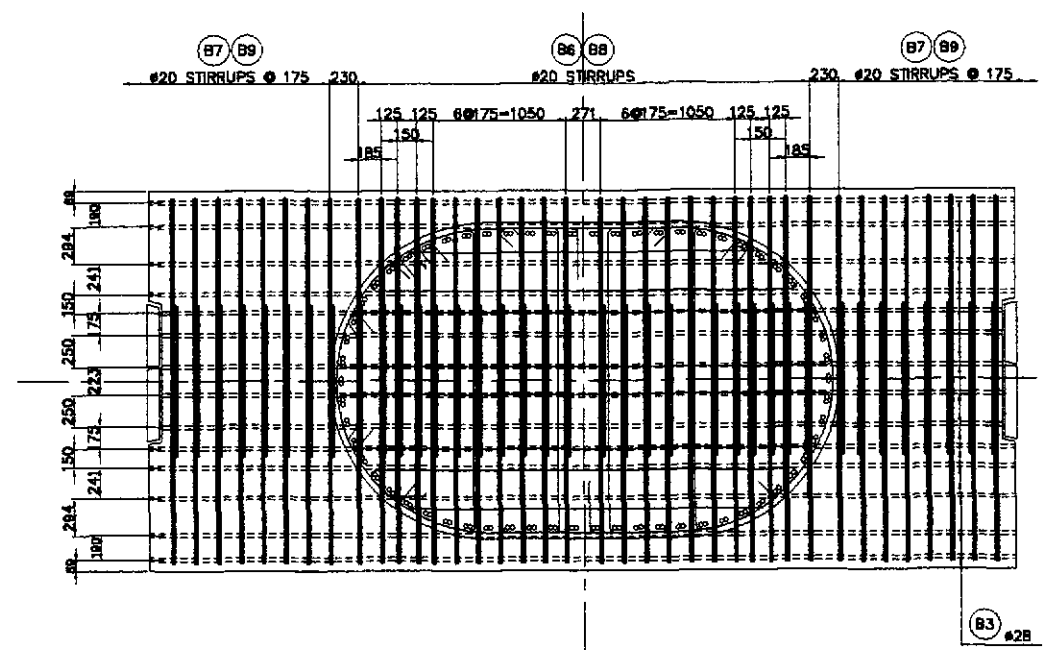




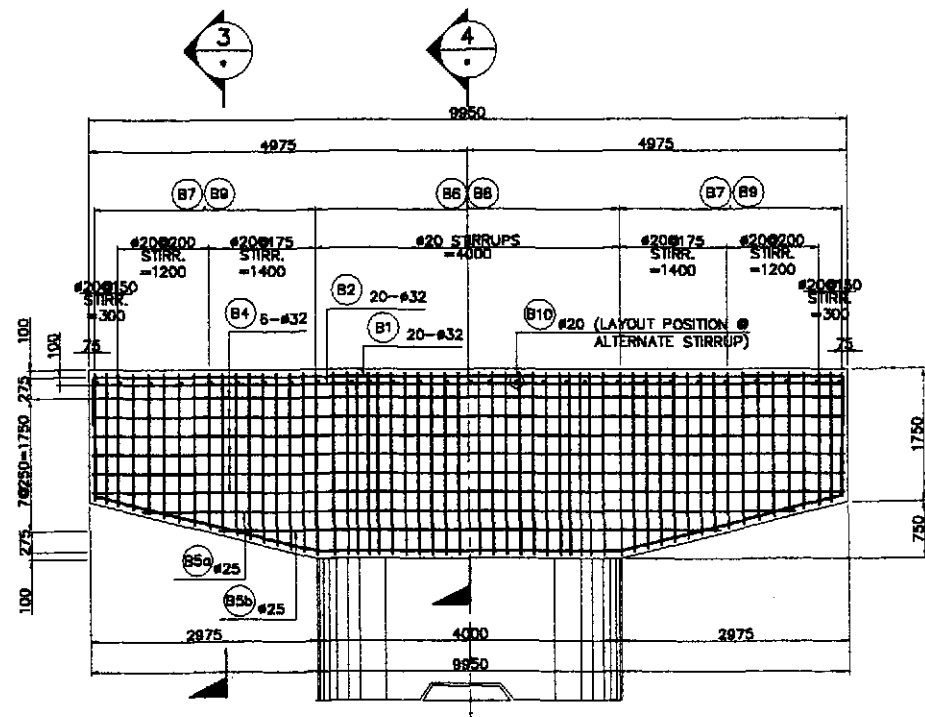
1 PLAN  
SCALE 1:50



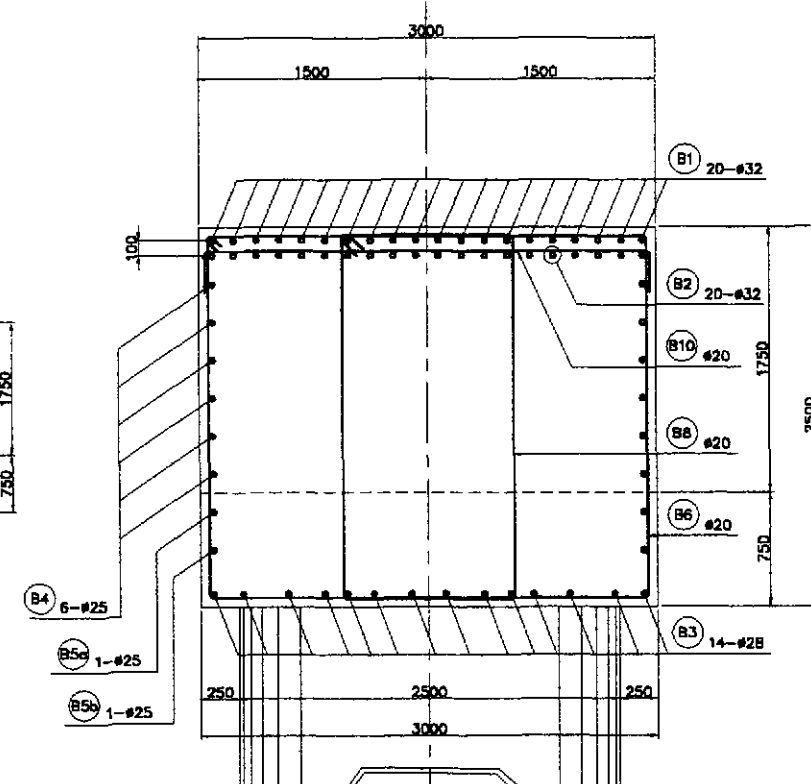
3 SECTION  
SCALE 1:25



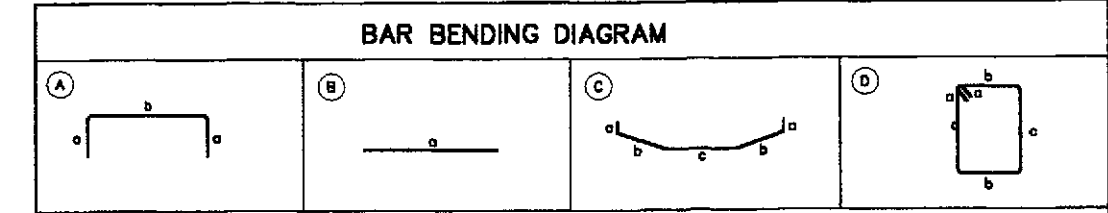
5 DETAIL  
SCALE 1:30



2 ELEVATION  
SCALE 1:50



4 SECTION  
SCALE 1:25



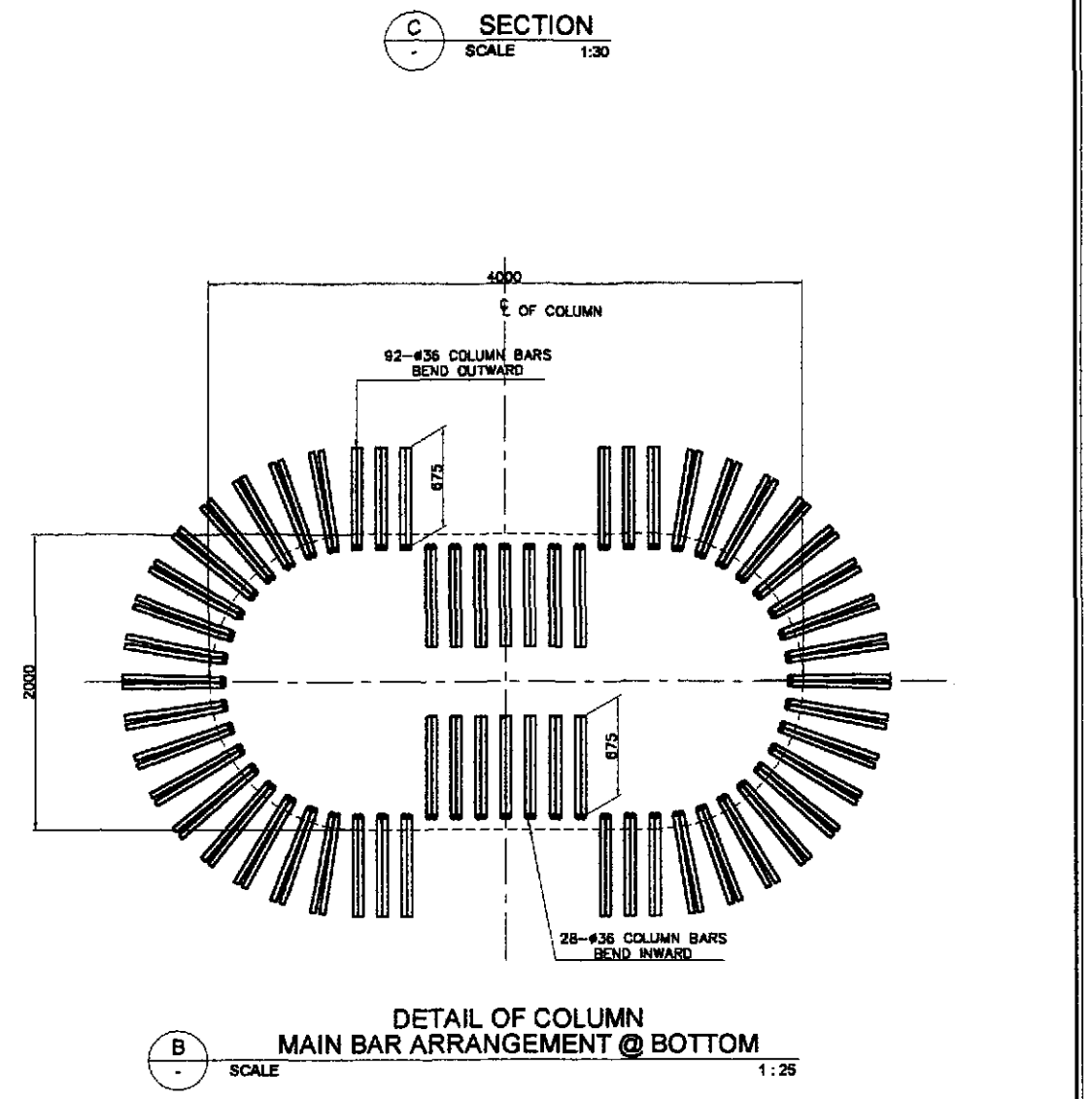
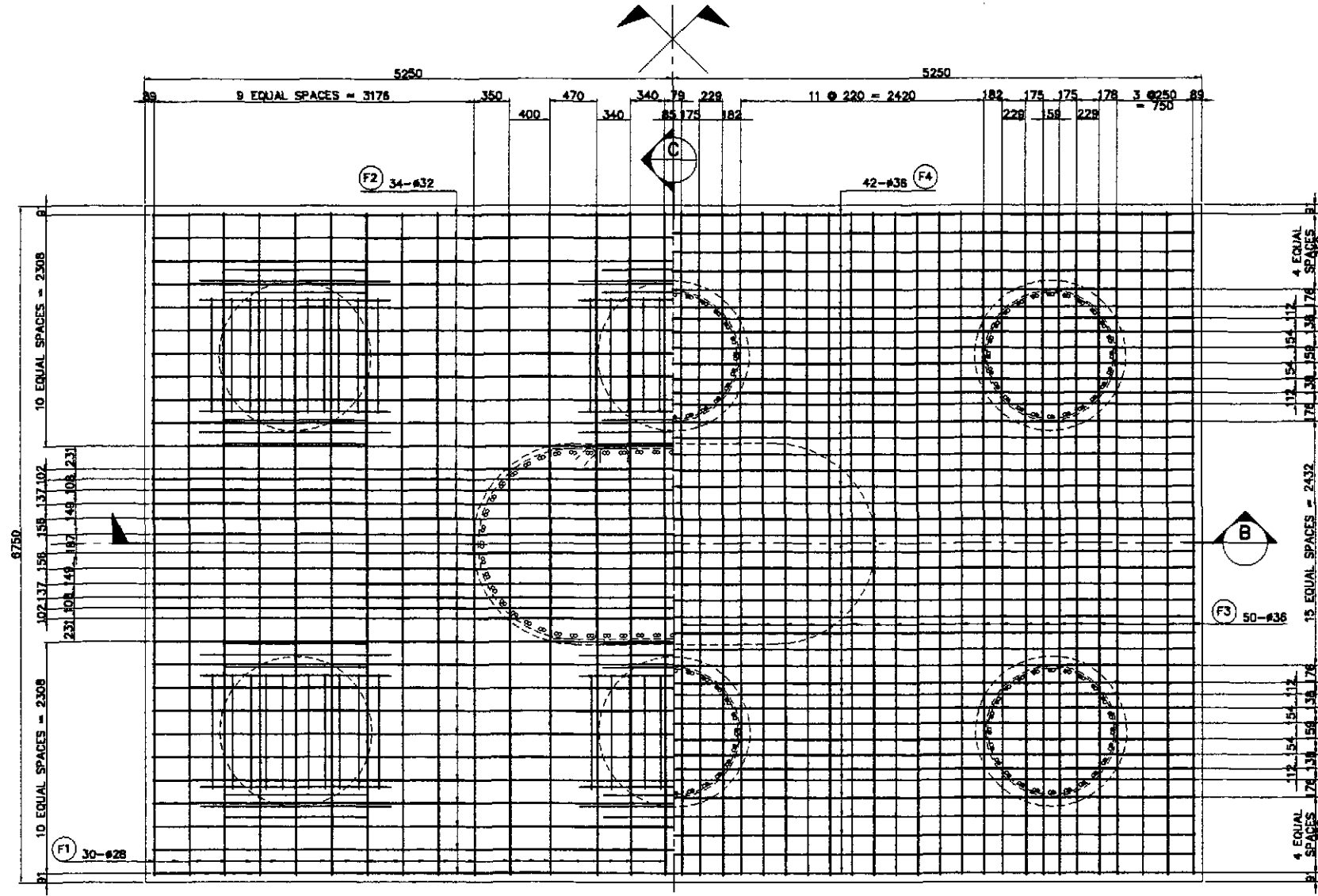
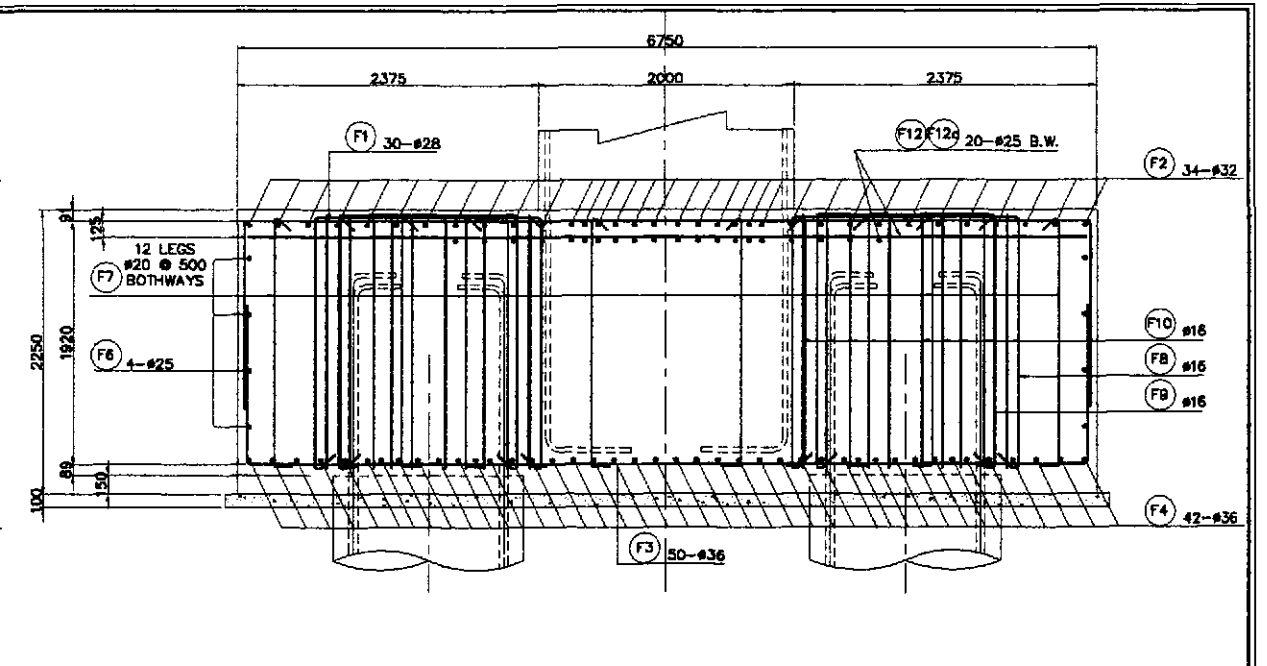
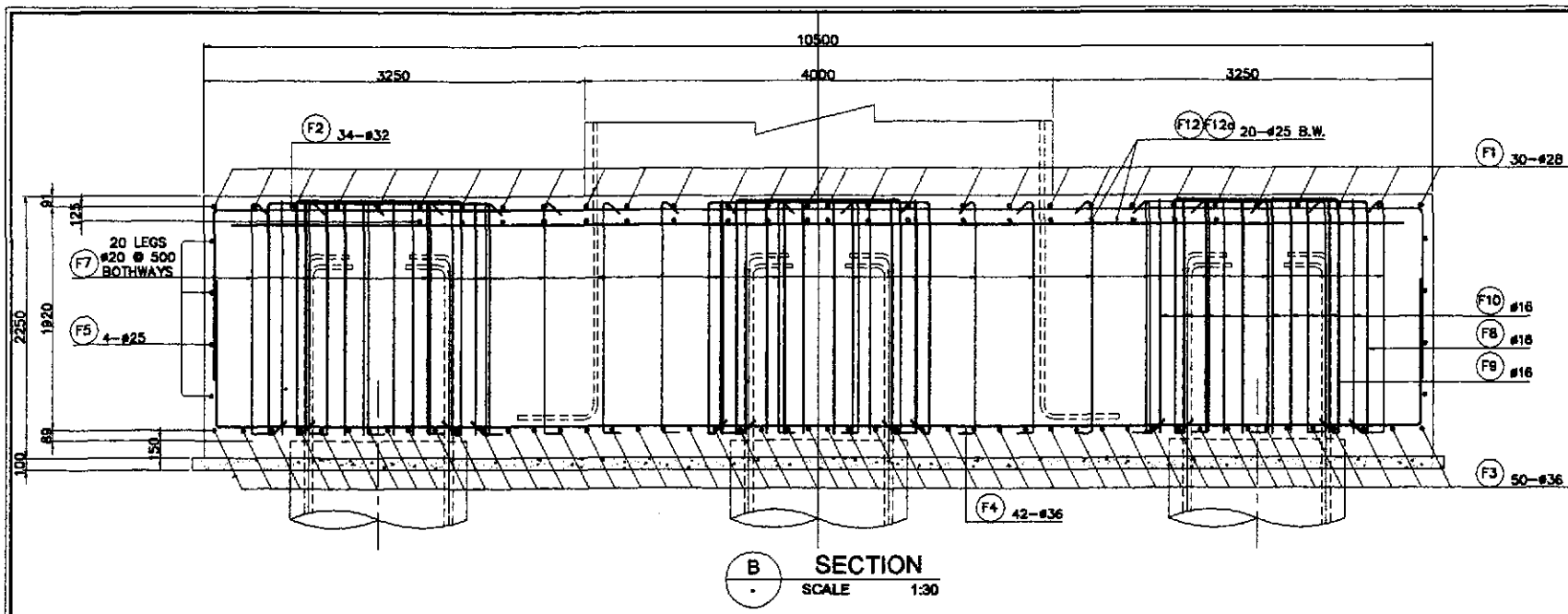
SCHEDULE OF REINFORCEMENT

LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION (mm) OUT TO OUT						LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (Kg/m)	WEIGHT (kg)	REMARKS
				a	b	c	d	e	f					
PIER 7 TO PIER 14) COPING	B1	32	A	600	9800					11000	20	6.314	1,238	Quantities for one(1) coping only.
	B2	32	B	9800						9800	20	6.314	1,238	
	B3	28	C	600	2995	4000				11200	14	4.834	758	
	B4	25	B	9800						9800	12	3.854	454	
	B5a	25	B	8300						8300	2	3.854	64	
	B5b	25	B	6250						6300	2	3.854	49	
	B6	20	D	100	2880	2300				10800	24	2.466	628	
	B7	20	D	100	2880	2300				9850	32	2.466	778	
	B8	20	D	100	1100	2300				7000	24	2.466	415	
	B9	20	D	100	1100	2300				6300	32	2.466	498	
B10	20	A	300	2850					3450	29	2.466	247		
TOTAL WEIGHT (1 PIER) =												6,518		
TOTAL WEIGHT (8 PIERS) =												52,152		

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

1 COPING REINFORCEMENT DETAILS (PIER 7 TO PIER 14)  
SCALE AS SHOWN

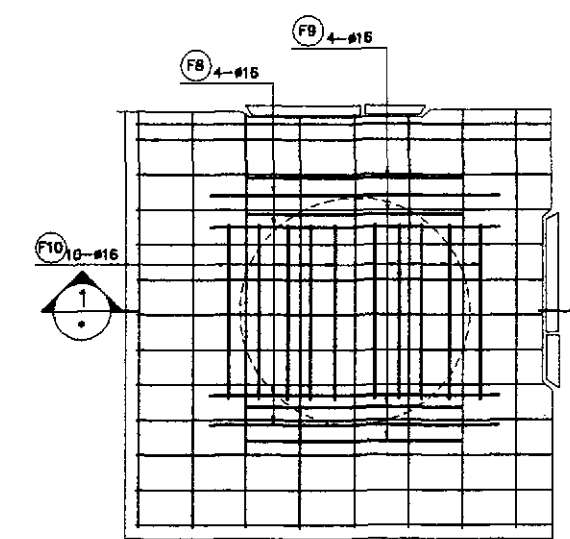
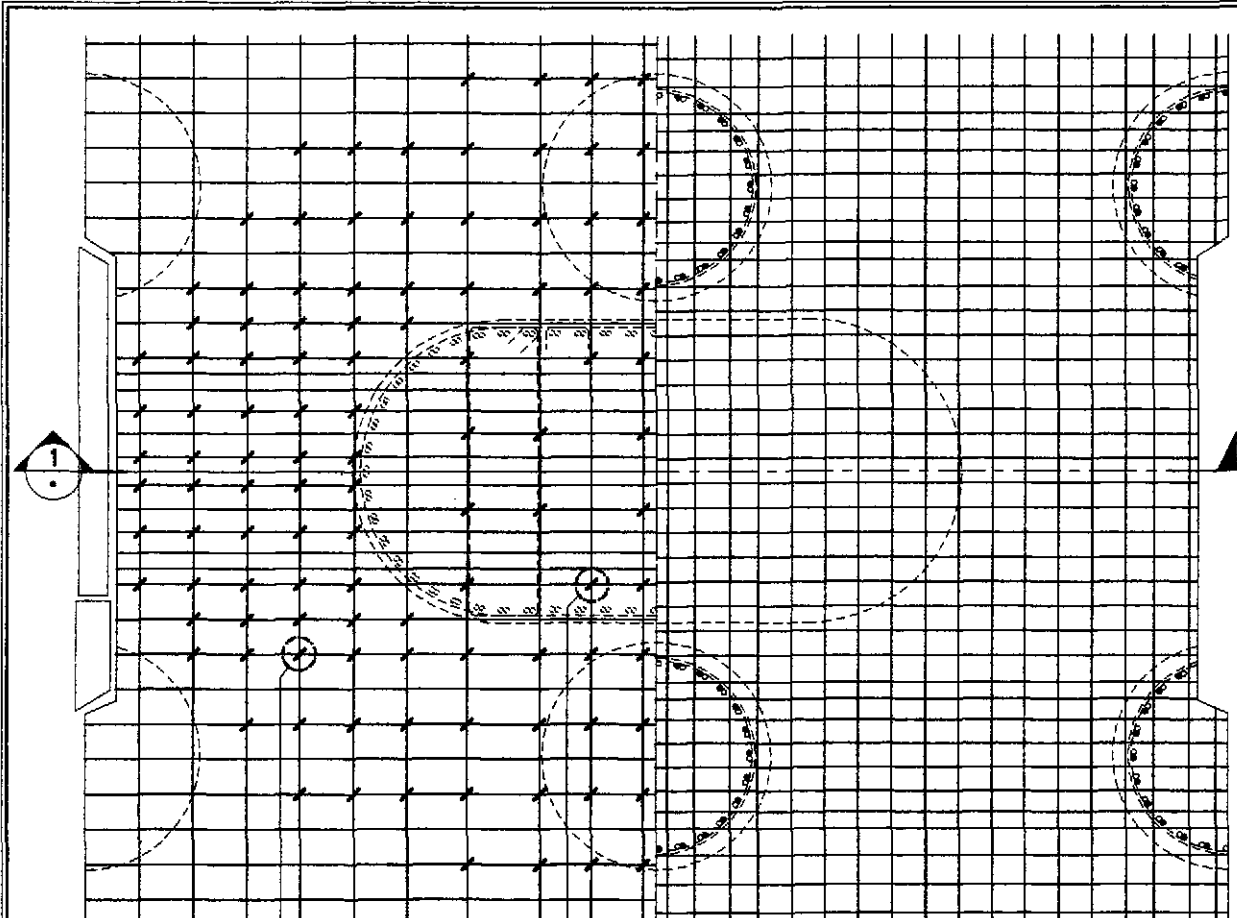
	DESIGNED	DATE	SIGNATURE	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/17/02	<i>[Signature]</i>		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)		AS SHOWN	BRIDGE NO. 10 PAMPANGA RIVER BRIDGE COPING REINFORCEMENT DETAILS (PIER 7 to PIER 14) (INITIAL STAGE)	B10M-60
	SUBMITTED	10/19/02	<i>[Signature]</i>		CABANATUAN BYPASS - CONTRACT PACKAGE III		FULL SIZE A1		
Submitted By: <i>[Signature]</i> Reviewed By: <i>[Signature]</i> Recommended By: <i>[Signature]</i> Approved By: <i>[Signature]</i>				BUREAU OF DESIGN OFFICE OF THE SECRETARY					
Submitted By: DANILO C. TRAJANO Reviewed By: ADRIANO M. DORAY Recommended By: GILBERTO S. REYES Approved By: MANUEL M. BONGAN				Project Director Chief, Bridge Division Director IV (OIC) Undersecretary					



← HALF SHOWING TOP BARS    HALF SHOWING BOTTOM BARS →

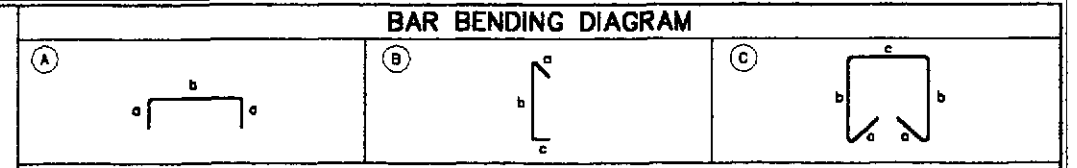
**1 PILECAP REINFORCEMENT DETAILS**  
SCALE AS SHOWN

		PROJECT AND LOCATION : <b>THE DETAILED DESIGN STUDY ON          UPGRADING INTER-URBAN HIGHWAY SYSTEM          ALONG THE PAN-PHILIPPINE HIGHWAY          (Plaridel, Cabanatuan and San Jose Bypasses)</b> <b>CABANATUAN BYPASS - CONTRACT PACKAGE III</b>	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : <b>BRIDGE NO. 10 PAMPANGA RIVER BRIDGE          PILE CAP REINFORCEMENT DETAILS          (PIER 6 &amp; PIER 15) - 1 of 2          (INITIAL STAGE)</b>	SHEET NO. : <b>B10M-61</b>	
	DESIGNED: 10/8/02 CHECKED: 10/17/02 SUBMITTED: 6/19/02	DATE: 10/8/02 SIGNATURE: F. M. SALAS Submitted By: DANLO C. TRAJANO Project Director	OFFICE OF THE SECRETARY Recommended By: MANUEL M. BONDAN Undersecretary Approved By: SIMEON A. DATILMANGING Secretary	BUREAU OF DESIGN Reviewed By: ADRIANO M. DORAY Chief, Bridges Division Recommended By: GILBERTO S. REYES Director IV (D/C)	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	JICA JAPAN INTERNATIONAL COOPERATION AGENCY
	TEAM LEADER: M. R. SANTOS	Project Director: DANLO C. TRAJANO	Undersecretary: MANUEL M. BONDAN	Director IV (D/C): GILBERTO S. REYES	Chief, Bridges Division: ADRIANO M. DORAY	Chief, Bridges Division: ADRIANO M. DORAY



TYPICAL ON PILE-PILECAP CONNECTION

B PLAN SCALE 1:25



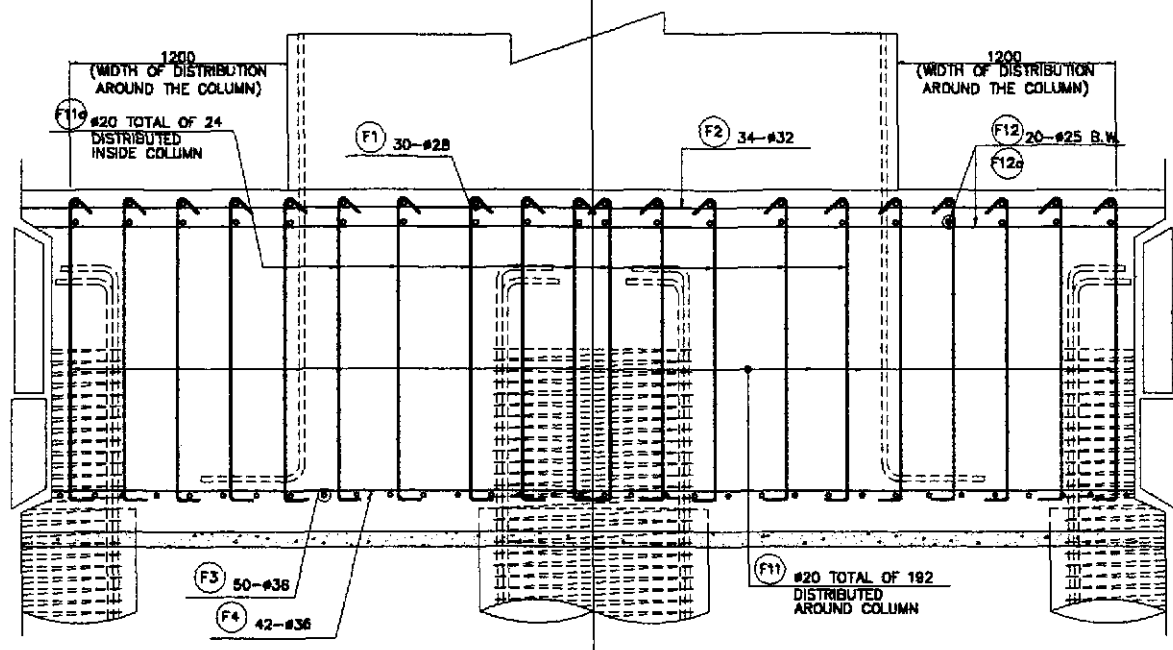
LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION(mm) OUT TO OUT						LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (Kg) GRADE 60	WEIGHT (Kg) GRADE 40
				a	b	c	d	e	f					
PIER P6 & P15	F1	25	A	1600	6600					8800	50	3.854	1888.46	
	F2	32	A	800	10350					11950	42	6.313	3168.48	
	F3	32	A	1600	6600					8800	34	6.313	2103.48	
	F4	32	A	800	10350					11950	30	6.313	2263.21	
	F5	25	STR	6600						6600	8	3.854	203.48	
	F6	25	STR	10350						10350	8	3.854	318.112	
	F7	20	B	260	1950					2470	280	2.466	1705.48	
	F8	16	C	100	1950	1500				5600	24	1.579		212.22
	F9	16	C	100	1850	1250				5350	24	1.579		202.74
	F10	16	C	100	1950	1100				5200	36	1.579		295.59
	F11a	20	B	260	1950					2470	192	2.466	1169.48	
	F11b	20	B	260	1950					2470	24	2.466	146.18	
F12	25	STR	10350						10350	20	3.854	797.78		
F12a	25	STR	6600						6600	20	3.854	508.73		

WEIGHT FOR GRADE 40 = 0 710.55 Kgs.  
 WEIGHT FOR GRADE 60 = 14,273.81 Kgs. 0

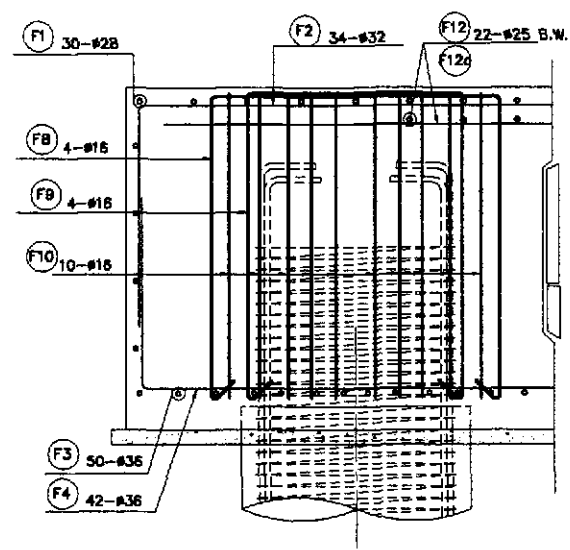
THE REINFORCEMENT SHOWN ON THIS TABLE IS FOR REFERENCE ONLY. THE CONTRACTOR SHOULD CHECK AND VERIFY ALL DIMENSIONS, SIZES AND QUANTITIES OF REINFORCEMENT.

← HALF SHOWING TOP BARS HALF SHOWING BOTTOM BARS →

A PLAN SCALE 1:25



1 SECTION SCALE 1:25

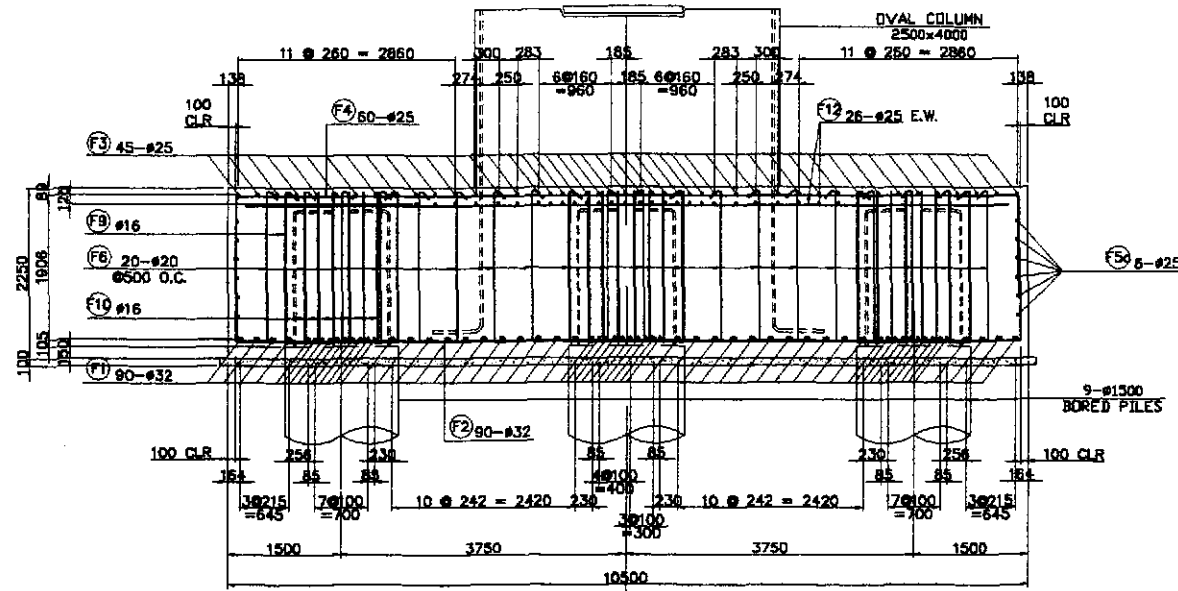


2 SECTION SCALE 1:25

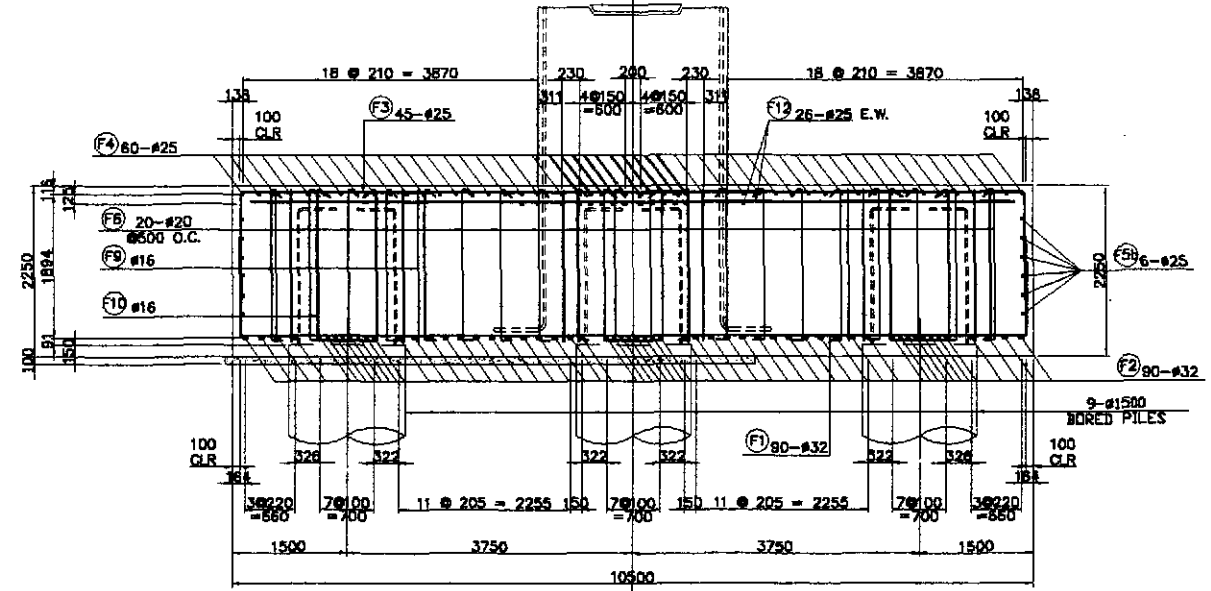
PILE CAP REINFORCEMENT DETAILS

SCALE AS SHOWN

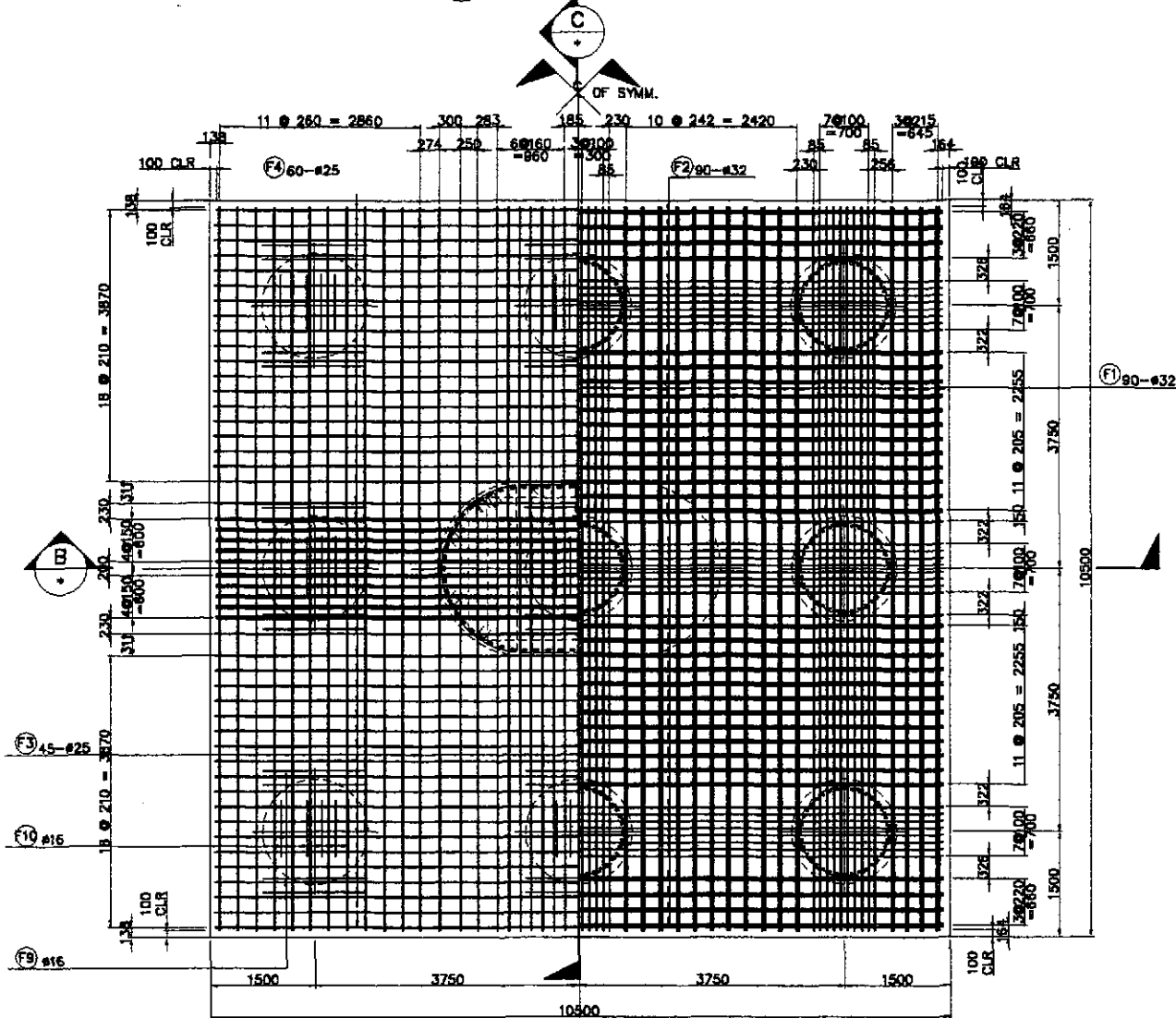
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pinarid, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE III	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : BRIDGE NO. 10 PAMPANGA RIVER BRIDGE PILE CAP REINFORCEMENT DETAILS (PIER 6 & PIER 15) - 2 of 2 (INITIAL STAGE)	SHEET NO. : <b>B10M-62</b>	
	CHECKED	10/17/02	F. M. SAYS		SUBMITTED BY: FUHL - PMO DANLO C. TRAJANO Project Director	REVIEWED BY: ADRIANO M. DORAY Chief, Bridges Division	RECOMMENDED BY: GILBERTO S. REYES Director IV (OC)	RECOMMENDED BY: MANUEL M. BONGAN Undersecretary					APPROVED BY: SIMEON A. DATUMANONG Secretary
	SUBMITTED	10/19/02	TEAM LEADER										



