

**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 IV MOC PORTION**

DECEMBER 2017

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

NIPPON KOEI CO., LTD.

ORIENTAL CONSULTANTS GLOBAL CO., LTD.

METROPOLITAN EXPRESSWAY COMPANY LIMITED.

CHODAI CO., LTD.

NIPPON ENGINEERING CONSULTANTS CO., LTD.

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A. GENERAL

GENERAL NOTES (1)

HIGHWAY / CIVIL AND DRAINAGE

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.

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GENERAL NOTES (2)

LIGHTING

LEGEND

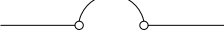

























-  : Concrete pole
-  : Steel pole
-  : Traffic signal controller
-  : Vehicle traffic signal
-  : Arrow sign traffic signal
-  : Pedestrian signal
-  : Push-button switch
-  : Junction box
-  : Power supply box
-  : Pull box
-  : Hand hole
-  : Raising underground pipe
-  : Base mounted pole signal 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




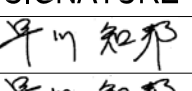
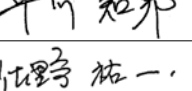
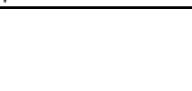
GENERAL NOTES

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 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

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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

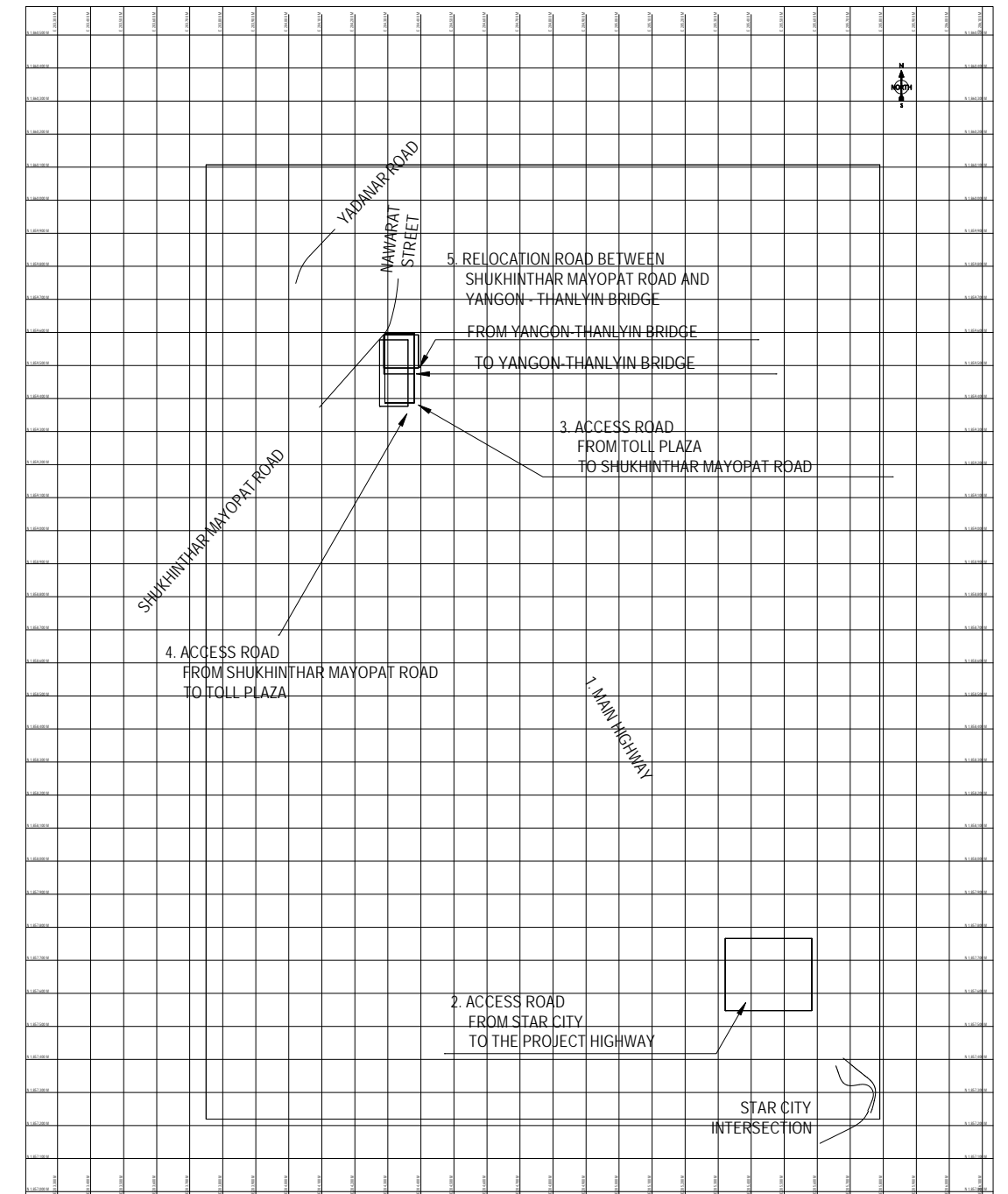
POINT NAME	STATION	NORTHING X-COORDINATE	EASTING Y-COORDINATE	ELEMENT		AZIMUTH ANGLE	ELEMENT LENGTH	ACCUMULATED DISTANCE
BP	0+000.000000	1859387.083266	204379.898737					0.000000
KA 1-1	0+027.420376	1859410.822724	204366.175940	STRAIGHT LINE		329° 58' 10.457547"	27.420376	27.420376
KE 1-1	0+080.298246	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

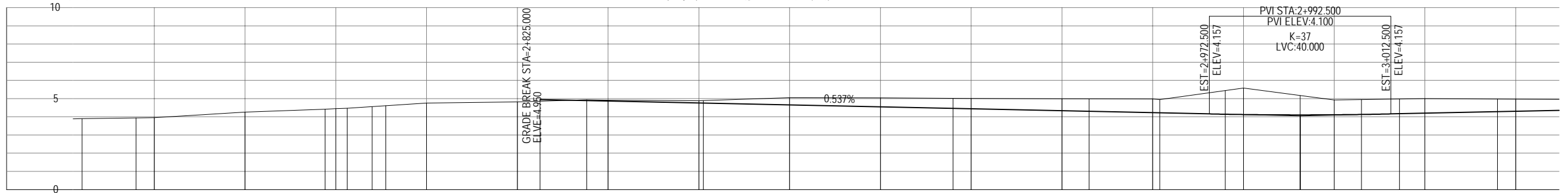
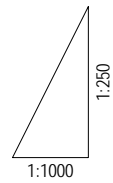
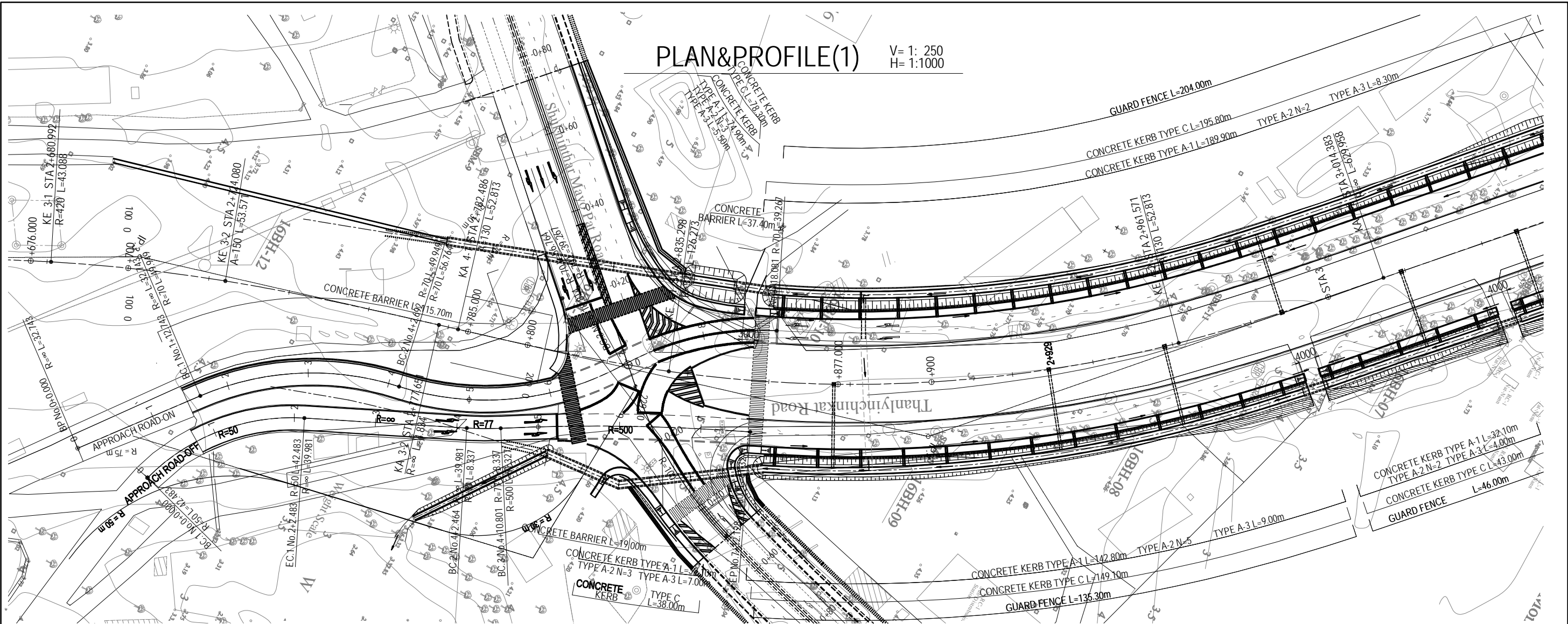
- NOTE:
1. STAR CITY INTERSECTION CONSISTS OF FOUR (4) ROADS, I.E., MAIN HIGHWAY, YANGON ACCESS LINE, THILAWA ACCESS LINE AND STAR CITY ACCESS LINE. SEE STAR CITY INTERSECTION DRAWINGS FOR THE HORIZONTAL ALIGNMENT DATA OF YANGON ACCESS LINE, THILAWA ACCESS LINE AND STAR CITY ACCESS LINE.
 2. SEE THE 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 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 ALIGNMENT LAYOUT AND GEOMETRIC DATA	PACKAGE 0 DWG No. PO-GE-0003	
				PREPARED BY	T. HAYAKAWA				29 Sep. 2017
				CHECKED BY	T. HAYAKAWA				3 Oct. 2017
				APPROVED BY	Y. SANO				6 Oct. 2017

B. ROAD DESIGN

PLAN&PROFILE(1)

V= 1: 250
H= 1:1000



GRADE	PROPOSED HEIGHT	EXISTING HEIGHT	STATION	SUPER ELEVATION	CURVE ELEMENTS
		3.90	KE 3-2		L=53.571 A=150.000
		3.94	+736.000		
		3.95	+740.000		
		4.26	+760.000		R=∞ L=4.834
		4.42	KA 3-2		
		4.45	KA 4-1		
		4.56	+788.000		A=130.000 L=52.813
		4.61	+791.000		
		4.75	+800.000		
		4.82	+820.000		IP = IP.4 IA = 32.03.54 CL = 231.898 R=320.000 L=126.273
		4.86	+825.000		
		4.93	KE 4-1		
		4.91	+840.000		I=0.537% L=167.500
		4.88	+860.000		
		4.89	+861.000		
		5.05	+880.000		A=130.000 L=52.813
		5.04	+900.000		
		5.02	+916.000		
		5.01	+920.000		K=37 LVC=40.000
		4.99	+940.000		
		4.99	+946.000		
		4.98	+960.000		EST=2+972.500 ELEV=4.157
		4.95	KE 4-2		
		4.95	+976.000		
		5.44	+976.000		PVI STA=2+992.500 PVI ELEV=4.100 K=37 LVC=40.000
		5.58	+980.000		
		5.17	+992.500		
		4.92	STA3		EST=3+012.500 ELEV=4.157
		4.95	+6.000		
		4.98	KA 4-2		
		5.00	+20.000		A=130.000 L=52.813
		4.98	+36.000		
		4.97	+40.000		

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

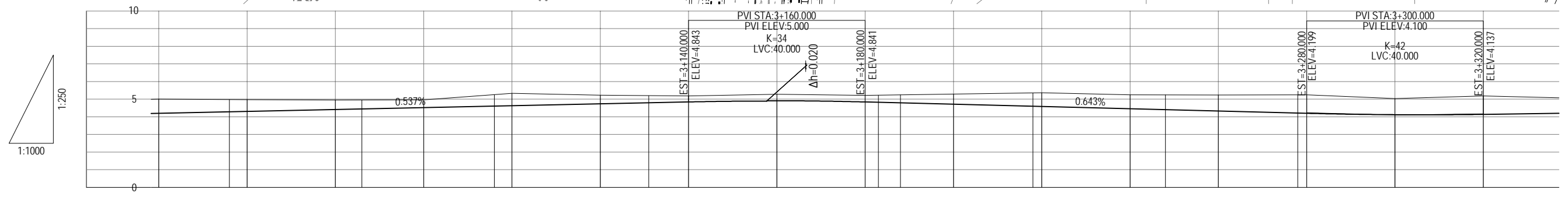
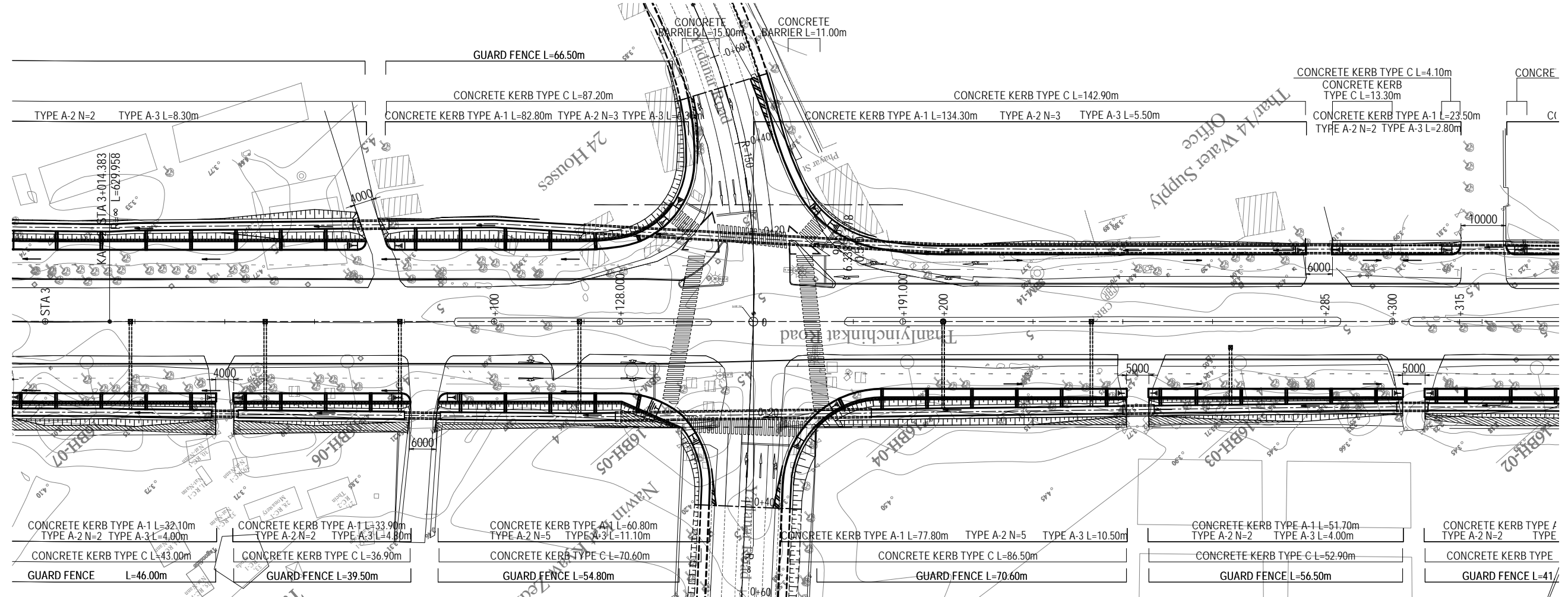
JICA STUDY TEAM
 NIPPON KOEI CO., LTD.
ORIENTAL CONSULTANTS GLOBAL CO., LTD.
METROPOLITAN EXPRESSWAY COMPANY LIMITED
CHODAI CO., LTD.
NIPPON ENGINEERING CONSULTANTS CO., LTD.

	NAME	SIGNATURE	DATE
PREPARED BY	K. TACHIBANA		29 Sep.2017
CHECKED BY	T. HAYAKAWA		3 Oct.2017
APPROVED BY	Y. SANO		6 Oct.2017

DRAWING TITLE	PACKAGE
PLAN&PROFILE(1) V= 1: 250,H= 1:1000	0 DWG No. P0-RD-0100

PLAN&PROFILE(2)

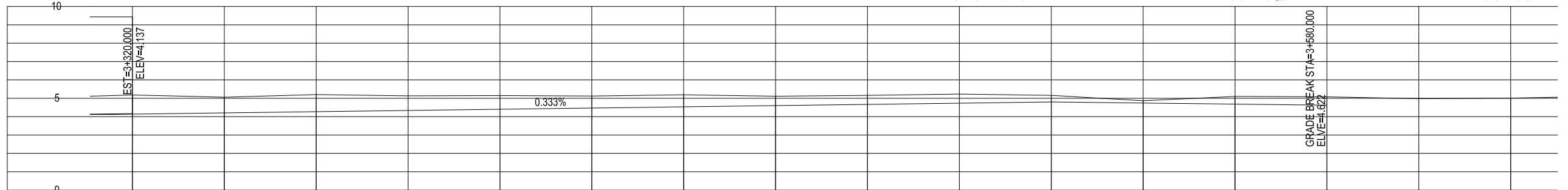
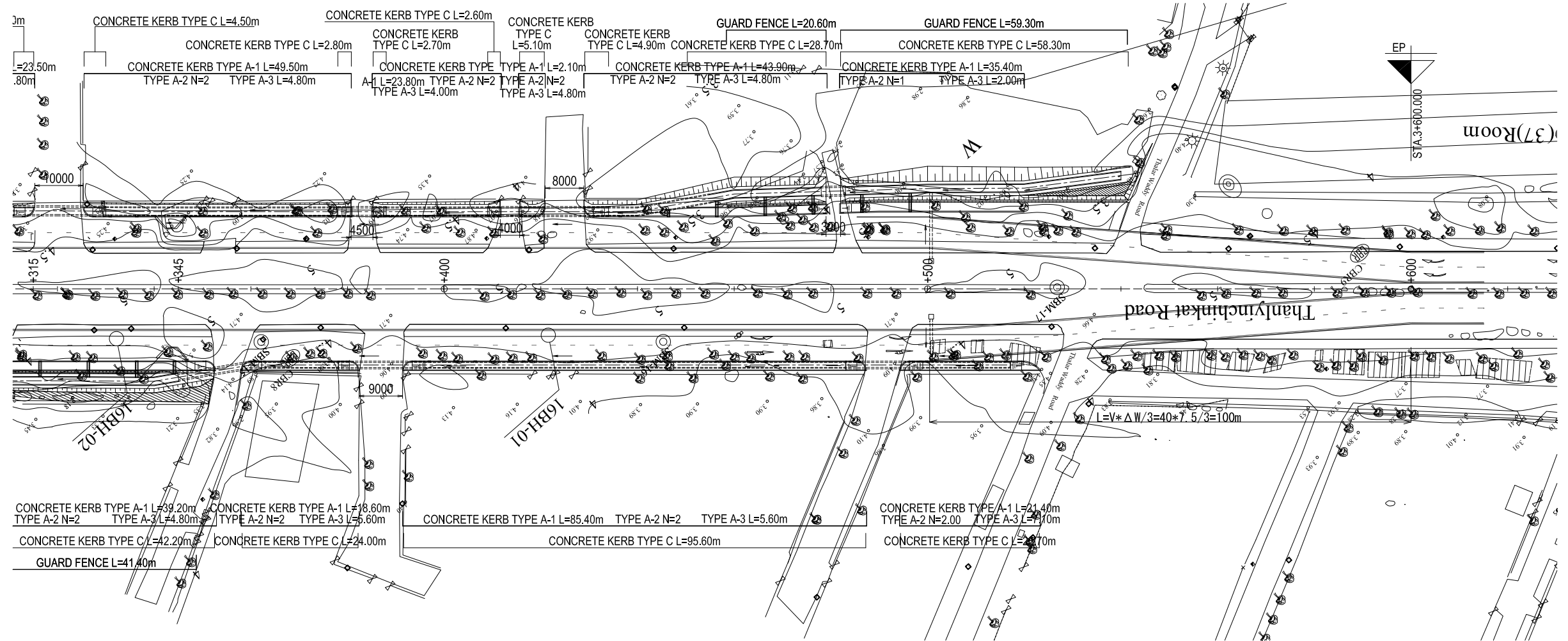
V= 1: 250
H= 1:1000



GRADE	I=0.537% L=167.500										I=0.643% L=140.000																	
PROPOSED HEIGHT	PH1 4.198	PH1 4.284	PH1 4.305	PH1 4.413	PH1 4.445	PH1 4.520	PH1 4.606	PH1 4.628	PH1 4.735	PH1 4.784	PH1 4.843	PH1 4.881	PH2 4.811	PH2 4.841	PH2 4.822	PH2 4.790	PH2 4.713	PH2 4.597	PH2 4.584	PH2 4.456	PH2 4.404	PH2 4.327	PH2 4.211	PH2 4.169	PH2 4.119	PH2 4.137		
EXISTING HEIGHT	5.00	4.98	4.97	4.95	4.95	4.96	5.26	5.33	5.22	5.20	5.18	5.28	5.21	5.22	5.24	5.29	5.35	5.36	5.25	5.25	5.24	5.25	5.25	5.03	5.18			
STATION	+20.000	+36.000	+40.000	+60.000	+66.000	+80.000	+96.000	+100.000	+120.000	+131.000	+140.000	+160.000	+180.000	+183.000	+188.000	+200.000	+218.000	+220.000	+240.000	+248.000	+260.000	+278.000	+280.000	+300.000	+320.000			
SUPER ELEVATION	-																											
CURVE ELEMENTS	R=∞ L=629.958																											

PLAN&PROFILE(3)

V= 1: 250
H= 1:1000



GRADE																
PROPOSED HEIGHT	5.18-PH2 4.137	5.06-PH2 4.203	5.20-PH2 4.270	5.13-PH2 4.336	5.15-PH2 4.403	5.12-PH2 4.469	5.19-PH2 4.536	5.11-PH2 4.602	5.16-PH2 4.669	5.23-PH2 4.735	5.16-PH2 4.802	4.87-PH2 4.742	5.10-PH2 4.682	5.08-PH2 4.622	4.98	5.01
EXISTING HEIGHT																
STATION	+320.000	+340.000	+360.000	+380.000	+400.000	+420.000	+440.000	+460.000	+480.000	+500.000	+520.000	+540.000	+560.000	+580.000	+600.000	+620.000
SUPER ELEVATION	-----															
CURVE ELEMENTS	$R=\infty$ $L=629.958$															

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.

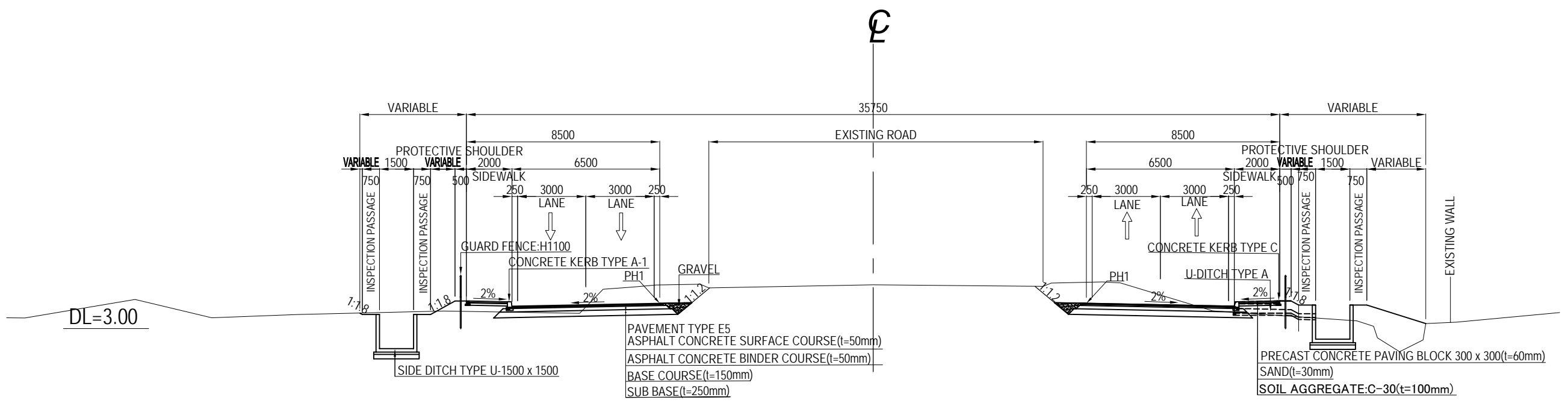
	NAME	SIGNATURE	DATE
PREPARED BY	K. TACHIBANA		29 Sep. 2017
CHECKED BY	T. HAYAKAWA		3 Oct. 2017
APPROVED BY	Y. SANO		6 Oct. 2017

DRAWING TITLE
PLAN&PROFILE(3)
V= 1: 250,H= 1:1000

PACKAGE
0
DWG No.
P0-RD-0120

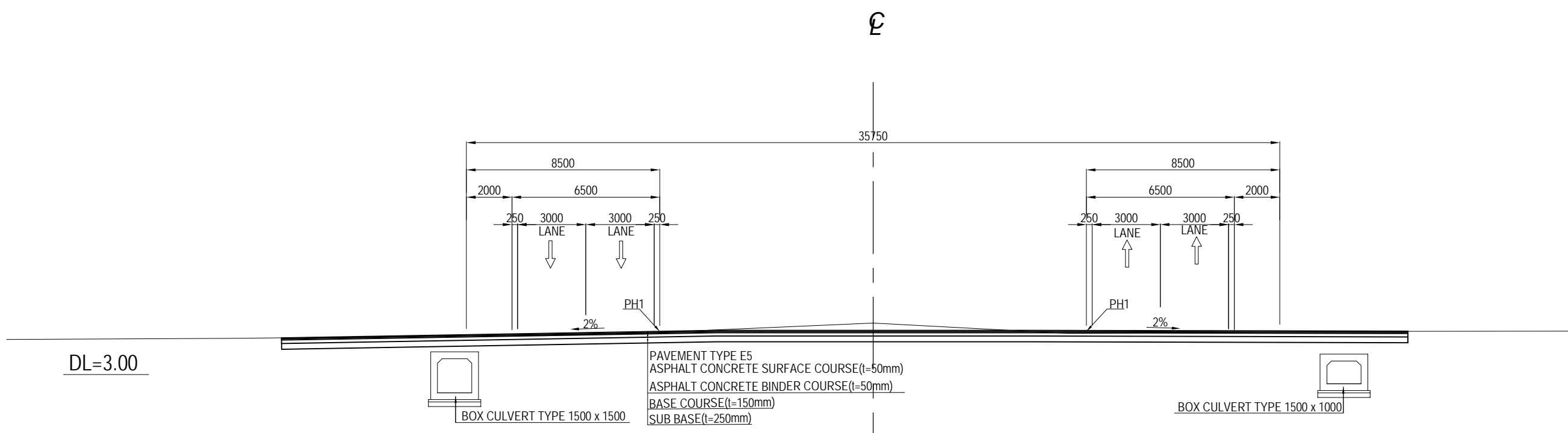
TYPICAL CROSS SECTION (1) S=1:200

℄



"SHUKHINTHAR INTERSECTION - YADANAR INTERSECTION" SECTION

℄

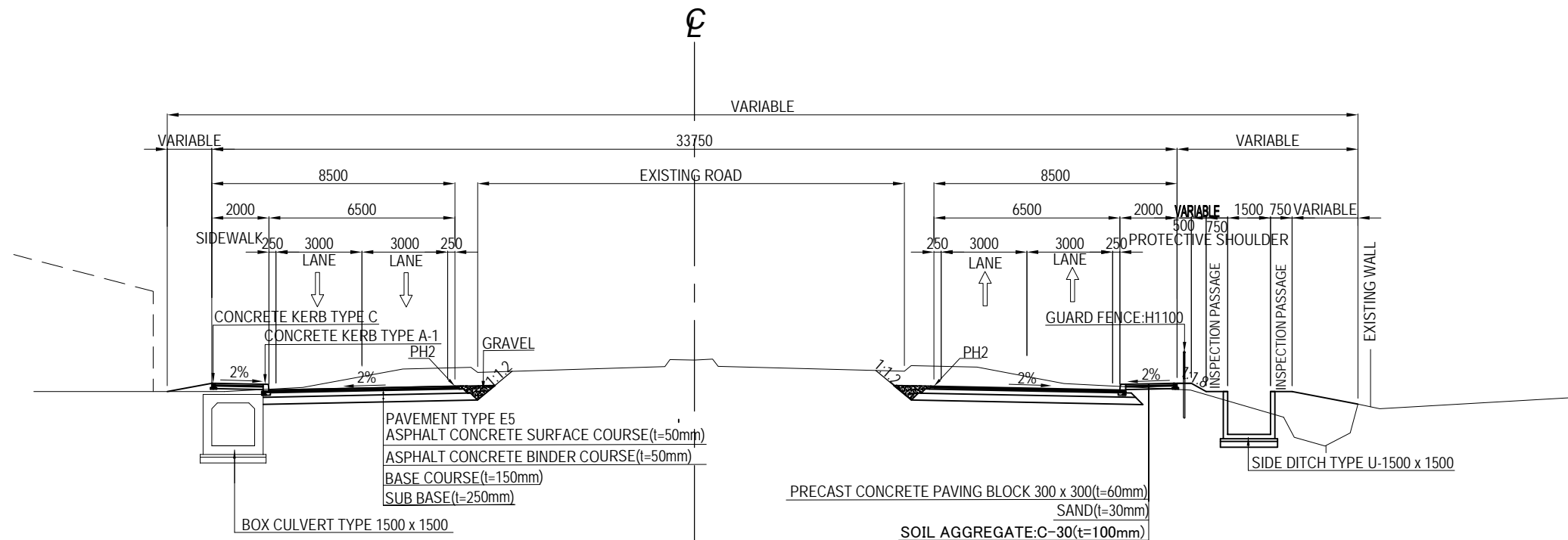


INTERSECTION

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) S=1:200	PACKAGE	
				PREPARED BY	K. TACHIBANA			29 Sep.2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct.2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct.2017	PO-RD-0200

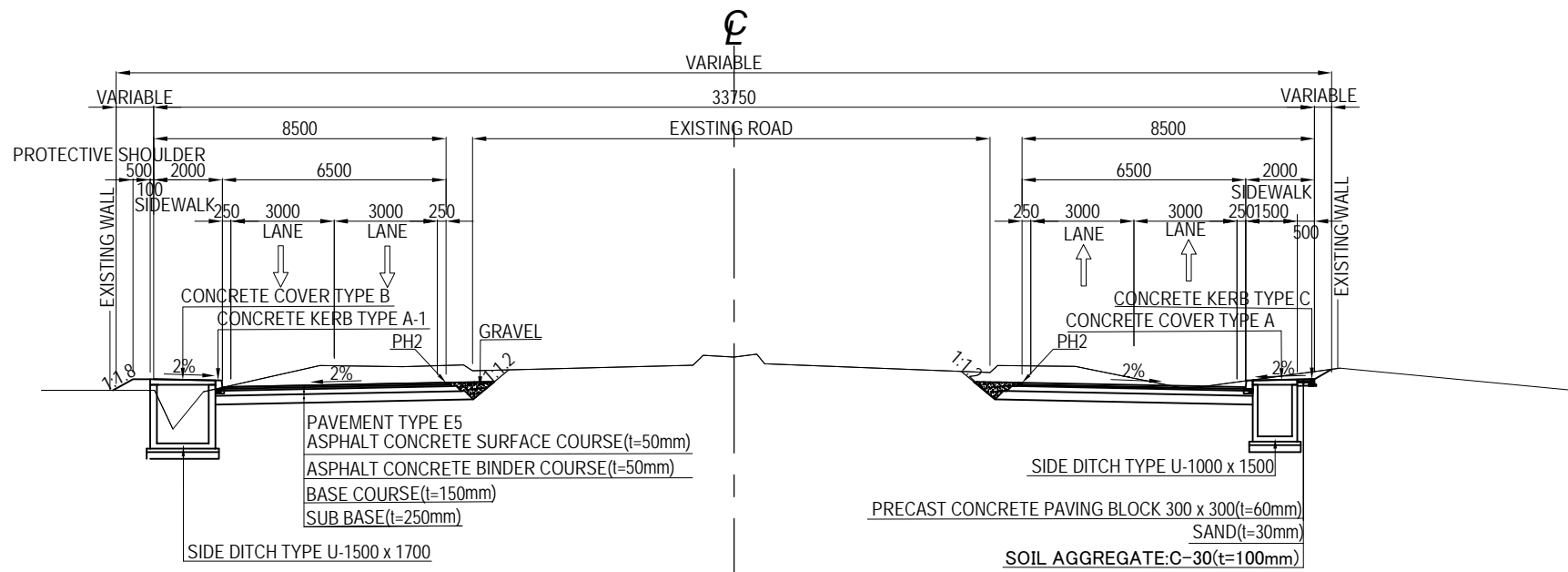
TYPICAL CROSS SECTION (2) S=1:200

DL=3.00



"NEAR THE WATER SUPPLY OFFICE" SECTION

DL=3.00

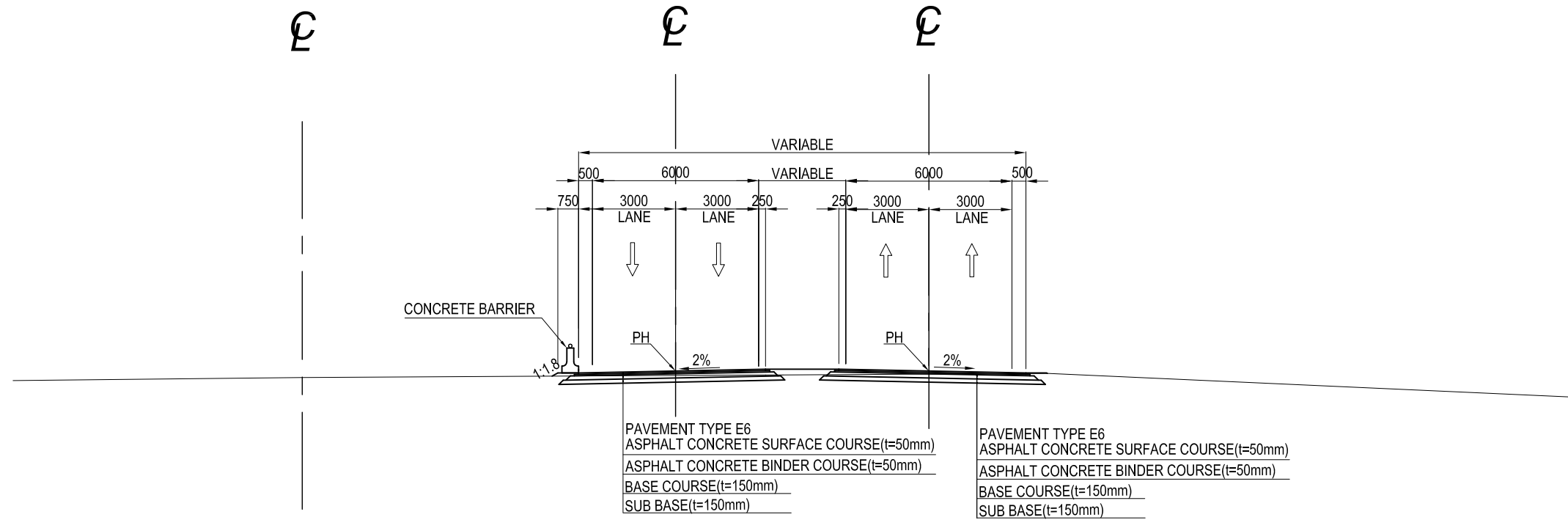


"MECHANICALLY-STABILISED EARTH WALL" SECTION

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) S=1:200	PACKAGE	
				PREPARED BY	K. TACHIBANA			29 Sep.2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct.2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct.2017	P3-RD-0210

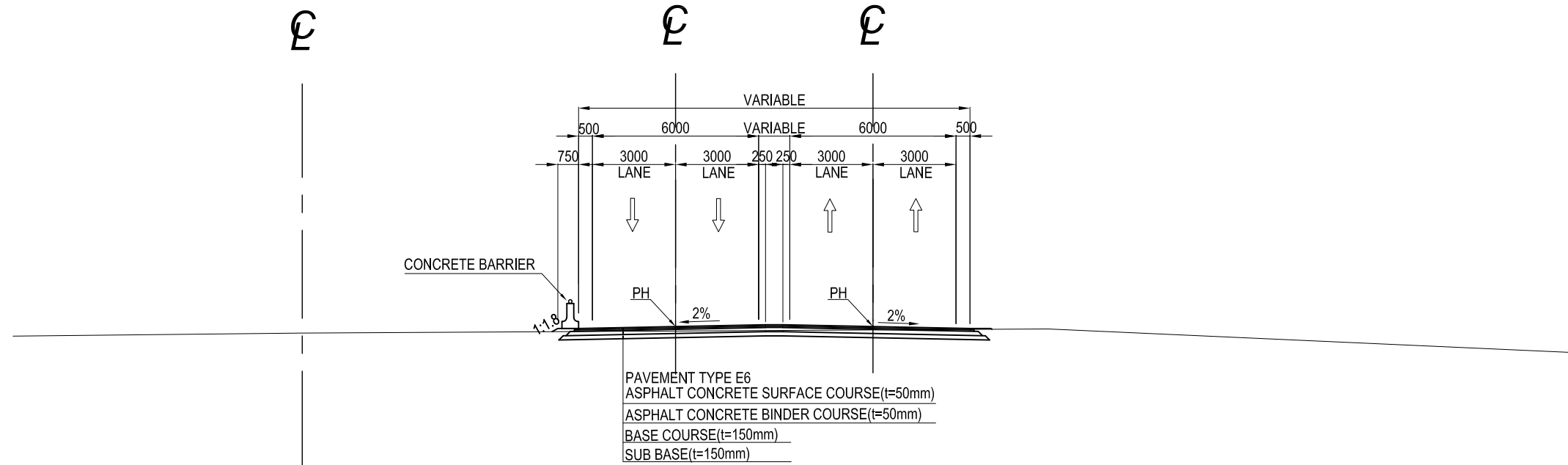
TYPICAL CROSS SECTION (3) S=1:200

DL=3.00



"SHUKHINTHAR INTERSECTION TEMPORARY ROAD" SEPARATION SECTION

DL=3.00

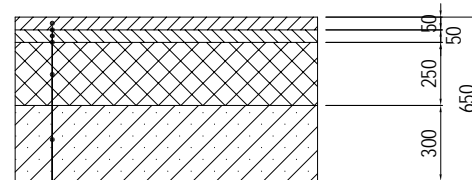


"SHUKHINTHAR INTERSECTION TEMPORARY ROAD" SECTION

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 (3) S=1:200	PACKAGE	
				PREPARED BY	K. TACHIBANA			29 Sep. 2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct. 2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct. 2017	P0-RD-0220

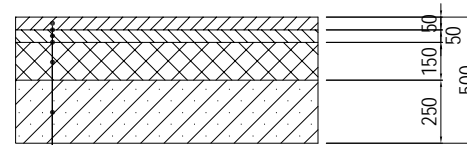
DETAIL OF ASPHALT CONCRETE PAVEMENT S=1:30

Type E3



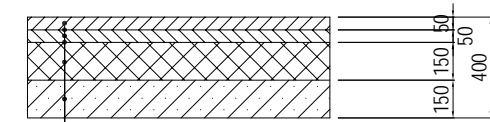
AC SURFACE COURSE (t=50mm)
 TACK COAT 0.4 l/m²
 AC SURFACE BASE (t=50mm)
 PRIME COAT 0.4 l/m²
 BASE COURSE (t=250mm)
 SUB BASE (t=300mm)

Type E5



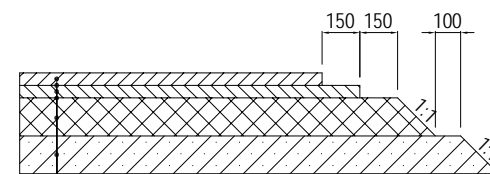
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 TACK COAT 0.4 l/m²
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 PRIME COAT 0.4 l/m²
 BASE COURSE (t=150mm)
 SUB BASE (t=250mm)

