

LEGEND			
SYMBOL	NAME	SYMBOL	NAME
—	SEWAGE WATER	⊗	MOTOR OPERATED BALL VALVE
— F —	STRAINER WATER	⊗	BACK PRESSURE VALVE
— D —	DRAINAGE WATER	⊗	RELIEF VALVE
— C —	CHEMICAL	⊗	DIAPHRAGM VALVE
— SE —	SEDIMENT	⊗	PULSATION DAMPER
— SC —	SCUM	⊗	Y STRAINER
—	CLEAR WATER	⊗	SPRINKLER STOP COCK
⊗	BALL VALVE	⊗	
⊗	GATE VALVE	⊗	PUMP
⊗	CHECK VALVE	⊗	MOTOR
⊗	MOTOR OPERATED VALVE		

EQUIPMENT No.	M02-09	M02-10	M02-11	M02-12	M02-13
EQUIPMENT NAME	Scum Screen	Screenings Conveyor	Coarse Screen	Bypass Gate	Grit Chamber Outlet Weir
SPECIFICATIONS	Automatic Drum Screen OP. Less than 2mm	Screw Conveyor (Shaftless) W200mm x L5.5m	Manual Bar Screen W1600mm x H1900m x OP.100mm	Manual Operated Cast Iron Gate W 500mm x H 500m	Fixed Weir Plate W 1.5 m
MOTOR (kW)	0.4kW	2.2kW	—	—	—
QUANTITY + (STANDBY)	1	1	2	1	1
REMARKS					

EQUIPMENT No.	M02-01-01/02	M02-02-01/02	M02-03-01/02	M02-04-01/02	M02-05-01/02	M02-06	M02-07	M02-08-01/02
EQUIPMENT NAME	Grit Chamber Inlet Gate	Medium Screen	Grit Collector	Grit Pump	Sump Drain Pump	Grit Separator	Oil Skimmer	Oil Discharge Pump
SPECIFICATIONS	Manual Operated Cast Iron Gate W500mm x H750mm	Automatic Drum Screen Dia.1400mm x OP.20mm	Vortex Type Dia. 1600 mm	Centrifugal Sludge Pump Dia.80mm x 0.5m ³ /min x 7m	Submersible Sludge Pump Dia.80mm x 0.3m ³ /min x 6m	Screw Conveyor Type 0.5m ³ /min	Manual Operated Skimmer Dia.200mm x L 4200mm	Submersible Sludge Pump Dia.65mm x 0.2m ³ /min x 6m
MOTOR (kW)	—	2.2 kW	0.75kW	2.2kW	1.5kW	0.75kW	—	0.75kW
QUANTITY + (STANDBY)	2	2	2	2	1+(1)	1	1	1+(1)
REMARKS								

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP: Process Flow Diagram 1/5

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
 PROJECT MANAGEMENT UNIT (PMU)
 JAPAN INTERNATIONAL COOPERATION AGENCY

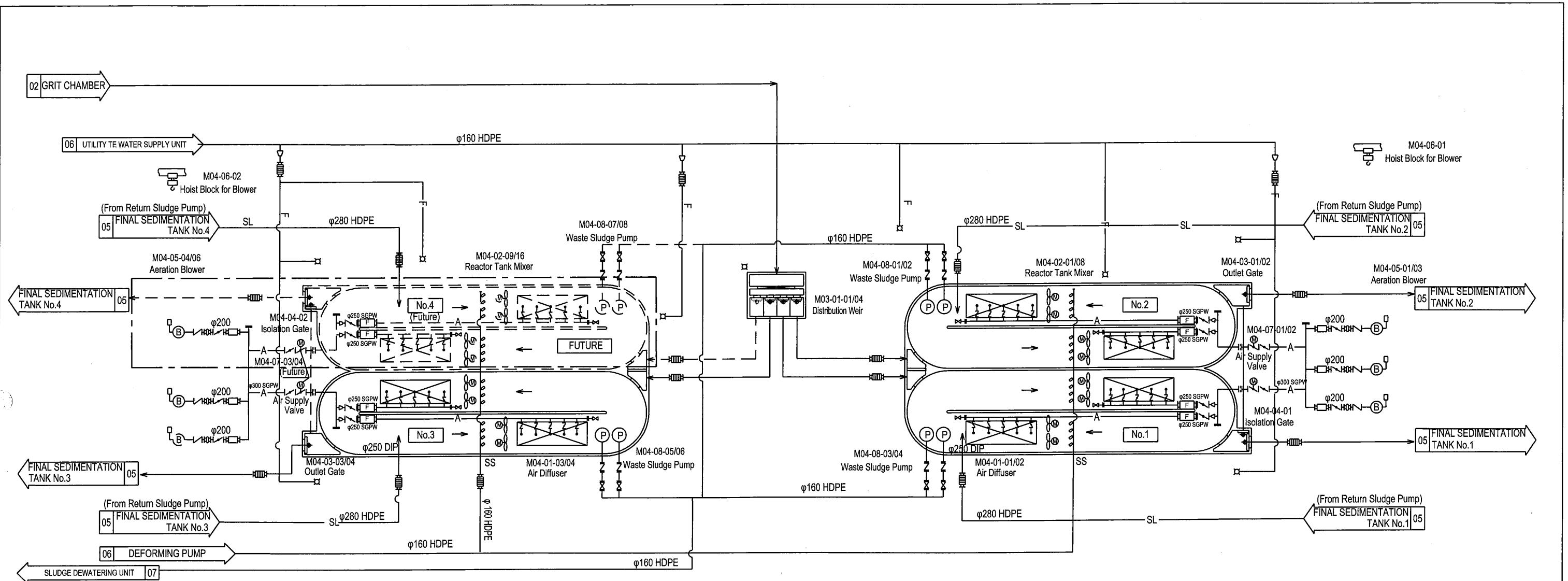
CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
 Project Director
 Lot G.Zauya
 CHECKED by CONSULTANT
 Project Manager
 T.Fuji

DATE: 1. Dec 2011
 SCALE: NTS
 DATE: 1. Dec 2011
 DRAWING NO.: STP-01



LEGEND			
SYMBOL	NAME	SYMBOL	NAME
—	SEWAGE WATER	⊘	SAFETY VALVE
— SL —	SLUDGE	⊘	BALL VALVE
— SC —	SCUM	⊘	ELECTROMAGNETIC FLOW METER
— T —	TREATED WATER	⊘	DENSITY METER
— F —	STRAINER WATER	⊘	PUMP
— A —	AIR	⊘	MOTOR
⊘	GATE VALVE	⊘	BLOWER
⊘	CHECK VALVE	⊘	FLEXIBLE JOINT
⊘	BUTTERFLY VALVE	⊘	FLANGE ADAPTOR
⊘	SPRINKLER STOP COCK	⊘	ORIFICE TYPE FLOW METER
⊘	FLOW METER (DIRECT READING TYPE)	⊘	ULTRA SONIC FLOW METER
⊘	MOTOR OPERATED BALL VALVE	⊘	
⊘	FLOW SWITCH	⊘	

EQUIPMENT No.	M03-01-01/04	M04-01-01/04	M04-02-01/16	M04-03-01/04	M04-04-01/02	M04-05-01/06	M04-06-01/02	M04-07-01/04	M04-08-01/08
EQUIPMENT NAME	Distribution Weir	Air Diffuser	Reactor Tank Mixer	Outlet Gate	Isolation Gate	Aeration Blower	Hoist Block for Blower	Air Supply Valve	Waste Sludge Pump
SPECIFICATIONS	Adjustable Weir, Cast Iron W800mm x S.T.400mm	Membrane Type Air Flow: 42 Srt /min/train	Submersible Propeller Mixer Propeller Dia. Approx. 2.4m	Manual Operated Cast Iron Gate W500mm x H500mm	Manual Operated Cast Iron Gate W500mm x H500mm	Rotary Type Dia.200mm x 42 Srt /min x 70 kPa	Geared Trolley Chain Block 2.0Ton	Motorized Butterfly Valve Dia. 300mm	Submersible Sludge Pump Dia.100mm x 1.1m /min x 14m
MOTOR (kW)	—	—	Approx. 2.3kW	—	—	75kW	—	0.2kW	5.5 kW
QUANTITY + (STANDBY)	4	3 Lot	12	3	1	3+(2)	2	3	3 + (3)
REMARKS		Super Fine Bubble						1 unit will be motorized in the future	and 1 Stock

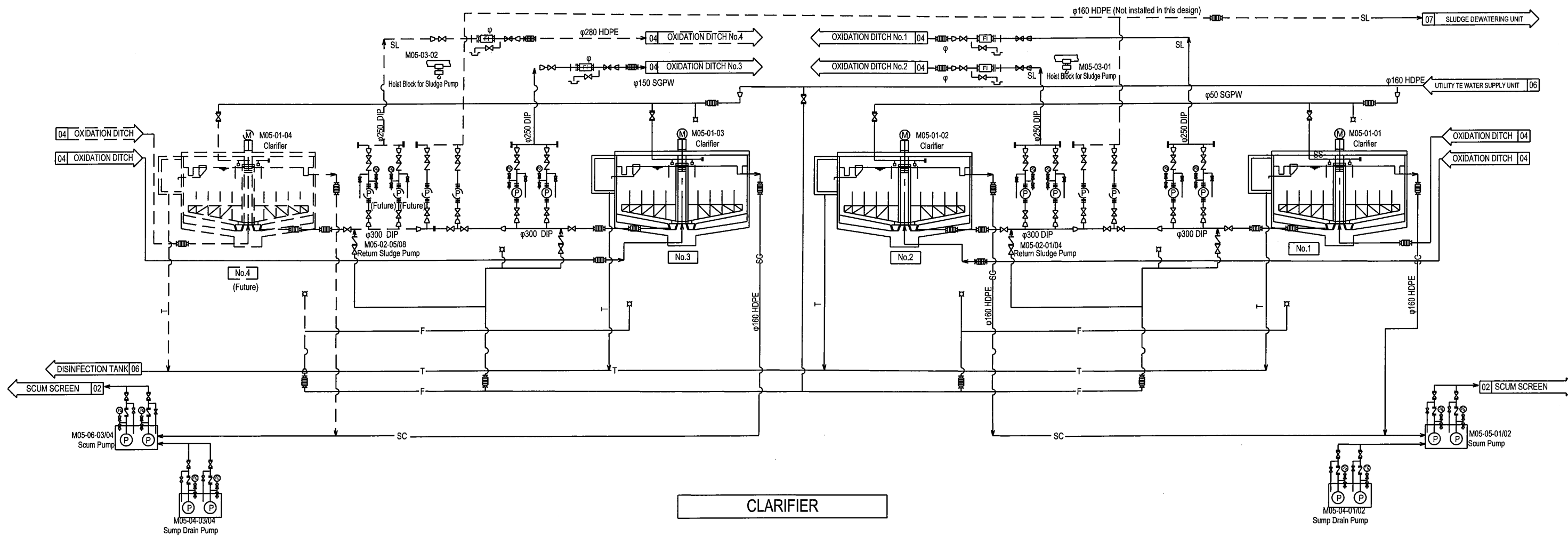
PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP) TITLE: Kila Kila STP: Process Flow Diagram 2/5

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU) JICA JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

REVISIONS			APPROVED by PMU:	DATE:	SCALE:
REV.	DATE	DESCRIPTION	Project Director Lot G.Zauya	1. Dec 2011	NTS
			CHECKED by CONSULTANT Project Manager T.Fuji	DATE: 1. Dec 2011	DRAWING NO.: STP-02

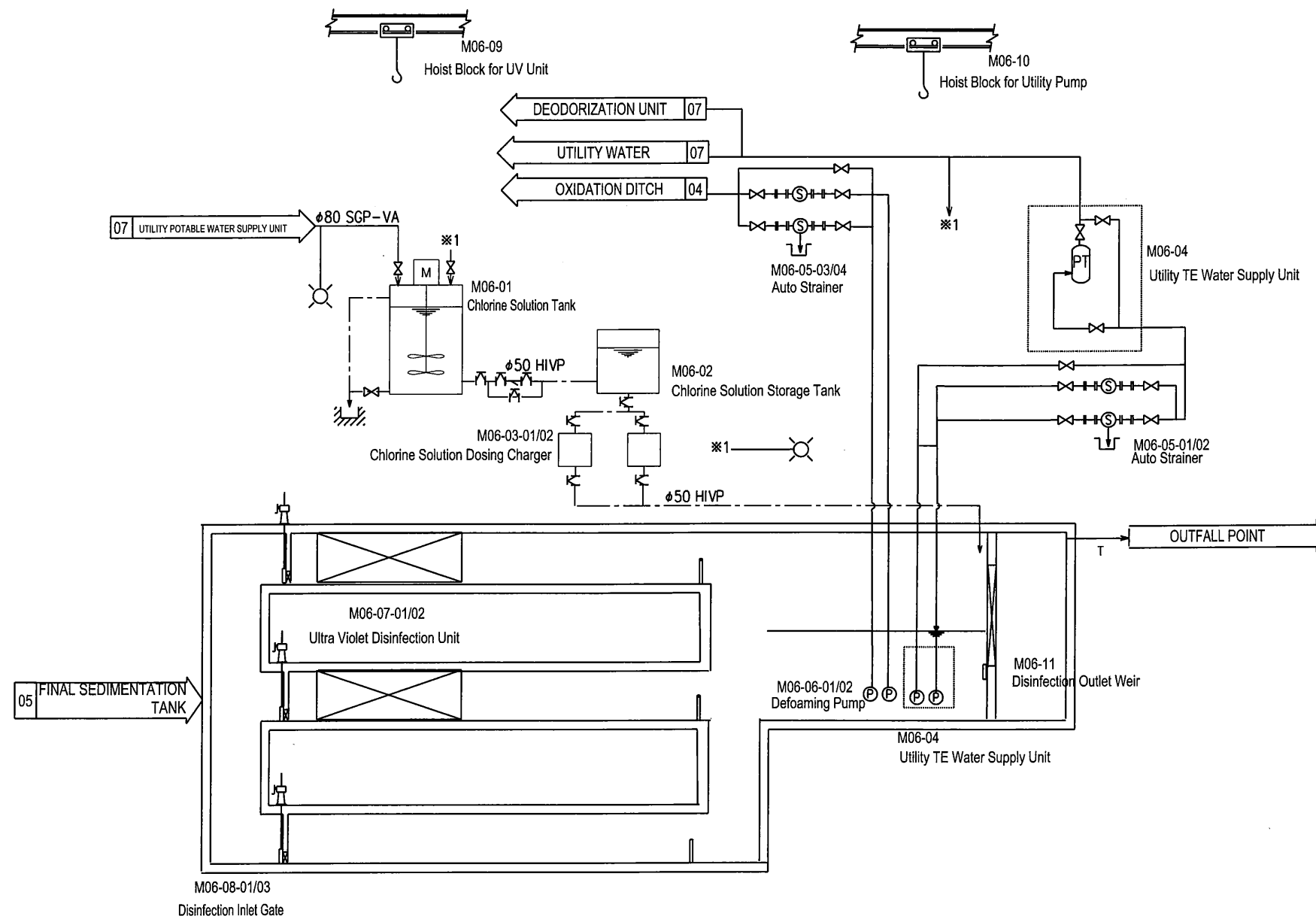


CLARIFIER

EQUIPMENT No.	M05-01-01/04	M05-02-01/08	M05-03-01/06	M05-04-01/02	M05-05-01/04
EQUIPMENT NAME	Clarifier	Return Sludge Pump	Hoist Block for Sludge Pump	Sump Drain Pump	Scum Pump
SPECIFICATIONS	Center Driven Column Type	Centrifugal Screw Type	Geared Trolley Chain Block	Submersible Sludge Pump	Submersible Sludge Pump
	Dia.25m x H3.5m	Dia.150mm x 3.2m ³ /min x 9m	1.0Ton	Dia.80mm x 0.3m ³ /min x 6m	Dia.80mm x 0.5m ³ /min x 14m
MOTOR (kW)	0.75kW	11kW	—	1.5kW	3.7kW
QUANTITY + (STANDBY)	3	3+(3)	2	2+(2)	2+(2)
REMARKS					

LEGEND			
SYMBOL	NAME	SYMBOL	NAME
—	SEWAGE WATER	⊗	SAFETY VALVE
— SL —	SLUDGE	⊘	BALL VALVE
— SC —	SCUM	⊠	ELECTROMAGNETIC FLOW METER
— T —	TREATED WATER	⊞	DENSITY METER
— F —	STRAINER WATER	⊙	PUMP
— A —	AIR	⊕	MOTOR
⊙	BLOWER	⊕	BLOWER
⊞	GATE VALVE	⊞	FLEXIBLE JOINT
⊞	CHECK VALVE	⊞	FLANGE ADAPTOR
⊞	BUTTERFLY VALVE	⊞	ORIFICE TYPE FLOW METER
⊞	SPRINKLER STOP COCK	⊞	ULTRA SONIC FLOW METER
⊞	FLOW METER (DIRECT READING TYPE)	⊞	
⊞	MOTOR OPERATED BALL VALVE	⊞	
⊞	FLOW SWITCH	⊞	

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP: Process Flow Diagram 3/5					
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU) JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	REVISIONS		APPROVED by PMU:	DATE: 1. Dec 2011	SCALE: NTS
			REV.	DATE	DESCRIPTION	Project Director Lot G.Zauya	
					CHECKED by CONSULTANT Project Manager T.Fuji	DATE: 1. Dec 2011	DRAWING NO.: STP-03



UTILITY WATER AND
DISINFECTION FACILITY

LEGEND			
SYMBOL	NAME	SYMBOL	NAME
—	SEWAGE WATER	⊗	SAFETY VALVE
— SL —	SLUDGE	⊘	BALL VALVE
— SC —	SCUM	⊞	ELECTROMAGNETIC FLOW METER
— T —	TREATED WATER	⊞	DENSITY METER
— F —	STRAINER WATER	⊞	PUMP
— A —	AIR	⊞	MOTOR
⊞	GATE VALVE	⊞	BLOWER
⊞	CHECK VALVE	⊞	FLEXIBLE JOINT
⊞	BUTTERFLY VALVE	⊞	FLANGE ADAPTOR
⊞	DIAPHRAGM VALVE	⊞	ORIFICE TYPE FLOW METER
⊞	SPRINKLER STOP COCK	⊞	ULTRA SONIC FLOW METER
⊞	FLOW METER (DIRECT READING TYPE)	⊞	ULTRA SONIC FLOW METER
⊞	MOTOR OPERATED BALL VALVE	⊞	ULTRA SONIC FLOW METER
⊞	FLOW SWITCH	⊞	STRAINER

EQUIPMENT No.	M06-09	M06-10	M06-11
EQUIPMENT NAME	Hoist Block for UV Unit	Hoist Block for Utility Pump	Disinfection Outlet Weir
SPECIFICATIONS	Geared Trolley Chain Block	Geared Trolley Chain Block	Fixed Weir Plate
	0.5 Ton	0.5 Ton	W 1.5 m
MOTOR (kW)	—	—	—
QUANTITY + (STANDBY)	1	1	1
REMARKS			

EQUIPMENT No.	M06-01	M06-02	M06-03-01/02	M06-04	M06-05-01/04	M06-06-01/02	M06-07-01/02	M06-08-01/03
EQUIPMENT NAME	Chlorine Solution Tank	Chlorine Solution Storage Tank	Chlorine Solution Dosing Charger	Utility TE Water Supply Unit	Auto Strainer	Defoaming Pump	Ultra Violet Disinfection Unit	Disinfection Inlet Gate
SPECIFICATIONS	Cylindrical Steel Tank	Cylindrical PE Tank	Gravity Flow type	Submersible two Pumps with Pressure Tank	Automatic Washing System	Submersible Turbin type	Low Pressure High Intensity type	Manual Operated Cast Iron Gate
	7 m ³	0.1m ³	0 - 0.26m ³ /hr	Dia.50mm x 0.6m ³ /min x 42m	0.6m ³ /min x mesh 0.4mm	0.6m ³ /min x 29m	Hourly Maximum 18,400m ³ /day/unit	W400mm x H600mm
MOTOR (kW)	—	—	—	7.4kW	0.1kW	3.7kW	Approx.15kW	—
QUANTITY + (STANDBY)	1	1	1+(1)	1	2+(2)	1+(1)	2	2 + (1)
REMARKS	With Agitator		Manual Control	With Control Panel	With Control Panel		With Control Panel	

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP: Process Flow Diagram 4/5

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
PROJECT MANAGEMENT UNIT (PMU)
 JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

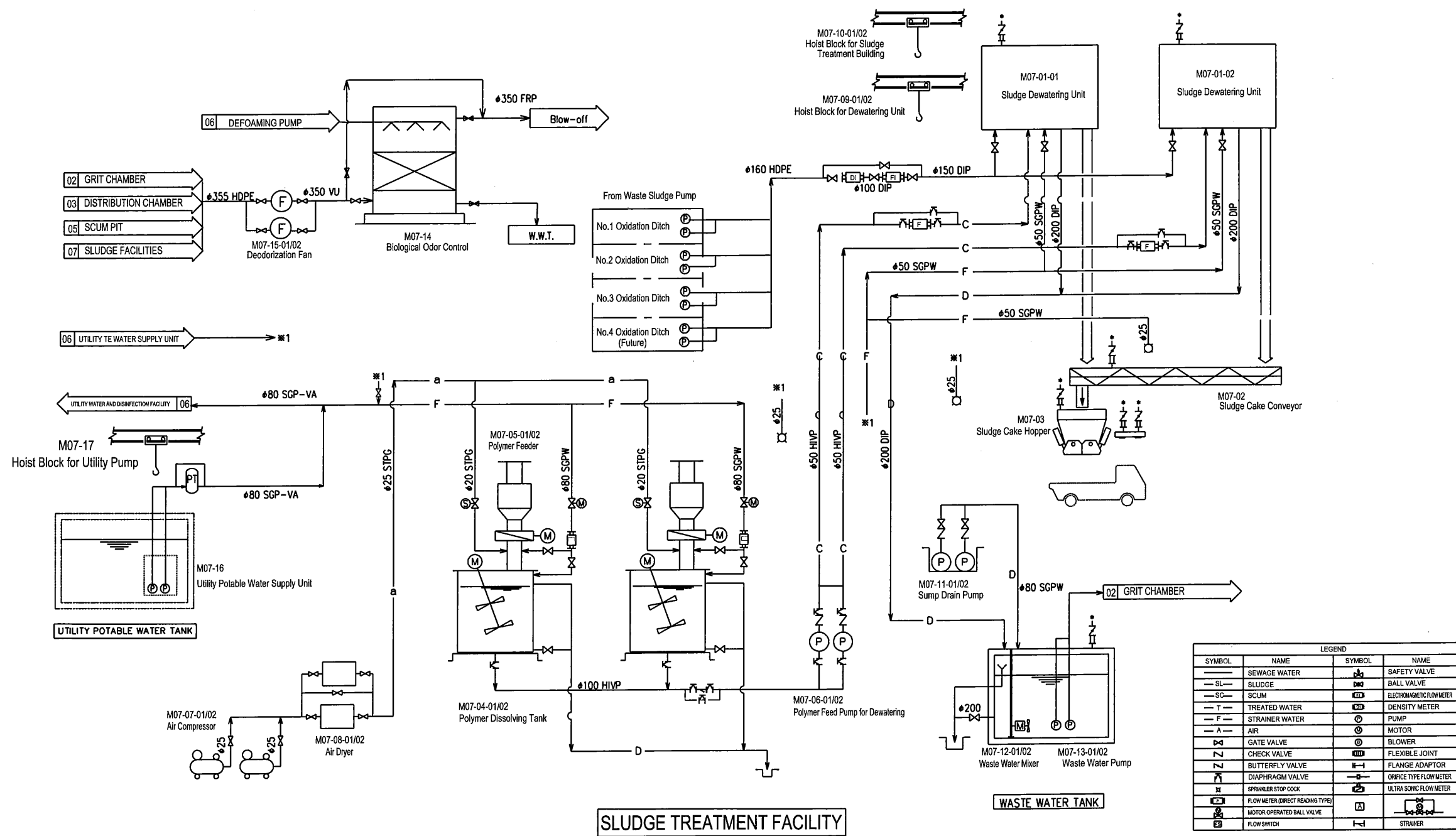
NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
Project Director
Lot G.Zauya
CHECKED by CONSULTANT
Project Manager
T.Fuji

DATE:
1. Dec 2011
DATE:
1. Dec 2011

SCALE:
NTS
DRAWING NO.:
STP-04



SLUDGE TREATMENT FACILITY

EQUIPMENT No.	M07-09-01/02	M07-10-01/02	M07-11-01/02	M07-12-01/02	M07-13-01/02	M07-14	M07-15-01/02	M07-16	M07-17
EQUIPMENT NAME	Hoist Block for Dewatering Unit	Hoist Block for Sludge Treatment Building	Sump Drain Pump	Waste Water Mixer	Waste Water Pump	Biological Odor Control	Deodorization Fan	Utility Potable Water Supply Unit	Hoist Block for Utility Pump
SPECIFICATIONS	Geared Trolley Chain Block 2.0Ton	Geared Trolley Chain Block 2.0Ton	Submersible Sludge Pump Dia.80mm x 0.3m ³ /min x 6m	Submersible Mixer 1.5kW	Submersible Sludge Pump Dia. 100mm x 2.0m ³ /min x 14m 11 kW	40 m ³ /min Approx. 5.0 kW	Turbo Fan 40 m ³ /min 5.5kW	Submersible two Pumps with Pressure Tank Dia.50mm x 0.45m ³ /min x 25m 4.4kW	Geared Trolley Chain Block 0.5 Ton
MOTOR (kW)	—	2.8 + 0.4 kW	1.5kW	1.5kW	11 kW	Approx. 5.0 kW	5.5kW	4.4kW	—
QUANTITY + (STANDBY)	2	2	1+(1)	1	1+(1)	1	1+(1)	1	1
REMARKS		1 unit manual, 1 unit motorized		and 1 stock		With Control Panel		With Control Panel	

EQUIPMENT No.	M07-01-01/02	M07-02	M07-03	M07-04-01/02	M07-05-01/02	M07-06-01/02	M07-07-01/02	M07-08-01/02
EQUIPMENT NAME	Sludge Dewatering Unit	Sludge Cake Conveyor	Sludge Cake Hopper	Polymer Dissolving Tank	Polymer Feeder	Polymer Feed Pump for Dewatering	Air Compressor	Air Dryer
SPECIFICATIONS	Multi-Diskplate Screw Press 180kg-DS/hr	Shaftless Screw Conveyor Dia.400 x L 10m	Motor Driven Cutgate Type 15 m ³	Cylindrical Steel Tank 17 m ³	Constant Chemical Feeder 2.3 kg/min	Progress Cavity Pump 0.7 - 2.0 m ³ /hr x 20m	Pressure-switch type 400 NL/min x 0.83 MPa	Refrigerating type 400 NL/min
MOTOR (kW)	Approx.6.0 kW	5.5 kW	4.4 kW	11 kW	0.4 kW	1.5 kW	3.7 kW	0.2 kW
QUANTITY + (STANDBY)	1+(1)	1	1	1+(1)	1+(1)	1+(1)	1+(1)	1+(1)
REMARKS	With Control Panel			With Agitator			With Control Panel	

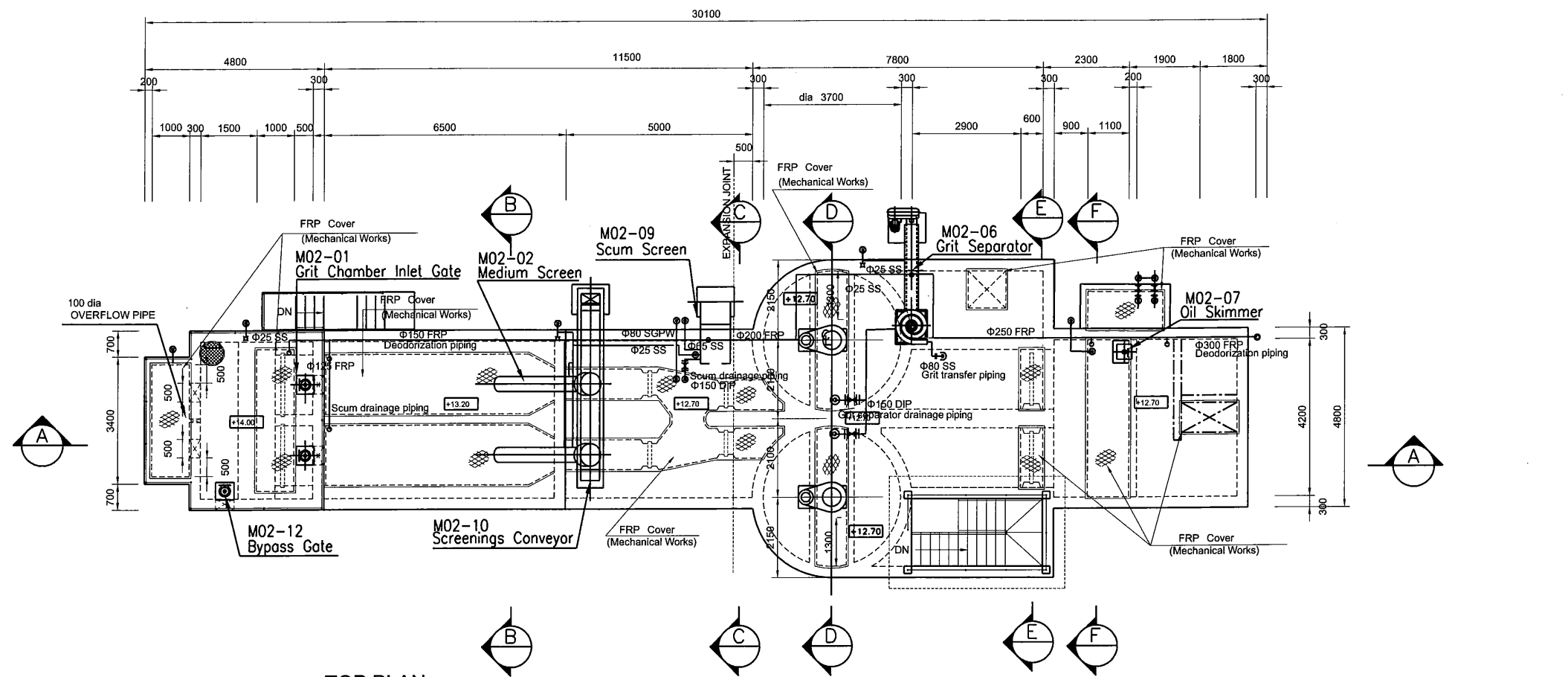
PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP) TITLE: Kila Kila STP: Process Flow Diagram 5/5

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU) CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

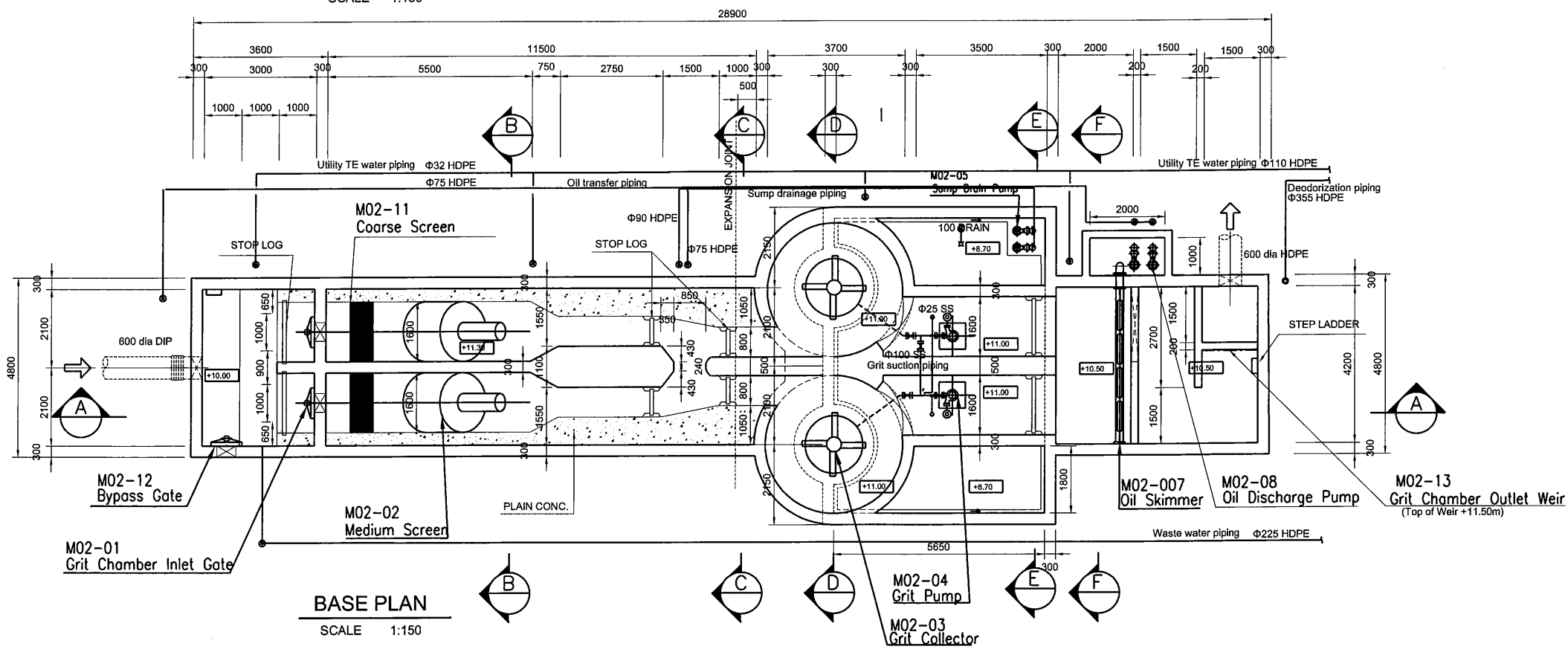
NOTES: APPROVED by PMU: Project Director Lot G.Zauya DATE: 1. Dec 2011 SCALE: NTS

CHECKED by CONSULTANT: Project Manager T.Fuji DATE: 1. Dec 2011 DRAWING NO.: STP-05

REVISIONS		
REV.	DATE	DESCRIPTION



TOP PLAN
SCALE 1:150



BASE PLAN
SCALE 1:150

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
 PROJECT MANAGEMENT UNIT (PMU)

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

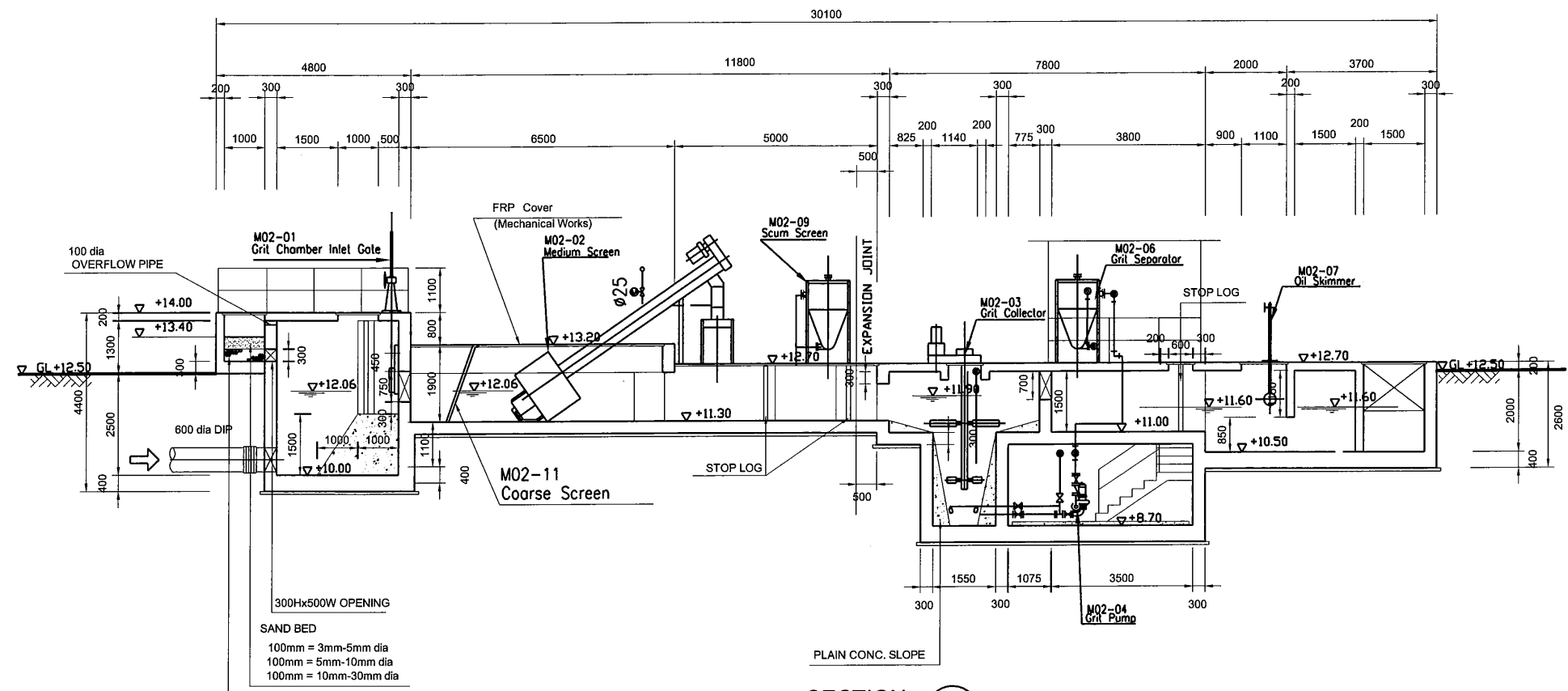
CLIENT LOGO: IPBC (INDEPENDENT PUBLIC BUSINESS CORPORATION) and JICA (JAPAN INTERNATIONAL COOPERATION AGENCY)