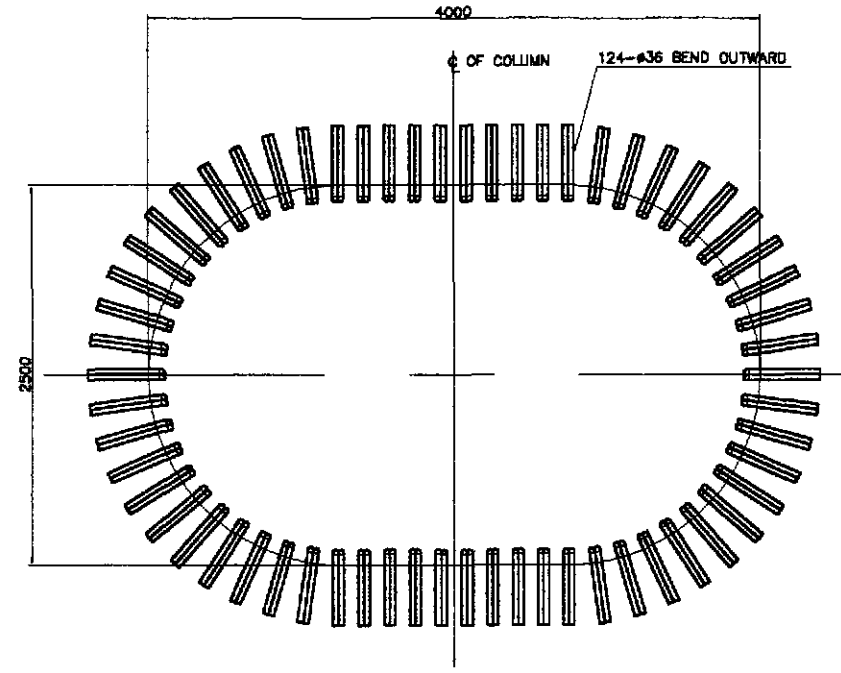
**B SECTION**  
SCALE 1:50



**C SECTION**  
SCALE 1:50



**A PLAN**  
SCALE 1:50



**B DETAIL OF COLUMN MAIN BAR ARRANGEMENT @ BOTTOM**  
SCALE 1:25

**1 PILECAP REINFORCEMENT DETAILS**  
SCALE AS SHOWN

**JICA**  
JAPAN INTERNATIONAL COOPERATION AGENCY

**KATAHIRA & ENGINEERS INTERNATIONAL**

**YEO YACHYO ENGINEERING CO., LTD.**

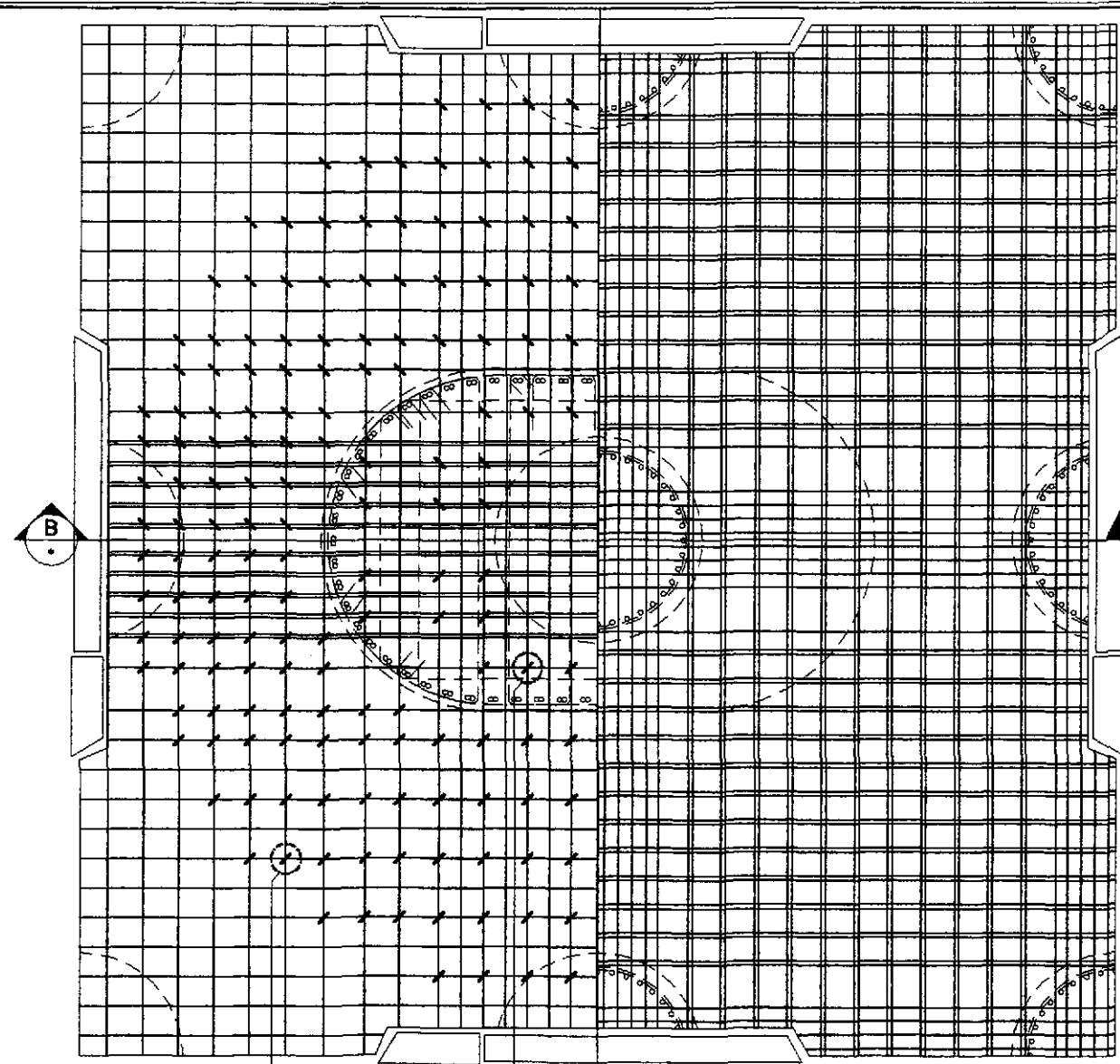
DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				
10/18/02		F. M. SALAS	BUREAU OF DESIGN		OFFICE OF THE SECRETARY		
CHECKED	10/17/02	J. C. SANTOS	Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:
SUBMITTED	10/19/02	TEAM LEADER	DANILO C. TRAJANO Project Director	ADRIANO M. DORAY Chief, Bridge Division	GILBERTO S. REYES Director IV (OC)	MANUEL M. BONGAN Undersecretary	SIMEON A. DATUMANONG Secretary

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

SCALE :  
AS SHOWN  
FULL SIZE A1

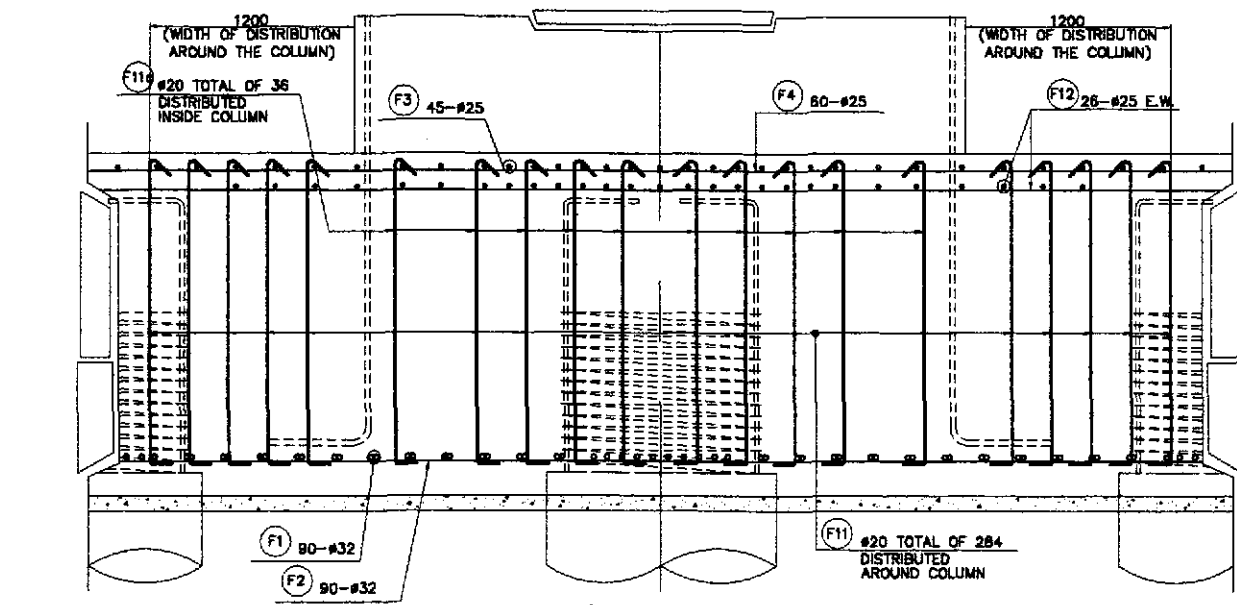
SHEET CONTENTS :  
BRIDGE NO. 10 PAMPANGA RIVER BRIDGE  
PILE CAP REINFORCEMENT DETAILS  
(PIER 7 to PIER 14) - 1 of 2  
(INITIAL STAGE)

SHEET NO. :  
**B10M-63**



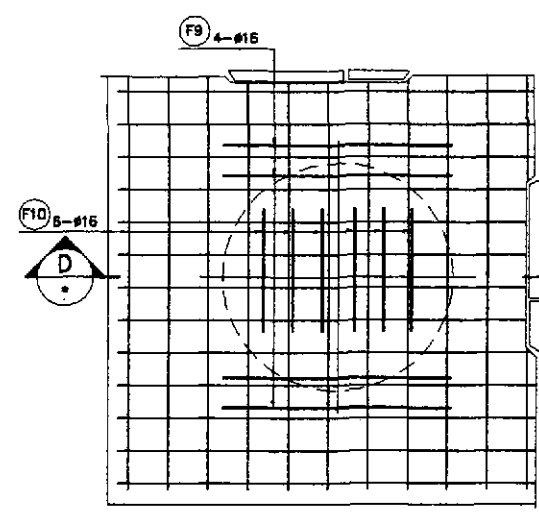
**PLAN**  
SCALE 1:25

F11 #20 TOTAL OF 284 DISTRIBUTED AROUND COLUMN  
F11a #20 TOTAL OF 36 DISTRIBUTED INSIDE COLUMN



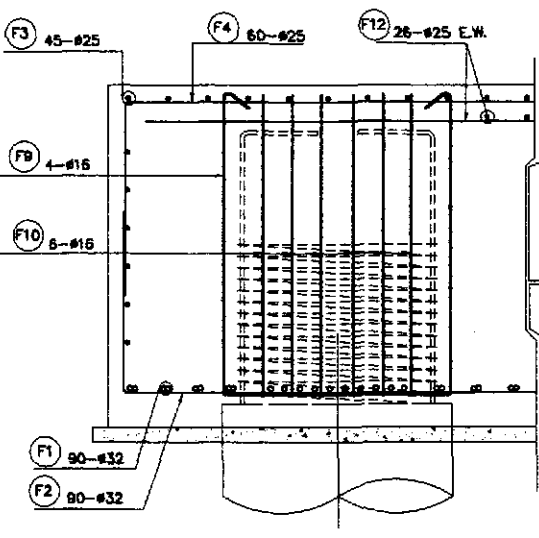
**SECTION**  
SCALE 1:25

F1 90-#32  
F2 90-#32  
F3 45-#25  
F4 60-#25  
F12 26-#25 E.W.  
F11 #20 TOTAL OF 284 DISTRIBUTED AROUND COLUMN



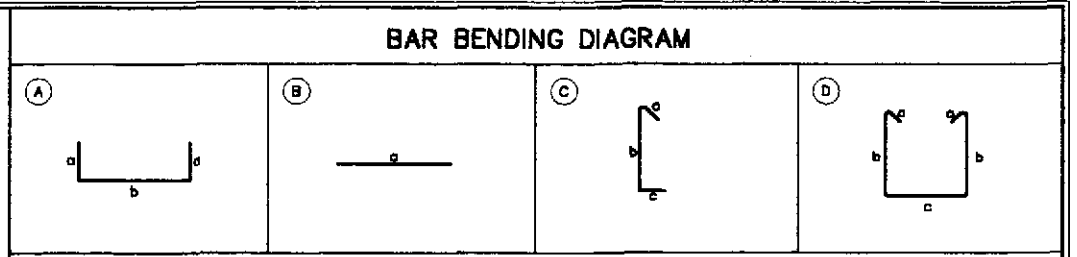
TYPICAL ON PILE-PILECAP CONNECTION

**PLAN**  
SCALE 1:25



**SECTION**  
SCALE 1:25

**PILE CAP REINFORCEMENT DETAILS**  
SCALE AS SHOWN



**SCHEDULE OF REINFORCEMENT**

LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION(mm) OUT TO OUT						LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (kg)	
				a	b	c	d	e	f				GRADE 40	GRADE 60
PIER 7, 8, 9, 10, 11, 12, 13 & 14	F1	32	A	1000	10350					12350	90	6.314		7,019
	F2	32	A	1000	10350					12350	90	6.314		7,019
	F3	25	A	1000	10350					12350	45	3.854		2,142
	F4	25	A	1000	10350					12350	60	3.854		2,856
	F5a	25	B	10350						10350	12	3.854		479
	F5b	25	B	10350						10350	12	3.854		479
	F6	20	C	300	2100	350				2750	400	2.466		2,713
	F7	18	D	300	2100	1500				6300	6	1.579	60	
	F8	18	D	300	2100	2950				7750	4	1.579	49	
	F9	16	D	300	2100	1500				6300	32	1.579	319	
	F10	16	D	300	2100	800				5600	48	1.579	425	
	F11	20	C	300	2100	350				2750	284	2.466		1,926
F11a	20	C	300	2100	350				2750	36	2.466		245	
F12	25	B	10350						10350	52	3.854		2,075	
<b>TOTAL WEIGHT</b>											<b>853</b>	<b>28,953</b>		
<b>TOTAL WEIGHT (8 PIERS)</b>											<b>6,824</b>	<b>215,924</b>		

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

**JICA**  
JAPAN INTERNATIONAL COOPERATION AGENCY

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

REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

DESIGNED: 10/18/02  
CHECKED: 10/17/02  
SUBMITTED: 10/19/02

DATE: 10/18/02  
SIGNATURE: F. M. SALAS  
TEAM LEADER

PROJECT DIRECTOR: DANILLO C. TRAJANO  
CHIEF, BRIDGE DIVISION: ADRIANO M. DORAY  
DIRECTOR IV (DC): GILBERTO S. REYES

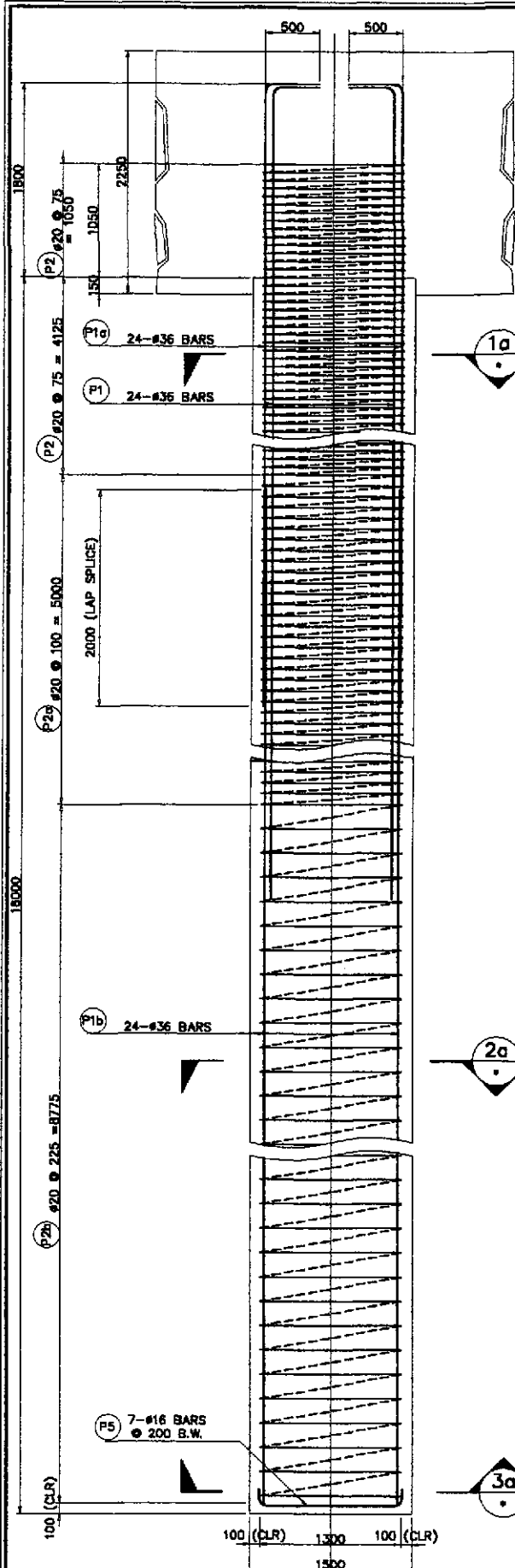
OFFICE OF THE SECRETARY  
MANUEL M. BONDAN  
SIMEON A. DATUMANONG

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

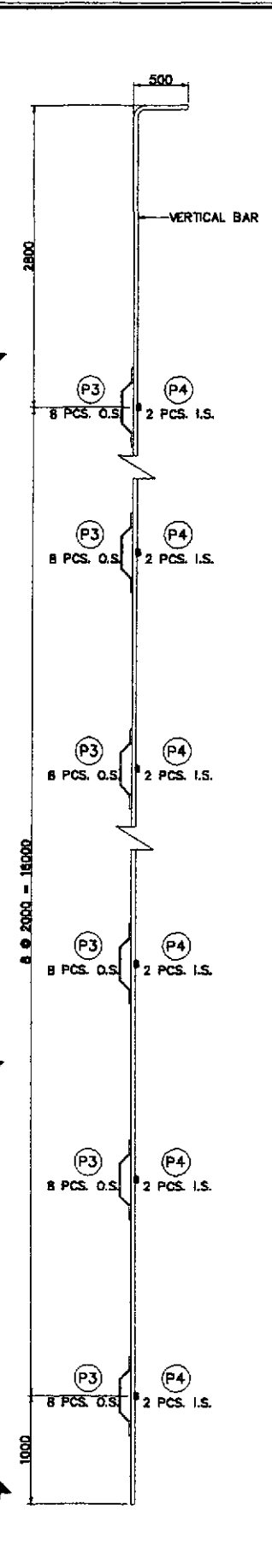
SCALE: AS SHOWN  
FULL SIZE A1

SHEET CONTENTS: BRIDGE NO. 10 PAMPANGA RIVER BRIDGE  
PILE CAP REINFORCEMENT DETAILS  
(PIER 7 to PIER 14) - 2 of 2  
(INITIAL STAGE)

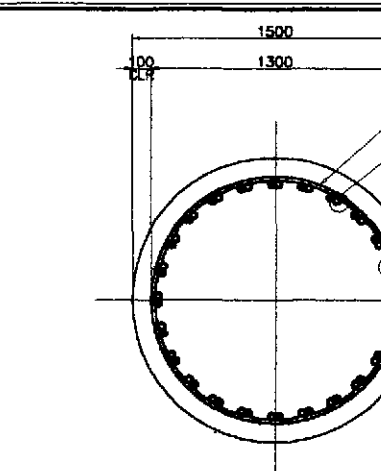
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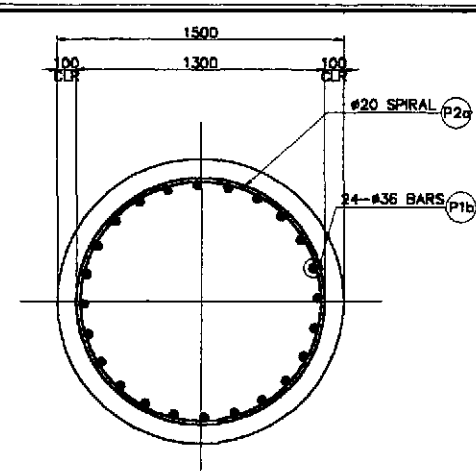
**A ELEVATION**  
SCALE 1:30



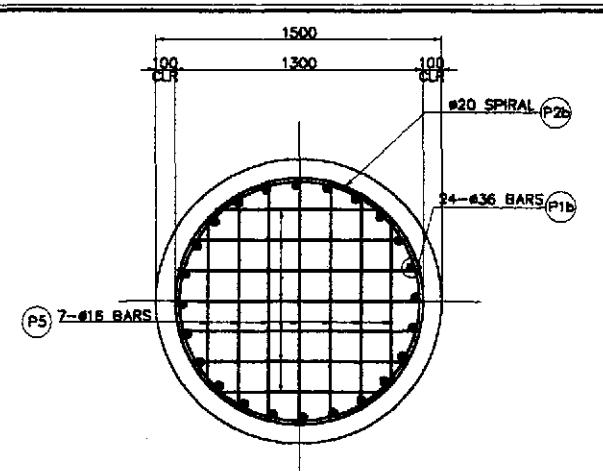
**B LAYOUT OF STIFFENER**  
SCALE 1:30



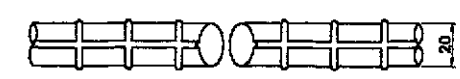
**1a SECTION**  
SCALE 1:20



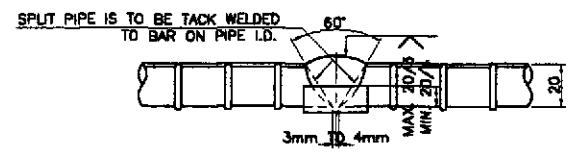
**2a SECTION**  
SCALE 1:20



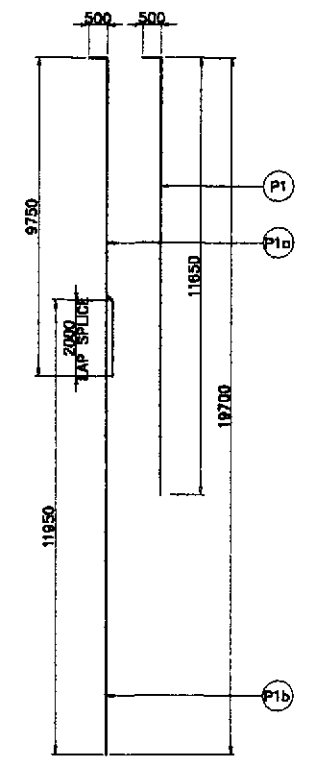
**3a SECTION**  
SCALE 1:20



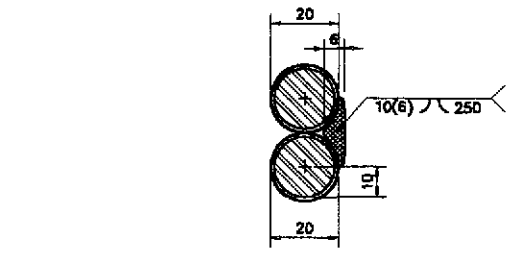
PLAN (BARS BEFORE WELDING)



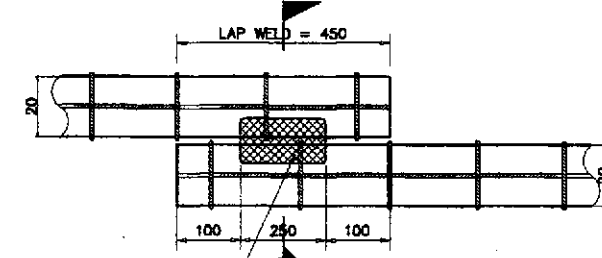
DETAILS OF SINGLE-V-GROOVE BUTT WELD



**C SCHEMATIC DETAIL**  
NOT TO SCALE

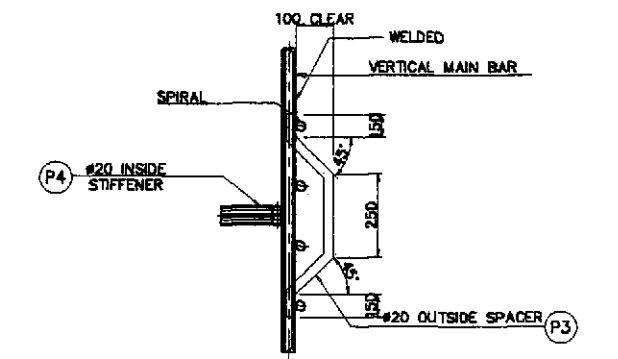


DOUBLE FLARED-V-GROOVE WELD SECTION - D1



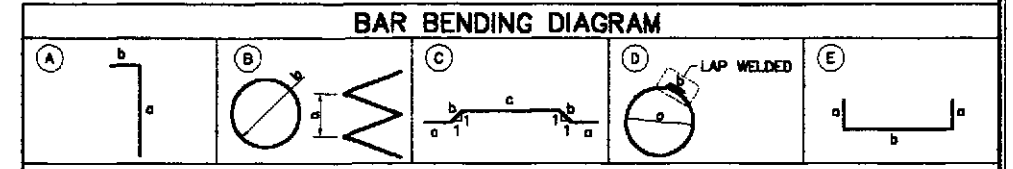
SEE NOTE 1 TO 5/250  $\sqrt{10(6)}$   
DIRECT LAP JOINT WITH BARS IN CONTACT

**D DETAILS OF TIES REINF. LAP-WELD CONNECTION**  
NOT TO SCALE



**E DETAIL OF STIFFENER/SPACER**  
NOT TO SCALE

- NOTES ON LAP WELD CONNECTION**
1. THE REINFORCEMENTS ARE LAP-WELD CONNECTED (FLARED-V-GROOVE TYPE).
  2. WELDING SHOULD CONFORM TO ANSI/AWS D1.4-92 "STRUCTURAL WELDING CODE REINFORCEMENT STEEL".
  3. USE ELECTRODE E90XX-X.
  4. CARE SHOULD BE TAKEN NOT TO DAMAGE THE BORED PILE MAIN BARS DURING WELDING.
  5. SPIRAL REINFORCEMENT SHOULD BE BUTT WELDED WHERE SPIRAL PITCH IS 75mm. OTHERWISE, USE LAP WELD SPLICE.



BAR BENDING DIAGRAM

LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION (mm) OUT TO OUT					LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (kg) GRADE 60	WEIGHT (kg) GRADE 40
				a	b	c	d	e					
PIER P6 & P15 DIA. = 1500 L = 18000	P1	36	A	500	11650				12150	24	7.991	2330.18	
	P1a	36	A	500	9750				10250	24	7.991	1965.78	
	P1b	36	STR	11850					11850	24	7.991	2281.82	
	P2	20	B	75	1300				281865	1	2.466	695.08	
	P2a	20	B	100	1300				208386	1	2.466	513.88	
	P2b	20	B	200	1300				187864	1	2.466	463.27	
	P3	20	C	150	140	250			830	36	2.466	73.68	
	P4	20	D	1188	150				3882	18	2.466	172.32	
	P5	16	E	200	1100(ave)				1500	14	1.578		33.16

WEIGHT PER PILE FOR GRADE 40 = 33.16 Kgs.  
 WEIGHT PER PILE FOR GRADE 60 = 8,506.02 Kgs.  
 TOTAL WEIGHT PER PIER :  
 WEIGHT FOR GRADE 40 = 198.98 Kgs.  
 WEIGHT FOR GRADE 60 = 51,036.12 Kgs.  
 TOTAL WEIGHT FOR 2 PIERS :  
 WEIGHT FOR GRADE 40 = 397.92 Kgs.  
 WEIGHT FOR GRADE 60 = 102,072.24 Kgs.

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

**1 BORED PILE REINFORCEMENT DETAILS (PIERS P6 & P15)**  
SCALE AS SHOWN

**JICA**  
JAPAN INTERNATIONAL COOPERATION AGENCY

**KATAHIRA & ENGINEERS**  
KEI INTERNATIONAL

**YEO YACHYO ENGINEERING CO., LTD.**

REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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

SCALE : AS SHOWN  
SHEET CONTENTS : BRIDGE NO. 10 PAMPANGA RIVER BRIDGE BORED PILE REINFORCEMENT DETAILS (PIER 6 & PIER 15) (INITIAL STAGE)  
SHEET NO. : B10M-65

DESIGNED: 6/2/02  
CHECKED: 6/17/02  
SUBMITTED: 6/19/02

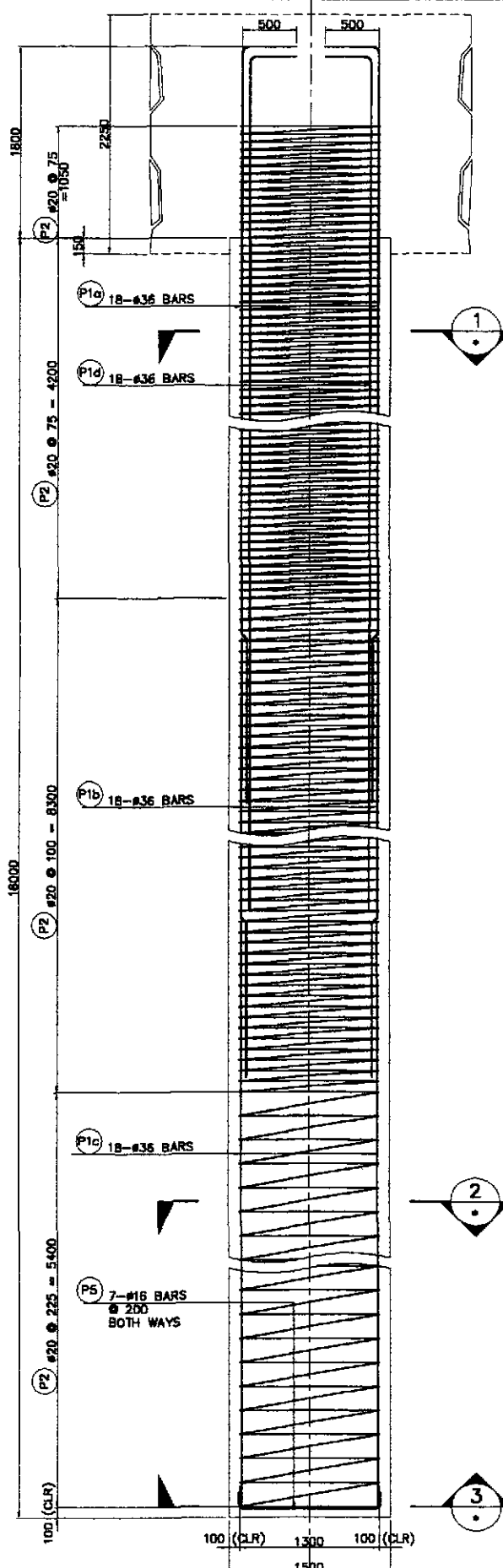
DATE: 6/2/02

SIGNATURE: F. M. SALAS

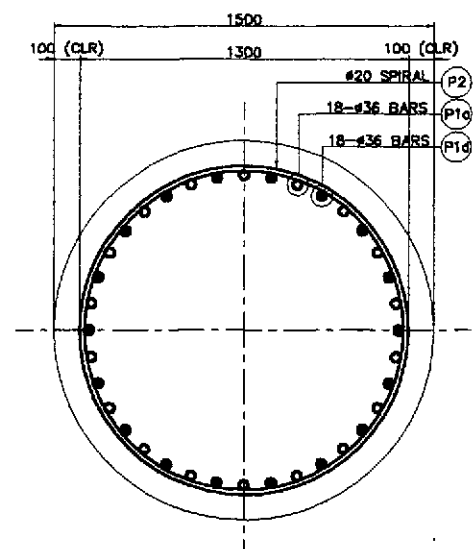
Submitted By: DANILLO C. TRAJANO  
Reviewed By: ADRIANO M. DORON  
Recommended By: GILBERTO S. REYES  
Approved By: MANUEL M. BONGLOAN  
SIMEON A. DATUMANONG

Team Leader: DANILLO C. TRAJANO  
Chief, Bridge Division: ADRIANO M. DORON  
Director IV (OC): GILBERTO S. REYES  
Undersecretary: MANUEL M. BONGLOAN  
Secretary: SIMEON A. DATUMANONG

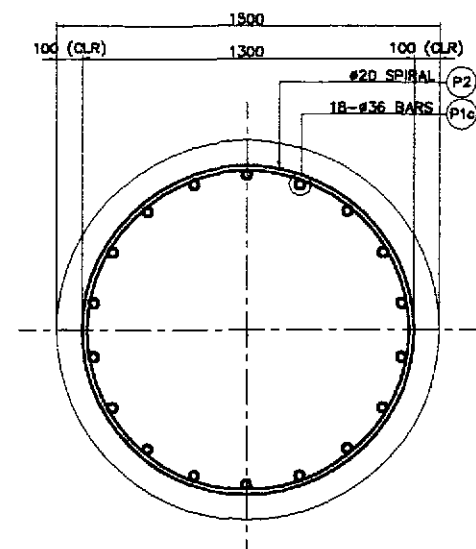




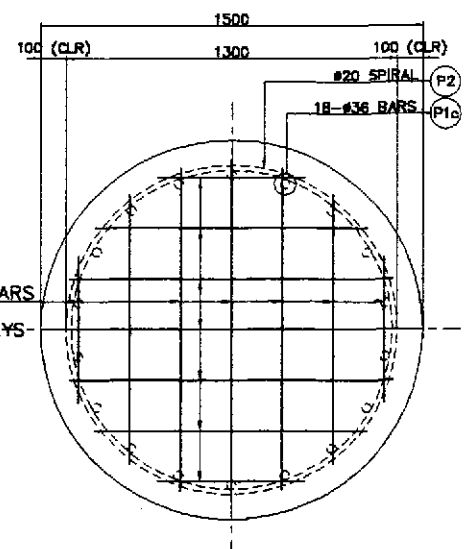
**A ELEVATION** SCALE 1:30  
**B LAYOUT OF STIFFENER** SCALE 1:30



**1 SECTION** SCALE 1:15



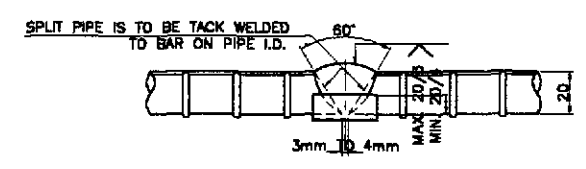
**2 SECTION** SCALE 1:15



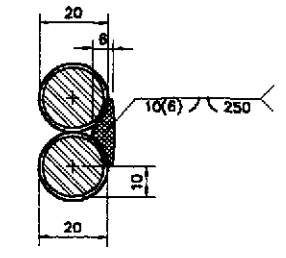
**3 SECTION** SCALE 1:15



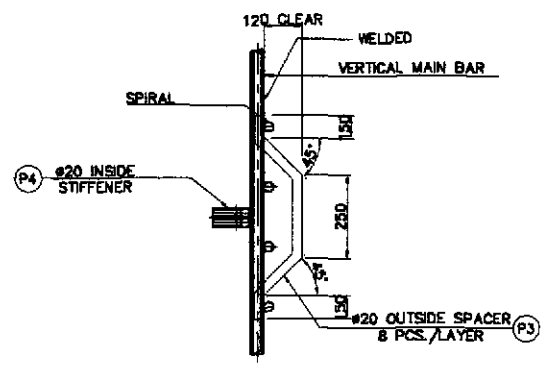
**PLAN (BARS BEFORE WELDING)**



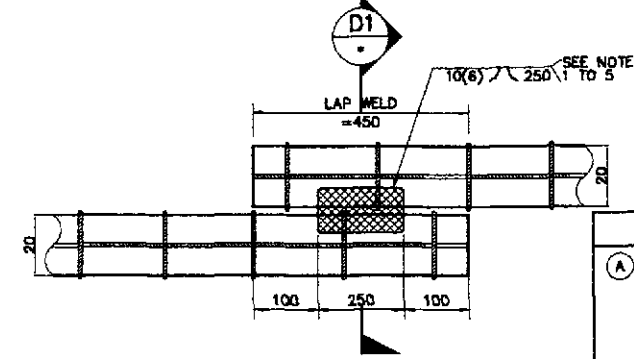
**DETAILS OF SINGLE-V-GROOVE BUTT WELD**



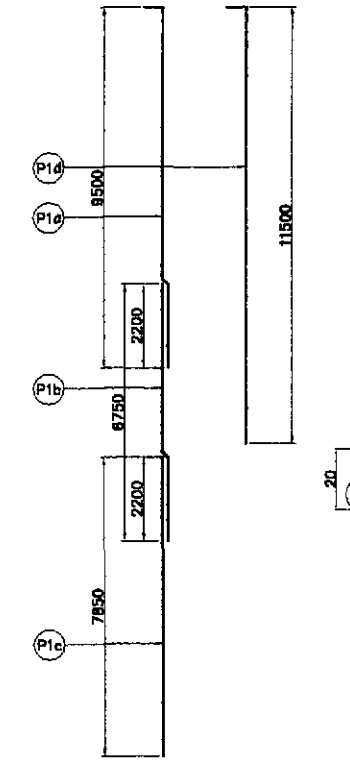
**DOUBLE FLARED-V-GROOVE WELD SECTION - D1**



**E DETAIL OF STIFFENER/SPACER** SCALE NOT TO

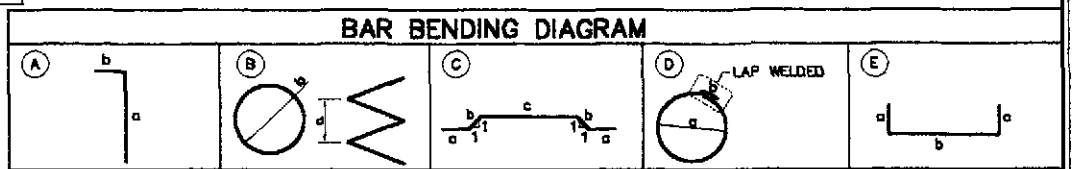


**DETAILS OF SPIRAL REINF. FULL LAP-WELD CONNECTION** SCALE NOT TO



**C SCHEMATIC DETAIL** SCALE NOT TO

- NOTES ON LAP WELD CONNECTION**
1. TIE REINFORCEMENTS ARE LAP-WELD CONNECTED (FLARED-V-GROOVE TYPE).
  2. WELDING SHOULD CONFORM TO ANSI/AWS D1.4-92 "STRUCTURAL WELDING CODE REINFORCEMENT STEEL".
  3. USE ELECTRODE E60XX-X.
  4. CARE SHOULD BE TAKEN NOT TO DAMAGE THE BORED PILE MAIN BARS DURING WELDING.
  5. SPIRAL REINFORCEMENT SHOULD BE BUTT WELDED WHERE SPIRAL PITCH IS 75mm. OTHERWISE, USE LAP WELD SPLICE.



**BAR BENDING DIAGRAM**

LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION(mm) OUT TO OUT						LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (kg)	
				a	b	c	d	e	f				GRADE 40	GRADE 60
PIER 7 TO PIER 14	P1a	36	A	500	9500					10000	18	7.991		14.39
	P1b	36	STR	6750						6750	18	7.991		971
	P1c	36	STR	7850						7850	18	7.991		1130
	P1d	36	A	500	11500					12000	18	7.991		1727
	P2a	20	B	75	1300					285890	1	2.466		705
	P2b	20	B	100	1300					338880	1	2.466		836
	P2c	20	B	225	1300					98020	1	2.466		242
	P3	20	C	150	170	250				890	72	2.466		159
	P4	20	D	1188	300					4040	16	2.466		180
	P5	16	E	200	1090	(AVE)				1300	14	1.579	29	
<b>TOTAL WEIGHT</b>												<b>28</b>	<b>7.389</b>	
<b>TOTAL WEIGHT (1 PIER)</b>												<b>261</b>	<b>68,501</b>	
<b>TOTAL WEIGHT (6 PIERS)</b>												<b>2,088</b>	<b>532,008</b>	

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

**JICA**  
 JAPAN INTERNATIONAL COOPERATION AGENCY

**KATAHIRA & ENGINEERS**  
 INTERNATIONAL

**YEO**  
 YACHIYO ENGINEERING CO., LTD.

REPUBLIC OF THE PHILIPPINES  
 DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

DESIGNED: 10/12/02  
 CHECKED: 10/17/02  
 SUBMITTED: 10/19/02

DATE: 10/12/02  
 SIGNATURE: F. M. SALAS  
 SIGNATURE: M. R. SANTOS  
 SIGNATURE: M. R. SANTOS

PROJECT DIRECTOR: DANILO C. TRAJANO  
 CHIEF, BRIDGE DIVISION: ADRIANO M. DOROY  
 DIRECTOR IV (OC): GILBERTO S. REYES  
 UNDERSECRETARY: MANUEL M. BONCAN  
 SECRETARY: SIMON A. DATUMANGONG

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

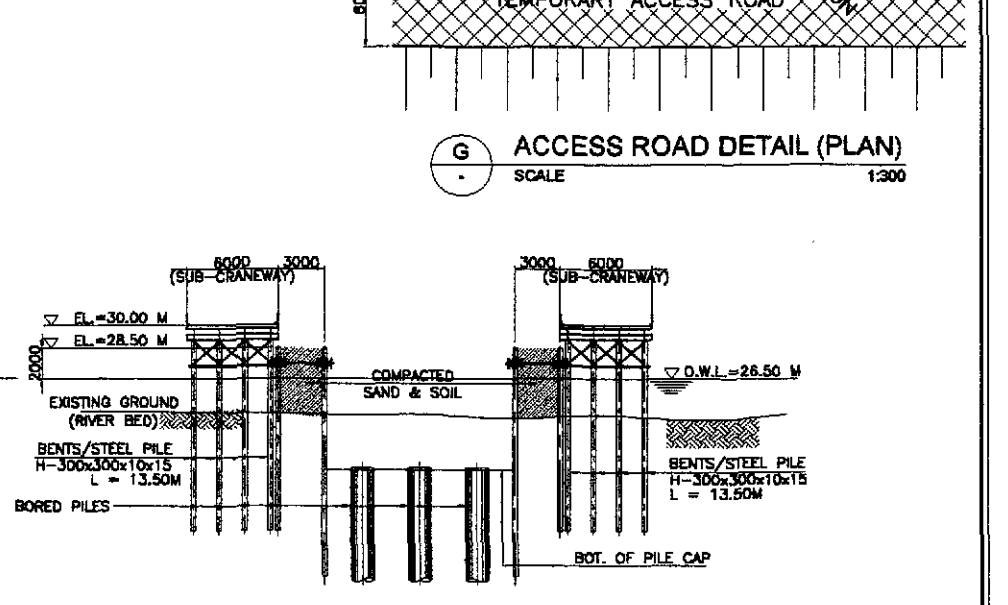
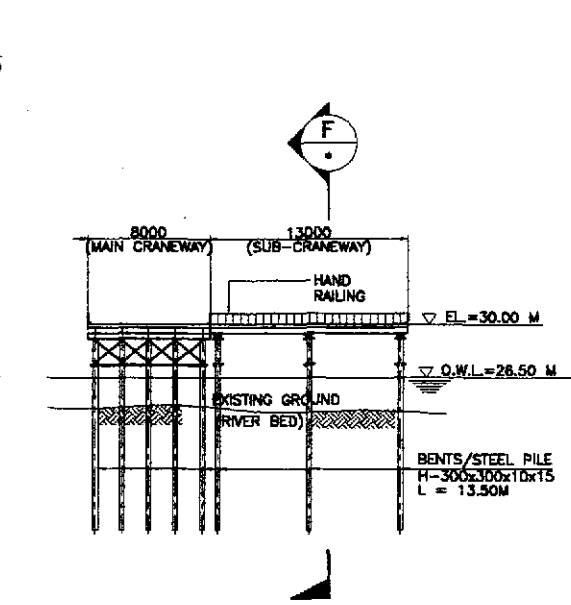
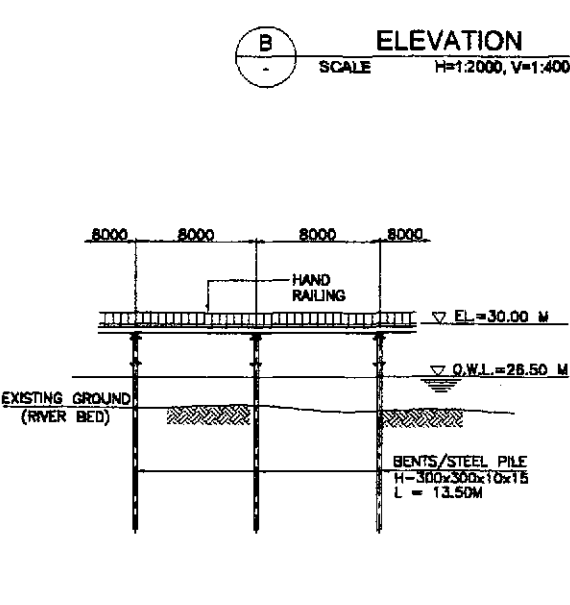
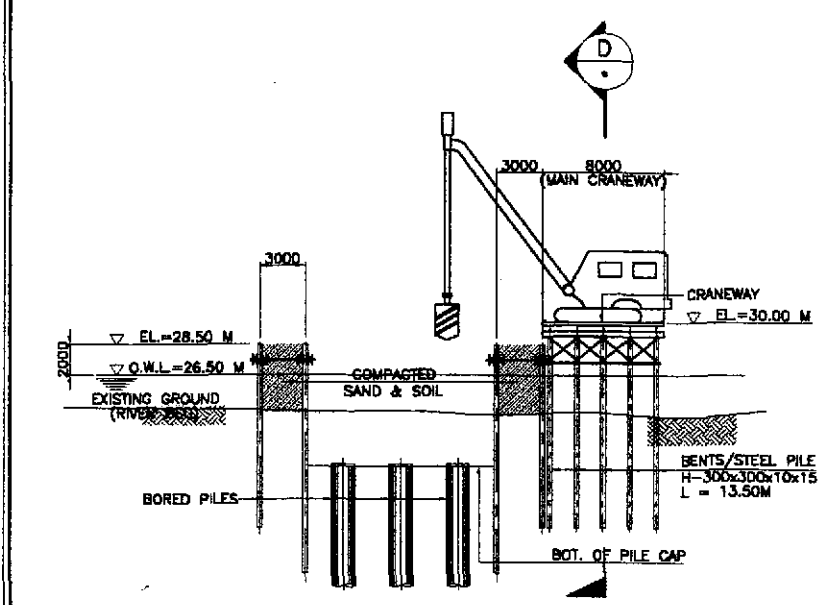
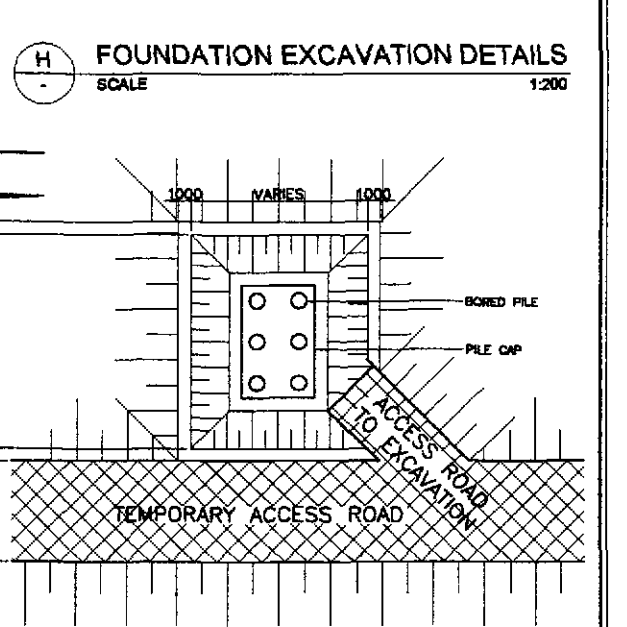
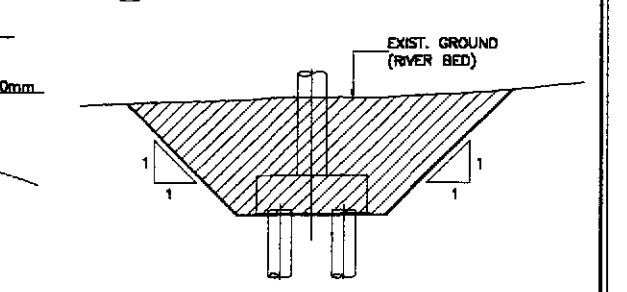
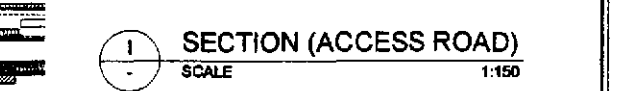
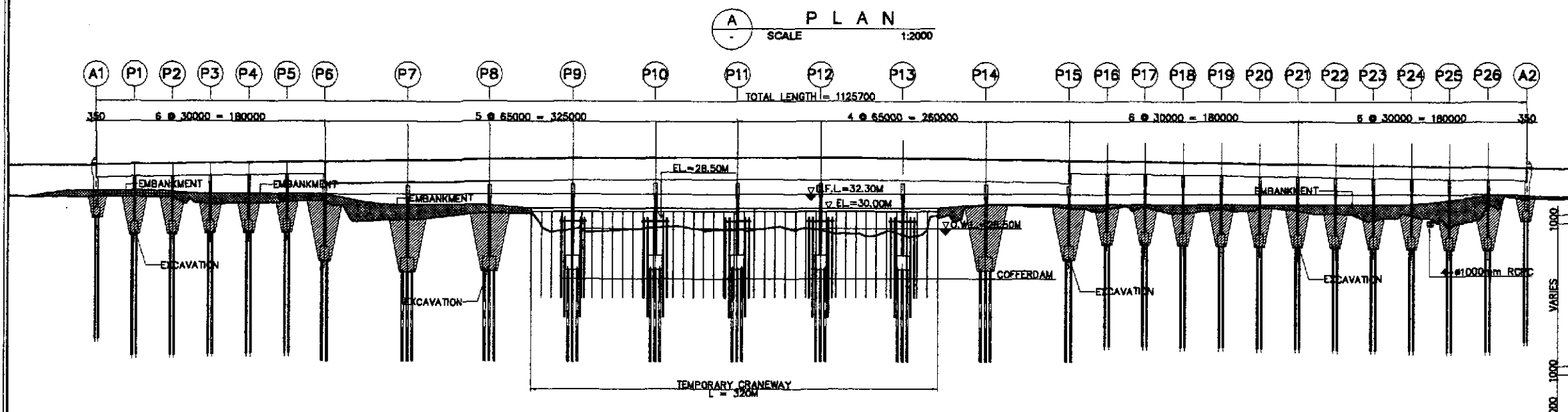
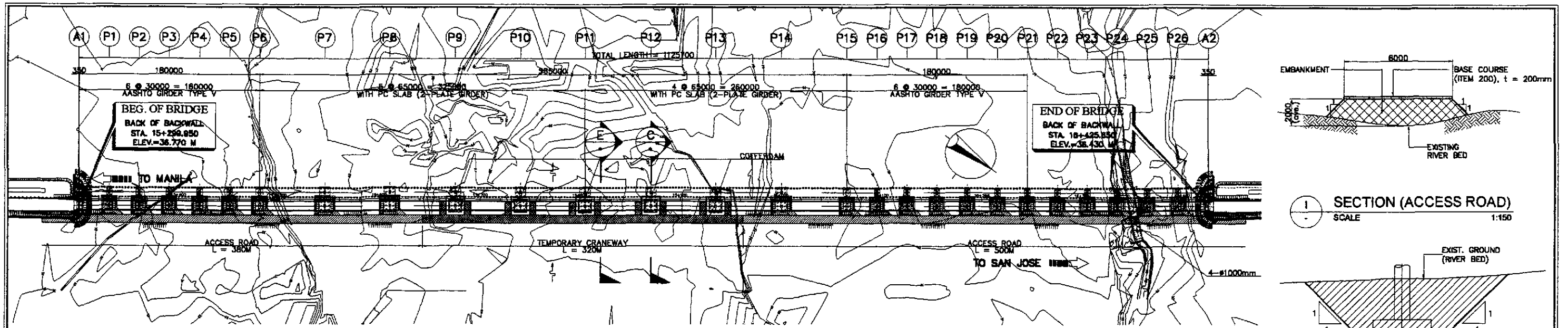
CABANATUAN BYPASS - CONTRACT PACKAGE III

