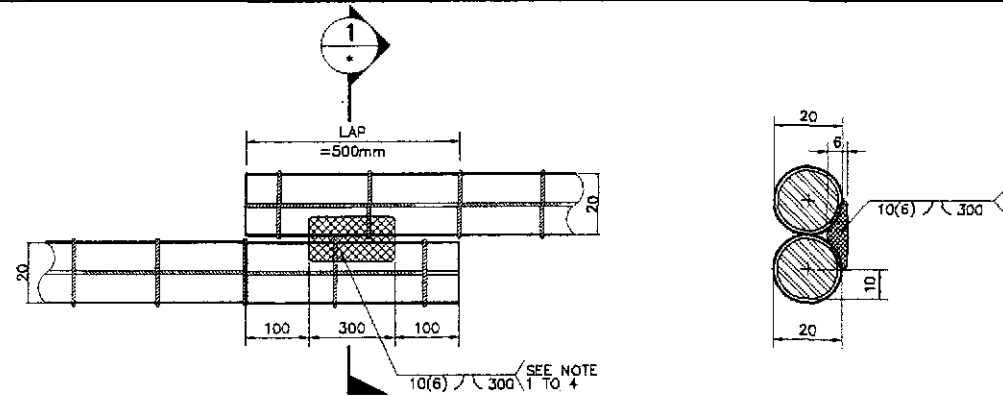


# **SUBSTRUCTURE REINFORCING DETAIL**

**NOTES ON LAP WELD CONNECTION**

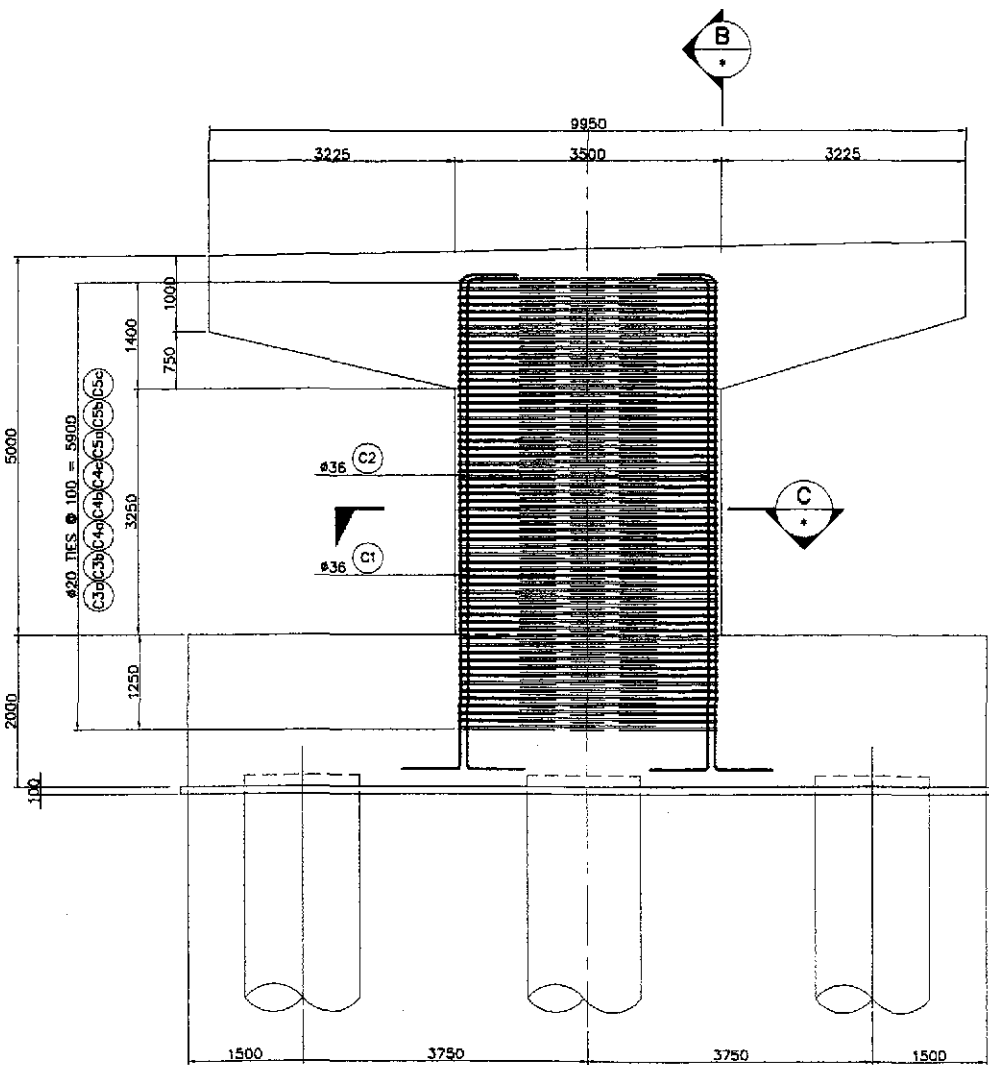
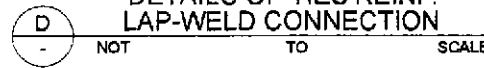
1. TIES REINFORCEMENT ARE LAP-WELD CONNECTED (FLARED-V-GROOVE TYPE).
2. WELDING SHOULD CONFORM TO ANSI/AWS D1.4-92 "STRUCTURAL WELDING CODE REINFORCEMENT STEEL".
3. USE ELECTRODE E90XX-X.
4. CARE SHOULD BE TAKEN NOT TO DAMAGE THE BORED PILE MAIN BARS DURING WELDING.



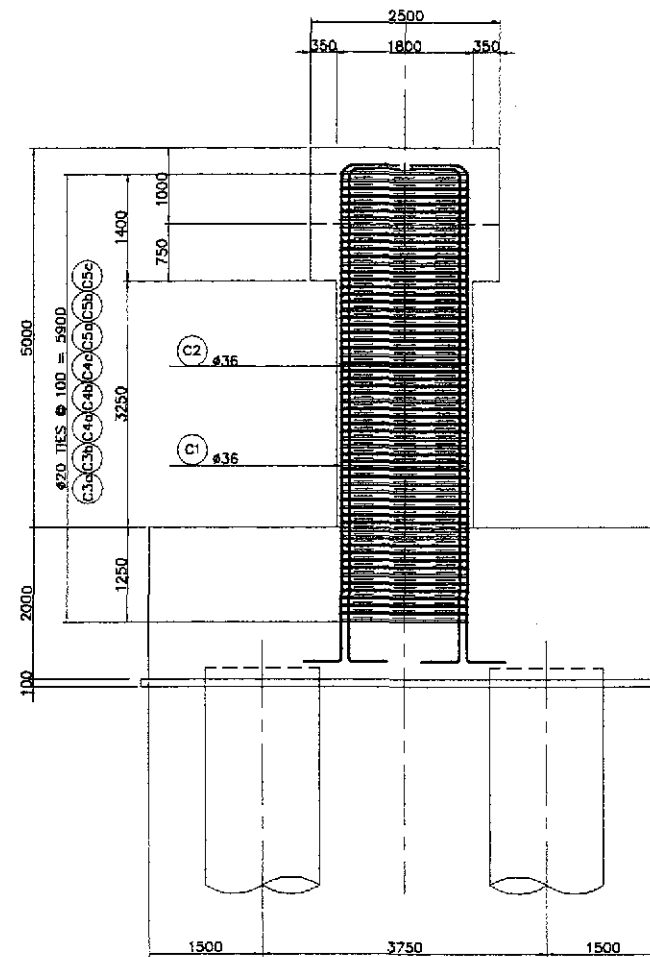
DIRECT LAP JOINT WITH BARS IN CONTACT

DOUBLE FLARED-V-GROOVE WELD SECTION - 1

**DETAILS OF TIES REINF. LAP-WELD CONNECTION**



**A ELEVATION**  
SCALE 1:50



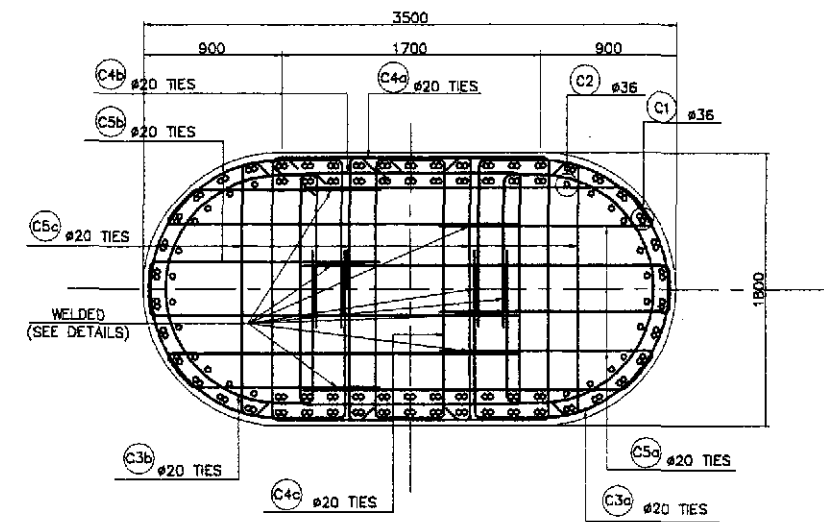
**B SECTION**  
SCALE 1:50

**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) grade 60	WEIGHT (kg)	
				a	b	c	d	e	f					
PIER 1	C1	36	A	650	6500	650					7800	92	7.990	5734
	C2	36	B	650	6500	650					7800	68	7.990	4238
	C3a	20	C	2580	390	1075					5510	120	2.466	1631
	C3b	20	C	2260	200	975					4610	120	2.466	1364
	C4a	20	D	260	1810	1650					7440	60	2.466	1101
	C4b	20	D	260	1440	1450					6300	60	2.466	932
	C4c	20	D	260	1650	450					4720	180	2.466	2104
	C5a	20	E	1420	280	2440	1420	280	1420		7260	120	2.466	2231
	C5b	20	E	1160	270	2340	1160	270	2340		5200	60	2.466	1074
	C5c	20	F	300	1650	350					2300	240	2.466	1361
<b>TOTAL WEIGHT (GRADE 60) = 21,770 Kgs.</b>														
PIER 2	C1	36	A	650	6500	650					7800	92	7.990	5734
	C2	36	B	650	6500	650					7800	68	7.990	4238
	C3a	20	C	2580	390	1075					5510	120	2.466	1631
	C3b	20	C	2260	200	975					4610	120	2.466	1364
	C4a	20	D	260	1810	1650					7440	60	2.466	1101
	C4b	20	D	260	1440	1450					6300	60	2.466	932
	C4c	20	D	260	1650	450					4720	180	2.466	2104
	C5a	20	E	1420	280	2440	1420	280	1420		7260	120	2.466	2231
	C5b	20	E	1160	270	2340	1160	270	2340		5200	60	2.466	1074
	C5c	20	F	300	1650	350					2300	240	2.466	1361
<b>TOTAL WEIGHT (GRADE 60) = 21,770 Kgs.</b>														

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



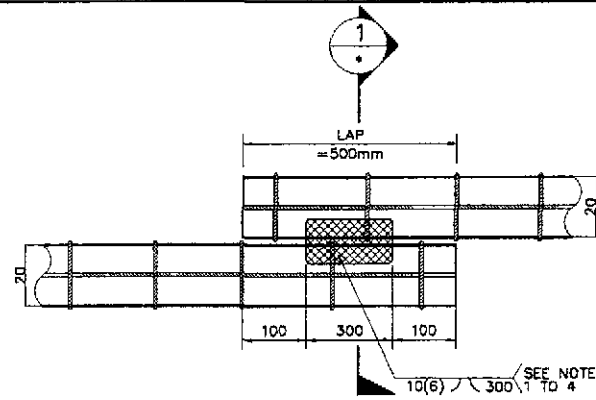
**C SECTION**  
SCALE 1:25

**1 COLUMN REINFORCEMENT DETAILS (PIER 1 & PIER 2 - FIXED PIER)**  
SCALE AS SHOWN

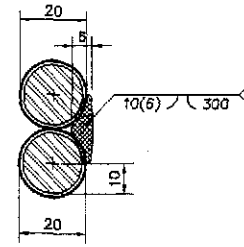
	DESIGNED	10/17/02	SIGNATURE					REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	SCALE : AS SHOWN	SHEET CONTENTS : BRIDGE NO.14 TALAVERA RIVER BRIDGE COLUMN REINFORCEMENT DETAILS (PIER 1 & PIER 2 - FIXED PIER) (ULTIMATE STAGE)	SHEET NO. : B14S-61
	CHECKED	10/19/02	SIGNATURE				BUREAU OF DESIGN	OFFICE OF THE SECRETARY	CABANATUAN BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1		
	SUBMITTED	10/21/02	SIGNATURE				DANILLO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridges Division	GILBERTO S. REYES Director IV (OIC)	MANUEL M. BONOAN Undersecretary	SIMON A. DATUMANDING Secretary	

**NOTES ON LAP WELD CONNECTION**

1. TIES REINFORCEMENT 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.



DIRECT LAP JOINT WITH BARS IN CONTACT

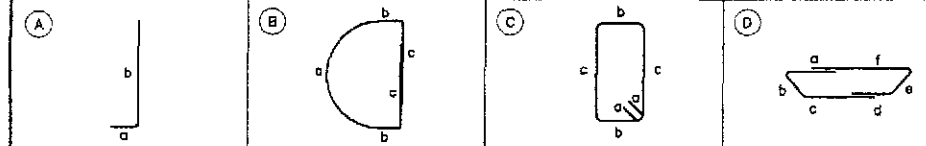


DOUBLE FLARED-V-GROOVE WELD SECTION - 1

**DETAILS OF TIES REINF. LAP-WELD CONNECTION**



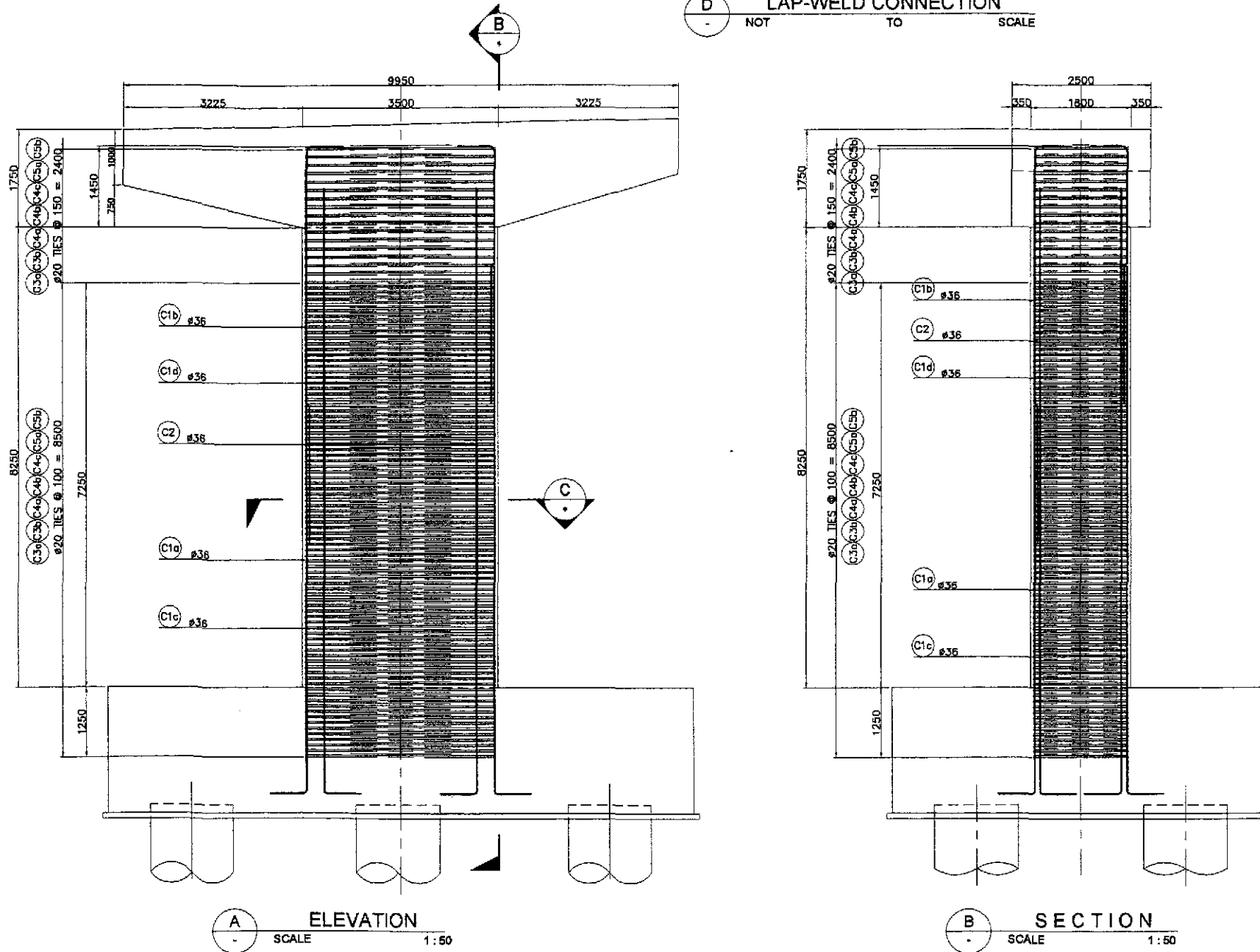
**BAR BENDING DIAGRAM**



**SCHEDULE OF REINFORCEMENT**

LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION(mm) OUT TO OUT						LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m) grade 60	WEIGHT (kg)
				a	b	c	d	e	f				
PIER 4, PIER 5, PIER 7 & PIER 8	C1a	36	A	650	6750					7400	46	7.990	2720
	C1b	36	A	650	6900					7550	46	7.990	2775
	C1c	36	A	650	8950					9600	46	7.990	3528
	C1d	36	A	650	4700					5350	46	7.990	1966
PIER 4, PIER 5, PIER 7 & PIER 8	C2	36	A	650	11350					12000	46	7.990	4410
	C3a	20	B	2580	390	1075				5510	206	2.466	2799
	C3b	20	B	2260	200	975				4610	206	2.466	2342
	C4a	20	C	260	1810	1650				7440	103	2.466	1890
	C4b	20	C	260	1440	1450				6300	103	2.466	1600
	C4c	20	C	260	480	1650				4740	309	2.466	3612
	C5a	20	D	1160	270	2340	1160	270	2340	7540	206	2.466	3830
	C5b	20	D	1420	280	2440	1420	280	1420	7260	103	2.466	1844
	<b>TOTAL WEIGHT (GRADE 60) = 33,316 Kgs.</b>												

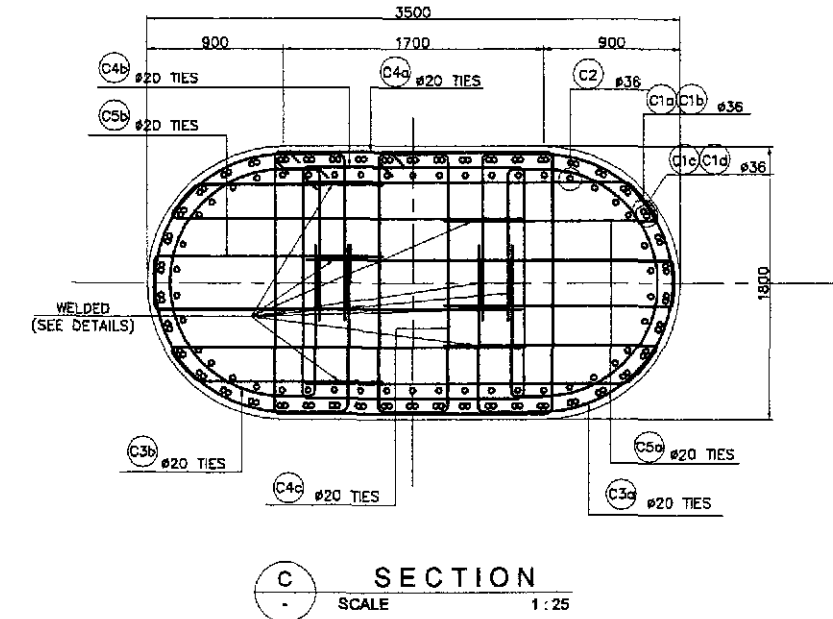
THE REINFORCEMENT SHOWN ON THIS TABLE IS FOR REFERENCE ONLY. THE CONTRACTOR SHOULD CHECK AND VERIFY ALL DIMENSIONS, SIZES AND QUANTITIES OF REINFORCEMENT.



**A ELEVATION**  
SCALE 1:50

**B SECTION**  
SCALE 1:50

**1 COLUMN REINFORCEMENT DETAILS (PIER 4, PIER 5, PIER 7 & PIER 8 - FIXED PIERS)**  
SCALE AS SHOWN

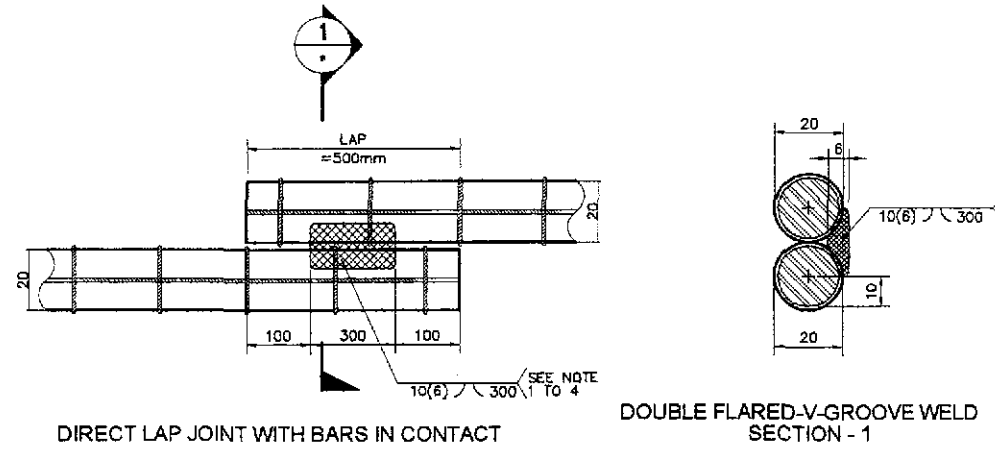


**C SECTION**  
SCALE 1:25

	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 (Paridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE IV	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : BRIDGE NO.14 TALAVERA RIVER BRIDGE COLUMN REINFORCEMENT DETAILS (PIERS P4, P5, P7 & P8 - FIXED PIER) (ULTIMATE STAGE)	SHEET NO. : <b>B14S-62</b>
	CHECKED	10/19/02	<i>[Signature]</i>		BUREAU OF DESIGN							
	SUBMITTED	10/21/02	<i>[Signature]</i>		OFFICE OF THE SECRETARY							
			P.I.E. - P.M.O.	BUREAU OF DESIGN								
			Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:					
			DANILO C. TRAJANO Project Director	ADRIANO M. DORCY Chief, Bridge Division	GILBERTO S. REYES Director, N (DC)	MANUEL M. BONDAN Undersecretary	SIMON A. DATUMANONG Secretary					

**NOTES ON LAP WELD CONNECTION**

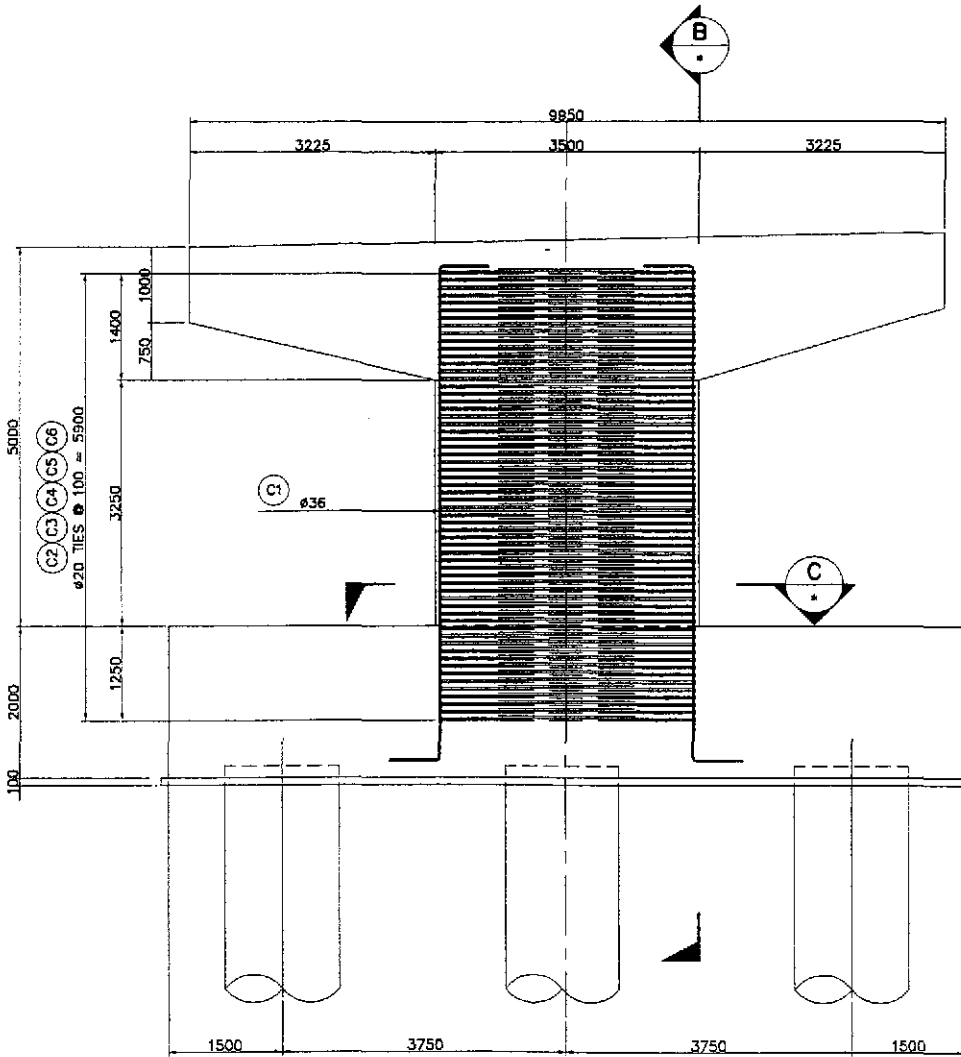
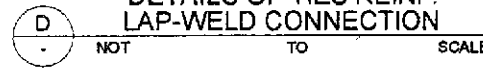
1. TIES REINFORCEMENT ARE LAP-WELD CONNECTED (FLARED-V-GROOVE TYPE).
2. WELDING SHOULD CONFORM TO ANSI/AWS D1.4-92 "STRUCTURAL WELDING CODE REINFORCEMENT STEEL".
3. USE ELECTRODE E90XX-X.
4. CARE SHOULD BE TAKEN NOT TO DAMAGE THE BORED PILE MAIN BARS DURING WELDING.