Type E6



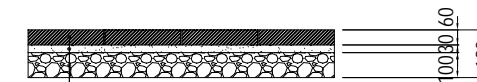
AC SURFACE COURSE (t=50mm)
 TACK COAT 0.4 l/m²
 AC SURFACE BASE (t=50mm)
 PRIME COAT 0.4 l/m²
 BASE COURSE (t=150mm)
 SUB BASE (t=150mm)

END OF PAVEMENT



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

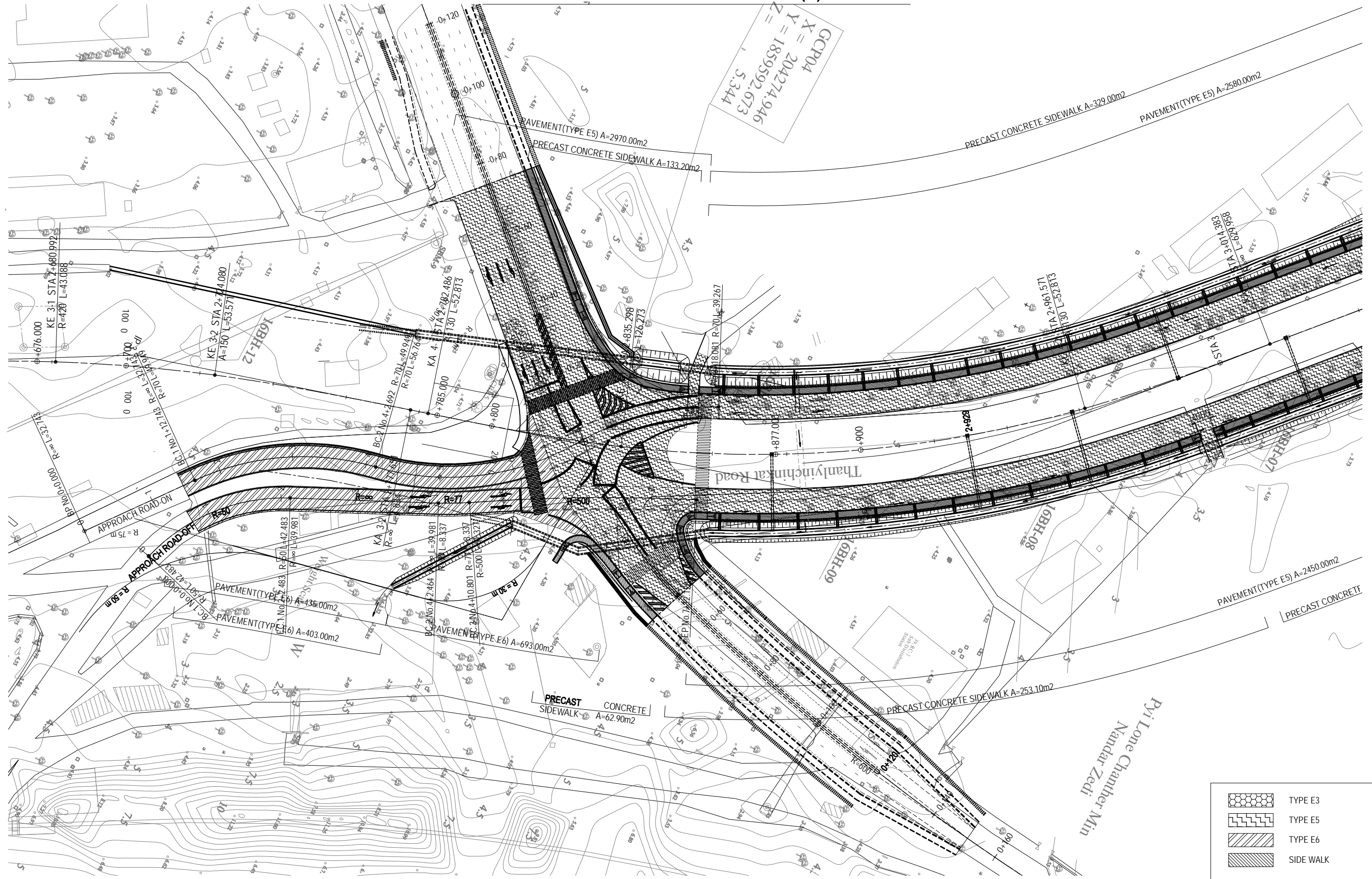
Side Walk



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 PREPARED BY K. TACHIBANA CHECKED BY T. HAYAKAWA APPROVED BY Y. SANO	SIGNATURE 	DATE 29 Sep.2017 3 Oct.2017 6 Oct.2017	DRAWING TITLE DETAIL OF ASPHALT CONCRETE PAVEMENT S=1:30	PACKAGE 0 DWG No. P3-RD-0300
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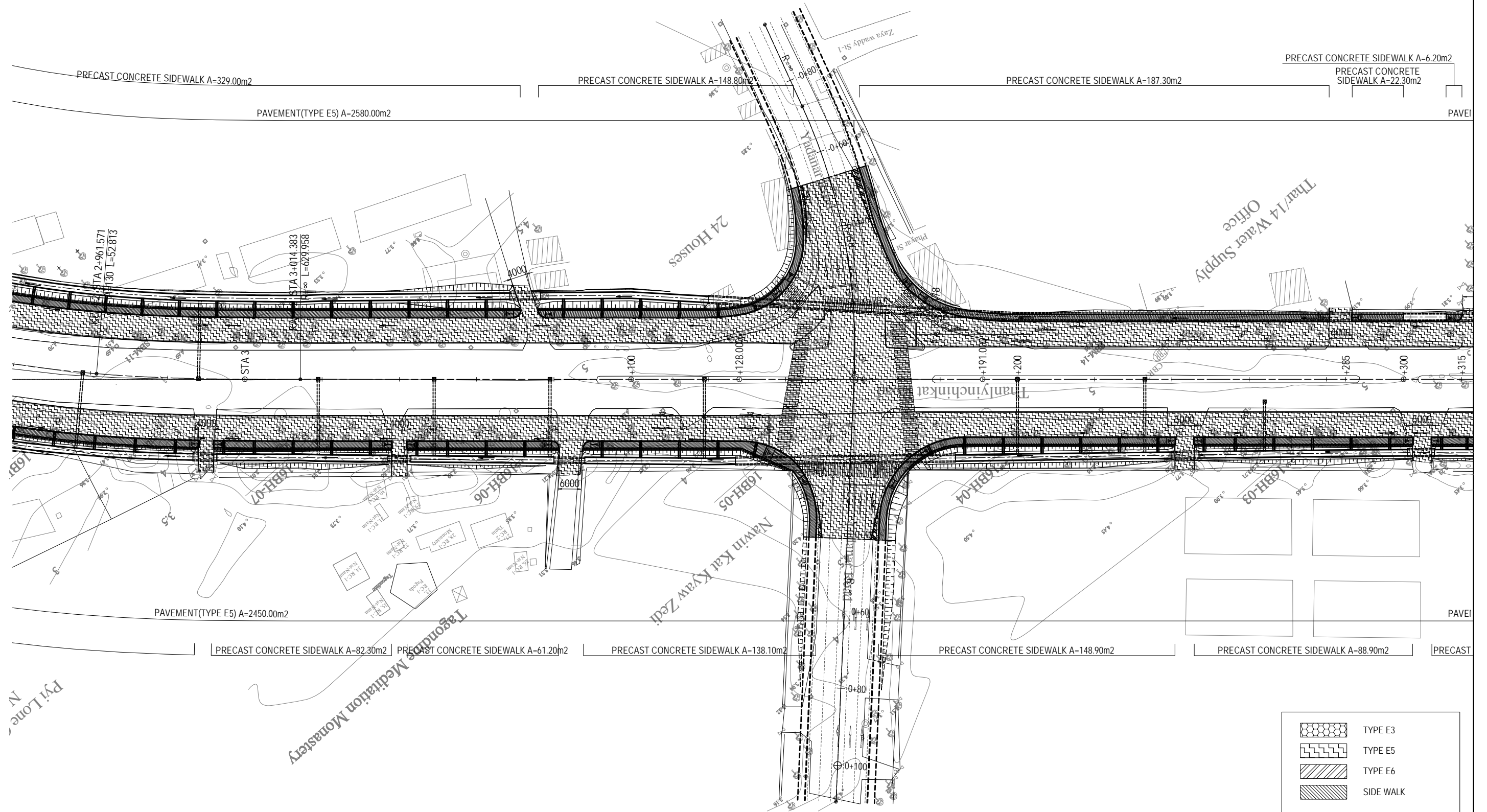
PLAN FOR PAVEMENT TYPE(1) S= 1:1000



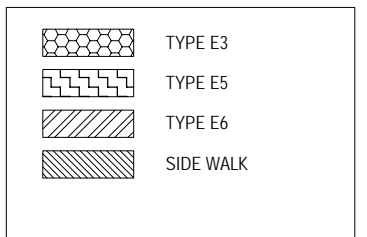
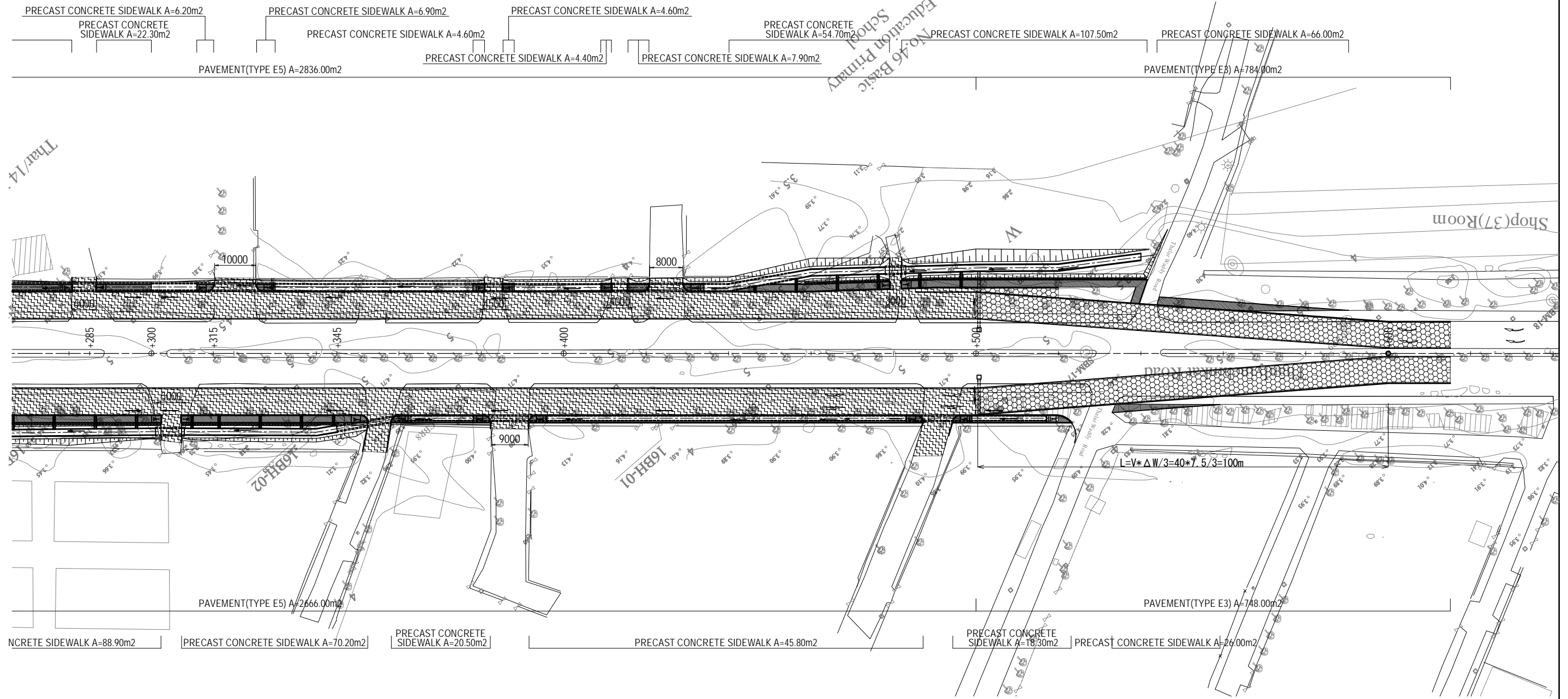
	TYPE E3
	TYPE E5
	TYPE E6
	SIDE WALK

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 FOR PAVEMENT TYPE(1) S=1:1000	PACKAGE 0 DWG No. P3-RD-0310	
				PREPARED BY	K. TACHIBANA				29 Sep.2017
				CHECKED BY	T. HAYAKAWA				3 Oct.2017
				APPROVED BY	Y. SANO				6 Oct.2017

PLAN FOR PAVEMENT TYPE(2) S= 1:1000

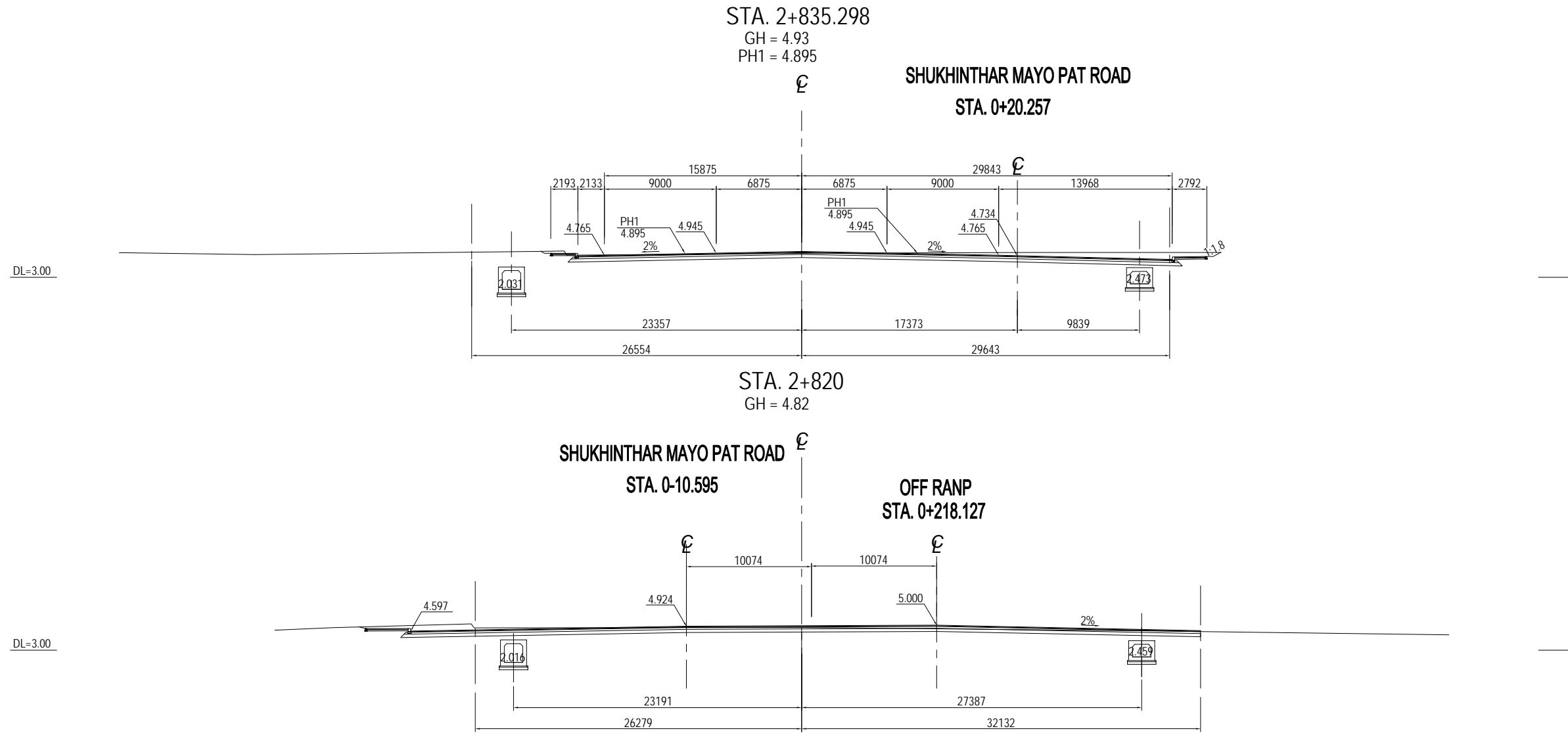


PLAN FOR PAVEMENT TYPE(3) S= 1:1000



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 PLAN FOR PAVEMENT TYPE(3) S=1:1000	PACKAGE	
				PREPARED BY	K. TACHIBANA			29 Sep.2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct.2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct.2017	P3-RD-0330

CROSS SECTION(1) S= 1:400



Note: Elevation of each cross section is based on Mean Sea Level (MSL).

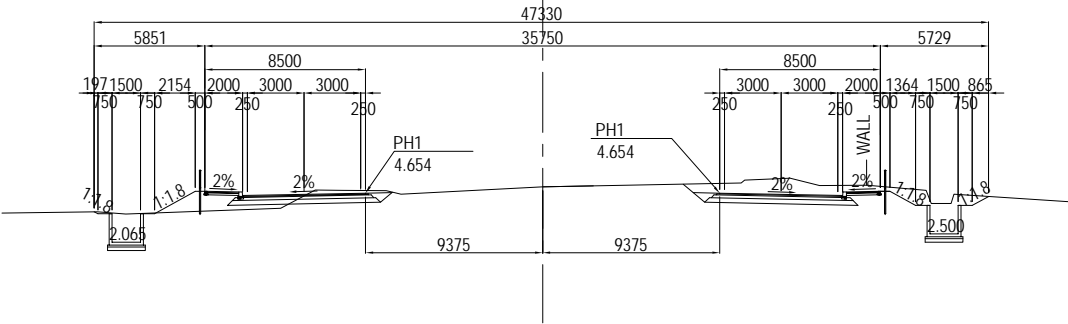
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO. LTD. NIPPON ENGINEERING CONSULTANTS CO. LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE CROSS SECTION(1) S= 1:400	PACKAGE	
				PREPARED BY	K. TACHIBANA			29 Sep.2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct.2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct.2017	P0-RD-0400

CROSS SECTION(2) S= 1:400

STA. 2+880
GH = 4.98
PH1 = 4.654

℄

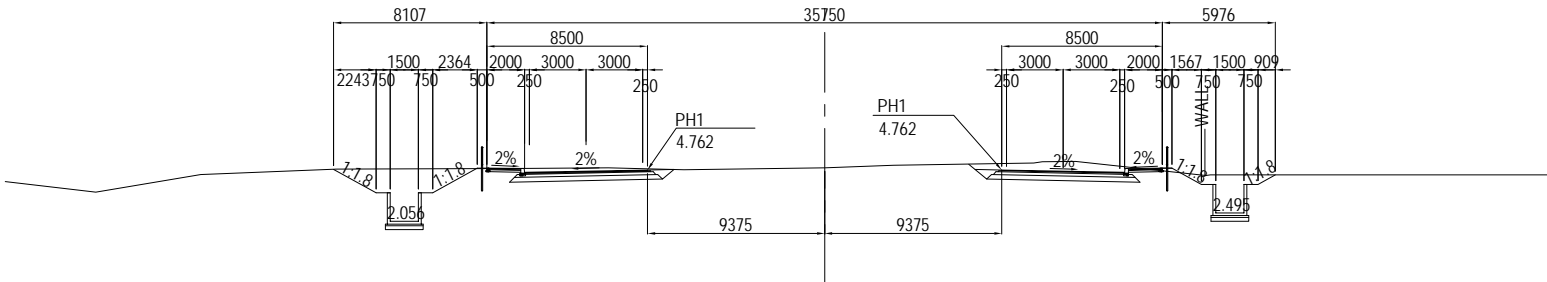
DL=3.00



STA. 2+860
GH = 4.88
PH1 = 4.762

℄

DL=3.00

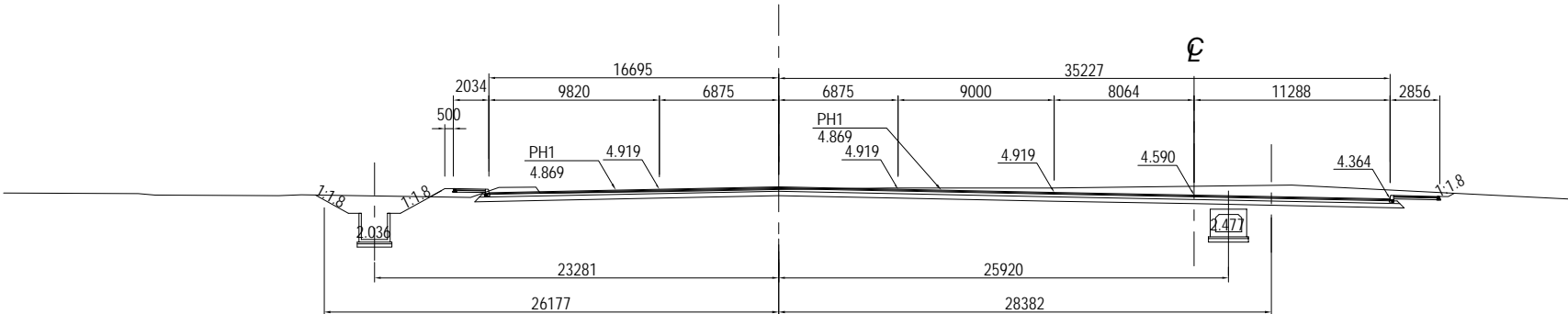


STA. 2+840
GH = 4.91
PH1 = 4.869

SHUKHINTHAR MAYO PAT ROAD
STA. 0+28.516

℄

DL=3.00

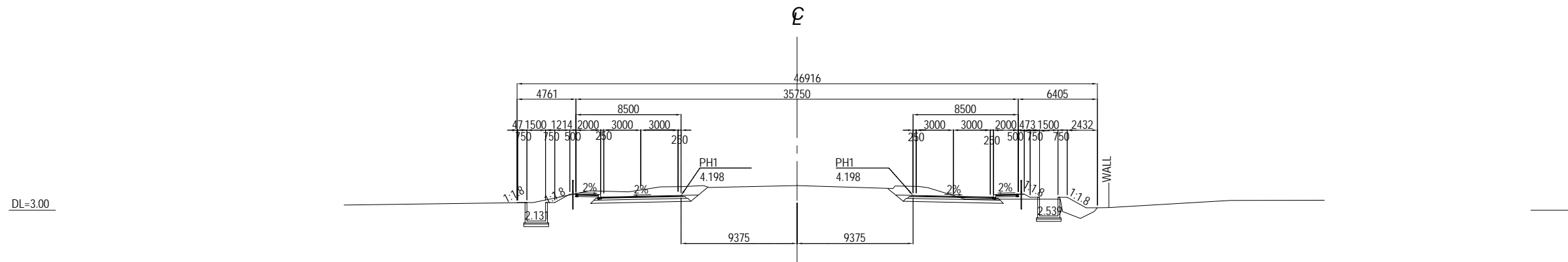


Note: Elevation of each cross section is based on Mean Sea Level (MSL).

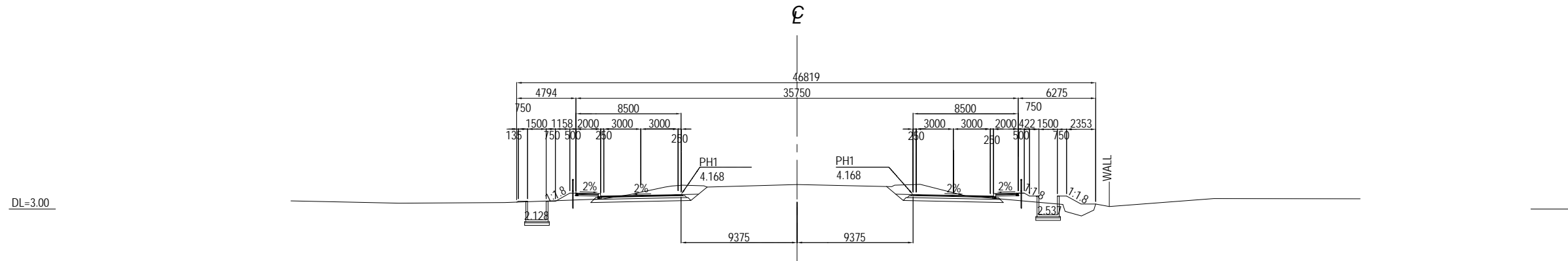
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO. LTD. NIPPON ENGINEERING CONSULTANTS CO. LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE CROSS SECTION(2) S= 1:400	PACKAGE	
				PREPARED BY	K. TACHIBANA			29 Sep.2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct.2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct.2017	P0-RD-0410

CROSS SECTION(5) S= 1:400

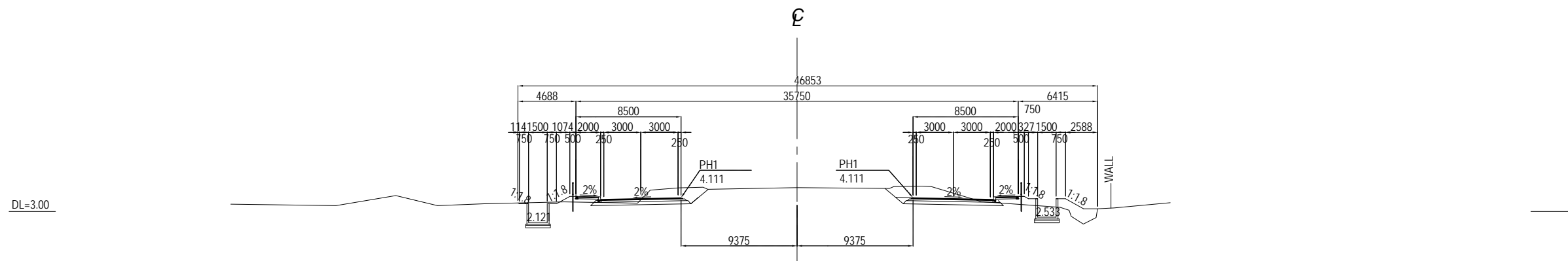
STA. 3+020
GH = 4.99
PH1 = 4.198



STA. 3+014.383
GH = 4.98
PH1 = 4.168



STA. 3+0.0
GH = 4.92
PH1 = 4.111

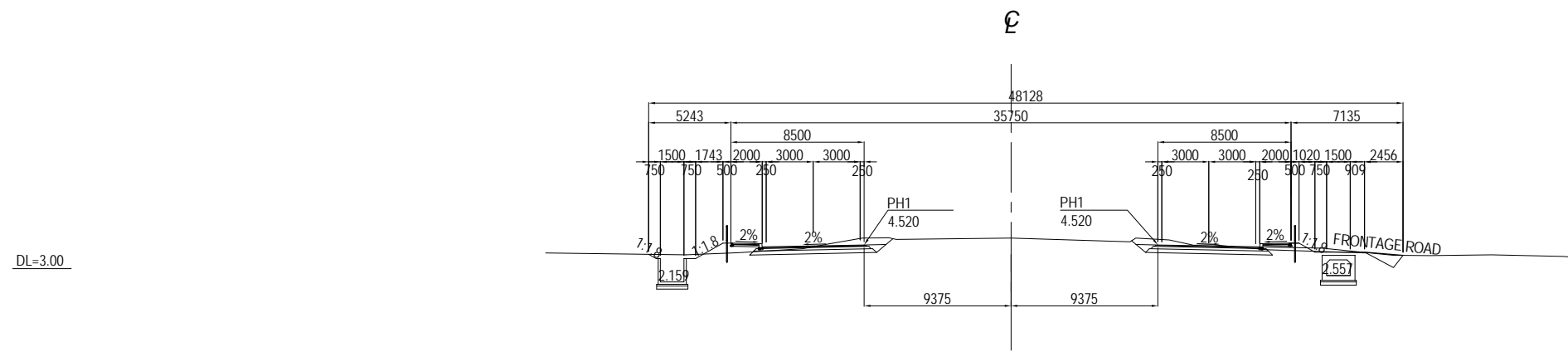


Note: Elevation of each cross section is based on Mean Sea Level (MSL).

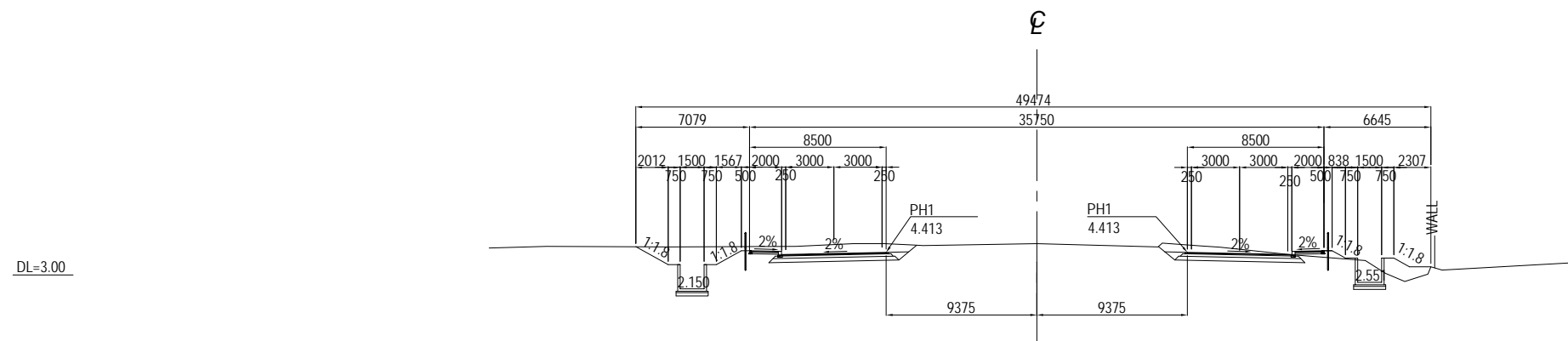
PROJECT NAME	FINANCED BY	COUNTERPART	JICA STUDY TEAM	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE
DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	JICA JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	K. TACHIBANA		29 Sep.2017	CROSS SECTION(5) S= 1:400	0
				T. HAYAKAWA		3 Oct.2017		DWG No.
				Y. SANO		6 Oct.2017		P0-RD-0440

CROSS SECTION(6) S= 1:400

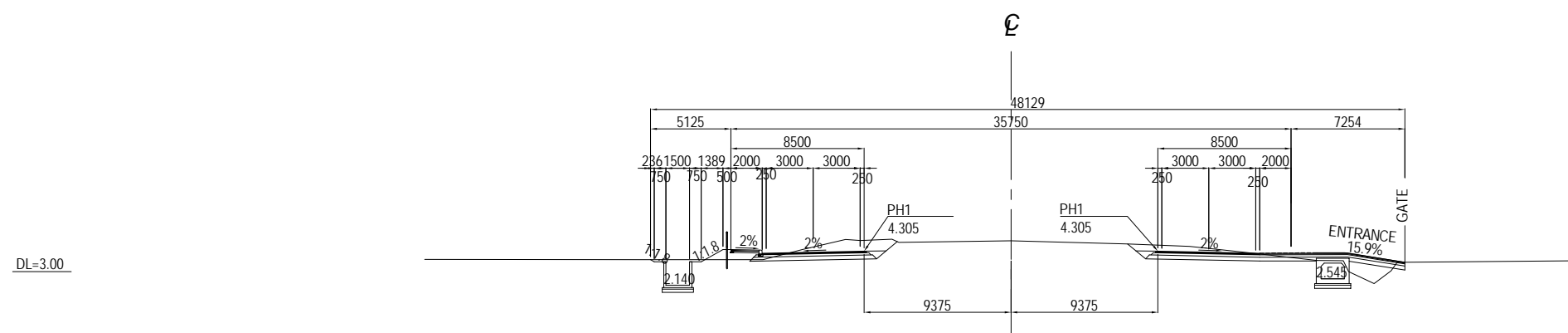
STA. 3+080
GH = 4.96
PH1 = 4.520



STA. 3+060
GH = 4.95
PH1 = 4.413



STA. 3+040
GH = 4.97
PH1 = 4.305



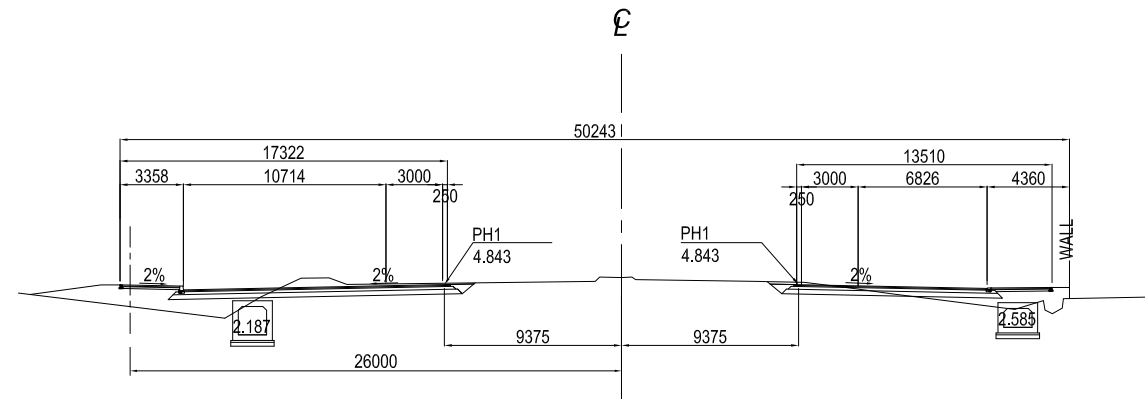
Note: Elevation of each cross section is based on Mean Sea Level (MSL).

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(6) S= 1:400	PACKAGE 0 DWG No. P0-RD-0450	
				PREPARED BY	K. TACHIBANA				29 Sep.2017
				CHECKED BY	T. HAYAKAWA				3 Oct.2017
				APPROVED BY	Y. SANO				6 Oct.2017

CROSS SECTION(7) S= 1:400

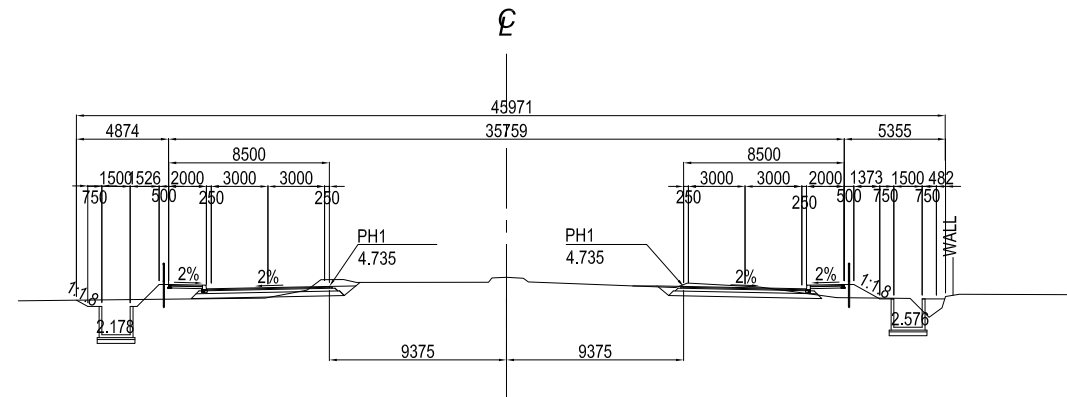
STA. 3+140
GH = 5.22
PH1 = 4.843

DL=3.00



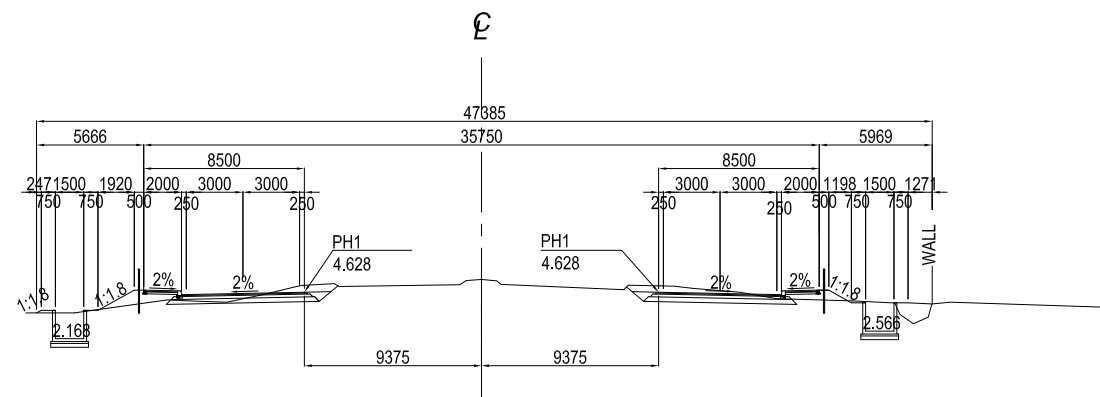
STA. 3+120
GH = 5.22
PH1 = 4.735

DL=3.00



STA. 3+100
GH = 5.30
PH1 = 4.628

DL=3.00

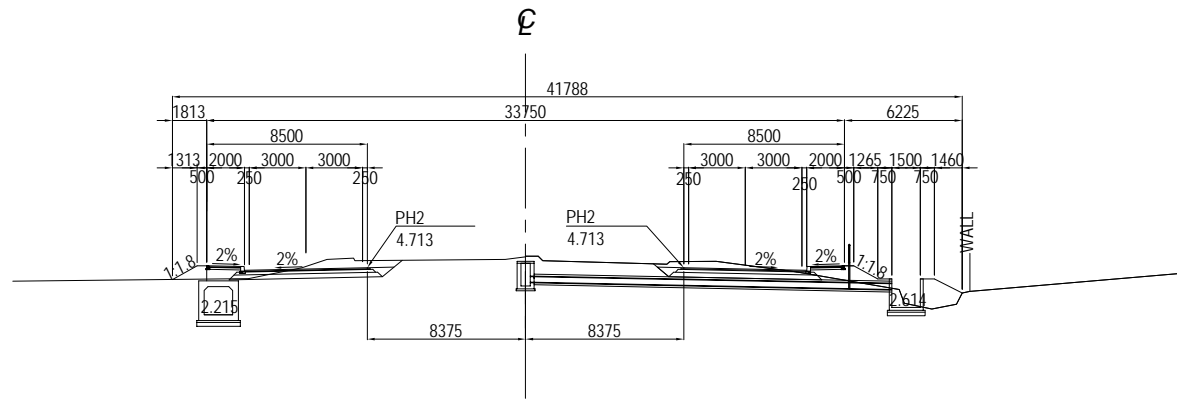


Note: Elevation of each cross section is based on Mean Sea Level (MSL).

