

Central SEQ Distributor – Retailer

Authority – trading as Queensland Urban Utilities

Operation & Instruction Manual

Design & Construction Upgrade of the
Hopkins St Sewerage Pump Station,
Beaudesert

Contract No. C1011-052



RE-PUMP Australia PTY LTD A.B.N. 20 109 927 844

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www.repump.com.au

Pump 1 Hidrostral Submersible Pump

1. Operating Instructions Manual
Pump Code: H05K-MH3R+HE050X4-GSEK1+NE1B5E-15
Serial No. 206666
Supplier: Weir Minerals Australia Ltd
2. Pump test record for Submersible/Immersible Pump with Venturi flow measurement
Verification of Guarantee

Pump 2 Hidrostral Submersible Pump

3. Operating Instructions Manual
Pump Code: H05K-MH3R+HE050X4-GSEK1+NE1B5E-15
Serial No. 206665
Supplier: Weir Minerals Australia Ltd
4. Pump test record for Submersible/Immersible Pump with Venturi flow measurement
Verification of Guarantee Pump 2 Test Record

Valves

5. Sluice Valve Series 728
Supplier – HMA Valveco
6. Val-Matic Swing Flex Check Valves
Supplier – HMA Valveco
7. Drawing SS-1721 Val-Matic Swing Flex Check Valve with Limit Switch
Supplier – HMA Valveco
8. Drawing VM-502A Val-Matic Swing Flex Check Valve
Supplier – HMA Valveco

Monorail

9. Certificate of Load Test and Examination
Supplier – All Lifting
10. Structural Design Check Certificate
Supplier – Arthur Thiris & Assoc. Pty. Ltd
11. Existing Monorail Certification Sketch
Supplier – Altra 9 Pty Ltd

Crane

12. Structural Design Check Certificate
Supplier – Arthur Thiris & Assoc. Pty. Ltd

Vibration Test

13. Certification of Calibration Conformance Supplier – TR Techrentals Pty Ltd

Noise Level Test

14. Certification of Calibration Conformance Supplier – TR Techrentals Pty Ltd

Drawings

15. 486/5/7-0256-031 Hopkins Street Pump Replacement - Cover Sheet & Locality Plan
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18. 486/5/7-0256-034 Hopkins Street Pump Replacement - P&ID
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Supplier - Altra 9

Queensland Urban Utilities

Design & Construction Upgrade of the Hopkins St Sewerage Pump Station, Beaudesert Contract No. C1011-052

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Vega Instruments				
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VEGABAR 52 Test Certificate	1	TMS118	TMS118	Hilary Goebel
VEGABOX 02 Instructions	1	TMS119	TMS119	Hilary Goebel
VEGADIS 62 Instructions	1	TMS120	TMS120	Hilary Goebel
VEGAWELL 52 Instructions	1	TMS121	TMS121	Hilary Goebel
VEGAWELL 52 Test Certificate	1	TMS121	TMS121	Hilary Goebel
Multitrode Controls				
MultiSmart Controller				
MiniLogic Programming Guide 1.5_R02	1	TMS122	TMS122	Hilary Goebel
MS Configurator User Guide	1	TMS123	TMS123	Hilary Goebel
MultiSmart DNP3 Slave Profile v2-0_R02	1	TMS124	TMS124	Hilary Goebel
MultiSmart Installation Guide	1	TMS125	TMS125	Hilary Goebel
MultiSmart Integrator Guide_R01	1	TMS126	TMS126	Hilary Goebel
MultiSmart IO Manual	1	TMS127	TMS127	Hilary Goebel
MultiSmart Modbus Profile v2-0_R02	1	TMS128	TMS128	Hilary Goebel
MultiSmart Pump Controller	1	TMS129	TMS129	Hilary Goebel
MultiSmart RTU	1	TMS130	TMS130	Hilary Goebel
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MTR Installation AU+US_R1.2	1	TMS131	TMS131	Hilary Goebel
MultiTrode Level Sensing	1	TMS131	TMS131	Hilary Goebel
MultiTrode Probes & Installation	1	TMS131	TMS131	Hilary Goebel
SafeSmart Backup Controller				
SAFE-FSP Manual R2	1	TMS132	TMS132	Hilary Goebel
SafeSmart Backup Controller	1	TMS132	TMS132	Hilary Goebel
ABB VSD				
ABB AVS550 VSD User Manual	2	TMS133	TMS133	Hilary Goebel
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IN-ASR-610 Swipe Card Reader	2	TMS134	TMS134	Hilary Goebel
MOXA NPort 6450 Server Manual	2	TMS135	TMS135	Hilary Goebel

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Generator Inlet	2	TMS137	TMS137	Hilary Goebel
Wieland RST Connectors	2	TMS137	TMS137	Hilary Goebel
Energy Meter				
Electrex PFE 405-50 User_manual_Flash_96	2	TMS138	TMS138	Hilary Goebel
Power Supplies				
Powerbox PB251A PSU				
251-1605X1 BCT	2	TMS139	TMS139	Hilary Goebel
2511603X1_PB251A Series Manual	2	TMS139	TMS139	Hilary Goebel
PB251A Start Switch Powerbox 020810	2	TMS139	TMS139	Hilary Goebel
QUU Powerbox 24V RTU PSU	2	TMS139	TMS139	Hilary Goebel
Powerbox PBIH PSU	2	TMS139	TMS139	Hilary Goebel
Weidmuller 5A PSU	2	TMS139	TMS139	Hilary Goebel
Signal Splitters				
Moore Industries ECT-DIN Signal Splitter	2	TMS140	TMS140	Hilary Goebel
Surge Diverters				
TDS11002SR277	2	TMS141	TMS141	Hilary Goebel
UTB30DP	2	TMS141	TMS141	Hilary Goebel
Yuasa Battery				
UXH_Overview	2	TMS142	TMS142	Hilary Goebel
NHP Switchgear Products				
NHP Contactor Tech Data	2	TMS143	TMS143	Hilary Goebel
NHP Contactors and Accessories	2	TMS144	TMS144	Hilary Goebel
NHP Enclosures & Cooling	2	TMS145	TMS145	Hilary Goebel
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NHP MCB's & Accessories	3	TMS147	TMS147	Hilary Goebel
NHP MCCB Accessory Tech Data	3	TMS148	TMS148	Hilary Goebel
NHP MCCB Tech Data	3	TMS149	TMS149	Hilary Goebel
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NHP Panelboards & Chassis	3	TMS153	TMS153	Hilary Goebel
NHP Pushbuttons & Indicators	3	TMS154	TMS154	Hilary Goebel
NHP Sight & Sound Products	3	TMS155	TMS155	Hilary Goebel
NHP Switches and Fusegear	3	TMS156	TMS156	Hilary Goebel
NHP Timing Monitoring & Control relays	3	TMS157	TMS157	Hilary Goebel
X500 Installation Instruction Sheet	3	TMS158	TMS158	Hilary Goebel

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Hopkins Street 50kW Load Calculation Report	4	TMS159	TMS159	Hilary Goebel
Hopkins Street 132kW Load Calculation Report	4	TMS160	TMS160	Hilary Goebel
Electrical Test Documentation				
Certificate of Testing & Compliance	4	TMS161	TMS161	Hilary Goebel
Control System FAT	4	TMS161	TMS161	Hilary Goebel
Control System SAT	4	TMS161	TMS161	Hilary Goebel
Hopkins Final Well LevelsInstallation SAT Test Sheets	4	TMS161	TMS161	Hilary Goebel
Installation SAT Test Sheets	4	TMS161	TMS161	Hilary Goebel
Switchboard FAT Test Sheets	4	TMS161	TMS161	Hilary Goebel
Switchboard Sheetmetal Inspection	4	TMS161	TMS161	Hilary Goebel

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Volume 4

Electrical Drawings



QUEENSLAND
UrbanUtilities

BTSP1 HOPKINS STREET SEWAGE PUMPING STATION SITE COVER SHEET

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486/5/7-0256-002	PUMP No1 SCHEMATIC DIAGRAM	02	P1 0 1 2 3
486/5/7-0256-003	PUMP No2 SCHEMATIC DIAGRAM	03	P1 0 1 2 3
486/5/7-0256-004	SPARE SHEET - NOT USED	04	P1 0 1 2
486/5/7-0256-005	DRY WELL SUMP PUMP AND VENT FANS SCHEMATIC DIAGRAM	05	P1 0 1 2
486/5/7-0256-006	SPARE SHEET - NOT USED	06	P1 0 1 2
486/5/7-0256-007	COMMON CONTROLS SCHEMATIC DIAGRAM	07	P1 0 1 2
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486/5/7-0256-009	MULTISMART 3PC MODULE TERMINATION DIAGRAM	09	P1 0 1 2
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486/5/7-0256-011	MULTISMART 3PC MODULE TERMINATION DIAGRAM	11	P1 0 1 2
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STANDARD VARIABLES

DESCRIPTION	VALUES
CT METERING ISOLATOR	400A SLB4003P
NORMAL SUPPLY MAIN SWITCH	400/200A S400NE3400
GENERATOR SUPPLY MAIN SWITCH	400/200A S400NE3400
PUMP1 CIRCUIT BREAKER	250/160A E250NJ3250
PUMP2 CIRCUIT BREAKER	250/160A E250NJ3250
PUMP3 CIRCUIT BREAKER	NOT APPLICABLE
DRY WELL SUMP PUMP CIRCUIT BREAKER	10A DTCB6316C
PUMP VARIABLE SPEED DRIVE SIZE	ACS550-01-125A-4 55kW
PUMP RATING	50kW 92A
PUMP FORWARD CONTACTOR	CA6-210-El-11-240VAC
PUMP REVERSING CONTACTOR	NOT APPLICABLE
SUMP PUMP RATING	0.75kW 2.0A
SUMP PUMP CONTACTOR & TOL	4kW AC3 1.4-2.0 A
DRY WELL VENT FAN RATING	0.37kW 1.0 A
DRY WELL VENT FAN CONTACTOR & TOL	4kW AC3 0.75-1.0 A
WET WELL VENT FAN RATING	0.1kW 0.29 A
WET WELL VENT FAN CONTACTOR & TOL	4kW AC3 0.25-0.4 A
PUMP SOCKET OUTLET + INCLINE SLEEVE	NOT APPLICABLE
PUMP INLET PLUG + HANDLE	NOT APPLICABLE
WET WELL LEVEL TRANSMITTER	VEGAWELL 52 0-1 bar
EMERGENCY STORAGE WELL LEVEL TRANSMITTER	NOT APPLICABLE
DELIVERY PRESSURE TRANSMITTER	VEGABAR 52 0-5 bar
FLOWMETER RANGE	NOT APPLICABLE
RADIO	RAD-TEL 3000
EMERGENCY PUMPING TIME	5 minutes
No of SINGLE POINT PROBES	6
INCOMING MAINS SUPPLY CABLE	2 x 70mm ² Cu/XLPE/PVC/phase
MAIN EARTHING CABLE	50mm ²
INCOMING GENERATOR SUPPLY CABLE	NOT APPLICABLE
VARIABLE SPEED DRIVE 3 PHASE SUPPLY	NOT APPLICABLE

STANDARD DESIGN OPTIONS

OPTION	DESCRIPTION	FITTED
A	INDIVIDUAL PUMP MOISTURE IN OIL (MIO) SENSOR AND FAULT RELAY	YES <input checked="" type="checkbox"/>
B	INDIVIDUAL PUMP MOTOR AUX PROTECTION SENSORS AND FAULT RELAYS	YES <input checked="" type="checkbox"/>
C	INDIVIDUAL PUMP REFLUX VALVE MICROSWITCH	YES <input checked="" type="checkbox"/>
D	STATION MANHOLE SURCHARGE IMMINENT	<input checked="" type="checkbox"/> NO
E	STATION DRY WELL SUMP PUMP AND LEVEL INDICATION SENSORS AND RELAYS	YES <input checked="" type="checkbox"/>
F	STATION PERMANENT GENERATOR - ATS AND CONTROL CONNECTIONS	<input checked="" type="checkbox"/> NO
G	STATION EMERGENCY STORAGE LEVEL SENSOR	<input checked="" type="checkbox"/> NO
H	STATION DELIVERY FLOWMETER	YES <input checked="" type="checkbox"/>
I	BACKUP COMMUNICATION - NEXT G	YES <input checked="" type="checkbox"/>
J	PUMP CONNECTION (Via Local Isolating Switch)	YES <input checked="" type="checkbox"/>
K	CATHODIC PROTECTION	<input checked="" type="checkbox"/> NO
L	MOTOR THERMISTORS (Via Dry Well J-Box)	YES <input checked="" type="checkbox"/>
M	ODOUR CONTROL	<input checked="" type="checkbox"/> NO
N	CURRENT TRANSFORMER (CT) METERING	YES <input checked="" type="checkbox"/>
O	PUMPS ELECTRICAL INTERLOCK	YES <input checked="" type="checkbox"/>
P	WET WELL WASHER	YES <input checked="" type="checkbox"/>
Q	AUX PIT SUMP PUMP AND LEVEL PROBE	YES <input checked="" type="checkbox"/>
R	TELEMETRY RADIO	YES <input checked="" type="checkbox"/>
S	WET WELL DUO PROBE	<input checked="" type="checkbox"/> NO
T	SINGLE SIDED SWITCHBOARD	<input checked="" type="checkbox"/> NO
U	DELIVERY PRESSURE TRANSMITTER	YES <input checked="" type="checkbox"/>
V	CHEMICAL DOSING	<input checked="" type="checkbox"/> NO

Sheet 00

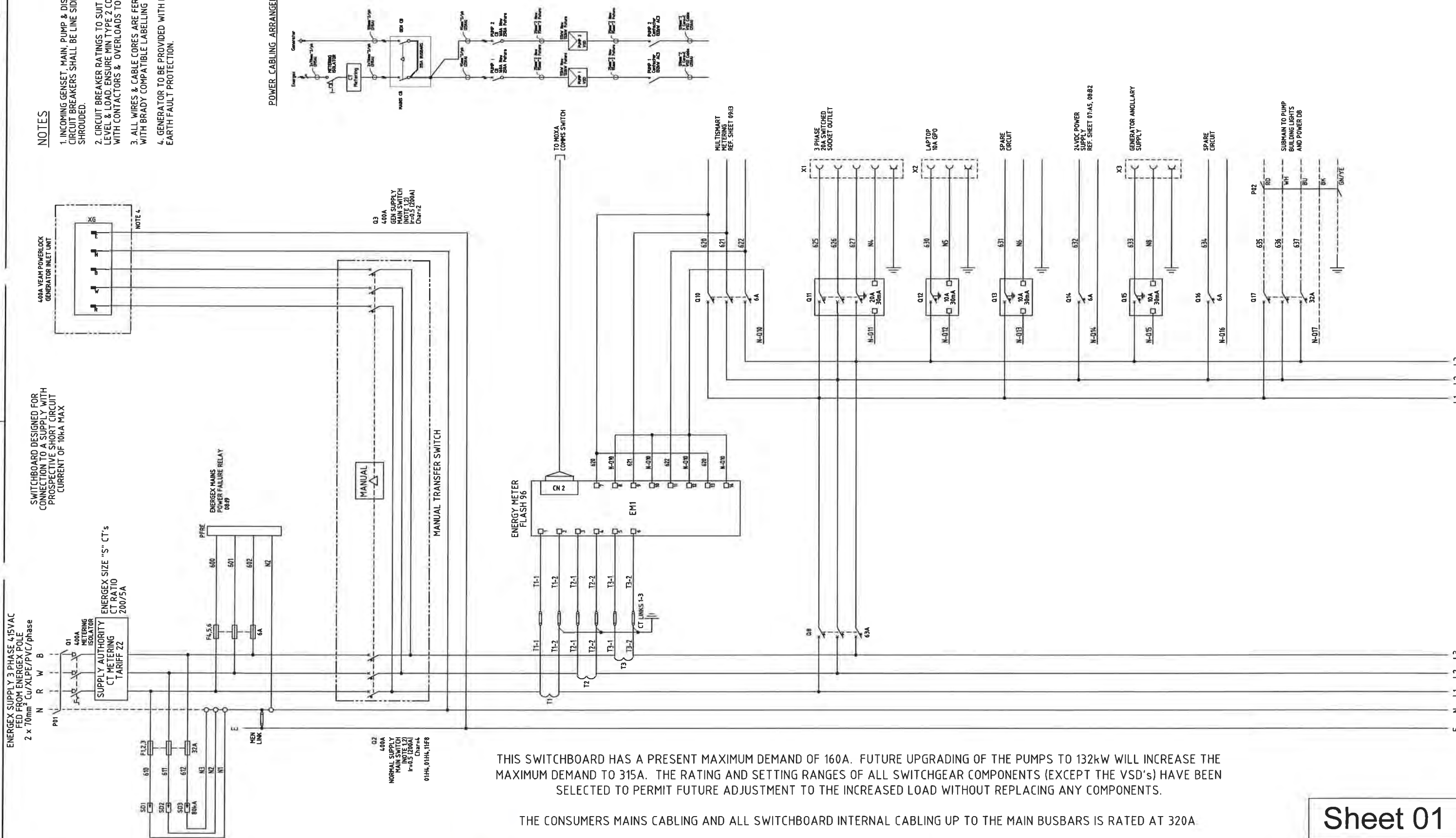
AS CONSTRUCTED

08/12	SITE WIRING MODIFICATION	JHD	DD	DRAFTED	JHD	23/8/12	PRINCIPAL DESIGN MANAGER	DATE	QUEENSLAND UrbanUtilities A DIVISION OF THE BRISBANE CITY COUNCIL	SITE BTSP1 SEWAGE PUMP STATION HOPKINS STREET, BEAUDESERT	TITLE SITE COVER SHEET	SHEET No. 00	Queensland Urban Utilities DRAWING No	AMEND
06/12	AS CONSTRUCTED	JHD	DD	DRAFTING CHECK	JC-S	23/8/12	CLIENT DELEGATE	DATE					486/5/7-0256-000	3
05/12	ISSUED FOR FAT TESTING	JHD	DD	CAD FILE	57-0256-000	23/8/12								
DATE	AMENDMENT	DRN	APD	B C C FILE No										

NOTES

1. INCOMING GENSET, MAIN, PUMP & DIST. BOARD CIRCUIT BREAKERS SHALL BE LINE SIDE SHROUDED.
2. CIRCUIT BREAKER RATINGS TO SUIT FAULT LEVEL & LOAD. ENSURE MIN TYPE 2 CO-ORDINATION WITH CONTACTORS & OVERLOADS TO IEC 94-7-4-1.
3. ALL WIRES & CABLE CORES ARE FERRULED WITH BRADY COMPATIBLE LABELLING
4. GENERATOR TO BE PROVIDED WITH INTEGRAL EARTH FAULT PROTECTION.

POWER CABLING ARRANGEMENT GUIDE



THIS SWITCHBOARD HAS A PRESENT MAXIMUM DEMAND OF 160A. FUTURE UPGRADING OF THE PUMPS TO 132kW WILL INCREASE THE MAXIMUM DEMAND TO 315A. THE RATING AND SETTING RANGES OF ALL SWITCHGEAR COMPONENTS (EXCEPT THE VSD's) HAVE BEEN SELECTED TO PERMIT FUTURE ADJUSTMENT TO THE INCREASED LOAD WITHOUT REPLACING ANY COMPONENTS.

THE CONSUMERS MAINS CABLING AND ALL SWITCHBOARD INTERNAL CABLING UP TO THE MAIN BUSBARS IS RATED AT 320A.

Sheet 01

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD	06/12
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S	
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-001	
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No		

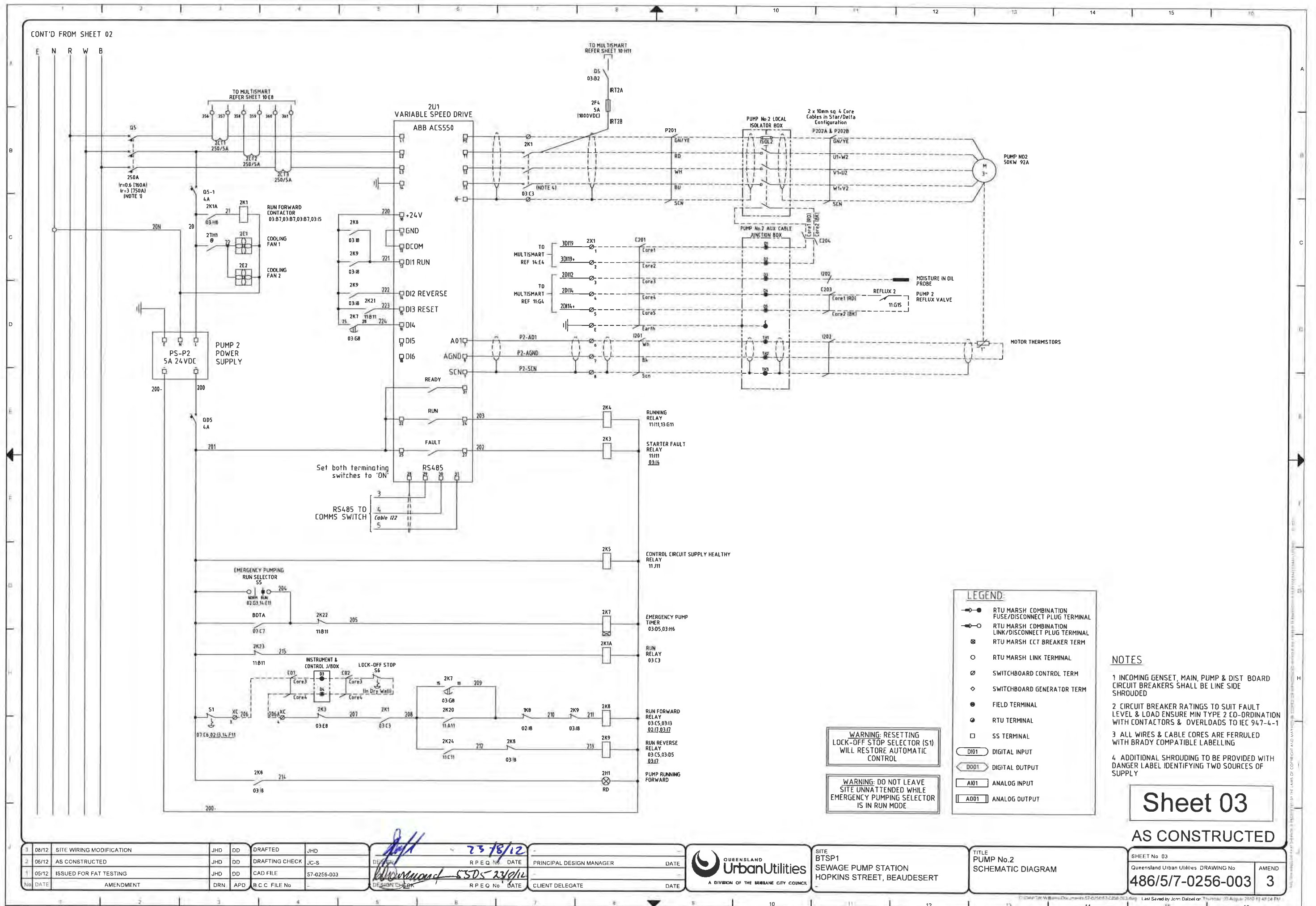
DESIGN	R.P.E.Q. No.	DATE	PRINCIPAL DESIGN MANAGER	DATE
DESIGN CHECK	R.P.E.Q. No.	DATE	CLIENT DELEGATE	DATE



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
POWER DISTRIBUTION
SCHEMATIC DIAGRAM

SHEET No. 01	AMEND
Queensland Urban Utilities DRAWING No.	
486/5/7-0256-001	2




The image shows a large architectural drawing sheet with a grid. The grid is labeled with letters A through J on the left and numbers 1 through 4 on the top. The central area of the sheet is mostly blank, with the text "RESERVED FOR FUTURE USE" written in a large, light blue, sans-serif font. In the bottom right corner, there is a box containing the text "Sheet 04" and "AS CONSTRUCTED". Below this, there is a table with the following information:

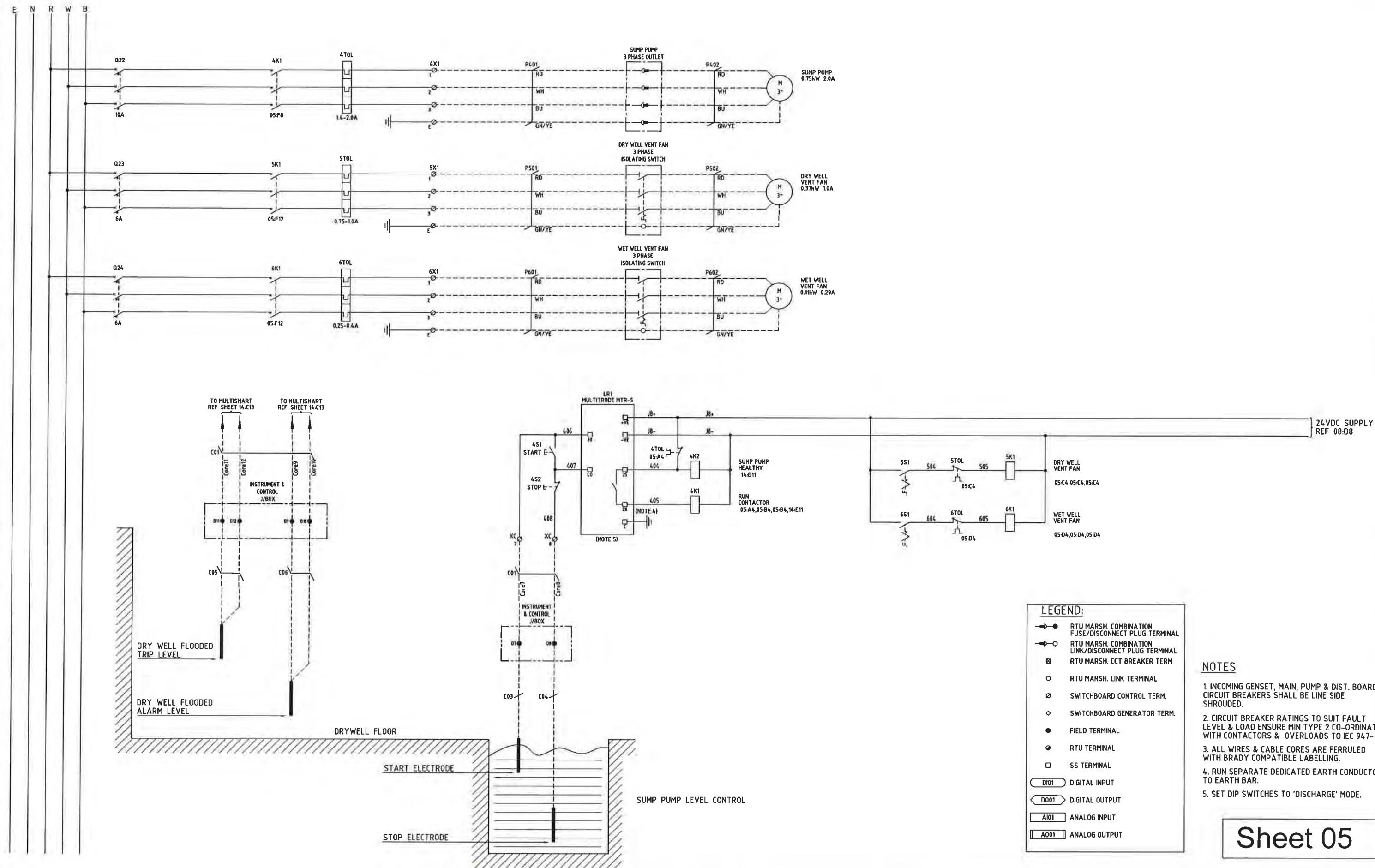
NO.	DATE	DESCRIPTION	BY	CHECKED	DATE
2	06/12	AS CONSTRUCTED	JHD	DD	
1	05/12	ISSUED FOR EAT TESTING	JHD	DD	

Below the table, there is a signature and the date "06/12". To the right of the signature, there is a logo for "QUEENSLAND" and the text "SITE BTSP1".

SHEET No 04	
Queensland Urban Utilities DRAWING No	AMEND
486/5/7-0256-004	2

 <p>QUEENSLAND Urban Utilities</p> <p>A DIVISION OF THE BRISBANE CITY COUNCIL</p>	<p>SITE BTSP1</p> <p>SEWAGE PUMP STATION HOPKINS STREET, BEAUDESERT</p>	<p>TITLE</p>	<p>SHEET No 04</p>	
			<p>Queensland Urban Utilities DRAWING No</p> <p>486/5/7-0256-004</p>	<p>AMENDMENT No</p> <p>2</p>

CONT'D FROM SHEET 01



LEGEND:

- RTU MARSH. COMBINATION FUSE/DISCONNECT PLUG TERMINAL
- RTU MARSH. COMBINATION LINK/DISCONNECT PLUG TERMINAL
- RTU MARSH. CCT BREAKER TERM
- RTU MARSH. LINK TERMINAL
- SWITCHBOARD CONTROL TERM.
- SWITCHBOARD GENERATOR TERM.
- FIELD TERMINAL
- RTU TERMINAL
- SS TERMINAL
- DIGI01 DIGITAL INPUT
- DIGI01 DIGITAL OUTPUT
- AI01 ANALOG INPUT
- A001 ANALOG OUTPUT

NOTES

1. INCOMING GENSET, MAIN, PUMP & DIST. BOARD CIRCUIT BREAKERS SHALL BE LINE SIDE SHROUDED.
2. CIRCUIT BREAKER RATINGS TO SUIT FAULT LEVEL & LOAD ENSURE MIN TYPE 2 CO-ORDINATION WITH CONTACTORS & OVERLOADS TO IEC 947-4-1.
3. ALL WIRES & CABLE CORES ARE FERRULED WITH BRADY COMPATIBLE LABELLING.
4. RUN SEPARATE DEDICATED EARTH CONDUCTOR TO EARTH BAR.
5. SET DIP SWITCHES TO 'DISCHARGE' MODE.

Sheet 05

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD	08/12		
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S			
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-005	06/12		
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No	DESIGN CHECK	R.P.E.Q. No	DATE	CLIENT DELEGATE



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
DRY WELL SUMP PUMP AND
VENT FANS SCHEMATIC DIAGRAM

SHEET No. 05
Queensland Urban Utilities DRAWING No
486/5/7-0256-005
AMEND.
2

RESERVED FOR FUTURE USE

Sheet 06

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD	06/12
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S	DESIGN R.P.E.Q. No. DATE
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-006	5505 06/12
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No.	DESIGN CHECK R.P.E.Q. No. DATE	CLIENT DELEGATE DATE



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE

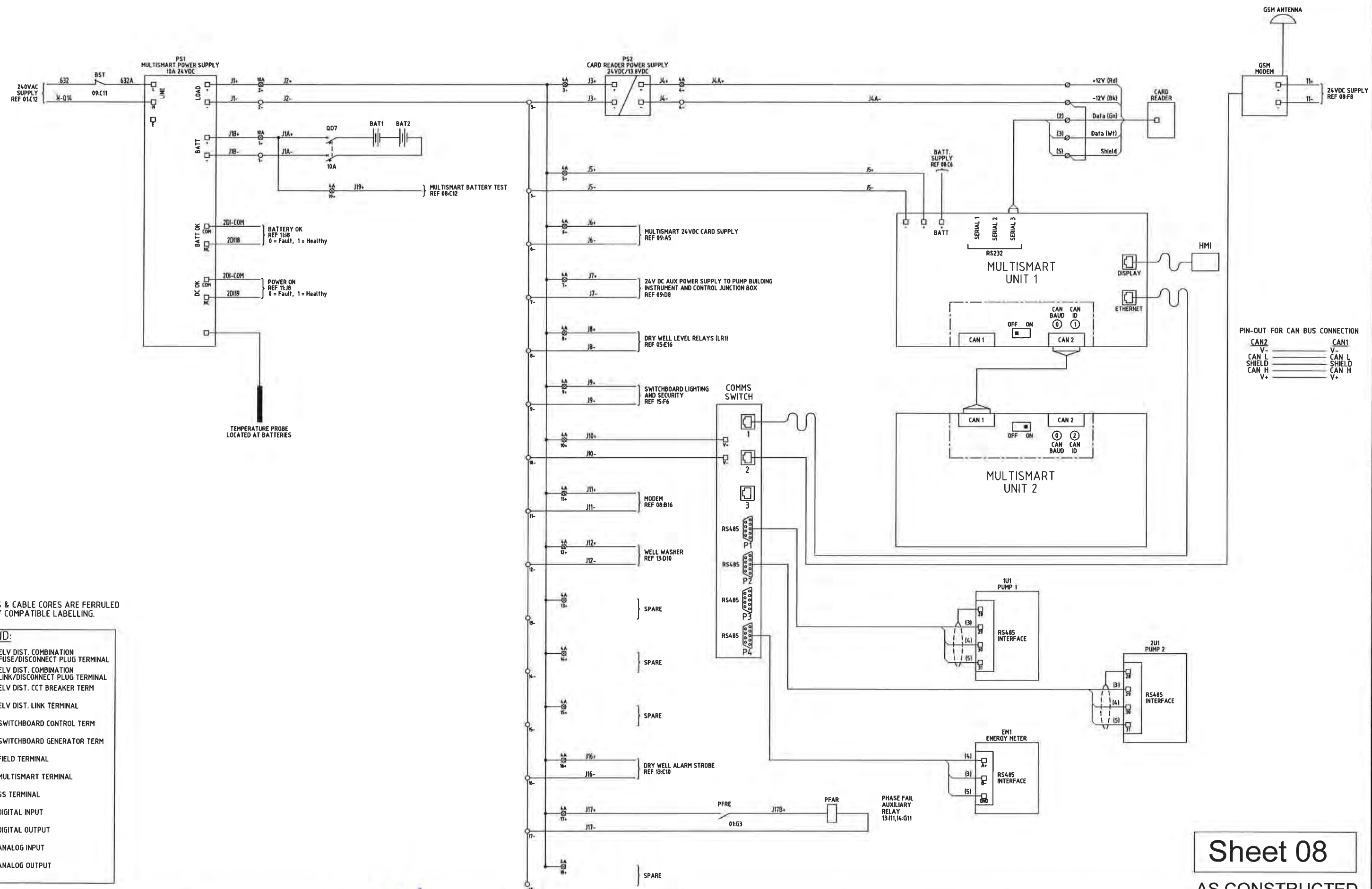
SHEET No. 06

Queensland Urban Utilities DRAWING No

486/5/7-0256-006

AMEND

2



NOTES

1. ALL WIRES & CABLE CORES ARE FERRULED WITH BRADY COMPATIBLE LABELLING.

LEGEND:

- | | |
|--|--|
| | ELV DIST. COMBINATION
FUSE/DISCONNECT PLUG TERMINAL |
| | ELV DIST. COMBINATION
LINK/DISCONNECT PLUG TERMINAL |
| | ELV DIST. CCT BREAKER TERM |
| | ELV DIST. LINK TERMINAL |
| | SWITCHBOARD CONTROL TERM |
| | SWITCHBOARD GENERATOR TERM |
| | FIELD TERMINAL |
| | MULTISMART TERMINAL |
| | SS TERMINAL |
| | DIGITAL INPUT |
| | DIGITAL OUTPUT |
| | ANALOG INPUT |
| | ANALOG OUTPUT |

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD	06/12	
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S	DESIGN R P E Q No DATE	PRINCIPAL DESIGN MANAGER DATE
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-008	DESIGN R P E Q No DATE	CLIENT DELEGATE DATE
No	DATE	AMENDMENT	DRN	APD	B C C FILE No		DESIGN R P E Q No DATE	CLIENT DELEGATE DATE