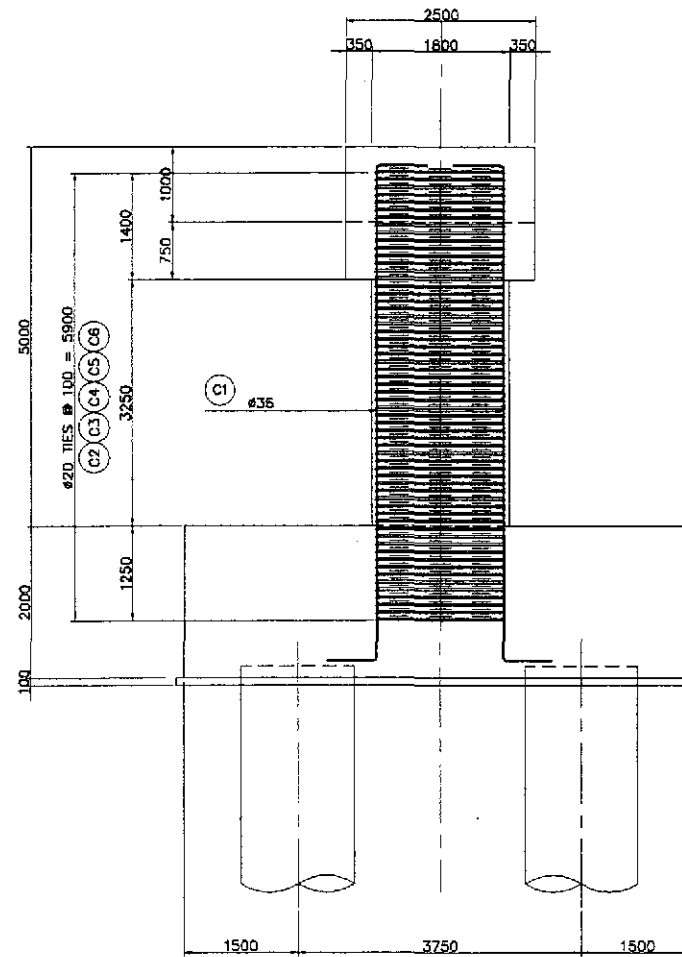
DIRECT LAP JOINT WITH BARS IN CONTACT

DOUBLE FLARED-V-GROOVE WELD SECTION - 1

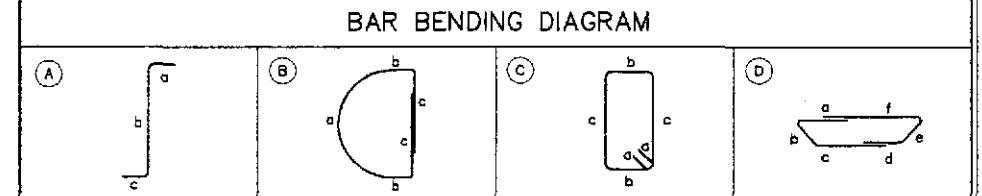
**DETAILS OF TIES REINF. LAP-WELD CONNECTION**



**A** ELEVATION  
SCALE 1:50



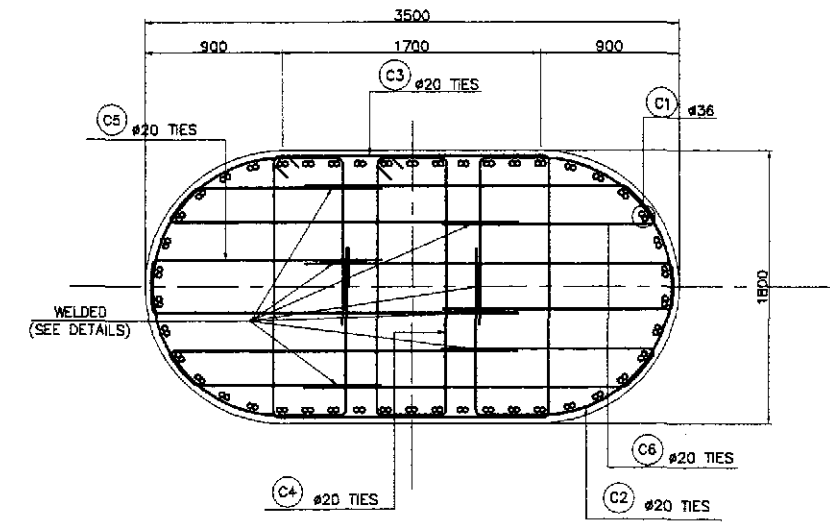
**B** SECTION  
SCALE 1:50



**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					
PIER 3	C1	36	A	650	6500	650					7800	92	7.990	5734
	C2	20	B	2580	390	1075					5510	120	2.466	1631
	C3	20	C	260	1650	1810					7440	60	2.466	1101
	C4	20	C	260	1650	460					4740	180	2.466	2104
	C5	20	D	1160	270	2340	1160	270	2340	7540	120	2.466	2231	
	C6	20	D	1420	280	2440	1420	280	1420	7260	60	2.466	1074	
<b>TOTAL WEIGHT (GRADE 60) = 13,975 Kgs</b>														
PIER 6	C1a	36	A	650	6750						7400	46	7.990	2720
	C1b	36	A	650	6900						7550	46	7.990	2775
	C1c	36	A	650	8950						9600	46	7.990	3528
	C1d	36	A	650	4700						5350	46	7.990	1966
	C2	20	B	2580	390	1075					5510	206	2.466	2799
	C3	20	C	260	1810	1650					7440	103	2.466	1880
C4	20	C	260	460	1650					4740	309	2.466	3612	
C5	20	D	1160	270	2340	1160	270	2340	7540	103	2.466	1915		
C6	20	D	1420	280	2440	1420	280	1420	7260	206	2.466	3688		
<b>TOTAL WEIGHT (GRADE 60) = 24,893 Kgs</b>														

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



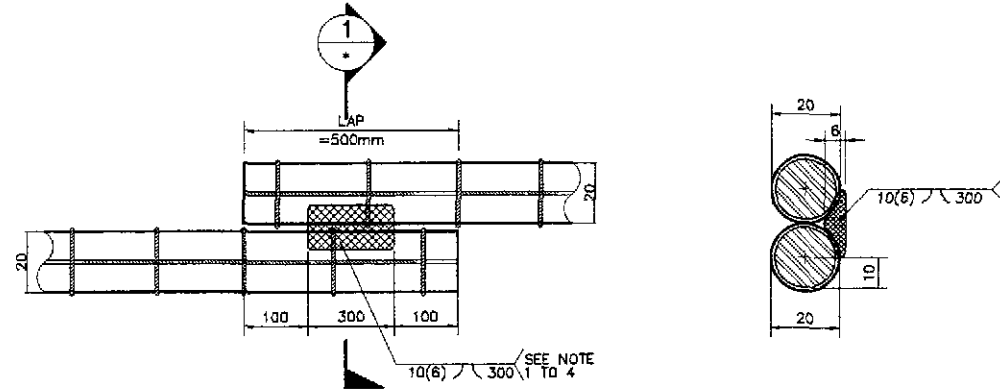
**C** SECTION  
SCALE 1:25

**1 COLUMN REINFORCEMENT DETAILS (PIER 3 - EXP. PIER)**  
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	F. P. DE JESUS	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.14 TALAVERA RIVER BRIDGE COLUMN REINFORCEMENT DETAILS (PIER 3 - EXP. PIER) (ULTIMATE STAGE)	B14S-63
	SUBMITTED	10/21/02	J. C. SANTOS	Submitted By:	Reviewed By:	Recommended By:	Approved By:	FULL SIZE A1			
				DANILO C. TRAJANO Project Director	ADRIANO M. DORAY Chief, Bridges Division	GILBERTO S. REYES Director IV (CIC)	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary			

**NOTES ON LAP WELD CONNECTION**

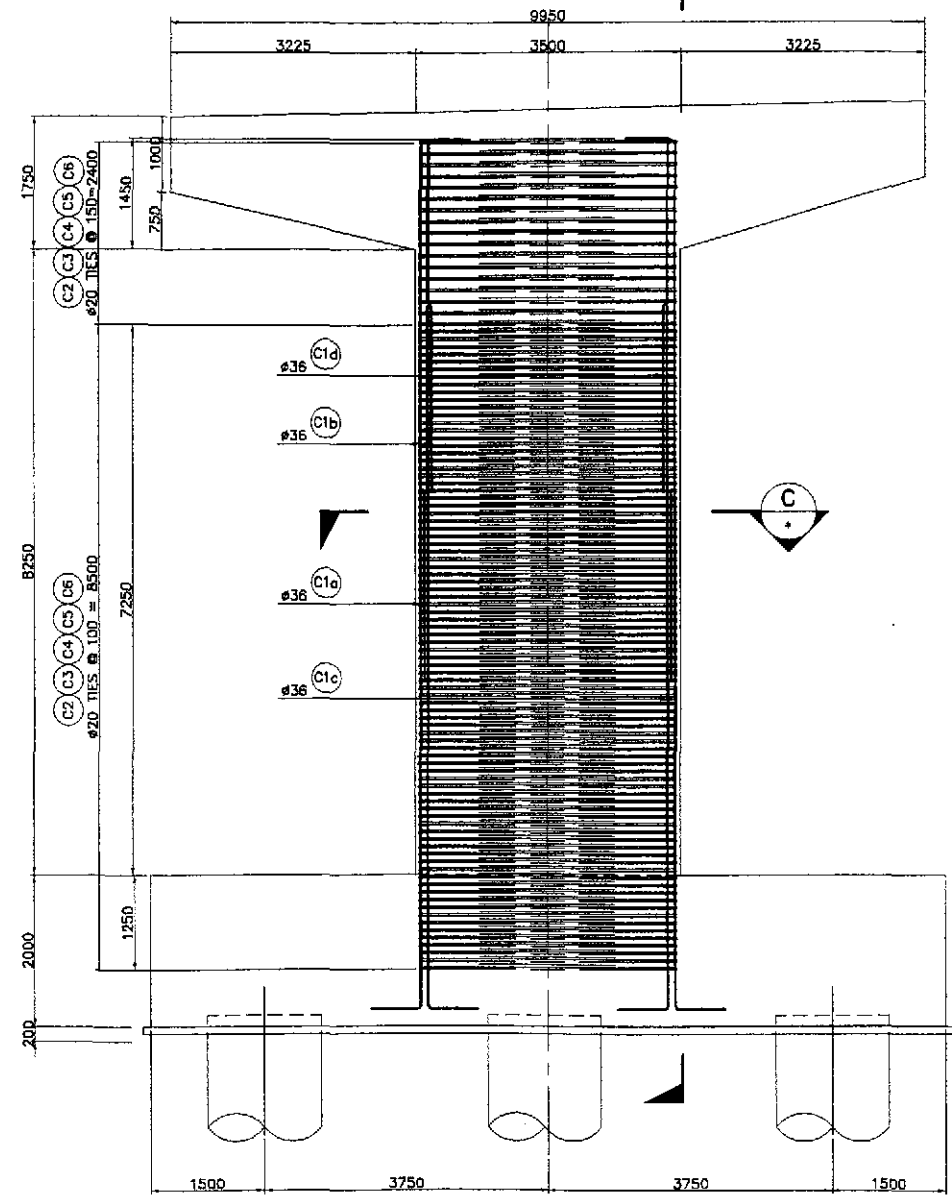
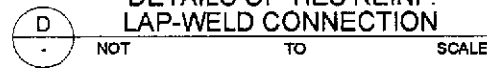
1. TIES REINFORCEMENT ARE LAP-WELD CONNECTED (FLARED-V-GROOVE TYPE).
2. WELDING SHOULD CONFORM TO ANSI/AWS D1.4-92 "STRUCTURAL WELDING CODE REINFORCEMENT STEEL".
3. USE ELECTRODE E90XX-X.
4. CARE SHOULD BE TAKEN NOT TO DAMAGE THE BORED PILE MAIN BARS DURING WELDING.



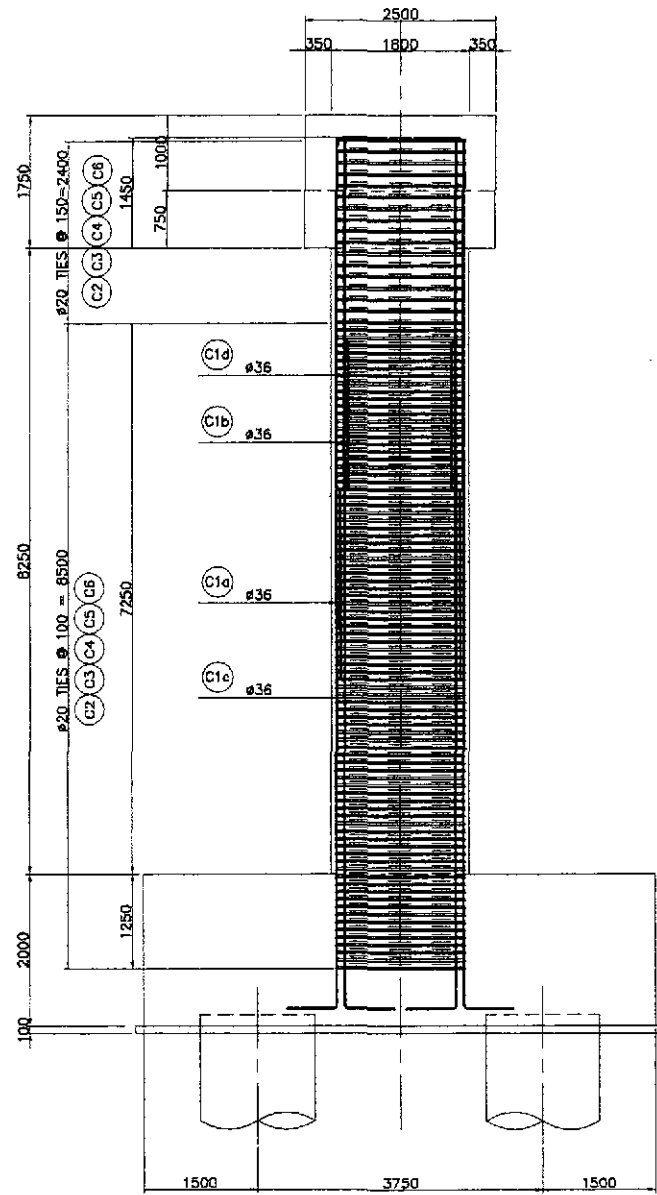
DIRECT LAP JOINT WITH BARS IN CONTACT

DOUBLE FLARED-V-GROOVE WELD SECTION - 1

**DETAILS OF TIES REINF. LAP-WELD CONNECTION**



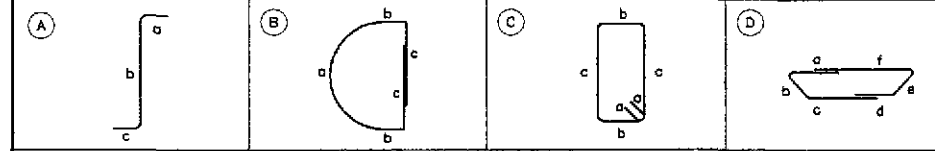
**A ELEVATION**  
SCALE 1:50



**B SECTION**  
SCALE 1:50

**1 COLUMN REINFORCEMENT DETAILS (PIER 6 - EXP. PIER)**  
SCALE AS SHOWN

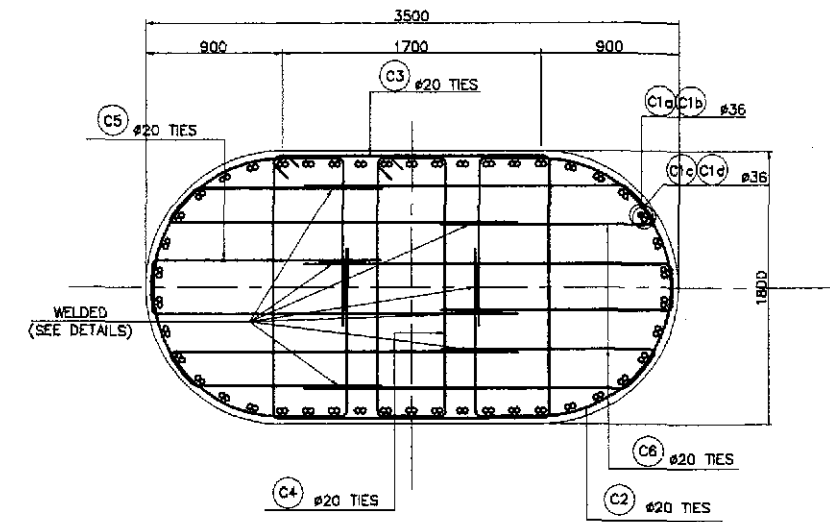
**BAR BENDING DIAGRAM**



**SCHEDULE OF REINFORCEMENT**

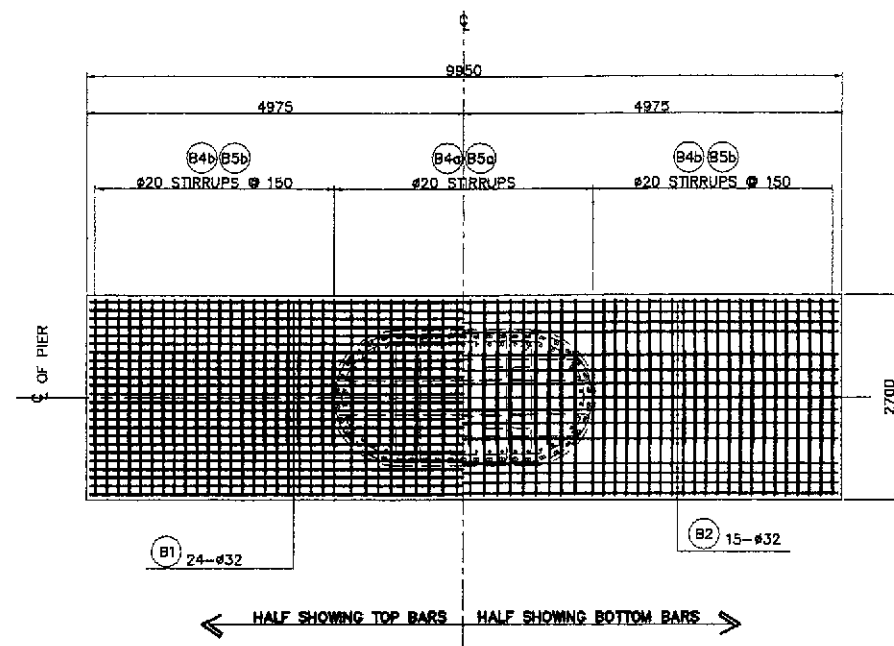
LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION(mm) OUT TO OUT						LENGTH (mm)	NO. REQD.	UNIT WEIGHT (kg/m)	WEIGHT (kg)
				a	b	c	d	e	f				
PIER 3	C1	36	A	650	6500	650				7800	92	7.990	5734
	C2	20	B	2580	390	1075				5510	120	2.466	1631
	C3	20	C	260	1650	1810				7440	80	2.466	1101
	C4	20	C	260	1650	480				4740	180	2.466	2104
	C5	20	D	1180	270	2340	1160	270	2340	7540	120	2.466	2231
	C6	20	D	1420	280	2440	1420	280	1420	7280	60	2.466	1074
<b>TOTAL WEIGHT (GRADE 60) = 13,675 Kgs.</b>													
PIER 6	C1a	36	A	650	6750					7400	46	7.990	2720
	C1b	36	A	650	6900					7550	46	7.990	2775
	C1c	36	A	650	8950					9600	46	7.990	3528
	C1d	36	A	650	4700					5350	46	7.990	1966
	C2	20	B	2580	390	1075				5510	206	2.466	2799
	C3	20	C	260	1810	1650				7440	103	2.466	1890
	C4	20	C	260	460	1650				4740	309	2.466	3612
	C5	20	D	1160	270	2340	1160	270	2340	7540	103	2.466	1915
C6	20	D	1420	280	2440	1420	280	1420	7260	206	2.466	3688	
<b>TOTAL WEIGHT (GRADE 60) = 24,893 Kgs.</b>													

