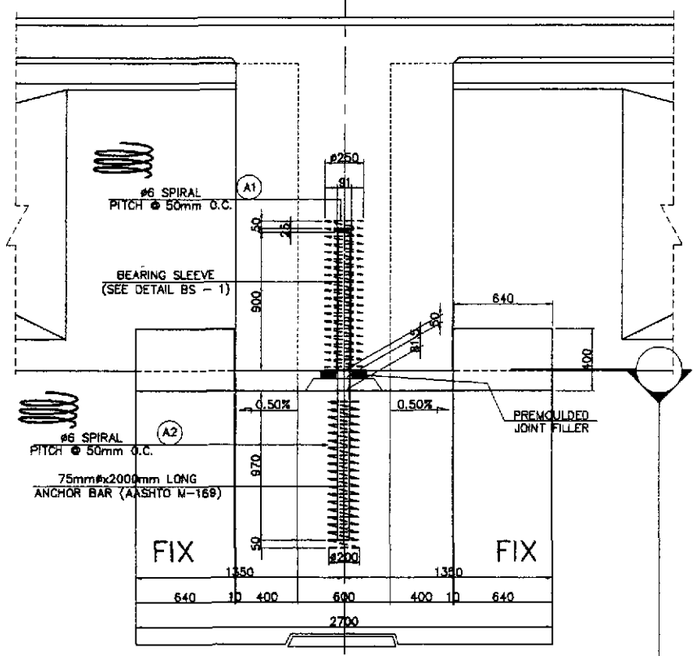
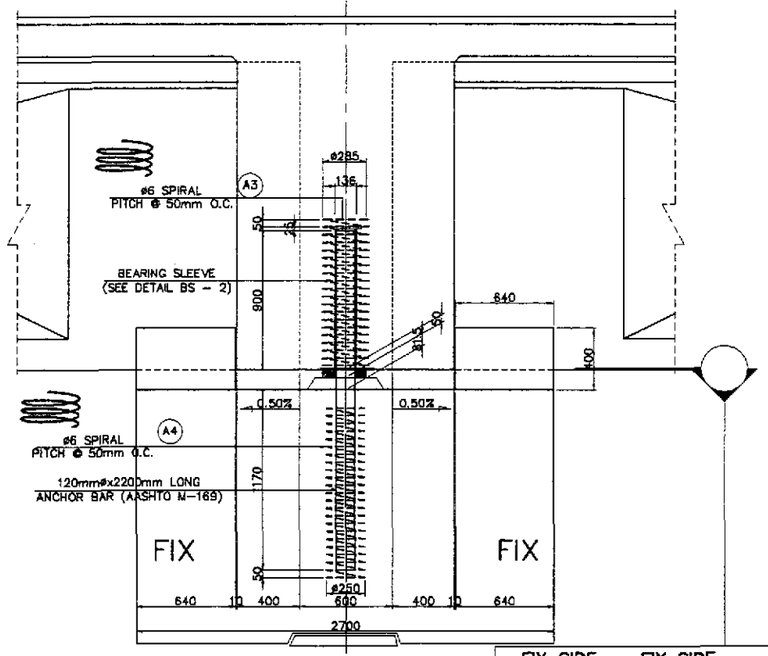
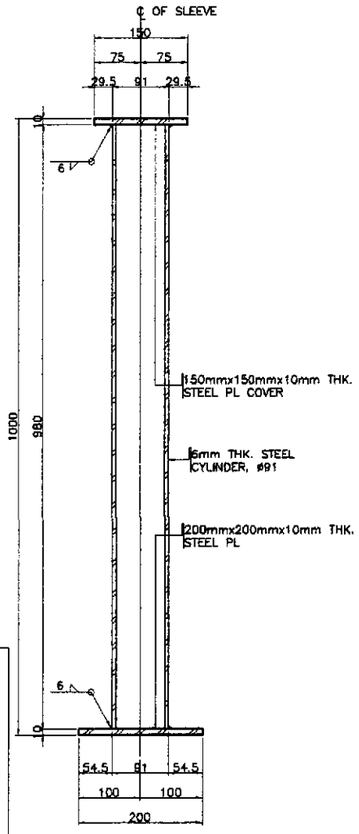
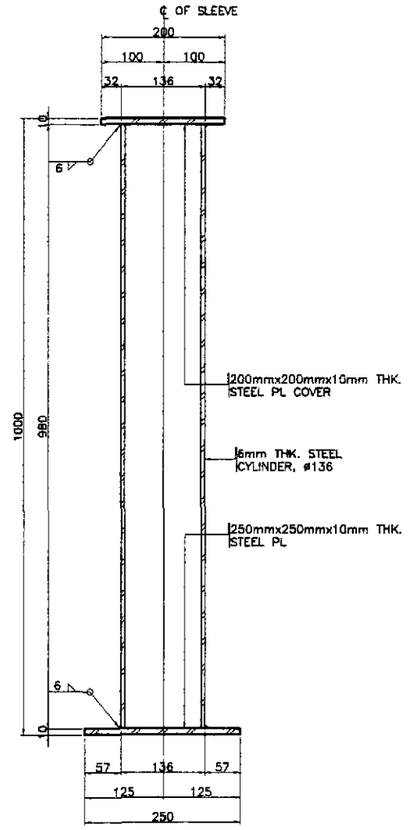
MISCELLANEOUS DRAWINGS





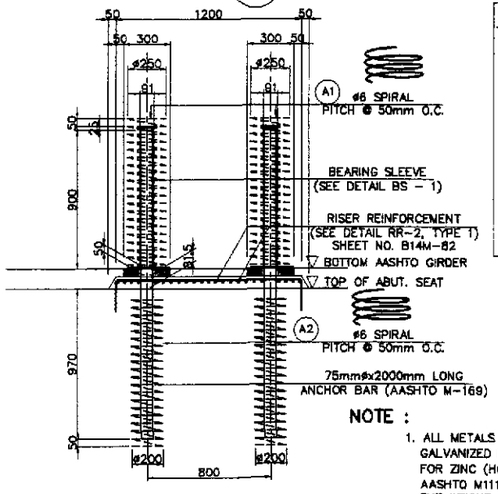


ELEVATION



ELEVATION

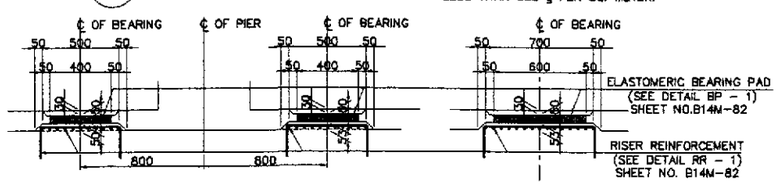
A1 LONG'L ELEVATION
SCALE 1 : 20



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.

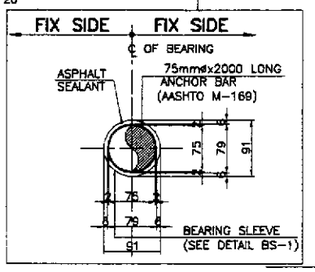
A2 TRAN'L ELEVATION
SCALE 1 : 20



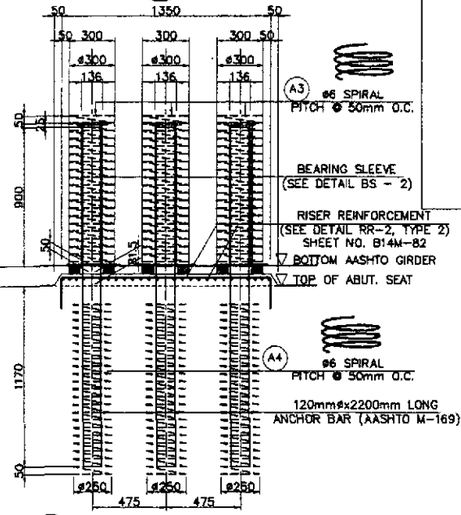
A3 LONG'L SECTION
SCALE 1 : 20

A4 TRAN'L SECTION
SCALE 1 : 20

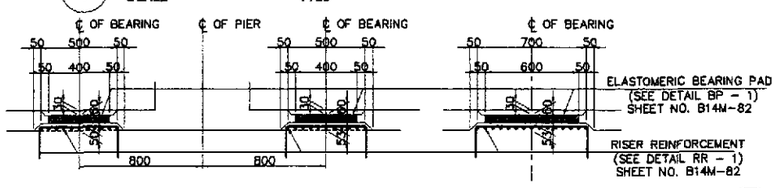
A MISC. DETAILS FOR PIERS P4, P5, P7 & P8 (FIX-FIX PIER)
SCALE AS SHOWN



B1 LONG'L ELEVATION
SCALE 1 : 20



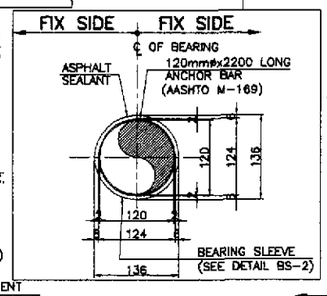
B2 TRAN'L ELEVATION
SCALE 1 : 20

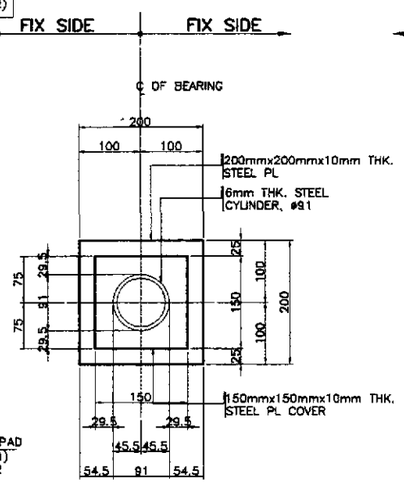


B3 LONG'L SECTION
SCALE 1 : 20

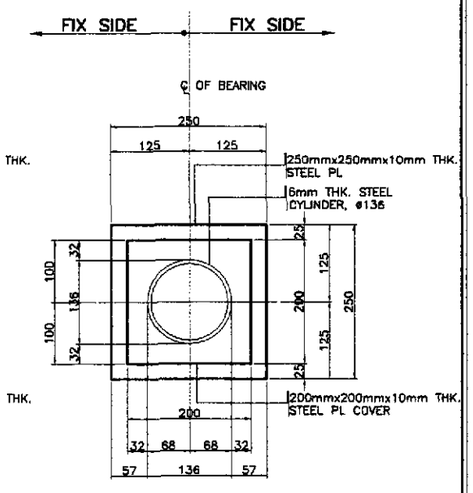
B4 TRAN'L SECTION
SCALE 1 : 20

B MISC. DETAILS FOR PIERS P1 & P2 (FIX-FIX PIER)
SCALE AS SHOWN





PLAN



PLAN

C1 BS-1 (PIER P4, P5, P7 & P8)
SCALE 1 : 5

C2 BS-2 (PIER P1 & P2)
SCALE 1 : 5

C ANCHOR BAR SLEEVE DETAILS
SCALE AS SHOWN

JAPAN INTERNATIONAL COOPERATION AGENCY

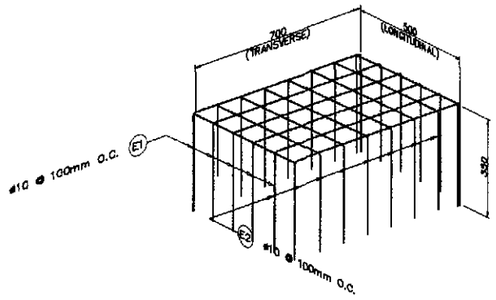
KATAHIRA & ENGINEERS INTERNATIONAL — YACHIYO ENGINEERING CO., LTD.

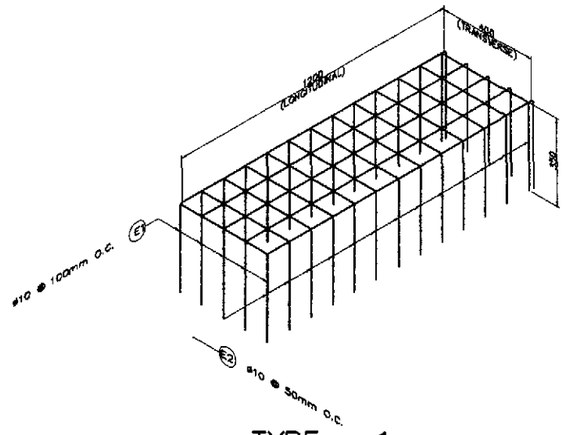
	DATE	SIGNATURE
DESIGNED	10/12/02	F. P. DE JESUS
CHECKED	10/19/02	J. C. SANTOS
SUBMITTED	10/21/02	M. N. KUCHI, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

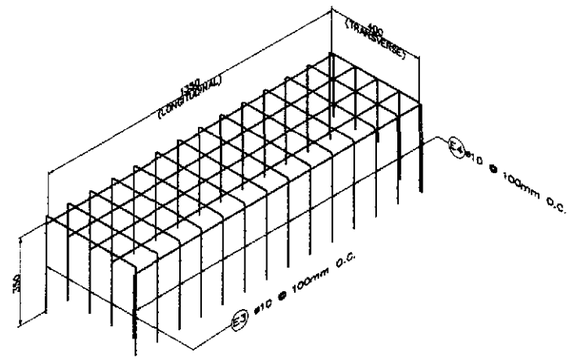
PUHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	ADRIANO M. DOROY, Chief, Bridges Division	GILBERTO S. REYES, Director IV (OIC)	MANUEL M. BONOAN, Undersecretary	SIMEON A. DATUMANONG, Secretary

PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE IV	AS SHOWN FULL SIZE A1	BRIDGE NO.14 TALAVERA RIVER BRIDGE ANCHOR BAR AND BEARING DETAILS FOR FIX PIERS (INITIAL STAGE)	B14M-81





TYPE – 1

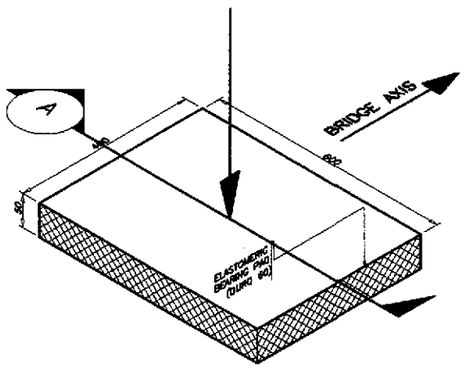


TYPE – 2

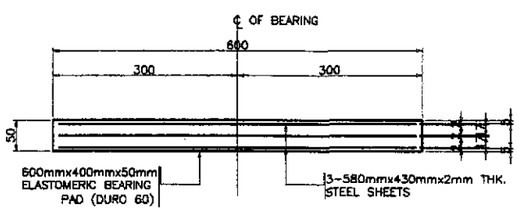
A RR–1 (BEARING PAD)
N T S

B RR–2 (DOWEL)
PIER (FIX–FIX)
N T S

3 RISER REINFORCEMENT DETAILS
N T S

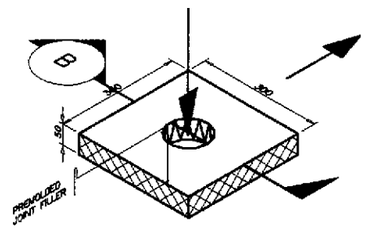


ISOMETRIC VIEW

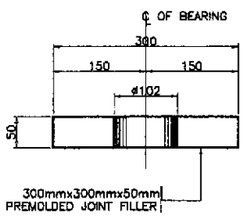


SECTION A

D BP–1 @ BEARING
SCALE: 1:5



ISOMETRIC VIEW



SECTION A

E BP–2 @ ANCHOR BAR
SCALE: 1:5

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 a	b	c	d	e	LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT(kgs.) Grade 40	REMARKS
RISER (PIER FIX–FIX) GIRDER	E1	10	A	350	700				1400	48	0.617	42	1. ESTIMATED QUANTITY FOR ONE(1) PIER ONLY.
	E2	10	A	350	500				1200	64	0.617	48	
											TOTAL=	90	2. ESTIMATED QUANTITY FOR ONE(1) ABUT.
RISER (PIER EXP–EXP) GIRDER	E1	10	A	350	700				1400	48	0.617	42	
	E2	10	A	350	500				1200	64	0.617	48	
											TOTAL=	90	
RISER (ABUT EXP) GIRDER	E1	10	A	350	700				1400	24	0.617	21	
	E2	10	A	350	500				1200	32	0.617	24	
											TOTAL=	45	
RISER (PIER 1 & 2) ANCHOR BAR	E1	10	A	350	1350				2050	15	0.617	19	
	E2	10	A	350	400				1100	42	0.617	29	
											TOTAL=	48	
RISER (PIER 4, 5, 7 & 8) ANCHOR BAR	E1	10	A	350	1200				1700	15	0.617	16	
	E2	10	A	350	400				1100	39	0.617	27	
											TOTAL=	43	
SPIRAL (PIER 4, 5, 7 & 8) ANCHOR BAR	A1	6	B	50	250				15163	6	0.222	20	
	A2	6	B	50	200				13058	6	0.222	17	
											TOTAL=	37	
SPIRAL (PIER 1 & 2) ANCHOR BAR	A3	6	B	50	250				15163	9	0.222	30	
	A4	6	B	50	200				15571	9	0.222	31	
											TOTAL=	61	

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
YACHIYO ENGINEERING CO., LTD.

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CHECKED	10/19/02	J. C. SANTOS
SUBMITTED	10/21/02	M. ROCHI, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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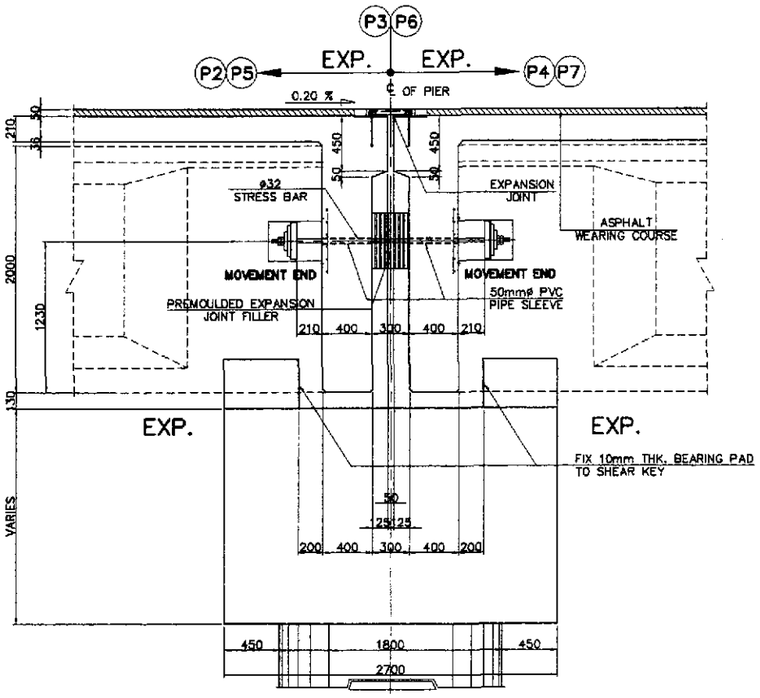
(Plaridel, Cabanatuan and San Jose Bypasses)
CABANATUAN BYPASS - CONTRACT PACKAGE IV

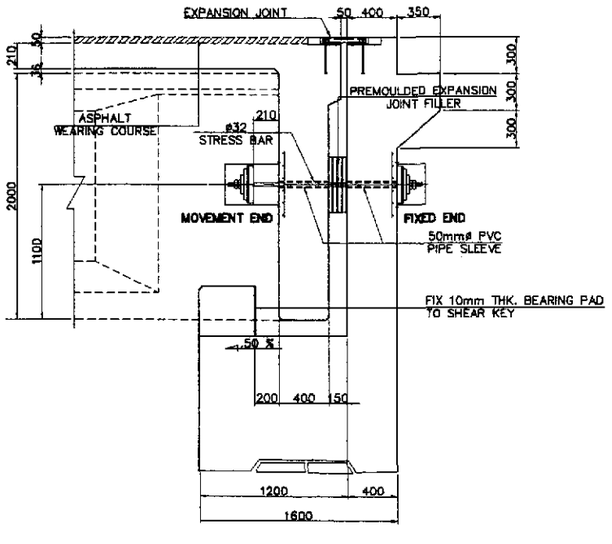
SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO.14 TALAVERA RIVER BRIDGE
RISER REINF. & BEARING PADS DET.
(INITIAL STAGE)

SHEET NO. : B14M-82



B — ELEVATION @ EXP. PIER
SCALE 1:25



A — ELEVATION @ ABUTMENT
SCALE 1:25

NOTE :

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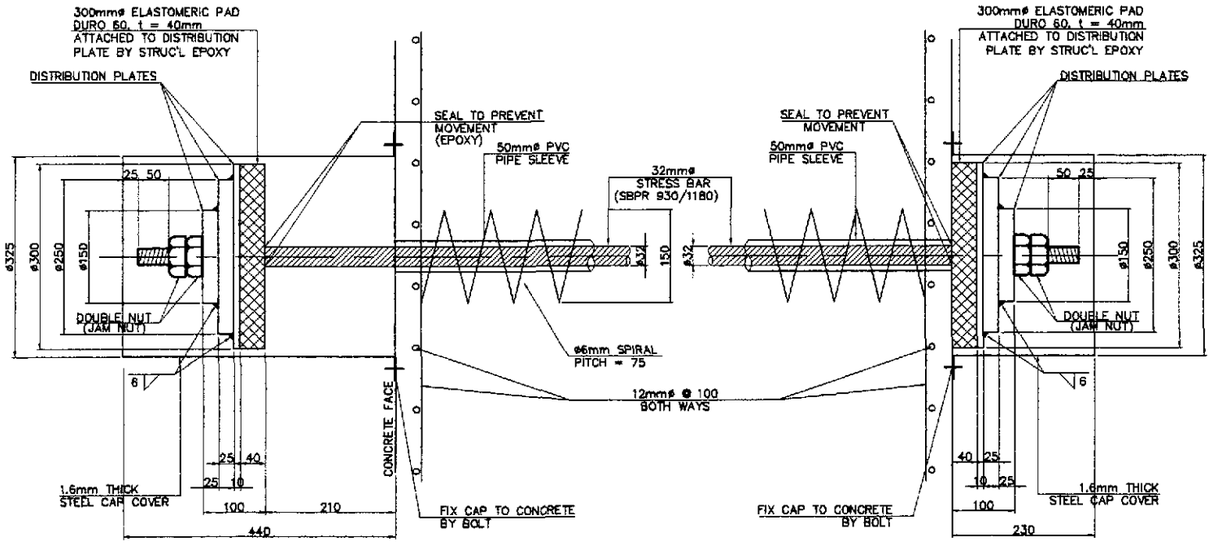
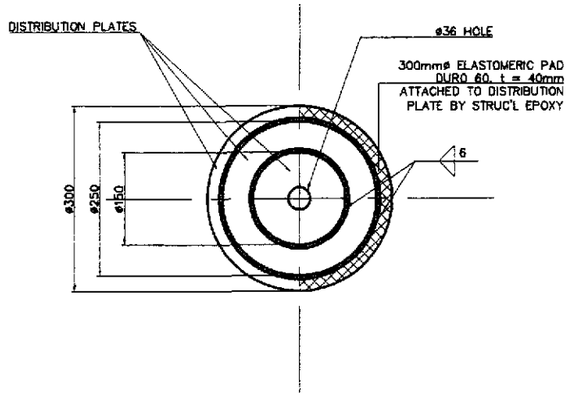
2. THE CONTRACTOR SHALL PROVIDE A LOCKING MECHANISM ON THE NUTS TO ENSURE THAT THE GAP SHOWN IN THE DRAWINGS WILL BE KEPT AT ALL TIME.
3. NUTS SHOULD CONFORM WITH ASTM A490 WITH STRENGTH CORRESPONDING TO STRENGTH OF STRESS BAR.



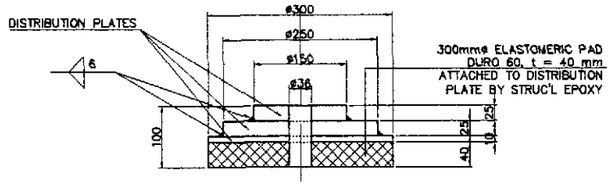
C2 — MOV. END ANCHOR DETAILS (@ EXP. PIERS)
SCALE 1:5

C1 — FIXED END ANCHOR DETAILS (@ ABUT. BACKWALL)
SCALE 1:5

C — HORIZONTAL ANCHOR BAR DETAILS
SCALE AS SHOWN



D1 — P L A N
SCALE 1:5



D2 — P L A N
SCALE 1:5

D — ELASTOMERIC PAD AND BEARING PLATE DETAILS
SCALE AS SHOWN

1 — RESTRAINING BAR DETAILS
SCALE AS SHOWN

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

	DATE	SIGNATURE
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CHECKED	10/19/02	J. C. SANTOS
SUBMITTED	10/21/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

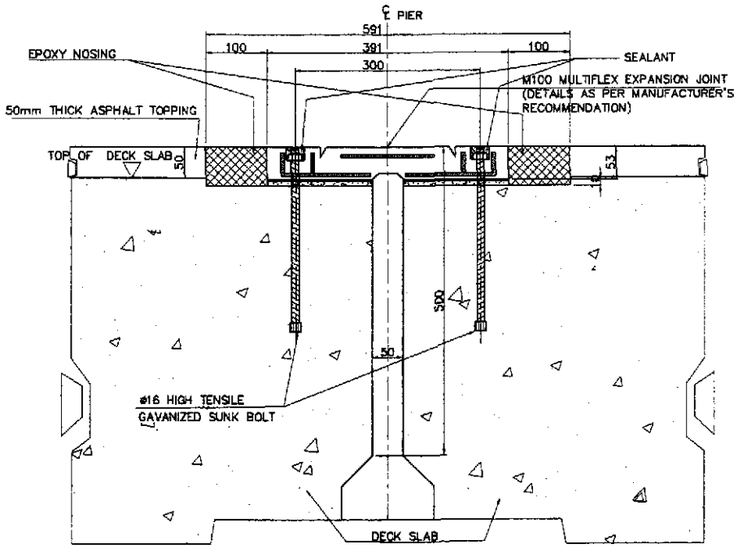
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	ADRIANO M. DOROY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Bridges Division	Director IV (OIC)	Undersecretary	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

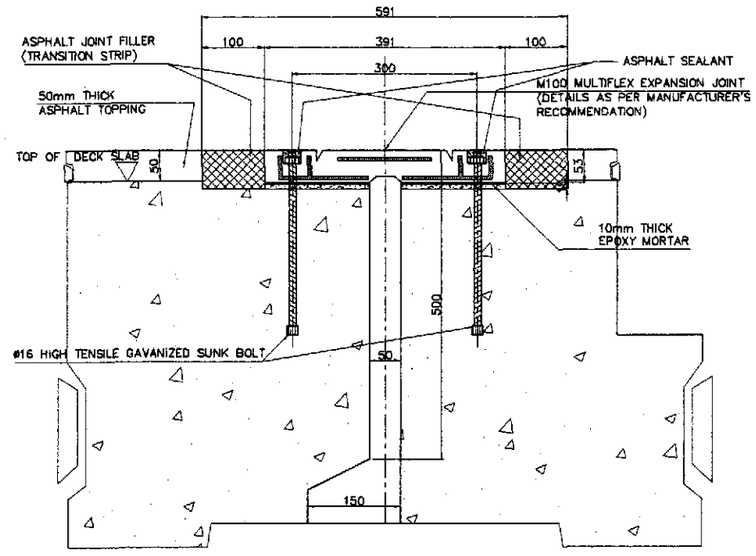
SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO.14 TALAVERA RIVER BRIDGE
RESTRAINING BAR DETAILS
(INITIAL STAGE)

