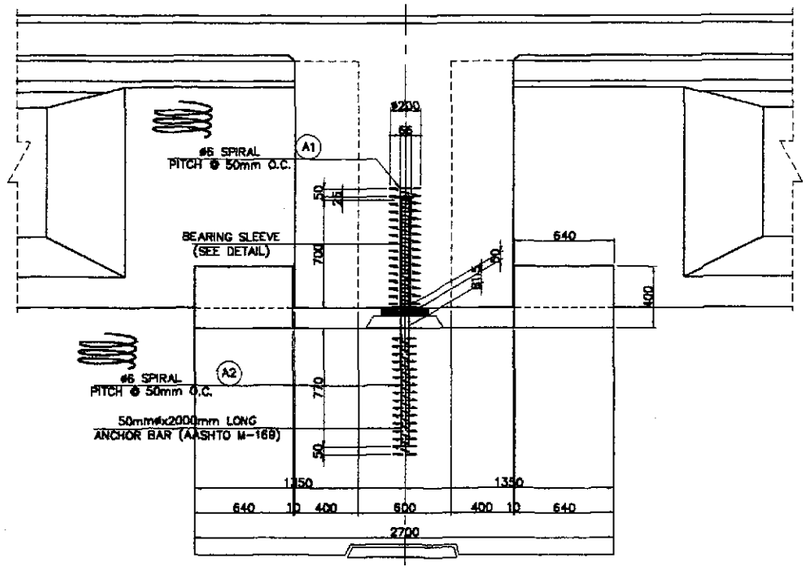
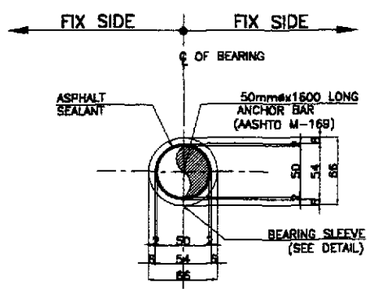
MISCELLANEOUS DRAWINGS



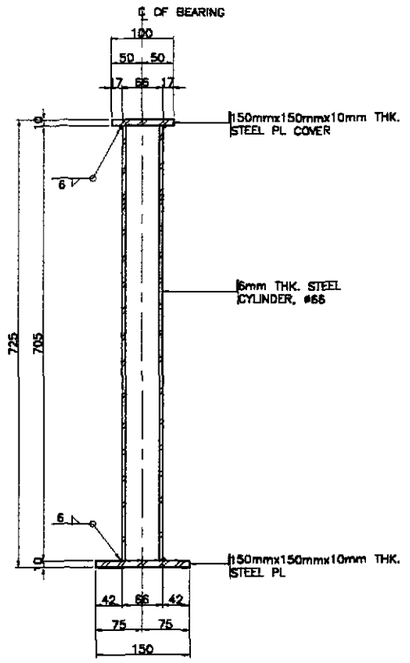
A1 LONG'L ELEVATION
SCALE 1:20

NOTE :

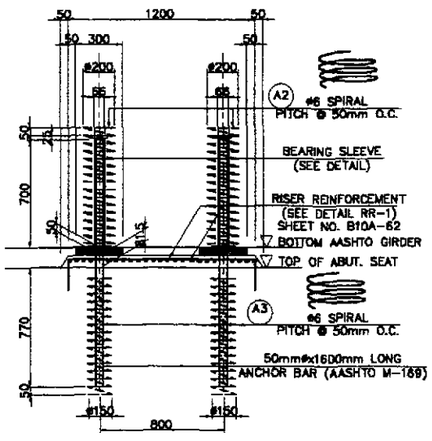
1. ALL METALS SHOWN IN THIS DRAWING SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS FOR ZINC (HOT-GALVANIZE) COATING CONFORMING TO AASHTO M111 (ASTM A123) OR AASHTO M232 (ASTM A153). THE WEIGHT OF ZINC COATING SHALL AVERAGE NOT LESS THAN 365 g PER SQ. METER OF ACTUAL SURFACE AREA WITH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



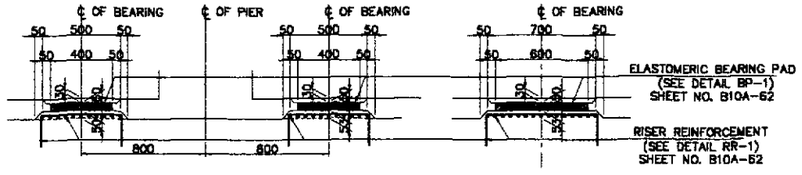
A5 SECTION
NOT TO SCALE



B1 ELEVATION
SCALE 1:5

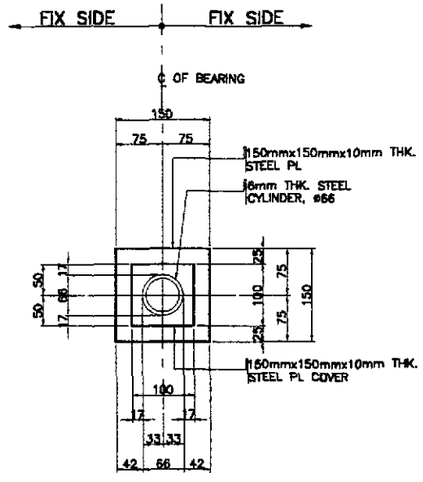


A2 TRAN'L ELEVATION
SCALE 1:20



A3 LONG'L SECTION
SCALE 1:20

A4 TRAN'L SECTION
SCALE 1:20



B2 P L A N
SCALE 1:5

A ANCHOR BARS & BEARING DETAILS
SCALE AS SHOWN

B BEARING SLEEVE DETAIL (FIX PIERS)
SCALE AS - SHOWN

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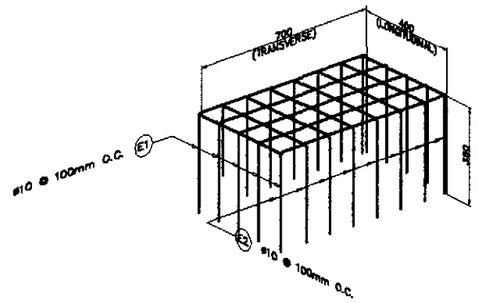
JAPAN INTERNATIONAL COOPERATION AGENCY
KEI KATAHIRA & ENGINEERS INTERNATIONAL
YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/8/07	F. M. SALAS
CHECKED	10/17/07	J. C. SANTOS
SUBMITTED	10/19/07	TEAM LEADER

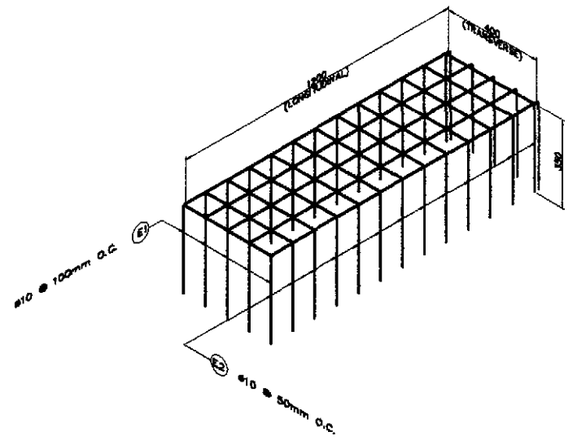
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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	ADRIANO M. DORCY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Bridge Division	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) CABANATUAN BYPASS - CONTRACT PACKAGE III	AS SHOWN FULL SIZE A1	BRIDGE NO.10 PAMPANGA RIVER BRIDGE ANCHOR BARS & BEARING DETAILS (INITIAL STAGE)	B10A-61

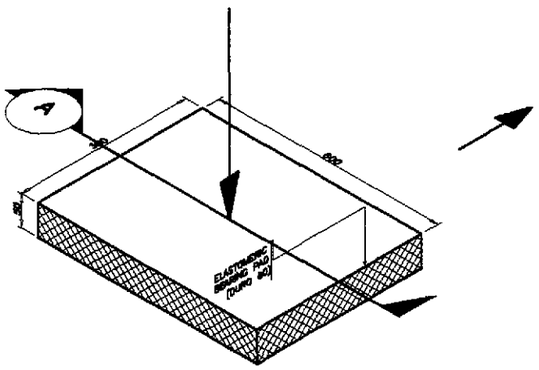


A RR-1 (BEARING PAD)
N T S

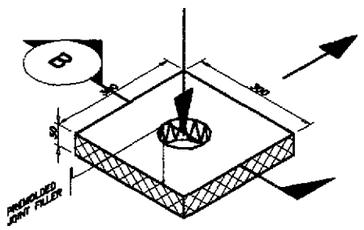


B RR-2 (DOWEL)
N T S

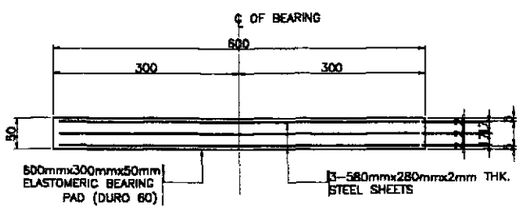
3 RISER REINFORCEMENT DETAILS
N T S



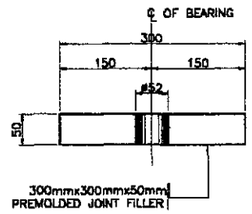
ISOMETRIC VIEW



ISOMETRIC VIEW



SECTION A



SECTION B

D BP-1 @ BEARING
N T S

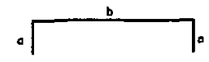
D BP-2 @ ANCHOR BAR
N T S

1 ELASTOMERIC BEARING PAD DETAILS
SCALE AS SHOWN

2 PREMOLDED JOINT FILLER DETAILS
SCALE AS SHOWN

BAR BENDING DIAGRAM

A



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	REMARKS
RISER (PIER FIX-FIX) GIRDER	E1	10	A	350	700				1400	40	0.616	34.50		1. ESTIMATED QUANTITY FOR ONE(1) PIER ONLY.
	E2	10	A	350	400				1100	64	0.616	43.37		
											TOTAL=	77.86	0	2. ESTIMATED QUANTITY FOR ONE(1) ABUT.
RISER (PIER FIX-FIX) GIRDER-P30 ONLY	E1	10	A	350	700				1400	40	0.616	34.50		
	E2	10	A	350	400				1100	64	0.616	43.37		
											TOTAL=	77.86	0	
RISER (PIER EXP-EXP) GIRDER	E1	10	A	350	700				1400	40	0.616	34.50		
	E2	10	A	350	400				1100	64	0.616	43.37		
											TOTAL=	77.86	0	
RISER (ABUT-1 EXP) GIRDER	E1	10	A	350	700				1400	20	0.616	17.25		
	E2	10	A	350	400				1100	32	0.616	21.68		
											TOTAL=	38.93	0	
RISER (ABUT-2 EXP) GIRDER	E1	10	A	350	700				1400	25	0.616	21.58		
	E2	10	A	350	400				1100	40	0.616	27.10		
											TOTAL=	48.66	0	
RISER (PIER FIX-FIX) ANCHOR BAR	E1	10	A	200	1350				1900	15	0.616	17.56		
	E2	10	A	200	400				1100	39	0.616	26.43		
											TOTAL=	43.98	0	

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

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

	DATE	SIGNATURE
DESIGNED	10/18/02	F. M. SALAS
CHECKED	10/17/02	J. C. SANTOS
SUBMITTED	10/19/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

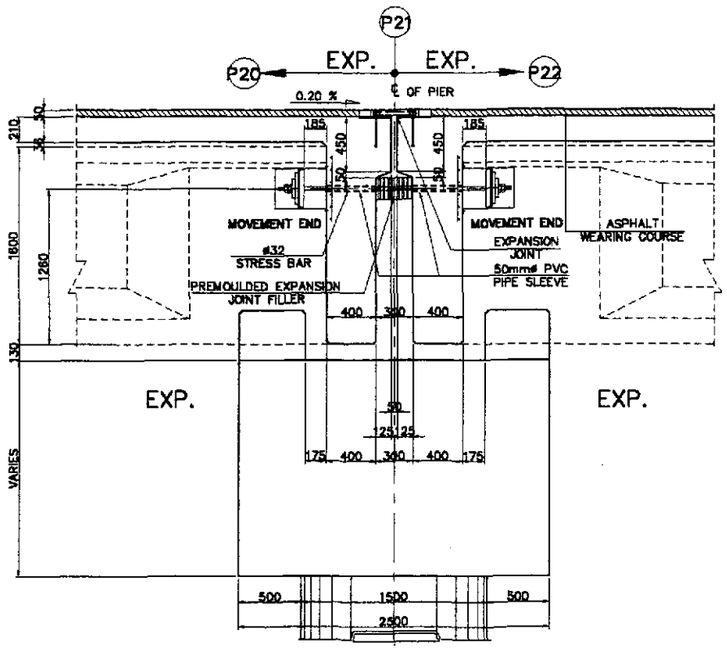
PUHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	ADRIANO M. DOROY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director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

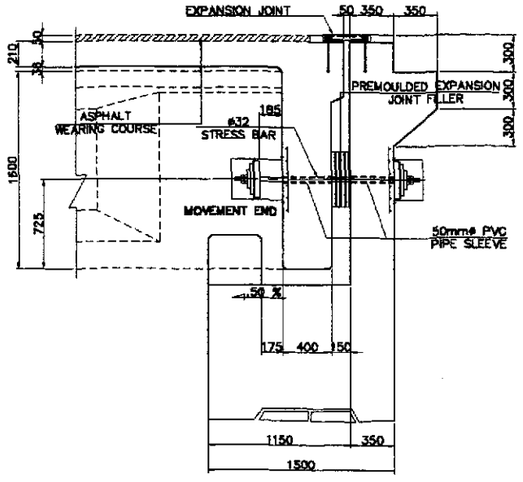
SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO.10 PAMPANGA RIVER BRIDGE
RISER REINFORCEMENT & BEARING PAD DETAILS
(INITIAL STAGE)

SHEET NO. : B10A-62



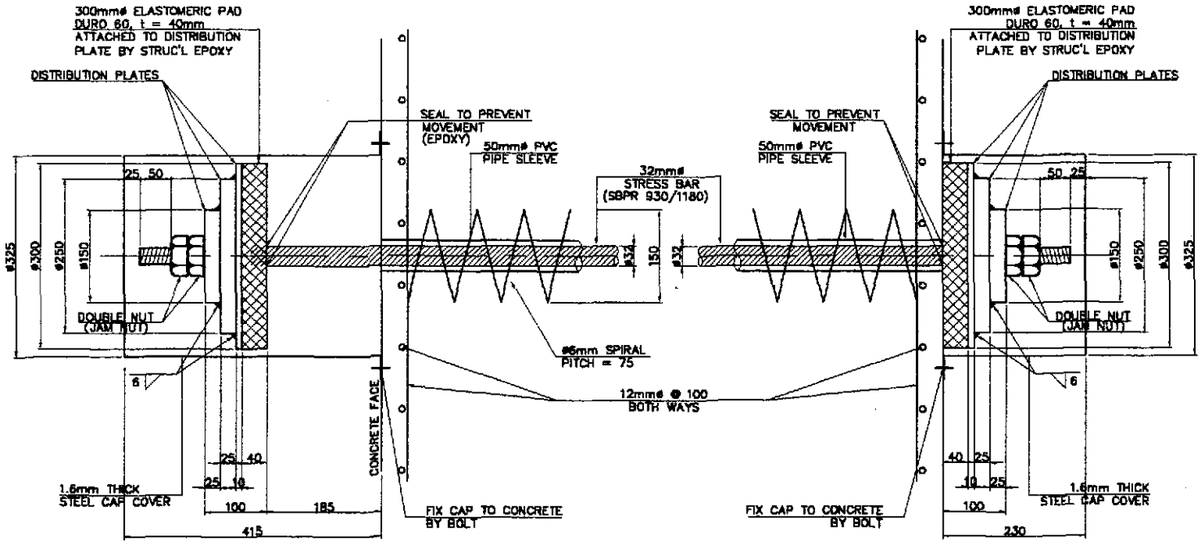
B — ELEVATION @ EXP. PIER
SCALE 1:25



A — ELEVATION @ ABUTMENT
SCALE 1:25

NOTE :

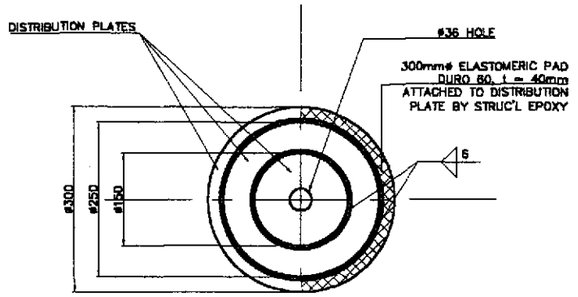
1. ALL METALS SHOWN IN THIS DRAWING SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS FOR ZINC (HOT-GALVANIZE) COATING CONFORMING TO AASHTO M111 (ASTM A123) OR AASHTO M232 (ASTM A153). THE WEIGHT OF ZINC COATING SHALL AVERAGE NOT LESS THAN 355 g PER SQ. METER OF ACTUAL SURFACE AREA WITH NO INDIVIDUAL SPECIMEN HAVING A COATING OF LESS THAN 305 g PER SQ. METER.
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.



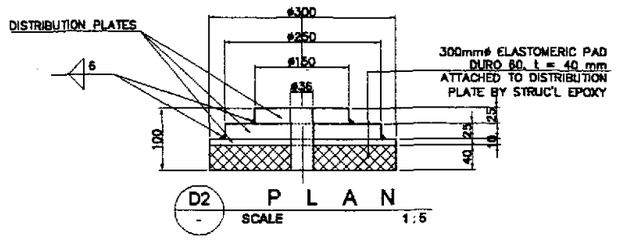
C2 — MOV. END ANCHOR DETAILS
SCALE 1:5

C1 — FIXED END ANCHOR DETAILS
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

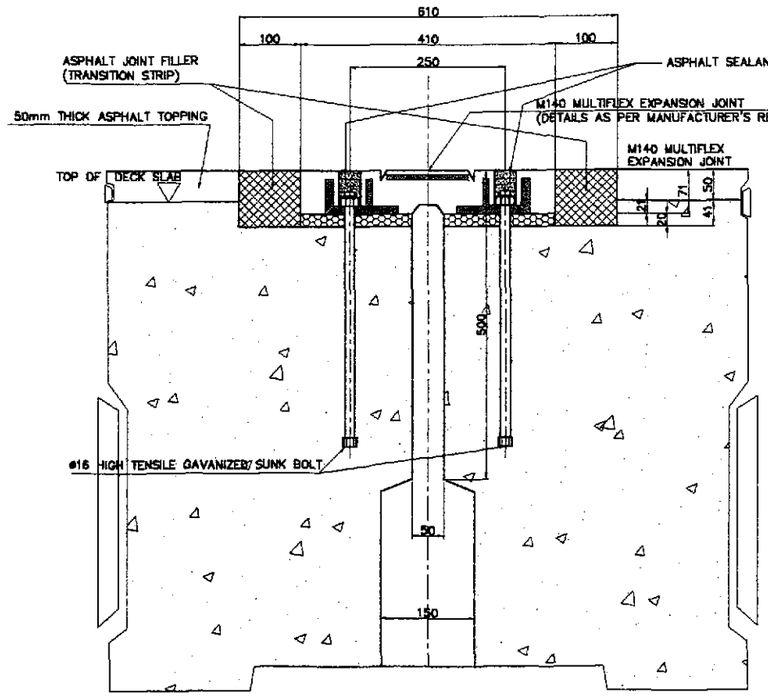
1 — RESTRAINING BAR DETAILS AT ABUTMENTS & PIERS
SCALE AS SHOWN

JAPAN INTERNATIONAL COOPERATION AGENCY	KATAHIRA & ENGINEERS INTERNATIONAL / YACHIYO ENGINEERING CO., LTD.	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

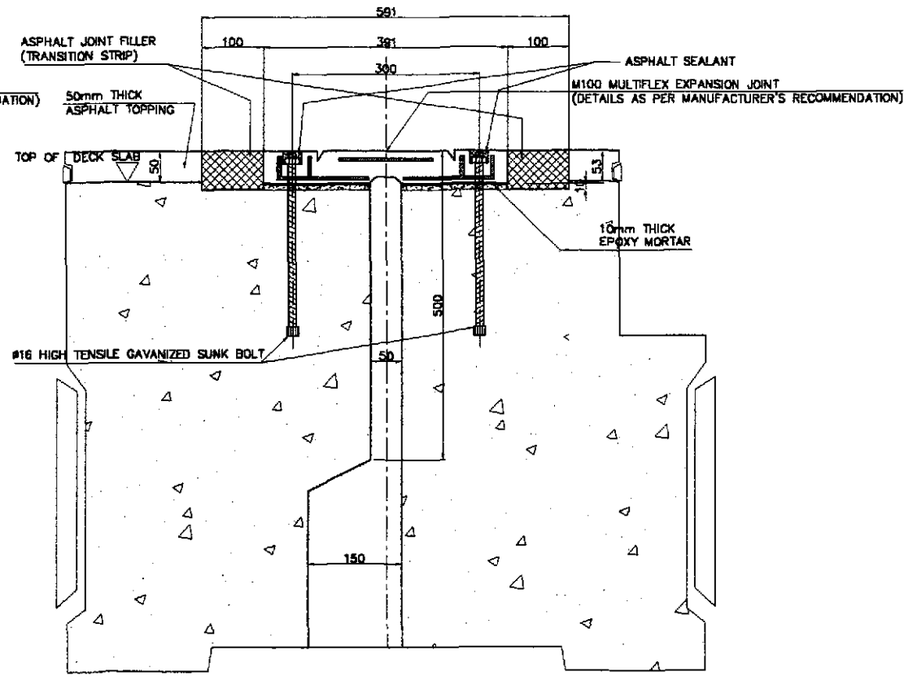
	DATE	SIGNATURE
DESIGNED	10/8/02	F. M. SALAS
CHECKED	10/17/02	J. C. SANTOS
SUBMITTED	10/19/02	TEAM LEADER

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, Bridge Division	GILBERTO S. REYES Director IV (DIC)	MANUEL M. BONOAN Undersecretary	SIMEON A. DATUMANONG Secretary

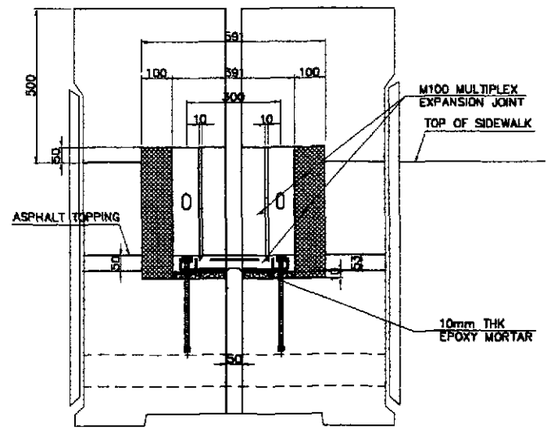
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) **CABANATUAN BYPASS - CONTRACT PACKAGE III**	AS SHOWN FULL SIZE A1	BRIDGE NO.10 PAMPANGA RIVER BRIDGE **RESTRAINING BAR DETAILS AT ABUTMENTS & PIERS** (INITIAL STAGE)	**B10A-63**



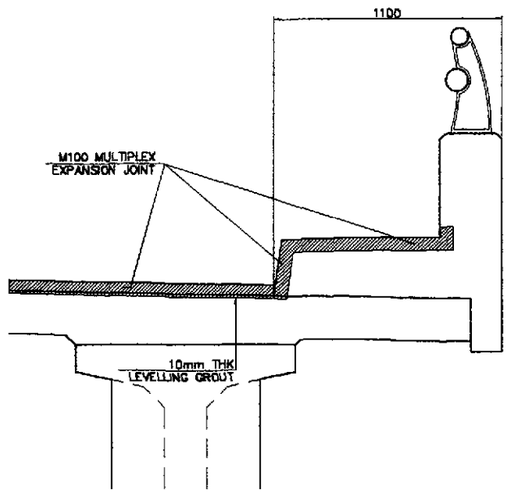
C — SECTION @ P21 (M140 MULTIFLEX)
SCALE 1:5



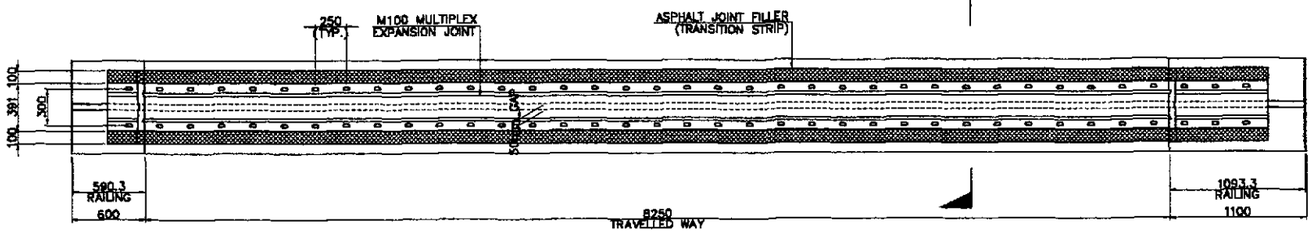
B — SECTION @ ABUTMENT A1 & A2 (M100 MULTIPLEX)
SCALE 1:15



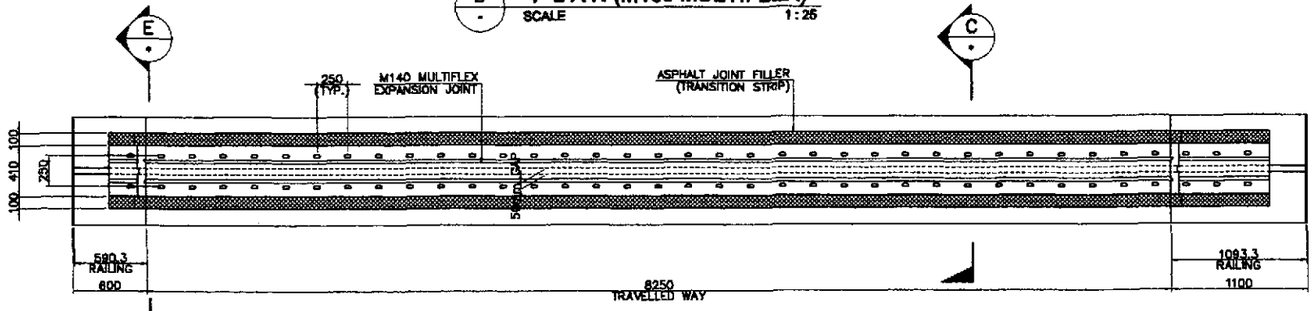
E — DETAIL
SCALE 1:15



F — DETAIL
SCALE 1:15



B — PLAN (M100 MULTIFLEX)
SCALE 1:25



A — PLAN (M140 MULTIFLEX)
SCALE 1:25

1 — EXPANSION JOINT DETAILS
SCALE AS SHOWN

LOCATION	EXPANSION JOINT TYPE	MOVEMENT (mm)	LENGTH (m)
ABUT. A1	MULTIPLEX M100	±50(TOTAL=100mm)	10.00
ABUT. A2	MULTIPLEX M100	±50(TOTAL=100mm)	10.00
PIER 21	MULTIPLEX M140	±70(TOTAL=140mm)	10.00

NOTES :

1. THE EXPANSION JOINT SHALL BE MULTIPLEX M100 & M140 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.

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

	DATE	SIGNATURE
DESIGNED	10/8/02	F.M. SALAS
CHECKED	10/17/02	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. DORCY, Chief, Bridge Division	GILBERTO S. REYES, Director IV (OIC)	MANUEL M. BONOAN, Undersecretary	SIMEON A. DATUMANONG, Secretary

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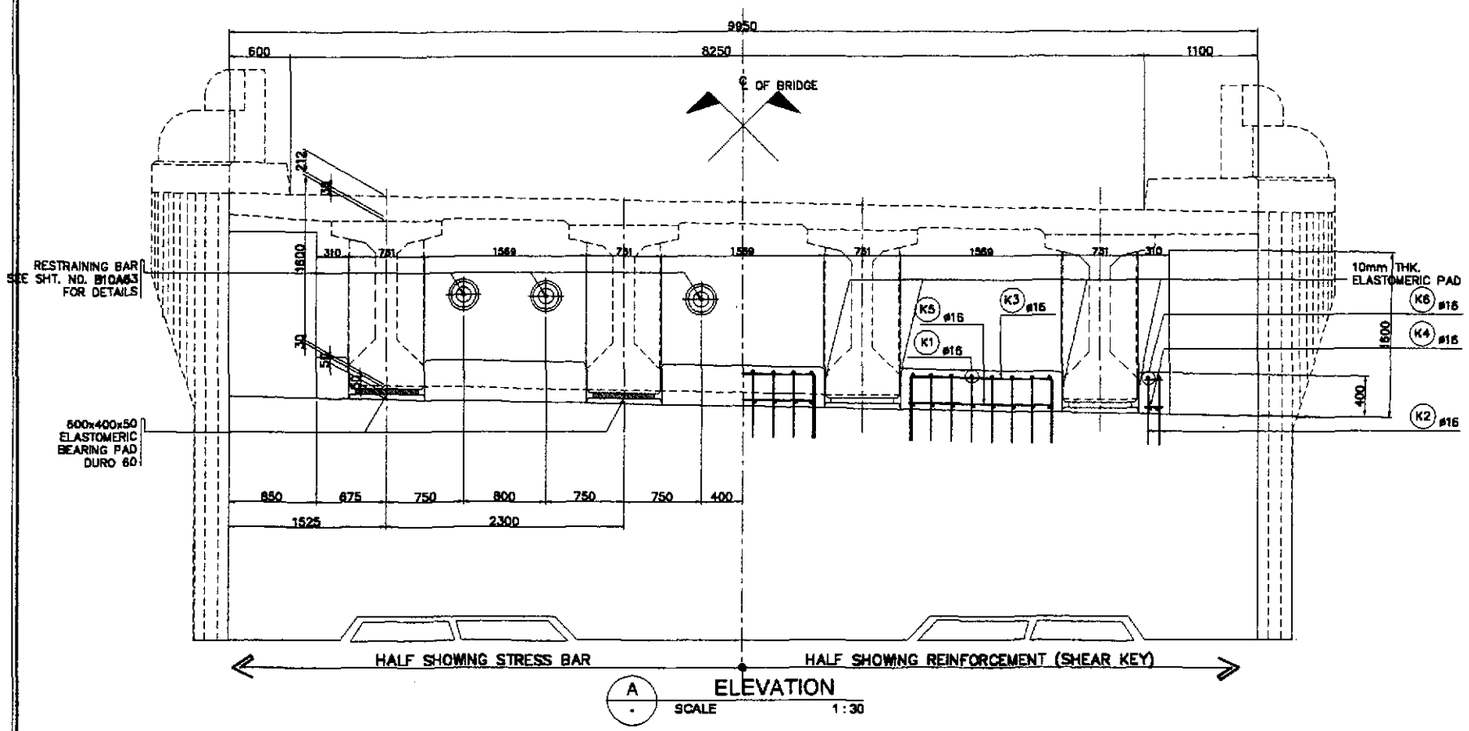
ALONG THE PAN-PHILIPPINE HIGHWAY
(Plaridel, Cabanatuan and San Jose Bypasses)
CABANATUAN BYPASS - CONTRACT PACKAGE III

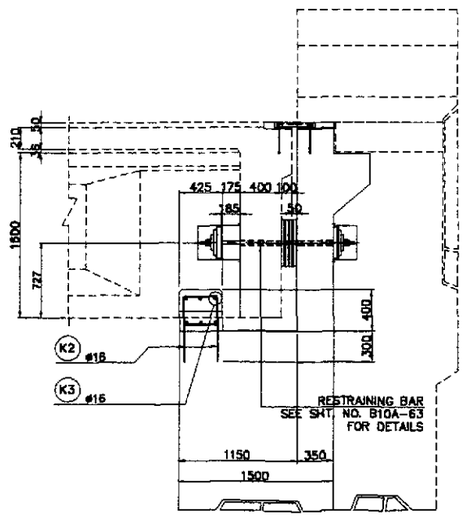
SCALE : AS SHOWN
FULL SIZE A1

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

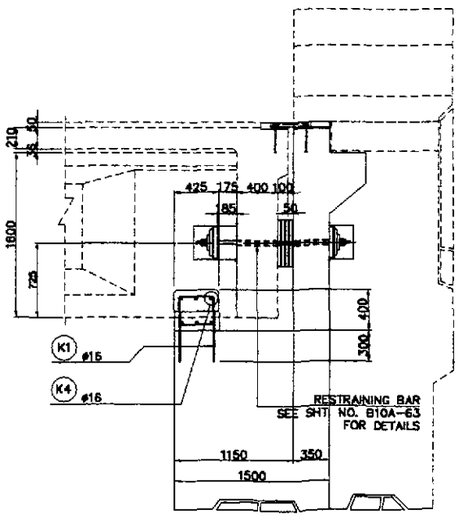
SHEET NO. : B10A-64



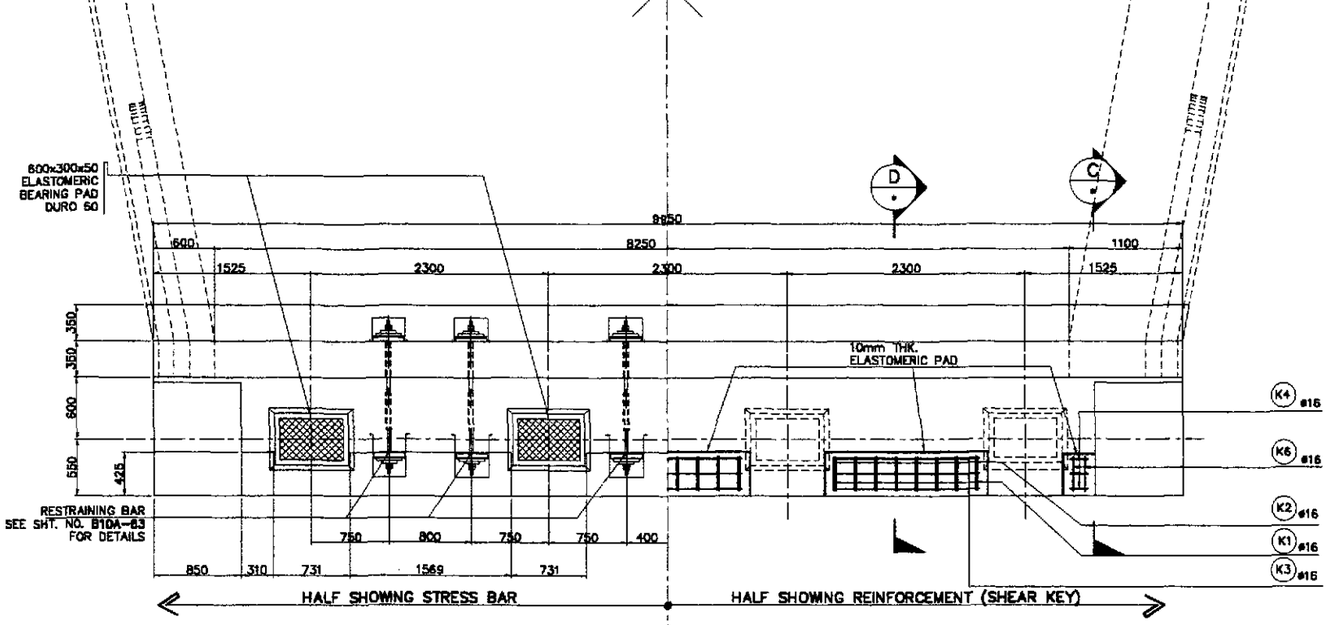
A — ELEVATION
SCALE 1:30



C — SECTION @ SHEAR KEY
SCALE 1:30

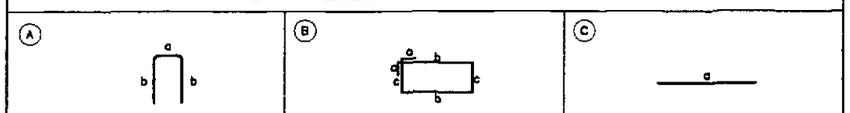


D — SECTION @ SHEAR KEY
SCALE 1:30



B — P L A N
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	LENGTH (mm)	NO. REQ'D.	UNIT WEIGHT (kg/m)	WEIGHT (Kgs) GRADE 40	GRADE 60
SHEAR KEY & END BLOCK @ PIER EXP.	K1	16	A	290	650				1590	54	1.578	135.48	
	K2	16	A	340	650				1640	40	1.578	103.52	
	K3	16	B	1470					1470	36	1.578	83.51	
	K4	16	B	1060					1060	32	1.578	53.53	
	K5	16	C	150	590	320			2120	18	1.578	60.22	
	K5a	16	C	150	475	320			1890	18	1.578	53.68	
	K6	16	C	150	2400	320			5740	10	1.578	90.58	
									TOTAL WEIGHT =			580.51 Kgs.	
SHEAR KEY & END BLOCK @ PIER FIXED	K1	20	A	290	860				1890	54	2.466		265.00
	K2	20	A	340	850				2040	40	2.466		201.23
	K3	16	B	1470					1470	36	1.578	83.51	
	K4	16	B	1060					1060	32	1.578	53.53	
	K5	16	C	150	440	320			1820	36	1.578	103.39	
	K6	16	C	150	2400	320			5740	10	1.578	90.58	
									TOTAL WEIGHT =			331.01 Kgs.	466.23 Kgs.
SHEAR KEY @ ABUTMENT	K1	16	A	290	650				1580	18	1.578	45.16	
	K2	16	A	350	650				1650	6	1.578	15.62	
	K3	16	B	1470					1470	12	1.578	27.84	
	K4	16	B	460					460	8	1.578	5.81	
	K5	16	C	150	350	320			1640	18	1.578	48.00	
	K6	16	C	150	350	320			1640	6	1.578	16.00	
									TOTAL WEIGHT =			158.43 Kgs.	