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

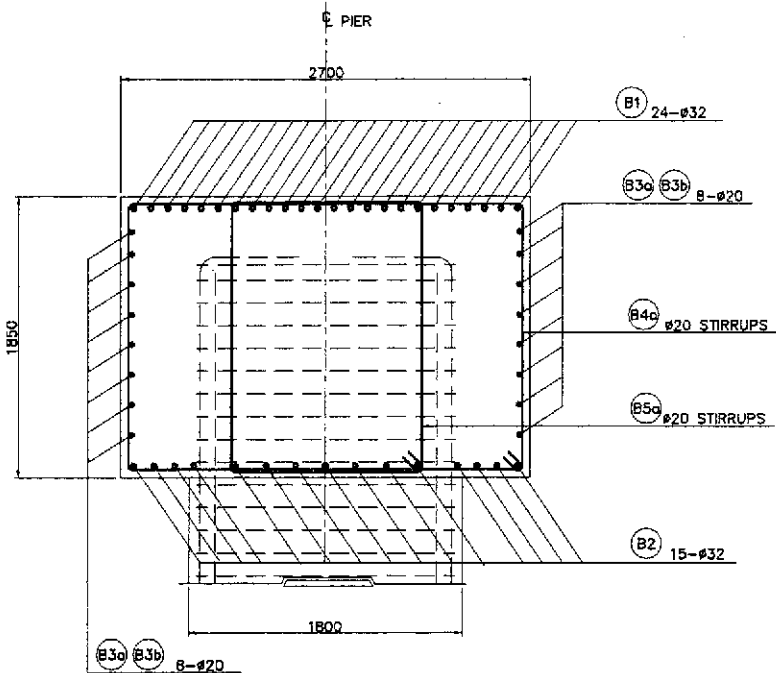


**C SECTION**  
SCALE 1:25

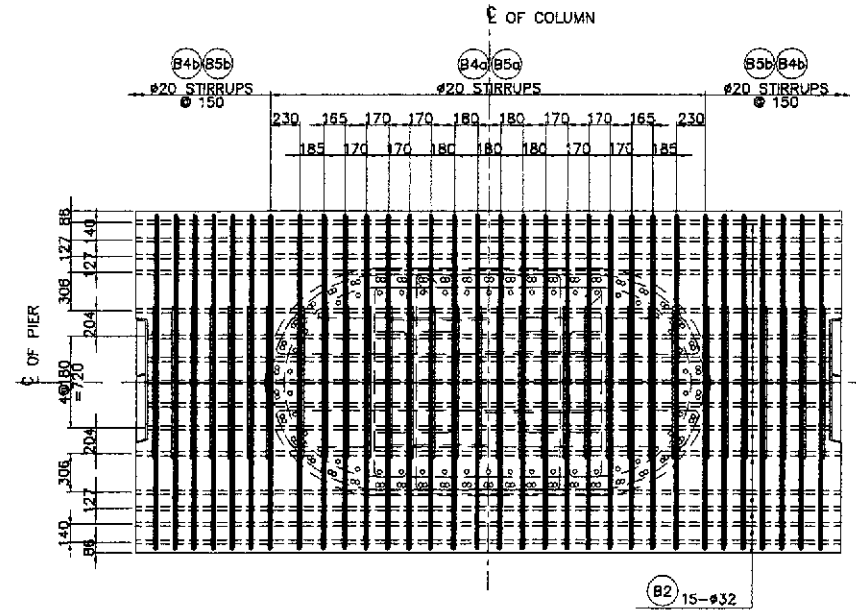
	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/17/02	R. P. DE JESUS	BUREAU OF DESIGN OFFICE OF THE SECRETARY			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pinaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO.14 TALAVERA RIVER BRIDGE COLUMN REINFORCEMENT DETAILS (PIER 6 - EXP. PIER) (ULTIMATE STAGE)	B14S-64
	SUBMITTED	10/21/02	Mr. Santos	Submitted By:	Reviewed By:	Recommended By:	CABANATUAN BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1		



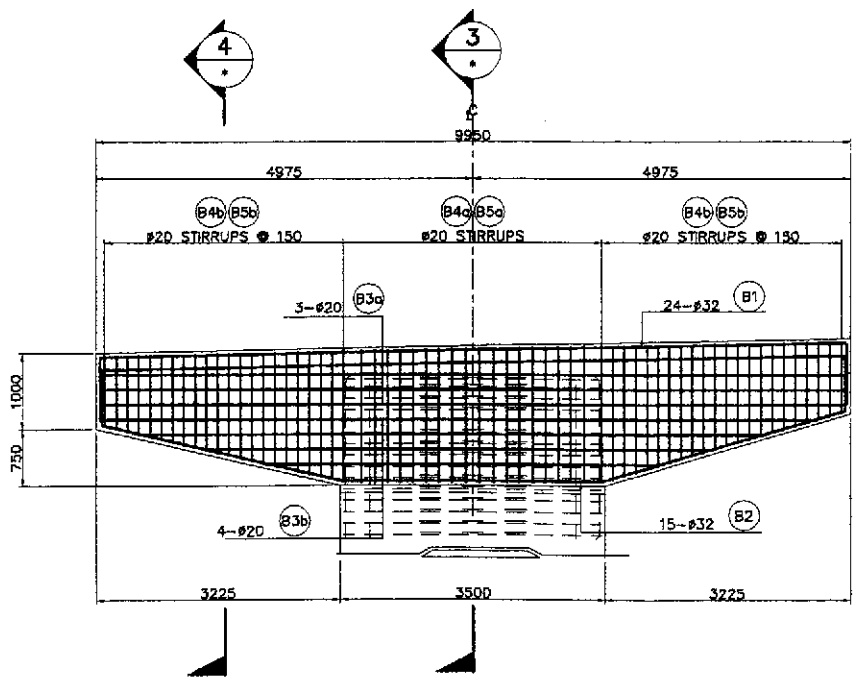
1 PLAN  
SCALE 1:50



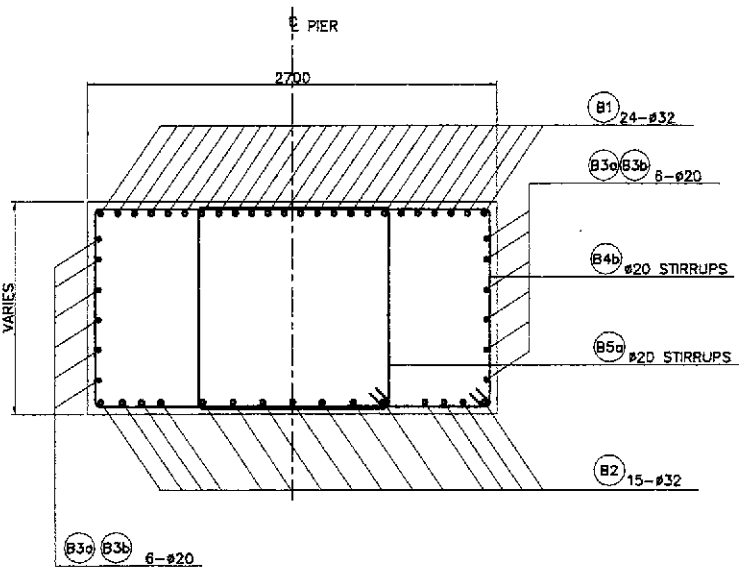
3 SECTION  
SCALE 1:25



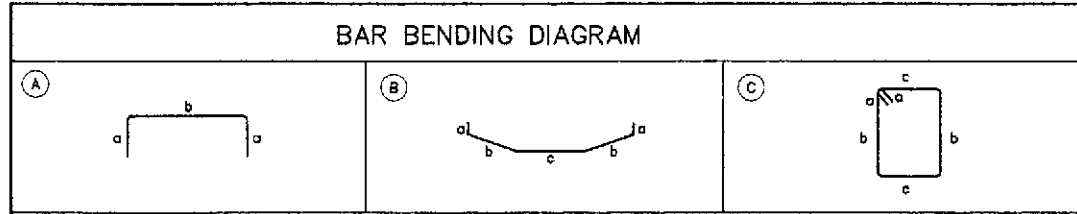
5 DETAIL  
SCALE 1:30



2 ELEVATION  
SCALE 1:50



4 SECTION  
SCALE 1:25

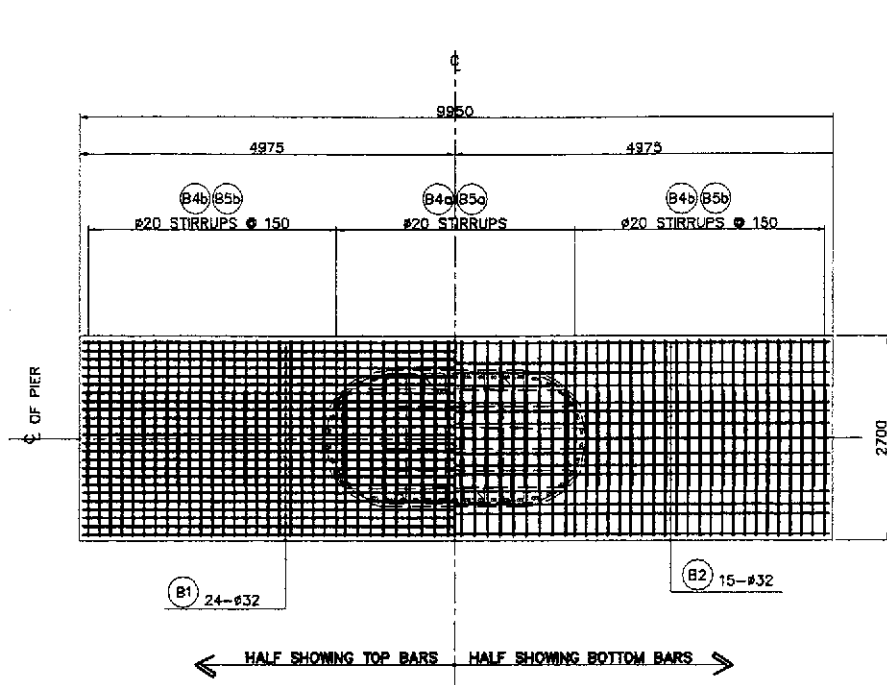


LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION (mm) OUT TO OUT						LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (kg) GRADE 60	REMARKS
				a	b	c	d	e	f					
PIER 1, PIER 2, PIER 4, PIER 5, PIER 7, & PIER 8 COPING	B1	32	A	600	9850					11050	24	6.313	1674	Quantities for one(1) coping only.
	B2	32	B	600	3350	3400				11300	15	6.313	1070	
	B3a	20	A	600	9850					11050	8	2.466	218	
	B3b	20	A	600	9350(max)					8425	8	2.466	166	
					5100(min)									
	B4a	25	C	260	2600	1650				9020	20	2.466	445	
	B4b	20	C	260	2800	1850(max)				8270	42	2.466	857	
	B5a	20	C	260	2000	1650	900(min)			7820	20	2.466	386	
	B5b	20	C	260	2000	1650(max)	900(min)			8270	42	2.466	857	
TOTAL WEIGHT = 5672 Kgs.														
TOTAL WEIGHT FOR (B) COPING = 34033 Kgs.														

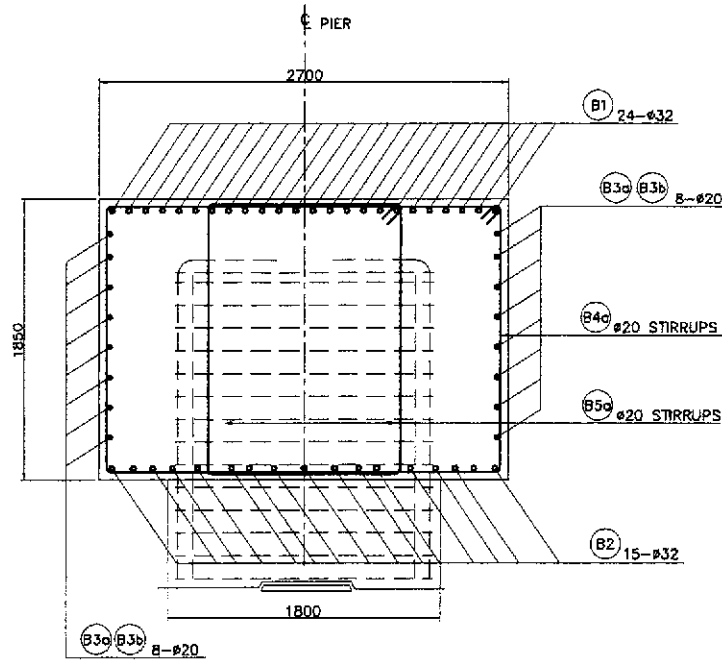
THE REINFORCEMENT SHOWN ON THIS TABLE IS FOR REFERENCE ONLY. THE CONTRACTOR SHOULD CHECK AND VERIFY ALL DIMENSIONS, SIZES AND QUANTITIES OF REINFORCEMENT.

A COPING REINFORCEMENT DETAILS (FIXED PIERS)  
SCALE AS SHOWN

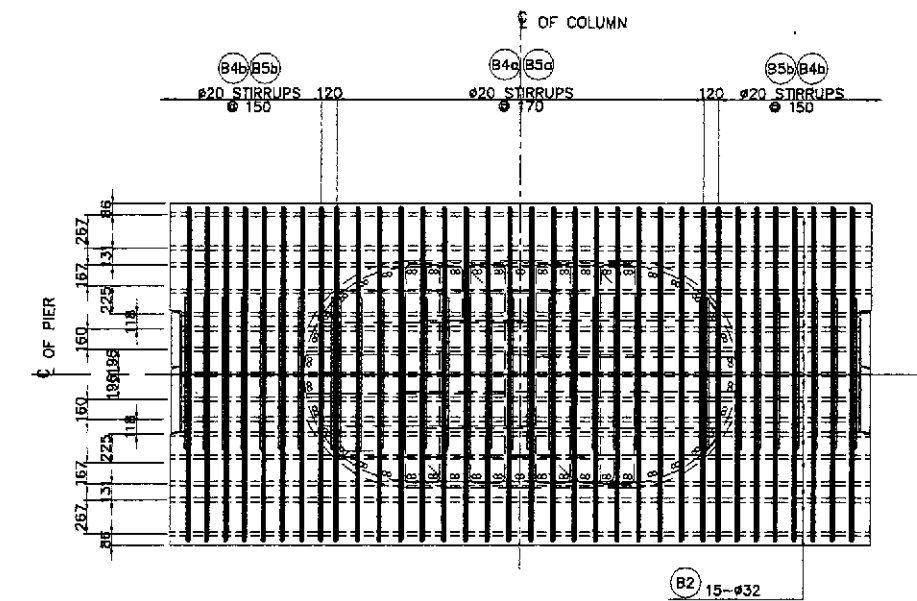
	DATE: 10/17/02 DESIGNED: P. DE JESUS CHECKED: 10/19/02 SUBMITTED: 10/21/02	SIGNATURE: [Signature] P. DE JESUS TEAM LEADER		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY	PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE IV	SCALE: AS SHOWN FULL SIZE A1	SHEET CONTENTS: BRIDGE NO.14 TALAVERA RIVER BRIDGE COPING REIN. DETAILS (FIXED PIERS) (PIERS P1, P2, P4, P5, P7 & P8) (ULTIMATE STAGE)	SHEET NO.: B14S-65
	P.J.H.L. - P.M.D. Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: ADRIANO M. DORCY Chief, Bridges Division	Recommended By: GILBERTO S. REYES Director IV (OIC)	Recommended By: MANUEL M. BONDAN Undersecretary	Approved By: SIMEDN A. DATUMANONG Secretary			
	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL YEO YACHIYO ENGINEERING CO., LTD.							



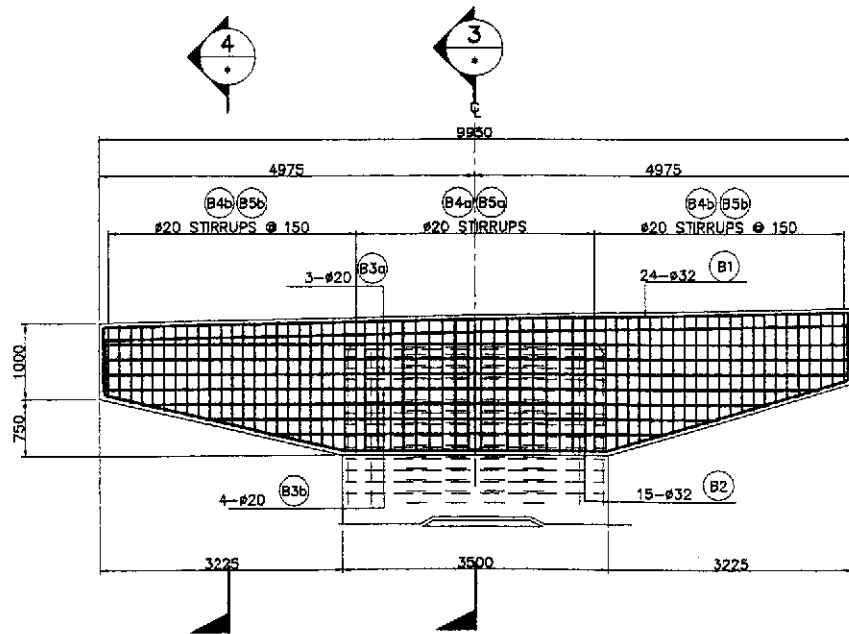
1 PLAN  
SCALE 1:50



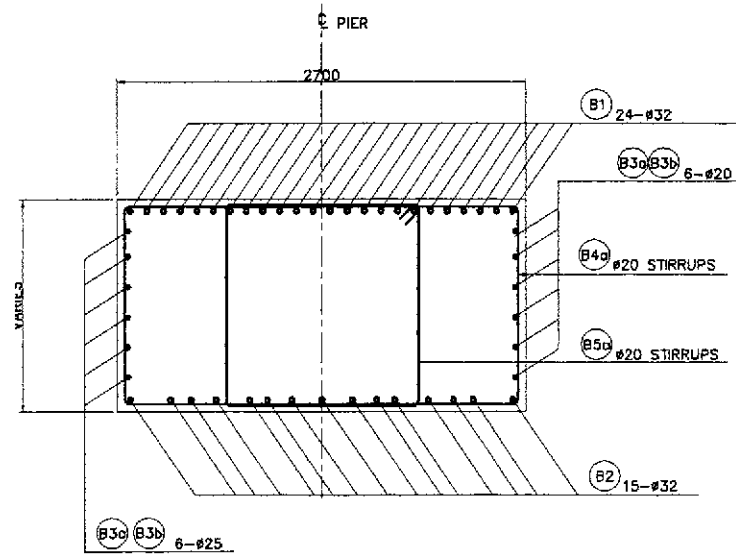
3 SECTION  
SCALE 1:25



5 DETAIL  
SCALE 1:30



2 ELEVATION  
SCALE 1:50



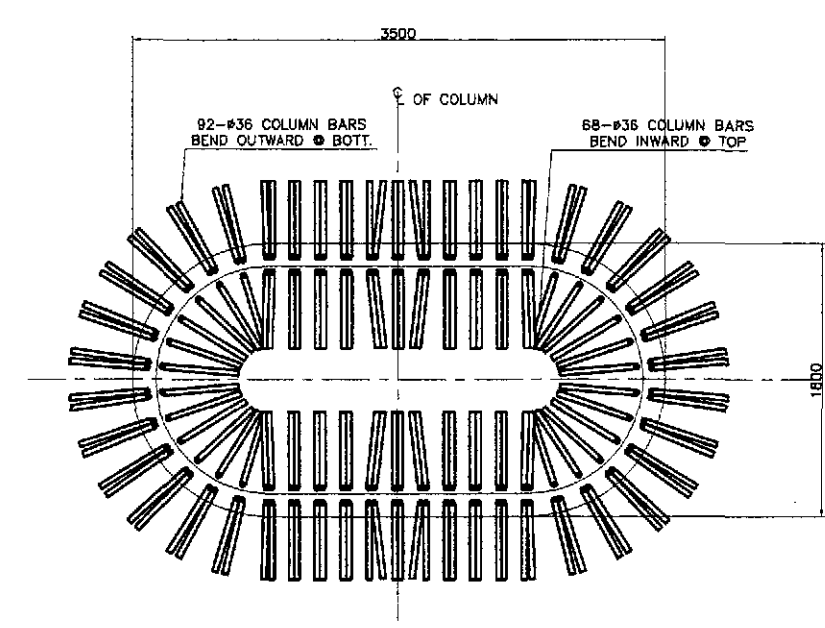
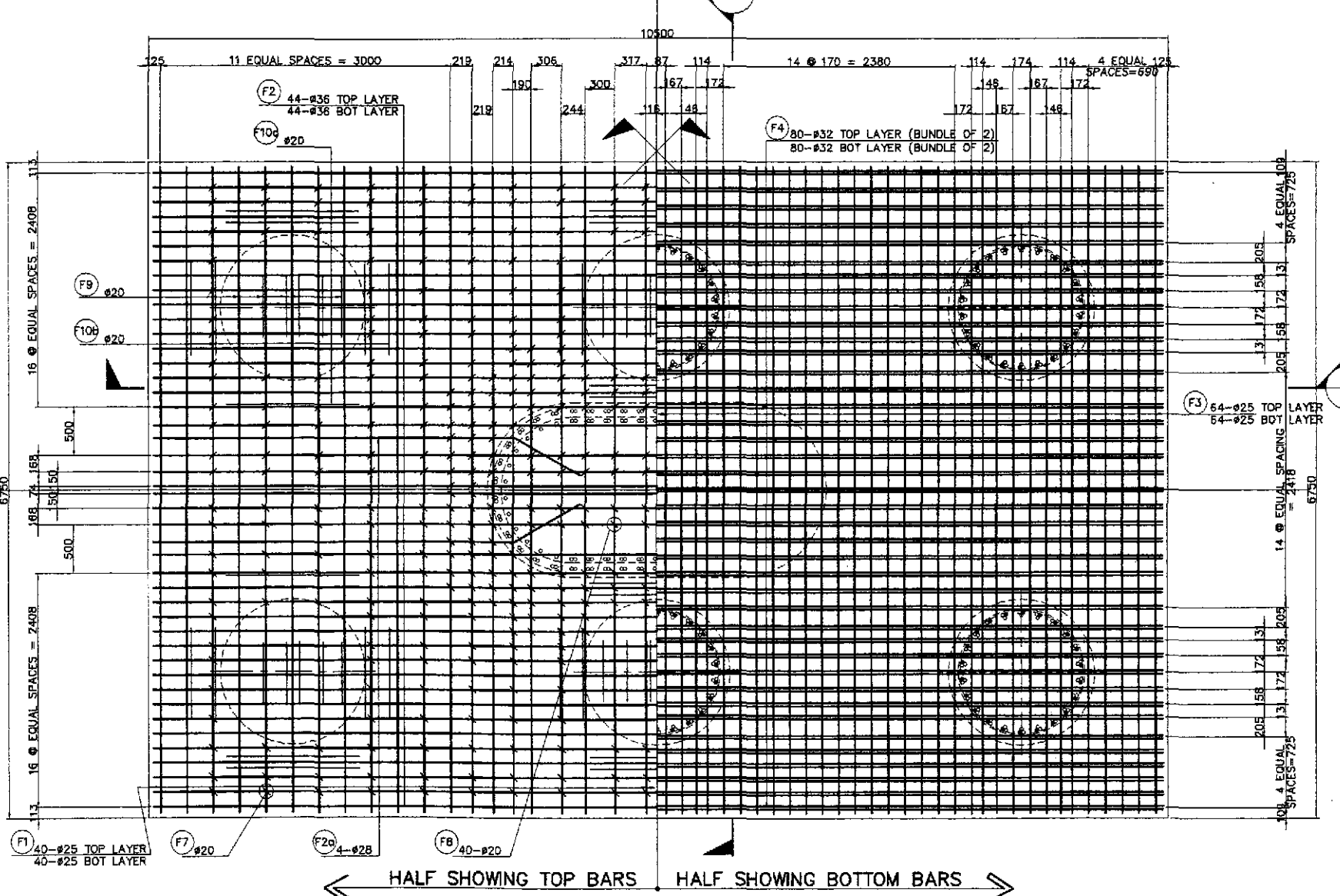
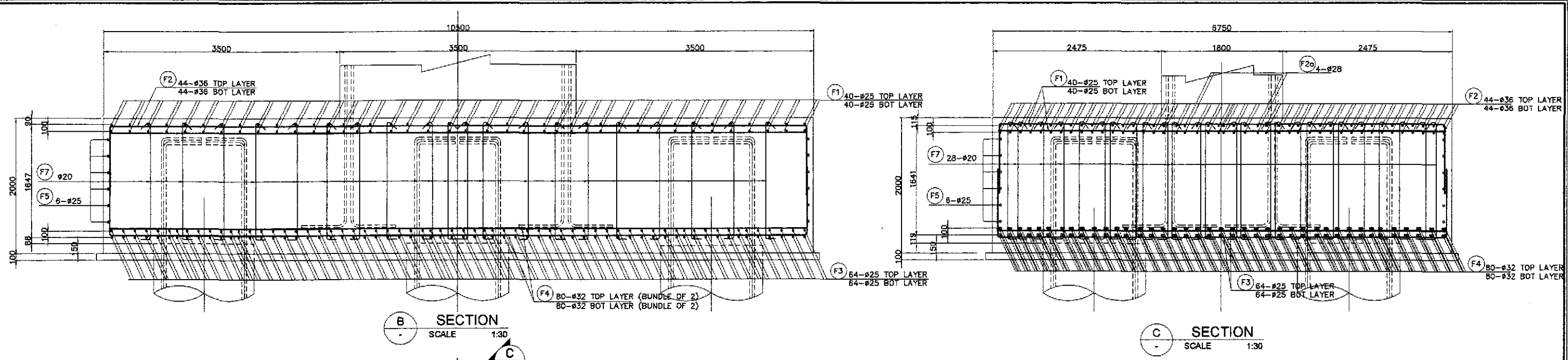
4 SECTION  
SCALE 1:25