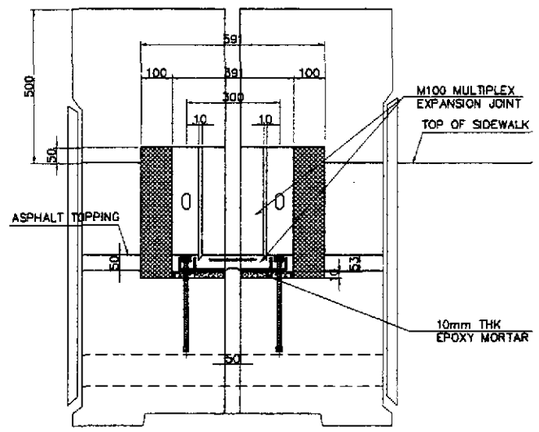
SHEET NO. : B14M-83



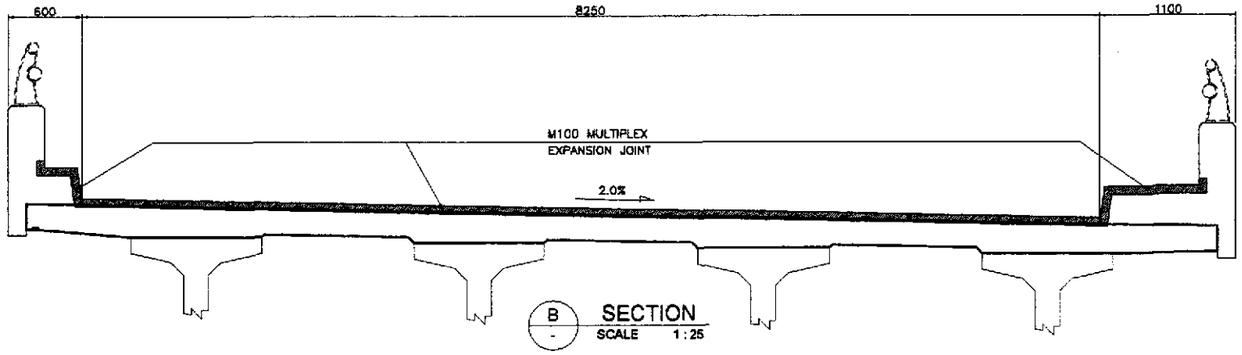
C — SECTION @ PIER P3 & P6
SCALE 1 : 5



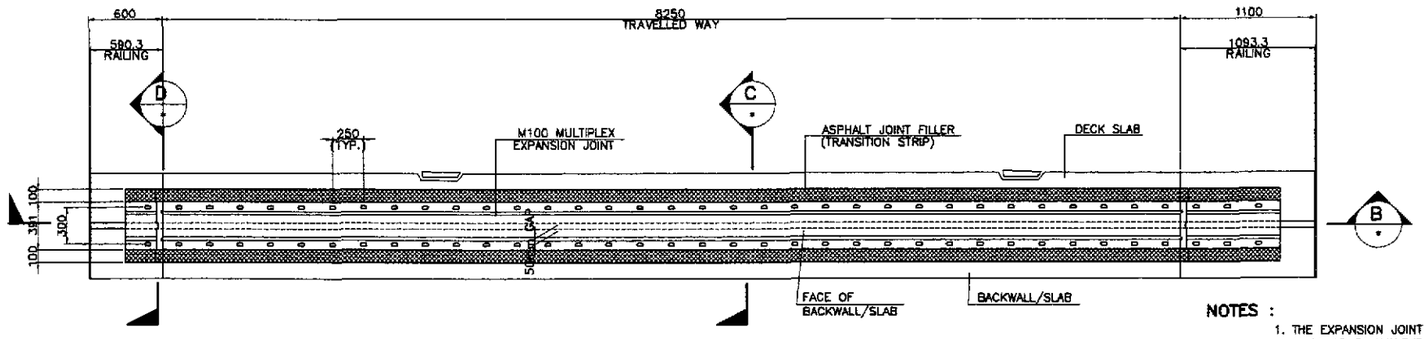
C1 — SECTION @ ABUT. A1 & A2
SCALE 1 : 5



D — SECTION
SCALE 1 : 10



B — SECTION
SCALE 1 : 25



A — PLAN
SCALE 1 : 25

1 — EXPANSION JOINT DETAILS @ ABUTMENT AND PIERS
SCALE AS SHOWN

NOTES :

1. THE EXPANSION JOINT SHALL BE MULTIPLEX M100 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 pphm)	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

LOCATION	EXPANSION JOINT TYPE	MOVEMENT (mm)	LENGTH (m)
ABUT. A1	MULTIPLEX M100	±50(TOTAL=100mm)	10.20
ABUT. A2	MULTIPLEX M100	±50(TOTAL=100mm)	10.20
PIER 3	MULTIPLEX M100	±50(TOTAL=100mm)	10.20
PIER 6	MULTIPLEX M100	±50(TOTAL=100mm)	10.20

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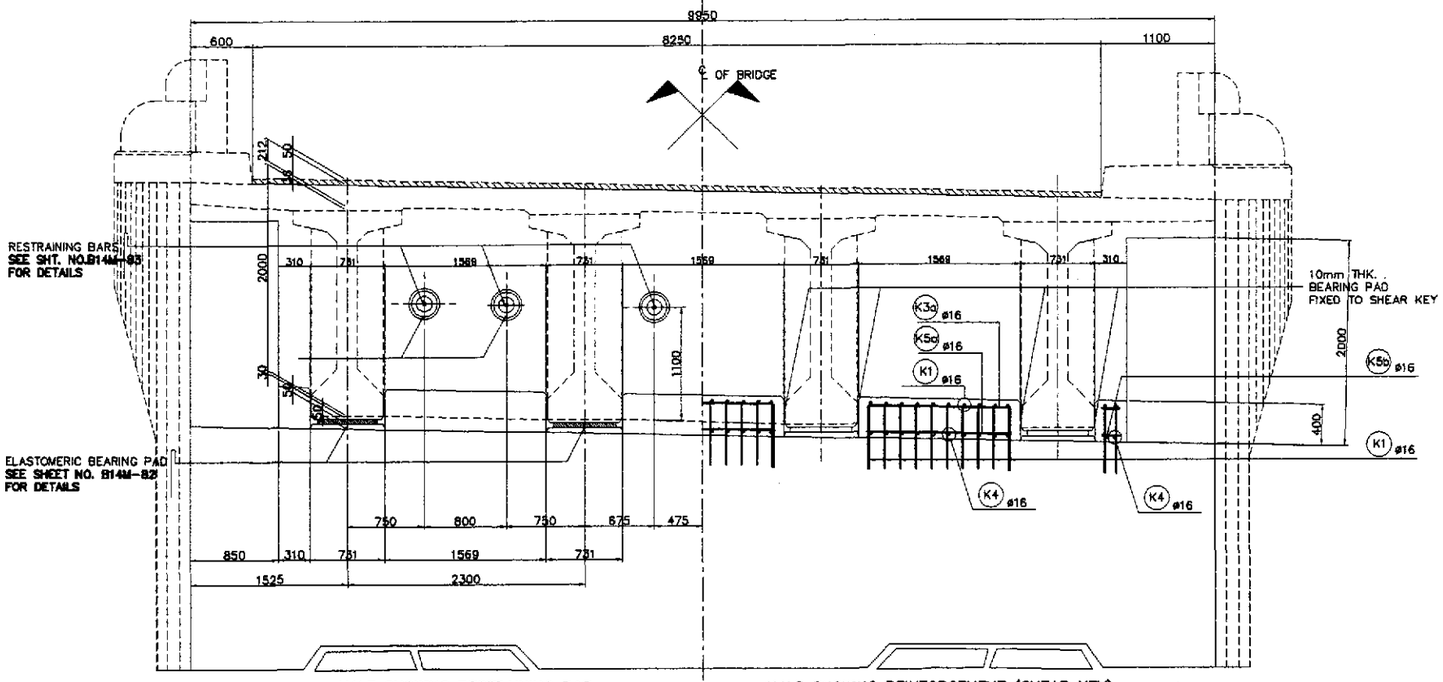
CABANATUAN BYPASS - CONTRACT PACKAGE IV

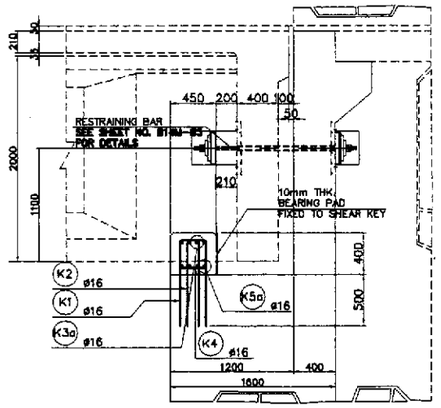
SCALE :
AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO.14 TALAVERA RIVER BRIDGE
EXPANSION JOINT DETAILS AT ABUTMENT & PIERS
(INITIAL STAGE)

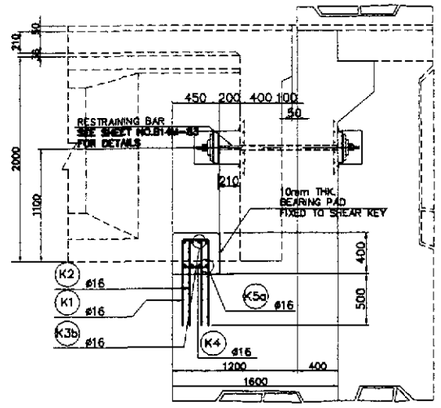
SHEET NO. :
B14M-84



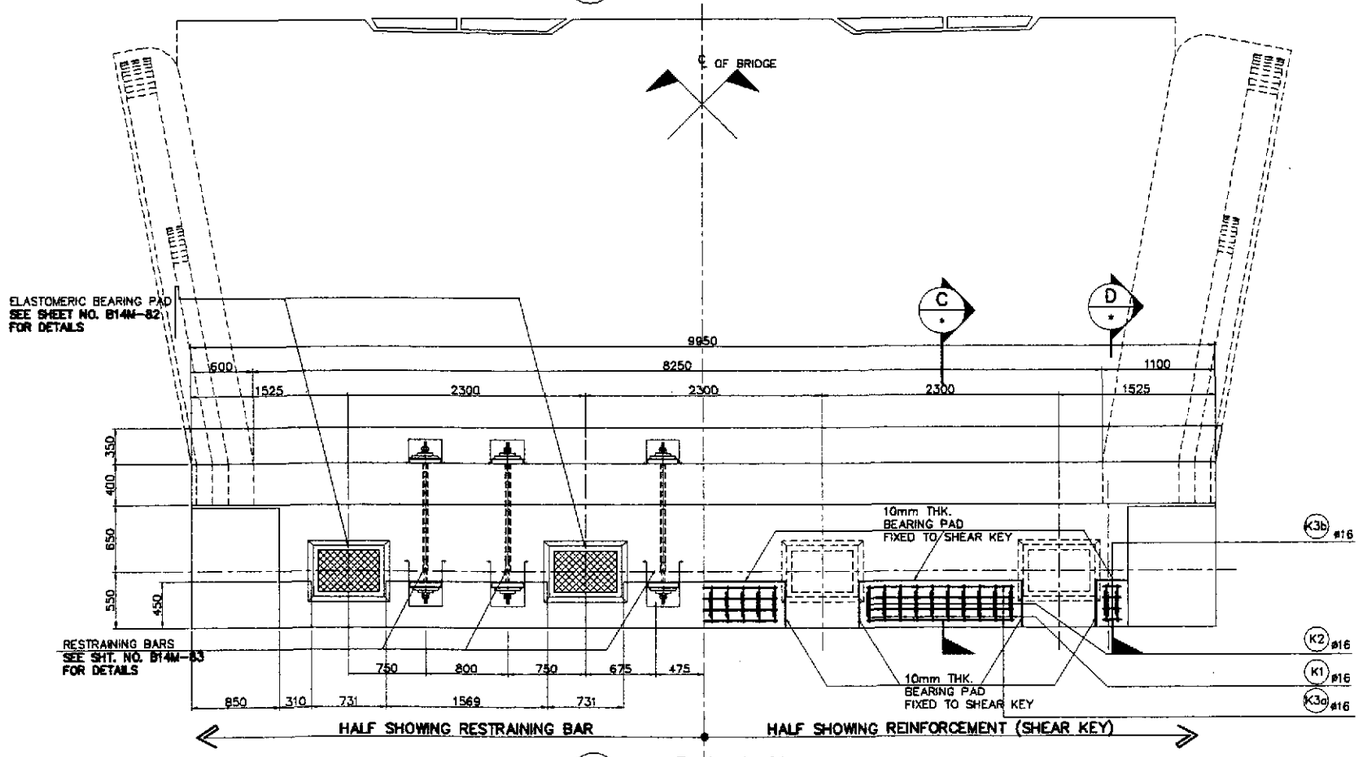
A ELEVATION
SCALE 1 : 30



C SECTION
SCALE 1 : 30



D SECTION
SCALE 1 : 30



B PLAN
SCALE 1 : 30

1 REINF. DETAILS OF SHEAR KEY (ABUTMENT A1 & A2)
SCALE AS SHOWN

BAR BENDING DIAGRAM

SCHEDULE OF REINFORCEMENT

LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION(mm) OUT TO OUT a	b	c	d	e	LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT(kgs.) Grade 40	Grade 60
SHEAR KEY @ PIER P3 & P6 (EXP.-EXP.)	K1	16	A	850	500				2200	48	1.578		167
	K2	16	A	850	170				1870	48	1.578		142
	K3	16	A	850	1470				3170	24	1.578		120
	K4	16	B	500					500	48	1.578		38
	K5	16	B	1470					1470	24	1.578		56
	K6	16	A	850	150				1850	108	1.578		315
	K7	16	A	850	1060				2760	36	1.578		157
	K8	16	A	850	2600				4300	16	1.578		109
	K9	16	B	1060					1060	38	1.578		60
	K10	16	B	2600					2600	16	1.578		66
										TOTAL WEIGHT/PIER			1230
										TOTAL WEIGHT/2 PIERS			2460
SHEAR KEY @ PIER P1 & P2 (FIX-FIX)	K1	20	A	850	540				2240	48	1.578		170
	K2	20	A	850	180				1880	48	1.578		142
	K3	16	A	850	1470				3170	24	1.578		120
	K4	16	B	540					540	48	1.578		41
	K5	16	B	1470					1470	24	1.578		56
	K6	16	A	850	150				1850	108	1.578		315
	K7	16	A	850	1060				2760	36	1.578		157
	K8	16	A	850	2600				4300	16	1.578		109
	K9	16	B	1060					1060	38	1.578		60
	K10	16	B	2600					2600	16	1.578		66
										TOTAL WEIGHT/PIER			1236
										TOTAL WEIGHT/2 PIERS			2472
SHEAR KEY @ PIER P4, P5, P7 & P8 (FIX-FIX)	K1	20	A	850	540				2240	48	1.578		170
	K2	20	A	850	180				1880	48	1.578		142
	K3	16	A	850	1470				3170	24	1.578		120
	K4	16	B	540					540	48	1.578		41
	K5	16	B	1470					1470	24	1.578		56
	K6	16	A	850	150				1850	108	1.578		315
	K7	16	A	850	1060				2760	36	1.578		157
	K8	16	A	850	2600				4300	16	1.578		109
	K9	16	B	1060					1060	36	1.578		60
	K10	16	B	2600					2600	16	1.578		66
										TOTAL WEIGHT/PIER			1236
										TOTAL WEIGHT/4 PIERS			4944
SHEAR KEY @ ABUTMENT	K1	16	A	750	350				2050	34	1.578		110
	K2	16	A	750	230				1930	34	1.578		104
	K3a	16	A	750	1470				3170	12	1.578		60
	K3b	16	A	750	210				1910	8	1.578		24
	K4	16	B	370					370	34	1.578		20
	K5a	16	B	1490					1490	12	1.578		28
	K5b	16	B	210					210	8	1.578		3
										TOTAL WEIGHT/ABUT.		=	349
										TOTAL WEIGHT FOR TWO(2) ABUT.		=	698

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
YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/12/02	H P. DE JESUS
CHECKED	10/19/02	J.C. SANTOS
SUBMITTED	10/21/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

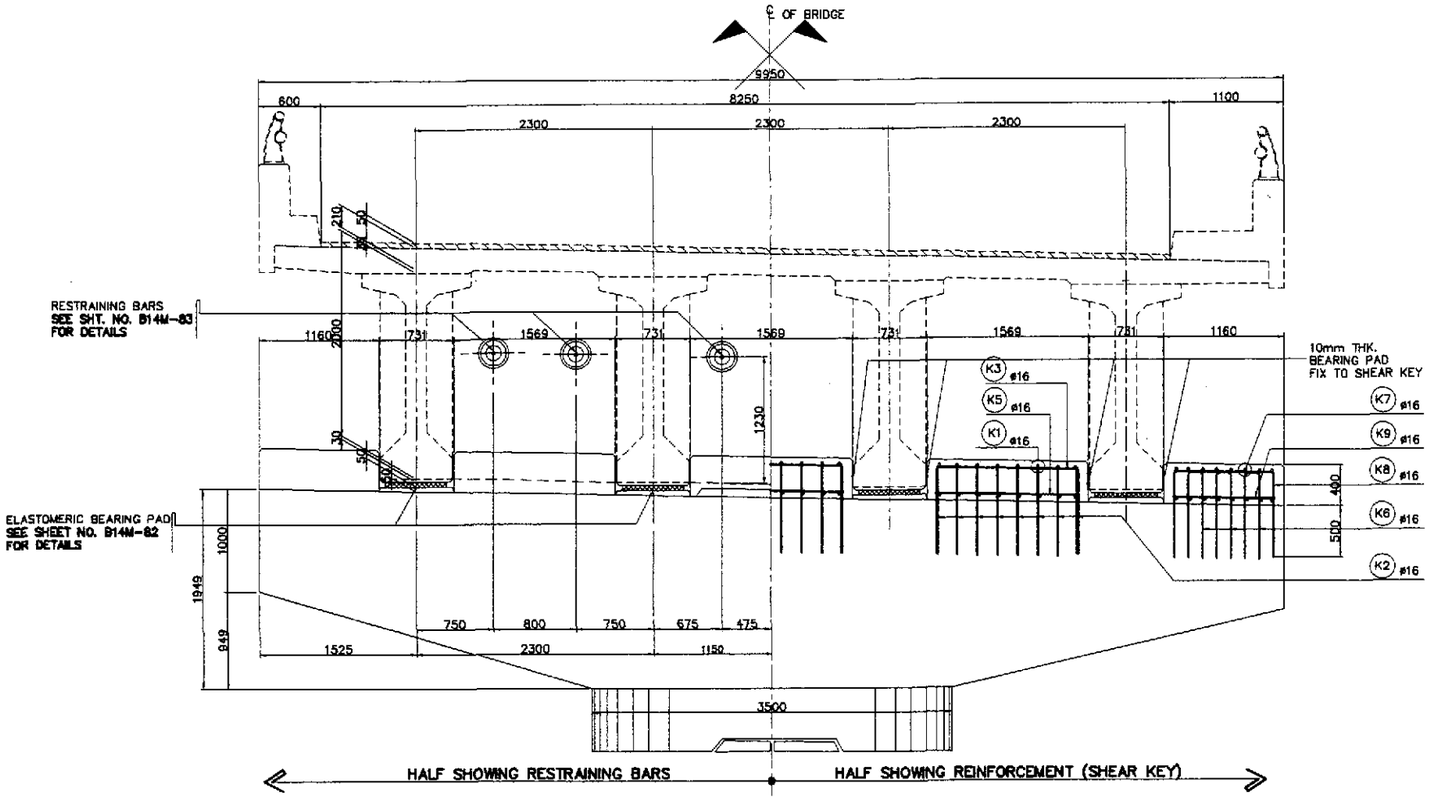
PUHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	ADRIANO M. DOROY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Bridges Division	Director IV (OIC)	Undersecretary	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

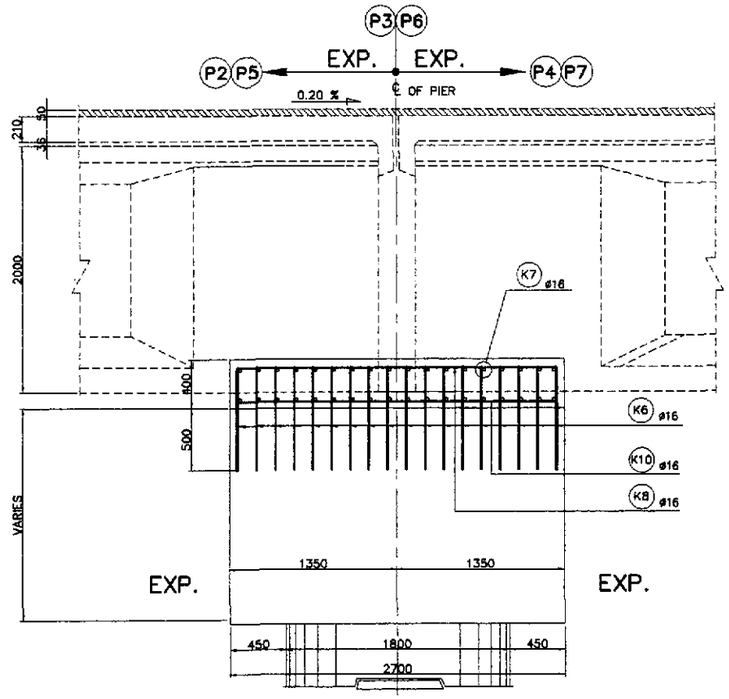
SHEET CONTENTS :
BRIDGE NO.14 TALAVERA RIVER BRIDGE
REINF. DETAILS OF SHEAR KEY
(ABUTMENT A1 & A2)
(INITIAL STAGE)

SHEET NO. :
B14M-85

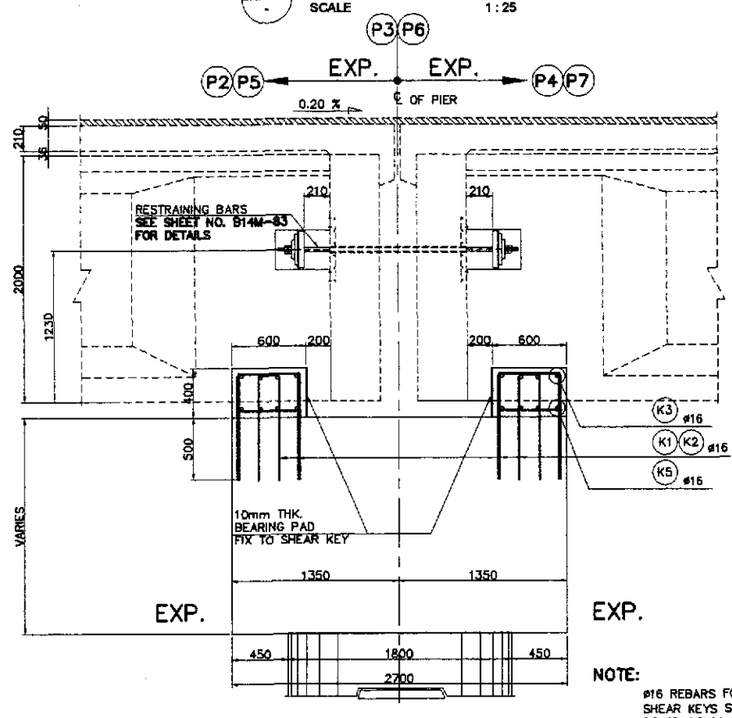


A — ELEVATION
SCALE 1:30

B — PLAN
SCALE 1:30



C — SECTION
SCALE 1:25



NOTE:
ø16 REBARS FOR SHEAR KEYS SHALL BE GRADE 60
Fy = 415 MPa

D — SECTION
SCALE 1:25

1 — REINF. DETAILS OF SHEAR KEY (PIERS P3 & P6, EXP.-EXP. PIERS)
SCALE AS SHOWN

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

	DATE	SIGNATURE
DESIGNED	10/12/02	E. P. DE JESUS
CHECKED	10/19/02	J. C. SANTOS
SUBMITTED	10/24/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	ADRIANO M. DOROY, Chief, Bridges Division	GILBERTO S. REYES, Director IV (OIC)	MANUEL M. BONOAN, Undersecretary	SIMEON A. DATUMANONG, Secretary

PROJECT AND LOCATION :
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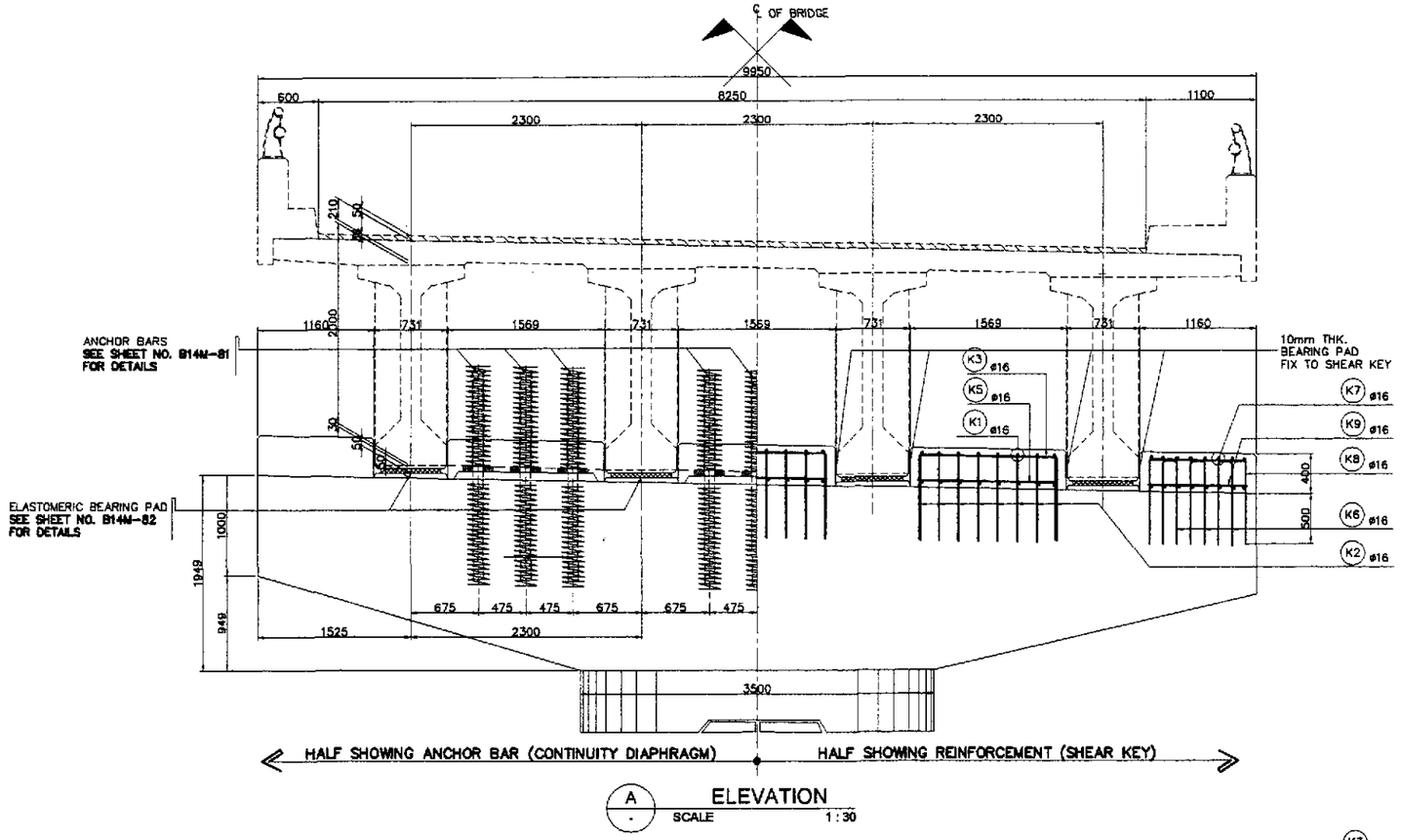
ALONG THE PAN-PHILIPPINE HIGHWAY
(Plaridel, Cabanatuan and San Jose Bypasses)
CABANATUAN BYPASS - CONTRACT PACKAGE IV

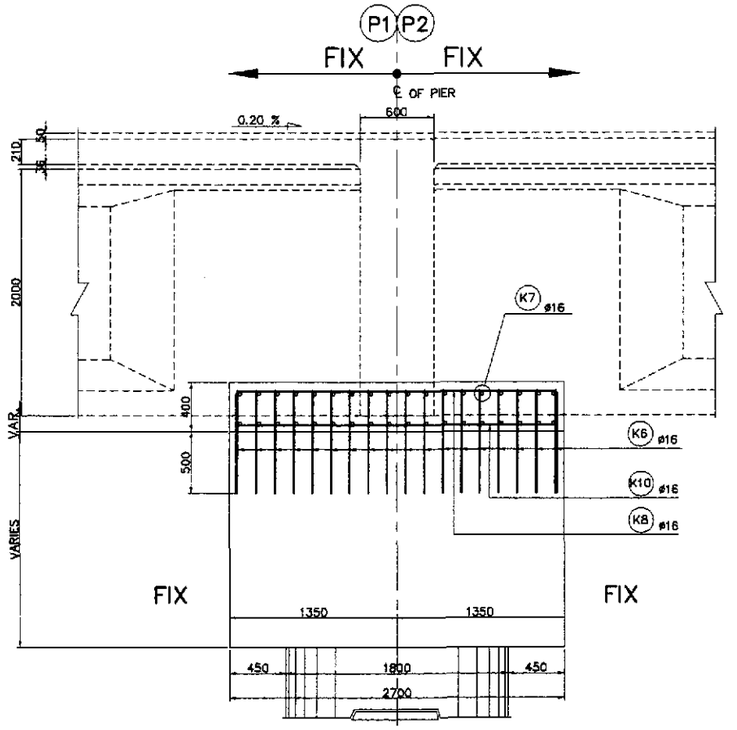
SCALE : AS SHOWN — FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO.14 TALAVERA RIVER BRIDGE
REINF. DETAILS OF SHEAR KEY
(PIERS P3 & P6, EXP.-EXP.PIERS)
(INITIAL STAGE)