TITLE: Kila Kila STP - GRIT CHAMBER PLAN

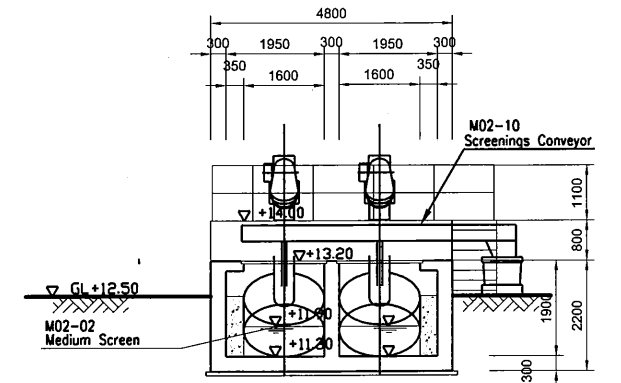
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REVISIONS		
REV.	DATE	DESCRIPTION

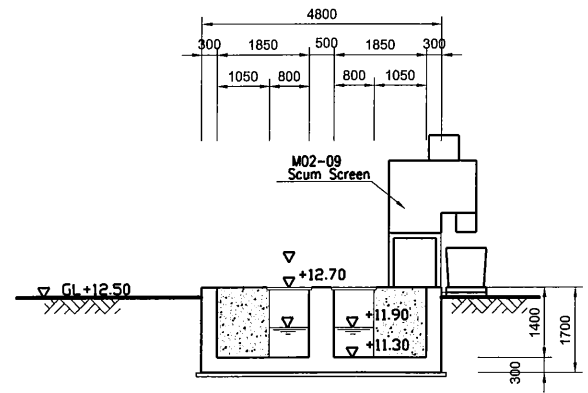
APPROVED by PMU: Project Director Lot G.Zauya	DATE: 1. Dec 2011	SCALE: 1/150
CHECKED by CONSULTANT Project Manager T.Fuji	DATE: 1. Dec 2011	DRAWING NO.: STP-GC-M01



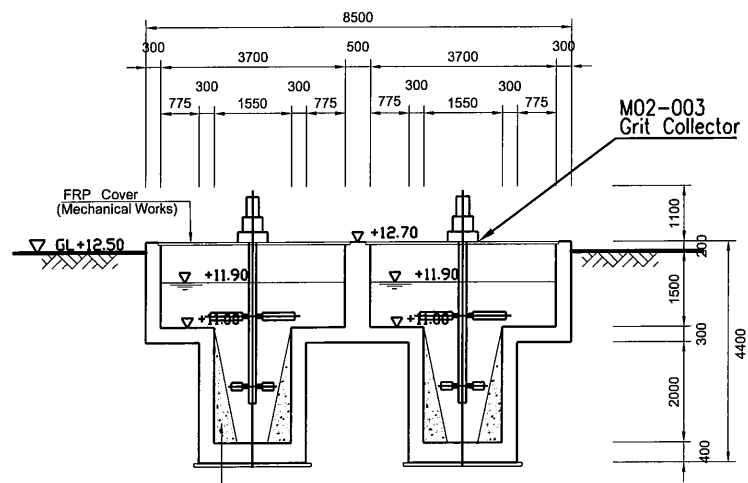
SECTION A-A
SCALE 1:150



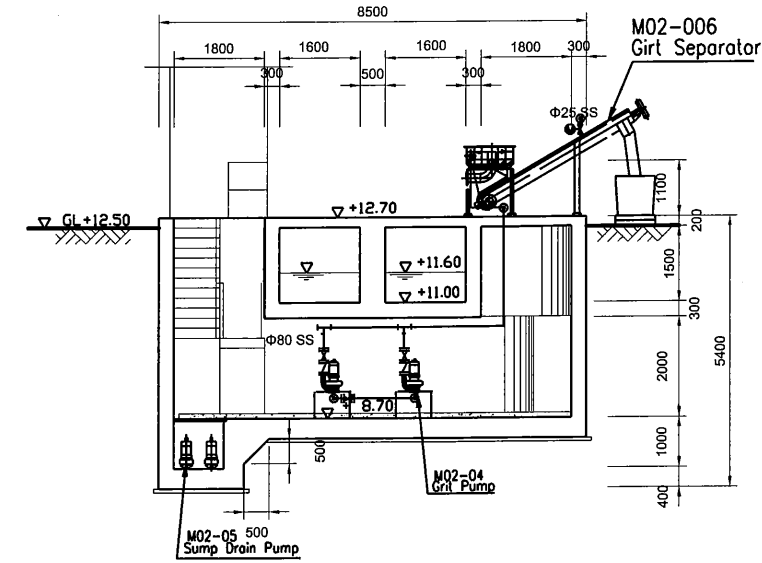
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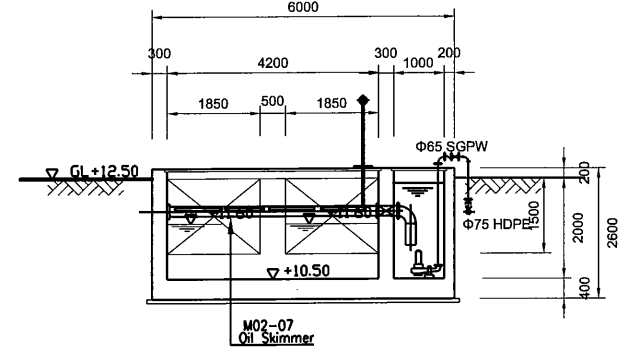
SECTION C-C
SCALE 1:150



SECTION D-D
SCALE 1:150

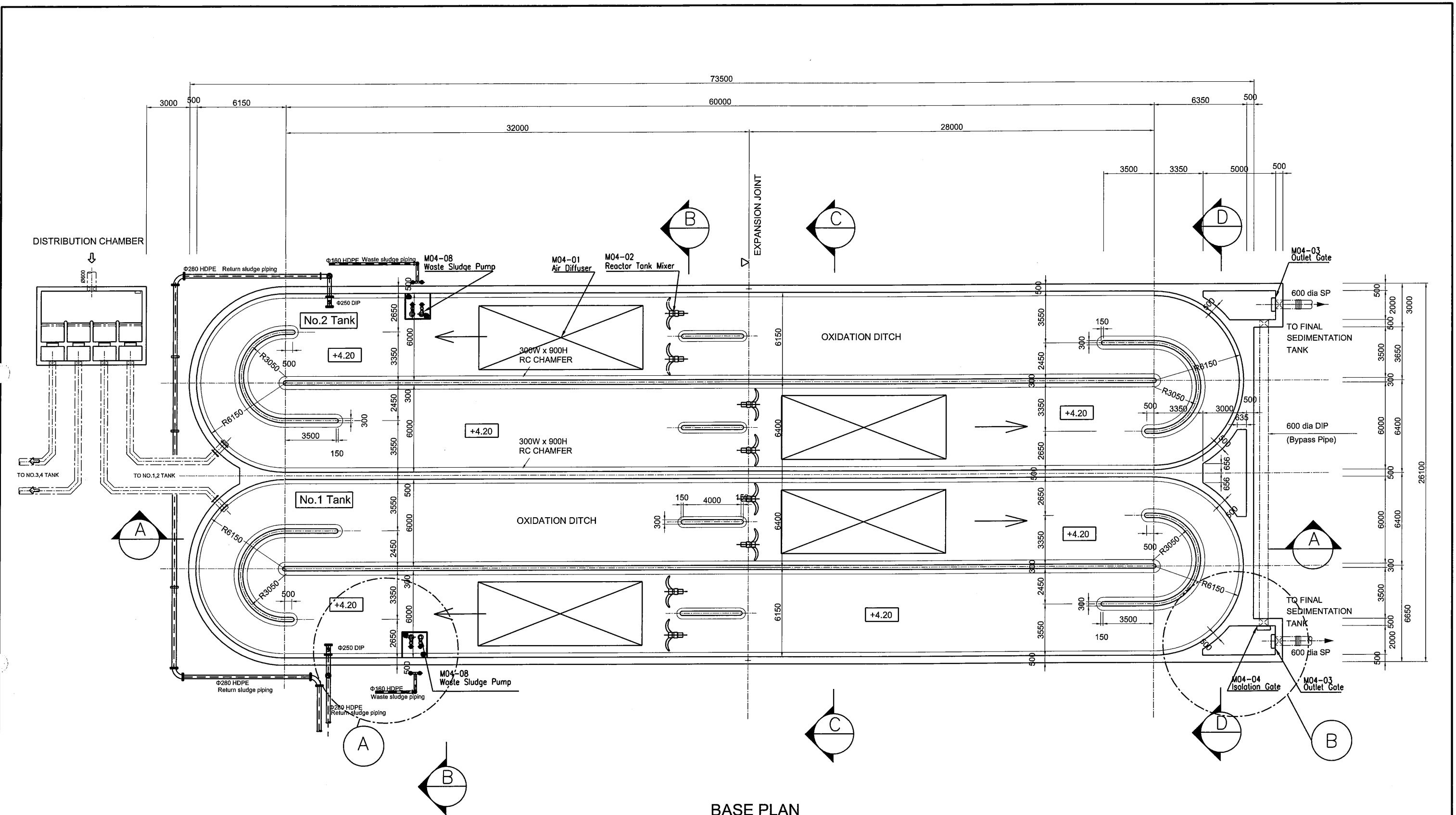


SECTION E-E
SCALE 1:150



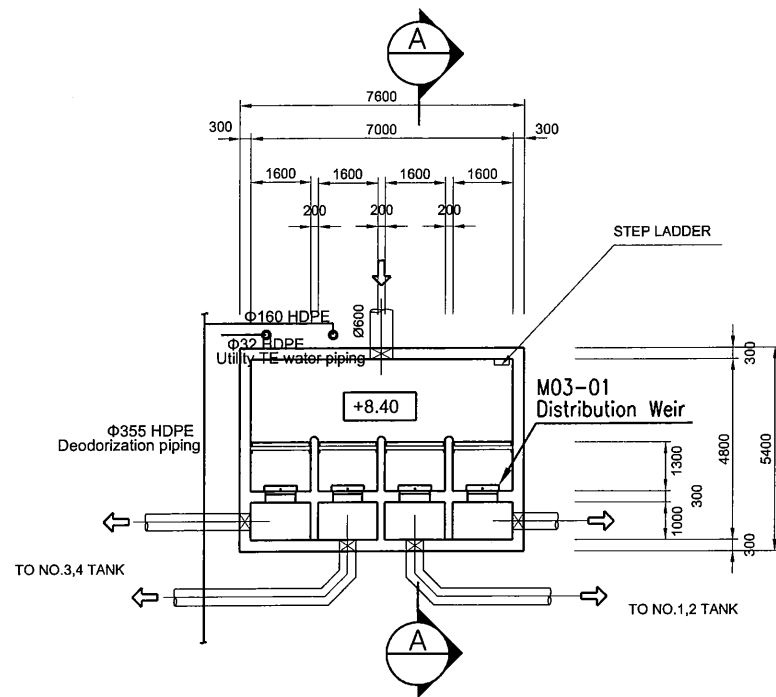
SECTION F-F
SCALE 1:150

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP - GRIT CHAMBER SECTION																	
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU) JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	APPROVED by PMU: Project Director Lot G.Zauya																
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REVISIONS																			
REV.	DATE	DESCRIPTION																	
		DATE: 1. Dec 2011	SCALE: 1/150																
		DATE: 1. Dec 2011	DRAWING NO.: STP-GC-M02																

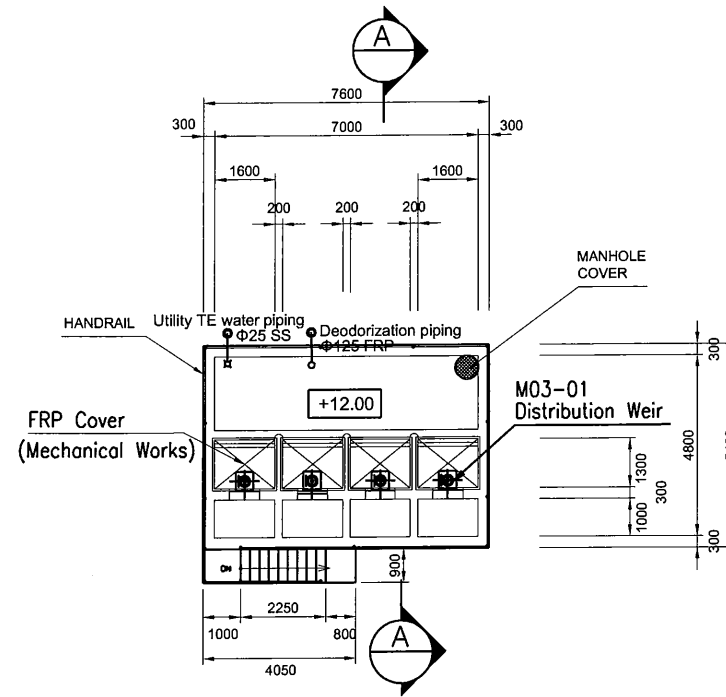


BASE PLAN
SCALE 1:250

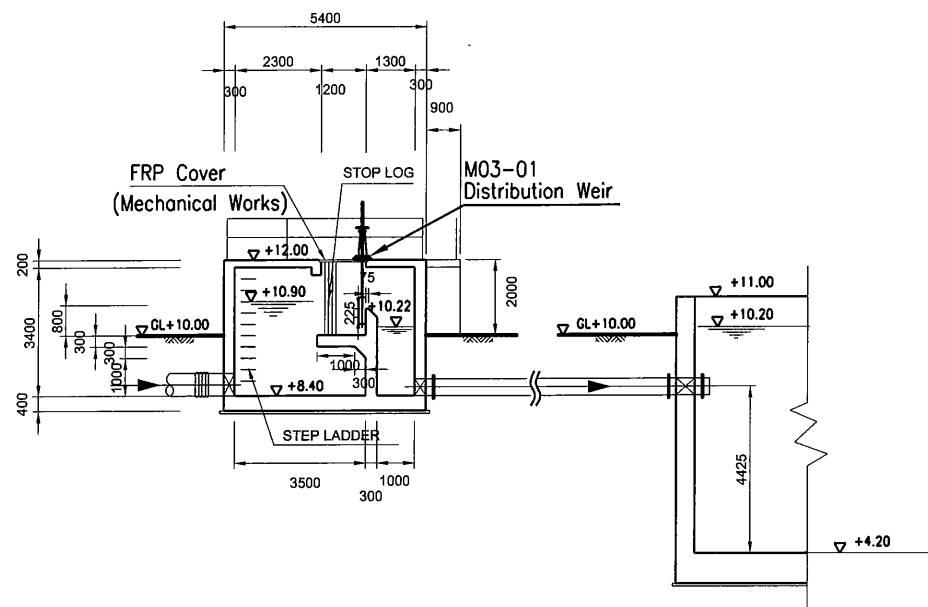
PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP: OXIDATION DITCH PLAN-1 (TANK 1,2)																				
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU) JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	APPROVED by PMU: Project Director Lot G.Zauya																			
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REVISIONS																						
REV.	DATE	DESCRIPTION																				
		DATE: 1. Dec 2011	SCALE: 1/250																			
		DATE: 1. Dec 2011	DRAWING NO.: STP-OD-M01																			






BASE PLAN
DISTRIBUTION CHAMBER SCALE 1:200

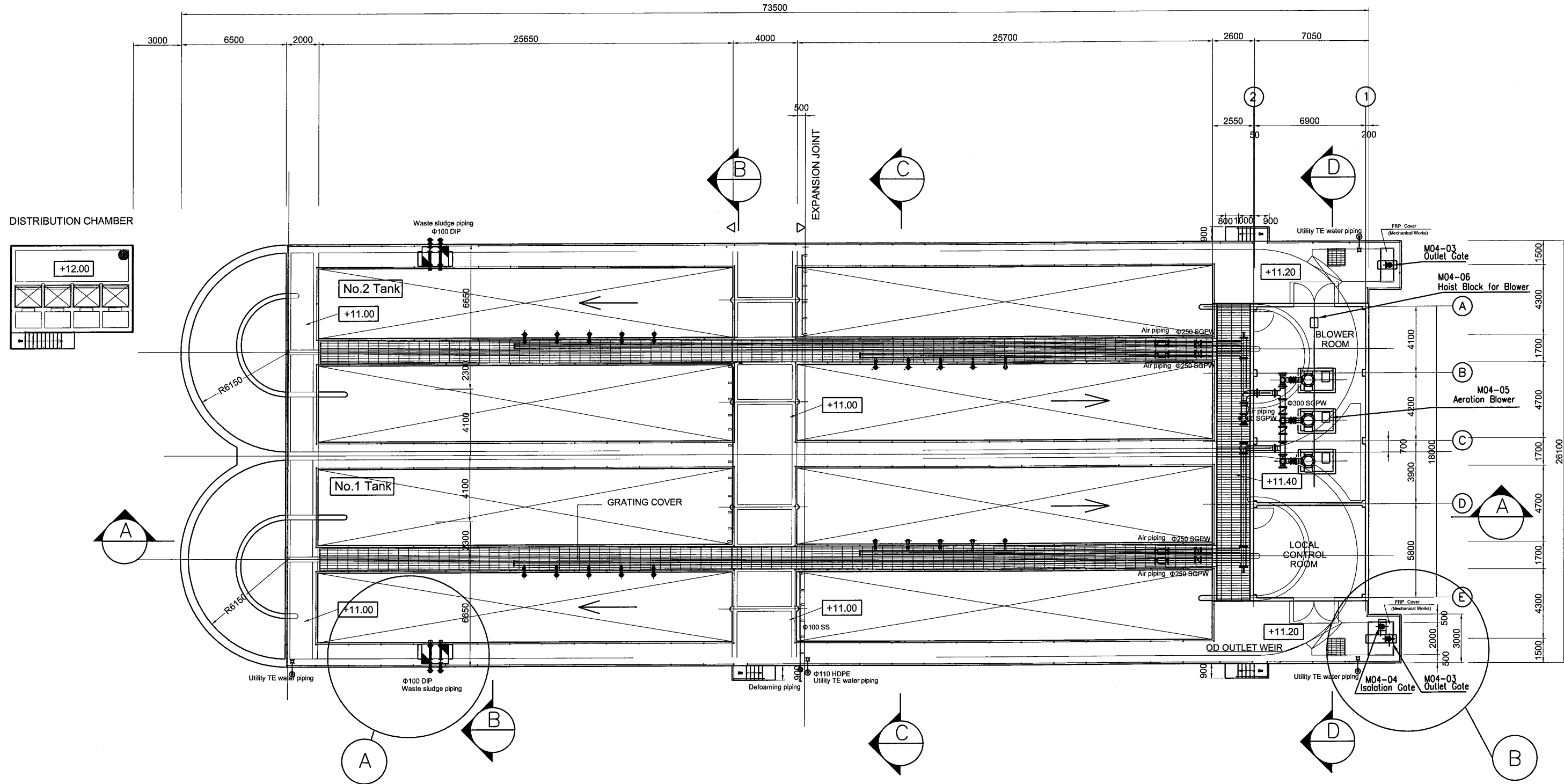


TOP PLAN
DISTRIBUTION CHAMBER SCALE 1:200






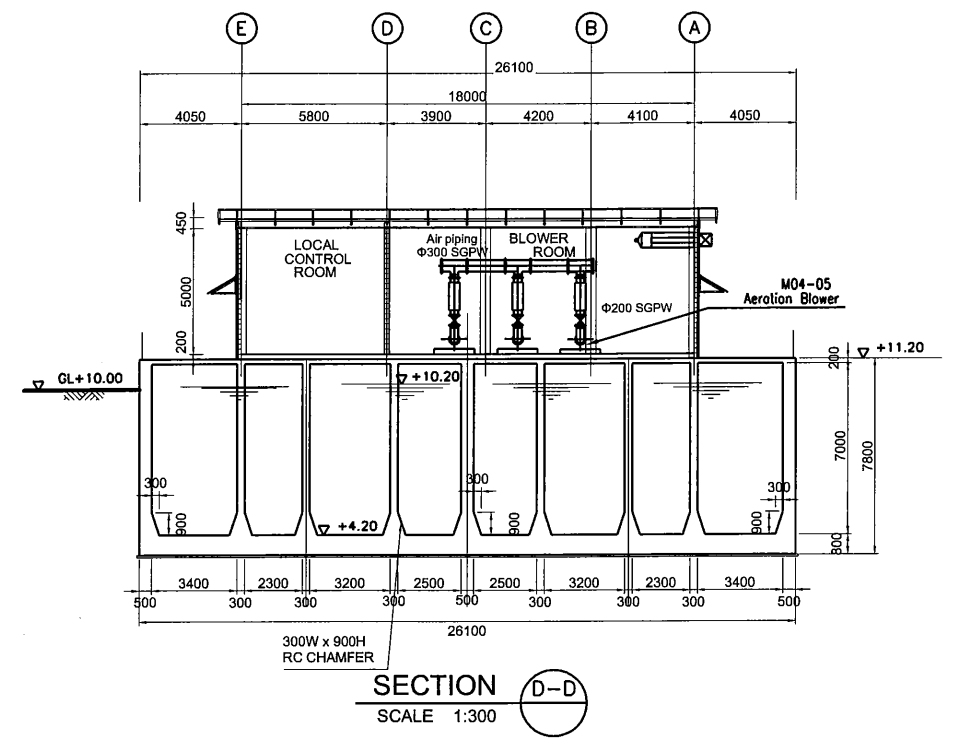
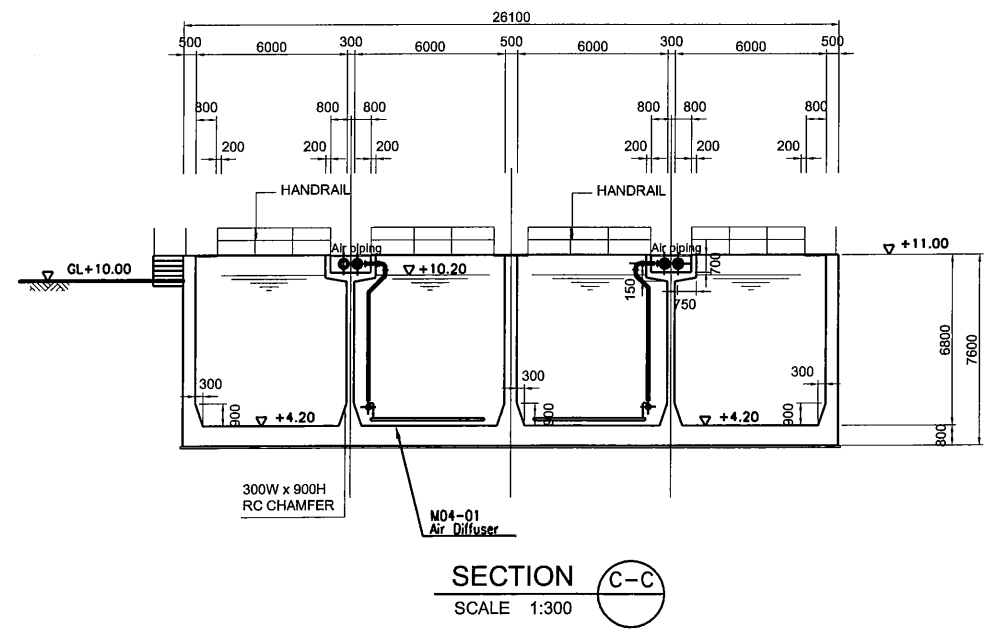
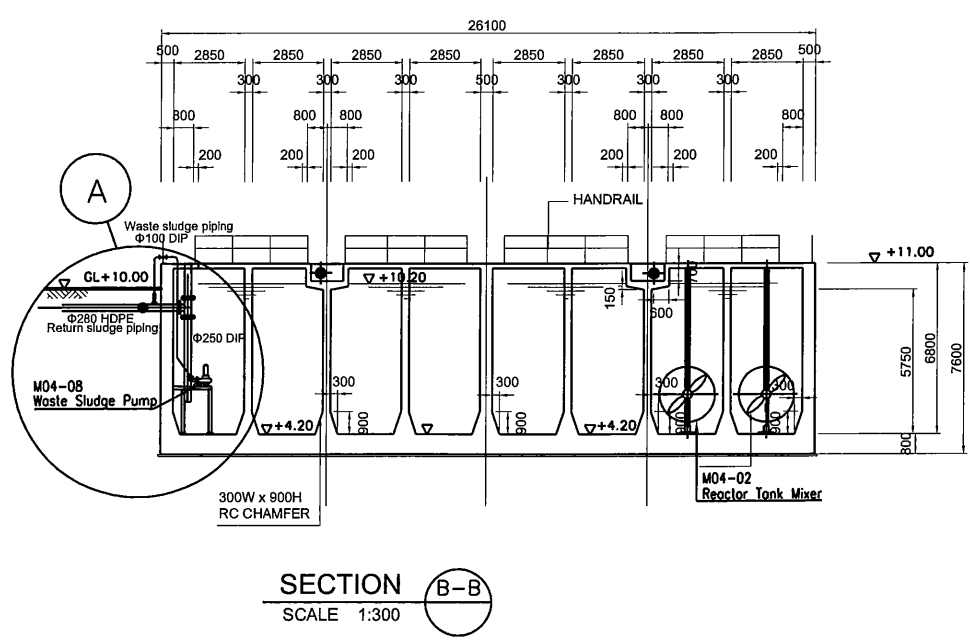
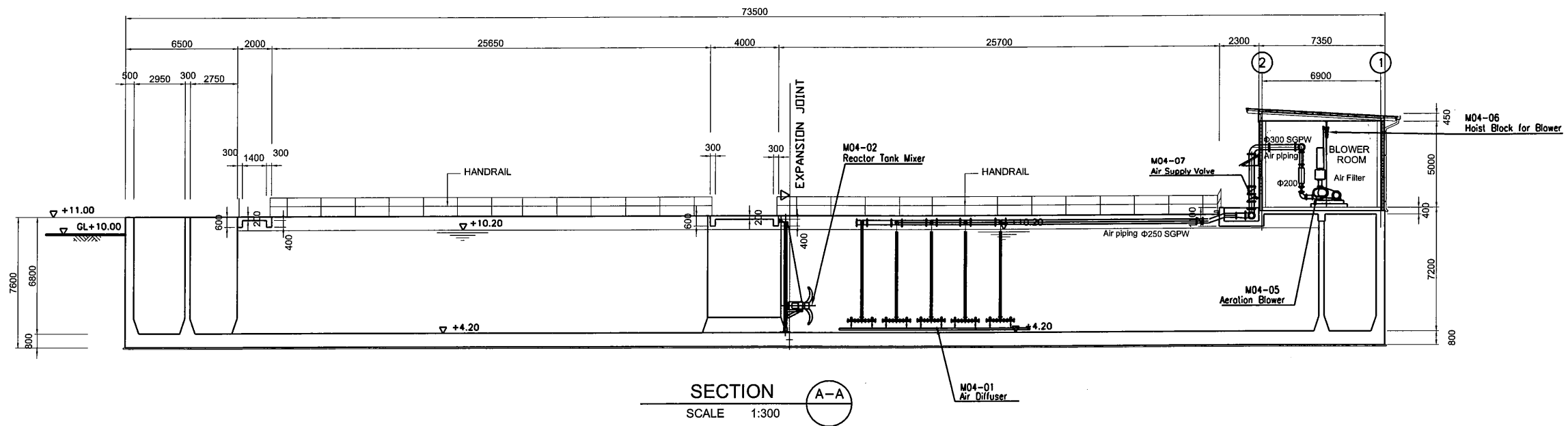
SECTION
DISTRIBUTION CHAMBER SCALE 1:200

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP: DISTRIBUTION CHAMBER PLAN and SECTION						
CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION  JAPAN INTERNATIONAL COOPERATION AGENCY	PROJECT MANAGEMENT UNIT (PMU)	CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	REVISIONS		APPROVED by PMU: Project Director Lot G.Zauya	DATE: 1. Dec 2011	SCALE: 1/200
				REVISIONS	DESCRIPTION	CHECKED by CONSULTANT Project Manager T.Fuji	DATE: 1. Dec 2011	DRAWING NO.: STP-DC-M01



TOP PLAN
SCALE 1:250

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP: OXIDATION DITCH PLAN-2 (TANK 1,2)			
CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU)  JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	APPROVED by PMU: Project Director Lot G.Zauya	DATE: 1. Dec 2011	SCALE: 1/250
			CHECKED by CONSULTANT: Project Manager T.Fuji	DATE: 1. Dec 2011	DRAWING NO.: STP-OD-M02



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
 PROJECT MANAGEMENT UNIT (PMU)

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

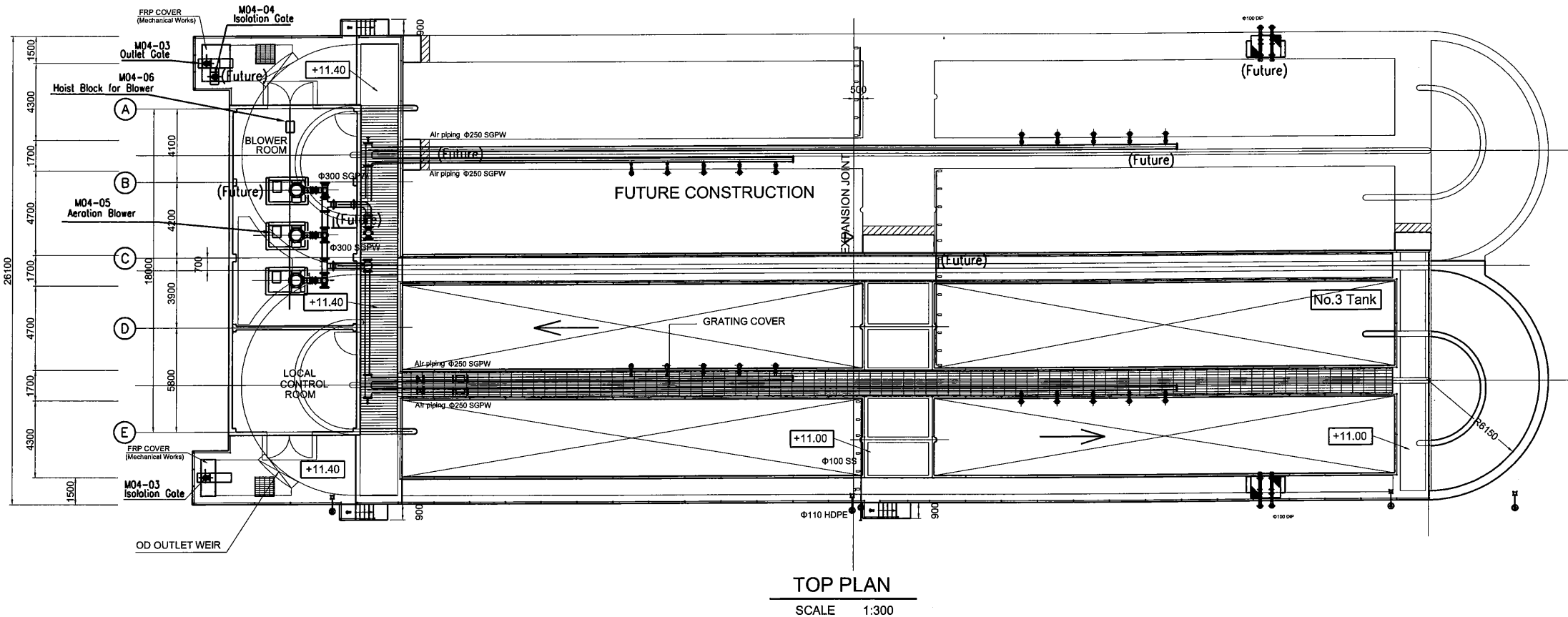
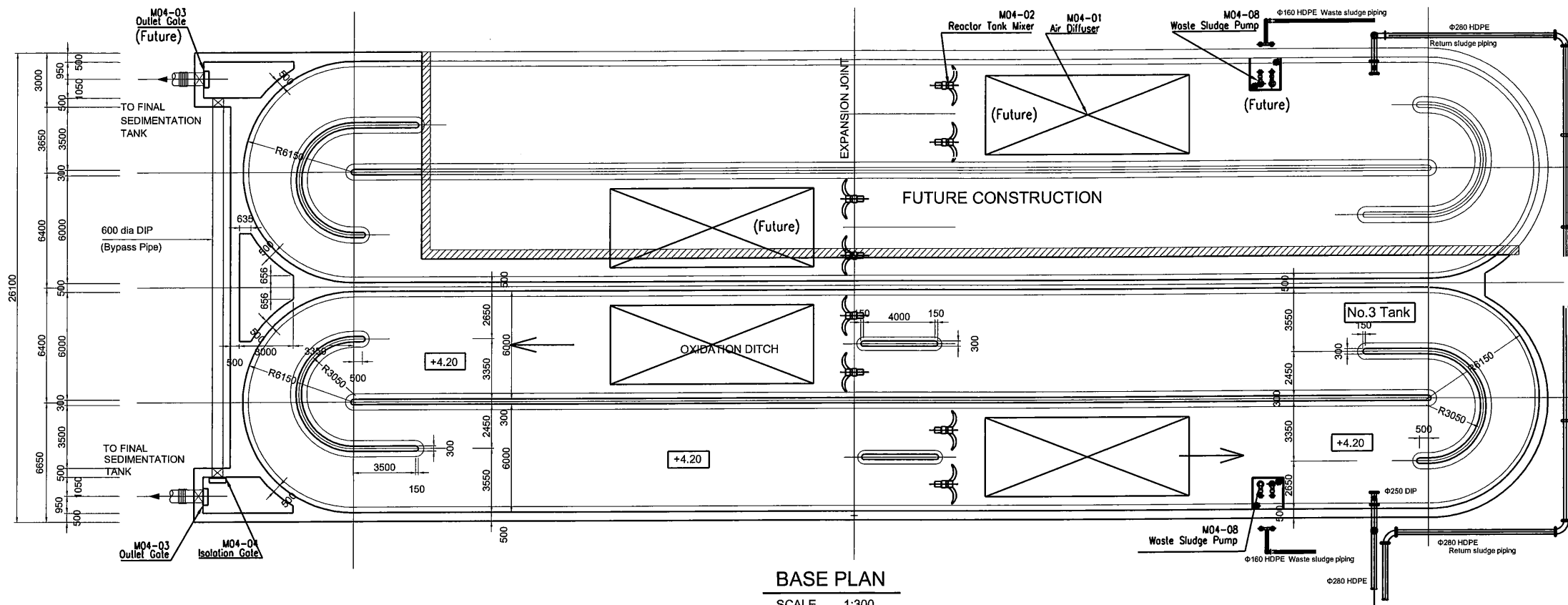
CLIENT LOGOS: IPBC, JICA

TITLE: Kila Kila STP: OXIDATION DITCH SECTION (TANK1, 2)

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU: Project Director Lot G.Zauya	DATE: 1. Dec 2011	SCALE: 1/300
CHECKED by CONSULTANT Project Manager T.Fuji	DATE: 1. Dec 2011	DRAWING NO.: STP-OD-M03



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP: OXIDATION DITCH PLAN and SECTION (TANK3,4)

CLIENT: **IPBC** INDEPENDENT PUBLIC BUSINESS CORPORATION
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
 PROJECT MANAGEMENT UNIT (PMU)
JICA JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: **NJS** NJS CONSULTANTS CO., LTD. - JAPAN