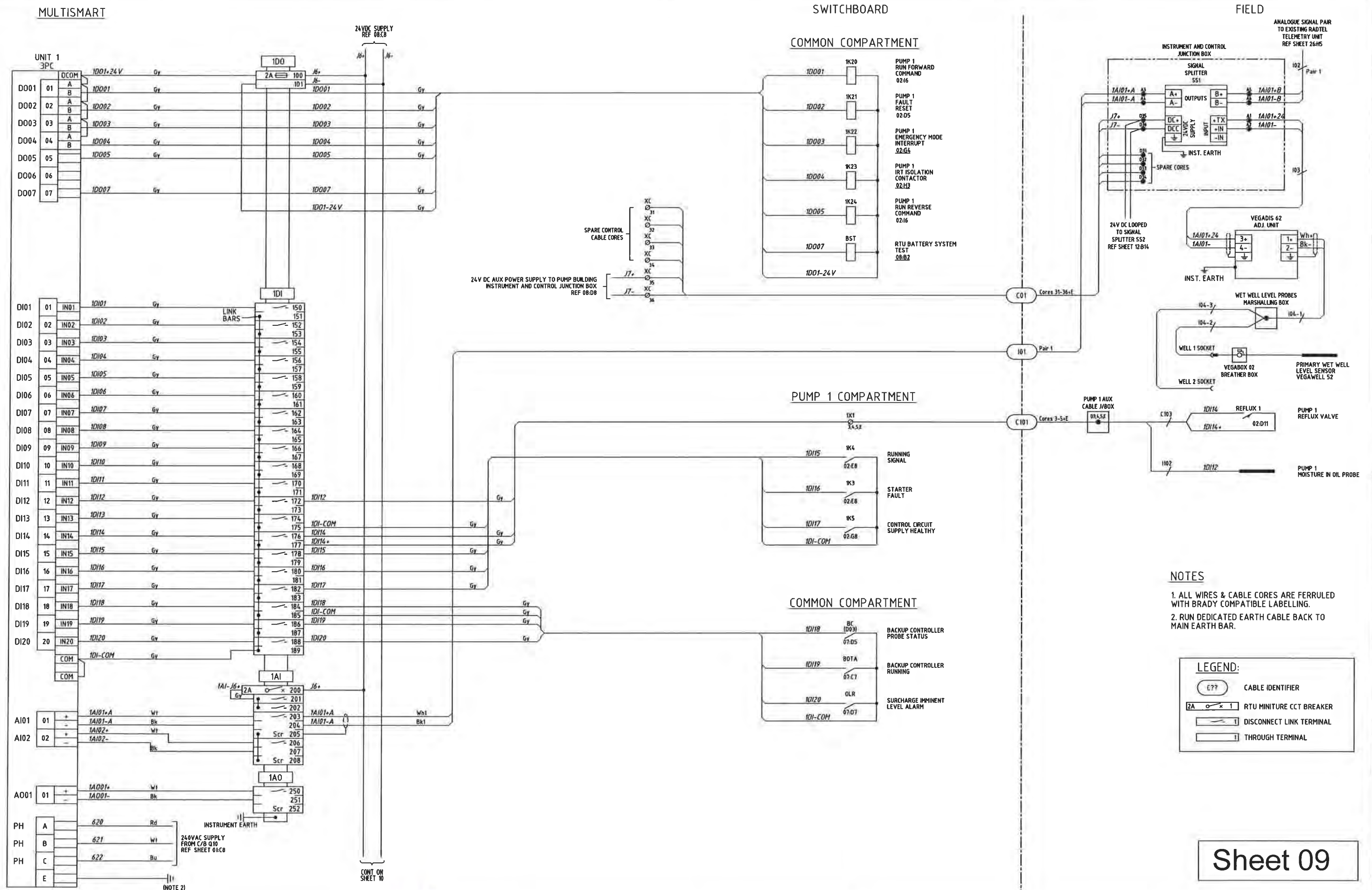
SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
MULTISMART
POWER DISTRIBUTION

Sheet 08

AS CONSTRUCTED

SHEET No 08	
Queensland Urban Utilities DRAWING No 486/5/7-0256-008	AMEND 2



Sheet 09

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD	06/12	
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S	DESIGN R P E Q No DATE	PRINCIPAL DESIGN MANAGER DATE
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-009	DESIGN R P E Q No DATE	CLIENT DELEGATE DATE
No	DATE	AMENDMENT	DRN	APD	B C C FILE No		DESIGN CHECK R P E Q No DATE	



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
MULTISMART 3PC MODULE
TERMINATION DIAGRAM

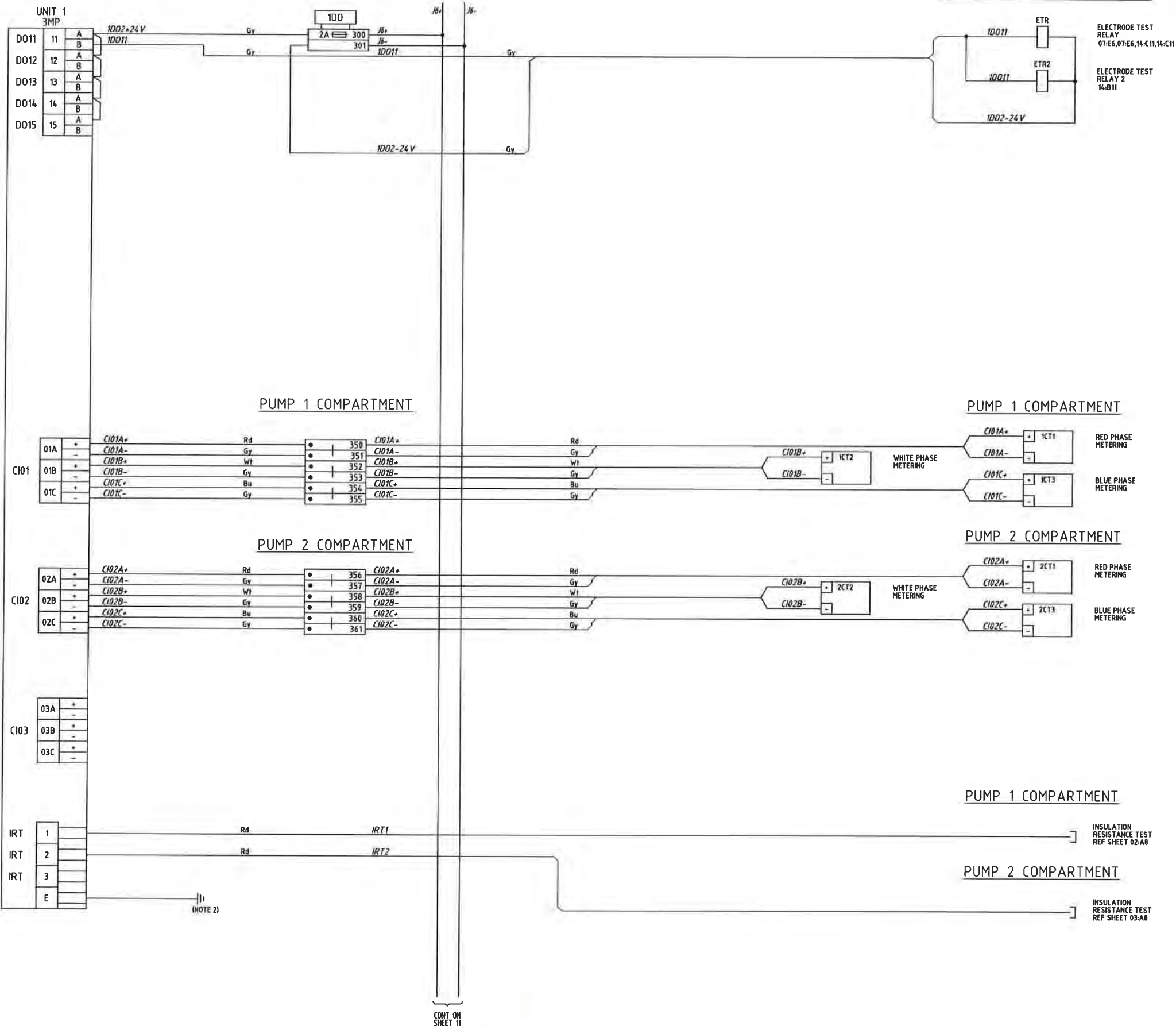
SHEET No 09	
Queensland Urban Utilities DRAWING No 486/5/7-0256-009	AMEND 2

MULTISMART

SWITCHBOARD

FIELD

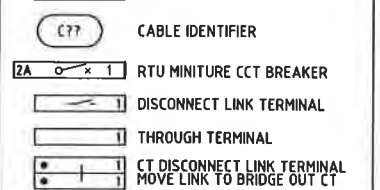
DOL STARTERS COMPARTMENT



NOTES

- ALL WIRES & CABLE CORES ARE FERRULED WITH BRADY COMPATIBLE LABELLING.
- RUN DEDICATED EARTH CABLE BACK TO MAIN EARTH BAR.

LEGEND:



Sheet 10

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD	06/12
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S	
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-010	
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No.		

DESIGN	R.P.E.Q. No.	DATE	PRINCIPAL DESIGN MANAGER	DATE
DESIGN CHECK	5505	06/12	CLIENT DELEGATE	DATE



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
MULTISMART 3PC MODULE
TERMINATION DIAGRAM

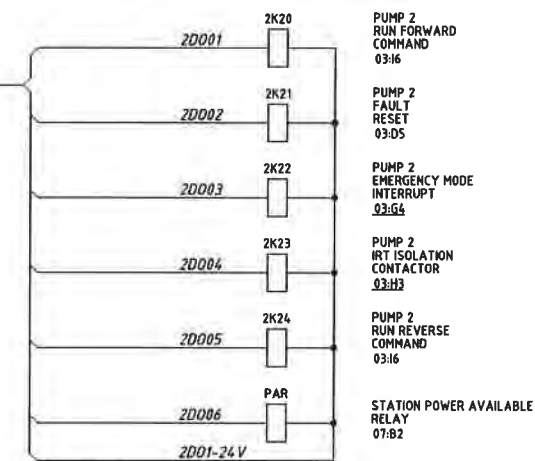
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Queensland Urban Utilities DRAWING No.	
486/5/7-0256-010	2

MULTISMART

SWITCHBOARD

FIELD

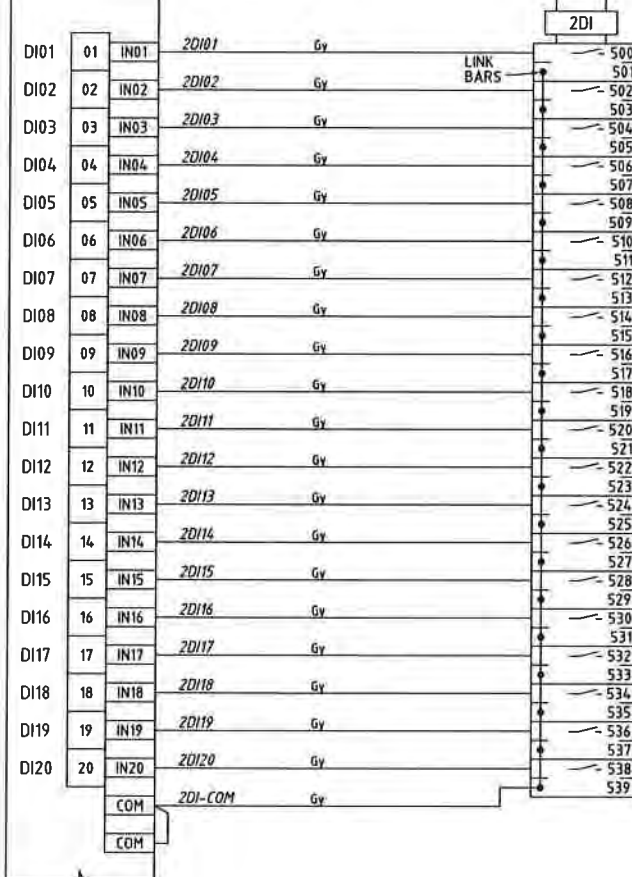
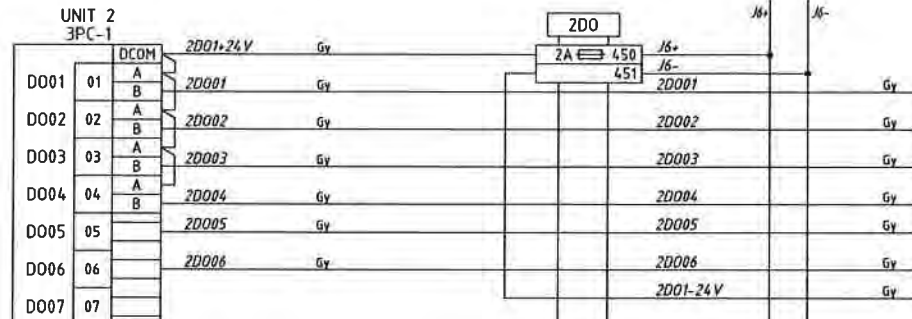
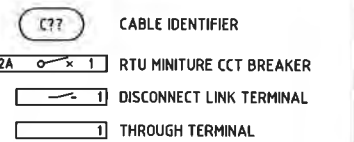
COMMON COMPARTMENT



NOTES

1. ALL WIRES & CABLE CORES ARE FERRULED WITH BRADY COMPATIBLE LABELLING.
2. RUN DEDICATED EARTH CABLE BACK TO MAIN EARTH BAR.

LEGEND:



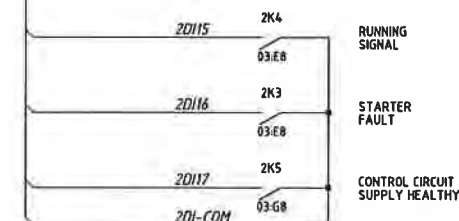
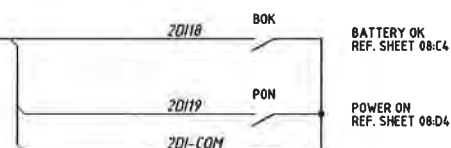
MAIN SWITCH

DOL STARTERS COMPARTMENT

PUMP 2 COMPARTMENT

PUMP 1 COMPARTMENT

COMMON COMPARTMENT



Sheet 11

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-011
No	DATE	AMENDMENT	DRN.	APD	B.C.C. FILE No	

DESIGN	R.P.E.Q. No	DATE	PRINCIPAL DESIGN MANAGER	DATE
DESIGN CHECK	R.P.E.Q. No	DATE	CLIENT DELEGATE	DATE



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
MULTISMART 3PC MODULE
TERMINATION DIAGRAM

SHEET No 11	AMEND
Queensland Urban Utilities DRAWING No	
486/5/7-0256-011	2



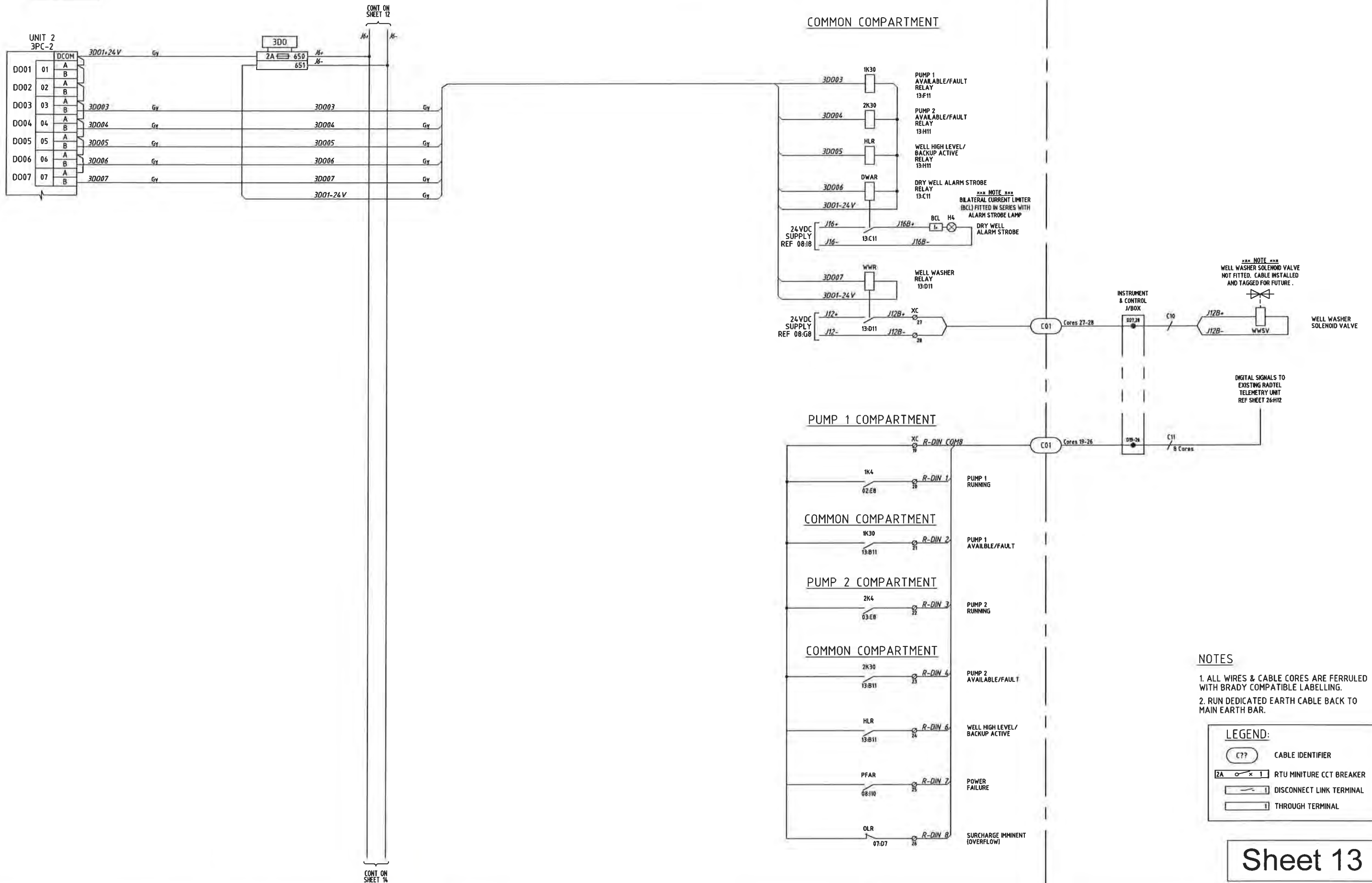
SHEET No 12	
Queensland Urban Utilities DRAWING No.	AMEND
486/5/7-0256-012	2

MULTISMART

SWITCHBOARD

FIELD

COMMON COMPARTMENT



Sheet 13

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-013
No	DATE	AMENDMENT	ORN	APD	B.C.C. FILE No.	

DESIGN	R.P.E.Q. No.	DATE	PRINCIPAL DESIGN MANAGER	DATE
DESIGN CHECK	5505	06/12	CLIENT DELEGATE	DATE



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

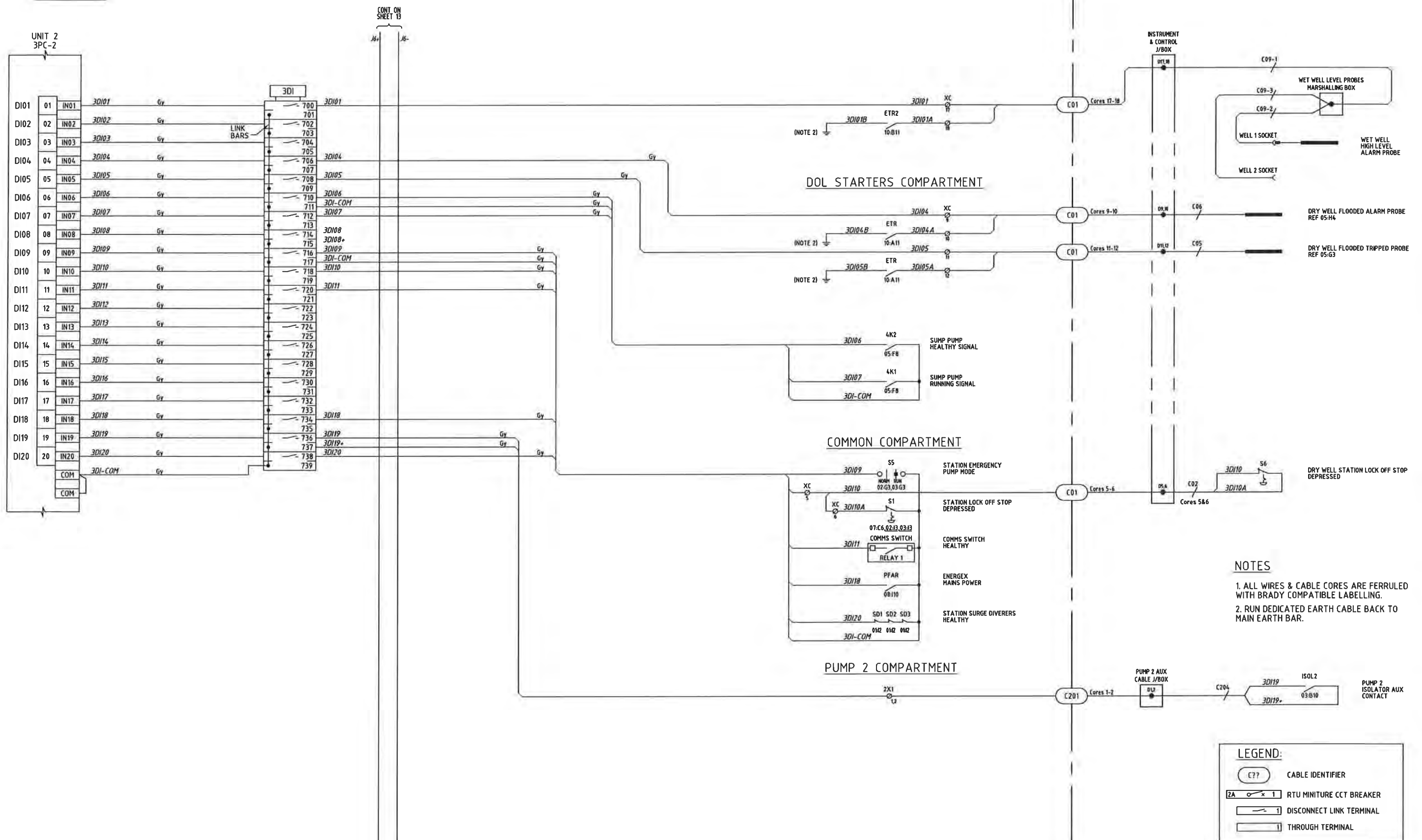
TITLE
MULTISMART 3PC MODULE
TERMINATION DIAGRAM

SHEET No. 13
Queensland Urban Utilities DRAWING No.
486/5/7-0256-013
AMEND
2

MULTISMART

SWITCHBOARD

FIELD



Sheet 14

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-014
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No	

DESIGN	R.P.E.Q. No	DATE	PRINCIPAL DESIGN MANAGER	DATE
DESIGN CHECK	R.P.E.Q. No	DATE	CLIENT DELEGATE	DATE



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

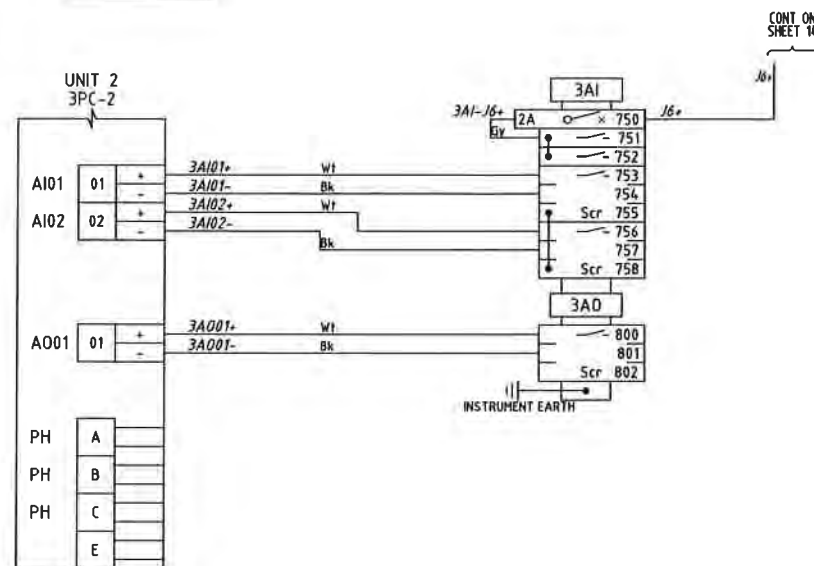
TITLE
MULTISMART 3PC MODULE
TERMINATION DIAGRAM

SHEET No. 14
Queensland Urban Utilities DRAWING No
486/5/7-0256-014
AMEND
2

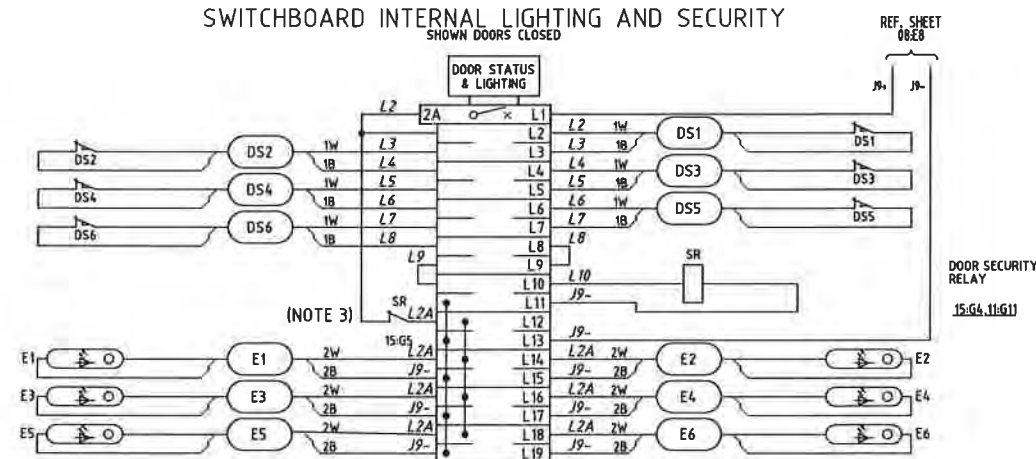
MULTISMART

SWITCHBOARD

FIELD



SWITCHBOARD INTERNAL LIGHTING AND SECURITY



NOTES

1. ALL WIRES & CABLE CORES ARE FERRULED WITH BRADY COMPATIBLE LABELLING.
2. RUN DEDICATED EARTH CABLE BACK TO MAIN EARTH BAR.
3. SR CONTACT SHOWN IN THE DE-ENERGISED STATE.

LEGEND:

	CABLE IDENTIFIER
	RTU MINITURE CCT BREAKER
	DISCONNECT LINK TERMINAL
	THROUGH TERMINAL

Sheet 15

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD	06/12		
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S			
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-015			
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No				



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
MULTISMART 3PC MODULE
TERMINATION DIAGRAM

SHEET No. 15	AMEND.
Queensland Urban Utilities DRAWING No	
486/5/7-0256-015	2

ITEM	QTY	DESCRIPTION	MANUFACTURER	CATALOGUE No	REMARKS
1	1	Q1 - METERING ISOLATOR C/W EXT HANDLE MECHANISM	SOCOME	SLB400 3P	
2	1	Q2 - NORMAL SUPPLY MAIN SWITCH	TERASAKI	540NE3400	Set Ir=0.5 (200A) Char=4
2	1	Q2 - EXTERNAL ROTARY HANDLE MECHANISM	TERASAKI	TZHS40RS5GH	
2	1	Q2 - TERMINAL SHIELD	TERASAKI	TZCF4035WNG	
2	1	Q2 - AUXILIARY CONTACT	TERASAKI	TZAX00B15TA	
2	1	Q2 - MECHANICAL LINK INTERLOCK LEFT SECTION	TERASAKI	TZML40L3B	
3	1	Q3 - GENERATOR SUPPLY MAIN SWITCH	TERASAKI	540NE3400	Set Ir=0.5 (200A) Char=2
3	1	Q3 - EXTERNAL ROTARY HANDLE MECHANISM	TERASAKI	TZHS40RS5GH	
3	1	Q3 - TERMINAL SHIELD	TERASAKI	TZCF4035WNG	
3	1	Q3 - AUXILIARY CONTACT	TERASAKI	TZAX00B15TA	
3	1	Q3 - MECHANICAL LINK INTERLOCK RIGHT SECTION	TERASAKI	TZML40R3B	
4	1	COMMON LOAD SIDE BUSBAR SET	TERASAKI	TZLSBB40033	
5	1	GENERATOR INLET PLUG SET	ITT VEAH POWERLOCK	NRG2U.SL.PSAU400 (400A)	
6	1	MAIN NEUTRAL BAR	SWBD BUILDER	CUSTOM BUILD	
7	1	MAIN EARTH BAR	SWBD BUILDER	CUSTOM BUILD	
8	1	F1,7,3 - SURGE DIVERTER CIRCUIT FUSES	WOHNER	31113 c/w 3 x 31189	32A FUSES & HOLDERS
9	3	SD1,2,3 - SURGE DIVERTER	CRITEC	TDS1100-25R-277	
10	1	F4,5,6 - PHASE FAILURE FUSES	WOHNER	31113 c/w 3 x 31184	6A FUSES & HOLDERS
11	1	PFRE - ENERGEX MAINS PHASE FAILURE RELAY	CARLO GAVAZZI	DPB-01-C-M48	
12	3	T1,2,3 - ENERGY METER CT's	IME	TAH400	400/5A
13	1	EM1 - ENERGY METER WITH RS485 OPTION	ELECTREX	PFAZC10-82 + PFE420-08	
14	1	Q4 - PUMP 1 CIRCUIT BREAKER	TERASAKI	E250N3250	Set Ir=0.6 (160A) Im=3
14	1	Q4 - EXTERNAL ROTARY HANDLE MECHANISM	TERASAKI	TZHS25RS5GH	
14	1	Q4 - TERMINAL SHIELD	TERASAKI	TZCF2535LNG	
14	1	Q4 - AUXILIARY CONTACT	TERASAKI	TZAX00B15TA	
15	1	Q5 - PUMP 2 CIRCUIT BREAKER	TERASAKI	E250N3250	Set Ir=0.6 (160A) Im=3
15	1	Q5 - EXTERNAL ROTARY HANDLE MECHANISM	TERASAKI	TZHS25RS5GH	
15	1	Q5 - TERMINAL SHIELD	TERASAKI	TZCF2535LNG	
15	1	Q5 - AUXILIARY CONTACT	TERASAKI	TZAX00B15TA	
16	1	Q8 SUB-DISTRIBUTION BOARD CIRCUIT BREAKER	TERASAKI	E125N3363	Set Ir=1.0 (163A) Im=5
16	1	Q8 - EXTERNAL ROTARY HANDLE MECHANISM	TERASAKI	TZHS12RS5GH	
16	1	Q8 - TERMINAL SHIELD	TERASAKI	TZCF1235LNG	
17	1	DIST. BD. 30 POLE 3 PHASE CHASSIS	TERASAKI	CD2-30/10-3U	
18	1	DIST. BD. NEUTRAL LINK	DORE ELEC.	165N30	c/w E/N FEET
19	1	DIST. BD. EARTH LINK	DORE ELEC.	165E30	
20	1	Q10 - MULTITRODE MULTISHART METERING CIRCUIT BREAKER	TERASAKI	DTCB6306C	
21	1	Q11 - 20A 3 PHASE+N GPO CIRCUIT BREAKER	TERASAKI	DTCB6320C	c/w DSRCH-32-30-3PN
22	1	Q12 - RTU LAPTOP GPO CIRCUIT BREAKER	TERASAKI	DSRCH-10-30A	
23	1	Q13 - SPARE RCBD	TERASAKI	DSRCH-10-30A	
24	1	Q14 - DC SUPPLY CIRCUIT BREAKER	TERASAKI	DTCB6106C	
25	1	Q15 - GENERATOR ANCILLARY SUPPLY CIRCUIT BREAKER	TERASAKI	DSRCH-10-30A	
26	1	Q16 - SPARE CIRCUIT BREAKER	TERASAKI	DTCB6106C	
27	1	Q22 - DRY WELL SUMP PUMP CIRCUIT BREAKER	TERASAKI	DTCB6310C	
28	1	Q23 - DRY WELL VENT FAN 1 CIRCUIT BREAKER	TERASAKI	DTCB6306C	
29	1	Q24 - DRY WELL VENT FAN 2 CIRCUIT BREAKER	TERASAKI	DTCB6306C	
30	1	X1 - 3 PHASE SWITCHED OUTLET 20A	CLIPSAL	56CS20	IP56
31	1	X2 - 1 PHASE DIN-RAIL MOUNTED OUTLET 10A	CLIPSAL	4P5010	
32	1	X3 - GENERATOR ANCILLARY POWER OUTLET 10A	CLIPSAL	56S0310	IP56
33	1	Q4-1, Q5-1 - PUMP 240VAC CONTROL CIRCUIT BREAKER	TERASAKI	DTCB6104C	
34	1	Q04, Q05 - PUMP 24VDC CONTROL CIRCUIT BREAKER	TERASAKI	DTCB0C10C	
35	1	Q07 - BATTERY SHORT CCT PROTECTION CIRCUIT BREAKER	TERASAKI	DTCB0C210C	
36	2	PS-P1,2 - PUMP 240VAC-24VDC POWER SUPPLY	WEIDMULLER	8951340000	120W 5A/24VDC
37	2	12U1 PUMP VARIABLE SPEED DRIVE	ABB	ACS550-01-125A-4-0J408	c/w ACS-CP-D KEYPAD
38	6	12CT1-3 - CURRENT TRANSFORMERS	IME	TAI 233	250/5A
39	2	VSD COOLING THERMOSTAT	COSMOTEC	KTS01141	
40	4	VSD VENTILATION FAN	COSMOTEC	GKVB0A2220	
41	4	VSD VENTILATION FILTERS	COSMOTEC	GKF30	
42	2	12K1 - PUMP CONTACTOR	SPRECHER & SCHUH	CAS6-210-EI-22-240VAC	
43	2	12K1A - PUMP CONTACTOR SLAVE RELAYS	FINDER	38.5124VACDC	
44	2	12K3 - CONTROL RELAYS	FINDER	46.52.0074 24VDC	+ 97.02 BASE
45	2	12K4 - CONTROL RELAYS	FINDER	46.52.0074 24VDC	+ 97.02 BASE
46	2	12K5 - CONTROL RELAYS	FINDER	38.5124VACDC	
47	2	12K7 - PUMP EMERGENCY PUMP TIMER	CARLO GAVAZZI	DAA-01-D-M24	
48	2	12K8 - PUMP FORWARD RELAY	FINDER	55.34.0074 24VDC	+ 94.04 BASE

ITEM	QTY	DESCRIPTION	MANUFACTURER	CATALOGUE No	REMARKS
49	2	12K9 - PUMP REVERSE RELAY	FINDER	55.34.0074 24VDC	+ 94.04 BASE
50	2	12H1 - PUMP RUNNING RED INDICATOR	SPRECHER & SCHUH	D7P-P4-PN3R	
51	2	12F4 - INSULATION RESISTANCE TESTING FUSES	WOHNER / FERAZ SHAWMUT	31971 c/w DCS-2	5A 1000V FUSE & HOLDER
52	2	12K20 - PUMP RUN FORWARD COMMAND RELAY	FINDER	38.5124VACDC	
53	2	12K21 - PUMP FAULT RESET RELAY	FINDER	38.5124VACDC	
54	2	12K22 - PUMP EMERGENCY MODE INTERRUPT RELAY	FINDER	38.5124VACDC	
55	2	12K23 - PUMP IRT ISOLATION CONTACTOR	FINDER	38.5124VACDC	
56	2	12K24 - PUMP RUN REVERSE COMMAND RELAY	FINDER	38.5124VACDC	
57	1	S1 - PUMP LOCK OFF PUSHBUTTON	SPRECHER & SCHUH	D7P-LMT44 + D7-ALP + D7-N3R	c/w D7-X10 + D7-X01
57	2	S1 - PUMP LOCK OFF SAFETY CONTACTS	SPRECHER & SCHUH	D7-X015	
58	1	S5 - EMERGENCY PUMPING SELECTOR SWITCH	KRAUS & NAIMER	CA18-A223-600-FT2	ENGRAVED 'NORMAL-RUN'
59	1	H1 - POWER AVAILABLE WHITE INDICATOR	SPRECHER & SCHUH	D7P-P7-PN3W	
60	1	PAR - POWER AVAILABLE RELAY	FINDER	38.5124VACDC	
61	1	4K1 - DRY WELL SUMP PUMP RUN CONTACTOR	SPRECHER & SCHUH	CAS7-9D-14C-24VDC	24VDC COIL
62	1	4TOL - DRY WELL SUMP PUMP THERMAL OVERLOAD RELAY	SPRECHER & SCHUH	CT7N-23-B32	
63	1	4K2 - DRY WELL SUMP PUMP HEALTHY RELAY	FINDER	38.5124VACDC	
64	1	4S1 - DRY WELL SUMP PUMP MANUAL START PUSH BUTTON	SPRECHER & SCHUH	D7P-F301-PX10	
65	1	4S2 - DRY WELL SUMP PUMP MANUAL STOP PUSH BUTTON	SPRECHER & SCHUH	D7P-F402-PX01	
66	1	LRI - DRY WELL SUMP PUMP LEVEL RELAY	MULTITRODE	MTR-5	24VDC
67	6	SINGLE POINT FAIL SAFE PROBES	MULTITRODE	02030FSP	
68	1	SK1 - DRY WELL VENT FAN RUN CONTACTOR	SPRECHER & SCHUH	CAS7-9D-14C-24VDC	
69	1	STOL - DRY WELL VENT FAN THERMAL OVERLOAD RELAY	SPRECHER & SCHUH	CT7N-23-B10	
70	1	SS1 - DRY WELL VENT FAN CONTROL SWITCH	SPRECHER & SCHUH	D7P-F301-PX10	
71	1	6K1 - WET WELL VENT FAN RUN CONTACTOR	SPRECHER & SCHUH	CAS7-9D-14C-24VDC	
72	1	6TOL - WET WELL VENT FAN THERMAL OVERLOAD RELAY	SPRECHER & SCHUH	CT7N-23-A40	
73	1	6S1 - WET WELL VENT FAN CONTROL SWITCH	SPRECHER & SCHUH	D7P-F301-PX10	
74	1	PS3 - BACKUP CONTROL POWER SUPPLY	WEIDMULLER	PRO-M-5A (89513 40000)	
75	1	Q40 - BACKUP CONTROL CIRCUIT BREAKER	TERASAKI	DTCB6404C	
76	1	BC - BACKUP CONTROL LEVEL RELAY	MULTITRODE	SAFE-FSP	24VDC
77	1	BACKUP LEVEL PROBE 3 POINT FAIL SAFE	MULTITRODE	05030FSP	
78	1	BOT - BACKUP OFF-DELAY TIMER	CARLO GAVAZZI	DOB-01-D-M24	
79	1	BOTA - BACKUP OFF-DELAY TIMER HOLD RELAY	FINDER	55.34.0074 24VDC	+ 94.04 BASE
80	1	PS1 - MULTISHART POWER SUPPLY	POWERBOX	PB251A-24CM-CC-T-5	
81	1	MULTISHART RTU PUMP CONTROLLER	MULTITRODE	MSM-DUJ2	
81	1	HM KEYPAD			
81	1	EXTENSION I/O			
82	2	PRIMARY PROBE	VEGA	VEGAWELL 52	+ VEGADIS 62
83	2	ETR, ETR2 - ELECTRODE TEST RELAY	FINDER	55.34.0074 24VDC	+ 94.04 BASE
84	1	BST - RTU BATTERY SYSTEM TEST RELAY	FINDER	38.5124VACDC	
85	2	BATTERIES - INCLUDING SPILL TRAYS	YUASA	UXH8B-12	
86	1	PS2 - RADIO & CARD READER POWER SUPPLY	POWERBOX	PBH-242J-CC	
87	1	TELEMETRY RADIO SYSTEM	RADTEL	EXISTING SYSTEM TO BE RETAINED	
88	1	COMMS SWITCH	MOXA	NPORT 6450/SAA + NM-TX02	MULTISHART CODE CMP2704
89	1	SWIPE CARD READER	INDALA	IN-ASR-610/1	+ SPACER ISP-610-001
90	1	GSM MODEM	WAVECOM (SIERRA)	FASTTRACK XTEND FXT009	
91	1	GSM CELLULAR TRANSIT ANTENNA	RF INDUSTRIES	TLA2100	
92	1	H4 - DRY WELL ALARM RED STROBE	MOFLASH	MOX501-10R	+ X50104
93	1	DWAR - DRY WELL ALARM RELAY	FINDER	38.5124VACDC	
94	4	E1-6 - LED SWITCHBOARD LIGHT	LUMIFA	LF1B-C35-27HW4	
95	6	DS1-6 - SWITCHBOARD DOOR MICRO SWITCHES	SAIA-BURGESS	DS3-UL	6 OFF N/C
96	1	SR - SECURITY ALARM & LIGHTING CONTROL RELAY	FINDER	46.52.0074 24VDC	+ 97.02 BASE
97	1	INSTRUMENT EARTH BAR	CLIPSAL	L10	
98	1	DELIVERY PRESSURE TRANSMITTER	VEGA	VEGABAR 52	RANGE = 0-2 Bar
99	1	TRICLOVER FITTING FOR VEGABAR52	VEGA	ADAPTOR 4	
100	6	CORROSION INHIBITOR	CORTEC	VPCI-111	
101	1	PFAR - PHASE FAIL AUXILIARY RELAY	FINDER	55.32.0074 24VDC	+ 94.02 BASE
102	1	OLR - OVERFLOW LEVEL RELAY	FINDER	55.32.0074 24VDC	+ 94.02 BASE
103	1	HLR - HIGH LEVEL / BACKUP ACTIVE RELAY	FINDER	38.5124VACDC	
104	1	1K30 - PUMP 1 AVAILABLE / FAULT RELAY	FINDER	38.5124VACDC	
105	1	2K30 - PUMP 2 AVAILABLE / FAULT RELAY	FINDER	38.5124VACDC	
106					
107					
108					
109					

