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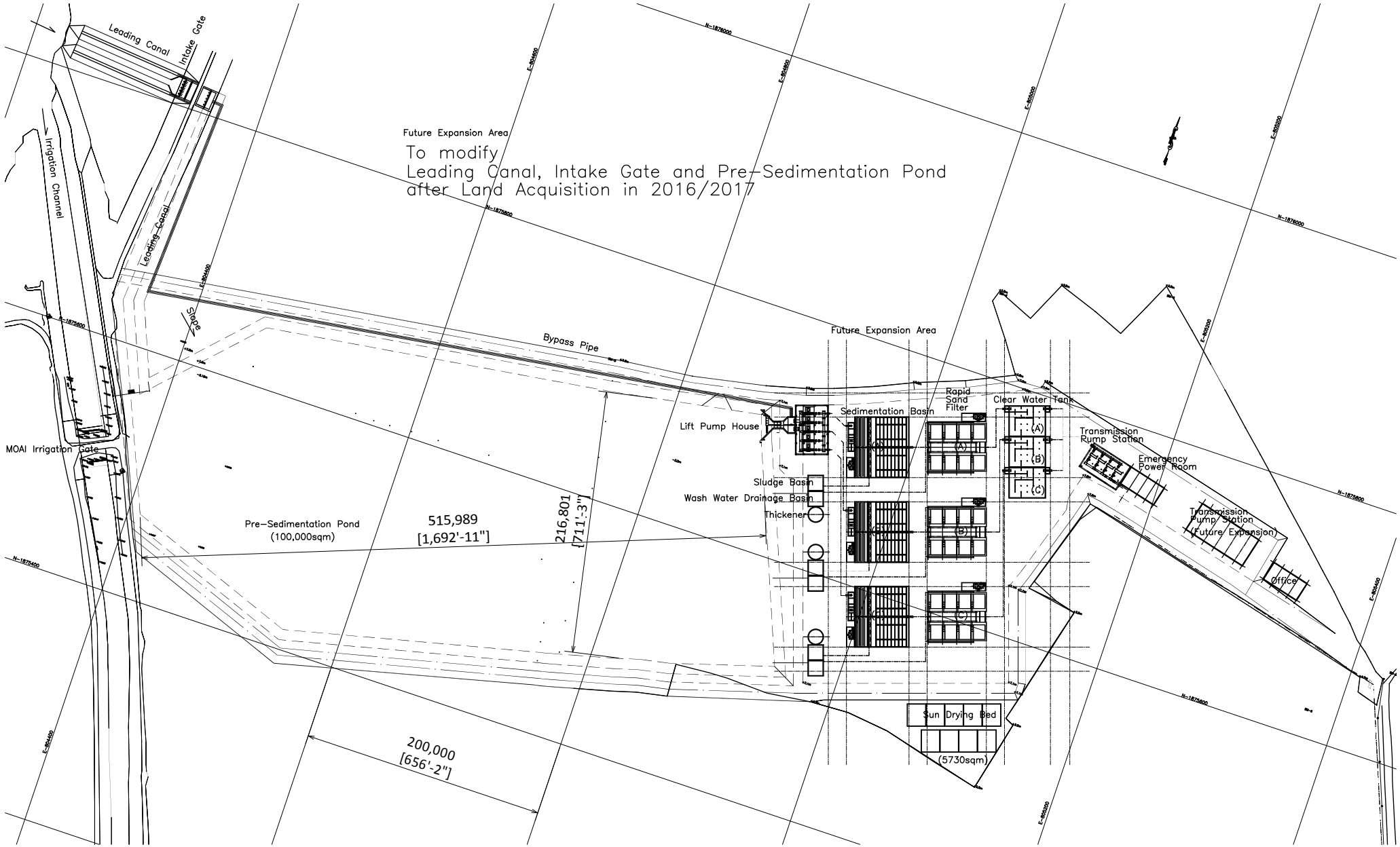
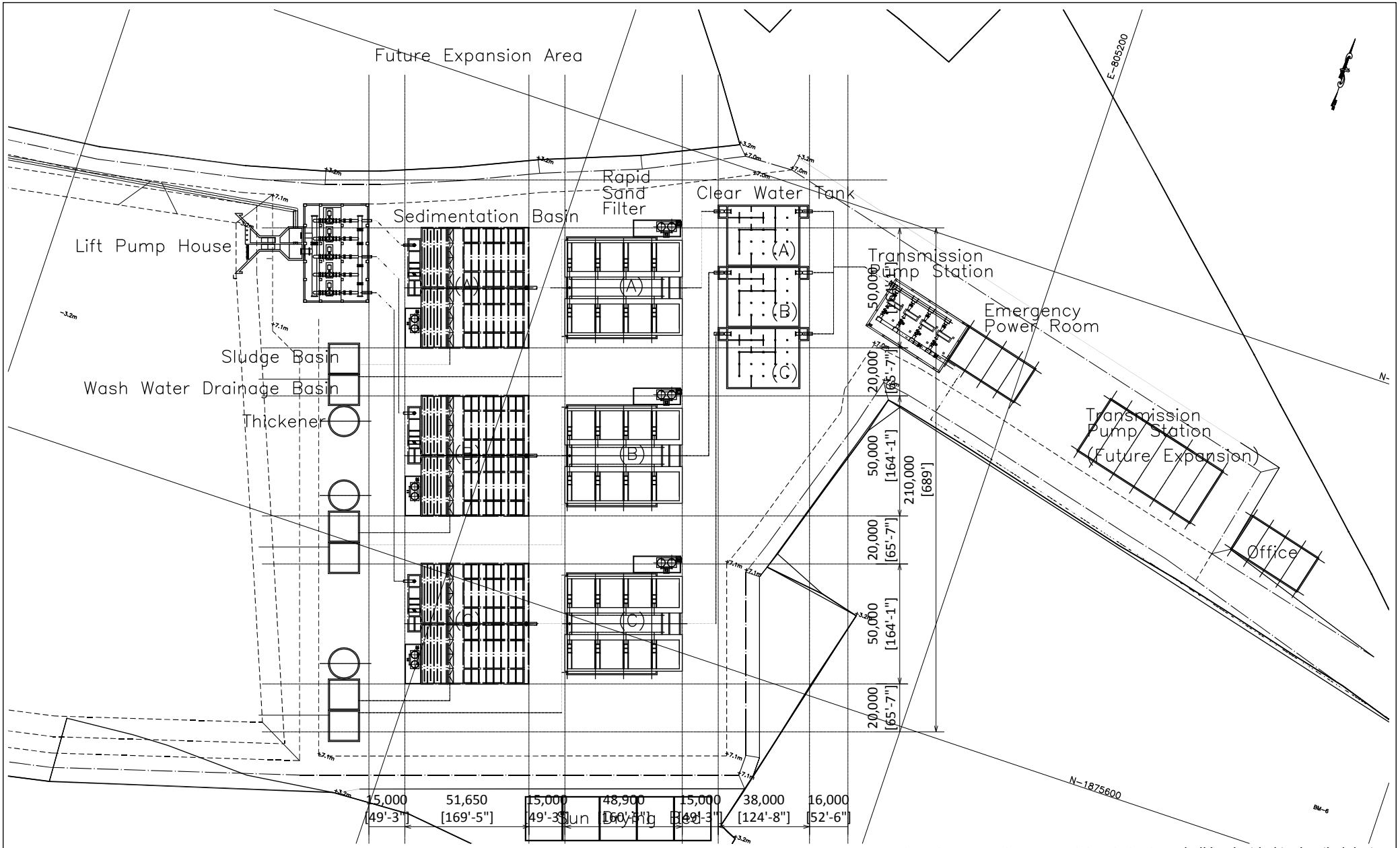
			SCADA	Flow Monitoring Diagram	NONE



Note : The values are indicative, and detailed values shall be decided in detailed design.

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	A3; S=1:3000
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	Kokkowa Water Treatment Plant Layout Plan(1/2)	Drawing No.	WTP- 1
-	-	-	-			Date	30 June 2016



Note : The values are indicative, and detailed values shall be decided in detailed design.

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	A3; S=1:1500
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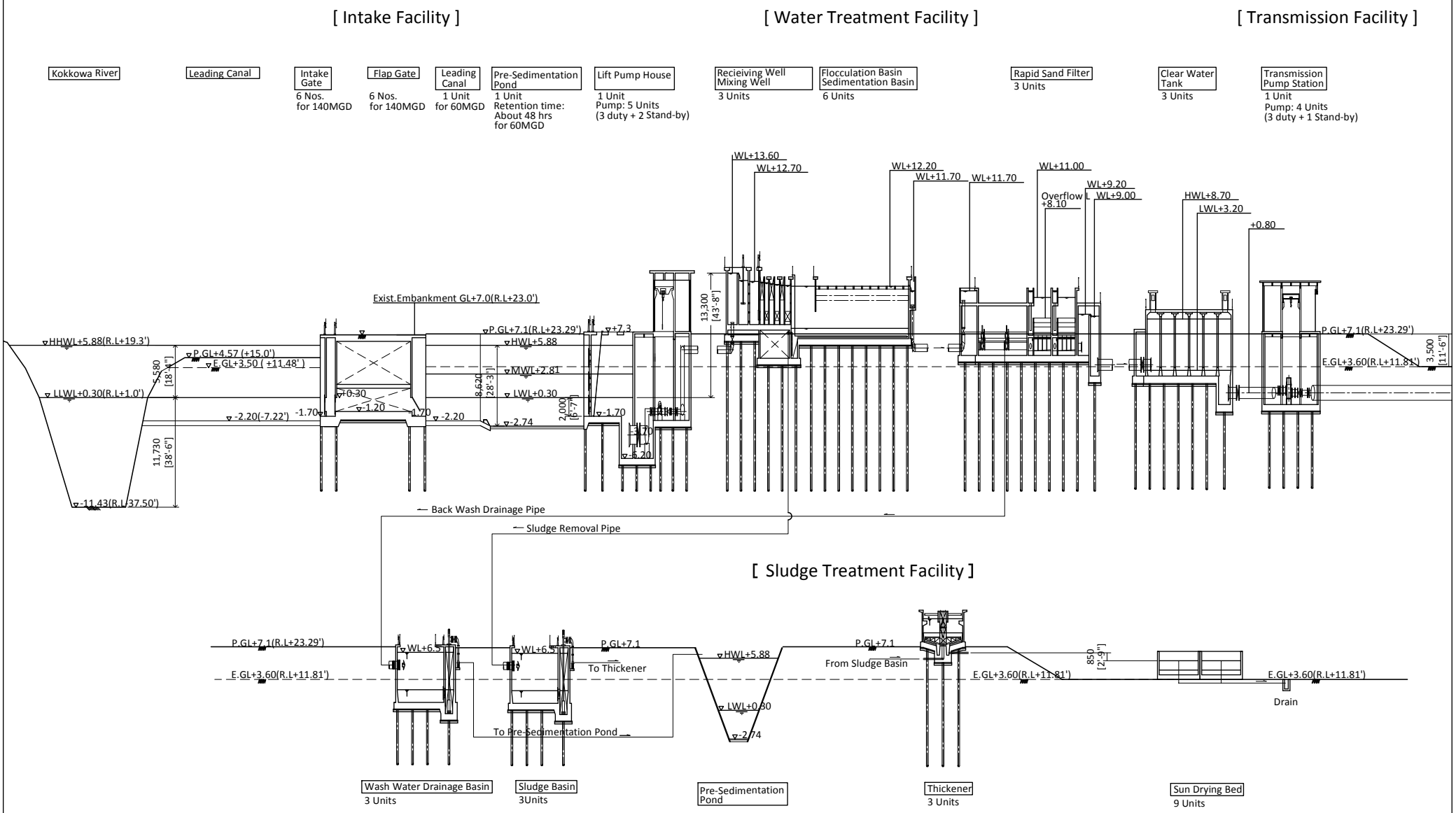
-	-	-	-			Date	30 June 2016



60MGD=286,400m3/day

Note : The values are indicative, and detailed values shall be decided in detailed design.

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	None
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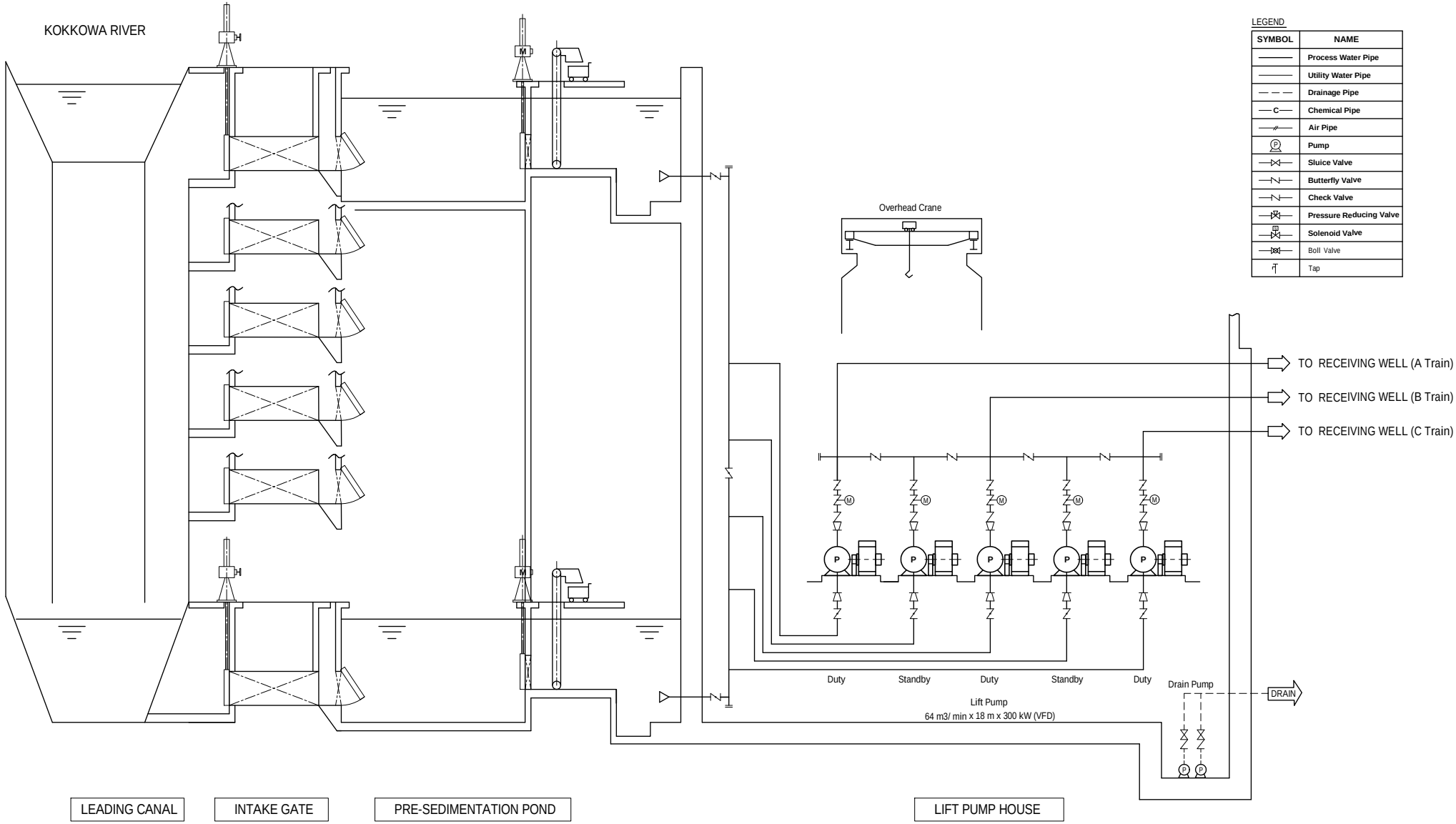
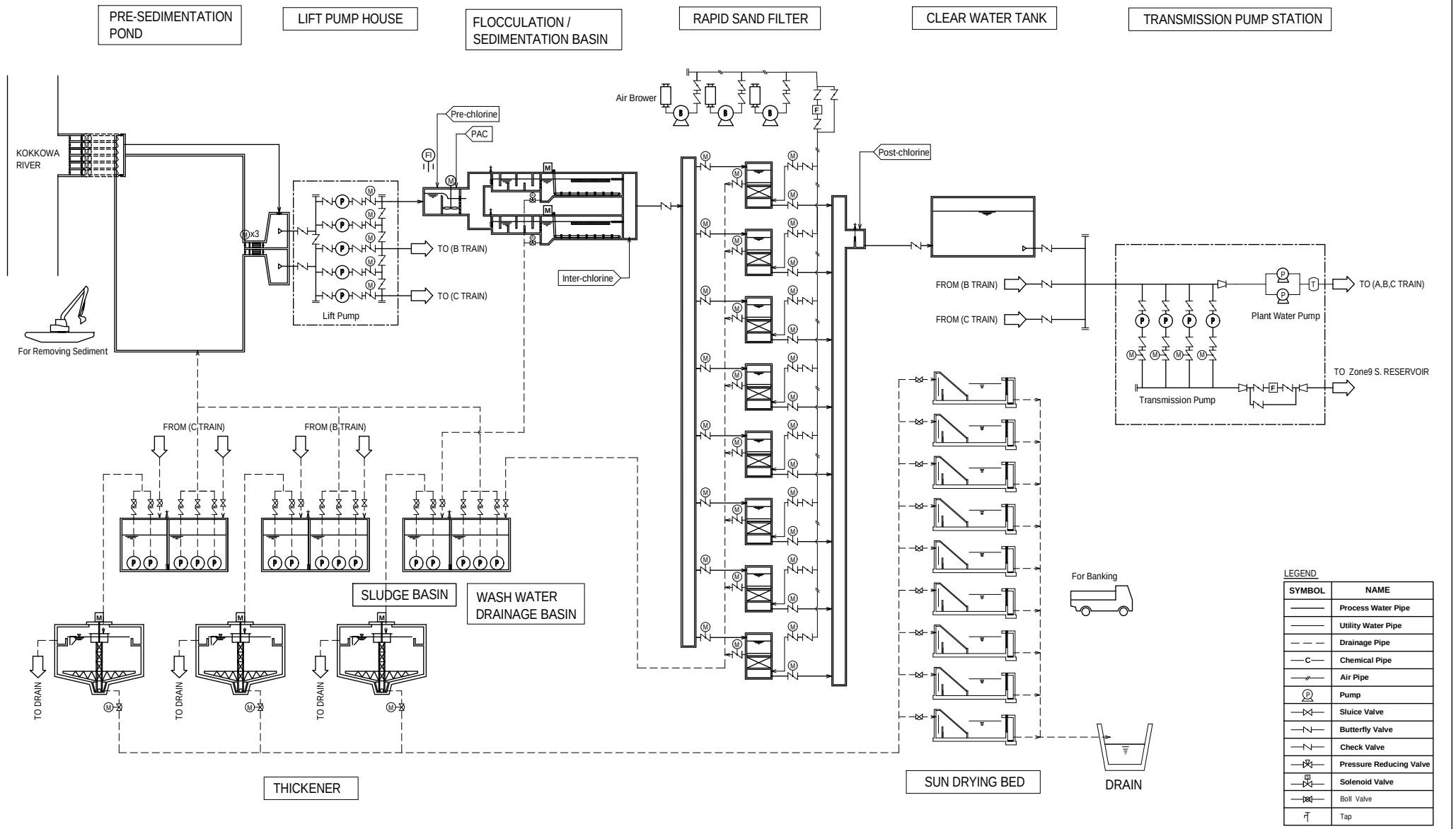
-	-	-	-			Date	30 June 2016



Note : The values are indicative, and detailed values shall be decided in detailed design.