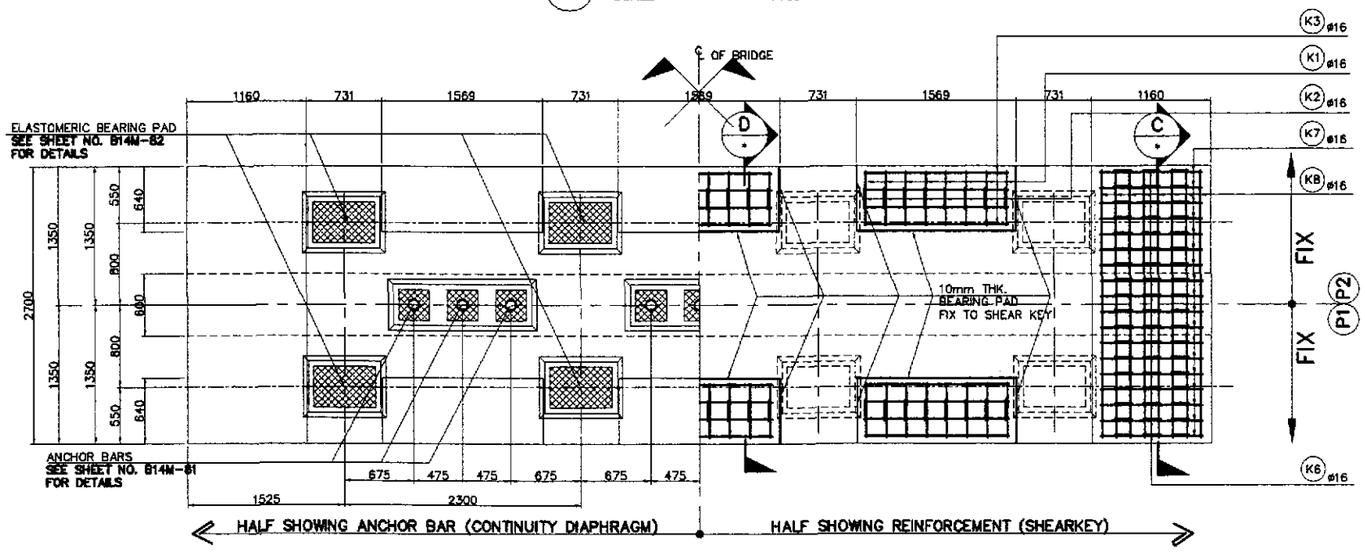
SHEET NO. : B14M-86



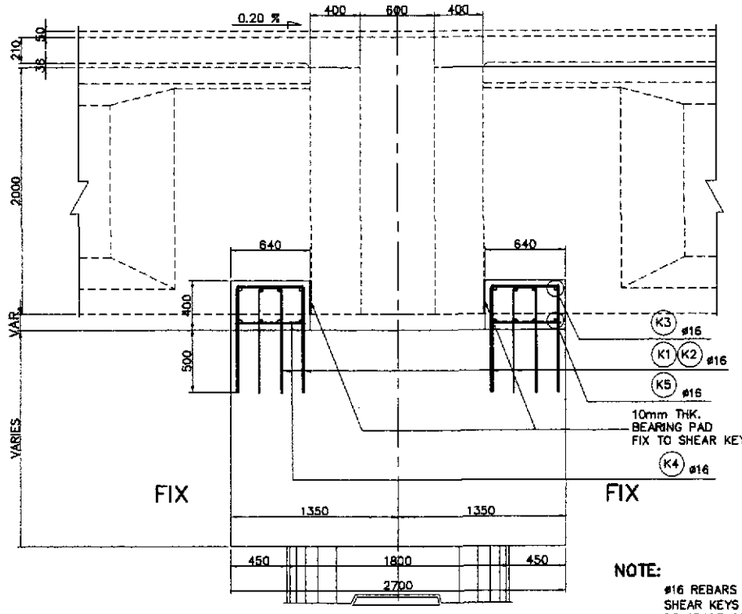
A — ELEVATION
SCALE 1:30



C — SECTION
SCALE 1:25



B — PLAN
SCALE 1:30



D — SECTION
SCALE 1:25

NOTE:
ø16 REBARS FOR SHEAR KEYS SHALL BE GRADE 60
Fy = 415 MPa

1 — REINF. DETAILS OF SHEAR KEY (PIERS P1 & P2, FIX-FIX PIERS)
SCALE AS SHOWN

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

	DATE	SIGNATURE
DESIGNED	10/12/02	E. P. DE JESUS
CHECKED	10/17/02	J. C. SANTOS
SUBMITTED	10/21/02	M. KUCHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

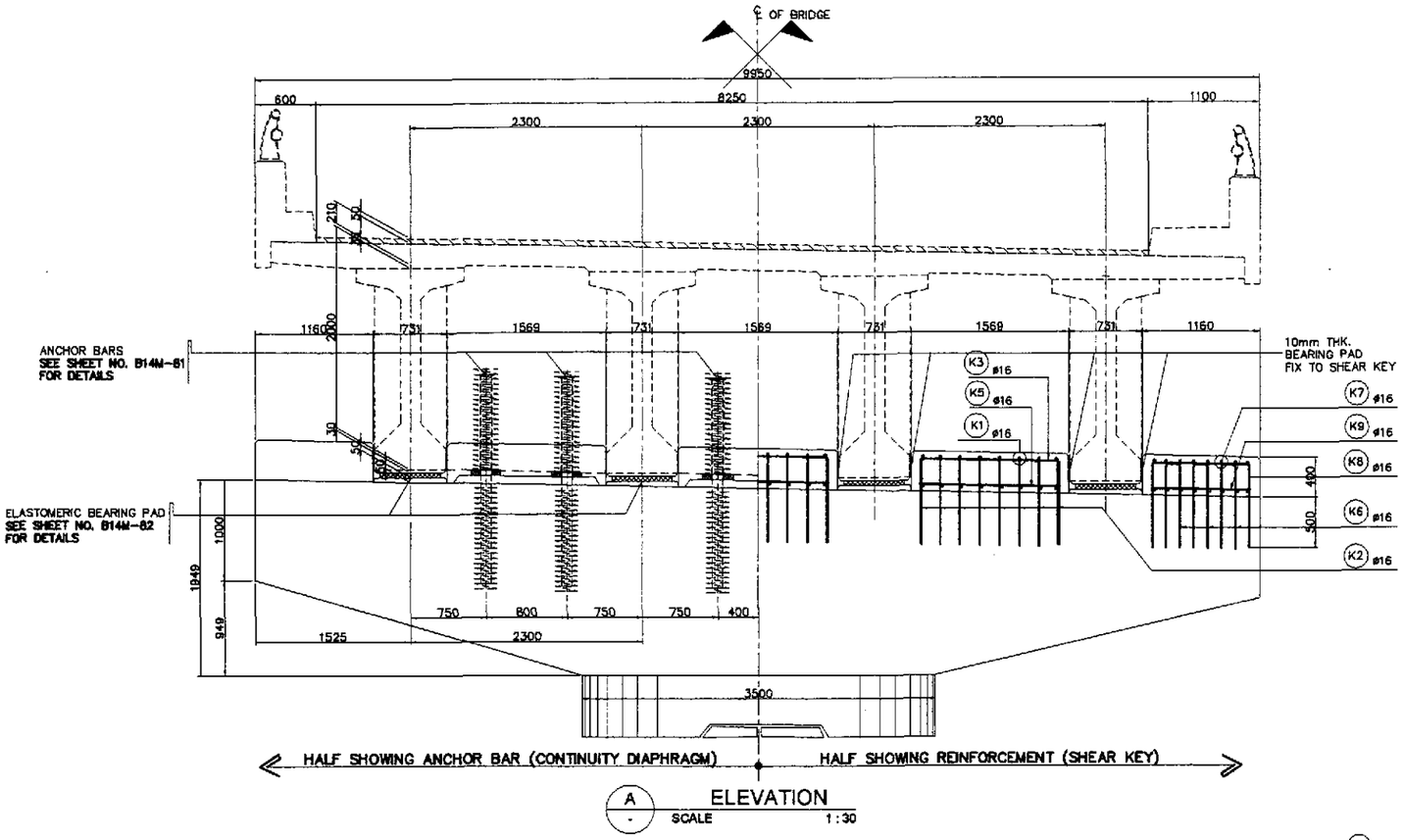
PUHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	ADRIANO M. OOROY, Chief, Bridges Division	GILBERTO S. REYES, Director IV (OIC)	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

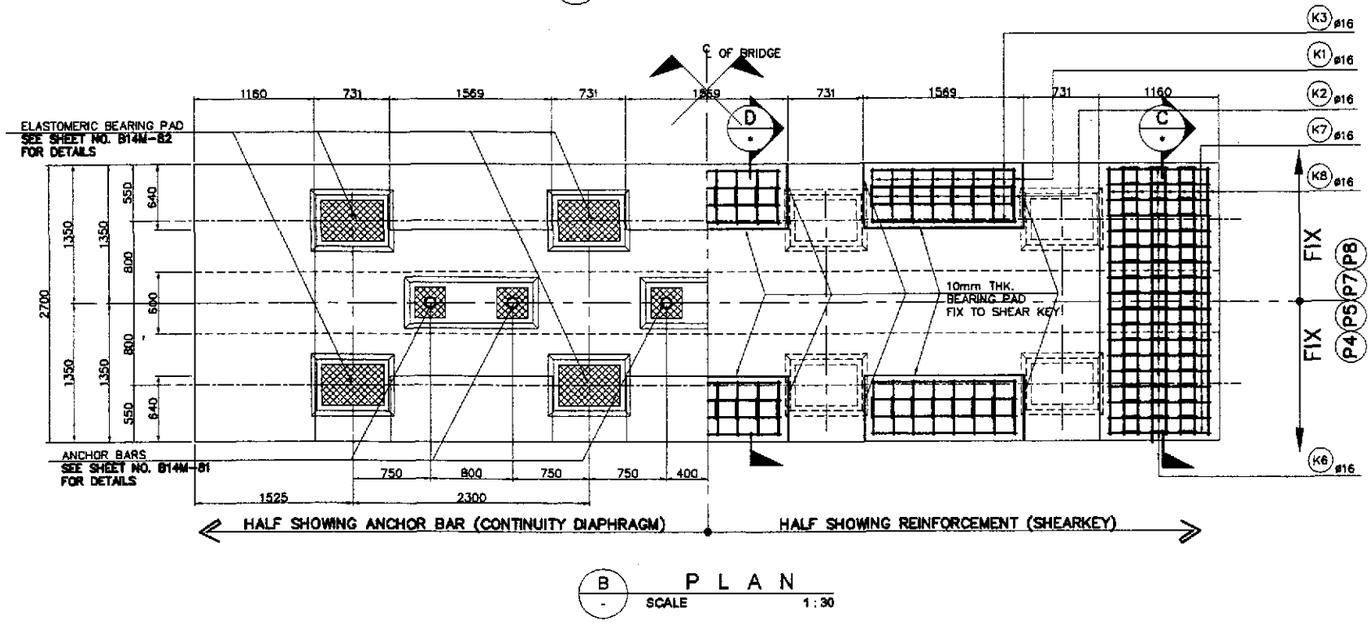
SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO.14 TALAVERA RIVER BRIDGE
REINF. DETAILS OF SHEAR KEY (PIERS P1 & P2, FIX-FIX PIERS)
(INITIAL STAGE)

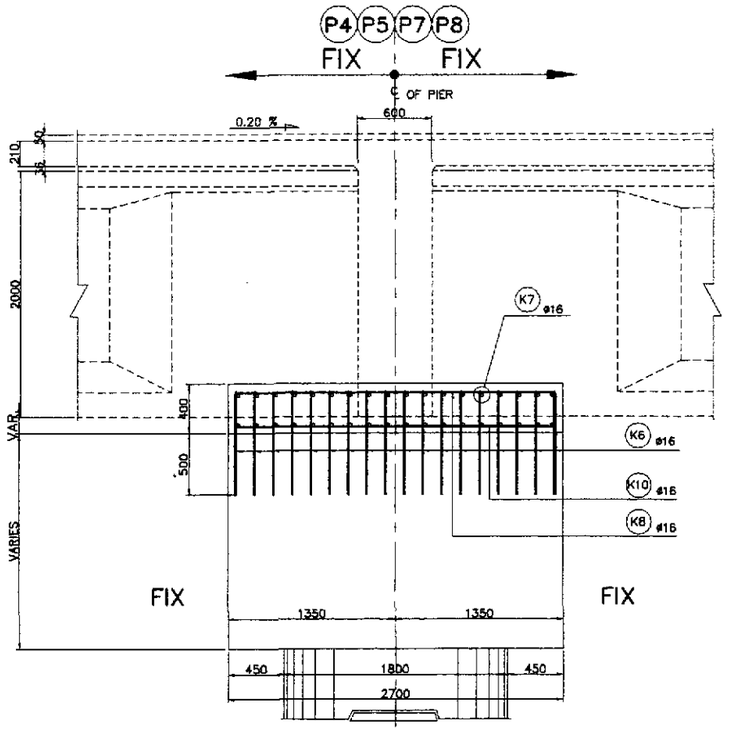
SHEET NO. : B14M-87



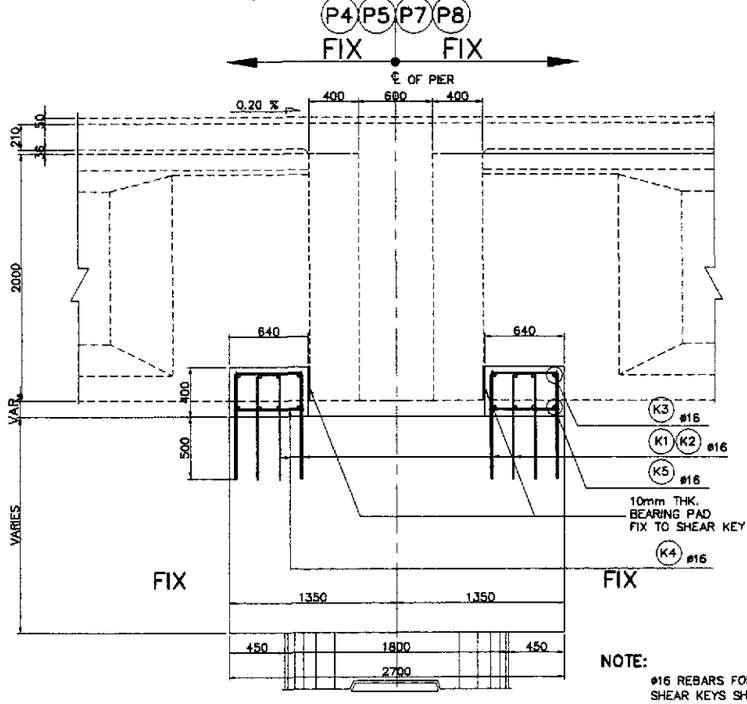
A - SCALE 1:30 ELEVATION



B - SCALE 1:30 P L A N



C - SCALE 1:25 SECTION



D - SCALE 1:25 SECTION

NOTE:
ø16 REBARS FOR SHEAR KEYS SHALL BE GRADE 60 Fy = 415 MPa

1 - SCALE AS SHOWN DETAIL OF SHEAR KEY AND ANCHOR BAR AT PIERS P4, P5, P7, & P8 (FIX-FIX)

JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL — YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/12/02	V. P. DE JESUS
CHECKED	10/19/02	J. C. SANTOS
SUBMITTED	10/21/02	A. C. ROCES, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

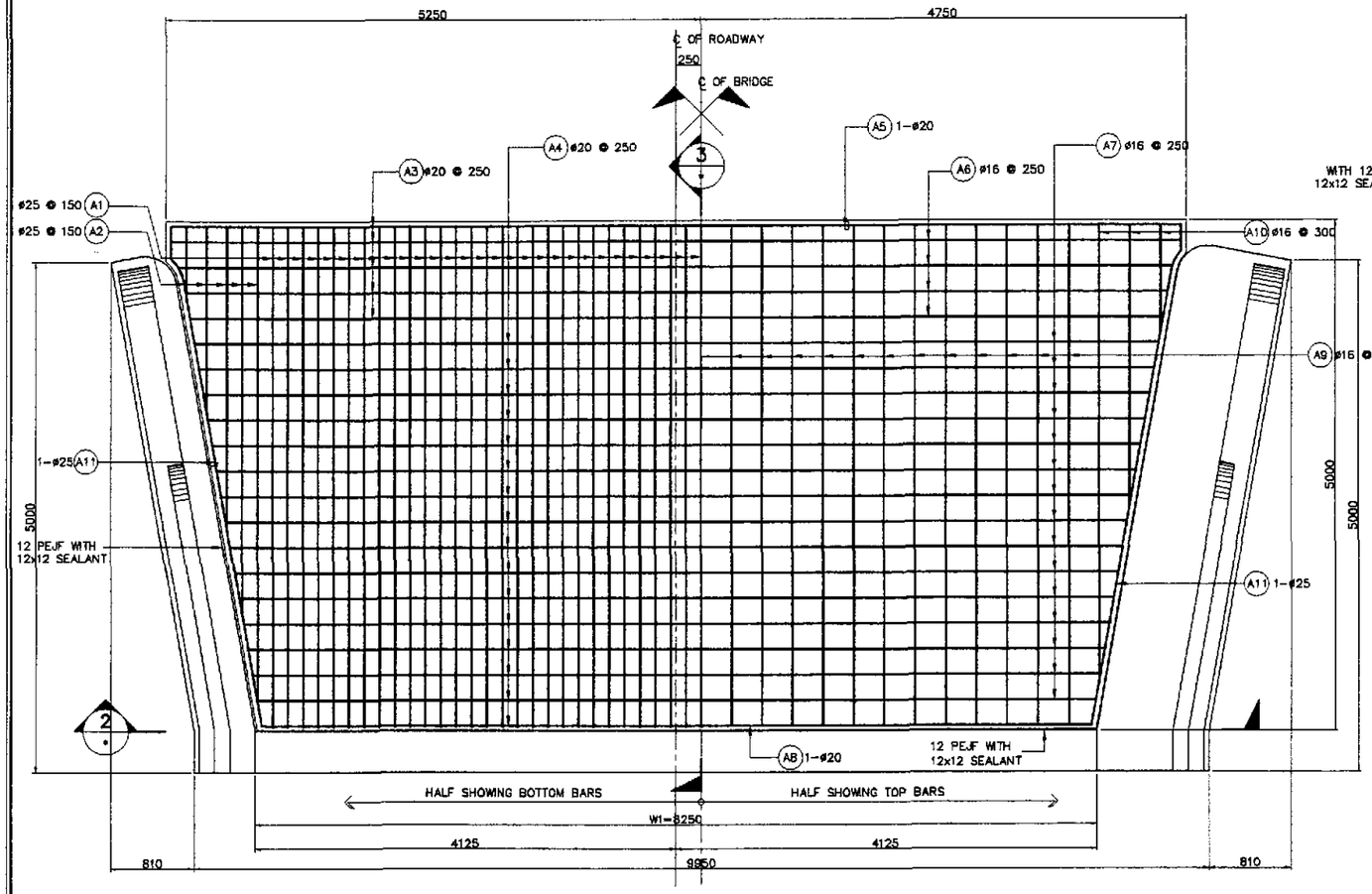
P.M.L. – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	ADRIANO M. DOROY, Chief, Bridges Division	GILBERTO S. REYES, Director IV (OIC)	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

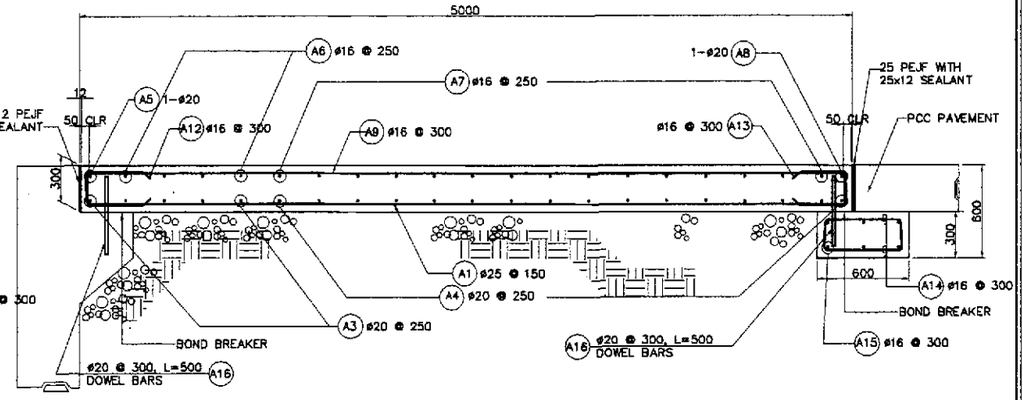
SCALE : AS SHOWN — FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO.14 TALAVERA RIVER BRIDGE
REINF. DETAILS OF SHEAR KEY (PIERS P4,P5,P7 & P8, FIX-FIX PIERS) (INITIAL STAGE)

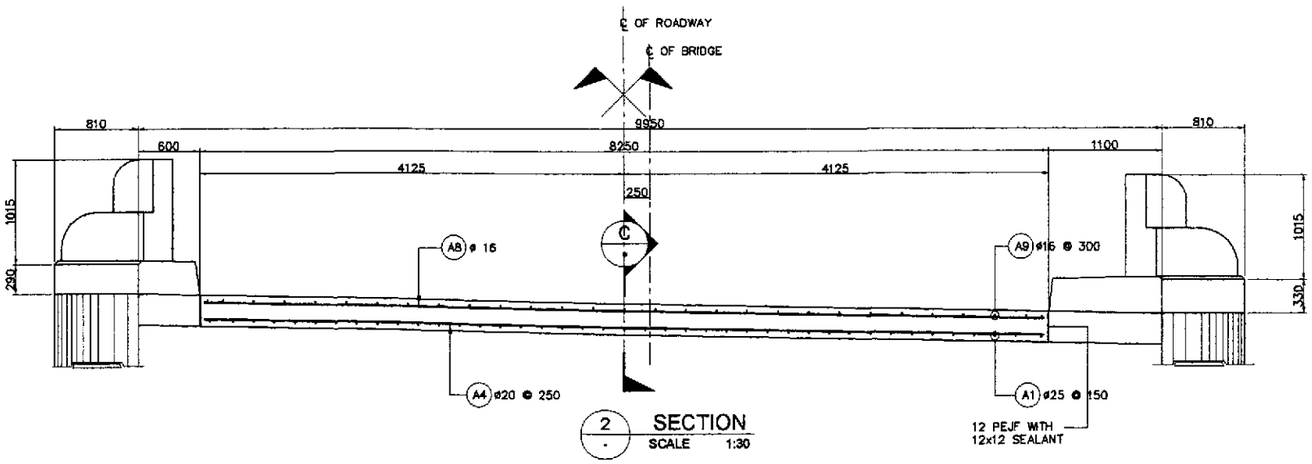
SHEET NO. : B14M-88



1 PLAN
SCALE 1:30

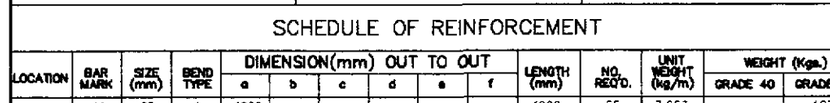


3 SECTION
SCALE 1:20



2 SECTION
SCALE 1:30

BAR BENDING DIAGRAM



SCHEDULE OF REINFORCEMENT

LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION(mm) OUT TO OUT a	b	c	d	e	f	LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (Kgs.) GRADE 40	GRADE 60
APPROACH SLAB	A1	25	A	4900						4900	55	3.853		1038
	A2	25	A	4450 max 1950 min						3200	10	3.853		123
	A3	20	A	9900						9900	3	2.466		73
	A4	20	A	9800 max 8140 min						8970	18	2.466		398
	A5	20	A	9900						9900	1	2.466		24
	A6	16	A	9900						9900	2	1.578	31	
	A7	16	A	9800 max 8140 min						8970	17	1.578	241	
	A8	20	A	8140						8140	1	2.466		20
	A9	16	A	4900						4900	28	1.578	217	
	A10	16	A	4450 max 2850 min						3650	4	1.578	26	
	A11	25	B	500	4550					5050	4	3.853		78
	A12	16	C	300	200	300				800	28	1.578	35	
	A13	16	C	300	200	300				800	33	1.578	42	
	A14	16	C	200	500	200				900	66	1.578	94	
	A15	16	A	9900						9900	6	1.578	91	
	A16	20	A	500						500	61	2.466		75
										TOTAL WEIGHT =			780	1754

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

A APPROACH SLAB REINFORCEMENT DETAILS (ABUT. A1 & A2)
SCALE AS SHOWN

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

	DATE	SIGNATURE
DESIGNED	10/18/02	F. P. DE JESUS
CHECKED	10/19/02	J. C. SANTOS
SUBMITTED	10/21/02	M. ROCHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

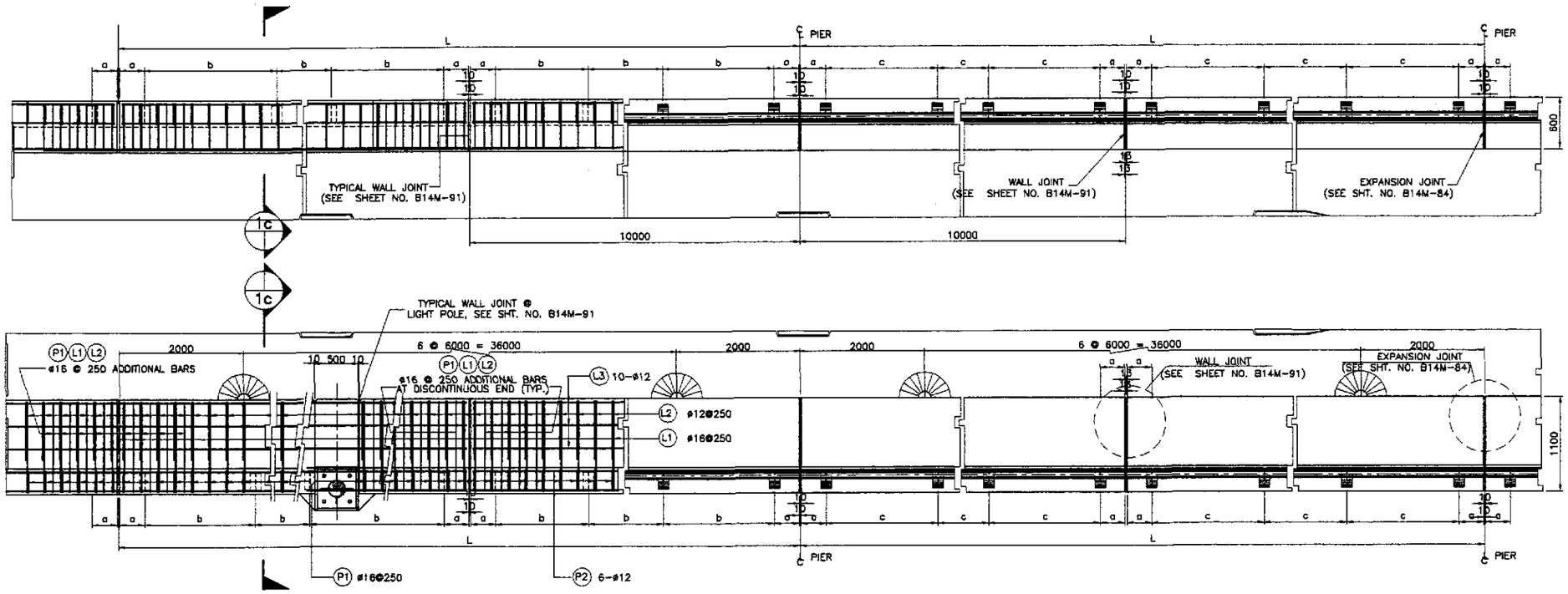
PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO Project Director	ADRIANO M. DORDY Chief, Bridges Division	GILBERTO S. REYES Director IV (OIC)	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

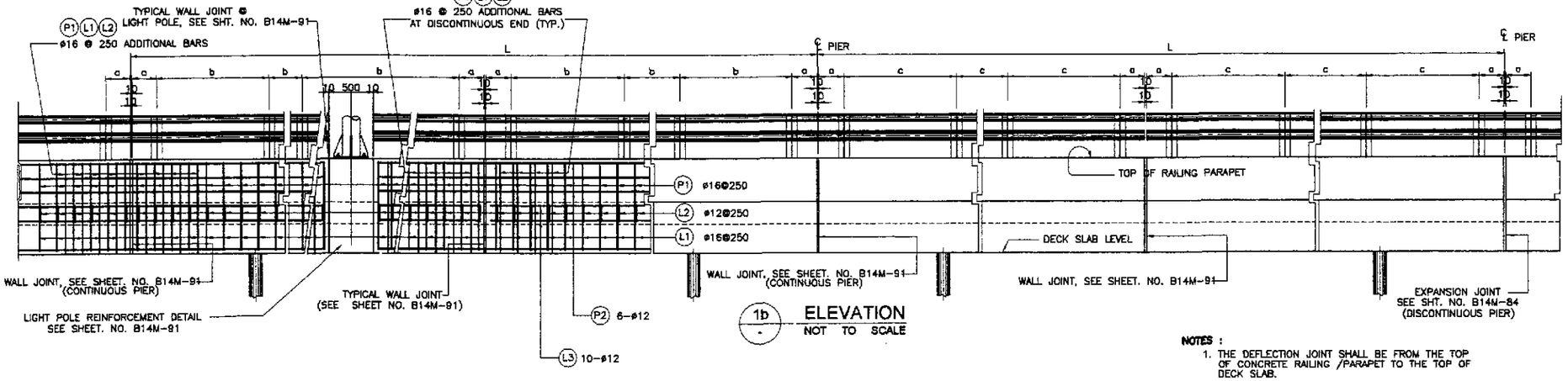
SHEET CONTENTS :
BRIDGE NO.14 TALAVERA RIVER BRIDGE
APPROACH SLAB REINF. DETAILS (ABUT. A1 & ABUT. A2)
(INITIAL STAGE)

SHEET NO. :
B14M-89



1a PLAN
NOT TO SCALE

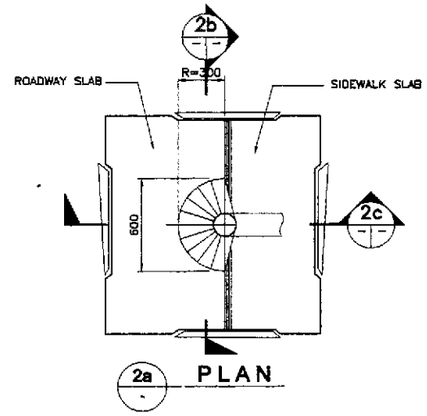
SCHEDULE OF RAILING					
SPAN LENGTH (m)	NO. OF DEFLECTION. JT. INSIDE SPAN	NO. OF RAIL POST PER SIDE/SPAN	a (mm)	b (mm)	c (mm)
40.00	3	24	250	1895	1895

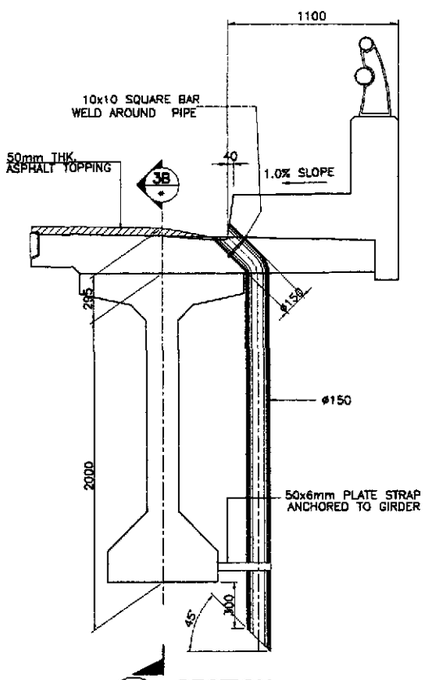


1b ELEVATION
NOT TO SCALE

1 DETAILS OF SIDEWALK, RAILING AND DRAIN
SCALE AS SHOWN

NOTES :
1. THE DEFLECTION JOINT SHALL BE FROM THE TOP OF CONCRETE RAILING /PARAPET TO THE TOP OF DECK SLAB.
2. NUMBER OF DEFLECTION JOINT INSIDE SPAN DOES NOT INCLUDE LIGHT POLE.