ITEM	QTY	DESCRIPTION	MANUFACTURER	CATALOGUE No	REMARKS
110		NOT USED			
111		NOT USED			
112		NOT USED			
113		NOT USED			
114		NOT USED			
115		NOT USED			
116		NOT USED			
117		NOT USED			
118		NOT USED			
119		NOT USED			
120		NOT USED			
121		NOT USED			
122		NOT USED			
123		NOT USED			
124		NOT USED			
125		NOT USED			
126		NOT USED			
127		NOT USED			
128		NOT USED			
129		NOT USED			
130		NOT USED			
131		NOT USED			
132		NOT USED			
133		NOT USED			
SWITCHBOARD TERMINALS					
164.0	2	10A MINIATURE THERMAL CIRCUIT BREAKER	PHOENIX CONTACT	TCP 10	(071 2314)
164.1	17	4A MINIATURE THERMAL CIRCUIT BREAKER	PHOENIX CONTACT	TCP 4	(071 2259)
164.2	4	2A MINIATURE THERMAL CIRCUIT BREAKER	PHOENIX CONTACT	TCP 2	(071 2217)
164.3	23	FUSE TERMINAL BLOCK	PHOENIX CONTACT	UK 6-FSI/C	(311 8203)
164.4	2	10-TERMINAL PLUG-IN BRIDGING BAR	PHOENIX CONTACT	FBI 10-B	(020 3263)
164.5	69	1 x DISCONNECT, 1 x PHASE, 1 x PE TERMINAL	PHOENIX CONTACT	PIT2.5-PE/L/LTB	(321 3957)
164.6	9	TERMINAL END PLATE	PHOENIX CONTACT	D-PIT1/3B	(321 3976)
164.7	4	COMBINATION TERMINAL	PHOENIX CONTACT	PIT2.5-TG	(321 0185)
164.8	4	FUSE CONNECTOR WITH LED 24	PHOENIX CONTACT	P-FU 5X20 LED 24	(303 6899)
164.9	6	20-TERMINAL PLUG-IN BRIDGING BAR	PHOENIX CONTACT	FBS 20-S	(303 0226)
164.10	102	THROUGH TERMINAL	PHOENIX CONTACT	PIT2.5	(320 9510)
164.11	6	EARTH TERMINAL	PHOENIX CONTACT	PIT2.5-PE	(320 9536)
164.12	15	TERMINAL END PLATE	PHOENIX CONTACT	D-ST2.5	(303 0417)
164.13	6	DISCONNECT TERMINAL	PHOENIX CONTACT	PIT2.5-MT	(321 0156)
164.14	7	TERMINAL END PLATE	PHOENIX CONTACT	D-PIT2.5-MT	(321 1003)
164.15	30	TERMINAL END BRACKET	PHOENIX CONTACT	CLIPFIX 35-S	(302 2276)
164.16	2	TEST PLUG	PHOENIX CONTACT	PS 5	(303 8983)
164.17	15	TERMINAL GROUP MARKER	PHOENIX CONTACT	UBE/D	(080 0307)
165	3	CT TEST LINK TERMINAL ASSEMBLY	PHOENIX CONTACT	URTK/S CUSTOM ASSEMBLY	(592 1304)
166		NOT USED			
MISCELLANEOUS					
167	1	ENERGEX PADLOCK - 45mm brass pin tumbler	H.A. REED LOCKSMITHS	KEY No 24242 & S/S Shackle	c/w 1 KEY
168	Lot	S/STEEL FITTINGS AS DETAILED FOR PRESSURE TX	FITTINGS	STAINLESS STEEL	Sheet 21
169	1	EARTH ROD CONNECTION BOX	NESCO	ERB1 (if cased in stabi)	PIT-03 (if direct in gnd)
170	1	LINE TAP - BONDING TO EARTHING ROD	CLIPSAL	8P26	
171	1	EARTHING ROD	COPPER ROD	13mm Diameter	
172	1	16A 3ph OUTLET - FOR DRY WELL SUMP PUMP	MENNEKES	Socket-T196, Plug - 282	IP67
173	1	PUMP FIELD LOCK OFF STOP STATION - S6	SPRECHER & SCHUH	D7Y1M1 + D7-ALP + 3 x D7-BX01	c/w D7-5YE12
174	2	DRY WELL & WET WELL VENT FAN ISOLATOR	CLIPSAL	56SW300	
175	6	DRY WELL FLURO FITTINGS	PIERLITE - PWP236H	TWIN 36W W/PROOF	High Impact Resistant
176	2	DRY WELL EMERGENCY LIGHTING FITTINGS	PIERLITE - PWP218H	TWIN 18W W/PROOF MAINTAINED	High Impact Resistant
177	2	IP56 JUNCTION BOX - FOR DRY WELL LEVEL PROBES	POLYCARBONATE	To Suit - c/w terminals	Mounted in drywell
178	1	DRY WELL LIGHTING SWITCH - ST2	CLIPSAL	56SW110N	c/w NEON INDICATOR
179	2	PUMP LOCAL ISOLATION SWITCHES - ISOL1/2	KRAUS & NAIMER	6KE401 K302-AUQ1023x65H4	
180					

Sheet 16
AS CONSTRUCTED

3	08/12	SITE WIRING MODIFICATION	JHD	DD	DRAFTED	JHD
2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTING CHECK	JC-S
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	CAD FILE	57-0256-016
DATE		AMENDMENT	DRN	APD	B.C.C. FILE No	

23/3/12	R P E C No	DATE	PRINCIPAL DESIGN MANAGER	DATE
23/3/12	R P E C No	DATE	CLIENT DELEGATE	DATE



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
SWITCHBOARD
EQUIPMENT SCHEDULE

ITEM	DESCRIPTION - INTERNAL LABEL	LABEL 1	LABEL 2 (IF NECESSARY)	LABEL 3 (IF NECESSARY)	TEXT HEIGHT	MATERIAL / COLOUR
01	METERING ISOLATOR	CT METERING ISOLATOR ONLY 400A			10mm	ABS PLASTIC W/B
02	ENERGEX SUPPLY	NORMAL SUPPLY MAIN SWITCH 400A (set 200A)	(Note: Mount Additional Warning Label - Item 208)		10mm	ABS PLASTIC W/B
03	GENERATOR SUPPLY	GENERATOR SUPPLY MAIN SWITCH 400A (set 200A)			10mm	ABS PLASTIC W/B
04	ENERGY METER CURRENT TRANSFORMERS	ET	12	13	4mm	ABS PLASTIC W/B
05	ENERGY METER	EM1			4mm	ABS PLASTIC W/B
06	PUMP CIRCUIT BREAKER	PUMP No1 250A (set 160A)	PUMP No2 250A (set 160A)		6mm	ABS PLASTIC W/B
07	DRY WELL SUMP PUMP CIRCUIT BREAKER	DRY WELL SUMP PUMP 022			4mm	ABS PLASTIC W/B
08	PHASE FAILURE FUSES	ENERGEX PHASE FAILURE RELAY F4.5/6 32/6A	FED FROM LINE SIDE OF MAIN SWITCH (Mounted On Escutcheon)		4mm	ABS PLASTIC W/B - R/W
09	SUB-DISTRIBUTION BOARD CIRCUIT BREAKER	SUB-DISTRIBUTION BOARD 63A			4mm	ABS PLASTIC W/B
10	MULTISMART RTU CIRCUIT BREAKER	MULTISMART RTU 010			4mm	ABS PLASTIC W/B
11	3 PHASE OUTLET CIRCUIT BREAKER	3Ø OUTLET 011			4mm	ABS PLASTIC W/B
12	1 PHASE OUTLET CIRCUIT BREAKER	LAPTOP GPO 012			4mm	ABS PLASTIC W/B
13	SPARE	SPARE 013			4mm	ABS PLASTIC W/B
14	RTU POWER SUPPLY CIRCUIT BREAKER	RTU 240V SUPPLY 014			4mm	ABS PLASTIC W/B
15	GENERATOR ANCILLARY SUPPLY CB	GENERATOR ANCILLARY SUPPLY 015			4mm	ABS PLASTIC W/B
16	SPARE	SPARE 016			4mm	ABS PLASTIC W/B
17	SUBMAIN TO PUMP BUILDING L&P DB	PUMP BUILDING L&P DB 017			4mm	ABS PLASTIC W/B
18	DRY WELL VENT FAN CIRCUIT BREAKER	DRY WELL VENT FAN 023			4mm	ABS PLASTIC W/B
19	WET WELL VENT FAN CIRCUIT BREAKER	DRY WELL VENT FAN 024			4mm	ABS PLASTIC W/B
22	PUMP 240VAC CONTROL CIRCUIT BREAKER	PUMP No1 04-1	PUMP No2 05-1		4mm	ABS PLASTIC W/B
23	PUMP 24VDC CONTROL CIRCUIT BREAKER	PUMP No1 004	PUMP No2 005		4mm	ABS PLASTIC W/B
24	BATTERY CIRCUIT BREAKER	BATTERY 007			4mm	ABS PLASTIC W/B
25	PUMP 240VAC-24VDC POWER SUPPLY	PS-P1	PS-P2		4mm	ABS PLASTIC W/B
27	SURGE DIVERTER FUSES	SURGE DIVERTER FUSES F12.3 32/32A	FED FROM LINE SIDE OF MAIN SWITCH		4mm	ABS PLASTIC W/B - R/W
28	SURGE DIVERTERS	SURGE DIVERTERS	FED FROM LINE SIDE OF MAIN SWITCH		4mm	ABS PLASTIC W/B - R/W
29	PHASE FAILURE RELAY	ENERGEX MAINS POWER FAIL - PFRE	FED FROM LINE SIDE OF MAIN SWITCH		4mm	ABS PLASTIC W/B - R/W
30	MAIN NEUTRAL LINK	MAIN NEUTRAL			4mm	ABS PLASTIC W/B
31	MAIN EARTH LINK	MAIN EARTH			4mm	ABS PLASTIC W/B
32	SUB-BOARD NEUTRAL LINK	NEUTRAL			4mm	ABS PLASTIC W/B
33	SUB-BOARD EARTH LINK	EARTH			4mm	ABS PLASTIC W/B
34	SURGE DIVERTER NEUTRAL LINK	SURGE DIVERTER NEUTRAL			4mm	ABS PLASTIC W/B
35	INSTRUMENT EARTH LINK	INSTRUMENT EARTH			4mm	ABS PLASTIC W/B
36	LAPTOP GPO	LAPTOP GPO			4mm	ABS PLASTIC W/B
37	3 PHASE SWITCHED OUTLET	X1			4mm	ABS PLASTIC W/B
38	GENERATOR CONNECTION SOCKETS	GENERATOR ANCILLARY SUPPLY			4mm	ABS PLASTIC W/B - R/W
39	GENERATOR CONNECTION SOCKETS	GENERATOR CONTROL			4mm	ABS PLASTIC W/B - R/W
40	GENERATOR POWER CONNECTION SOCKET	GENERATOR CONNECTION			4mm	ABS PLASTIC W/B
42	PUMP VARIABLE SPEED DRIVE	PUMP No1 011	PUMP No2 201		4mm	ABS PLASTIC W/B
43	PUMP CURRENT TRANSFORMERS	CT1 CT2 CT3	2CT1 2CT2 2CT3		4mm	ABS PLASTIC W/B
44	PUMP RUN CONTACTOR	IK1	2K1		4mm	ABS PLASTIC W/B
46	PUMP STARTER FAULT RELAY	IK3	2K3		4mm	ABS PLASTIC W/B
47	PUMP RUNNING RELAY	IK4	2K4		4mm	ABS PLASTIC W/B
48	PUMP SUPPLY HEALTHY RELAY	IK5	2K5		4mm	ABS PLASTIC W/B
50	EMERGENCY PUMP TIMER	IK7	2K7		4mm	ABS PLASTIC W/B
51	PUMP RUN FORWARD RELAY	IK8	2K8		4mm	ABS PLASTIC W/B
52	PUMP RUN REVERSE RELAY	IK9	2K9		4mm	ABS PLASTIC W/B
53	PUMP RUN RELAY	IK1A	2K1A		4mm	ABS PLASTIC W/B
55	PUMP RUN FORWARD COMMAND RELAY	IK20	2K20		4mm	ABS PLASTIC W/B
56	PUMP FAULT RESET RELAY	IK21	2K21		4mm	ABS PLASTIC W/B
57	PUMP EMERGENCY MODE INTERRUPT RELAY	IK22	2K22		4mm	ABS PLASTIC W/B
58	PUMP IRT ISOLATION CONTACTOR	IK23	2K23		4mm	ABS PLASTIC W/B
59	PUMP RUN REVERSE COMMAND RELAY	IK24	2K24		4mm	ABS PLASTIC W/B
60	PUMP INSULATION TEST RESISTANCE FUSE	IF4 32/5A	2F4 32/5A		4mm	ABS PLASTIC W/B
61	PUMP RUNNING INDICATOR	PUMP No1 RUNNING	PUMP No2 RUNNING		4mm	ABS PLASTIC W/B

ITEM	DESCRIPTION - INTERNAL LABEL	LABEL 1	LABEL 2 (IF NECESSARY)	LABEL 3 (IF NECESSARY)	TEXT HEIGHT	MATERIAL / COLOUR
62	DRY WELL SUMP PUMP RUN CONTACTOR	4K1			4mm	ABS PLASTIC W/B
63	DRY WELL SUMP PUMP TOL	4TOL			4mm	ABS PLASTIC W/B
64	DRY WELL SUMP PUMP HEALTHY RELAY	4K2			4mm	ABS PLASTIC W/B
65	DRY WELL SUMP PUMP START PUSHBUTTON	START			4mm	ABS PLASTIC W/B
66	DRY WELL SUMP PUMP STOP PUSHBUTTON	STOP			4mm	ABS PLASTIC W/B
67	DRY WELL S/PUMP STOP/START LEVEL RELAY	DRY WELL SUMP PUMP CNL - 1R1			4mm	ABS PLASTIC W/B
68	LOCK-OFF STOP PUSHBUTTON	LOCK-OFF STOP			4mm	ABS PLASTIC W/B
69	EMERGENCY PUMPING MODE START SWITCH	EMERGENCY PUMPING MODE			4mm	ABS PLASTIC W/B
70	POWER AVAILABLE INDICATOR	POWER AVAILABLE			4mm	ABS PLASTIC W/B
71	RTU BATTERY SYSTEM TEST RELAY	BS1			4mm	ABS PLASTIC W/B
72	DOOR SECURITY RELAY	SR			4mm	ABS PLASTIC W/B
73	POWER AVAILABLE RELAY	PAR			4mm	ABS PLASTIC W/B
74	ATS CONTROL RELAY	CPSR			4mm	ABS PLASTIC W/B
75	GENERATOR EXERCISE RELAY	GEN-EX			4mm	ABS PLASTIC W/B
76	ATS AUXILIARY RELAY	ATSN			4mm	ABS PLASTIC W/B
77	ELECTRODES TEST RELAY	ETR			4mm	ABS PLASTIC W/B
78	DRY WELL VENT FAN RUN CONTACTOR	SK1			4mm	ABS PLASTIC W/B
79	DRY WELL VENT FAN TOL	STOL			4mm	ABS PLASTIC W/B
79	DRY WELL VENT FAN ON/OFF SWITCH	SS1			4mm	ABS PLASTIC W/B
62	WET WELL VENT FAN RUN CONTACTOR	6K1			4mm	ABS PLASTIC W/B
63	WET WELL VENT FAN TOL	6TOL			4mm	ABS PLASTIC W/B
79	WET WELL VENT FAN ON/OFF SWITCH	6S1			4mm	ABS PLASTIC W/B
84	DELIVERY PRESSURE ADJ. UNIT	DELIVERY PRESSURE (Located in FOB)			4mm	ABS PLASTIC W/B
85	MULTISMART 240VAC/24VDC POWER SUPPLY	MULTISMART 24VDC POWER SUPPLY			4mm	ABS PLASTIC W/B
86	CARD READER 24V/13.8VDC CONVERTER	24/12 VDC CONVERTER - CARD READER			4mm	ABS PLASTIC W/B
87	BACKUP CONTROL LEVEL RELAY	BC			4mm	ABS PLASTIC W/B
88	BACKUP OFF-DELAY TIMER	BOT			4mm	ABS PLASTIC W/B
89	BACKUP TIMER AUXILIARY RELAY	BOTA			4mm	ABS PLASTIC W/B
90	BACKUP CONTROLLER CIRCUIT BREAKER	BACKUP 24VDC 040			4mm	ABS PLASTIC W/B
91	BACKUP CONT. 240VAC/24VDC POWER SUPPLY	BACKUP CONTROLLER 24 VDC CONVERTER			4mm	ABS PLASTIC W/B
94	TELEMETRY UNIT	MULTISMART UNIT 1	MULTISMART UNIT 2		4mm	ABS PLASTIC W/B
95	MODEM	MODEM			4mm	ABS PLASTIC W/B
96	TERMINAL HEADER	24VDC POWER DISTRIBUTION			4mm	ABS PLASTIC W/B
97	TERMINAL HEADER	DIGITAL OUTPUTS 100	DIGITAL OUTPUTS 200	DIGITAL OUTPUTS 300	4mm	ABS PLASTIC W/B
98	TERMINAL HEADER	DIGITAL INPUTS 101	DIGITAL INPUTS 201	DIGITAL INPUTS 301	4mm	ABS PLASTIC W/B
99	TERMINAL HEADER	ANALOG INPUTS 1A1	ANALOG INPUTS 2A1	ANALOG INPUTS 3A1	4mm	ABS PLASTIC W/B
100	TERMINAL HEADER	ANALOG OUTPUTS 1A0	ANALOG OUTPUTS 2A0	ANALOG OUTPUTS 3A0	4mm	ABS PLASTIC W/B
200	HEADER LABEL (Incomer Section)	MEN BEYOND			6mm	ABS PLASTIC W/B
201	HEADER LABEL (Over XC Control Terminals)	DIGITAL INSTRUMENT AND CONTROL TERMINALS			4mm	ABS PLASTIC W/B
202	HEADER LABEL (Over Shrouded Terminals)	WARNING 240VAC			4mm	ABS PLASTIC R/W
203	HEADER LABEL (Over Terminals)	GENERATOR CONNECTIONS	AREA LIGHTING		4mm	ABS PLASTIC W/B
204	HEADER LABEL (Over Pushbuttons)	DRY WELL SUMP PUMP	DRY WELL VENT FAN	WET WELL VENT FAN	6mm	ABS PLASTIC W/B
205	PUMP CONNECTIONS	PUMP No1	PUMP No2		6mm	ABS PLASTIC W/B
206	METER PANEL WARNING SIGN	(DUPLICATE LABEL 'S' FROM EXTERNAL LABEL LIST)	(MOUNT INSIDE METER BOX ADJACENT METERS)		6mm	ABS PLASTIC W/B
207	INSPECTION PLATE LABELS - GLUE ONLY	INSPECTION PLATE DO NOT INSTALL GLANDS	INSPECTION PLATE DO NOT INSTALL GLANDS	INSPECTION PLATE DO NOT INSTALL GLANDS	6mm	ABS PLASTIC W/B
208	SUB DISTRIBUTION BOARD (Escutcheon)	SUB DISTRIBUTION BOARD			10mm	ABS PLASTIC W/B
209	PUMP No.1 (Escutcheon)	PUMP No.1			10mm	ABS PLASTIC W/B
210	PUMP No.2 (Escutcheon)	PUMP No.2			10mm	ABS PLASTIC W/B
211	MAIN SWITCHES (Escutcheon)	MAIN SWITCHES			10mm	ABS PLASTIC W/B
212	COMMON CONTROLS (Escutcheon)	COMMON CONTROLS			10mm	ABS PLASTIC W/B
213	DOL STARTERS (Escutcheon)	DOL STARTERS AND LEVEL CONTROLS			10mm	ABS PLASTIC W/B
214	SUPPLY AUTHORITY CT CHAMBER (Escutcheon)	SUPPLY AUTHORITY CT CHAMBER			10mm	ABS PLASTIC W/B
215	METERING ISOLATOR (Escutcheon)	METERING ISOLATOR			10mm	ABS PLASTIC W/B
216	MAIN SWITCH WARNING LABEL	Mount over Normal & Gen main switches Label size to be approximately 240 x 60	WARNING: THIS BOARD IS SUPPLIED FROM 2 SOURCES. ISOLATE BOTH NORMAL SUPPLY CB AND GENERATOR SUPPLY CB BEFORE WORKING ON THIS SWITCHBOARD.		6mm	ABS PLASTIC R/W
217	PUMP INFORMATION LABEL	Label size to be approximately 150x50	BTSP1 HOPKINS STREET PUMPS ZONE ??? IMPELLER ??? kW 50		6mm	ABS PLASTIC W/B
218	OPERATOR LABEL	PLEASE CHECK THAT THE EMERGENCY PUMPING SWITCH IS IN NORMAL MODE BEFORE LEAVING SITE			6mm	ABS PLASTIC W/B
219	OPERATOR LABEL	Positioned Over Lock-Off Stop Pushbutton	CAUTION: RESETING RESTORES AUTOMATIC CONTROL		6mm	ABS PLASTIC W/B

EXTERNAL DOOR LABEL LIST				
LABEL	TEXT	TEXT HEIGHT	PAINT FILL (LETTERING)	QUANTITY
A	BTSP1	25mm	Black	1
B	COMMON CONTROLS	10mm	Black	1
C	PUMP No1	10mm	Black	1
D	PUMP No2	10mm	Black	1
E	MAIN SWITCHES	10mm	Black	1
F	THIS SITE IS MONITORED BY THE CONTROL ROOM. PLEASE INFORM THE OPERATOR BEFORE ISOLATING PUMPS OR STATION	8mm	Black	2
G	SUPPLY AUTHORITY METERING	10mm	Black	1
H	SUB DB, DOL STARTERS AND LEVEL CONTROLS	10mm	Black	1
I	DANGER 415V	10mm	Black	1
J	DANGER - 2 SOURCES OF SUPPLY	10mm	Red	1
K				
L				
M				
N				
O				
P				
Q				
R				
S	WARNING THIS SITE IS CONTINUOUSLY MONITORED CONTACT CONTROL ROOM BEFORE OPENING METER DOOR AND PRIOR TO LEAVING SITE.	8mm	Black	1
T				
U	DANGER ELECTRICAL EQUIPMENT Queensland Urban Utilities Phone 34078414		NOTE THIS LABEL IS FREE ISSUE BY QUU	2
EXTERNAL LABELS 1mm THICK, 316 GRADE STAINLESS STEEL. FIXED WITH M3 316 STAINLESS STEEL METAL THREADS.				
FIELD LABEL LIST				
LABEL	TEXT	TEXT HEIGHT	PAINT FILL (LETTERING)	QUANTITY
AA	MAIN EARTH CONDUCTOR - DO NOT DISCONNECT (On Main Earth Electrode)	5mm	ABS PLASTIC - W/B	1
AB				
AC	RESTRICTED PURPOSE RCD PROTECTION NOT PROVIDED SUMP PUMP ONLY (Above Sump Pump Disconnection Plug in Dry Well)	20mm	ABS PLASTIC - W/B	1
AD	DRY WELL VENT FAN ISOLATOR (Above Vent Fan Isolator in Dry Well)	10mm	ABS PLASTIC - W/B	1
AE	WET WELL VENT FAN ISOLATOR (Adjacent Wet Well Vent Fan on Outside Wall)	10mm	ABS PLASTIC - W/B	1
AF	DRY WELL LEVEL PROBES (On J-Box in Dry Well)	5mm	ABS PLASTIC - W/B	1
AG	SUMP PUMP LEVEL PROBES (On J-Box in Dry Well)	5mm	ABS PLASTIC - W/B	1
AH	AREA LIGHTS (On Drywell Lighting Control Switch)	5mm	ABS PLASTIC - W/B	1

DETAIL Q

Sheet 18

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD	06/12
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S	05/12
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-018	02/12
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No		

DESIGN	R P E Q No	DATE	PRINCIPAL DESIGN MANAGER	DATE
DESIGN CHECK	5505	06/12	CLIENT DELEGATE	DATE



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
SWITCHBOARD
LABEL SCHEDULE

SHEET No. 18
Queensland Urban Utilities DRAWING No
486/5/7-0256-018
AMEND
2

CONSTRUCTION - EXTERNAL SWITCHBOARD

Cubicle construction 3mm marine grade aluminium.
Equipment panels to be 3mm marine grade aluminium.
Meter Panel is double-hinged 6mm laminated phenolic resin fitted with Supply Authority sealing facility.
Lifting via 38mm holes in plinth.
Plinth construction 160x63 channel 6061 T6 grade aluminium.
Fully welded on fascia of cubicle and stiffened to prevent warping and form a rigid enclosure.
Cubicle is to be sealed to prevent the ingress of sewer well gases.
External doors and covers fitted with Dore Electrics ES60-051 seal.
All Fixings shall be 316 grade stainless steel.
M6 earth buttons fixed to the interior of all doors and hinged escutcheons and on adjacent cubicle interior surfaces.
Earth all doors/escutcheons with 4mm² flexible earth wire.
Fit door switch brackets to each door opening.
Door dropstays arms to be S/Steel and of sufficient strength to prevent being deformed when subjected to reasonable loads. Minimum 3mm S/Steel.
Gland plates manufactured from 3mm aluminium, unless otherwise shown.
Inspection/Access plates manufactured from 3mm aluminium.
Gland/Inspect/Access plate openings fitted with M6x1.0 flat head closed end rivet nuts. (Detail F)
Cable glands to be fitted with compression side installed within cubicle. (Detail G)
Gland/Inspection/Access plates to be fitted with seals attached to cubicle.
Gland/Inspection/Access plate fixings at 150mm with hex head bolts.
Gland/Inspection/Access plates are NOT to be split.
Inspection/Access plates are NOT to be earthed.
Hinges (external) lift-off type. Stainless steel with star washers fitted under all hinge screws.
Hinged escutcheons fixed with 1/4 turn coin lock with a square insert.
All equipment to be removable via front access.
All escutcheons to open a minimum of 90°
Ventilation via punched louvers (Refer drawings for detail)
Switchboard Ventilation (excluding breezeway) to be backed with stainless steel mesh gauze and removable filter material.
Fit laptop tray to rear of door 3. (Refer drawings for detail)
Fit drawing holder to rear of door 3. (Refer drawings for detail)

Locks Doors 1, 2, 3, 4, 5

DORE ELECTRICS - Stainless steel Lockable Swing Handle. (Keyed 92268)
DORE ELECTRICS - 3 point lock rod set with rollers.

Locks Door 6

DORE ELECTRICS - Stainless steel Padlockable Swing Handle.
DORE ELECTRICS - 3 point lock rod set with rollers.
ENERGEX padlock, S/Steel Shackle, 45mm brass pin tumbler.
Enerex Key No24242. c/w 1 key.

OPERATING PARAMETERS

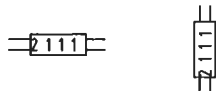
Standard	AS 3439.1
Current & Frequency	AC 50Hz
Rated Operational Voltage Ue	415 VAC
Rated Insulation Voltage Ui	0.6/1kV
Rated Auxiliary Voltage	240 VAC / 24 VDC
Short Circuit Current Isc	20 kA
Duration of Isc	0.2 sec
Degree of Protection	IP56 Weather Resistant
Internal Degree of Protection	IP20B / IP10A to AS3000:2007
Service Conditions	Outdoors
Mass	Not exceeding 2000kg
Forms of Separation	Form 3b1h (DOL Starters) - Form 4A (VSD's)
Earthing System	MEN
MEN Link	Required

PAINTING

Paint Type	Polyester Powdercoat to 50 micron thickness.
Preparation	Grind smooth all welds, descale and degrease.
Exterior/Doors Colour	Mist Green
Interior Colour	Mist Green
Equipment Panel Colour	Bright White
Escutcheon Colour	Bright White
Plinth Colour	Mist Green

WIRING

All wiring to be PVC V90 HT 0.6/1kV Grade with tinned conductor.
Control and instrumentation wiring has flexible copper conductors, and is colour coded as detailed below, each individual wire shall be numbered each end, and terminated by the use of appropriate pre-insulated crimp lugs or pins.
Separate lugs or pins shall be used for each conductor. A proprietary double pin lug may be used to terminate two conductors.
Use proprietary bridging links when required to common up terminals.
Not more than two wires shall be connected to any terminal.
Power wiring to be minimum 2.5mm² stranded copper conductors, phase colour coded as detailed below.
Control wiring to be minimum 1.0mm² flexible copper conductors, colour coded as detailed below.
Low level control signals to be minimum 0.5mm² flexible copper conductors, colour coded as detailed below.
4-20mA analog signals (internal & external) wired in shielded pair minimum size 0.5mm², and earthed at one end only. (Switchboard end for external signals)
All 240VAC terminals in the Multispart section shall be shrouded and labelled - 'Danger 240VAC'
Earth cables minimum 2.5mm² flexible.
Doors and hinged escutcheons bonded with flexible earth wire.
Switchboard to have dedicated earthing cable bonding directly to main earth bar.
Wire numbering will be equal to Brady marking system.
Wire numbers are readable left to right, bottom to top as shown.

**COLOUR CODE**

Phase wiring (A, B & C)	Red, White, Blue	2.5mm ² (min)
Potential Metering (240/415 VAC)	Red, White, Blue, Black	1.5mm ²
Current Metering (Secondary)	Red, White, Blue, Grey	2.5mm ²
240 VAC Control Active	Red	1.0mm ²
240 VAC Neutral	Black	1.0mm ²
Extra Low VDC Positive supplies	Orange	1.0mm ²
Extra Low VDC Negative supplies	Violet	1.0mm ²
General Extra Low VDC Wiring	Grey	1.0mm ²
RTU & PLC Wiring	Grey	0.5mm ²
Electrode Wiring	Pink	1.0mm ²
Intrinsically safe wiring	Light Blue	1.5mm ²
Earth	Green/Yellow	2.5mm ² (min)
Door & Escutcheon Earth Bonds	Green/Yellow	4 mm ²

LABELS

Internal labels - W/B engraved Gravoply, to label schedule.
Warning labels - R/W engraved Gravoply, to label schedule.
E/Stop labels - Y/B engraved Gravoply, to label schedule.
First letter = Background colour, Second letter = Lettering colour.

Main switch label		10mm 4mm	Material ABS PLASTIC Colour B/W
Pump CB labels		6mm 4mm	Material ABS PLASTIC Colour W/B
Compartment labels		10mm	Material Stainless Steel
E/Stop labels		4mm	Material ABS PLASTIC Colour Y/B
Warning labels		7mm 5mm	Material ABS PLASTIC Colour R/W

Internal labels secured by M3 316 grade stainless steel metal threads and adhesive.
Labels obstructed by switchboard wiring are relocated to adjacent duct lid and secured by M3 nylon threads. Lid to be secured by a single cable tie at one corner.
External labels 1mm thick 316 grade s/steel secured by M3 316 s/steel metal threads.
All internal and external labels are to have bevelled edges.
Label on the Internal side of the escutcheon for all equipment mounted on escutcheon. Affix labels with double sided tape only.

Sheet 19

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-019
No	DATE	AMENDMENT	DRN	APD	B C C FILE No.	

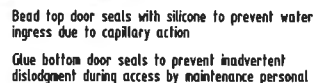
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PRINCIPAL DESIGN MANAGER		DATE	
DESIGN CHECK	R P E Q No	DATE	06/12
CLIENT DELEGATE		DATE	



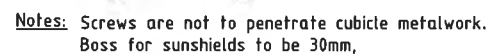
SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
SWITCHBOARD
CONSTRUCTION DETAILS

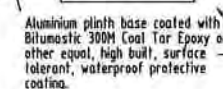
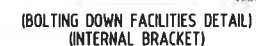
SHEET No 19	AMEND
Queensland Urban Utilities DRAWING No	
486/5/7-0256-019	2



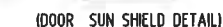
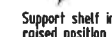
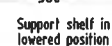
DETAIL A



DETAIL B



SET UP CUBICLE TO BE LEVEL & PLUMB BEFORE BOLTING TO CONCRETE PLINTH USING M12 S/STEEL CHEMICAL ANCHORS. MINIMUM ANCHORAGE 110mm.
FILL WITH NON-SHRINK GROUT WHERE REQUIRED.



NOTE :
DOORS MUST BE ARRANGED ON MULLIONS TO
ALLOW FOR ALL DOORS TO OPEN THE FULL 105°.
A FULLY OPEN DOOR MUST NOT PREVENT AN
ADJACENT DOOR FROM BEING OPENED OR CLOSED.



