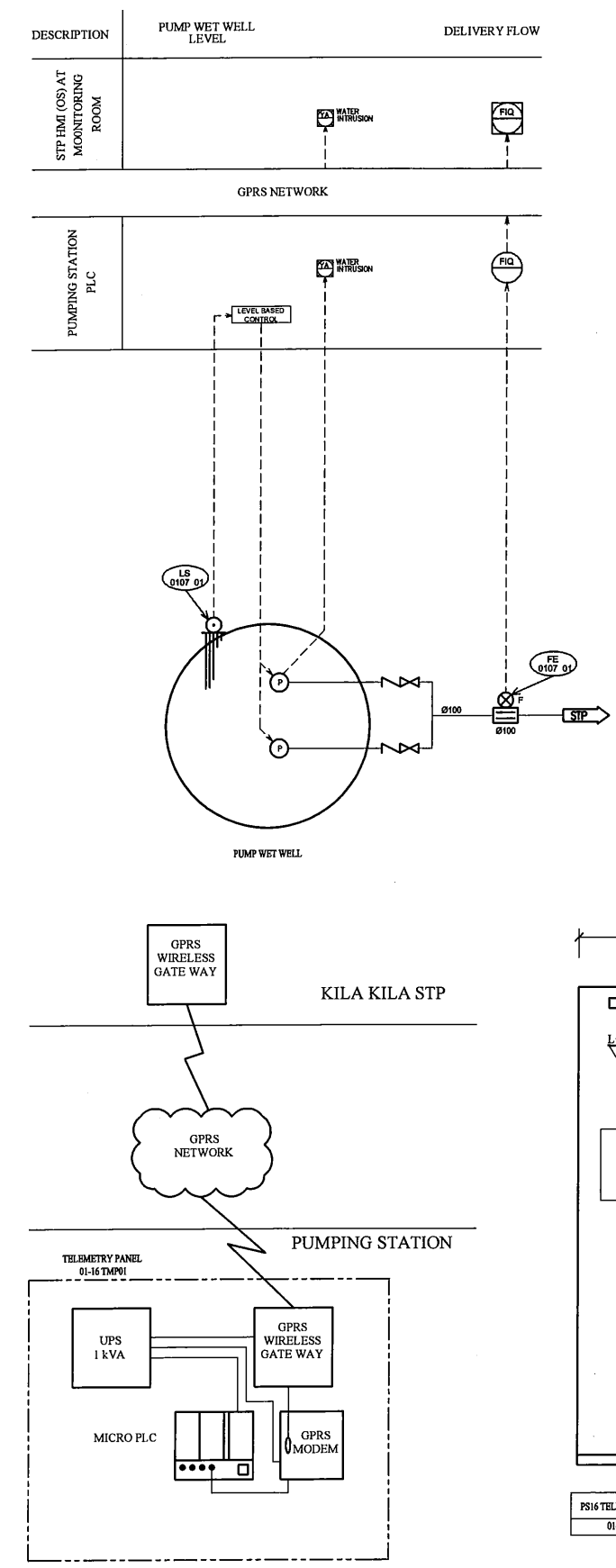
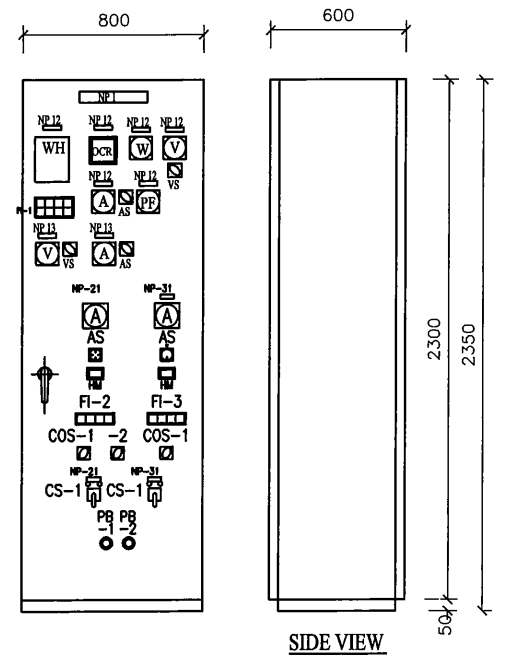
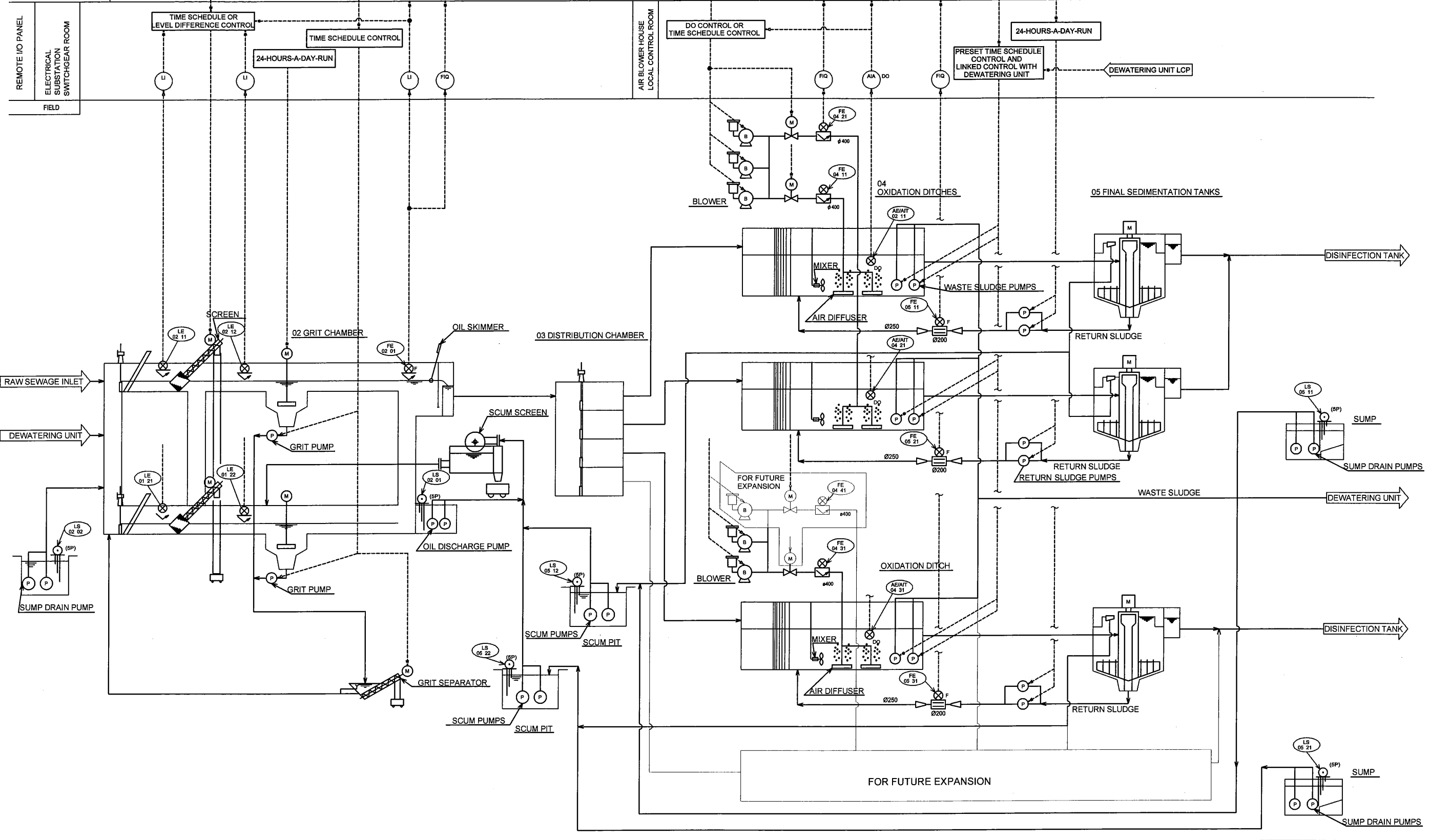


SYMBOL	DESCRIPTION
A	AMMETER
AS	AMMETER SWITCH
AVR	AUTOMATIC VOLTAGE REGULATOR
CH	CABLE HEAD
cosØ	POWER FACTOR METER
CT	CURRENT TRANSFORMER
DE	DIESEL ENGINE
E	EARTH
ELCB	EARTH LEAKAGE CIRCUIT BREAKER
F	FUSE
G	GENERATOR
Hz	FREQUENCY METER
kWh	KILO WATT HOUR METER
LA	LIGHTNING ARRESTER
LBS	LOAD BREAK SWITCHES
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

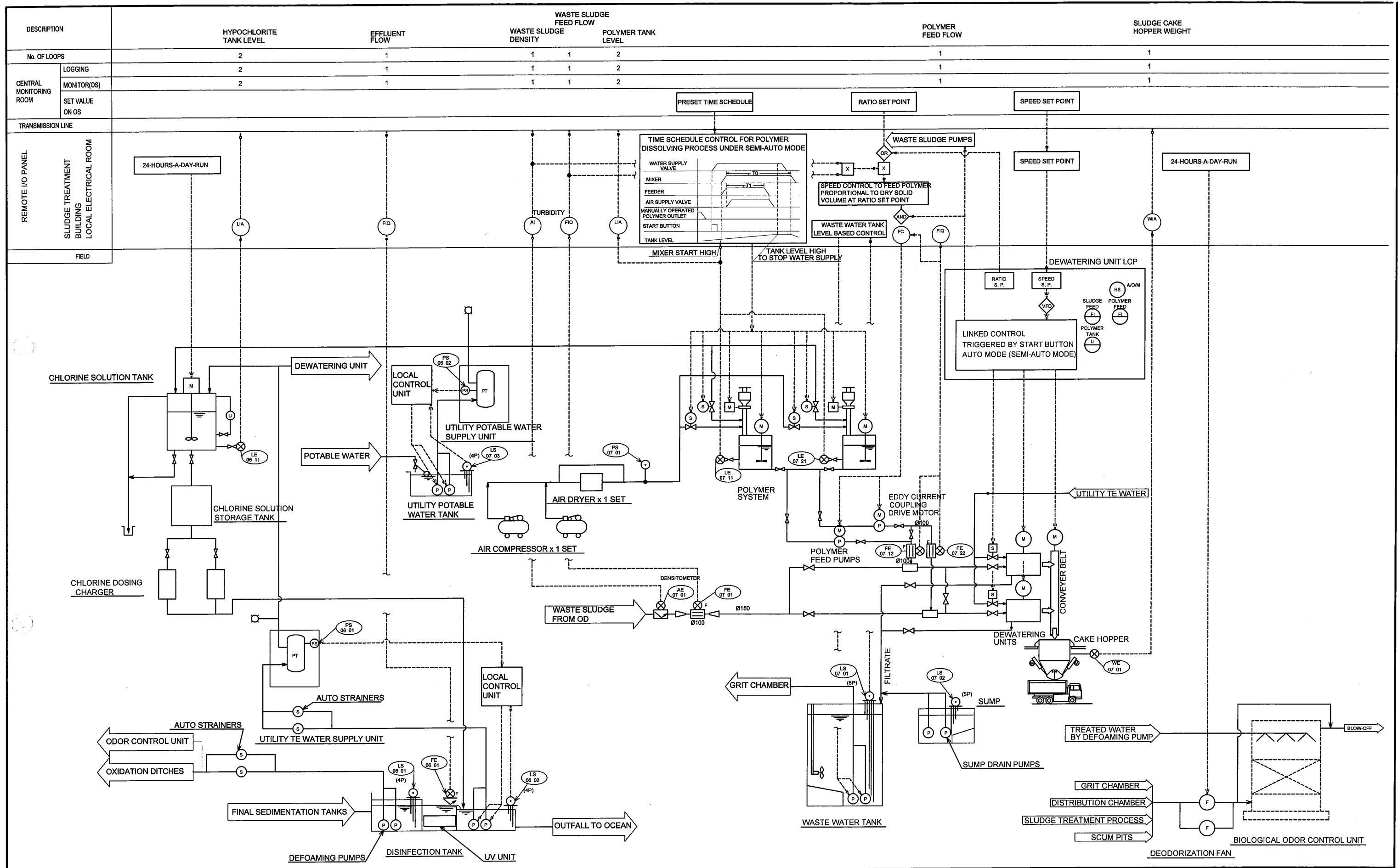
Item	Description
NP-1	Incoming & Pump Control Panel
NP-12	PNG Power Supply
NP-13	DG Set Power Supply
NP-21	NO.1 Sewage Pump
NP-31	NO.2 Sewage Pump
COS1	Auto - Off - Manual
COS2	1 - 2 - Alternate
CS1	Start - Stop
PBS1	Emergency Stop
PBS2	Lamp Test
FI	Illuminated Alarm Indicator



DESCRIPTION	PRE-SCREEN CHANNEL LEVEL	POST-SCREEN CHANNEL LEVEL	CHANNEL LEVEL	INFLUENT FLOW	BLOWER FLOW	OXIDATION DITCH DO	RETURN SLUDGE FLOW
No. OF LOOPS	2	2	1	1	3	3	3
LOGGING	2	2	1	1	3	3	3
MONITOR(OS)	2	2	1	1	3	3	3
CENTRAL MONITORING ROOM	SET VALUE	PRESET CYCLE/DURATION TIME SCHEDULE OR PRESET LEVEL DIFFERENCE		PRESET CYCLE/DURATION TIME SCHEDULE	DO SET POINT OR PRESET CYCLE/DURATION TIME SCHEDULE		PRESET TIME SCHEDULE
	ON OS						PRESET DUTY NUMBER IN SERVICE
TRANSMISSION LINE	2	2	1	1	3	3	3

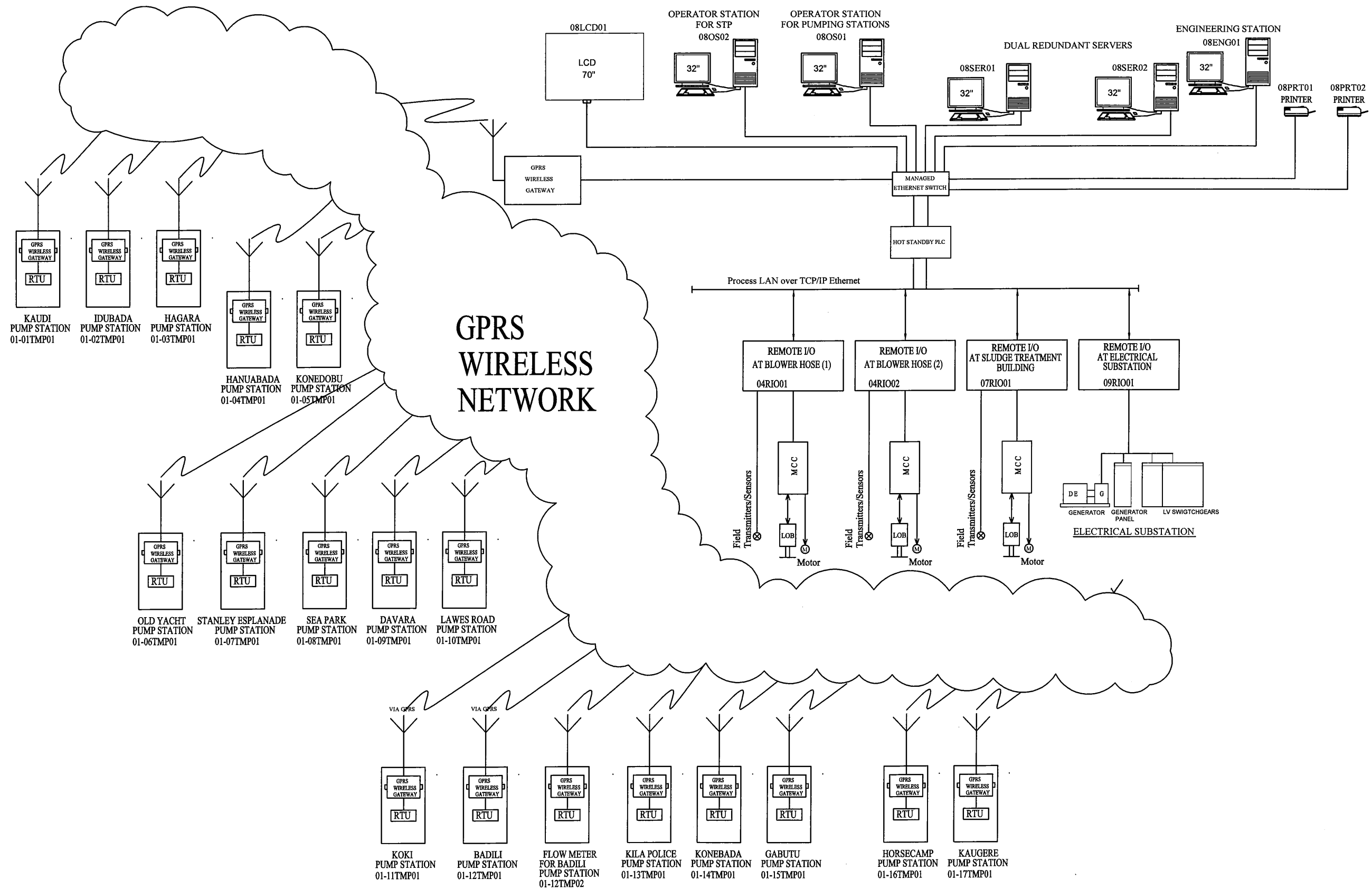


PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP : INSTRUMENTATION DIAGRAM PART 1 - (1/2)																
CLIENT: IPBC INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU)	CONSULTANTS: NJS NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	<table border="1"> <thead> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	REVISIONS			REV.	DATE	DESCRIPTION									
REVISIONS																		
REV.	DATE	DESCRIPTION																
APPROVED by PMU: Project Director Lot G.Zauya	DATE: 1. Dec 2011	CHECKED by CONSULTANT Project Manager T.Fuji	SCALE: NOT TO SCALE DRAWING NO.: STP-E-003															
DATE: 1. Dec 2011	SCALE: NOT TO SCALE																	



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP : INSTRUMENTATION DIAGRAM PART 2 - (2/2)	
CLIENT: IPBC 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
JICA JAPAN INTERNATIONAL COOPERATION AGENCY			CHECKED by CONSULTANT Project Manager T.Fuji
			DATE: 1. Dec 2011
			SCALE: NOT TO SCALE
			DATE: 1. Dec 2011
			DRAWING NO.: STP-E004

SCADA ROOM (ADMINISTRATION BUILDING)



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP : SCADA 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

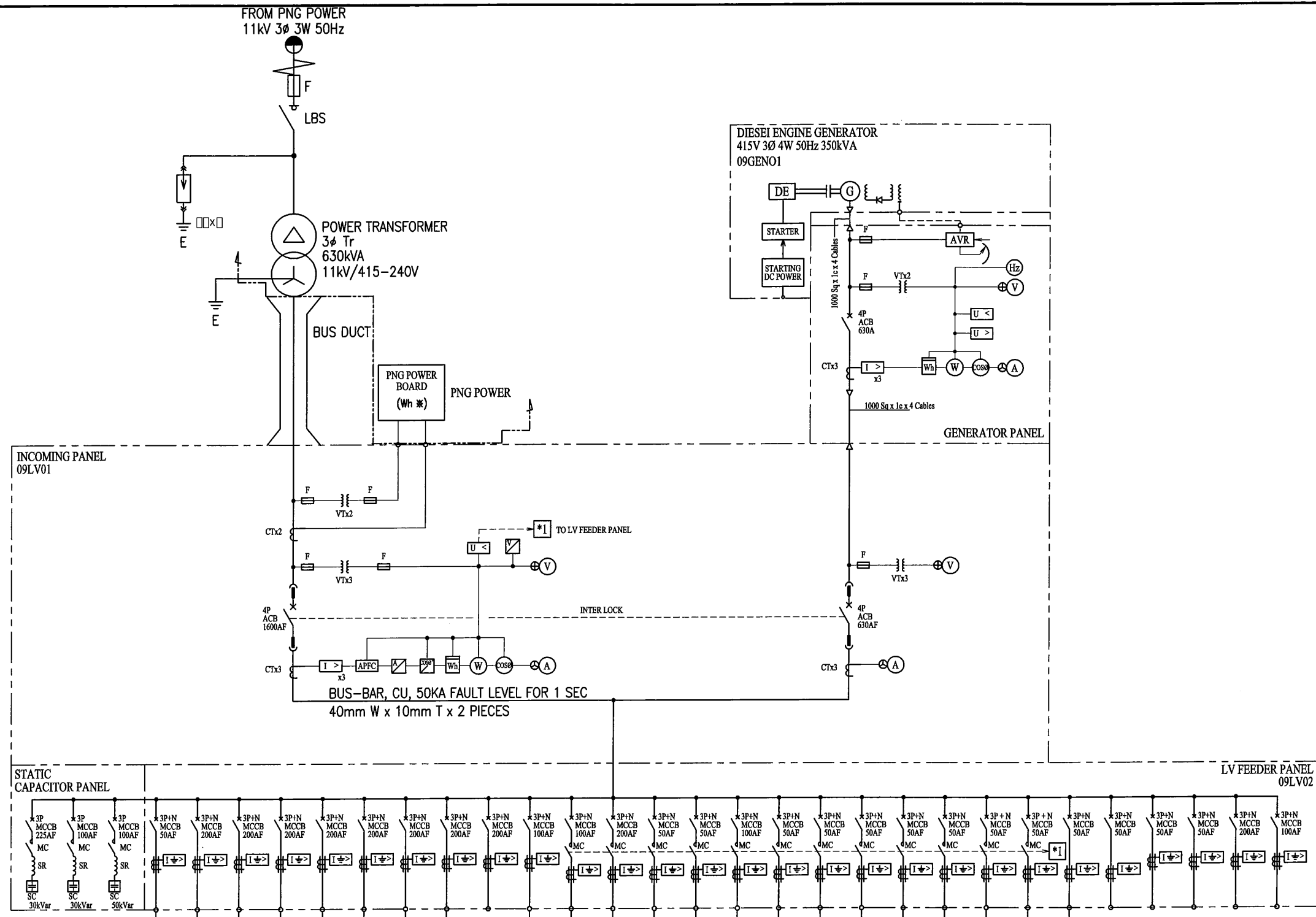
NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

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

DATE: 1. Dec 2011
 DATE: 1. Dec 2011
 SCALE: NOT TO SCALE
 DRAWING NO.: STP-E-005

SYMBOL	DESCRIPTION
A	AMMETER
AS	AMMETER SWITCH
AVR	AUTOMATIC VOLTAGE REGULATOR
CH	CABLE HEAD
CosØ	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
	AC TIME OVER CURRENT RELAY
	GROUND FAULT RELAY
	UNDER VOLTAGE RELAY
	OVER VOLTAGE RELAY



APPLICATION	CAPA. (kW)	CABLE SIZE
GRIT CHAMBER MCC	16.3	6 Sq x 4c
No.1/2 OD & CLARIFIER MCC	58.5	70 Sq x 4c
No.3 OD & CLARIFIER MCC	58.5	70 Sq x 4c
NO.1 BLOWER CONTROL PANEL	75.00	95 Sq x 4c
NO.2 BLOWER CONTROL PANEL	75.00	95 Sq x 4c
NO.3 BLOWER CONTROL PANEL	75.00	95 Sq x 4c
NO.4 BLOWER CONTROL PANEL	75.00	185 Sq x 4c
NO.5 BLOWER CONTROL PANEL	75.00	185 Sq x 4c
RESERVE		
UTILITY WATER & DISINFECTION MCC	30	70 Sq x 4c
SLUDGE TREATMENT MCC	40.7	95 Sq x 4c
DISTRIBUTION BOARD FOR ADMINISTRATION BUILDING	66	70 Sq x 4c
DISTRIBUTION BOARD FOR BLOWEWR HOUSE (1)	20	10 Sq x 4c
DISTRIBUTION BOARD FOR BLOWEWR HOUSE (2)	20	35 Sq x 4c
DISTRIBUTION BOARD FOR SLUDGE PUMP ROOM (1)	4	4 Sq x 4c
DISTRIBUTION BOARD FOR SLUDGE PUMP ROOM (2)	4	6 Sq x 4c
DISTRIBUTION BOARD FOR SLUDGE TREATMENT BUILDING	14	35 Sq x 4c
DISTRIBUTION BOARD FOR CHLORINATION ROOM	5	6 Sq x 4c
DISTRIBUTION BOARD FOR GUARD HOUSE	2	10 Sq x 4c
DISTRIBUTION BOARD FOR YARD LIGHTING	5	2.5 Sq x 4c
DISTRIBUTION BOARD FOR GRIT CHAMBER	2	2.5 Sq x 4c
DISTRIBUTION BOARD FOR ELECTRICAL SS	10	4 Sq x 4c
UPS (09UPS01)	7.5kVA	2.5 Sq x 4c
GENERATOR	5kVA	2.5 Sq x 2c
RESERVE		
RESERVE		
RESERVE		
RESERVE		
RESERVE		

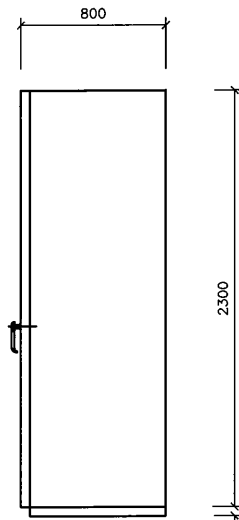
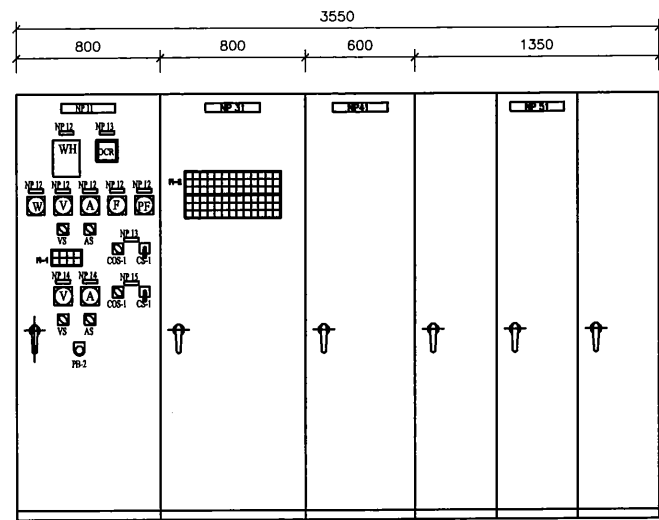
PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP) TITLE: STP KILA KILA: Singel Line Diagram For Power Supply

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

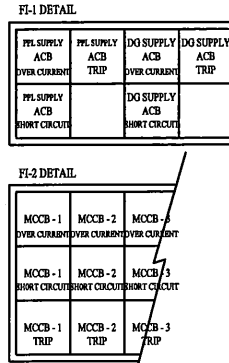
NOTES: APPROVED by PMU: Project Director Lot G.Zauya DATE: 1. Dec 2011 SCALE: NOT TO SCALE

CHECKED by CONSULTANT: Project Manager T.Fuji DATE: 1. Dec 2011 DRAWING NO.: STP-E006