2 TYPICAL DRAIN DETAILS
SCALE 1:20

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

	DATE	SIGNATURE
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CHECKED	10/19/02	J. C. SANTOS
SUBMITTED	10/21/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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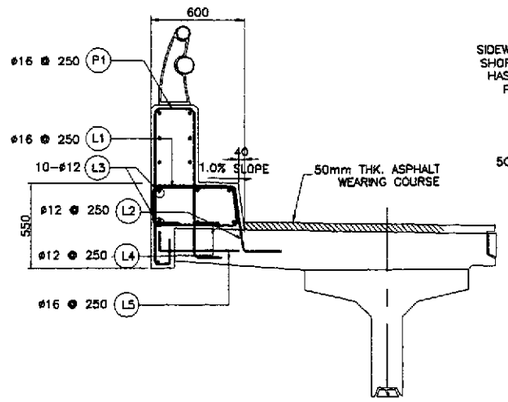
DANILO C. TRAJANO	ADRIANO M. DOROY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Bridges Division	Director IV (OIC)	Undersecretary	Secretary

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

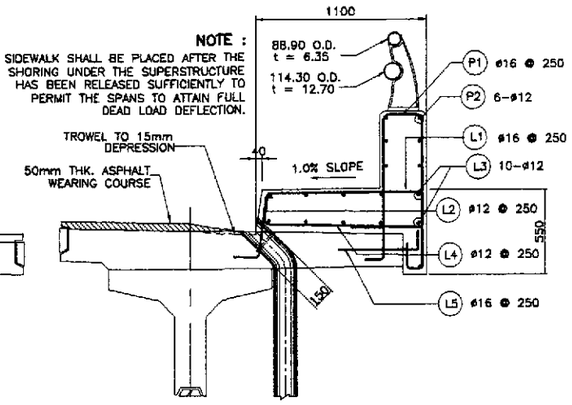
SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO.14 TALAVERA RIVER BRIDGE
DETAILS OF SIDEWALK, RAILING AND DRAIN
(INITIAL STAGE)

SHEET NO. : B14M-90

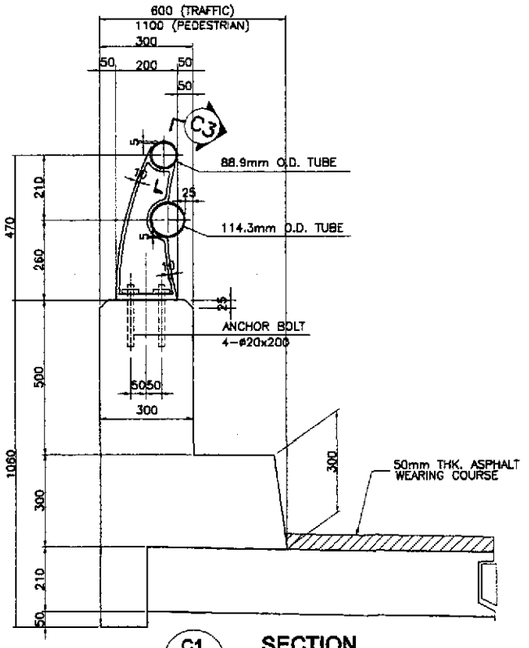


A1 SIDEWALK (TRAFFIC)
SCALE 1:20

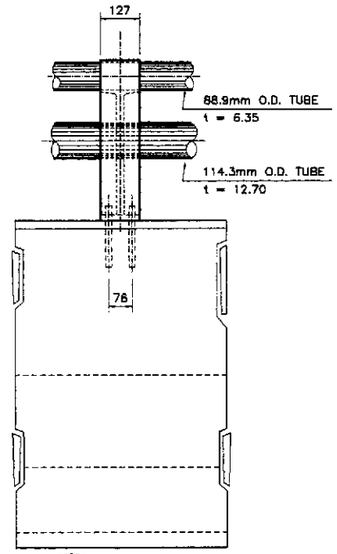


A2 SIDEWALK (PEDESTRIAN)
SCALE 1:20

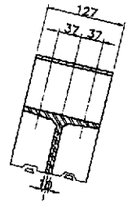
A SIDEWALK REINFORCEMENT DETAILS
SCALE AS SHOWN



C1 SECTION
SCALE 1:10

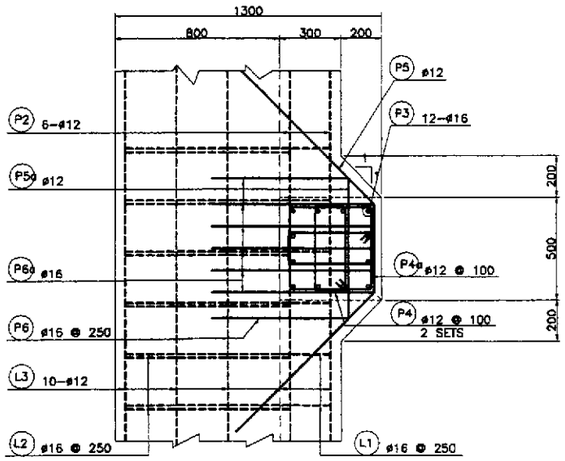


C2 ELEVATION
SCALE 1:10

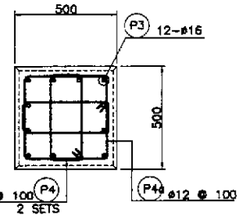


C3 SECTION
SCALE 1:5

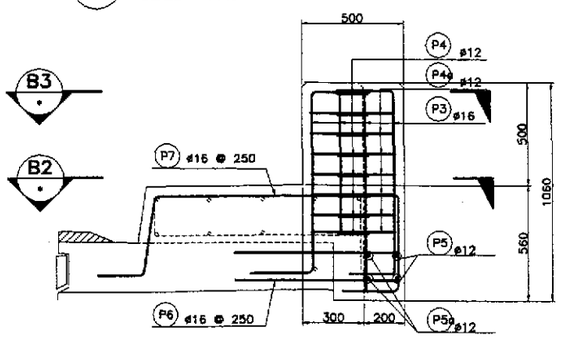
C DETAILED DIMENSION OF RAILING
SCALE AS SHOWN



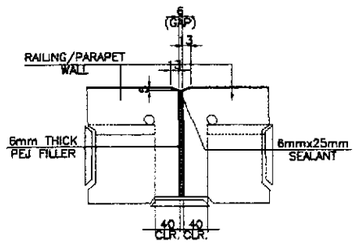
B2 SECTION
SCALE 1:15



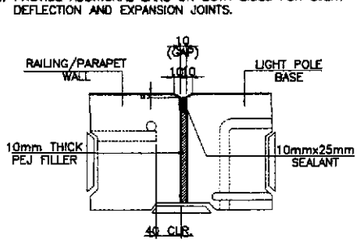
B3 SECTION
SCALE 1:15



B1 ELEVATION
SCALE 1:15



DETAILS @ WALL JOINT



DETAILS @ LIGHT POLE BASE / WALL JOINT

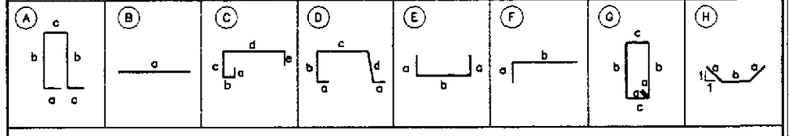
D DETAILS OF DEFLECTION JOINTS
SCALE 1:5

B LIGHT POLE BASE REINF. DETAIL
SCALE AS SHOWN

1 SIDEWALK & LIGHT POLE BASE REINF. DETAILS, RAILING DIMENSIONS
SCALE AS SHOWN

NOTES :
1. FOR LOCATION OF JOINTS SEE DWG. NO. B14M-90.
2. PROVIDE DEFLECTION JOINTS AT EVERY CONTINUOUS PIER EXCEPT @ LIGHT POST POSITION. ALSO PROVIDE THREE (3) ADDITIONAL DEFLECTION JOINTS IN BETWEEN PIERS.
3. PROVIDE ADDITIONAL BARS ON BOTH SIDES FOR EVERY DEFLECTION AND EXPANSION JOINTS.

BAR BENDING DIAGRAM



SCHEDULE OF REINFORCEMENT

LOCATION	BAR MARK	SIZE (mm)	BEND TYPE	DIMENSION(mm) OUT TO OUT a	b	c	d	e	LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT(kgs.) Grade 40	Grade 60
PARAPET	P1	16	A	300	720	220			2260	384	1.578	1369	
	P2	12	B	9874					9874	48	0.888	421	
									TOTAL WEIGHT PER SPAN = 1790 Kgs.				
									TOTAL WEIGHT FOR 9 SPANS = 16110 Kgs.				
SIDEWALK PEDESTRIAN	L1	16	C	100	70	450	980	260	1860	192	1.578	564	
	L2	12	D	200	375	700	375		1850	192	0.888	315	
	L3	12	B	9874					9874	44	0.888	386	
	L4	12	E	200	980				1380	192	0.888	235	
	L5	12	F	200	400				600	192	0.888	102	
									TOTAL WEIGHT PER SPAN = 1602 Kgs.				
									TOTAL WEIGHT FOR 9 SPANS = 14418 Kgs.				
SIDEWALK TRAFFIC	L1	16	C	100	70	4750	480	260	5660	192	1.578	1715	
	L2	12	D	200	375	200	375		1350	192	0.888	230	
	L3	12	B	9874					9874	28	0.888	246	
	L4	12	E	220	480				880	192	0.888	150	
	L5	12	F	200	400				600	192	0.888	102	
									TOTAL WEIGHT PER SPAN = 2443 Kgs.				
									TOTAL WEIGHT FOR 9 SPANS = 21987 Kgs.				
LIGHT POST	P3	16	F	300	910				1210	12	1.578	23	
	P4	12	G	150	150	420			1440	16	0.888	20	
	P4a	12	G	150	420	420			1980	8	0.888	14	
	P5	12	H	1000	500				2500	2	0.888	4	
	P5a	12	B	700					700	2	0.888	1	
	P6	16	E	650	130				1430	5	1.578	11	
	P6a	16	E	750	130				1630	5	1.578	13	
	P7	12	C	100	250	4750	1150	260	6520	3	0.888	17	
									TOTAL WEIGHT PER POST = 103 Kgs.				
									TOTAL WEIGHT FOR 12 POSTS = 1236 Kgs.				

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
YEC YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/12/02	F. P. DE JESUS
CHECKED	10/19/02	J. SANTOS
SUBMITTED	10/21/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

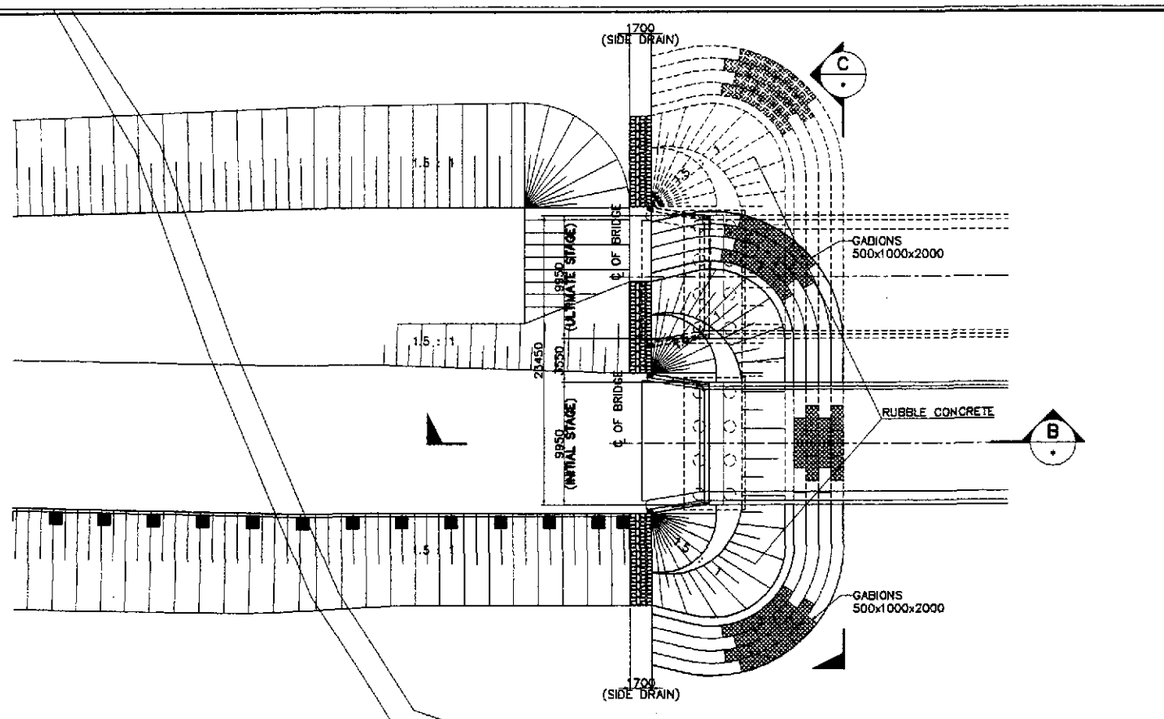
PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	ADRIANO M. DOROY, Chief, Bridges Division	GILBERTO S. REYES, Director IV (OIC)	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

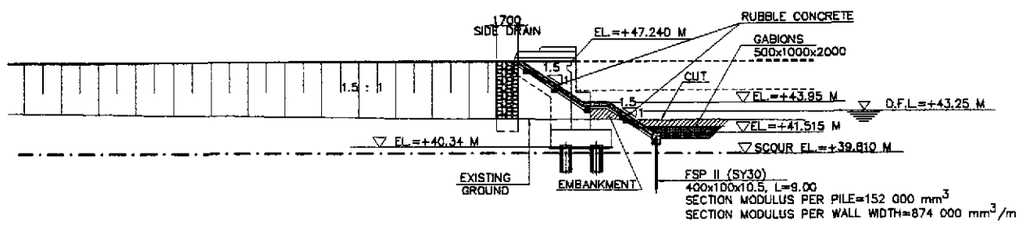
SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO.14 TALAVERA RIVER BRIDGE
SIDEWALK & LIGHT POLE BASE REINF. DETAILS, RAILING DIMENSIONS (INITIAL STAGE)

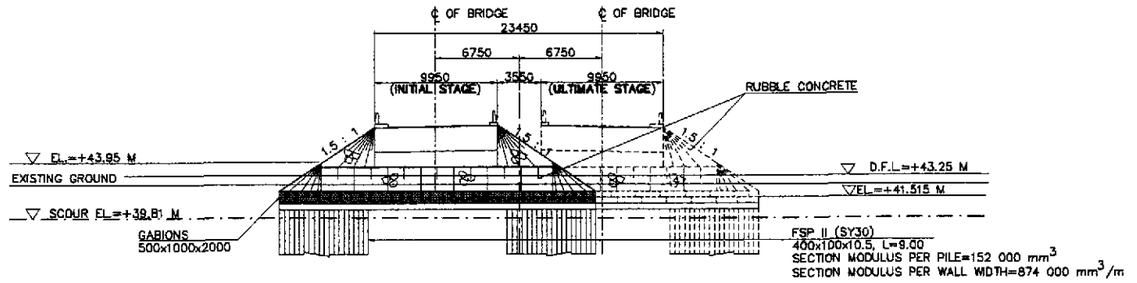
SHEET NO. : B14M-91



A PLAN
SCALE 1 : 250



B SECTION
SCALE 1 : 250



C ELEVATION
SCALE 1 : 250

1 DETAILS OF ABUTMENT SLOPE PROTECTION (ABUT. A1)
SCALE AS SHOWN

NOTES :

1. SLOPE PROTECTION SHOWN BY SOLID LINES ARE FOR THE INITIAL STAGE.
2. SLOPE PROTECTION SHOWN BY HIDDEN LINES ARE FOR THE ULTIMATE STAGE.

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

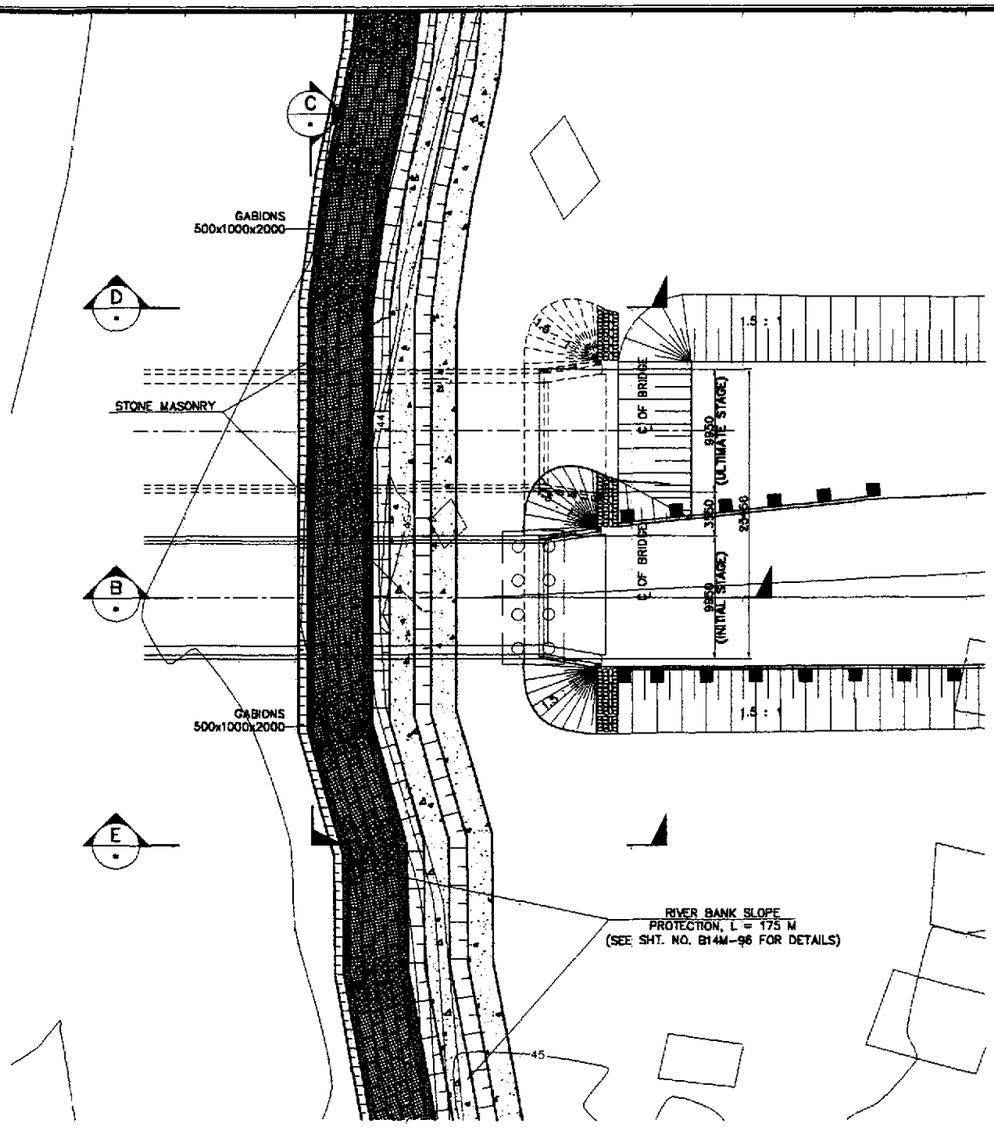
KEI KATAHIRA & ENGINEERS INTERNATIONAL
YEC YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/2/02	P. DE JESUS
CHECKED	10/19/02	J. E. SANTOS
SUBMITTED	10/21/02	TEAM LEADER

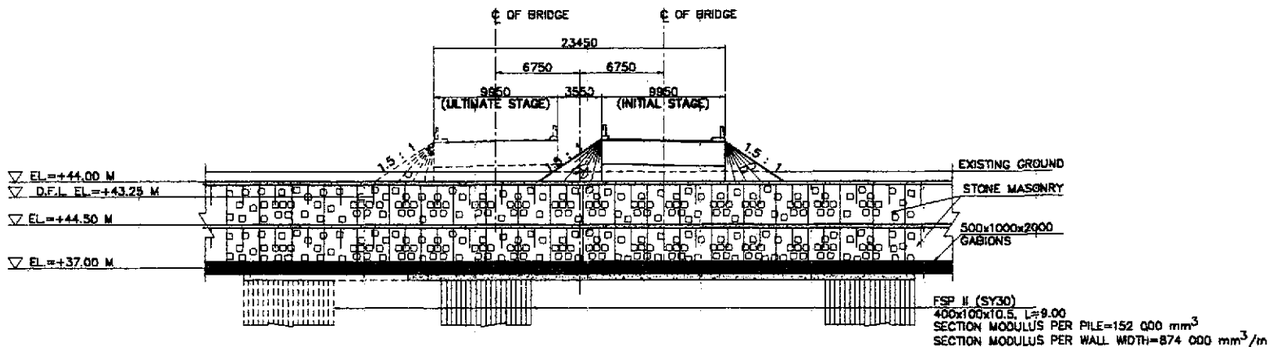
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

P.H.L - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	PERFECTO L. ZAPLAN JR.	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Hydraulics Division (OIC)	Director IV (OIC)	Undersecretary	Secretary

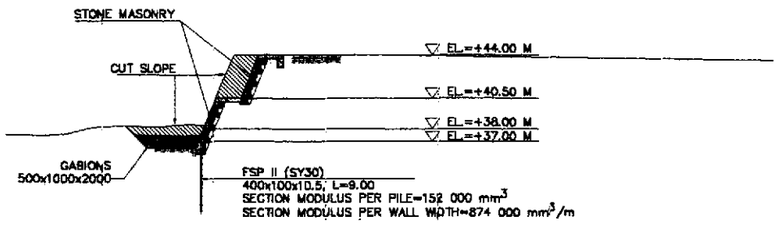
PROJECT AND LOCATION	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	BRIDGE NO.14 TALAVERA RIVER BRIDGE DETAILS OF ABUT. SLOPE PROTECTION (ABUT. A1) - 1 OF 3 (INITIAL STAGE)	B14M-92
CABANATUAN BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1		



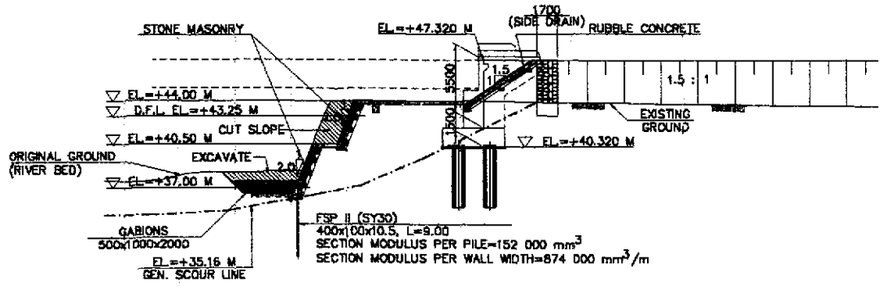
A PLAN
SCALE 1 : 250



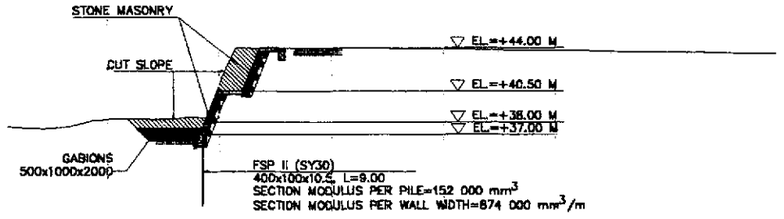
C ELEVATION
SCALE 1 : 250



D SECTION
SCALE 1 : 250



B SECTION
SCALE 1 : 250



E SECTION
SCALE 1 : 250

NOTES :

1. SLOPE PROTECTION SHOWN BY SOLID LINES ARE FOR THE INITIAL STAGE.
2. SLOPE PROTECTION SHOWN BY HIDDEN LINES ARE FOR THE ULTIMATE STAGE.