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

1 — REINF. DETAILS OF SHEAR KEY & END BLOCK (ABUT. A1 & ABUT. A2)
SCALE AS SHOWN

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

	DATE	SIGNATURE
DESIGNED	10/15/07	F. M. SALAS
CHECKED	10/17/07	J. C. SANTOS
SUBMITTED	10/19/07	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

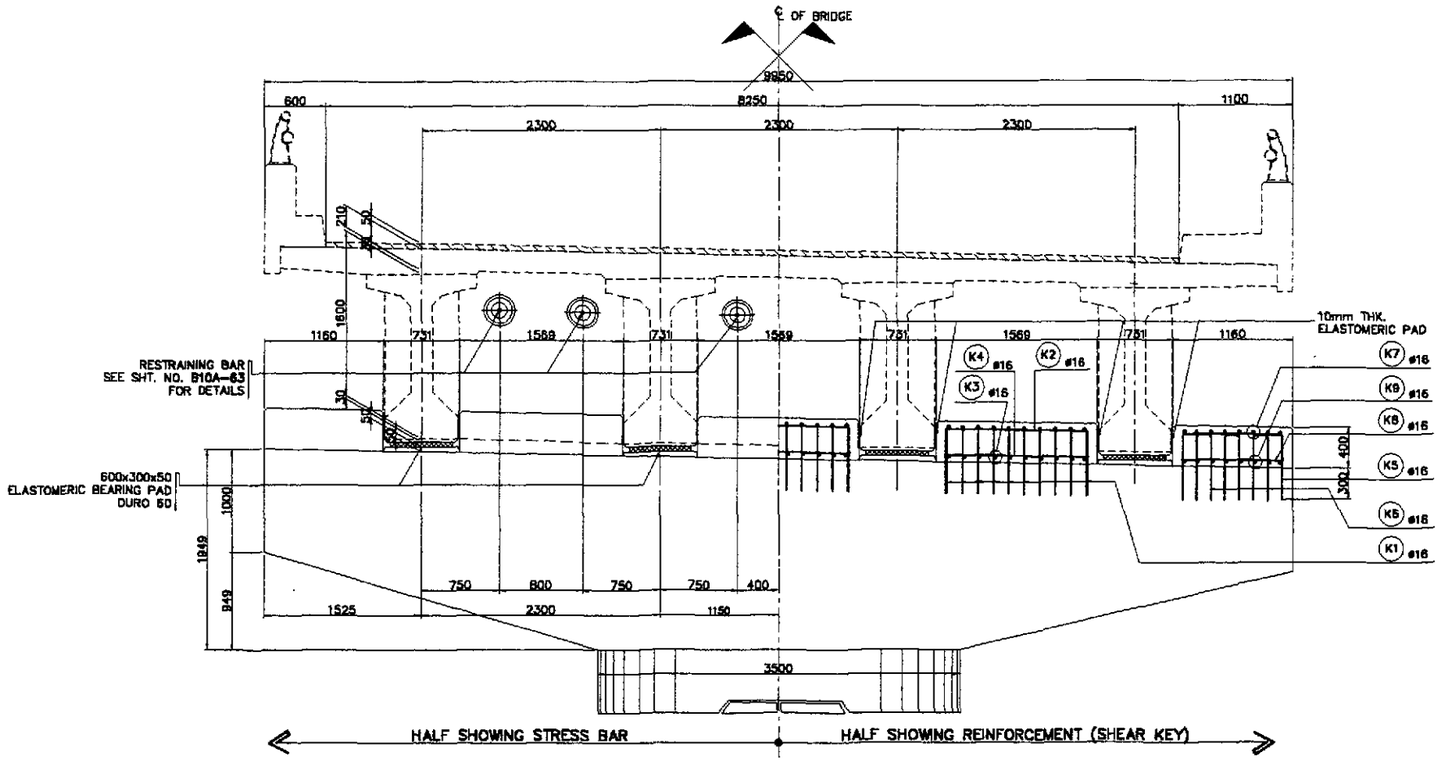
PUHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	ADRIANO M. DOROY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director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

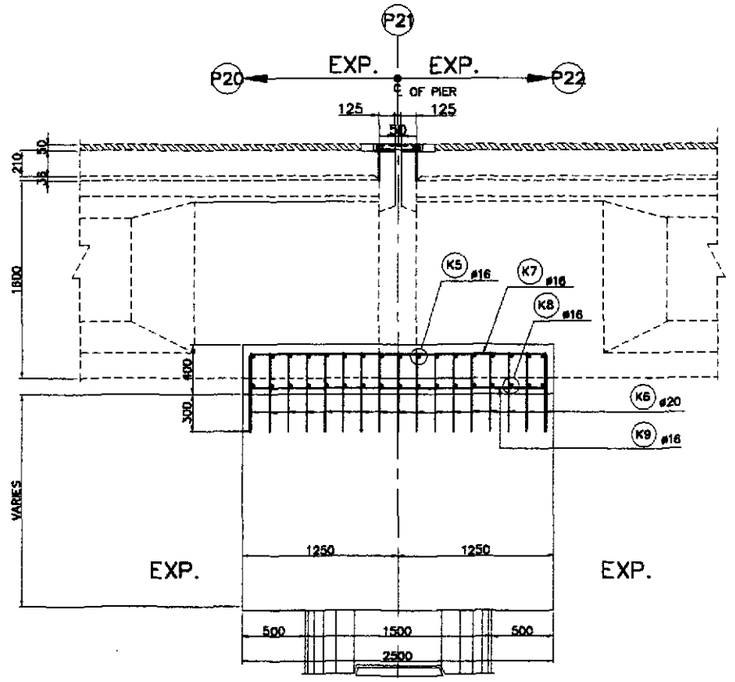
SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO.10 PAMPANGA RIVER BRIDGE
REINF. DETAILS OF SHEAR KEY AND END BLOCK (ABUT. A1 & ABUT. A2)
(INITIAL STAGE)

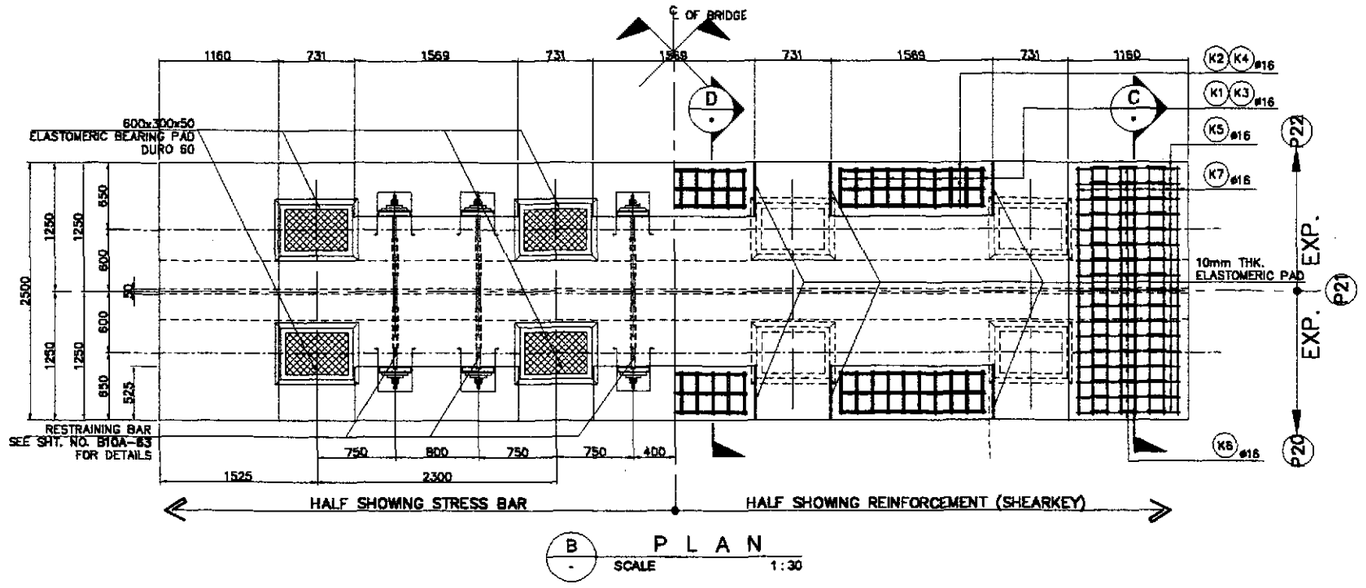
SHEET NO. : B10A-65



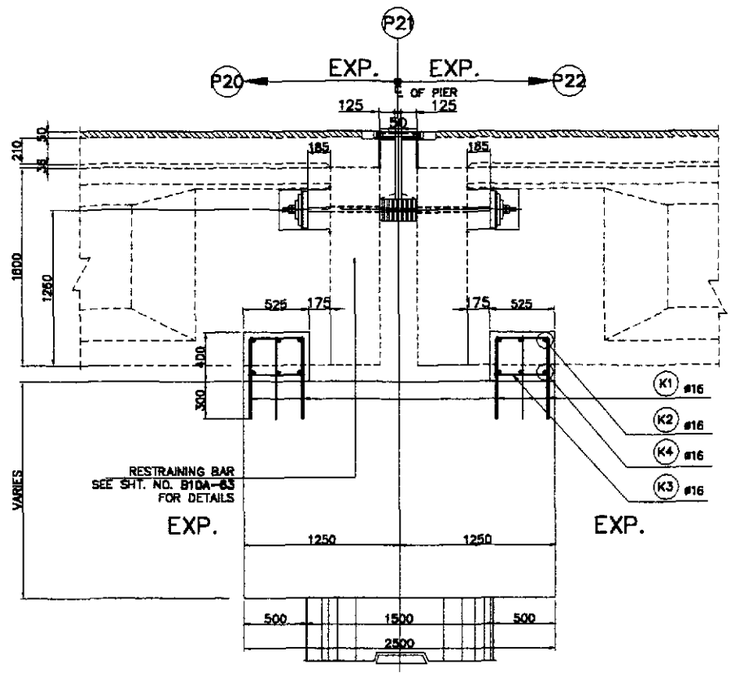
A ELEVATION
SCALE 1 : 30



C SECTION @ END BLOCK
SCALE 1 : 25



B P L A N
SCALE 1 : 30



D SECTION @ SHEAR KEY
SCALE 1 : 25

1 REINF. DETAILS OF SHEAR KEY & END BLOCK (EPX. PIERS)
SCALE AS SHOWN

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

	DATE	SIGNATURE
DESIGNED	10/8/02	F. M. SALAS
CHECKED	10/7/02	J. C. SANTOS
SUBMITTED	10/9/02	M. KOBAYASHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

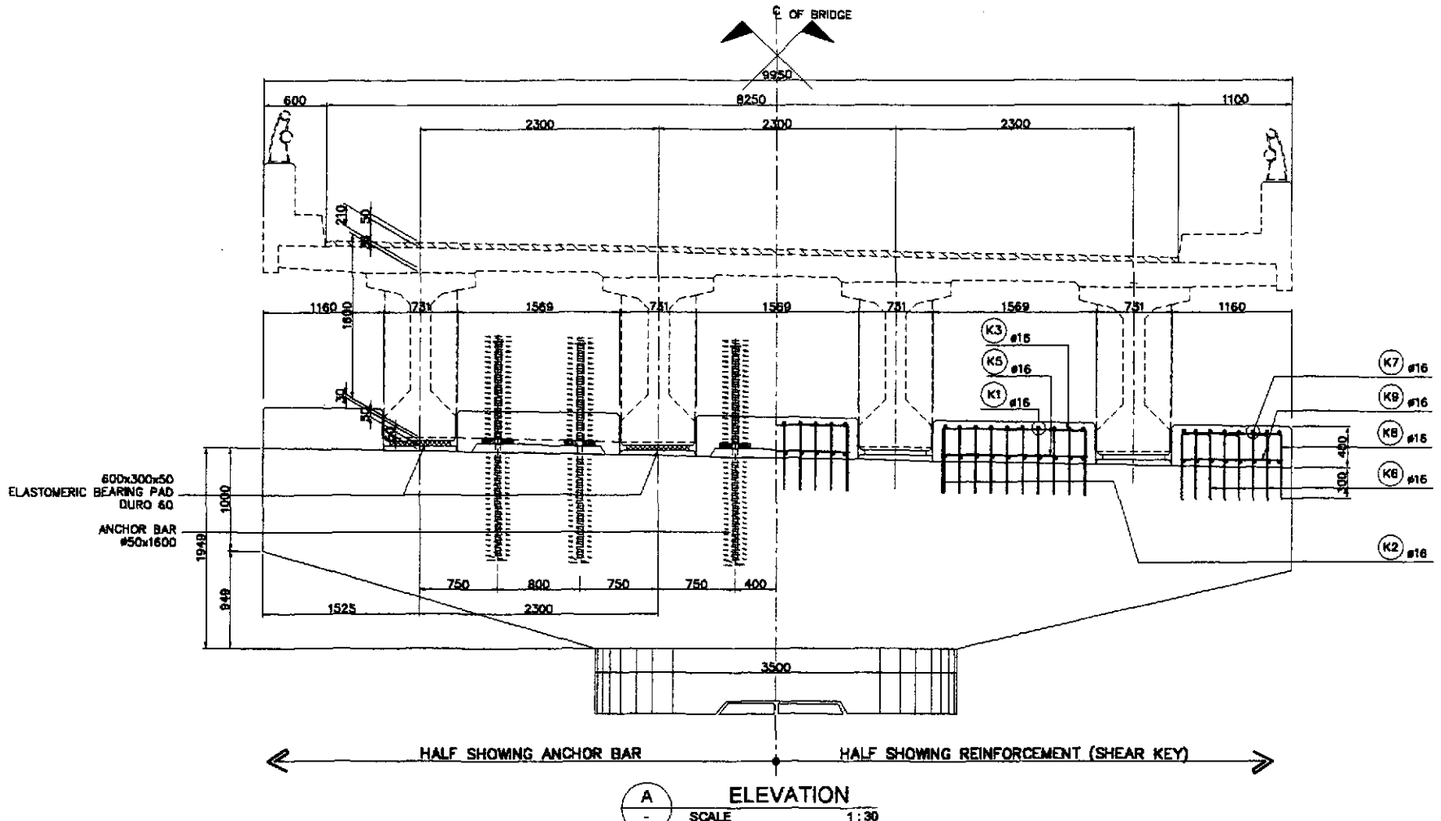
PUPL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridge Division	GILBERTO S. REYES Director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

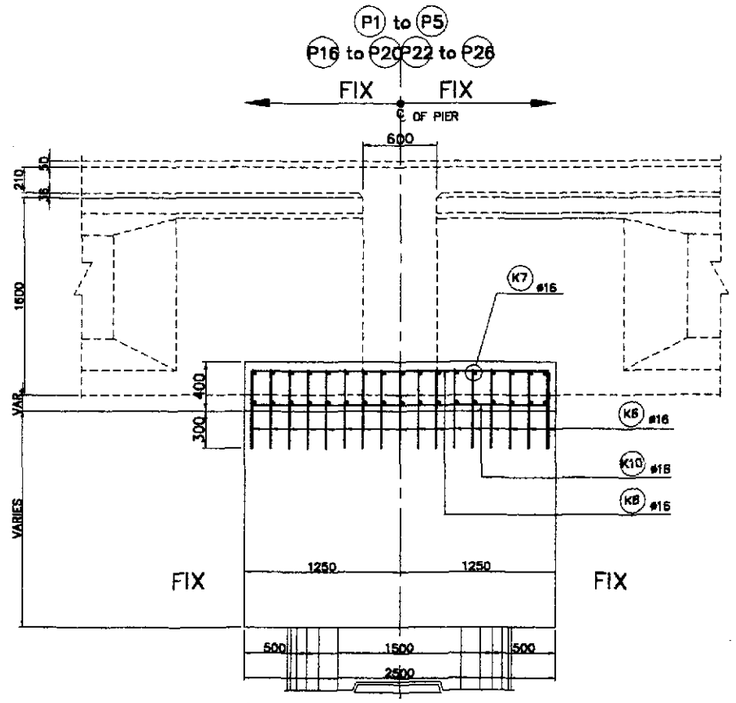
SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO.10 PAMPANGA RIVER BRIDGE
REINF. DETAILS OF SHEAR KEY & END BLOCK (EXP. PIERS)
(INITIAL STAGE)

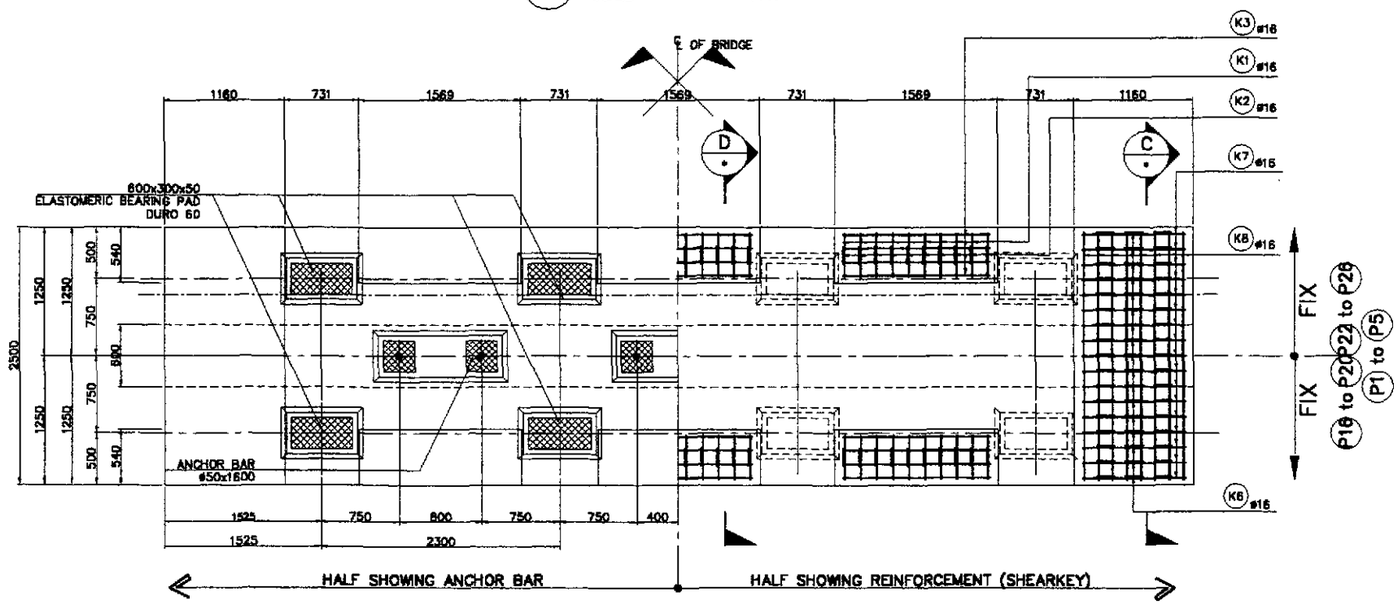
SHEET NO. : B10A-66



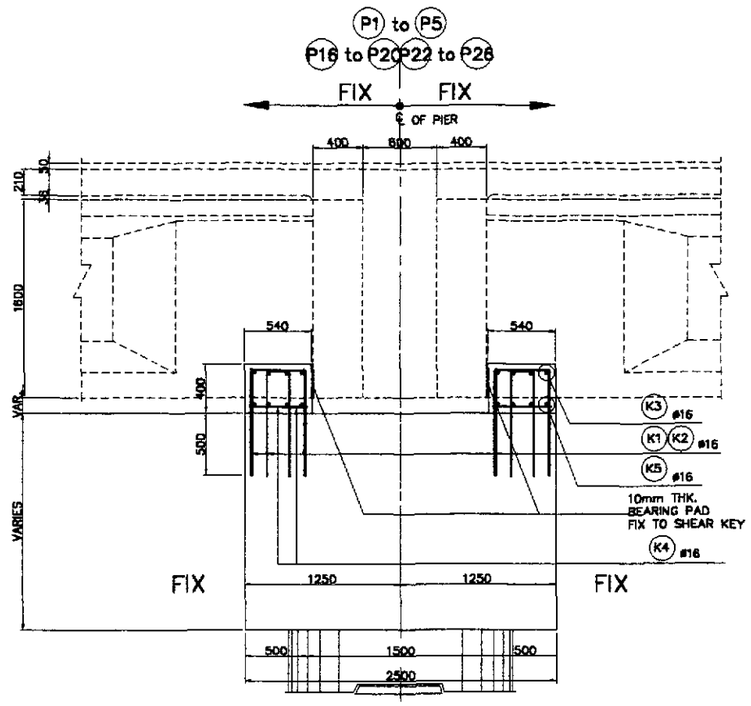
A — ELEVATION
SCALE 1:30



C — SECTION @ END BLOCK
SCALE 1:25



B — P L A N
SCALE 1:30



D — SECTION @ SHEAR KEY
SCALE 1:25

1 — REINF. DETAILS OF SHEAR KEY & END BLOCK (FIX PIERS)
SCALE AS SHOWN

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

	DATE	SIGNATURE
DESIGNED	12/18/02	F.M. SARAS
CHECKED	12/17/02	J.C. SANTOS
SUBMITTED	12/19/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

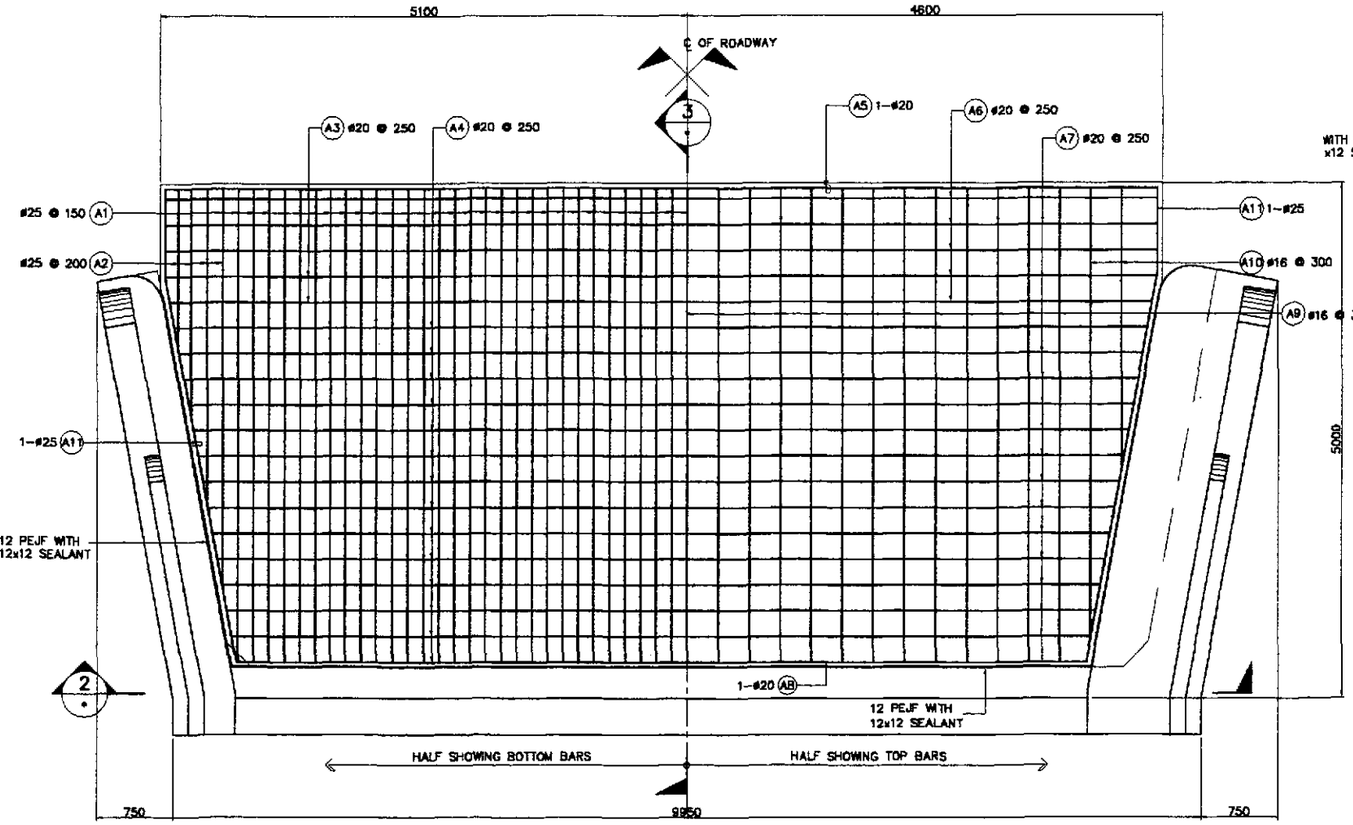
PUHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	ADRIANO M. DOROY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director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

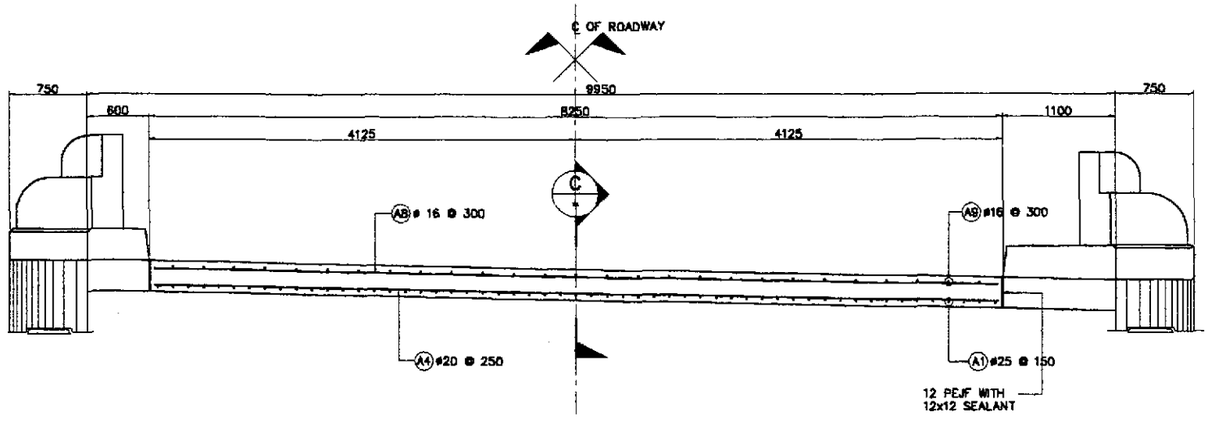
SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO.10 PAMPANGA RIVER BRIDGE
REINF. DETAILS OF SHEAR KEY & END BLOCK (FIX PIERS)
(INITIAL STAGE)

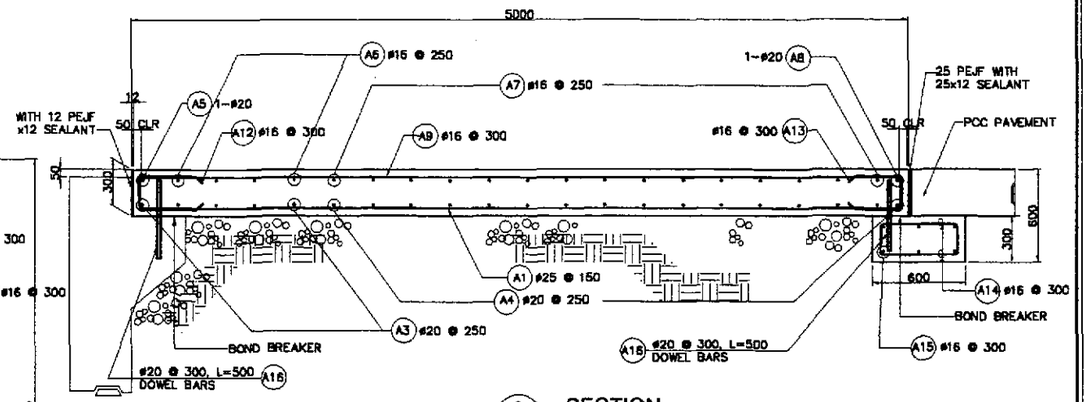
SHEET NO. : B10A-67



1 - PLAN
SCALE 1:30

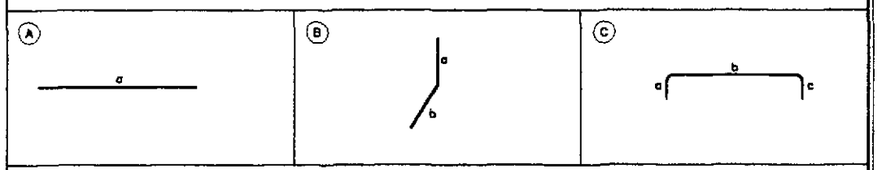


2 - SECTION
SCALE 1:30



3 - SECTION
SCALE 1:20

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 (ABUT. A1 & ABUT. A2)	A1	25	A	4900						4900	55	3.853		1038
	A2	25	A	4450 max / 1950 min						3200	8	3.853		99
	A3	20	A	9600						9600	5	2.466		118
	A4	20	A	9500 max / 8140 min						8820	16	2.466		348
	A5	20	A	9600						9600	1	2.466		24
	A6	16	A	9600						9600	4	1.578	61	
	A7	16	A	9500 max / 8140 min						8820	15	1.578	209	
	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	23	
	A11	25	B	1000	3950					4950	4	3.853		76
	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	56	1.578	94	
	A15	16	A	9600						9600	6	1.578	91	
	A16	20	A	500						500	61	2.466		75
										TOTAL WEIGHT =			772	1798

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

	DATE	SIGNATURE
DESIGNED	10/16/02	F.M. SILAS
CHECKED	10/17/02	J.C. SANTOS
SUBMITTED	10/19/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

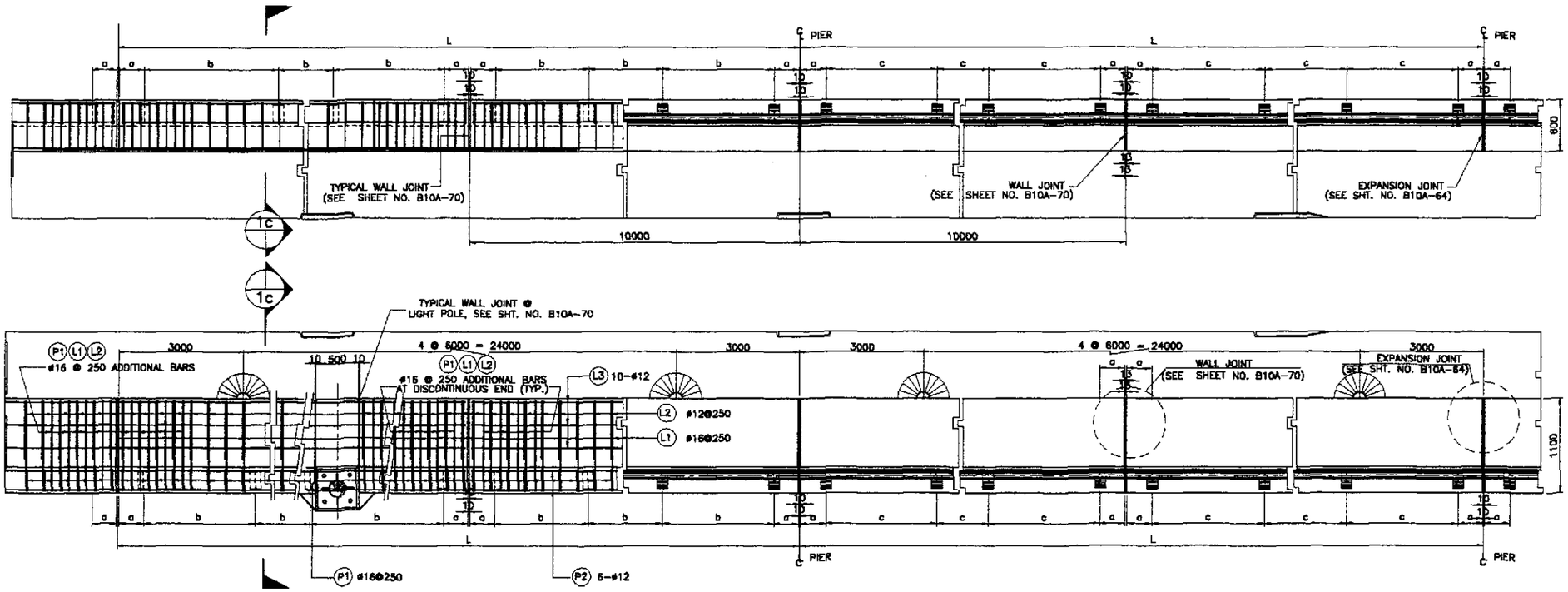
PUHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	ADRIANO M. DOROY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director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

SCALE :
AS SHOWN
FULL SIZE A1

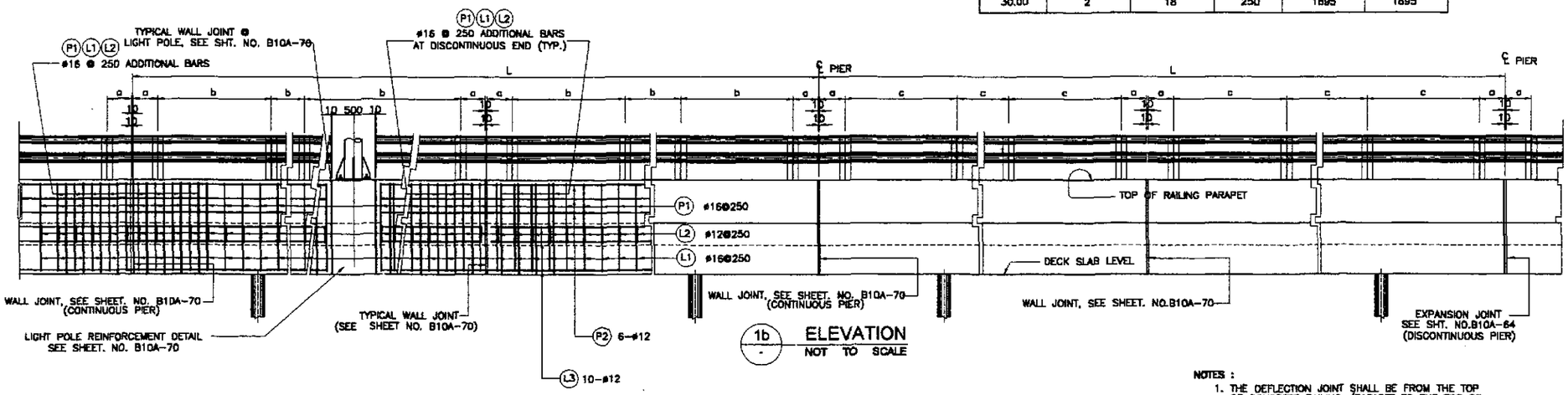
SHEET CONTENTS :
BRIDGE NO.10 PAMPANGA RIVER BRIDGE
APPROACH SLAB REINF. DETAILS
(ABUT. A1 & ABUT. A2)
(INITIAL STAGE)

SHEET NO. :
B10A-68



1a PLAN
NOT TO SCALE

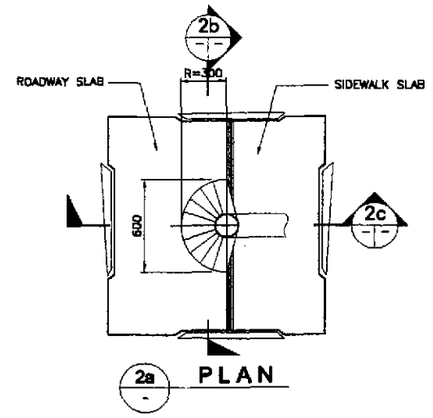
SCHEDULE OF RAILING					
SPAN LENGTH (m)	NO. OF DEFLECTION JT. INSIDE SPAN	NO. OF RAIL POST PER SIDE/SPAN	a (mm)	b (mm)	c (mm)
30.00	2	18	250	1895	1895

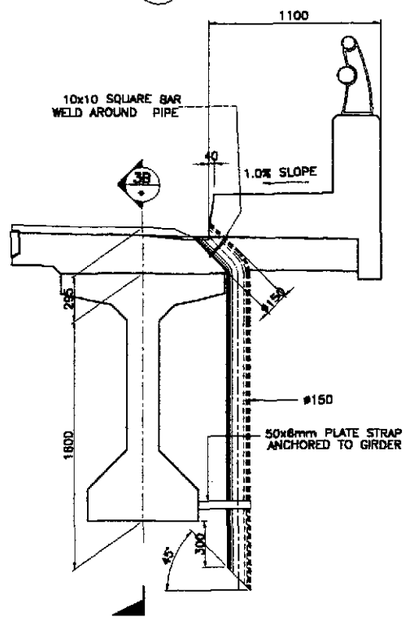


1b ELEVATION
NOT TO SCALE

1 SIDEWALK & RAILING DETAILS
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 DRAIN DETAILS
SCALE 1:20

JAPAN INTERNATIONAL COOPERATION AGENCY

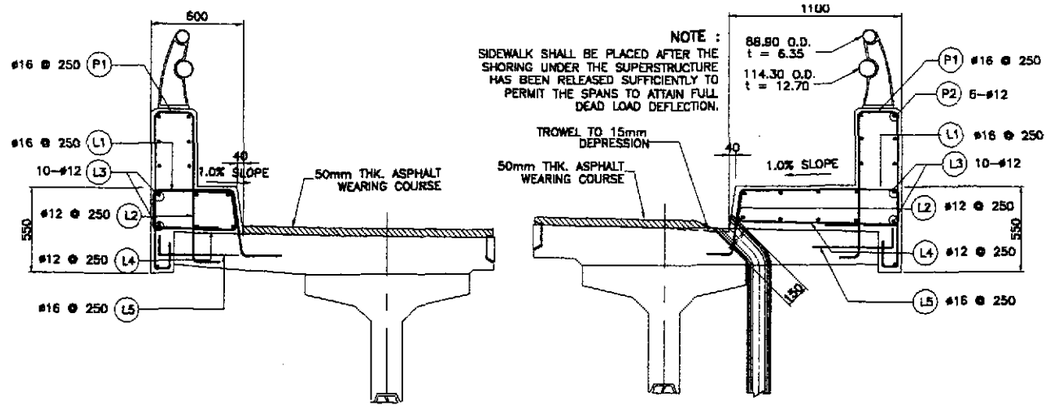
KATAHIRA & ENGINEERS INTERNATIONAL — YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/5/02	F.M. SALAS
CHECKED	10/7/02	J.S. SANTOS
SUBMITTED	10/9/02	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, Bridge Division	GILBERTO S. REYES, Director IV (OIC)	MANUEL M. BONOAN, Undersecretary	SIMEON A. DATUMANONG, Secretary

