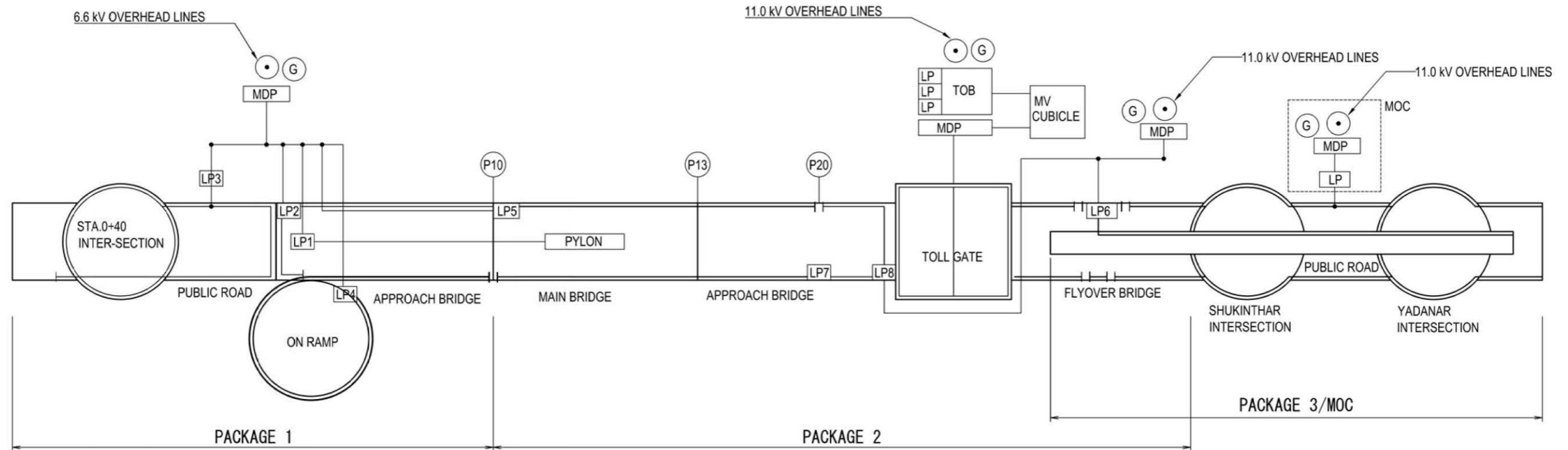
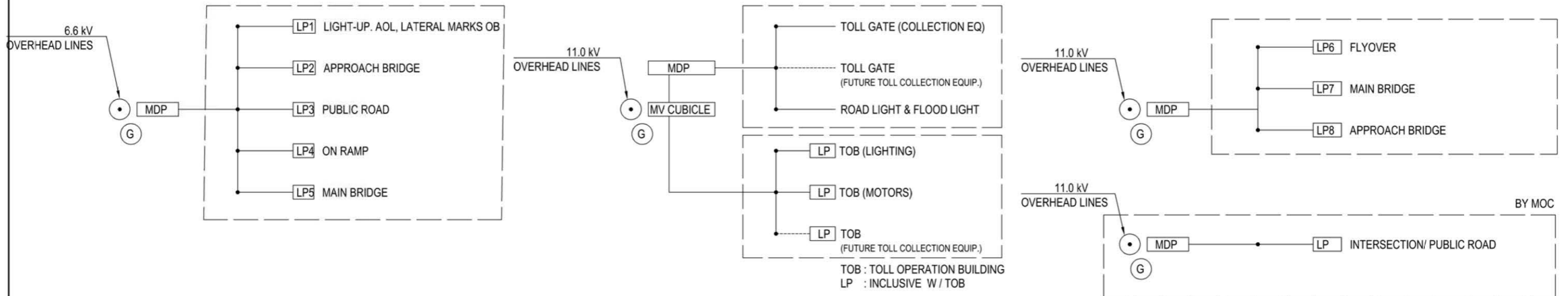


## **C. LIGHTING**

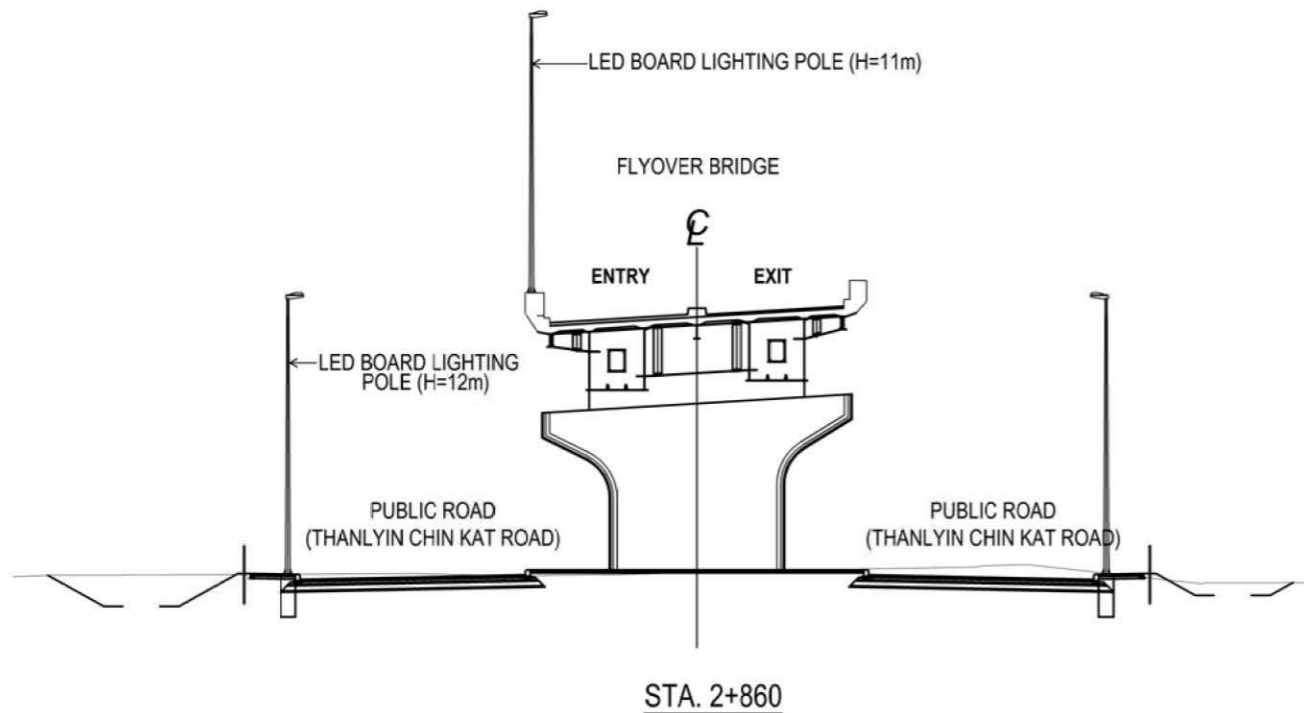
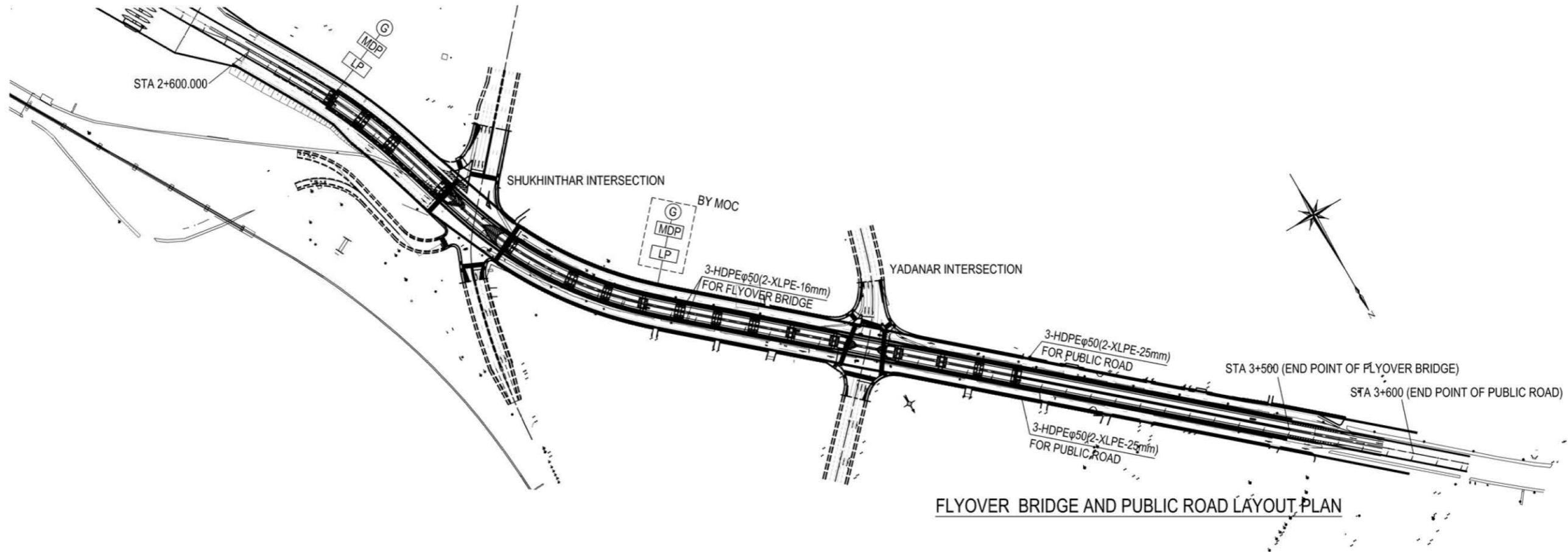
# TYPICAL POWER DISTRIBUTION PLAN



POWER DISTRIBUTION DIAGRAM

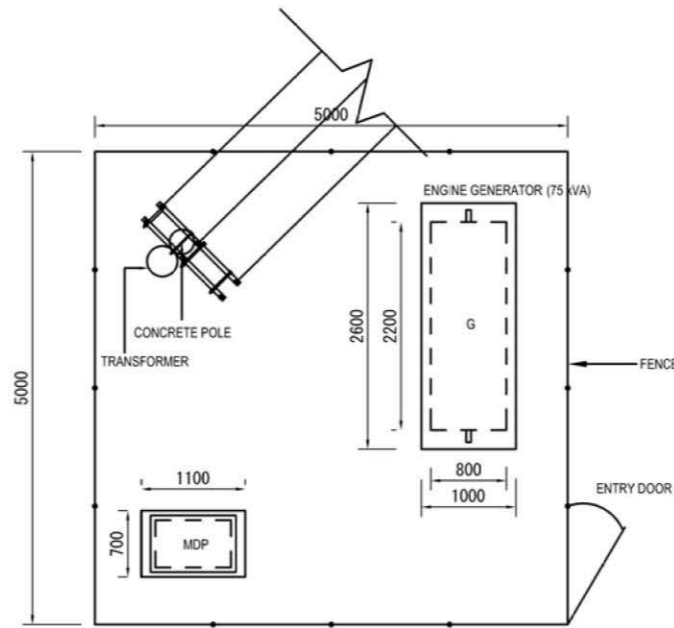
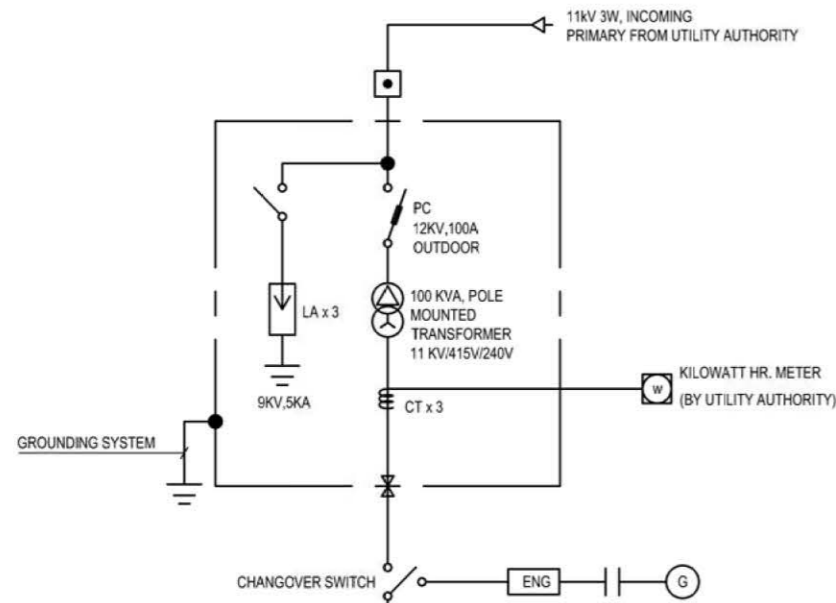
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE	
				PREPARED BY	K. MORIMATA				29 Sep. 2017
				CHECKED BY	T. HAYAKAWA				3 Oct. 2017
				APPROVED BY	Y. SANO				6 Oct. 2017
TYPICAL POWER DISTRIBUTION PLAN							0	DWG No.	
								PO-EL-0001	

# TYPICAL WIRING PLAN FOR FLYOVER BRIDGE AND PUBLIC ROAD

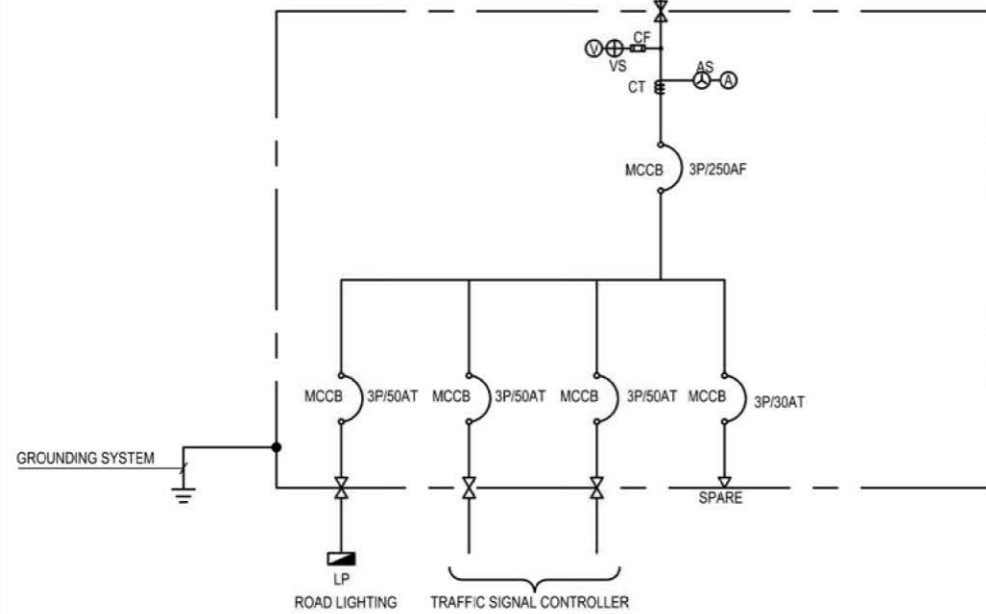


PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE TYPICAL WIRING PLAN FOR FLYOVER BRIDGE AND PUBLIC ROAD	PACKAGE	
				PREPARED BY	K. MORIMATA			29 Sep. 2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct. 2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct. 2017	P0-EL-0002

# TYPICAL MV SITE SUBSTATION



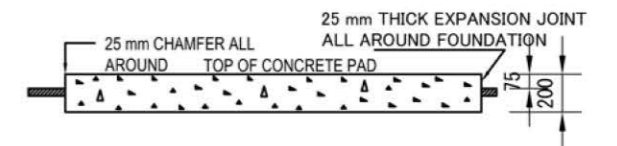
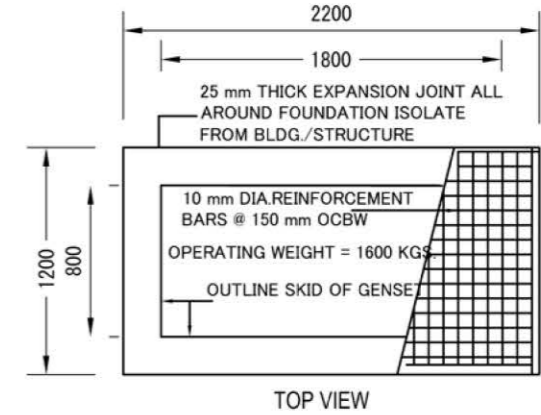
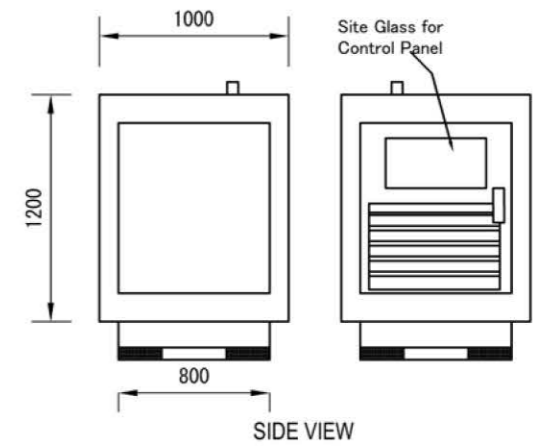
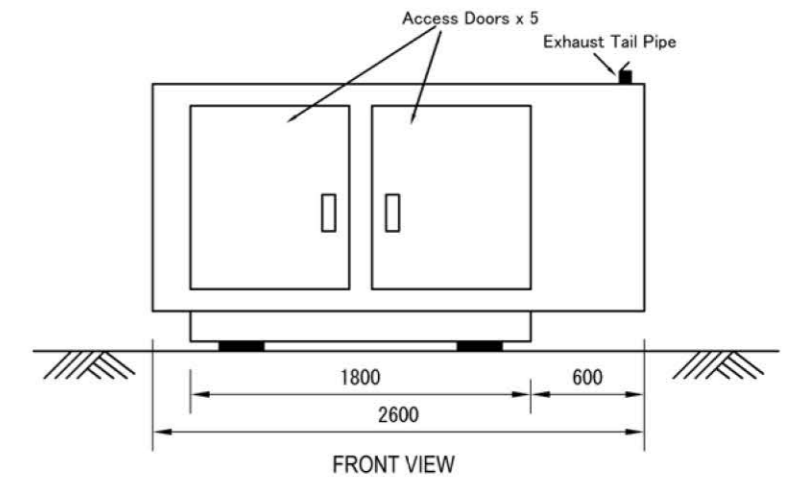
SITE LAYOUT OF INCOMING POWER STATION S=1:80



SINGLE LINE DIAGRAM

### LEGEND

- LIGHTING PANEL
- MOLDED CASE CIRCUIT BREAKER (MCCB)
- GROUNDING
- KILOWATT HR.METER
- POWER TRANSFORMER
- PRIMARY CUTOUT (PC) WITH POWER FUSE (PF)
- LIGHTING ARRESTER (LA)
- GENERATOR
- ENGINE
- AS - AMMETER CHANGE OVER SWITCH
- CF - CURRENT FUSE
- VS - VOLTAGE CHANGE OVER SWITCH
- CT - CURRENT TRANSFORMER
- MDP - MAIN DISTRIBUTION PANEL
- PF - POWER FUSE