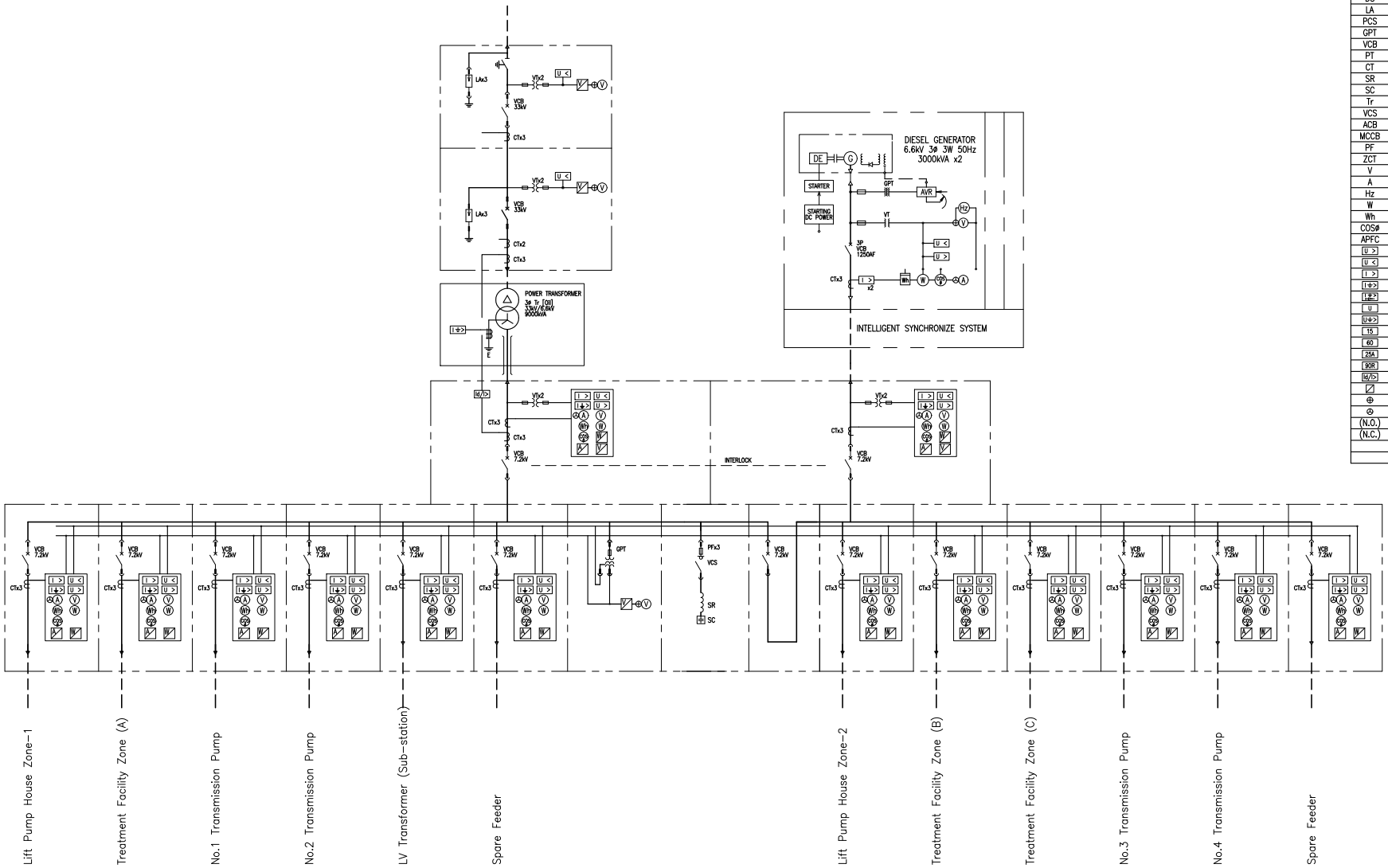
JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	A3; None
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE	Kokkowa Water Treatment Plant Flow Sheet (Intake)	Drawing No. Date	WTP-4 30 June 2016



Note : The values are indicative, and detailed values shall be decided in detailed design.

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	A3; None
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE	Kokkowa Water Treatment Plant Flow Sheet (WTP)	Drawing No.	WTP-5
						Date	30 June 2016

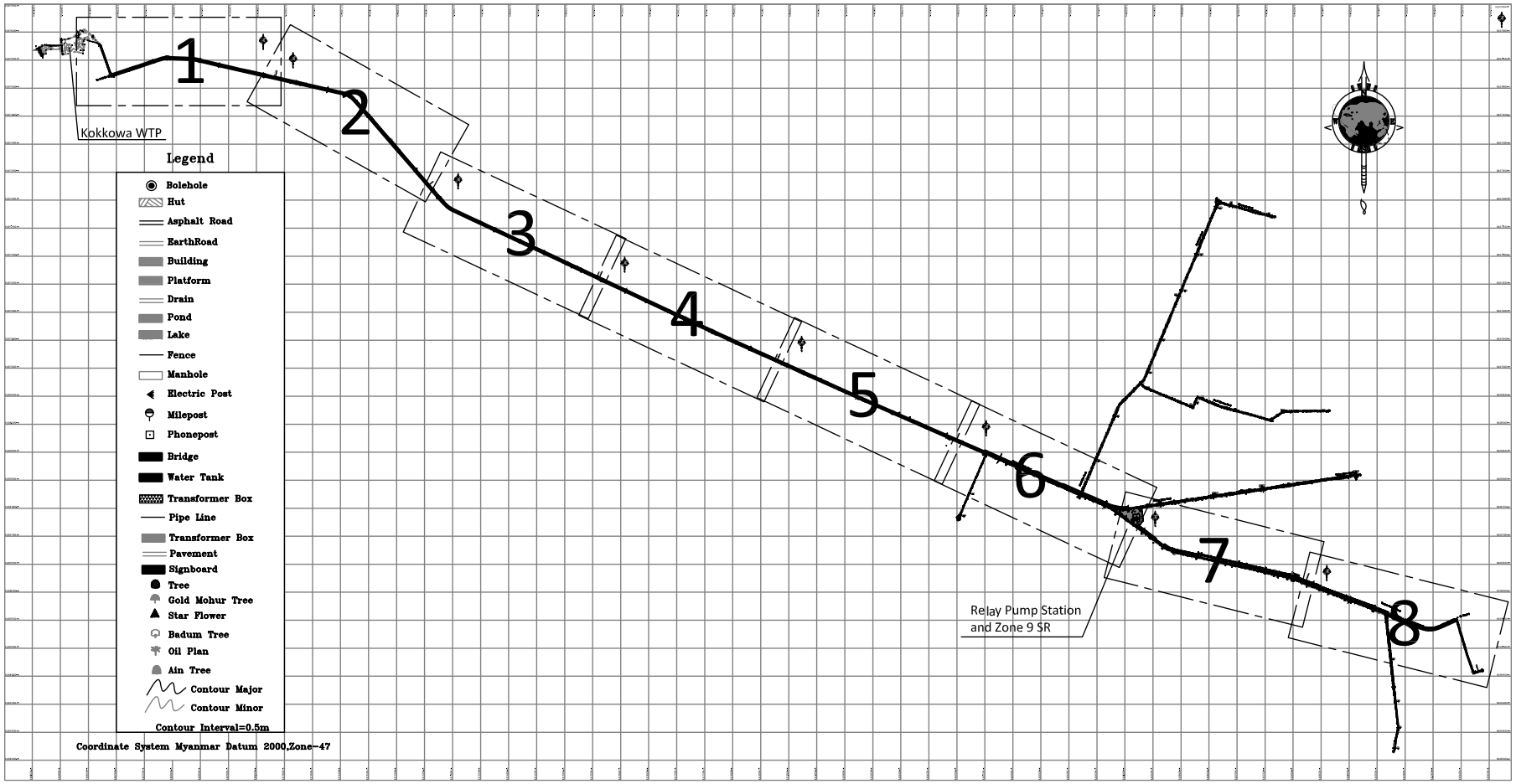
SYMBOL	LEGEND
VCT	VOLTAGE CURRENT TRANSFORMER
VD	VOLTAGE DETECTOR
DS	DISCONNECTING SWITCH
LA	LIGHTNING ARRESTER
PCS	PRIMARY CUTOUT SWITCH
GPT	GROUNDING POTENTIAL TARANSFORMER
VCB	VACUUM CIRCUIT BREAKER
PT	POTENTIAL TRANSFORMER
CT	CURRENT TRANSFORMER
SR	SERIES REACTOR
SC	STATIC CAPACITOR
Tr	TRANSFORMER
VCS	VACUUM CONTACTOR
ACB	AIR CIRCUIT BREAKER
MCCB	MOLDED CASE CIRCUIT BREAKER
PF	POWER FUSE
ZCT	ZERO PHASE CURRENT TRANSFORMER
V	VOLTMETER
A	AMMETER
Hz	FREQUENCY METER
W	WATT METER
Wh	WATT HOUR METER
COSΦ	POWER FACTOR METER
APFC	AUTOMATIC PF CONTROLLER
U >	AC OVER VOLTAGE RELAY
U <	UNDER VOLTAGE RELAY
I >	OVER CURRENT RELAY
I↓>	OVER CURRENT GROUNDING RELAY
I↓>	DIRECTIONAL GROUNDING RELAY
U	AC VOLTAGE RELAY
U↓>	GROUNDING OVER VOLTAGE RELAY
15	SPEED ADJUSTING DEVICE RELAY
60	VOLTAGE BALANCE RELAY
25A	SYNCHRONIZING RELAY
90R	AUTOMATIC VOLTAGE REGULATING RELAY
Id/I>	RATIO DIFFERENTIAL RELAY
◪	TRANSDUCER
⊕	VOLTMETER SWITCH
⊙	AMMETER SWITCH
(N.O.)	NORMALLY OPEN
(N.C.)	NORMALLY CLOSE



Single Line Diagram for WTP

Note : The values are indicative, and detailed values shall be decided in detailed design.

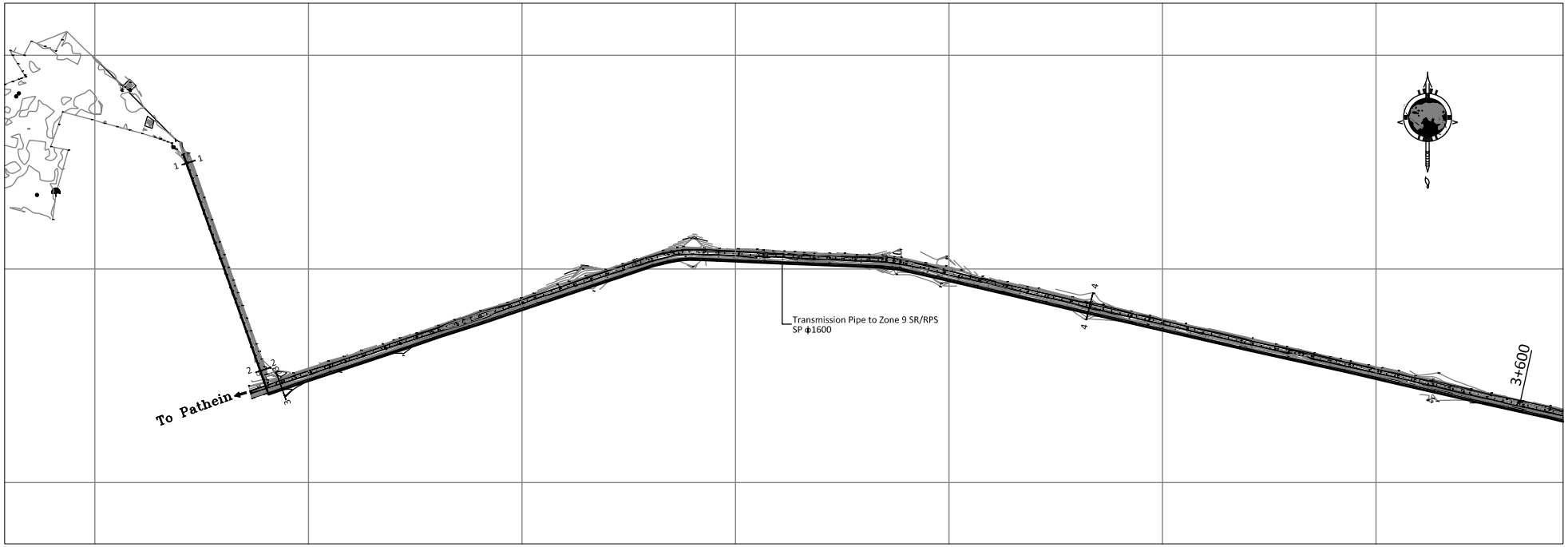
JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT: Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale: NTS
DRAWN BY: -	DESIGNED BY: -	CHECKED BY: -	APPROVED BY: -	TITLE: Kokkowa WTP Single Line Diagram	Drawing No.: WTP-6
					Date: 30 June 2016



Index Map (1)

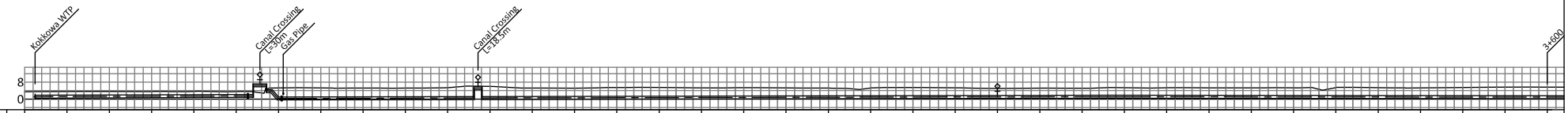
Scale = 1: 80000

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	1:80000
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	Transmission Pipe to Zone 9 Index Map (Hlaing Tharyar TS)	Drawing No.	TRM-PL-001
-	-	-	-			Date	June 2016



Plan (1)

Scale = 1:10000



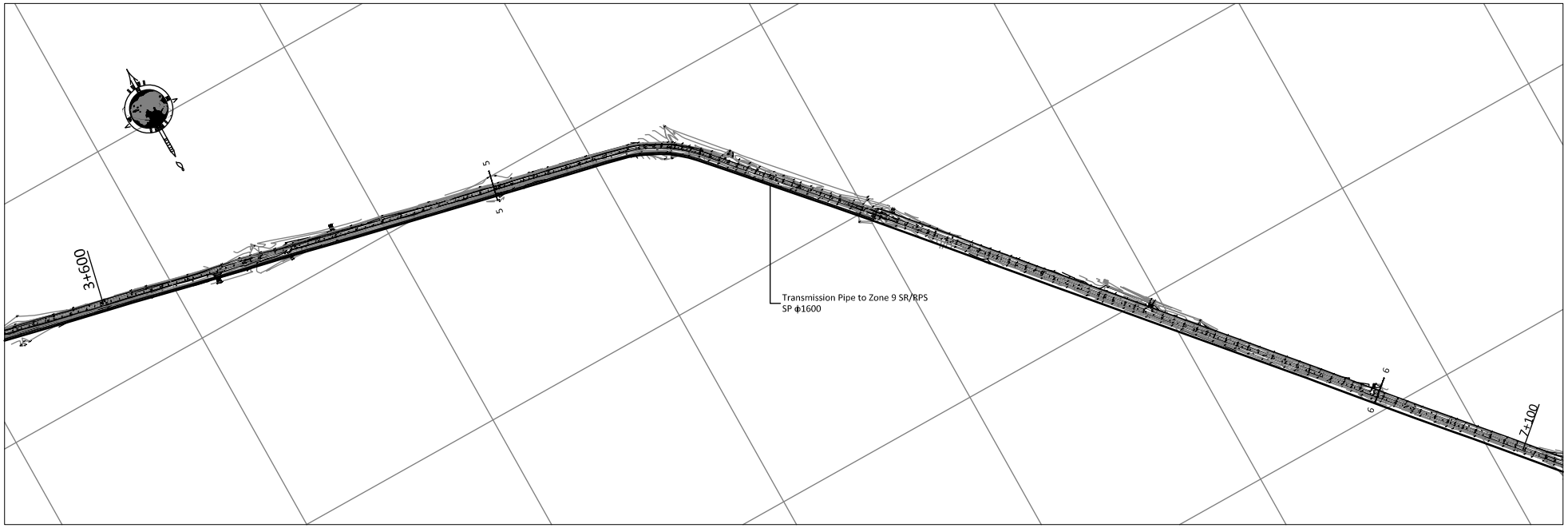
Observation Station	Ground Elevation (m)
0+000	3.43
0+200	3.54
0+400	3.57
0+600	3.51
0+800	3.60
1+000	3.56
1+200	5.24
1+400	5.25
1+600	5.19
1+800	5.18
2+000	5.39
2+200	6.01
2+400	5.21
2+600	5.21
2+800	5.46
3+000	5.54
3+200	5.29
3+400	5.38
3+600	5.28
	5.19
	5.23
	5.45
	5.32
	5.08
	5.15
	5.13
	5.36
	5.32
	5.28
	5.31
	5.33
	5.44
	5.38
	5.26
	5.51
	5.66
	5.65

Pipe Dia./Class: Dia. ϕ1600/Steel Pipe

Longitudinal Section (1)

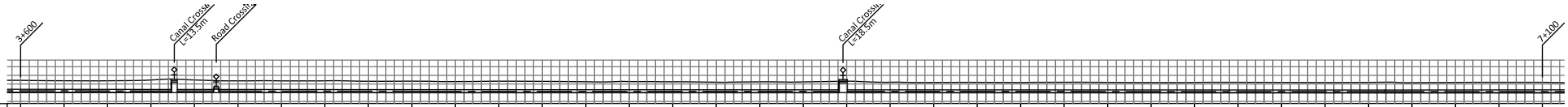
Scale: H=1:10000, V=2000

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT: Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	H=1:10000 V=1:2000
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE: Transmission Pipe to Zone 9 Plan and Longitudinal Section (1)	Drawing No.	TRM-PL-002
					Date	June 2016



Plan (2)

Scale = 1:10000

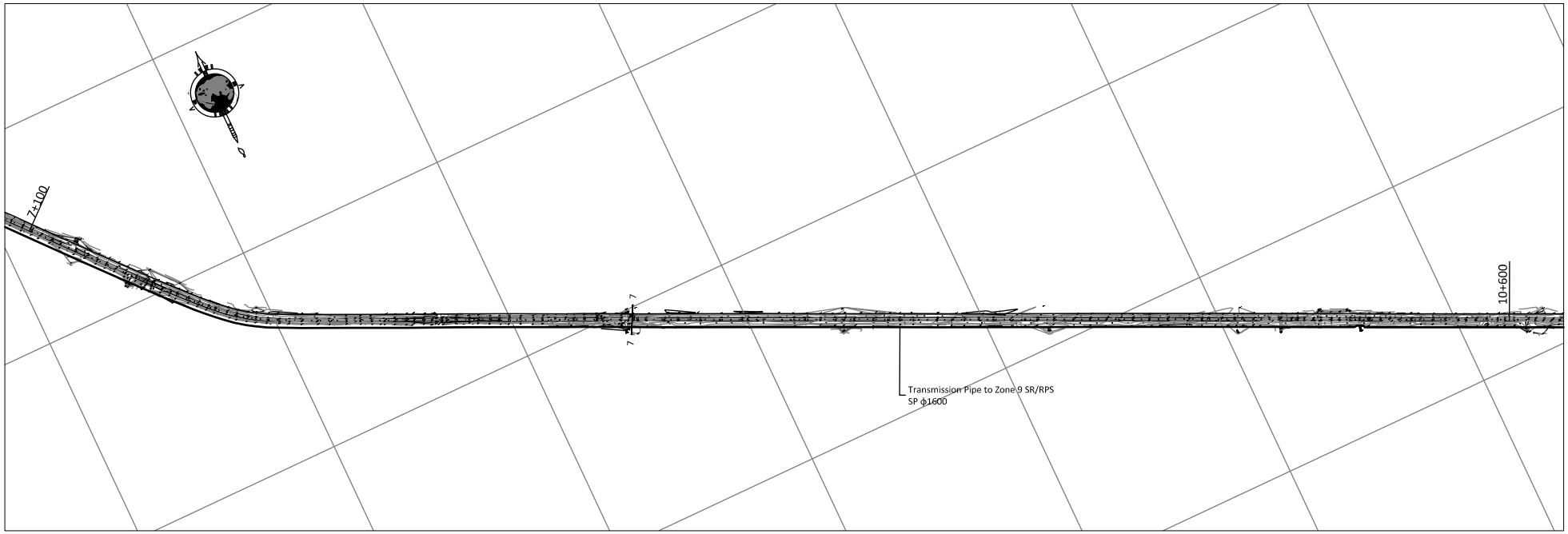


Ground Elevation (m)	5.65	5.47	5.49	5.82	5.85	5.44	5.45	5.46	5.26	5.31	5.11	5.26	5.14	5.05	5.12	5.01	4.83	5.02	4.97	5.27	4.80	4.73	4.74	4.72	4.80	4.76	4.63	4.78	4.76	4.70	4.73	4.80	4.64	4.76	4.80	4.80
Observation Station	3+600		3+800		4+000		4+200		4+400		4+600		4+800		5+000		5+200		5+400		5+600		5+800		6+000		6+200		6+400		6+600		6+800		7+000	
Pipe Dia./Class	Dia. Φ1600/Steel Pipe																																			

