

**REPUBLIC OF THE UNION OF MYANMAR
MINISTRY OF CONSTRUCTION
DEPARTMENT OF BRIDGE**

**DETAILED DESIGN STUDY ON
THE BAGO RIVER BRIDGE
CONSTRUCTION PROJECT**

FINAL REPORT ATTACHMENTS

VOLUME I DRAWINGS

PART I PACKAGE 1

DECEMBER 2017

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

NIPPON KOEI CO., LTD.

ORIENTAL CONSULTANTS GLOBAL CO., LTD.

METROPOLITAN EXPRESSWAY COMPANY LIMITED.

CHODAI CO., LTD.

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				MAIN TOWER ANCHORAGE OF STAY CABLES CABLE NO.C2 & C19 (1)-(2)	P1-CS-1505 ~ 1506				
				MAIN TOWER ANCHORAGE OF STAY CABLES CABLE NO.C3 & C18 (1)-(2)	P1-CS-1507 ~ 1508				
				MAIN TOWER ANCHORAGE OF STAY CABLES CABLE NO.C4 & C17 (1)-(2)	P1-CS-1509 ~ 1510				

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E. STEEL CABLE STAYED BRIDGE				F. ON-RAMP BRIDGE							
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		BAR ARRANGEMENT OF P13 PIER (1)-(30)	P1-CS-2303 ~ 2332			GENERAL VIEW OF SUPERSTRUCTURE FOR ON-RAMP (1)-(5)	P1-OR-1001 ~ 1005				
		BAR ARRANGEMENT OF P13 FOOTING (1)-(8)	P1-CS-2333 ~ 2340			TENDON ARRANGEMENT OF PRECAST BEAM FOR ON-RAMP (1)-(4)	P1-OR-1101 ~ 1104				
		GENERAL DRAWING OF STEEL PIPE SHEET PILE FOUNDATION OF P13 PIER	P1-CS-2341			BAR ARRANGEMENT OF PRECAST BEAM FOR ON-RAMP (1)-(8)	P1-OR-1201 ~ 1208				
		DETAIL OF STEEL PIPE SHEET PILE OF P13 PIER (1)-(2)	P1-CS-2342 ~ 2343			BAR ARRANGEMENT OF SLAB FOR ON-RAMP (1)-(8)	P1-OR-1301 ~ 1308				
		DETAIL OF INTERLOCKING OF STEEL PIPE SHEET PILE OF P13 PIER	P1-CS-2344			BAR ARRANGEMENT OF CROSS BEAM FOR ON-RAMP (1)-(5)	P1-OR-1401 ~ 1405				
		DETAIL OF CONNECTION BETWEEN STEEL PIPE SHEET PILE AND FOOTING OF P13 PIER	P1-CS-2345			BAR ARRANGEMENT OF PC-BOARD FOR ON-RAMP	P1-OR-1501				
		DETAIL OF PILE TOP CONNECTION TO THE BASE CONCRETE OF P13 PIER	P1-CS-2346								
		FALL PREVENTIVE HANDRAIL OF P13 PIER (1)-(4)	P1-CS-2347 ~ 2350								
		(REFERENCE) LAYOUT PLAN OF COFFERDAM PART OF P13 PIER (1)-(2)	P1-CS-2351 ~ 2352								
		(REFERENCE) CONSTRUCTION PLAN OF STEEL PIPE SHEET PILE WORK OF P13 PIER (1)-(2)	P1-CS-2353 ~ 2354								
		BRIDGE ACCESSORIES				ROCKING BEARING	P1-CS-3001	SUBSTRUCTURE AND FOUNDATION		COORDINATES OF SUBSTRUCTURE (A01-P03)	P1-OR-2000
						ANCHOR FRAME	P1-CS-3002			GENERAL VIEW OF AO1 ABUTMENT (1)-(2)	P1-OR-2001 ~ 2002
						TIE BAR FOR ROCKING BEARING	P1-CS-3003			GENERAL VIEW OF PO1 PIER	P1-OR-2011
						DETAIL OF TIE BAR (1)-(2)	P1-CS-3004 ~ 3005			GENERAL VIEW OF PO2 PIER	P1-OR-2021
						DETAIL OF PIN ROLLER BEARING (1)-(4)	P1-CS-3006 ~ 3009			GENERAL VIEW OF PO3 PIER	P1-OR-2031
DETAIL OF PIVOT BEARING (1)-(3)	P1-CS-3010 ~ 3012			BAR ARRANGEMENT OF AO1 ABUTMENT (1)-(8)	P1-OR-2101 ~ 2108						
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CONTENTS OF DRAWINGS

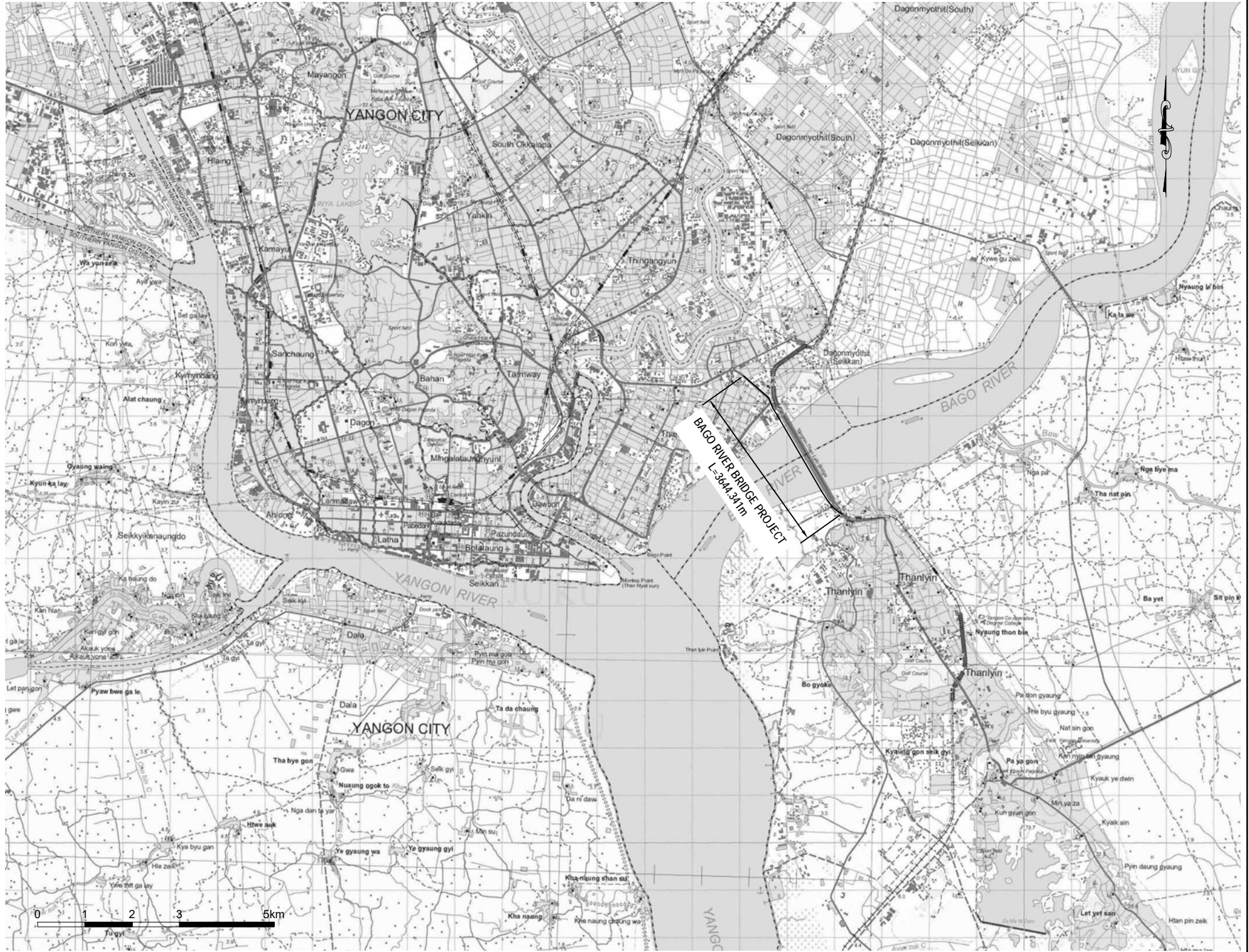
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		TYPICAL WIRING PLAN	P1-EL-0002
		(REFERENCE) INCOMING POWER RECEIVING FOR ROAD LIGHTING	P1-EL-0003
		TYPICAL MV SITE SUBSTATION	P1-EL-0004
		TYPICAL ELECTRIC POLE ASSEMBLING	P1-EL-0005
		TYPICAL LIGHTING PLAN FOR RETAINING WALL APPROACH (THANLYIN SIDE)	P1-EL-0006
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		(REFERENCE) LAND TRANSPORTATION ROUTE FROM LANDING PORT	P1-REF-1003
		(REFERENCE) DIAGRAM OF RAILING POST	P1-REF-2001
		(REFERENCE) INSPECTION LADDER FROM DECK	P1-REF-2002

A. GENERAL

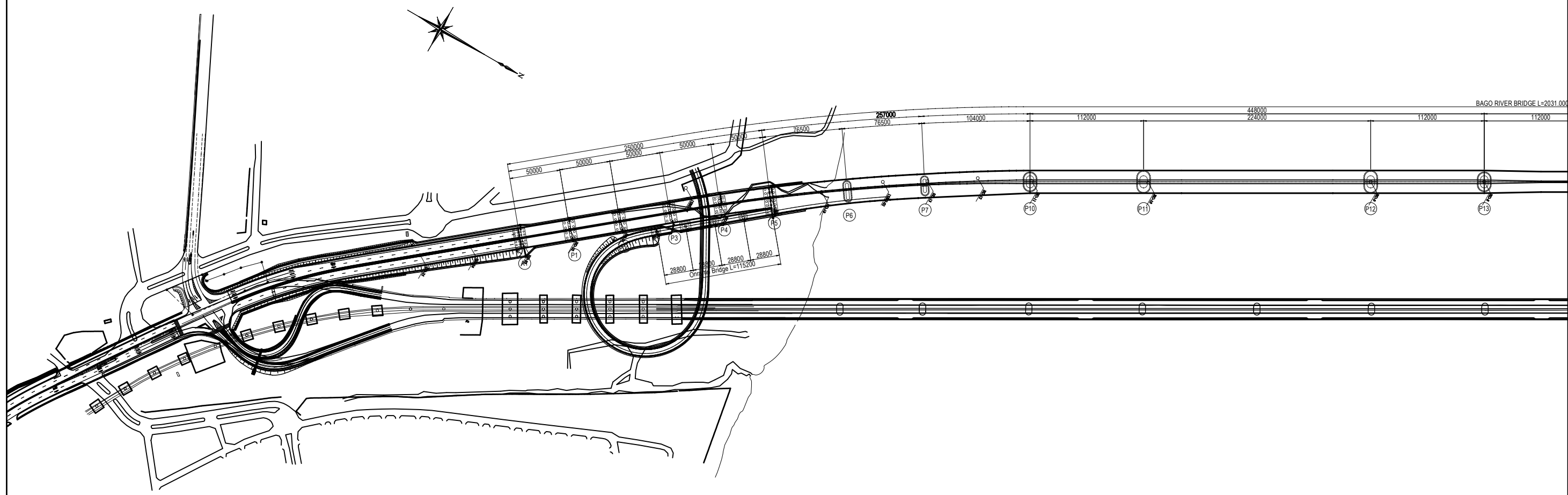
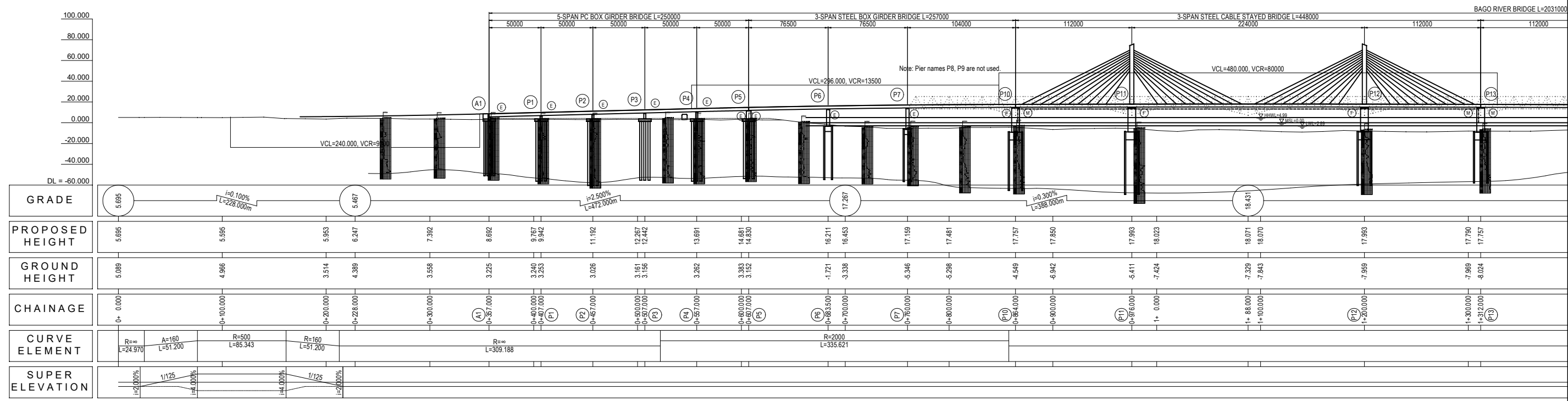


LOCATION MAP

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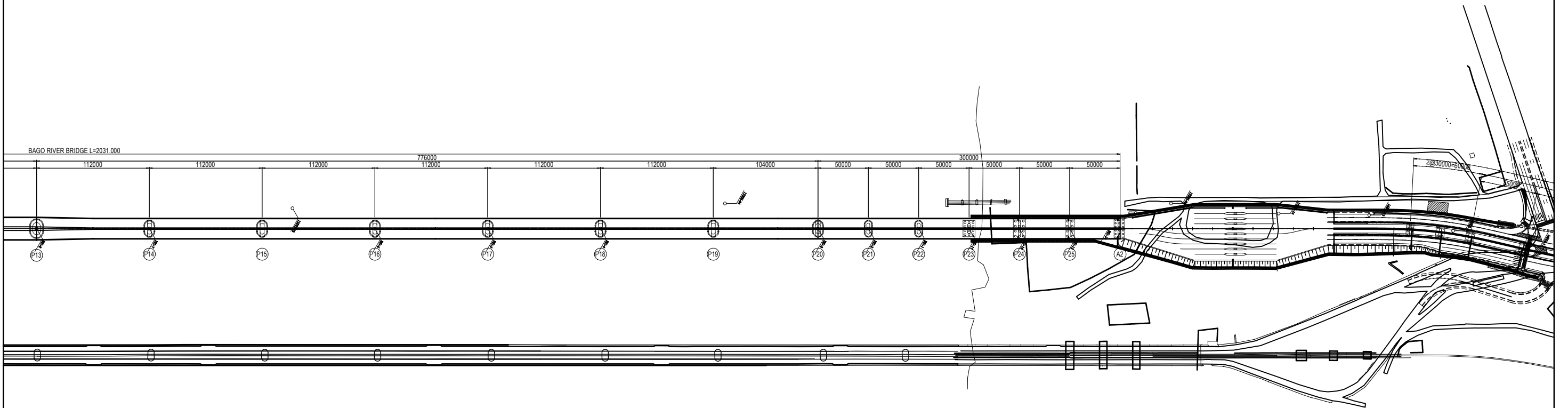
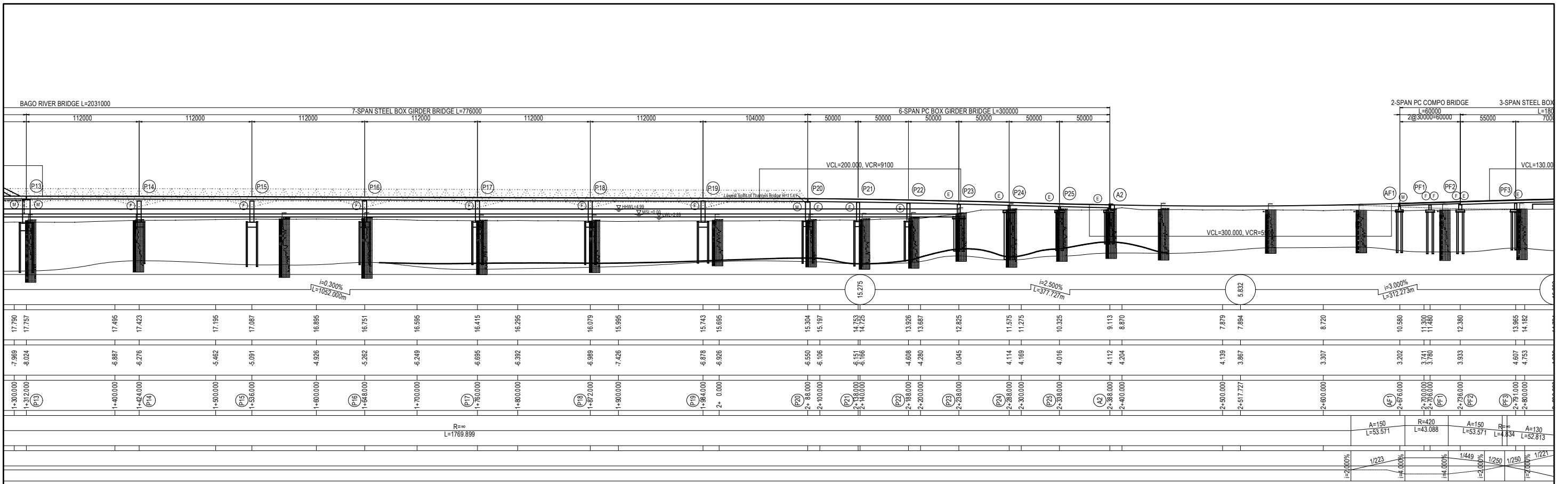


PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE LOCATION MAP	PACKAGE 1 DWG No. P1-GE-0001	
				PREPARED BY	T. HAYAKAWA				15 Sep.2017
				CHECKED BY	T. HAYAKAWA				22 Sep.2017
	APPROVED BY	Y. SANO		29 Sep.2017					



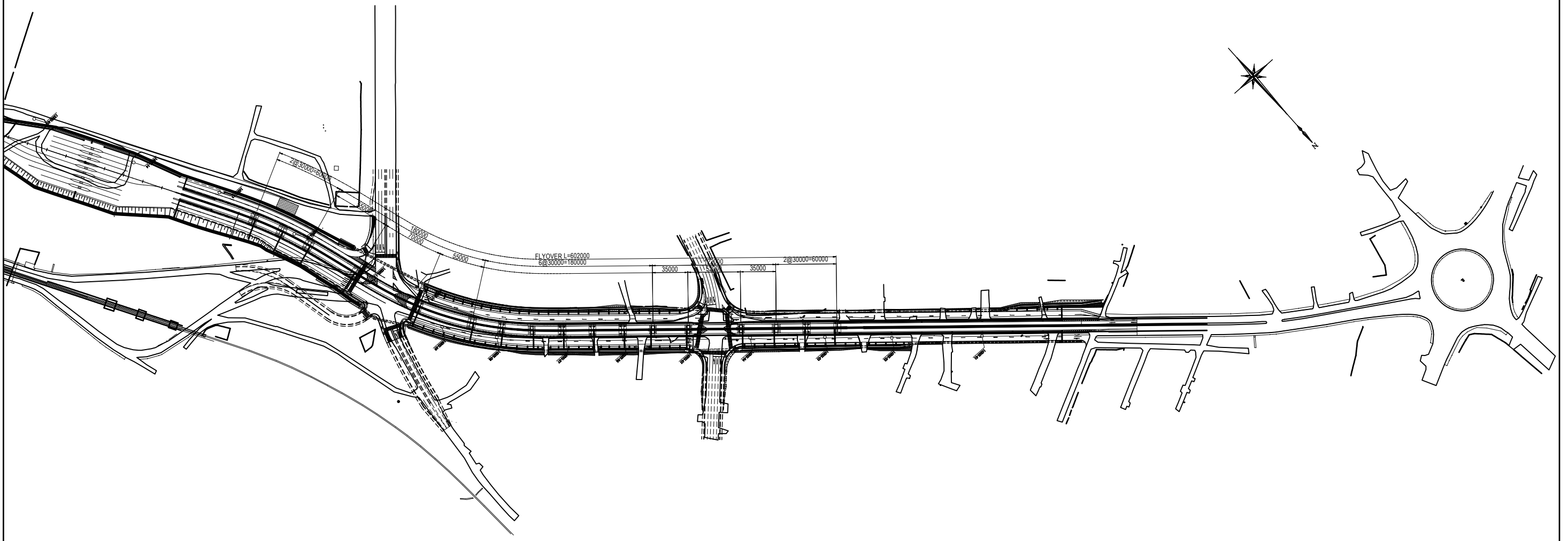
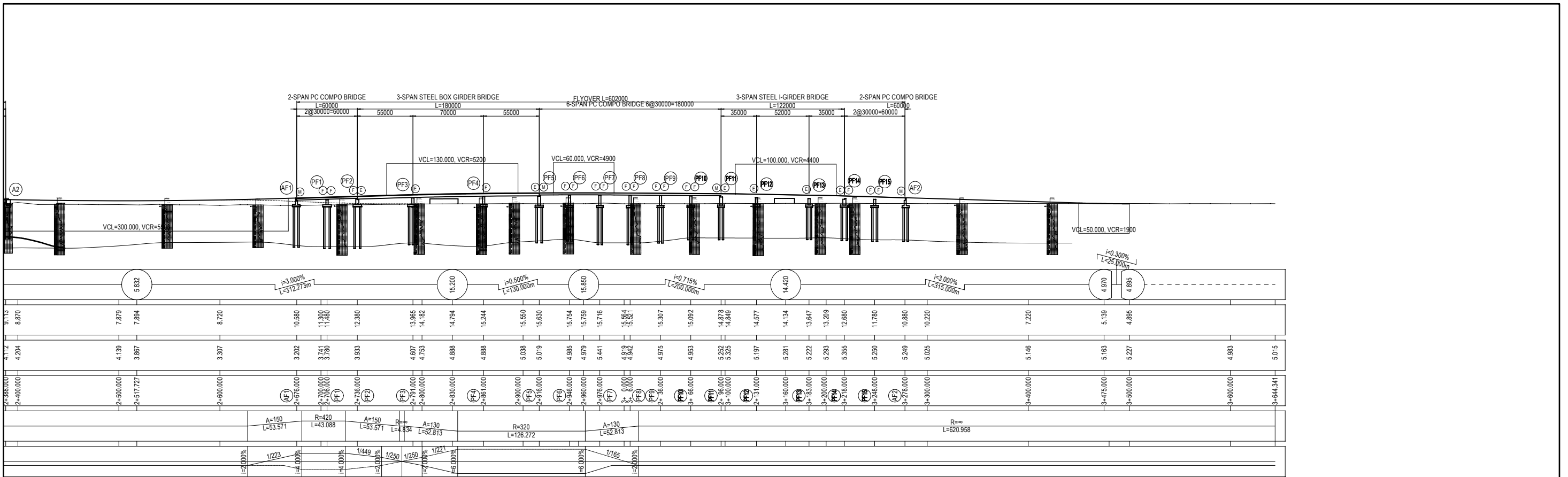
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PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE GENERAL VIEW OF BAGO RIVER BRIDGE (1)	PACKAGE 1 DWG No. P1-GE-0002	
				PREPARED BY	T. HAYAKAWA				27 Nov. 2017
				CHECKED BY	T. HAYAKAWA				28 Nov. 2017
				APPROVED BY	Y. SANO				29 Nov. 2017



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PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE GENERAL VIEW OF BAGO RIVER BRIDGE (2)	PACKAGE 1 DWG No. P1-GE-0003	
				PREPARED BY	T. HAYAKAWA				27 Nov. 2017
				CHECKED BY	T. HAYAKAWA				28 Nov. 2017
				APPROVED BY	Y. SANO				29 Nov. 2017



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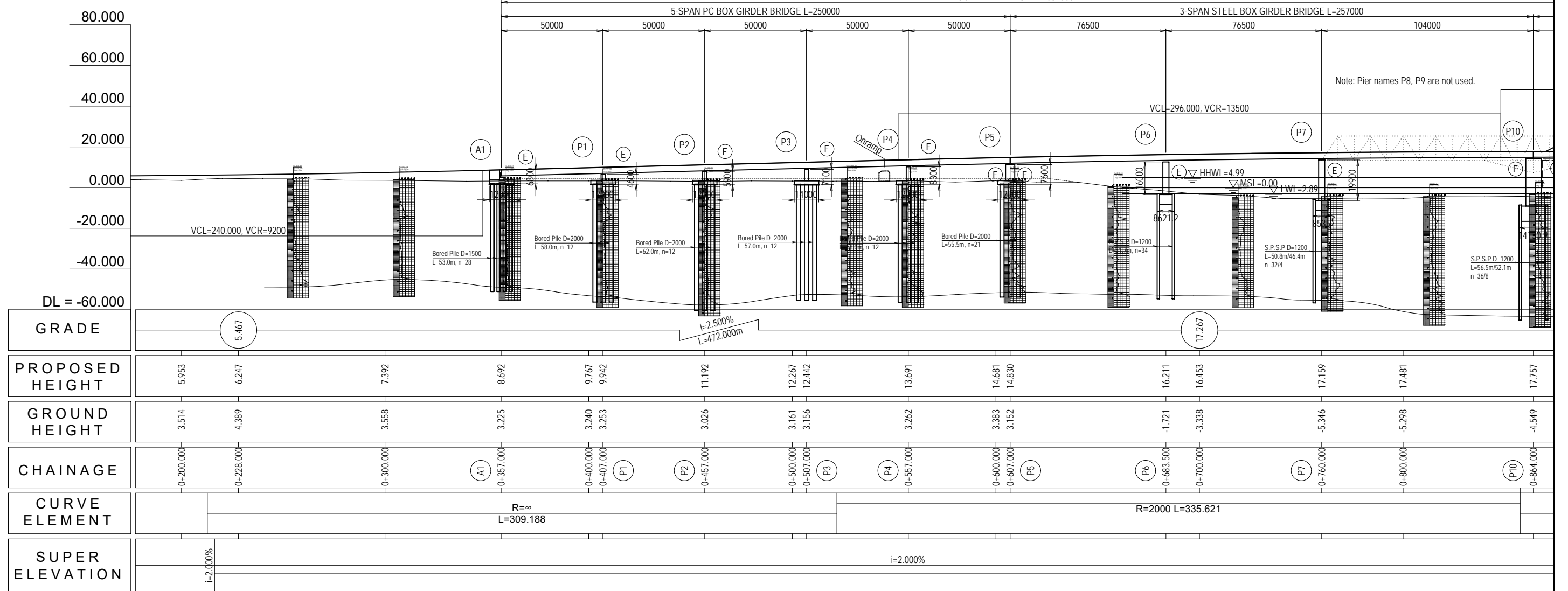
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE GENERAL VIEW OF BAGO RIVER BRIDGE (3)	PACKAGE 1 DWG No. P1-GE-0004	
				PREPARED BY	T. HAYAKAWA				27 Nov. 2017
				CHECKED BY	T. HAYAKAWA				28 Nov. 2017
				APPROVED BY	Y. SANO				29 Nov. 2017

GENERAL VIEW OF BAGO RIVER BRIDGE (4)

LONGITUDINAL SECTION

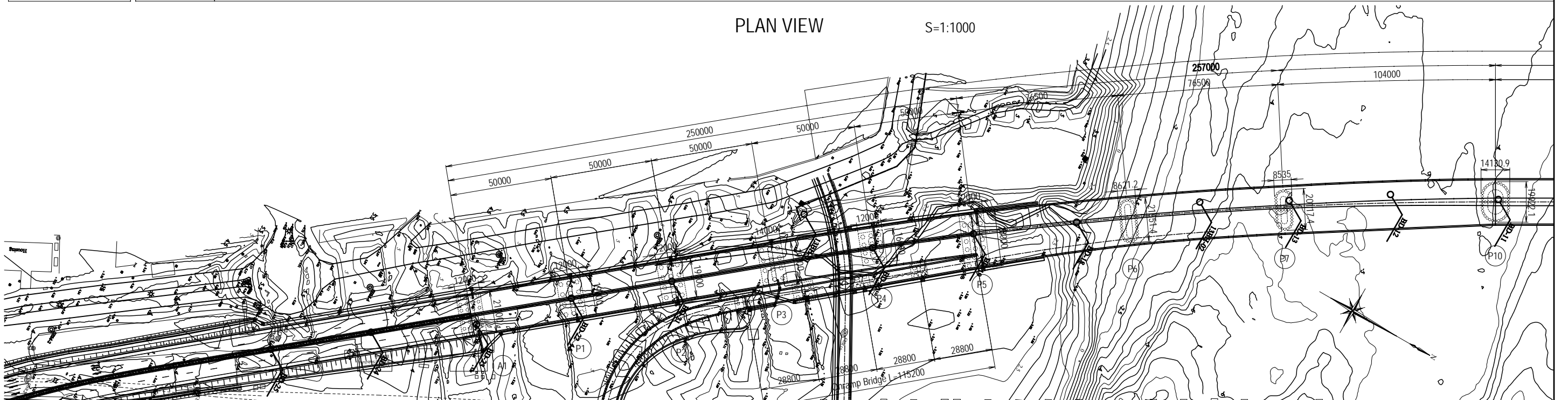
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BAGO RIVER BRIDGE L=2031000



PLAN VIEW

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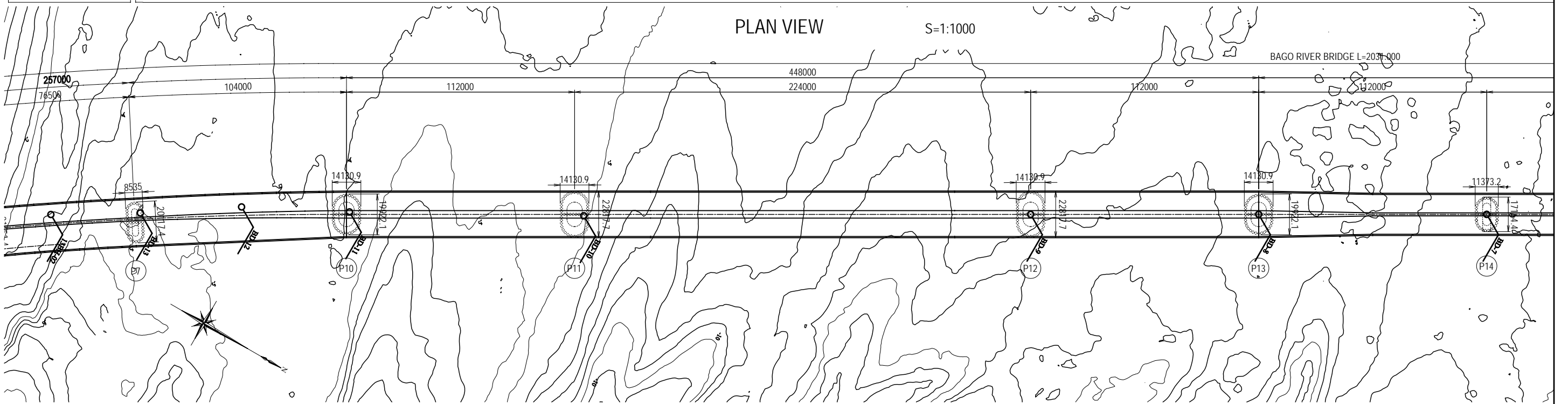
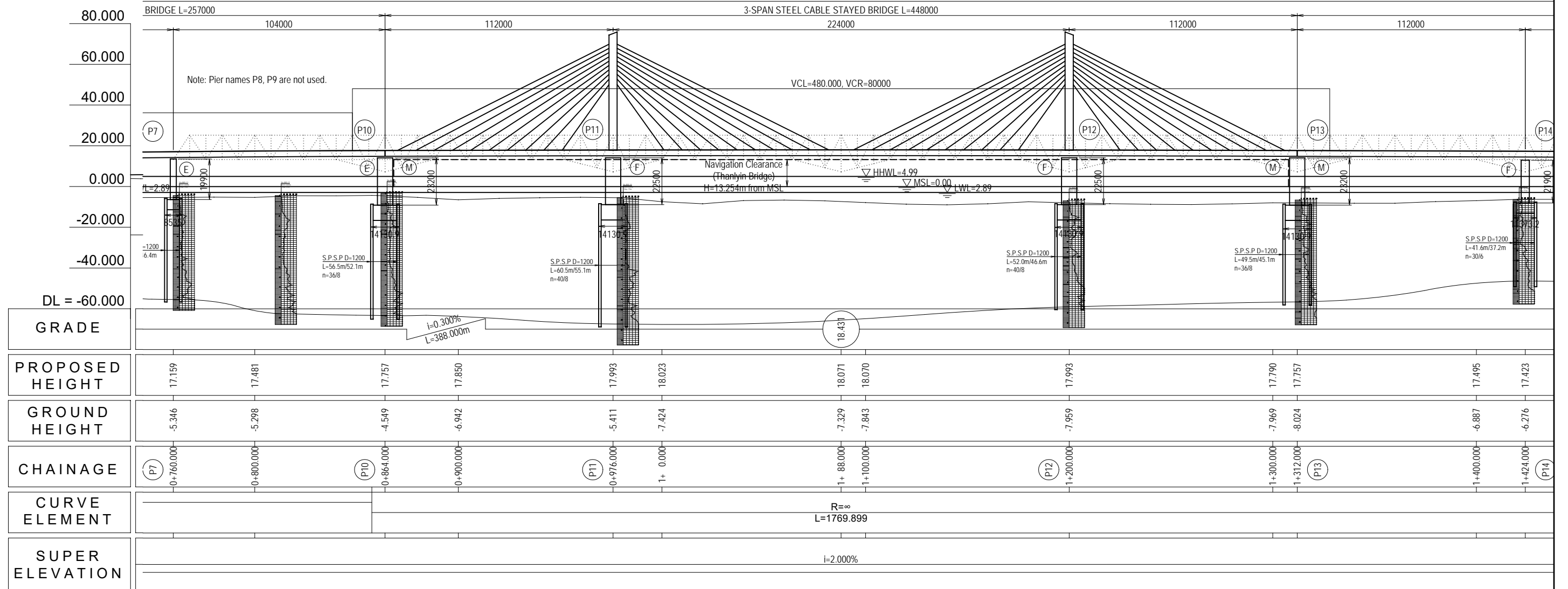
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE GENERAL VIEW OF BAGO RIVER BRIDGE (4)	PACKAGE	
				PREPARED BY	T. HAYAKAWA			27 Nov. 2017	1
				CHECKED BY	T. HAYAKAWA			28 Nov. 2017	DWG No.
				APPROVED BY	Y. SANO			29 Nov. 2017	P1-GE-0005

GENERAL VIEW OF BAGO RIVER BRIDGE (5)

LONGITUDINAL SECTION S=1:1000

BAGO RIVER BRIDGE L=2031000

3-SPAN STEEL CABLE STAYED BRIDGE L=448000



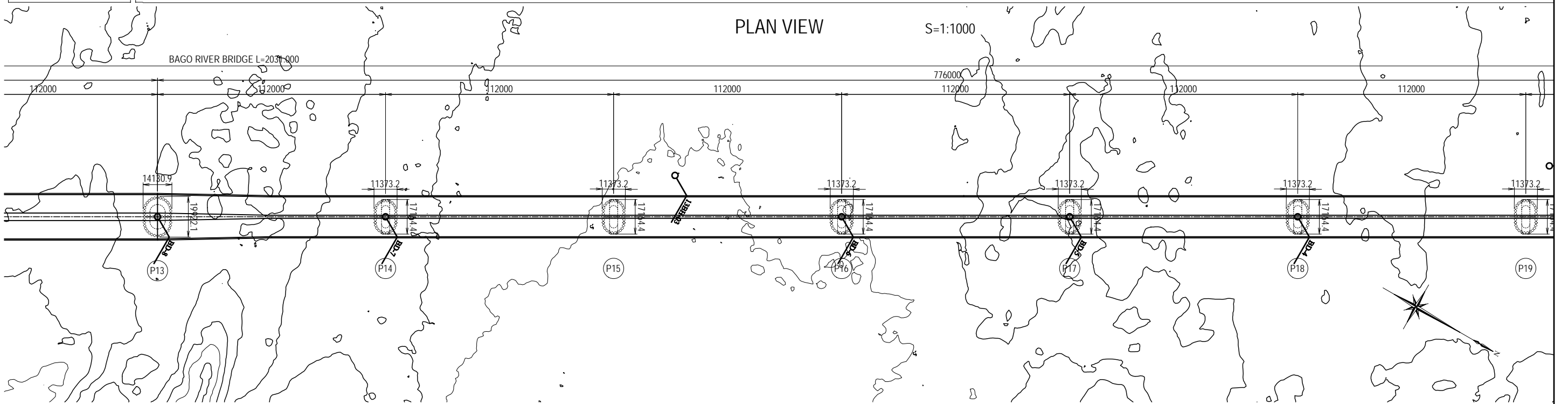
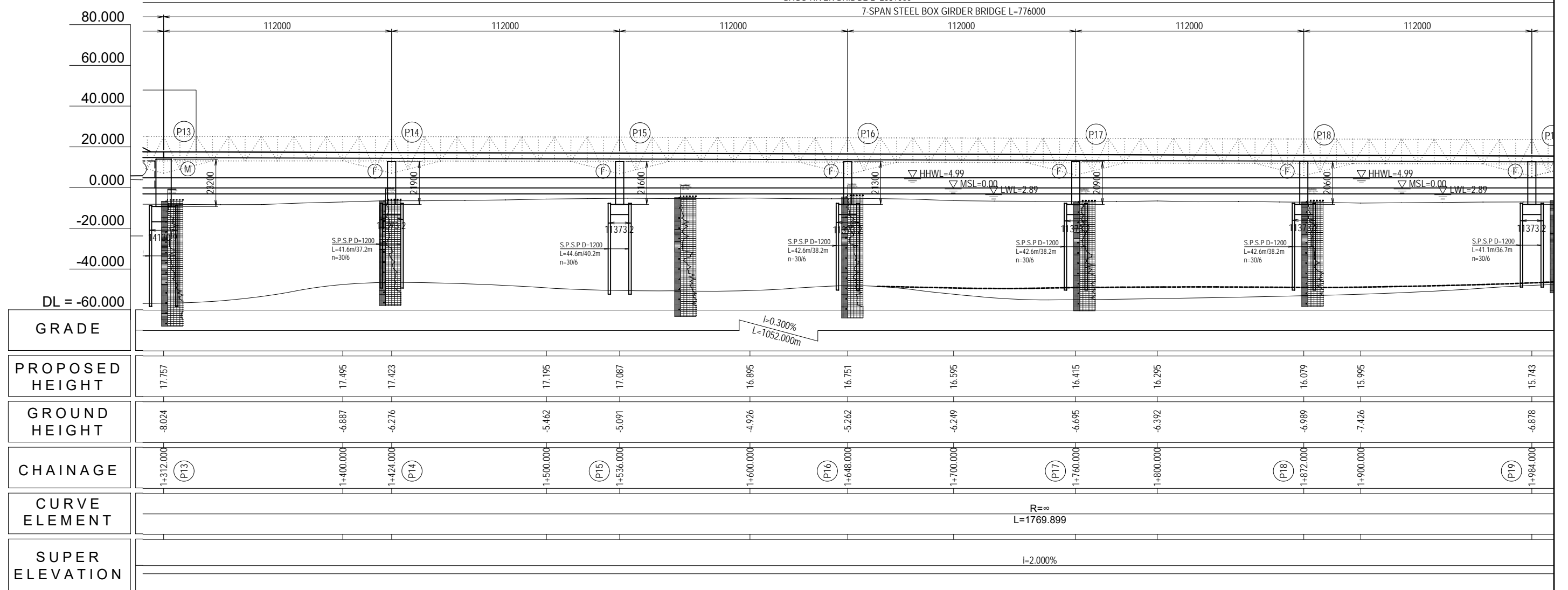
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PROJECT NAME	FINANCED BY	COUNTERPART	JICA STUDY TEAM	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE
DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	JICA JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	T. HAYAKAWA		27 Nov. 2017	GENERAL VIEW OF BAGO RIVER BRIDGE (5)	1
				T. HAYAKAWA		28 Nov. 2017		DWG No.
				Y. SANO		29 Nov. 2017		P1-GE-0006

GENERAL VIEW OF BAGO RIVER BRIDGE (6)

LONGITUDINAL SECTION S=1:1000

BAGO RIVER BRIDGE L=2031000
7-SPAN STEEL BOX GIRDER BRIDGE L=776000



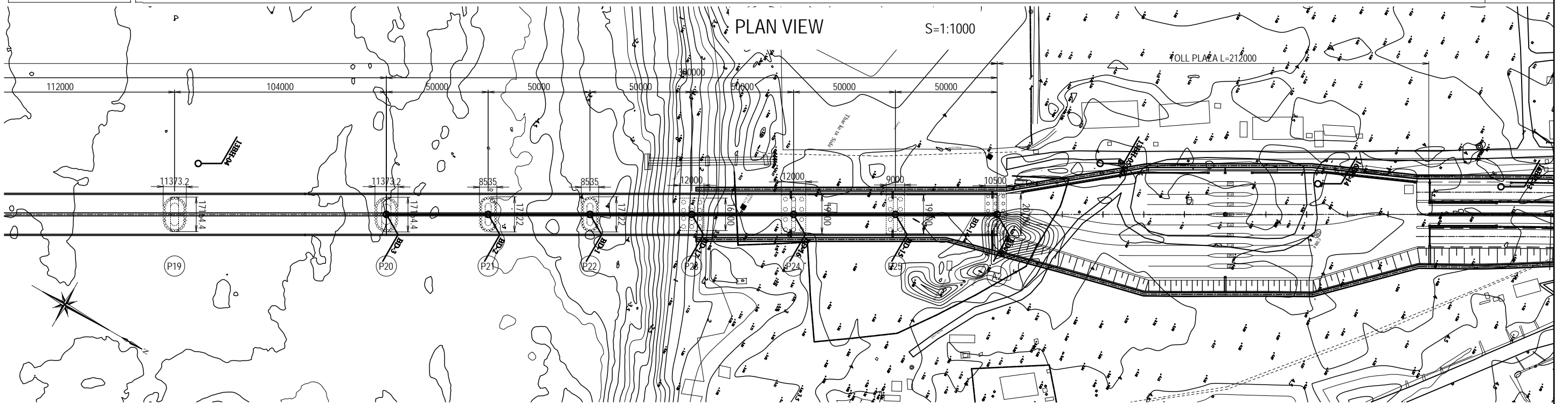
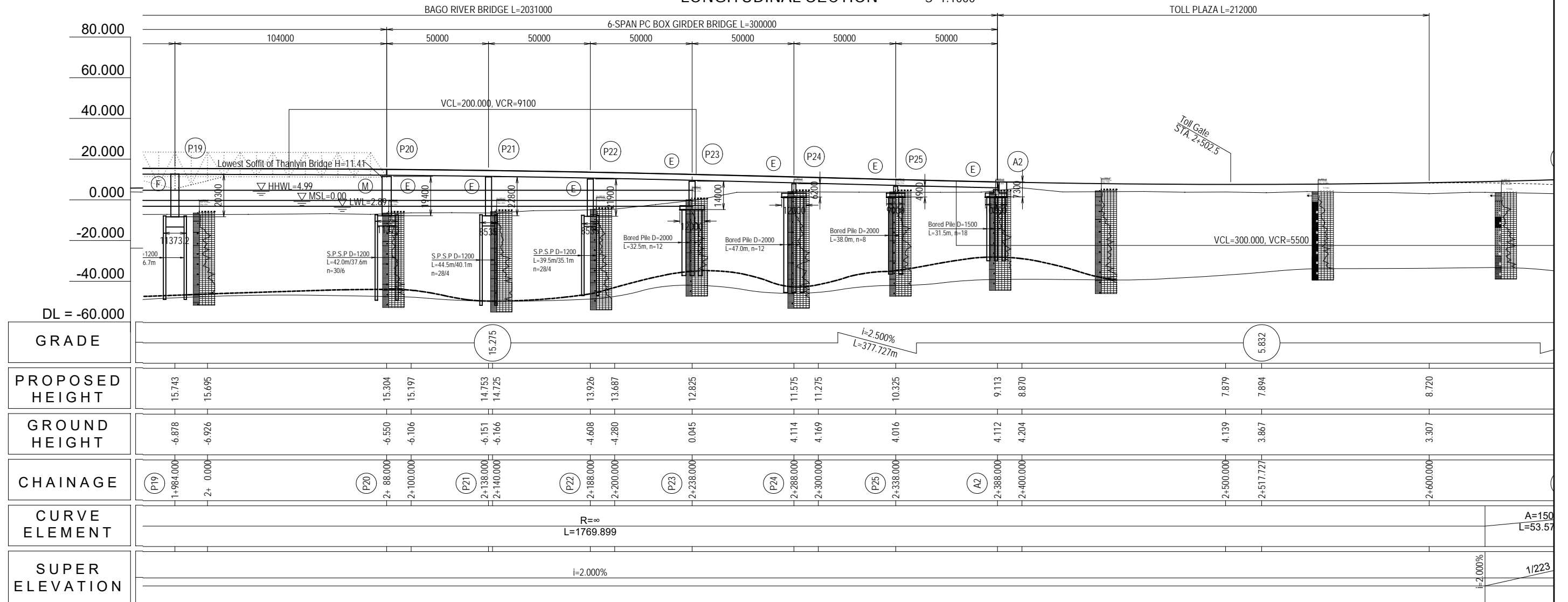
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PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE GENERAL VIEW OF BAGO RIVER BRIDGE (6)	PACKAGE	
				PREPARED BY	T. HAYAKAWA			27 Nov. 2017	1
				CHECKED BY	T. HAYAKAWA			28 Nov. 2017	DWG No.
				APPROVED BY	Y. SANO			29 Nov. 2017	P1-GE-0007

GENERAL VIEW OF BAGO RIVER BRIDGE (7)

LONGITUDINAL SECTION

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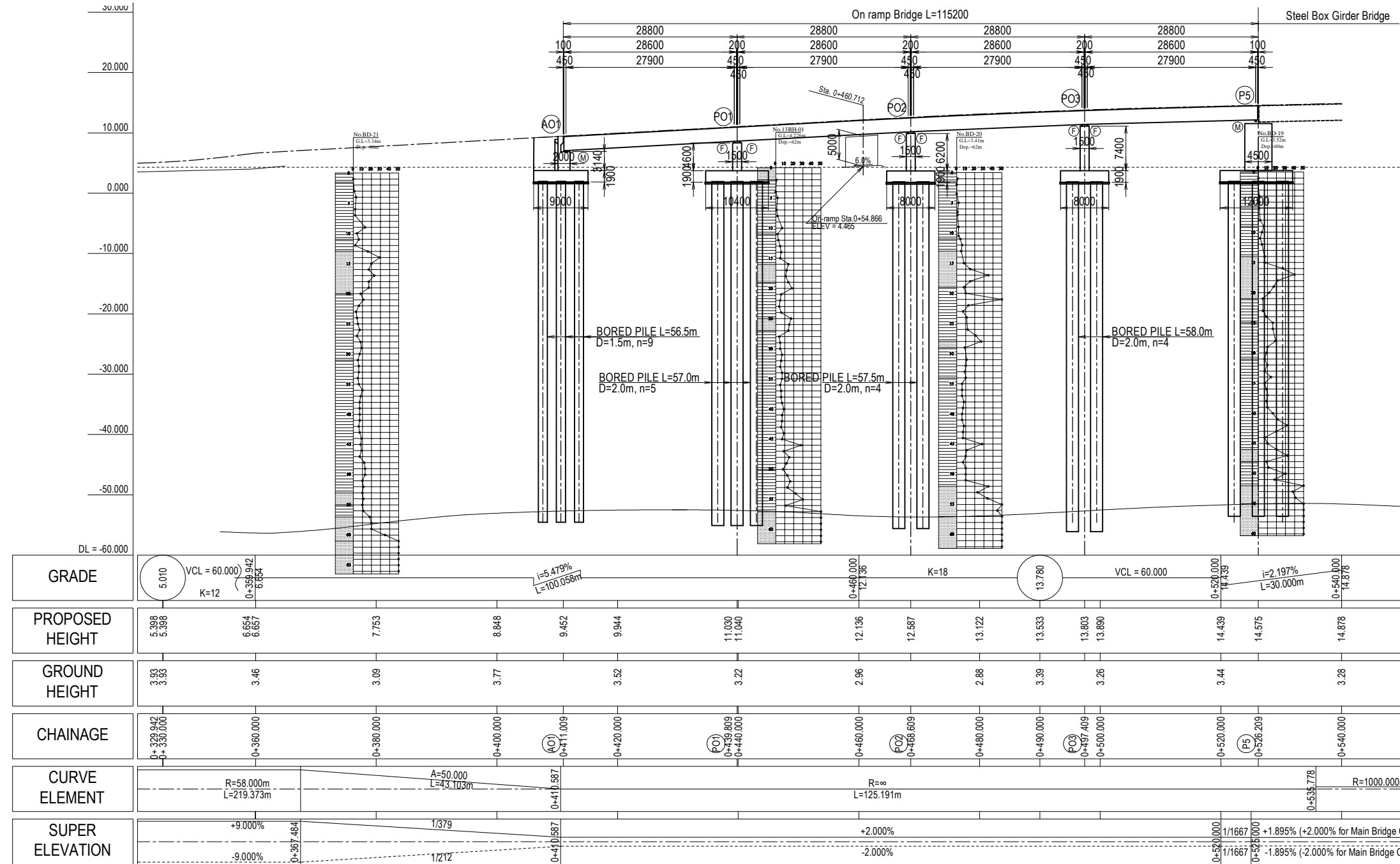


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PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>NAME</th> <th>SIGNATURE</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>PREPARED BY</td> <td>T. HAYAKAWA</td> <td></td> <td>27 Nov. 2017</td> </tr> <tr> <td>CHECKED BY</td> <td>T. HAYAKAWA</td> <td></td> <td>28 Nov. 2017</td> </tr> <tr> <td>APPROVED BY</td> <td>Y. SANO</td> <td></td> <td>29 Nov. 2017</td> </tr> </tbody> </table>		NAME	SIGNATURE	DATE	PREPARED BY	T. HAYAKAWA		27 Nov. 2017	CHECKED BY	T. HAYAKAWA		28 Nov. 2017	APPROVED BY	Y. SANO		29 Nov. 2017	DRAWING TITLE <h3 style="text-align: center;">GENERAL VIEW OF BAGO RIVER BRIDGE (7)</h3>	PACKAGE 1 DWG No. P1-GE-0008
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CHECKED BY	T. HAYAKAWA		28 Nov. 2017																			
APPROVED BY	Y. SANO		29 Nov. 2017																			

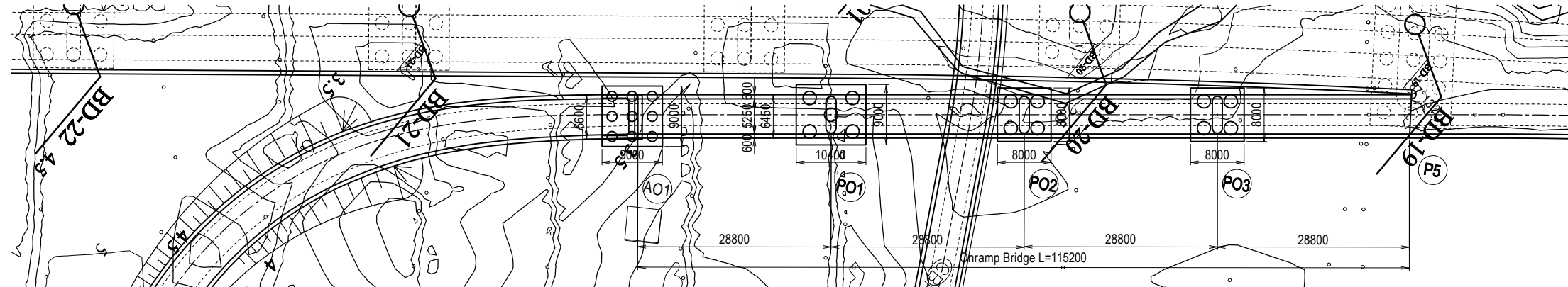
GENERAL VIEW OF ON-RAMP BRIDGE

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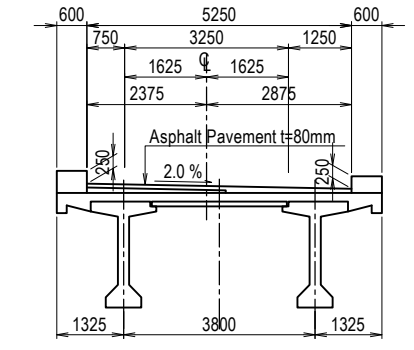


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PROPOSED HEIGHT	5.398 5.398	6.654 6.657	7.753	8.848	9.452	9.944	11.030 11.040	12.136	12.587	13.122	13.533	13.803	13.890	14.439	14.575	14.878	
GROUND HEIGHT	3.93 3.93	3.46	3.09	3.77	3.52	3.52	3.22	2.96	2.88	3.39	3.26	3.44	3.26	3.44	3.28	3.28	
CHAINAGE	0+329.842 0+330.000	0+360.000	0+380.000	0+400.000	0+410.587 0+411.009	0+420.000	0+439.809 0+440.000	0+460.000	0+468.609	0+480.000	0+490.000	0+497.409	0+500.000	0+520.000	0+526.209	0+540.000	
CURVE ELEMENT	R=58.000m L=219.373m	A=50.000 L=43.103m			R=∞ L=125.191m									R=1000.000m			
SUPER ELEVATION	+9.000% -9.000%	0-387.484	1/379	1/212	0-410.587	+2.000% -2.000%								0-520.000 1/1667	0-526.209 1/1667	+1.895% (+2.000% for Main Bridge CL) -1.895% (-2.000% for Main Bridge CL)	

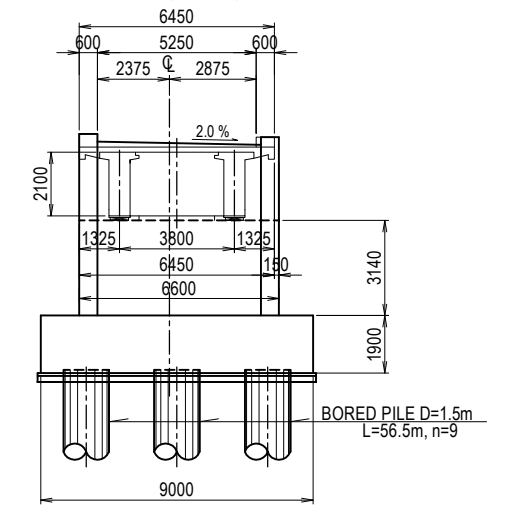
PLAN S=1:800



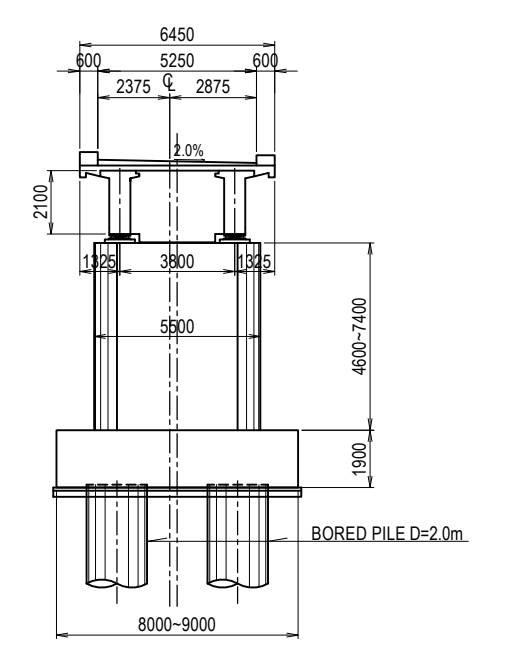
TYPICAL CROSS SECTION S=1:150



ABUTMENT (AO1) S=1:250



PIER (PO1, PO2, PO3) S=1:250



PROJECT NAME	FINANCED BY	COUNTERPART	JICA STUDY TEAM	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE
DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	JICA JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	PREPARED BY M. OHYAMA	大山 満弘	15 Jun.2017	GENERAL VIEW OF ON-RAMP BRIDGE	1
				CHECKED BY T. HAYAKAWA	平川 知寿	20 Jun.2017		DWG No.
				APPROVED BY Y. SANO	佐野 祐一	21 Jun.2017		P1-GE-009

GENERAL NOTES (ROAD DESIGN)

1.0 SPECIFICATIONS

- 1.1 ALL WORKS SHALL COMPLY WITH THE AASHTO STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, AND WITH THE SPECIAL PROVISIONS & SUPPLEMENTAL SPECIFICATIONS PERTAINING TO THIS PROJECT.

2.0 DIMENSIONS

- 2.1 DISTANCES AND ELEVATIONS SHOWN ON THE PLANS ARE IN METERS (m) UNLESS OTHERWISE SPECIFIED.
2.2 DIMENSIONS OF CULVERTS, BRIDGES AND OTHER STRUCTURES ARE MEASURED AND EXPRESSED IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.

3.0 STATIONING

- 3.1 STATIONING OF ROAD, BRIDGE, ELEMENTS OF CURVE FOR BOTH HORIZONTAL AND VERTICAL ALIGNMENTS ARE RECKONED FROM THE ROAD CENTERLINE.
3.2 STATION TICK MARKS ARE SHOWN AT 20m INTERVAL AND STATION LABELS AT 100m INTERVAL. STATIONS ARE SHOWN ALSO AT LOCATIONS OF HORIZONTAL AND VERTICAL GEOMETRY.

4.0 HORIZONTAL AND VERTICAL ALIGNMENT

- 4.1 NO ALTERATION/CHANGE IN ALIGNMENT SHALL BE MADE UNLESS EXISTING FIELD CONDITIONS SO WARRANT AND ONLY UPON APPROVAL OF THE ENGINEER.
4.2 FINISHED GRADE ELEVATIONS SHOWN ON THE PLAN AND PROFILE SHEET REFER TO THE FINISHED GRADE LEVEL AT ROAD CENTERLINE SHOWN ON THE TYPICAL ROADWAY SECTIONS. MODIFICATIONS CAN BE DONE ON DESIGN GRADES AND ELEVATIONS ONLY UPON APPROVAL OF THE ENGINEER.
4.3 GROUND LEVEL SHOWN ON THE PLAN AND PROFILE SHEET REFERS TO THE ELEVATION OF THE ORIGINAL GROUND ALONG THE DESIGN ROAD CENTERLINE.

5.0 ROAD CONNECTIONS AND SHOULDER IMPROVEMENT

- 5.1 ROAD CONNECTIONS SHALL BE CONSTRUCTED BY THE CONTRACTOR AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER IN SUCH MANNER AS TO ENSURE SMOOTH CONNECTION AND GOOD RIDING QUALITY.
5.2 THE SHOULDER STRUCTURE IS ASPHALT CONCRETE WITH VARYING WIDTHS. THE WIDTH MAY BE ADJUSTED DURING CONSTRUCTION TO SUIT EXISTING FIELD CONDITION UPON APPROVAL OF THE ENGINEER.

6.0 REMOVAL OF EXISTING UTILITIES, STRUCTURES AND OBSTRUCTIONS

- 6.1 ALL WORKS SHALL COMPLY WITH THE REQUIREMENTS AND CONDITIONS OF CONTRACT OF THE MINISTRY OF CONSTRUCTION.
6.2 EXTREME PRECAUTION SHALL BE EXERCISED BY THE CONTRACTOR NOT TO DAMAGE ANY PORTION OF EXISTING UTILITIES DURING CONSTRUCTION. ANY DAMAGE THEREOF SHALL BE REPAIRED OR COMPENSATED ON THE ACCOUNT OF THE CONTRACTOR.