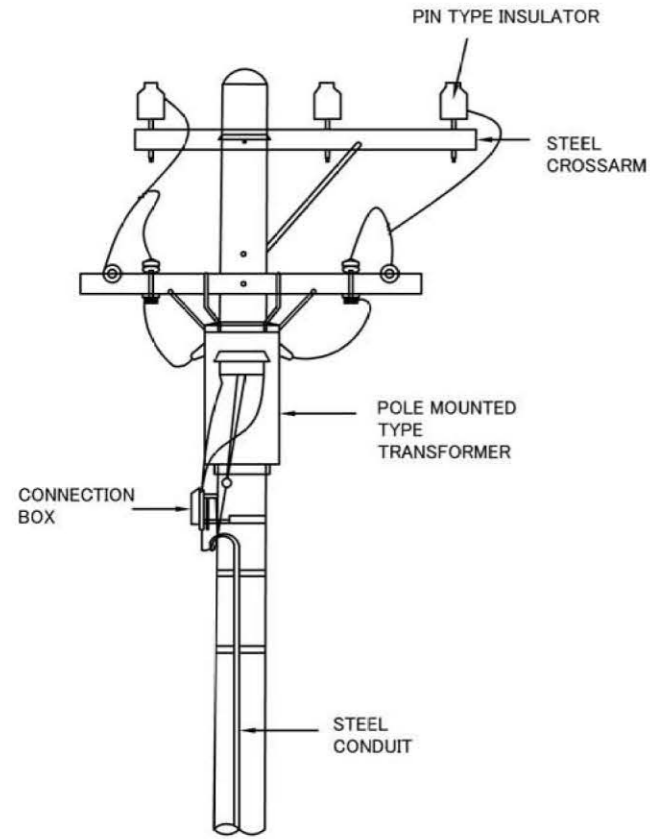
CONCRETE FOUNDATION

REFERENCE LAYOUT OF ENGINE GENERATOR S=1:40

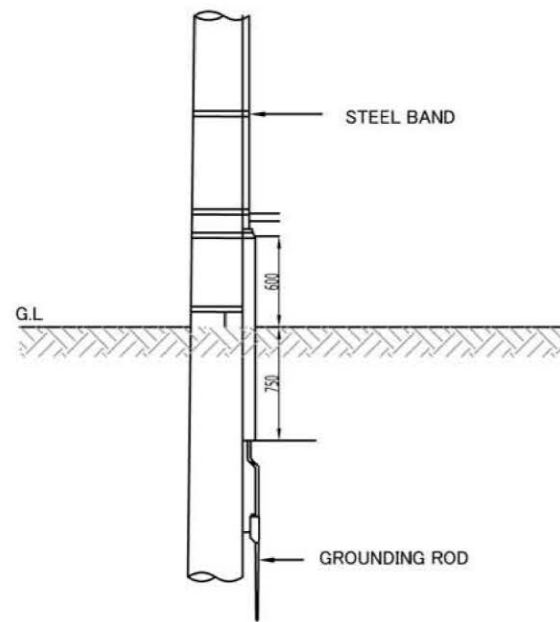
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE TYPICAL MV SITE SUBSTATION	PACKAGE 0 DWG No. P0-EL-0003	
				PREPARED BY	K. MORIMATA				29 Sep. 2017
				CHECKED BY	T. HAYAKAWA				3 Oct. 2017
				APPROVED BY	Y. SANO				6 Oct. 2017



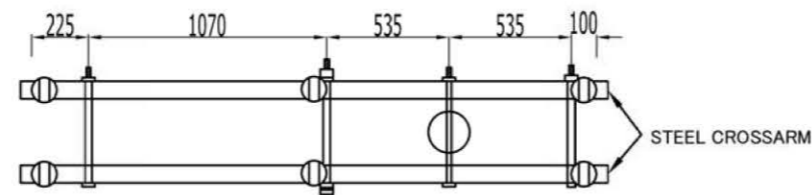
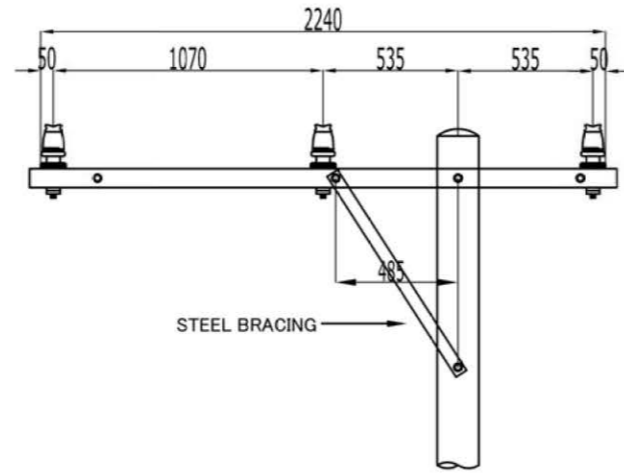
# TYPICAL ELECTRIC POLE ASSEMBLING (11kv USE)



TYPICAL POLE ASSEMBLING FOR POLE MOUNTED TRANSFORMER

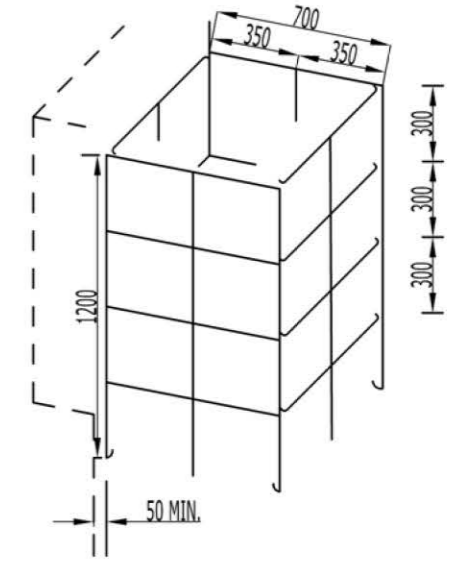
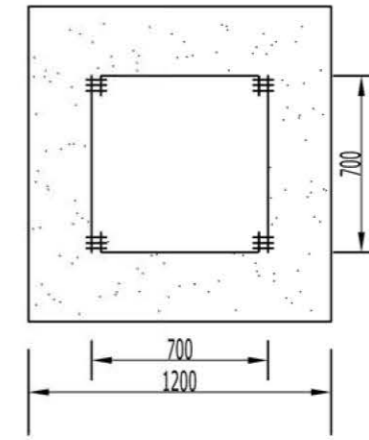


TYPICAL GROUNDING SYSTEM



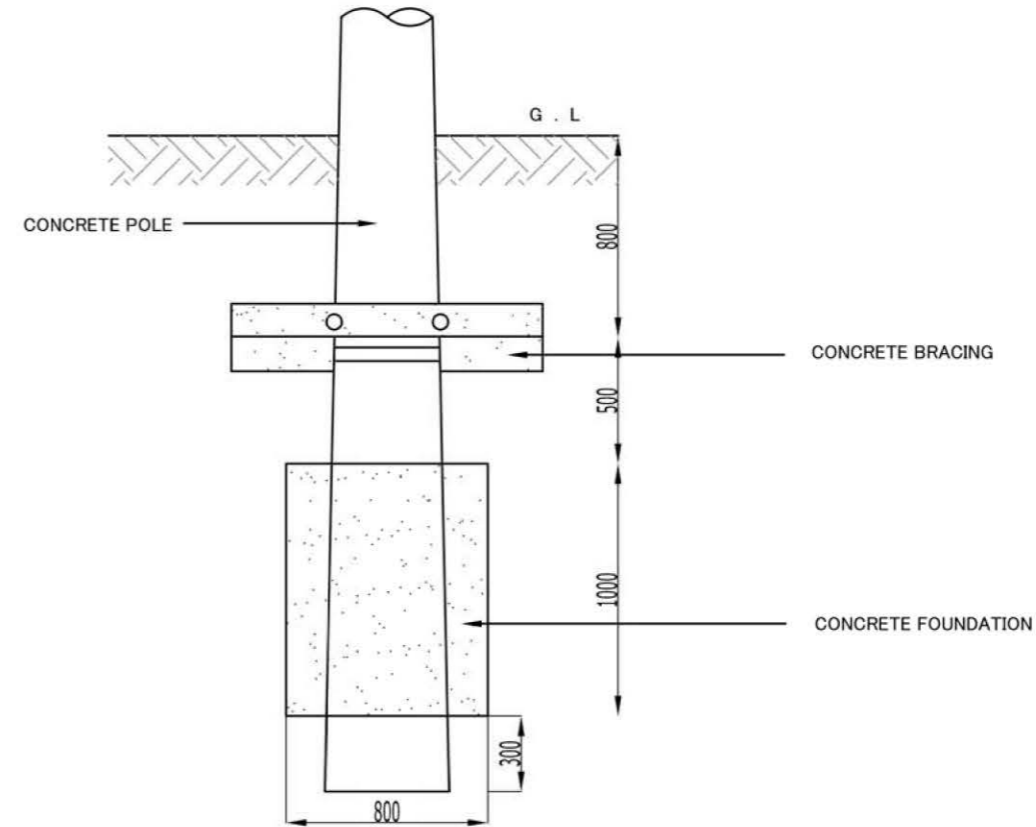
TYPICAL POLE ASSEMBLING FOR EXTENDED OVERHEAD LINES

UNIT: mm



NOTE : REINFORCEMENT BAR WITH MORE THAN 10MM DIA. SHALL BE ARRANGED.

TYPICAL CONCRETE FOUNDATION AND RE-BAR ARRANGEMENT



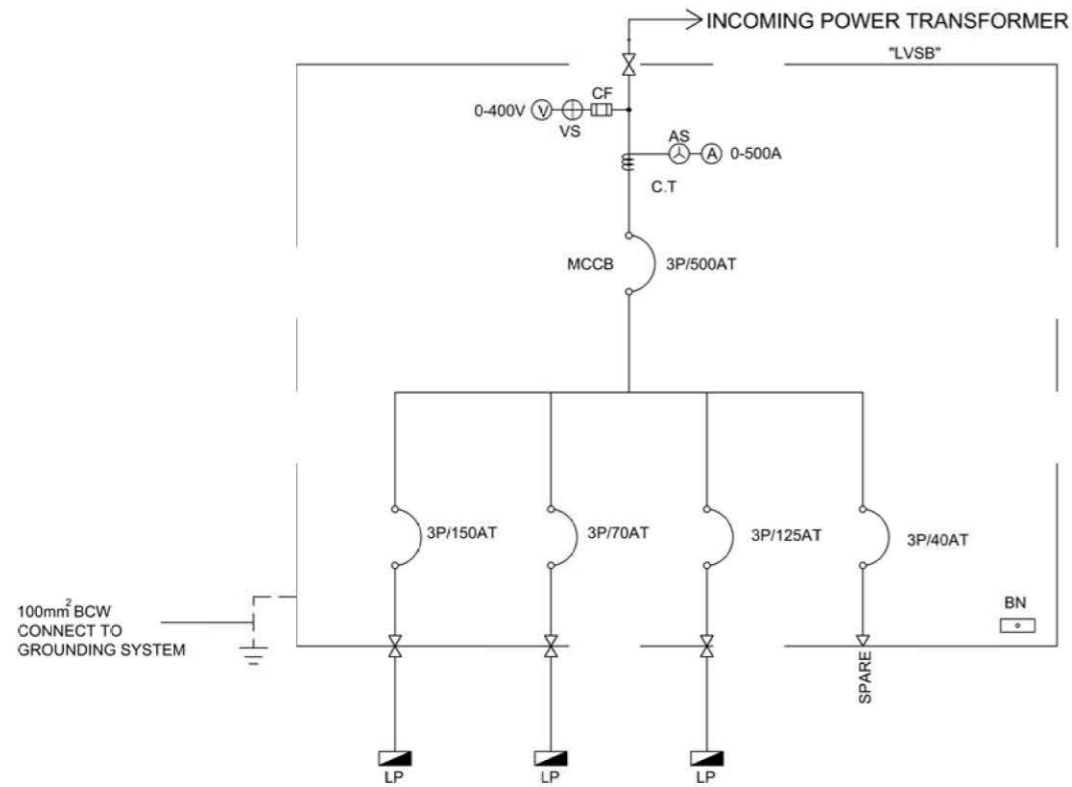
TYPICAL POLE CONCRETE BRACING

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. MORIMATA T. HAYAKAWA Y. SANO	SIGNATURE <i>[Signature]</i> <i>[Signature]</i> <i>[Signature]</i>	DATE 29 Sep. 2017 3 Oct. 2017 6 Oct. 2017	DRAWING TITLE TYPICAL ELECTRIC POLE ASSEMBLING (11kv USE)	PACKAGE 0 DWG No. PO-EL-0004
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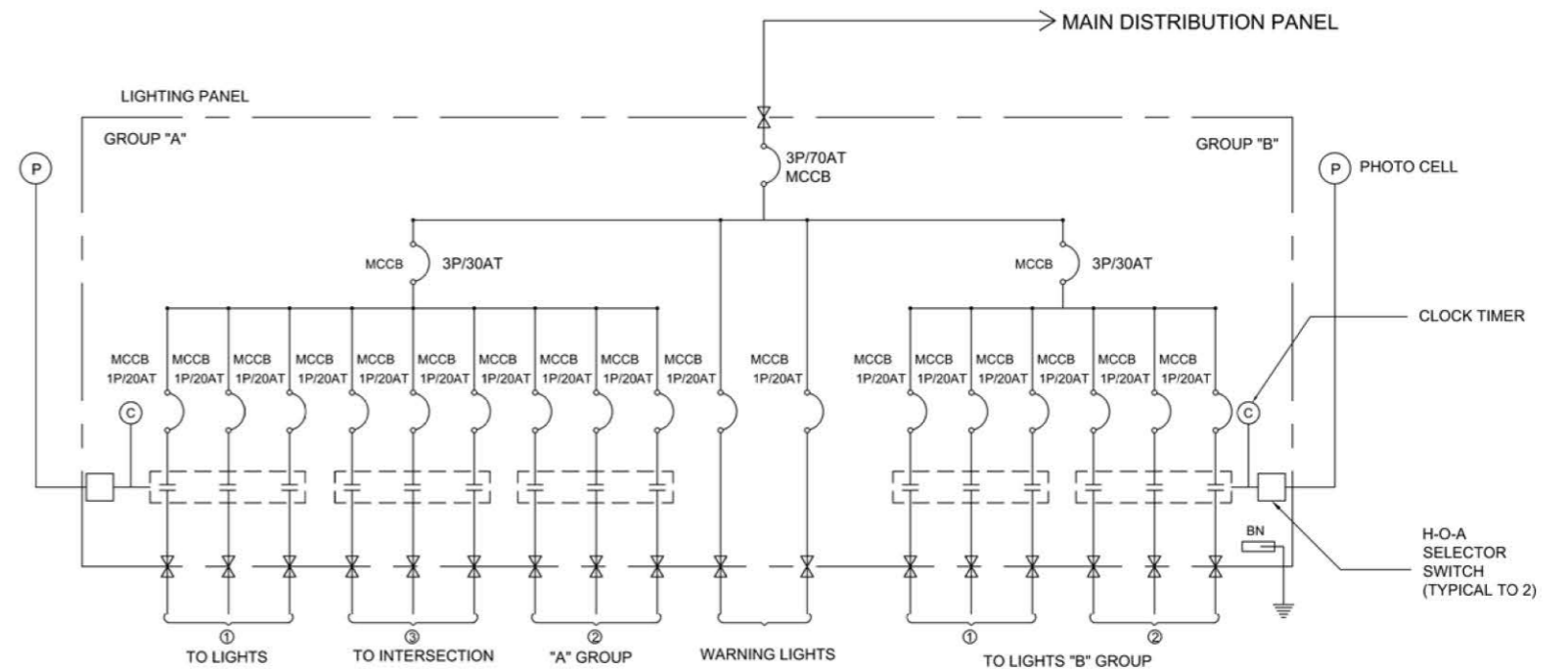




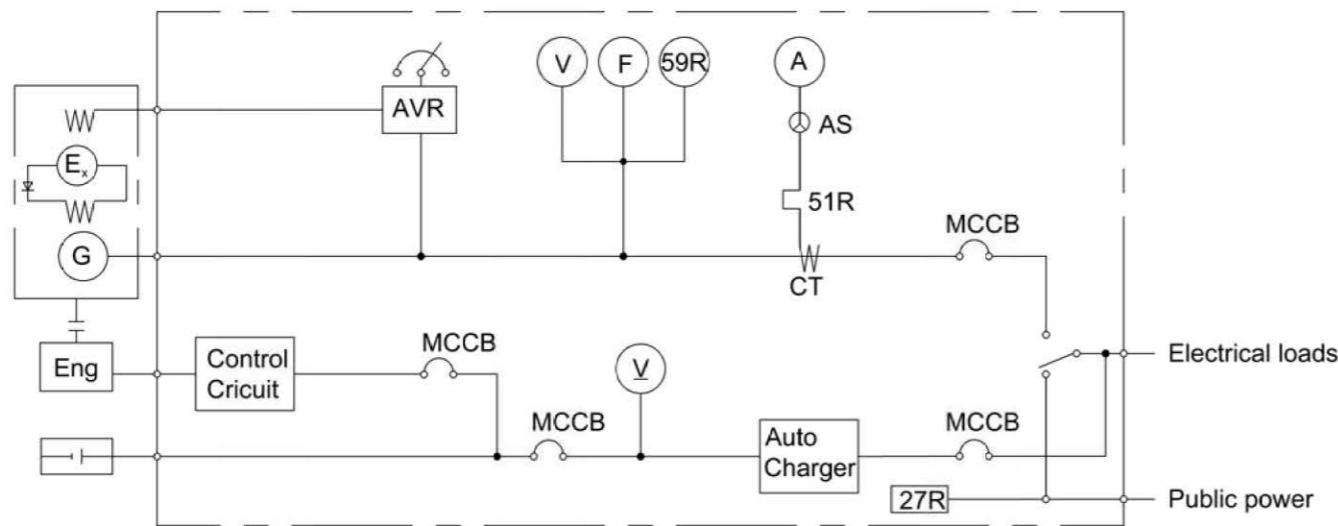
# (REFERENCE) SINGLE LINE DIAGRAM FOR PANELS



SINGLE LINE DIAGRAM FOR MAIN DISTRIBUTION PANEL



SINGLE LINE DIAGRAM FOR LIGHTING PANEL



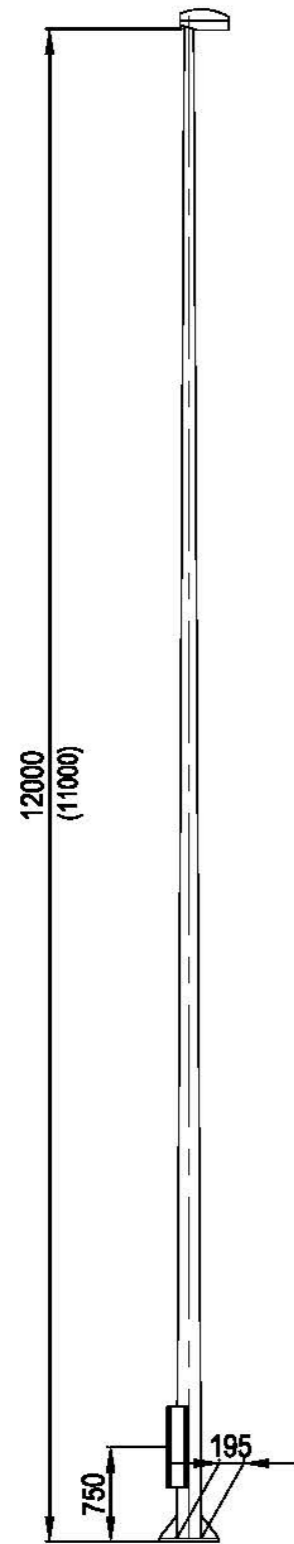
SINGLE LINE DIAGRAM FOR ENGINE GENERATOR CONTROL PANEL

## LEGEND

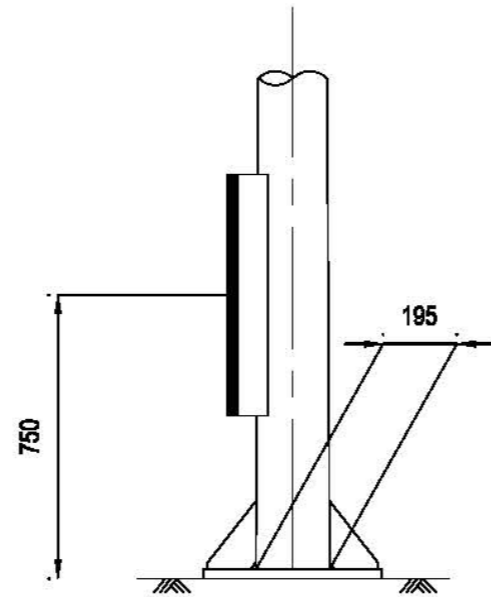
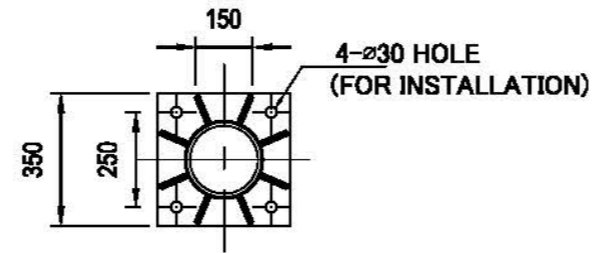
	: MOLDED CASE CIRCUIT BREAKER		: DIESEL ENGINE
AT	: AMPERE TRIPPING		: GENERATOR
	: GROUNDING		: EXITER
	: CONTACTOR		: AMPERE METER
VS	: VOLTMETER CHANGE OVER SWITCH		: VOLTAGE METER
AS	: AMMETER CHANGOVER SWITCH		: FREQUENCY METER
CT	: CURRENT TRANSFORMER		: BATTERY
			: AUTOMATIC VOLTAGE LEGULATOR
		27R	: LOW VOLTAGE RELAY
		59G	: OVER VOLTAGE
		51R	: OVERCURRENT RELAY