Longitudinal Section (2)

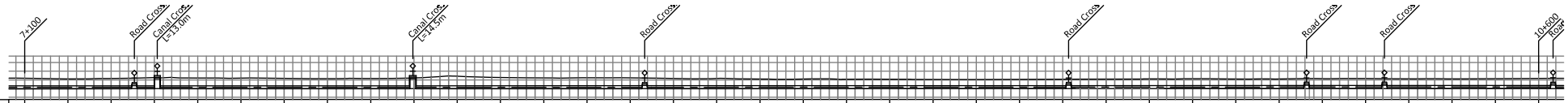
Scale: H=1:10000, V=2000

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	H=1:10000 V=1:2000
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	Transmission Pipe to Zone 9 Plan and Longitudinal Section (2)	Drawing No.	TRM-PL-003
-	-	-	-			Date	June 2016



Plan (3)

Scale = 1:10000

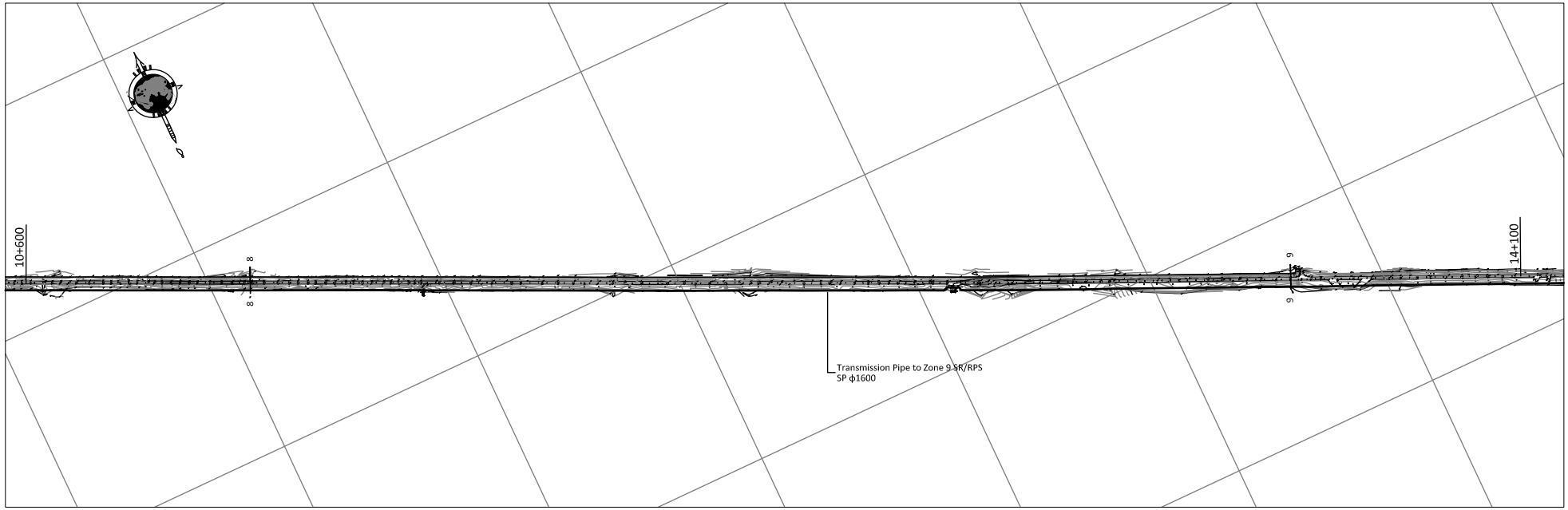


Ground Elevation (m)	4.80	4.50	4.67	5.08	4.90	4.82	4.69	4.62	4.66	4.92	5.68	5.03	4.90	4.99	4.94	4.64	4.66	4.43	4.39	4.29	4.34	4.19	4.21	4.27	4.33	4.35	4.46	4.59	4.43	4.33	4.57	4.69	4.51	4.51	4.61	4.70
Observation Station		7+200		7+400		7+600		7+800		8+000		8+200		8+400		8+600		8+800		9+000		9+200		9+400		9+600		9+800		10+000		10+200		10+400		10+600
Pipe Dia./Class		Dia. ϕ1600/Steel Pipe																																		

Longitudinal Section (3)

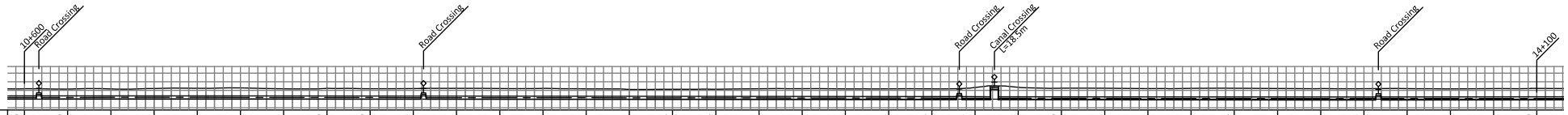
Scale: H=1:10000, V=2000

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale: H=1:10000 V=1:2000
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE	Transmission Pipe to Zone 9 Plan and Longitudinal Section (3)	Drawing No.: TRM-PL-004 Date: June 2016



Plan (4)

Scale = 1:10000



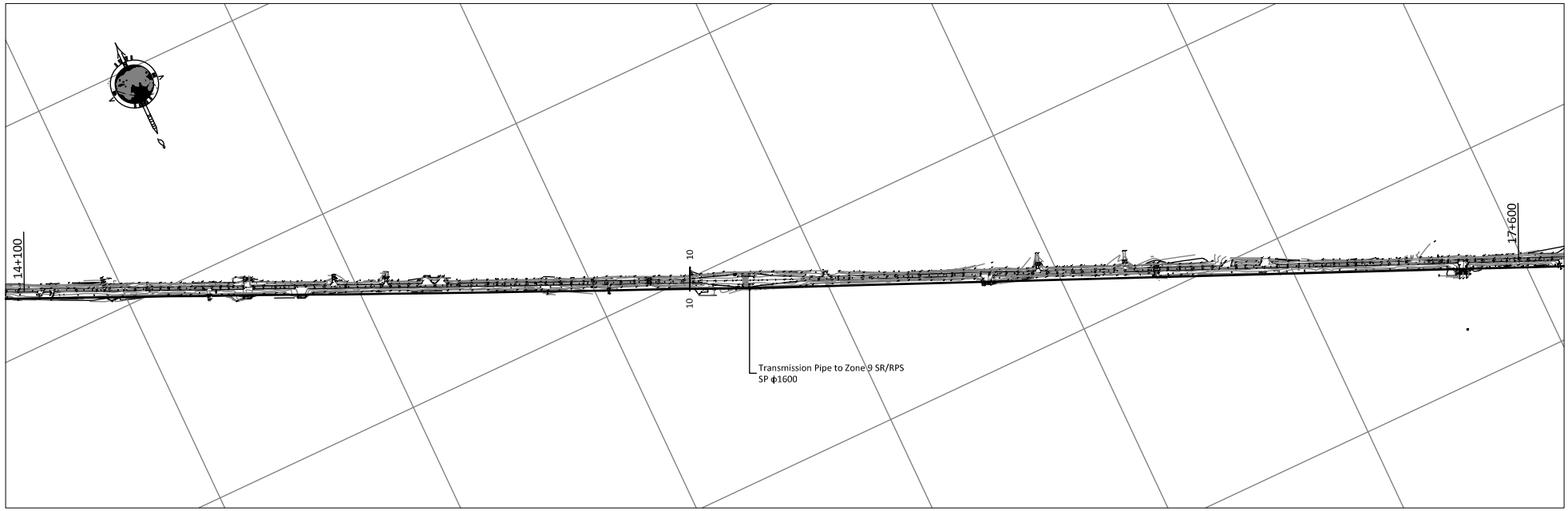
Observation Station	Ground Elevation (m)
10+600	4.70
10+800	4.60
11+000	4.67
11+200	4.91
11+400	4.97
11+600	5.12
11+800	4.78
12+000	4.90
12+200	4.80
12+400	4.86
12+600	4.97
12+800	4.92
13+000	4.92
13+200	4.72
13+400	4.45
13+600	4.54
13+800	4.54
14+000	4.75
	4.81
	4.75
	4.75
	4.74
	5.37
	5.46
	5.00
	4.99
	4.87
	4.93
	5.04
	4.91
	4.82
	4.86
	4.87
	4.73
	4.87
	4.90

Pipe Dia./Class: Dia. ϕ1600/Steel Pipe

Longitudinal section (4)

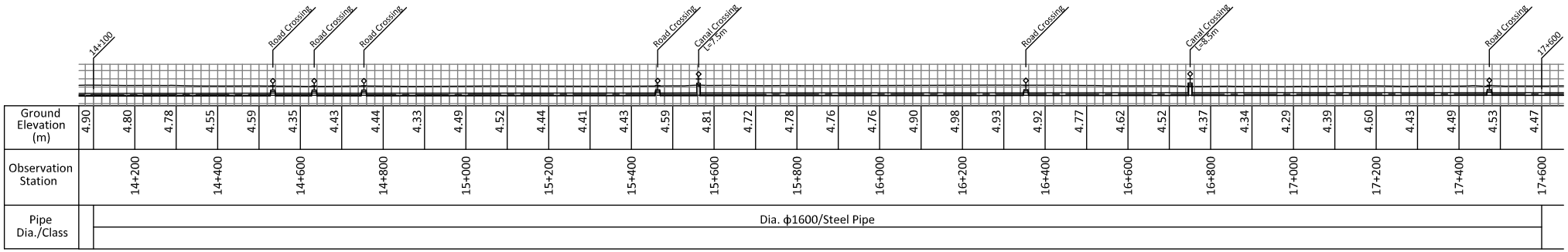
Scale: H=1:10000, V=2000

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	H=1:10000 V=1:2000
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	Transmission Pipe to Zone 9 Plan and Longitudinal Section (4)	Drawing No.	TRM-PL-005
-	-	-	-			Date	June 2016



Plan (5)

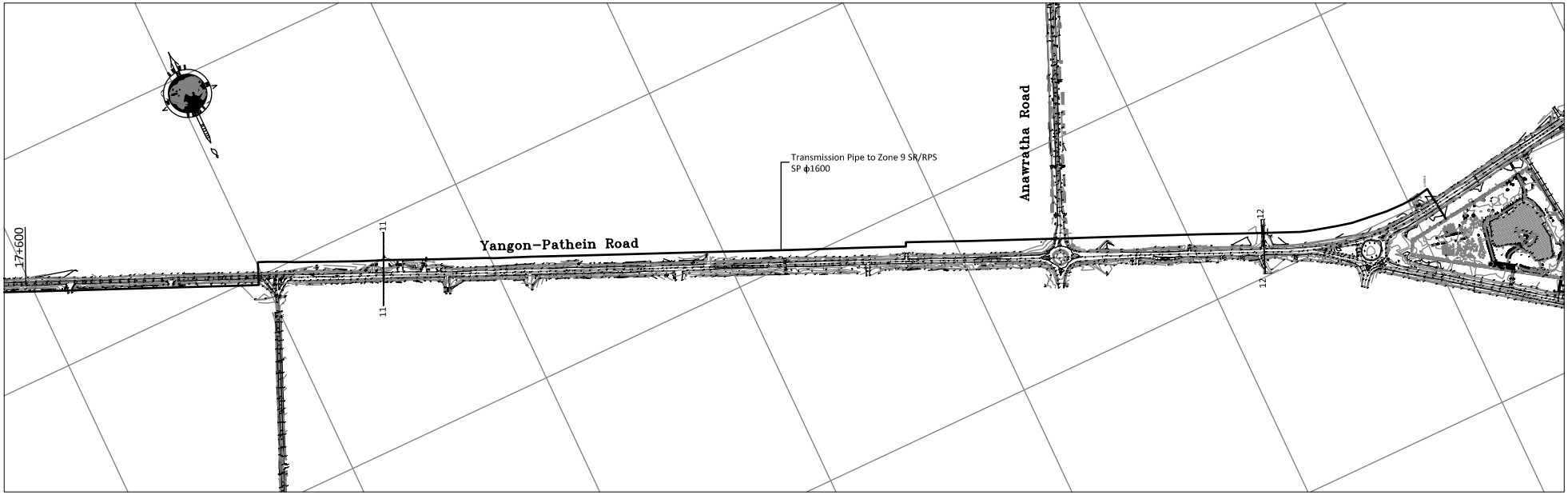
Scale = 1:10000



Longitudinal Section (5)

Scale: H=1:10000, V=2000

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT: Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	H=1:10000 H=1:2000
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE: Transmission Pipe to Zone 9 Plan and Longitudinal Section (5)	Drawing No.	TRM-PL-006
					Date	June 2016



Plan (6)

Scale = 1:10000

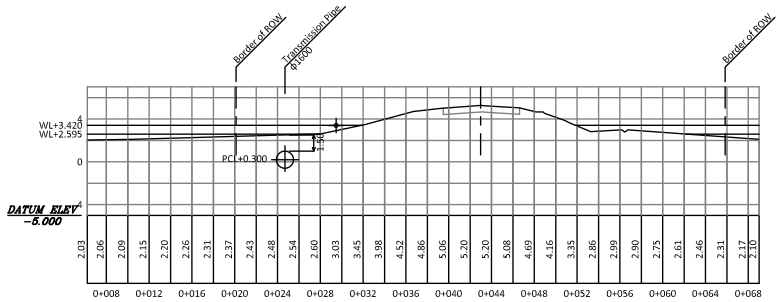
Observation Station	Ground Elevation (m)
17+600	4.47
	4.46
17+800	4.32
	4.37
18+000	4.49
	4.46
18+200	4.62
	5.01
18+400	4.82
	4.75
18+600	4.75
	4.76
18+800	4.77
	4.66
19+000	4.65
	4.90
19+200	4.94
	5.06
19+400	4.58
	4.58
19+600	4.88
	4.88
19+800	4.96
	4.91
20+000	5.14
	4.91
20+200	4.69
	4.89
20+400	4.82
	4.73
20+600	4.85
0+000	4.87
0+200	4.60
0+309.9	4.60
0+400	4.73

Pipe Dia./Class: Dia. ϕ1600/Steel Pipe

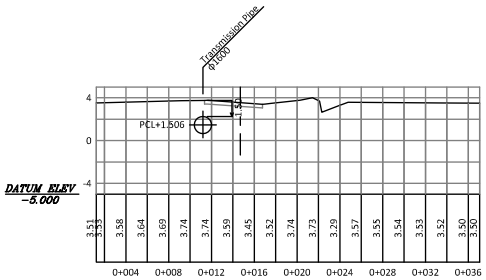
Longitudinal Section (6)

Scale: H=1:10000, V=1:2000

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale: H=1:10000 V=1:2000
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE	Transmission Pipe to Zone 9 Plan and Longitudinal Section (6)	Drawing No.: TRM-PL-007 Date: June 2016



3 - 3



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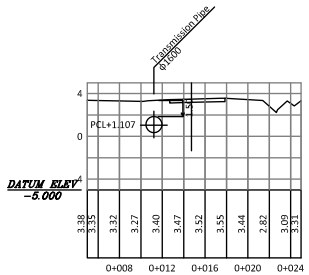

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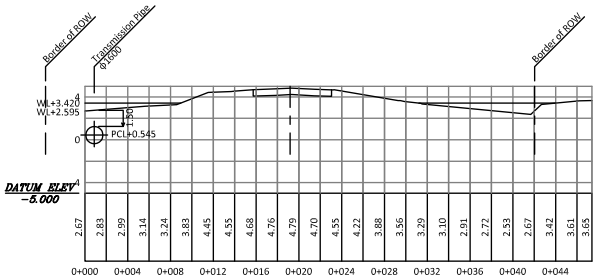
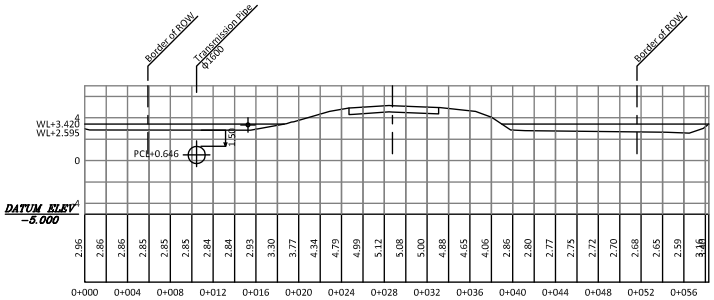


6 - 6



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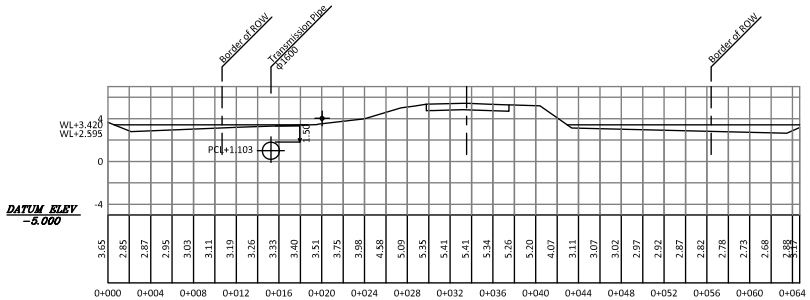
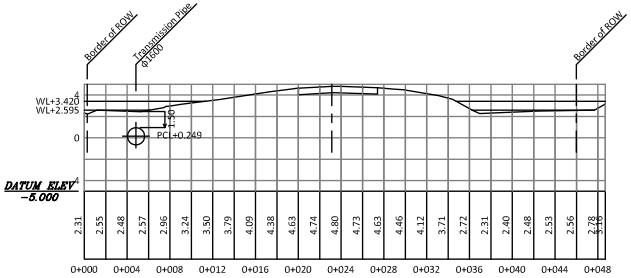


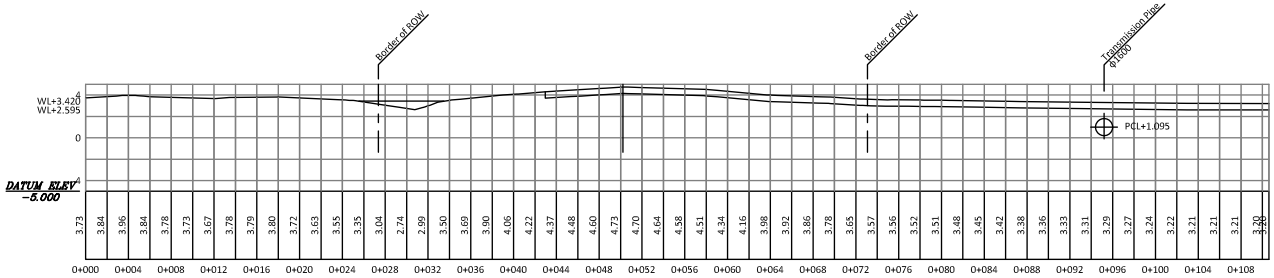
4 - 4

Note: WL+2.595 (Dry Season), WL+3.420 (Rainy Season)