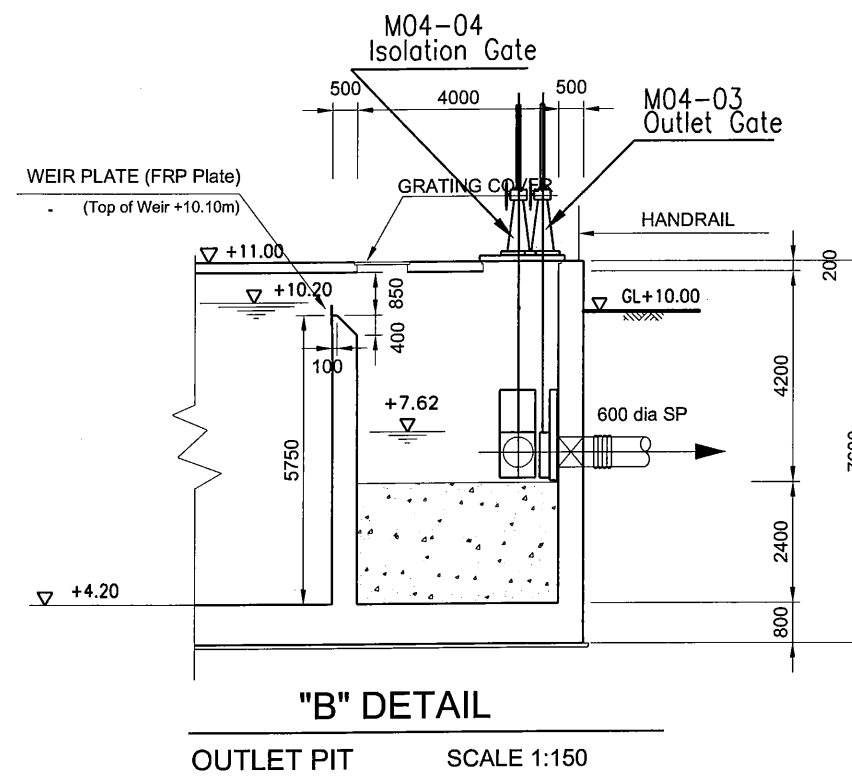
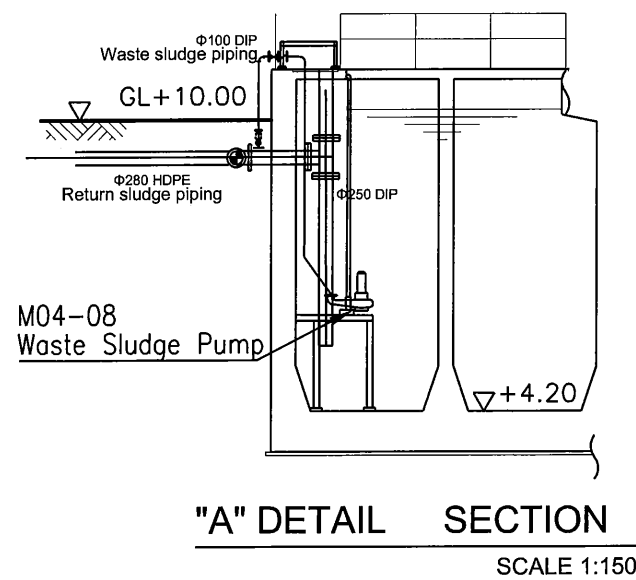
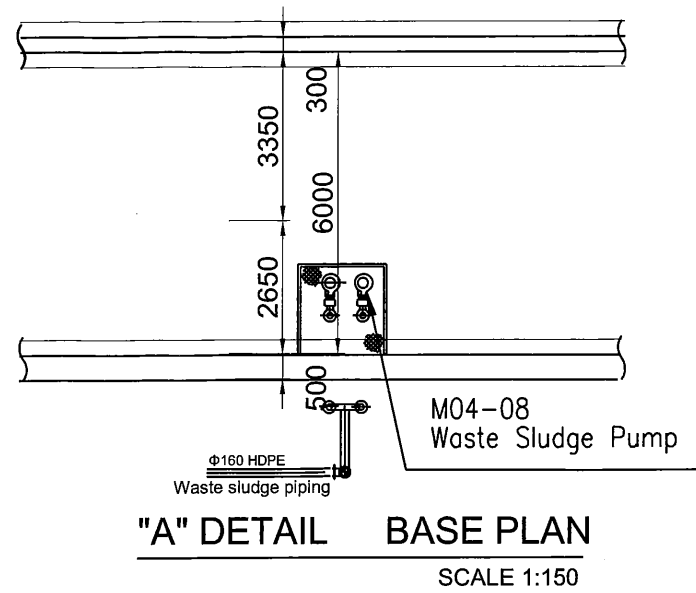
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REV.	DATE	DESCRIPTION

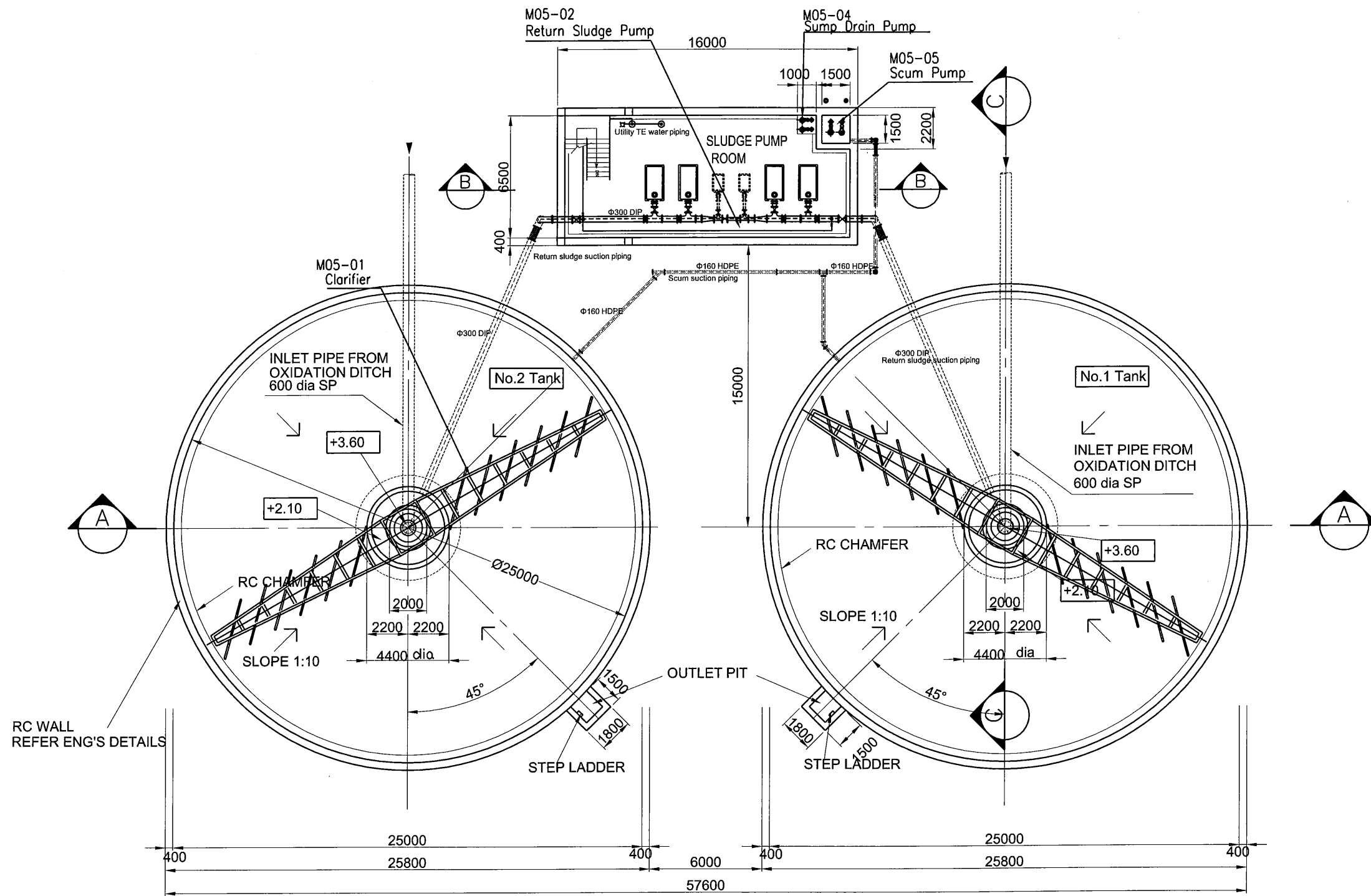
APPROVED by PMU:
Project Director
 Lot G.Zauya
 CHECKED by CONSULTANT
Project Manager
 T.Fuji

DATE:
 1. Dec 2011
 DATE:
 1. Dec 2011

SCALE:
 1/300
 DRAWING NO.:
 STP-OD-M04



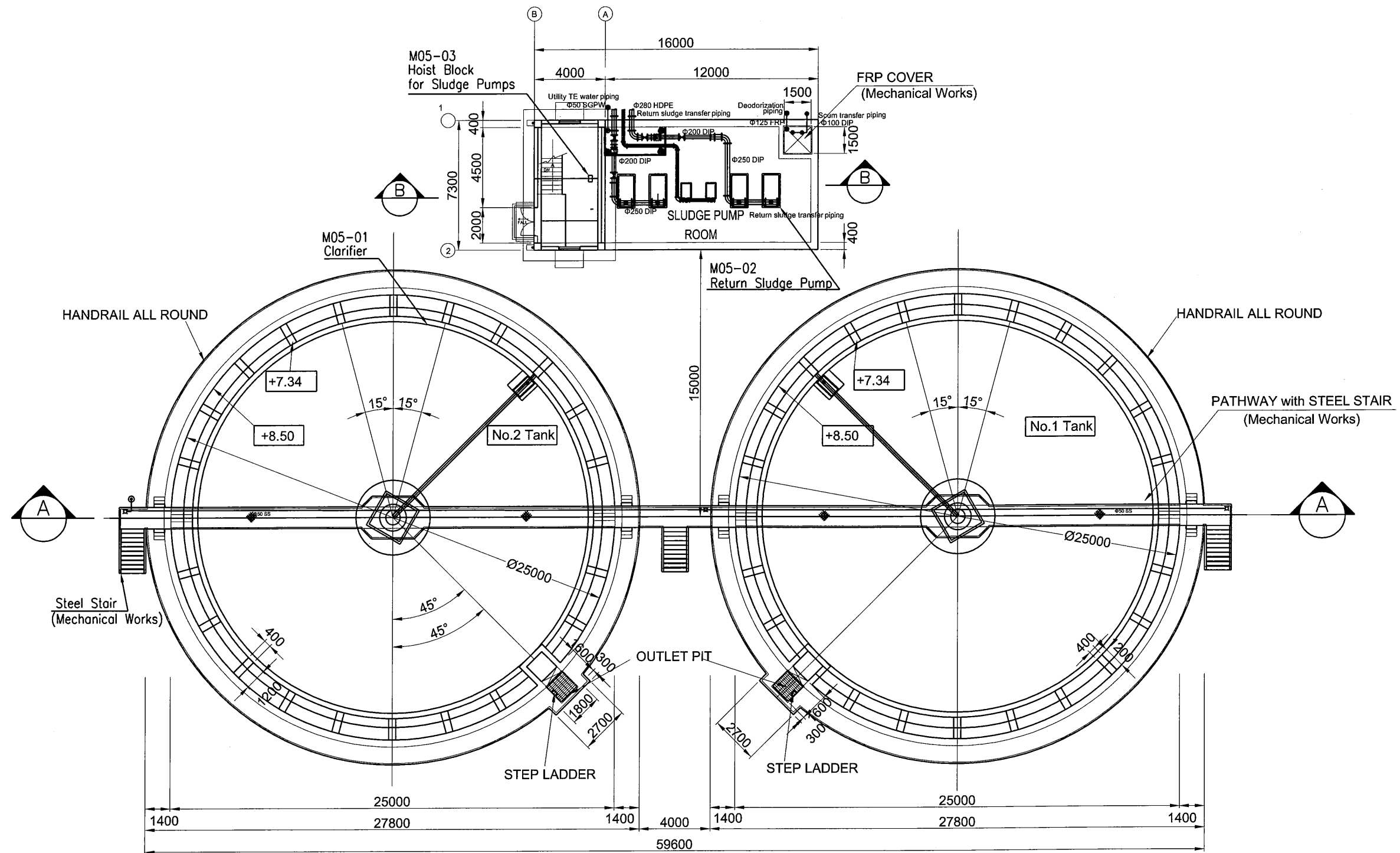
PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP: OXIDATION DITCH DETAILS					
CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION  JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	REVISIONS		APPROVED by PMU: Project Director Lot G.Zauya	DATE: 1. Dec 2011	SCALE: 1/150
			REV.	DATE	DESCRIPTION	CHECKED by CONSULTANT Project Manager T.Fuji	DATE: 1. Dec 2011



BASE PLAN

SCALE 1:250

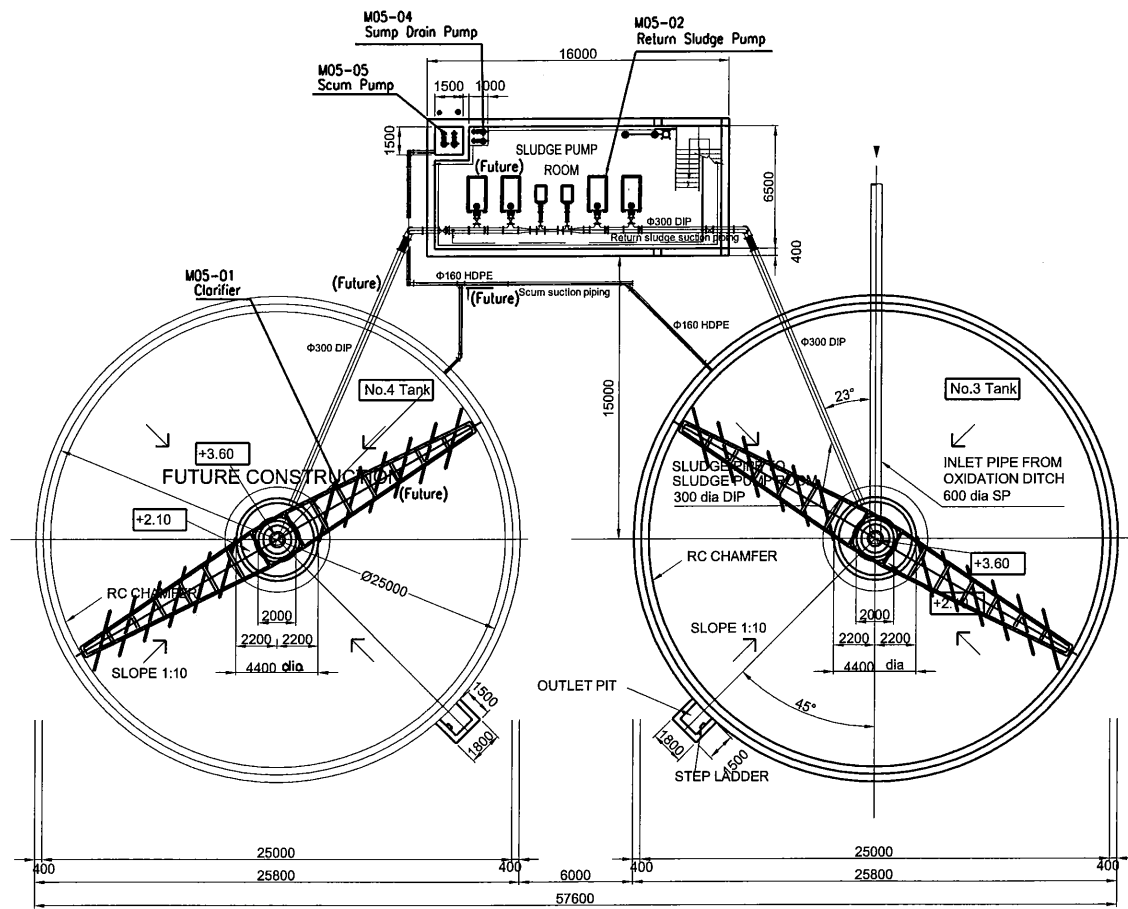
PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP: FINAL SEDEMENTATION TANK PLAN-1 (TANK 1,2)					
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU) JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	REVISIONS		APPROVED by PMU: Project Director Lot G.Zauya	DATE: 1. Dec 2011	SCALE: 1/250
			REV.	DATE	DESCRIPTION	CHECKED by CONSULTANT Project Manager T.Fuji	DATE: 1. Dec 2011



TOP PLAN

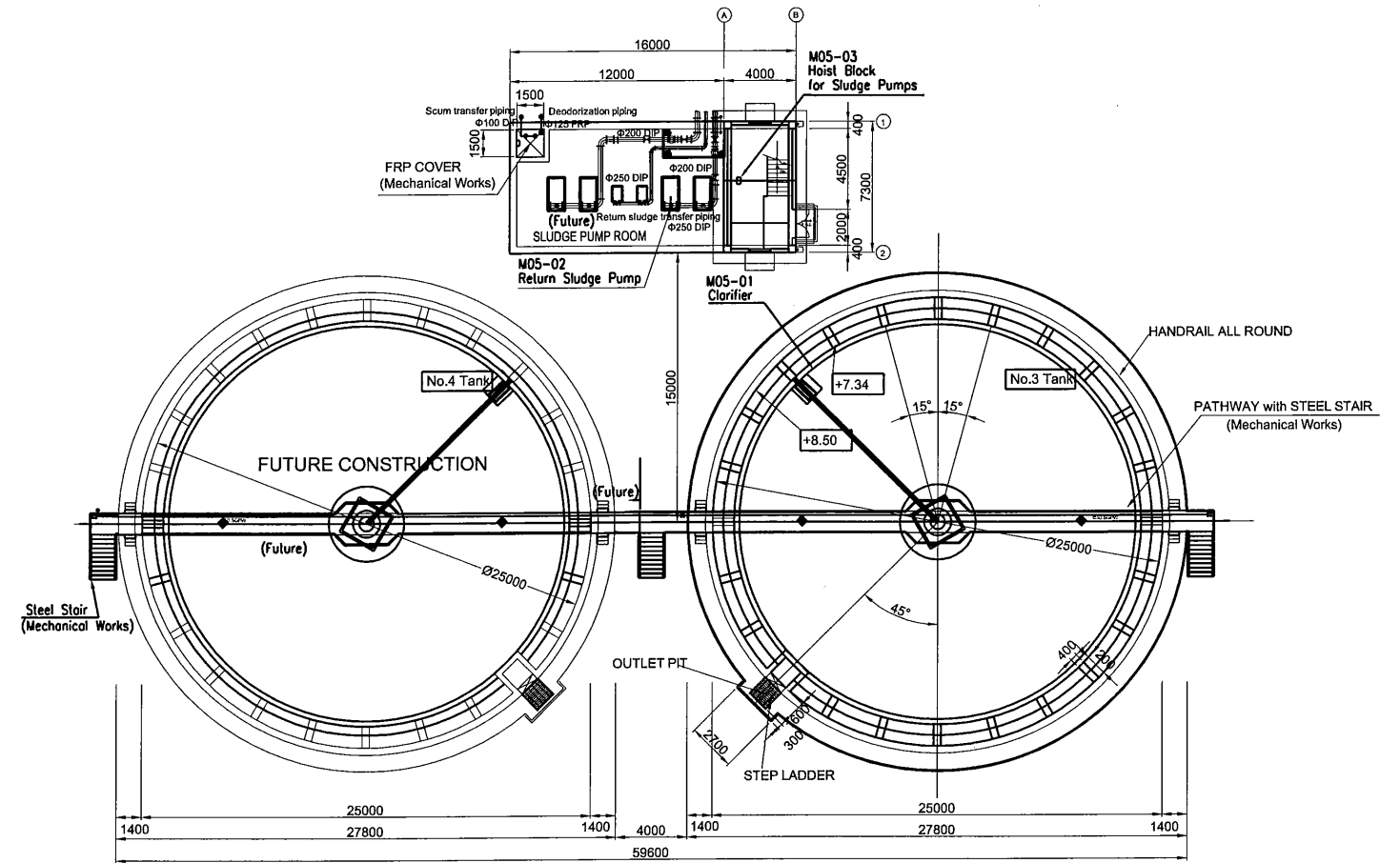
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PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP: FINAL SEDEMENTATION TANK PLAN-2 (TANK 1,2)														
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU) JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	APPROVED by PMU: Project Director Lot G.Zauya													
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REVISIONS																
REV.	DATE	DESCRIPTION														
		DATE: 1. Dec 2011	SCALE: 1/250													
		DATE: 1. Dec 2011	DRAWING NO.: STP-FS-M02													



BASE PLAN

SCALE 1:400



TOP PLAN

SCALE 1:400

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP: FINAL SEDEMENTATION TANK PLAN (TANK 3,4)

CLIENT: **IPBC** INDEPENDENT PUBLIC BUSINESS CORPORATION
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
 PROJECT MANAGEMENT UNIT (PMU)
JICA JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: **NJS CONSULTANTS CO., LTD. - JAPAN**

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
Project Director
 Lot G.Zauya

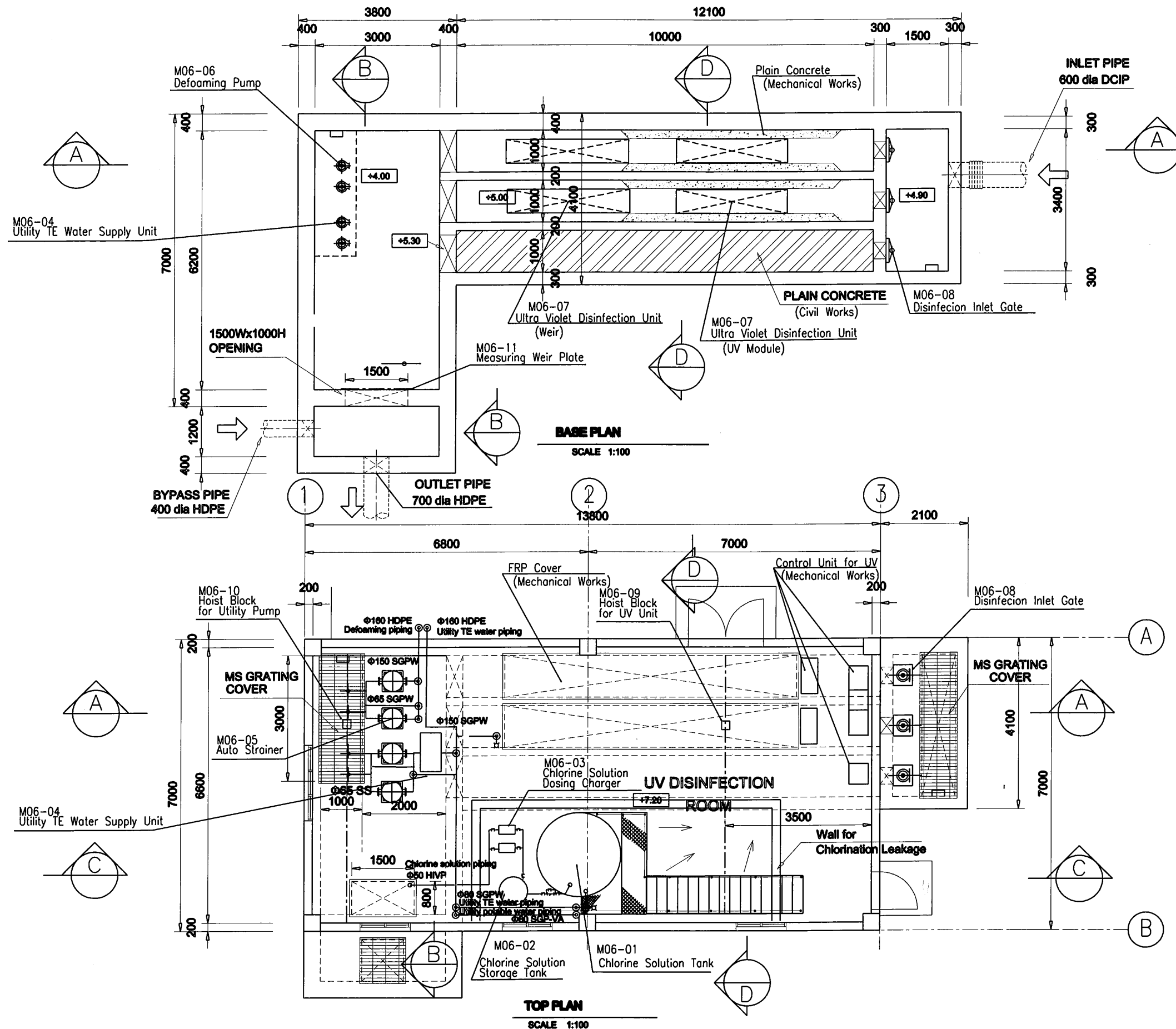
CHECKED by CONSULTANT
Project Manager
 T.Fuji

DATE:
 1. Dec 2011

DATE:
 1. Dec 2011



SCALE:
 1/400

DRAWING NO.:
 STP-FS-M04



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP - UV DISINFECTION ROOM and TREATED WATER TANK PLAN

CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
 PROJECT MANAGEMENT UNIT (PMU)
 JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN

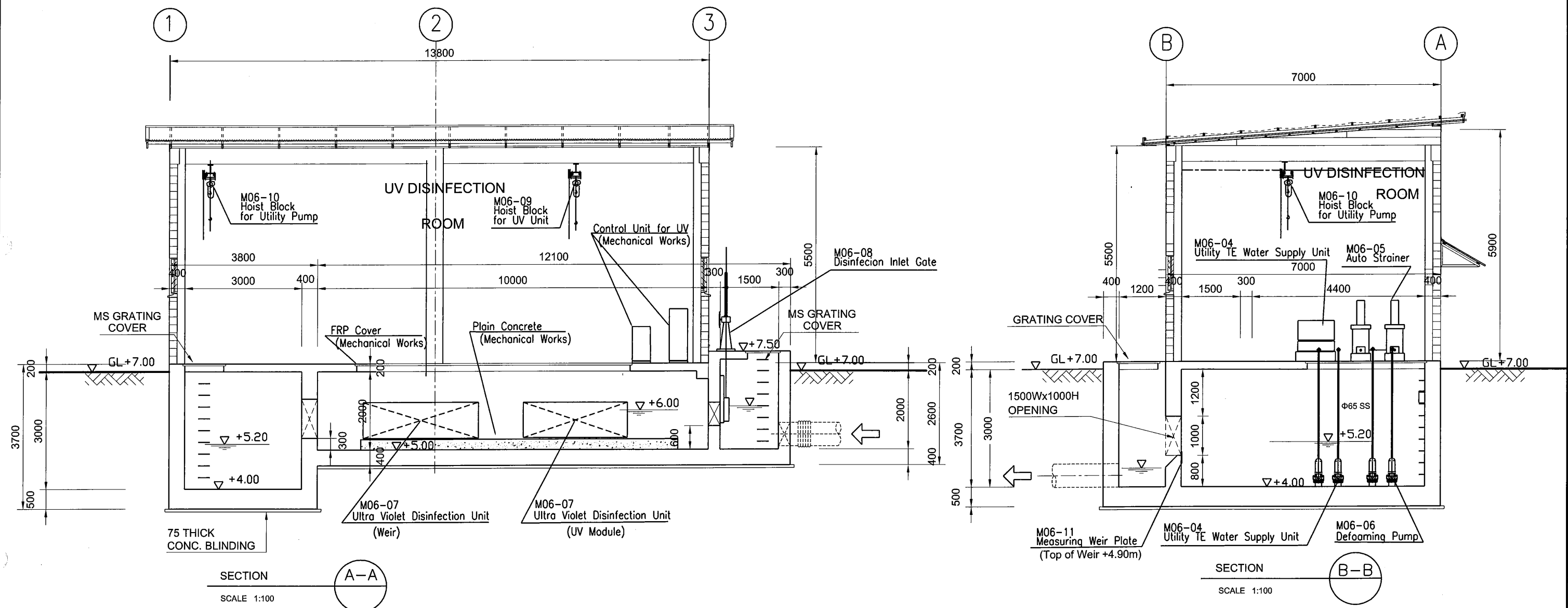
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REV.	DATE	DESCRIPTION

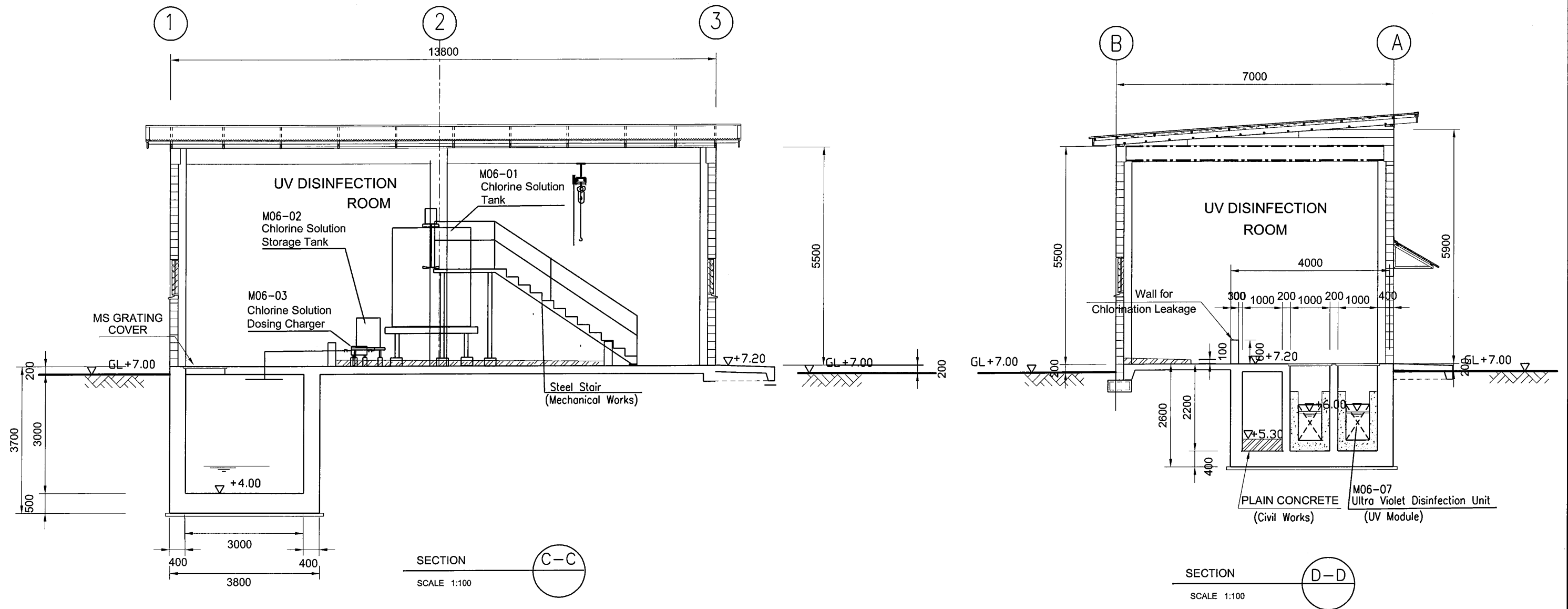
APPROVED by PMU:
 Project Director
 Lot G.Zauya
 CHECKED by CONSULTANT
 Project Manager
 T.Fuji

DATE:
 1. Dec 2011
 DATE:
 1. Dec 2011

SCALE:
 1/100
 DRAWING NO.:
 STP-TW-M01



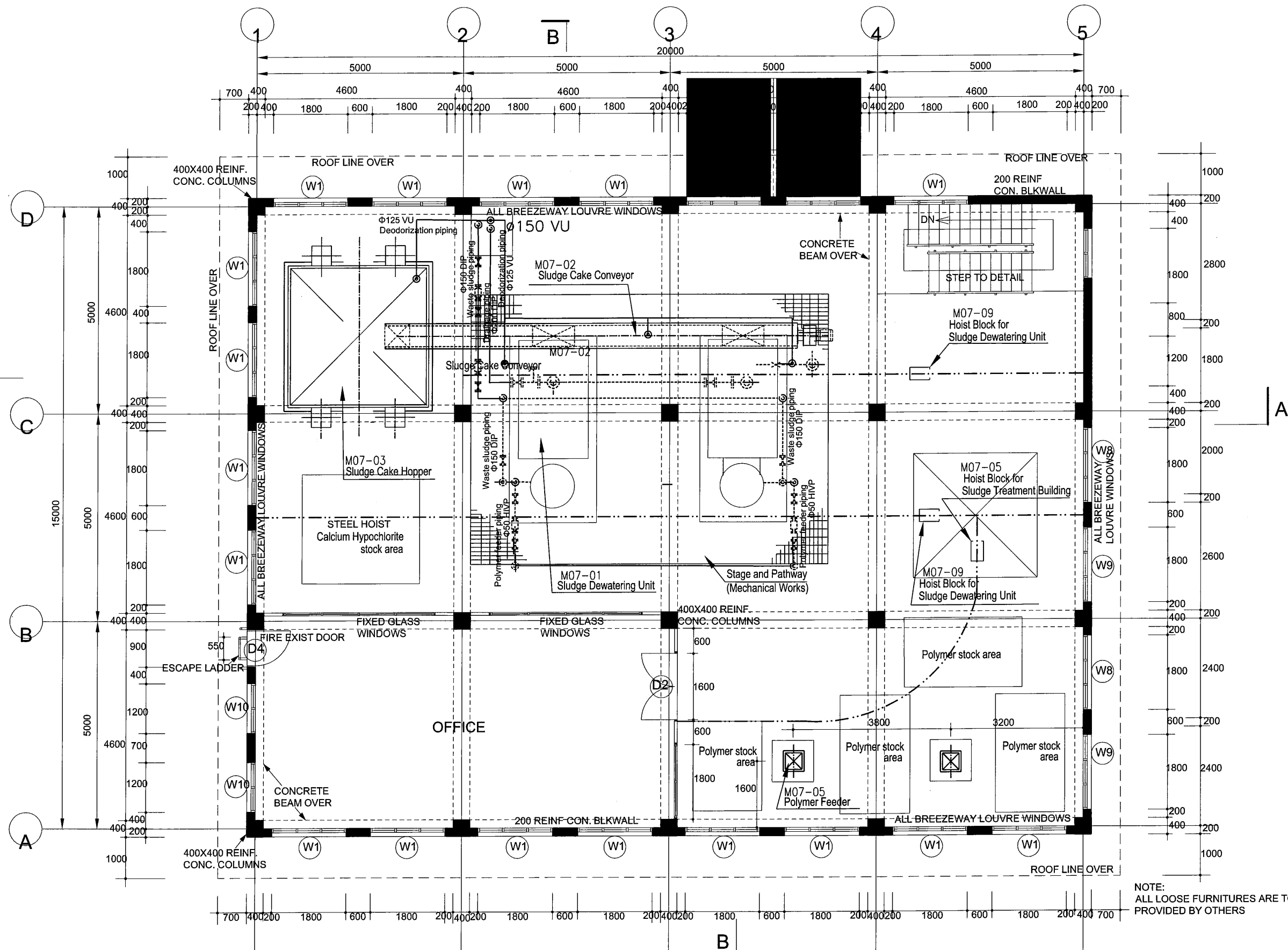
PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP - UV DISINFECTION ROOM and TREATED WATER TANK SECTION - 1					
CLIENT: IPBC INDEPENDENT PUBLIC BUSINESS CORPORATION JICA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS: NJS NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	REVISIONS		APPROVED by PMU: Project Director Lot G.Zauya	DATE: 1. Dec 2011	SCALE: 1/100
			REV.	DATE	DESCRIPTION	CHECKED by CONSULTANT Project Manager T.Fuji	DATE: 1. Dec 2011



SECTION C-C
SCALE 1:100

SECTION D-D
SCALE 1:100

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP - UV DISINFECTION ROOM and TREATED WATER TANK SECTION - 2					
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	REVISIONS		APPROVED by PMU: Project Director Lot G.Zauya	DATE: 1. Dec 2011	SCALE: 1/100
			REV.	DATE	DESCRIPTION	CHECKED by CONSULTANT Project Manager T.Fuji	DATE: 1. Dec 2011



UPPER FLOOR PLAN SCALE: 1:100

NOTE:
ALL LOOSE FURNITURES ARE TO BE PROVIDED BY OTHERS

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP - SLUDGE TREATMENT BUILDING - Upper Floor Plan

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
PROJECT MANAGEMENT UNIT (PMU)
JAPAN INTERNATIONAL COOPERATION AGENCY

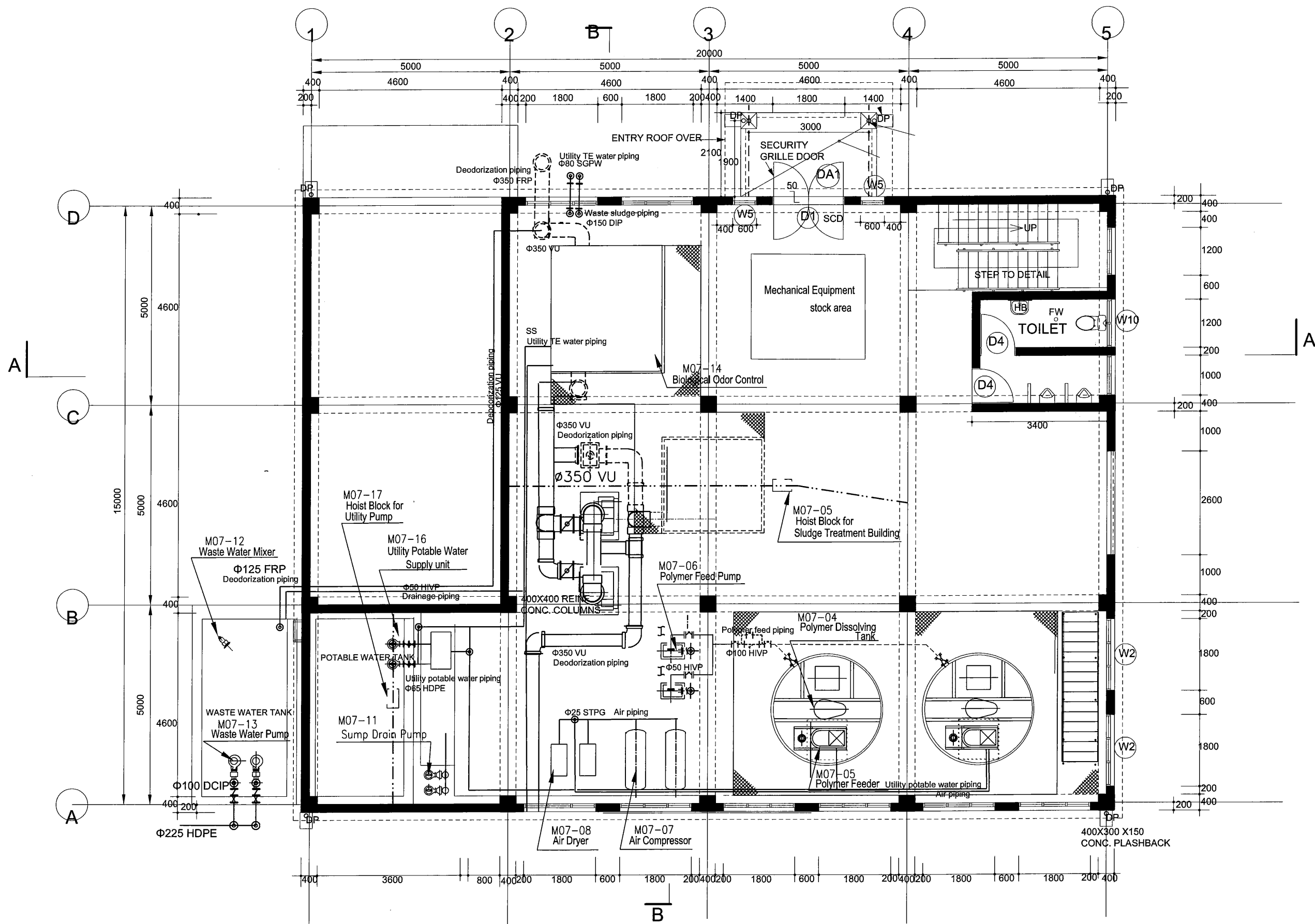
CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
Project Director
Lot G.Zauya
CHECKED by CONSULTANT
Project Manager
T.Fuji