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE (REFERENCE) SINGLE LINE DIAGRAM FOR PANELS	PACKAGE	
				PREPARED BY	K. MORIMATA			29 Sep. 2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct. 2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct. 2017	P0-EL-0006

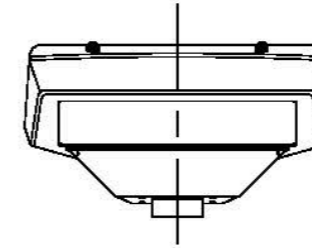
# TYPICAL LED LUMINAIR AND POLE



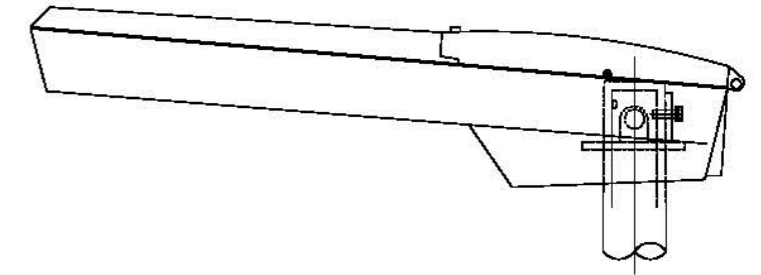
NOTE: ( ) : FOR FLYOVER  
OUTLINE OF LIGHTING POLE



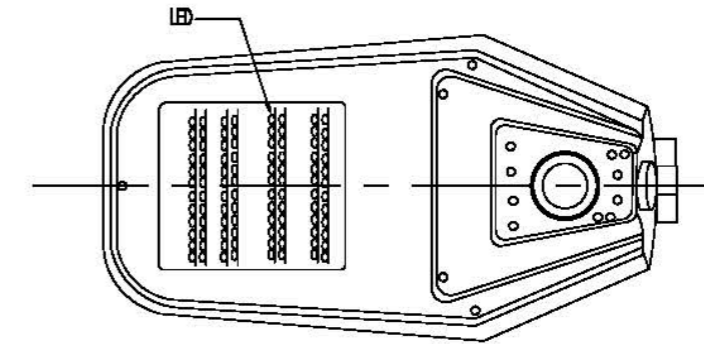
MAINTENANCE OPENING  
REFERENCE FOR LIGHTING POLE  
 NTS



FRONT VIEW



SIDE VIEW



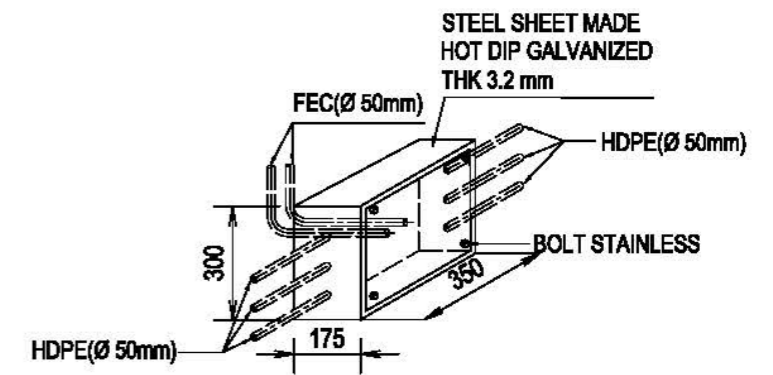
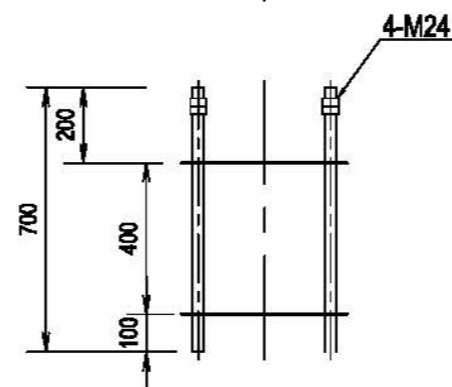
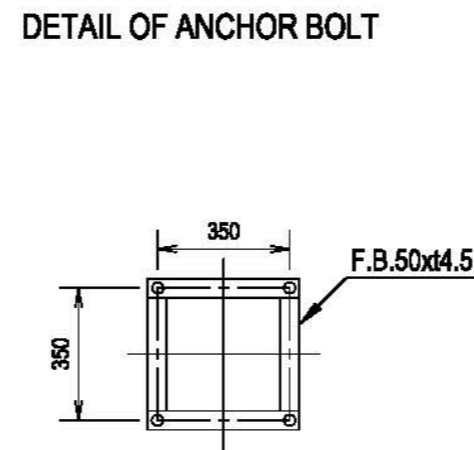
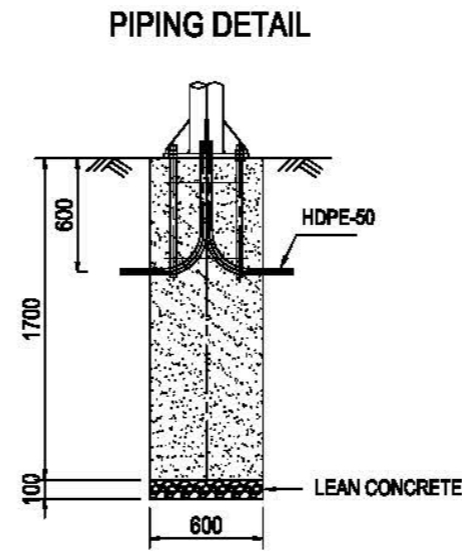
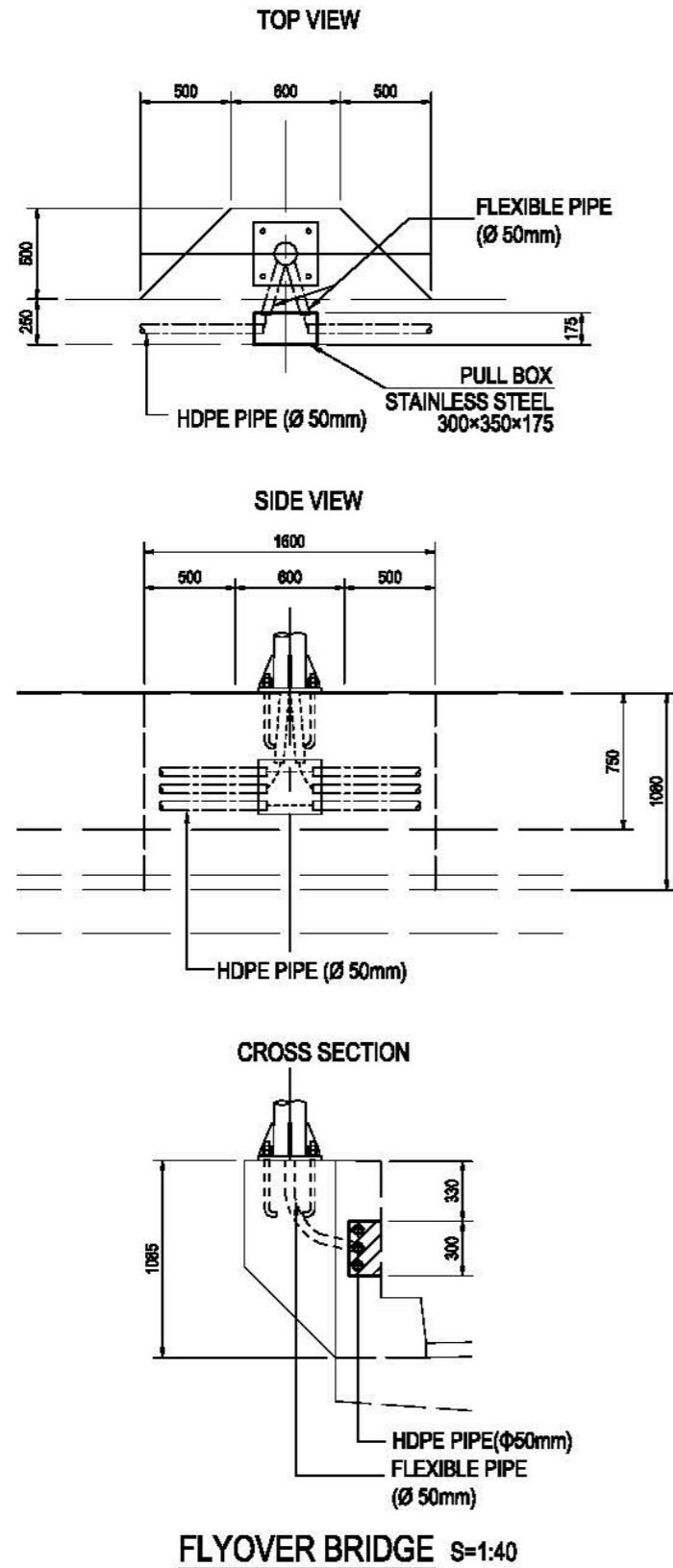
FACE VIEW

REFERENCE FOR LED LUMINAIR  
 NTS

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTRY/STATE 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 LED LUMINAIR AND POLE	PACKAGE	
				PREPARED BY	K. MORIMATA			29 Sep. 2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct. 2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct. 2017	PD-EL-0007



# TYPICAL FOUNDATION DETAILS FOR LIGHTING POLE

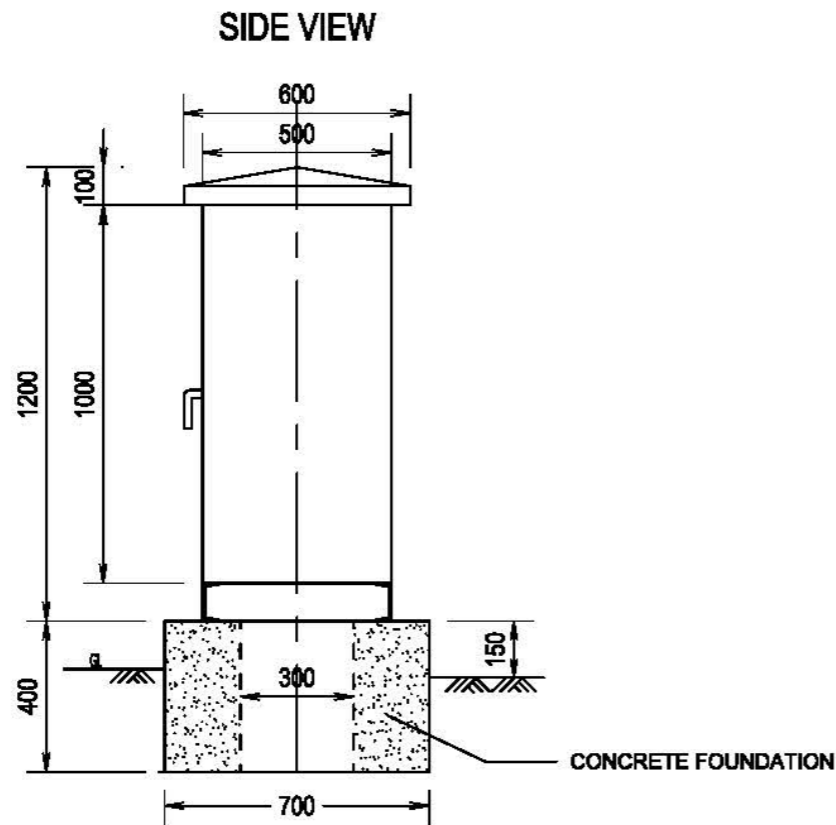
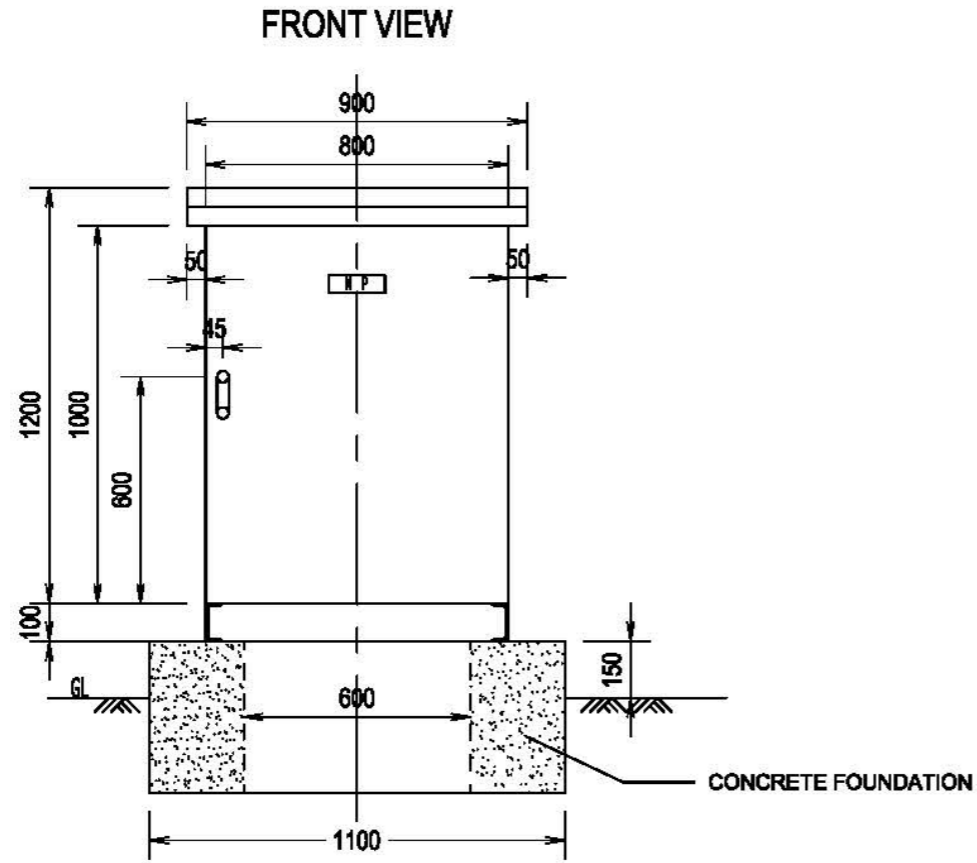


**PULL BOX S=1:20**

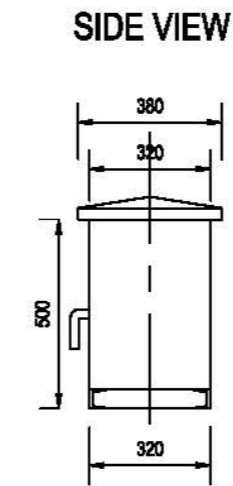
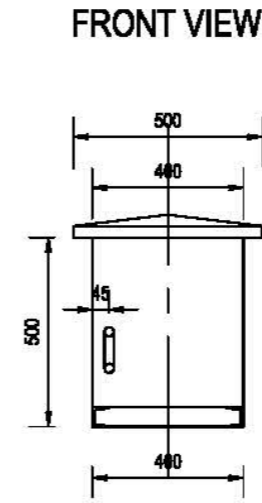
**FOR THANLYIN CHIN KAT ROAD LIGHTING POLE S=1:20**

PROJECT NAME	FINANCED BY	COUNTRY/STATE	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 K. MORIMATA	<i>[Signature]</i>	29 Sep. 2017	TYPICAL FOUNDATION DETAILS FOR LIGHTING POLE	0
				CHECKED BY T. HAYAKAWA	<i>[Signature]</i>	3 Oct. 2017		DWG No.
				APPROVED BY Y. SANO	<i>[Signature]</i>	6 Oct. 2017		PD-EL-0008

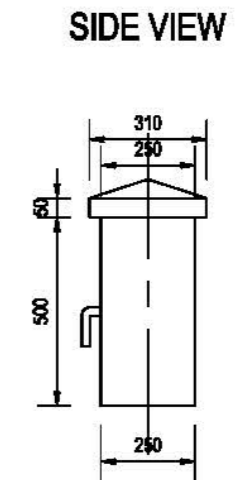
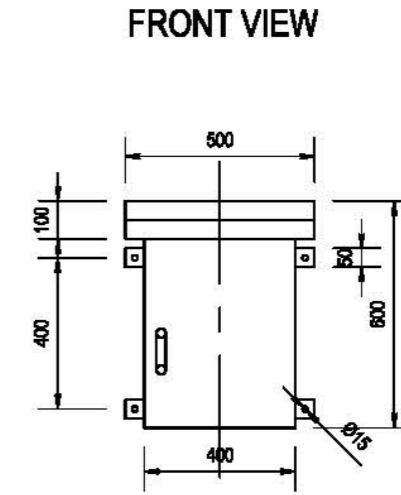
# (REFERENCE) OUTLINE OF ELECTRIC PANELS