SCALE: AS SHOWN / FULL SIZE A1

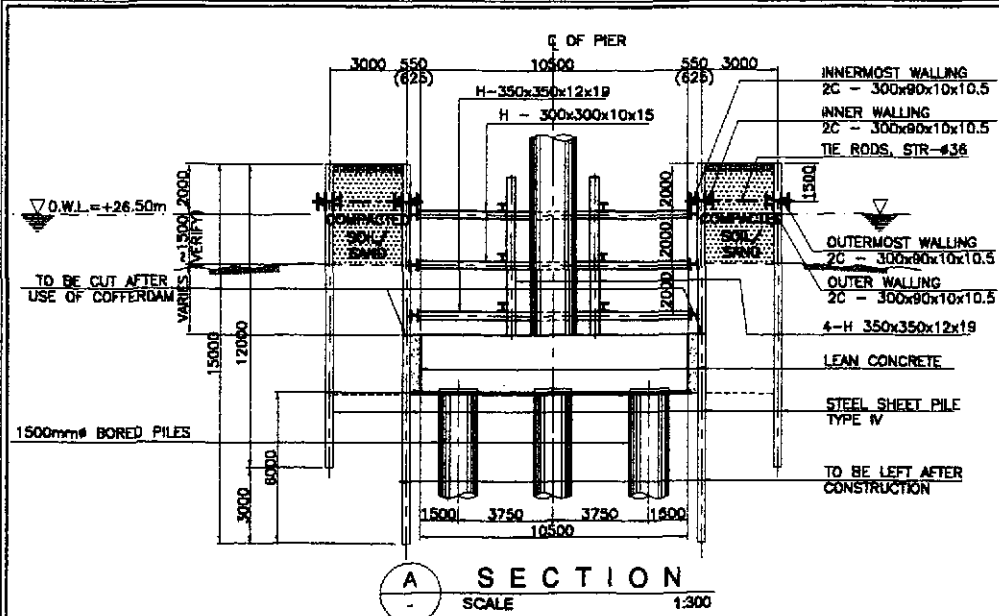
SHEET CONTENTS: BRIDGE NO. 10 PAMPANGA RIVER BRIDGE BORED PILE REINFORCEMENT DETAILS (PIER 7 TO PIER 14) (INITIAL STAGE)

SHEET NO.: B10M-66

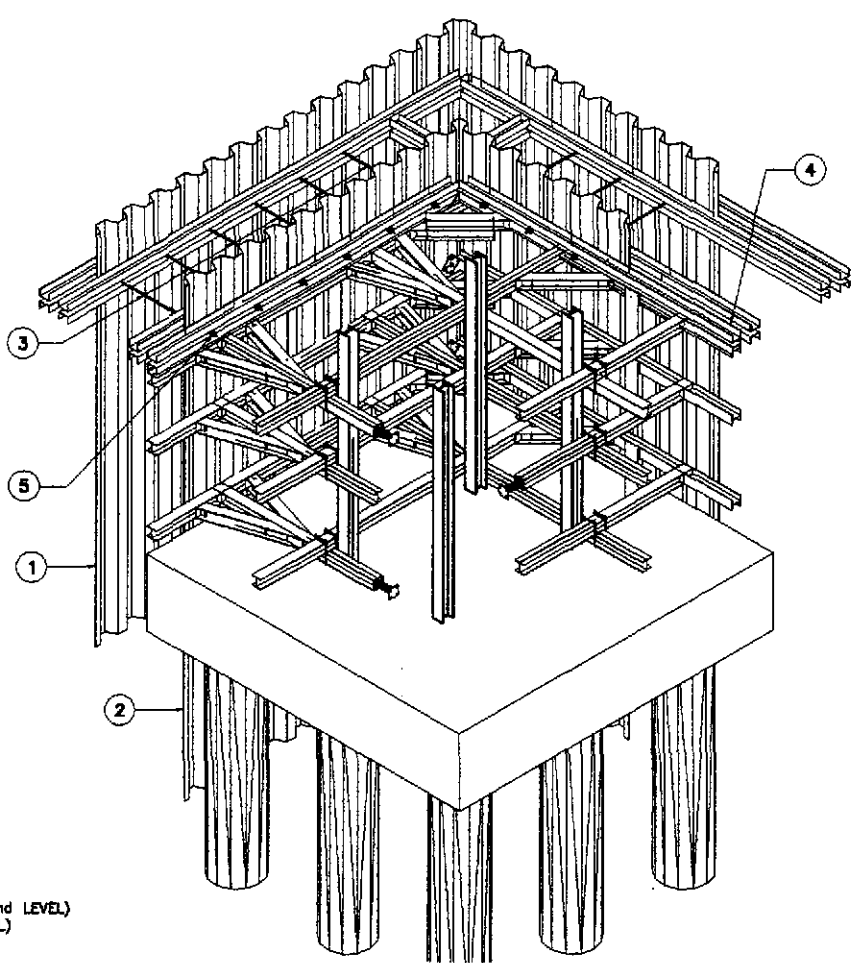
# **CONSTRUCTION WORKS**



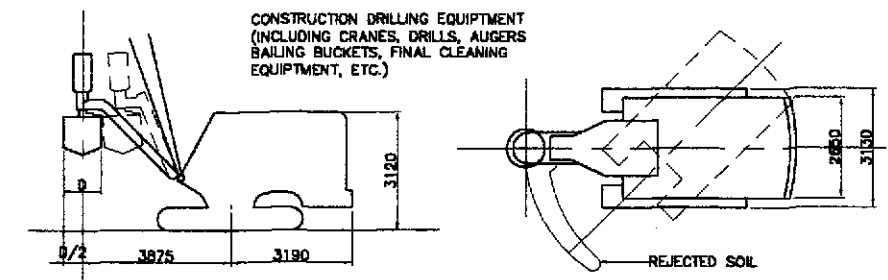
	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	<p>PROJECT AND LOCATION :</p> <p>THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)</p> <p>CABANATUAN BYPASS - CONTRACT PACKAGE III</p>	<p>SCALE :</p> <p>AS SHOWN</p> <p>FULL SIZE A1</p>	<p>SHEET CONTENTS :</p> <p>BRIDGE NO. 10 PAMPANGA RIVER BRIDGE TEMPORARY CRANWAY BRIDGE AND COFFERDAMS - 1 of 2 (INITIAL STAGE)</p>	<p>SHEET NO. :</p> <p>B10M-71</p>					
	CHECKED	10/17/02	F. M. SIKAS						<p>Submitted By:</p> <p>DANILO C. TRAJANO Project Director</p>	<p>Reviewed By:</p> <p>ADRIANO M. DORCAY Chief, Bridge Division</p>	<p>Recommended By:</p> <p>GILBERTO S. REYES Director IV (OC)</p>	<p>Recommended By:</p> <p>MANUEL M. BONDAN Undersecretary</p>	<p>Approved By:</p> <p>SIMEON A. DATUMANONG Secretary</p>
	SUBMITTED	10/17/02	J. C. SANTOS TEAM LEADER										



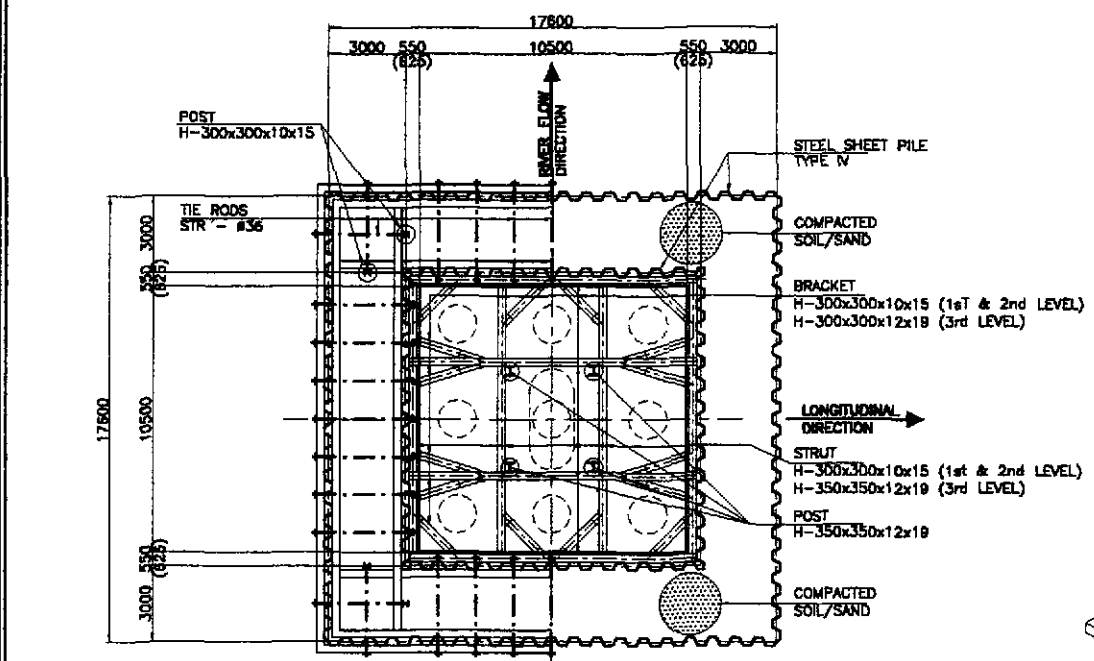
**A SECTION**  
SCALE 1:300



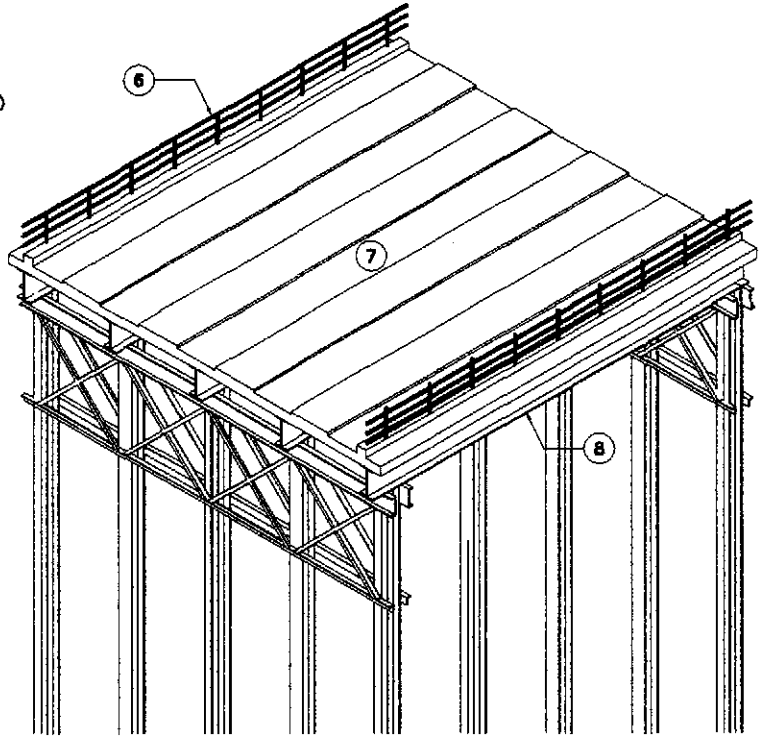
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NOT TO SCALE



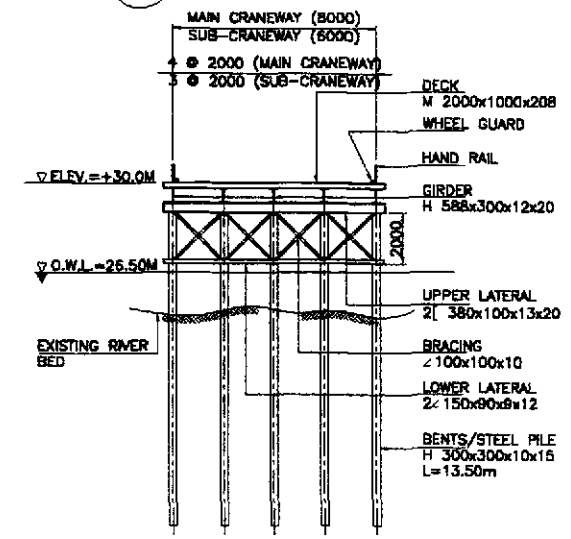
**D EARTH DRILL MACHINE**  
NOT TO SCALE



**B PLAN**  
SCALE 1:300



**C ISOMETRIC VIEW**  
NOT TO SCALE



**B CRANEWAY SECTION (MAIN BRIDGE)**  
SCALE 1:300

- LEGEND :**
- ① OUTER SHEET PILE
  - ② INNER SHEET PILE
  - ③ TIE RODS
  - ④ WALLING
  - ⑤ NUTS AND WASHER
  - ⑥ HAND RAIL
  - ⑦ DECK PLATE
  - ⑧ MAIN GIRDER

**COFFERDAM SCHEDULE**

TYPE	PILE CAP SIZE	LOCATION	QUANTITY
2	10500 x 10500	PIER 9 & PIER 13	5

**MATERIAL LIST OF TEMPORARY COFFERDAM (PER PIER)**

MATERIAL NAME	SIZE	LENGTH (m)	NO. (PCS)	UNIT	UNIT WT (kg/m)	QUANTITY	REMARKS
<b>TYPE 2 ( 10.5 x 10.5 )</b>							
Steel Sheet Pile ( Inner )	IV	15.00	116	kg	76.10	132,414.00	
Steel Sheet Pile ( outer )	IV	12.00	176	kg	76.10	160,724.00	
Steel Strut, 1st& 2nd Level	H-300x300x10x15	10.60	16	kg	94.00	15,943.00	
Steel Strut, 3rd Level	H-350x350x12x19	10.60	8	kg	137.00	11,618.00	
Steel Waling ( inner )	C-300x90x10x10.5	17.20	8	kg	43.80	6,027.00	
Steel Waling ( innermost )	C-300x90x10x10.5	11.20	8	kg	43.80	3,925.00	
Steel Waling ( outer )	C-300x90x10x10.5	17.20	8	kg	43.80	6,027.00	
Steel Waling ( outermost )	C-300x90x10x10.5	18.00	8	kg	43.80	6,308.00	
Steel Post	H-350x350x12x19	15.00	4	kg	137.00	8,220.00	
Steel Post	H-300x300x10x15	12.00	8	kg	94.00	9,024.00	
Steel Bracket, 1st&2nd Level	H-300x300x10x15	2.00	32	kg	94.00	6,018.00	
Steel Bracket, 3rd Level	H-350x350x12x19	2.00	16	kg	137.00	4,384.00	
Tie Rods	STR - Ø36	3.50	36	kg	7.99	1,007.00	
Sand/Soil	Borrow Materials			m <sup>3</sup>		744.00	Selected Materials

**MATERIAL LIST OF TEMPORARY CRANEWAY**

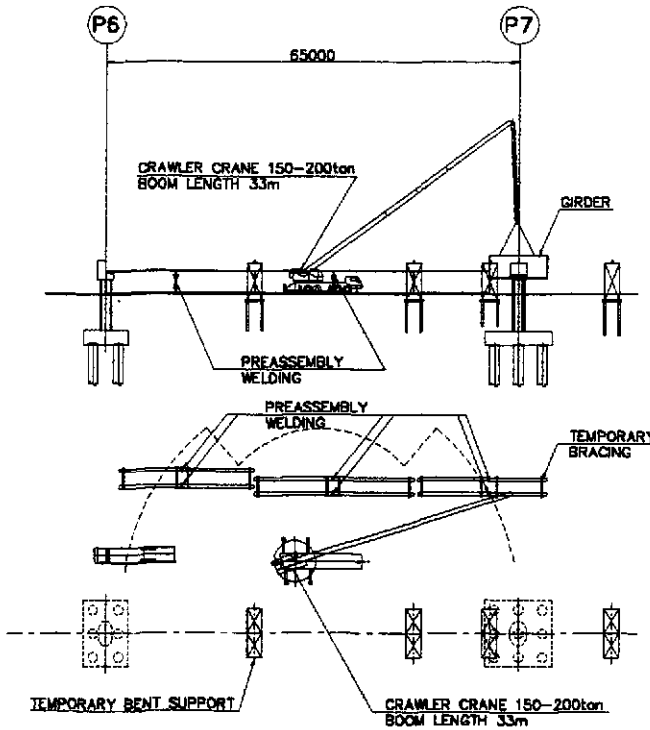
A ) MAIN CRANEWAY, L = 320 000 mm	Steel Pile ( Bents )	H-300 x 300 x 10 x 15	13.50	205	kg	94.00	260,145.00
Lower Lateral	L-150 x 90 x 9 x 12	9.30	82	kg	16.40	12,507.00	
Upper Lateral	C-380 x 100 x 13 x 20	9.30	82	kg	67.30	51,323.00	
Bracing	L-100 x 100 x 10	2.90	328	kg	14.90	14,173.00	
Girder	H-588 x 300 x 12 x 20	8.00	200	kg	147.00	235,200.00	
Deck Plate	2000 x 1000 x 208			m <sup>2</sup>		2,560.00	
Hand Railing				m		640.00	
Wheel Guard				m		640.00	
<b>B ) SUB CRANEWAY, L = 130 000 mm</b>							
Steel Pile ( Bents )	H-300 x 300 x 10 x 15	13.50	120	kg	94.00	152,280.00	
Lower Lateral	L-150 x 90 x 9 x 12	7.30	60	kg	16.40	7,184.00	
Upper Lateral	C-380 x 100 x 13 x 20	7.30	60	kg	67.30	29,478.00	
Bracing	L-100 x 100 x 10	2.90	60	kg	14.90	2,593.00	
Girder	H-588 x 300 x 12 x 20	13.00	40	kg	147.00	76,440.00	
Deck Plate	2000 x 1000 x 208			m <sup>2</sup>		780.00	
Hand Railing				m		260.00	
Wheel Guard				m		260.00	

**MATERIAL LIST OF ACCESS ROAD**

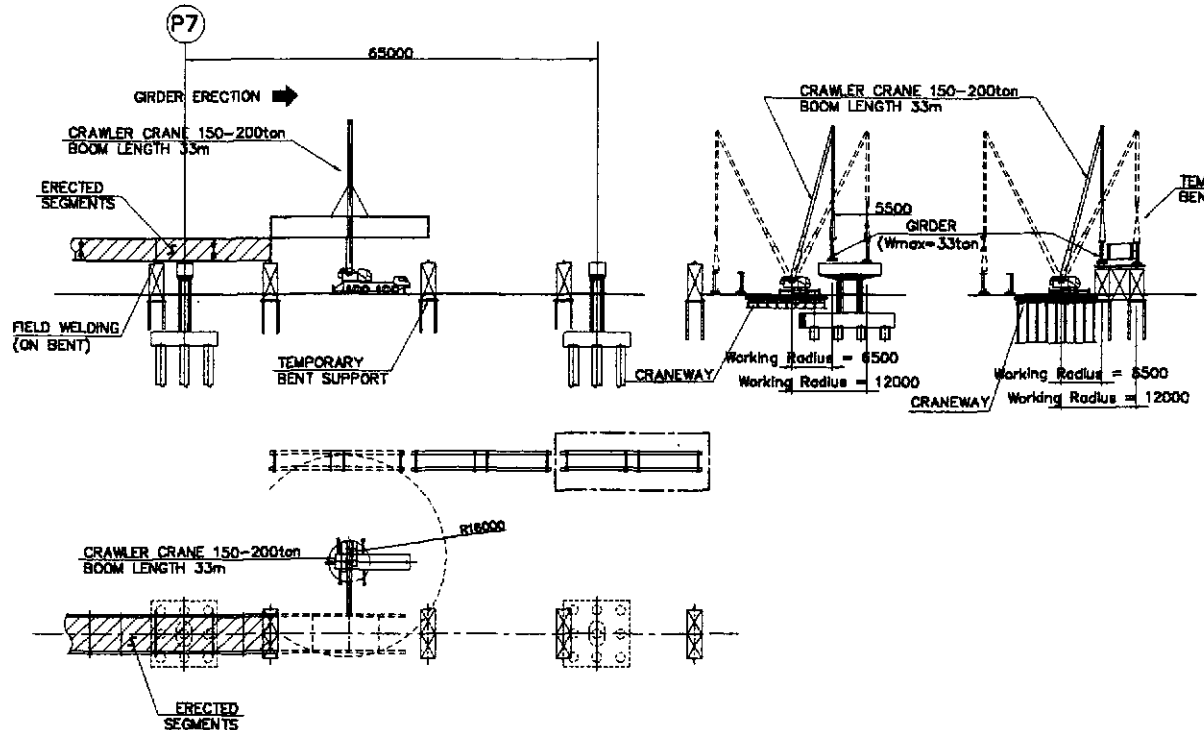
Base Course, t = 200 mm	880.00	m <sup>3</sup>	1444.00
Embankment	880.00	m <sup>3</sup>	12260.00

	DESIGNED	DATE	SIGNATURE		PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/17/02	J. C. SANTOS		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 III	AS SHOWN	BRIDGE NO. 10 PAMPANGA RIVER BRIDGE TEMPORARY CRANEWAY BRIDGE AND COFFERDAMS - 2 of 2 (INITIAL STAGE)	B10M-72
SUBMITTED	10/19/02	M. R. RIVERA	DANILLO C. TRILANO Project Director	ADRIANO M. DORAY Chief, Bridges Division	GILBERTO S. REYES Director IV (OIC)	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary	FULL SIZE A1

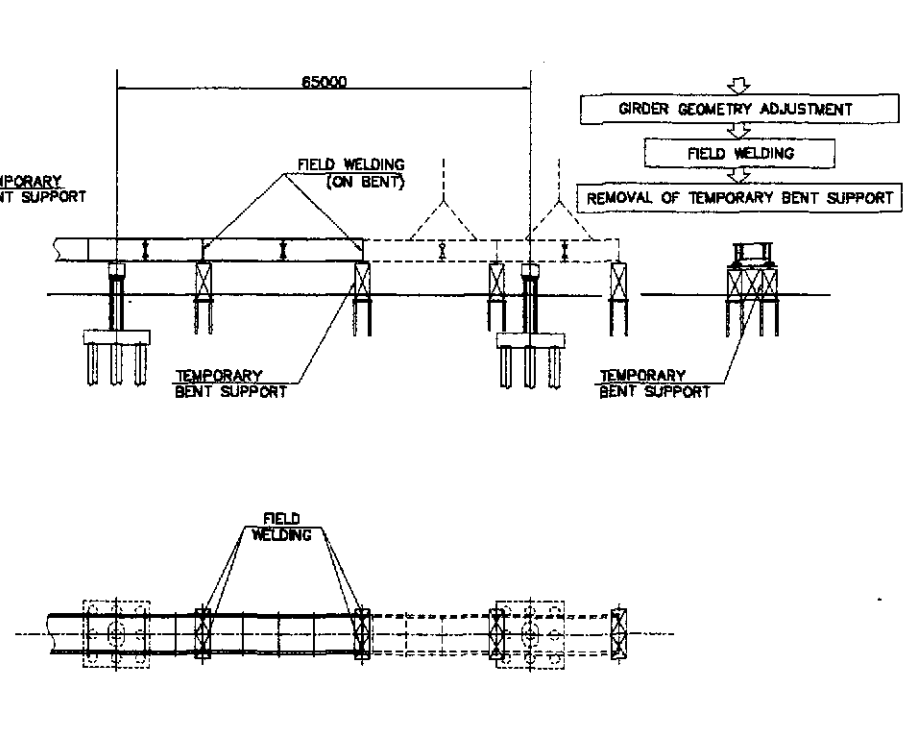
**SEQUENCE 1**  
MAIN GIRDER ASSEMBLY AND TEMPORARY SUPPORT WORKS  
SCALE 1:600



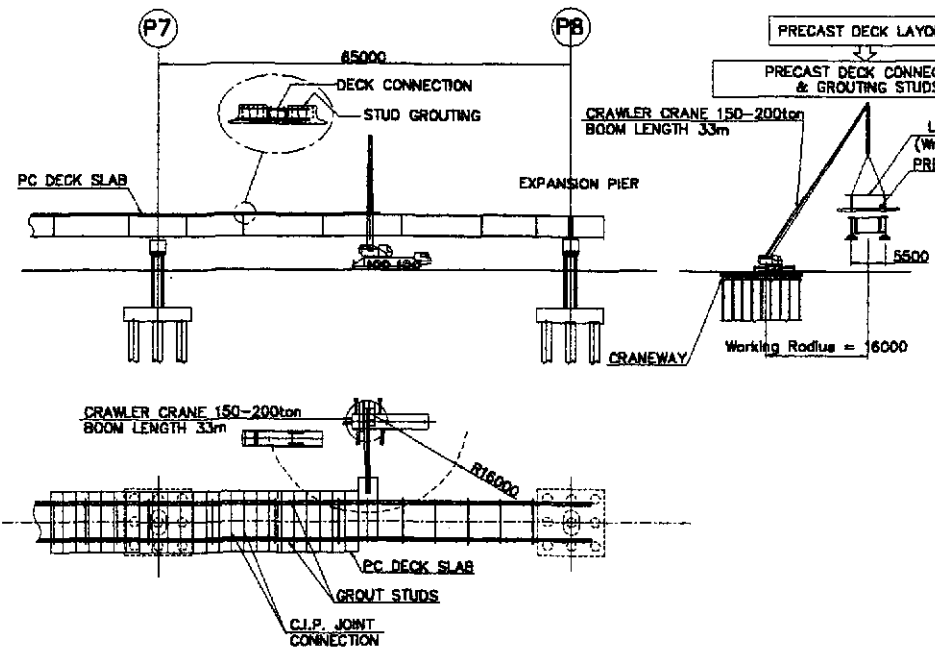
**SEQUENCE 2**  
ERECTION OF MAIN GIRDER  
SCALE 1:600



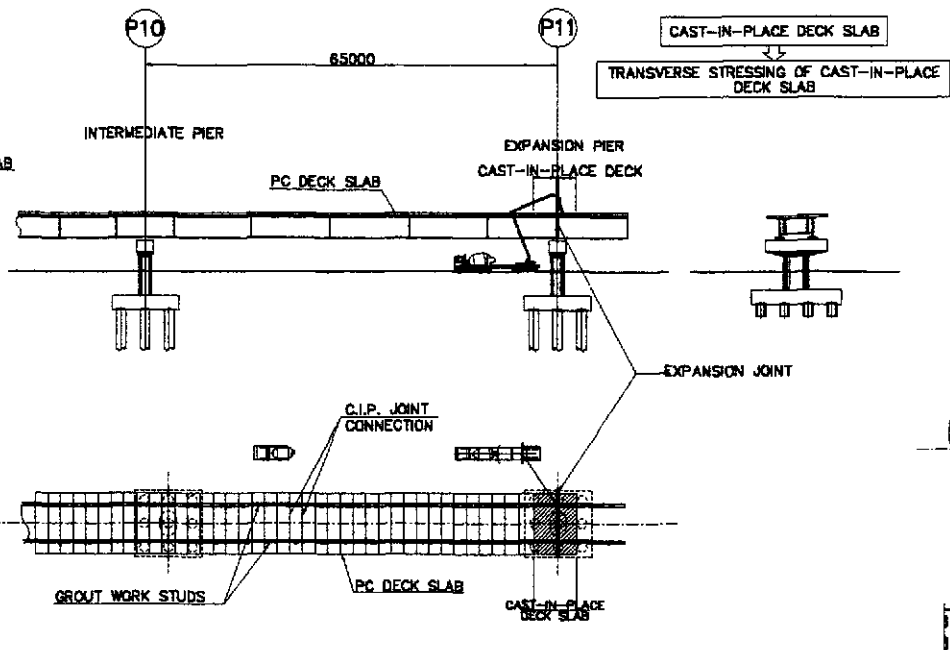
**SEQUENCE 3**  
GEOMETRIC CONTROL AND FIELD WELDING  
SCALE 1:600



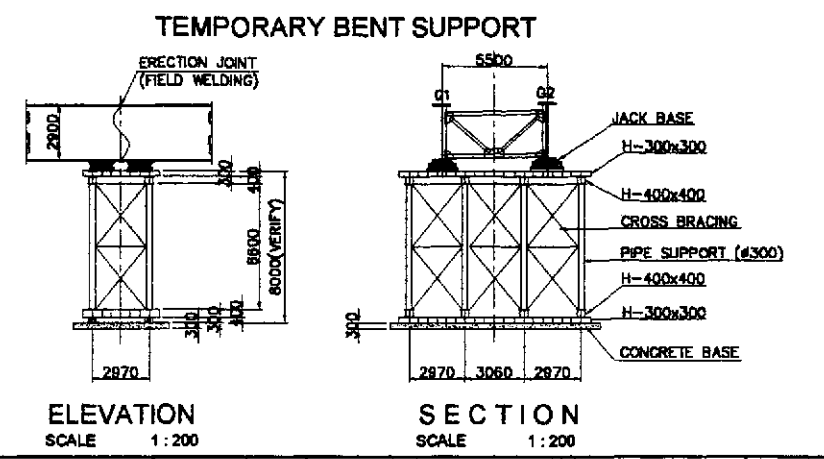
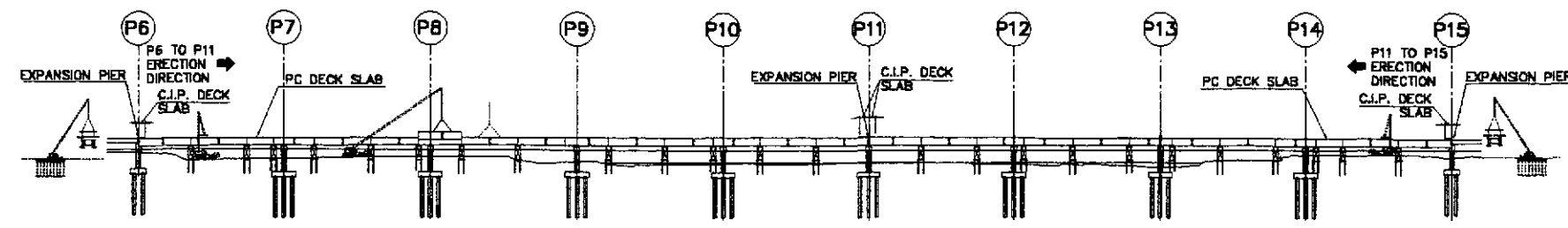
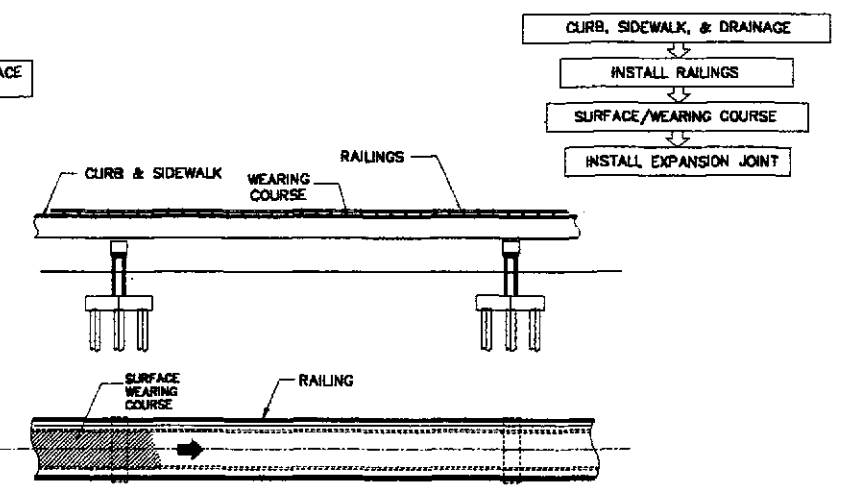
**SEQUENCE 4**  
ERECTION OF PRECAST PC DECKS & DECK CONNECTION  
SCALE 1:600



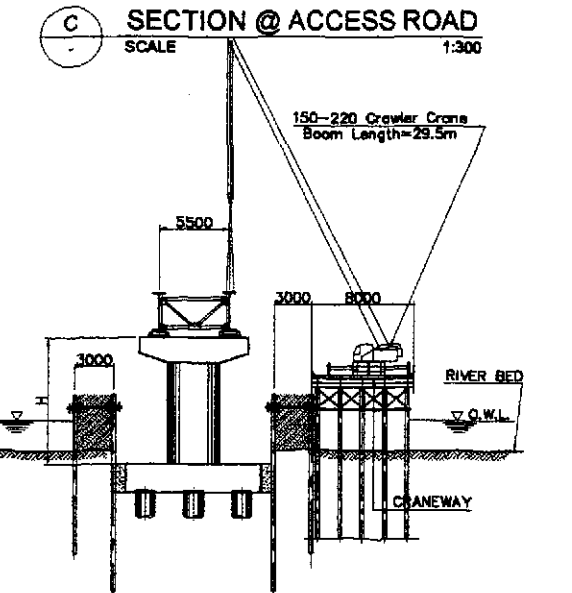
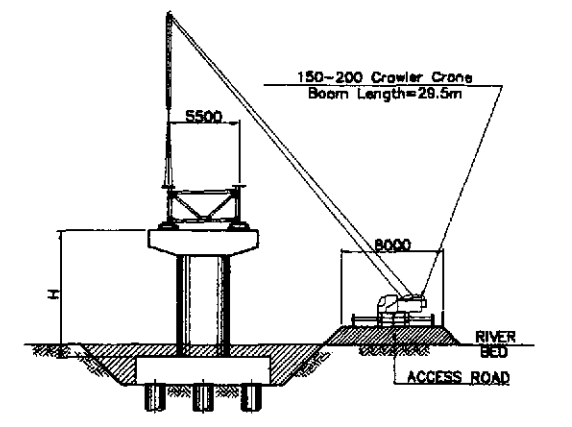
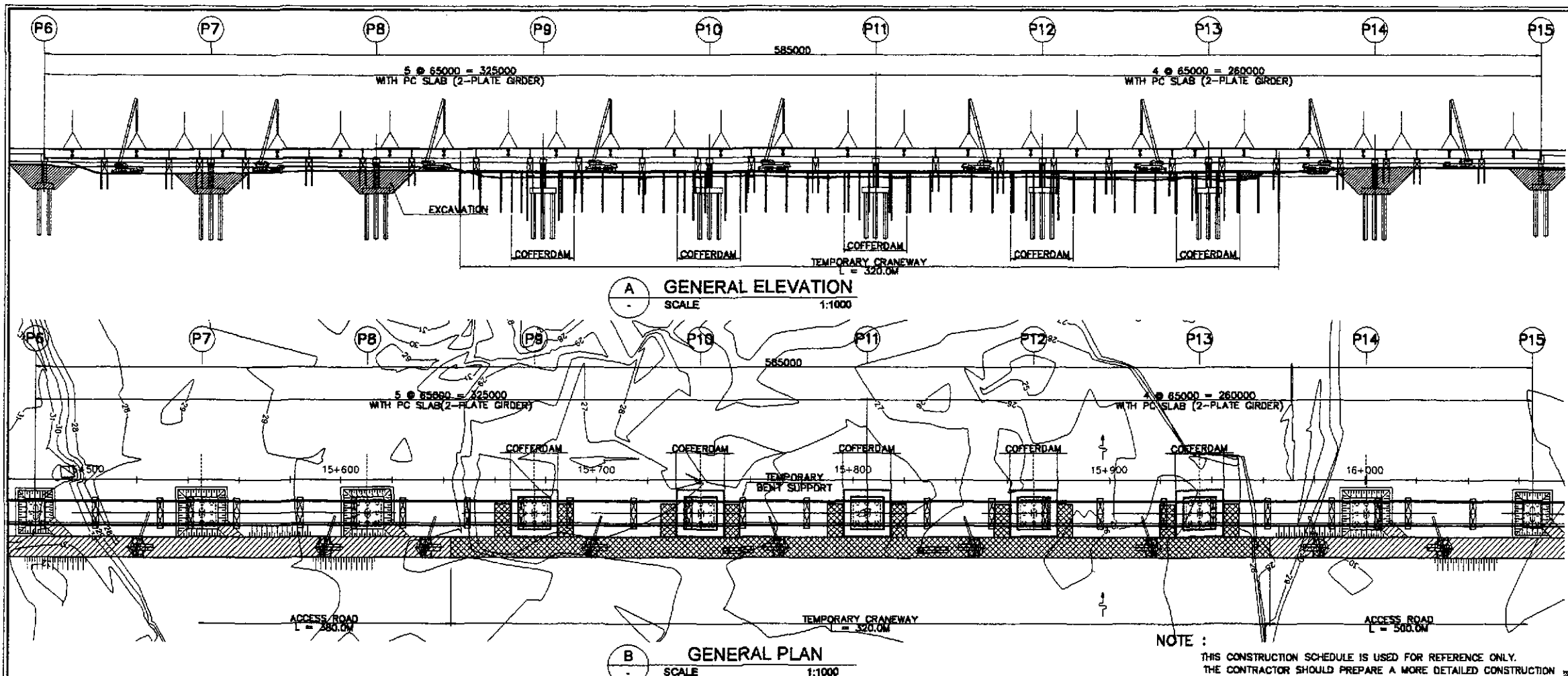
**SEQUENCE 5**  
CAST-IN-SITU PC DECKS  
SCALE 1:600



**SEQUENCE 6**  
FINISHING WORKS  
SCALE 1:600



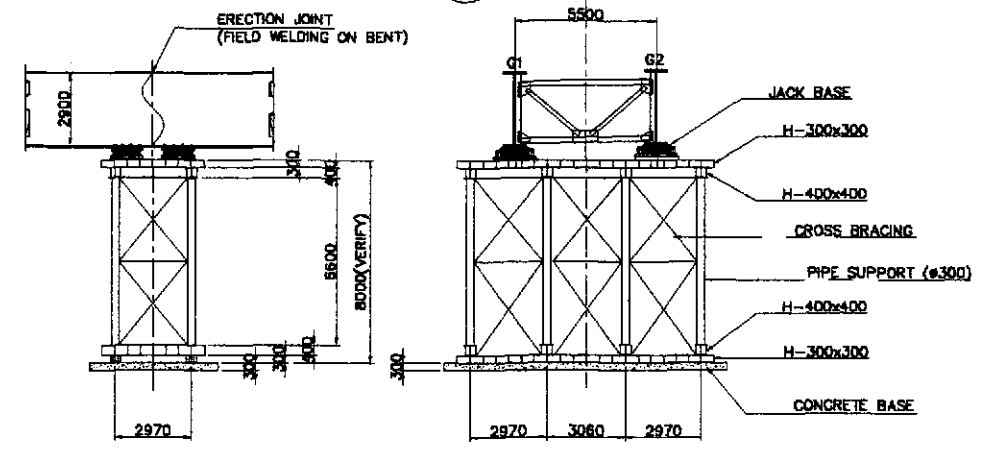
	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE III	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : BRIDGE NO. 10 PAMPANGA RIVER BRIDGE CONSTRUCTION SEQUENCE (INITIAL STAGE)	SHEET NO. : B10M-73
	CHECKED	10/17/02	F. M. SALAS	BUREAU OF DESIGN						
	SUBMITTED	10/19/02	J. C. SANTOS	Submitted By:	Reviewed By:	Recommended By:				
				DANILDO C. TRAJANO	ADRIANO M. DOROY	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG		



NOTE : THIS CONSTRUCTION SCHEDULE IS USED FOR REFERENCE ONLY. THE CONTRACTOR SHOULD PREPARE A MORE DETAILED CONSTRUCTION SCHEDULE CONSIDERING PLANT CAPACITIES, EQUIPMENT CAPACITY/AVAILABILITY, LABOR CONDITIONS, CLIMATE, WORKING DAYS, ETC. FOR THE APPROVAL OF THE ENGINEER.