1 DETAILS OF ABUTMENT SLOPE PROTECTION (ABUT. A2)
SCALE AS SHOWN

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

	DATE	SIGNATURE
DESIGNED	10/12/02	F. P. DE JESUS
CHECKED	10/19/02	J. D. SANTOS
SUBMITTED	10/21/02	M. YOUSHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
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Project Director	Chief, Hydraulics Division (OIC)	Director IV (OIC)	Undersecretary	Secretary

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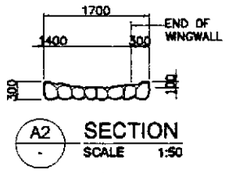
CABANATUAN BYPASS - CONTRACT PACKAGE IV

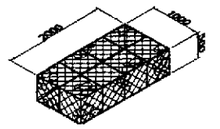
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO. 14 TALAVERA RIVER BRIDGE
DETAILS OF ABUT. SLOPE PROTECTION (ABUT. A2) - 2 OF 3 (INITIAL STAGE)

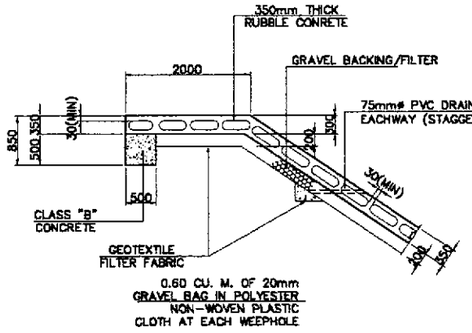
SHEET NO. : B14M-93



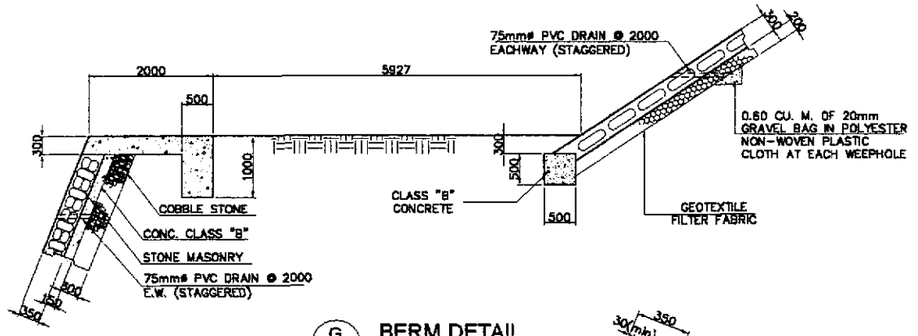
A2 SECTION
SCALE 1:50



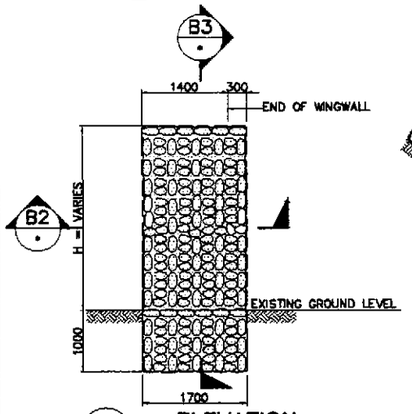
B GABION DETAIL
NOT TO SCALE



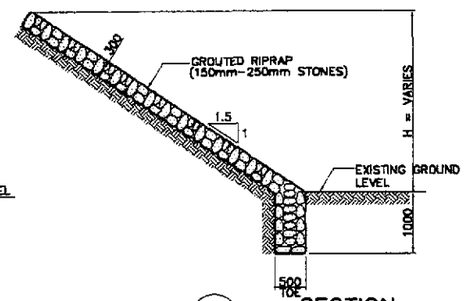
D BERM DETAIL
SCALE 1:50



G BERM DETAIL
SCALE 1:50



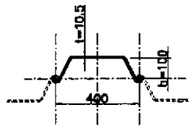
A1 ELEVATION
SCALE- 1:50



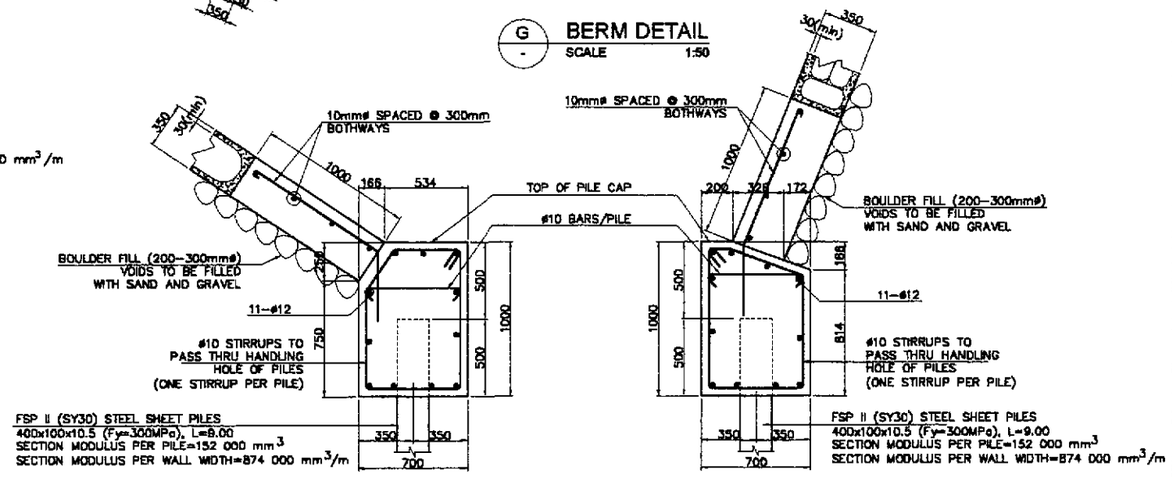
A3 SECTION
SCALE- 1:50

A SIDE DRAIN DETAILS
SCALE AS SHOWN

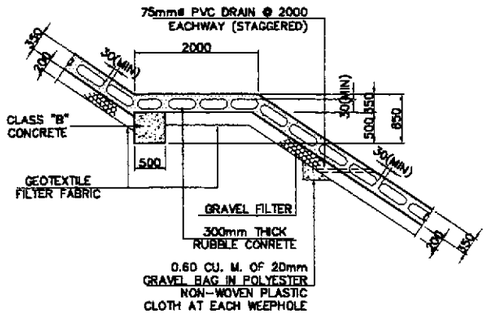
FSP II :
SECTION MODULUS PER PILE = 152 000 mm^3
SECTION MODULUS PER WALL WIDTH = 874 000 mm^3/m



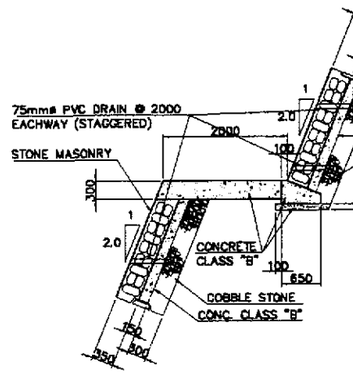
SECTION OF SHEET PILE



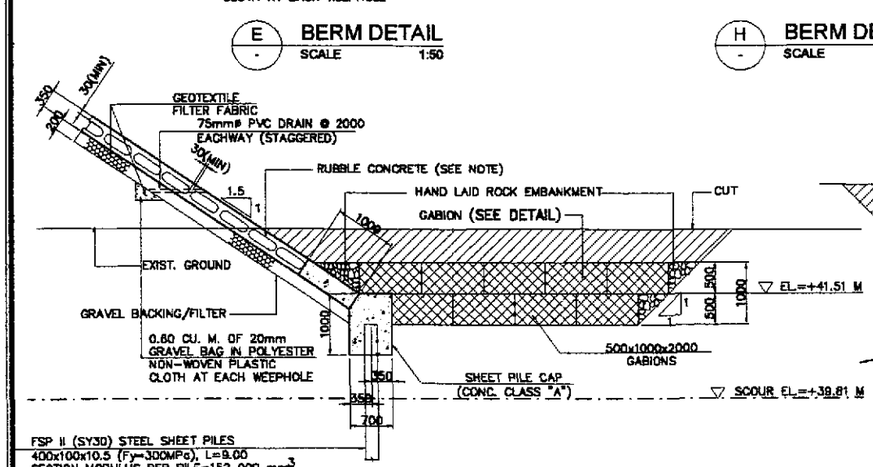
I CAPPING & SHEET PILE CONNECTION
SCALE 1:20



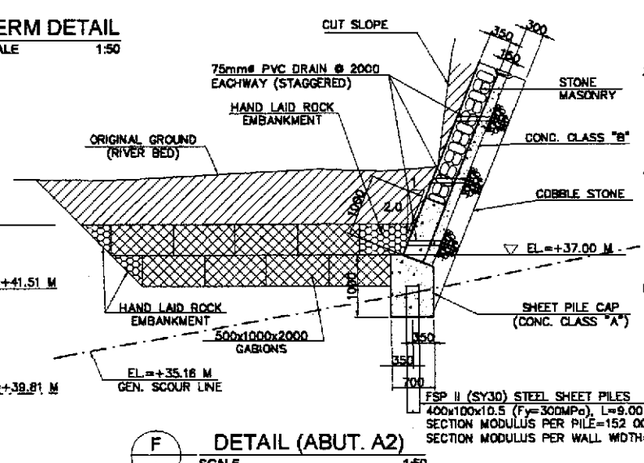
E BERM DETAIL
SCALE 1:50



H BERM DETAIL
SCALE 1:50



C DETAIL (ABUT. A1)
SCALE 1:50



F DETAIL (ABUT. A2)
SCALE 1:50

GENERAL NOTES:

1. THE SLOPE PROTECTION SHOWN IN THE DRAWINGS SHALL CONFORM WITH THE DPWH STANDARD SPECIFICATIONS FOR SLOPE PROTECTION.
2. GROUTED RIPRAP FOR SIDE DRAIN (150-300mm DIA.) SHALL BE USED FOR THE FACING AND SHALL BE CAREFULLY HANDLAID WITH THE LONGEST DIMENSIONS PERPENDICULAR TO THE SLOPE AND FIRMLY BEDDED TO THE SLOPE AND ADJACENT TO THE ADJOINING BOULDERS SHALL BE COMPLETELY FILLED WITH MORTAR. THE OUTSIDE SURFACE OF THE BOULDERS SHALL BE EXPOSED AND THE SURFACEOF THE MORTAR SHALL BE SWEPT WITH A STIFF BROOM.
3. RUBBLE CONCRETE FOR SLOPE PROTECTION SHALL CONSIST OF CLASS "B" (1:2.5:5) MIX CONCRETE WITH 200-300mm DIA. BOULDERS EMBEDDED THEREIN. THE BOULDERS SHALL BE CAREFULLY HANDLAID AND THOROUGHLY INCORPORATED INTO THE MASS. AT LEAST 30mm APART AND SHALL BE AT LEAST 30mm BELOW THE OUTSIDE SURFACE OF SURFACE OF THE CONCRETE. THE RUBBLE CONCRETE SHALL BE COMPOSED OF 40% CLASS "B" CONCRETE & 60% BOULDERS.
4. WIRE MESH GABIONS:
   A. WIRE - THE WIRE MESH SHALL MADE OF GALVANIZED STEEL HAVING A MINIMUM SIZE OF 3.40mm DIA. (U.S. WIRE GAUGE NO.11). THE TENSILE STRENGTH OF THE WIRE SHALL BE IN RANGE OF 413 TO 586.10 MPa. (60000-85000 PSI). THE MINIMUM ZINC COATING OF THE WIRE SHALL BE 22.70 g/0.0929 sq.m. OF UNCOATED WIRE SURFACES AS DETERMINED BY TEST CONDUCTED IN ACCORDANCE WITH AASHTO T65.
   B. ROCK FILL - ROCK USED IN THE GABIONS SHALL CONSISTS OF HARD DURABLE ROCK PIECES THAT WILL NOT DETERIORATE WHEN SUBMERGED IN WATER OR EXPOSED TO SEVER WEATHER CONDITIONS. ROCK PIECES SHALL BE GENERALLY UNIFORMLY GRADED IN SIZES RANGING FROM 100 TO 200mm FILLED GABIONS SHALL HAVE A MINIMUM DENSITY OF 1400 kg/cu.m. VOIDS SHALL BE EVENLY DISTRIBUTED. THE ROCKS SHALL MEET THE REQUIREMENTS OF AASHTO M63 EXCEPT THAT THE SODIUM SULFATE SOUNDNESS LOSS SHALL NOT EXCEED 9% AFTER 5 CYCLES.
5. GRAVEL FILTER SHALL BE COARSE AGGREGATE MATERIALS WHICH SATISFY THE REQUIREMENTS FOR ITEM 405, STRUCTURAL CONCRETE GRADING B, OF TABLE 405.1 AS REVISED.
6. GEOTEXTILE:
   THE FOLLOWING SPECIFICATIONS ARE REQUIRED.
   (a) POLYSTER OR POLYPROPELENE - 100%
   (b) MECHANICALLY HEAT BOND BONDED
   (c) NON-WOVEN & COMPRISE OF CONTINOUS FILAMENT
   (d) EFFECTIVE OPENING SIZE - 110 MICRONS (MAX)
   (e) THICKNESS UNDER PRESSURE - 200 KN/sq.m., 0.60mm (MIN)
   (f) WEIGHT 200 g/sq.m. (MIN)
   (g) CBR PUNCTURE STRENGTH - 2100 N
   (h) MULTI-DIRECTIONAL TENSILE STRENGTH - 13 KN/m.
7. HAND-LAID ROCK SHALL BE MORE THAN 0.015 cu.m. IN VOLUME AND SHALL CONSISTS OF HARD AND DURABLE STONES. ALL SHALL BE LAID FLAT AND SECURELY PLACED WITH LARGER STONES GENERALLY LOCATED IN THE LOWER PART OF THE STRUCTURE.

FOR MATTRESES:

1. BODY WIRE DIAMETER ---------- 2.70 mm
2. SELVEDGE WIRE DIAMETER ---------- 3.40 mm
3. TENSILE STRENGTH ---------- 413.7 MPa-586.10 MPa
4. WT. OF ZINC COATING ---------- 244 g/sq.m OF CAOTED WIRE SURFACE
5. ELONGATION; 200mm GAGE LEGNTH ---- 12% (min)
6. TYING & CONNECTING WIRE DIAMETER --- 2.20 mm
7. ROCK FILL ---------- 100 mm DIAMETER
8. DENSITY OF FILLED GABIONS ---------- 1400 Kg/cu.m
9. WIRE SHOULD BE TRIPLE TWISTED

1 DETAILS OF ABUTMENT SLOPE PROTECTION (SECTION DETAILS) - 3 OF 3
SCALE AS SHOWN

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

	DATE	SIGNATURE
DESIGNED	10/12/02	P. DE JESUS
CHECKED	10/19/02	J.C. SANTOS
SUBMITTED	10/21/02	M.J. RAIGH TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	PERFECTO L. ZAPLAN JR., Chief, Hydraulics Division (OIC)	GILBERTO S. REYES, Director IV (OIC)	MANUEL M. BONOAN, Undersecretary	SIMEON A. DATUMANONG, Secretary

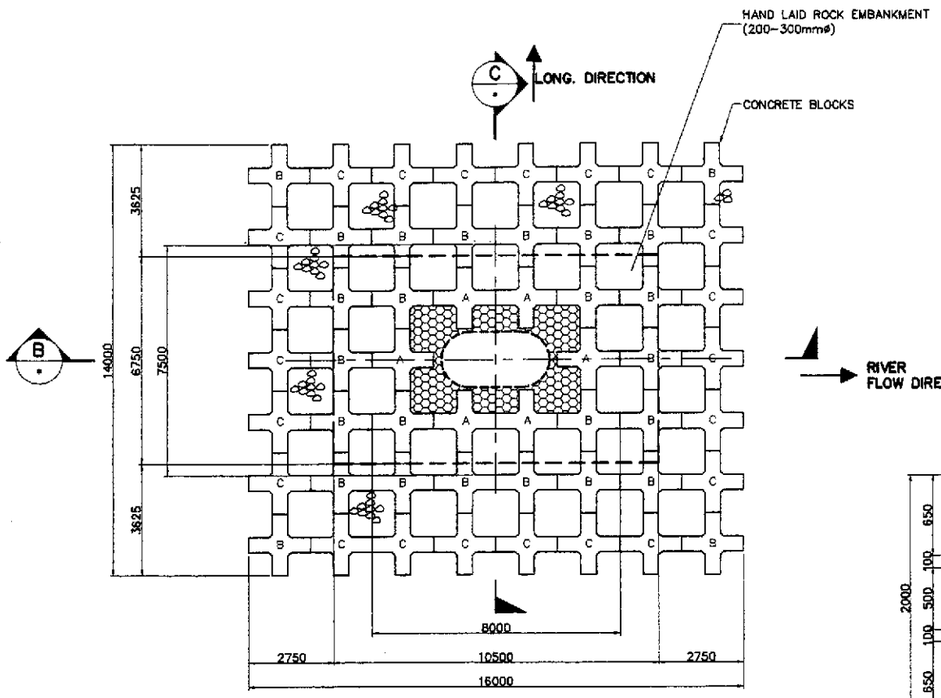
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE IV	AS SHOWN FULL SIZE A1	BRIDGE NO. 14 TALAVERA RIVER BRIDGE DETAILS OF ABUT. SLOPE PROTECTION (SECTION DETAILS) - 3 OF 3 (INITIAL STAGE)	B14M-94

ESTIMATE OF QUANTITIES FOR ONE PIER

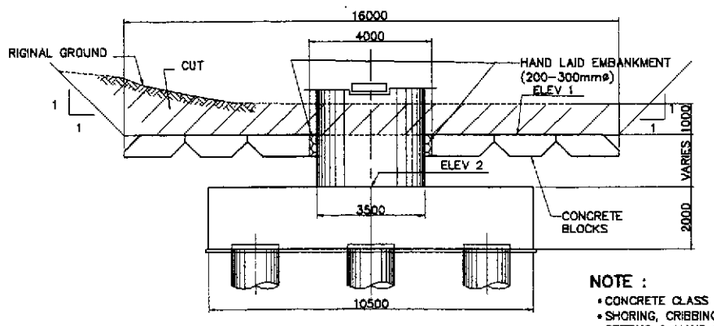
DESCRIPTION	NO. OF PCS.	QUANTITY	
		CONCRETE (cu. m.)	STEEL (kg.)
CONCRETE BLOCKS TYPE "A"	6	6.30	156
CONCRETE BLOCKS TYPE "B"	26	25.71	624
CONCRETE BLOCKS TYPE "C"	22	21.76	484
ø 16 x 1000 CONNECTOR	–	–	40

SCHEDULE OF PIER PROTECTION

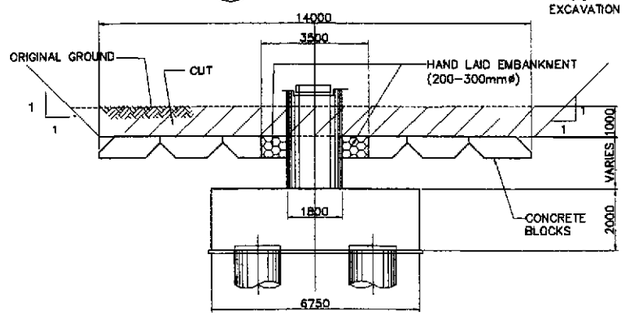
PIER NO.	ELEVATION (m)		SIZE (mm)	
	ELEV 1	ELEV 2	LONG. DIRECTION	TRANS. DIRECTION
P5	35.135	39.443	14000	16000
P6	35.115	39.024	14000	16000
P7	35.055	37.567	14000	16000
P8	34.975	36.670	14000	16000



A PLAN SHOWING CONCRETE BLOCK ARRANGEMENT
SCALE 1:100

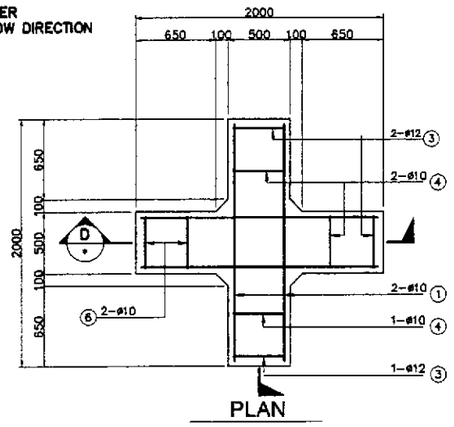


B SECTION
SCALE 1:100

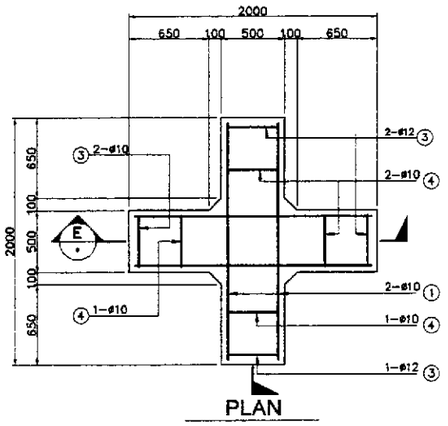


C SECTION
SCALE 1:100

NOTE :
- CONCRETE CLASS "B" FOR CONCRETE BLOCKS.
- SHORING, CRIBBING & RELATED WORK REQUIRED FOR CONCRETE BLOCK SETTING & HAND LAID EMBANKMENT SC 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)a RIVERBED EXCAVATION (AOWL) & 103(2)c RIVERBED EXCAVATION (BOWL).



PLAN



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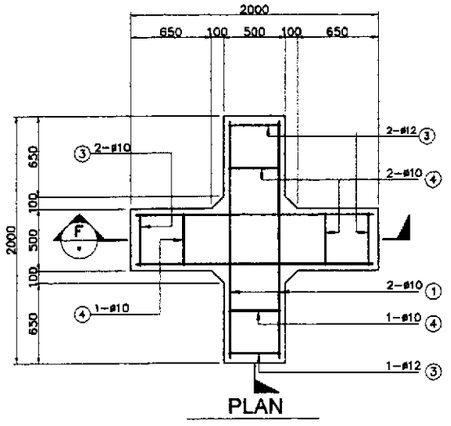

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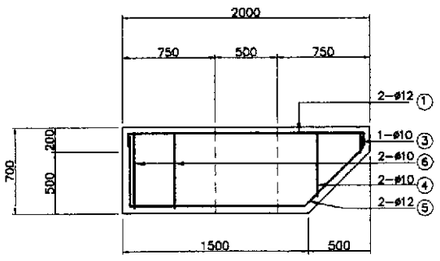
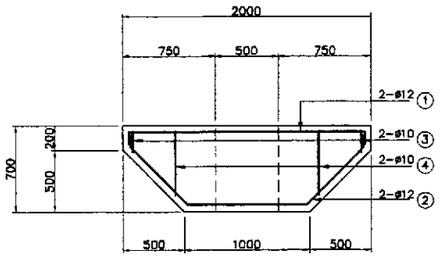
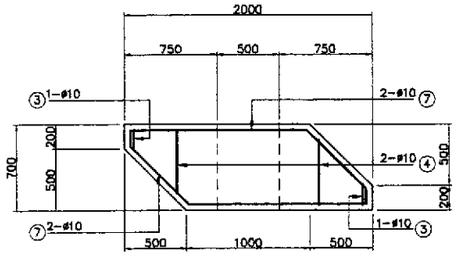


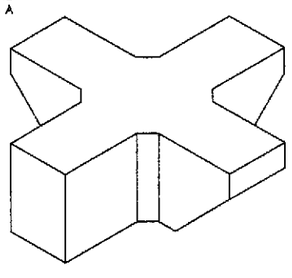
SECTION



SECTION

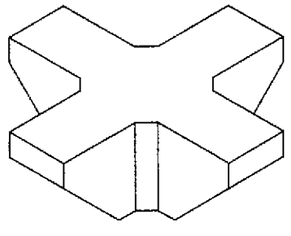


SECTION



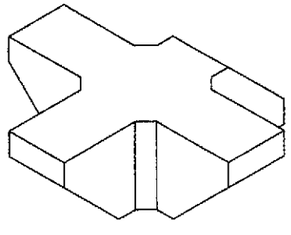
ISOMETRIC VIEW

D TYPE-A CONC. BLOCK
SCALE 1:25



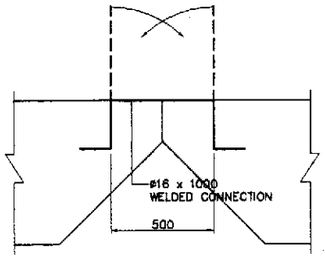
ISOMETRIC VIEW

E TYPE-B CONC. BLOCK
SCALE 1:25



ISOMETRIC VIEW

F TYPE-C CONC. BLOCK
SCALE 1:25



G JOINT CONNECTION DETAIL
SCALE 1:15

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CHECKED	10/14/02	J.C. SANTOS
SUBMITTED	10/21/02	TEAM LEADER

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DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

FUHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	PERFECTO L. ZAPLAN JR.	GILBERTO S. REYES	MANUEL N. BONGAN	SIMEON A. DATUMANONG
Project Director	Chief,Hydraulics Division (OIC)	Director IV (OIC)	Undersecretary	Secretary

PROJECT AND LOCATION :
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UPGRADING INTER-URBAN HIGHWAY SYSTEM
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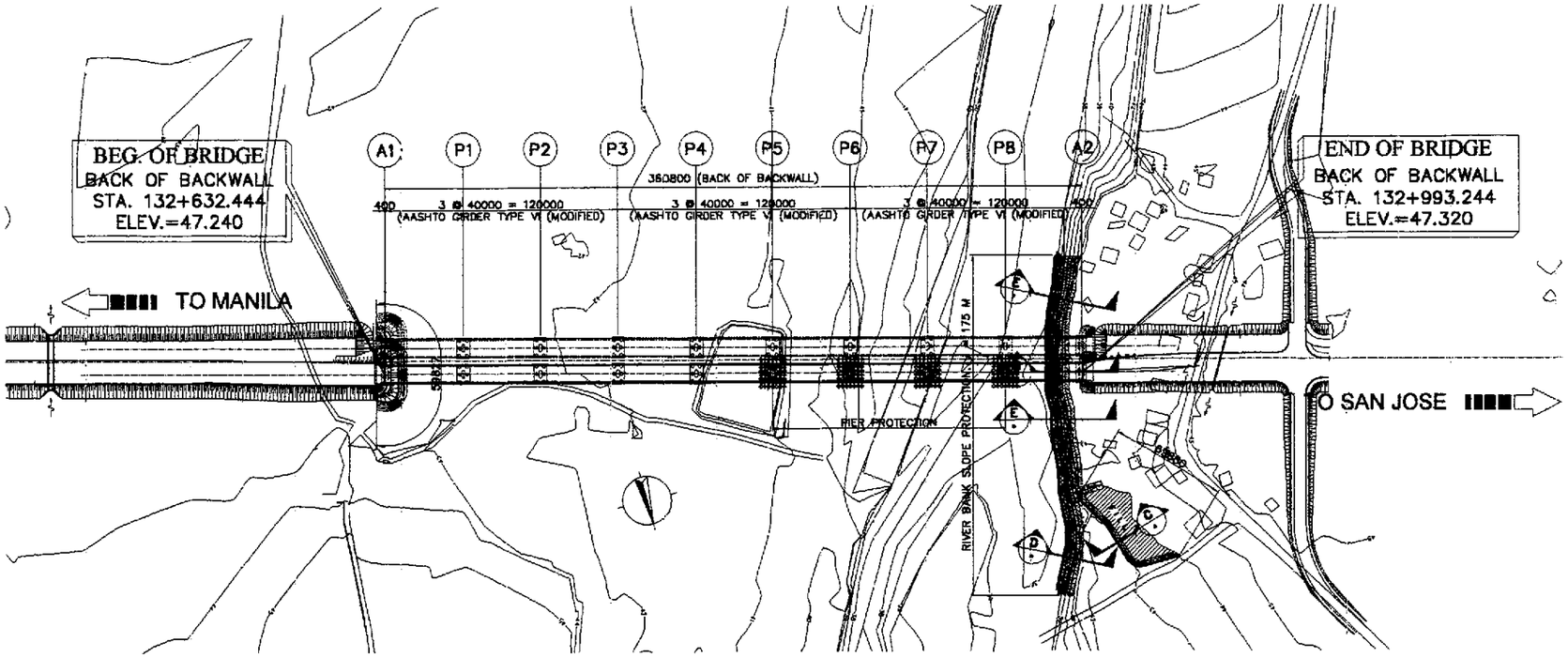
(Plaridel, Cabanatuan and San Jose Bypasses)
CABANATUAN BYPASS - CONTRACT PACKAGE IV

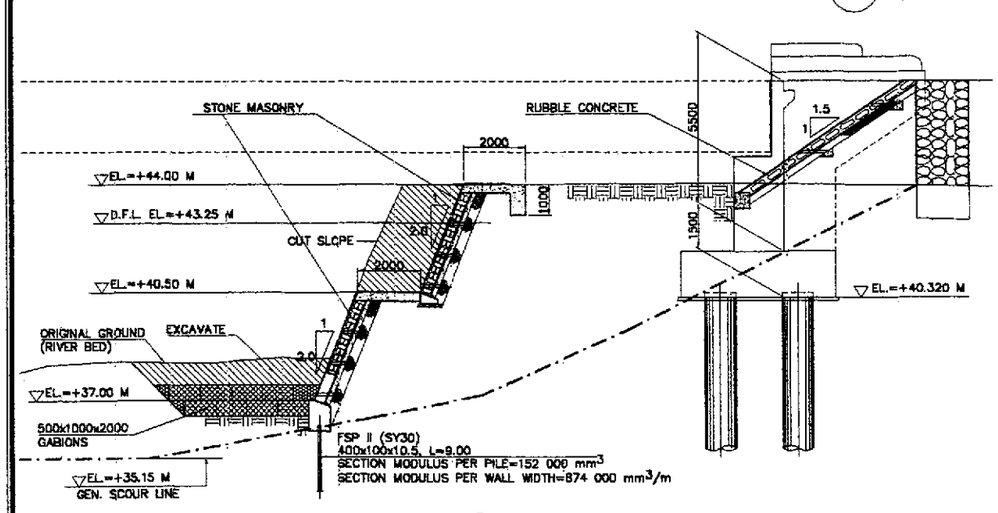
SCALE :
AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO.14 TALAVERA RIVER BRIDGE
DETAILS OF PIER PROTECTION
(PIERS P5 TO P8)
(INITIAL STAGE)