**MAIN DISTRIBUTION PANEL S=1:20**



**LIGHTING PANEL S=1:20**



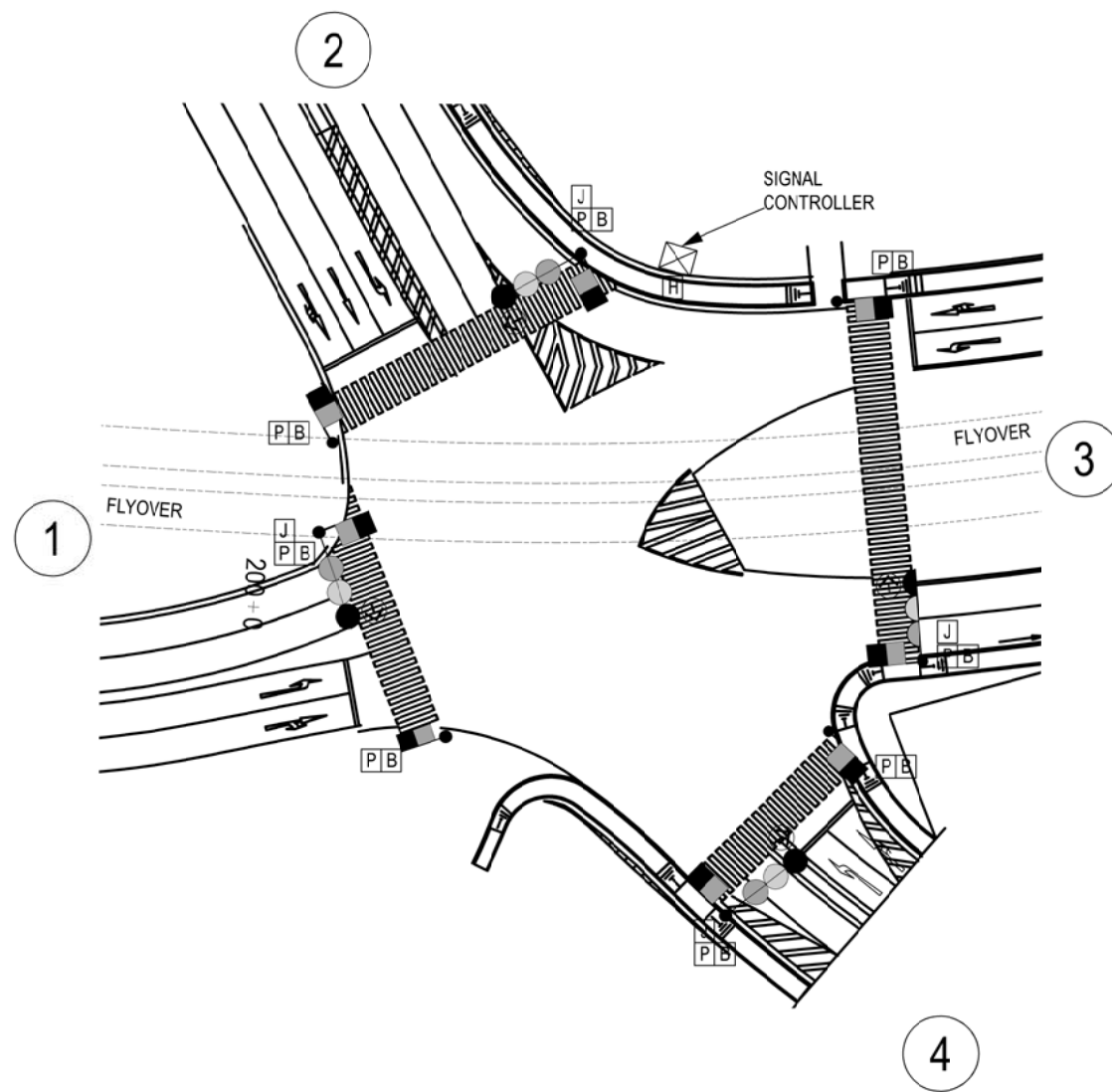
**POLE MOUNTED TYPE BOX S=1:20**

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTRY/STATE 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 (REFERENCE) OUTLINE OF ELECTRIC PANELS	PACKAGE	
				PREPARED BY	K. MORIMATA			29 Sep. 2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct. 2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct. 2017	PD-EL-0009

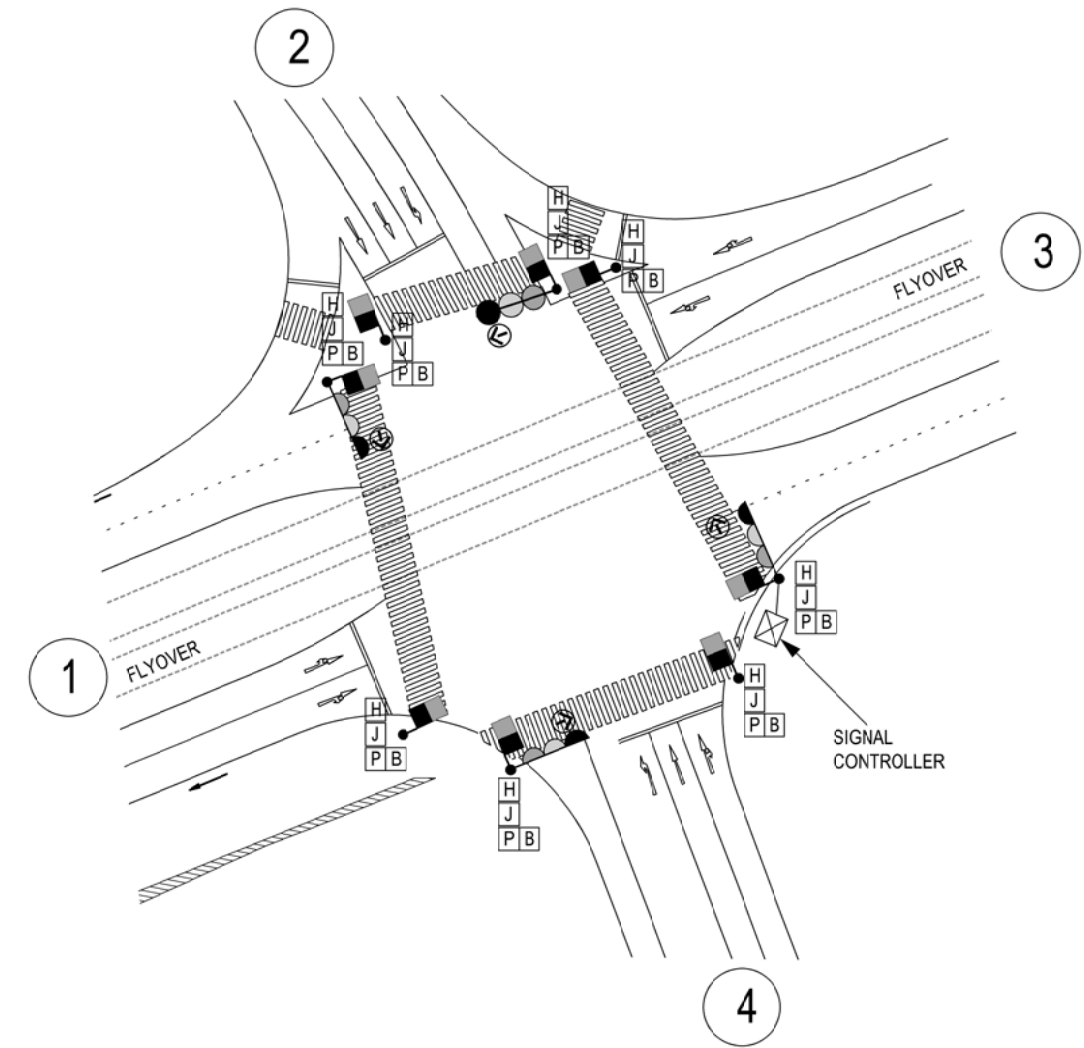
# TYPICAL TRAFFIC SIGNAL CONTROL SYSTEM PLAN FOR INTERSECTIONS(MOC'S CONSTRUCTION)

## LEGEND

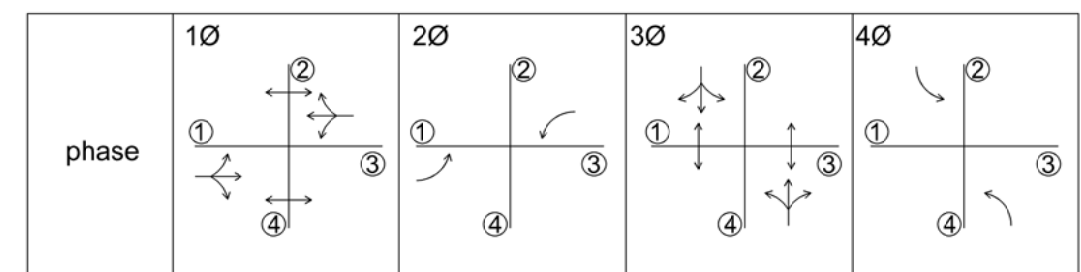
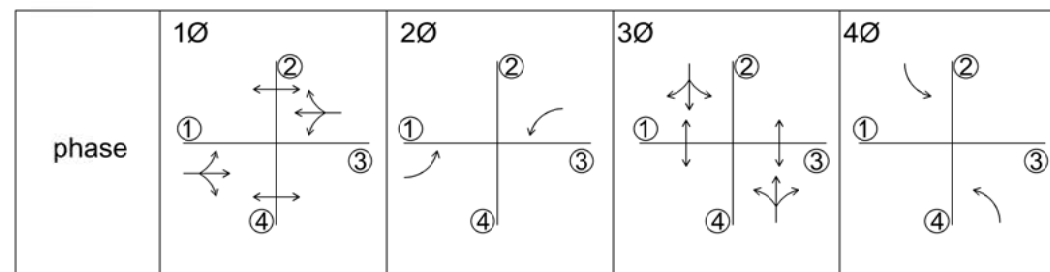
- : Concrete pole
- : Steel pole
- ⊠ : Traffic signal controller
- : Vehicle traffic signal with steel pole
- ➔ : Arrow sign traffic signal
- : Pedestrian signal with steel pipe
- ⊠ P B : Push-button switch
- ⊠ J : Junction box
- ⊠ S : Power supply box
- ⊠ P : Pull box
- ⊠ H : Hand hole
- ⬆ : Raising underground pipe
- ⚡ : Cable
- : Underground piping
- SVV : Control -use vinyl insulated vinyl sheathed cable
- IV : Indoor PVC
- E : Grounding



PLAN OF TEMPORARY TRAFFIC SIGNAL SYSTEM FOR SHUKHINTHAR I/S



PLAN OF TRAFFIC SIGNAL SYSTEM FOR YADANAR I/S

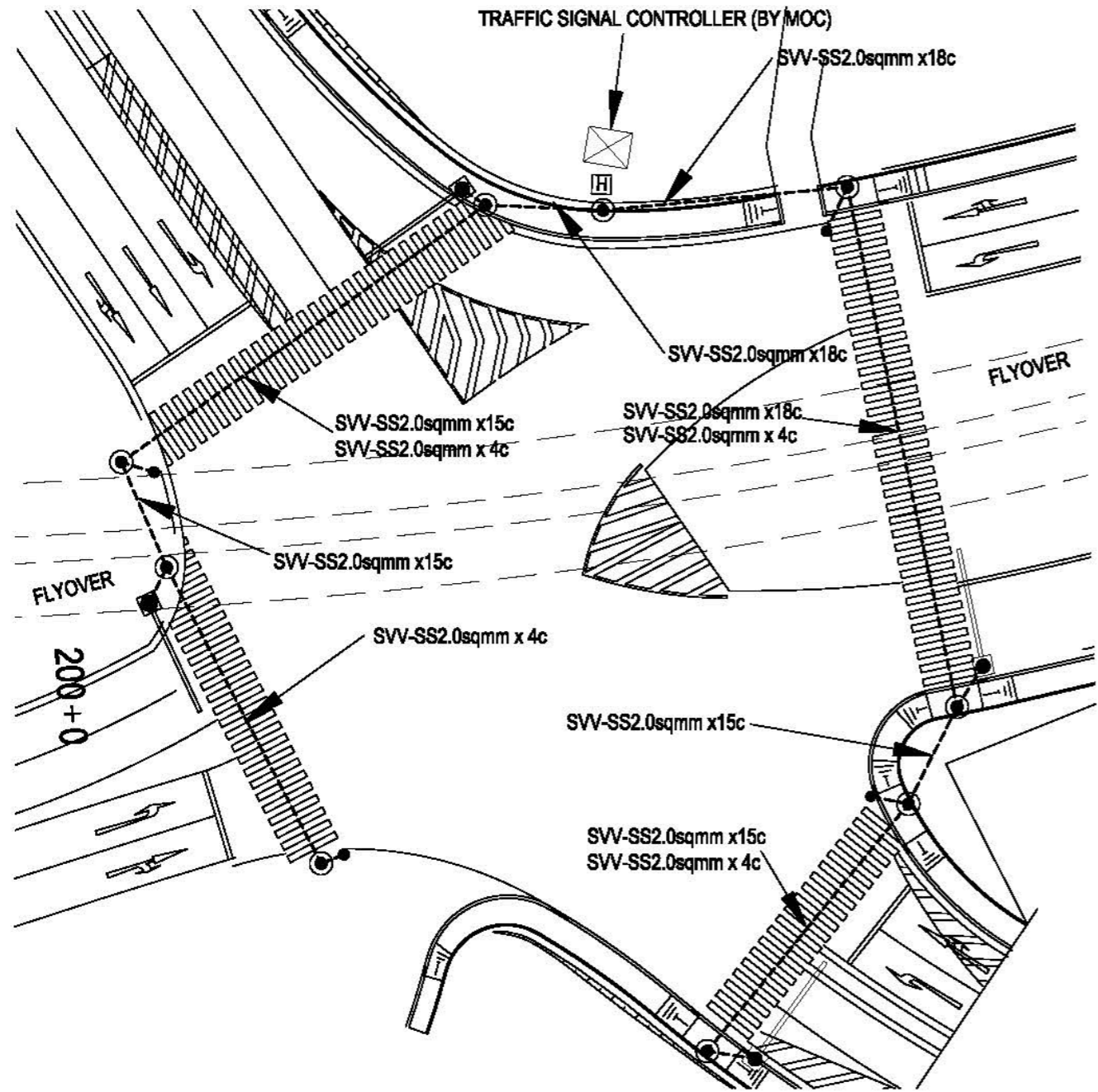


VEHICLE AND PEDESTRIAN PHASING PLAN

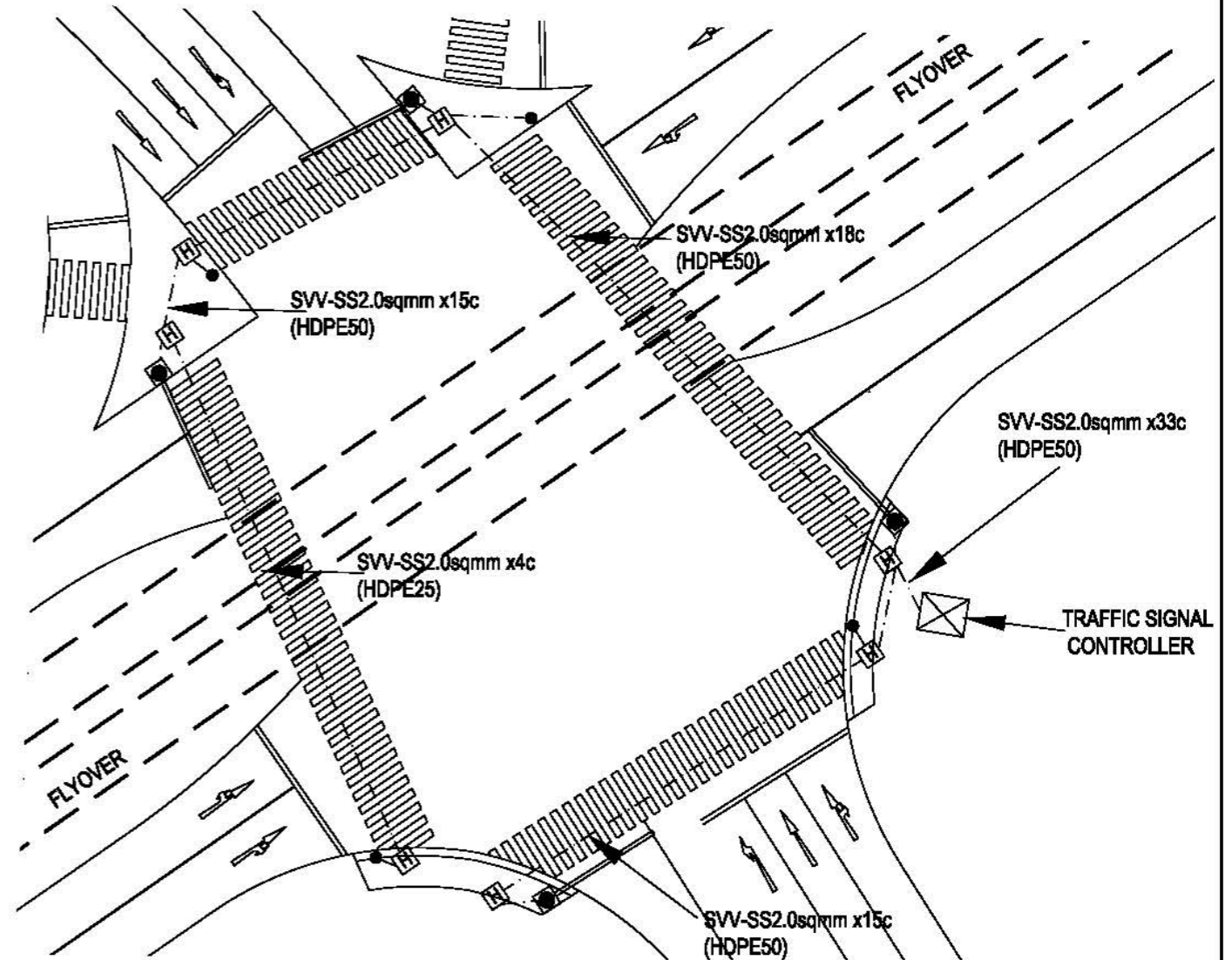
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO. LTD. NIPPON ENGINEERING CONSULTANTS CO.,LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE		
				PREPARED BY	K. MORIMATA	29 Sep. 2017			TYPICAL TRAFFIC SIGNAL CONTROL SYSTEM PLAN FOR INTERSECTIONS(MOC'S CONSTRUCTION)	0
				CHECKED BY	T. HAYAKAWA	3 Oct. 2017				DWG No.
				APPROVED BY	Y. SANO	6 Oct. 2017				PO-EL-0010



# TYPICAL WIRING PLAN FOR INTERSECTION (MOC'S CONSTRUCTION)



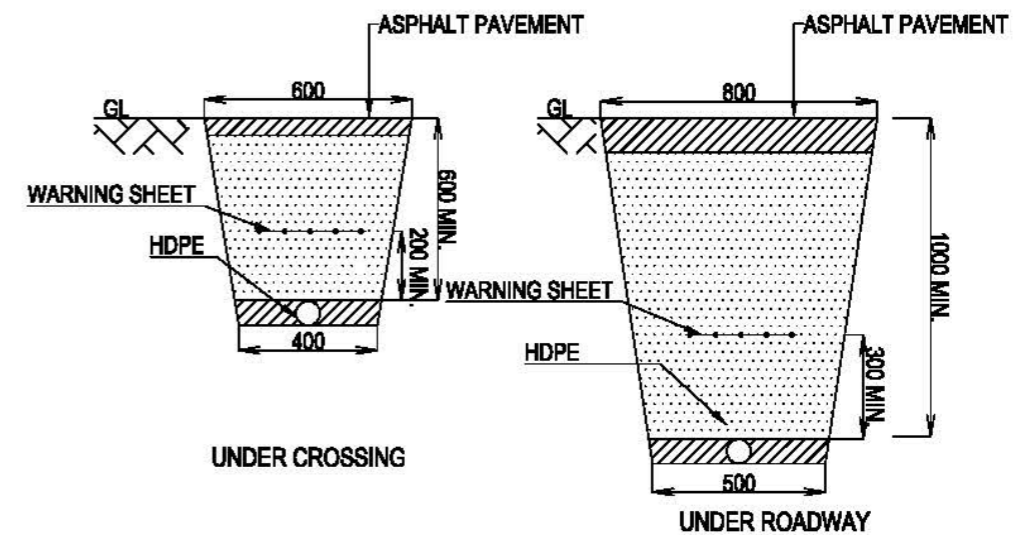
**OVERHEAD WIRING PLAN FOR SHUKHINTHAR I/S**  
1:400



**UNDERGROUND WIRING PLAN FOR YADANAR I/S**  
1:400

**LEGEND**

- : Base mounted pole signal head pole (with arm)
- : Pedestrian signal head pole (with push-button)
- : Concrete Pole
- : Underground wiring
- : Messenger Wire