7.0 DRAINAGE STRUCTURES

- 7.1 EXACT LOCATIONS, SLOPES, OUTFALLS, AND INVERT ELEVATIONS OF DRAINAGE STRUCTURES SHALL BE CHECKED IN THE FIELD BY THE CONTRACTOR BEFORE MAKING ANY REMOVAL OR IMPROVEMENT. MINOR ADJUSTMENTS MAY BE MADE TO SUIT ACTUAL FIELD CONDITIONS UPON APPROVAL OF THE ENGINEER.
7.2 EXISTING DRAINAGE STRUCTURES THAT ARE FAULTY, BROKEN DOWN, OR NOT IN GOOD WORKING CONDITION SHALL BE DETERMINED IN THE FIELD. RECONSTRUCTION, REPAIR AND/OR REPLACEMENT OF SAME SHALL BE DIRECTED BY THE ENGINEER, AND SHALL CONFORM TO THE STANDARDS SHOWN IN THE DRAWINGS.
7.3 EXISTING DRAINAGE STRUCTURES OR PARTS THEREOF REMOVED BY THE CONTRACTOR THAT ARE STILL SERVICEABLE SHALL BE TURNED OVER TO THE GOVERNMENT AND SHALL BE DEPOSITED AT A PLACE DESIGNATED BY THE ENGINEER WITHOUT ANY EXTRA COMPENSATION. EXTREME PRECAUTIONS SHALL BE EXERCISED BY THE CONTRACTOR NOT TO DAMAGE THESE MATERIALS DURING THE REMOVAL AND HANDLING OPERATION.
7.4 PRIOR TO INSTALLATION OF PIPE CULVERTS AND OTHER DRAINAGE STRUCTURES, ALL MATERIALS SHALL BE TESTED TO CHECK ANY DEFECT AND CONFORMITY WITH TECHNICAL SPECIFICATIONS.
7.5 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF MATERIALS INSTALLED AND FOUND TO BE DEFICIENT IN WORKMANSHIP AND QUALITY.
7.6 INLETS AND OUTLETS OF NEW AND OPERATIONAL EXISTING CULVERTS SHALL BE CHANNELIZED AND CLEARED OF DEBRIS AND OBSTRUCTIONS. THIS SHALL BE CONSIDERED AS SUBSIDIARY WORK OF OTHER DRAINAGE PAY ITEMS.
7.7 ANY REVISION, REMOVAL, CLEANING, UNCLOGGING AND/OR RE-LAYING OF DRAINAGE STRUCTURES AS DIRECTED BY THE ENGINEER TO SUIT EXISTING FIELD CONDITION SHALL BE CONSIDERED AS SUBSIDIARY WORK PERTAINING TO OTHER CONTRACT ITEMS. NO DIRECT PAYMENT SHALL BE MADE FOR THIS WORK UNLESS OTHERWISE SPECIFICALLY IDENTIFIED FOR PAYMENT IN THE BID SCHEDULE.

8.0 OPEN DITCHES (LINED CANAL AND EARTH DITCH)

- 8.1 ALL DITCHES SHALL COMPLY WITH THE REQUIRED STANDARDS.
8.2 INVERT ELEVATIONS AND EXACT LOCATION AND DIMENSION OF OPEN DITCHES MAYBE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.

9.0 MISCELLANEOUS STRUCTURES

- 9.1 LOCATION AND LENGTH OF GUARDRAILS, SLOPE PROTECTIONS SUCH AS GROUTED RIPRAP, STONE MASONRY RETAINING WALLS AND OTHER STRUCTURES ARE SUBJECT TO ADJUSTMENT TO SUIT EXISTING FIELD CONDITIONS UPON APPROVAL OF THE ENGINEER.
9.2 GROUTED RIPRAP AND/OR RIPRAP, STONE MASONRY SHOULD BE WELL CONSTRUCTED AS SPECIFIED IN THE STANDARD SPECIFICATION FOR THE SAID ITEM.
9.3 CUT SLOPE CONSTRUCTION SHALL BE DONE AT PACE WITH EMBANKMENT CONSTRUCTION TO AVOID SLIDING OF FILL MATERIALS.

10.0 OTHERS

- 10.1 ALL SCHEDULES/LISTINGS FOR GUARDRAILS, SLOPE PROTECTION STRUCTURES, PAVEMENT MARKINGS, ROAD SIGNS AND ALL OTHER RELATED SCHEDULES/LISTINGS SHOWN ON THE PLANS ARE SUBJECT TO ADJUSTMENT/MODIFICATION TO SUIT ACTUAL FIELD CONDITION. THE ENGINEER MAY ORDER IN WRITING THE CONSTRUCTION/INSTALLATION OF NEW STRUCTURES/OR MISCELLANEOUS ITEMS IF IN HIS OPINION IS DEEMED NECESSARY IN ADDITION TO THE APPROVED SCHEDULES AND LISTINGS.
10.2 ADEQUATE ROAD SIGNAGE AND SAFETY PRECAUTION SHALL BE PROVIDED TO INFORM, WARN AND ALERT MOTORISTS DURING CONSTRUCTION.

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY  JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART  REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM     NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE GENERAL NOTES (ROAD DESIGN)	PACKAGE	
				PREPARED BY	T. HAYAKAWA			15 Sep.2017	1
				CHECKED BY	T. HAYAKAWA			22 Sep.2017	DWG No.
				APPROVED BY	Y. SANO			29 Sep.2017	P1-GE-1011

GENERAL NOTES (PC BOX GIRDER BRIDGE)

1. GENERAL DESCRIPTION

- 1) A bridge with 4-lane road with width 3.5m/lane have been provided.
- 2) All drawings are to be read in conjunction with the technical specification.
- 3) All chainages, coordinates and elevations are shown in meter.
- 4) All dimensions are shown in millimeters.
- 5) WGS84 UTM coordinate system is applied.
- 6) Vertical control is based on the BM. 76097 established by Myanmar Survey Department.
- 7) Dimensions shown in the drawing are ones after the period of calculation of creep and/or shrinkage.

2. DESIGN CODES

The structure shall be designed in accordance with Specifications for Highway Bridges of Japan Road Associations (JSHB, 2012).

3. DESIGN LOADS

- 1) Dead loads
- 2) Live loads
AASHTO HL-93
- 3) Shrinkage and creep
- 4) Effect of temperature
+10°C to +40°C (25°C ± 15°C)
- 5) Wind load
W=44.7m/sec
- 6) Effect of earthquake
Horizontal seismic coefficient K=0.30
- 7) Earth pressure
- 8) Water pressure
- 9) Buoyant Force

4. RIVER CONDITION

	Elevation	Remarks
High Water Level (H.W.L.)	MSL +4.990	100 year flood
H.W.L. for temporary work	MSL +4.340	5 year flood
Low Water Level (L.W.L.)	MSL -2.39	
River Bed Level	A1 N/A A2 side or P20~P22 MSL -7.490	Designed River Bed Level

5. CONCRETE

- 1) Unless otherwise indicated the strength of concrete shall be of the following grade based on 28 days cylinder strength.

Strength (MPa)	Structural member
50	Precast segment & CIP portion for PC box girder
40	Main girder for PC-I GIRDER
30	RC CIP slab, crossbeam and connection for PC-I girder Pier head and column : P4 through P23 Cast-In-Place RC pile
24	RC concrete: general, wheel guard.... Abutment A1 , A2 and AO1 Pier for P1 to P3,P24,P25,PO1 to PO3 Footing : P4 through P23
21	Seal concrete (Bottom slab concrete, Filling inside of SPSP)
18	Blinding concrete, etc

- 2) Grouting mortar with $f_{Dck} = 45\text{MPa}$ is used .
- 3) All exposed edges of concrete shall be chamfered 20x20 mm unless noted otherwise.

6. REINFORCEMENT

- 1) Unless otherwise indicated reinforcement bar shall be high strength deformed bar confirming to the requirement of JIS G 3112.

Class	Yield point or 0.2% proof stress (MPa)	Tensile stress (MPa)	Structural member
SD390	>>390	>>560	Pier column axial rebar :P4 through P23
SD345	>>345	>>490	Superstructure, substructure, Stud rebar
SD295	>>295	>>440	Accessories (saddle)

- 2) Clear cover to reinforcement as follows unless otherwise stated on the component of drawings.

Structural member	Cover (mm)
Cast in situ pile	120
Pile cap	70
Pier, abutment and approach slab	70
Pier beam	50
Main girder	35
Slab, wheel guard	30

- 3) Minimum requirements for development length and lap length for reinforcement bar shall be comply to the JSHB. Mechanical splice shall be used for the connection of reinforcement bars 35mm of diameter or exceeded instead of lap joint.

		SD345									
Diameter		D13	D16	D19	D22	D25	D29	D32	D35	D38	
Length la (mm)	$\sigma = 40\text{N/mm}^2$	330	400	480	550	630	730	800	1160		
	$\sigma = 36\text{N/mm}^2$	340	420	500	580	660	760	840	1210		
	$\sigma = 30\text{N/mm}^2$	370	450	530	620	700	810	890	980	1060	
	$\sigma = 24\text{N/mm}^2$	410	510	600	690	790	910	1010	1100	1190	
		SD390									
Length la (mm)	$\sigma = 30\text{N/mm}^2$	420	520	610	710	800	930	1030	1120	1220	
	$\sigma = 24\text{N/mm}^2$	470	580	690	790	900	1050	1150	1260	1370	

7. PRESTRESSING STEEL

- 1) Unless otherwise indicated prestressing steel shall be low relaxation strand confirming to the requirement of JIS G 3536 or JIS G 3109.

Class	Grade	Structural member
19S15.2mm ECF strand	SWPR7BL	External tendon for PC box girder
12S15.2mm strand	SWPR7BL	Internal tendon for PC box girder(longitudinal)
3S12.7mm strand	SWPR7BL	Internal tendon for PC box girder(transverse)
4S15.2mm strand	SWPR7BL	Internal tendon for PC box girder(crossbeam)
$\phi 32$ bar	SWPR930/1080	Internal tendon for PC box girder(crossbeam)
12S12.7mm strand	SWPR7BL	Internal tendon for PC-I girder(longitudinal)
1S19.3mm strand	SWPR7A	Internal tendon for precast PC panel of PC -I girder
$\phi 32$ bar	SWPR930/1080	Internal tendon for PC-I girder(crossbeam)

8. STEEL PIPE SHEET PILE

- 1) Unless otherwise indicated steel pipe sheet pile shall be confirming to the requirement of JIS A 5530 or JIS G 3444.

Class	Yield point or proof stress (MPa)	Tensile stress (MPa)	Structural member
SKY490	>>315	>>490	Steel pipe sheet pile
SKY400	>>235	>>400	Steel pipe sheet pile
STK400	>>235	>>400	Joint pipe for steel pipe sheet pile

9. OTHER STRUCTURE

- 1) Bearings and Anchor bars shall satisfy the requirement of the force and displacement stated on the Drawings.
- 2) Expansion joint shall satisfy the requirement of the displacement stated on the Drawings.

Note : This general notes is not applicable to the following structures;

- Cable stayed bridge
- Piers P10 through P13

PROJECT NAME	FINANCED BY	COUNTERPART	JICA STUDY TEAM	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE
DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	JICA JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO.,LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.	M. OHYAMA	大山 満弘	15 Jun.2017	GENERAL NOTES (PC BOX GIRDER BRIDGE)	1
				T. HAYAKAWA	平川 知邦	20 Jun.2017		DWG No.
				Y. SANO	佐野 祐一	21 Jun.2017		P1-GE-1021

GENERAL NOTES

(STEEL BOX GIRDER BRIDGE)

1. GENERAL DESCRIPTION

- 1) A bridge with 4-lane road with width 3.5m/lane have been provided.
- 2) All drawings are to be read in conjunction with the technical specification.
- 3) All chainages, coordinates and elevations are shown in meter.
- 4) All dimensions are shown in millimeters.
- 5) WGS84 UTM coordinate system is applied.
- 6) Vertical control is based on the BM. 76097 established by Myanmar Survey Department.

2. DESIGN CODES

The structure shall be designed in accordance with Specifications for Highway Bridges of Japan Road Associations (JSHB, 2012).

3. DESIGN LOADS

- 1) Dead loads
- 2) Live loads
AASHTO HL-93
- 3) Effect of temperature
+10°C to +40°C (25°C ± 15°C)
- 4) Wind load
W=44.7m/sec
- 5) Effect of earthquake
Horizontal seismic coefficient K=0.30
- 6) Earth pressure
- 7) Water pressure
- 8) Buoyant Force
- 9) Collision Load

4. RIVER CONDITION

	Elevation	Remarks
High Water Level (H.W.L.)	MSL +4.990	100 year flood
H.W.L. for temporary work	MSL +4.340	5 year flood
Low Water Level (L.W.L.)	MSL -2.39	
River Bed Level	P6 MSL-1.721m P7 MSL-5.346m	Designed River Bed Level

5. CONCRETE

- 1) Unless otherwise indicated the strength of concrete shall be of the following grade based on 28 days cylinder strength.

Strength (MPa)	Structural member
30	Pier head and column : P6 and P7
24	RC concrete: concrete curb, foundation of lighting pole, connection with expansion joint Footing : P6 and P7
21	Seal concrete (Bottom slab concrete, Filling inside of SPSP)

- 2) All exposed edges of concrete shall be chamfered 20x20 mm unless noted otherwise.

6. REINFORCEMENT

- 1) Unless otherwise indicated reinforcement bar shall be high strength deformed bar conforming to the requirement of JIS G 3112.

Class	Yield point or 0.2% proof stress (MPa)	Tensile stress (MPa)	Structural member
SD345	>>345	>>490	Superstructure, Substructure, Foundation

- 2) Clear cover to reinforcement as follows unless otherwise stated on the component of drawings.

Structural member	Cover (mm)
Footing, Pier	70
Pier beam	50
Concrete curb etc.	30

- 3) Minimum requirements for development length and lap length for reinforcement bar shall be comply to the JSHB. Mechanical splice shall be used for the connection of reinforcement bars 35mm of diameter or exceeded instead of lap joint.

		SD345									
Diameter		D13	D16	D19	D22	D25	D29	D32	D35	D38	
Length la (mm)	$\sigma=40\text{N/mm}^2$	330	400	480	550	630	730	800	1160		
	$\sigma=36\text{N/mm}^2$	340	420	500	580	660	760	840	1210		
	$\sigma=30\text{N/mm}^2$	370	450	530	620	700	810	890	980	1060	
	$\sigma=24\text{N/mm}^2$	410	510	600	690	790	910	1010	1100	1190	

7. STRUCTURAL STEEL

Structural steel for steel box girder shall comply with the below, unless otherwise indicated on the drawings.

Standard	Designation(Class)	Structural Member
JIS G 3101	SS400	Fabricated steel for main girder
JIS G 3106	SM400	Ditto
	SM490Y	Ditto
	SM520	Ditto
	SM570	Ditto
	SM570	Ditto
	SM570-H	Ditto
JS G 3444	STK400	Shapes
	STK490	Shapes
*	S10T	High strength bolt for splice joints
JIS B 1186	F8T	Galvanized high strength bolt
	F10T	High strength bolt

* Applied to Technical Specification

8. STEEL PIPE SHEET PILE

- 1) Unless otherwise indicated steel pipe sheet pile shall be conforming to the requirement of JIS A 5530 or JIS G 3444.

Class	Yield point or proof stress (MPa)	Tensile stress (MPa)	Structural member
SKY400	>>235	>>400	Steel pipe sheet pile
STK400	>>235	>>400	Joint pipe for steel pipe sheet pile

9. OTHER STRUCTURE

- 1) Bearings and Anchor bars shall satisfy the requirement of the force and displacement stated on the Drawings.
- 2) Expansion joint shall satisfy the requirement of the displacement stated on the Drawings.

PROJECT NAME	FINANCED BY	COUNTERPART	JICA STUDY TEAM	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE
DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	PREPARED BY S. IMADA		29 Sept.2017	GENERAL NOTES (STEEL BOX GIRDER BRIDGE)	1
			CHECKED BY T. HAYAKAWA		3 Oct.2017	DWG No.		
			APPROVED BY Y. SANO		6 Oct.2017	P1-GE-1031		

GENERAL NOTES (STEEL CABLE STAYED BRIDGE)

1. GENERAL

- 1) A bridge with 4-lane road with width 3.5m/lane have been provided.
- 2) All drawings are to be read in conjunction with the technical specification.
- 3) All chainages, coordinates and elevations are shown in meter.
- 4) All dimensions are shown in millimeters.
- 5) WGS84 UTM coordinate system is applied.
- 6) Vertical control is based on the BM. 76097 established by Myanmar Survey Department.

2. DESIGN CODES

The structure shall be designed in accordance with Specifications for Highway Bridges of Japan Road Associations (JSHB, 2012).
The design live load shall comply with AASHTO LRFD Bridge Design Specifications.

3. DESIGN LOADS

- 1) Dead loads
- 2) Live loads: AASHTO HL-93
- 3) Effect of temperature: +10 to +40 (25 ± 15)
- 4) Wind load: W=44.7m/sec (3 sec instantaneous wind speed)
[30m/sec (10 min average wind speed)]
- 5) Effect of earthquake: Horizontal seismic coefficient K=0.30
- 6) Earth pressure
- 7) Water pressure
- 8) Buoyant Force
- 9) Collision Load

4. RIVER CONDITION

	Elevation	Remarks
High Water Level (H.W.L.)	MSL +4.990	100 year flood
H.W.L. for temporary work	MSL +4.340	5 year flood
Low Water Level (L.W.L.)	MSL -2.390	
River Bed Level	P10 MSL-4.55m P11 MSL-5.41m P12 MSL-7.96m P13 MSL-8.02m	Designed River Bed Level

5. CONCRETE

- 1) Unless otherwise indicated the strength of concrete shall be of the following grade based on 28 days cylinder strength.

Strength (MPa)	Structural Member
30	Pier head and column
24	Concrete curb, Connection with pile head and footing, Footing
21	Bottom slab concrete
18	Filling inside of SPSP

- 2) All exposed edge of concrete shall be chamfered 20x20mm unless noted otherwise.

6. REINFORCEMENT

- 1) Unless otherwise indicated the reinforcement bar shall be high strength deformed bar conforming to the requirement of JIS G 3112.

Class	Yield point or 0.2% proof stress (MPa)	Tensile stress (MPa)	Structural member
SD345	>>345	>>490	Substructure, Stud rebar

- 2) Clear cover to reinforcement as follows unless otherwise stated on the components of drawings.

Structural member	Cover (mm)
Footing, Pier	70
Pier beam	50
Concrete curb etc.	40

- 3) Minimum requirement for development length and lap length for reinforcement bar shall be comply to the JSHB. Mechanical splice shall be used for the connection of reinforcement bars 35mm of diameter or exceeded instead of lap joint.

		SD345									
Diameter		D13	D16	D19	D22	D25	D29	D32	D35	D38	
Length la (mm)	$\sigma=40N/mm^2$	330	400	480	550	630	730	800	1160		
	$\sigma=36N/mm^2$	340	420	500	580	660	760	840	1210		
	$\sigma=30N/mm^2$	370	450	530	620	700	810	890	980	1060	
	$\sigma=24N/mm^2$	410	510	600	690	790	910	1010	1100	1190	
		SD390									
	$\sigma=30N/mm^2$	420	520	610	710	800	930	1030	1120	1220	
	$\sigma=24N/mm^2$	470	580	690	790	900	1050	1150	1260	1370	

7. NOTES FOR STEEL STRUCTURE

- 1) All cope holes are to be 35mm radius unless noted otherwise.
- 2) All materials shall be applicable criteria or equivalent in accordance with the technical specification.
- 3) Unless otherwise indicated the steel superstructure is symmetric about \bar{C} bridge and about the main span.
- 4) The position and methods of field connections (bolted connections and yard welding) shown in the drawings are one of the typical options, the contractor can propose an alternative which shall comply with all the relevant requirements of the specification. In that case, the contractor shall perform calculations and detailed design for that proposal. Any additional cost incurred by the change for his own convenience is at the contractor's responsibility.

8. STRUCTURAL STEEL

- 1) Unless noted otherwise structural steel plates shall be in accordance with:

STEEL GRADE	STANDARD
SS400	JIS G 3101
SM400, SM490Y SM520, SM570	JIS G 3106

- 2) Unless noted otherwise section steel shall be in accordance with:

TYPE	STEEL GRADE	STANDARD
ANGLE SECTION	SS400	JIS G 3192
CHANNEL	SS400	JIS G 3192
CIRCULAR HOLLOW SECTION	STK400	JIS G 3444
RECTANGULAR HOLLOW SECTION	STKR400	JIS G 3466

9. WELDING OF STRUCTURAL STEEL

- 1) Welding symbols are in accordance with ISO 2553: 1992.
- 2) Dimensions of fillet welds are throat thickness.
- 3) Butt welds: Weld class B in accordance with the specification unless noted otherwise. Fillet Welds: Weld class C in accordance with the specification unless noted otherwise.
- 4) Fillet weld size shall be in accordance with the following table unless noted otherwise.

THICKNESS OF PLATE (THICKER PART) (mm)	MINIMUM FILLET WELD THROAT SIZE (mm)
$t \leq 8$	4
$8 < t \leq 12$	5
$12 < t \leq 18$	6
$18 < t \leq 24$	7
$24 < t \leq 32$	8
$32 < t \leq 40$	9
$40 < t \leq 50$	10
$50 < t \leq 60$	11
$60 < t \leq 72$	12
$72 < t \leq 84$	13
$84 < t \leq 98$	14

- 5) Fillet weld for stress member shall be 6mm or more in accordance with the JSBH.
- 6) Welds shall be airtight.
- 7) Relocation of erection/section welds is subject to the approval of engineer.

10. BOLTS

- 1) Unless noted otherwise bolts and assemblies shall be in accordance with:

TYPE	GRADE OF BOLT	GRADE OF NUT	STANDARD
ISO METRIC PRECISION HEXAGON BOLTS, SCREWS AND NUTS	4.6	5	JIS B 1180, JIS B 1181

- 2) Where high strength friction grip bolt are indicated they shall be in accordance with:

TYPE	GRADE OF BOLT	GRADE OF NUT	STANDARD
HSFG BOLTS AND ASSOCIATED NUTS	F10T S10T	F10T S10T	JIS B 1186 JSS II 09-1996

- 3) HSFG Bolt holes shall be 24.5mm diameter unless noted otherwise.
- 4) Unless noted otherwise the slip factor at friction grip surfaces for HSFG bolts shall be at least 0.40.
- 5) Nuts for Non-HSFG bolts shall be nipped up tight (i.e. not torqued) and shall be secured by locking devices or other mechanical means.
- 6) Unless noted otherwise all bolts, screws and nuts shall be hot-dip galvanized.

11. STAY CABLE

Strands for stay cable (7 wire strands) shall be in accordance with JIS G 3536 or ASTM A 416 or equivalent.

12. CORROSION PROTECTION AND PAINT APPLICATION

Metal coating and painting systems are shown in the specifications.

13. ERECTION

- 1) Be sure to secure an opening for installation of a hanging ring on the erection scaffold, at the location of the erection joint of the main girder and tower. Also, make sure to infill the opening with a bolt after erection.
- 2) As for the bent erection range between back spans and main span, be sure to install separately a stiffener at the bent location of the main girder.
- 3) The Contractor shall install necessary temporary member for construction work (stiffener, hanging metal and etc.) in accordance with the proposed erection methods.

14. STEEL PIPE SHEET PILE

- 1) Unless otherwise indicated steel pipe sheet pile shall be conforming to the requirement of JIS A 5530 or JIS A 3444.

Class	Yield point or proof stress (MPa)	Tensile stress (MPa)	Structural member
SKY490	>>315	>>490	Steel pipe sheet pile
SKY400	>>235	>>400	Steel pipe sheet pile
STK400	>>235	>>400	Joint pipe for steel pipe sheet pile

15. OTHER STRUCTURE

- 1) Bearing and anchor bars shall satisfy the requirement of force and displacement stated on the Drawings.
- 2) Expansion joint shall satisfy the requirement of the displacement stated on the Drawings.
- 3) Base, bolt hole and hole for electric wire for electrical equipments shall be adjusted and installed in accordance with the actual electrical equipments (road lighting, light-up for tower and pier, navigation sign and light, aircraft warning light, lighting conductor and etc.) to be used.

16. ABBREVIATIONS

☉	CENTER LINE
N.T.S.	NOT TO SCALE
WP	WORKING POINT
EW	ERECTION WELD
YW	YARD WELD
EJ	ERECTION JOINT
YJ	YARD JOINT
APPROX.	APPROXIMATELY
PL	PLATE
THK	THICK
LG	LONG
DIA	DIAMETER
DIA	DIAPHRAGM
R	RADIUS
DWG	DRAWING
Var.	VARIES
EQ.	EQUAL
w/	WITH
TYP.	TYPICAL
TC	TANGENT TO CURVE
CC	CURVE TO CURVE
SYMM ABT.	SYMMETRIC ABOUT
U.N.O	UNLESS NOTED OTHERWISE
HORIZ.	HORIZONTAL
VERT.	VERTICAL
LONGIT.	LONGITUDINAL
DEV.	DEVELOPMENT
CONT	CONTINUE
RB	ROUND BAR
L	L-SHAPE STEEL
CH	CHANNEL
HSFG	HIGH STRENGTH FRICTION GRIP
B.N.	BOLT & NUT
STIFF.	STIFFENER
FLG	FLANGE
BRKT	BRACKET
EL.	ELEVATION
B.S.	BOTH SIDES
F.S.	FAR SIDE
N.S.	NEAR SIDE

17. LEGENDS

●	WORK POINT
⊗	MATCH LINE

PROJECT NAME	FINANCED BY	COUNTERPART	JICA STUDY TEAM	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE
DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	JICA JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	PREPARED BY CHECKED BY APPROVED BY	T.TOMODA T. HAYAKAWA Y. SANO	友田 智雄 平川 知寿 佐野 祐一	27. Nov.2017 28. Nov.2017 29. Nov.2017	GENERAL NOTES (STEEL CABLE STAYED BRIDGE)
								1 DWG No. P1-GE-1041

GENERAL NOTES (ON-RAMP BRIDGE)

1. GENERAL DESCRIPTION

- 1) A bridge with 4-lane road with width 3.5m/lane have been provided.
- 2) All drawings are to be read in conjunction with the technical specification.
- 3) All chainages, coordinates and elevations are shown in meter.
- 4) All dimensions are shown in millimeters.
- 5) WGS84 UTM coordinate system is applied.
- 6) Vertical control is based on the BM. 76097 established by Myanmar Survey Department.
- 7) Dimensions shown in the drawing are ones after the period of calculation of creep and/or shrinkage.

2. DESIGN CODES

The structure shall be designed in accordance with Specifications for Highway Bridges of Japan Road Associations (JSHB, 2012).

3. DESIGN LOADS

- 1) Dead loads
- 2) Live loads
AASHTO HL-93
- 3) Shrinkage and creep
- 4) Effect of temperature
+10°C to +40°C (25°C ± 15°C)
- 5) Wind load
W=44.7m/sec
- 6) Effect of earthquake
Horizontal seismic coefficient K=0.30
- 7) Earth pressure
- 8) Water pressure
- 9) Buoyant Force

4. RIVER CONDITION

	Elevation	Remarks
High Water Level (H.W.L.)	MSL +4.990	100 year flood
H.W.L. for temporary work	MSL +4.340	5 year flood
Low Water Level (L.W.L.)	MSL -2.39	
River Bed Level	A1 N/A A2 side or P20~P22 MSL -7.490	Designed River Bed Level

5. CONCRETE

- 1) Unless otherwise indicated the strength of concrete shall be of the following grade based on 28 days cylinder strength.

Strength (MPa)	Structural member
50	Precast segment & CIP portion for PC box girder
40	Main girder for PC-I GIRDER
30	RC CIP slab, crossbeam and connection for PC-I girder Pier head and column : P4 through P23 Cast-In-Place RC pile
24	RC concrete: general, wheel guard.... Abutment A1 , A2 and AO1 Pier for P1 to P3,P24,P25,PO1 to PO3 Footing : P4 through P23
21	Seal concrete (Bottom slab concrete, Filling inside of SPSP)
18	Blinding concrete, etc

- 2) Grouting mortar with $f_{Dck} = 45\text{MPa}$ is used .
- 3) All exposed edges of concrete shall be chamfered 20x20 mm unless noted otherwise.

6. REINFORCEMENT

- 1) Unless otherwise indicated reinforcement bar shall be high strength deformed bar confirming to the requirement of JIS G 3112.

Class	Yield point or 0.2% proof stress (MPa)	Tensile stress (MPa)	Structural member
SD390	>>390	>>560	Pier column axial rebar :P4 through P23
SD345	>>345	>>490	Superstructure, substructure, Stud rebar
SD295	>>295	>>440	Accessories (saddle)

- 2) Clear cover to reinforcement as follows unless otherwise stated on the component of drawings.

Structural member	Cover (mm)
Cast in situ pile	120
Pile cap	70
Pier, abutment and approach slab	70
Pier beam	50
Main girder	35
Slab, wheel guard	30

- 3) Minimum requirements for development length and lap length for reinforcement bar shall be comply to the JSHB. Mechanical splice shall be used for the connection of reinforcement bars 35mm of diameter or exceeded instead of lap joint.

		SD345									
Diameter		D13	D16	D19	D22	D25	D29	D32	D35	D38	
Length la (mm)	$\sigma = 40\text{N/mm}^2$	330	400	480	550	630	730	800	1160		
	$\sigma = 36\text{N/mm}^2$	340	420	500	580	660	760	840	1210		
	$\sigma = 30\text{N/mm}^2$	370	450	530	620	700	810	890	980	1060	
	$\sigma = 24\text{N/mm}^2$	410	510	600	690	790	910	1010	1100	1190	
		SD390									
Length la (mm)	$\sigma = 30\text{N/mm}^2$	420	520	610	710	800	930	1030	1120	1220	
	$\sigma = 24\text{N/mm}^2$	470	580	690	790	900	1050	1150	1260	1370	

7. PRESTRESSING STEEL

- 1) Unless otherwise indicated prestressing steel shall be low relaxation strand confirming to the requirement of JIS G 3536 or JIS G 3109.

Class	Grade	Structural member
19S15.2mm ECF strand	SWPR7BL	External tendon for PC box girder
12S15.2mm strand	SWPR7BL	Internal tendon for PC box girder(longitudinal)
3S12.7mm strand	SWPR7BL	Internal tendon for PC box girder(transverse)
4S15.2mm strand	SWPR7BL	Internal tendon for PC box girder(crossbeam)
$\phi 32$ bar	SWPR930/1080	Internal tendon for PC box girder(crossbeam)
12S12.7mm strand	SWPR7BL	Internal tendon for PC-I girder(longitudinal)
1S19.3mm strand	SWPR7A	Internal tendon for precast PC panel of PC -I girder
$\phi 32$ bar	SWPR930/1080	Internal tendon for PC-I girder(crossbeam)

8. STEEL PIPE SHEET PILE

- 1) Unless otherwise indicated steel pipe sheet pile shall be confirming to the requirement of JIS A 5530 or JIS G 3444.

Class	Yield point or proof stress (MPa)	Tensile stress (MPa)	Structural member
SKY490	>>315	>>490	Steel pipe sheet pile
SKY400	>>235	>>400	Steel pipe sheet pile
STK400	>>235	>>400	Joint pipe for steel pipe sheet pile

9. OTHER STRUCTURE

- 1) Bearings and Anchor bars shall satisfy the requirement of the force and displacement stated on the Drawings.
- 2) Expansion joint shall satisfy the requirement of the displacement stated on the Drawings.

















Note : This general notes is not applicable to the following structures;

- Cable stayed bridge
- Piers P10 through P13

PROJECT NAME	FINANCED BY	COUNTERPART	JICA STUDY TEAM	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE
DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO.,LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.	PREPARED BY M. OHYAMA		15 Jun.2017	GENERAL NOTES (ON-RAMP BRIDGE)	1
				CHECKED BY T. HAYAKAWA		20 Jun.2017		DWG No.
				APPROVED BY Y. SANO		21 Jun.2017		P1-GE-1051

GENERAL NOTES (LIGHTING)

LEGEND



























-  : Concrete pole
-  : Steel pole
-  : Traffic signal controller
-  : Vehicle traffic signal
-  : Arrow sign traffic signal
-  : Pedestrian signal
-  : Push-button switch
-  : Junction box
-  : Power supply box
-  : Pull box
-  : Hand hole
-  : Raising underground pipe
-  : Base mounted pole signal head pole (with arm)
-  : Pedestrian signal head pole (with push-button)
-  : Underground piping
-  : Underground wiring
- SVV : Control -use vinyl insulated vinyl sheathed cable
- IV : Indoor PVC
- E : Grounding
- G : Vehicle traffic signal : Green light
- Y : Vehicle traffic signal : Yellow light
- R : Vehicle traffic signal : Red light
- A : Arrow traffic signal : Green light
- PG : Pedestrian signal lamp : Green light
- PR : Pedestrian signal lamp : Red light
- COM : Common for all indication

GENERAL NOTES

1. THE ELECTRICAL WORKS SHALL BE DONE UNDER THE DIRECT SUPERVISION OF THE DUTY REGISTERED ELECTRICAL ENGINEER.
2. THE CONTRACTOR SHALL SECURE ALL PERMITS AND PAY ALL FEES REQUIRED FOR ELECTRICAL INSTALLATION WORKS AND FURNISH THE OWNER, THROUGH THE ENGINEER, THE FINAL CERTIFICATE OF ELECTRICAL INSPECTION AND APPROVAL FROM PROPER GOVERNMENT AUTHORITIES FOR THE COMPLETE ELECTRICAL WORKS.
3. ALL ELECTRICAL MATERIALS TO BE USED SHALL BE BRAND NEW AND APPROVED TYPES.
4. ALL UNDERGROUND CONDUIT PIPES AND CONDUIT RUN EMBEDDED IN CONCRETE SHALL BE HIGH-DENSITY POLYETHYLENE (HDPE)..
5. UNPROTECTED CONDUIT RISERS AND EXPOSED CONDUIT SHALL BE GAS PIPE(GP).
6. ALL CONDUIT RUN SHALL BE PROVIDED WITH A 14mm² BARE COPPER GROUND WIRE AND SHALL BE TERMINATED AT MAIN DISTRIBUTION PANEL BOARD, ALL EQUIPMENT, METALLIC PARTS AND SURFACES SHALL BE EFFECTIVELY GROUNDED.
7. ALL STREET LUMINAIRE ASSEMBLIES INCLUDING POLES SHALL WITHSTAND UP TO 180 KpH GUSTING WINDS WITHOUT PERMANENT DEFORMATION.
8. THE ELECTRICAL SERVICE VOLTAGE FOR THAKETA SIDE SHALL BE 11KV/240V SECONDARY, 3-PHASE 4 WIRE, 50 HERTZ AC.
9. THE ELECTRICAL SERVICE VOLTAGE FOR THANLYIN SIDE SHALL BE 6.6KV/240V SECONDARY, 3-PHASE 4 WIRE, 50 HERTZ AC.
10. THE CONTRACTOR SHALL EXERCISE EXTREME CARE IN REMOVING EXISTING INSTALLATIONS, APPROPRIATE TOOLS AND EQUIPMENT SHALL BE UTILIZED TO MINIMIZED DAMAGE.
11. ALL FEEDER LINES AND BRANCH CIRCUITS SHALL BE INSTALLED AS INDICATED ON PLANS, INDIVIDUAL FEEDER AND BRANCH CIRCUIT AND HOMERUNS SHALL NOT BE COMBINED IN THE SAME RACEWAY UNLESS SPECIFIED.
12. LOCATIONS OF ELECTRICAL EQUIPMENT AND DEVICES INCLUDING CONDUIT ROUTINGS SHOWN IN THE DRAWINGS ARE APPROXIMATE LOCATION ONLY. CONTRACTOR SHALL ALLOW FOR NECESSARY FIELD ADJUSTMENTS TO SUIT ACTUAL CONDITION AT SITE.
13. SUBMIT COMPLETE TECHNICAL SPECIFICATIONS OF MATERIALS/EQUIPMENTS AND SHOP DRAWINGS FOR APPROVAL BY THE ENGINEER PRIOR TO START OF INSTALLATION.

ABBREVIATIONS:

- A : AMPERE
- AC : ALTERNATING CURRENT
- AF : AMPERE FRAME
- AT : AMPERE TRIP
- BCW : BARE COPPER WIRE
- C : CONDUIT
- CB : CIRCUIT BREAKER
- CHH : COMMUNICATION HANDHOLE
- CT : CURRENT TRANSFORMER
- DF : DEMAND FACTOR
- DIA : DIAMETER
- ECB : ENCLOSED CIRCUIT BREAKER
- EHH : ELECTRICAL HANDHOLE
- EL : ELEVATION
- (GND) : GROUND
- ATS : AUTOMATIC TRANSFER SWICH
- HID : HIGH INTENSITY DISCHARGE LAMP
- HZ : HERTZ
- IMC : INTERMEDIATE METAL CONDUIT
- IND'L : INDUSTRIAL
- KVA : KILOVOLT AMPERE
- KW : KILOWATT
- KWHR : KILOWATT HOUR
- KAIC : KILOAMPERE INTERRUPTIG CAPACITY
- LED : LIGHT EMITTING DIODE
- LP : LIGHTING PANEL BOARD
- LTG : LIGHTING
- MDP : MAIN DISTRIBUTION PANEL BOARD
- MTD : MOUNTED
- P,Ø : POLE, PHASE
- PVC : POLYVINYL CHLORIDE
- uPVC : UNPLASTICIZED POLYVINYL CHLORIDE
- ROW : RIGHT OF WAY
- STA : STATION
- SDBC : SOFT DRAWN BARE COPPER WIRE
- TW : THERMOPLASTIC MOISTURE RESISTANT
- TYP : TYPICAL
- THW : THERMOPLASTIC HEAT AND MOISTURE RESISTANT
- V : VOLT / VOLTAGE
- VA : VOLT - AMPERE
- W : WATT
- XLPE : CORSS-LINKED POLYETHYLENE INSULATED CABLES
- TEI : TARLAC ELECTRIC INCORPORATED

-  : MOLD-CASE CIRCUIT BREAKER
-  : EXITER
-  : LIGHTING PANEL
-  : AMPERE TRIPPING
-  : AMPERE METER
-  : KILOWATT HR.METER
-  : GROUNDING
-  : VOLTAGE METER
-  : POWER TRANSFORMER
-  : CONTACTOR
-  : FREQUENCY METER
-  : PRIMARY CUTOUT (PE) WITH POWER FUSE (PF)
-  : VOLTMETER CHANGE OVER SWITCH
-  : BATTERY
-  : LIGHTING ARRESTER (LA)
-  : AMMETER CHANGOVER SWITCH
-  : AUTOMATIC VOLTAGE LEGULATOR
-  : CURRENT FUSE
-  : CURRENT TRANSFORMER
-  : LOW VOLTAGE RELAY
-  : MAIN DISTRIBUTION PANEL
-  : DIESEL ENGINE
-  : OVER VOLTAGE
-  : POWER FUSE
-  : GENERATOR
-  : OVERCURRENT RELAY

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY  JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART  REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM  NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO.,LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.		NAME T. HAYAKAWA	SIGNATURE 	DATE 15 Sep.2017	DRAWING TITLE GENERAL NOTES (LIGHTING)	PACKAGE 1 DWG No. P1-GE-1061
					PREPARED BY T. HAYAKAWA	SIGNATURE 	DATE 22 Sep.2017		
					CHECKED BY Y. SANO	SIGNATURE 	DATE 29 Sep.2017		

DESIGN ELEMENTS OF HORIZONTAL ALIGNMENT

1. MAIN HIGHWAY

POINT NAME	STATION	NORTHING X-COORDINATE	EASTING Y-COORDINATE	ELEMENT	AZIMUTH ANGLE	ELEMENT LENGTH	ACCUMULATED DISTANCE
BP	0+000.000000	1857219.291051	205789.549518				0.000000
KE 1-1	0+024.969805	1857233.508737	205769.022741	STRAIGHT LINE	304° 42' 29.009669"	24.969805	24.969805
KA 1-1	0+076.169805	1857263.372323	205727.441550	CLOTHOID A=160	307° 38' 29.767749"	51.200000	76.169805
KA 1-2	0+161.512727	1857320.993624	205664.628061	CIRCLE R=500	317° 25' 16.250510"	85.342923	161.512727
KE 1-2	0+212.712727	1857359.850350	205631.296633	CLOTHOID A=160	320° 21' 17.008590"	51.200000	212.712727
BC 2	0+521.900231	1857597.927606	205434.024909	STRAIGHT LINE	320° 21' 17.008590"	309.187504	521.900231
EC 2	0+857.521703	1857873.073202	205242.524037	CIRCLE R=2000	329° 58' 10.457547"	335.621472	857.521703
KA 3-1	2+627.420376	1859405.380223	204356.760802	STRAIGHT LINE	329° 58' 10.457547"	1769.898673	2627.420376
KE 3-1	2+680.991804	1859452.311131	204330.947038	CLOTHOID A=150	333° 37' 25.100803"	53.571429	2680.991804
KE 3-2	2+724.079800	1859491.826837	204313.816465	CIRCLE R=420	339° 30' 5.903241"	43.087995	2724.079800
KA 3-2	2+777.651228	1859542.749064	204297.209619	CLOTHOID A=150	343° 9' 20.546495"	53.571429	2777.651228
KA 4-1	2+782.485673	1859547.376091	204295.808734	STRAIGHT LINE	343° 9' 20.546495"	4.834445	2782.485673
KE 4-1	2+835.298173	1859597.467560	204279.125895	CLOTHOID A=130	338° 25' 39.671372"	52.812500	2835.298173
KE 4-2	2+961.570619	1859702.829467	204211.024695	CIRCLE R=320	315° 49' 7.291643"	126.272446	2961.570619
KA 4-2	3+014.383119	1859738.611303	204172.202890	CLOTHOID A=130	311° 5' 26.416517"	52.812500	3014.383119
EP	3+575.000000	1860107.078174	203749.682533	STRAIGHT LINE	311° 5' 26.416517"	560.616881	3575.000000

2. ACCESS ROAD FROM STAR CITY TO THE PROJECT HIGHWAY

POINT NAME	STATION	NORTHING X-COORDINATE	EASTING Y-COORDINATE	ELEMENT	AZIMUTH ANGLE	ELEMENT LENGTH	ACCUMULATED DISTANCE
BP	0+000.000000	1857586.250773	205393.281977				0.000000
BC-1	0+004.471511	1857589.735828	205396.083549	STRAIGHT LINE	38° 47' 42.593542"	4.471511	4.471511
EC-1	0+058.044963	1857624.134584	205436.728193	CIRCLE R=140	60° 43' 13.433109"	53.573451	58.044963
KA 2-1	0+105.007058	1857647.102428	205477.690573	STRAIGHT LINE	60° 43' 13.433109"	46.962095	105.007058
KE 2-1	0+148.110506	1857663.282883	205517.356898	CLOTHOID A=50	82° 0' 37.609033"	43.103448	148.110506
KE 2-2	0+367.483423	1857554.981013	205497.547926	CIRCLE R=58	298° 43' 11.268296"	219.372917	367.483423
KA 2-2	0+410.586871	1857584.154535	205466.177078	CLOTHOID A=50	320° 0' 35.444221"	43.103448	410.586871
BC-3	0+535.778322	1857680.070576	205385.722045	STRAIGHT LINE	320° 0' 35.444221"	125.191450	535.778322
EP	0+643.083345	1857765.821505	205321.300759	CIRCLE R=1000	326° 9' 28.675974"	107.305023	643.083345

3. ACCESS ROAD FROM TOLL PLAZA TO SHUKHINTHAR MAYOPAT ROAD

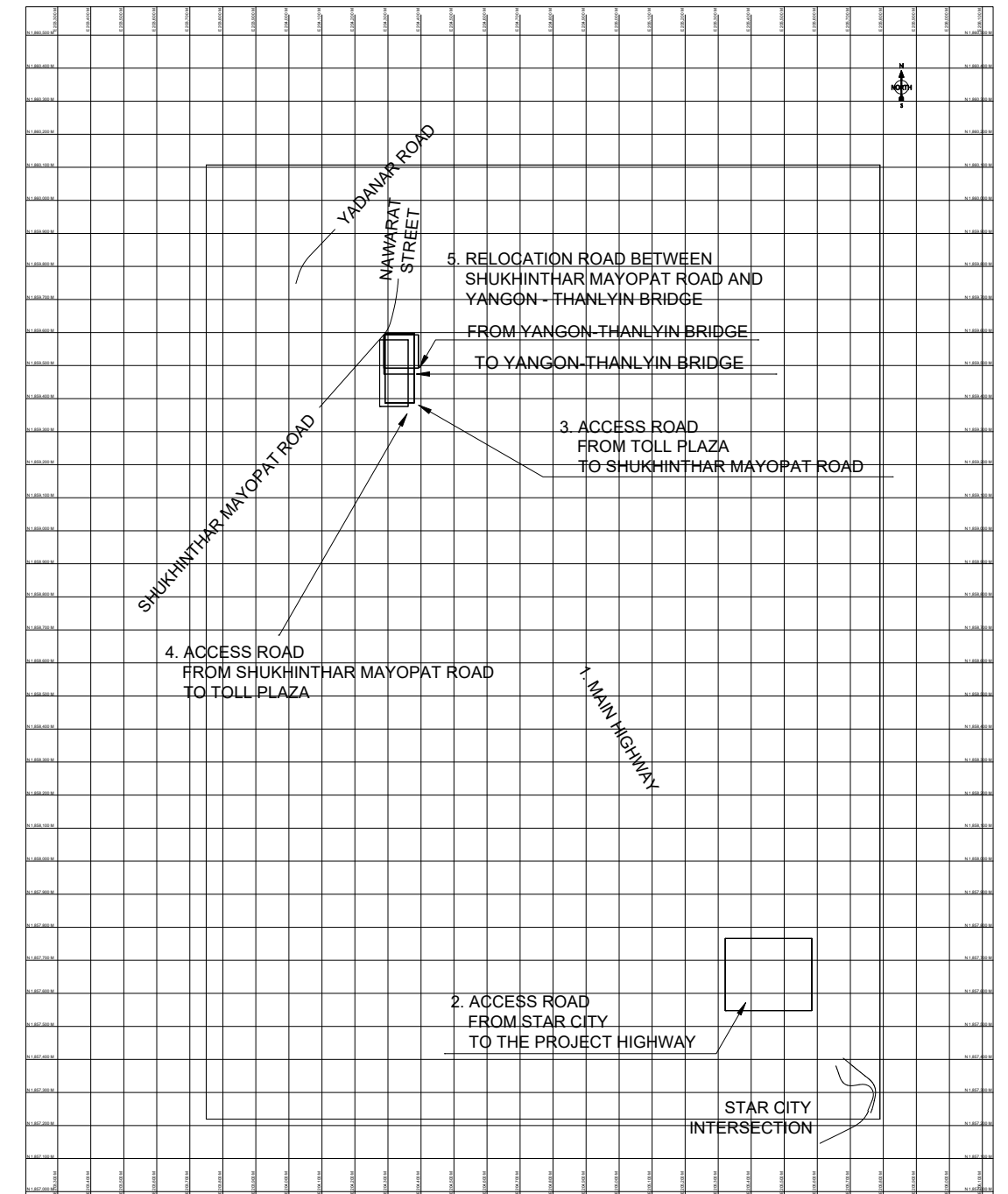
POINT NAME	STATION	NORTHING X-COORDINATE	EASTING Y-COORDINATE	ELEMENT	AZIMUTH ANGLE	ELEMENT LENGTH	ACCUMULATED DISTANCE
BP	0+000.000000	1859387.083266	204379.898737				0.000000
KA 1-1	0+027.420376	1859410.822724	204366.175940	STRAIGHT LINE	329° 58' 10.457547"	27.420376	27.420376
KE 1-1	0+080.298246	1859457.142519	204340.689898	CLOTHOID A=147.083849	333° 40' 19.933366"	52.877870	80.298246
KE 1-2	0+122.270570	1859495.635051	204324.002884	CIRCLE R=409.125000	339° 33' 0.735807"	41.972324	122.270570
KA 1-2	0+175.148440	1859545.900332	204307.618036	CLOTHOID A=147.083849	343° 9' 20.546495"	52.877870	175.148440
KA 2-1	0+179.982885	1859550.527359	204306.217150	STRAIGHT LINE	343° 9' 20.546495"	4.834445	179.982885
EP	0+228.545623	1859596.665312	204291.095464	CLOTHOID A=132.996909	341° 1' 10.050264"	48.562738	228.545623

4. ACCESS ROAD FROM SHUKHINTHAR MAYOPAT ROAD TO TOLL PLAZA

POINT NAME	STATION	NORTHING X-COORDINATE	EASTING Y-COORDINATE	ELEMENT	AZIMUTH ANGLE	ELEMENT LENGTH	ACCUMULATED DISTANCE
BP	0+000.000000	1859376.198265	204361.068463				0.000000
KA 1-1	0+027.420376	1859399.937722	204347.345665	STRAIGHT LINE	329° 58' 10.457547"	27.420376	27.420376
KE 1-1	0+081.685363	1859447.479743	204321.204179	CLOTHOID A=152.909864	333° 34' 39.093555"	54.264987	81.685363
KE 1-2	0+125.889030	1859488.018623	204303.630046	CIRCLE R=430.875000	339° 27' 19.895993"	44.203667	125.889030
KA 1-2	0+180.154017	1859539.597796	204286.801203	CLOTHOID A=152.909864	343° 9' 20.546495"	54.264987	180.154017
KA 2-1	0+184.988462	1859544.224823	204285.400317	STRAIGHT LINE	343° 9' 20.546495"	4.834445	184.988462
EP	0+219.973050	1859577.579400	204274.853056	CLOTHOID A=127.777631	341° 0' 29.487429"	34.984588	219.973050

5. RELOCATION ROAD BETWEEN SHUKHINTHAR MAYOPAT ROAD AND YANGON - THANLYIN BRIDGE

POINT NAME	STATION	NORTHING X-COORDINATE	EASTING Y-COORDINATE	ELEMENT	AZIMUTH ANGLE	ELEMENT LENGTH	ACCUMULATED DISTANCE
BP	0+000.000000	1859592.452945	204287.866125				0.000000
BC 1	0+024.306092	1859591.810075	204312.163713	STRAIGHT LINE	91° 30' 56.114217"	24.306092	24.306092
EC-1	0+063.975512	1859568.426887	204340.633817	CIRCLE R=30	167° 16' 42.957166"	39.669420	63.975512
TO YANGON-THANLYIN BRIDGE							
BC-2	0+115.859871	1859517.816166	204352.059301	STRAIGHT LINE	167° 16' 42.957166"	51.884359	115.859871
EP	0+168.655834	1859474.391353	204380.139144	CIRCLE R=75	126° 56' 43.638429"	52.795963	168.655834
FROM YANGON-THANLYIN BRIDGE							
BC-2	0+102.399065	1859530.946541	204349.095089	STRAIGHT LINE	167° 16' 42.957166"	38.423553	102.399065
EP	0+164.083776	1859492.287742	204392.126807	CIRCLE R=50	96° 35' 35.259250"	61.684711	164.083776

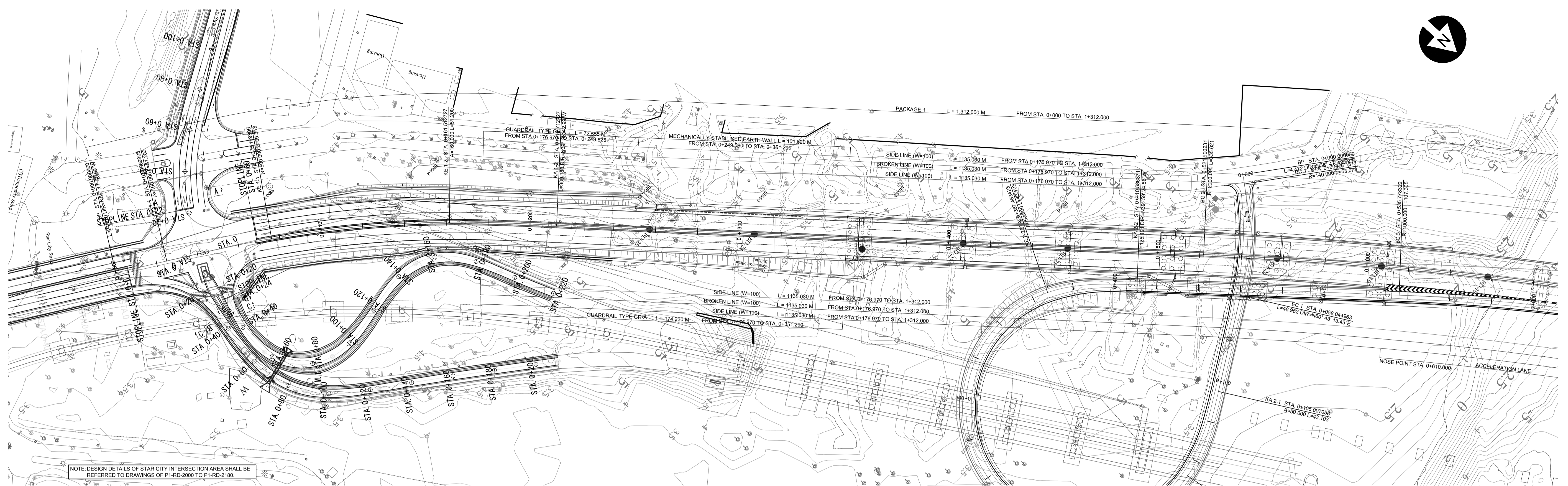
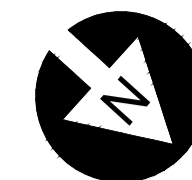


ALIGNMENT DIAGRAM SCALE = 1:20,000

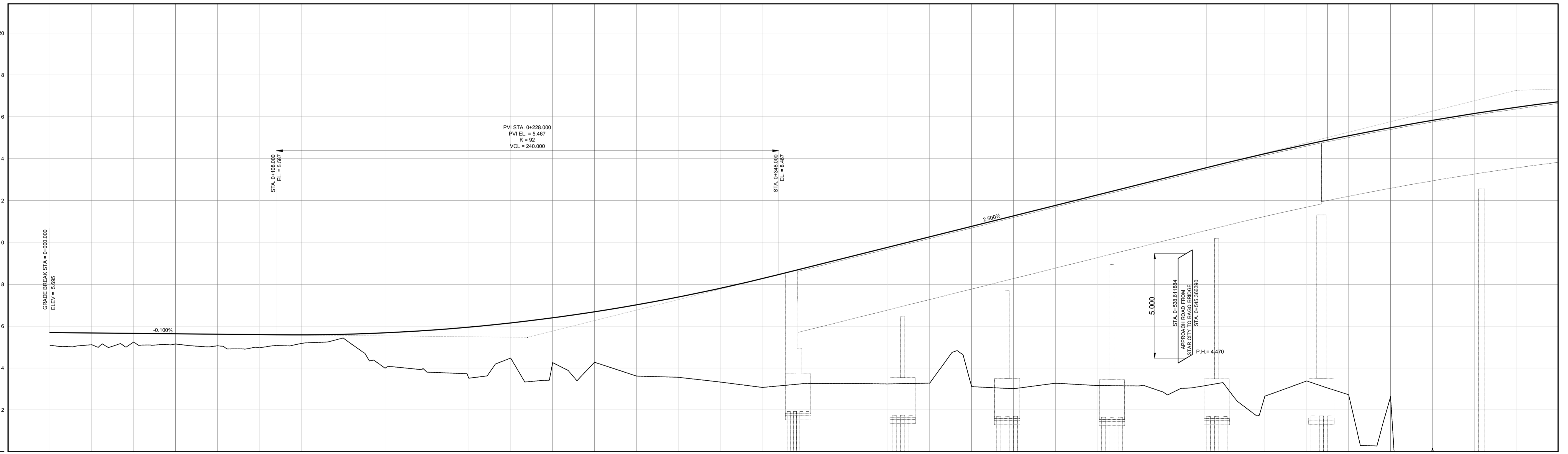
NOTE: 1. STAR CITY INTERSECTION CONSISTS OF FOUR (4) ROADS, I.E., MAIN HIGHWAY, YANGON ACCESS LINE, THILAWA ACCESS LINE AND STAR CITY ACCESS LINE. SEE STAR CITY INTERSECTION DRAWINGS FOR THE HORIZONTAL ALIGNMENT DATA OF YANGON ACCESS LINE, THILAWA ACCESS LINE AND STAR CITY ACCESS LINE.
 2. SEE THE DESIGN DATA OF HORIZONTAL ALIGNMENT OF SHUKHINTHAR MAYOPAT ROAD AND NAWARAT STREET IN THE DRAWING INCLUDED IN PACKAGE 3 DRAWINGS.
 3. SEE THE DESIGN DATA OF HORIZONTAL ALIGNMENT OF YADANAR ROAD IN THE DRAWING INCLUDED IN PACKAGE 3 DRAWINGS.

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JICA JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME T. HAYAKAWA T. HAYAKAWA Y. SANO	SIGNATURE <i>T. Hayakawa</i> <i>T. Hayakawa</i> <i>Y. Sano</i>	DATE 15 Jun.2017 20 Jun.2017 21 Jun.2017	DRAWING TITLE ALIGNMENT LAYOUT AND GEOMETRIC DATA	PACKAGE 1 DWG No. P1-GE-2001
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B. ROAD DESIGN

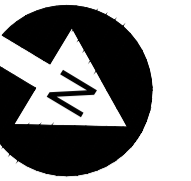


NOTE: DESIGN DETAILS OF STAR CITY INTERSECTION AREA SHALL BE REFERRED TO DRAWINGS OF P1-RD-2000 TO P1-RD-2150.