**CONSTRUCTION SCHEDULE OF PAMPANGA RIVER BRIDGE LENGTH = 1125m (6@30 + 5@65 + 4@65 + 6@30 + 6@30)**

ITEM NO.	WORK ITEMS	QTY.	UNIT	MONTH - YEAR 1												MONTH - YEAR 2												MONTH - YEAR 3											
				1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1.0	MOBILIZATION AND PREPARATORY WORKS	1	LOT	[Gantt chart bars]																																			
2.0	ERECTION OF TEMPORARY FACILITIES AND PLANTS	1	LOT	[Gantt chart bars]																																			
3.0	CONSTRUCTION OF APPROACH SPANS			[Gantt chart bars]																																			
3.1	MANILA SIDE (6 @ 30)			[Gantt chart bars]																																			
3.1.1	CONSTRUCTION OF ACCESS ROAD	1680	Sq.M.	[Gantt chart bars]																																			
3.1.2	ABUTMENT 1	1	UNIT	[Gantt chart bars]																																			
3.1.3	BORED PILE CONSTRUCTION	570	LM	[Gantt chart bars]																																			
3.1.4	CONSTRUCTION OF PILE CAP	5	PCS	[Gantt chart bars]																																			
3.1.5	CONSTRUCTION OF COLUMNS	3	PCS	[Gantt chart bars]																																			
3.1.6	CONSTRUCTION OF COPING	5	PCS	[Gantt chart bars]																																			
3.1.7	FABRICATION OF PC AASHTO GIRDERS	24	PCS	[Gantt chart bars]																																			
3.1.8	LAUNCHING OF PC AASHTO GIRDERS	24	PCS	[Gantt chart bars]																																			
3.1.9	DECK SLAB WORKS	1737	Sq.M.	[Gantt chart bars]																																			
3.2	SAN JOSE SIDE (6 @ 30 + 6 @ 30)			[Gantt chart bars]																																			
3.2.1	CONSTRUCTION OF ACCESS ROAD	1	UNIT	[Gantt chart bars]																																			
3.2.2	ABUTMENT 2	1056	L.M.	[Gantt chart bars]																																			
3.2.3	BORED PILE CONSTRUCTION	11	PCS	[Gantt chart bars]																																			
3.2.4	CONSTRUCTION OF PILE CAP	11	PCS	[Gantt chart bars]																																			
3.2.5	CONSTRUCTION OF COLUMNS	11	PCS	[Gantt chart bars]																																			
3.2.6	CONSTRUCTION OF COPING	11	PCS	[Gantt chart bars]																																			
3.2.7	FABRICATION OF PC AASHTO GIRDERS	48	PCS	[Gantt chart bars]																																			
3.2.8	LAUNCHING OF PC AASHTO GIRDERS	48	PCS	[Gantt chart bars]																																			
3.2.9	DECK SLAB WORKS	118	Sq.M.	[Gantt chart bars]																																			
4.0	MAIN SPAN (5 @ 65 + 4 @ 65)			[Gantt chart bars]																																			
4.1	CONSTRUCTION OF ACCESS ROAD AND CRANEWAY	5480	Sq.M.	[Gantt chart bars]																																			
4.2	BORED PILE CONSTRUCTION	1512	L.M.	[Gantt chart bars]																																			
4.3	CONSTRUCTION OF PILE CAP	10	PCS	[Gantt chart bars]																																			
4.4	CONSTRUCTION OF COLUMNS	10	PCS	[Gantt chart bars]																																			
4.5	CONSTRUCTION OF COPING	10	PCS	[Gantt chart bars]																																			
4.6	FABRICATION OF STEEL PLATE GIRDERS	1170	L.M.	[Gantt chart bars]																																			
4.7	FABRICATION OF PC DECK SLAB	5645	Sq.M.	[Gantt chart bars]																																			
4.8	LAUNCHING OF STEEL PLATE GIRDERS	1170	L.M.	[Gantt chart bars]																																			
4.9	LAUNCHING OF PC DECK SLAB & JOINT CONCRETING	5645	Sq.M.	[Gantt chart bars]																																			
4.10	CAST-IN-PLACE SLAB	320	Cu.M.	[Gantt chart bars]																																			
4.11	MISCELLANEOUS WORKS			[Gantt chart bars]																																			
5.0	RAILING WORKS			[Gantt chart bars]																																			
5.1	MANILA SIDE RAILING CONSTRUCTION	360	L.M.	[Gantt chart bars]																																			
5.2	SAN JOSE SIDE RAILING CONSTRUCTION	320	L.M.	[Gantt chart bars]																																			
5.3	MAIN SPAN RAILING INSTALLATION	1170	L.M.	[Gantt chart bars]																																			
6.0	BRIDGE SURFACE WORKS			[Gantt chart bars]																																			
6.1	ASPHALT OVERLAY - MANILA SIDE	1465	Sq.M.	[Gantt chart bars]																																			
6.2	ASPHALT OVERLAY - SAN JOSE SIDE	2870	Sq.M.	[Gantt chart bars]																																			
6.3	ASPHALT OVERLAY - MAIN SPAN	4827	Sq.M.	[Gantt chart bars]																																			
7.0	RIVER AND PIER PROTECTION WORKS	1	LOT	[Gantt chart bars]																																			
8.0	FINISHING WORKS/MISCELLANEOUS	1	LOT	[Gantt chart bars]																																			
9.0	CLEANING AND DEMOBILIZATION	1	LOT	[Gantt chart bars]																																			



LEGEND :  
 - COFFERDAM  
 - CRANEWAY  
 - ACCESS ROAD

**E TEMPORARY BENT SUPPORT**  
SCALE 1:150

ITEM NO.	DESCRIPTION	UNIT	INITIAL STAGE	ULTIMATE STAGE	TOTAL
SPL B.4a	CRANEWAY/JETTY (8.0 m WIDTH)	l.m.	320	320	640
SPL B.4b	CRANEWAY/JETTY (6.0 m WIDTH)	l.m.	130	130	260
SPL B.4c	ACCESS ROAD (8.0 m WIDTH)	l.m.	880	880	1760

**JICA** JAPAN INTERNATIONAL COOPERATION AGENCY

**KATAHIRA & ENGINEERS** **YEO** YACHYO ENGINEERING CO., LTD.

DESIGNED: 10/8/02 **[Signature]**  
 CHECKED: 10/17/02 **[Signature]**  
 SUBMITTED: 10/19/02 **[Signature]**

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

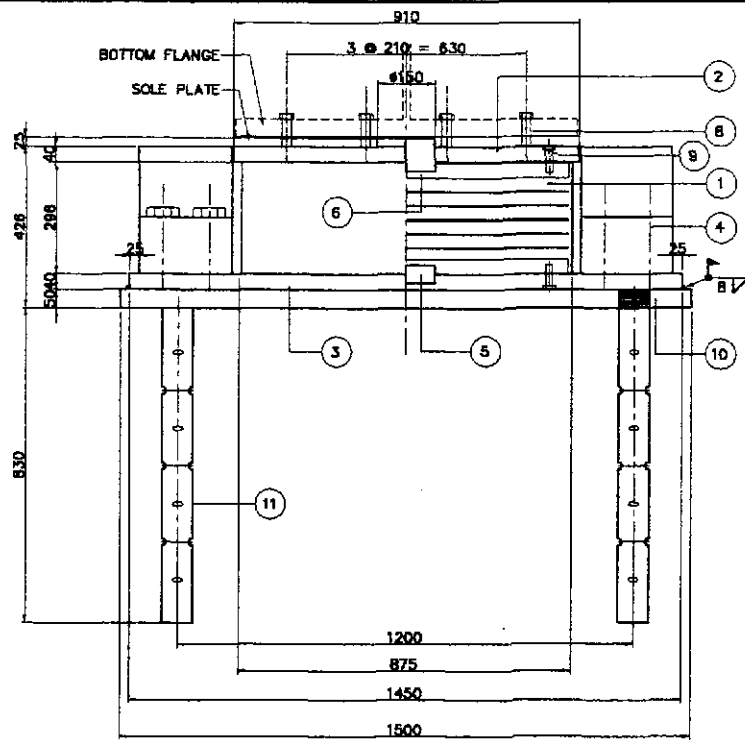
PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pardel, Cabanatuan and San Jose Bypasses)  
 CABANATUAN BYPASS - CONTRACT PACKAGE III

SCALE : AS SHOWN  
 FULL SIZE A1

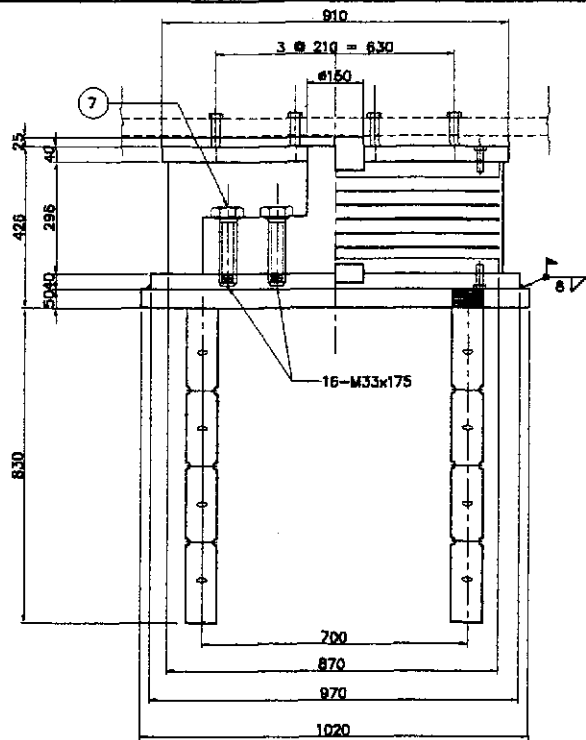
SHEET CONTENTS : BRIDGE NO. 10 PAMPANGA RIVER BRIDGE CONSTRUCTION PLAN, ELEVATION AND SCHEDULE (INITIAL STAGE)

SHEET NO. : **B10M-74**

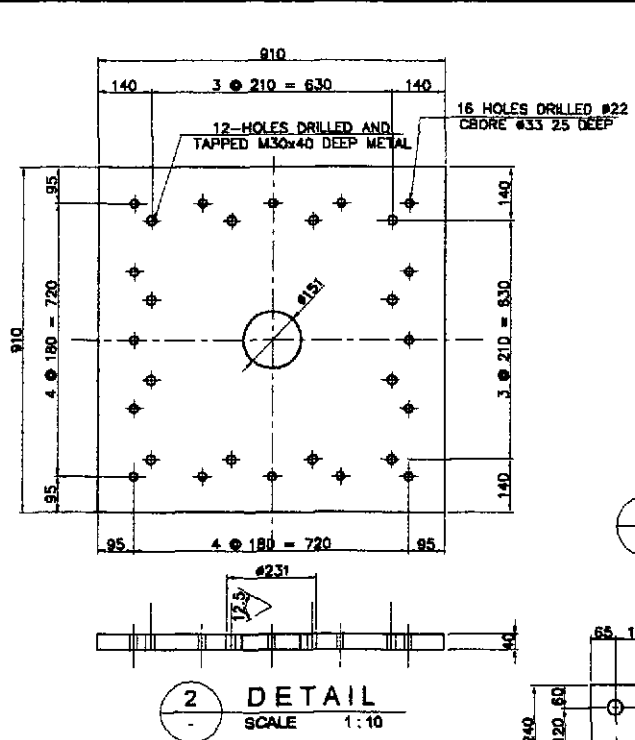
**MISCELLANEOUS DRAWINGS**



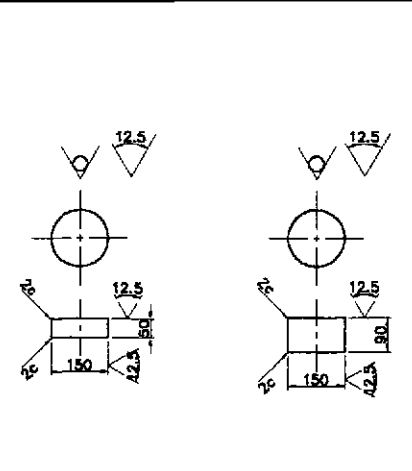
**A TRANSVERSE SECTION**  
SCALE 1:10



**B LONGITUDINAL SECTION**  
SCALE 1:10

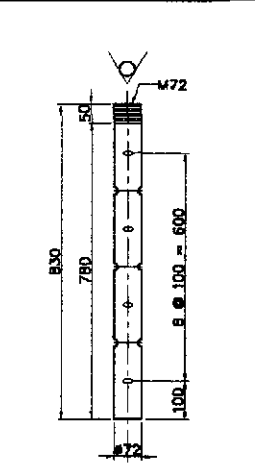


**2 DETAIL**  
SCALE 1:10

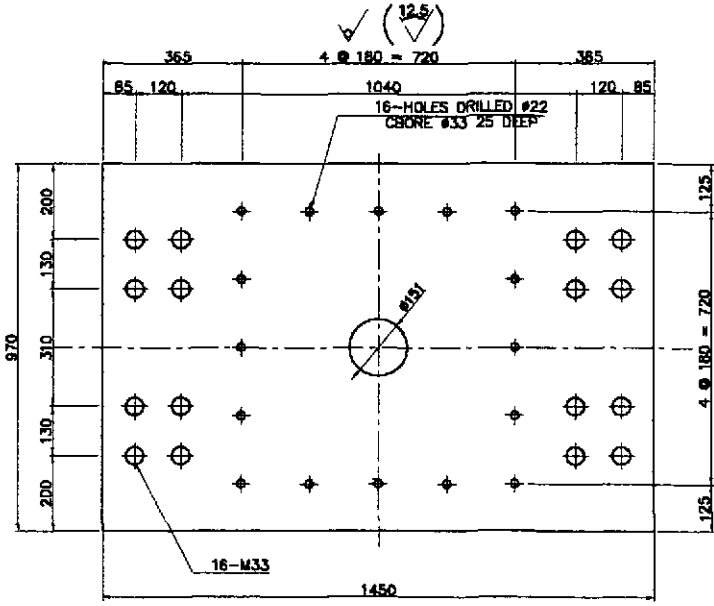


**4 DETAIL**  
SCALE 1:10

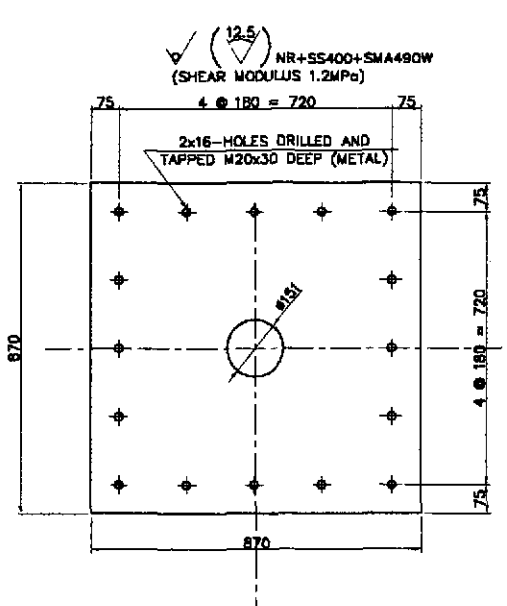
**5 DETAIL**  
SCALE 1:10



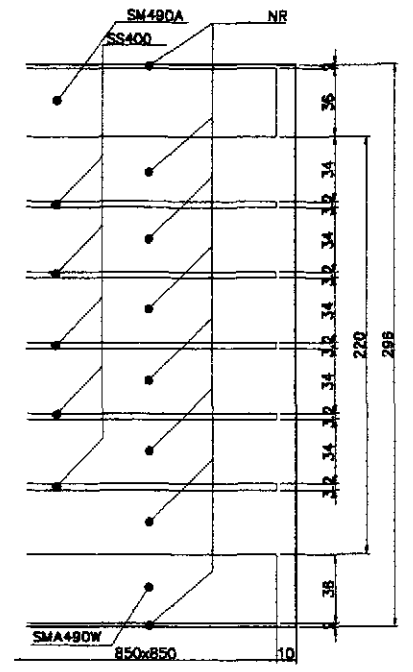
**11 DETAIL**  
SCALE 1:10



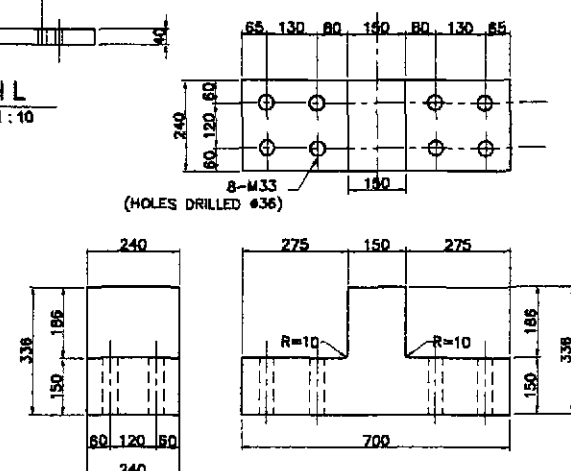
**3 DETAIL**  
SCALE 1:10



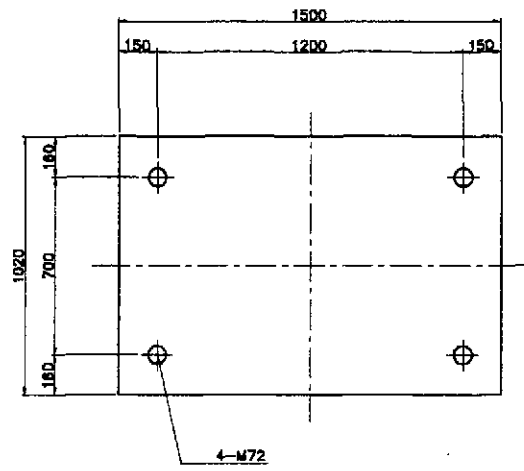
**1 DETAIL**  
SCALE 1:10



**12 DETAIL**  
SCALE 1:2



**4 DETAIL**  
SCALE 1:10



**10 DETAIL**  
SCALE 1:15

DESIGN CONDITION	
<b>REACTIONS</b>	
MAXIMUM REACTION	R <sub>max</sub> 2194 kN
DEAD LOAD REACTION	R <sub>d</sub> 1663 kN
LONGITUDINAL FORCE (UNDER EARTHQUAKE)	RH1e 1412 kN
TRANSVERSE FORCE (UNDER EARTHQUAKE)	RH2e 1412 kN
UPLIFT FORCE (UNDER EARTHQUAKE)	R <sub>u</sub> -489 kN
<b>ELASTOMERIC BEARING DISPLACEMENT</b>	
DISPLACEMENT UNDER NORMAL CONDITION	e1 55 mm
DISPLACEMENT UNDER EARTHQUAKE (L1)	e2 128 mm
DISPLACEMENT UNDER EARTHQUAKE (L2)	e3 333 mm
<b>HORIZONTAL SEISMIC COEFFICIENT</b>	
DESIGN HORIZONTAL	0.67
SEISMIC COEFFICIENT LONGITUDINAL	0.67
SEISMIC COEFFICIENT TRANSVERSE	0.67
<b>RUBBER BEARING</b>	
STATISTIC SHEAR MODULUS	G 1.2 MPa
ULTIMATE STRAIN	c <sub>sk</sub> 500%

MATERIALS					
NO.	ITEM	MATERIAL	NUMBER	WEIGHT (kg)	REMARKS
①	RUBBER BEARING	NR	1	-	
	STEEL PLATES (THICKNESS=3.2MM)	SS400	5	90.7	
	STEEL PLATES (THICKNESS=36MM)	SMA490W	2	408.4	
②	UPPER BEARING PLATE	SMA490W	1	260.0	
③	LOWER BEARING PLATE	SMA490W	1	441.6	
④	SIDE BLOCK	SMA490W	2	500.8	
⑤	SHEAR KEY	SMA490W	1	6.8	
⑥	SHEAR KEY	SMA490W	1	12.5	
⑦	HEXAGON HEAD BOLT (W/ FLAT WASHER)	-	16	25.0	
⑧	HEXAGON HEAD BOLT (W/ TAPERED WASHER)	-	12	4.3	
⑨	BOLT W/ HEXAGON HOLE	-	32	6.8	
⑩	BASE PLATE	SMA490W	1	600.5	
⑪	ANCHOR BOLT	SS400	4	106.1	
				<b>TOTAL WEIGHT = 2,483.8 kg</b>	

- NOTE:
- STRUCTURAL STEEL SHALL BE SMA490W/GRADE SOW (ATMOSPHERIC CORROSION RESISTANT) UNLESS OTHERWISE NOTED.
  - GALVANIZATION: BOLTS - MORE THAN 350g/m<sup>2</sup>.
  - HEXAGON HEAD BOLT (WITH FLAT WASHER) M33 x 175 STRENGTH 10.9
  - HEXAGON HEAD BOLT (WITH TAPERED WASHER) M30 x 75 STRENGTH 8.8
  - BOLT W/ HEXAGON HOLE M20 x 40 STRENGTH 12.9

**ELASTOMERIC BEARING DETAILS (TYPE 1)**  
SCALE AS SHOWN

**JICA**  
JAPAN INTERNATIONAL COOPERATION AGENCY

**KAI** KATAHIRA & ENGINEERS INTERNATIONAL  
**YEO** YACHYO ENGINEERING CO., LTD.

REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

BUREAU OF DESIGN

OFFICE OF THE SECRETARY

Submitted By: **DANILO C. TRAJANO** Project Director  
Reviewed By: **ADRIANO M. DORAY** Chief, Bridge Division  
Recommended By: **GILBERTO S. REYES** Director IV (D/C)  
Recommended By: **MANUEL M. BONDAN** Undersecretary  
Approved By: **SIMEON A. DATUMANONG** Secretary

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

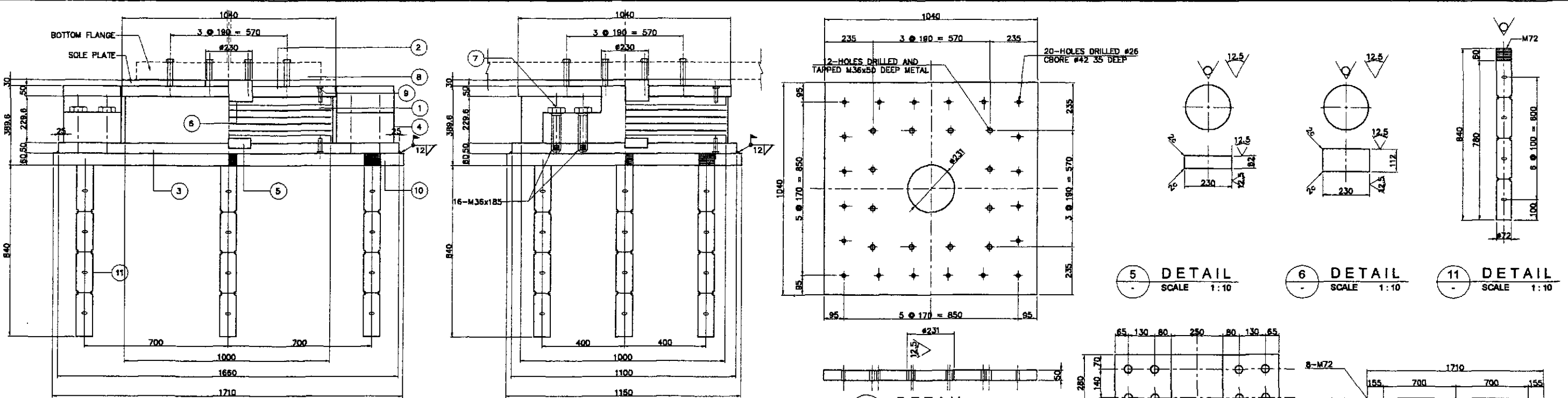
CABANATUAN BYPASS - CONTRACT PACKAGE III

SCALE :  
AS SHOWN  
FULL SIZE A1

SHEET CONTENTS :  
BRIDGE NO. 10 PAMPANGA RIVER BRIDGE  
ELASTOMERIC BEARING DETAILS  
(TYPE 1)  
(INITIAL STAGE)

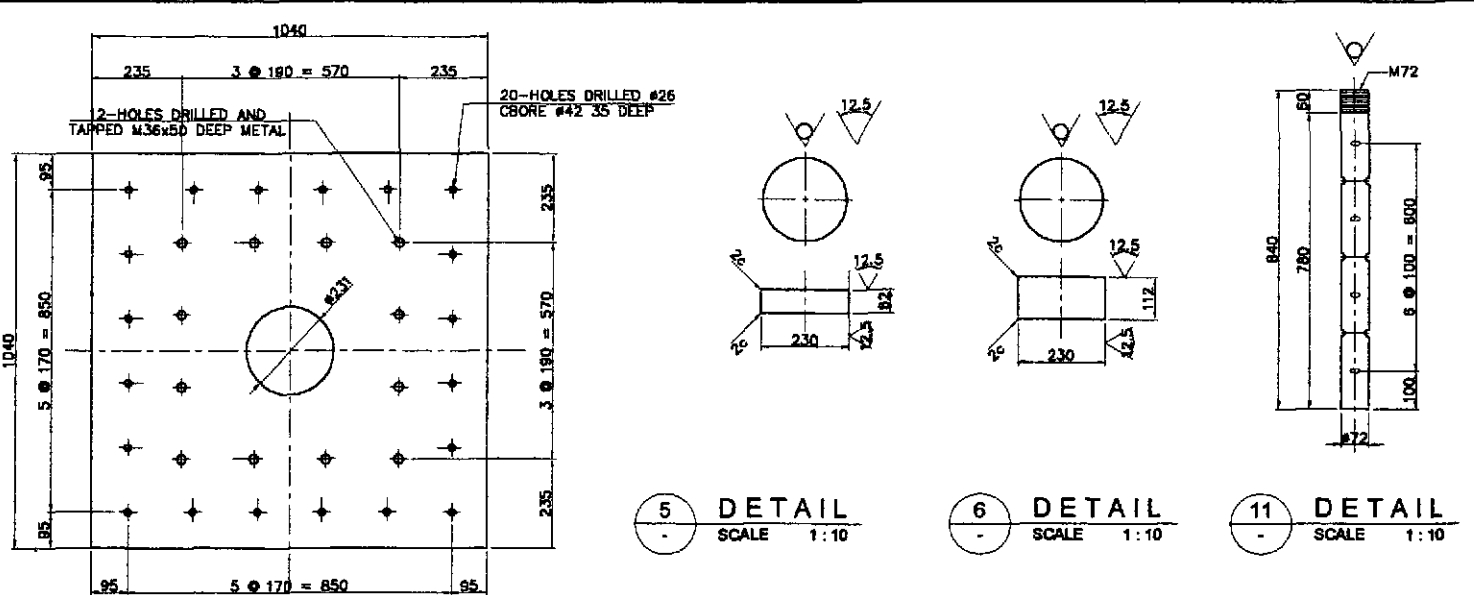
SHEET NO. :  
**B10M-81**





**A** TRANSVERSE SECTION  
SCALE 1:10

**B** LONGITUDINAL SECTION  
SCALE 1:10

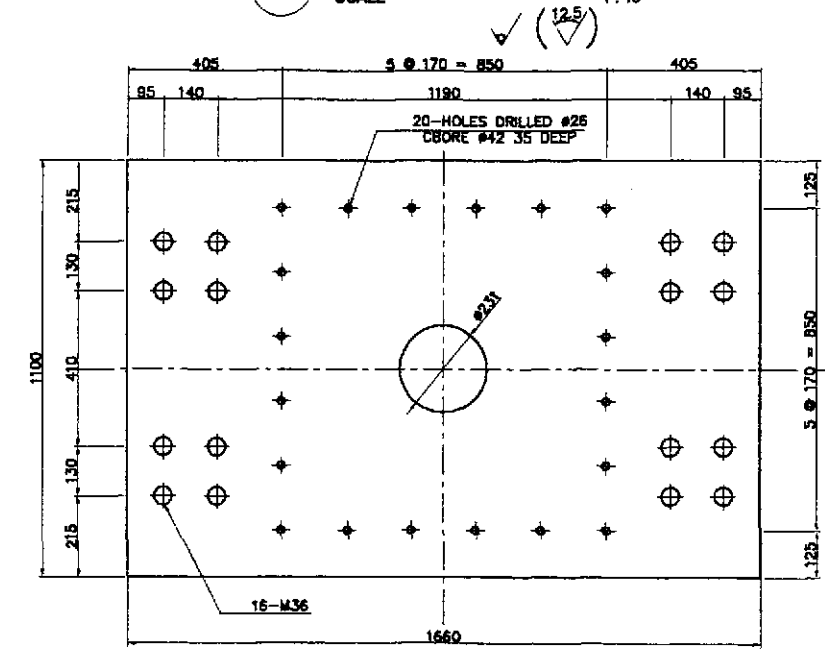


**2** DETAIL  
SCALE 1:10

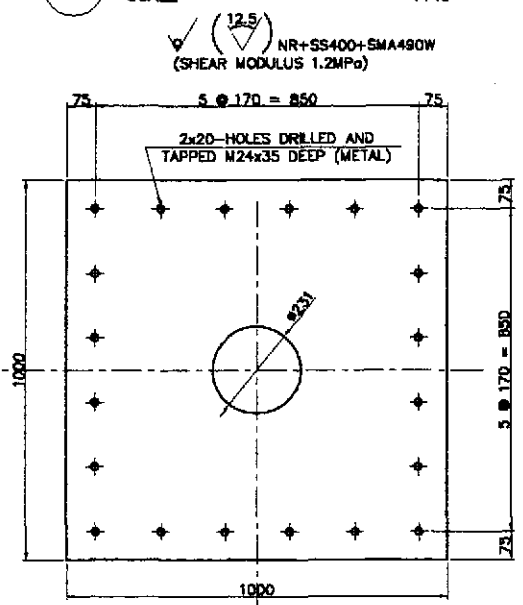
**5** DETAIL  
SCALE 1:10

**6** DETAIL  
SCALE 1:10

**11** DETAIL  
SCALE 1:10

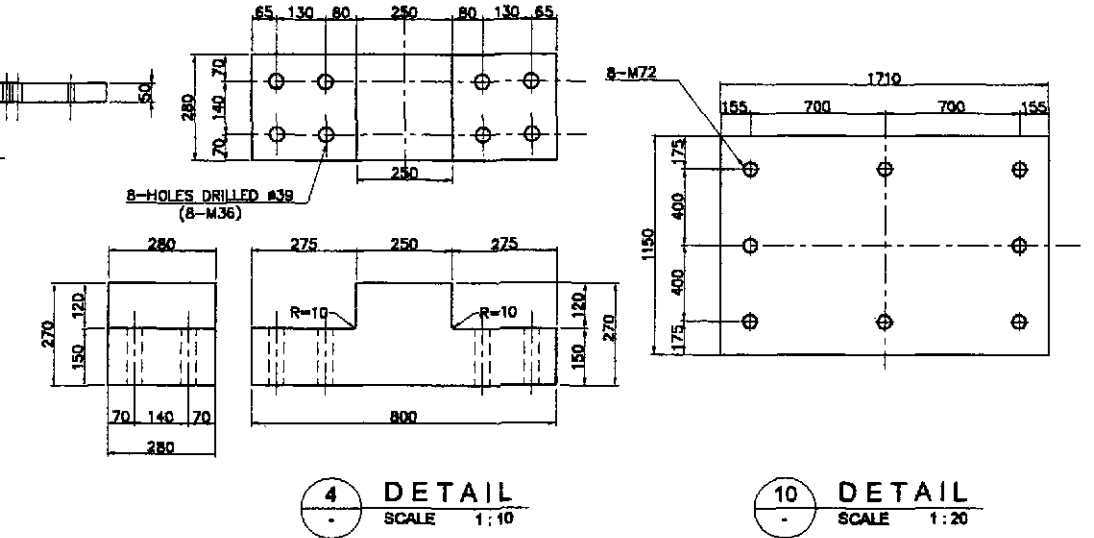


**3** DETAIL  
SCALE 1:10



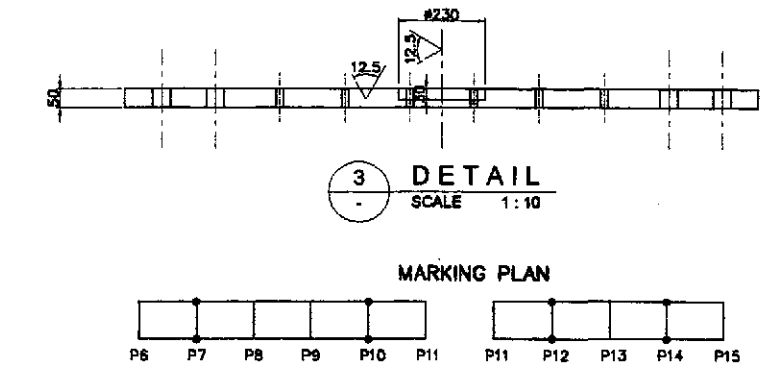
**1** DETAIL  
SCALE 1:10

**12** DETAIL  
SCALE 1:2



**4** DETAIL  
SCALE 1:10

**10** DETAIL  
SCALE 1:20



NO. OF LOCATIONS = 8

NOTE :  
1. MATERIALS, ASTM A36 EXCEPT NOTED.

**ELASTOMERIC BEARING DETAILS (TYPE 2)**  
SCALE AS SHOWN

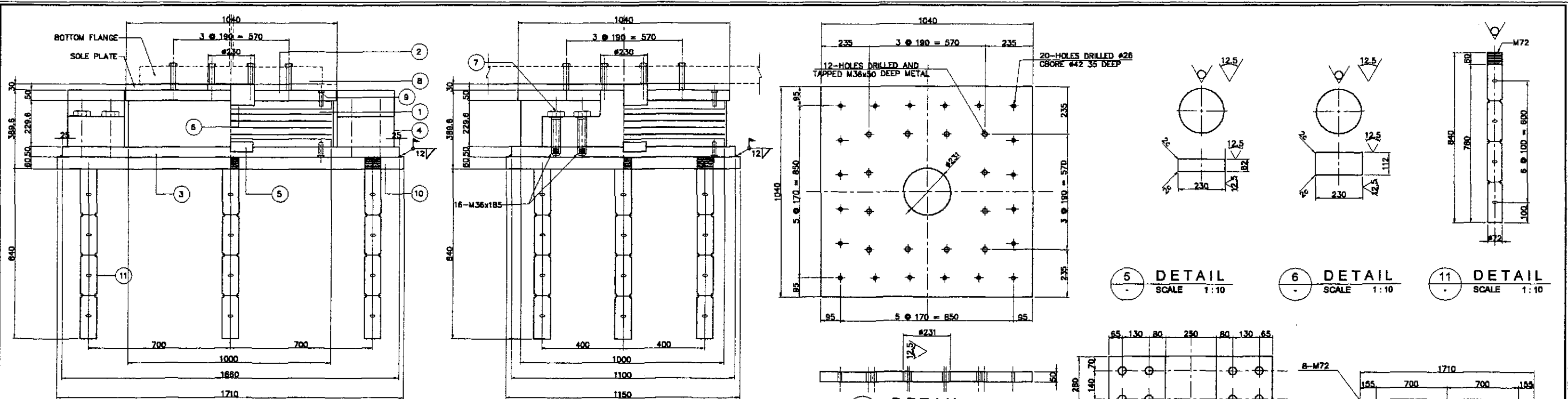
DESIGN CONDITION	
REACTIONS	
MAXIMUM REACTION	R <sub>max</sub> 6337 kN
DEAD LOAD REACTION	R <sub>d</sub> 5057 kN
LONGITUDINAL FORCE (UNDER EARTHQUAKE)	RH1e 2824 kN
TRANSVERSE FORCE (UNDER EARTHQUAKE)	RH2e 2824 kN
UPLIFT FORCE (UNDER EARTHQUAKE)	R <sub>u</sub> -1517 kN
ELASTOMERIC BEARING DISPLACEMENT	
DISPLACEMENT UNDER NORMAL CONDITION	e1 45 mm
DISPLACEMENT UNDER EARTHQUAKE (L1)	e2 129 mm
DISPLACEMENT UNDER EARTHQUAKE (L2)	e3 334 mm
HORIZONTAL SEISMIC COEFFICIENT	
DESIGN HORIZONTAL	LONGITUDINAL KH 0.67
SEISMIC COEFFICIENT	TRANSVERSE KH 0.67
RUBBER BEARING	
STATIC SHEAR MODULUS	G 1.2 MPa
ULTIMATE STRAIN	c <sub>h</sub> 500%

MATERIALS				
NO.	ITEM	MATERIAL NUMBER	WEIGHT (kg)	REMARKS
①	RUBBER BEARING	NR	1	
	STEEL PLATES (THICKNESS=3.2MM)	SS400	3	72.4
	STEEL PLATES (THICKNESS=40MM)	SMA490W	2	603.1
②	UPPER BEARING PLATE	SMA490W	1	424.5
③	LOWER BEARING PLATE	SMA490W	1	716.7
④	SIDE BLOCK	SMA490W	2	659.4
⑤	SHEAR KEY	SMA490W	1	20.9
⑥	SHEAR KEY	SMA490W	1	35.6
⑦	HEXAGON HEAD BOLT (W/ FLAT WASHER)	-	16	31.5
⑧	HEXAGON HEAD BOLT (W/ TAPERED WASHER)	-	12	16.0
⑨	BOLT W/ HEXAGON HOLE	-	40	15.8
⑩	BASE PLATE	SMA490W	1	926.2
⑪	ANCHOR BOLT	SS400	8	214.8
			TOTAL WEIGHT =	3,736.8 kgs

NOTE :  
1. STRUCTURAL STEEL SHALL BE SMA490W/GRADE 50W (ATMOSPHERIC CORROSION RESISTANT) UNLESS OTHERWISE NOTED.  
2. GALVANIZATION : BOLTS - MORE THAN 350g/m<sup>2</sup>.

⑦ HEXAGON HEAD BOLT (WITH FLAT WASHER) M36 x 185 STRENGTH 10.9  
⑧ HEXAGON HEAD BOLT (WITH TAPERED WASHER) M36 x 120 STRENGTH 8.8  
⑨ BOLT W/ HEXAGON HOLE M24 x 45 STRENGTH 12.9

	DESIGNED	10/8/02				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/17/02	DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS 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. 10 PAMPANGA RIVER BRIDGE ELASTOMERIC BEARING DETAILS (TYPE 2) (INITIAL STAGE)	B10M-82
SUBMITTED	10/19/02	Submitted By: DANILLO C. TRAJANO Project Director Reviewed By: ADRIANO M. DOROY Chief, Bridge Division Recommended By: GILBERTO S. REYES Director IV (DC) Recommended By: MANUEL M. BONGAN Undersecretary Approved By: SIMEON A. DATUMANGONG Secretary			CABANATUAN BYPASS - CONTRACT PACKAGE III	FULL SIZE A1			



**A TRANSVERSE SECTION**  
SCALE 1:10

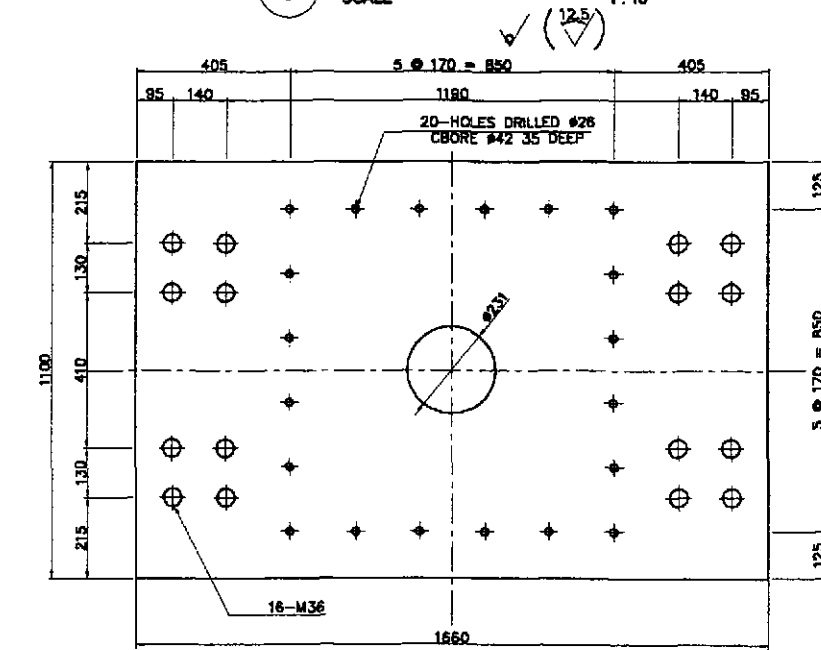
**B LONGITUDINAL SECTION**  
SCALE 1:10

**2 DETAIL**  
SCALE 1:10

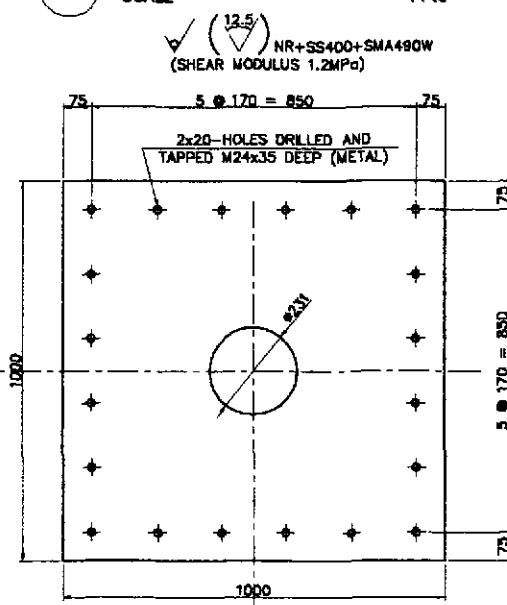
**5 DETAIL**  
SCALE 1:10

**6 DETAIL**  
SCALE 1:10

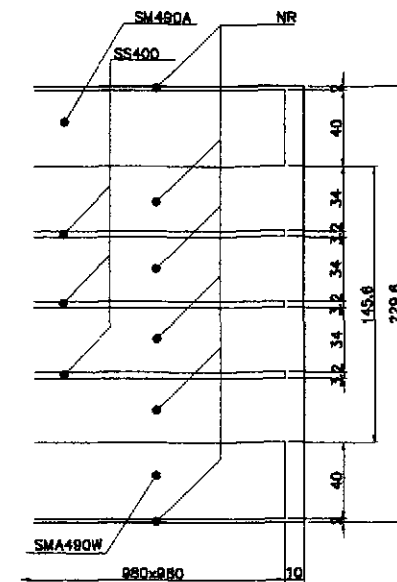
**11 DETAIL**  
SCALE 1:10



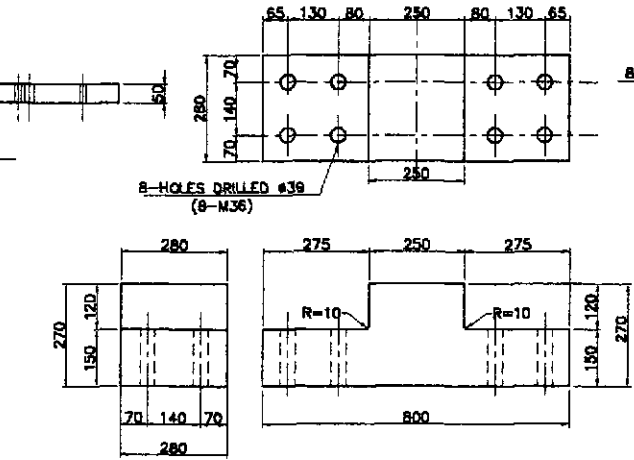
**3 DETAIL**  
SCALE 1:10



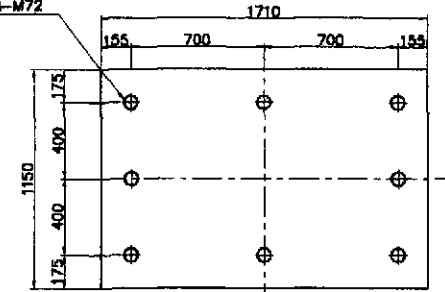
**1 DETAIL**  
SCALE 1:10



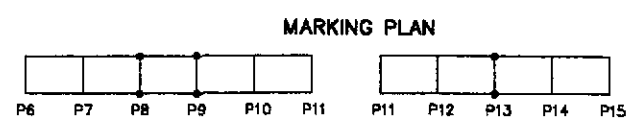
**12 DETAIL**  
SCALE 1:2



**4 DETAIL**  
SCALE 1:10



**10 DETAIL**  
SCALE 1:20



**3 DETAIL**  
SCALE 1:10

**MARKING PLAN**

P6 P7 P8 P9 P10 P11 P12 P13 P14 P15  
NO. OF LOCATIONS = 6

NOTE :  
1. MATERIALS, ASTM A36 EXCEPT NOTED.

DESIGN CONDITION		
<b>REACTIONS</b>		
MAXIMUM REACTION	R <sub>max</sub>	5243 kN
DEAD LOAD REACTION	R <sub>d</sub>	4149 kN
LONGITUDINAL FORCE (UNDER EARTHQUAKE)	RH1e	2824 kN
TRANSVERSE FORCE (UNDER EARTHQUAKE)	RH2e	2824 kN
UPLIFT FORCE (UNDER EARTHQUAKE)	R <sub>u</sub>	-1245kN
<b>ELASTOMERIC BEARING DISPLACEMENT</b>		
DISPLACEMENT UNDER NORMAL CONDITION	e1	35 mm
DISPLACEMENT UNDER EARTHQUAKE (L1)	e2	129 mm
DISPLACEMENT UNDER EARTHQUAKE (L2)	e3	334 mm
<b>HORIZONTAL SEISMIC COEFFICIENT</b>		
DESIGN HORIZONTAL	LONGITUDINAL	kH 0.67
SEISMIC COEFFICIENT	TRANSVERSE	kH 0.67
<b>RUBBER BEARING</b>		
STATIC SHEAR MODULUS	G	1.2 MPa
ULTIMATE STRAIN	e <sub>b</sub>	500%

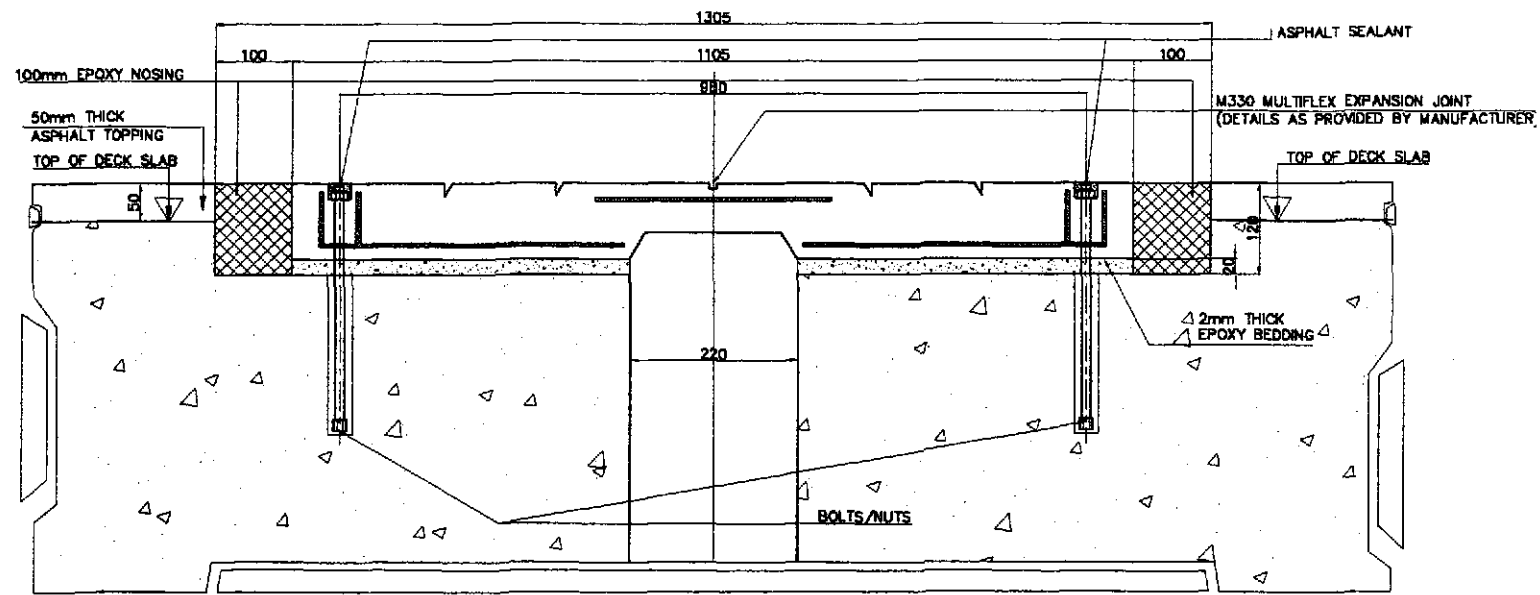
MATERIALS					
NO.	ITEM	MATERIAL	NUMBER	WEIGHT (kg)	REMARKS
①	RUBBER BEARING	NR	1	-	
	STEEL PLATES (THICKNESS=3.2MM)	SS400	3	72.4	
	STEEL PLATES (THICKNESS=4MM)	SMA490W	2	603.1	
②	UPPER BEARING PLATE	SMA490W	1	424.5	
③	LOWER BEARING PLATE	SMA490W	1	716.7	
④	SIDE BLOCK	SMA490W	2	558.4	
⑤	SHEAR KEY	SMA490W	1	20.9	
⑥	SHEAR KEY	SMA490W	1	35.6	
⑦	HEXAGON HEAD BOLT (W/ FLAT WASHER)	-	16	31.5	
⑧	HEXAGON HEAD BOLT (W/ TAPERED WASHER)	-	12	16.0	
⑨	BOLT W/ HEXAGON HOLE	-	40	15.8	
⑩	BASE PLATE	SMA490W	1	926.2	
⑪	ANCHOR BOLT	SS400	8	214.8	
				TOTAL WEIGHT =	3,736.8 kgs

NOTE :  
1. STRUCTURAL STEEL SHALL BE SMA490W/GRADE 50W (ATMOSPHERIC CORROSION RESISTANT) UNLESS OTHERWISE NOTED.  
2. GALVANIZATION : BOLTS - MORE THAN 350g/m<sup>2</sup>.