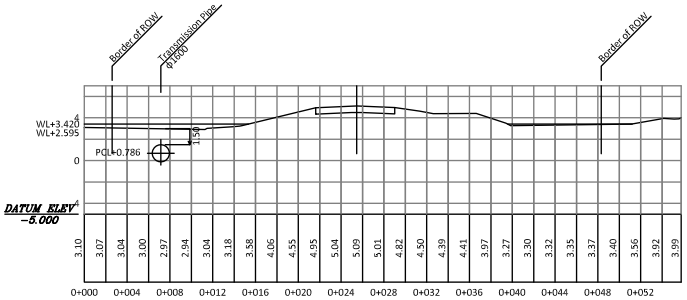
JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	1:500
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	Transmission Pipe to Zone 9 Cross Section (1)	Drawing No.	TRM-PL-008
-	-	-	-			Date	June 2016



9 - 9



12 - 12



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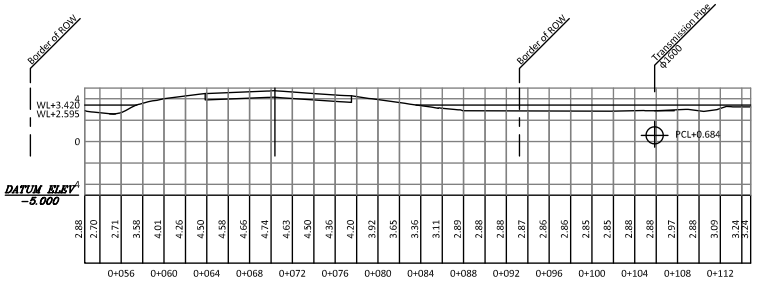
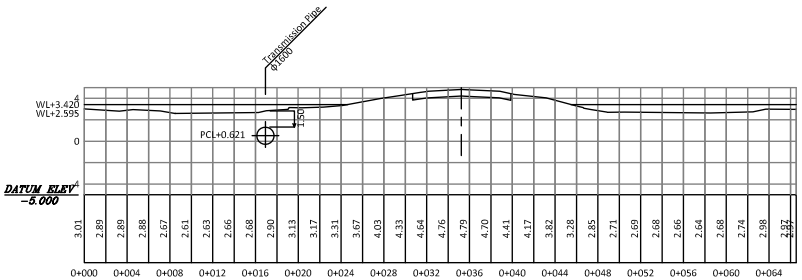
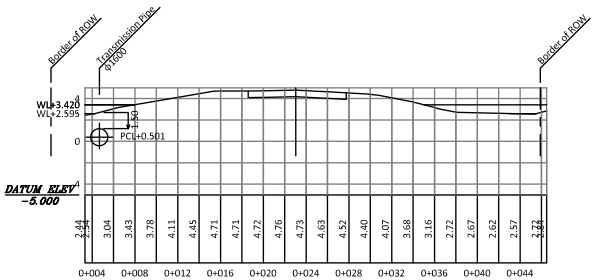


11 - 11



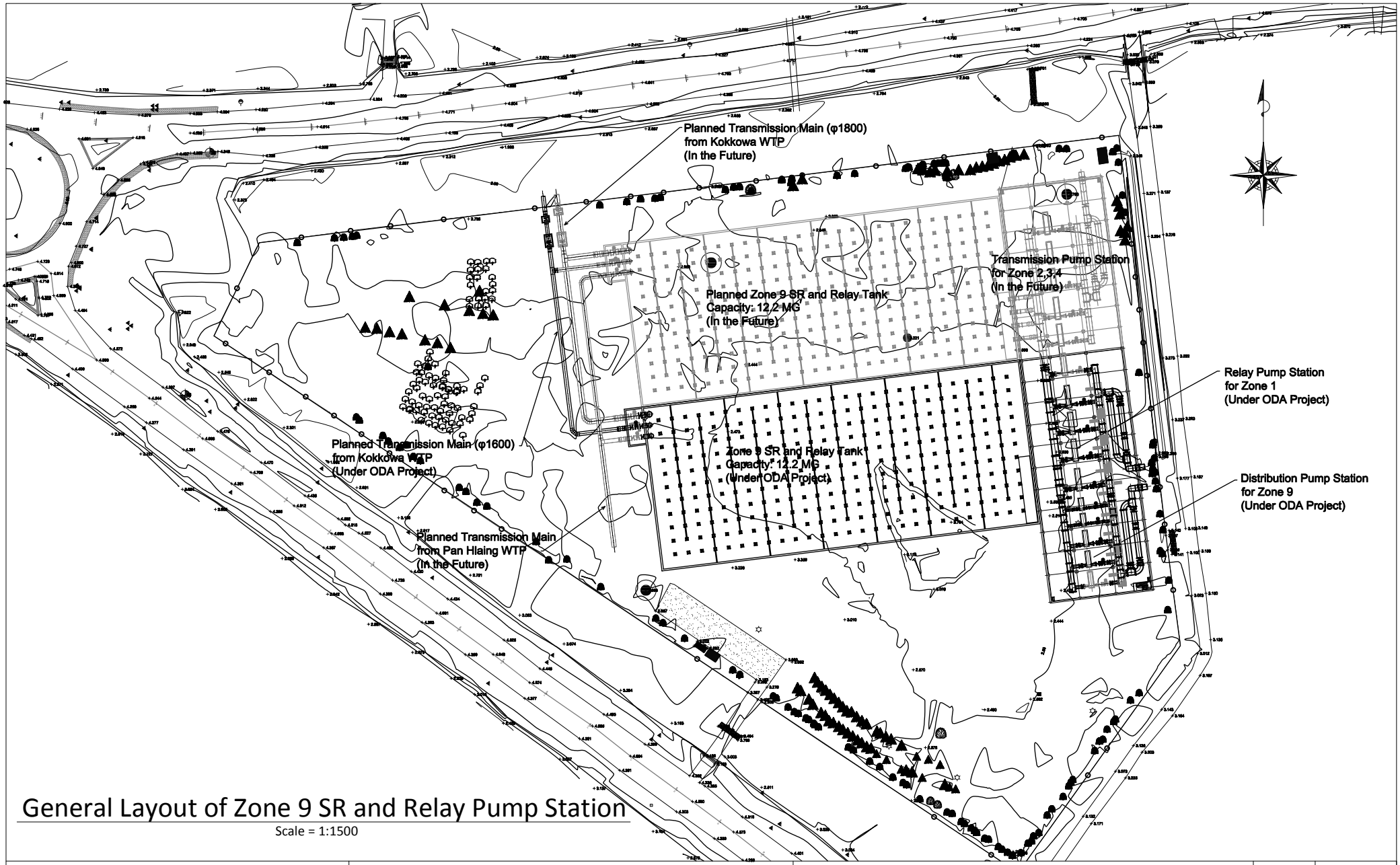
7 - 7



10 - 10

Note: WL+2.595 (Dry Season), WL+3.420 (Rainy Season)

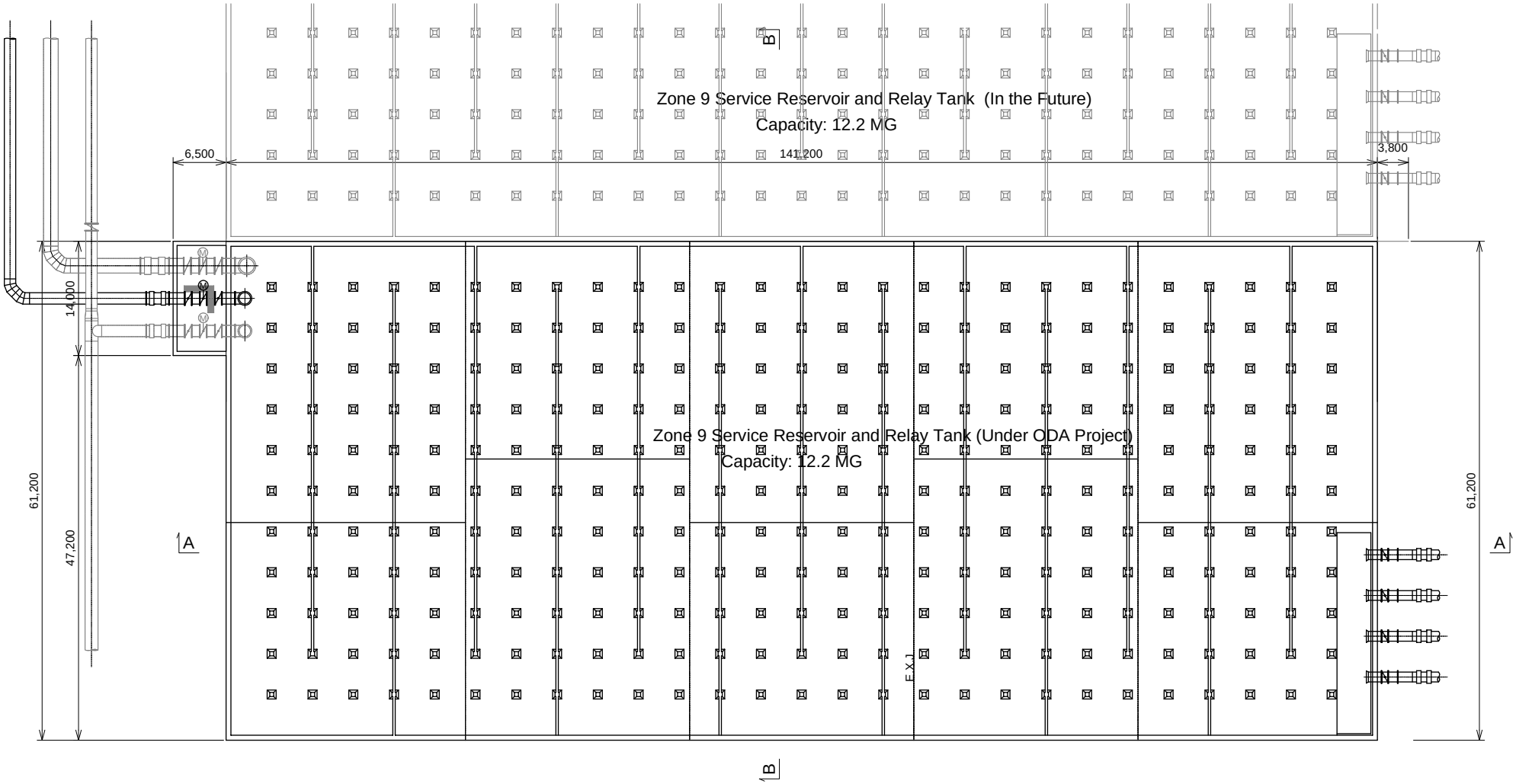
JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	1:500
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	Transmission Pipe to Zone 9 Cross Section (2)	Drawing No.	TRM-PL-009
-	-	-	-			Date	June 2016



General Layout of Zone 9 SR and Relay Pump Station

Scale = 1:1500

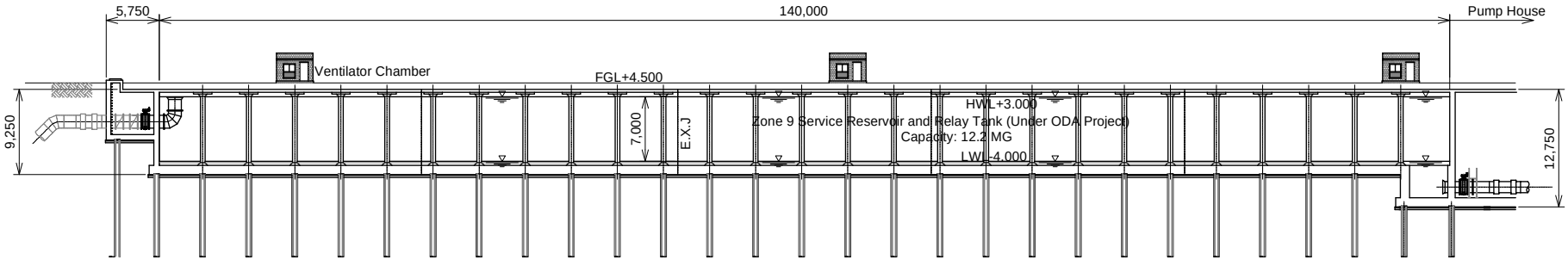
JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	1:1500
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	General Layout of Zone 9 SR and Relay Pump Station	Drawing No.	Z9SR-1
-	-	-	-			Date	June 2016



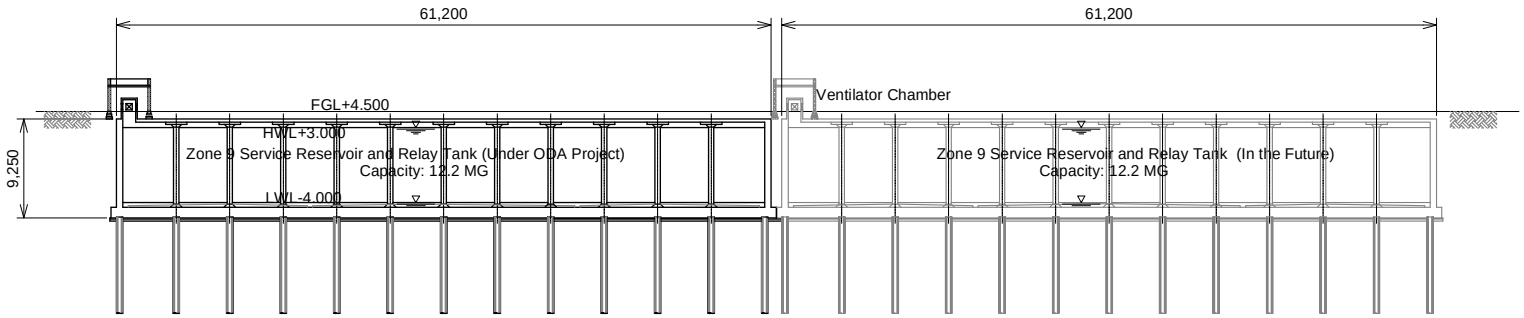
Plan of Zone 9 SR and Relay Pump Tank

Scale = 1:500

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale 1:500
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE Plan of Zone 9 SR and Relay Pump Tank	Drawing No. Z9SR-2
					Date June 2016



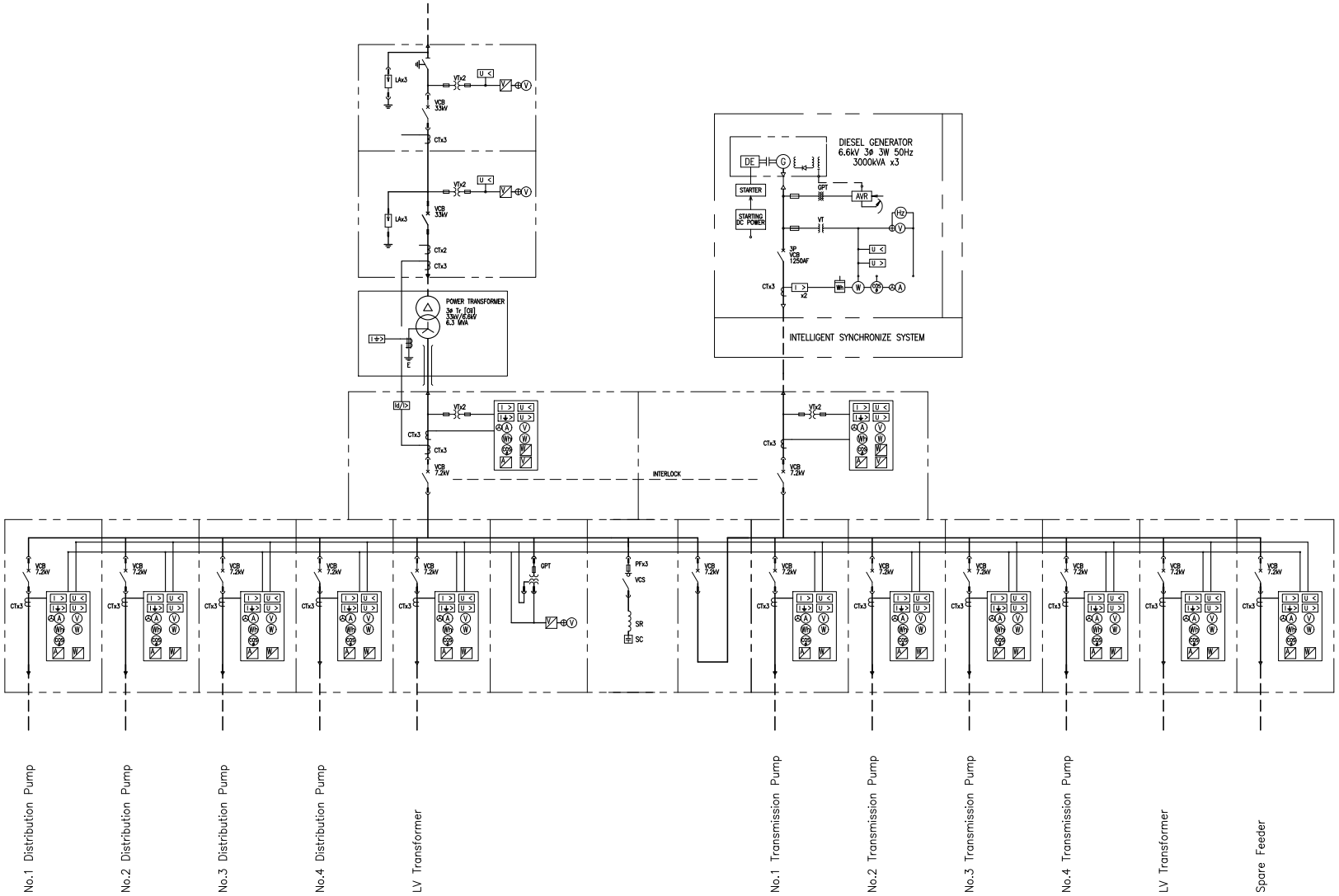
A - A Section



B - B Section

Section of Zone 9 SR and Relay Pump Tank Scale = 1:500

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	1:500
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE Section of Zone 9 SR and Relay Pump Tank	Drawing No.	Z9SR-3
					Date	June 2016