2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-020
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No	

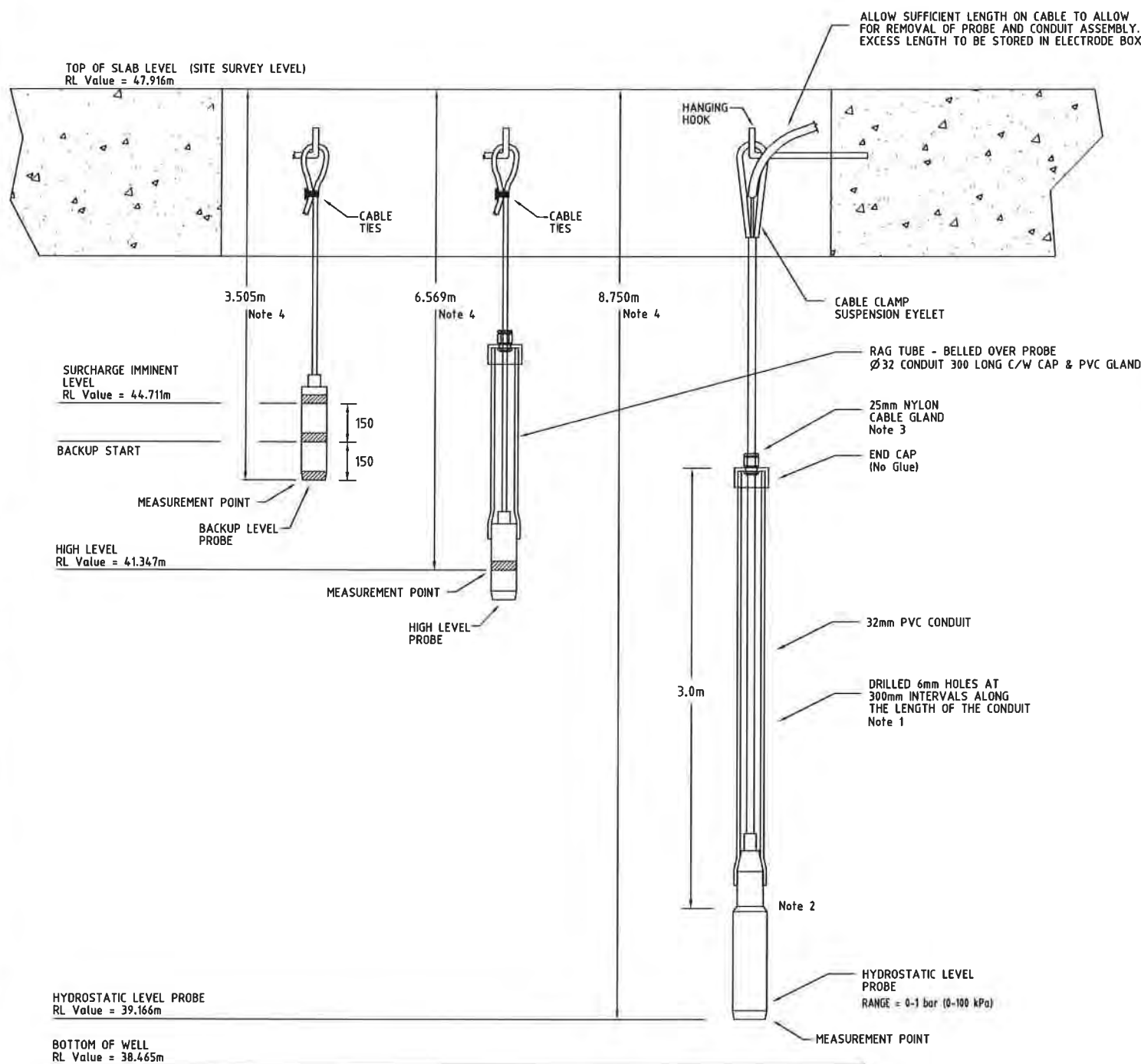
DESIGN	R P E Q. No	DATE	PRINCIPAL DESIGN MANAGER	DATE
DESIGN CHECK	R P E Q. No	DATE	CLIENT DELEGATE	DATE



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
SWITCHBOARD
CONSTRUCTION DETAILS

SHEET No. 20	
Queensland Urban Utilities DRAWING No 486/5/7-0256-020	AMEND 2



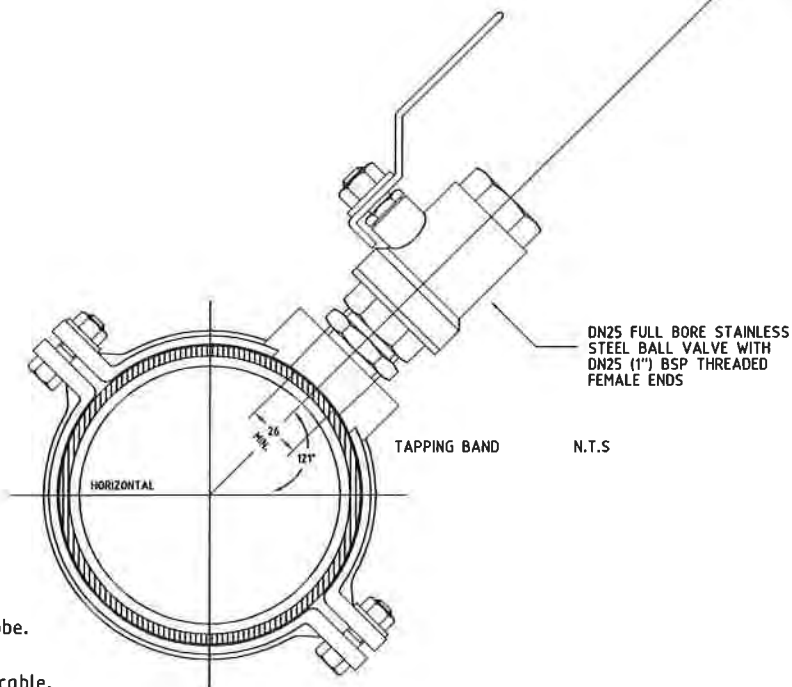
LEVEL PROBE INSTALLATION NOTES

1. Drill 4 x 6mm holes, 150mm from each end and every 300mm of the cut length, prior to installation.
2. Install so that the conduit rests on the shoulder of the probe. Do Not glue the conduit to the end cap.
3. Install a 25mm nylon cable gland. Apply no compression to cable.
4. Measurements are to be taken from top of the concrete slab to 'measurement points' on probes

DETAILS OF NON PREFERRED INSTALLATION TO BE USED WHERE SPACE IS LIMITED

DN25 STAINLESS STEEL UNION WITH DN25 (1") BSP FEMALE ENDS AND INSTALLED WITH FEMALE SECTION OF UNION ADJACENT TO VALVE

DN25 (1") BSP STAINLESS STEEL NIPPLE.



IP68 RATED VEGABAR 52 PRESSURE SENSOR WITH 2" TRICLOVER FITTING. MODEL TO SUIT PRESSURE RANGE AND CABLE LENGTH FOR EACH INDIVIDUAL SITE. EXAMPLE MODEL "BR52XXCA1EHPMAS"

PRESSURE RANGE

"TRI-CLOVER" STAINLESS STEEL CLAMP TO BE SUPPLIED WITH PRESSURE SENSOR

STAINLESS STEEL "VEGA ADAPTOR X" MATING PIECE FOR JOINING "TRI-CLOVER" FITTING WITH DN25 (1") BSP MALE END. TO BE SUPPLIED WITH PRESSURE SENSOR.

DN25 (1") BSP STAINLESS STEEL SOCKET

DN25 (1") BSP STAINLESS STEEL 90° EQUAL MALE BEND.

DETAILS OF PREFERRED INSTALLATION

PRESSURE TRANSMITTER INSTALLATION NOTES

1. Material: All stainless steel fittings to be grade 316.
2. Galling: All stainless steel threads to be lubricated with approved anti galling grease and thread tape where applicable.
3. Install as per 'preferred' detail unless space limitations prevents this method.

Sheet 21

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-021
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No	

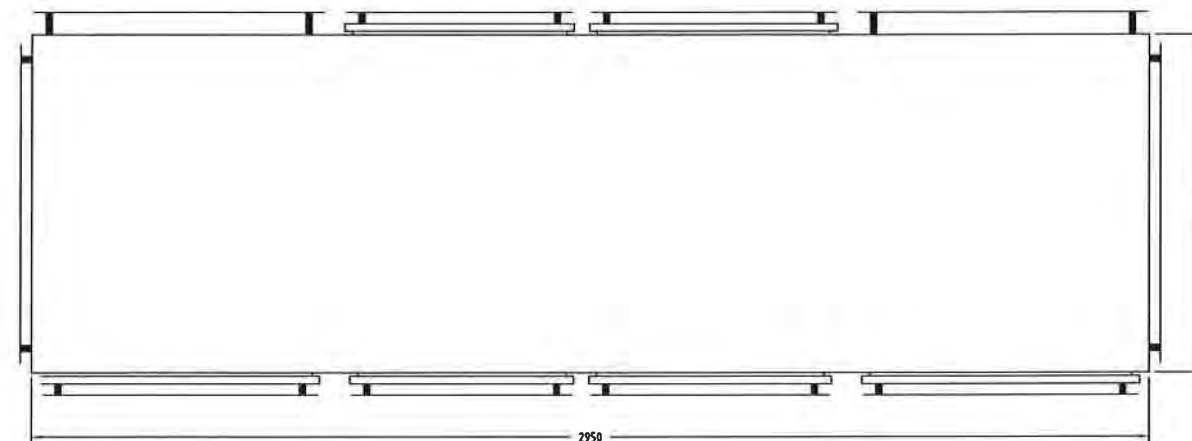
DESIGN	R.P.E.Q. No	DATE	PRINCIPAL DESIGN MANAGER	DATE
DESIGN CHECK	R.P.E.Q. No	DATE	CLIENT DELEGATE	DATE



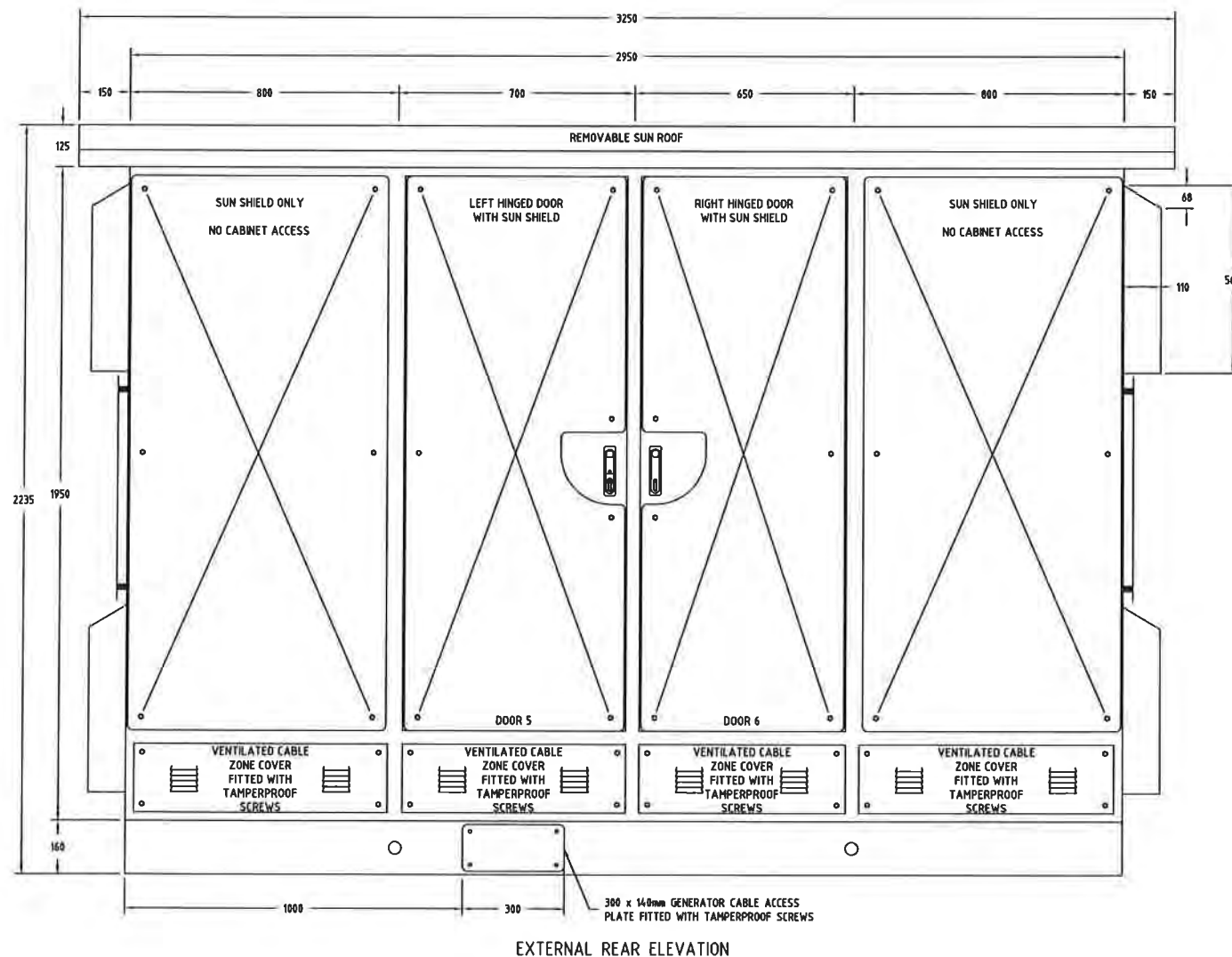
SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
LEVEL PROBES AND
PRESSURE TRANSMITTER
INSTALLATION DETAILS

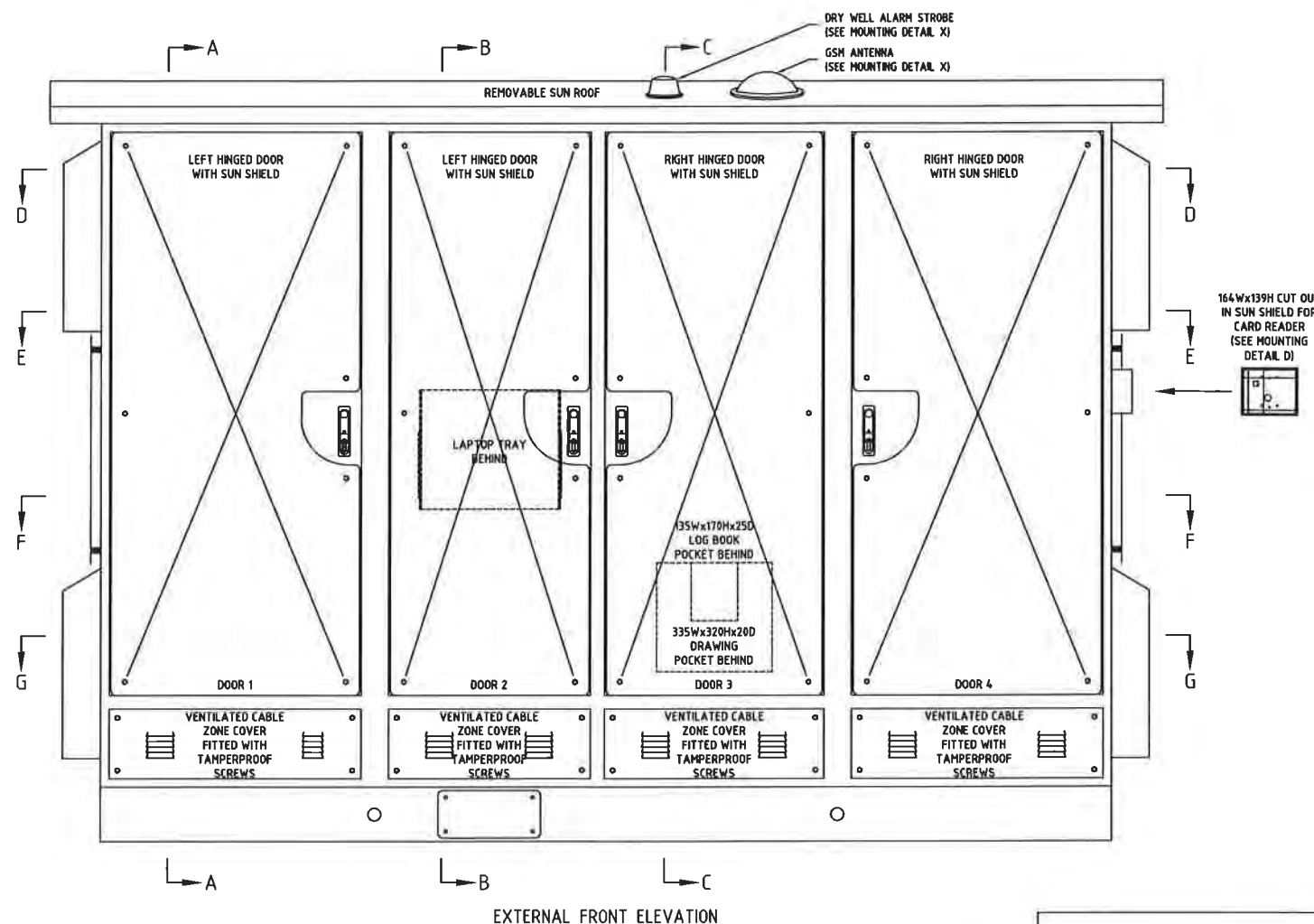
SHEET No 21	AMEND.
Queensland Urban Utilities DRAWING No	
486/5/7-0256-021	2



PLAN VIEW
(SUN ROOF AND VENT HOODS REMOVED FOR CLARITY)



EXTERNAL REAR ELEVATION



EXTERNAL FRONT ELEVATION

Sheet 22

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-022
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No	

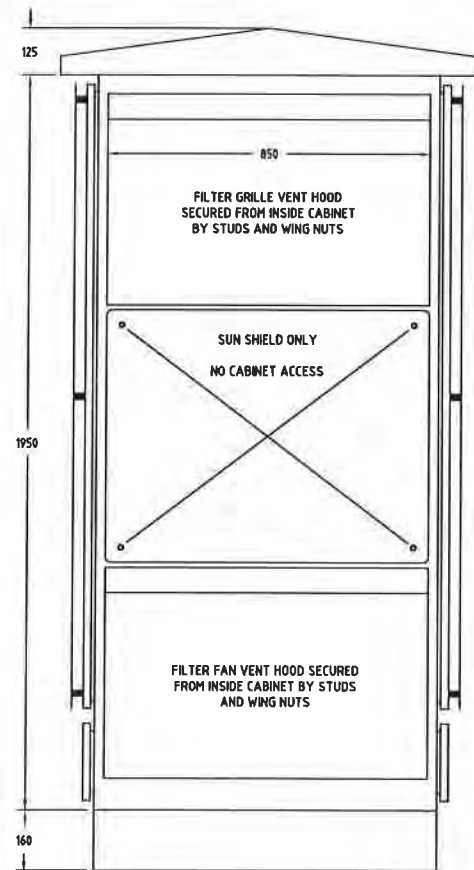
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DESIGN CHECK	R.P.E.Q. No	DATE	CLIENT DELEGATE	DATE



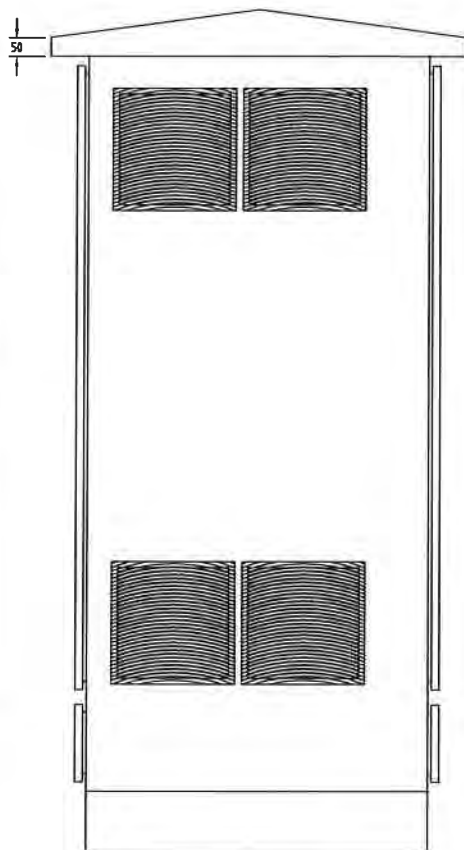
SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
SWITCHBOARD EXTERNAL
GENERAL ARRANGEMENT
PLAN AND ELEVATIONS

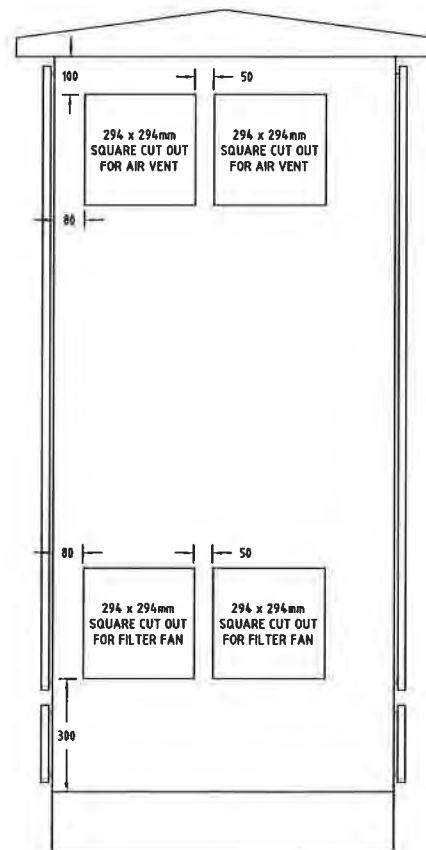
SHEET No 22
Queensland Urban Utilities DRAWING No
486/5/7-0256-022
AMEND
2



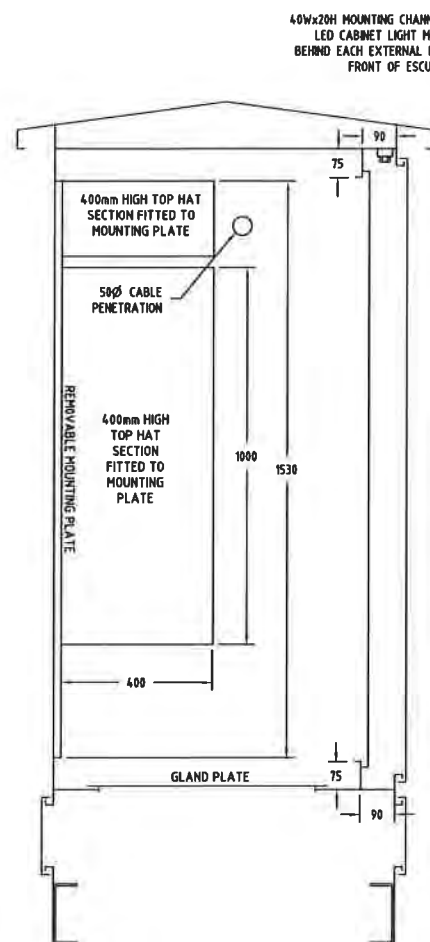
EXTERNAL LEFT HAND END ELEVATION



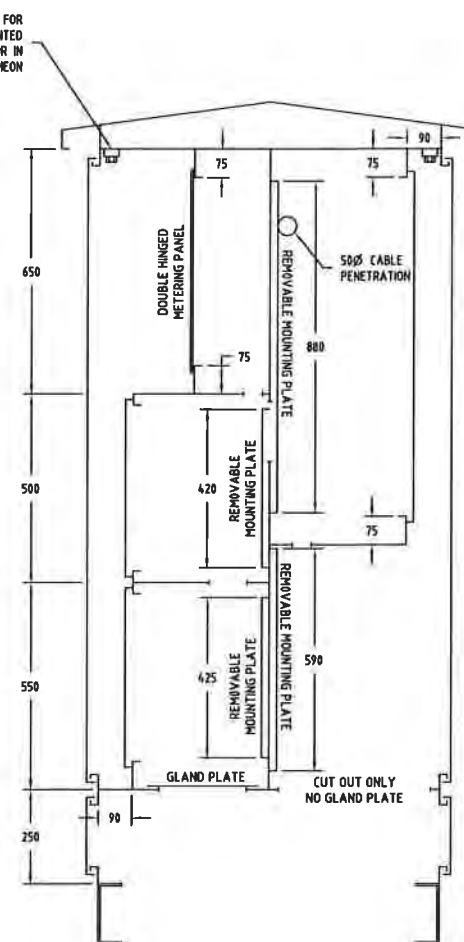
EXTERNAL LEFT HAND END ELEVATION
(SUN SHIELD AND VENT HOODS REMOVED FOR CLARITY)



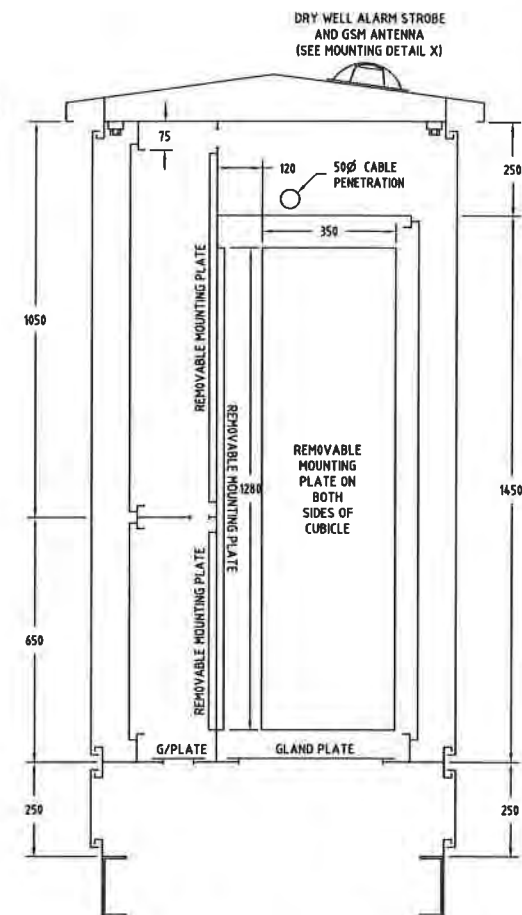
EXTERNAL LEFT HAND END ELEVATION
(SHOWING CUT OUT DETAILS FOR FANS & VENTS)



SECTION A-A



SECTION B-B



SECTION C-C

Sheet 23

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-023
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No.	

DESIGN	R.P.E.Q. No.	DATE	PRINCIPAL DESIGN MANAGER	DATE
DESIGN CHECK	R.P.E.Q. No.	DATE	CLIENT DELEGATE	DATE



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
SWITCHBOARD GENERAL
ARRANGEMENT
SECTIONAL ELEVATIONS

SHEET No. 23	AMEND.
Queensland Urban Utilities DRAWING No.	
486/5/7-0256-023	2



SECTION D-D



SECTION E-E



SECTION F-F



SECTION G-G

Sheet 24

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-024
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No	-

DESIGN	R P E Q No	DATE	PRINCIPAL DESIGN MANAGER	DATE
DESIGN CHECK	R P E Q No	DATE	CLIENT DELEGATE	DATE

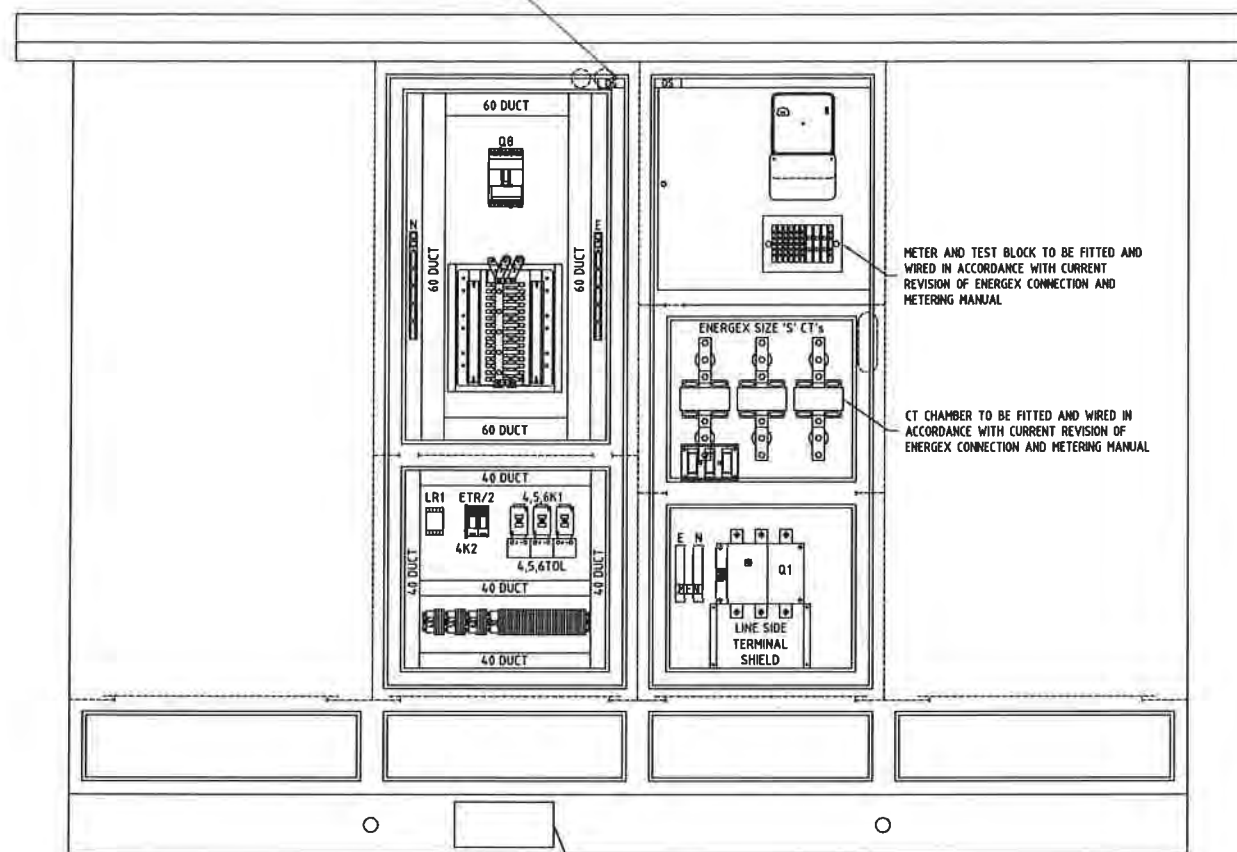


SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

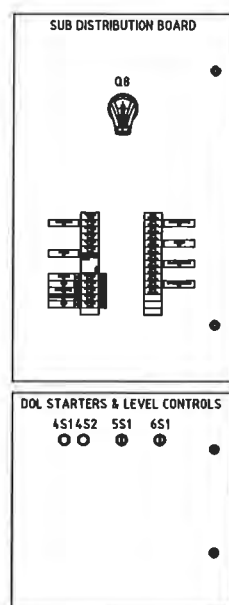
TITLE
SWITCHBOARD GENERAL
ARRANGEMENT
SECTIONAL PLANS

SHEET No 24	
Queensland Urban Utilities DRAWING No	AMEND.
486/5/7-0256-024	2

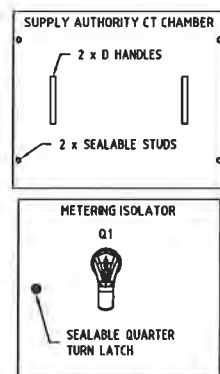
MOUNTING BRACKET FOR
DOOR SWITCH BEHIND
EACH EXTERNAL DOOR
ON NON HINGED SIDE



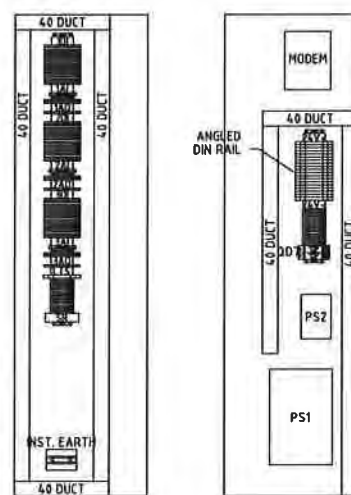
REAR ELEVATION
(SUN SHIELDS, DOORS, VENT HOODS AND ESCUTCHEONS REMOVED)



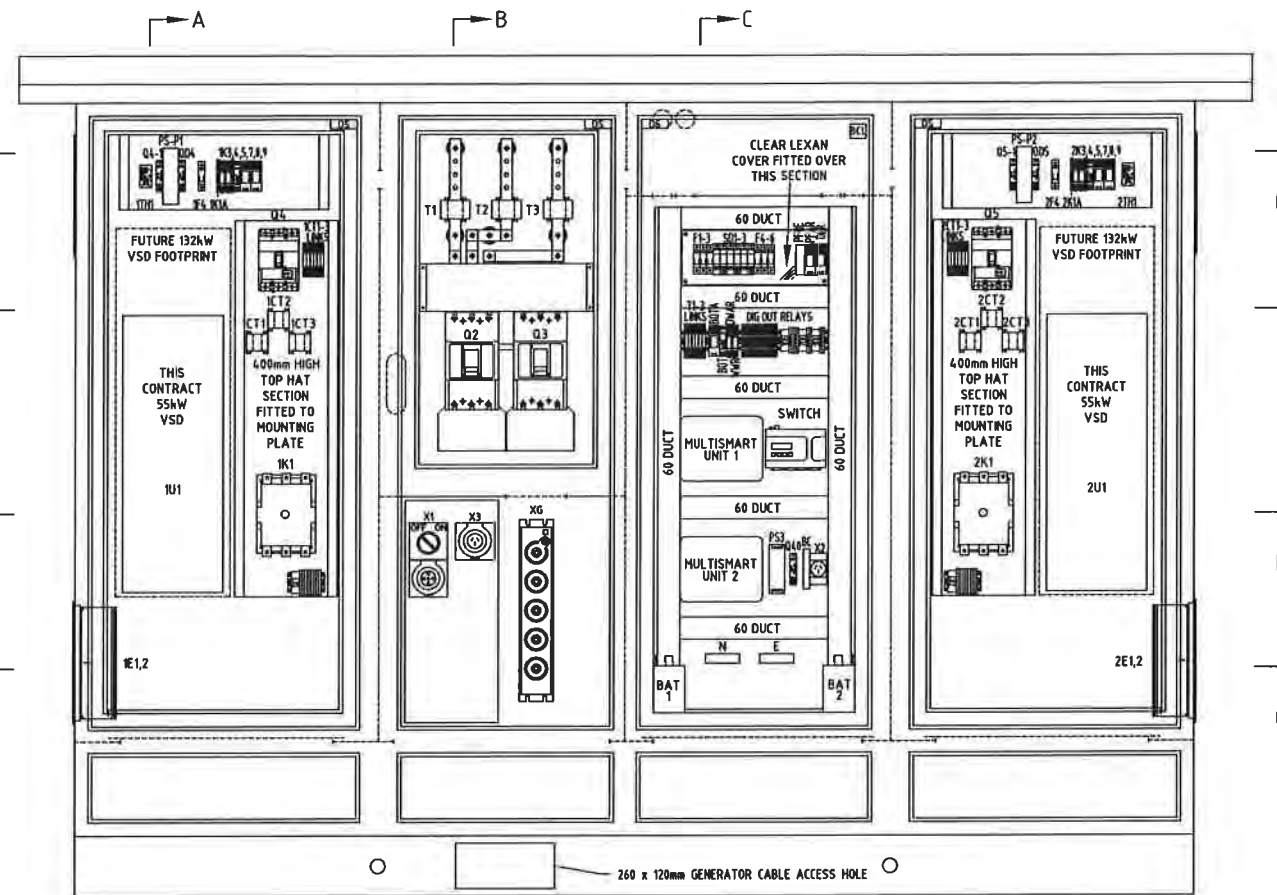
REAR ESCUTCHEONS



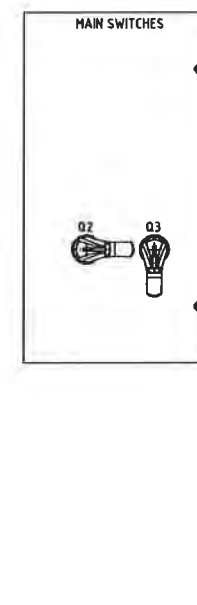
LEFT SIDE
COMMON CONTROL CUBICLE SIDE MOUNTING PLATES



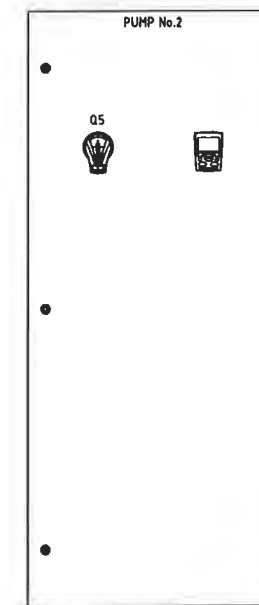
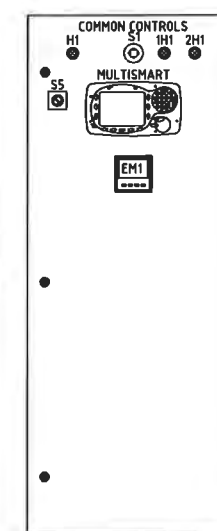
RIGHT SIDE



FRONT ELEVATION
(SUN SHIELDS, DOORS, VENT HOODS AND ESCUTCHEONS REMOVED)



FRONT ESCUTCHEONS



Sheet 25

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-025
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No	