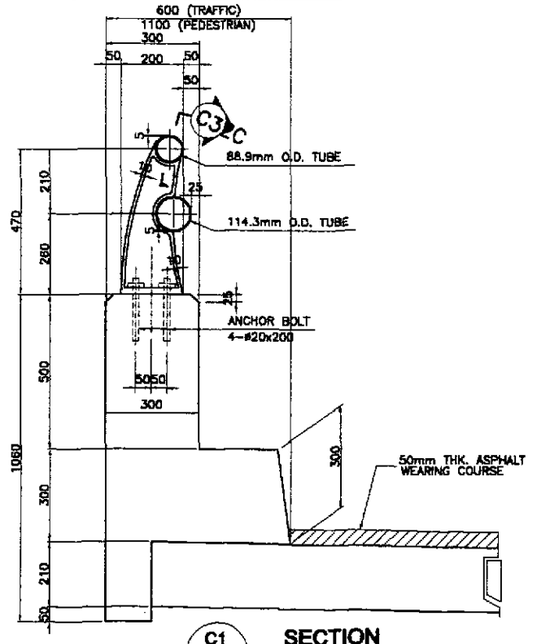
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE III	AS SHOWN FULL SIZE A1	BRIDGE NO.10 PAMPANGA RIVER BRIDGE SIDEWALK, RAILING AND DRAIN DETAILS (INITIAL STAGE)	B10A-69



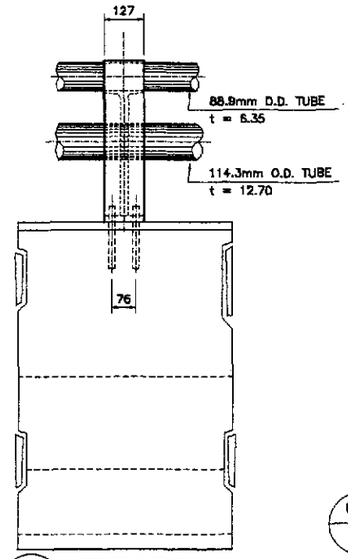
A1 SIDEWALK (TRAFFIC)
SCALE 1:20

A2 SIDEWALK (PEDESTRIAN)
SCALE 1:20

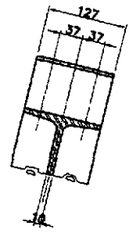
A SIDEWALK REINFORCEMENT DETAILS
SCALE AS SHOWN



C1 SECTION
SCALE 1:10

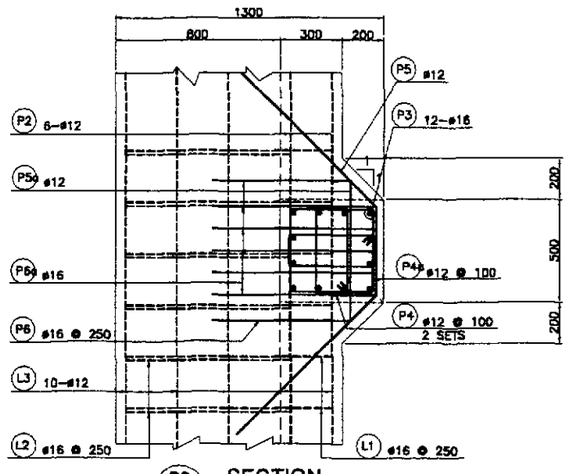


C2 ELEVATION
SCALE 1:10

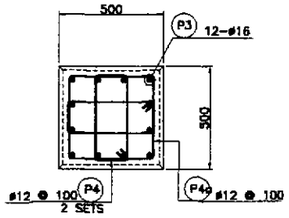


C3 SECTION
SCALE 1:5

C DETAILED DIMENSION OF RAILING
SCALE AS SHOWN

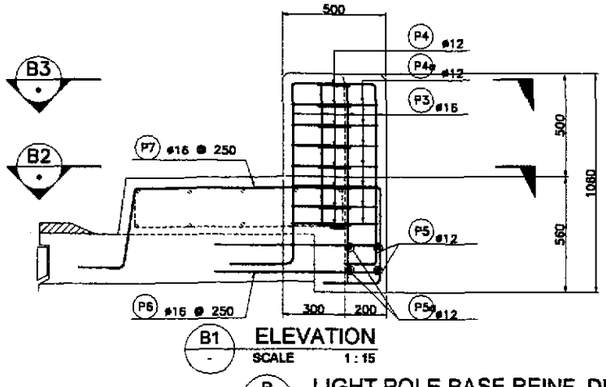


B2 SECTION
SCALE 1:15



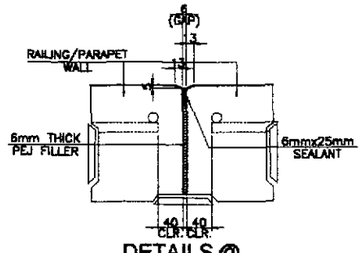
B3 SECTION
SCALE 1:15

NOTES :
1. FOR LOCATION OF JOINTS SEE DWG. NO. B10M–90.
2. PROVIDE DEFLECTION JOINTS AT EVERY CONTINUOUS PIER EXCEPT @ LIGHT POST POSITION. ALSO PROVIDE TWO (2) ADDITIONAL DEFLECTION JOINTS IN BETWEEN PIERS.
3. PROVIDE ADDITIONAL BARS ON BOTH SIDES FOR EVERY DEFLECTION AND EXPANSION JOINTS.

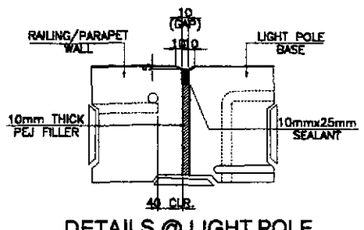


B1 ELEVATION
SCALE 1:15

B LIGHT POLE BASE REINF. DETAIL
SCALE AS SHOWN



DETAILS @ WALL JOINT

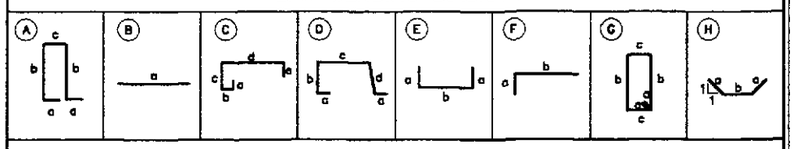


DETAILS @ LIGHT POLE BASE / WALL JOINT

D DETAILS OF DEFLECTION JOINTS
SCALE 1:5

1 REINF. OF SIDEWALK & LIGHT POLE BASE, RAILING DIMESIONS 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	Grade 60
PARAPET	P1	16	A	300	720	220			2260	288	1.578	1027	
	P2	12	B	9874					9874	36	0.888	316	
									TOTAL WEIGHT PER SPAN = 1343 Kgs.				
									TOTAL WEIGHT FOR 18 SPANS = 24174 Kgs.				
SIDEWALK PEDESTRIAN	L1	16	C	100	70	450	980	250	1860	144	1.578	423	
	L2	12	D	200	375	700	375		1850	144	0.888	237	
	L3	12	B	9874					9874	33	0.888	289	
	L4	12	E	200	980				1380	144	0.888	176	
	L5	12	F	200	400				600	144	0.888	77	
									TOTAL WEIGHT PER SPAN = 1202 Kgs.				
									TOTAL WEIGHT FOR 18 SPANS = 21636 Kgs.				
SIDEWALK TRAFFIC	L1	16	C	100	70	4750	480	250	5660	144	1.578	1288	
	L2	12	D	200	375	200	375		1350	144	0.888	173	
	L3	12	B	9874					9874	21	0.888	184	
	L4	12	E	220	480				880	144	0.888	113	
	L5	12	F	200	400				600	144	0.888	77	
									TOTAL WEIGHT PER SPAN = 1833 Kgs.				
									TOTAL WEIGHT FOR 18 SPANS = 32994 Kgs.				
LIGHT POST	P3	16	E	300	930				1530	12	1.578	29	
	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	1160	250	5520	3	0.888	17	
									TOTAL WEIGHT PER POST = 109 Kgs.				
									TOTAL WEIGHT FOR 18 POSTS = 1962 Kgs.				

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

	DATE	SIGNATURE
DESIGNED	10/18/02	F.M. SALAS
CHECKED	10/17/02	J.C. SANTOS
SUBMITTED	10/19/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

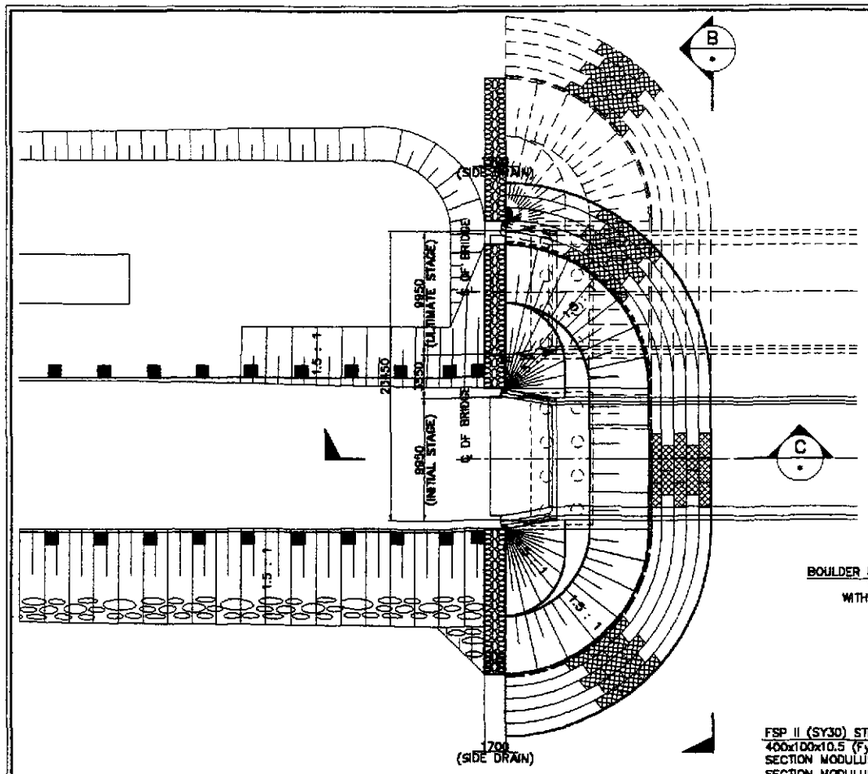
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO Project Director	ADRIANO M. DOROY Chief, Bridge Division	GILBERTO S. REYES Director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

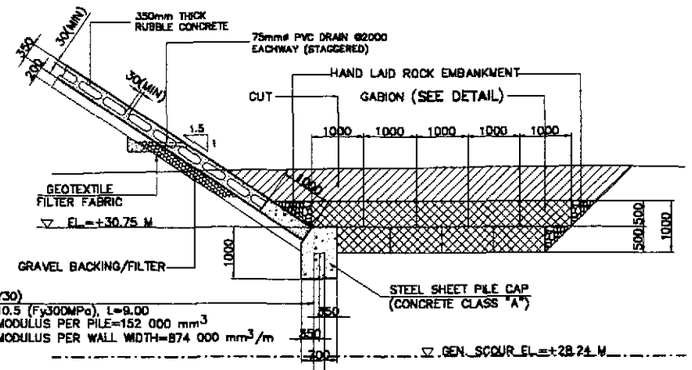
SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO.10 PAMPANGA RIVER BRIDGE
REINF. FOR SIDEWALK & LIGHT POLE BASE, RAILING DIMENSIONS DETAILS (INITIAL STAGE)

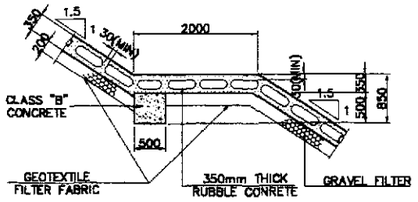
SHEET NO. : B10A-70



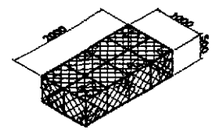
A PLAN
SCALE 1:250



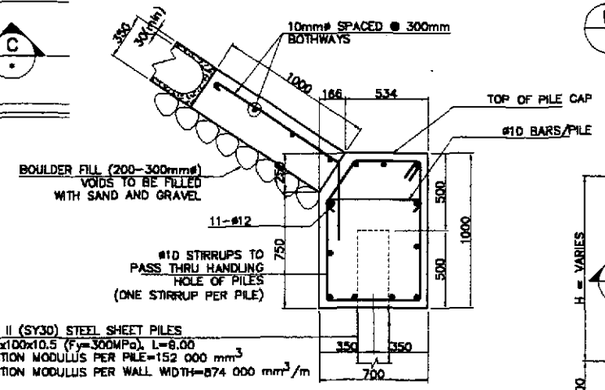
E DETAIL
SCALE 1:60



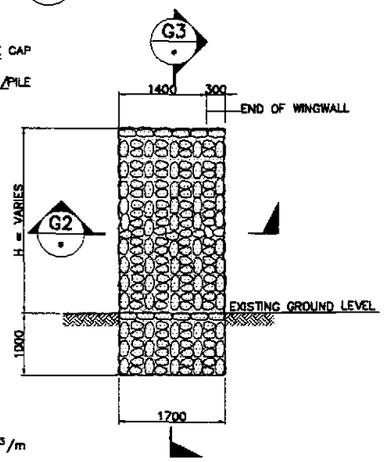
G BERM DETAIL
SCALE 1:50



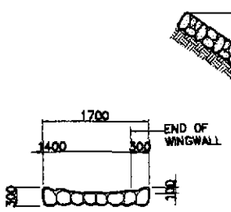
F GABION DETAIL
NOT TO SCALE



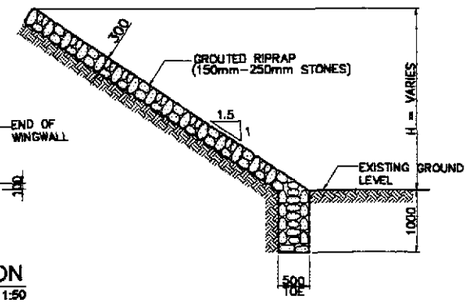
D CAPPING & SHEET PILE CONNECTION
SCALE 1:20



D1 DETAIL
SCALE 1:50

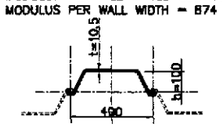


G2 SECTION
SCALE 1:50

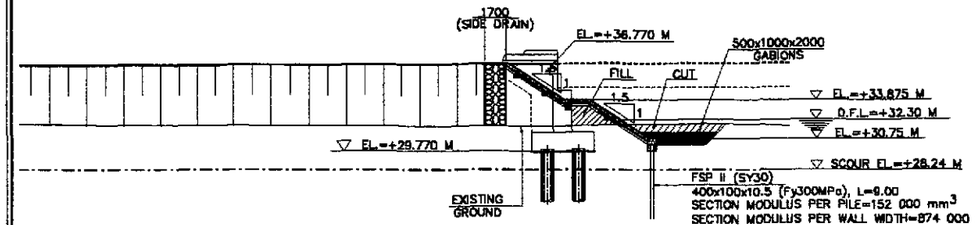


G3 SECTION THRU DRAIN
SCALE- 1:50

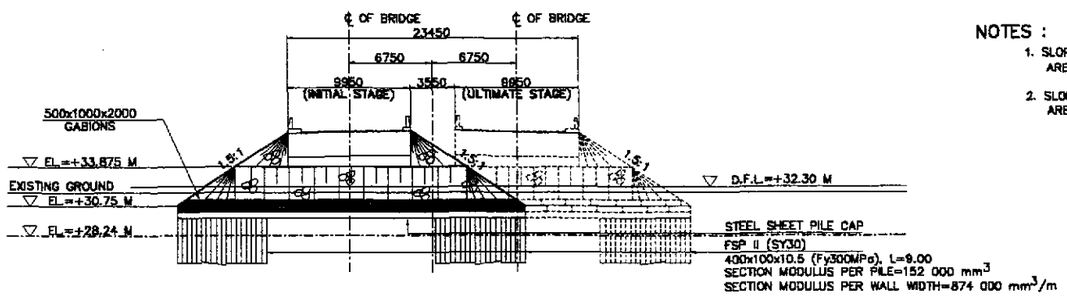
FSP II :
SECTION MODULUS PER PILE = 152 000 mm³
SECTION MODULUS PER WALL WIDTH = 874 000 mm³/m



SECTION OF SHEET PILE



B SECTION
SCALE 1:250



C 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.

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 T85.
   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 M83 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 ABUTMENT SLOPE PROTECTION (ABUT. A1)
SCALE AS SHOWN

JAPAN INTERNATIONAL COOPERATION AGENCY

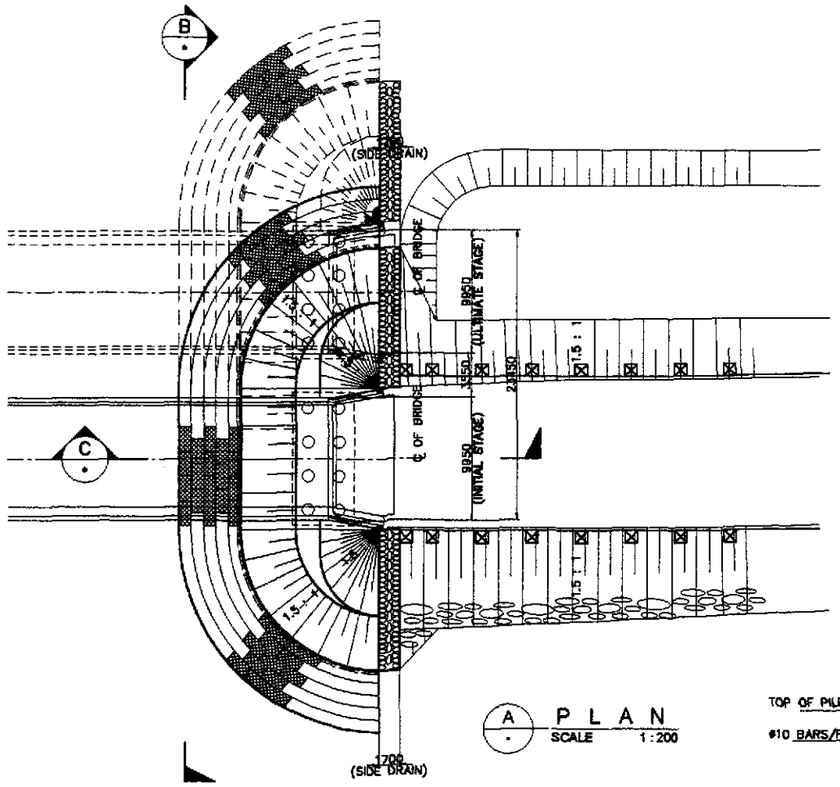
KATAHIRA & ENGINEERS INTERNATIONAL — YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/8/02	F. M. SALAS
CHECKED	10/17/02	J. C. SANTOS
SUBMITTED	12/19/02	TEAM LEADER

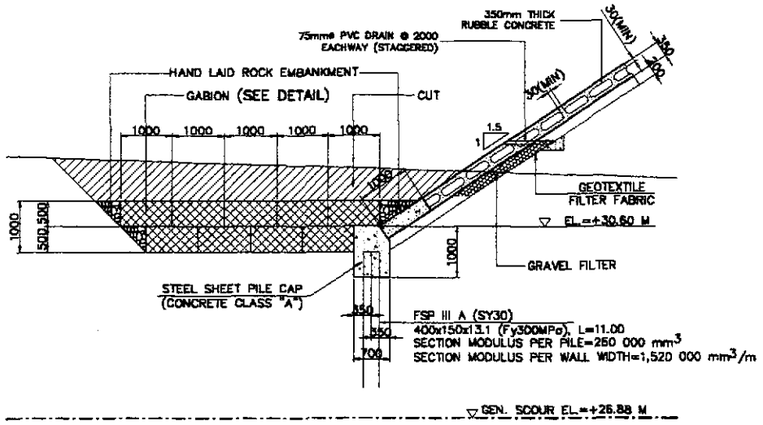
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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, Project Director	PERFECTO L. ZAPLAN JR., Chief, Hydraulics Division (OIC)	GILBERTO S. REYES, Director IV (OIC)	MANUEL M. BONOAN, Undersecretary	SIMEON A. DATUMANONG, Secretary

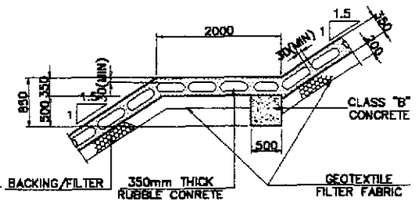
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE III	AS SHOWN FULL SIZE A1	BRIDGE NO.10 PAMPANGA RIVER BRIDGE ABUTMENT SLOPE PROTECTION DETAILS (ABUT. A1) (INITIAL STAGE)	B10A-71



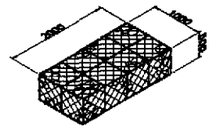
A PLAN
SCALE 1:200



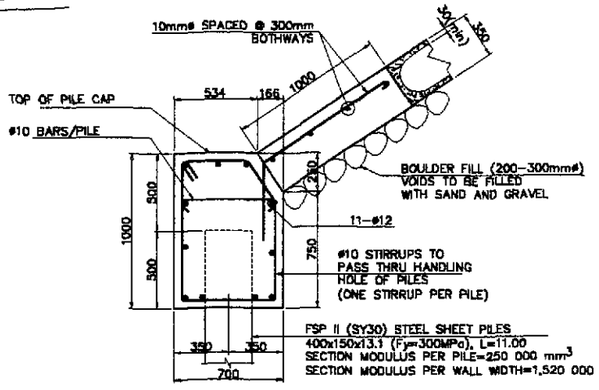
E DETAIL
SCALE 1:50



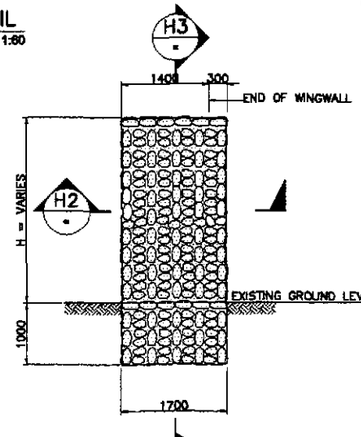
G BERM DETAIL
SCALE 1:50



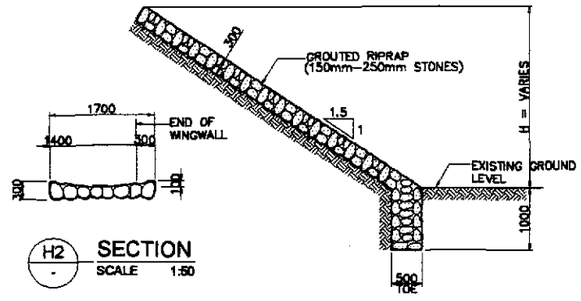
F GABION DETAIL
NOT TO SCALE



D CAPPING & SHEET PILE CONECTION
SCALE 1:20



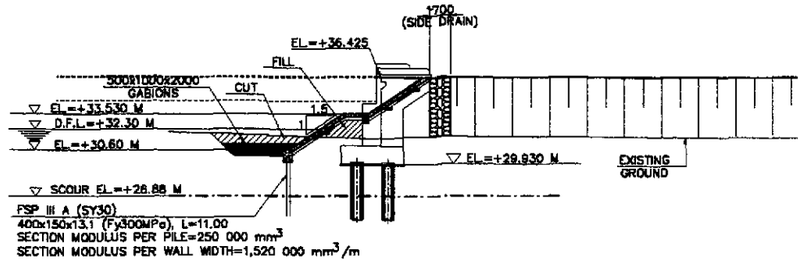
H1 DETAIL
SCALE 1:50



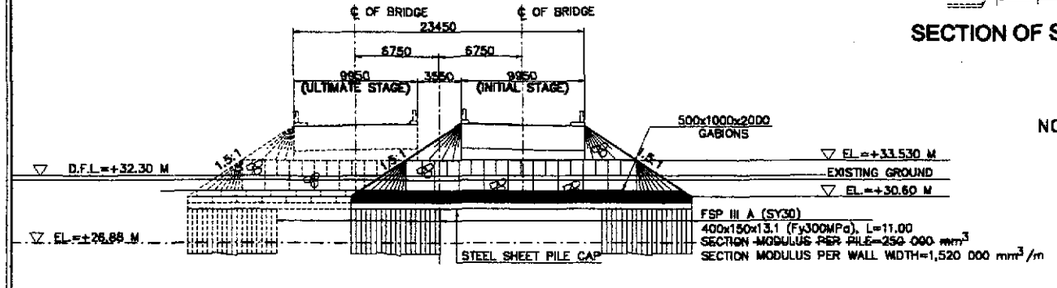
H2 SECTION
SCALE 1:50

H3 SECTION THRU DRAIN
SCALE 1:50

H SIDE DRAIN DETAIL
SCALE AS SHOWN

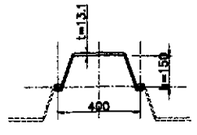


B SECTION
SCALE 1:250



C SECTION
SCALE 1:100

FSP III A :
SECTION MODULUS PER PILE = 250 000 mm3
SECTION MODULUS PER WALL WIDTH = 1,520 000 mm3/m



SECTION OF SHEET PILE

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.

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

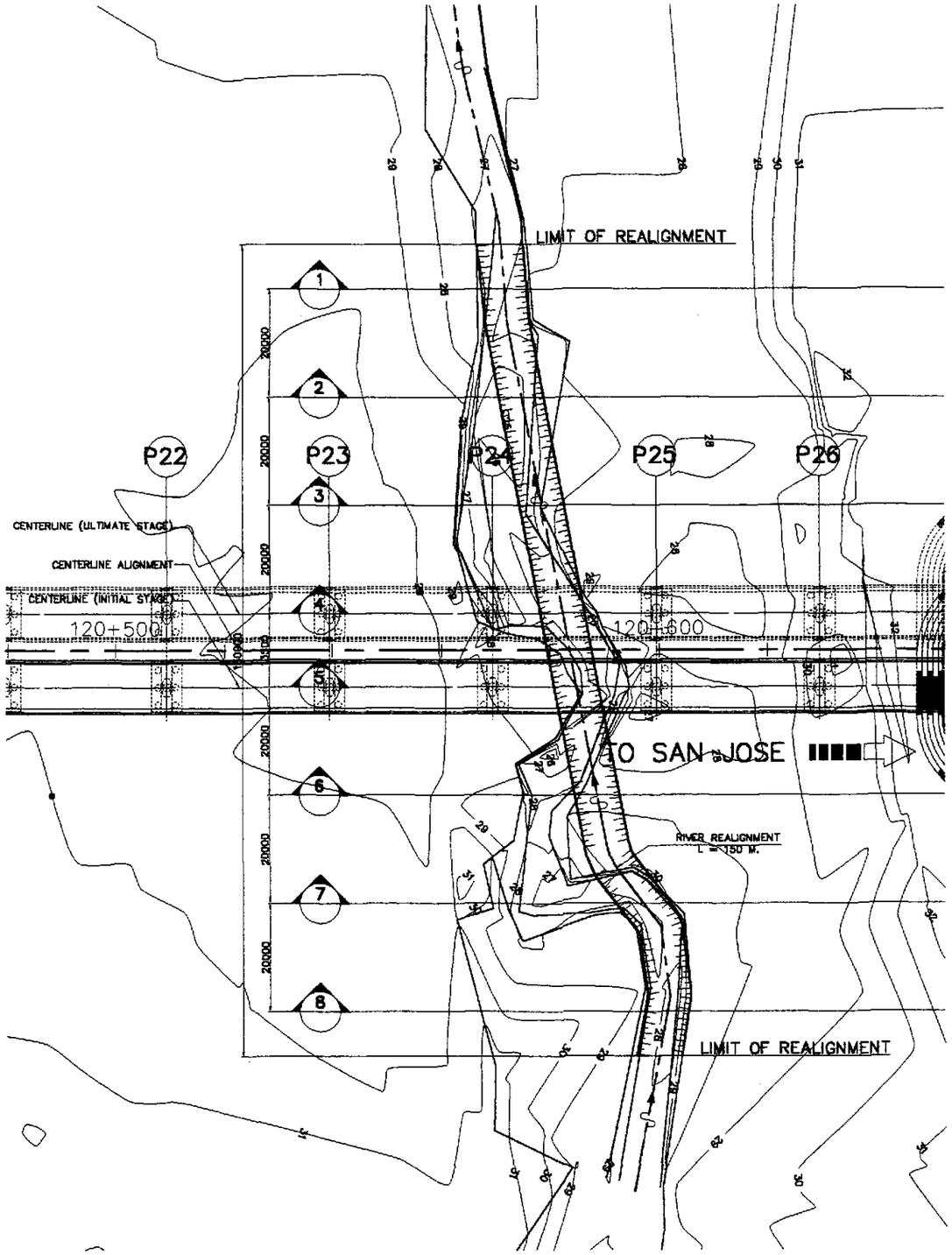
JICA
JAPAN INTERNATIONAL COOPERATION AGENCY
KEI KATAHIRA & ENGINEERS INTERNATIONAL
YEO YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/8/02	F. M. SALAS
CHECKED	10/17/02	J. C. SANTOS
SUBMITTED	10/19/02	K. HOSHI TEAM LEADER

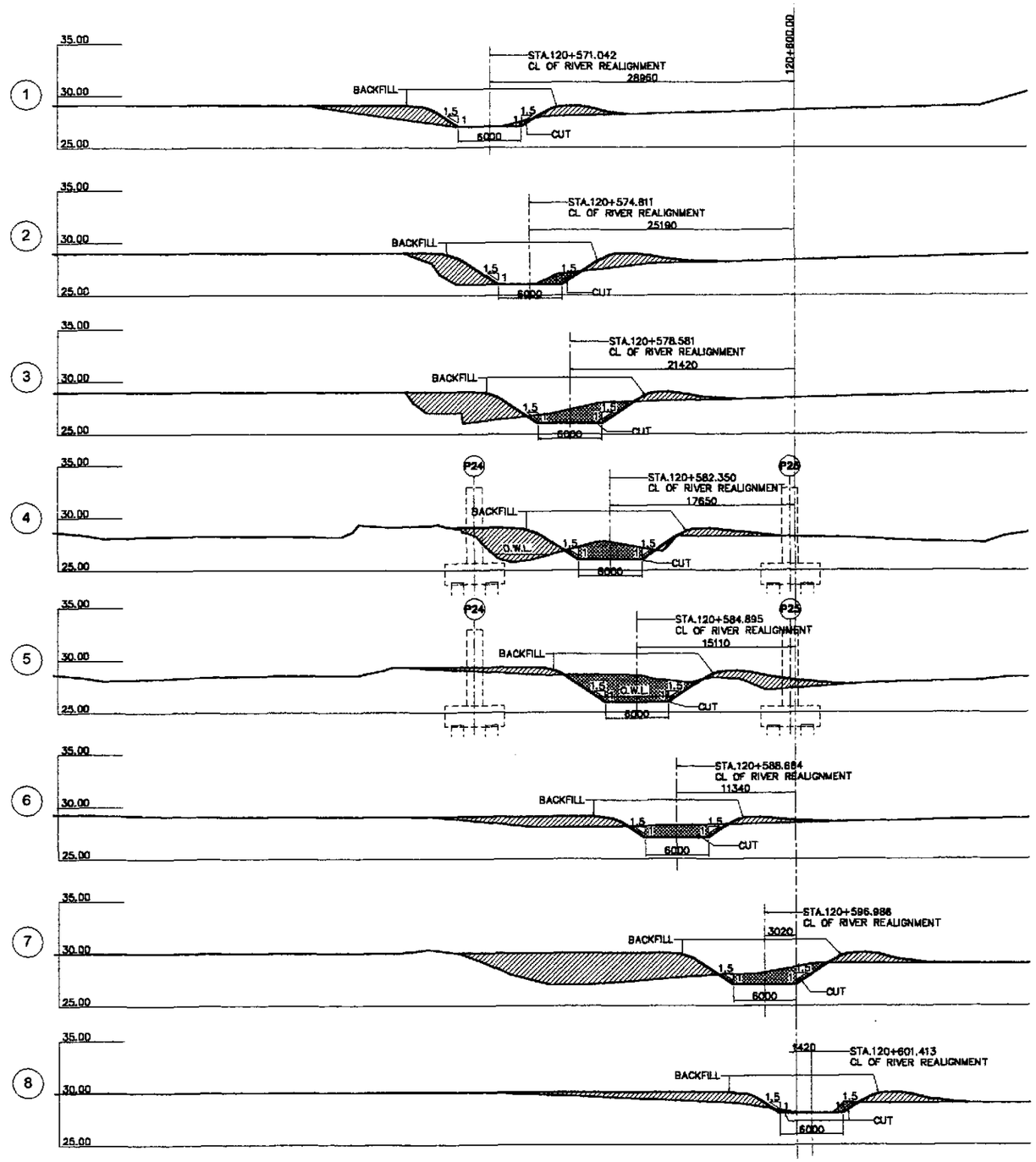
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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	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 III	AS SHOWN FULL SIZE A1	BRIDGE NO.10 PAMPANGA RIVER BRIDGE ABUTMENT SLOPE PROTECTION DETAILS (ABUT. A2) (INITIAL STAGE)	B10A-72



A — PLAN OF RIVER REALIGNMENT
SCALE 1:500



B — RIVER SECTIONS
SCALE 1:250

EARTHWORK QUANTITIES	
ITEM	VOLUME (m^3)
CUT	1,358.00
BACKFILL	3,717.00

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

	DATE	SIGNATURE
DESIGNED	10/8/02	F. M. SALAS
CHECKED	10/12/02	R. C. SANTOS
SUBMITTED	10/19/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
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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	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 III

SCALE : AS SHOWN
FULL SIZE A1

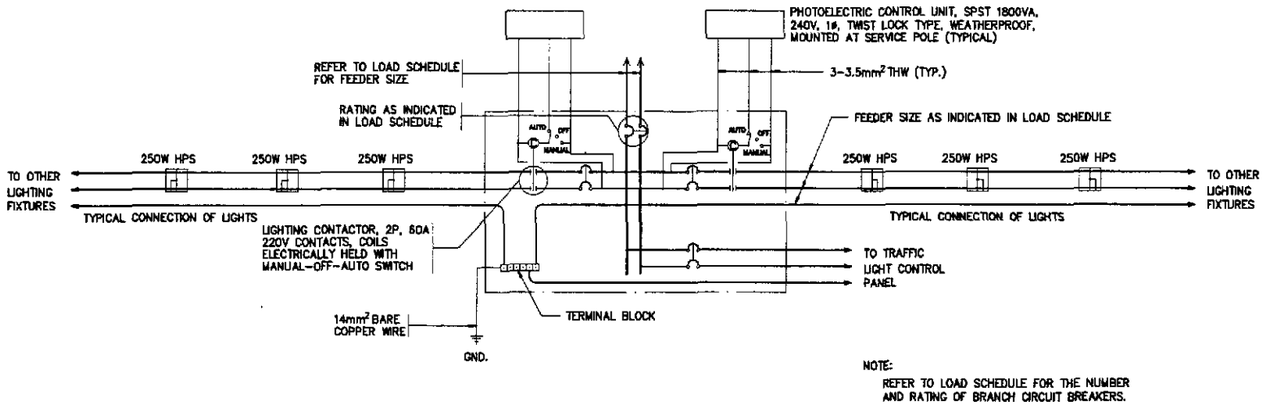
SHEET CONTENTS :
BRIDGE NO. 10 PAMPANGA RIVER BRIDGE
RIVER REALIGNMENT DETAILS
(INITIAL STAGE)

SHEET NO. : B10A-73

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
- (M) KILOWATT HOUR METER, SINGLE-PHASE, 240V, 60 Hz
- CIRCUIT HOMERUN



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

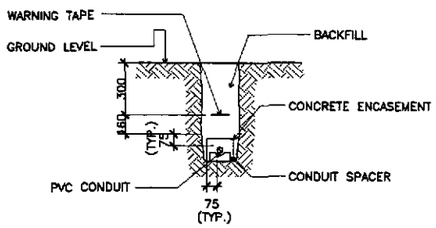
2 ES-01 **SCHEMATIC CONTROL DIAGRAM**
SCALE 1-20

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. MAXIMUM 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. 7403884 P.E.E. NO. 2913
ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
TAX. 108-382-378

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

	DATE	SIGNATURE
DESIGNED	10/8/02	E. ANTIOQUIA
CHECKED	10/17/02	E. ANTIOQUIA
SUBMITTED	10/19/02	M. KUCHO, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