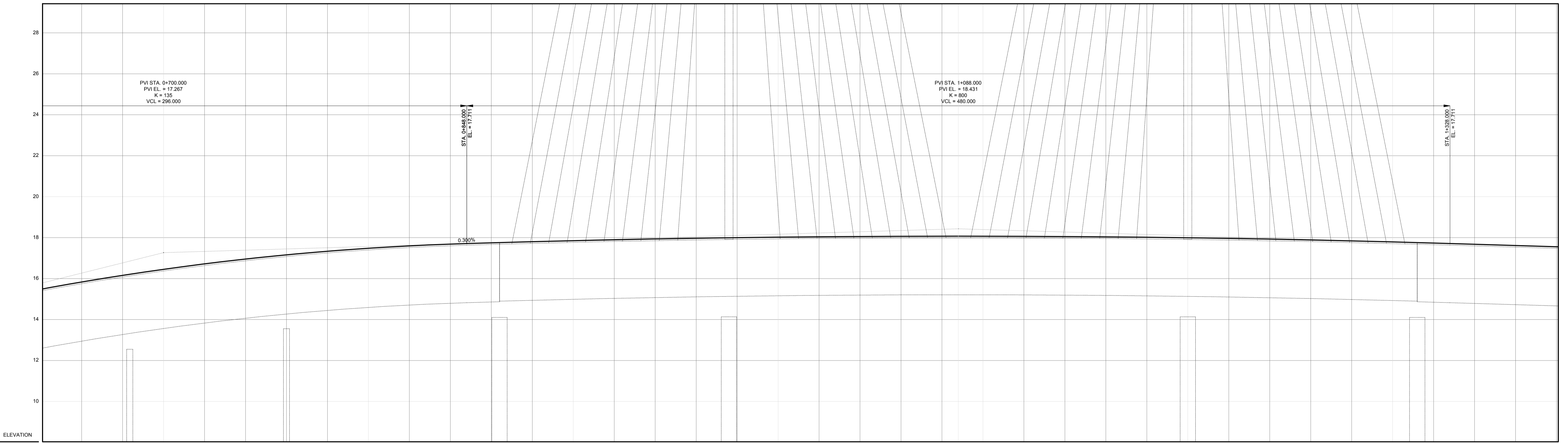
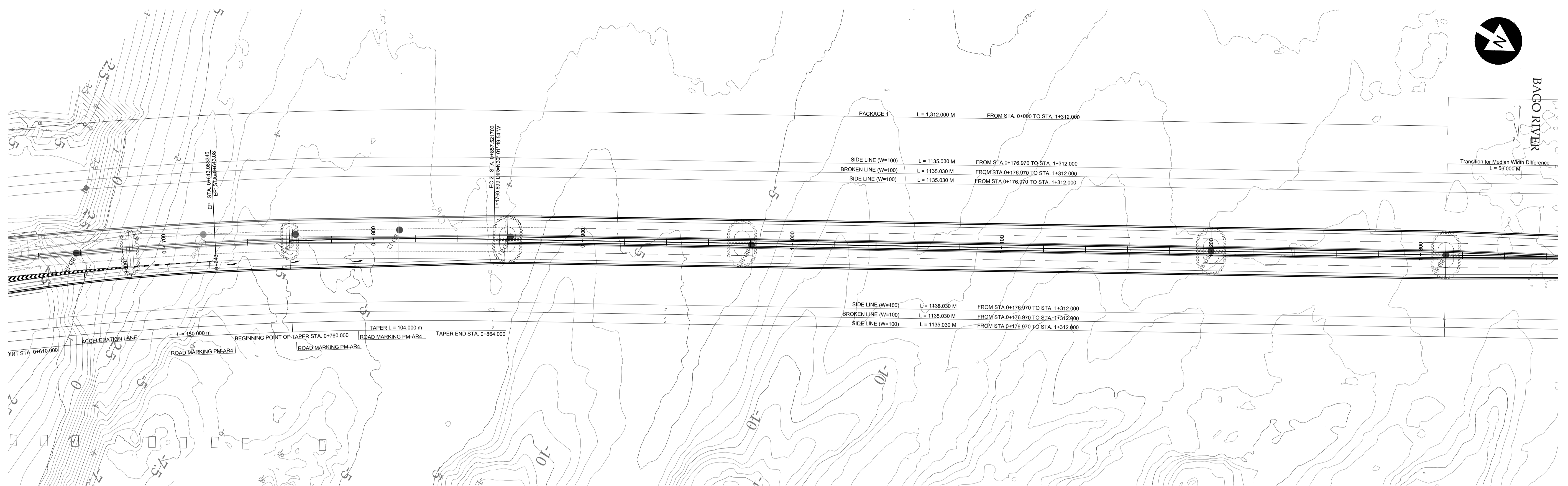
GRADE	0+000.000 ELEV = 5.855		L = -0.100% L = 228.000 m		0+108.000 ELEV = 5.897		0+228.000 ELEV = 5.467		L = 2.500% L = 472.000 m		0+820.000 ELEV = 17.267	
PROPOSED HEIGHT	5.08	5.11	5.15	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17
EXISTING HEIGHT	5.08	5.11	5.15	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17	5.17
STATION	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220
SUPER ELEVATION	-2.000%		1/125		+4.000%		-4.000%		-2.000%		-2.000%	
CURVE ELEMENTS	R = ∞ L = 24.970m		A = 180.000 L = 51.200m		R = 500.000m L = 85.343m		R = ∞ L = 51.200m		R = ∞ L = 309.188m		R = 2000.000m L = 335.521m	

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE PLAN AND PROFILE (1/2)	PACKAGE 1 DWG No. P1-RD-0100
				PREPARED BY	E. YOKOTA	15 JUNE 2017		
				CHECKED BY	T. HAYAKAWA	20 JUNE 2017		
APPROVED BY	Y. SANO	21 JUNE 2017						



BAGO RIVER

Transition for Median Width Difference
L = 56.000 M

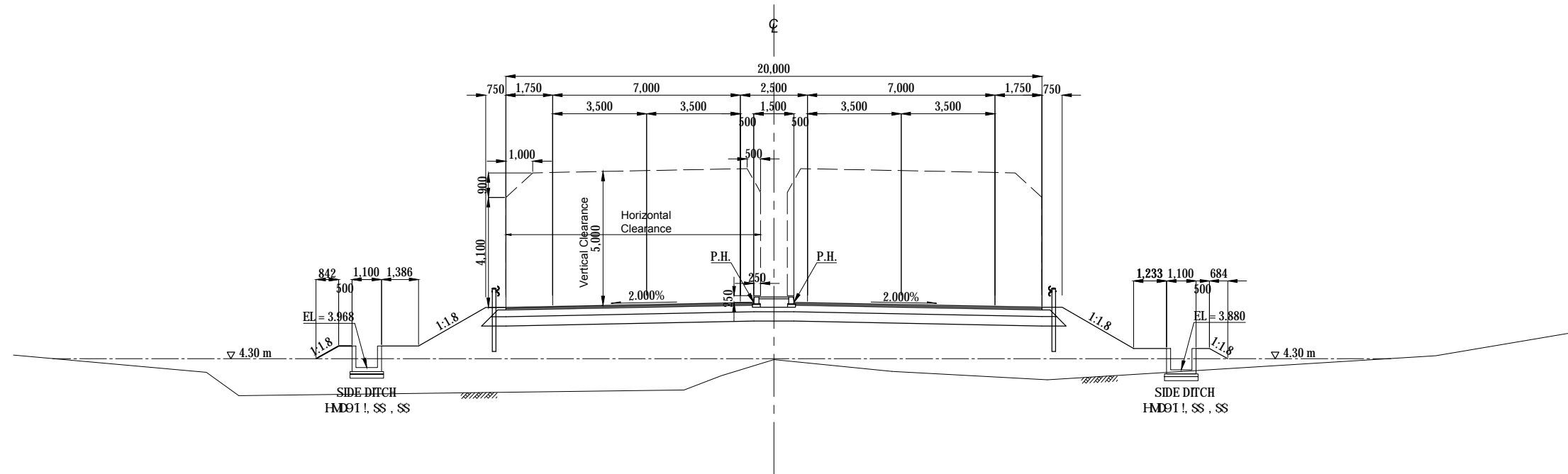


GRADE	0.300% L = 388.000 m																																			
PROPOSED HEIGHT	18.833	16.156	16.453	16.716	16.953	17.159	17.335	17.481	17.598	17.685	17.746	17.801	17.850	17.895	17.934	17.969	17.998	18.023	18.042	18.057	18.066	18.071	18.070	18.065	18.054	18.039	17.993	17.962	17.927	17.886	17.841	17.790	17.735	17.675	17.615	17.555
EXISTING HEIGHT	0.17	-1.23	-2.63	-3.63	-4.80	-5.01	-4.81	-4.88	-4.33	-4.09	-3.93	-4.88	-6.18	-4.94	-5.07	-4.74	-4.88	-6.74	-7.99	-6.87	-6.01	-6.33	-7.50	-8.38	-8.76	-8.11	-7.59	-7.97	-8.05	-8.33	-8.26	-7.74	-7.53	-8.07	-7.88	-7.53
STATION	0+660	0+680	0+700	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920	0+940	0+960	0+980	1+000	1+020	1+040	1+060	1+080	1+100	1+120	1+140	1+160	1+180	1+200	1+220	1+240	1+260	1+280	1+300	1+320	1+340	1+360
SUPER ELEVATION	-2.000%																																			
CURVE ELEMENTS	R=2000.000m L=336.621m																																			

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE PLAN AND PROFILE (2/2)	PACKAGE 1 DWG No. P1-RD-0110
				PREPARED BY	E. YOKOTA	15 JUNE 2017		
				CHECKED BY	T. HAYAKAWA	20 JUNE 2017		
APPROVED BY	Y. SANO	21 JUNE 2017						

STA. 0+240

G.H.= 4.26
P.H.= 6.399

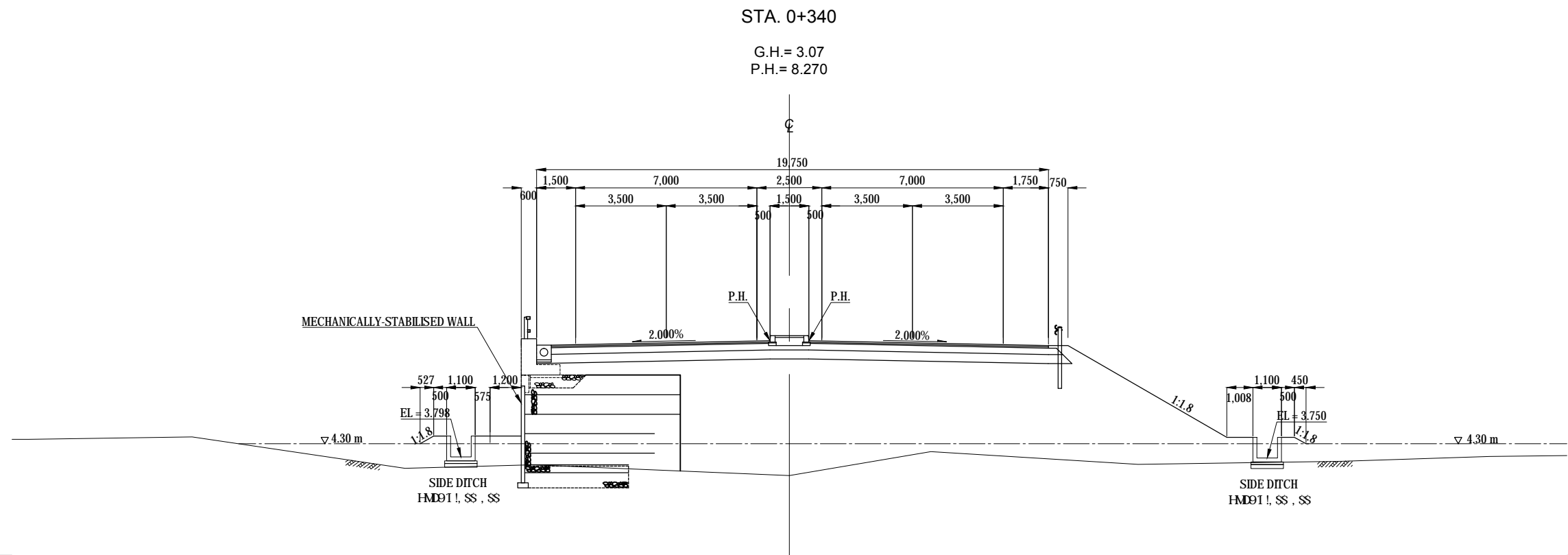


D.L.= 0.00

EMBANKMENT SECTION S = 1:200

NOTE: ELEVATION IS BASED ON MSL (MEAN SEA LEVEL).
ELEVATION OF 4.30 M SHOWN IN THE DRAWING IS THE PROPOSED HEIGHT OF CONSTRUCTION YARD.

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO.,LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE TYPICAL CROSS SECTION (1/2)	PACKAGE	
				PREPARED BY	E. YOKOTA			15 JUNE 2017	1
				CHECKED BY	T. HAYAKAWA			20 JUNE 2017	DWG No.
				APPROVED BY	Y. SANO			21 JUNE 2017	P1-RD-0200



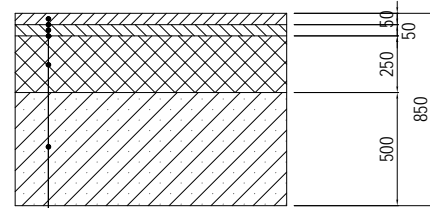
EMBANKMENT SECTION WITH MECHANICALLY-STABILISED WALL AT THE LEFT SIDE S = 1:200

NOTE: ELEVATION IS BASED ON MSL (MEAN SEA LEVEL).
ELEVATION OF 4.30 M SHOWN IN THE DRAWING IS THE PROPOSED HEIGHT OF CONSTRUCTION YARD.

<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.		<small>NAME</small> PREPARED BY E. YOKOTA CHECKED BY T. HAYAKAWA APPROVED BY Y. SANO	<small>SIGNATURE</small> 	<small>DATE</small> 15 JUNE 2017 20 JUNE 2017 21 JUNE 2017	<small>DRAWING TITLE</small> TYPICAL CROSS SECTION (2/2)	<small>PACKAGE</small> 1 DWG No. P1-RD-0210
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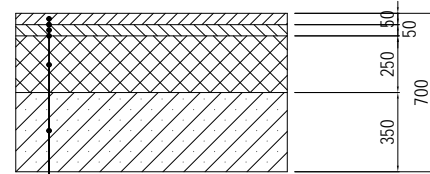
PAVEMENT LAYER (1) S=1:30

TYPE E1



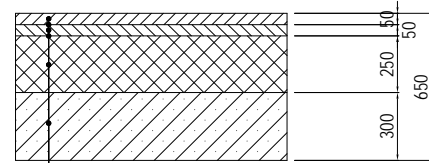
AC SURFACE COURSE (t=50mm)
TACK COAT 0.4 l/m²
AC SURFACE BASE (t=50mm)
PRIME COAT 0.4 l/m²
BASE COURSE (t=250mm)
SUB BASE (t=500mm)

TYPE E2



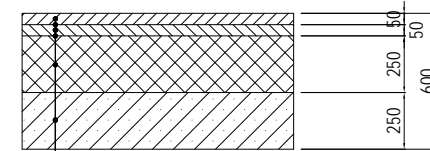
AC SURFACE COURSE (t=50mm)
TACK COAT 0.4 l/m²
AC SURFACE BASE (t=50mm)
PRIME COAT 0.4 l/m²
BASE COURSE (t=250mm)
SUB BASE (t=350mm)

TYPE E3



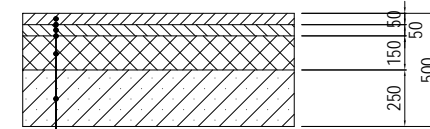
AC SURFACE COURSE (t=50mm)
TACK COAT 0.4 l/m²
AC SURFACE BASE (t=50mm)
PRIME COAT 0.4 l/m²
BASE COURSE (t=250mm)
SUB BASE (t=300mm)

TYPE E4



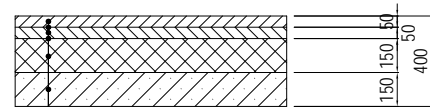
AC SURFACE COURSE (t=50mm)
TACK COAT 0.4 l/m²
AC SURFACE BASE (t=50mm)
PRIME COAT 0.4 l/m²
BASE COURSE (t=250mm)
SUB BASE (t=250mm)

TYPE E5



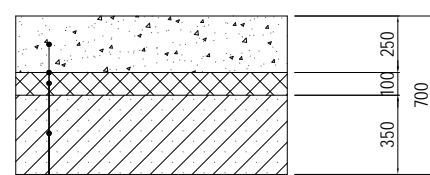
AC SURFACE COURSE (t=50mm)
TACK COAT 0.4 l/m²
AC SURFACE BASE (t=50mm)
PRIME COAT 0.4 l/m²
BASE COURSE (t=150mm)
SUB BASE (t=250mm)

TYPE E6



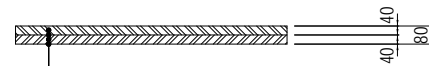
AC SURFACE COURSE (t=50mm)
TACK COAT 0.4 l/m²
AC SURFACE BASE (t=50mm)
PRIME COAT 0.4 l/m²
BASE COURSE (t=150mm)
SUB BASE (t=150mm)

TYPE C



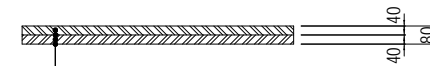
CONCRETE (t=250mm)
PRIME COAT 0.4 l/m²
BASE COURSE (t=100mm)
SUB BASE (t=350mm)

TYPE B1
(FOR CONCRETE DECK)



AC SURFACE COURSE (t=40mm)
TACK COAT 0.4 l/m²
AC SURFACE BASE (t=40mm)
WATERPROOFING
BONDING COAT

TYPE B2
(FOR STEEL DECK)



POLYMER-MODIFIED ASPHALT II (t=40mm)
TACK COAT 0.4 l/m²
POLYMER-MODIFIED ASPHALT III-WF (t=40mm)
WATERPROOFING
BONDING COAT

SIDE WALK

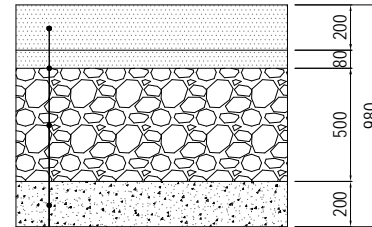


PRECAST CONCRETE PAVING BLOCK (300x300mm x t=60mm)
SAND (t=30mm)
SOIL AGGREGATE: C-30 (t=100mm)

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE PAVEMENT LAYER (1)	PACKAGE	
				PREPARED BY	J.TSUCHIYA			15 Jun. 2017	1
				CHECKED BY	T. HAYAKAWA			20 Jun. 2017	DWG No.
				APPROVED BY	Y. SANO			21 Jun. 2017	P1-RD-0300

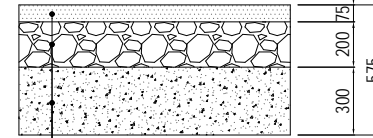
PAVEMENT LAYER (2) S=1:30

TYPE CS



RC PAVEMENT G-30 (t=200mm)
 LEAN CONCRETE 1:3:6 (t=80mm)
 PLASTIC SHEET
 HARD CORE WITH SAND ROLLER MACHINE COMPACTED CBR>10% (t=500mm)
 SAND COMPACTED (t=200mm)

SIDE WALK S



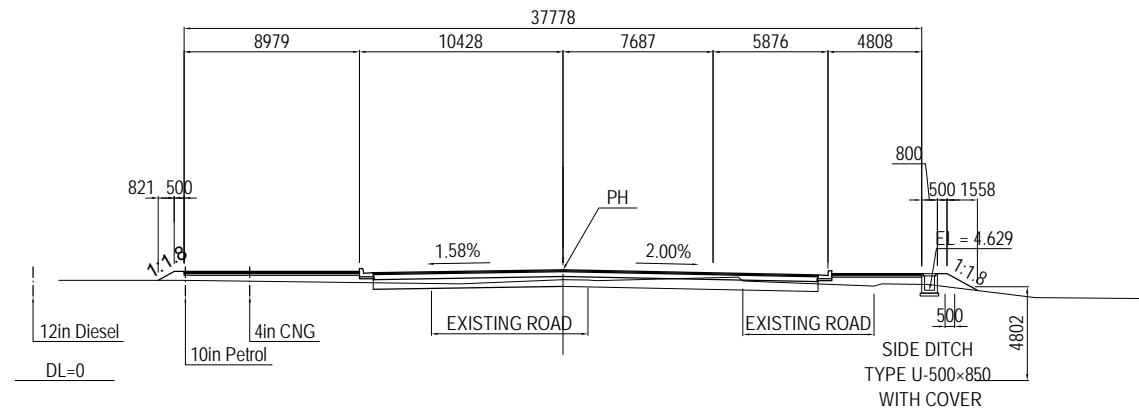
EXPOSED AGGREGATE FINISHED FOOTPATH (t=75mm)
 HARDCORE WITH COMPACTED SAND (t=200mm)
 SAND COMPACTED (t=300mm)

PROJECT NAME	FINANCED BY	COUNTERPART	JICA STUDY TEAM	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE
DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	PREPARED BY	J.TSUCHIYA	土屋 潤 15 Jun. 2017	PAVEMENT LAYER (2)	1
			CHECKED BY	T. HAYAKAWA	平川 知邦 20 Jun. 2017	DWG No.		
			APPROVED BY	Y. SANO	佐野 祐一 21 Jun. 2017	P1-RD-0310		

CROSS SECTION MAIN ROAD (1) S=1:400

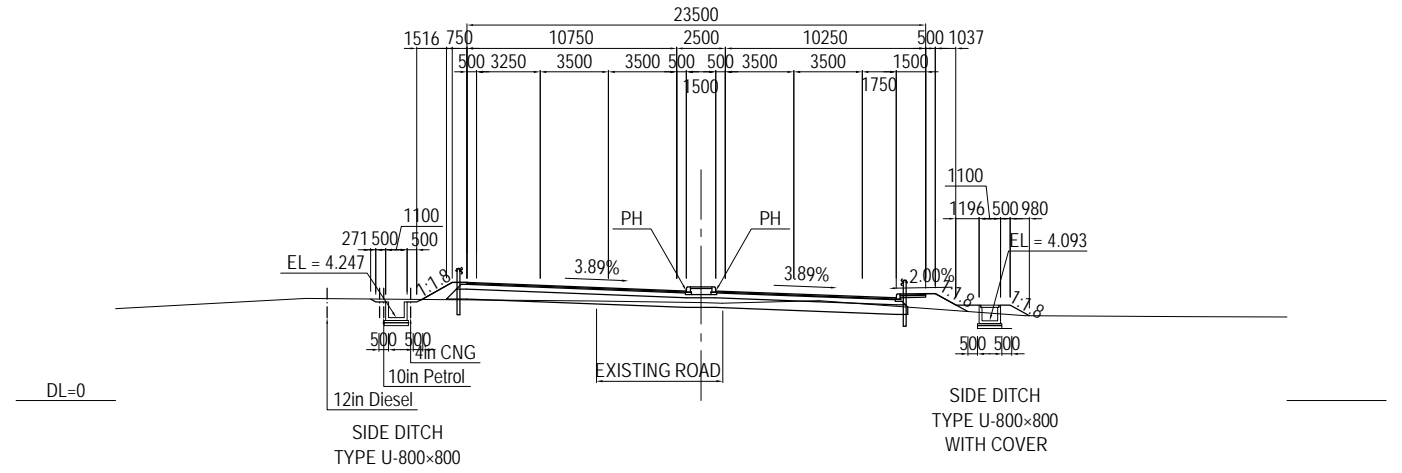
STA.0+24.97

GH = 5.16
PH = 5.670



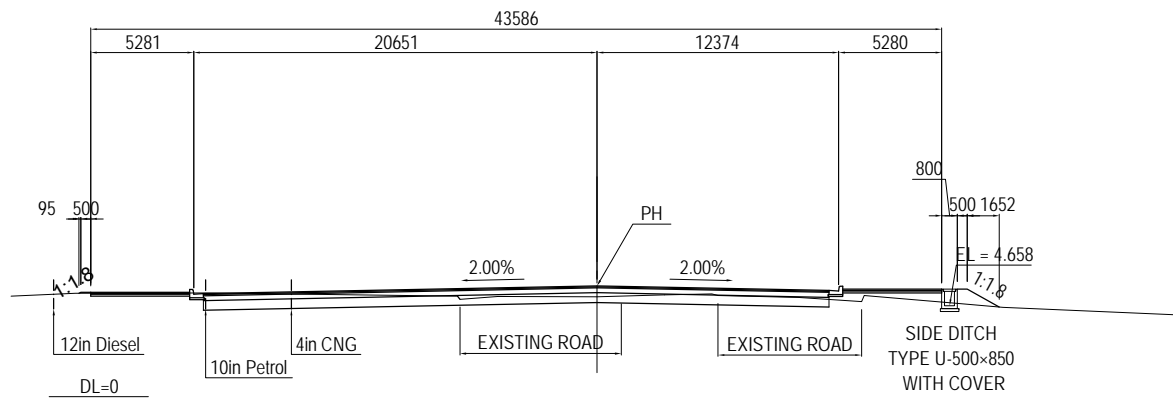
STA.0+76.17

GH = 5.01
PH = 5.619



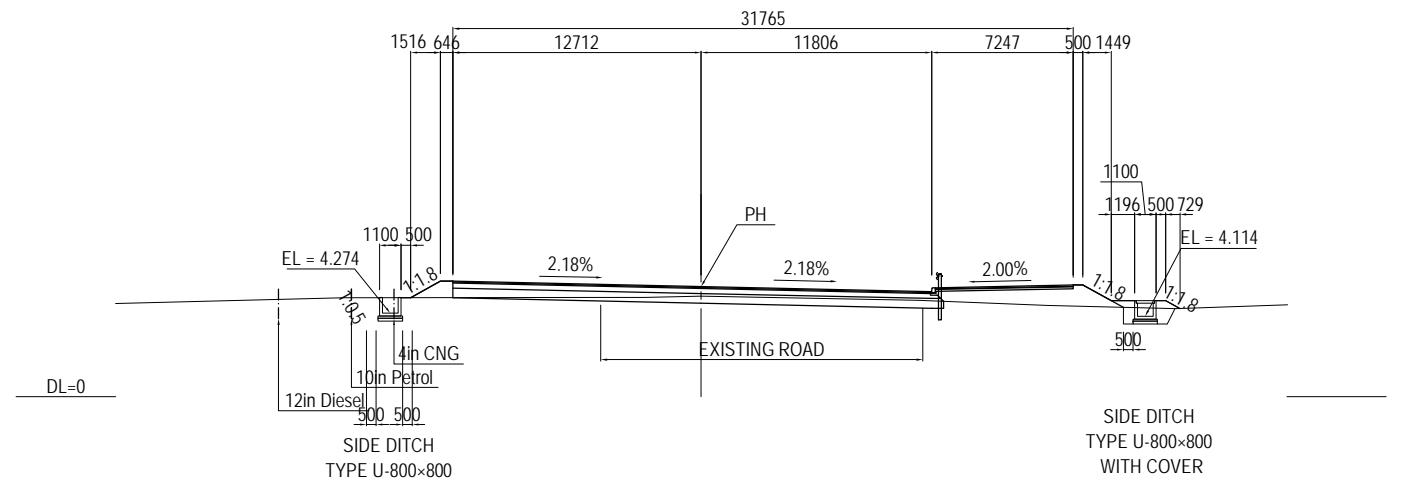
STA.0+20

GH = 5.12
PH = 5.675



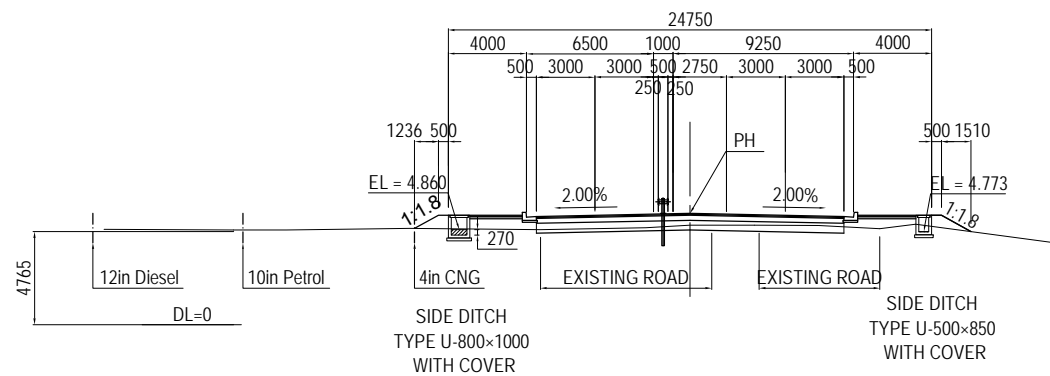
STA.0+60

GH = 5.15
PH = 5.635



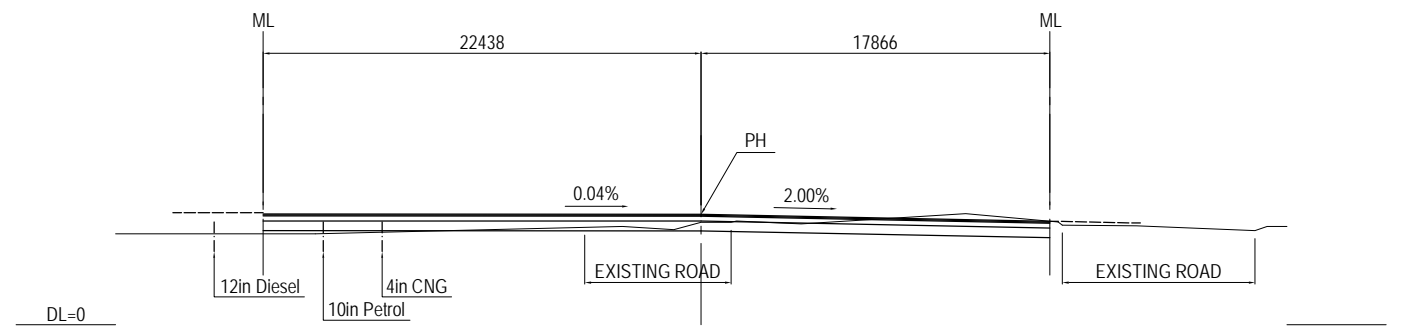
STA.0

GH = 5.09
PH = 5.695



STA.0+40

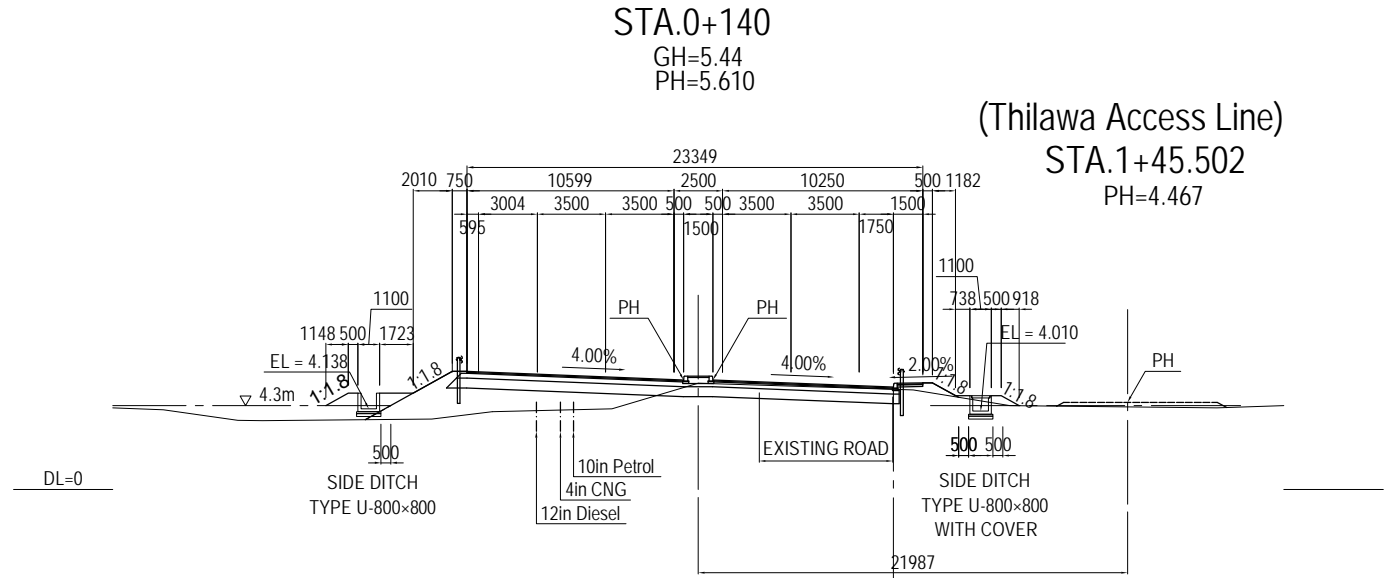
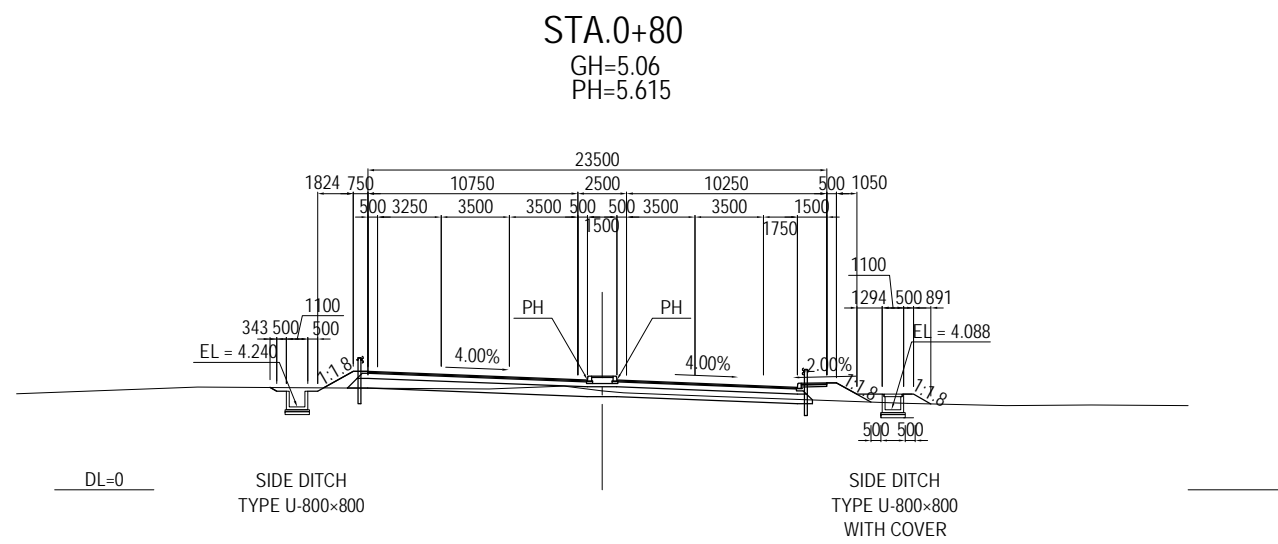
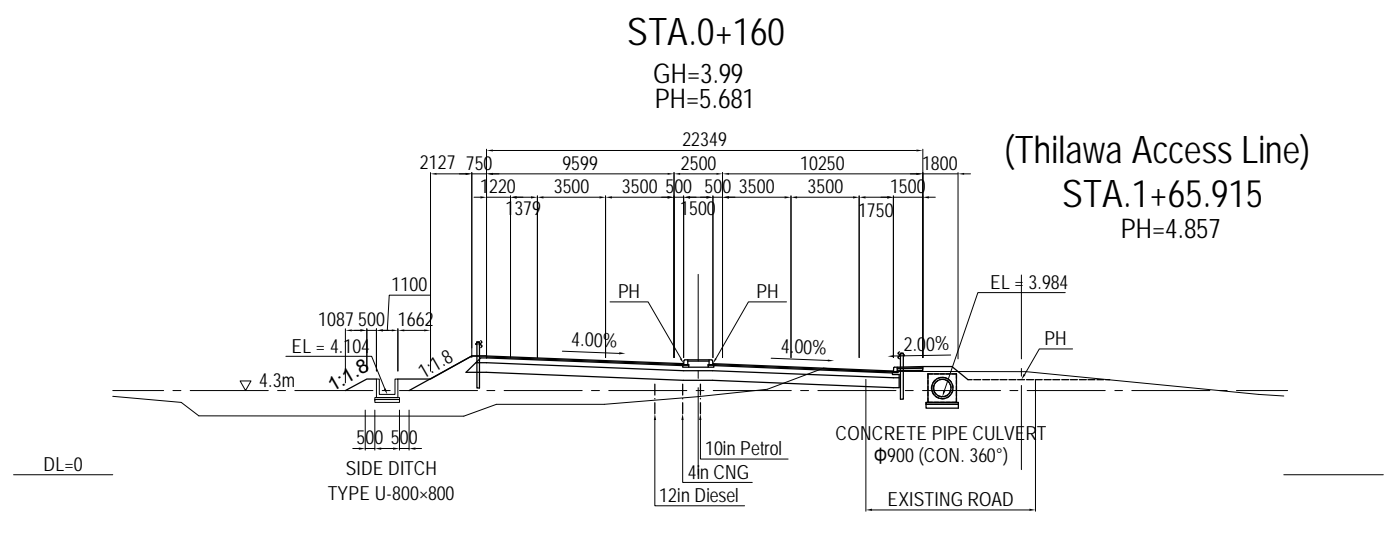
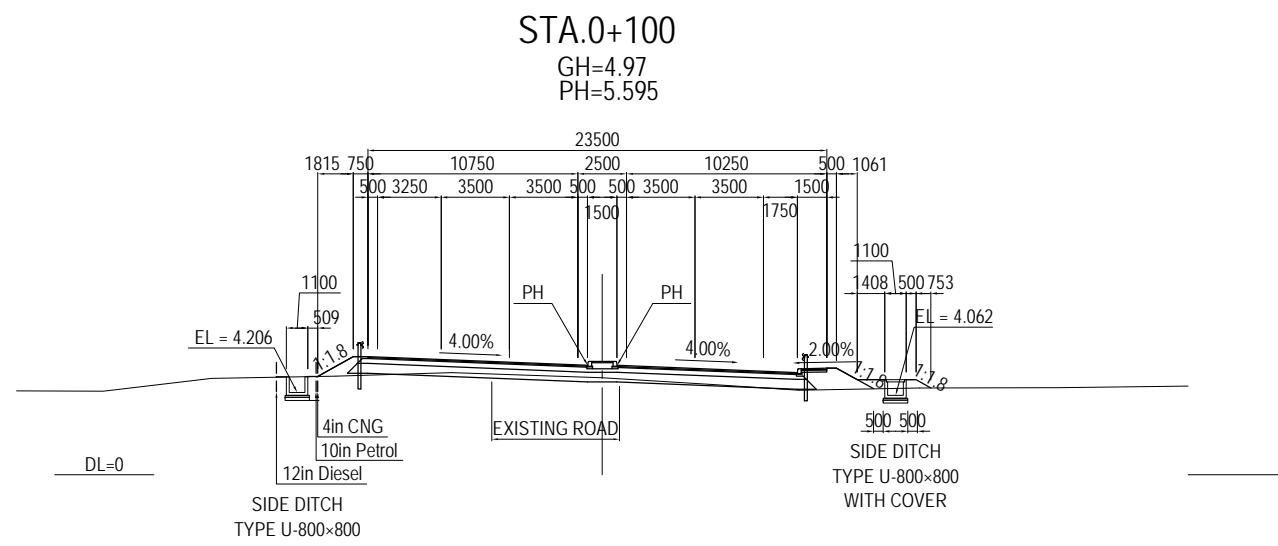
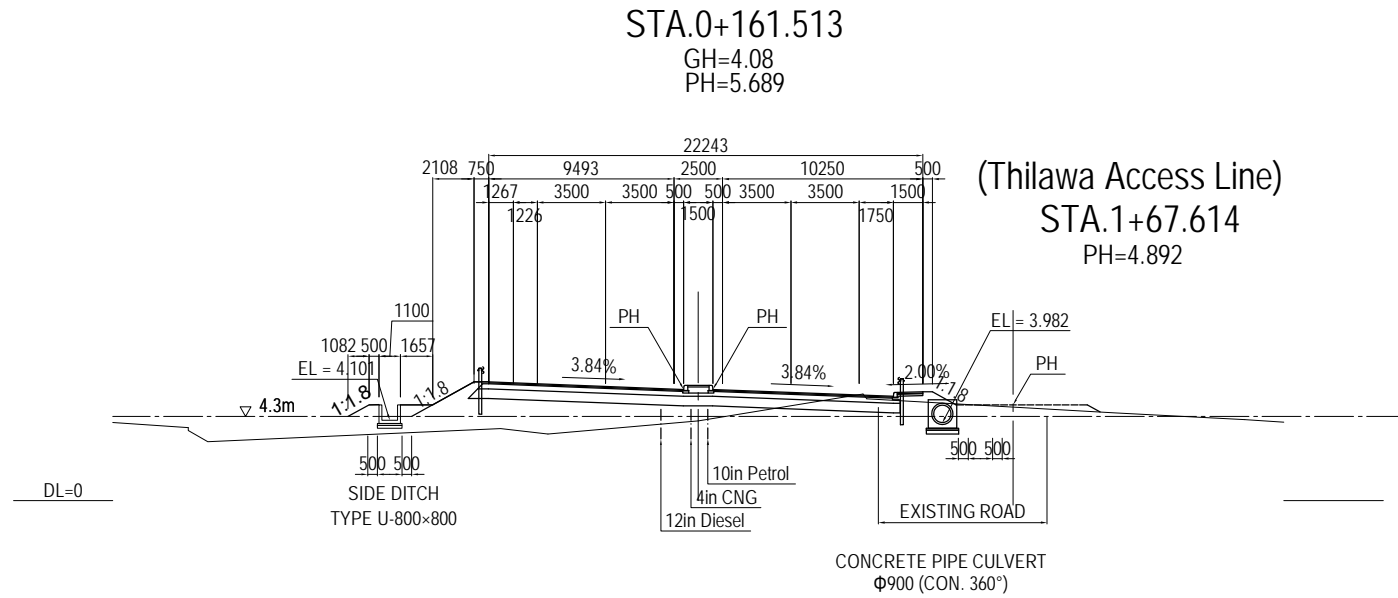
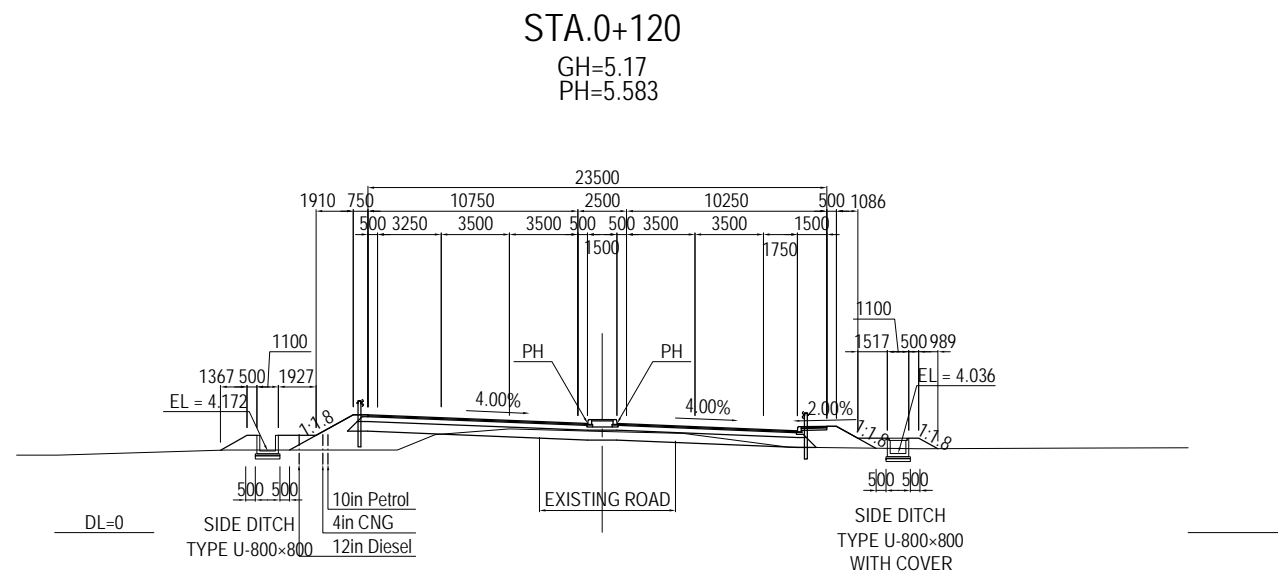
GH = 5.24
PH = 5.655



Note: Elevation is based on MSL (Mean Sea Level)

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE CROSS SECTION MAIN ROAD (1)	PACKAGE 1 DWG No. P1-RD-0400
				PREPARED BY	M. TORIU	15 Jun. 2017		
				CHECKED BY	T. HAYAKAWA	20 Jun. 2017		
				APPROVED BY	Y. SANO	21 Jun. 2017		

CROSS SECTION MAIN ROAD (2) S=1:400



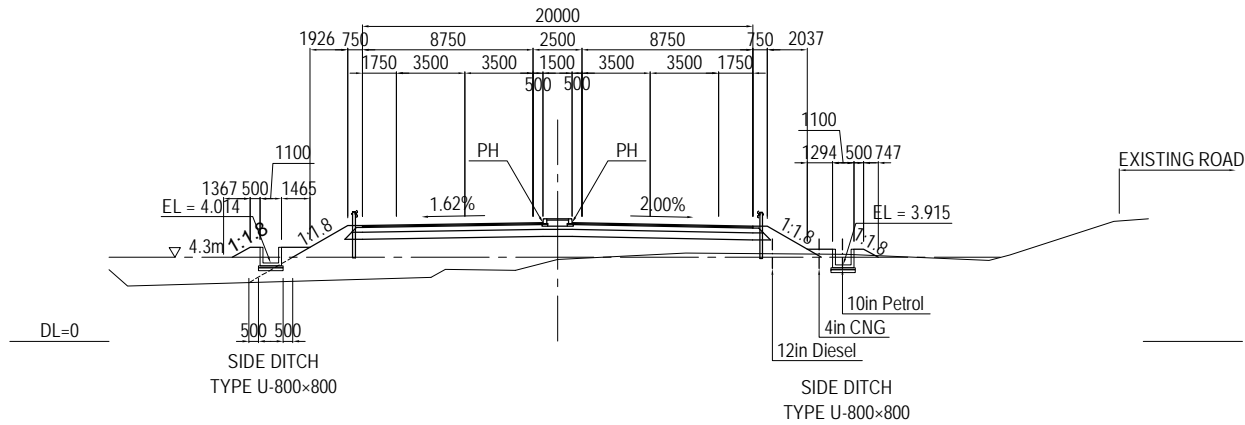
Note: Elevation is based on MSL (Mean Sea Level)

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE CROSS SECTION MAIN ROAD (2)	PACKAGE	
				PREPARED BY	M. TORIU			15 Jun. 2017	1
				CHECKED BY	T. HAYAKAWA			20 Jun. 2017	DWG No.
				APPROVED BY	Y. SANO			21 Jun. 2017	P1-RD-0410

CROSS SECTION MAIN ROAD (3) S=1:400

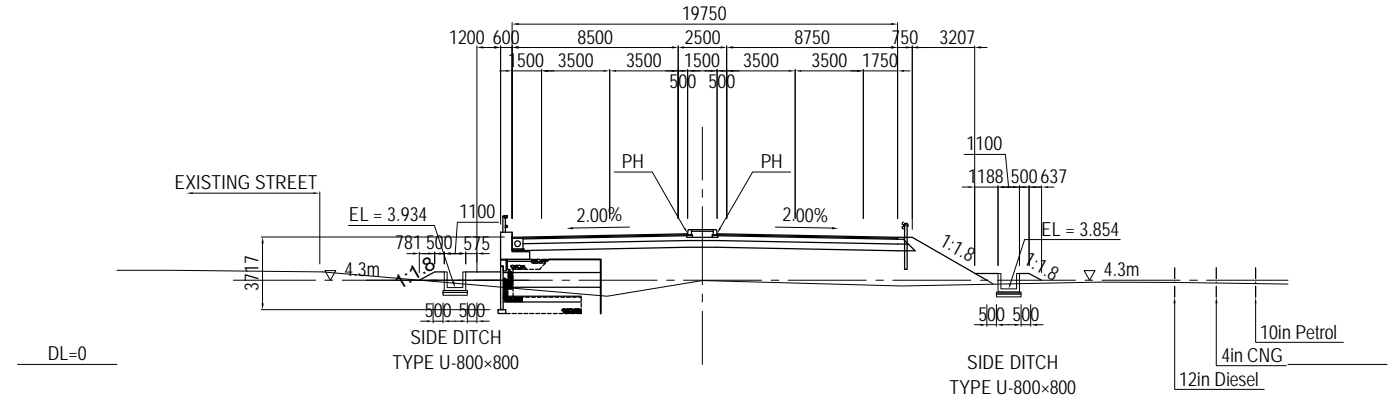
STA.0+212.713

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PH=6.076



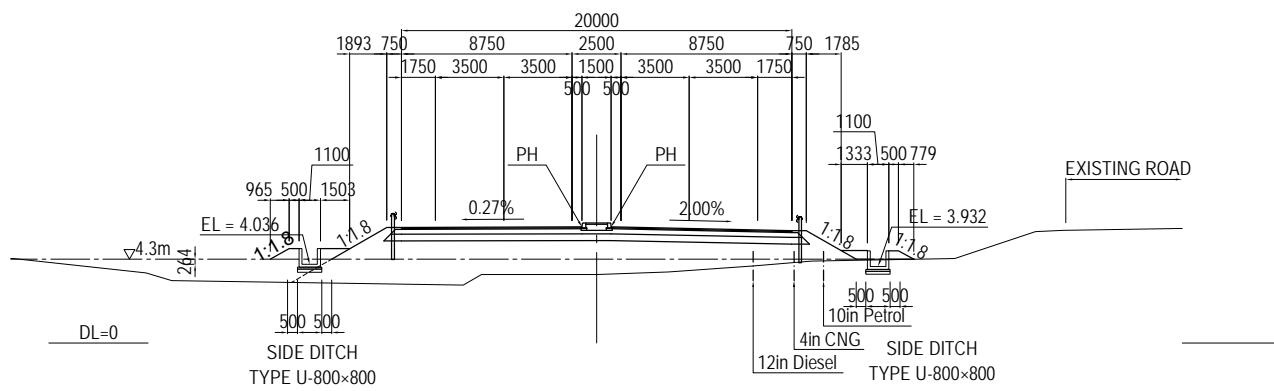
STA.0+260

GH=4.28
PH=6.686



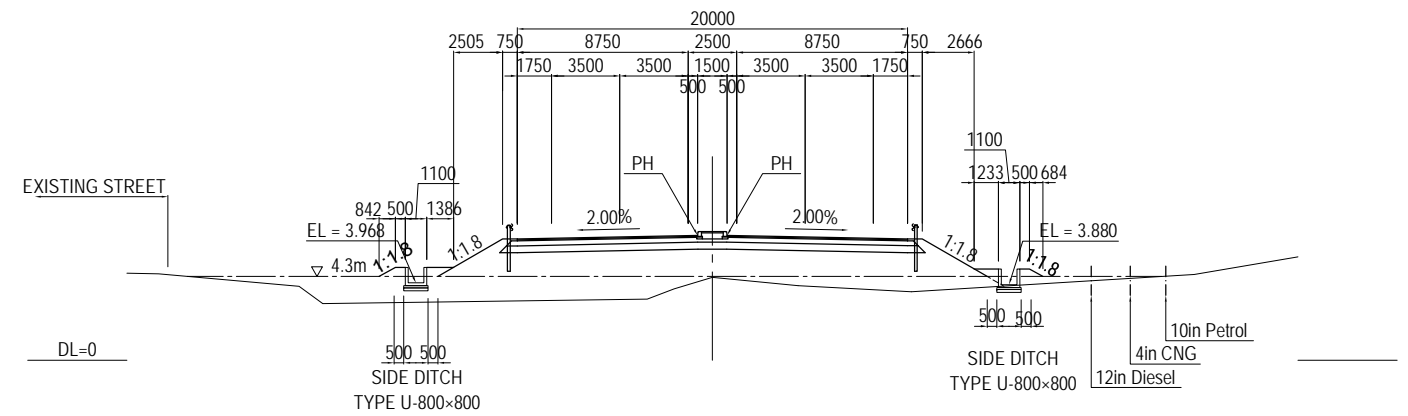
STA.0+200

GH=3.51
PH=5.953



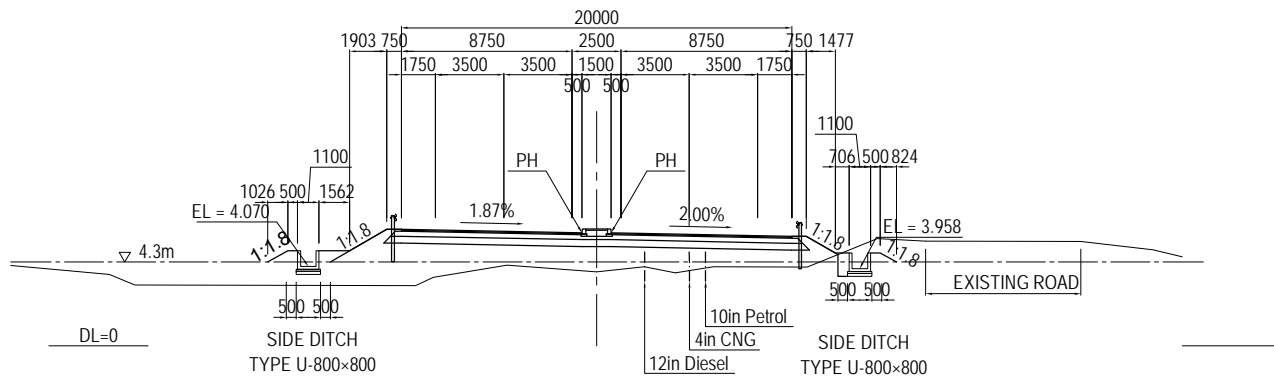
STA.0+240

GH=4.26
PH=6.399



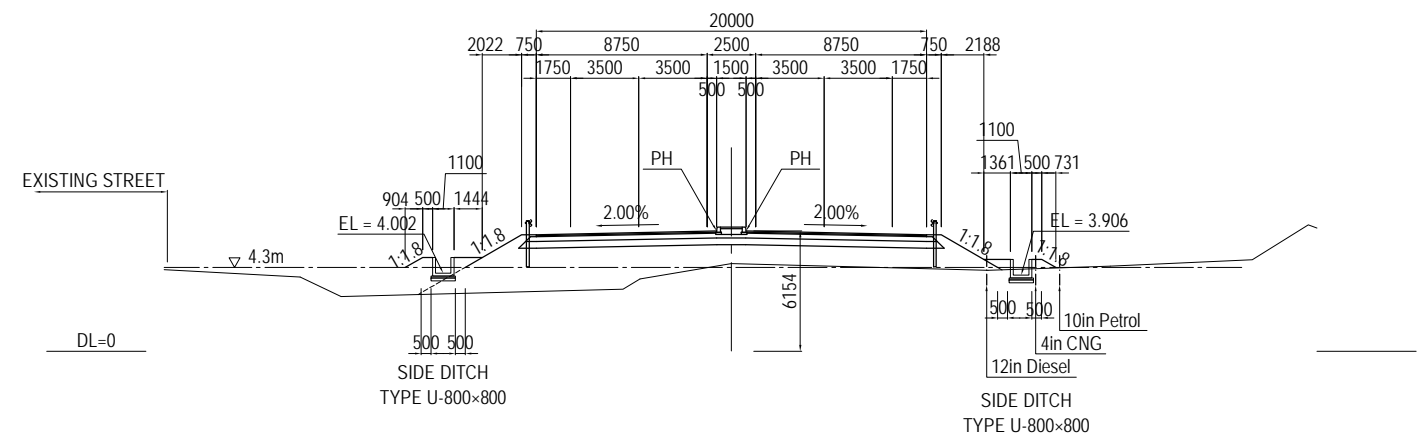
STA.0+180

GH=3.80
PH=5.796



STA.0+220

GH=4.48
PH=6.154



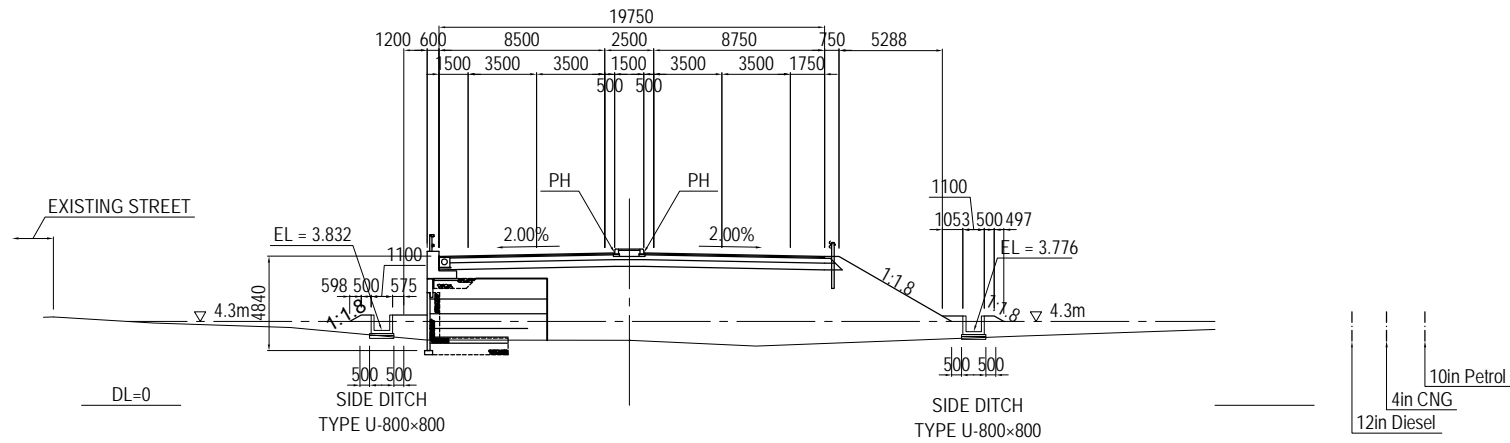
Note: Elevation is based on MSL (Mean Sea Level)

<p>PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT</p>	<p>FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY</p>	<p>COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE</p>	<p>JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">NAME</th> <th style="width: 15%;">SIGNATURE</th> <th style="width: 15%;">DATE</th> </tr> <tr> <td>PREPARED BY</td> <td>M. TORIU</td> <td>15 Jun. 2017</td> </tr> <tr> <td>CHECKED BY</td> <td>T. HAYAKAWA</td> <td>20 Jun. 2017</td> </tr> <tr> <td>APPROVED BY</td> <td>Y. SANO</td> <td>21 Jun. 2017</td> </tr> </table>	NAME	SIGNATURE	DATE	PREPARED BY	M. TORIU	15 Jun. 2017	CHECKED BY	T. HAYAKAWA	20 Jun. 2017	APPROVED BY	Y. SANO	21 Jun. 2017	<p style="text-align: center;">DRAWING TITLE</p> <p style="text-align: center; font-weight: bold;">CROSS SECTION MAIN ROAD (3)</p>	<p style="text-align: center;">PACKAGE</p> <p style="text-align: center;">1</p> <p style="text-align: center;">DWG No.</p> <p style="text-align: center;">P1-RD-0420</p>
NAME	SIGNATURE	DATE																
PREPARED BY	M. TORIU	15 Jun. 2017																
CHECKED BY	T. HAYAKAWA	20 Jun. 2017																
APPROVED BY	Y. SANO	21 Jun. 2017																

CROSS SECTION MAIN ROAD (4) S=1:400

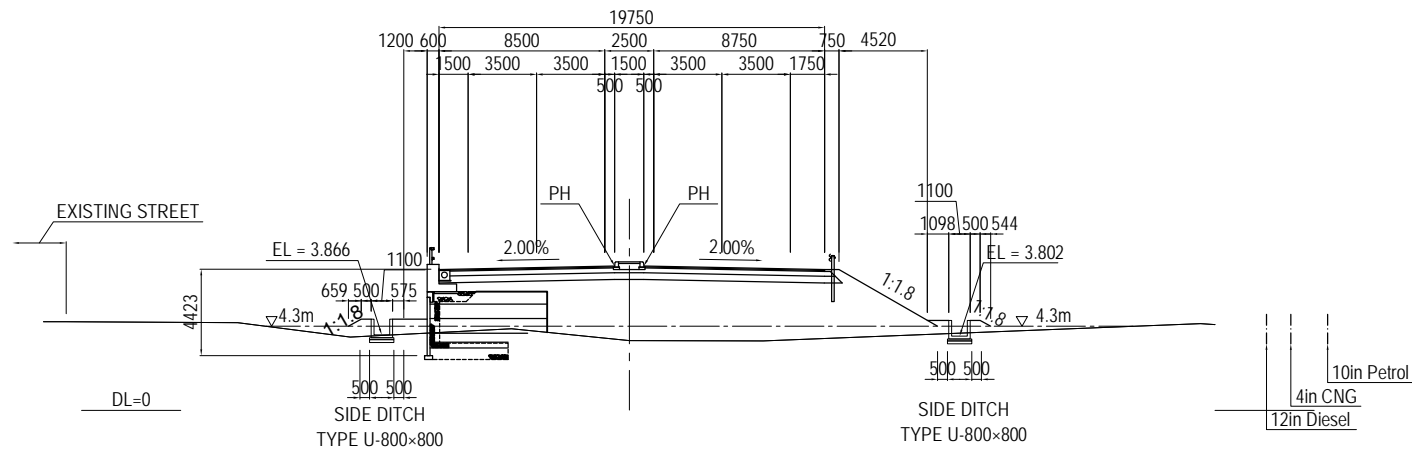
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PH=7.809