DATE: 1. Dec 2011
SCALE: 1/100
DATE: 1. Dec 2011
DRAWING NO.: STP-STB-M01




GROUND FLOOR PLAN SCALE: 1:100

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP - SLUDGE TREATMENT BUILDING - Ground Floor Plan

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
 PROJECT MANAGEMENT UNIT (PMU)
 JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN

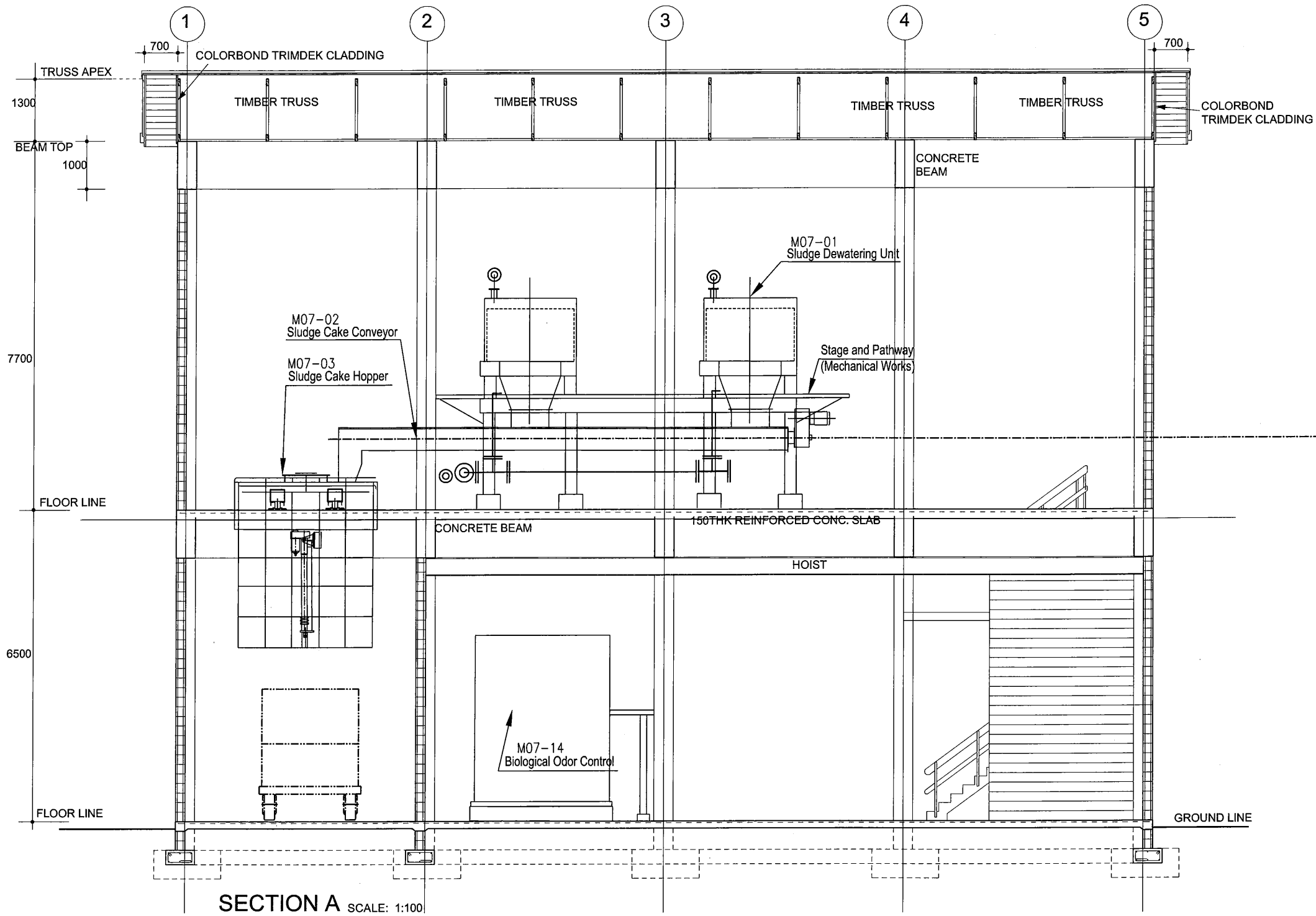
NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
 Project Director
 Lot G.Zauya
 CHECKED by CONSULTANT
 Project Manager
 T.Fuji

DATE: 1. Dec 2011
 DATE: 1. Dec 2011


SCALE: 1/100
 DRAWING NO.: STP-STB-M02



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP - SLUDGE TREATMENT BUILDING SECTION - 1

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
 PROJECT MANAGEMENT UNIT (PMU)
 JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN

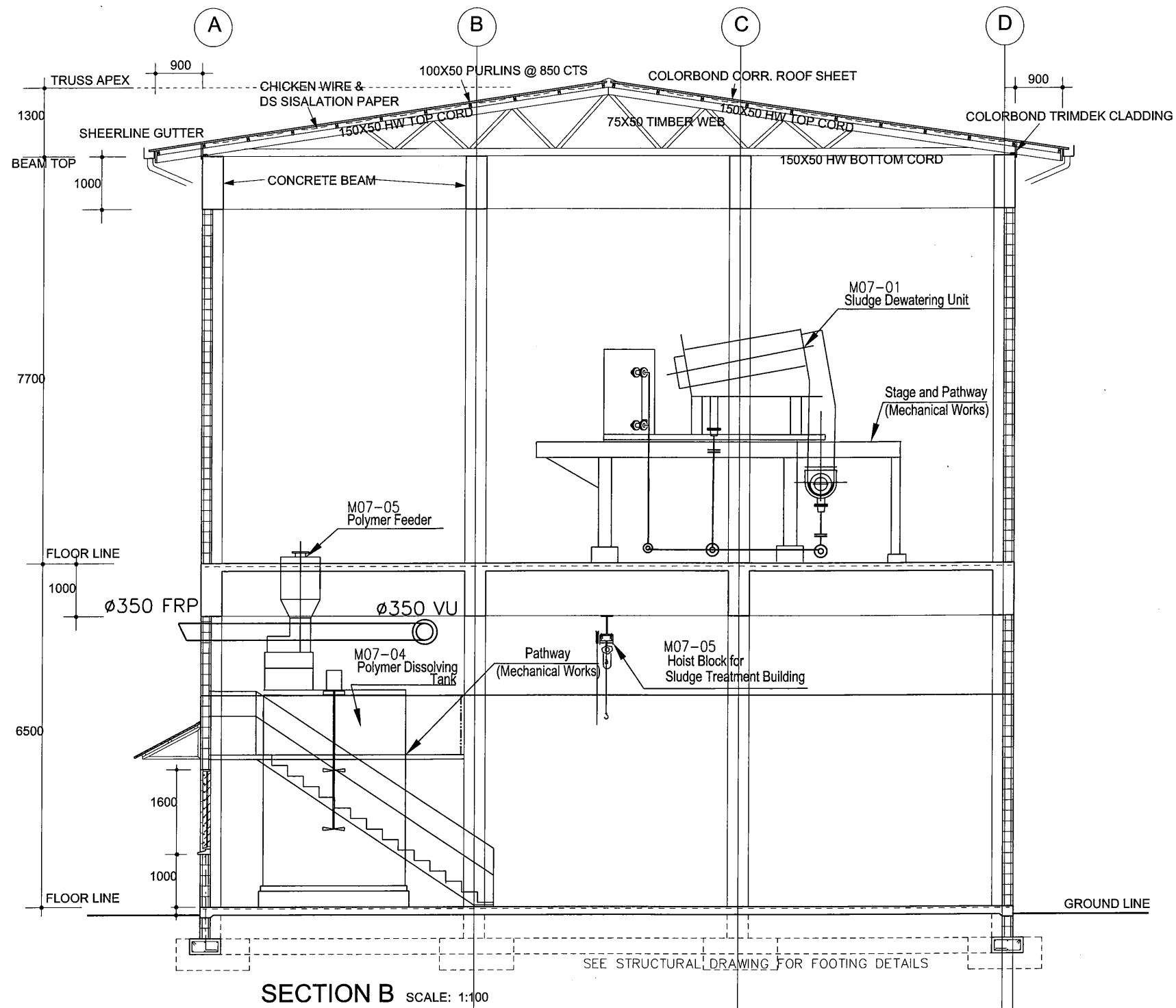
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REVISIONS		
REV.	DATE	DESCRIPTION


APPROVED by PMU:
 Project Director
 Lot G.Zauya
 CHECKED by CONSULTANT
 Project Manager
 T.Fuji

DATE:
 1. Dec 2011
 DATE:
 1. Dec 2011

SCALE:
 1/100
 DRAWING NO.:
 STP-STB-M03

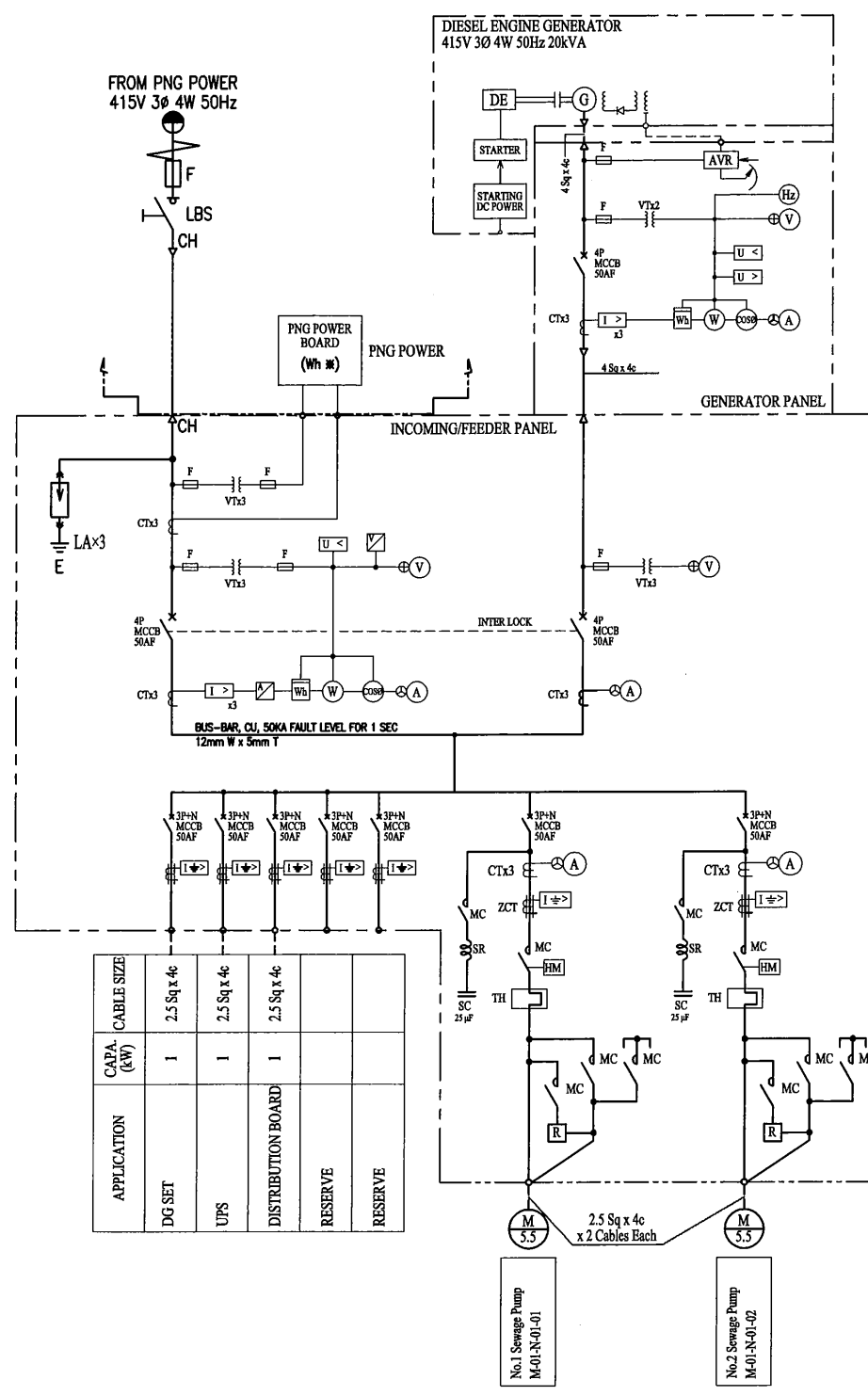


SECTION B SCALE: 1:100

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP - SLUDGE TREATMENT BUILDING SECTION - 2																																									
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU) JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	<table border="1"> <thead> <tr> <th colspan="2">REVISIONS</th> <th>APPROVED by PMU:</th> <th>DATE:</th> <th>SCALE:</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td>1. Dec 2011</td> <td>1/100</td> </tr> <tr> <td></td> <td></td> <td></td> <td>CHECKED by CONSULTANT</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Project Director Lot G.Zauya</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Project Manager T.Fuji</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>DATE:</td> <td>DRAWING NO.:</td> </tr> <tr> <td></td> <td></td> <td></td> <td>1. Dec 2011</td> <td>STP-STB-M04</td> </tr> </tbody> </table>	REVISIONS		APPROVED by PMU:	DATE:	SCALE:	REV.	DATE	DESCRIPTION						1. Dec 2011	1/100				CHECKED by CONSULTANT					Project Director Lot G.Zauya					Project Manager T.Fuji					DATE:	DRAWING NO.:				1. Dec 2011	STP-STB-M04
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			1. Dec 2011	STP-STB-M04																																							

LIST OF DRAWINGS (DETAILED DESIGN)

Drawing No.	Title	Scale	Drawing No.	Title	Scale
	<ELECTRICAL WORKS>				
	<u>(Pumping Stations)</u>			<u>(Kila Kila STP)</u>	
PS1/6/13-E-001	Incoming/Pump Control Panel And Telemetry System Diagram For PS1/6/13	NONE	STP-E-01	Yard Wiring Plan	1:800
PS2/3/4-E-001	Incoming/Feeder Panel And Pump Control Panel For PS2/3/4	NONE	STP-E-02	Cable Schedule	NONE
PS2/3/4-E-002	Instrumentation And Telemetry System Diagram For PS2/3/4	NONE	STP-E-03	Instrumentation Diagram - Part-1 (1/2)	NONE
PS5/17-E-001	Incoming/Feeder Panel And Pump Control Panel For PS5/17	NONE	STP-E-04	Instrumentation Diagram - Part-2 (2/2)	NONE
PS5/17-E-002	Instrumentation And Telemetry System Diagram For PS5/17	NONE	STP-E-05	SCADA System Diagram	NONE
PS7-E-001	Incoming/Feeder Panel And Pump Control Panel	NONE	STP-E-06	Single Line Diagram For Power Supply	NONE
PS7-E-002	Instrumentation And Telemetry System Diagram	NONE	STP-E-07	Outline Of LV Incoming/Feeder Panels And SCADA Components	NONE
PS8-E-001	Pump Control Panel And Telemetry System Diagram	NONE	STP-E-08	Earthing System Diagram	NONE
PS9-E-001	Incoming/Feeder Panel And Pump Control Panel	NONE	STP-E-09	UPS And Yard Lighting Distribution Board	NONE
PS9-E-002	Instrumentation And Telemetry System Diagram	NONE	STP-E-10	Grit Chamber MCC And Air Blower Control Panels	NONE
PS10-E-001	Incoming/Feeder Panel And Pump Control Panel	NONE	STP-E-11	No.1/2 OD/Clarifier MCC	NONE
PS10-E-002	Instrumentation And Telemetry System Diagram	NONE	STP-E-12	No.3 OD/Clarifier MCC And Utility/Disinfection MCC	NONE
PS11-E-001	Incoming/Feeder Panel And Pump Control Panel	NONE	STP-E-13	Sludge Treatment MCC	NONE
PS11-E-002	Instrumentation And Telemetry System Diagram	NONE	STP-E-14	Local Control Panels - Part 1 (1/2)	NONE
PS12-E-001	Incoming/Feeder Panel And Pump Control Panel	NONE	STP-E-15	Local Control Panels - Part 2 (2/2)	NONE
PS12-E-002	Instrumentation And Telemetry System Diagram	NONE	STP-E-16	Grit Chamber Wiring Plan	1:100
PS14-E-001	Pump Control Panel And Telemetry System Diagram	NONE	STP-E-17	Grit Chamber Wiring Section	1:100
PS15-E-001	Incoming/Feeder Panel And Pump Control Panel	NONE	STP-E-18	Oxidation Ditch Wiring Plan/Section (Tank 1,2)	1:250
PS15-E-002	Instrumentation And Telemetry System Diagram	NONE	STP-E-19	Oxidation Ditch Wiring Plan (Tank 3)	1:200
PS16-E-001	Incoming/Pump Control Panel And Telemetry System Diagram	NONE	STP-E-20	UV Disinfection Room And Treated Water Tank Wiring Plan/Section	1:100
			STP-E-21	Sludge Treatment Building Wiring Plan For Ground Floor	1:100
			STP-E-22	Disinfection Tank Wiring Plan/Section	1:100
			STP-E-23	Sludge Treatment Building Wiring Plan For Ground Floor	1:100
			STP-E-24	Sludge Treatment Building Wiring Plan For First Floor	1:100
			STP-E-25	Sludge Treatment Building Wiring Section	1:100
			STP-E-26	Electrical Substation Wiring Plan	1:100
			STP-E-27	Administration Building Wiring Plan	1:100



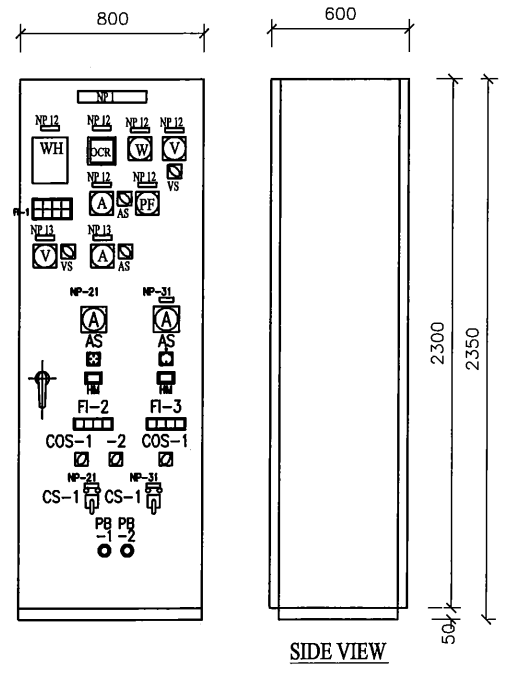
APPLICATION	CABLE SIZE	CAPA. (kW)
DG SET	2.5 Sq x 4c	1
UPS	2.5 Sq x 4c	1
DISTRIBUTION BOARD	2.5 Sq x 4c	1
RESERVE		
RESERVE		

SYMBOL	DESCRIPTION
A	AMMETER
AS	AMMETER SWITCH
AVR	AUTOMATIC VOLTAGE REGULATOR
CH	CABLE HEAD
cosφ	POWER FACTOR METER
CT	CURRENT TRANSFORMER
DE	DIESEL ENGINE
E	EARTH
ELCB	EARTH LEAKAGE CIRCUIT BREAKER
F	FUSE
G	GENERATOR
Hz	FREQUENCY METER
kWh	KILO WATT HOUR METER
LA	LIGHTNING ARRESTER
LBS	LOAD BREAK SWITCHES
M	MOTOR
MC	ELECTROMAGNETIC CONTACTOR
MCCB	MOLDED CASE CIRCUIT BREAKER
THR	THERMAL RELAY
V	VOLTMETER
VS	VOLTMETER SWITCH
VT	VOLTAGE TRANSFORMER
W	WATT METER
WL	WHITE LAMP
ZCT	ZERO PHASE CURRENT TRANSFORMER
3E	3E RELAY
[Symbol]	AC TIME OVER CURRENT RELAY
[Symbol]	GROUND FAULT RELAY
[Symbol]	UNDER VOLTAGE RELAY
[Symbol]	OVER VOLTAGE RELAY

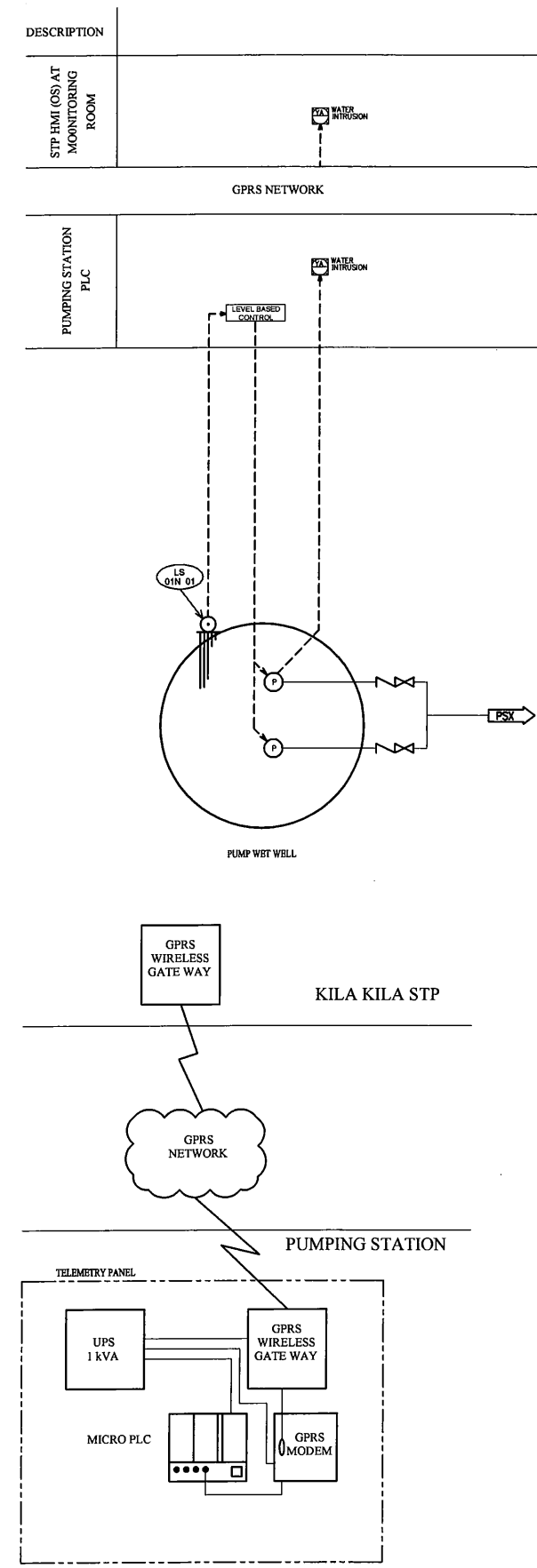
Note 1;
Read N as figures shown on the schedule below.

Symbol	PS1	PS6	PS13
N	1	6	13

Item	Description
NP-1	Incoming & Pump Control Panel
NP-12	PNG Power Supply
NP-13	DG Set Power Supply
NP-21	NO.1 Sewage Pump
NP-31	NO.2 Sewage Pump
COS1	Auto - Off - Manual
COS2	1 - 2 - Alternate
CS1	Start - Stop
PBS1	Emergency Stop
PBS2	Lamp Test
FI	Illuminated Alarm Indicator

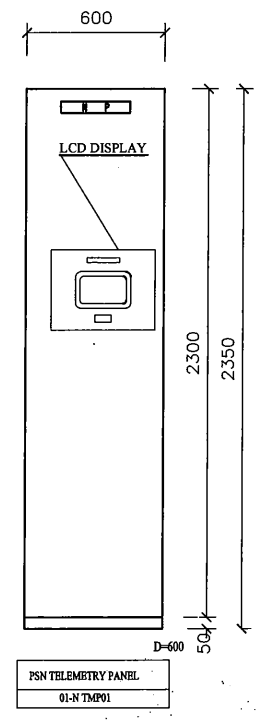


Incoming/Pump Control Panel
01-N PCP01

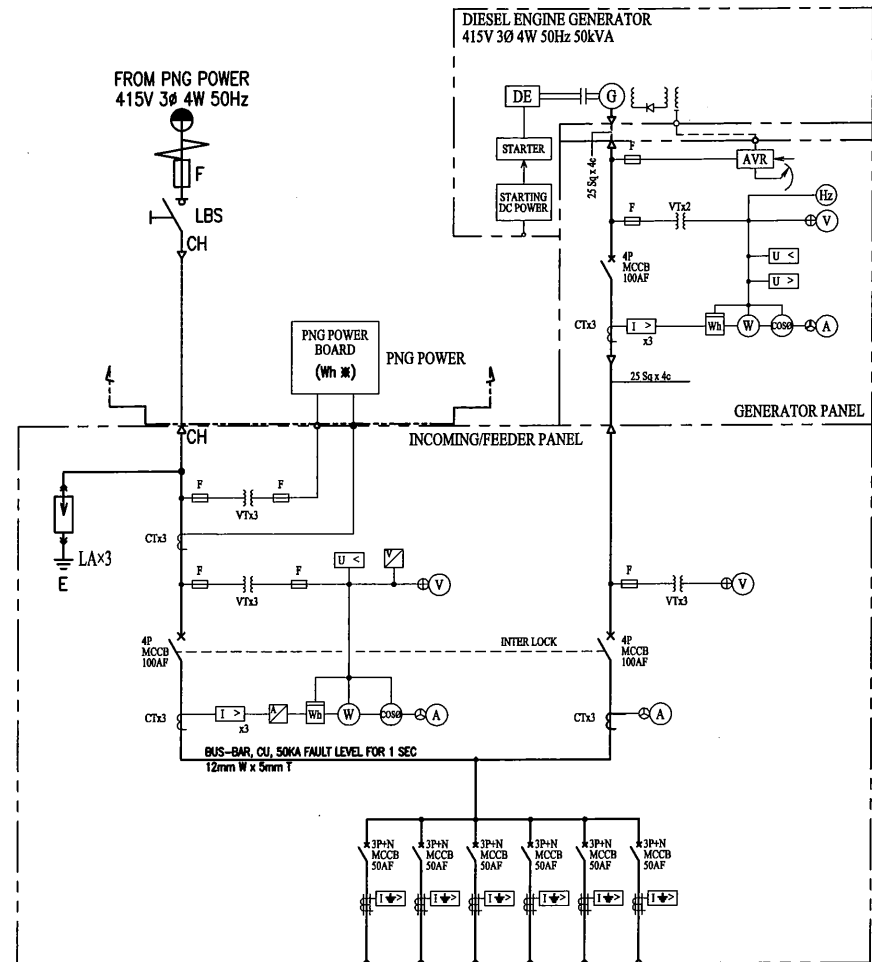


Note 1;
Read X as figures shown on the schedule below.

Symbol	PS1	PS6	PS13
X	2	7	14

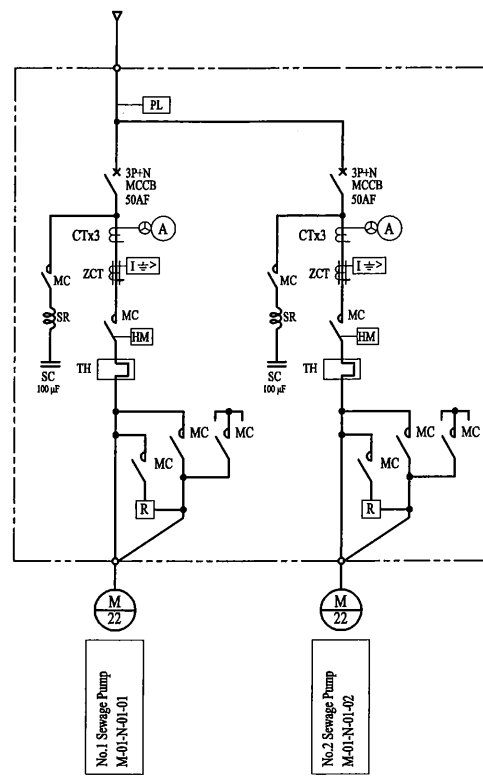


PSN TELEMETRY PANEL
01-N TMP01



SYMBOL	DESCRIPTION
A	AMMETER
AS	AMMETER SWITCH
AVR	AUTOMATIC VOLTAGE REGULATOR
CH	CABLE HEAD
Coθθ	POWER FACTOR METER
CT	CURRENT TRANSFORMER
DE	DIESEL ENGINE
E	EARTH
ELCB	EARTH LEAKAGE CIRCUIT BREAKER
F	FUSE
G	GENERATOR
Hz	FREQUENCY METER
kWh	KILO WATT HOUR METER
LA	LIGHTNING ARRESTER
LBS	LOAD BREAK SWITCHES
M	MOTOR
MC	ELECTROMAGNETIC CONTACTOR
MCCB	MOLDED CASE CIRCUIT BREAKER
THR	THERMAL RELAY
V	VOLTMETER
VS	VOLTMETER SWITCH
VT	VOLTAGE TRANSFORMER
W	WATT METER
WL	WHITE LAMP
ZCT	ZERO PHASE CURRENT TRANSFORMER
3E	3E RELAY
[Symbol]	AC TIME OVER CURRENT RELAY
[Symbol]	GROUND FAULT RELAY
[Symbol]	UNDER VOLTAGE RELAY
[Symbol]	OVER VOLTAGE RELAY

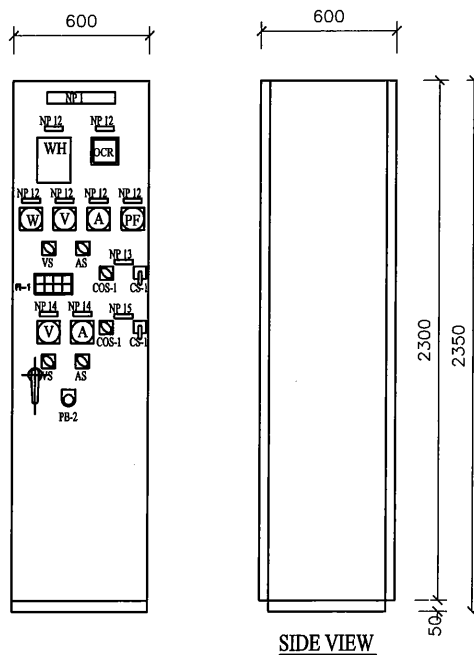
Incoming/Feeder Panel
3Ø4W 415V 50Hz



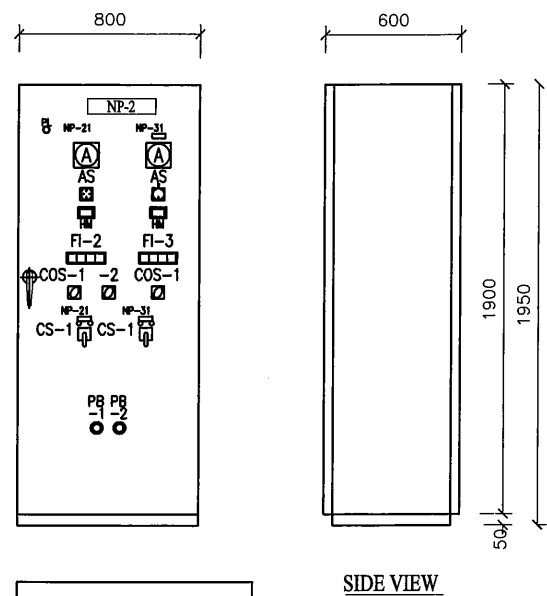
Note 1;
Read N as figures shown on the schedule below.

Symbol	PS2	PS3	PS4
N	2	3	4

APPLICATION	CABLE SIZE	CAPA. (kW)
PUMP CONTROL PANEL	16 Sq x 4c	22
DG SET	2.5 Sq x 4c	1
UPS	2.5 Sq x 4c	1
DISTRIBUTION BOARD	2.5 Sq x 4c	1
RESERVE		
RESERVE		



Incoming/Feeder Panel
01-N IFP01



Pump Control Panel
01-N PCP01

Item	Description
NP-1	Incoming/Feeder Panel
NP-12	PNG Power Supply
NP-13	PNG Power Supply ON - OFF
NP-14	DG Set Power Supply
NP-15	DG Set Power Supply ON - OFF
NP-2	Sewage Pump Control Panel NPCP 01
NP-21	NO.1 Sewage Pump
NP-31	NO.2 Sewage Pump
COS1	Auto - Off - Manual
COS2	1 - 2 - Alternate
CS1	Start - Stop
PBS1	Emergency Stop
PBS2	Lamp Test
FI	Illuminated Alarm Indicator
PL	Pilot Light

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
PROJECT MANAGEMENT UNIT (PMU)
jica JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

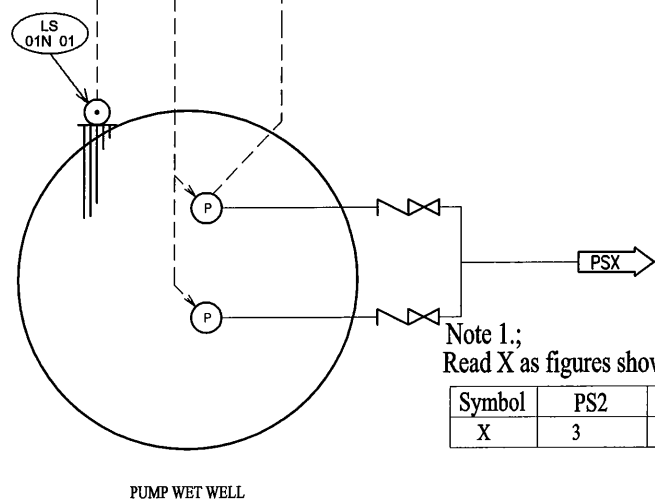
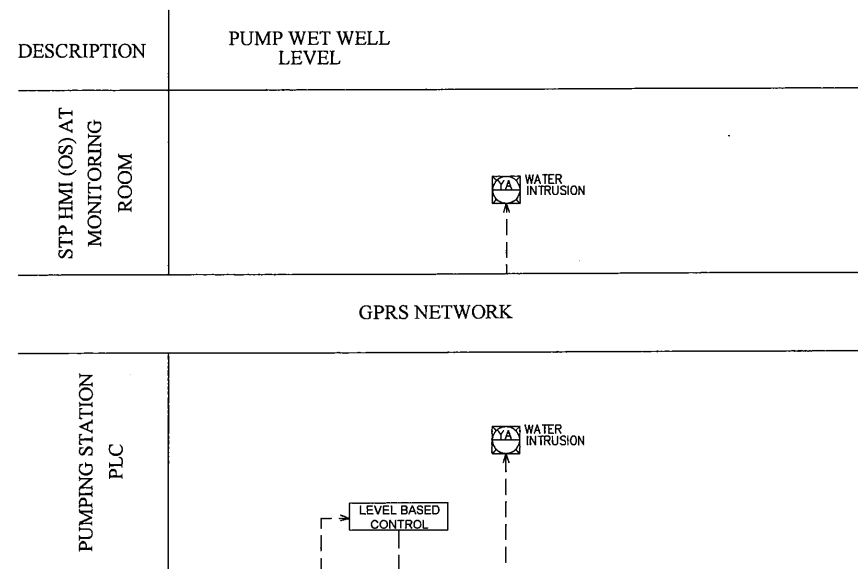
TITLE: PS2/3/4 IDUBADA/HAGARA/HANUABADA: INCOMING/FEEDER PANEL AND PUMP CONTROL PANEL

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

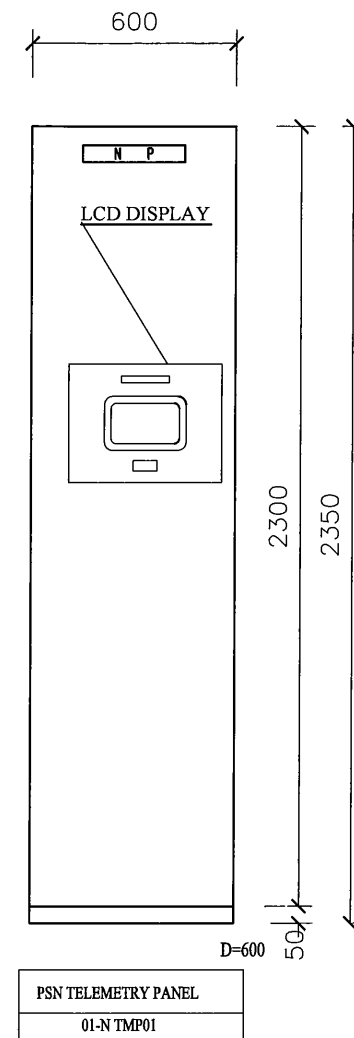
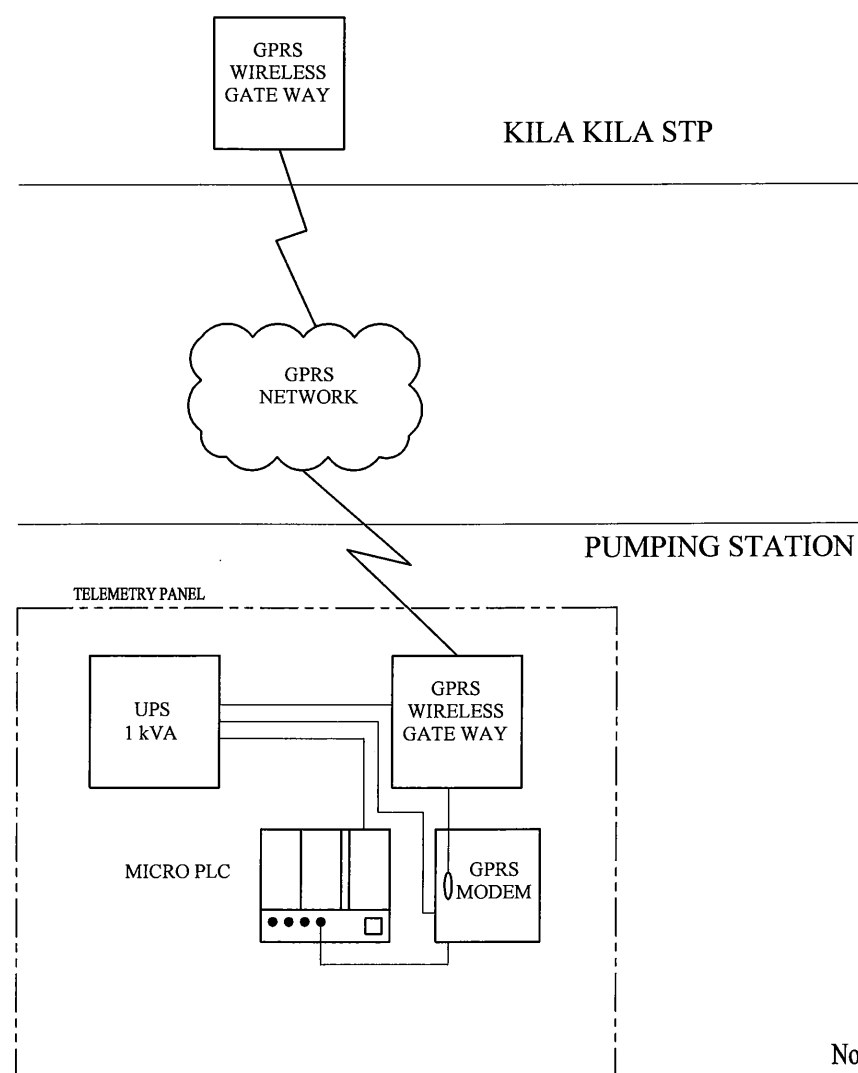
APPROVED by PMU:
Project Director
Lot G.Zauya
CHECKED by CONSULTANT
Project Manager
T.Fuji

DATE: 1. Dec 2011
SCALE: NOT TO SCALE
DATE: 1. Dec 2011
DRAWING NO.: PS2/3/4-E001



Note 1.;
Read X as figures shown on the schedule below.