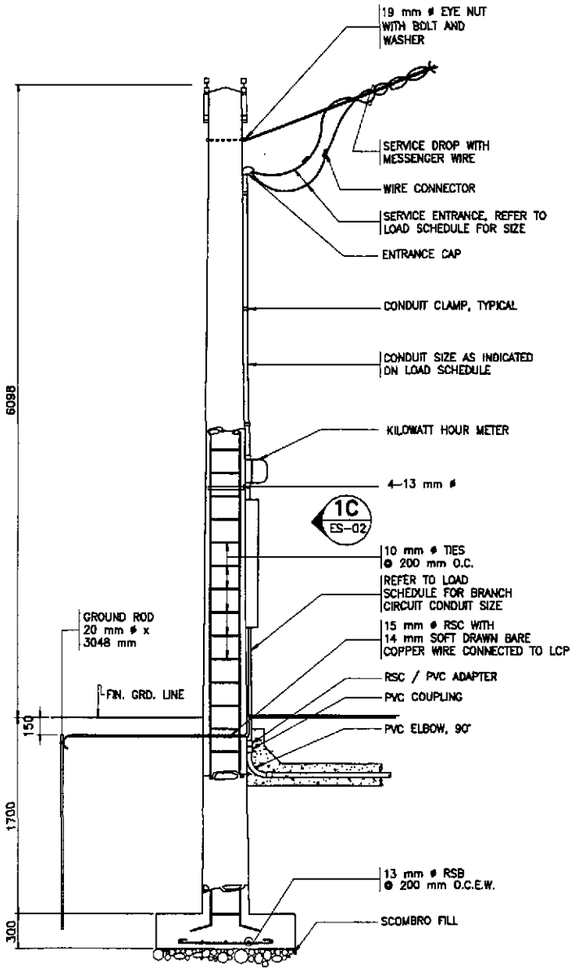
PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	FE M. BARRIENTOS	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director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

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

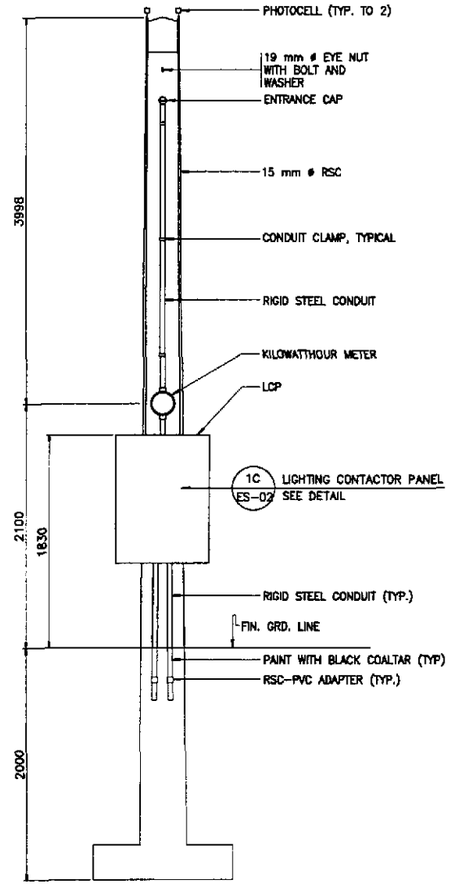
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
NOTES & LEGENDS, SCHEMATIC CONTROL DIAG. & DUCT SECTION (INITIAL STAGE)

SHEET NO. : ES-01



1A ES-02 SECTION



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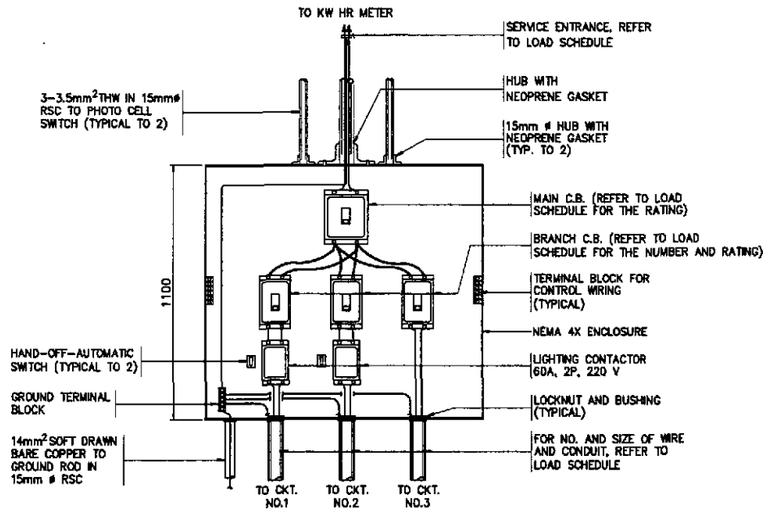
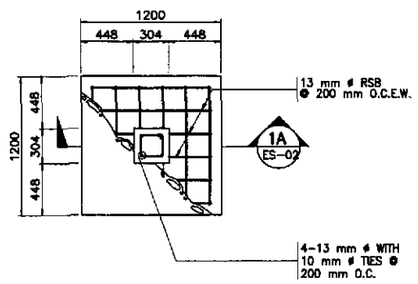


1C ES-02 DETAIL
SCALE 1:20



1D ES-02 FOOTING PLAN

1 ES-02 SERVICE POLE DETAILS
SCALE 1:20

ERNESTO M. ANTIOQUIA
ENGINEER
PTR NO. 7403884 P.E.E. NO. 2913
ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
T.I.N. 109-382-379

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

	DATE	SIGNATURE
DESIGNED	10/8/02	E. ANTIOQUIA
CHECKED	10/7/02	E. ANTIOQUIA
SUBMITTED	10/19/02	M. ARUGAY, 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	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 :
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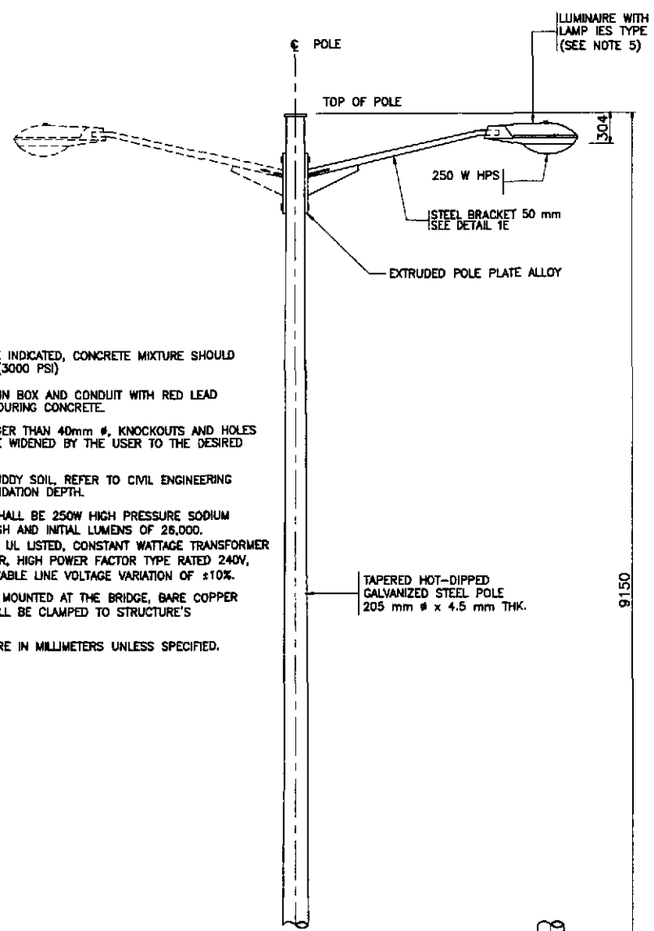
CABANATUAN BYPASS - CONTRACT PACKAGE III

SCALE : AS SHOWN FULL SIZE A1

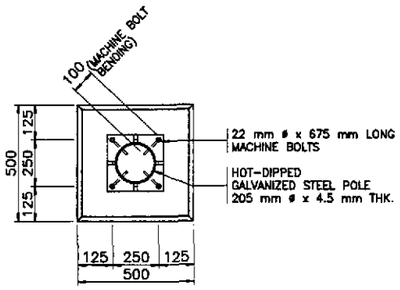
SHEET CONTENTS : SERVICE POLE DETAILS (INITIAL STAGE)

SHEET NO. : ES-02

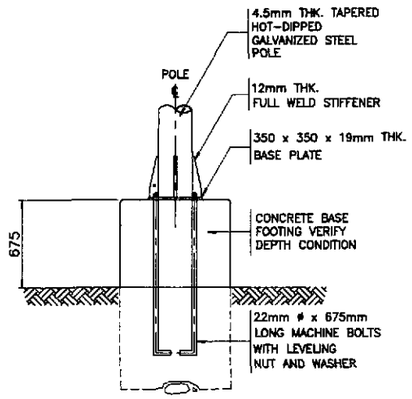


NOTES:

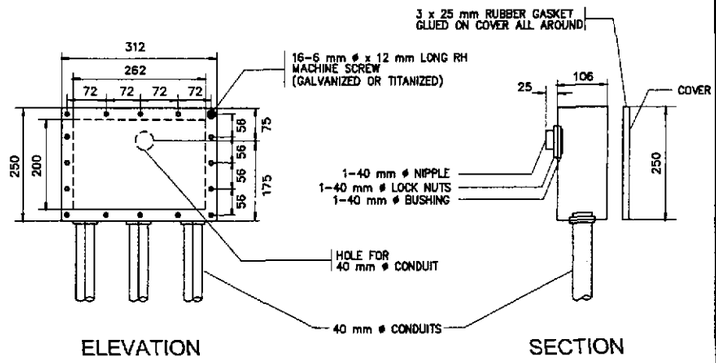
1. UNLESS OTHERWISE INDICATED, CONCRETE MIXTURE SHOULD BE 211 kg./cm (3000 PSI)
2. PAINT ALL JOINTS IN BOX AND CONDUIT WITH RED LEAD PRIMER BEFORE POURING CONCRETE.
3. FOR CONDUIT LARGER THAN 40mm ø, KNOCKOUTS AND HOLES SHALL HAVE TO BE WIDENED BY THE USER TO THE DESIRED DIAMETER.
4. FOR LOAM AND MUDDY 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 26,000. 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

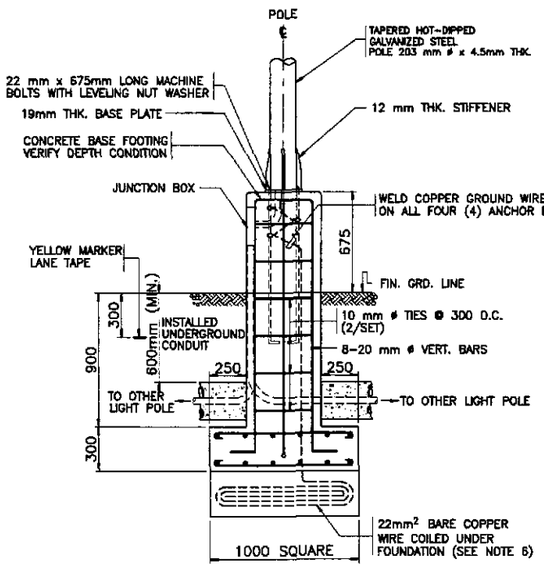


ELEVATION



ELEVATION SECTION

1B ES-03 BASE PLATE DETAIL



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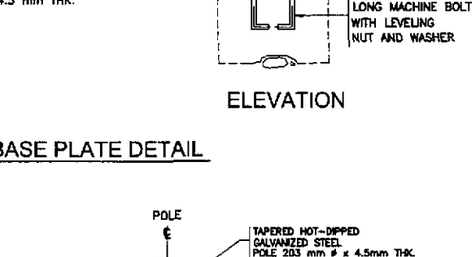
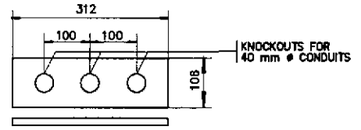


PLAN



SECTION

MATERIAL:

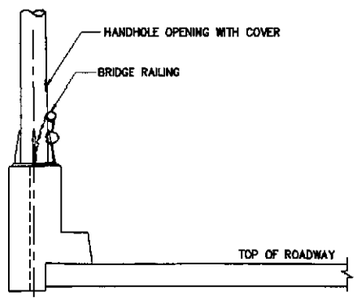
JUNCTION BOX – 50 mm THICK CAST ALUMINUM FOR BOX AND COVER

ANCHOR BOLT – ASTM A-36

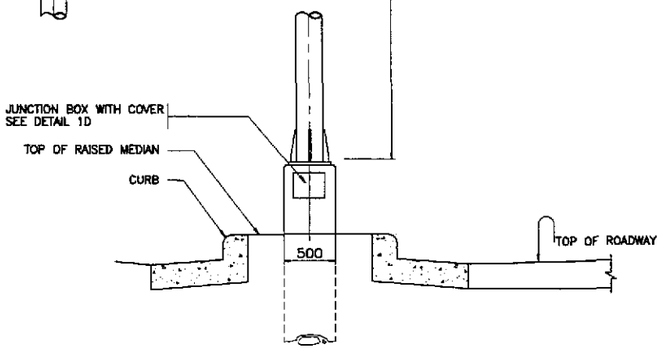
FINISH:

ANCHOR BOLT – ASTM A-153

1D ES-03 JUNCTION BOX DETAILS



BRIDGE LEVEL



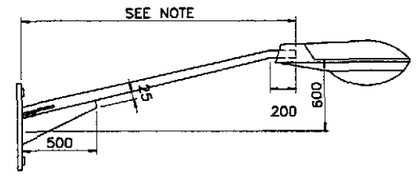
GROUND LEVEL

POLE SHAFT

LENGTH	BASE DIA.	POLE TOP DIA.
9000	205	115

1A ES-03 ELEVATION

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. 7403984 P.E.C. NO. 2913
ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
T.I.N. 106-382-378

JAPAN INTERNATIONAL COOPERATION AGENCY

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

	DATE	SIGNATURE
DESIGNED	10/8/02	E. ANTIOQUIA
CHECKED	10/17/02	E. ANTIOQUIA
SUBMITTED	10/18/02	E. ANTIOQUIA 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	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 :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)
CABANATUAN BYPASS - CONTRACT PACKAGE III

SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
STREET LIGHT POLE DETAILS
(INITIAL STAGE)

SHEET NO. :
ES-03

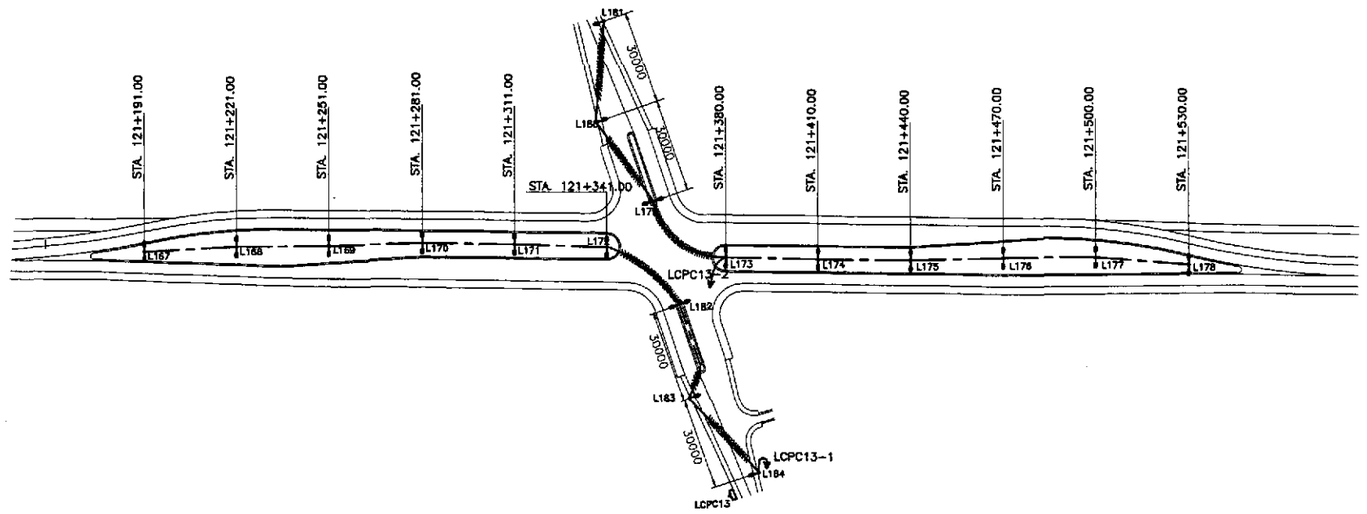
NOTE:

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 : LCPC13 — LIGHTING CONTACTOR — ENCLOSURE : NEMA 4X
FEED : TOP — PANEL NO.13 — 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	L184 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L183 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L182 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L172 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L171 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L170 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L169 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L168 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L167 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	SUB–TOTAL		4960	22.56	2–30 mm²THW & 1–8.0 mm²TW(G) IN 40 mmø CONDUIT	30	100	2
2	L173 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L174 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L175 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L176 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L177 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L178 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L179 (2 x 250 W HPS)	220	620	2.82	SEE NOTE 1			
	L180 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L181 (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		13370	60.12	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. 7403684 — P.E.E. NO. 2913
ISSUED ON 01/02/2002 — ISSUED AT CABUYAO, LAGUNA
T.I.N. 108–382–379

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

	DATE	SIGNATURE
DESIGNED	10/8/02	E. ANTIOQUIA
CHECKED	10/17/02	E. ANTIOQUIA
SUBMITTED	12/19/02	M. Kuroda TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

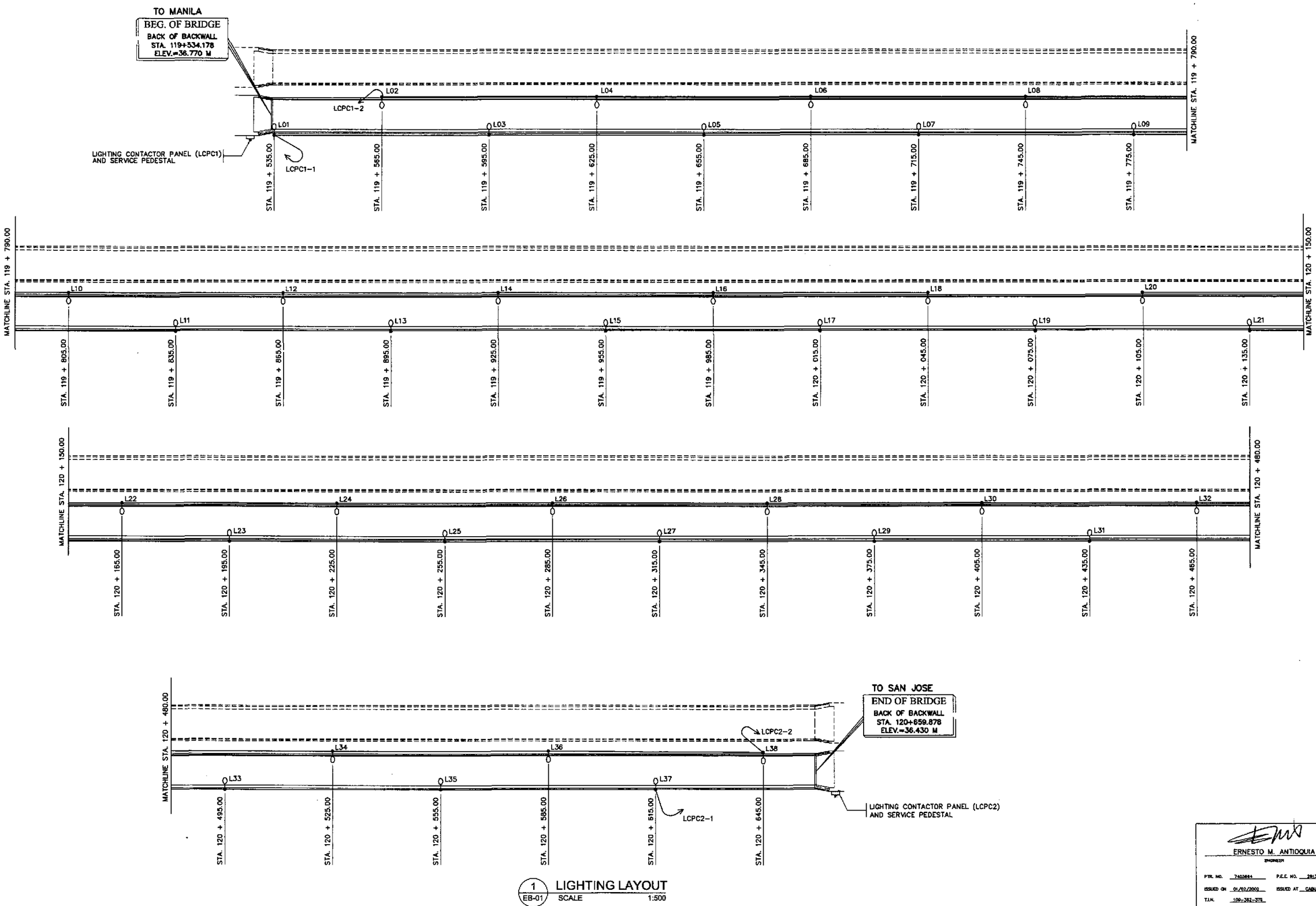
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	FE M. BARRIENTOS	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director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

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

SCALE : 1:1000 FULL SIZE A1

SHEET CONTENTS :
ROADWAY LIGHTING PLAN AND LOAD SCHEDULE
INTERSECTION A-21 (INITIAL STAGE)

SHEET NO. : EI-01



1 EB-01 LIGHTING LAYOUT
SCALE 1:500

ERNESTO M. ANTIOQUIA
ENGINEER
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ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
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KATAHIRA & ENGINEERS INTERNATIONAL
YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/18/02	E. ANTIOQUIA
CHECKED	10/17/02	E. ANTIOQUIA
SUBMITTED	10/24/02	M. KUDA TEAM LEADER

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CABANATUAN BYPASS - CONTRACT PACKAGE III

SCALE :
AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO. 10 PAMPANGA RIVER BRIDGE
ROADWAY LIGHTING PLAN
(INITIAL STAGE)

SHEET NO. :
EB-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 SCHEDULES

PANEL ID : LCPC1
FEED : TOP
MOUNTING : SURFACE

LIGHTING CONTACTOR PANEL NO.1

ENCLOSURE : NEMA 4X
MIN. KAIC : 10
MAIN CB : 40 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			
	L03 (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			
	L07 (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			
	L11 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L13 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L15 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L17 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L19 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	SUB-TOTAL		3100	14.1	2–30 mm² THW & 1–8.0 mm² TW(G) IN 40 mmø CONDUIT	30	100	2
2	L02 (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			
	L06 (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			
	L10 (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			
	L14 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L16 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L18 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	SUB-TOTAL		2790	12.69	2–30 mm² THW & 1–8.0 mm² TW(G) IN 40 mmø CONDUIT	30	100	2
	TOTAL		5890	26.79	2–38 mm² THW IN 40 mmø CONDUIT	40	100	2

PANEL ID : LCPC2
FEED : TOP
MOUNTING : SURFACE

LIGHTING CONTACTOR PANEL NO.2

ENCLOSURE : NEMA 4X
MIN. KAIC : 10
MAIN CB : 40 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	L37 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L35 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L33 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L31 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L29 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L27 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L25 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L23 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L21 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	SUB-TOTAL		2790	12.69	2–30 mm² THW & 1–8.0 mm² TW(G) IN 40 mmø CONDUIT	30	100	2
2	L38 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L36 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L34 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L32 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L30 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L28 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L26 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L24 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L22 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	L20 (1 x 250 W HPS)	220	310	1.41	SEE NOTE 1			
	SUB-TOTAL		3100	14.10	2–30 mm² THW & 1–8.0 mm² TW(G) IN 40 mmø CONDUIT	30	100	2
	TOTAL		5890	26.79	2–38 mm² THW IN 40 mmø CONDUIT	40	100	2

ERNESTO M. ANTIOQUIA
ENGINEER
PTR. NO. 7403644 P.E.C. NO. 2913
ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
T.I.N. 109-382-379

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

	DATE	SIGNATURE
DESIGNED	10/8/02	E. ANTIOQUIA
CHECKED	10/17/02	E. ANTIOQUIA
SUBMITTED	10/19/02	M. KOCHI / 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	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

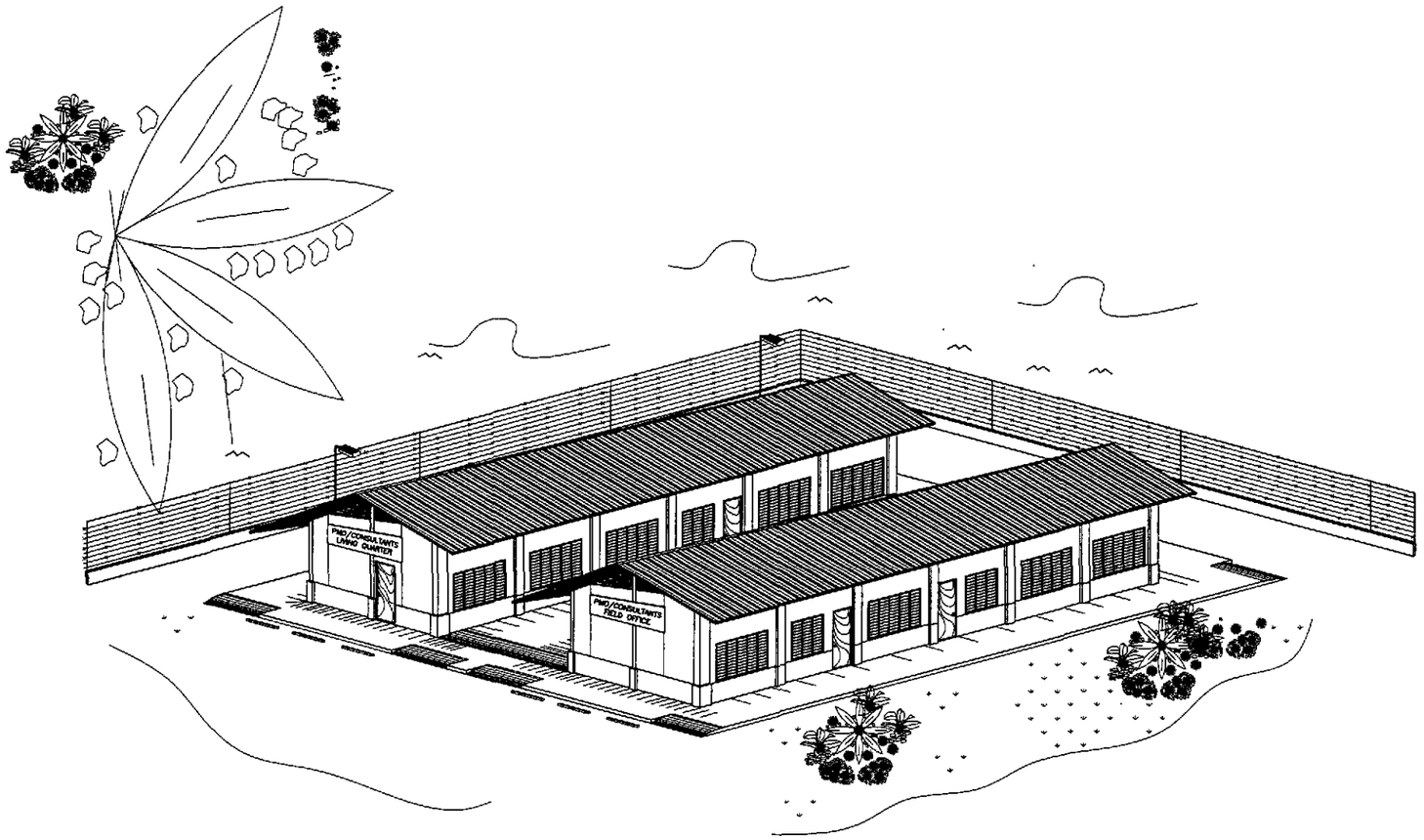
PROJECT AND LOCATION :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)
CABANATUAN BYPASS - CONTRACT PACKAGE III

SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
BRIDGE NO.10 PAMPANGA RIVER BRIDGE
LOAD SCHEDULE
(INITIAL STAGE)

SHEET NO. :
EB-02

ENGR'S FIELD OFFICE & LIVING QUARTERS



PERSPECTIVE

GENERAL NOTES :

IT IS THE INTENTION OF THE DPWH THAT AFTER COMPLETION OF THE PROJECTS ALL PRE-FABRICATED METAL FIELD OFFICES WITH LABORATORY AND ENGINEER'S QUARTERS BUILDINGS BE DONATED TO THE NEAREST PUBLIC SCHOOL. THESE AFOREMENTIONED BUILDINGS SHOULD THEREFORE BE LOCATED WITHIN A PUBLIC SCHOOL COMPOUND OR ON A GOVERNMENT LOT THAT COULD BE EASILY ACQUIRED BY THE DEPARTMENT OF EDUCATION. FOR NEW SCHOOL SITE. IF NONE IS AVAILABLE, THEN THE PRE-FABRICATED METAL COMPONENTS SHALL BE DISMANTLED AFTER COMPLETION OF THE PROJECT FOR DONATION TO THE NEAREST PUBLIC SCHOOL AUTHORITIES OR TO THE LOCAL GOVERNMENT UNIT WHERE SAID PROJECT IS LOCATED.

ARNEL P. GONZALES
ENGINEER

PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN, M.M.

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LEFT & RIGHT SIDE ELEV.
LONGITUDINAL & CROSS SECT.
REFLECTED CEILING PLAN

03 ENGINEER'S LIVING QUARTERS
FLOOR PLAN
FRONT & REAR ELEV.
LEFT & RIGHT SIDE ELEV.
LONGITUDINAL & CROSS SECT.
REFLECTED CEILING PLAN

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DET. CROSS SECTION
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SCHEDULE OF DOORS & WINDOWS

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FRAMES SCHEMATIC DIAGRAMS

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10 ENGINEER'S LIVING QUARTERS
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POWER LAYOUT
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02 ENGINEER'S LIVING QUARTERS
LIGHTING LAYOUT
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REPUBLIC OF THE PHILIPPINES
OFFICE OF THE MUNICIPAL / CITY ENGINEER / BUILDING OFFICIAL

CITY / DISTRICT / MUNICIPALITY

LAND USE and ZONING

LINE and GRADE

ARCHITECTURAL

STRUCTURAL

SANITARY

ELECTRICAL

MECHANICAL

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL
YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/8/02	A. GONZALES
CHECKED	10/17/02	A. GONZALES
SUBMITTED	10/19/02	M. KONDO, 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	EMMANUEL P. CUNTAPAY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Architectural Division	OIC, Director IV	Undersecretary	Secretary

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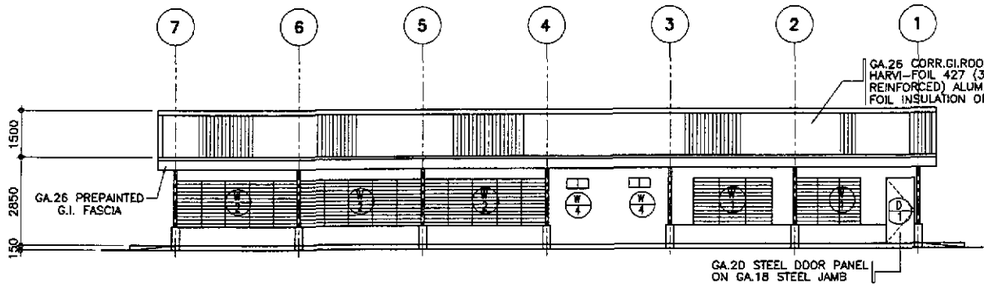
(Plaridel, Cabanatuan and San Jose Bypasses)
CABANATUAN BYPASS - CONTRACT PACKAGE III

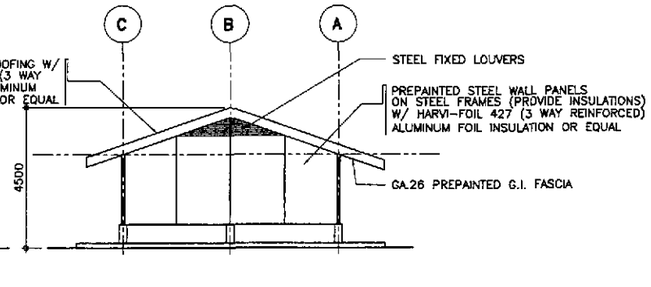
SCALE :
NOT TO SCALE
FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S FIELD OFFICE AND LIVING QUARTERS
PERSPECTIVE AND TABLE OF CONTENTS

SHEET NO. :
FA-01



3 FA-02 **REAR ELEVATION**
SCALE 1:100



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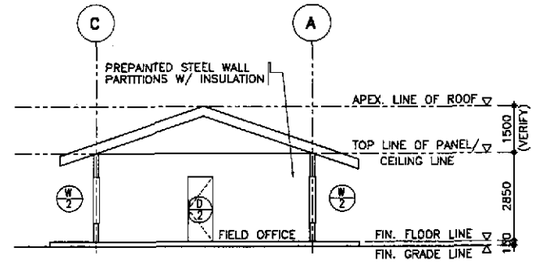

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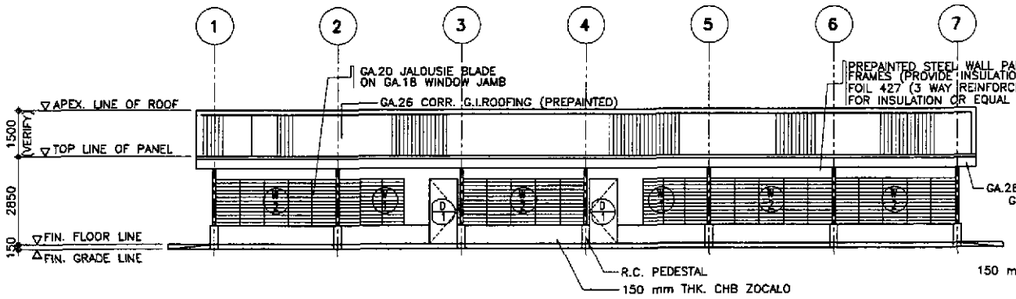

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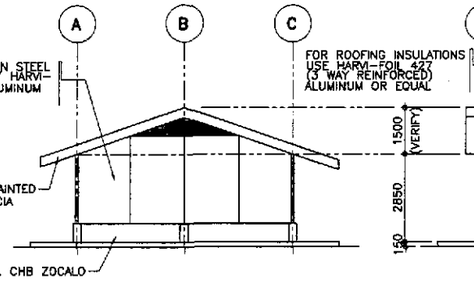

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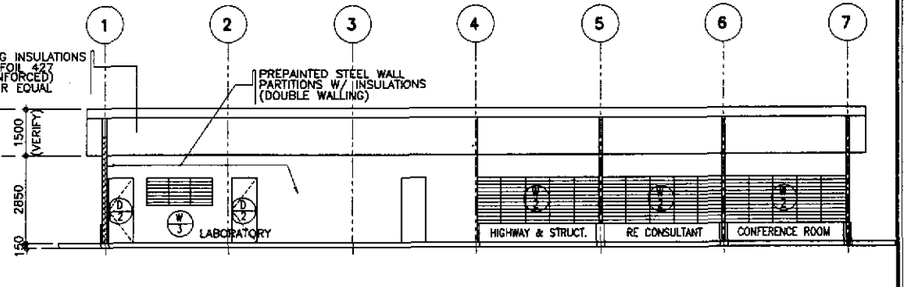

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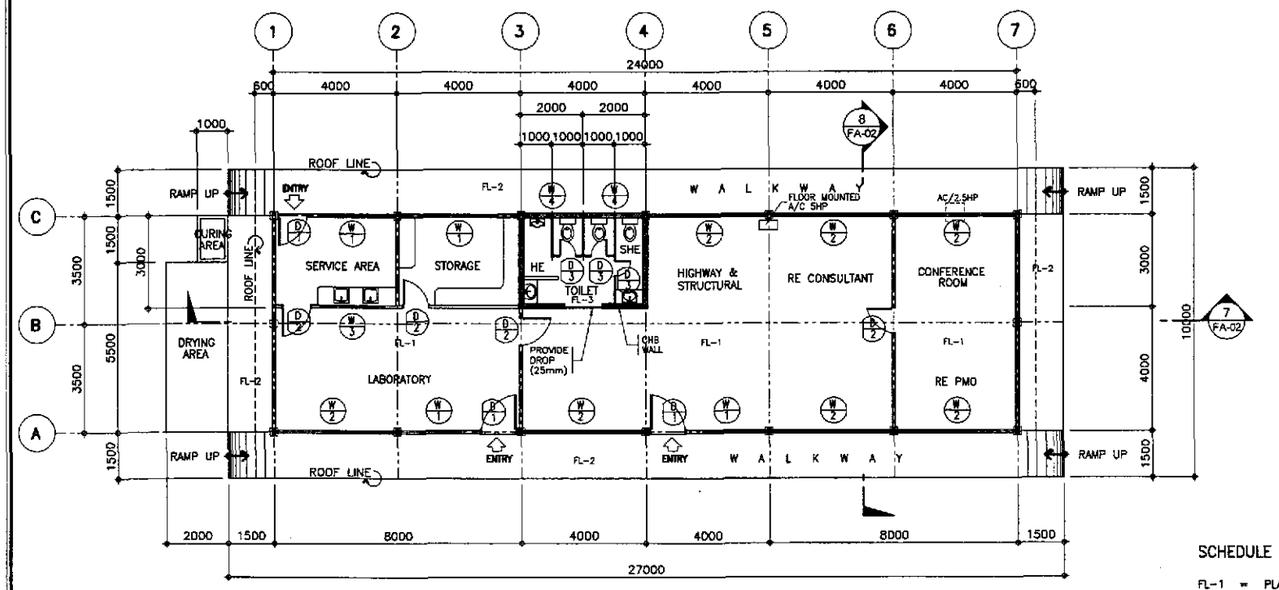
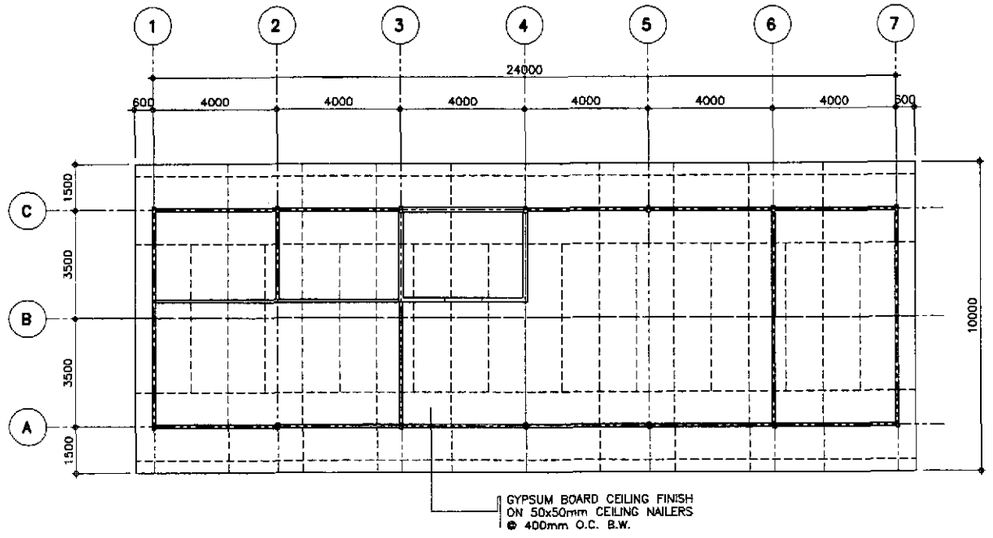
SCALE 1:100



1 FA-02 **FLOOR PLAN FOR ENGINEER'S FIELD OFFICE/LABORATORY**
SCALE 1:100



6 FA-02 **REFLECTED CEILING PLAN**
SCALE 1:100

SCHEDULE OF FLOOR FINISHES

FL-1 = PLAIN CEMENT FLOOR FINISH
FL-2 = PLAIN CEMENT FLOOR FINISH WITH NON SKID CEMENT WITH GROOVE LINES
FL-3 = UNGLAZED TILE FINISH, 200x200mm

ARNEL P. GONZALES
ENGINEER

PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-082-882
ISSUED AT SAN JUAN,M.M.