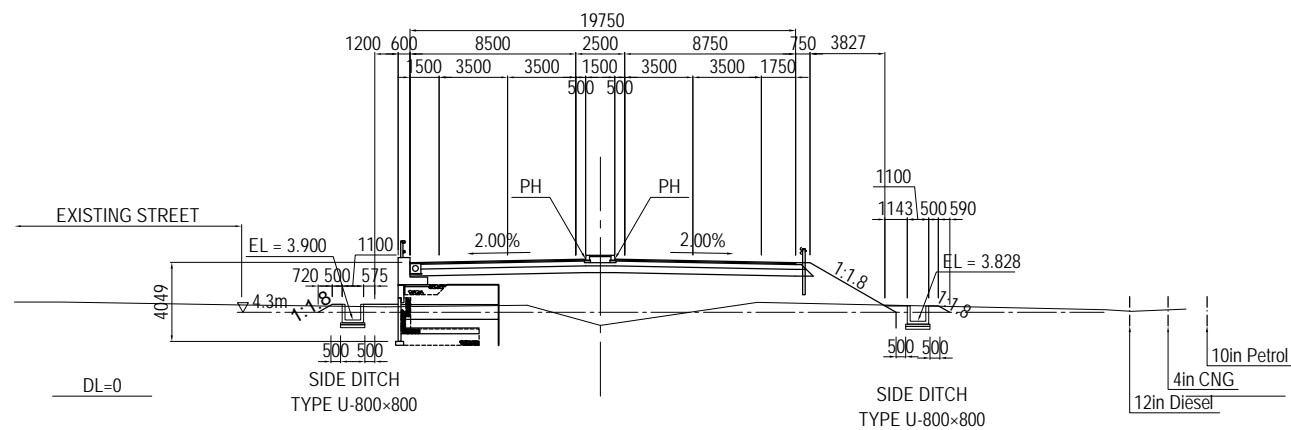
STA.0+300

GH=3.56
PH=7.392



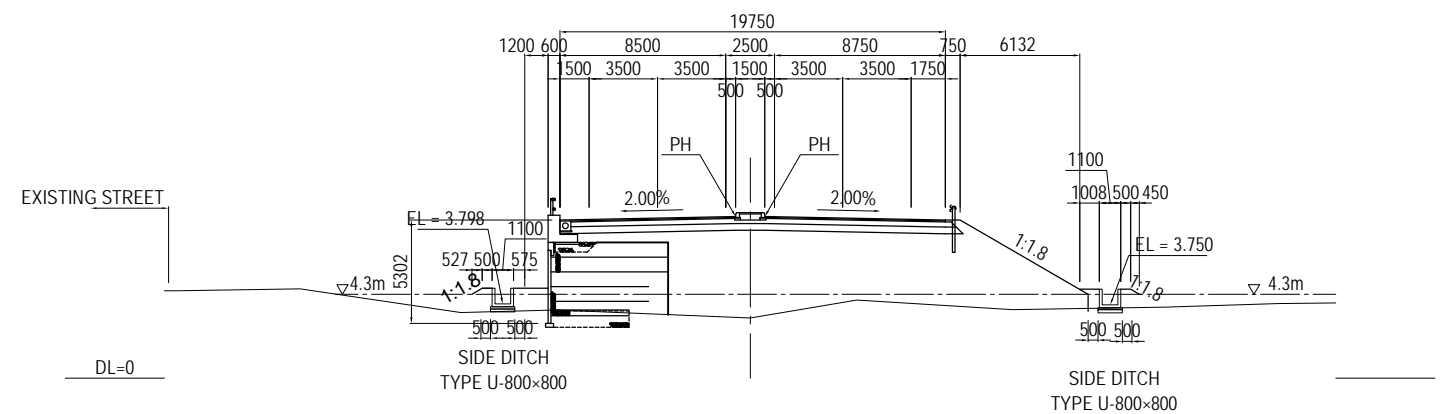
STA.0+280

GH=3.62
PH=7.017



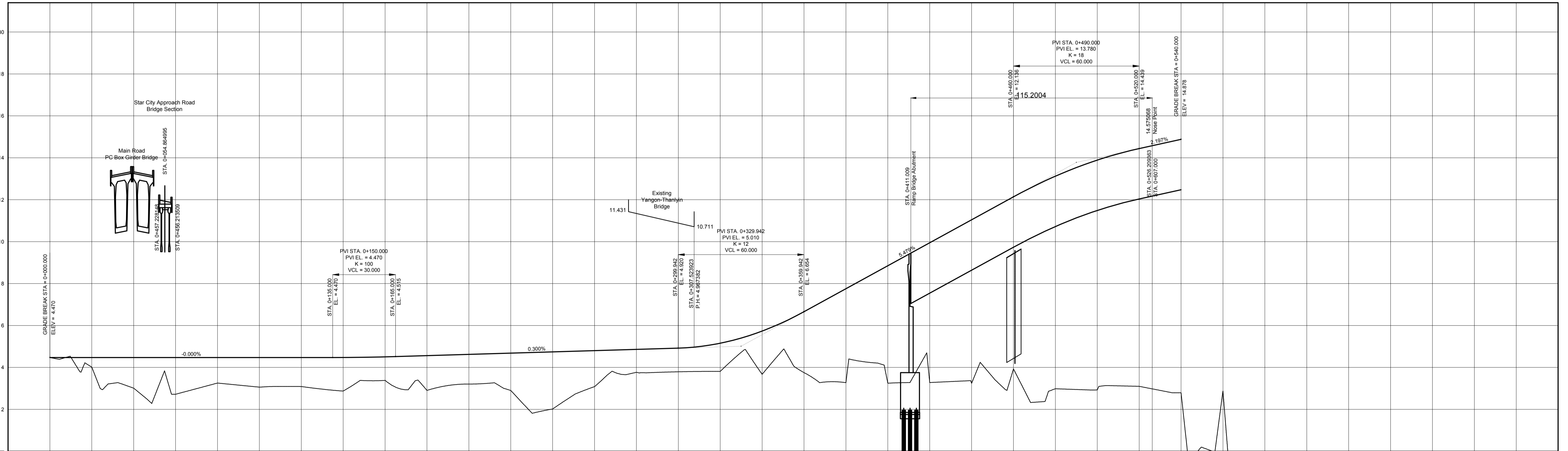
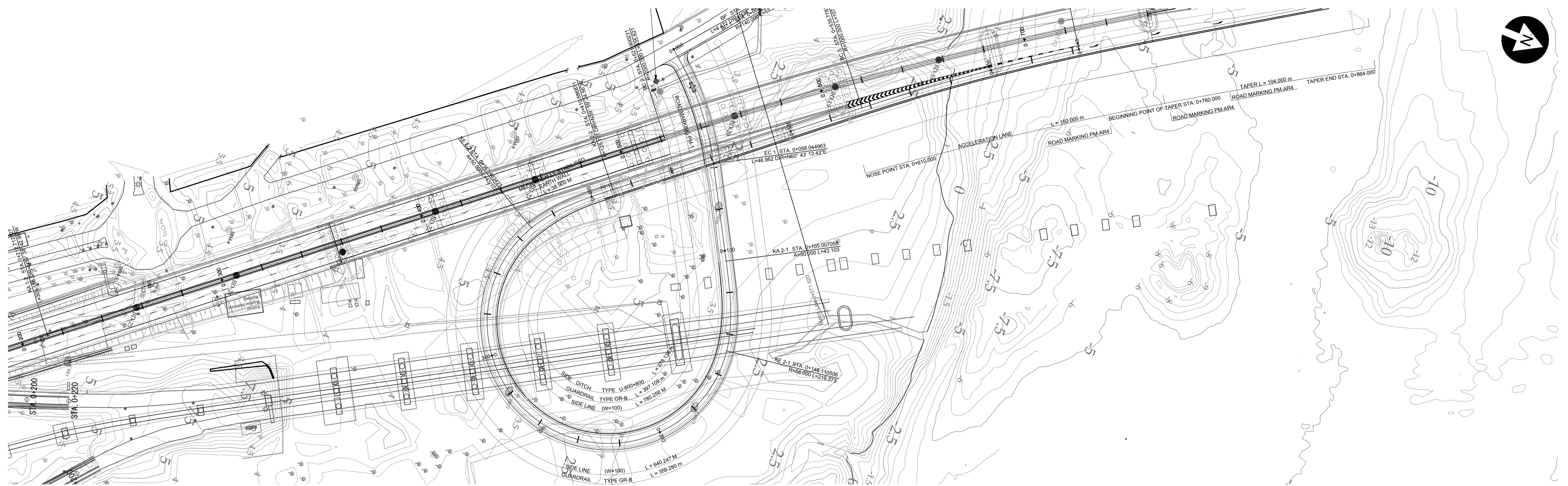
STA.0+340

GH=3.07
PH=8.270



Note: Elevation is based on MSL (Mean Sea Level)

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO.,LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.	NAME M. TORIU T. HAYAKAWA Y. SANO	SIGNATURE 	DATE 15 Jun. 2017 20 Jun. 2017 21 Jun. 2017	DRAWING TITLE CROSS SECTION MAIN ROAD (4)	PACKAGE 1 DWG No. P1-RD-0430
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GRADE	PROPOSED HEIGHT	EXISTING HEIGHT	STATION	SUPER ELEVATION	CURVE ELEMENTS
0+000 4.470	4.47	4.47	0+000	-2.000%	R=140.000m L=4.77m
0+020 4.470	4.01	4.01	0+020	-6.000%	R=140.000m L=53.37m
0+040 4.470	3.01	3.01	0+040	-2.000%	R=140.000m L=46.962m
0+060 4.470	2.72	2.72	0+060	+2.000%	R=∞
0+080 4.470	3.25	3.25	0+080	-2.000%	R=∞
0+100 4.470	3.06	3.06	0+100	+1.379%	R=∞
0+120 4.470	3.09	3.09	0+120	-0.121%	R=∞
0+140 4.470	2.87	2.87	0+140	+1.797%	A=50.000 L=43.103m
0+160 4.501	3.38	3.38	0+160	+1.611%	R=∞
0+180 4.560	2.90	2.90	0+180	-0.155%	R=∞
0+200 4.620	3.20	3.20	0+200	+0.220%	R=∞
0+220 4.680	2.90	2.90	0+220	-0.889%	R=∞
0+240 4.740	2.02	2.02	0+240	+0.300%	R=∞
0+260 4.800	3.08	3.08	0+260	+9.000%	R=58.000m L=219.37m
0+280 4.860	3.77	3.77	0+280	-0.000%	R=∞
0+300 4.920	3.79	3.79	0+300	+0.375%	R=∞
0+320 5.154	3.81	3.81	0+320	+6.154%	R=∞
0+340 5.733	3.67	3.67	0+340	+0.000%	R=∞
0+360 6.657	3.75	3.75	0+360	+6.657%	R=∞
0+380 7.753	3.27	3.27	0+380	+7.753%	R=∞
0+400 8.849	3.25	3.25	0+400	+8.849%	R=∞
0+420 9.944	3.26	3.26	0+420	+9.944%	R=∞
0+440 11.040	3.24	3.24	0+440	+11.040%	R=∞
0+460 12.136	3.03	3.03	0+460	+12.136%	R=∞
0+480 13.222	2.98	2.98	0+480	+13.222%	R=∞
0+500 13.890	2.93	2.93	0+500	+13.890%	R=∞
0+520 14.430	3.10	3.10	0+520	+14.430%	R=∞
0+540 14.876	2.79	2.79	0+540	+14.876%	R=∞
0+560 15.204	2.87	2.87	0+560	+15.204%	R=∞
0+580 15.513	0.00	0.00	0+580	+15.513%	R=1000.000m L=107.305m
0+600 15.812	-1.70	-1.70	0+600	+15.812%	R=1000.000m L=107.305m
0+620 16.101	-2.97	-2.97	0+620	+16.101%	R=1000.000m L=107.305m
0+640 16.380	-4.05	-4.05	0+640	+16.380%	R=1000.000m L=107.305m
0+660 16.659			0+660	+16.659%	R=1000.000m L=107.305m
0+680 16.938			0+680	+16.938%	R=1000.000m L=107.305m
0+700 17.217			0+700	+17.217%	R=1000.000m L=107.305m

PROJECT NAME
DETAILED DESIGN ON
BAGO RIVER BRIDGE
CONSTRUCTION PROJECT

FINANCED BY
 JAPAN INTERNATIONAL
COOPERATION AGENCY

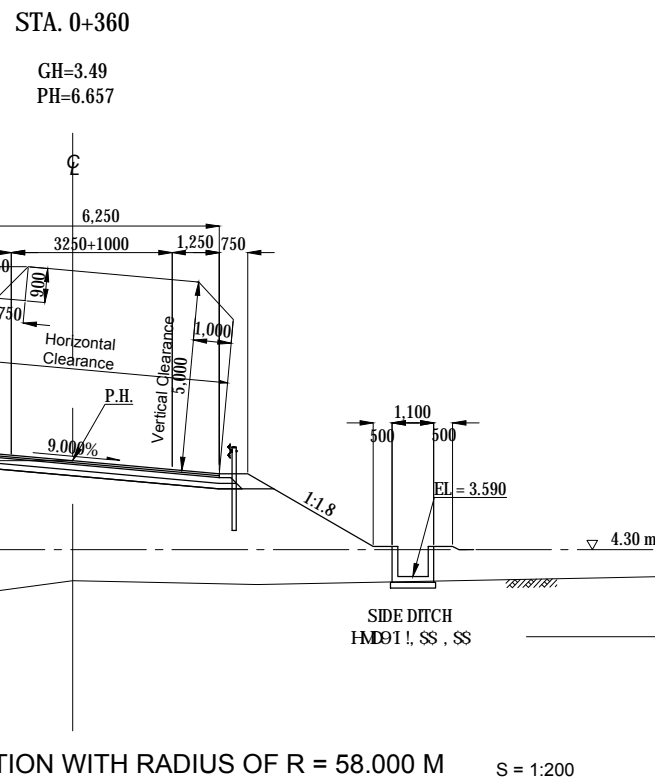
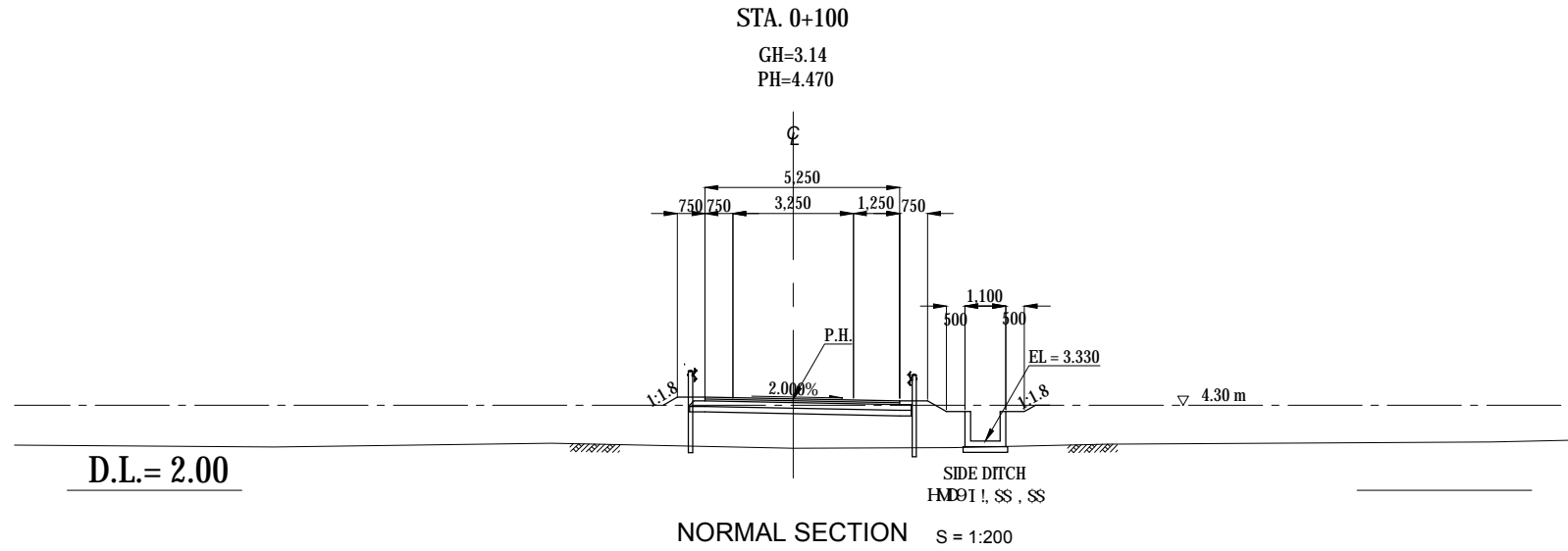
COUNTERPART
 REPUBLIC OF THE UNION OF MYANMAR
MINISTRY OF CONSTRUCTION
DEPARTMENT OF BRIDGE

JICA STUDY TEAM
 NIPPON KOEI CO., LTD.
 ORIENTAL CONSULTANTS GLOBAL CO., LTD.
 METROPOLITAN EXPRESSWAY COMPANY LIMITED
 CHODAI CO., LTD.
 NIPPON ENGINEERING CONSULTANTS CO., LTD.

	NAME	SIGNATURE	DATE
PREPARED BY	E. YOKOTA		15 JUNE 2017
CHECKED BY	T. HAYAKAWA		20 JUNE 2017
APPROVED BY	Y. SANO		21 JUNE 2017

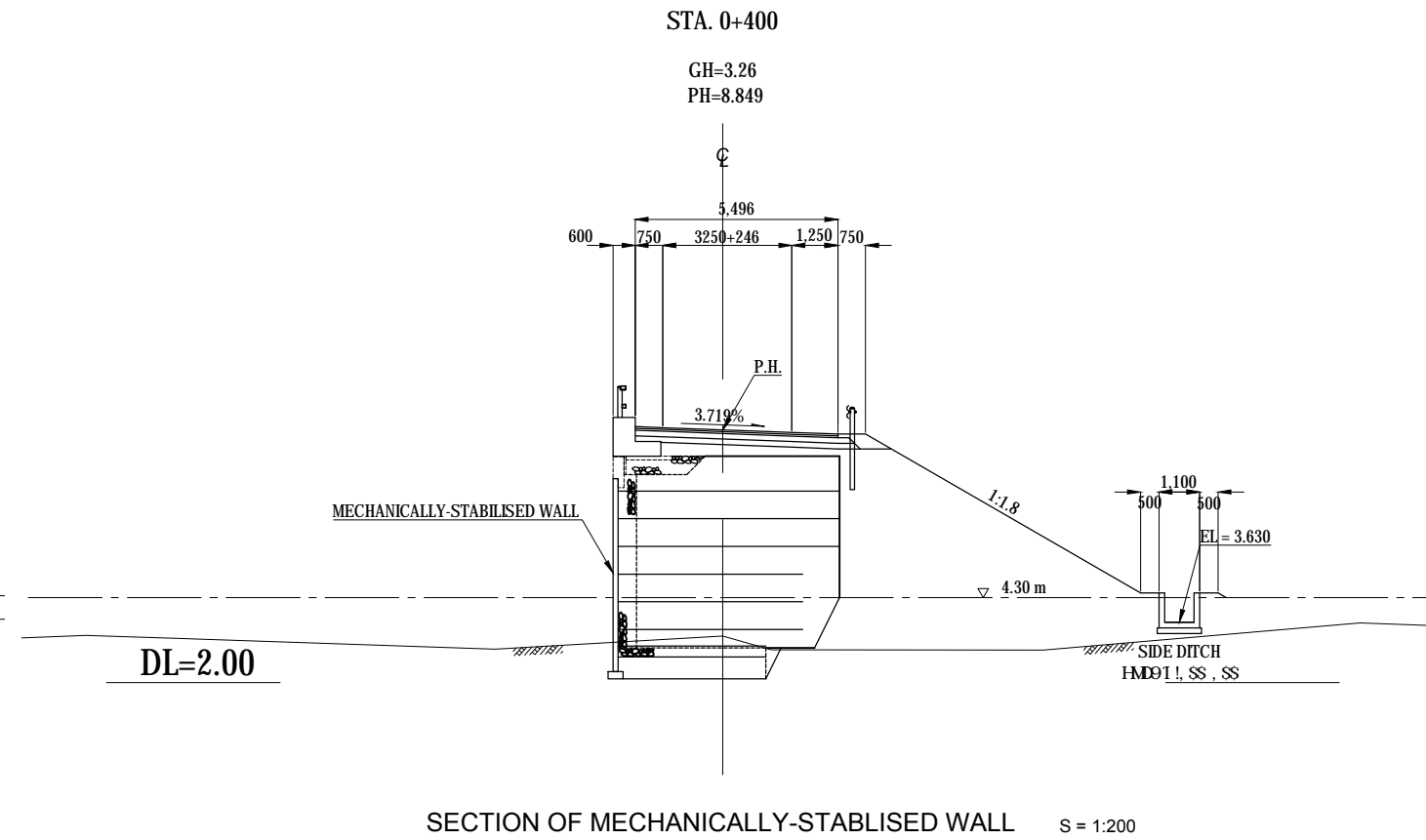
DRAWING TITLE
STAR CITY APPROACH ROAD TO BAGO BRIDGE
PLAN AND PROFILE

PACKAGE
1
DWG No.
P1-RD-1000



CIRCULAR CURVE SECTION WITH RADIUS OF R = 58.000 M S = 1:200

INSIDE WIDENING OF 1.000 M IS REQUIRED FOR THE CARRIAGEWAY
 VERTICAL/HORIZONTAL CLEARANCE LIMIT SHALL BE INCLINED PARALLEL TO SURFACE SLOPE



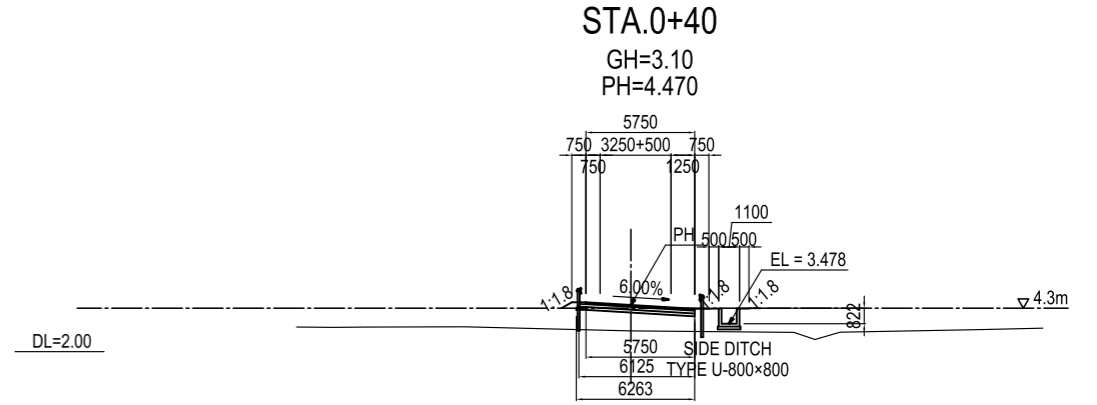
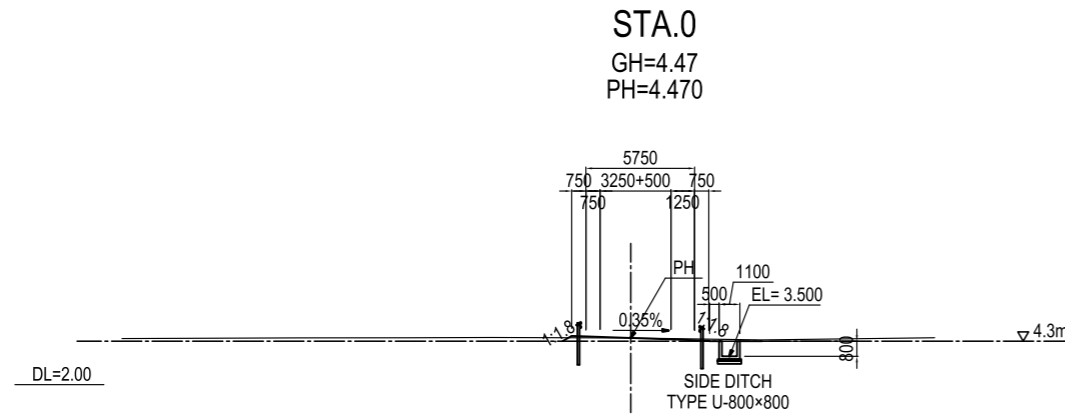
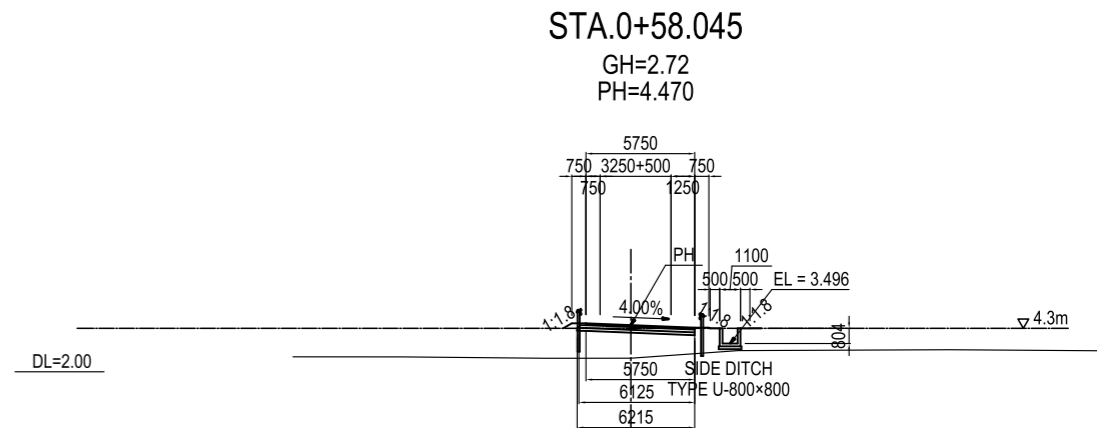
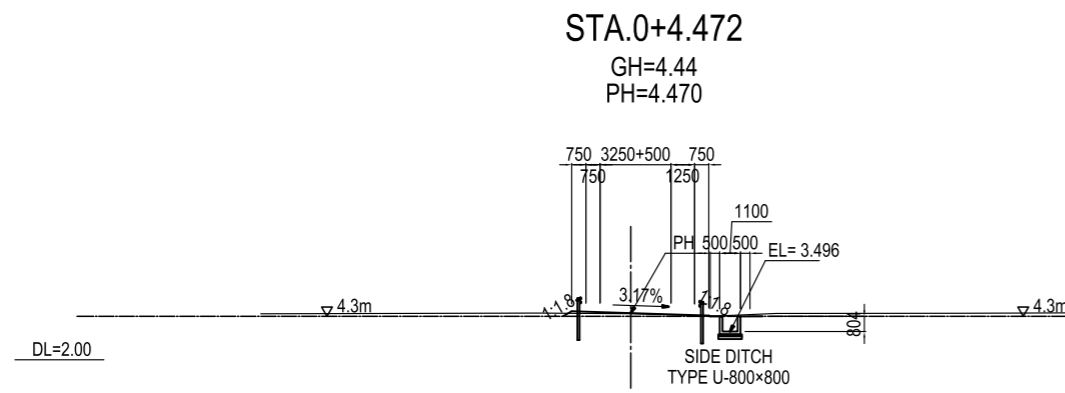
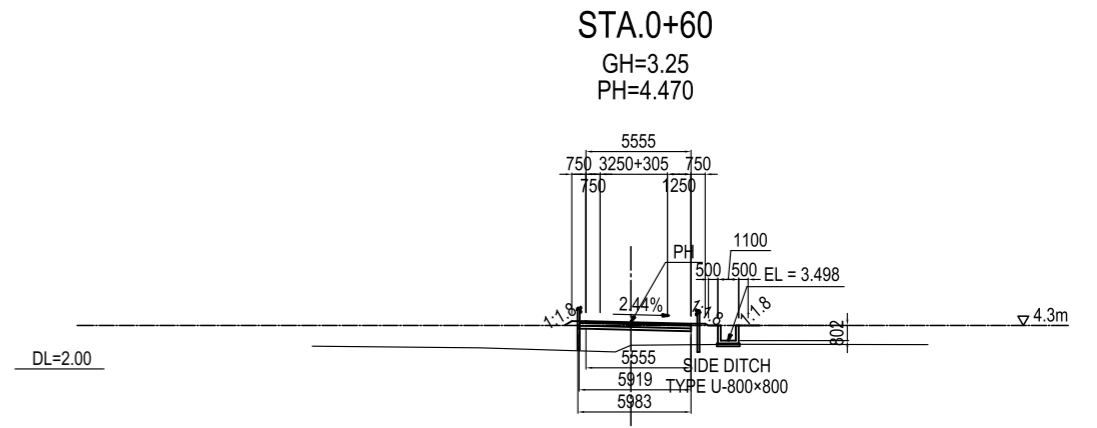
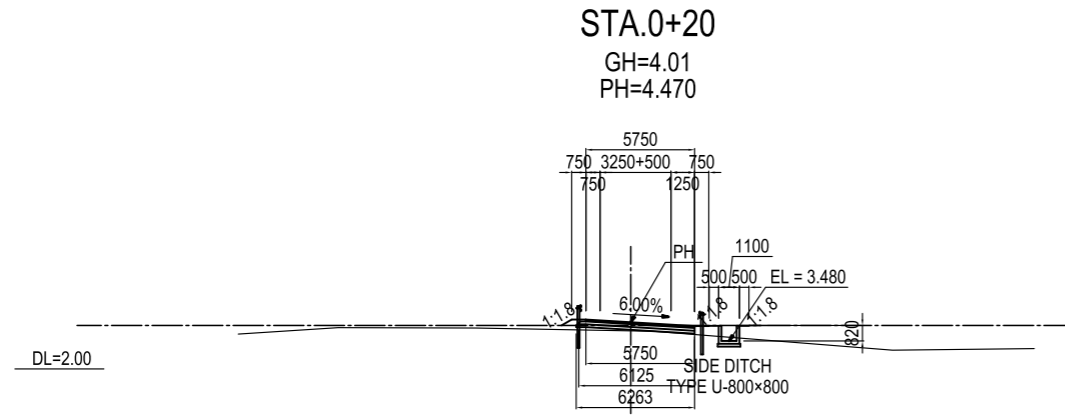
SECTION OF MECHANICALLY-STABILISED WALL AT LEFT SIDE S = 1:200

STA. 0+400 IS LOCATED IN THE TRANSITION SECTION OF 1.000 M WIDENING.

NOTE: ELEVATION IS BASED ON MSL (MEAN SEA LEVEL).
 ELEVATION OF 4.30 M SHOWN IN THE DRAWING IS THE PROPOSED HEIGHT OF CONSTRUCTION YARD.

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE STAR CITY APPROACH ROAD TO BAGO BRIDGE TYPICAL CROSS SECTION	PACKAGE	
				PREPARED BY	E. YOKOTA			15 JUNE 2017	1
				CHECKED BY	T. HAYAKAWA			20 JUNE 2017	DWG No.
				APPROVED BY	Y. SANO			21 JUNE 2017	P1-RD-1010

CROSS SECTION MAIN ROAD (1) S=1:400



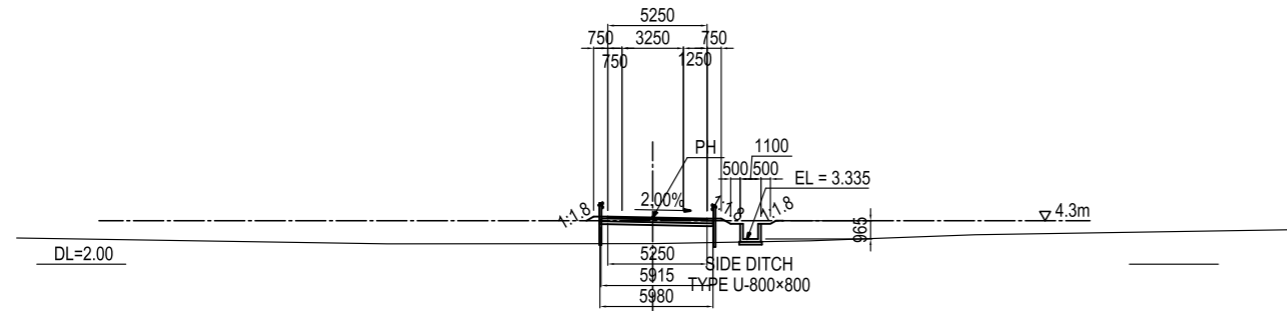
Note: Elevation is based on MSL (Mean Sea Level)

<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	<small>PREPARED BY</small> M. TORIU	<small>SIGNATURE</small> 	<small>DATE</small> 15 Jun. 2017	<small>DRAWING TITLE</small> CROSS SECTION MAIN ROAD (1)	<small>PACKAGE</small> 1 DWG No. P1-RD-1020
<small>CHECKED BY</small> T. HAYAKAWA	<small>SIGNATURE</small> 	<small>DATE</small> 20 Jun. 2017						
<small>APPROVED BY</small> Y. SANO	<small>SIGNATURE</small> 	<small>DATE</small> 21 Jun. 2017						

CROSS SECTION MAIN ROAD (2) S=1:400

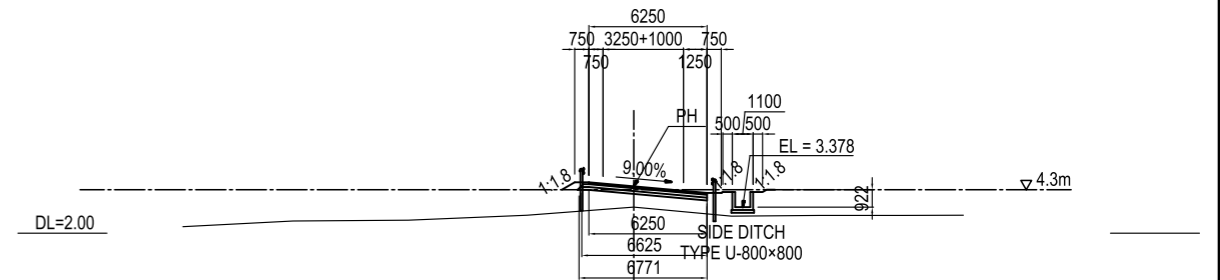
STA.0+105.007

GH=3.09
PH=4.470



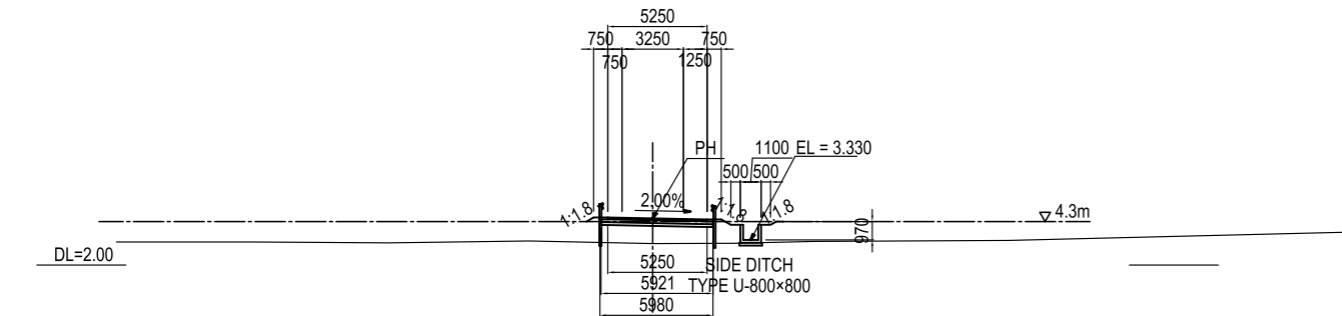
STA.0+148.111

GH=3.38
PH=4.479



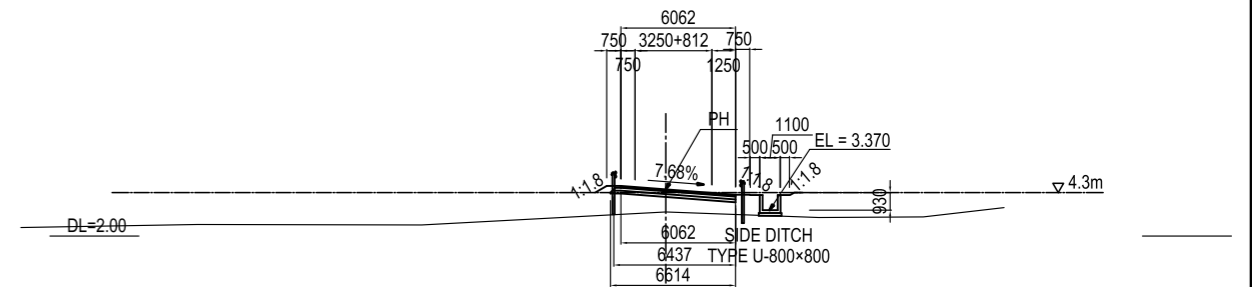
STA.0+100

GH=3.14
PH=4.470



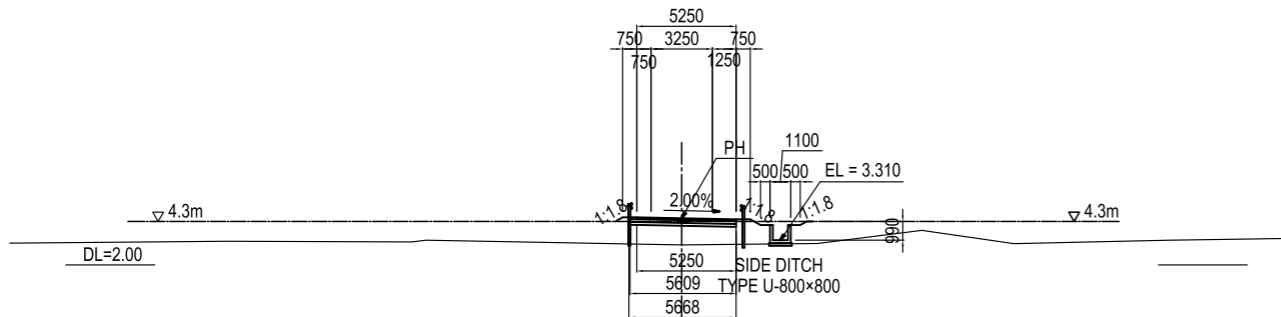
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GH=3.28
PH=4.470



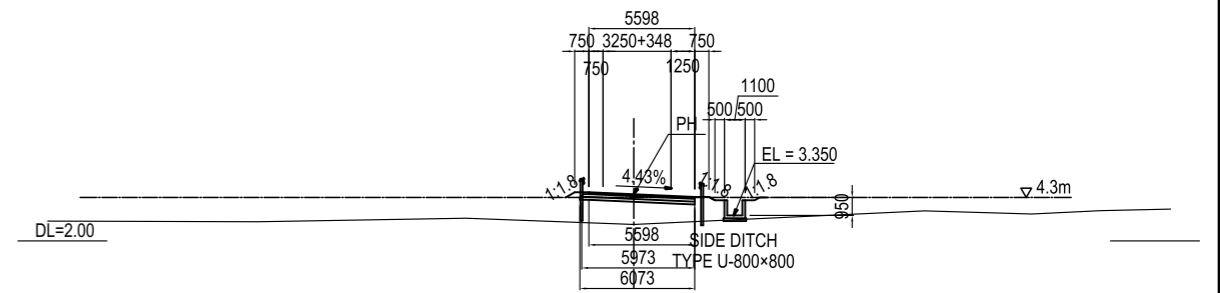
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GH=3.06
PH=4.470



STA.0+120

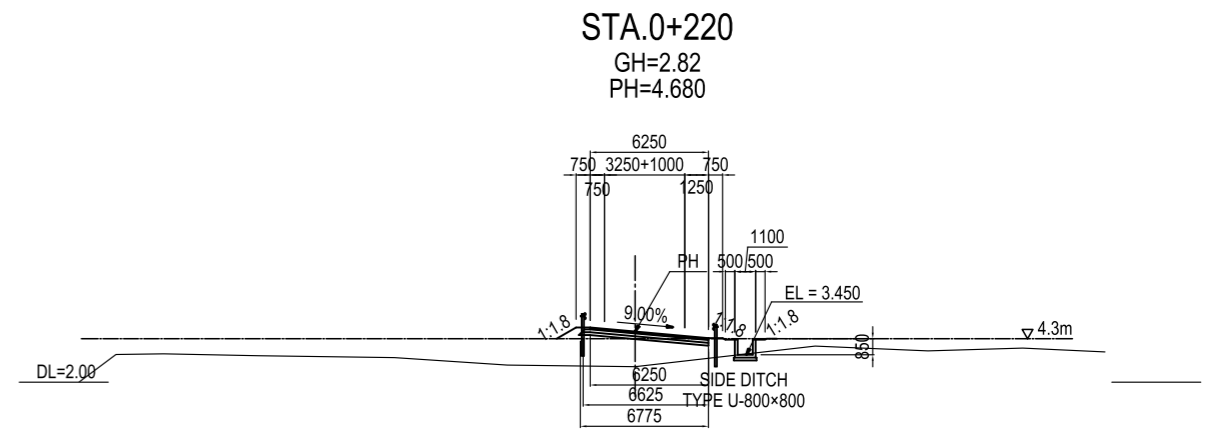
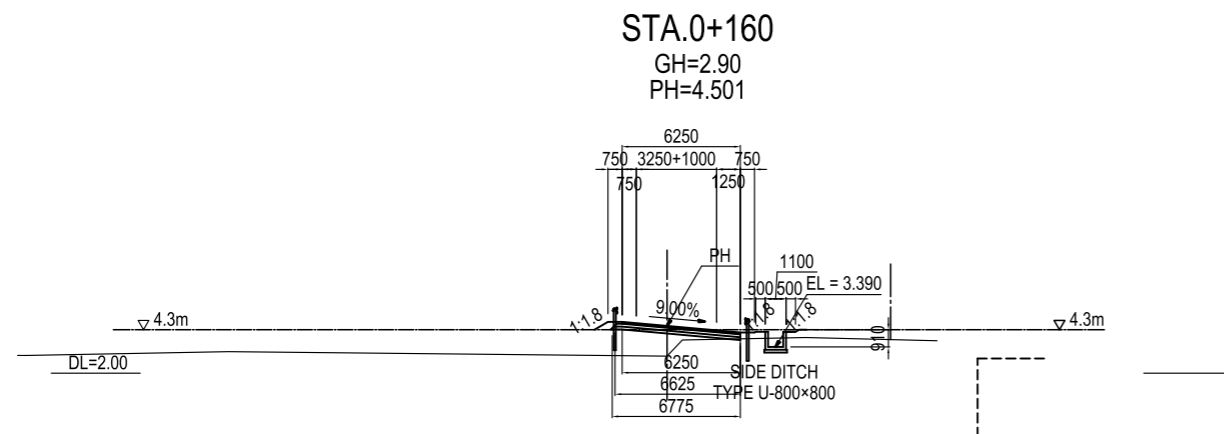
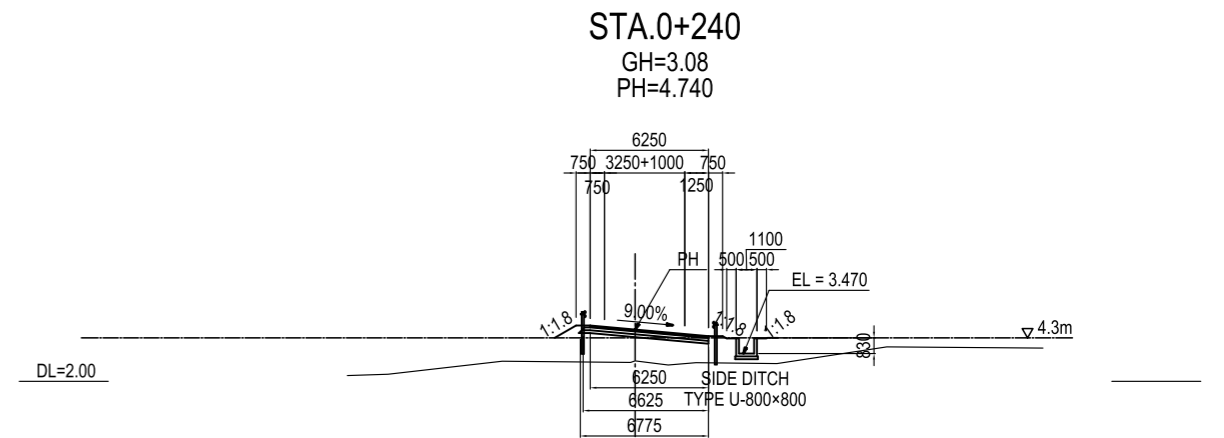
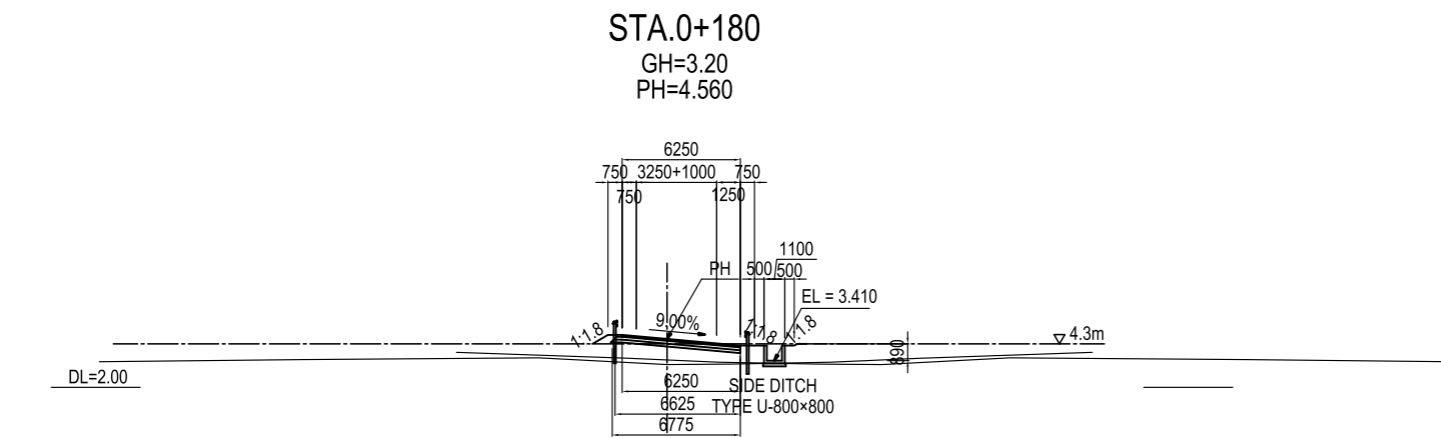
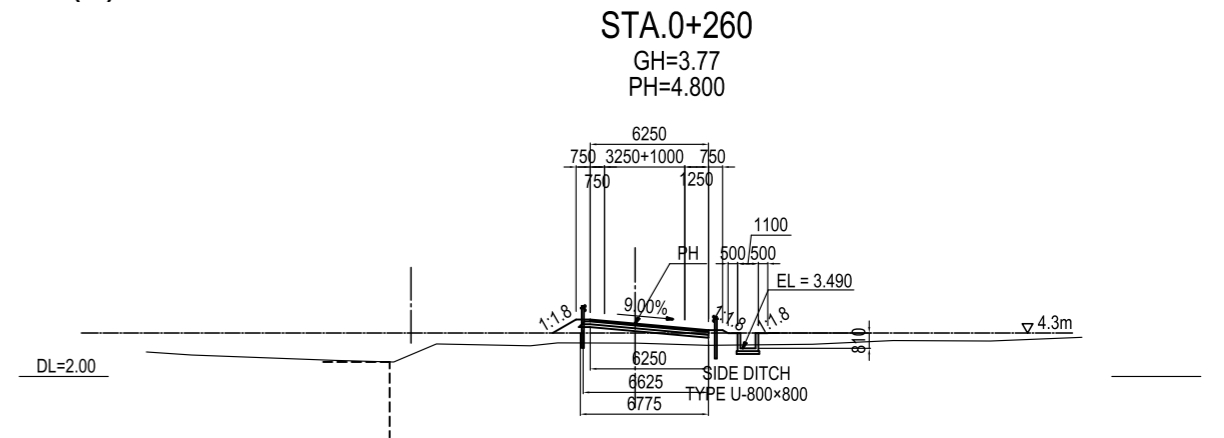
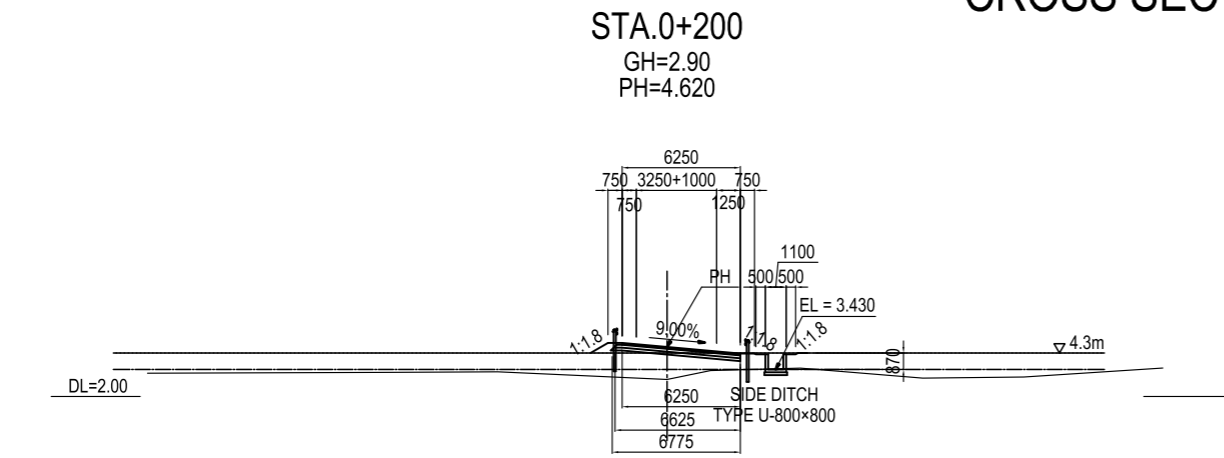
GH=2.87
PH=4.470



Note: Elevation is based on MSL (Mean Sea Level)

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	PREPARED BY M. TORIU	SIGNATURE 	DATE 15 Jun. 2017	DRAWING TITLE CROSS SECTION MAIN ROAD (2)	PACKAGE 1 DWG No. P1-RD-1030
				CHECKED BY T. HAYAKAWA		20 Jun. 2017		
				APPROVED BY Y. SANO		21 Jun. 2017		

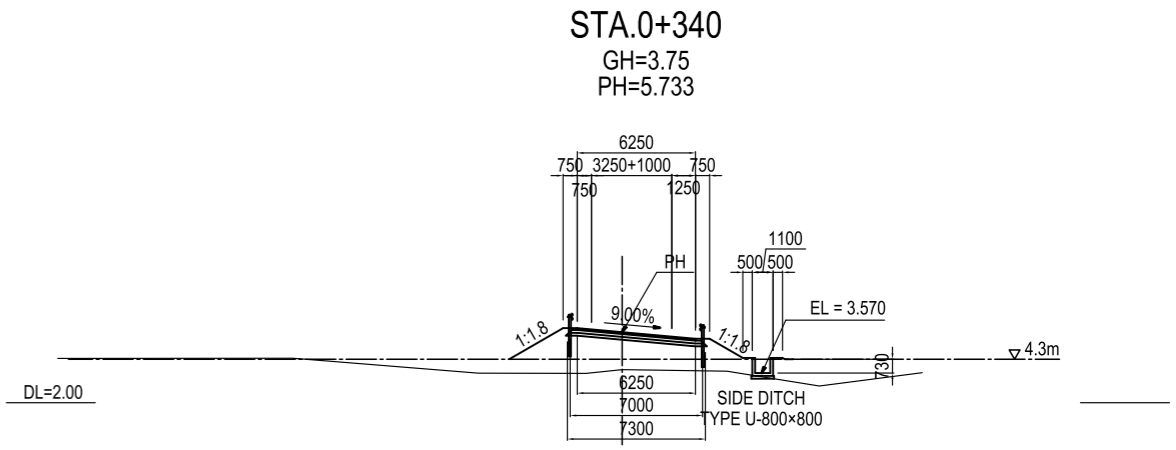
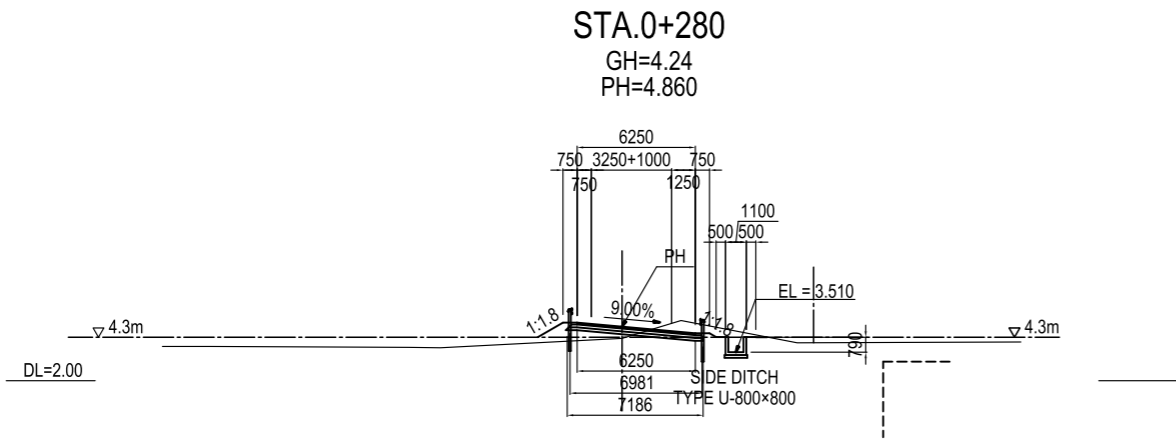
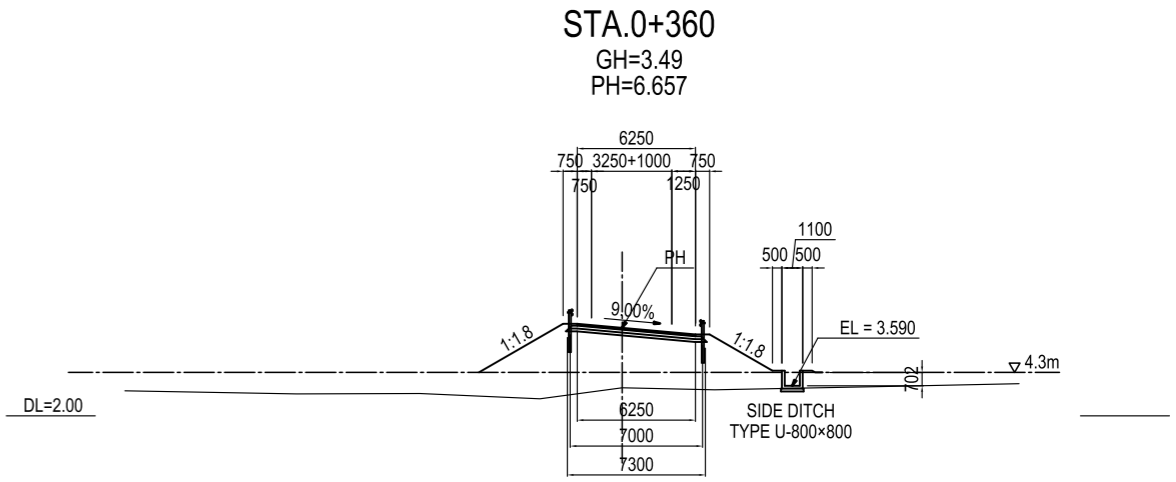
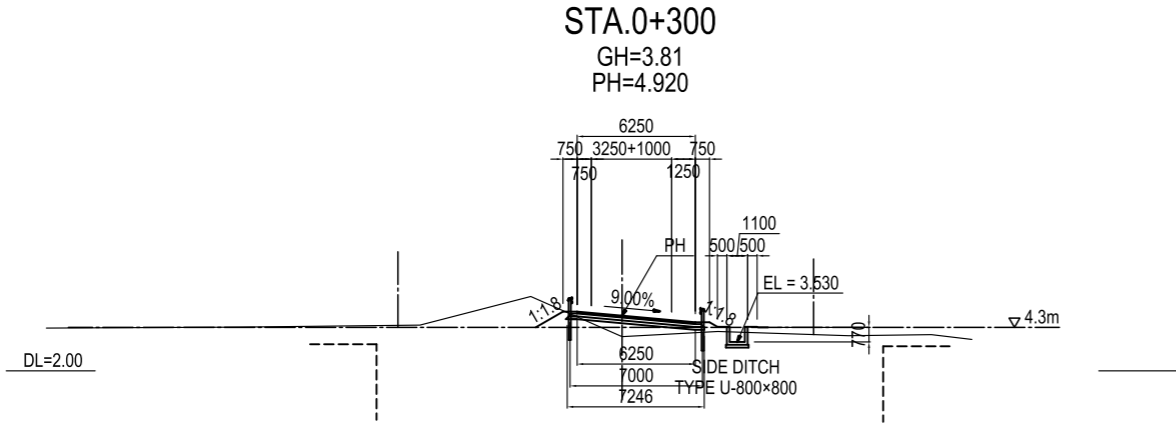
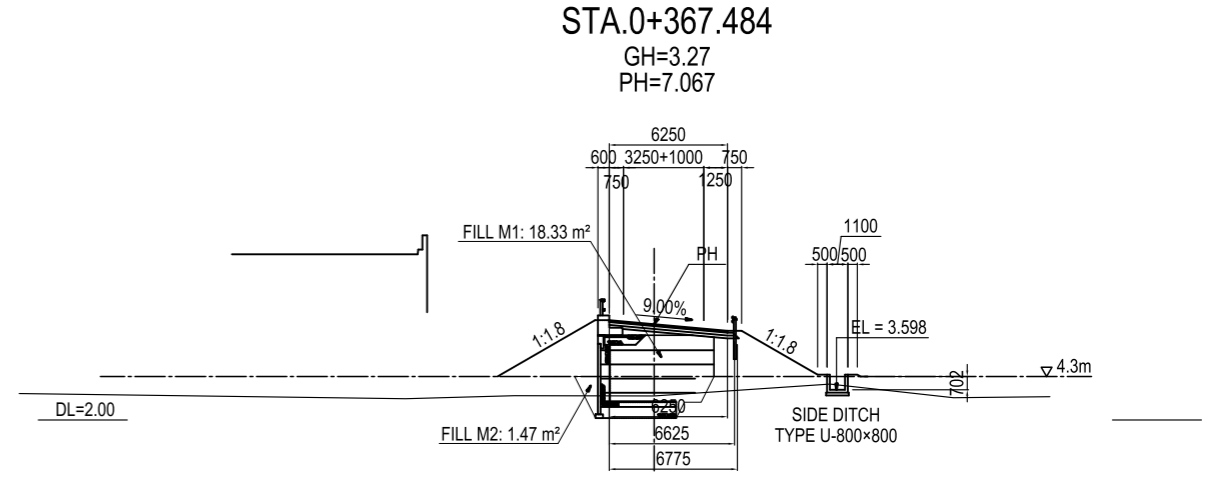
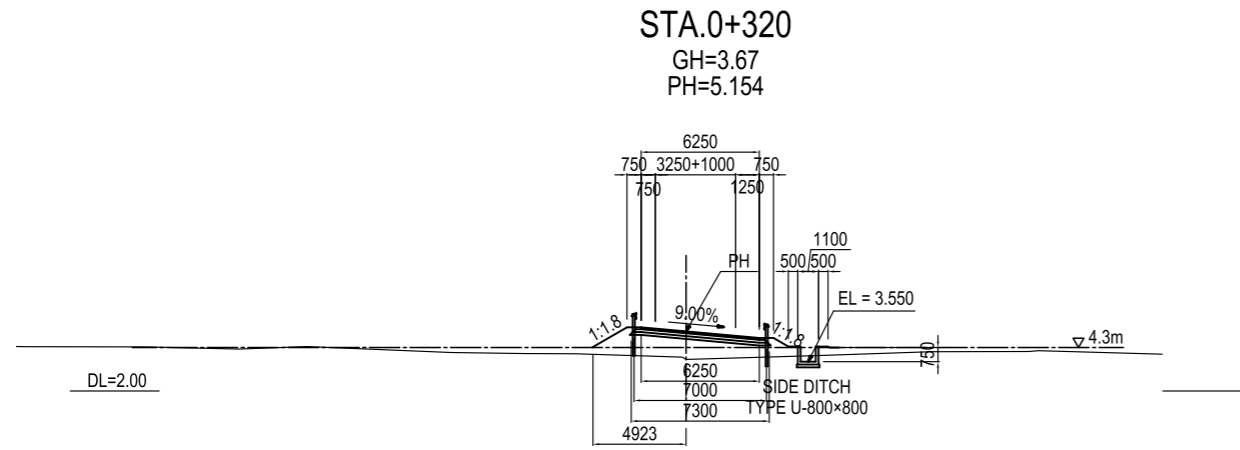
CROSS SECTION MAIN ROAD (3) S=1:400



Note: Elevation is based on MSL (Mean Sea Level)