BAR BENDING DIAGRAM															
A			B				C								
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 3 & PIER 6 COPING	B1	32	A	600	9850						11050	24	6.313	1674	Quantities for one(1) coping only.
	B2	32	B	600	3350	3400					11300	15	6.313	1070	
	B3a	20	A	600	9850						11050	8	2.466	218	
	B3b	20	A	600	9350(max)						8425	8	2.466	166	
					5100(min)										
	B4a	25	C	260	2800	1850					9020	20	2.466	445	
	B4b	20	C	260	2600	1650(max)					8270	42	2.466	857	
						900(min)									
B5a	20	C	260	2000	1850					7820	20	2.466	386		
B5b	20	C	260	2000	1650(max)					8270	42	2.466	857		
					900(min)										
TOTAL WEIGHT = 5672 Kgs.															
TOTAL WEIGHT FOR (2) COPING = 11344 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 COPING REINFORCEMENT DETAILS (EXP. PIERS)  
SCALE AS SHOWN

	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	DESIGNED	10/17/02	F. P. DE JESUS	BUREAU OF DESIGN				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 IV		
	CHECKED	10/19/02	J. S. SANTOS	OFFICE OF THE SECRETARY						
SUBMITTED	10/21/02	M. S. BAYAN	Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:	FULL SIZE A1		
			DANILO C. TRAJANO Project Director	ADRIANO M. DORDY Chief, Bridge Division	GILBERTO S. REYES Director IV (OIC)	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary			



**B SECTION**  
SCALE 1:30

**C SECTION**  
SCALE 1:30

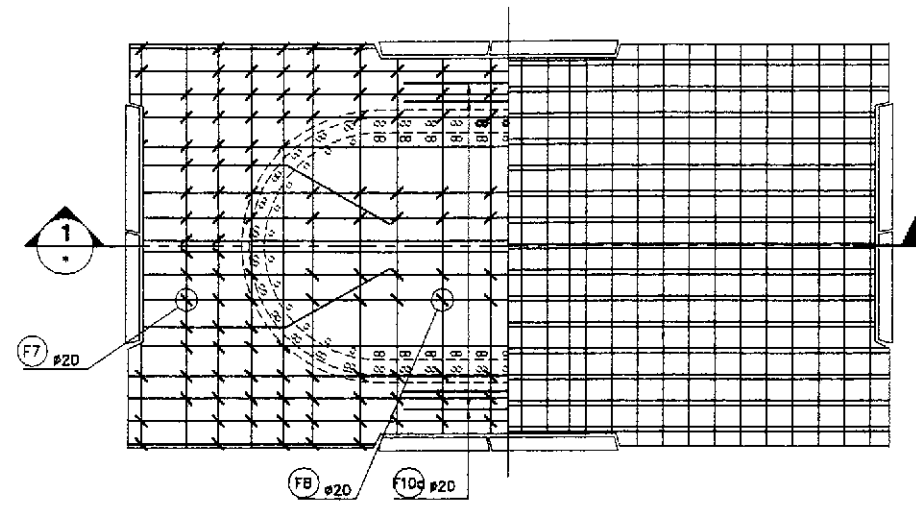
**A PLAN**  
SCALE 1:30

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

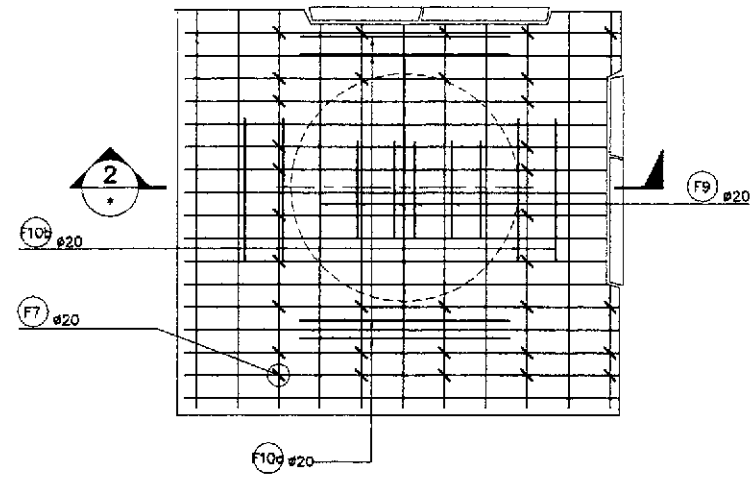
**1 PILECAP REINF. DETAILS FOR FIX-FIX PIERS (PIER 1 & PIER 2)**  
SCALE AS SHOWN

	DATE: 10/17/02 DESIGNED: P. P. DE JESUS CHECKED: C. SANTOS SUBMITTED: 10/21/02	SIGNATURE: P. P. DE JESUS C. SANTOS TEAM LEADER	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PUBL. - PMC BUREAU OF DESIGN OFFICE OF THE SECRETARY	PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE IV	SCALE: AS SHOWN FULL SIZE A1	SHEET CONTENTS: BRIDGE NO.14 TALAVERA RIVER BRIDGE PILECAP REINF. DETAILS FOR FIX PIERS (PIERS P1 & P2) - 1 OF 2 (ULTIMATE STAGE)	SHEET NO.: <b>B14S-67</b>
	Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: ADRIANO M. DORCO Chief, Bridges Division	Recommended By: GILBERTO S. REYES Director IV (OIC)	Recommended By: MANUEL M. BONDAN Undersecretary	Approved By: SIMON A. DATUMANONG Secretary			
	APPROVED: P. P. DE JESUS P. P. DE JESUS Chief, Bridges Division							

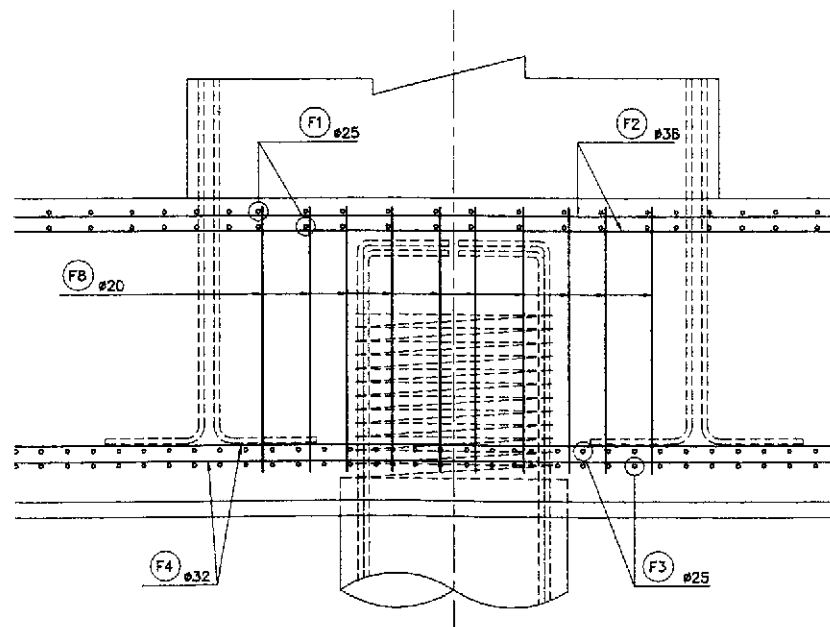




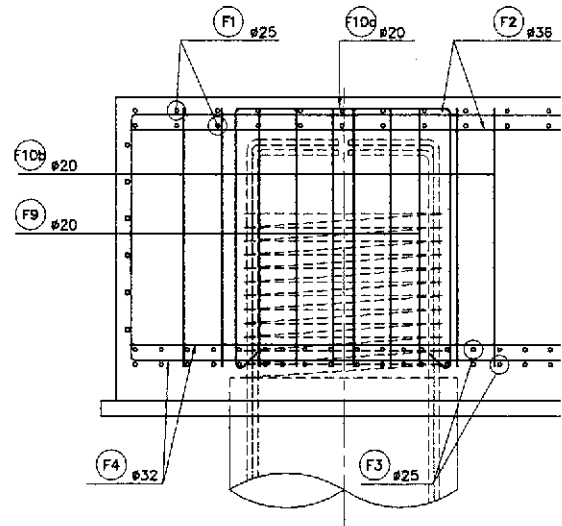
**A PLAN**  
SCALE 1:25



**B PLAN**  
SCALE 1:25



**1 SECTION**  
SCALE 1:25



**2 SECTION**  
SCALE 1:25

**1 PILECAP REINF. DETAILS FOR FIX-FIX PIERS (PIER 1 & PIER 2)**  
SCALE AS SHOWN

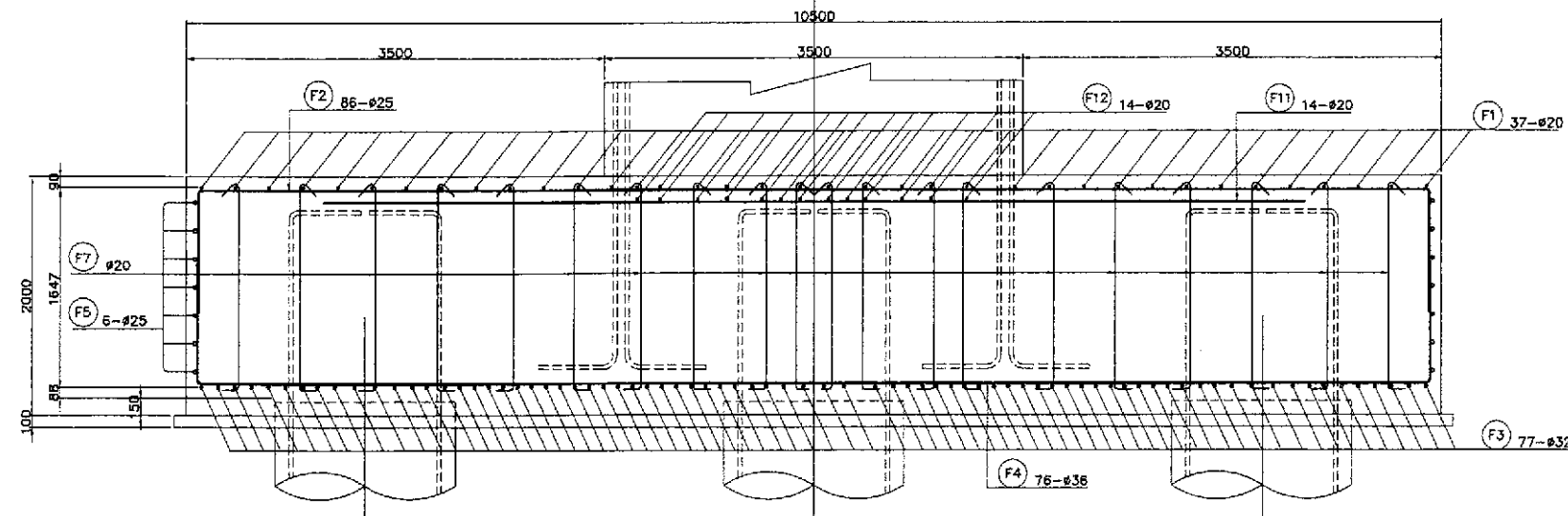
**BAR BENDING DIAGRAM**

**SCHEDULE OF REINFORCEMENT**

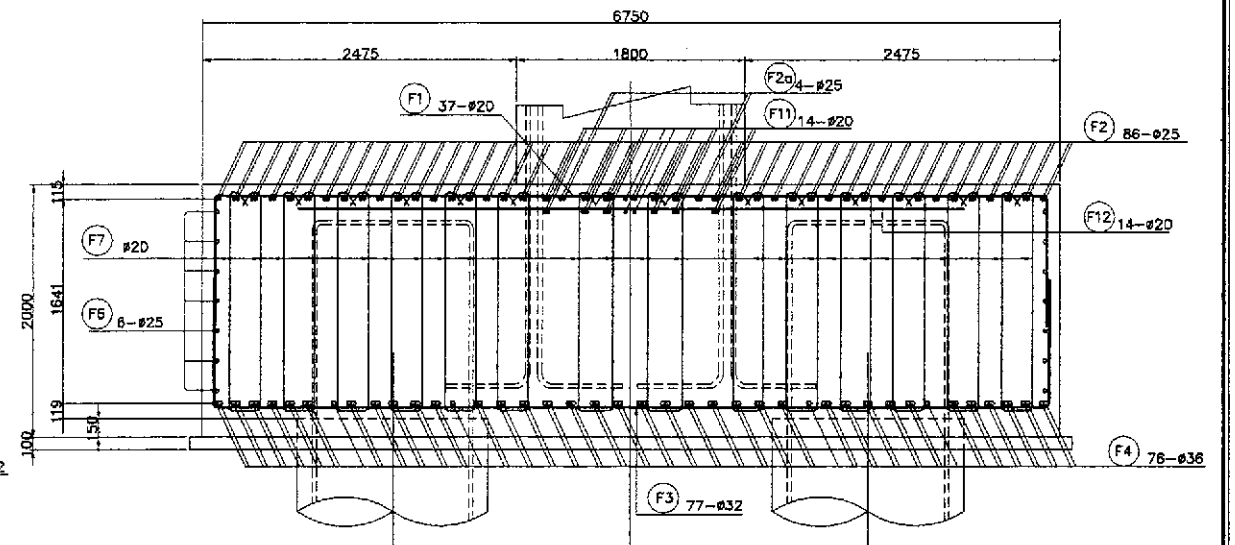
LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION (mm) OUT TO OUT					LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (kg)	
				a	b	c	d	e				GRADE 40	GRADE 60
PIERS P1 & P2	F1	25	A	1000	6600				8600	80	3.853		2851
	F2	36	A	825	10350				12000	88	7.990		8437
	F2a	36	C	3700	1500				5200	8	7.990		332
	F3	25	A	1000	6600				8600	128	3.853		4241
	F4	32	A	825	10350				12000	180	5.313		12121
	F5	25	B	8800					8600	12	3.853		305
	F6	25	B	10350					10350	12	3.853		479
	F7	20	D	350	1870	300			2320	588	2.466		3364
	FB	20	D	350	1870	300			2320	40	2.466		229
	F9	20	E	1670	840	300			4580	36	2.466		407
F10a	20	E	1670	1550	300			5490	24	2.466		325	
F10b	20	E	1670	1600	300			5540	24	2.466		328	
<b>TOTAL WEIGHT PER PIER = 33,219 kg.</b>													
<b>TOTAL WEIGHT FOR (2) PIERS = 66,438 kg.</b>													

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

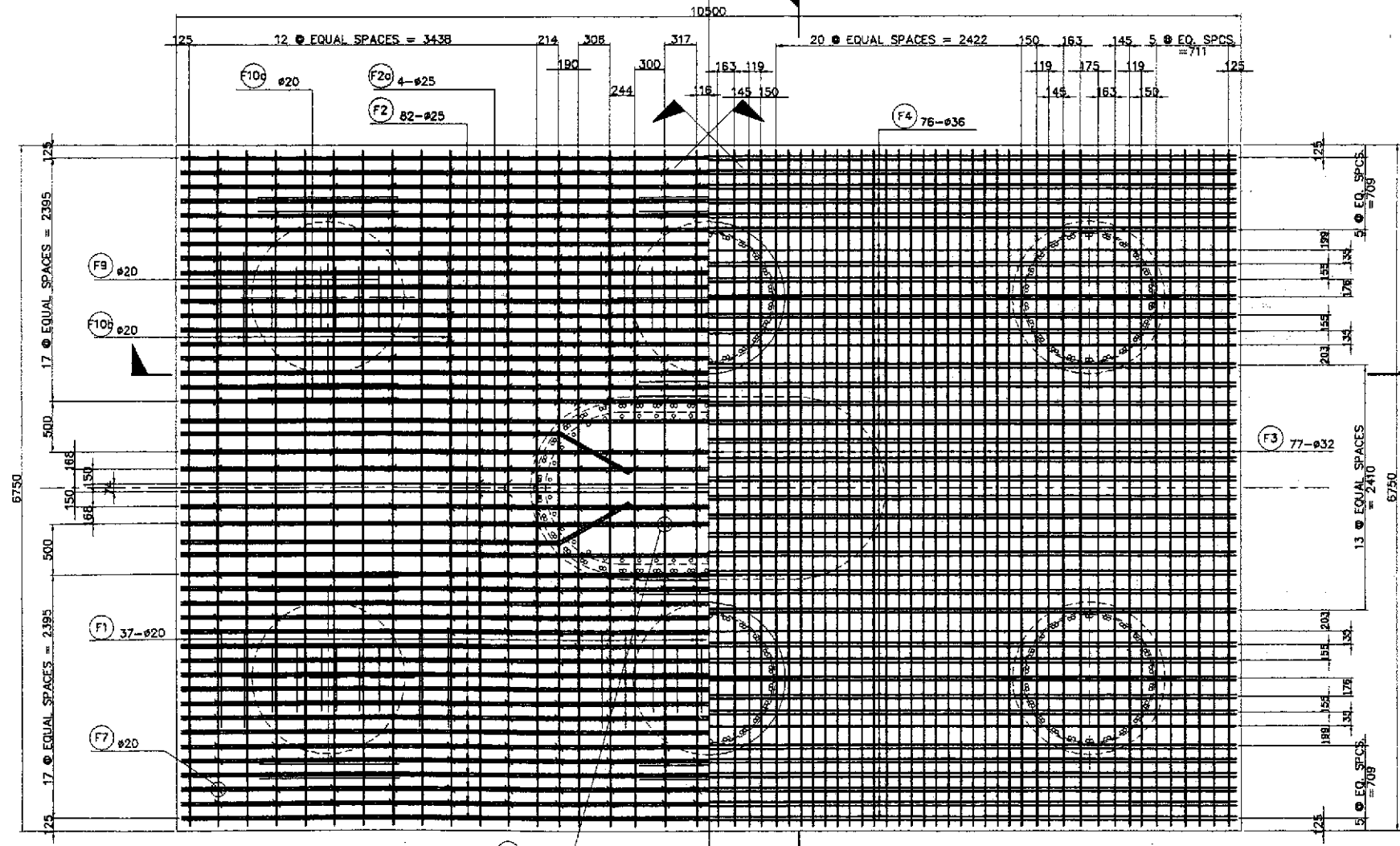
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Palaridel, Cabanatuan and San Jose Bypasses) <b>CABANATUAN BYPASS - CONTRACT PACKAGE IV</b>	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : BRIDGE NO.14 TALAVERA RIVER BRIDGE PILECAP REINF. DETAILS FOR FIX PIERS (PIERS P1 & P2) - 2OF 2 (ULTIMATE STAGE)	SHEET NO. : <b>B14S-68</b>	
	CHECKED	10/19/02	J. P. DE JESUS		P.W.H. - PMO	BUREAU OF DESIGN	OFFICE OF THE SECRETARY	Recommended By: (See cover sheet for Signature/Approval)					Approved By: (See cover sheet for Signature/Approval)
	SUBMITTED	10/21/02	M. P. SANTOS		Submitted By:	Reviewed By:	Recommended By:	Manuel M. BONDAN Undersecretary					Simeon A. DATUMANONG Secretary



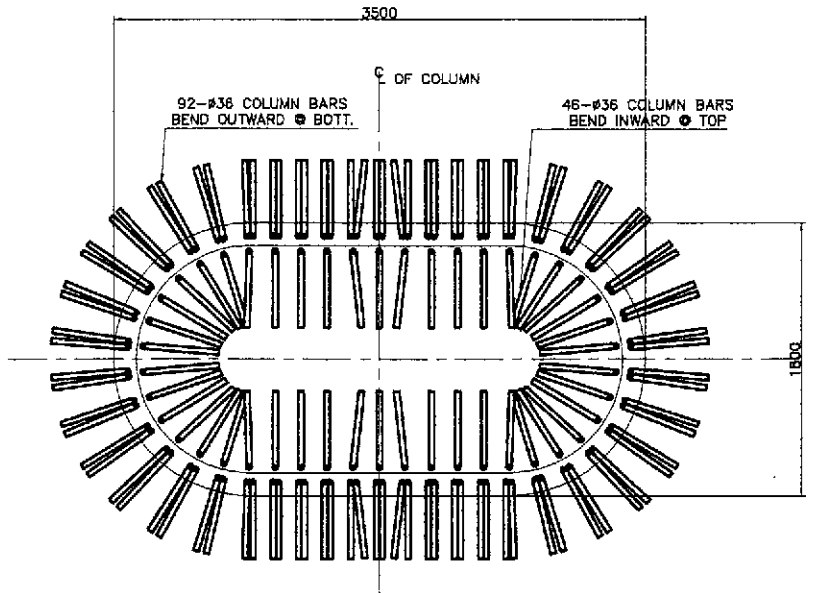
**B SECTION**  
SCALE 1:30



**C SECTION**  
SCALE 1:30



**A PLAN**  
SCALE 1:30



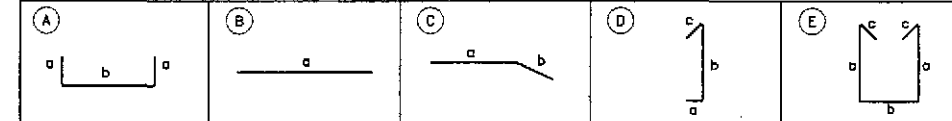
**D DETAIL OF COLUMN**  
**MAIN BAR ARRANGEMENT @ BOTTOM**  
SCALE 1:25

← HALF SHOWING TOP BARS    HALF SHOWING BOTTOM BARS →

**1 PILECAP REINF. DETAILS FOR FIX PIERS (PIER 4, PIER 5, PIER 7 & PIER 8)**  
SCALE AS SHOWN

	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			<b>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>CABANATUAN BYPASS - CONTRACT PACKAGE IV</b>	<b>SCALE :</b> AS SHOWN FULL SIZE A1	<b>SHEET CONTENTS :</b> BRIDGE NO.14 TALAVERA RIVER BRIDGE PILECAP REINF. DET. FOR FIX PIERS (PIERS P4, P5, P7 & P8) - 1 OF 2 (ULTIMATE STAGE)	<b>SHEET NO. :</b> <b>B14S-69</b>
	CHECKED	10/19/07	J.C. SANTOS	BUREAU OF DESIGN Submitted By: DANILO C. TRAJANO (Project Director) Reviewed By: ADRIANO M. DOROY (Chief, Bridge Division) Recommended By: GILBERTO S. REYES (Director - N (CIC)) Office of the Secretary Recommended By: MANUEL M. BONGAN (Undersecretary) Approved By: SIMON A. DATUMANONG (Secretary)						
	SUBMITTED	10/21/07	Team Leader							

BAR BENDING DIAGRAM

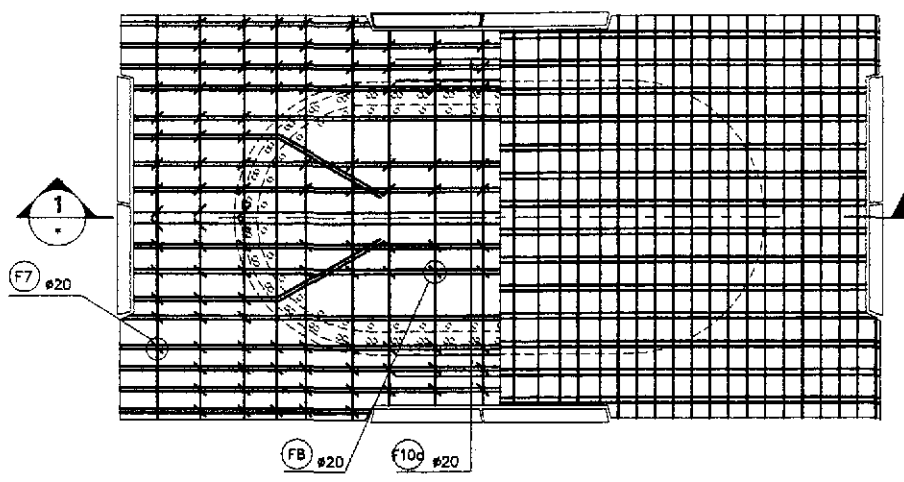


SCHEDULE OF REINFORCEMENT

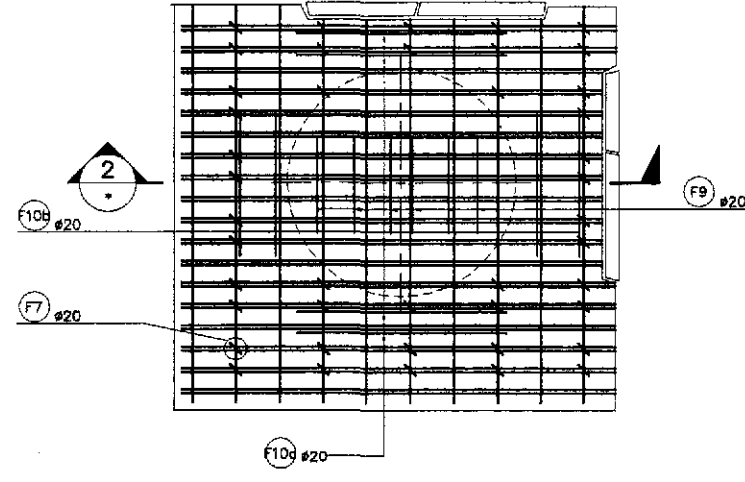
LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION(mm) OUT TO OUT					LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (Kg)	
				a	b	c	d	e				GRADE 40	GRADE 60
PIERS P4, P5, P7 & P8	F1	20	A	1000	8600				8600	37	2.466	785	
	F2	25	A	825	10350				12000	86	3.854	3977	
	F2a	25	C	3700	1000				4700	4	3.854	72	
	F3	32	A	1000	8600				8600	77	6.313	4180	
	F4	36	A	825	10350				12000	76	7.991	7288	
	F5	25	B	8600					6600	12	3.854	305	
	F6	25	B	10350					10350	12	3.854	479	
	F7	20	D	350	1670	300			2320	568	2.466	3250	
	F8	20	D	350	1670	300			2320	40	2.466	229	
	F9	20	E	1670	780	300			4720	36	2.466	419	
	F10a	20	E	1670	1760	300			5700	24	2.466	337	
	F10b	20	E	1670	1480	300			5420	24	2.466	321	
F11	20	B	9000					9000	14	2.466	311		
F12	20	B	5000					5000	14	2.466	173		

TOTAL WEIGHT PER PIER = 22126 kg.  
TOTAL WEIGHT FOR (4) PIERS = 88502 kg.