Symbol	PS2	PS3	PS4
X	3	4	5



Note 2.;
Read N as figures shown on the schedule below.

Symbol	PS2	PS3	PS4
N	2	3	4

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: PS2/3/4 IDUBADA/HAGARA/HANUABADA: INSTRUMENTATION AND TELEMETRY SYSTEM DIAGRAM

CLIENT: **IPBC** INDEPENDENT PUBLIC BUSINESS CORPORATION
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
PROJECT MANAGEMENT UNIT (PMU)
jica JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: **NJS** NJS CONSULTANTS CO., LTD. - JAPAN

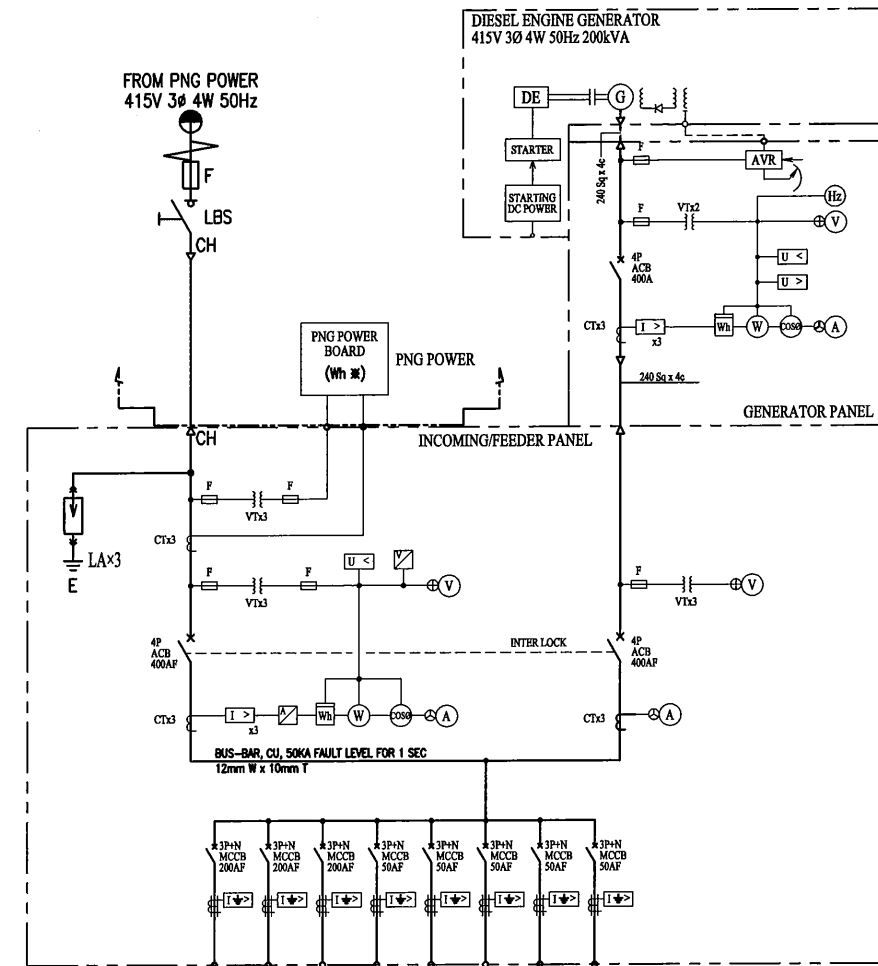
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REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
Project Director
Lot G.Zauya
CHECKED by CONSULTANT
Project Manager
T.Fuji

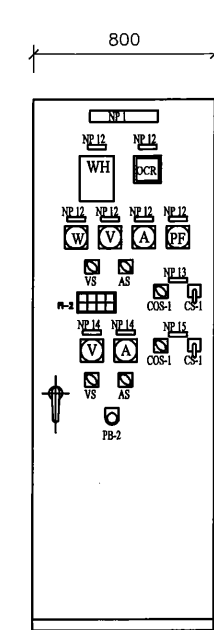
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1. Dec 2011
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1. Dec 2011

SCALE:
NOT TO SCALE
DRAWING NO.:
PS2/3/4-E002

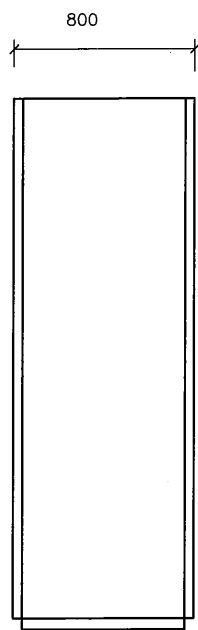


SYMBOL	DESCRIPTION
A	AMMETER
AS	AMMETER SWITCH
AVR	AUTOMATIC VOLTAGE REGULATOR
CH	CABLE HEAD
Coθ0	POWER FACTOR METER
CT	CURRENT TRANSFORMER
DE	DIESEL ENGINE
E	EARTH
ELCB	EARTH LEAKAGE CIRCUIT BREAKER
F	FUSE
G	GENERATOR
Hz	FREQUENCY METER
kWh	KILO WATT HOUR METER
LA	LIGHTNING ARRESTER
LBS	LOAD BREAK SWITCHES
M	MOTOR
MC	ELECTROMAGNETIC CONTACTOR
MCCB	MOLDED CASE CIRCUIT BREAKER
THR	THERMAL RELAY
V	VOLTMETER
VS	VOLTMETER SWITCH
VT	VOLTAGE TRANSFORMER
W	WATT METER
WL	WHITE LAMP
ZCT	ZERO PHASE CURRENT TRANSFORMER
3E	3E RELAY
[Symbol]	AC TIME OVER CURRENT RELAY
[Symbol]	GROUND FAULT RELAY
[Symbol]	UNDER VOLTAGE RELAY
[Symbol]	OVER VOLTAGE RELAY

APPLICATION	CABLE SIZE	CAPA. (kW)
No.1 SEWAGE PUMP CONTROL PANEL	70 Sq x 4c	55
No.2 SEWAGE PUMP CONTROL PANEL	70 Sq x 4c	55
No.3 SEWAGE PUMP CONTROL PANEL	70 Sq x 4c	55
DG SET	2.5 Sq x 4c	1
UPS	2.5 Sq x 4c	1
DISTRIBUTION BOARD	2.5 Sq x 4c	1
RESERVE		
RESERVE		

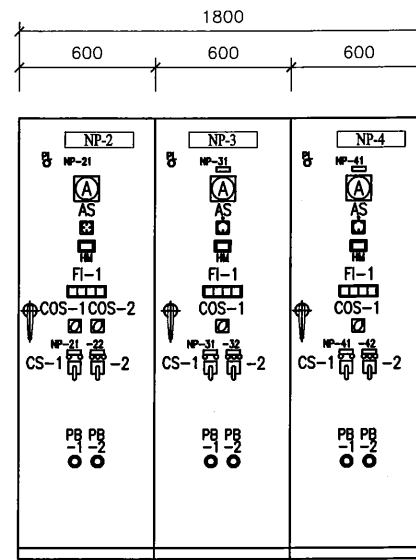
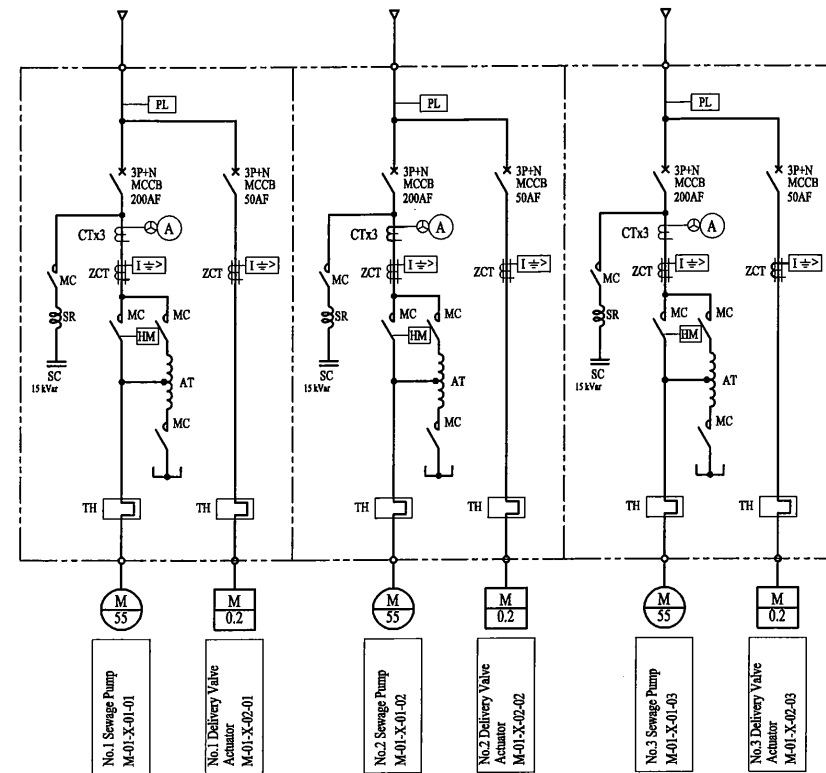


Incoming/Feeder Panel
01-X IFP01

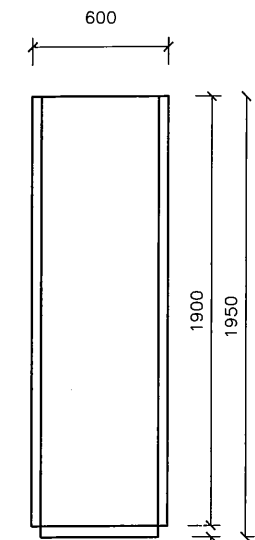


SIDE VIEW

Incoming/Feeder Panel
3Ø4W 415V 50Hz



Sewage Pump Control Panel
01-X PCP01 01-X PCP02 01-X PCP03



SIDE VIEW

Item	Description
NP-1	Incoming/Feeder Panel
NP-12	PNG Power Supply
NP-13	PNG Power Supply ON - OFF
NP-14	DG Set Power Supply
NP-15	DG Set Power Supply ON - OFF
NP-2	No.1 Sewage Pump Control Panel XMCC 01
NP-3	No.2 Sewage Pump Control Panel XMCC 01
NP-4	No.3 Sewage Pump Control Panel XMCC 01
NP-21	NO.1 Sewage Pump
NP-31	NO.2 Sewage Pump
NP-41	NO.3 Sewage Pump
COS1	Auto - Off - Manual
COS2	1/2/3 - 2/3/1 - 3/1/2 - Off
CS1	Start - Stop
CS2	Open - Stop - Close
PBS1	Emergency Stop
PBS2	Lamp Test
FI	Illuminated Alarm Indicator
PL	Pilot Light

Note 1;
Read X as Pump Station Number, 05 for Konedobu and 17 for Kaugere.

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: PS5/PS17 KONEDOBUBU/KAUGERE: INCOMING/FEEDER PANEL AND PUMP CONTROL PANEL

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
PROJECT MANAGEMENT UNIT (PMU)
JICA JAPAN INTERNATIONAL COOPERATION AGENCY

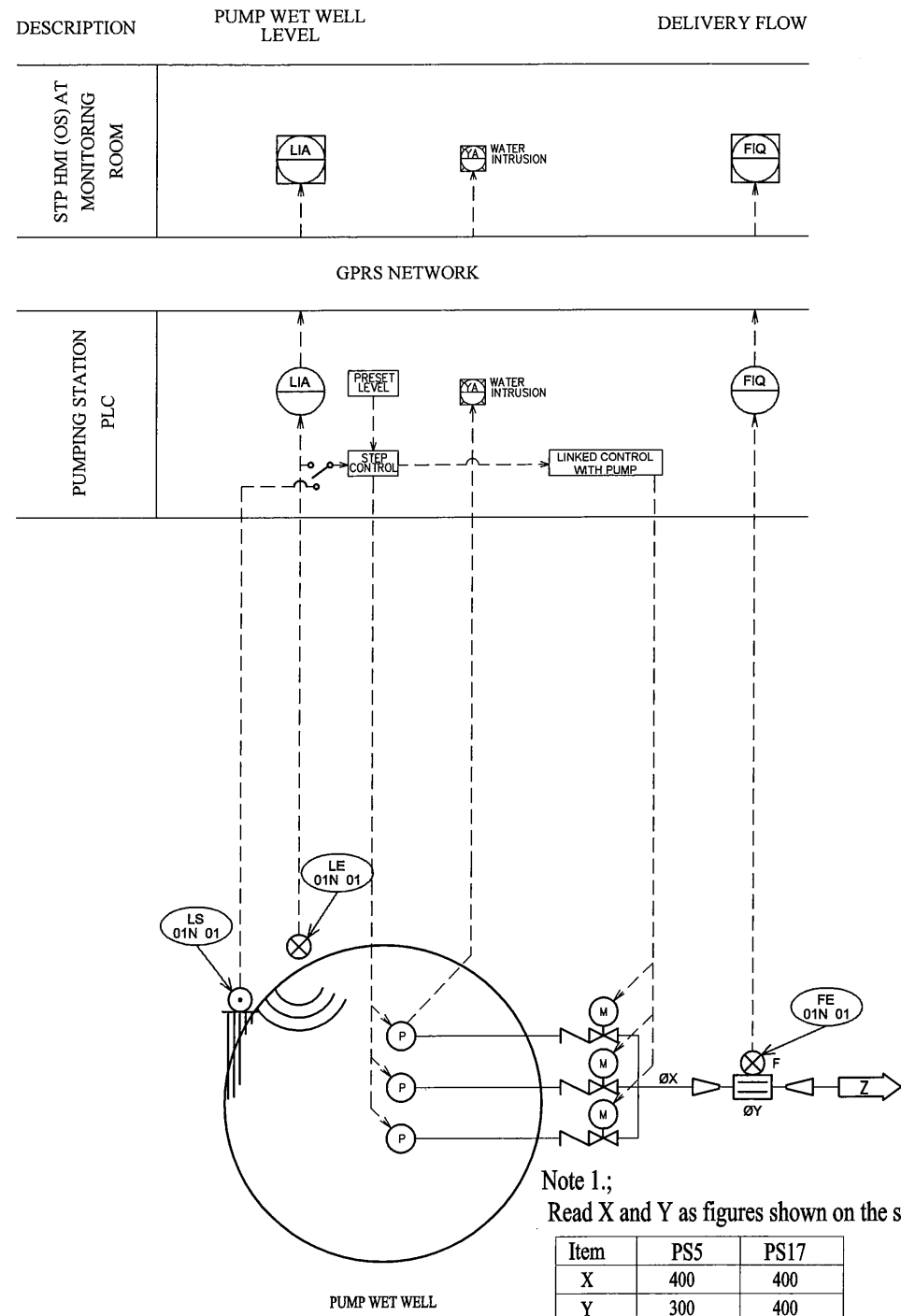
CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
Project Director
Lot G. Zauya
CHECKED by CONSULTANT
Project Manager
T. Fuji

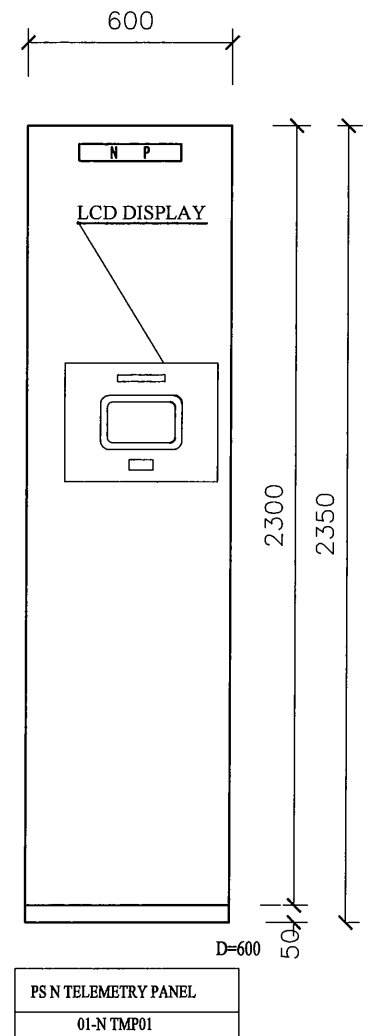
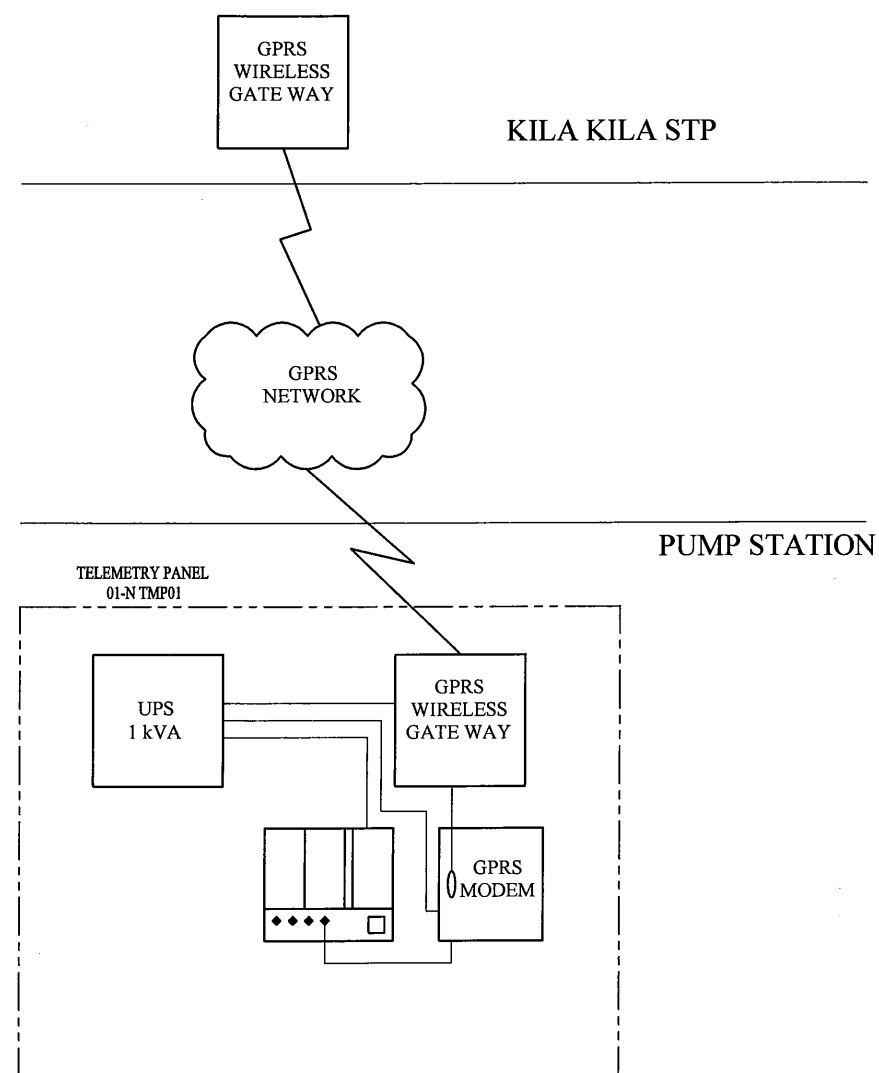
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DATE: 1. Dec 2011
DRAWING NO.: PS5/17-E001



Note 1.;
Read X and Y as figures shown on the schedule below.

Item	PS5	PS17
X	400	400
Y	300	400

Note 2.;
Read Z as PS9 and STP for PS5 and PS 17 respectively.



Note 3.;
Read N as 05 for Konedobu and 07 for Kaugere respectively

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: PS5/17 KONEDOBU/KAUGERE: INSTRUMENTATION AND TELEMETRY SYSTEM DIAGRAM

CLIENT: **IPBC** INDEPENDENT PUBLIC BUSINESS CORPORATION
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
PROJECT MANAGEMENT UNIT (PMU)
jica JAPAN INTERNATIONAL COOPERATION AGENCY

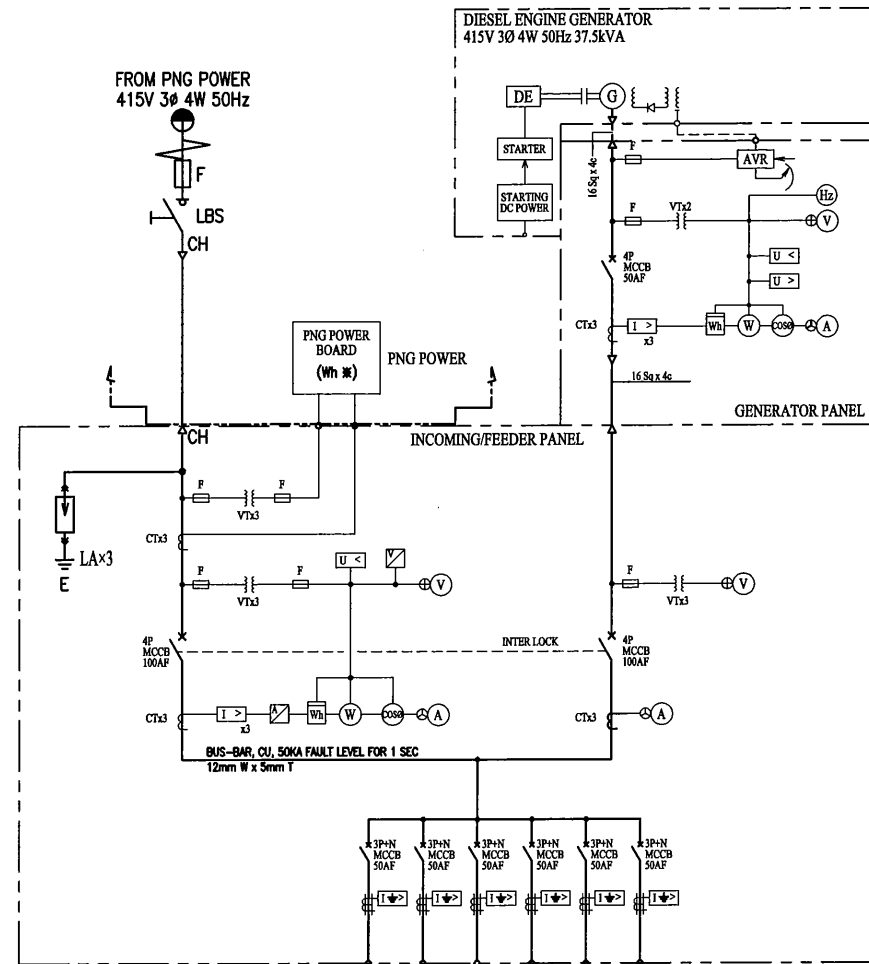
CONSULTANTS: **NJS** NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
Project Director
Lot G.Zauya
CHECKED by CONSULTANT
Project Manager
T.Fuji

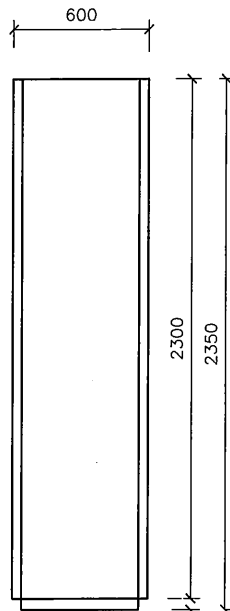
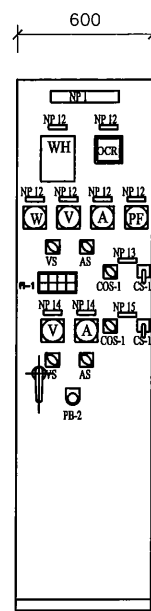
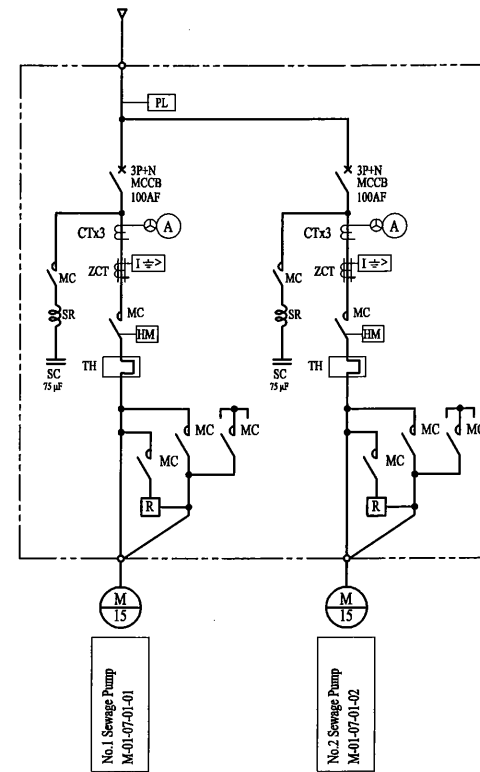
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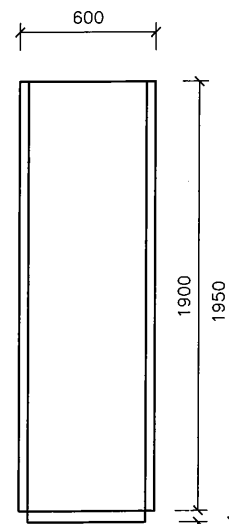
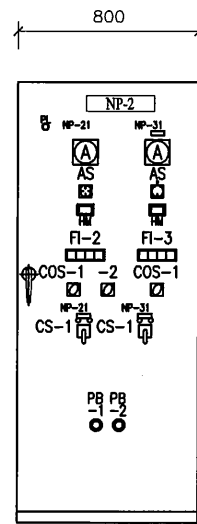
APPLICATION	CABLE SIZE	CAPA (kW)
PUMP CONTROL PANEL	6 Sq x 4c	15
DG SET	2.5 Sq x 4c	1
UPS	2.5 Sq x 4c	1
DISTRIBUTION BOARD	2.5 Sq x 4c	1
RESERVE		
RESERVE		

SYMBOL	DESCRIPTION
A	AMMETER
AS	AMMETER SWITCH
AVR	AUTOMATIC VOLTAGE REGULATOR
CH	CABLE HEAD
CoSθ	POWER FACTOR METER
CT	CURRENT TRANSFORMER
DE	DIESEL ENGINE
E	EARTH
ELCB	EARTH LEAKAGE CIRCUIT BREAKER
F	FUSE
G	GENERATOR
Hz	FREQUENCY METER
kWh	KILO WATT HOUR METER
LA	LIGHTNING ARRESTER
LBS	LOAD BREAK SWITCHES
M	MOTOR
MC	ELECTROMAGNETIC CONTACTOR
MCCB	MOLDED CASE CIRCUIT BREAKER
THR	THERMAL RELAY
V	VOLTMETER
VS	VOLTMETER SWITCH
VT	VOLTAGE TRANSFORMER
W	WATT METER
WL	WHITE LAMP
ZCT	ZERO PHASE CURRENT TRANSFORMER
3E	3E RELAY
[Symbol]	AC TIME OVER CURRENT RELAY
[Symbol]	GROUND FAULT RELAY
[Symbol]	UNDER VOLTAGE RELAY
[Symbol]	OVER VOLTAGE RELAY

Incoming/Feeder Panel
3Ø4W 415V 50Hz



Incoming/Feeder Panel
01-07 IFP01



Sewage Pump Control Panel
01-07 PCP01

Item	Description
NP-1	Incoming/Feeder Panel
NP-12	PNG Power Supply
NP-13	PNG Power Supply ON - OFF
NP-14	DG Set Power Supply
NP-15	DG Set Power Supply ON - OFF
NP-2	Sewage Pump Control Panel 07PCP 01
NP-21	NO.1 Sewage Pump
NP-31	NO.2 Sewage Pump
COS1	Auto - Off - Manual
COS2	1 - 2 - Alternate
CS1	Start - Stop
PBS1	Emergency Stop
PBS2	Lamp Test
FI	Illuminated Alarm Indicator
PL	Pilot Light

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: PS7 STANLEY ESPLANADE: INCOMING/FEEDER PANEL AND PUMP CONTROL PANEL

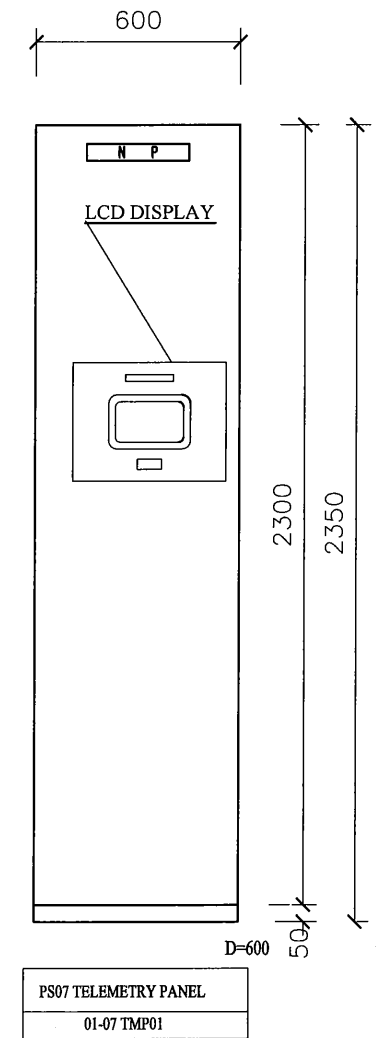
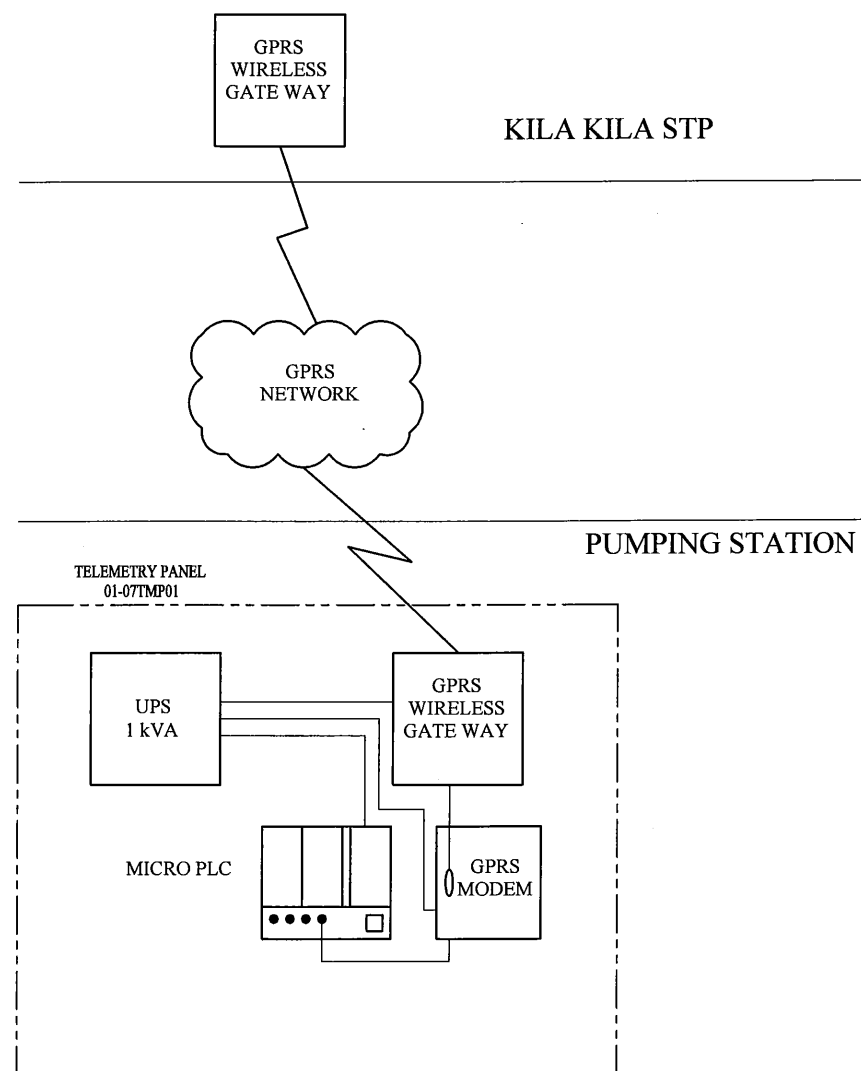
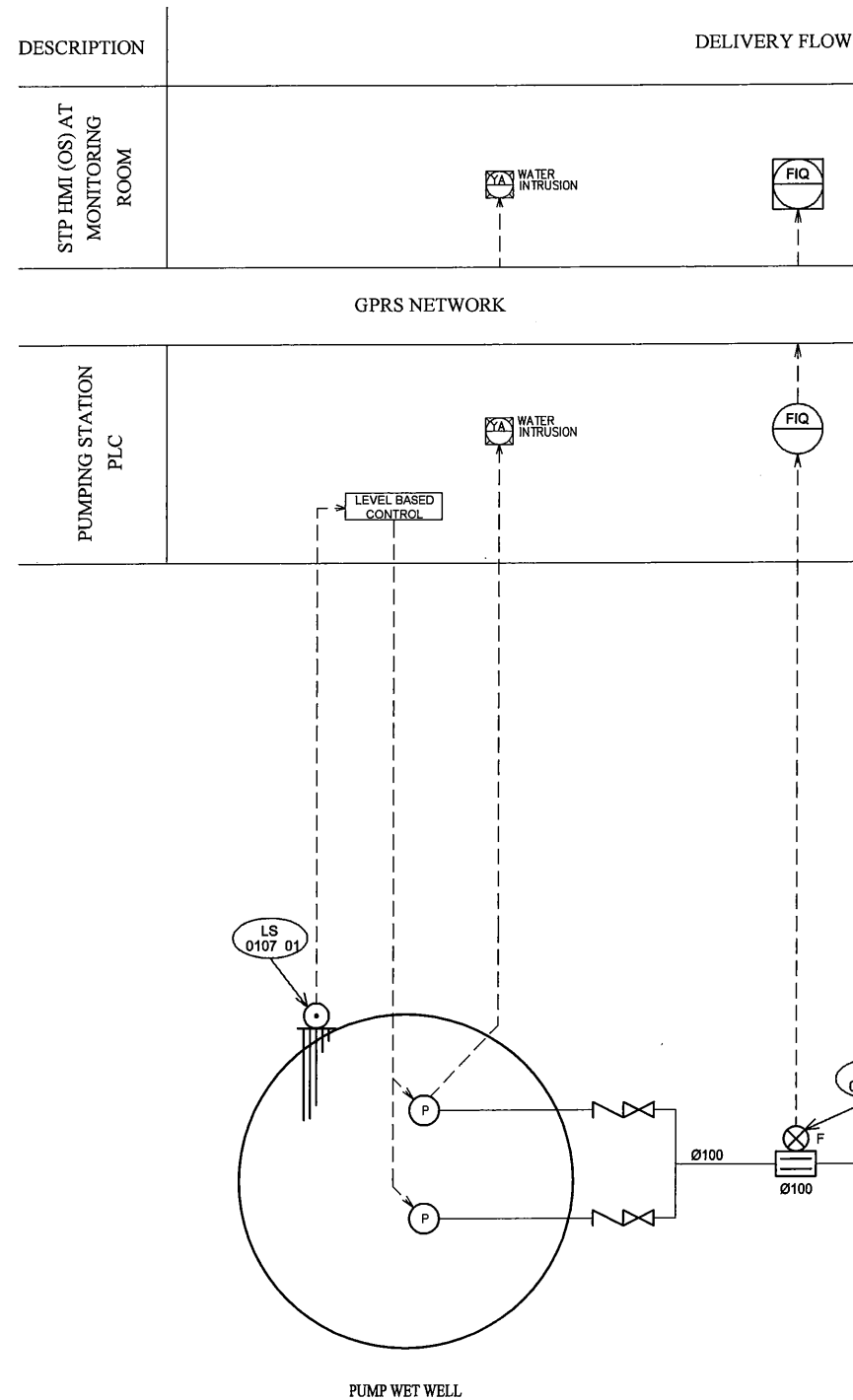
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
PROJECT MANAGEMENT UNIT (PMU)
jica JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