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

	DATE	SIGNATURE
DESIGNED	10/8/02	A.P. GONZALES
CHECKED	10/11/02	A.P. GONZALES
SUBMITTED	10/11/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

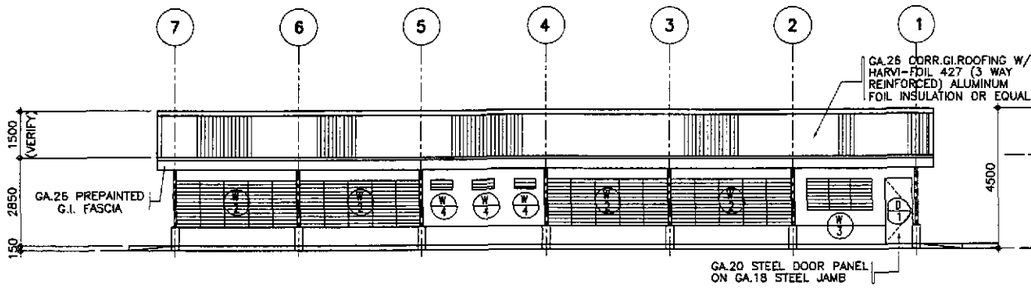
PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	EMMANUEL P. CUNTAPAY, Chief, Architectural Division	GILBERTO S. REYES, 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 III

SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
ENGR'S FIELD OFFICE / LABORATORY
FLOOR PLAN, ELEVATIONS, CROSS-SECTIONS AND REFLECTED CEILING PLAN

SHEET NO. :
FA-02



3 FA-03 **REAR ELEVATION**
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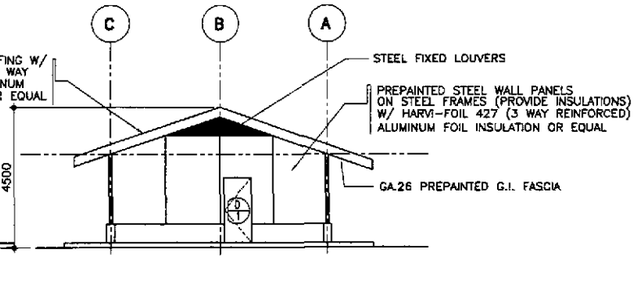

5 FA-03 **LEFT SIDE ELEVATION**
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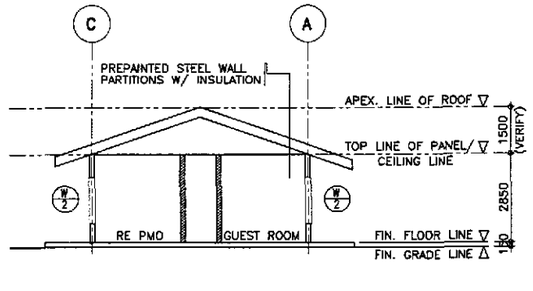

8 FA-03 **CROSS SECTION**
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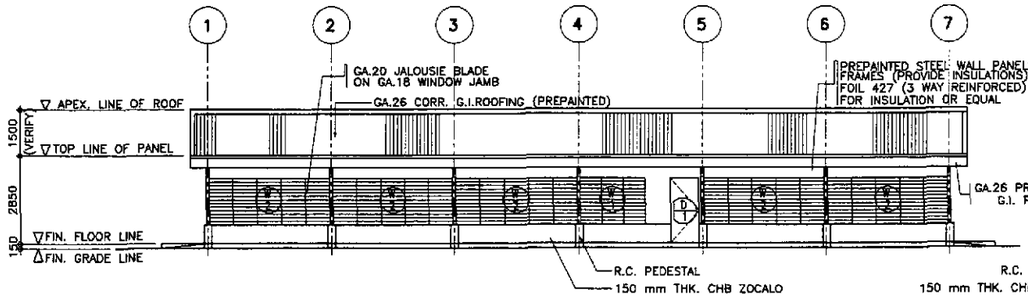

2 FA-03 **FRONT ELEVATION**
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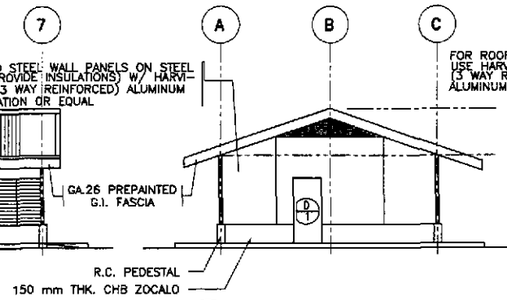

4 FA-03 **RIGHT SIDE ELEVATION**
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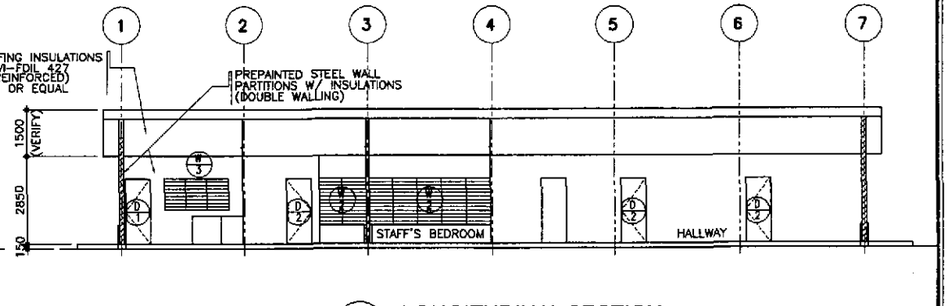
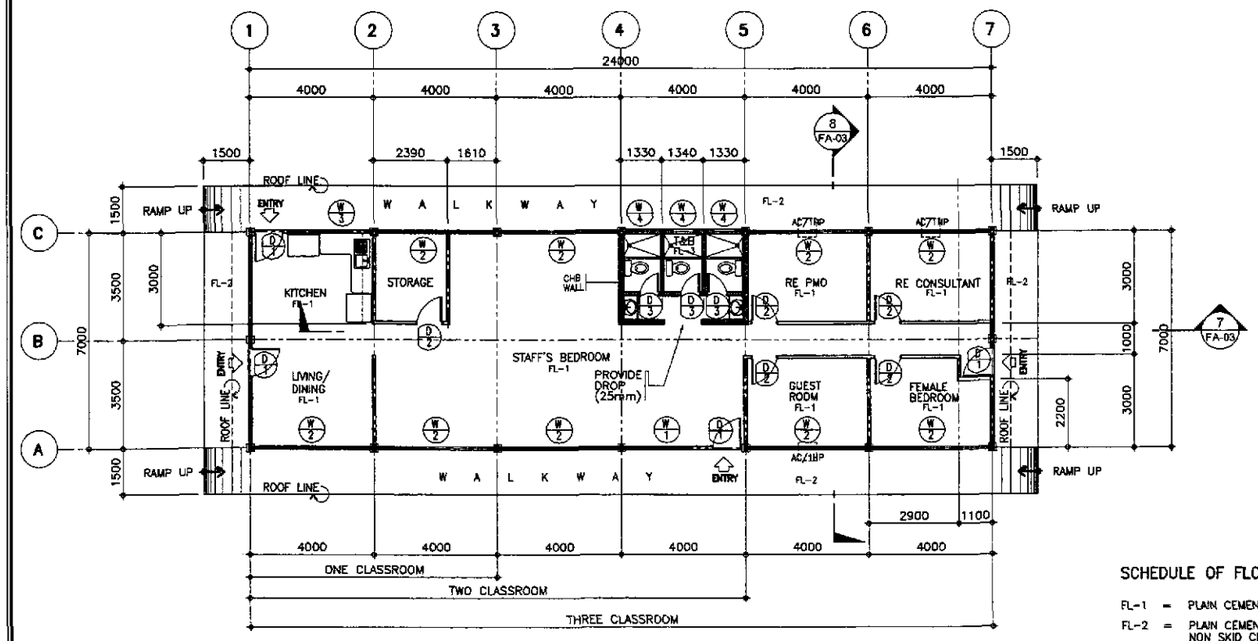
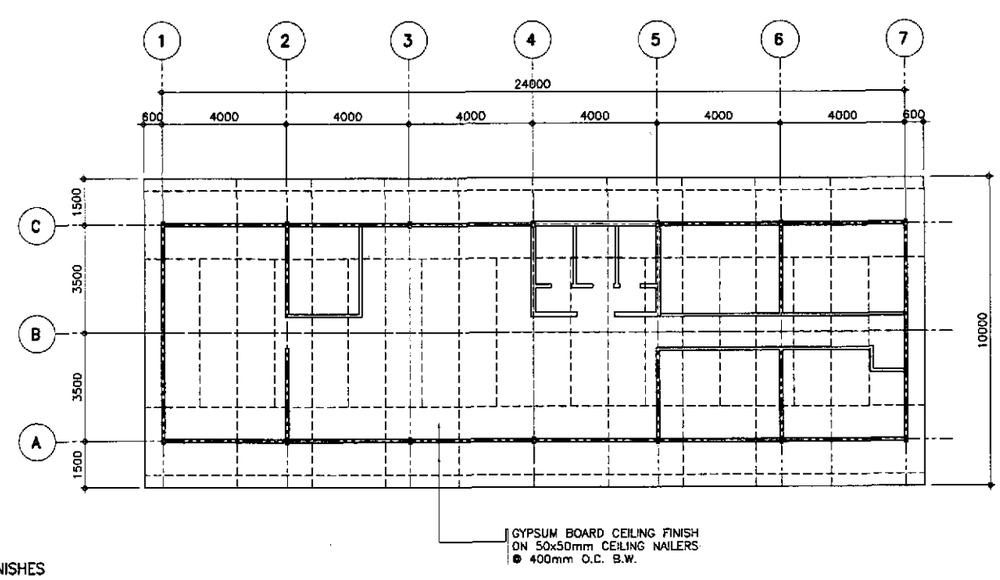


7 FA-03 **LONGITUDINAL SECTION**
SCALE 1:100



1 FA-03 **FLOOR PLAN FOR ENGINEER'S LIVING QUARTER**
SCALE 1:100



6 FA-03 **REFLECTED CEILING PLAN**
SCALE 1:100

SCHEDULE OF FLOOR FINISHES

FL-1 = PLAIN CEMENT FLOOR FINISH
FL-2 = PLAIN CEMENT FLOOR FINISH WITH NON SKID CEMENT WITH GROOVE LINES
FL-3 = UNGLAZED TILE FINISH, 200x200mm

ARNEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN,M.M.

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

	DATE	SIGNATURE
DESIGNED	10/3/02	A. P. GONZALES
CHECKED	10/17/02	A. P. GONZALES
SUBMITTED	10/19/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

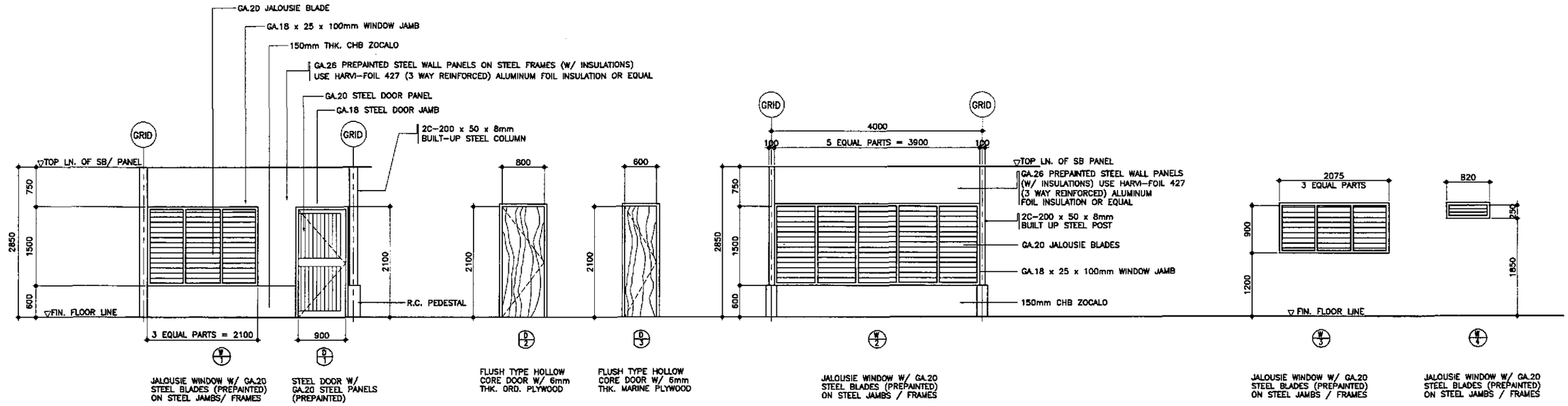
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	EMMANUEL P. CUNTAPAY	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG
Project Director	Chief, Architectural 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 III

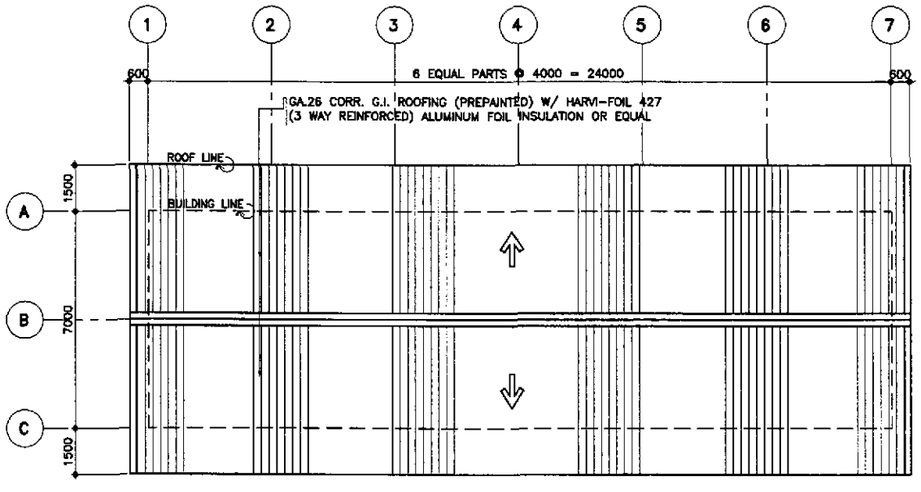
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S LIVING QUARTERS
FLOOR PLAN, ELEVATIONS, CROSS-SECTION AND REFLECTED CEILING PLAN

SHEET NO. : FA-03



3 / FA-04 FOR ENGINEER'S FIELD OFFICE
SCHEDULE OF DOORS & WINDOWS
SCALE 1:40



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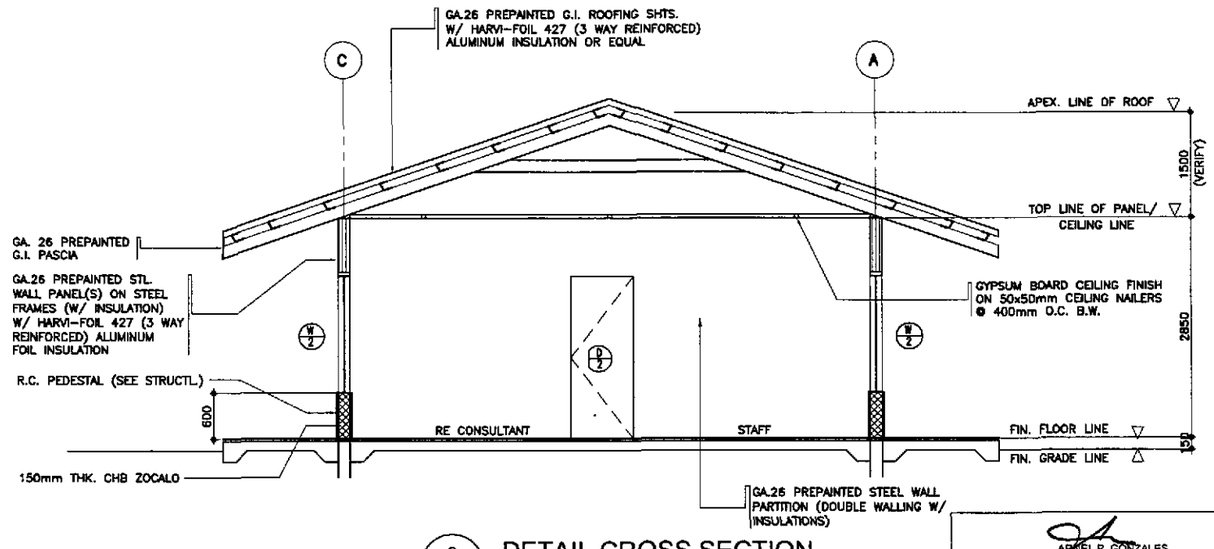

2 / FA-04 DETAIL CROSS SECTION
SCALE 1:40

ABNEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-882
ISSUED AT SAN JUAN,M.M.

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

	DATE	SIGNATURE
DESIGNED	10/9/02	P. GONZALES
CHECKED	10/11/02	P. GONZALES
SUBMITTED	10/14/02	B. KUDO 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	EMMANUEL P. CUNTAPAY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Architectural Division	OIC, Director IV	Undersecretary	Secretary

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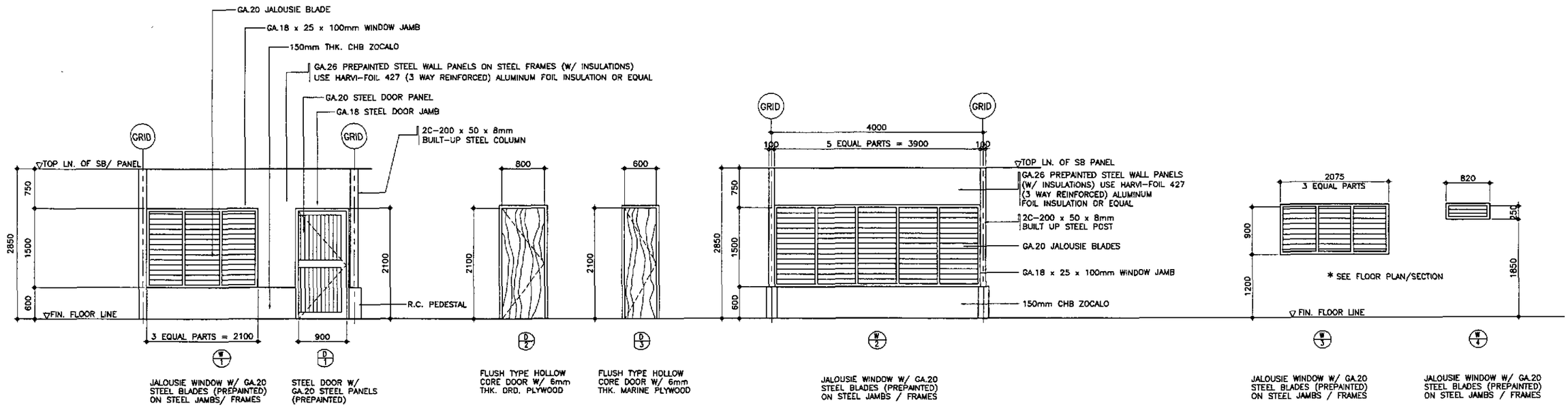
CABANATUAN BYPASS - CONTRACT PACKAGE III

SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGR'S FIELD OFFICE / LABORATORY
ROOF PLAN, CROSS-SECTION AND SCHEDULE OF DOORS & WINDOWS

SHEET NO. : FA-04



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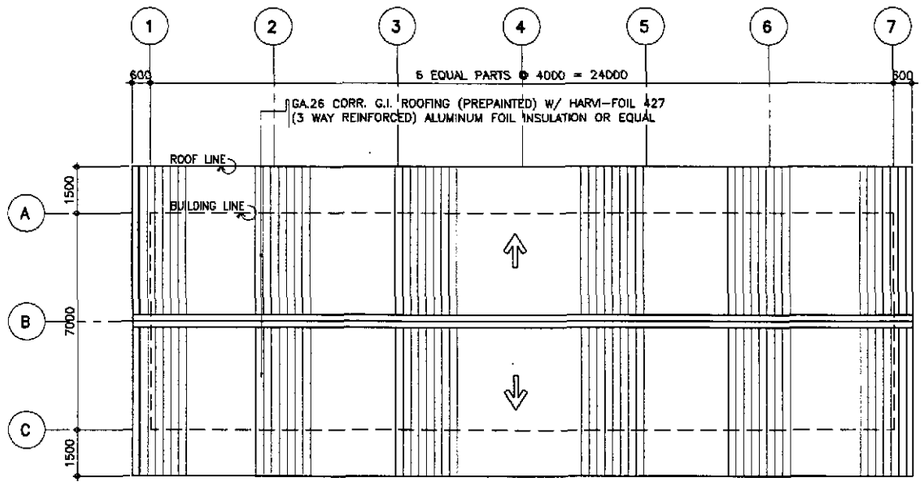
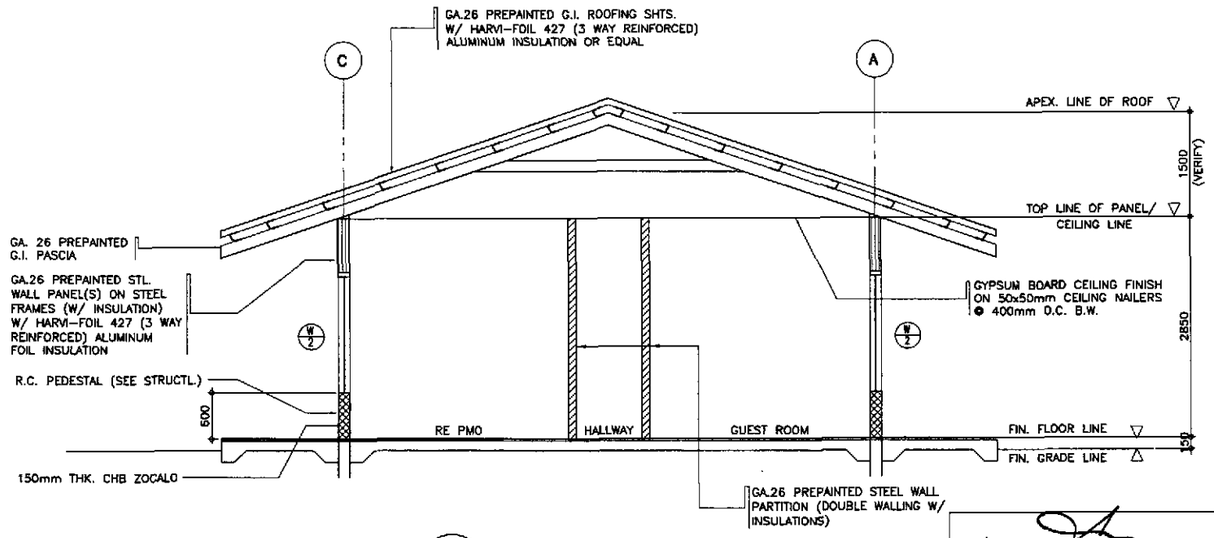
SCHEDULE OF DOORS & WINDOWS
SCALE 1:40



1 FA-05 — ROOF PLAN
SCALE 1:100



2 FA-05 — DETAIL CROSS SECTION
SCALE 1:40

ARNEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN,M.M.

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

	DATE	SIGNATURE
DESIGNED	10/8/02	P. GONZALES
CHECKED	10/17/02	P. GONZALES
SUBMITTED	10/18/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

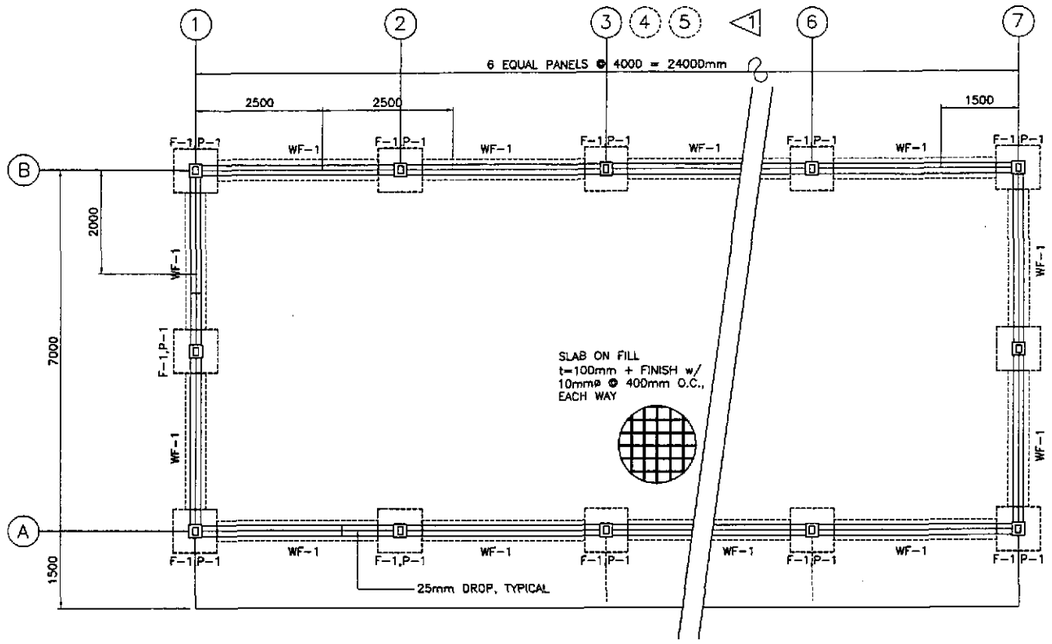
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	EMMANUEL P. CUNTAPAY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Architectural 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 III

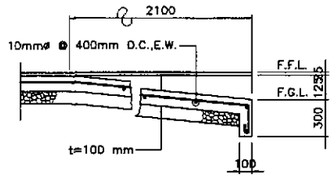
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S LIVING QUARTERS
ROOF PLAN, CROSS-SECTION AND SCHEDULE OF DOORS & WINDOWS

SHEET NO. : FA-05



1 / FA-06 — **FOUNDATION PLAN**
SCALE 1:25



4 / FA-06 — **R.C. RAMP DETAIL**
SCALE 1:25

DESIGN CRITERIA :

I. LIVE LOAD

ROOF	0.58 KPa
OFFICE/LABORATORY	2.40 KPa

II. DEAD LOAD

CONCRETE	24 KN/m³
STEEL	76.10 KN/m³
CHB	2.73 KPa

III. WIND LOAD

p = Ce Cq Qs I

WHERE :

p = ACTUAL WIND PRESSURE
Ce = GUST FACTOR COEFFICIENT (EXPOSURE B=0.63)
Cq = PRESSURE COEFFICIENT
Qs = 1.50 KPa FOR ZONE 2&3, Qs=1.92 FOR ZONE 1
I = OCCUPANCY IMPORTANCE = 1.00

IV. ALLOWABLE STRESSES

1. CONCRETE (ALLOWABLE COMPRESSIBLE STRENGTH @ 28 DAYS)
   a.) FOR FOOTINGS AND PEDESTAL COLUMN
   fc' = 20.70 mpa fc = 9.31mpa
   b.) FOR SLAB ON FILL
   fc' = 17.26 mpa fc = 7.76mpa
2. REINFORCING STEEL BARS (STRUCTURAL GRADE 33 DEFORMED BARS)
   fy = 227.0 mpa fst = 124.02 mpa
3. STRUCTURAL LIGHT GAGE COLD FORMED STEEL
   STIFFENED LIGHT GAGE CHANNEL FOR RAFTERS, STUD & WALLS
   fs = 124.0 mpa (18,000 psi)
4. STRUCTURAL BUILT-UP STEEL PLATES (ASTM A-36)
   FOR STEEL BOX COLUMN
   fy = 248.0 mpa (36,000 psi)
5. WELDS
   USE E-60 XX ELECTRODES
   fv = 93.76 mpa
6. BOLTS (ASTM A-307)
   fv = 69 mpa fst = 98.60 mpa
7. CONCRETE MASONRY UNITS (NON-LOAD BEARING CHB)
   fm' = 3.41 mpa (500 psi)
8. ASSUMED ALLOWABLE SOIL BEARING CAPACITY OF 95.76 KPa (2,000 psf)

NOTES ON FOUNDATION :

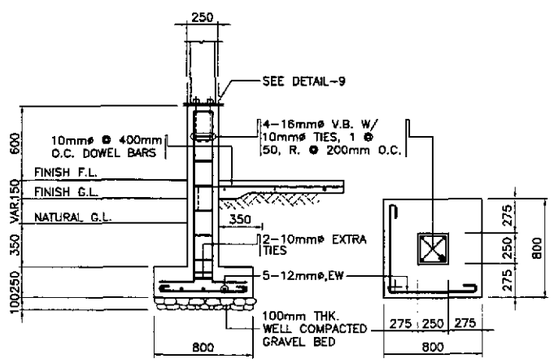
1. IN CASE THE ACTUAL SOIL BEARING PRESSURE IS FOUND LESS THAN THE ASSUMED VALUE OF 95.76 KPa, NOTIFY THE DIRECTOR, BUREAU OF DESIGN FOR PROPER REVISION OF FOOTINGS.
2. NO FOOTINGS SHALL REST ON FILL.

MATERIAL SPECIFICATIONS :

1. FOR ROOFING SHEETS :
   0.6mm THICK (GA.26) PREPAINTED CORRUGATED G.I. ROOFING SHEET, LONG SPAN.
2. FOR WALLING SHEETS : USE ALUMINUM FOIL INSULATION HARVI-FOIL 427 (3-WAY REINFORCED OR EQUAL), DOUBLE WALL 0.6mm THICK (GA.26) HIGH TENSILE STEEL SHEET WALLING/ CLADDING W/ ALUMINUM FOIL FOR INSULATION. HARVI--FOIL 427 (3-WAY REINFORCED OR EQUAL). BASE STEEL WITH 550 MPa YIELD STRESS.
3. THE VERTICAL AND HORIZONTAL STUDS AND RAFTERS SHALL CONFORM WITH THE AMERICAN IRON AND STEEL INSTITUTE (AISI), SPECIFICATION OF LIGHT GAGE COLD-FORMED STEEL STRUCTURAL MEMBERS AS PER ASTM A246-LIGHT GAGE STRUCTURAL QUALITY FLAT ROLLED CARBON STEEL SHEET.
4. ALL METAL PARTS SHALL BE GIVEN TWO(2) COATS OF ANTI-CORROSIVE PAINT OF APPROVED QUALITY WITH A MINIMUM TOTAL THICKNESS OF 3mm. FINISHING PAINT SHALL BE 2-COATS OF GLOSS OF APPROVED QUALITY, WEATHER RESISTANT AND OF THE SAME COLOR AS THE PREPAINTED SHEETINGS. BASE OF SIDINGS AND DOOR AND WINDOW JAMBS SHALL BE GIVEN ANOTHER TWO COATS OF BROWN OR MAHOGANY COLORED ENAMEL PAINT.

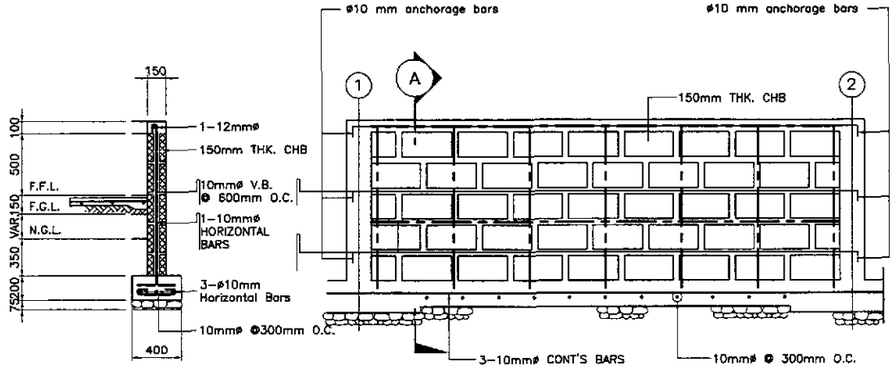
NOTES :

1. ALL LOCATION OF ANCHOR BOLTS AND BOLT HOLES SHALL BE VERIFIED ON THE SITE PRIOR TO INSTALLATION / ASSEMBLY.
2. HOLES FOR ALL BOLTS SHALL BE 1.6mm LARGER IN DIAMETER THAN BOLTS. BOLTS SHALL BE FITTED WITH STANDARD NUTS AND WASHERS TO ENSURE TIGHT FIT.
3. THE STEEL MANUFACTURER / FABRICATOR / CONTRACTOR SHALL SUBMIT SHOP / FABRICATION DRAWINGS TO INCLUDE MATERIAL SCHEDULES, ASSEMBLY PROCEDURE, CONNECTIONS AND SPLICES AS PER APPROVED PLANS FOR REVIEW AND APPROVAL OF THE DIRECTOR, BUREAU OF DESIGN.



ELEVATION PLAN

2 / FA-06 — **F-1, P-1**
SCALE 1:25



SECTION A TYP. ELEVATION

3 / FA-06 — **WF - 1**
SCALE 1:25

ARNEL P. GONZALES
ENGINEER

PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-582
ISSUED AT SAN JUAN,M.M.