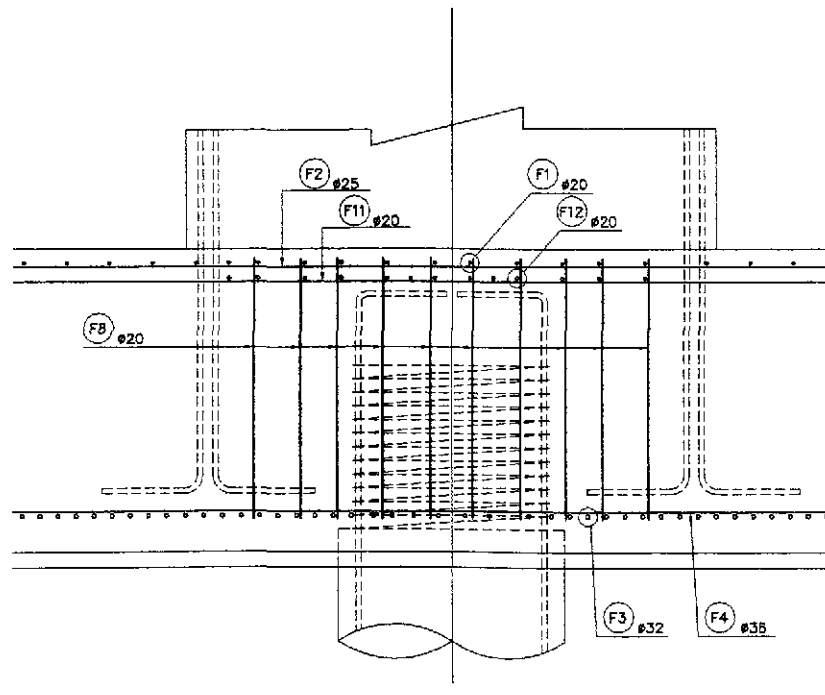
THE REINFORCEMENT SHOWN ON THIS TABLE IS FOR REFERENCE ONLY. THE CONTRACTOR SHOULD CHECKED AND VERIFY ALL DIMENSIONS, SIZES AND QUANTITIES OF REINFORCEMENT.



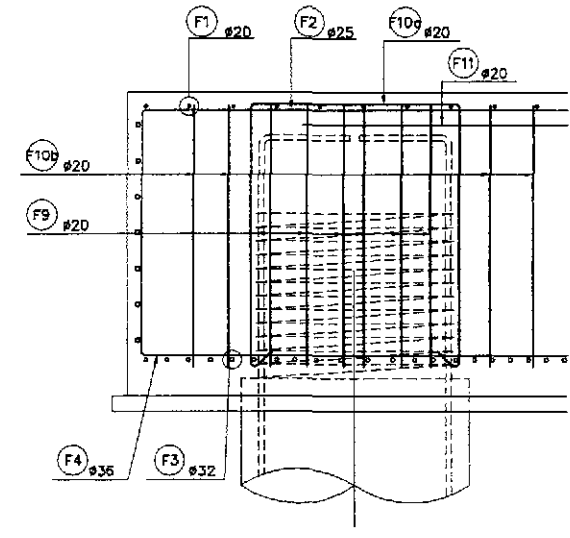
A PLAN SCALE 1:25



B PLAN SCALE 1:25



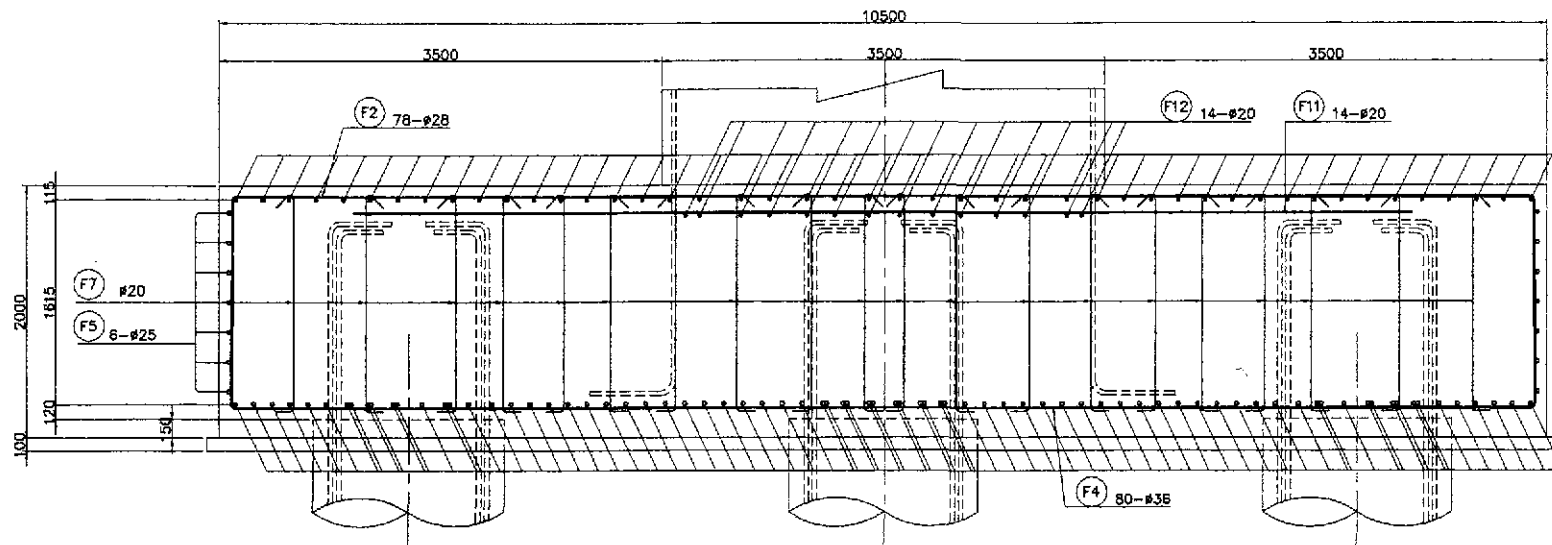
1 SECTION SCALE 1:25



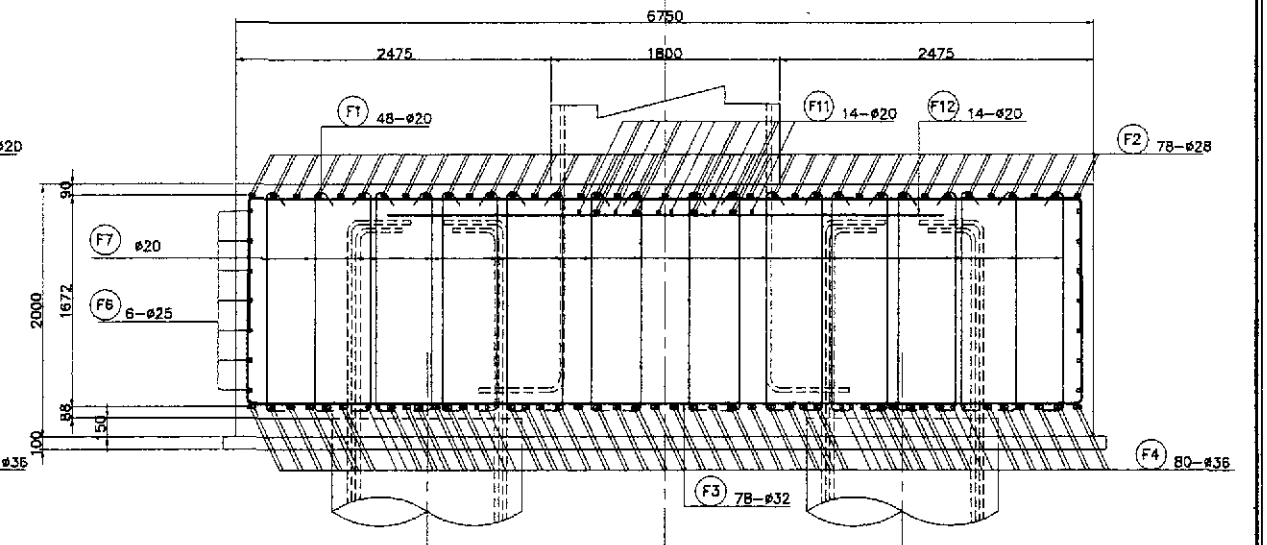
2 SECTION SCALE 1:25

1 PILECAP REINF. DETAILS FOR FIX PIERS (PIER 4, PIER 5, PIER 7 & PIER 8) SCALE AS SHOWN

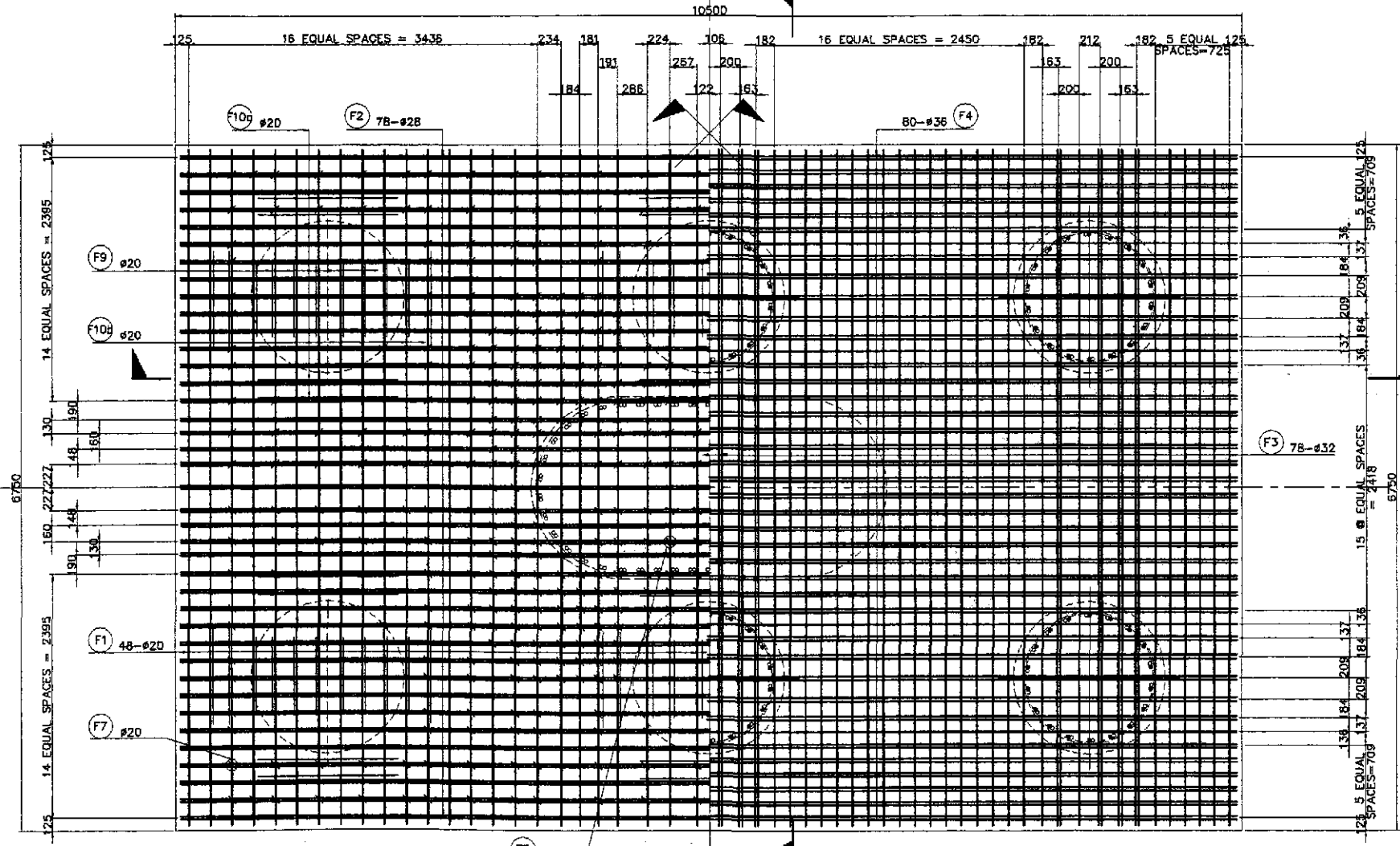
	DESIGNED	10/17/02	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS		PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/19/02	BUREAU OF DESIGN		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)		AS SHOWN	BRIDGE NO.14 TALAVERA RIVER BRIDGE PILECAP REINF. DET. FOR FIX PIERS (PIERS P4, P5, P7 & P8) - 2 OF 2 (ULTIMATE STAGE)	B14S-70
	SUBMITTED	10/21/02	OFFICE OF THE SECRETARY		CABANATUAN BYPASS - CONTRACT PACKAGE IV		FULL SIZE A1		



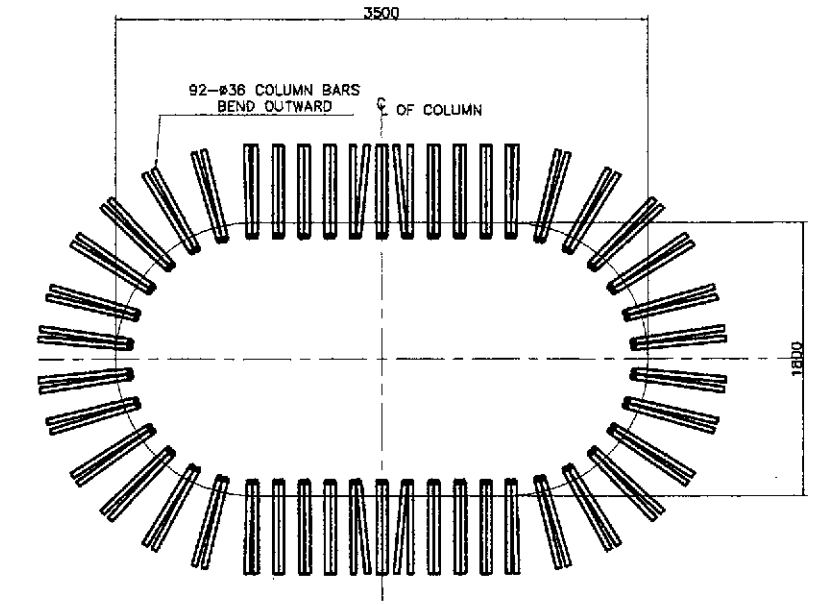
**B SECTION**  
SCALE 1:30



**C SECTION**  
SCALE 1:30



**A PLAN**  
SCALE 1:30



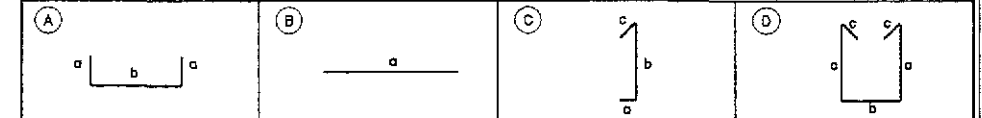
**D DETAIL OF COLUMN**  
**MAIN BAR ARRANGEMENT @ BOTTOM**  
SCALE 1:25

← HALF SHOWING TOP BARS | HALF SHOWING BOTTOM BARS →

**1 PILECAP REINF. DETAILS FOR EXP. PIERS (PIER 3 & PIER 6)**  
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	10/19/02	P. DE JESUS	BUREAU OF DESIGN OFFICE OF THE SECRETARY			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pardel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO.14 TALAVERA RIVER BRIDGE PILECAP REINF. DETAILS FOR EXP. (PIERS P3 & P6) - 1 OF 2 (ULTIMATE STAGE)	B14S-71
	SUBMITTED	10/21/02	J. SANTOS	Submitted By:	Reviewed By:	Recommended By:				
			DANILO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridge Division	GILBERTO S. REYES Director N (CIC)	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary	CABANATUAN BYPASS - CONTRACT PACKAGE IV FULL SIZE A1		

BAR BENDING DIAGRAM

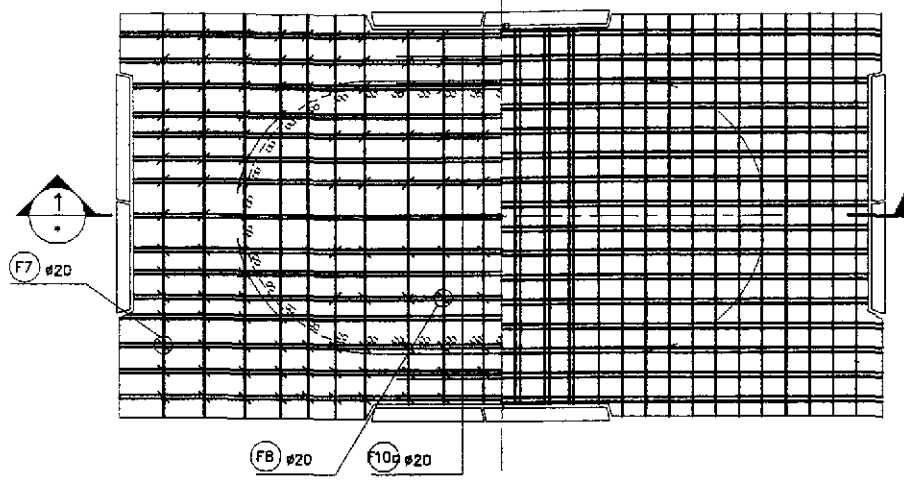


SCHEDULE OF REINFORCEMENT

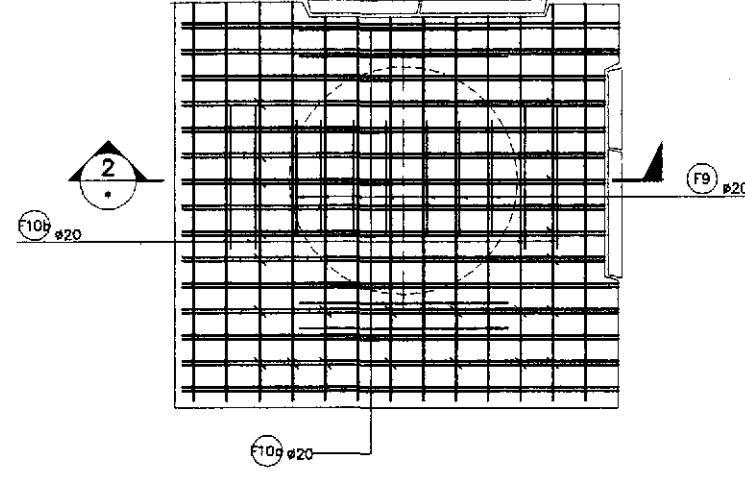
LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION(mm) OUT TO OUT					LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (Kg)	
				a	b	c	d	e				GRADE 40	GRADE 60
PIERS P3 & P6	F1	20	A	1000	6600				8800	48	2.466		1018
	F2	28	A	825	10350				12000	78	4.833		4525
	F3	32	A	1000	6600				8800	78	6.313		4235
	F4	36	A	825	10350				12000	80	7.991		7871
	F5	25	B	6600					6600	12	3.854		305
	F6	25	B	10350					10350	12	3.854		479
	F7	20	C	350	1870	300			2320	464	2.466		2655
	F8	20	C	350	1870	300			2320	40	2.466		229
	F9	20	D	1870	590	300			4530	36	2.466		402
	F10a	20	D	1670	1360	300			5300	24	2.466		314
	F10b	20	D	1670	1450	300			5390	24	2.466		319
	F11	20	B	9000					9000	14	2.466		311
F12	20	B	5000					5000	14	2.466		173	

TOTAL WEIGHT PER PIER = 22635 kg  
 TOTAL WEIGHT FOR (2) PIERS = 45270 kg

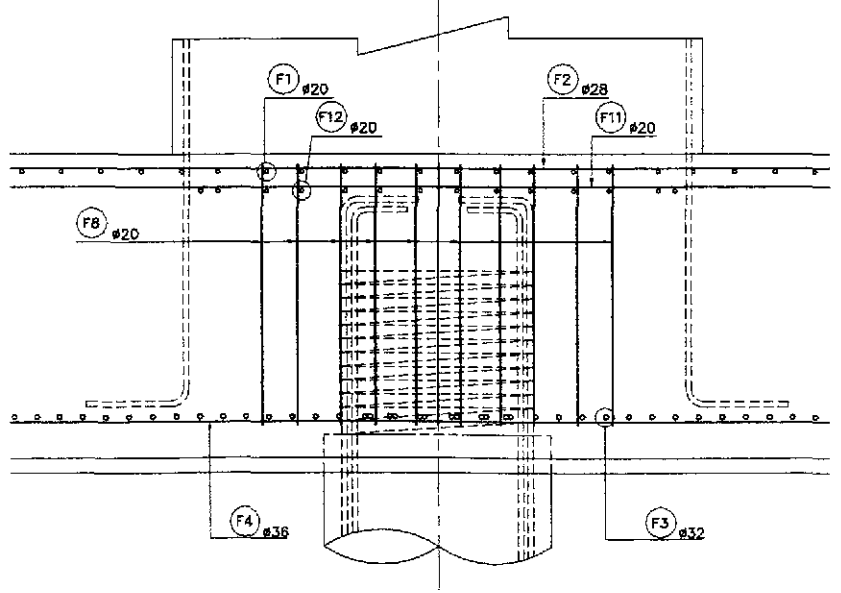
THE REINFORCEMENT SHOWN ON THIS TABLE IS FOR REFERENCE ONLY. THE CONTRACTOR SHOULD CHECKED AND VERIFY ALL DIMENSIONS, SIZES AND QUANTITIES OF REINFORCEMENT.