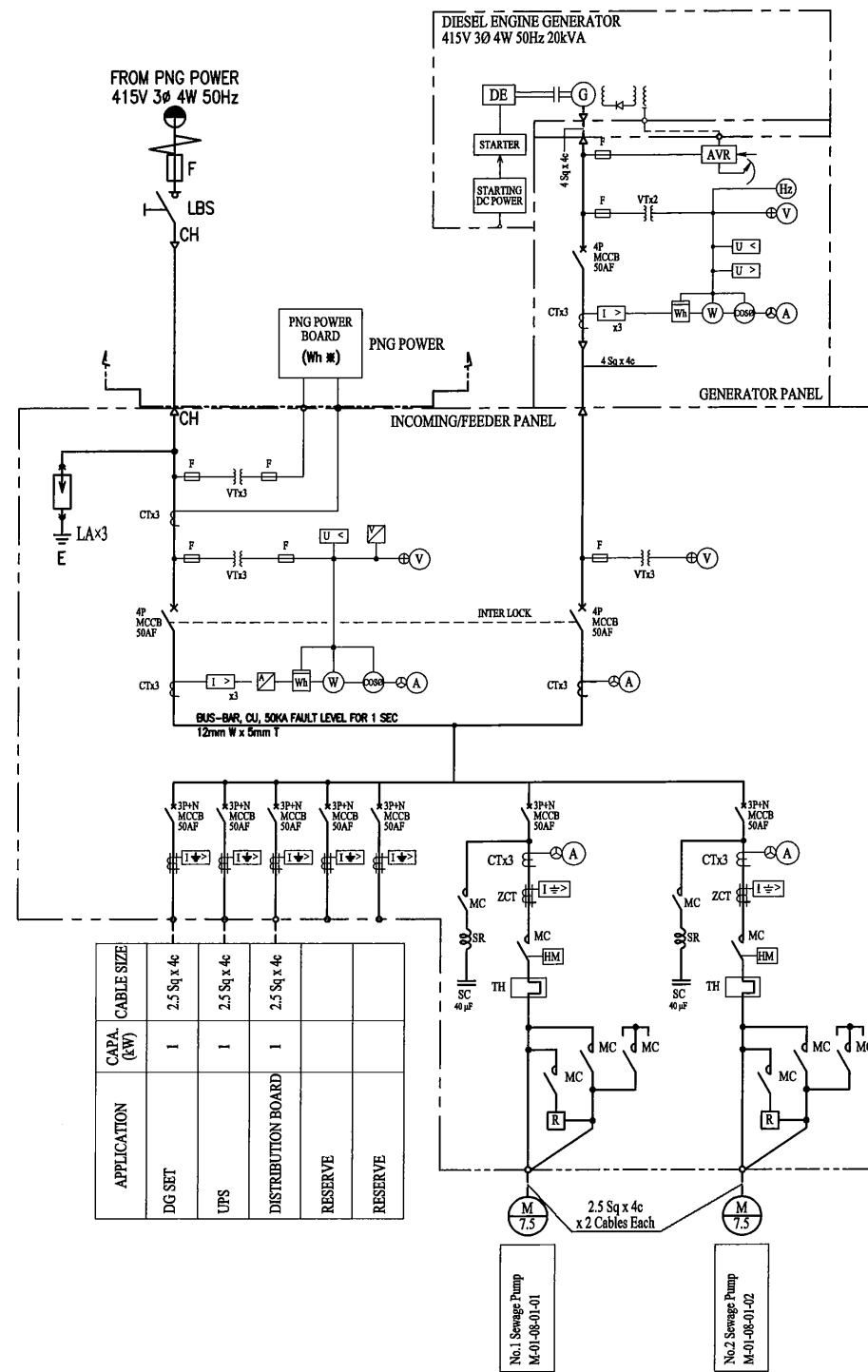
NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
Project Director
Lot G.Zauya
CHECKED by CONSULTANT
Project Manager
T.Fuji
DATE: 1. Dec 2011
SCALE: NOT TO SCALE
DRAWING NO.: PS7-E001

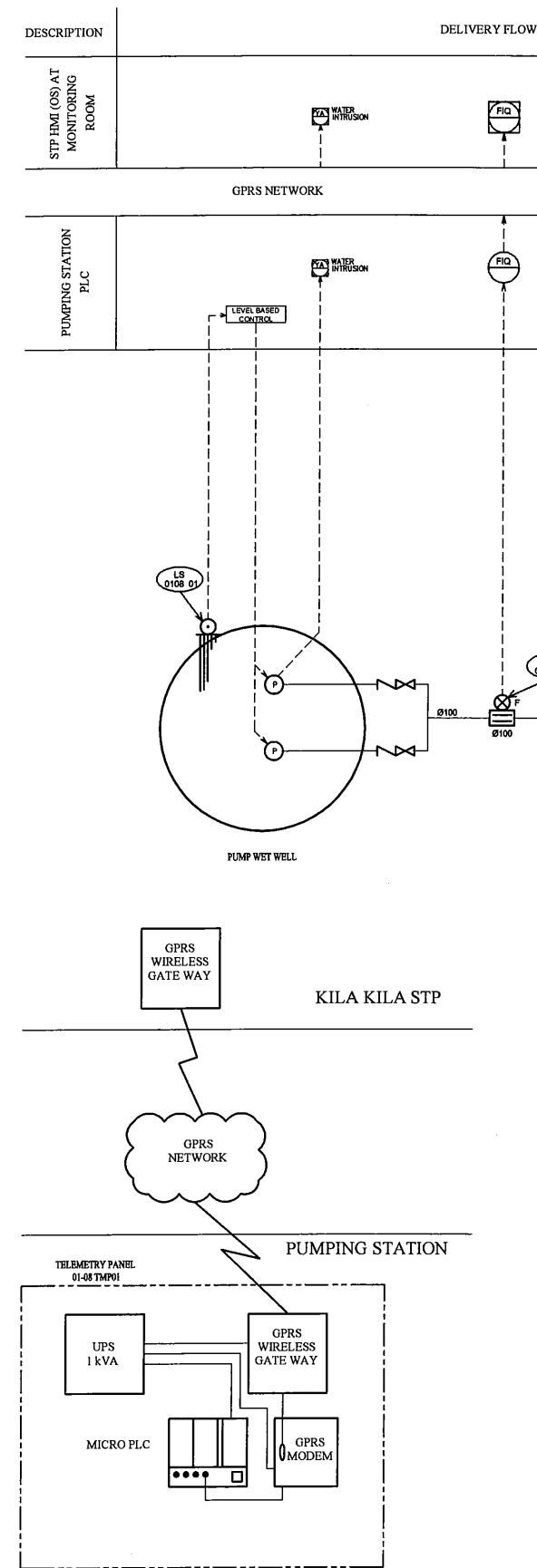
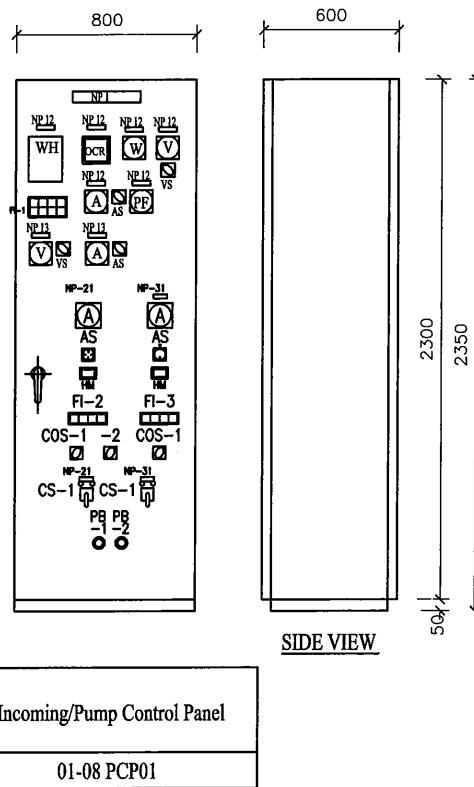


PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: PS7 STANLEY ESPLANADE: INSTRUMENTATION AND TELEMETRY SYSTEM DIAGRAM																				
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU)	CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:																				
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REVISIONS																						
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JAPAN INTERNATIONAL COOPERATION AGENCY		APPROVED by PMU: Project Director Lot G. Zauya	DATE: 1. Dec 2011 SCALE: NOT TO SCALE																			
		CHECKED by CONSULTANT Project Manager T. Fuji	DATE: 1. Dec 2011 DRAWING NO.: PS7-E002																			



SYMBOL	DESCRIPTION
A	AMMETER
AS	AMMETER SWITCH
AVR	AUTOMATIC VOLTAGE REGULATOR
CH	CABLE HEAD
Cosφ	POWER FACTOR METER
CT	CURRENT TRANSFORMER
DE	DIESEL ENGINE
E	EARTH
ELCB	EARTH LEAKAGE CIRCUIT BREAKER
F	FUSE
G	GENERATOR
Hz	FREQUENCY METER
kWh	KILO WATT HOUR METER
LA	LIGHTNING ARRESTER
LBS	LOAD BREAK SWITCHES
M	MOTOR
MC	ELECTROMAGNETIC CONTACTOR
MCCB	MOLDED CASE CIRCUIT BREAKER
THR	THERMAL RELAY
V	VOLTMETER
VS	VOLTMETER SWITCH
VT	VOLTAGE TRANSFORMER
W	WATT METER
WL	WHITE LAMP
ZCT	ZERO PHASE CURRENT TRANSFORMER
3E	3E RELAY
[Symbol]	AC TIME OVER CURRENT RELAY
[Symbol]	GROUND FAULT RELAY
[Symbol]	UNDER VOLTAGE RELAY
[Symbol]	OVER VOLTAGE RELAY

Item	Description
NP-1	Incoming & Pump Control Panel
NP-12	PNG Power Supply
NP-13	DG Set Power Supply
NP-21	NO.1 Sewage Pump
NP-31	NO.2 Sewage Pump
COS1	Auto - Off - Manual
COS2	1 - 2 - Alternate
CS1	Start - Stop
PBS1	Emergency Stop
PBS2	Lamp Test
FI	Illuminated Alarm Indicator



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: PS8 SEA PARK Incoming/Pump Control Panel And Telemetry System Diagram

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
 PROJECT MANAGEMENT UNIT (PMU)
 JICA JAPAN INTERNATIONAL COOPERATION AGENCY

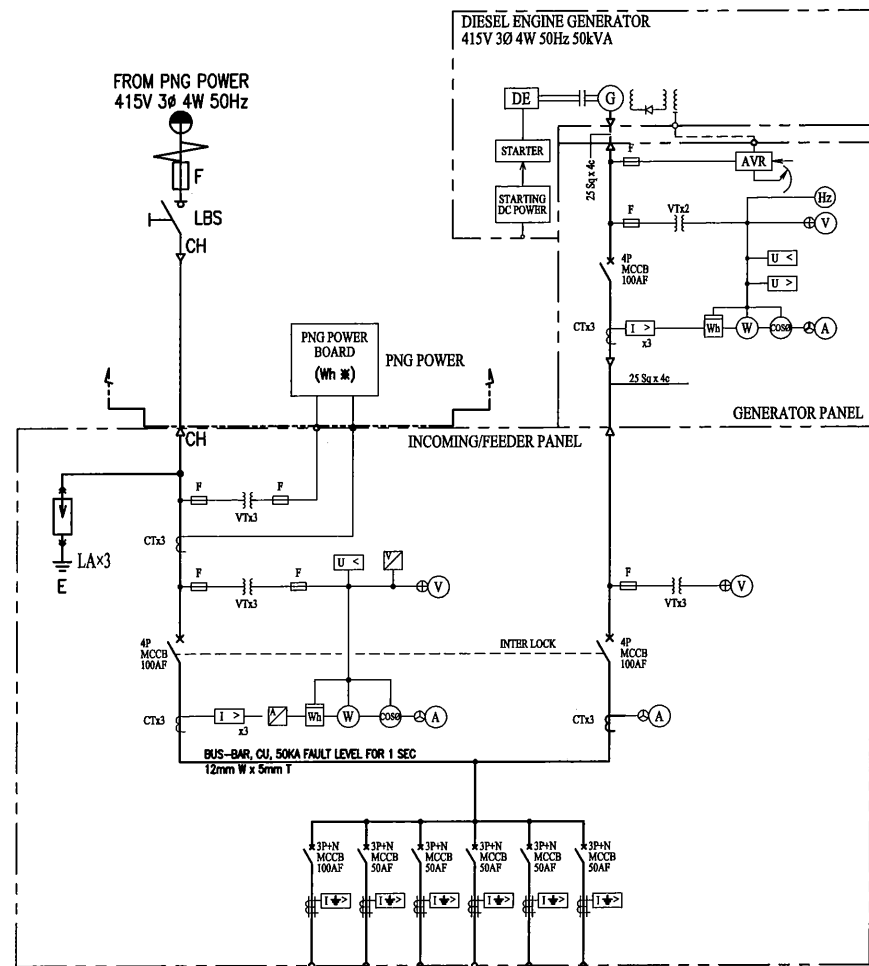
CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
 Project Director
 Lot G.Zauya
 CHECKED by CONSULTANT
 Project Manager
 T.Fuji

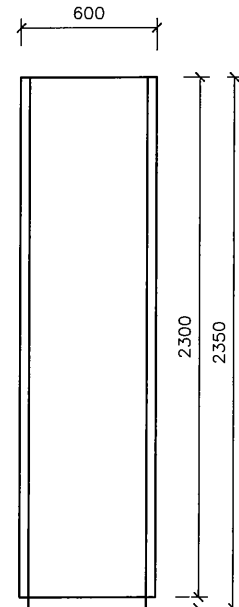
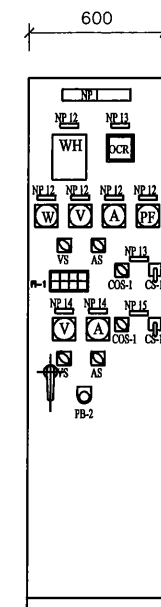
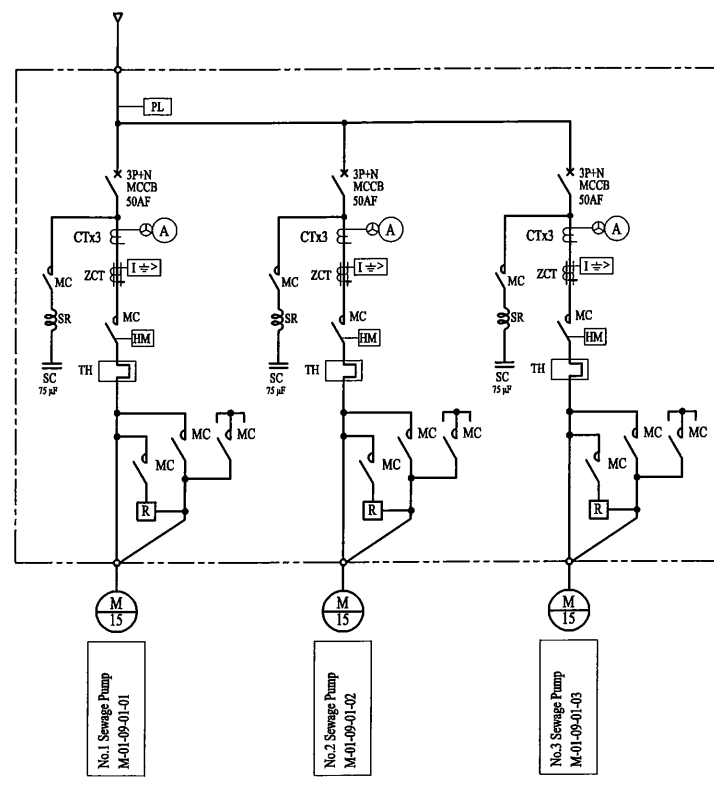
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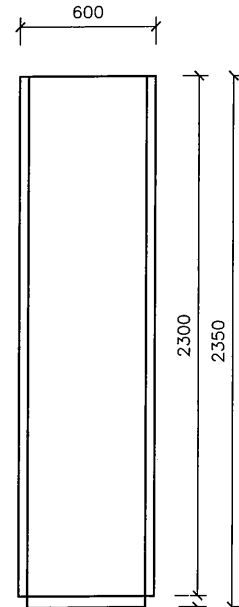
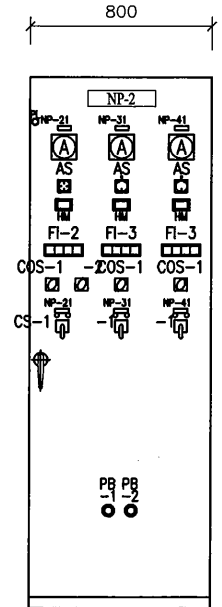
APPLICATION	CABLE SIZE	CAPA. (kV)
PUMP CONTROL PANEL	25 Sq x 4c	30
DG SET	2.5 Sq x 4c	1
UPS	2.5 Sq x 4c	1
DISTRIBUTION BOARD	2.5 Sq x 4c	1
RESERVE		
RESERVE		

SYMBOL	DESCRIPTION
A	AMMETER
AS	AMMETER SWITCH
AVR	AUTOMATIC VOLTAGE REGULATOR
CH	CABLE HEAD
CoS0	POWER FACTOR METER
CT	CURRENT TRANSFORMER
DE	DIESEL ENGINE
E	EARTH
ELCB	EARTH LEAKAGE CIRCUIT BREAKER
F	FUSE
G	GENERATOR
Hz	FREQUENCY METER
kWH	KILO WATT HOUR METER
LA	LIGHTNING ARRESTER
LBS	LOAD BREAK SWITCHES
M	MOTOR
MC	ELECTROMAGNETIC CONTACTOR
MCCB	MOLDED CASE CIRCUIT BREAKER
THR	THERMAL RELAY
V	VOLTMETER
VS	VOLTMETER SWITCH
VT	VOLTAGE TRANSFORMER
W	WATT METER
WL	WHITE LAMP
ZCT	ZERO PHASE CURRENT TRANSFORMER
3E	3E RELAY
[I >]	AC TIME OVER CURRENT RELAY
[I <]	GROUND FAULT RELAY
[U <]	UNDER VOLTAGE RELAY
[U >]	OVER VOLTAGE RELAY

Incoming/Feeder Panel
3Ø4W 415V 50Hz

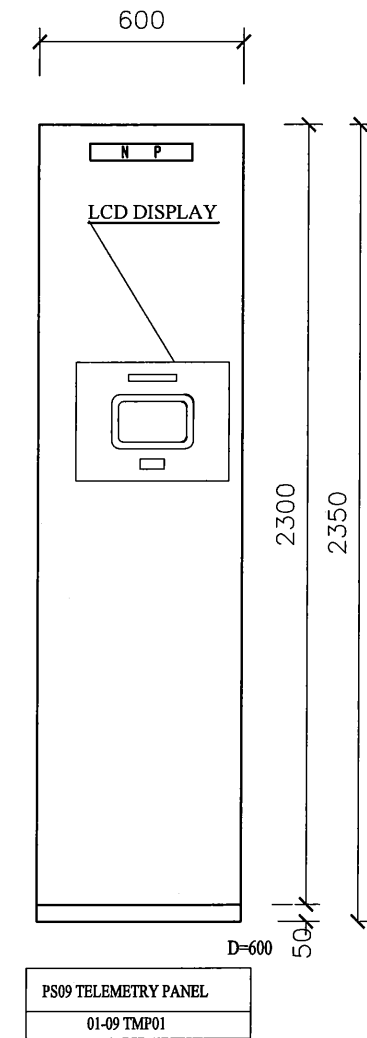
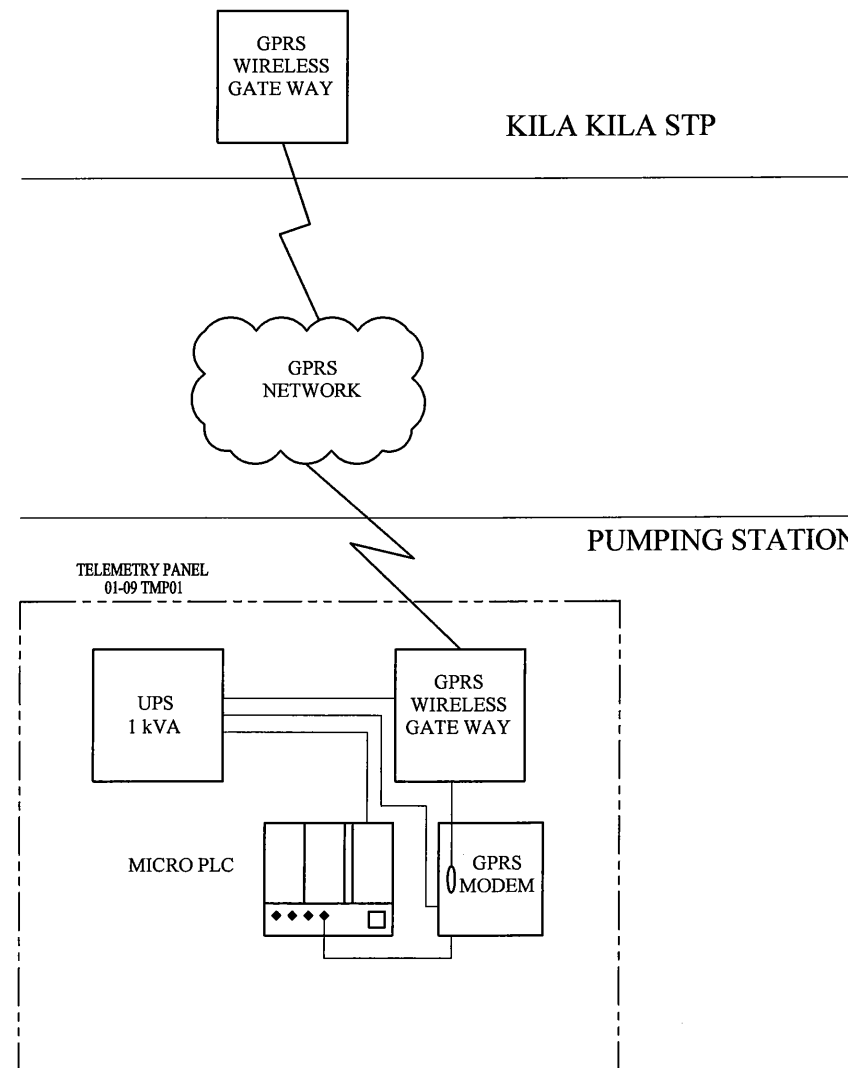
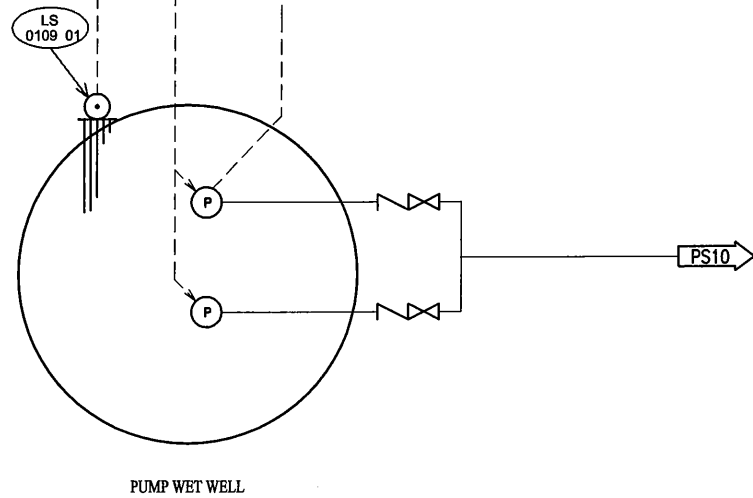
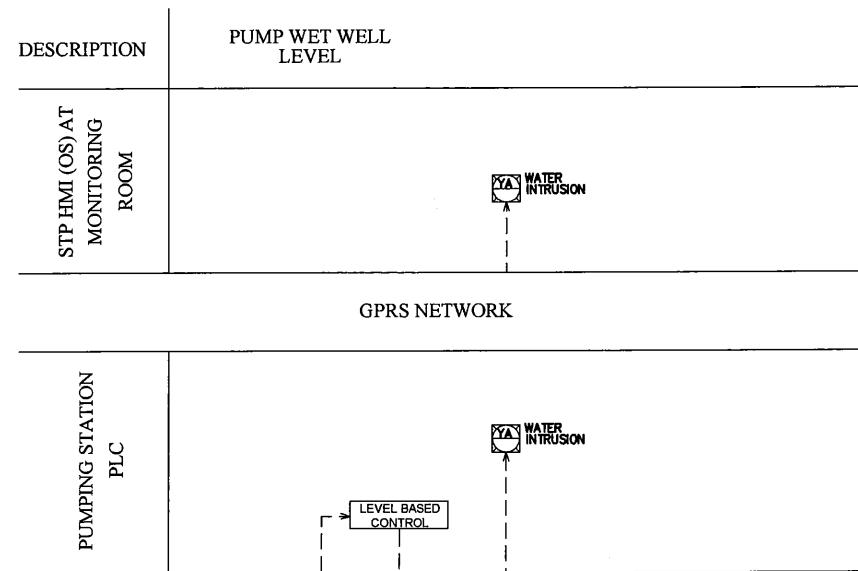


Incoming/Feeder Panel
01-09 IFP01

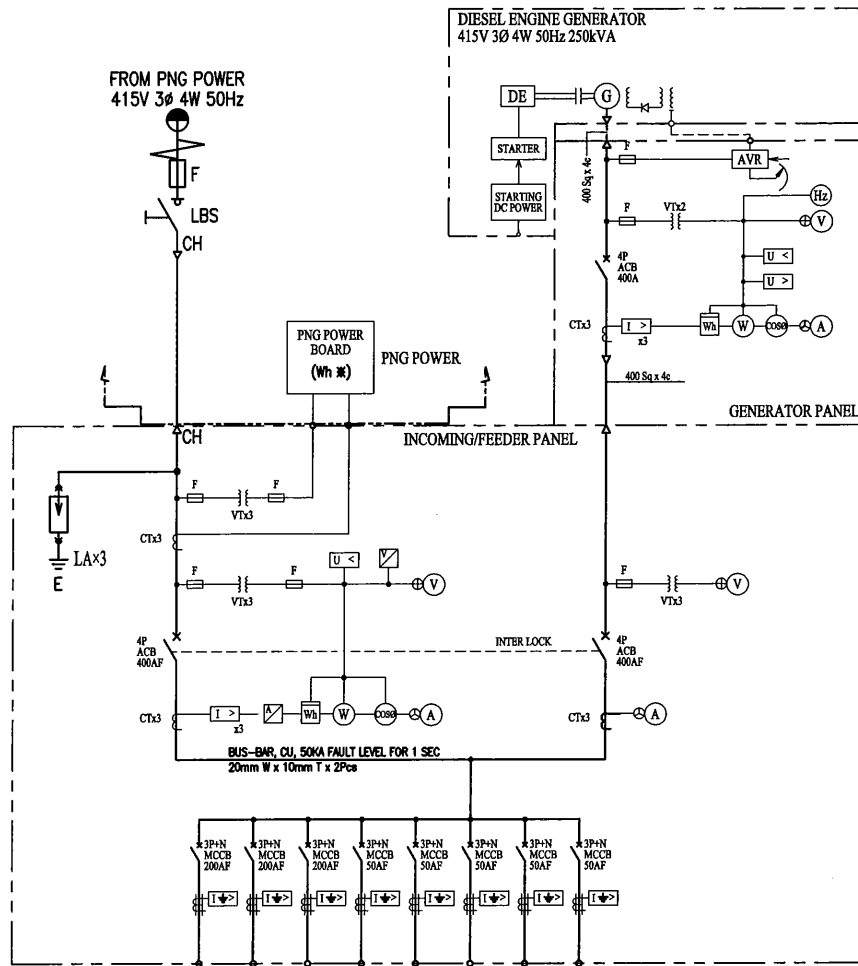


Sewage Pump Control Panel
01-09 PCP01

Item	Description
NP-1	Incoming/Feeder Panel
NP-12	PNG Power Supply
NP-13	PNG Power Supply ON - OFF
NP-14	DG Set Power Supply
NP-15	DG Set Power Supply ON - OFF
NP-2	Sewage Pump Control Panel 09PCP 01
NP-21	NO.1 Sewage Pump
NP-31	NO.2 Sewage Pump
NP-41	NO.3 Sewage Pump
COS1	Auto - Off - Manual
COS2	1/23/ - 2/3/1 - 3/1/2 - Off
CS1	Start - Stop
PBS1	Emergency Stop
PBS2	Lamp Test
FI	Illuminated Alarm Indicator
PL	Pilot Light

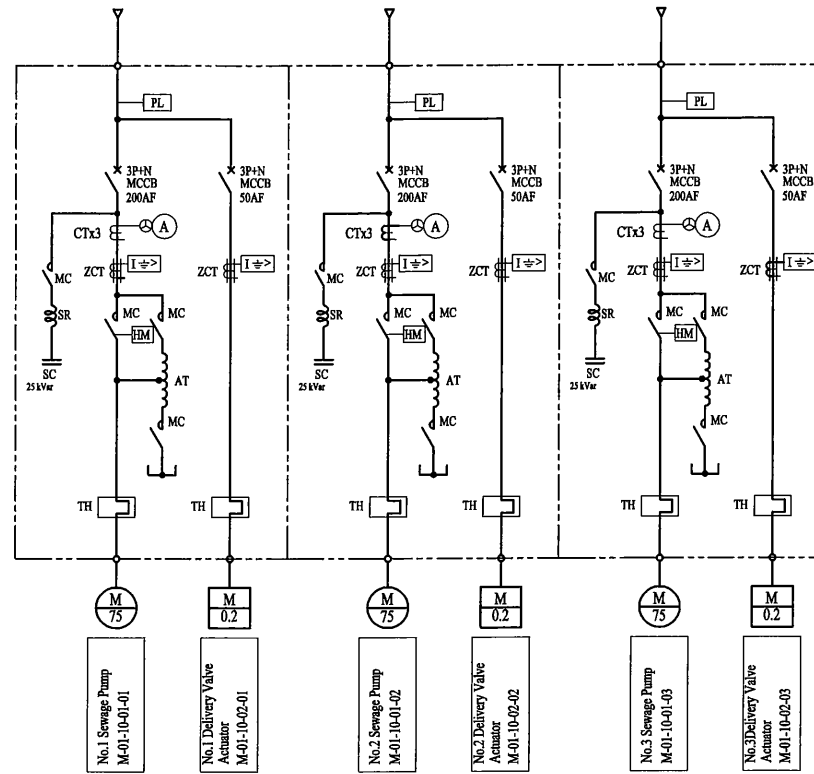


PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: PS9 DAVARA: Instrumentation And Telemetry System Diagram																		
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU) JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	APPROVED by PMU: Project Director Lot G.Zauya																	
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CHECKED by CONSULTANT Project Manager T.Fuji																				

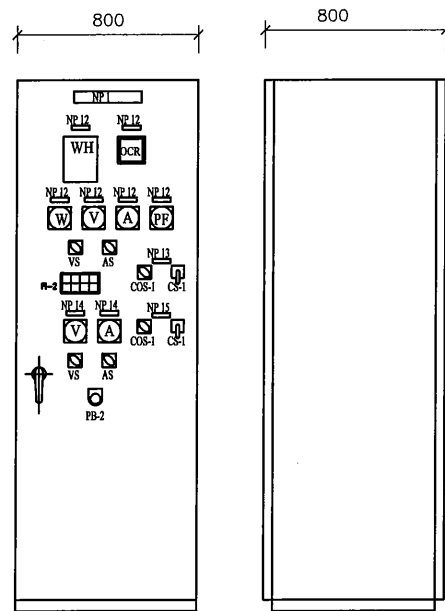


SYMBOL	DESCRIPTION
A	AMMETER
AS	AMMETER SWITCH
AVR	AUTOMATIC VOLTAGE REGULATOR
CH	CABLE HEAD
Cosφ	POWER FACTOR METER
CT	CURRENT TRANSFORMER
DE	DIESEL ENGINE
E	EARTH
ELCB	EARTH LEAKAGE CIRCUIT BREAKER
F	FUSE
G	GENERATOR
Hz	FREQUENCY METER
kWh	KILO WATT HOUR METER
LA	LIGHTNING ARRESTER
LBS	LOAD BREAK SWITCHES
M	MOTOR
MC	ELECTROMAGNETIC CONTACTOR
MCCB	MOLDED CASE CIRCUIT BREAKER
THR	THERMAL RELAY
V	VOLTMETER
VS	VOLTMETER SWITCH
VT	VOLTAGE TRANSFORMER
W	WATT METER
WL	WHITE LAMP
ZCT	ZERO PHASE CURRENT TRANSFORMER
3E	3E RELAY
[Symbol]	AC TIME OVER CURRENT RELAY
[Symbol]	GROUND FAULT RELAY
[Symbol]	UNDER VOLTAGE RELAY
[Symbol]	OVER VOLTAGE RELAY

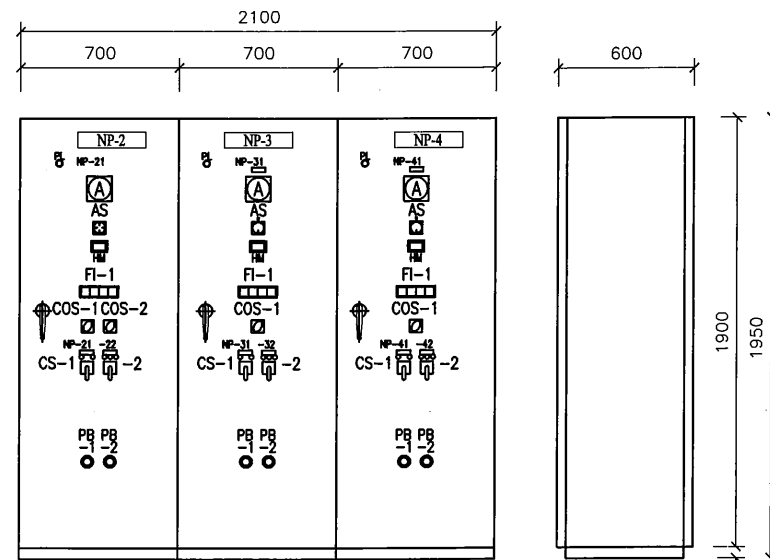
Incoming/Feeder Panel
3Ø4W 415V 50Hz



APPLICATION	CABLE SIZE	CAPX (kW)
No.1 SEWAGE PUMP CONTROL PANEL	95 Sq x 4c	75
No.2 SEWAGE PUMP CONTROL PANEL	95 Sq x 4c	75
No.3 SEWAGE PUMP CONTROL PANEL	95 Sq x 4c	75
DG SET	2.5 Sq x 4c	1
UPS	2.5 Sq x 4c	1
DISTRIBUTION BOARD	2.5 Sq x 4c	1
RESERVE		
RESERVE		