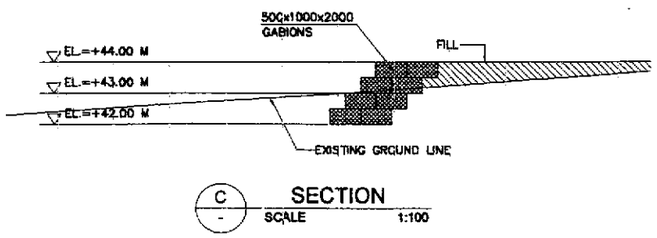
SHEET NO. :
B14M-95



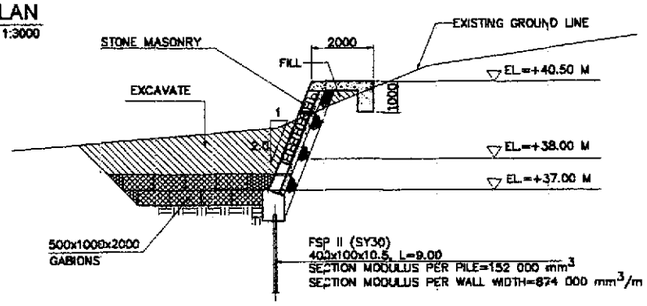
A GENERAL PLAN
SCALE 1:3000



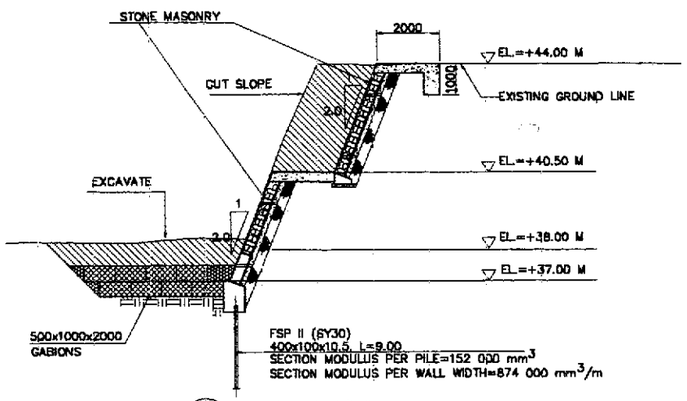
B SECTION
SCALE 1:100



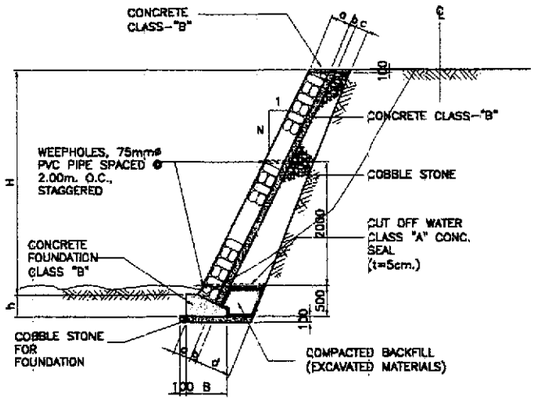
C SECTION
SCALE 1:100



D SECTION
SCALE 1:100



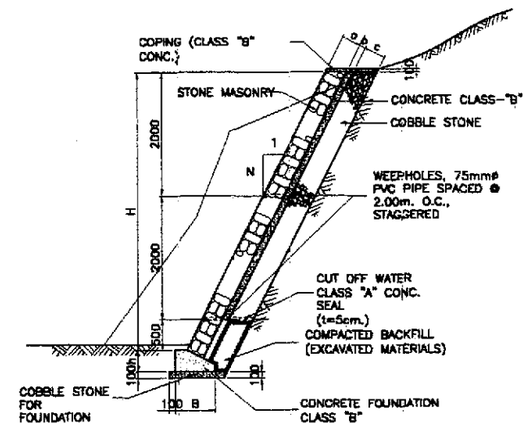
E SECTION
SCALE 1:100



F STONE MASONRY EMBANKMENT SLOPE
SCALE 1:50

FOR EMBANKMENT SLOPE							
H	N	a	b	c	d	B	h
1000	3.30	350	100	200	300	520	300
1500	3.30	350	100	200	340	520	300
2000	2.50	350	100	200	380	520	300
2500	2.50	350	100	200	420	520	300
3000	2.50	350	100	200	460	520	300
3500	2.00	350	150	200	500	550	350
4000	2.00	350	150	200	540	550	350
4500	2.00	350	150	200	580	550	350
5000	2.00	350	150	200	620	550	350

NOTE
DRAIN AND WEEP HOLES (50mmø) SHALL BE PROVIDED ON STONE MASONRY EMBANKMENT AND CUT SLOPE AS SHOWN ON THE DRAWINGS.



G STONE MASONRY CUT SLOPE
SCALE 1:50

FOR CUT SLOPE						
H	N	a	b	c	B	h
1000	3.30	250	50	300	520	300
2000	3.30	250	100	300	520	300
3000	2.50	250	100	300	520	300
4000	2.50	350	150	300	550	350
5000	2.50	350	150	300	550	350
6000	2.00	350	200	300	550	350
7000	2.00	350	200	300	550	350

JICA
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KATAHIRA & ENGINEERS INTERNATIONAL
YACHIYO ENGINEERING CO., LTD.

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CHECKED	10/19/02	J. E. SANTOS
SUBMITTED	10/21/02	TEAM LEADER

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DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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Project Director	Chief, Hydraulics Division (OIC)	Director IV (OIC)	Undersecretary	Secretary

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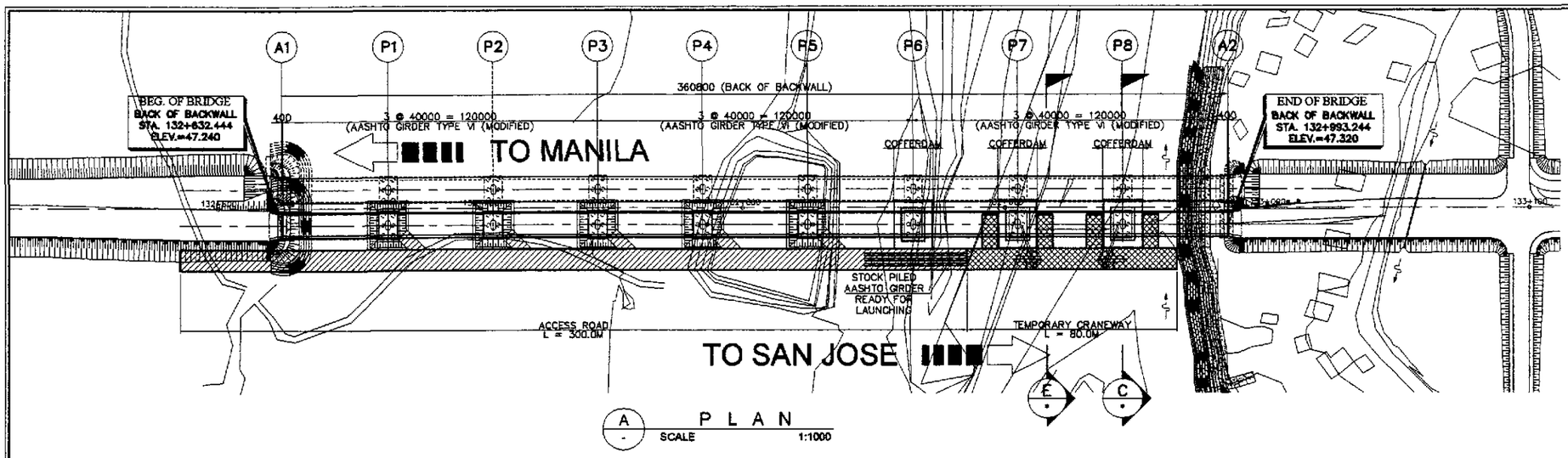
(Plaridel, Cabanatuan and San Jose Bypasses)
CABANATUAN BYPASS - CONTRACT PACKAGE IV

SCALE :
AS SHOWN
FULL SIZE A1

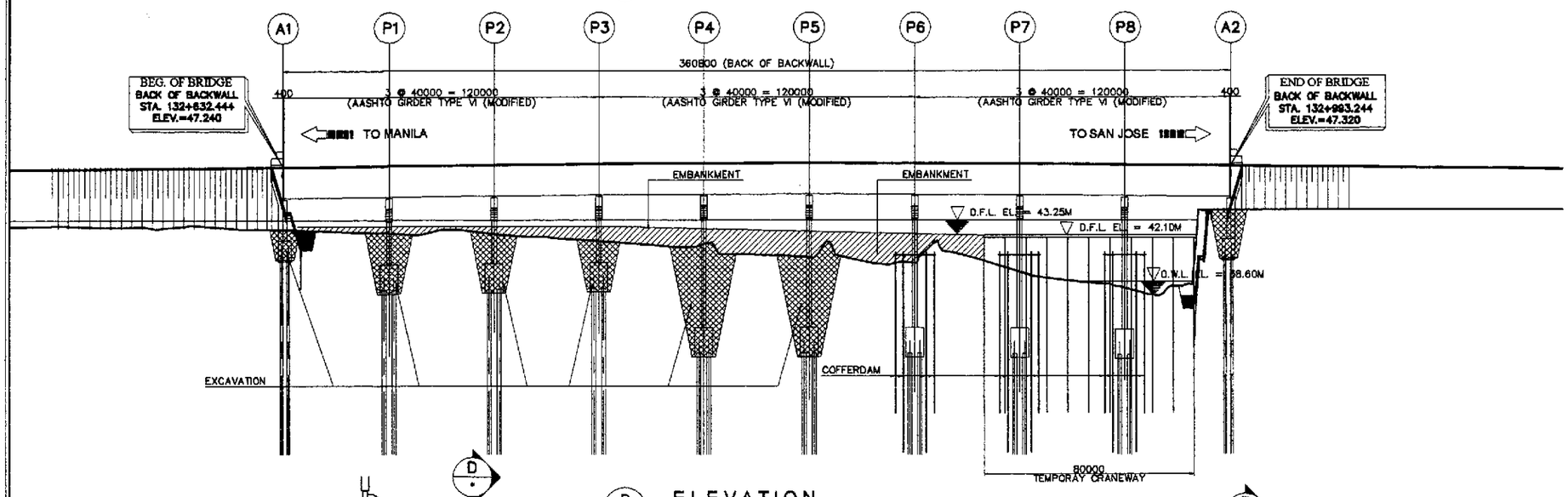
SHEET CONTENTS :
BRIDGE NO.14 TALAVERA RIVER BRIDGE
DETAILS OF RIVER SLOPE PROTECTION
(INITIAL STAGE)

SHEET NO. :
B14M-96

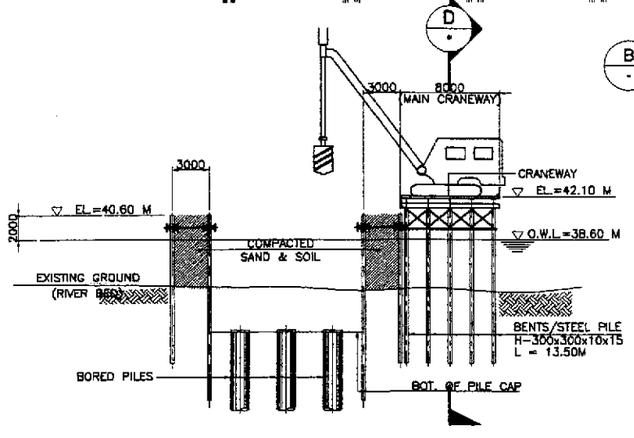
CONSTRUCTION WORKS



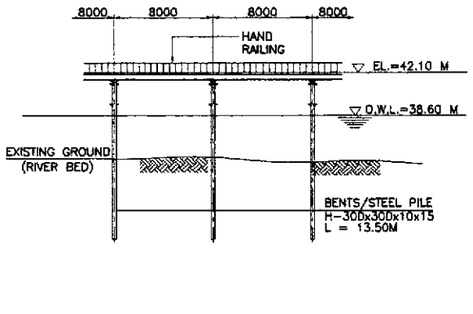
A - PLAN
SCALE 1:1000



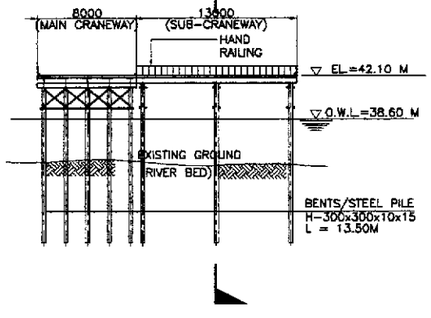
B - ELEVATION
SCALE H = 1000, V = 200



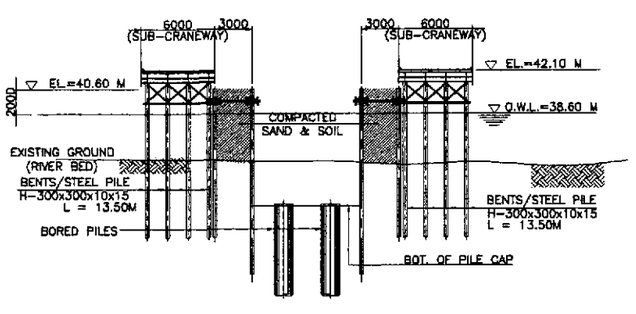
C - SECTION
SCALE 1:250



D - SECTION
SCALE 1:250



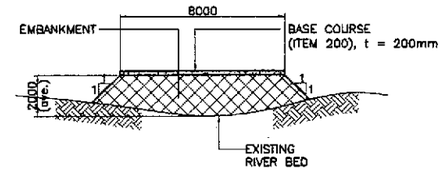
E - SECTION
SCALE 1:250



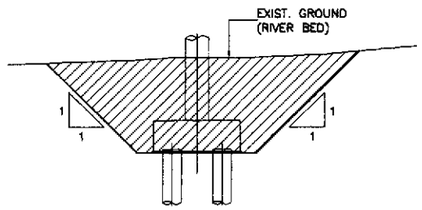
F - SECTION
SCALE 1:250

SUMMARY OF QUANTITIES FOR TEMPORARY WORKS

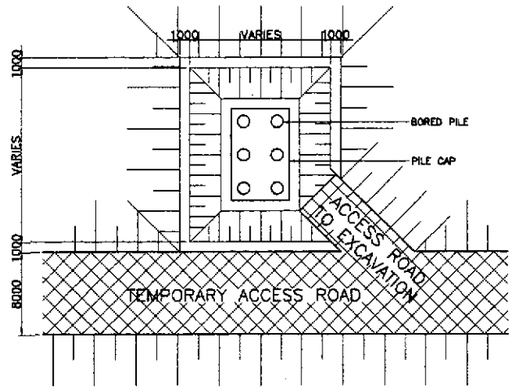
ITEM NO.	DESCRIPTION	UNIT	INITIAL STAGE	ULTIMATE STAGE	TOTAL
SPL B.4a	CRANEWAY/JETTY (8.0 m WIDTH)	l.m.	80	80	160
SPL B.4b	CRANEWAY/JETTY (6.0 m WIDTH)	l.m.	52	52	104
SPL B.4c	ACCESS ROAD (8.0 m WIDTH)	l.m.	300	300	600



1 - ACCESS ROAD (SECTION)
SCALE 1:150



H - FOUNDATION EXCAVATION DETAILS
SCALE 1:200



G - ACCESS ROAD DETAILS (PLAN)
SCALE 1:300

JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL

YACHIYO ENGINEERING CO., LTD.

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SUBMITTED	10/21/02	TEAM LEADER

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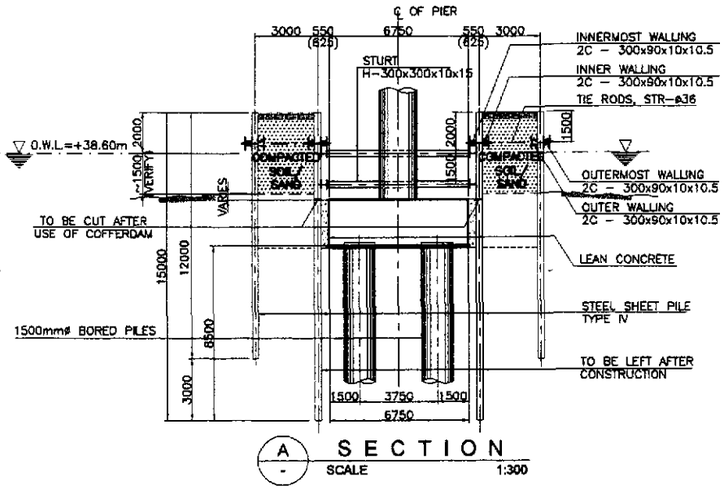
CABANATUAN BYPASS - CONTRACT PACKAGE IV

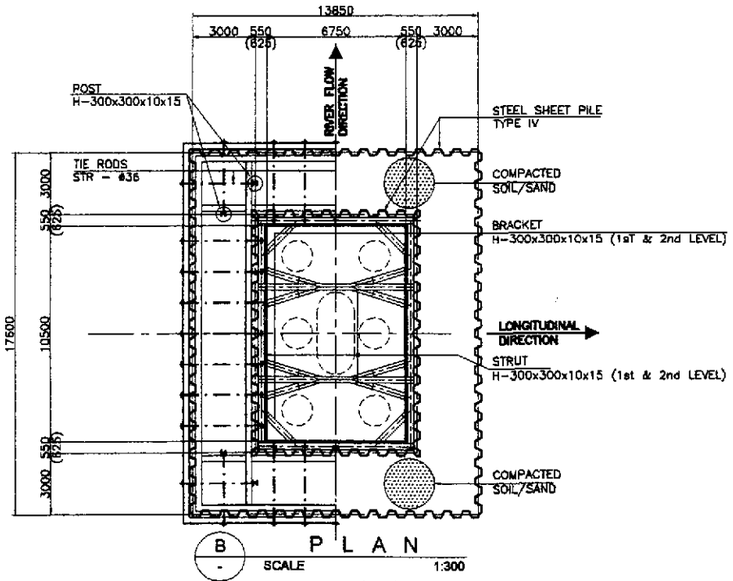
SCALE :
AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO. 14 TALAVERA RIVER BRIDGE
TEMPORARY CRANEWAY BRIDGE AND COFFERDAM LAYOUT
(INITIAL STAGE)

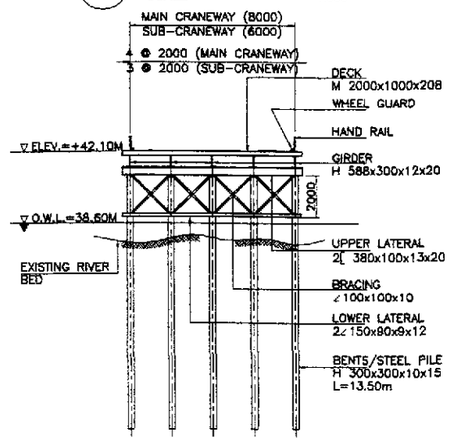
SHEET NO. :
B14C-101



A - SECTION
SCALE 1:300



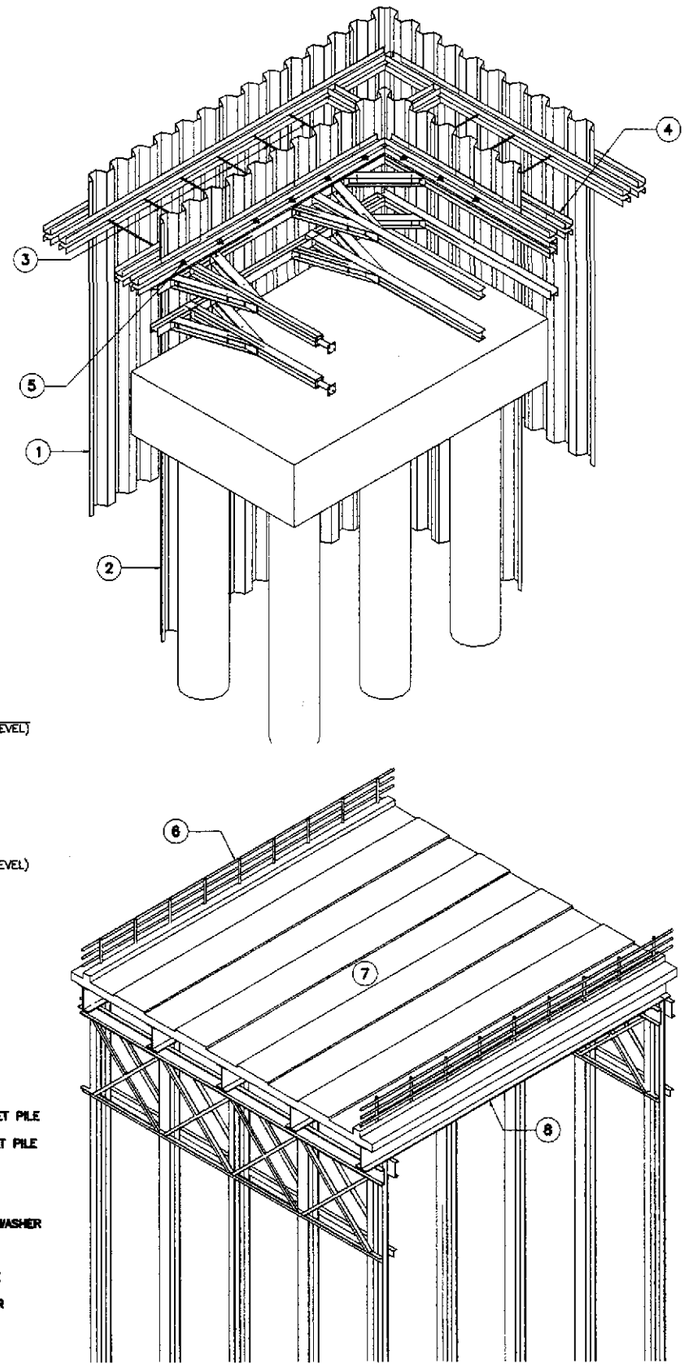
B - PLAN
SCALE 1:300



B - CRANEWAY SETION (MAIN BRIDGE)
SCALE 1:300

LEGEND :

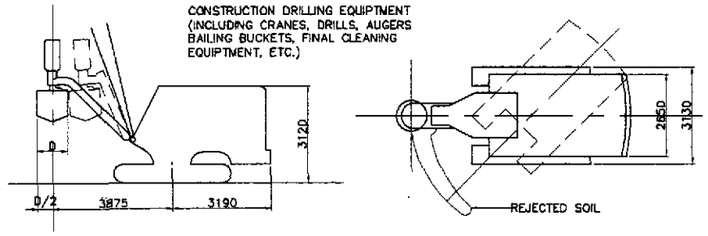
1. OUTER SHEET PILE
2. INNER SHEET PILE
3. TIE RODS
4. WALLING
5. NUTS AND WASHER
6. HAND RAIL
7. DECK PLATE
8. MAIN GIRDER



C - ISOMETRIC VIEW
NOT TO SCALE

COFFERDAM SCHEDULE

TYPE	PILE CAP SIZE	LOCATION	QUANTITY
1	6750 x 10500	PIER 6, 7 & 8	3



SECTION PLAN

D - EARTH DRILL MACHINE
NOT TO SCALE

MATERIAL LIST OF TEMPORARY COFFERDAM (PER PIER)

MATERIAL NAME	SIZE	LENGTH (m)	NO. (pcs)	UNIT	UNIT WT. (kg/m)	QUANTITY	REMARKS
TYPE 1 (6.75 x 10.5)							
Steel Sheet Pile (inner)	IV	15.00	98	kgs	76.10	111,867.00	
Steel Sheet Pile (outer)	IV	12.00	158	kgs	76.10	144,286.00	
Steel Strut, 1st& 2nd Level (Longitudinal)	H-300x300x10x15	6.85	8	kgs	94.00	5,152.00	
Steel Strut, 1st& 2nd Level (Transverse)	H-300x300x10x15	10.60	4	kgs	94.00	3,986.00	
Steel Waling (inner - longitudinal)	C-300x90x10x10.5	13.45	4	kgs	43.80	2,357.00	
Steel Waling (innermost - longitudinal)	C-300x90x10x10.5	7.45	4	kgs	43.80	1,306.00	
Steel Waling (inner - transverse)	C-300x90x10x10.5	17.20	4	kgs	43.80	3,014.00	
Steel Waling (innermost - transverse)	C-300x90x10x10.5	11.20	4	kgs	43.80	1,963.00	
Steel Waling (outer-longitudinal)	C-300x90x10x10.5	13.45	4	kgs	43.80	2,357.00	
Steel Waling (outermost-longitudinal)	C-300x90x10x10.5	14.25	4	kgs	43.80	2,497.00	
Steel Waling (outer - transverse)	C-300x90x10x10.5	17.20	4	kgs	43.80	3,014.00	
Steel Waling (outermost - transverse)	C-300x90x10x10.5	18.00	4	kgs	43.80	3,154.00	
Steel Post	H-300x300x10x15	15.00	8	kgs	94.00	11,280.00	
Steel Bracket, 1st&2nd Level	H-300x300x10x15	2.00	24	kgs	94.00	4,512.00	
Tie Rods	STR - Ø36	3.50	32	kgs	7.99	895.00	
Sand/Soil	Borrow Materials			m^3		534.45	Selected Materials

MATERIAL LIST OF TEMPORARY CRANEWAY

A) MAIN CRANEWAY, L = 80 000 mm							
Steel Pile (Bents)	H-300 x 300 x 10 x 15	13.50	55	kgs	94.00	69,795.00	
Lower Lateral	L-150 x 90 x 9 x 12	9.30	22	kgs	16.40	3,356.00	
Upper Lateral	C-380 x 100 x 13 x 20	9.30	22	kgs	67.30	13,770.00	
Bracing	L-100 x 100 x 10	2.90	88	kgs	14.90	3,803.00	
Girder	H-588 x 300 x 12 x 20	8.00	50	kgs	147.00	58,800.00	
Deck Plate	2000 x 1000 x 208			m^2		640.00	
Hand Railing				m		160.00	
Wheel Guard				m		160.00	
B) SUB-CRANEWAY							
Steel Pile (Bents)	H-300 x 300 x 10 x 15	13.50	48	kgs	94.00	60,912.00	
Lower Lateral	L-150 x 90 x 9 x 12	7.30	24	kgs	16.40	2,874.00	
Upper Lateral	C-380 x 100 x 13 x 20	7.30	24	kgs	67.30	11,791.00	
Bracing	L-100 x 100 x 10	2.90	24	kgs	14.90	1,038.00	
Girder	H-588 x 300 x 12 x 20	13.00	16	kgs	147.00	30,576.00	
Deck Plate	2000 x 1000 x 208			m^2		312.00	
Hand Railing				m		104.00	
Wheel Guard				m		104.00	

MATERIAL LIST OF ACCESS ROAD

Base Course, t = 200 mm		300.00		m3		492.00	
Embankment		300.00		m3		6,750.00	

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YACHIYO ENGINEERING CO., LTD.