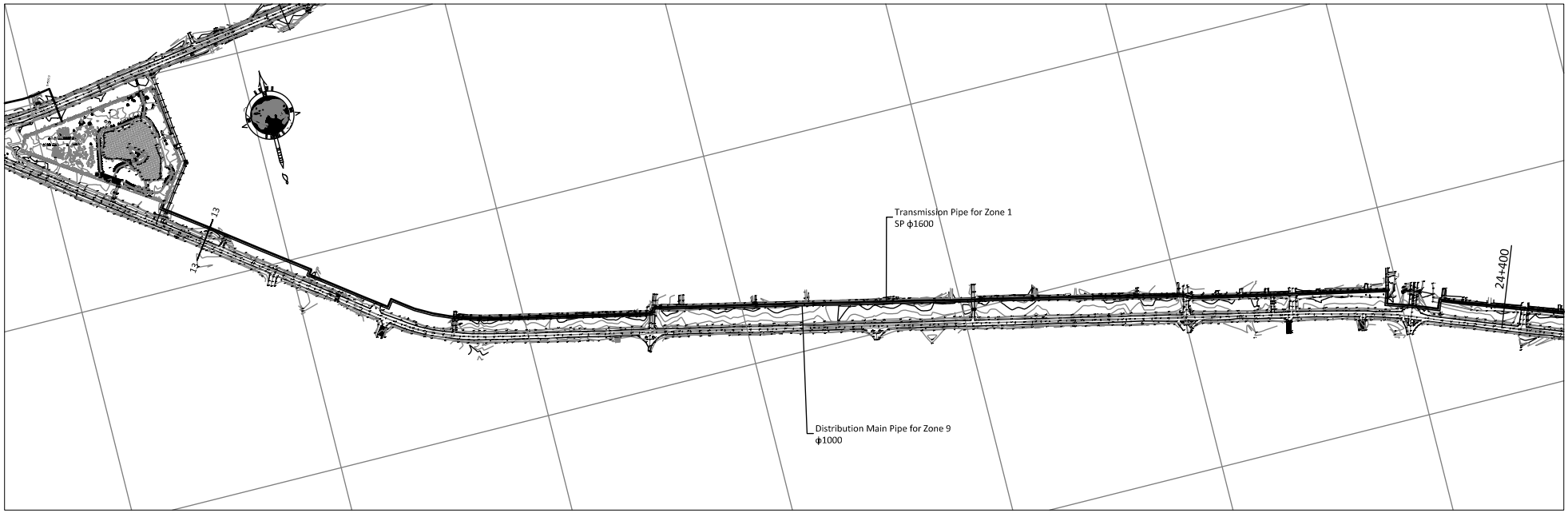


SYMBOL	LEGEND
VCT	VOLTAGE CURRENT TRANSFORMER
VD	VOLTAGE DETECTOR
DS	DISCONNECTING SWITCH
LA	LIGHTNING ARRESTER
PCS	PRIMARY CUTOUT SWITCH
GPT	GROUNDING POTENTIAL TARANSFORMER
VCB	VACUUM CIRCUIT BREAKER
PT	POTENTIAL TRANSFORMER
CT	CURRENT TRANSFORMER
SR	SERIES REACTOR
SC	STATIC CAPACITOR
Tr	TRANSFORMER
VCS	VACUUM CONTACTOR
ACB	AIR CIRCUIT BREAKER
MCCB	MOLDED CASE CIRCUIT BREAKER
PF	POWER FUSE
ZCT	ZERO PHASE CURRENT TRANSFORMER
V	VOLTMETER
A	AMMETER
Hz	FREQUENCY METER
W	WATT METER
Wh	WATT HOUR METER
COSø	POWER FACTOR METER
APFC	AUTOMATIC PF CONTROLLER
U >	AC OVER VOLTAGE RELAY
U <	UNDER VOLTAGE RELAY
I >	OVER CURRENT RELAY
I↓>	OVER CURRENT GROUNDING RELAY
I↓↓>	DIRECTIONAL GROUNDING RELAY
U	AC VOLTAGE RELAY
U↓>	GROUNDING OVER VOLTAGE RELAY
15	SPEED ADJUSTING DEVICE RELAY
60	VOLTAGE BALANCE RELAY
25A	SYNCHRONIZING RELAY
90R	AUTOMATIC VOLTAGE REGULATING RELAY
Id/I>	RATIO DIFFERENTIAL RELAY
⧄	TRANSDUCER
⊕	VOLTMETER SWITCH
⊕	AMMETER SWITCH
(N.O.)	NORMALLY OPEN
(N.C.)	NORMALLY CLOSE

Single Line Diagram for Zone 9

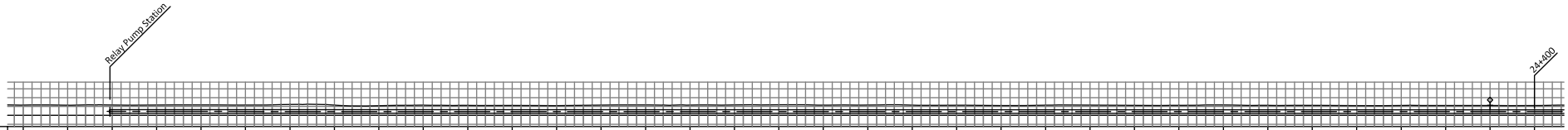
Note : The values are indicative, and detailed values shall be decided in detailed design.

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	NTS
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE	Zone 9 Single Line Diagram	Drawing No.	Z9SR-4
						Date	30 June 2016



Plan (7)

Scale = 1:10000



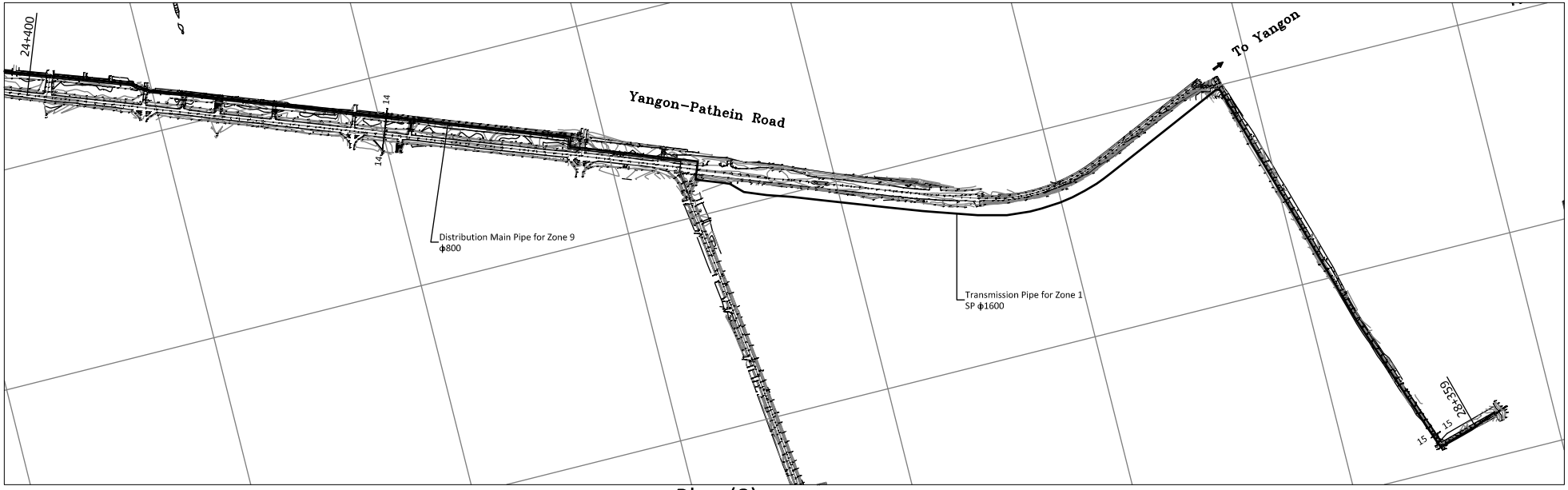
Observation Station	Ground Elevation (m)
21+000	4.65
	4.58
21+200	4.64
	4.71
21+400	4.71
	4.63
21+600	4.93
	4.61
21+800	4.38
	4.59
22+000	4.48
	4.46
22+200	4.37
	4.60
22+400	4.67
	4.66
22+600	4.67
	4.75
22+800	4.58
	4.63
23+000	4.66
	4.61
23+200	4.44
	4.58
23+400	4.59
	4.52
23+600	4.56
	4.70
23+800	4.48
	4.50
24+000	4.41
	4.49
24+200	4.48
	4.44
24+400	4.44

Pipe Dia./Class: Dia. ϕ1600/Steel Pipe

Longitudinal Section (7)

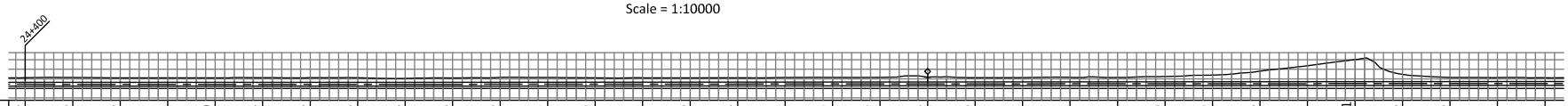
Scale: H=1:10000, V=2000

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale: H=1:10000 V=1:2000
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE	Transmission Pipe for Zone 1 Plan and Longitudinal Section (7)	Drawing No.: TRM-PL-010 Date: June 2016



Plan (8)

Scale = 1:10000



Observation Station	Ground Elevation (m)
24+400	4.44
	4.58
24+600	4.34
	4.42
24+800	4.40
	4.46
25+000	4.44
	4.46
25+200	4.18
	4.38
25+400	4.56
	4.55
25+600	4.39
	4.43
25+800	4.38
	4.44
26+000	4.55
	4.59
26+200	4.57
	4.76
26+400	4.46
	4.53
26+600	4.61
	4.53
26+800	4.96
	5.59
27+000	7.18
	9.51
27+200	12.01
	5.88
27+400	4.58
	4.53
27+600	4.45

Pipe Dia./Class: Dia. ϕ1600/Steel Pipe

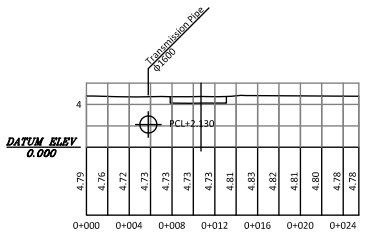
Observation Station	Ground Elevation (m)
27+600	4.45
	4.49
27+800	4.36
	4.18
28+000	4.26
	4.56
28+200	4.71
	4.67
28+400	4.22

Pipe Dia./Class: Dia. ϕ1600/Steel Pipe

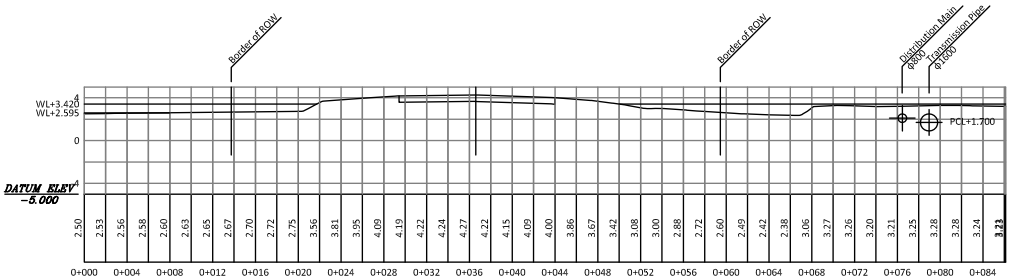
Longitudinal Section (8)

Scale: H=1:10000, V=2000

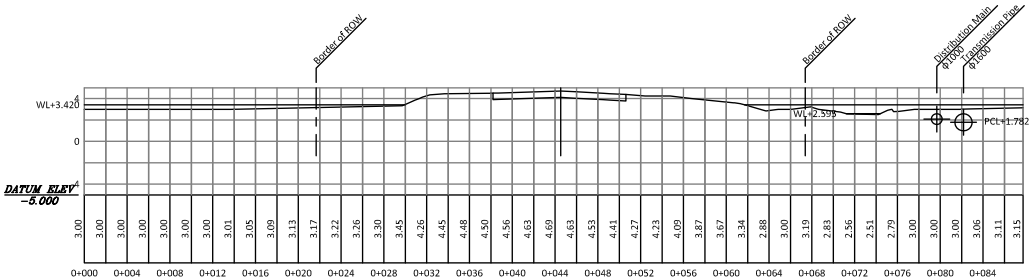
JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale: H=1:10000 V=1:2000
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	Transmission Pipe for Zone 1 Plan and Longitudinal Section (8)	Drawing No.: TRM-PL-011
-	-	-	-			Date: June 2016



15 - 15



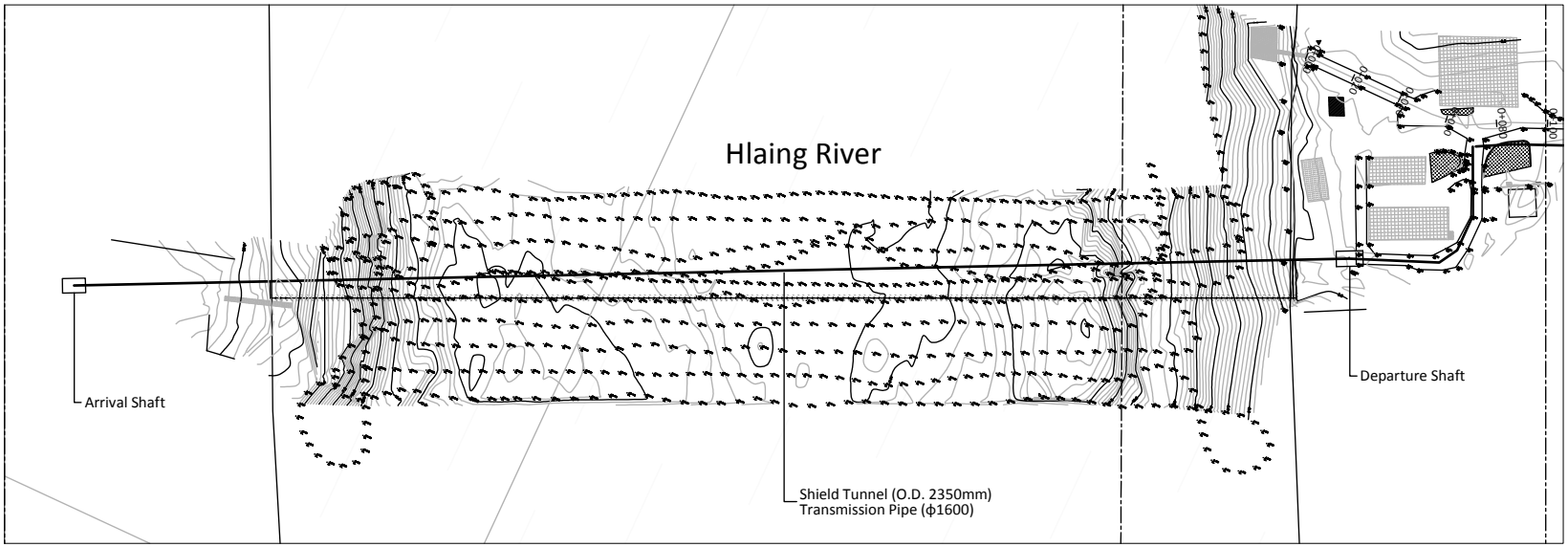
14 - 14



13 - 13

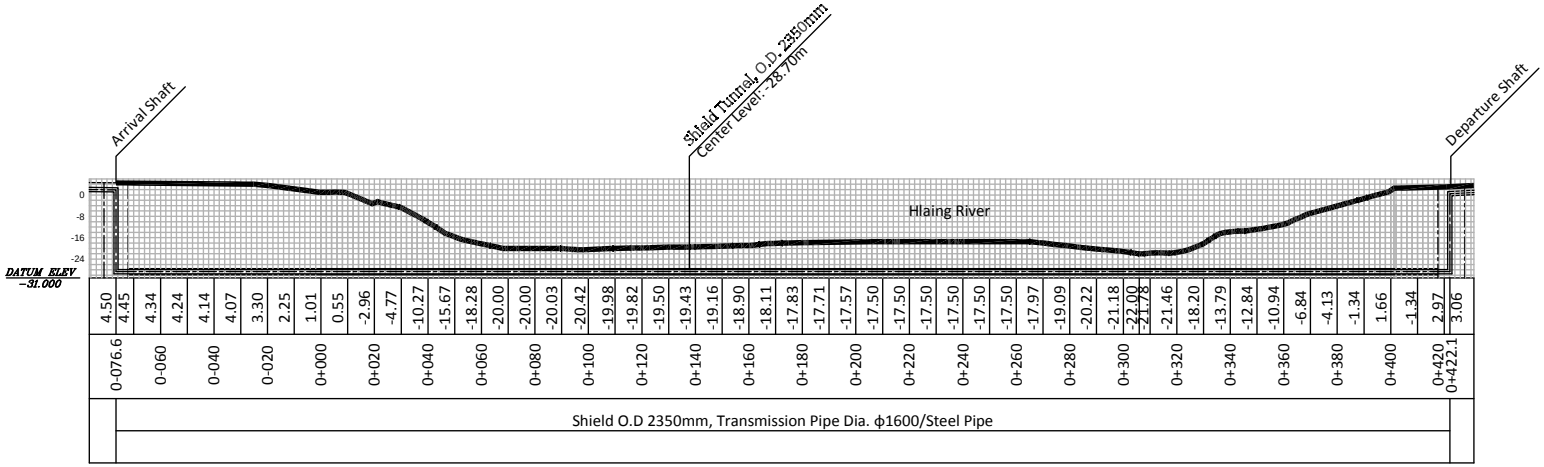
Note: WL+2.595 (Dry Season), WL+3.420 (Rainy Season)

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	1:500
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	Transmission Pipe for Zone 1 Cross Section (3)	Drawing No.	TRM-PL-012
-	-	-	-			Date	June 2016