Incoming/Feeder Panel
01-10 IFP01



Sewage Pump Control Panel
01-10 PCP01 01-10 PCP02 01-10 PCP03

Item	Description
NP-1	Incoming/Feeder Panel
NP-12	PNG Power Supply
NP-13	PNG Power Supply ON - OFF
NP-14	DG Set Power Supply
NP-15	DG Set Power Supply ON - OFF
NP-2	No.1 Sewage Pump Control Panel 04MCC 01
NP-3	No.2 Sewage Pump Control Panel 04MCC 01
NP-4	No.3 Sewage Pump Control Panel 04MCC 01
NP-21	NO.1 Sewage Pump
NP-31	NO.2 Sewage Pump
NP-41	NO.3 Sewage Pump
COS1	Auto - Off - Manual
COS2	1/2/3 - 2/3/1 - 3/1/2 - Off
CS1	Start - Stop
CS2	Open - Stop - Close
PBS1	Emergency Stop
PBS2	Lamp Test
FI	Illuminated Alarm Indicator
PL	Pilot Light

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: PS10 Lawes Road: INCOMING/FEEDER PANEL AND PUMP CONTROL PANEL

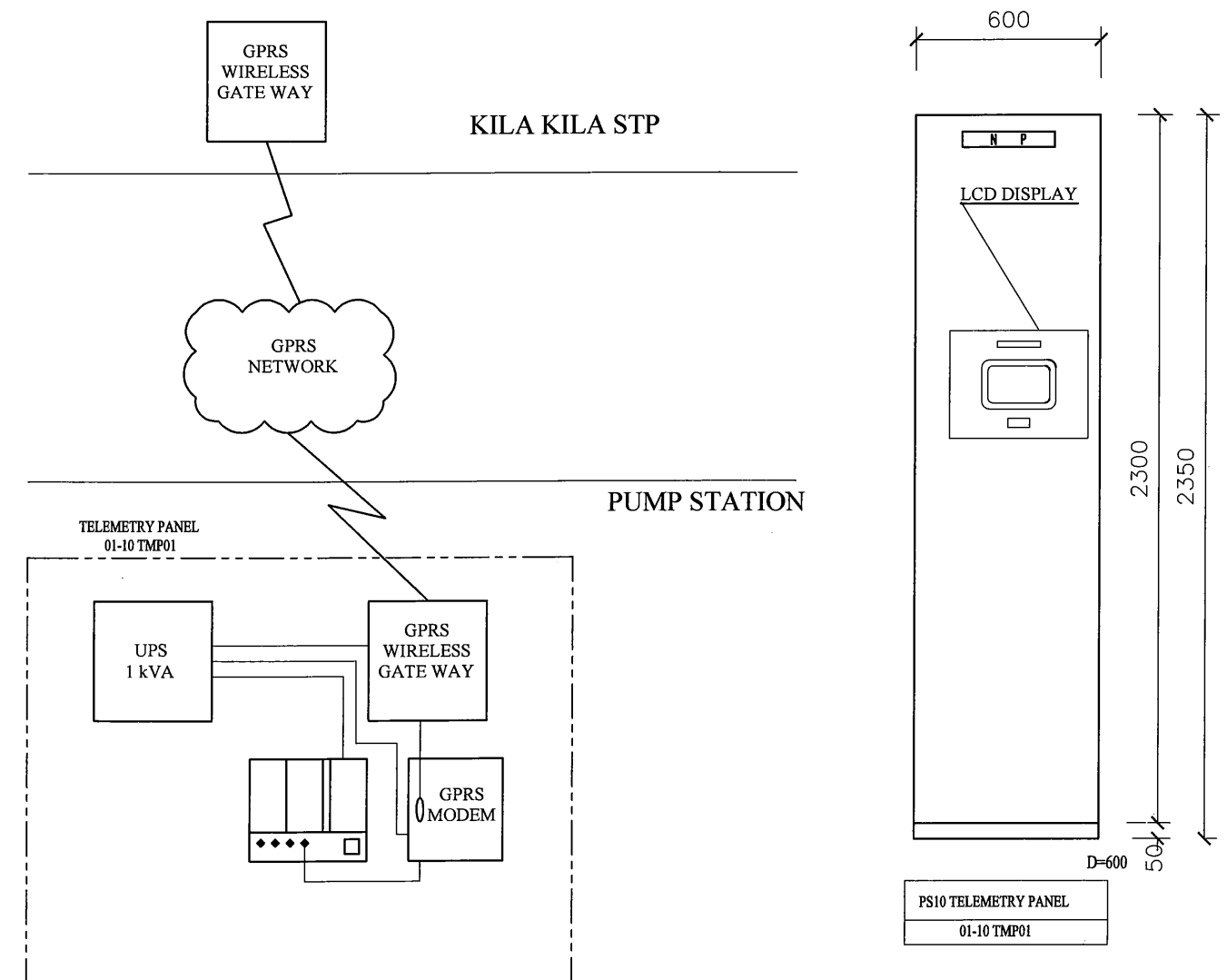
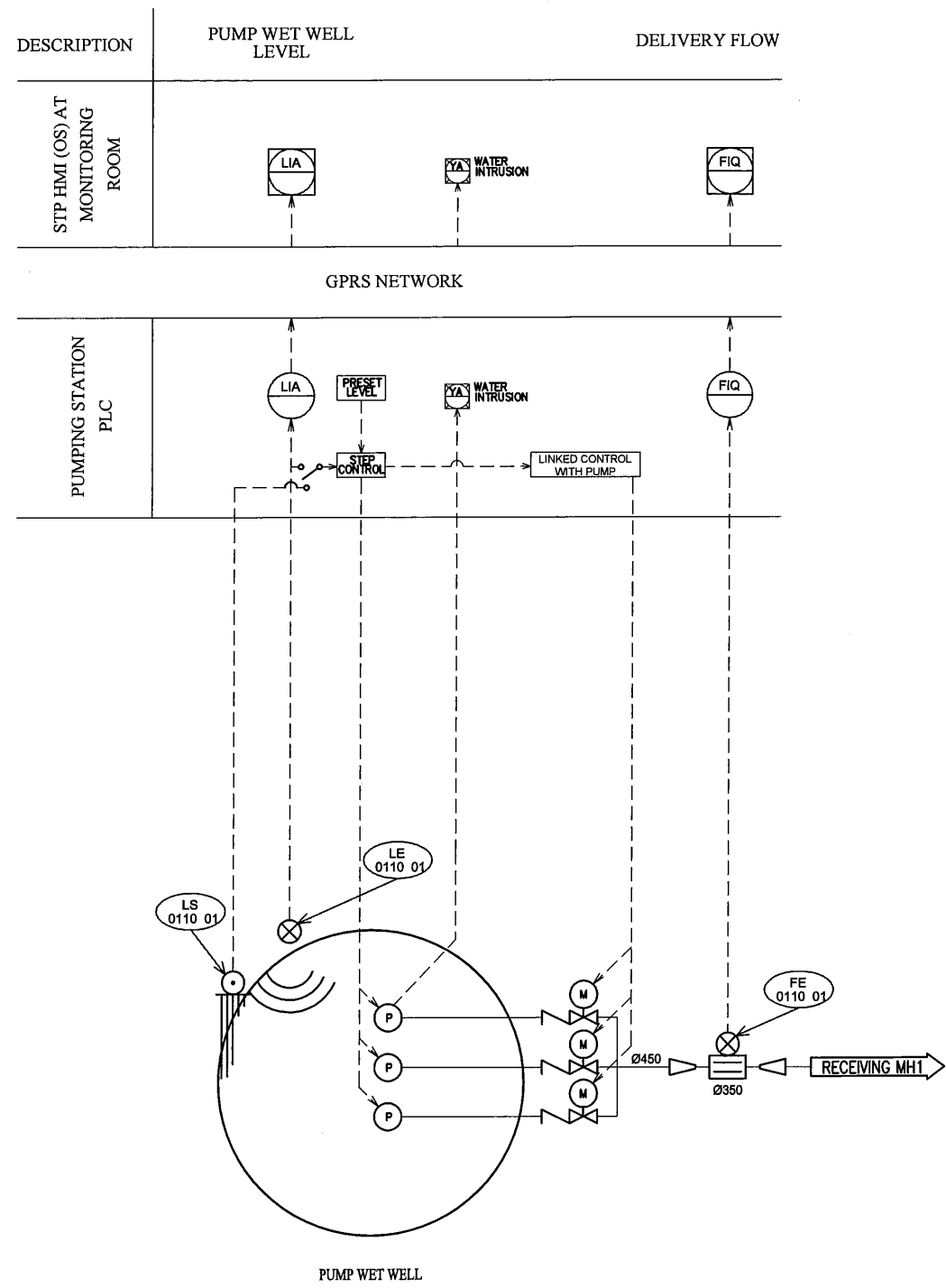
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PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
PROJECT MANAGEMENT UNIT (PMU)
jica JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
Project Director
Lot G.Zauya
DATE: 1. Dec 2011
SCALE: NOT TO SCALE
CHECKED by CONSULTANT
Project Manager
T.Fuji
DATE: 1. Dec 2011
DRAWING NO.: PS10-E001



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: PS10 Lawes Road: INSTRUMENTATION AND TELEMETRY SYSTEM DIAGRAM

CLIENT: **IPBC** INDEPENDENT PUBLIC BUSINESS CORPORATION
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
 PROJECT MANAGEMENT UNIT (PMU)
jica JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: **NJS CONSULTANTS CO., LTD. - JAPAN**

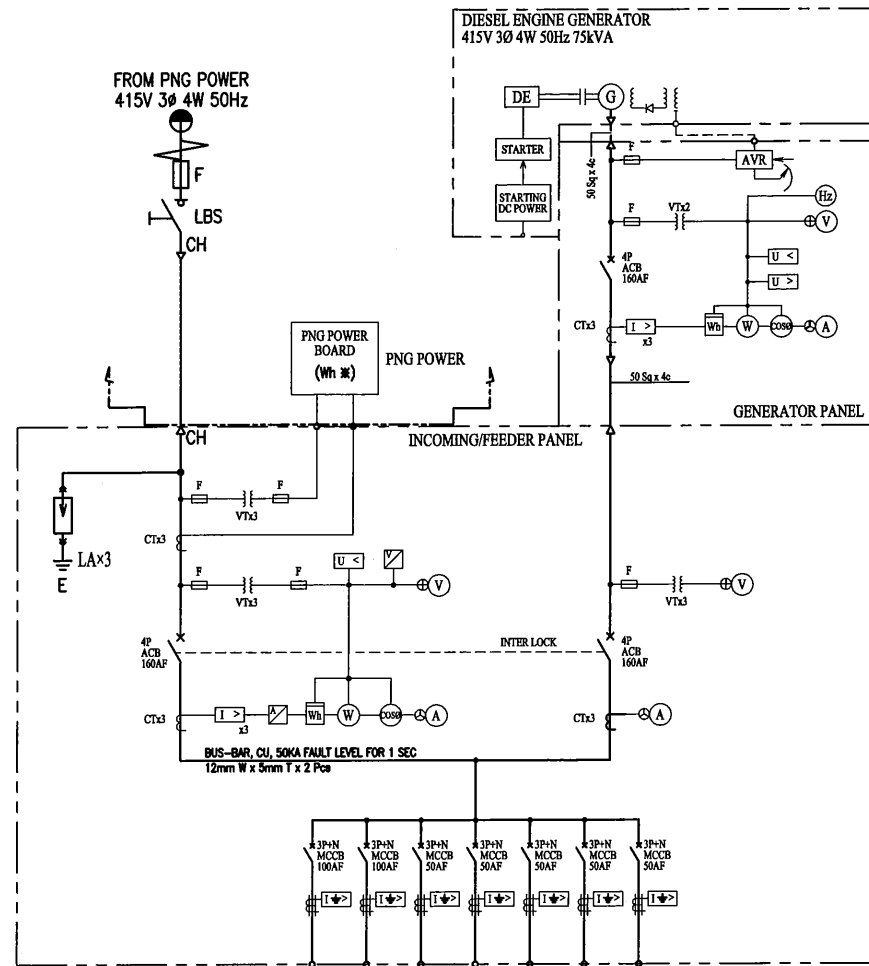
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REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
 Project Director
 Lot G. Zauya

CHECKED by CONSULTANT
 Project Manager
 T. Fuji

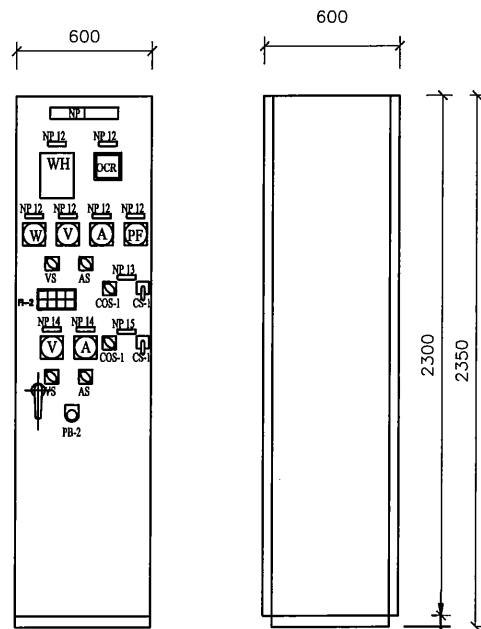
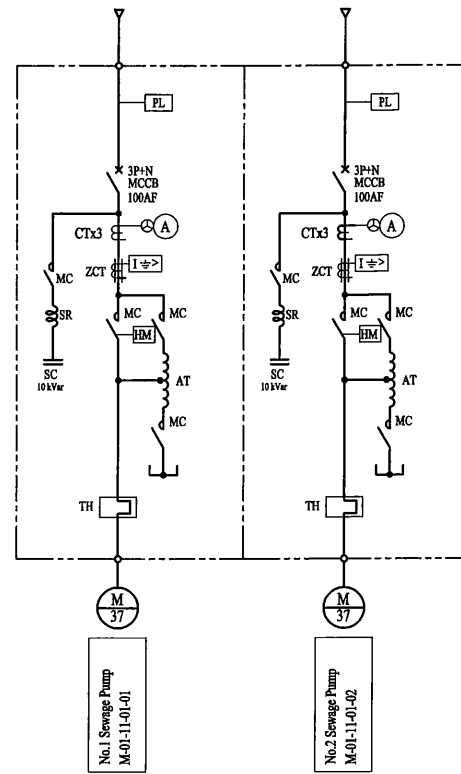
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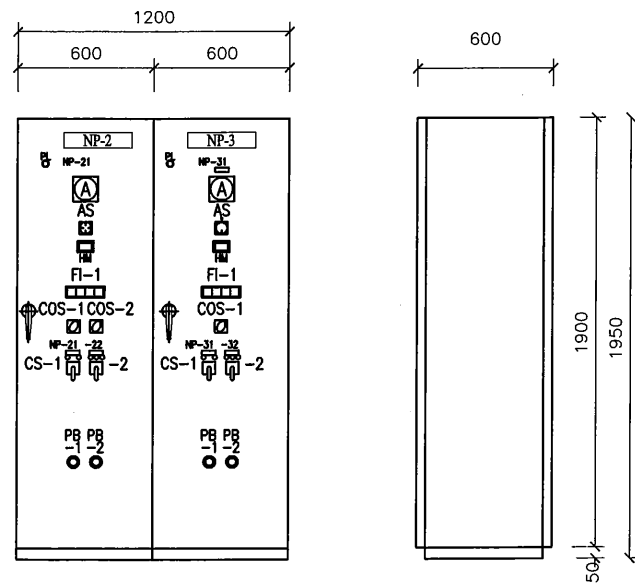
APPLICATION	CABLE SIZE	CAPA. (kW)
No.1 SEWAGE PUMP	35 Sq x 4c	37
No.2 SEWAGE PUMP	35 Sq x 4c	37
DG SET	2.5 Sq x 4c	1
UPS	2.5 Sq x 4c	1
DISTRIBUTION BOARD	2.5 Sq x 4c	1
RESERVE		
RESERVE		

SYMBOL	DESCRIPTION
A	AMMETER
AS	AMMETER SWITCH
AVR	AUTOMATIC VOLTAGE REGULATOR
CH	CABLE HEAD
CoSφ	POWER FACTOR METER
CT	CURRENT TRANSFORMER
DE	DIESEL ENGINE
E	EARTH
ELCB	EARTH LEAKAGE CIRCUIT BREAKER
F	FUSE
G	GENERATOR
Hz	FREQUENCY METER
kWh	KILO WATT HOUR METER
LA	LIGHTNING ARRESTER
LBS	LOAD BREAK SWITCHES
M	MOTOR
MC	ELECTROMAGNETIC CONTACTOR
MCCB	MOLDED CASE CIRCUIT BREAKER
THR	THERMAL RELAY
V	VOLTMETER
VS	VOLTMETER SWITCH
VT	VOLTAGE TRANSFORMER
W	WATT METER
WL	WHITE LAMP
ZCT	ZERO PHASE CURRENT TRANSFORMER
3E	3E RELAY
[I>]	AC TIME OVER CURRENT RELAY
[I<]	GROUND FAULT RELAY
[U<]	UNDER VOLTAGE RELAY
[U>]	OVER VOLTAGE RELAY

Incoming/Feeder Panel
3Ø4W 415V 50Hz



Incoming/Feeder Panel
01-11 IFP01



Pump Control Panel
01-11 PCP01 | 01-11 PCP02

Item	Description
NP-1	Incoming/Feeder Panel
NP-12	PNG Power Supply
NP-13	PNG Power Supply ON - OFF
NP-14	DG Set Power Supply
NP-15	DG Set Power Supply ON - OFF
NP-2	No.1 Sewage Pump Control Panel 11MCC 01
NP-3	No.2 Sewage Pump Control Panel 11MCC 01
NP-21	NO.1 Sewage Pump
NP-31	NO.2 Sewage Pump
COS1	Auto - Off - Manual
COS2	1/2/3 - 2/3/1 - 3/1/2 - Off
CS1	Start - Stop
CS2	Open - Stop - Close
PBS1	Emergency Stop
PBS2	Lamp Test
FI	Illuminated Alarm Indicator
PL	Pilot Light

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: PS11 KOKI: INCOMING/FEEDER PANEL AND PUMP CONTROL PANEL

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
PROJECT MANAGEMENT UNIT (PMU)
jica JAPAN INTERNATIONAL COOPERATION AGENCY

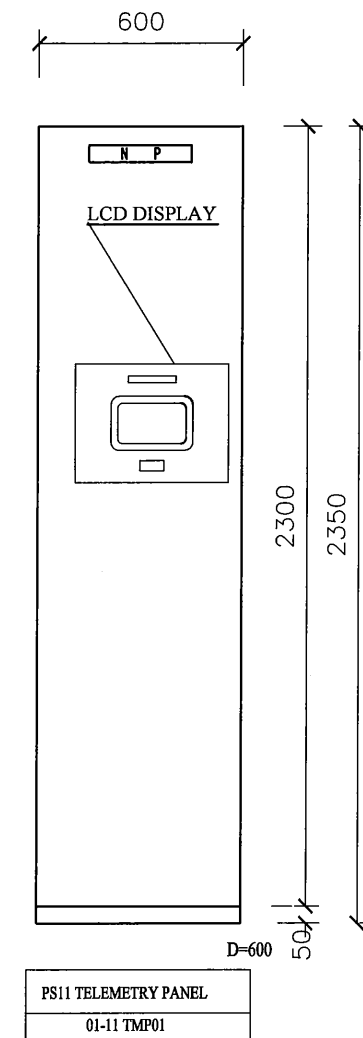
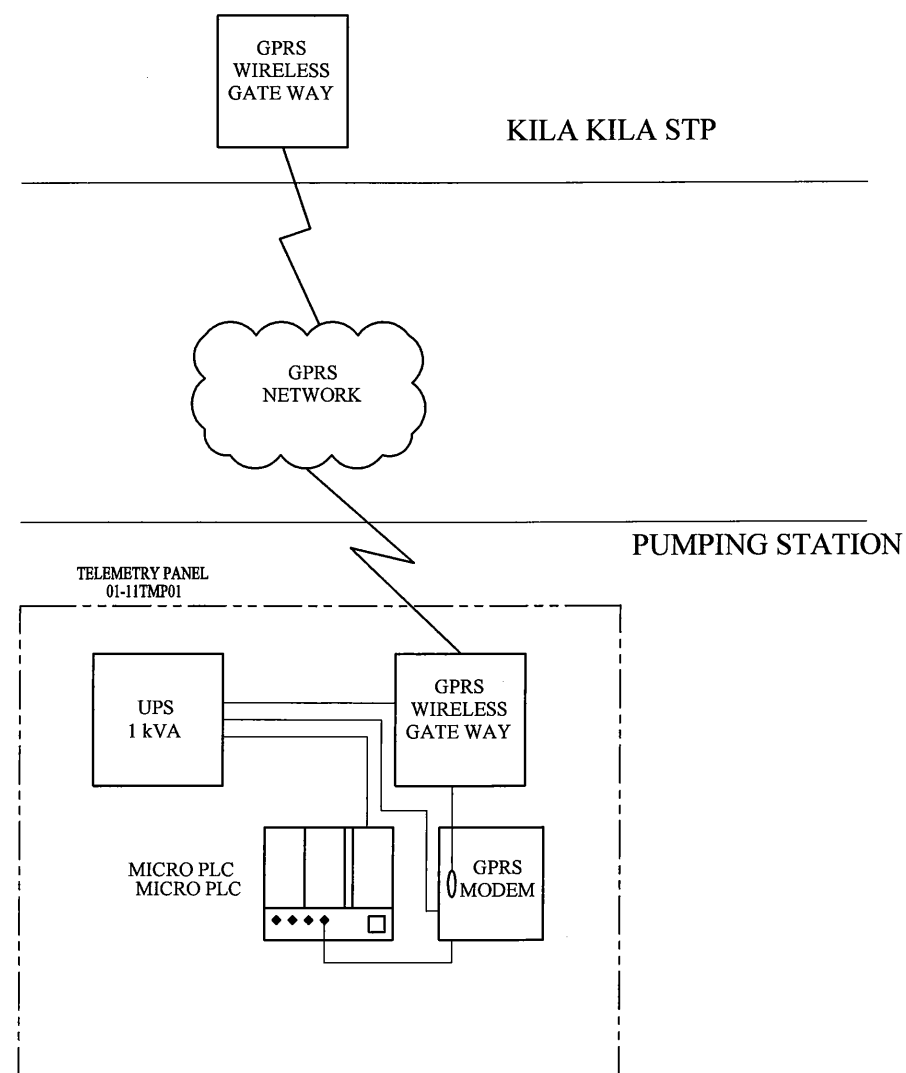
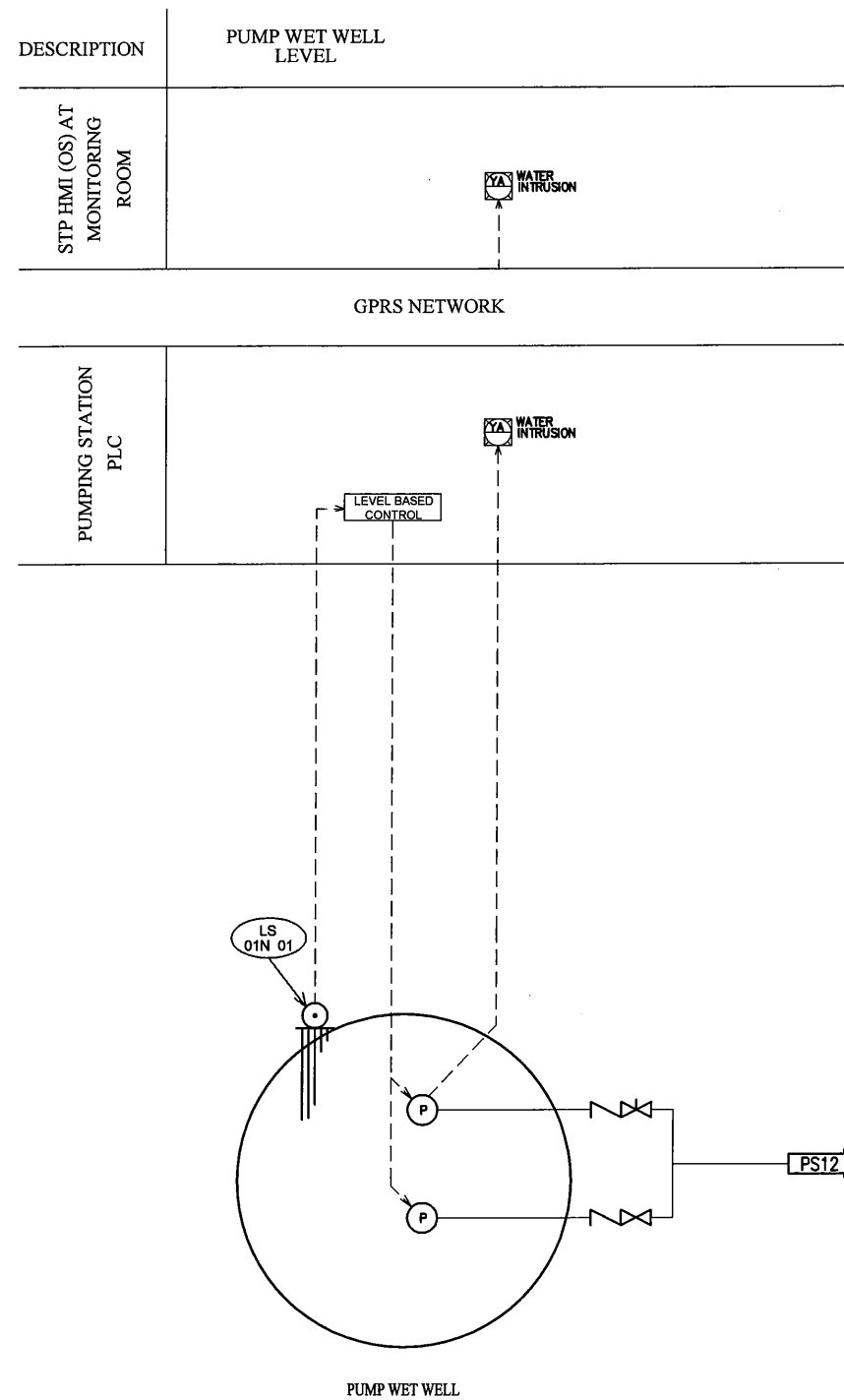
CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
Project Director
Lot G.Zauya
CHECKED by CONSULTANT
Project Manager
T.Fuji

DATE: 1. Dec 2011
SCALE: NOT TO SCALE
DATE: 1. Dec 2011
DRAWING NO.: PS11-E001



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

CLIENT: **IPBC** INDEPENDENT PUBLIC BUSINESS CORPORATION
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
PROJECT MANAGEMENT UNIT (PMU)
JICA JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: **NJS CONSULTANTS CO., LTD. - JAPAN**

TITLE: PS11 KOKI: INSTRUMENTATION AND TELEMETRY SYSTEM DIAGRAM

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
Project Director
Lot G.Zauya

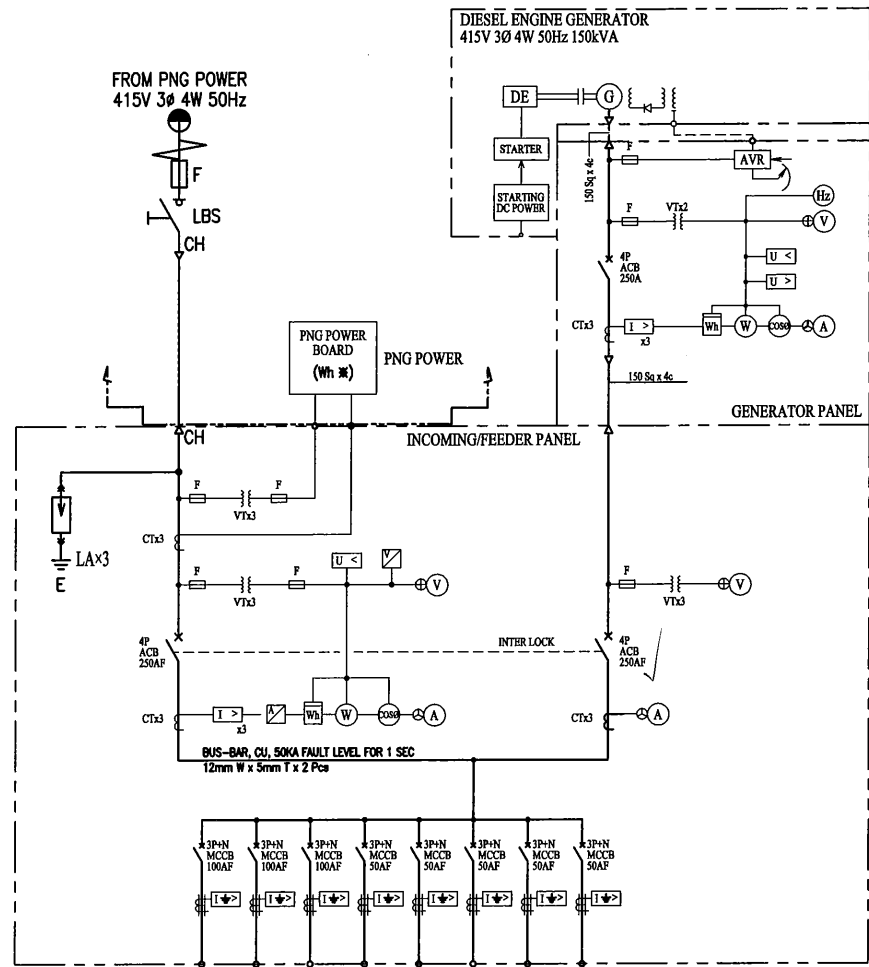
CHECKED by CONSULTANT
Project Manager
T.Fuji

DATE: 1. Dec 2011

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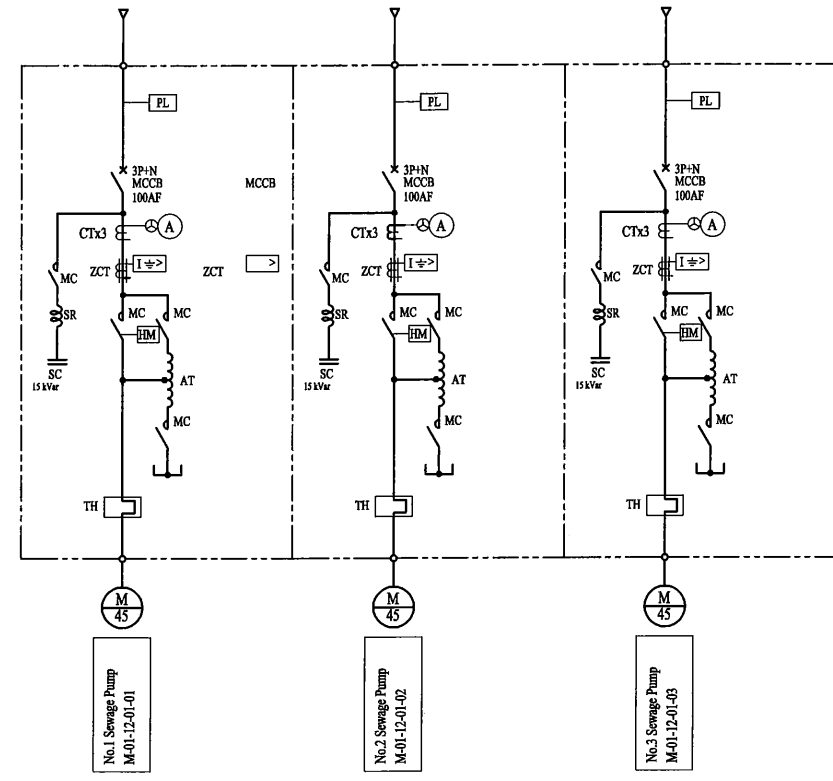
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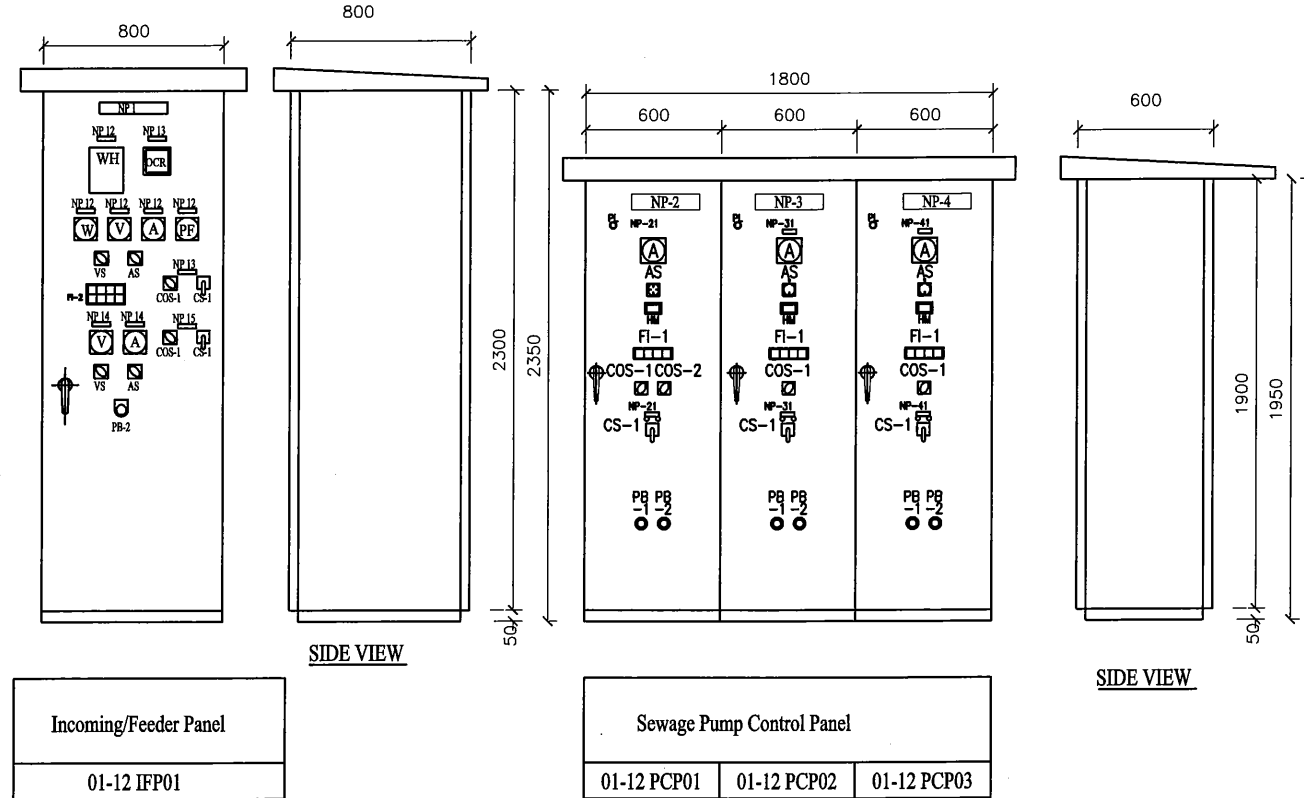


SYMBOL	DESCRIPTION
A	AMMETER
AS	AMMETER SWITCH
AVR	AUTOMATIC VOLTAGE REGULATOR
CH	CABLE HEAD
cosφ	POWER FACTOR METER
CT	CURRENT TRANSFORMER
DE	DIESEL ENGINE
E	EARTH
ELCB	EARTH LEAKAGE CIRCUIT BREAKER
F	FUSE
G	GENERATOR
Hz	FREQUENCY METER
kWh	KILO WATT HOUR METER
LA	LIGHTNING ARRESTER
LBS	LOAD BREAK SWITCHES
M	MOTOR
MC	ELECTROMAGNETIC CONTACTOR
MCCB	MOLDED CASE CIRCUIT BREAKER
THR	THERMAL RELAY
V	VOLTMETER
VS	VOLTMETER SWITCH
VT	VOLTAGE TRANSFORMER
W	WATT METER
WL	WHITE LAMP
ZCT	ZERO PHASE CURRENT TRANSFORMER
3E	3E RELAY
[I >]	AC TIME OVER CURRENT RELAY
[I >>]	GROUND FAULT RELAY
[U <]	UNDER VOLTAGE RELAY
[U >]	OVER VOLTAGE RELAY