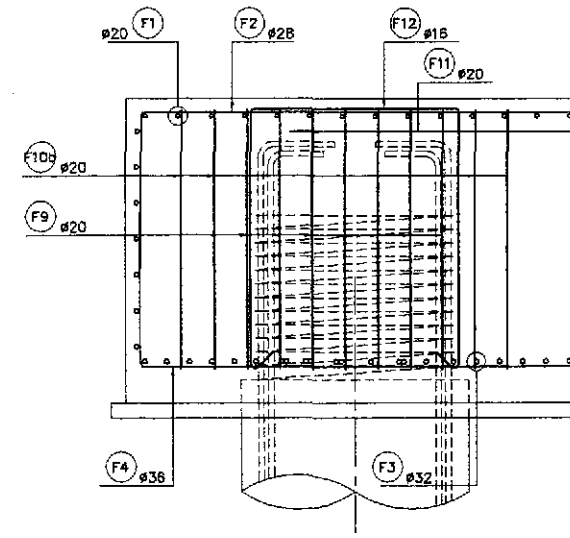
A PLAN SCALE 1:25



B PLAN SCALE 1:25



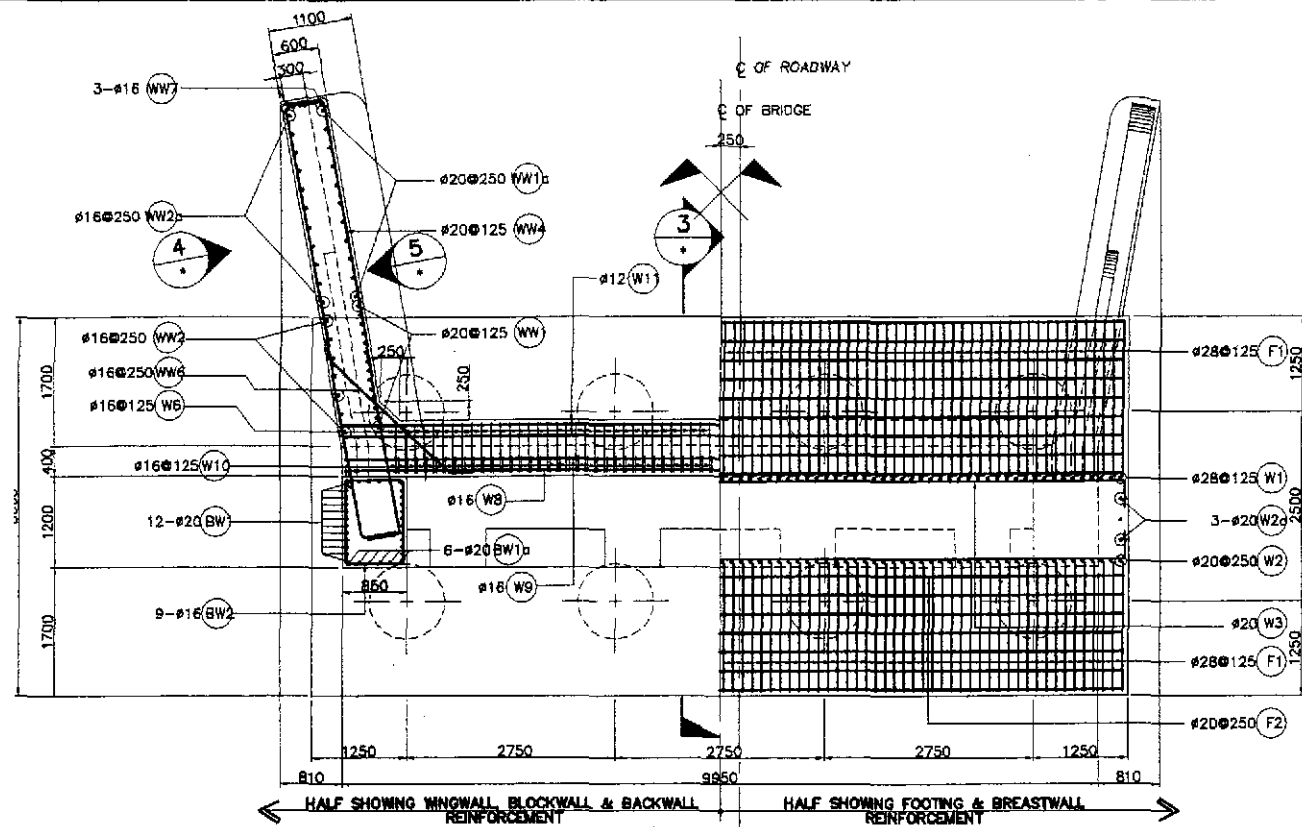
1 SECTION SCALE 1:25



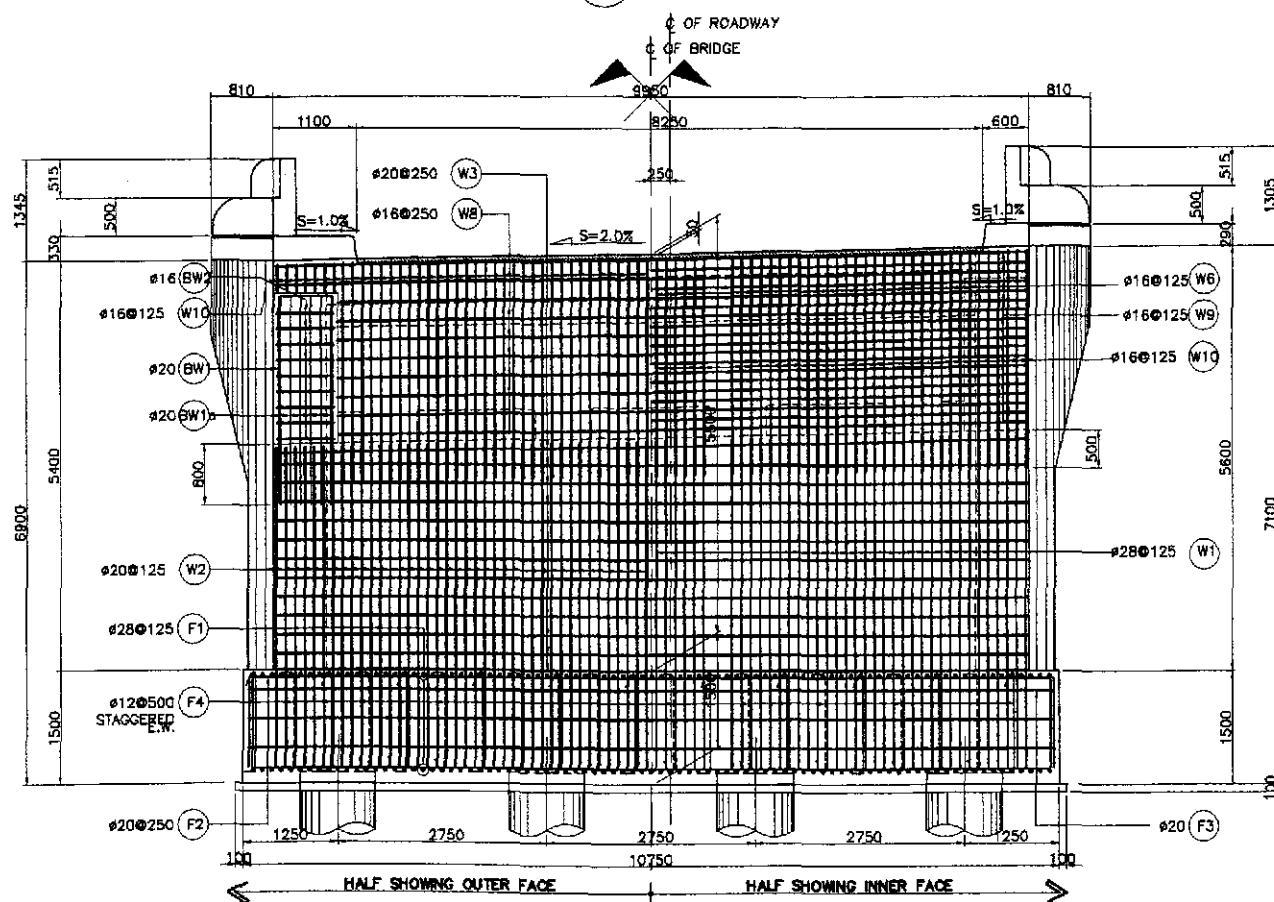
2 SECTION SCALE 1:25

1 PILECAP REINF. DETAILS FOR EXP. PIERS (PIER 3 & PIER 6) SCALE AS SHOWN

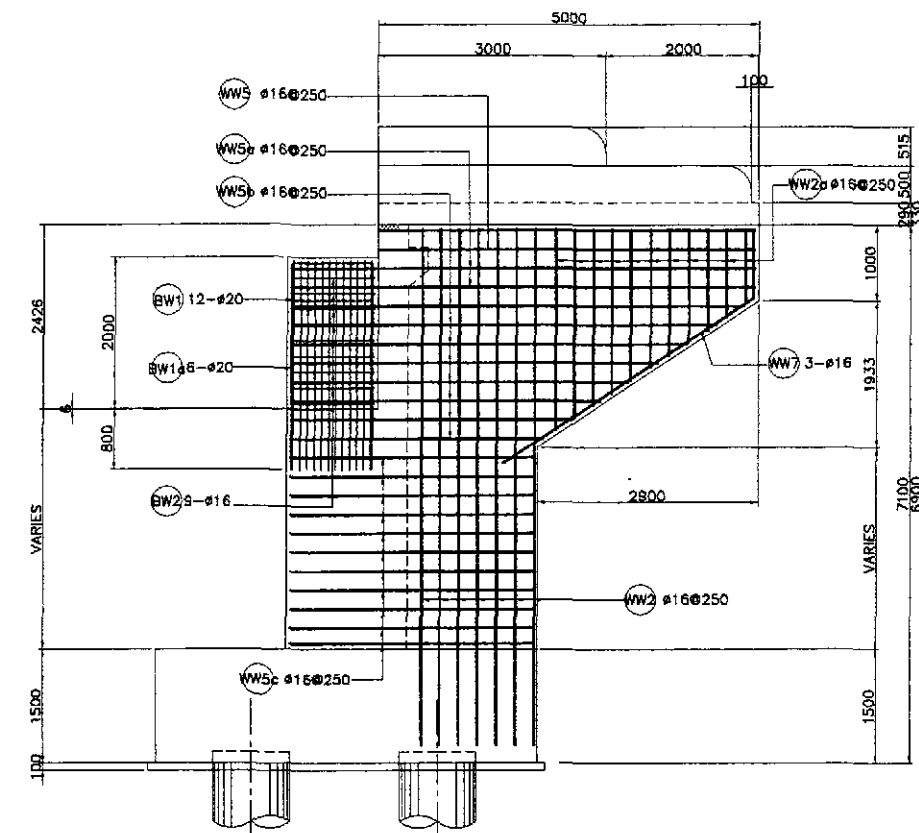
	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/17/02	F. P. DE JESUS	BUREAU OF DESIGN Submitted By: DANILLO C. TRAJANO, Project Director				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE IV	AS SHOWN	BRIDGE NO.14 TALAVERA RIVER BRIDGE PILECAP REINF. DETAILS FOR EXP. (PIERS P3 & P6) - 2 OF 2 (ULTIMATE STAGE)	B14S-72
	SUBMITTED	10/21/02	MANUEL M. BONDAN	OFFICE OF THE SECRETARY Reviewed By: ADRIANO M. DOROS, Chief, Bridges Division Recommended By: GILBERTO S. REYES, Director IV (C&C) Approved By: MANUEL M. BONDAN, Undersecretary SIMEON A. DATUMANONG, Secretary							



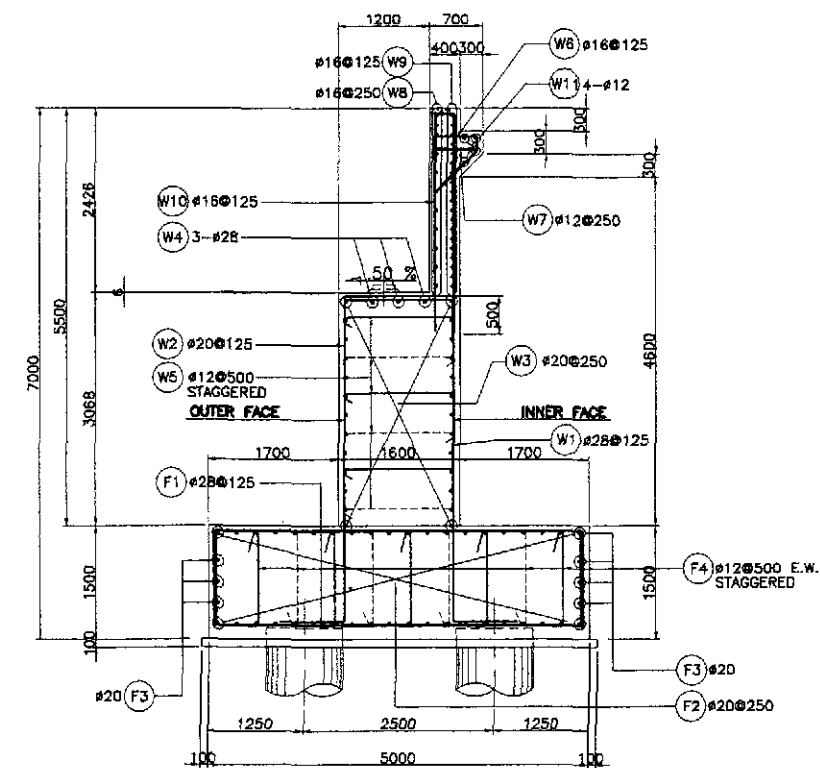
1 PLAN  
SCALE 1:50



2 ELEVATION  
SCALE 1:50



4 WINGWALL ELEVATION  
SCALE 1:50



3 SECTION  
SCALE 1:50

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

DESIGNED	DATE	SIGNATURE
10/17/02		J. P. DE JESUS
CHECKED	10/19/02	J. S. YOS
SUBMITTED	11/21/02	Mr. Bando TEAM LEADER

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

Reviewed By:	Recommended By:	Recommended By:	Approved By:
ADRIANO M. DORAY Chief, Bridges Division	GILBERTO S. REYES Director IV (CIC)	MANUEL M. BONOAN Undersecretary	SIMEON A. DATUMANONG Secretary

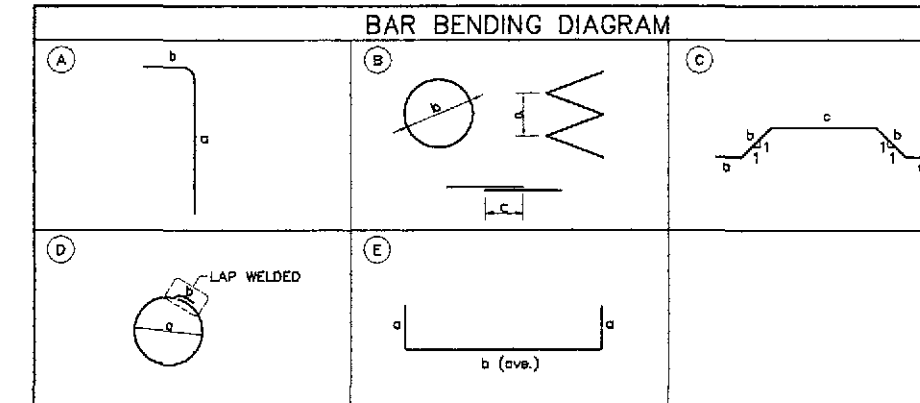
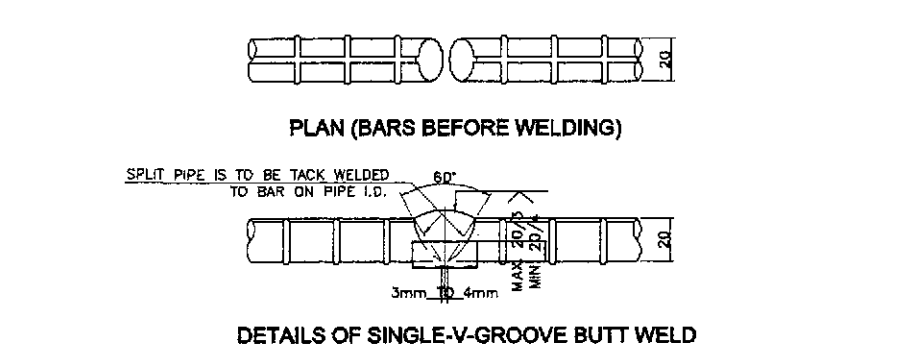
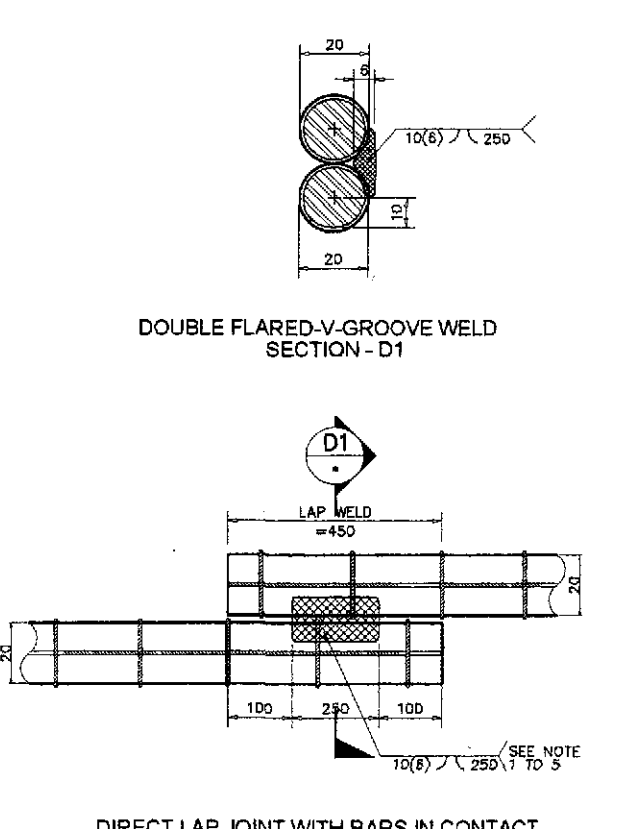
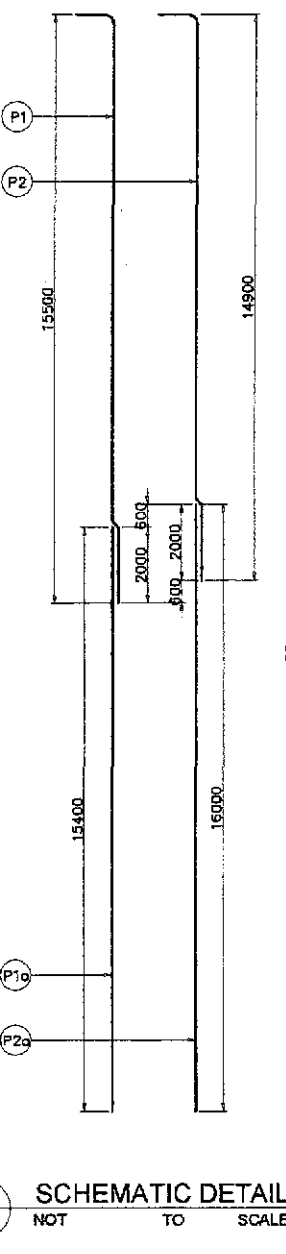
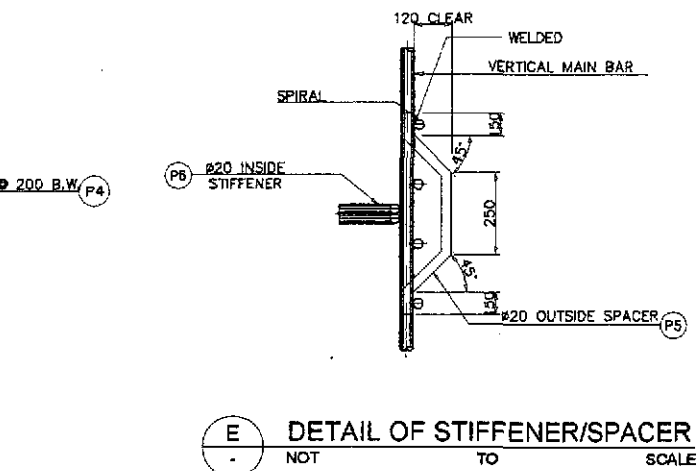
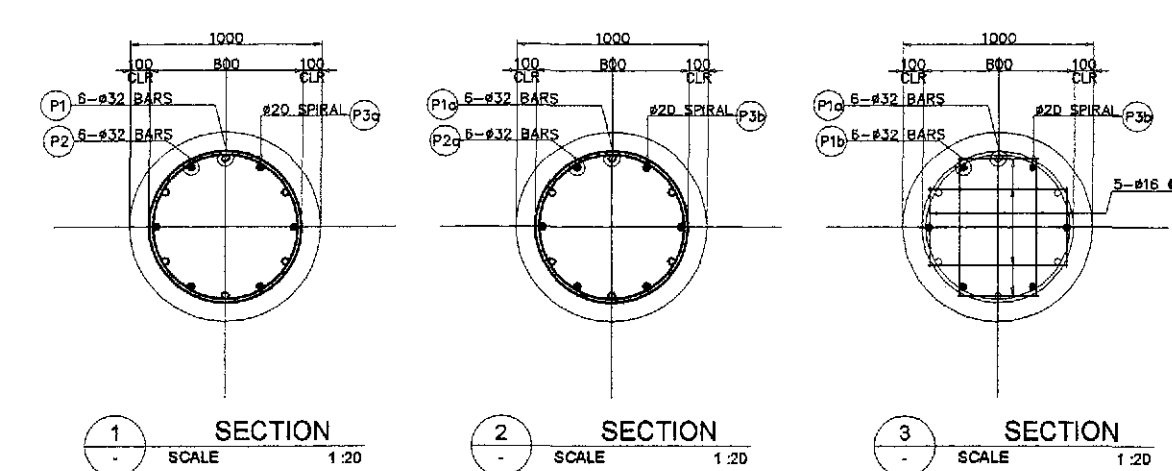
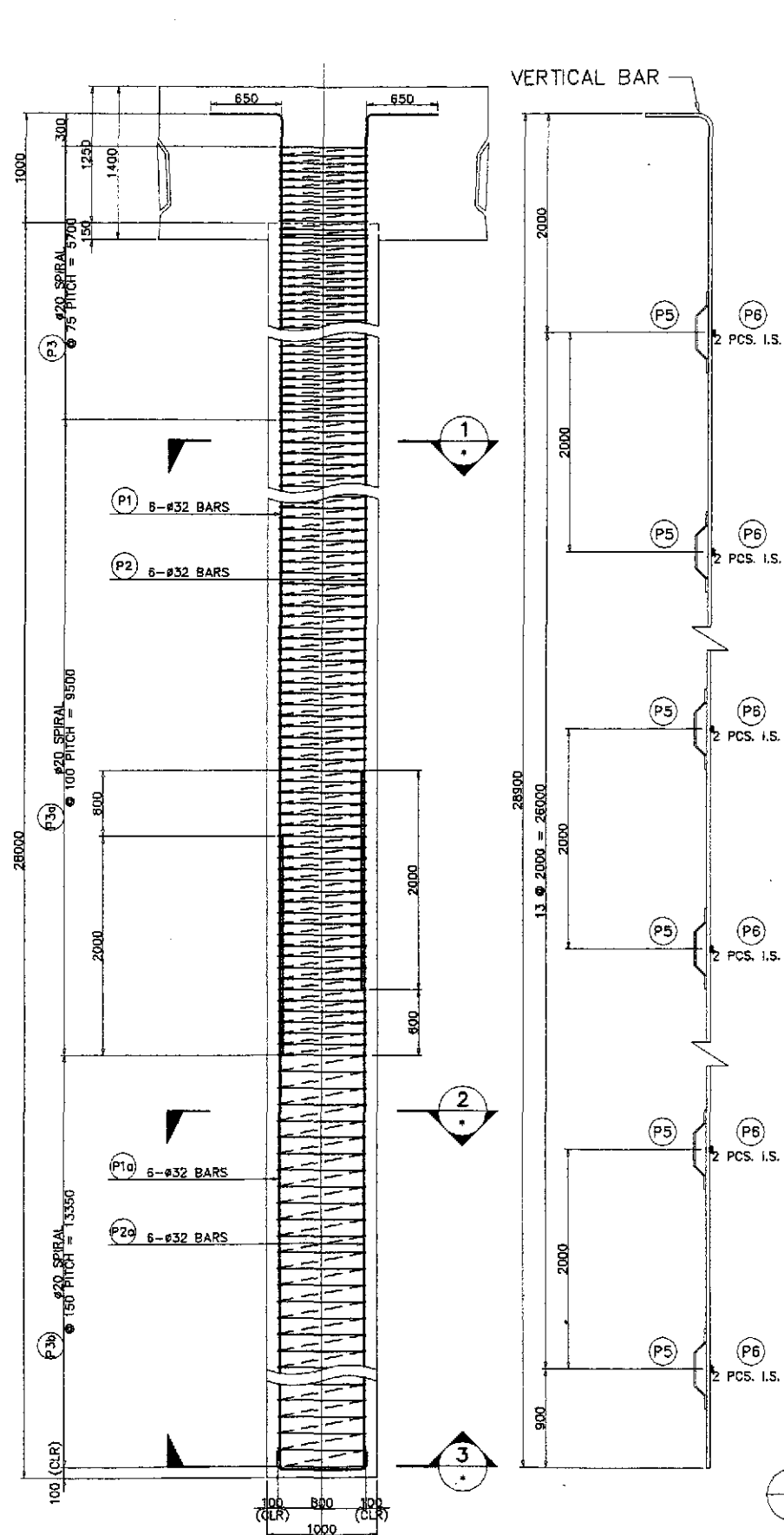
PROJECT AND LOCATION :  
THE DETAILED DESIGN STUDY ON  
UPGRADING INTER-URBAN HIGHWAY SYSTEM  
ALONG THE PAN-PHILIPPINE HIGHWAY  
(Plaridel, Cabanatuan and San Jose Bypasses)  
CABANATUAN BYPASS - CONTRACT PACKAGE IV