<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	<small>PREPARED BY</small> M. TORIU	<small>SIGNATURE</small> 	<small>DATE</small> 15 Jun. 2017	<small>DRAWING TITLE</small> CROSS SECTION MAIN ROAD (3)	<small>PACKAGE</small> 1 DWG No. P1-RD-1040
				<small>CHECKED BY</small> T. HAYAKAWA		20 Jun. 2017		
				<small>APPROVED BY</small> Y. SANO		21 Jun. 2017		

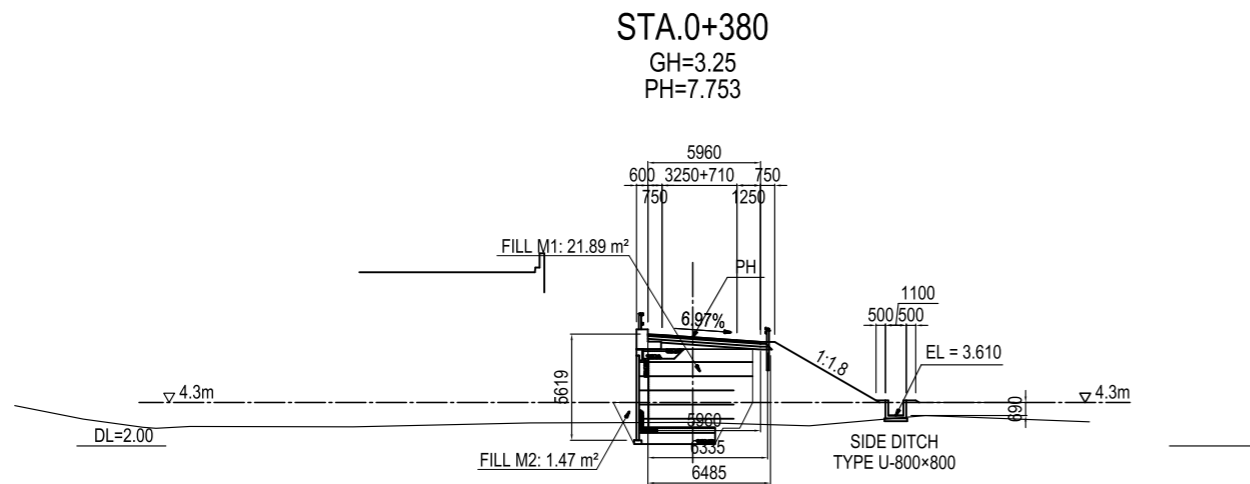
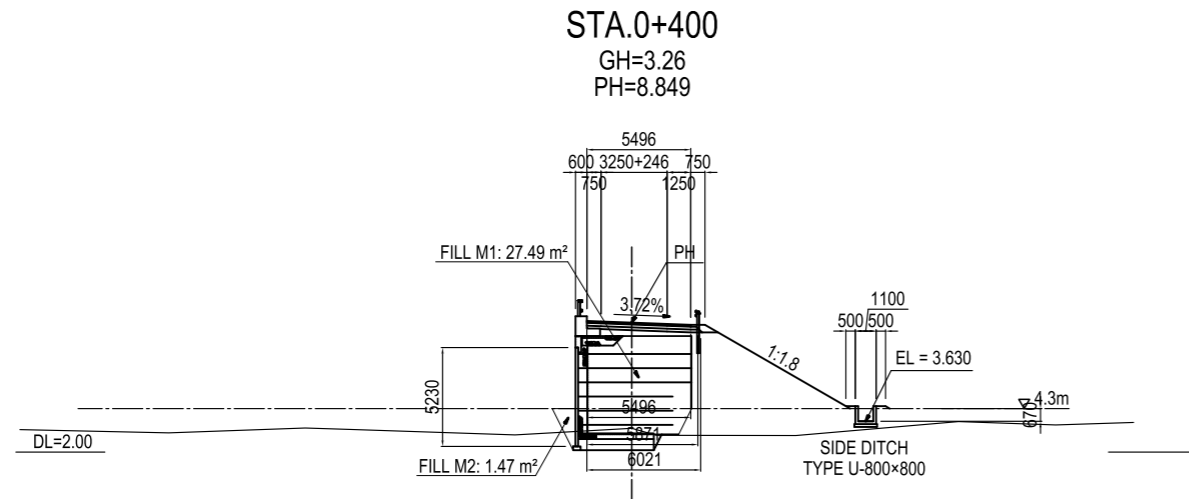
CROSS SECTION MAIN ROAD (4) S=1:400



Note: Elevation is based on MSL (Mean Sea Level)

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	PREPARED BY M. TORIU	SIGNATURE 	DATE 15 Jun. 2017	DRAWING TITLE CROSS SECTION MAIN ROAD (4)	PACKAGE 1 DWG No. P1-RD-1050
				CHECKED BY T. HAYAKAWA		20 Jun. 2017		
				APPROVED BY Y. SANO		21 Jun. 2017		

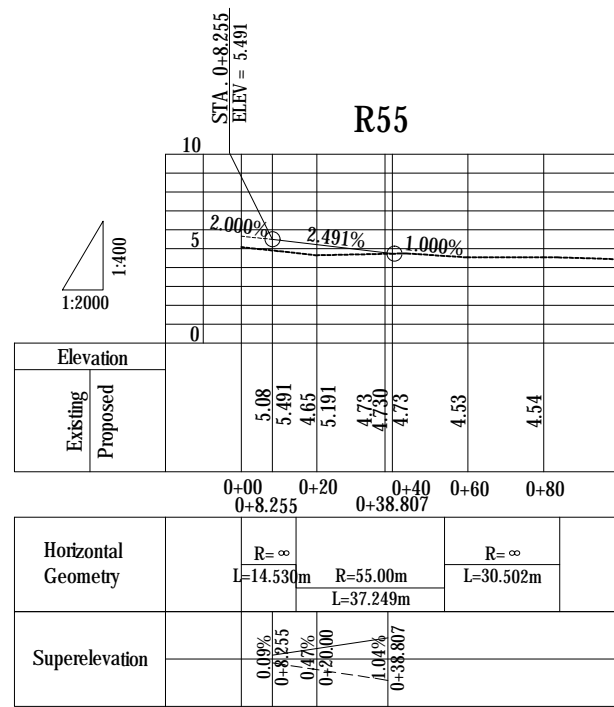
CROSS SECTION MAIN ROAD (5) S=1:400



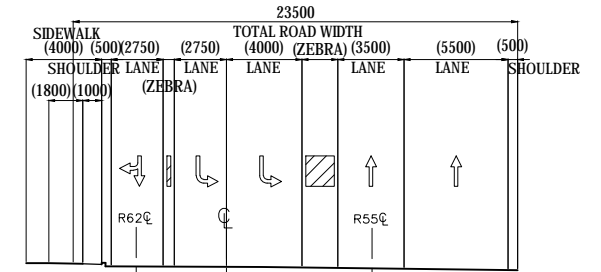
Note: Elevation is based on MSL (Mean Sea Level)

<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">NAME</th> <th style="text-align: left;">SIGNATURE</th> <th style="text-align: left;">DATE</th> </tr> <tr> <td>PREPARED BY M. TORIU</td> <td></td> <td>15 Jun. 2017</td> </tr> <tr> <td>CHECKED BY T. HAYAKAWA</td> <td></td> <td>20 Jun. 2017</td> </tr> <tr> <td>APPROVED BY Y. SANO</td> <td></td> <td>21 Jun. 2017</td> </tr> </table>	NAME	SIGNATURE	DATE	PREPARED BY M. TORIU		15 Jun. 2017	CHECKED BY T. HAYAKAWA		20 Jun. 2017	APPROVED BY Y. SANO		21 Jun. 2017	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">DRAWING TITLE</th> <th style="text-align: left;">PACKAGE</th> </tr> <tr> <td rowspan="3" style="text-align: center; vertical-align: middle;"> CROSS SECTION MAIN ROAD (5) </td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">DWG No.</td> </tr> <tr> <td style="text-align: center;">P1-RD-1060</td> </tr> </table>	DRAWING TITLE	PACKAGE	CROSS SECTION MAIN ROAD (5)	1	DWG No.	P1-RD-1060
NAME	SIGNATURE	DATE																					
PREPARED BY M. TORIU		15 Jun. 2017																					
CHECKED BY T. HAYAKAWA		20 Jun. 2017																					
APPROVED BY Y. SANO		21 Jun. 2017																					
DRAWING TITLE	PACKAGE																						
CROSS SECTION MAIN ROAD (5)	1																						
	DWG No.																						
	P1-RD-1060																						

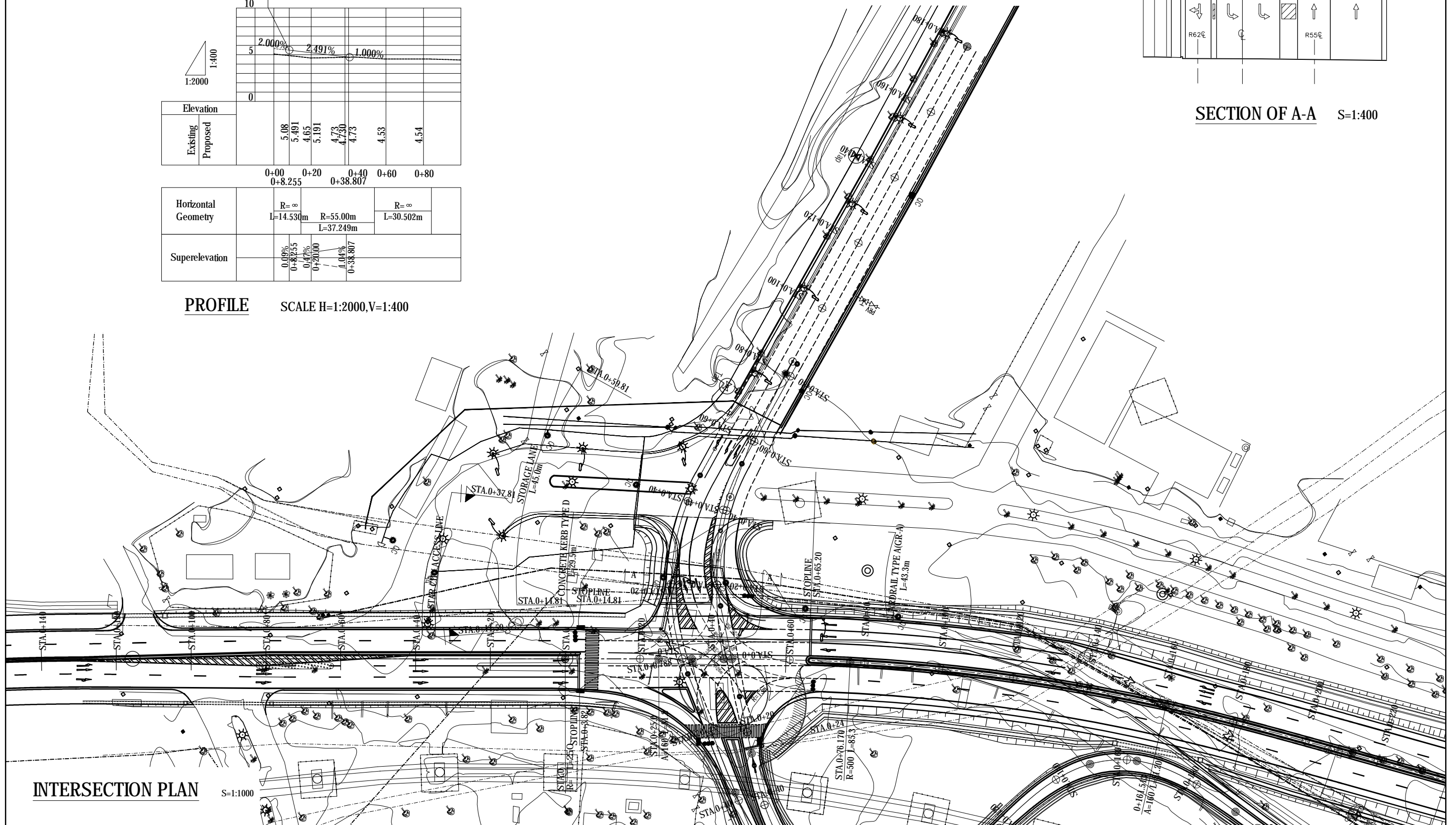
PLAN & PROFILE (1) Star City Access Line



PROFILE SCALE H=1:2000,V=1:400



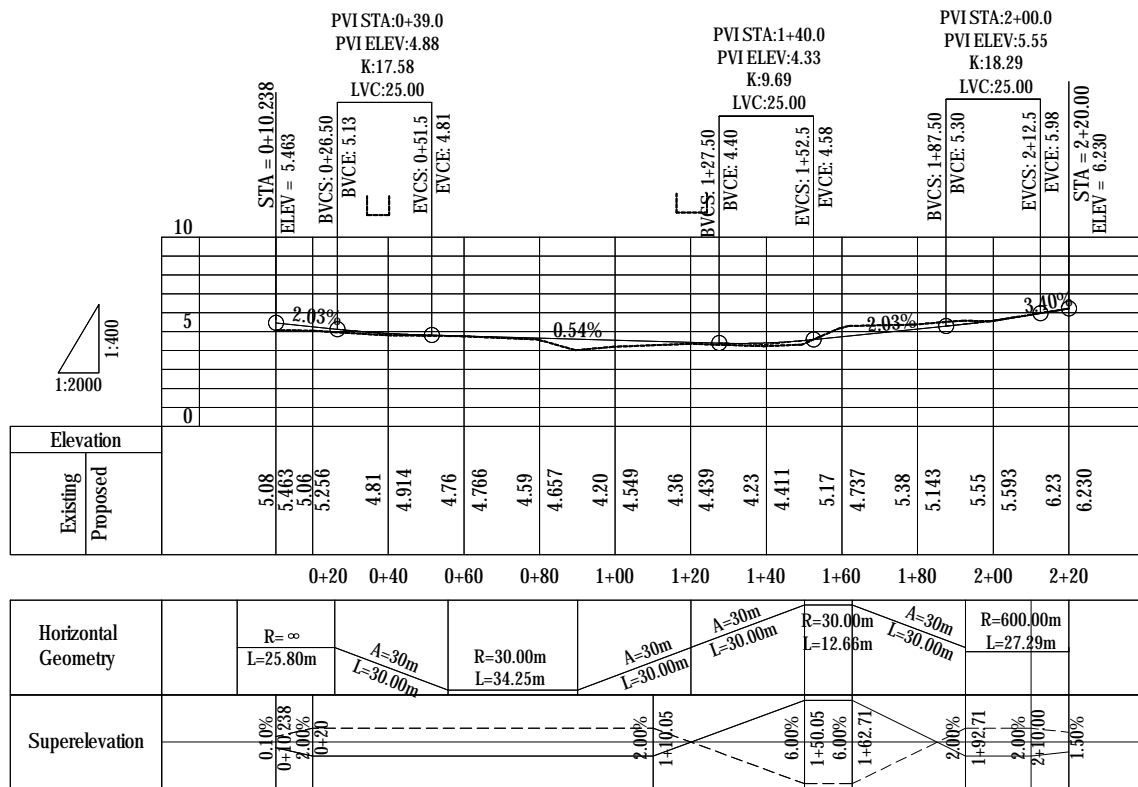
SECTION OF A-A S=1:400



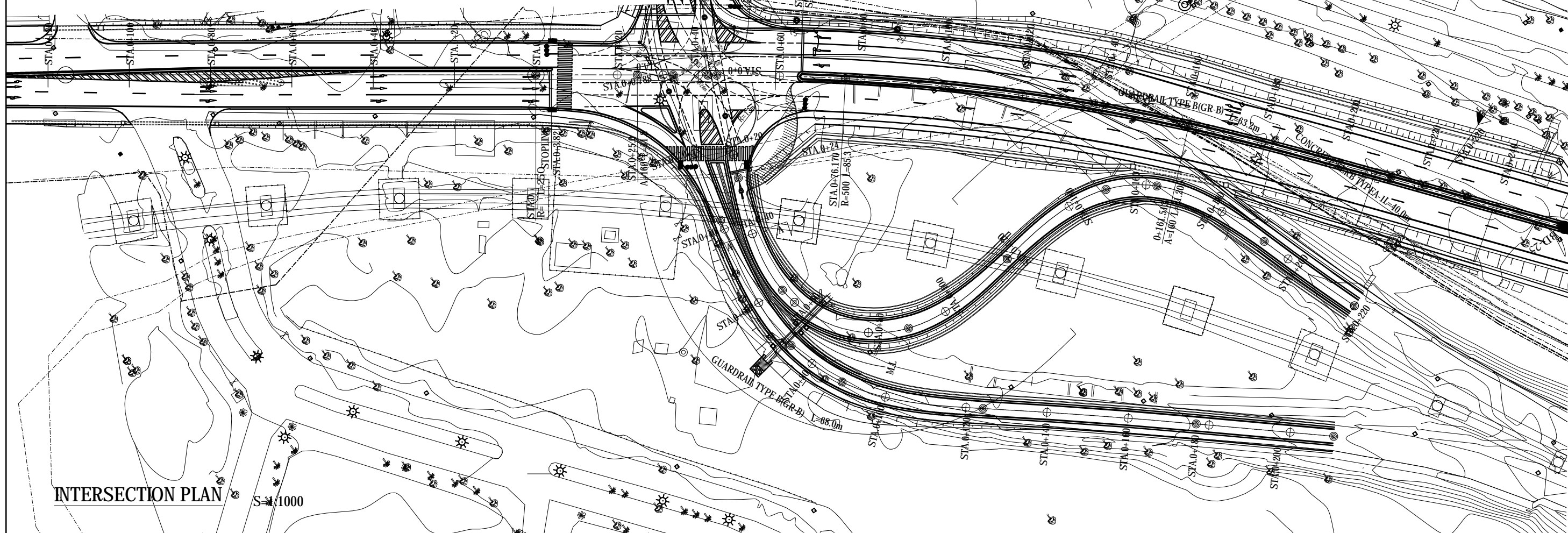
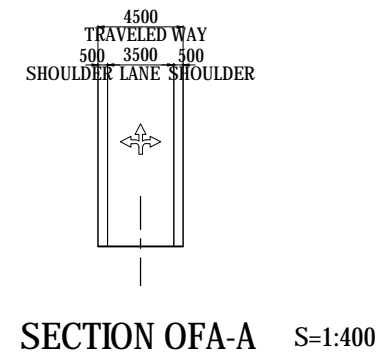
INTERSECTION PLAN S=1:1000

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO.,LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE PLAN & PROFILE (1) Star City Access Line	PACKAGE 1 DWG No. P1-RD-2000	
				PREPARED BY	M. TOMITA				27 NOV. 2017
				CHECKED BY	T. HAYAKAWA				28 NOV. 2017
				APPROVED BY	Y. SANO				29 NOV. 2017

PLAN & PROFILE (2) Thilawa Access Line

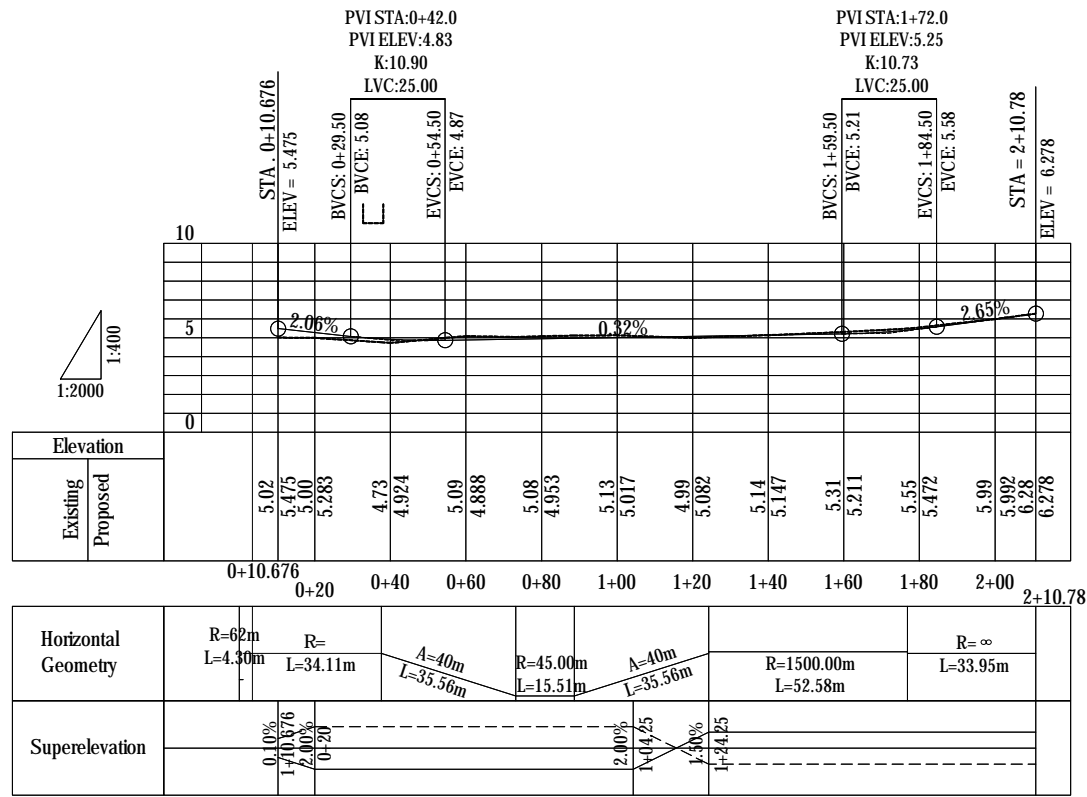


PROFILE SCALE H=1:2000, V=1:400

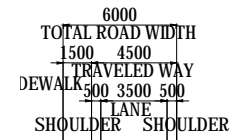


PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	ICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	PREPARED BY	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE			
				CHECKED BY	M. TOMITA		27 NOV. 2017			PLAN & PROFILE (2) Thilawa Access Line	1	
				APPROVED BY	T. HAYAKAWA		28 NOV. 2017					DWG No.
					Y. SANO		29 NOV. 2017					P1-RD-2010

PLAN & PROFILE (3) Yangon Access Line

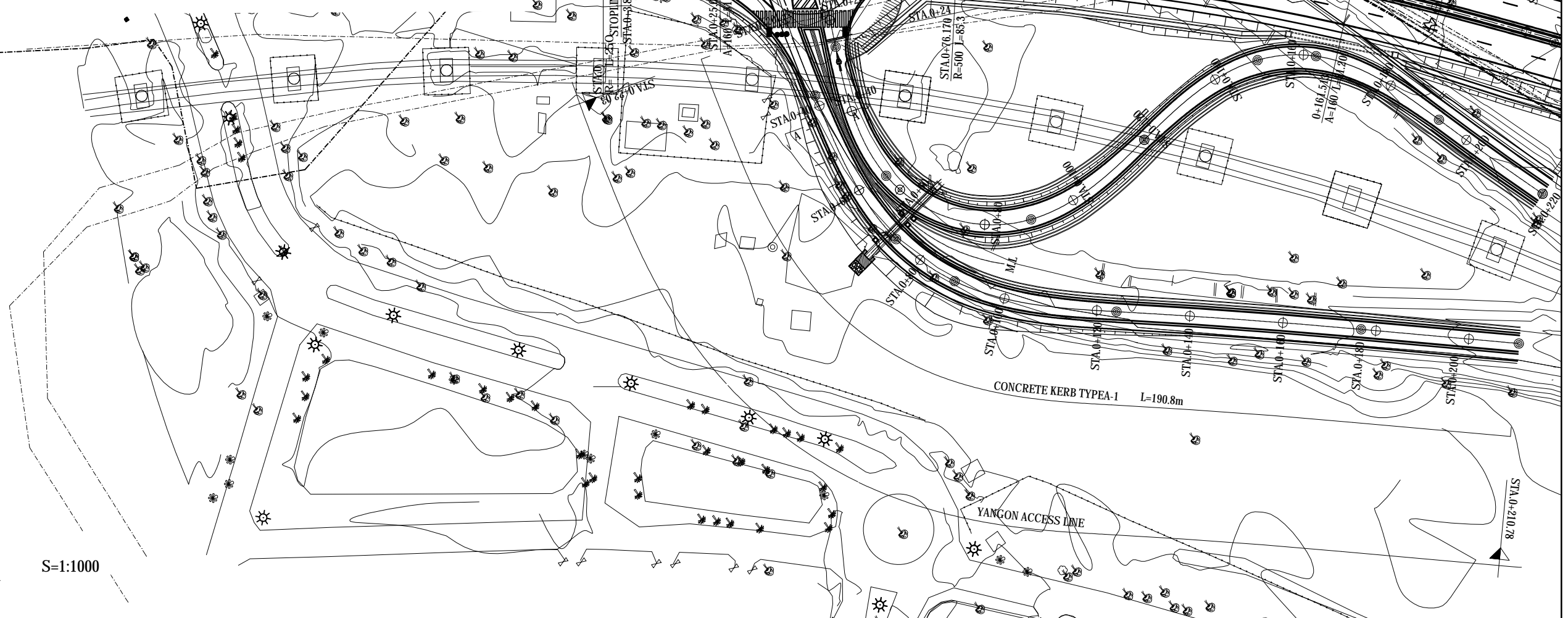


PROFILE SCALE H=1:2000,V=1:400



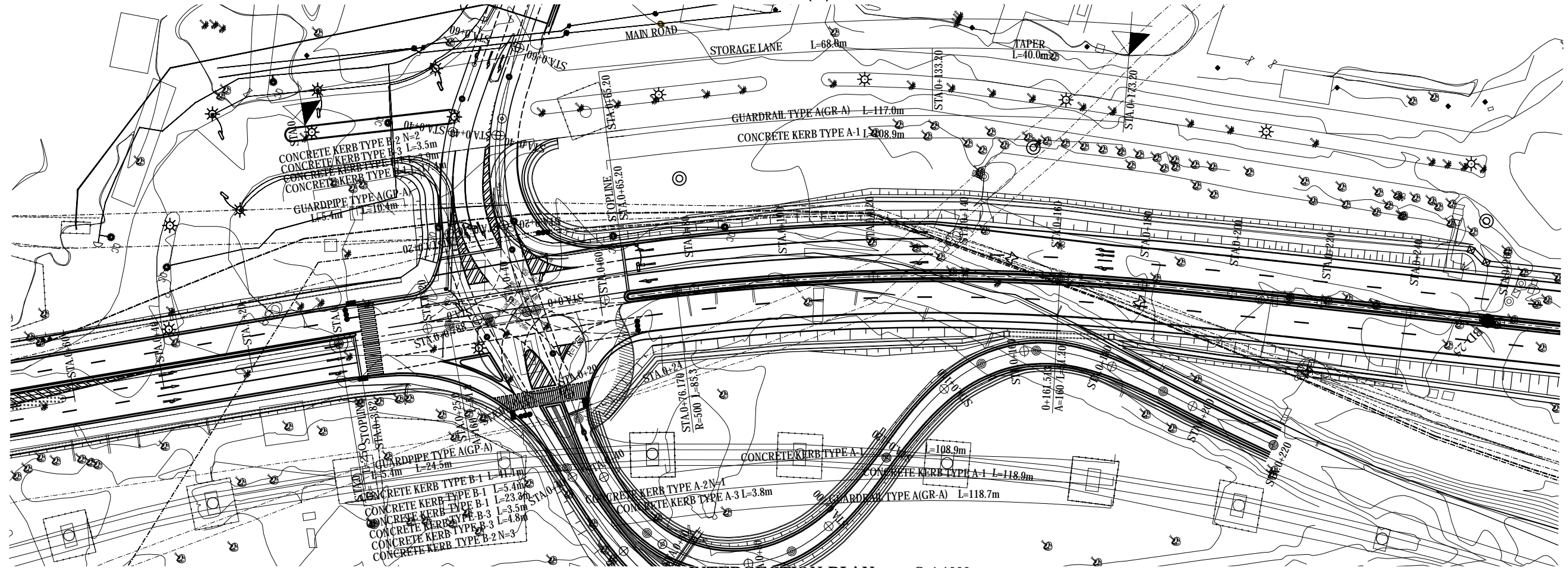
SECTION OF A-A S=1:400

INTERSECTION PLAN S=1:1000

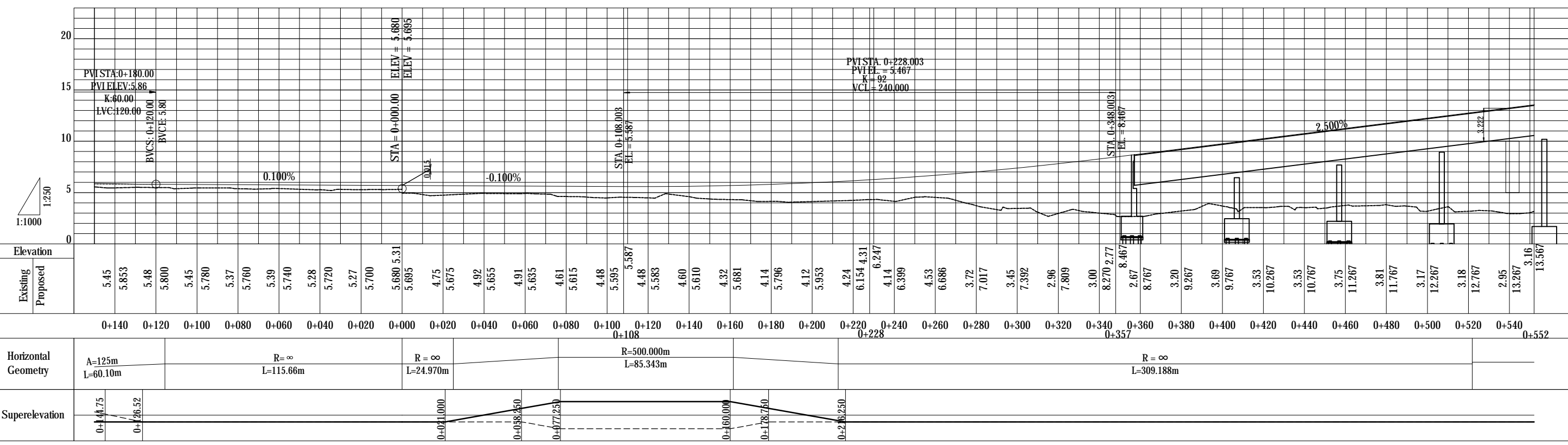


PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	ICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE PLAN & PROFILE (3) Yangon Access Line	PACKAGE 1 DWG No. P1-RD-2020	
				PREPARED BY	M. TOMITA				27 NOV. 2017
				CHECKED BY	T. HAYAKAWA				28 NOV. 2017
				APPROVED BY	Y. SANO				29 NOV. 2017

PLAN & PROFILE (4) Main Road



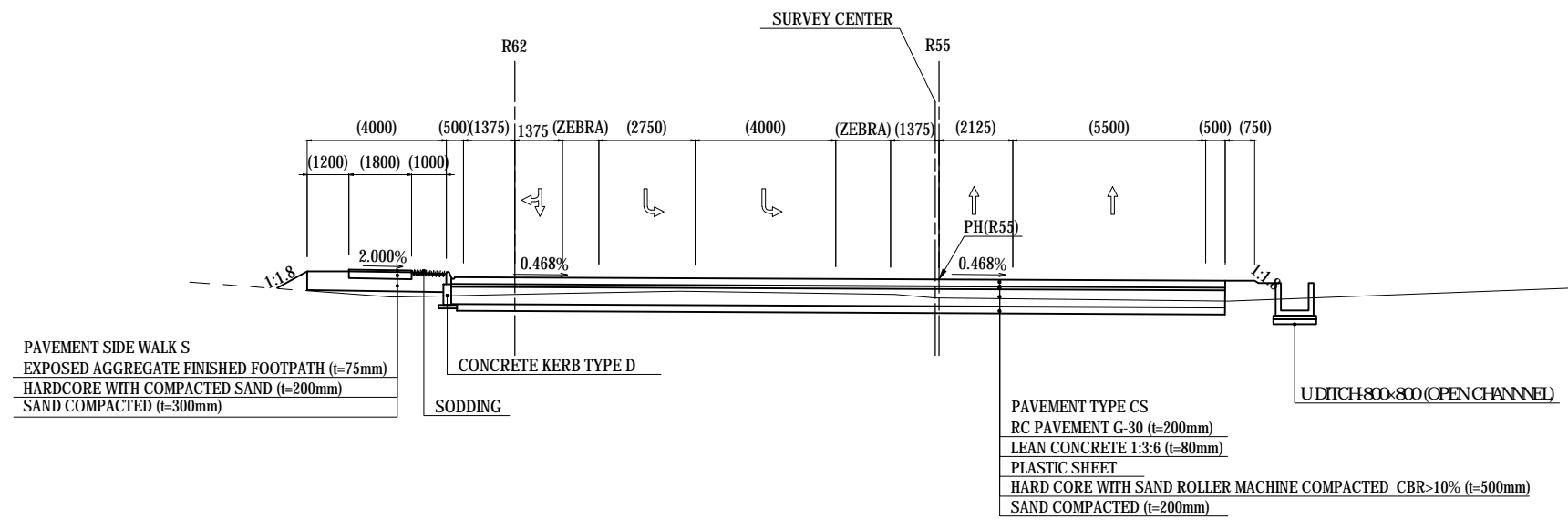
INTERSECTION PLAN S=1:1000



PROFILE OF SUBROAD SCALE H=1:2000,V=1:400

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE PLAN & PROFILE (4) Main Road	PACKAGE 1 DWG No. P1-RD-2025	
				PREPARED BY	M. TOMITA				27 NOV. 2017
				CHECKED BY	T. HAYAKAWA				28 NOV. 2017
				APPROVED BY	Y. SANO				29 NOV. 2017

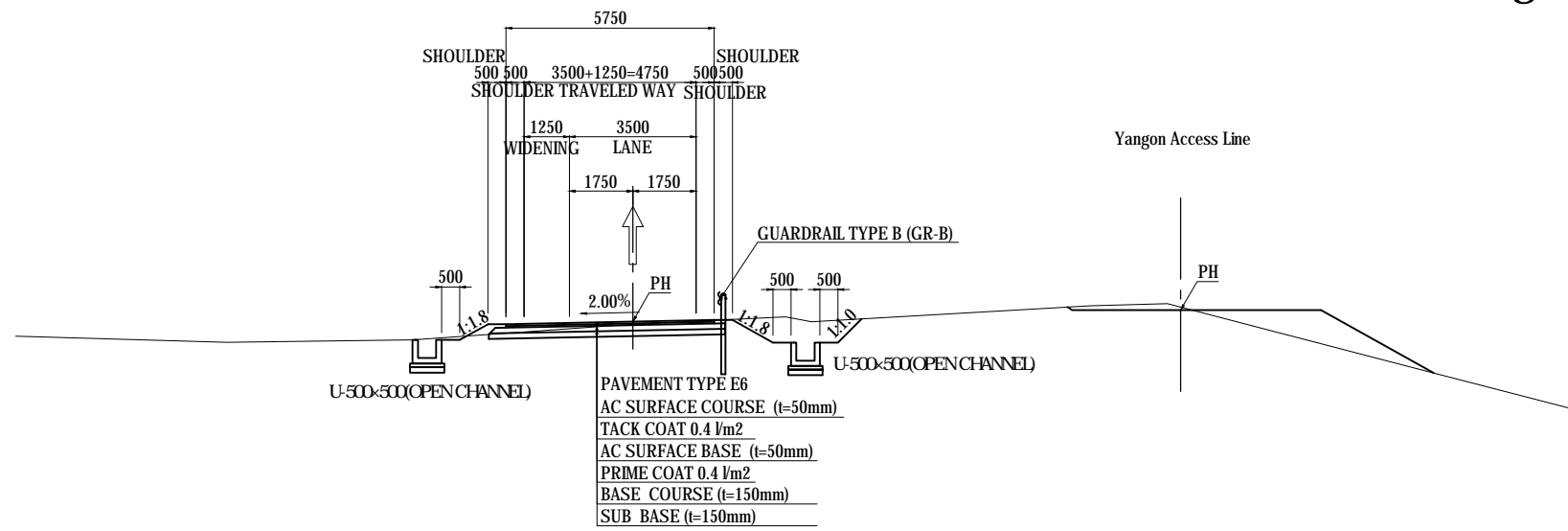
TYPICAL CROSS SECTION (1) Star City Access Line S=1:200



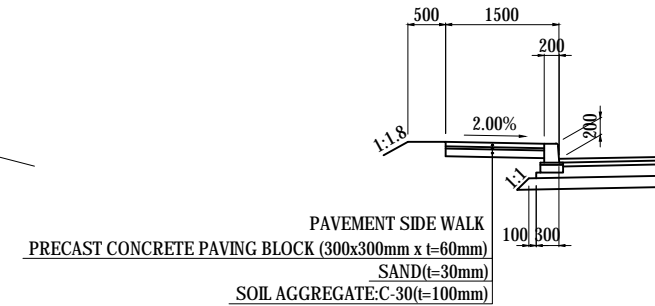
IN/OUT FLOW SECTION OF SIGNALIZED INTERSECTION WITH LEFT TURN LANE

PROJECT NAME	FINANCED BY	COUNTERPART	JICA STUDY TEAM	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE
DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	JICA JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO.,LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.	PREPARED BY M. TOMITA		27 NOV. 2017	TYPICAL CROSS SECTION (1) Star City Access Line	1
				CHECKED BY T. HAYAKAWA		28 NOV. 2017		DWG No.
				APPROVED BY Y. SANO		29 NOV. 2017		P1-RD-2030

TYPICAL CROSS SECTION (2) Thilawa Access Line / Yangon Access Line S=1:200

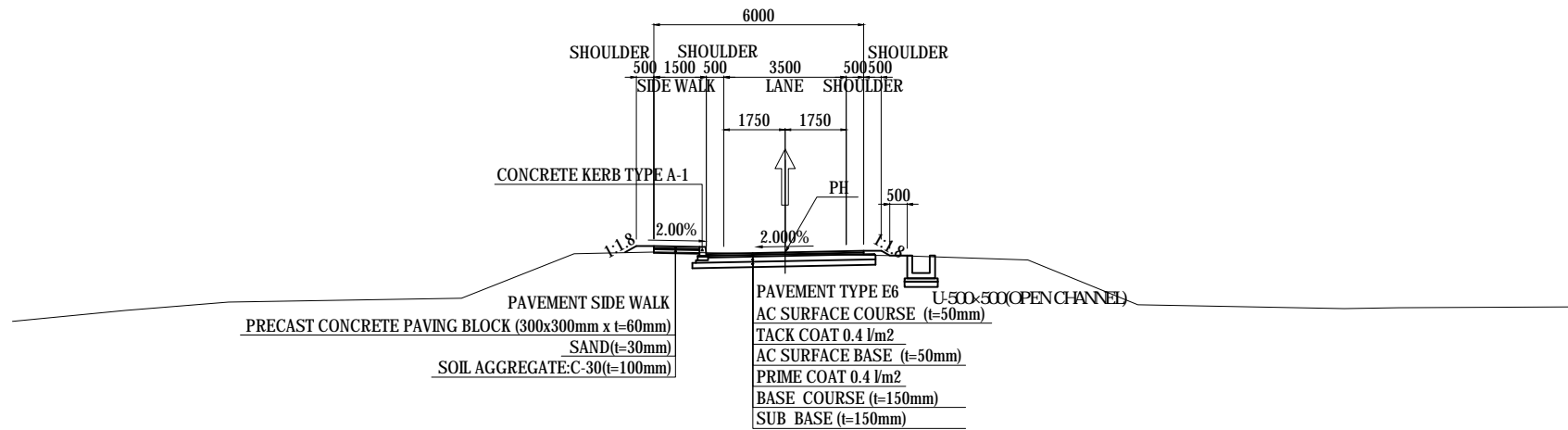


STANDARD SECTION - 1 (Thilawa Access Line)

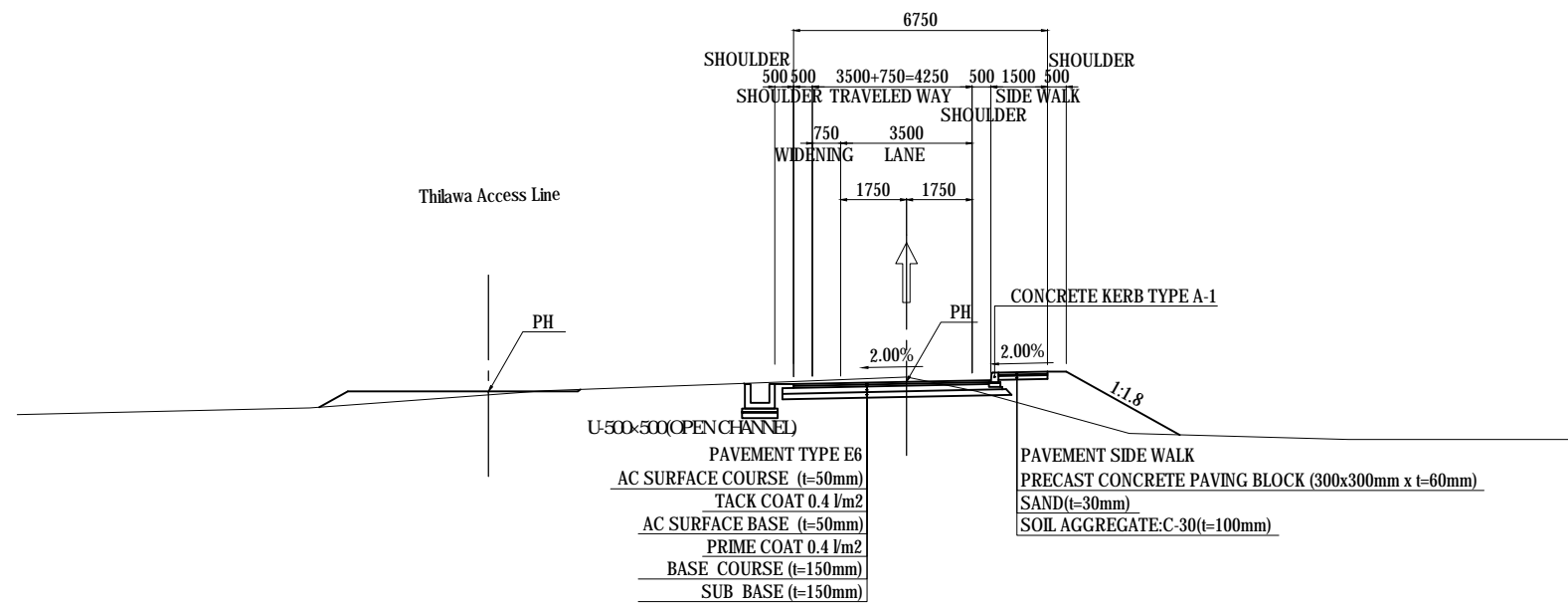


SIDEWALK STANDARD SECTION

S = 1:100



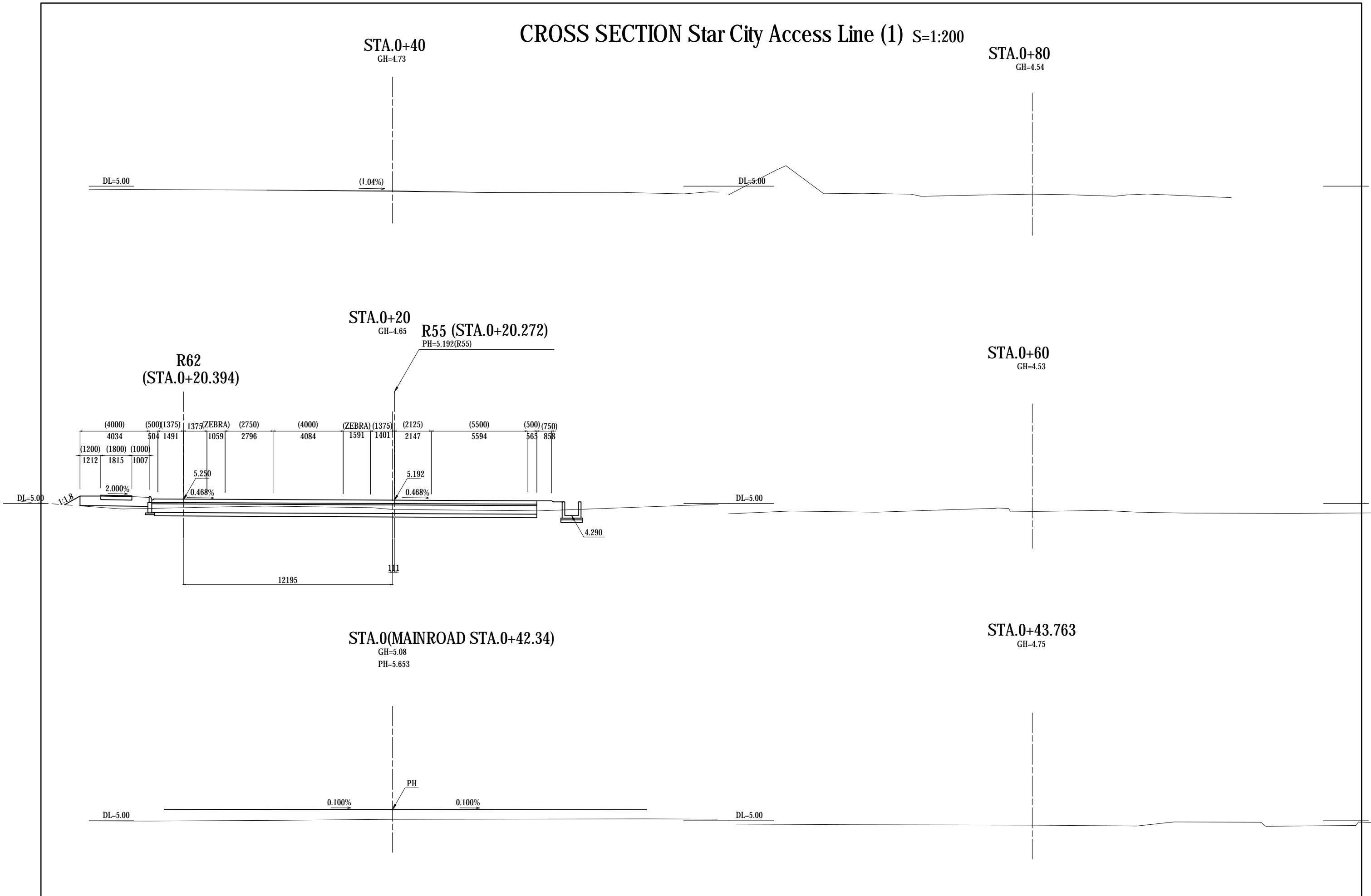
STANDARD SECTION - 2 (Thilawa Access Line)



STANDARD SECTION (Yangon Access Line)

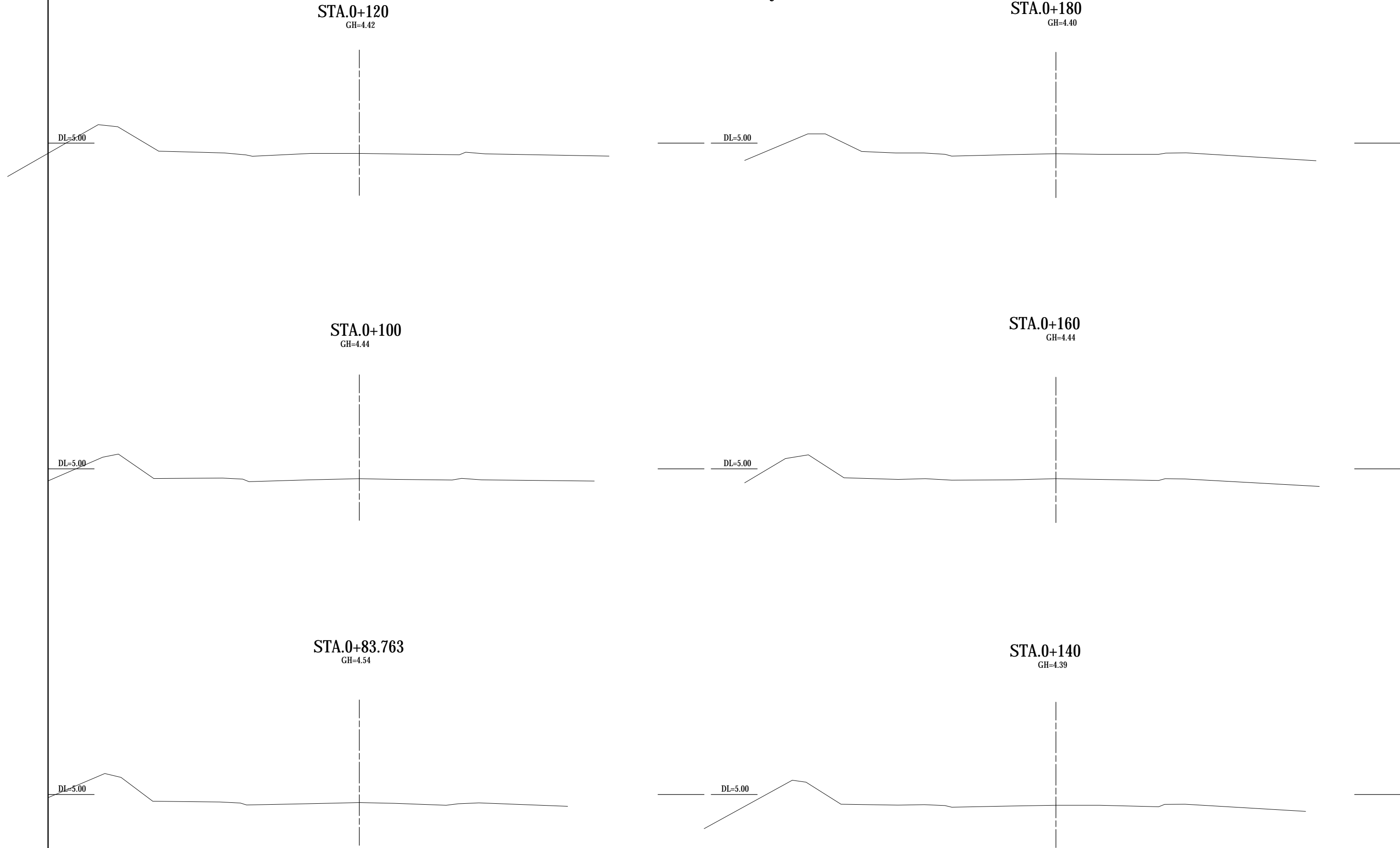
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE TYPICAL CROSS SECTION (2) Thilawa Access Line/Yangon Access Line	PACKAGE	
				PREPARED BY	M. TOMITA			27 NOV. 2017	1
				CHECKED BY	T. HAYAKAWA			28 NOV. 2017	DWG No.
				APPROVED BY	Y. SANO			29 NOV. 2017	P1-RD-2040

CROSS SECTION Star City Access Line (1) S=1:200



<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO.,LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>NAME</th> <th>SIGNATURE</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>PREPARED BY</td> <td>M. TOMITA</td> <td></td> <td>27 NOV. 2017</td> </tr> <tr> <td>CHECKED BY</td> <td>T. HAYAKAWA</td> <td></td> <td>28 NOV. 2017</td> </tr> <tr> <td>APPROVED BY</td> <td>Y. SANO</td> <td></td> <td>29 NOV. 2017</td> </tr> </tbody> </table>		NAME	SIGNATURE	DATE	PREPARED BY	M. TOMITA		27 NOV. 2017	CHECKED BY	T. HAYAKAWA		28 NOV. 2017	APPROVED BY	Y. SANO		29 NOV. 2017	<small>DRAWING TITLE</small> CROSS SECTION Star City Access Line (1)	<small>PACKAGE</small> 1 DWG No. P1-RD-2050
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PREPARED BY	M. TOMITA		27 NOV. 2017																				
CHECKED BY	T. HAYAKAWA		28 NOV. 2017																				
APPROVED BY	Y. SANO		29 NOV. 2017																				

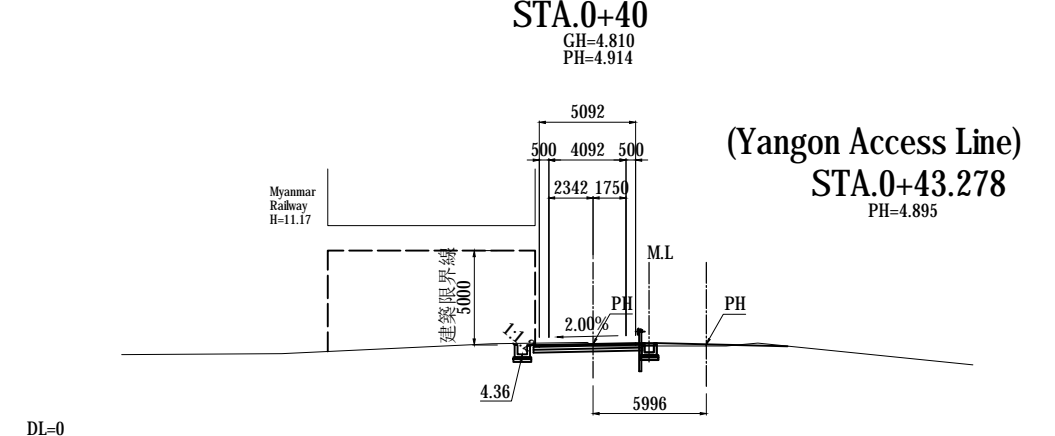
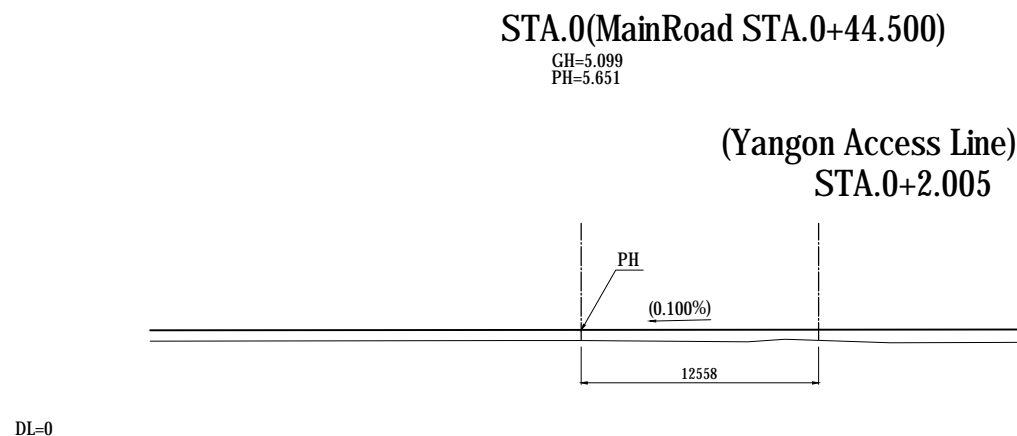
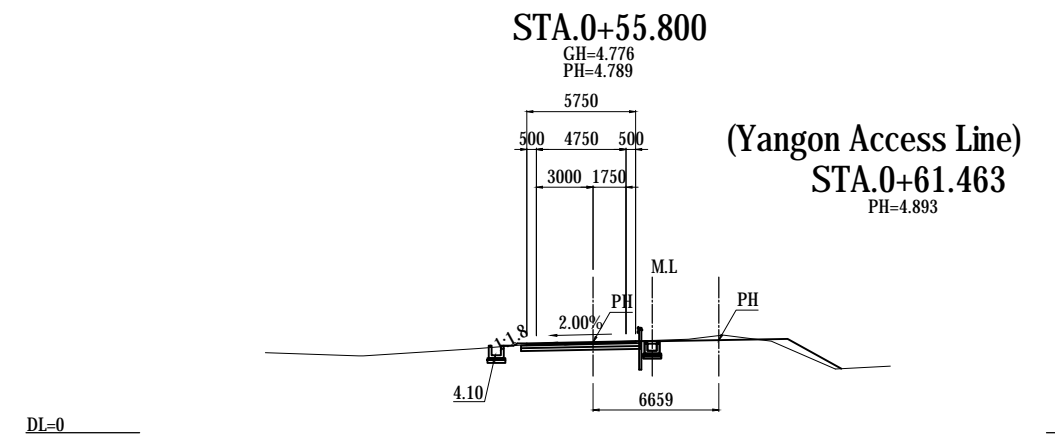
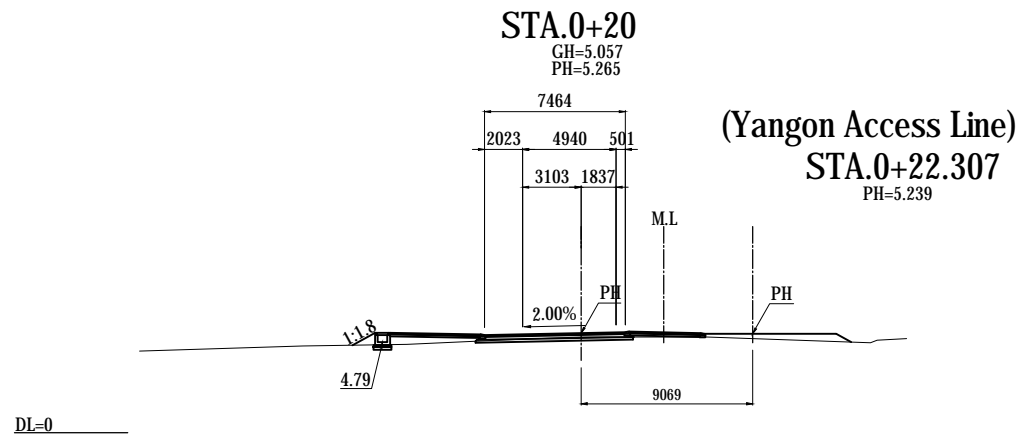
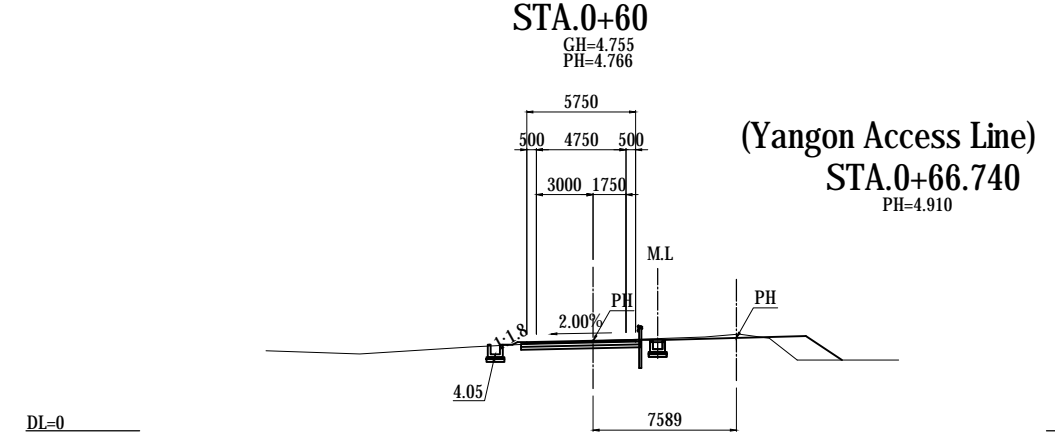
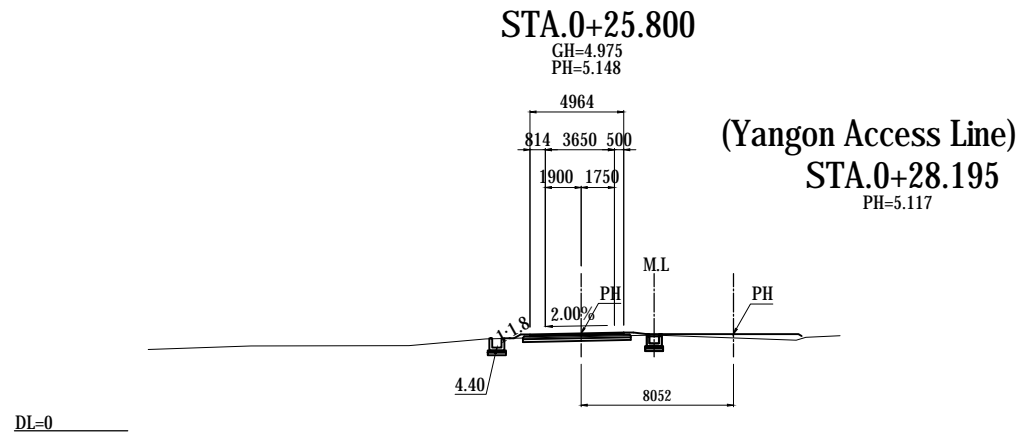
CROSS SECTION Star City Access Line (2) S=1:200