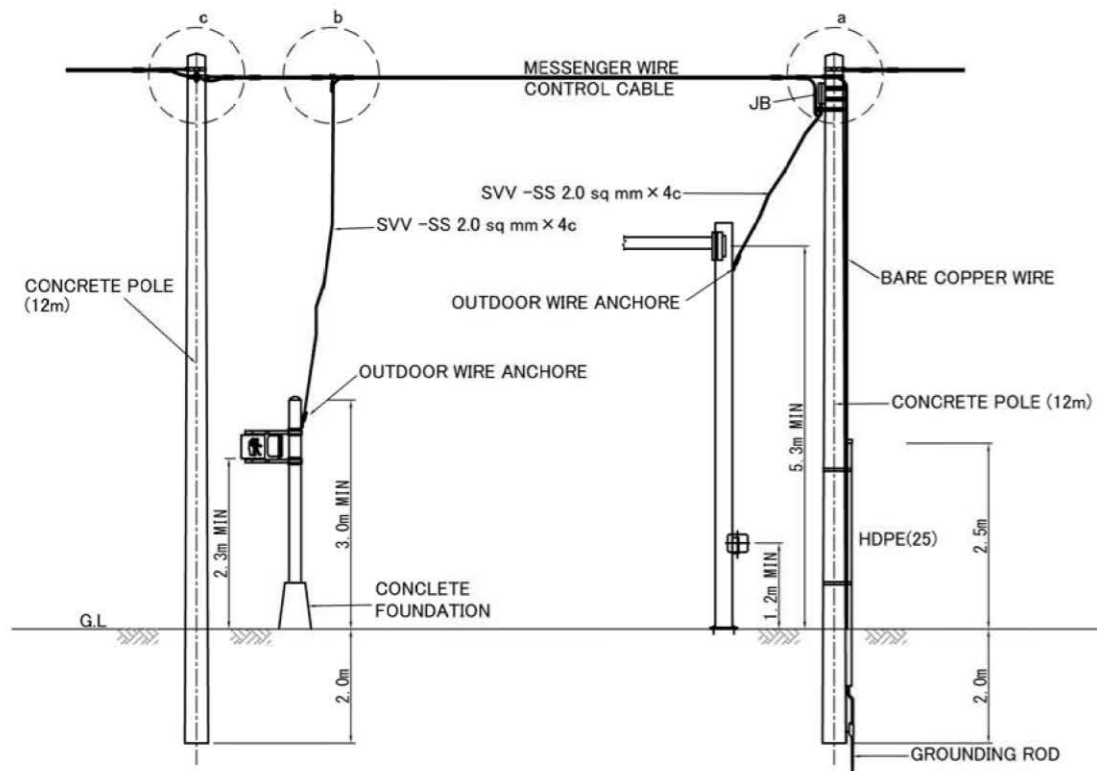


**UNDERGROUND WIRING DEPTH 1:20**

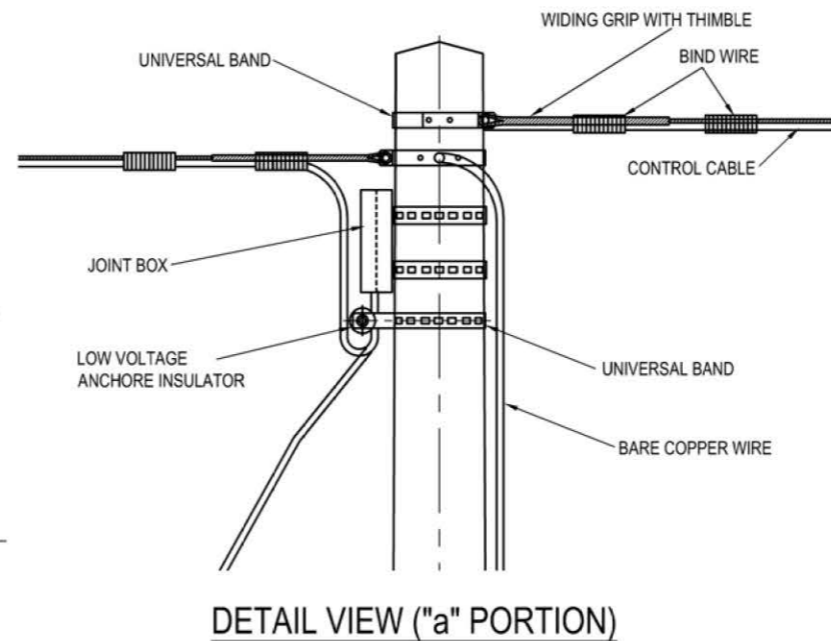
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTRY REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JOA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE TYPICAL WIRING PLAN FOR INTERSECTION (MOC'S CONSTRUCTION)	PACKAGE	
				PREPARED BY	K. MORIMATA			29 Sep. 2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct. 2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct. 2017	P0-EL-0011



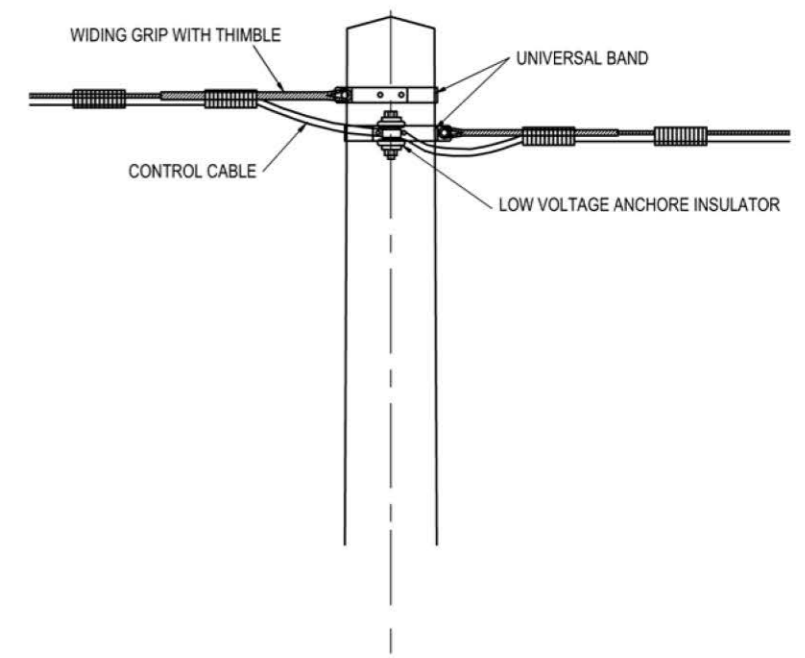
# (REFERENCE) TYPICAL OVERHEAD WIRING PLAN



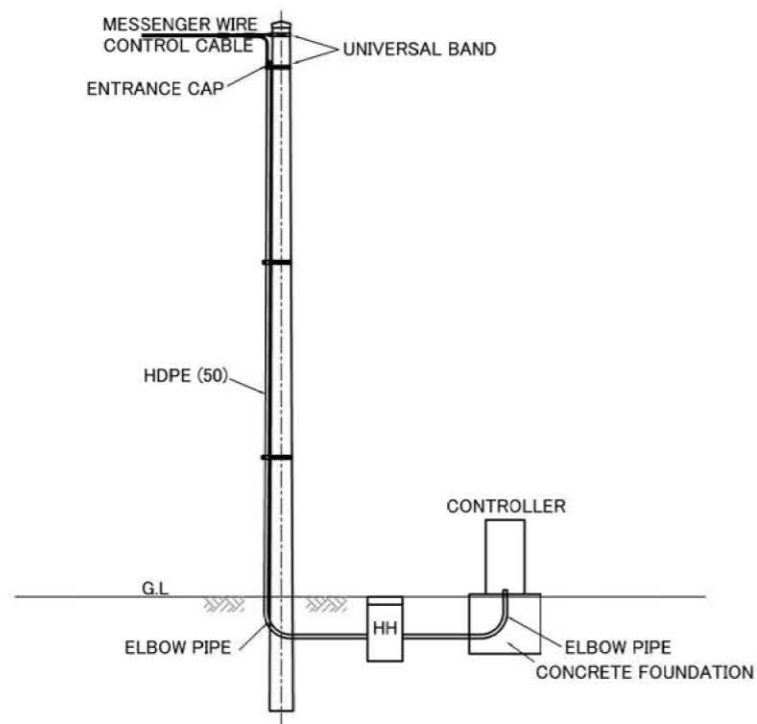
TYPICAL WIRING LAYOUT



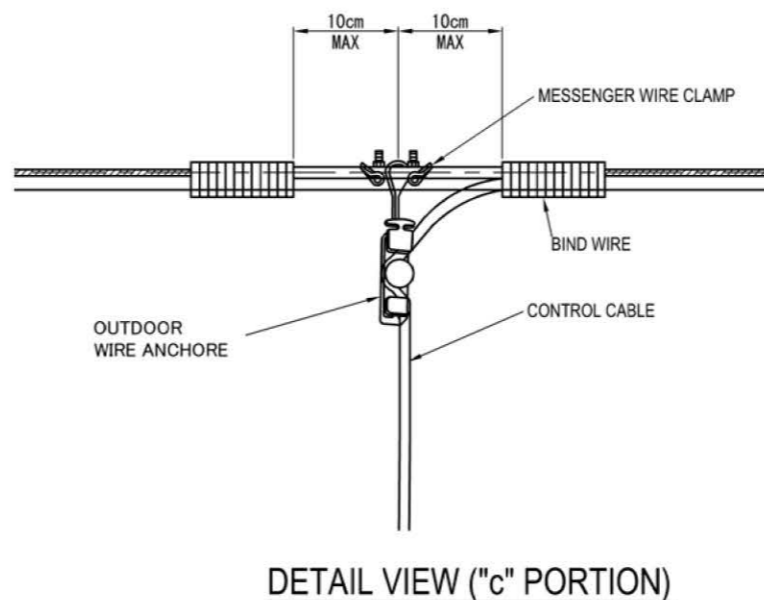
DETAIL VIEW ("a" PORTION)



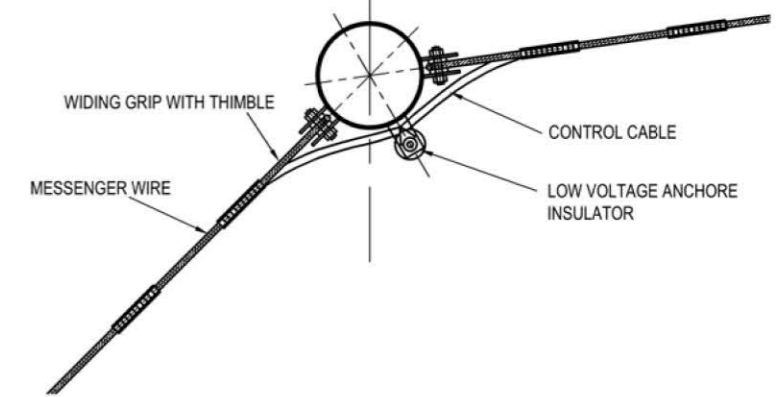
DETAIL VIEW ("b" PORTION)



TYPICAL WIRING PLAN TO CONCRETE POLE



DETAIL VIEW ("c" PORTION)

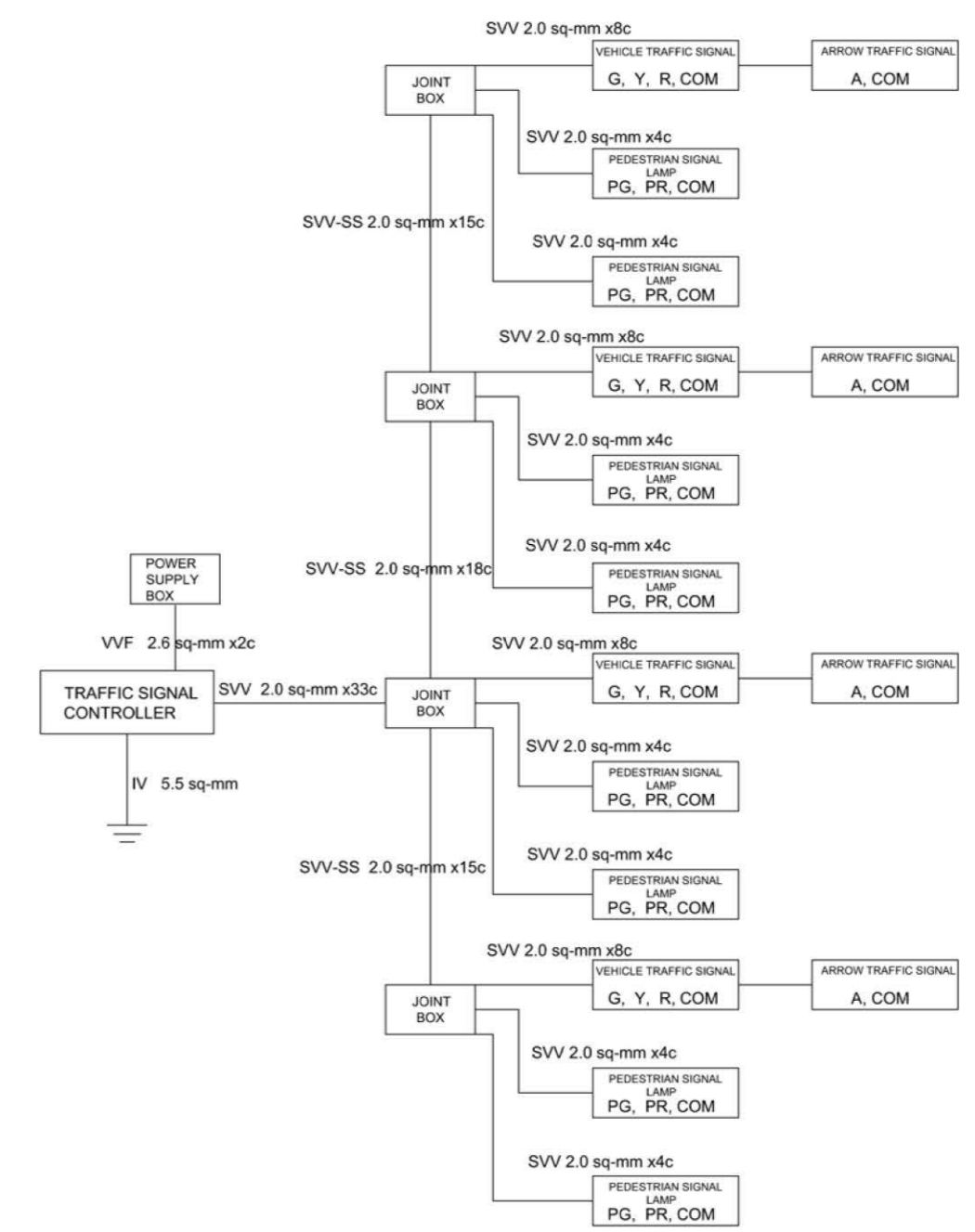
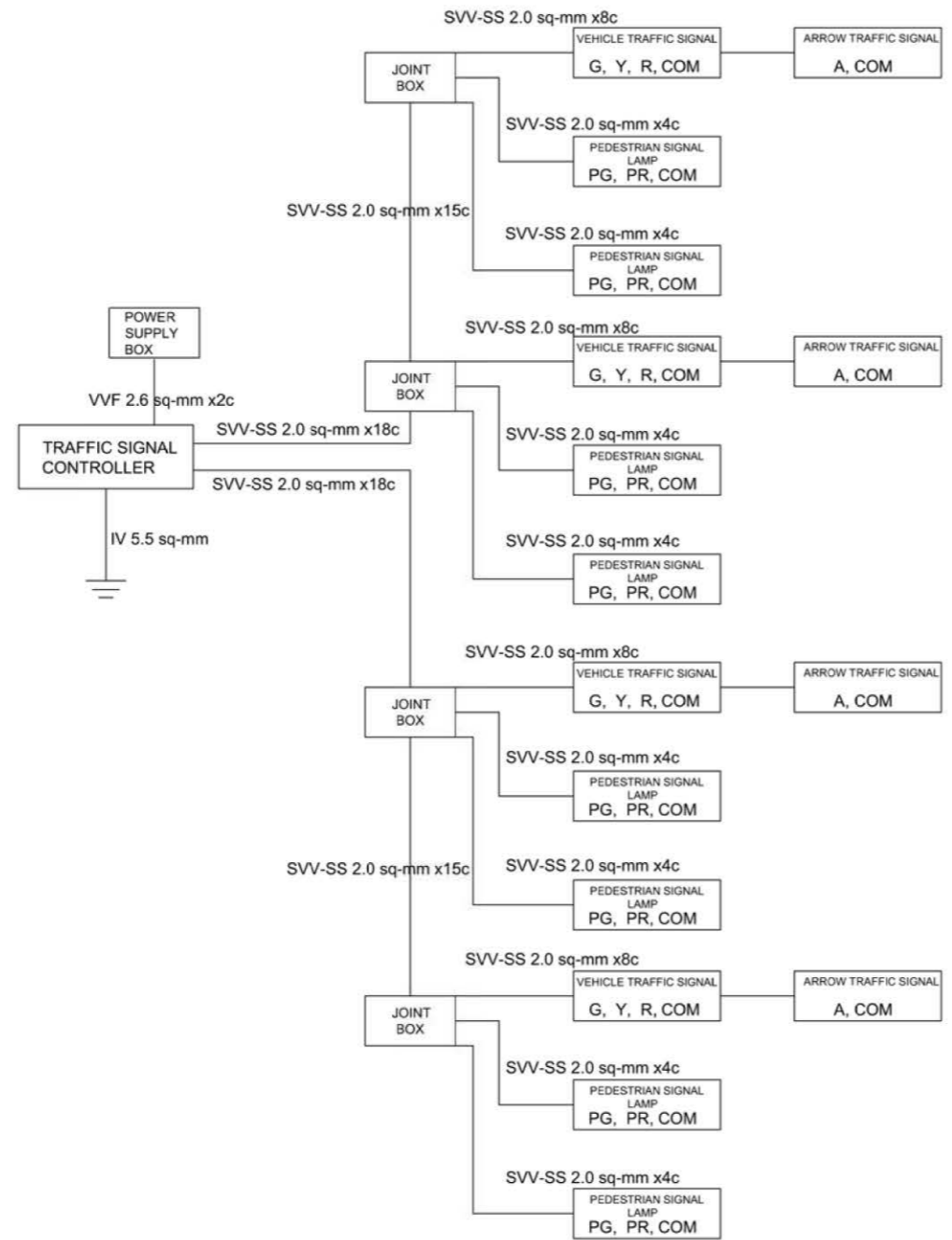


PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE	PACKAGE			
				PREPARED BY	K. MORIMATA				29 Sep. 2017	(REFERENCE) TYPICAL OVERHEAD WIRING PLAN	0
				CHECKED BY	T. HAYAKAWA				3 Oct. 2017		DWG No.
				APPROVED BY	Y. SANO				6 Oct. 2017		P0-EL-0012

# TYPICAL TRAFFIC SIGNAL CONTROL SYSTEM DIAGRAM

## LEGND

- 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
- : Concrete Pole (H=12m)
- : Overhead Cable