Hlaing River Crossing Plan

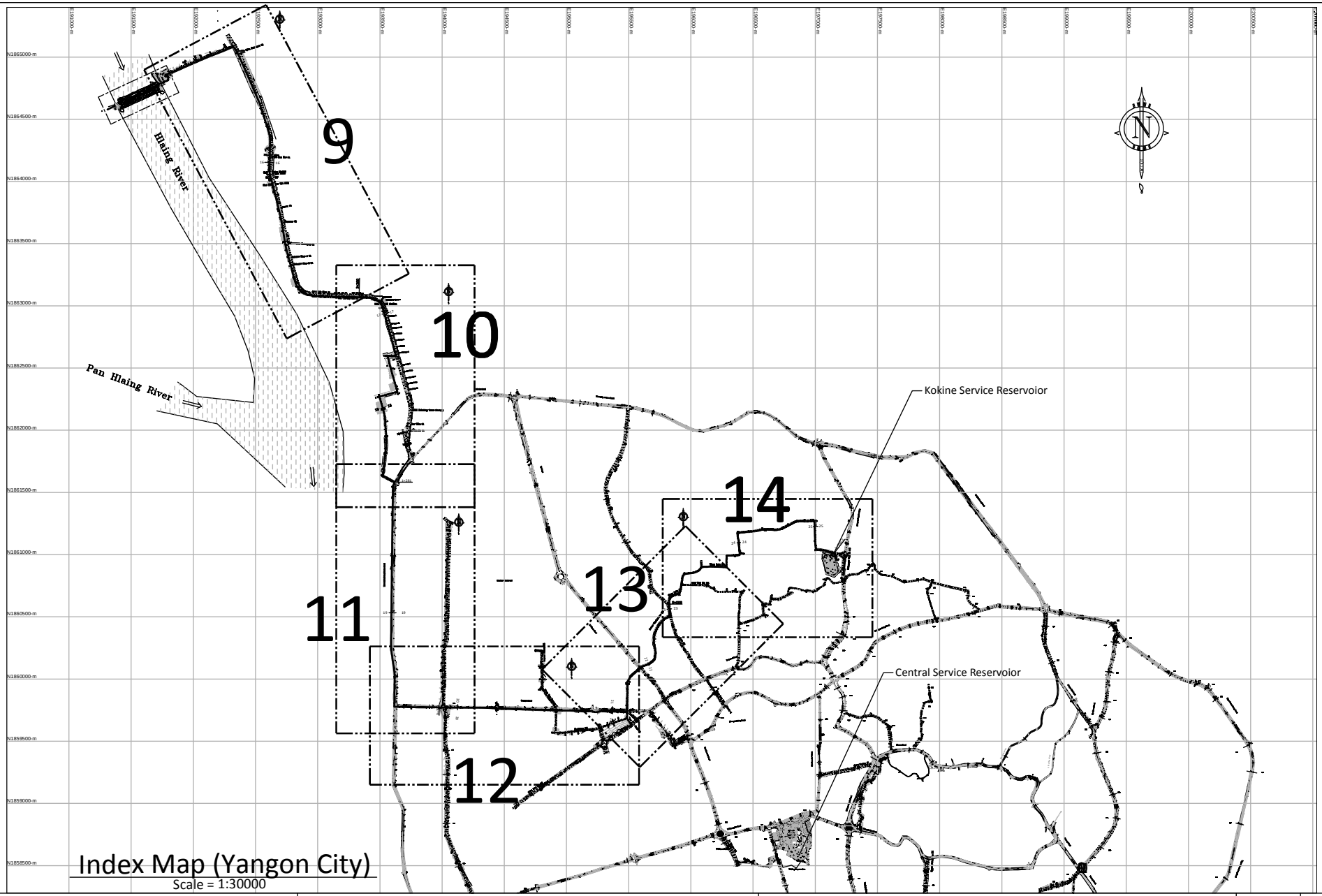
Scale = 1:1000



Hlaing River Crossing Longitudinal Section

Scale: H=V= 1:1000

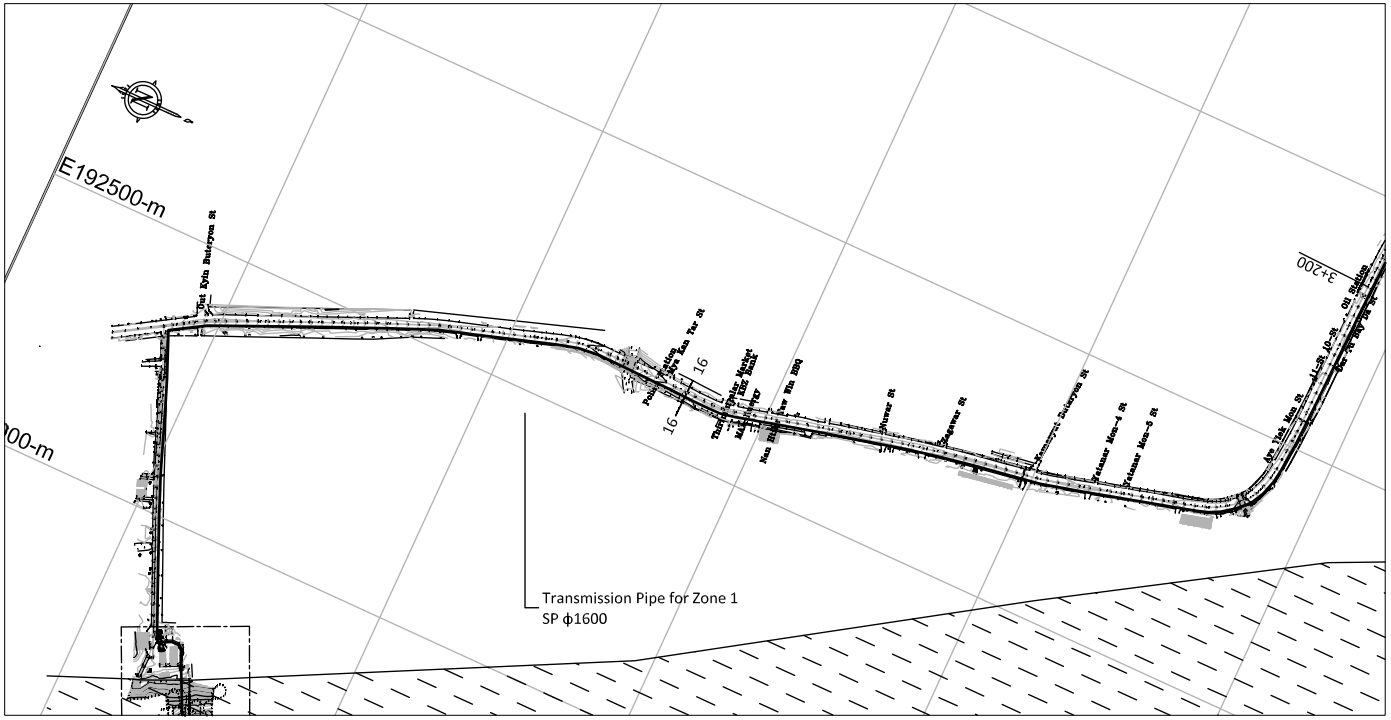
JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT: Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	1:1000
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE: Transmission Pipe for Zone 1 Hlaing River Crossing Plan and Longitudinal Section	Drawing No.	TRM-PL-013
					Date	June 2016



Index Map (Yangon City)

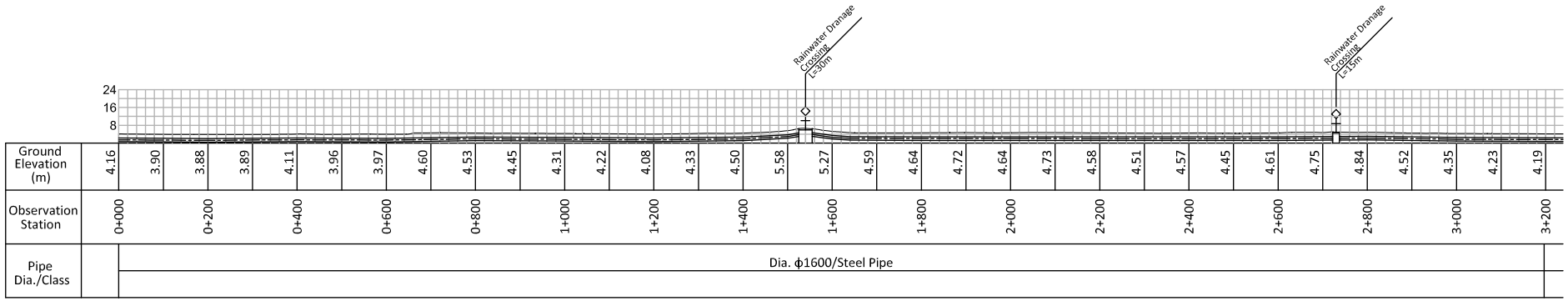
Scale = 1:30000

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	1:30000
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	Transmission Pipe for Zone 1 Index Map (Yangon City)	Drawing No.	TRM-PL-014
-	-	-	-			Date	June 2016



Plan (9)

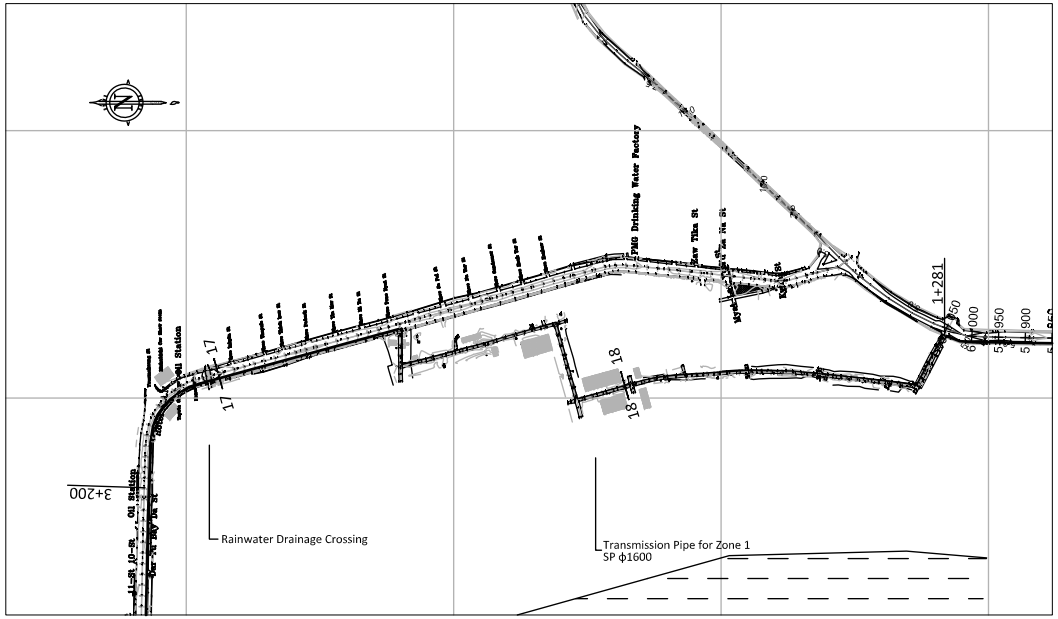
Scale = 1:10000



Longitudinal Section (9)

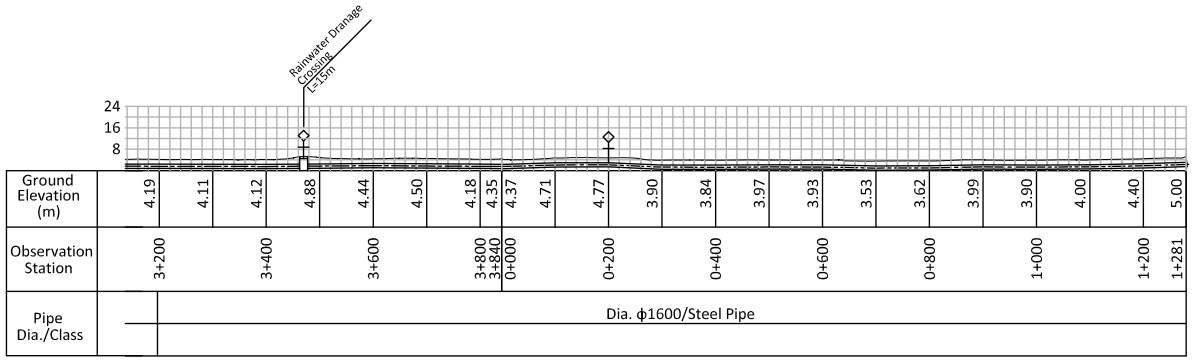
Scale : H= 1:10000, V=1:2000

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale: H=1:10000 V=1:2000
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE	Transmission Pipe for Zone 1 Plan and Longitudinal Section (9)	Drawing No.: TRM-PL-015 Date: June 2016



Plan (10)

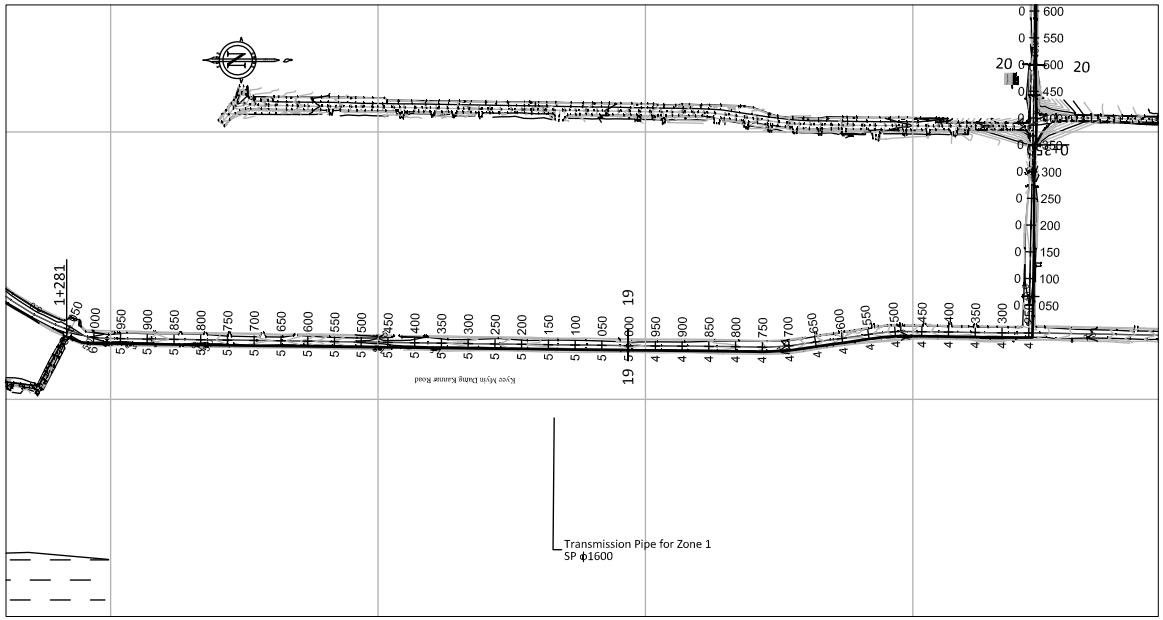
Scale = 1:10000



Longitudinal Section (10)

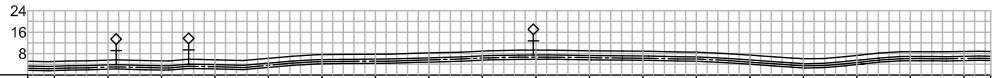
Scale: H=1:10000, V=1:2000

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT: Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	H=1:10000 V=1:2000
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE: Transmission Pipe for Zone 1 Plan and Longitudinal Section (10)	Drawing No.	TRM-PL-016
					Date	June 2016



Plan (11)

Scale = 1:10000

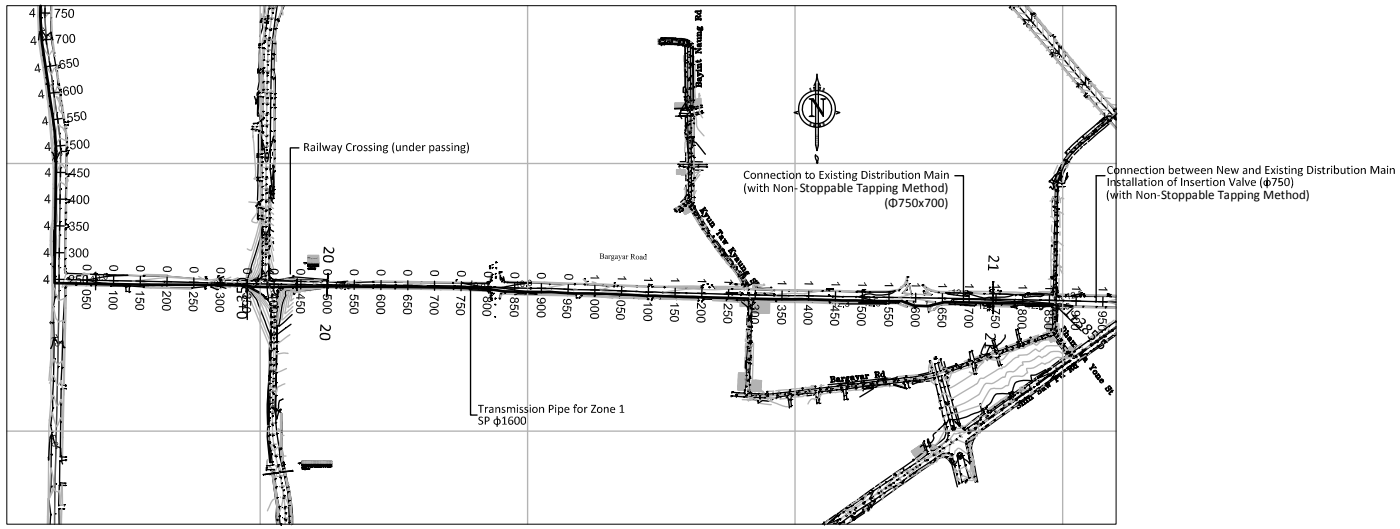


Ground Elevation (m)		5.11	5.05	5.53	5.25	5.69	6.24	7.57	7.73	8.22	8.93	9.26	9.07	8.87	8.56	7.42	6.06	7.29	8.71	8.75	8.78
Observation Station	1+281	6+050	6+000	5+800	5+600	5+400	5+200	5+000	4+800	4+600	4+400	4+250									
Pipe Dia./Class		Dia. ϕ1600/Steel Pipe																			

Longitudinal Section (11)

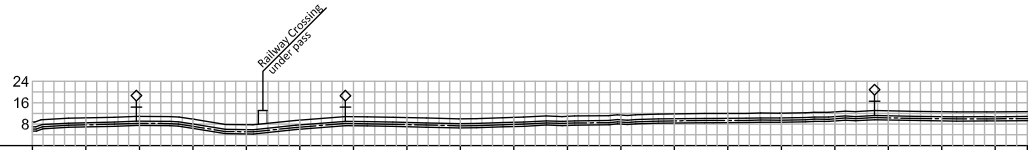
Scale: H=1:10000, V=1:2000

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	H=1:10000 V=1:2000
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	Transmission Pipe for Zone 1 Plan and Longitudinal Section (11)	Drawing No.	TRM-PL-017
-	-	-	-			Date	June 2016



Plan (12)

Scale = 1:10000

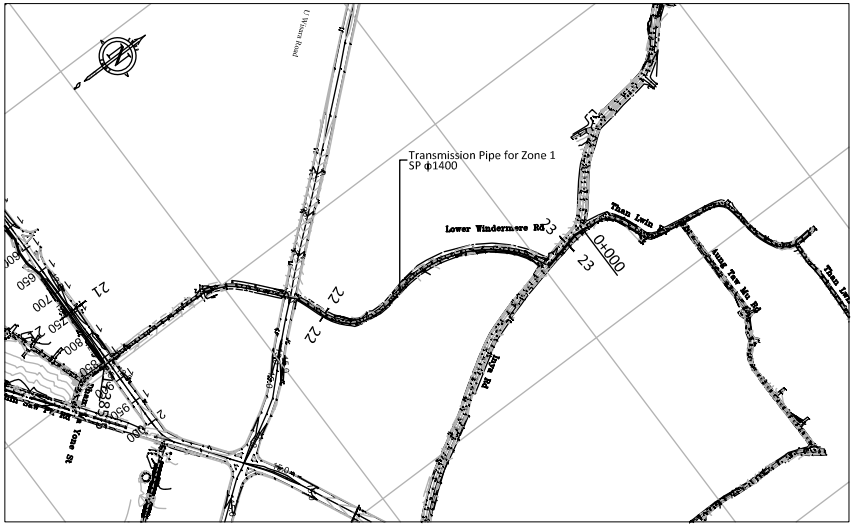


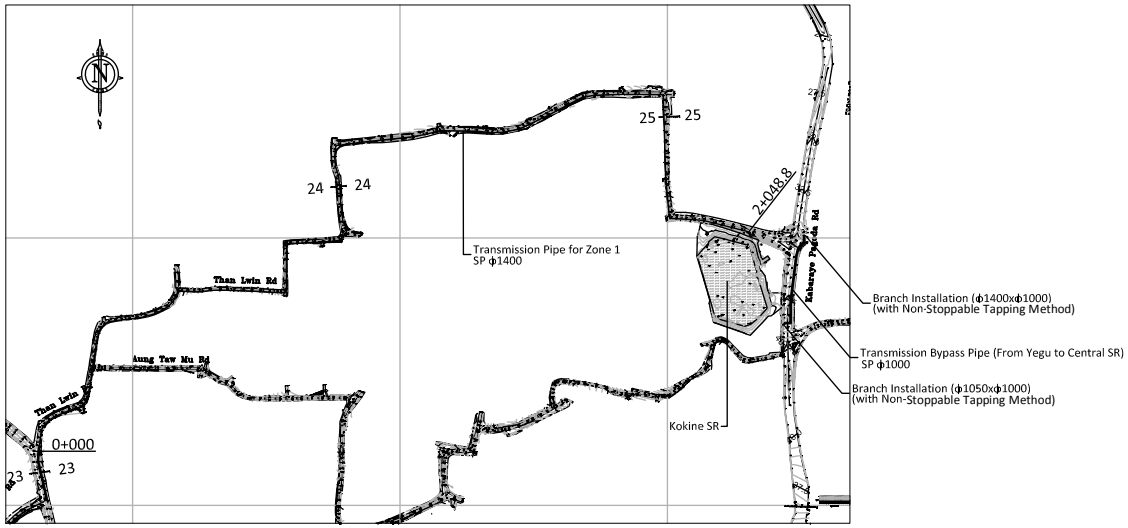
Ground Elevation (m)	8.78	10.34	10.88	9.85	7.75	9.51	10.81	10.43	9.97	10.50	10.93	11.42	11.81	11.97	12.10	12.58	12.96	12.62	12.57	12.69
Observation Station	0+000		0+200		0+400		0+600		0+800		1+000		1+200		1+400		1+600		1+800	1+860
Pipe Dia./Class		Dia. ϕ1600/Steel Pipe																		

Logitudial Section (12)