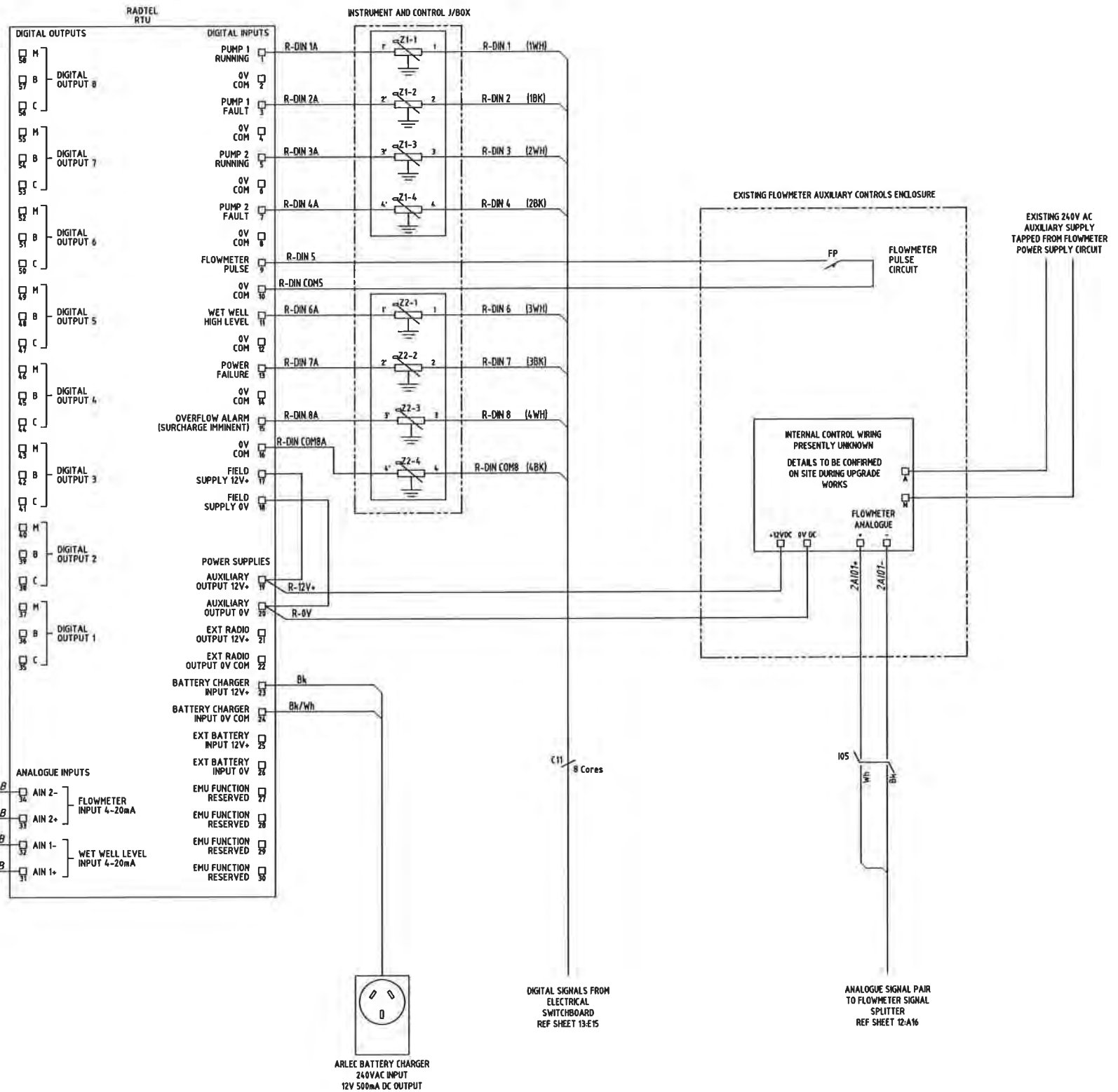
DESIGN	R.P.E.Q. No	DATE	PRINCIPAL DESIGN MANAGER	DATE
DESIGN CHECK	R.P.E.Q. No	DATE	CLIENT DELEGATE	DATE



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
SWITCHBOARD INTERNAL
EQUIPMENT LAYOUT

SHEET No 25	AMEND
Queensland Urban Utilities DRAWING No	
486/5/7-0256-025	2



Sheet 26

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-026
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No	

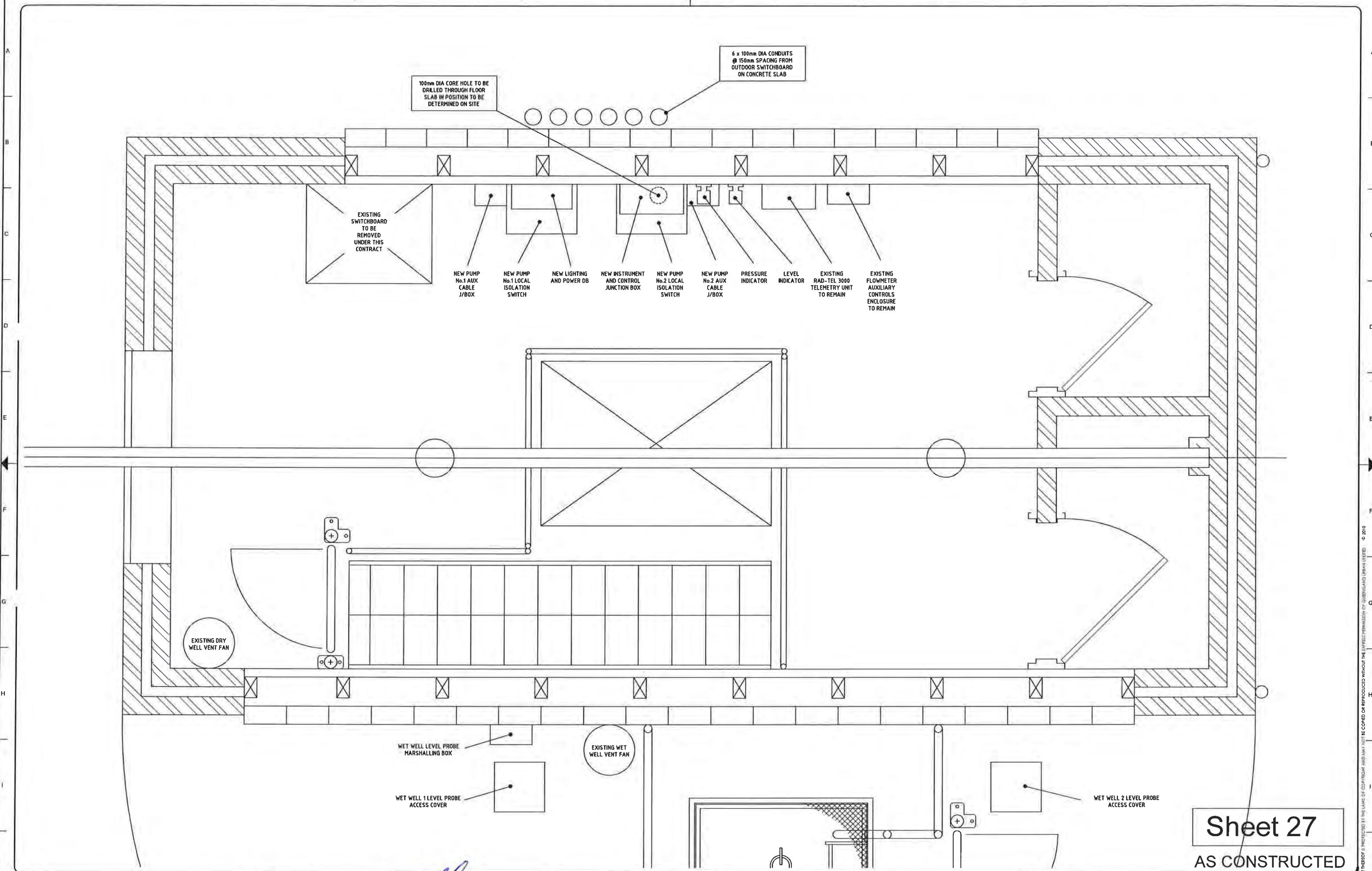
DESIGN	R.P.E.Q. No.	DATE	PRINCIPAL DESIGN MANAGER	DATE
DESIGN CHECK	5505	06/12	CUEENT DELEGATE	DATE



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE
INTERFACE SIGNALS TO EXISTING
RAD-TEL TELEMETRY UNIT
SCHEMATIC DIAGRAM

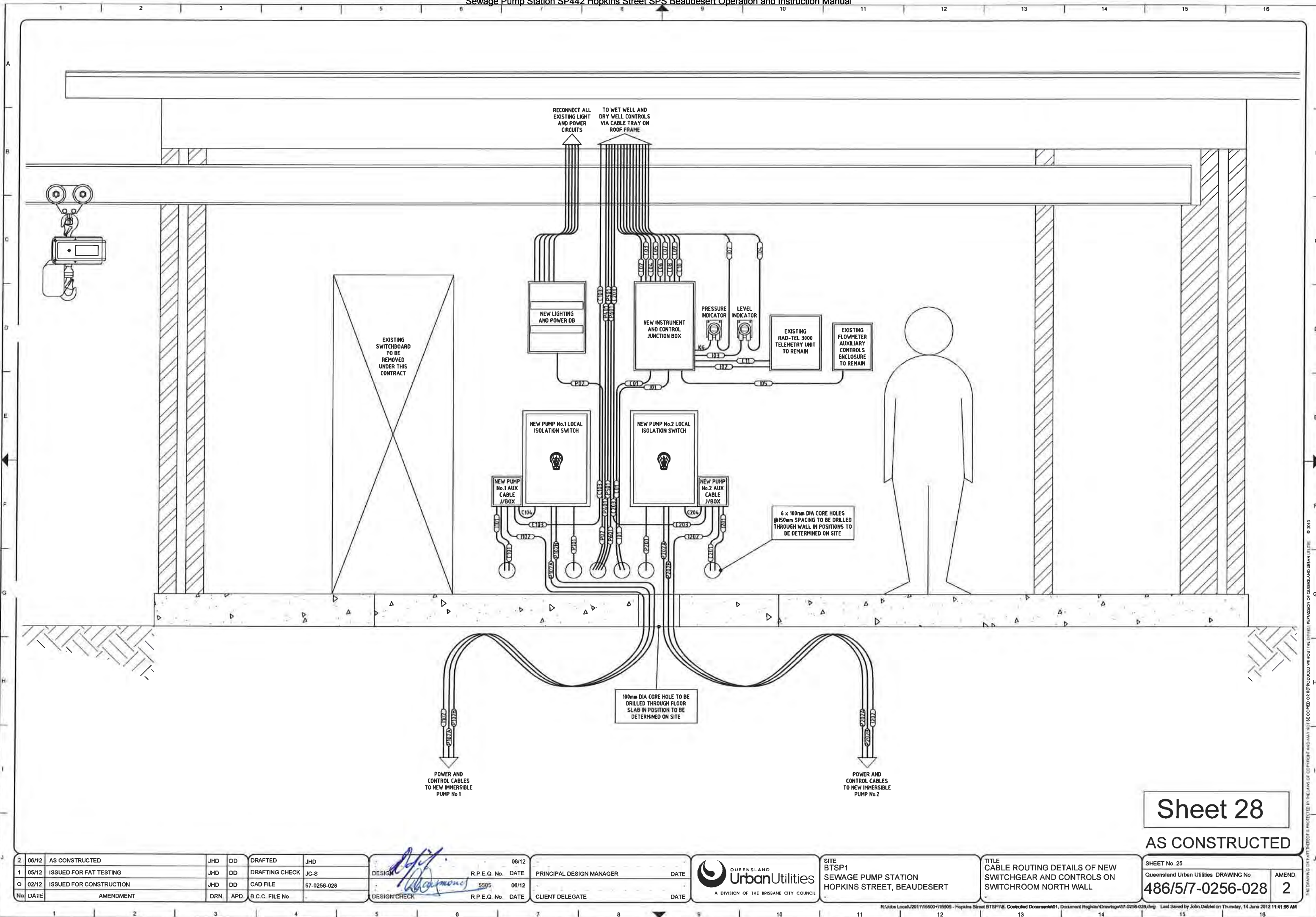
SHEET No. 26	AMEND
Queensland Urban Utilities DRAWING No	2
486/5/7-0256-026	



Sheet 27

AS CONSTRUCTED

[illegible]



Sheet 28

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-028
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No	

DESIGN	R.P.E.Q. No.	DATE	PRINCIPAL DESIGN MANAGER	DATE
DESIGN CHECK	5505	06/12	CLIENT DELEGATE	DATE



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT


TITLE
CABLE ROUTING DETAILS OF NEW
SWITCHGEAR AND CONTROLS ON
SWITCHROOM NORTH WALL

SHEET No 25	AMEND
Queensland Urban Utilities DRAWING No	2
486/5/7-0256-028	

RESERVED FOR FUTURE USE

Sheet 29

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD	DESIGN	R.P.E.Q. No.	06/12	PRINCIPAL DESIGN MANAGER	DATE	 A DIVISION OF THE BRISBANE CITY COUNCIL	SITE BTSP1 SEWAGE PUMP STATION HOPKINS STREET, BEAUDESERT	TITLE	SHEET No. 29 Queensland Urban Utilities DRAWING No 486/5/7-0256-029	AMEND 2
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S	DESIGN	R.P.E.Q. No.	DATE	CLIENT DELEGATE	DATE					
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-029	DESIGN CHECK	5505	06/12							
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No		DESIGN CHECK	R.P.E.Q. No.	DATE	CLIENT DELEGATE	DATE					

RESERVED FOR FUTURE USE

Sheet 30

AS CONSTRUCTED

2	06/12	AS CONSTRUCTED	JHD	DD	DRAFTED	JHD
1	05/12	ISSUED FOR FAT TESTING	JHD	DD	DRAFTING CHECK	JC-S
0	02/12	ISSUED FOR CONSTRUCTION	JHD	DD	CAD FILE	57-0256-030
No	DATE	AMENDMENT	DRN	APD	B.C.C. FILE No.	

DESIGN	R.P.E.Q. No.	DATE
5505	06/12	
DESIGN CHECK	R.P.E.Q. No.	DATE

PRINCIPAL DESIGN MANAGER	DATE
CLIENT DELEGATE	DATE



SITE
BTSP1
SEWAGE PUMP STATION
HOPKINS STREET, BEAUDESERT

TITLE

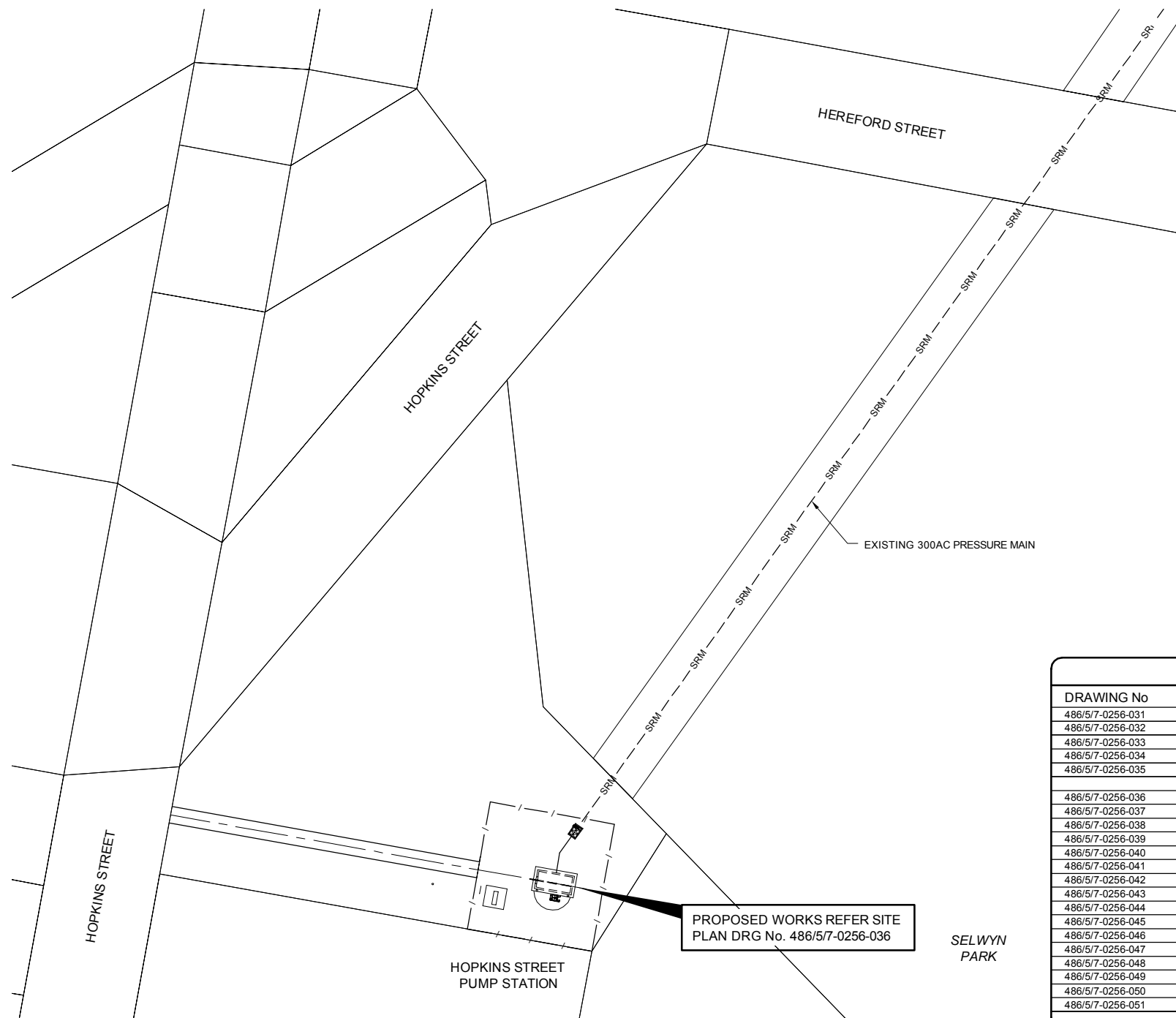
SHEET No. 30	AMEND
Queensland Urban Utilities DRAWING No	2
486/5/7-0256-030	

Volume 4

Mechanical

Mechanical Drawings

BEAUDESERT SEWERAGE SCHEME HOPKINS STREET SEWERAGE PUMP STATION - BTSP1 UPGRADE



LEGEND

PROPOSED WATER MAIN	---
FUTURE WATER MAIN (APPROVED)	---
VALVE TO REMAIN CLOSED PENDING CLEARANCE OF NEW WATER MAIN	⊗
PROPOSED NON DRINKING WATER MAIN	--- NDW --- NDW ---
EXISTING NON DRINKING WATER MAIN	--- NDW --- NDW ---
EXISTING WATER MAIN	--- W --- W ---
WATER MAIN TO BE ABANDONED	--- w --- w ---
EXISTING TRUNK WATER MAIN	--- S --- S ---
EXISTING SEWERAGE	--- SRM --- SRM ---
EXISTING SEWER RISING MAIN	--- SWD --- SWD ---
EXISTING STORMWATER	--- E --- E ---
EXISTING ELECTRICITY	--- G --- G ---
EXISTING GAS	--- T --- T ---
EXISTING TELECOMMUNICATION	--- OIL --- OIL ---
EXISTING OIL	--- OF --- OF ---
EXISTING TELSTRA OPTIC FIBRE	---
EXISTING BACK OF KERB	---
EXISTING EDGE OF BITUMEN	---
EXISTING FENCE LINE	---

PROPOSED FIRE HYDRANT	FH	EXISTING ZONE VALVE	⊗
PROPOSED VALVE	X	EXISTING VALVE	X
PROPOSED SCOUR VALVE	⊗	EXISTING SCOUR	⊗
PROPOSED DEADEND	⊗	EXISTING FH	●
PROPOSED CONNECTOR	=	EXISTING REDUCER	>
PROPOSED TEST POINT	⊗	EXISTING DEADEND	⊗
PROPOSED REDUCER	>	EXISTING WATER METER	⊗ SC
THRUST/ANCHOR BLOCK	←	LIGHT POLE	o LP
STORMWATER GULLY	⊗	ELECTRICITY POLE	o EP
PIT (TELSTRA/ELEC)	⊗		

ABBREVIATIONS

AC	- ASBESTOS CEMENT	F&SP	- FLANGE & SPIGOT
CICL	- CAST IRON CEMENT LINED	mPVC	- MODIFIED POLYVINYL CHLORIDE
CISL	- CAST IRON SPUN LINED	MSBW	- MILD STEEL BUTT WELD
CR	- CONCRETE REINFORCED	MSCL	- MILD STEEL CEMENT LINED
CTS	- CUT TO SUIT	NDW	- NON DRINKING WATER
CUR	- CONCRETE UN-REINFORCED	oPVC	- ORIENTED PLASTICISED POLYVINYL CHLORIDE
DF	- DOUBLE FLANGE	PE	- POLYETHYLENE
DI	- DUCTILE IRON	P&F	- PLAIN & FLANGED
DICL	- DUCTILE IRON CEMENT LINED	RTS	- ROTATE TO SUIT
DS	- DOUBLE SOCKET	SC	- STOP COCK/WATER METER
SGW	- SALT GLAZED WARE	S&P	- SOCKET & PLAIN
EW	- EARTHENWARE	S&SP	- SOCKET & SPIGOT
FH	- FIRE HYDRANT	uPVC	- UNPLASTICISED POLYVINYL CHLORIDE
F&S	- FLANGE & SOCKET		

DRAWING SCHEDULE	
DRAWING No	TITLE/DESCRIPTION
486/5/7-0256-031	LOCALITY PLAN AND DRAWING SCHEDULE
486/5/7-0256-032	CONSTRUCTION NOTES
486/5/7-0256-033	P&ID LEGEND
486/5/7-0256-034	P&ID
486/5/7-0256-035	PUMP AND PUMP CURVE DETAILS
486/5/7-0256-036	EXISTING SITE PLAN
486/5/7-0256-037	EXISTING PUMP STATION PLAN
486/5/7-0256-038	EXISTING PUMP STATION SECTION SHEET 1 OF 5
486/5/7-0256-039	EXISTING PUMP STATION SECTION SHEET 2 OF 5
486/5/7-0256-040	EXISTING PUMP STATION SECTION SHEET 3 OF 5
486/5/7-0256-041	EXISTING PUMP STATION SECTION SHEET 4 OF 5
486/5/7-0256-042	EXISTING PUMP STATION SECTION SHEET 5 OF 5
486/5/7-0256-043	PIPEWORK SCHEDULE
486/5/7-0256-044	SWITCHBOARD SLAB AND CONDUIT DETAILS
486/5/7-0256-045	VALVE COVERS GENERAL ARRANGEMENT
486/5/7-0256-046	VALVE PIT COVER DETAILS SHEET 1 OF 3
486/5/7-0256-047	VALVE PIT COVER DETAILS SHEET 2 OF 3
486/5/7-0256-048	VALVE PIT COVER DETAILS SHEET 3 OF 3
486/5/7-0256-049	EXISTING PUMP STATION ACCESS PLATFORM GA
486/5/7-0256-050	EXISTING PUMP STATION ACCESS PLATFORM DETAILS SHEET 1 OF 2
486/5/7-0256-051	EXISTING PUMP STATION ACCESS PLATFORM DETAILS SHEET 2 OF 2



FUNDING		DRAFTED		S. WILKINSON		D. DAKIN		ASSET/PROJECT		DRAWING TITLE		SHEET No. OF	
DESIGN W.O. No.		DRAFTING CHECK	D. DAKIN	DESIGN	R.P.E.Q. No.	MANAGER ENGINEERING SERVICES	DATE	HOPKINS STREET BEAUDESERT		COVER SHEET AND LOCALITY PLAN		86/5/7-0256-031 01	
CONSTRUCTION W.O. No.		CAD FILE	570256031.DWG	A. THIRIS	3325 12/01/12	FIELD SERVICES DELEGATE	DATE						
FUNDED BY B.C.C. (✓)	EXTERNAL ()	B.C.C. FILE No.	486/5/7-0256-031	DESIGN CHECK	R.P.E.Q. No.								

GENERAL

- G1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER PROJECT DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE SUPERINTENDENT BEFORE PROCEEDING WITH THE WORK.
- G2. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT CURRENT STANDARDS AUSTRALIA CODES AND WITH THE BUILDING CODE OF AUSTRALIA.
- G3. ALL DIMENSIONS SHOWN ON THESE DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR ON SITE. THESE DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS.
- G4. UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.
- G5. THE STRUCTURAL COMPONENTS DETAILED ON THESE STRUCTURAL DRAWINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RELEVANT STANDARDS AUSTRALIA CODE AND THE BUILDING CODE OF AUSTRALIA FOR THE FOLLOWING LOADINGS FOR IMPORTANCE LEVEL 3.

Floor Usage	Live Load (kPa)	Superimposed Dead Load (kPa)
Buildings	5.0	Nil
Work Platforms	4.0	Nil

Wind Loads are in accordance with AS 1170.2 as follows:
Basic Wind Velocity, $V_s = 37$ m/s $V_u = 46$ m/s
Region: B
Terrain Category: 2.5
Terrain Multiplier: 1.0
Shielding Multiplier: 1.0
Topographic Multiplier: 1.0

THE RELEVANT PROVISIONS OF AS 1170.4 HAVE BEEN APPLIED FOR A SITE FACTOR (S) OF 1.0 AND FOR AN EARTHQUAKE ACCELERATION COEFFICIENT (A) OF 0.08

- G6. THE METHOD OF CONSTRUCTION AND THE MAINTENANCE OF SAFETY DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR. IF ANY STRUCTURAL ELEMENT PRESENTS DIFFICULTY IN RESPECT OF CONSTRUCTABILITY OR SAFETY, THE MATTER SHALL BE REFERRED TO THE SUPERINTENDENT FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.
- G7. DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERLOADED. TEMPORARY BRACING SHALL BE PROVIDED BY THE CONTRACTOR IN ORDER TO KEEP THE BUILDING WORKS AND EXCAVATIONS STABLE AT ALL TIMES.
- G8. NO PENETRATIONS, CHASES OR TEMPORARY FIXTURES ARE PERMITTED WITHOUT PRIOR APPROVAL OF THE SUPERINTENDENT. CORED HOLES MAY BE LEFT FOR PIPES PENETRATING CONCRETE WALLS, THE CORED HOLES SHALL BE MINIMUM SIZE NECESSARY TO ACCOMMODATE THE PIPES AND WEEP FLANGES.
- G9. ALL PRODUCTS TO BE AS SHOWN ON DRAWINGS, UNLESS APPROVED OTHERWISE IN WRITING BY THE SUPERINTENDENT.
- G10. ALL AUSTRALIAN STANDARDS REFERRED TO IN THESE NOTES ARE TO BE THE LATEST REVISIONS OF THE STANDARD OR THE STANDARD THAT SUPERSEDES THE STANDARD.

CONCRETE

- C1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATION.
- C2. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF AS3600 AND AS3735 INCLUDING AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- C3. READYMIX CONCRETE SUPPLY SHALL COMPLY WITH AS 1379.
- C4. CONCRETE FOR LIQUID RETAINING STRUCTURES SHALL BE SULPHATE RESISTANT IN ACCORDANCE WITH AS3735. NOTE CONTRACT REQUIREMENTS FOR LABORATORY TRIAL CONCRETE MIXES.

Element	Strength Grade (MPa)	Slump (mm)	Max. Agg. Size (mm)	Max. Water/Cement Ratio	Shrinkage at 56 days	Cement Type
All liquid retaining structures	S40	80	20	0.45	700×10^{-6}	SR
Pump plinths and pipe supports	S40	80	20	0.45	700×10^{-6}	SR
Non-watertight linings to lagoons and ponds	S25	80	20	0.5	700×10^{-6}	SR
Building slabs, footings, structural concrete in non-water retaining structures, pits and bunds	N32	80	20	0.5	-	GP
Footpaths and blinding	N20	-	20	-	-	GP
concrete (cement Type GB Flyash Blend complies with AS 3972 as a Type SR Sylplate Resistant cement)						

- C5. CLEAR CONCRETE COVER TO ALL REINFORCEMENT FOR DURABILITY SHALL BE AS FOLLOWS UNLESS SHOWN OTHERWISE.

Element In Structure	Exposure Classification to AS3600 & AS3735	Concrete Grade (MPa)	Minimum Cover (unless otherwise shown)
Inlet Works	B2	S40	75 (Faces in contact with sewage)
All other structures except footings	B2	S40	50
Footing with polyethylene membrane	B1	N32	50
Footing directly in contact with ground	B1	N32	65

AS CONSTRUCTED

- C6. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON MILD STEEL PLASTIC TIPPED CHAIRS. PLASTIC CHAIRS OR CONCRETE CHAIRS AT NOT GREATER THAN 1 METRE CENTRES BOTH WAYS. IN EXPOSURE CONDITION B2 OR C OR EXTERNAL EXPOSED AREAS USE ONLY PLASTIC OR CONCRETE CHAIRS. BARS SHALL BE TIED AT ALTERNATE INTERSECTIONS.
- C7. UNLESS OTHERWISE SPECIFIED, CONCRETE SHALL BE CURED CONTINUOUSLY FOR A MINIMUM OF 7 DAYS FROM THE TIME OF PLACEMENT UNTIL THE CUMULATIVE NUMBER OF DAYS OR FRACTIONS THEREOF, NOT NECESSARILY CONSECUTIVE, DURING WHICH THE AIR TEMPERATURE IN CONTACT WITH THE CONCRETE IS ABOVE 10°C.
- C8. FINISHED CONCRETE SURFACES SHALL BE PROTECTED FROM DAMAGE DUE TO ANY CAUSE, INCLUDING MORTAR SPLASHES AND STAINS, TIMBER STAINS, RUST STAINS, CHEMICAL ATTACK, ADDITIVES, CURING COMPOUNDS, PROTECTIVE COATINGS, RAIN, RUNNING WATER, MECHANICAL EQUIPMENT AND THE LIKE.
- C9. CONCRETE IS LIABLE TO BE REJECTED IF SURFACES ARE DAMAGED. RECTIFICATION MAY BE ATTEMPTED ONLY IF PRIOR APPROVAL IS GIVEN.
- C10. NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE SUPERINTENDENT.
- C11. CONDUITS, PIPES ETC. SHALL ONLY BE LOCATED IN THE MIDDLE ONE THIRD OF SLAB DEPTH AND SPACED AT NOT LESS THAN 3 DIAMETERS. PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE COVER TO THE REINFORCEMENT.
- C12. REINFORCEMENT
ALL REINFORCING BARS SHALL BE GRADE D500N TO AS4671 UNLESS NOTED OTHERWISE.

ALL MESH SHALL BE GRADE 500L TO AS4671 AND SHALL BE SUPPLIED IN FLAT SHEETS.
e.g. 17-N20-250 EF

REINFORCEMENT NOTATION SHALL BE AS FOLLOWS IN THE FOLLOWING ORDER
number of bars in group bar grade nominal bar size in mm. spacing in mm bar location

EF - each face, EW -each way, FF - far face, NF - near face, T-top, B - bottom.

THE FIGURES FOLLOWING THE FABRIC SYMBOLS RL, SL, L, TM IS THE REFERENCE NUMBER FOR FABRIC IN ACCORDANCE WITH AS4671.

REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.

SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN POSITIONS SHOWN ON THE STRUCTURAL DRAWINGS OR IN POSITIONS OTHERWISE APPROVED IN WRITING BY THE SUPERINTENDENT. LAPS SHALL BE IN ACCORDANCE WITH AS3600 AND NOT LESS THAN THE DEVELOPMENT LENGTH FOR EACH BAR, UNLESS NOTED OTHERWISE.

SITE BENDING OF REINFORCING BARS SHALL BE DONE WITHOUT HEATING USING MECHANICAL BENDING TOOLS.

WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE SUPERINTENDENT.

JOGGLES TO BARS SHALL BE 1 BAR DIAMETER OVER A LENGTH OF 12 BAR DIAMETERS.

FABRIC SHALL BE LAPPED 2 TRANSVERSE WIRES PLUS 50mm. BUNDLED BARS SHALL BE TIED TOGETHER AT 30 BAR DIAMETER CENTRES WITH 3 WRAPS OF TIE WIRE.

- C13. THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE SHALL BE COMPACTED WITH MECHANICAL VIBRATORS.
- C14. CURING OF OF CONCRETE SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATION. THE FOLLOWING METHODS SHALL BE USED:
- PONDING OR CONTINUOUS SPRINKLING WITH WATER (MOIST CURING)
- AN IMPERMEABLE MEMBRANE WITH WATER FLOWING BENEATH IT
- AN ABSORPTIVE COVER KEPT CONTINUOUSLY WET CONCRETE CURING SHALL COMMENCE IMMEDIATELY AFTER FINISHING AND SHALL CONTINUE UNTIL THE CONCRETE HAS ATTAINED 75%%% OF THE 28 DAY COMPRESSIVE STRENGTH AS DETERMINED FROM TRIAL MIXES AND FOR A MINIMUM PERIOD OF 7 DAYS.
- C15. CONSTRUCTION SUPPORT PROPPING IS TO BE LEFT IN PLACE WHERE NEEDED TO AVOID OVERSTRESSING THE STRUCTURE DUE TO CONSTRUCTION LOADING. ALL BACKPROPPING SHALL BE APPROVED BY THE SUPERINTENDENT.

PREPARATION UNDER SLABS ON GRADE

- PG1. THE SLAB DESIGN AS DETAILED ON THIS DRAWING ASSUMES A PROPERLY PREPARED UNIFORM AND STABLE SUBGRADE.
- PG2. STRIP OFF ALL VEGETATION, RUBBISH & TOPSOIL CONTAINING ORGANIC OR ROOT MATTER FROM THE AREA OF THE WORKS AND REMOVE FROM SITE.
- PG3. PRIOR TO ANY FILLING, THE EXPOSED SUBGRADE TO A DISTANCE OF 1.5 METRES BEYOND THE BUILDING WORKS SHALL BE PROOF ROLLED WITH A MINIMUM OF 10 PASSES OF A 5 TONNE (MIN) DEAD WEIGHT VIBRATING ROLLER. ANY SOFT OR YIELDING MATERIAL SHALL BE REMOVED AND REPLACED WITH APPROVED FILLING COMPACTED AS HEREAFTER SPECIFIED. FILL SHALL BE SOUND WELL GRADED MATERIAL WITH A HIGH GRANULAR CONTENT.
- PG4. FILL SHALL BE SPREAD IN LAYERS NOT EXCEEDING 200MM AND COMPACTED USING SUITABLE MECHANICAL EQUIPMENT AT OPTIMUM MOISTURE CONTENT $\pm 2\%$ TO NOT LESS THAN 98 % MAXIMUM STANDARD DRY DENSITY IN ACCORDANCE WITH AS1289 - E1.1 UNLESS OTHERWISE NOTED.
- PG5. BLIND WITH SAND SUFFICIENT ONLY TO ENSURE NO DAMAGE TO MEMBRANE (0 TO 10MM MAX.) AND LAY POLYTHENE VAPOURPROOF MEMBRANE.
- PG6. VAPOURPROOF MEMBRANE SHALL BE POLYTHENE SHEETING OF 0.2MM THICKNESS LAPPED 200MM AT JOINTS AND TURNED UP AND TAPED AT PIPE PENETRATIONS ETC.

STRUCTURAL STEEL

- S1. ALL WORKMANSHIP AND MATERIAL SHALL BE IN ACCORDANCE WITH AS4100 EXCEPT WHERE VARIED THE PROJECT SPECIFICATION. FABRICATION SHALL BE CARRIED OUT IN ACCORDANCE WITH SECTION 14 OF AS4100. ERECTION SHALL BE CARRIED OUT IN ACCORDANCE WITH SECTION 15 OF AS4100.
- S2. UNLESS NOTED OTHERWISE IN THE POJECT SPECIFICATIONS, ALL STEEL SHALL BE OF THE FOLLOWING GRADE IN ACCORDANCE WITH THE FOLLOWING AUSTRALIAN STANDARDS

Type of Steel	Grade
Universal beams and columns, parallel flange channels, large angles to AS/NZS 3679.1	300
Welded sections to AS/NZS 3679.2	300
Hot rolled plates, floor plates and slabs to AS/NZS 3678	250
Hollow sections to AS 1163	C350
Cold formed purlins and girts to AS1397	G450/Z350

- S3. ALL STEELWORK SHALL BE SECURELY TEMPORARILY BRACED BY THE ERECTOR AS NECESSARY TO STABILISE THE STRUCTURE DURING ERECTION.

BOLTING

- S4. BOLTING CATEGORIES ARE IDENTIFIED ON THE STRUCTURAL DRAWINGS IN THE FOLLOWING MANNER.

Bolt Category:	Comments:
4.6/S	commercial bolts of grade 4.6 to AS 1111 snug tightened
8.8/S	high strength structural bolts of grade 8.8 to AS1252 snug tightened
8.8/TB	high strength structural bolts of grade 8.8 to AS1252 fully tensioned to AS4100 as a bearing type joint
8.8/TF	high strength structural bolts of grade 8.8 to AS1252 fully tensioned to AS4100 as a friction type joint with faying surfaces left uncoated

- S5. UNLESS NOTED OTHERWISE ALL BOLTS SHALL BE M16 CATEGORY 316 SS BOLTS AND 304 SS NUTS. ALL OTHER BOLTS, NUTS AND WASHERS SHALL BE GALVANISED, UNLESS NOTED OTHERWISE. ALL HOLES SHALL BE 2MM LARGER THAN THE BOLT DIAMETER UNLESS NOTED OTHERWISE. NO CONNECTION SHALL HAVE LESS THAN 2 BOLTS.

- S6. UNLESS NOTED OTHERWISE ALL BOLTS TO LIQUID RETAINING STRUCTURES SHALL BE STAINLESS STEEL (SS) GRADE 316.

- S7. /TB AND /TF BOLT CATEGORIES SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 15 OF AS4100, USING EITHER THE PART-TURN METHOD OR THE DIRECT-TENSION INDICATOR METHOD.

S8. WELDING

ALL WELDING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS1554.1. ELECTRODES SHALL BE TO EITHER AS1553, AS1858, AS2203 OR AS2717, AS APPROPRIATE. UNLESS NOTED OTHERWISE, ALL FILLET WELDS SHALL BE 6MM CONTINUOUS CATEGORY SP USING E48XX ELECTRODES OR EQUIVALENT. ALL BUTT WELDS SHALL BE COMPLETE PENETRATION BUTT WELDS CATEGORY SP TO AS1554.1. THE EXTENT OF NON-DESTRUCTIVE WELD EXAMINATION SHALL BE AS NOTED BELOW. RADIOGRAPHIC OR ULTRASONIC EXAMINATION SHALL BE TO AS1554.1, AS2177.1 AND AS2207 AS APPROPRIATE.