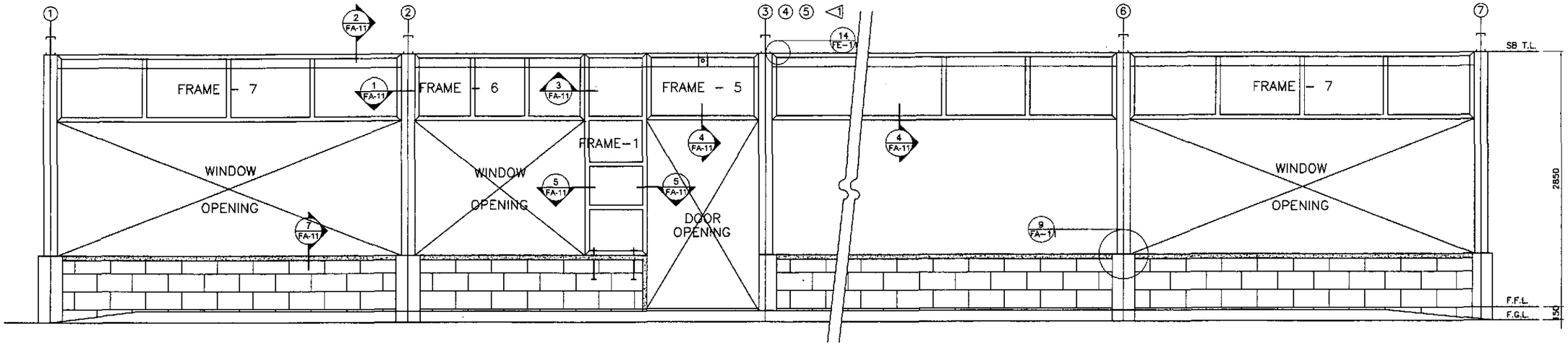
JICA JAPAN INTERNATIONAL COOPERATION AGENCY
KEI KATAHIRA & ENGINEERS INTERNATIONAL — YEC YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/8/02	A. P. GONZALES
CHECKED	10/17/02	A. P. GONZALES
SUBMITTED	10/17/02	M. HOCHI TEAM LEADER

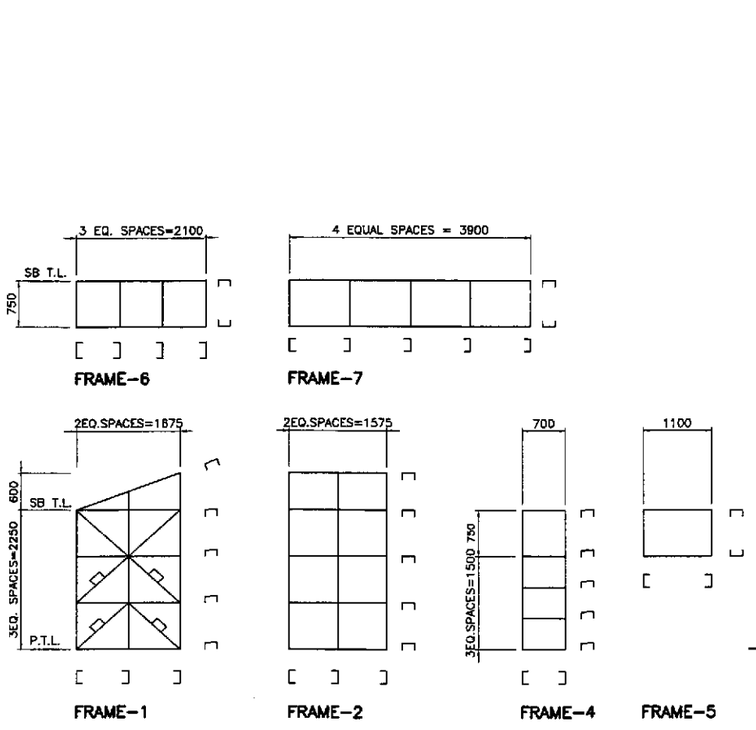
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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	WILFREDO S. LOPEZ	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Structural Division	OIC, Director IV	Undersecretary	Secretary

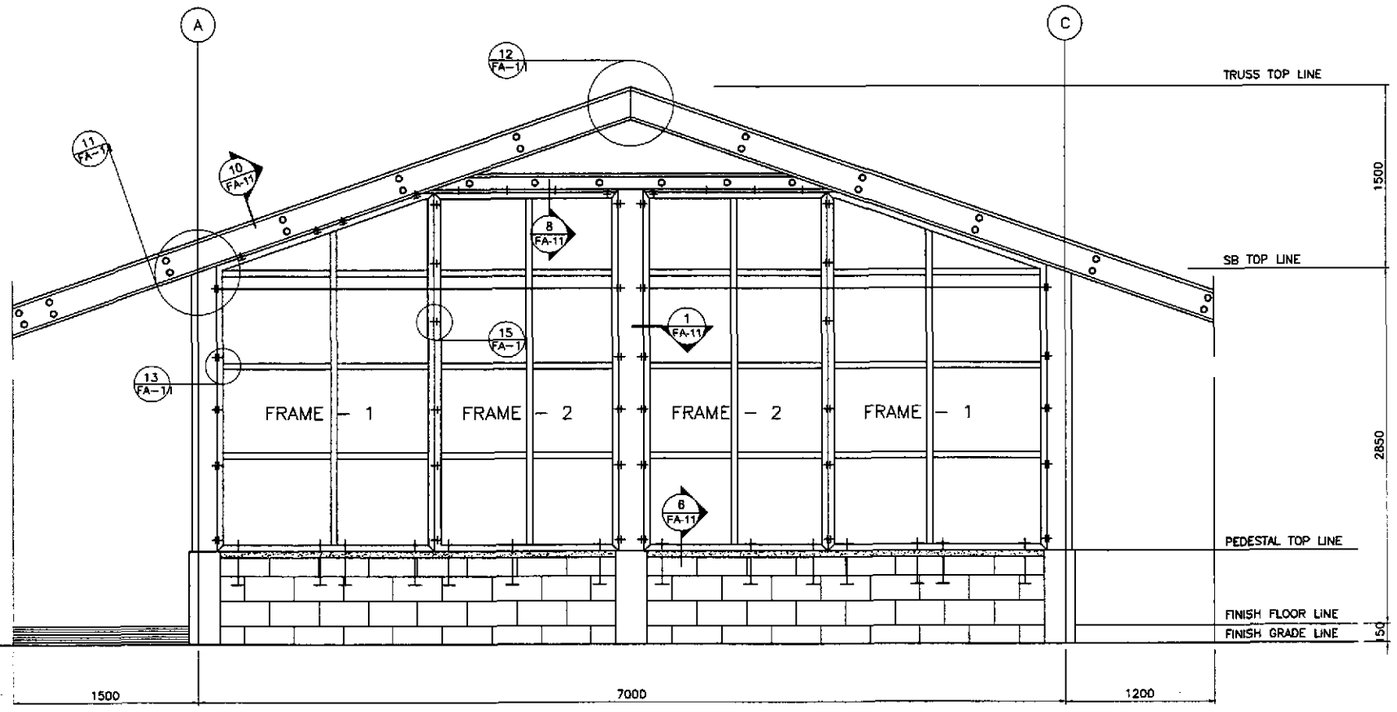
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE III	AS SHOWN FULL SIZE A1	ENGINEER'S FIELD OFFICE AND LIVING QUARTERS FOUNDATION PLAN, R.C. RAMP, DETAILS OF F1, P-1 & WF1 AND DESIGN CRITERIA	FA-06



2 / FA-07 FRONT ELEVATION
SCALE 1:25



1 / FA-07 FRAMES SCHEMATIC DIAGRAMS
SCALE 1:50



3 / FA-07 RIGHT SIDE ELEVATION
SCALE 1:25

ARNEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138–062–682
ISSUED AT SAN JUAN,M.M.

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

	DATE	SIGNATURE
DESIGNED	10/29/02	A. P. GONZALES
CHECKED	10/29/02	A. P. GONZALES
SUBMITTED	10/29/02	M. KIUCHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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DANILO C. TRAJANO Project Director	WILFREDO S. LOPEZ Chief, Structural Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONOAN Undersecretary	SIMEON A. DATUMANONG Secretary

PROJECT AND LOCATION :
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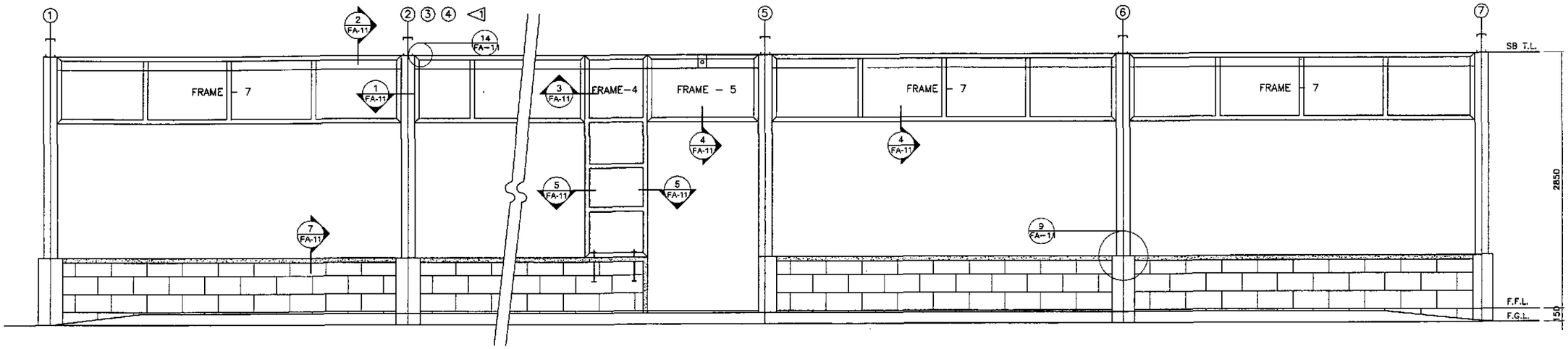
CABANATUAN BYPASS - CONTRACT PACKAGE III

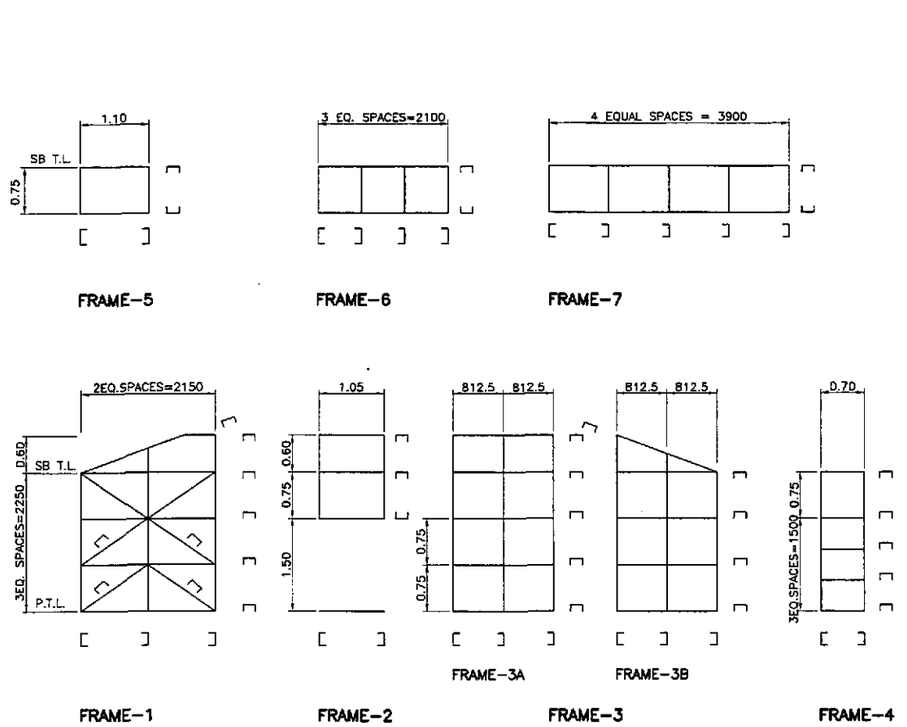
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGR'S FIELD OFFICE / LABORATORY
FRONT AND RIGHT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAM

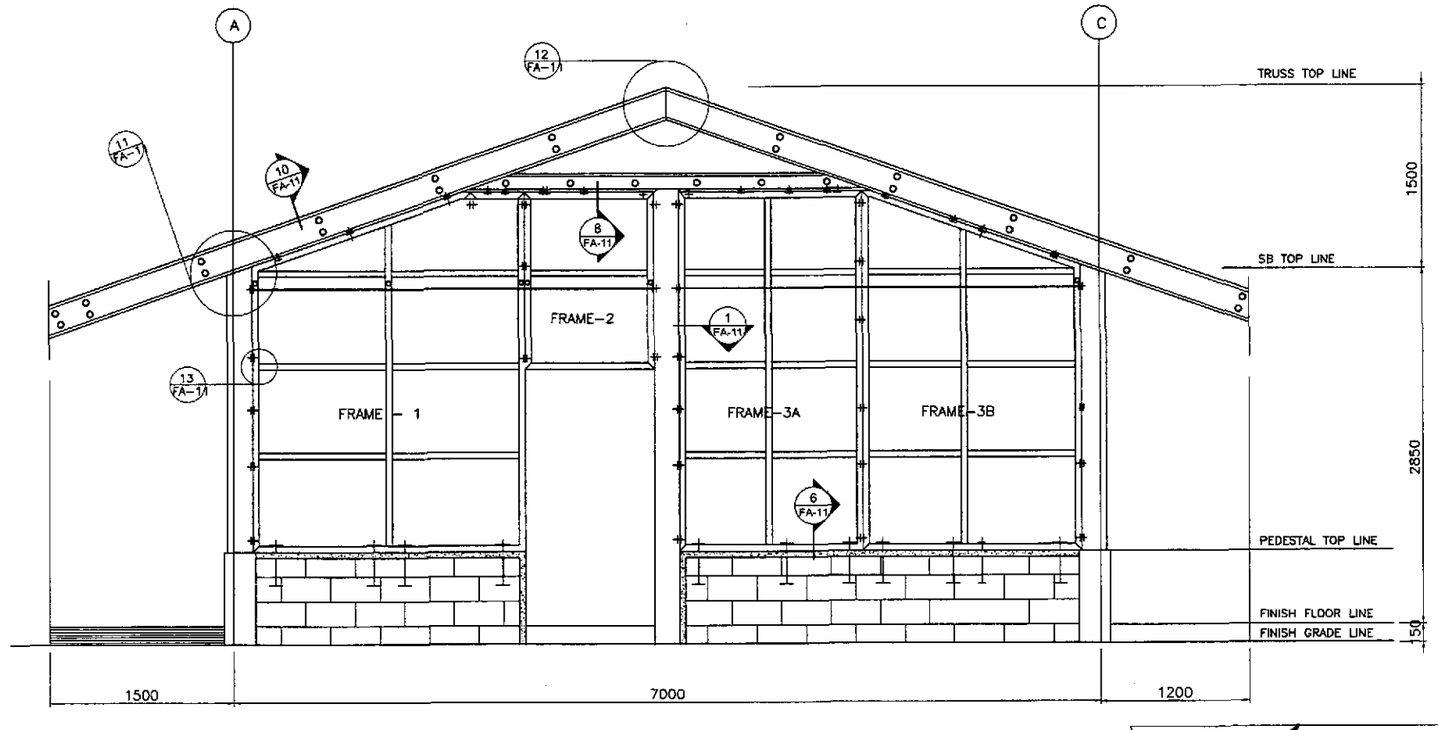
SHEET NO. : FA-07



2 FA-08 **FRONT ELEVATION**
SCALE 1:25



1 FA-08 **FRAMES SCHEMATIC DIAGRAMS**
SCALE 1:50



3 FA-08 **RIGHT SIDE ELEVATION**
SCALE 1:25

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ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-582
ISSUED AT SAN JUAN,M.M.

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

	DATE	SIGNATURE
DESIGNED	10/18/02	P. GONZALES
CHECKED	10/17/02	P. GONZALES
SUBMITTED	10/19/02	M. KIKUCHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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DANILO C. TRAJANO	EMMANUEL P. CUNTAPAY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Architectural Division	OIC, Director IV	Undersecretary	Secretary

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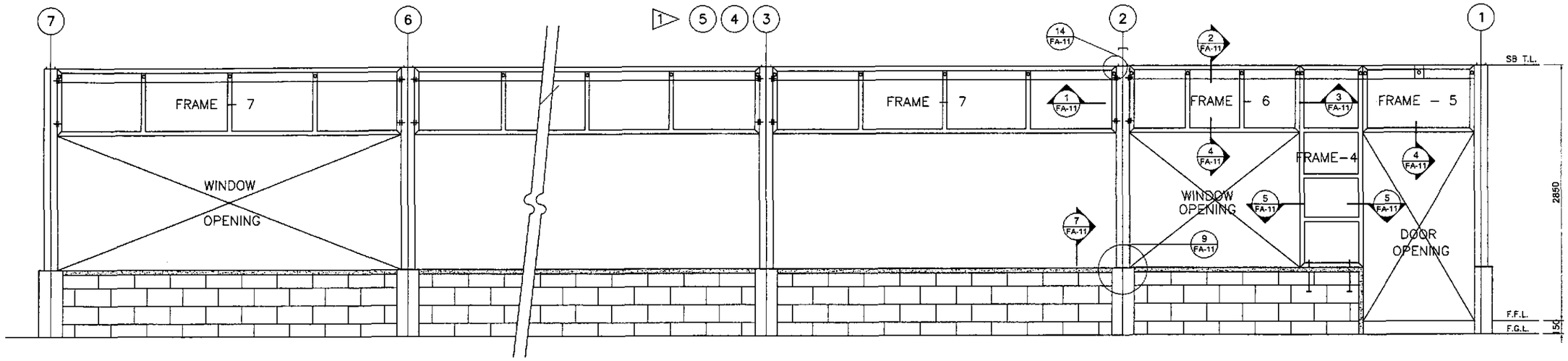
CABANATUAN BYPASS - CONTRACT PACKAGE III

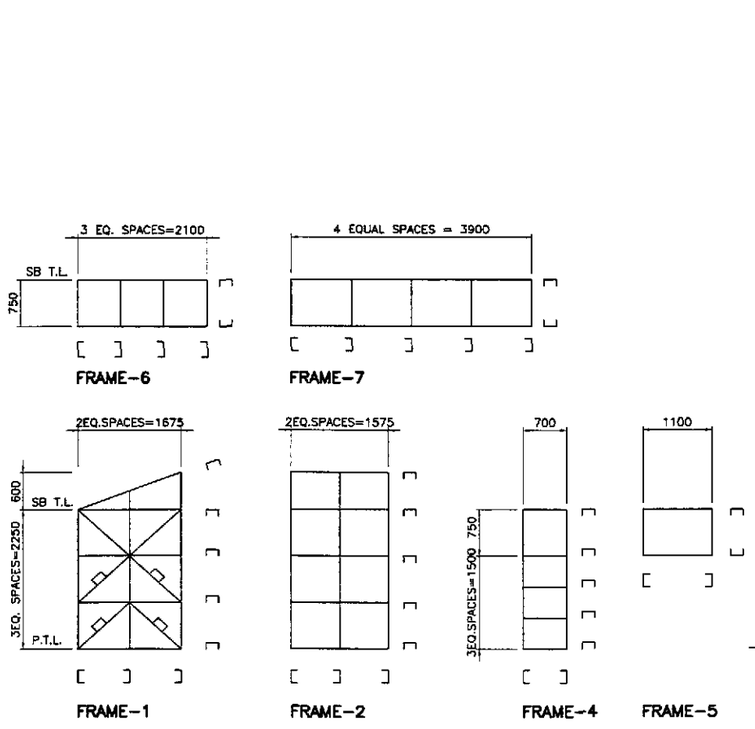
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S LIVING QUARTERS
FRONT AND RIGHT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAM

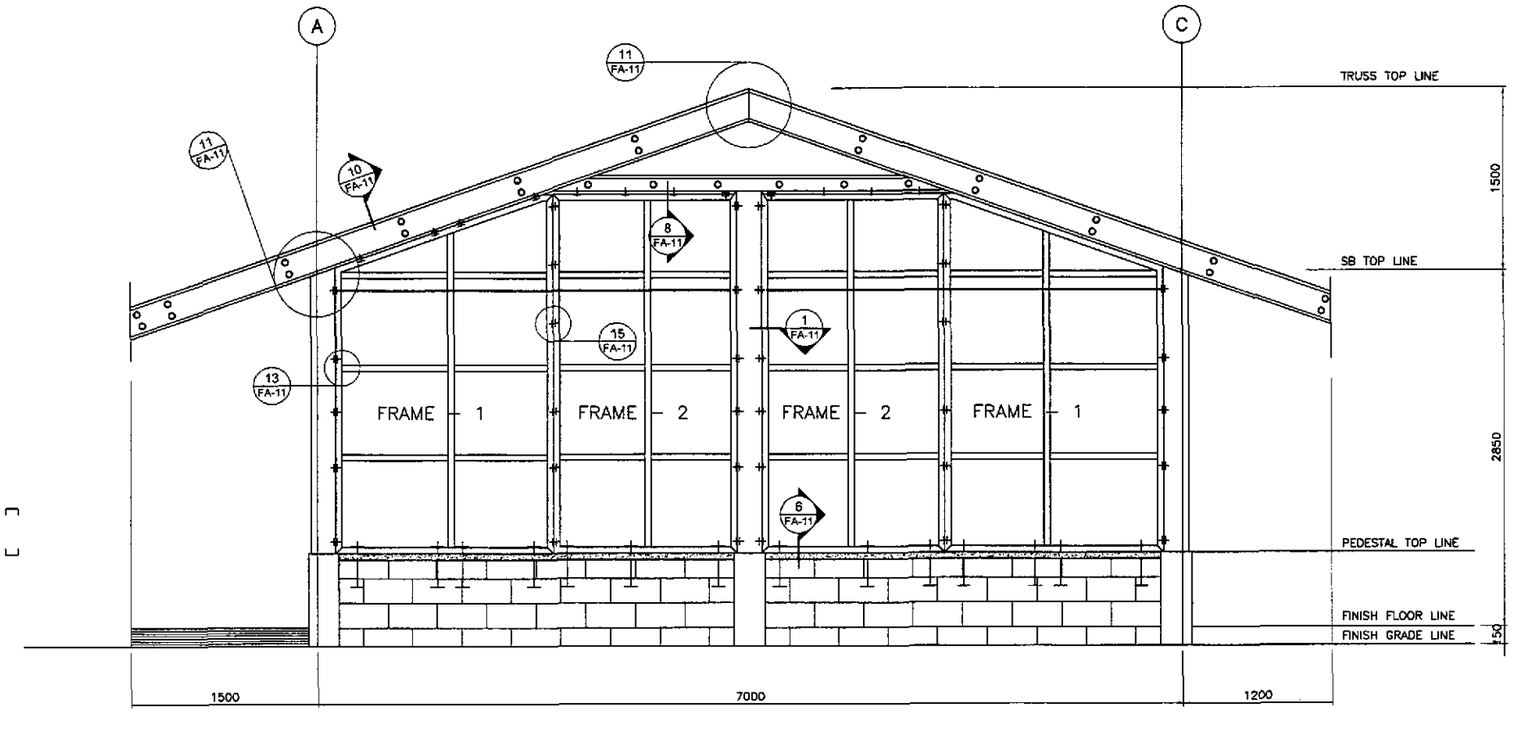
SHEET NO. : FA-08



2 FA-09 **REAR ELEVATION**
SCALE 1:25



1 FA-09 **FRAMES SCHEMATIC DIAGRAMS**
SCALE 1:50



3 FA-09 **LEFT SIDE ELEVATION**
SCALE 1:25

ARNEL P. GONZALES
ENGINEER

PTR. NO. 5848340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-882
ISSUED AT SAN JUAN,M.M.

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

	DATE	SIGNATURE
DESIGNED	10/8/02	A. P. GONZALES
CHECKED	10/17/02	A. P. GONZALES
SUBMITTED	10/19/02	M. KUDA TEAM LEADER

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Project Director	Chief, Structural Division	OIC, Director IV	Undersecretary	Secretary

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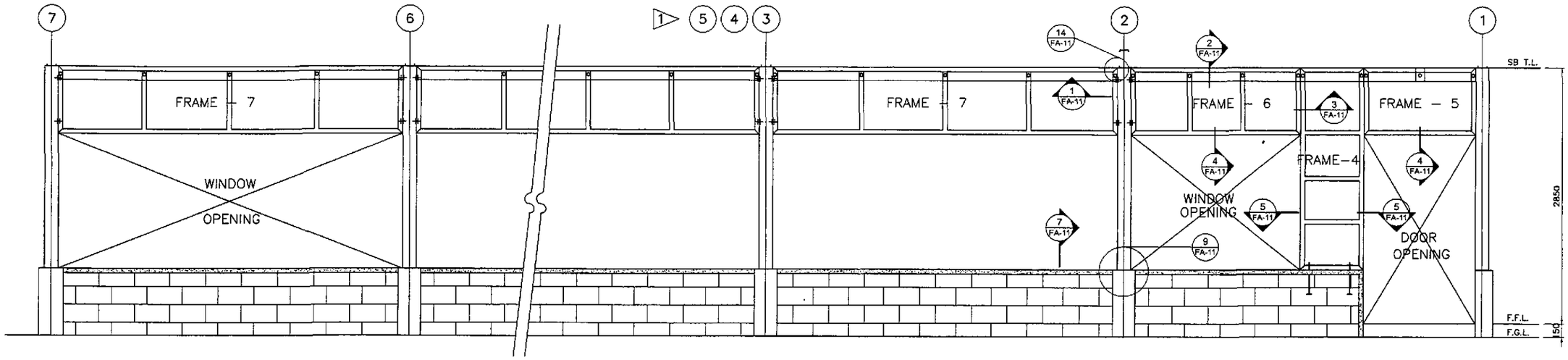
CABANATUAN BYPASS - CONTRACT PACKAGE III

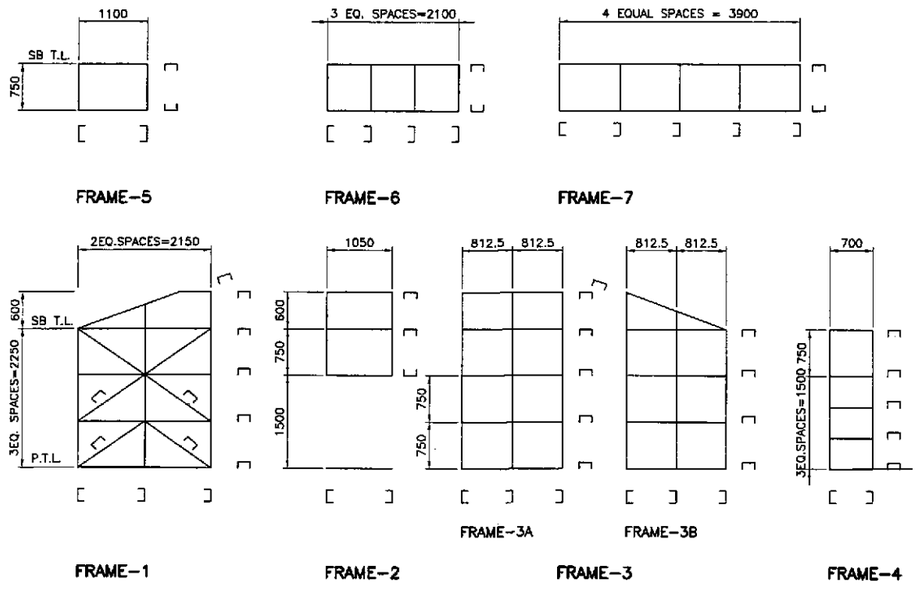
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGR'S FIELD OFFICE / LABORATORY
REAR AND LEFT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAM

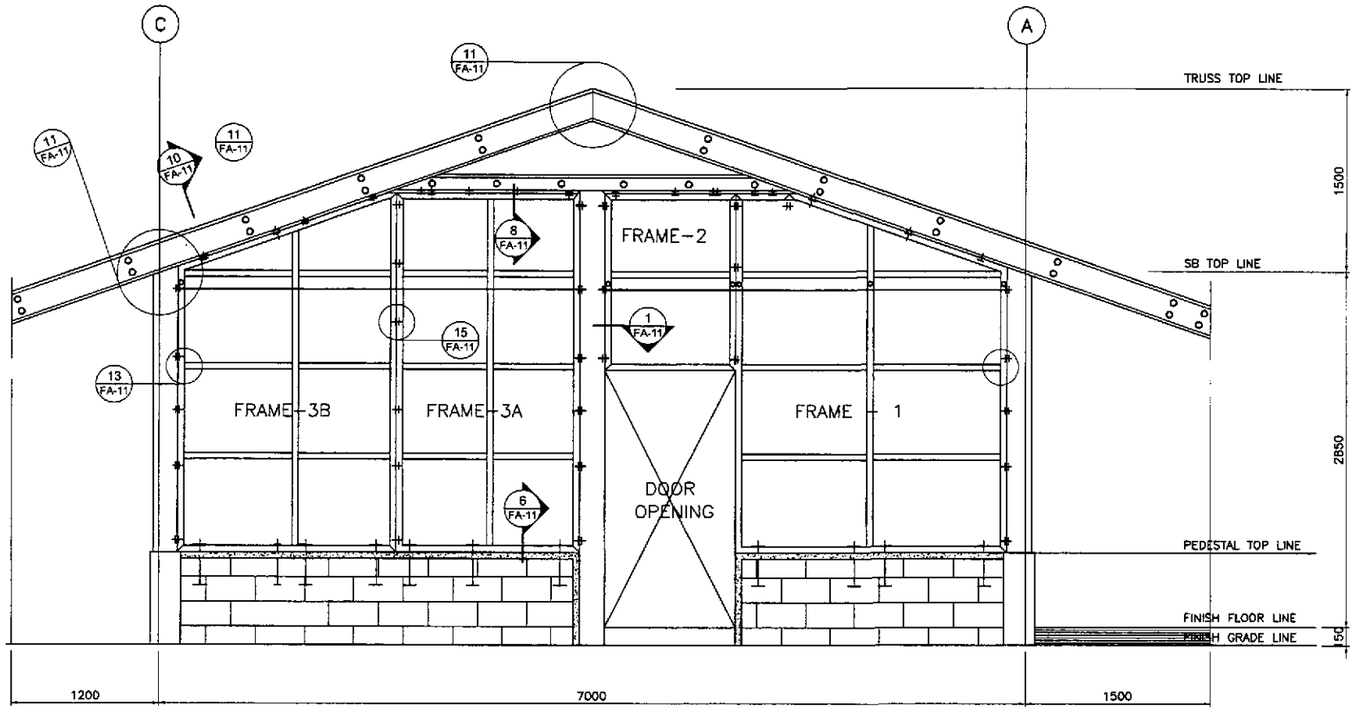
SHEET NO. : FA-09



2 / FA-10 **REAR ELEVATION**
SCALE 1:25



1 / FA-10 **FRAMES SCHEMATIC DIAGRAMS**
SCALE 1:50



3 / FA-10 **LEFT SIDE ELEVATION**
SCALE 1:25

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SUBMITTED	10/11/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
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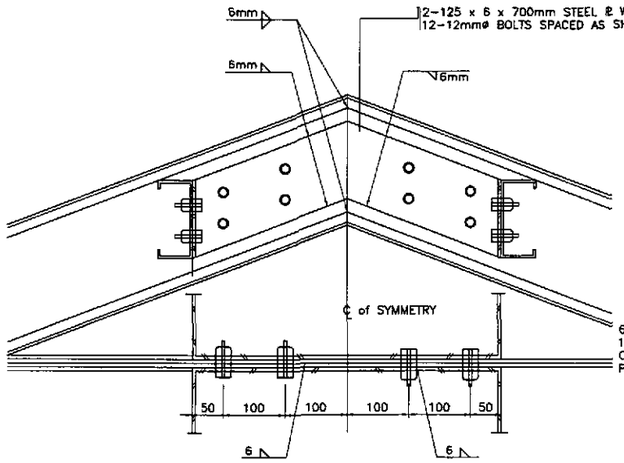
CABANATUAN BYPASS - CONTRACT PACKAGE III

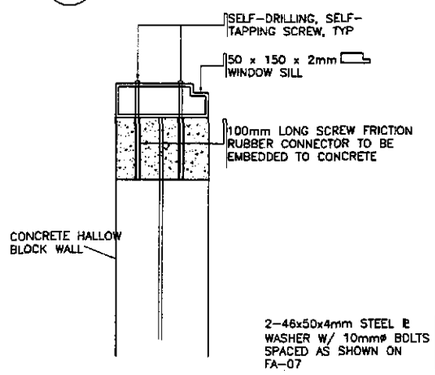
SCALE : AS SHOWN FULL SIZE A1

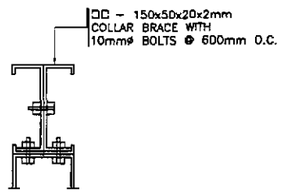
SHEET CONTENTS :
ENGINEER'S LIVING QUARTERS
REAR AND LEFT SIDE ELEVATION OF STEEL STUD FRAMES & SCHEMATIC DIAGRAMS

SHEET NO. : FA-10

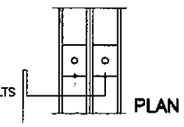


3 FA-11 **DETAIL - 12** SCALE 1:5





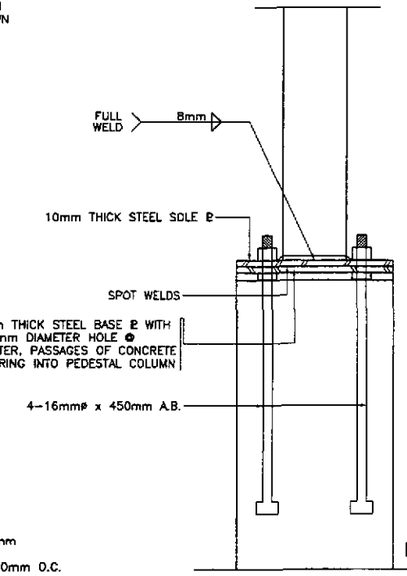
SECTION



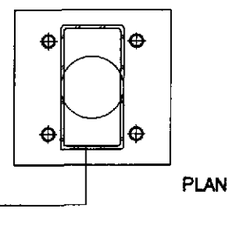
PLAN

2 FA-11 **DETAIL - 7** SCALE 1:5

5 FA-11 **DETAIL - 8** SCALE 1:5

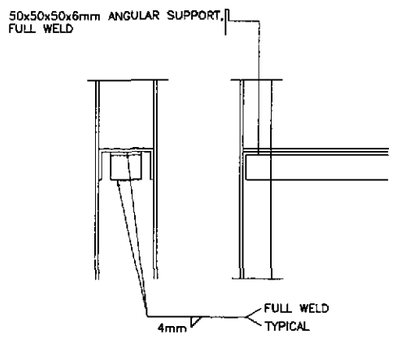


ELEVATION



PLAN

7 FA-11 **DETAIL - 9** SCALE 1:5

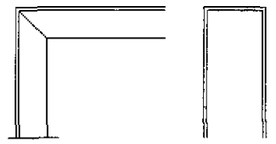


SECTION ELEVATION

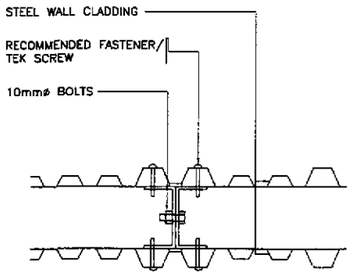
9 FA-11 **DETAIL - 10** SCALE 1:5

NOTES :

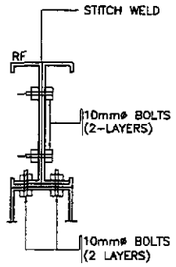
1. ALL VERTICAL AND HORIZONTAL STUDS SHALL BE 100x50x2mm UNSTIFFENED FLANGED UNLESS OTHERWISE SPECIFIED.
2. HORIZONTAL STUDS MUST BE INSERTED TO AND WELDED IN THE VERTICAL STUDS UNLESS OTHERWISE SPECIFIED.
3. REVISION IN THE ATTACHMENT/ CONNECTIONS THAT WILL IMPROVE DESIGN MAYBE DONE W/ PRIOR APPROVAL OF FABRICATION DRAWINGS.



ELEVATION SECTION



10 FA-11 **DETAIL - 13** SCALE 1:5



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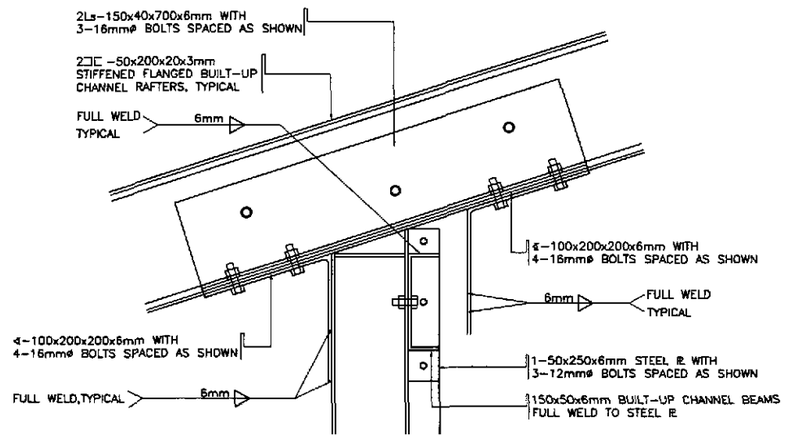
15 FA-11 **DETAIL - 15** SCALE 1:5



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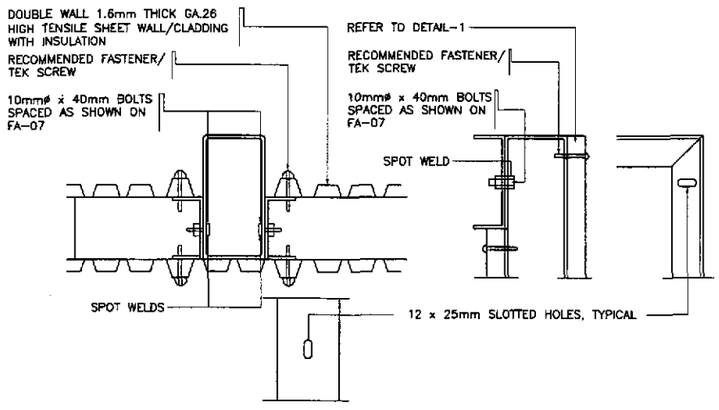

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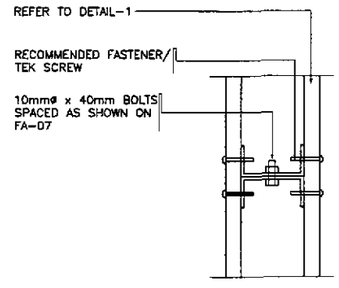
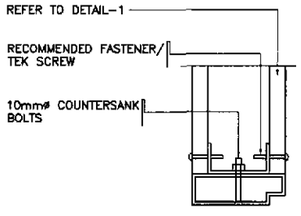


4 FA-11 **DETAIL - 2** SCALE 1:5

6 FA-11 **DETAIL - 3** SCALE 1:5



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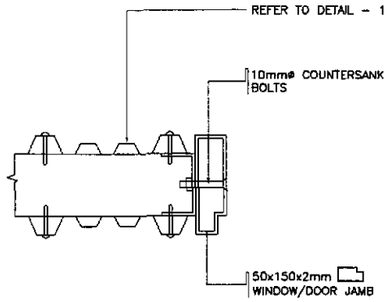
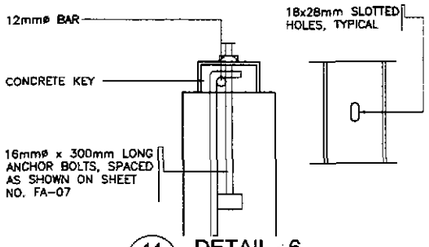


11 FA-11 **DETAIL - 5** SCALE 1:5



14 FA-11 **DETAIL - 6** SCALE 1:5

JARNEL P. GONZALES
ENGINEER

PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN,M.M.