Scale: H=1:10000, V=1:2000

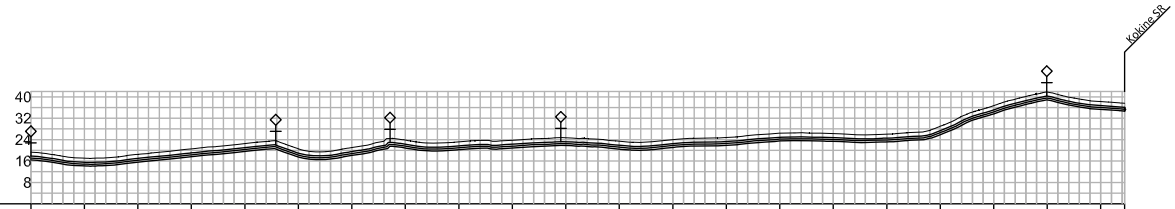
JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT: Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	H=1:10000 V=1:2000
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE: Transmission Pipe for Zone 1 Plan and Longitudinal Section (12)	Drawing No.	TRM-PL-018
					Date	June 2016


Transmission Pipe for Zone 1
SP ϕ1400
Lower Windermere Rd
Than Lwin
0+000
23
22
22
21
Hlaing Tar Ya Rd
Hlaing Tar Ya Rd
Than Lwin
Hlaing Tar Ya Rd
Hlaing Tar Ya Rd
Hlaing Tar Ya Rd



Plan (14)

Scale = 1:10000

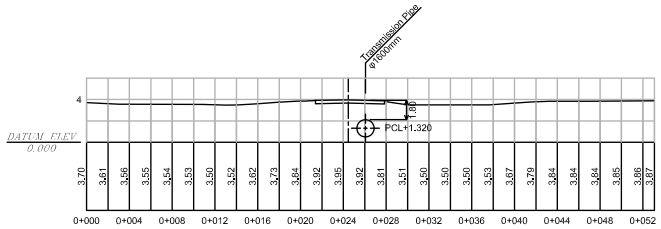


Ground Elevation (m)	19.32	17.07	18.48	20.54	22.52	20.55	21.04	23.83	23.15	23.77	24.68	23.38	24.00	24.78	26.42	26.24	26.06	28.98	36.69	41.77	38.21	37.56	37.56
Observation Station	0+000		0+200		0+400		0+600		0+800		1+000		1+200		1+400		1+600		1+800		2+000	2+040	2+048.8
Pipe Dia./Class		Dia. ϕ1400/Steel Pipe																					

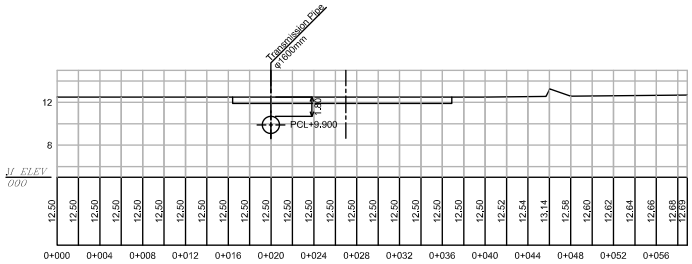
Longitudinal Section (14)

Scale: H=1:10000, V=1:2000

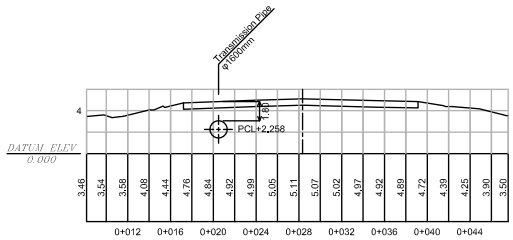
JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale: H=1:10000 V=1:2000
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE	Transmission Pipe for Zone 1 Plan and Longitudinal Section (14)	Drawing No.: TRM-PL-020 Date: June 2016



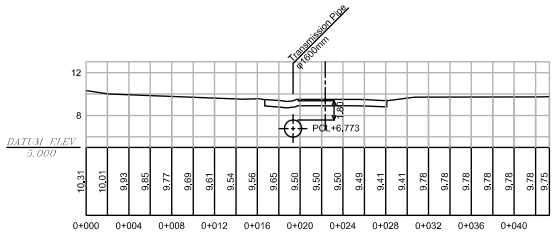
18 - 18



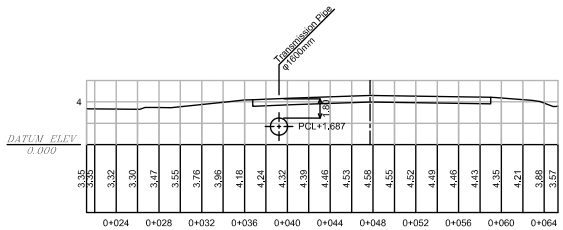
21 - 21



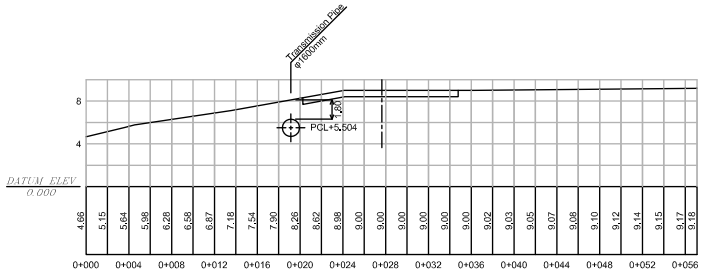
17 - 17



20 - 20

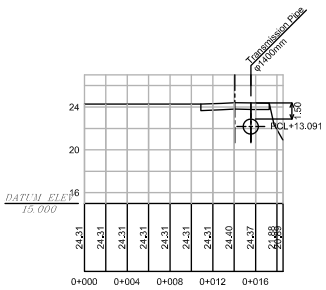


16 - 16

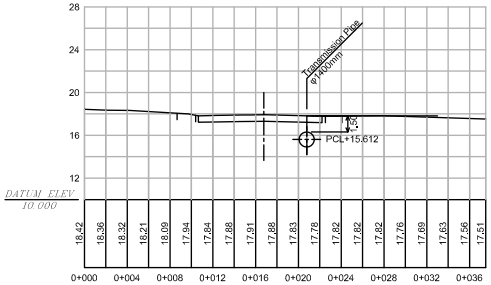


19 - 19

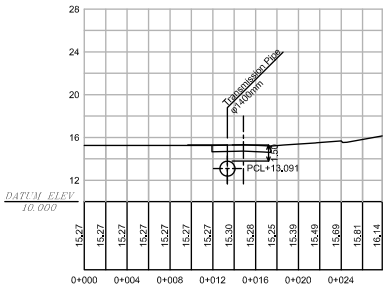
JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	1:500
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE Transmission Pipe for Zone 1 Cross Section (4)	Drawing No.	TRM-PL-021
					Date	June 2016



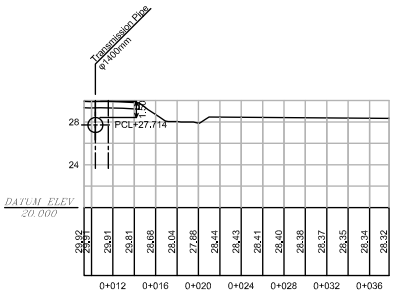
24 - 24



23 - 23

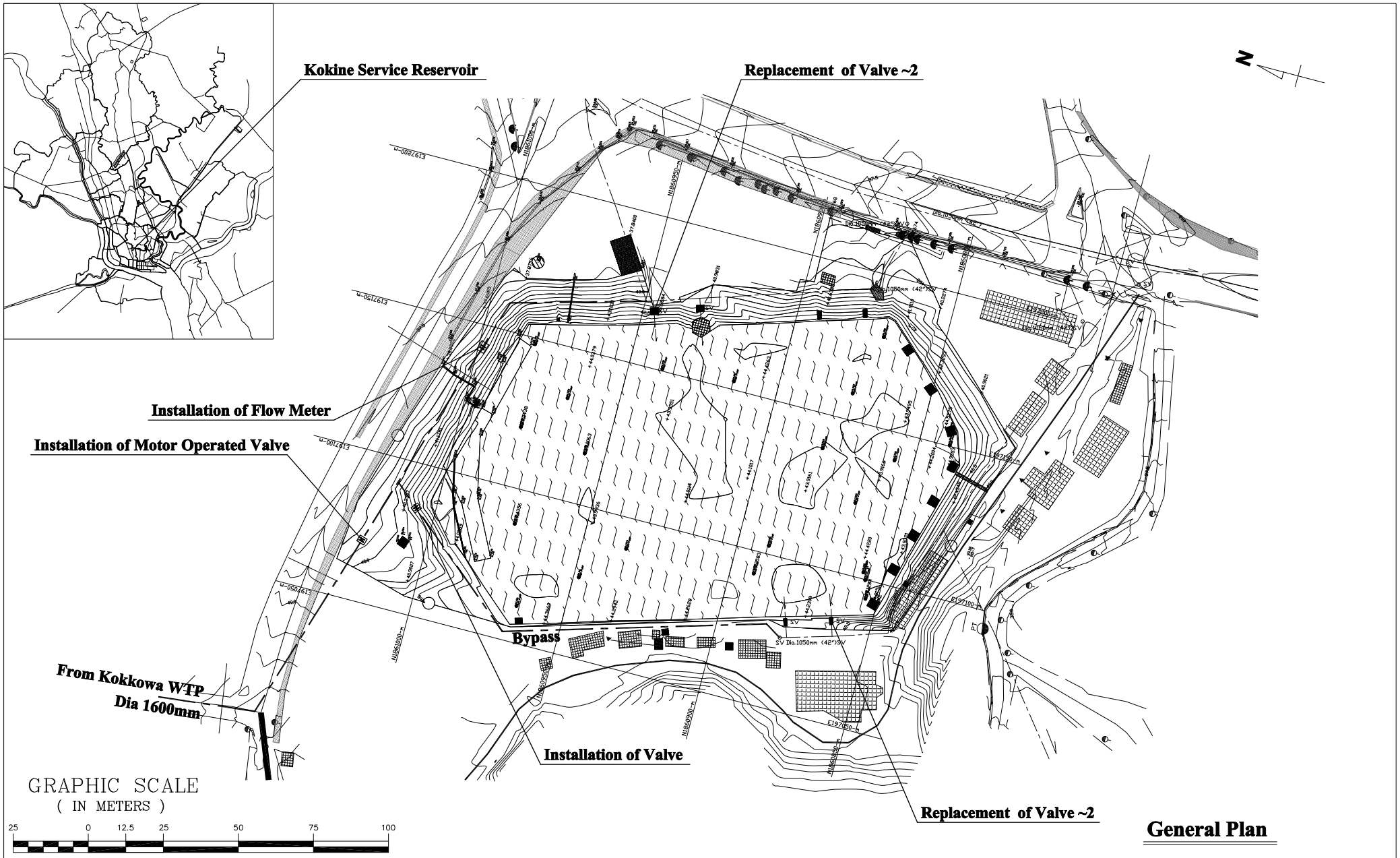


22 - 22



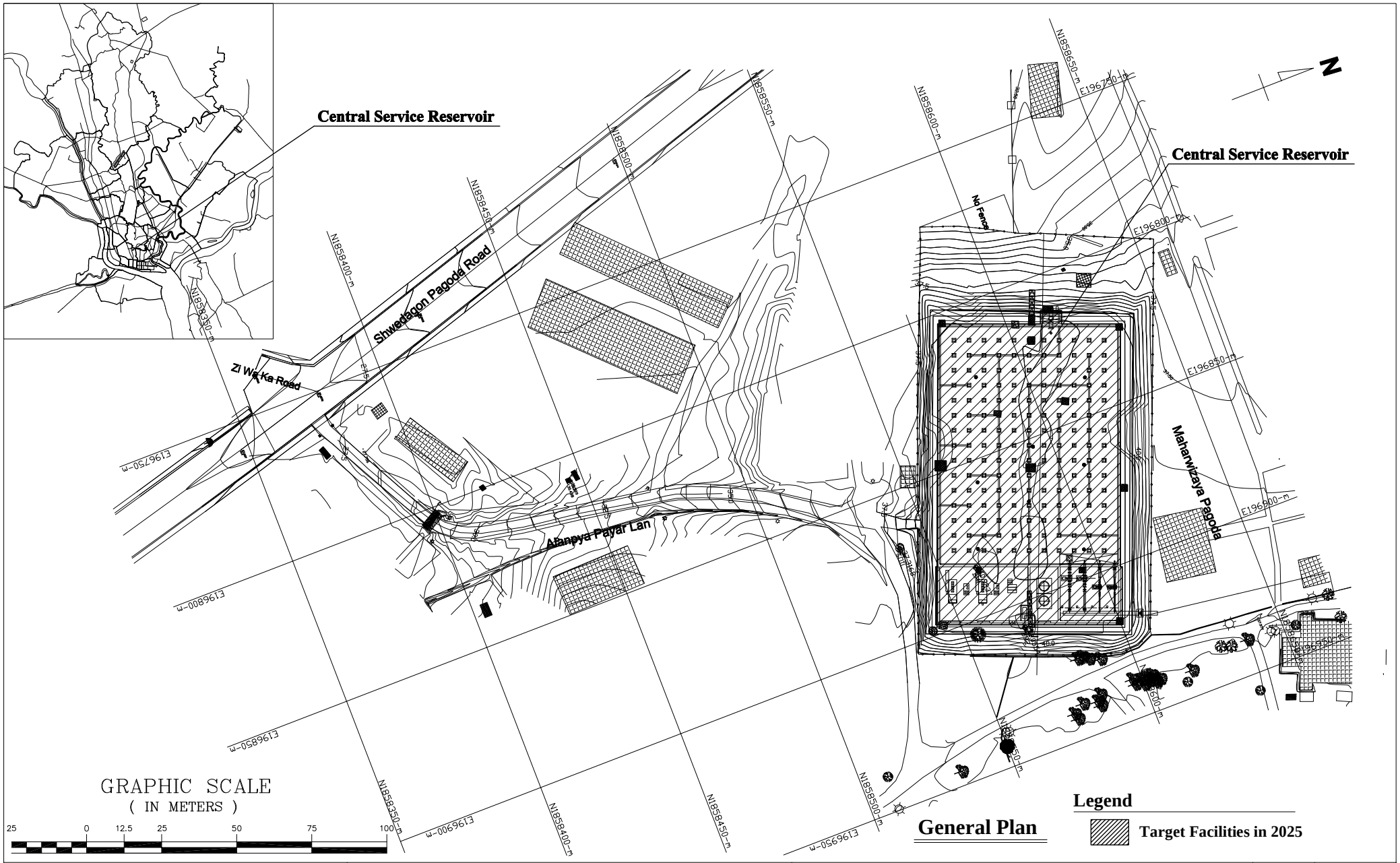
25 - 25

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT: Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	1:500
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE: Transmission Pipe for Zone 1 Cross Section (5)	Drawing No.	TRM-PL-022
					Date	June 2016

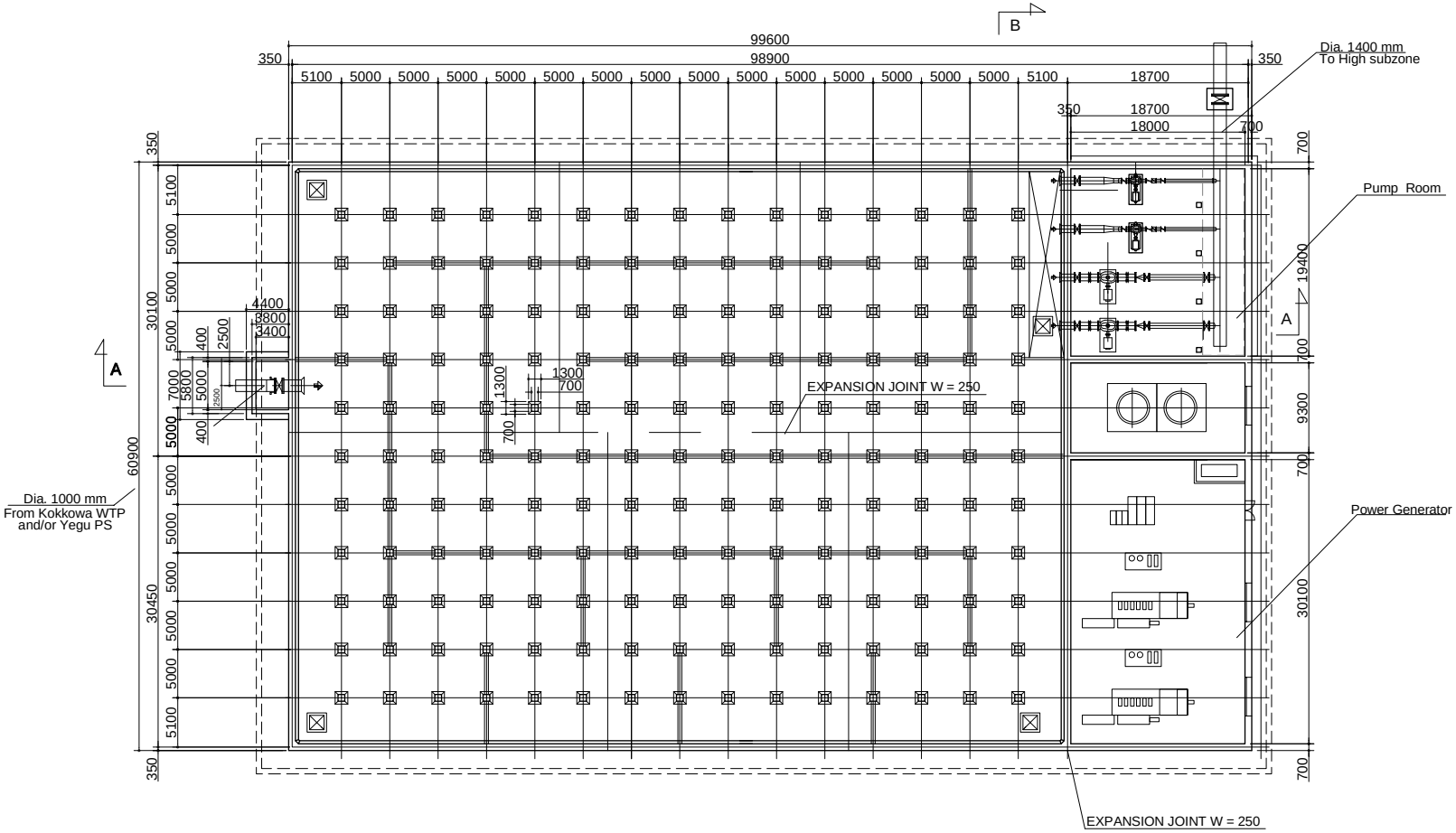


General Plan

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	A3; S=1:1200
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	Kokine Service Reservoir General Plan	Drawing No.	KSR-1
-	-	-	-			Date	April 2016



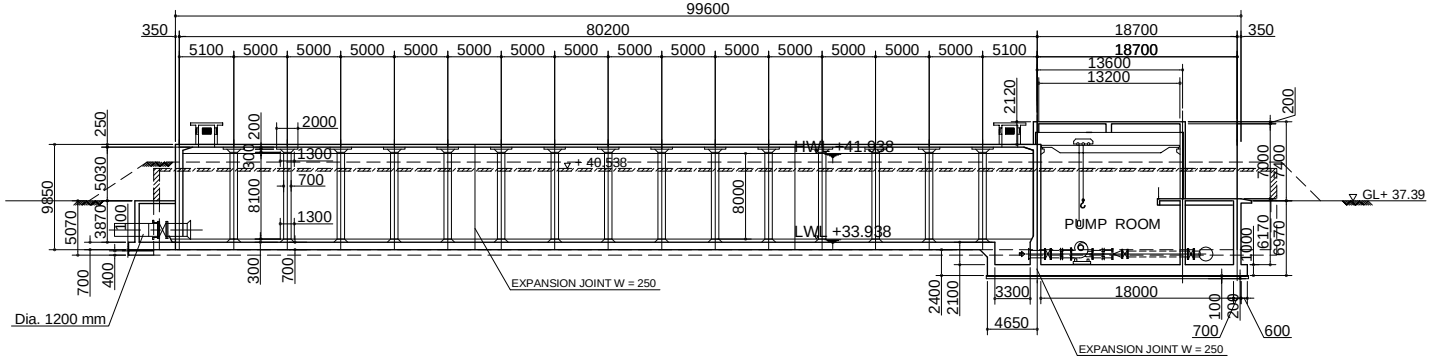
JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	A3; S=1:1200
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	Central Service Reservoir General Plan	Drawing No.	CSR-1
-	-	-	-			Date	April 2016



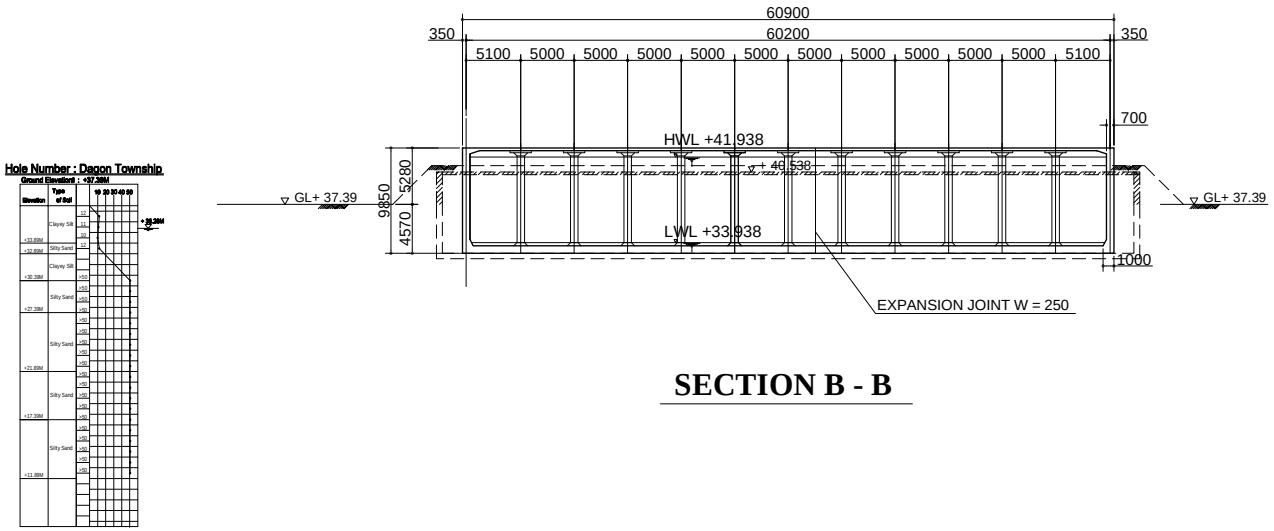
Plan

Note : The values are indicative, and detailed values shall be decided in detailed design.