REVISIONS		
REV.	DATE	DESCRIPTION



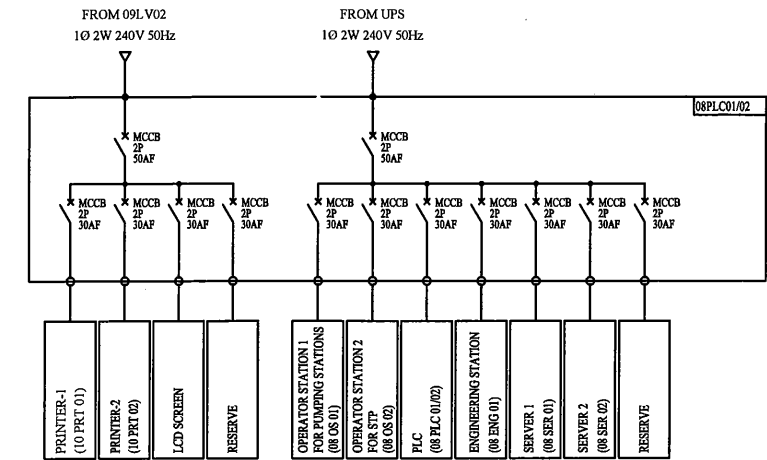
SIDE VIEW



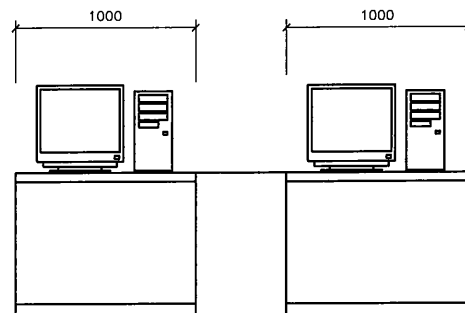
LEGEND

SYMBOL	DESCRIPTION
○	INDICATION LAMP
⊕	EACH ALARM INDICATION
LT	LAMP TEST
AR	ALARM RESET
CS	CONTROL SWITCH
COB	CHANGE OVER SWITCH
PB	PUSH BUTTON SWITCH
VS	VOLTMETER SWITCH
AS	AMMETER SWITCH
AM	AUTO-MANUAL

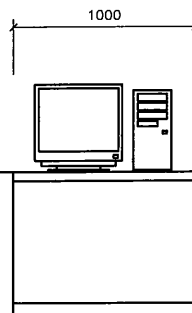
NP-11	PPL/DG SET INCOMING PANEL
NP-12	PPL (PNG POWER LTD) POWER SUPPLY
NP-13	PPL POWER SUPPLY ON - OFF
NP-14	DG SET POWER SUPPLY
NP-15	DG SET POWER SUPPLY ON - OFF
NP-31	L V (LOW VOLTAGE) FEEDER PANEL
NP-41	L V SC (STATIC CAPACITOR) PANEL
NP-41	UPS



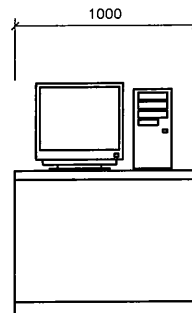
PPL/DG SET INCOMING PANEL	LV FEEDER PANEL	LV STATIC CAPACITOR PANEL	UPS PANEL
09LV01	09LV02	09LV03	09UPS01



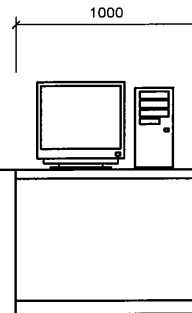
OPERATOR STATION 1 FOR PUMPING STATIONS
08OS01



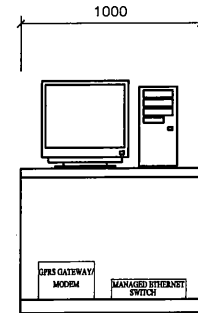
OPERATOR STATION 2 FOR STP
08OS02



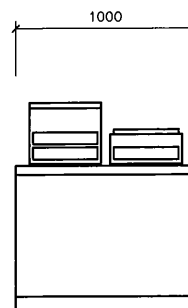
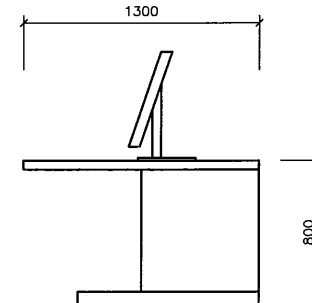
DATA PROCESS SERVER
08SER01



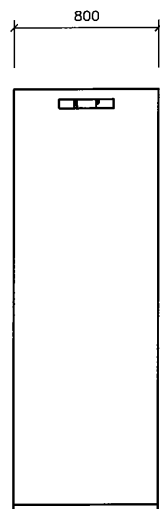
DATA PROCESS SERVER
08SER02



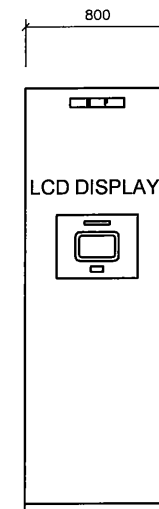
ENGINEERING STATION
08ENG01



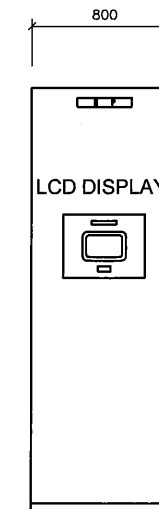
PRINTERS
08PRT01, 08PRT02



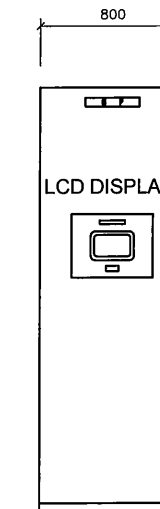
PLC AT ADMINISTRATION BUILDING
08PLC01/02



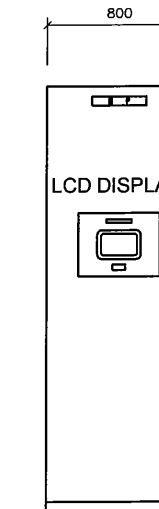
RIO PANEL AT BLOWER HOUSE - 1
04RIO01



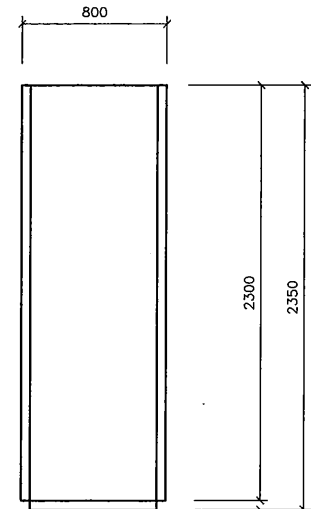
RIO PANEL AT BLOWER HOUSE - 2
04RIO02



RIO PANEL AT SLUDGE TREATMENT BUILDING
07RIO01



RIO PANEL AT ELECTRICAL SUBSTATION
09RIO01



SIDE VIEW

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

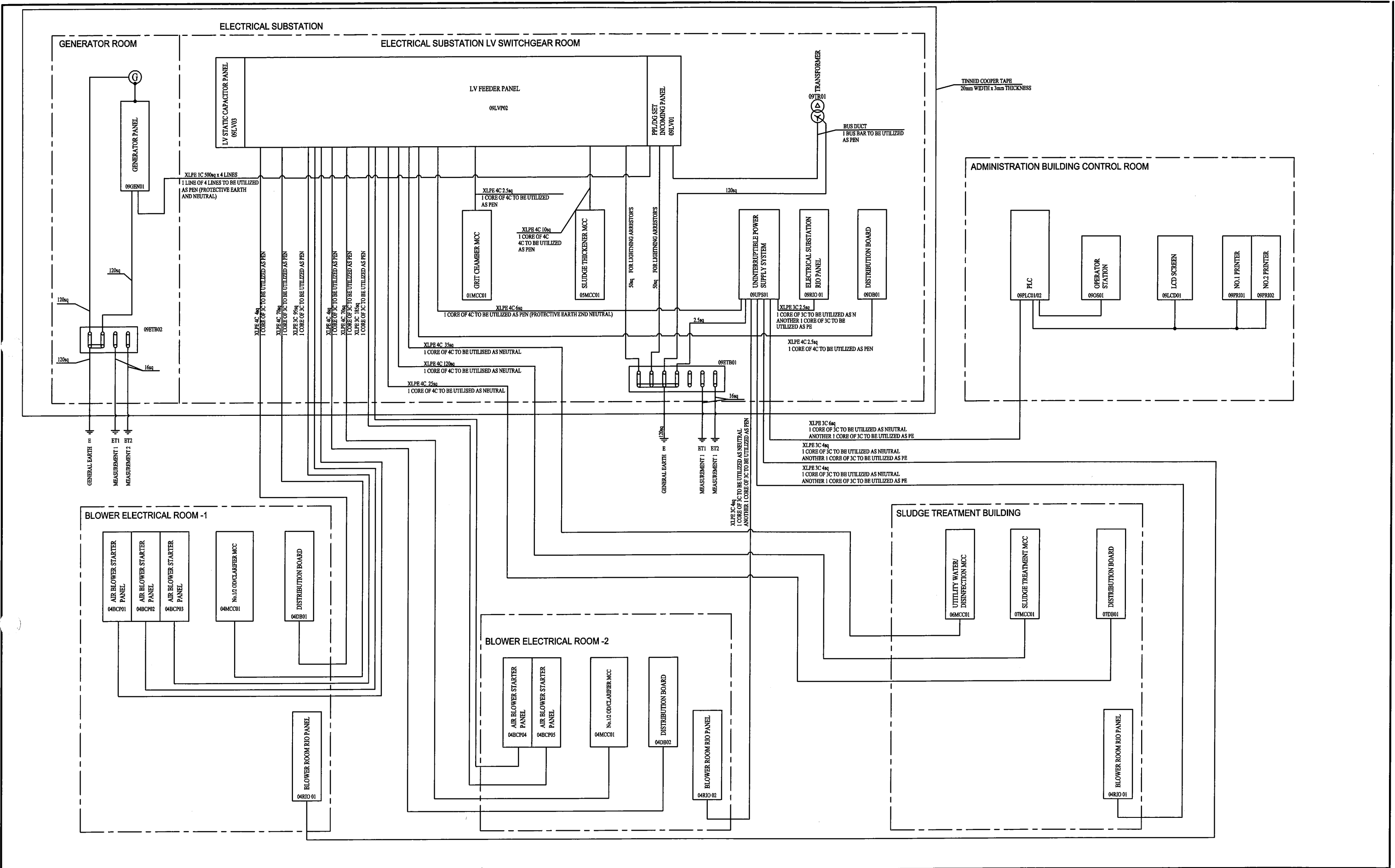
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT
PROJECT MANAGEMENT UNIT (PMU)
jica JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

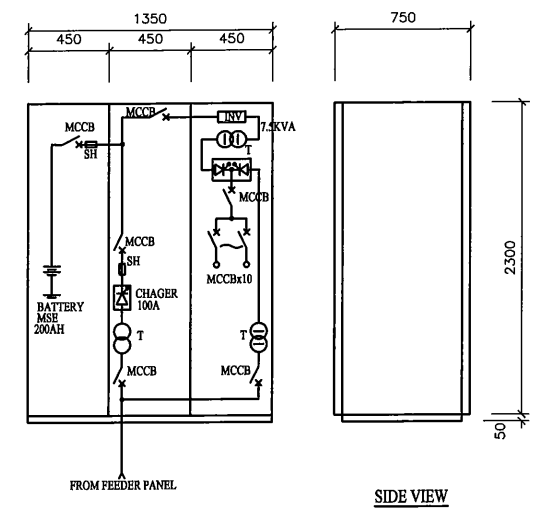
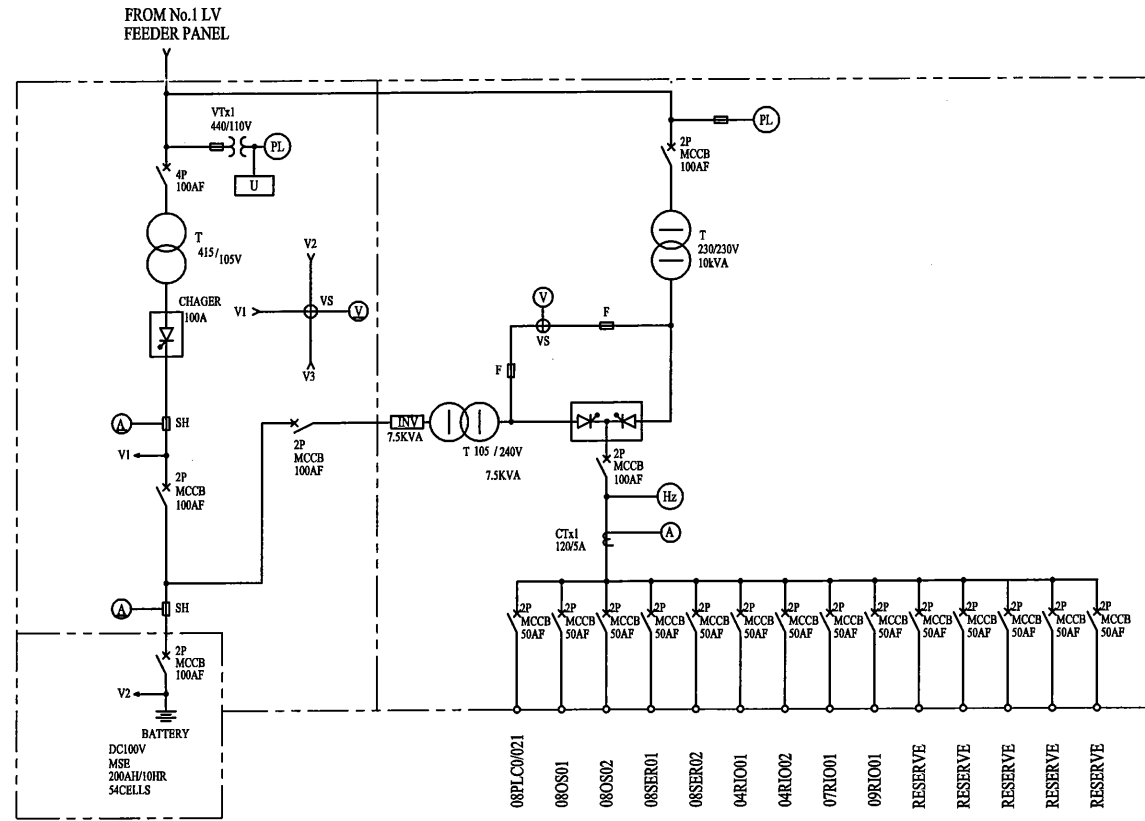
TITLE: KILA KILA Sewage Treatment Plant: Outline Of Power Supply Panel And SCADA Components

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.: STP-E007

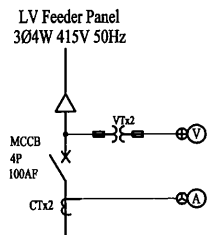


PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: KILA KILA Sewage Treatment Plant: Earthing System Diagram	
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU)	CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	APPROVED by PMU: Project Director Lot G. Zauya
JAPAN INTERNATIONAL COOPERATION AGENCY			CHECKED by CONSULTANT Project Manager T. Fuji
			DATE: 1. Dec 2011
			SCALE: NOT TO SCALE
			DATE: 1. Dec 2011
			DRAWING NO.: STP-E008



PANEL NAME	BATTERY PANEL	CHARGER PANEL	INVERTER PANEL
PANEL TAG No.	10UPS01-1	10UPS01-2	10UPS01-3
MEASURING DEVICE		V A	V A Hz
COS		VS	VS
CS			
P B		LT, AR	
PROTECTION RELAY			
INDICATION		○	○
ALARM		⊕	⊕
REMARKS			

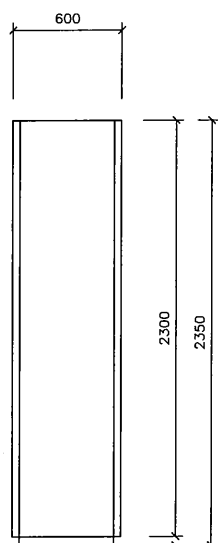
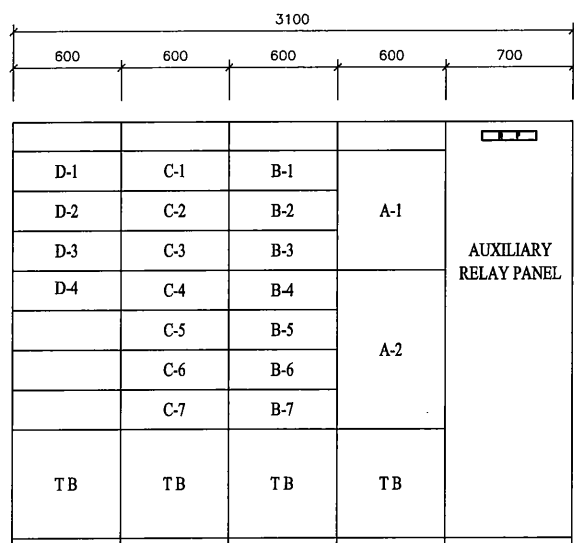
PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: KILA KILA Sewage Treatment Plant: UPS Single Line Diagram And Outline	
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU)	CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN	APPROVED by PMU: Project Director Lot G. Zauya	DATE: 1. Dec 2011 SCALE: NOT TO SCALE
NOTES:		CHECKED by CONSULTANT Project Manager T. Fuji	DATE: 1. Dec 2011 DRAWING NO.: STP-E009



STARTER SYMBOL	B	A	A	A	B	A	A	B	A	D
LOAD NAME	Fine Screen	Grit Collector	Grit Pump NO.1,2	Sump Drain Pump NO.1,2	Grit Separator NO.1,2	Oil Discharge Pump NO.1,2	Scum Screen NO.1,2	Conveyer	Fuel Transfer Pump	Reserve
LOAD TAG NO.	M02-02-01/02	M02-03-01/02	M02-04-01/02	M02-05-01/02	M02-06	M02-08-01/02	M02-09	M02-10	09-FP-01/02	
(kW)	2.2	0.75	0.4	1.5	0.75	0.75	0.4	2.2	0.4	
MCCB (AF)	50	50	50	50	50	50	50	50	50	50
NUMBERS	1st Stage	2	2	2(1)*	1	2(1)*	1	1	2(1)*	3
MEASURING DEVICE	(A)			(H)				(A)	(H)	
PROTECTION RELAY	I<math>\psi>	I<math>\psi>	I<math>\psi>	I<math>\psi>	I<math>\psi>	I<math>\psi>	I<math>\psi>	I<math>\psi>	I<math>\psi>	I<math>\psi>
REMARKS										

Total : 16.3kW

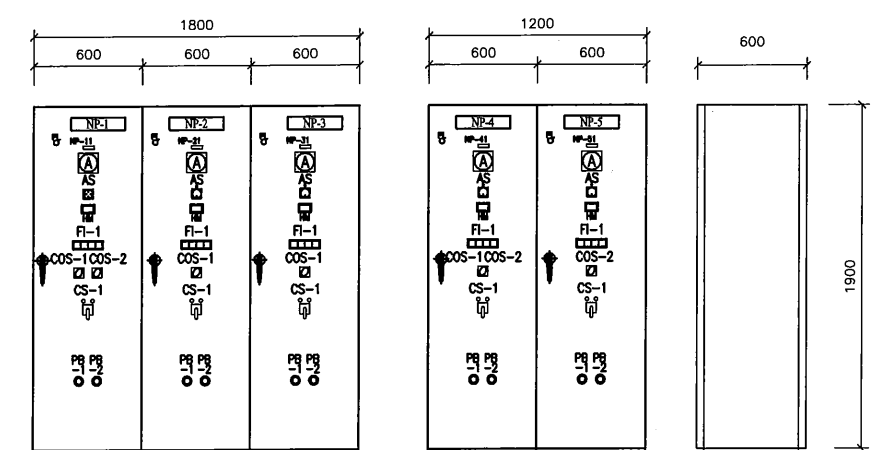
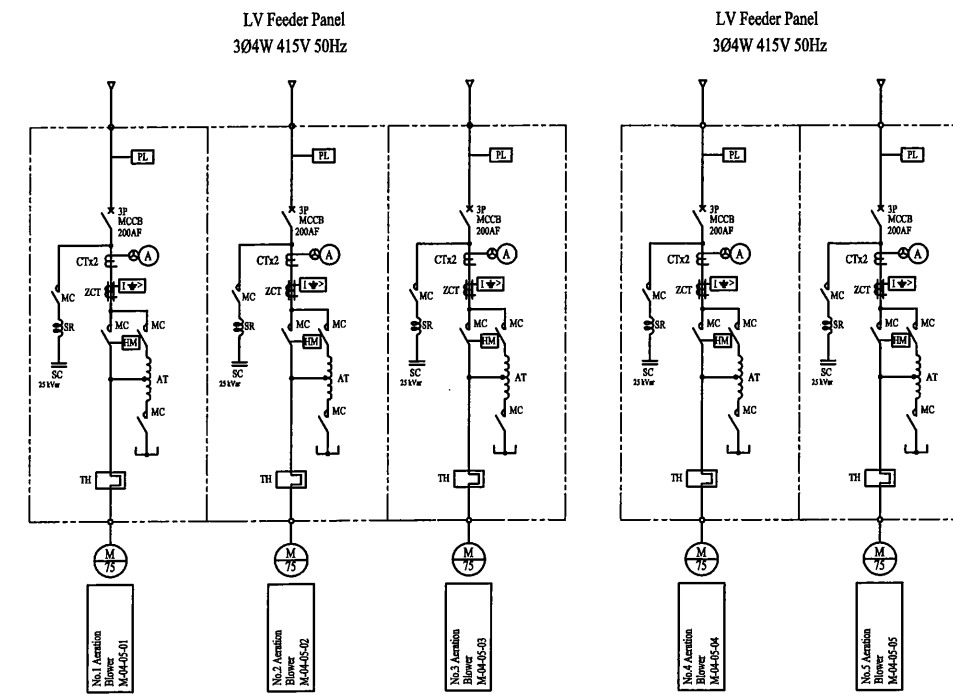
(1)* : FIGURE INSIDE THE ROUND BRACKETS SHOWS NUMBERS OF STANDBY



UNIT NO.	LOAD NAME	LOAD NAME
A-1	Incoming Unit	
A-2	Control Power Unit Utility TE Supply Valves for Fine screens, Grit Separator and Scum Screen	
B-1	No.1 Fine Screen	D-1 No.1 Fuel Transfer Pump
B-2	No.2 Fine Screen	D-2 No.2 Fuel Transfer Pump
B-3	No.1 Grit Collector	D-3 Reserve
B-4	No.2 Grit Collector	D-4 Reserve
B-5	No.1 Grit Pump	
B-6	No.2 Grit Pump	
B-7	Reserve	
C-1	No.1 Sump Drain Pump	
C-2	No.2 Sump Drain Pump	
C-3	Grit Separator	
C-4	No.1 Oil Discharge Pump	
C-5	No.2 Oil Discharge Pump	
C-6	Scum Screen	
C-7	Conveyer	

Grit Chamber MCC	02MCC01
Auxiliary Relay Panel	

TYPE	DIRECT LINE START	REVERSIBLE START	STAR DELTA	POWER SUPPLY	AUTO TRANSFORMER	CONTROL POWER
SYMBOL	A up to 7.5kW	B	C 7.5 to 30kW	D	E above 30kW	Z
CIRCUIT						



Air Blower Control Panel For No.1 And No.2 ODs			Air Blower Control No.3 OD	
04 BCP 01	04 BCP 02	04 BCP 03	04 BCP 04	04 BCP 05

NP-1	No.1 Aeration Blower Control Panel 04BCP 01
NP-2	No.2 Aeration Blower Control Panel 04BCP 02
NP-3	No.3 Aeration Blower Control Panel 04BCP 03
NP-4	No.4 Aeration Blower Control Panel 04MCC 04
NP-5	No.5 Aeration Blower Control Panel 04BCP 05
NP-11	NO.1 Aeration Blower
NP-21	NO.2 Aeration Blower
NP-31	NO.3 Aeration Blower
NP-41	NO.4 Aeration Blower
NP-51	NO.5 Aeration Blower
COS1	Auto - Off - Manual
COS2	1/2/3 - 2/3/1 - 3/1/2 - Off
COS3	4/5/6 - 5/6/5 - 6/4/5 - Off
CS1	Start - Stop
PBS1	Emergency Stop
PBS2	Lamp Test
FI	Illuminated Alarm Indicator
FL	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)

CONSULTANTS: JNS CONSULTANTS CO., LTD. - JAPAN

CLIENT: JICA JAPAN INTERNATIONAL COOPERATION AGENCY

TITLE: Kila Kila STP: GRIT CHAMBER MCC AND BLOWER CONTROL PANELS

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU: Project Director Lot G.Zauiya

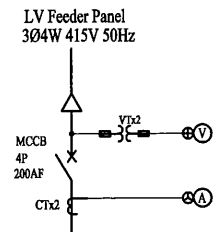
CHECKED by CONSULTANT: Project Manager T.Fuji

DATE: 1. Dec 2011

SCALE: NOT TO SCALE

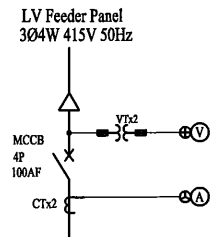
DATE: 1. Dec 2011

DRAWING NO.: STP-E010



Total : 32.45kW/58.5kW

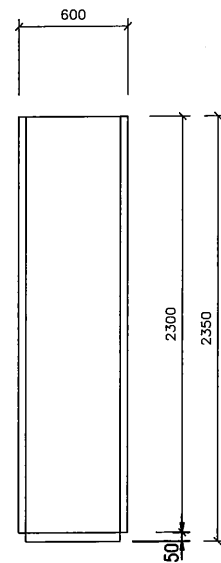
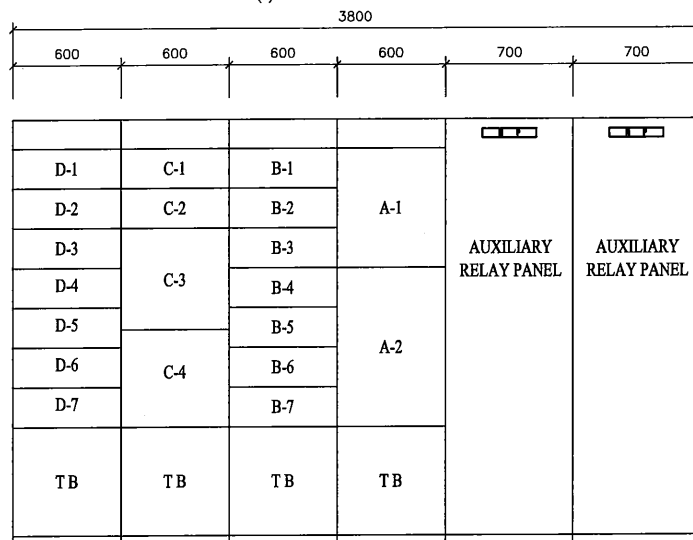
STARTER SYMBOL	A	A	A	C	A	A	D
LOAD NAME	Reactor Tank Mixer	Waste Sludge Pump	Clarifier	Return Sludge Pump	Sump Drain Pump	Scum Pump	Reserve
LOAD TAG NO.	M04-01-09/12	M04-08-05/06	M05-01-03	M05-02-05/06	M05-04-03/04	M05-05-03/04	
(kW)	2.3	5.5	0.75	11	1.5	3.7	
MCCB (AF)	50	50	50	50	50	50	50
NUMBERS	1st Stage	4	2(1)*	1	2(1)*	2(1)*	3
MEASURING DEVICE		Ⓜ		Ⓜ Ⓜ	Ⓜ	Ⓜ	
PROTECTION RELAY	Ⓜ	Ⓜ	Ⓜ	Ⓜ	Ⓜ	Ⓜ	Ⓜ
REMARKS							



Total : 30.0kW

STARTER SYMBOL	A	D	A	Z	D	D
LOAD NAME	Chlorine Solution Tank Mixer	Utility TE Water Supply Unit	Defoaming Pump	Auto Strainer	UV Device	Reserve
LOAD TAG NO.	M06-01-01	M06-04	M06-06-01/02	M06-05-01/04	M06-07-01/04	
(kW)	1.5	7.4	3.7	0.1	15	
MCCB (AF)	50	50	50	50	100	50
NUMBERS	1st Stage	1	2(1)*	4(2)*	2	1
MEASURING DEVICE			Ⓜ			
PROTECTION RELAY	Ⓜ	Ⓜ	Ⓜ	Ⓜ	Ⓜ	Ⓜ
REMARKS						