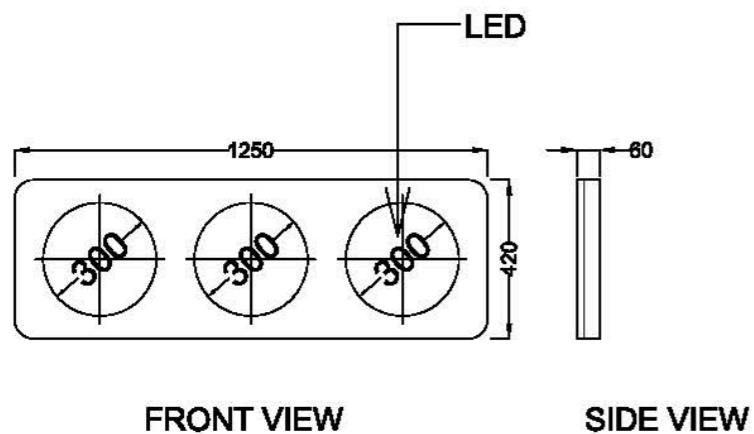


TYPICAL TRAFFIC SIGNAL CONTROL SYSTEM DIAGRAM FOR YADANAR INTERSECTION

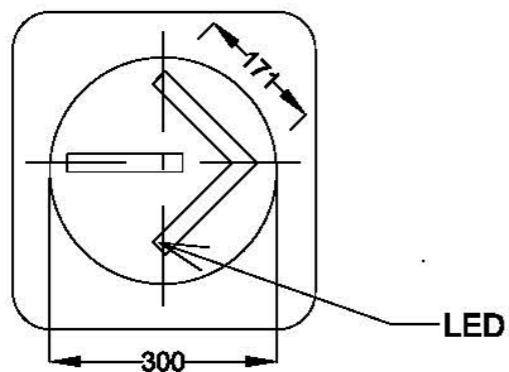
TYPICAL TRAFFIC SIGNAL CONTROL SYSTEM DIAGRAM FOR SHUKHINTHAR INTERSECTION

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. MORIMATA	<i>[Signature]</i>	29 Sep. 2017	TYPICAL TRAFFIC SIGNAL CONTROL SYSTEM DIAGRAM	0
				T. HAYAKAWA	<i>[Signature]</i>	3 Oct. 2017		DWG No.
				Y. SANO	<i>[Signature]</i>	6 Oct. 2017		PO-EL-0013

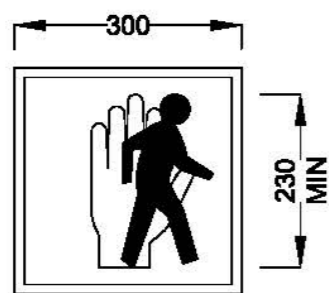
# (REFERENCE) TRAFFIC SIGNAL HEAD AND POLES



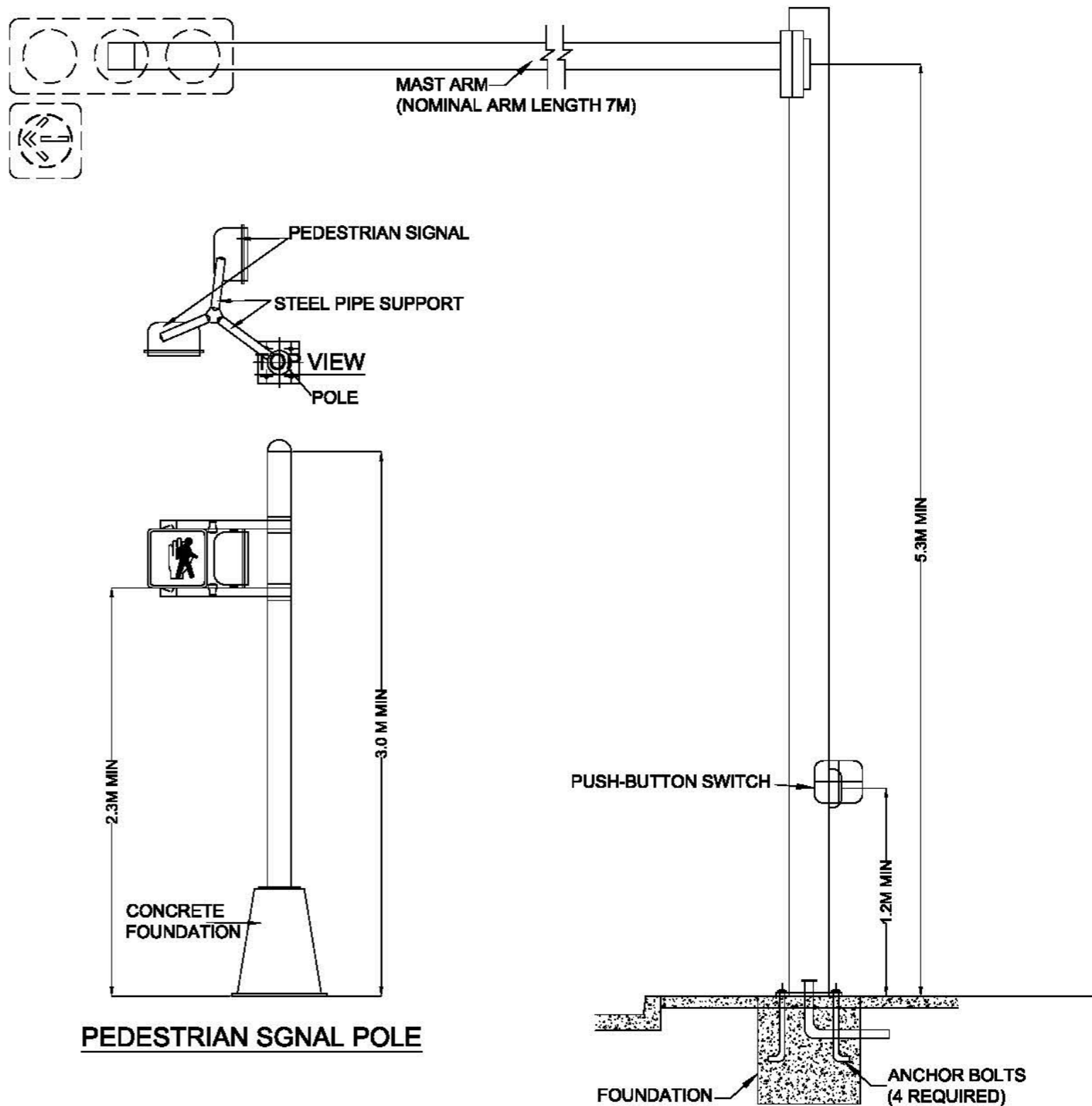
FRONT VIEW SIDE VIEW  
**TYPICAL SIGNAL HEAD** S=1:20



**TYPICAL ARROW SIGNAL DETAIL** S=1:10



**TYPICAL PEDESTRIAN SIGNAL** S=1:10



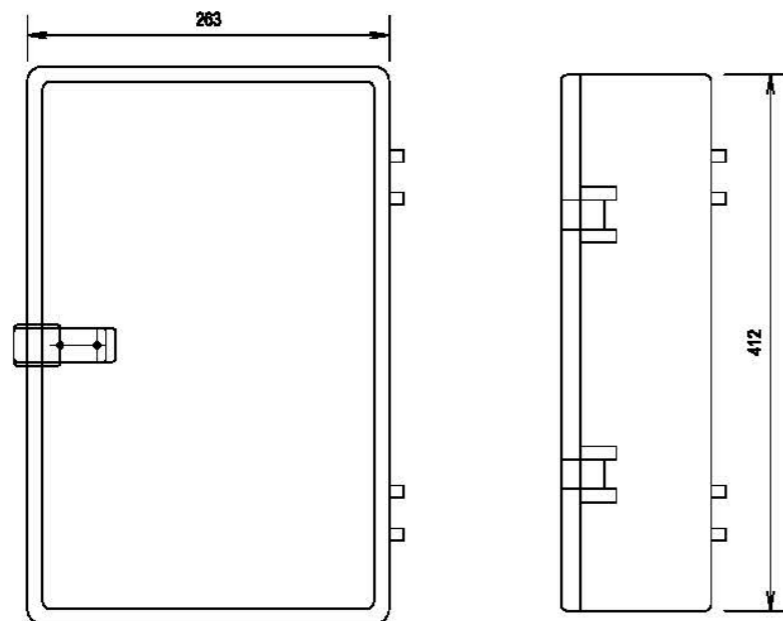
**PEDESTRIAN SIGNAL POLE**

**TRAFFIC SIGNAL HEAD POLE**

PROJECT NAME	FINANCED BY	COUNTRY/STATE	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 K. MORIMATA	<i>[Signature]</i>	29 Sep. 2017	(REFERENCE) TRAFFIC SIGNAL HEAD AND POLES	0
				CHECKED BY T. HAYAKAWA	<i>[Signature]</i>	3 Oct. 2017		DWG No.
				APPROVED BY Y. SANO	<i>[Signature]</i>	6 Oct. 2017		PD-EL-0014

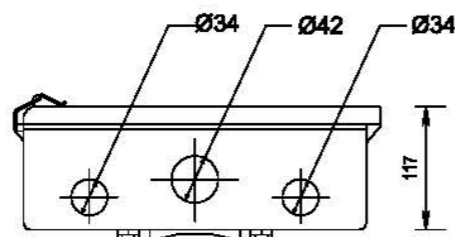


# (REFERENCE) OUTLINE OF TRAFFIC SIGNAL CONTROLLER AND JUNCTION BOX



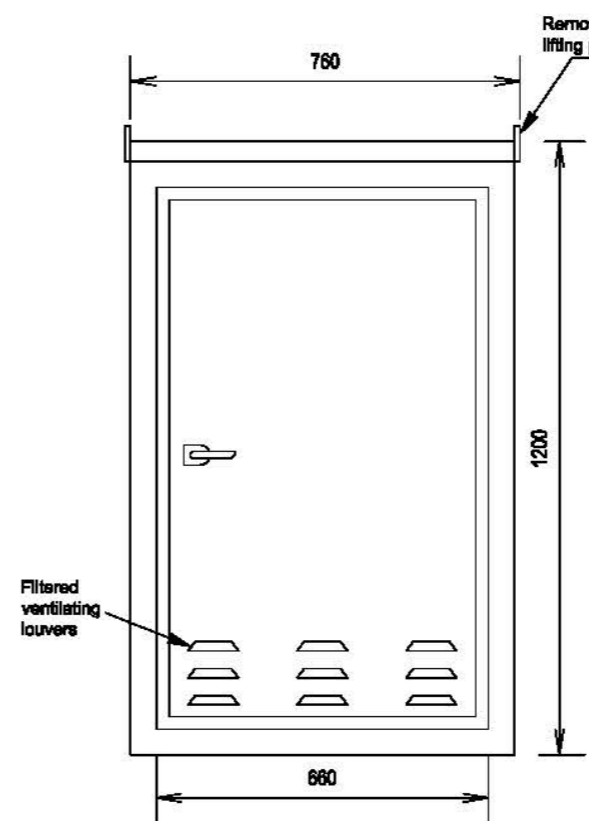
**FRONT VIEW**  
UNIT : mm

**SIDE VIEW**  
UNIT : mm

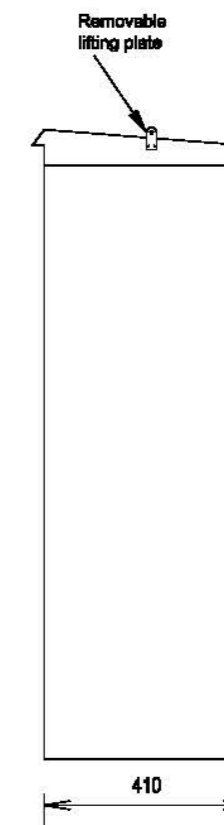


**BOTTOM VIEW**  
UNIT : mm

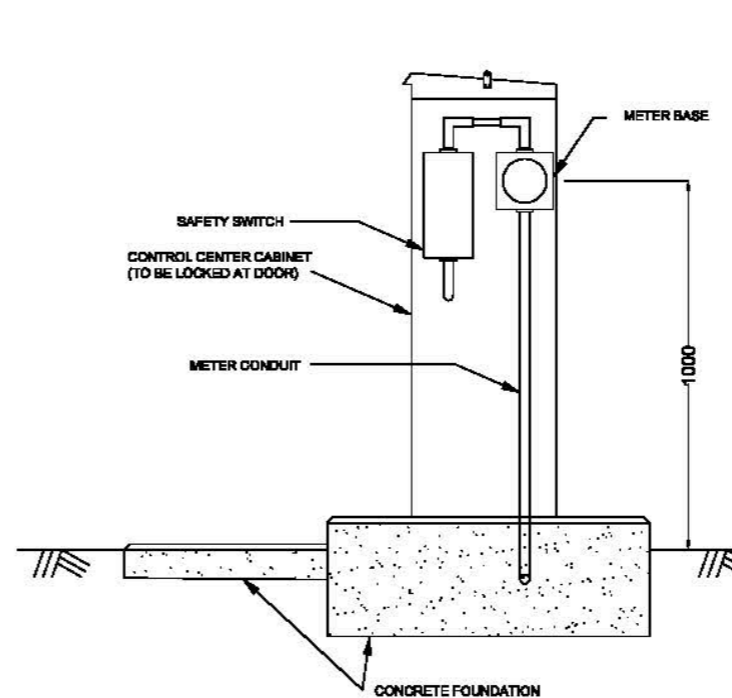
**TYPICAL OUTLINE OF JUNCTION BOX**  
NTS



**FRONT VIEW**



**SIDE VIEW**



**SIDE VIEW**

UNIT : mm

**TYPICAL TRAFFIC SIGNAL CONTROLLER**

PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTRY 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 (REFERENCE) OUTLINE OF TRAFFIC SIGNAL CONTROLLER AND JUNCTION BOX	PACKAGE	
				PREPARED BY	K. MORIMATA			29 Sep. 2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct. 2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct. 2017	PD-EL-0015



## QUANTITY TABLE OF LIGHTING AND ELECTRICAL WORKS FOR MOC'S CONSTRUCTION (REFERENCE DRAWING)




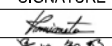
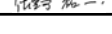
### QUANTITY OF ROAD LIGHTING SYSTEM

Item Description	Unit	Total
Lighting Pole Type B (H=12m)	No.	51.0
LED Lamp (140W)	No.	42.0
LED Lamp (150W)	No.	4.0
HID Lamp (360W)	No.	5.0
Lighting Panel Type A (17 branches)	No.	1.0
Grounding Plates	No.	9.0
4 Core/XLPE 35 sq. mm Electric Wire Cable	m	20.0
4 Core/XLPE 25 sq. mm Electric Wire Cable	m	4,420.0
4 Core/XLPE 8 sq. mm Electric Wire Cable	m	500.0
NFB 240V, 2P	No.	51.0
HDPE Pipe (50mm dia.)	m	4,555.0
Steel Conduit (100mm dia.)	m	26.0
Handhole (600 x 600 x 1200)	No.	10.0
Handhole (600 x 600 x 800)	No.	7.0
Incoming Power Receiving Pole (H=15m)	No.	1.0
Power Receiving Panel (100kVA)	No.	1.0
Emergency Engine Generator (50kVA)	No.	1.0
Main Power Distribution Panel (300AF / 50AF)	No.	1.0
Boundary Fence (H=1.2m)	m	20.0

### QUANTITY OF TRAFFIC SIGNAL CONTROL SYSTEM

Item Description	Unit	Total
Traffic Signal Pole	No.	8.0
Pedestrian Signal Pole	No.	8.0
Traffic Signal Head (LED)	No.	8.0
Arrow Signal Head (LED)	No.	8.0
Pedestrian Signal Head and Push Botton	No.	16.0
Distribution Panel (3branches)	No.	2.0
Handhole (600 x 600 x 800)	No.	8.0
Traffic Signal Controller	No.	2.0
HDPE Pipe (50mm dia.)	m	30.0
HDPE Pipe (25mm dia.)	m	12.0
SVV-SS 2.0 sq.mm x 4c	m	40.0
SVV-SS 2.0 sq.mm x 15c	m	160.0
SVV-SS 2.0 sq.mm x 18c	m	163.0
SVV-SS 2.0 sq.mm x 33c	m	14.0
SVV 2.0 sq.mm x 4c	m	341.0
SVV 2.0 sq.mm x 8c	m	68.0
Joint Box (36terminal)	No.	12.0
Grounding Rod (L=1.5m, D=14mm)	No.	4.0
Concrete Pole (H=12m, Φ=190mm)	No.	9.0
Messenger Wire(55sq.mm)	m	192.0
Winding Grip with Thimble	No.	18.0
Messenger Wire Clap	No.	8.0
Universal Band	No.	20.0
Entrance Cap	No.	2.0
Outdoor Wire Anchor	No.	8.0
Low Voltage Anchor Insulator with Mounting Hardware	No.	9.0
Copper Bind Wire (0.9 sq.mm)	m	77.0

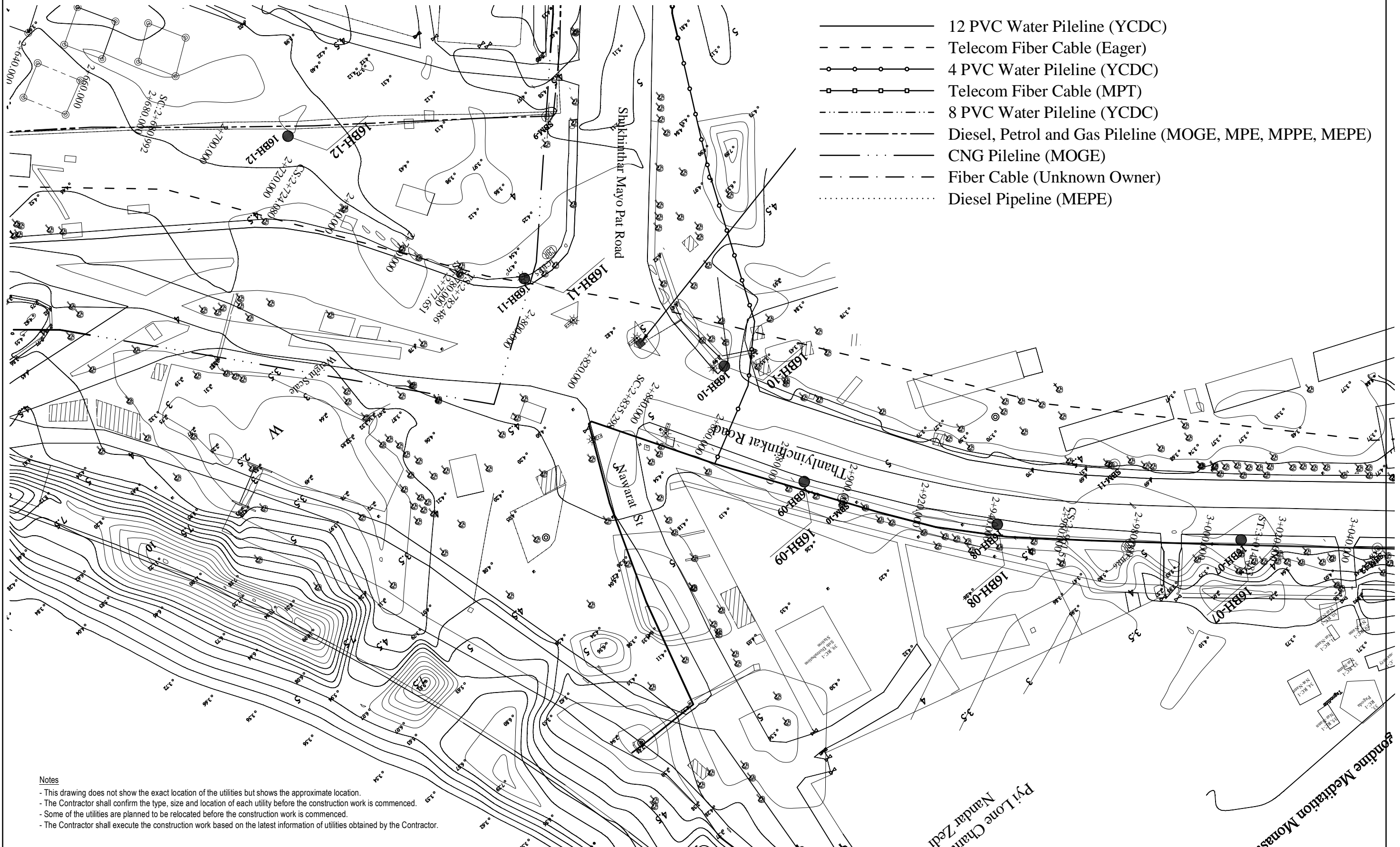
NOTE) THE QUANTITY SHOWN IN THE LIST IS A BIT DATA ONLY