Type of weld and category	Examination method	Extent (% of total length of weld type)
Fillet welds, GP + SP	Visual inspection	100
Butt welds, GP	Visual inspection	100
Butt welds, SP	Visual inspection	100
	Radiographic or ultrasonic inspection	10

S9. CORROSION PROTECTION

STRUCTURAL STEELWORK NOT ENCASED IN CONCRETE SHALL HAVE CORROSION PROTECTION TO THE PROJECT SPECIFICATION.

- S10. ALL GALVANISING OF STRUCTURAL STEELWORK SHALL BE TO AS4680. THE CONTINUOUS AVERAGE ZINC COATING MASS SHALL BE 600g/m^2 (550g/m^2 MINIMUM). PROVIDE SEAL PLATES TO THE ENDS OF ALL HOLLOW SECTIONS, WITH 'BREATHER' HOLES IF MEMBERS ARE TO BE HOT DIP GALVANIZED. ALL GALVANISED STEELWORK SUBJECT TO IMMERSION, SPLASH OR SPRAY SHALL BE TREATED IN ACCORDANCE WITH THE PROJECT SPECIFICATION.

- S11. SITE WELDING AND DRILLING OF HOT DIP GALVANISED COMPONENTS IS NOT PERMITTED. WHERE THIS IS NOT PRACTICAL THE SUPERINTENDENT'S APPROVAL SHALL BE OBTAINED AND AFFECTED AREAS SHALL BE TREATED AND PAINTED WITH 2 COATS OF APPROVED PAINTING SYSTEM WITH EQUIVALENT PROTECTION AS HOT DIP GALVANISING.

- S12. WHERE DIFFERENT METALS ARE IN CONTACT PROVIDE INSULATION BETWEEN METALS.

STAINLESS STEELWORK

- ST1 ALL STAINLESS STEEL SHALL BE GRADE ALLOY 316, UNO.

- ST2 WELDING OF STAINLESS STEEL SHALL CONFORM TO AS/NZS 1554.6.

- ST3 BOLTS, NUTS, WASHERS AND JOINTING MATERIAL SHALL COMPLY WITH PROJECT SPECIFICATION.

ALUMINIUM

- A1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS1664-1997.
- A2. ALL WELDS SHALL BE IN ACCORDANCE WITH SECTION 7 OF AS1664 AND AS1665-2004.
- A3. BOLT ALL ALUMINIUM MEMBERS WITH STAINLESS STEEL BOLTS.
- A4. CONNECTIONS WITH DISSIMILAR METALS SHALL BE MADE WITH NEOPRENE OR NYLON SEPARATORS.

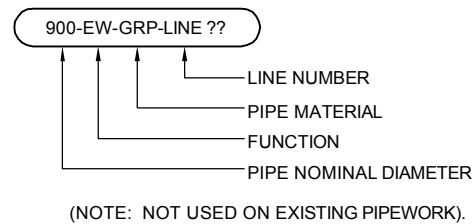


No.	DATE	AMENDMENT	DRAFT	APPR	FUNDED BY B.C.C. (✓)	EXTERNAL ()	B.C.C. FILE No.	486/5/7-0256-032	DESIGN CHECK	A.THRIS	3325	12/01/12	MANAGER ENGINEERING SERVICES	DATE	FIELD SERVICES DELEGATE	DATE
01	15.06.12	AS CONSTRUCTED		S.W	A.T											

HOPKINS STREET
BEAUDESERT

DRAWING TITLE
CONSTRUCTION NOTES

SHEET No. OF
QUEENSLAND URBAN UTILITIES DRAWING No.
486/5/7-0256-032
AMEND.
01



PIPE MATERIAL ABBREVIATIONS

CODE	DESCRIPTION
ABS	ABS
DICL	DUCTILE IRON CEMENT LINED
GRP	GLASS REINFORCED PLASTIC
PE	POLYETHYLENE
PUC	PUC
RC	REINFORCED CONCRETE
SS	STAINLESS STEEL
XX	OTHER

PIPE FUNCTION ABBREVIATIONS

CODE	DESCRIPTION
AL	ALUMINIUM SULPHATE
CA	COMPRESSED AIR
DS	DIGESTER SLUDGE
FC	FERRIC CHLORIDE
FE	FINAL EFFLUENT
FW	FILTERED WATER
GS	GRIT SLURRY
MH	MAGNESIUM HYDROXIDE
ML	MIXED LIQUOR
MS	MIXED SLUDGE
OC	ODOUR CONTROL
PA	PROCESS AIR
PO	POLYELECTROLYTE SOLUTION
PW	POTABLE WATER
PS	PRIMARY SLUDGE
PE	PRIMARY EFFLUENT
RA	RETURN ACTIVATED SLUDGE
RL	RETURN LIQUORS
RS	RAW SEWAGE
RW	REUSE WATER
SB	SODIUM BISULPHITE
SC	SCUM
SE	SECONDARY EFFLUENT
SH	SODIUM HYPOCHLORITE
SN	SUPERNATANT
SS	SCREENED SEWERAGE
SW	STORM WATER
TE	TERTIARY EFFLUENT
TS	TERTIARY SLUDGE
WA	WASTE ACTIVATED SLUDGE

EQUIPMENT TAGS

CODE	DESCRIPTION
B	BLOWER
C	CONVEYOR
F	FILTER
M	MIXER
P	PUMP
T	TANK
V	VALVE, PENSTOCK OR STOPBOARD

PIPELINE + VALVE SYMBOLS

	MAIN FLOW LINE		VENTILATION DAMPER
	SECONDARY FLOW LINE		HANDWHEEL
	MINOR FLOW LINE		MOTORISED ACTUATOR
	FLEXIBLE HOSE		MOTORISED ACTUATOR WITH POSITIONER
	FUTURE LINE		SOLENOID ACTUATOR
	GATE (SLUICE) VALVE		PNEUMATIC ACTUATOR
	KNIFEGATE VALVE		PNEUMATIC ACTUATOR WITH POSITIONER
	BUTTERFLY VALVE		VARIABLE AREA FLOWMETER
	BALL VALVE		VENT
	GLOBE VALVE		SILENCER
	ECCENTRIC PLUG VALVE		DRAIN
	NEEDLE VALVE		AUTO-DRAIN
	DIAPHRAGM VALVE		AIR VALVE
	THREE WAY VALVE		TERMINATION POINT
	PRESSURE RELIEF VALVE		FLUME
	PRESSURE LOADING VALVE		'Y' STRAINER
	PRESSURE REDUCING VALVE		FILTER
	REDUCED PRESSURE ZONE VALVE		SPRAY NOZZLE
	NON-RETURN VALVE		FLEXIBLE PIPE COUPLING
	REDUCER		'CAMLOCK' COUPLING
	PENSTOCK		
	STOP BOARD		

EQUIPMENT SYMBOLS

	MOTOR, VARIABLE SPEED
	MOTOR, FIXED SPEED
	CENTRIFUGAL PUMP
	AXIAL FLOW PUMP
	MIXER
	FAN
	POSITIVE DISPLACEMENT PUMP OR BLOWER
	STEP SCREEN
	BAR SCREEN
	CHEMICAL METERING PUMP
	PROGRESSIVE CAVITY PUMP
	CALIBRATION COLUMN
	DIAPHRAGM PUMP - PNEUMATIC
	DIAPHRAGM PRESSURE VESSEL

INSTRUMENT + CONTROL SYMBOLS

	PNEUMATIC CONTROL
	CONTROL SIGNAL
	TYPICAL INSTRUMENT TAG REFER TABLE BELOW
	FIELD MOUNTED COMPONENT AND TAG POSITION
	REMOTE MOUNTED COMPONENT
	LOCAL PANEL MOUNTED COMPONENT
	SCADA COMPONENT
	MAGNETIC FLOWMETER ELEMENT
	INSERTION TYPE FLOW SWITCH
	SINGLE SENSOR LEVEL PROBE
	MULTI-SENSOR LEVEL PROBE
	ULTRASONIC LEVEL ELEMENT
	HYDROSTATIC LEVEL ELEMENT
	FLOAT LEVEL ELEMENT
	SHARED CONTROL/DISPLAY CONNECTION
	GAUGE

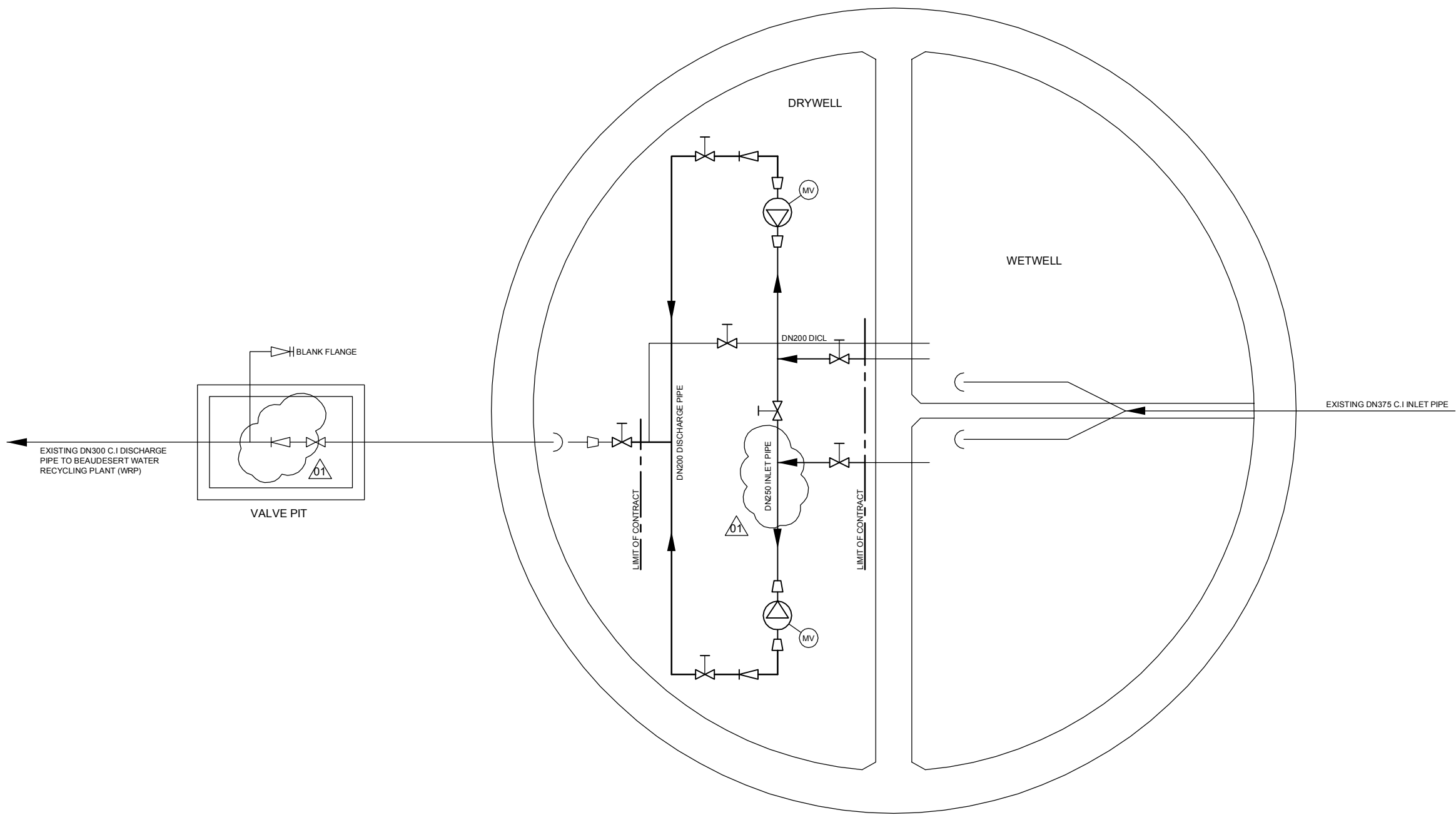
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POSITION 1		POSITION 2 & 3		POSITION 4		LOOP No.	
CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
A	ANALYSIS	A	ALARM	CL	CHLORINE RESIDUAL	??	????
F	FLOW	C	CONTROL	DO	DISSOLVED OXYGEN		
K	TIME	E	ELEMENT (SENSOR)	DP	DIFFERENTIAL PRESSURE		
L	LEVEL	I	INDICATE	H	HIGH		
P	PRESSURE	R	RECORD	HH	HIGH HIGH		
S	SPEED	S	SWITCH	L	LOW		
T	TEMPERATURE	T	TRANSMIT	LL	LOW LOW		
W	WEIGHT			NI	NITRATE		
X	OTHER DIGITAL			O/C	OPEN/CLOSED		
Z	POSITION			PO	ORTHOPHOSPHATE		
Q	TOTAL FLOW			PH	PH		
				SS	SUSPENDED SOLIDS		
				TU	TURBIDITY		
				%	PERCENTAGE		

AS CONSTRUCTED



FUNDING		DRAFTED		S.WILKINSON		D.DAKIN		ASSET/PROJECT		DRAWING TITLE		SHEET No. OF	
DESIGN W.O. No.		DRAFTING CHECK	D.DAKIN	DESIGN		R.P.E.Q. No.		MANAGER ENGINEERING SERVICES	DATE	HOPKINS STREET	P&ID LEGEND	QUEENSLAND URBAN UTILITIES DRAWING No.	AMEND.
CONSTRUCTION W.O. No.		CAD FILE	570256033.DWG	A.THIRIS	3325	12/01/12				BEAUDESERT		486/5/7-0256-033	01
FUNDED BY B.C.C. (✓)	EXTERNAL ()	B.C.C. FILE No.	486/5/7-0256-033	DESIGN CHECK		R.P.E.Q. No.	DATE	FIELD SERVICES DELEGATE	DATE				



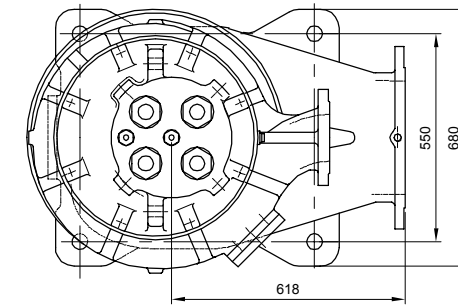
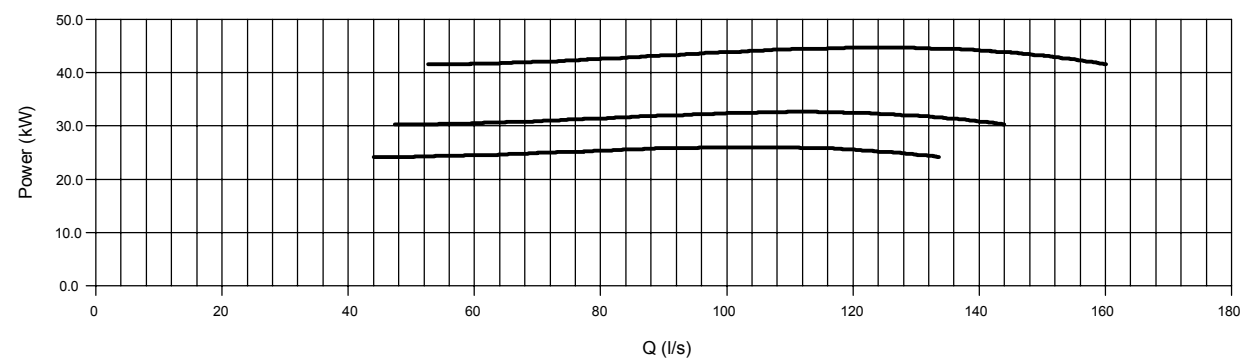
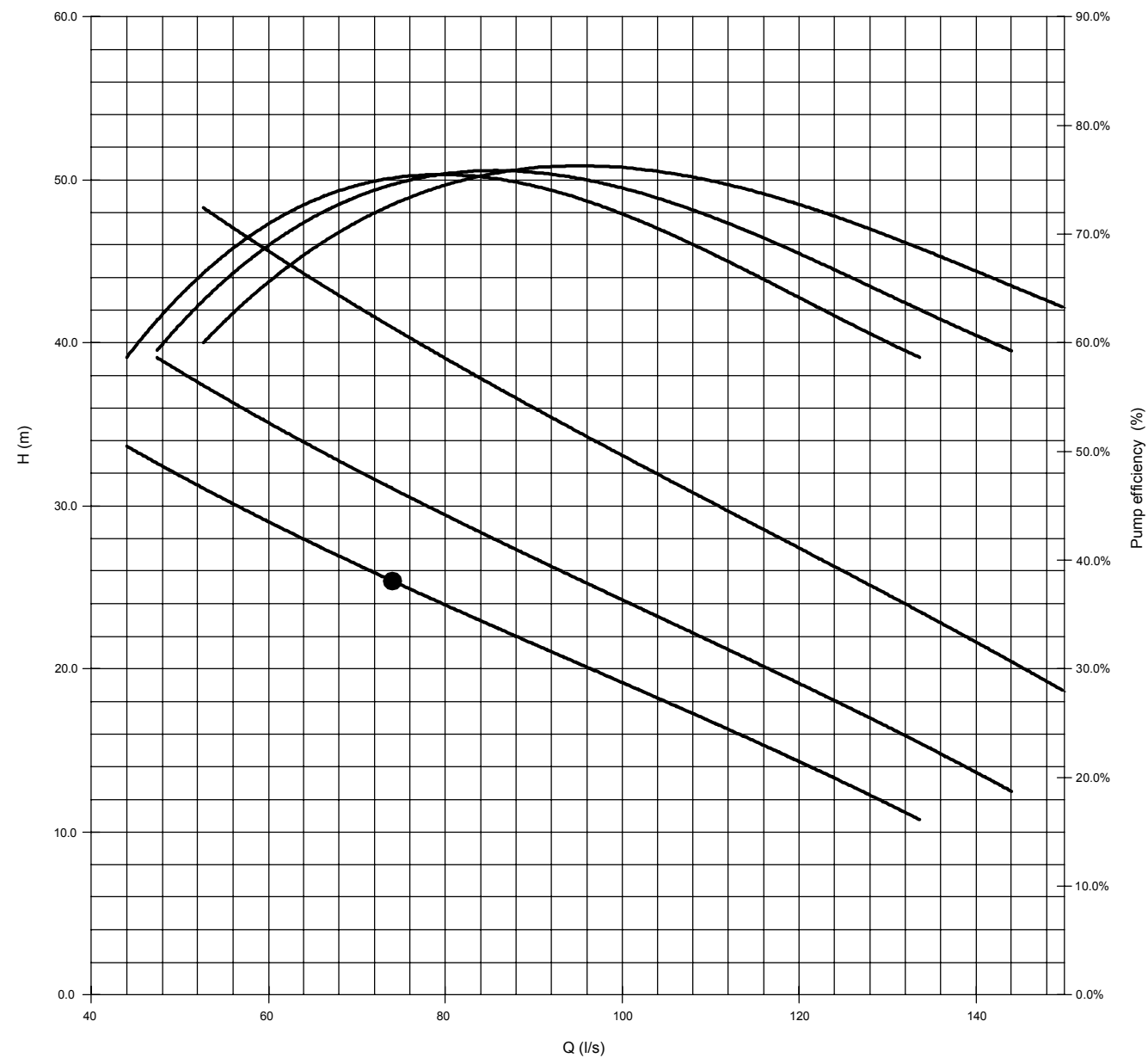
NOTE:
LEVEL TRANSMITTERS
LEVEL INDICATORS
LEVEL SWITCHES
LEVEL ALARMS HIGH/LOW
ARE TO BE SHOWN ON AS BUILT DRAWINGS

AS CONSTRUCTED

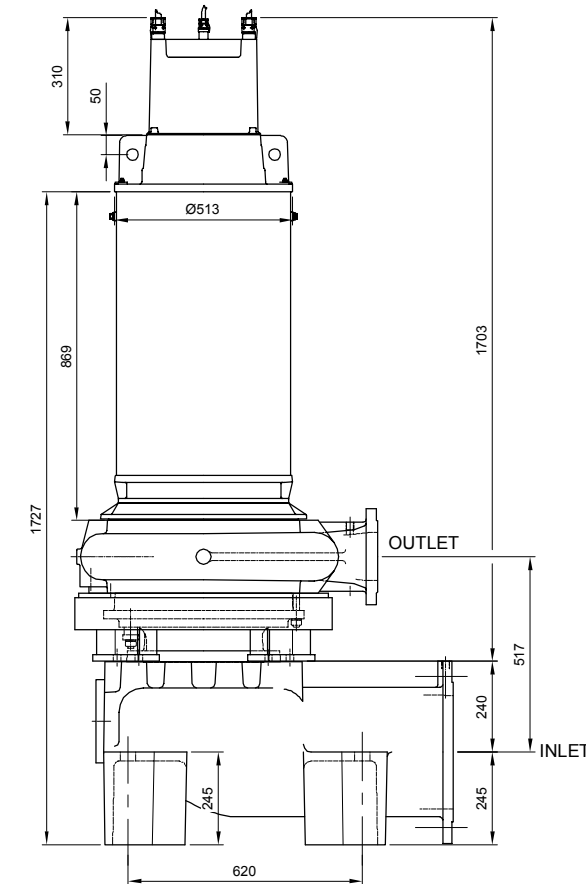


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				DESIGN W.O. No.		DRAFTING CHECK	D.DAKIN	DESIGN	HOPKINS STREET BEAUDESERT		P&ID		QUEENSLAND URBAN UTILITIES DRAWING No.	
01	15.06.12	AS CONSTRUCTED	S.W	A.T	CONSTRUCTION W.O. No.	CAD FILE	570256034.DWG	A.THIRIS	MANAGER ENGINEERING SERVICES				486/5/7-0256-034	
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								3325	DATE				01	

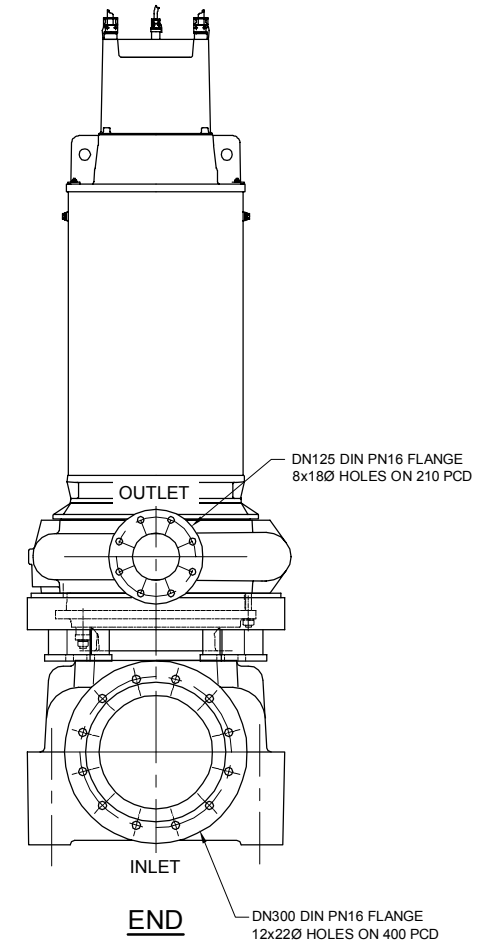
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PLAN



SECTION



END

HIDROSTAL SINGLE VANE SCREW CENTRIFUGAL PUMP DETAIL

SCALE 1:10 FULL SIZE A1 SHEET

HOPKINS STREET IMMERSIBLE PUMP

DUTY: Q = 74 l/s
H = 25.3 mtrs
SPEED = 4 POLE/VARIABLE VIA END USER SUPPLIED VSD
TEMP = AMBIENT

PUMP

PUMP TYPE : HIDROSTAL SINGLE VANE SCREW CENTRIFUGAL PUMP
PUMP MODE : H05K-MH3RU + HE050X4-GSEN1 + NE1B5E-15

ELECTRIC MOTOR

MOTOR: HIDROSTAL IMMERSIBLE
MOTOR RATING: 50kW - 50Hz - 415 VOLTS - 1479rpm

ACCESSORIES

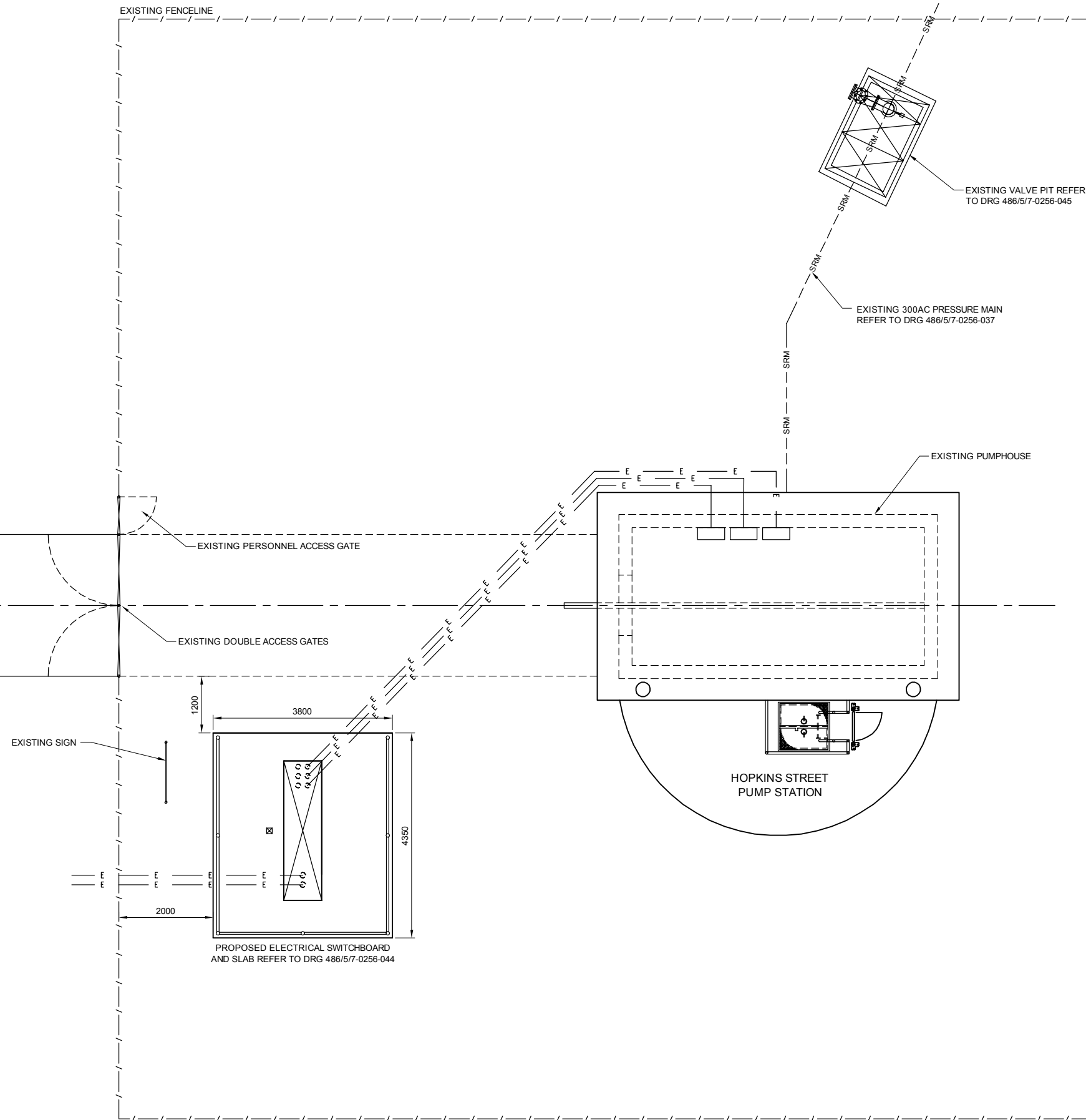
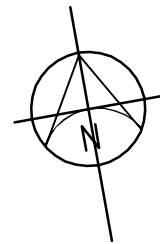
15 mtrs SCREENED POWER CABLE SUITABLE FOR VSD
BO PUMP SUCTION STAND
THERMISTORS

AS CONSTRUCTED

0 100 200 400 600
Full Size 1:10; Half Reduction 1:20
SCALE (mm)



FUNDING				DRAFTED				ASSET/PROJECT				DRAWING TITLE				SHEET No. OF		DRAWING No. AMEND.	
DESIGN W.O. No.				DRAFTING CHECK				HOPKINS STREET BEAUDESERT				PUMP AND PUMP CURVE DETAILS				01		01	
CONSTRUCTION W.O. No.				CAD FILE				14/05/2013											
FUNDED BY B.C.C. (✓) EXTERNAL ()				B.C.C. FILE No.															



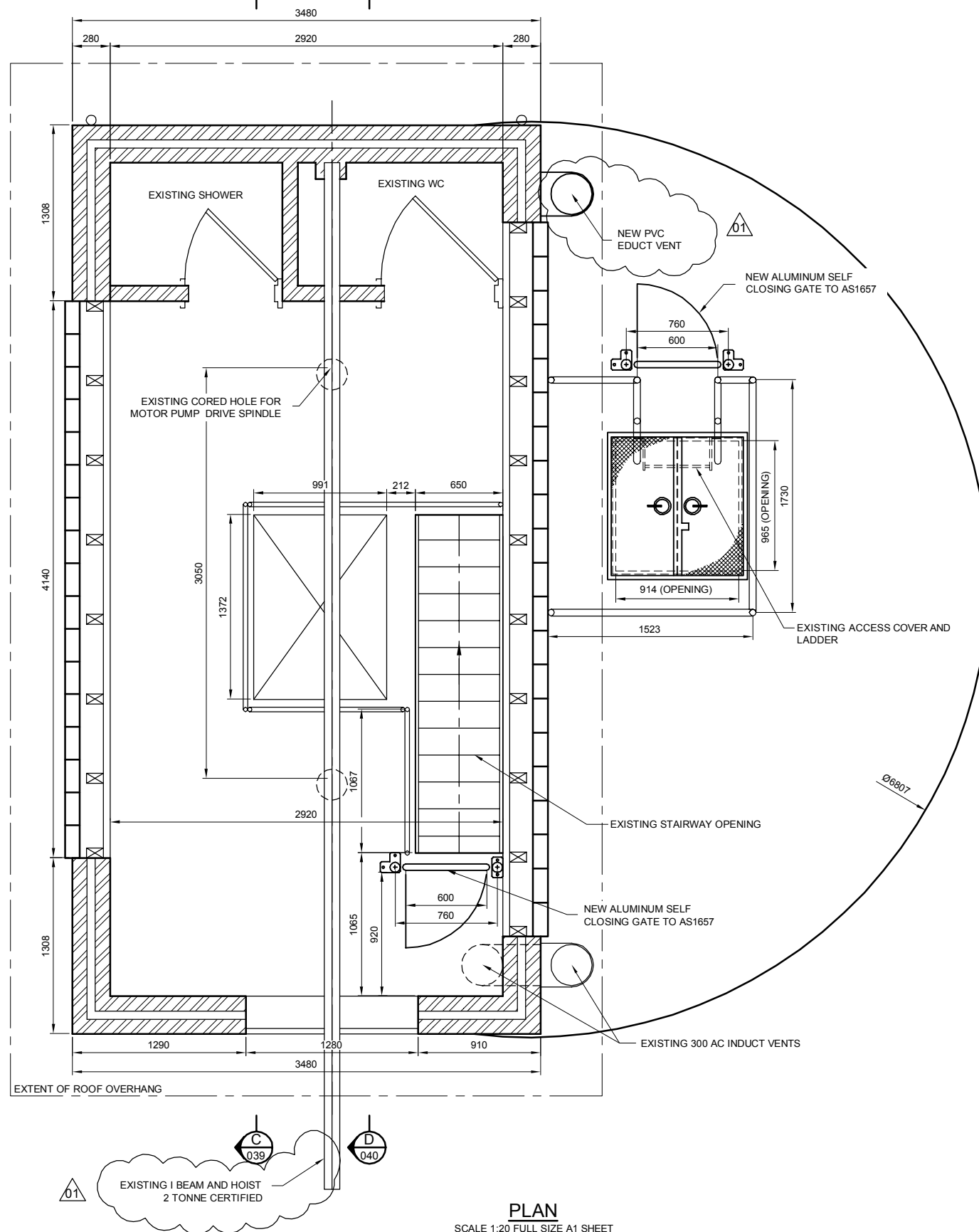
AS CONSTRUCTED

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Full Size 1:50 ; Half Reduction 1:100
SCALE (mm)

PLAN
SCALE 1:50 FULL SIZE A1 SHEET



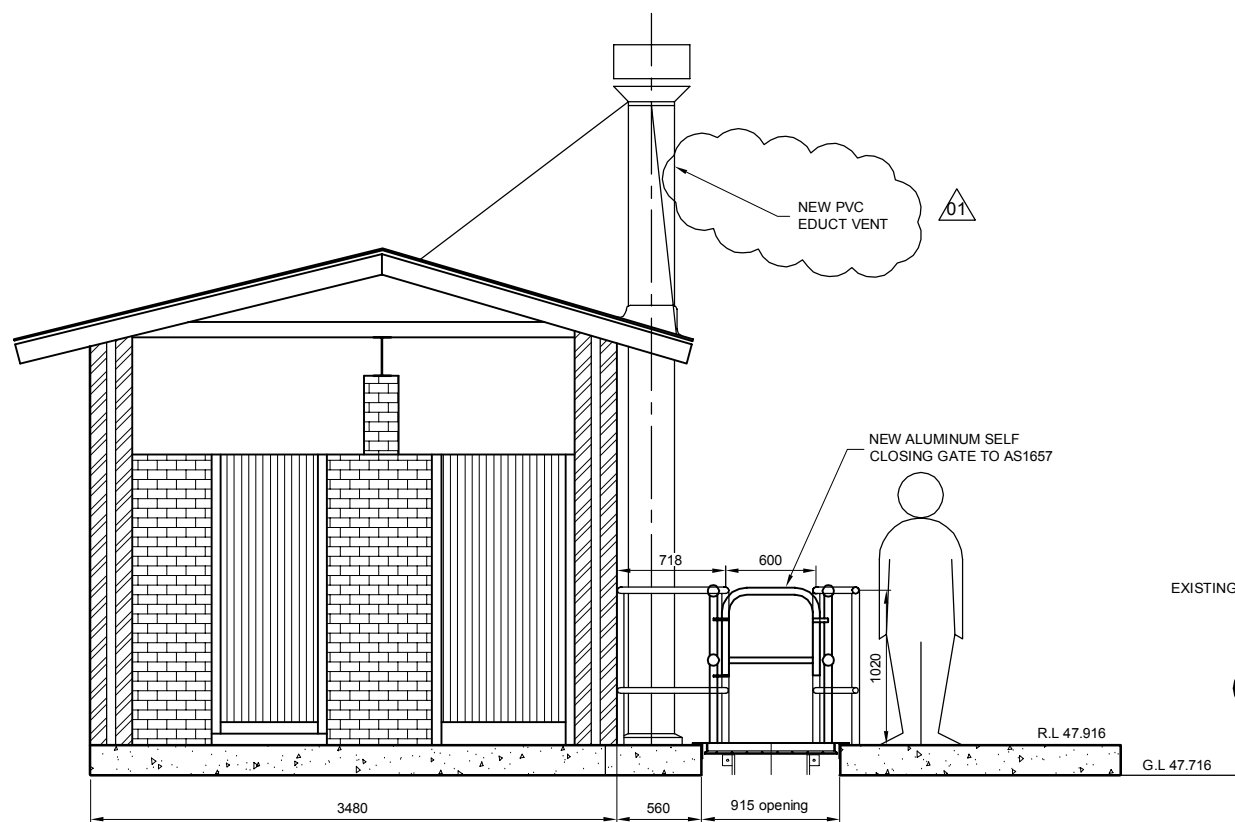
No.		DATE	AMENDMENT	DRAFT	APPR	FUNDING		DRAFTED	S.WILKINSON	D.DAKIN	ASSET/PROJECT		DRAWING TITLE		SHEET No. OF		QUEENSLAND URBAN UTILITIES DRAWING No. AMEND.	
01		15.06.12	AS CONSTRUCTED			S.W.	A.T.	DESIGN W.O. No.			HOPKINS STREET BEAUDESERT		EXISTING SITE PLAN		486/5/7-0256-036		01	
								CONSTRUCTION W.O. No.										
								FUNDED BY B.C.C. (✓)	EXTERNAL ()									
								B.C.C. FILE No.	486/5/7-0256-036									
								DESIGN CHECK										

**AS CONSTRUCTED**

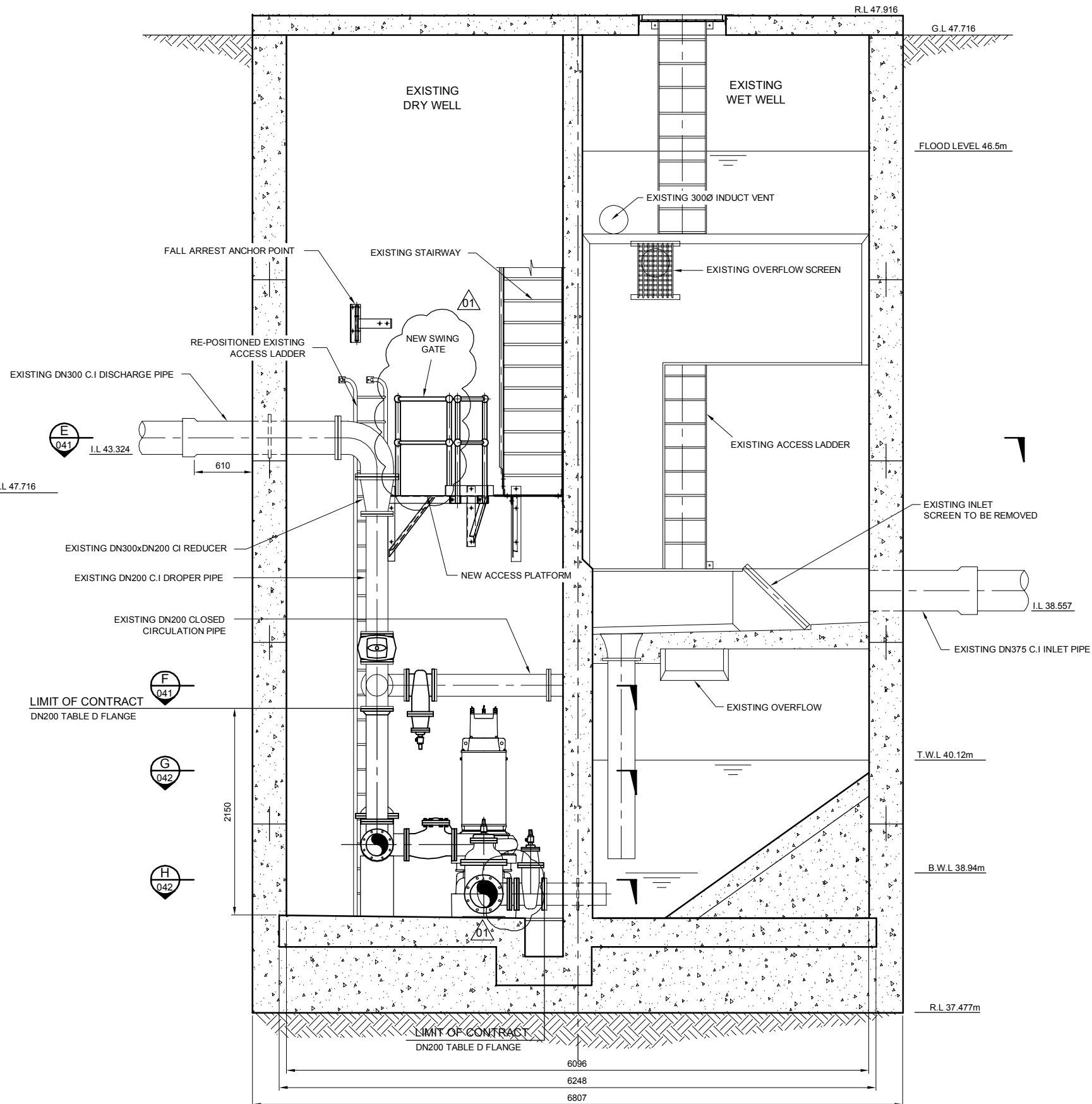
0 200 400 800 1200
Full Size 1:20 ; Half Reduction 1:40
SCALE (mm)



FUNDING				DRAFTED				ASSET/PROJECT				DRAWING TITLE				SHEET No. OF			
DESIGN W.O. No.				DRAFTING CHECK				MANAGER ENGINEERING SERVICES				EXISTING PUMP STATION				QUEENSLAND URBAN UTILITIES DRAWING No.			
CONSTRUCTION W.O. No.				CAD FILE				HOPKINS STREET				PLAN				486/5/7-0256-037			
FUNDED BY B.C.C. (✓) EXTERNAL ()				B.C.C. FILE No.				FIELD SERVICES DELEGATE								AMEND.			