DESIGNED	10/20/02	F. P. DE JESUS
CHECKED	10/19/02	J. C. SANTOS
SUBMITTED	10/20/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

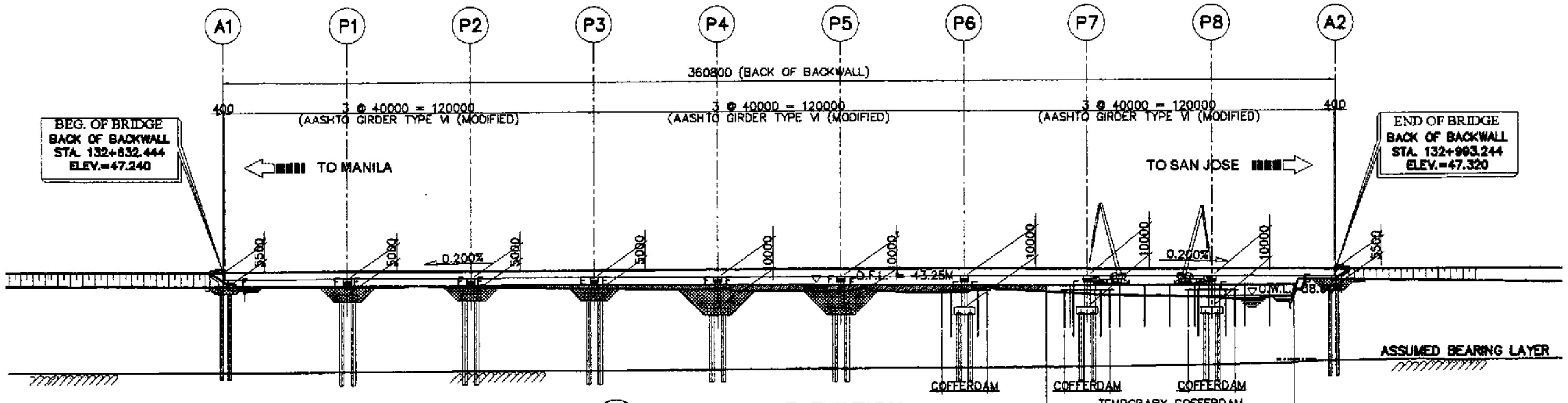
PUHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	ADRIANO M. DOROY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Bridges Division	Director IV (OIC)	Undersecretary	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

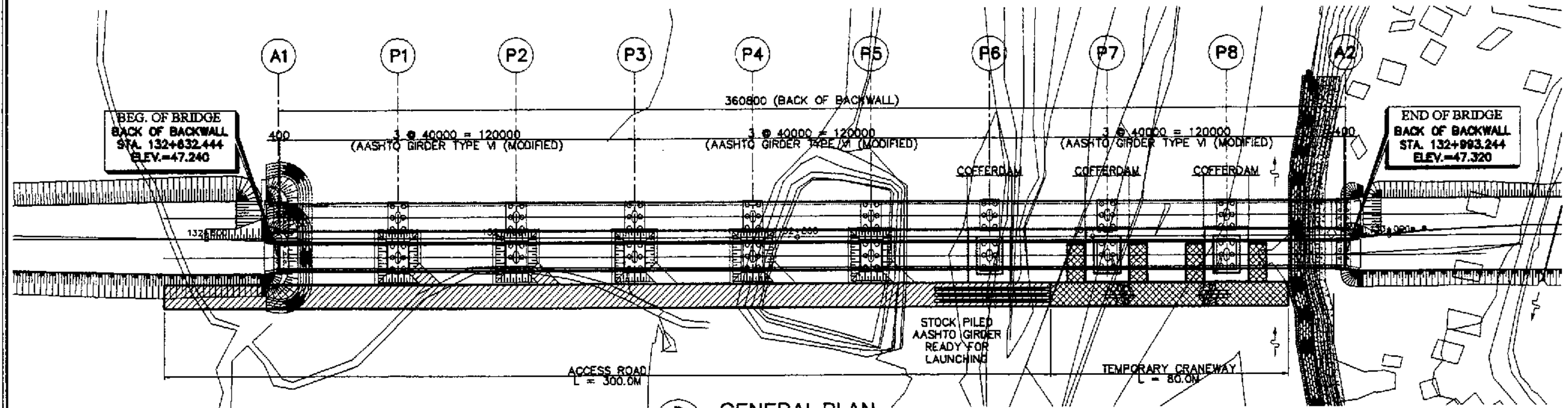
SHEET CONTENTS :
BRIDGE NO.14 TALAVERA RIVER BRIDGE
DETAILS OF COFFERDAM AND CRANEWAY BRIDGE
INITIAL (STAGE)

SHEET NO. :
B14C-102



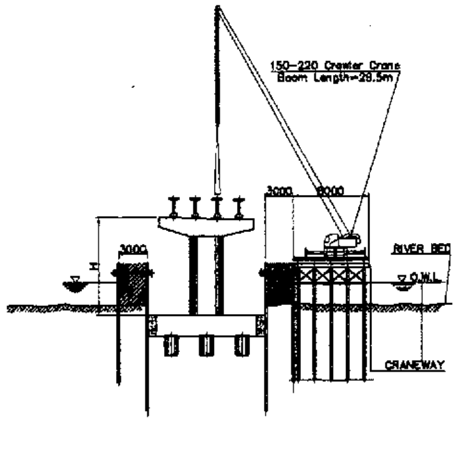
GENERAL ELEVATION

A - SCALE 1:1000



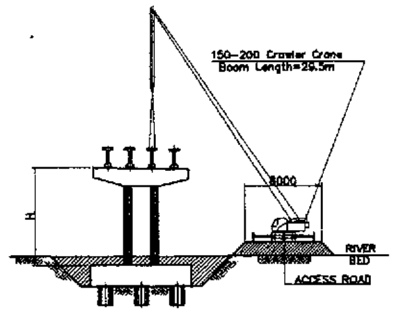
GENERAL PLAN

B - SCALE 1:1000



SECTION SHOWING COFFERDAM

C - SCALE 1:1000



SECTION SHOWING GIRDER LAUNCHING

D - SCALE 1:1000

100t Hydraulic Crane

Work radius(m)	Lifting Capacity(tf)
10.0	22.4
12.0	18.9
14.0	16.3
16.0	14.1
18.0	12.0
20.0	9.7

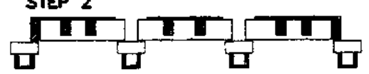
Boom Length 29.5m

CONSTRUCTION SEQUENCE OF SUPERSTRUCTURE (3-SPAN CONTINUOUS)

STEP 1

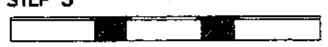
1. FABRICATION & STRESSING
2. LAUNCHING OF GIRDERS

STEP 2



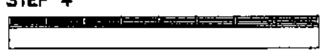
1. POURING OF SLAB, INTERMEDIATE & END DIAPHRAGMS (CLASS "A" CONCRETE)

STEP 3



1. POURING OF CONTINUITY DIAPHRAGM (CLASS "A" CONCRETE)
2. POURING OF DECK SLAB (CLASS "A" CONCRETE)

STEP 4



1. POURING OF SIDEWALK FOR ENTIRE LENGTH OF BRIDGE (CLASS "C" CONCRETE)
2. POURING OF RAILINGS FOR ENTIRE LENGTH OF BRIDGE (CLASS "C" CONCRETE)

CONSTRUCTION SCHEDULE OF TALAVERA BRIDGE
BRIDGE LENGTH = 360m

ITEMS	QTY.	UNIT	MONTH 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. MOBILIZATION	1	LOT																				
2. CONSTRUCTION OF TEMPORARY PLANTS & FACILITIS	380	L.M.																				
3. CONSTRUCTION OF ACCESS ROAD & CRANEWAY																						
4. CONSTRUCTION OF SUBSTRUCTURE																						
a. COFFERDAM FOR PIERS P6, P7 & P8	3	SETS																				
b. BORED PILE & PILE CAP	8	SETS																				
c. COLUMN & COPING	8	PCS																				
5. CONSTRUCTION OF ABUTMENTS A1 & A2																						
a. BORED PILE & PILE CAP	2	SETS																				
b. BREAST WALL & WINGWALL	2	SETS																				
c. EMBANKMENT /APPROACH SLAB	2	SETS																				
6. CONSTRUCTION OF SUPERSTRUCTURE																						
a. GIRDER FABRICATION	36	PCS																				
b. LAUNCHING OF GIRDERS	36	PCS																				
c. POURING SLAB END & INTERMEDIATE DIAPHRAGMS	1	LOT																				
d. SLAB & CONTINUITY DIAPHRAGMS (CLOSURE POUR)	9	SPANS																				
e. SIDEWALK, RAILING & WEARING COURSE	9	SPANS																				
7. CONSTRUCTION OF SCOUR PROTECTION																						
a. ABUTMENT SLOPE PROTECTION	1	LOT																				
b. PIER PROTECTION	1	LOT																				
c. RIVER PROTECTION	1	LOT																				
8. FINISHING WORKS/MISCELLANEOUS	1	LOT																				
9. DEMOBILIZATION	1	LOT																				

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KATAHIRA & ENGINEERS INTERNATIONAL
YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/12/02	[signature]
CHECKED	10/19/02	[signature]
SUBMITTED	10/21/02	[signature] TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	ADRIANO M. DOROY, Chief, Bridges Division	GILBERTO S. REYES, Director IV (OIC)	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

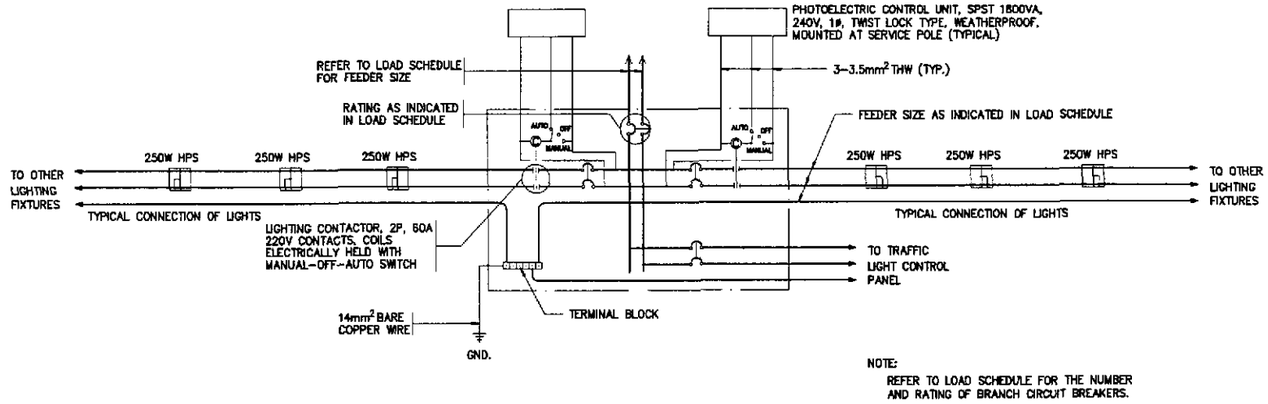
SHEET CONTENTS :
BRIDGE NO.14 TALAVERA RIVER BRIDGE
TENTATIVE CONSTRUCTION PLAN, ELEVATION AND SCHEDULE
INITIAL (STAGE)

SHEET NO. : B14C-103

ELECTRICAL

LEGEND AND SYMBOLS:

○●	STREET LIGHTING POLE WITH 1 x 250 WATTS, 240 VOLTS HIGH PRESSURE SODIUM LUMINAIRE SINGLE BRACKET / SINGLE ARM, LOCATED AT 180° ON CENTER IES TYPE III MEDIUM SEMI CUT-OFF, SIMILAR TO GE M250A2
○●○	-DITTO- DOUBLE ARM LIGHT POLE WITH 2 x 250 WATTS HPS LAMP
	SERVICE ENTRANCE AND METERING PEDESTAL WITH LIGHTING CONTACTOR PANEL AS SHOWN IN THE DRAWINGS.
	CIRCUIT BREAKER, RATING AS SHOWN
————	UNDERGROUND CONDUIT WITH CONCRETE ENVELOPE
▪▪▪▪▪▪▪▪	UNDERGROUND CONDUIT WITH STEEL REINFORCED CONCRETE ENVELOPE
Ⓜ	KILOWATT HOUR METER, SINGLE-PHASE, 240V, 60 Hz
——→	CIRCUIT HOMERUN



NOTE:
REFER TO LOAD SCHEDULE FOR THE NUMBER AND RATING OF BRANCH CIRCUIT BREAKERS.

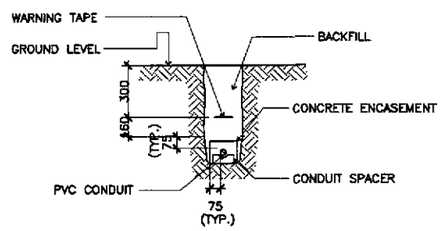
2 / ES-01 **SCHEMATIC CONTROL DIAGRAM**
SCALE 1-20

GENERAL NOTES:

1. ALL ELECTRICAL WORKS SHALL BE DONE IN ACCORDANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, THE LAWS AND ORDINANCES OF THE LOCAL CODE, ENFORCING AUTHORITIES AND THE REQUIREMENTS OF THE LOCAL POWER COMPANY. THE ELECTRICAL WORK SHALL BE DONE UNDER THE DIRECT SUPERVISION OF A DULY REGISTERED ELECTRICAL ENGINEER.
2. THE CONTRACTOR SHALL SECURE ALL PERMITS AND PAY ALL FEES REQUIRED FOR THE WORK AND FURNISH THE OWNER, THROUGH THE ENGINEERS FINAL CERTIFICATES OF ELECTRICAL INSPECTION AND APPROVAL FROM PROPER GOVERNMENT AUTHORITIES FOR COMPLETED WORK.
3. THE POWER SERVICE VOLTAGE SHALL BE 240V, 1Φ, 2W, 60 Hz. ALL MATERIALS TO BE USED AND EQUIPMENT TO BE INSTALLED SHALL BE BRAND NEW AND MUST BE OF THE APPROVED TYPES FOR THE PARTICULAR LOCATION AND PURPOSE INTENDED.
4. ALL WIRES SHALL BE COPPER, THERMOPLASTIC INSULATED TYPE THW, 600V, UNLESS OTHERWISE INDICATED. BRAND SHALL BE PHELPS DODGE, DURAFLEX OR APPROVED EQUAL.
5. UNLESS OTHERWISE INDICATED, THE MINIMUM SIZE OF CIRCUIT CONDUCTORS FROM STEEL POLE JUNCTION BOX/HANDHOLE TO EACH LUMINAIRE SHALL BE 2-3.5mm² THW & 1-3.5mm² TW(GND) INSIDE STEEL POLE.
6. UNLESS OTHERWISE INDICATED ALL CONDUIT PIPES SHALL BE UNPLASTICIZED POLYVINYL CHLORIDE CONDUIT SCHEDULE 40 OR POLYTHELENE PIPE AS MANUFACTURED BY MOLDEX, NELTEX OR APPROVED EQUAL. THE CONDUIT SIZE INDICATED IS THE INSIDE DIAMETER OF CONDUIT.
7. THE CONTRACTOR SHALL VERIFY AND COORDINATE TO LOCAL UTILITY COMPANY THE ACTUAL LOCATION OF THE SERVICE ENTRANCE FOR CONNECTION TO THE POWER SUPPLY. LIKEWISE, THE CONCRETE PEDESTAL SHALL BE PROVIDED BY THE CONTRACTOR.
8. ALL NON-CURRENT CARRYING PARTS OF EVERY ELECTRICAL EQUIPMENT/FIXTURE SHALL BE GROUNDED EFFECTIVELY.
9. UNDERGROUND CONDUIT RUN SHALL BE BURIED A MINIMUM OF 460mm BELOW GROUND LEVEL. UNLESS OTHERWISE INDICATED, CONDUIT RUN CROSSING STREET SHALL BE ENCASED IN STEEL REINFORCED 2500 PSI CONCRETE WITH MINIMUM OF 75mm (3 INCHES) THICKNESS COVERED ALL AROUND.
10. UNPROTECTED CONDUIT RISERS AND EXPOSED CONDUIT RUNS SHALL BE RIGID STEEL CONDUIT.
11. ALL PANELBOARD ENCLOSURES SHALL BE RAINTIGHT, NEMA 4X ENCLOSURE (1.5mm THICK MINIMUM GAUGE 14 FOR BOX AND COVER) WITH CONCEALED HINGE AND FLUSH LOCK KEY.
12. ALL STREET LUMINAIRE ASSEMBLY INCLUDING POLE AND FOUNDATION SHALL WITHSTAND WINDS UP TO 250 KPH PER HOUR GUSTING WITHOUT PERMANENT DEFORMATION.
13. DO NOT INSTALL POLE WITHOUT COMPLETE INSTALLATION/CONNECTION OF THE LUMINAIRE ASSEMBLY.
14. ALL CIRCUIT BREAKERS SHALL BE UL LISTED AS SWD (SWITCHING DUTY) SUITABLE FOR HIGH INITIAL INRUSH CURRENT FOR SWITCHING THE PRESSURE SODIUM LUMINAIRES. SIEMENS-ITE, SQUARE D, WESTINGHOUSE BRANDS SHALL BE USED OR APPROVED EQUIVALENT.
15. CONCRETE HANDHOLES OR OUTDOOR TYPE PULLBOXES OF CODE 1.61mm (GAGE 16) MINIMUM SHALL BE PROVIDED BY THE CONTRACTOR, WHENEVER NECESSARY, TO FACILITATE WIRE PULLING EVEN IF THESE ITEMS ARE NOT SHOWN IN THE PLANS.

NOTES:

1. UNLESS OTHERWISE SPECIFIED, TOP OF CONCRETE ENVELOPE SHALL NOT BE LESS THAN 460mm BELOW FINISHED GRADE LINE EXCEPT, THAT UNDER ROAD AND PAVEMENT, IT SHALL BE NOT LESS THAN 600mm.
2. PROVIDE STEEL REBAR REINFORCEMENT ON PAVED AREA.
3. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE F'c SHALL BE 13.8MPa (2000PSI)
4. REINFORCING BARS SHALL CONFORM TO PS GRADE 227, FY=227MPa (33,000PSI)
5. MAXIMUN SPACING OF PRECAST SPACER SHALL BE 1.5 METERS.
6. ALL DIMENSIONS ARE IN MILLIMETER, UNLESS OTHERWISE SPECIFIED.



1 / ES-01 **TYPICAL DUCT SECTION**
NOT TO SCALE

ERNESTO M. ANTIOQUIA
ENGINEER
PTR. NO. 7403864 P.E.E. NO. 3213
ISSUED ON 01/05/2002 ISSUED AT CABUYAO, LAGUNA
T.I.N. 108-382-376

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

	DATE	SIGNATURE
DESIGNED	10/12/02	E. ANTIOQUIA
CHECKED	10/19/02	E. ANTIOQUIA
SUBMITTED	10/21/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
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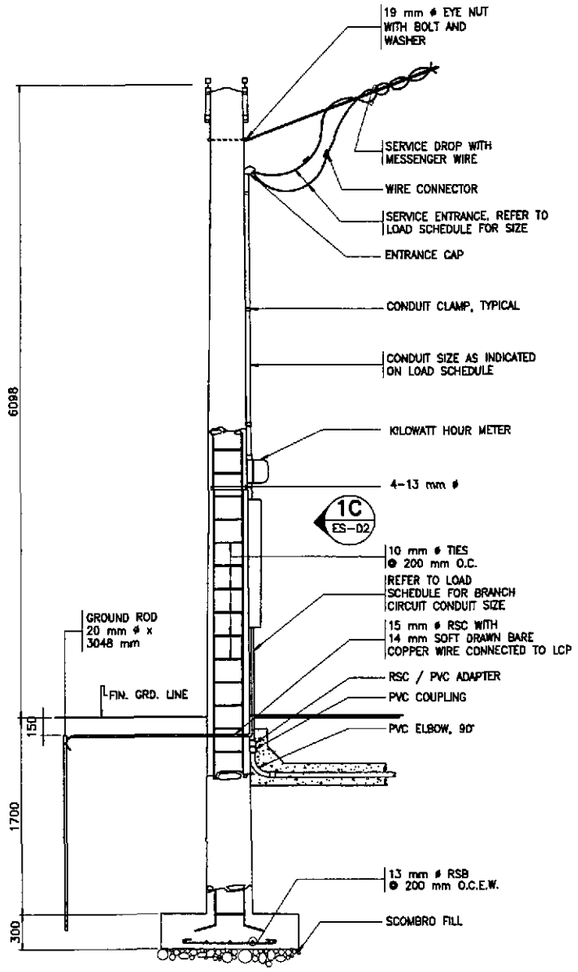
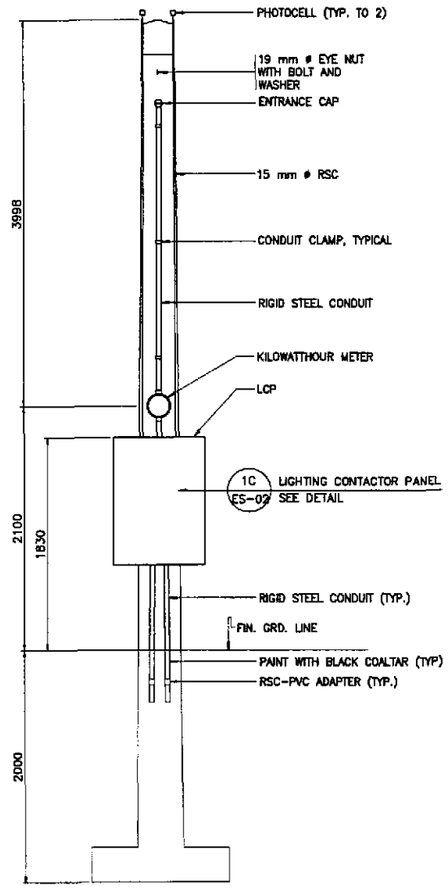
DANILO C. TRAJANO	FE M. BARRIENTOS	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Mech'l-Elect'l Division	OIC, Director IV	Undersecretary	Secretary

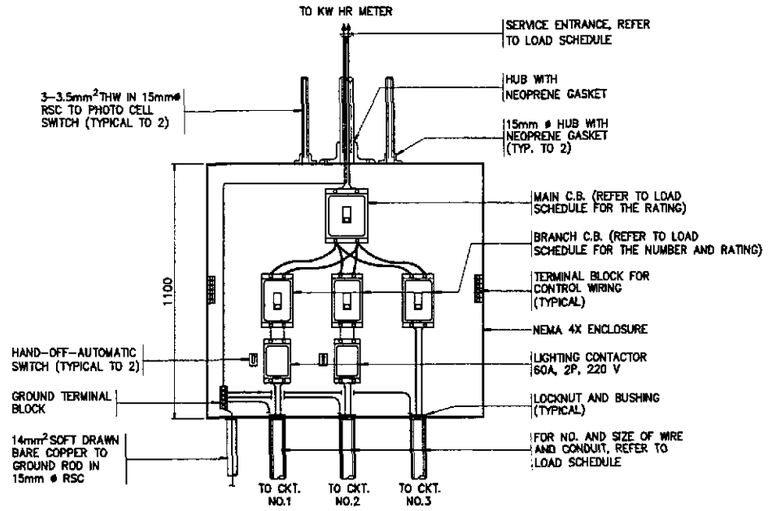
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE IV	AS SHOWN FULL SIZE A1	NOTES & LEGENDS, SCHEMATIC CONTROL DIAG. & DUCT SECTION (INITIAL STAGE)	ES-01



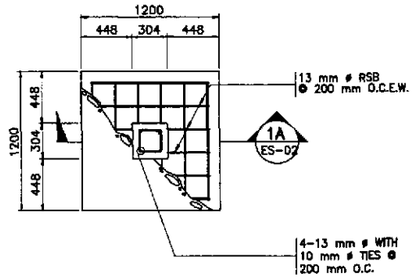
1A ES-02 SECTION



1B ES-02 ELEVATION



1C ES-02 DETAIL
SCALE 1:20



1D ES-02 FOOTING PLAN

1 ES-02 SERVICE POLE DETAILS
SCALE 1:20

ERNESTO M. ANTIOQUIA
ENGINEER
PTR NO. 7463884 P.E.C. NO. 2813
ISSUED ON 01/10/2002 ISSUED AT CABUYAO, LAGUNA
T.I.N. 108-382-379

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

	DATE	SIGNATURE
DESIGNED	10/12/02	E. ANTIOQUIA
CHECKED	10/19/02	E. ANTIOQUIA
SUBMITTED	10/21/02	M. KINOSHITA TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
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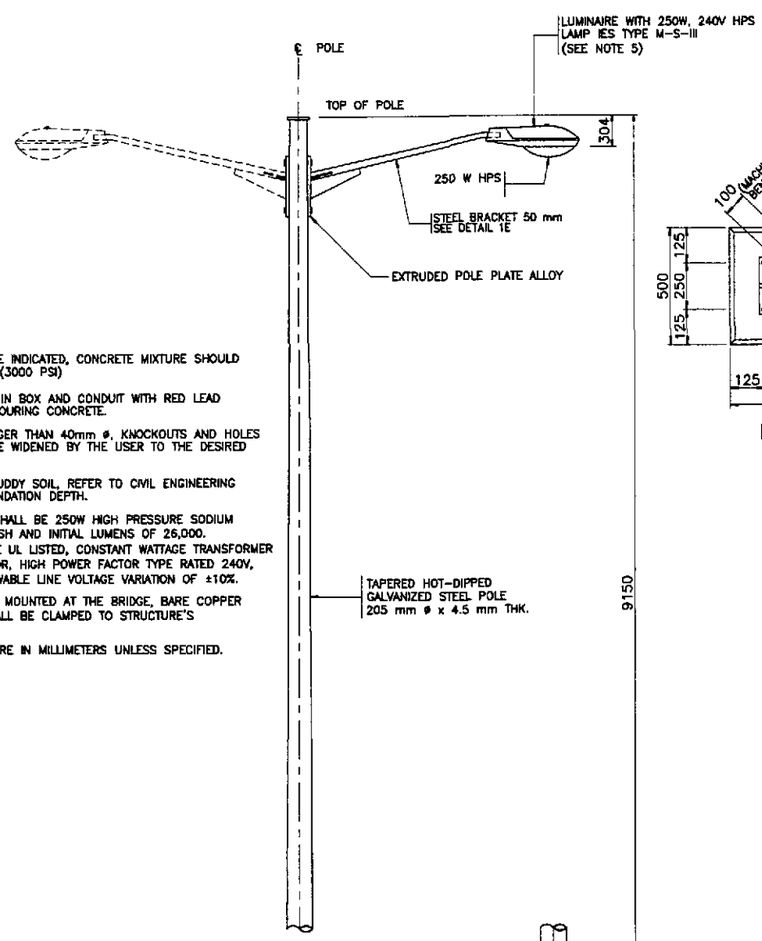
CABANATUAN BYPASS - CONTRACT PACKAGE IV

SCALE : AS SHOWN FULL SIZE A1

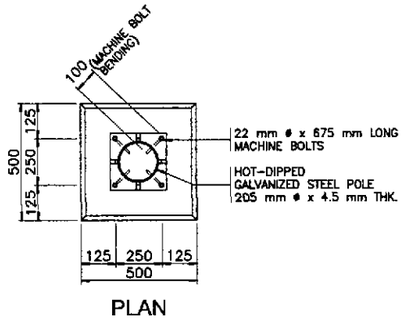
SHEET CONTENTS : SERVICE POLE DETAILS (INITIAL STAGE)

SHEET NO. : ES-02

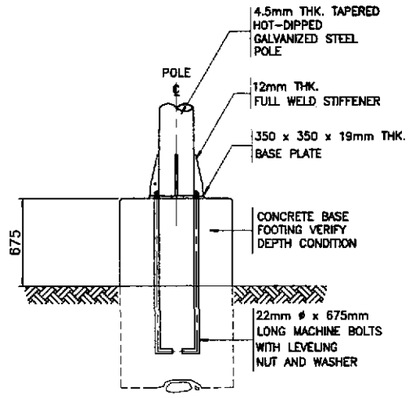


NOTES:

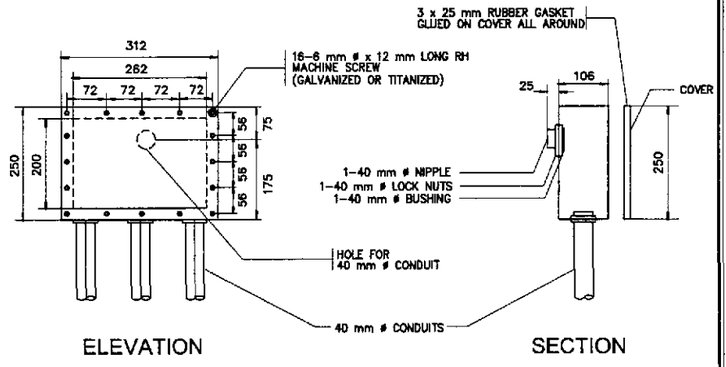
1. UNLESS OTHERWISE INDICATED, CONCRETE MIXTURE SHOULD BE 211 kg./cm (3000 PSI)
2. PAINT ALL JOINTS IN BOX AND CONDUIT WITH RED LEAD PRIMER BEFORE POURING CONCRETE.
3. FOR CONDUIT LARGER THAN 40mm ø, KNOCKOUTS AND HOLES SHALL HAVE TO BE WIDENED BY THE USER TO THE DESIRED DIAMETER.
4. FOR LOAM AND MUDDY SOIL, REFER TO CIVIL ENGINEERING FOR PROPER FOUNDATION DEPTH.
5. LUMINAIRE LAMP SHALL BE 250W HIGH PRESSURE SODIUM WITH DIFFUSE FINISH AND INITIAL LUMENS OF 25,000. BALLAST SHALL BE UL LISTED, CONSTANT WATTAGE TRANSFORMER CWA OR REGULATOR, HIGH POWER FACTOR TYPE RATED 240V, 60 Hz WITH ALLOWABLE LINE VOLTAGE VARIATION OF ±10%.
6. FOR STEEL POLES MOUNTED AT THE BRIDGE, BARE COPPER GROUND WIRE SHALL BE CLAMPED TO STRUCTURE'S REINFORCING BAR.
7. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SPECIFIED.