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 LIGHTING AND ELECTRICAL WORKS FOR MOC'S CONSTRUCTION (REFERENCE DRAWING)	PACKAGE	
				PREPARED BY	K. MORIMATA			29 Sep. 2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct. 2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct. 2017	P0-EL- 0016

## **D REFERENCE DRAWING**

# (REFERENCE) EXISTING UNDERGROUND UTILITIES LAYOUT (1)

S=1:1000



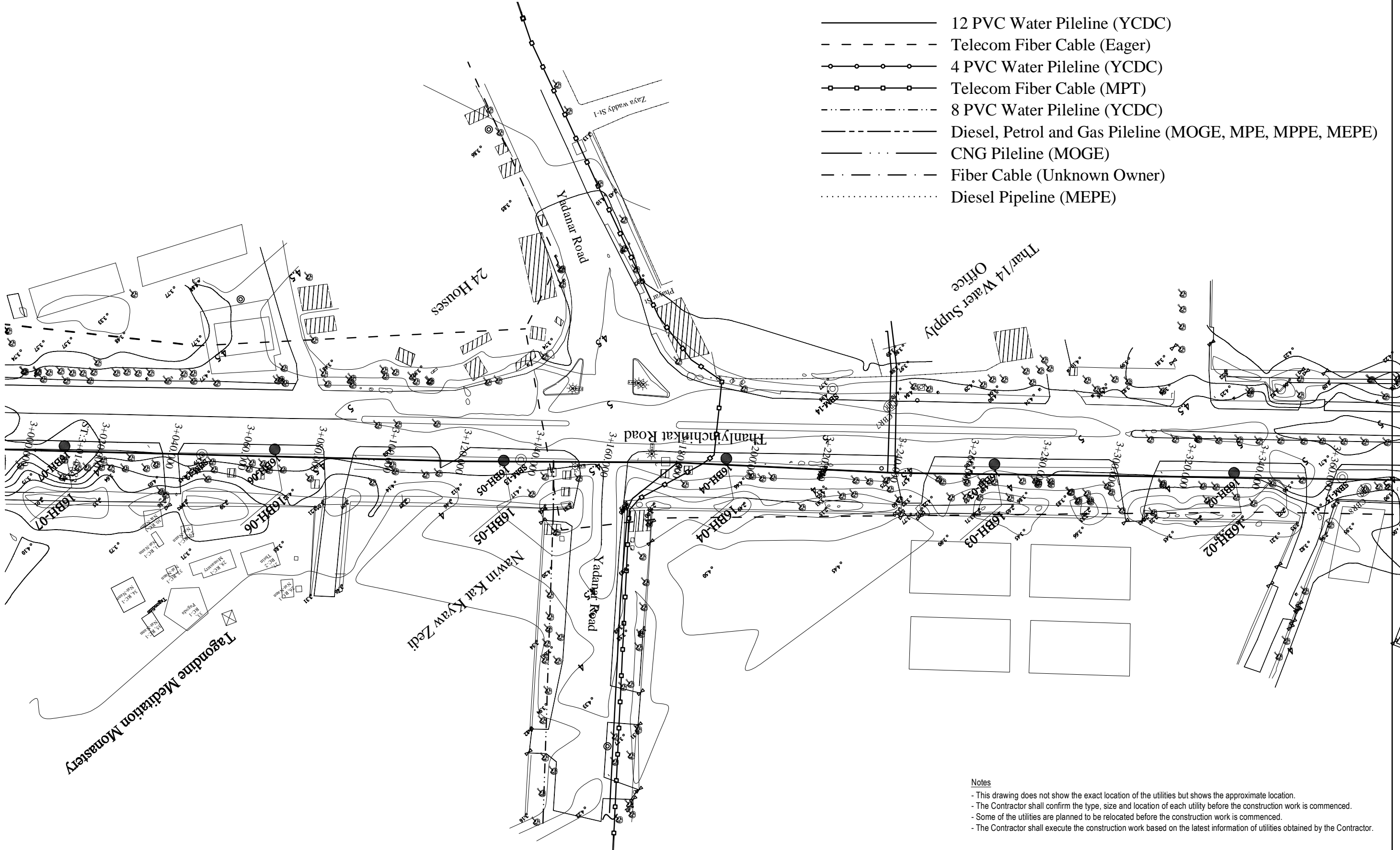
**Notes**  
 - This drawing does not show the exact location of the utilities but shows the approximate location.  
 - The Contractor shall confirm the type, size and location of each utility before the construction work is commenced.  
 - Some of the utilities are planned to be relocated before the construction work is commenced.  
 - The Contractor shall execute the construction work based on the latest information of utilities obtained by the Contractor.

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 (REFERENCE) EXISTING UNDERGROUND UTILITIES LAYOUT (1)	PACKAGE	
				PREPARED BY	T. OGUNI			29 Sep. 2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct. 2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct. 2017	P0-REF-0001

# (REFERENCE) EXISTING UNDERGROUND UTILITIES LAYOUT (2)

S=1:1000

- 12 PVC Water Pipeline (YCDC)
- - - - - Telecom Fiber Cable (Eager)
- 4 PVC Water Pipeline (YCDC)
- Telecom Fiber Cable (MPT)
- · - · - · - 8 PVC Water Pipeline (YCDC)
- · — · — · — Diesel, Petrol and Gas Pipeline (MOGE, MPE, MPPE, MEPE)
- · · · · · CNG Pipeline (MOGE)
- · - · - · - Fiber Cable (Unknown Owner)
- Diesel Pipeline (MEPE)



Notes

- This drawing does not show the exact location of the utilities but shows the approximate location.
- The Contractor shall confirm the type, size and location of each utility before the construction work is commenced.
- Some of the utilities are planned to be relocated before the construction work is commenced.
- The Contractor shall execute the construction work based on the latest information of utilities obtained by the Contractor.

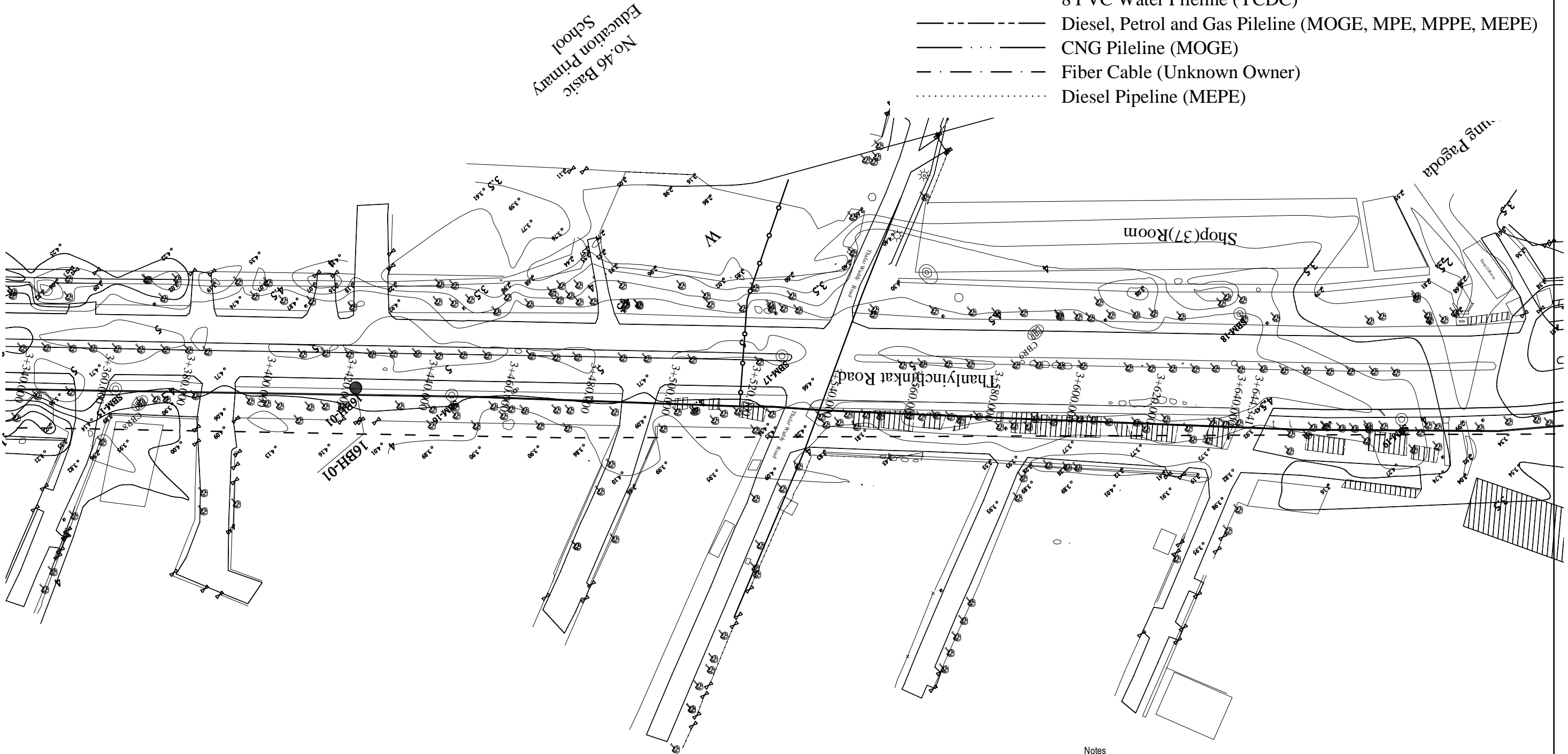
PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT	FINANCED BY JAPAN INTERNATIONAL COOPERATION AGENCY	COUNTERPART REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE	JICA STUDY TEAM NIPPON KOEI CO., LTD. ORIENTAL CONSULTANTS GLOBAL CO., LTD. METROPOLITAN EXPRESSWAY COMPANY LIMITED CHODAI CO., LTD. NIPPON ENGINEERING CONSULTANTS CO., LTD.	NAME	SIGNATURE	DATE	DRAWING TITLE (REFERENCE) EXISTING UNDERGROUND UTILITIES LAYOUT (2)	PACKAGE	
				PREPARED BY	T. OGUNI			29 Sep. 2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct. 2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct. 2017	P0-REF-0002



# (REFERENCE) EXISTING UNDERGROUND UTILITIES LAYOUT (3)

S=1:1000

- 12 PVC Water Pipeline (YCDC)
- - - - - Telecom Fiber Cable (Eager)
- 4 PVC Water Pipeline (YCDC)
- Telecom Fiber Cable (MPT)
- · - · - · - 8 PVC Water Pipeline (YCDC)
- Diesel, Petrol and Gas Pipeline (MOGE, MPE, MPPE, MEPE)
- CNG Pipeline (MOGE)
- · - · - · - Fiber Cable (Unknown Owner)
- Diesel Pipeline (MEPE)

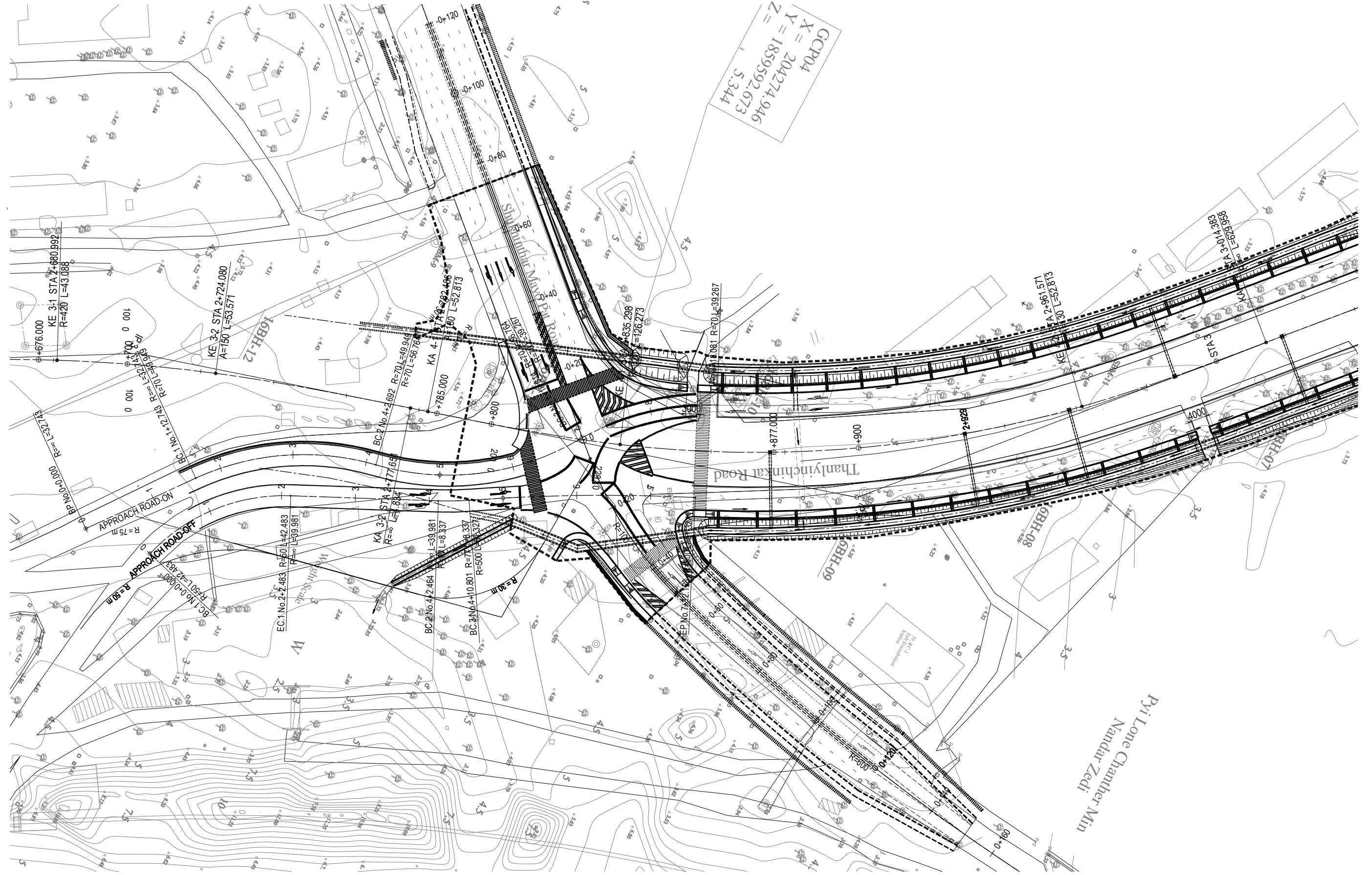


**Notes**

- This drawing does not show the exact location of the utilities but shows the approximate location.
- The Contractor shall confirm the type, size and location of each utility before the construction work is commenced.
- Some of the utilities are planned to be relocated before the construction work is commenced.
- The Contractor shall execute the construction work based on the latest information of utilities obtained by the Contractor.

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 (REFERENCE) EXISTING UNDERGROUND UTILITIES LAYOUT (3)	PACKAGE	
				PREPARED BY	T. OGUNI			29 Sep. 2017	0
				CHECKED BY	T. HAYAKAWA			3 Oct. 2017	DWG No.
				APPROVED BY	Y. SANO			6 Oct. 2017	P0-REF-0003

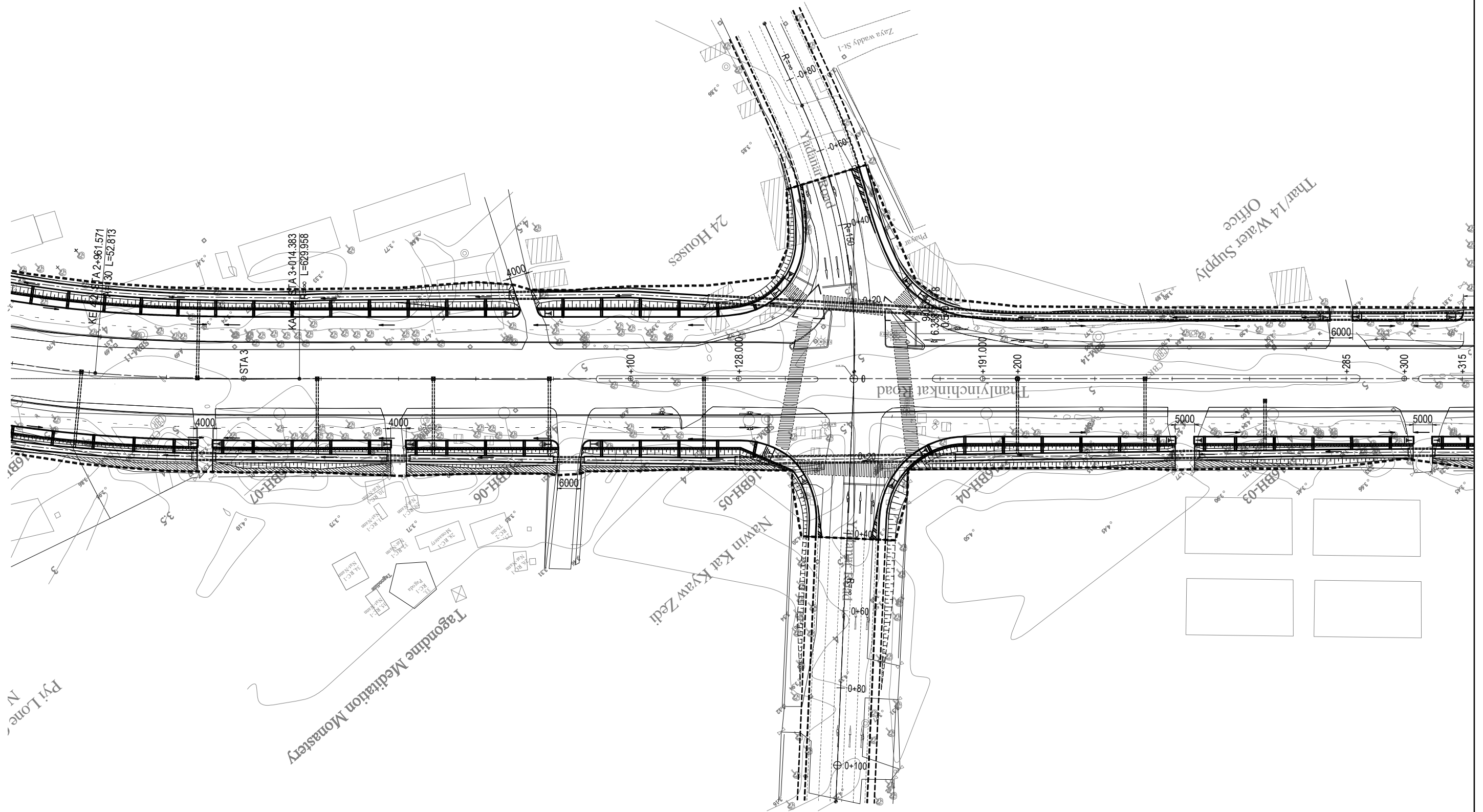
(REFERENCE) RIGHT OF WAY PLAN(1) S= 1:1000



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	DRAWING TITLE (REFERENCE) RIGHT OF WAY PLAN(1) 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	PO-REF-0004