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	**Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)**	Scale	**A3; S=1:500**
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	**Central Service Reservoir Plan**	Drawing No.	CSR-2
-	-	-	-			Date	**April 2016**

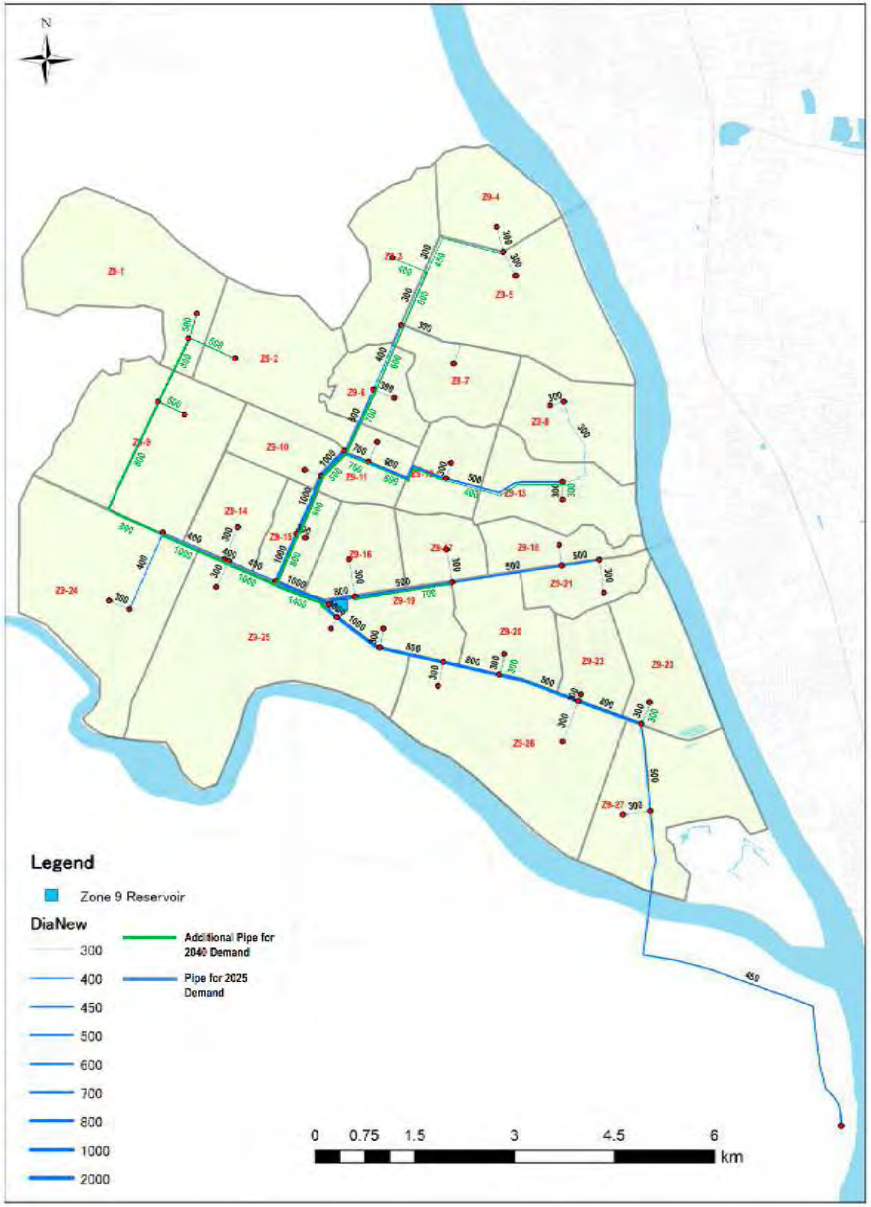


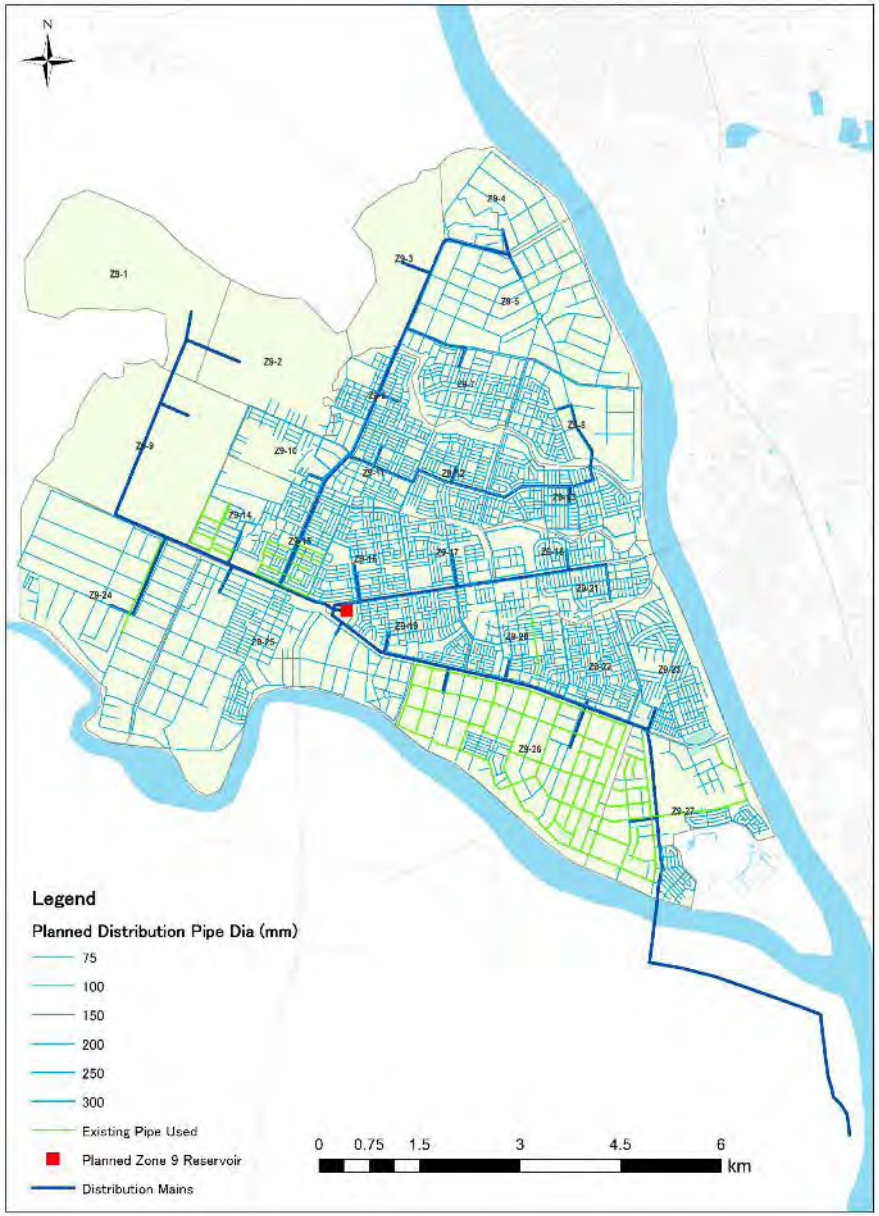
SECTION A - A



SECTION B - B

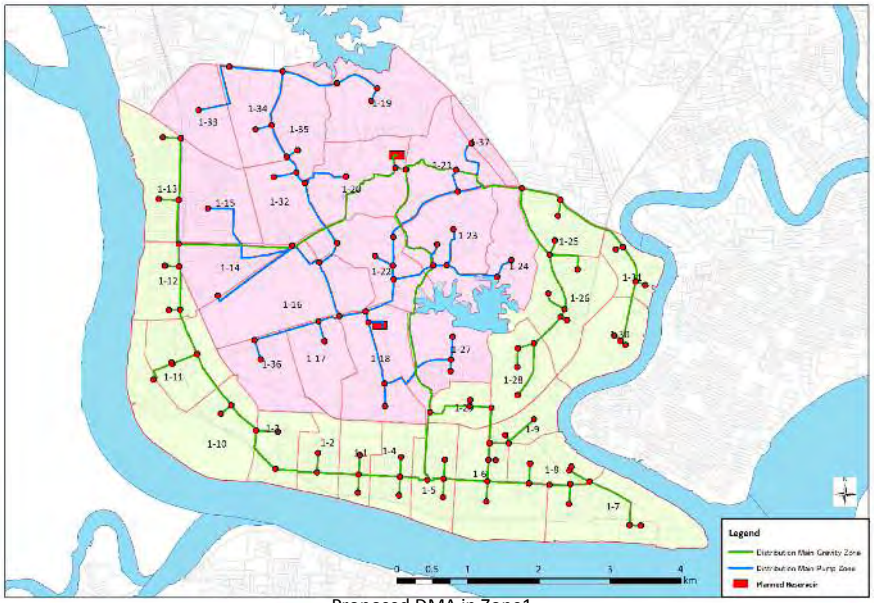
JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	**Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)**	Scale	**A3; S=1:500**
DRAWN BY -	DESIGNED BY -	CHECKED BY -	APPROVED BY -	TITLE	**Central Service Reservoir Section**	Drawing No. Date	CSR-3 **April 2016**



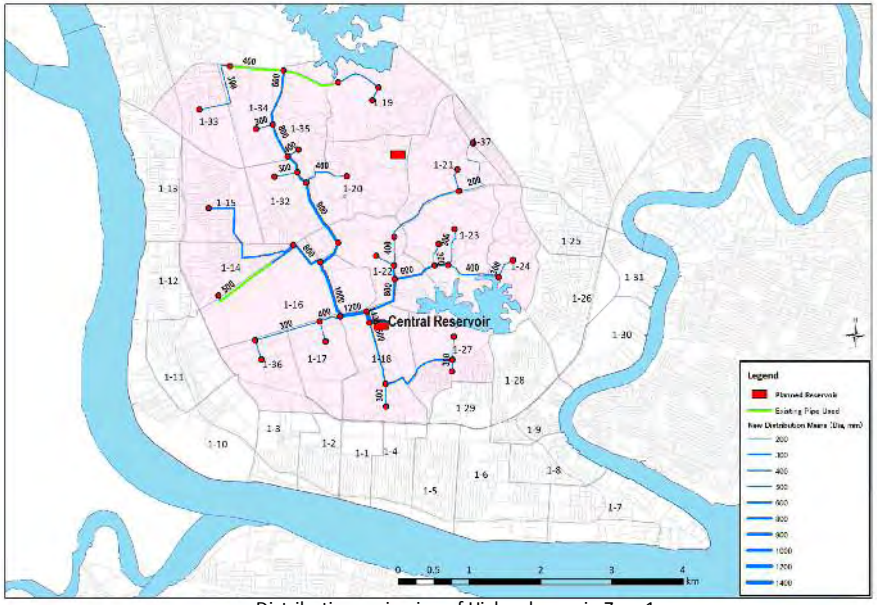


Note : The values are indicative, and detailed values shall be decided in detailed design.

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	A3; None
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	Zone 9 in 2025 General Plan of Distribution Main, DMA and Distribution Pipe	Drawing No.	DPL-Z9
-	-	-	-			Date	June 2016

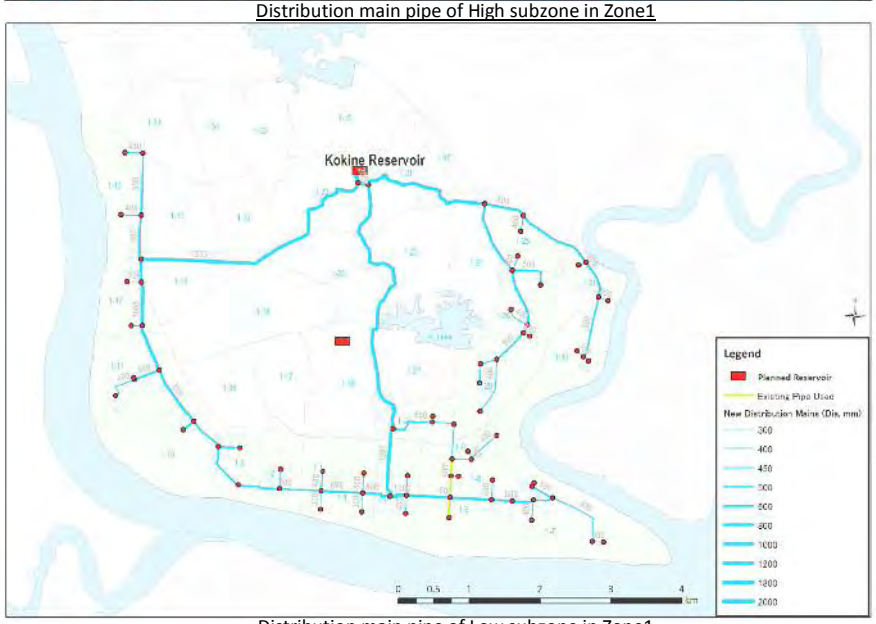


Proposed DMA in Zone1



Distribution main pipe of High subzone in Zone1

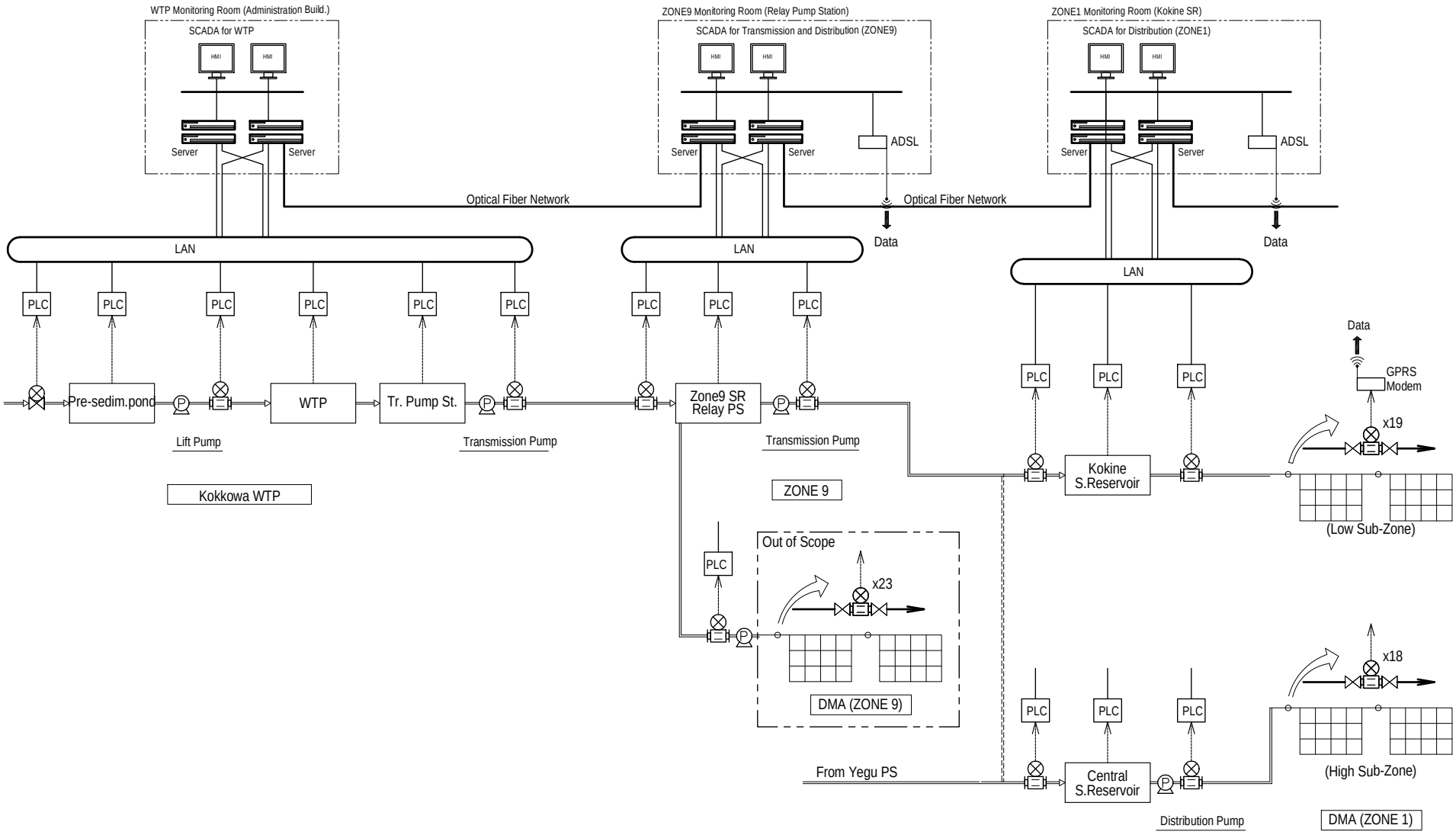
Distribution pipe-network in Zone1



Distribution main pipe of Low subzone in Zone1

Note : The values are indicative shall be decided in detailed design.

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	A3; None
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	Zone 1 in 2025 General Plan of Distribution Main, DMA and Distribution Pipe	Drawing No.	DPL-Z1
-	-	-	-			Date	June 2016



Flow Monitoring Diagram

Note : The values are indicative, and detailed values shall be decided in detailed design.

JAPAN INTERNATIONAL COOPERATION AGENCY YANGON CITY DEVELOPMENT COMMITTEE		JICA Study Team ENGINEERING DEPARTMENT (WATER & SANITATION)		PROJECT	Preparatory Survey for Greater Yangon Water Supply Improvement Project Phase II (Kokkowa River)	Scale	NTS
DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY	TITLE	General Flow Monitoring Diagram	Drawing No.	SCADA
-	-	-	-			Date	30 June 2016