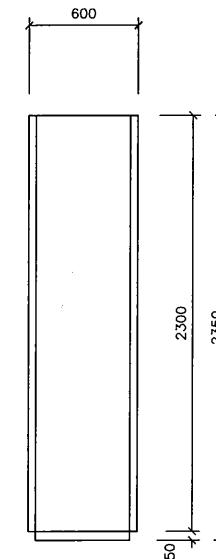
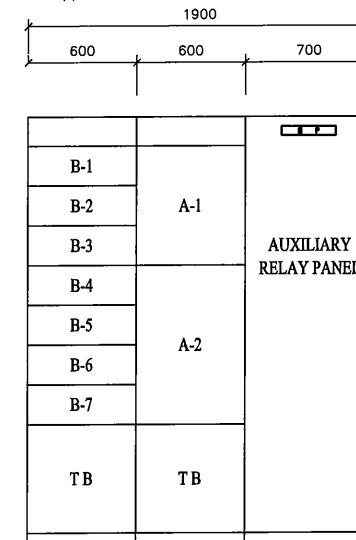
(1)* : FIGURE INSIDE THE ROUND BRACKETS SHOWS NUMBERS OF STANDBY



UNIT NO.	LOAD NAME	LOAD NAME
A-1	Incoming Unit	D-1 No.1 Sump Drain Pump
A-2	Control Power Unit	D-2 No.2 Sump Drain Pump
		D-3 No.1 Scum Pump
		D-4 No.2 Scum Pump
		D-5 Reserve
		D-6 Reserve
		D-7 Vacant
B-1	No.9 Reactor Tank Mixer	
B-2	No.10 Reactor Tank Mixer	
B-3	No.11 Reactor Tank Mixer	
B-4	No.12 Reactor Tank Mixer	
B-5	No.5 Waste Sludge Pump	
B-6	No.6 Waste Sludge Pump	
B-7	Reserve	
C-1	No.3 Clarifier	
C-2	Vacant	
C-3	No.5 Return Sludge Pump	
C-4	No.6 Return Sludge Pump	

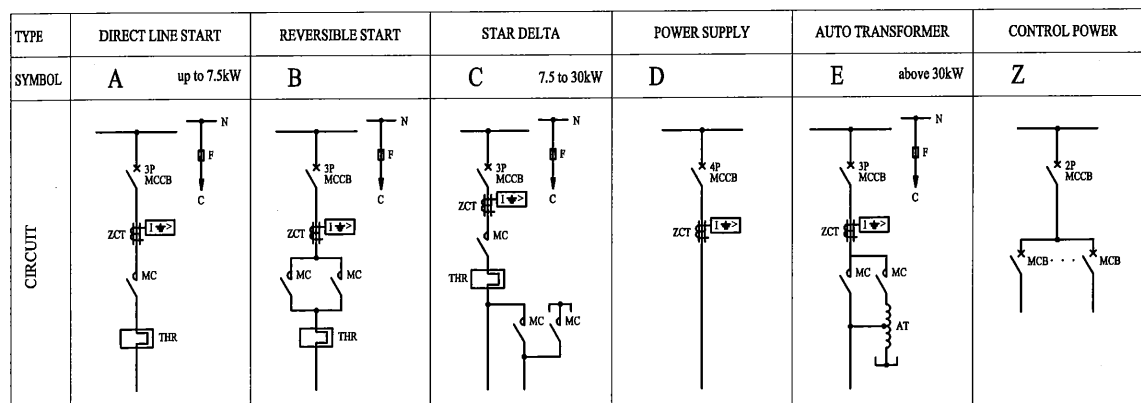
Oxidation Ditch And Clarifier MCC-2	04MCC02
Auxiliary Relay Panel	

(1)* : FIGURE INSIDE THE ROUND BRACKETS SHOWS NUMBERS OF STANDBY



Utility Water and Disinfection MCC	06MCC01
Auxiliary Relay Panel	

UNIT NO.	LOAD NAME
A-1	Incoming Unit
A-2	Control Power Unit, Auto Strainer
B-1	Chlorine Dissolving Tank Mixer
B-2	Utility Water Supply Unit
B-3	No.1 Defoaming Pump
B-4	No.2 Defoaming Pump
B-5	No.1 UV Disinfection Unit
B-6	No.2 UV Disinfection Unit
B-7	Reserve



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP: No.3 OD/CLARIFIER MCC AND UTILITY/DISINFECTION MCC

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:

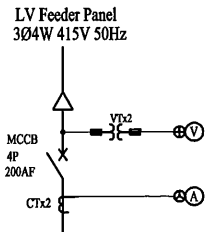
REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
Project Director
Lot G.Zauya

CHECKED by CONSULTANT
Project Manager
T.Fuji

DATE: 1. Dec 2011
SCALE: NOT TO SCALE

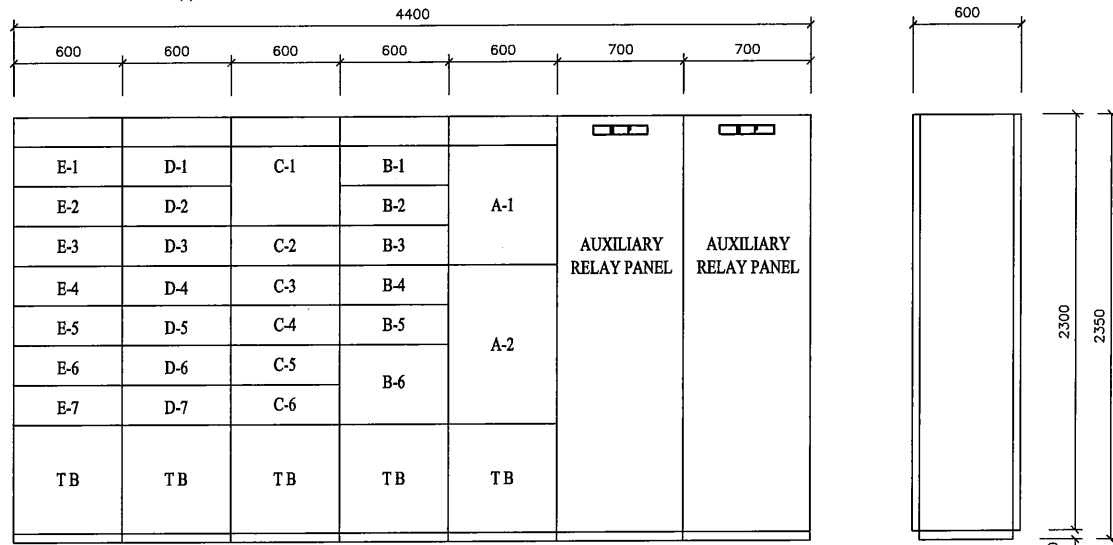
DATE: 1. Dec 2011
DRAWING NO.: STP-E012



Total : 51.7kW

STARTER SYMBOL	D	B	B	C	A	D	A	A	A	A	A	D	D	D	D
LOAD NAME	Sludge Dewatering Unit	Sludge Cake Conveyer	Sludge Cake Hopper	Polymer Dissolving Mixer	Polymer Feeder	Air Compressor	Air Dryer	Sump Drain Pump	Waste Water Mixer	Waste Water Pump	Deodorization Fan	Motorised Hoist	Biological Odor Control Unit	Utility Potable Water Supply Unit	Reserve
LOAD TAG NO.	M07-01-01/02	M07-02	M07-03-01/02	M07-04-01/02	M07-05-01/02	M07-07	M07-08-01/02	M07-11-01/02	M07-12-01/02	M07-13-01/02	M07-15-01/02	M07-10-01	M07-14	M07-16	
(kW)	6.0	3.7	2.2	11	0.4	3.7	0.2	1.5	1.5	5.5	3.7	3.2	5.0	4.4	
MCCB (AF)	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
NUMBERS	1st Stage	2(1)*	1	2	2(1)*	2(1)*	1	2	2(1)*	1	2(1)*	2(1)*	1	1	1
MEASURING DEVICE				Ⓐ Ⓜ	Ⓜ										
PROTECTION RELAY	I >	I >	I >	I >	I >	I >	I >	I >	I >	I >	I >	I >	I >	I >	I >
REMARKS															

(1)* : FIGURE INSIDE THE ROUND BRACKETS SHOWS NUMBERS OF STANDBY

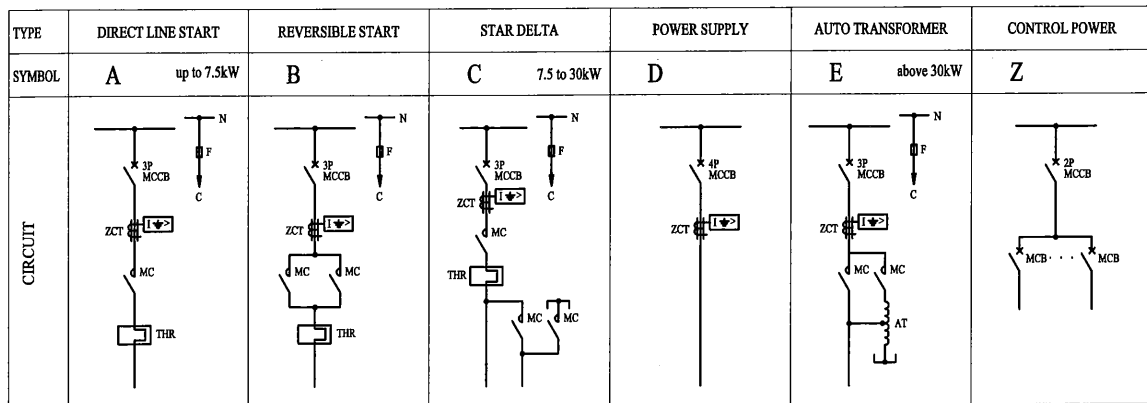


SIDE VIEW

Sludge Treatment MCC	07MCC01
Auxiliary Relay Panel	

UNIT NAME

UNIT NO.	LOAD NAME	LOAD NAME
A-1	Incoming Unit	D-1 No.1 Sump Drain Pump
A-2	Control Power Unit Utility Potable Water Supply valves and Air Supply Valves for Polymer Feeders	D-2 No.2 Sump Drain Pump
		D-3 Waste Water Mixer
		D-4 No.1 Waste Water Pump
		D-5 No.2 Waste Water Pump
		D-6 No.1 Deodorization Fan
		D-7 No.2 Deodorization Fan
		B-1
B-2	No.2 Sludge Dewatering Unit	E-2 Motorised Hoist
B-3	Sludge Cake Conveyer	E-3 Utility Potable Water Supply Unit
B-4	Sludge Cake Hopper - Right Arm	E-4 Reserve
B-5	Sludge Cake Hopper - Left Arm	E-5 Reserve
B-6	No.1 Polymer Dissolving Tank Mixer	
C-1	No.2 Polymer Dissolving Tank Mixer	
C-2	No.1 Polymer Feeder	
C-3	No.2 Polymer Feeder	
C-4	Air Compressor	
C-5	No.1 Air Dryer	
C-6	No.2 Air Dryer	



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP: SLUDGE TREATMENT MCC

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

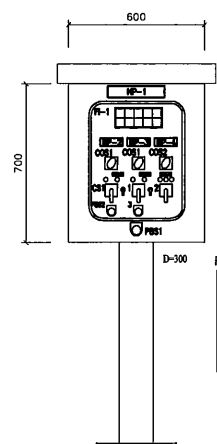
CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

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.: STP-E013

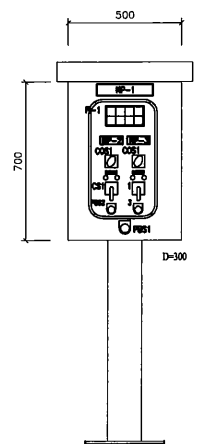


NP-1	Fine Screen LCP
NP-2	No.1 Fine Screen & Water Supply Valve
NP-3	No.2 Fine Screen & Water Supply Valve
NP-4	Screening Conveyor
CO-1	LOCAL-REMOTE
CO-2	SINGLE-LINKAGE
CS-1	STOP-START
CS-2	FORWARD-STOP-REVERSE
PB-1	EMERGENCY STOP
PB-2	LAMP TEST
PB-3	ALARM RESET

FI-1 DETAIL

No.1 Fine Screen OVER LOAD	No.1 Fine Screen BARTH FAULT	No.1 Fine Screen OVER TORQUE	Screening Conveyor OVER LOAD	Screening Conveyor BARTH FAULT	Screening Conveyor MEASURING
No.2 Fine Screen OVER LOAD	No.2 Fine Screen BARTH FAULT	No.2 Fine Screen OVER TORQUE	Screening Conveyor OVER LOAD	Screening Conveyor BARTH FAULT	EMERGENCY STOP

Fine Screen LOCAL CONTROL PANEL
02LCP01

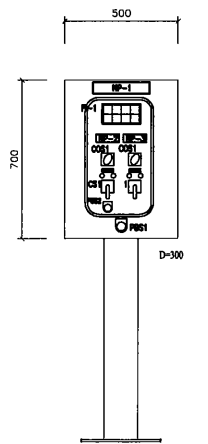


NP-1	Grit Collector LCP
NP-2	No.1 Grit Collector
NP-3	No.2 Grit Collector
CO-1	LOCAL-REMOTE
CS-1	STOP-START
PB-1	EMERGENCY STOP
PB-2	LAMP TEST
PB-3	ALARM RESET

FI-1 DETAIL

No.1 Grit Collector OVER LOAD	No.1 Grit Collector BARTH FAULT	No.1 Grit Collector OVER TORQUE	EMERGENCY STOP
No.2 Grit Collector OVER LOAD	No.2 Grit Collector BARTH FAULT	No.2 Grit Collector OVER TORQUE	

Grit Collector LOCAL CONTROL PANEL
02LCP02

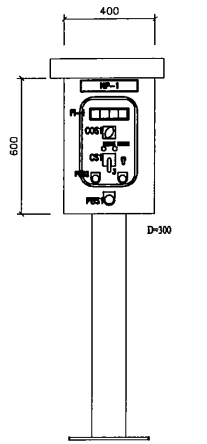


NP-1	Grit Pump LCP
NP-2	No.1 Grit Pump
NP-3	No.2 Grit Pump
CO-1	LOCAL-REMOTE
CS-1	STOP-START
PB-1	EMERGENCY STOP
PB-2	LAMP TEST

FI-1 DETAIL

No.1 Grit Pump OVER LOAD	No.1 Grit Pump BARTH FAULT	No.1 Grit Pump OVER TORQUE	EMERGENCY STOP
No.2 Grit Pump OVER LOAD	No.2 Grit Pump BARTH FAULT	No.2 Grit Pump OVER TORQUE	

Grit Pump LOCAL CONTROL PANEL
02LCP03

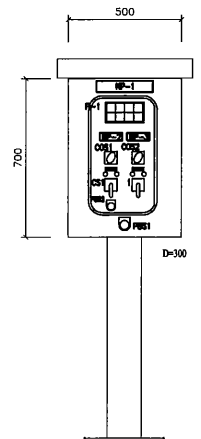


NP-1	Grit Separator LCP
NP-2	Grit Separator
NP-3	Water Supply Valve
CO-1	LOCAL - REMOTE
CS-1	STOP-START
PB-1	EMERGENCY STOP
PB-2	LAMP TEST
PB-3	ALARM RESET

FI-1 DETAIL

Grit Separator OVER LOAD	Grit Separator BARTH FAULT	Grit Separator OVER TORQUE	EMERGENCY STOP
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GRIT SEPARATOR LOCAL CONTROL PANEL
02LCP04

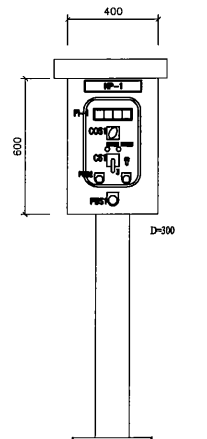


NP-1	Oil Discharge Pump LCP
NP-2	No.1 Oil Discharge Pump
NP-3	No.2 Oil Discharge Pump
CO-1	LOCAL-REMOTE
CO-2	No.1 - ALTERNATE - No.2
CS-1	STOP-START
PB-1	EMERGENCY STOP
PB-2	LAMP TEST

FI-1 DETAIL

No.1 Oil Dis. Pump OVER LOAD	No.1 Oil Dis. Pump BARTH FAULT	No.1 Oil Dis. Pump OVER TORQUE	EMERGENCY STOP
No.2 Oil Dis. Pump OVER LOAD	No.2 Oil Dis. Pump BARTH FAULT	No.2 Oil Dis. Pump OVER TORQUE	

Oil Discharge Pump LOCAL CONTROL PANEL
02LCP05

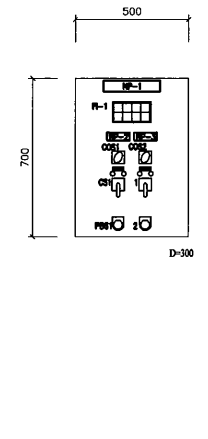


NP-1	Scum Screen LCP
NP-2	Scum Screen
NP-3	Water Supply Valve
CO-1	LOCAL - REMOTE
CS-1	STOP-START
PB-1	EMERGENCY STOP
PB-2	LAMP TEST
PB-3	ALARM RESET

FI-1 DETAIL

Scum Screen OVER LOAD	Scum Screen BARTH FAULT	Scum Screen OVER TORQUE	EMERGENCY STOP
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SCUM SCREEN LOCAL CONTROL PANEL
02LCP06

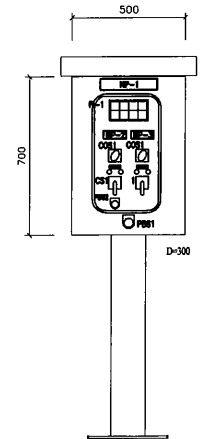


NP-1	Sludge Drain Pump LCP
NP-2	No.1 Sludge Drain Pump
NP-3	No.2 Sludge Drain Pump
CO-1	LOCAL-REMOTE
CO-2	No.1 - ALTERNATE - No.2
CS-1	STOP-START
PB-1	EMERGENCY STOP
PB-2	LAMP TEST

FI-1 DETAIL

No.1 Sludge Drain Pump OVER LOAD	No.1 Sludge Drain Pump BARTH FAULT	No.1 Sludge Drain Pump OVER TORQUE	EMERGENCY STOP
No.2 Sludge Drain Pump OVER LOAD	No.2 Sludge Drain Pump BARTH FAULT	No.2 Sludge Drain Pump OVER TORQUE	Sludge LEVEL H.H.

Sludge Drain Pump LOCAL CONTROL PANEL
02LCP07, 02LCP08, 02LCP09
NOTES: 4 PANELS IN TOTAL

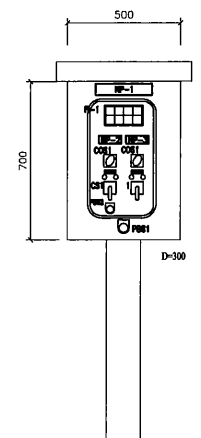


NP-1	OD Mixer LCP
NP-2	No. X-1 Mixer
NP-3	No. X-2 Mixer
CO-1	LOCAL-REMOTE
CS-1	STOP-START
PB-1	EMERGENCY STOP
PB-2	LAMP TEST

FI-1 DETAIL

No.1 Mixer OVER LOAD	No.1 Mixer BARTH FAULT	No.1 Mixer WATER INTRUSION	EMERGENCY STOP
No.2 Mixer OVER LOAD	No.2 Mixer BARTH FAULT	No.2 Mixer WATER INTRUSION	

No. X - 1 AND 2 OD MIXER LOCAL CONTROL PANEL
04LCP0Y
NOTES: X VARIES 1 TO 3
Y VARIES 1, 3 AND 5
3 PANELS IN TOTAL

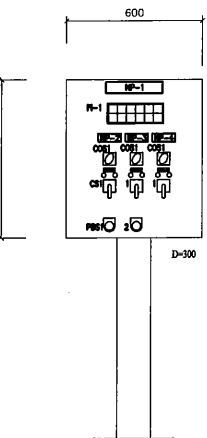


NP-1	OD Mixer LCP
NP-2	No. X-3 Mixer
NP-3	No. X-4 Mixer
CO-1	LOCAL-REMOTE
CS-1	STOP-START
PB-1	EMERGENCY STOP
PB-2	LAMP TEST

FI-1 DETAIL

No.3 Mixer OVER LOAD	No.3 Mixer BARTH FAULT	No.3 Mixer WATER INTRUSION	EMERGENCY STOP
No.4 Mixer OVER LOAD	No.4 Mixer BARTH FAULT	No.4 Mixer WATER INTRUSION	

No. X - 3 AND 4 OD MIXER LOCAL CONTROL PANEL
04LCP0Y
NOTES: X VARIES 1 TO 3
Y VARIES 2, 4, AND 6
3 PANELS IN TOTAL

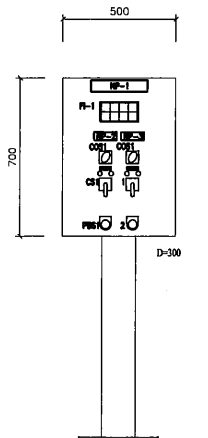


NP-1	Aeration Blower LCP
NP-2	No.1 Aeration Blower
NP-3	No.2 Aeration Blower
NP-4	No.3 Aeration Blower
CO-1	LOCAL-REMOTE
CS-1	STOP-START
PB-1	EMERGENCY STOP
PB-2	LAMP TEST

FI-1 DETAIL

No.1 Aeration Blower OVER LOAD	No.1 Aeration Blower BARTH FAULT	No.2 Aeration Blower OVER LOAD	No.2 Aeration Blower BARTH FAULT	No.3 Aeration Blower OVER LOAD	No.3 Aeration Blower BARTH FAULT	EMERGENCY STOP
No.4 Aeration Blower OVER LOAD	No.4 Aeration Blower BARTH FAULT	No.5 Aeration Blower OVER LOAD	No.5 Aeration Blower BARTH FAULT	No.6 Aeration Blower OVER LOAD	No.6 Aeration Blower BARTH FAULT	

Aeration Blower LOCAL CONTROL PANEL
04LCP07

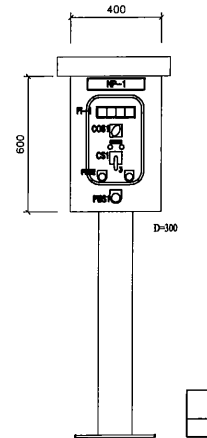


NP-1	Aeration Blower LCP
NP-2	No.4 Aeration Blower
NP-3	No.5 Aeration Blower
CO-1	LOCAL-REMOTE
CS-1	STOP-START
PB-1	EMERGENCY STOP
PB-2	LAMP TEST

FI-1 DETAIL

No.4 Aeration Blower OVER LOAD	No.4 Aeration Blower BARTH FAULT	No.5 Aeration Blower OVER LOAD	No.5 Aeration Blower BARTH FAULT	EMERGENCY STOP
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Aeration Blower LOCAL CONTROL PANEL
04LCP08



NP-1	No.X Clarifier LCP
CO-1	LOCAL - REMOTE
CS-1	STOP-START
PB-1	EMERGENCY STOP
PB-2	LAMP TEST
PB-3	ALARM RESET

FI-1 DETAIL

Clarifier OVER LOAD	Clarifier BARTH FAULT	Clarifier OVER TORQUE	EMERGENCY STOP
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NO.X CLARIFIER LOCAL CONTROL PANEL
02LCP0X
NOTES: X VARIES 1 TO 3
3 PANELS IN TOTAL

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP: LOCAL CONTROL PANEL - PART 1 (1/2)

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

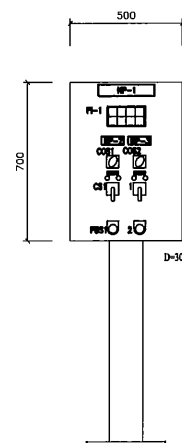
JICA JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU: Project Director Lot G.Zauya	DATE: 1. Dec 2011	SCALE: NOT TO SCALE
CHECKED by CONSULTANT Project Manager T.Fuji	DATE: 1. Dec 2011	DRAWING NO.: STP-E014

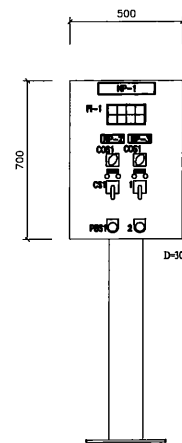


NP-1	Waste Sludge Pump LCP
NP-2	No. X Waste Sludge Pump
NP-3	No. Y Waste Sludge Pump
CO-01	LOCAL-REMOTE
CO-02	No. 1-ALTERNATE-No.2
CS-1	STOP-START
FS-01	EMERGENCY STOP
FS-02	LAMP TEST

FI-1 DETAIL				
No. X Waste Sludge Pump	No. Y Waste Sludge Pump	WASTE OVERLOAD	EMERGENCY STOP	
No. X Waste Sludge Pump	No. Y Waste Sludge Pump	WASTE WATER BATH FAULT		

Waste Sludge Pump LOCAL CONTROL PANEL
04LCP00/01/1

NOTES: X VARIES 1, 3 AND 5
Y VARIES 2, 4 AND 6
3 PANELS IN TOTAL

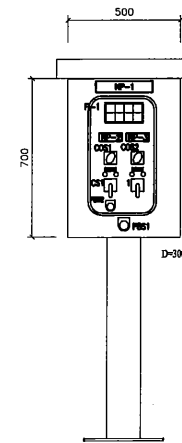


NP-1	Return Sludge Pump LCP
NP-2	No. X Return Sludge Pump
NP-3	No. Y Return Sludge Pump
CO-01	LOCAL-REMOTE
CS-1	STOP-START
FS-01	EMERGENCY STOP
FS-02	LAMP TEST

FI-1 DETAIL				
No. X Return Sludge Pump	No. Y Return Sludge Pump	EMERGENCY STOP		
No. X Return Sludge Pump	No. Y Return Sludge Pump	WATER BATH FAULT		

Return Sludge Pump LOCAL CONTROL PANEL
05LCP04/05/06

NOTES: X VARIES 1, 3 AND 5
Y VARIES 2, 4 AND 6
3 PANELS IN TOTAL

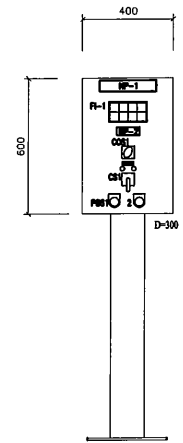


NP-1	Sludge Pump LCP
NP-2	No. X Sludge Pump
NP-3	No. Y Sludge Pump
CO-01	LOCAL-REMOTE
CO-02	No. 1-ALTERNATE-No.2
CS-1	STOP-START
FS-01	EMERGENCY STOP
FS-02	LAMP TEST

FI-1 DETAIL				
No. X Sludge Pump	No. Y Sludge Pump	EMERGENCY STOP		
No. X Sludge Pump	No. Y Sludge Pump	WATER BATH FAULT		

Sludge Pump LOCAL CONTROL PANEL
06LCP07/08

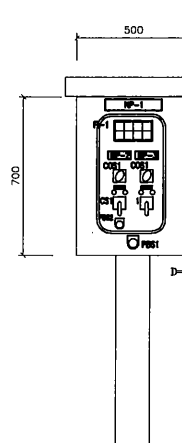
NOTES: X VARIES 1 AND 3
Y VARIES 2 AND 4
2 PANELS IN TOTAL



NP-1	Chlorine Tank Mixer LCP
NP-2	Chlorine Tank Mixer
CO-01	LOCAL-REMOTE
CS-1	STOP-START
FS-01	EMERGENCY STOP
FS-02	LAMP TEST