EXISTING PUMP HOUSE
SCALE 1:25 FULL SIZE A1 SHEET



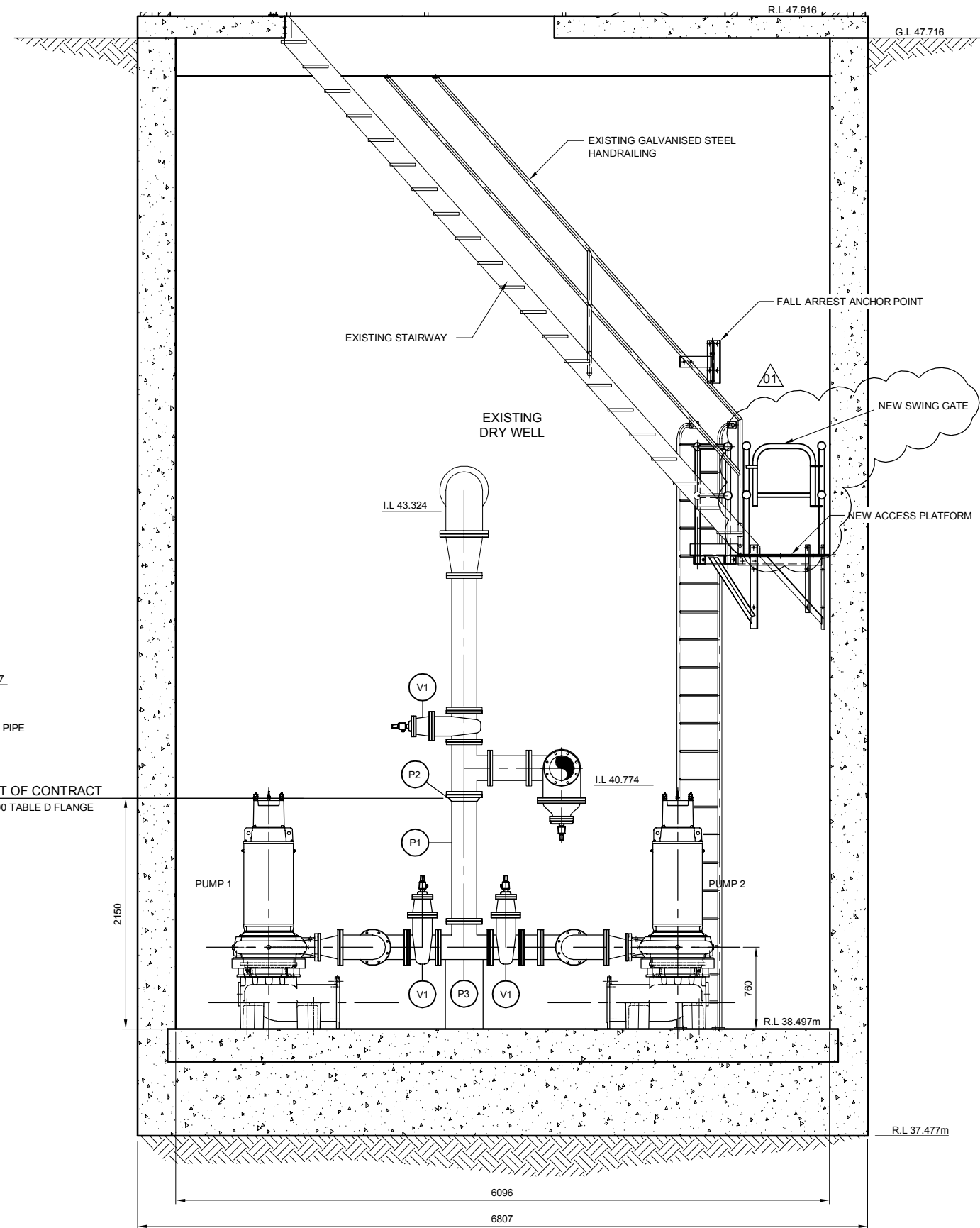
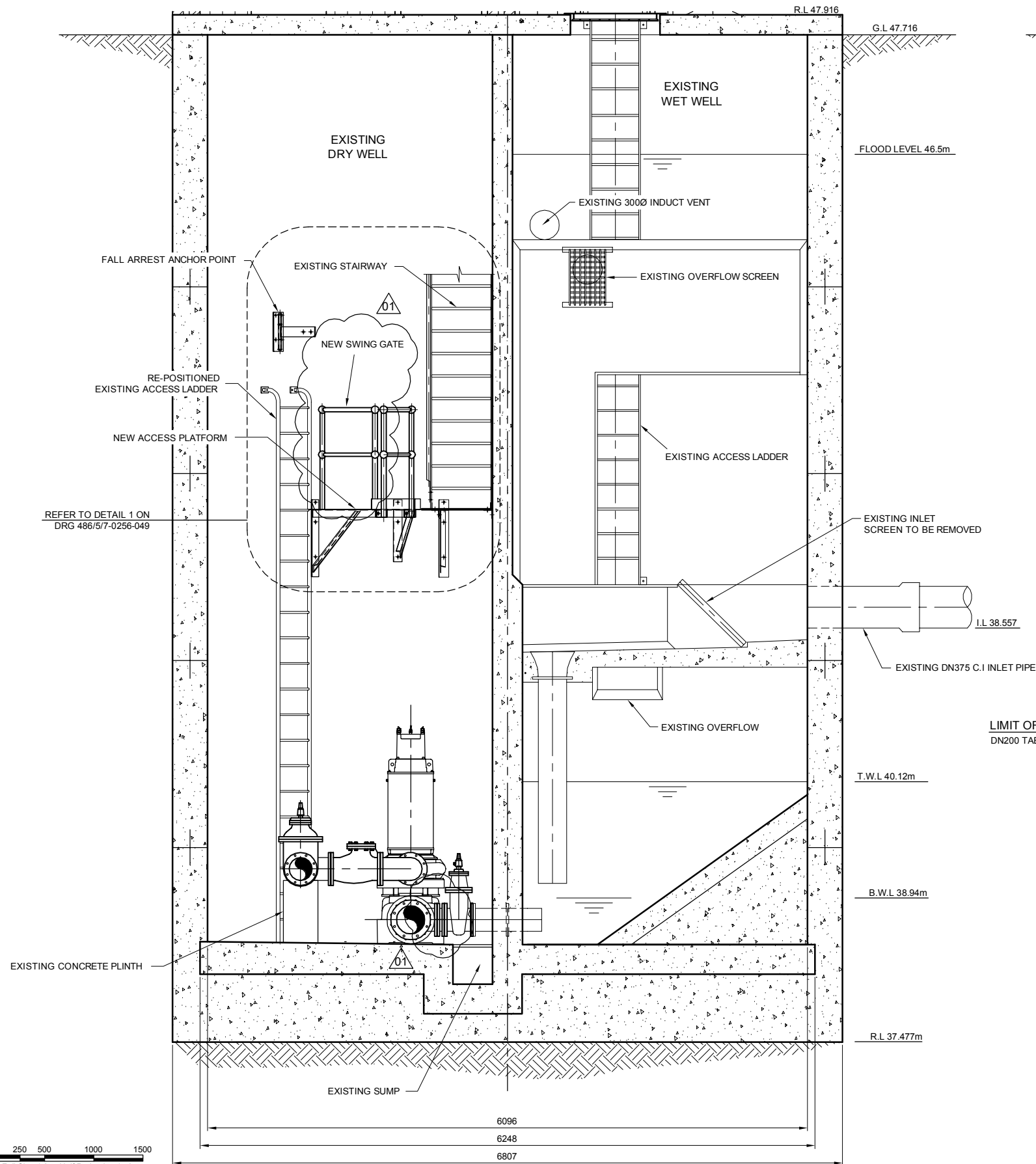
SECTION A
SCALE 1:25 FULL SIZE A1 SHEET 037

AS CONSTRUCTED

0 250 500 1000 1500
Full Size 1:25; Half Reduction 1:50
SCALE (mm)



FUNDING				DRAFTED				ASSET/PROJECT				DRAWING TITLE				SHEET No. OF	
DESIGN W.O. No.				DRAFTING CHECK				HOPKINS STREET BEAUDESERT				EXISTING PUMP STATION SECTION SHEET 1 OF 5				QUEENSLAND URBAN UTILITIES DRAWING No.	
CONSTRUCTION W.O. No.				CAD FILE				3325 12/01/12				846/5/7-0256-038				AMEND.	
FUNDED BY B.C.C. (✓) EXTERNAL ()				B.C.C. FILE No.				486/5/7-0256-038				01					

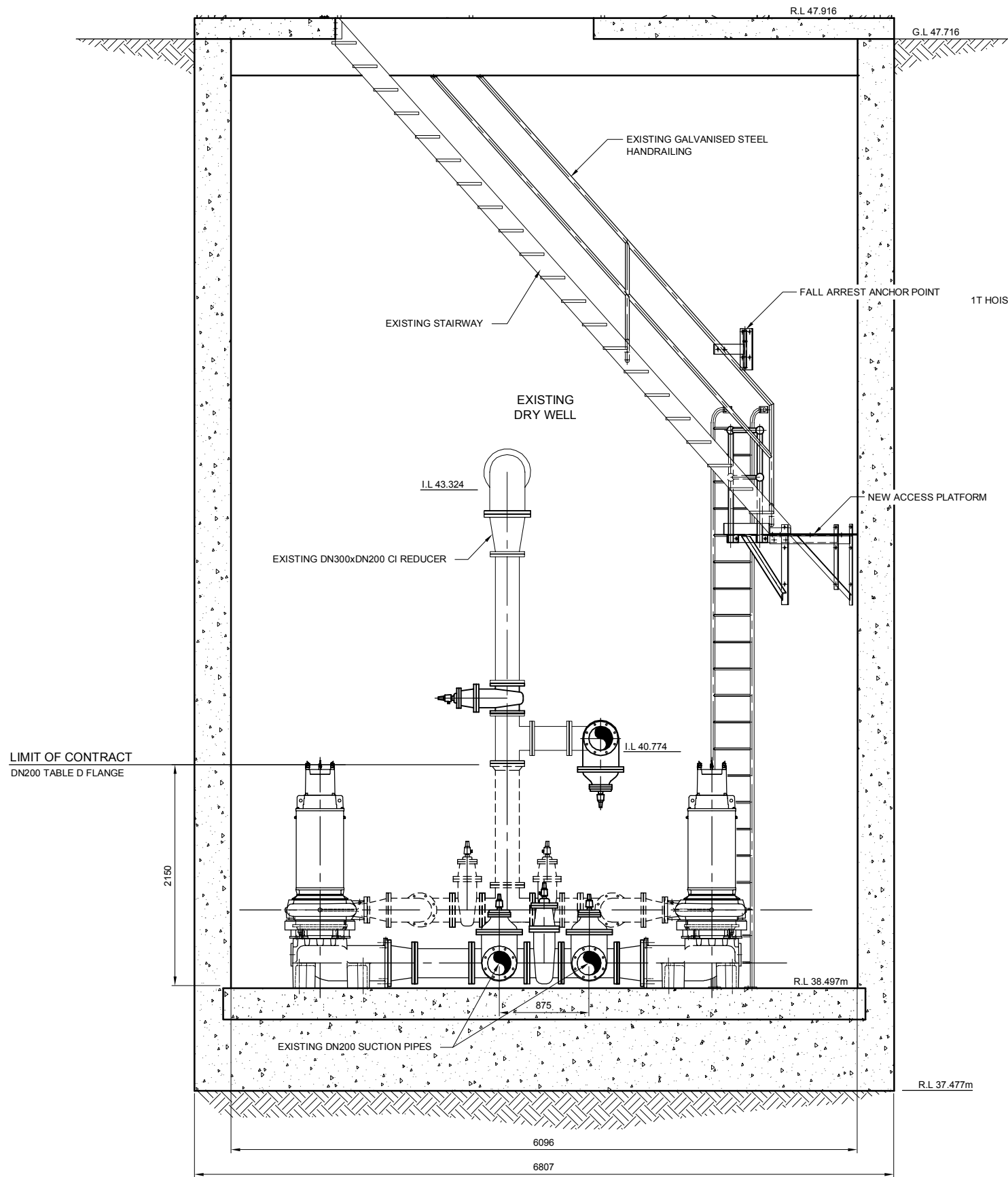


SECTION C
SCALE 1:25 FULL SIZE A1 SHEET

AS CONSTRUCTED

SECTION B
SCALE 1:25 FULL SIZE A1 SHEET

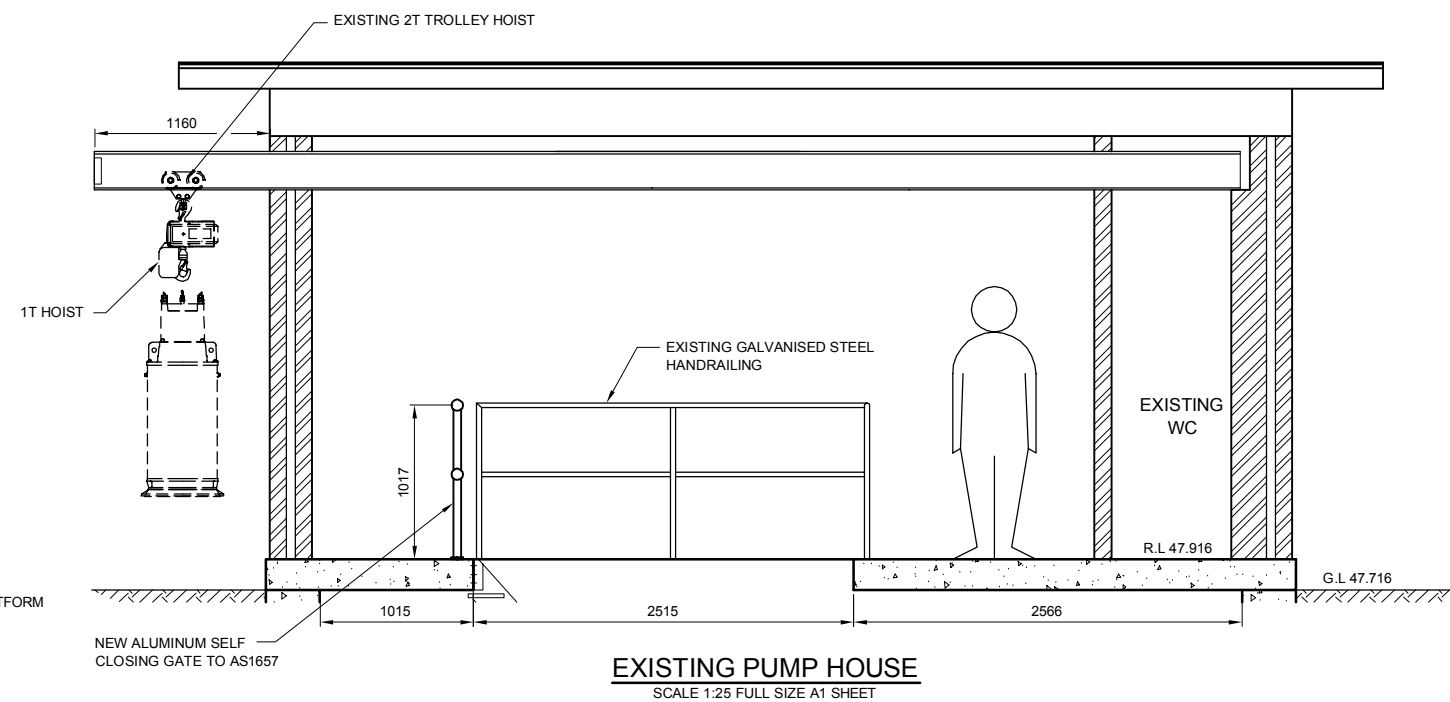
FUNDING		DRAFTED		S.WILKINSON		D.DAKIN		ASSET/PROJECT		DRAWING TITLE		SHEET No. OF	
DESIGN W.O. No.		DRAFTING CHECK		D.DAKIN		DESIGN		HOPKINS STREET BEAUDESERT		EXISTING PUMP STATION SECTION SHEET 2 OF 5		QUEENSLAND URBAN UTILITIES DRAWING No.	
CONSTRUCTION W.O. No.		CAD FILE		570256039.DWG		A.THIRIS		3325 12/01/12		846/5/7-0256-039		AMEND.	
FUNDED BY B.C.C. (✓) EXTERNAL ()		B.C.C. FILE No.		486/5/7-0256-039		DESIGN CHECK		FIELD SERVICES DELEGATE		DATE		01	



SECTION D
SCALE 1:25 FULL SIZE A1 SHEET
037

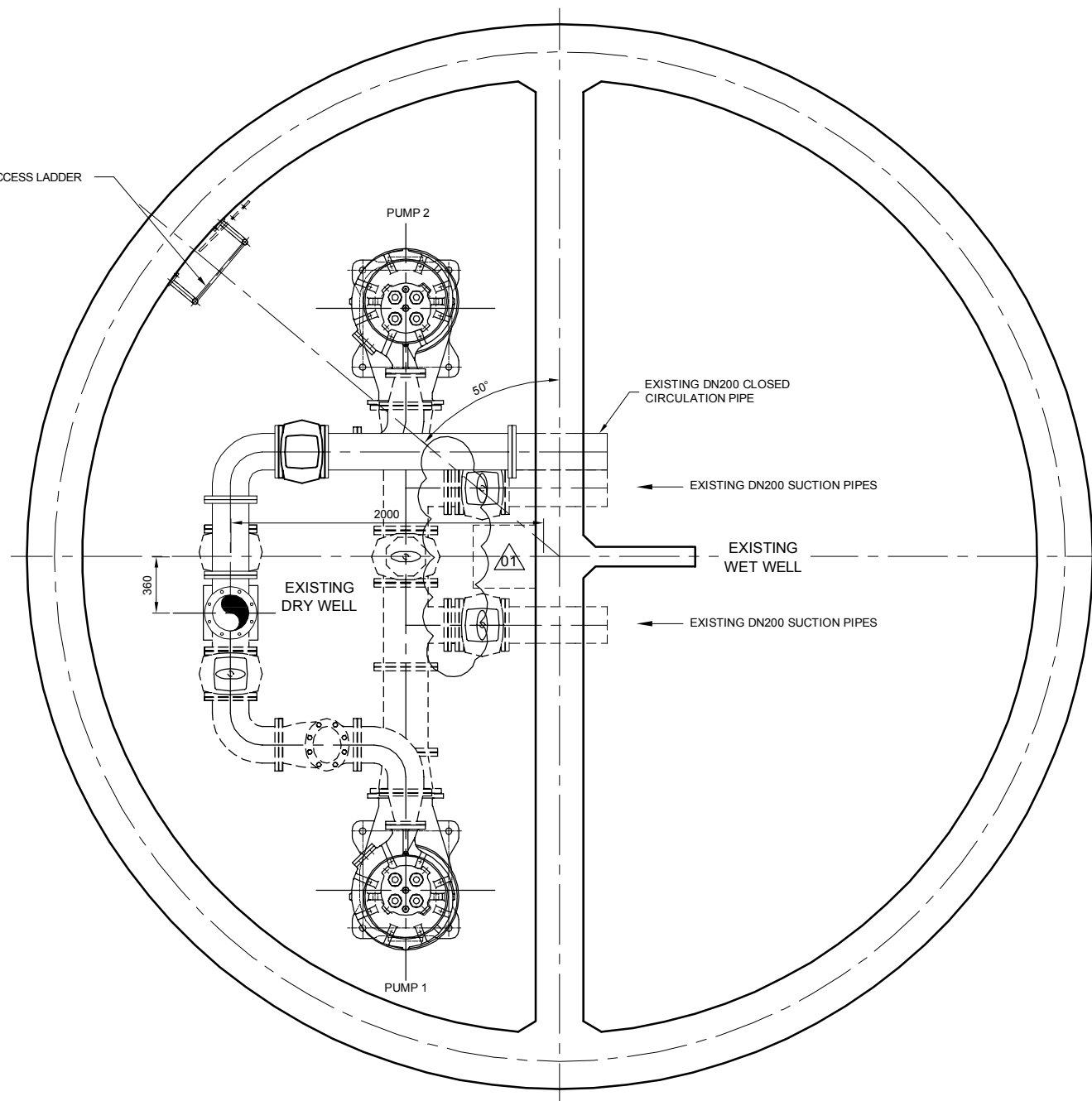
AS CONSTRUCTED

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Full Size 1:25; Half Reduction 1:50
SCALE (mm)



EXISTING PUMP HOUSE
SCALE 1:25 FULL SIZE A1 SHEET

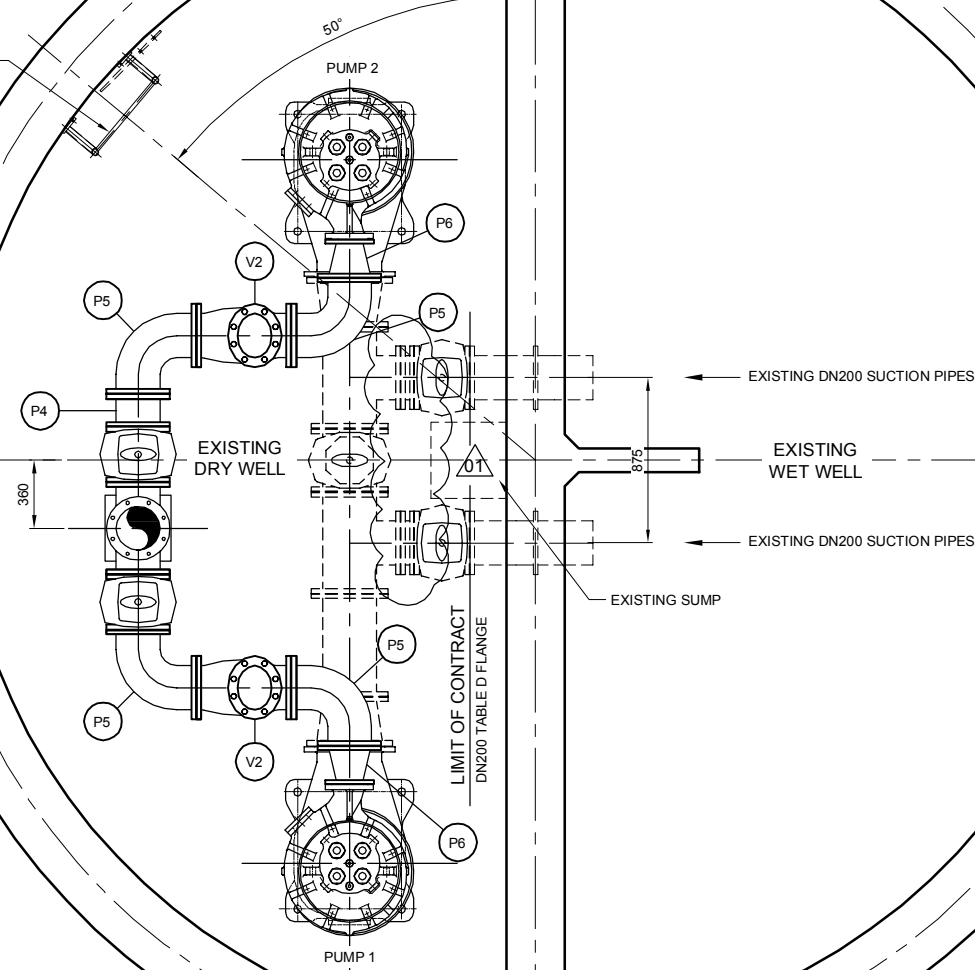
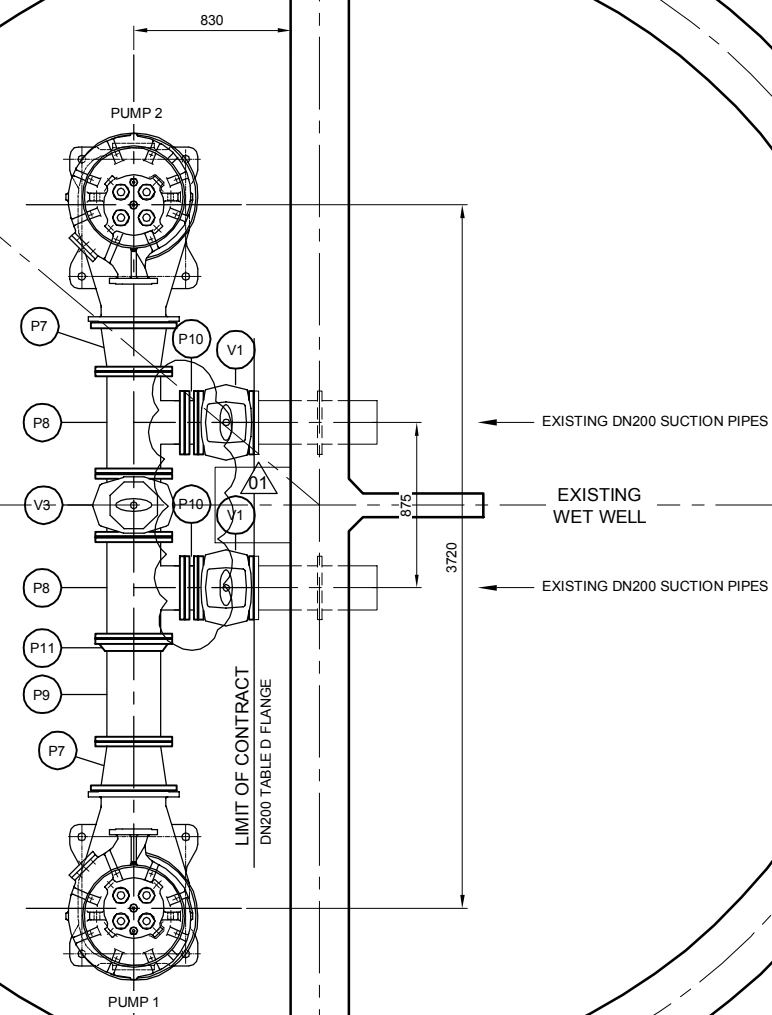
FUNDING				DRAFTED		S.WILKINSON		D.DAKIN		ASSET/PROJECT		DRAWING TITLE		SHEET No. OF	
DESIGN W.O. No.				DRAFTING CHECK		D.DAKIN		DESIGN		MANAGER ENGINEERING SERVICES		EXISTING PUMP STATION		QUEENSLAND URBAN UTILITIES DRAWING No.	
CONSTRUCTION W.O. No.				CAD FILE		570256040.DWG		A.THIRIS		3325 12/01/12		SECTION		AMEND.	
FUNDED BY B.C.C. (✓) EXTERNAL ()				B.C.C. FILE No.		486/5/7-0256-040		DESIGN CHECK		R.P.E.Q. No. DATE		FIELD SERVICES DELEGATE		486/5/7-0256-040	
												SHEET 3 OF 5		01	



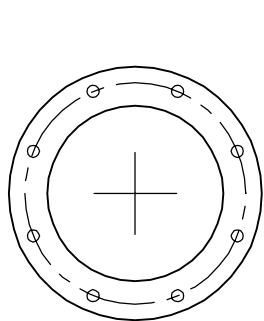
SECTION **F**
SCALE 1:20 FULL SIZE A1 SHEET 038

0 200 400 800 1200
Full Size 1:20 ; Half Reduction 1:40
SCALE (mm)

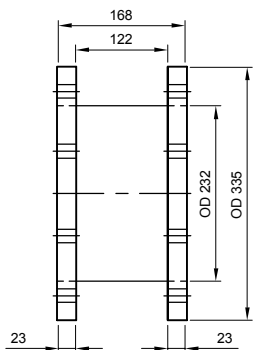
					FUNDING		DRAFTED	S.WILKINSON	D.DAKIN			ASSET/PROJECT		DRAWING TITLE		SHEET No. OF			
					DESIGN W.O. No.		DRAFTING CHECK	D.DAKIN	DESIGN		R.P.E.Q. No.	MANAGER ENGINEERING SERVICES	DATE	HOPKINS STREET BEAUDESERT		EXISTING PUMP STATION SECTION SHEET 4 OF 5		QUEENSLAND URBAN UTILITIES DRAWING No.	AMENDMENT
01	15.06.12	AS CONSTRUCTED		S.W	A.T	CONSTRUCTION W.O. No.	CAD FILE	570256041.DWG	A.THIRIS		3325	12/01/12						486/5/7-0256-041	01
No.	DATE	AMENDMENT		DRAFT	APPR	FUNDED BY B.C.C. (✓)	EXTERNAL ()	B.C.C. FILE No.	486/5/7-0256-041	DESIGN CHECK		R.P.E.Q. No.	DATE	FIELD SERVICES DELEGATE	DATE				

RE-POSITIONED EXISTING
ACCESS LADDERSECTION **G**
SCALE 1:20 FULL SIZE A1 SHEET 038**AS CONSTRUCTED**0 200 400 800 1200
Full Size 1:20 ; Half Reduction 1:40
SCALE (mm)RE-POSITIONED EXISTING
ACCESS LADDEREXISTING CONCRETE PIPE
SUPPORT PLINTHEXISTING
DRY WELLSECTION **H**
SCALE 1:20 FULL SIZE A1 SHEET 038

FUNDING				DRAFTED				ASSET/PROJECT				DRAWING TITLE				SHEET No. OF			
DESIGN W.O. No.				DRAFTING CHECK				HOPKINS STREET BEAUDESERT				EXISTING PUMP STATION SECTION SHEET 5 OF 5				486/5/7-0256-042			
CONSTRUCTION W.O. No.				CAD FILE				MANAGER ENGINEERING SERVICES				AMEND.				01			
FUNDED BY B.C.C. (✓) EXTERNAL ()				B.C.C. FILE No.				FIELD SERVICES DELEGATE											

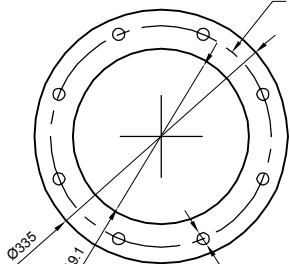


DN200 FLANGE

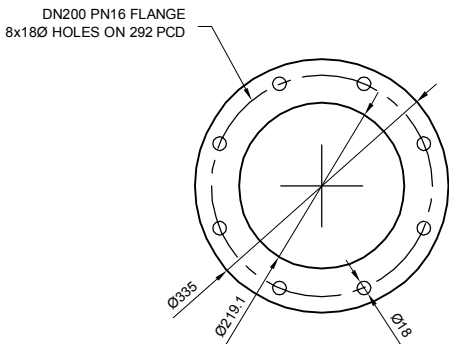


ITEM P4 DETAIL

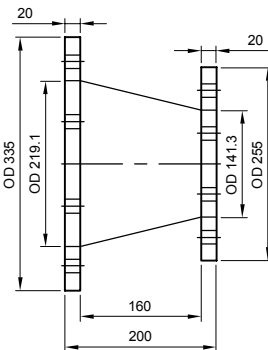
316 STAINLESS STEEL DN200 SPOOL PIECE
SCALE 1:5 FULL SIZE A1 SHEET



DN200 FLANGE

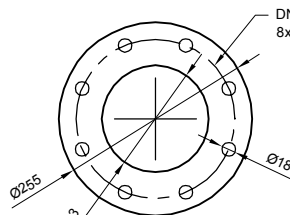


DN200 FLANGE

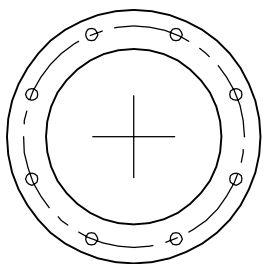


ITEM P6 DETAIL

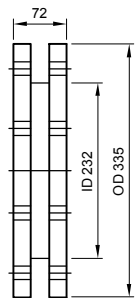
316 STAINLESS STEEL DN200-DN125
CONCENTRIC REDUCER
SCALE 1:5 FULL SIZE A1 SHEET



DN125 PUMP OUTLET
FLANGE

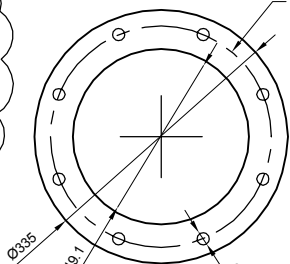


DN200 FLANGE



ITEM P10 DETAIL

316 STAINLESS STEEL DN200 SPOOL - SPECIAL
SCALE 1:5 FULL SIZE A1 SHEET



DN200 FLANGE

PIPEWORK SCHEDULE

ITEM	DESCRIPTION	MATL	DN	QTY
P1	FL/PL PIPE x 1400mm (INCLUDES 200mm GREEN)	DICL	200	1
P2	UNI-FLANGE	-	200	1
P3	FL/FL EQUAL TEE	DICL	200x200	1
P4	FL/FL PIPE x 168mm (REFER DETAIL)	316 S/S	200	1
P5	FL/FL 90° BEND	DICL	200	4
P6	FL/FL CONCENTRIC REDUCER x 200mm (REFER DETAIL)	316 S/S	200x125	2
P7	FL/FL CONCENTRIC TAPER	DICL	250x300	2
P8	FL/FL UN-EQUAL TEE	DICL	250x200	2
P9	FL/PL PIPE x 600mm (CUT TO SUIT ON SITE)	DICL	250	1
P10	FL/FL PIPE x 72mm	316 S/S	200	2
P11	UNI-FLANGE	-	250	1

NOTE: PIPEWORK NOMINAL TO AS 2280
FLANGES TO AS 4087 PN16
COATING INTERNAL: CALCIUM ALUMINATE CEMENT MORTAR (SULPHATE RESISTANT)
COATING EXTERNAL: FUSION COATED POLYMERIC
NON-STANDARD SPECIALS SHALL BE FABRICATED FROM 316 S/S