<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO.,LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;"></th> <th style="width: 20%;">NAME</th> <th style="width: 20%;">SIGNATURE</th> <th style="width: 20%;">DATE</th> </tr> </thead> <tbody> <tr> <td>PREPARED BY</td> <td>M. TOMITA</td> <td></td> <td>27 NOV. 2017</td> </tr> <tr> <td>CHECKED BY</td> <td>T. HAYAKAWA</td> <td></td> <td>28 NOV. 2017</td> </tr> <tr> <td>APPROVED BY</td> <td>Y. SANO</td> <td></td> <td>29 NOV. 2017</td> </tr> </tbody> </table>		NAME	SIGNATURE	DATE	PREPARED BY	M. TOMITA		27 NOV. 2017	CHECKED BY	T. HAYAKAWA		28 NOV. 2017	APPROVED BY	Y. SANO		29 NOV. 2017	<small>DRAWING TITLE</small> CROSS SECTION Star City Access Line (2)	<small>PACKAGE</small> 1 DWG No. P1-RD-2060
	NAME	SIGNATURE	DATE																				
PREPARED BY	M. TOMITA		27 NOV. 2017																				
CHECKED BY	T. HAYAKAWA		28 NOV. 2017																				
APPROVED BY	Y. SANO		29 NOV. 2017																				

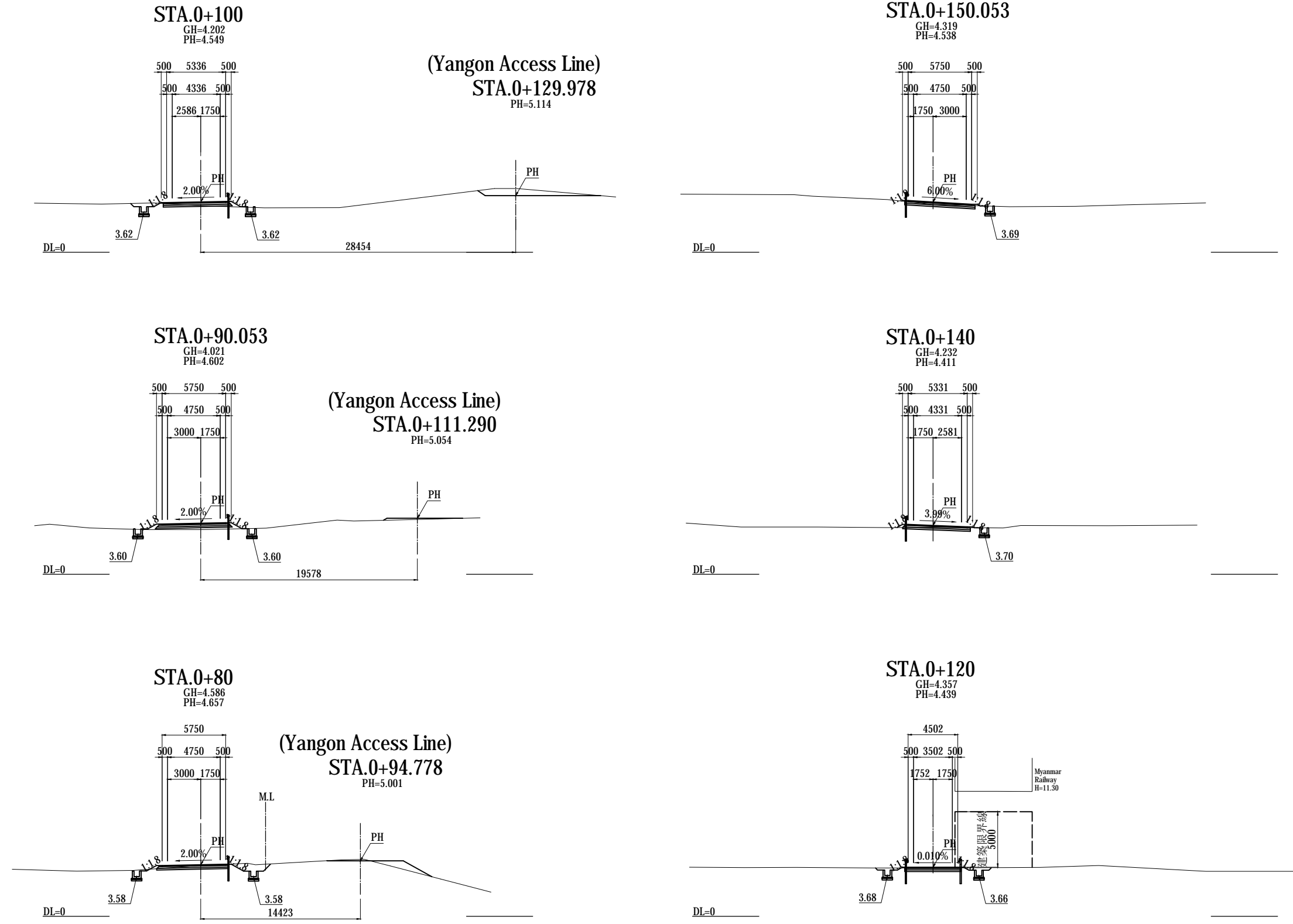
CROSS SECTION Thilawa Access Line(1)

S=1:400



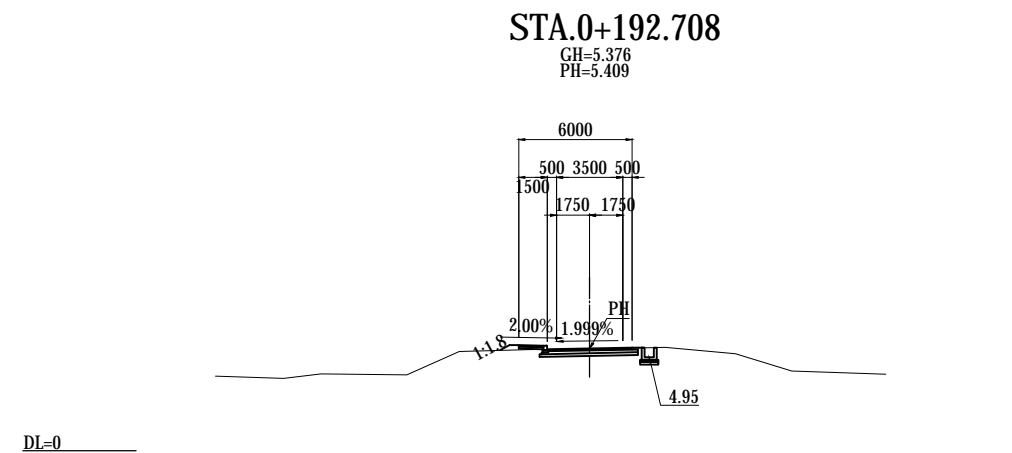
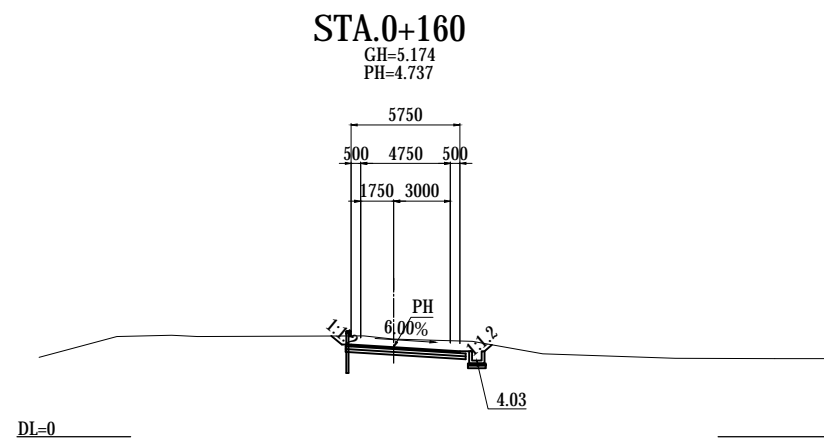
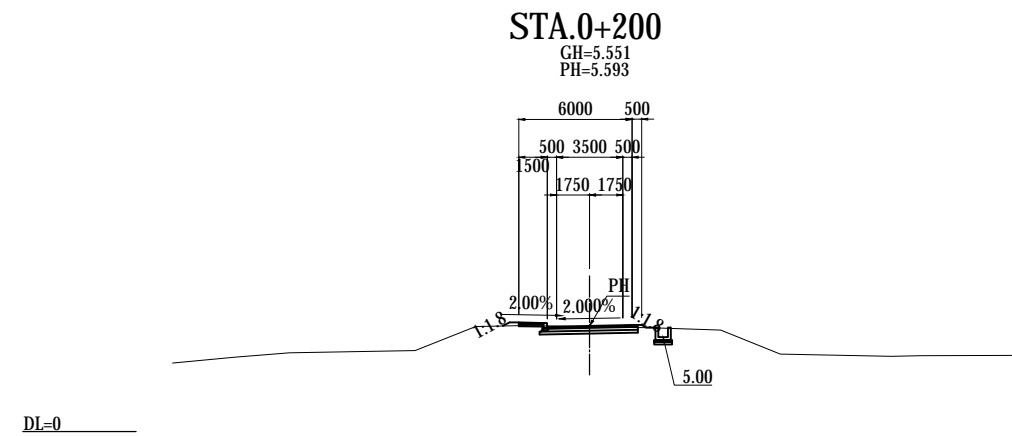
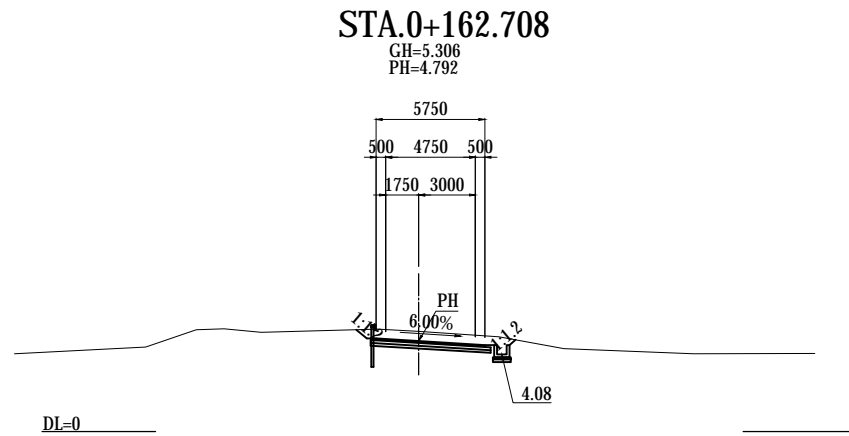
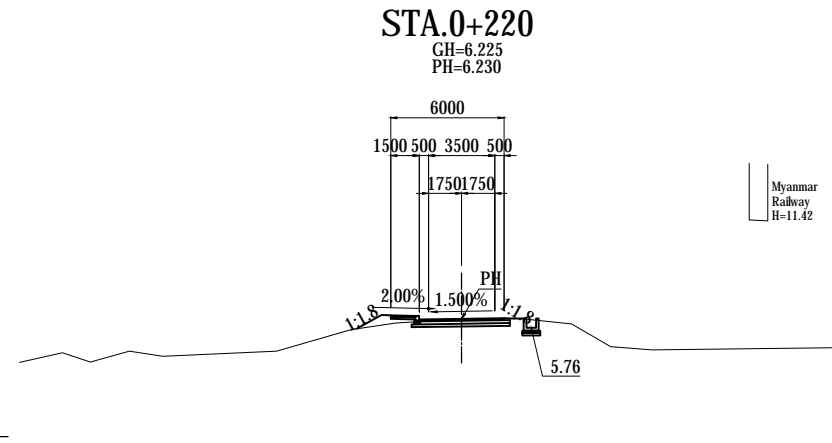
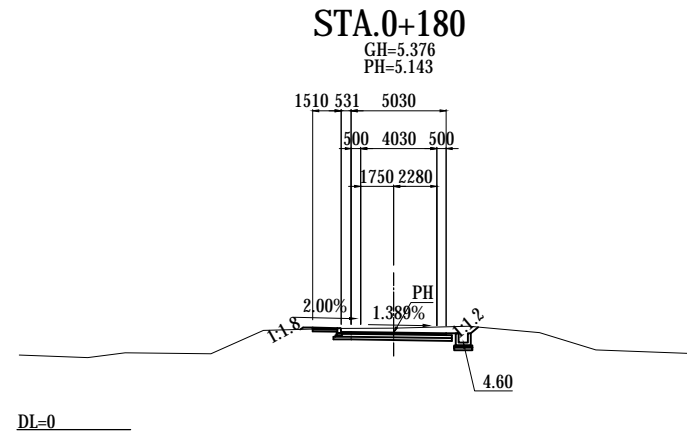
PROJECT NAME	FINANCED BY	COUNTERPART	JICA STUDY TEAM	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE
DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	JICA JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO.,LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.	M. TOMITA		27 NOV. 2017	CROSS SECTION Thilawa Access Line(1)	1
				T. HAYAKAWA		28 NOV. 2017		DWG No.
				Y. SANO		29 NOV. 2017		P1-RD-2070

CROSS SECTION Thilawa Access Line(2) S=1:400



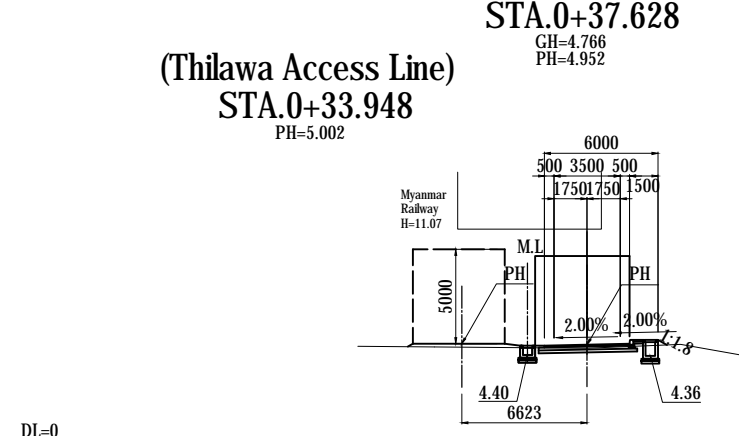
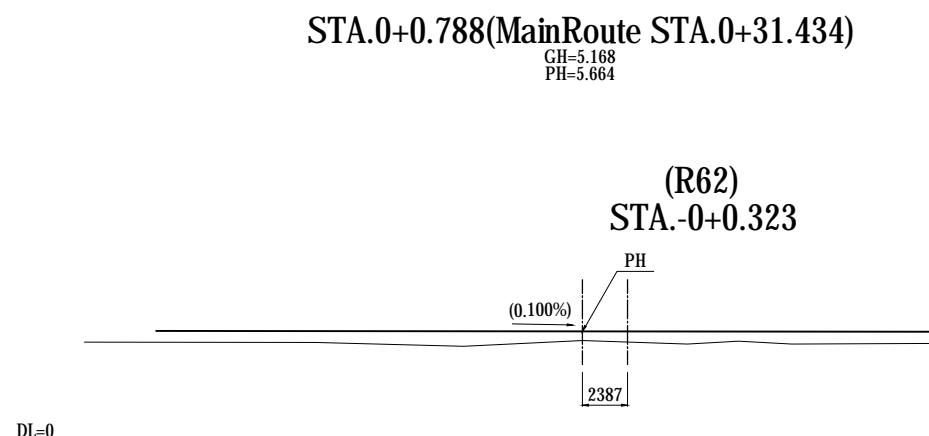
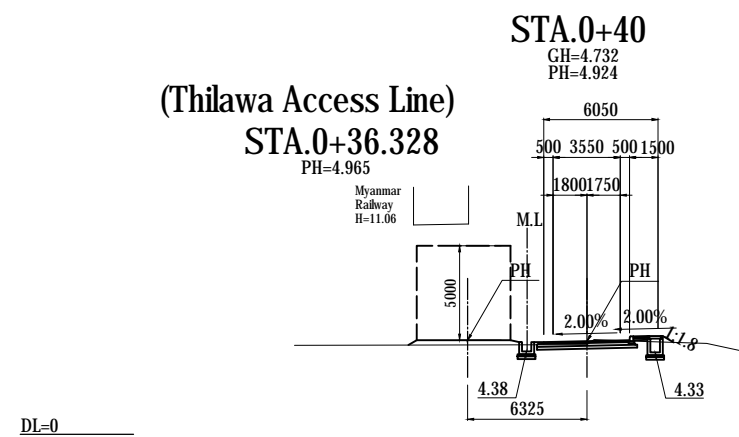
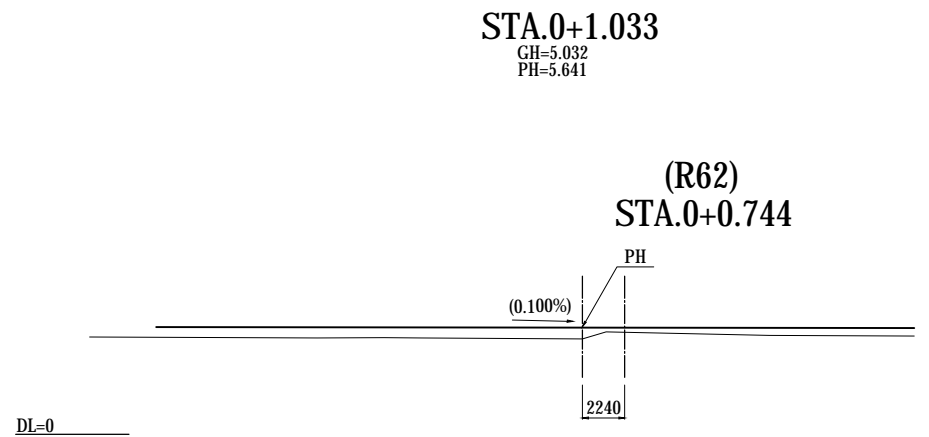
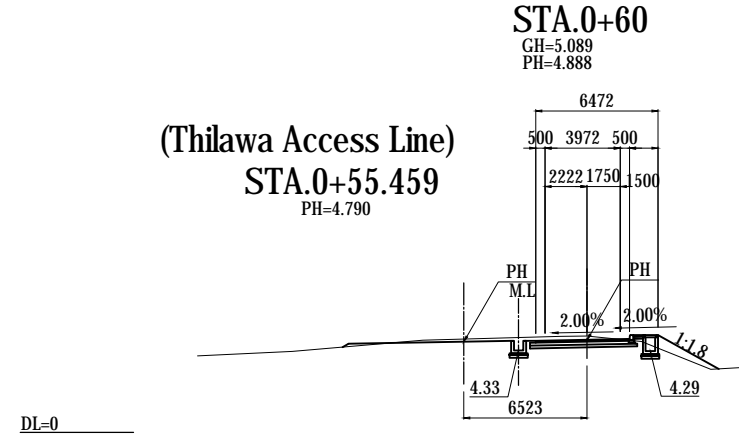
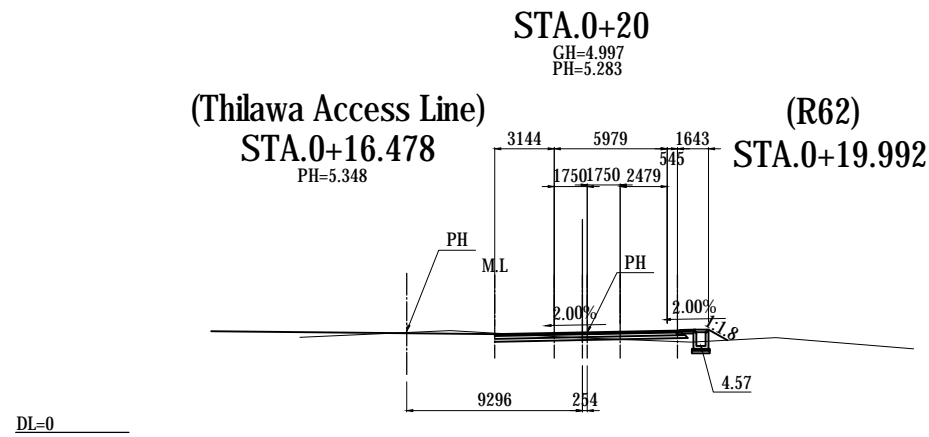
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO.,LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.		NAME M. TOMITA T. HAYAKAWA Y. SANO	SIGNATURE 	DATE 27 NOV. 2017 28 NOV. 2017 29 NOV. 2017	DRAWING TITLE CROSS SECTION Thilawa Access Line(2)	PACKAGE 1 DWG No. P1-RD-2080
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CROSS SECTION Thilawa Access Line(3) S=1:400



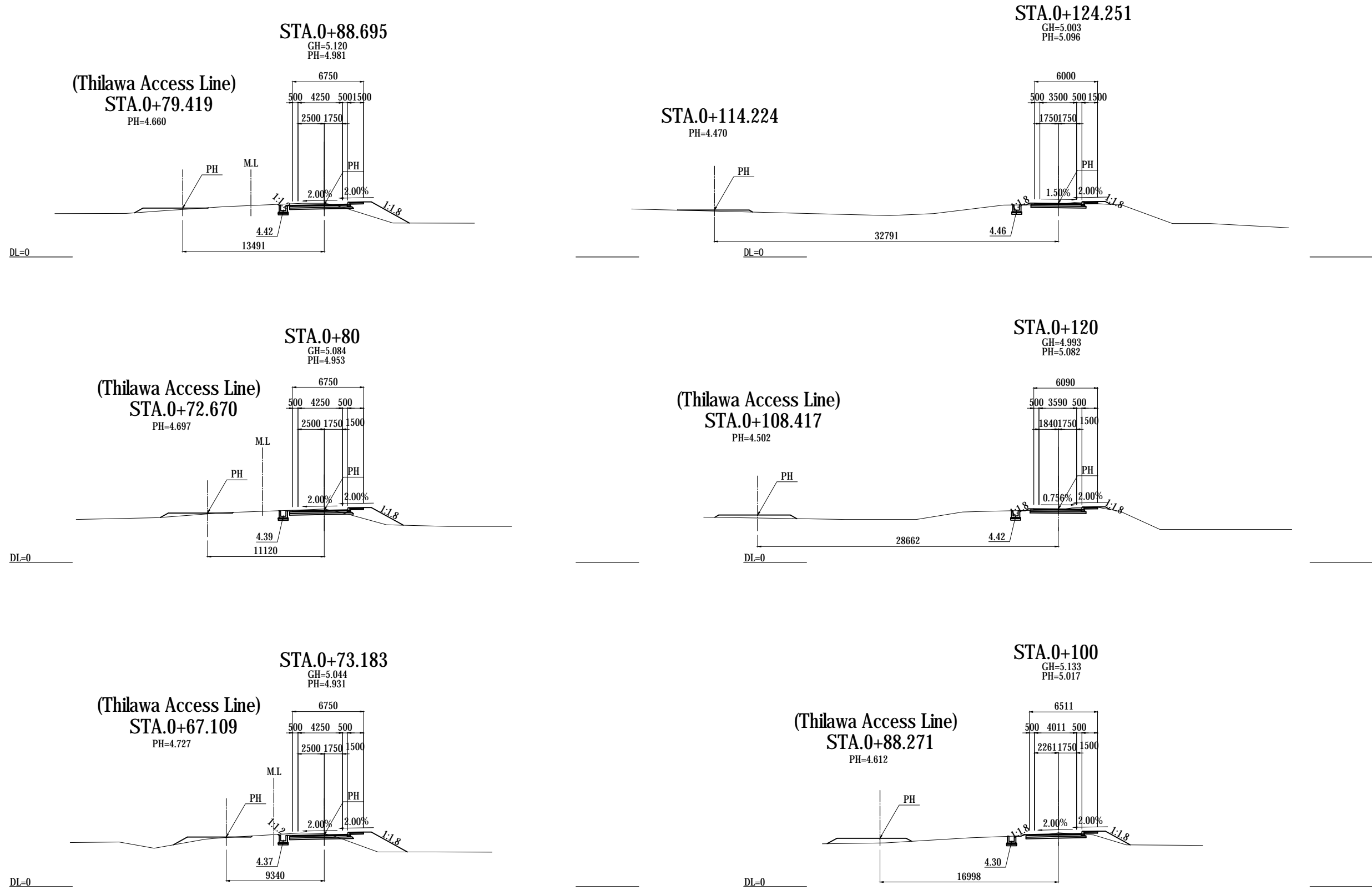
<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO.,LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.		<small>NAME</small> M. TOMITA T. HAYAKAWA Y. SANO	<small>SIGNATURE</small> 	<small>DATE</small> 27 NOV. 2017 28 NOV. 2017 29 NOV. 2017	<small>DRAWING TITLE</small> CROSS SECTION Thilawa Access Line(3)	<small>PACKAGE</small> 1 DWG No. P1-RD-2090
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CROSS SECTION Yangon Access Line (1) S=1:400



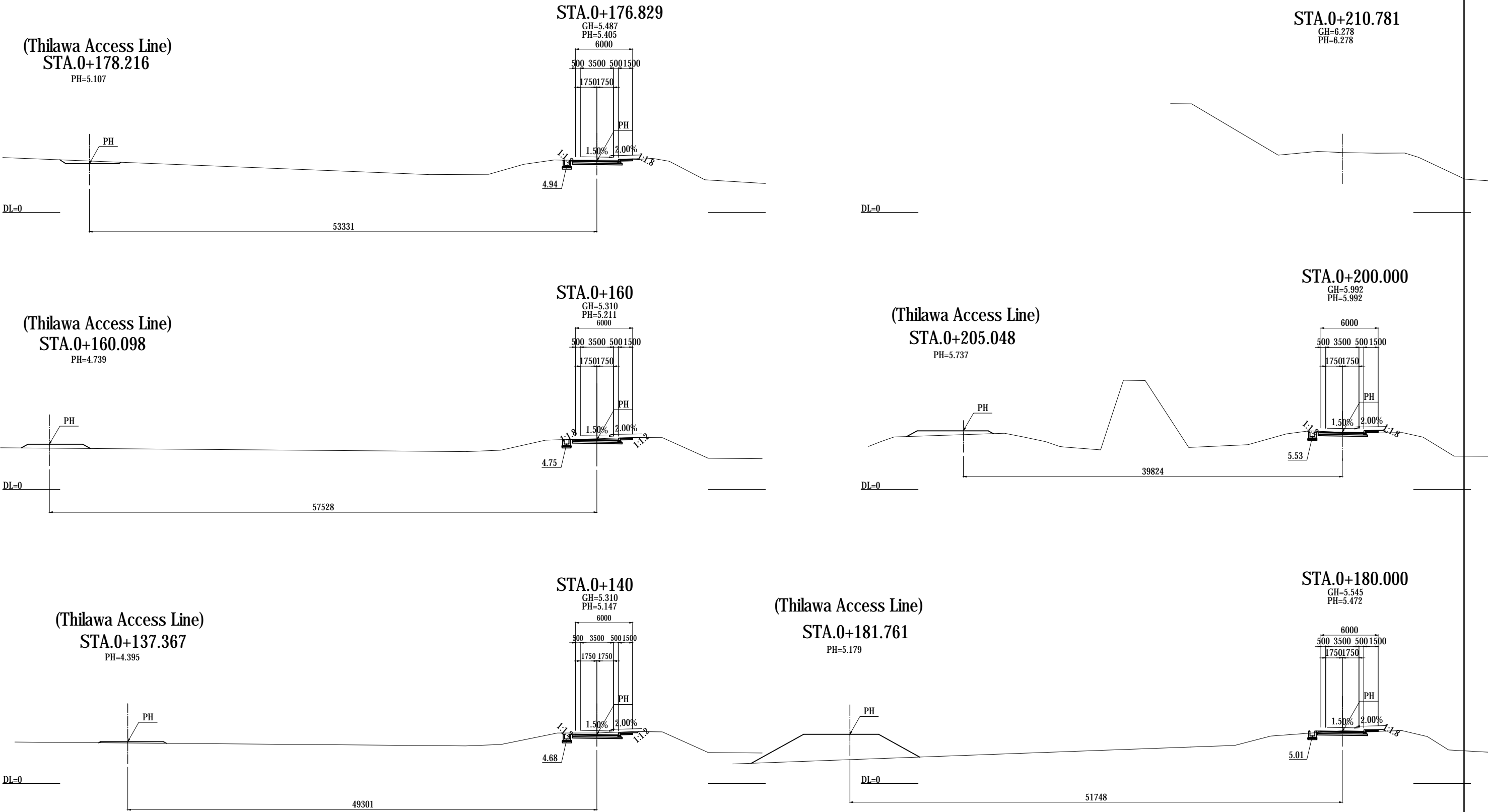
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	PREPARED BY M. TOMITA	SIGNATURE 	DATE 27 NOV. 2017	DRAWING TITLE CROSS SECTION Yangon Access Line (1)	PACKAGE 1 DWG No. PI-RD-2100
				CHECKED BY T. HAYAKAWA		28 NOV. 2017		
				APPROVED BY Y. SANO		29 NOV. 2017		

CROSS SECTION Yangon Access Line (2) S=1:400



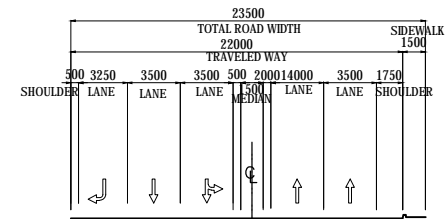
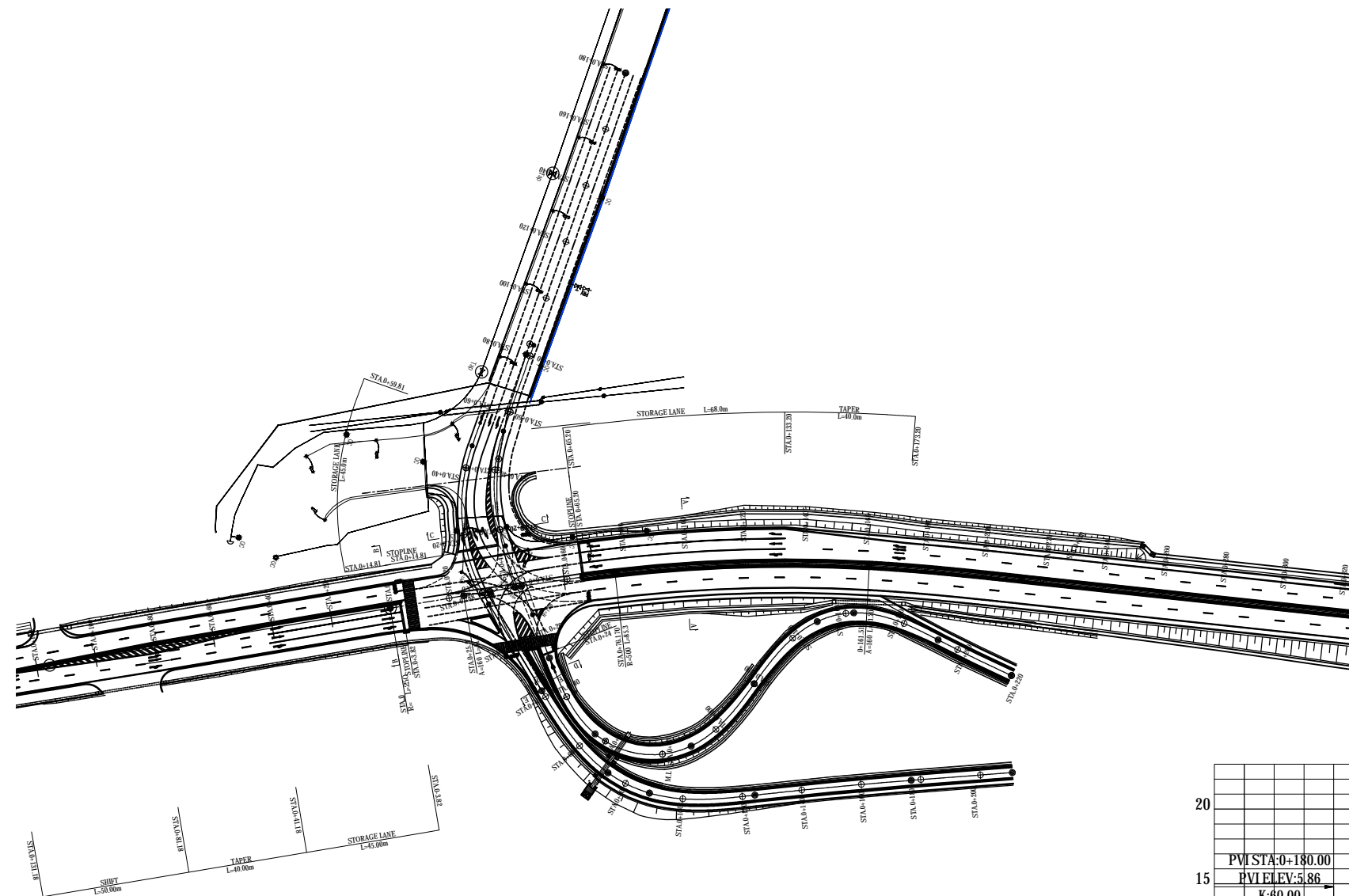
<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">NAME</th> <th style="width: 15%;">SIGNATURE</th> <th style="width: 15%;">DATE</th> </tr> <tr> <td>PREPARED BY</td> <td>M. TOMITA</td> <td>27 NOV. 2017</td> </tr> <tr> <td>CHECKED BY</td> <td>T. HAYAKAWA</td> <td>28 NOV. 2017</td> </tr> <tr> <td>APPROVED BY</td> <td>Y. SANO</td> <td>29 NOV. 2017</td> </tr> </table>	NAME	SIGNATURE	DATE	PREPARED BY	M. TOMITA	27 NOV. 2017	CHECKED BY	T. HAYAKAWA	28 NOV. 2017	APPROVED BY	Y. SANO	29 NOV. 2017	<small>DRAWING TITLE</small> CROSS SECTION Yangon Access Line (2)	<small>PACKAGE</small> 1 DWG No. P1-RD-2110
NAME	SIGNATURE	DATE																
PREPARED BY	M. TOMITA	27 NOV. 2017																
CHECKED BY	T. HAYAKAWA	28 NOV. 2017																
APPROVED BY	Y. SANO	29 NOV. 2017																

CROSS SECTION Yangon Access Line (3) S=1:400



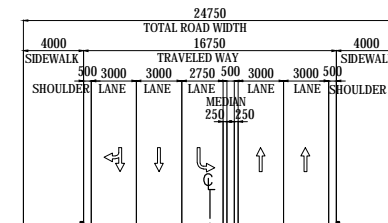
<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">NAME</th> <th style="text-align: left;">SIGNATURE</th> <th style="text-align: left;">DATE</th> </tr> <tr> <td>PREPARED BY M. TOMITA</td> <td></td> <td>27 NOV. 2017</td> </tr> <tr> <td>CHECKED BY T. HAYAKAWA</td> <td></td> <td>28 NOV. 2017</td> </tr> <tr> <td>APPROVED BY Y. SANO</td> <td></td> <td>29 NOV. 2017</td> </tr> </table>	NAME	SIGNATURE	DATE	PREPARED BY M. TOMITA		27 NOV. 2017	CHECKED BY T. HAYAKAWA		28 NOV. 2017	APPROVED BY Y. SANO		29 NOV. 2017	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">DRAWING TITLE</th> <th style="text-align: left;">PACKAGE</th> </tr> <tr> <td rowspan="3" style="text-align: center; vertical-align: middle;"> CROSS SECTION Yangon Access Line (3) </td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">DWG No.</td> </tr> <tr> <td style="text-align: center;">P1-RD-2120</td> </tr> </table>	DRAWING TITLE	PACKAGE	CROSS SECTION Yangon Access Line (3)	1	DWG No.	P1-RD-2120
NAME	SIGNATURE	DATE																					
PREPARED BY M. TOMITA		27 NOV. 2017																					
CHECKED BY T. HAYAKAWA		28 NOV. 2017																					
APPROVED BY Y. SANO		29 NOV. 2017																					
DRAWING TITLE	PACKAGE																						
CROSS SECTION Yangon Access Line (3)	1																						
	DWG No.																						
	P1-RD-2120																						

INTERSECTION PLAN , PLOFILE AND SECTION (STA.0+040) S=1:2000



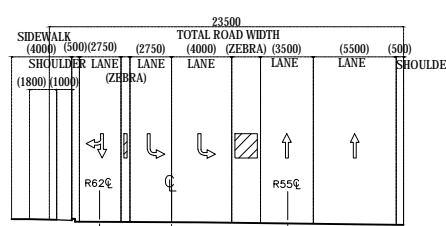
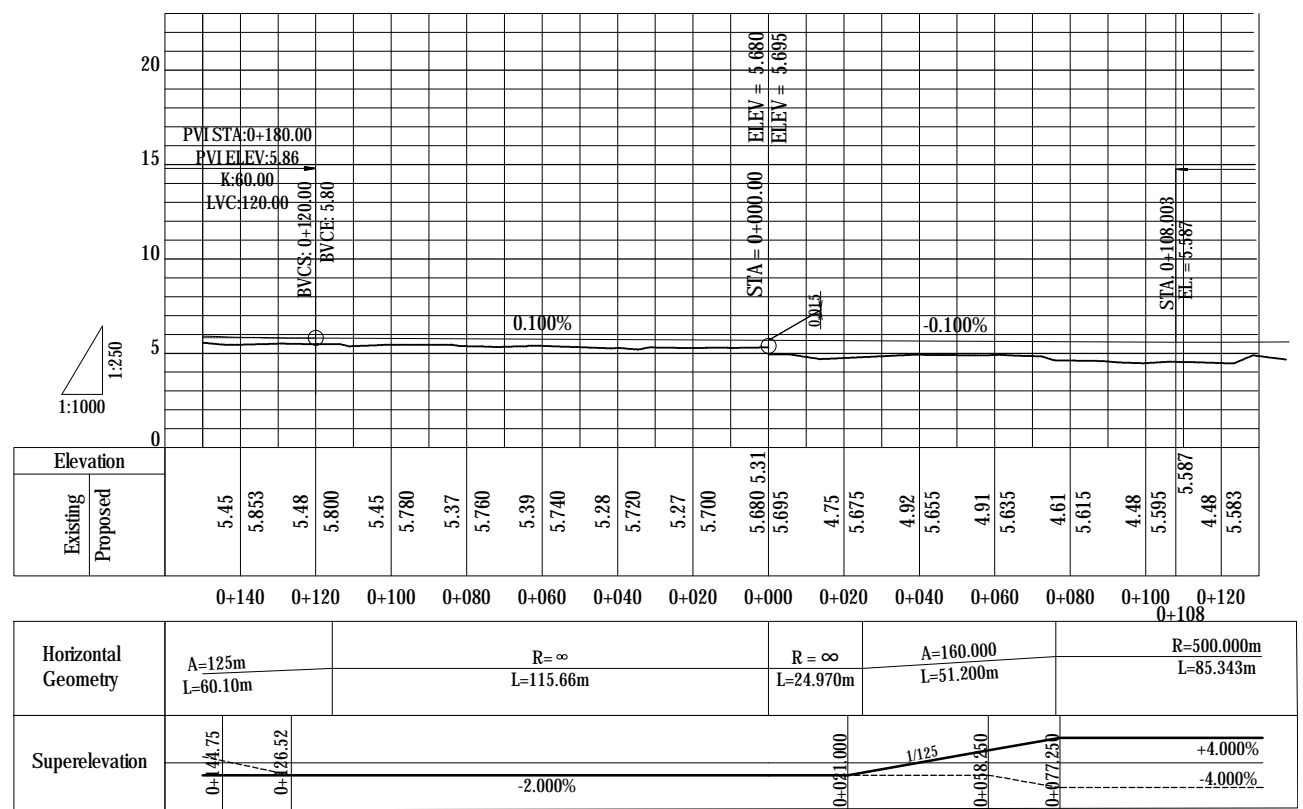
SECTION OF A-A

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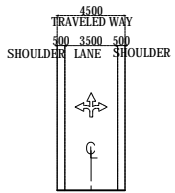


SECTION OF B-B

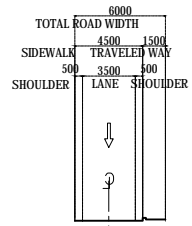
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C-C



D-D



E-E

SECTION OF SUBROAD

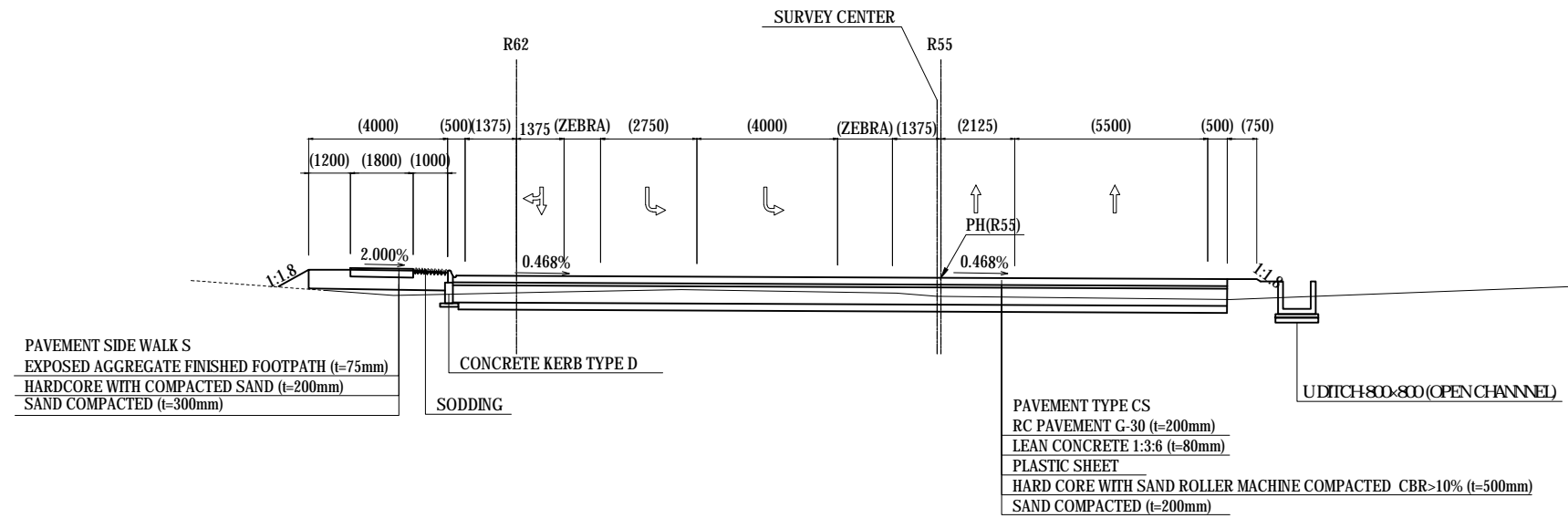
S=1:400

Elevation	Existing		Proposed	
	Existing	Proposed	Existing	Proposed
20				
15				
10				
5				
0				

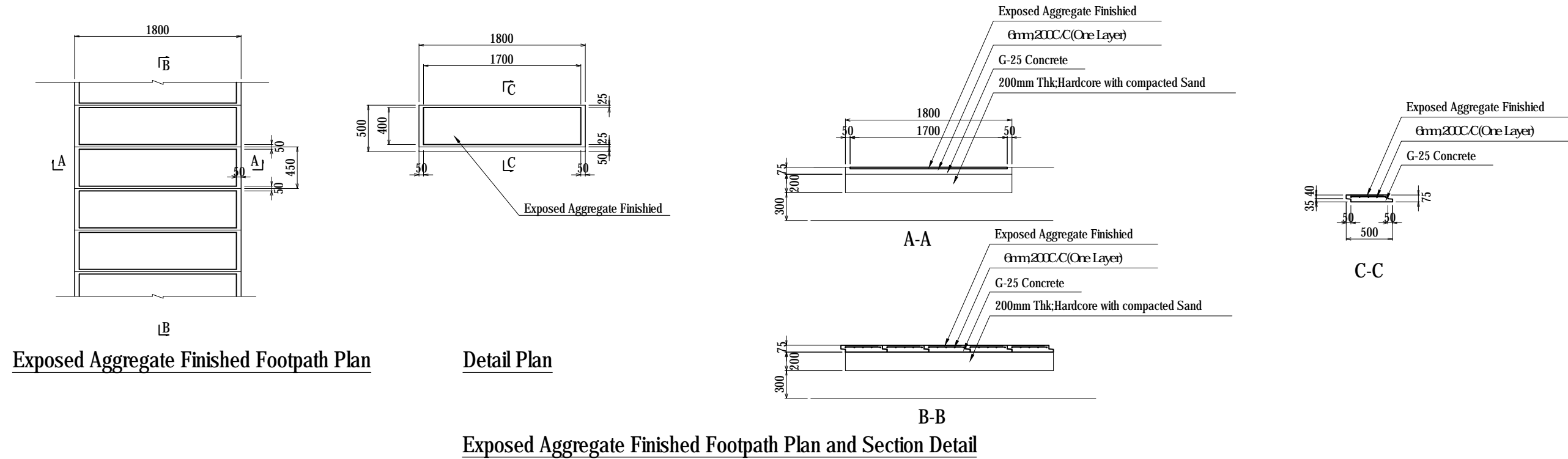
Station	Horizontal Geometry	Superelevation
0+140	A=125m, L=60.10m	+4.475%
0+120	R=∞, L=115.66m	+2.652%
0+100	R=∞, L=24.970m	-2.000%
0+080	A=160.000, L=51.200m	+1.125%
0+060	R=500.000m, L=85.343m	+4.000%
0+040		+4.000%
0+020		-4.000%
0+000		-4.000%
0+020		-4.000%
0+040		-4.000%
0+060		-4.000%
0+080		-4.000%
0+100		-4.000%
0+108.003		-4.000%
0+120		-4.000%

DETAIL OF CONCRETE PAVEMENT (1)

S=1:1000



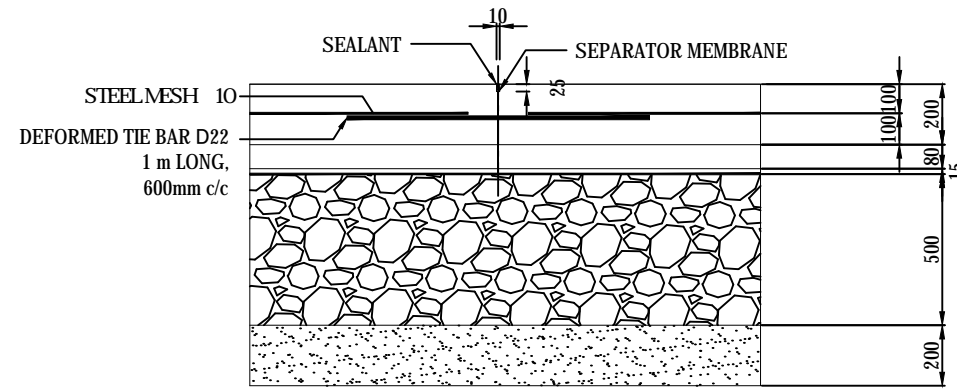
Connection Road Section



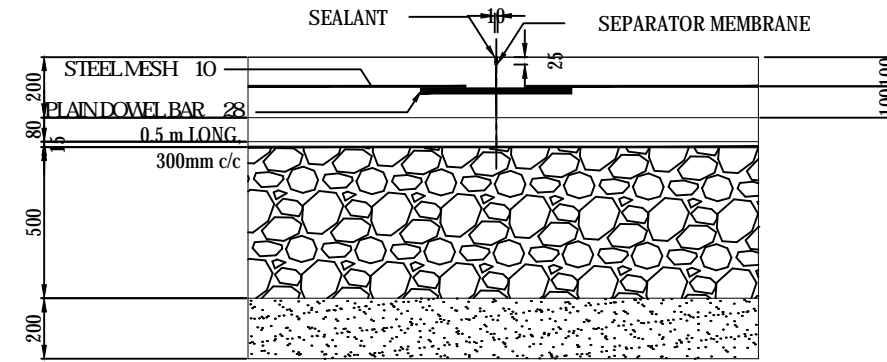
PROJECT NAME	FINANCED BY	COUNTERPART	JICA STUDY TEAM	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE
DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	JICA JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	M. TOMITA		27 NOV. 2017	DETAIL OF CONCRETE PAVEMENT (1)	1
				T. HAYAKAWA		28 NOV. 2017		DWG No.
				Y. SANO		29 NOV. 2017		P1-RD-2140

DETAIL OF CONCRETE PAVEMENT (2)

S=1:1000

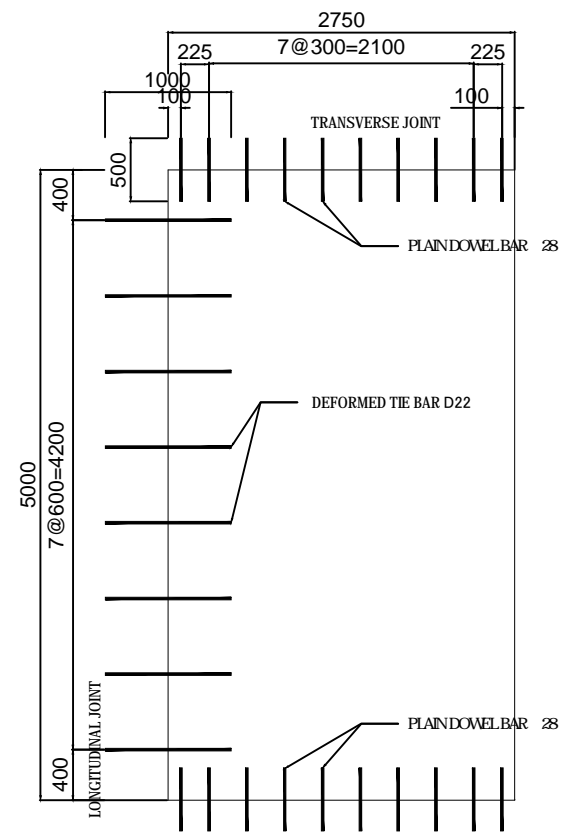


RC Pavement G-30 (t=200mm)
Lean Concrete 1:3:6 (t=80mm)
PLASTIC SHEET
Hard Core with Sand (t=500mm)
Sand Compacted (t=200mm)

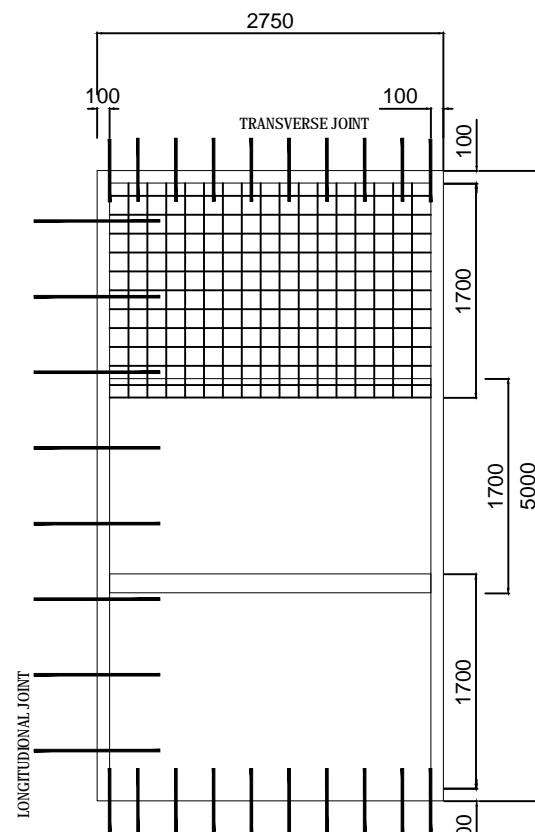


SECTION OF LONGITUDINAL JOINT S = 1:20

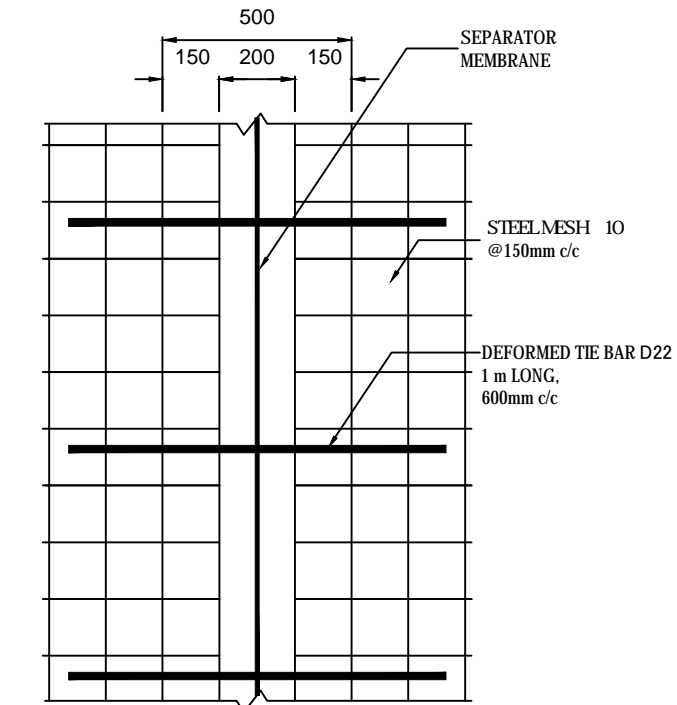
SECTION OF TRANSVERSE JOINT S = 1:20



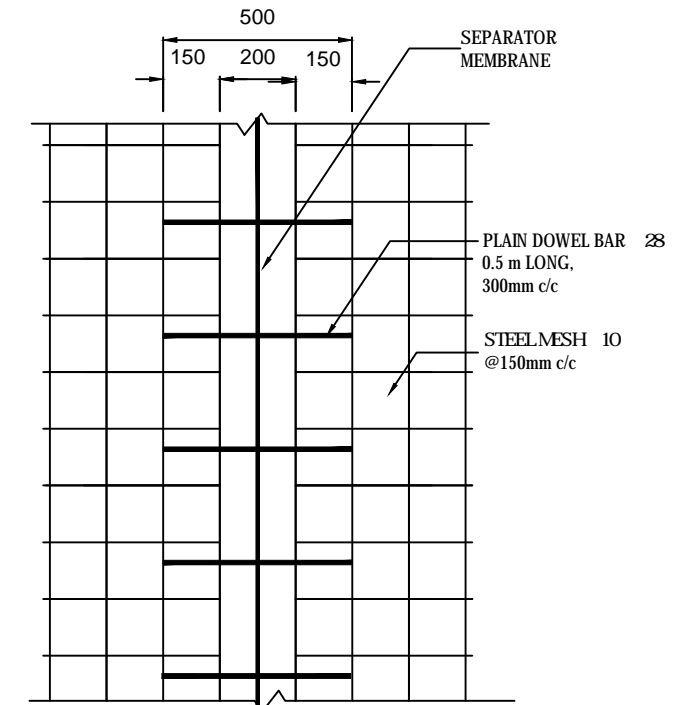
JOINT ARRANGEMENT S = 1:50



STEEL MESH ARRANGEMENT S = 1:50



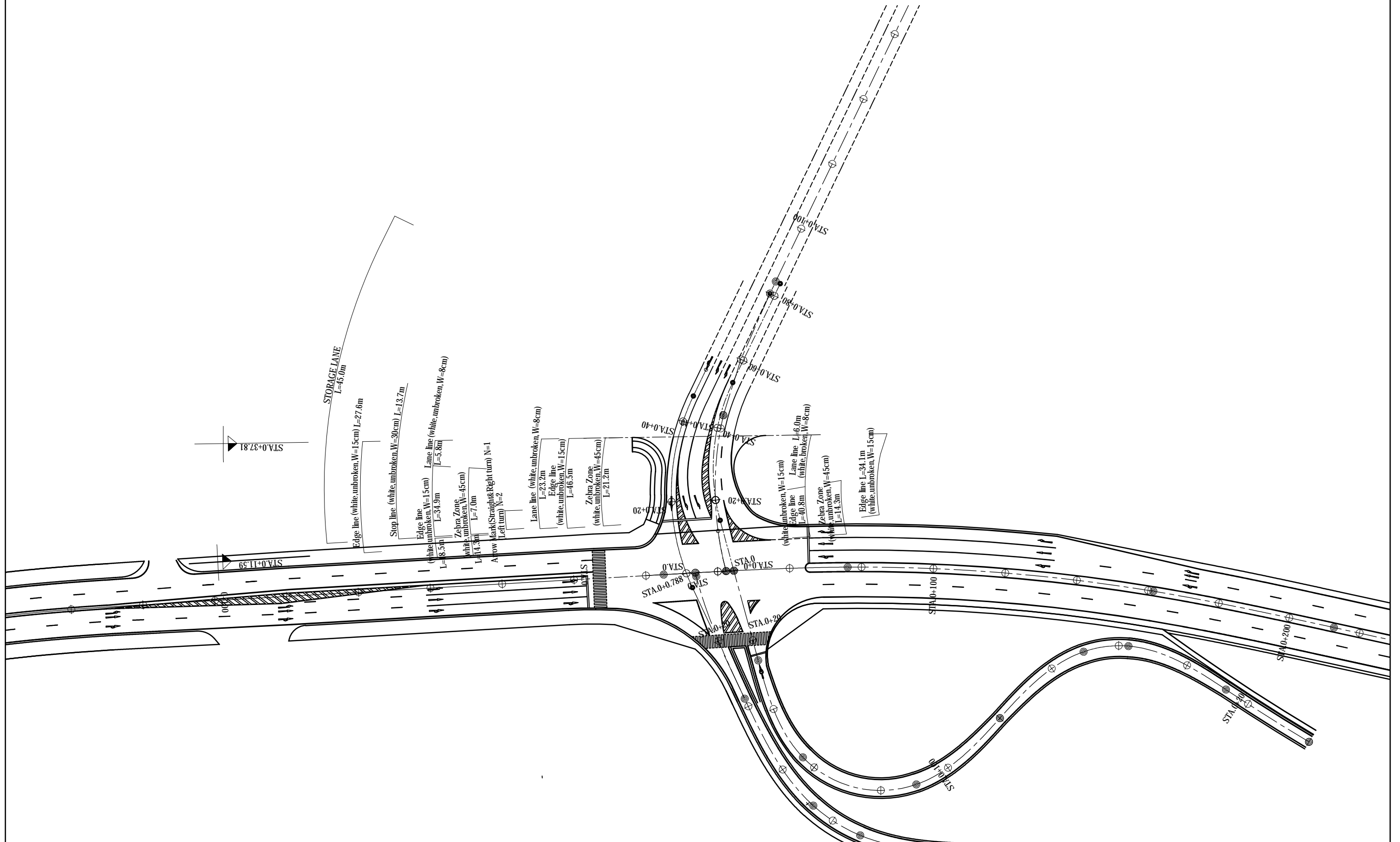
PLAN VIEW OF LONGITUDINAL JOINT S = 1:20