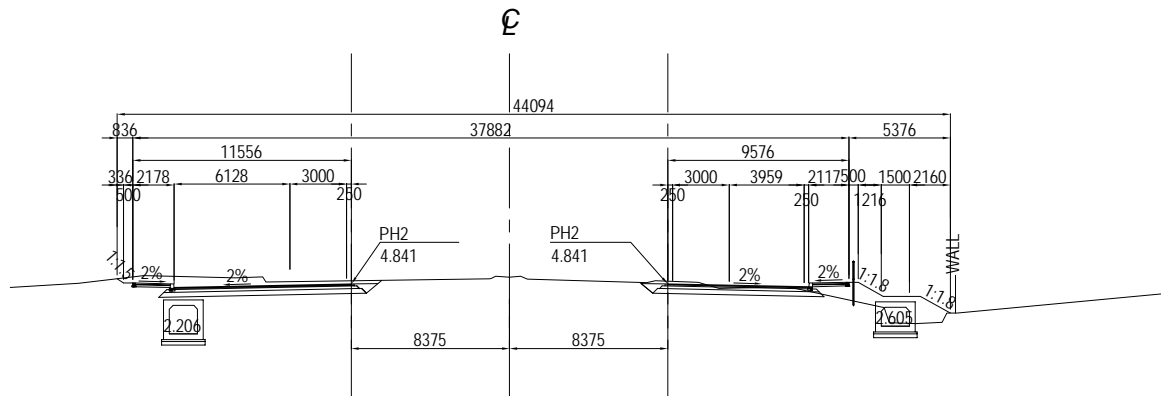
PROJECT NAME	FINANCED BY	COUNTERPART	JICA STUDY TEAM	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE
DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	JICA JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	K. TACHIBANA		29 Sep. 2017	CROSS SECTION(7) S= 1:400	0
				T. HAYAKAWA		3 Oct. 2017		DWG No.
				Y. SANO		6 Oct. 2017		P0-RD-0460

CROSS SECTION(8) S= 1:400

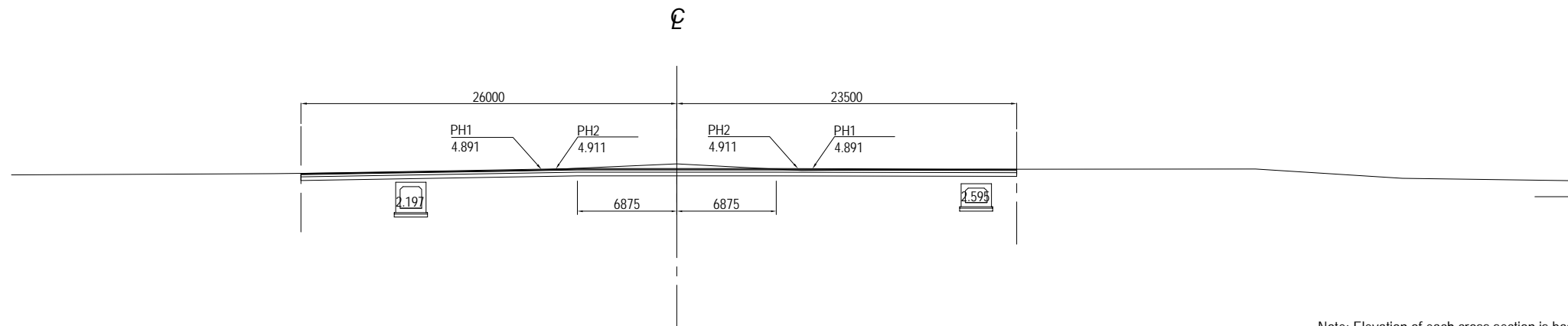
STA. 3+200
GH = 5.29
PH2 = 4.713



STA. 3+180
GH = 5.21
PH2 = 4.841



STA. 3+160
GH = 5.26
PH1 = 4.891 PH2 = 4.911



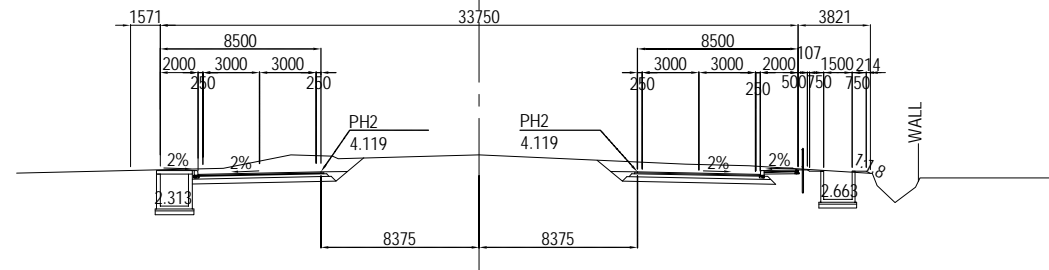
Note: Elevation of each cross section is based on Mean Sea Level (MSL).

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(8) S= 1:400	PACKAGE	
				PREPARED BY	K. TACHIBANA			29 Sep.2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct.2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct.2017	P0-RD-0470

CROSS SECTION(10) S= 1:400

STA. 3+300
GH = 5.03
PH2 = 4.119

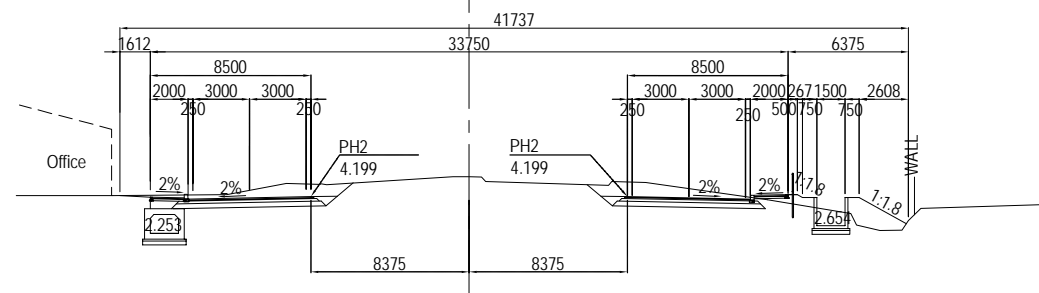
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DL=3.00

STA. 3+280
GH = 5.25
PH2 = 4.199

℄



DL=3.00

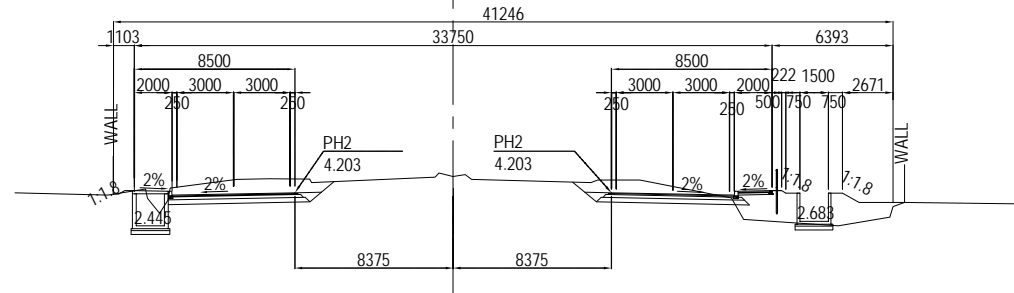
Note: Elevation of each cross section is based on Mean Sea Level (MSL).

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.	K. TACHIBANA		29 Sep.2017	CROSS SECTION(10) S= 1:400	0
				T. HAYAKAWA		3 Oct.2017		DWG No.
				Y. SANO		6 Oct.2017		P0-RD-0490

CROSS SECTION(11) S= 1:400

STA. 3+340
GH = 5.06
PH2 = 4.203

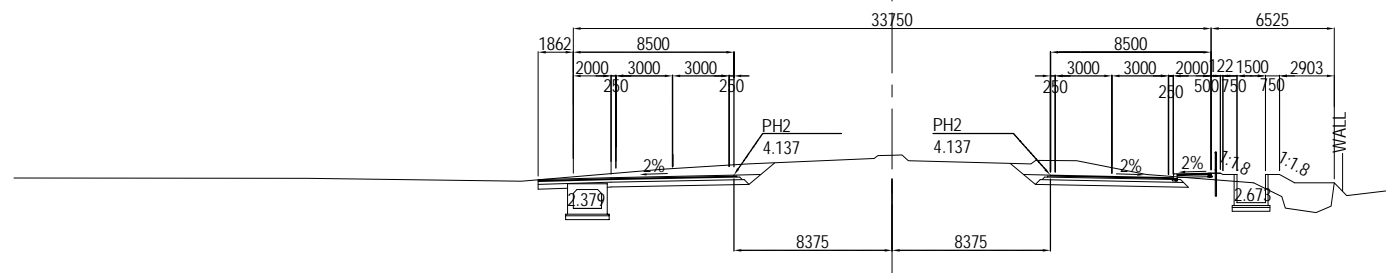
℄



DL=3.00

STA. 3+320
GH = 5.18
PH2 = 4.137

℄



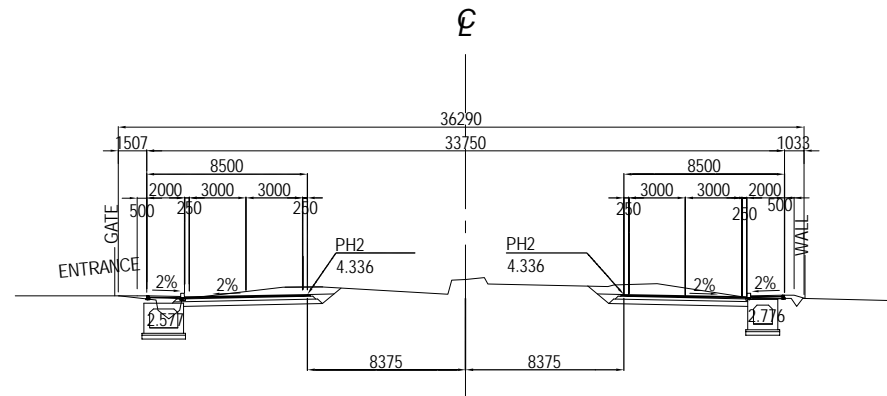
DL=3.00

Note: Elevation of each cross section is based on Mean Sea Level (MSL).

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.	K. TACHIBANA		29 Sep.2017	CROSS SECTION(11) S= 1:400	0
				T. HAYAKAWA		3 Oct.2017		DWG No.
				Y. SANO		6 Oct.2017		P0-RD-0500

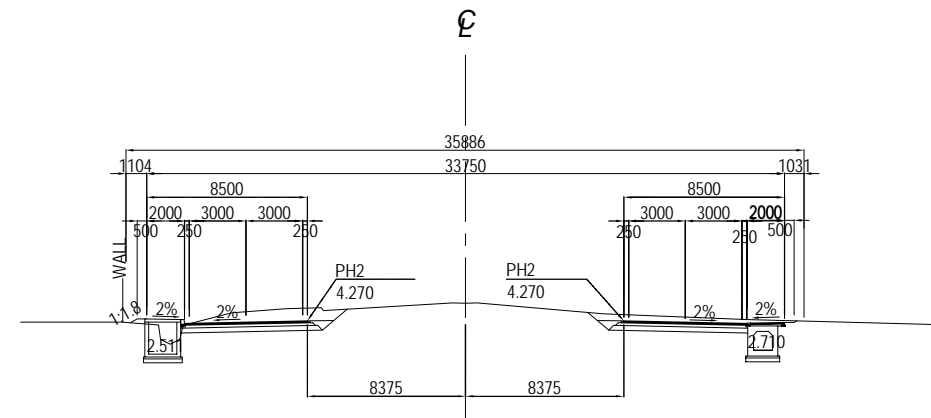
CROSS SECTION(12) S= 1:400

STA. 3+380
GH = 5.13
PH2 = 4.336



DL=3.00

STA. 3+360
GH = 5.20
PH2 = 4.270



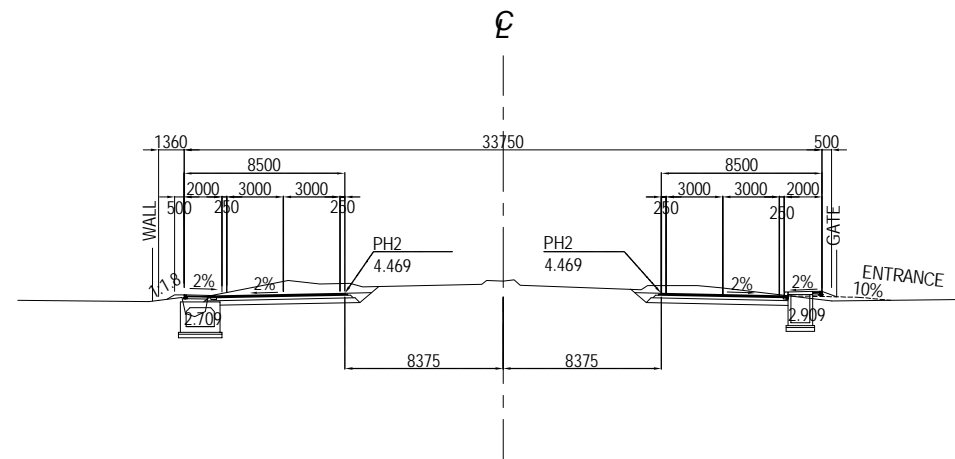
DL=3.00

Note: Elevation of each cross section is based on Mean Sea Level (MSL).

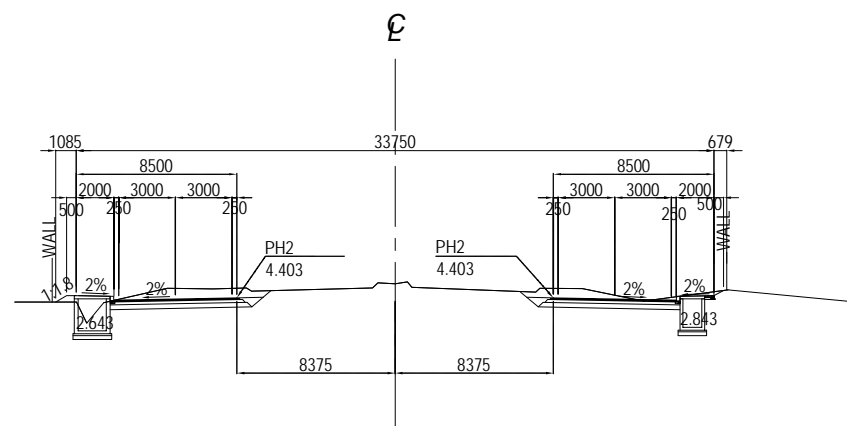
PROJECT NAME	FINANCED BY	COUNTERPART	JICA STUDY TEAM	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE
DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	JICA JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	K. TACHIBANA		29 Sep. 2017	CROSS SECTION(12) S= 1:400	0
				T. HAYAKAWA		3 Oct. 2017		DWG No.
				Y. SANO		6 Oct. 2017		P0-RD-0510

CROSS SECTION(13) S= 1:400

STA. 3+420
GH = 5.12
PH2 = 4.469



STA. 3+400
GH = 5.15
PH2 = 4.403



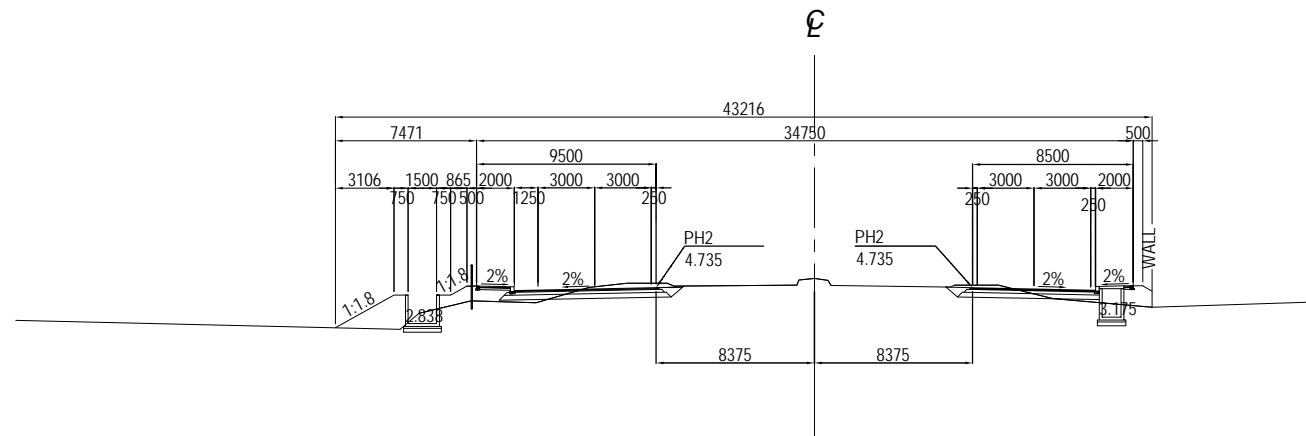
Note: Elevation of each cross section is based on Mean Sea Level (MSL).

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(13) S= 1:400	PACKAGE	
				PREPARED BY	K. TACHIBANA			29 Sep.2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct.2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct.2017	P0-RD-0520

CROSS SECTION(15) S= 1:400

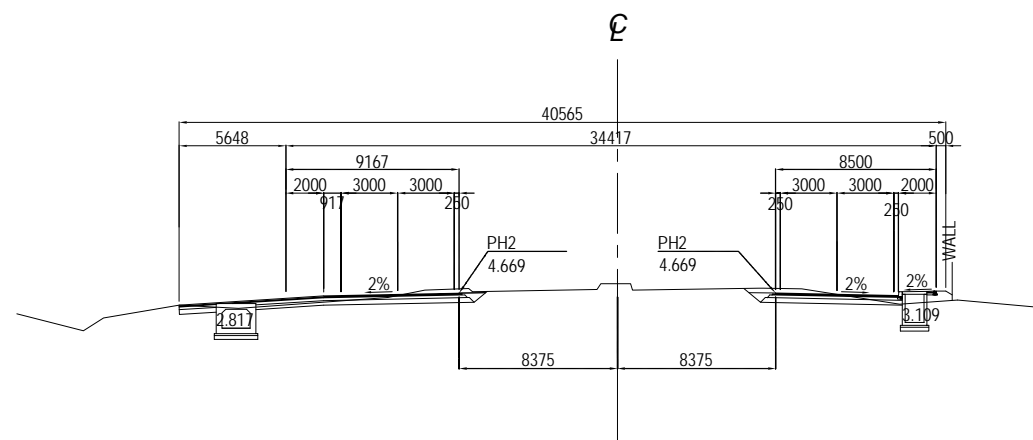
STA. 3+500
GH = 5.23
PH2 = 4.735

DL=3.00



STA. 3+480
GH = 5.16
PH2 = 4.669

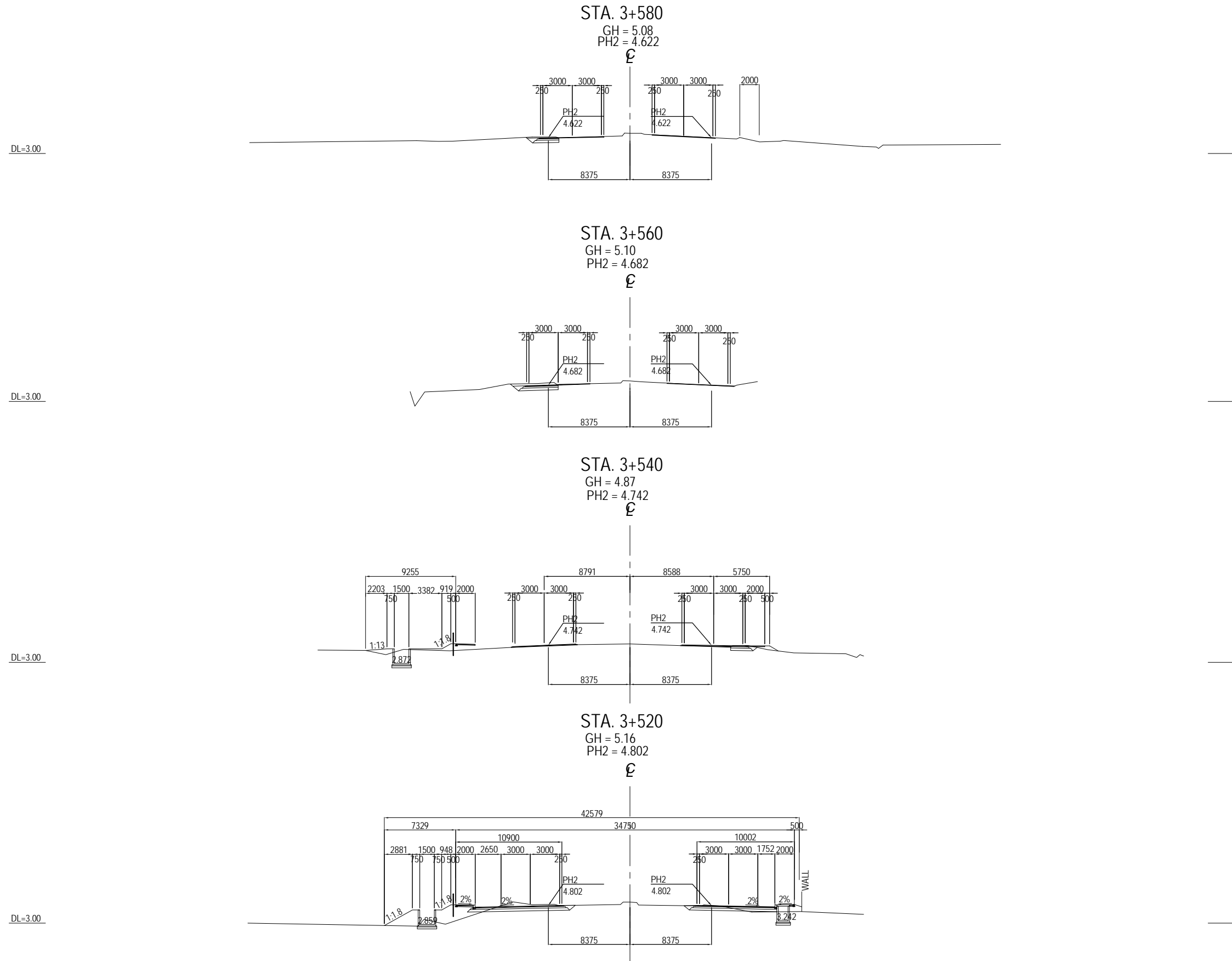
DL=3.00



Note: Elevation of each cross section is based on Mean Sea Level (MSL).

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.	K. TACHIBANA		29 Sep. 2017	CROSS SECTION(15) S= 1:400	0
				T. HAYAKAWA		3 Oct. 2017		DWG No.
				Y. SANO		6 Oct. 2017		P0-RD-0540

CROSS SECTION(16) S= 1:400



Note: Elevation of each cross section is based on Mean Sea Level (MSL).

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(16) S= 1:400	PACKAGE 0 DWG No. P0-RD-0550	
				PREPARED BY	K. TACHIBANA				29 Sep.2017
				CHECKED BY	T. HAYAKAWA				3 Oct.2017
				APPROVED BY	Y. SANO				6 Oct.2017

INTERSECTION PLAN, PROFILE AND SECTION (SHUKHINTHAR INTERSECTION STA.2+830)

SHUKHINTHAR MAYO PAT ROAD/AWARAT ST

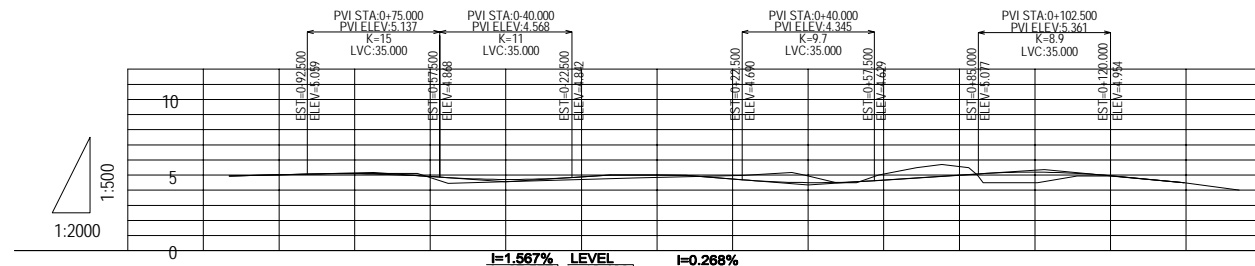
STA	EASTING	NORTHING	ELEMENT	DIRECTION	BR	P	ER	L
BP	0+286.8224	204092.659200	1859373.180867	S	L			292.345
BC.1	0+5.5228	204286.365525	1859592.141060	R	L	100.000		43.312
BC.2	0+48.8349	204307.258946	1859629.694478	R	L	600.000		135.124
EP	0+183.9593	204331.207129	1859762.389763	E				

APPROACH ROAD-ON

No	EASTING	NORTHING	ELEMENT	DIRECTION	BR	P	ER	L
BP	0+0.000	204367.454022	1859480.659695	S	L			32.743
BC.1	1+12.743	204341.376097	1859500.459242	R	L	70.000		49.949
BC.2	4+2.433	204315.188197	1859541.750719	R	L	70.000		56.764
BC.3	6+18.814	204283.398817	1859586.904210	R	R	70.000		39.267
EP	8+18.081	204257.313166	1859615.564452	E				

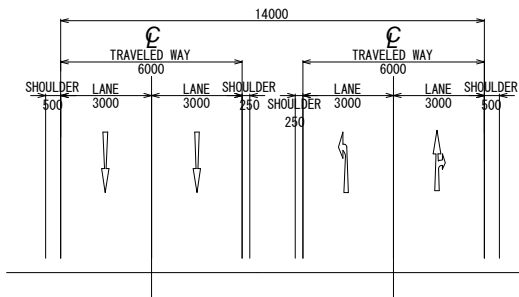
APPROACH ROAD-OFF

No	EASTING	NORTHING	ELEMENT	DIRECTION	BR	P	ER	L
BC.1	0+0.000	204365.245444	1859499.164484	R	R	50.000		42.483
EC.1	2+2.483	204333.436371	1859525.375230	S	L			39.981
BC.2	4+2.464	204315.803013	1859561.257828	R	L	77.000		8.337
BC.3	4+10.801	204311.728750	1859568.526403	R	R	500.000		61.327
EP	7+12.128	204282.146606	1859622.203211	E				

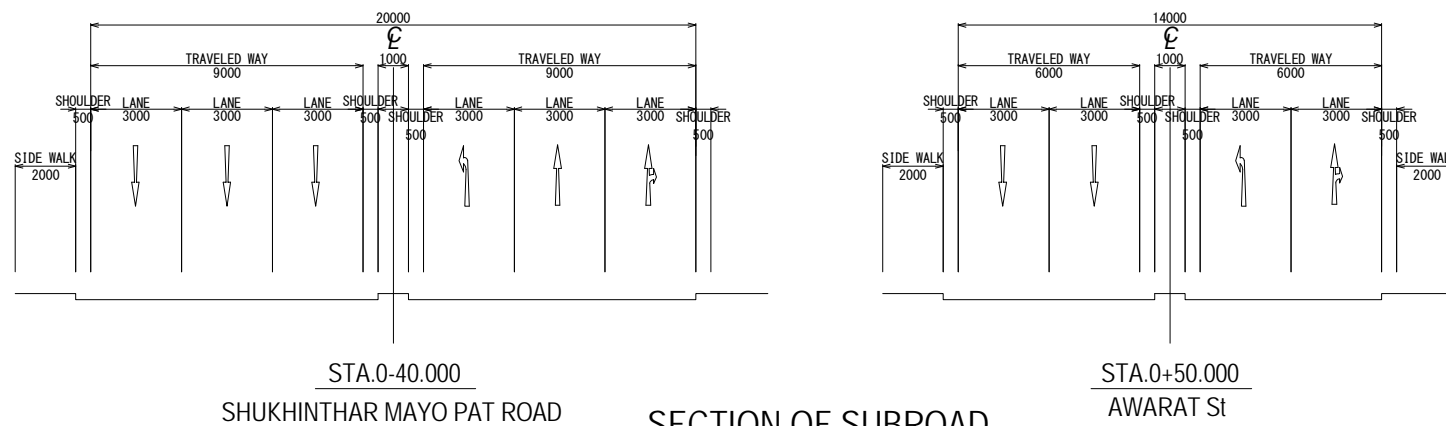


GRADE	PROPOSED HEIGHT	EXISTING HEIGHT	STATION	SUPER ELEVATION	CURVE ELEMENTS
4.930	4.930	4.93	STA 0+173.200	0.113, 2.00%	L=292.345
5.002	5.002	5.01	-100.000	2.00%	
5.062	5.062	5.11	-80.000	0.520, 2.00%	R=100.000 IP 1 IA=24.4858 CL=43.312
5.137	5.042	5.11	-75.000	2.00%	
4.981	4.891	4.83	-60.000	1.119, 2.00%	R=600.000 IP 2 IA=12.5412 CL=135.124
4.708	4.708	4.56	-40.000	2.00%	
5.000	5.000	4.71	-20.000	2.00%	RUN-OFF AREA
5.000	5.000	4.77	-12.423	2.00%	
4.979	4.979	4.86	STA 0+71.822	2.00%	R=100.000 IP 1 IA=24.4858 CL=43.312
4.739	4.739	4.89	BC 1+7.822	2.00%	
4.345	4.502	4.94	+40.000	2.00%	R=600.000 IP 2 IA=12.5412 CL=135.124
4.627	4.627	4.50	BC 2+0.000	2.00%	
4.670	4.670	5.07	+80.000	2.00%	R=600.000 IP 2 IA=12.5412 CL=135.124
4.985	4.985	5.57	+80.000	2.00%	
5.361	5.193	4.56	+100.000	2.00%	R=600.000 IP 2 IA=12.5412 CL=135.124
4.954	4.954	4.95	+120.000	2.00%	
4.500	4.500	4.50	+138.500	2.00%	R=600.000 IP 2 IA=12.5412 CL=135.124
4.500	4.500	4.48	+160.000	2.00%	

PROFILE OF SUBROAD
SCALE: H-1:2000, V-1:500



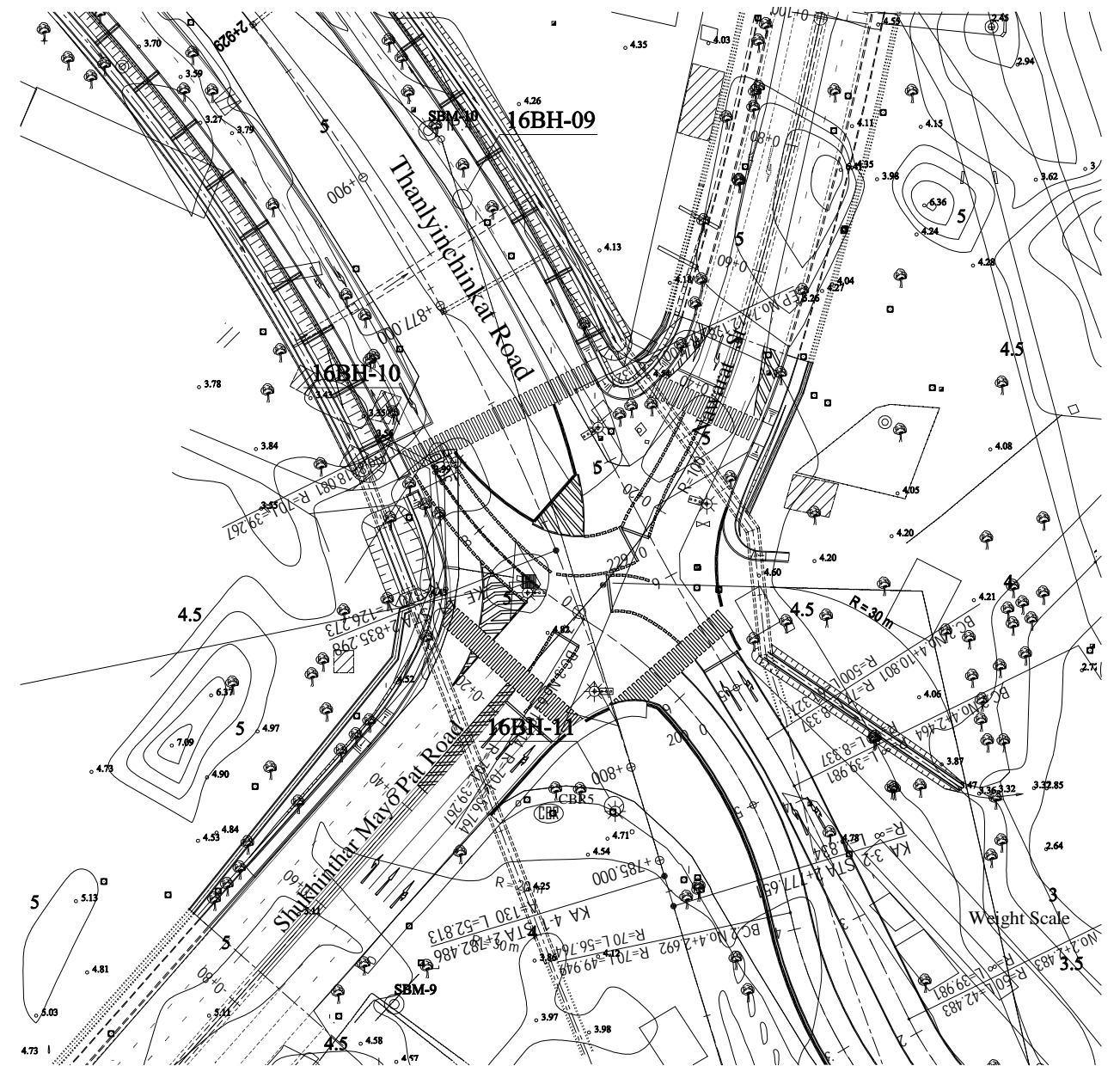
TEMPORARY ROAD SECTION
SCALE: 1:250



STA.0+40.000
SHUKHINTHAR MAYO PAT ROAD

SECTION OF SUBROAD
SCALE: 1:250

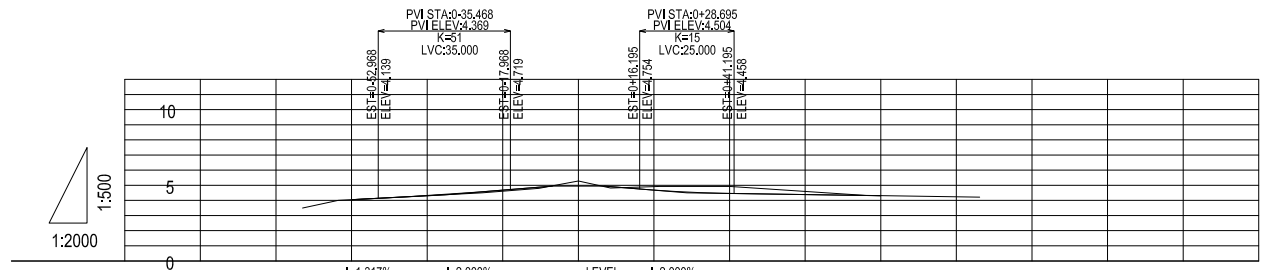
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AWARAT ST



INTERSECTION PLAN
SCALE: 1:1000

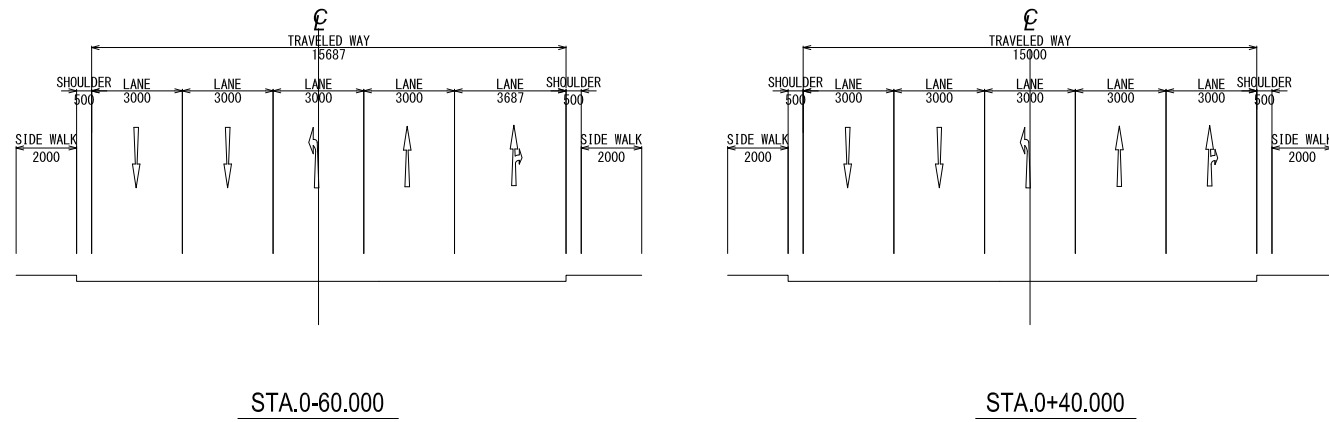
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JICA JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME K. TACHIBANA	SIGNATURE <i>[Signature]</i>	DATE 29 Sep.2017	DRAWING TITLE INTERSECTION PLAN, PROFILE AND SECTION (SHUKHINTHAR INTERSECTION STA.2+830)	PACKAGE 0
				CHECKED BY T. HAYAKAWA	<i>[Signature]</i>	3 Oct.2017		DWG No.
				APPROVED BY Y. SANO	<i>[Signature]</i>	6 Oct.2017		P0-RD-2000

INTERSECTION PLAN, PROFILE AND SECTION (YADANAR INTERSECTION STA.3+160)



GRADE		-1.317%	-2.000%	2.000%	-2.000%										
PROPOSED HEIGHT		4.046	4.326	4.399	4.679	4.941	4.941	4.941	4.683	4.555	4.464	4.389	4.315		
EXISTING HEIGHT		3.52	4.05	4.31	4.37	4.61	4.96	4.941	4.91	4.92	4.93	4.60	4.31	4.24	
STATION	BP	-80.000	BC.1	-60.000	-40.000	-35.468	-20.000	STA0	+6.875	+20.000	+28.695	+40.000	+60.000	+80.000	EP
SUPER ELEVATION			0.000%	2.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
CURVE ELEMENTS		L=23.316	R=150,000	IP.1	IP.1	IP.1	IP.1	IP.1	IP.1	IP.1	IP.1	IP.1	IP.1	IP.1	L=111.190

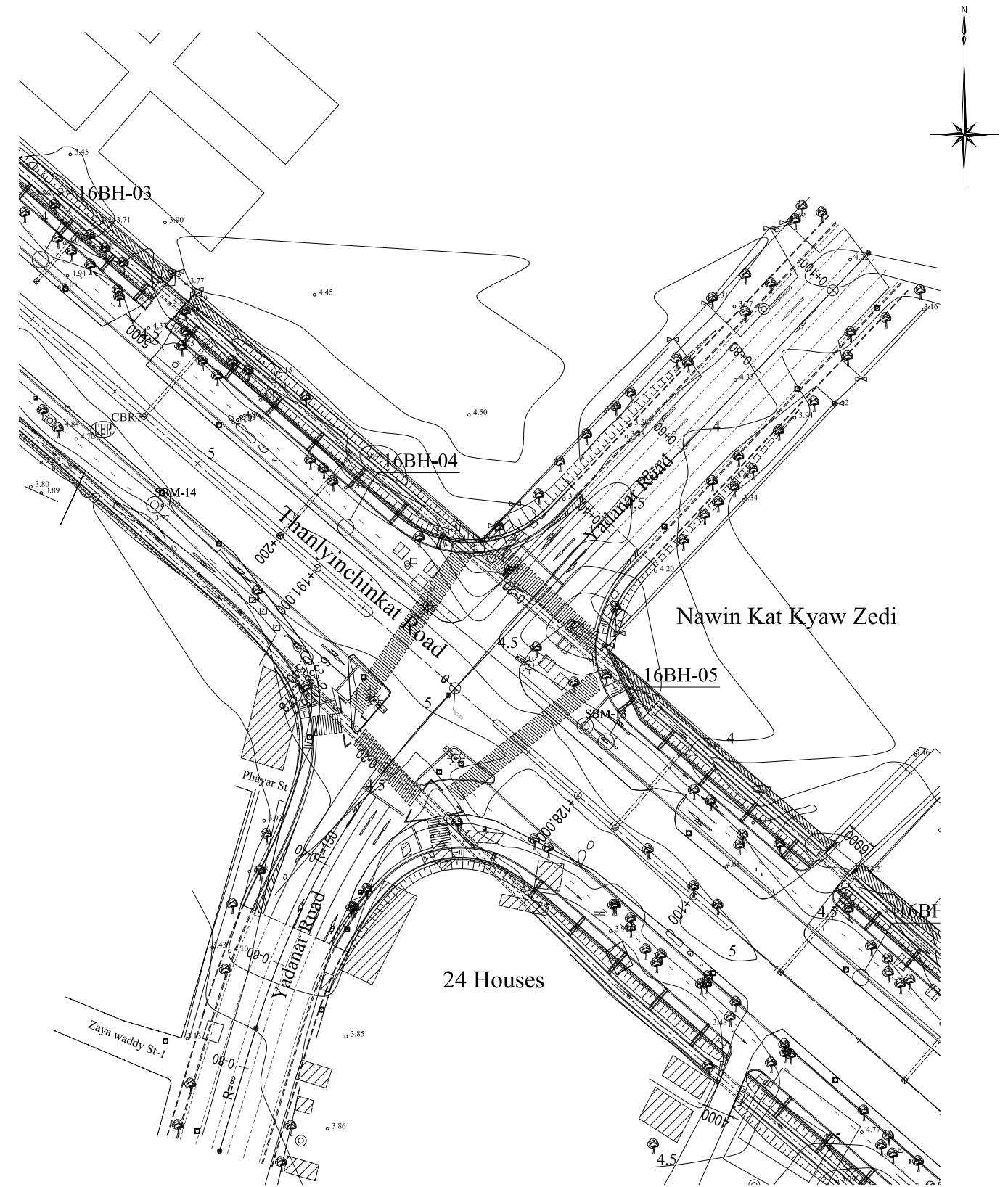
PROFILE OF SUBROAD
SCALEH-1:2000,V-1:500