PLAN

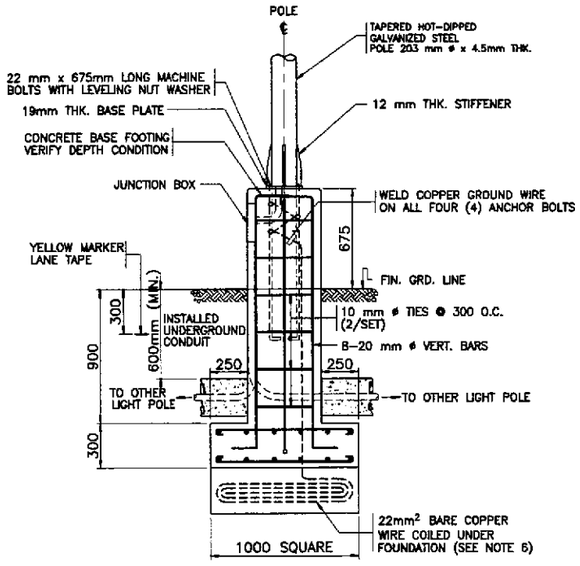


ELEVATION

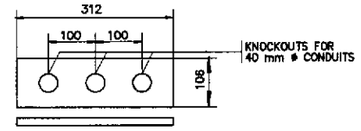


ELEVATION SECTION

1B ES-03 BASE PLATE DETAIL



ELEVATION



SECTION

MATERIAL:

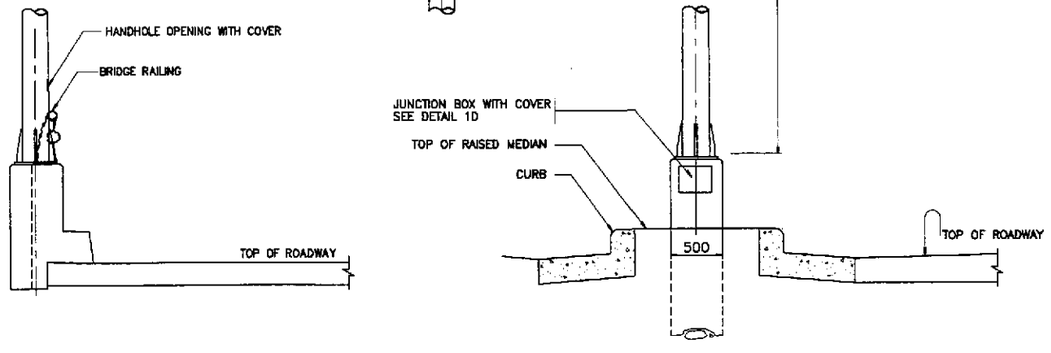
JUNCTION BOX - 50 mm THICK CAST ALUMINUM FOR BOX AND COVER

ANCHOR BOLT - ASTM A-36

FINISH:

ANCHOR BOLT - ASTM A-153

1D ES-03 JUNCTION BOX DETAILS

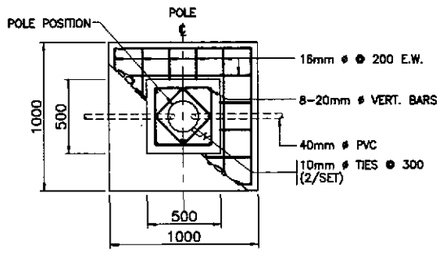


BRIDGE LEVEL GROUND LEVEL

POLE SHAFT

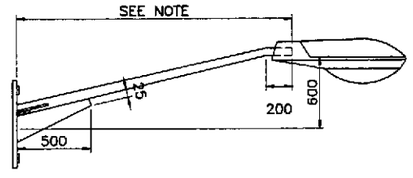
LENGTH	BASE DIA.	POLE TOP DIA.
9000	205	115

1A ES-03 ELEVATION



PLAN

1C ES-03 STANDARD FOOTING DETAIL



NOTE:

ARM LENGTH SHALL BE 3000mm UNLESS OTHERWISE INDICATED IN THE PLAN.

MATERIAL:

MAST ARM- B.I. PIPE AS PER PNS 26: 1984 (MEDIUM SERIES)
POLE SHAFT AS PER ASTM A-53 MOUNTING PLATE AND STIFFENERS

MACHINE BOLT- ANSI-C135.

FINISH:

HOT-DIP GALVANIZED PER LATEST EDITION OF ASTM A-123
MACHINE BOLT-ASTM A-153

1E ES-03 MAST ARM DETAILS

1 ES-03 STREET LIGHT POLE DETAILS I

NOT TO SCALE

ERNESTO M. ANTIOQUIA
ENGINEER
PTR NO. 7403864 P.E.C. NO. 2913
ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
T.I.N. 108-382-378

JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL — YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/2/02	E. ANTIOQUIA
CHECKED	10/19/02	E. ANTIOQUIA
SUBMITTED	10/21/02	M. KUBOTA, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	FE M. BARRIENTOS, Chief, Mech'l-Elect'l Division	GILBERTO S. REYES, OIC, Director IV	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 : STREET LIGHT POLE DETAILS (INITIAL STAGE)

SHEET NO. : ES-03

NOTE:

1. UNLESS OTHERWISE INDICATED, THE MINIMUM SIZE OF CIRCUIT CONDUCTORS FROM STEEL POLE JUNCTION BOX/HANDHOLE TO EACH LUMINAIRE SHALL BE 2–3.5mm² THW AND 1–3.5mm² TW(GND) INSIDE STEEL POLE.

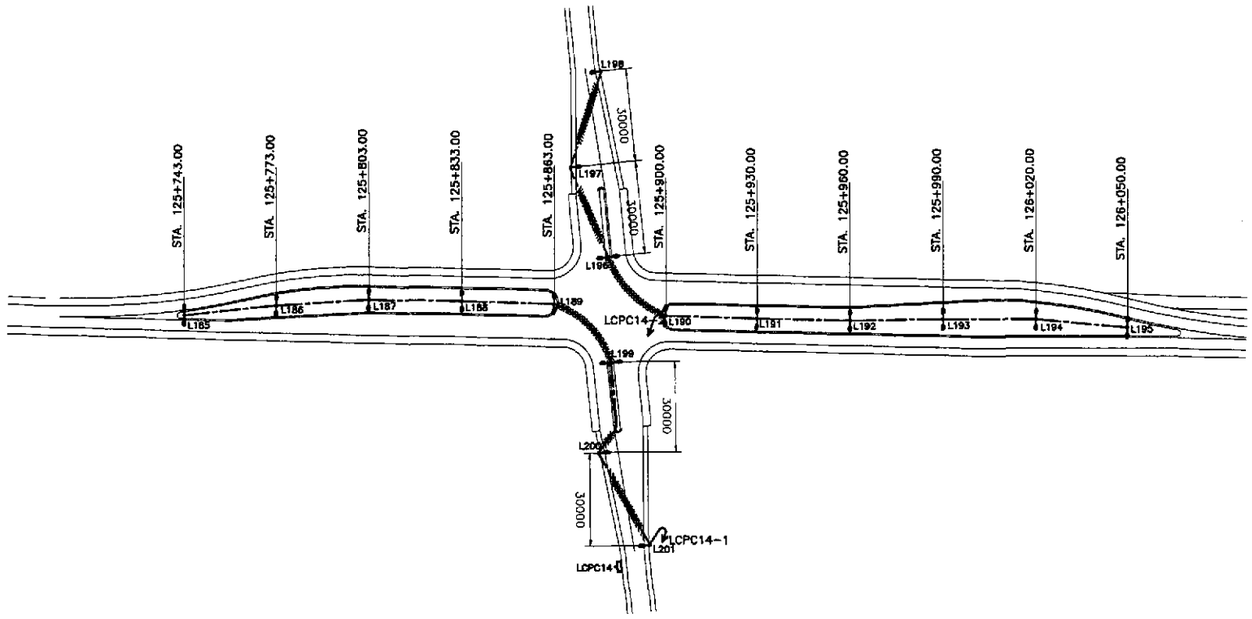
LOAD SCHEDULE

PANEL ID : LCPC14
FEED : TOP
MOUNTING : SURFACE

LIGHTING CONTACTOR
PANEL NO.14

ENCLOSURE : NEMA 4X
MIN. KAIC : 10
MAIN CB : 80 AT, 100 AF, 2P

CKT. NO.	LOAD DESCRIPTION	VOLTS	CONNECTED LOAD (VA)	CONNECTED LOAD AMPERE	NO. & SIZE OF WIRES & CONDUIT	PROTECTION AT	PROTECTION AF	PROTECTION P
1	L201 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L200 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L199 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L189 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L188 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L187 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L186 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L185 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	SUB-TOTAL		4340	19.74	2–30 mm²THW & 1–8.0 mm²TW(G) IN 40 mmø CONDUIT	30	100	2
2	L190 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L191 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L192 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L193 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L194 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L195 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L196 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L197 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L198 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	SUB-TOTAL		4960	22.56	2–30 mm²THW & 1–8.0 mm²TW(G) IN 40 mmø CONDUIT	30	100	2
3	TRAFFIC LIGHTS	220	3450	15	WIRES AND CONDUIT (BY OTHERS)	30	100	2
	TOTAL		12750	57.30	2–38 mm²THW IN 40 mmø CONDUIT	80	100	2



1 / EI-01 ROADWAY LIGHTING PLAN
SCALE 1:1000

ERNESTO M. ANTIOQUIA
ENGINEER
PTR. NO. 7403864 P.E.E. NO. 2813
ISSUED ON 01/09/2002 ISSUED AT CABUYAO, LAGUNA
T.I.N. 106-302-379

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

	DATE	SIGNATURE
DESIGNED	10/12/02	E. ANTIOQUIA
CHECKED	10/19/02	E. ANTIOQUIA
SUBMITTED	10/21/02	M. KIDA, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PUHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	FE M. BARRIENTOS	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG
Project Director	Chief, Mech'l–Elect'l Division	OIC, Director IV	Undersecretary	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 : 1:1000 FULL SIZE A1

SHEET CONTENTS :
ROADWAY LIGHTING PLAN AND LOAD SCHEDULE
INTERSECTION A-25 (INITIAL STAGE)

SHEET NO. : EI-01

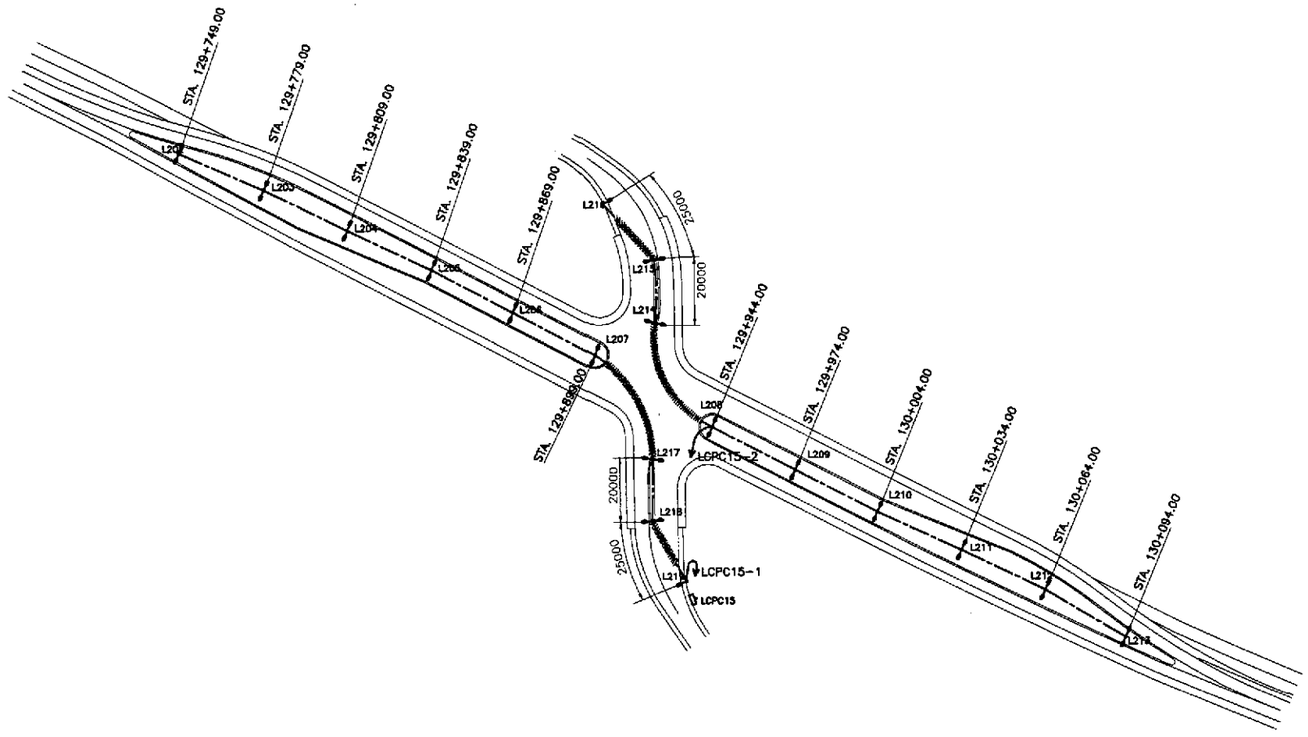
NOTE:

1. UNLESS OTHERWISE INDICATED, THE MINIMUM SIZE OF CIRCUIT CONDUCTORS FROM STEEL POLE JUNCTION BOX/HANDHOLE TO EACH LUMINAIRE SHALL BE 2–3.5mm² THW AND 1–3.5mm² TW(GND) INSIDE STEEL POLE.

LOAD SCHEDULE

PANEL ID : LCPC15 — LIGHTING CONTACTOR — ENCLOSURE : NEMA 4X
FEED : TOP — PANEL NO.15 — MIN. KAIC : 10
MOUNTING : SURFACE — MAIN CB : 80 AT, 100 AF, 2P

CKT. NO.	LOAD DESCRIPTION	VOLTS	CONNECTED LOAD (VA)	CONNECTED LOAD AMPERE	NO. & SIZE OF WIRES & CONDUIT	PROTECTION AT	PROTECTION AF	PROTECTION P
1	L219 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L218 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L217 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L207 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L206 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L205 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L204 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L203 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L202 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	SUB–TOTAL		5270	23.97	2–30 mm²THW & 1–8.0 mm²TW(G) IN 40 mmø CONDUIT	30	100	2
2	L208 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L209 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L210 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L211 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L212 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L213 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L214 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L215 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L216 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	SUB–TOTAL		5270	23.97	2–30 mm²THW & 1–8.0 mm²TW(G) IN 40 mmø CONDUIT	30	100	2
3	TRAFFIC LIGHTS	220	3450	15	WIRES AND CONDUIT (BY OTHERS)	30	100	2
	TOTAL		13990	62.94	2–38 mm²THW IN 40 mmø CONDUIT	80	100	2



1 / EI-02 ROADWAY LIGHTING PLAN
SCALE 1:1000

ERNESTO M. ANTIOQUIA
ENGINEER
PTR NO. 7403884 — P.E.E. NO. 2913
ISSUED ON 05/08/2002 — ISSUED AT CABUYAO, LAGUNA
T.I.N. 109-382-378

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

	DATE	SIGNATURE
DESIGNED	10/19/01	E. ANTIOQUIA
CHECKED	10/19/01	E. ANTIOQUIA
SUBMITTED	10/21/01	M. KUDO, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	FE M. BARRIENTOS, Chief, Mech'l–Elect'l Division	GILBERTO S. REYES, OIC, Director IV	MANUEL M. BONDAD, Undersecretary	SIMEON A. DATUMANONG, Secretary

PROJECT AND LOCATION :
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CABANATUAN BYPASS - CONTRACT PACKAGE IV

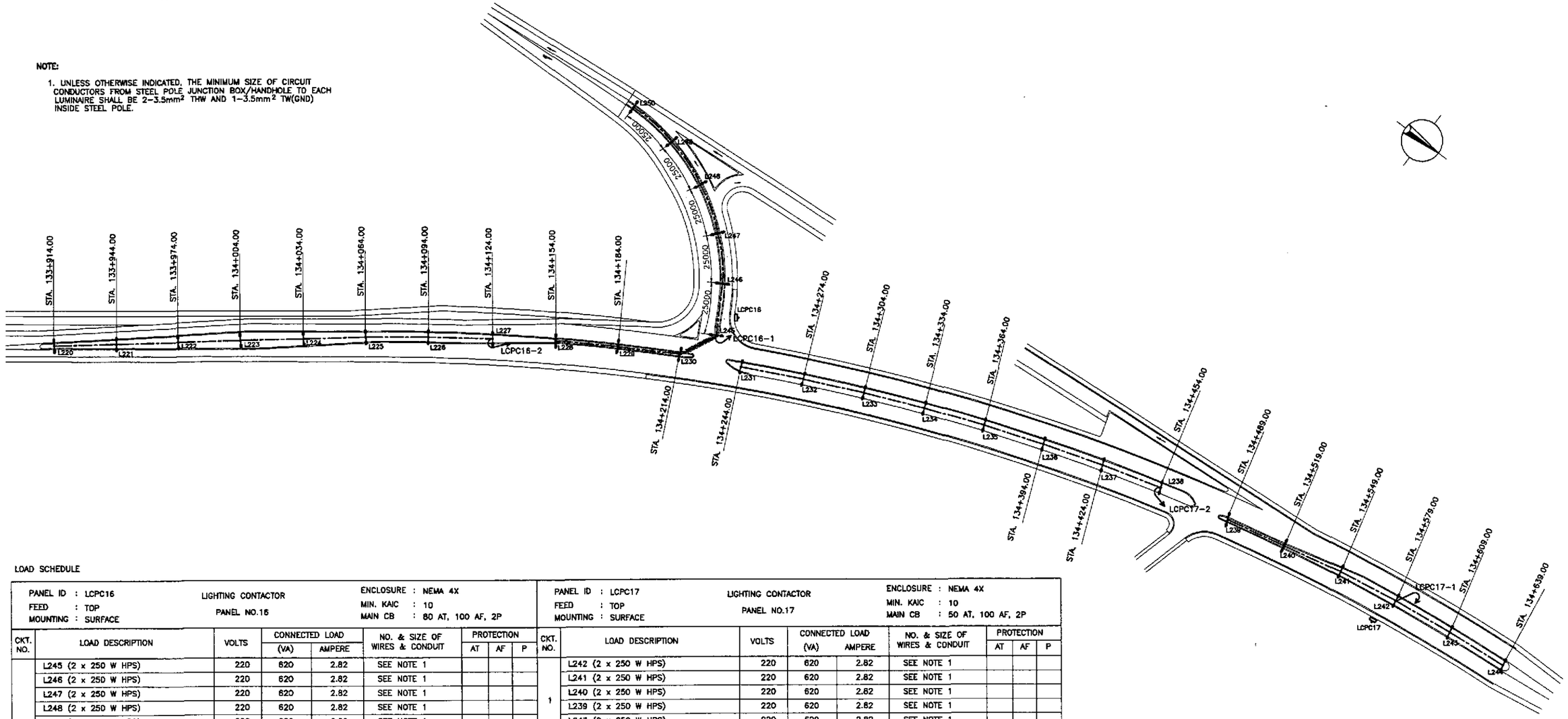
SCALE : 1:1000 FULL SIZE A1

SHEET CONTENTS :
ROADWAY LIGHTING PLAN AND LOAD SCHEDULE
INTERSECTION A-30 (INITIAL STAGE)

SHEET NO. : EI-02

NOTE:

1. UNLESS OTHERWISE INDICATED, THE MINIMUM SIZE OF CIRCUIT CONDUCTORS FROM STEEL POLE JUNCTION BOX/HANDHOLE TO EACH LUMINAIRE SHALL BE 2–3.5mm² THW AND 1–3.5mm² TW(GND) INSIDE STEEL POLE.



LOAD SCHEDULE

PANEL ID : LCPC16 — LIGHTING CONTACTOR — ENCLOSURE : NEMA 4X
FEED : TOP — PANEL NO.16 — MIN. KAIC : 10
MOUNTING : SURFACE — MAIN CB : 80 AT, 100 AF, 2P

CKT. NO.	LOAD DESCRIPTION	VOLTS	CONNECTED LOAD (VA)	CONNECTED LOAD AMPERE	NO. & SIZE OF WIRES & CONDUIT	PROTECTION AT	PROTECTION AF	PROTECTION P
1	L245 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L246 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L247 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L248 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L249 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L250 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L230 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L229 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L228 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	SUB–TOTAL		5580	25.38	2–30 mm²THW & 1–8.0 mm² TW(G) IN 40 mmø CONDUIT	40	100	2
2	L227 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L226 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L225 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L224 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L223 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L222 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L221 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L220 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	SUB–TOTAL		4960	22.56	2–30 mm²THW & 1–8.0 mm² TW(G) IN 40 mmø CONDUIT	30	100	2
3	TRAFFIC LIGHTS	220	3450	15	WIRES AND CONDUIT (BY OTHERS)	30	100	2
	TOTAL		13990	62.94	2–38 mm²THW IN 40 mmø CONDUIT	80	100	2

PANEL ID : LCPC17 — LIGHTING CONTACTOR — ENCLOSURE : NEMA 4X
FEED : TOP — PANEL NO.17 — MIN. KAIC : 10
MOUNTING : SURFACE — MAIN CB : 50 AT, 100 AF, 2P

CKT. NO.	LOAD DESCRIPTION	VOLTS	CONNECTED LOAD (VA)	CONNECTED LOAD AMPERE	NO. & SIZE OF WIRES & CONDUIT	PROTECTION AT	PROTECTION AF	PROTECTION P
1	L242 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L241 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L240 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L239 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L243 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L244 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	SUB–TOTAL		3720	16.92	2–22 mm²THW & 1–8.0 mm² TW(G) IN 40 mmø CONDUIT	30	100	2
2	L238 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L237 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L236 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L235 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L234 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L233 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L232 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L231 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	SUB–TOTAL		4960	22.56	2–30 mm²THW & 1–8.0 mm² TW(G) IN 40 mmø CONDUIT	30	100	2
	TOTAL		8680	39.48	2–38 mm²THW IN 40 mmø CONDUIT	50	100	2

ERNESTO M. ANTIOQUIA
ENGINEER
PTR NO. 7403664 — P.E.E. NO. 2913
ISSUED ON 01/02/2002 — ISSUED AT CABUYAO, LAGUNA
T.I.N. 108-383-378

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

	DATE	SIGNATURE
DESIGNED	10/12/02	E. ANTIOQUIA
CHECKED	10/19/02	E. ANTIOQUIA
SUBMITTED	10/21/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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DANILO C. TRAJANO	FE M. BARRIENTOS	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG
Project Director	Chief, Mech'l–Elect'l Division	OIC, Director IV	Undersecretary	Secretary

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CABANATUAN BYPASS - CONTRACT PACKAGE IV

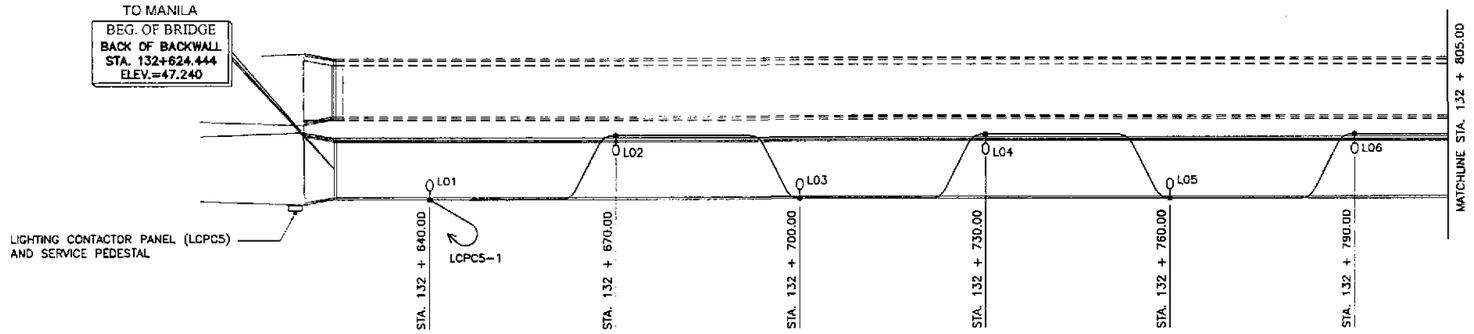
SCALE : 1:1000 FULL SIZE A1

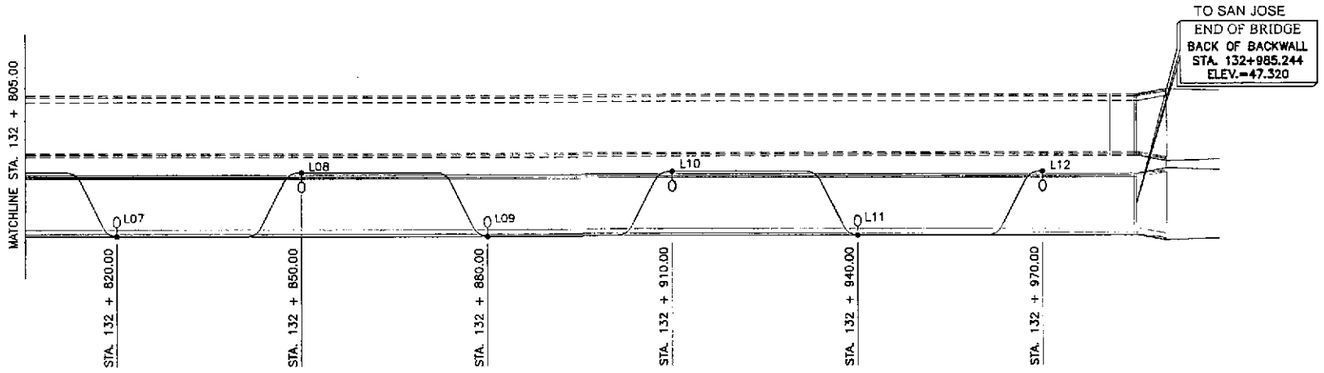
SHEET CONTENTS :
ROADWAY LIGHTING PLAN AND LOAD SCHEDULE
INTERSECTION A-35 (INITIAL)

SHEET NO. : EI-03

NOTE:

1. UNLESS OTHERWISE INDICATED, THE MINIMUM SIZE OF CIRCUIT CONDUCTORS FROM STEEL POLE JUNCTION BOX/HANDHOLE TO EACH LUMINAIRE SHALL BE 2-3.5mm² THW AND 1-3.5mm² TW(GND) INSIDE STEEL POLE.





LOAD SCHEDULE

PANEL ID : LCPC5
FEED : TOP
MOUNTING : SURFACE

LIGHTING CONTACTOR PANEL NO.5

ENCLOSURE : NEMA 4X
MIN. KAIC : 10
MAIN CB : 30 AT, 100 AF, 2P

CKT. NO.	LOAD DESCRIPTION	VOLTS	CONNECTED LOAD (VA)	CONNECTED LOAD AMPERE	NO. & SIZE OF WIRES & CONDUIT	PROTECTION AT	PROTECTION AF	PROTECTION P
1	L01 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L02 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L03 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L04 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L05 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L06 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L07 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L08 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L09 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L10 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L11 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L12 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	SUB-TOTAL		3720	16.92	2-30 mm² THW & 1-8.0 mm² TW(G) IN 40 mmø CONDUIT			
	TOTAL		3720	16.92	2-30 mm² THW & IN 40 mmø CONDUIT	30	100	2

1 / EB-01 ROADWAY LIGHTING PLAN
SCALE 1:500

ERNESTO M. ANTIOQUIA
ENGINEER
PTR NO. 7403684 P.E.E. NO. 2813
ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
T.I.N. 109-382-378

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

	DATE	SIGNATURE
DESIGNED	10/2/02	E. ANTIOQUIA
CHECKED	10/9/02	E. ANTIOQUIA
SUBMITTED	10/21/02	M. KUCHI, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	FE M. BARRIENTOS, Chief, Mech'l-Elect'l Division	GILBERTO S. REYES, OIC, Director IV	MANUEL M. BONDAN, Undersecretary	SIMEON A. DATUMANONG, Secretary

PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE IV	1:500 FULL SIZE A1	TALAVERA RIVER BRIDGE CROSSING ROADWAY LIGHTING PLAN AND LOAD SCHEDULE INITIAL STAGE	EB-01