SCALE :  
AS SHOWN  
FULL SIZE A1

SHEET CONTENTS :  
BRIDGE NO.14 TALAVERA RIVER BRIDGE  
REINFORCEMENT DETAILS  
(ABUTMENT A1 & A2) - 1 OF 2  
(ULTIMATE STAGE)

SHEET NO. :  
B14S-73





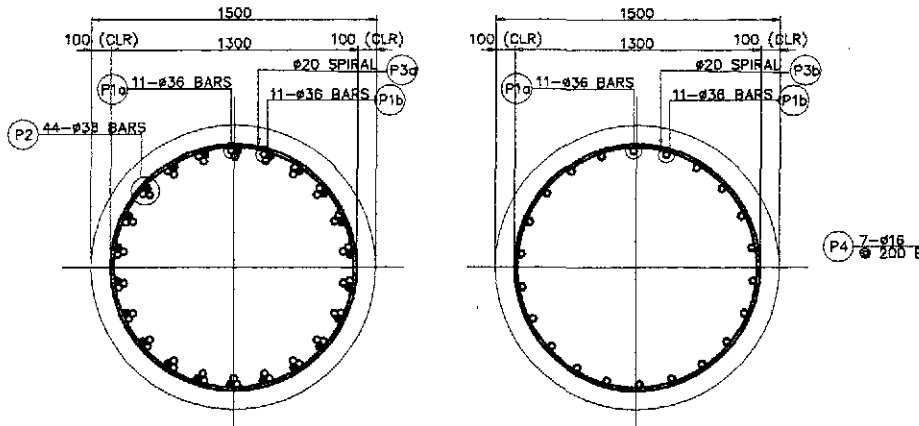
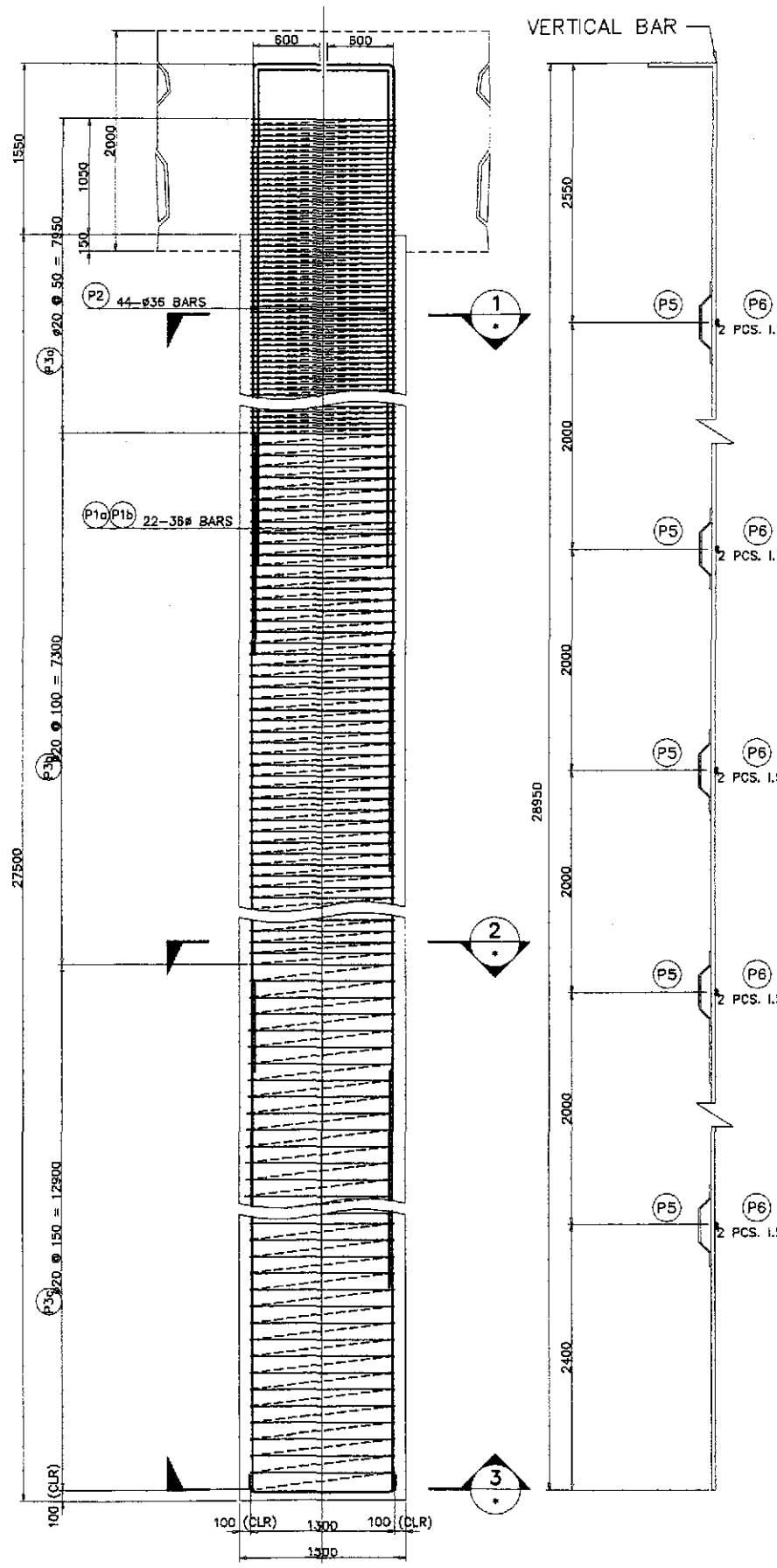
SCHEDULE OF REINFORCEMENT													
LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION (mm) OUT TO OUT						LENGTH (mm)	NO. REC'D.	UNIT WEIGHT (kg/m)	WEIGHT (kg)
				a	b	c	d	e	f				
ABUTMENT A1 AND A2	P1	32	A	15500	500					16000	6	7.990	606.05
	P1a	32	STR	15400						15400	6	7.990	583.32
	P2	32	A	14900	500					15400	6	7.990	583.32
	P2a	32	STR	16000						16000	6	7.990	606.05
	P3	20	B	75	780	500				194321	-	2.466	479.20
	P3a	20	B	100	780	500				242986	-	2.466	599.20
	P3b	20	B	150	780	500				227998	-	2.466	562.24
	P4	16	E	150	590					890	10	1.578	14.04
	P5	20	C	150	170	250				890	112	2.466	245.81
	P6	20	D	665	500					2590	28	2.466	178.83
	TOTAL WEIGHT PER PILE = 4,458.07 Kgs.												
	TOTAL WEIGHT (16 PILES) = 71,329.12 Kgs.												

**NOTES ON LAP WELD CONNECTION**

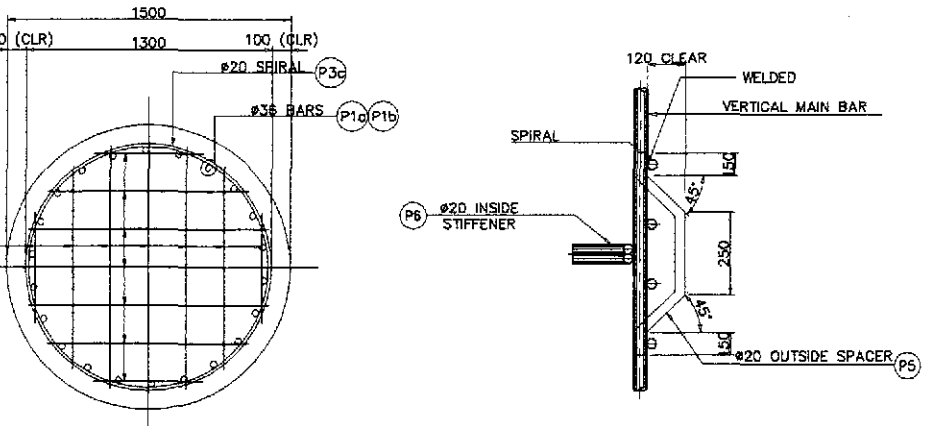
1. TIES REINFORCEMENT ARE LAP-WELD CONNECTED (FLARED-V-GROOVE TYPE).
2. WELDING SHOULD CONFORM TO ANSI/AWS D1.4-92 "STRUCTURAL WELDING CODE REINFORCEMENT STEEL".
3. USE ELECTRODE E90XX-X.
4. CARE SHOULD BE TAKEN NOT TO DAMAGE THE BORED PILE MAIN BARS DURING WELDING.
5. SPIRAL REINFORCEMENT SHOULD BE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

(A) ELEVATION SCALE 1:30 (B) LAYOUT OF STIFFENER SCALE 1:30 (1) BORED PILE REINFORCEMENT DETAILS, Ø1000mm (ABUTMENT A1&A2) SCALE AS SHOWN

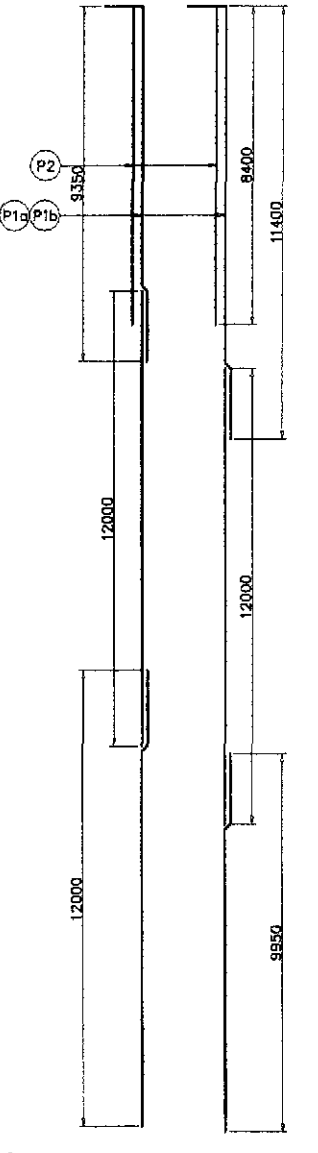




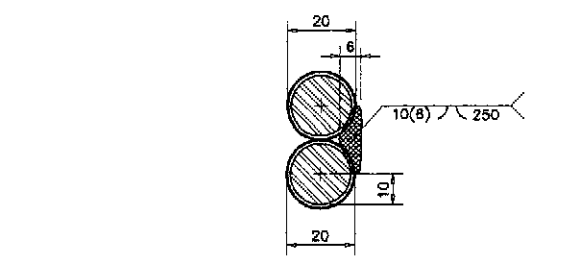
1 SECTION SCALE 1:20  
2 SECTION SCALE 1:20  
3 SECTION SCALE 1:20



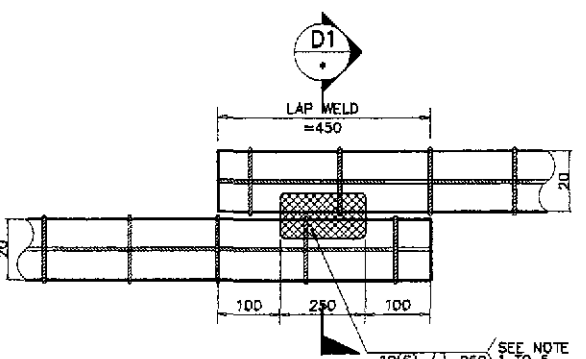
E DETAIL OF STIFFENER/SPACER NOT TO SCALE



C SCHEMATIC DETAIL NOT TO SCALE

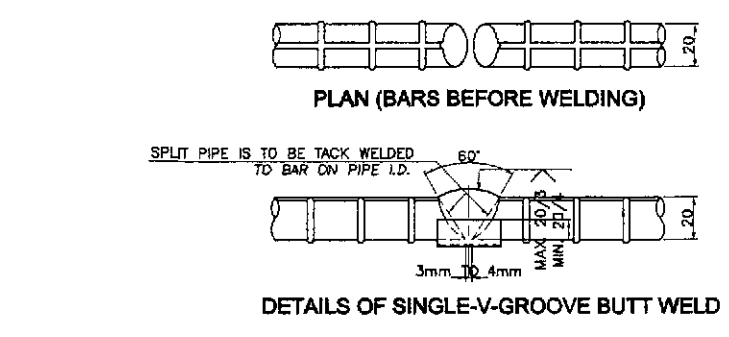


DOUBLE FLARED-V-GROOVE WELD SECTION - D1

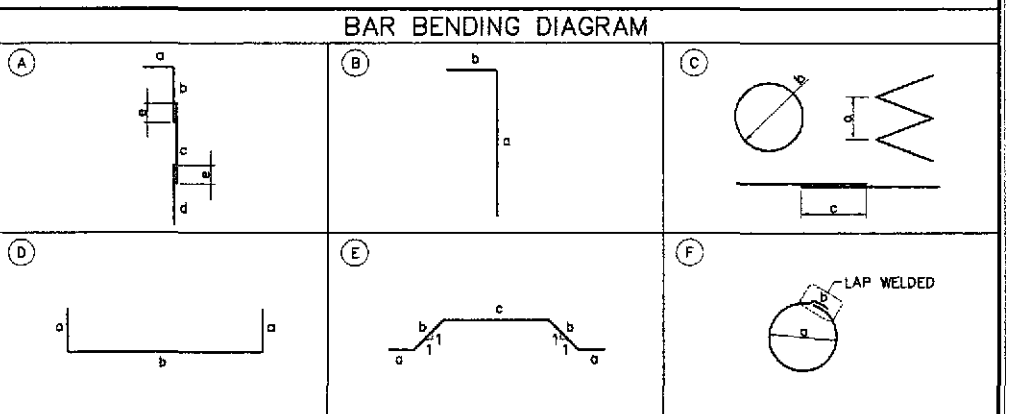


D DETAILS OF SPIRAL REINFORCEMENT LAP-WELD CONNECTION NOT TO SCALE

- NOTES ON LAP WELD CONNECTION
1. TIES REINFORCEMENT 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.



PLAN (BARS BEFORE WELDING)  
DETAILS OF SINGLE-V-GROOVE BUTT WELD



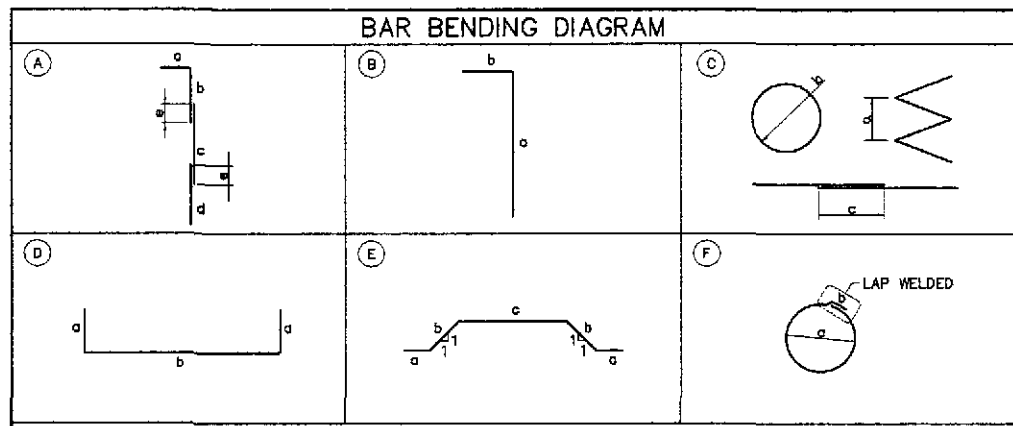
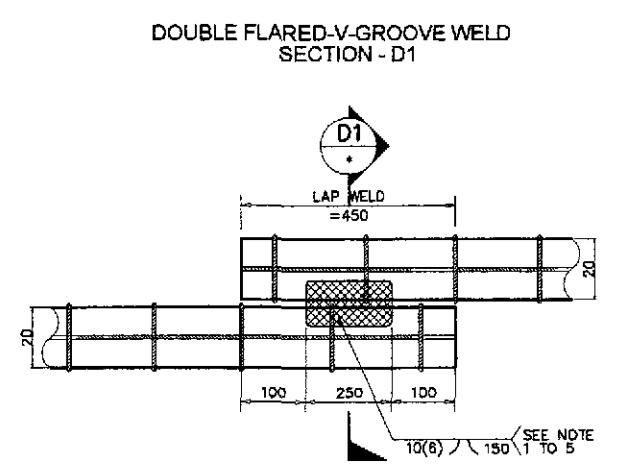
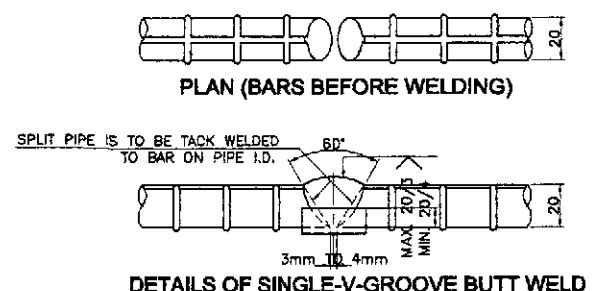
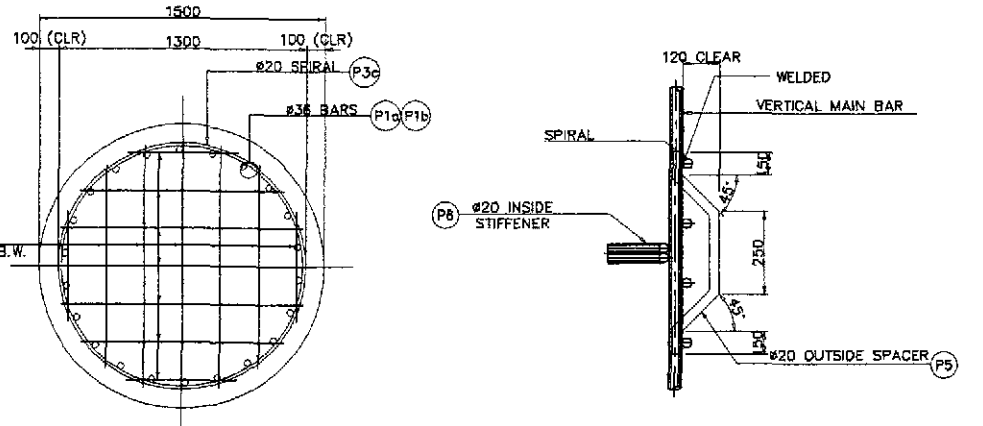
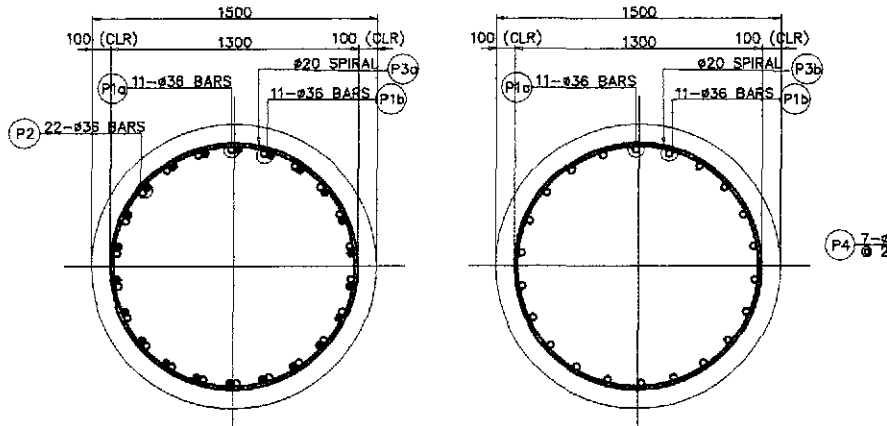
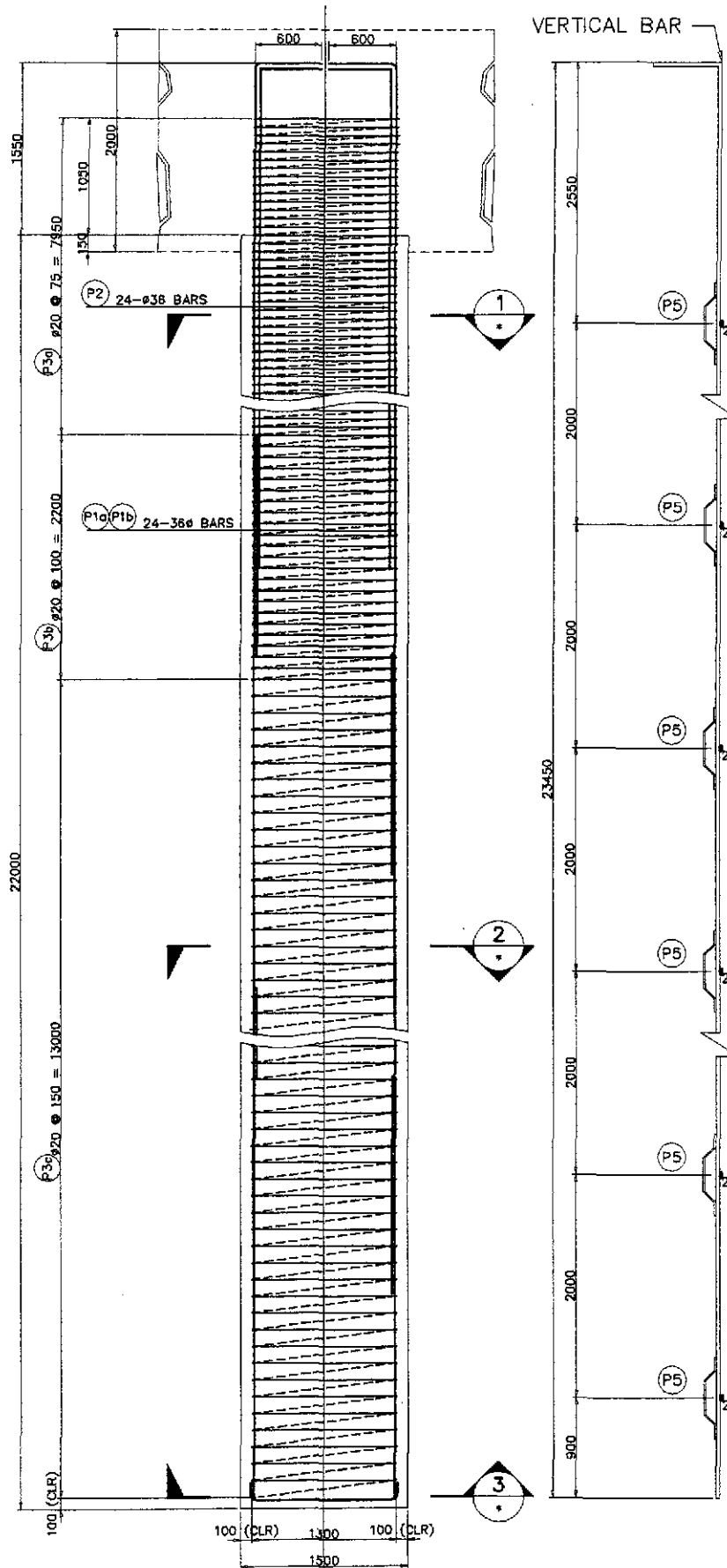
SCHEDULE OF REINFORCEMENT