SECTION OF SUBROAD
SCALEH-1:250

YADANAR ROAD

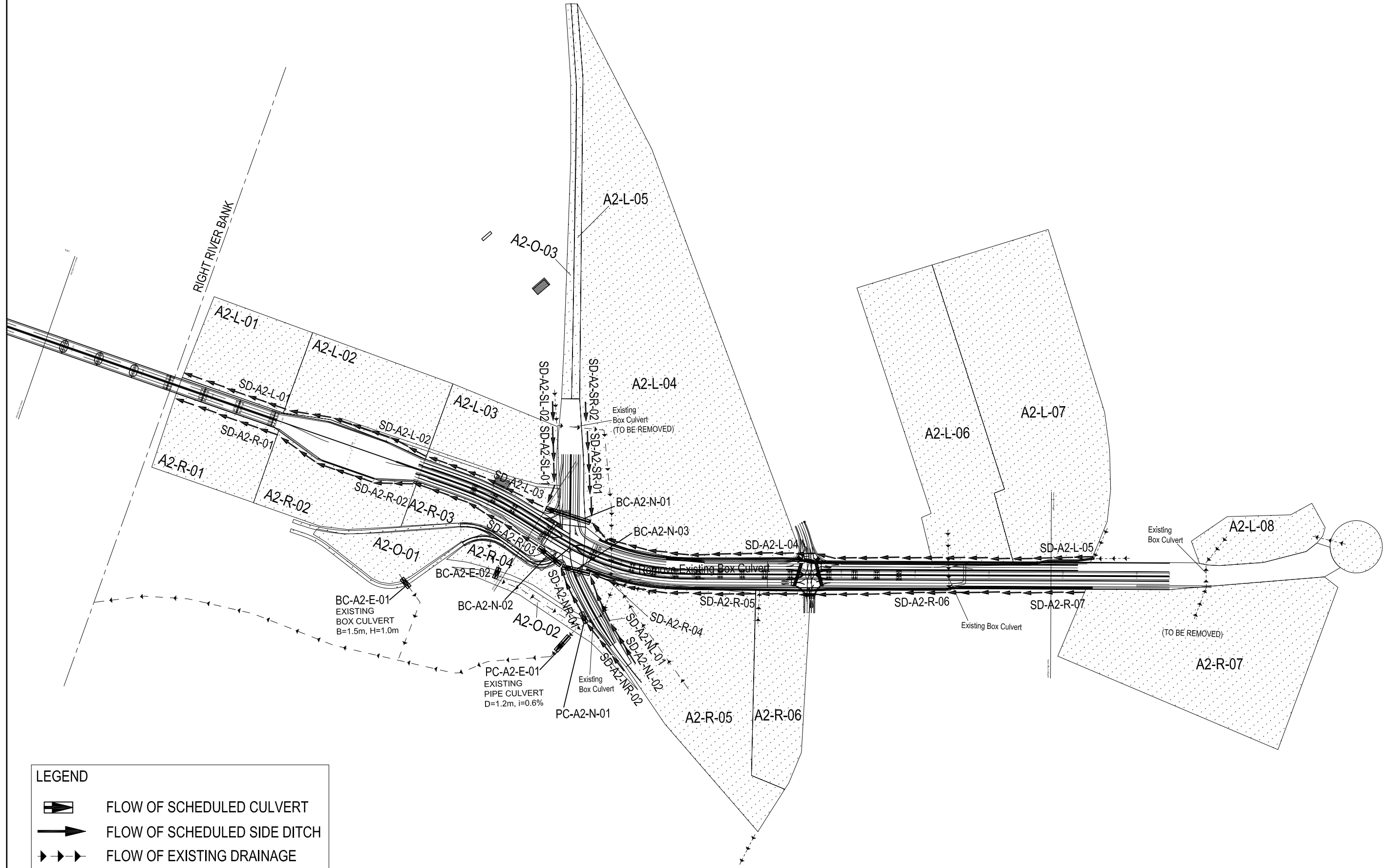
	STA	EASTING	NORTHING	ELEMENT	DIRECTION	BR	P	ER	L
BP	0-95.8649	204021.251900	1859748.460679	S	L				23.316
BC.1	0-72.5487	204027.875452	1859770.816336	R	R	150.000			70.754
EC.1	0-1.7949	204062.942775	1859831.514307	S	L				111.190
EP	0+109.3947	204139.522025	1859912.129132	E					



INTERSECTION PLAN
SCALEH-1:1000

DRAINAGE SYSTEM PLAN AND OUTLETS (RIGHT RIVER BANK)

S= 1:5000

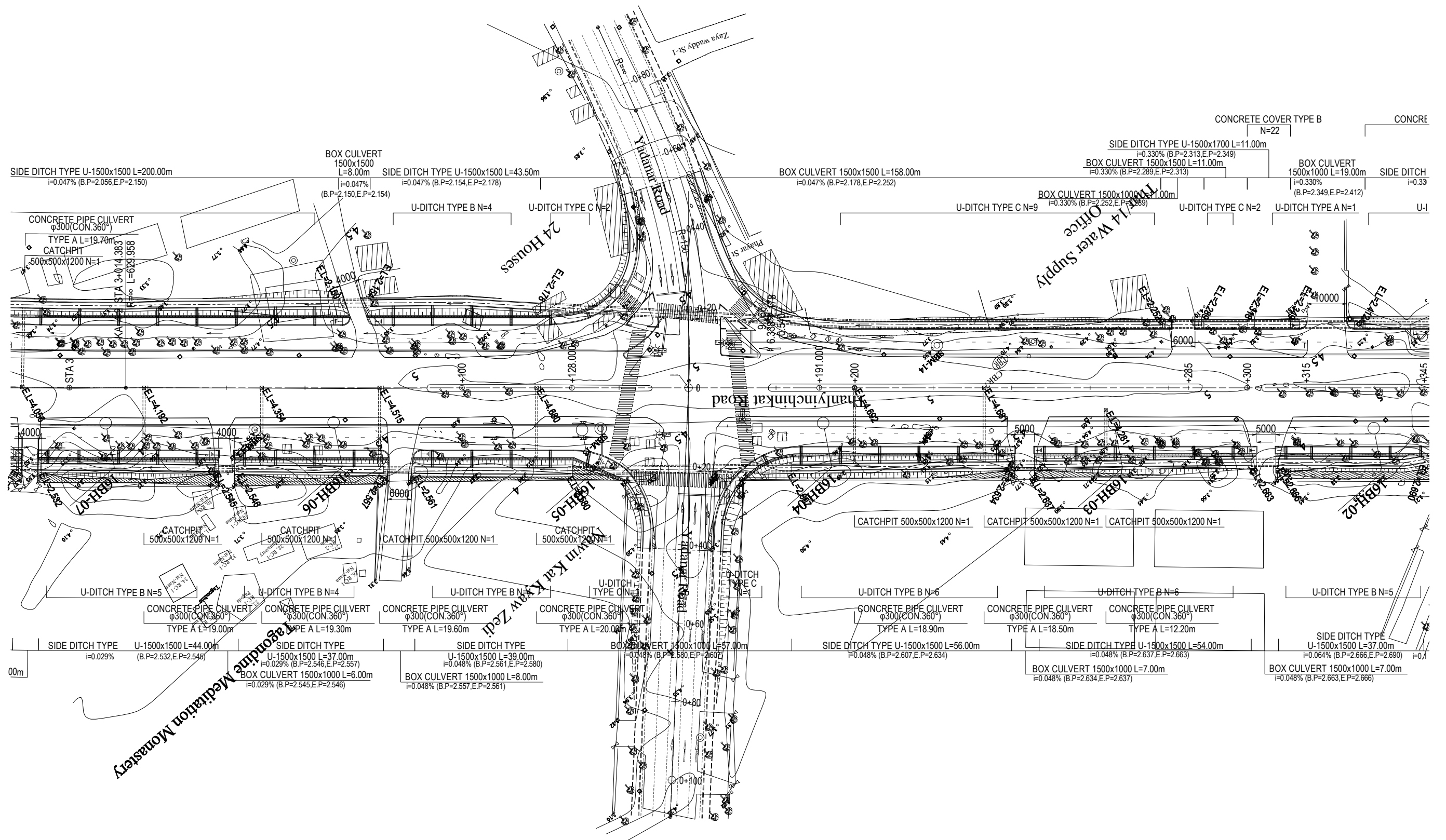


LEGEND

- FLOW OF SCHEDULED CULVERT
- FLOW OF SCHEDULED SIDE DITCH
- FLOW OF EXISTING DRAINAGE
- CATCHMENT AREA

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	K. TACHIBANA				29 Sep. 2017	DRAINAGE SYSTEM PLAN AND OUTLETS (RIGHT RIVER BANK)	0
				CHECKED BY	T. HAYAKAWA				3 Oct. 2017		DWG No.
				APPROVED BY	Y. SANO				6 Oct. 2017		P0-RD-3000

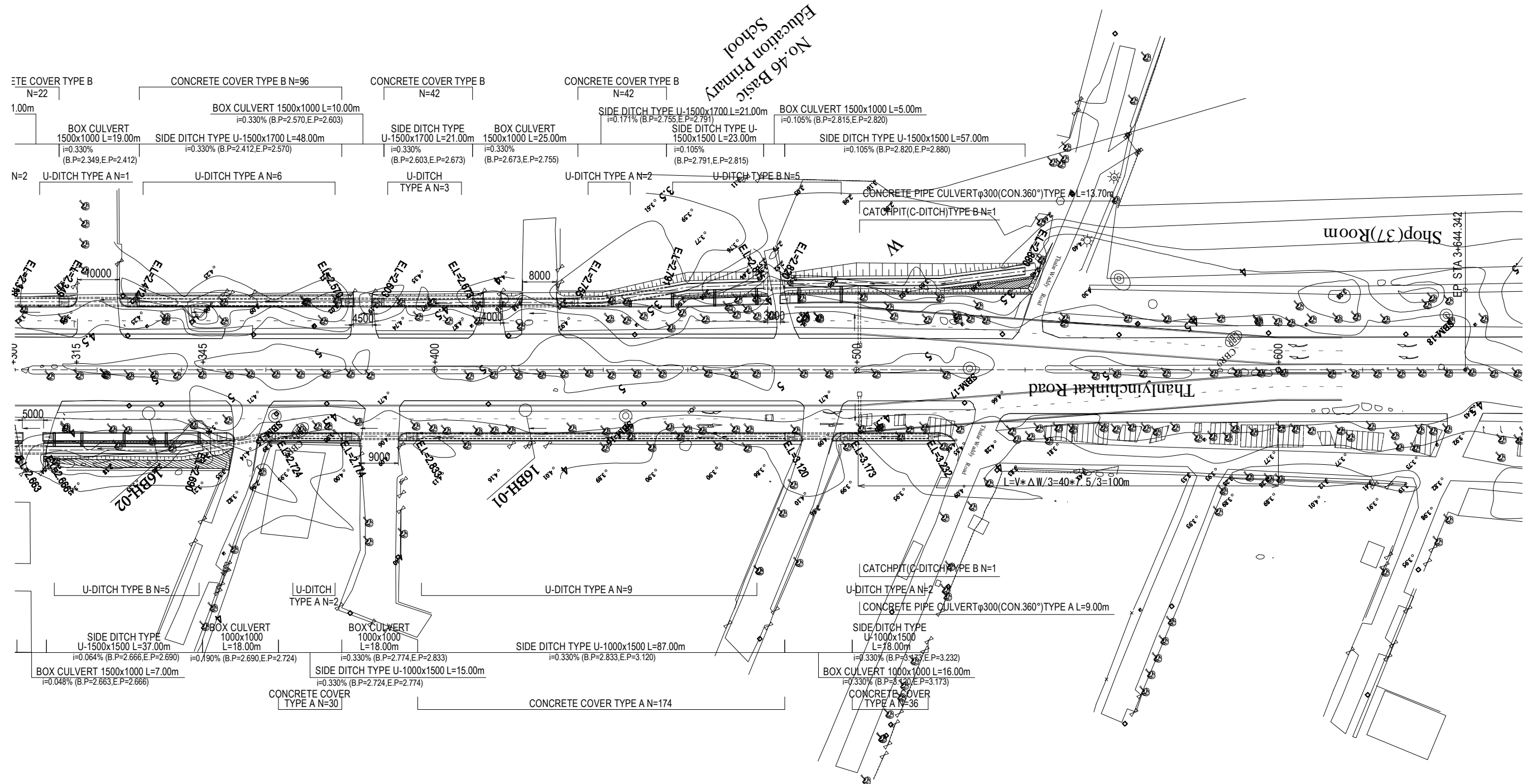
DRAINAGE SYSTEM PLAN(2) H= 1:1000



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.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">NAME</th> <th style="width: 15%;">SIGNATURE</th> <th style="width: 15%;">DATE</th> </tr> </thead> <tbody> <tr> <td>PREPARED BY K. TACHIBANA</td> <td></td> <td>29 Sep.2017</td> </tr> <tr> <td>CHECKED BY T. HAYAKAWA</td> <td></td> <td>3 Oct.2017</td> </tr> <tr> <td>APPROVED BY Y. SANO</td> <td></td> <td>6 Oct.2017</td> </tr> </tbody> </table>	NAME	SIGNATURE	DATE	PREPARED BY K. TACHIBANA		29 Sep.2017	CHECKED BY T. HAYAKAWA		3 Oct.2017	APPROVED BY Y. SANO		6 Oct.2017	DRAWING TITLE DRAINAGE SYSTEM PLAN(2) S=1:1000	PACKAGE 0 DWG No. P0-RD-3020
NAME	SIGNATURE	DATE																
PREPARED BY K. TACHIBANA		29 Sep.2017																
CHECKED BY T. HAYAKAWA		3 Oct.2017																
APPROVED BY Y. SANO		6 Oct.2017																

DRAINAGE SYSTEM PLAN(3) H= 1:1000

Note : Bottom elevations of each drainage at beginning point side and end point side be shown in the brackets like as (B.P=1.968, E.P=2.034) .

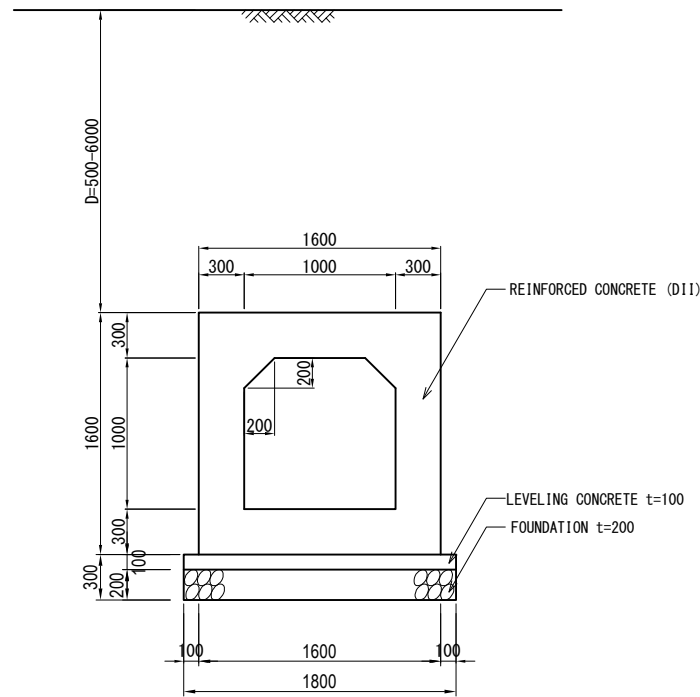


PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">NAME</th> <th style="width: 10%;">SIGNATURE</th> <th style="width: 10%;">DATE</th> </tr> </thead> <tbody> <tr> <td>PREPARED BY K. TACHIBANA</td> <td></td> <td>29 Sep.2017</td> </tr> <tr> <td>CHECKED BY T. HAYAKAWA</td> <td></td> <td>3 Oct.2017</td> </tr> <tr> <td>APPROVED BY Y. SANO</td> <td></td> <td>6 Oct.2017</td> </tr> </tbody> </table>	NAME	SIGNATURE	DATE	PREPARED BY K. TACHIBANA		29 Sep.2017	CHECKED BY T. HAYAKAWA		3 Oct.2017	APPROVED BY Y. SANO		6 Oct.2017	DRAWING TITLE DRAINAGE SYSTEM PLAN(3) S=1:1000	PACKAGE 0 DWG No. P0-RD-3030
NAME	SIGNATURE	DATE																
PREPARED BY K. TACHIBANA		29 Sep.2017																
CHECKED BY T. HAYAKAWA		3 Oct.2017																
APPROVED BY Y. SANO		6 Oct.2017																

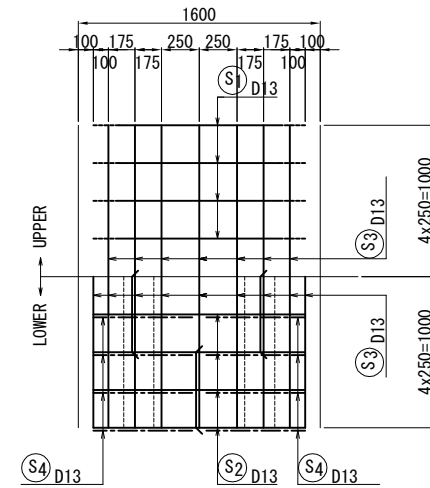
DETAIL OF BOX CULVERT TYPE 1000 x 1000

BAR ARRANGEMENT OF BOX CULVERT S=1/50

GENERAL DRAWING S=1:50

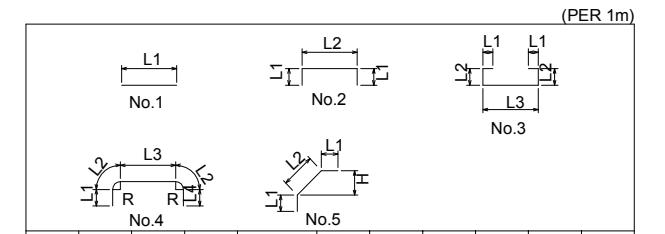


TOP SLAB



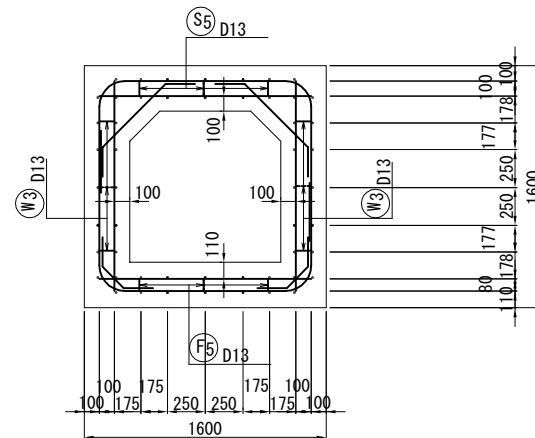
DESIGN CRITERIA

INSIDE DIMENSION		WIDTH	1.00 m
		HEIGHT	1.00 m
LIVE LOAD		T-TYPE LIVE LOAD	
UNIT WEIGHT	REINFORCED CONCRETE	24.5 kN/m ³	
	SOIL	18 kN/m ³	
CONCRETE DESIGN STRENGTH		24 N/mm ²	
ALLOWABLE STRESS			
COMPRESSIVE STRESS DUE TO BENDING		8 N/mm ²	
SHEARING STRESS		0.39 N/mm ²	
TENSILE STRESS (SD345)		160 N/mm ²	
COEFFICIENT OF EARTH PRESSURE		0.5	
IMPACT COEFFICIENT		-	
SEISMIC COEFFICIENT		-	
ANGLE OF SKEW		90°00'00"	
RADIUS OF CURVATURE		R=∞	
GRADIENT OF BOX CULVERT		i=0.500%	

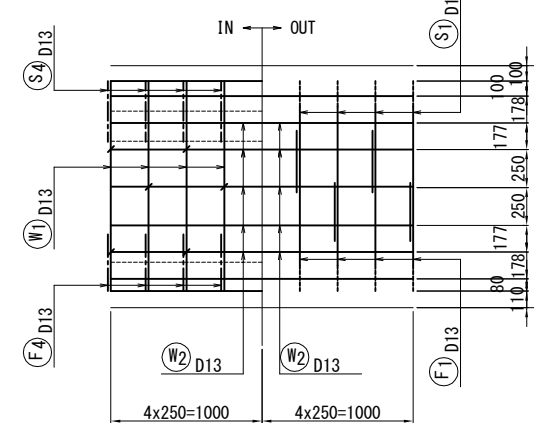


MARK	No.	SEC.	EACH	LENGTH (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	H (mm)	R (mm)
S 1	4	D13	4	3080	600	220	1120	920		140
S 2	1	D13	4	1400	1400					
S 3	1	D13	16	1000	1000					
S 4	5	D13	8	1040	195	649			459	
S 5	3	D13	3	980		126				
W 1	1	D13	8	1390	1390					
W 2	1	D13	20	1000	1000					
W 3	2	D13	12	360		152				
F 1	4	D13	4	3080	600	220	1120	920		140
F 2	1	D13	4	1400	1400					
F 3	1	D13	16	1000	1000					
F 4	5	D13	8	650	195	255			180	
F 5	3	D13	3	940		106				

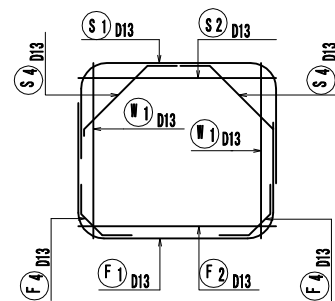
SECTION S=1:50



SIDE SLAB



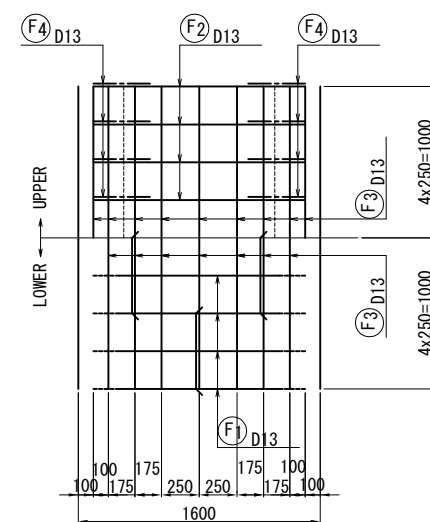
ERECTION DIAGRAM OF MAIN REINFORCEMENT



LIST OF REINFORCEMENT (PER 1m)

MARK	SEC.	LENGTH (mm)	EACH	WEIGHT (kg/m)	WEIGHT/one (kg)	WEIGHT (kg)	REMARKS
S 1	D13	3080	4	0.995	3.065	12.260	□
S 2	D13	1400	4	0.995	1.393	5.572	—
S 3	D13	1000	16	0.995	0.995	15.920	—
S 4	D13	1040	8	0.995	1.035	8.280	□
S 5	D13	980	3	0.995	0.975	2.925	□
W 1	D13	1390	8	0.995	1.383	11.064	—
W 2	D13	1000	20	0.995	0.995	19.900	—
W 3	D13	360	12	0.995	0.358	4.296	—
F 1	D13	3080	4	0.995	3.065	12.260	□
F 2	D13	1400	4	0.995	1.393	5.572	—
F 3	D13	1000	16	0.995	0.995	15.920	—
F 4	D13	650	8	0.995	0.647	5.176	□
F 5	D13	940	3	0.995	0.935	2.805	□

BOTTOM SLAB



MATERIALS (PER 1m)

KIND	UNIT	QUANTITY
CONCRETE (D11)	TOP	0.480 m ³
	SIDE	0.640 m ³
	BOTTOM	0.480 m ³
	TOTAL	1.600 m ³
FORM	m ²	5.966
REINFORCING BAR	D19	0 kg
	D16	0 kg
	D13	121.950 kg
	TOTAL	121.950 kg
FOUNDATION	LEVELING CONCRETE t=100	0.180 m ²
	CRUSHED STONE t=200	0.360 m ²

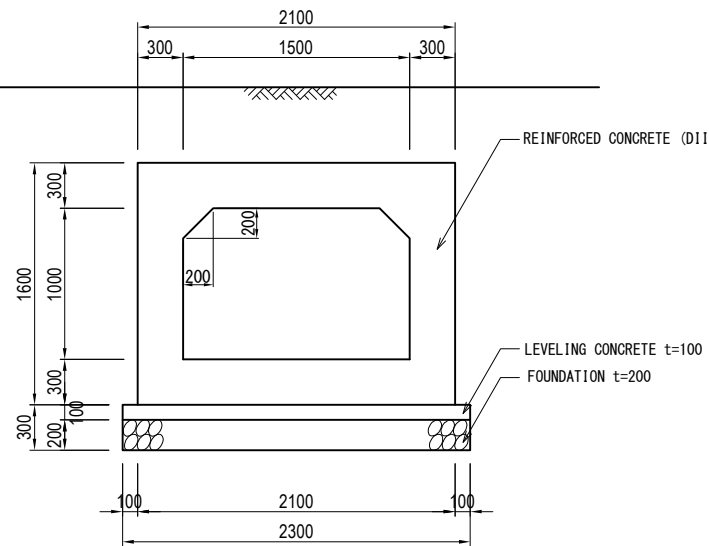
D (mm)	a (mm)	b (mm)	c (mm)	R (mm)	L (mm)
D13	66	164	230	42	410
D16	75	195	270	48	500
D19	94	236	330	60	600
D22	104	266	370	66	690
D25	122	308	430	78	790
D29	141	349	490	90	910
D32	151	389	540	96	1000

Note1: Size of Box Culvert and Bar Arrangement are based on Standard Drawing of Ministry of Land, Infrastructure, Transport and Tourism of Japan
 Note2: Specification of Steel Reinforcement Bar shall comply with SD345 (JIS G3112) or equivalent

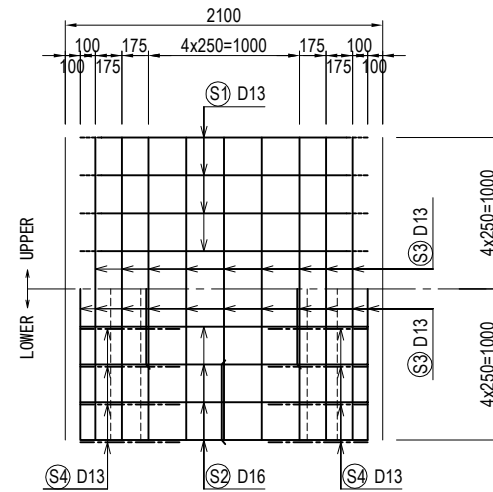
DETAIL OF BOX CULVERT TYPE 1500 x 1000

BAR ARRANGEMENT OF BOX CULVERT S=1/50

GENERAL DRAWING S=1:50



TOP SLAB



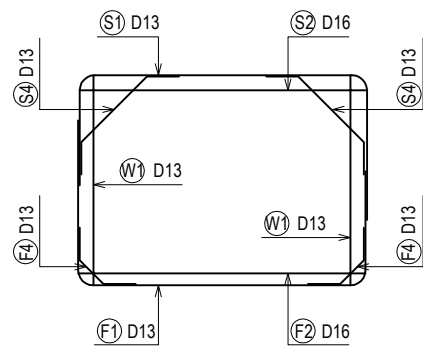
DESIGN CRITERIA

INSIDE DIMENSION		WIDTH	1.50 m
		HEIGHT	1.00 m
LIVE LOAD		T-TYPE LIVE LOAD	
UNIT WEIGHT	REINFORCED CONCRETE	24.5 kN/m ³	
	SOIL	18 kN/m ³	
CONCRETE DESIGN STRENGTH		24 N/mm ²	
ALLOWABLE STRESS			
COMPRESSIVE STRESS DUE TO BENDING		8 N/mm ²	
SHEARING STRESS		0.39 N/mm ²	
TENSILE STRESS (SD345)		160 N/mm ²	
COEFFICIENT OF EARTH PRESSURE		0.5	
IMPACT COEFFICIENT		-	
SEISMIC COEFFICIENT		-	
ANGLE OF SKEW		90°00'00"	
RADIUS OF CURVATURE		R=∞	
GRADIENT OF BOX CULVERT		i=0.500%	

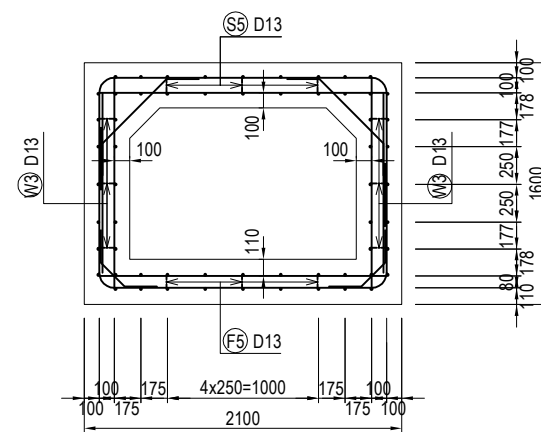
(PER 1m)

MARK	No.	SEC.	EACH	LENGTH (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	H (mm)	R (mm)
S1	4	D13	4	3500	600	220	1620	840		140
S2	1	D16	4	1900	1900					
S3	1	D13	20	1000	1000					
S4	5	D13	8	1040	195	649			459	
S5	3	D13	3	990		128				
W1	1	D13	8	1390	1390					
W2	1	D13	20	1000	1000					
W3	2	D13	12	360		152				
F1	4	D13	4	3660	680	220	1620	920		140
F2	1	D16	4	1900	1900					
F3	1	D13	20	1000	1000					
F4	5	D13	8	650	195	255			180	
F5	3	D13	3	950		108				

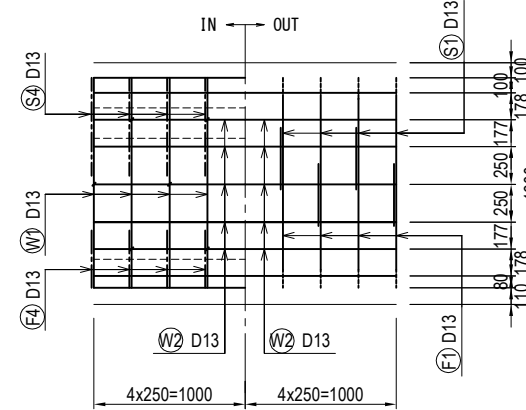
ERECTION DIAGRAM OF MAIN REINFORCEMENT



SECTION S=1:50



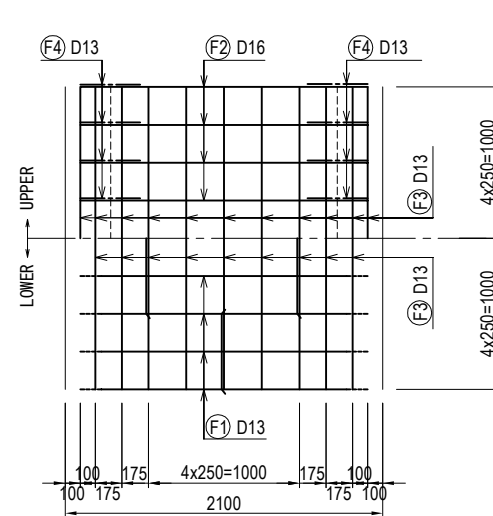
SIDE SLAB



LIST OF REINFORCEMENT (PER 1m)

MARK	SEC.	LENGTH (mm)	EACH	WEIGHT (kg/m)	WEIGHT/one (kg)	WEIGHT (kg)	REMARKS
S1	D13	3500	4	0.995	3.483	13.932	□
S2	D16	1900	4	1.56	2.964	11.856	—
S3	D13	1000	20	0.995	0.995	19.900	—
S4	D13	1040	8	0.995	1.035	8.280	□
S5	D13	990	3	0.995	0.985	2.955	□
W1	D13	1390	8	0.995	1.383	11.064	—
W2	D13	1000	20	0.995	0.995	19.900	—
W3	D13	360	12	0.995	0.358	4.296	—
F1	D13	3660	4	0.995	3.642	14.568	□
F2	D16	1900	4	1.56	2.964	11.856	—
F3	D13	1000	20	0.995	0.995	19.900	—
F4	D13	650	8	0.995	0.647	5.176	□
F5	D13	950	3	0.995	0.945	2.835	□

BOTTOM SLAB



MATERIALS (PER 1m)

KIND	UNIT	QUANTITY
CONCRETE (DII)	TOP	m ³ 0.630
	SIDE	m ³ 0.640
	BOTTOM	m ³ 0.630
	TOTAL	m ³ 1.900
FORM	m ²	6.466
REINFORCING BAR	D19	kg 0
	D16	kg 23.712
	D13	kg 122.806
	TOTAL	kg 146.518
FOUNDATION	LEVELING CONCRETE t=100	m ² 0.230
	CRUSHED STONE t=200	m ² 0.460

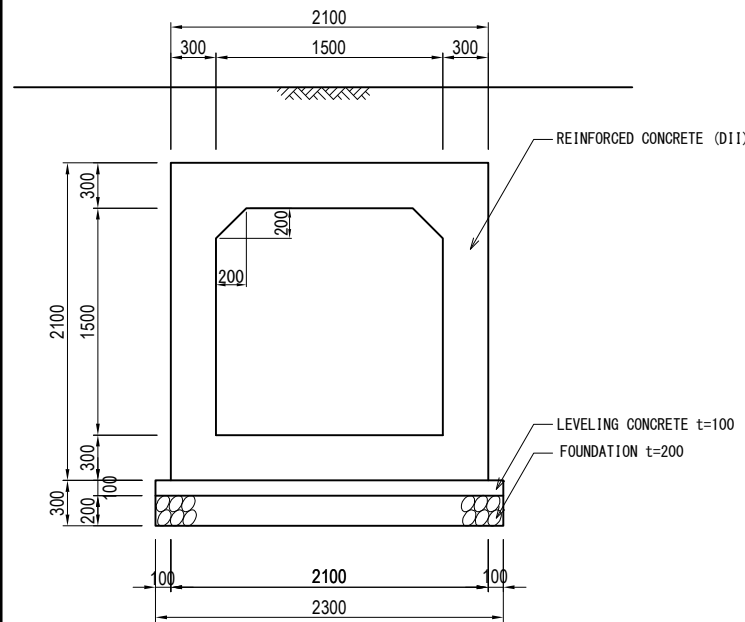
D (mm)	a (mm)	b (mm)	c (mm)	R (mm)	L (mm)
D13	66	164	230	42	410
D16	75	195	270	48	500
D19	94	236	330	60	600
D22	104	266	370	66	690
D25	122	308	430	78	790
D29	141	349	490	90	910
D32	151	389	540	96	1000

Note1: Size of Box Culvert and Bar Arrangement are based on Standard Drawing of Ministry of Land, Infrastructure, Transport and Tourism of Japan
 Note2: Specification of Steel Reinforcement Bar shall comply with SD345 (JIS G3112) or equivalent

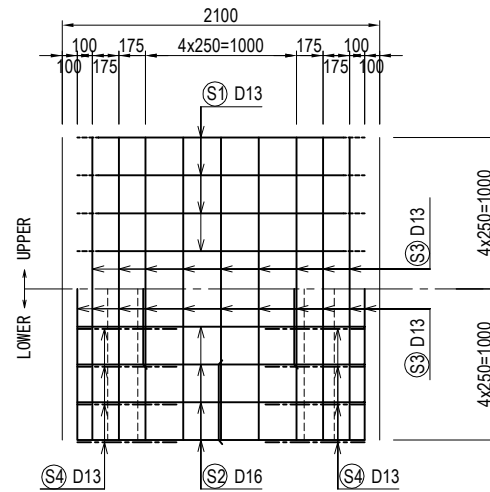
DETAIL OF BOX CULVERT TYPE 1500 x 1500

BAR ARRANGEMENT OF BOX CULVERT S=1/50

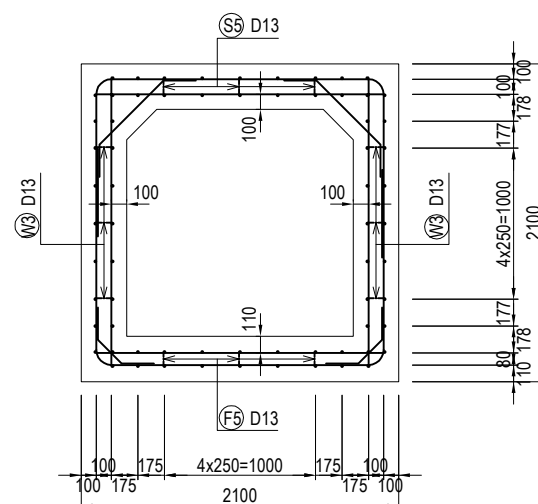
GENERAL DRAWING S=1:50



TOP SLAB



SECTION S=1:50



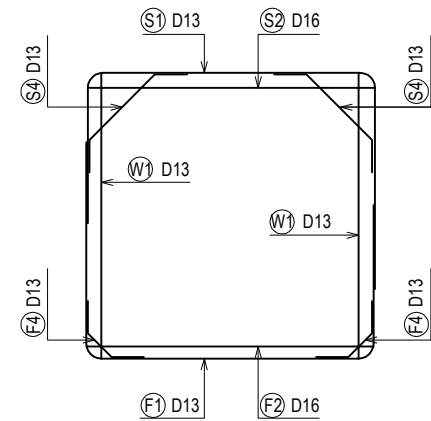
DESIGN CRITERIA

INSIDE DIMENSION		WIDTH	1.50 m
		HEIGHT	1.50 m
LIVE LOAD		T-TYPE LIVE LOAD	
UNIT WEIGHT	REINFORCED CONCRETE	24.5 kN/m ³	
	SOIL	18 kN/m ³	
CONCRETE DESIGN STRENGTH		24 N/mm ²	
ALLOWABLE STRESS			
COMPRESSIVE STRESS DUE TO BENDING		8 N/mm ²	
SHEARING STRESS		0.39 N/mm ²	
TENSILE STRESS (SD345)		160 N/mm ²	
COEFFICIENT OF EARTH PRESSURE		0.5	
IMPACT COEFFICIENT		-	
SEISMIC COEFFICIENT		-	
ANGLE OF SKEW		90°00'00"	
RADIUS OF CURVATURE		R=∞	
GRADIENT OF BOX CULVERT		i=0.500%	

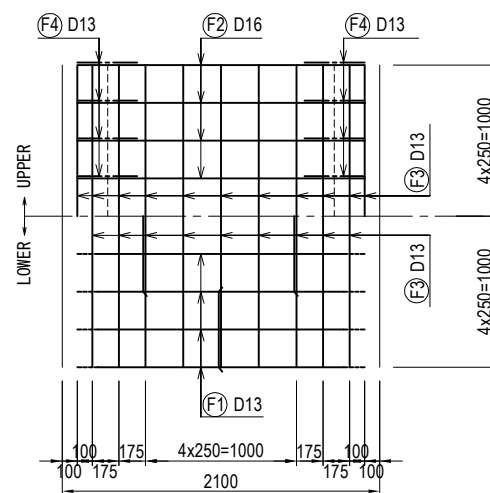
(PER 1m)

MARK	No.	SEC.	EACH	LENGTH (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	H (mm)	R (mm)
S 1	4	D13	4	4000	900					140
S 2	1	D16	4	1900	1900					
S 3	1	D13	20	1000	1000					
S 4	5	D13	8	1040	195	649			459	
S 5	3	D13	3	990		128				
W 1	1	D13	8	1890	1890					
W 2	1	D13	28	1000	1000					
W 3	2	D13	12	360		152				
F 1	4	D13	4	4500	1150	220	1620	1290		140
F 2	1	D16	4	1900	1900					
F 3	1	D13	20	1000	1000					
F 4	5	D13	8	650	195	255			180	
F 5	3	D13	3	950		108				

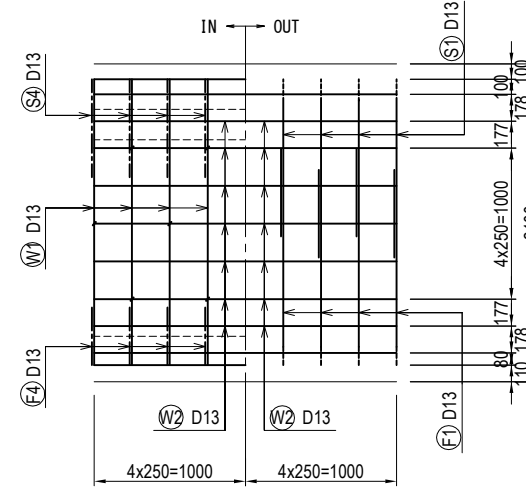
ERECTION DIAGRAM OF MAIN REINFORCEMENT



BOTTOM SLAB



SIDE SLAB



MATERIALS

KIND	UNIT	QUANTITY (PER 1m)
CONCRETE (D11)	TOP	m ³ 0.630
	SIDE	m ³ 0.940
	BOTTOM	m ³ 0.630
	TOTAL	m ³ 2.200
FORM	m ²	8.466
REINFORCING BAR	D19	kg 0
	D16	kg 23.712
	D13	kg 140.082
TOTAL	kg	163.794
FOUNDATION	LEVELING CONCRETE t=100	m ² 0.230
	CRUSHED STONE t=200	m ² 0.460