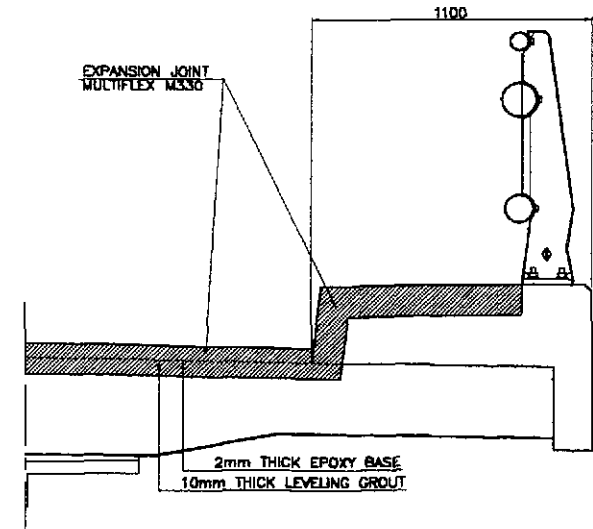
⑦ HEXAGON HEAD BOLT (WITH FLAT WASHER) M36 x 185 STRENGTH 10.9  
⑧ HEXAGON HEAD BOLT (WITH TAPERED WASHER) M36 x 120 STRENGTH 8.8  
⑨ BOLT W/ HEXAGON HOLE M24 x 45 STRENGTH 12.9

**ELASTOMERIC BEARING DETAILS (TYPE 3)**  
SCALE AS SHOWN

	DESIGNED	10/19/02	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/19/02	BUREAU OF DESIGN OFFICE OF THE SECRETARY			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pilaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 10 PAMPANGA RIVER BRIDGE ELASTOMERIC BEARING DETAILS (TYPE 3) (INITIAL STAGE)	B10M-83
SUBMITTED	10/19/02	DANILLO C. TRAJANO Project Director			ADRIANO M. DOROY Chief, Bridge Division	CABANATUAN BYPASS - CONTRACT PACKAGE III		FULL SIZE A1	

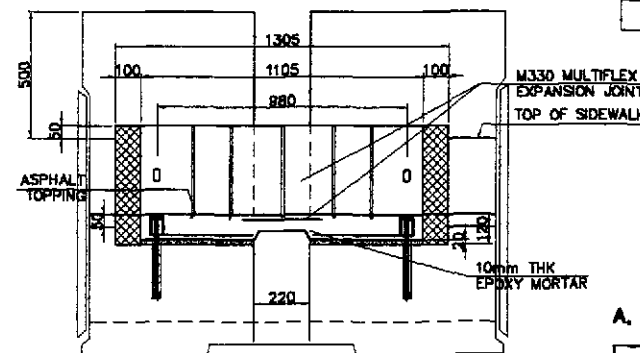


**SECTION B**  
**TYPE EJ - 1 (M330) FOR P11, P6 & P15**  
 SCALE 1:6

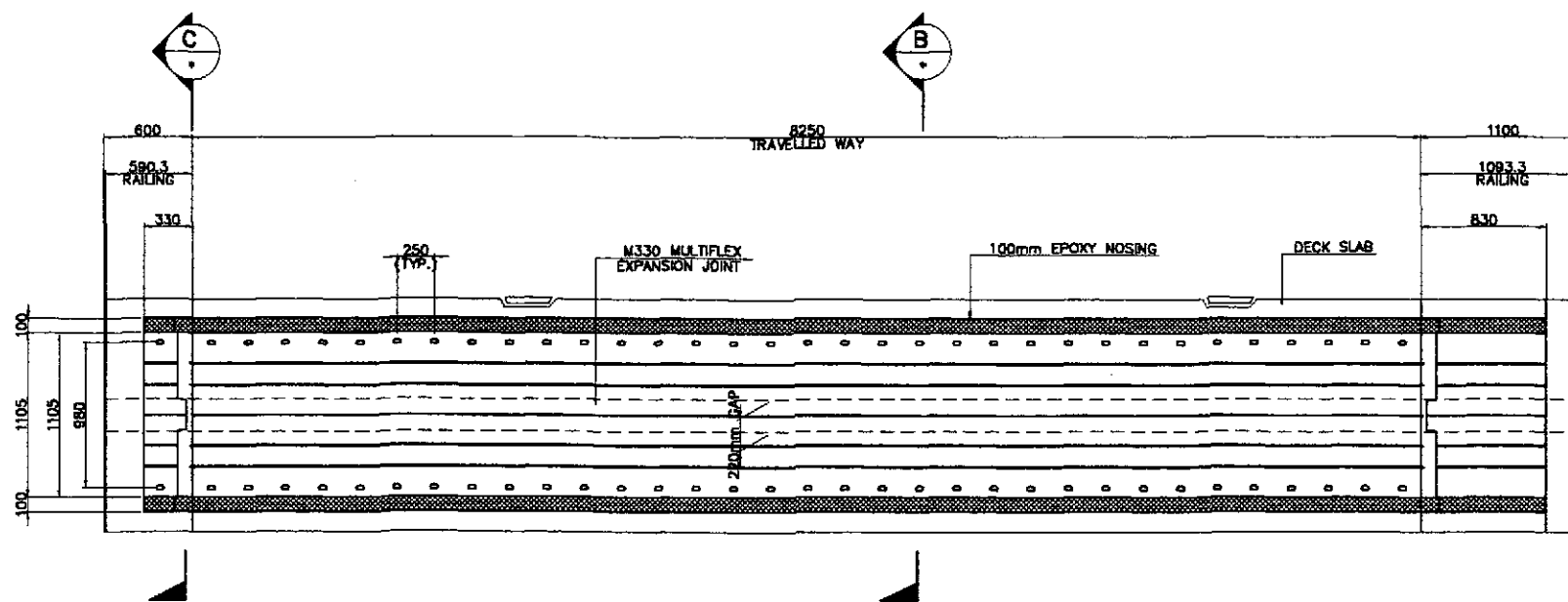


**2**  
**DETAIL**  
 SCALE 1:15

LOCATION	EXPANSION JOINT TYPE	MOVEMENT (mm)	LENGTH (m)
PIER 6	MULTIFLEX M330	±165(TOTAL=330mm)	10.00
PIER 11	MULTIFLEX M330	±165(TOTAL=330mm)	10.00
PIER 15	MULTIFLEX M330	±165(TOTAL=330mm)	10.00



**C**  
**SECTION**  
 SCALE 1:15



**A**  
**PLAN**  
**TYPE EJ - 1 (M330)**  
 SCALE 1:25

**1**  
**EXPANSION JOINT DETAILS**  
 SCALE AS SHOWN

**NOTES :**

1. THE EXPANSION JOINT SHALL BE MULTIFLEX M330 OR EQUIVALENT.
2. THE CONTRACTOR SHALL GUARANTEE WATERTIGHTNESS OF EXPANSION JOINTS INCLUDING SIDEWALK JOINTS.
3. THE EXPANSION JOINT SHALL HAVE A 15-YEAR WARRANTY PERIOD. DAMAGES ON THE JOINTS WITHIN THIS PERIOD SHALL BE REPLACED BY THE CONTRACTOR.
4. VERIFY ACTUAL DIMENSIONS OF EXPANSION JOINT BLOCK-OUT AS PER MANUFACTURER'S RECOMMENDATION.

**A.) QUALITY TESTING OF RUBBER COMPOUND**

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

**B.) DIMENSION CHECK ON METAL PLATES**

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

**C.) QUALITY CHECK**

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

**INSTALLATION MATERIALS**

1. EPOXY BEDDING
2. EPOXY NOSING
3. BOLT / NUTS
4. SEALANT

**JICA**  
 JAPAN INTERNATIONAL COOPERATION AGENCY

**KAI** KATAHIRA & ENGINEERS INTERNATIONAL  
**YEO** YACHYO ENGINEERING CO., LTD.

DESIGNED: 10/16/02 F. M. SALAS  
 CHECKED: 10/17/02 J. M. SALAS  
 SUBMITTED: 10/19/02 M. B. SALAS

REPUBLIC OF THE PHILIPPINES  
 DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

BUREAU OF DESIGN OFFICE OF THE SECRETARY

Submitted By: DANILO C. TRAJANO (Project Director)  
 Reviewed By: ADRIANO M. DOROY (Chief, Bridge Division)  
 Recommended By: GILBERTO S. REYES (Director IV (OIC))  
 Recommended By: MANUEL M. BONOAN (Undersecretary)  
 Approved By: SIMEON A. DATUMANONG (Secretary)

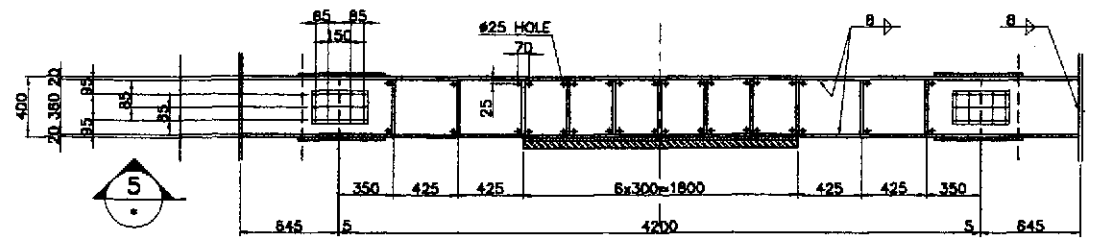
PROJECT AND LOCATION :  
 THE DETAILED DESIGN STUDY ON  
 UPGRADING INTER-URBAN HIGHWAY SYSTEM  
 ALONG THE PAN-PHILIPPINE HIGHWAY  
 (Ptaridel, Cabanatuan and San Jose Bypasses)  
 CABANATUAN BYPASS - CONTRACT PACKAGE III

SCALE :  
 AS SHOWN  
 FULL SIZE A1

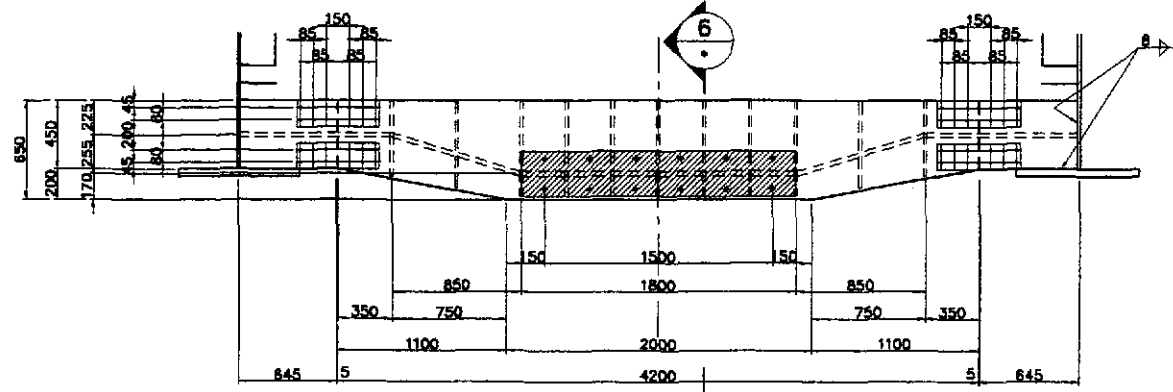
SHEET CONTENTS :  
 BRIDGE NO. 10 PAMPANGA RIVER BRIDGE  
 EXPANSION JOINT DETAILS  
 (INITIAL STAGE)

SHEET NO. :  
 B10M-84



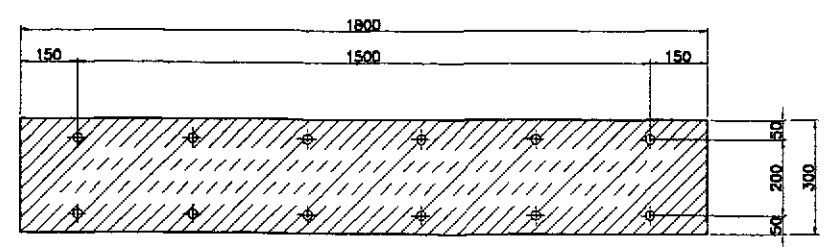


4 SECTION  
SCALE 1:25



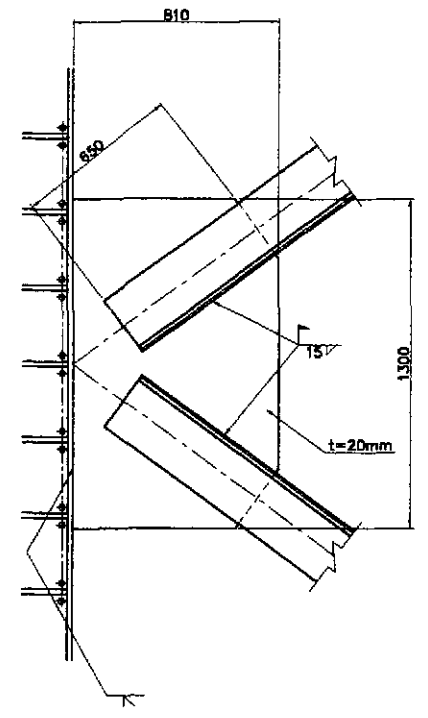
5 SECTION  
SCALE 1:25

- 2-FLG PL 850x20x4200
- 1-WEB PL 360x30x4275
- 7-RIB PL 360x20x445
- 7-RIB PL 360x20x135
- 2-RIB PL 360x20x317
- 2-RIB PL 360x20x180
- 2-RIB PL 360x20x203
- 2-RIB PL 360x20x253
- 1-PL 300x20x1800
- 16-SPL PL 170x15x570
- 96-BOLTS No. M22x80
- 4-SPL PL 250x15x400
- 24-BOLTS No. M22x100

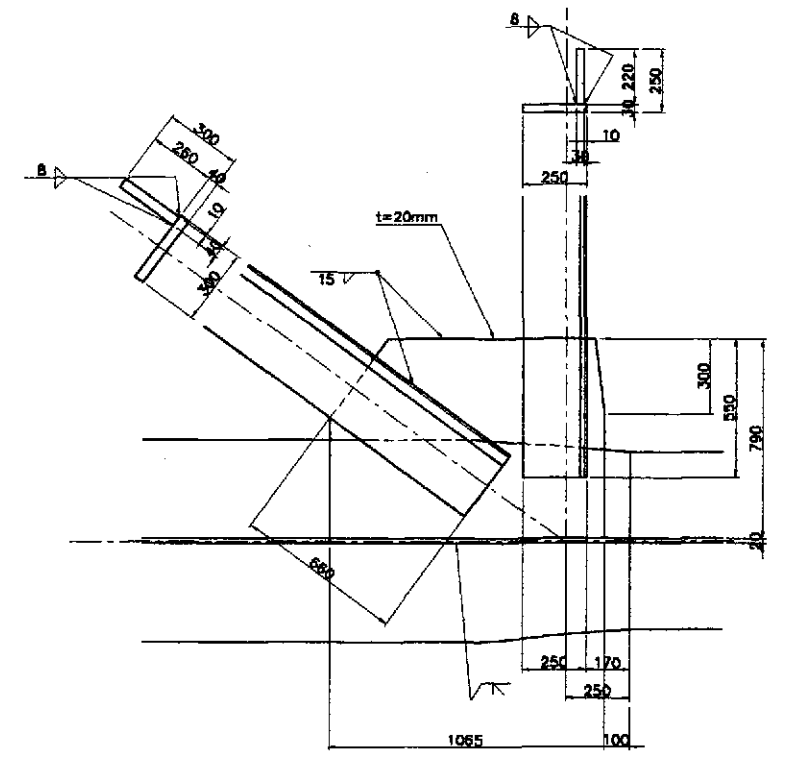


- 1-NATURAL RUBBER 300x50x1800
- 12-B.N. M12x85(1-WASHER)

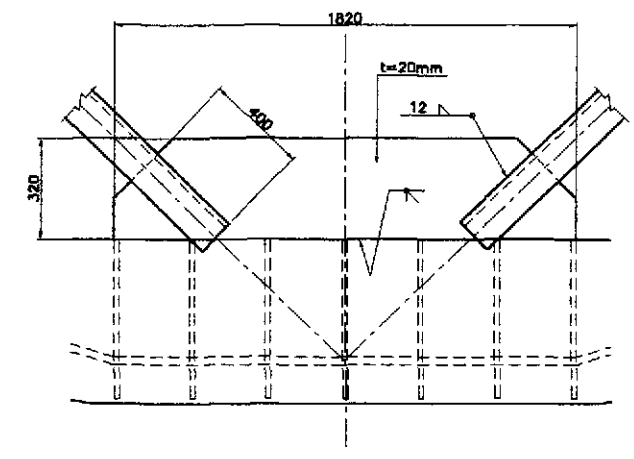
E BUFFER DETAIL  
SCALE 1:10



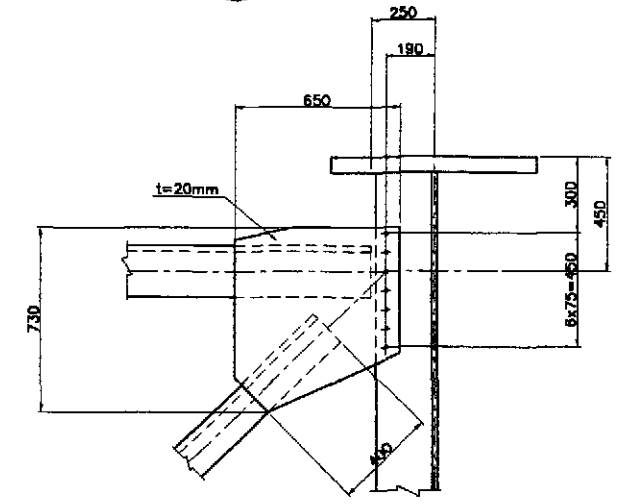
A DETAIL  
SCALE 1:15



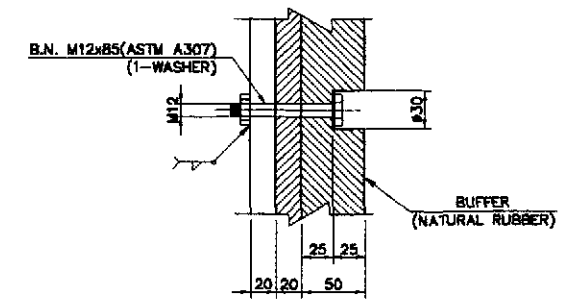
B DETAIL  
SCALE 1:15



C DETAIL  
SCALE 1:15



D DETAIL  
SCALE 1:15



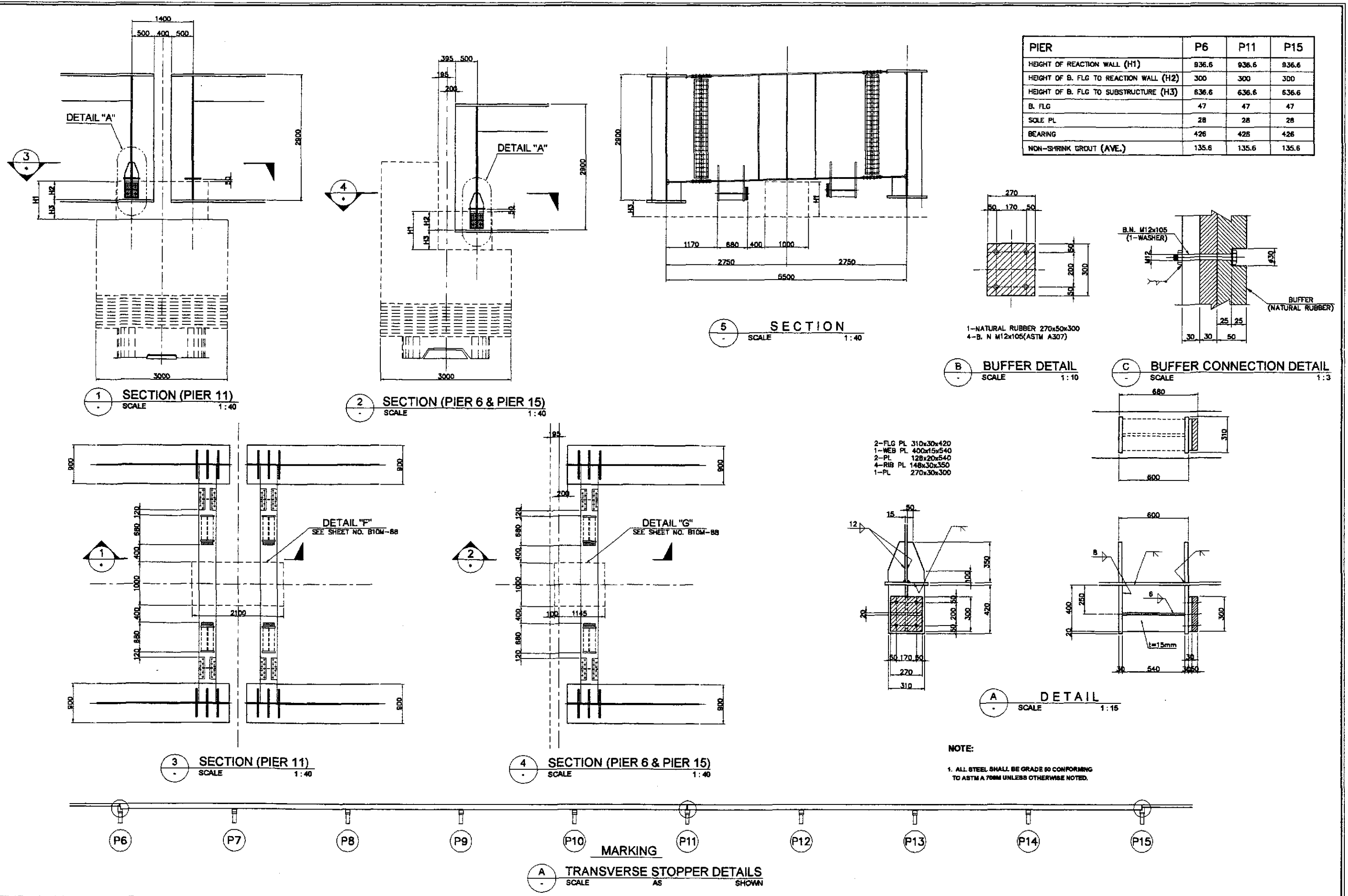
6 BUFFER CONNECTION DETAIL  
SCALE 1:10

RESTRAINER		
MATERIAL	SIZE(mm)	TOTAL NO.
BUFFER	270x50x300	8
NATURAL RUBBER	300x50x1800	14

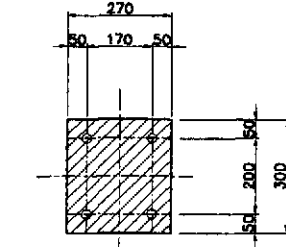
- NOTES:
- ALL STEEL SHALL BE GRADE 50 CONFORMING TO ASTM A 709M UNLESS OTHERWISE NOTED.
  - ALL BOLTS SHALL BE HIGH STRENGTH BOLTS CONFORMING TO ASTM A 490M UNLESS OTHERWISE NOTED.

A LONGITUDINAL STOPPER DETAILS - 2 of 2  
SCALE AS SHOWN

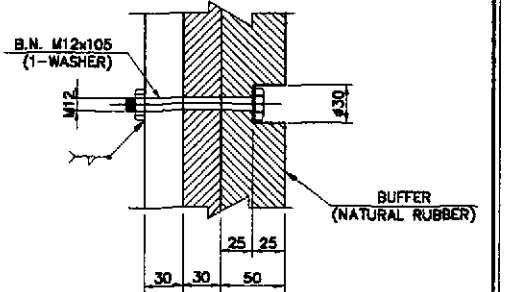
	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/17/02	J. C. SANTOS		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO. 10 PAMPANGA RIVER BRIDGE LONGITUDINAL STOPPER DETAILS - 2 of 2 (INITIAL STAGE)	B10M-86
	SUBMITTED	10/17/02	TEAM LEADER		CABANATUAN BYPASS - CONTRACT PACKAGE III	FULL SIZE A1		
<p>Submitted By: DANILLO C. TRAJANO, Project Director</p> <p>Reviewed By: ADRIANO M. DORAY, Chief, Bridge Division</p> <p>Recommended By: GILBERTO S. REYES, Director IV (DC)</p> <p>Recommended By: MANUEL M. BONGAN, Undersecretary</p> <p>Approved By: SIMEON A. DATUMANONG, Secretary</p>								



PIER	P6	P11	P15
HEIGHT OF REACTION WALL (H1)	936.6	936.6	936.6
HEIGHT OF B. FLG TO REACTION WALL (H2)	300	300	300
HEIGHT OF B. FLG TO SUBSTRUCTURE (H3)	636.6	636.6	636.6
B. FLG	47	47	47
SOLE PL	28	28	28
BEARING	426	426	426
NON-SHRINK GROUT (AVE.)	135.6	135.6	135.6



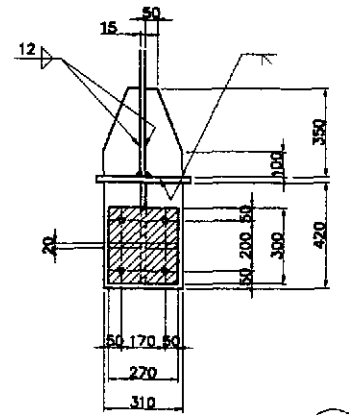
1-NATURAL RUBBER 270x50x300  
4-B. N M12x105(ASM A307)



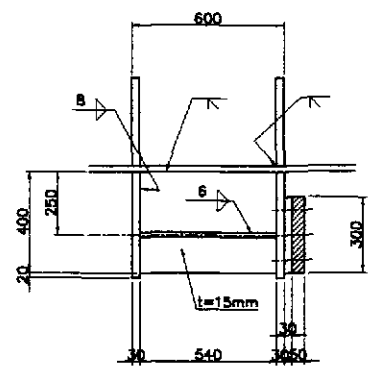
BUFFER CONNECTION DETAIL  
SCALE 1:3

BUFFER DETAIL  
SCALE 1:10

- 2- FLG PL 310x30x420
- 1- WEB PL 400x15x540
- 2- PL 128x20x540
- 4- RIB PL 148x30x350
- 1- PL 270x30x300



DETAIL  
SCALE 1:15

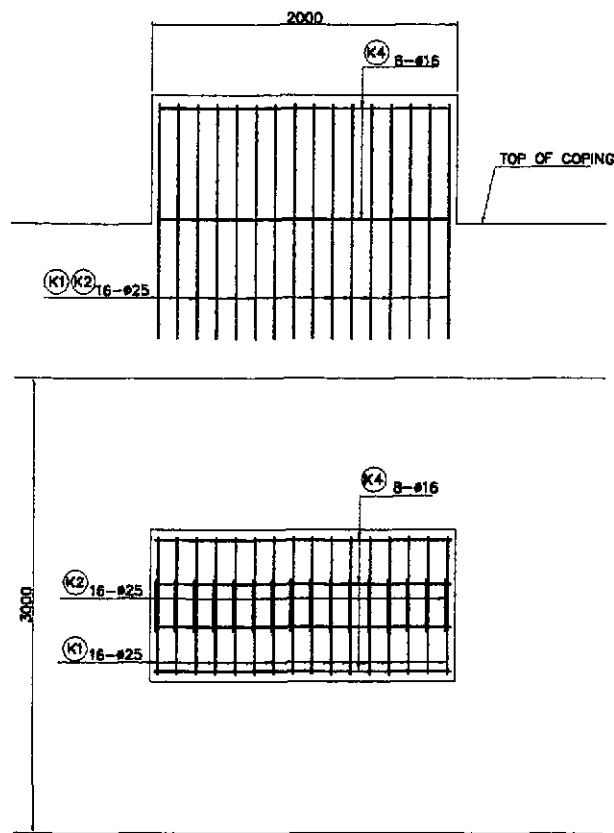


NOTE:  
1. ALL STEEL SHALL BE GRADE 50 CONFORMING TO ASTM A 708M UNLESS OTHERWISE NOTED.

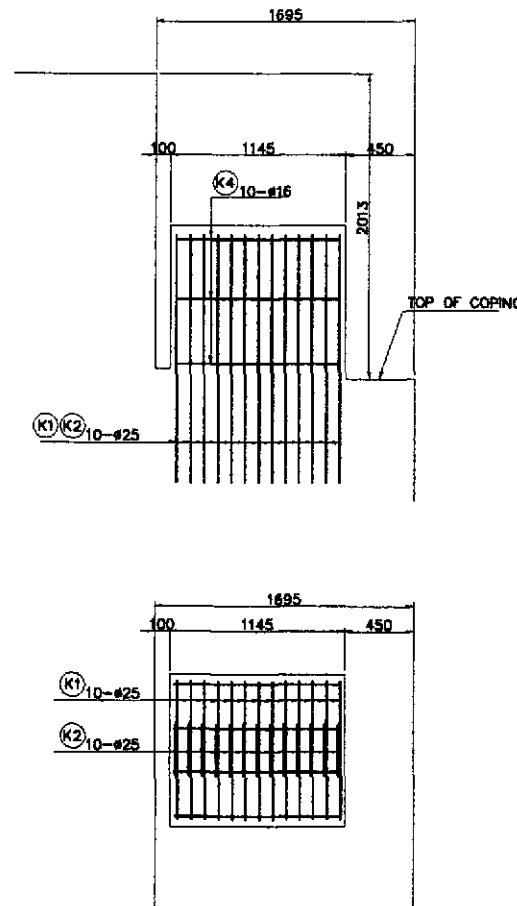
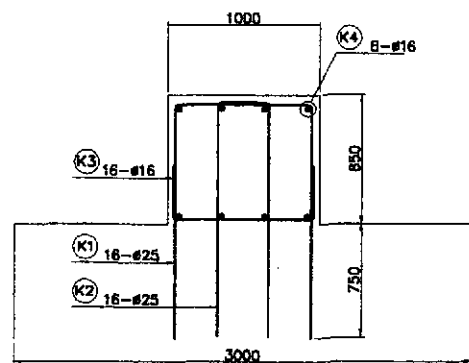


A TRANSVERSE STOPPER DETAILS  
SCALE AS SHOWN

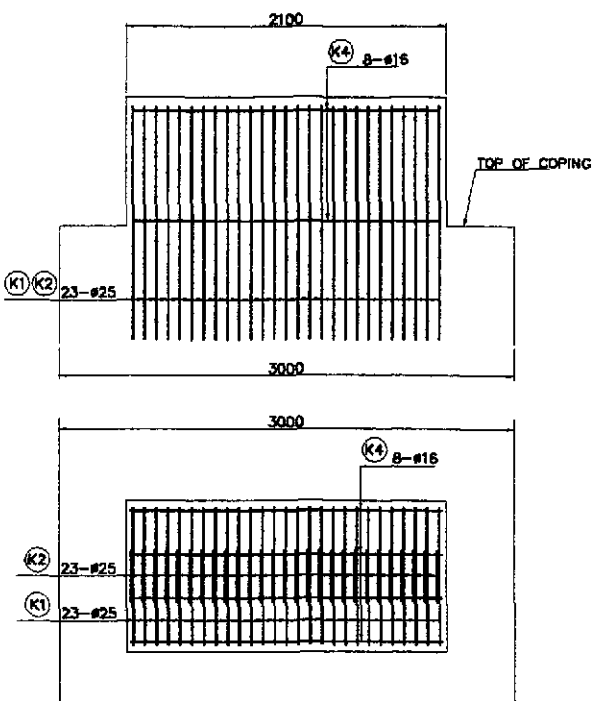
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE III	SCALE :	SHEET CONTENTS : BRIDGE NO. 10 PAMPANGA RIVER BRIDGE TRANSVERSE STOPPER DETAILS (INITIAL STAGE)	SHEET NO. :	
	CHECKED	10/17/02	F. M. SALAS		Submitted By:	Reviewed By:	Recommended By:		Office of the Secretary		AS SHOWN	B10M-87
	SUBMITTED	10/19/02	J. SANTOS		Submitted By:	Reviewed By:	Recommended By:		Office of the Secretary		FULL SIZE A1	
			M. REYES		Submitted By:	Reviewed By:	Recommended By:		Office of the Secretary			
			DAWLO C. TRAJANO Project Director		ADRIANO M. DOROY Chief, Bridges Division	GILBERTO S. REYES Director IV (DC)	MANUEL M. BONOAN Undersecretary					



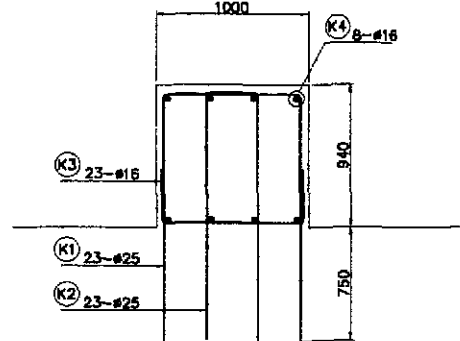
**E** LONGITUDINAL SEISMIC BUFFER (PIER 7-10, PIER 12-14)  
SCALE 1:25



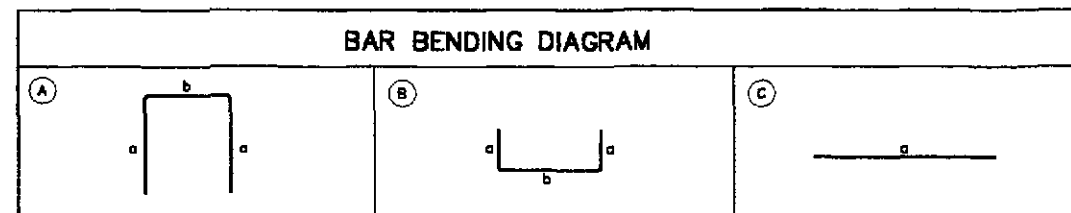
**G** TRANSVERSE SEISMIC BUFFER (PIER 6 & 15)  
SCALE 1:25



**F** TRANSVERSE SEISMIC BUFFER (PIER 11)  
SCALE 1:25



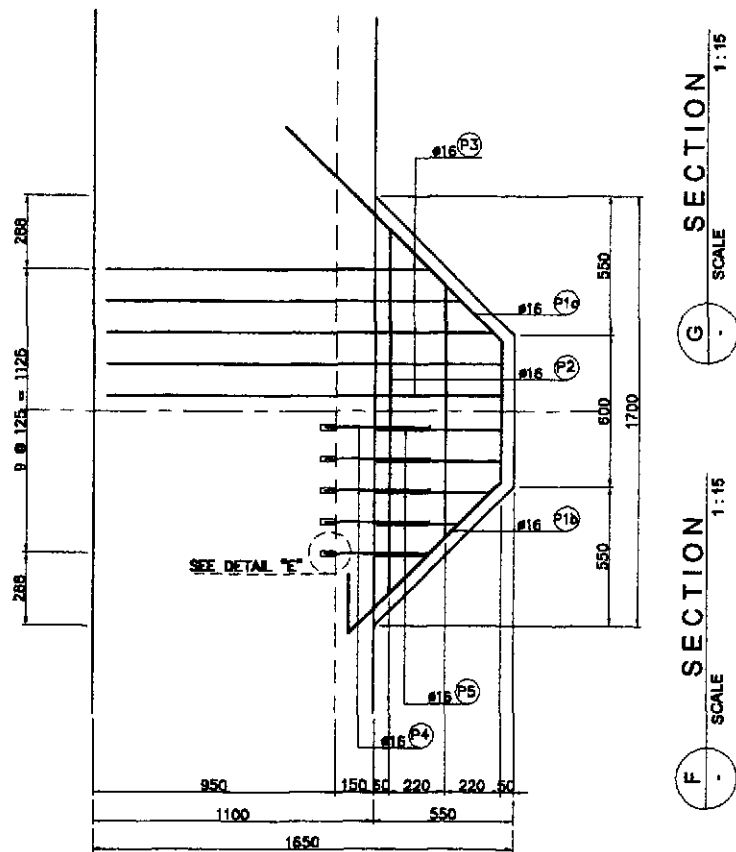
**1** SEISMIC BUFFER REINFORCEMENT DETAILS  
SCALE AS SHOWN



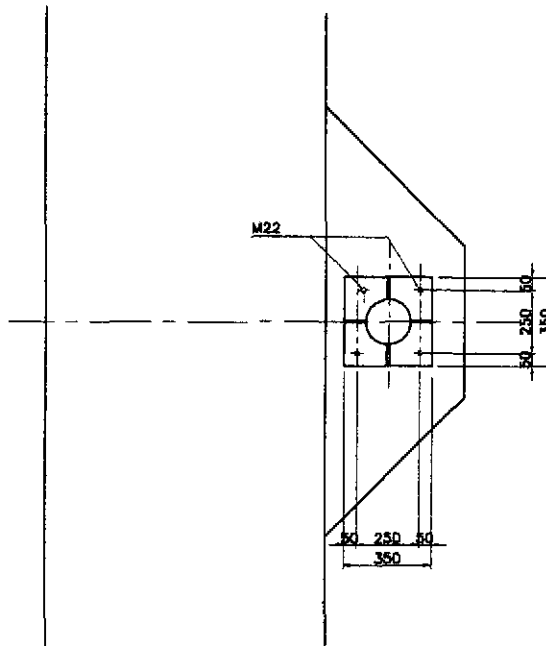
SCHEDULE OF REINFORCEMENT															
LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION (mm) OUT TO OUT						LENGTH (mm)	NO. REQD.	UNIT WEIGHT (kg/m)	WEIGHT (kg)		
				a	b	c	d	e	f				GRADE 40	GRADE 50	
P7, P8, P9, P10, P12, P13, P14	K1	25	A	1550	900					4000	16	3.854		247	
	K2	25	A	1550	500					3600	16	3.854		222	
	K3	16	B	300	900					1500	16	1.579	38		
	K4	16	C	1800						1800	8	1.579	24		
TOTAL =														82	488
P11	K1	25	A	1640	900					4180	23	3.854		371	
	K2	25	A	1640	500					3780	23	3.854		336	
	K3	16	B	300	900					1500	23	1.579	55		
	K4	16	C	2000						2000	8	1.579	26		
TOTAL =														81	707
P6, P15	K1	25	A	1640	900					4180	8	3.854		129	
	K2	25	A	1640	500					3780	8	3.854		117	
	K3	16	B	300	900					1500	8	1.579	19		
	K4	16	C	1045						1045	8	1.579	14		
TOTAL =														33	246

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

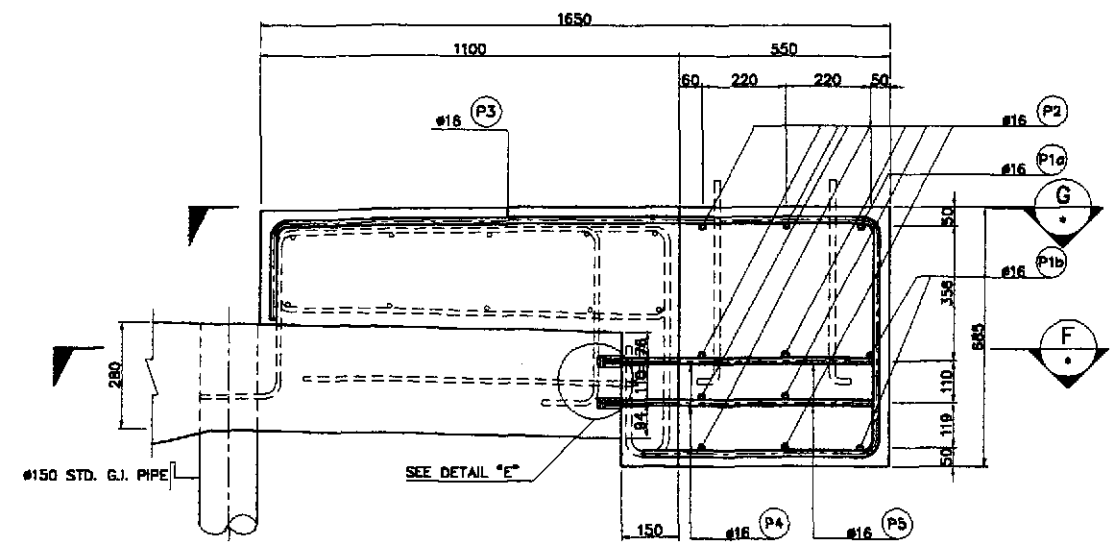
	DESIGNED	DATE	SIGNATURE	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/2/02	F. M. BALAS		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)			AS SHOWN	BRIDGE NO. 10 PAMPANGA RIVER BRIDGE SEISMIC BUFFER REINFORCEMENT DETAILS (INITIAL STAGE)	B10M-88
	SUBMITTED	10/19/02	TEAM LEADER		CABANATUAN BYPASS - CONTRACT PACKAGE III			FULL SIZE A1		
SUBMITTED BY: DANILLO C. TRAJANO, Project Director REVIEWED BY: ADRIANO M. DOROY, Chief, Bridges Division RECOMMENDED BY: GILBERTO S. REYES, Director IV (DC) MANUEL M. BONGAON, Undersecretary APPROVED BY: SIMEON A. DATUMANONG, Secretary										



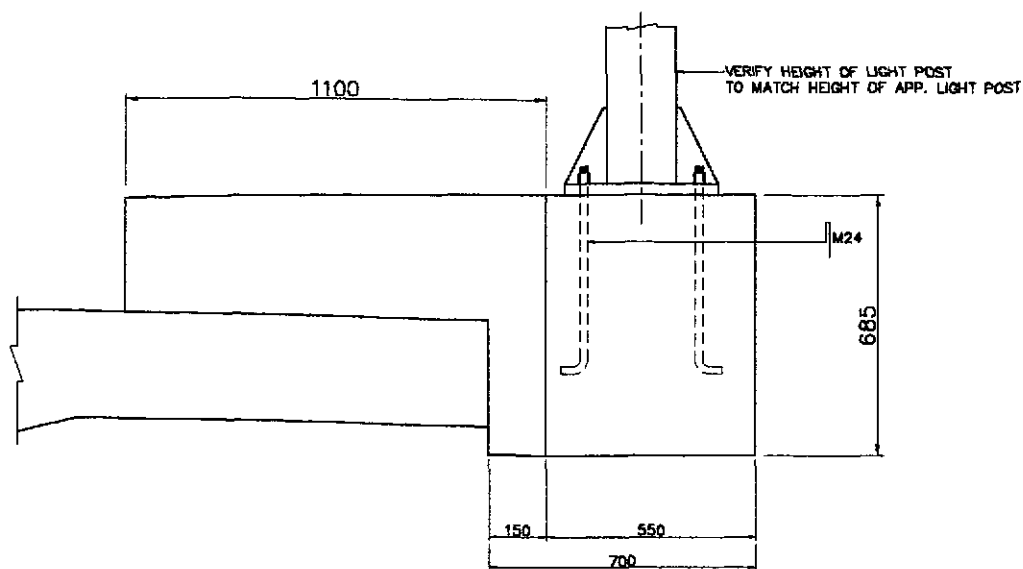
**A** PLAN  
SCALE 1:15



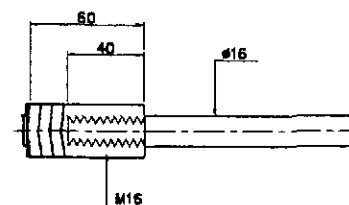
**B** PLAN  
SCALE 1:15



**C** ELEVATION  
SCALE 1:10



**D** ELEVATION  
SCALE 1:10



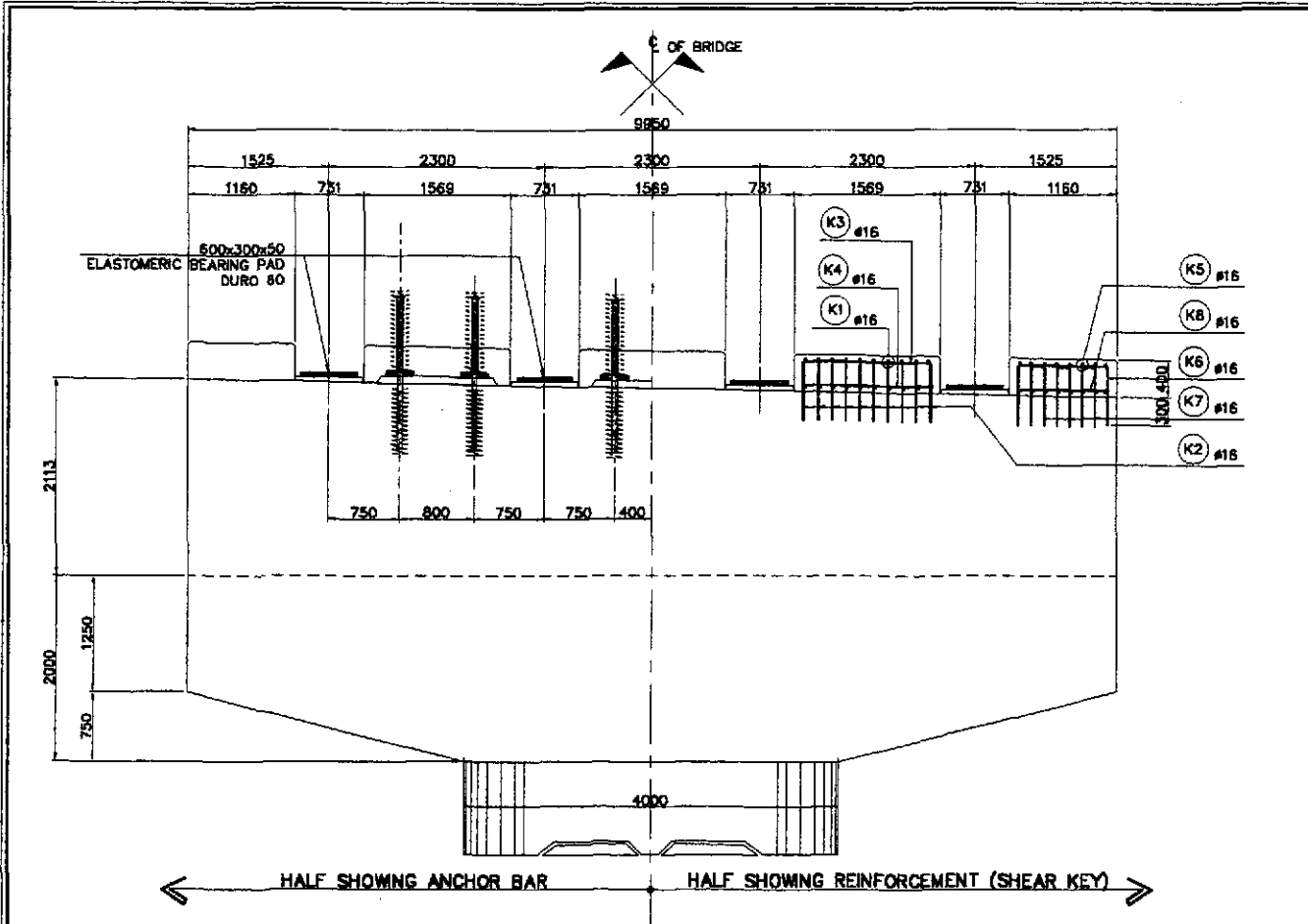
**E** DOWEL BAR ANCHOR DETAIL  
SCALE 1:2