PLAN VIEW OF TRANSVERSE JOINT S = 1:20

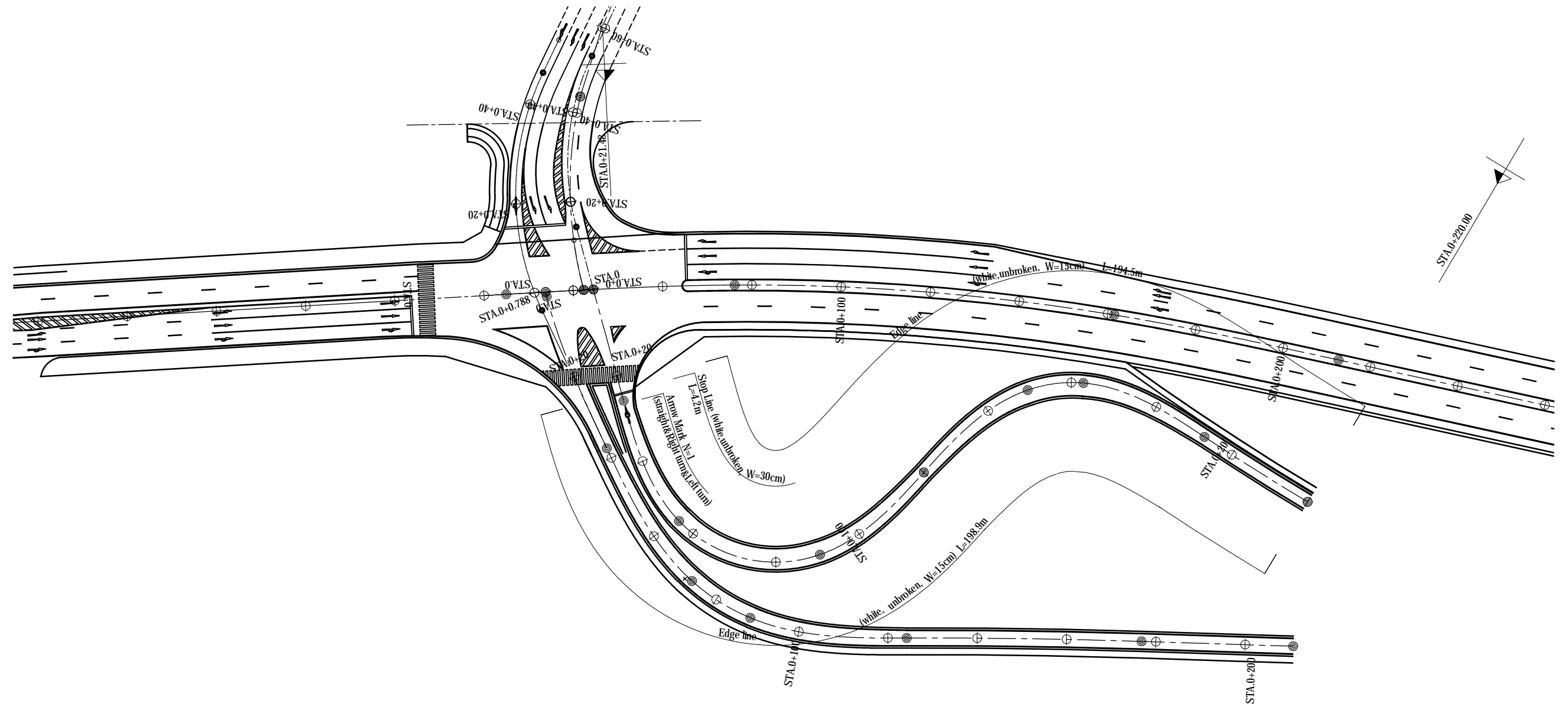
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE			
				PREPARED BY	M. TOMITA				27 NOV. 2017	DETAIL OF CONCRETE PAVEMENT (2)	1
				CHECKED BY	T. HAYAKAWA				28 NOV. 2017		DWG No.
				APPROVED BY	Y. SANO				29 NOV. 2017		P1-RD-2150

ROAD MARKINGS PLAN (1) Star City Access Line S=1:1000



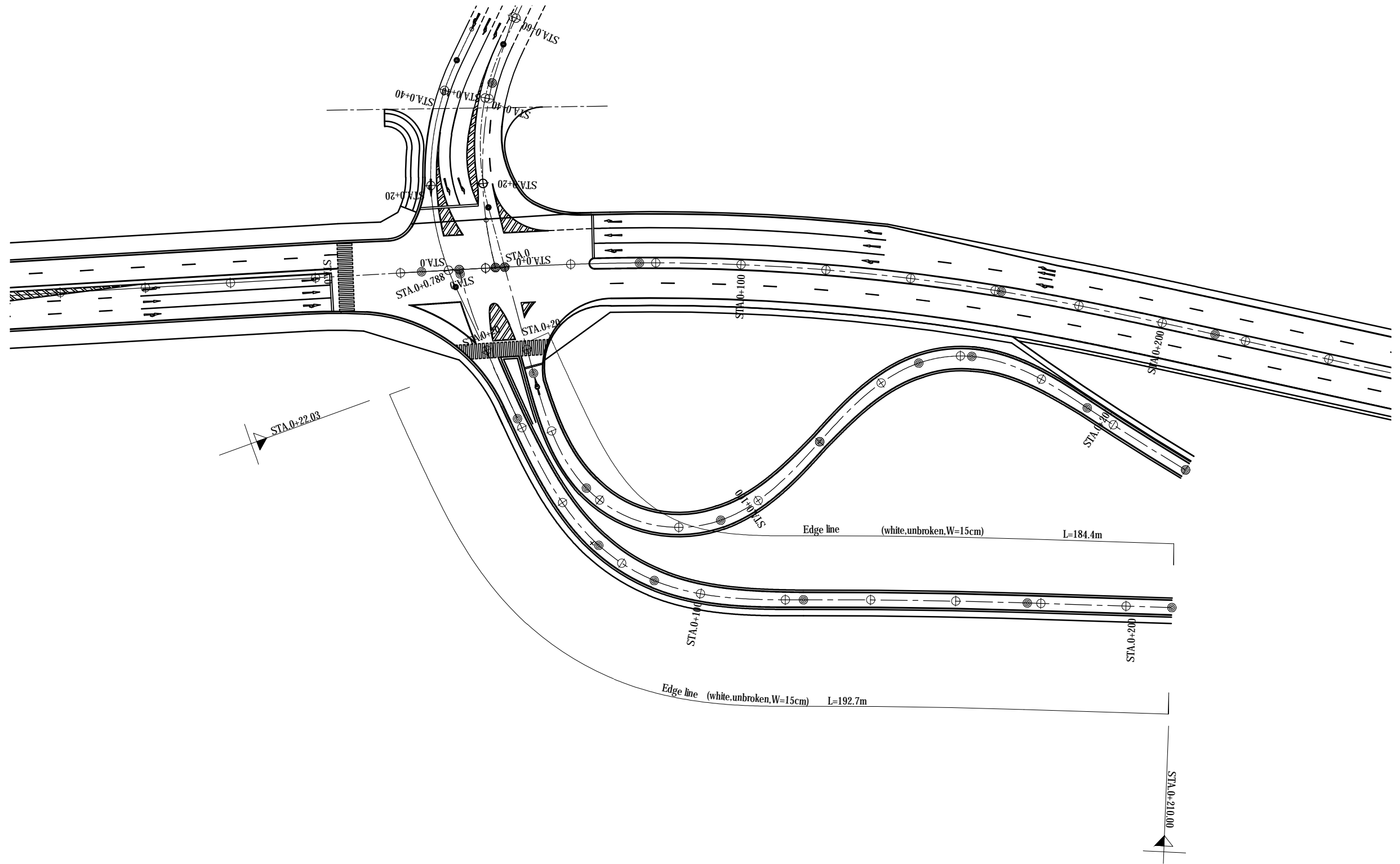
<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">NAME</th> <th style="text-align: left;">SIGNATURE</th> <th style="text-align: left;">DATE</th> </tr> <tr> <td>PREPARED BY M. TOMITA</td> <td></td> <td>27 NOV. 2017</td> </tr> <tr> <td>CHECKED BY T. HAYAKAWA</td> <td></td> <td>28 NOV. 2017</td> </tr> <tr> <td>APPROVED BY Y. SANO</td> <td></td> <td>29 NOV. 2017</td> </tr> </table>	NAME	SIGNATURE	DATE	PREPARED BY M. TOMITA		27 NOV. 2017	CHECKED BY T. HAYAKAWA		28 NOV. 2017	APPROVED BY Y. SANO		29 NOV. 2017	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">DRAWING TITLE</th> <th style="text-align: left;">PACKAGE</th> </tr> <tr> <td rowspan="3" style="text-align: center; vertical-align: middle;">ROAD MARKINGS PLAN (1) Star City Access Line</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">DWG No.</td> </tr> <tr> <td style="text-align: center;">P1-RD-2160</td> </tr> </table>	DRAWING TITLE	PACKAGE	ROAD MARKINGS PLAN (1) Star City Access Line	1	DWG No.	P1-RD-2160
NAME	SIGNATURE	DATE																					
PREPARED BY M. TOMITA		27 NOV. 2017																					
CHECKED BY T. HAYAKAWA		28 NOV. 2017																					
APPROVED BY Y. SANO		29 NOV. 2017																					
DRAWING TITLE	PACKAGE																						
ROAD MARKINGS PLAN (1) Star City Access Line	1																						
	DWG No.																						
	P1-RD-2160																						

ROAD MARKINGS PLAN (2) Thilawa Access Line S=1:1000



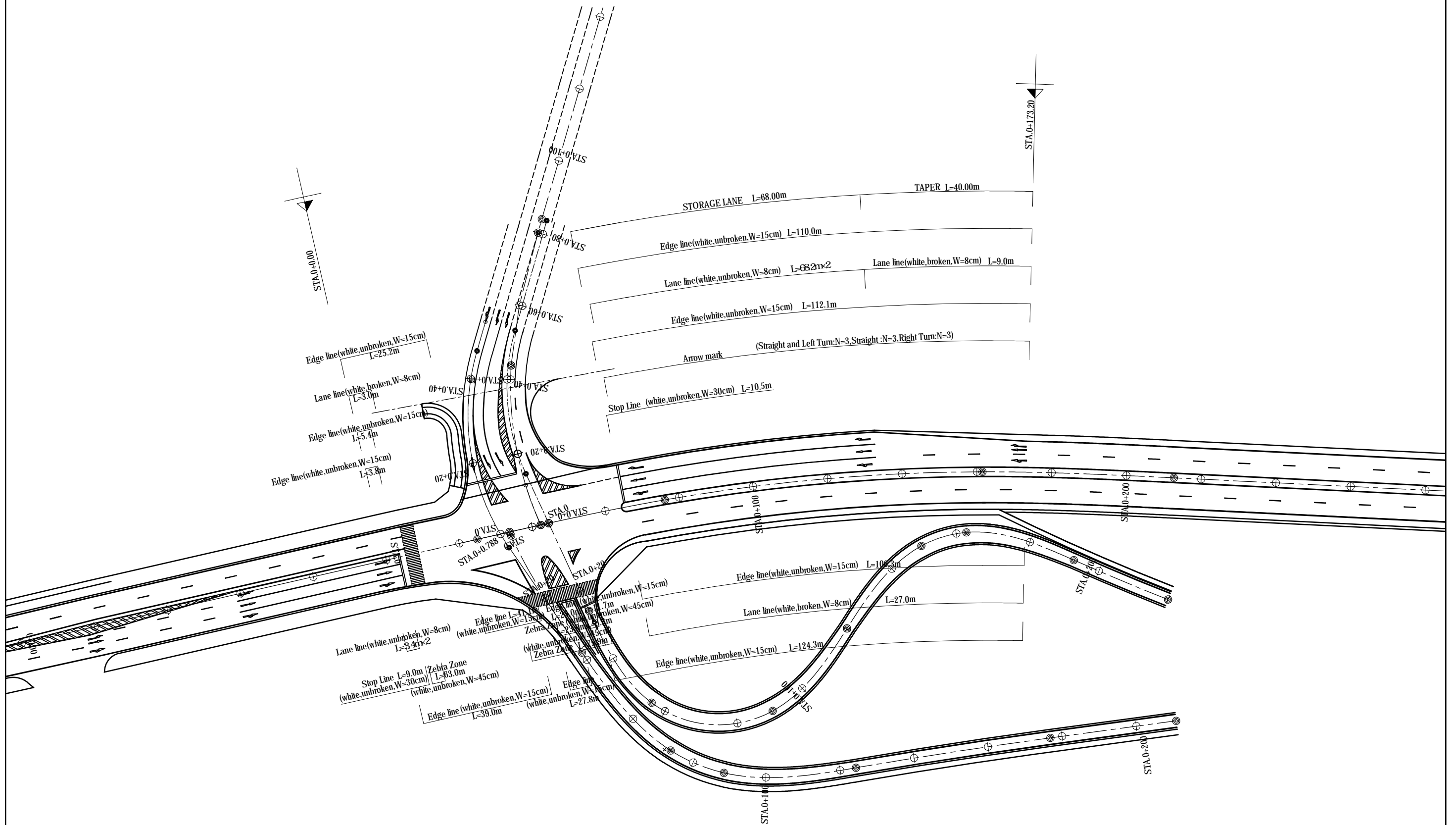
<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;"></th> <th style="width: 20%;">NAME</th> <th style="width: 20%;">SIGNATURE</th> <th style="width: 20%;">DATE</th> </tr> </thead> <tbody> <tr> <td>PREPARED BY</td> <td>M. TOMITA</td> <td></td> <td>27 NOV. 2017</td> </tr> <tr> <td>CHECKED BY</td> <td>T. HAYAKAWA</td> <td></td> <td>28 NOV. 2017</td> </tr> <tr> <td>APPROVED BY</td> <td>Y. SANO</td> <td></td> <td>29 NOV. 2017</td> </tr> </tbody> </table>		NAME	SIGNATURE	DATE	PREPARED BY	M. TOMITA		27 NOV. 2017	CHECKED BY	T. HAYAKAWA		28 NOV. 2017	APPROVED BY	Y. SANO		29 NOV. 2017	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 100%;">DRAWING TITLE</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">ROAD MARKINGS PLAN (2) Thilawa Access Line</td> </tr> </tbody> </table>	DRAWING TITLE	ROAD MARKINGS PLAN (2) Thilawa Access Line	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 100%;">PACKAGE</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">DWG No.</td> </tr> <tr> <td style="text-align: center;">P1-RD-2170</td> </tr> </tbody> </table>	PACKAGE	1	DWG No.	P1-RD-2170
	NAME	SIGNATURE	DATE																										
PREPARED BY	M. TOMITA		27 NOV. 2017																										
CHECKED BY	T. HAYAKAWA		28 NOV. 2017																										
APPROVED BY	Y. SANO		29 NOV. 2017																										
DRAWING TITLE																													
ROAD MARKINGS PLAN (2) Thilawa Access Line																													
PACKAGE																													
1																													
DWG No.																													
P1-RD-2170																													

ROAD MARKINGS PLAN (3) Yangon Access Line S=1:1000



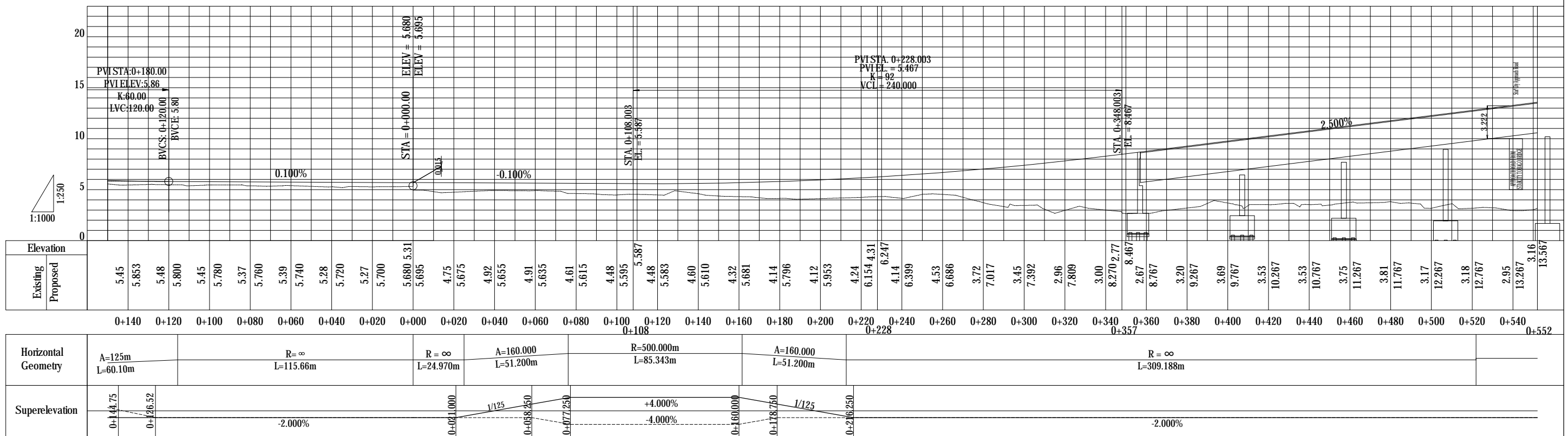
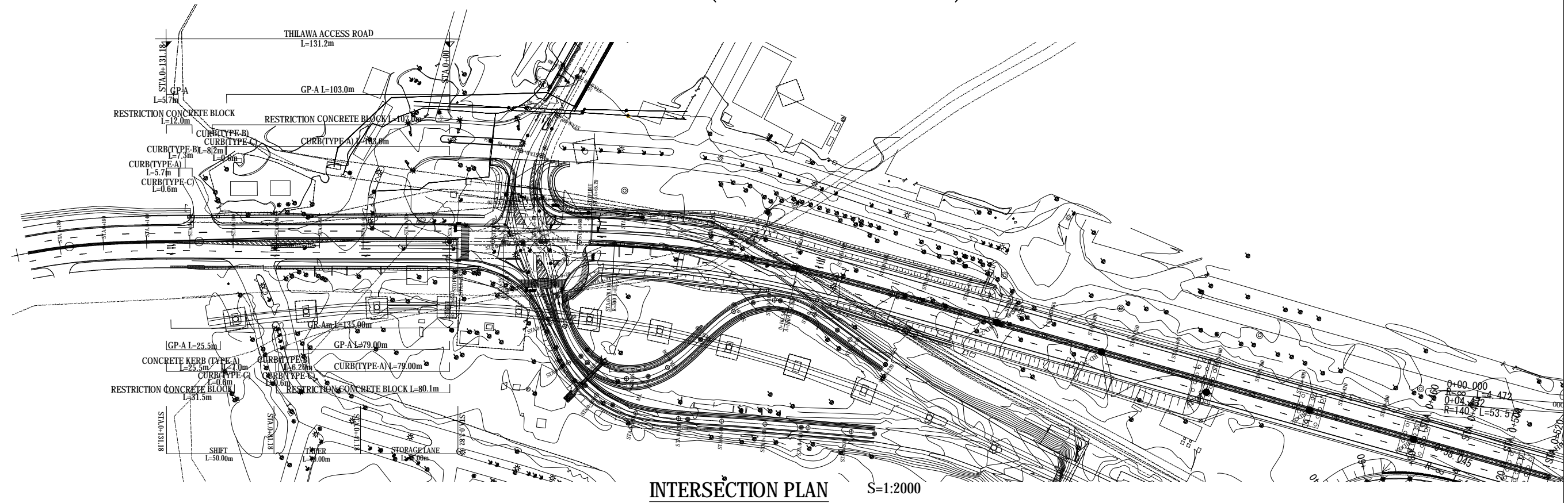
<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO.,LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 25%;">NAME</th> <th style="width: 25%;">SIGNATURE</th> <th style="width: 35%;">DATE</th> </tr> </thead> <tbody> <tr> <td>PREPARED BY</td> <td>M. TOMITA</td> <td></td> <td>27 NOV. 2017</td> </tr> <tr> <td>CHECKED BY</td> <td>T. HAYAKAWA</td> <td></td> <td>28 NOV. 2017</td> </tr> <tr> <td>APPROVED BY</td> <td>Y. SANO</td> <td></td> <td>29 NOV. 2017</td> </tr> </tbody> </table>		NAME	SIGNATURE	DATE	PREPARED BY	M. TOMITA		27 NOV. 2017	CHECKED BY	T. HAYAKAWA		28 NOV. 2017	APPROVED BY	Y. SANO		29 NOV. 2017	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">DRAWING TITLE</th> <th style="width: 40%;">PACKAGE</th> </tr> </thead> <tbody> <tr> <td rowspan="3" style="text-align: center; vertical-align: middle;">ROAD MARKINGS PLAN (3) Yangon Access Line</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">DWG No.</td> </tr> <tr> <td style="text-align: center;">P1-RD-2180</td> </tr> </tbody> </table>	DRAWING TITLE	PACKAGE	ROAD MARKINGS PLAN (3) Yangon Access Line	1	DWG No.	P1-RD-2180
	NAME	SIGNATURE	DATE																								
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CHECKED BY	T. HAYAKAWA		28 NOV. 2017																								
APPROVED BY	Y. SANO		29 NOV. 2017																								
DRAWING TITLE	PACKAGE																										
ROAD MARKINGS PLAN (3) Yangon Access Line	1																										
	DWG No.																										
	P1-RD-2180																										

ROAD MARKINGS PLAN Main Road S=1:1000



<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;"></th> <th style="width: 20%;">NAME</th> <th style="width: 20%;">SIGNATURE</th> <th style="width: 20%;">DATE</th> </tr> </thead> <tbody> <tr> <td>PREPARED BY</td> <td>M. TOMITA</td> <td></td> <td>27 NOV. 2017</td> </tr> <tr> <td>CHECKED BY</td> <td>T. HAYAKAWA</td> <td></td> <td>28 NOV. 2017</td> </tr> <tr> <td>APPROVED BY</td> <td>Y. SANO</td> <td></td> <td>29 NOV. 2017</td> </tr> </tbody> </table>		NAME	SIGNATURE	DATE	PREPARED BY	M. TOMITA		27 NOV. 2017	CHECKED BY	T. HAYAKAWA		28 NOV. 2017	APPROVED BY	Y. SANO		29 NOV. 2017	<small>DRAWING TITLE</small> ROAD MARKINGS PLAN (4) Main Road	<small>PACKAGE</small> 1 DWG No. P1-RD-2185
	NAME	SIGNATURE	DATE																			
PREPARED BY	M. TOMITA		27 NOV. 2017																			
CHECKED BY	T. HAYAKAWA		28 NOV. 2017																			
APPROVED BY	Y. SANO		29 NOV. 2017																			

PLAN & PROFILE (Thilawa Access Road)

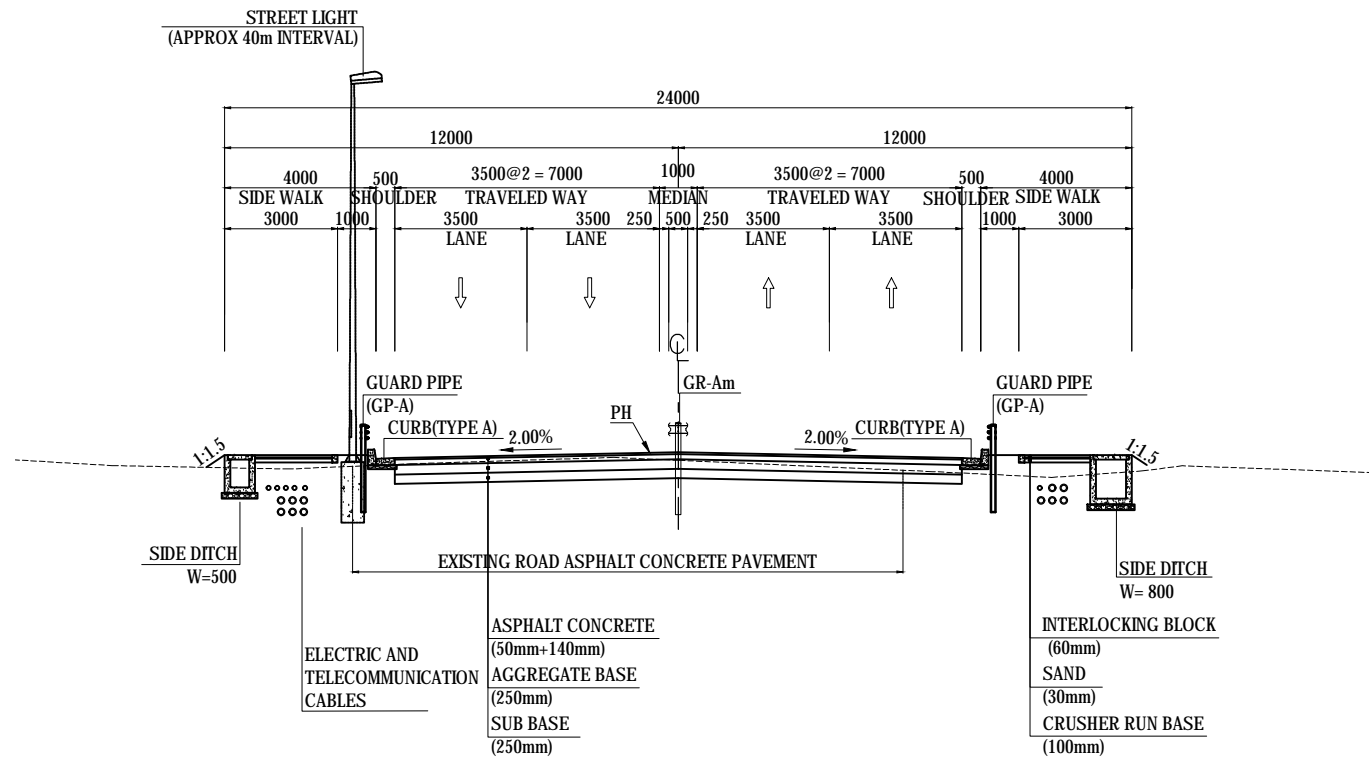


PROFILE OF SUBROAD

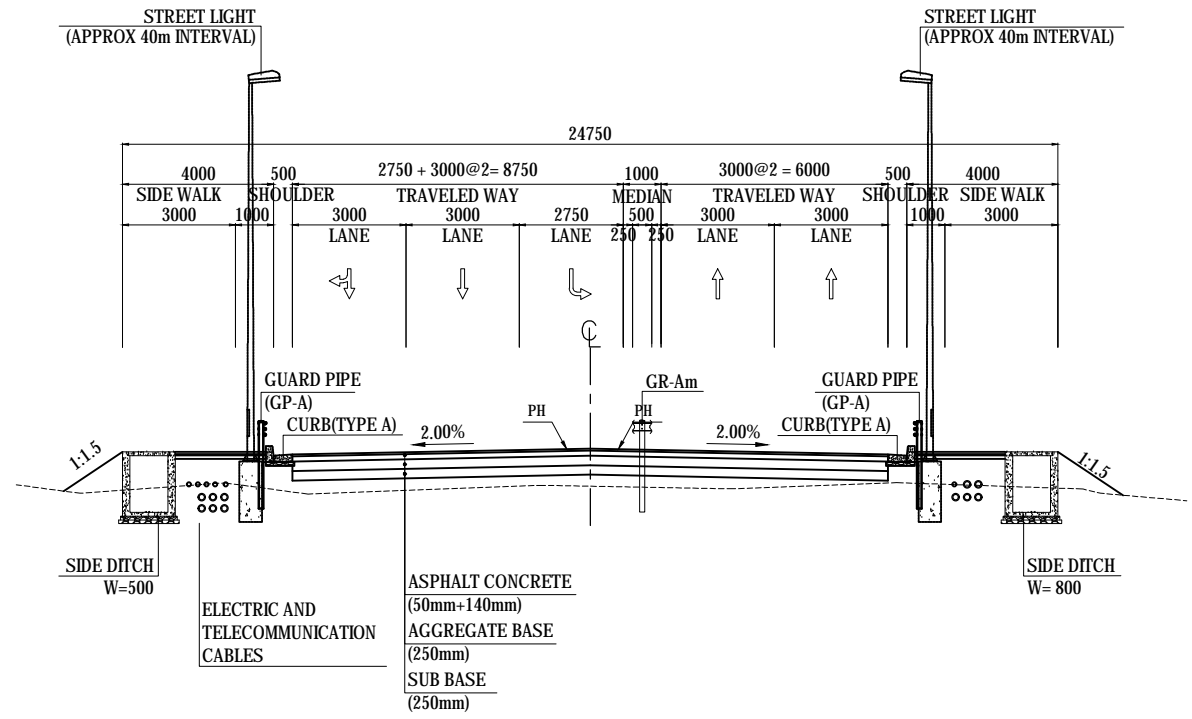
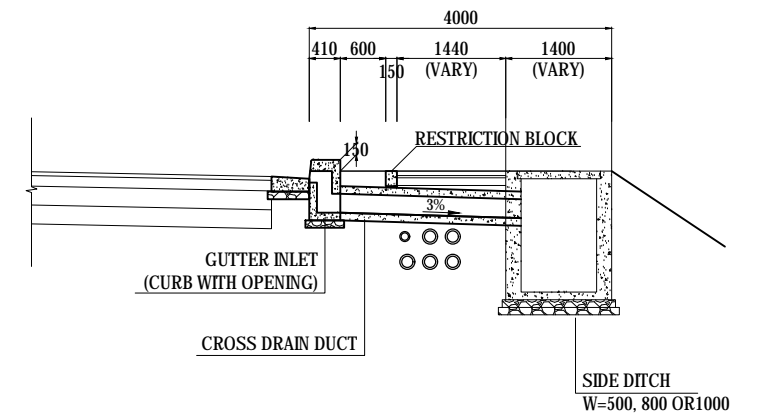
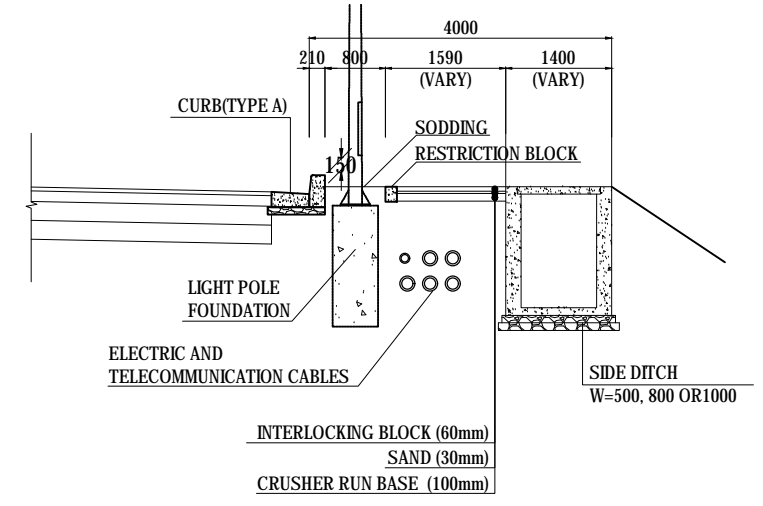
SCALE H=1:2000, V=1:400

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE	
				PREPARED BY	M. TOMITA				27 Nov. 2017
				CHECKED BY	T. HAYAKAWA				28 Nov. 2017
				APPROVED BY	Y. SANO				29 Nov. 2017
PLAN & PROFILE (Thilawa Access Road)							1	DWG No.	
								P1-RD-2190	

TYPICAL CROSS SECTION (Thilawa Access Road) S=1:200

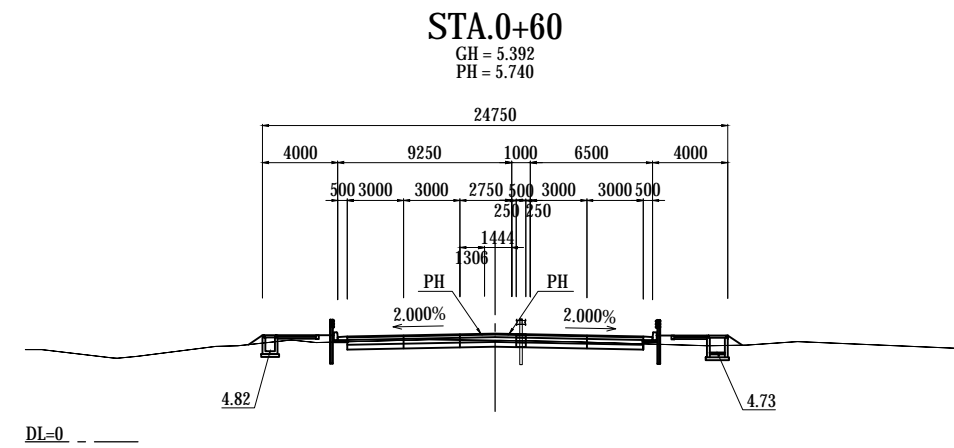
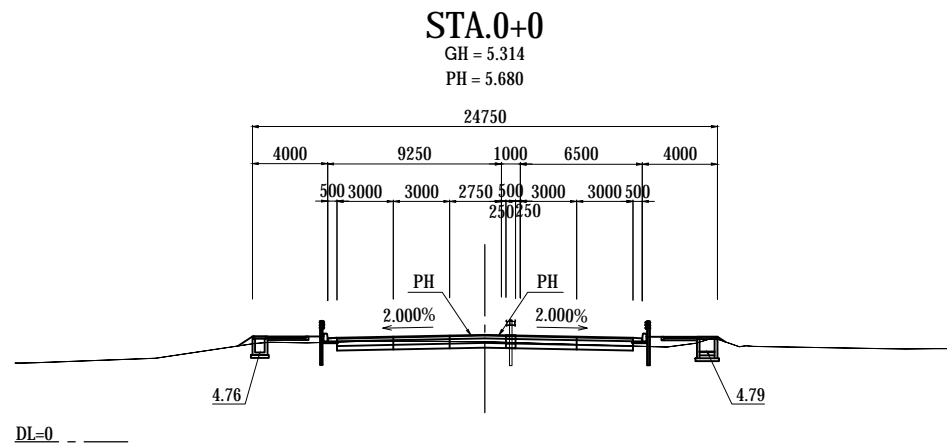
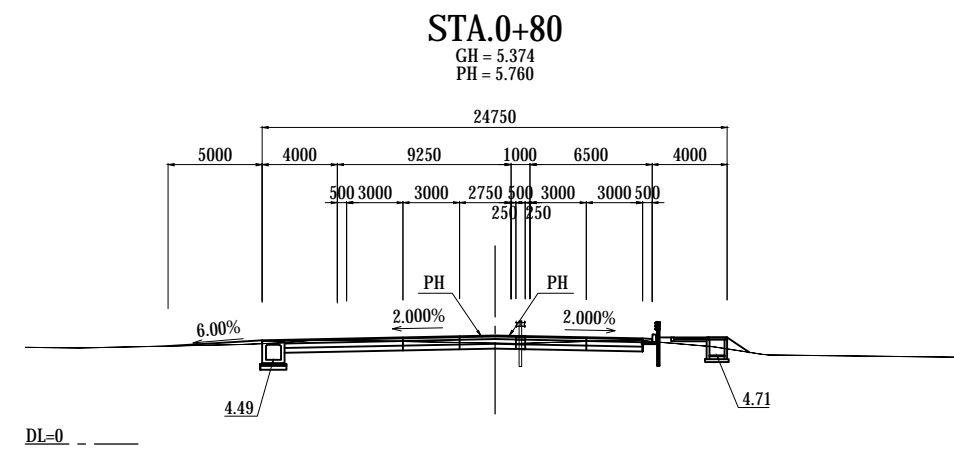
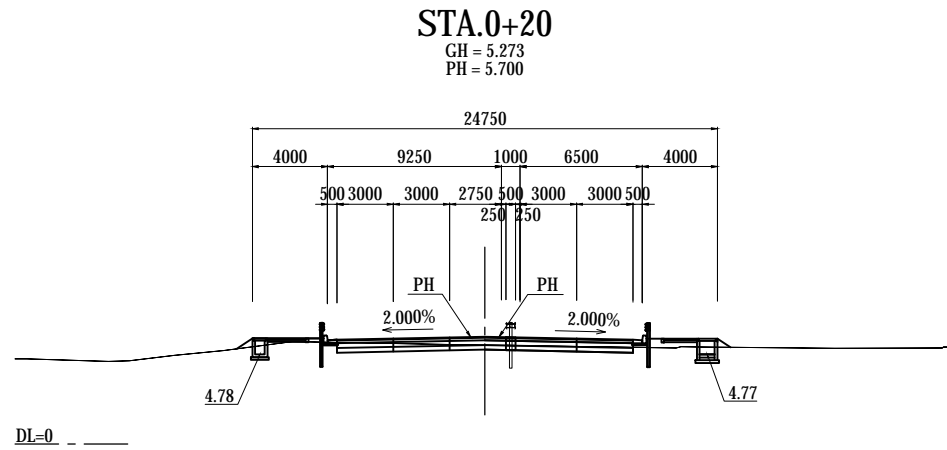
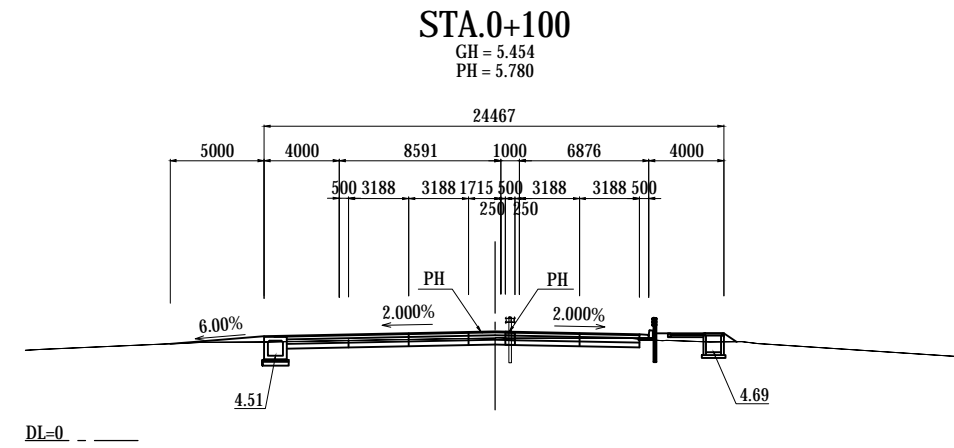
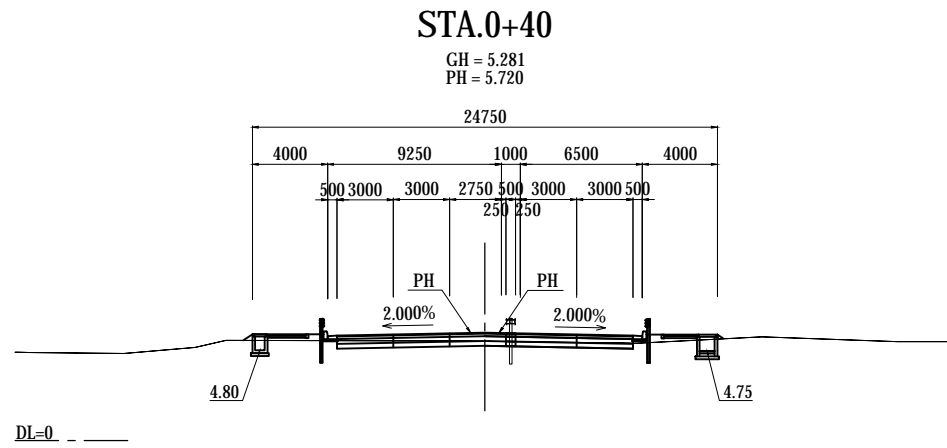


STANDARD SECTION
S = 1:200



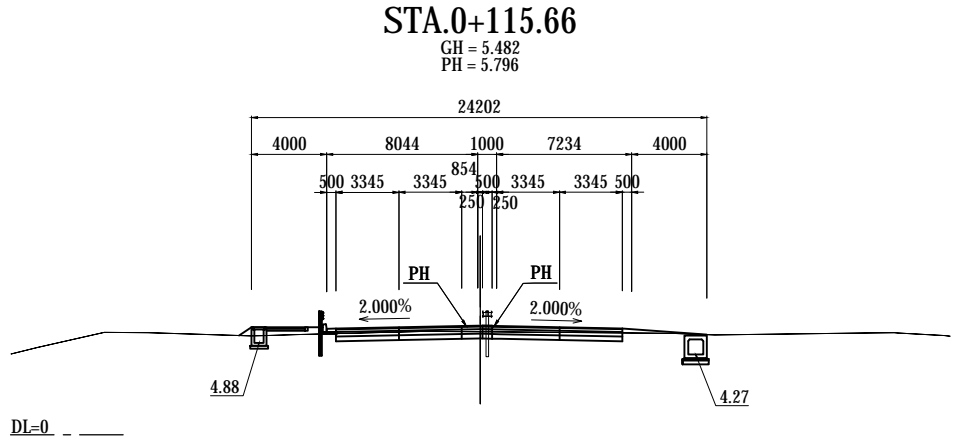
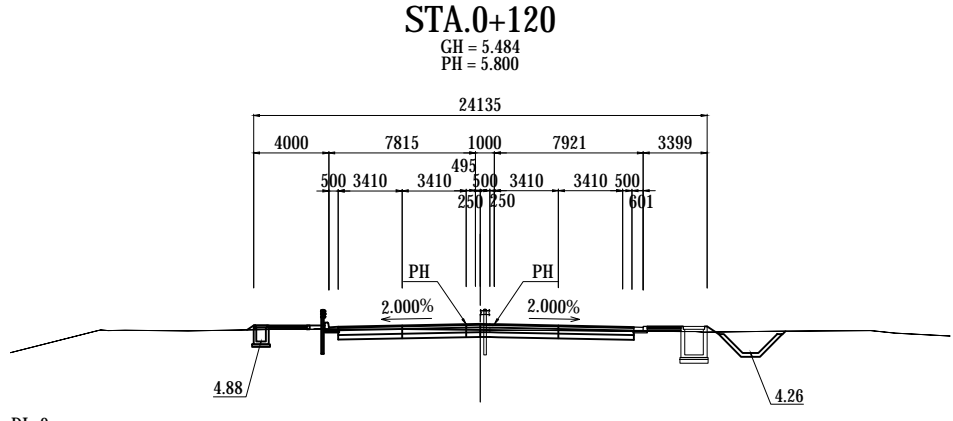
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JICA JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE TYPICAL CROSS SECTION (Thilawa Access Road)	PACKAGE 1 DWG No. P1-RD-2200
				PREPARED BY	M. TOMITA	27 Nov. 2017		
				CHECKED BY	T. HAYAKAWA	28 Nov. 2017		
				APPROVED BY	Y. SANO	29 Nov. 2017		

CROSS SECTION (1) (Thilawa Access Road) S=1:400



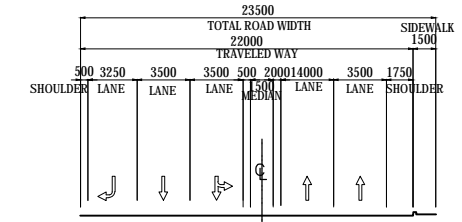
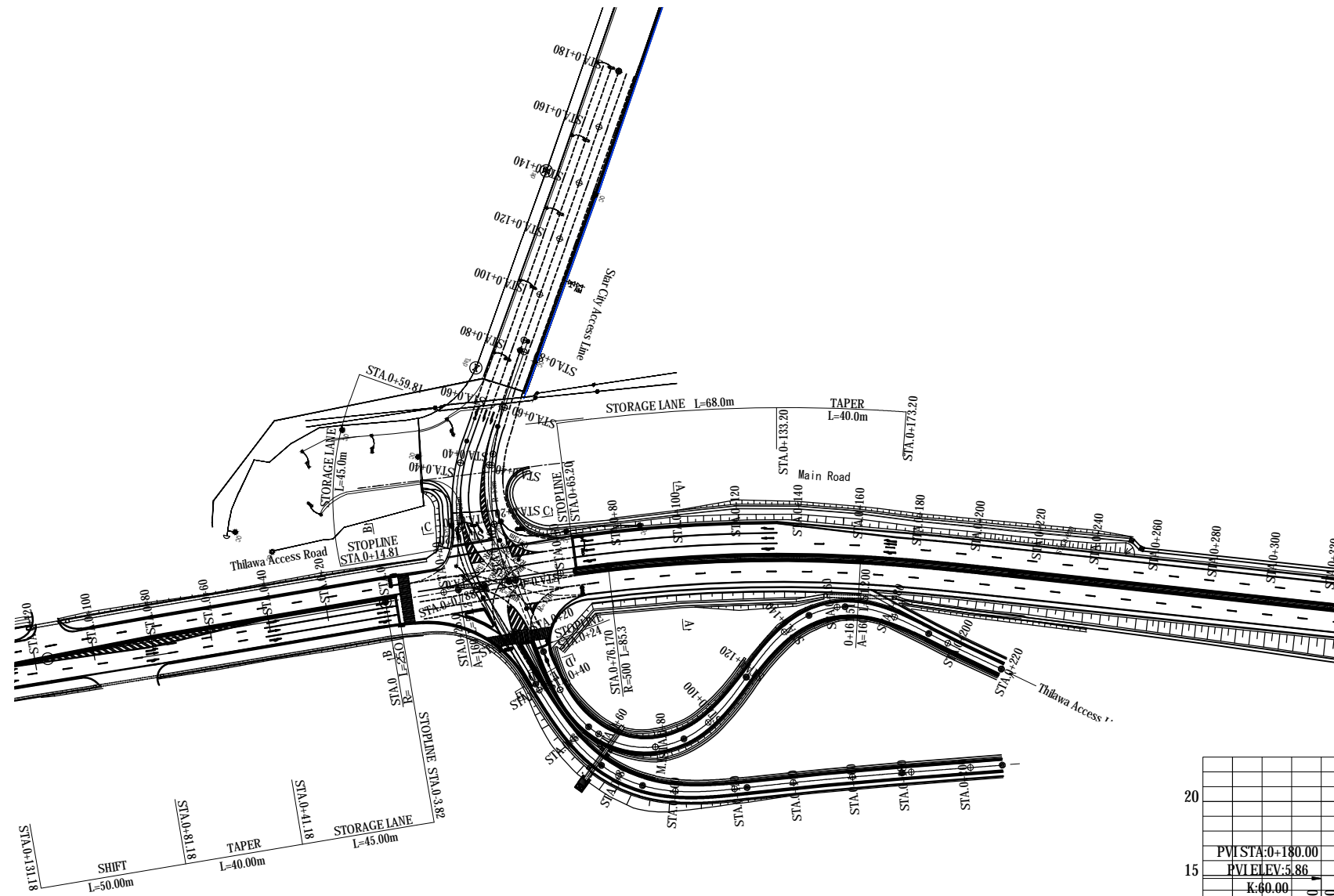
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE CROSS SECTION (1) (Thilawa Access Road)	PACKAGE	
				PREPARED BY	M. TOMITA			27 Nov. 2017	1
				CHECKED BY	T. HAYAKAWA			28 Nov. 2017	DWG No.
				APPROVED BY	Y. SANO			29 Nov. 2017	P1-RD-2210

CROSS SECTION (2) (Thilawa Access Road) S=1:400



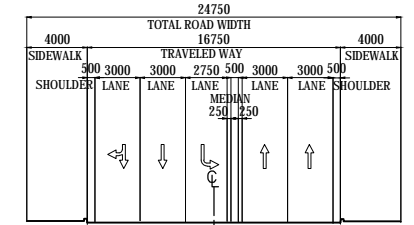
<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO.,LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 20%;">NAME</th> <th style="width: 20%;">SIGNATURE</th> <th style="width: 15%;">DATE</th> </tr> </thead> <tbody> <tr> <td>PREPARED BY</td> <td>M. TOMITA</td> <td></td> <td>27 Nov. 2017</td> </tr> <tr> <td>CHECKED BY</td> <td>T. HAYAKAWA</td> <td></td> <td>28 Nov. 2017</td> </tr> <tr> <td>APPROVED BY</td> <td>Y. SANO</td> <td></td> <td>29 Nov. 2017</td> </tr> </tbody> </table>		NAME	SIGNATURE	DATE	PREPARED BY	M. TOMITA		27 Nov. 2017	CHECKED BY	T. HAYAKAWA		28 Nov. 2017	APPROVED BY	Y. SANO		29 Nov. 2017	<small>DRAWING TITLE</small> CROSS SECTION (2) (Thilawa Access Road)	<small>PACKAGE</small> 1 DWG No. P1-RD-2220
	NAME	SIGNATURE	DATE																				
PREPARED BY	M. TOMITA		27 Nov. 2017																				
CHECKED BY	T. HAYAKAWA		28 Nov. 2017																				
APPROVED BY	Y. SANO		29 Nov. 2017																				

INTERSECTION PLAN , PROFILE AND SECTION (Thilawa Access Road ,Main Road) S=1:2000



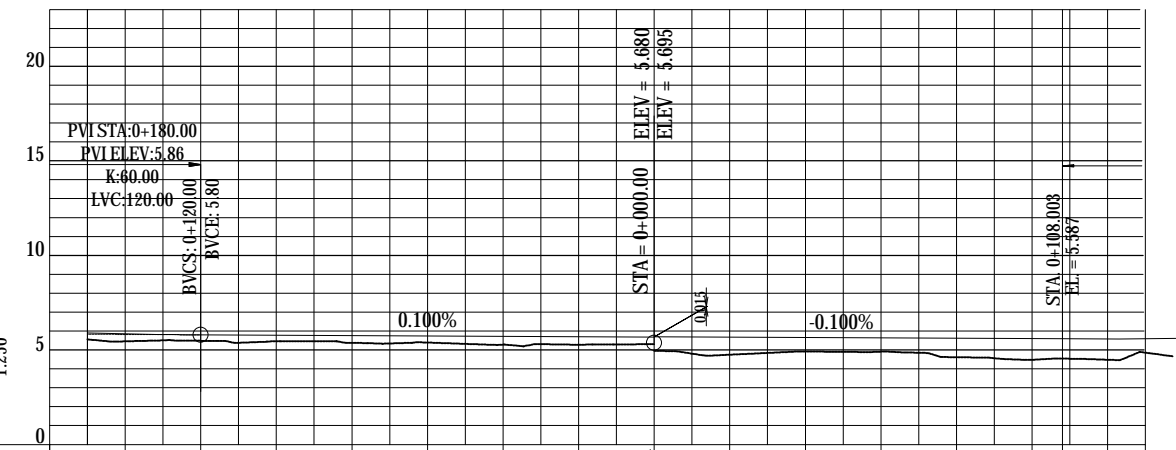
SECTION OF A-A

S=1:400

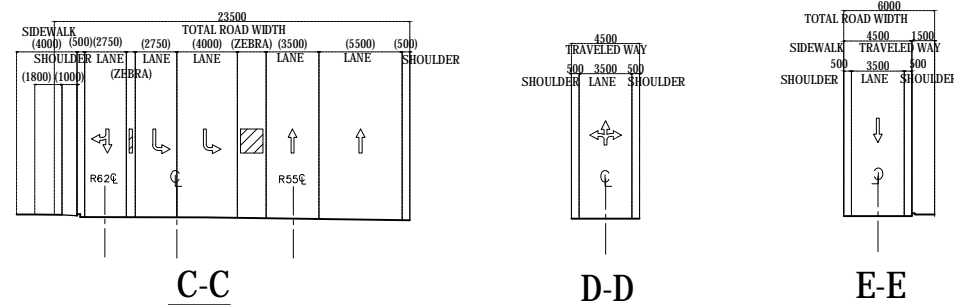


SECTION OF B-B

S=1:400



Elevation															
Existing	Proposed	0+140	0+120	0+100	0+080	0+060	0+040	0+020	0+000	0+020	0+040	0+060	0+080	0+100	0+120
5.45	5.853								5.680	5.685					
	5.48								5.685	4.75	5.675	4.92	5.655	4.91	5.635
	5.800								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	5.45								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	5.780								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	5.37								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	5.760								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	5.39								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	5.740								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	5.28								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	5.720								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	5.27								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	5.700								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	5.680								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	5.685								5.31	4.75	5.675	4.92	5.655	4.91	5.635
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	5.675								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	4.92								5.31	4.75	5.675	4.92	5.655	4.91	5.635
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	4.61								5.31	4.75	5.675	4.92	5.655	4.91	5.635
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	4.48								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	5.595								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	4.48								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	5.587								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	4.48								5.31	4.75	5.675	4.92	5.655	4.91	5.635
	5.583								5.31	4.75	5.675	4.92	5.655	4.91	5.635

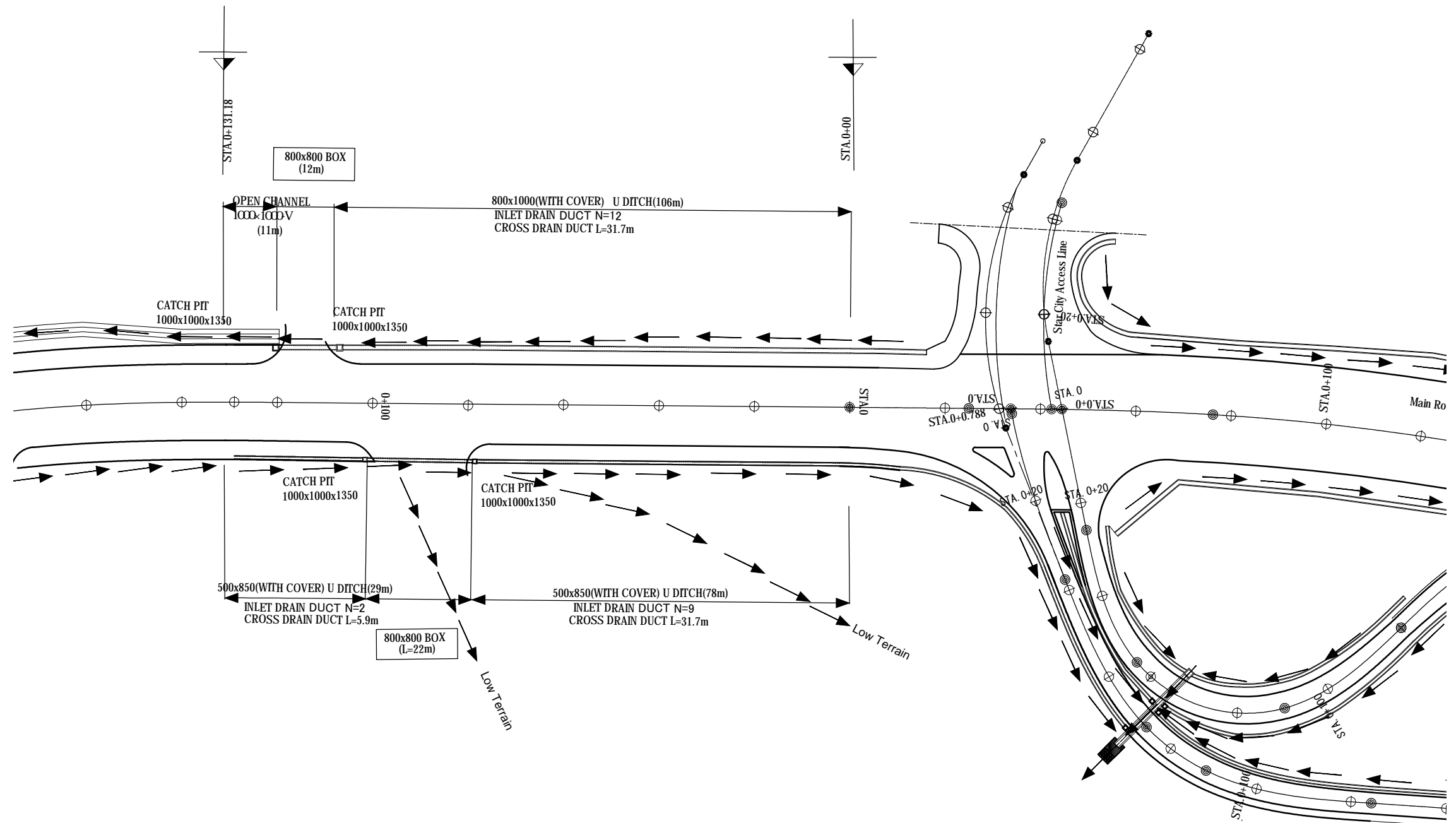


SECTION OF SUBROAD

S=1:400

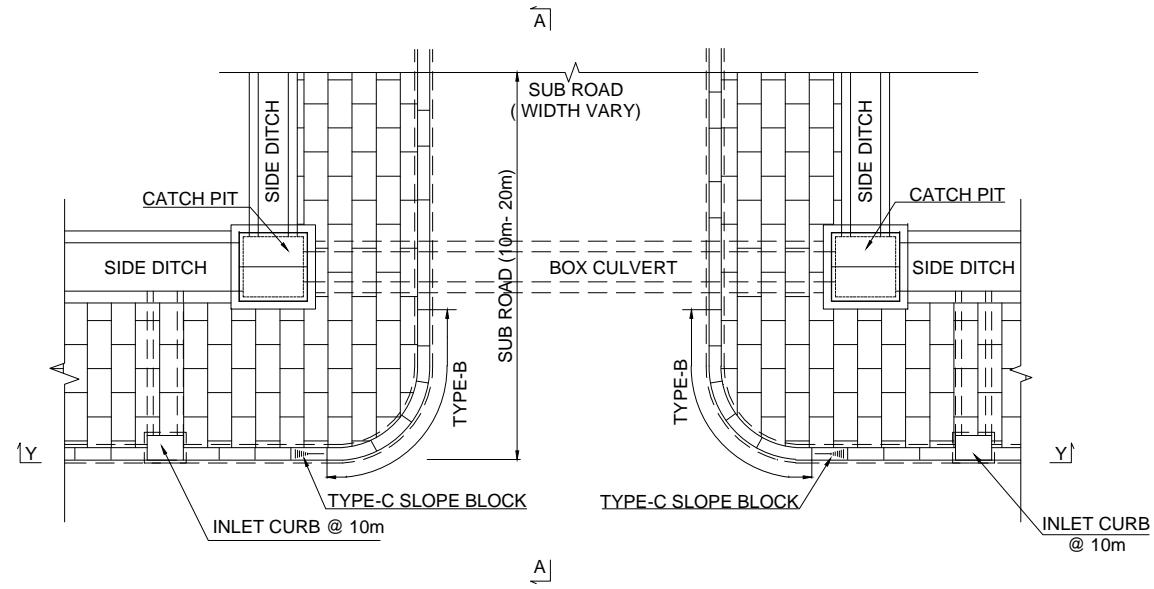
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME M. TOMITA T. HAYAKAWA Y. SANO	SIGNATURE 	DATE 27 Nov. 2017 28 Nov. 2017 29 Nov. 2017	DRAWING TITLE INTERSECTION PLAN , PROFILE AND SECTION (Thilawa Access Road ,Main Road)	PACKAGE 1 DWG No. P1-RD-2230
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DRAINAGE SYSTEM PLAN (Thilawa Access Road) S=1:1000

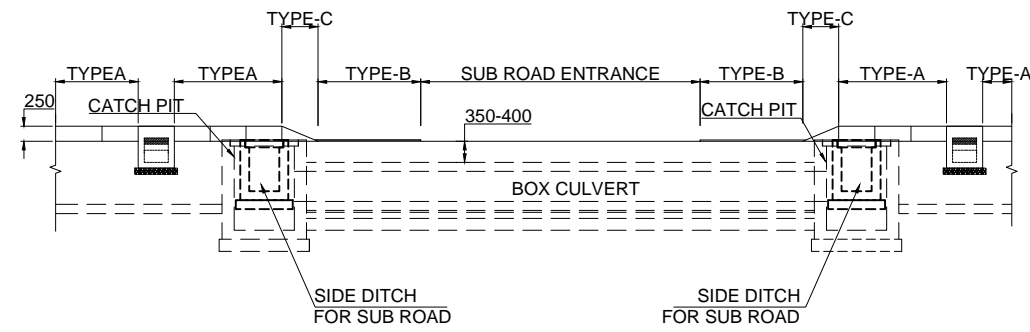


<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">NAME</th> <th style="width: 15%;">SIGNATURE</th> <th style="width: 15%;">DATE</th> </tr> <tr> <td>PREPARED BY M. TOMITA</td> <td></td> <td>27 Nov. 2017</td> </tr> <tr> <td>CHECKED BY T. HAYAKAWA</td> <td></td> <td>28 Nov. 2017</td> </tr> <tr> <td>APPROVED BY Y. SANO</td> <td></td> <td>29 Nov. 2017</td> </tr> </table>	NAME	SIGNATURE	DATE	PREPARED BY M. TOMITA		27 Nov. 2017	CHECKED BY T. HAYAKAWA		28 Nov. 2017	APPROVED BY Y. SANO		29 Nov. 2017	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 100%;">DRAWING TITLE</th> </tr> <tr> <td style="text-align: center;">DRAINAGE SYSTEM PLAN(Thilawa Access Road)</td> </tr> </table>	DRAWING TITLE	DRAINAGE SYSTEM PLAN(Thilawa Access Road)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 100%;">PACKAGE</th> </tr> <tr> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">DWG No.</td> </tr> <tr> <td style="text-align: center;">P1-RD-2240</td> </tr> </table>	PACKAGE	1	DWG No.	P1-RD-2240
NAME	SIGNATURE	DATE																						
PREPARED BY M. TOMITA		27 Nov. 2017																						
CHECKED BY T. HAYAKAWA		28 Nov. 2017																						
APPROVED BY Y. SANO		29 Nov. 2017																						
DRAWING TITLE																								
DRAINAGE SYSTEM PLAN(Thilawa Access Road)																								
PACKAGE																								
1																								
DWG No.																								
P1-RD-2240																								