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
PIERS 1 & PIER 2 (FIX-FIX) #1500 BORED PILE	P1a	36	A	600	11400	12000	9950	2200		38350	11	7.990		3371
	P1b	36	A	600	9350	12000	12000	2200		38350	11	7.990		3371
	P2	36	S	600	8400					9000	44	7.990		3164
	P3a	20	C	100	1300	1200				715367	1	2.466		1764
	P3b	20	C	150	1300	1200				328137	1	2.466		809
	P3c	20	C	200	1300	1200				387230	1	2.466		955
	P4	18	D	200	950	ave.				1350	14	1.578	30	
	P5	20	E	150	170	200				840	52	2.466		106
	P6	20	F	1188	150					3883	26	2.466		249
	<b>TOTAL WEIGHT</b>											<b>=</b>	<b>30</b>	<b>13791</b>

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 1:30  
B LAYOUT OF STIFFENER SCALE 1:30  
1 BORED PILE REINFORCEMENT DETAILS, Ø1500mm (PIER 1 & PIER 2) AS SHOWN

	DESIGNED	10/17/02	P. DE JESUS	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/19/02	SANTOS	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.14 TALAVERA RIVER BRIDGE BORED PILE REINF. DETAILS, Ø1500mm (PIERS 1 & 2) (ULTIMATE STAGE)	B14S-76
	SUBMITTED	10/21/02	M. KAUDI	OFFICE OF THE SECRETARY				FULL SIZE A1	CABANATUAN BYPASS - CONTRACT PACKAGE IV		
			Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:				
			DANILO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridges Division	GILBERTO S. REYES Director IV (OIC)	MANUEL M. BONDAN Undersecretary	SIMON A. DATUMANONG Secretary				



**SCHEDULE OF REINFORCEMENT**

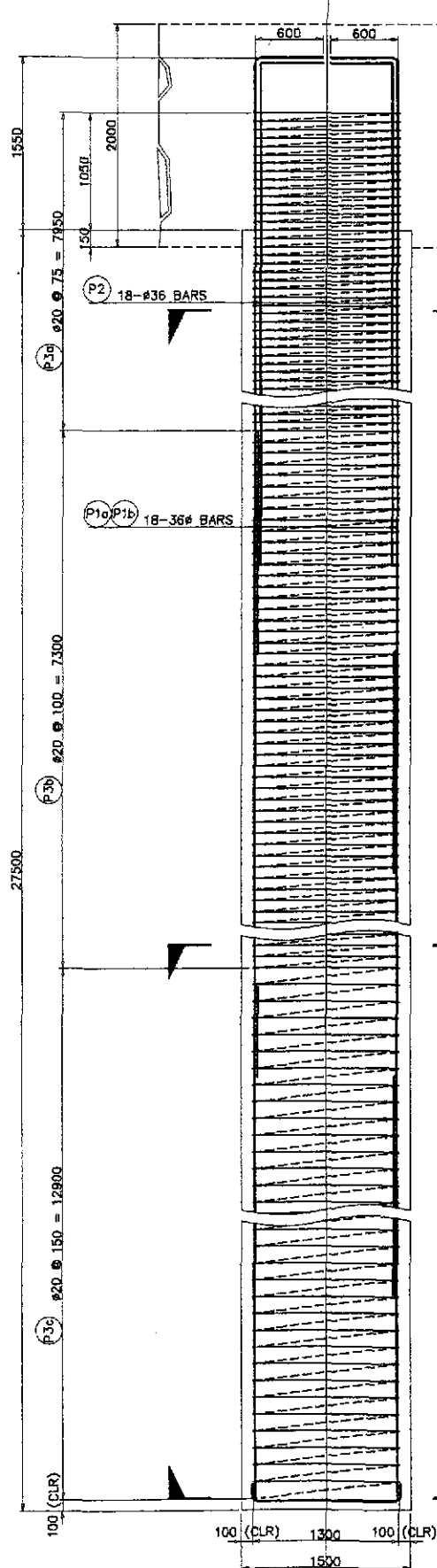
LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION(mm) OUT TO OUT							LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (kg)	
				a	b	c	d	e	f	GRADE 40				GRADE 60	
PIERS P4, P5, P7 & P8 Ø1500 BORED PILE	P1a	36	A	500	11400	12000	4450	2200			32850	11	7.990		2887
	P1b	36	A	600	9200	12000	6650	2200			32850	11	7.990		2887
	P2	36	B	600	8400						9000	22	7.990		1582
	P3a	20	C	100	1300	1200					477311	1	2.466		1177
	P3b	20	C	150	1300	1200					99450	1	2.466		245
	P3c	20	C	200	1300	1200					377862	1	2.466		932
	P4	16	D	200	950	ave.					1350	14	1.578	30	
	P5	20	E	150	170	200					840	44	2.466		91
	P6	20	F	1188	150						3863	22	2.466		211
												<b>TOTAL WEIGHT</b>	<b>=</b>	<b>30</b>	<b>10012</b>

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

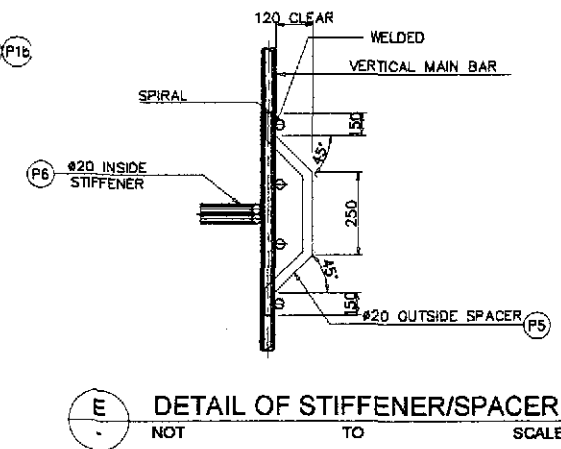
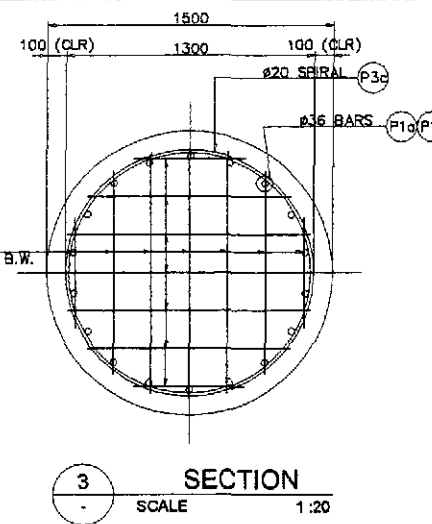
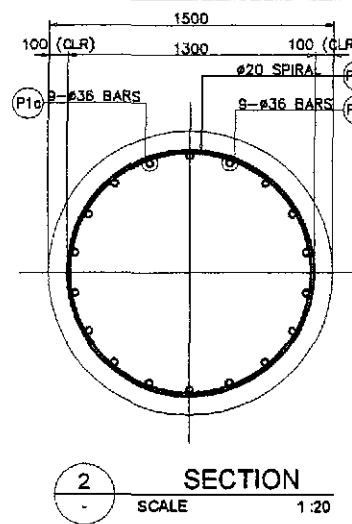
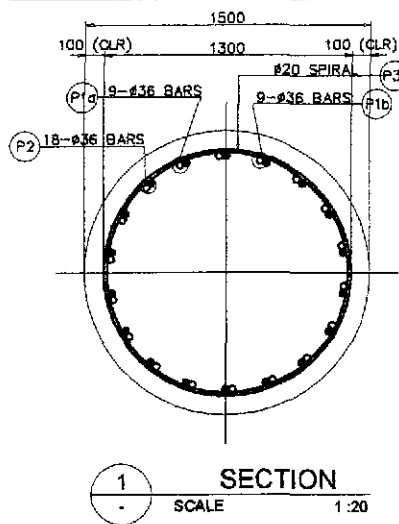
**NOTES ON LAP WELD CONNECTION**

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

<p>JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA &amp; ENGINEERS INTERNATIONAL YACHINO ENGINEERING CO., LTD.</p>	DESIGNED	10/17/02	R. P. DE JESUS	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/19/02	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.145 TALAVERA RIVER BRIDGE BORED PILE REINF. DETAILS, Ø1500mm (PIERS 4, 5, 7 & 8) (ULTIMATE STAGE)	B14S-77
	SUBMITTED	10/21/02	M. B. BUCHANAN		CABANATUAN BYPASS - CONTRACT PACKAGE IV			FULL SIZE A1		
<p>Submitted By: DANILO C. TRAJANO, Project Director</p> <p>Reviewed By: ADRIANO M. DORGY, Chief, Bridges Division</p> <p>Recommended By: GILBERTO S. REYES, Director IV (CIC)</p> <p>Recommended By: MANUEL M. BONDAN, Undersecretary</p> <p>Approved By: SIMON A. DATUMANONG, Secretary</p>				<p>OFFICE OF THE SECRETARY</p>			<p>AS SHOWN</p>		<p>BRIDGE NO.145 TALAVERA RIVER BRIDGE BORED PILE REINF. DETAILS, Ø1500mm (PIERS 4, 5, 7 &amp; 8) (ULTIMATE STAGE)</p>	<p>B14S-77</p>



VERTICAL BAR

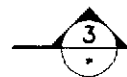
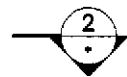


1 SECTION SCALE 1:20

2 SECTION SCALE 1:20

3 SECTION SCALE 1:20

E DETAIL OF STIFFENER/SPACER NOT TO SCALE

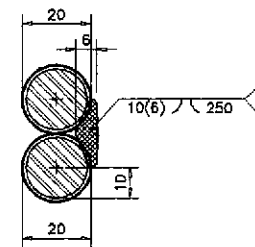


C SCHEMATIC DETAIL NOT TO SCALE

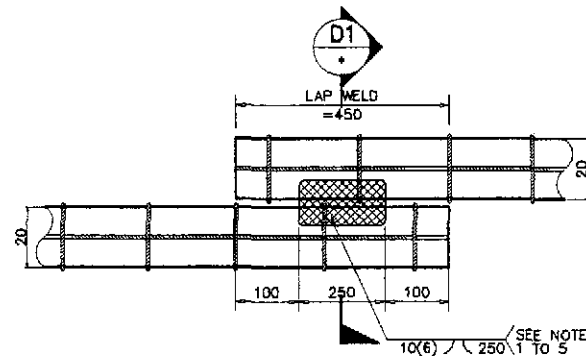
1 BORED PILE REINFORCEMENT DETAILS, Ø1500mm (PIER 3) AS SHOWN

A ELEVATION SCALE 1:30

B LAYOUT OF STIFFENER SCALE 1:30



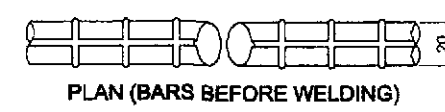
DOUBLE FLARED-V-GROOVE WELD SECTION - D1



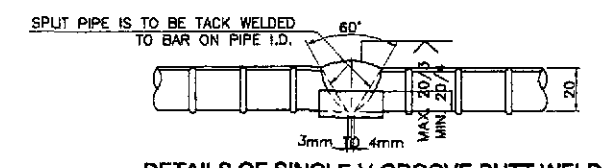
D DETAILS OF SPIRAL REINFORCEMENT FULL LAP-WELD CONNECTION NOT TO SCALE

NOTES ON LAP WELD CONNECTION

1. TIES REINFORCEMENT 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.



PLAN (BARS BEFORE WELDING)



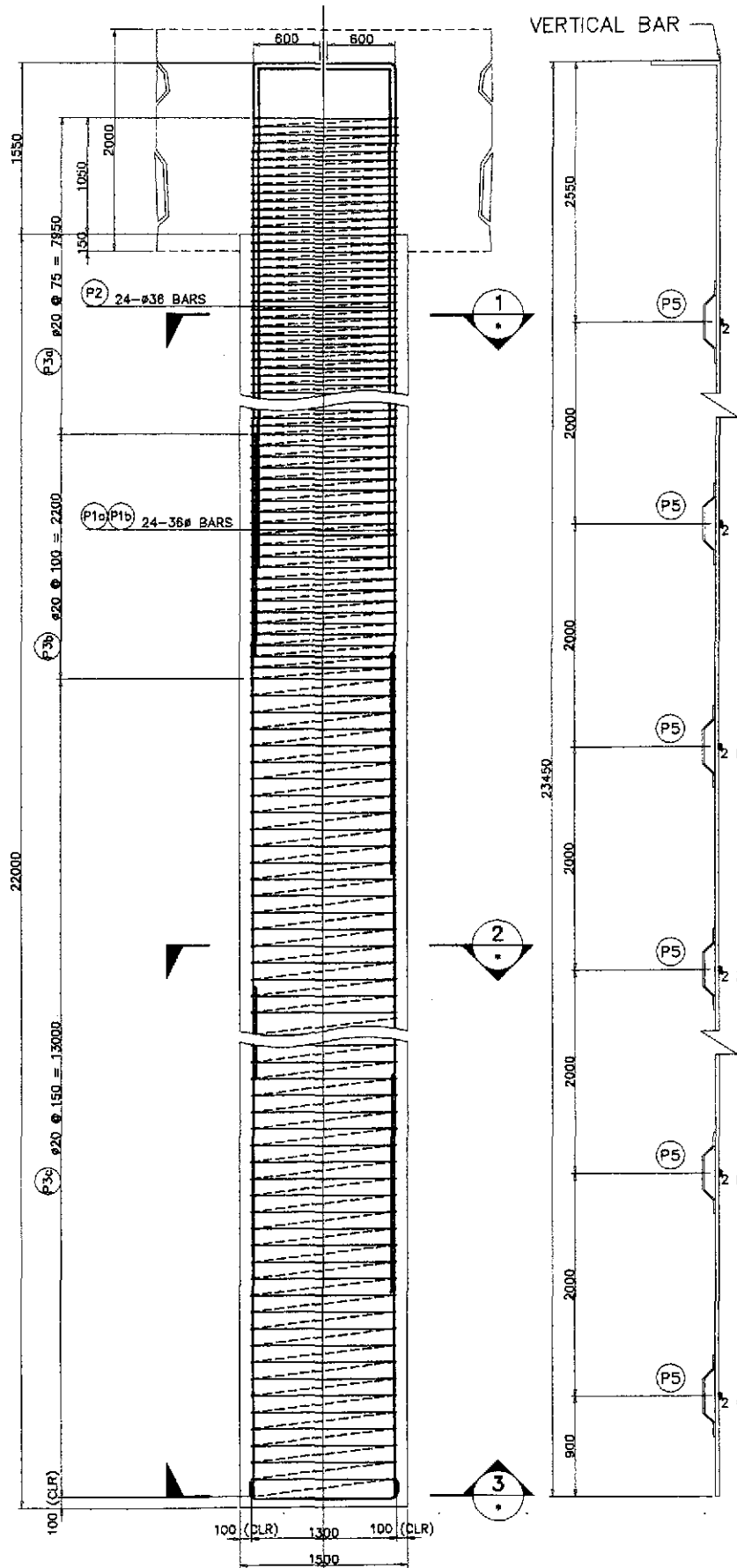
DETAILS OF SINGLE-V-GROOVE BUTT WELD

BAR BENDING DIAGRAM					
A	B	C	D	E	F

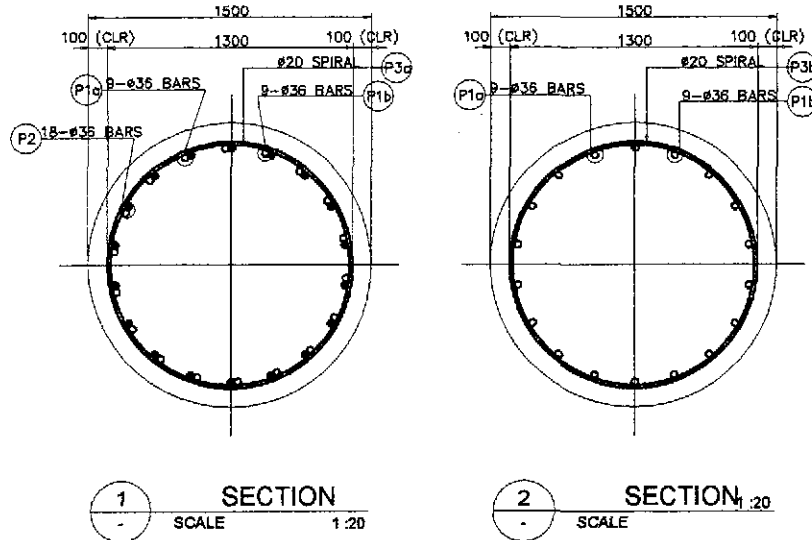
SCHEDULE OF REINFORCEMENT														
LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION (mm) OUT TO OUT						LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (kg)	
				a	b	c	d	e	f				GRADE 40	GRADE 60
PIER P3 (Ø1500 BORED PILE)	P1a	36	A	600	11400	12000	9950	2200		38350	9	7.990		2758
	P1b	36	A	600	9350	12000	12000	2200		38350	9	7.990		2758
	P2	36	B	600	8400					9000	18	7.990		1294
	P3c	20	C	100	1300	1200				477311	1	2.466		1177
	P3b	20	C	150	1300	1200				328137	1	2.466		809
	P3c	20	C	200	1300	1200				387230	1	2.466		955
P4	16	D	200	950	ove.				1350	14	1.578	30		
P5	20	E	150	170	200				840	52	2.466		108	
P6	20	F	1188	150					3883	28	2.466		249	
											TOTAL WEIGHT	=	30	10108

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

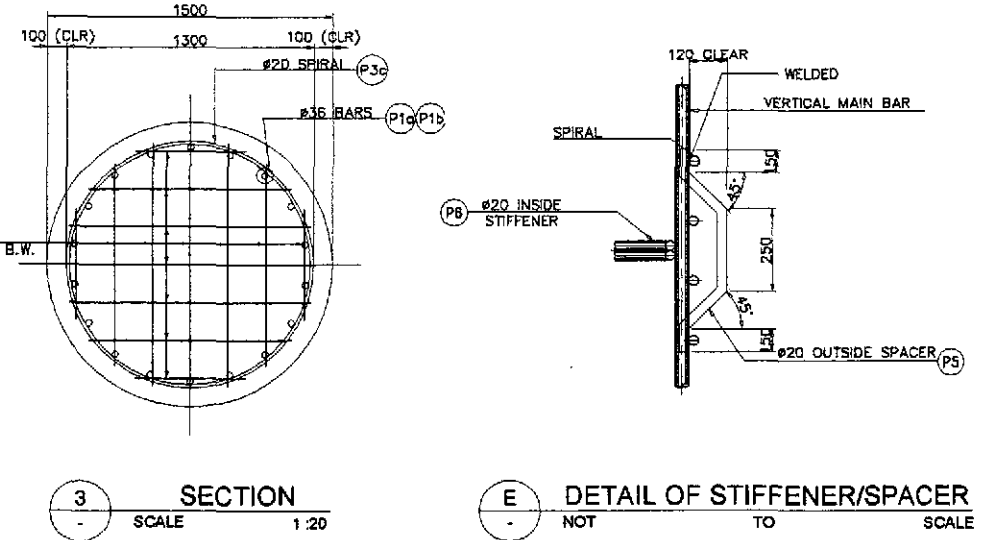
	DESIGNED	DATE	SIGNATURE		PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/17/07	P. DE JESUS		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO.14 TALAVERA RIVER BRIDGE BORED PILE REINF. DETAILS, Ø1500mm (PIER 3) (ULTIMATE STAGE)	B14S-78
	SUBMITTED	10/14/07	MANUEL M. BONOAN		CABANATUAN BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1		



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



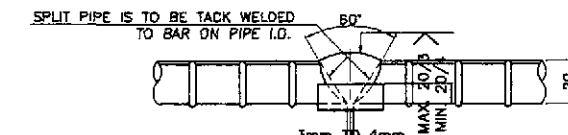
**1** SECTION SCALE 1:20  
**2** SECTION SCALE 1:20  
**3** SECTION SCALE 1:20



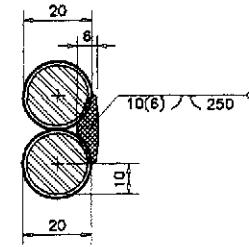
**E** DETAIL OF STIFFENER/SPACER NOT TO SCALE



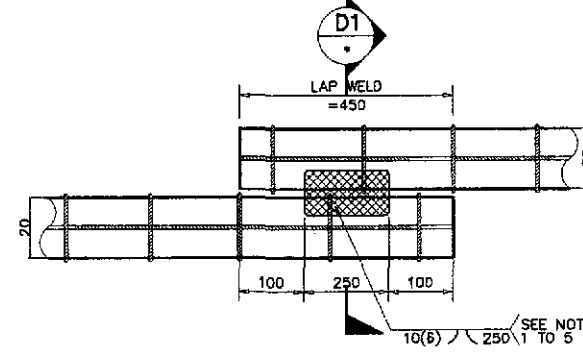
PLAN (BARS BEFORE WELDING)



DETAILS OF SINGLE-V-GROOVE BUTT WELD



DOUBLE FLARED-V-GROOVE WELD SECTION - D1



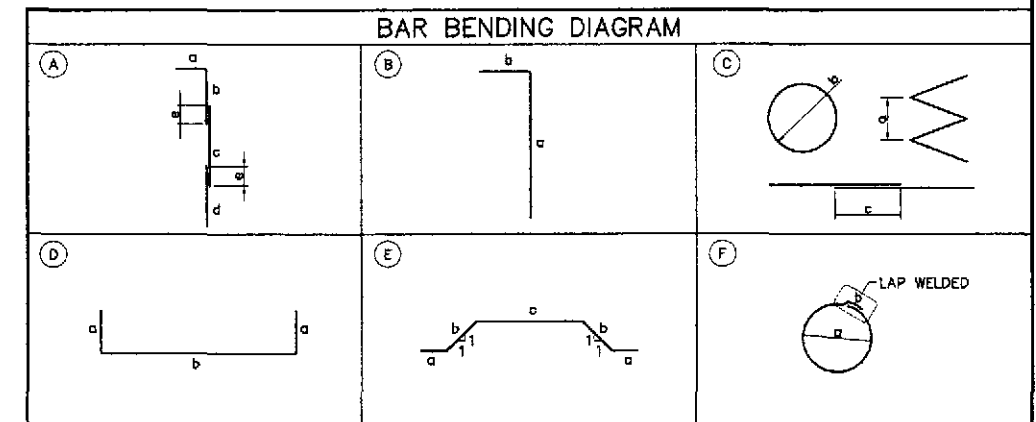
DIRECT LAP JOINT WITH BARS IN CONTACT  
**D** DETAILS OF SPIRAL REINFORCEMENT FULL LAP-WELD CONNECTION NOT TO SCALE

**NOTES ON LAP WELD CONNECTION**

1. TIES REINFORCEMENT 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 E80XX-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.

**C** SCHEMATIC DETAIL NOT TO SCALE

**1** BORED PILE REINFORCEMENT DETAILS, Ø1500mm (PIER 6) AS SHOWN SCALE



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 (kg)		
				a	b	c	d	e	f				GRADE 40	GRADE 60	
PIERS P6 (Ø1500 BORED PILE)	P1a	36	A	600	11400	12000	4450	2200			32850	9	7.990		2362
	P1b	36	A	600	9200	12000	6650	2200			32850	9	7.990		2362
	P2	36	B	600	8400						9000	18	7.990		1294
	P3a	20	C	100	1300	1200					47731	1	2.466		1177
	P3b	20	C	150	1300	1200					99450	1	2.466		245
	P3c	20	C	200	1300	1200					377862	1	2.466		932
	P4	16	D	200	950	ave.					1350	14	1.578	30	
	P5	20	E	150	170	200					840	44	2.466		91
	P6	20	F	1188	150						3883	22	2.466		211
	<b>TOTAL WEIGHT</b>											<b>30</b>	<b>8874</b>		

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

			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 IV	SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : BRIDGE NO.14 TALAVERA RIVER BRIDGE BORED PILE REINF. DETAILS, Ø1500mm (PIER 6) (ULTIMATE STAGE)	SHEET NO. : <b>B14S-79</b>
			DESIGNED: 10/1/07 CHECKED: 10/14/07 SUBMITTED: 10/21/07	P.I.N.L. - PMO DANIL C. TRAJANO Project Director	BUREAU OF DESIGN Reviewed By: ADRIANO M. DOROY Chief, Bridges Division	OFFICE OF THE SECRETARY Recommended By: GILBERTO S. REYES Director IV (CIC)				