**1** LIGHT POST BASE REINFORCEMENT DETAIL  
SCALE AS SHOWN

BAR BENDING DIAGRAM																																																																																																																																																																											
A	B	C	D	E																																																																																																																																																																							
<p align="center"><b>SCHEDULE OF REINFORCEMENT</b></p> <table border="1"> <thead> <tr> <th rowspan="2">LOCATION</th> <th rowspan="2">BAR MARK</th> <th rowspan="2">SIZE (mm)</th> <th rowspan="2">BEND TYPE</th> <th colspan="6">DIMENSION(mm) OUT TO OUT</th> <th rowspan="2">LENGTH (mm)</th> <th rowspan="2">NO. REQ'D.</th> <th rowspan="2">UNIT WEIGHT (kg/m)</th> <th rowspan="2">WEIGHT (kg)</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> <th>f</th> </tr> </thead> <tbody> <tr> <td rowspan="10">LIGHT POST</td> <td>P1a</td> <td>16</td> <td>A</td> <td>560</td> <td>1200</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2960</td> <td>1</td> <td>1.578</td> <td>5</td> </tr> <tr> <td>P1b</td> <td>16</td> <td>B</td> <td>560</td> <td>850</td> <td>240</td> <td></td> <td></td> <td></td> <td></td> <td>2740</td> <td>2</td> <td>1.578</td> <td>8</td> </tr> <tr> <td>P2a</td> <td>16</td> <td>C</td> <td>1000</td> <td>min</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1000</td> <td>4</td> <td>1.578</td> <td>7</td> </tr> <tr> <td>P2b</td> <td></td> <td></td> <td>1440</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1440</td> <td>4</td> <td>1.578</td> <td>10</td> </tr> <tr> <td>P3</td> <td>16</td> <td>D</td> <td>615</td> <td>580</td> <td>600</td> <td>240</td> <td></td> <td></td> <td></td> <td>2180</td> <td>10</td> <td>1.578</td> <td>35</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>880</td> <td>max</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>P4</td> <td>16</td> <td>C</td> <td>400</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>400</td> <td>20</td> <td>1.578</td> <td>13</td> </tr> <tr> <td>P5</td> <td>16</td> <td>E</td> <td>100</td> <td>220</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>460</td> <td>20</td> <td>1.578</td> <td>15</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>500</td> <td>max</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="12"></td> <td align="right">TOTAL WEIGHT =</td> <td>94.0</td> </tr> </tbody> </table> <p>THE REINFORCEMENT SHOWN ON THIS TABLE IS FOR REFERENCE ONLY. THE CONTRACTOR SHOULD CHECKED AND VERIFY ALL DIMENSIONS, SIZES AND QUANTITIES OF REINFORCEMENT.</p>											LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION(mm) OUT TO OUT						LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (kg)	a	b	c	d	e	f	LIGHT POST	P1a	16	A	560	1200						2960	1	1.578	5	P1b	16	B	560	850	240					2740	2	1.578	8	P2a	16	C	1000	min						1000	4	1.578	7	P2b			1440							1440	4	1.578	10	P3	16	D	615	580	600	240				2180	10	1.578	35						880	max								P4	16	C	400							400	20	1.578	13	P5	16	E	100	220						460	20	1.578	15						500	max																				TOTAL WEIGHT =	94.0
LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION(mm) OUT TO OUT						LENGTH (mm)					NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (kg)																																																																																																																																																										
				a	b	c	d	e	f																																																																																																																																																																		
LIGHT POST	P1a	16	A	560	1200						2960	1	1.578	5																																																																																																																																																													
	P1b	16	B	560	850	240					2740	2	1.578	8																																																																																																																																																													
	P2a	16	C	1000	min						1000	4	1.578	7																																																																																																																																																													
	P2b			1440							1440	4	1.578	10																																																																																																																																																													
	P3	16	D	615	580	600	240				2180	10	1.578	35																																																																																																																																																													
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	P4	16	C	400							400	20	1.578	13																																																																																																																																																													
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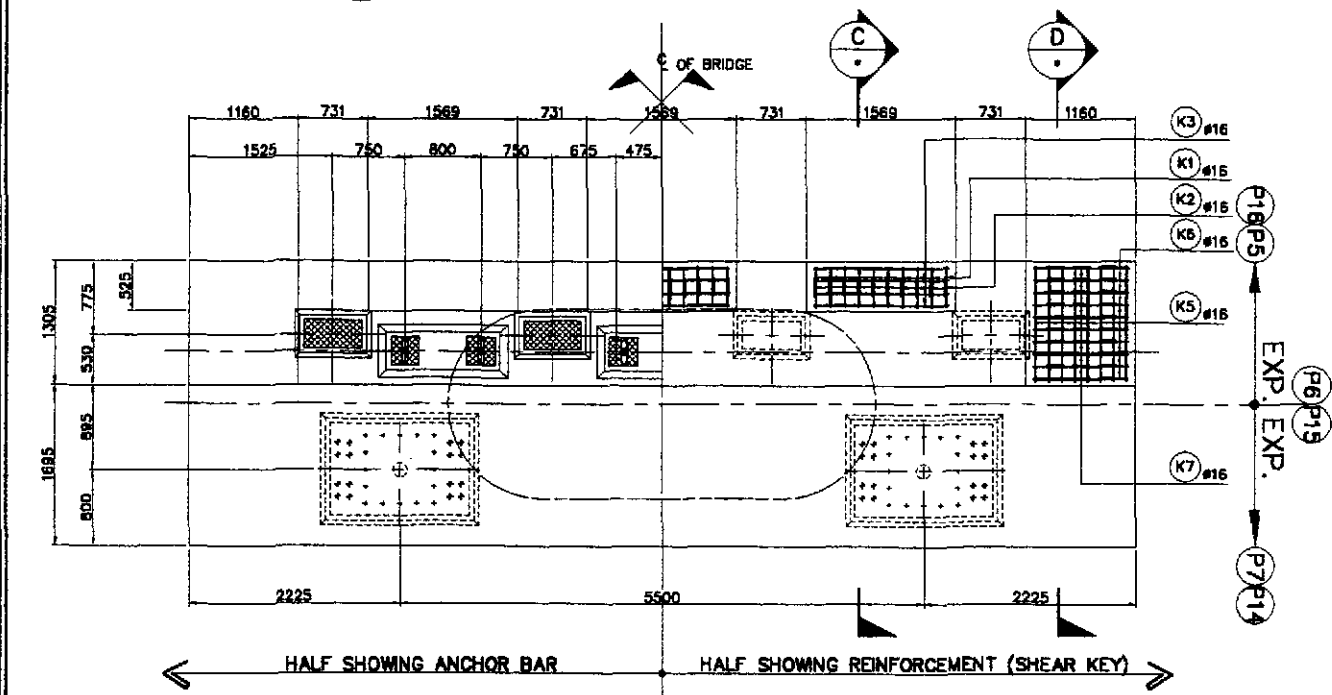
	DESIGNED	DATE	SIGNATURE	<p align="center">REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/17/02	F. M. SALAS		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)		AS SHOWN	BRIDGE NO. 10 PAMPANGA RIVER BRIDGE LIGHT POST BASE REINFORCEMENT DETAIL (INITIAL STAGE)	B10M-89
	SUBMITTED	10/19/02	J. E. SANTOS		CABANATUAN BYPASS - CONTRACT PACKAGE III		FULL SIZE A1		
	<p align="center">BUREAU OF DESIGN</p> <p>Submitted By: DANILLO C. TRAJANO, Project Director</p> <p>Reviewed By: ADRIANO M. DORAY, Chief, Bridge Division</p> <p>Recommended By: GILBERTO S. REYES, Director IV (OC)</p> <p>Recommended By: MANUEL M. BONDAN, Undersecretary</p> <p>Approved By: SIMEON A. DATUMANONG, Secretary</p>				<p align="center">OFFICE OF THE SECRETARY</p> <p>(See cover sheet for Signature/Approval)</p>				





← HALF SHOWING ANCHOR BAR      HALF SHOWING REINFORCEMENT (SHEAR KEY) →

**B ELEVATION @ AASHTO GIRDER SIDE**  
SCALE 1:40



← HALF SHOWING ANCHOR BAR      HALF SHOWING REINFORCEMENT (SHEAR KEY) →

**A PLAN**  
SCALE 1:40

**BAR BENDING DIAGRAM**

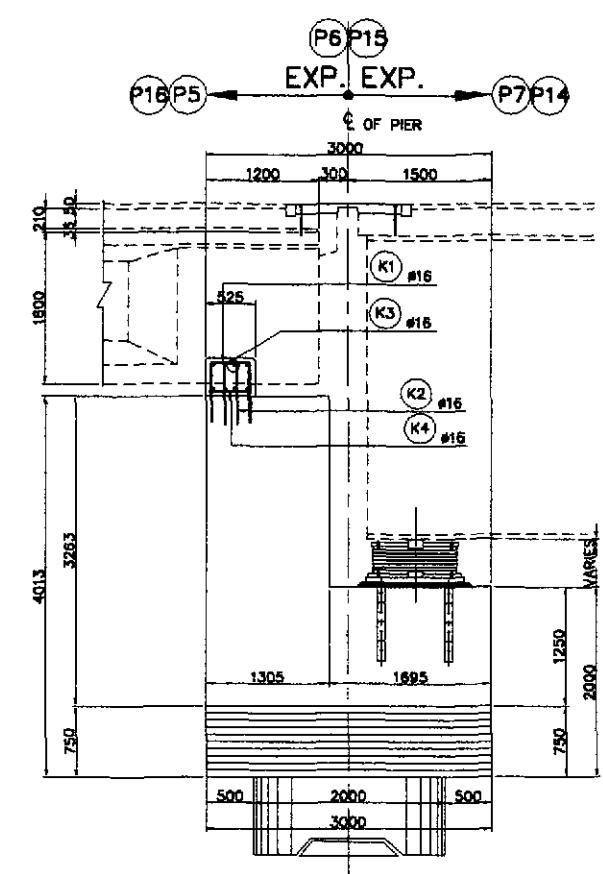
(A)

(B)

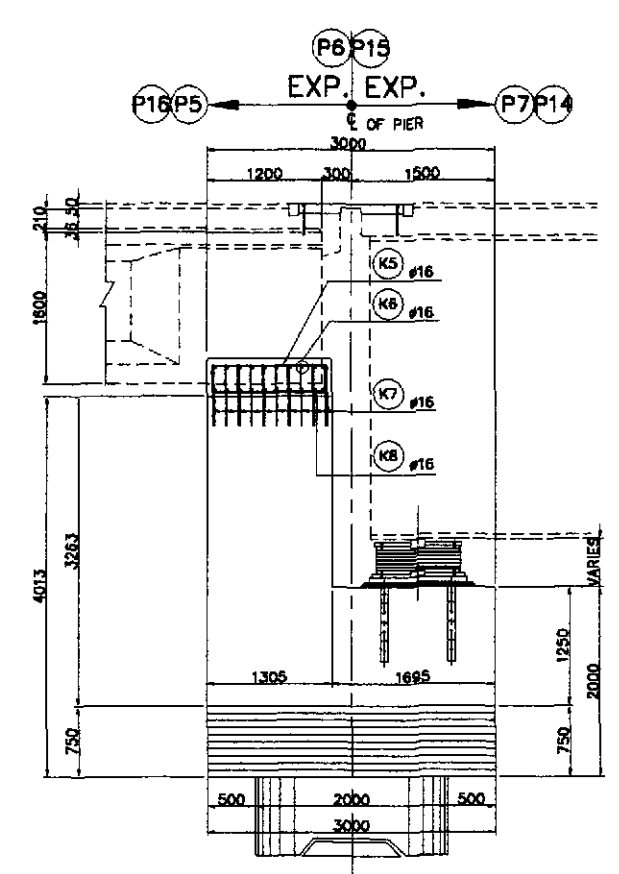
**SCHEDULE OF REINFORCEMENT**

LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION (mm) OUT TO OUT					LENGTH (mm)	NO. REFD.	UNIT WEIGHT (kg/m)	WEIGHT (kgs.)	
				a	b	c	d	e				Grade 40	Grade 60
SHEAR KEY PIER P6 & P15 (EXP.-EXP.)	K1	16	A	660	595				1915	30	1.578	90.66	
	K2	16	A	660	200				1520	30	1.578	71.96	
	K3	16	A	660	1490				2810	12	1.578	53.21	
	K4	16	B	1490					1490	12	1.578	28.21	
	K5	16	A	660	1300				2620	16	1.578	66.15	
	K6	16	A	660	1080				2400	20	1.578	75.74	
	K7	16	A	660	165				1485	60	1.578	140.60	
	K8	16	B	1080					1080	60	1.578	102.25	
TOTAL WEIGHT PER PIER =												828.78	
TOTAL WEIGHT FOR (2) PIERS =												1257.57	

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



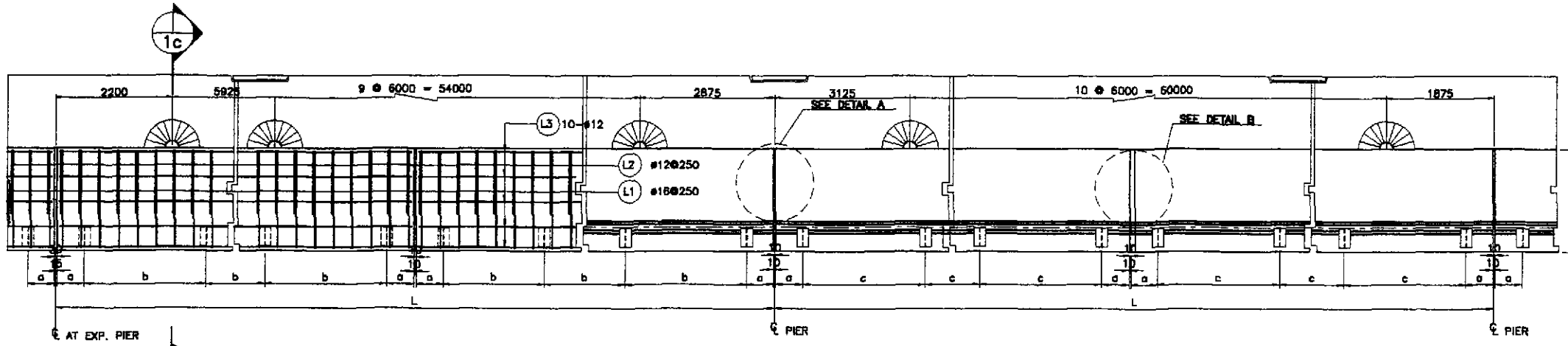
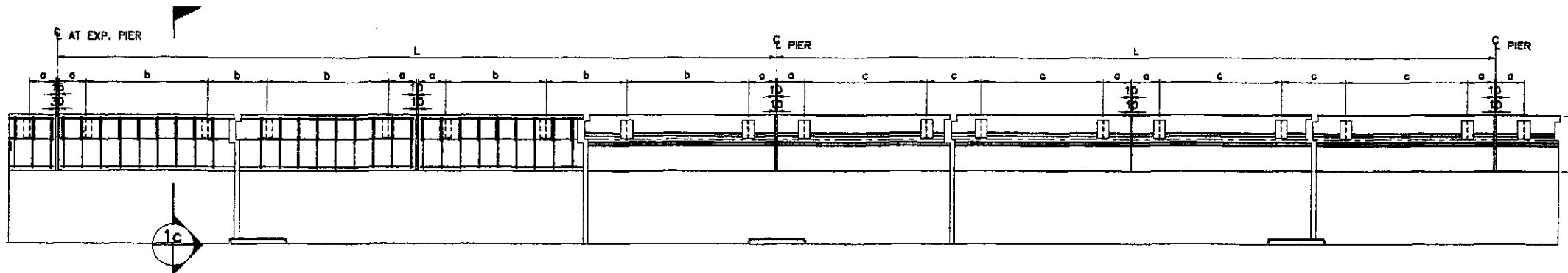
**C SECTION**  
SCALE 1:40



**D SECTION**  
SCALE 1:40

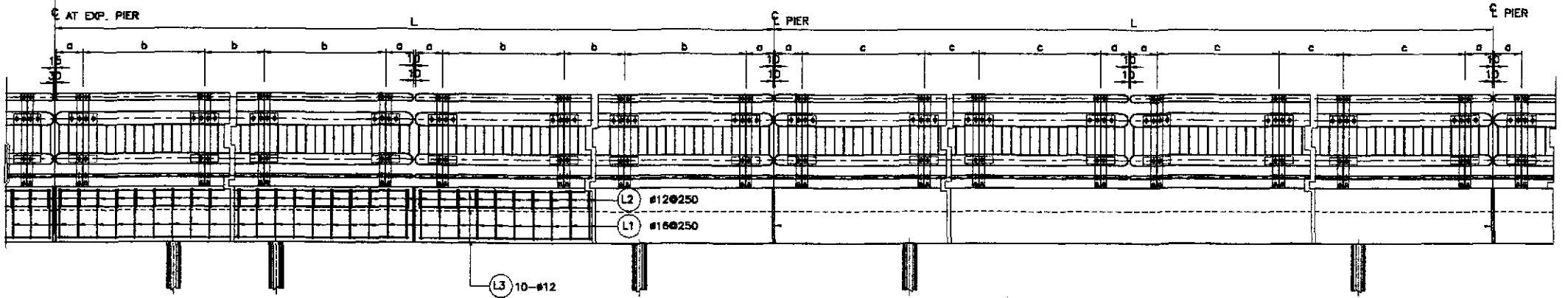
**1 DETAIL OF SHEAR KEY AND ANCHOR BAR (PIER 6 & PIER 15)**  
SCALE AS SHOWN

	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	10/17/02	<i>[Signature]</i>		<p>Submitted By: <i>[Signature]</i></p> <p>Reviewed By: <i>[Signature]</i></p> <p>Recommended By: <i>[Signature]</i></p> <p>Approved By: <i>[Signature]</i></p>	<p>THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)</p>	AS SHOWN	<p>BRIDGE NO. 10 PAMPANGA RIVER BRIDGE DETAIL OF SHEAR KEY &amp; ANCHOR BAR (PIER 6 &amp; PIER 15) (INITIAL STAGE)</p>	B10M-90
	SUBMITTED	10/19/02	<i>[Signature]</i>		<p>Submitted By: <i>[Signature]</i></p> <p>Reviewed By: <i>[Signature]</i></p> <p>Recommended By: <i>[Signature]</i></p> <p>Approved By: <i>[Signature]</i></p>	<p>CABANATUAN BYPASS - CONTRACT PACKAGE III</p>	FULL SIZE A1		



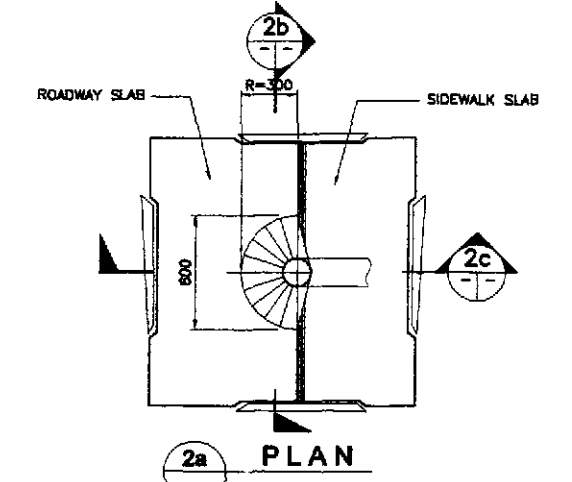
1a PLAN  
NOT TO SCALE

SCHEDULE OF RAILING					
SPAN LENGTH (m)	NO. OF EXP. JT. INSIDE SPAN	NO. OF RAIL POST PER SPAN	a (mm)	b (mm)	c (mm)
65.000	5	66	407	2000	2000

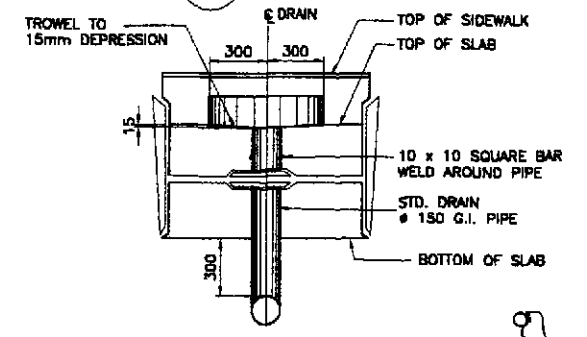


1b ELEVATION  
NOT TO SCALE

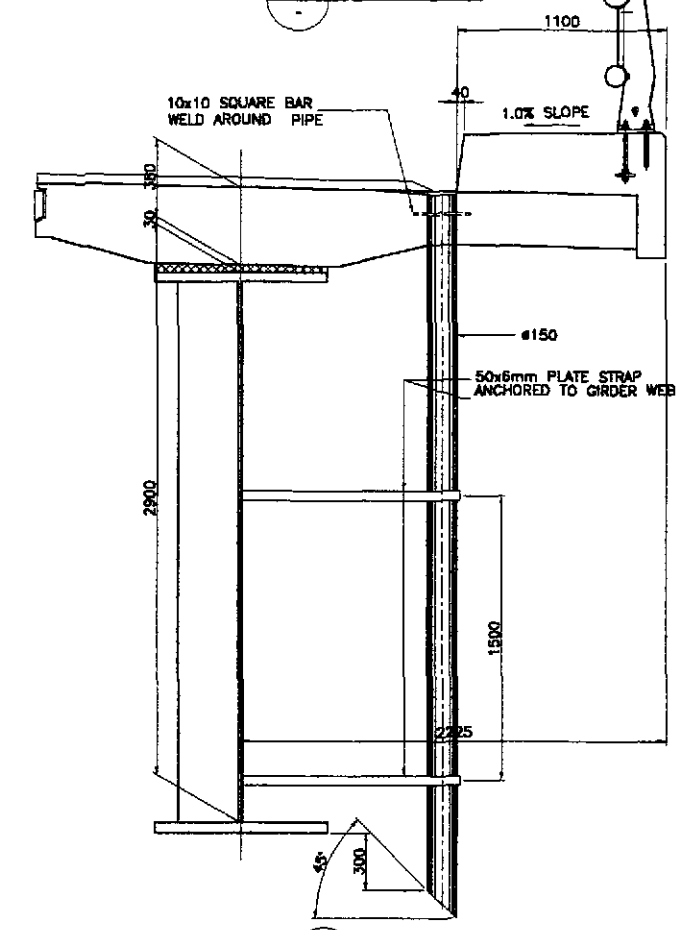
1 TYPICAL SIDEWALK, RAILING AND DRAIN DETAILS - 1 of 2  
SCALE AS SHOWN



2a PLAN



2b SECTION



2c SECTION

2 TYPICAL DRAIN DETAILS  
SCALE 1:20

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

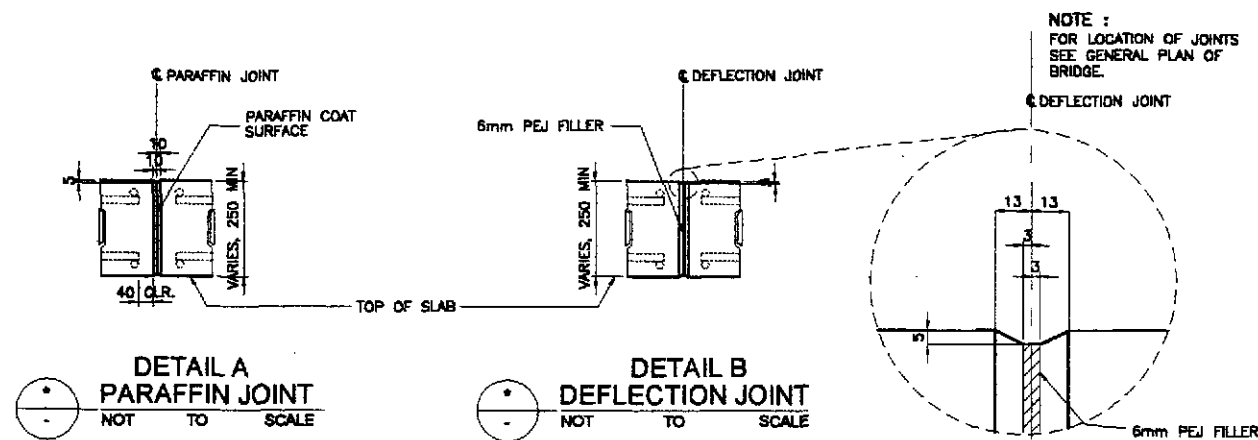
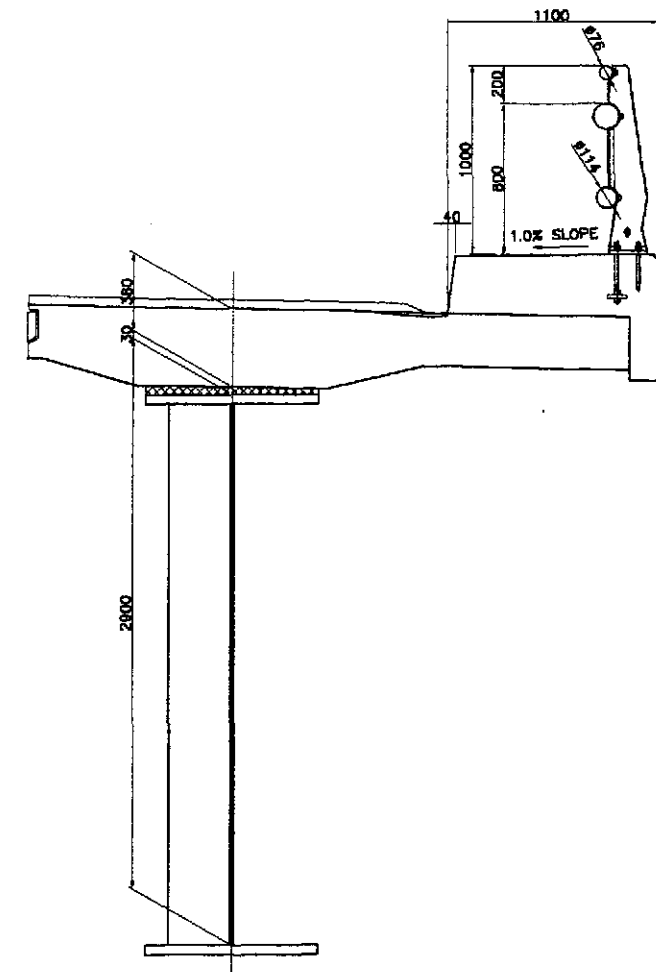
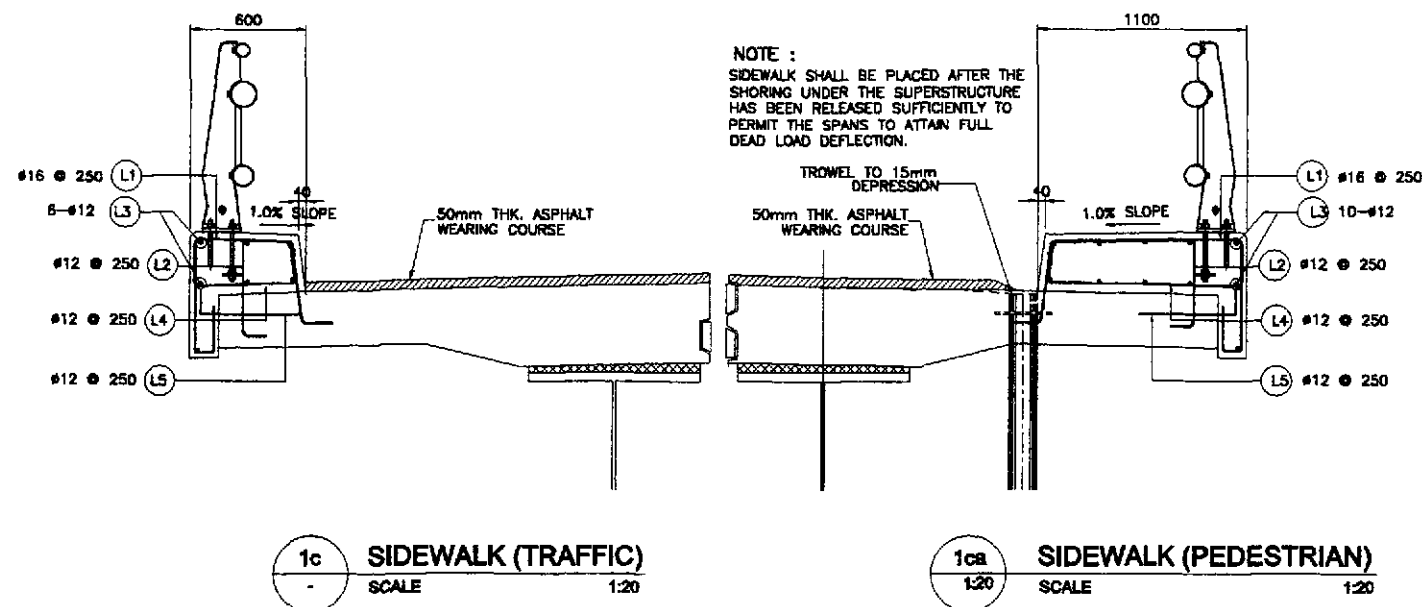
REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS  
BUREAU OF DESIGN  
OFFICE OF THE SECRETARY  
DESIGNED: 10/17/02  
CHECKED: 10/17/02  
SUBMITTED: 10/17/02  
DATE: 10/17/02  
SIGNATURE: F. M. SALAS  
F. M. SALAS  
M. RUCHA  
TEAM LEADER  
SUBMITTED BY: DANILLO C. TRAJANO  
Project Director  
REVIEWED BY: ADRIANO M. DORJOY  
Chief, Bridge Division  
RECOMMENDED BY: GILBERTO S. REYES  
Director (CIC)  
MANUEL M. BONGAN  
Undersecretary  
SIMEON A. DATUMANONG  
Secretary

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

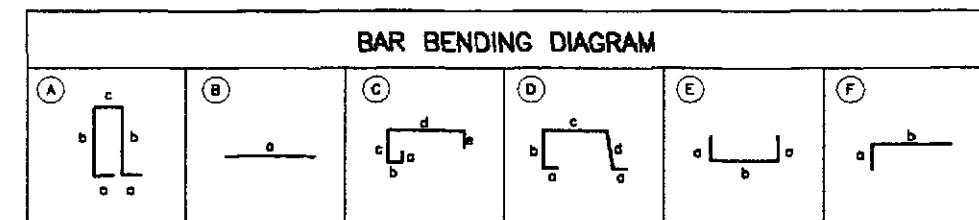
SCALE :  
AS SHOWN  
FULL SIZE A1

SHEET CONTENTS :  
BRIDGE NO. 10 PAMPANGA RIVER BRIDGE  
TYPICAL SIDEWALK, RAILING AND  
DRAIN DETAILS - 1 of 2  
(INITIAL STAGE)

SHEET NO. :  
B10M-91



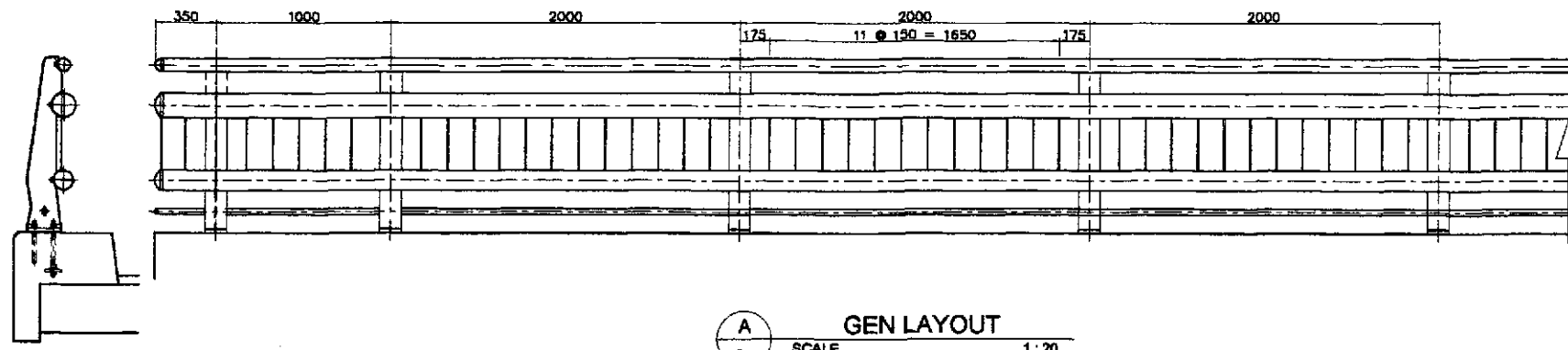
1 TYPICAL SIDEWALK, RAILING & DRAIN DETAIL - 2 of 2 SCALE AS SHOWN



SCHEDULE OF REINFORCEMENT													
LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION (mm) OUT TO OUT					LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (kgs.)	
				a	b	c	d	e				Grade 40	Grade 60
SIDEWALK (PEDESTRIAN)	L1	16	B	100	70	450	880	260	1850	261	1.579	767	
	L2	12	C	200	375	700	375		1850	261	0.888	429	
	L3	12	A	64950					64950	11	0.888	635	
	L4	12	D	200	880				1380	261	0.888	320	
	L5	12	E	200	400				600	261	0.888	140	
											TOTAL WEIGHT (1 SPANS) = 2, 281 Kgs.		
											TOTAL WEIGHT (9 SPANS) = 20, 619 Kgs.		
SIDEWALK (TRAFFIC)	L1	16	B	100	70	450	480	260	1360	261	1.579	561	
	L2	12	C	200	375	200	375		1350	261	0.888	313	
	L3	12	A	64950					64950	7	0.888	404	
	L4	12	D	200	480				880	261	0.888	204	
	L5	12	E	200	400				600	261	0.888	140	
											TOTAL WEIGHT (1 SPANS) = 1, 822 Kgs.		
											TOTAL WEIGHT (9 SPANS) = 14, 588 Kgs.		

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

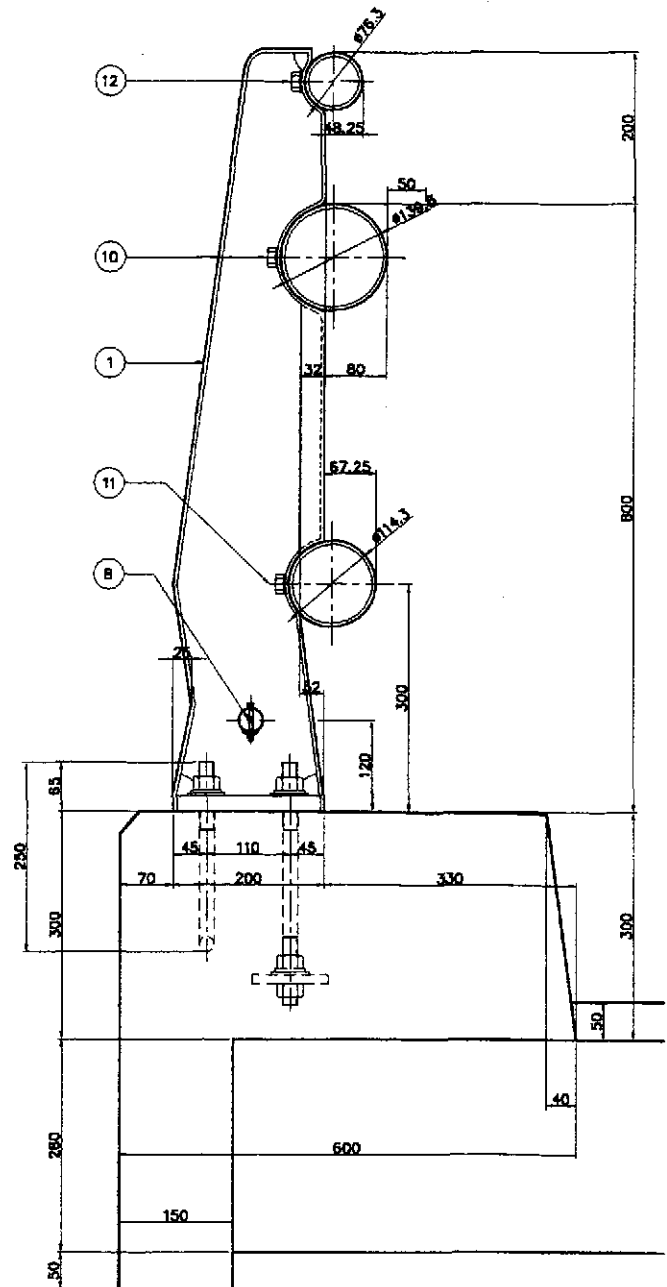
	DESIGNED	DATE	SIGNATURE	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/17/02	F. M. SLAS		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)		AS SHOWN	BRIDGE NO. 10 PAMPANGA RIVER BRIDGE TYPICAL SIDEWALK, RAILING AND DRAIN DETAILS - 2 of 2 (INITIAL STAGE)	B10M-92
	SUBMITTED	10/19/02	J. C. SANTOS		CABANATUAN BYPASS - CONTRACT PACKAGE III		FULL SIZE A1		
Submitted By: DANIEL G. TRAJANO, Project Director Reviewed By: ADRIANO M. DORON, Chief, Bridges Division Recommended By: GILBERTO S. REYES, Director IV (D/C) Recommended By: MANUEL M. BONGAN, Undersecretary Approved By: SINEON A. DATUMANONG, Secretary									



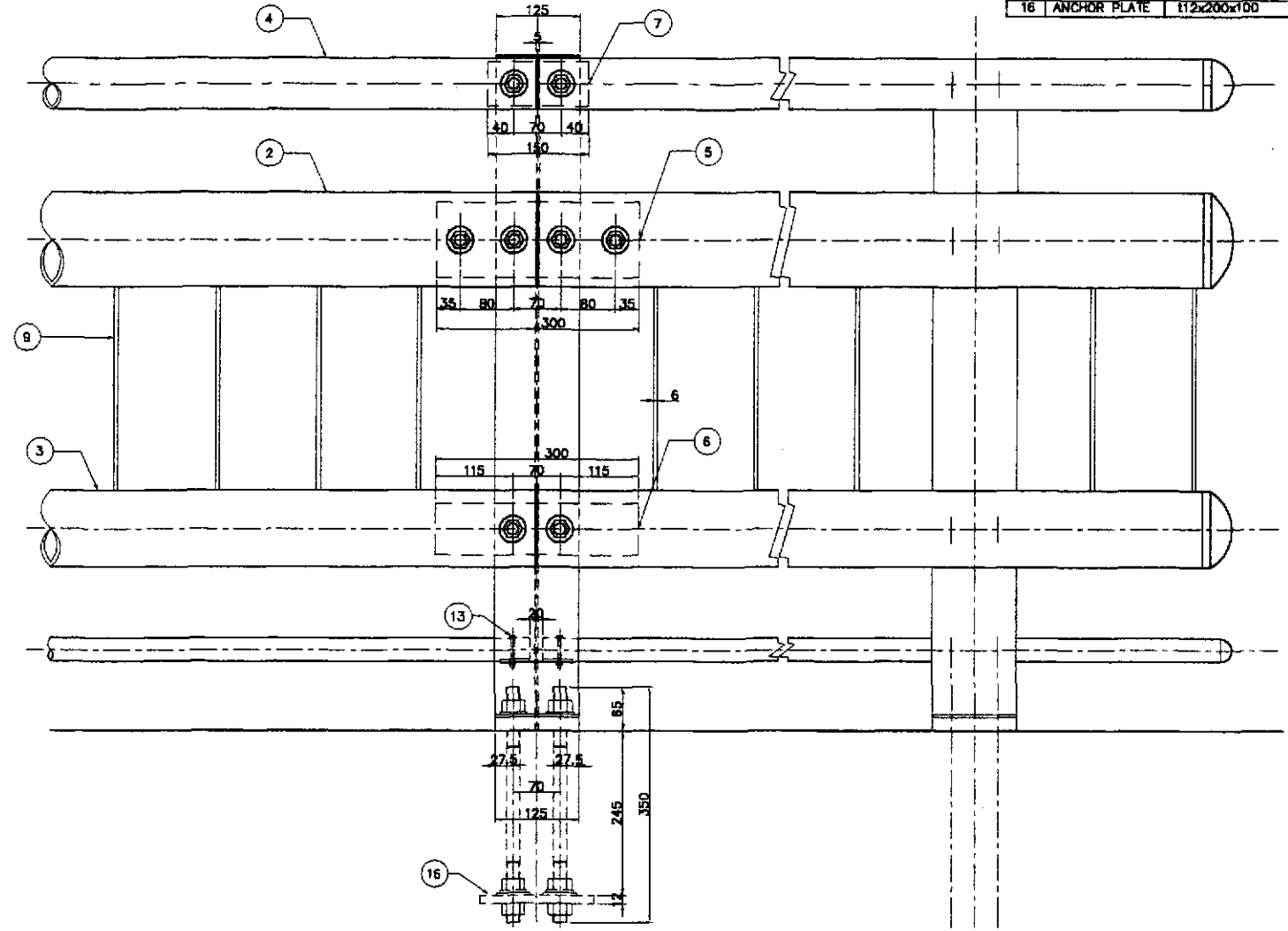
**A GEN LAYOUT**  
SCALE 1:20

**MATERIALS (FOR 20.35m LONG)**

MEMBER	SIZE	SPECIFICATION	UNIT WEIGHT	QTY	WEIGHT	
1	POST	1000x200x125x18	SS400	21.09 Kg/m	11	232.0
2	TOP RAIL	ø139.8x16	STK400	18.80 Kg/m	20.35m	402.9
3	BOTTOM RAIL	ø114.3x18	STK400	8.56 Kg/m	20.35m	194.5
4	UPPER RAIL	ø76.3x12.8	STK400	5.08 Kg/m	20.35m	103.4
5	TOP SLEEVE	ø120x7x300	STK400	5.85 Kg/□	10 □	58.5
6	BOTTOM SLEEVE	ø101.6x4.6x300	STK400	3.23 Kg/□	10 □	32.3
7	UPPER SLEEVE	ø85x3.5x150	STK400	0.60 Kg/□	10 □	8.0
8	BOTTOM RAIL	ø34x12.3	STK400	1.80 Kg/m	20.13m	36.2
9	BALLUSTER	32x18x329	SS400	0.50 Kg/	121	60.5
10	BOLT	M16x40	SS400	0.12 Kg/	42	5.0
11	BOLT	M16x40	SS400	0.12 Kg/	22	2.6
12	BOLT	M12x40	SS400	0.06 Kg/	22	1.3
13	BOLT	M8x60	SS400	0.04 Kg/	22	0.9
14	ANCHOR BOLT	M20x250x100	SS400	0.92 Kg/	22	20.2
15	ANCHOR BOLT	M20x350	SS400	1.12 Kg/	22	24.6
16	ANCHOR PLATE	112x200x100	SS400	1.88 Kg/□	11 □	20.7
				1189.5 Kg/	58.5kgf/m	