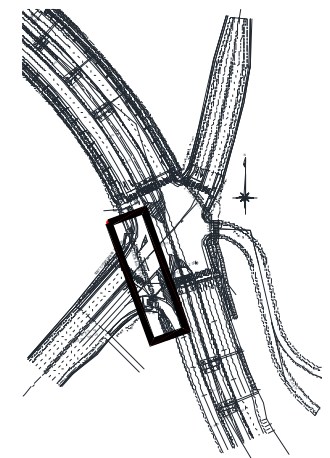
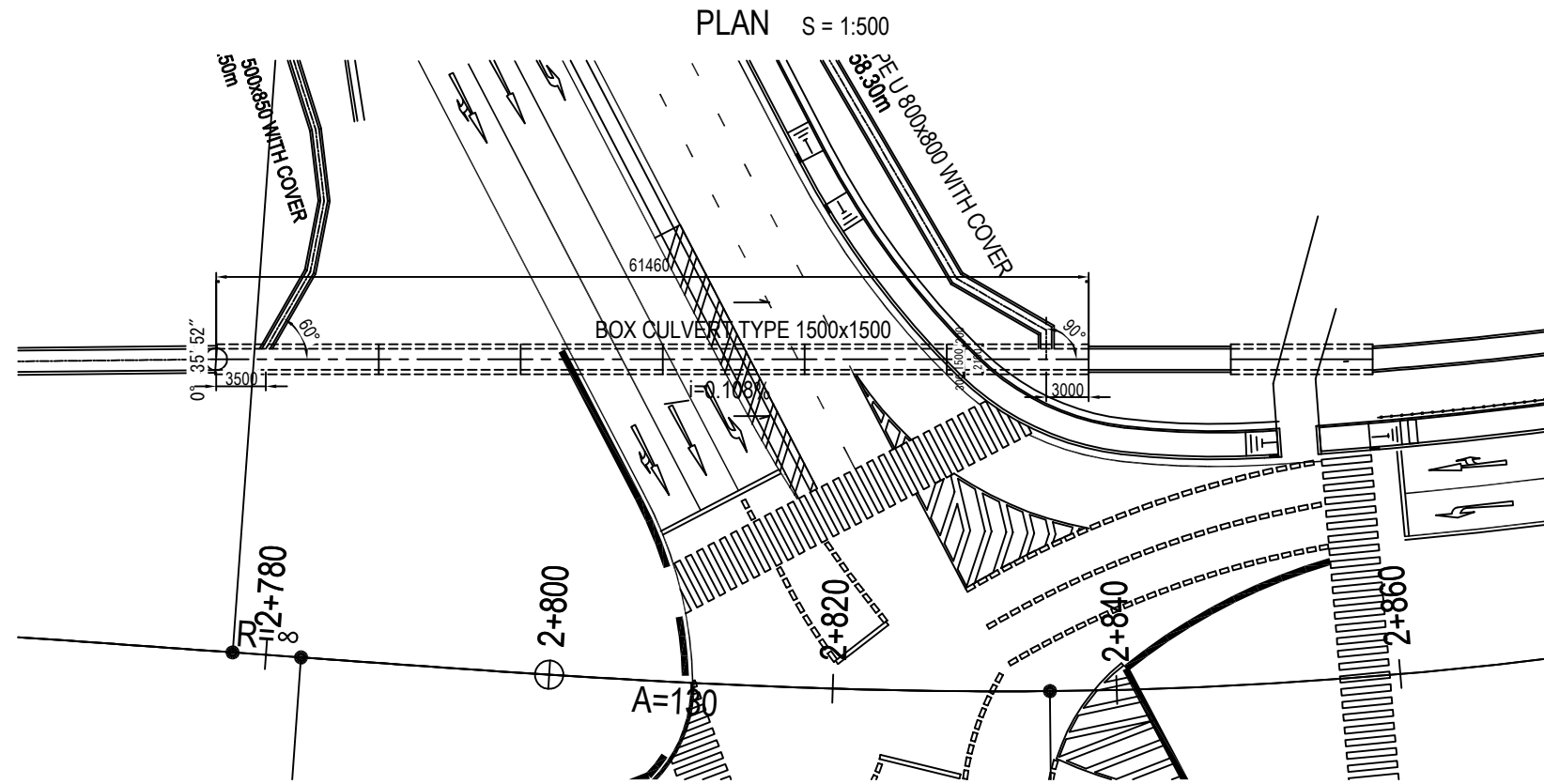
LIST OF REINFORCEMENT (PER 1m)

MARK	SEC.	LENGTH (mm)	EACH	WEIGHT (kg/m)	WEIGHT/one (kg)	WEIGHT (kg)	REMARKS
S 1	D13	4000	4	0.995	3.980	15.920	□
S 2	D16	1900	4	1.56	2.964	11.856	—
S 3	D13	1000	20	0.995	0.995	19.900	—
S 4	D13	1040	8	0.995	1.035	8.280	□
S 5	D13	990	3	0.995	0.985	2.955	□
W 1	D13	1890	8	0.995	1.881	15.048	—
W 2	D13	1000	28	0.995	0.995	27.860	—
W 3	D13	360	12	0.995	0.358	4.296	□
F 1	D13	4500	4	0.995	4.478	17.912	□
F 2	D16	1900	4	1.56	2.964	11.856	—
F 3	D13	1000	20	0.995	0.995	19.900	—
F 4	D13	650	8	0.995	0.647	5.176	□
F 5	D13	950	3	0.995	0.945	2.835	□

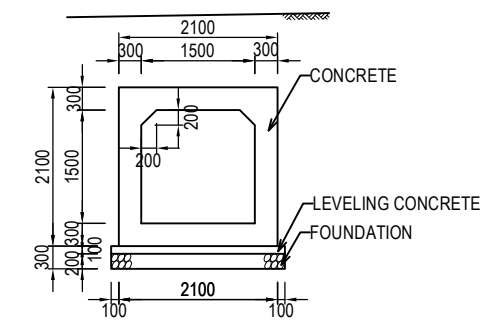
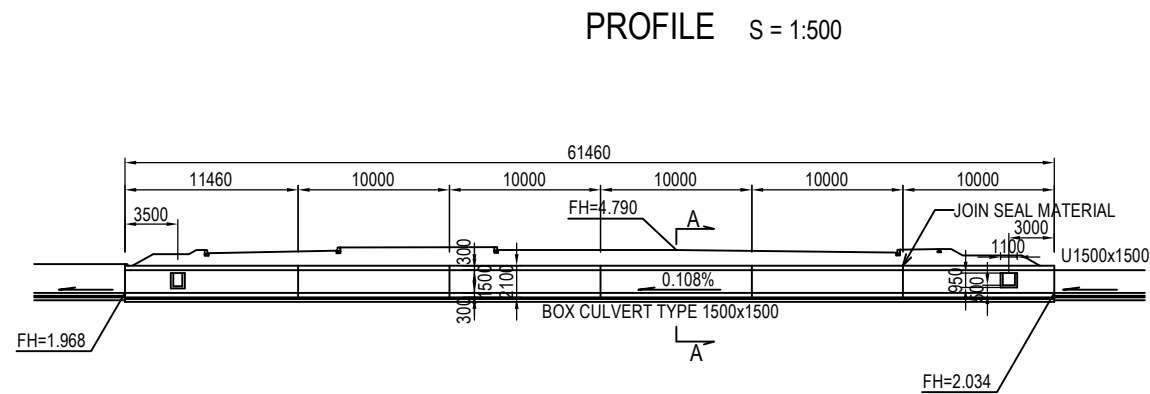
D	a (mm)	b (mm)	c (mm)	R (mm)	L (mm)
D13	66	164	230	42	410
D16	75	195	270	48	500
D19	94	236	330	60	600
D22	104	266	370	66	690
D25	122	308	430	78	790
D29	141	349	490	90	910
D32	151	389	540	96	1000

Note1: Size of Box Culvert and Bar Arrangement are based on Standard Drawing of Ministry of Land, Infrastructure, Transport and Tourism of Japan
 Note2: Specification of Steel Reinforcement Bar shall comply with SD345 (JIS G3112) or equivalent

GENERAL VIEW OF BOX CULVERT (1) SHUKHINTHAR (LEFT SIDE)



KEY PLAN S=1:5000

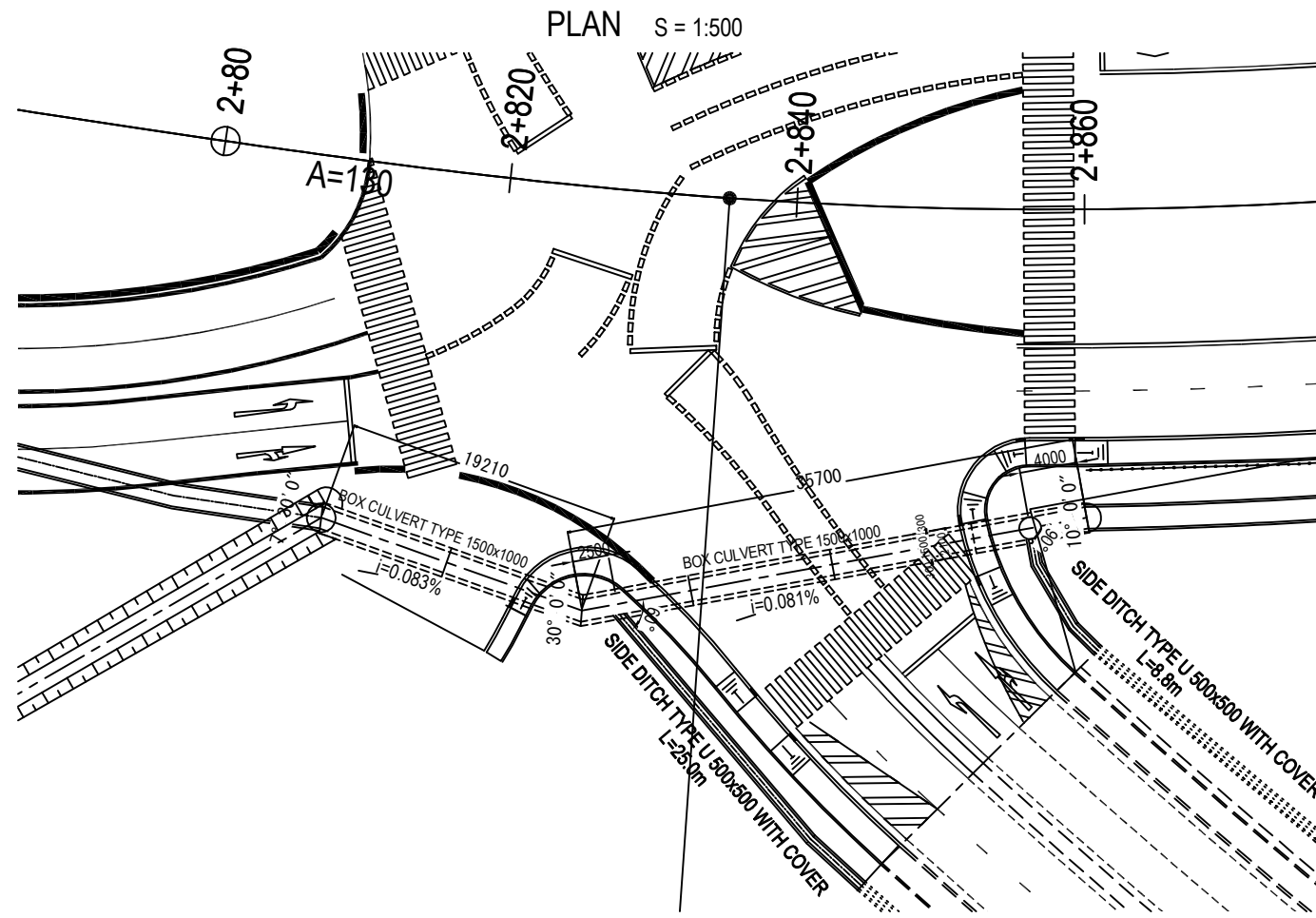


SECTION A - A S = 1:100

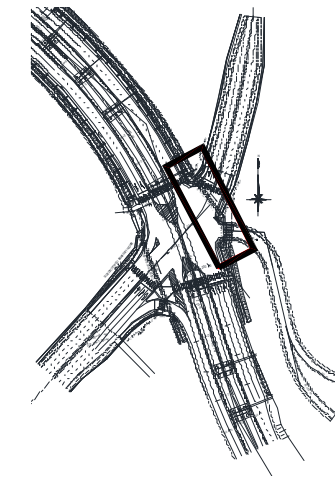
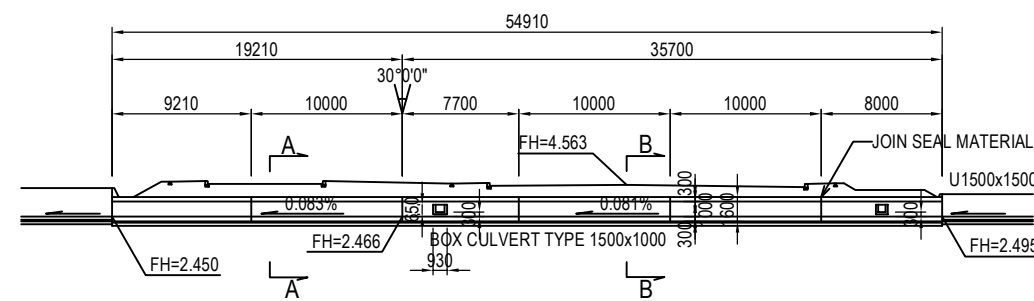
- Note
1. Specification of Reinforced Concrete should be CLASS DII
 2. Specification of Steel reinforcement bar should be SD345

<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: 10%;">NAME</th> <th style="width: 10%;">SIGNATURE</th> <th style="width: 10%;">DATE</th> </tr> <tr> <td>PREPARED BY</td> <td>K. TACHIBANA</td> <td>29 Sep.2017</td> </tr> <tr> <td>CHECKED BY</td> <td>T. HAYAKAWA</td> <td>3 Oct.2017</td> </tr> <tr> <td>APPROVED BY</td> <td>Y. SANO</td> <td>6 Oct.2017</td> </tr> </table>	NAME	SIGNATURE	DATE	PREPARED BY	K. TACHIBANA	29 Sep.2017	CHECKED BY	T. HAYAKAWA	3 Oct.2017	APPROVED BY	Y. SANO	6 Oct.2017	<small>DRAWING TITLE</small> GENERAL VIEW OF BOX CULVERT (1) SHUKHINTHAR (LEFT SIDE)	<small>PACKAGE</small> 0 <small>DWG No.</small> P0-RD-3070
NAME	SIGNATURE	DATE																
PREPARED BY	K. TACHIBANA	29 Sep.2017																
CHECKED BY	T. HAYAKAWA	3 Oct.2017																
APPROVED BY	Y. SANO	6 Oct.2017																

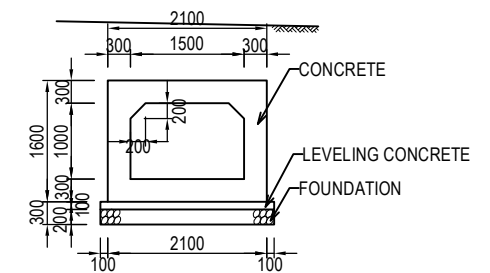
GENERAL VIEW OF BOX CULVERT (2) SHUKHINTHAR (RIGHT SIDE)



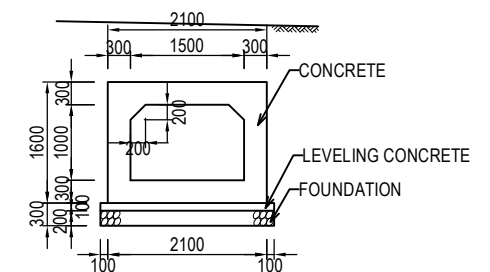
PROFILE S = 1:500



KEY PLAN S=1:5000



SECTION B - B S = 1:100



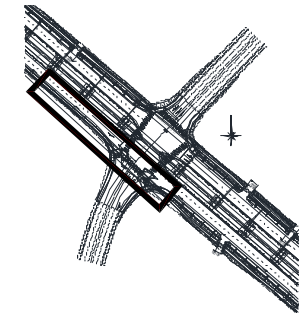
SECTION A - A S = 1:100

- Note
1. Specification of Reinforced Concrete should be CLASS DII
 2. Specification of Steel reinforcement bar should be SD345

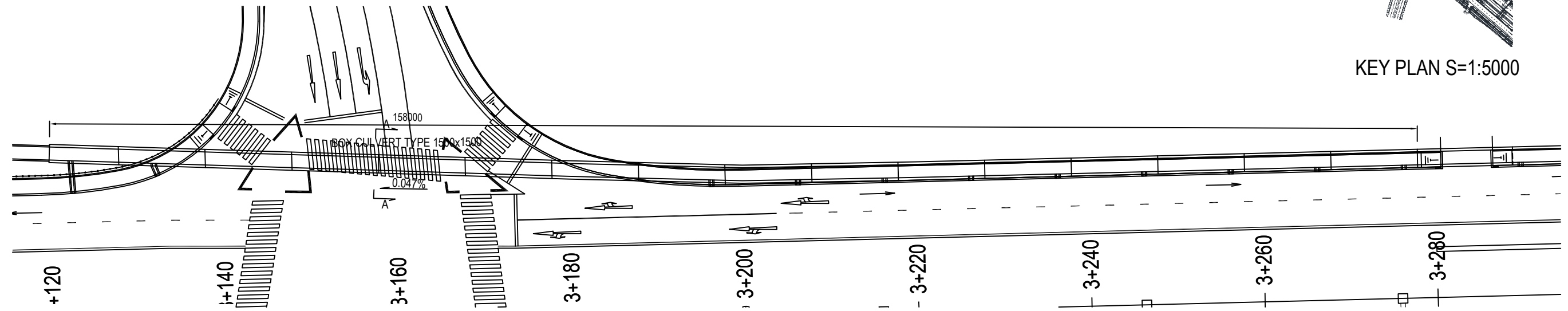
<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI 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 K. TACHIBANA</td> <td></td> <td>29 Sep.2017</td> </tr> <tr> <td>CHECKED BY T. HAYAKAWA</td> <td></td> <td>3 Oct.2017</td> </tr> <tr> <td>APPROVED BY Y. SANO</td> <td></td> <td>6 Oct.2017</td> </tr> </table>	NAME	SIGNATURE	DATE	PREPARED BY K. TACHIBANA		29 Sep.2017	CHECKED BY T. HAYAKAWA		3 Oct.2017	APPROVED BY Y. SANO		6 Oct.2017	DRAWING TITLE GENERAL VIEW OF BOX CULVERT (2) SHUKHINTHAR (RIGHT SIDE)	<small>PACKAGE</small> 0 <small>DWG No.</small> P0-RD-3080
NAME	SIGNATURE	DATE																
PREPARED BY K. TACHIBANA		29 Sep.2017																
CHECKED BY T. HAYAKAWA		3 Oct.2017																
APPROVED BY Y. SANO		6 Oct.2017																

GENERAL VIEW OF BOX CULVERT (3) YADANAR (LEFT SIDE)

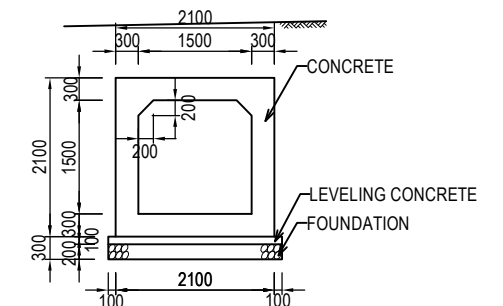
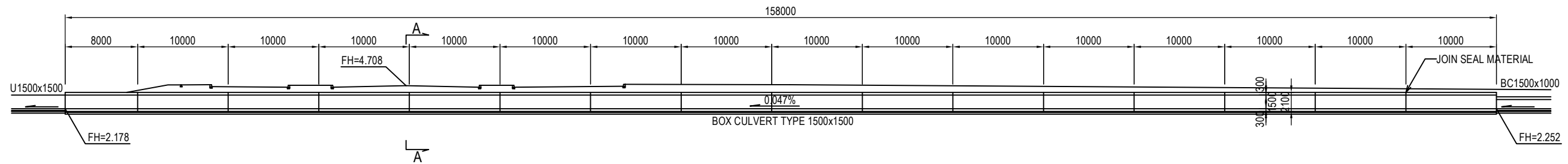
PLAN S = 1:500



KEY PLAN S=1:5000



PROFILE S = 1:500



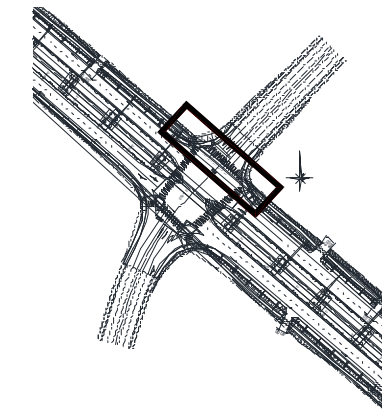
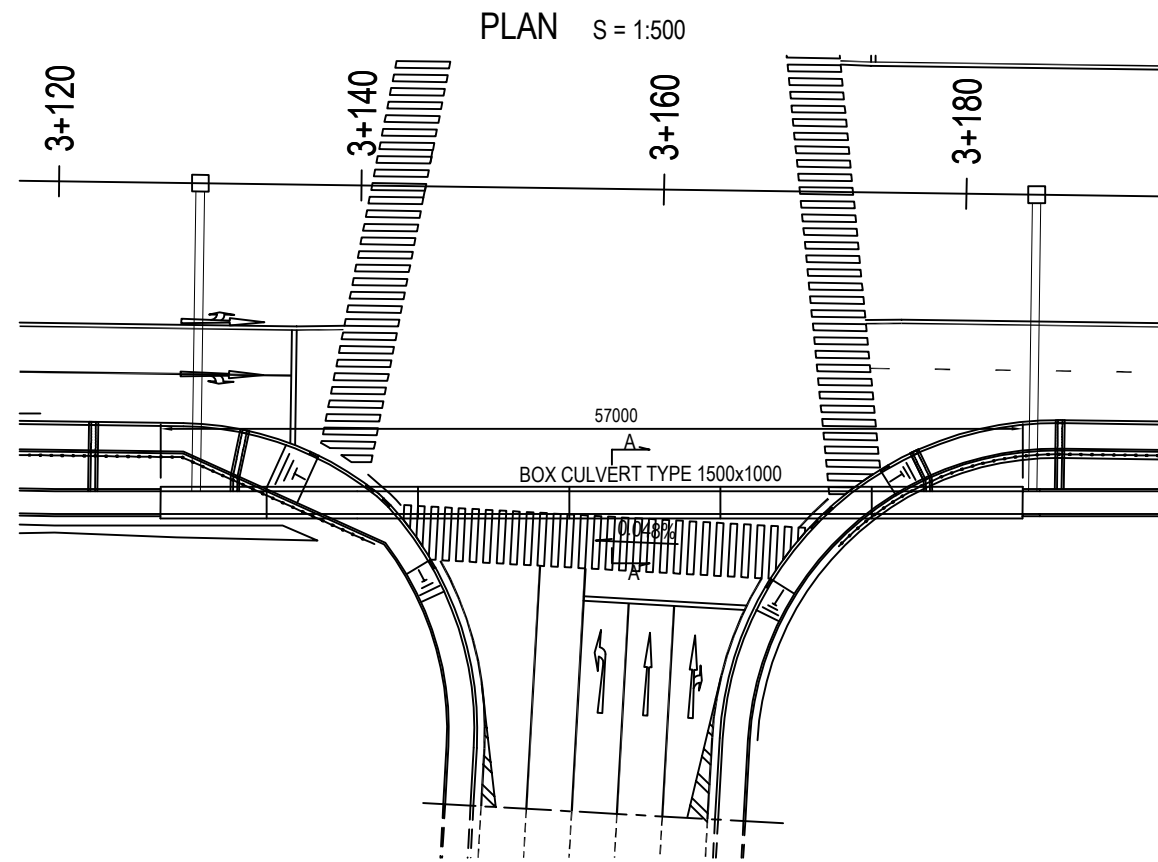
SECTION A - A S = 1:100

Note

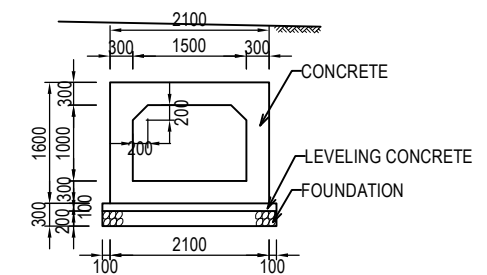
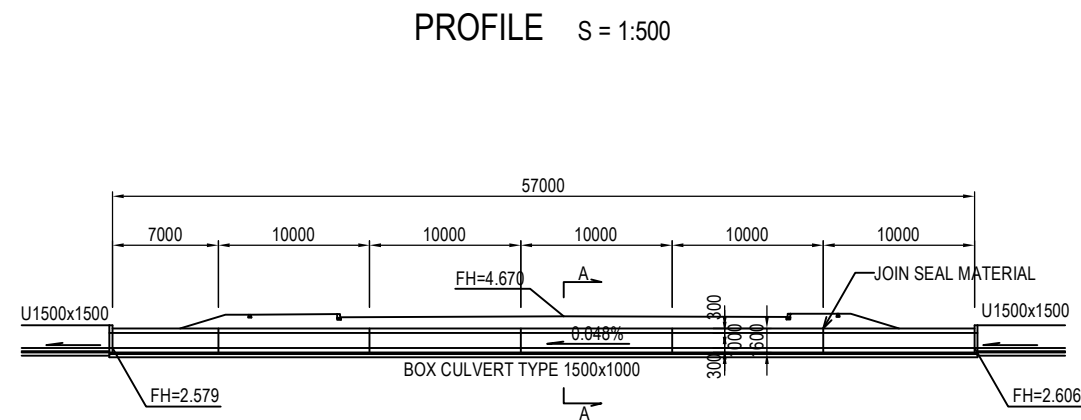
1. Specification of Reinforced Concrete should be CLASS DII
2. Specification of Steel reinforcement bar should be SD345

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 BOX CULVERT (3) YADANAR (LEFT SIDE)	PACKAGE	
				PREPARED BY	K. TACHIBANA			29 Sep.2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct.2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct.2017	P3-RD-3090

GENERAL VIEW OF BOX CULVERT (4) YADANAR (RIGHT SIDE)



KEY PLAN S=1:5000



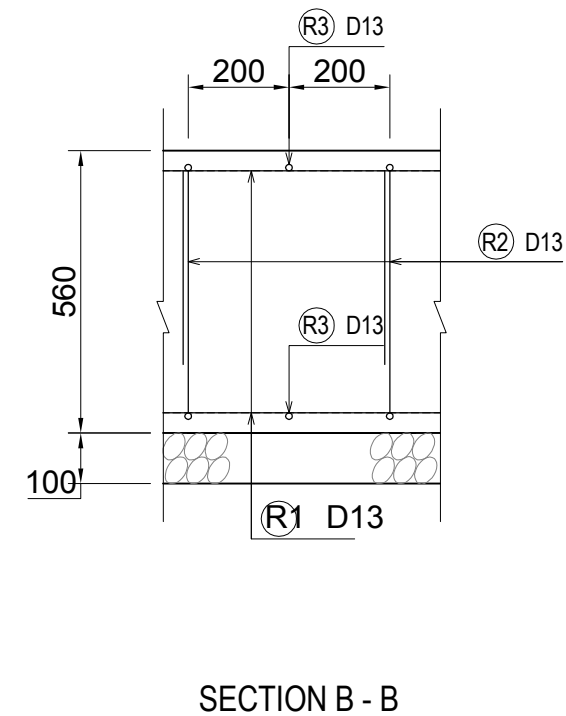
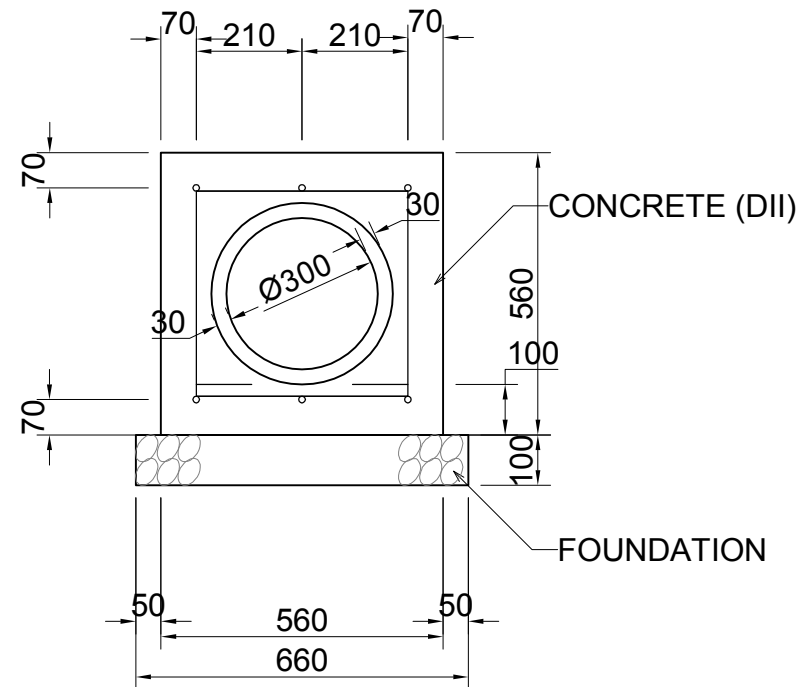
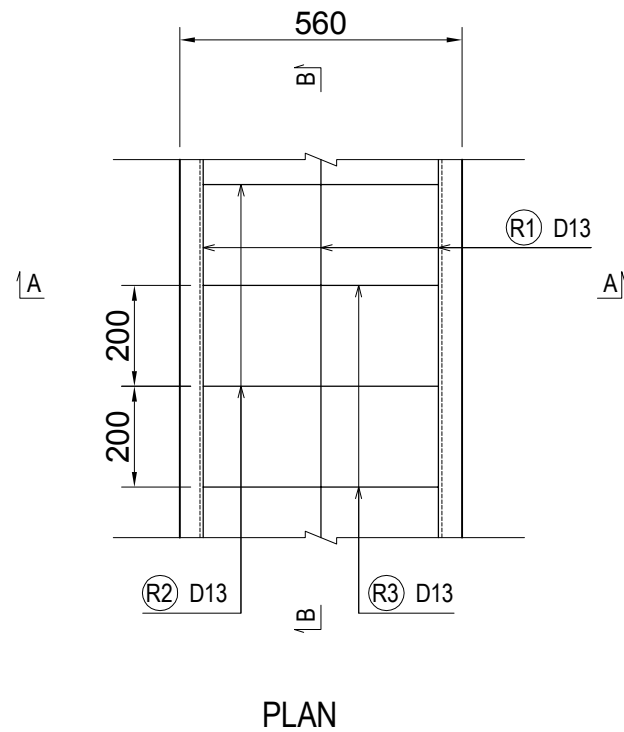
SECTION A - A S = 1:100

- Note
1. Specification of Reinforced Concrete should be CLASS DII
 2. Specification of Steel reinforcement bar should be SD345

<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</td> <td>K. TACHIBANA</td> <td>29 Sep.2017</td> </tr> <tr> <td>CHECKED BY</td> <td>T. HAYAKAWA</td> <td>3 Oct.2017</td> </tr> <tr> <td>APPROVED BY</td> <td>Y. SANO</td> <td>6 Oct.2017</td> </tr> </table>	NAME	SIGNATURE	DATE	PREPARED BY	K. TACHIBANA	29 Sep.2017	CHECKED BY	T. HAYAKAWA	3 Oct.2017	APPROVED BY	Y. SANO	6 Oct.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;">GENERAL VIEW OF BOX CULVERT (4) YADANAR (RIGHT SIDE)</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="text-align: center;">DWG No.</td> </tr> <tr> <td style="text-align: center;">P3-RD-3100</td> </tr> </table>	DRAWING TITLE	PACKAGE	GENERAL VIEW OF BOX CULVERT (4) YADANAR (RIGHT SIDE)	0	DWG No.	P3-RD-3100
NAME	SIGNATURE	DATE																					
PREPARED BY	K. TACHIBANA	29 Sep.2017																					
CHECKED BY	T. HAYAKAWA	3 Oct.2017																					
APPROVED BY	Y. SANO	6 Oct.2017																					
DRAWING TITLE	PACKAGE																						
GENERAL VIEW OF BOX CULVERT (4) YADANAR (RIGHT SIDE)	0																						
	DWG No.																						
	P3-RD-3100																						

DETAIL OF CONCRETE PIPE CULVERT $\Phi 300$ (CON.360°) TYPE A S= 1:15

CONCRETE PIPE CULVERT $\Phi 300$ (CON.360°)TYPE A A - A



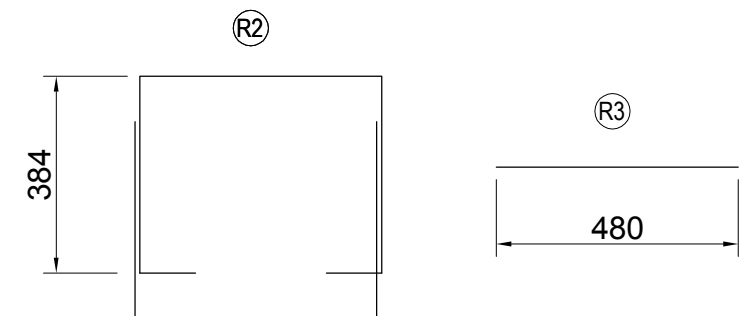
WORK QUANTITIES PER UNIT (PER 10m)

ITEM	UNIT	QUANTITY	REMARKS
R.C.PIPE $\Phi 300$	m	10.000	JIS A 5303 CLASS 1
CONCRETE (DII)	m ³	2.118	28 days = 240 kg/cm ²
FOUNDATION	m ²	6.600	GRAVEL / t=100mm
FORM	m ²	11.200	

WORK QUANTITIES PER UNIT FOR REINFORCEMENT BAR (PER 1.0m)

Dia	Nos	Length (mm/nos)	Unit Weight (kg/m)	Weight (kg)	Remarks
D13	6	1,000	0.995	5.970	Ⓡ1 / SD345
D13	5	420	0.995	2.090	Ⓡ2 / SD345
D13	5	1,310	0.995	6.517	Ⓡ3 / SD345
TOTAL				14.557	

DETAIL OF STEEL REINFORCEMENT



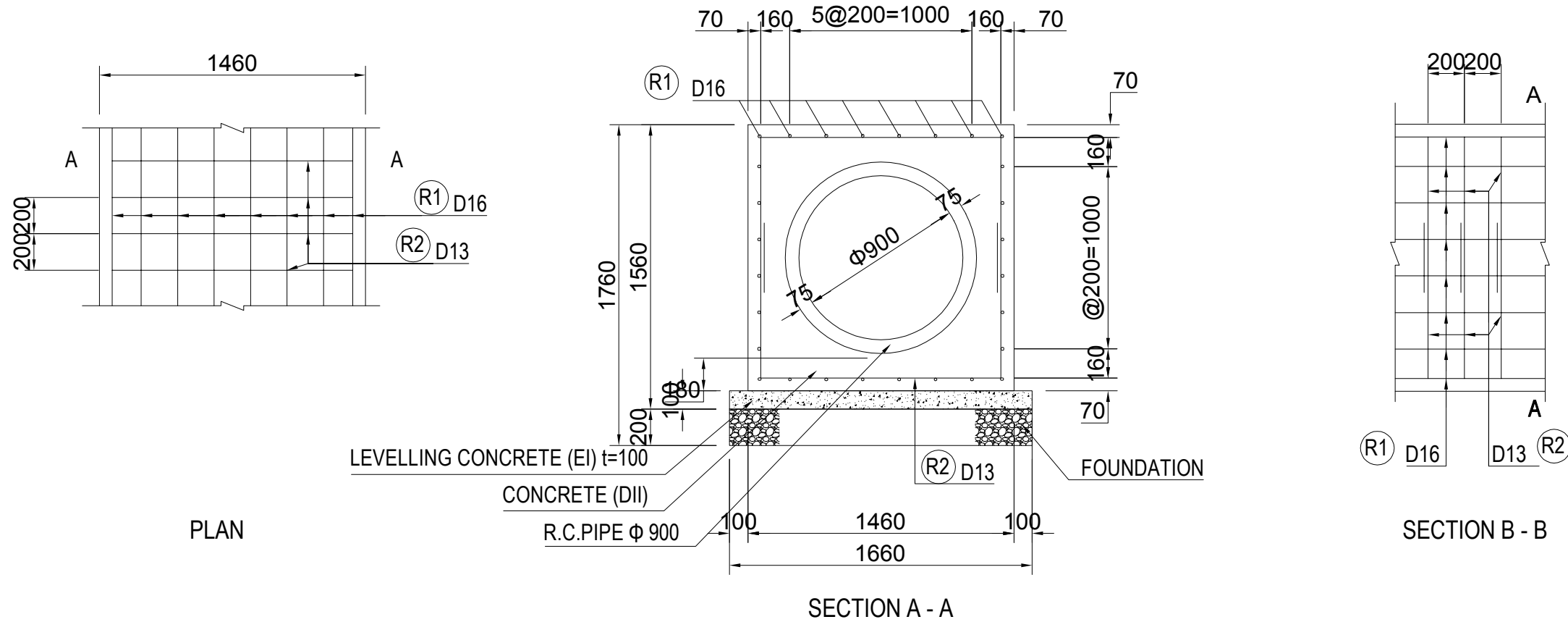
Note: Precast R.C. Pipe $\Phi 300$, Reinforced Spun and Centrifugal Reinforced Concrete Pipes shall be Selected.

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 PREPARED BY K. TACHIBANA CHECKED BY T. HAYAKAWA APPROVED BY Y. SANO	SIGNATURE 	DATE 29 Sep.2017 3 Oct.2017 6 Oct.2017	DRAWING TITLE DETAIL OF CONCRETE PIPE CULVERT $\Phi 300$ (CON.360°) TYPE A S=1:15	PACKAGE 0 DWG No. P0-RD-3110
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DETAIL OF CONCRETE PIPE CULVERT $\Phi 900$ (CON.360°) S= 1:30

CONCRETE PIPE CULVERT
 $\Phi 900$ (CON.360°)

A - A



WORK QUANTITIES PER UNIT (PER 10m)

ITEM	UNIT	QUANTITY	REMARKS
R.C.PIPE $\Phi 900$	m	10.000	JIS A 5303 CLASS 1
CONCRETE (DII)	m ³	12.657	28 days = 240 kg/cm ²
FOUNDATION	m ²	16.600	GRAVEL / t=200mm
FORM	m ²	29.200	
LEVELLING CONCRETE (EI)	m ³	1.660	t=100

WORK QUANTITIES PER UNIT FOR REINFORCEMENT BAR (PER 1.0m)

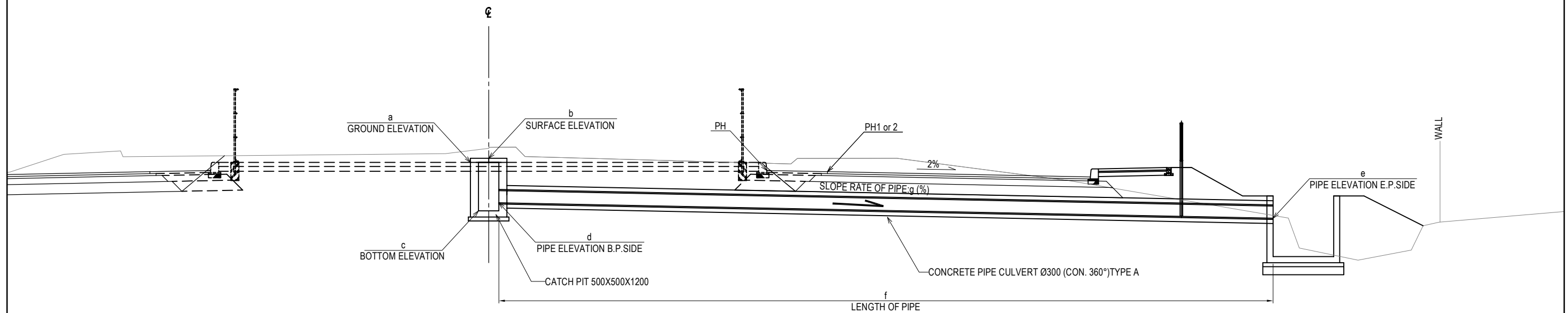
Dia	Nos	Length (mm/nos)	Unit Weight (kg/m)	Weight (kg)	Remarks
D13	10	3,110	0.995	30.945	(R2) / SD345
D16	28	1,000	1.560	43.680	(R1) / SD345
TOTAL				74.625	

Note: Precast R.C. Pipe $\Phi 900$, Reinforced Spun and Centrifugal Reinforced Concrete Pipes shall be Selected.