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

	DATE	SIGNATURE
DESIGNED	10/15/01	J. P. GONZALES
CHECKED	10/19/01	J. P. GONZALES
SUBMITTED	10/19/01	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

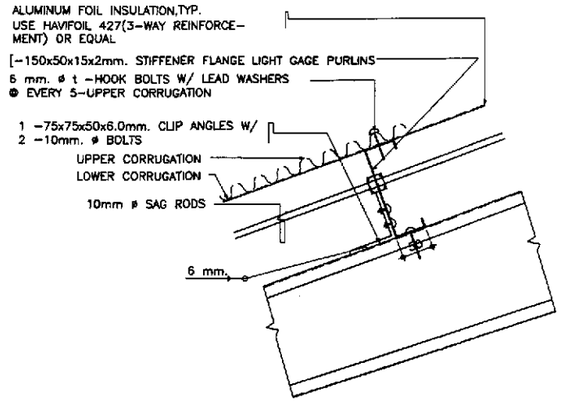
PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	WILFREDO S. LOPEZ	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Structural 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 III

SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S FIELD OFFICE AND LIVING QUARTERS
DETAILS OF CONNECTIONS
DETAIL 1 TO 15

SHEET NO. : FA-11



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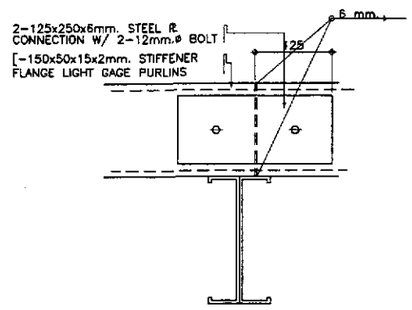
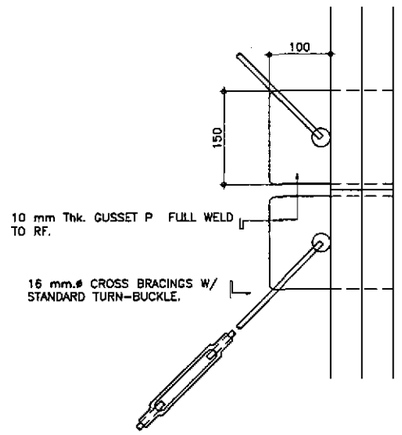
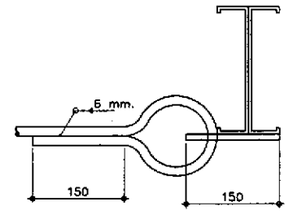


SECTION , SPLICE CONNECTION



P L A N



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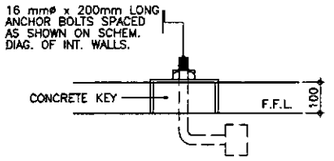
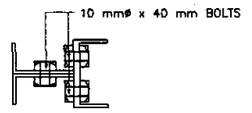
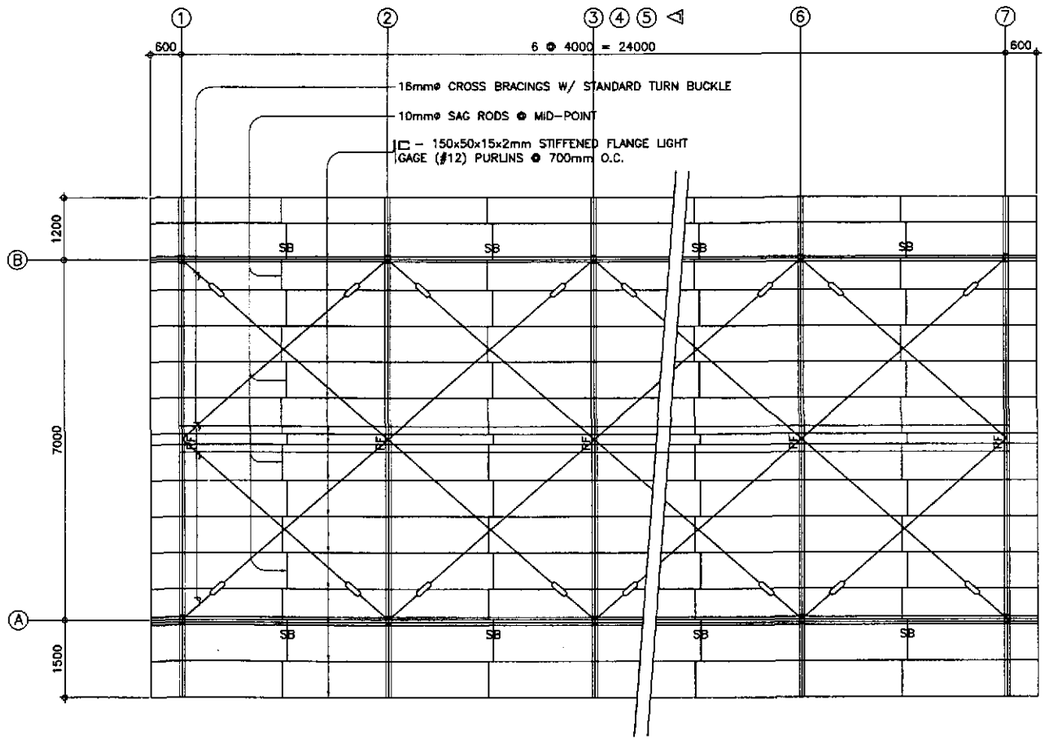


5 / FA-12 DETAIL - a
SCALE 1:5



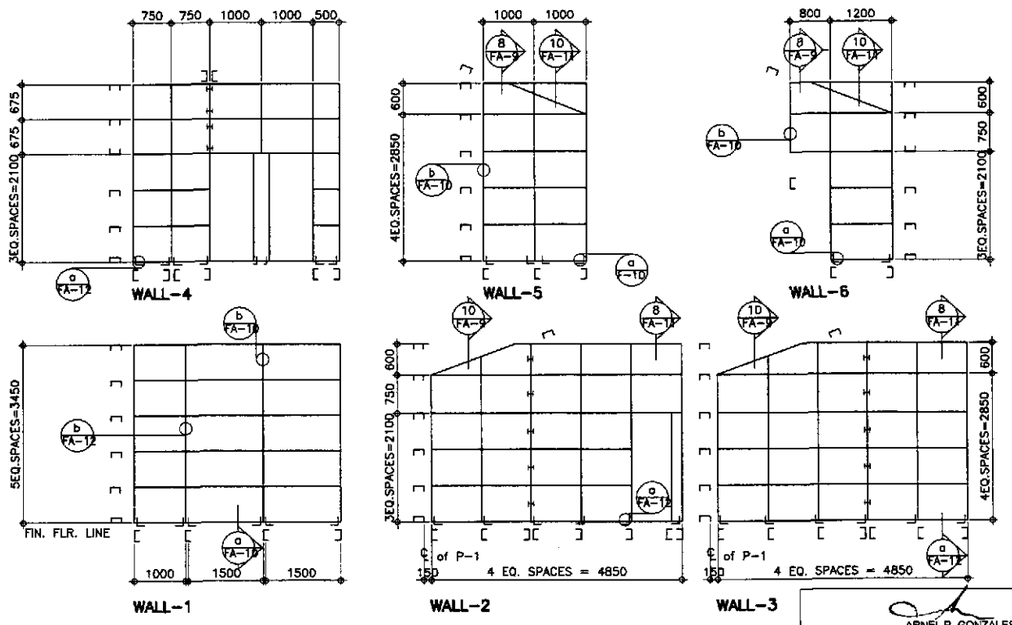
6 / FA-12 DETAIL - b
SCALE 1:5

2 / FA-12 PURLIN CONNECTION
SCALE 1:5



1 / FA-12 ROOF FRAMING PLAN
SCALE 1:60

4 / FA-12 CROSS-BRACING CONNECTION
SCALE 1:5



3 / FA-12 SCHEMATIC DIAGRAMS OF INTERIOR WALLS
SCALE 1:60

ARNEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-082-682
ISSUED AT SAN JUAN,M.M.

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

	DATE	SIGNATURE
DESIGNED	10/8/02	A. P. GONZALES
CHECKED	10/17/02	A. P. GONZALES
SUBMITTED	10/19/02	M. KIUCHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

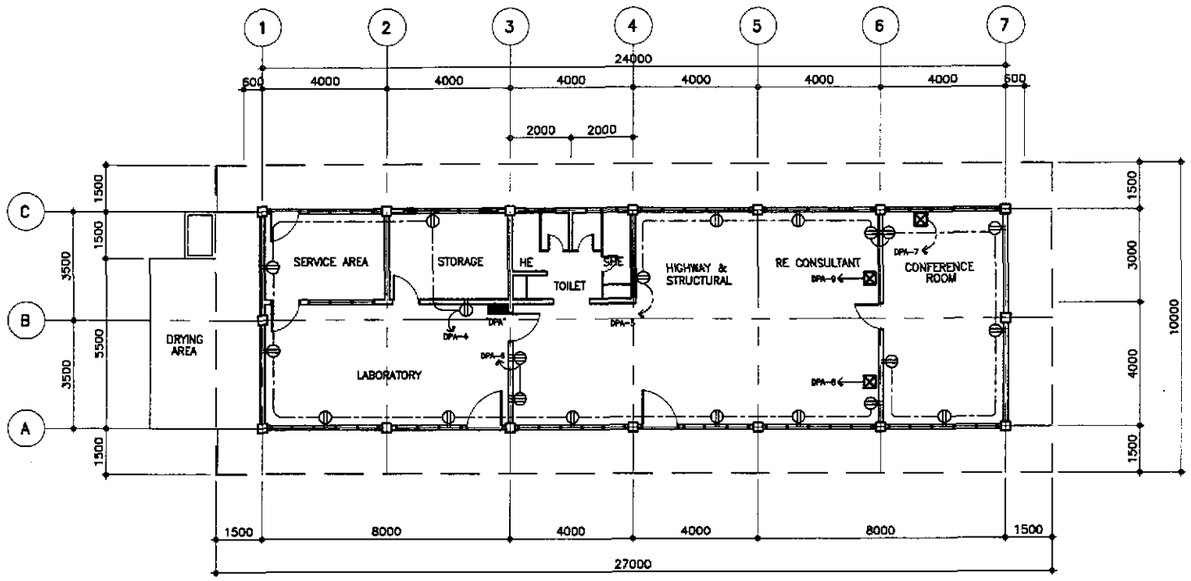
PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO Project Director	WILFREDO S. LOPEZ Chief, Structural Division	GILBERTO S. REYES OIC,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

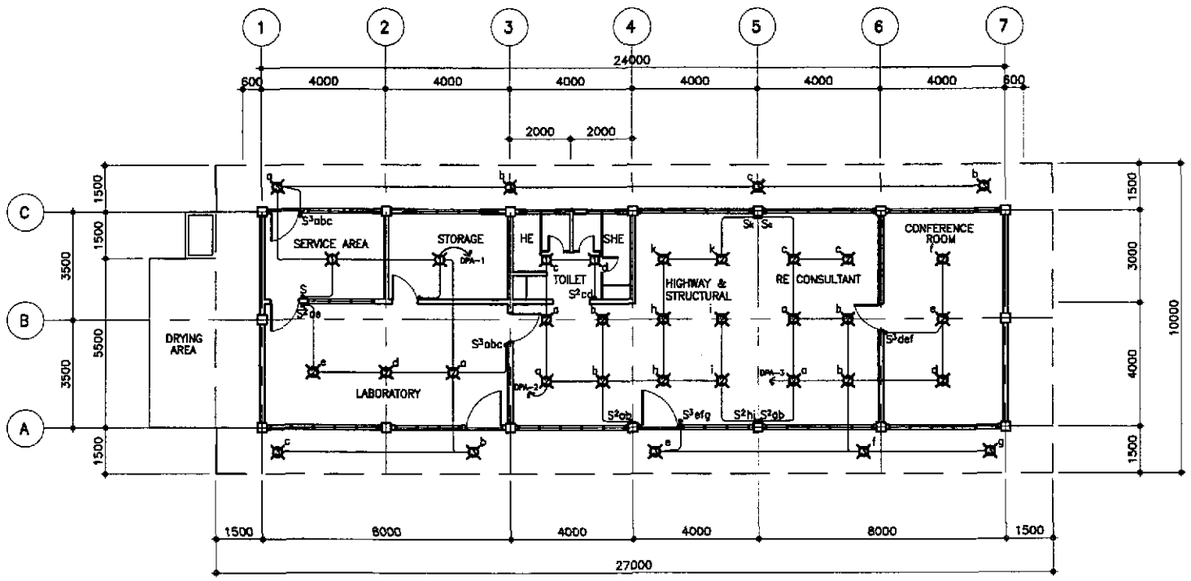
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGR'S FIELD OFF. & LIVING QUARTERS
ROOF FRAMING PLAN, SCHEMATIC DIAGRAM
PURLIN CONN. & CROSS-BRASING CONN.

SHEET NO. : FA-12



2 / FE-01 POWER LAYOUT OF THE ENGINEER'S FIELD OFFICE / LABORATORY
SCALE 1:100



2 / FE-01 LIGHTING LAYOUT OF THE ENGINEER'S FIELD OFFICE / LABORATORY
SCALE 1:100

GENERAL NOTES:

1. ALL ELECTRICAL WORKS SHALL BE DONE IN STRICT COMPLIANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE PHIL. ELECT. CODE, EXISTING APPLICABLE ORDINANCES, RULES AND REGULATIONS OF THE LOCAL GOVERNMENT AND THE REQUIREMENTS OF THE POWER COMPANY.
2. THE TYPE OF POWER SERVICE TO USED SHALL BE SINGLE-PHASE 2-WIRE, 240 VOLTS, 60Hz, AC.
3. ALL WIRINGS SHALL BE INSTALLED IN STANDARD GALVANIZED RIGID STEEL CONDUIT, RUN EMBEDDED INSIDE THE CONCRETE AND HOLLOW BLOCK STRUCTURES, SLABS, COLUMNS, WALLS PARTITIONS AND/OR RUN BETWEEN DOUBLE WALL WOODED PARTITIONS OR INSIDE THE CEILING SPACES.
4. ALL LIGHTING CIRCUIT HOMERUNS AND CONVENIENCE OUTLETS SHALL BE WIRED WITH NOT LESS THAN 3.5mm IN SIZE.
5. THE MINIMUM SIZES OF WIRE AND CONDUIT TO BE USED SHALL BE 2.0mm² AND 15mm NOMINAL DIAMETER, RESPECTIVELY.
6. ALL NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT SHALL BE PROPERLY GROUNDED IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE IV OF THE PHIL ELECT. CODE, PART I, LATEST EDITION.
7. WHENEVER REQUIRED AND NECESSARY, PULL BOXES OF PROPER SIZES SHALL BE INSTALLED AT CONVENIENT AND INCONSPICUOUS LOCATIONS, ALTHOUGH SUCH BOXES ARE NOT SHOWN ON THE PLAN IS NOR MENTIONED IN THE SPECIFICATIONS.
8. ALL WALL OUTLETS SHALL BE INSTALLED AT THE FOLLOWING HEIGHT ABOVE THE FINISHED FLOOD LEVEL, UNLESS OTHERWISE NOTED.

   A. WALL SWITCHES .....1200 mm
   B. CONVENIENCE OUTLETS .....300 mm
   C. AIR CONDITIONING OUTLETS ....AT CONVENIENT HEIGHT NEAR THE EQUIPMENT
9. STANDARD TYPE OF ACCESSORIES, SPLICING DEVICES, TERMINATORS AND OTHER APPURTENANCES FOR THE ENTIRE ELECTRICAL INSTALLATION SHALL BE USED.
10. ALL MATERIALS TO BE USED SHALL BE BRAND NEW AND OF THE APPROVED TYPE FOR THE LOCATION AND PURPOSE.
11. THE CONTRACTOR SHALL VERIFY AND ORIENT THE ACTUAL LOCATION OF THE SERVICE ENTRANCE FOR CONNECTION TO POWER COMPANY SERVICE POINT.
12. ALL ELECTRICAL WORKS SHALL BE DONE UNDER THE STRICT SUPERVISION OF A DULY REGISTERED ELECTRICAL ENGINEER.

NOTE:

ALL FLUORESCENT LIGHTING FIXTURES SHALL BE EQUIPPED WITH A HIGH POWER FACTOR PRE-HEAT WITH STARTER TYPE BALLAST, COMPLETE WITH ALL NECESSARY ACCESSORIES, WIRED AND READY FOR SERVICE USED.

ELECTRICAL SYMBOLS:

- CEILING LIGHT; REFER TO SCHEDULE OF LIGHTING FIXTURES AND LAMPS
- ELECTRICAL RISER
- S — ONE-WAY WALL SWITCH, 15A, 250V
- S^2 — 2 ONE-WAY WALL SWITCHES ON ONE-GANG PLATE, 15A, 250V
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- ENCLOSED AUTOMATIC CIRCUIT BREAKER (ACB) 70AT, 100AF, 2P, 240V
- DISTRIBUTION PANEL BOARD
- PULL BOX OR JUNCTION BOX
- (m) ELECTRIC SERVICE METER
- PROPOSED SERVICE ENTRANCE WITH CAP
- CONCEALED OR EMBEDED CONDUIT RUN
- UNDERGROUND OR UNDER FLOOR CONDUIT RUN
- CIRCUIT HOMERUN TO PANEL BOARD

ERNESTO M. ANTIOQUIA
ENGINEER

PTR. NO. 7403864 P.E.E. NO. 2913
ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
T.I.N. 109-382-379

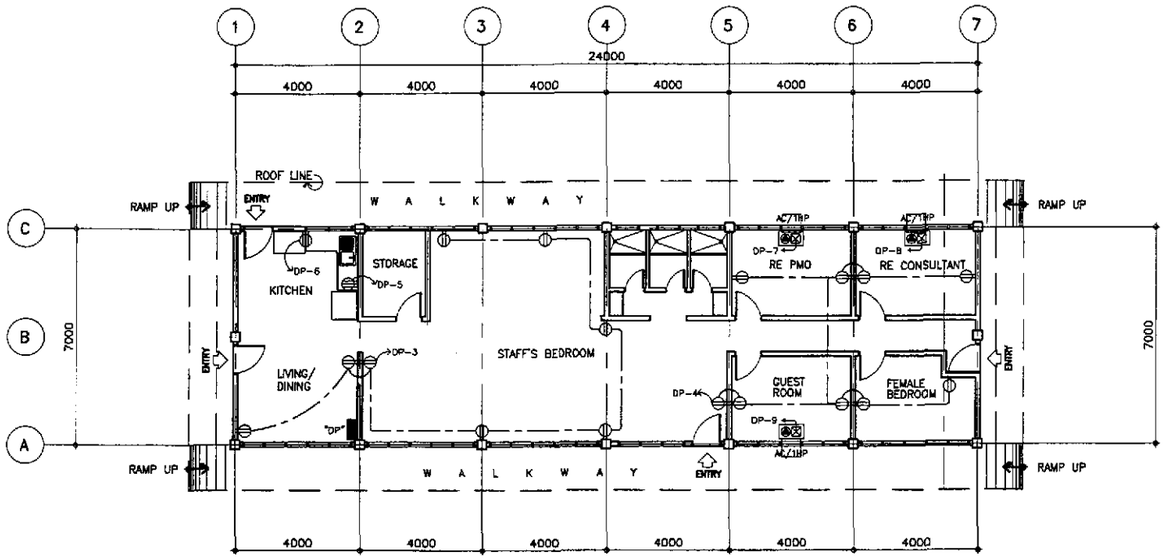
JICA JAPAN INTERNATIONAL COOPERATION AGENCY
KEI KATAHIRA & ENGINEERS INTERNATIONAL
YEC YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/8/02	E.M. ANTIOQUIA
CHECKED	10/17/02	E.M. ANTIOQUIA
SUBMITTED	10/19/02	TEAM LEADER

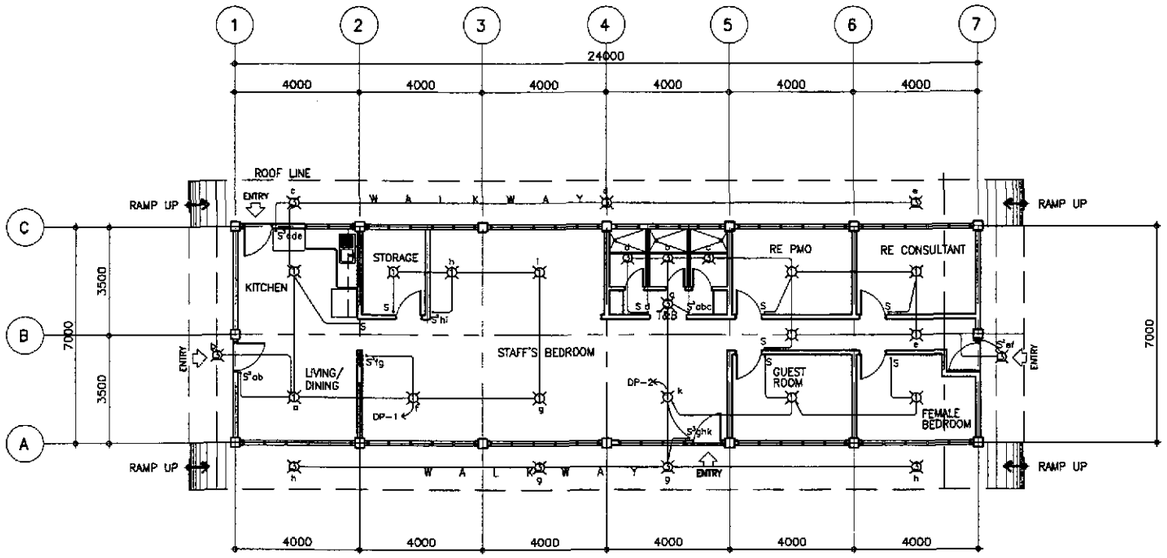
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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	FE M. BARRIENTOS	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG
Project Director	Chief, Mechanical-Elect'l. Div.	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 III	AS SHOWN FULL SIZE A1	ENGR'S FIELD OFFICE / LABORATORY LIGHTING LAYOUT, POWER LAYOUT ELECTRICAL SYMBOLS & GENERAL NOTES	FE-01



2 FE-02 POWER LAYOUT FOR ENGINEER'S LIVING QUARTER
SCALE 1:100



1 FE-02 LIGHTING LAYOUT FOR ENGINEER'S LIVING QUARTER
SCALE 1:100

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- CIRCUIT HOMERUN TO PANEL BOARD

ERNESTO M. ANTIOQUIA
ENGINEER

PTR. NO. 7403684 P.E.E. NO. 2913
ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
T.I.N. 109–382–379

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

	DATE	SIGNATURE
DESIGNED	10/5/02	E.M. ANTIOQUIA
CHECKED	10/17/02	E.M. ANTIOQUIA
SUBMITTED	10/19/02	Chi Kenda
		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	FE M. BARRIENTOS	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Mechanical–Elect'l. Div.	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 III

SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S LIVING QUARTERS
LIGHTING LAYOUT, POWER LAYOUT
ELECTRICAL SYMBOLS & GENERAL NOTES

SHEET NO. : FE-02

SCHEDULE OF LOADS AND COMPUTATIONS

PANELBOARD "DP" — MAIN A.C.B. : 100AF,2P, 250V 100 AT, 18 KAIC W/SOLID NEUTRAL

CRT. NO.	LOAD DESCRIPTION	VA	RATING OF BRANCH BREAKER VOLTS	AF	P	AT	SIZE OF HOMERUN WIRES IN CONDUIT
1	LIGHT OUTLETS	455	220	50	2	15	2-3.5mm TW^2in 15mmøC
2	LIGHT OUTLETS	640	220	50	2	15	2-3.5mm TW^2in 15mmøC
3	CONVENIENCE OUTLET	1440	220	50	2	20	2-3.5mm TW^2in 15mmøC
4	CONVENIENCE OUTLET	1620	220	50	2	20	2-3.5mm TW^2in 15mmøC
5	REFRIGERATOR	500	220	50	2	20	2-3.5mm TW^2+ 1-20mm^2 TW(G) IN 15mmøC
6	ELECTRIC STOVE	3000	220	50	2	30	2-5.5mm^2 THW+1-3.5mm^2 TW(G) IN 20mmøC
7	1hp,1ϕ WDO,TYPE ACU	1980	220	50	2	30	2-5.5mm^2 THW+1-3.5mm^2 TW(G) IN 20mmøC
8	1hp,1ϕ WDO,TYPE ACU	1980	220	50	2	30	2-5.5mm^2 THW+1-3.5mm^2 TW(G) IN 20mmøC
9	1hp,1ϕ WDO,TYPE ACU	1980	220	50	2	30	2-5.5mm^2 THW+1-3.5mm^2 TW(G) IN 20mmøC
10	SPARE	1500	220	50	2	20	-
11	SPARE	1500	220	50	2	20	-
12	SPARE	1500	220	50	2	20	-
	TOTAL	18,095					

Iv @ 90% D.F. = $\frac{18095}{220}$ (0.90)+0.25(8)= 75.03 Amps

$I_B = \frac{18095}{220}$ (0.90)+1.5(8)= 86.03 Amps

MAIN ACB: 100AF,2P,250 V,100AT,15KAIC

USE : 2-38mm^2 THW + 1-14mm^2 TW(G) IN 40mmø RSC

SCHEDULE OF LIGHTING FIXTURES & LAMPS

SYMBOLS	DESCRIPTION	MOUNTING & INSTALLATION
(1)	ONE (1) 40 WATTS, 220V, FLUORESCENT LIGHTING FIXTURES, BOX TYPE	SURFACE CEILING MOUNTED
(2)	ONE (2) 40 WATTS, 220V, FLUORESCENT LIGHTING FIXTURES, BOX TYPE	SURFACE CEILING MOUNTED
(3)	ONE (1)-SL-18 LAMP WITH HEXLESS TYPE, MEDIUM BASE PORCELAIN RECEPTACLE	SURFACE CEILING MOUNTED

NOTE:
ALL FLUORESCENT LIGHTING FIXTURES SHALL BE EQUIPPED WITH A HIGH POWER FACTOR PRE-HEAT WITH STARTER TYPE BALLAS, COMPLETE WITH ALL NECESSARY ACCESSORIES, WIRED AND READY FOR USE.

ENGINEER'S LIVING QUARTERS

SCHEDULE OF LOADS AND COMPUTATIONS

PANELBOARD "DPA" — MAIN A.C.B. : 225AF,2P, 250V 200 AT, 18 KAIC W/SOLID NEUTRAL

CRT. NO.	LOAD DESCRIPTION	VA	RATING OF BRANCH BREAKER VOLTS	AF	P	AT	SIZE OF HOMERUN WIRES IN CONDUIT
1	LIGHT OUTLETS	590	220	50	2	15	2-3.5mm TW^2in 15mmøC
2	LIGHT OUTLETS	1210	220	50	2	15	2-3.5mm TW^2in 15mmøC
3	LIGHT OUTLETS	1065	220	50	2	15	2-3.5mm TW^2in 15mmøC
4	CONVENIENCE OUTLETS	1800	220	50	2	20	2-3.5mm TW^2+ 1-2.0mm^2 TW(G) IN 15mmøC
5	CONVENIENCE OUTLETS	1620	220	50	2	20	2-3.5mm TW^2+ 1-2.0mm^2 TW(G) IN 15mmøC
6	PHOTOCOPY MACHINE /HEAVY DUTY CO.	2500	220	50	2	20	2-3.5mm TW^2+ 1-2.0mm^2 TW(G) IN 15mmøC
7	3TR,1ϕ,SPLIT TYPE ACU	6930	220	100	2	70	2-8mm^2 THW + 1-5.5mm^2 TW(G) IN 25mmøC
8	3TR,1ϕ,SPLIT TYPE ACU	6930	220	100	2	70	2-8mm^2 THW + 1-5.5mm^2 TW(G) IN 25mmøC
9	3TR,1ϕ,SPLIT TYPE ACU	6930	220	100	2	70	2-8mm^2 THW + 1-5.5mm^2 TW(G) IN 25mmøC
10	SPARE	5000	220	100	2	70	
11	SPARE FOR PERIMETER LIGHTS	1500	220	50	2	30	2-5.5mm^2 THW + 1-3.5mm^2 TW(G) IN 25mmøC
12	SPARE	1500	220	50	2	20	-
	TOTAL	37,575					

Iv @ 95% D.F. = $\frac{37575(0.95)}{220}$ +0.25(23)= 168 Amps

USE : 2-100mm^2 THW + 1-30mm^2 TW IN 50mmø RSC

I_B=162.25567+1.5(23)=196.75 Amps.

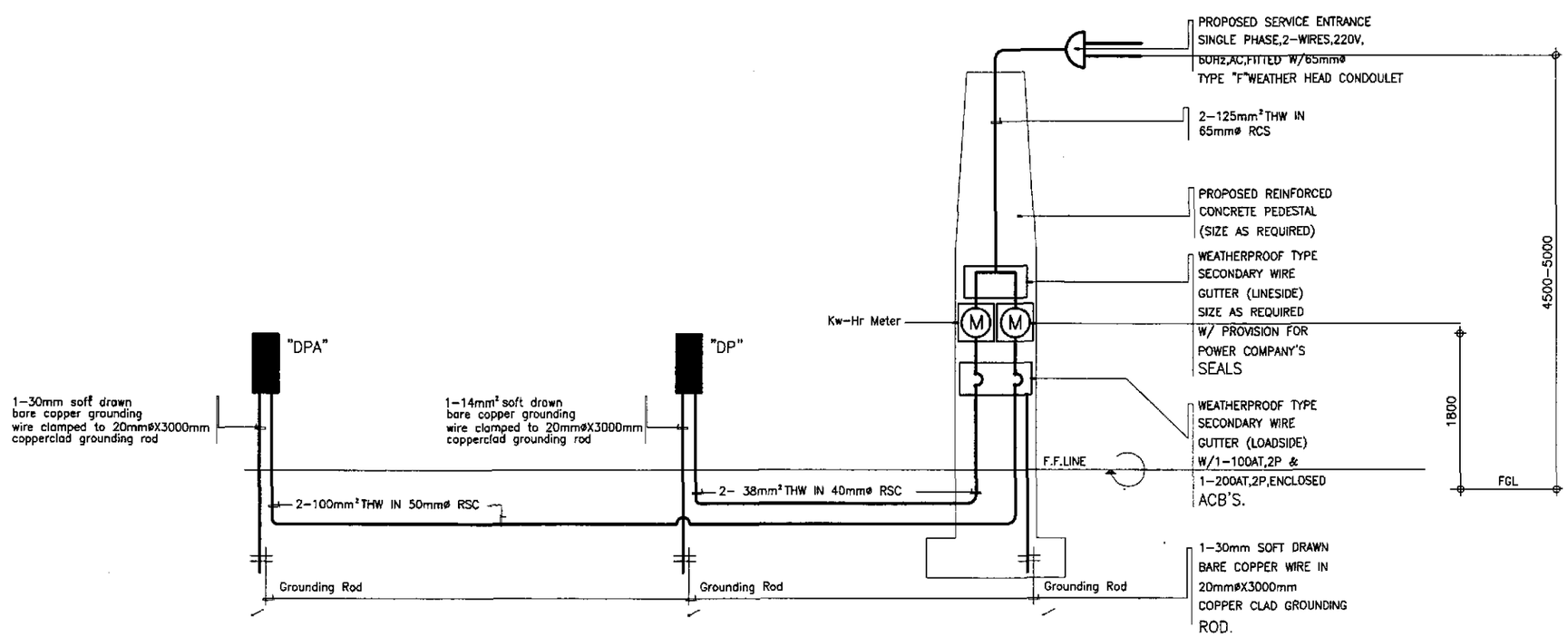
MAIN ACB: 225AF,2P,250 V,200AT,18 KAIC

SCHEDULE OF LIGHTING FIXTURES & LAMPS

SYMBOLS	DESCRIPTION	MOUNTING & INSTALLATION
(1)	ONE (1) 40 WATTS, 220V, FLUORESCENT LIGHTING FIXTURES, BOX TYPE	SURFACE CEILING MOUNTED
(2)	ONE (2) 40 WATTS, 220V, FLUORESCENT LIGHTING FIXTURES, BOX TYPE	SURFACE CEILING MOUNTED
(3)	ONE (1)-SL-18 LAMP WITH HEXLESS TYPE, MEDIUM BASE PORCELAIN RECEPTACLE	SURFACE CEILING MOUNTED

NOTE:
ALL FLUORESCENT LIGHTING FIXTURES SHALL BE EQUIPPED WITH A HIGH POWER FACTOR PRE-HEAT WITH STARTER TYPE BALLAS, COMPLETE WITH ALL NECESSARY ACCESSORIES, WIRED AND READY FOR USE.

ENGINEER'S FIELD OFFICE/LABORATORY



COMPUTATION FOR REQUIRED SIZE OF MAIN SERVICE ENTRANCE FEEDER:

$I_T = \frac{VA"DPA"+VA"AP"}{220}$ @ 85% DF + 0.25(I)

$I_T = \frac{37575+18095}{220}$ (0.85)+0.25(23)

I_T= 220.83 Amps.