**B SECTION**  
SCALE 1:5

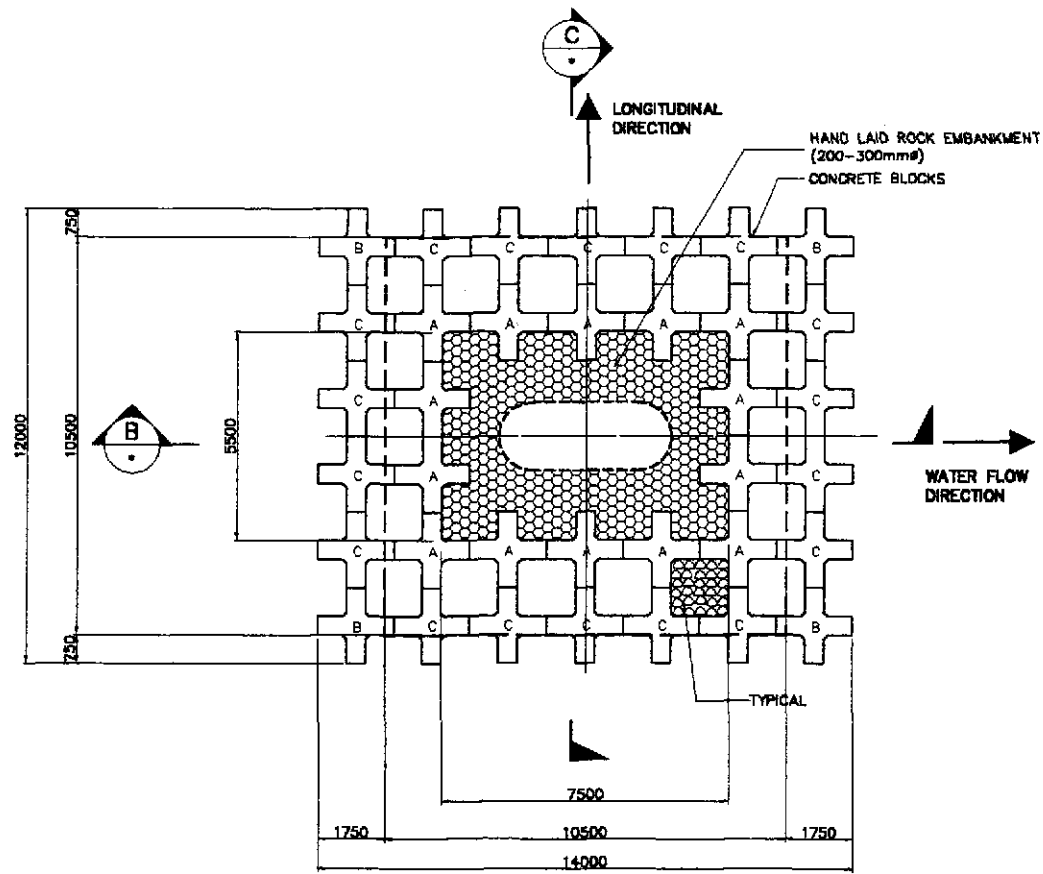


**C ELEVATION DETAILS**  
SCALE 1:5

**1 DETAILS OF RAILING**  
SCALE AS SHOWN

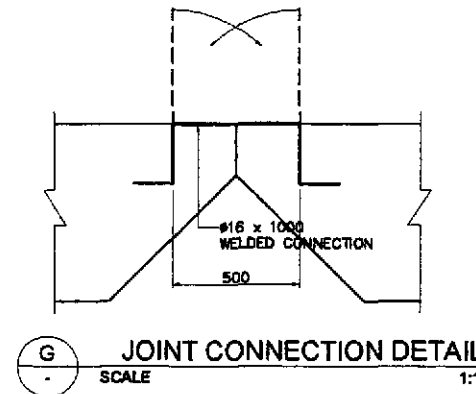
**SURFACE PROTECTION**  
GALVANIZED COATING  
- GALVANIZATION HDZ55 (STANDARD)  
- FOR t<3.0mm USE HDZ40

	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/17/02	F. M. SALAS		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pinaridel, Cabanatuan and San Jose Bypasses)			AS SHOWN	BRIDGE NO. 10 PAMPANGA RIVER BRIDGE DETAILS OF RAILING	B10M-93
	SUBMITTED	10/19/02	Mr. [Signature]		CABANATUAN BYPASS - CONTRACT PACKAGE III			FULL SIZE A1	(INITIAL STAGE)	
Submitted By:		Reviewed By:		Recommended By:		Approved By:				
DANILO C. TRAMAHO Project Director		ADRIANO M. DOROY Chief, Bridge Division		GILBERTO S. REYES Director IV (DC)		MANUEL M. BONGAN Undersecretary		SIMEON A. DATUMAHONG Secretary		

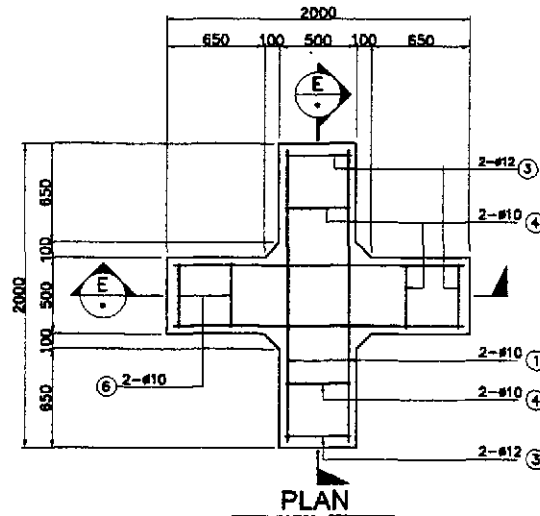


**A PLAN SHOWING CONCRETE BLOCK ARRANGEMENT**  
SCALE 1:100

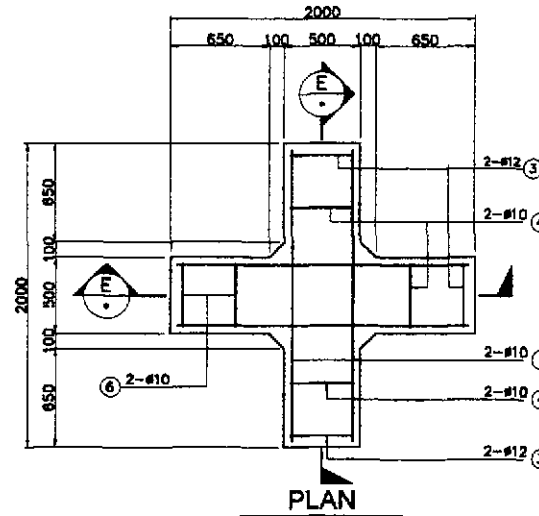
PIER NO.	ELEVATION	
	ELEV 1	ELEV 2
P9	25.087	22.587
P10	25.121	22.621
P11	25.196	22.696
P12	25.121	22.621
P13	25.087	22.587



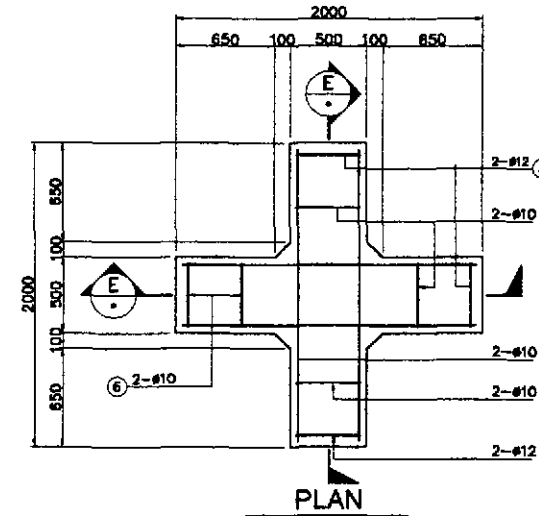
**G JOINT CONNECTION DETAIL**  
SCALE 1:15



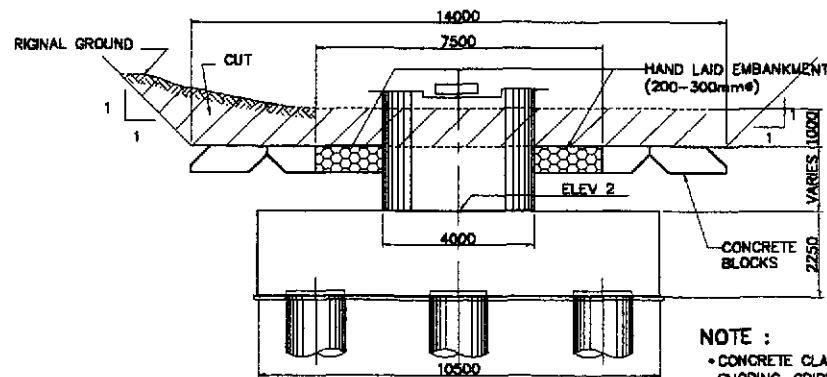
**PLAN**



**PLAN**

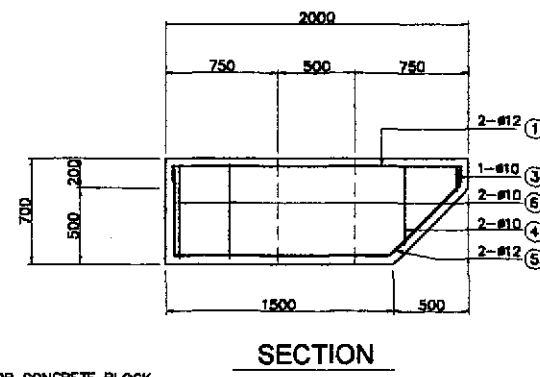


**PLAN**

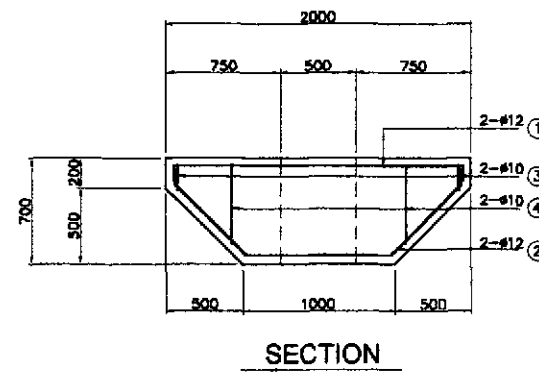


**B SECTION**  
SCALE 1:100

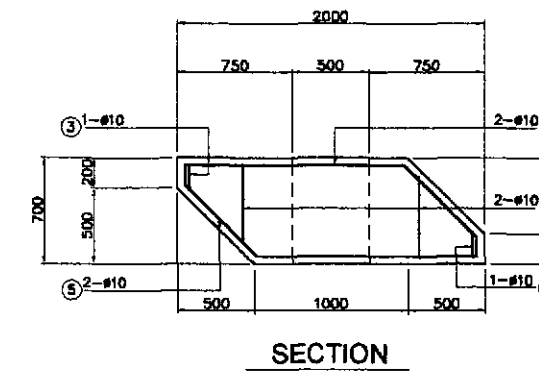
**NOTE :**  
 • CONCRETE CLASS "B" FOR CONCRETE BLOCKS.  
 • SHORING, CRIBBING & RELATED WORK REQUIRED FOR CONCRETE BLOCK SETTING & HAND LAID EMBANKMENT AS SPECIFIED IN THIS DRAWING WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED AS A SUBSIDIARY OBLIGATION OF THE CONTRACTOR UNDER PAY ITEMS 103(2) RIVERBED EXCAVATION (ADWL) & 103(2) RIVERBED EXCAVATION (BOWL).



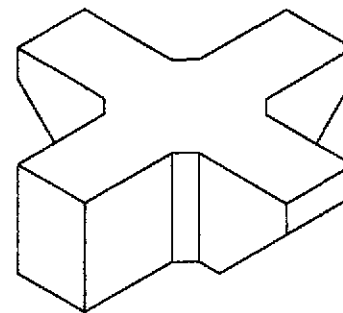
**SECTION**



**SECTION**

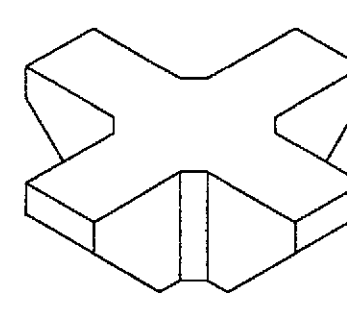


**SECTION**



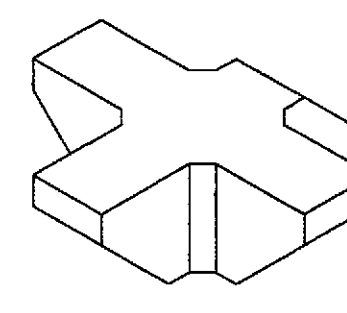
**ISOMETRIC VIEW**

**D TYPE-A CONC. BLOCK**  
SCALE 1:25



**ISOMETRIC VIEW**

**E TYPE-B CONC. BLOCK**  
SCALE 1:25



**ISOMETRIC VIEW**

**F TYPE-C CONC. BLOCK**  
SCALE 1:25

**JICA**  
JAPAN INTERNATIONAL COOPERATION AGENCY

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

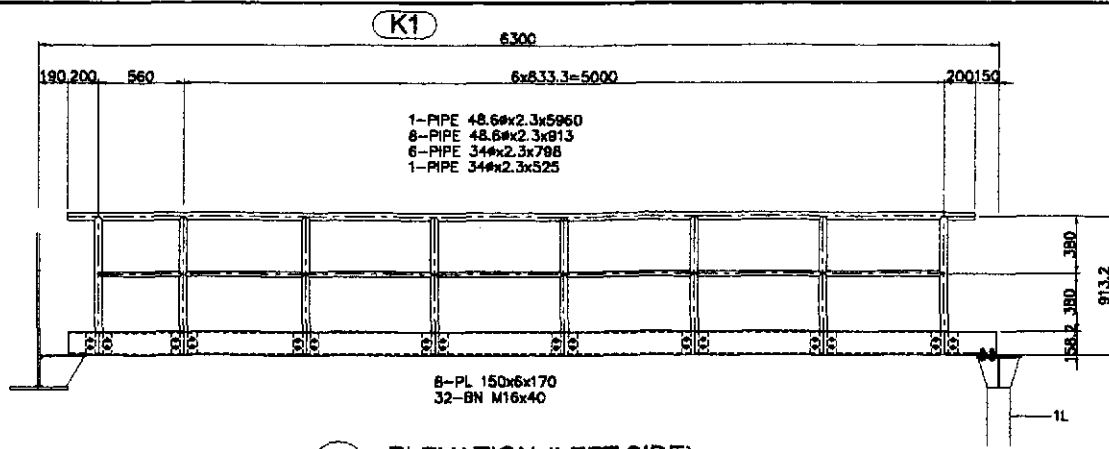
DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			
10/18/02	10/18/02	F. M. SAYS	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
CHECKED	10/17/02	[Signature]	Submitted By:	Reviewed By:	Recommended By:	Approved By:
SUBMITTED	10/19/02	[Signature]	DANILLO C. TRAJANO Project Director	PERFECTO L. ZAPLAN JR. Chief, Hydraulic Division (OC)	GILBERTO S. REYES Director IV (OC)	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  
 (Pinarid, Cabanatuan and San Jose Bypasses)  
 CABANATUAN BYPASS - CONTRACT PACKAGE III

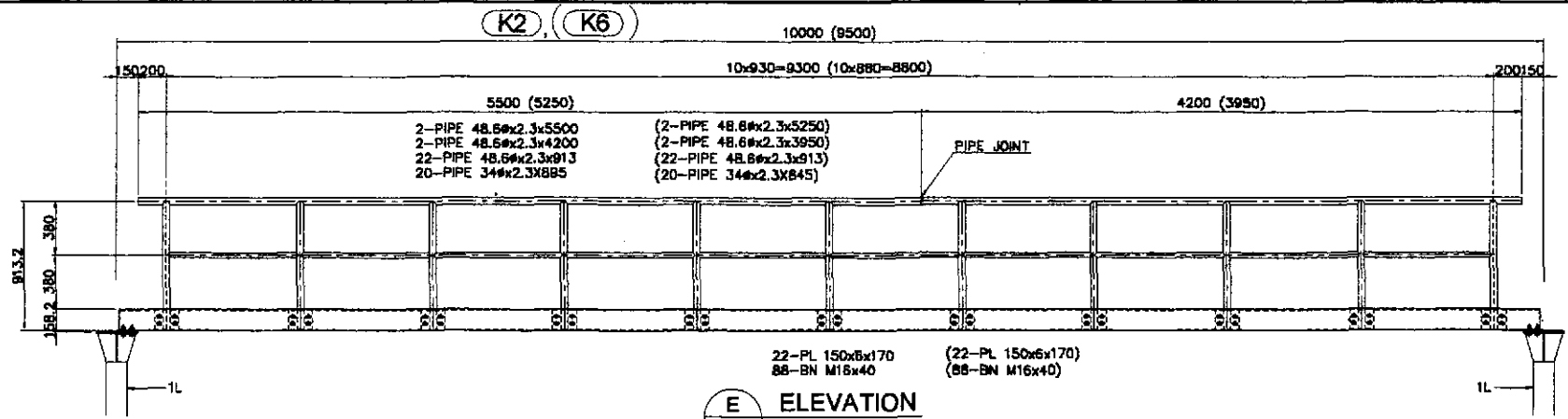
SCALE :  
 AS SHOWN  
 FULL SIZE A1

SHEET CONTENTS :  
 BRIDGE NO. 10 PAMPANGA RIVER BRIDGE  
 DETAILS OF PIER PROTECTION  
 (PIER 9 TO PIER 13)  
 (INITIAL STAGE)

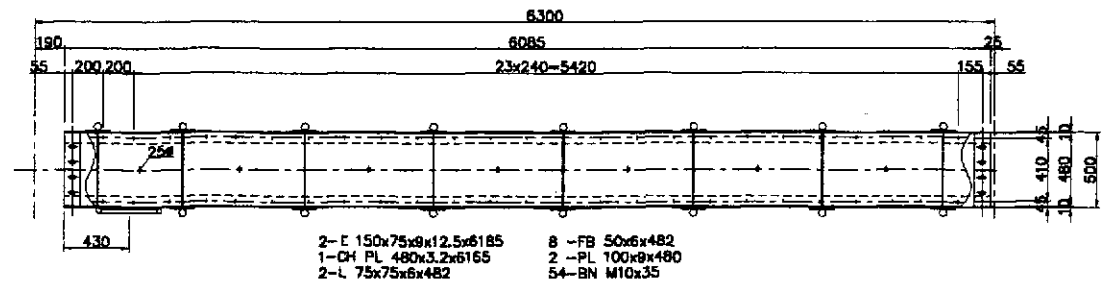
SHEET NO. :  
**B10M-94**



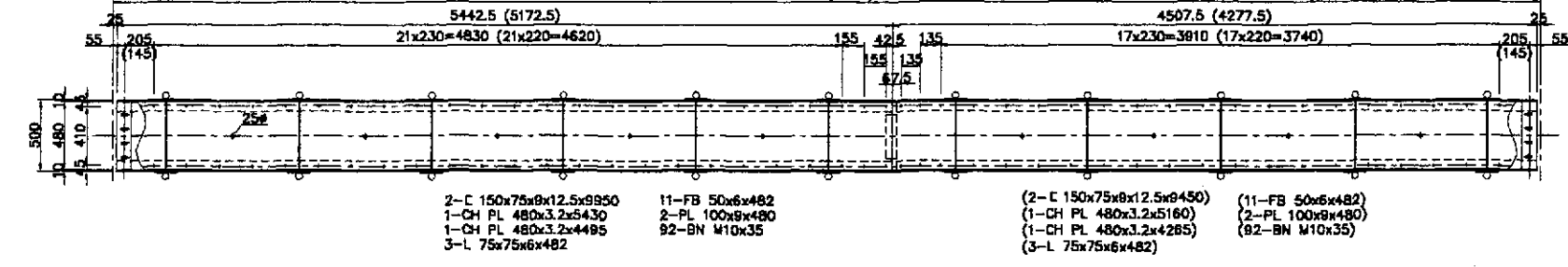
**A** ELEVATION (LEFT SIDE)  
 SCALE 1:25



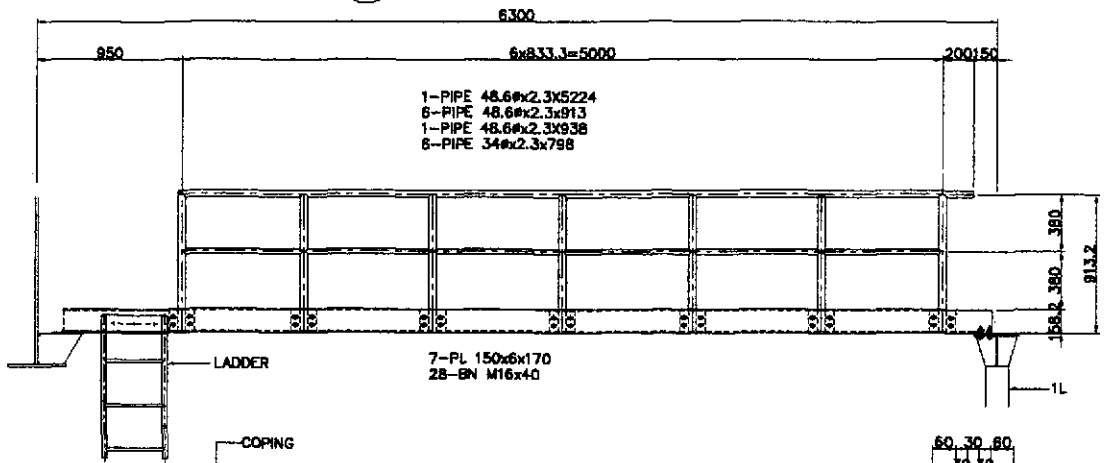
**E** ELEVATION  
 SCALE 1:25



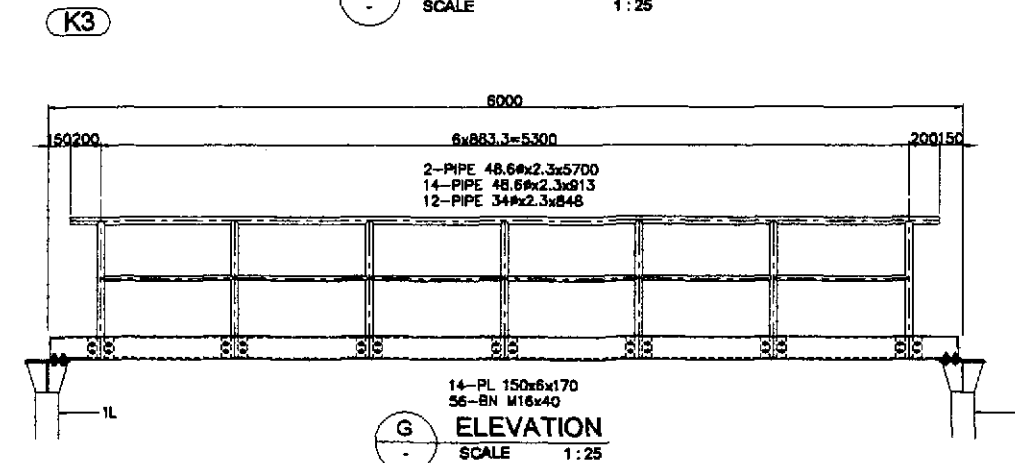
**B** PLAN  
 SCALE 1:25



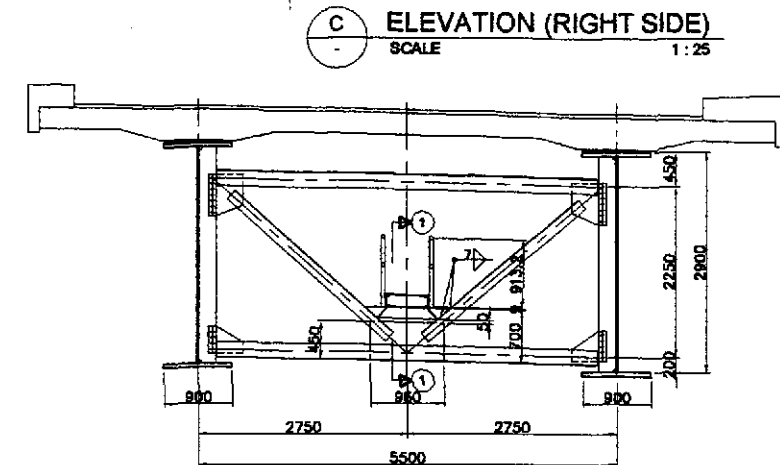
**F** PLAN  
 SCALE 1:25



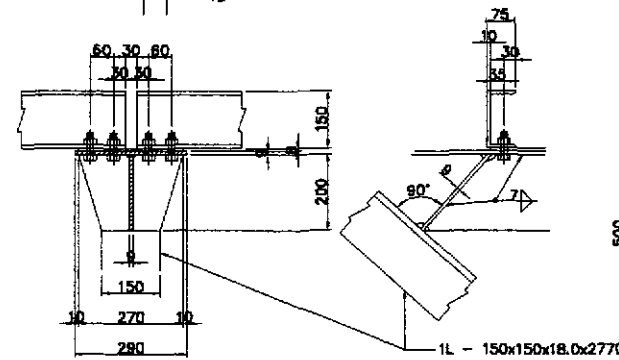
**C** ELEVATION (RIGHT SIDE)  
 SCALE 1:25



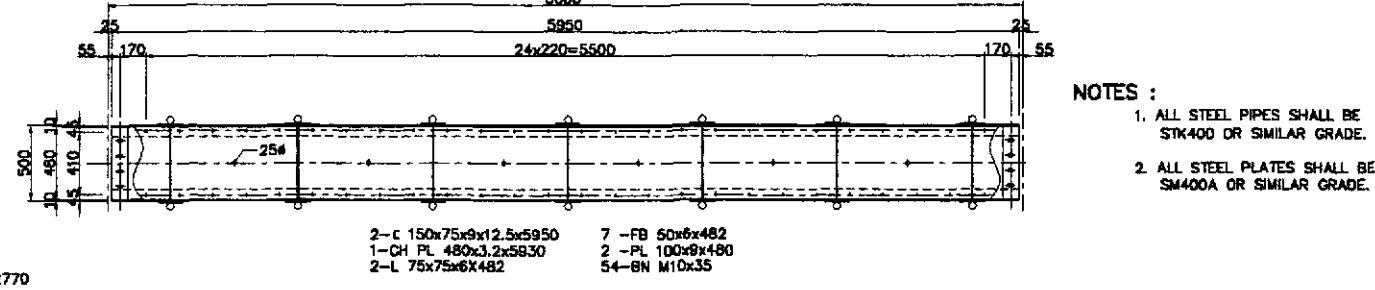
**G** ELEVATION  
 SCALE 1:25



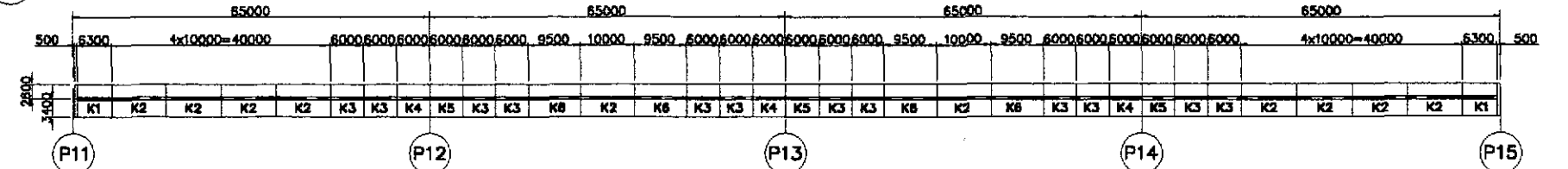
**D** ELEVATION  
 SCALE 1:50



**1** SECTION  
 SCALE 1:10



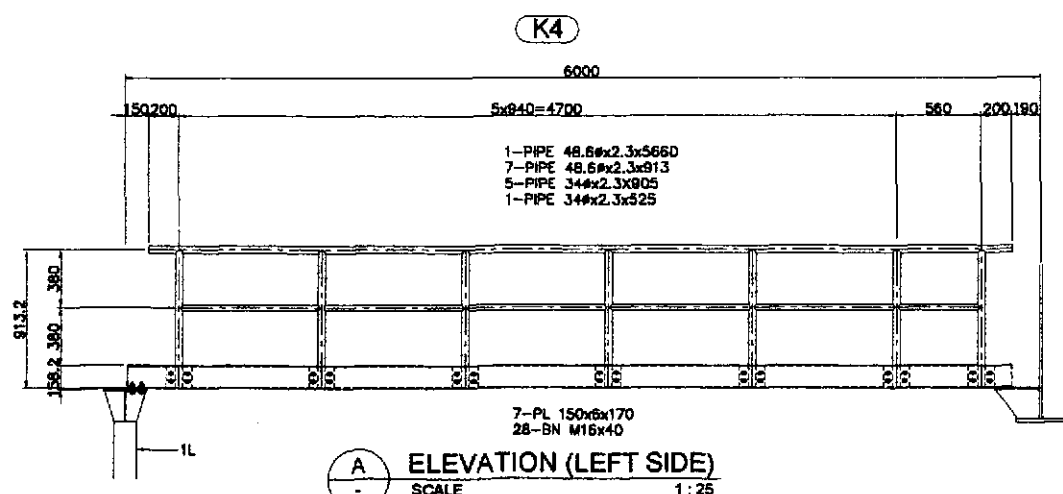
**H** PLAN  
 SCALE 1:25



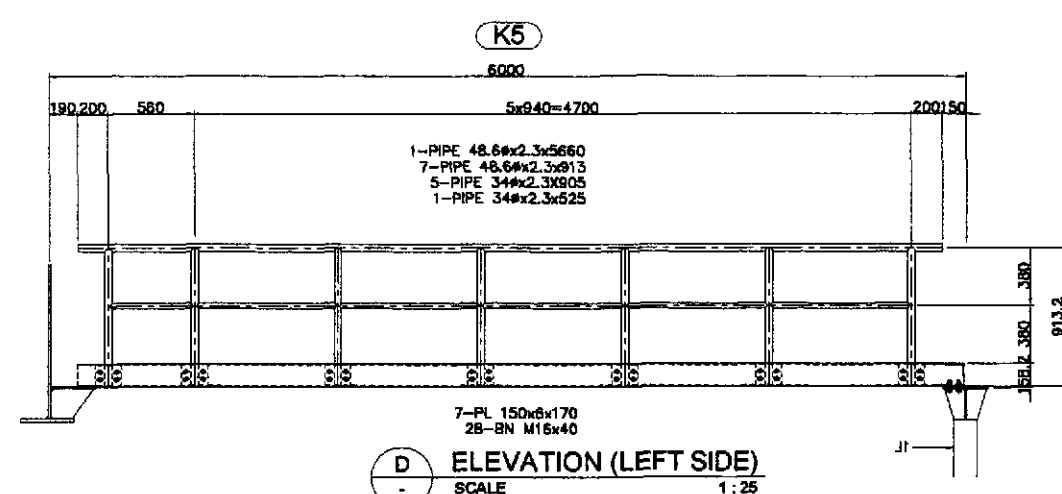
**1** KEY PLAN  
 SCALE 1:800

- NOTES :**
1. ALL STEEL PIPES SHALL BE STK400 OR SIMILAR GRADE.
  2. ALL STEEL PLATES SHALL BE SM400A OR SIMILAR GRADE.

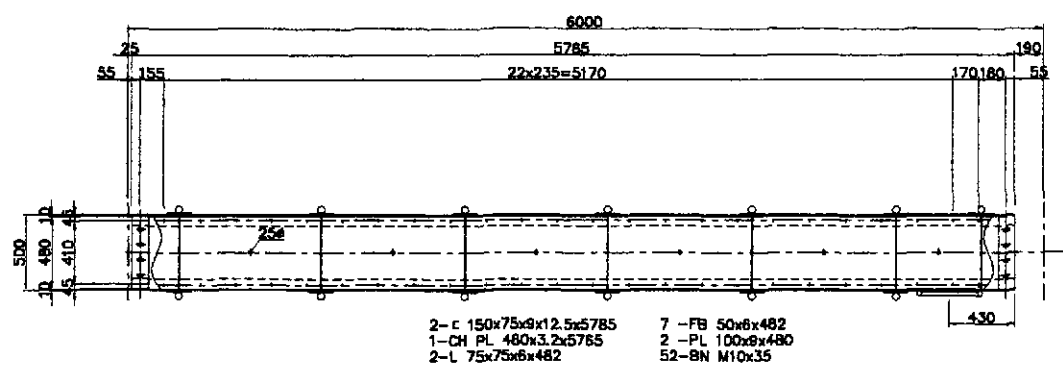
	DESIGNED	DATE	SIGNATURE	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/17/07	<i>F. M. SALAS</i>		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)			AS SHOWN	BRIDGE NO. 10 PAMPANGA RIVER BRIDGE DETAILS OF MAINTENANCE CATWALK - 1 of 3 (INITIAL STAGE)	B10M-95
	SUBMITTED	10/19/07	<i>M. MERCADO</i>		CABANATUAN BYPASS - CONTRACT PACKAGE III			FULL SIZE A1		
			OFFICE OF THE SECRETARY Submitted By: <i>DANILO C. TRAMANO</i> Project Director Reviewed By: <i>ADRIANO M. DOROY</i> Chief, Bridge Division Recommended By: <i>GILBERTO S. REYES</i> Director IV (SC) Approved By: <i>MANUEL M. BONDAN</i> Undersecretary <i>SIMEON A. DATUMANONG</i> Secretary							



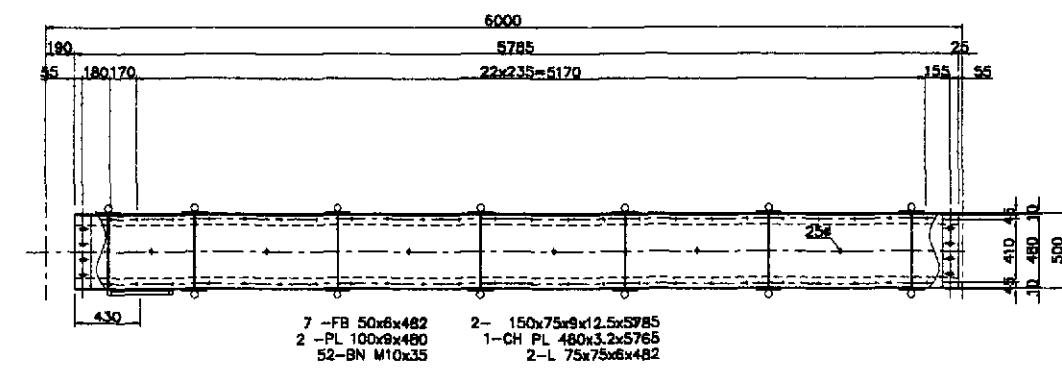
**A** ELEVATION (LEFT SIDE)  
SCALE 1:25



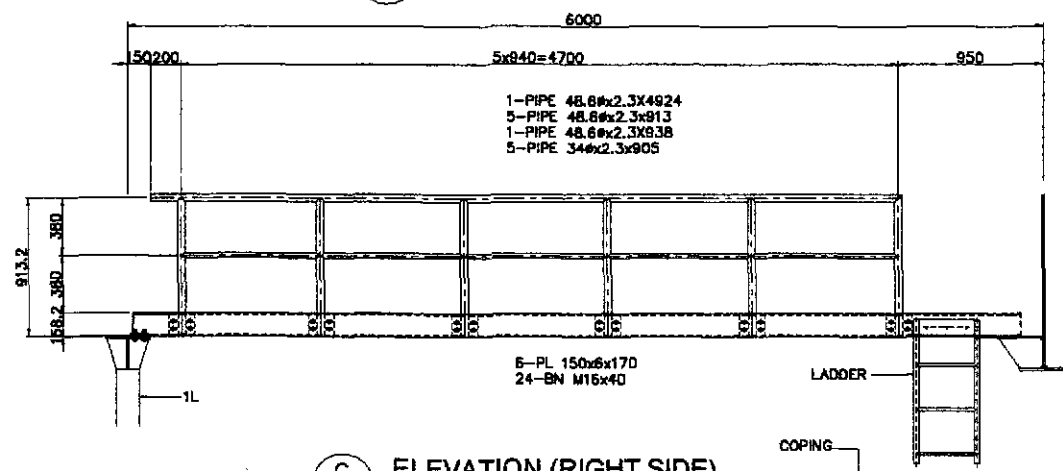
**D** ELEVATION (LEFT SIDE)  
SCALE 1:25



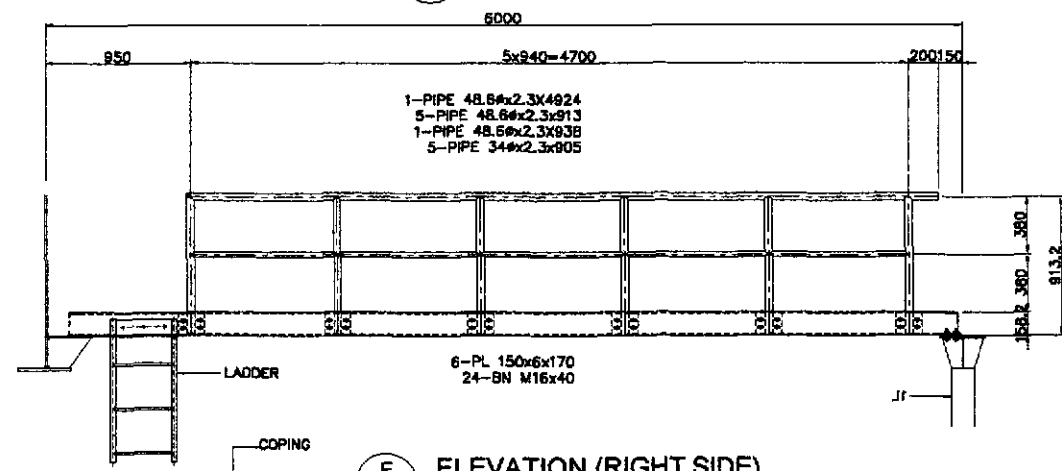
**B** PLAN  
SCALE 1:25



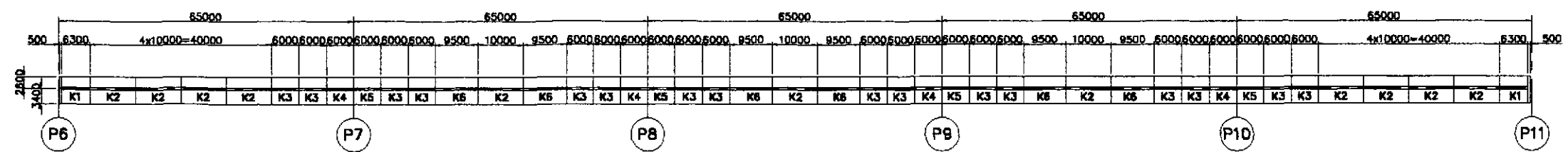
**E** PLAN  
SCALE 1:25



**C** ELEVATION (RIGHT SIDE)  
SCALE 1:25



**F** ELEVATION (RIGHT SIDE)  
SCALE 1:25



**1** KEY PLAN  
SCALE 1:600

**JICA**  
JAPAN INTERNATIONAL COOPERATION AGENCY

**KEI** KATAHIRA & ENGINEERS INTERNATIONAL

**YEO** YACHIYO ENGINEERING CO., LTD.

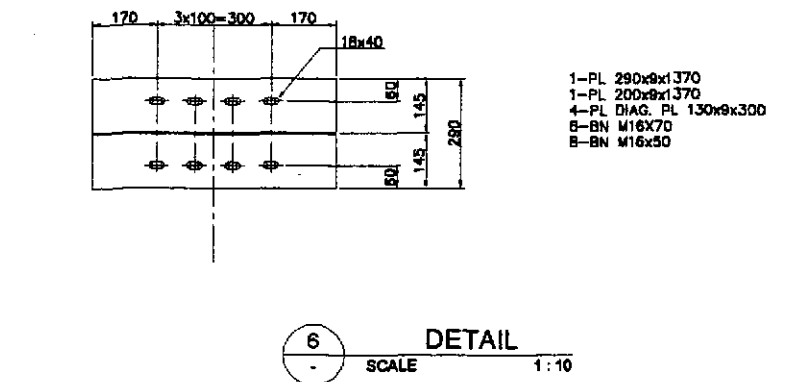
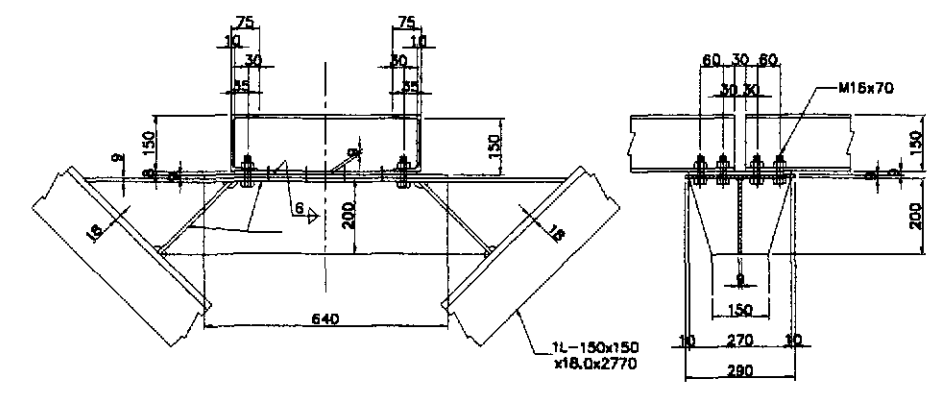
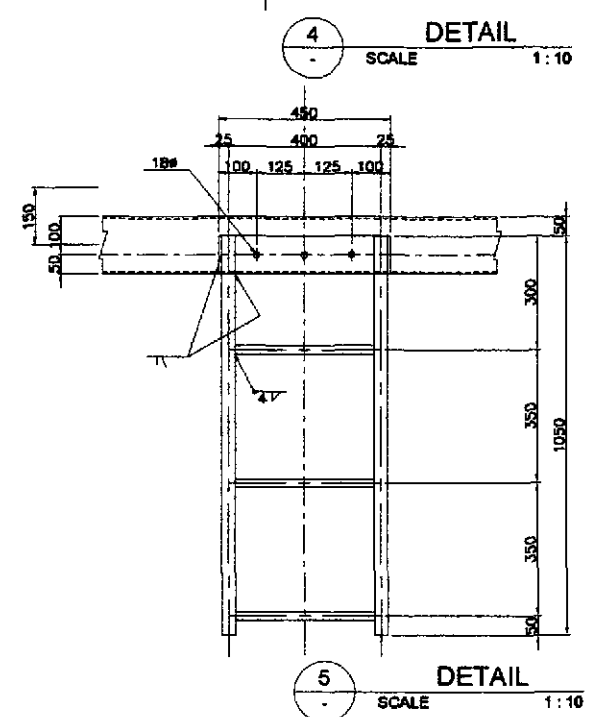
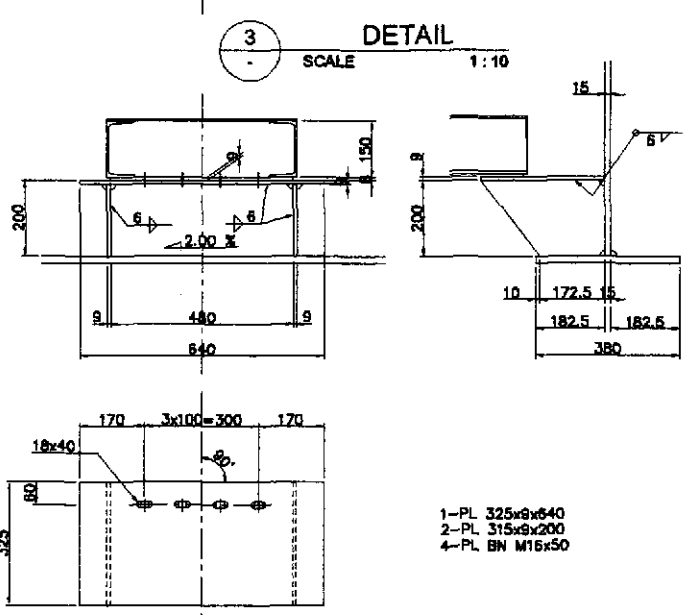
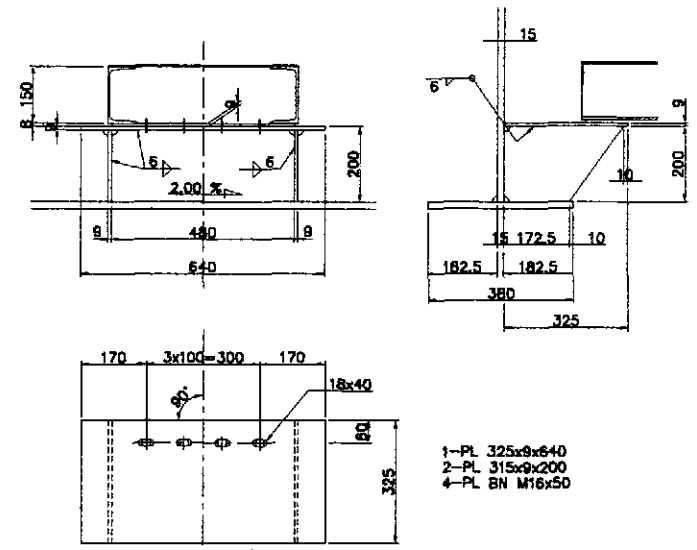
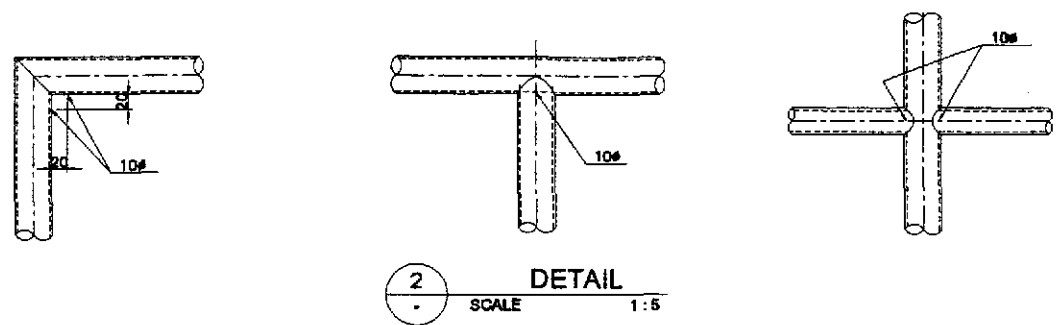
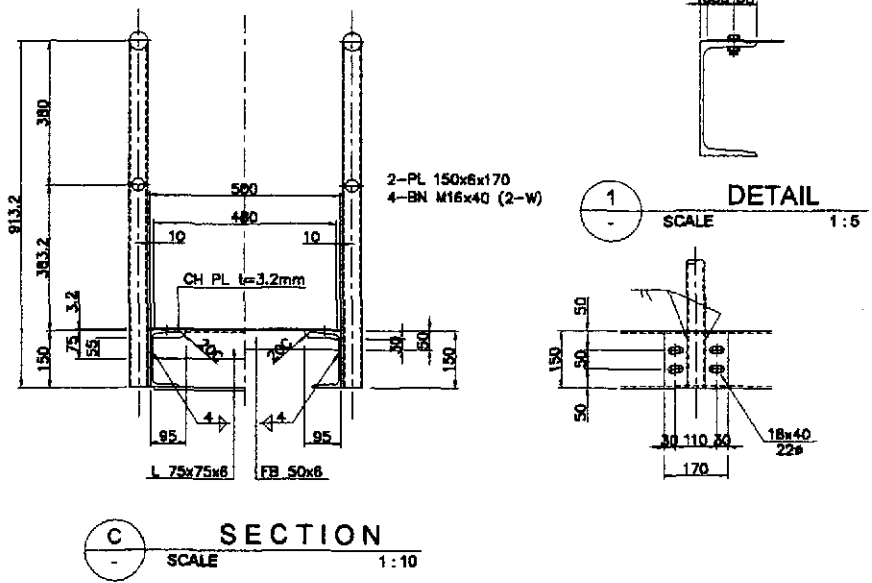
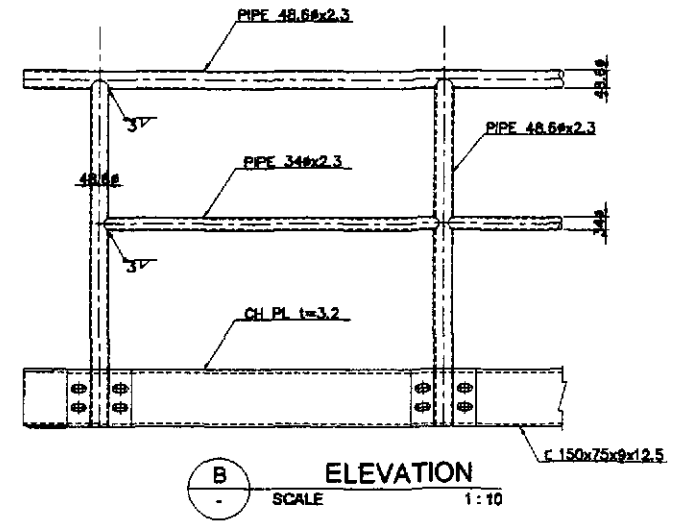
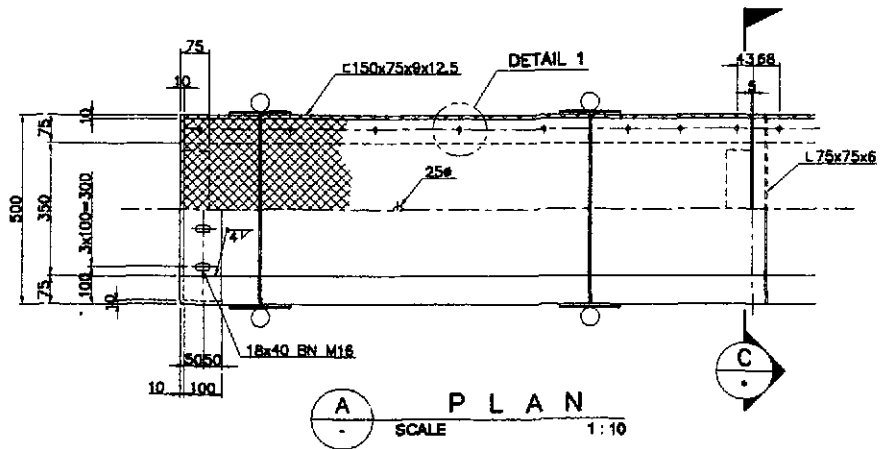
DESIGNED	10/18/02	<i>[Signature]</i> F. M. SALAS	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	
CHECKED	10/17/02	<i>[Signature]</i> SANTOS	PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pinaridel, Cabanatuan and San Jose Bypasses)	
SUBMITTED	10/19/02	<i>[Signature]</i> TEAM LEADER	SCALE: AS SHOWN	
SUBMITTED BY: DANILLO C. TRAJANO Project Director			SHEET CONTENTS: BRIDGE NO. 10 PAMPANGA RIVER BRIDGE DETAILS OF MAINTENANCE CATWALK - 2 of 3 (INITIAL STAGE)	
REVIEWED BY: ADRIANO M. DOROY Chief, Bridge Division			SHEET NO.: <b>B10M-96</b>	
RECOMMENDED BY: GILBERTO S. REYES Director IV (OC)			FULL SIZE A1	
OFFICE OF THE SECRETARY MANUEL M. BONOAN Undersecretary			CABANATUAN BYPASS - CONTRACT PACKAGE III	