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				PREPARED BY	K. TACHIBANA				29 Sep.2017
				CHECKED BY	T. HAYAKAWA				3 Oct.2017
				APPROVED BY	Y. SANO				6 Oct.2017

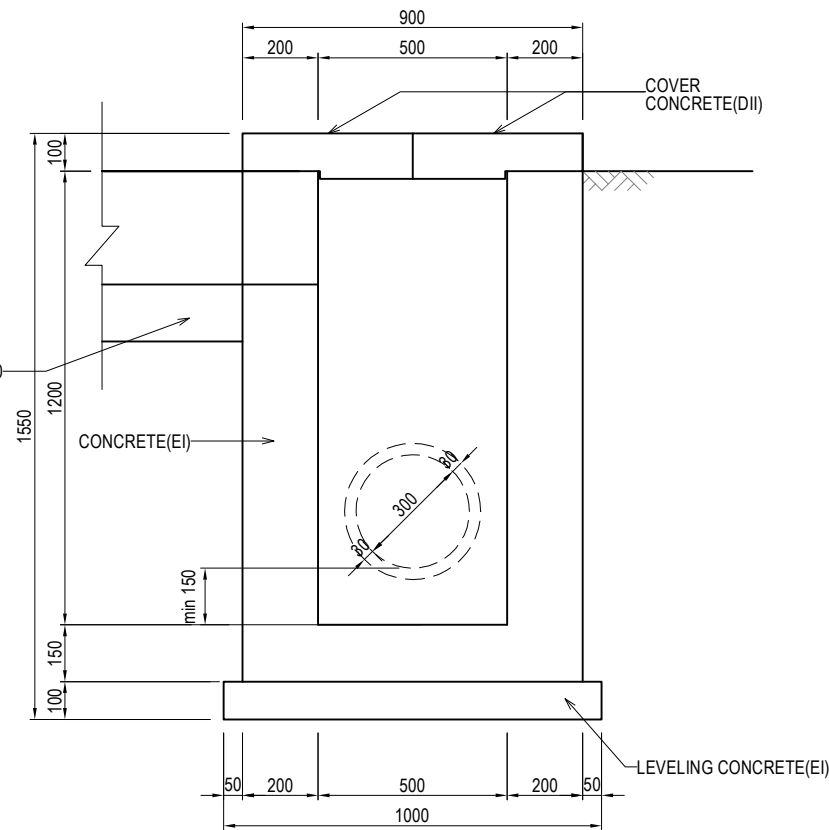
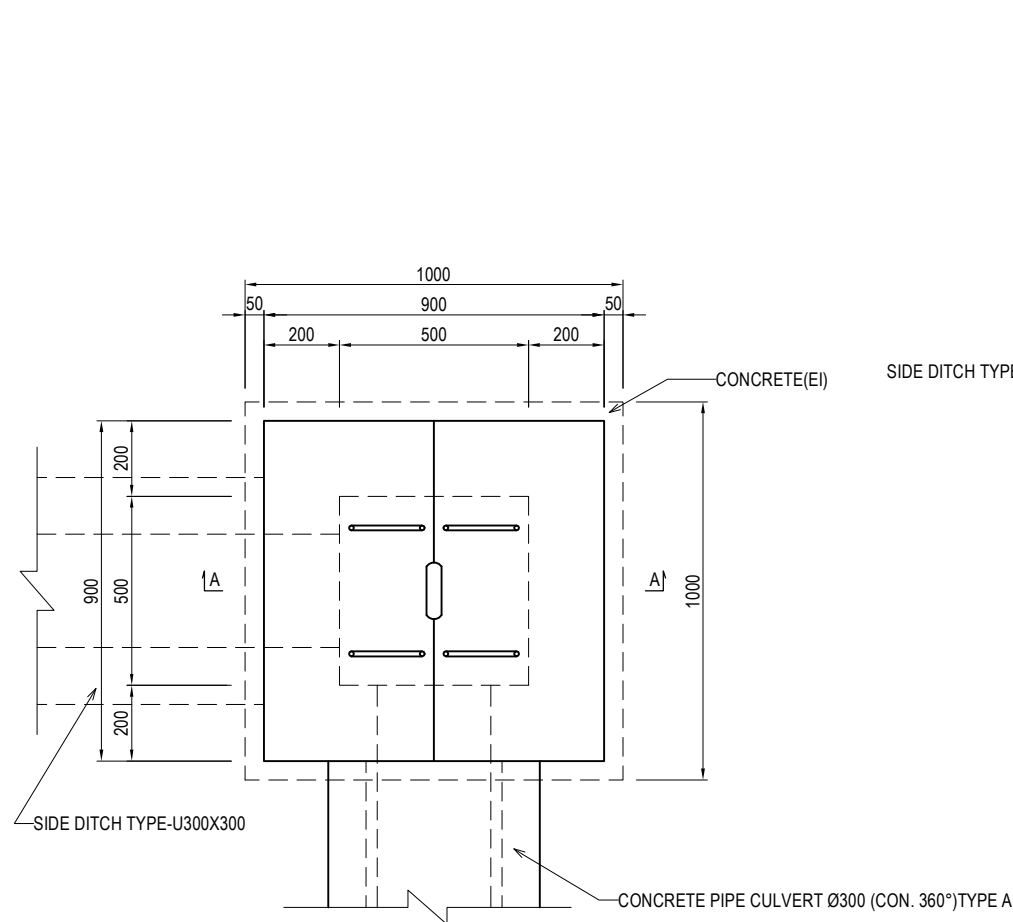
GENERAL VIEW OF CONCRETE PIPE CULVERT Ø300 (CON. 360°)TYPE A S=1:100

No.	STA.	PH	PH1or2	a GROUND ELEVATION (EL.m)	b SURFACE ELEVATION (EL.m)	c BOTTOM ELEVATION (EL.m)	d PIPE ELEVATION B.P.SIDE (EL.m)	e PIPE ELEVATION E.P.SIDE (EL.m)	f LENGTH OF PIPE (m)	g SLOPE RATE OF PIPE (%)
PF.4	2+876	4.726	4.676	4.926	5.026	3.726	3.929	3.523	20.28	2.00%
PF.5	2+929	4.441	4.391	4.641	4.741	3.441	3.644	3.249	19.75	2.00%
PF.6	2+958	4.285	4.235	4.485	4.585	3.285	3.488	3.099	19.45	2.00%
PF.7	2+988	4.156	4.106	4.356	4.456	3.156	3.359	2.959	19.97	2.00%
PF.8	3+019	4.242	4.192	4.442	4.542	3.242	3.445	3.058	19.32	2.00%
PF.9	3+049	4.404	4.354	4.604	4.704	3.404	3.607	3.217	19.46	2.00%
PF.10	3+079	4.565	4.515	4.765	4.865	3.565	3.768	3.370	19.89	2.00%
PF.11										
PF.12	3+119	4.780	4.730	4.980	5.080	3.780	3.983	3.578	20.24	2.00%
PF.13	3+200	4.743	4.713	4.943	5.043	3.743	3.946	3.563	19.12	2.00%
PF.14										
PF.15	3+233	4.531	4.501	4.731	4.831	3.531	3.734	3.361	18.73	2.00%
AF.2	3+264	4.331	4.301	4.531	4.631	3.331	3.534	3.281	12.61	2.00%

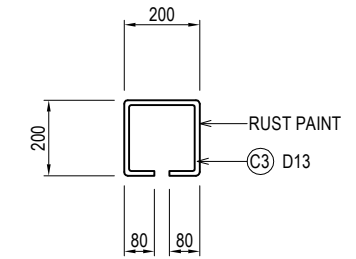


PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO. LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE GENERAL VIEW OF CONCRETE PIPE CULVERT Ø300 (CON. 360°) TYPE A S=1:100	PACKAGE	
				PREPARED BY	K. TACHIBANA			29 Sep.2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct.2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct.2017	P0-RD-3130

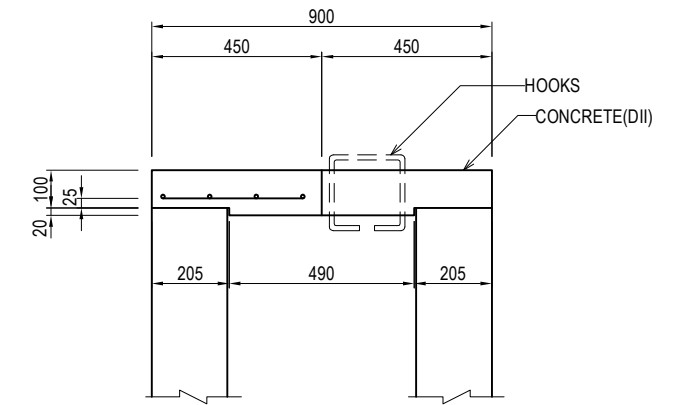
DETAIL OF CATCH PIT 500x500x1200 S=1:20



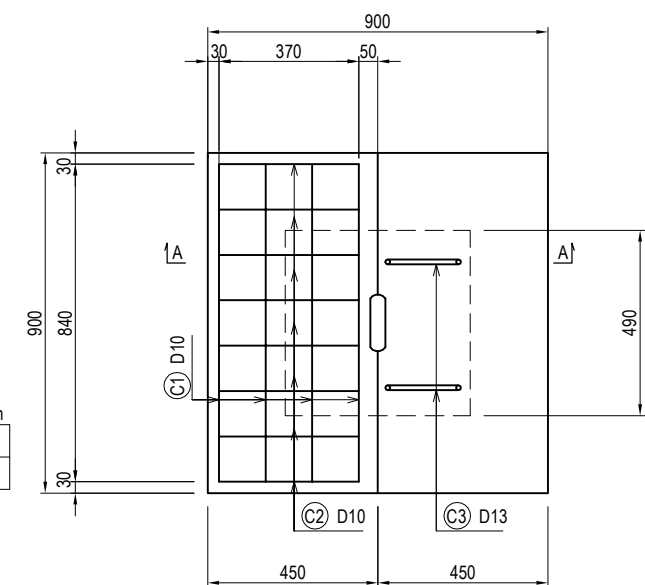
DETAIL OF HOOKS



DETAIL OF COVER SECTION A - A



PLAN



QUANTITY Per 10 each

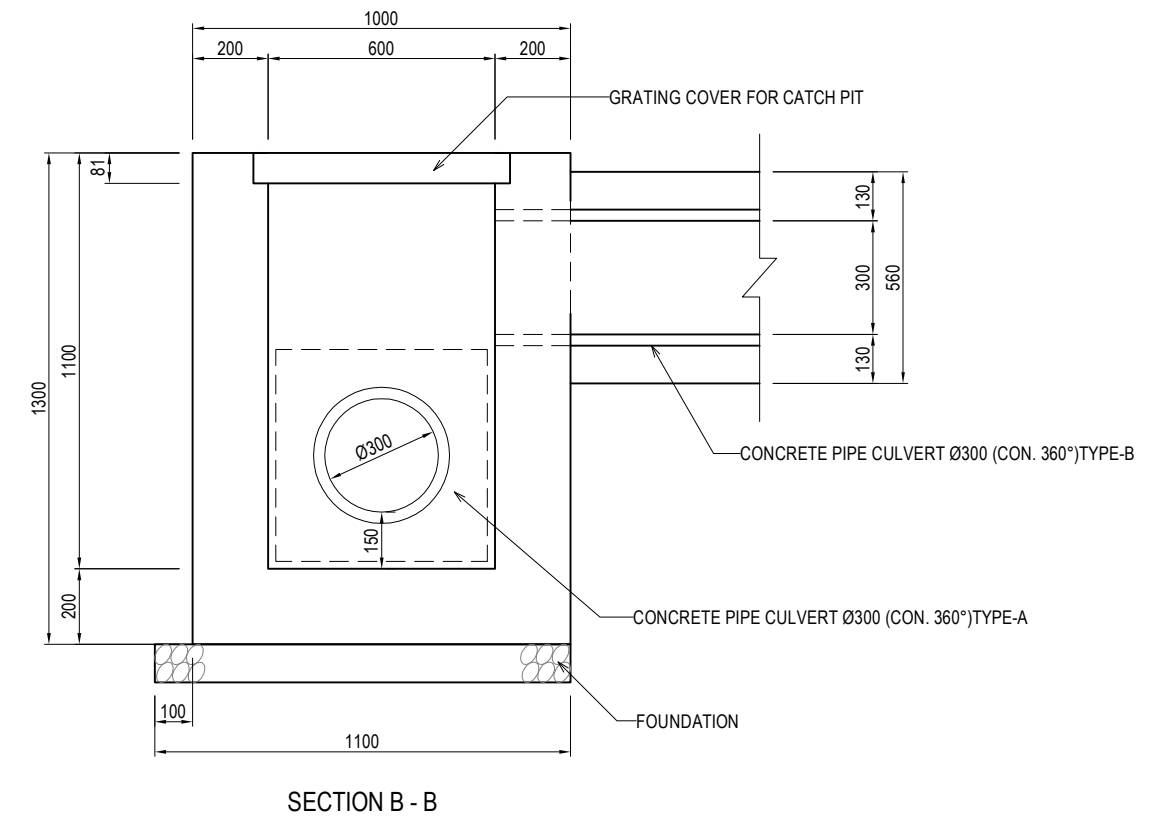
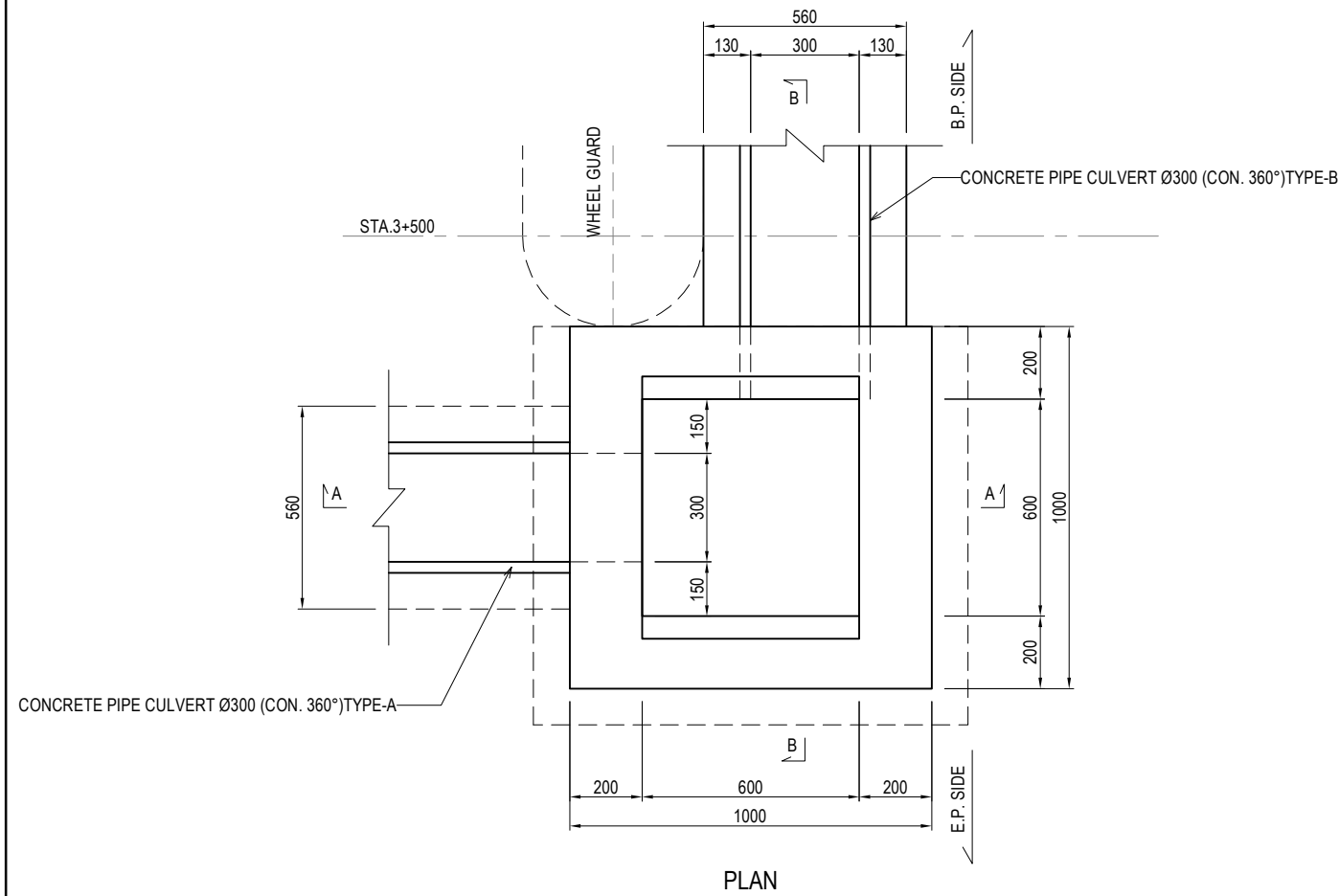
Title	Specification	Quantity
Body		
Concrete	EI	7.94 m3
Form		75.60 m2
Leveling Concrete	t=100	1.00 m2
Cover		
Concrete	DII	0.81 m3
Reinforcing bar	D10	88.88 kg
	D13	15.12 kg
Form		8.10 m2

BAR LIST Per 10 each		
C1	C2	C3
4-D10-740	8-D10-320	2-φ13-760

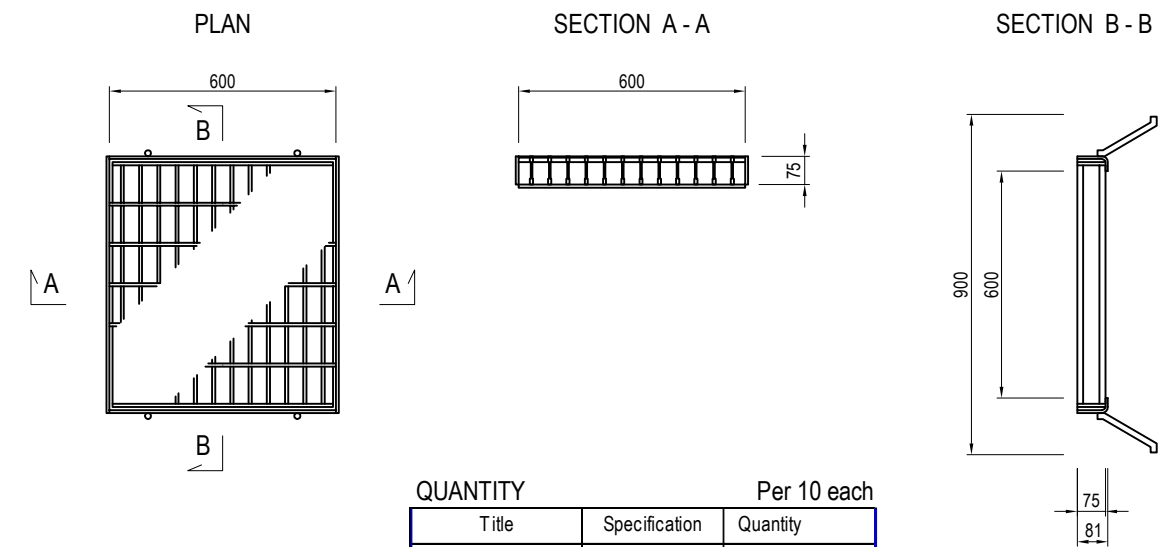
- Note**
1. Specification of Plain Concrete should be CLASS EI
 2. Specification of Reinforced Concrete should be CLASS DII
 3. Specification of Steel reinforcement bar should be SD345

DETAIL OF CATCH PIT (C-DITCH) TYPE B S=1:20

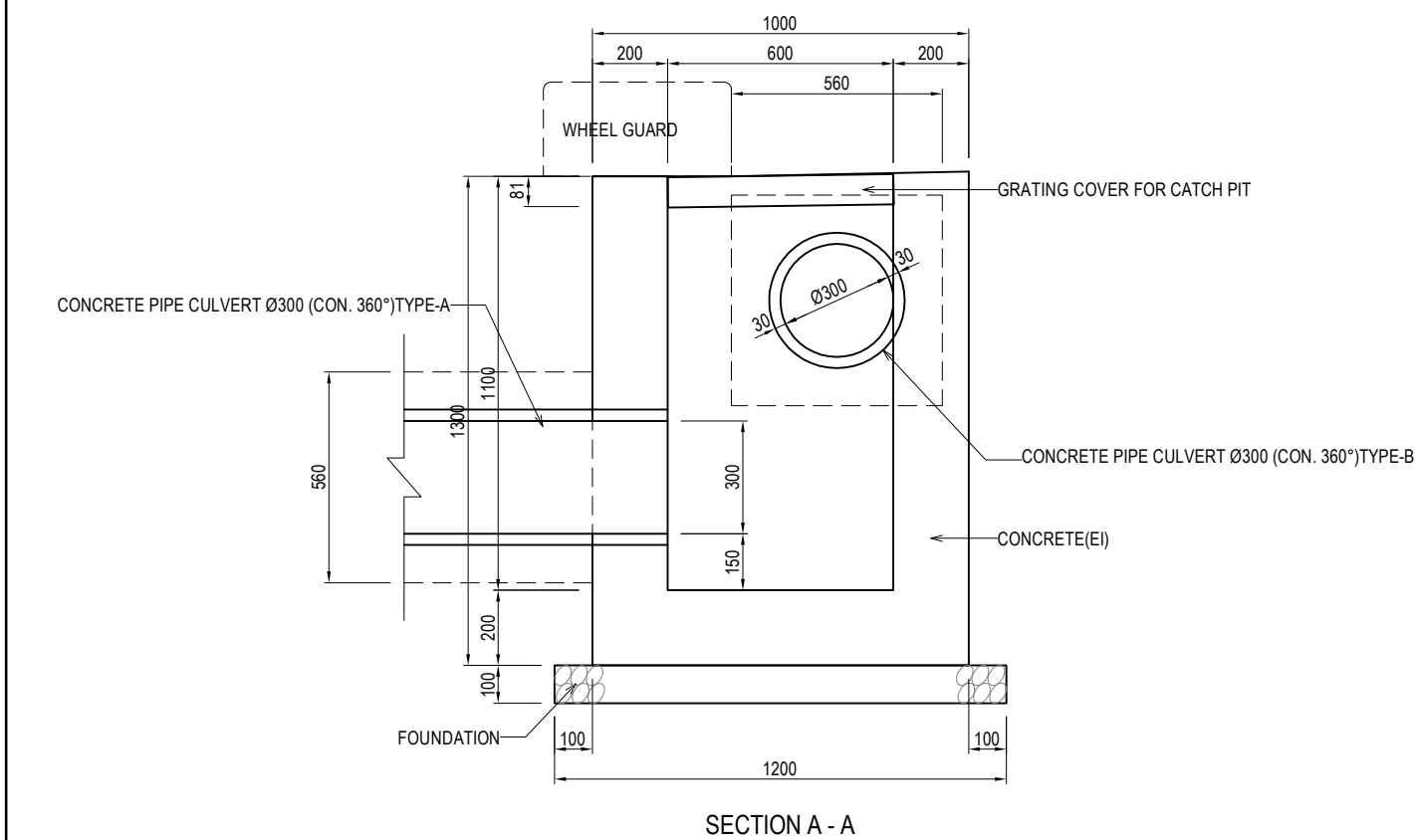
Note
1. Specification of Plain Concrete should be CLASS EI



DETAIL OF GRATING COVER FOR CATCH PIT

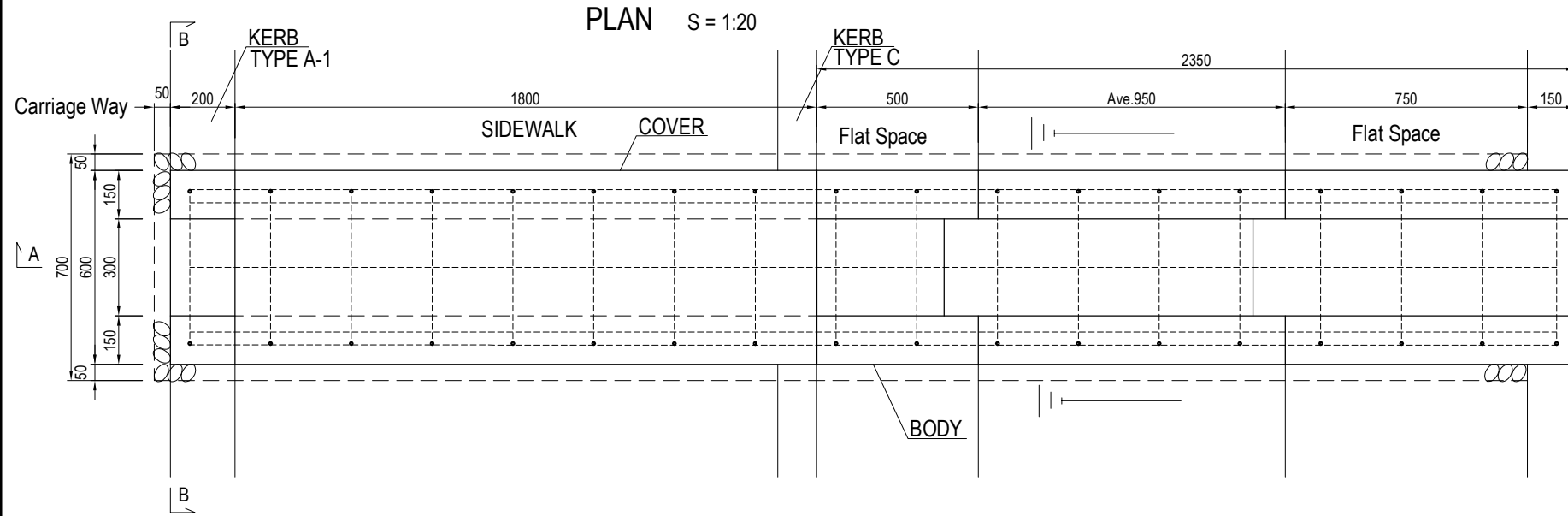


QUANTITY		Per 10 each	
Title	Specification	Quantity	
Body			
Concrete	EI	8.57	m3
Form		78.40	m2
Foundation	t=100	13.20	m2
Cover			
Grating Cover	600x720	10	each



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 CATCH PIT (C-DITCH) TYPE B S=1:20	PACKAGE	
				PREPARED BY	K. TACHIBANA			29 Sep.2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct.2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct.2017	P0-RD-3150

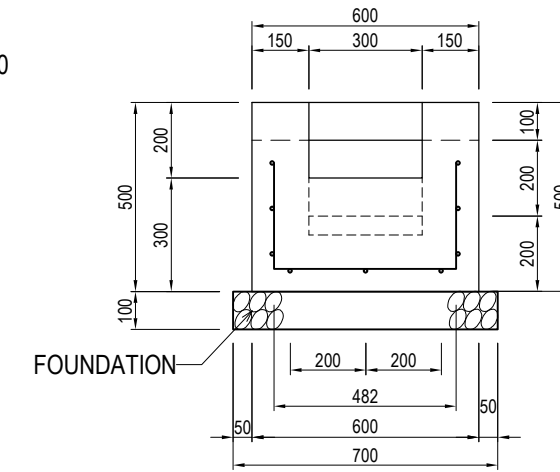
DETAIL OF U-DITCH TYPE A



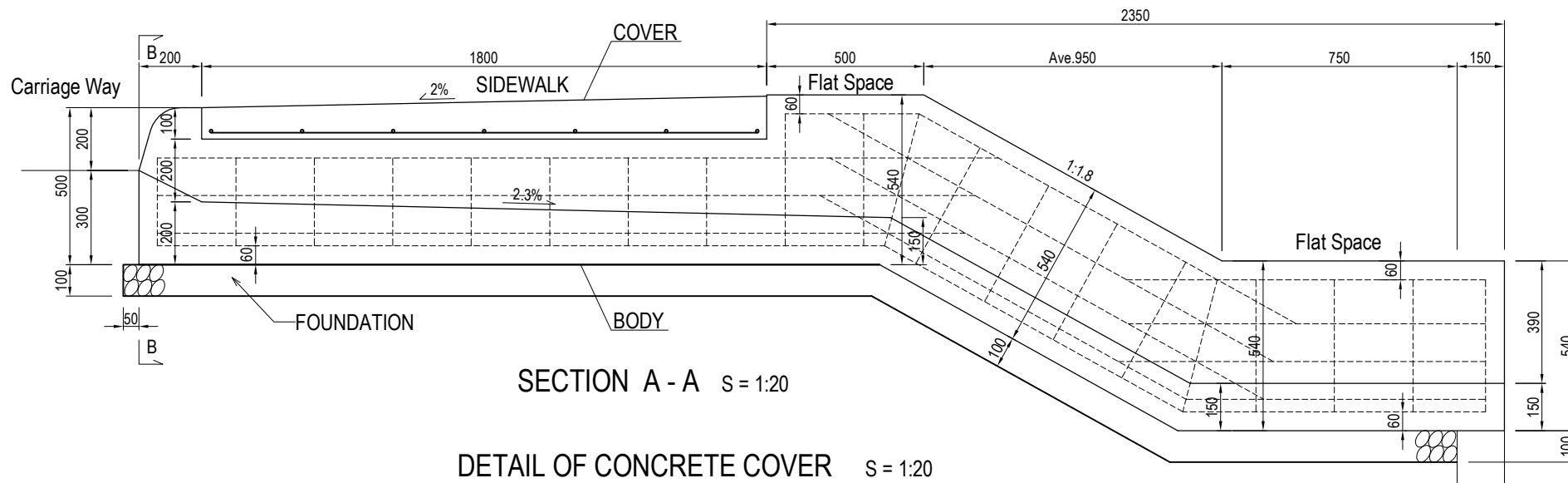
SIDE DITCH TYPE U-1500x1500

A

- Note
1. Specification of Reinforced Concrete should be CLASS DII
 2. Specification of Steel reinforcement bar should be SD345



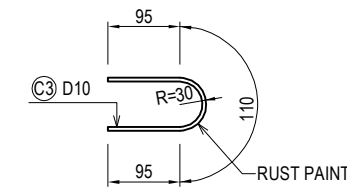
SECTION B - B S = 1:20



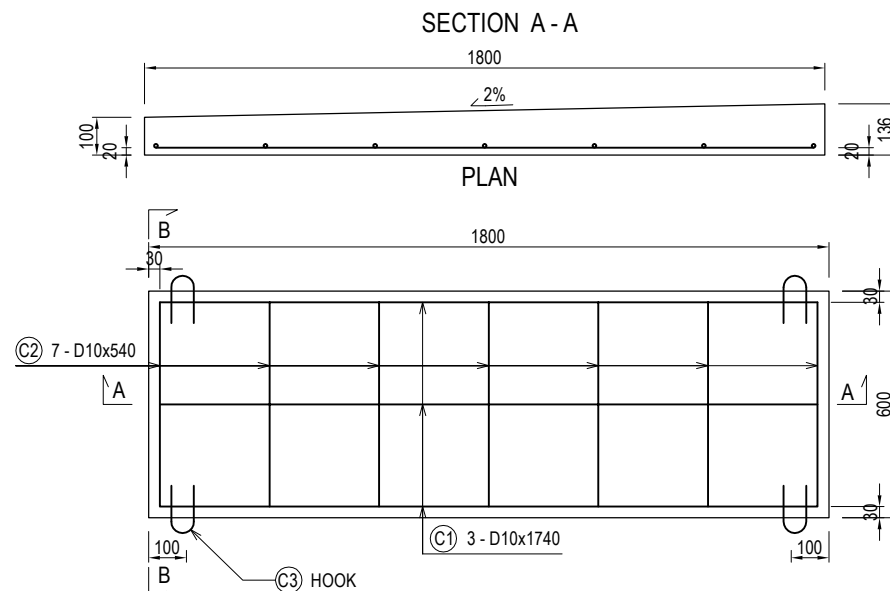
SECTION A - A S = 1:20

SIDE DITCH TYPE U-1500x1500

DETAIL OF HOOKS S = 1:10



DETAIL OF CONCRETE COVER S = 1:20

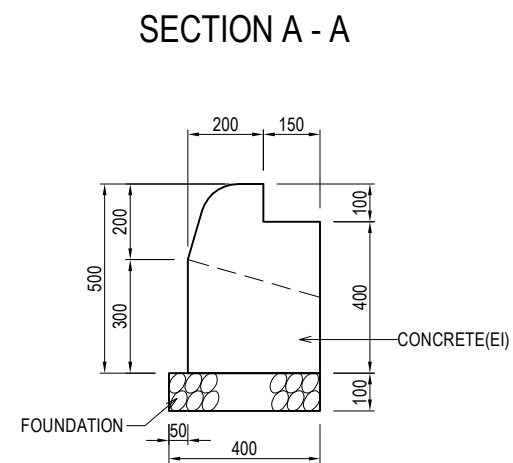
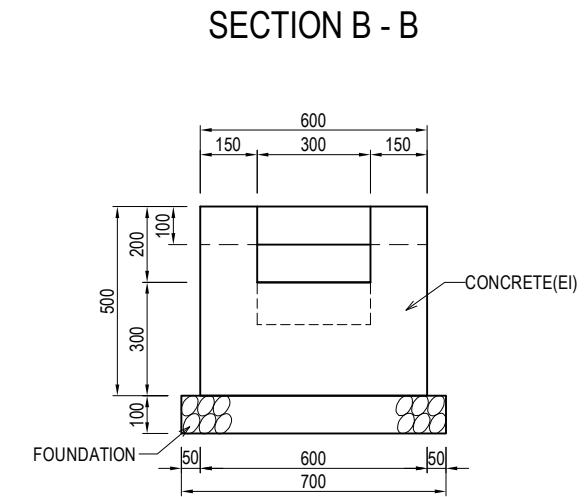
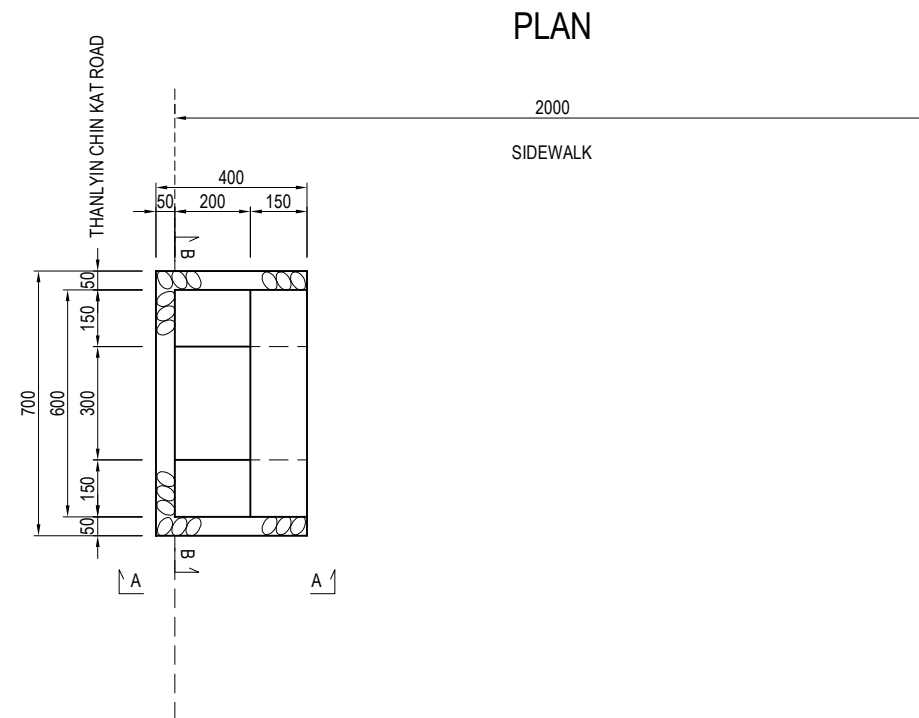


QUANTITY Per 10 each

Title	Specification	Quantity
Body		
Concrete	DII	8.15 m ³
Reinforcing bar	D10	346.15 kg
Form		64.98 m ²
Foundation	t=100	30.71 m ²
Cover		
Concrete	DII	1.27 m ³
Reinforcing bar	D10	57.12 kg
Form		5.68 m ²

DETAIL OF U-DITCH TYPE B S=1:20

Note
1. Specification of Plain Concrete should be CLASS EI



QUANTITY Per 10 each

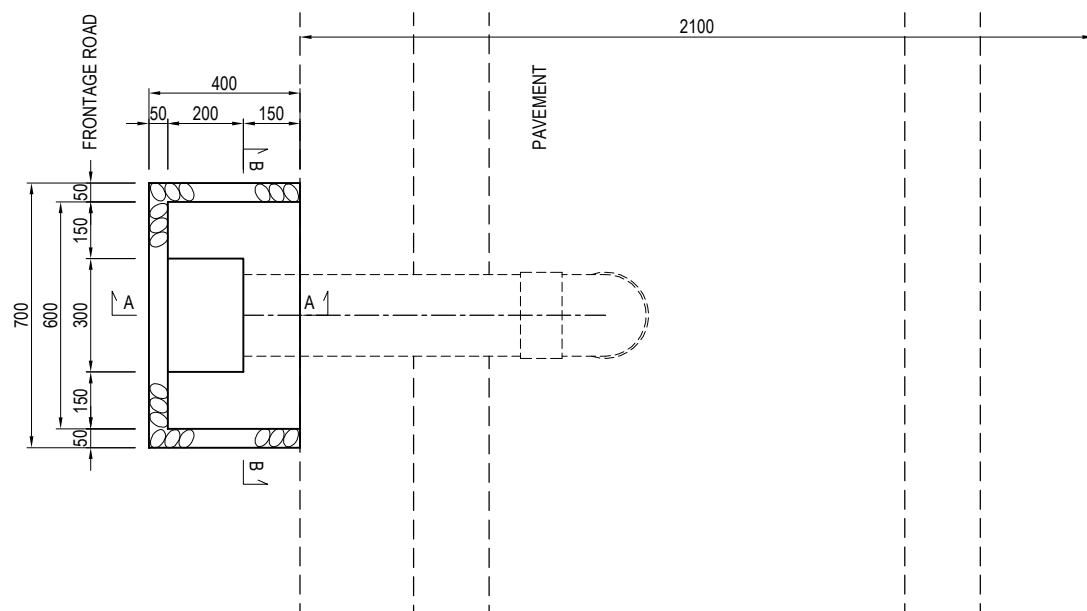
Title	Specification	Quantity
Concrete	EI	0.74 m ³
Form		4.35 m ²
Foundation	≒100	2.80 m ²

<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>K. TACHIBANA</td> <td></td> <td>29 Sep.2017</td> </tr> <tr> <td>CHECKED BY</td> <td>T. HAYAKAWA</td> <td></td> <td>3 Oct.2017</td> </tr> <tr> <td>APPROVED BY</td> <td>Y. SANO</td> <td></td> <td>6 Oct.2017</td> </tr> </table>		NAME	SIGNATURE	DATE	PREPARED BY	K. TACHIBANA		29 Sep.2017	CHECKED BY	T. HAYAKAWA		3 Oct.2017	APPROVED BY	Y. SANO		6 Oct.2017	DRAWING TITLE DETAIL OF U-DITCH TYPE B S=1:20	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 100%;">PACKAGE</td> </tr> <tr> <td style="text-align: center;">0</td> </tr> <tr> <td style="text-align: center;">DWG No.</td> </tr> <tr> <td style="text-align: center;">P0-RD-3170</td> </tr> </table>	PACKAGE	0	DWG No.	P0-RD-3170
	NAME	SIGNATURE	DATE																							
PREPARED BY	K. TACHIBANA		29 Sep.2017																							
CHECKED BY	T. HAYAKAWA		3 Oct.2017																							
APPROVED BY	Y. SANO		6 Oct.2017																							
PACKAGE																										
0																										
DWG No.																										
P0-RD-3170																										