USE : 2-125 mm^2 THW IN 65 mmø RSC

1 / FE-03 ELECTRICAL RISER DIAGRAMS
NOT TO SCALE

ERNESTO M. ANTIOQUIA
ENGINEER

PTR. NO. 7403664 P.E.E. NO. 2913
ISSUED ON 01/02/2002 ISSUED AT CABUYAO, LAGUNA
T.I.N. 109-382-379

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

	DATE	SIGNATURE
DESIGNED	1/8/02	E.M. ANTIOQUIA
CHECKED	1/11/02	E.M. ANTIOQUIA
SUBMITTED	1/19/02	B. KUDA, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

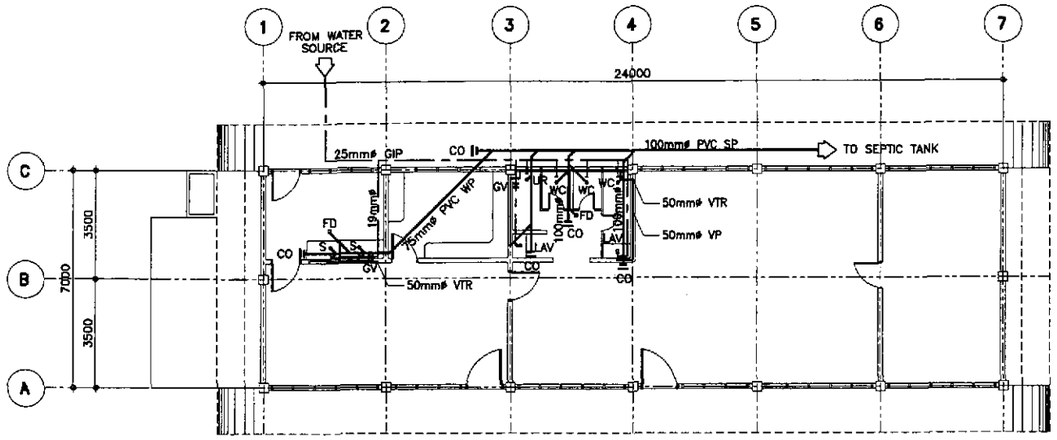
PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	FE M. BARRIENTOS	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Mechanical-Elect'l. Div.	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 III

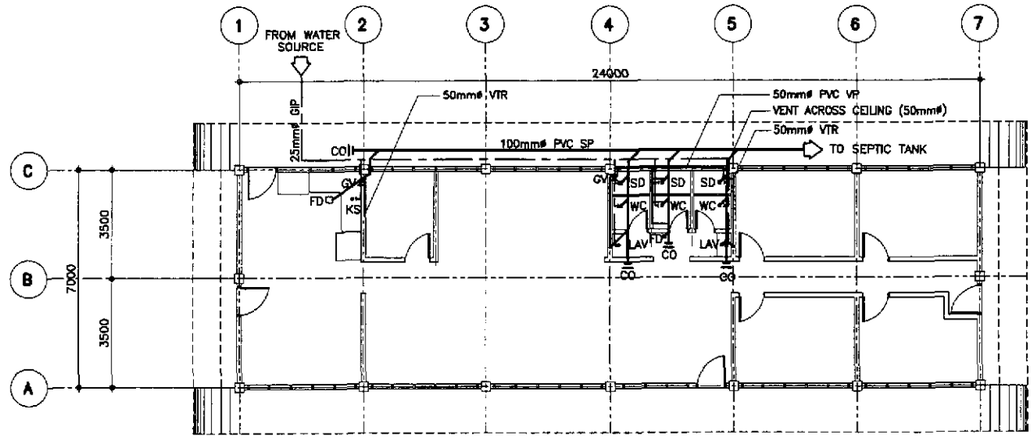
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S FIELD OFFICE AND LIVING QUARTERS
SCHEDULE OF LOADS AND COMPUTATIONS
ELECTRICAL RISER DIAGRAM

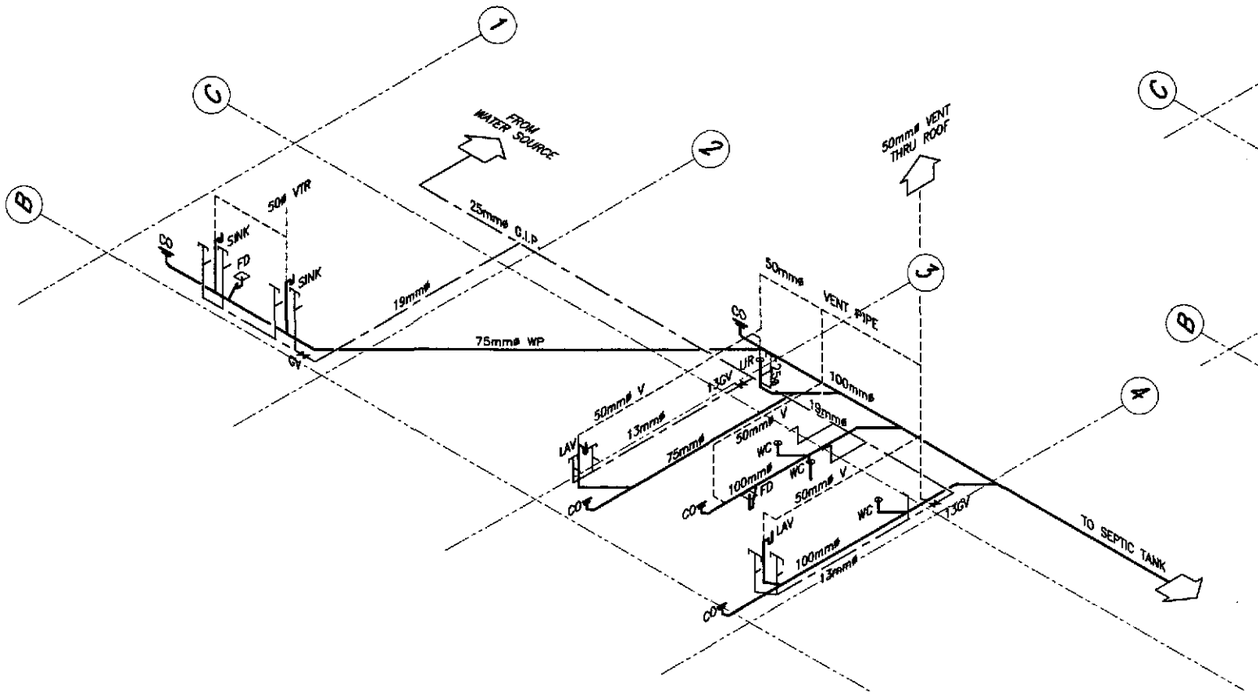
SHEET NO. : FE-03



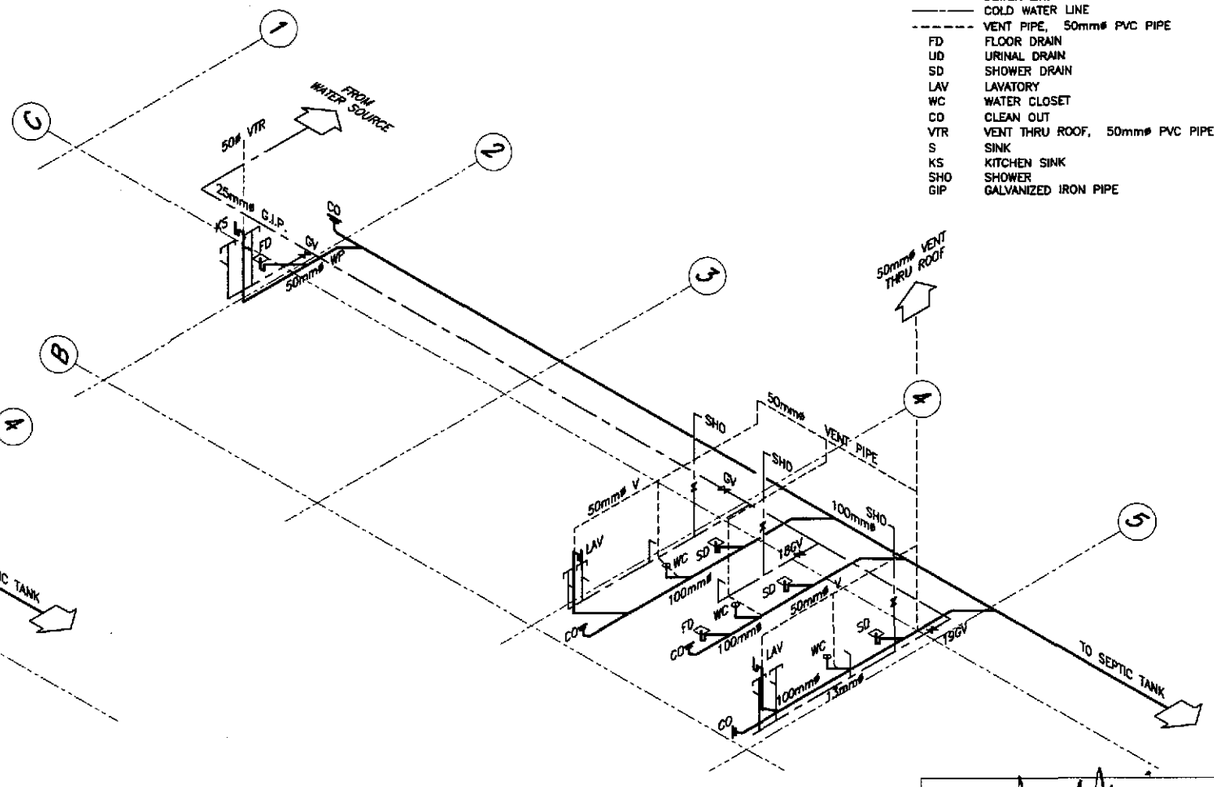
1 / FP-01 — ENGINEER'S FIELD OFFICE
SEWER AND WATER LINE LAYOUT
SCALE 1:100



2 / FP-01 — ENGINEER'S LIVING QUARTER
SEWER AND WATER LINE LAYOUT
SCALE 1:100



3 / FP-01 — (SHOWING SEWER AND WATER LINE)
ISOMETRIC DIAGRAM
SCALE 1:50



4 / FP-01 — (SHOWING SEWER AND WATER LINE)
ISOMETRIC DIAGRAM
SCALE 1:50

LEGEND :

———	SEWER LINE
———	COLD WATER LINE
- - - - -	VENT PIPE, 50mmø PVC PIPE
FD	FLOOR DRAIN
UD	URINAL DRAIN
SD	SHOWER DRAIN
LAV	LAVATORY
WC	WATER CLOSET
CO	CLEAN OUT
VTR	VENT THRU ROOF, 50mmø PVC PIPE
S	SINK
KS	KITCHEN SINK
SHO	SHOWER
GIP	GALVANIZED IRON PIPE

FRANCISCO A. [illegible] JR.
SANITARY ENGINEER
PTR. NO. 0083138 P.R.C. NO. 0000695
ISSUED ON 03/26/2002 T.I.N. 119-878-225
ISSUED AT SAN MATEO, RIZAL

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

	DATE	SIGNATURE
DESIGNED	10/8/02	F. SANTOS
CHECKED	10/17/02	F. SANTOS
SUBMITTED	10/19/02	H. KIKUCHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

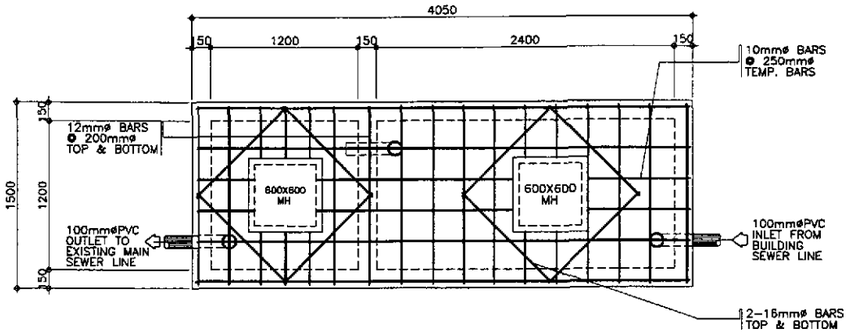
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	EMMANUEL P. CUNTAPAY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Architectural 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 III

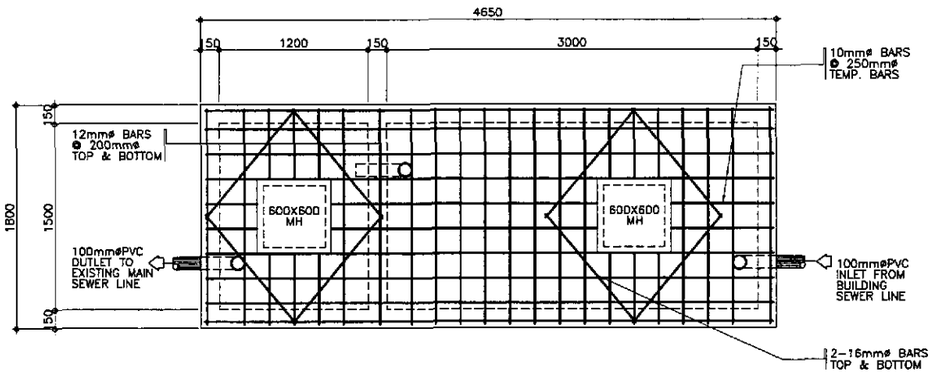
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S FIELD OFFICE AND LIVING QUARTERS
SEWER AND WATER LINE LAYOUT AND ISOMETRIC DIAGRAM

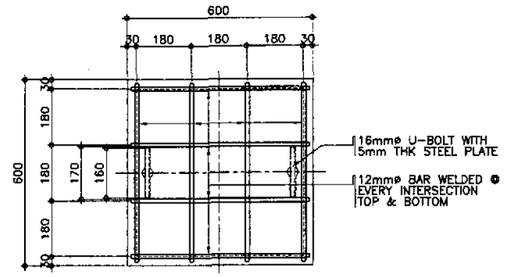
SHEET NO. : FP-01



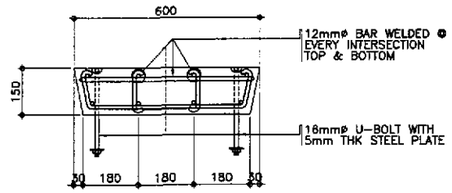
1A / FP-02 PLAN SCALE 1:20



1C / FP-02 PLAN SCALE 1:20



2A / FP-02 PLAN SCALE 1:20



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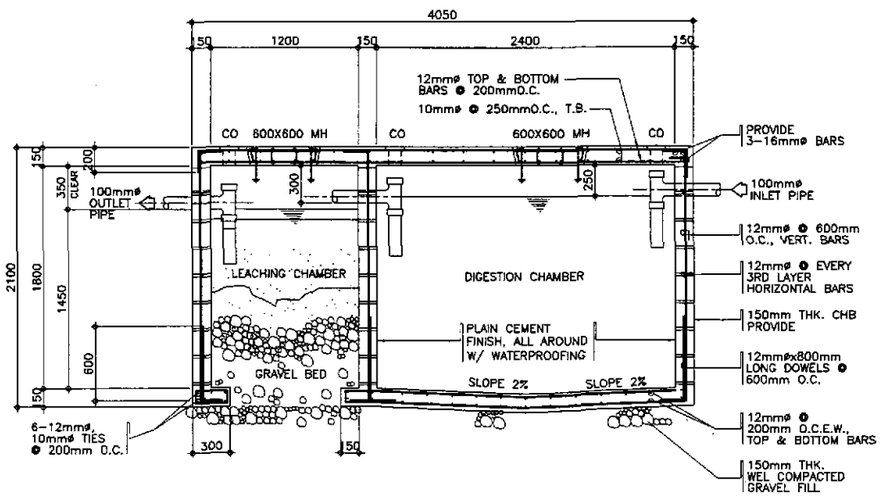
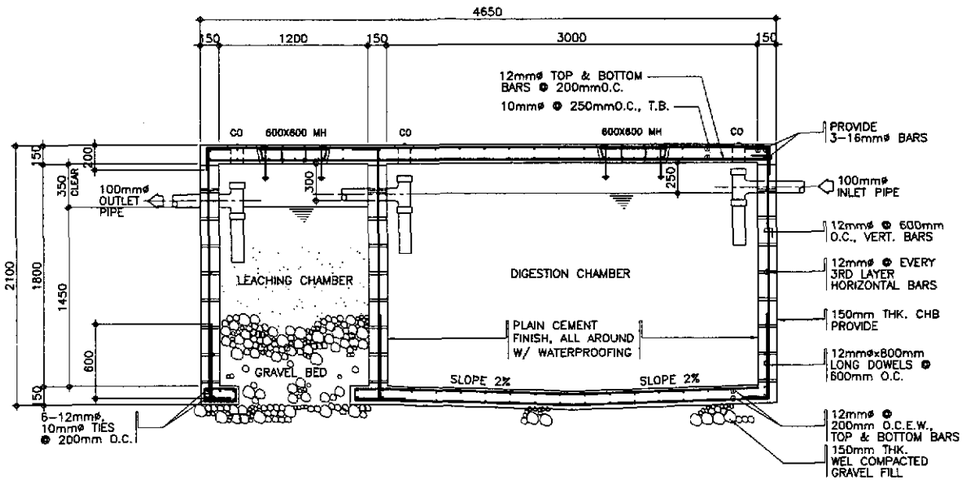


1B / FP-02 SECTION SCALE 1:20

ENGINEER'S FIELD OFFICE



1D / FP-02 SECTION SCALE 1:20

ENGINEER'S LIVING QUARTER

1 / FP-02 SEPTIC TANK DETAILS SCALE AS SHOWN

2 / FP-02 CONCRETE COVER DETAIL SCALE AS SHOWN

GENERAL NOTES:

1. ALL PLUMBING WORKS INCLUDED HEREIN EXECUTED ACCORDING TO THE PROVISIONS AND REQUIREMENTS OF THE PHILIPPINE NATIONAL PLUMBING CODE.
2. SOIL AND WASTE PIPE LINE SHALL BE PVC, SIZE AS IN DRAWING.
3. ALL WATER LINES SHALL BE G.I. PIPE SCHEDULE 40 AND SIZE OF PIPES TO THE FIXTURES SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
4. PROVIDE 2% SLOPE FOR HOUSE AND SEWER LINES.
5. ALL G.I. PIPES AND FITTINGS BURRIED UNDERGROUND SHALL BE LEAD COATED OR TAR COATED.
6. VENT THRU ROOF PIPE SHALL BE AT LEAST 0.30m ABOVE ROOF.
7. ALL DOWNSPOUTS SHALL BE PVC PIPES 75mmø (3") UNLESS OTHERWISE SPECIFIED.

AUGUSTINO T. SAN MARIA
SANITARY ENGINEER

PTR. NO. 0083138 P.R.C. NO. 0000695
ISSUED ON 03/26/2002 T.I.N. 119-878-225
ISSUED AT SAN MATEO, RIZAL

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

	DATE	SIGNATURE
DESIGNED	10/8/02	F. STA. MARIA
CHECKED	10/17/02	F. STA. MARIA
SUBMITTED	10/19/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

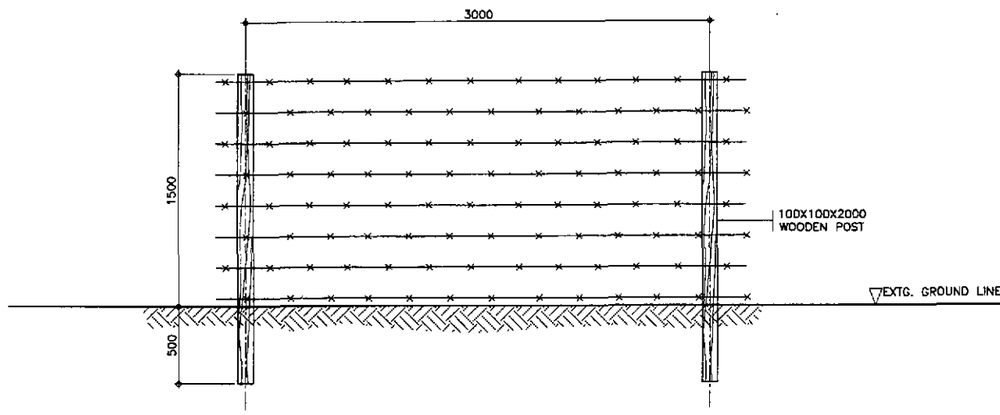
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	EMMANUEL P. CUNTAPAY	GILBERTO S. REYES	MANUEL M. BONDAD	SIMEON A. DATUMANONG
Project Director	Chief, Architectural 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 III

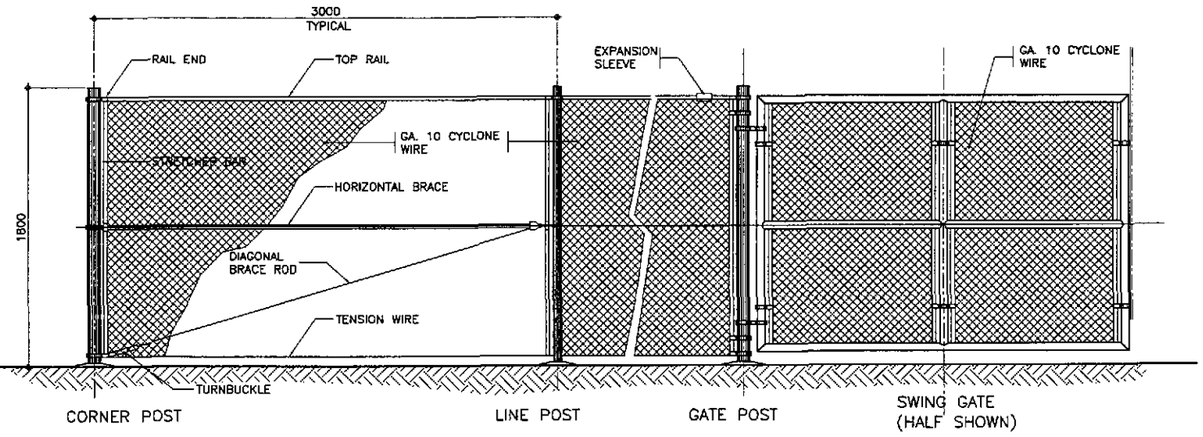
SCALE : AS SHOWN FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S FIELD OFFICE AND LIVING QUARTERS
SEPTIC TANK DETAILS

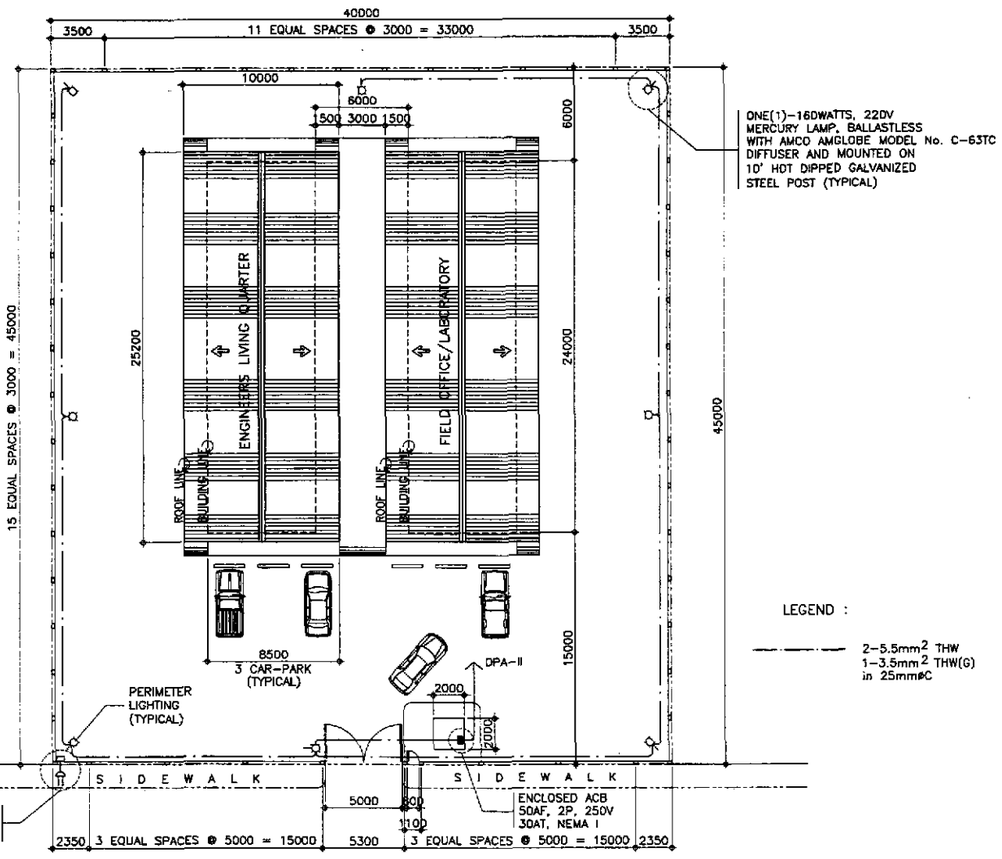
SHEET NO. : FP-02



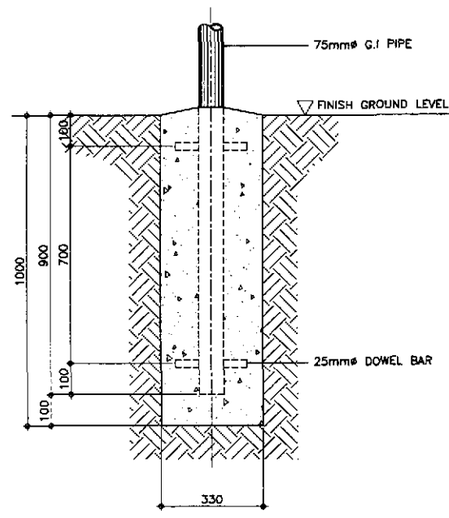
3 FX-01 TYPICAL ELEVATION FENCE (REAR & SIDE)
SCALE 1:20

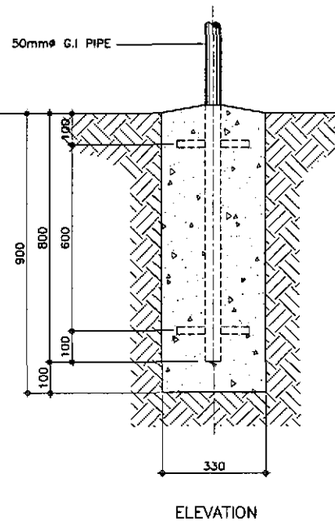


2 FX-01 TYPICAL ELEVATION - FENCE AND GATE
SCALE 1:20



1 FX-01 PLOT PLAN
SCALE 1:200





4 FX-01 TYPICAL FOUNDATION DETAIL
SCALE 1:10

ARNEL P. GONZALES
ENGINEER
PTR. NO. 5846340 P.R.C. NO. 53457
ISSUED ON 04/26/2002 T.I.N. 138-062-682
ISSUED AT SAN JUAN,M.M.

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

	DATE	SIGNATURE
DESIGNED	10/8/02	A.P. GONZALES
CHECKED	10/17/02	A.P. GONZALES
SUBMITTED	10/18/02	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	EMMANUEL P. CUNTAPAY	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Architectural Division	DIC, Director IV	Undersecretary	Secretary

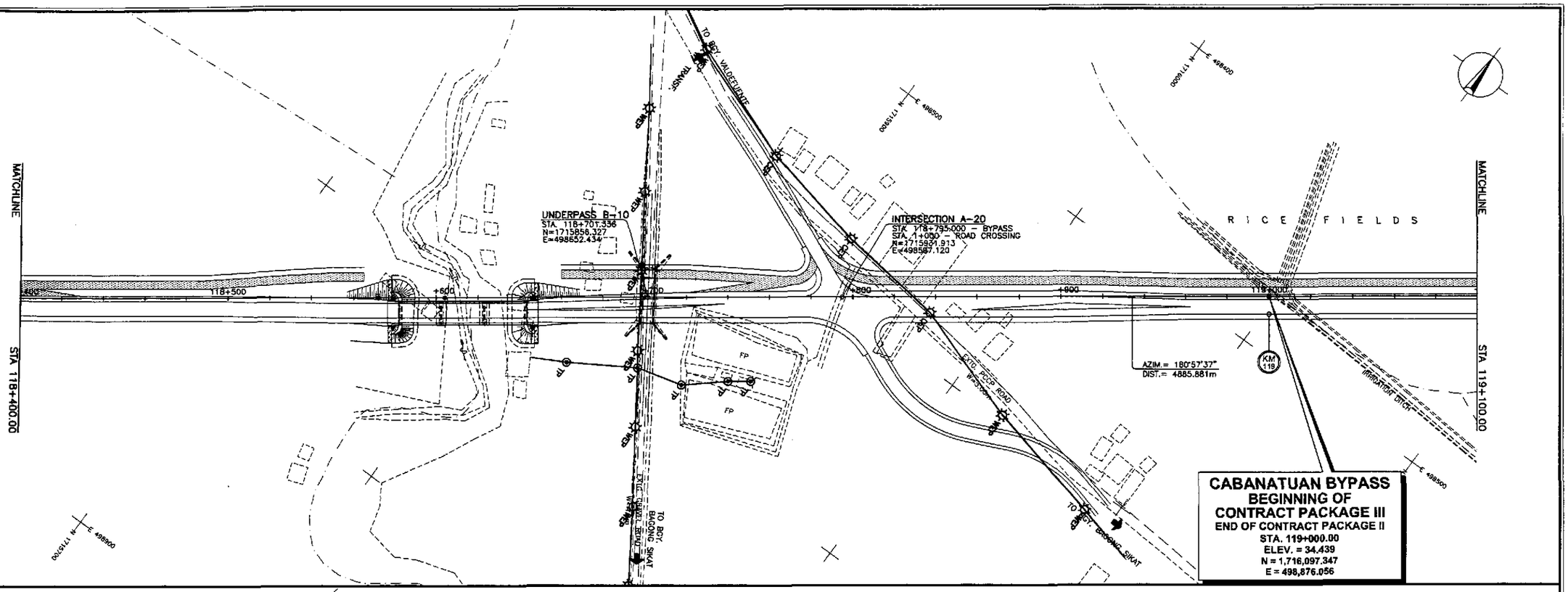
PROJECT AND LOCATION :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)
CABANATUAN BYPASS - CONTRACT PACKAGE III

SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
ENGINEER'S FIELD OFFICE AND LIVING QUARTERS
PLOT PLAN, ELEVATION OF FENCE & GATE
TYPICAL FOUNDATION DETAILS

SHEET NO. : FX-01

OTHERS



JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

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

	DATE	SIGNATURE
DESIGNED	10/8/07	
CHECKED	10/17/07	
SUBMITTED	10/19/07	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

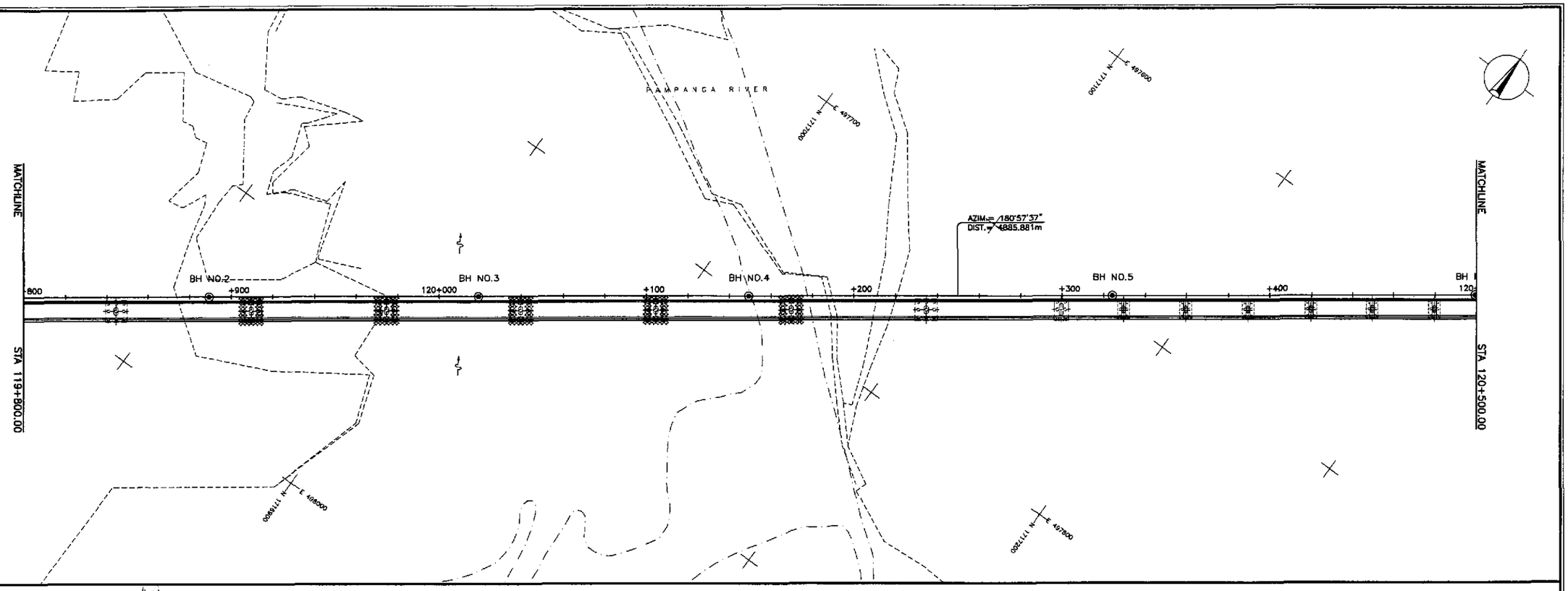
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG
Project Director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

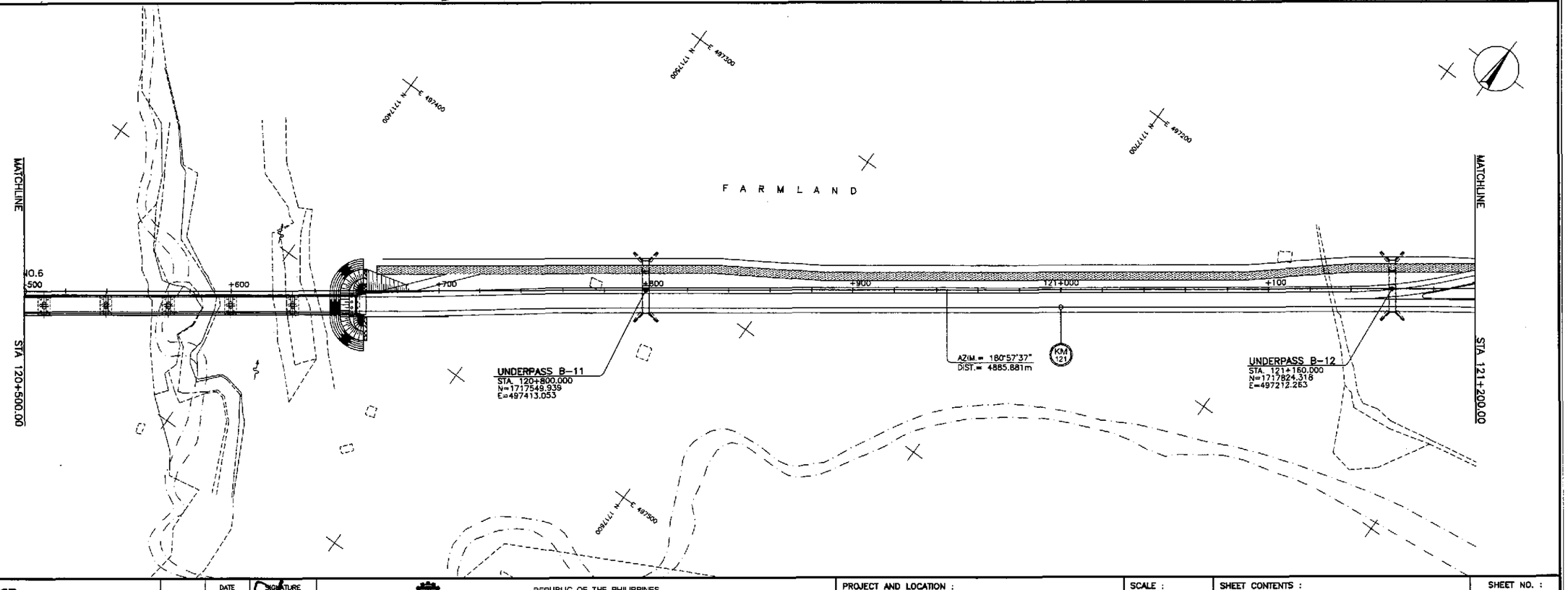
PROJECT AND LOCATION :
THE DETAILED DESIGN STUDY ON
UPGRADING INTER-URBAN HIGHWAY SYSTEM
ALONG THE PAN-PHILIPPINE HIGHWAY
(Plaridel, Cabanatuan and San Jose Bypasses)
CABANATUAN BYPASS - CONTRACT PACKAGE III

SCALE :
1:1000
FULL SIZE A1

SHEET CONTENTS :
UTILITY RELOCATION REFERENCE LAYOUT PLAN
ALONG BYPASS
STA. 119+000 - STA. 119+800

SHEET NO. :
OE-01





JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL

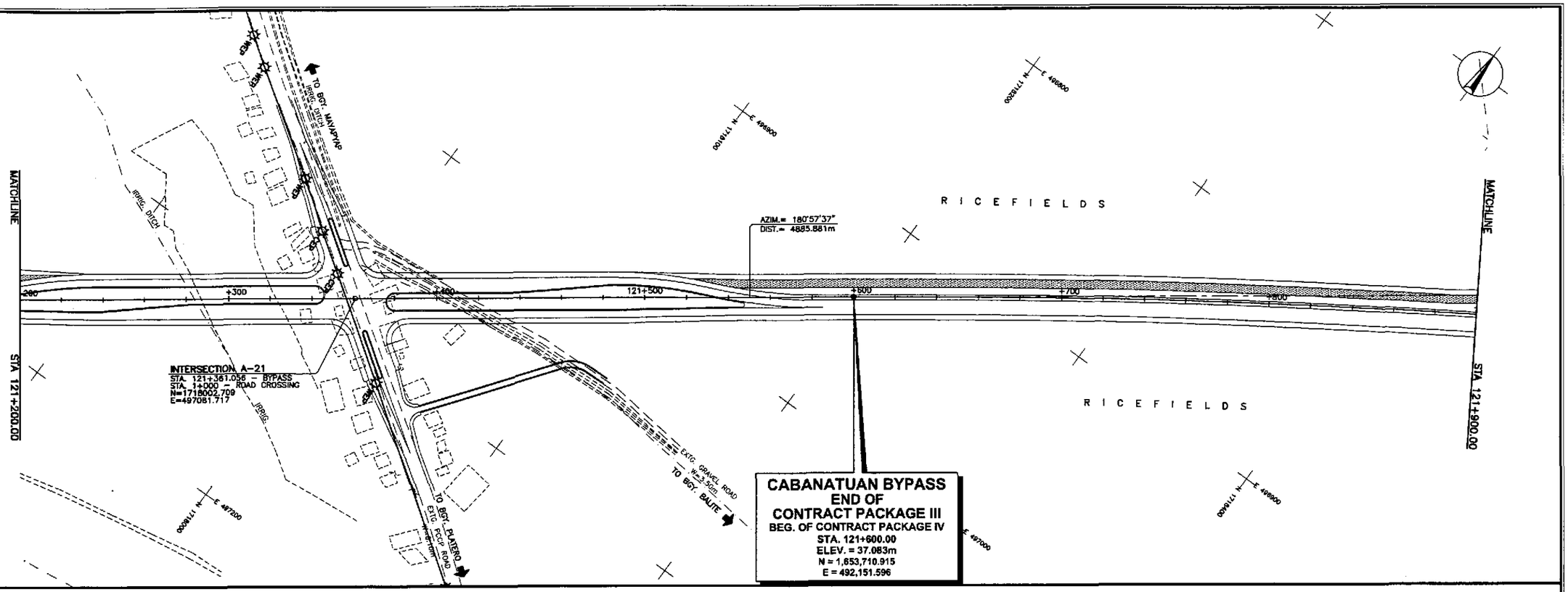
YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/18/12	ACACIO
CHECKED	10/17/12	JOSE
SUBMITTED	10/19/12	KINUCHI 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	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Highways 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)	1:1000	UTILITY RELOCATION REFERENCE LAYOUT PLAN	OE-02
CABANATUAN BYPASS - CONTRACT PACKAGE III	FULL SIZE A1	ALONG BYPASS STA. 119+800 - STA. 121+200	



JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL

YACHIYO ENGINEERING CO., LTD.

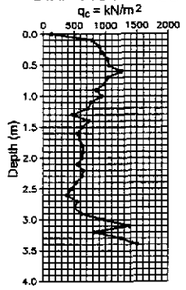
	DATE	SIGNATURE
DESIGNED	10/8/07	A. ACADO
CHECKED	10/17/07	S. GEE
SUBMITTED	10/19/07	K. KUSUMI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

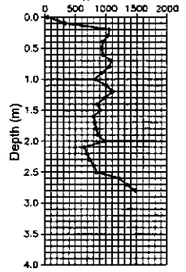
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Highways 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)	1:1000	UTILITY RELOCATION REFERENCE LAYOUT PLAN ALONG BYPASS STA. 121+200 - STA. 121+600	OE-03
CABANATUAN BYPASS - CONTRACT PACKAGE III	FULL SIZE A1		

STA. 119+254.00



STA. 119+534.00



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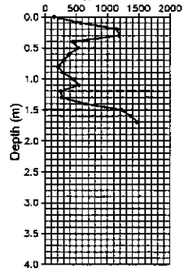

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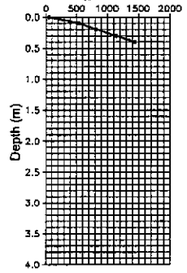

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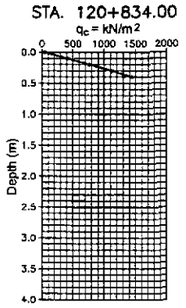
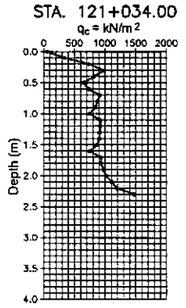


STA. 121+034.00



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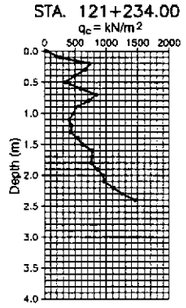

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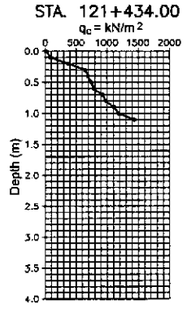

1 / OC-01 GEOTECHNICAL SURVEY - PORTABLE CONE PENETRATION TEST (CPT)
NOT TO SCALE

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

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

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

	DATE	SIGNATURE	PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
DESIGNED	12/8/02	COSE	Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved by: (See cover sheet for Signature/Approval)
CHECKED	12/17/02	COSE	DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
SUBMITTED	12/19/02	TEAM LEADER	Project Director	Chief, Highways 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 III

SCALE : NOT TO SCALE / FULL SIZE A1

SHEET CONTENTS :
PORTABLE CONE PENETRATION TEST (CPT) PROFILE
ALONG BYPASS
STA. 119+254.00 - STA. 121+434.00

SHEET NO. : OC-01