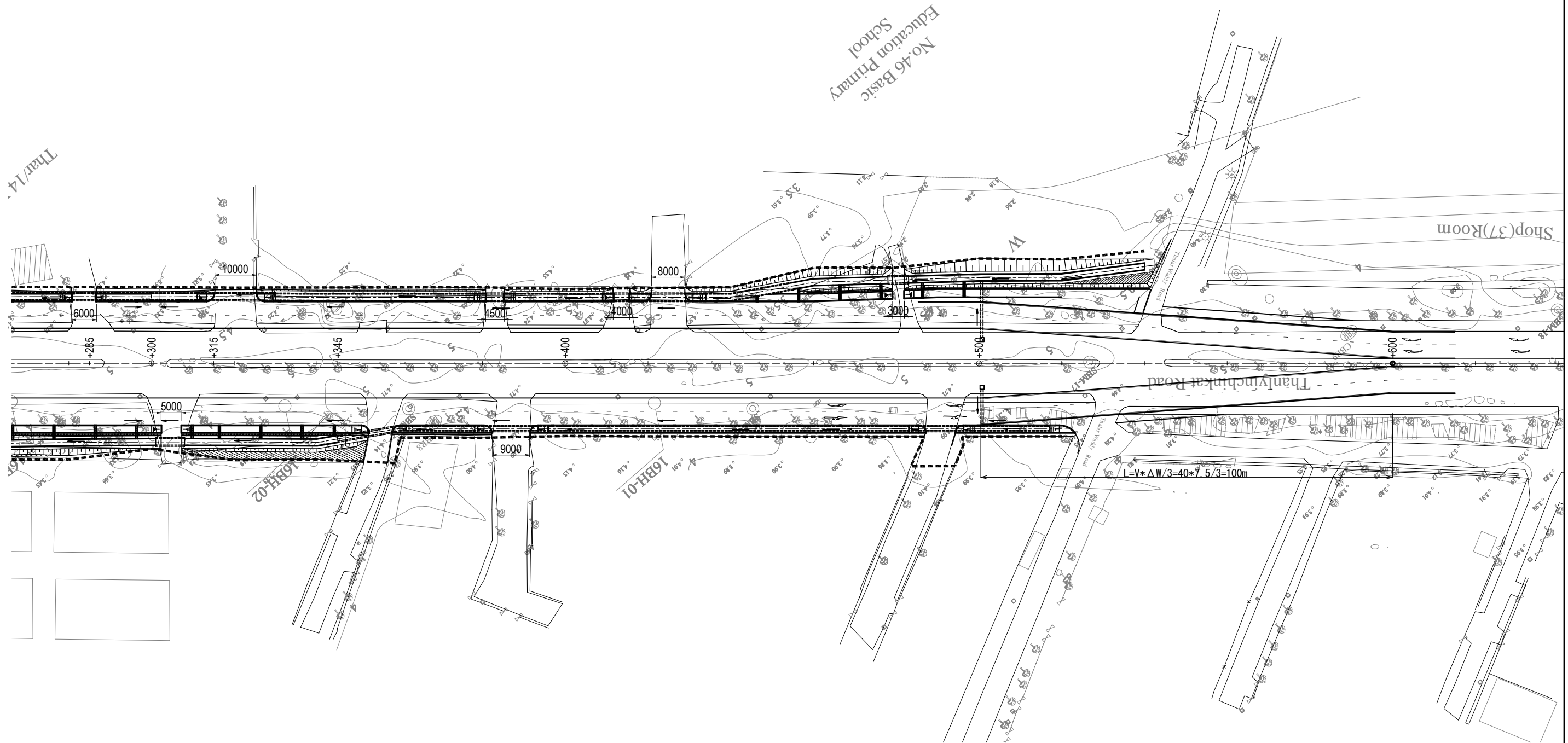
(REFERENCE) RIGHT OF WAY PLAN(2) S= 1:1000



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	DRAWING TITLE (REFERENCE) RIGHT OF WAY PLAN(2) 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	PO-REF-0005



(REFERENCE) RIGHT OF WAY PLAN(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 (REFERENCE) RIGHT OF WAY PLAN(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	PO-REF-0006

# (REFERENCE) NETWORK PLAN

## Primary Control Point By GPS

Point No	Easting	Northing	Elevation
GPS 01	205,842.773	1,857,184.685	5.698
GPS 011	205,760.156	1,857,254.692	5.543
GPS 02	205,321.737	1,857,693.657	4.426
GPS 021	205,410.480	1,857,584.129	4.262
GPS 03	204,535.795	1,859,088.346	4.115
GPS 031	204,453.920	1,859,180.786	3.874
GPS 04	204,274.946	1,859,592.673	5.344
GPS 041	204,205.987	1,859,475.724	5.066
GPS 05	203,521.369	1,860,268.348	4.914
GPS 051	203,458.184	1,860,271.486	5.105

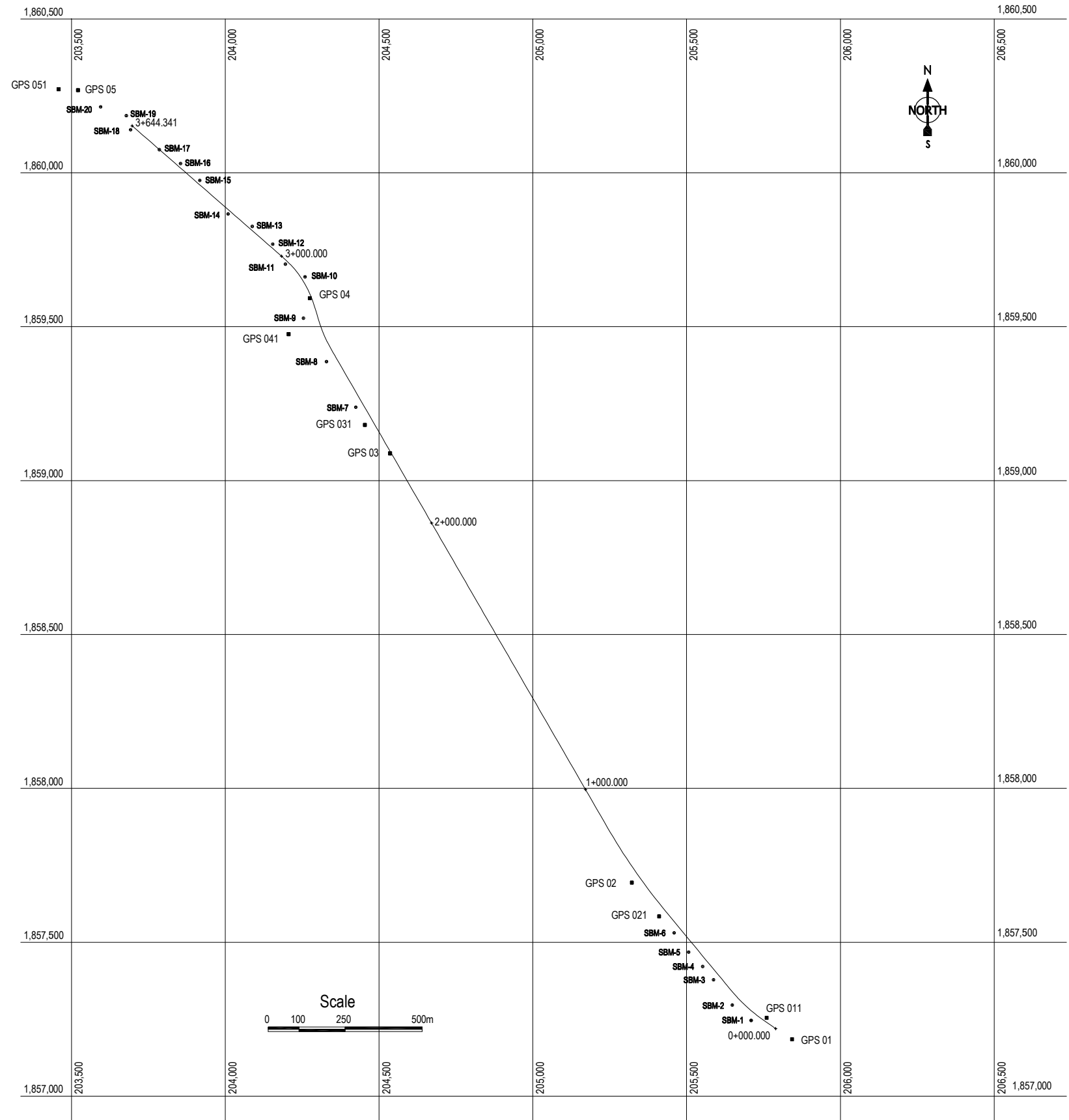
## Secondary Control Point By TS

Point No	Easting	Northing	Elevation
SBM-1	205,709.674	1,857,245.921	4.664
SBM-2	205,648.458	1,857,295.972	3.968
SBM-3	205,587.614	1,857,378.019	4.452
SBM-4	205,552.160	1,857,421.174	4.242
SBM-5	205,506.509	1,857,467.950	4.582
SBM-6	205,459.429	1,857,530.545	4.476
SBM-7	204,424.427	1,859,238.491	4.324
SBM-8	204,329.282	1,859,386.470	4.361
SBM-9	204,254.242	1,859,527.666	4.472
SBM-10	204,259.481	1,859,662.039	5.476
SBM-11	204,195.472	1,859,703.336	4.441
SBM-12	204,154.484	1,859,768.248	4.809
SBM-13	204,087.886	1,859,825.931	4.820
SBM-14	204,009.411	1,859,866.246	4.668
SBM-15	203,917.301	1,859,975.432	4.711
SBM-16	203,854.596	1,860,030.075	4.662
SBM-17	203,785.802	1,860,075.169	5.150
SBM-18	203,692.328	1,860,139.951	4.536
SBM-19	203,678.453	1,860,185.673	4.496
SBM-20	203,595.035	1,860,214.212	4.526

Elevation : Direct Leveling above Mean Sea Level

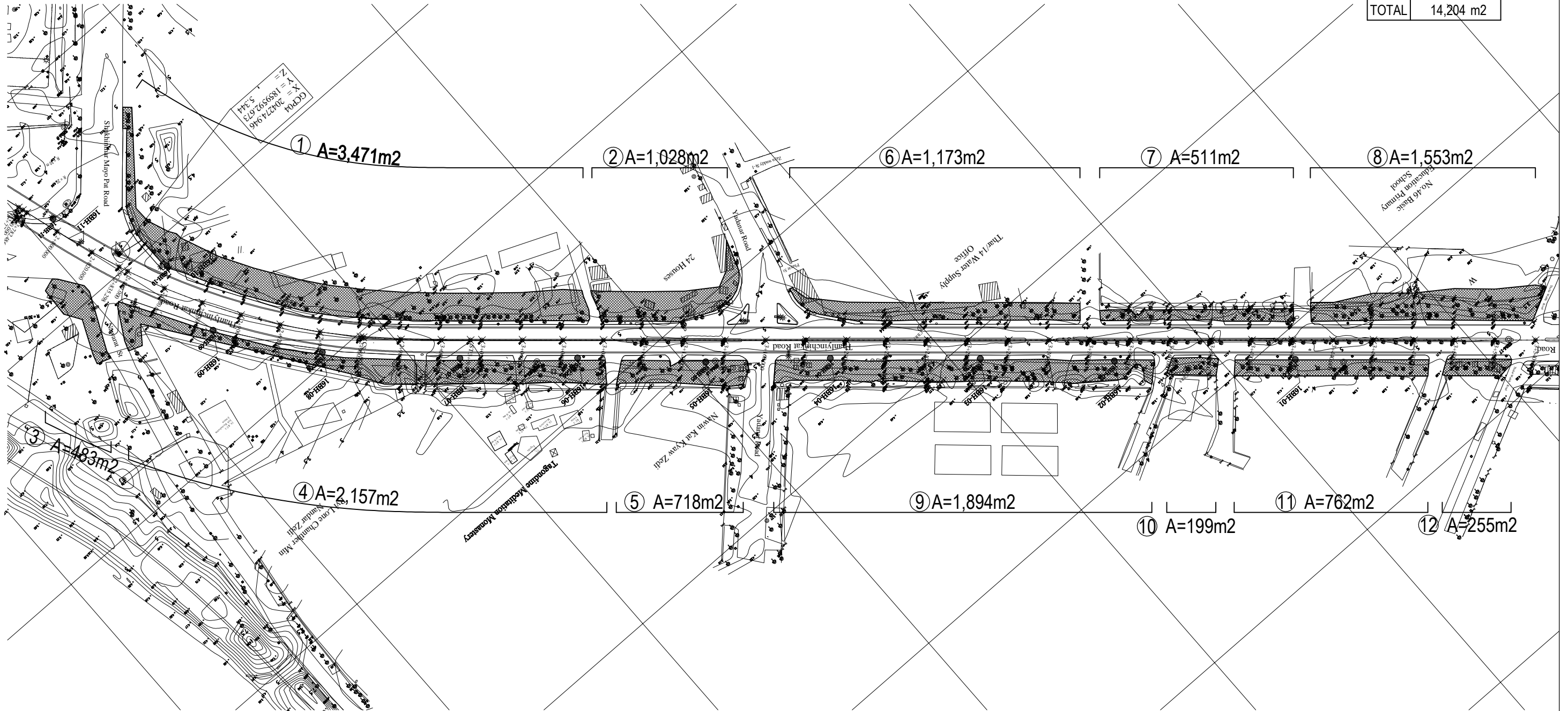
## Existing Control Points from SD

Point No	Easting	Northing	Elevation
GCP 08	204,426.731	1,867,438.719	————
SD 2	197,289.025	1,863,904.781	————
BM76097	214,396.8	1,851,646.3	23.895



(REFERENCE) SITE CLEARING S= 1:1000

①	3,471 m <sup>2</sup>
②	1,028 m <sup>2</sup>
③	483 m <sup>2</sup>
④	2,157 m <sup>2</sup>
⑤	718 m <sup>2</sup>
⑥	1,173 m <sup>2</sup>
⑦	511 m <sup>2</sup>
⑧	1,553 m <sup>2</sup>
⑨	1,894 m <sup>2</sup>
⑩	199 m <sup>2</sup>
⑪	762 m <sup>2</sup>
⑫	255 m <sup>2</sup>
TOTAL	14,204 m <sup>2</sup>



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.

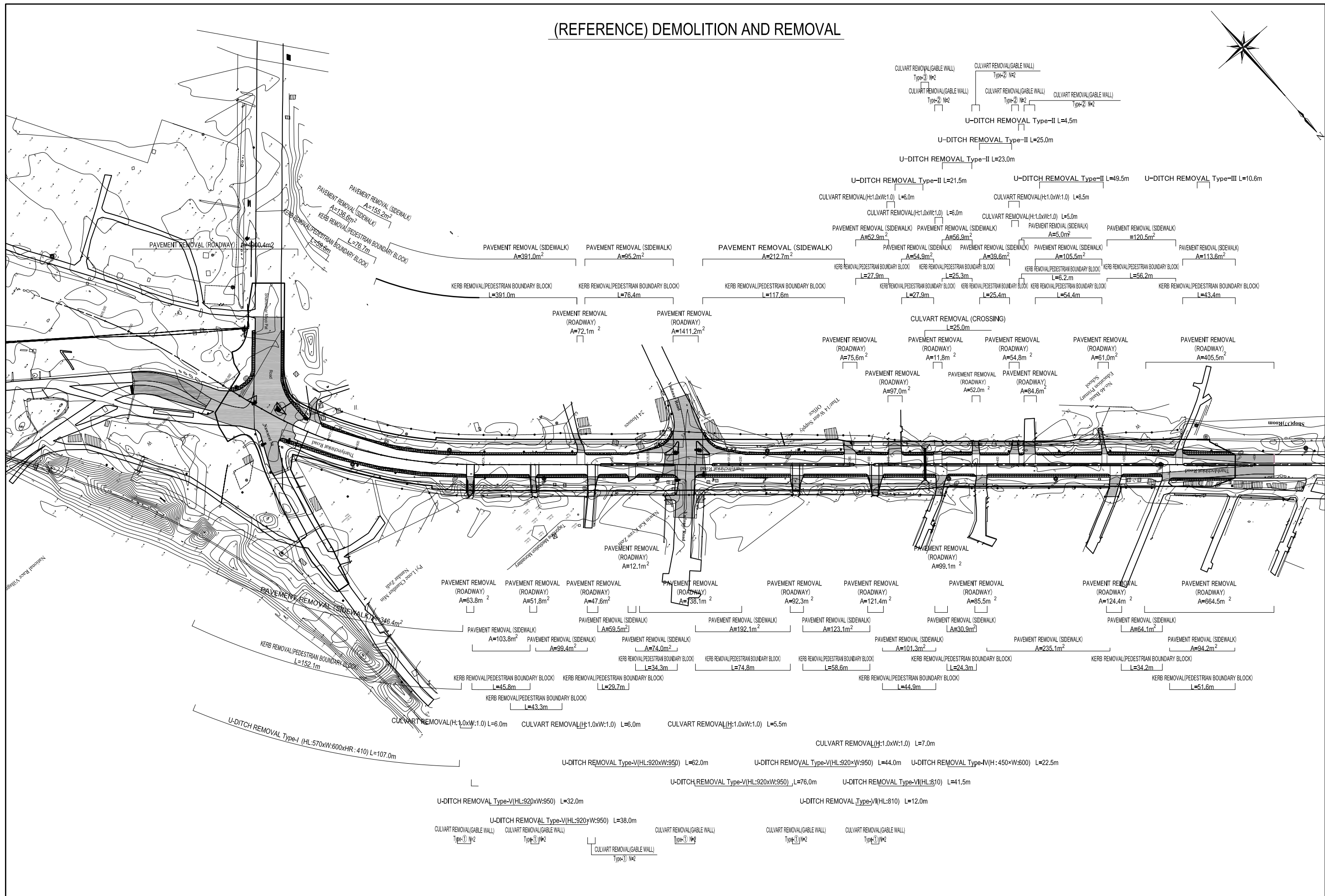
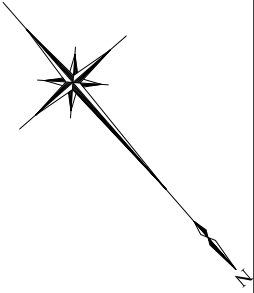
	NAME	SIGNATURE	DATE
PREPARED BY	K. TACHIBANA		29 Sep. 2017
CHECKED BY	T. HAYAKAWA		3 Oct. 2017
APPROVED BY	Y. SANO		6 Oct. 2017

DRAWING TITLE  
 (REFERENCE) SITE CLEARING  
 S= 1:1000

PACKAGE  
 0  
 DWG No.  
 PO-REF-0008



(REFERENCE) DEMOLITION AND REMOVAL



<p>PROJECT NAME DETAILED DESIGN ON BAGO RIVER BRIDGE CONSTRUCTION PROJECT</p>	<p>FINANCED BY  JAPAN INTERNATIONAL COOPERATION AGENCY</p>	<p>COUNTERPART  REPUBLIC OF THE UNION OF MYANMAR MINISTRY OF CONSTRUCTION DEPARTMENT OF BRIDGE</p>	<p>JICA STUDY TEAM  NIPPON KOEI CO., LTD.  ORIENTAL CONSULTANTS GLOBAL CO., LTD.  METROPOLITAN EXPRESSWAY COMPANY LIMITED  CHODAI CO., LTD.  NIPPON ENGINEERING CONSULTANTS CO., LTD.</p>	<p>NAME PREPARED BY CHECKED BY APPROVED BY</p>	<p>SIGNATURE K. TACHIBANA T. HAYAKAWA Y. SANO</p>	<p>DATE 29 Sep. 2017 3 Oct. 2017 6 Oct. 2017</p>	<p>DRAWING TITLE (REFERENCE) DEMOLITION AND REMOVAL</p>	<p>PACKAGE 0 DWG No. RD-REF-0009</p>
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