FI-1 DETAIL		
Chlorine Tank Mixer	EMERGENCY STOP	
Chlorine Tank Mixer	WATER BATH FAULT	

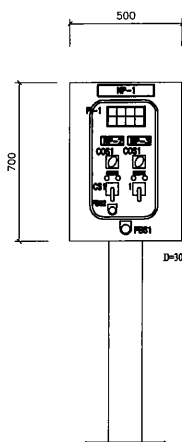
Chlorine Tank Mixer LOCAL CONTROL PANEL
06LCP01



NP-1	Deforming Pump LCP
NP-2	No. 1 Deforming Pump
NP-3	No. 2 Deforming Pump
CO-01	LOCAL-REMOTE
CO-02	No. 1-ALTERNATE-No.2
CS-1	STOP-START
FS-01	EMERGENCY STOP
FS-02	LAMP TEST

FI-1 DETAIL		
No. 1 Deforming Pump	No. 2 Deforming Pump	EMERGENCY STOP
No. 1 Deforming Pump	No. 2 Deforming Pump	WATER BATH FAULT

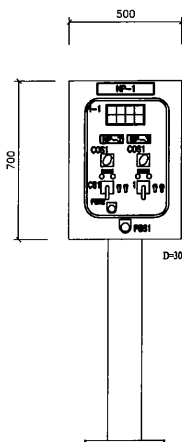
Deforming Pump LOCAL CONTROL PANEL
06LCP02



NP-1	Polymer Tank Mixer LCP
NP-2	No. 1 Polymer Tank Mixer
NP-3	No. 2 Polymer Tank Mixer
CO-01	LOCAL-REMOTE - SEMI AUTO
CS-1	STOP-START
FS-01	EMERGENCY STOP
FS-02	LAMP TEST

FI-1 DETAIL				
No. 1 Polymer Tank Mixer	No. 2 Polymer Tank Mixer	OVERLOAD	EMERGENCY STOP	
No. 1 Polymer Tank Mixer	No. 2 Polymer Tank Mixer	WATER BATH FAULT		

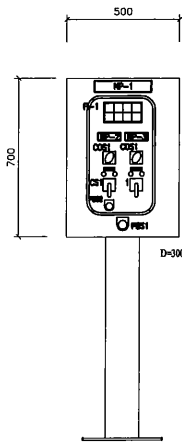
Polymer Tank Mixer LOCAL CONTROL PANEL
07LCP01



NP-1	Polymer Feeder LCP
NP-2	No. 1 Polymer Feeder, Water Supply and Air Supply Valve
NP-3	No. 2 Polymer Feeder, Water Supply and Air Supply Valve
CO-01	LOCAL-REMOTE
CS-1	STOP-START
FS-01	EMERGENCY STOP
FS-02	LAMP TEST

FI-1 DETAIL		
No. 1 Polymer Feeder	No. 2 Polymer Feeder	EMERGENCY STOP
No. 1 Polymer Feeder	No. 2 Polymer Feeder	WATER BATH FAULT

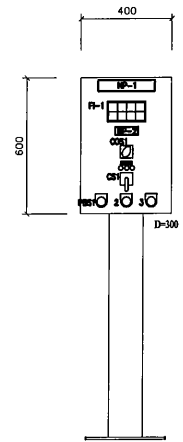
Polymer Feeder LOCAL CONTROL PANEL
07LCP02



NP-1	Polymer Feed Pump LCP
NP-2	No. 1 Polymer Feed Pump
NP-3	No. 2 Polymer Feed Pump
CO-01	LOCAL-REMOTE
CS-1	STOP-START
FS-01	EMERGENCY STOP
FS-02	LAMP TEST

FI-1 DETAIL		
No. 1 Polymer Feed Pump	No. 2 Polymer Feed Pump	EMERGENCY STOP
No. 1 Polymer Feed Pump	No. 2 Polymer Feed Pump	WATER BATH FAULT

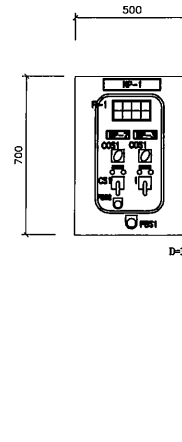
Polymer Feed Pump LOCAL CONTROL PANEL
07LCP03



NP-1	Sludge Cake Conveyor LCP
NP-2	Sludge Cake Conveyor
CO-01	LOCAL-REMOTE
CS-1	FORWARD-STOP-REVERSE
FS-01	EMERGENCY STOP
FS-02	LAMP TEST
FS-03	ALARM RESET

FI-1 DETAIL		
Sludge Cake Conveyor	EMERGENCY STOP	
Sludge Cake Conveyor	WATER BATH FAULT	

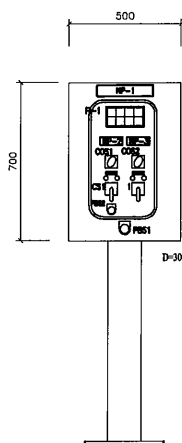
Sludge Cake Conveyor LOCAL CONTROL PANEL
07LCP04



NP-1	Sludge Cake Hopper LCP
NP-2	Cake Hopper - Arm 1
NP-3	Cake Hopper - Arm 2
CO-01	OFF - MANUAL
CS-1	OPEN-STOP-CLOSE
FS-01	EMERGENCY STOP
FS-02	LAMP TEST

FI-1 DETAIL				
Cake Hopper Arm 1	Cake Hopper Arm 1	Cake Hopper Arm 2	EMERGENCY STOP	
Cake Hopper Arm 1	Cake Hopper Arm 1	Cake Hopper Arm 2	WATER BATH FAULT	

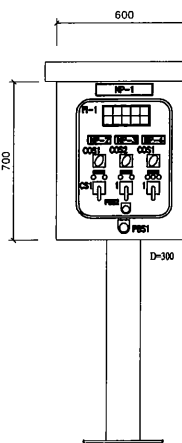
Sludge Cake Hopper LOCAL CONTROL PANEL
07LCP05



NP-1	Air Dryer LCP
NP-2	No. 1 Air Dryer
NP-3	No. 2 Air Dryer
CO-01	LOCAL-REMOTE
CO-02	No. 1-ALTERNATE-No.2
CS-1	STOP-START
FS-01	EMERGENCY STOP
FS-02	LAMP TEST

FI-1 DETAIL		
No. 1 Air Dryer	No. 2 Air Dryer	EMERGENCY STOP
No. 1 Air Dryer	No. 2 Air Dryer	WATER BATH FAULT

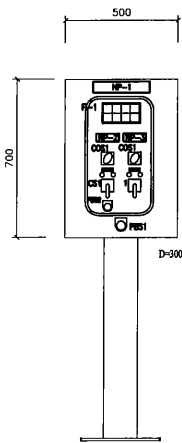
Air Dryer LOCAL CONTROL PANEL
07LCP06



NP-1	Waste Water Tank LCP
NP-2	No. 1 Waste Water Pump
NP-3	No. 2 Waste Water Pump
NP-4	Mixer
CO-01	LOCAL-REMOTE
CO-02	No. 1-ALTERNATE-No.2
CS-1	STOP-START
FS-01	EMERGENCY STOP
FS-02	LAMP TEST

FI-1 DETAIL				
No. 1 Pump	No. 1 Pump	Mixer	Mixer	
No. 1 Pump	No. 1 Pump	WATER BATH FAULT		
No. 2 Pump	No. 2 Pump	Mixer	EMERGENCY STOP	
No. 2 Pump	No. 2 Pump	WATER BATH FAULT		

Waste Water Tank LOCAL CONTROL PANEL
07LCP08



NP-1	Dewatering Fan LCP
NP-2	No. 1 Dewatering Fan
NP-3	No. 2 Dewatering Fan
CO-01	LOCAL-REMOTE
CS-1	STOP-START
FS-01	EMERGENCY STOP
FS-02	LAMP TEST

FI-1 DETAIL		
No. 1 Dewatering Fan	No. 2 Dewatering Fan	EMERGENCY STOP
No. 1 Dewatering Fan	No. 2 Dewatering Fan	WATER BATH FAULT

Dewatering Fan LOCAL CONTROL PANEL
07LCP09

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP: LOCAL CONTROL PANEL - PART 2 (2/2)

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

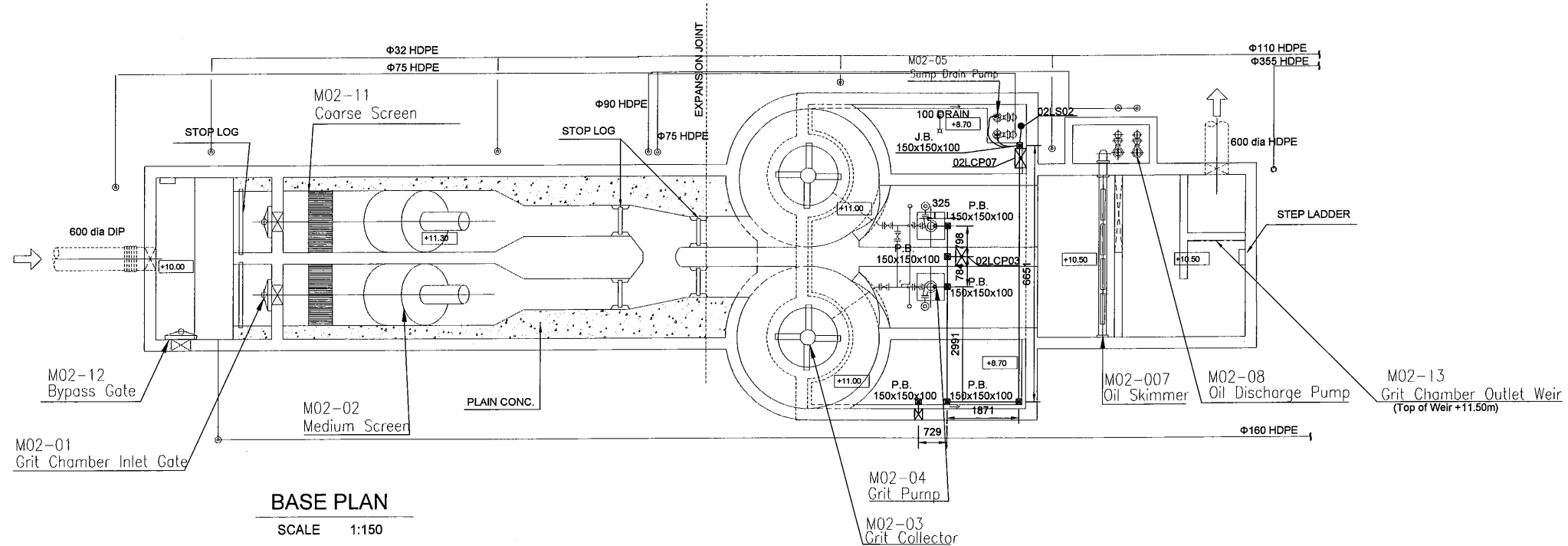
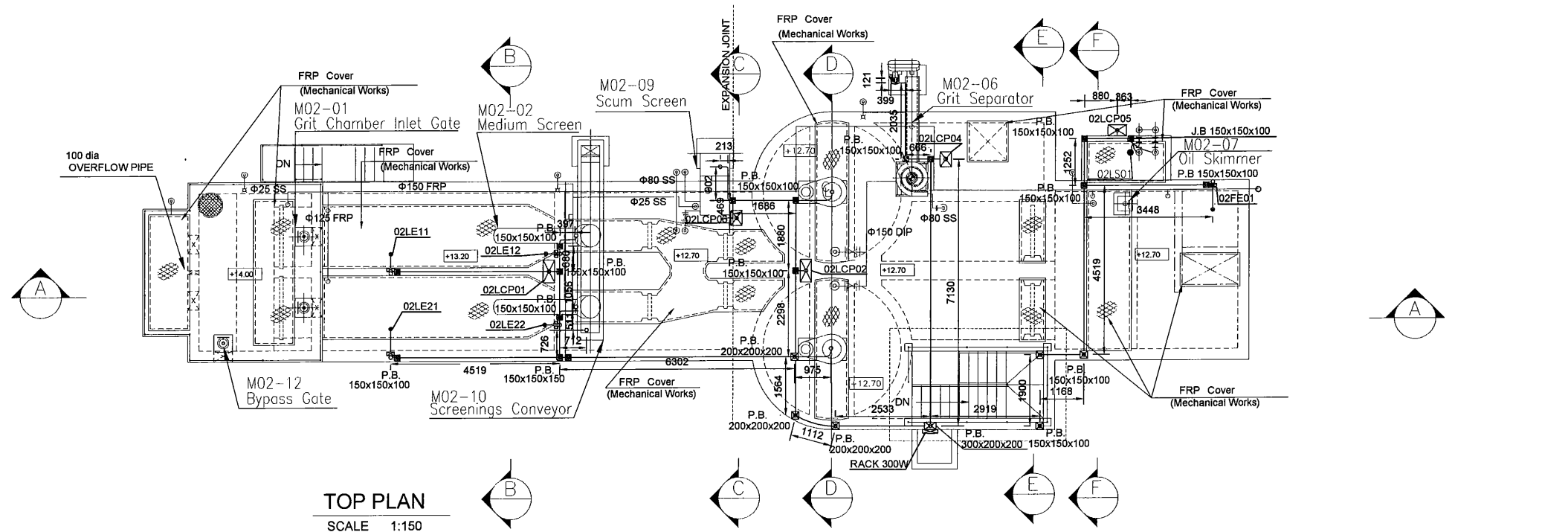
CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

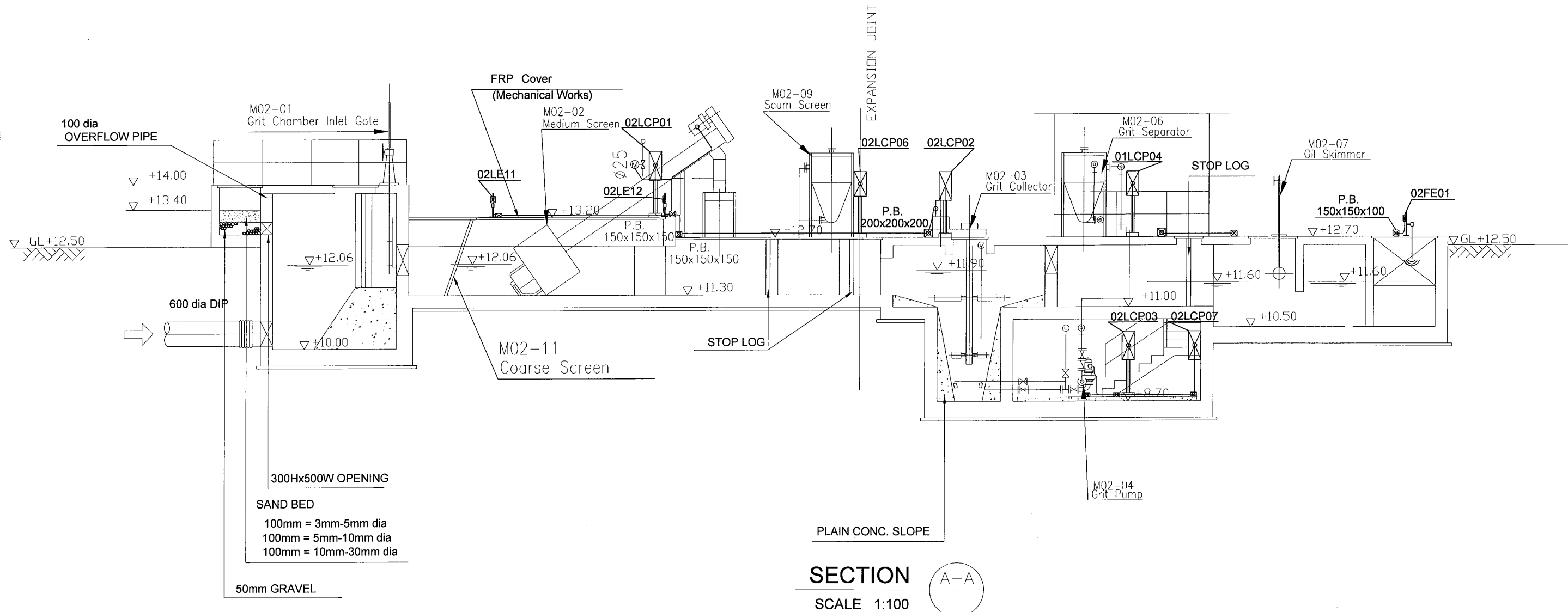
REVISIONS		
REV.	DATE	DESCRIPTION

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




DATE: 1. Dec 2011
SCALE: NOT TO SCALE
DATE: 1. Dec 2011
DRAWING NO.: STP-E015

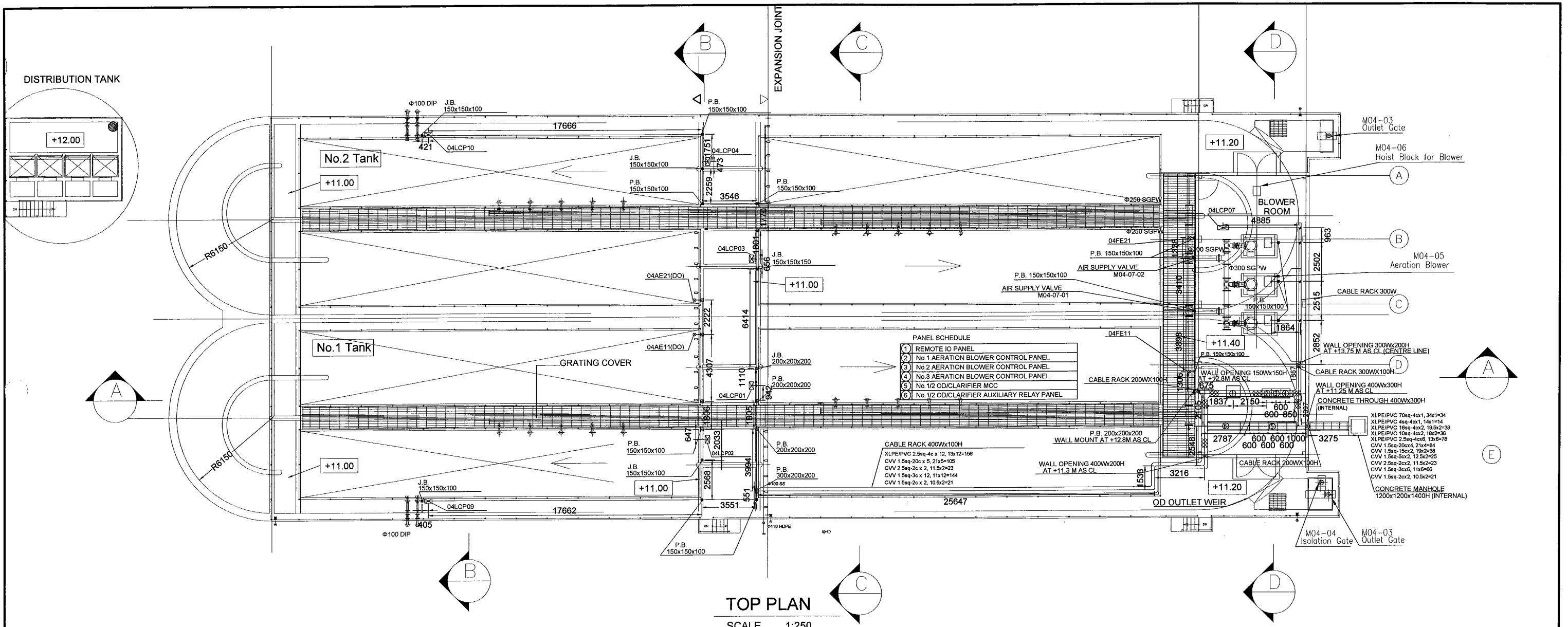


PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP - GRIT CHAMBER WIRING PLAN	
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU) JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	APPROVED by PMU: Project Director Lot G.Zauya
			CHECKED by CONSULTANT Project Manager T.Fuji
		REVISIONS	DATE: 1. Dec 2011
		REV. DATE DESCRIPTION	SCALE: 1/150
			DATE: 1. Dec 2011
			DRAWING NO.: STP-E-016

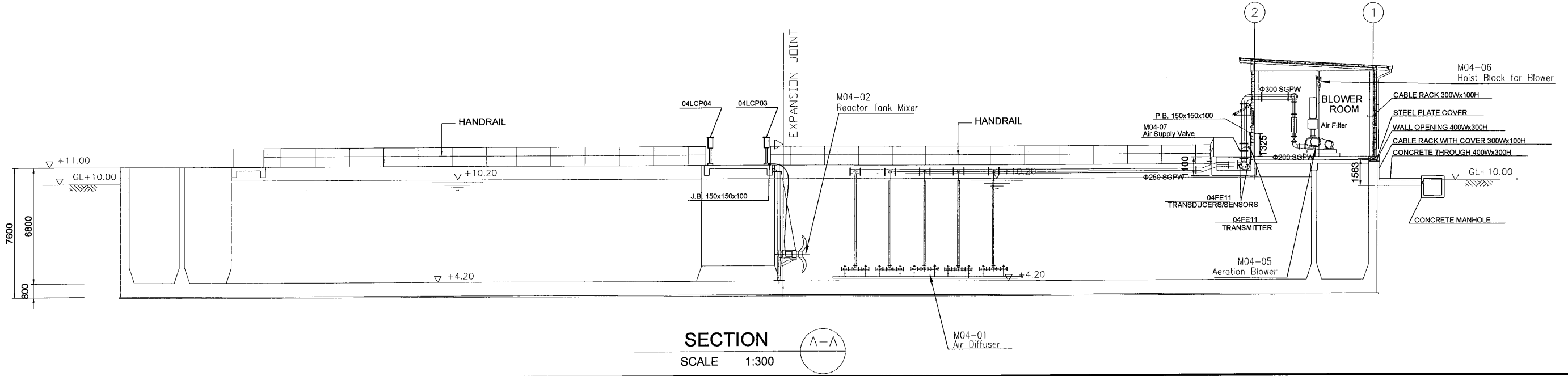


SECTION A-A
SCALE 1:100

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP - GRIT CHAMBER WIRING 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:	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	1. Dec 2011

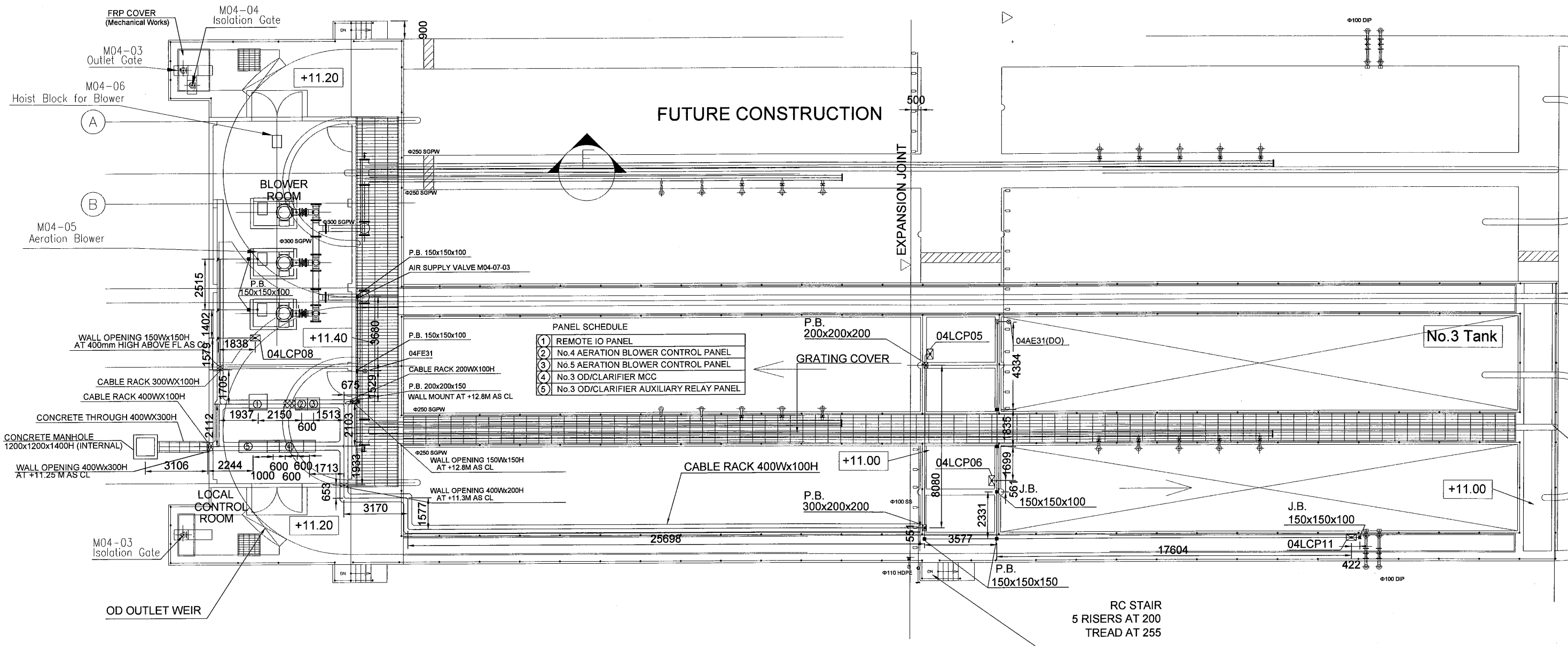


TOP PLAN
SCALE 1:250






SECTION
SCALE 1:300

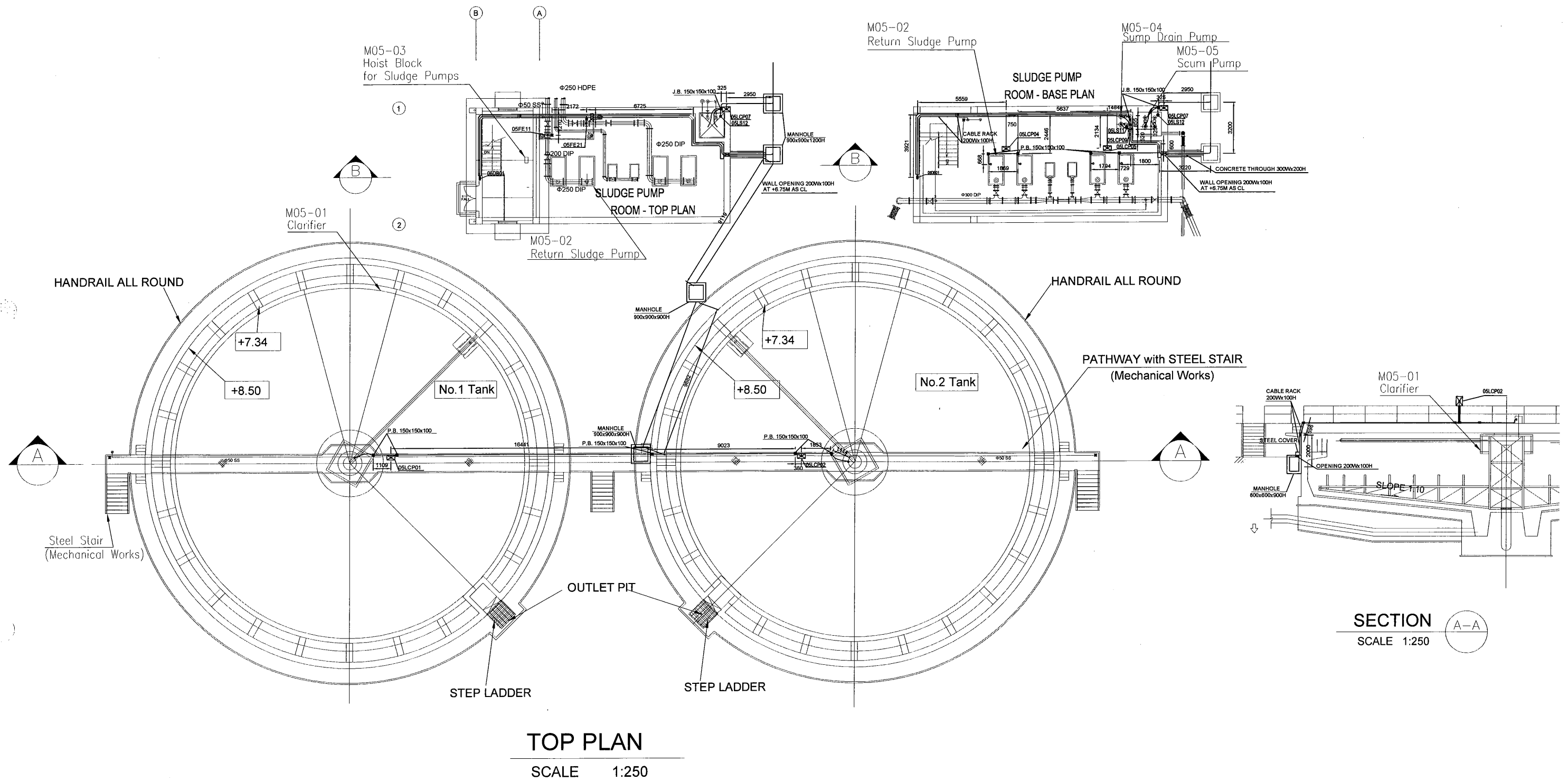
PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP: OXIDATION DITCH WIRING PLAN AND SECTION (TANK 1,2)																
CLIENT: IPBC INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU) JICA JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	<table border="1"> <thead> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS			REV.	DATE	DESCRIPTION									
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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-E-018															



TOP PLAN

SCALE 1:200

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP: OXIDATION DITCH WIRING PLAN (TANK3,4)					
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: 1/200
			REV.	DATE	DESCRIPTION	CHECKED by CONSULTANT Project Manager T.Fuji	DATE: 1. Dec 2011



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP: FINAL SEDEMENTATION TANK (NO.1/2) WIRING PLAN/SECTION

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:

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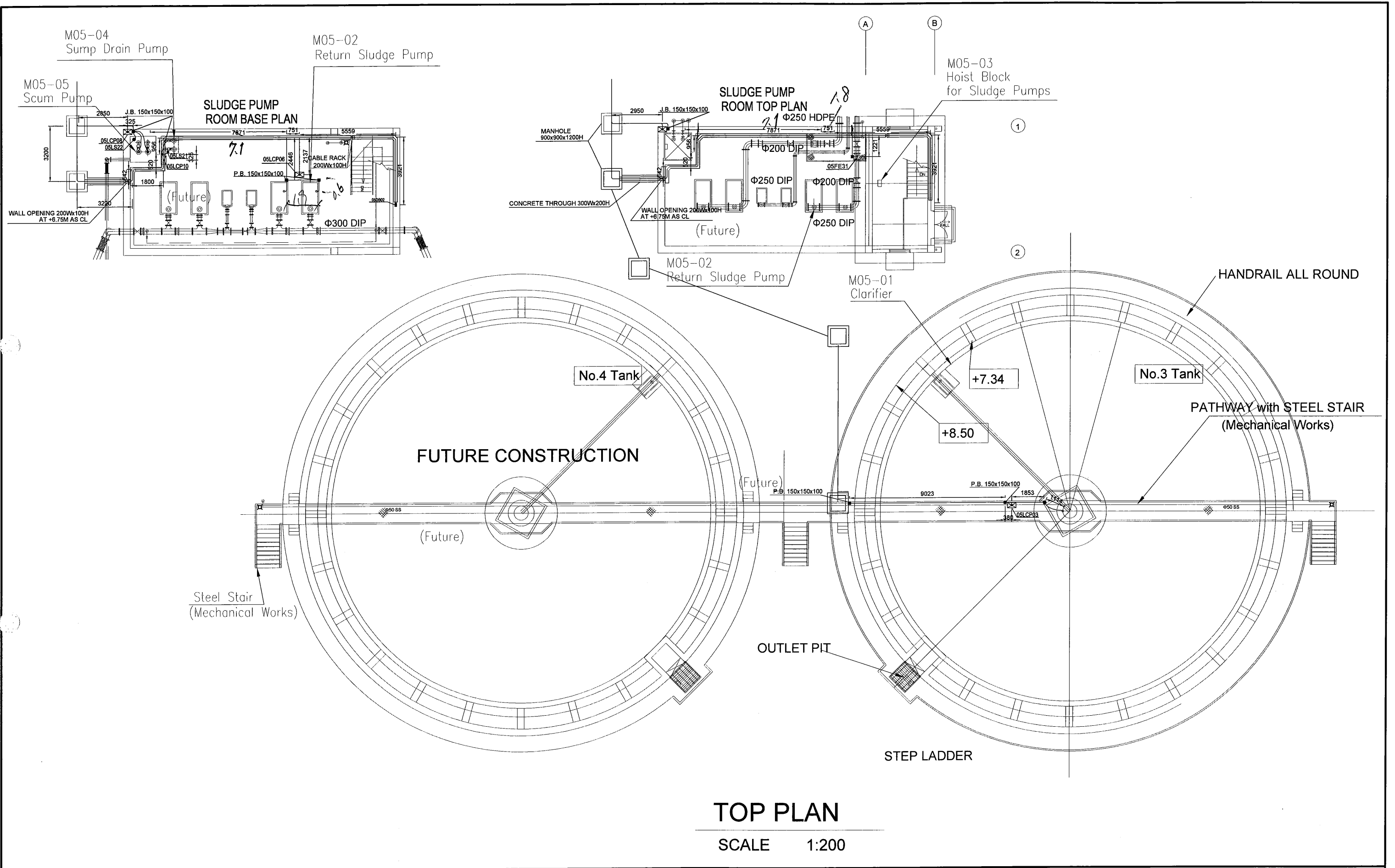
APPROVED by PMU:
Project Director
 Lot G.Zauya
 CHECKED by CONSULTANT
Project Manager
 T.FuJI




DATE: 1. Dec 2011

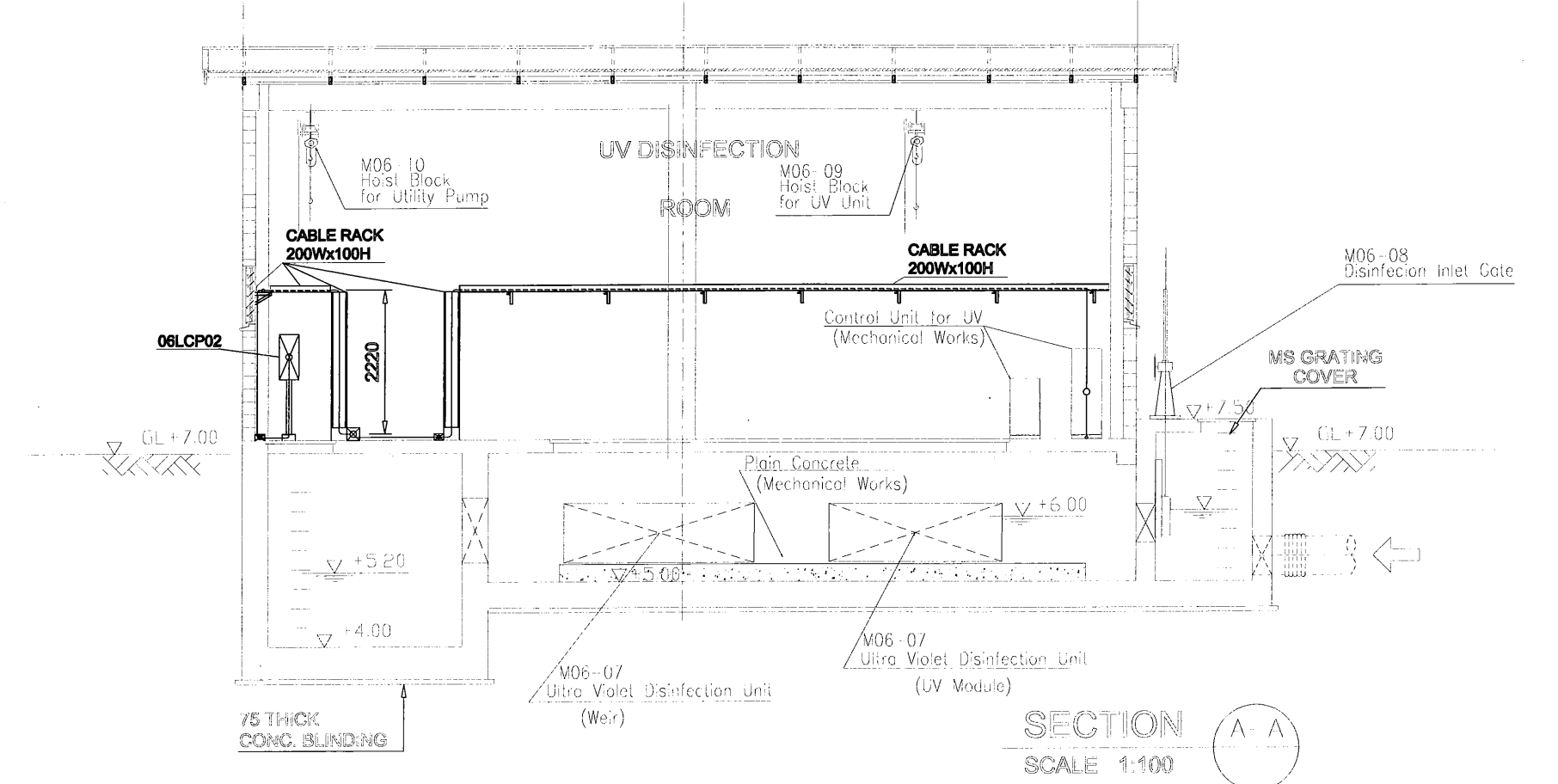
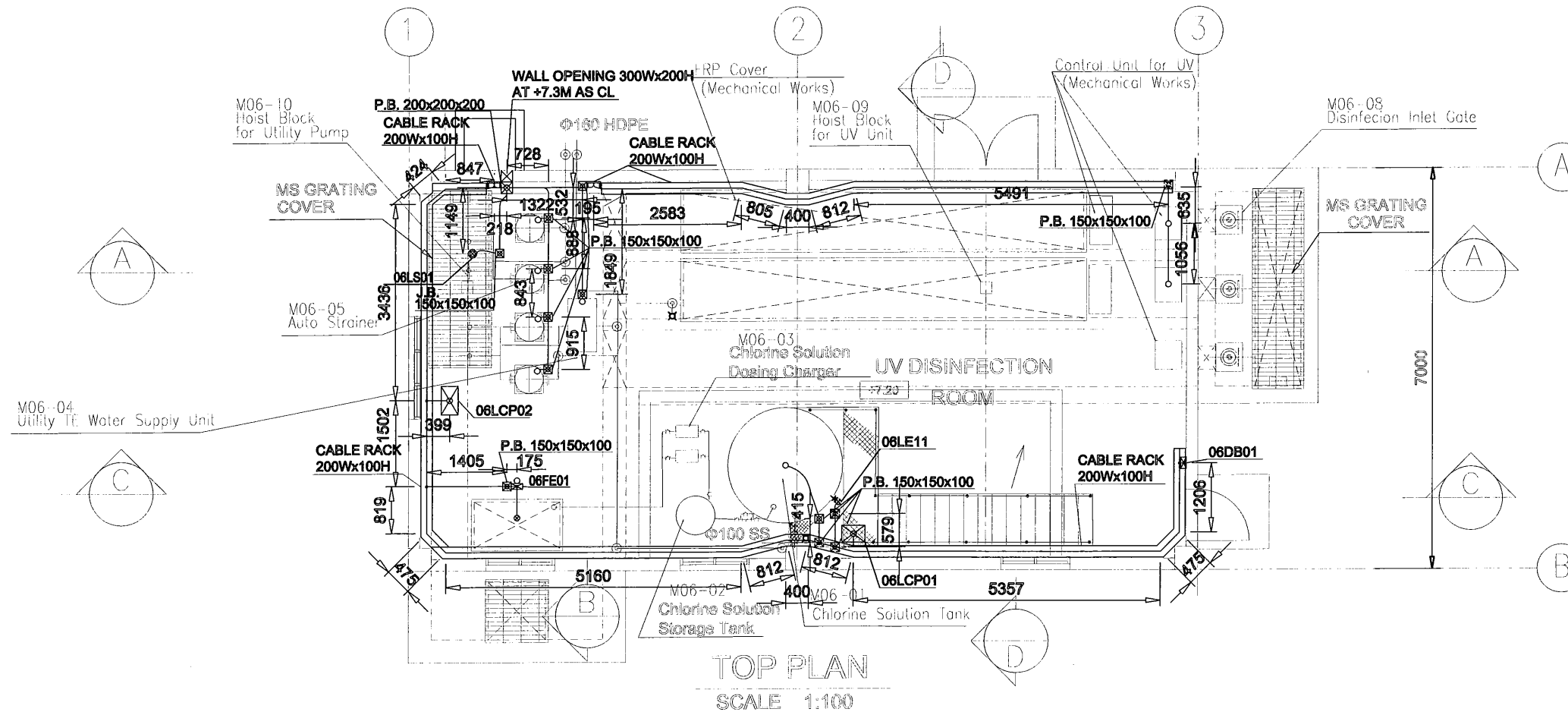
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DATE: 1. Dec 2011

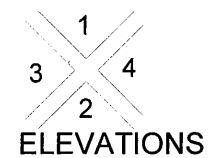
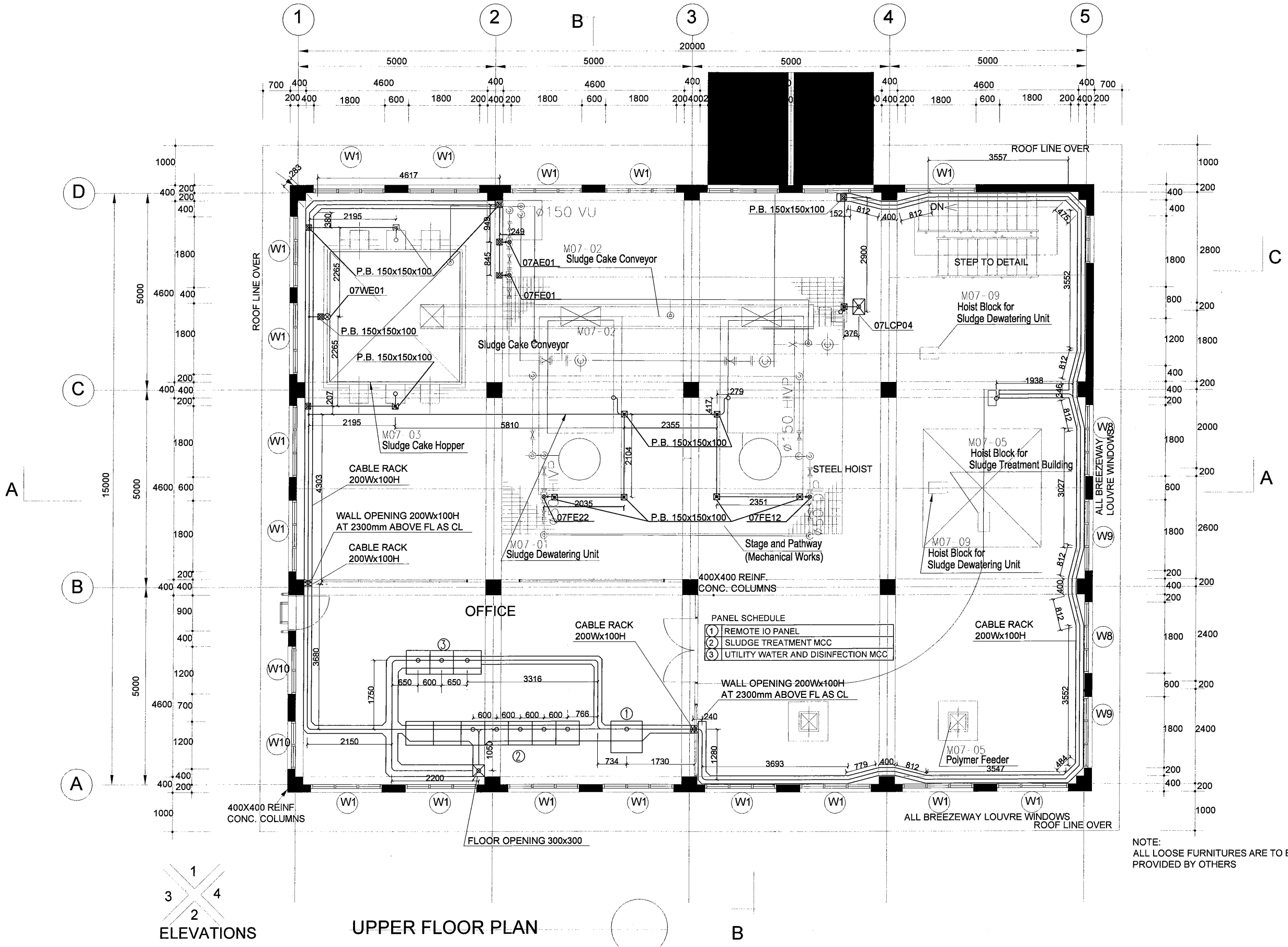
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PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP: FINAL SEDEMENTATION TANK (NO.3) WIRING PLAN																	
CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU)  JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	<table border="1"> <thead> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS			REV.	DATE	DESCRIPTION										APPROVED by PMU: Project Director Lot G.Zauya DATE: 1. Dec 2011 SCALE: 1/200
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REV.	DATE	DESCRIPTION																	
		CHECKED by CONSULTANT Project Manager T.Fuji	DATE: 1. Dec 2011 DRAWING NO.: STP-E-021																

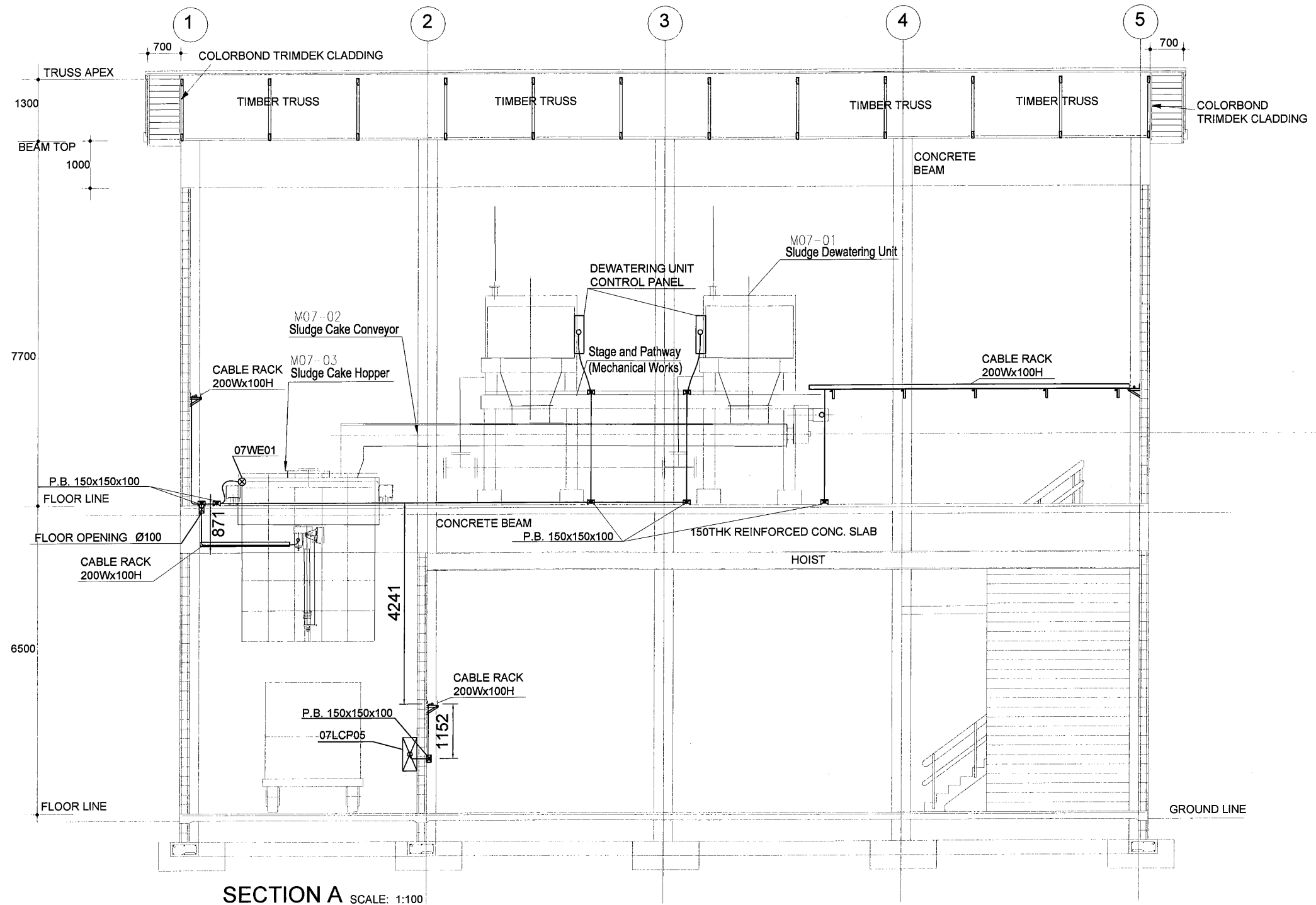


PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP - UV DISINFECTION ROOM and TREATED WATER TANK WIRING PLAN/SECTION					
CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU)  JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	REVISIONS		APPROVED by PMU: Project Director Lot G.Zauya	DATE: 1. Dec 2011	SCALE: 1/100
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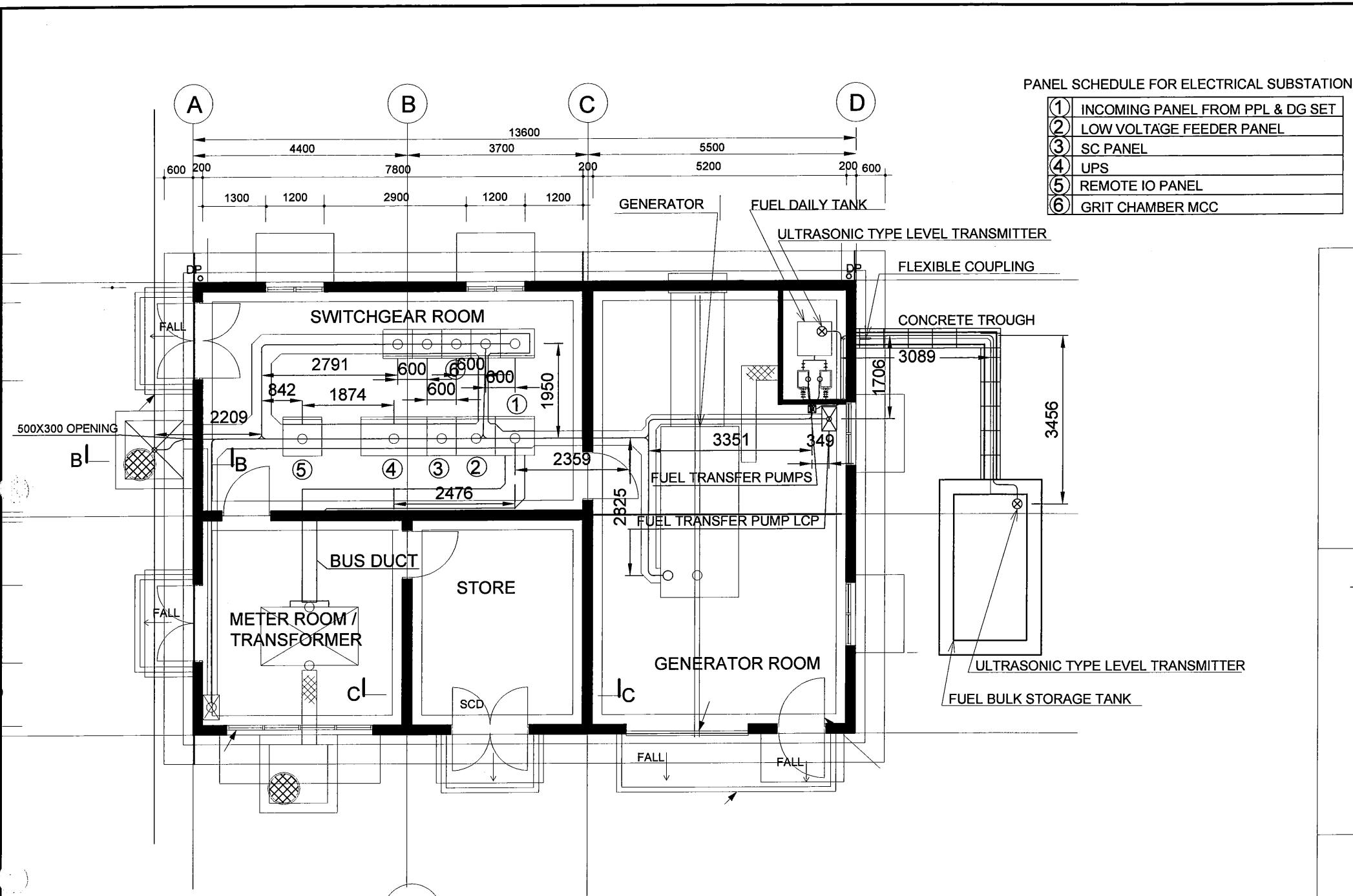
UPPER FLOOR PLAN

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP: SLUDGE TREATMENT BUILDING WIRING PLAN FOR FIRST FLOOR	
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
		REVISIONS	DATE: 1. Dec 2011
			CHECKED by CONSULTANT Project Manager T.Fuji
			DATE: 1. Dec 2011
			SCALE: 1/100
			DRAWING NO.: STP-E-024



SECTION A SCALE: 1:100

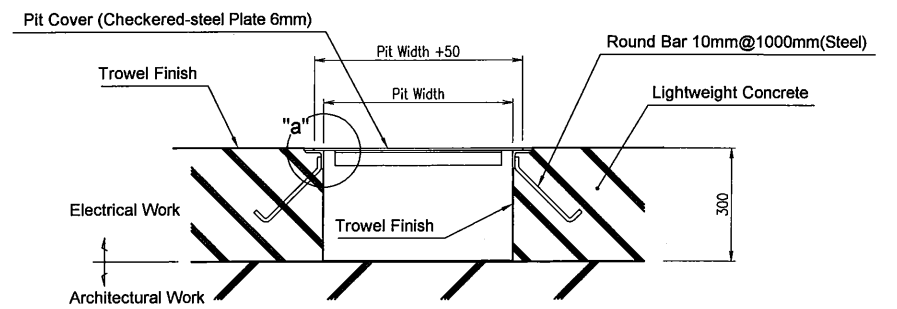
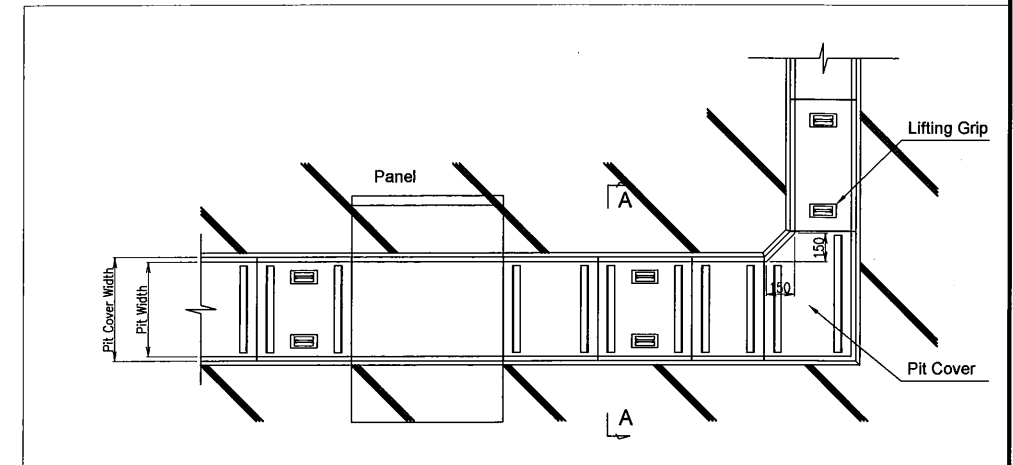
PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: Kila Kila STP: SLUDGE TREATMENT BUILDING WIRING SECTION																	
CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU)  JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	<table border="1"> <thead> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS			REV.	DATE	DESCRIPTION										APPROVED by PMU: Project Director Lot G.Zauya DATE: 1. Dec 2011 SCALE: 1/100
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REV.	DATE	DESCRIPTION																	
		CHECKED by CONSULTANT Project Manager T.Fuji DATE: 1. Dec 2011 DRAWING NO.: STP-E-025																	



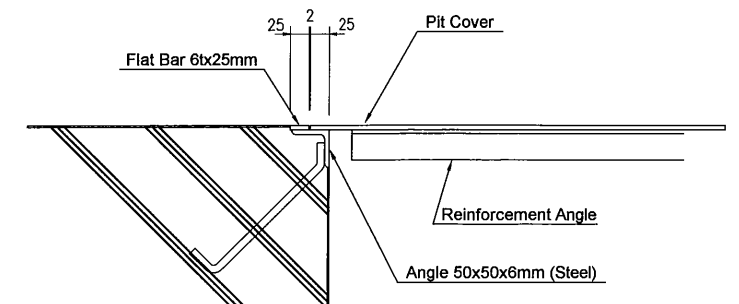
PANEL SCHEDULE FOR ELECTRICAL SUBSTATION

①	INCOMING PANEL FROM PPL & DG SET
②	LOW VOLTAGE FEEDER PANEL
③	SC PANEL
④	UPS
⑤	REMOTE IO PANEL
⑥	GRIT CHAMBER MCC

WIRING PIT
Refer to the following details

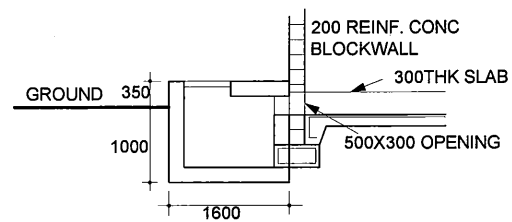


Section A-A (S=1:20)



Detail "a" (S=1:10)

FLOOR PLAN
SCALE: 1:100



SECT. B-B
CABLE INCOMING MAN HOLE

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP: ELECTRICAL SUBSTATION WIRING PLAN

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

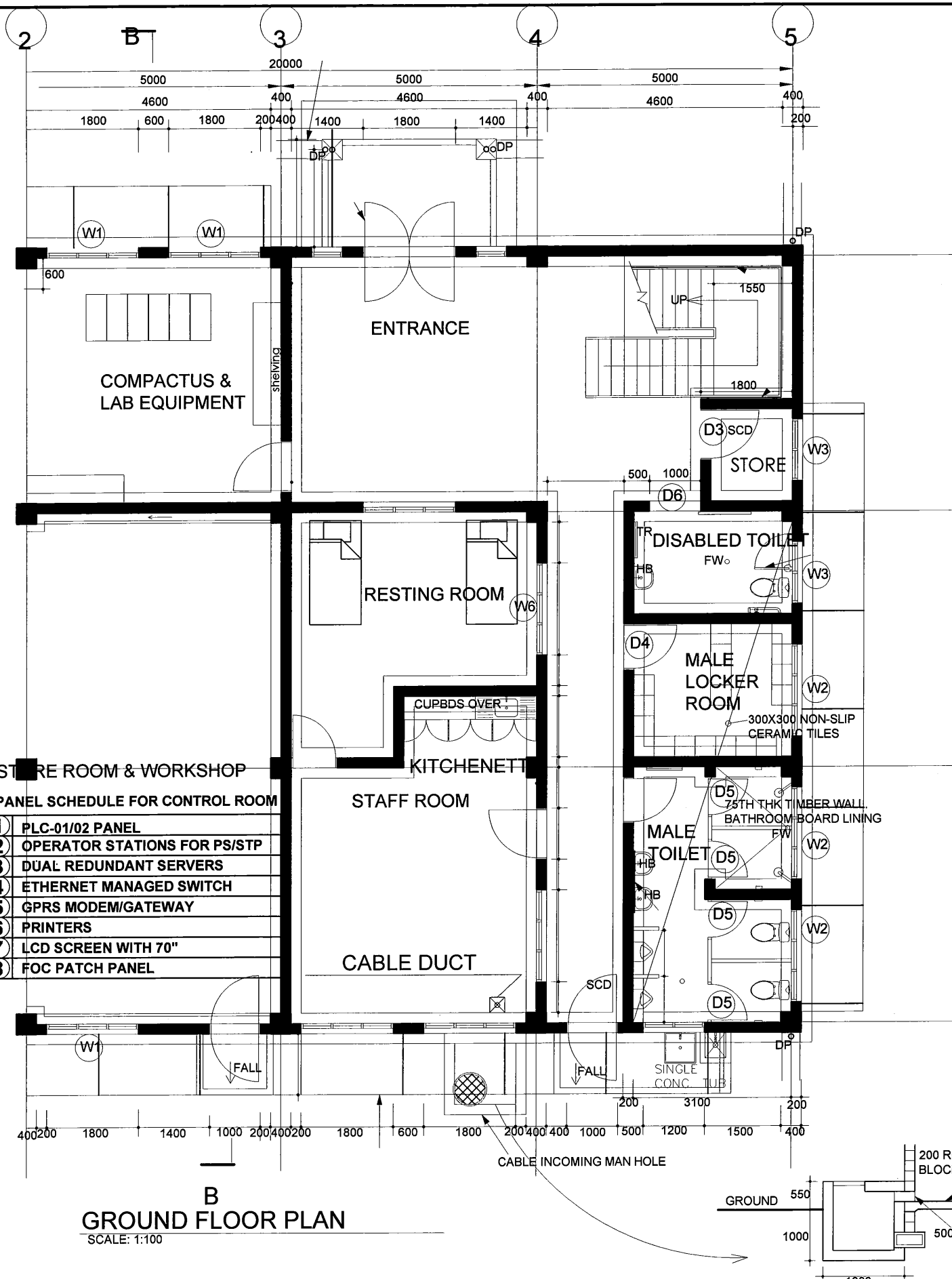
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REVISIONS		
REV.	DATE	DESCRIPTION

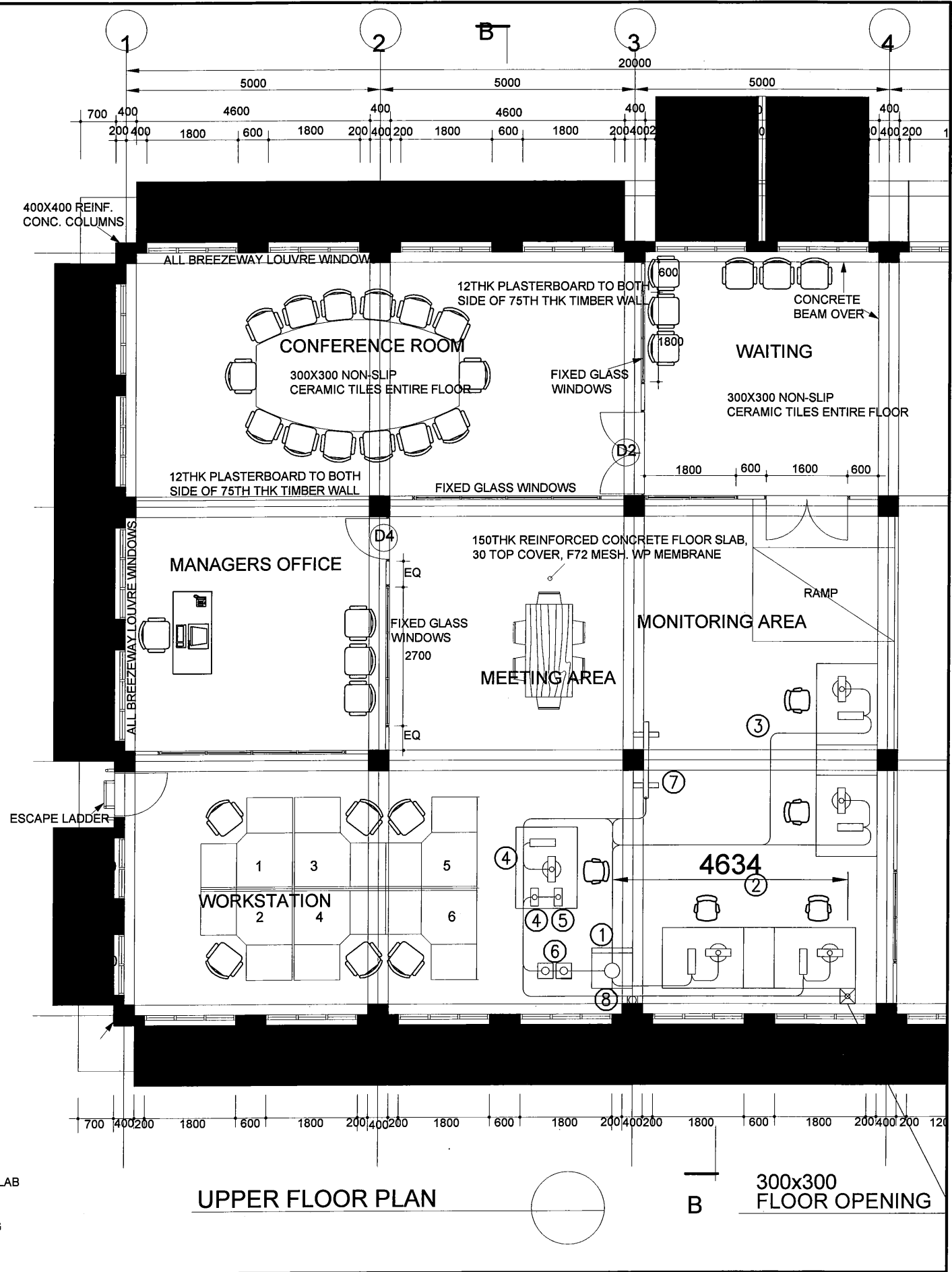
APPROVED by PMU:
Project Director
Lot G.Zauya
CHECKED by CONSULTANT
Project Manager
T.Fuji

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

SCALE: 1/100
DRAWING NO.: STP-E-026



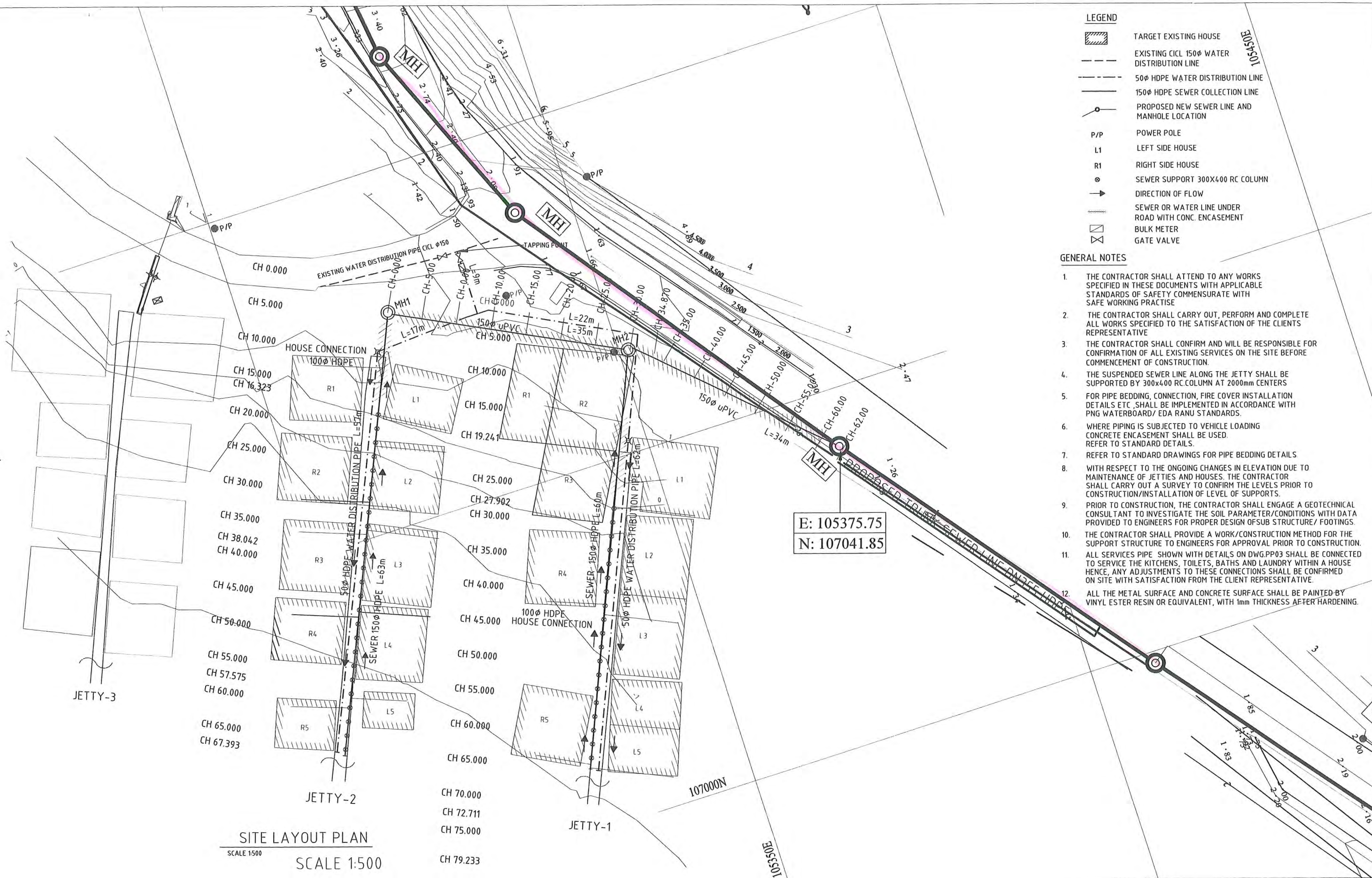
B
GROUND FLOOR PLAN
SCALE: 1:100



UPPER FLOOR PLAN

B
300x300 FLOOR OPENING

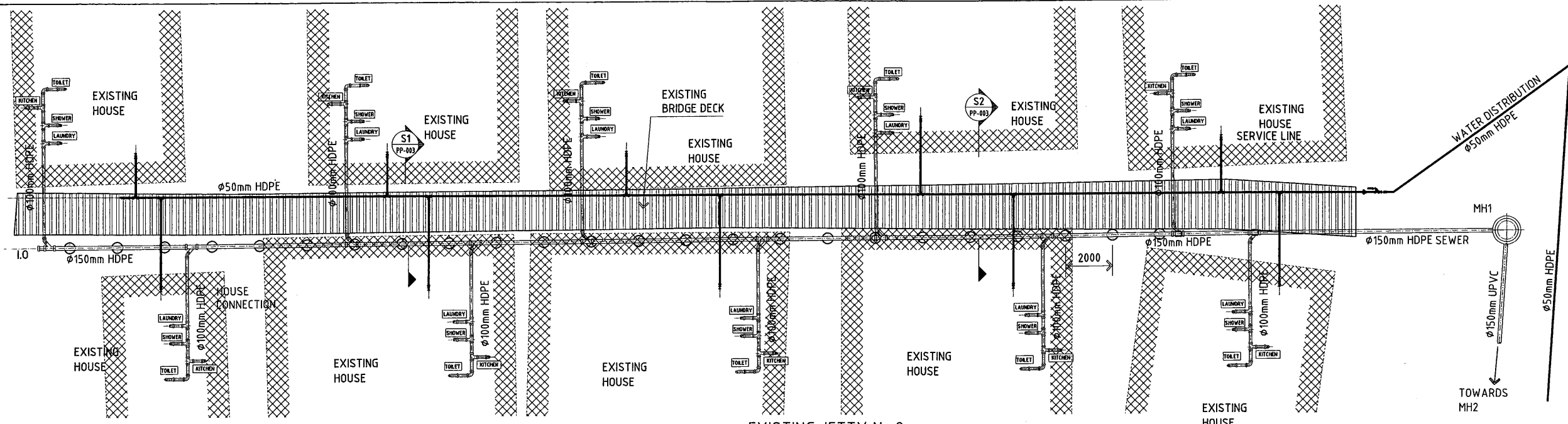
PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: CABLE INCOMING MAN HOLE		Kila Kila STP: ADMINISTRATION BUILDING WIRING PLAN																	
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU) JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:		APPROVED by PMU: Project Director Lot G.Zauya	DATE: 1. Dec 2011	SCALE: 1/100															
				CHECKED by CONSULTANT Project Manager T.FuJi	DATE: 1. Dec 2011	DRAWING NO.: STP-E-027															
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REVISIONS																					
REV.	DATE	DESCRIPTION																			



- LEGEND**
- TARGET EXISTING HOUSE
 - EXISTING C150 WATER DISTRIBUTION LINE
 - 50φ HDPE WATER DISTRIBUTION LINE
 - 150φ HDPE SEWER COLLECTION LINE
 - PROPOSED NEW SEWER LINE AND MANHOLE LOCATION
 - P/P POWER POLE
 - L1 LEFT SIDE HOUSE
 - R1 RIGHT SIDE HOUSE
 - SEWER SUPPORT 300X400 RC COLUMN
 - DIRECTION OF FLOW
 - SEWER OR WATER LINE UNDER ROAD WITH CONC. ENCASUREMENT
 - BULK METER
 - GATE VALVE

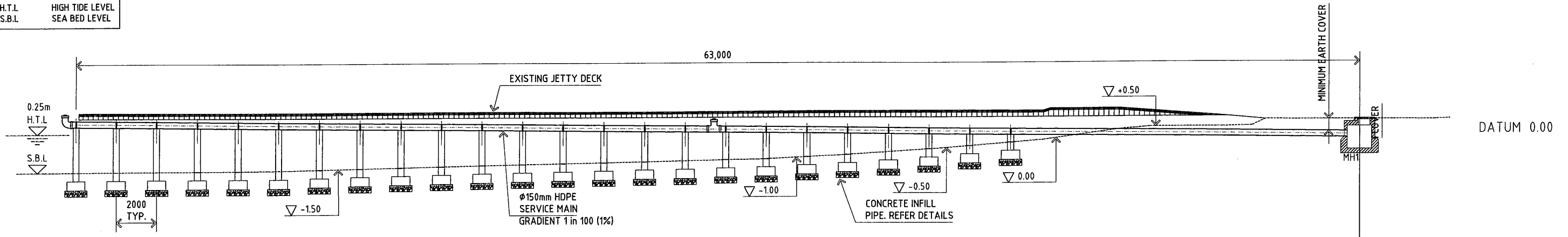
- GENERAL NOTES**
1. THE CONTRACTOR SHALL ATTEND TO ANY WORKS SPECIFIED IN THESE DOCUMENTS WITH APPLICABLE STANDARDS OF SAFETY COMMENSURATE WITH SAFE WORKING PRACTISE
 2. THE CONTRACTOR SHALL CARRY OUT, PERFORM AND COMPLETE ALL WORKS SPECIFIED TO THE SATISFACTION OF THE CLIENTS REPRESENTATIVE
 3. THE CONTRACTOR SHALL CONFIRM AND WILL BE RESPONSIBLE FOR CONFIRMATION OF ALL EXISTING SERVICES ON THE SITE BEFORE COMMENCEMENT OF CONSTRUCTION.
 4. THE SUSPENDED SEWER LINE ALONG THE JETTY SHALL BE SUPPORTED BY 300X400 RC COLUMN AT 2000mm CENTERS
 5. FOR PIPE BEDDING, CONNECTION, FIRE COVER INSTALLATION DETAILS ETC., SHALL BE IMPLEMENTED IN ACCORDANCE WITH PNG WATERBOARD/ EDA RANU STANDARDS.
 6. WHERE PIPING IS SUBJECTED TO VEHICLE LOADING CONCRETE ENCASUREMENT SHALL BE USED. REFER TO STANDARD DETAILS.
 7. REFER TO STANDARD DRAWINGS FOR PIPE BEDDING DETAILS
 8. WITH RESPECT TO THE ONGOING CHANGES IN ELEVATION DUE TO MAINTENANCE OF JETTIES AND HOUSES. THE CONTRACTOR SHALL CARRY OUT A SURVEY TO CONFIRM THE LEVELS PRIOR TO CONSTRUCTION/INSTALLATION OF LEVEL OF SUPPORTS.
 9. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ENGAGE A GEOTECHNICAL CONSULTANT TO INVESTIGATE THE SOIL PARAMETER/CONDITIONS WITH DATA PROVIDED TO ENGINEERS FOR PROPER DESIGN OF SUB STRUCTURE/ FOOTINGS.
 10. THE CONTRACTOR SHALL PROVIDE A WORK/CONSTRUCTION METHOD FOR THE SUPPORT STRUCTURE TO ENGINEERS FOR APPROVAL PRIOR TO CONSTRUCTION.
 11. ALL SERVICES PIPE SHOWN WITH DETAILS ON DWG.PP03 SHALL BE CONNECTED TO SERVICE THE KITCHENS, TOILETS, BATHS AND LAUNDRY WITHIN A HOUSE HENCE, ANY ADJUSTMENTS TO THESE CONNECTIONS SHALL BE CONFIRMED ON SITE WITH SATISFACTION FROM THE CLIENT REPRESENTATIVE.
 12. ALL THE METAL SURFACE AND CONCRETE SURFACE SHALL BE PAINTED BY VINYL ESTER RESIN OR EQUIVALENT, WITH 1mm THICKNESS AFTER HARDENING.

PROJECT PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE HANUABADA PILOT PROJECT . SITE LAYOUT	
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
		CHECKED by CONSULTANT Project Manager T Fuji	SCALE 1/500
			DRAWING NO PP-001

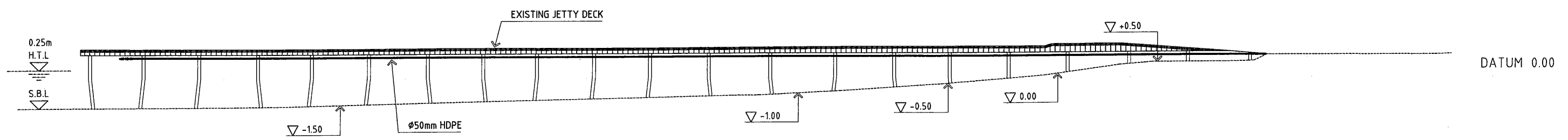


EXISTING JETTY No.2
PLAN
Scale: 1:200

LEGEND
H.T.L HIGH TIDE LEVEL
S.B.L SEA BED LEVEL



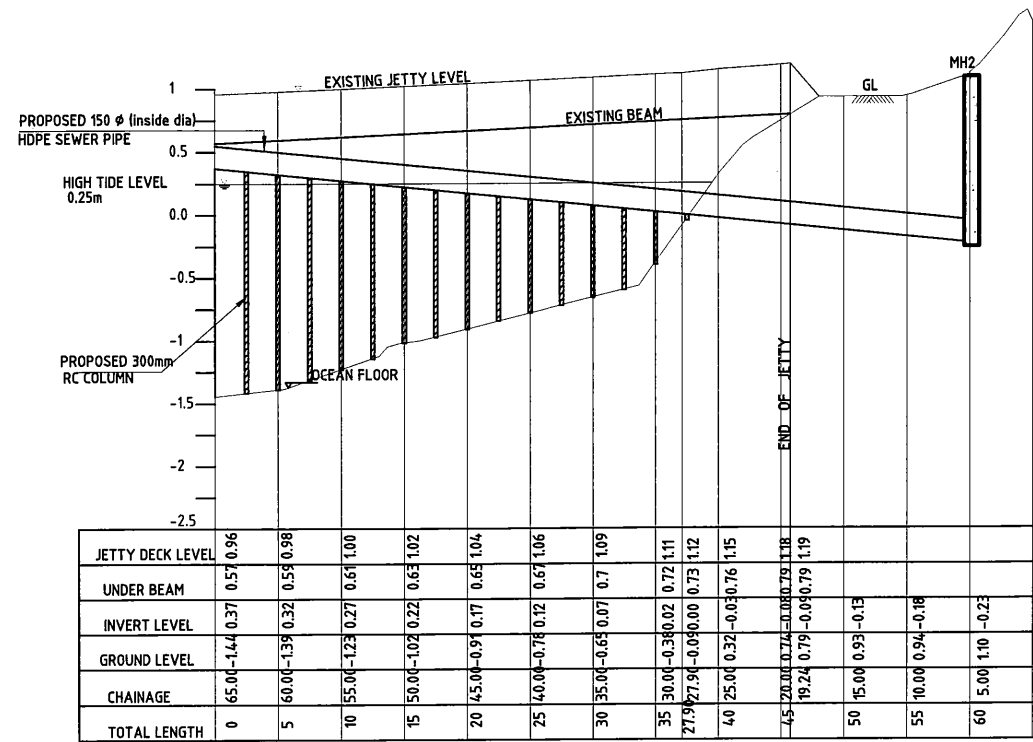
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Scale: 1:200



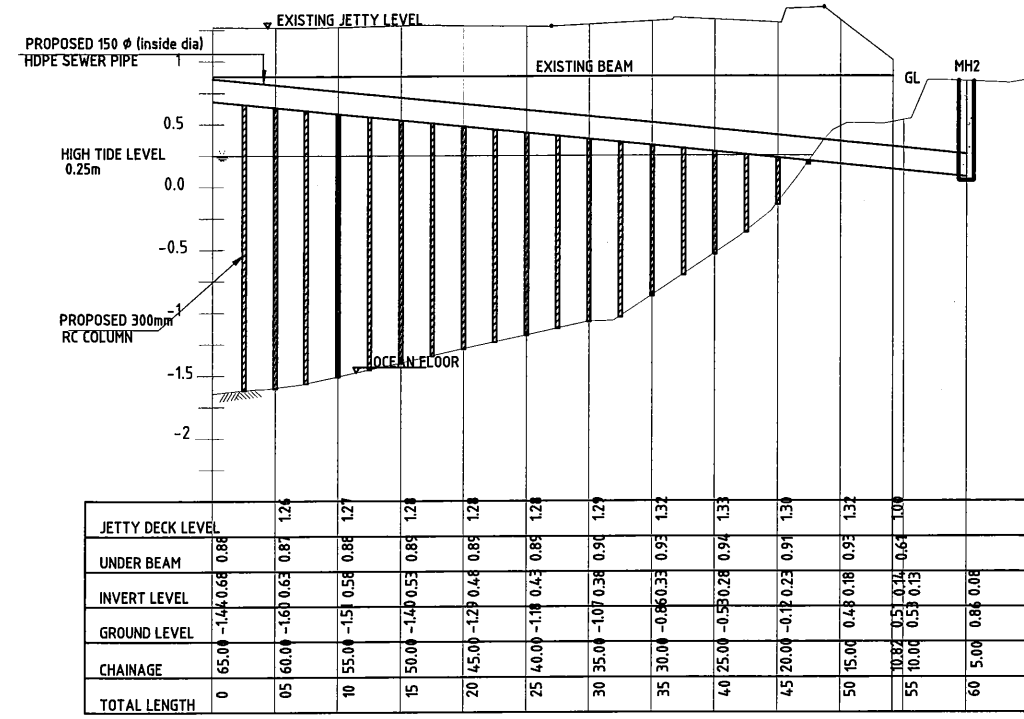
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WATER PIPE LONGITUDINAL SECTION
Scale: 1:200

FOR GENERAL NOTES REFER TO
DRG No PP-001

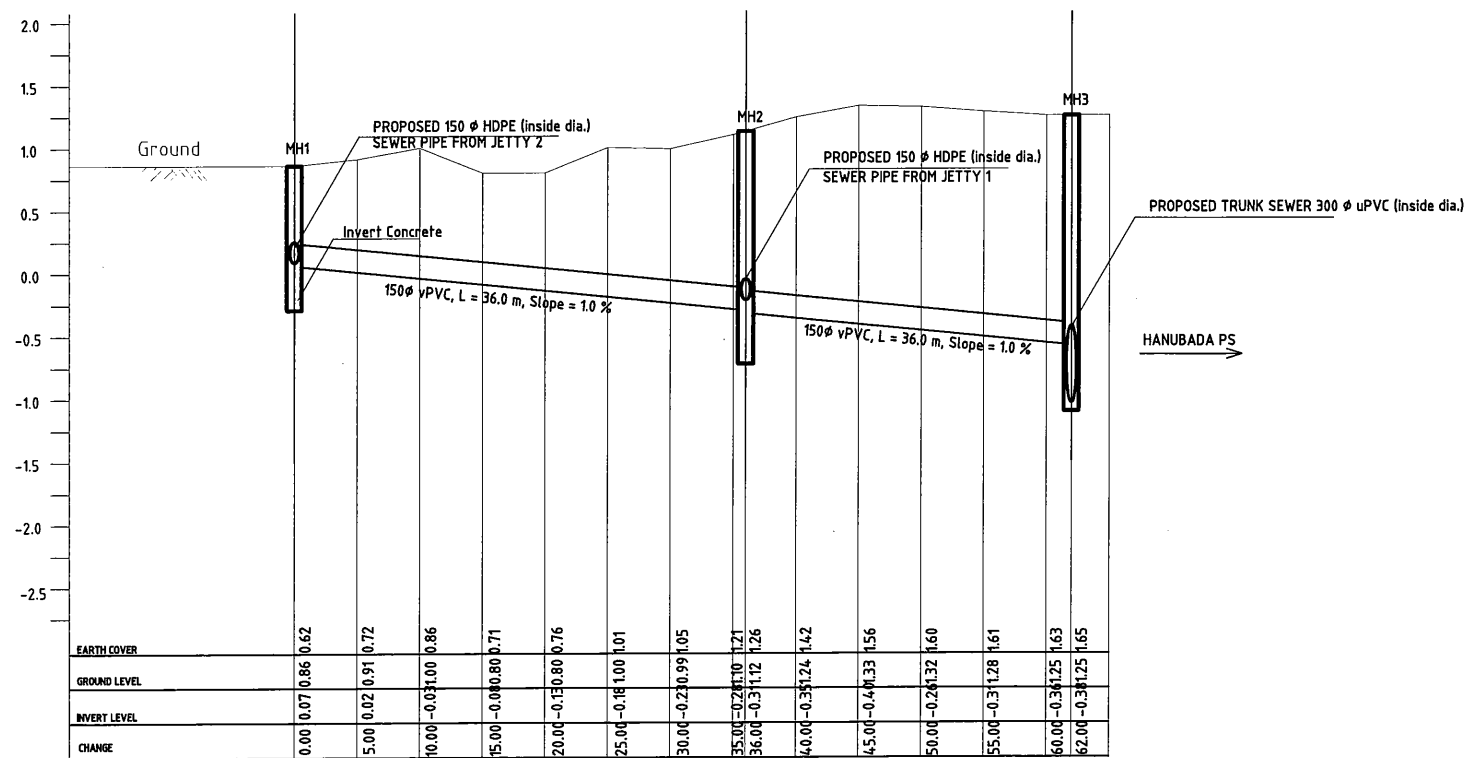
PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: HANUABADA PILOT PROJECT. SEWER AND WATER SUPPLY PIPE PLAN AND SECTION					
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU) JAPAN INTERNATIONAL COOPERATION AGENCY	CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN	NOTES:	REVISIONS		APPROVED by PMU:	DATE:	SCALE:
			REV	DATE	DESCRIPTION	Project Director Lot G.Zauya	1. Dec 2011
					CHECKED by CONSULTANT Project Manager T.Fuji	DATE:	DRAWING NO.:
						1. Dec 2011	PP-002



JETTY No.1



JETTY No.2



CONNECTION SEWER

LEGEND		SCALE
	PROPOSED SEWER MANHOLE	
	PROPOSED SEWER LINE	

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

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

TITLE: HANUBADA PILOT PROJECT. SEWER LONGITUDINAL SECTION

NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

APPROVED by PMU:
Project Director
Lot G.Zauya

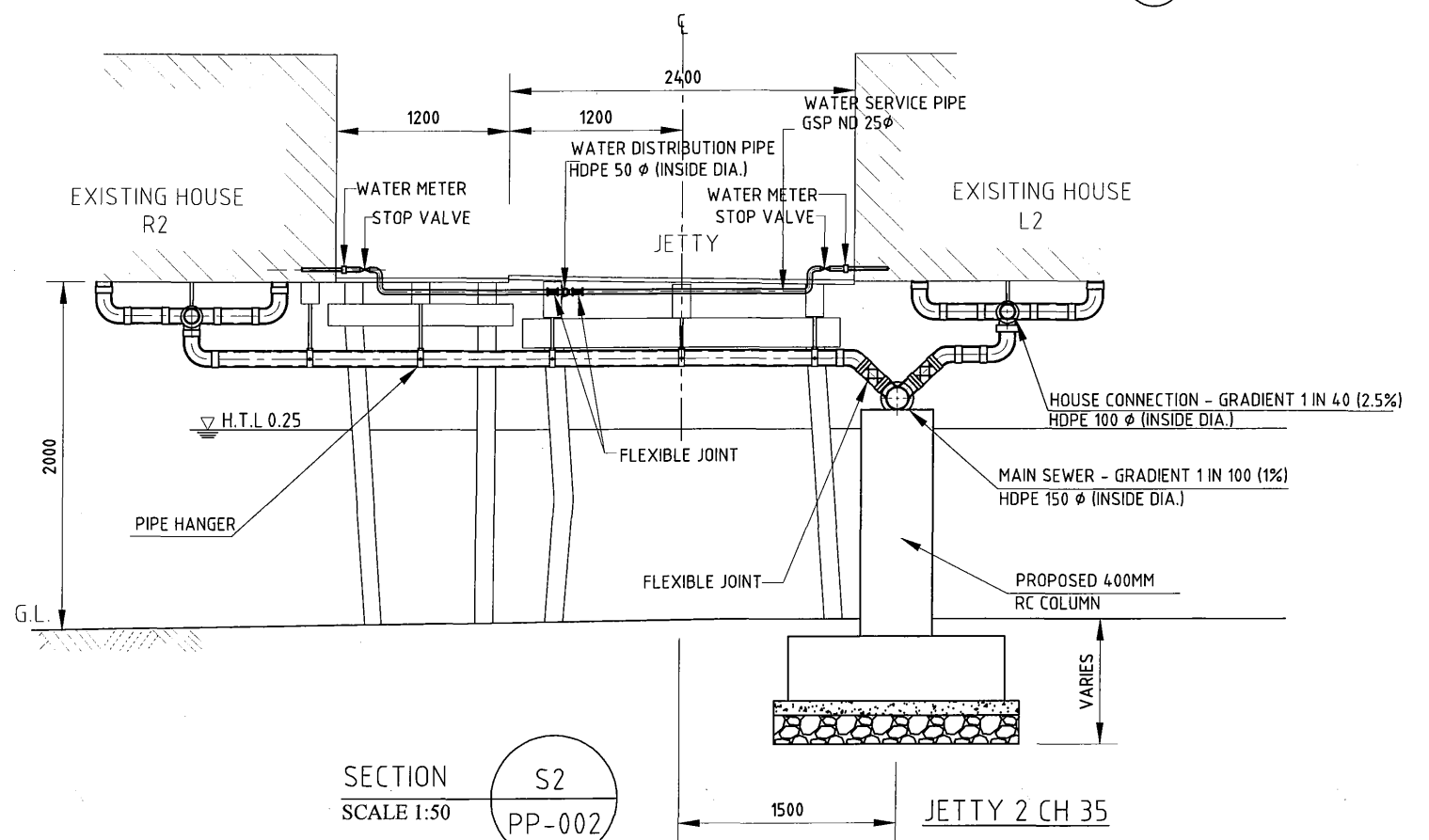
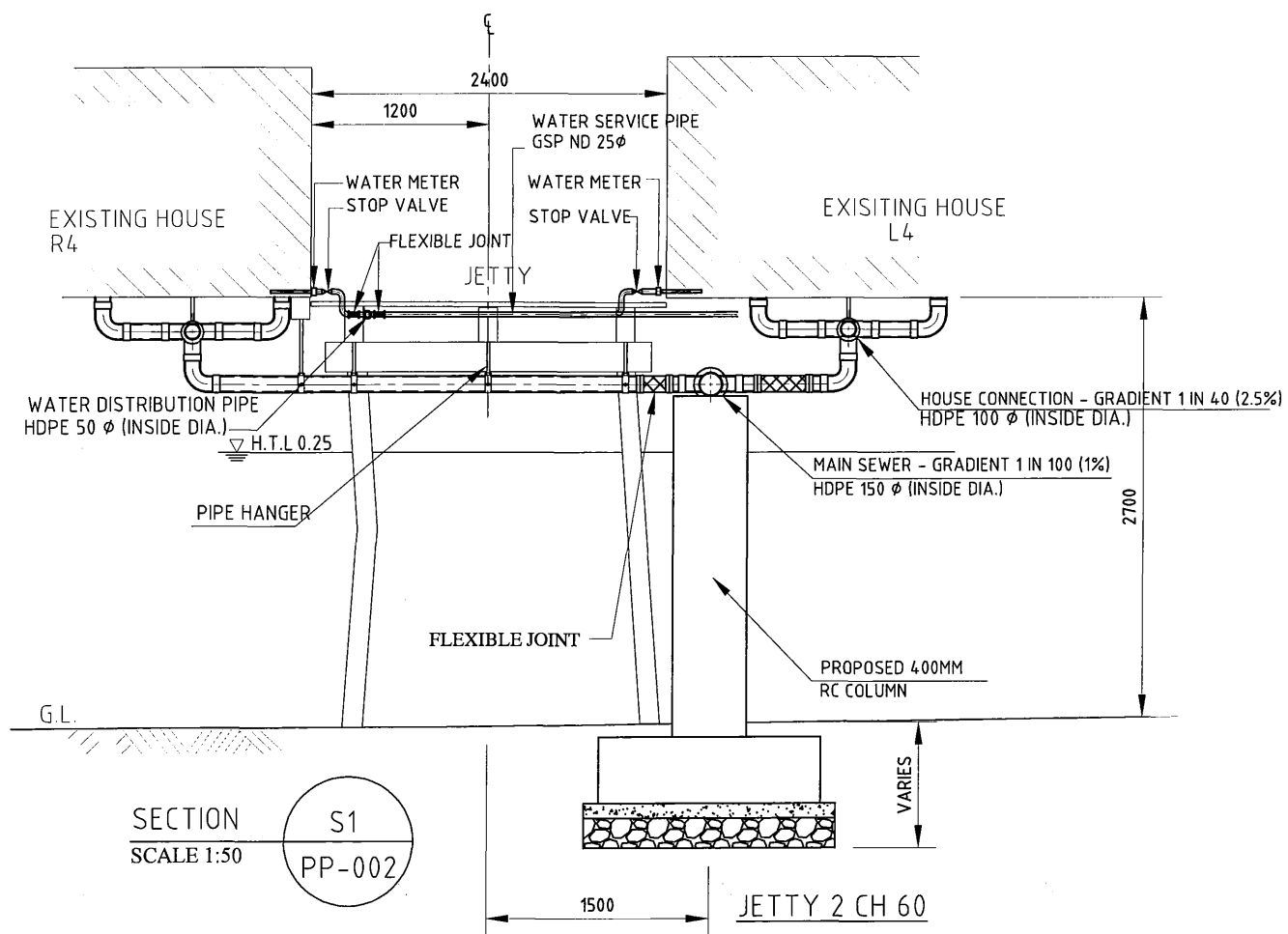
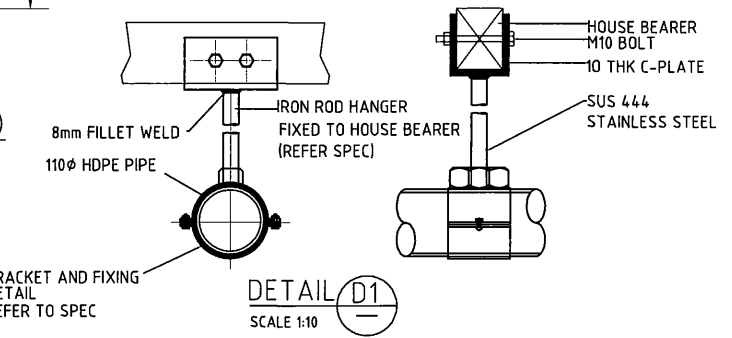
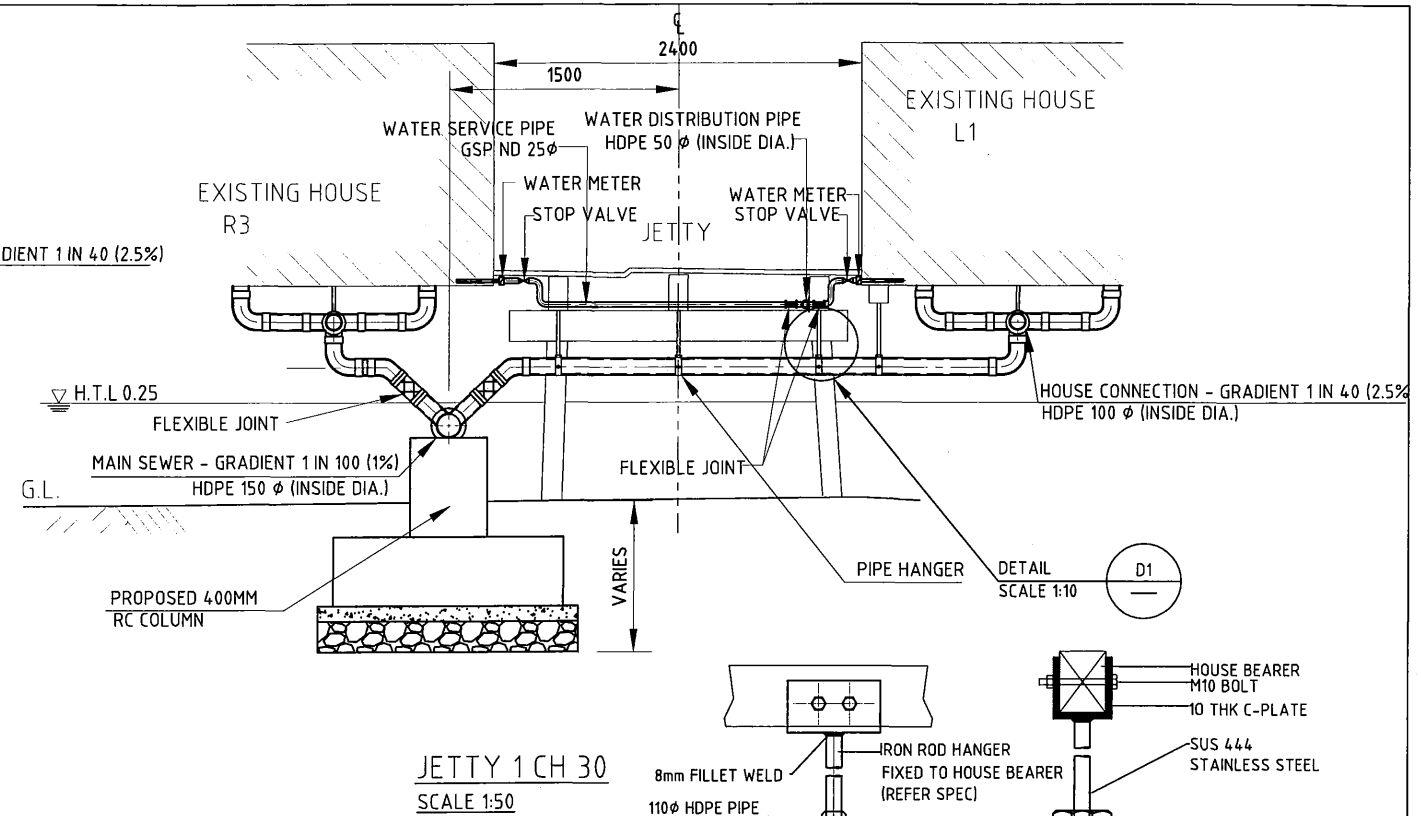
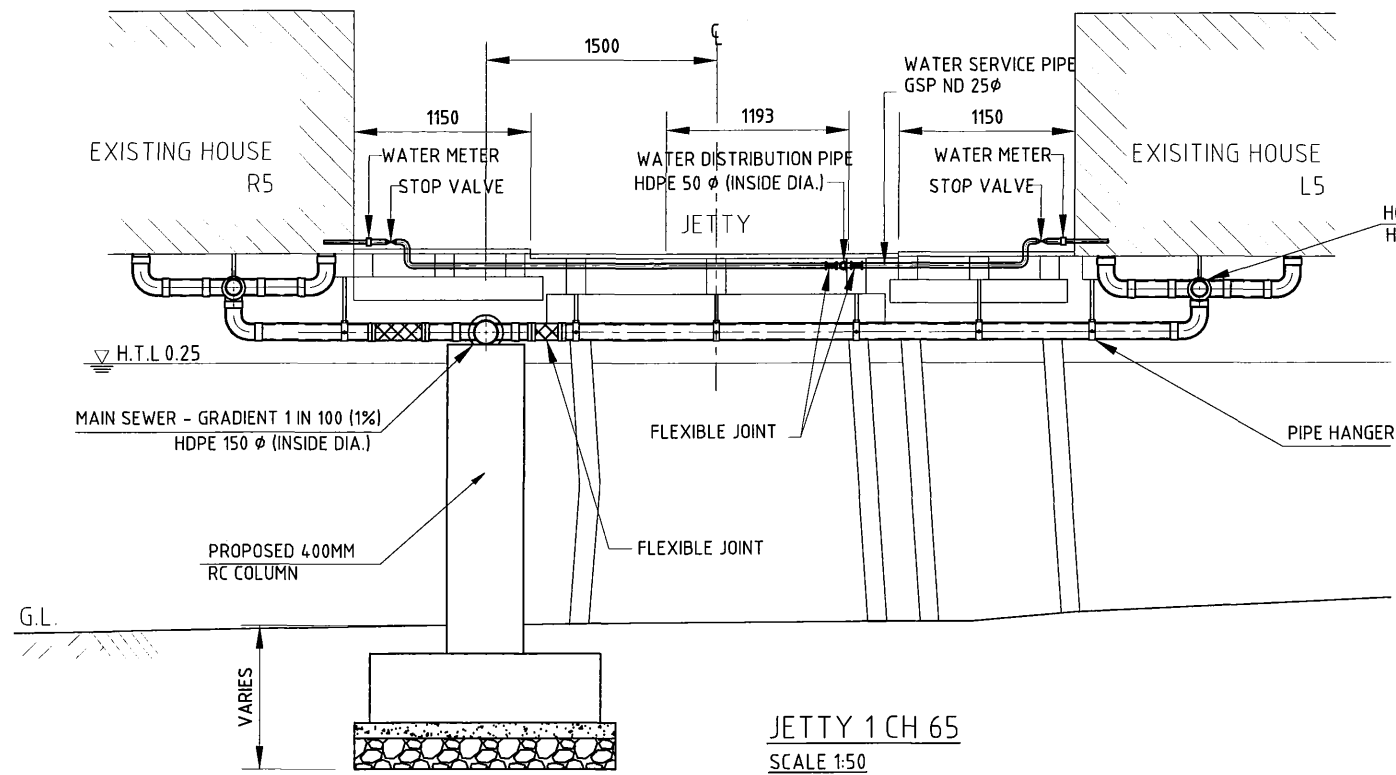
CHECKED by CONSULTANT
Project Manager
T.Fuji

DATE: 1. Dec 2011

SCALE: AS SHOWN

DATE: 1. Dec 2011

DRAWING NO.: PP-003



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: HANUBADA PILOT PROJECT. SELECTED CROSS SECTIONS

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

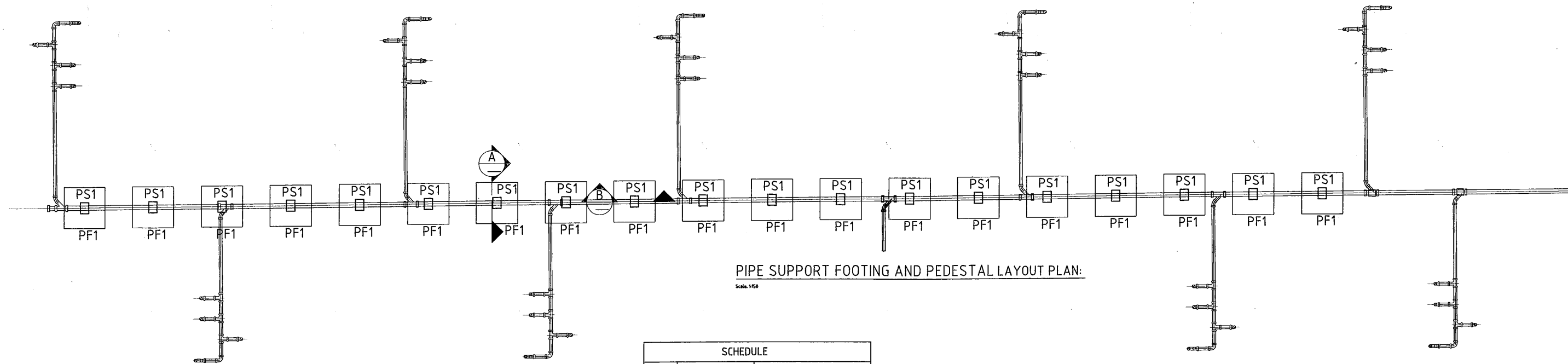
CHECKED by CONSULTANT
Project Manager
T.Fuji

DATE:
1. Dec 2011

DATE:
1. Dec 2011

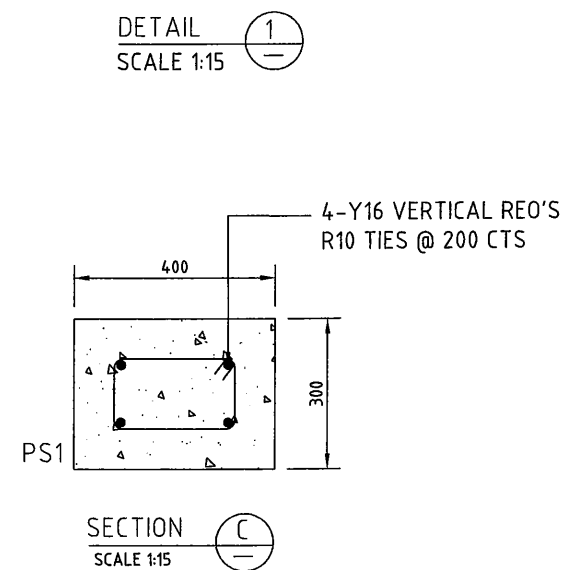
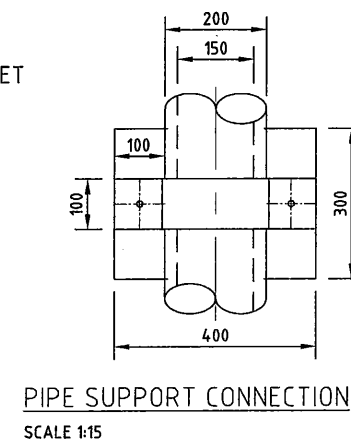
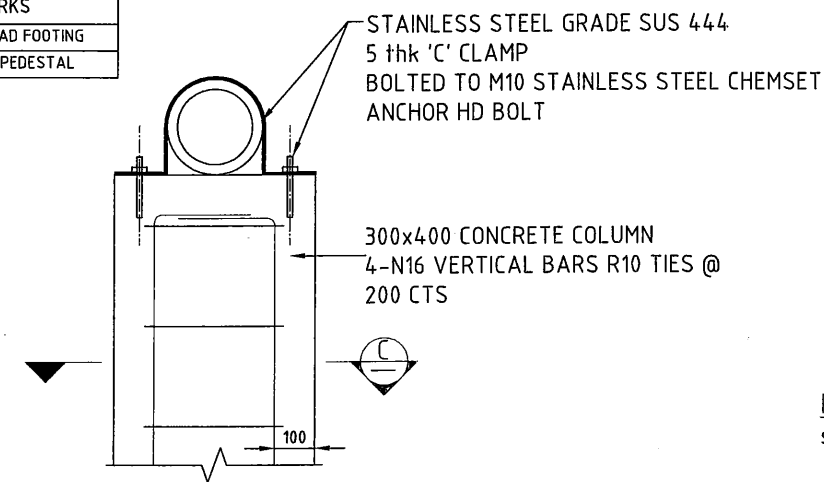
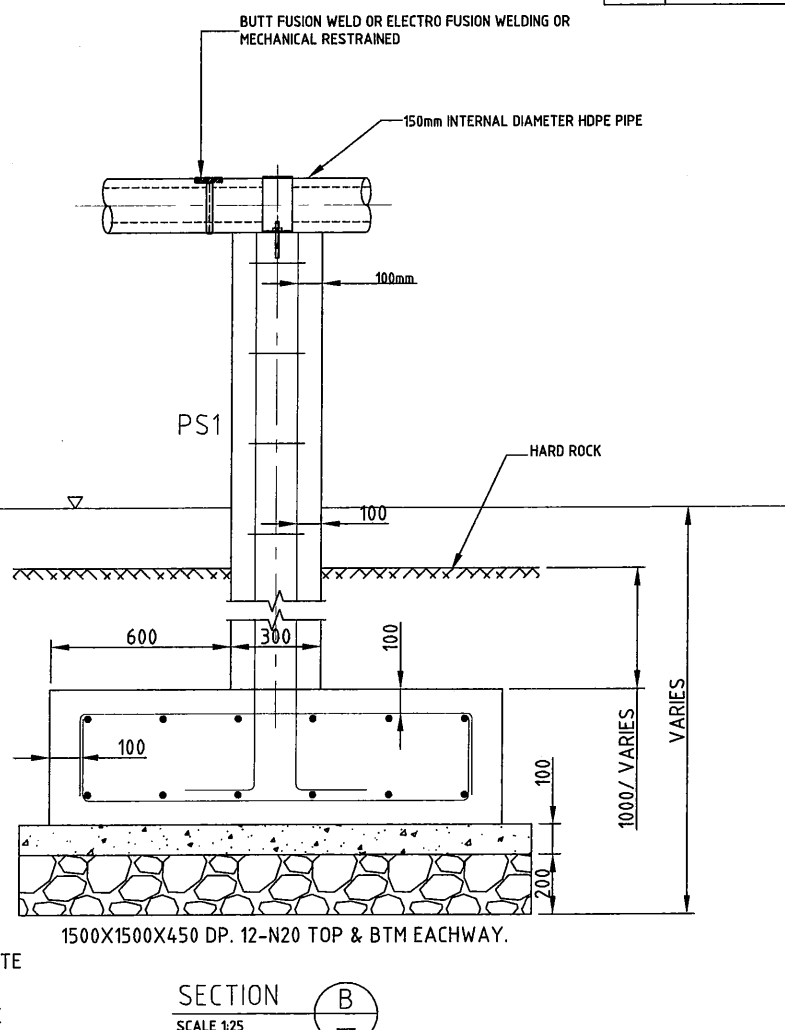
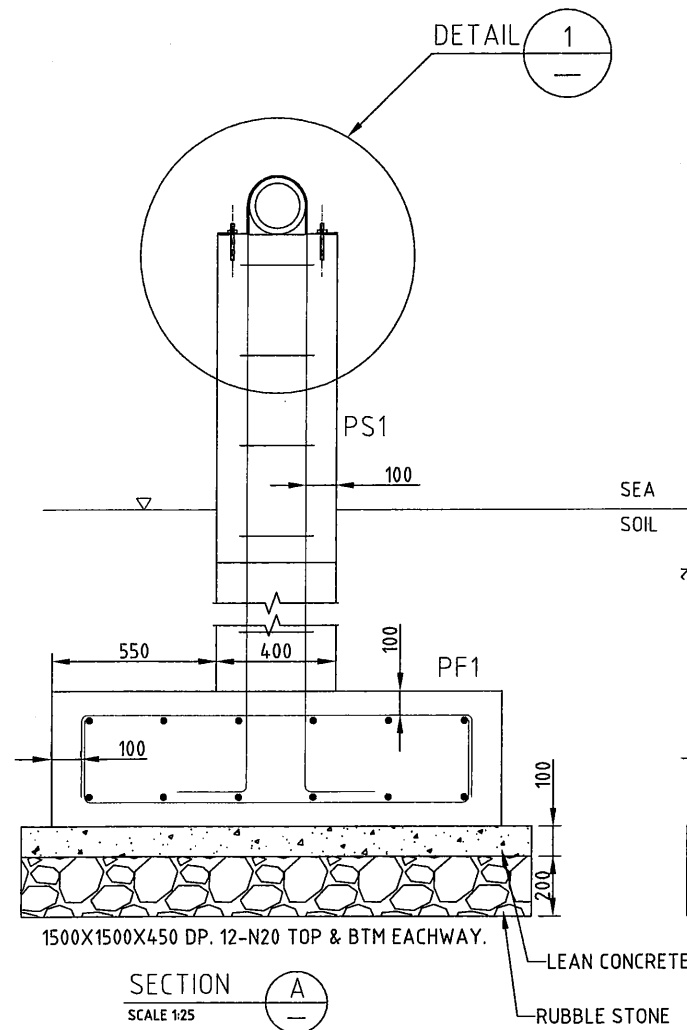
SCALE:
AS SHOWN

DRAWING NO.:
PP-004



PIPE SUPPORT FOOTING AND PEDESTAL LAYOUT PLAN:
Scale 1:50

SCHEDULE		
MARK	SIZE	REMARKS
PF1	1500x1500x450 dp	RC.CONC. PAD FOOTING
PS1	400X300	RC.CONC. PEDESTAL



NOTE

1. ALL SPECIFICATION AS PER PNGS 1002 - 1982 (PAPUA NEW GUINEA STANDARD 1002 - 1982 REINFORCED CONCRETE STRUCTURE).
2. ALL CHEMSET ANCHOR BOLTS SHALL BE
3. CONCRETE COVER TO REINFORCING BAR SHALL BE 100mm
4. ALL THE METAL SURFACE AND CONCRETE SURFACE SHALL BE PAINTED BY VINYL ESTER SURFACE RESIN OR EQUIVALENT, WITH 1mm THICKNESS AFTER HARDENING.

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: HANUABADA PILOT PROJECT: SEWER SUPPORT FOOTING PLAN AND DETAILS

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
S.A. Aboni	06/04/11	

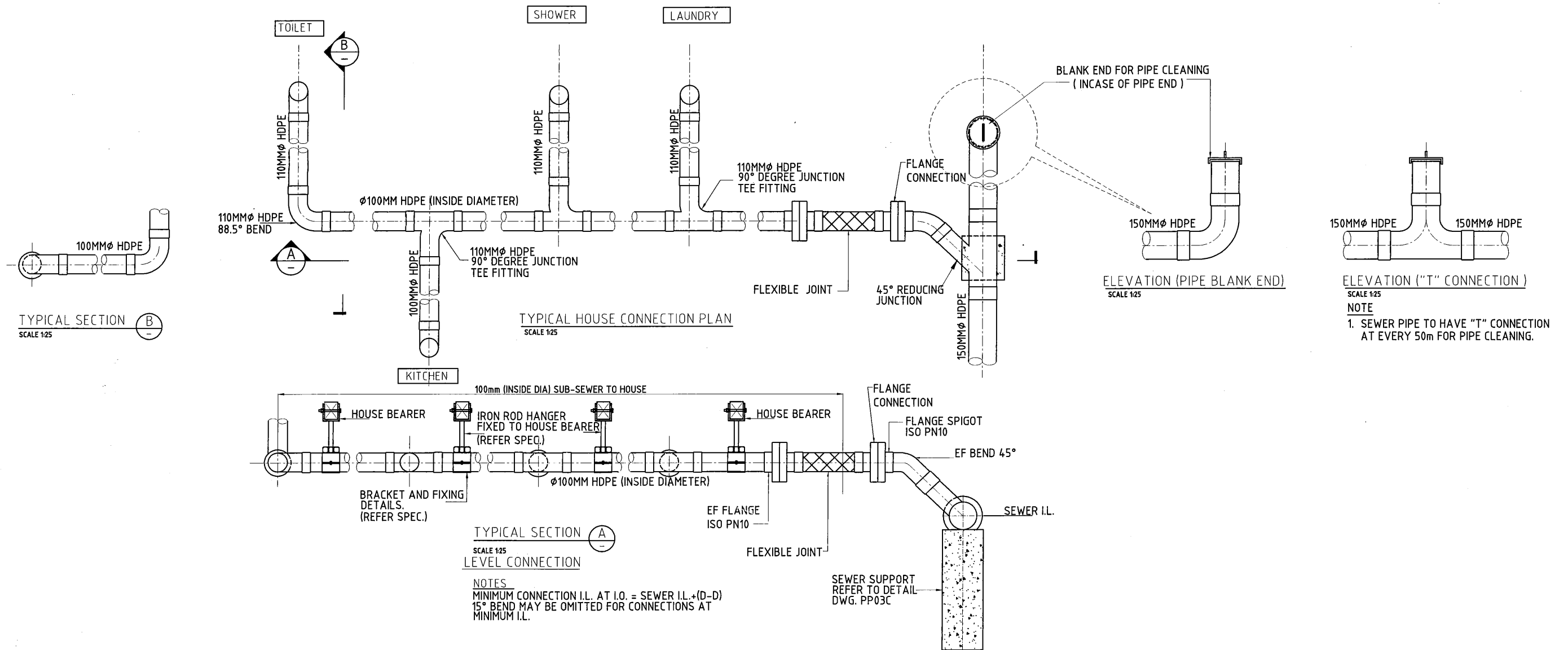
APPROVED by PMU:
Project Director
Lot G. Zauya
CHECKED by CONSULTANT
Project Manager
T. Fuji

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

SCALE:
AS SHOWN
DRAWING NO.:
PP-005

NOTE

1. HOUSE CONNECTION SHALL BE INSTALLED TO EXISTING SANITARY FIXTURES TO EACH HOUSE
2. A FLUSH TOILET SHALL BE PROVIDED TO EACH HOUSE
3. ALL JOINING SHALL BE BY FULLY AUTOMATIC BUTT FUSION WELDING, BY ELECTRO FUSION WELDING OR BY MECHANICAL RESTRAINED JOINTS FOR USE WITH HDPE PIPE AND FITTINGS



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: HANUABADA PILOT PROJECT. TYPICAL HOUSE CONNECTIONS FOR SEWER

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

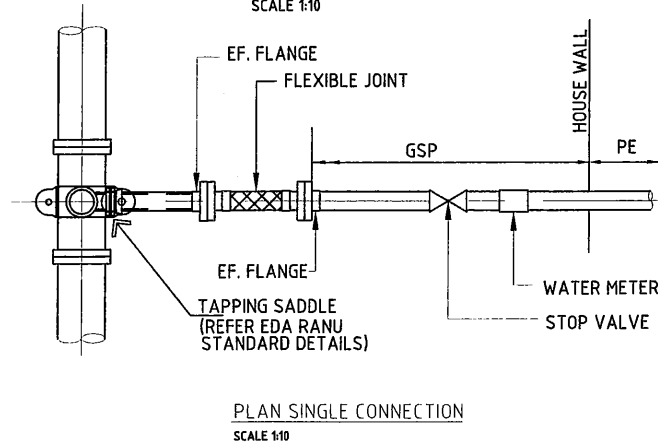
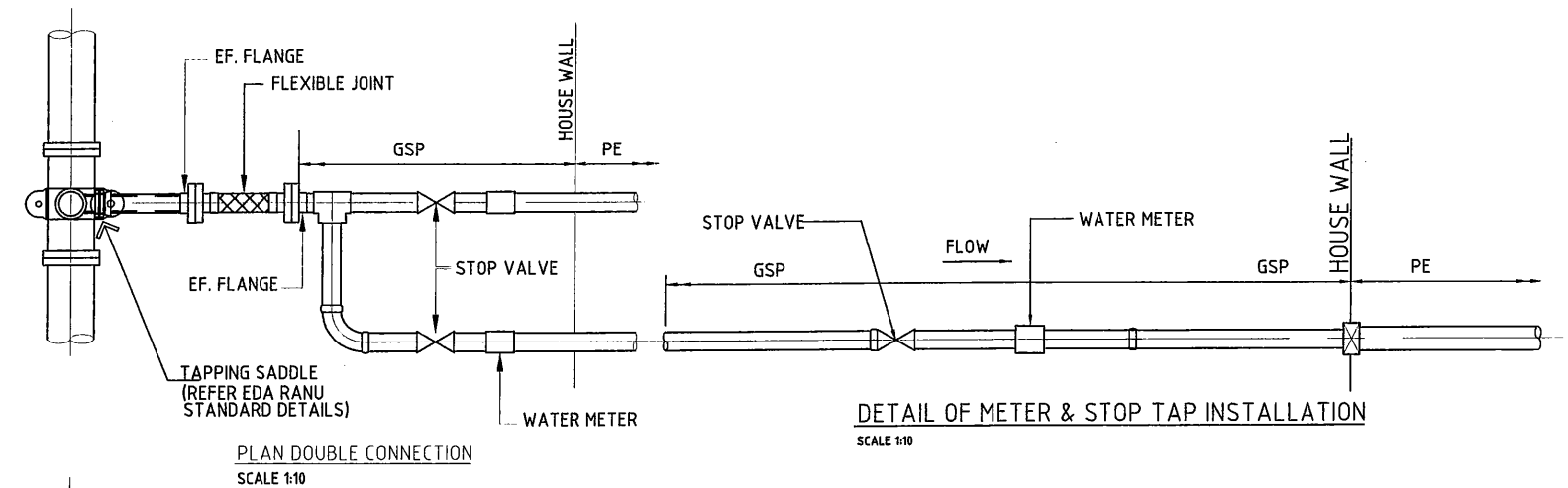
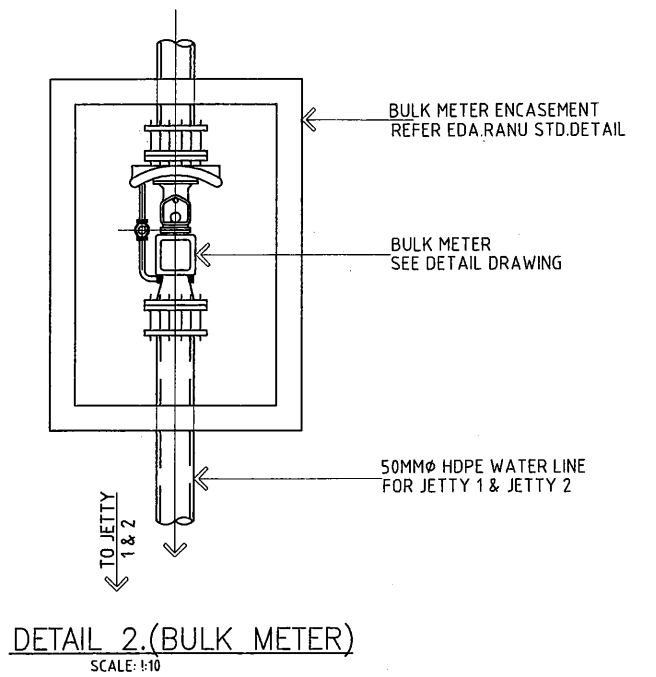
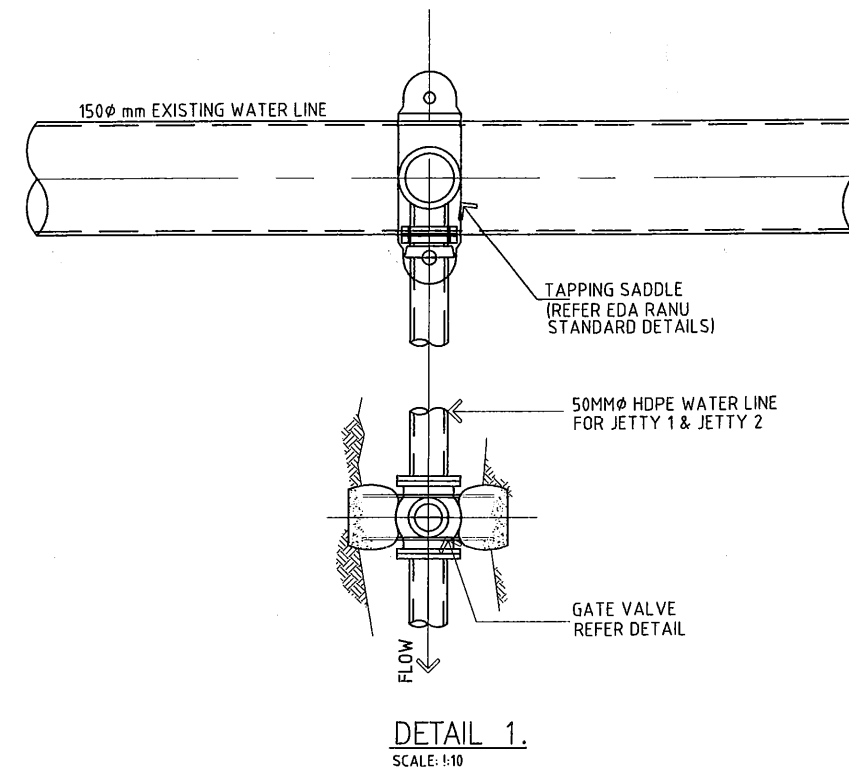
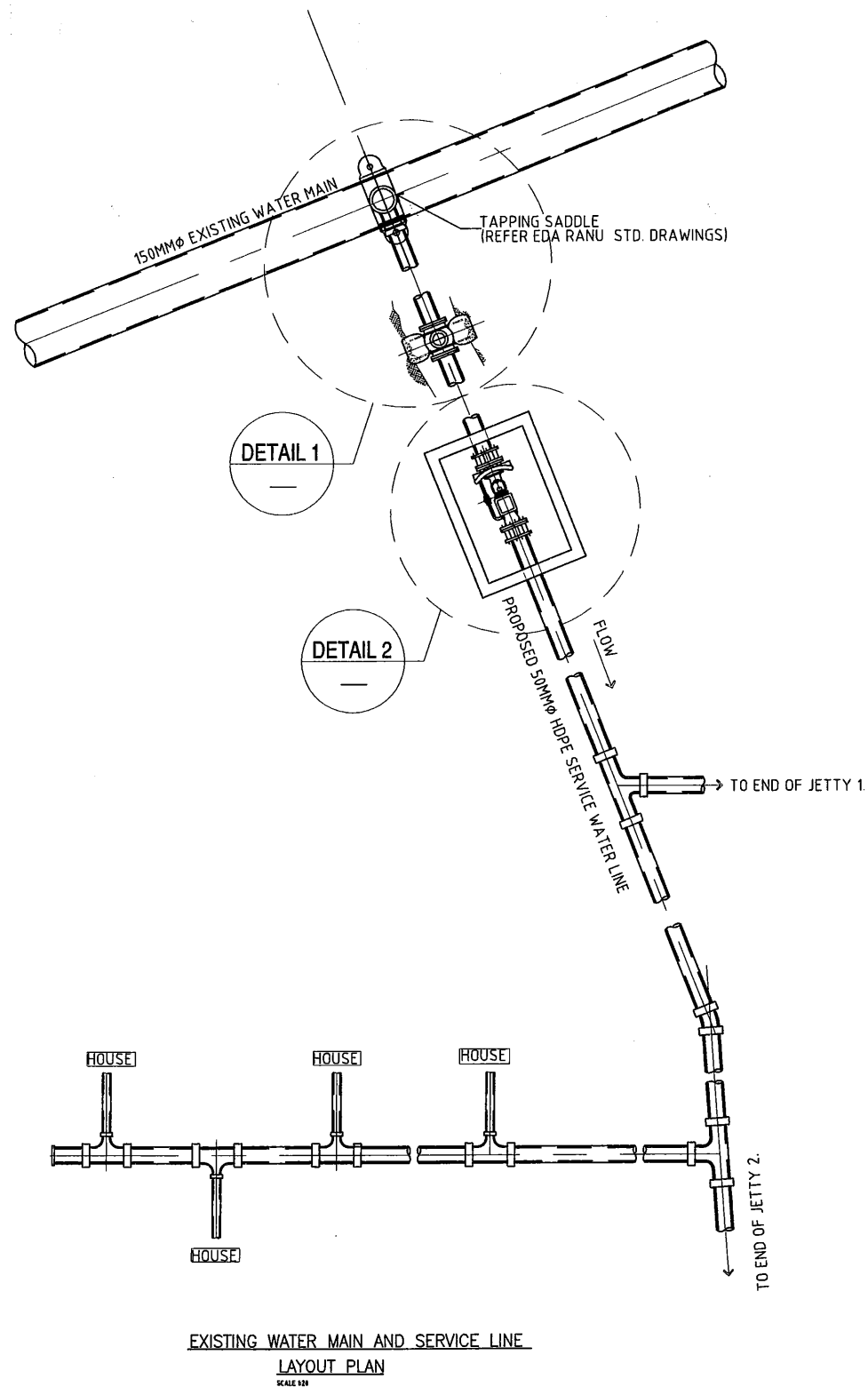
NOTES:

REVISIONS		
REV.	DATE	DESCRIPTION

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

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

SCALE:
 AS SHOWN
 DRAWING NO.:
 PP-006



WATER SERVICE CONNECTIONS

1. INSTALLATION BY THE SUBDIVIDER SHALL INCLUDE THE CONNECTION FROM THE MAIN TO THE TAPS SUCH AS A KITCHEN, TOILET, BATH AND LAUNDRY
2. THE SUBDIVIDER SHALL INSTALL THE CONNECTIONS BEFORE TESTING THE MAIN AND SHALL HAVE THE FERRULE COCK OPEN AND THE METER STOP TAP CLOSED DURING TESTING
3. ON COMPLETION OF TESTING THE FERRULE COCK SHALL BE CLOSED
4. COVER TO CONNECTION PIPE SHALL BE 600 MINIMUM IN AREAS SUBJECT TO TRAFFIC, 300 MINIMUM ELSEWHERE
5. NOMINAL DIAMETERS

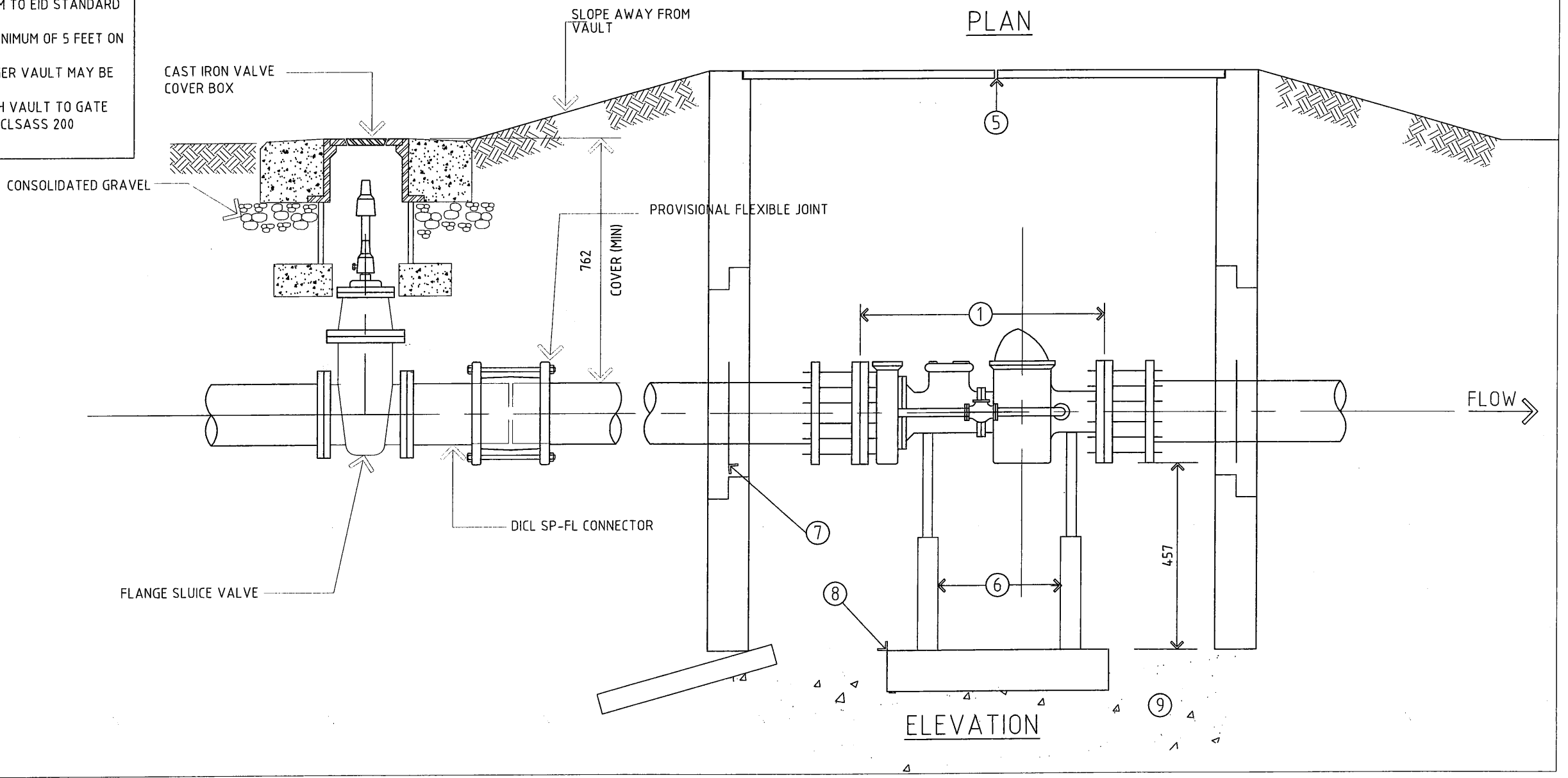
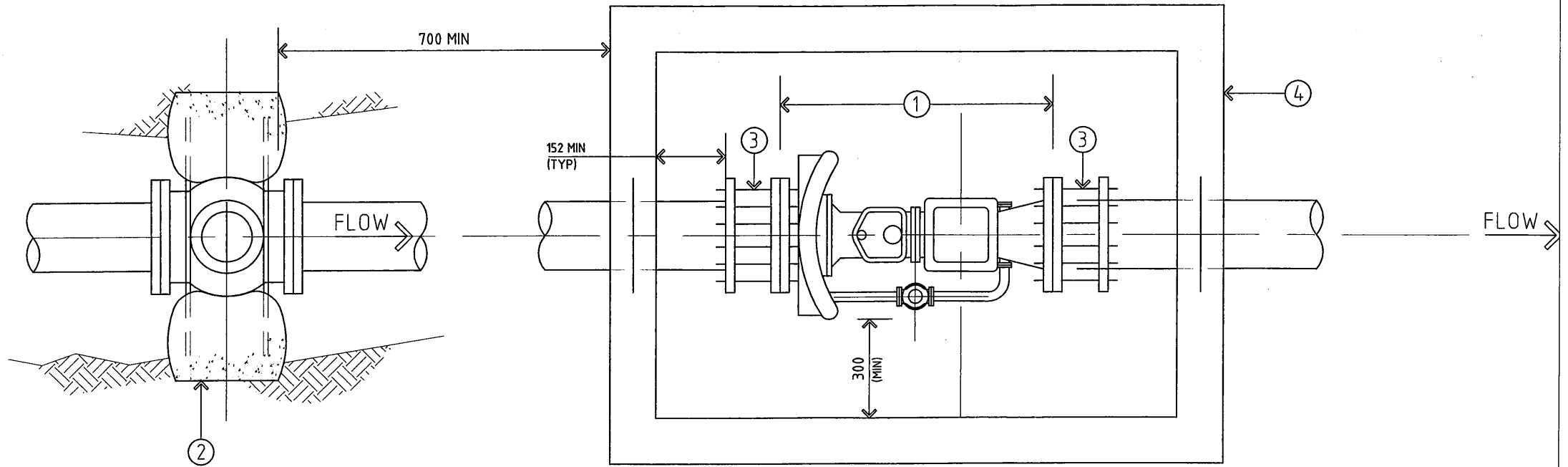
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PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: HANUABADA PLOT PROJECT. TYPICAL HOUSE CONNECTION FOR WATER SUPPLY	
CLIENT:	INDEPENDENT PUBLIC BUSINESS CORPORATION PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT PROJECT MANAGEMENT UNIT (PMU)	CONSULTANTS:	NJS CONSULTANTS CO., LTD. - JAPAN
	IPBC INDEPENDENT PUBLIC BUSINESS CORPORATION		
	JICA JAPAN INTERNATIONAL COOPERATION AGENCY		

NOTES:			APPROVED by PMU: Project Director Lot G.Zauya	DATE: 1. Dec 2011	SCALE: AS SHOWN
REVISIONS			CHECKED by CONSULTANT Project Manager T.Fuji	DATE: 1. Dec 2011	DRAWING NO PP-007
REV.	DATE	DESCRIPTION			

①	SENSUS COMPACT FIRELINE SERVICE ASSEMBLY WITH BYPASS METER
②	GATE VALVE
③	FLANGE COUPLING ADAPTER
④	7'x6'x5' DEEP (MIN I.D.) PRECAST CONCRETE VAULT EXTERIOR W/W/ 12 MILS BITUMENOUS MASTIC
⑤	2-PC HINGED SPRING LOADED, SCREW DOWN LID W/ HINGED READING LIDS CENTERED OVER BOTH METERS. H-20 TRAFFIC LOADING. WATER TIGHT W/ DRAIN CHANNEL. BILCO JDAL SERIES OR APPROVED EQUAL.
⑥	ADJUSTABLE PIPE SUPPORTS
⑦	RAMNECK & NON-SHRINK GROUT
⑧	6" CONCRETE SUPPORT SLAB
⑨	12" MIN CRUSHED ROCK

- NOTES:**
1. ALL WORK AND MATERIALS SHALL CONFORM TO EID STANDARD DETAILS AND SPECIFICATION
 2. AN EASEMENT SHALL BE PROVIDED AT A MINIMUM OF 5 FEET ON EACH SIDE OF FINISH VAULT.
 3. VAULTS ARE SHOWN MINIMUM SIZE, A LARGER VAULT MAY BE REQUIRED BASED ON VAULT DIMENSIONS
 4. PIPE FROM DISTRIBUTION PIPELINE THROUGH VAULT TO GATE VALVE SHALL DUCTILE IRON OR PVC C-900 CLSASS 200



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)		TITLE: HANUABADA PILOT PROJECT. GATE VALVE AND BULK METER DETAILS	
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
JAPAN INTERNATIONAL COOPERATION AGENCY			CHECKED by CONSULTANT Project Manager T.Fuji
			DATE: 1. Dec 2011
			SCALE: AS SHOWN
			DATE: 1. Dec 2011
			DRAWING NO. PP-008