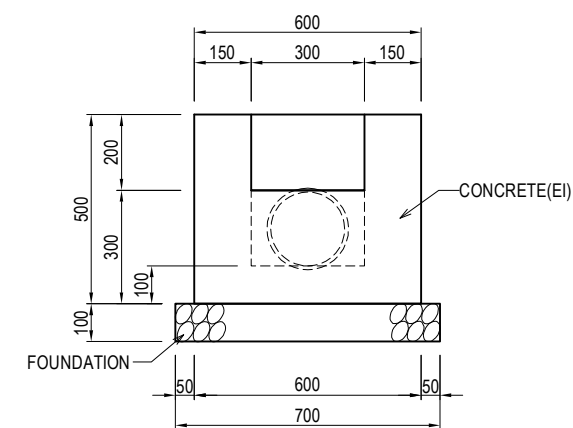
DETAIL OF U-DITCH TYPE C S=1:20

Note
1. Specification of Plain Concrete should be CLASS EI

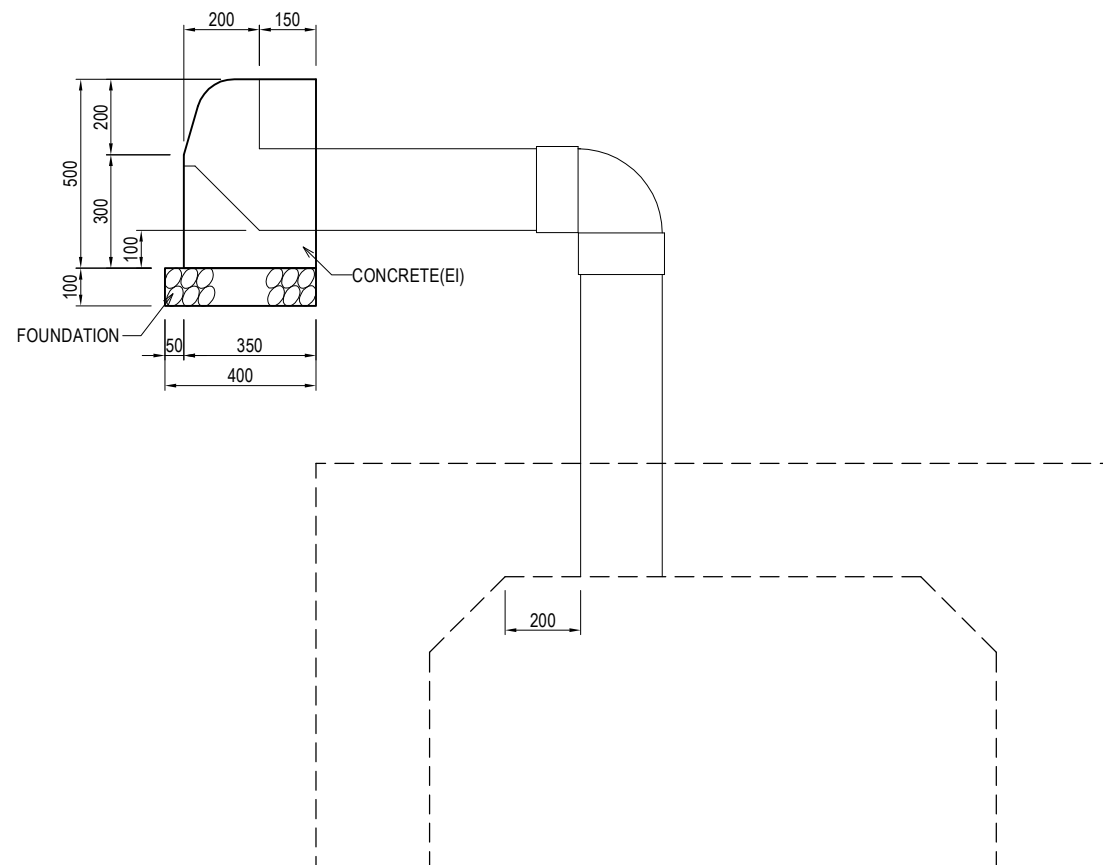
PLAN



SECTION B - B



SECTION A - A



QUANTITY Per 10 each

Title	Specification	Quantity	
Concrete	EI	0.82	m ³
Form		11.30	m ²
Foundation	t=100	2.80	m ²
Pipe	VPφ200	20.00	m
Pipe Elbow	90°	10	each

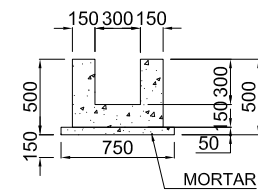
DETAIL OF SIDE DITCH (1)

S=1:50

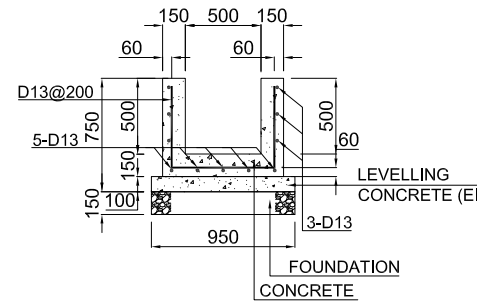
NOTES:

1. Concrete Class DII
(240 kg/cm²)
2. Steel Reinforcement
SD345
3. Pit of Steel Reinforcement
is 200mm

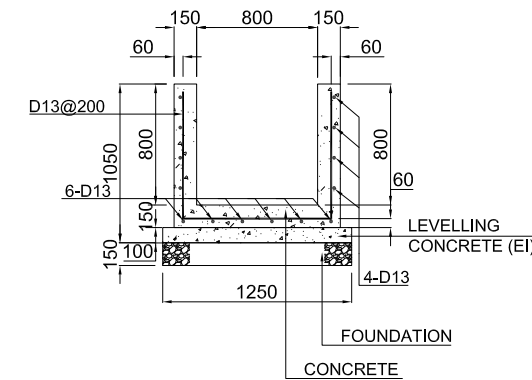
SIDE DITCH TYPE U-300×300



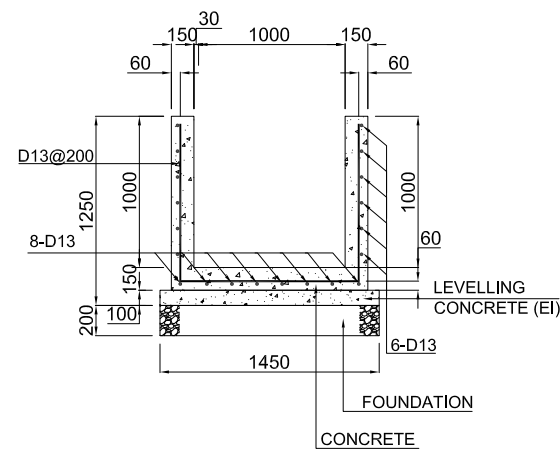
SIDE DITCH TYPE U-500×500



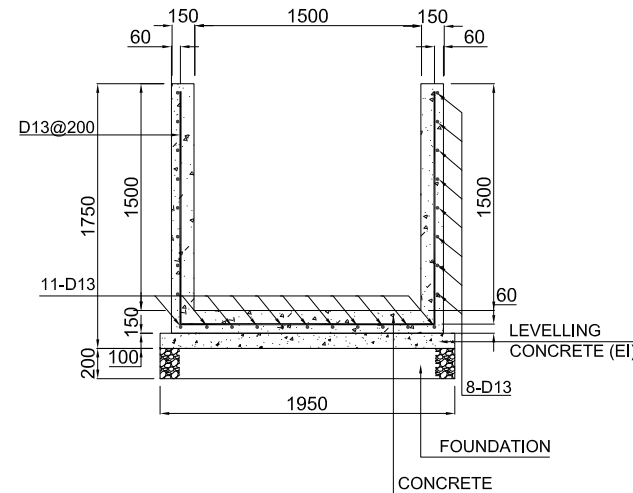
SIDE DITCH TYPE U-800×800



SIDE DITCH TYPE U-1000×1000

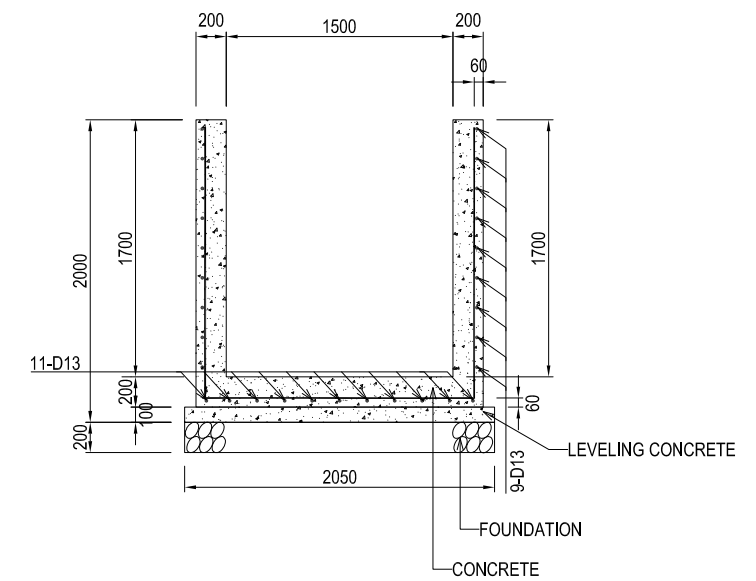


SIDE DITCH TYPE U-1500×1500



SIDE DITCH TYPE U-1500x1700

S=1:50



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.	K. TACHIBANA		29 Sep. 2017	DETAIL OF SIDE DITCH (1)	0
				T. HAYAKAWA		3 Oct. 2017		DWG No.
				Y. SANO		6 Oct. 2017		P0-RD-3190

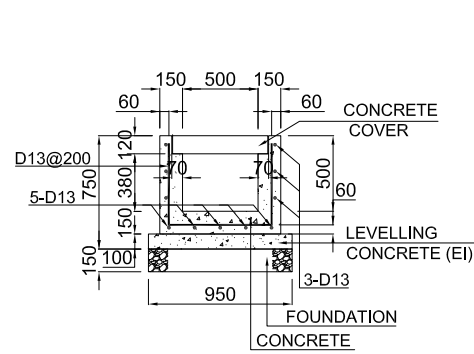
DETAIL OF SIDE DITCH (2)

S=1:50

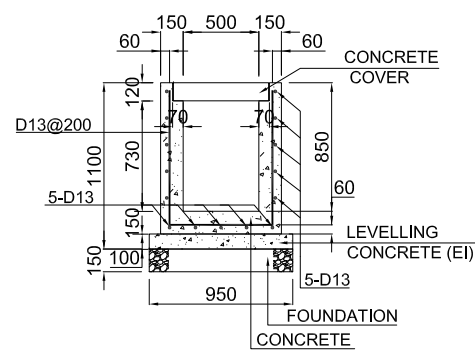
NOTES:

1. Concrete Class DII (240 kg/cm²)
2. Steel Reinforcement SD345
3. Pit of Steel Reinforcement is 200mm

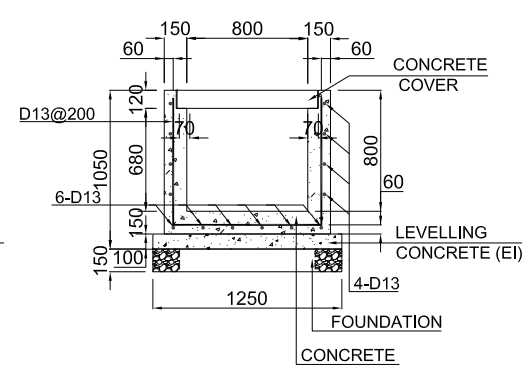
SIDE DITCH TYPE U-500×500 WITH COVER



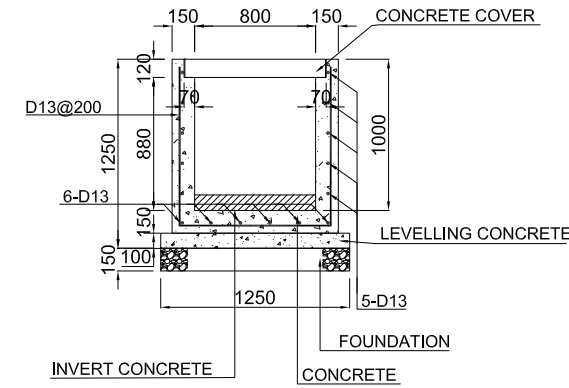
SIDE DITCH TYPE U-500×850 WITH COVER



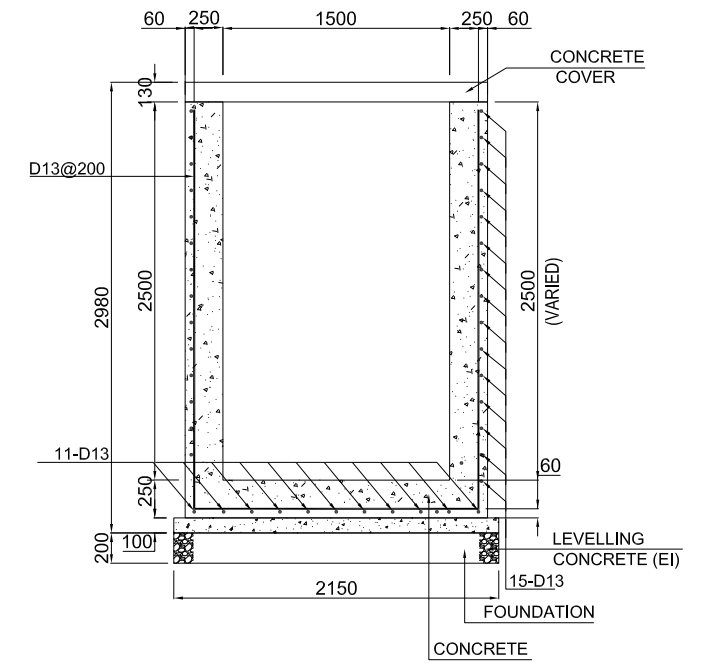
SIDE DITCH TYPE U-800×800 WITH COVER



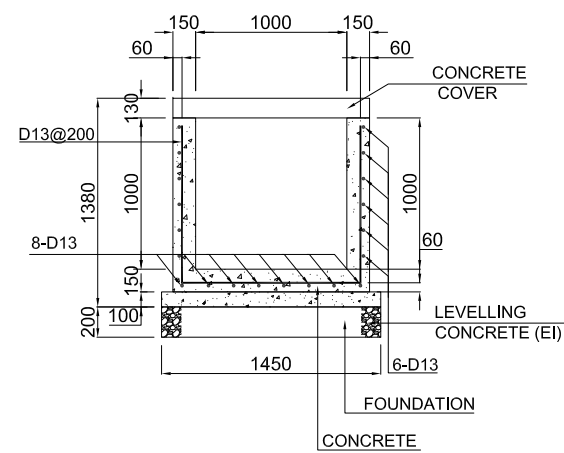
SIDE DITCH TYPE U-800×1000 WITH COVER



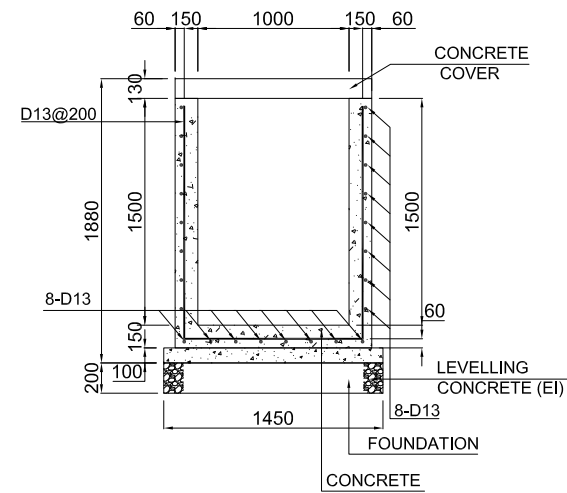
SIDE DITCH TYPE U-1500×2500 WITH COVER



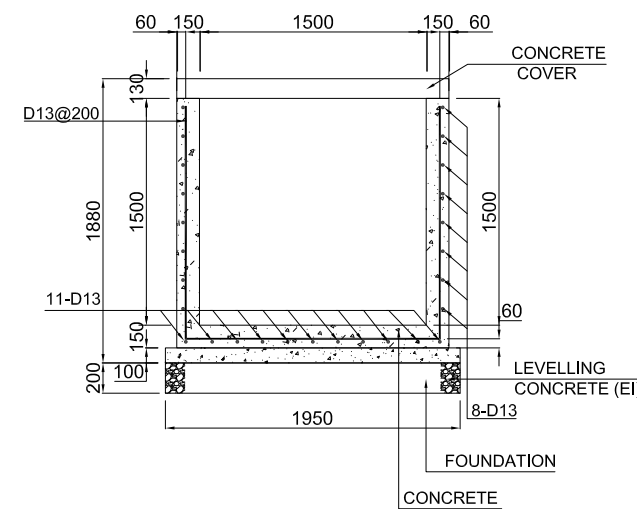
SIDE DITCH TYPE U-1000×1000 WITH COVER



SIDE DITCH TYPE U-1000×1500 WITH COVER



SIDE DITCH TYPE U-1500×1500 WITH COVER

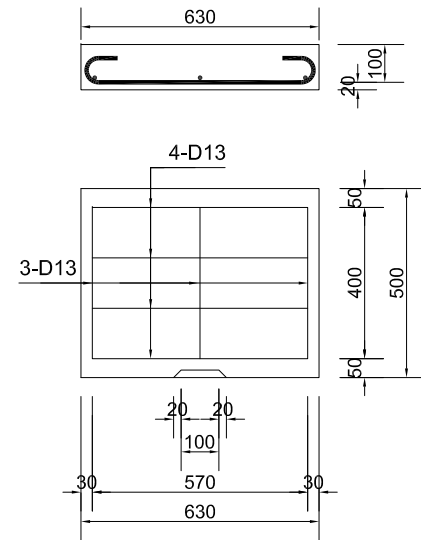


PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE	
				PREPARED BY	K. TACHIBANA				29 Sep. 2017
				CHECKED BY	T. HAYAKAWA				3 Oct. 2017
				APPROVED BY	Y. SANO				6 Oct. 2017
							DETAIL OF SIDE DITCH (2)	0	
								DWG No.	
								P0-RD-3200	

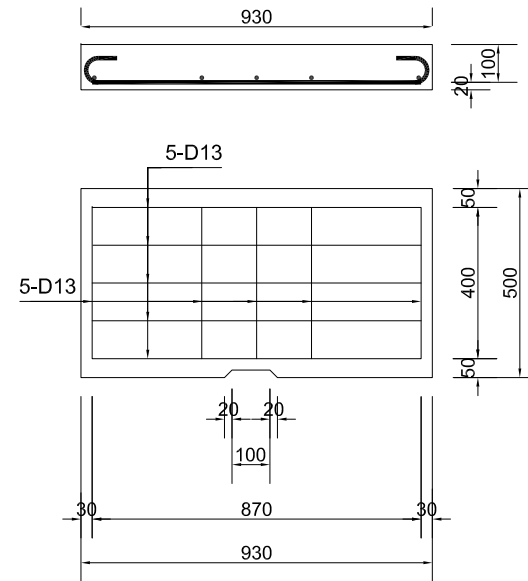
DETAIL OF SIDE DITCH (3)

S=1:20

CONCRETE COVER
SIDE DITCH TYPE U-500×500 WITH COVER



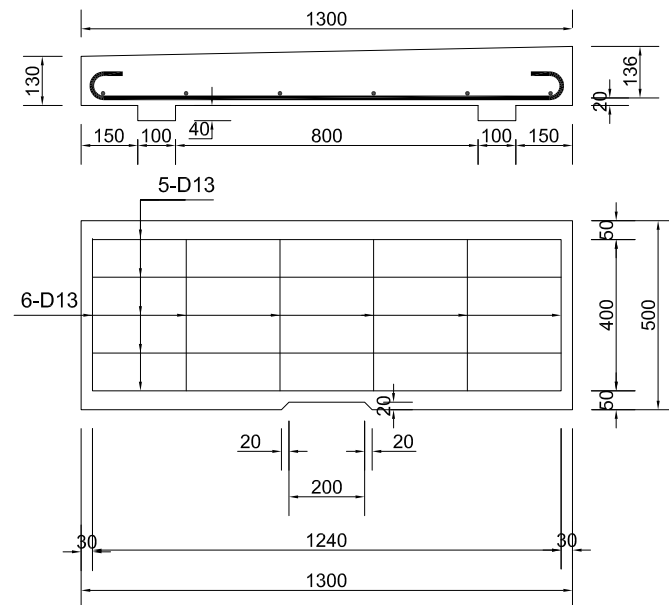
CONCRETE COVER
SIDE DITCH TYPE U-800×800 WITH COVER
SIDE DITCH TYPE U-800×1000 WITH COVER



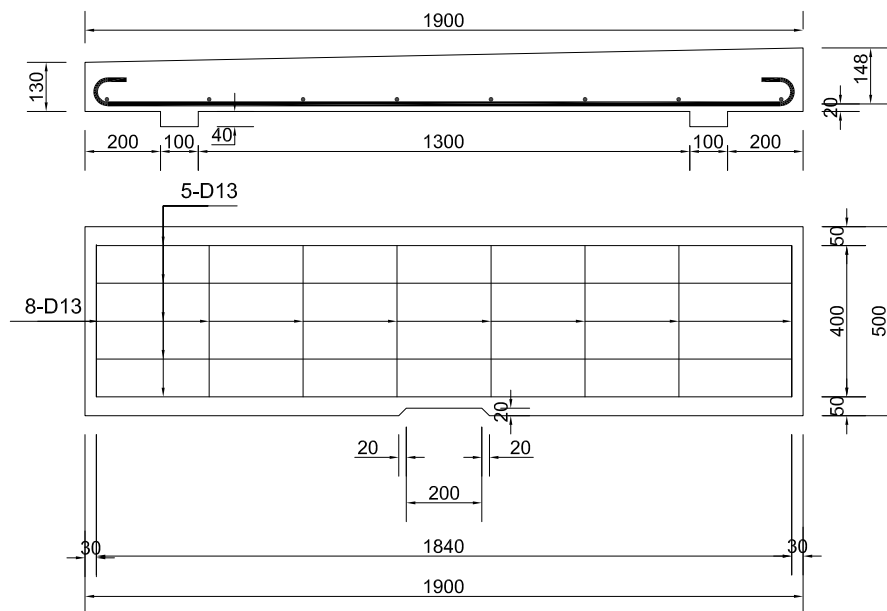
NOTES:

1. Concrete Class DII (240 kg/cm²)
2. Steel Reinforcement SD345
3. Pit of Steel Reinforcement is 200mm

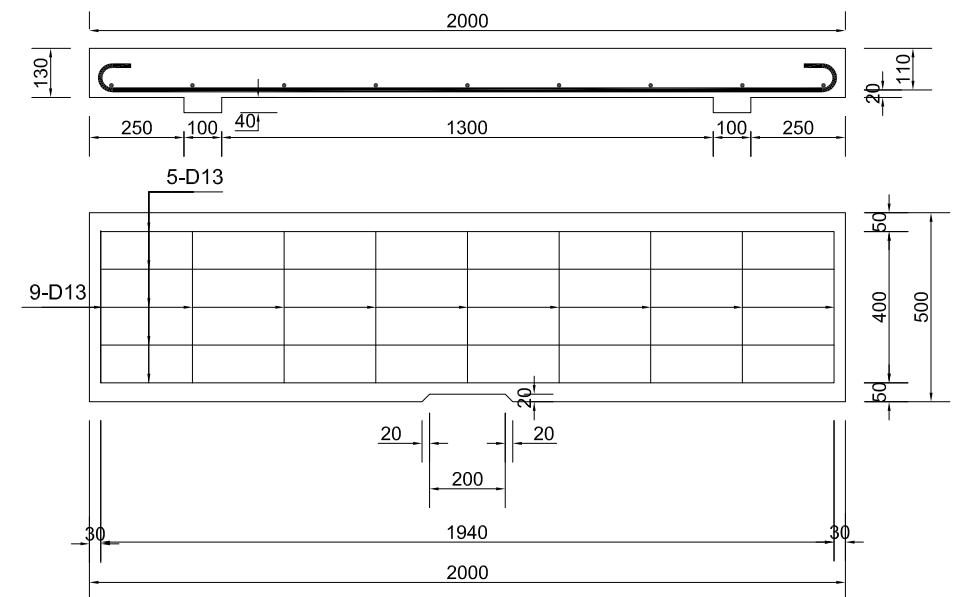
CONCRETE COVER TYPE A
SIDE DITCH TYPE U-1000×1000 WITH COVER
SIDE DITCH TYPE U-1000×1500 WITH COVER



CONCRETE COVER TYPE B
SIDE DITCH TYPE U-1500×1700 WITH COVER

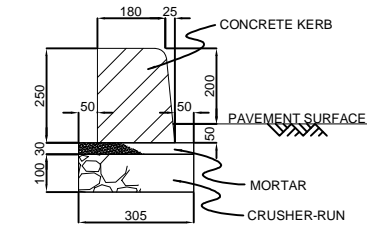


CONCRETE COVER
SIDE DITCH TYPE U-1500×2500 WITH COVER

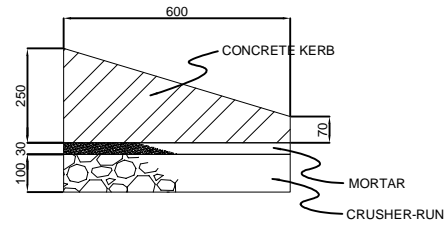


PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JICA JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE DETAIL OF SIDE DITCH (3)	PACKAGE
				PREPARED BY	K. TACHIBANA	29 Sep. 2017		0
				CHECKED BY	T. HAYAKAWA	3 Oct. 2017		DWG No.
				APPROVED BY	Y. SANO	6 Oct. 2017		P0-RD-3210

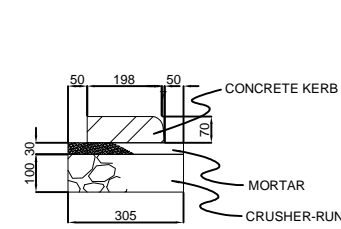
DETAILS OF KERB SCALE = 1:20



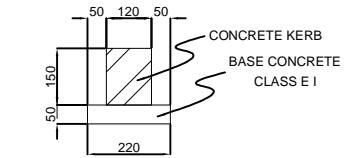
CONCRETE KERB TYPE A-1



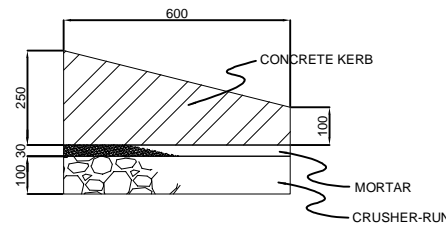
CONCRETE KERB TYPE A-2
TRANSITION BLOCK BETWEEN
TYPE A-1 AND TYPE A-3



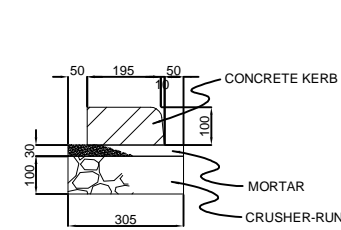
CONCRETE KERB TYPE A-3



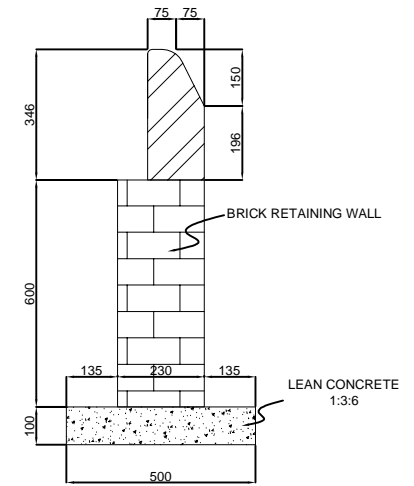
CONCRETE KERB TYPE C



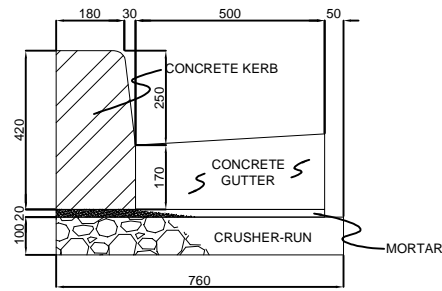
CONCRETE KERB TYPE A-4
TRANSITION BLOCK BETWEEN
TYPE A-1 AND TYPE A-5



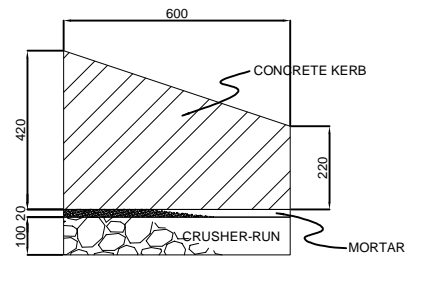
CONCRETE KERB TYPE A-5



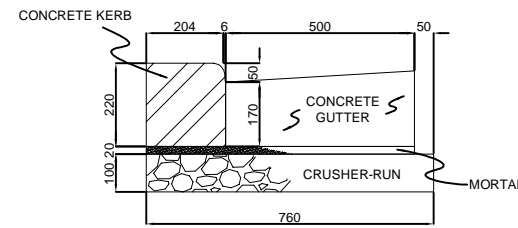
CONCRETE KERB TYPE D



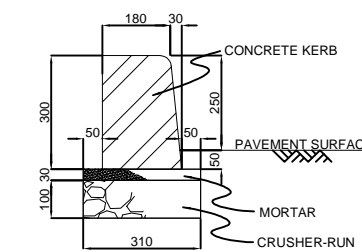
CONCRETE KERB TYPE B-1



CONCRETE KERB TYPE B-2
TRANSITION BLOCK BETWEEN
TYPE B-1 AND TYPE B-3



CONCRETE KERB TYPE B-3



CONCRETE KERB TYPE E

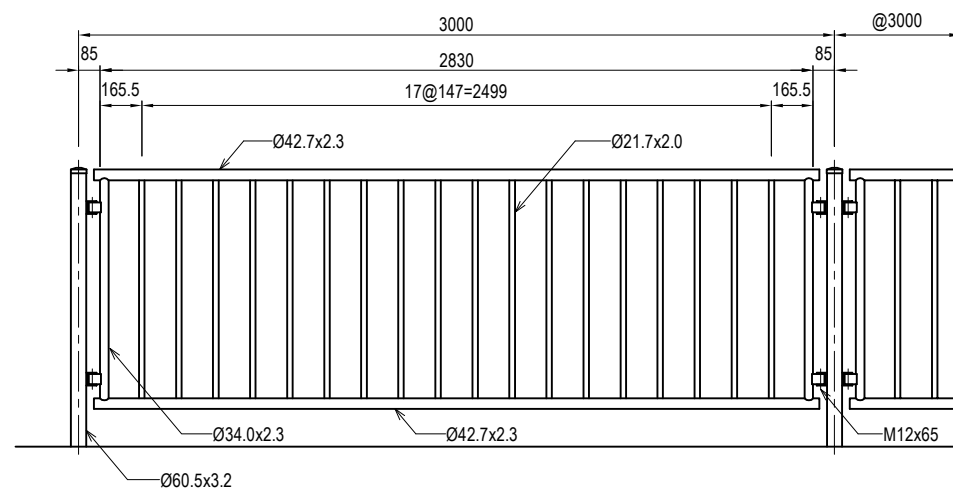
MATERIAL LIST (QUANTITIES PER 10 M)

TYPE	A-1	A-2	A-3	A-4	A-5	B-1	B-2	B-3
DIMENSION	180/205×H250×L600	180/205×H250 198/205×H70 ×L600	198/205×H70×L600	180/205×H250 195/205×H100 ×L600	195/205×H100×L600	180/210×H420×L600	180/210×H420 204/210×H220 ×L600	204/210×H220×L600
CONCRETE	CLASS E I	CLASS E I	CLASS E I	CLASS E I	CLASS E I	CLASS E I	CLASS E I	CLASS E I
MORTAR (1:3)	0.0915 m ³	0.0915 m ³	0.0915 m ³	0.0915 m ³	0.0915 m ³	0.142 m ³	0.142 m ³	0.142 m ³
CRUSHER-RUN	0.305 m ³	0.305 m ³	0.305 m ³	0.305 m ³	0.305 m ³	0.760 m ³	0.760 m ³	0.760 m ³
GUTTER CONCRETE	-	-	-	-	-	0.925 m ³	0.925 m ³	0.925 m ³

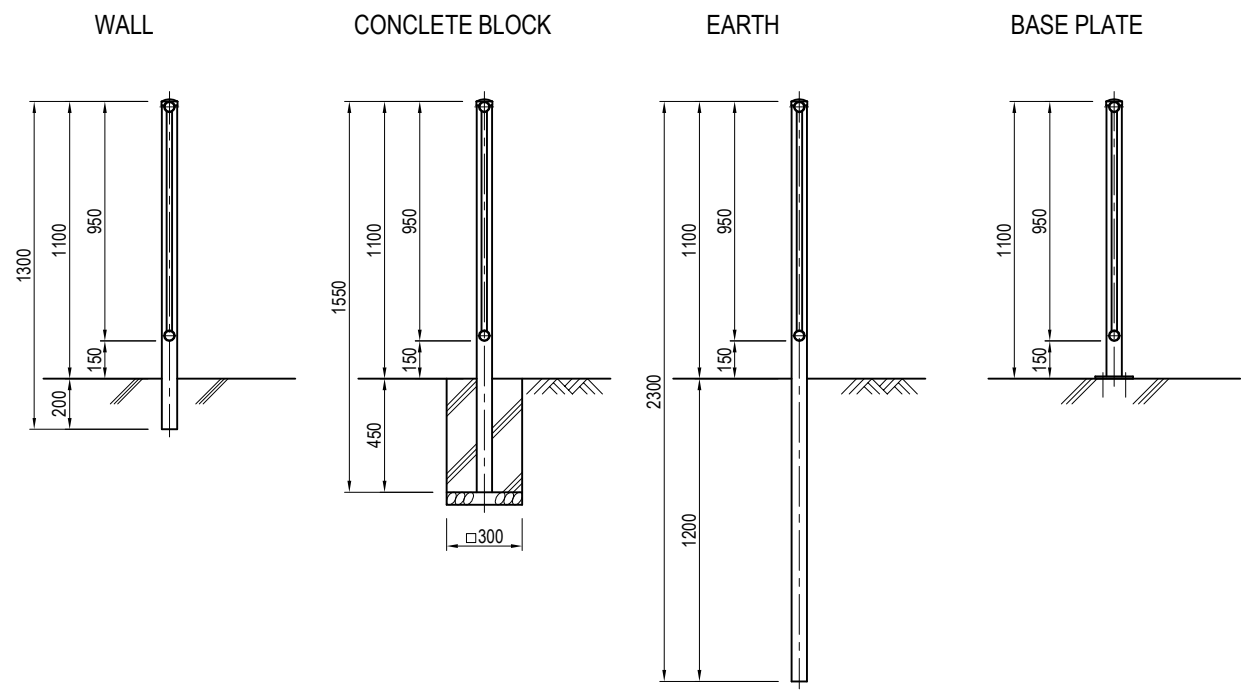
MATERIAL LIST (QUANTITIES PER 10 M)

TYPE	C	D	E
DIMENSION	120×H150×L600	75/150×H346×L600	180/210×H300×L600
CONCRETE	CLASS E I	CLASS E I	CLASS E I
MORTAR (1:3)	-	-	-
CRUSHER-RUN	-	-	0.093 m ³
BASE CONCRETE	0.110 m ³	-	0.310 m ³
LEAN CONCRETE	-	0.500 m ³	-
BRICK	-	1.380 m ³	-

DETAIL OF GUARD FENCE



FRONT VIEW
S=1:30



SECTION
S=1:30

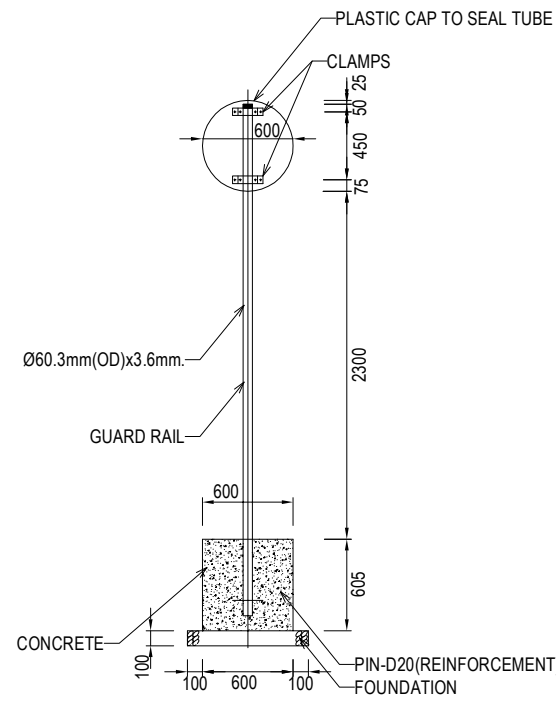
QUANTITY PER 10m

Title	Specification	Quantity	Description
Post	φ60.5 x 3.2	4.2 each	Coating specification
Panel	φ42.7 x 950 x 2880	3.3 each	Coating specification
(Concrete)	E 1	0.17 m3	
(Form)		2.3 m2	

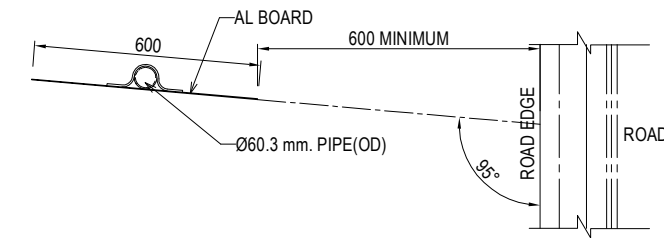
<small>PROJECT NAME</small> DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	<small>FINANCED BY</small> JAPAN INTERNATIONAL COOPERATION AGENCY	<small>COUNTERPART</small> REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	<small>JICA STUDY TEAM</small> NIPPON KOEI 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>NAME</th> <th>SIGNATURE</th> <th>DATE</th> </tr> <tr> <td>PREPARED BY</td> <td>K. TACHIBANA</td> <td>29 Sep.2017</td> </tr> <tr> <td>CHECKED BY</td> <td>T. HAYAKAWA</td> <td>3 Oct.2017</td> </tr> <tr> <td>APPROVED BY</td> <td>Y. SANO</td> <td>6 Oct.2017</td> </tr> </table>	NAME	SIGNATURE	DATE	PREPARED BY	K. TACHIBANA	29 Sep.2017	CHECKED BY	T. HAYAKAWA	3 Oct.2017	APPROVED BY	Y. SANO	6 Oct.2017	DRAWING TITLE DETAIL OF GUARD FENCE	PACKAGE 0 DWG No. P0-RD-6010
NAME	SIGNATURE	DATE																
PREPARED BY	K. TACHIBANA	29 Sep.2017																
CHECKED BY	T. HAYAKAWA	3 Oct.2017																
APPROVED BY	Y. SANO	6 Oct.2017																

DETAIL OF SIGNBOARD FOUNDATION AND POST

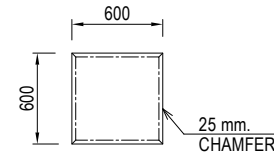
Note
1. Specification of Plain Concrete should be CLASS EI