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

SCALE:  
AS SHOWN

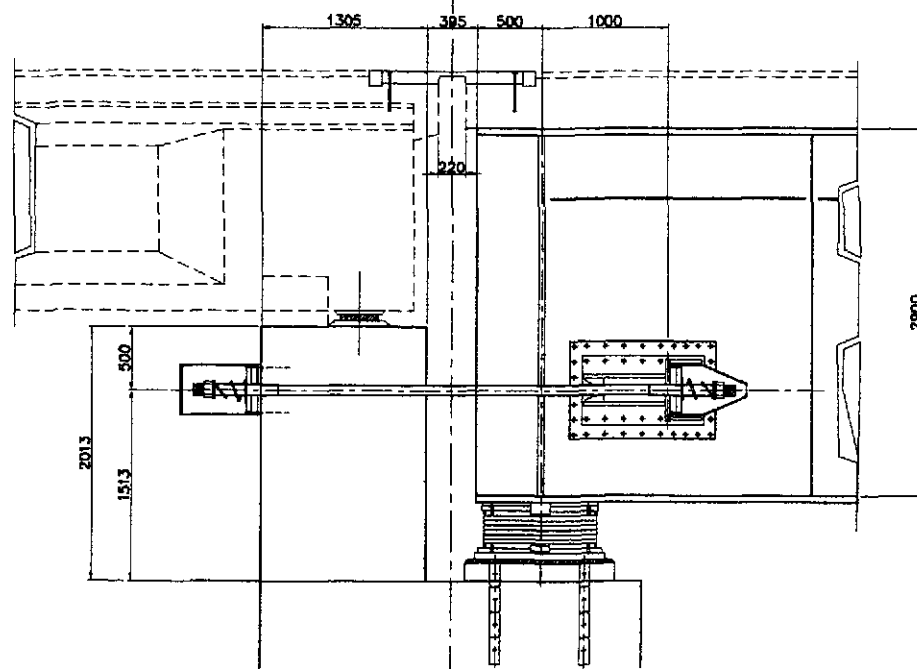
SHEET CONTENTS:  
BRIDGE NO. 10 PAMPANGA RIVER BRIDGE  
DETAILS OF MAINTENANCE  
CATWALK - 2 of 3  
(INITIAL STAGE)

SHEET NO.:  
**B10M-96**

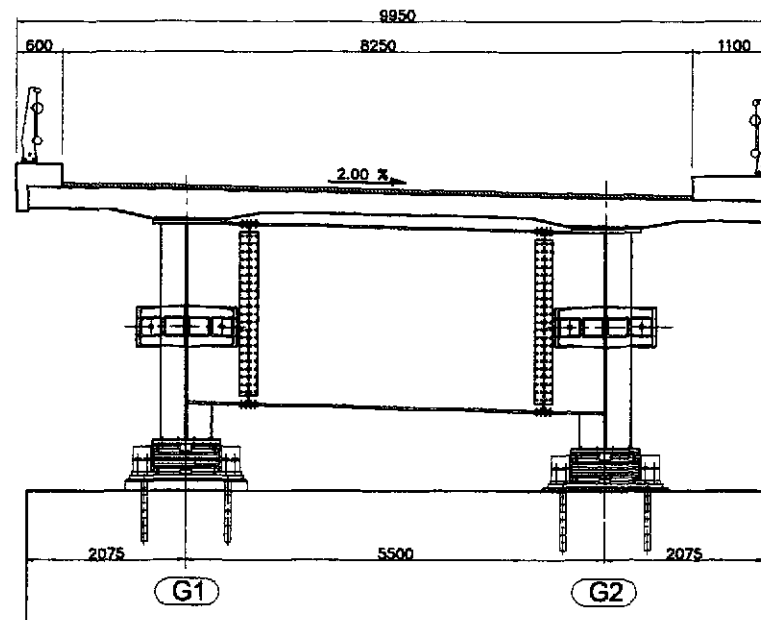


	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) <b>CABANATUAN BYPASS - CONTRACT PACKAGE III</b>	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : BRIDGE NO. 10 PAMPANGA RIVER BRIDGE DETAILS OF MAINTENANCE CATWALK - 3 of 3 (INITIAL STAGE)	SHEET NO. : <b>B10M-97</b>	
	CHECKED	10/17/02	<i>[Signature]</i>	BUREAU OF DESIGN							
	SUBMITTED	10/19/02	<i>[Signature]</i>	Submitted By: DANILO C. TRAJANO Project Director	Reviewed By: ADRIANO M. DORCY Chief, Bridges Division	Recommended By: GILBERTO S. REYES Director IV (OC)					Recommended By: MANUEL M. BONGAN Undersecretary
			<i>[Signature]</i>	OFFICE OF THE SECRETARY							

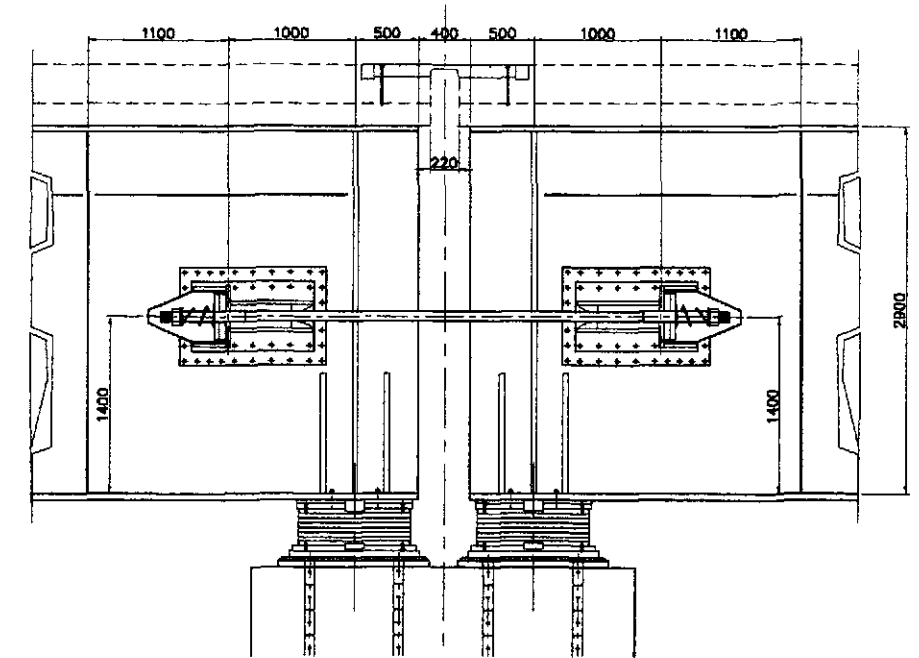




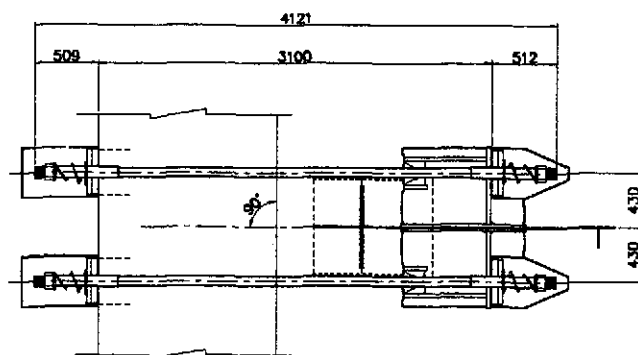
**A** SIDE ELEVATION  
SCALE 1:30



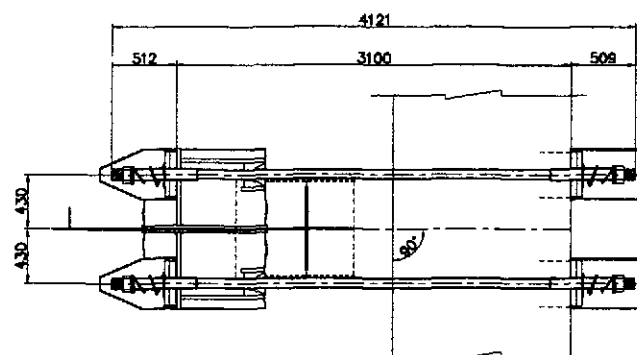
**B** FRONT ELEVATION  
SCALE 1:50



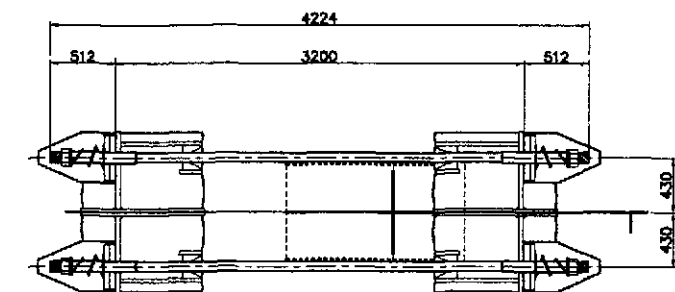
**C** SIDE ELEVATION  
SCALE 1:30



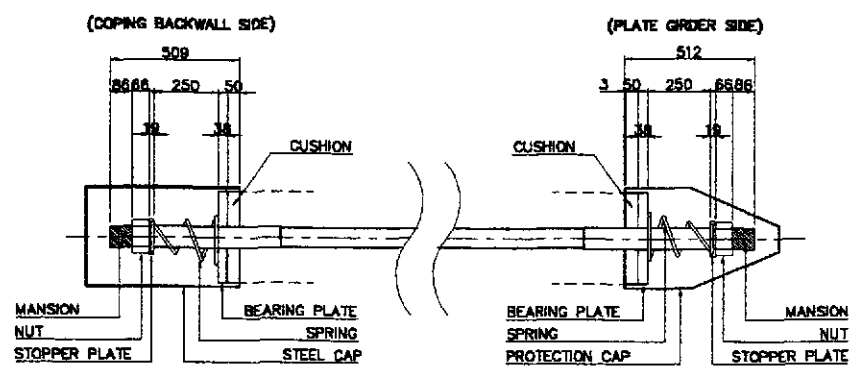
**1B** DETAIL PIER 6 (TYPE 1)  
SCALE 1:30



**1C** DETAIL PIER 15 (TYPE 1)  
SCALE 1:30



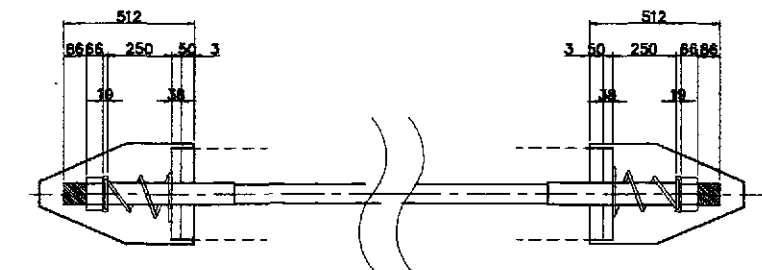
**2B** DETAIL PIER 11 (TYPE 2)  
SCALE 1:30



**1A** DETAIL OF RESTRAINER (PIER 6 & PIER 15)  
SCALE 1:15

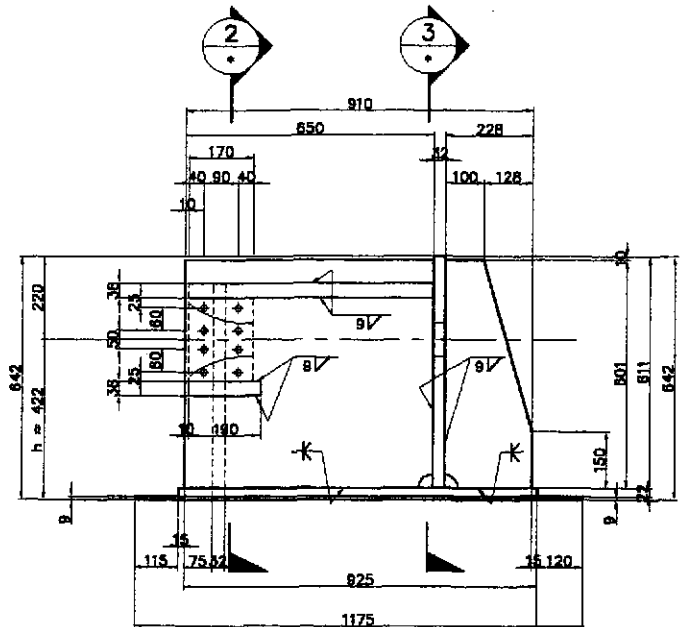
**1** LONGITUDINAL SPRING RESTRAINER (PIER 6 & PIER 15)  
SCALE AS SHOWN

QUANTITIES OF RESTRAINER		
LOCATION	RESTRAINER TYPE	QUANTITY
PIER 6	1	4
PIER 11	2	4
PIER 15	1	4

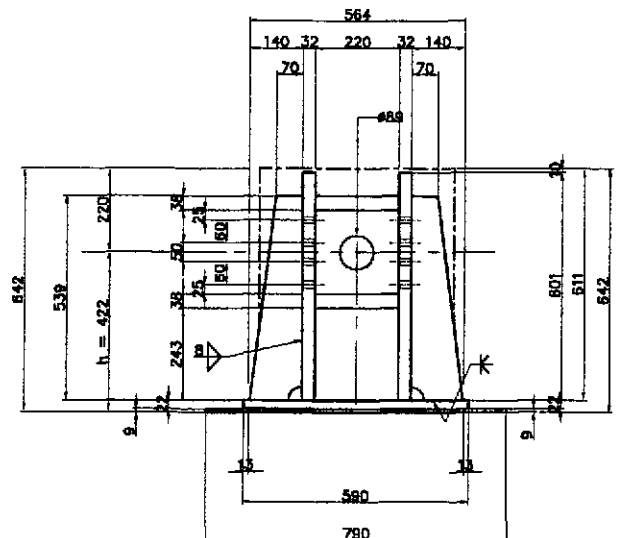


**2A** DETAIL OF RESTRAINER (PIER 11)  
SCALE 1:15

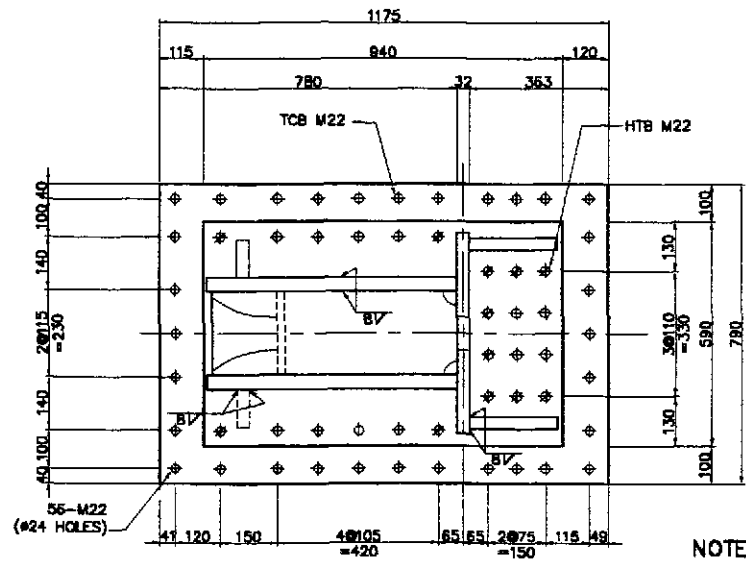
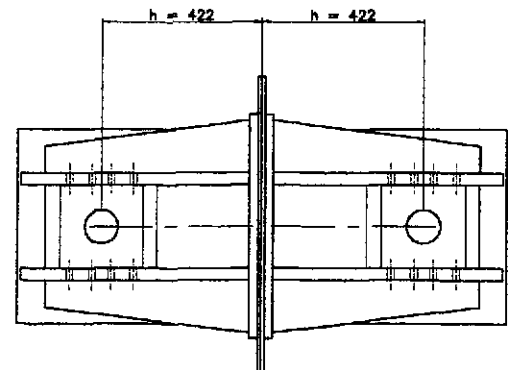
**2** LONGITUDINAL SPRING RESTRAINER (PIER 11)  
SCALE AS SHOWN



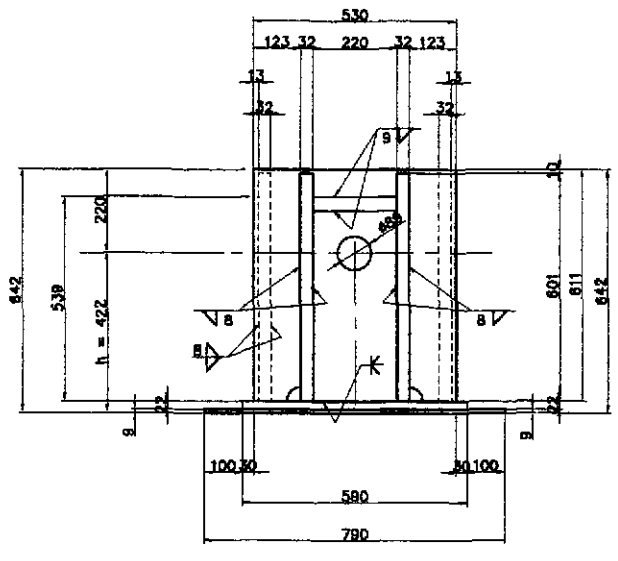
**A SECTION 1**  
SCALE 1:10



**B SECTION 2**  
SCALE 1:10



**C SECTION 4**  
SCALE 1:10



**D SECTION 3**  
SCALE 1:10

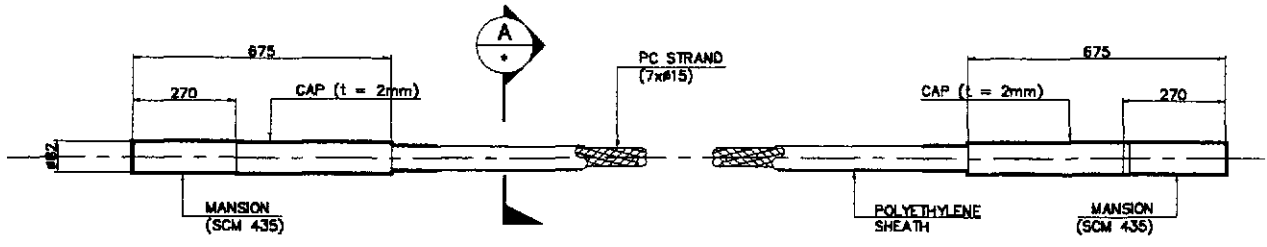
- 4 - PL 228 x 32 x 601 (SMA 400 BW)
- 4 - PL 650 x 32 x 601 (SMA 400 BW)
- 4 - PL 140 x 32 x 538 (SMA 400 BW)
- 2 - PL 640 x 38 x 220 (SMA 400 BW)
- 2 - PL 190 x 38 x 220 (SMA 400 BW)
- 2 - PL 940 x 22 x 590
- 2 - PL 1175 x 8 x 790
- 12 - HTB M22 x 120 (F10TW)
- 12 - HTB M22 x 115 (S10TW)
- 32 - HTB M22 x 70 (S10TW)

NOTE :  $\oplus$  - M22 (S10TW)  
 $\otimes$  - M22 (F10TW)

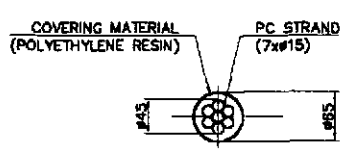
**1 LONGITUDINAL SPRING RESTRAINER DETAILS (PIERS P6, P11 & P15) - 2 of 3**  
SCALE AS SHOWN

	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 (Paridel, Cabanatuan and San Jose Bypasses) <b>CABANATUAN BYPASS - CONTRACT PACKAGE III</b>	SCALE :  AS SHOWN  FULL SIZE A1	SHEET CONTENTS :  BRIDGE NO. 10 PAMPANGA RIVER BRIDGE <b>LONGITUDINAL SPRING RESTRAINER          DETAILS (PIERS P6, P11 &amp; P15) 2 of 3</b> (INITIAL STAGE)	SHEET NO. :  <b>B10M-99</b>
	CHECKED	10/17/02	F. M. SALAS		DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS					
	SUBMITTED	10/19/02	TEAM LEADER		BUREAU OF DESIGN Submitted By: DANILLO C. TRAJANO, Project Director Reviewed By: ADRIANO M. DORCOY, Chief, Bridge Division Recommended By: GILBERTO S. REYES, Director IV (OIC) Recommended By: MANUEL M. BONDAM, Undersecretary Approved By: SIMEON A. DATUMANONG, Secretary					

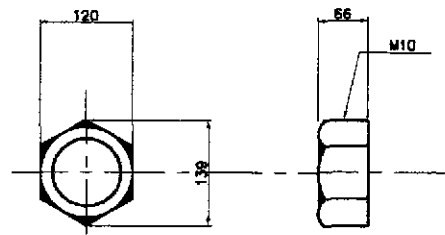
PC CABLE : 7 - #15mm STRANDS  
 YIELD STRENGTH = 1500 MPa  
 YIELD FORCE = 1575 KN



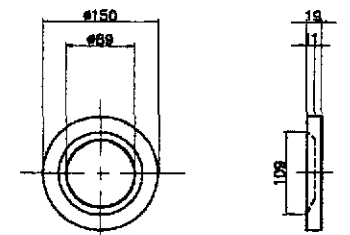
A RESTRAINING CABLE  
 SCALE 1:10



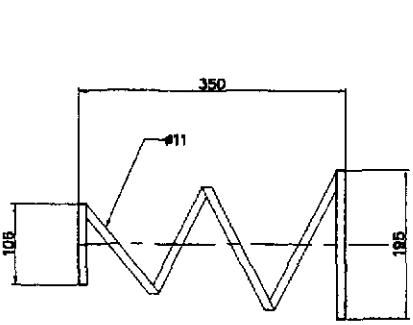
A SECTION A  
 SCALE 1:5



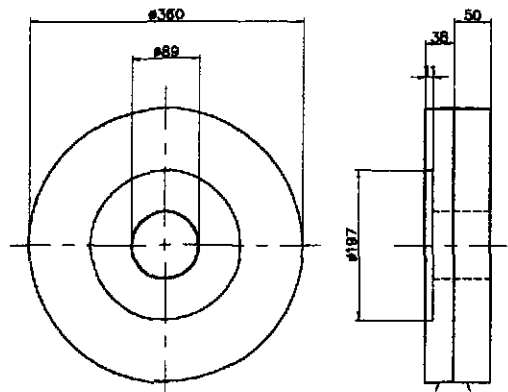
B NUT (S45C)  
 SCALE 1:5



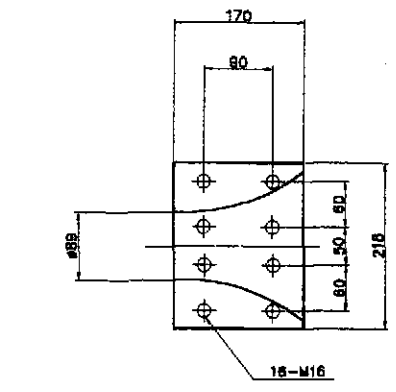
C STOPPER PLATE (SS400 : STAINLESS STEEL)  
 SCALE 1:5



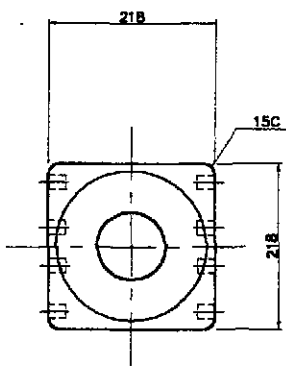
D SPRING  
 SCALE 1:5



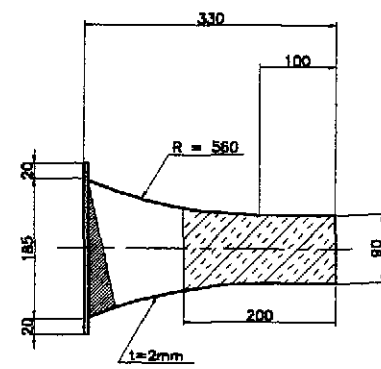
E BEARING PLATE  
 SCALE 1:5



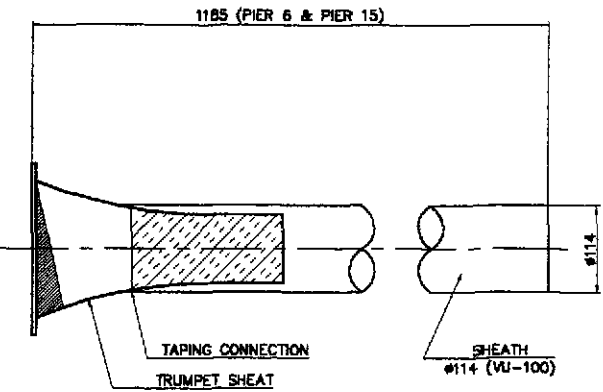
F DEVIATOR (POLYETHYLENE)  
 SCALE 1:5



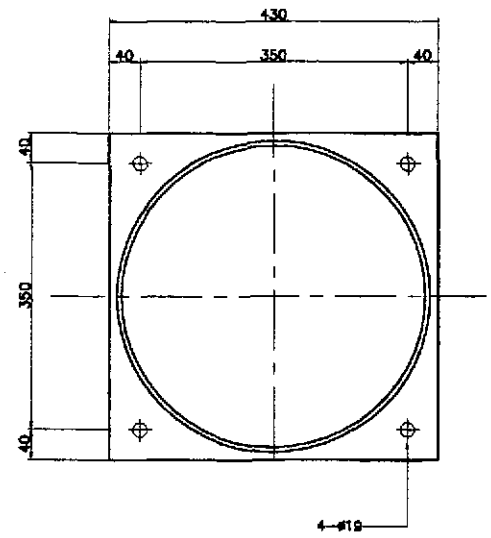
G TRUMPET SHEATH (@ PLATE GIRDER)  
 SCALE 1:5



H TRUMPET SHEATH (@ PIER 6 & PIER 15)  
 SCALE 1:5



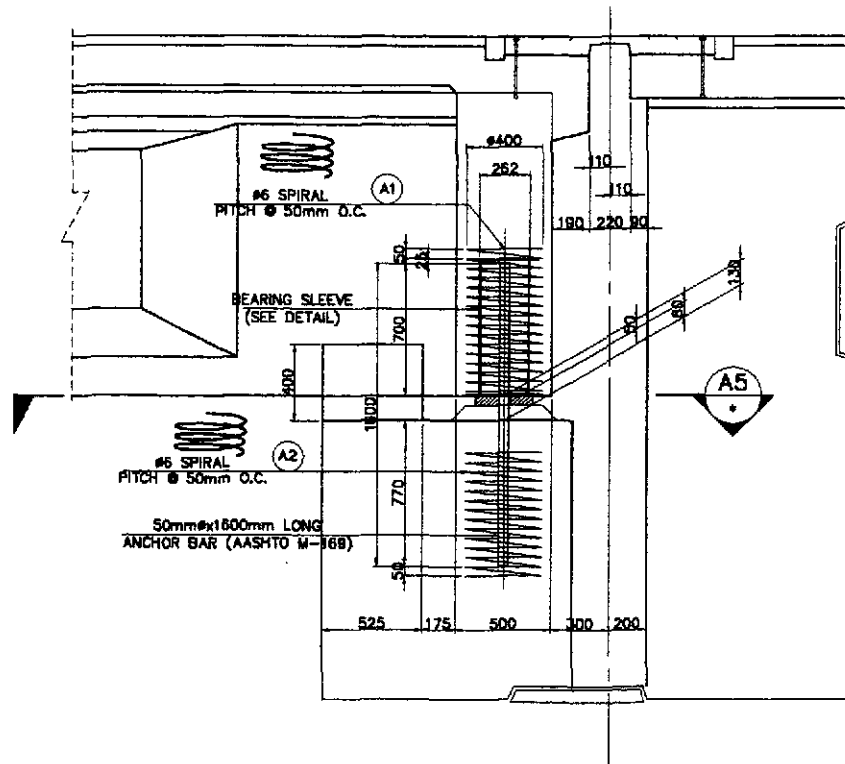
I STEEL CAP (STK 400, SS400 : STAINLESS STEEL)  
 SCALE 1:5



J PROTECTION CAP (POLYETHYLENE)  
 SCALE 1:5

1 LONGITUDINAL SPRING RESTRAINER DETAILS (PIERS P6, P11 & P15) - 3 of 3  
 SCALE AS SHOWN

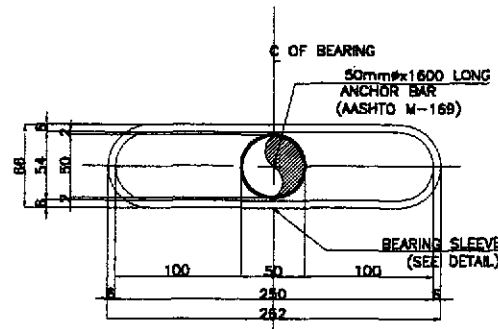
	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pinaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE III	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : BRIDGE NO. 10 PAMPANGA RIVER BRIDGE LONGITUDINAL SPRING RESTRAINER DETAILS (PIERS P6, P11 & P15) - 3 of 3 (INITIAL STAGE)	SHEET NO. : <b>B10M-100</b>
	CHECKED	10/17/07	F. M. SALAS	BUREAU OF DESIGN						
	SUBMITTED	10/19/07	J. E. SANTOS	Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: ADRIANO M. DORCOY Chief, Bridge Division	Recommended By: GILBERTO S. REYES Director IV (OIC)				



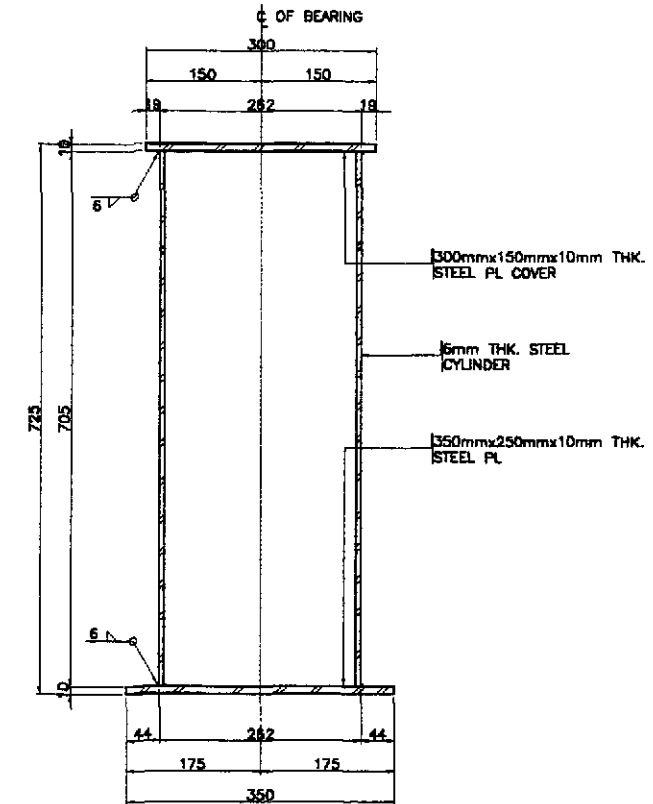
**A1 LONG'L ELEVATION**  
SCALE 1:20

**NOTE :**

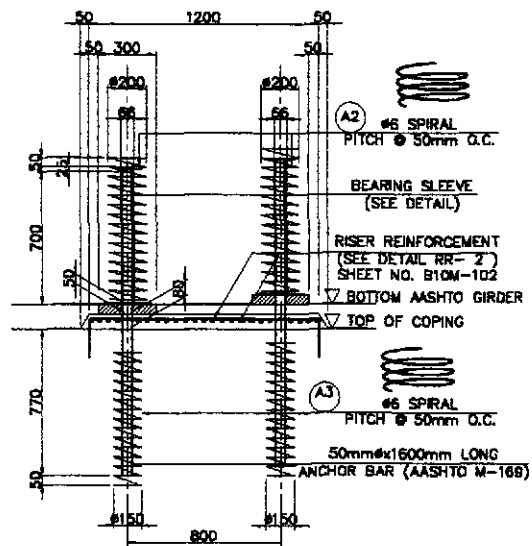
1. ALL METALS SHOWN IN THIS DRAWING SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS FOR ZINC (HOT-GALVANIZE) COATING CONFORMING TO AASHTO M111 (ASTM A123) OR AASHTO M232 (ASTM A153). THE WEIGHT OF ZINC COATING SHALL AVERAGE NOT LESS THAN 365 g PER SQ. METER OF ACTUAL SURFACE AREA WITH NO INDIVIDUAL SPECIMEN HAVING A COATING OF LESS THAN 305 g PER SQ. METER.



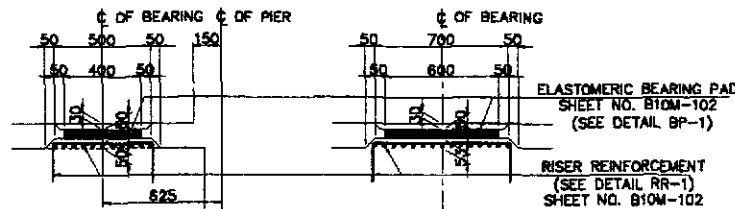
**A5 SECTION**  
NOT TO SCALE



**B1 ELEVATION**  
SCALE 1:5

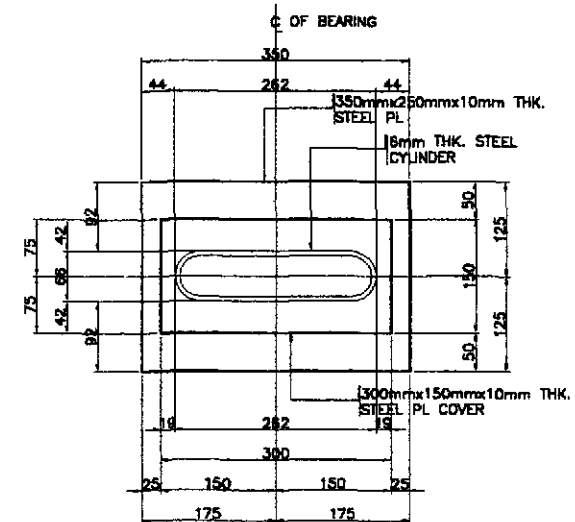


**A2 TRAN'L ELEVATION**  
SCALE 1:20



**A3 LONG'L SECTION**  
SCALE 1:20

**A4 TRAN'L SECTION**  
SCALE 1:20

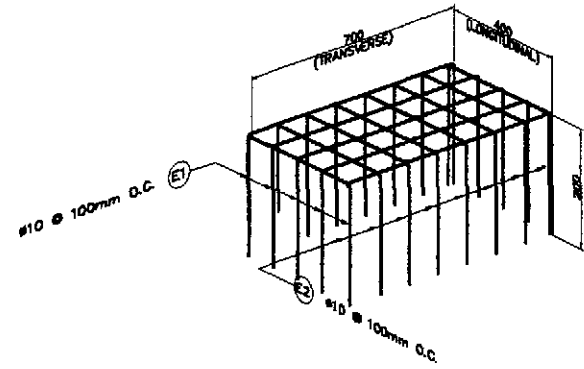


**B2 PLAN**  
SCALE 1:5

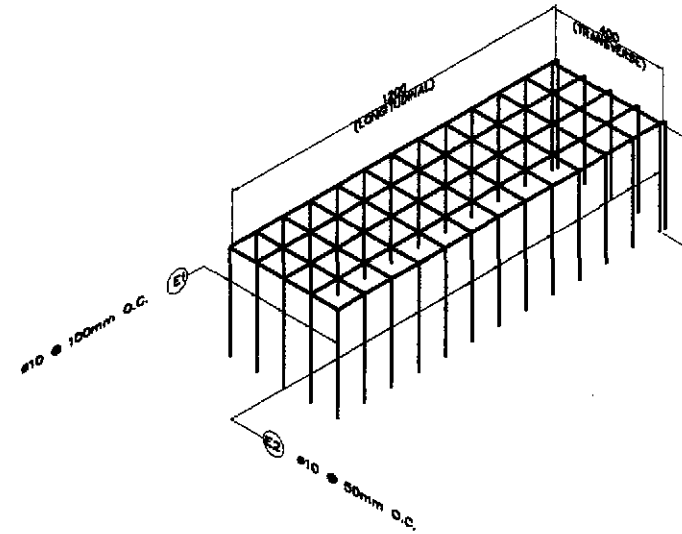
**B BEARING SLEEVE DETAILS**  
SCALE AS SHOWN

**A MISCELLANEOUS DETAILS AT APPROACH SIDE BEARING (P6 & P15)**  
SCALE AS SHOWN

	DESIGNED	DATE	SIGNATURE	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 III	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : BRIDGE NO. 10 PAMPANGA RIVER BRIDGE MISCELLANEOUS DETAILS AT APP. SIDE BEARING (P6 & P15) (INITIAL STAGE)	SHEET NO. : <b>B10M-101</b>
	CHECKED	10/17/02	F. M. SALAS	BUREAU OF DESIGN OFFICE OF THE SECRETARY						
	SUBMITTED	10/19/02	TEAM LEADER	DANILO C. TRAJANO Project Director	ADRIANO M. DORDY Chief, Bridge Division	GILBERTO S. REYES Director IV (OIC)				

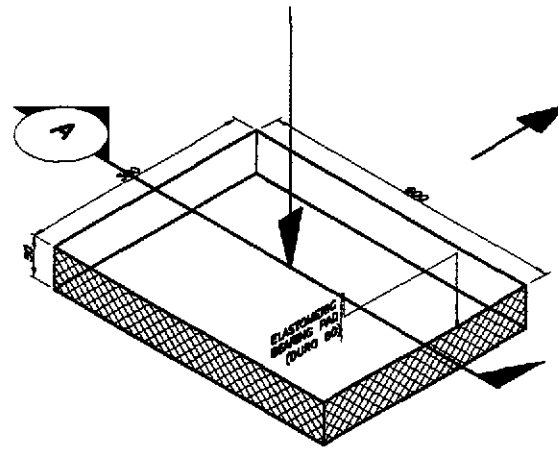


A RR-1 (BEARING PAD)  
N T S

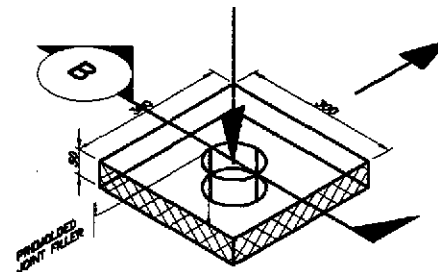


B RR-2 (DOWEL)  
N T S

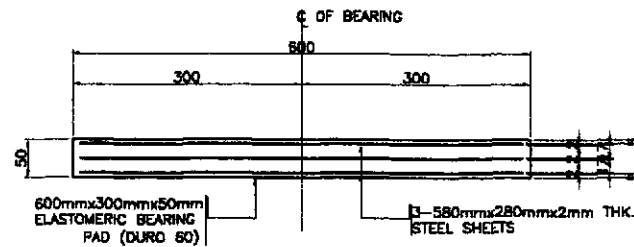
3 RISER REINFORCEMENT DETAILS  
N T S



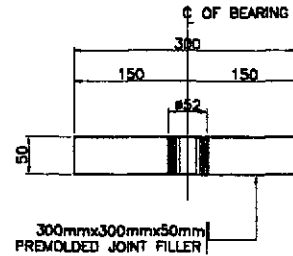
ISOMETRIC VIEW



ISOMETRIC VIEW



SECTION A



SECTION B

D BP-1 @ BEARING  
N T S

D BP-2 @ ANCHOR BAR  
N T S

1 ELASTOMERIC BEARING PAD DETAILS  
SCALE AS SHOWN

2 PREMOLDED JOINT FILLER DETAILS  
SCALE AS SHOWN

BAR BENDING DIAGRAM															
SCHEDULE OF REINFORCEMENT															
LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION(mm) OUT TO OUT					LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT(kgs.)		REMARKS	
				a	b	c	d	e				Grade 40	Grade 60		
RISER P6/P15 ANCHOR BAR	E1	10	A	200	700				1100	20	0.616	13.55		ESTIMATED QUANTITY FOR ONE(1) PER ONLY.	
	E2	10	A	200	500				900	52	0.616	28.63			
											TOTAL=	42.38	0		
RISER P6/P15 BEARING PAD	E1	10	A	200	700				1100	20	0.616	13.55			
	E2	10	A	200	500				900	32	0.616	17.74			
											TOTAL=	31.28	0		
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	10/17/02	F. M. SALAS		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. 10 PAMPANGA RIVER BRIDGE RISER REINF. & BEARING PAD DETAILS AT APPROACH SIDE (P6 & P15) (INITIAL STAGE)	B10M-102
	SUBMITTED	10/19/02	C. SANTOS TEAM LEADER		Submitted By:	Reviewed By:	Recommended By:	Approved By:	CABANATUAN BYPASS - CONTRACT PACKAGE III				FULL SIZE A1			
				DANILO C. TRAJANO Project Director	ADRIANO M. DORAY Chief, Bridge Division	GILBERTO S. REYES Director IV (OC)	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary								