

PASTE IN EXPORT FROM MAP VIEWING TOOL SHOWING BSP LOCATION PIN POINTED BY GPS COORDINATES AND PLACE A BOX AROUND THE BSP INDICATING SITE LOCATION

Template sheets of this drawing set are available in AutoCAD on request and will be issued on presenting a Watercare project drawing number or development reference where the intention is to vest the assets to Watercare

SITE OVERVIEW

SITE INFORMATION		
DESCRIPTION	SITE DESCRIPTION AS DETAILED IN THE WSL DATABASE	
WATERMAIN	WATERMAIN NAME AS DETAILED IN THE WSL DATABASE	
LOCATION	SITE PHYSICAL ADDRESS	
GIS CO-ORDINATES  (WGS84 DEGREES DECIMAL)	LATITUDE	SITE INFORMATION ON THE WSL GIS SYSTEM
	LONGITUDE	SITE INFORMATION ON THE WSL GIS SYSTEM
HISTORICAL REF	AS DETAILED IN THE WSL DATABASE	
FACILITY CODE	AS DETAILED IN THE WSL DATABASE	
AREA CODE (TAG PREFIX)	93	

- NOTES:
1. INSTRUMENT TYPES ARE SITE TYPE DEPENDENT.
  2. SITE SPECIFIC DRAWING SERIES NUMBERS ARE SITE DEPENDENT.
  3. REFER TO DRAWING SERIES NO. XXXXXX FOR THE CIVIL DRAWING.
  4. SITE POWER REQUIREMENTS ARE SITE DEPENDENT. THE AUTONOMY AND RECHARGE TIME REQUIRED FOR A SITE IS TO BE CALCULATED AND CONFIRMED WITH OPERATIONS FOR EACH INSTALLATION.

DRAWING SERIES NO.	SHEET	SITE SPECIFIC DRAWINGS	ACAD/REFERENCE FILE NO.
2010998	001	LOCALITY AND DRAWING SCHEDULE	2010998.001
2010998	002	OVERVIEW SCHEMATIC	2010998.002
2010998	003	PIPING AND INSTRUMENTATION DIAGRAM	2010998.003
2010998	004	KINGFISHER RTU DIAGRAM	2010998.004

DRAWING SERIES NO.	SHEET	STANDARD DRAWINGS	ACAD/REFERENCE FILE NO.
2010998	005	AC DISTRIBUTION SCHEMATIC	2010998.005
2010998	006	PS-12 12V DC DISTRIBUTION SCHEMATIC - SUPERSEDED	2010998.006
2010998	007	SLOT 3 ANALOG INPUTS SCHEMATIC	2010998.007
2010998	008	SLOT 4 DIGITAL INPUTS SCHEMATIC	2010998.008
2010998	009	SLOT 5 DIGITAL OUTPUTS SCHEMATIC	2010998.009
2010998	010	AIT-XX3 & AIT-XX4 DEPOLOX 3 PLUS CL2/pH ANALYSER LOOP SCHEMATIC	2010998.010
2010998	011	AIT-XX2 CUM253 TURBIDITY ANALYSER LOOP SCHEMATIC	2010998.011
2010998	012	FIT-XXX MAGMASTER FLOWMETER 1 LOOP SCHEMATIC	2010998.012
2010998	013	FIT-XXX MAGMASTER FLOWMETER 2 LOOP SCHEMATIC	2010998.013
2010998	014	SOV-XXX & SOV-XXX PRESSURE CONTROL VALVE LOOP SCHEMATIC	2010998.014
2010998	015	PIT-XXX PRESSURE TRANSDUCER 1 LOOP SCHEMATIC	2010998.015
2010998	016	PIT-XXX PRESSURE TRANSDUCER 2 LOOP SCHEMATIC	2010998.016
2010998	017	TERMINAL BLOCK & PLUG/SOCKET CONNECTIONS	2010998.017
2010998	018	DRY GEARPLATE LAYOUT	2010998.018
2010998	019	WET GEARPLATE GENERAL LAYOUT 1 FOR DEPOLOX 3 PLUS/5 & CUM253	2010998.019
2010998	020	PU-XXX SUMP PUMP AND LSH-XXX HIGH LEVEL ALARM SCHEMATIC	2010998.020
2010998	021	PRESSURE DISPLAY UNIT	2010998.021
2010998	022	24V DC DISTRIBUTION SCHEMATIC	2010998.022
2010998	023	FIT-XXX TURBOWERK FLOWMETER LOOP SCHEMATIC	2010998.023
2010998	024	FQIT-XXX KENT FLOWMETER 1 LOOP SCHEMATIC	2010998.024
2010998	025	FQIT-XXX KENT FLOWMETER 2 LOOP SCHEMATIC	2010998.025
2010998	026	FIT-XXX WATERMASTER FLOWMETER 1 LOOP SCHEMATIC (SERIAL COMMS)	2010998.026
2010998	027	FIT-XXX WATERMASTER FLOWMETER 2 LOOP SCHEMATIC (SERIAL COMMS)	2010998.027
2010998	028	FIT-XXX WATERMASTER FLOWMETER 1 LOOP SCHEMATIC (4-20mA)	2010998.028
2010998	029	FIT-XXX WATERMASTER FLOWMETER 2 LOOP SCHEMATIC (4-20mA)	2010998.029
2010998	030	PIT-XXX PRESSURE TRANSDUCER 3 LOOP SCHEMATIC	2010998.030
2010998	031	AIT-XX3 & AIT-XX4 DEPOLOX 4 CL2/pH ANALYSER LOOP SCHEMATIC	2010998.031
2010998	032	AIT-XX3 & AIT-XX4 DEPOLOX 5 CL2/pH ANALYSER LOOP SCHEMATIC	2010998.032
2010998	033	AIT-XX3 AND AIT-XX4 E AND H CM444 CL2/PH/TURBIDITY ANALYSER LOOP SCHEMATIC	2010998.033
2010998	034	AIT-XX2 SC100 TURBIDITY ANALYSER LOOP SCHEMATIC	2010998.034
2010998	035	AIT-XX2 ACCU4 TURBIDITY ANALYSER LOOP SCHEMATIC	2010998.035
2010998	036	WET GEARPLATE GENERAL LAYOUT 2 FOR DEPOLOX 4 & ACCU4	2010998.036
2010998	037	WET GEARPLATE GENERAL LAYOUT 3 FOR DEPOLOX 3 PLUS & SC100	2010998.037
2010998	038	WET GEAR PLATE GENERAL LAYOUT 4 FOR E AND H CM444 CL/PH TURBIDITY	2010998.038
2010998	039	TYPICAL ANTENNA INSTALLATION	2010998.039
2010998	040	CABINET GENERAL LAYOUT	2010998.040
2010998	041	12V DC DISTRIBUTION SCHEMATIC	2010998.041
2010998	042	EAL-XX1 & EAL-XX2 PS-XX1 MAINS & BATT STATUS LOOP SCHEMATIC	2010998.042
2010998	043	PU-XXX SUMP PUMP 1 SCHEMATIC	2010998.043
2010998	044	PU-XXX SUMP PUMP 2 AND LSH-XXX HIGH LEVEL 2 ALARM SCHEMATIC	2010998.044
2010998	045	PU-XXX SAMPLING PUMP SCHEMATIC	2010998.045
2010998	046	SOV-XXX & SOV-XXX PRESSURE CONTROL VALVE 2 LOOP SCHEMATIC	2010998.046
2010998	047	PIT-XXX IFM PRESSURE TRANSDUCER 1 LOOP SCHEMATIC	2010998.047
2010998	048	PIT-XXX IFM PRESSURE TRANSDUCER 2 LOOP SCHEMATIC	2010998.048
2010998	049	PIT-XXX IFM PRESSURE TRANSDUCER 3 LOOP SCHEMATIC	2010998.049
2010998	050	TYPICAL ANTENNA INSTALLATION AT STRUCTURE	2010998.050
2010998	051	SPARE (FUTURE)	2010998.051

DRAWING SERIES NO.	SHEET	CIVIL AND MECHANICAL DRAWING SCHEDULE	ACAD/REFERENCE FILE NO.
2010998	052	CHAMBER SAMPLE TAPPING POINT LAYOUT	2010998.052
2010998	053	CHAMBER SAMPLE TAPPING POINT BOM	2010998.053
2010998	054	CHAMBER SAMPLE TAPPING POINT (MANUAL)	2010998.054
2010998	055	DETAILS OF SAMPLING LINE AND DRAINS	2010998.055
2010998	056	CONCRETE PLINTH DETAIL	2010998.056

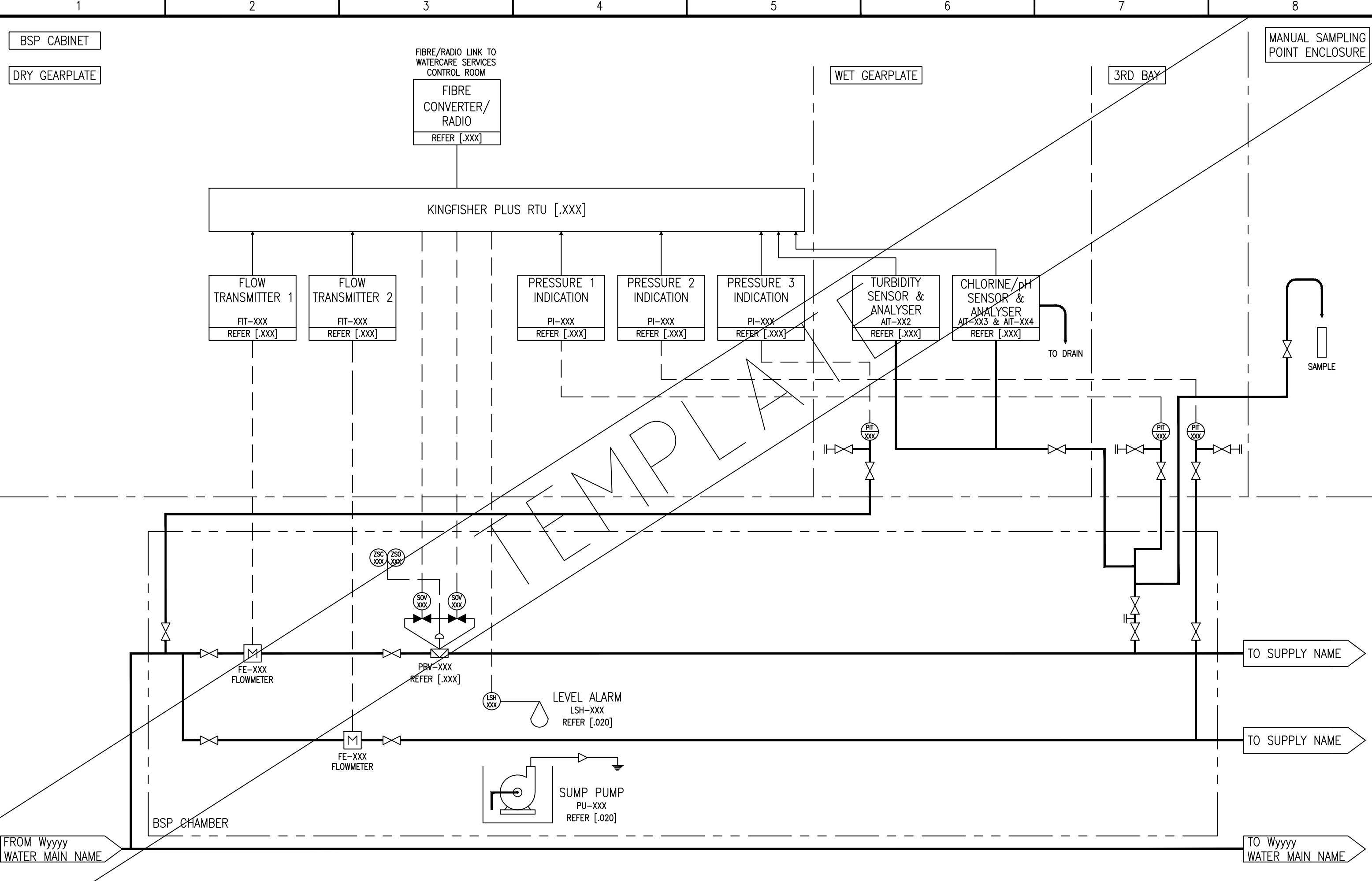
ISSUE	DATE	AMENDMENT	BY	APPD.
C	03/16	DRAWINGS .033 AND .038 ADDED (SPARE SHEETS)	F.T	M.W
B	11/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
A	11/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

DESIGNED	S Fagomalo	09/14
DES. CHECKED	D Ibrahim	09/14
DRAWN	R Matthews	09/14
DWG. CHECKED	S Fagomalo	09/14
PROJECT LEADER		
INFRASTR APP'D		



BSP STANDARD DRAWING  
CONTROL SYSTEM  
LOCALITY AND DRAWING SCHEDULE

CAD FILE	2010998.001C	DATE	14:03:2016
ORIGINAL SCALE	A3	CONTRACT No.	
N.T.S.			
REF No.	-	ISSUE	-
DWG No.	2010998	.001	C



BSP CABINET

DRY GEARPLATE

MANUAL SAMPLING POINT ENCLOSURE

FIBRE/RADIO LINK TO WATERCARE SERVICES CONTROL ROOM  
 FIBRE CONVERTER/RADIO  
 REFER [.XXX]

KINGFISHER PLUS RTU [.XXX]

FLOW TRANSMITTER 1  
 FIT-XXX  
 REFER [.XXX]

FLOW TRANSMITTER 2  
 FIT-XXX  
 REFER [.XXX]

PRESSURE 1 INDICATION  
 PI-XXX  
 REFER [.XXX]

PRESSURE 2 INDICATION  
 PI-XXX  
 REFER [.XXX]

PRESSURE 3 INDICATION  
 PI-XXX  
 REFER [.XXX]

TURBIDITY SENSOR & ANALYSER  
 AIT-XX2  
 REFER [.XXX]

CHLORINE/pH SENSOR & ANALYSER  
 AIT-XX3 & AIT-XX4  
 REFER [.XXX]

TO DRAIN

SAMPLE

TEMP

FE-XXX FLOWMETER

PRV-XXX REFER [.XXX]

LEVEL ALARM LSH-XXX REFER [.020]

FE-XXX FLOWMETER

SUMP PUMP PU-XXX REFER [.020]

FROM Wyyyy WATER MAIN NAME

TO SUPPLY NAME

TO SUPPLY NAME

BSP CHAMBER

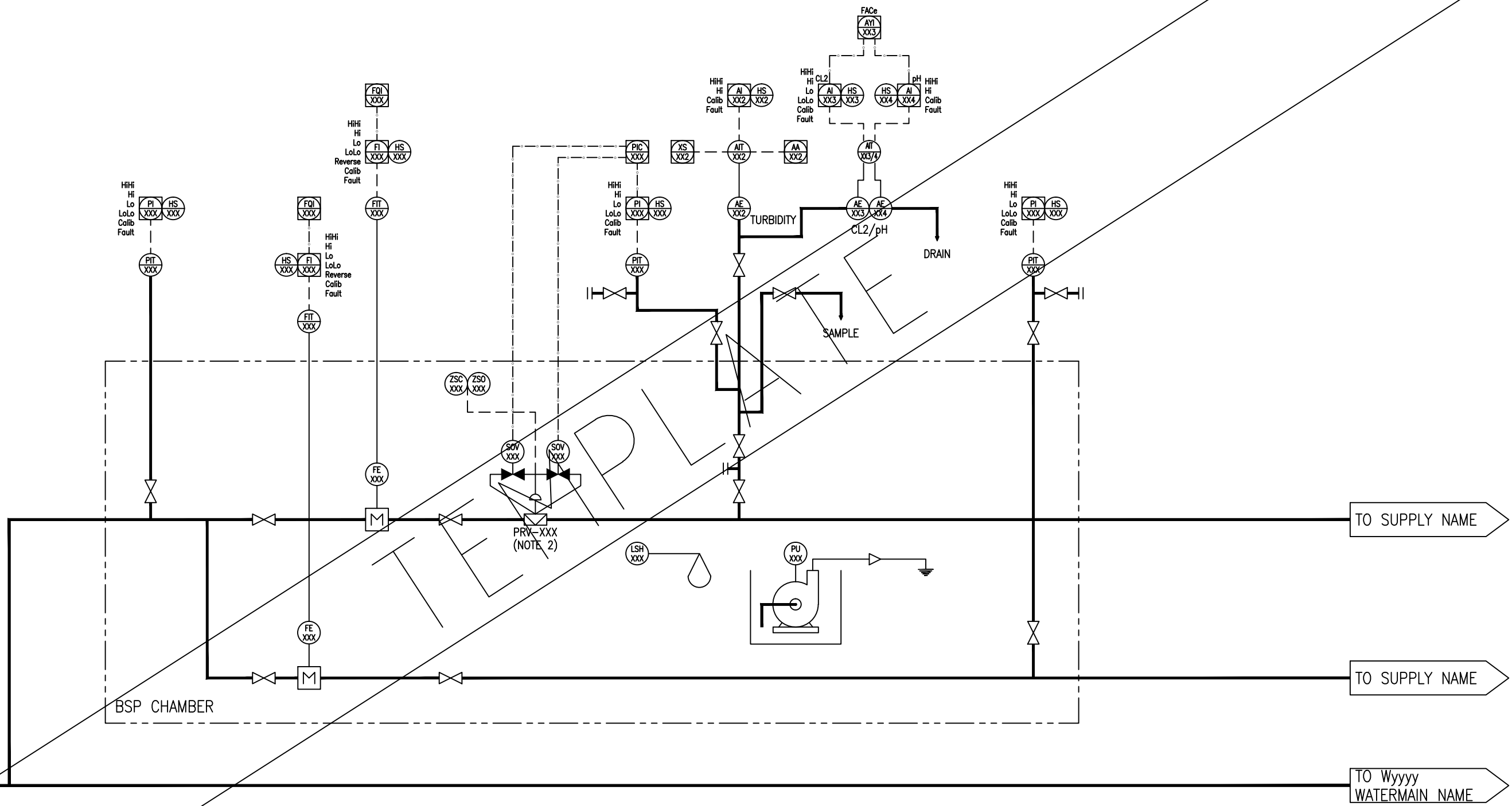
TO Wyyyy WATER MAIN NAME

DESIGNED		S Fagamalo		09/14		OPERATIONS		CAD FILE 2010998.002		DATE 16/09/14	
DES. CHECKED		D Ibrahim		09/14		INFRASTRUCTURE		ORIGINAL SCALE A3		CONTRACT No.	
DRAWN		R Matthews		09/14				N.T.S.			
DWG. CHECKED		S Fagamalo		09/14				REF No.		ISSUE	
PROJECT LEADER								-		-	
INFRAS'T'R APP'D								DWG No.		-	
-		09/14		ISSUED FOR CONSTRUCTION		R.M. D.I.		2010998		.002	
ISSUE		DATE		AMENDMENT		BY APPD.					



BSP STANDARD DRAWING  
 CONTROL SYSTEM  
 OVERVIEW SCHEMATIC

CAD FILE 2010998.002		DATE 16/09/14	
ORIGINAL SCALE A3		CONTRACT No.	
N.T.S.			
REF No.		ISSUE	
-		-	
DWG No.		-	
2010998		.002	



**NOTES:**

- EQUIPMENT NUMBERING (XXX IN ABOVE TAGS) IS BASED ON THE FOLLOWING CONVENTION:  
 XX = REPRESENTS THE BSP SUB LOCATION CODE. EG. 01 FOR THE FIRST BSP ON THAT PARTICULAR WATERMAIN.  
 X = SEQUENTIAL NUMBER (STARTING FROM 1 FOR EACH EQUIPMENT TYPE).
- SOLENOID OPERATION IS TO BE CONFIRMED DURING DESIGN AND SHOWN ON DRAWING. I.E. NORMALLY CLOSED, NORMALLY OPEN.

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER				
INFRASTR APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

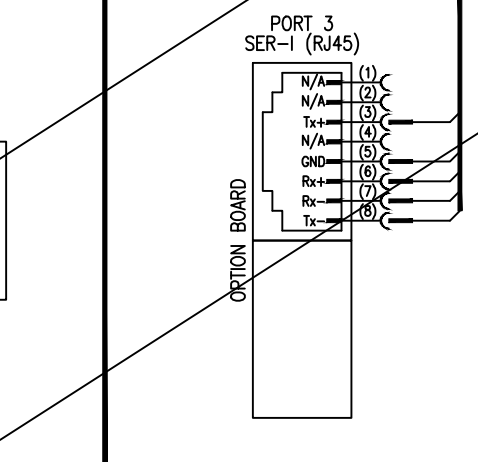
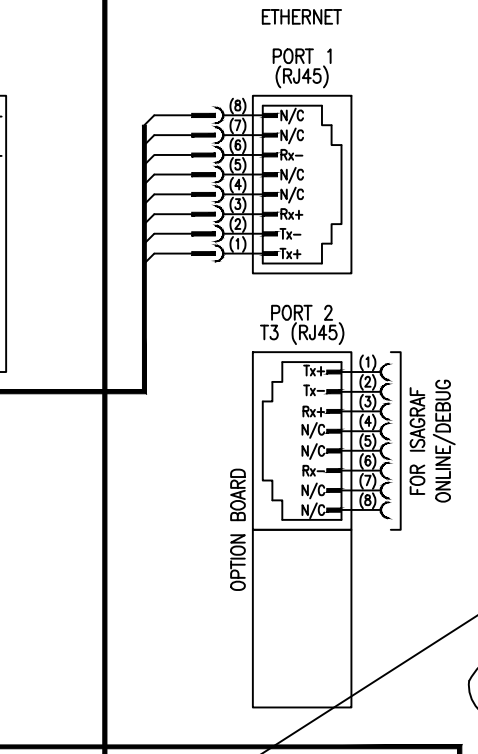
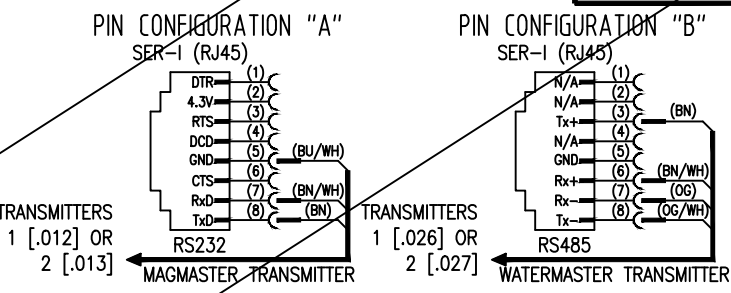
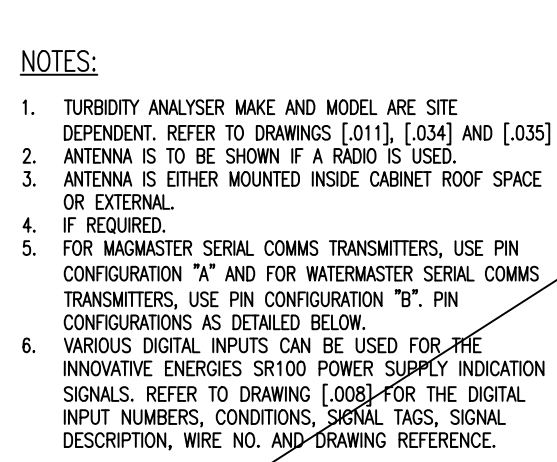
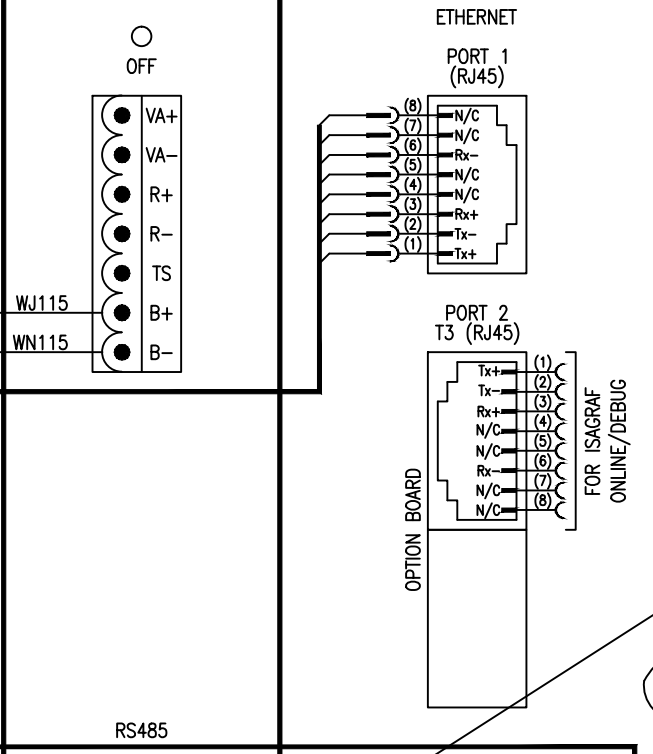
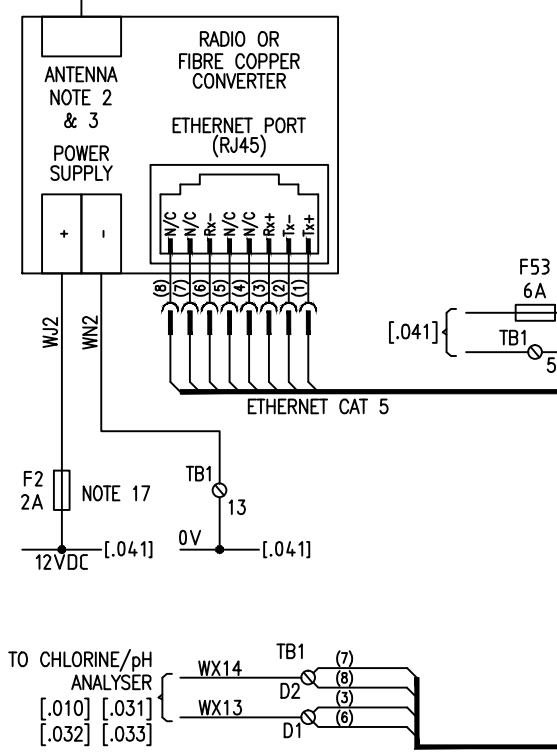
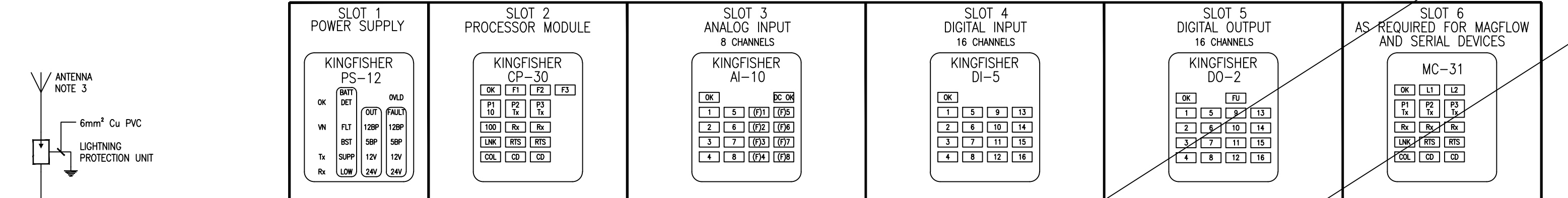
OPERATIONS

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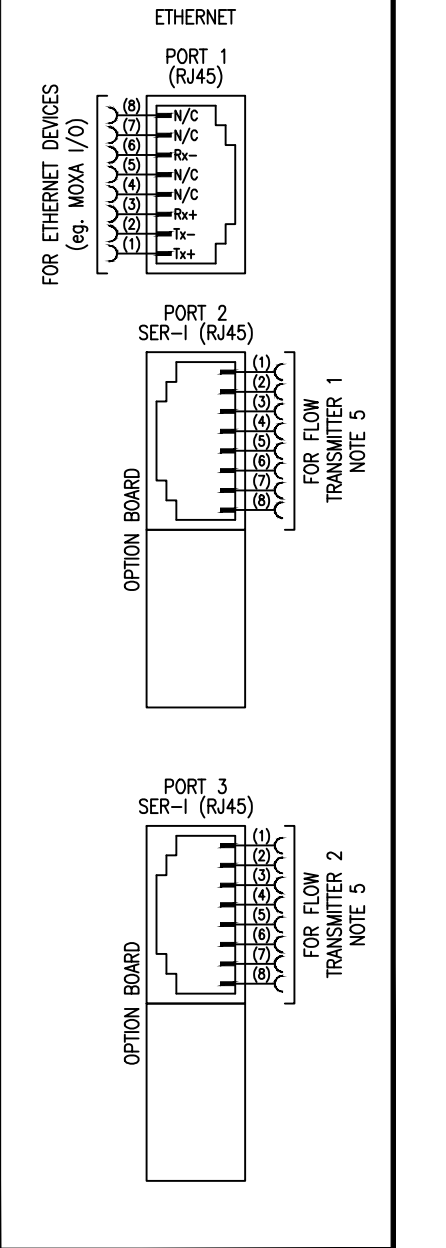
INFRASTRUCTURE

BSP STANDARD DRAWING  
 CONTROL SYSTEM  
 PIPING AND INSTRUMENTATION DIAGRAM

CAD FILE	2010998.003	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
	N.T.S.		
REF No.	-	ISSUE	-
DWG No.	2010998	.003	-

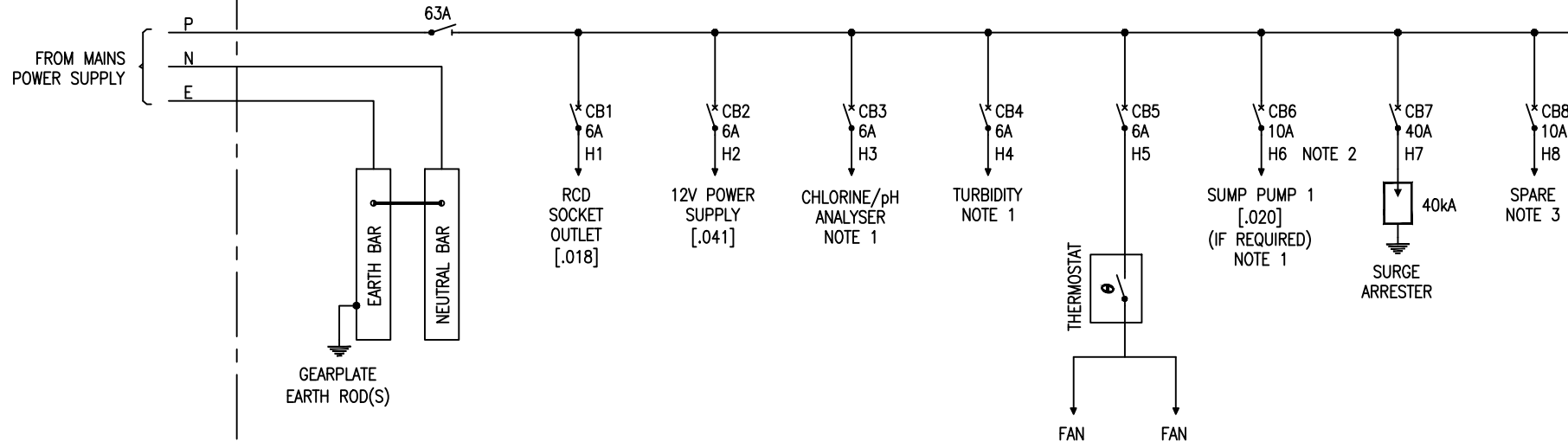


WIRE NO.	DWG NO.	TAG DESCRIPTION	TERMINALS	WIRE NO.	DWG NO.	TAG DESCRIPTION	TERMINALS
WS1	NOTE 1	AI-XX2 TURBIDITY	0301+	1	WL1	.008	HS-XX3 CHLORINE CALIBRATION
WS1A	NOTE 1	AI-XX2 TURBIDITY	0301-	2	WL2	.008	HS-XX4 pH CALIBRATION
WS2B	NOTE 15	PI-XXX PRESSURE 1	0302+	3	WL3	.008	HS-XX2 TURBIDITY CALIBRATION
WN106	NOTE 15	PI-XXX PRESSURE 1	0302-	4	WL4	.009	AA-XX2 TURBIDITY FAIL
WS3B	NOTE 15	PI-XXX PRESSURE 2	0303+	5	WL5	.009	XS-XX2 WATER QUALITY INSTALLED
WN107	NOTE 15	PI-XXX PRESSURE 2	0303-	6	WL6	.008	ZSO-XX1 DOOR OPEN
WS4	.023	FI-XXX TURBOWERK FLOW	0304+	7	WL7	.008	HS-XX6 PRESSURE 1 CALIBRATION
WS4A	.023	FI-XXX TURBOWERK FLOW	0304-	8	WL8	.008	HS-XX7 PRESSURE 2 CALIBRATION
WJ100	.007	+24V DC OUT	+24V DC OUT	9	WJ3	.009	+12V DC SUPPLY
WN100	.007	OV COMMON	OV/COM	10	WN101	.008	OV COMMON
WS5B	NOTE 15	PI-XXX PRESSURE 3	0305+	11	WL9	.008	HS-XX1 FLOW 1 CALIBRATION
WN109	NOTE 15	PI-XXX PRESSURE 3	0305-	12	WL10	.024	FQI-XXX FLOW 1 PULSE
WS6	.028	FI-XXX WATERMASTER FLOW 1	0306+	13	WL11	.024	FQI-XXX-DIR FLOW 1 DIRECTION
WS6A	.028	FI-XXX WATERMASTER FLOW 1	0306-	14	WL12	.008	HS-XX5 FLOW 2 CALIBRATION
WS7	.029	FI-XXX WATERMASTER FLOW 2	0307+	15	WL13	.025	FQI-XXX FLOW 2 PULSE
WS7A	.029	FI-XXX WATERMASTER FLOW 2	0307-	16	WL14	.025	FQI-XXX-DIR FLOW 2 DIRECTION
	.007	SPARE	0308+	17	WL15	.008	HS-XX8 PRESSURE 3 CALIBRATION
	.007	SPARE	0308-	18	WL16	.020	LSH-XXX SUMP LEVEL HIGH
WJ100	.007	+24V DC OUT	+24V DC OUT	19	WJ3	.009	+12V DC SUPPLY
WN100	.007	OV COMMON	OV/COM	20	WN101	.008	OV COMMON



- TURBIDITY ANALYSER MAKE AND MODEL ARE SITE DEPENDENT. REFER TO DRAWINGS [.011], [.034] AND [.035]
- ANTENNA IS TO BE SHOWN IF A RADIO IS USED.
- ANTENNA IS EITHER SHOWN INSIDE CABINET ROOF SPACE OR EXTERNAL.
- IF REQUIRED.
- FOR MAGMASTER SERIAL COMMS TRANSMITTERS, USE PIN CONFIGURATION "A" AND FOR WATERMASTER SERIAL COMMS TRANSMITTERS, USE PIN CONFIGURATION "B". PIN CONFIGURATIONS AS DETAILED BELOW.
- VARIOUS DIGITAL INPUTS CAN BE USED FOR THE INNOVATIVE ENERGIES SR100 POWER SUPPLY INDICATION SIGNALS. REFER TO DRAWING [.008] FOR THE DIGITAL INPUT NUMBERS, CONDITIONS, SIGNAL TAGS, SIGNAL DESCRIPTION, WIRE NO. AND DRAWING REFERENCE.
- THIS DIGITAL INPUT IS TO BE USED WHEN THE TURBOWERK FLOWMETER IS USED. "FQI-XXX TURBOWERK REVERSE DIRECTION" IS THE SIGNAL TAG AND ASSOCIATED DESCRIPTION THAT ARE TO BE USED FOR THIS PARTICULAR INSTRUMENT.
- THIS DIGITAL INPUT IS TO BE USED WHEN A SECOND SUMP PUMP AND LEVEL SWITCH IS USED. "LSH-XXX SUMP LEVEL 2 HIGH" IS THE SIGNAL TAG AND ASSOCIATED DESCRIPTION THAT ARE TO BE USED FOR THIS PARTICULAR INSTRUMENT.
- THIS DIGITAL INPUT IS TO BE USED WHEN THE SUMP PUMP MCB AUXILIARY CONTACT IS INSTALLED AND USED. "CB-XXX SUMP CIRCUIT BREAKER TRIPPED" IS THE SIGNAL TAG AND ASSOCIATED DESCRIPTION THAT ARE TO BE USED FOR THIS PARTICULAR EQUIPMENT.
- ALL THE NOTES THAT ARE DETAILED IN THIS DRAWING ARE TO PROVIDE GUIDANCE DURING DESIGN. HENCE, NOTES THAT ARE NOT REQUIRED SHOULD BE REMOVED FROM THE SITE SPECIFIC RTU DRAWING.
- THIS DIGITAL INPUT IS TO BE USED FOR A PRESSURE CONTROL VALVE OPENED STATUS INDICATION WHEN A KENT FLOWMETER IS NOT INSTALLED ON SITE. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- THIS DIGITAL INPUT IS TO BE USED FOR A PRESSURE CONTROL VALVE CLOSED STATUS INDICATION WHEN A KENT FLOWMETER AND A TURBOWERK FLOWMETER ARE NOT INSTALLED ON SITE. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- THIS DIGITAL INPUT IS TO BE USED FOR A PRESSURE CONTROL VALVE 2 OPENED STATUS INDICATION WHEN A FLOWMETER 2 IS NOT INSTALLED ON SITE. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- THIS DIGITAL INPUT IS TO BE USED FOR A PRESSURE CONTROL VALVE 2 CLOSED STATUS INDICATION WHEN A TURBOWERK FLOWMETER AND PRESSURE 3 TRANSDUCER ARE NOT INSTALLED ON SITE, AND THIS PARTICULAR INPUT IS NOT USED FOR THE POWER SUPPLY BATTERY VOLTAGE INDICATION. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- PRESSURE TRANSMITTER MAKE AND MODEL ARE SITE DEPENDENT. REFER TO THE SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- THE RADIO MODEL SHOULD BE DETAILED ON THE SITE SPECIFIC KINGFISHER RTU DIAGRAM.
- THE FUSE SIZE SHOWN IS BASED ON THE USE OF A TRIO ER45E RADIO. FOR A TRIO QR450 H RADIO A 4A FUSE SHALL BE USED.

DRY GEARPLATE



NOTES:

- EQUIPMENT IS SITE DEPENDENT. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- THE USE OF AN MCB THAT IS COMPLETE WITH A FAULT INDICATION AUXILIARY CONTACT FOR THE SUMP PUMP IS SITE DEPENDENT. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- THE USE OF THIS MCB FOR A SECOND SUMP PUMP OR SAMPLING PUMP IS SITE DEPENDENT. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14
DES. CHECKED	D Ibrahim	09/14
DRAWN	R Matthews	09/14
DWG. CHECKED	S Fagomalo	09/14
PROJECT LEADER		
INFRASTR APP'D		

OPERATIONS
INFRASTRUCTURE

**Watercare**

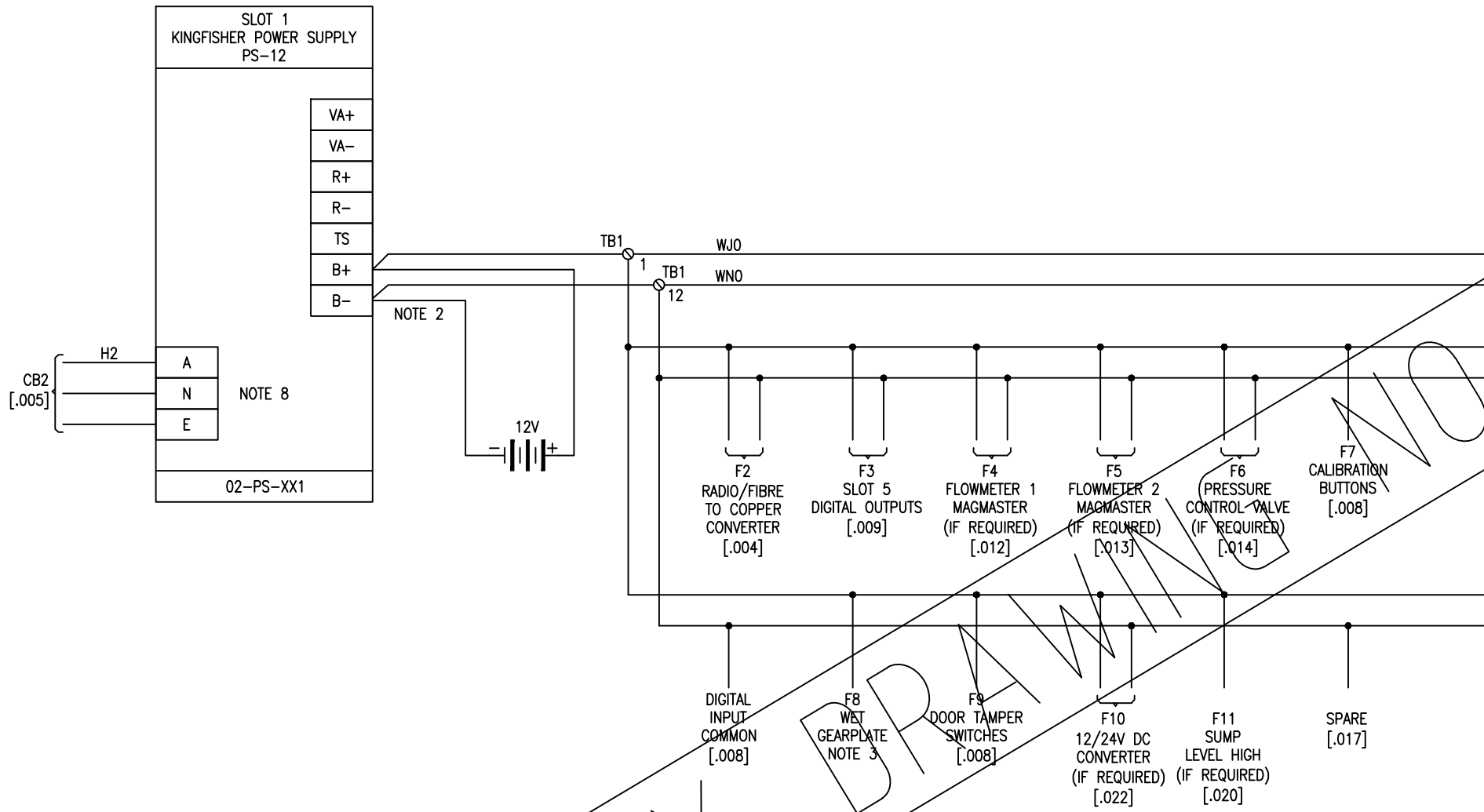
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BSP STANDARD DRAWING  
CONTROL SYSTEM  
AC DISTRIBUTION SCHEMATIC

CAD FILE	2010998.005A	DATE	20/04/15
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.005	A

ISSUE	DATE	AMENDMENT	BY	APPD.
A	04/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

2010998.041



**NOTES:**

1. THE PS-12 ENTERS LOW BATTERY SHUTDOWN WHEN BATTERY VOLTAGE DROPS BELOW 10.0V. ALL OUTPUTS ARE SWITCHED OFF FOR BATTERY PRESERVATION, INCLUDING BACKPLANE POWER. THIS EFFECTIVELY MEANS THAT THE RTU WILL SHUT DOWN.
2. USE OF THIS SUPPLY ON FLAT OR FULLY DISCHARGED BATTERIES MAY CAUSE DAMAGE TO THE MODULE.
3. BACKPLANE POWER WILL BE RESTORED WHEN +12V\_RAIL VOLTAGE RISES ABOVE 12.4V (IF NO MAINS PRESENT) OR 11.5V (IF MAINS PRESENT).
4. IF OUTPUT POWER EXCEEDS THE MAXIMUM SPECIFIED POWER, THE SMPS WILL ENTER AN OVERLOAD MODE. THE OUTPUT VOLTAGE WILL BE RAMPED DOWN AND, IF OVERLOAD STILL EXISTS WHEN IT REACHES 10.0V (MINIMUM OUTPUT VOLTAGE), IT WILL SWITCH ALL OUTPUTS OFF, SIMILAR TO LOW BATTERY SHUTDOWN. PS-12 WILL ATTEMPT TO SWITCH THE BACKPLANE ON AGAIN REGULARLY. RTU POWER WILL BE RESTORED WHEN THE OVERLOAD CONDITION IS REMOVED.
5. BATTERY; 12 VOLT SEALED LEAD-ACID. 26AH MAX.  
NOTE: BATTERIES EXCEEDING 26AH CAN BE USED. HOWEVER, FULL CHARGING AND ESTIMATED BATTERY CAPACITY VALUE CANNOT BE GUARANTEED.
6. PS-12 MAXIMUM POWER OUTPUT. 4.5 AMPS
7. MAXIMUM CONNECTED LOAD. 2.25 AMPS @ 12 VOLTS.
8. PS-12 HAS INTERNAL 230V SUPPLY FUSE SLOW BLOW 1.6A.
9. PS-12 HAS INTERNAL BATTERY FUSE 4A POLY FUSE (SELF RESETTING).
10. EQUIPMENT TYPE IS SITE DEPENDENT. REFER TO SITE SPECIFIC DRAWING SCHEDULE IN [.001].

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER				
INFRASTR APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

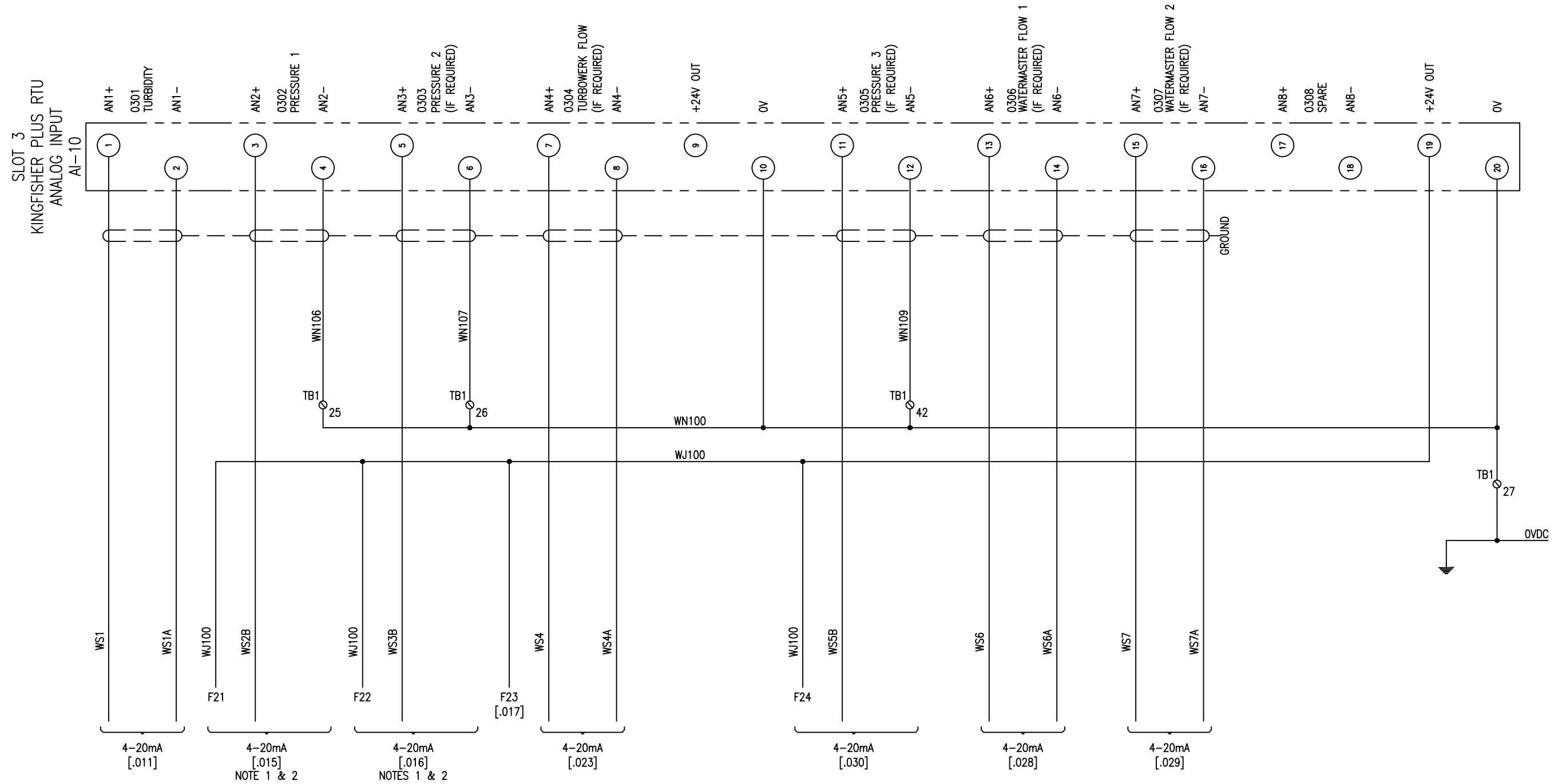
OPERATIONS

INFRASTRUCTURE

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BSP STANDARD DRAWING  
CONTROL SYSTEM  
PS-12 12V DC DISTRIBUTION SCHEMATIC

CAD FILE	2010998.006	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.006	-



**NOTES:**  
 1. PRESSURE TRANSMITTER MAKE AND MODEL ARE SITE DEPENDENT. REFER TO THE SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].  
 2. THE WIRING CONNECTIONS FOR THE ROSEMOUNT UNITS IN THIS DRAWING. FOR THE WIRING CONNECTIONS OF THE IFM UNITS, REFER TO DRAWING .047-.049.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER				
INFRASTR APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
B	10/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
A	06/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

OPERATIONS

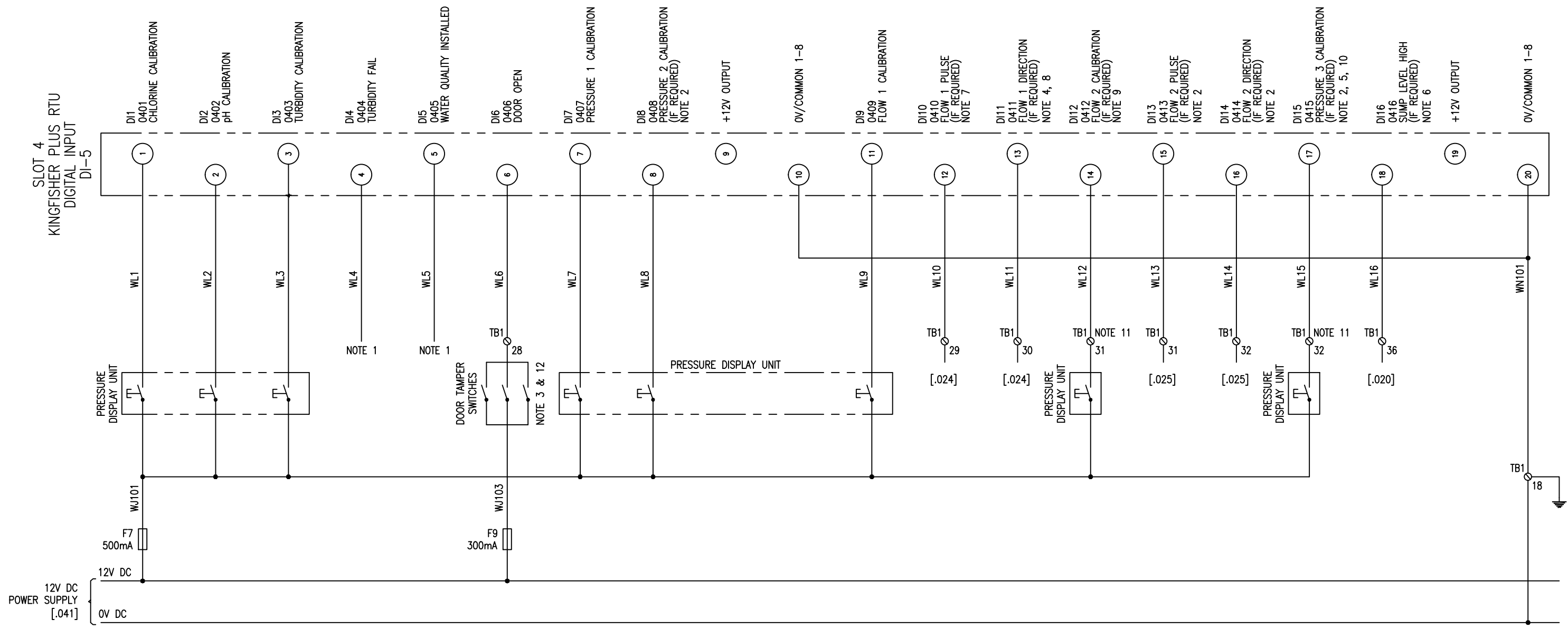
**Watercare**

INFRASTRUCTURE

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BSP STANDARD DRAWING  
 CONTROL SYSTEM  
 SLOT 3 ANALOG INPUTS SCHEMATIC

CAD FILE	2010998.007	DATE	12/10/15
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.007	B



**NOTES:**

- EQUIPMENT TYPE IS SITE DEPENDENT. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- THE FOLLOWING DIGITAL INPUTS COULD BE USED FOR THE INNOVATIVE ENERGIES SR100 POWER SUPPLY INDICATION SIGNALS.

DI No.	SIGNAL TAG	DESCRIPTION	WIRE No.	DWG No.	CONDITION
13	EAL-XX1	PS1 MAINS FAIL	WL13	[.042]	WHEN KENT FLOWMETER 2 IS NOT INSTALLED ON SITE.
8	EAL-XX1	PS1 MAINS FAIL	WL8	[.042]	WHEN KENT FLOWMETER IS INSTALLED ON SITE, AND NO PRESSURE 2 AND 3 ARE INSTALLED ON SITE.
11	EAL-XX1	PS1 MAINS FAIL	WL11	[.042]	WHEN TURBOWERK FLOWMETER AND PRESSURE 3 ARE NOT INSTALLED ON SITE.

DI No.	SIGNAL TAG	DESCRIPTION	WIRE No.	DWG No.	CONDITION
14	EAL-XX2	PS1 BATTERY VOLTAGE LOW	WL14	[.042]	WHEN KENT FLOWMETER 2 IS NOT INSTALLED ON SITE.
15	EAL-XX2	PS1 BATTERY VOLTAGE LOW	WL15	[.042]	WHEN KENT FLOWMETER IS INSTALLED ON SITE BUT PRESSURE 2, PRESSURE 3, AND PRESSURE CONTROL VALVE 2 STATUS INDICATION ARE NOT INSTALLED ON SITE.
15	EAL-XX2	PS1 BATTERY VOLTAGE LOW	WL15	[.042]	WHEN TURBOWERK FLOWMETER, PRESSURE 3 AND PRESSURE CONTROL VALVE 2 STATUS INDICATION ARE NOT INSTALLED ON SITE.

REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].

- THIRD DOOR SWITCH IS ONLY REQUIRED FOR 3 BAY BSP CABINETS.
- THIS DIGITAL INPUT IS TO BE USED FOR A TURBOWERK FLOWMETER WHEN A KENT FLOWMETER IS NOT INSTALLED ON SITE. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- THIS DIGITAL INPUT IS TO BE USED FOR A SECOND SUMP HIGH LEVEL SWITCH WHEN A PRESSURE 3 TRANSDUCER IS NOT INSTALLED ON SITE. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- THIS DIGITAL INPUT IS TO BE USED FOR A SUMP PUMP AUXILIARY CONTACT WHEN A SUMP HIGH LEVEL SWITCH IS NOT INSTALLED ON SITE. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- THIS DIGITAL INPUT IS TO BE USED FOR A PRESSURE CONTROL VALVE OPENED STATUS INDICATION WHEN A KENT FLOWMETER IS NOT INSTALLED ON SITE. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- THIS DIGITAL INPUT IS TO BE USED FOR A PRESSURE CONTROL VALVE CLOSED STATUS INDICATION WHEN A KENT FLOWMETER AND A TURBOWERK FLOWMETER ARE NOT INSTALLED ON SITE. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- THIS DIGITAL INPUT IS TO BE USED FOR A PRESSURE CONTROL VALVE 2 OPENED STATUS INDICATION WHEN A FLOWMETER 2 IS NOT INSTALLED ON SITE. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- THIS DIGITAL INPUT IS TO BE USED FOR A PRESSURE CONTROL VALVE 2 CLOSED STATUS INDICATION WHEN A TURBOWERK FLOWMETER AND PRESSURE 3 TRANSDUCER ARE NOT INSTALLED ON SITE, AND THIS PARTICULAR INPUT IS NOT USED FOR THE POWER SUPPLY BATTERY VOLTAGE INDICATION. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- TERMINALS SHALL NOT BE USED WHEN THE PRESSURE DISPLAY UNIT PUSH BUTTONS ARE CONNECTED TO THESE PARTICULAR INPUTS. TERMINALS SHALL BE USED FOR THE PRESSURE CONTROL VALVE 2 STATUS INDICATION WHEN A KENT FLOWMETER AND A SECOND SUMP HIGH LEVEL SWITCH ARE NOT INSTALLED ON SITE.
- TYPE : PUSHBUTTON SWITCH  
MAKE : EATON  
MODEL : AWH30E-NC

FACILITY CODE	AREA
-	93

ISSUE	DATE	AMENDMENT	BY	APPD.
B	10/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
A	06/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

DESIGNED	DES. CHECKED	DRAWN	DWG. CHECKED	PROJECT LEADER	INFRASTR'R APP'D
S Fagomalo	D Ibrahim	R Matthews	S Fagomalo		

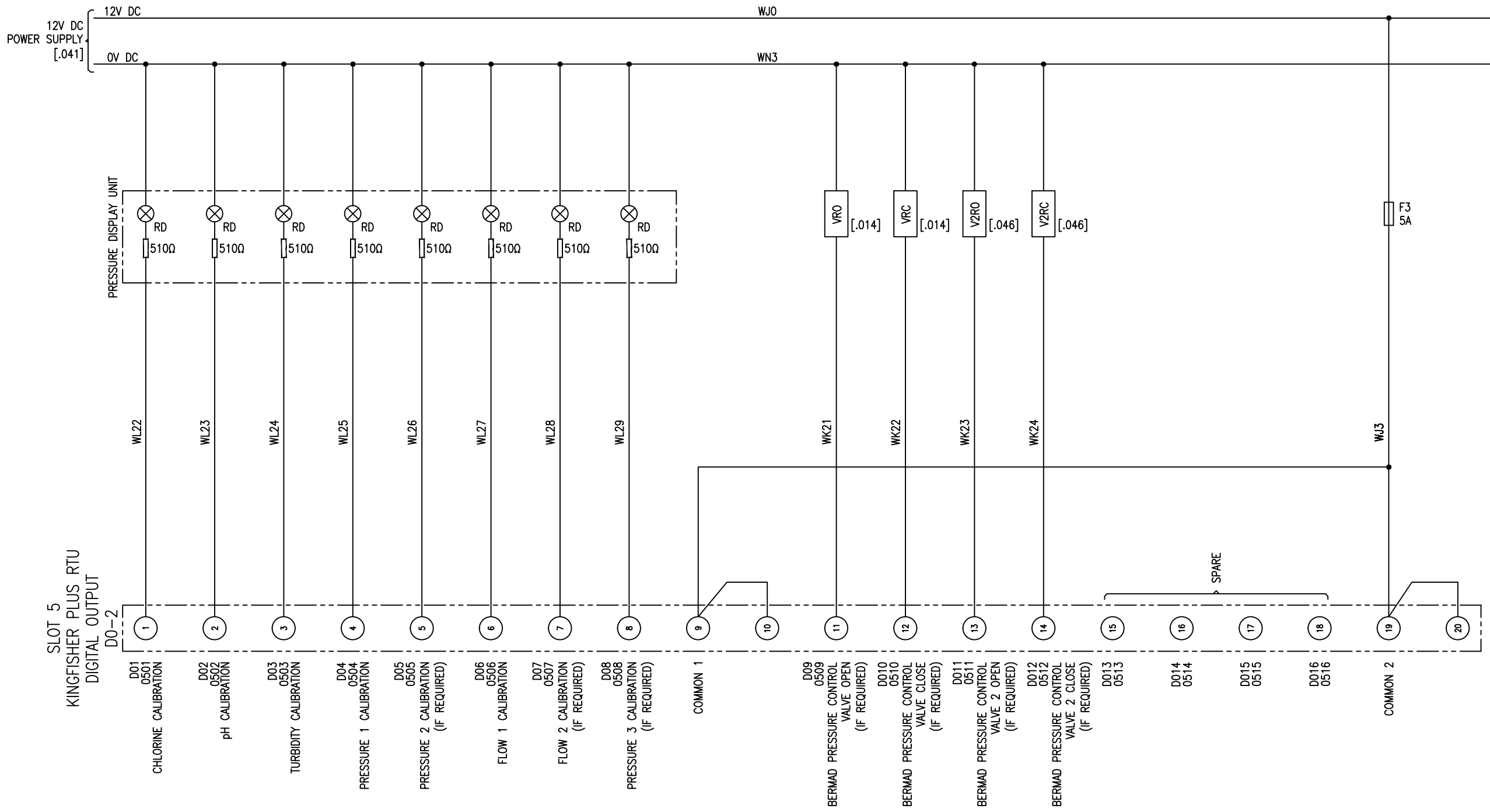


BSP STANDARD DRAWING  
CONTROL SYSTEM  
SLOT 4 DIGITAL INPUTS SCHEMATIC

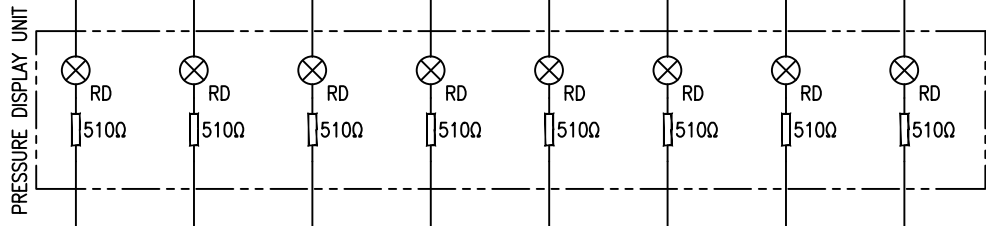
CAD FILE	2010998.008	DATE	12/10/15
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.008	B

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SLOT 5  
KINGFISHER PLUS RTU  
DIGITAL OUTPUT



FACILITY CODE	AREA
-	93

DESIGNED	S Fagamalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagamalo	09/14		
PROJECT LEADER	A.S.	D.I.		
INFRASTR APP'D	R.M.	D.I.		
BY	AMPPD.			

OPERATIONS

INFRASTRUCTURE

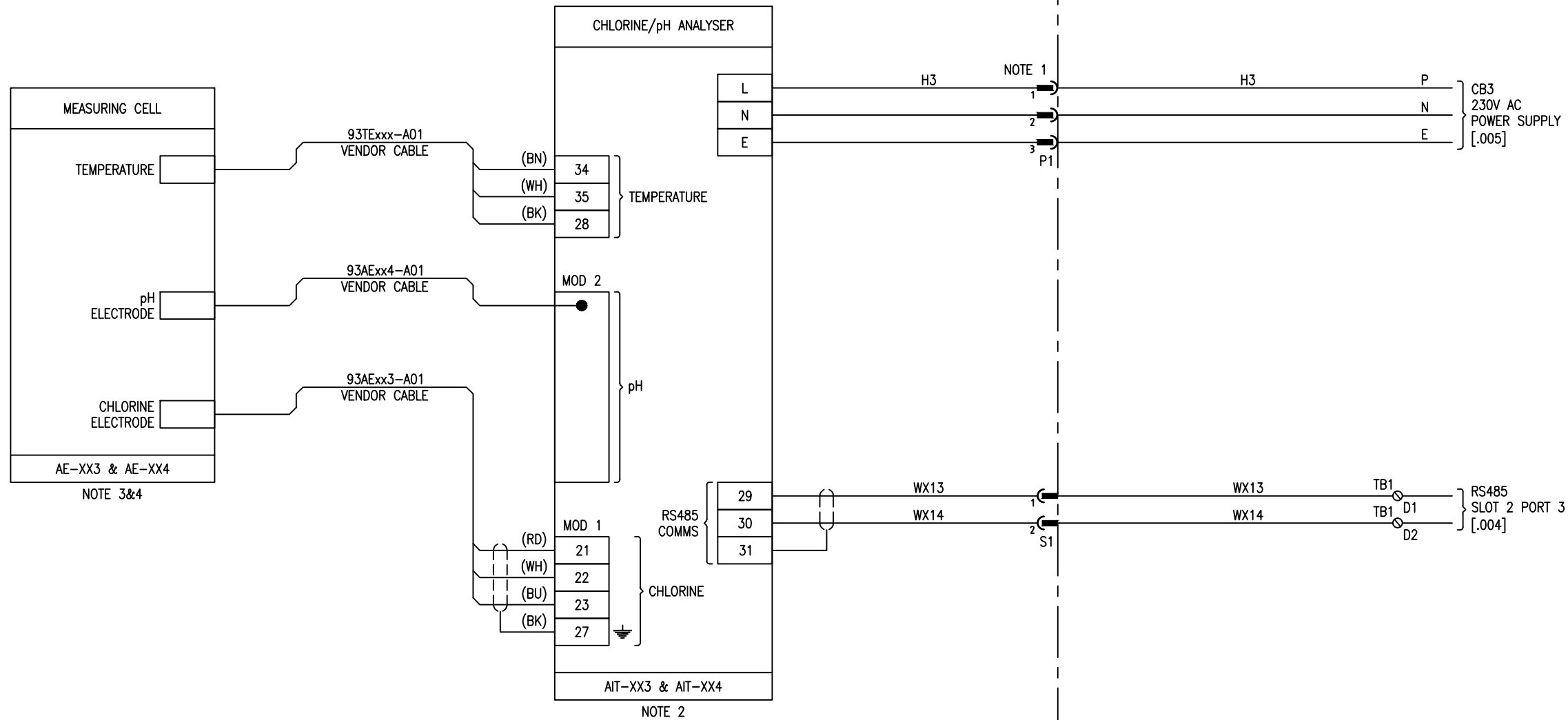
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BSP STANDARD DRAWING  
CONTROL SYSTEM  
SLOT 5 DIGITAL OUTPUTS SCHEMATIC

CAD FILE	2010998.009A	DATE	09/06/15
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.009	A

WET GEARPLATE

DRY GEARPLATE



- NOTES:
- REFER TO DRAWING [.017] FOR PLUG CONNECTIONS.
  - TYPE: CHLORINE/pH ANALYSER  
MAKE: SIEMENS W&T  
MODEL: DEPOLOX 3 + RESIDUAL ANALYSER
  - TYPE: MEASURING CELL  
MAKE: SIEMENS W&T  
MODEL: VARIASENS
  - THE CHLORINE AND pH PROBES SHALL NOT BE FITTED. THESE PROBES WILL BE FITTED BY WSL DURING COMMISSIONING.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER	A.S.	D.I.		
INFRASTR APP'D	R.M.	D.I.		
ISSUE	DATE	AMENDMENT	BY	APPD.
A	11/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

OPERATIONS

INFRASTRUCTURE

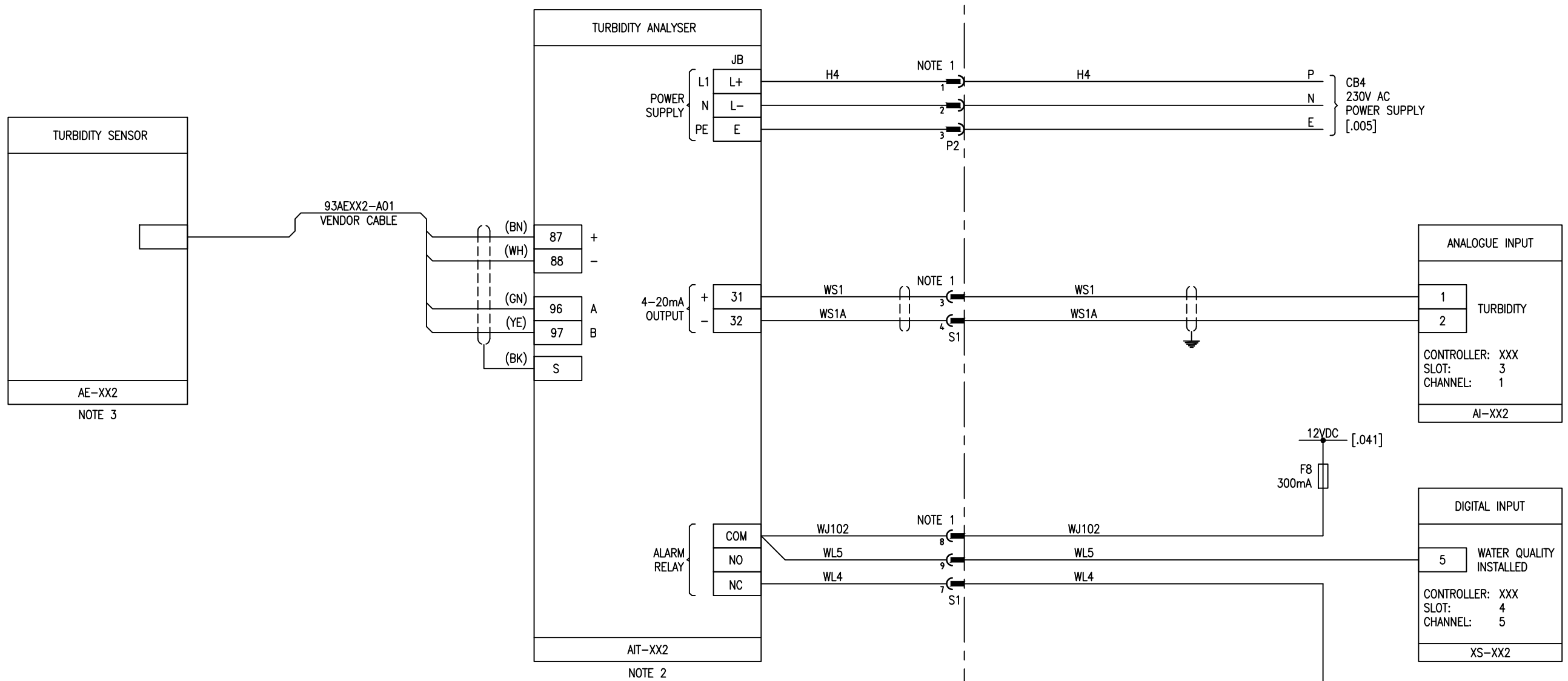
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BSP STANDARD DRAWING  
CONTROL SYSTEM  
AIT-XX3 & AIT-XX4 DEPOLOX 3 PLUS CL2/pH ANALYSER LOOP SCHEMATIC

CAD FILE	2010998.010	DATE	18/11/15
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.010	A

WET GEARPLATE

DRY GEARPLATE



- NOTES:
- REFER TO DRAWING [.017] FOR PLUG CONNECTIONS.
  - TYPE: TURBIDITY ANALYSER  
MAKE: ENDRESS & HAUSER  
MODEL: CUM253-TU0010
  - TYPE: TURBIDITY SENSOR  
MAKE: ENDRESS & HAUSER  
MODEL: CUS31-W2E

FACILITY CODE	AREA
-	93

DESIGNED	S Fagamalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagamalo	09/14		
PROJECT LEADER	A.S.	D.I.		
INFRASTR APP'D	R.M.	D.I.		
ISSUE	DATE	AMENDMENT	BY	APPD.
A	11/15	ISSUED FOR CONSTRUCTION - REVISED		
-	09/14	ISSUED FOR CONSTRUCTION		

OPERATIONS

INFRASTRUCTURE

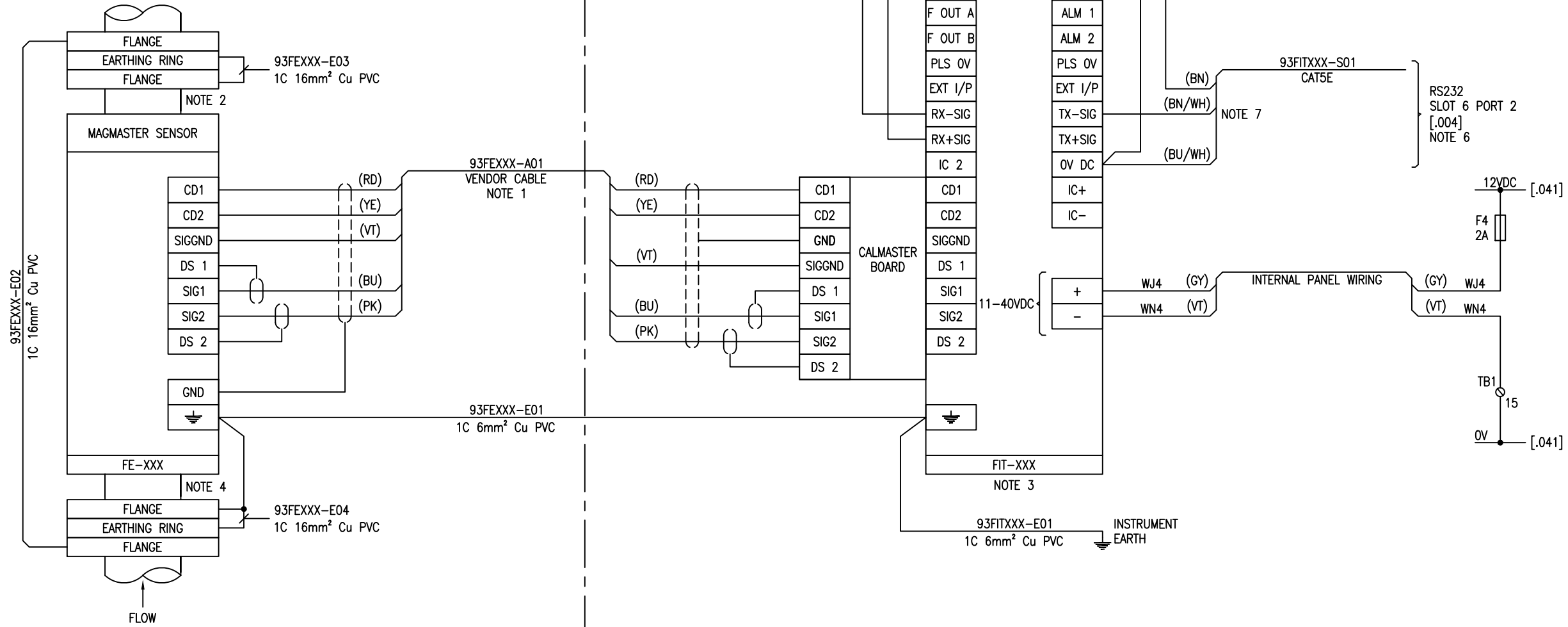
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BSP STANDARD DRAWING  
CONTROL SYSTEM  
AIT-XX2 CUM253 TURBIDITY ANALYSER LOOP SCHEMATIC

CAD FILE	2010998.011	DATE	18/11/15
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.011	A

FIELD  
NOTE 5

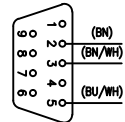
DRY GEARPLATE



NOTES:

- CABLE SUPPLIED AND CONNECTED BY MANUFACTURER. DO NOT CUT.
- FOR EARTHING RING AND INSTALLATION DETAIL REFER TO DRAWING 2001979.020 OR 2001979.071 - DEPENDENT ON INSTALLATION.
- TYPE - FLOW TRANSMITTER  
MAKE - ABB  
MODEL - MAGMASTER
- TYPE - FLOWMETER SENSOR  
MAKE - ABB  
MODEL - MAGMASTER MAGFLOW SENSOR
- LOCATION AS DETAILED WITHIN THE SITE SPECIFIC CONTROL SYSTEM OVERVIEW [.002].
- PIN CONFIGURATION AT THE RTU PROCESSOR/COMMUNICATION MODULE REFER TO DRAWING [.004].
- ALTERNATIVE CONNECTIONS FOR MAGFLOW TRANSMITTER INSTALLED BEFORE 2005.

D9 CONNECTIONS ONLY



FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER	A.S.	D.I.		
INFRASTR APP'D	R.M.	D.I.		
ISSUE	DATE	AMENDMENT	BY	APPD.
A	11/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

OPERATIONS

**Watercare**

INFRASTRUCTURE

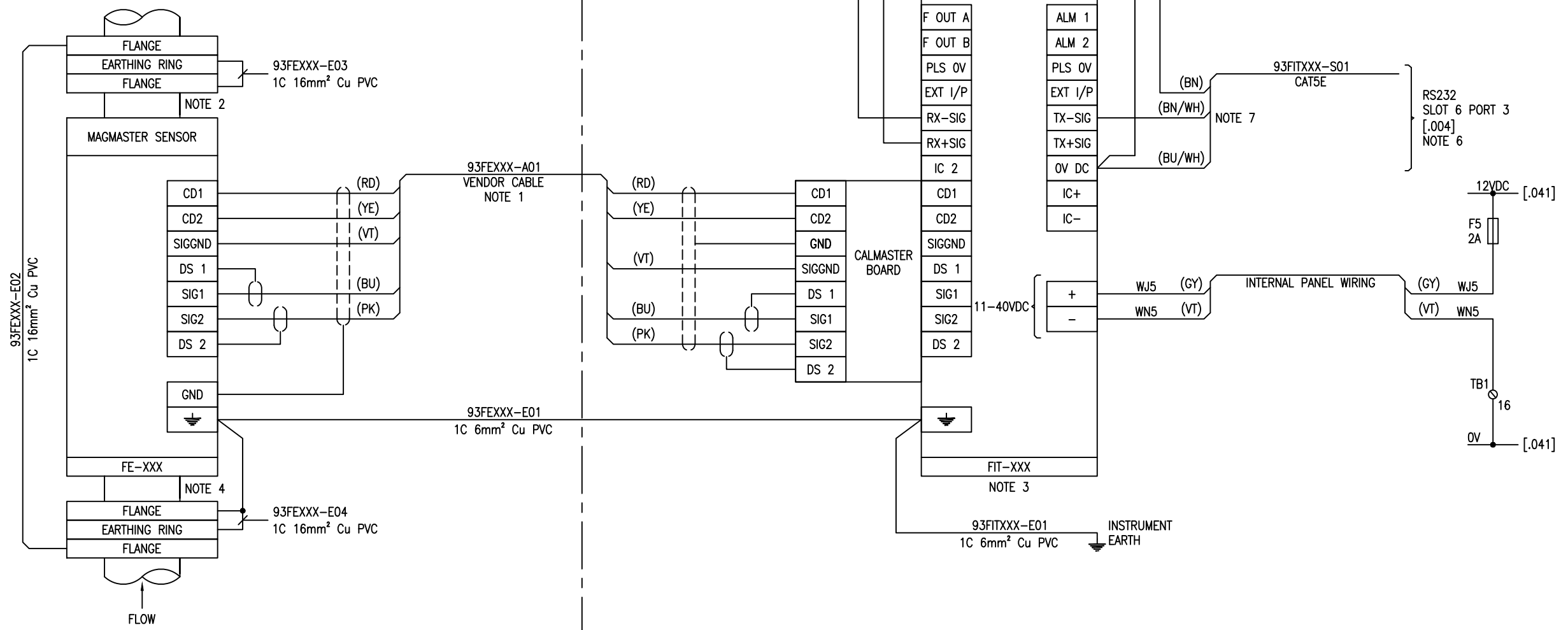
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BSP STANDARD DRAWING  
CONTROL SYSTEM  
FIT-XXX MAGMASTER FLOWMETER 1 LOOP SCHEMATIC

CAD FILE	2010998.012	DATE	18/11/15
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.012	A

FIELD  
NOTE 5

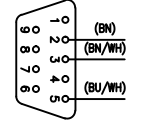
DRY GEARPLATE



NOTES:

1. CABLE SUPPLIED AND CONNECTED BY MANUFACTURER. DO NOT CUT.
2. FOR EARTHING RING AND INSTALLATION DETAIL REFER TO DRAWING 2001979.020 OR 2001979.071 - DEPENDENT ON INSTALLATION.
3. TYPE - FLOW TRANSMITTER  
MAKE - ABB  
MODEL - MAGMASTER
4. TYPE - FLOWMETER SENSOR  
MAKE - ABB  
MODEL - MAGMASTER MAGFLOW SENSOR
5. LOCATION AS DETAILED WITHIN THE SITE SPECIFIC CONTROL SYSTEM OVERVIEW [.002].
6. PIN CONFIGURATION AT THE RTU PROCESSOR/COMMUNICATION MODULE REFER TO DRAWING [.004].
7. ALTERNATIVE CONNECTIONS FOR MAGFLOW TRANSMITTER INSTALLED BEFORE 2005.

D9 CONNECTIONS ONLY



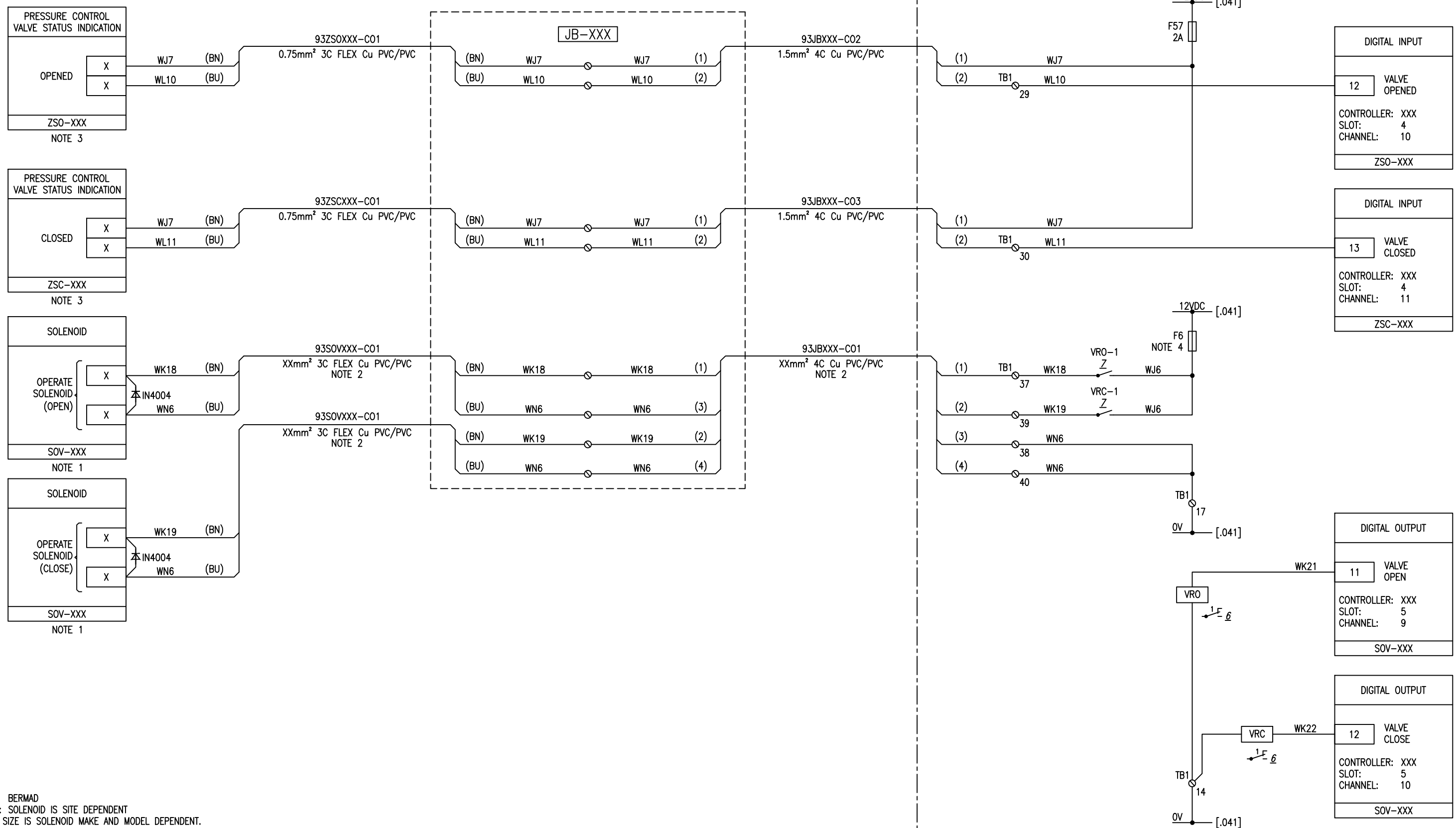
FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14	OPERATIONS	<p>COPYRIGHT - This drawing, the design concept, remain the exclusive property of Watercare Services Limited and may not be used without approval. Copyright reserved.</p>	CAD FILE	2010998.013	DATE	18/11/15
DES. CHECKED	D Ibrahim	09/14	INFRASTRUCTURE		ORIGINAL SCALE	A3	CONTRACT No.	-
DRAWN	R Matthews	09/14			REF No.	-	ISSUE	-
DWG. CHECKED	S Fagomalo	09/14		DWG No.	2010998	.013	A	
PROJECT LEADER	A.S.	D.I.		ISSUED FOR CONSTRUCTION - REVISED	A.15.	D.1.		
INFRASTR APP'D	R.M.	D.I.		ISSUED FOR CONSTRUCTION				
BY		APPD.		AMENDMENT				

BSP STANDARD DRAWING  
CONTROL SYSTEM  
FIT-XXX MAGMASTER FLOWMETER 2 LOOP SCHEMATIC

FIELD  
NOTE 5

DRY GEARPLATE



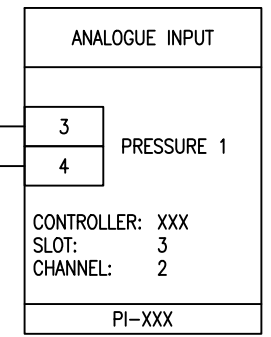
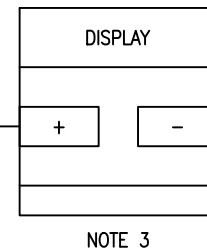
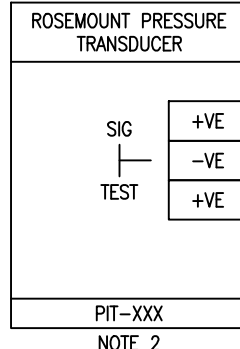
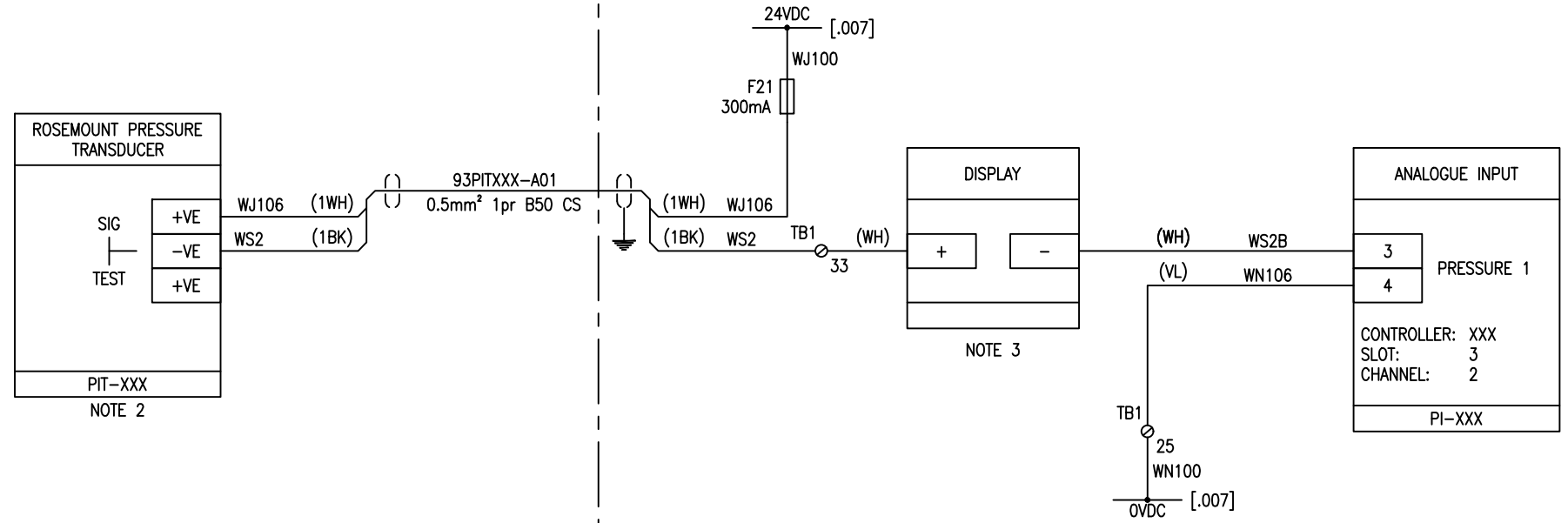
- NOTES:**
1. MAKE: BERMAD  
MODEL: SOLENOID IS SITE DEPENDENT
  2. CABLE SIZE IS SOLENOID MAKE AND MODEL DEPENDENT.
  3. DIGITAL INPUT STATUS INDICATIONS ARE SITE DEPENDENT. REFER TO SITE SPECIFIC RTU DRAWING [.004].
  4. FUSE SIZE IS SOLENOID DEPENDENT.
  5. LOCATION AS DETAILED WITHIN THE SITE SPECIFIC CONTROL SYSTEM OVERVIEW [.002].

FACILITY CODE	AREA
-	93

FLOWMETER CHAMBER

NOTE 1

DRY GEARPLATE



NOTES:

1. LOCATION AS DETAILED WITHIN THE SITE SPECIFIC CONTROL SYSTEM OVERVIEW [.002].
2. PRESSURE TRANSDUCER MODEL IS SITE DEPENDENT. MODEL IS EITHER 2088 OR 3015 SERIES.
3. DISPLAY SCALED TO 0-1500 kPA.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagamalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagamalo	09/14		
PROJECT LEADER				
INFRASTR APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

OPERATIONS

INFRASTRUCTURE

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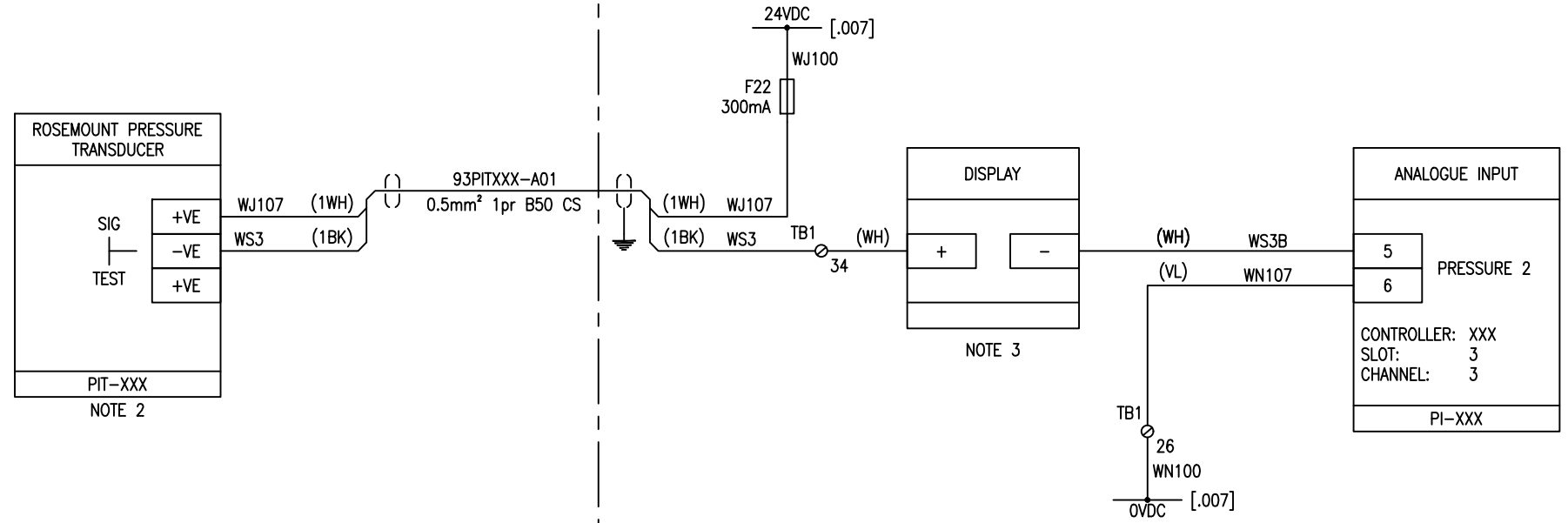
BSP STANDARD DRAWING  
CONTROL SYSTEM  
PIT-XXX PRESSURE TRANSDUCER 1 LOOP SCHEMATIC

CAD FILE	2010998.015	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.015	-

FLOWMETER CHAMBER

NOTE 1

DRY GEARPLATE



NOTES:

1. LOCATION AS DETAILED WITHIN THE SITE SPECIFIC CONTROL SYSTEM OVERVIEW [.002].
2. PRESSURE TRANSDUCER MODEL IS SITE DEPENDENT. MODEL IS EITHER 2088 OR 3015 SERIES.
3. DISPLAY SCALED TO 0-1500 kPA.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagamalo	09/14
DES. CHECKED	D Ibrahim	09/14
DRAWN	R Matthews	09/14
DWG. CHECKED	S Fagamalo	09/14
PROJECT LEADER		
INFRASTR'R APP'D		

OPERATIONS
INFRASTRUCTURE



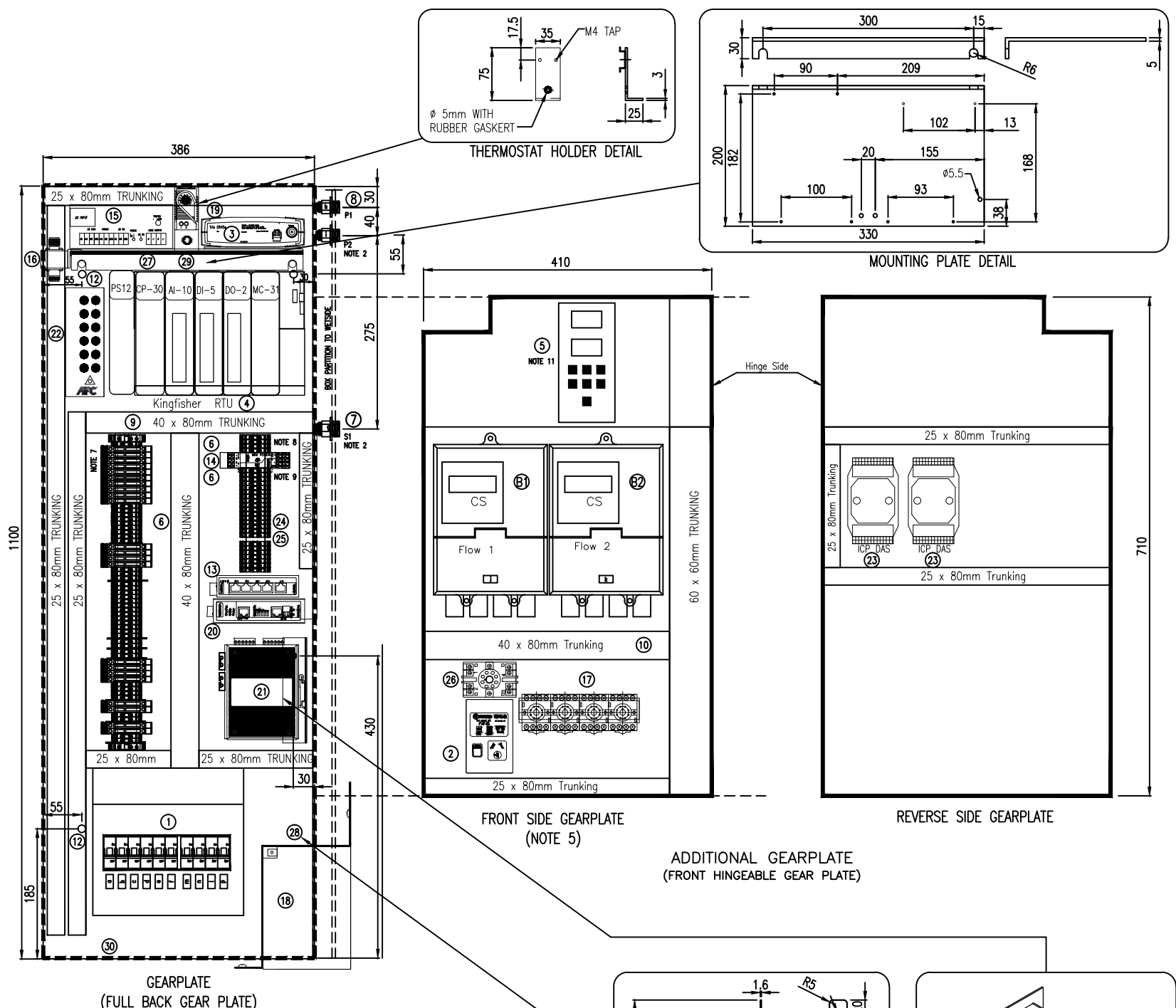
BSP STANDARD DRAWING  
CONTROL SYSTEM  
PIT-XXX PRESSURE TRANSDUCER 2 LOOP SCHEMATIC

CAD FILE	2010998.016	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.016	-

ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.





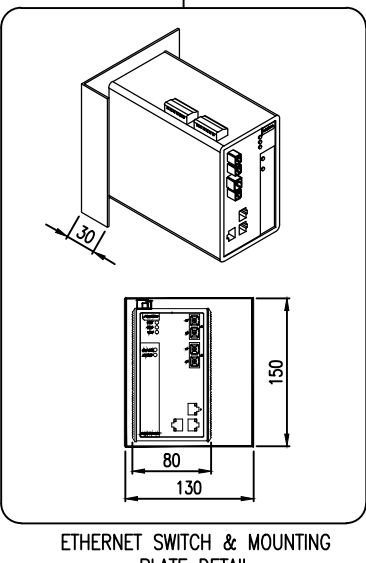
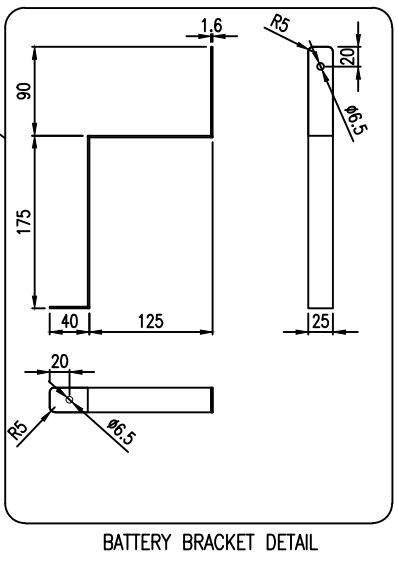


DRY GEARPLATE BILL OF MATERIALS				
ITEM No.	ITEM	MAKE	MODEL	No. OFF
1	230V AC DISTRIBUTION, COMPRISING MCB SWITCHBOARD	VYNCO	GE VCP10	1
	-ISOLATOR 63A	MERLIN GERIN	A9S66163	1
	-6A MCBS	MERLIN GERIN	A9F44106	5
	-40A MCBS	MERLIN GERIN	A9F44140	1
	-10A MCBS	MERLIN GERIN	A9F44110	AS REQUIRED
	-MCB AUXILIARY CONTACT (NOTE 4)	MERLIN GERIN	A9A26927	IF REQUIRED
	-COMB BUSBAR	MERLIN GERIN	A9XPH112	1
	-DIN RAIL			TO SUIT
	-EARTH & NEUTRAL BAR			1
1a	SURGE ARRESTER	SCHNEIDER	iPRD40	1
2	230V AC SOCKET OUTLET, COMPRISING			
	-SOCKET OUTLET	PDL	691 RCD	1
	-MOUNTING BLOCK	PDL	89DP	1
3	RADIO	TRIO	ER45e/QR450 H (NOTE 14)	IF REQUIRED
4	RTU, COMPRISING	KINGFISHER PLUS		1
	-MODULE RACK	KINGFISHER PLUS	BA-6	1
	-POWER SUPPLY MODULE	KINGFISHER PLUS	PS-12	1
	-PROCESSOR MODULE	KINGFISHER PLUS	CP-30	1
	-ANALOG INPUT MODULE	KINGFISHER PLUS	AI-10	1
	-DIGITAL INPUT MODULE	KINGFISHER PLUS	DI-5	1
	-DIGITAL OUTPUT MODULE	KINGFISHER PLUS	DO-2	1
	-COMMUNICATION MODULE	KINGFISHER PLUS	MC-30/31	IF REQUIRED
5	PRESSURE DISPLAY UNIT	REFER SHEET .021		1
6	TERMINALS	REFER SHEET .017		AS DETAILED
7	SIGNAL PLUG/SOCKET RECEPTACLE ASSEMBLY	REFER SHEET .017		1
8	230V AC PLUG/SOCKET RECEPTACLE ASSEMBLY	REFER SHEET .017		2
9	TRUNKING - NARROW SLOT, OPEN	CRITCHLEY BETADUCT		AS DETAILED
10	COMMUNICATIONS CABLE (NOTE 5)	ETHERNET	CAT 5E	1
11	TERMINALS (IF REQUIRED)			IF REQUIRED
12	GEARPLATE MOUNTING HOLE	11Ø HOLE		4
13	FIBRE TO COPPER CONVERTER	MOXA	EDS 208A	IF REQUIRED
14	12/24V DC CONVERTER	PHOENIX CONTACT	2320018	IF REQUIRED
B1	FLOW TRANSMITTER NO.1	AS DETAILED IN DWGS	AS DETAILED IN DWGS	IF REQUIRED
B2	FLOW TRANSMITTER NO.2 (IF REQUIRED)	AS DETAILED IN DWGS	AS DETAILED IN DWGS	IF REQUIRED
15	12V POWER SUPPLY	INNOVATIVE ENERGIES	SR100C	1
16	LIGHTNING PROTECTION UNIT	RF INDUSTRIES	POLYPHASER IS-50NX-CO	IF REQUIRED
17	RELAYS	OMRON	MK-S	IF REQUIRED
18	BATTERIES	YUASA	NP24-12B	1
19	THERMOSTAT	STEGO	KTS 01141	1
20	ETHERNET EXTENDER	MOXA	IEX-402-VDSL2	IF REQUIRED
21	ETHERNET SWITCH	MOXA	EDS 205A/208A OR EDS 505A/508A (MANAGED SWITCH)	IF REQUIRED
22	FIBRE TERMINATION ENCLOSURE	AFC	FDE-12 SC 6-S	IF REQUIRED
23	PROTOCOL CONVERTERS	ICP-DAS	7510	IF REQUIRED
24	CATHODIC PROTECTION TERMINALS (NOTE 6)			IF REQUIRED
25	CUSTOMER CONNECTION TERMINALS (NOTE 6)	PHOENIX CONTACT	UK5N	IF REQUIRED
26	CUSTOMER CONNECTION LOOP ISOLATOR	INTECH	PI-D-X	IF REQUIRED
27	MOUNTING PLATE		ALUMINIUM - DULUX ARCTIC WHITE POWDER COATED	1
28	BATTERY BRACKET		304 STAINLESS STEEL	1
29	THERMOSTAT BRACKET		ALUMINIUM	1
30	DRY GEARPLATE		ALUMINIUM - 5mm THICK DULUX ARCTIC WHITE POWDER COATED	1

DRY GEARPLATE LABEL SCHEDULE			
LABEL No.	INSCRIPTION	TYPE	LOCATION
a	MAIN SWITCH	ENGRAVED	BELOW SWITCH
b	RCD S/O	ENGRAVED	BELOW MCB
c	12VDC POWER SUPPLY	ENGRAVED	BELOW MCB
d	CHLORINE/pH	ENGRAVED	BELOW MCB
e	TURBIDITY	ENGRAVED	BELOW MCB
f	FAN	ENGRAVED	BELOW MCB
g	SIGNALS	CABLE FERRULE	ON RECEPTACLE CABLE
h	CHLORINE/pH 230V AC	CABLE FERRULE	ON RECEPTACLE CABLE
i	TURBIDITY 230V AC	CABLE FERRULE	ON RECEPTACLE CABLE
j	FLOW TRANSMITTER 1	ADHESIVE TAPE	ON GEARPLATE IN TRANSMITTER POSTION. (NOTE 1)
k	FLOW TRANSMITTER 2	ADHESIVE TAPE	ON GEARPLATE IN TRANSMITTER POSTION. (NOTE 1)
l	SPARE (NOTE 3)	ENGRAVED	BELOW MCB
m	SUMP PUMP NOTE 13	ENGRAVED	BELOW MCB
n	SURGE ARRESTER	ENGRAVED	BELOW MCB
p	SURGE ARRESTER UNIT	ENGRAVED	BELOW UNIT

FACILITY CODE	AREA
-	93

- NOTES:**
- PROVIDE ADHESIVE GEARPLATE LABELS ONLY IF EQUIPMENT NOT INSTALLED.
  - PLUG/SOCKET RECEPTACLES ARE TO BE FIXED IN POSITION WHEN GEARPLATE INSTALLED.
  - CIRCUIT BREAKER TO BE USED IF A SECOND SUMP PUMP OR SAMPLING PUMP IS USED. REFER TO SITE SPECIFIC DRAWING DETAILED IN [.001].
  - FAULT INDICATION AUXILIARY CONTACT FROM THE SUMP PUMP MCB.
  - AN ETHERNET CAT5E CABLE SHALL BE PROVIDED COMPLETE WITH RJ45 CONNECTORS AT BOTH ENDS. THE CABLE SHALL BE CONNECTED TO THE RTU CP-30 PORT 2 AND INSTALLED WITHIN THE CABINET. THIS IS IN ORDER TO ENABLE AN EXTERNAL LAPTOP CONNECTION FROM THE FRONT SIDE GEARPLATE WITHOUT THE NEED TO ACCESS THE FULL BACK GEARPLATE.
  - THE NUMBER AND SIZE OF CATHODIC PROTECTION AND CUSTOMER CONNECTION TERMINALS ARE INDICATIVE ONLY AND SITE DEPENDENT.
  - TERMINALS 1 TO 58 MOUNTING LOCATION.
  - TERMINALS 59 TO 60 MOUNTING LOCATION.
  - TERMINALS C1, C2, D1 AND D2 MOUNTING LOCATION.
  - BATTERY IS TO BE INSTALLED WITH BATTERY BRACKET.
  - THE PRESSURE DISPLAY UNIT CONFIGURATION IS SITE DEPENDENT. REFER TO DRAWING [.021].
  - THERMOSTAT IS TO BE MOUNTED ON AN "L" SHAPE BRACKET.
  - THE LABEL FOR THIS BREAKER IS TO BE "SPARE" IF A SUMP PUMP IS NOT INSTALLED ON SITE. REFER TO SITE SPECIFIC DRAWING DETAILED IN [.001].
  - THE RADIO MODEL IS SITE DEPENDENT. REFER TO SITE SPECIFIC DRAWING DETAILED IN [.004].



ISSUE	DATE	AMENDMENT	BY	APPD.	DESIGNED	T. Tan	01/15
E	11/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.	DESIGNED	T. Tan	01/15
D	10/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.	DES. CHECKED	I. Linstrom	01/15
C	06/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.	DRAWN	L. Bara	01/15
B	05/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.	DWG. CHECKED	S. Fagomalo	01/15
A	03/15	ISSUED FOR CONSTRUCTION - REVISED	B.Q.	S.F.	PROJECT LEADER		
-	01/15	ISSUED FOR CONSTRUCTION	L.B.	S.W.	INFRASTR'R APP'D		

**OPERATIONS**

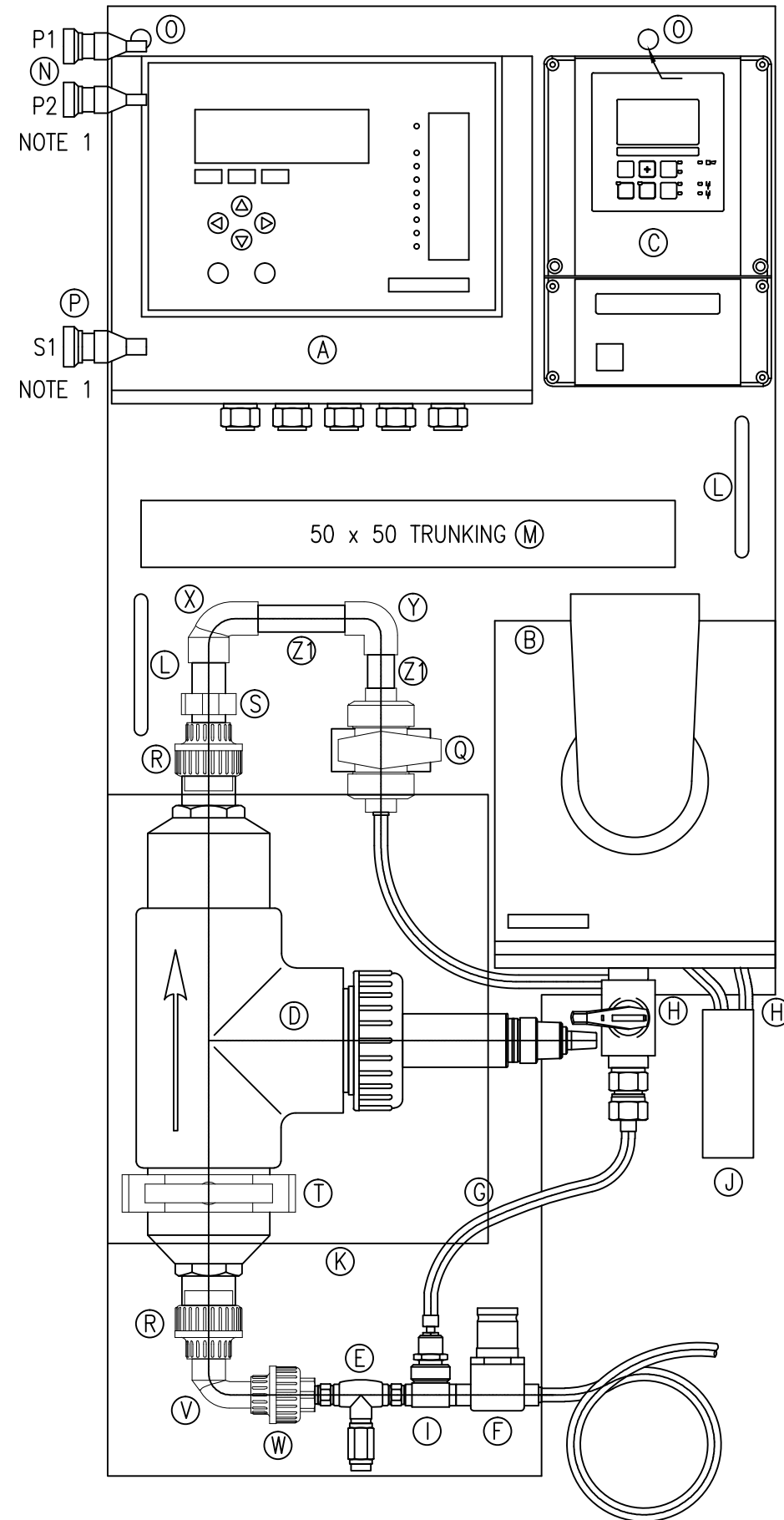
**INFRASTRUCTURE**

Watercare

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BSP STANDARD DRAWING  
CONTROL SYSTEM  
DRY GEARPLATE LAYOUT

CAD FILE	2010998.018	DATE	26/11/15
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.018	E



LIST OF MATERIALS

ITEM NO.	ITEM	MAKE	QTY
A	CHLORINE/pH TRANSMITTER	SIEMENS	1
B	CHLORINE/pH SENSOR	SIEMENS	1
C	TURBIDITY TRANSMITTER	ENDRESS+HAUSER	1
D	TURBIDITY SENSOR	ENDRESS+HAUSER	1
E	1/2" RELIEF VALVE SET TO 2 BAR G + 1/2" BRASS TEE	SWAGEOK	1
F	1/4" FLOW REGULATOR S/S SET TO 32 LITRES PER MINUTE	SMC	1
G	REINFORCED PLASTIC HOSE RATED TO MINIMUM 5 BAR GAUGE OPERATING PRESSURE	SMC	1
H	DRAIN HOSES SUPPLIED WITH SENSOR		2
I	1/4" BSP BRASS TEE	SMC	1
J	PVC DRAIN (NOTE 3)		1
K	GEAR PLATE - 6mm POWDER COATED ALUMINIUM		1
L	HANDLES - STAINLESS STEEL 96mm		2
M	TRUNKING - NARROW SLOT OPEN 50x50mm		TO SUIT
N	PLUG/SOCKET 230V AC ASSEMBLY (NOTE 2)		2
O	GEAR PLATE MOUNTING HOLES - 15mm Ø		2
P	PLUG/SOCKET SIGNAL WIRING ASSEMBLY (NOTE 2)		1
Q	GF523 METERING VALVE C/W MOUNTING PLATE		1
R	25mm PVC UNION	GEORG FISCHER	2
S	25mm CLIP-IT SADDLE + 2x SPACERS	GEORG FISCHER	1
T	90mm CLIP-IT SADDLE + SAFETY CLIP	GEORG FISCHER	1
U	20mm PRO-FIT REDUCING BUSH	GEORG FISCHER	1
V	20-16mm PRO-FIT 90° ELBOW	GEORG FISCHER	1
W	20mm PVC/BRASS UNION 20-1/2" BSP	GEORG FISCHER	1
X	25-20mm PRO-FIT 90° ELBOW	GEORG FISCHER	1
Y	20mm 90° ELBOW	GEORG FISCHER	1
Z	25mm METRIC PIPE PVC	GEORG FISCHER	1
Z1	20mm METRIC PIPE PVC CLEAR	GEORG FISCHER	2

LABELS

LABEL NO.	DESCRIPTION	TYPE	LOCATION
P1	CHLORINE/pH 230V AC	CABLE FERRULE	ON PLUG CABLE
P2	TURBIDITY 230V AC	CABLE FERRULE	ON PLUG CABLE
S1	SIGNALS	CABLE FERRULE	ON PLUG CABLE

NOTES:

- LEADS FOR PLUG/SOCKET ASSEMBLIES TO REACH RECEPTACLE POSITION.
- REFER TO DRAWING [.017] FOR PLUG CONNECTION DETAILS.
- REFER TO DRAWING [.055] FOR TAP AND DRAIN DETAILS.

FACILITY CODE	AREA
-	93

ISSUE	DATE	AMENDMENT	BY	APPD.	DESIGNED	DES. CHECKED	DRAWN	DWG. CHECKED	PROJECT LEADER	INFRASTR APP'D
A	11/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.	S Fagamalo	D Ibrahim	R Matthews	S Fagamalo		
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.						

OPERATIONS

INFRASTRUCTURE

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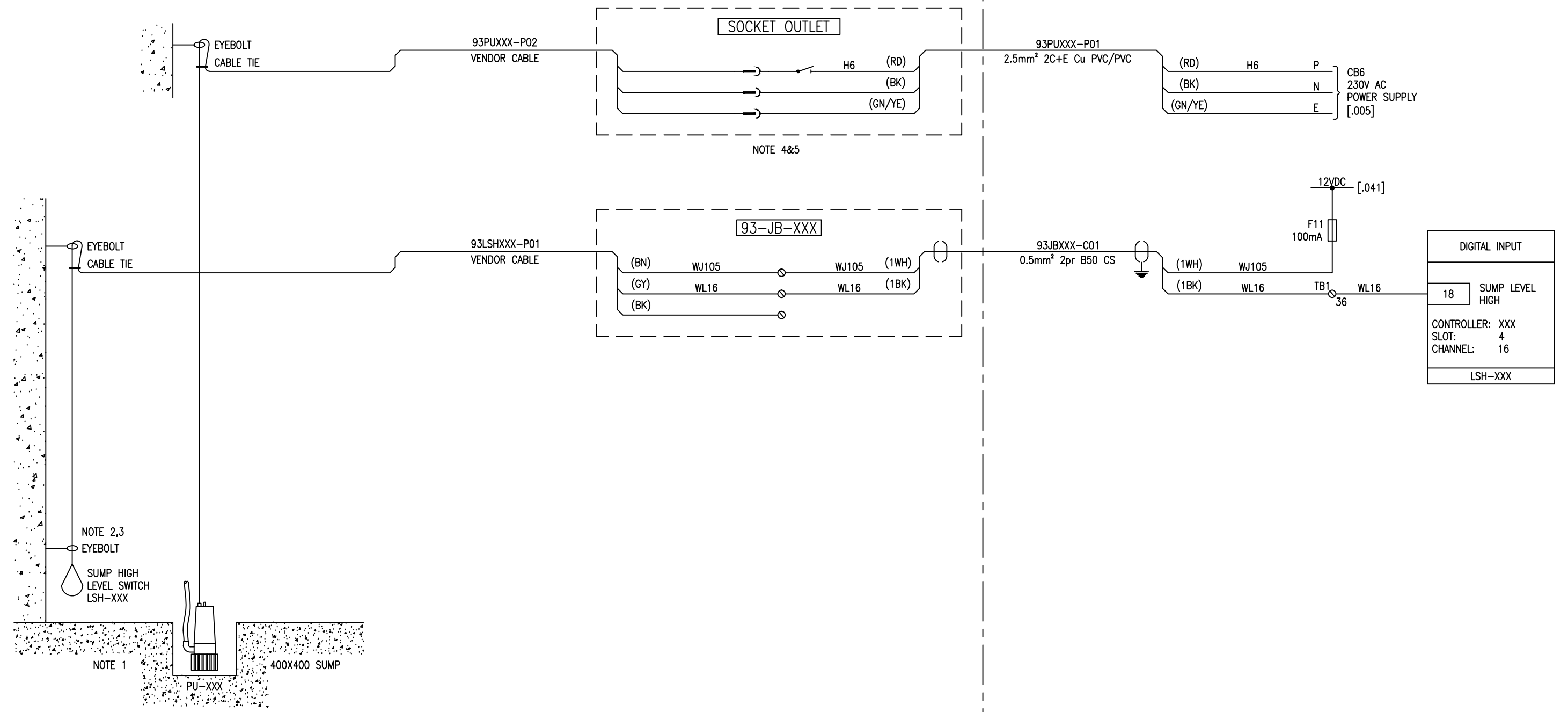
BSP STANDARD DRAWING  
CONTROL SYSTEM

WET GEARPLATE GENERAL LAYOUT 1 FOR DEPOLOX 3 PLUS/5 & CUM253

CAD FILE	2010998.019	DATE	18/11/15
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.019	A

CHAMBER

DRY GEARPLATE

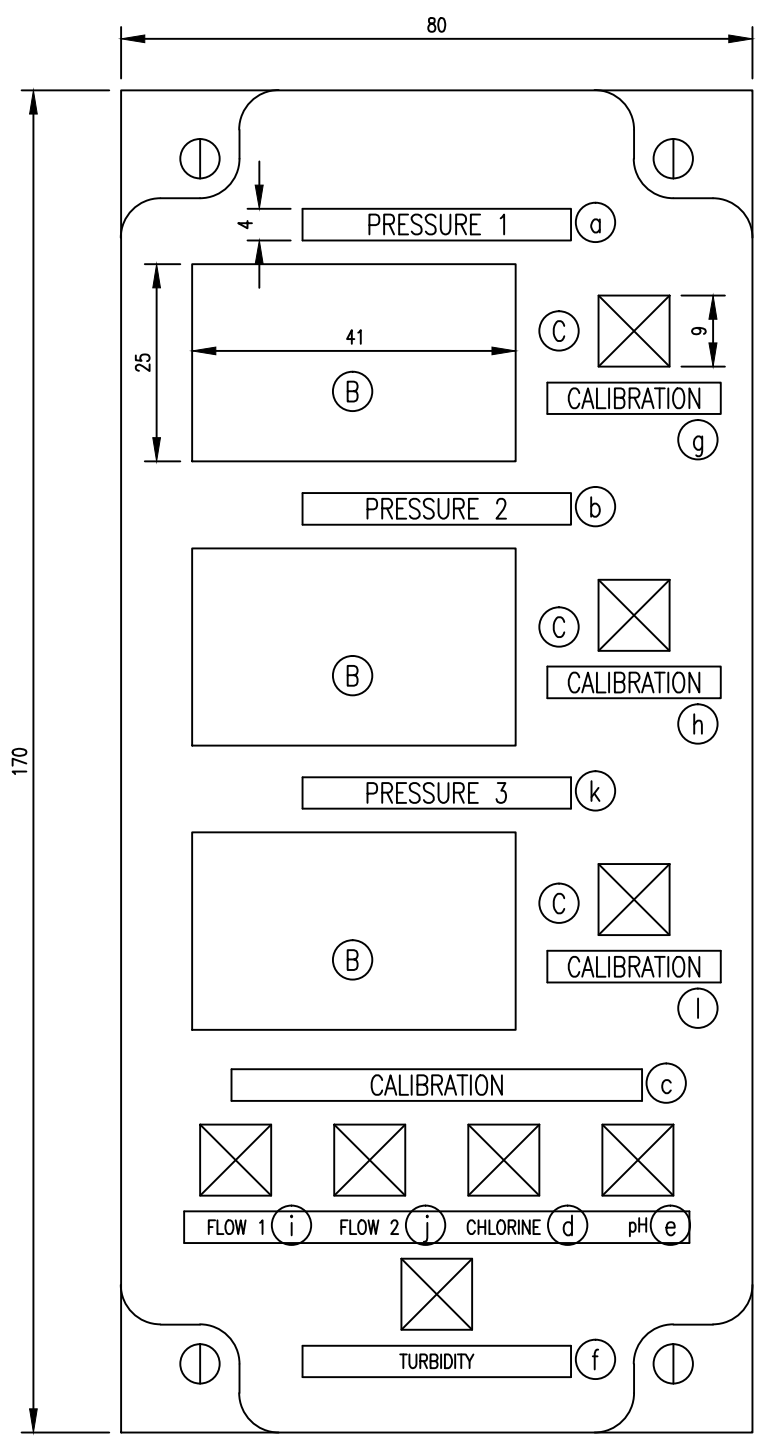


NOTES:

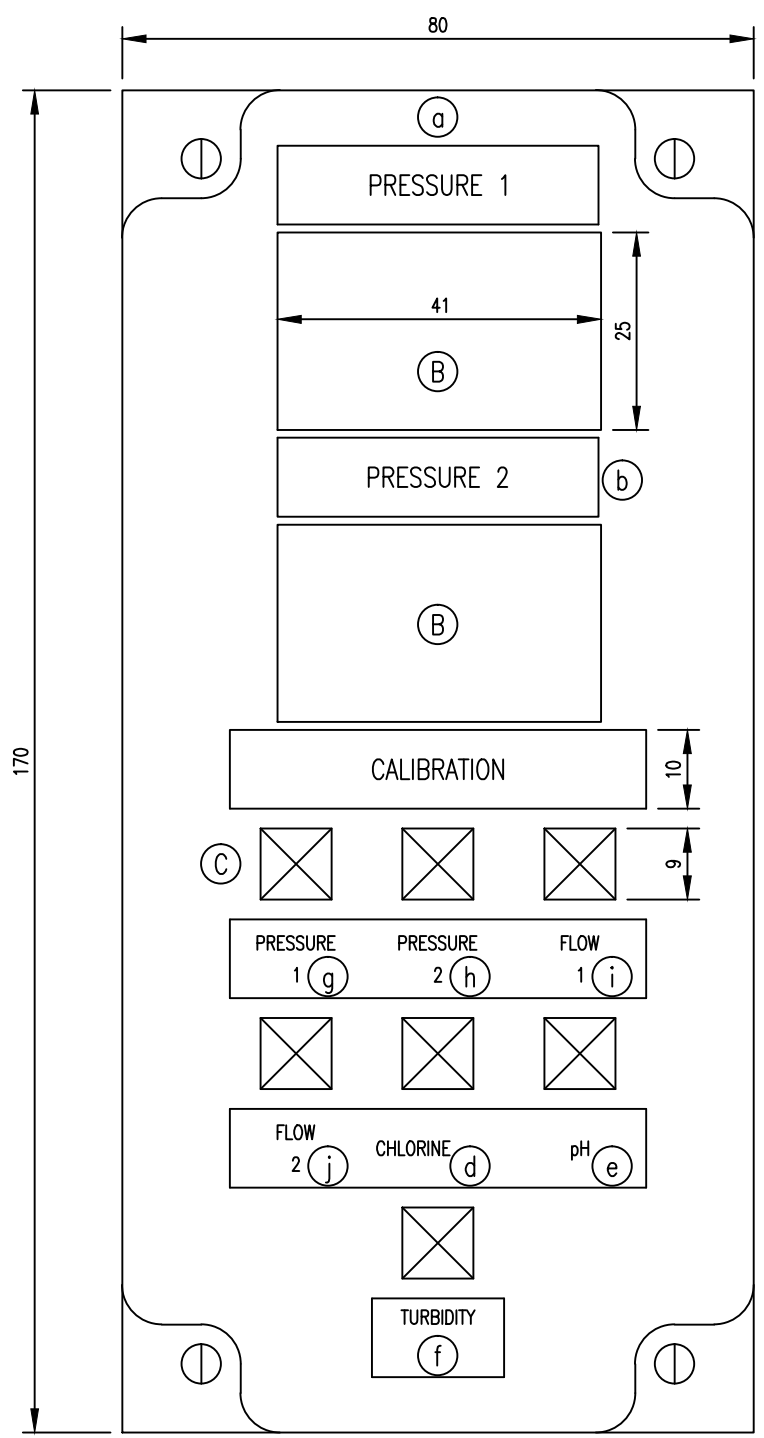
- SUMP PUMP: C/W STAINLESS STEEL SCREEN OR SHOFOU SFA-0512.
- TYPE: LEVEL SWITCH  
MAKE: FLYGT  
MODEL: EMN-10
- FLOAT SWITCH SHALL BE MOUNTED 50mm ABOVE FLOOR LEVEL. EYEBOLT SHALL PROTRUDE NO MORE THAN 50mm FROM WALL. EYEBOLT SHALL BE MOUNTED 300mm ABOVE FLOOR LEVEL.
- TYPE: SINGLE PHASE SOCKET UNIT  
MAKE: PDL  
MODEL: 56CV315
- PLUG, SOCKET, JUNCTION BOX, AND TOP EYEBOLT (IN THE PUMP CABLE) TO BE MOUNTED 300mm FROM CHAMBER ROOF.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14	OPERATIONS	<p>COPYRIGHT - This drawing, the design concept, remain the exclusive property of Watercare Services Limited and may not be used without approval. Copyright reserved.</p>	BSP STANDARD DRAWING CONTROL SYSTEM PU-XXX SUMP PUMP AND LSH-XXX HIGH LEVEL ALARM SCHEMATIC	CAD FILE	2010998.020	DATE	16/09/14
DES. CHECKED	D Ibrahim	09/14				ORIGINAL SCALE	A3	CONTRACT No.	
DRAWN	R Matthews	09/14				REF No.		ISSUE	
DWG. CHECKED	S Fagomalo	09/14				DWG No.	2010998		
PROJECT LEADER			INFRASTRUCTURE						
ISSUE	DATE	AMENDMENT	BY	APPD.					
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.					



NOTE 1



NOTE 1

PRESSURE DISPLAY UNIT BILL OF MATERIALS

ITEM No.	ITEM	MAKE	MODEL	No./UNIT
A	ENCLOSURE, 80w x 170h x 65d	FIBOX	PC D 65 G	1
B	LCD DISPLAY, LOOP POWERED, BEZEL MOUNT	MODUTEC	1030-0019 WITH 00-922233-001 BEZEL	2 OR 3 (NOTE 1)
C	ILLUMINATED PUSH BUTTONS (8MM, RED)	OMRON (NOTE 2)	A3DA-90AI-00ER (NOTE 2)	7 OR 8 (NOTE 1)
	INTERNAL PANEL WIRING	AFLEX	CT1B 1mm <sup>2</sup>	

LABEL No.	INSCRIPTION	TYPE	LOCATION
a	PRESSURE 1	ENGRAVED	ON ENCLOSURE
b	PRESSURE 2	ENGRAVED	ON ENCLOSURE
c	CALIBRATION	ENGRAVED	ON ENCLOSURE
d	CHLORINE	ENGRAVED	ON ENCLOSURE
e	pH	ENGRAVED	ON ENCLOSURE
f	TURBIDITY	ENGRAVED	ON ENCLOSURE
g	PRESSURE 1 CALIBRATION	ENGRAVED	ON ENCLOSURE
h	PRESSURE 2 CALIBRATION	ENGRAVED	ON ENCLOSURE
i	FLOW 1	ENGRAVED	ON ENCLOSURE
j	FLOW 2	ENGRAVED	ON ENCLOSURE
k	PRESSURE 3	ENGRAVED	ON ENCLOSURE
l	PRESSURE 3 CALIBRATION	ENGRAVED	ON ENCLOSURE

NOTES:

- THE PRESSURE DISPLAY UNIT LAYOUT IS SITE AND EQUIPMENT NUMBER DEPENDENT. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
- THE CONTRACTOR SHALL SUPPLY ONE OF THE ALTERNATIVE OPTIONS THAT ARE DETAILED BELOW SHOULD THE OMRON UNITS BE UNAVAILABLE:  
 OPTION 1 = MAKE: IDEC MODEL: ALBQ-M11-R  
 OPTION 2 = MAKE: NKK MODEL: HB15SKW01-5C-CB

THE CONTRACTOR SHALL ENSURE THAT THE SAME MAKE AND MODEL ARE USED FOR ALL THE PUSHBUTTONS.  
 THE CONTRACTOR SHALL ALSO ENSURE THAT AS PART OF THE AS-BUILDING A NOTE IS ADDED TO THE SITE SPECIFIC DRAWING SCHEDULE [.001]. THE NOTE SHALL DETAIL THE EXACT MAKE AND MODEL OF THE PUSHBUTTONS THAT ARE USED FOR THAT PARTICULAR SITE.

FACILITY CODE	AREA
-	93

ISSUE	DATE	AMENDMENT	BY	APPD.
B	10/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
A	06/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

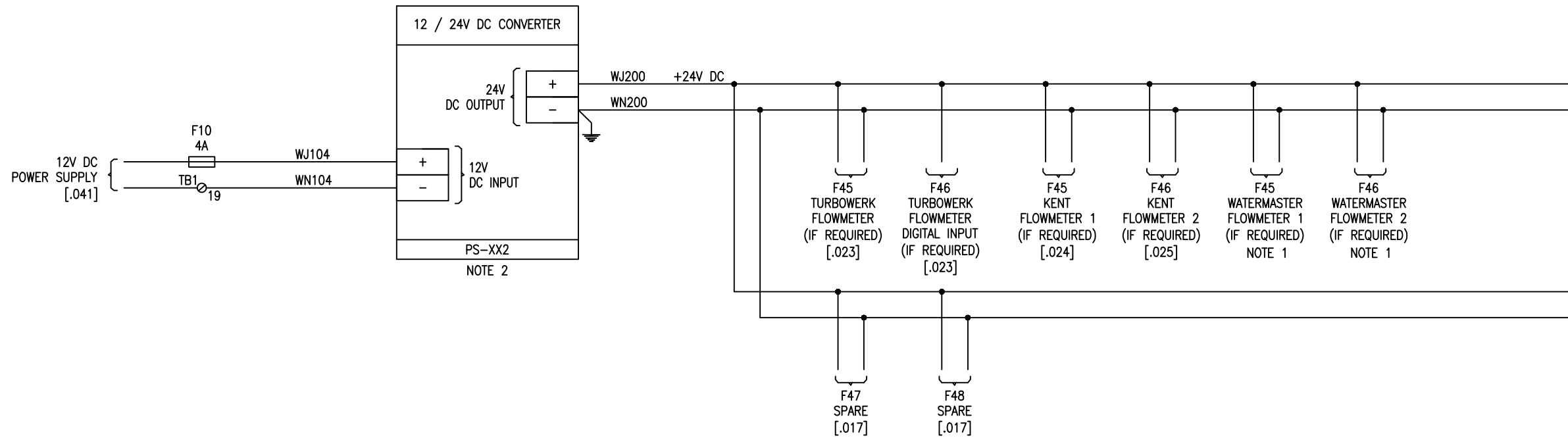
DESIGNED	DES. CHECKED	DRAWN	DWG. CHECKED	PROJECT LEADER	INFRASTR APP'D
S Fagomalo	D Ibrahim	R Matthews	S Fagomalo		

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BSP STANDARD DRAWING  
 CONTROL SYSTEM  
 PRESSURE DISPLAY UNIT

CAD FILE	2010998.021	DATE	12/10/15
ORIGINAL SCALE	A3	CONTRACT No.	
N.T.S.		REF No.	-
		ISSUE	-
DWG No.	2010998	.021	B

DRY GEARPLATE



NOTES:

1. WATERMASTER MODEL IS SITE DEPENDENT. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN THE [001].
2. TYPE: 12/24V DC CONVERTER  
MAKE: PHOENIX CONTACT  
MODEL: MINI-PS-12-24VDC/24DC/1.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER				
INFRASTR APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

OPERATIONS

INFRASTRUCTURE

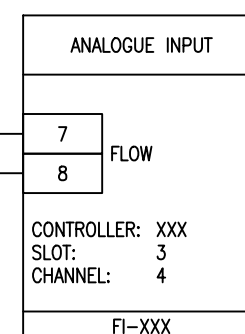
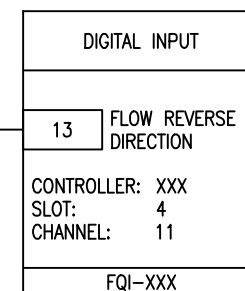
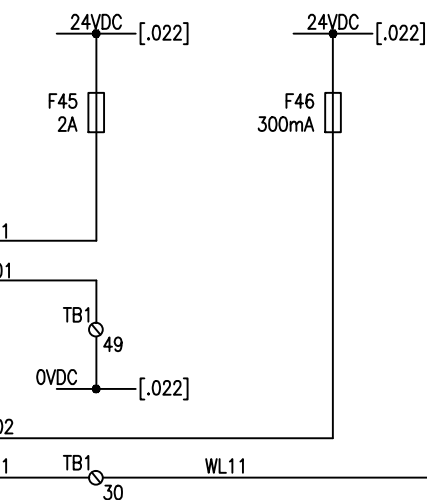
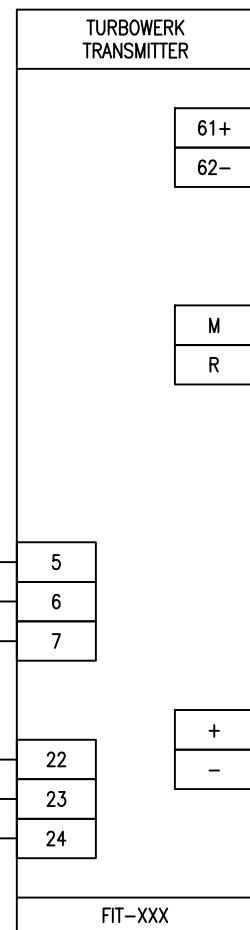
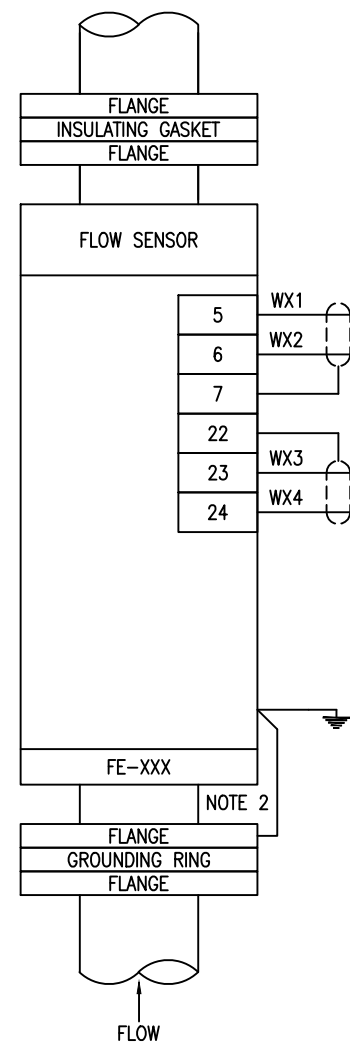
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BSP STANDARD DRAWING  
CONTROL SYSTEM  
24V DC DISTRIBUTION SCHEMATIC

CAD FILE	2010998.022	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.022	-

FLOWMETER CHAMBER

DRY GEARPLATE



NOTES:

1. TYPE - FLOWMETER TRANSMITTER  
MAKE - TURBO  
MODEL - TURBOWERK ndf/P2
2. TYPE - FLOW SENSOR  
MAKE - TURBO  
MODEL - TURBOWERK MG711/E-1

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14
DES. CHECKED	D Ibrahim	09/14
DRAWN	R Matthews	09/14
DWG. CHECKED	S Fagomalo	09/14
PROJECT LEADER		
INFRASTR APP'D		

OPERATIONS	
INFRASTRUCTURE	



BSP STANDARD DRAWING  
CONTROL SYSTEM  
FIT-XXX TURBOWERK FLOWMETER LOOP SCHEMATIC

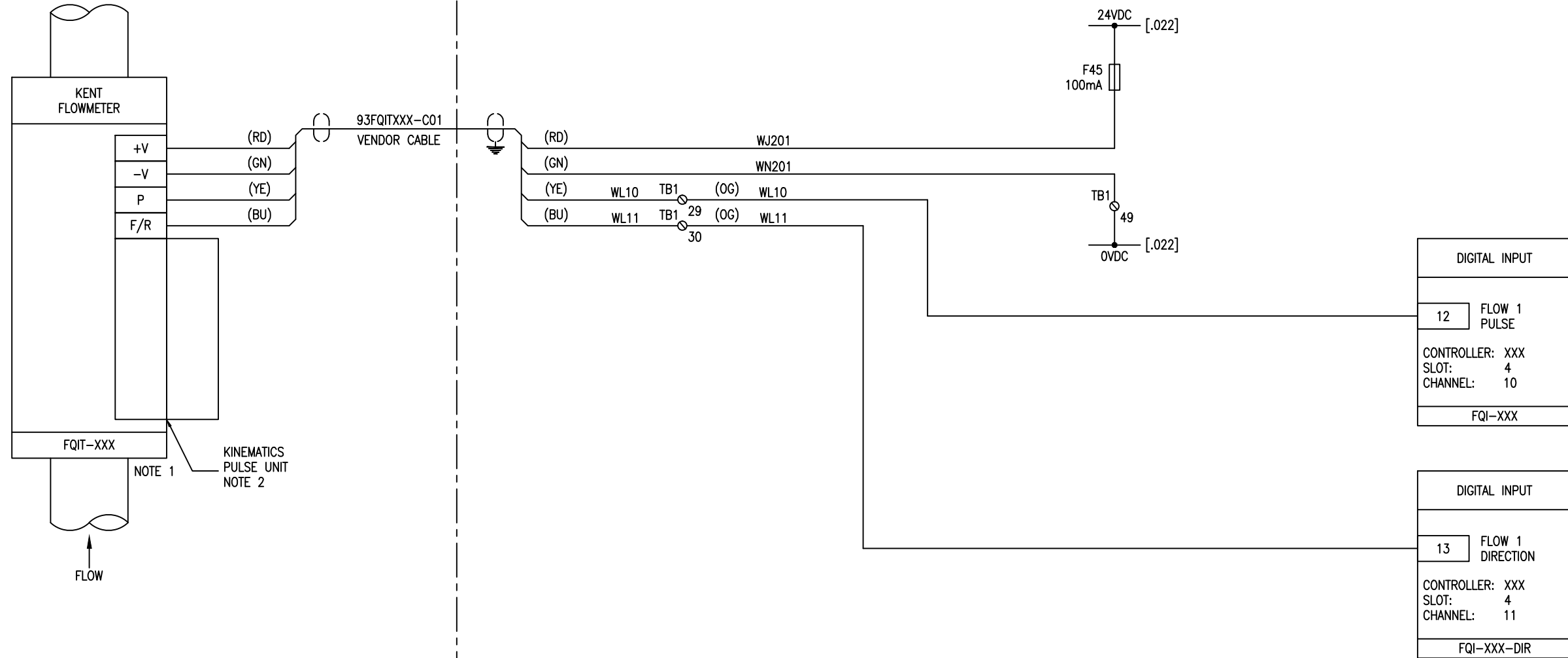
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ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.023	-

ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

FLOWMETER CHAMBER

NOTE 3

DRY GEARPLATE



- NOTES:
1. TYPE - MECHANICAL FLOWMETER  
MAKE - KENT
  2. TYPE - PULSE UNIT  
MAKE - KINEMATICS  
MODEL - METERPLATE
  3. LOCATION AS DETAILED WITHIN THE SITE  
SPECIFIC CONTROL SYSTEM OVERVIEW [.002].

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER				
INFRASTR'R APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

OPERATIONS

INFRASTRUCTURE

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BSP STANDARD DRAWING  
CONTROL SYSTEM  
FQIT-XXX KENT FLOWMETER 1 LOOP SCHEMATIC

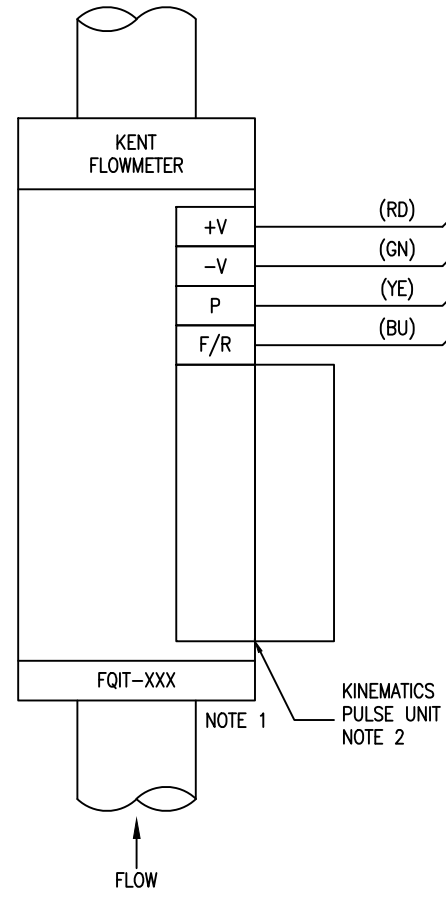
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ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.024	-



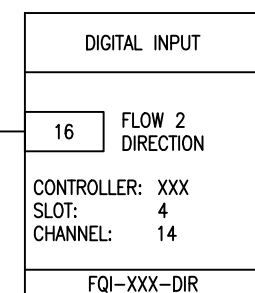
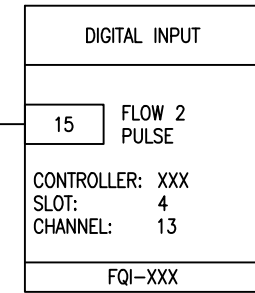
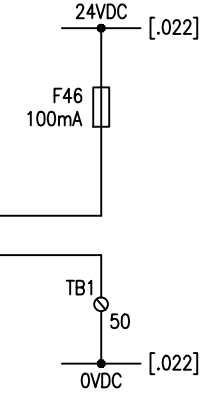
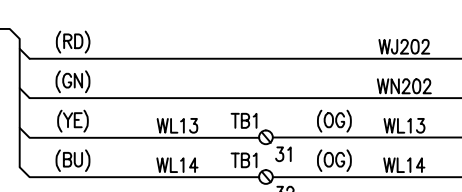
FLOWMETER CHAMBER

NOTE 3

DRY GEARPLATE



93FQITXXX-C01  
VENDOR CABLE



- NOTES:
- TYPE - MECHANICAL FLOWMETER  
MAKE - KENT
  - TYPE - PULSE UNIT  
MAKE - KINEMATICS  
MODEL - METERPLATE
  - LOCATION AS DETAILED WITHIN THE SITE  
SPECIFIC CONTROL SYSTEM OVERVIEW [.002].

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER				
INFRASTR'R APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

OPERATIONS

INFRASTRUCTURE

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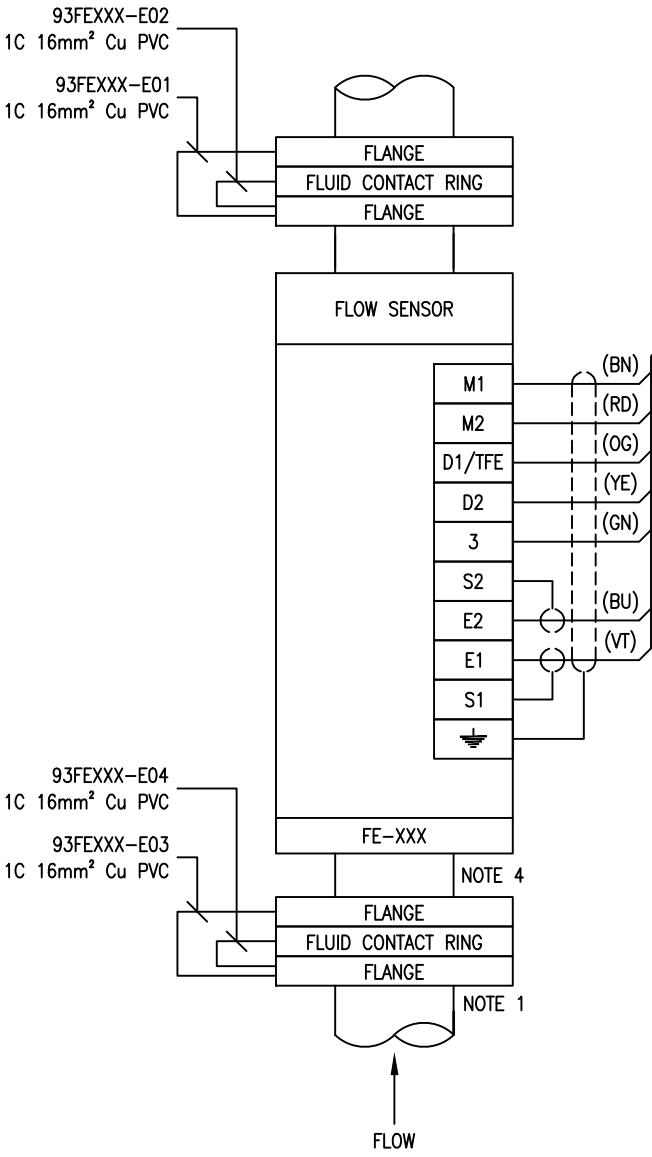
BSP STANDARD DRAWING  
CONTROL SYSTEM  
FQIT-XXX KENT FLOWMETER 2 LOOP SCHEMATIC

CAD FILE	2010998.025	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.025	-

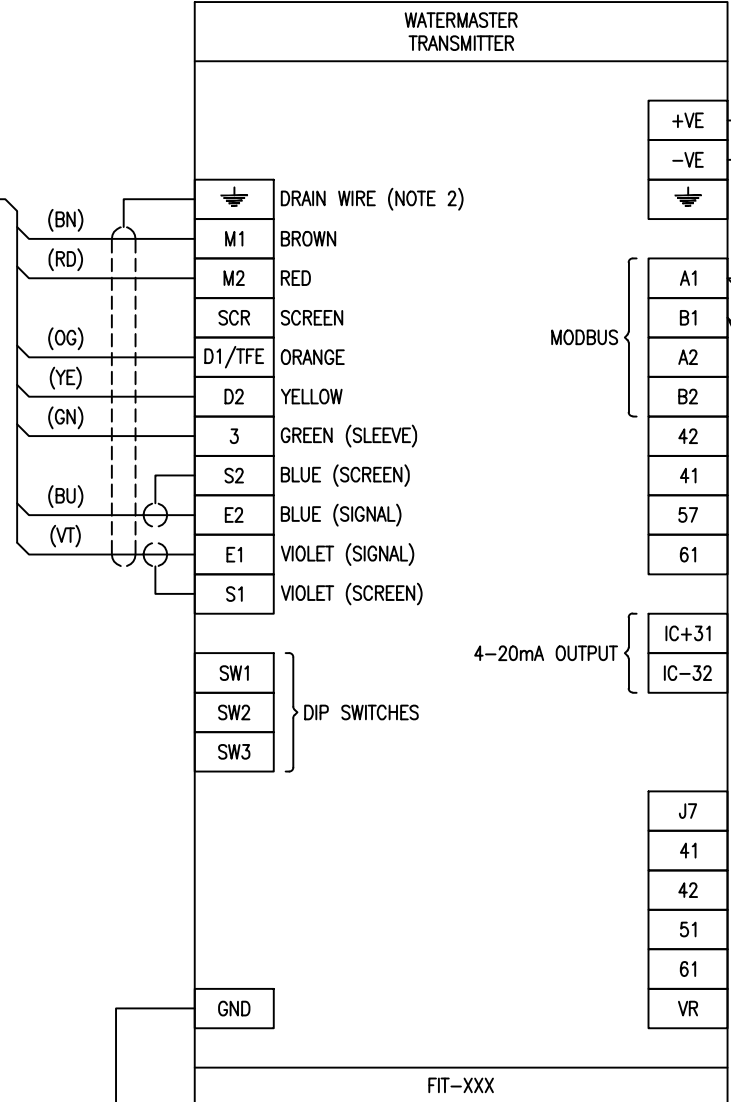
FLOWMETER CHAMBER

NOTE 6

DRY GEARPLATE

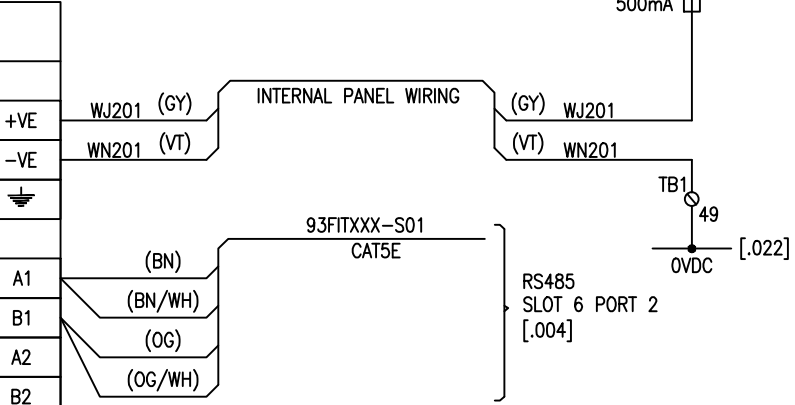


93FEXXX-A01  
VENDOR CABLE



NOTE 3

93FITXXX-E01  
1C 6mm<sup>2</sup> Cu PVC



- NOTES:**
- FOR EARTHING RING AND INSTALLATION DETAIL REFER TO DRAWING 2001979.135 OR 2001979.136 - DEPENDENT ON INSTALLATION.
  - FOR CATHODICALLY PROTECTED SYSTEM CONNECT THE DRAIN WIRE TO TERMINAL SCR AS THERE WILL BE NO EARTH SCREW.
  - TYPE - FLOWMETER TRANSMITTER  
MAKE - ABB  
MODEL - WATERMASTER
  - TYPE - FLOW SENSOR  
MAKE - ABB  
MODEL - WATERMASTER SENSOR
  - PIN CONFIGURATION AT THE RTU PROCESSOR/COMMUNICATION MODULE REFER DRAWING [.004].
  - LOCATION AS DETAILED WITHIN THE SITE SPECIFIC CONTROL SYSTEM OVERVIEW [.002].

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER				
INFRASTR APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

OPERATIONS

INFRASTRUCTURE

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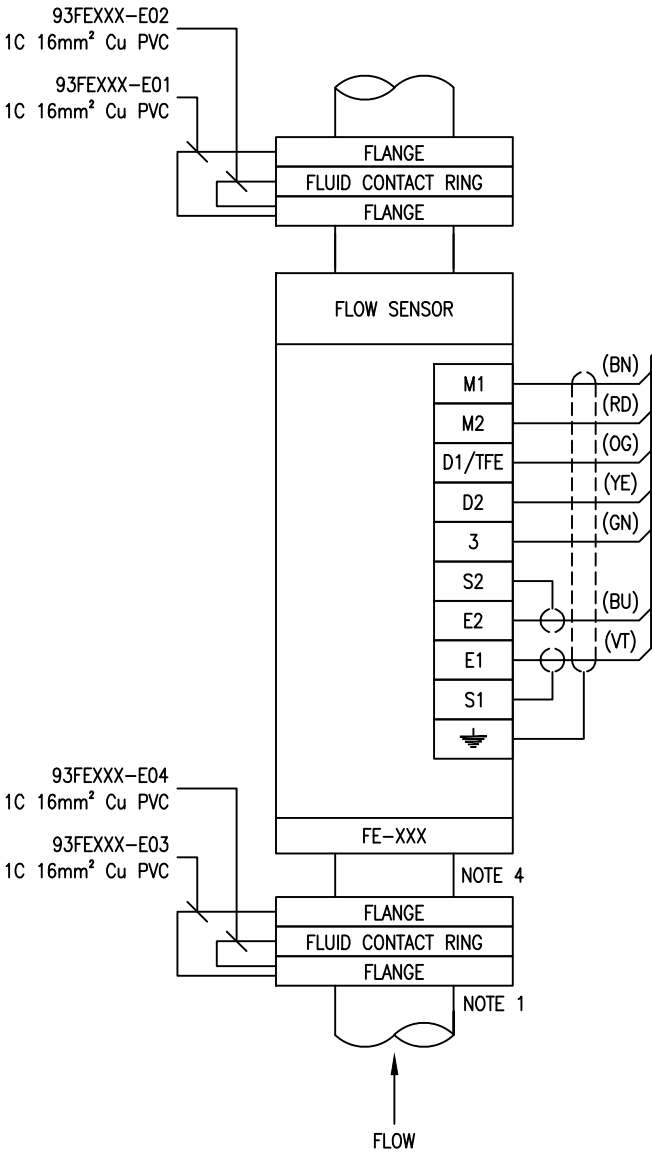
BSP STANDARD DRAWING  
CONTROL SYSTEM  
FIT-XXX WATERMASTER FLOWMETER 1 LOOP SCHEMATIC (SERIAL COMMS)

CAD FILE	2010998.026	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.026	-

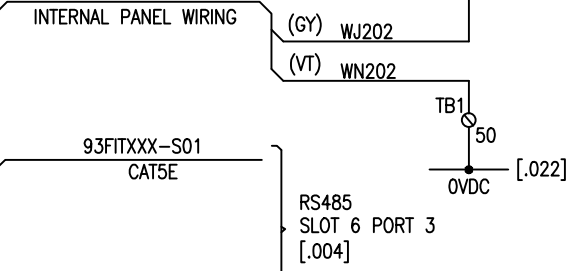
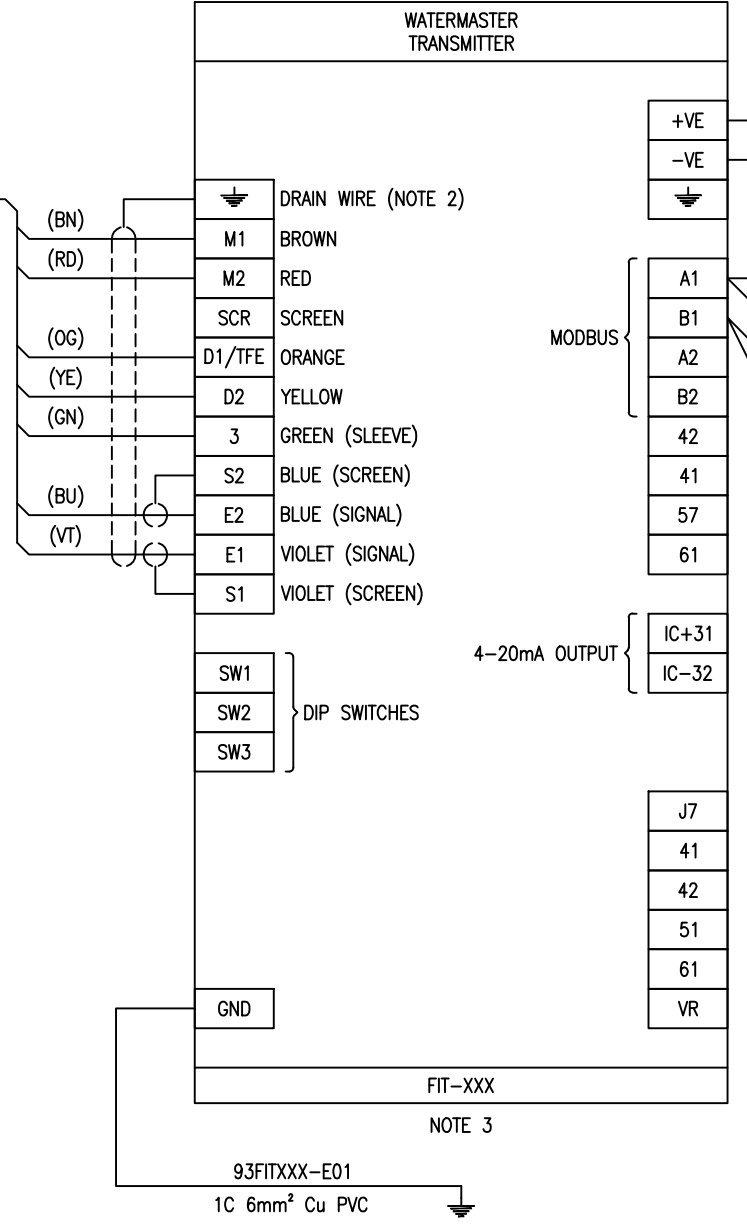
FLOWMETER CHAMBER

NOTE 6

DRY GEARPLATE



93FEXXX-A01  
VENDOR CABLE



- NOTES:**
- FOR EARTHING RING AND INSTALLATION DETAIL REFER TO DRAWING 2001979.135 OR 2001979.136 - DEPENDENT ON INSTALLATION.
  - FOR CATHODICALLY PROTECTED SYSTEM CONNECT THE DRAIN WIRE TO TERMINAL SCR AS THERE WILL BE NO EARTH SCREW.
  - TYPE - FLOWMETER TRANSMITTER  
MAKE - ABB  
MODEL - WATERMASTER
  - TYPE - FLOW SENSOR  
MAKE - ABB  
MODEL - WATERMASTER SENSOR
  - PIN CONFIGURATION AT THE RTU PROCESSOR/COMMUNICATION MODULE REFER DRAWING [.004].
  - LOCATION AS DETAILED WITHIN THE SITE SPECIFIC CONTROL SYSTEM OVERVIEW [.002].

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER				
INFRASTR APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

OPERATIONS

INFRASTRUCTURE

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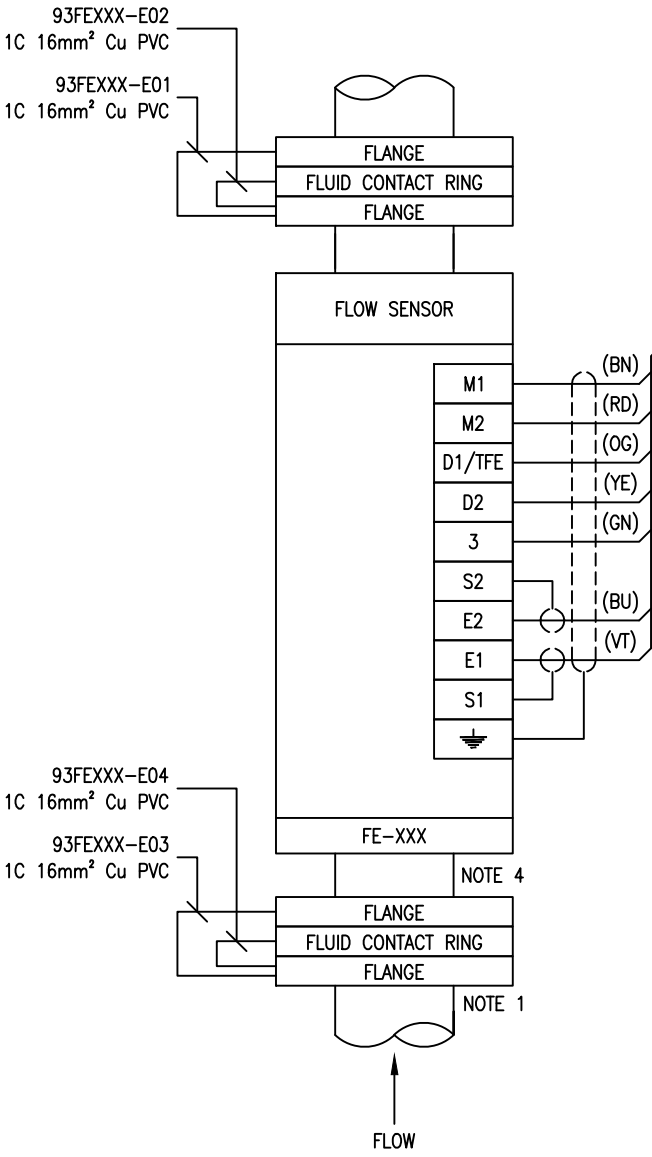
BSP STANDARD DRAWING  
CONTROL SYSTEM  
FIT-XXX WATERMASTER FLOWMETER 2 LOOP SCHEMATIC (SERIAL COMMS)

CAD FILE	2010998.027	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.027	-

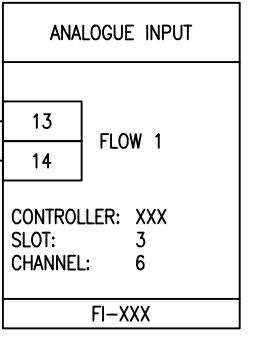
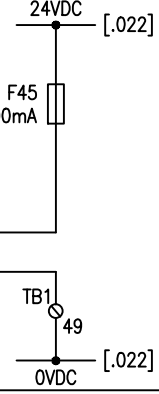
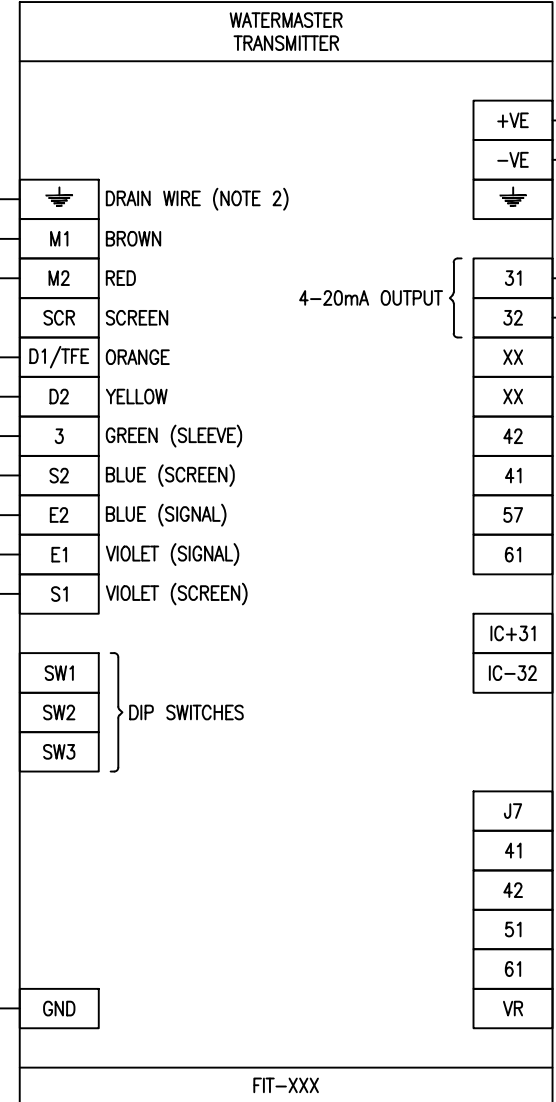
**FLOWMETER CHAMBER**

NOTE 5

**DRY GEARPLATE**



93FEXXX-A01  
VENDOR CABLE



- NOTES:**
- FOR EARTHING RING AND INSTALLATION DETAIL REFER TO DRAWING 2001979.135 OR 2001979.136 - DEPENDENT ON INSTALLATION.
  - FOR CATHODICALLY PROTECTED SYSTEM CONNECT THE DRAIN WIRE TO TERMINAL SCR AS THERE WILL BE NO EARTH SCREW.
  - TYPE - FLOWMETER TRANSMITTER  
MAKE - ABB  
MODEL - WATERMASTER
  - TYPE - FLOW SENSOR  
MAKE - ABB  
MODEL - WATERMASTER SENSOR
  - LOCATION AS DETAILED WITHIN THE SITE SPECIFIC CONTROL SYSTEM OVERVIEW.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER				
INFRASTR APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

OPERATIONS

**Watercare**

INFRASTRUCTURE

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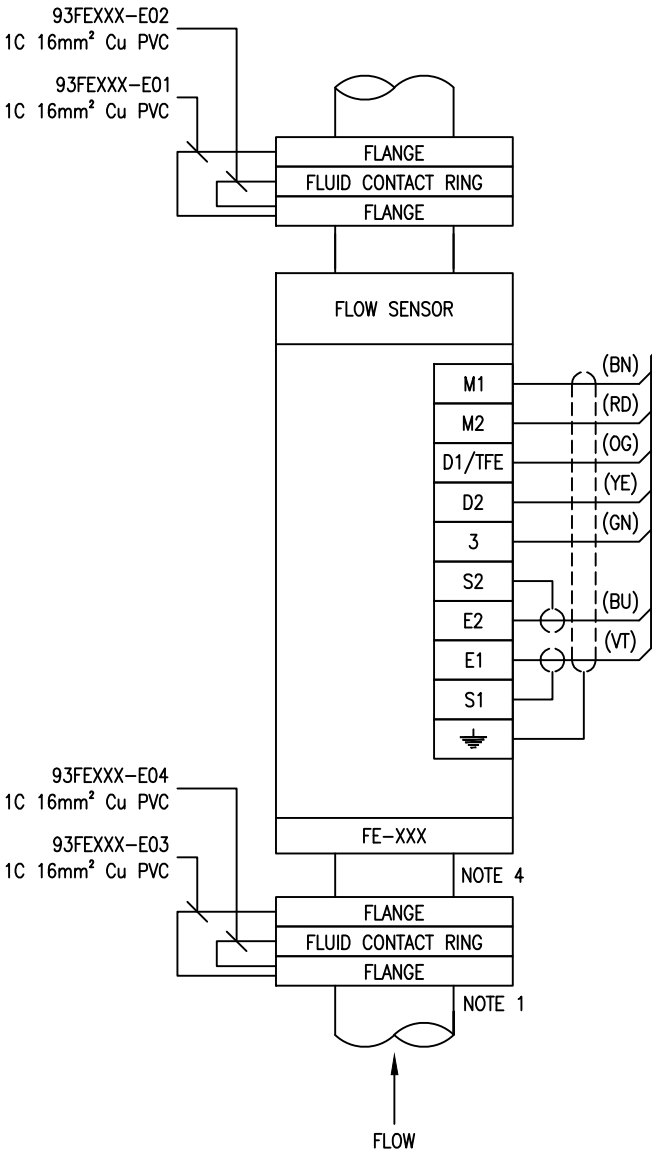
BSP STANDARD DRAWING  
CONTROL SYSTEM  
FIT-XXX WATERMASTER FLOWMETER 1 LOOP SCHEMATIC (4-20mA)

CAD FILE	2010998.028	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.028	-

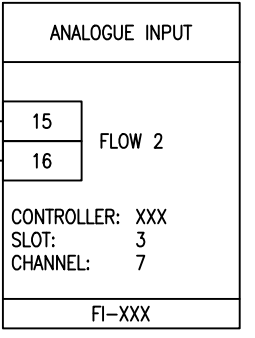
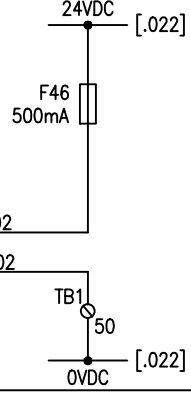
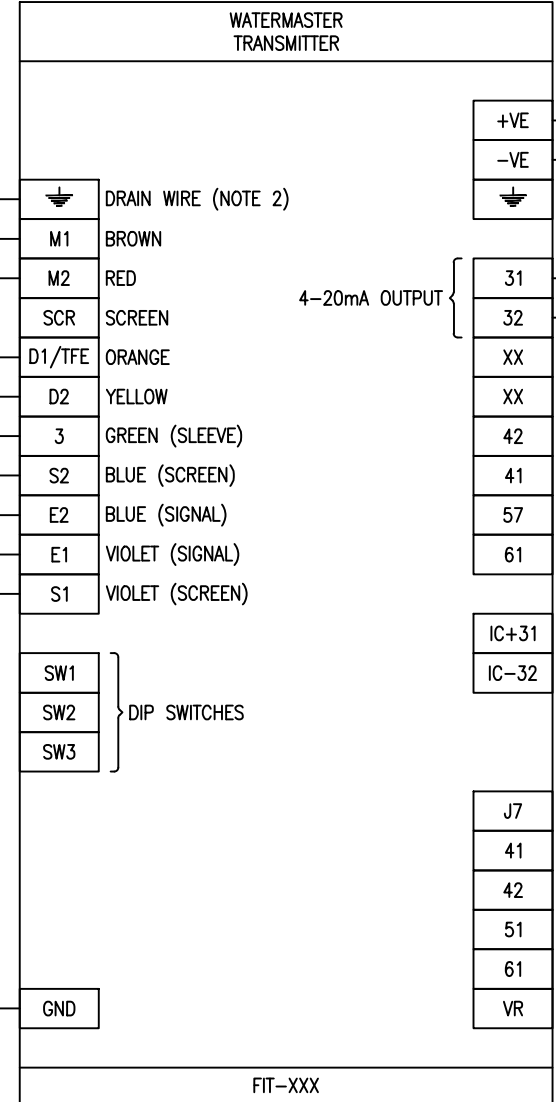
**FLOWMETER CHAMBER**

NOTE 5

**DRY GEARPLATE**



93FEXXX-A01  
VENDOR CABLE



- NOTES:**
- FOR EARTHING RING AND INSTALLATION DETAIL REFER TO DRAWING 2001979.135 OR 2001979.136 - DEPENDENT ON INSTALLATION.
  - FOR CATHODICALLY PROTECTED SYSTEM CONNECT THE DRAIN WIRE TO TERMINAL SCR AS THERE WILL BE NO EARTH SCREW.
  - TYPE - FLOWMETER TRANSMITTER  
MAKE - ABB  
MODEL - WATERMASTER
  - TYPE - FLOW SENSOR  
MAKE - ABB  
MODEL - WATERMASTER SENSOR
  - LOCATION AS DETAILED WITHIN THE SITE SPECIFIC CONTROL SYSTEM OVERVIEW [.002].

FACILITY CODE	AREA
-	93

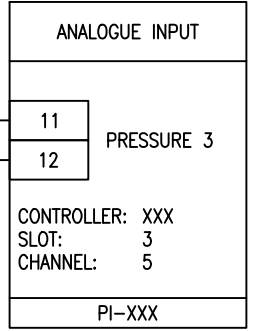
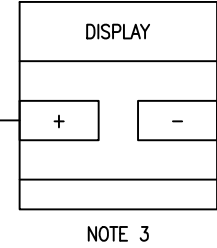
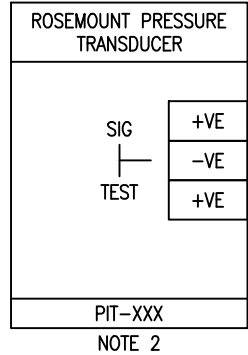
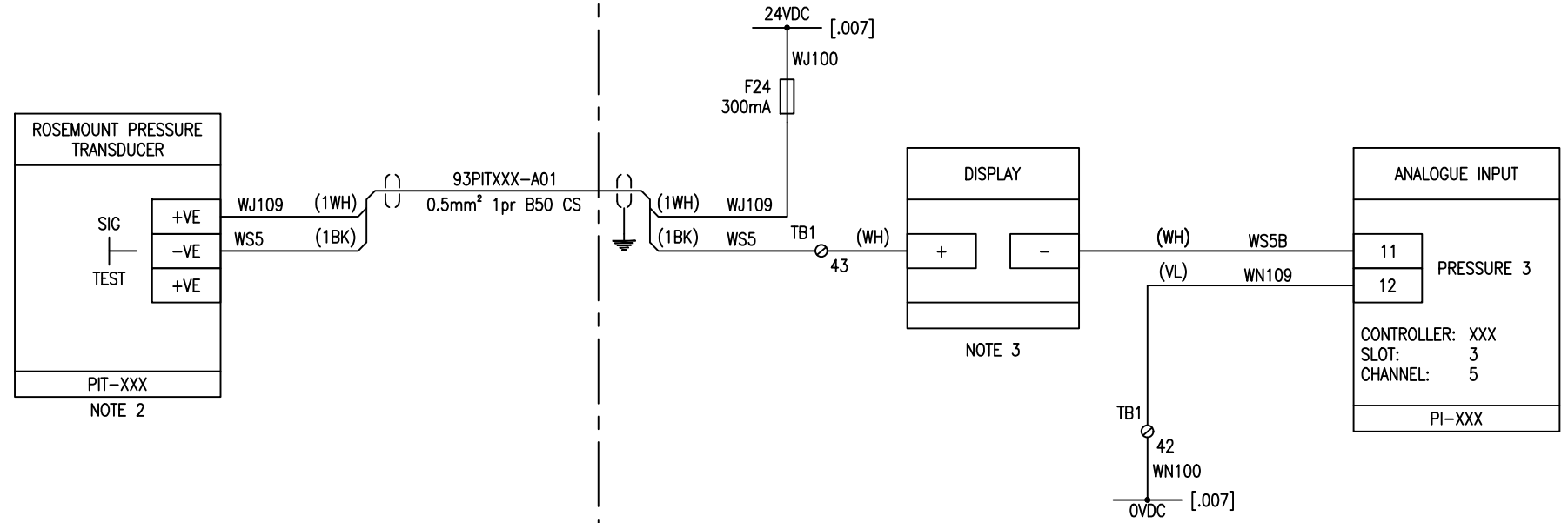
DESIGNED	S Fagomalo	09/14	OPERATIONS	<p>COPYRIGHT - This drawing, the design concept, remain the exclusive property of Watercare Services Limited and may not be used without approval. Copyright reserved.</p>	CAD FILE	2010998.029	DATE	16/09/14	
DES. CHECKED	D Ibrahim	09/14			INFRASTRUCTURE	ORIGINAL SCALE	A3	CONTRACT No.	
DRAWN	R Matthews	09/14				REF No.	-	ISSUE	-
DWG. CHECKED	S Fagomalo	09/14				DWG No.	2010998	.029	
PROJECT LEADER									
INFRASTR APP'D									
ISSUE	DATE	AMENDMENT	BY	APPD.					
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.					

BSP STANDARD DRAWING  
CONTROL SYSTEM  
FIT-XXX WATERMASTER FLOWMETER 2 LOOP SCHEMATIC (4-20mA)

FLOWMETER CHAMBER

NOTE 1

DRY GEARPLATE



NOTES:

1. LOCATION AS DETAILED WITHIN THE SITE SPECIFIC CONTROL SYSTEM OVERVIEW [.002].
2. PRESSURE TRANSDUCER MODEL IS SITE DEPENDENT. MODEL IS EITHER 2088 OR 3015 SERIES.
3. DISPLAY SCALED TO 0-1500 kPA.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagamalo	09/14
DES. CHECKED	D Ibrahim	09/14
DRAWN	R Matthews	09/14
DWG. CHECKED	S Fagamalo	09/14
PROJECT LEADER		
INFRASTR'R APP'D		

OPERATIONS
INFRASTRUCTURE



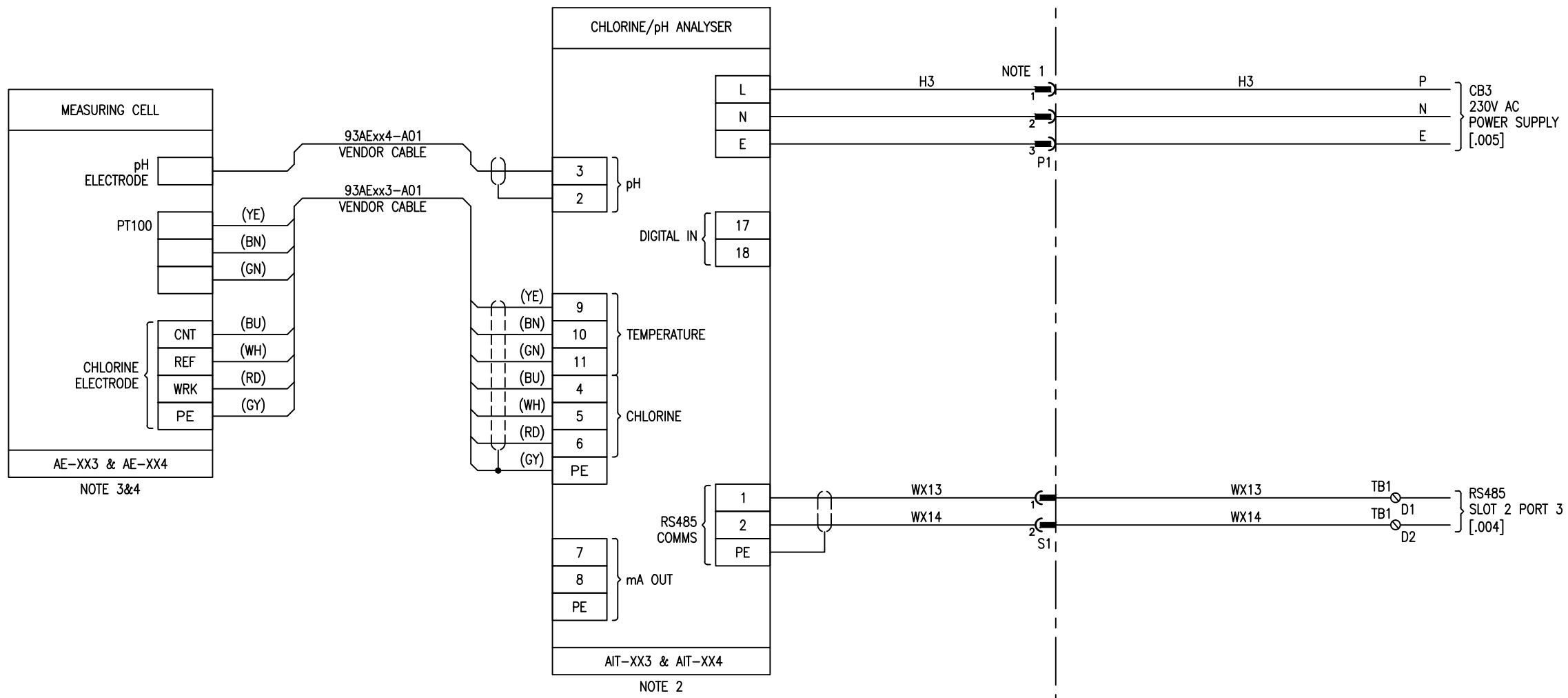
BSP STANDARD DRAWING  
CONTROL SYSTEM  
PIT-XXX PRESSURE TRANSDUCER 3 LOOP SCHEMATIC

CAD FILE	2010998.030	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.030	-

ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

WET GEARPLATE

DRY GEARPLATE



- NOTES:**
- REFER TO DRAWING [.017] FOR PLUG CONNECTIONS.
  - TYPE: CHLORINE/pH ANALYSER  
MAKE: SIEMENS W&T  
MODEL: MFA-Cl<sub>2</sub>++ ANALYSER
  - TYPE: MEASURING CELL  
MAKE: SIEMENS W&T  
MODEL: DEPOLOX 4
  - THE CHLORINE AND pH PROBES SHALL NOT BE FITTED. THESE PROBES WILL BE FITTED BY WSL DURING COMMISSIONING.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14
DES. CHECKED	D Ibrahim	09/14
DRAWN	R Matthews	09/14
DWG. CHECKED	S Fagomalo	09/14
PROJECT LEADER		
INFRASTR APP'D		



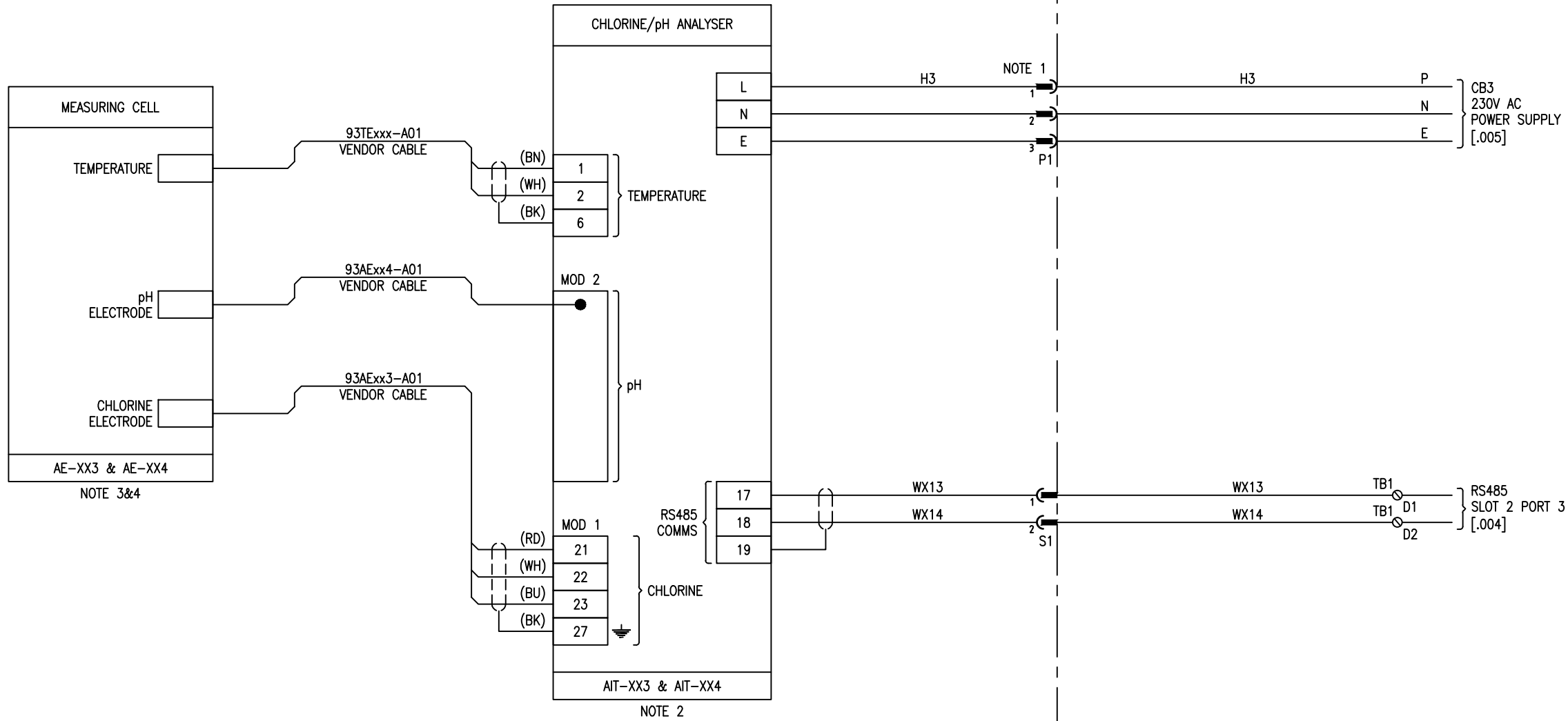
BSP STANDARD DRAWING  
CONTROL SYSTEM  
AIT-XX3 & AIT-XX4 DEPOLOX 4 CL2/pH ANALYSER LOOP SCHEMATIC

CAD FILE	2010998.031	DATE	18/11/15
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.031	A

ISSUE	DATE	AMENDMENT	BY	APPD.
A	11/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

WET GEARPLATE

DRY GEARPLATE



- NOTES:
- REFER TO DRAWING [.017] FOR PLUG CONNECTIONS.
  - TYPE: CHLORINE/pH ANALYSER  
MAKE: SIEMENS W&T  
MODEL: MFC ANALYSER
  - TYPE: MEASURING CELL  
MAKE: SIEMENS W&T  
MODEL: DEPOLOX 5
  - THE CHLORINE AND pH PROBES SHALL NOT BE FITTED. THESE PROBES WILL BE FITTED BY WSL DURING COMMISSIONING.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER	A.S.	D.I.		
INFRASTR APP'D	R.M.	D.I.		
ISSUE	DATE	AMENDMENT	BY	APPD.
A	11/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

OPERATIONS

INFRASTRUCTURE

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BSP STANDARD DRAWING  
CONTROL SYSTEM  
AIT-XX3 & AIT-XX4 DEPOLOX 5 CL2/pH ANALYSER LOOP SCHEMATIC

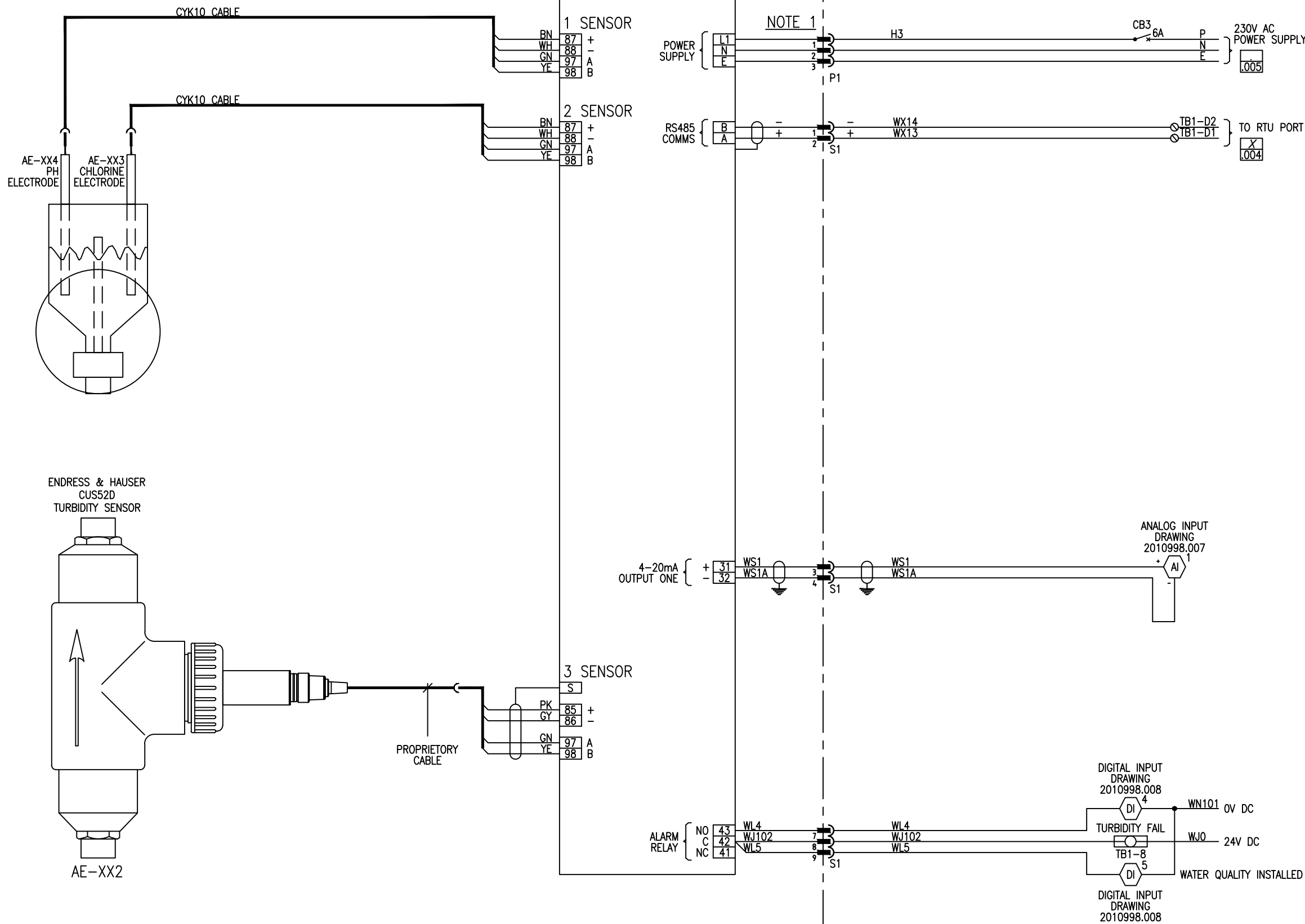
CAD FILE	2010998.032	DATE	18/11/15
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.032	A



WET GEARPLATE

ENDRESS & HAUSER  
CM444 MULTI PARAMETER  
TRANSMITTER

DRY GEARPLATE



FACILITY CODE	AREA
-	93

NOTES:  
1. REFER DRAWING 2010998.017 FOR PLUG CONNECTIONS.

**CONSTRUCTION ISSUE**

DESIGNED	F.T	07:15		
DES. CHECKED	S.W (EMC LTD)	07:15		
DRAWN	J.B	07:15		
DWG. CHECKED				
PROJECT LEADER				
INFRAS'T'R APP'D				
ISSUE	DATE	FOR CONSTRUCTION	BY	APPD.
A	03:16		F.T	M.W

OPERATIONS

INFRASTRUCTURE

Watercare

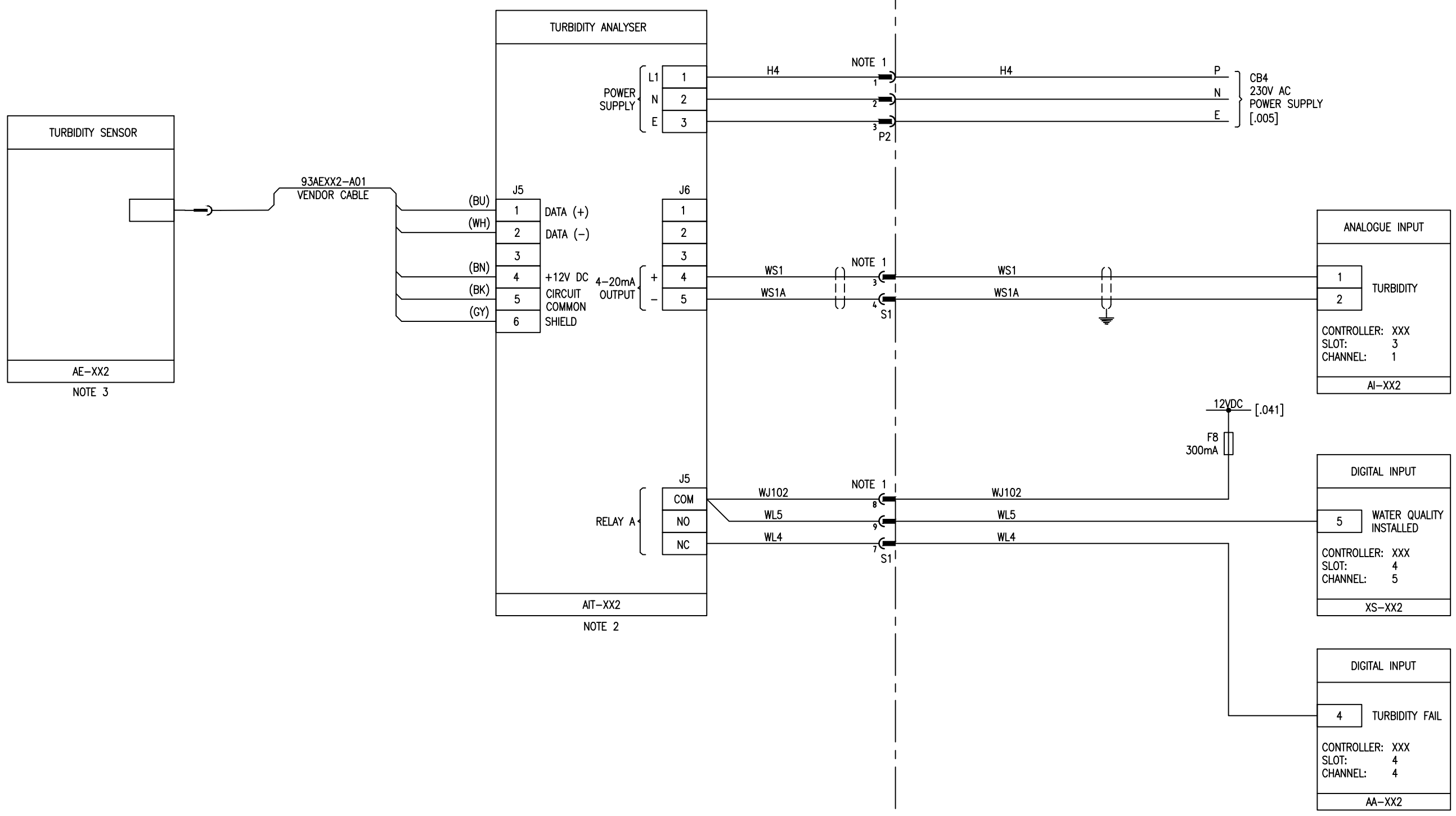
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BSP STANDARD DRAWING  
CONTROL SYSTEM  
AIT-XX3 AND AIT-XX4 E & H CM444 CL2/PH/TURBIDITY ANALYSER LOOP SCHEMATIC

CAD FILE	2010998.033A	DATE	14/03/2016
ORIGINAL SCALE	A3	CONTRACT No.	-
	N.T.S		
REF No.	-	ISSUE	-
DWG No.	2010998 .033		A

WET GEARPLATE

DRY GEARPLATE



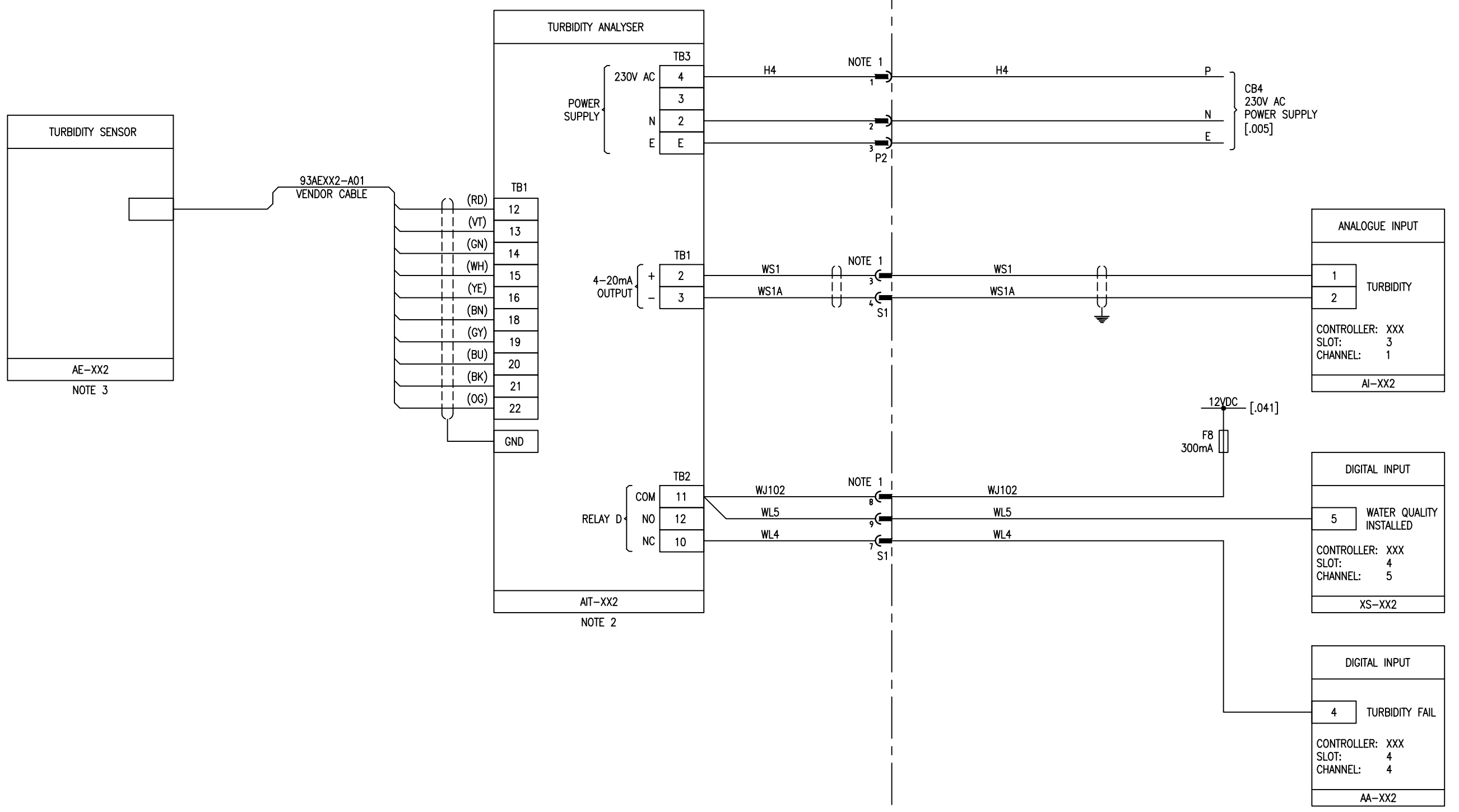
- NOTES:
- REFER TO DRAWING [.017] FOR PLUG CONNECTIONS.
  - TYPE: TURBIDITY ANALYSER  
MAKE: ENDRESS & HAUSER  
MODEL: CUM253-TU0010
  - TYPE: TURBIDITY SENSOR  
MAKE: ENDRESS & HAUSER  
MODEL: CUS31-W2E

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14	OPERATIONS		BSP STANDARD DRAWING CONTROL SYSTEM AIT-XX2 SC100 TURBIDITY ANALYSER LOOP SCHEMATIC	CAD FILE	2010998.034	DATE	18/11/15
DES. CHECKED	D Ibrahim	09/14				ORIGINAL SCALE	A3	CONTRACT No.	
DRAWN	R Matthews	09/14				REF No.	-	ISSUE	-
DWG. CHECKED	S Fagomalo	09/14				DWG No.	2010998		.034
PROJECT LEADER	A.S.	D.I.	INFRASTRUCTURE						
INFRASTR APP'D	R.M.	D.I.							
ISSUE	DATE	AMENDMENT	BY	APPD.					

WET GEARPLATE

DRY GEARPLATE



- NOTES:
- REFER TO DRAWING [.017] FOR PLUG CONNECTIONS.
  - TYPE: TURBIDITY ANALYSER  
MAKE: GREAT LAKES  
MODEL: ACCU4 T53 ANALYSER
  - TYPE: TURBIDITY SENSOR  
MAKE: GREAT LAKES  
MODEL: ACCU4 8320 SENSOR

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER	A.S.	D.I.		
INFRASTR APP'D	R.M.	D.I.		
ISSUE	DATE	AMENDMENT	BY	APPD.
A	11/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

OPERATIONS

**Watercare**

INFRASTRUCTURE

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BSP STANDARD DRAWING  
CONTROL SYSTEM  
AIT-XX2 ACCU4 TURBIDITY ANALYSER LOOP SCHEMATIC

CAD FILE	2010998.035	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.035	A

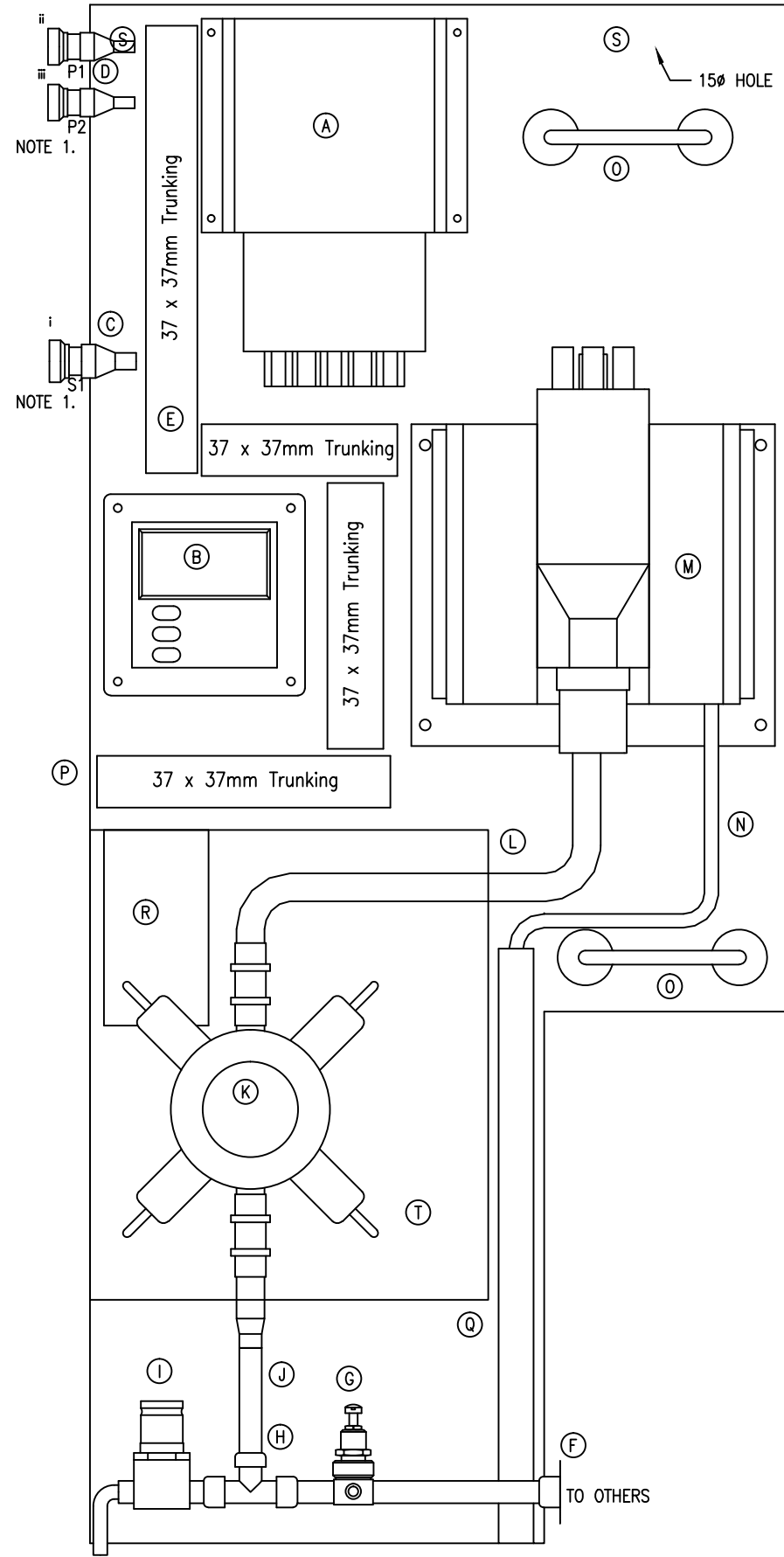
WET GEARPLATE BILL OF MATERIALS

ITEM No.	ITEM	MAKE	MODEL	No. OFF PER GEARPLATE
A	CHLORINE/pH MEASURING ANALYSER	WALLACE & TIERNAN	MFA-Cl <sub>2</sub> ++	
B	TURBIDITY ANALYSER	GREAT LAKES		
C	SIGNAL PLUG/SOCKET RECEPTACLE ASSEMBLY	REFER DRAWING 2002997 .015		1
D	230V AC PLUG/SOCKET RECEPTACLE ASSEMBLY	REFER DRAWING 2002997 .015		2
E	TRUNKING - NARROW SLOT, OPEN 37x37mm	CRITCHLEY BETADUCT	10470032	TO SUIT
F	1/2" MALE CONNECTOR FITTING TO ALLOW FOR THE REMOVAL OF THE GEARPLATE	SWAGELOK		1
G	1/4" FLOW REGULATOR	FISHER CONTROLS REGULATOR	TYPE 67ss-1 SPRING 0-35 PSI	1
H	1/2" TEE	SWAGELOK		1
I	1/2" RELIEF VALVE PRESET TO RELIEVE AT 2 BarG	NUPRO	B-BCPA2-3	1
J	1/2" PVC PIPE			1
K	TURBIDITY SENSOR	GREAT LAKES		1
L	6mm REINFORCED PLASTIC HOSE RATED TO MINIMUM 5 BarG OPERATING PRESSURE			1
M	CHLORINE/PH SENSOR	DEPOLOX 4		1
N	6mm REINFORCED PLASTIC HOSE RATED TO MINIMUM 5 BarG OPERATING PRESSURE			1
O	HANDLES			2
P	GEARPLATE			1
Q	25mm NB PVC PIPE			1
R	TURBIDITY ANALYSER JUNCTION BOX			1
S	GEARPLATE MOUNTING SLOTS	15Ø HOLES		2
T	TURBIDITY SENSOR ENCLOSURE			1

NOTE 2

WET GEARPLATE LABEL SCHEDULE

LABEL No.	INSCRIPTION	TYPE	LOCATION
i	SIGNALS	CABLE FERRULE	ON PLUG CABLE
ii	CHLORINE/PH 230V AC	CABLE FERRULE	ON PLUG CABLE
iii	TURBIDITY 230V AC	CABLE FERRULE	ON PLUG CABLE



WET GEARPLATE LAYOUT

NOTES:

- LEADS FOR PLUG/SOCKET PLUG ASSEMBLIES TO REACH RECEPTACLE POSITION.
- NORGREN R06-222-NNED REPLACED WITH FISHER FLOW REGULATOR, MOUNTED ON NEW PLATES AS THEY FAIL.

FACILITY CODE	AREA
-	93

ISSUE	DATE	AMENDMENT	BY	APPD.	DESIGNED	DES. CHECKED	DRAWN	DWG. CHECKED	PROJECT LEADER	INFRASTR'R APP'D
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.	S Fagamalo	D Ibrahim	R Matthews	S Fagamalo		

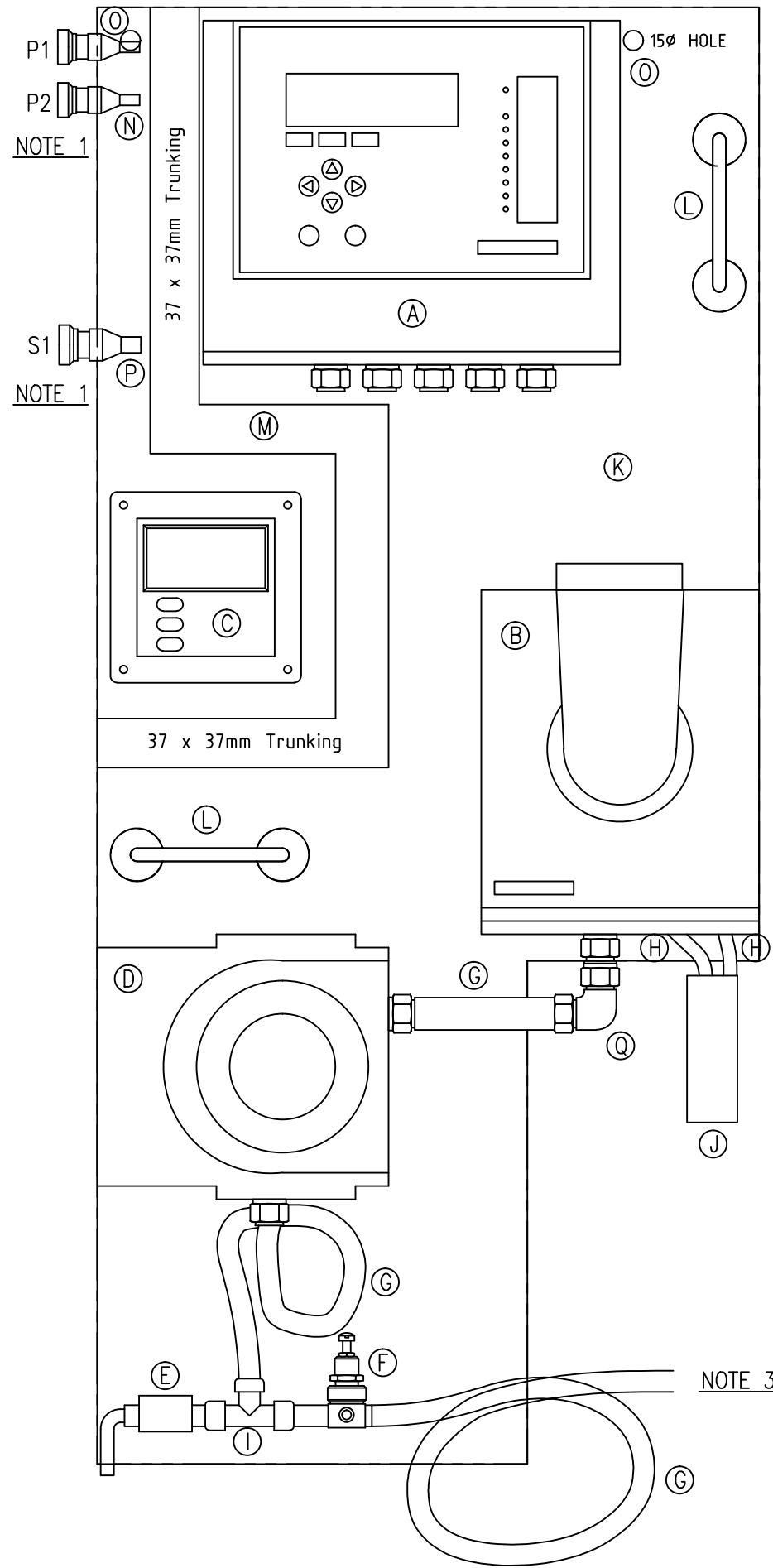
OPERATIONS

INFRASTRUCTURE

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BSP STANDARD DRAWING  
CONTROL SYSTEM  
WET GEARPLATE GENERAL LAYOUT 2 FOR DEPOLOX 4 & ACCU4

CAD FILE	2010998.036	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.036	-



LIST OF MATERIALS

ITEM NO.	ITEM	MAKE	QTY
A	CHLORINE/pH TRANSMITTER DEPOLOX 3 PLUS	SIEMENS	1
B	CHLORINE/pH SENSOR	SIEMENS	1
C	TURBIDITY TRANSMITTER	HACH	1
D	TURBIDITY SENSOR	HACH	1
E	1/2" RELIEF VALVE SET TO 2 BAR G		1
F	BRASS PRESSURE REGULATOR SMC WR110-02-X224		1
G	REINFORCED PLASTIC HOSE RATED TO MINIMUM 5 BAR GAUGE OPERATING PRESSURE		2
H	DRAIN HOSES SUPPLIED WITH SENSOR		2
I	1/2" BSP BRASS TEE	SWAGelok	1
J	PVC DRAIN - REFER DRAWING 2002888.089		1
K	GEAR PLATE		1
L	HANDLES		2
M	TRUNKING - NARROW SLOT OPEN 37x37mm		TO SUIT
N	PLUG/SOCKET 230V AC ASSEMBLY REFER NOTE 2		2
O	GEAR PLATE MOUNTING HOLES		2
P	PLUG/SOCKET SIGNAL WIRING ASSEMBLY REFER NOTE 2		1
Q	1/2" BSP BRASS ELBOW		1

LABELS

LABEL NO.	DESCRIPTION	TYPE	LOCATION
P1	CHLORINE/pH 230V AC	CABLE FERRULE	ON PLUG CABLE
P2	TURBIDITY 230V AC	CABLE FERRULE	ON PLUG CABLE
S1	SIGNALS	CABLE FERRULE	ON PLUG CABLE

NOTES:

- LEADS FOR PLUG/SOCKET ASSEMBLIES TO REACH RECEPTACLE POSITION.
- REFER DRAWING [.017] FOR PLUG CONNECTION DETAILS.
- REFER DRAWING [.055] FOR TAP AND DRAIN DETAILS.

FACILITY CODE	AREA
-	93

ISSUE	DATE	AMENDMENT	BY	APPD.	DESIGNED	DES. CHECKED	DRAWN	DWG. CHECKED	PROJECT LEADER	INFRASTR APP'D
A	11/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.	S Fagamalo	D Ibrahim	R Matthews	S Fagamalo		
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.						

OPERATIONS

**Watercare**

INFRASTRUCTURE

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BSP STANDARD DRAWING  
CONTROL SYSTEM

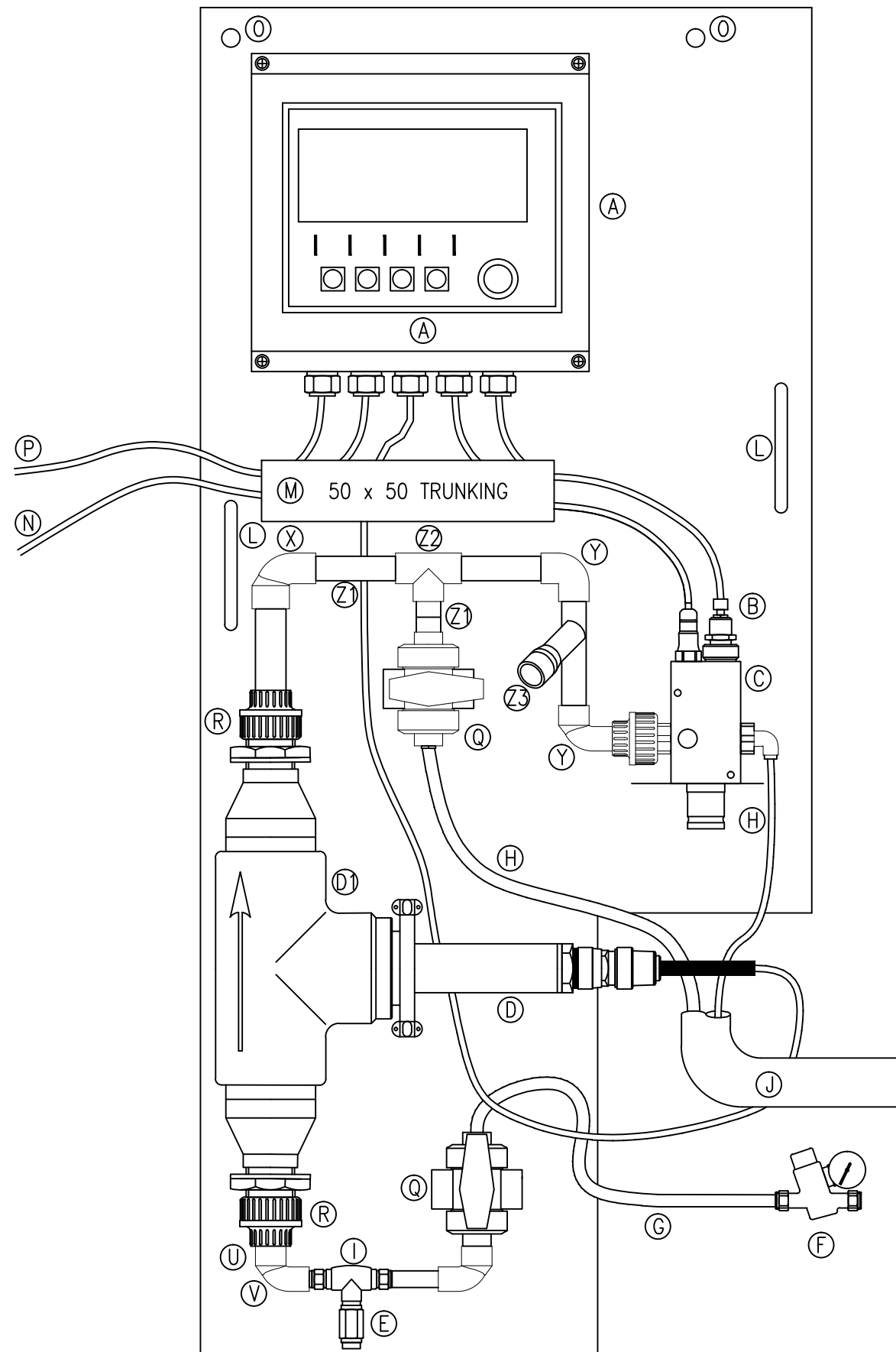
WET GEARPLATE GENERAL LAYOUT 3 FOR DEPOLOX 3 PLUS & SC100

REF No.	ISSUE
-	-

DWG No.	SCALE	DATE	CONTRACT No.
2010998	.037	18/11/15	

LIST OF MATERIALS

ITEM NO.	ITEM	MAKE	QTY
A	CHLORINE/pH/TURBIDITY TRANSMITTER CM444	ENDRESS	1
B	CHLORINE/pH SENSOR CCS142/CPS11D	ENDRESS	1
C	Cl <sub>2</sub> /pH FPW ASSEMBLY CPA250	ENDRESS+HAUSER	1
D	TURBIDITY SENSOR CUS52D	ENDRESS	1
D1	TURBIDITY FLOW ASSEMBLY CUA252	ENDRESS	1
E	1/2" RELIEF VALVE SET TO 2 BAR G + 1/2" BRASS TEE	SWAGEOK	1
F	1/2" FLOW REGULATOR 533...H C/W PRESSURE GAUGE	CALEFFI	1
G	REINFORCED PLASTIC HOSE RATED TO MINIMUM 5 BAR GAUGE OPERATING PRESSURE	SMC	1
H	DRAIN HOSES SUPPLIED WITH SENSOR		2
I	1/4" BSP BRASS TEE	SMC	1
J	PVC DRAIN - REFER DRAWING 2002888.089		1
K	GEAR PLATE - 6mm POWDER COATED ALUMINIUM		1
L	HANDLES - STAINLESS STEEL 96mm		TO SUIT
M	TRUNKING - NARROW SLOT OPEN 50x50mm		
N	PLUG/SOCKET 230V AC ASSEMBLY REFER NOTE 2		2
O	GEAR SOCKET MOUNTING HOLES - 15mm Ø		2
P	PLUG/SOCKET SIGNAL WIRING ASSEMBLY REFER NOTE 2		1
Q	GF523 METERING VALVE C/W MOUNTING PLATE		1
R	25mm PVC UNION	GEORG FISCHER	2
S	25mm CLIP-IT SADDLE + 2x SPACERS	GEORG FISCHER	1
T	90mm CLIP-IT SADDLE + SAFETY CLIP	GEORG FISCHER	1
U	20mm PRO-FIT REDUCING BUSH	GEORG FISCHER	1
V	20-16mm PRO-FIT 90° ELBOW	GEORG FISCHER	1
W	20mm PVC/BRASS UNION 20-1/2" BSP	GEORG FISCHER	1
X	25-20mm PRO-FIT 90° ELBOW	GEORG FISCHER	1
Y	20mm 90° ELBOW	GEORG FISCHER	1
Z	25mm METRIC PIPE PVC	GEORG FISCHER	1
Z1	20mm METRIC PIPE PVC CLEAR	GEORG FISCHER	2
Z2	20mm METRIC TEE PIPE PVC	GEORG FISCHER	1
Z3	SUM STRAINER	GEORG FISCHER	1



LABELS

LABEL NO.	DESCRIPTION	TYPE	LOCATION
P1	CHLORINE/pH 230V AC	CABLE FERRULE	ON PLUG CABLE
S1	SIGNALS	CABLE FERRULE	ON PLUG CABLE

NOTES:

- LEADS FOR PLUG/SOCKET ASSEMBLIES TO REACH RECEPTACLE POSITION.
- REFER DRAWING 2007862.012 FOR PLUG CONNECTION DETAILS.
- REFER DRAWING 2002888.089 FOR TAP AND DRAIN DETAILS.

**CONSTRUCTION ISSUE**

ISSUE	DATE	AMENDMENT	BY	APPD.
A	04:16	MINOR CHANGES FOR CONSTRUCTION	S.W	
-	03:16	TEMPLATE DRAWING	F.T	

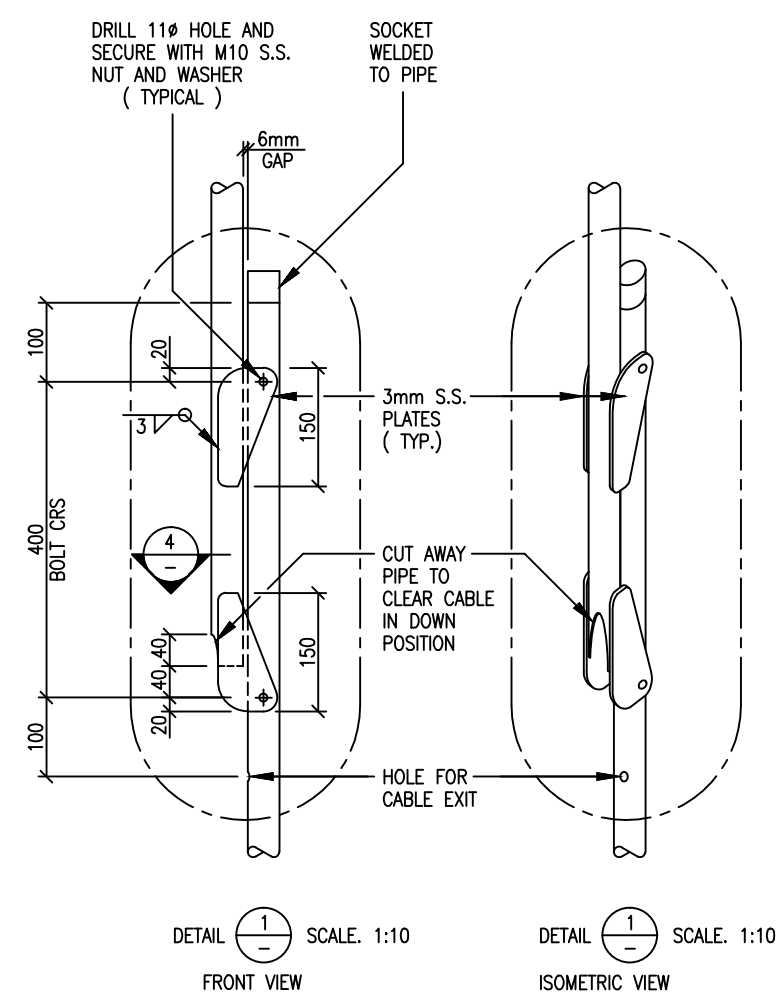
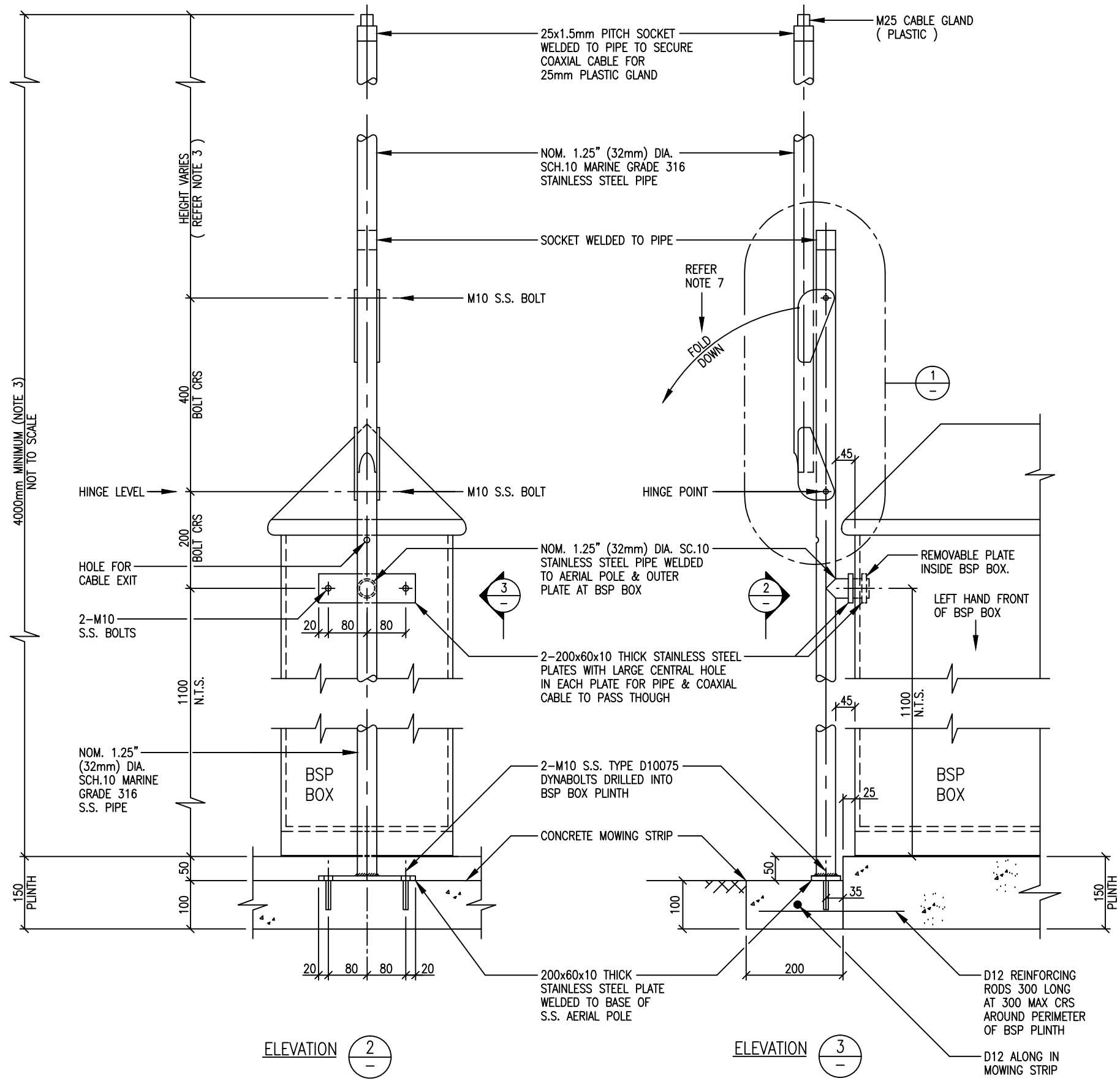
DESIGNED	F.T	03:16
DES. CHECKED	M.W	03:16
DRAWN	J.B	03:16
DWG. CHECKED		
PROJECT LEADER		
INFRASTR APP'D		

OPERATIONS	
INFRASTRUCTURE	

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BSP STANDARD DRAWING  
 CONTROL SYSTEM  
 WET GEAR PLATE GENERAL LAYOUT 4 FOR E AND H CM444 CL/PH TURBIDITY

CAD FILE	2010998.038A	DATE	08:04:2016
ORIGINAL SCALE	A3	CONTRACT No.	-
REF No.	-	ISSUE	-
DWG No.	2010998		.038
			A



- NOTES:**
1. ALL STAINLESS STEEL (S.S.) TO BE MARINE GRADE 316
  2. ANTENNA CABLE IS RG213 COAX.
  3. POLE HEIGHT IS SITE DEPENDANT.
  4. THE HINGE POINT SHALL BE CONSTRUCTED TO PROVIDE THE ABILITY OF HINGING THE POLE BY 135° TOWARD THE GROUND LEVEL WITH THE ANTENNA CABLE IN PLACE.
  5. THE HINGE POINT SHALL BE LOCATED AT 1350mm ABOVE STANDING LEVEL.
  6. TYPICAL ANTENNA FIXING TO BSP CABINET IS AS SHOWN ON THIS DRAWING. FOR ANTENNA FIXING TO A BUILDING OR STRUCTURE REFER 2010998.050
  7. ANTENNA AT HINGE TO FOLD DOWN TOWARDS MAINTENANCE STAND POINT TO ALLOW FOR CLEAR COLLAPSE.

ELEVATION 2

ELEVATION 3

AERIAL MOUNTING & PIPE FIXING DETAILS

FACILITY CODE	AREA
-	93

L:\---\ EGCADF1 \ 2015 \ BSP STANDARD DRAWINGS \ 2010998.039A .DWG

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER	L.C. J.D.			
INFRASTR APP'D	R.M. D.I.			
ISSUE	DATE	AMENDMENT	BY	APPD.
A	08/15	ISSUED FOR CONSTRUCTION - REVISED		
-	09/14	ISSUED FOR CONSTRUCTION		

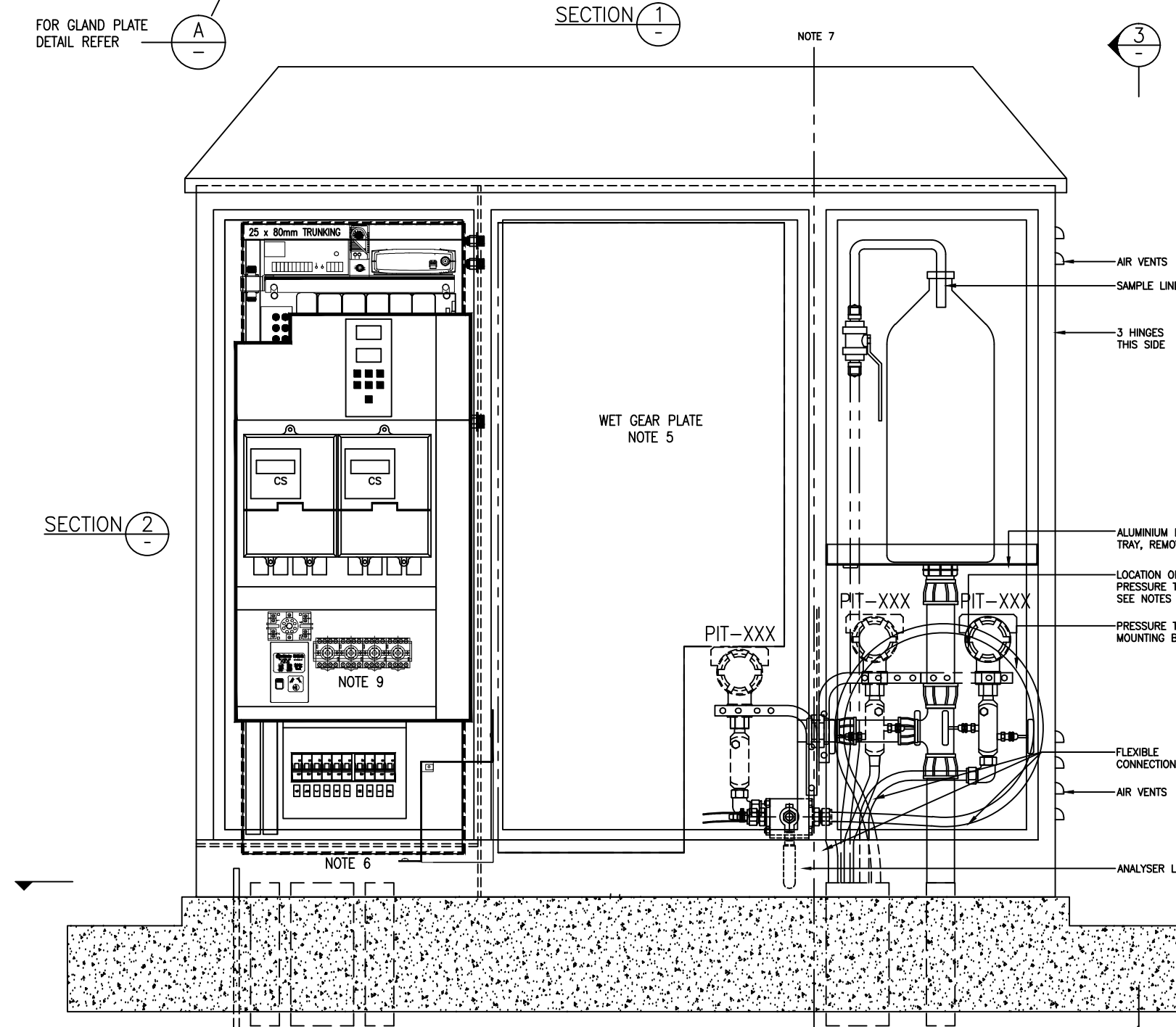
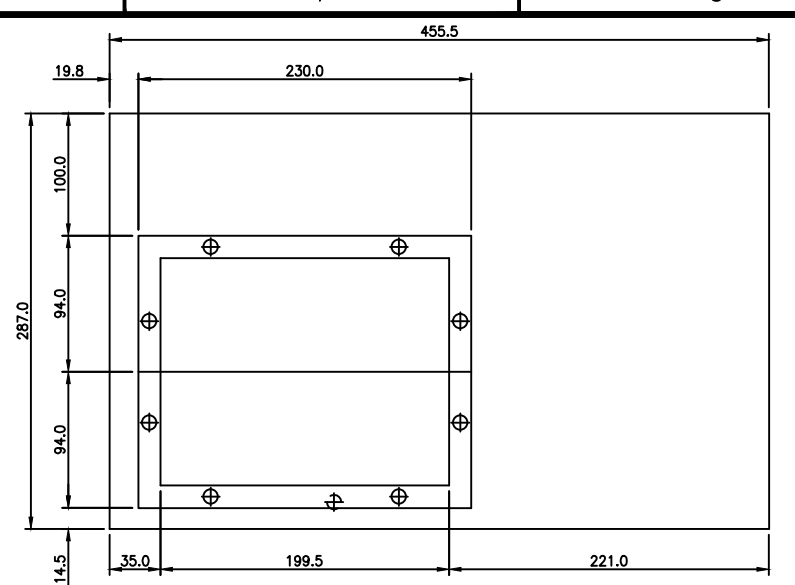
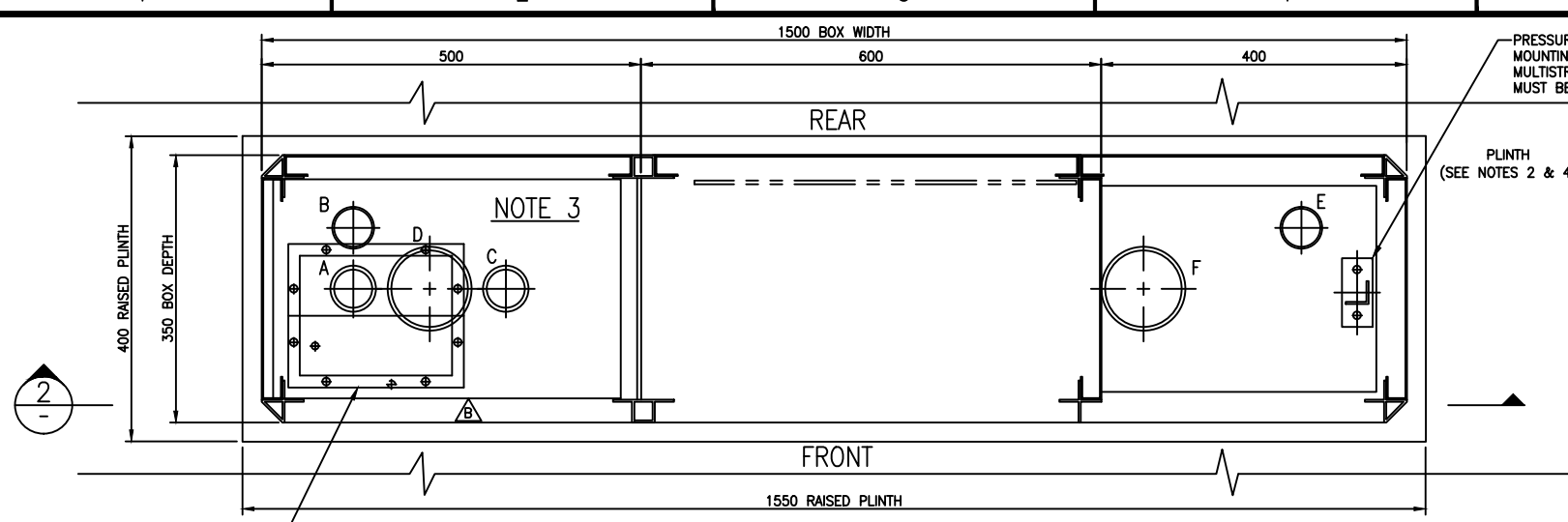
OPERATIONS	
INFRASTRUCTURE	

**Watercare**

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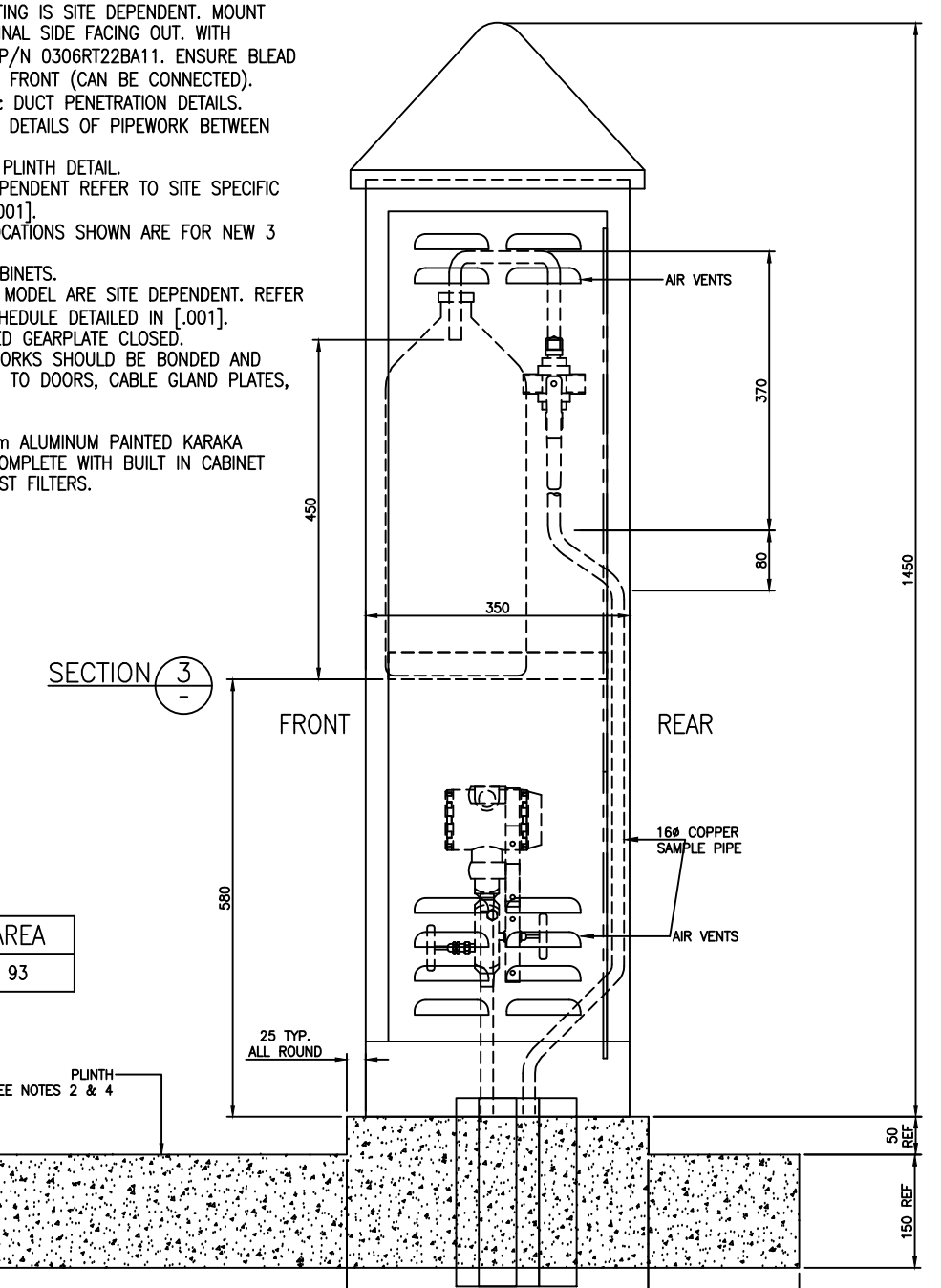
BSP STANDARD DRAWING  
CONTROL SYSTEM  
TYPICAL ANTENNA INSTALLATION AT BSP CABINET

CAD FILE	2010998.039A	DATE	17/08/15
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.039	A



- NOTES:**
- ROSEMOUNT PRESSURE UNIT MOUNTING IS SITE DEPENDENT. MOUNT PRESSURE TRANSDUCER WITH TERMINAL SIDE FACING OUT. WITH ROSEMOUNT-TWO VALVE MANIFOLD P/N 0306RT22BA11. ENSURE BLEAD & BLOCK CALIBRATION PORT FACES FRONT (CAN BE CONNECTED).
  - REFER SHEET [.056] FOR PLINTH & DUCT PENETRATION DETAILS.
  - REFER SHEET [.052] & [.053] FOR DETAILS OF PIPEWORK BETWEEN THE BOX AND CHAMBER
  - REFER DRAWING 2005696.017 FOR PLINTH DETAIL.
  - WETGEAR PLATE LAYOUT IS SITE DEPENDENT REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
  - CABLE PENETRATIONS AND DUCT LOCATIONS SHOWN ARE FOR NEW 3 BAY CABINET ONLY.
  - BOUNDARY FOR EXISTING 2 BAY CABINETS.
  - PRESSURE TRANSMITTER MAKE AND MODEL ARE SITE DEPENDENT. REFER TO THE SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
  - DRY GEARPLATE SHOWN WITH HINGED GEARPLATE CLOSED.
  - ALL OF THE BSP CABINET METAL WORKS SHOULD BE BONDED AND EARTHED INCLUDED BY NOT LIMITED TO DOORS, CABLE GLAND PLATES, INTERNAL WALLS, ETC.
  - IP56 :  
TYPE : IP56 MARINE GRADE 2.5mm ALUMINUM PAINTED KARAKA GREEN. THE CABINET IS COMPLETE WITH BUILT IN CABINET INSULATION, FANS AND DUST FILTERS.  
MAKE : CABLEWAYS

FACILITY CODE	AREA
-	93



ISSUE	DATE	AMENDMENT	BY	APPD.
C	11/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
B	10/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
A	06/15	ISSUED FOR CONSTRUCTION - REVISED	A.S.	D.I.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

DESIGNED	DES. CHECKED	DRAWN	DWG. CHECKED	PROJECT LEADER	INFRASTR'R APP'D
S Fagomalo	D Ibrahim	R Matthews	S Fagomalo		

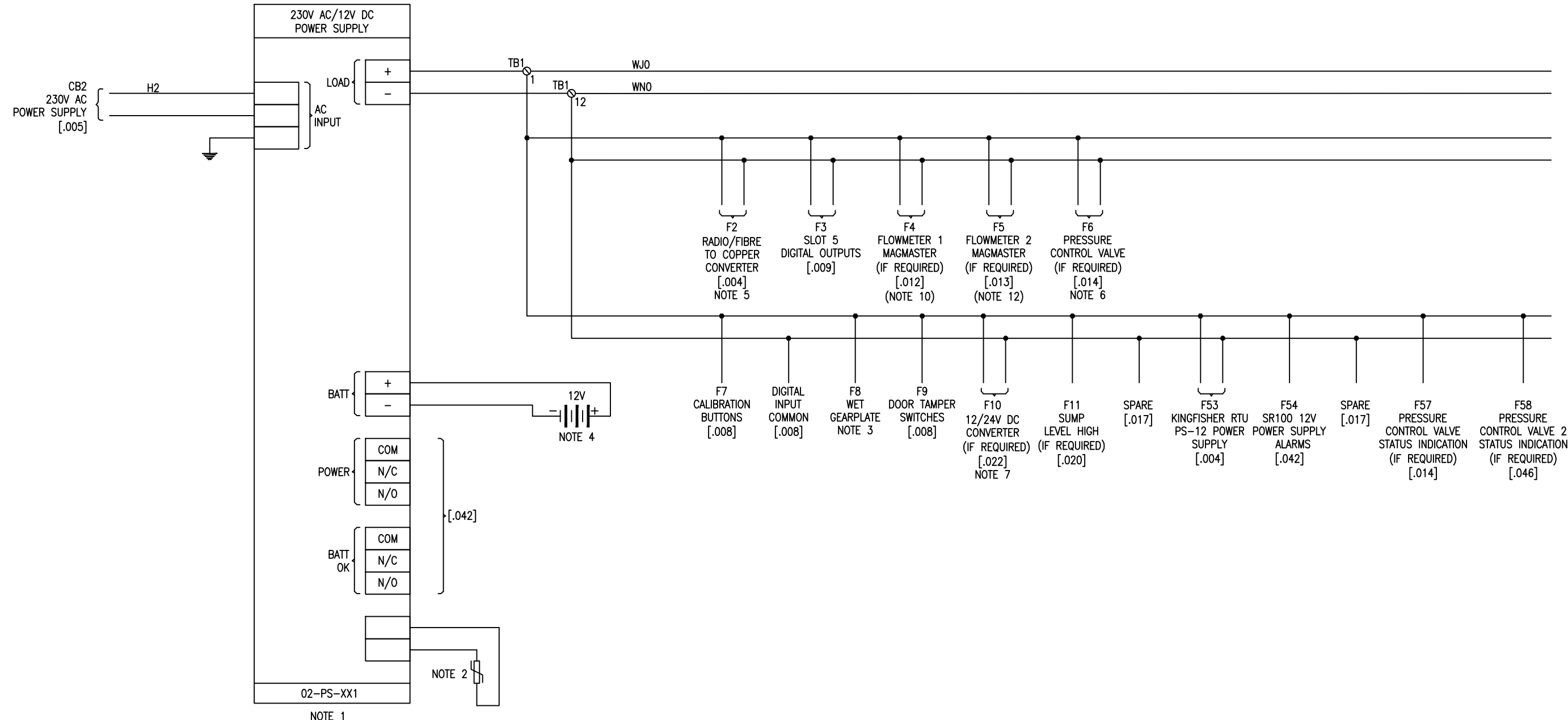


BSP STANDARD DRAWING  
CONTROL SYSTEM  
CABINET GENERAL LAYOUT

CAD FILE	2010998.040	DATE	26/11/15
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.040	C



DRY GEARPLATE



- NOTES:**
- TYPE: 230V AC /12V DC POWER SUPPLY  
MAKE: INNOVATIVE ENERGIES  
MODEL: SR10012TX
  - TEMPERATURE SENSOR IS TO BE MOUNTED ON BATTERIES.
  - EQUIPMENT TYPE IS SITE DEPENDENT. REFER TO SITE SPECIFIC DRAWING SCHEDULE DETAILED IN [.001].
  - 12VDC 24Ah BATTERY.
  - THE USE OF THIS FUSE FOR AN ETHERNET EXTENDER IS SITE DEPENDENT. REFER TO THE SITE SPECIFIC RTU SCHEMATIC DETAILED IN [.004].
  - THE USE OF THIS FUSE FOR A SECOND SUMP HIGH LEVEL SWITCH OR A PROGRAMMABLE ISOLATING DC TRANSMITTER IS SITE DEPENDENT. REFER TO THE SITE SPECIFIC DRAWINGS.
  - THE USE OF THIS FUSE IS FOR ONE OF THE FOLLOWING:
    - A 12/24V DC CONVERTER
    - AN ETHERNET EXTENDER
    - AN ETHERNET SWITCH
    - PRESSURE CONTROL VALVE 2
 THIS IS SITE DEPENDENT. REFER TO THE SITE SPECIFIC DRAWINGS.
  - THE USE OF THIS FUSE FOR THE PRESSURE CONTROL VALVE STATUS INDICATION DIGITAL INPUTS IS SITE DEPENDENT. REFER TO THE SITE SPECIFIC RTU SCHEMATIC DETAILED IN [.004] AND PRESSURE CONTROL VALVE DRAWING IN [.014].

- THE USE OF THIS FUSE AND 0V TERMINAL FOR THE PRESSURE CONTROL VALVE 2 STATUS INDICATION DIGITAL INPUTS IS SITE DEPENDENT. REFER TO THE SITE SPECIFIC RTU SCHEMATIC DETAILED IN [.004] AND PRESSURE CONTROL VALVE 2 DRAWINGS IN [.046].
- THE USE OF THIS FUSE IS FOR ONE OF THE FOLLOWING:
  - AN ETHERNET EXTENDER
  - AN ETHERNET SWITCH
  - PRESSURE CONTROL VALVE 2
 WHEN A 12/24V DC CONVERTER AND MAGMASTER FLOWMETER 2 ARE USED AND MAGMASTER FLOWMETER 1 IS NOT USED. REFER TO THE SITE SPECIFIC DRAWINGS.
- SITE POWER REQUIREMENTS ARE SITE DEPENDENT. THE AUTONOMY AND RECHARGE TIME REQUIRED FOR A SITE IS TO BE CALCULATED AND CONFIRMED WITH OPERATIONS FOR EACH INSTALLATION.
- THE USE OF THIS FUSE IS FOR ONE OF THE FOLLOWING:
  - AN ETHERNET EXTENDER
  - AN ETHERNET SWITCH
  - PRESSURE CONTROL VALVE 2
 WHEN A 12/24V DC CONVERTER AND MAGMASTER FLOWMETER 1 ARE USED AND MAGMASTER FLOWMETER 2 IS NOT USED. REFER TO THE SITE SPECIFIC DRAWINGS.

FACILITY CODE	AREA
-	93

ISSUE	DATE	AMENDMENT	BY	APPD.
A	02/15	ISSUED FOR CONSTRUCTION - REVISED	L.B.	D.I.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

DESIGNED	DES. CHECKED	DRAWN	DWG. CHECKED
S Fagamoto	D Ibrahim	R Matthews	S Fagamoto

OPERATIONS

**Watercare**

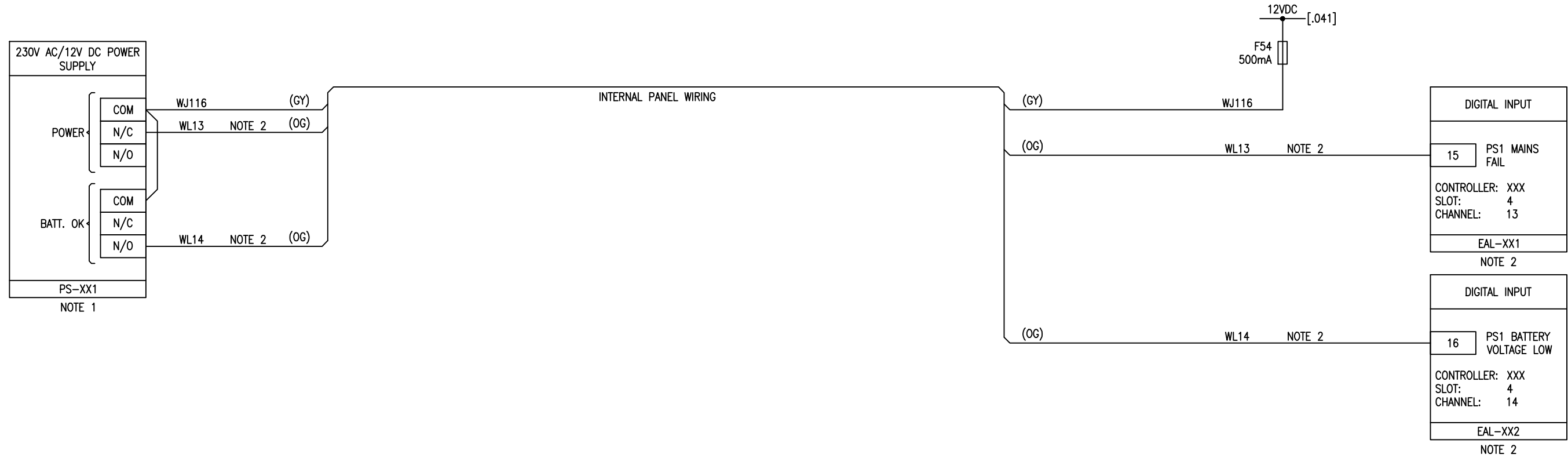
INFRASTRUCTURE

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BSP STANDARD DRAWING  
CONTROL SYSTEM  
12V DC DISTRIBUTION SCHEMATIC

CAD FILE	2010998.041A	DATE	20/02/15
ORIGINAL SCALE	A3	CONTRACT No.	-
REF No.	-	ISSUE	-
DWG No.	2010998	.041	A

DRY GEARPLATE



NOTES:

- REFER TO DRAWING [.041] FOR THE POWER SUPPLY TYPE, MAKE AND MODEL.
- VARIOUS DIGITAL INPUTS CAN BE USED FOR THE INNOVATIVE ENERGIES SR100 POWER SUPPLY INDICATION SIGNALS. REFER TO DRAWING [.008] FOR THE DIGITAL INPUT NUMBERS, CONDITIONS AND WIRE NO.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagamalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagamalo	09/14		
PROJECT LEADER				
INFRASTR APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

OPERATIONS

INFRASTRUCTURE

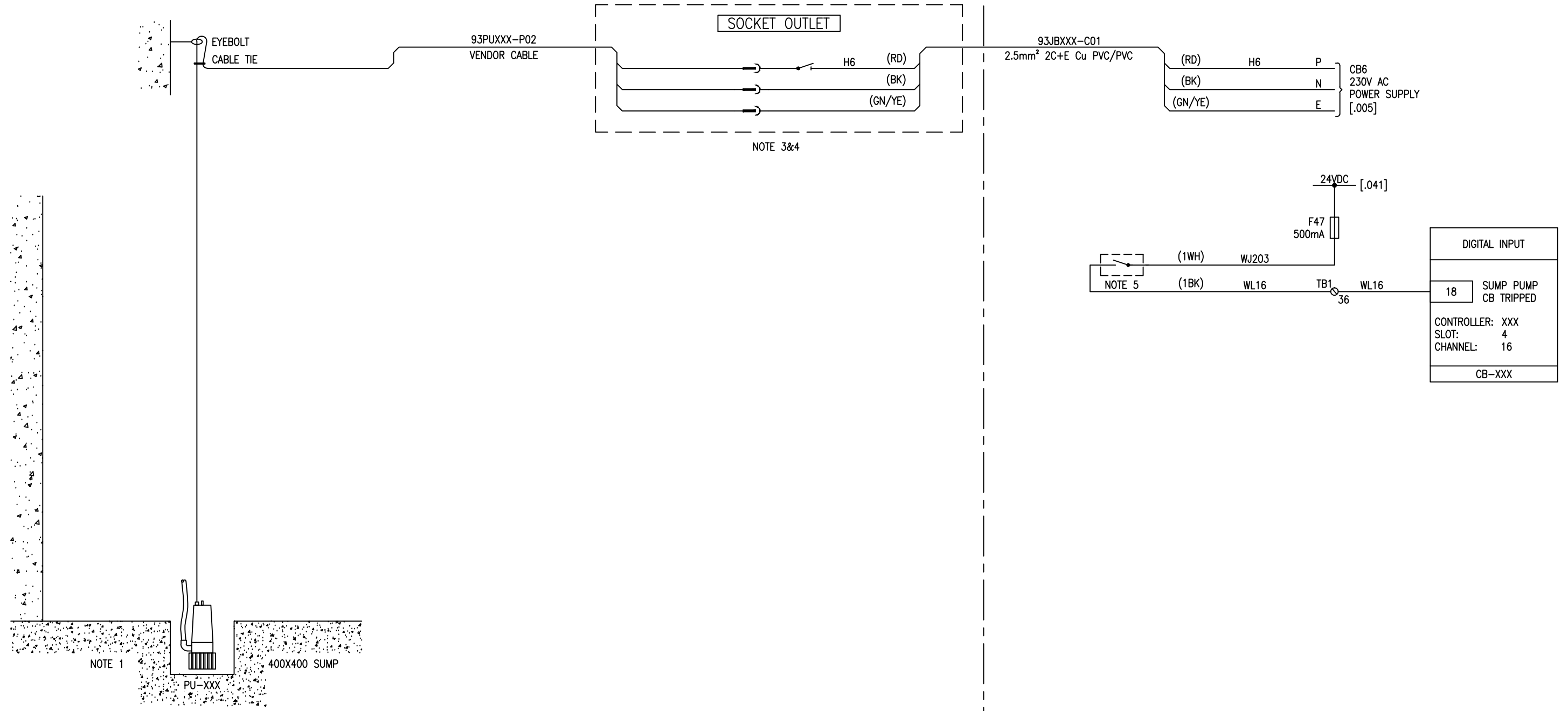
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BSP STANDARD DRAWING  
CONTROL SYSTEM  
EAL-XX1 & EAL-XX2 PS-XX1 MAINS & BATT STATUS LOOP SCHEMATIC

CAD FILE	2010998.042	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.042	-

CHAMBER

DRY GEARPLATE



- NOTES:**
- SUMP PUMP: C/W STAINLESS STEEL SCREEN OR SHOFOU SFA-0512.
  - EYEBOLT SHALL PROTRUDE NO MORE THAN 50mm FROM WALL.
  - TYPE: SINGLE PHASE SOCKET UNIT  
MAKE: PDL  
MODEL: 56CV315
  - PLUG, SOCKET, JUNCTION BOX, AND TOP EYEBOLT (IN THE PUMP CABLE) TO BE MOUNTED 300mm FROM CHAMBER ROOF.
  - SUMP PUMP MCB FAULT INDICATION AUXILIARY CONTACT.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER				
INFRASTR APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

OPERATIONS

**Watercare**

INFRASTRUCTURE

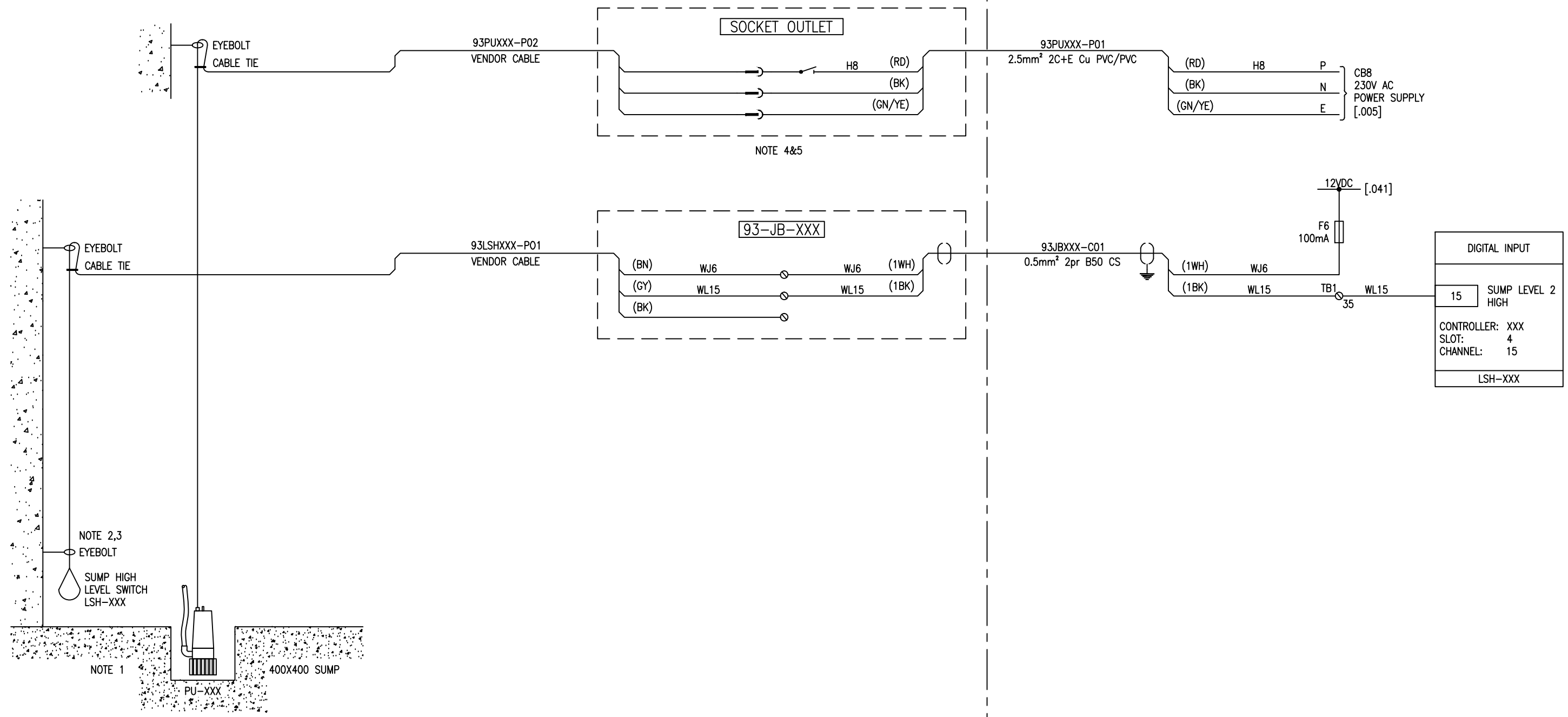
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BSP STANDARD DRAWING  
CONTROL SYSTEM  
PU-XXX SUMP PUMP 1 SCHEMATIC

CAD FILE	2010998.043	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.043	-

CHAMBER

DRY GEARPLATE



NOTES:

- SUMP PUMP: C/W STAINLESS STEEL SCREEN OR SHOFOU SFA-0512.
- TYPE: LEVEL SWITCH  
MAKE: FLYGT  
MODEL: EMN-10
- FLOAT SWITCH SHALL BE MOUNTED 50mm ABOVE FLOOR LEVEL. EYEBOLT SHALL PROTRUDE NO MORE THAN 50mm FROM WALL. EYEBOLT SHALL BE MOUNTED 300mm ABOVE FLOOR LEVEL.
- TYPE: SINGLE PHASE SOCKET UNIT  
MAKE: PDL  
MODEL: 56CV315
- PLUG, SOCKET, JUNCTION BOX, AND TOP EYEBOLT (IN THE PUMP CABLE) TO BE MOUNTED 300mm FROM CHAMBER ROOF.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER				
INFRASTR APP'D				
ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

OPERATIONS

INFRASTRUCTURE

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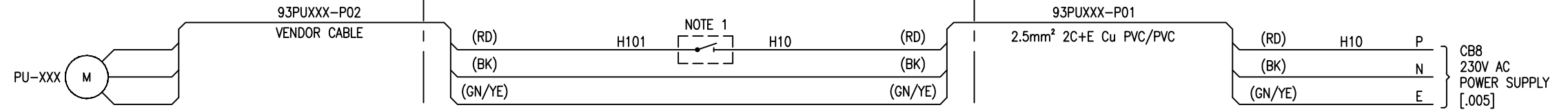
BSP STANDARD DRAWING  
CONTROL SYSTEM  
PU-XXX SUMP PUMP 2 AND LSH-XXX HIGH LEVEL 2 ALARM SCHEMATIC

CAD FILE	2010998.044	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.044	-

CHAMBER

MANUAL SAMPLING  
POINT ENCLOSURE

DRY GEARPLATE



NOTES:  
1. HAND SWITCH.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14		
DES. CHECKED	D Ibrahim	09/14		
DRAWN	R Matthews	09/14		
DWG. CHECKED	S Fagomalo	09/14		
PROJECT LEADER			A.S.	D.I.
INFRASTR'R APP'D			R.M.	D.I.
BY				APPD.

OPERATIONS



INFRASTRUCTURE

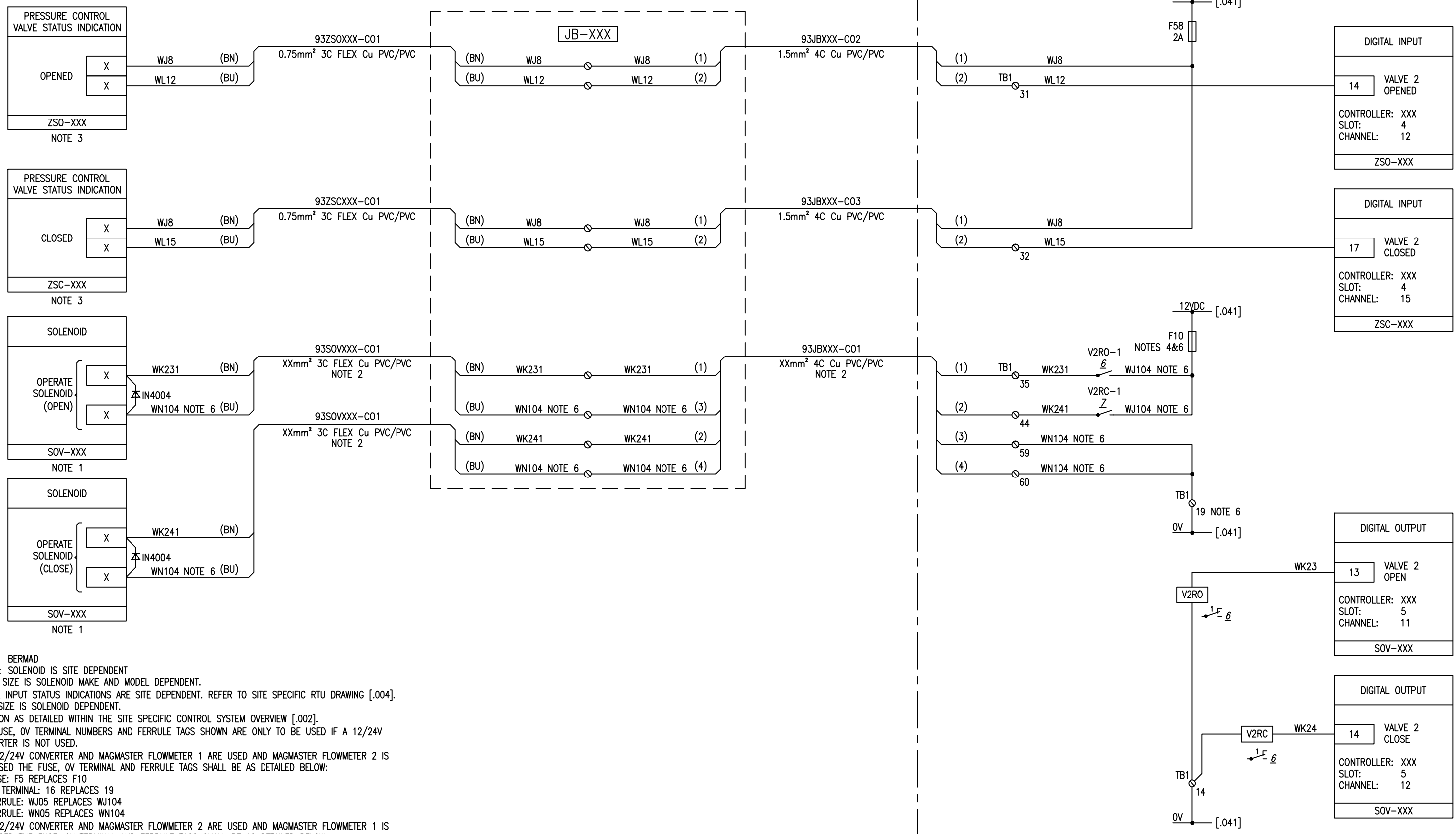
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BSP STANDARD DRAWING  
CONTROL SYSTEM  
PU-XXX SAMPLING PUMP SCHEMATIC

CAD FILE	2010998.045A	DATE	20/04/15
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.045	A

FIELD  
NOTE 5

DRY GEARPLATE



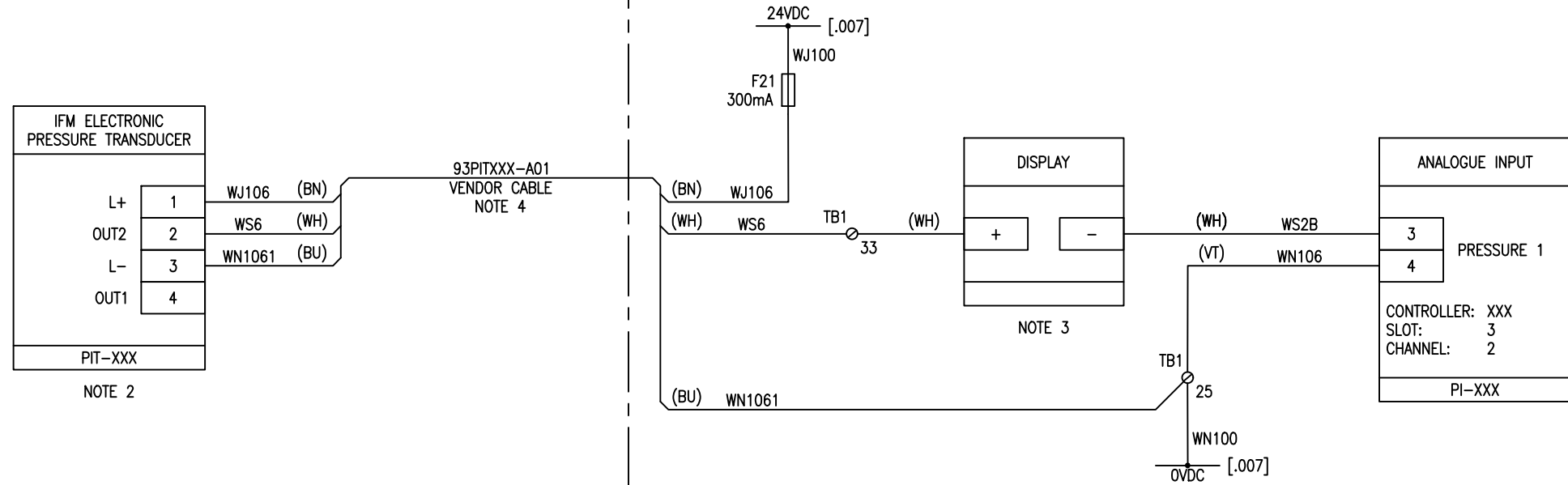
- NOTES:**
1. MAKE: BERMAD  
MODEL: SOLENOID IS SITE DEPENDENT
  2. CABLE SIZE IS SOLENOID MAKE AND MODEL DEPENDENT.
  3. DIGITAL INPUT STATUS INDICATIONS ARE SITE DEPENDENT. REFER TO SITE SPECIFIC RTU DRAWING [.004].
  4. FUSE SIZE IS SOLENOID DEPENDENT.
  5. LOCATION AS DETAILED WITHIN THE SITE SPECIFIC CONTROL SYSTEM OVERVIEW [.002].
  6. THE FUSE, OV TERMINAL NUMBERS AND FERRULE TAGS SHOWN ARE ONLY TO BE USED IF A 12/24V CONVERTER IS NOT USED.  
IF A 12/24V CONVERTER AND MAGMASTER FLOWMETER 1 ARE USED AND MAGMASTER FLOWMETER 2 IS NOT USED THE FUSE, OV TERMINAL AND FERRULE TAGS SHALL BE AS DETAILED BELOW:
    - FUSE: F5 REPLACES F10
    - OV TERMINAL: 16 REPLACES 19
    - FERRULE: WJ05 REPLACES WJ104
    - FERRULE: WN05 REPLACES WN104
 IF A 12/24V CONVERTER AND MAGMASTER FLOWMETER 2 ARE USED AND MAGMASTER FLOWMETER 1 IS NOT USED THE FUSE, OV TERMINAL AND FERRULE TAGS SHALL BE AS DETAILED BELOW:
    - FUSE: F4 REPLACES F10
    - OV TERMINAL: 15 REPLACES 19
    - FERRULE: WJ04 REPLACES WJ104
    - FERRULE: WN04 REPLACES WN104

FACILITY CODE	AREA
-	93

FLOWMETER CHAMBER

NOTE 1

DRY GEARPLATE



NOTES:

1. LOCATION AS DETAILED WITHIN THE SITE SPECIFIC CONTROL SYSTEM OVERVIEW [.002].
2. MAKE: IFM ELECTRONIC  
MODEL: PN202 SERIES
3. DISPLAY SCALED TO 0-1500 kPa.
4. VENDOR CABLE PART NUMBER IS EVMXXX, WHERE XXX IS A 3 DIGIT NUMBER ASSOCIATED WITH THE VARIOUS CABLE LENGTHS AVAILABLE. THE CONTRACTOR IS TO ENSURE THE VENDOR CABLE IS LONG ENOUGH FOR THE PARTICULAR INSTALLATION REQUIRED.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14
DES. CHECKED	D Ibrahim	09/14
DRAWN	R Matthews	09/14
DWG. CHECKED	S Fagomalo	09/14
PROJECT LEADER		
INFRASTR APP'D		

OPERATIONS
INFRASTRUCTURE



BSP STANDARD DRAWING  
CONTROL SYSTEM  
PIT-XXX IFM PRESSURE TRANSDUCER 1 LOOP SCHEMATIC

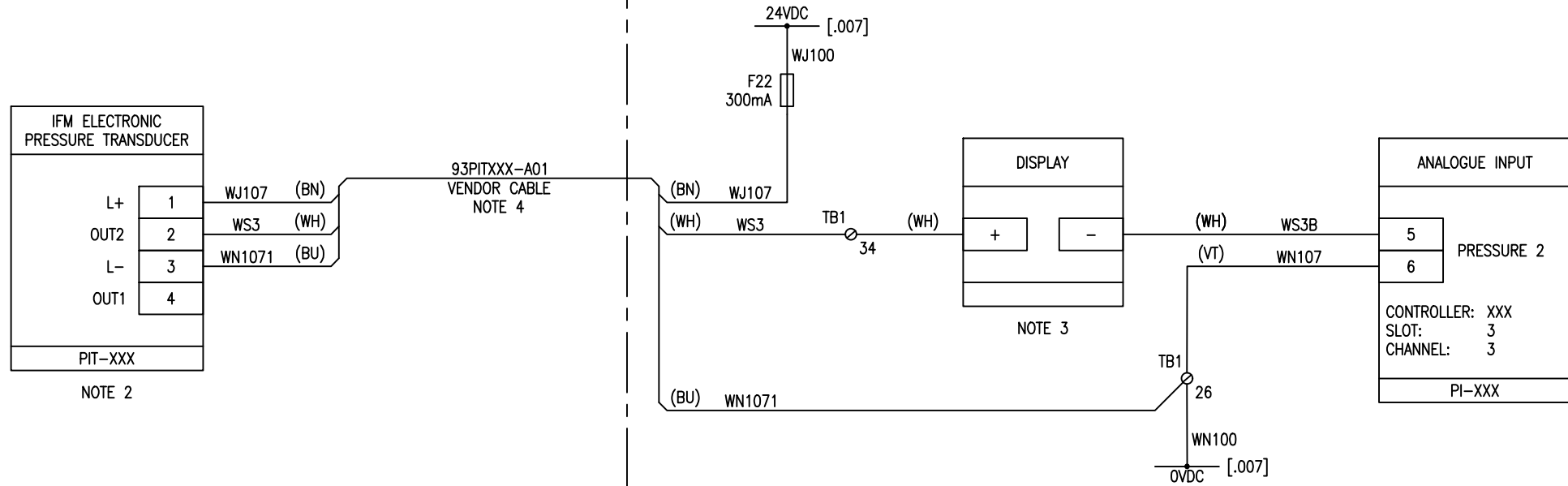
CAD FILE	2010998.047	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.047	-

ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.

FLOWMETER CHAMBER

NOTE 1

DRY GEARPLATE



NOTES:

1. LOCATION AS DETAILED WITHIN THE SITE SPECIFIC CONTROL SYSTEM OVERVIEW [.002].
2. MAKE: IFM ELECTRONIC  
MODEL: PN202 SERIES
3. DISPLAY SCALED TO 0-1500 kPA.
4. VENDOR CABLE PART NUMBER IS EVMXXX, WHERE XXX IS A 3 DIGIT NUMBER ASSOCIATED WITH THE VARIOUS CABLE LENGTHS AVAILABLE. THE CONTRACTOR IS TO ENSURE THE VENDOR CABLE IS LONG ENOUGH FOR THE PARTICULAR INSTALLATION REQUIRED.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14
DES. CHECKED	D Ibrahim	09/14
DRAWN	R Matthews	09/14
DWG. CHECKED	S Fagomalo	09/14
PROJECT LEADER		
INFRASTR APP'D		

OPERATIONS
INFRASTRUCTURE



BSP STANDARD DRAWING  
CONTROL SYSTEM  
PIT-XXX IFM PRESSURE TRANSDUCER 2 LOOP SCHEMATIC

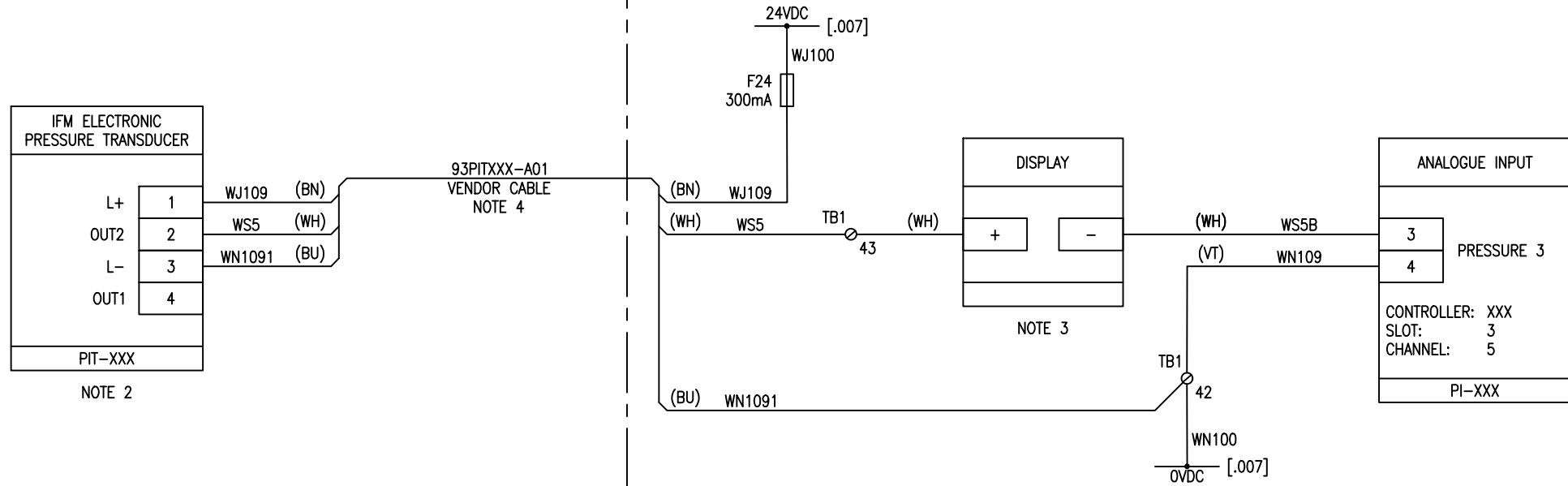
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ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.048	-



FLOWMETER CHAMBER

NOTE 1

DRY GEARPLATE



NOTES:

1. LOCATION AS DETAILED WITHIN THE SITE SPECIFIC CONTROL SYSTEM OVERVIEW [.002].
2. MAKE: IFM ELECTRONIC  
MODEL: PN202 SERIES
3. DISPLAY SCALED TO 0-1500 kPA.
4. VENDOR CABLE PART NUMBER IS EVMXXX, WHERE XXX IS A 3 DIGIT NUMBER ASSOCIATED WITH THE VARIOUS CABLE LENGTHS AVAILABLE. THE CONTRACTOR IS TO ENSURE THE VENDOR CABLE IS LONG ENOUGH FOR THE PARTICULAR INSTALLATION REQUIRED.

FACILITY CODE	AREA
-	93

DESIGNED	S Fagomalo	09/14
DES. CHECKED	D Ibrahim	09/14
DRAWN	R Matthews	09/14
DWG. CHECKED	S Fagomalo	09/14
PROJECT LEADER		
INFRASTR APP'D		

OPERATIONS
INFRASTRUCTURE

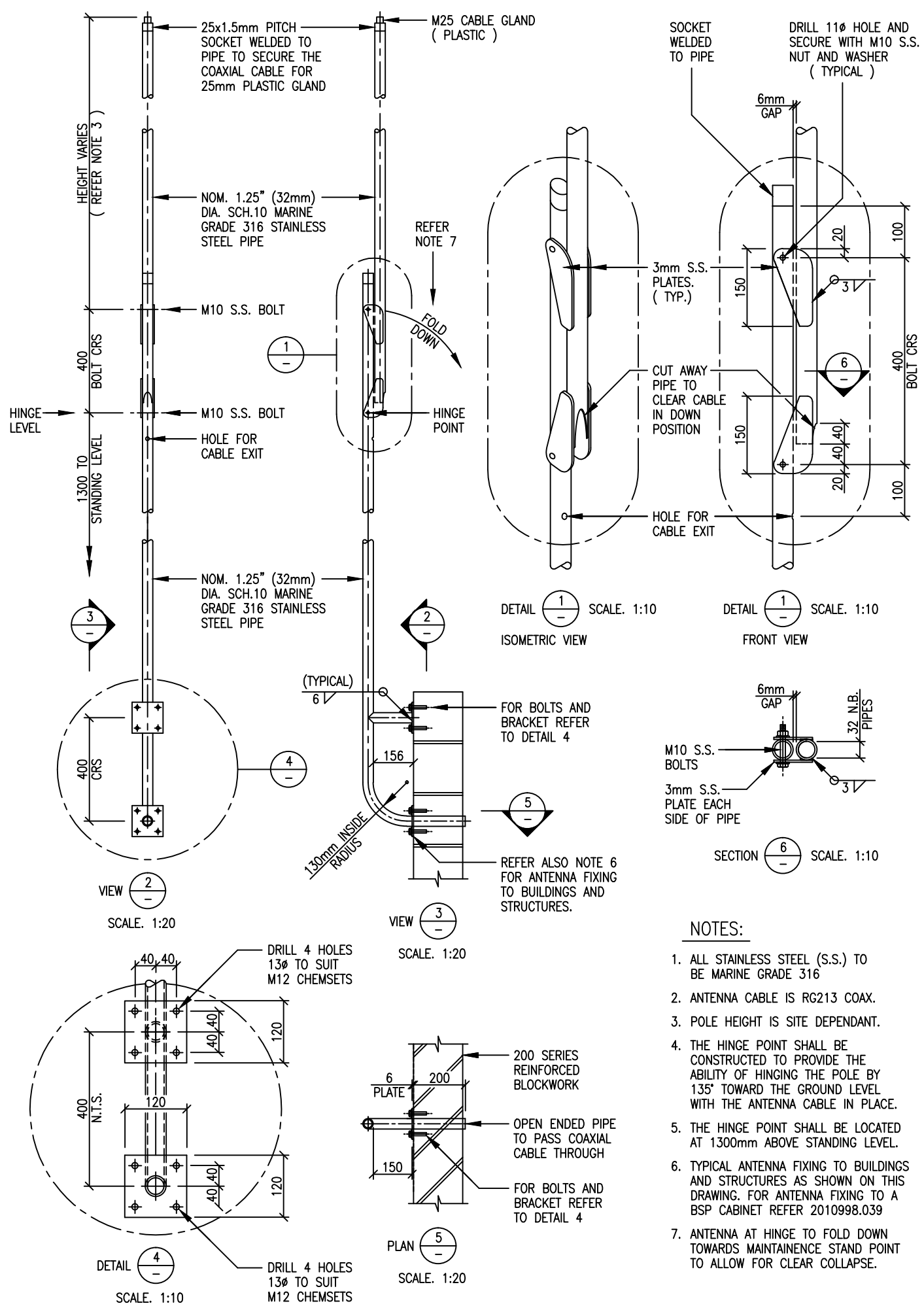


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BSP STANDARD DRAWING  
CONTROL SYSTEM  
PIT-XXX IFM PRESSURE TRANSDUCER 3 LOOP SCHEMATIC

CAD FILE	2010998.049	DATE	16/09/14
ORIGINAL SCALE	A3	CONTRACT No.	
REF No.	-	ISSUE	-
DWG No.	2010998	.049	-

ISSUE	DATE	AMENDMENT	BY	APPD.
-	09/14	ISSUED FOR CONSTRUCTION	R.M.	D.I.



- NOTES:**
1. ALL STAINLESS STEEL (S.S.) TO BE MARINE GRADE 316
  2. ANTENNA CABLE IS RG213 COAX.
  3. POLE HEIGHT IS SITE DEPENDANT.
  4. THE HINGE POINT SHALL BE CONSTRUCTED TO PROVIDE THE ABILITY OF HINGING THE POLE BY 135° TOWARD THE GROUND LEVEL WITH THE ANTENNA CABLE IN PLACE.
  5. THE HINGE POINT SHALL BE LOCATED AT 1300mm ABOVE STANDING LEVEL.
  6. TYPICAL ANTENNA FIXING TO BUILDINGS AND STRUCTURES AS SHOWN ON THIS DRAWING. FOR ANTENNA FIXING TO A BSP CABINET REFER 2010998.039
  7. ANTENNA AT HINGE TO FOLD DOWN TOWARDS MAINTAINENCE STAND POINT TO ALLOW FOR CLEAR COLLAPSE.

L:\---\ EGCADFI \ 2015 \ BSP STANDARD DRAWINGS \ 2010998.050 .DWG



**BSP STANDARD DRAWING  
 CONTROL SYSTEM  
 TYPICAL ANTENNA INSTALLATION AT STRUCTURE**

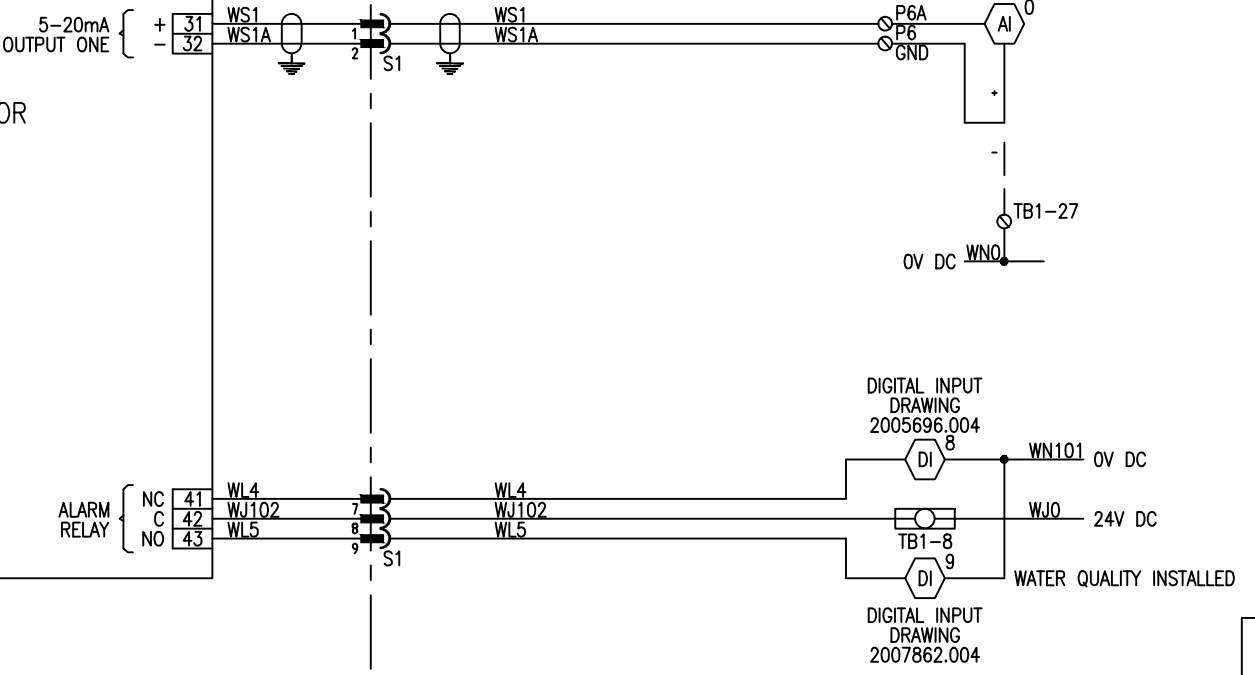
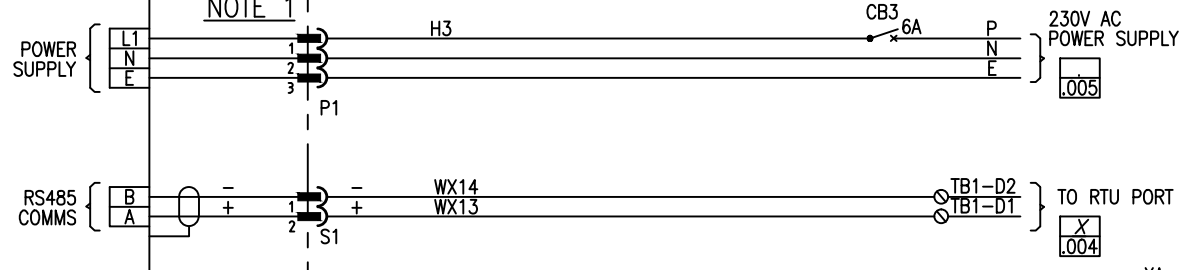
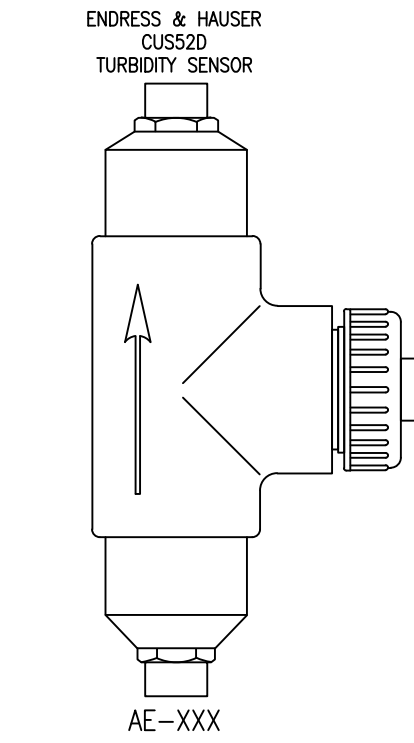
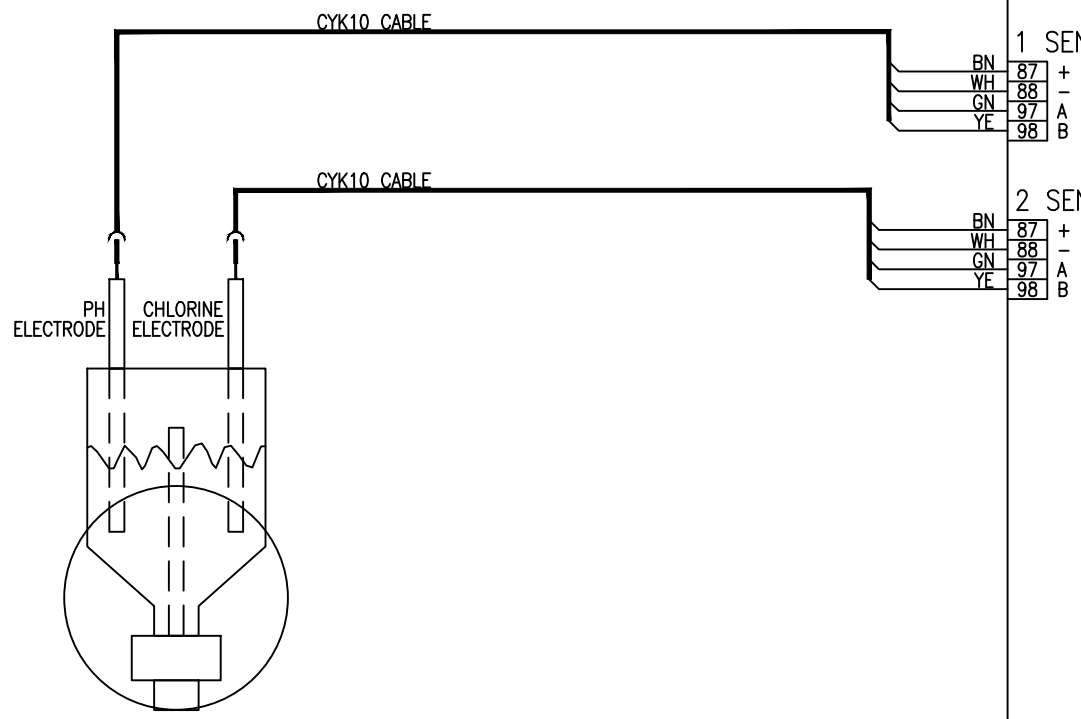
SCALE:	1:20 & 1:10 (A3)
ISSUE DATE:	17-08-2015
REFERENCE No.	—
DWG No.	2010998.050

WET GEARPLATE

DRY GEARPLATE

CM444 MULTI PARAMETER TRANSMITTER  
ENDRESS & HAUSER

8888



FACILITY CODE	AREA
-	93

NOTES:  
1. REFER DRAWING 2007899.017 FOR PLUG CONNECTIONS.

**CONSTRUCTION ISSUE**

DESIGNED	F.T	07:15
DES. CHECKED	A.D	07:15
DRAWN	J.B	07:15
DWG. CHECKED		
PROJECT LEADER		
INFRASTR'R APP'D		
ISSUE	DATE	AMENDMENT
-	01:16	FOR CONSTRUCTION
		BY
		APPD.

OPERATIONS

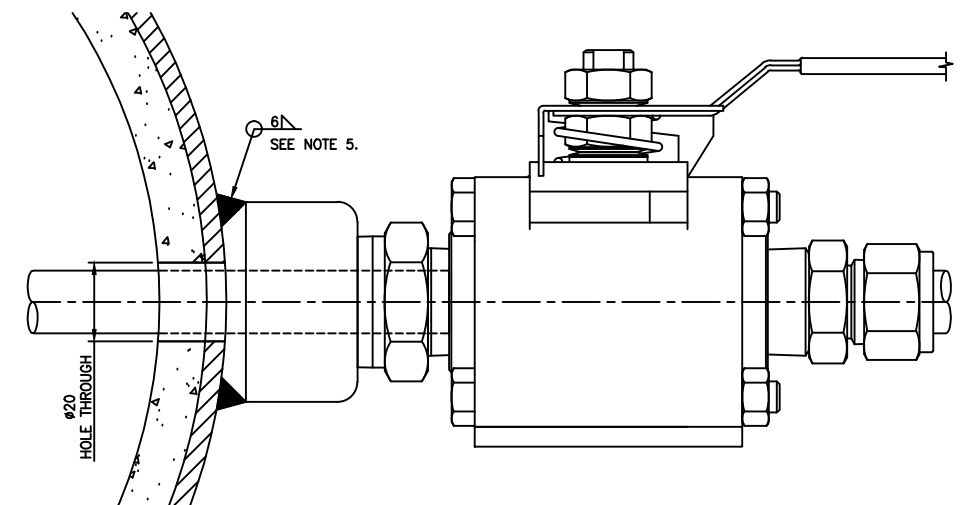
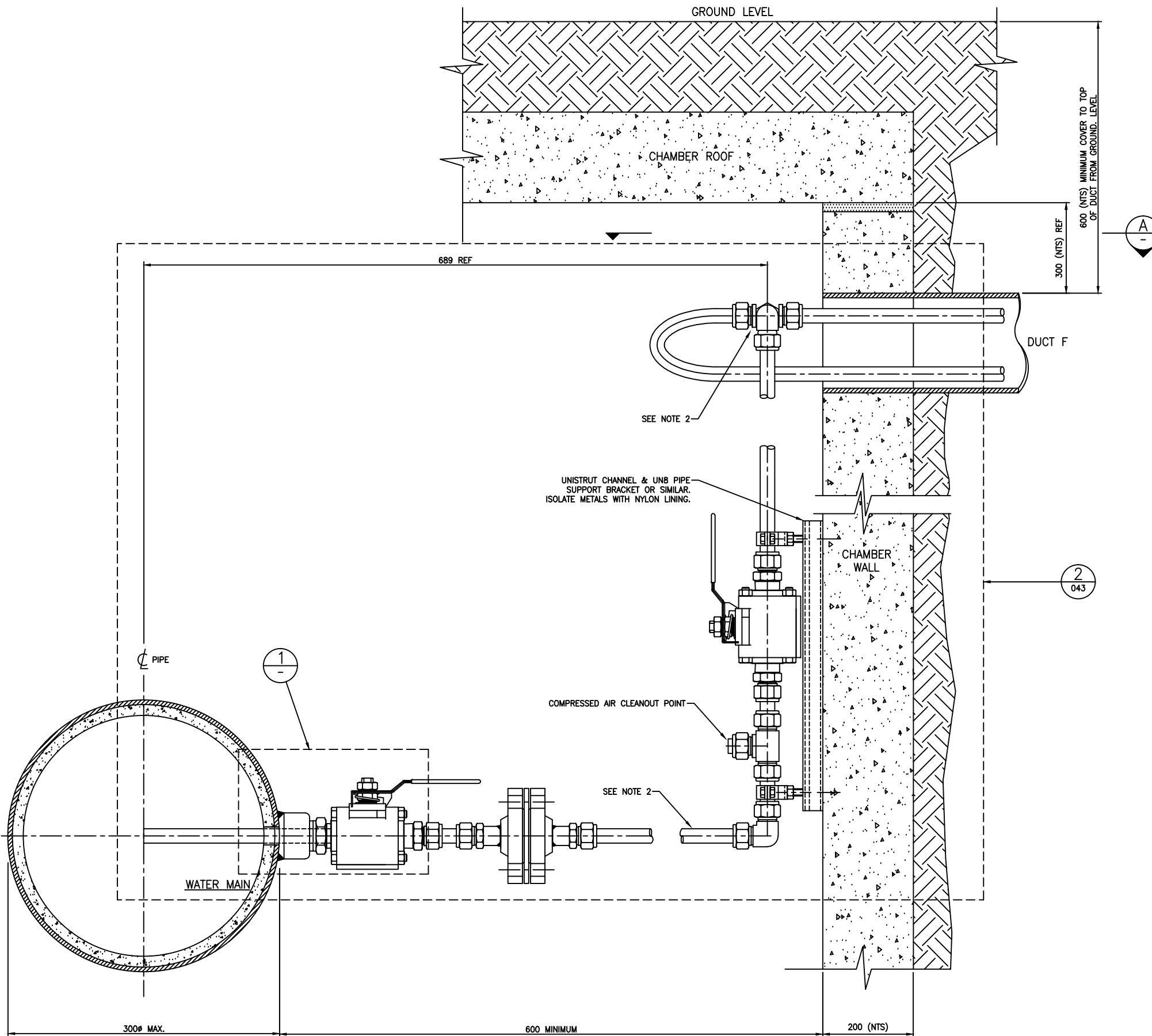
**Watercare**

INFRASTRUCTURE

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BSP STANDARD DRAWING  
CONTROL SYSTEM  
TURBIDITY/CHLORINE/PH ANALYSER 92-AIT-XXX AND XXX

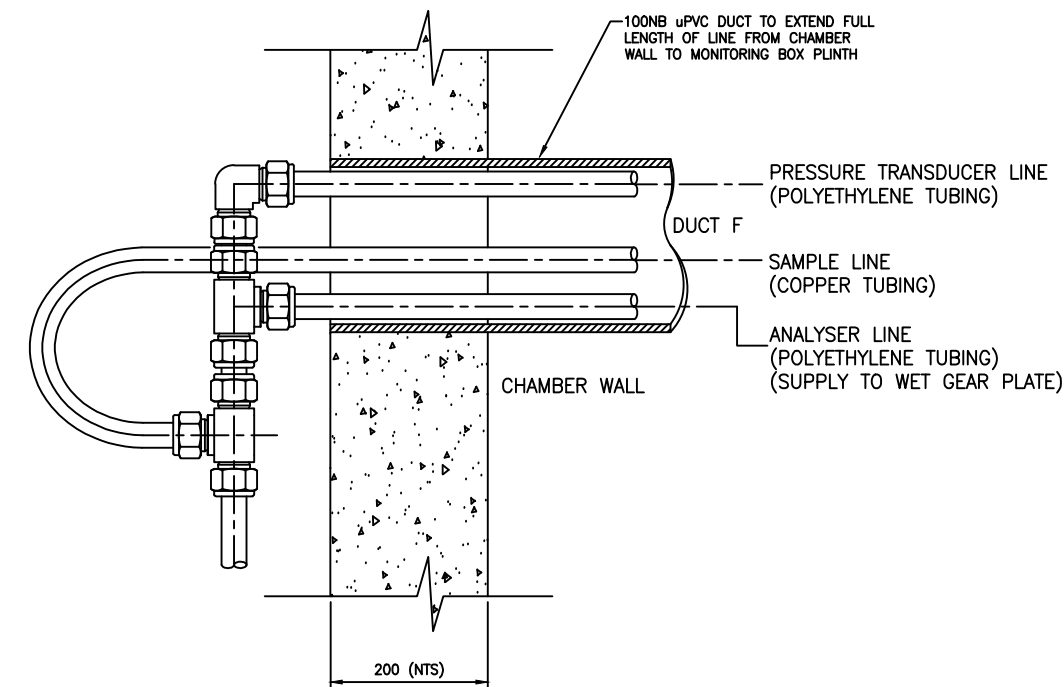
CAD FILE	2010998.051	DATE	25/01/2016
ORIGINAL SCALE	A3	CONTRACT No.	-
	N.T.S		
REF No.	-	ISSUE	-
DWG No.	2010998 .051		



DETAIL 1  
1:2 (A3)

**NOTES:**

1. ALL FITTINGS TO BE 20 BAR TEST PRESSURE RATED.
2. CUT TUBING TO LENGTH ON SITE.
3. CHECK ALL MEASUREMENTS ON SITE.
4. SEE DRG No. 2002888.043 FOR TAPPING POINT BOM.
5. ALL WELDS IN MILD STEEL PIPEWORK SHALL BE PERFORMED TO ASME B 31.4 UNLESS OTHERWISE STATED.



SECTION A  
1:5 (A3)

**CONSTRUCTION ISSUE**

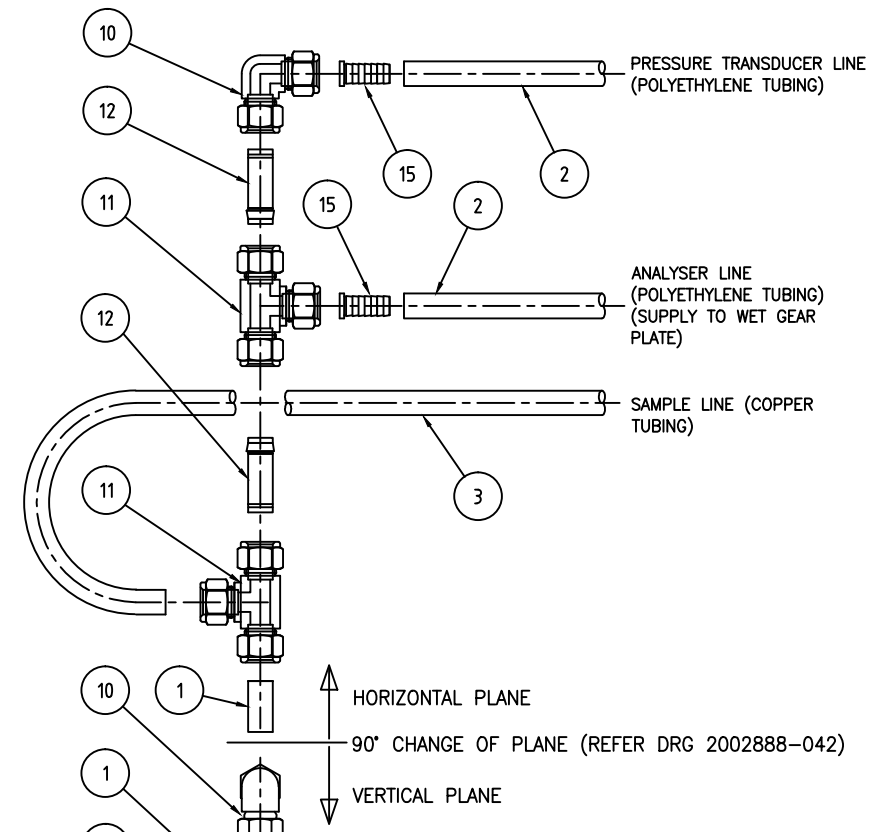
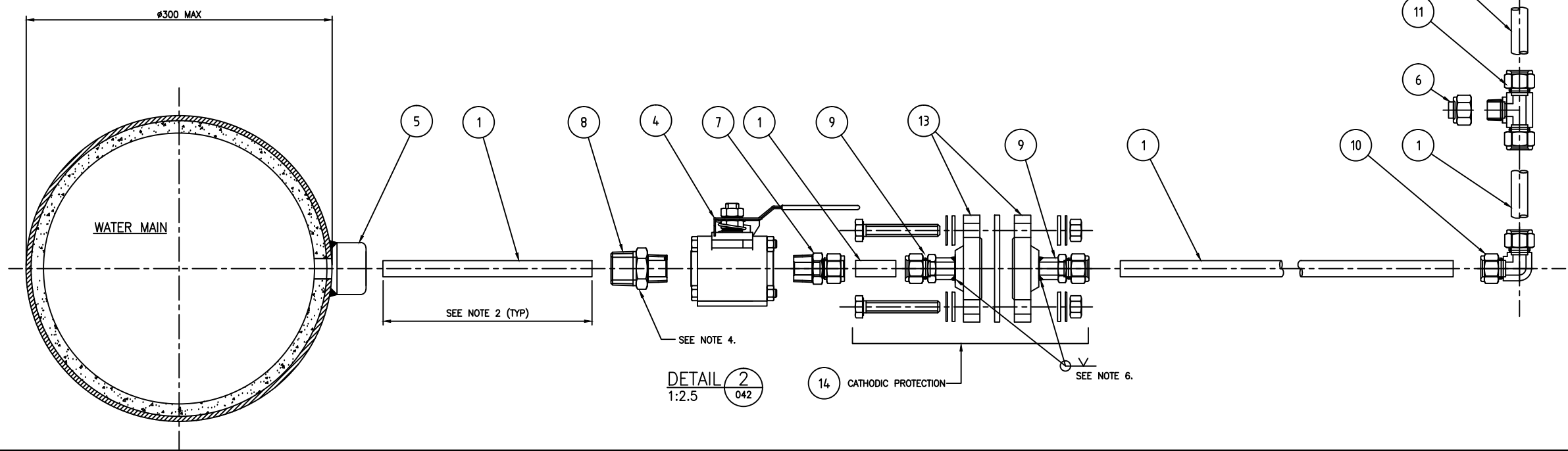
DESIGNED	J.D.	06:16	<p><b>Watercare</b>  <small>COPYRIGHT - This drawing, the design concept, remain the exclusive property of Watercare Services Limited and may not be used without approval. Copyright reserved.</small></p>	<p>BSP STANDARD DRAWING  CONTROL SYSTEM  CHAMBER SAMPLE TAPPING POINT LAYOUT</p>	CAD FILE	2010998.052	DATE	02:06:2016
DES. CHECKED					ORIGINAL SCALE	A3	CONTRACT No.	
DRAWN	J.B.	06:16			N.T.S.			
DWG. CHECKED					REF No.		ISSUE	
PROJECT LEADER					DWG No.	2010998.052		
INFRAS'T'R APP'D								
ISSUE	DATE	AMENDMENT	BY	APPD.	OPERATIONS	INFRASTRUCTURE		

ITEM	DRG/PART No.	MAKE/SUPPLIER	MATERIAL	DESCRIPTION	QTY
1	-	S&T STAINLESS	S/S	16mm x 1.5 WT SEAMLESS TUBE	-
2	PA 1612	LEDATHENE	POLYETHYLENE	16mm x 11.80 ID TUBE	-
3	-		COPPER	16mm x 1.5 WT TUBE	-
4	VPB6020-3	S&T STAINLESS	S/S	3/4" BSP BALL V/V 1000LB. TEFLON SEATED 3-PIECE	2
5	-	BONEY FORGE	MS	1" BSP THREAOLET CL3000	1
6	SS-16MO-P	SWAGELOK	S/S	16mm PLUG	1
7	SS-16MO-1-12RT	SWAGELOK	S/S	3/4" BSPx16mm MALE CONN.	3
8	BSP6RNO25020/3	S&T STAINLESS	S/S	1" x 3/4" BSP MALE ADAPTER (SEE NOTE 4)	1
9	SS-16MO-1-BW	SWAGELOK	S/S	16mm x 1/2" MALE PIPE WELD CONNECTOR	2
10	SS-16MO-9	SWAGELOK	S/S	16mm UNION ELBOW	3
11	SS-16MO-3	SWAGELOK	S/S	16mm UNION TEE	3
12	SS-16M1PC	SWAGELOK	S/S	16mm PORT CONNECTOR	2
13	FA300SP6020	S&T STAINLESS	S/S	3/4" ANSI 300LB WELDNECK FLANGE	2
14	FLANGE ISOLATION KIT	WATERCARE		3/4" ANSI 300LB FLANGE ISOLATION KIT (SEE NOTE 5.)	1
15	SS-16M5-12M	SWAGELOK	S/S	INSERT FOR SOFT PLASTIC TUBING	4

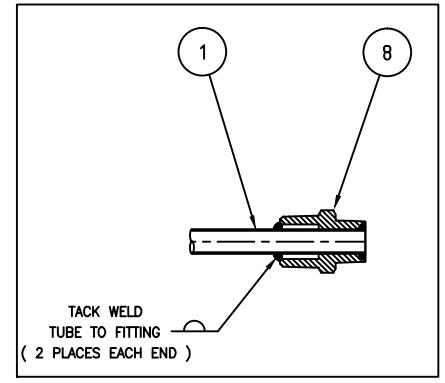
(SEE NOTE 7)  
(SEE NOTE 8)

**NOTES:**

- ALL FITTINGS TO BE 20 BAR TEST PRESSURE RATED.
- CUT ALL TUBING TO LENGTH ON SITE.
- CHECK ALL MEASUREMENTS ON SITE.
- SPOT WELD TO TUBING. (SEE DETAIL A)
- REFER TO WSL SPECIFICATION FOR SUPPLY OF BOLTS, NUTS, WASHERS AND GASKETS (SECTION 209)
- ALL WELDS IN STAINLESS STEEL PIPEWORK SHALL BE PERFORMED TO ASME IX UNLESS OTHERWISE STATED.
- EXTRA ELBOWS MAY BE REQUIRED DEPENDING ON CHAMBER PIPING VARIATIONS.
- INSERT ITEM 15 TO BE INSTALLED BOTH ENDS OF POLYETHYLENE TUBES



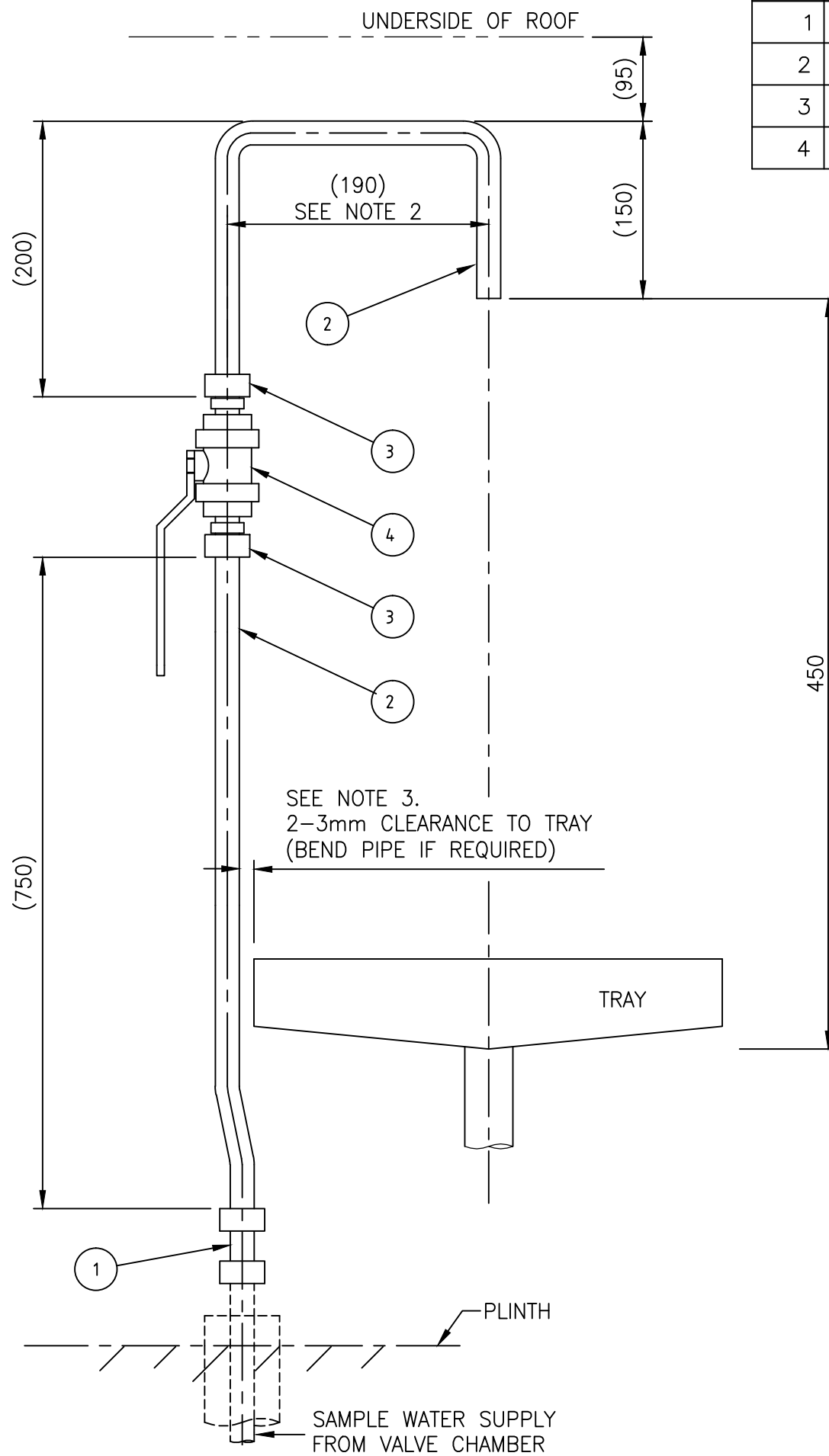
REFER DRAWING 2002888-042 FOR ASSEMBLED DETAIL (SECTION A)



DETAIL A SECTION THROUGH FITTING  
1:2.5

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DES. CHECKED					ORIGINAL SCALE	A3	CONTRACT No.	-
DRAWN	J.B.	06:16			REF No.	-	ISSUE	-
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PROJECT LEADER			ISSUE	-				
INFRAS'T'R APP'D			DATE	06:16	FOR CONSTRUCTION	J.D.	BY	APPD.
ISSUE	DATE	AMENDMENT	INFRASTRUCTURE					



ITEM	DRG/PART No.	MAKE/SUPPLIER	MATERIAL	DESCRIPTION	QTY
1	B-1010-6	SWAGELOK	BRASS	5/8" UNION	1
2	H1316	REFRIGERATION ENGINEERING	COPPER	5/8" SEAMLESS TUBE. ASTM B88 B280	2m
3	B-1010-1-8RT	SWAGELOK	BRASS	1/2" BSP x 5/8" MALE CONN.	2
4	VPB.6015-3	NZFS	S/S	3 PIECE BALL VALVE 1/2" BSP	1


**NOTES:**

1. ALL DIMENSIONS SHOWN ARE NOMINAL (xx), SITE CHECK TO BE MADE PRIOR TO MANUFACTURE OF EACH INSTALL.
2. ON ASSEMBLY WITH FRAME PIPE OUTLET MUST ALIGN WITH DRAIN CENTERLINE.
3. PIPE TO BE POSITIONED TO ALLOW FREE FITTING OF TRAY. 2-3mm CLEARANCE REQUIRED
4. ALL FITTINGS TO BE 16 BAR PRESSURE RATED.
5. CUT ALL TUBING TO LENGTH ON SITE.
6. CHECK ALL MEASUREMENTS ON SITE.
7. REFER SHEET .041 FOR SECTION THRO PIPING.

**CONSTRUCTION ISSUE**

ISSUE	DATE	AMENDMENT	BY	APPD.
-	06:16	FOR CONSTRUCTION	J.D	

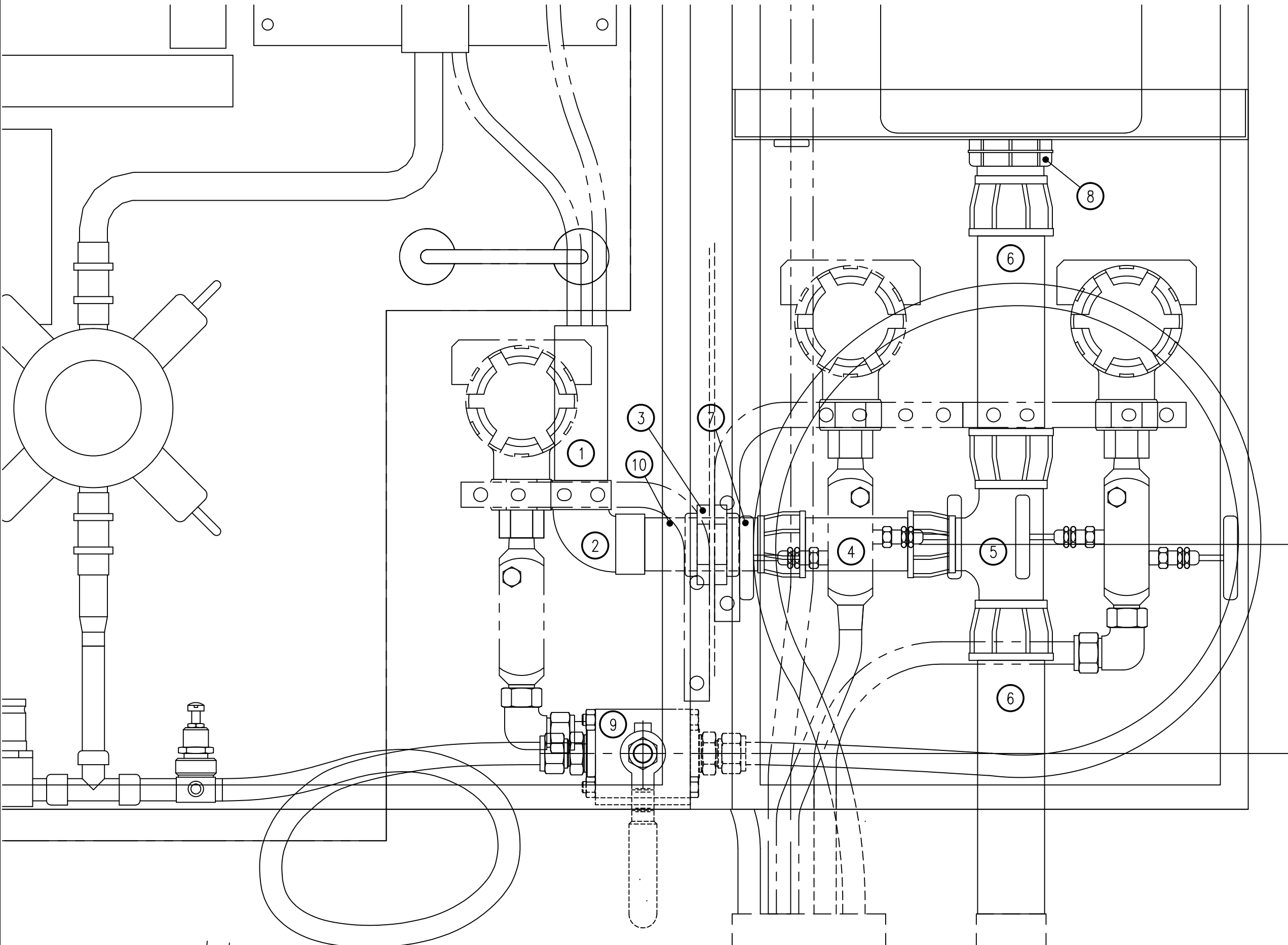
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BSP STANDARD DRAWING  
 CONTROL SYSTEM  
 CHAMBER SAMPLE TAPPING POINT LAYOUT

CAD FILE	2010998.054	DATE	02:06:2016
ORIGINAL SCALE	A3	CONTRACT No.	-
	N.T.S		
REF No.	-	ISSUE	-
DWG No.	2010998 .054		

LEGEND	
1	32∅ uPVC PIPE
2	32∅ uPVC ELBOW
3	32∅ TANK FITTING MACLON MTF32
4	32∅ FLEXIBLE PIPE
5	40∅ uPVC TEE ANKA ART4032
6	40∅ FLEXIBLE PIPE
7	ANKA AMC32
8	ANKA AFC40
9	3 PIECE 3/4" BSP SS316 BALL VALVE
10	32∅ FEMALE SOCKET



140 - 130 FROM REAR OF BOX  
 290 - 130 FROM REAR OF BOX

**CONSTRUCTION ISSUE**

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-	06:16	FOR CONSTRUCTION	J.D	

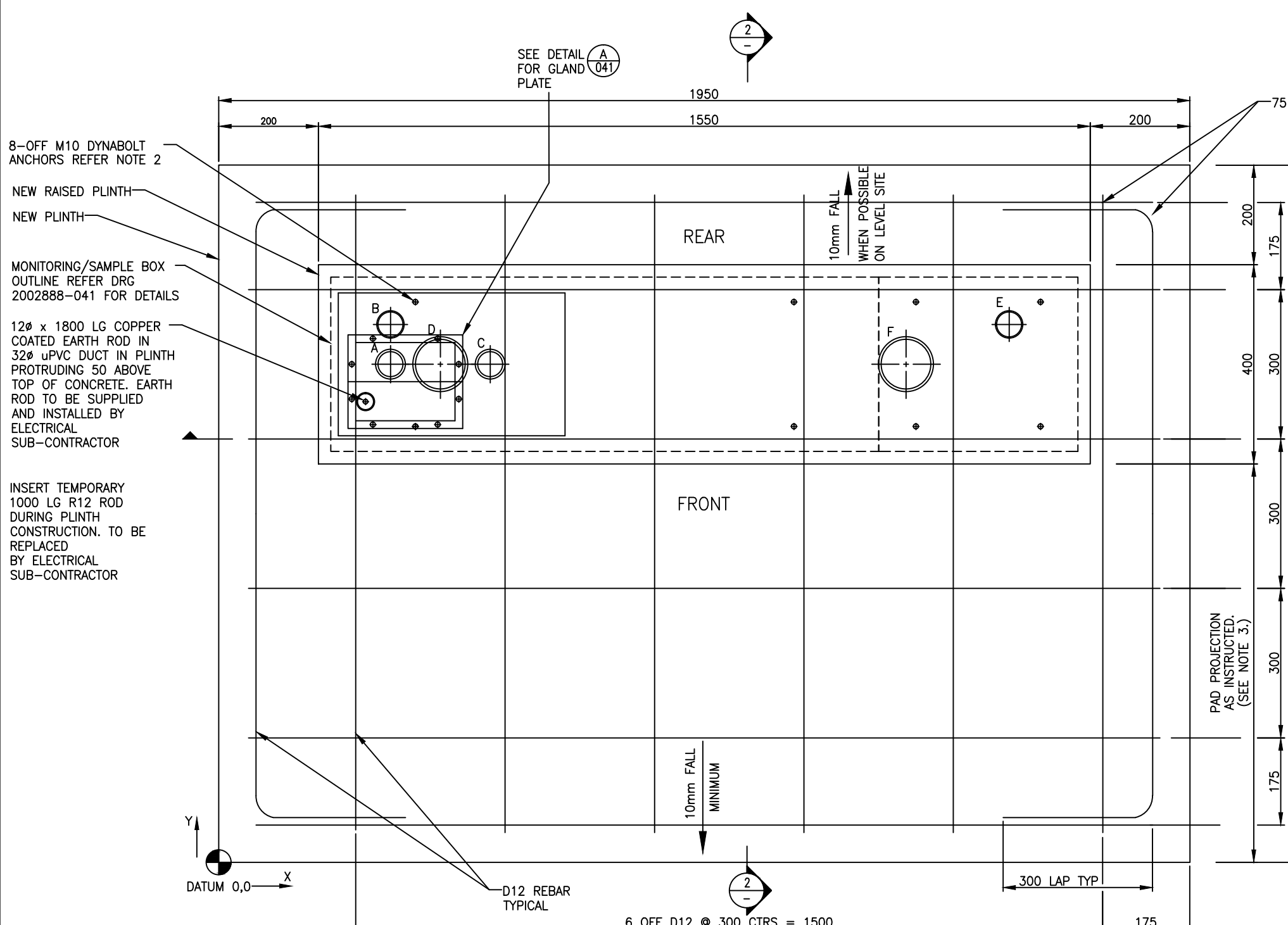
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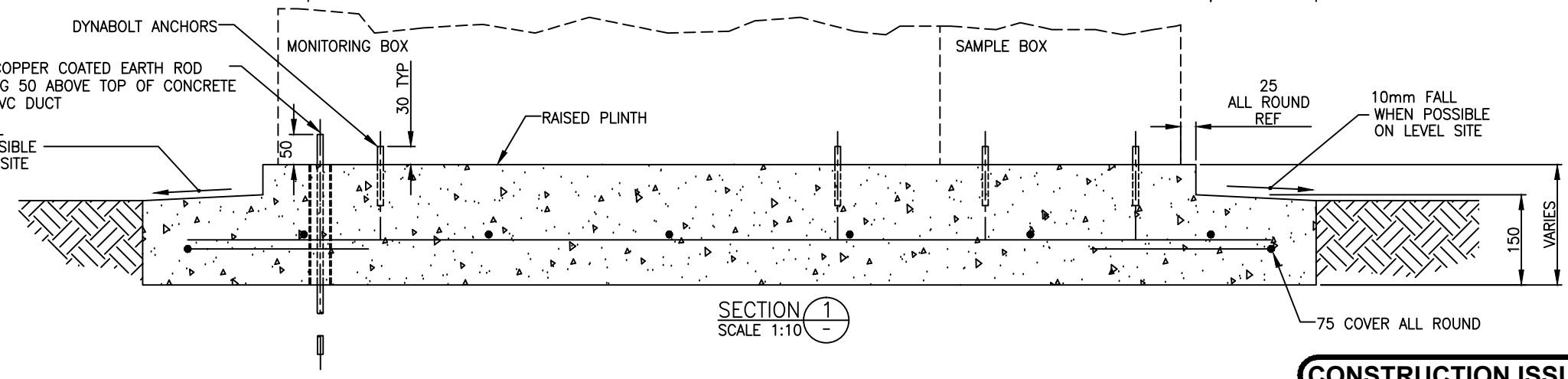
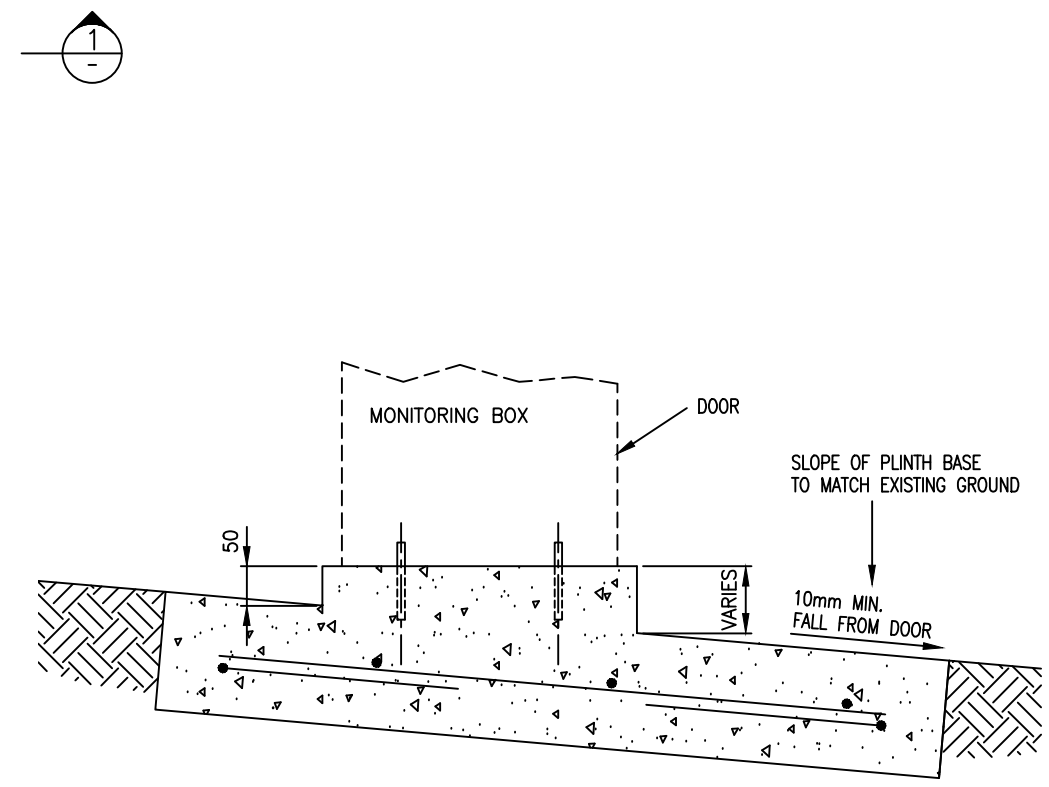
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BSP STANDARD DRAWING  
 CONTROL SYSTEM  
 DETAILS OF SAMPLING LINE AND DRAINS

CAD FILE	2010998.055	DATE	02:06:2016
ORIGINAL SCALE	A3	CONTRACT No.	-
	N.T.S		
REF No.	-	ISSUE	-
DWG No.	2010998.055		



PENETRATION CHART				
PENETRATION	DESCRIPTION	SIZE/MATERIAL	X-COORD	Y-COORD
A	ADDITIONAL COMMS (ONLY WHERE SPECIFIED)	50NB uPVC	345	1000
B	POWER SUPPLY (230V AC)	50NB uPVC	345	1080
C	SUMP PUMP POWER SUPPLY	50NB uPVC	545	1000
D	FLOWMETER AND PRV CABLING	100NB uPVC	445	1000
E	DRAIN FOR MANUAL SAMPLING TRAY AND WET GEAR PLATE	50NB uPVC	1587	1080
F	ANALYSER LINE (WET GEAR PLATE), SAMPLE LINE (FOR LABORATORY USE) PRESSURE TRANSDUCER (1, 2 & 3) (WHERE SPECIFIED)	100NB uPVC	1380	1000



- NOTES:**
- CHECK ALL DIMENSIONS & PENETRATIONS LOCATIONS ON SITE.
  - MONITORING & SAMPLE BOX ANCHOR BOLTS TO BE M10, 98mm GALVANISED DYNABOLTS P/No DP12100GH. TO PLACE, DRILL  $\phi 12$  HOLE 60 DEEP. USE MONITORING/SAMPLE BOX AS TEMPLATE. REFER DRG 2002888-041 FOR DETAILS.
  - PAD PROJECTION 800mm, UNLESS INSTRUCTED OTHERWISE
  - DUCTWORK MATERIAL TO COMPLY WITH AS/NZS 2053. WHERE A CHANGE IN DUCT DIRECTION IS REQUIRED USE LONG RADIUS BENDS.
  - ELECTRICAL DUCTWORK IS TO MAINTAIN A MINIMUM COVER OF 600mm.
  - TWO POLYPROPYLENE DRAW WIRES TO BE PROVIDED IN EACH DUCT.

**CONSTRUCTION ISSUE**

ISSUE	DATE	AMENDMENT	BY	APPD.
-	06:16	FOR CONSTRUCTION	J.D	

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**BSP STANDARD DRAWING**  
**CONTROL SYSTEM**  
 3 BAY BOX CONCRETE PLINTH DETAIL WITH EXTENDED PAD

CAD FILE	2010998.056	DATE	02:06:2016
ORIGINAL SCALE	A3	CONTRACT No.	-
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DWG No.	2010998.056		