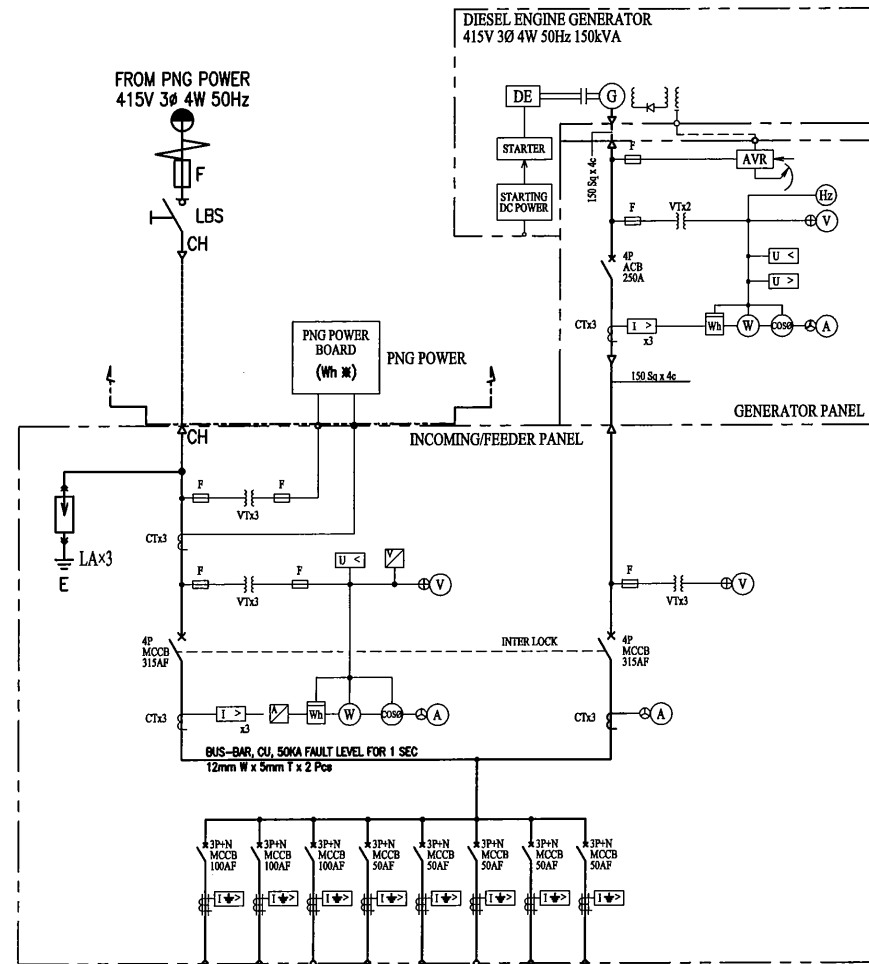
Incoming/Feeder Panel
3Ø4W 415V 50Hz



APPLICATION	CABLE SIZE	CAPA. (KW)
No.1 SEWAGE PUMP CONTROL PANEL	35 Sq x 4c	45
No.2 SEWAGE PUMP CONTROL PANEL	35 Sq x 4c	45
No.3 SEWAGE PUMP CONTROL PANEL	35 Sq x 4c	45
DG SET	2.5 Sq x 4c	1
UPS	2.5 Sq x 4c	1
DISTRIBUTION BOARD	2.5 Sq x 4c	1
RESERVE		
RESERVE		

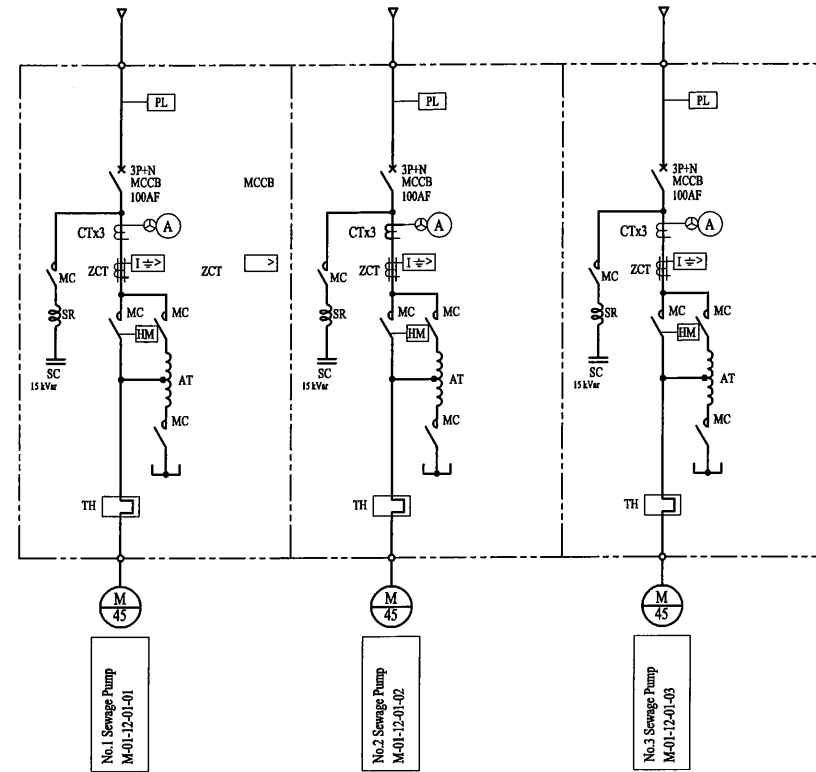


Item	Description
NP-1	Incoming/Feeder Panel
NP-12	PNG Power Supply
NP-13	PNG Power Supply ON - OFF
NP-14	DG Set Power Supply
NP-15	DG Set Power Supply ON - OFF
NP-2	No.1 Sewage Pump Control Panel 12MCC 01
NP-3	No.2 Sewage Pump Control Panel 12MCC 01
NP-4	No.3 Sewage Pump Control Panel 12MCC 01
NP-21	NO.1 Sewage Pump
NP-31	NO.2 Sewage Pump
NP-41	NO.3 Sewage Pump
COS1	Auto - Off - Manual
COS2	1/2B - 2/3/1 - 3/1/2 - Off
CS1	Start - Stop
PBS1	Emergency Stop
PBS2	Lamp Test
FI	Illuminated Alarm Indicator
FL	Pilot Light

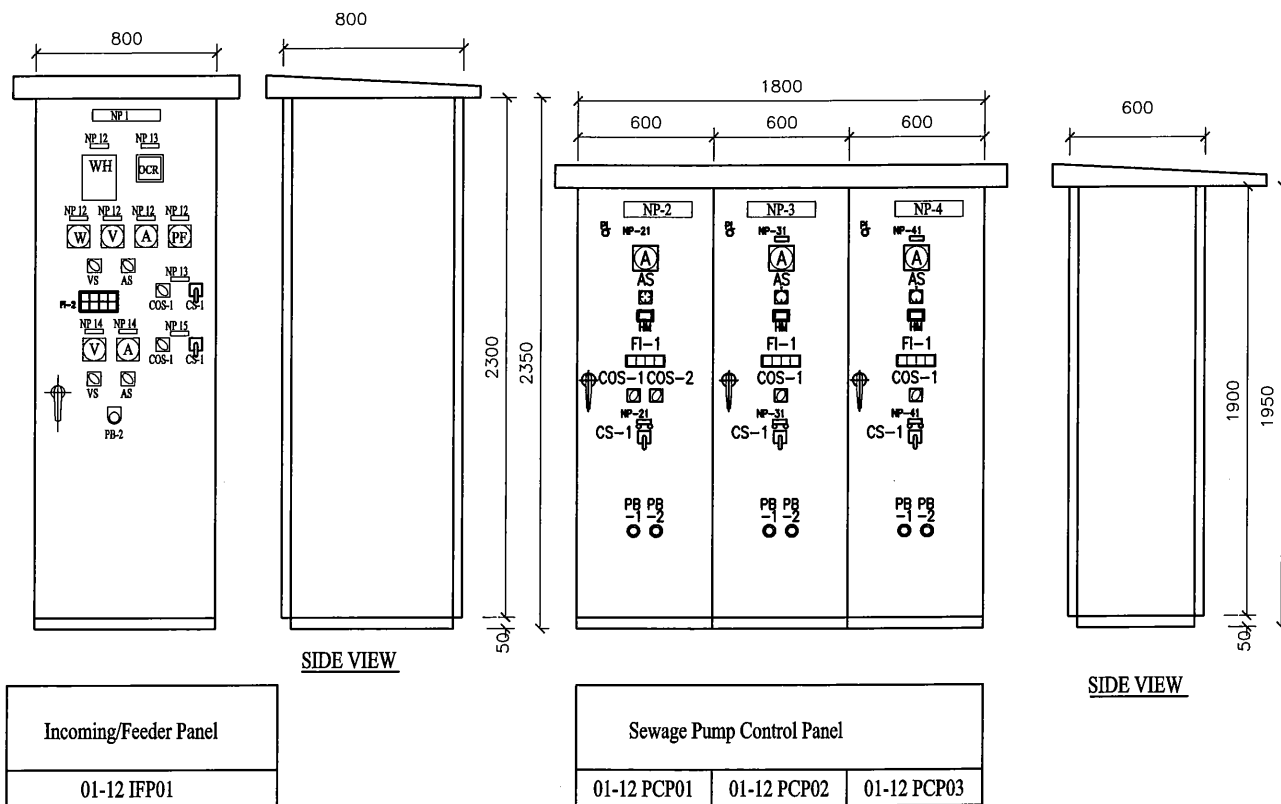


SYMBOL	DESCRIPTION
A	AMMETER
AS	AMMETER SWITCH
AVR	AUTOMATIC VOLTAGE REGULATOR
CH	CABLE HEAD
Coef	POWER FACTOR METER
CT	CURRENT TRANSFORMER
DE	DIESEL ENGINE
E	EARTH
ELCB	EARTH LEAKAGE CIRCUIT BREAKER
F	FUSE
G	GENERATOR
Hz	FREQUENCY METER
kWh	KILO WATT HOUR METER
LA	LIGHTNING ARRESTER
LBS	LOAD BREAK SWITCHES
M	MOTOR
MC	ELECTROMAGNETIC CONTACTOR
MCCB	MOLDED CASE CIRCUIT BREAKER
THR	THERMAL RELAY
V	VOLTMETER
VS	VOLTMETER SWITCH
VT	VOLTAGE TRANSFORMER
W	WATT METER
WL	WHITE LAMP
ZCT	ZERO PHASE CURRENT TRANSFORMER
3E	3E RELAY
[Symbol]	AC TIME OVER CURRENT RELAY
[Symbol]	GROUND FAULT RELAY
[Symbol]	UNDER VOLTAGE RELAY
[Symbol]	OVER VOLTAGE RELAY

Incoming/Feeder Panel
3Ø4W 415V 50Hz



APPLICATION	CABLE SIZE	CAPA. (kW)
No.1 SEWAGE PUMP CONTROL PANEL	35 Sq x 4c	45
No.2 SEWAGE PUMP CONTROL PANEL	35 Sq x 4c	45
No.3 SEWAGE PUMP CONTROL PANEL	35 Sq x 4c	45
DG SET	2.5 Sq x 4c	1
UPS	2.5 Sq x 4c	1
DISTRIBUTION BOARD	2.5 Sq x 4c	1
RESERVE		
RESERVE		



Item	Description
NP-1	Incoming/Feeder Panel
NP-12	PNG Power Supply
NP-13	PNG Power Supply ON - OFF
NP-14	DG Set Power Supply
NP-15	DG Set Power Supply ON - OFF
NP-2	No.1 Sewage Pump Control Panel 12MCC 01
NP-3	No.2 Sewage Pump Control Panel 12MCC 01
NP-4	No.3 Sewage Pump Control Panel 12MCC 01
NP-21	NO.1 Sewage Pump
NP-31	NO.2 Sewage Pump
NP-41	NO.3 Sewage Pump
COS1	Auto - Off - Manual
COS2	1/2/3 - 2/3/1 - 3/1/2 - OFF
CS1	Start - Stop
PBS1	Emergency Stop
PBS2	Lamp Test
FI	Illuminated Alarm Indicator
PL	Pilot Light

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: PS12 BADILI: INCOMING/FEEDER PANEL AND PUMP CONTROL PANEL

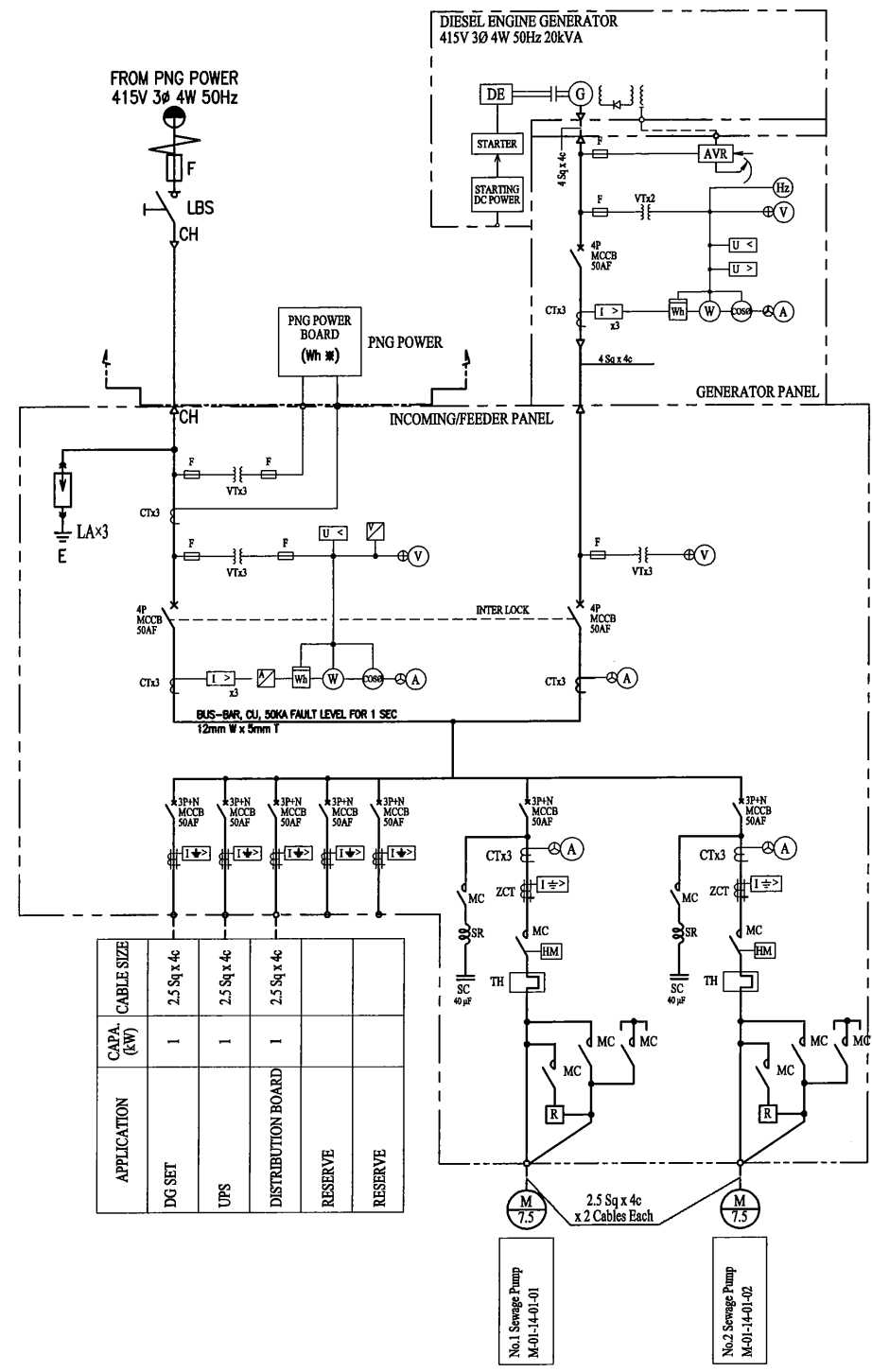
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PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
PROJECT MANAGEMENT UNIT (PMU)
JICA JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

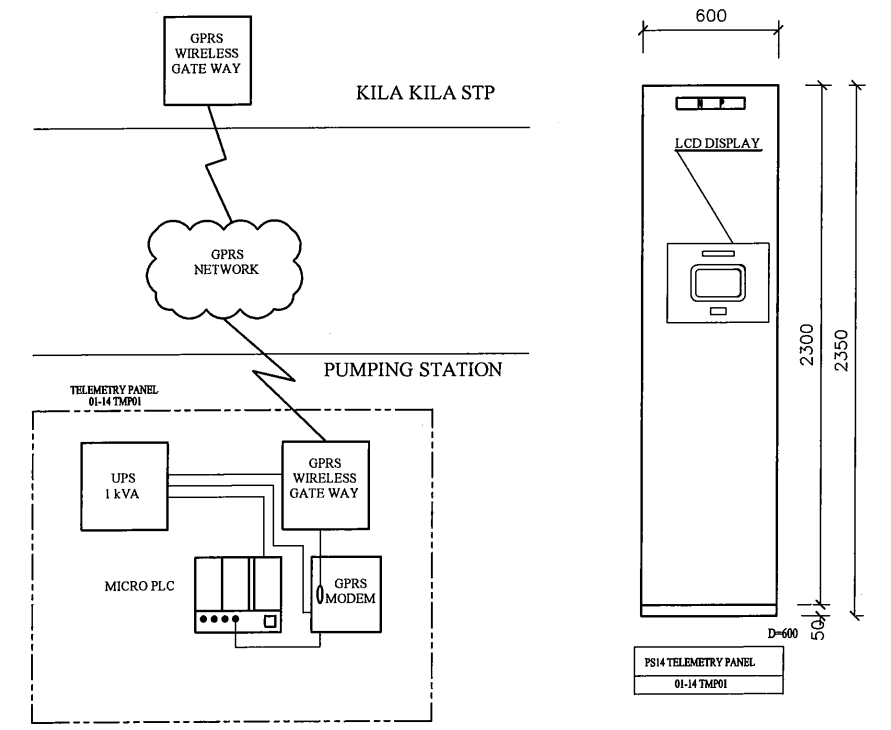
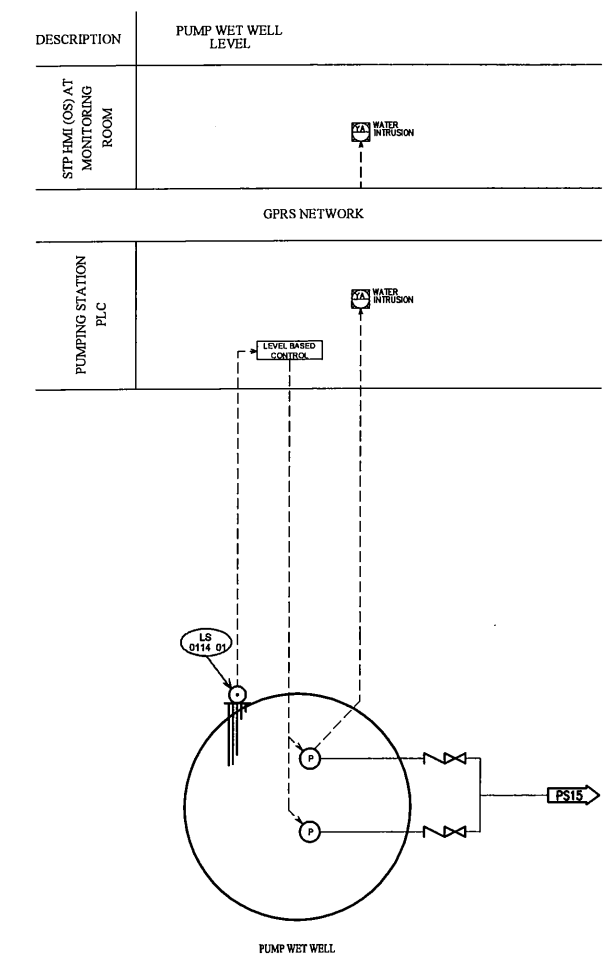
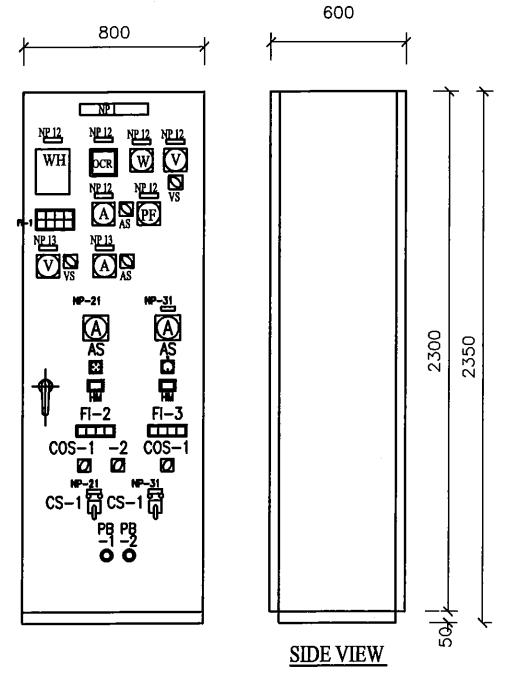
REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
Project Director
Lot G.Zauya
CHECKED by CONSULTANT
Project Manager
T.Fuji
DATE: 1. Dec 2011
SCALE: NOT TO SCALE
DRAWING NO.: PS12-E001



SYMBOL	DESCRIPTION
A	AMMETER
AS	AMMETER SWITCH
AVR	AUTOMATIC VOLTAGE REGULATOR
CH	CABLE HEAD
Cosφ	POWER FACTOR METER
CT	CURRENT TRANSFORMER
DE	DIESEL ENGINE
E	EARTH
ELCB	EARTH LEAKAGE CIRCUIT BREAKER
F	FUSE
G	GENERATOR
Hz	FREQUENCY METER
kWh	KILO WATT HOUR METER
LA	LIGHTNING ARRESTER
LBS	LOAD BREAK SWITCHES
M	MOTOR
MC	ELECTROMAGNETIC CONTACTOR
MCCB	MOLDED CASE CIRCUIT BREAKER
THR	THERMAL RELAY
V	VOLTMETER
VS	VOLTMETER SWITCH
VT	VOLTAGE TRANSFORMER
W	WATT METER
WL	WHITE LAMP
ZCT	ZERO PHASE CURRENT TRANSFORMER
3E	3E RELAY
[I→]	AC TIME OVER CURRENT RELAY
[I→]	GROUND FAULT RELAY
[U<]	UNDER VOLTAGE RELAY
[U>]	OVER VOLTAGE RELAY

Item	Description
NP-1	Incoming & Pump Control Panel
NP-12	PNG Power Supply
NP-13	DG Set Power Supply
NP-21	NO.1 Sewage Pump
NP-31	NO.2 Sewage Pump
COS1	Auto - Off - Manual
COS2	1 - 2 - Alternate
CS1	Start - Stop
PBS1	Emergency Stop
PBS2	Lamp Test
FI	Illuminated Alarm Indicator



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: PS14 KONEBADA Incoming/Pump Control Panel And Telemetry System Diagram

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
PROJECT MANAGEMENT UNIT (PMU)

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
Project Director
Lot G.Zauya

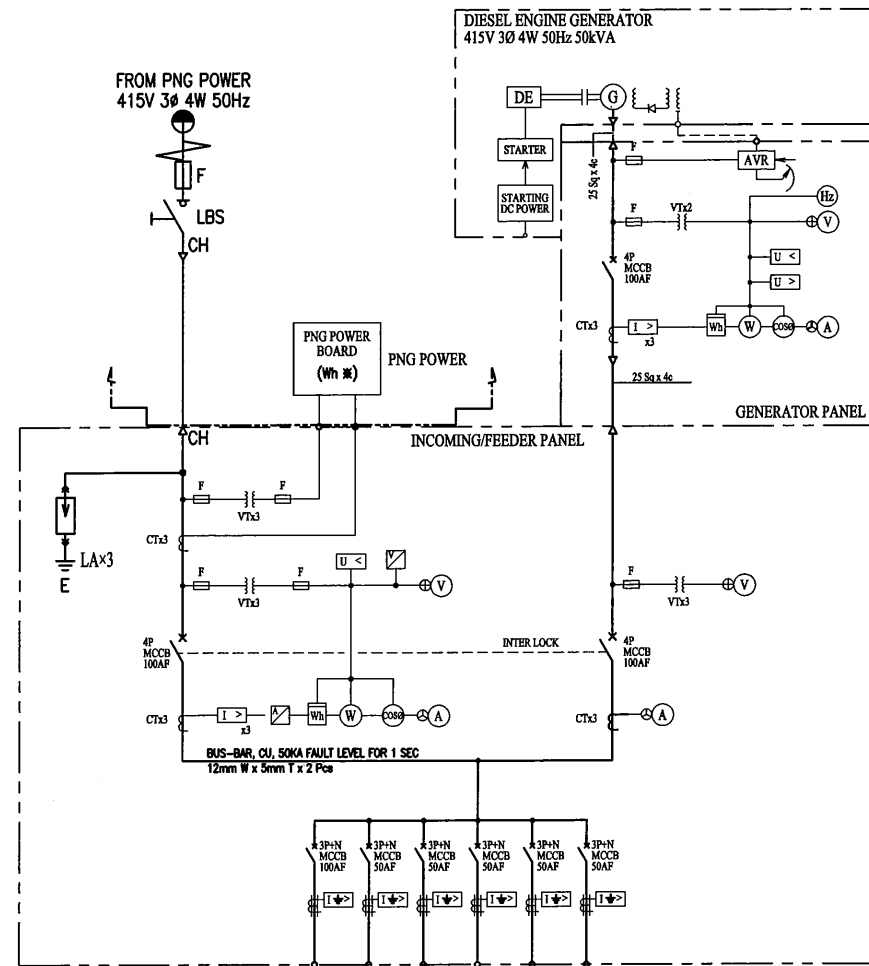
CHECKED by CONSULTANT
Project Manager
T.Fuji

DATE: 1. Dec 2011

SCALE: NOT TO SCALE

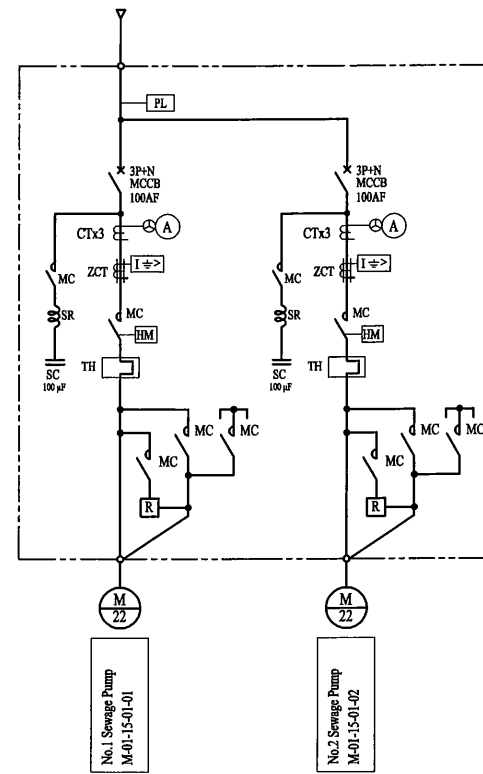
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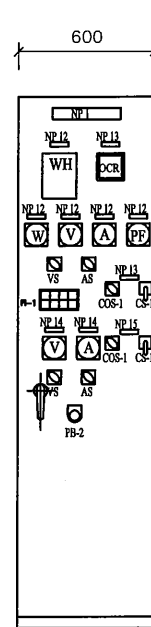


SYMBOL	DESCRIPTION
A	AMMETER
AS	AMMETER SWITCH
AVR	AUTOMATIC VOLTAGE REGULATOR
CH	CABLE HEAD
cosφ	POWER FACTOR METER
CT	CURRENT TRANSFORMER
DE	DIESEL ENGINE
E	EARTH
ELCB	EARTH LEAKAGE CIRCUIT BREAKER
F	FUSE
G	GENERATOR
Hz	FREQUENCY METER
kWh	KILO WATT HOUR METER
LA	LIGHTNING ARRESTER
LBS	LOAD BREAK SWITCHES
M	MOTOR
MC	ELECTROMAGNETIC CONTACTOR
MCCB	MOLDED CASE CIRCUIT BREAKER
THR	THERMAL RELAY
V	VOLTMETER
VS	VOLTMETER SWITCH
VT	VOLTAGE TRANSFORMER
W	WATT METER
WL	WHITE LAMP
ZCT	ZERO PHASE CURRENT TRANSFORMER
3E	3E RELAY
[I>]	AC TIME OVER CURRENT RELAY
[GFR]	GROUND FAULT RELAY
[U<]	UNDER VOLTAGE RELAY
[U>]	OVER VOLTAGE RELAY

Incoming/Feeder Panel
3Ø4W 415V 50Hz

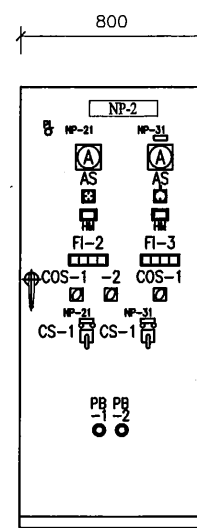


APPLICATION	CABLE SIZE	CAPA. (kW)
PUMP CONTROL PANEL	16 Sq x 4c	22
DG SET	2.5 Sq x 4c	1
UPS	2.5 Sq x 4c	1
DISTRIBUTION BOARD	2.5 Sq x 4c	1
RESERVE		
RESERVE		



SIDE VIEW

Incoming/Feeder Panel
01-15 IFP01



SIDE VIEW

Sewage Pump Control Panel
01-15 PCP01

Item	Description
NP-1	Incoming/Feeder Panel
NP-12	PNG Power Supply
NP-13	PNG Power Supply ON - OFF
NP-14	DG Set Power Supply
NP-15	DG Set Power Supply ON - OFF
NP-2	Sewage Pump Control Panel 15PCP 01
NP-21	NO.1 Sewage Pump
NP-31	NO.2 Sewage Pump
COS1	Auto - Off - Manual
COS2	1 - 2 - Alternate
CS1	Start - Stop
PBS1	Emergency Stop
PBS2	Lamp Test
FI	Illuminated Alarm Indicator
PL	Pilot Light

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
PROJECT MANAGEMENT UNIT (PMU)
jica JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

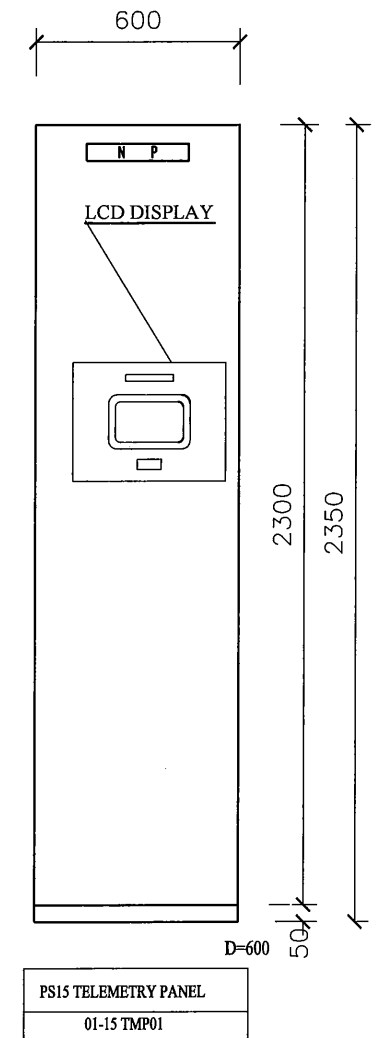
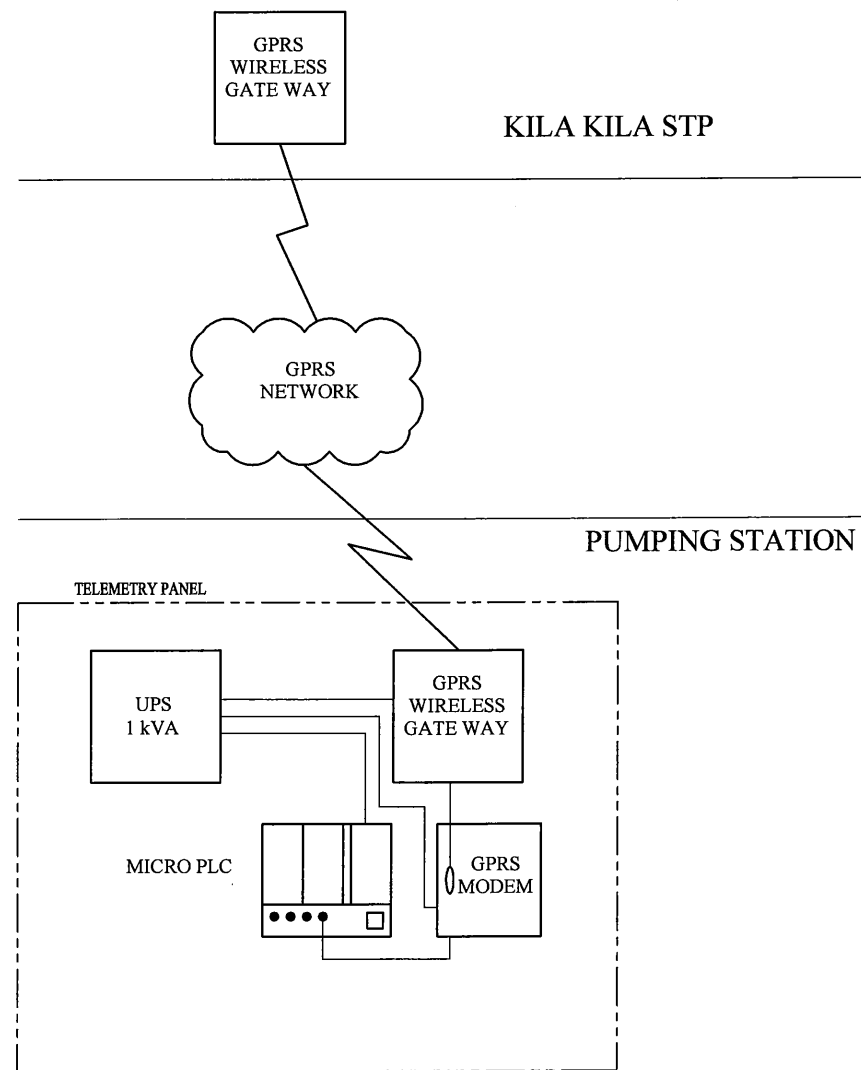
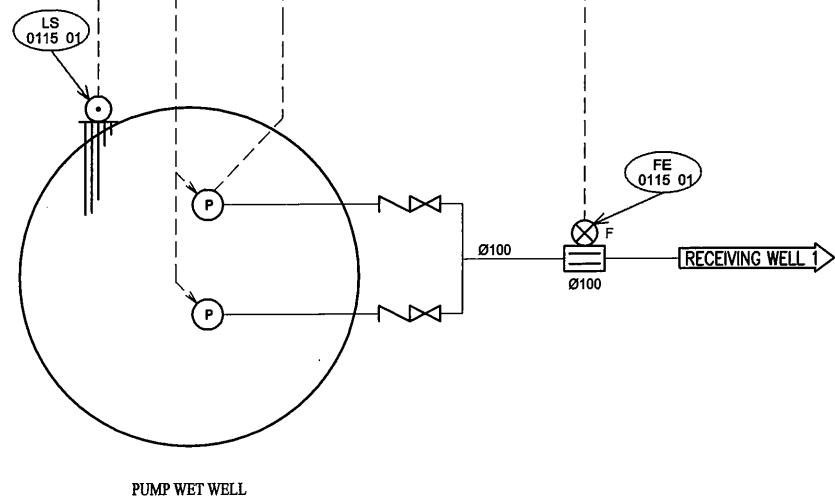
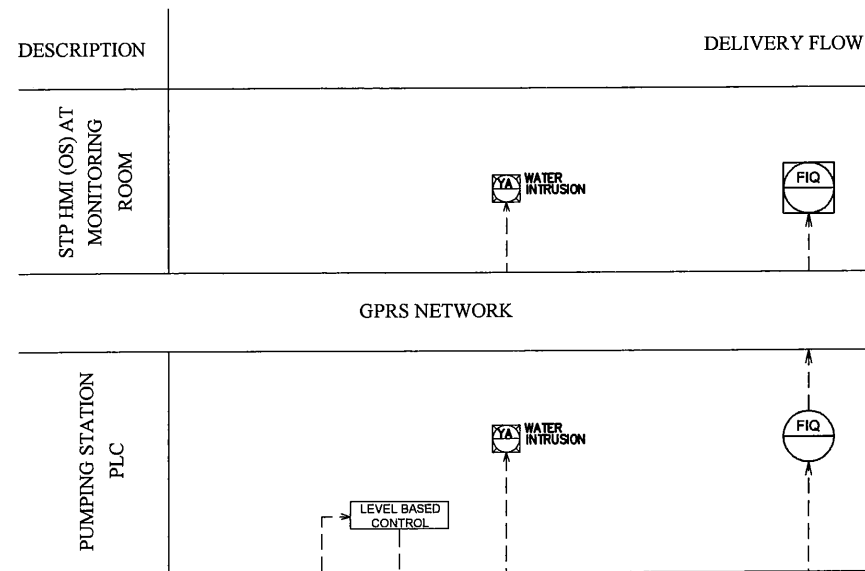
TITLE: PS15 GABUTU: Incoming/Feeder Panel And Pump Control Panel

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
Project Director
Lot G.Zauya
CHECKED by CONSULTANT
Project Manager
T.Fuji

DATE: 1. Dec 2011
SCALE: NOT TO SCALE
DATE: 1. Dec 2011
DRAWING NO.: PS15-E001



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

CLIENT: **IPBC** INDEPENDENT PUBLIC BUSINESS CORPORATION
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
 PROJECT MANAGEMENT UNIT (PMU)

CONSULTANTS: **JICA** JAPAN INTERNATIONAL COOPERATION AGENCY

NJS NJS CONSULTANTS CO., LTD. - JAPAN

TITLE: PS15 GABUTU: Instrumentation And Telemetry System Diagram

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
 Project Director
 Lot G.Zauya

CHECKED by CONSULTANT
 Project Manager
 T.Fuji

DATE: 1. Dec 2011

SCALE: NOT TO SCALE

DATE: 1. Dec 2011

DRAWING NO.: PS15-E002