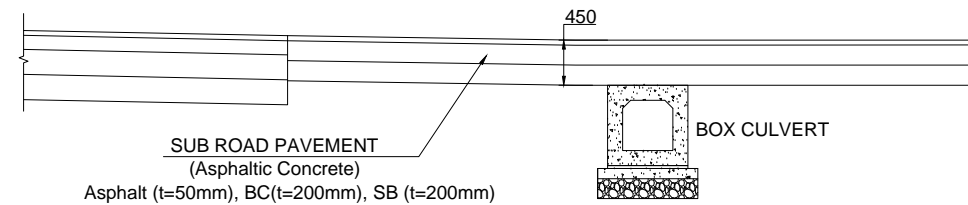
GENERAL PLAN AND SECTION OF ROAD ACCESS



PLAN S=1:125



SIDE ELEVATION (Y-Y SECTION) S=1:125



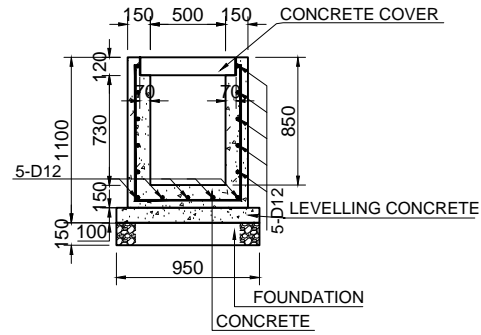
A-A SECTION S=1:75

PROJECT NAME	FINANCED BY	COUNTERPART	JICA STUDY TEAM	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE	
DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	PREPARED BY	M. TOMITA		27 Nov. 2017	GENERAL PLAN AND SECTION OF ROAD ACCESS	1
				CHECKED BY	T. HAYAKAWA		28 Nov. 2017		DWG No.
				APPROVED BY	Y. SANO		29 Nov. 2017		P1-RD-2250

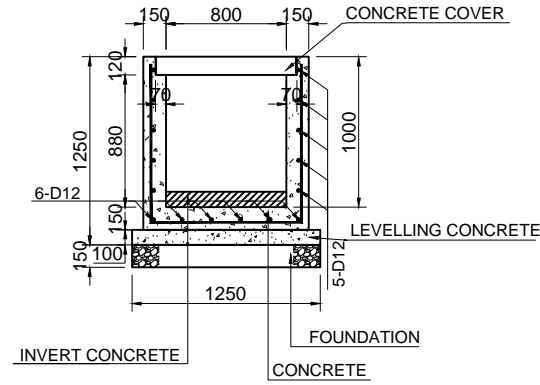
DETAIL OF SIDE DITCH

- Notes:**
1. Concrete Class A4
 2. Steel Reinforcement Grade 40

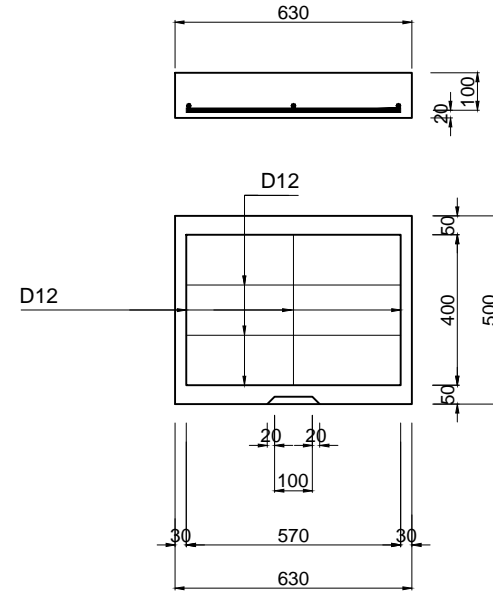
U-500x850 WITH COVER
S=1:50



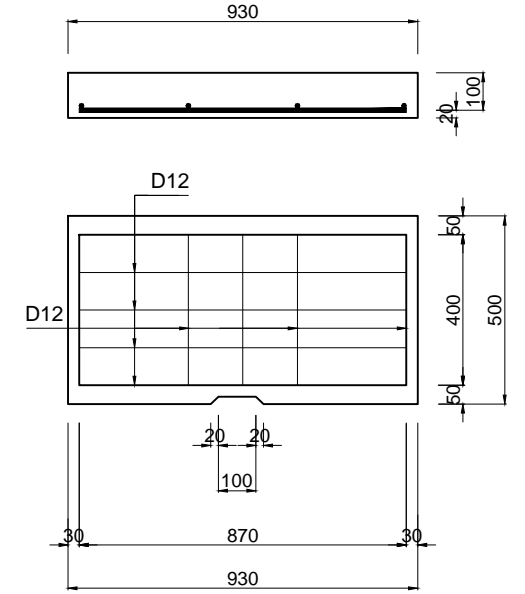
U-800x1000 WITH COVER
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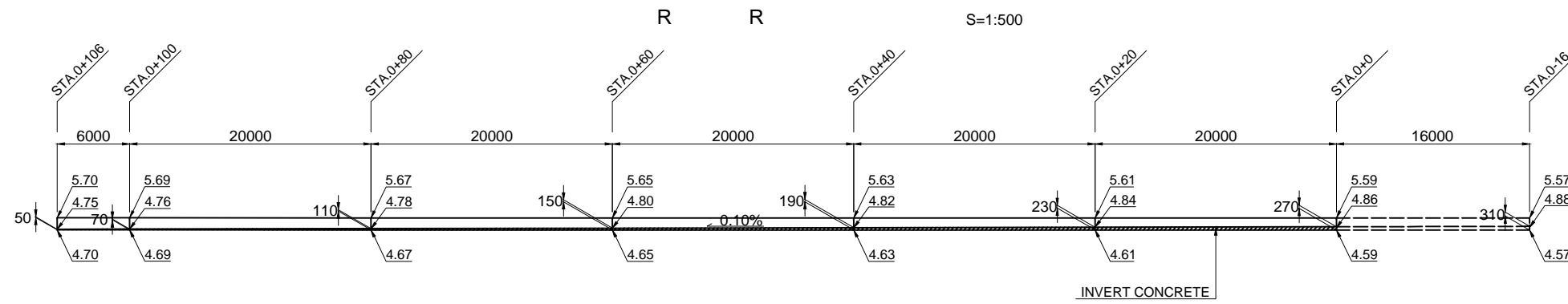
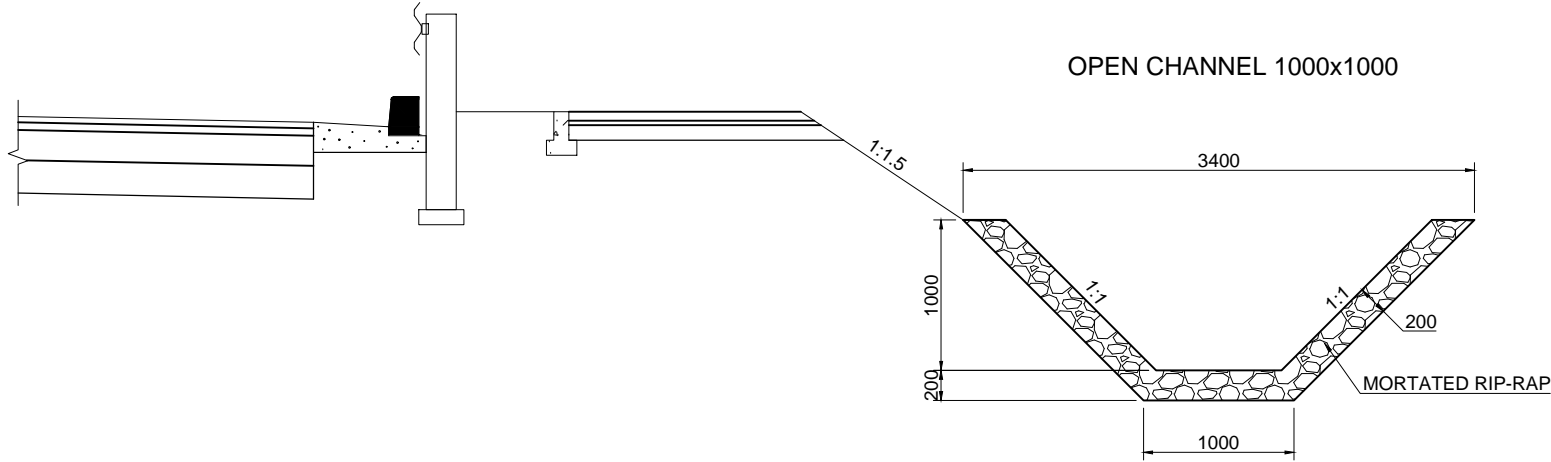
U-500 S=1:20



U-800 S=1:20



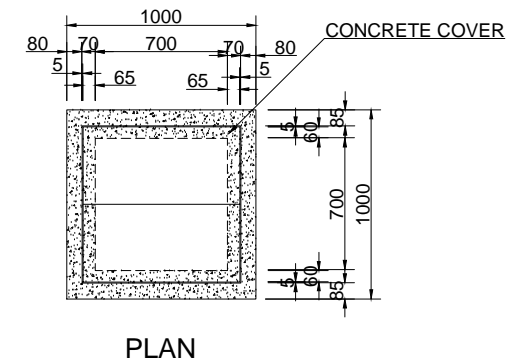
OPEN CHANNEL 1000x1000



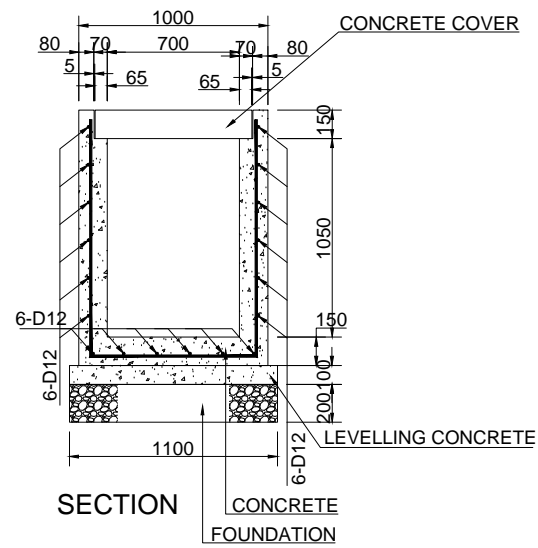
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	PREPARED BY M. TOMITA	SIGNATURE 	DATE 27 Nov. 2017	DRAWING TITLE DETAIL OF SIDE DITCH	PACKAGE 1 DWG No. P1-RD-2260
				CHECKED BY T. HAYAKAWA		DATE 28 Nov. 2017		
				APPROVED BY Y. SANO		DATE 29 Nov. 2017		

DETAIL OF CATCH PIT

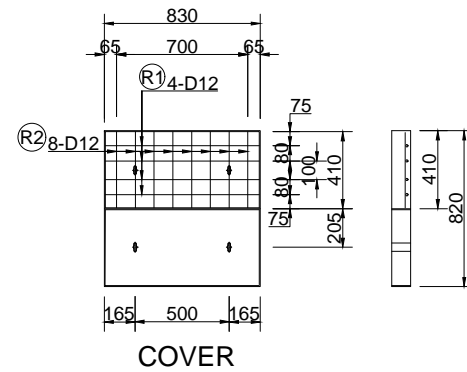
CATCH PIT (0.7X0.7X1.050)



PLAN

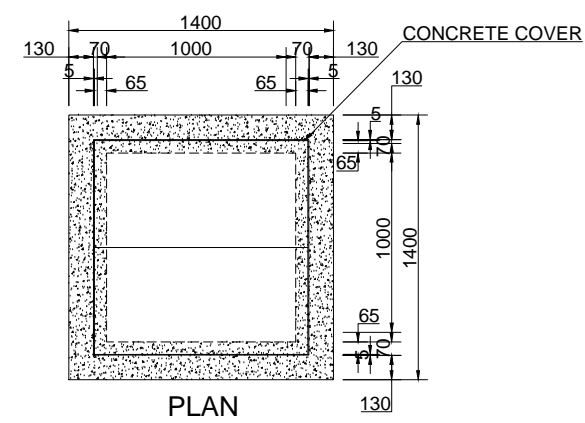


SECTION

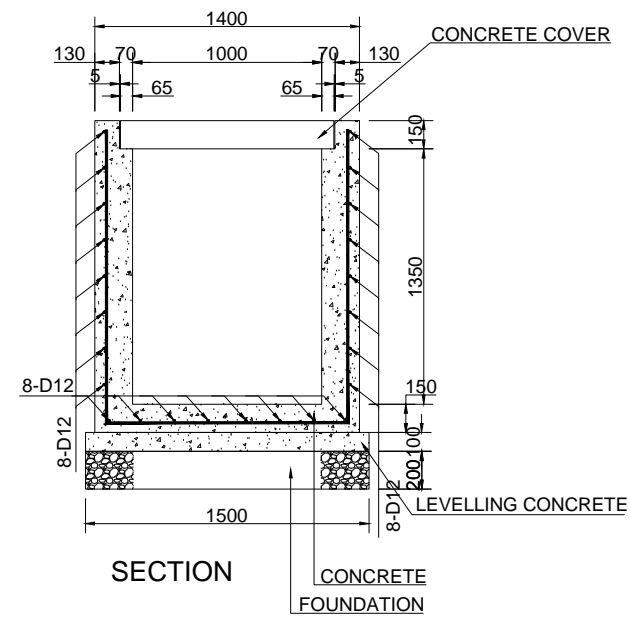


COVER

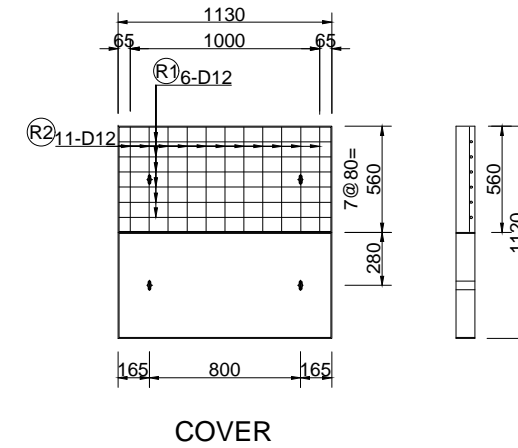
CATCH PIT (1.0X1.0X1.350)



PLAN



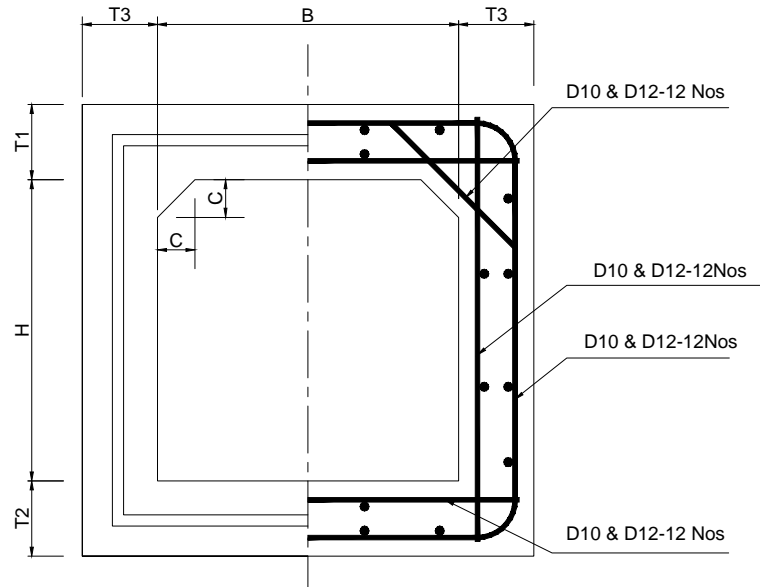
SECTION



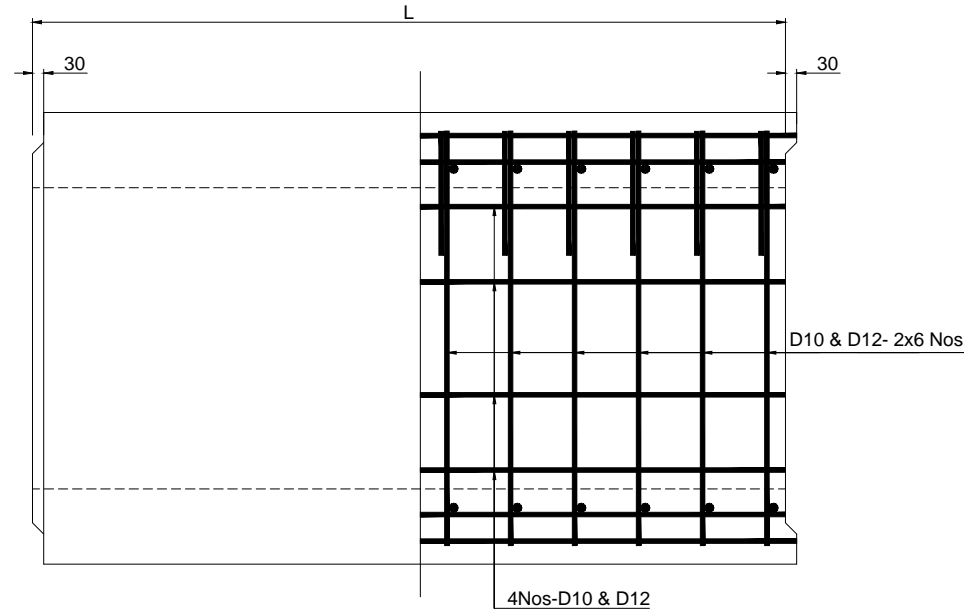
COVER

<p>PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT</p>	<p>FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY</p>	<p>COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE</p>	<p>JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">NAME</th> <th style="width: 15%;">SIGNATURE</th> <th style="width: 15%;">DATE</th> </tr> <tr> <td>PREPARED BY M. TOMITA</td> <td></td> <td>27 Nov. 2017</td> </tr> <tr> <td>CHECKED BY T. HAYAKAWA</td> <td></td> <td>28 Nov. 2017</td> </tr> <tr> <td>APPROVED BY Y. SANO</td> <td></td> <td>29 Nov. 2017</td> </tr> </table>	NAME	SIGNATURE	DATE	PREPARED BY M. TOMITA		27 Nov. 2017	CHECKED BY T. HAYAKAWA		28 Nov. 2017	APPROVED BY Y. SANO		29 Nov. 2017	<p>DRAWING TITLE DETAIL OF CATCH PIT</p>	<p>PACKAGE 1 DWG No. P1-RD-2270</p>
NAME	SIGNATURE	DATE																
PREPARED BY M. TOMITA		27 Nov. 2017																
CHECKED BY T. HAYAKAWA		28 Nov. 2017																
APPROVED BY Y. SANO		29 Nov. 2017																

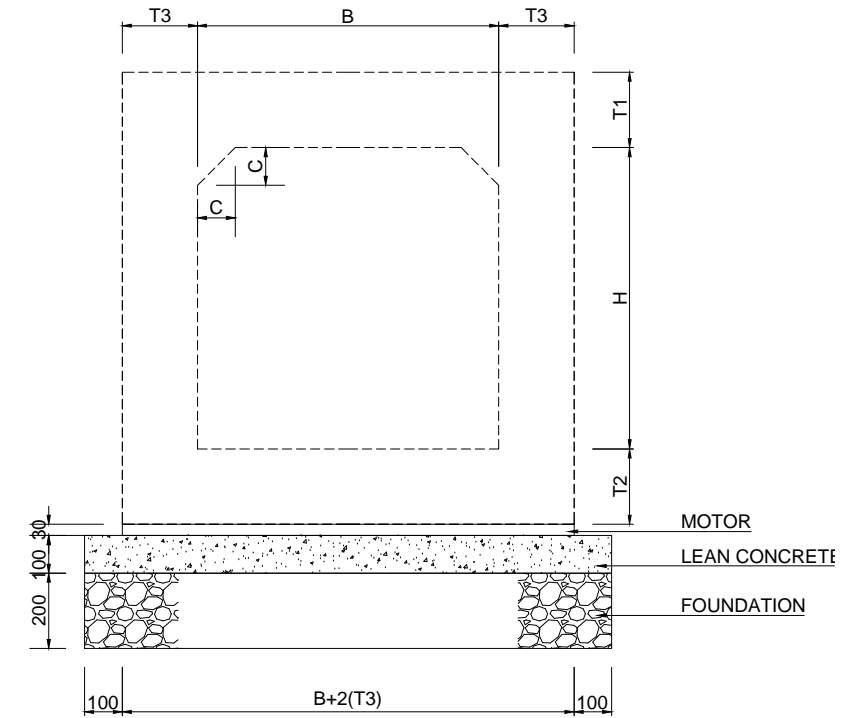
DETAIL OF BOX CULVERT FOR ROAD ACCESS



BOX CULVERT SECTION S=1:20



SIDE ELEVATION S=1:20



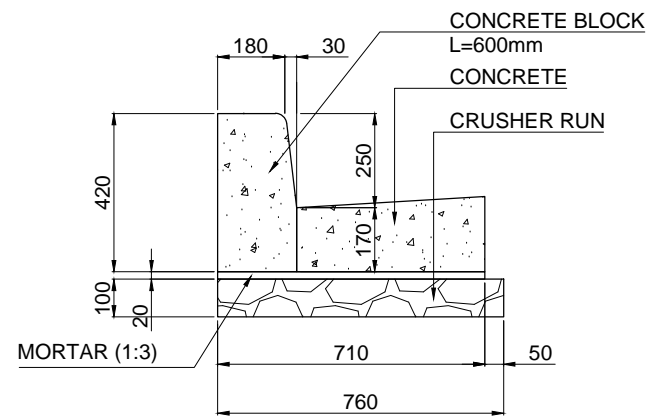
ELEVATION WITH FOUNDATION SECTION S=1:20

BOX CULVERT SIZE	B	H	T1	T2	T3	C	L	BAR DIAMETER
800x800	800	800	200	200	200	100	2000	D-12

- Notes :
- Concrete Strength may be Class A4 (240kg/m²) for Cast Insitu
 - Steel Reinforcement Grade 40

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE DETAIL OF BOX CULVERT FOR ROAD ACCESS	PACKAGE	
				PREPARED BY	M. TOMITA			27 Nov. 2017	1
				CHECKED BY	T. HAYAKAWA			28 Nov. 2017	DWG No.
				APPROVED BY	Y. SANO			29 Nov. 2017	P1-RD-2280

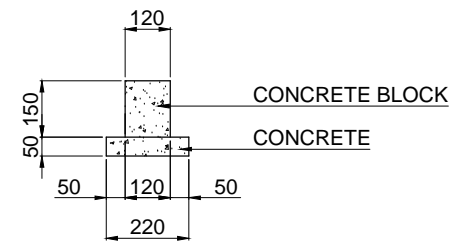
DETAIL OF CURB



CURB TYPE A MATERIAL LIST

CLASSIFICATION	STANDARD
CONCRETE BLOCK	180/210XH420XL600
MORTAR (1:3)	1:3
CONCRETE	CLASS A 20/40

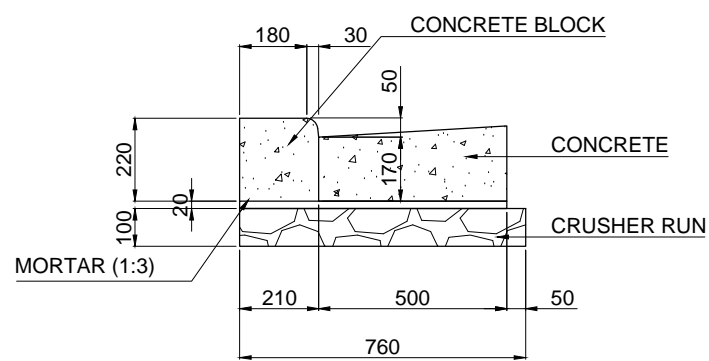
TYPE A



RESTRICTION CONCRETE BLOCK MATERIAL LIST

CLASSIFICATION	STANDARD
CONCRETE BLOCK	150xH120xL600
MORTAR (1:3)	1:3
CONCRETE	CLASS A 20/40

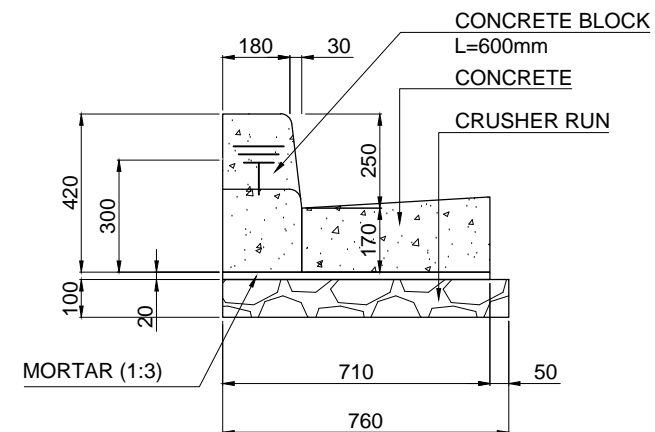
RESTRICTION CONCRETE BLOCK S = 1:20



CURB TYPE B MATERIAL LIST

CLASSIFICATION	STANDARD
CONCRETE BLOCK	180/210XH250XL600
MORTAR (1:3)	1:3
CONCRETE	CLASS A 20/40

TYPE B



CURB TYPE C MATERIAL LIST

CLASSIFICATION	STANDARD
CONCRETE BLOCK	180/210XH420XL600
MORTAR (1:3)	1:3
CONCRETE	CLASS A 20/40

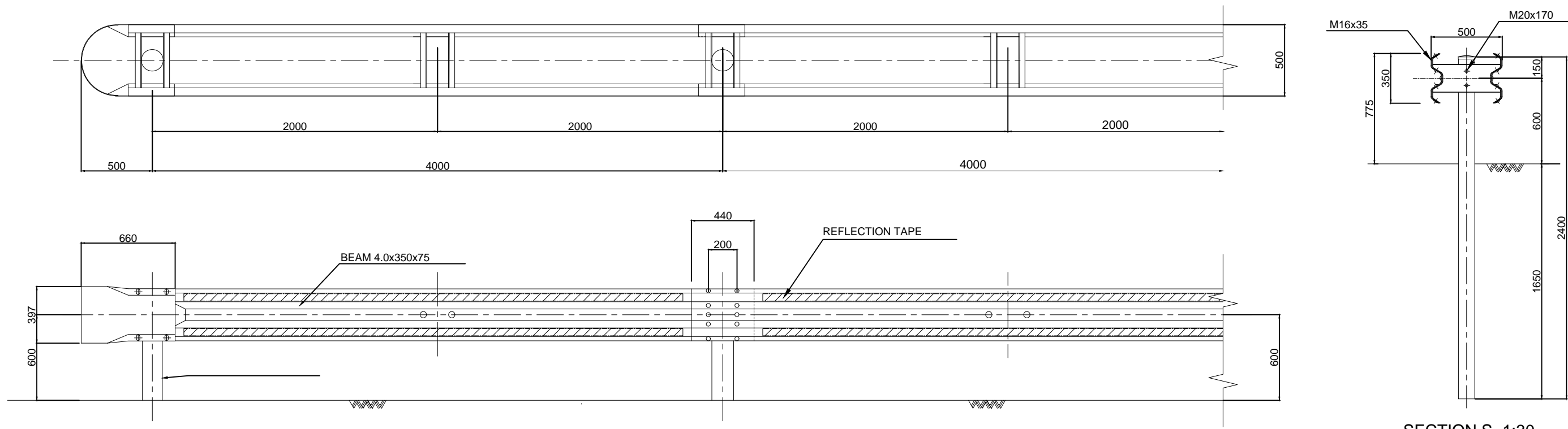
TYPE C

COMBINATION OF CONCRETE CURB & GUTTER

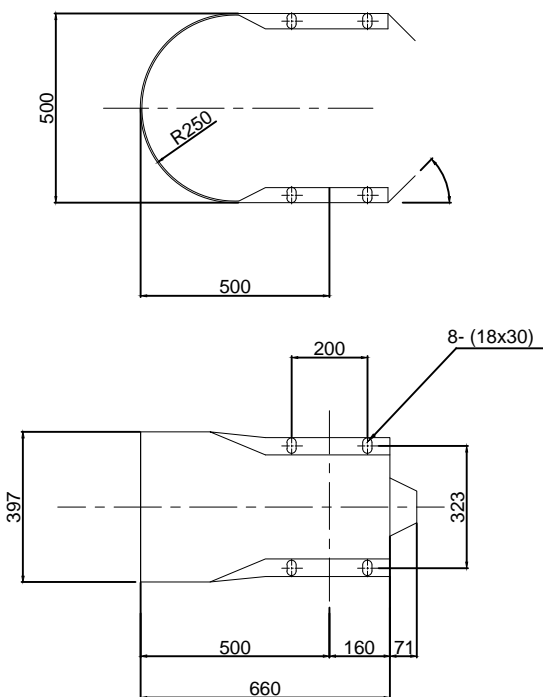
S = 1:20

<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"></td> <td style="width: 20%;">NAME</td> <td style="width: 20%;">SIGNATURE</td> <td style="width: 20%;">DATE</td> </tr> <tr> <td>PREPARED BY</td> <td>M. TOMITA</td> <td></td> <td>27 Nov. 2017</td> </tr> <tr> <td>CHECKED BY</td> <td>T. HAYAKAWA</td> <td></td> <td>28 Nov. 2017</td> </tr> <tr> <td>APPROVED BY</td> <td>Y. SANO</td> <td></td> <td>29 Nov. 2017</td> </tr> </table>		NAME	SIGNATURE	DATE	PREPARED BY	M. TOMITA		27 Nov. 2017	CHECKED BY	T. HAYAKAWA		28 Nov. 2017	APPROVED BY	Y. SANO		29 Nov. 2017	<small>DRAWING TITLE</small> DETAIL OF CURB	<small>PACKAGE</small> 1 DWG No. P1-RD-2290
	NAME	SIGNATURE	DATE																			
PREPARED BY	M. TOMITA		27 Nov. 2017																			
CHECKED BY	T. HAYAKAWA		28 Nov. 2017																			
APPROVED BY	Y. SANO		29 Nov. 2017																			

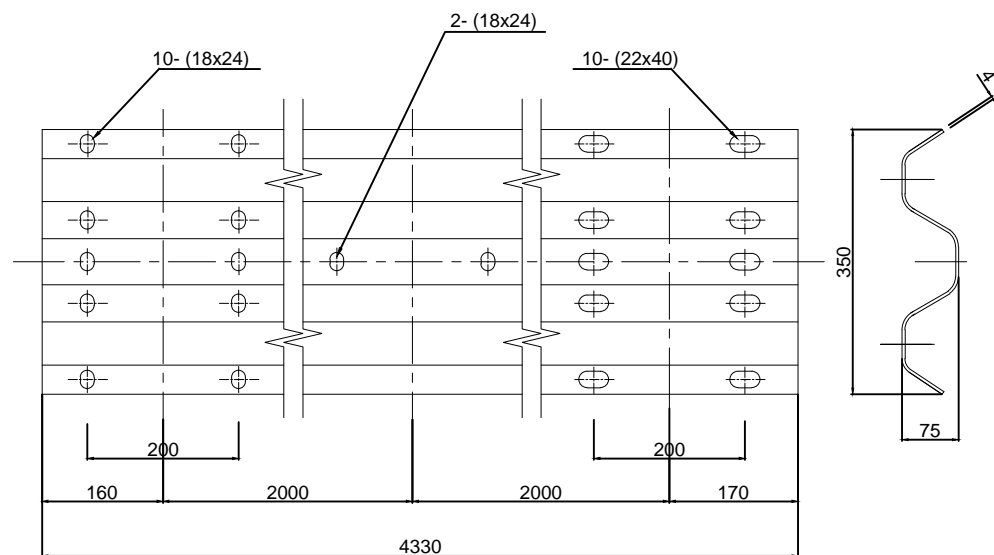
DETAIL OF GUARD RAIL (GR-Am)



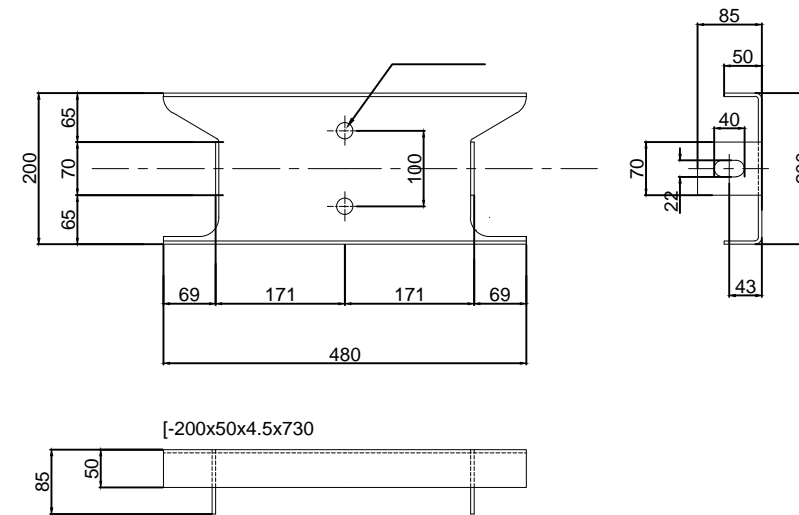
GUARD RAIL (GR-Am) S=1:30



ENDPIECE DETAIL S=1:20



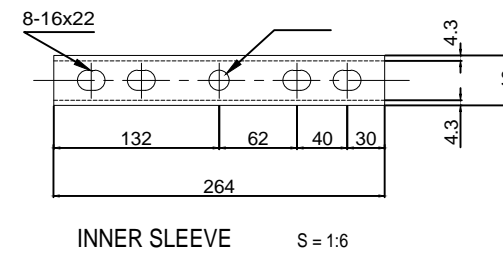
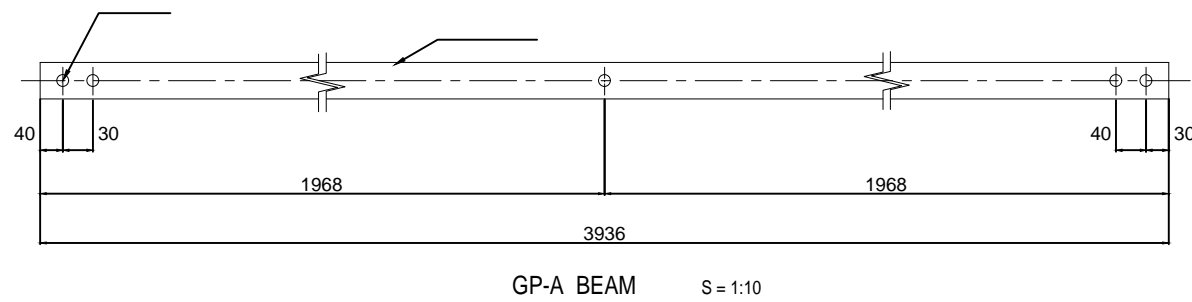
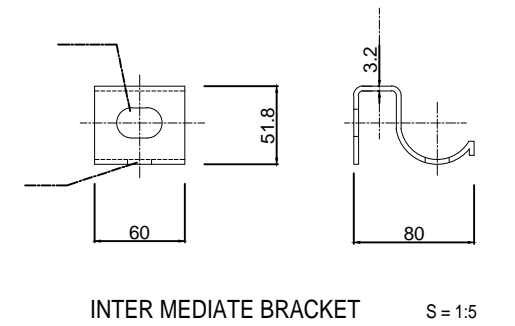
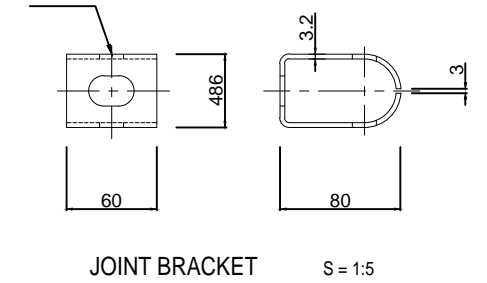
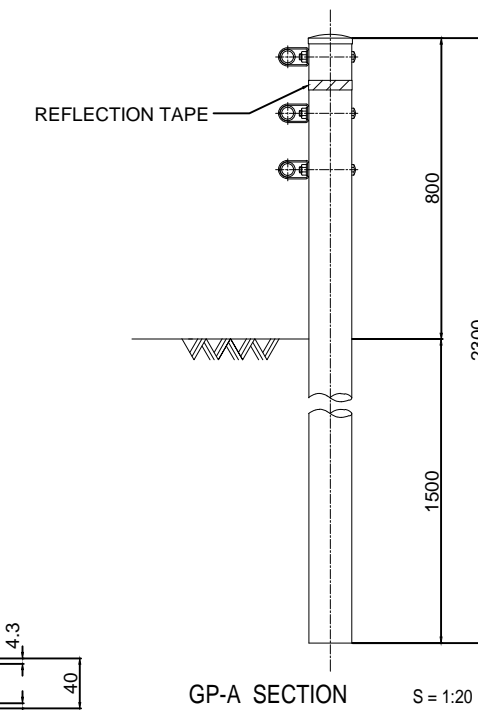
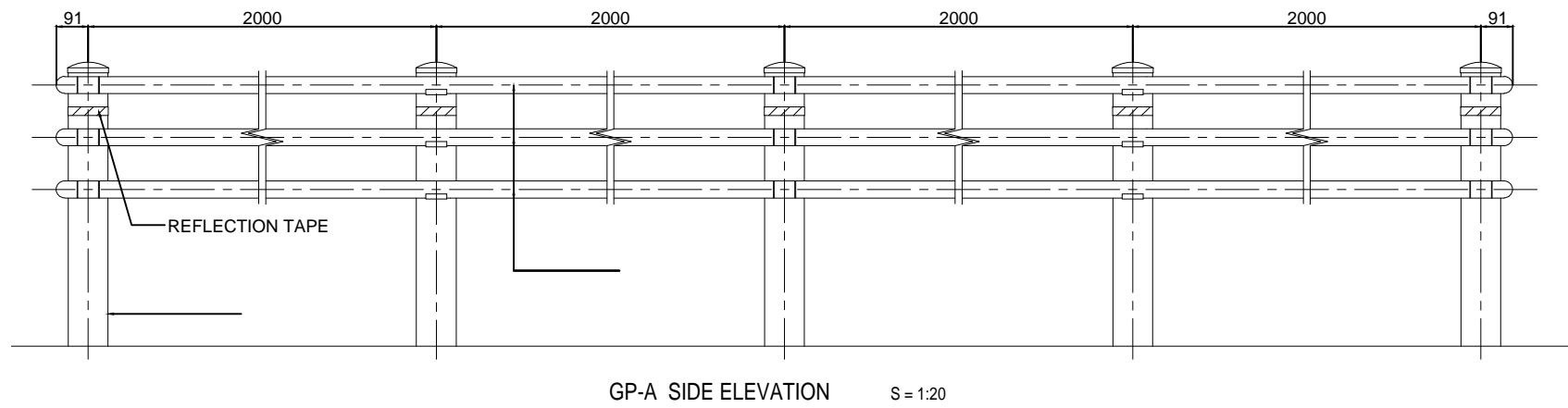
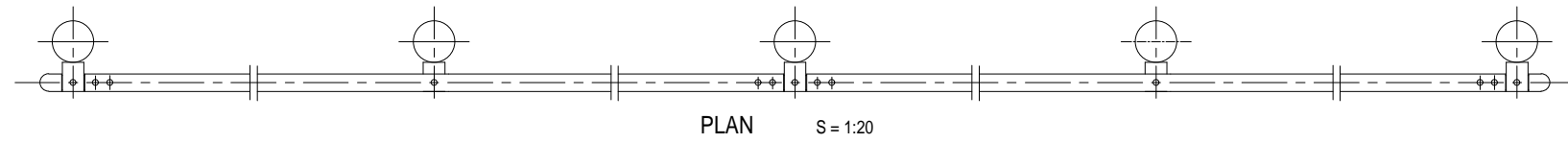
BEAM (SS400) S=1:10



BRACKET (SS400) S=1:10

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE			
				PREPARED BY	M. TOMITA				27 Nov. 2017	DETAIL OF GUARD RAIL (GR-Am)	1
				CHECKED BY	T. HAYAKAWA				28 Nov. 2017		DWG No.
				APPROVED BY	Y. SANO				29 Nov. 2017		P1-RD-2300

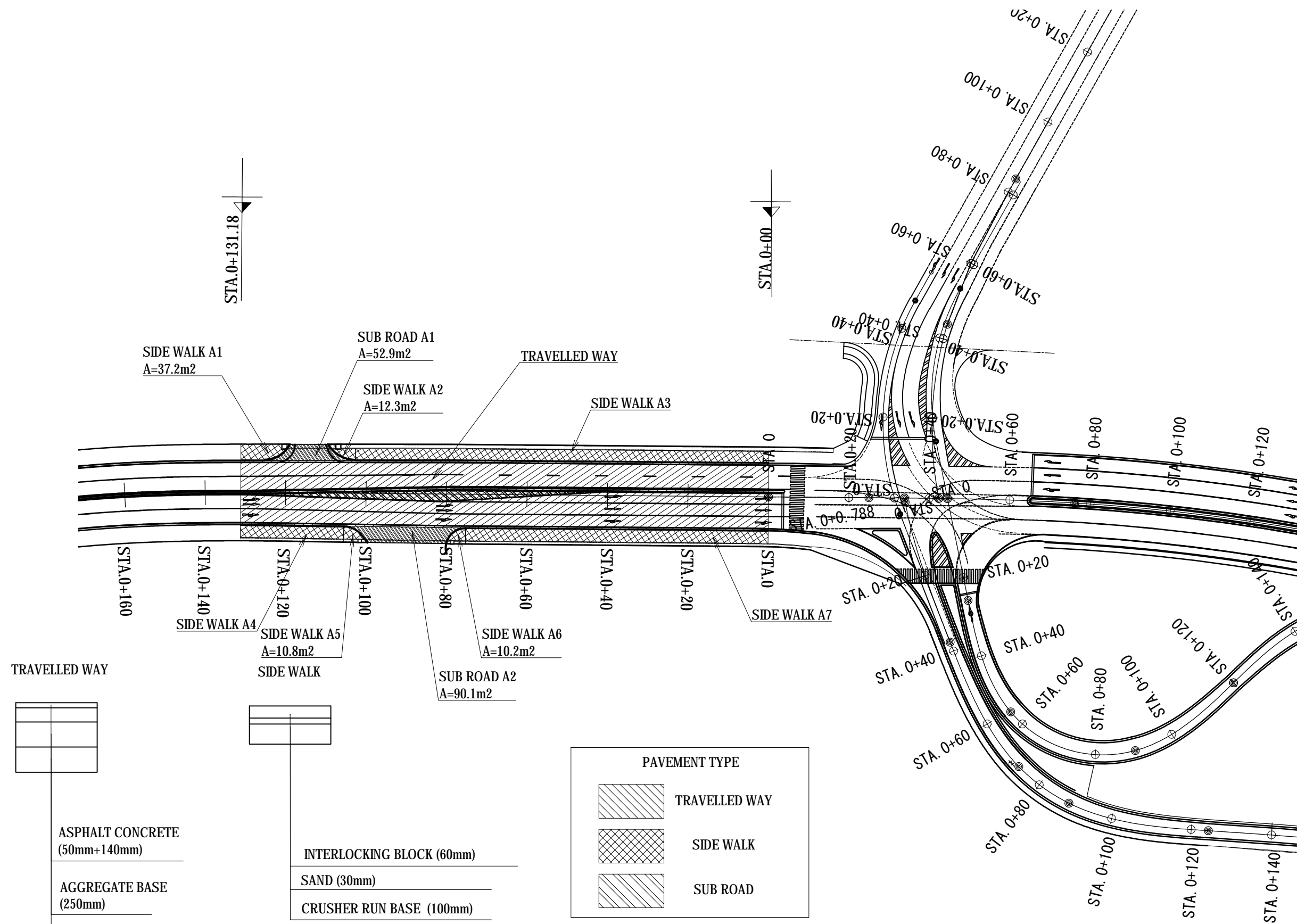
DETAIL OF GUARD PIPE (GP-A)



<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.		<small>NAME</small> M. TOMITA	<small>SIGNATURE</small> 	<small>DATE</small> 27 Nov. 2017	<small>DRAWING TITLE</small> DETAIL OF GUARD PIPE (GP-A)	<small>PACKAGE</small> 1 DWG No. P1-RD-2310
					<small>PREPARED BY</small> T. HAYAKAWA		28 Nov. 2017		
					<small>CHECKED BY</small> Y. SANO		29 Nov. 2017		
					<small>APPROVED BY</small>				

PAVEMENT PLAN (Thilawa Access Road)

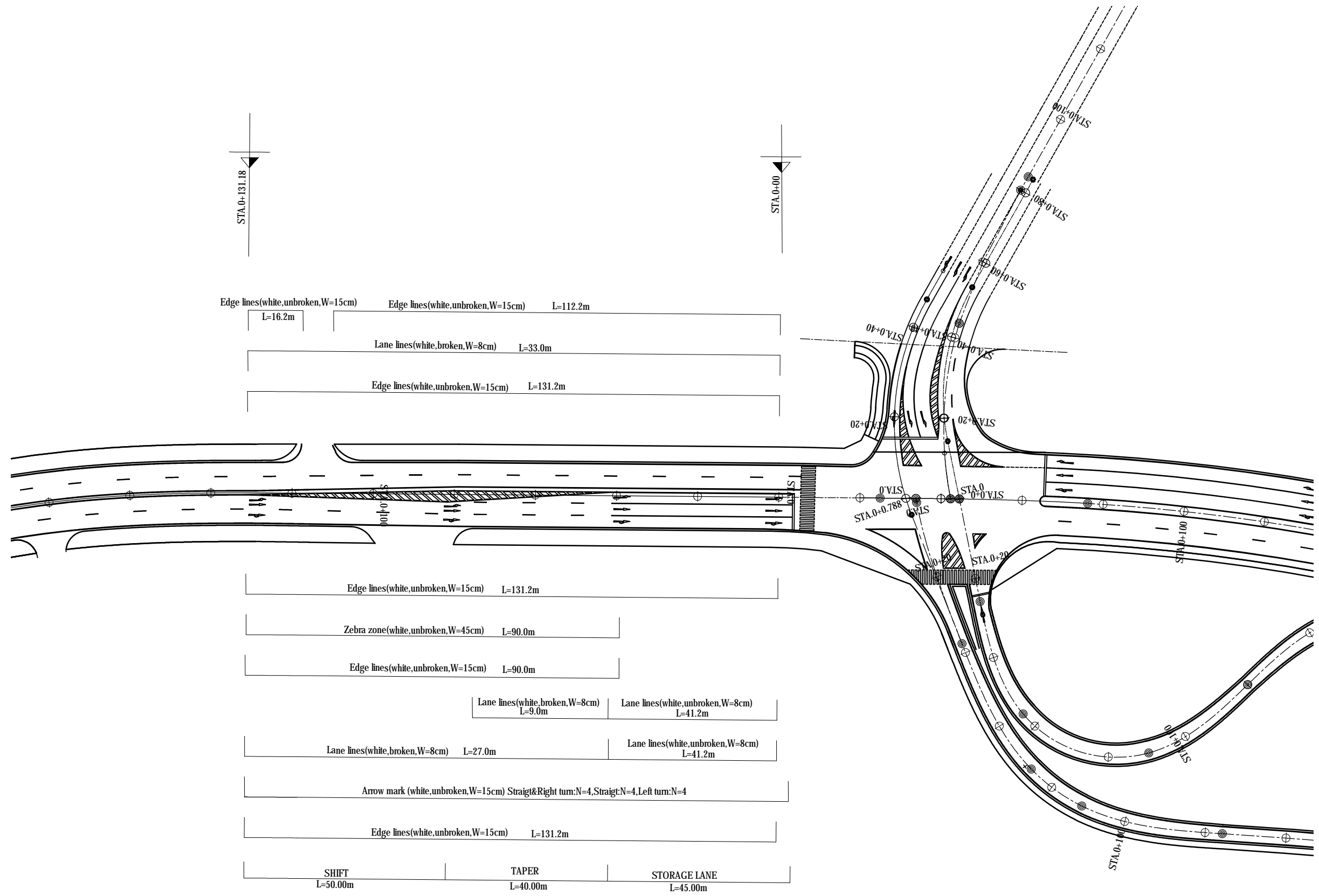
S=1:1000



PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE PAVEMENT PLAN(Thilawa Access Road)	PACKAGE 1 DWG No. P1-RD-2320	
				PREPARED BY	M. TOMITA				27 Nov. 2017
				CHECKED BY	T. HAYAKAWA				28 Nov. 2017
				APPROVED BY	Y. SANO				29 Nov. 2017

ROAD MARKINGS PLAN (Thilawa Access Road)

S=1:1000



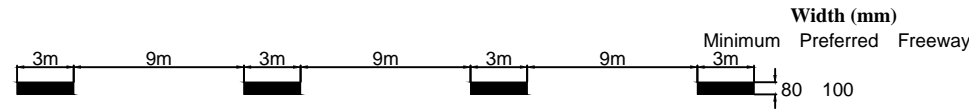
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO.,LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE ROAD MARKINGS PLAN(Thilawa Access Road)	PACKAGE	
				PREPARED BY	M. TOMITA			27 Nov. 2017	1
				CHECKED BY	T. HAYAKAWA			28 Nov. 2017	DWG No.
				APPROVED BY	Y. SANO			29 Nov. 2017	P1-RD-2330

DETAIL OF ROAD MARKING (1)

LOGITUDINAL LINES

1. Separation lines

(a) two-lane roads (Note 1)



(b) (i) narrow two-lane road in lieu of barrier line (Note 2)
(ii) curves and crests on local and collector roads



(c) multilane roads (Note 3)



2. Barrier lines

(a) one direction

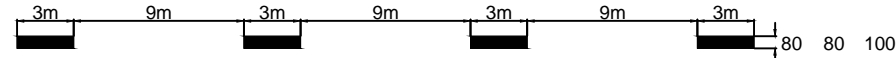


(b) both directions



3. Lane lines

(a) broken



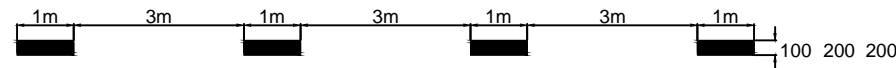
(b) unbroken (Note 4)



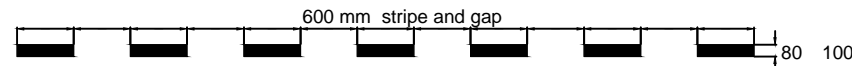
4. Edge lines (including transition lines)



5. Continuity lines



6. Turn lines



7. Outline markings

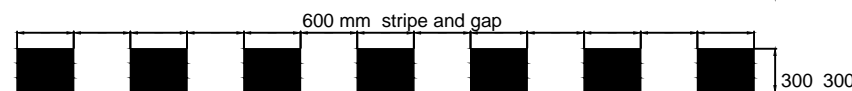


TRANSVERSE LINES

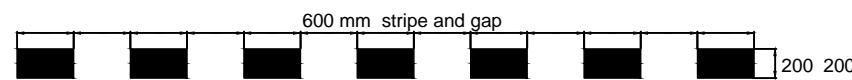
8. Stop lines



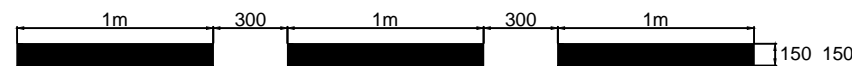
9. Holding lines



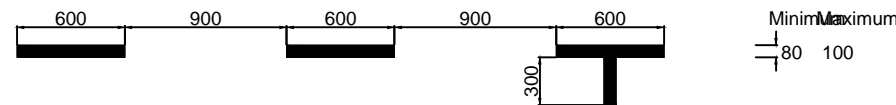
10. Give way lines



11. Crosswalk lines



12. Parking bay (yellow if restricted)

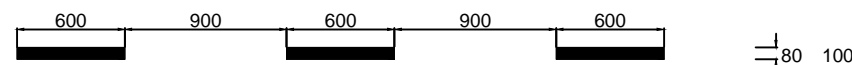


13. No stopping (yellow)

(a) all vehicle types

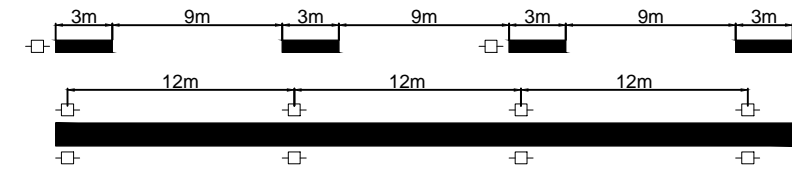


(b) some vehicle types



Separation lines

(a) two-lane rural roads (unit)



(b) multilane roads

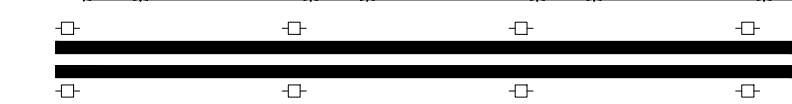


Barrier lines

(a) one direction

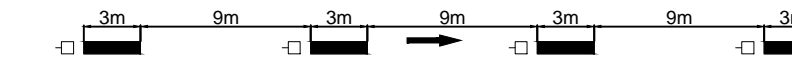


(b) both directions



Lane lines

(a) broken



(b) unbroken



Edge lines

(a) left side



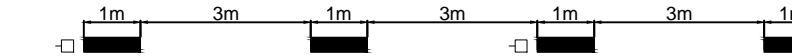
(b) left side at freeway ramps



(c) right side of one-way carriageway



Continuity lines (except freeway)



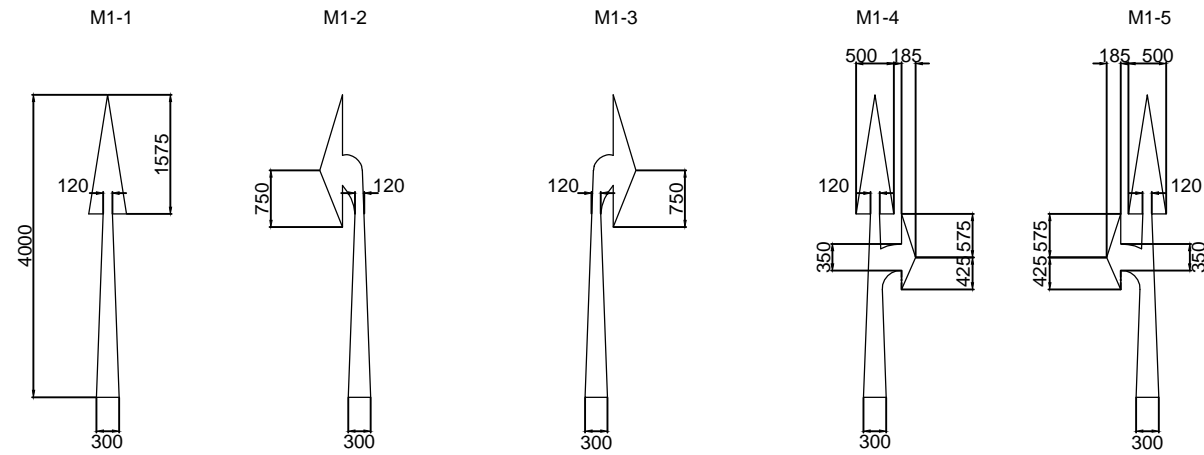
Key to RRPM types:

Notes:

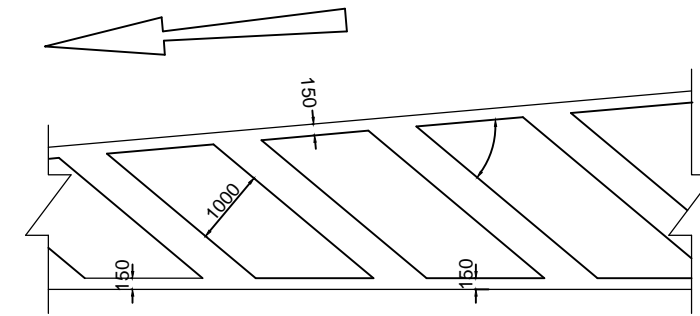
- Separation line on two-lane, two-way urban roads may be 6 m line/ 6 m gap marking where added emphasis of the line is needed.
- See Section for use of this marking.
- Separation lines for separating pedestrians and bicycles on a separated path are unbroken lines 80mm wide.
- The width of a bicycle lane line (unbroken line) is 100mm.

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE DETAIL OF ROAD MARKING (1)	PACKAGE 1 DWG No. P1-RD-2340	
				PREPARED BY	M. TOMITA				27 Nov. 2017
				CHECKED BY	T. HAYAKAWA				28 Nov. 2017
				APPROVED BY	Y. SANO				29 Nov. 2017

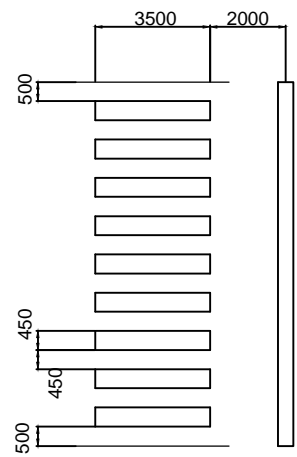
DETAIL OF ROAD MARKING (2)



ARROW MARK S = 1:100

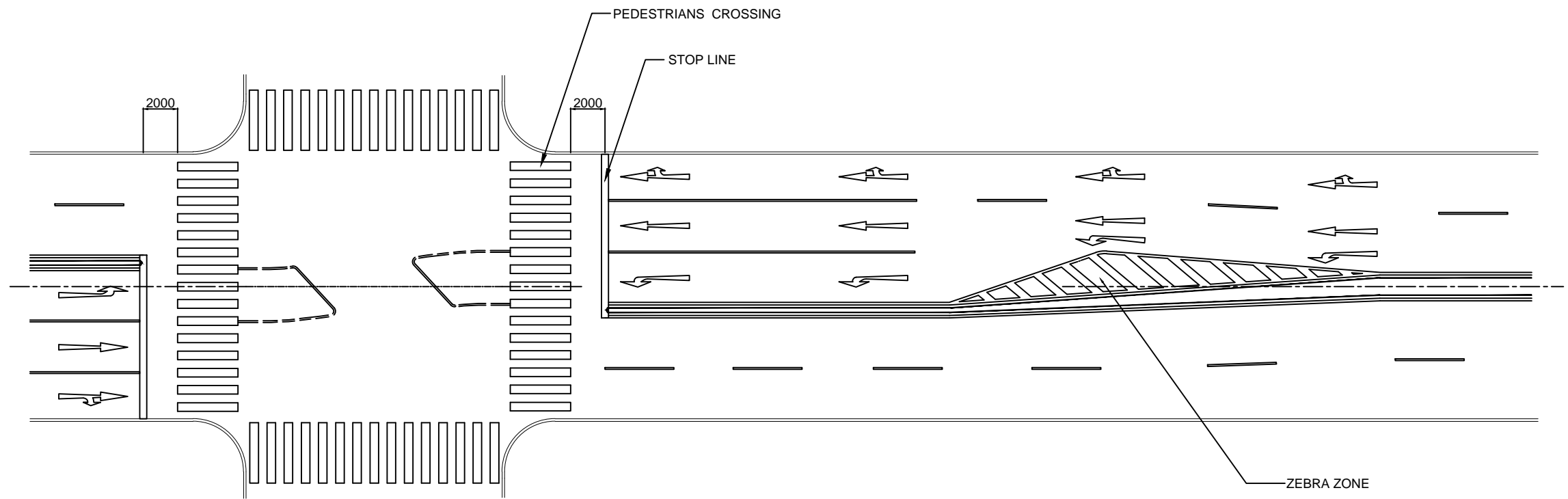


ZEBRA ZONE S = 1:100
(TRAFFIC ISLAND AROUND BENDS)



DRIVERS MUST GIVE WAY TO PEDESTRIANS ON THE CROSSING
F2

PEDESTRIANS CROSSING AND STOPPING LINE S = 1:200



TRAFFIC SIGN AT CROSS ROAD S = NTS

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JICA JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE DETAIL OF ROAD MARKING (2)	PACKAGE 1 DWG No. P1-RD-2350	
				PREPARED BY	M. TOMITA	前田 孝			27 Nov. 2017
				CHECKED BY	T. HAYAKAWA	平川 知那			28 Nov. 2017
				APPROVED BY	Y. SANO	佐野 雅一			29 Nov. 2017