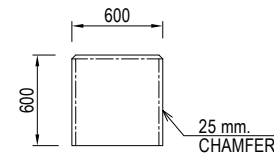
SIGN POST
S=1:50



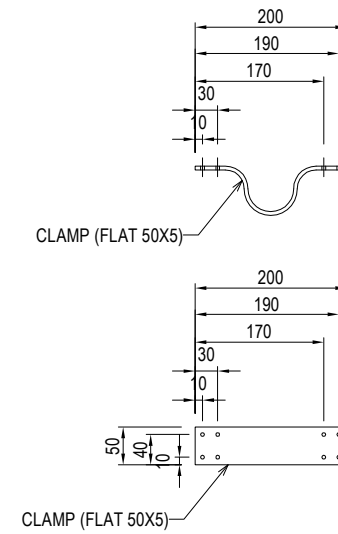
**TOP VIEW
PLAN OF SIGN BOARD**
S=1:20



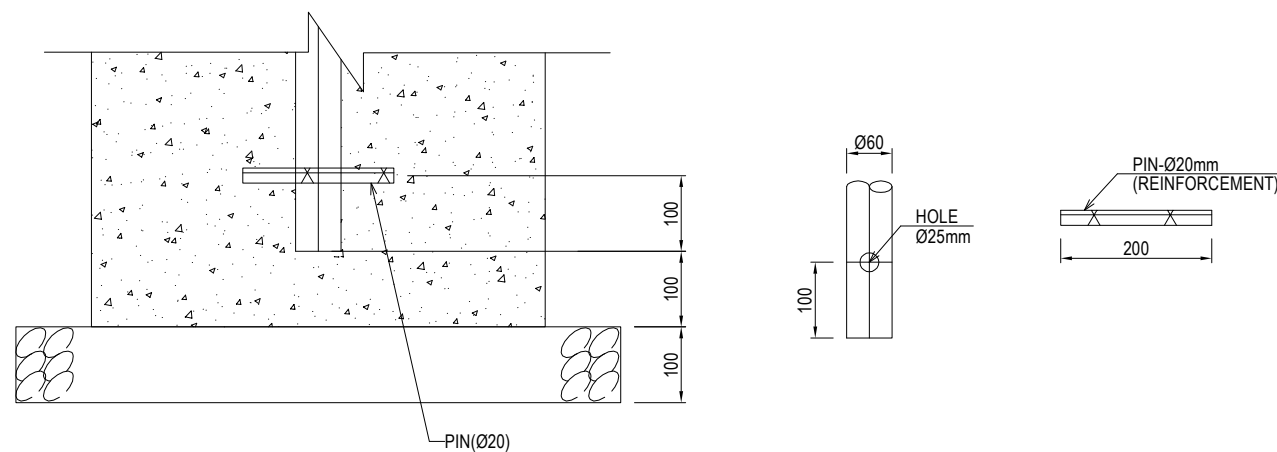
FOUNDATION PLAN
S=1:50



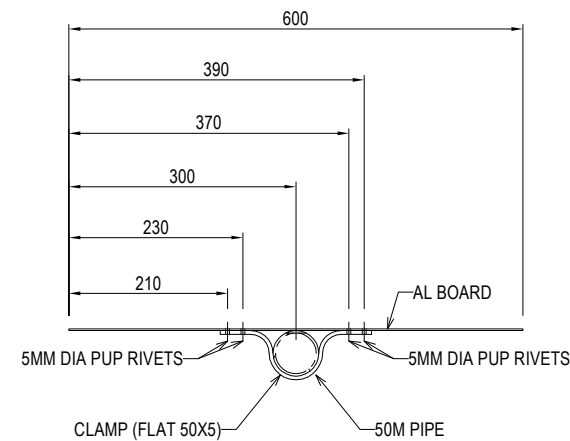
FOUNDATION ELEVATION
S=1:50



CLAMP DETAILS-2
S=1:10



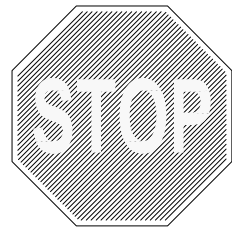
DETAIL OF "A"
S=1:10



CLAMP DETAILS-1
S=1:10

QUANTITY			PER 10each
Title	Specification	Quantity	Description
Signboard	aluminium:t=2.0	10 each	Wide-angle prism type
Post	φ60.3 x 3380 x 3.6	10 each	Coating specification
Concrete	E I	2.18 m3	
Foundation	t=100	6.40 m2	
Form		14.52 m2	

DETAIL OF SIGNBOARD



TS-1
STOP
SIZE: 600 MM×600 MM



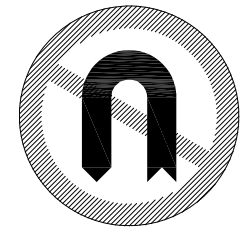
TS-2
SPEED LIMIT 60 KM/H
SIZE: 600 MM DIAMETER



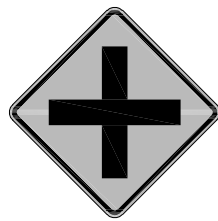
TS-3
SPEED LIMIT 40 KM/H
SIZE: 600 MM DIAMETER



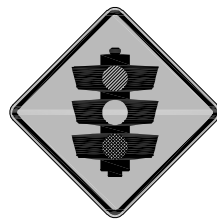
TS-4
SPEED LIMIT 30 KM/H
SIZE: 600 MM DIAMETER



TS-5
NO U-TURN
SIZE: 600 MM DIAMETER



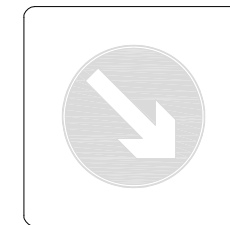
TS-6
CROSS ROAD
SIZE: 600 MM×600 MM



TS-7
TRAFFIC SIGNAL
SIZE: 600 MM×600 MM



TS-8
PEDESTRIAN CROSSING
SIZE: 600 MM×600 MM



TS-9
KEEP RIGHT (THIS WAY)
SIZE: 600 MM×600 MM



TS-10
SLOW DOWN
SIZE: 600 MM×600 MM



TS-11
SCHOOL ZONE
SIZE: 600 MM×600 MM



TS-12
REVERSE TURN (RIGHT)
SIZE: 600 MM×600 MM








TS-13
REVERSE TURN (LEFT)
SIZE: 600 MM×600 MM

COLORS: ■ BLACK ▨ RED ■ YELLOW ▩ GREEN □ WHITE ■ LIGHT BLUE

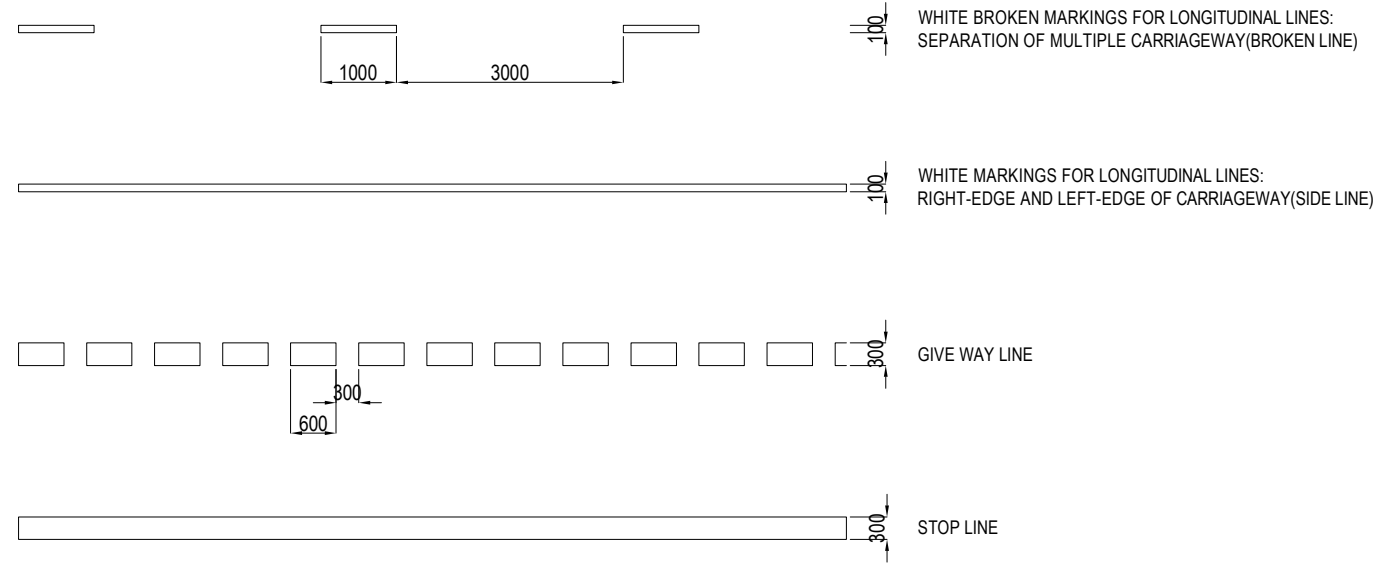
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE DETAIL OF SIGNBOARD	PACKAGE	
				PREPARED BY	K. TACHIBANA			29 Sep.2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct.2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct.2017	PO-RD-6030

SCHEDULE OF SIGNBOARD

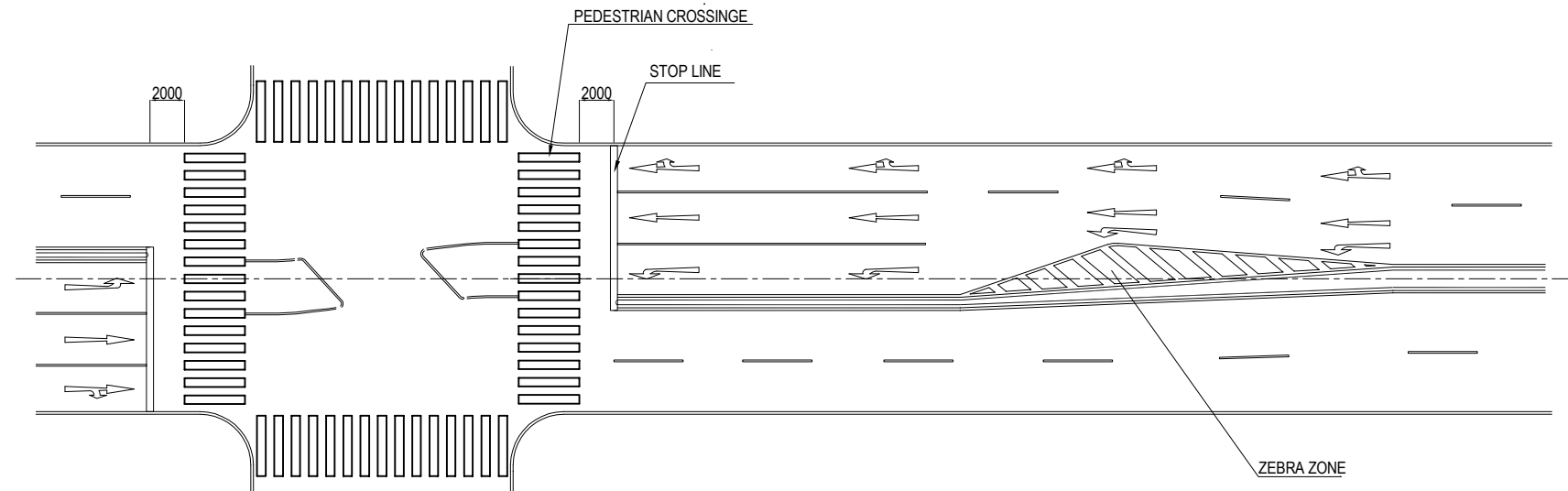
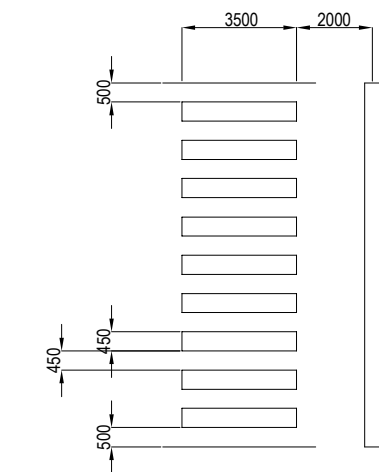
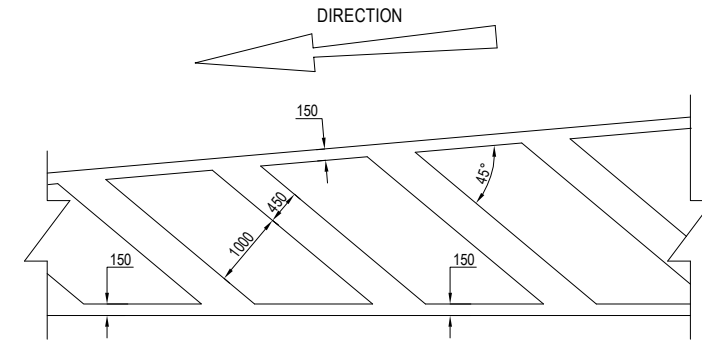
ROAD SIGN				1		2		3		4		5		TOTAL QUANTITY OF SAME ITEM
				0+000 to -0+080		0+000 to 0+060		2+860 to 3+140		-0+060 to 0+060		3+180 to 3+575		
		L	R	L	R	L	R	L	R	L	R			
ROAD				SHUKHINTHAR MAYO PAT ROAD		NAWARAT St		MAIN ROAD		YADANAR ROAD		MAIN ROAD		
WARNING SIGN		TS-7	TRAFFIC SIGNAL AHEAD		1		1	1	1	1	1		7	
		TS-10	SLOW DOWN		1		1	1	2	1	1	2	9	
		TS-11	SCHOOL						1			1	2	
REGULATION SIGN		TS-1	STOP		1					1	1		3	
		TS-3	SPEED LIMIT 40 KM/H					1	1			1	1	4

<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 K. TACHIBANA</td> <td></td> <td>29 Sep.2017</td> </tr> <tr> <td>CHECKED BY T. HAYAKAWA</td> <td></td> <td>3 Oct.2017</td> </tr> <tr> <td>APPROVED BY Y. SANO</td> <td></td> <td>6 Oct.2017</td> </tr> </table>	NAME	SIGNATURE	DATE	PREPARED BY K. TACHIBANA		29 Sep.2017	CHECKED BY T. HAYAKAWA		3 Oct.2017	APPROVED BY Y. SANO		6 Oct.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 style="text-align: center;">SCHEDULE OF SIGNBOARD</td> <td style="text-align: center;">0</td> </tr> <tr> <td></td> <td style="text-align: center;">DWG No.</td> </tr> <tr> <td></td> <td style="text-align: center;">P0-RD-6040</td> </tr> </table>	DRAWING TITLE	PACKAGE	SCHEDULE OF SIGNBOARD	0		DWG No.		P0-RD-6040
NAME	SIGNATURE	DATE																							
PREPARED BY K. TACHIBANA		29 Sep.2017																							
CHECKED BY T. HAYAKAWA		3 Oct.2017																							
APPROVED BY Y. SANO		6 Oct.2017																							
DRAWING TITLE	PACKAGE																								
SCHEDULE OF SIGNBOARD	0																								
	DWG No.																								
	P0-RD-6040																								

ROAD MARKINGS DETAILS(1)

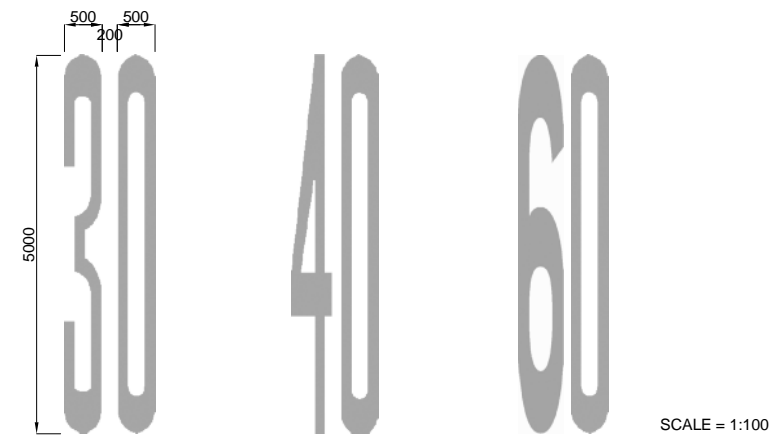


LINE MARKINGS SCALE = 1:100

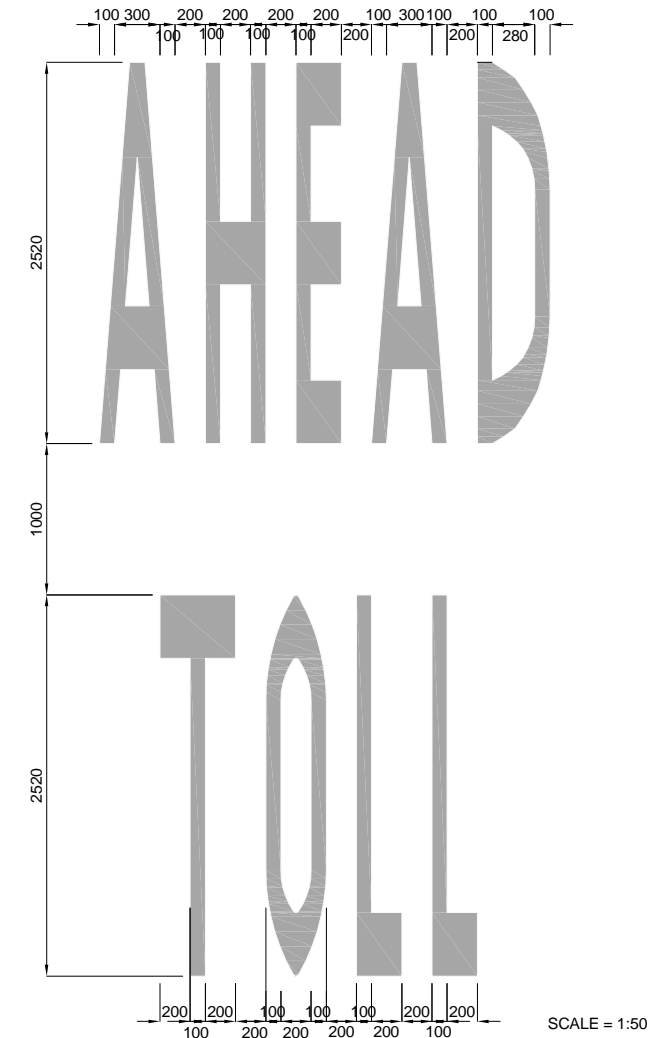


PROJECT NAME	FINANCED BY	COUNTERPART	JICA STUDY TEAM	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE
DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	JICA JAPAN INTERNATIONAL COOPERATION AGENCY	REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	PREPARED BY CHECKED BY APPROVED BY	K. TACHIBANA T. HAYAKAWA Y. SANO	29 Sep.2017 3 Oct.2017 6 Oct.2017	ROAD MARKINGS DETAILS(1)	0 DWG No. P0-RD-6050

ROAD MARKINGS DETAILS(2)

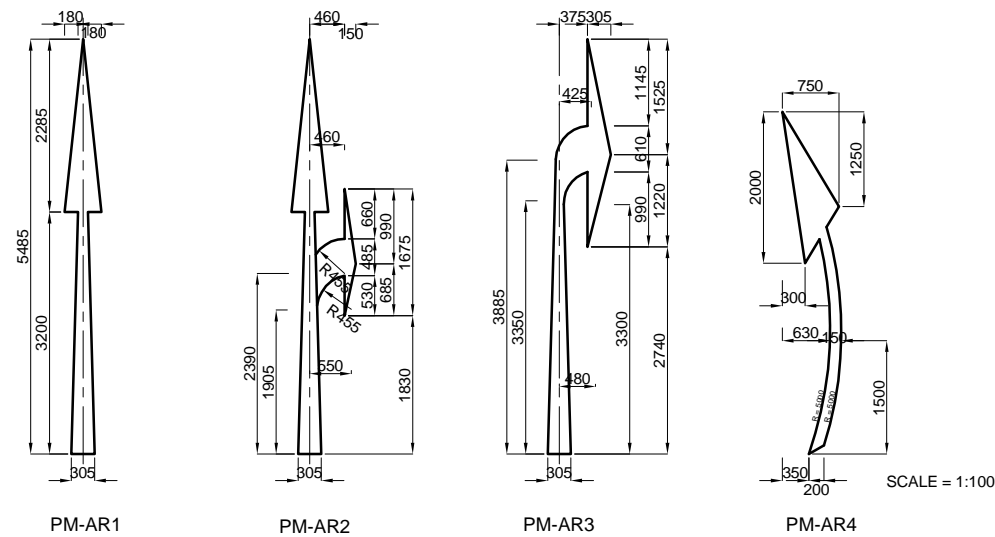


PM-1 SPEED LIMIT 30 KM/H PM-2 SPEED LIMIT 40 KM/H PM-3 SPEED LIMIT 60 KM/H



PM-4 TOLL AHEAD

REFERENCE SHALL BE MADE TO DRAWING NO. PWD(RD)/SD91/20-1, ROAD AND TRANSPORTATION DIVISION, PUBLIC WORKS DEPARTMENT



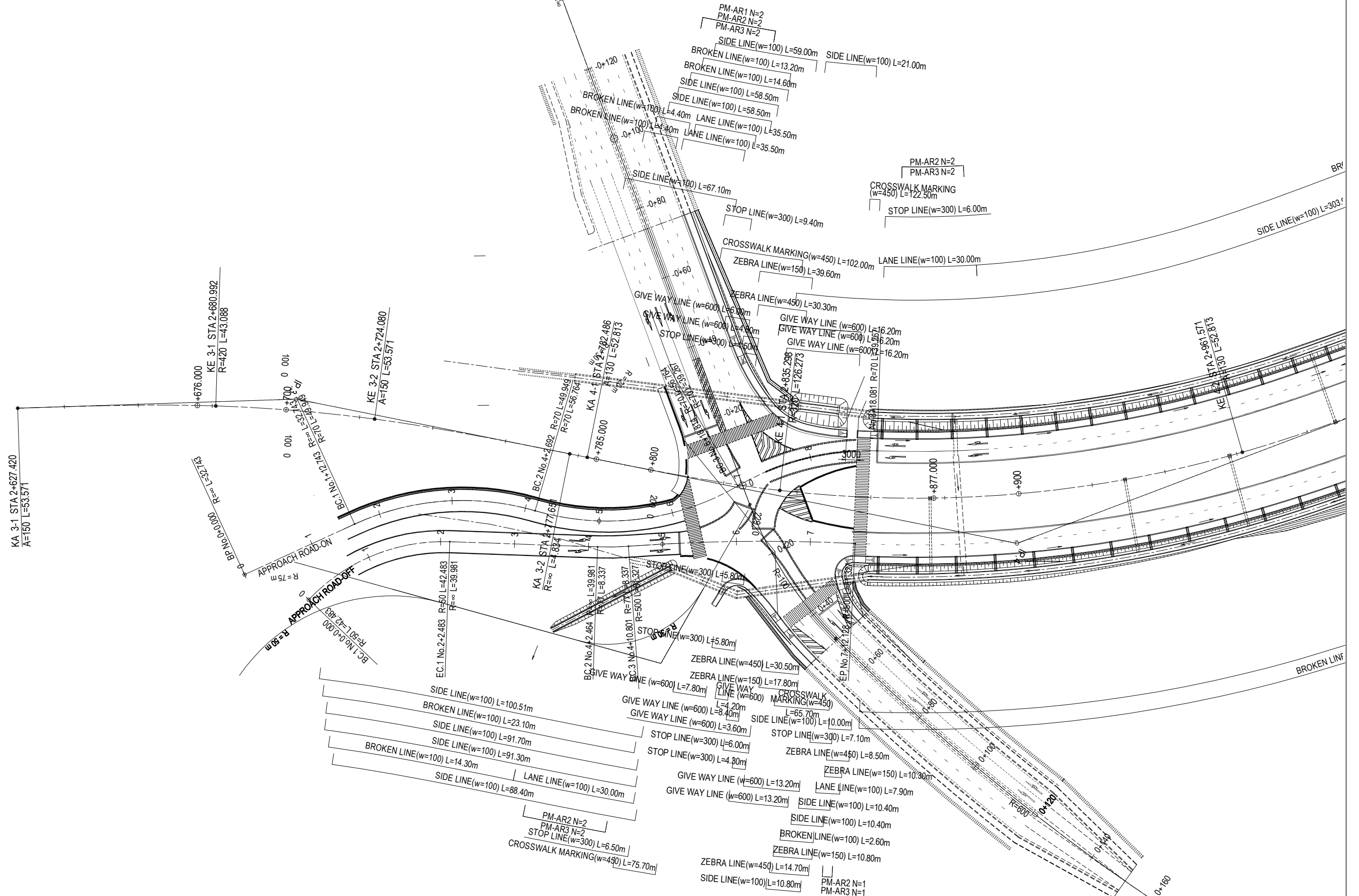
ARROW MARKS

REFERENCE SHALL BE MADE TO DRAWING NO. PWD(RD)/SD91/8-2 ROAD AND TRANSPORTATION DIVISION, PUBLIC WORKS DEPARTMENT

COLORS: WHITE ORANGE

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	K. TACHIBANA				29 Sep.2017
				CHECKED BY	T. HAYAKAWA				3 Oct.2017
				APPROVED BY	Y. SANO				6 Oct.2017
							ROAD MARKING DETAILS (2)	P0-RD-6060	

PLAN FOR ROAD MARKINGS(1) 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

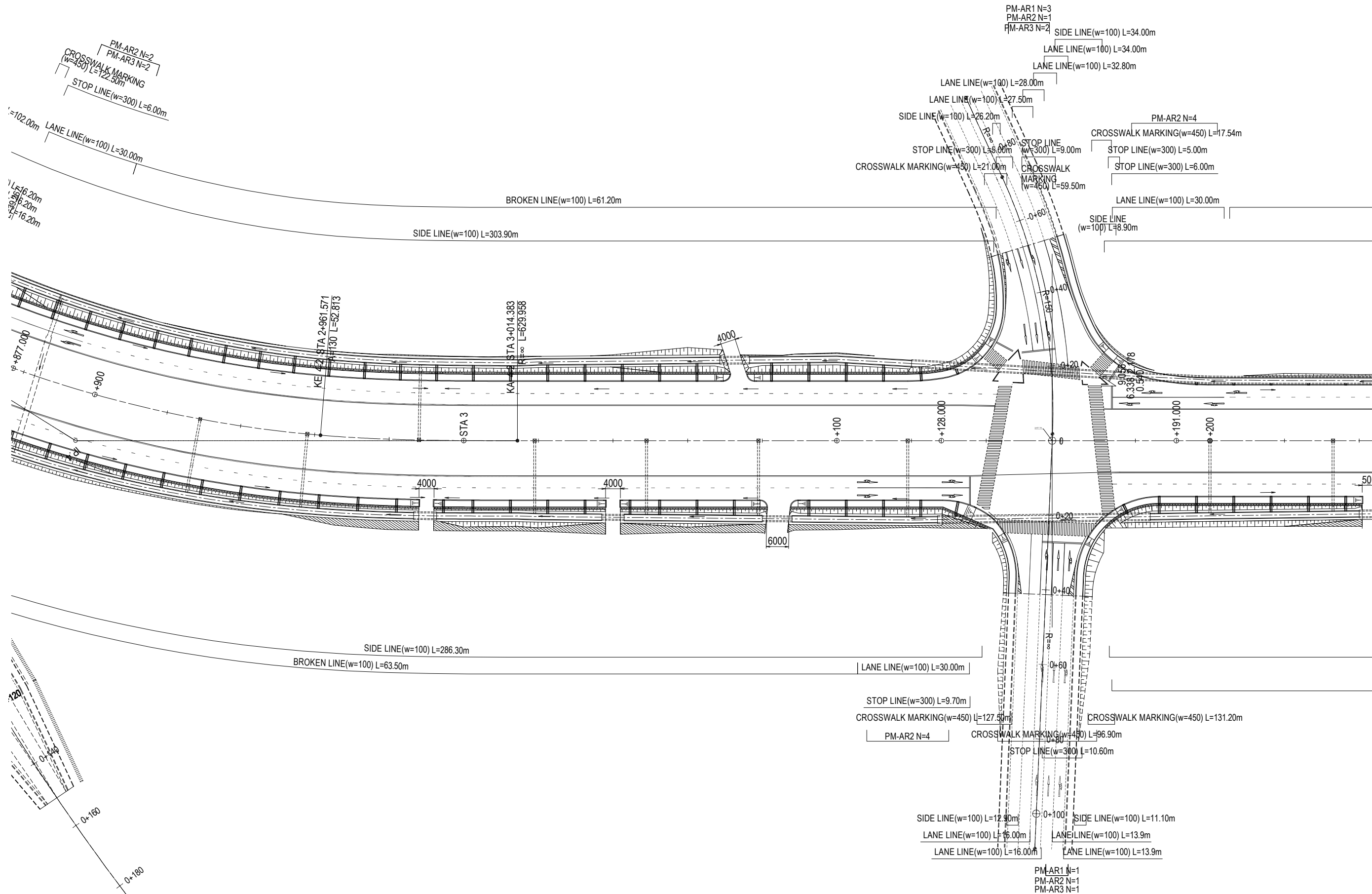
 NIPPON KOEI CO., LTD.
 ORIENTAL CONSULTANTS GLOBAL CO., LTD.
 METROPOLITAN EXPRESSWAY COMPANY LIMITED
 CHODAI CO., LTD.
 NIPPON ENGINEERING CONSULTANTS CO., LTD.

	NAME	SIGNATURE	DATE
PREPARED BY	K. TACHIBANA		29 Sep.2017
CHECKED BY	T. HAYAKAWA		3 Oct.2017
APPROVED BY	Y. SANO		6 Oct.2017

DRAWING TITLE
 PLAN FOR ROAD MARKINGS(1)
 S=1:1000

PACKAGE
 0
 DWG No.
 P0-RD-6070

PLAN FOR ROAD MARKINGS(2) 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

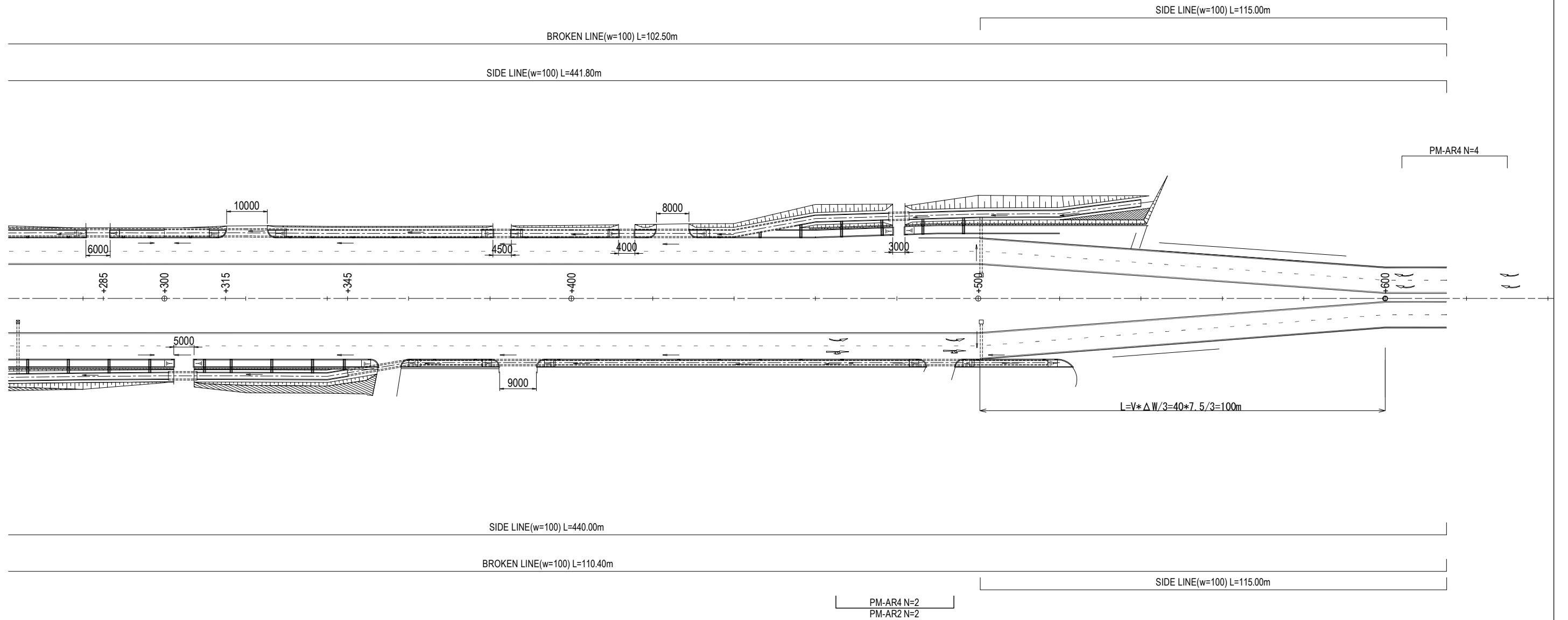
JICA STUDY TEAM
 NIPPON KOEI CO., LTD.
 ORIENTAL CONSULTANTS GLOBAL CO., LTD.
 METROPOLITAN EXPRESSWAY COMPANY LIMITED
 CHODAI CO., LTD.
 NIPPON ENGINEERING CONSULTANTS CO., LTD.

	NAME	SIGNATURE	DATE
PREPARED BY	K. TACHIBANA		29 Sep.2017
CHECKED BY	T. HAYAKAWA		3 Oct.2017
APPROVED BY	Y. SANO		6 Oct.2017

DRAWING TITLE
 PLAN FOR ROAD MARKINGS(2)
 S=1:1000

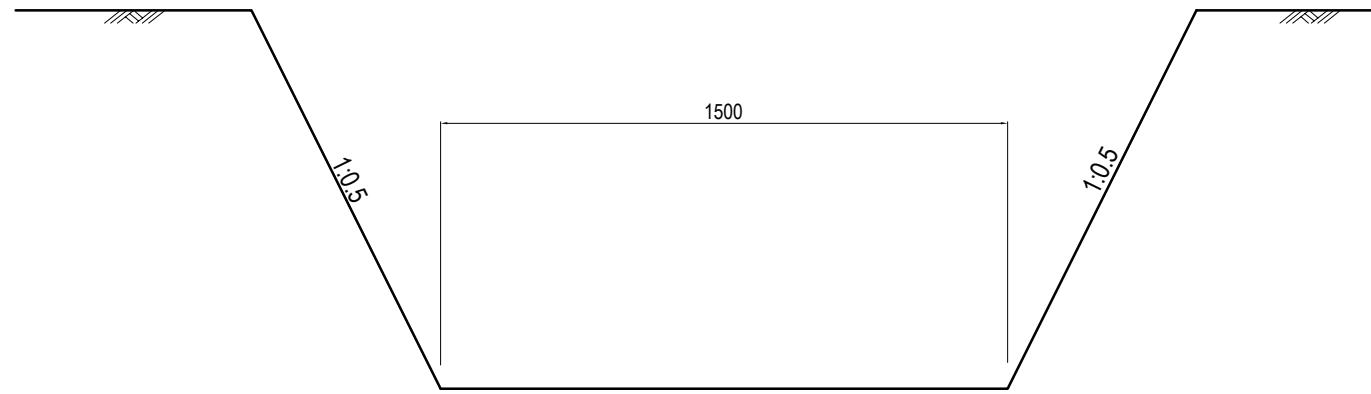
PACKAGE
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 DWG No.
 P0-RD-6080

PLAN FOR ROAD MARKINGS(3) S= 1:1000

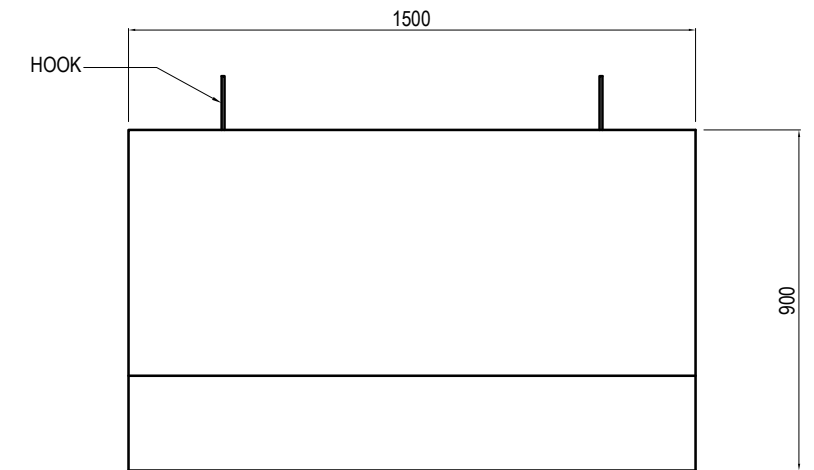
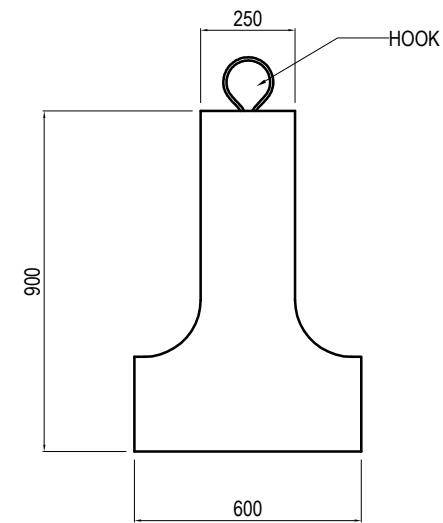


PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE PLAN FOR ROAD MARKINGS(3) S=1:1000	PACKAGE	
				PREPARED BY	K. TACHIBANA			29 Sep.2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct.2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct.2017	P0-RD-6090

DETAIL OF TEMPORARY WORKS S=1:20



TRENCH(W=1500)



WORK QUANTITIES PER UNIT (PER 10m)

ITEM	UNIT	QUANTITY	REMARKS
CONCRETE BARRIER BLOCK	EACH	6.66	

QUANTITY TABLE OF ROAD (REFERENCE DRAWING)

Construction type	Classification	UNIT	Quantity	Remark
DIVISION 02 SITE WORKS				
	Demolition of Existing Concrete Structure (Unreinforced concrete)	m3	710	
	Demolition of Existing Concrete Structure (Reinforced concrete)	m3	306	
	Demolition of Existing Concrete Structure Asphalt Pavement	m3	933	
	Clearing and Grubbing	m2	14,204	
DIVISION 03 EARTH WORKS				
	ROAD EARTH WORK			
	Excavation - Type 1 (Open Cut for Road)	m3	11,019	
	Backfill for Filled-up ground	m3	1,177	
	Backfill for Sub-grade	m3	732	
	Gravel	m3	396	
	Trimming of Slope	m2	2,202	
	STRUCTURE EARTH WORK			
	Excavation - Type 1 (Open Cut for Road Structure)	m3	14,850	
	Backfill	m3	8,780	
	Removal of surplus soil	m3	5,093	
DIVISION 04 WATERWAY WORKS				
	U-DITCH TYPE A	each	25	
	U-DITCH TYPE B	each	73	
	U-DITCH TYPE C	each	15	
	SIDE DITCH TYPE U-500x500 with Cover	m	34	
	SIDE DITCH TYPE U-800x800 with Cover	m	58	
	SIDE DITCH TYPE U-1000x1500	m	120	
	SIDE DITCH TYPE U-1500x1500	m	736	
	SIDE DITCH TYPE U-1500x1700	m	101	
	CONCRETE COVER TYPE A	each	240	
	CONCRETE COVER TYPE B	each	202	
	BOX CULVERT TYPE 1000x1000	m	52	
	BOX CULVERT TYPE 1500x1000	m	216	
	BOX CULVERT TYPE 1500x1500	m	249	
	CATCH PIT 500x500x1200	each	11	
	CATCH PIT (C-DITCH) TYPE B	each	2	
	CONCRETE PIPE CULVERT φ300 (CON. 360°) TYPE A	m	229	
	CONCRETE PIPE CULVERT φ900 (CON. 360°)	m	10	
	TRENCH(W=1500)	m	37	

Construction type	Classification	UNIT	Quantity	Remark
DIVISION 05 PAVEMENTS				
	Prime Coat	m2	16,565	
	Tack Coat	m2	16,565	
	Normal A/C Surface Course, thickness 5cm	m2	16,565	
	Normal A/C Subbase Course, thickness 5cm	m2	16,565	
	Aggregate Base thickness 15cm	m2	15,033	
	Aggregate Base thickness 25cm	m2	1,532	
	Aggregate Subbase thickness 15cm	m2	1,531	
	Aggregate Subbase thickness 25cm	m2	13,502	
	Aggregate Subbase thickness 30cm	m2	1,532	
	Concrete Plate for Sidewalk	m2	2,100	
	Sand(Side walk)	m2	2,100	
	Aggregate Base thickness 10cm(Sidewalk)	m2	2,100	
DIVISION 08 MISCELLANEOUS				
	CONCRETE KERB TYPE A-1	m	1,256	
	CONCRETE KERB TYPE A-2	each	54	
	CONCRETE KERB TYPE A-3	m	122	
	CONCRETE KERB TYPE C	m	1,299	
	SIGN BOARD - TS-1 (Regulation Sign)	each	3	
	SIGN BOARD - TS-3 (Regulation Sign)	each	4	
	SIGN BOARD - TS-7 (Warning Sign)	each	7	
	SIGN BOARD - TS-10 (Warning Sign)	each	9	
	SIGN BOARD - TS-11 (Warning Sign)	each	2	
	Guard Fence	m	795	
	CONCRETE BARRIER	m	198	
	LANE LINE(w=100)	m	381	
	SIDE LINE(w=100)	m	2,473	
	BROKEN LINE(w=100)	m	414	
	STOP LINE(w=300)	m	101	
	CROSSWALK ARKING(w=450)	m	820	
	GIVE WAY LINE (w=600)	m	110	
	ZEBRA LINE(w=150)	m	79	
	ZEBRA LINE(w=450)	m	84	
	ARROW	each	41	

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 QUANTITY TABLE OF ROAD(REFERENCE DRAWING)	PACKAGE	
				PREPARED BY	K. TACHIBANA			29 Sep. 2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct. 2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct. 2017	PO-RD-7000