VALVE SCHEDULE

ITEM	DESCRIPTION	MATL	DN	QTY
V1	FL/FL METAL SEATED SLUICE VALVE WITH 316/SS VALVE STEM	DI	200	5
V2	FL/FL NON-RETURN VALVE (VALMATIC) C/W MECHANICAL BACKFLOW ACTUATOR	DI	200	2
V3	FL/FL METAL SEATED SLUICE VALVE WITH 316/SS VALVE STEM	DI	250	1

NOTE: SLUICE VALVES TO CLOSE ANTI-CLOCKWISE

PUMP SCHEDULE

ITEM	DESCRIPTION	QTY
PUMP 1	HIDROSTAL SINGLE VANE SCREW CENTRIFUGAL PUMP	1
PUMP 2	HIDROSTAL SINGLE VANE SCREW CENTRIFUGAL PUMP	1

NOTE: SUPPLIER WEIR PUMPS (REFER DWG 6 FOR DETAILS)

GASKET SCHEDULE

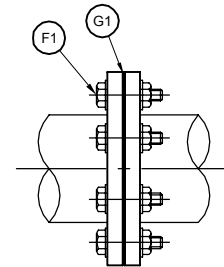
ITEM	DESCRIPTION	MATL	QTY
G1	DN125 GASKET TABLE D (3mm THICK)	EPDM	2
G2	DN200 GASKET TABLE D (3mm THICK)	EPDM	17
G3	DN250 GASKET TABLE D (3mm THICK)	EPDM	5
G4	DN300 GASKET TABLE D (3mm THICK)	EPDM	2
G5	DN200 GASKET TABLE D (3mm THICK)	EPDM	4

NOTE: GASKETS TO BE 3mm EPDM

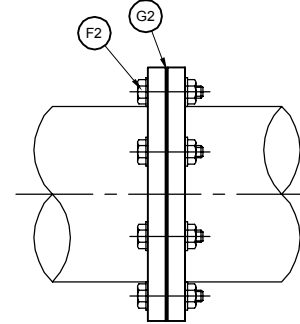
FASTENER SCHEDULE

ITEM	DESCRIPTION	MATL	QTY
F1	FASTENERS TO SUIT DN125 TABLE D ASSEMBLY M16x75mm HEX HEAD BOLT x 8 M16 FLAT WASHERS x 16 M16 NUTS x 8	316 S/S	2
F2	FASTENERS TO SUIT DN200 TABLE D ASSEMBLY M16x75mm HEX HEAD BOLT x 8 M16 FLAT WASHERS x 16 M16 NUTS x 8	316 S/S	17
F3	FASTENERS TO SUIT DN250 TABLE D ASSEMBLY M20x90mm HEX HEAD BOLT x 8 M20 FLAT WASHERS x 16 M20 NUTS x 8	316 S/S	5
F4	FASTENERS TO SUIT DN300 TABLE D ASSEMBLY M20x90mm HEX HEAD BOLT x 12 M20 FLAT WASHERS x 24 M20 NUTS x 12	316 S/S	2
F5	FASTENERS TO SUIT DN200 TABLE D ASSEMBLY - SPECIAL M16x160mm HEX HEAD BOLT x 8 M16 FLAT WASHERS x 16 M16 NUTS x 8	316 S/S	2

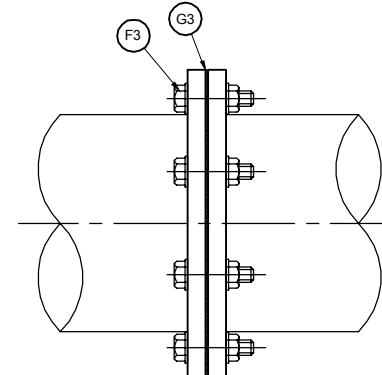
NOTE: BOLTS TO AS 1110
WASHERS TO AS 1237
NUTS TO AS 1112



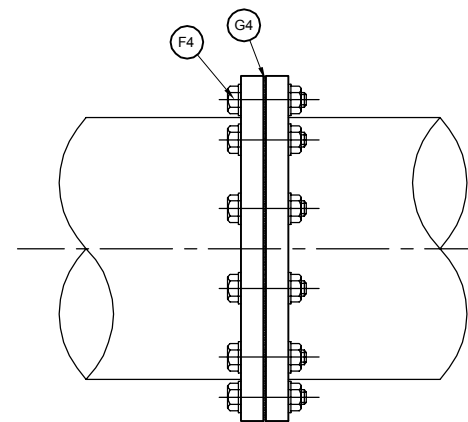
DN125 FLANGE ASSEMBLY
SCALE 1:5 FULL SIZE A1 SHEET



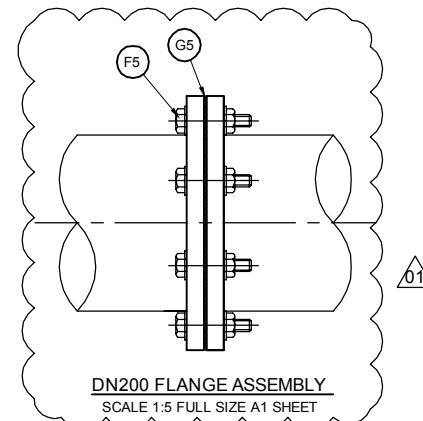
DN200 FLANGE ASSEMBLY
SCALE 1:5 FULL SIZE A1 SHEET



DN250 FLANGE ASSEMBLY
SCALE 1:5 FULL SIZE A1 SHEET



DN300 FLANGE ASSEMBLY
SCALE 1:5 FULL SIZE A1 SHEET

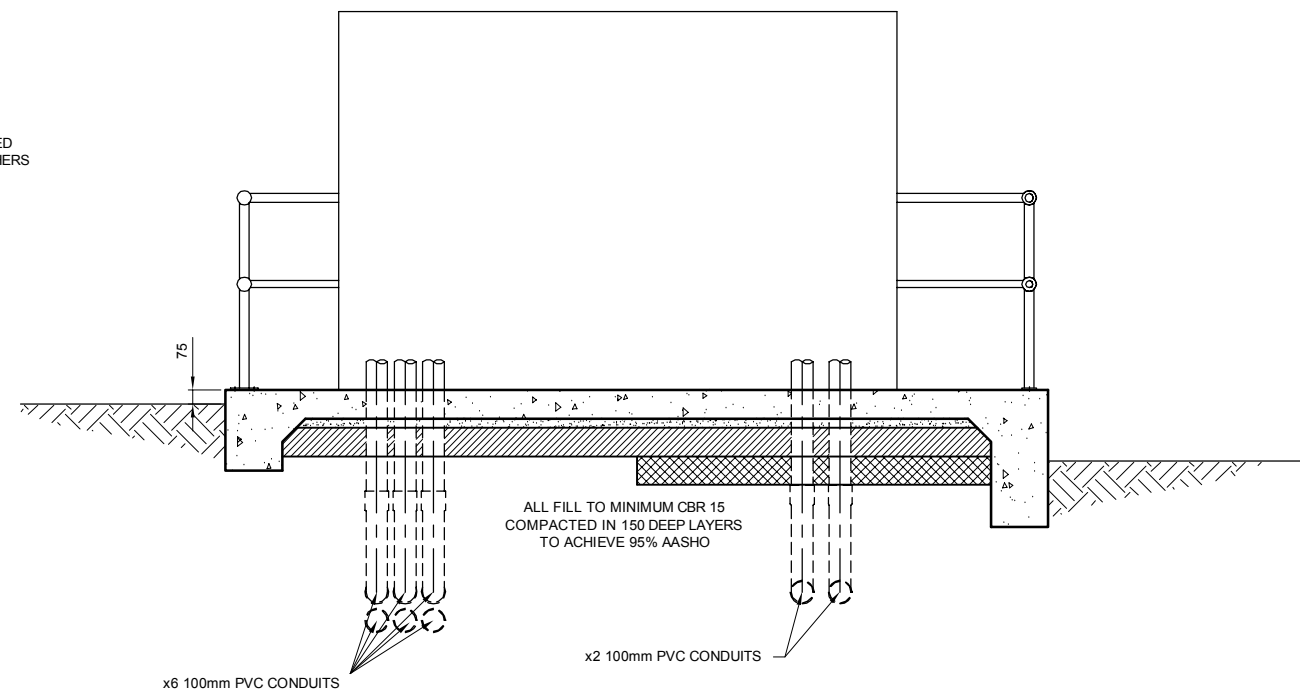
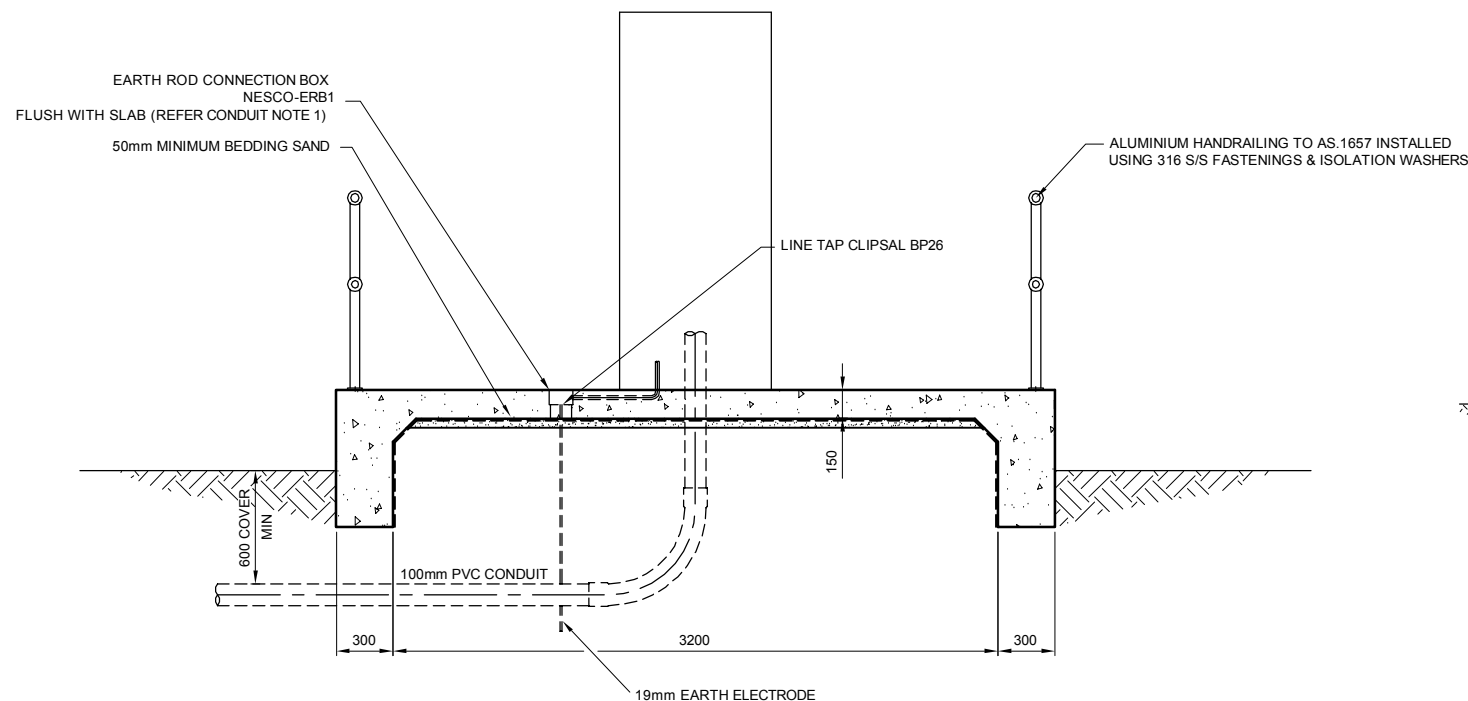
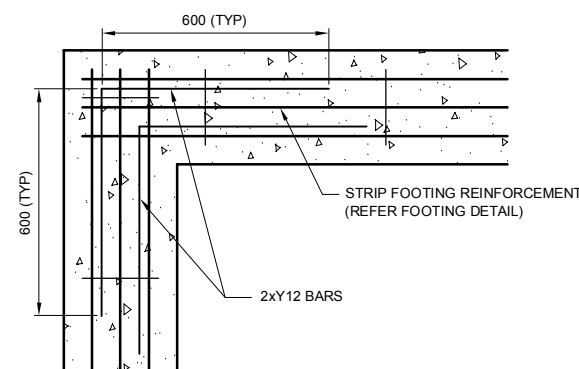
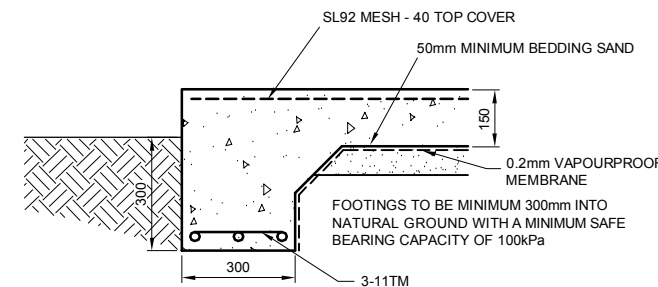
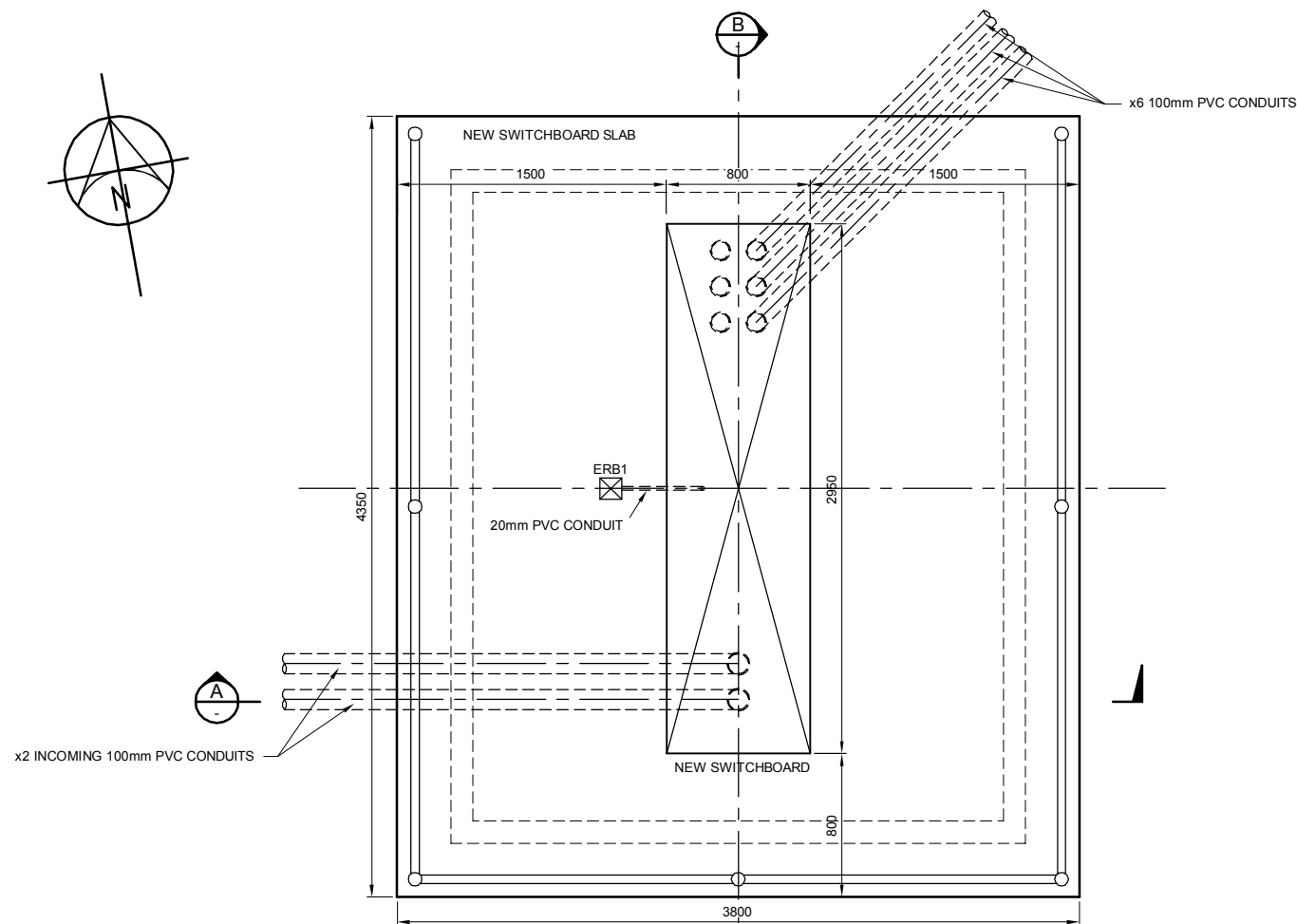


DN200 FLANGE ASSEMBLY
SCALE 1:5 FULL SIZE A1 SHEET

AS CONSTRUCTED

0 50 100 200 300
Full Size 1:5 ; Half Reduction 1:10
SCALE (mm)

FUNDING				DRAFTED		S.WILKINSON		D.DAKIN		ASSET/PROJECT		DRAWING TITLE		SHEET No. OF	
DESIGN W.O. No.				DRAFTING CHECK		D.DAKIN		DESIGN		HOPKINS STREET BEAUDESERT		PIPEWORK SCHEDULE		QUEENSLAND URBAN UTILITIES DRAWING No.	
CONSTRUCTION W.O. No.				CAD FILE		570256043.DWG		A.THIRIS		3325 12/01/12				486/5/7-0256-043	
FUNDED BY B.C.C. (✓) EXTERNAL ()				B.C.C. FILE No.		486/5/7-0256-043		DESIGN CHECK		R.P.E.Q. No. DATE		FIELD SERVICES DELEGATE DATE		AMEND.	
														01	



CONCRETING NOTES

1. A NEW BASE SLAB SHALL BE POURED TO PROVIDE A STABLE LEVEL PLATFORM FOR THE NEW SWITCHBOARD
2. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH CURRENT AUSTRALIAN STANDARDS CONCRETE STRUCTURES CODE AS3600-2009 AND THE BRISBANE WATER REFERENCE SPECIFICATION FOR CONCRETE WORK PSE-SSS002
3. ALL CONCRETE SHALL BE GRADE N32. THE MAXIMUM SIZE OF AGGREGATE IN THE CONCRETE SHALL BE 20mm
4. EXPOSED EDGING SHALL BE FINISHED WITH AN ARRIS
5. PENETRATIONS FOR CONDUITS STUBS SHALL BE ALLOWED FOR IN ACCORDANCE WITH CONDUIT LAYOUT
6. THE CONTRACTOR SHALL IDENTIFY ALL THE SERVICES IN THE IMMEDIATE AREA THAT MAY BE AFFECTED BY THE INSTALLATION OF THE NEW SLAB AND CONDUITS. THESE SERVICES SHALL BE PROTECTED AND MAINTAINED
7. HOLES TO BE CORED THROUGH DRY WELL/VALVE PIT WALLS. JOINTS TO BE SEALED WITH APPROVED HYDROPHILIC SEAL AROUND CONDUITS

FOOTING NOTES

1. TO BE EXCAVATED TO DEPTHS AND WIDTHS AS SHOWN. ROCK TO BE SCABBLED OUT IF MET WITH. EXCAVATIONS TO BE KEPT CLEAR OF WATER AND DEBRIS. SOFT SPOTS TO BE DUG OUT AND MADE GOOD. CONCRETE TO BE N32 x 75 SLUMP WELL VIBRATED DURING POUR
2. STRIP OFF ALL VEGETATION, RUBBISH & TOPSOIL CONTAINING ORGANIC OR ROOT MATTER FROM THE AREA OF THE WORKS AND REMOVE FROM SITE

REINFORCEMENT NOTES

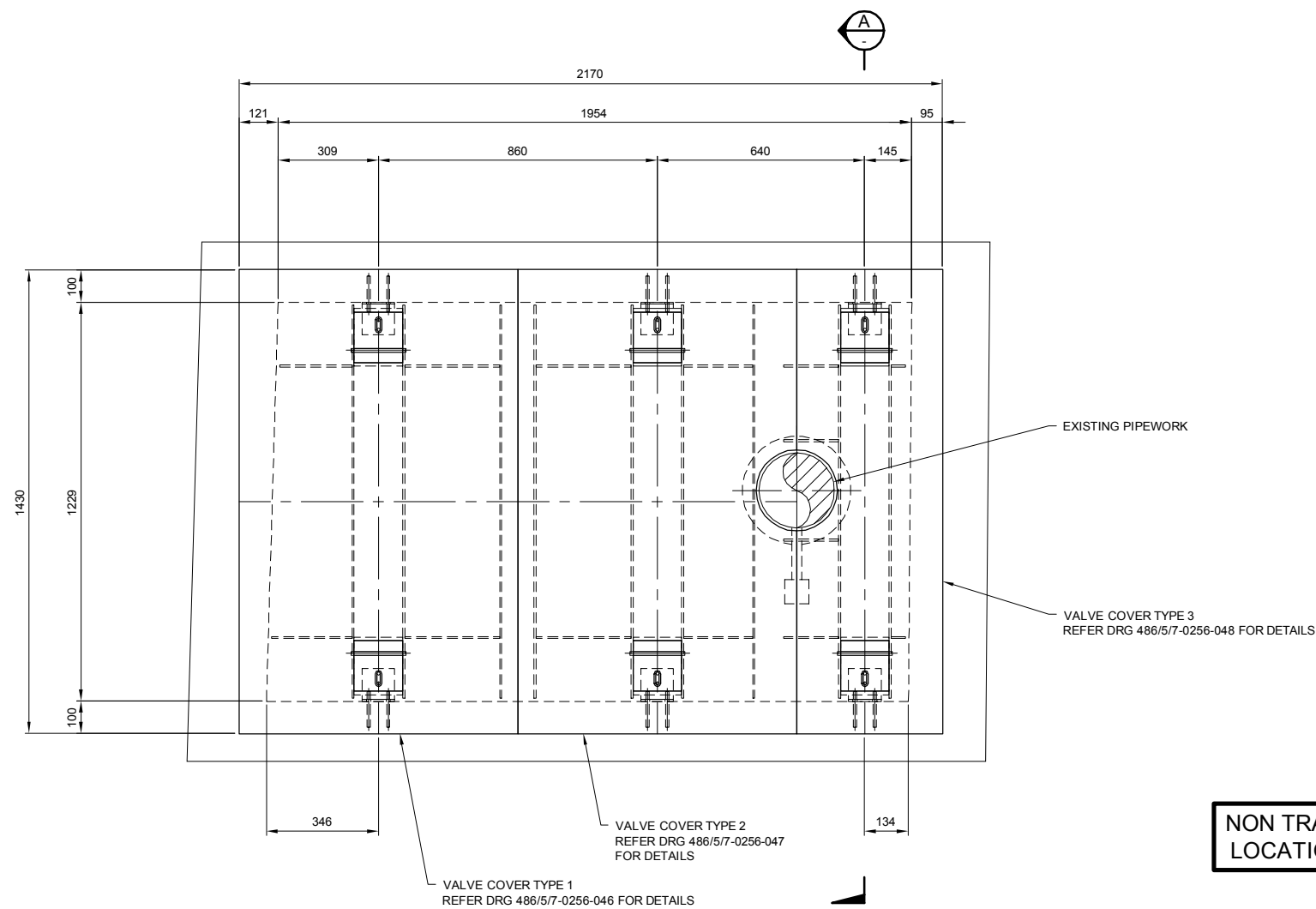
1. TO BE STRUCTURAL GRADE DEFORMED BARS OR HARD DRAWN STEEL WIRE TO AS1302, AS1303 & AS1304. AT SPLICERS BARS TO OVERLAP A MIN 40 BAR DIAMETERS AND STEEL MESH OVERLAP 2 PARALLEL WIRES
2. ALL REINFORCEMENT TO BE ACCURATELY POSITIONED BY PLASTIC TIPPED BAR CHAIRS TO ACHIEVE COVER

CONDUIT NOTES

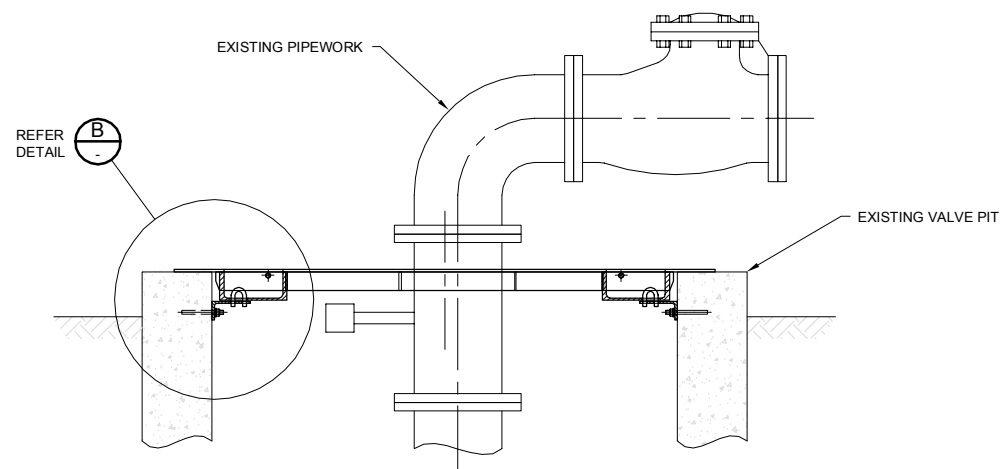
1. PVC-HEAVY DUTY ELECTRICAL CONDUITS (ORANGE) CASED INTO NEW CONCRETE SWITCHBOARD SLAB. ALL CONDUITS FITTED WITH LONG RADIUS BENDS, MINIMUM DEPTH 500mm. ALL CONDUIT STUBS FITTED WITH END CAPS TO PREVENT THE INGRESS OF MOISTURE AND SOIL. SPACE/FUTURE CONDUITS TO EXTEND 300mm BEYOND SLAB EDGE AND FITTED WITH END CAPS.
2. NESCO ERB1 EARTH ROD CONNECTION BOX TO BE CAST IN AND FLUSH WITH SLAB. ALLOW A MINIMUM OF 50mm CLEARANCE FROM CONNECTION BOX LID TO THE BASE OF SWITCHBOARD. 100mm CONDUIT CAST VERTICALLY IN SLAB TO EXTEND FROM INSIDE CONNECTION BOX DOWN TO GROUND LEVEL. THIS CONDUIT ALLOWS FOR THE INSTALLTION OF EARTH ROD PIT. 20mm CONDUIT FOR EARTH IS TO BE MARRIED INTO THIS CONNECTION BOX PRIOR TO POURING ANY CONCRETE WORKS. REFER DETAIL.

AS CONSTRUCTEDSECTION A
SCALE 1:20 FULL SIZE A1 SHEET0 100 200 400 600
Full Size 1:10; Half Reduction 1:20
SCALE (mm)0 200 400 800 1200
Full Size 1:20; Half Reduction 1:40
SCALE (mm)SECTION B
SCALE 1:20 FULL SIZE A1 SHEETQUEENSLAND
UrbanUtilities

FUNDING		DESIGN		DRAFTING		ASSET/PROJECT		DRAWING TITLE		SHEET No. OF	
DESIGN W.O. No.		DRAFTING CHECK	D.DAKIN	DRAFTING CHECK	D.DAKIN	MANAGER ENGINEERING SERVICES	DATE	SWITCHBOARD SLAB		486/5/7-0256-044	01
CONSTRUCTION W.O. No.		CAD FILE	570256044.DWG	CAD FILE	570256044.DWG	FIELD SERVICES DELEGATE	DATE	AND CONDUIT DETAILS			
FUNDED BY B.C.C. (✓)	EXTERNAL ()	B.C.C. FILE No.	486/5/7-0256-044	B.C.C. FILE No.	486/5/7-0256-044						

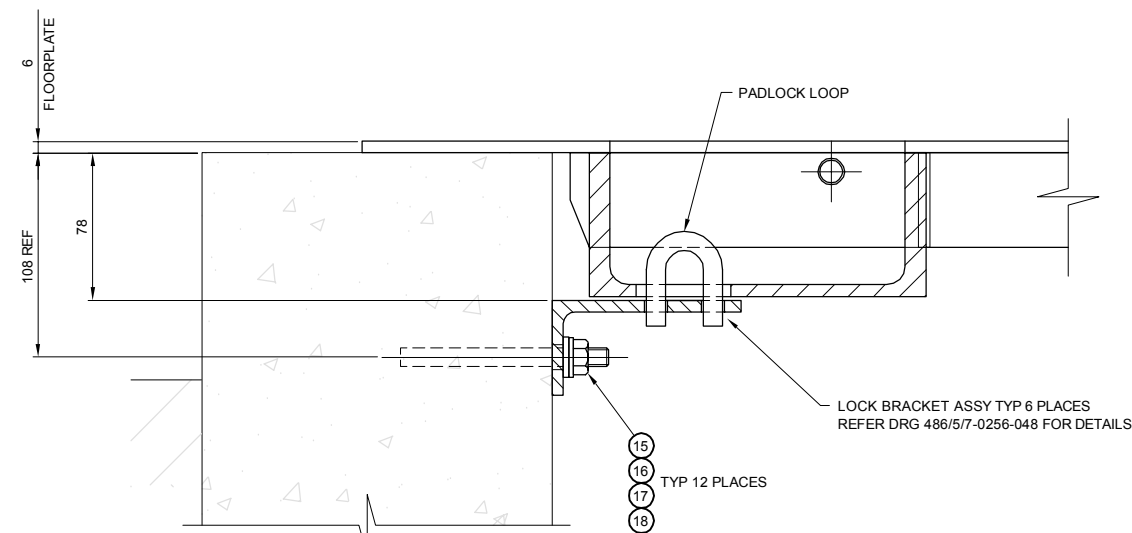


PLAN
SCALE 1:10 FULL SIZE A1 SHEET



SECTION A
SCALE 1:10 FULL SIZE A1 SHEET

NON TRAFFICABLE
LOCATIONS ONLY



DETAIL B
SCALE 1:2 FULL SIZE A1 SHEET

ITEM	QTY	DESCRIPTION	LENGTH	GRADE	REF. / REMARKS
1	1	860 x 6 THK FLOOR PLATE	1430	5052 H0	
2	1	860 x 6 THK FLOOR PLATE	1430	5052 H0	
3	1	450 x 6 THK FLOOR PLATE	1430	5052 H0	
4	6	178 x 76 x 6.3 PFC	150	6082 T5	
5	9	50 x 5 FL	1210	6060 T5	
6	4	50 x 5 FL	293	6060 T5	
7	1	50 x 5 FL	249	6060 T5	
8	1	50 x 5 FL	224	6060 T5	
9	1	50 x 5 FL	213	6060 T5	
10	1	50 x 5 FL	169	6060 T5	
11	1	50 x 5 FL	144	6060 T5	
12	6	Ø12 BAR	170	6060 T5	
13	6	100 x 50 x 6 UA	190	6060 T5	
14	6	Ø10 BAR	107	6060 T5	
15	12	M10 CHEMICAL ANCHOR	130	SS 316	RAMSET OR EQUIVALENT
16	12	M10 HEX NUT	-	SS 316	
17	12	M10 PLAIN WASHER	-	SS 316	
18	12	M10 ISOLATION WASHER	-	NYLON	ZILLMERE ENG. P/N ZNSW10

NOTES:

- PAINTING: THE TOP SURFACE OF THE COVER IS TO BE PAINTED WITH ANTI-SLIP COATING. THE COLOUR SHALL BE DULUX MIST GREEN 36648 OR EQUIVALENT. THE COATING SHALL BE APPLIED TO MANUFACTURER'S REQUIREMENTS AND SHALL BE EITHER :-
 - 100% SOLIDS MOISTURE CURING MDI BASED POLYURETHANE INCLUDING A CRUMBED RUBBER BINDER (SUCH AS HUNTSMAN DALTOBOND NEOTOP)
 - A LIQUID APPLIED ACRYLIC - POLYURETHANE COMPOSITE COATING INCLUDING A 16/30 CRUMBED RUBBER (SUCH AS NEOFERMA NEOTOP)
- WHERE THE ALUMINIUM FRAME MAY BE IN CONTACT WITH CONCRETE THE ALUMINIUM IS TO BE PAINTED WITH A MINIMUM OF TWO COATS OF BITUMENOUS PAINT OR QUU APPROVED ALTERNATIVE
- FOR LOCALITY PLAN REFER TO DRG 486/5/7-0256-045
- FOR GENERAL NOTES REFER TO DRG 486/5/7-0256-032
- THIS DRG TO BE READ IN CONJUNCTION WITH DRGS 486/5/7-0256-046 AND 486/5/7-0256-048

AS CONSTRUCTED

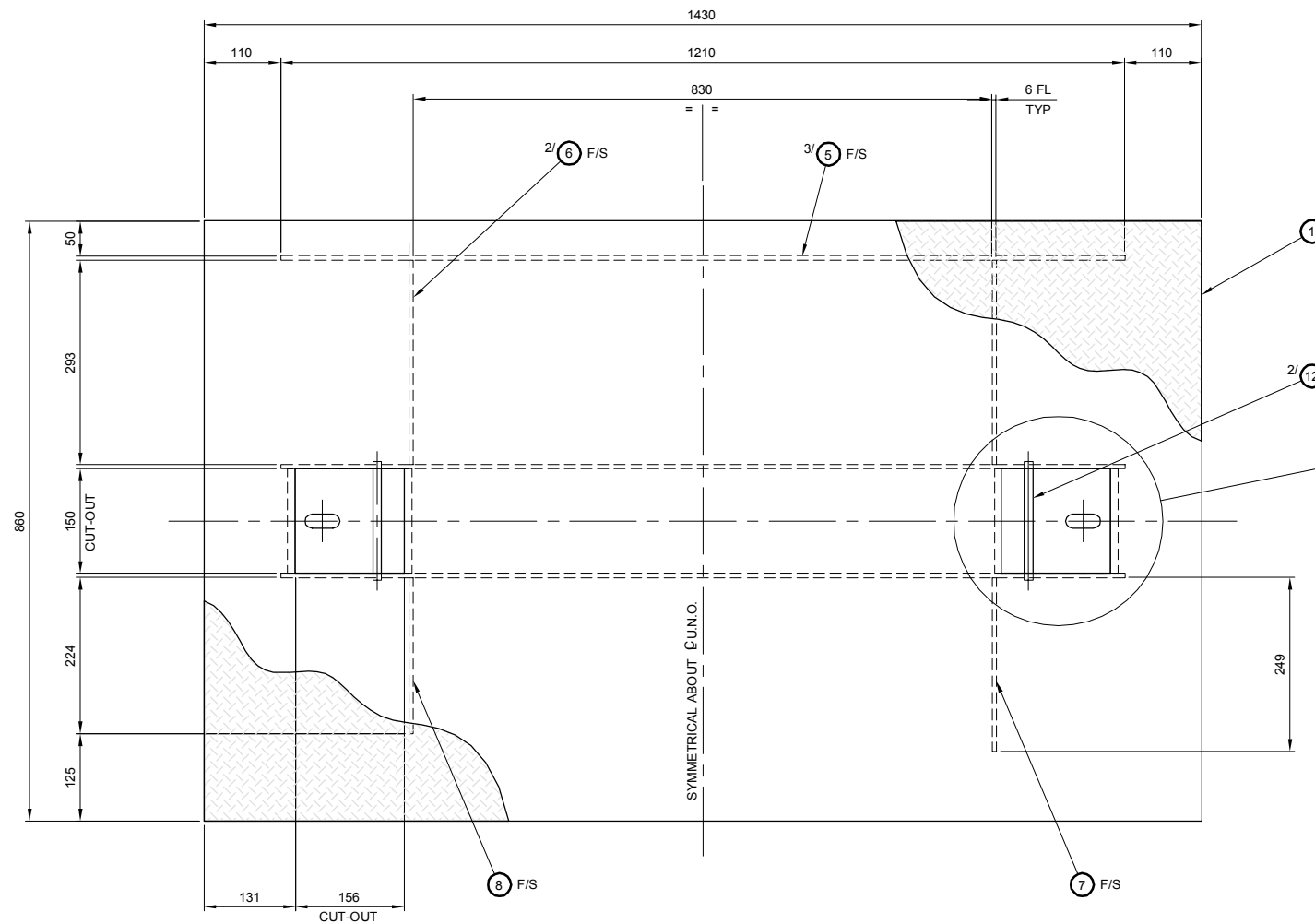


FUNDING				DRAFTED				ASSET/PROJECT				DRAWING TITLE			
DESIGN W.O. No.		S.W.	A.T.	DRAFTING CHECK	D.DAKIN	DESIGN	D.DAKIN	MANAGER ENGINEERING SERVICES				VALVE PIT COVERS			
CONSTRUCTION W.O. No.				CAD FILE	570256045.DWG	A.THIRIS	3325	FIELD SERVICES DELEGATE				GENERAL ARRANGEMENT			
FUNDED BY B.C.C. (✓)	EXTERNAL ()			B.C.C. FILE No.	486/5/7-0256-045	DESIGN CHECK									

SHEET No.	OF	DRAWING TITLE	AMEND.
486/5/7-0256-045	01	VALVE PIT COVERS GENERAL ARRANGEMENT	

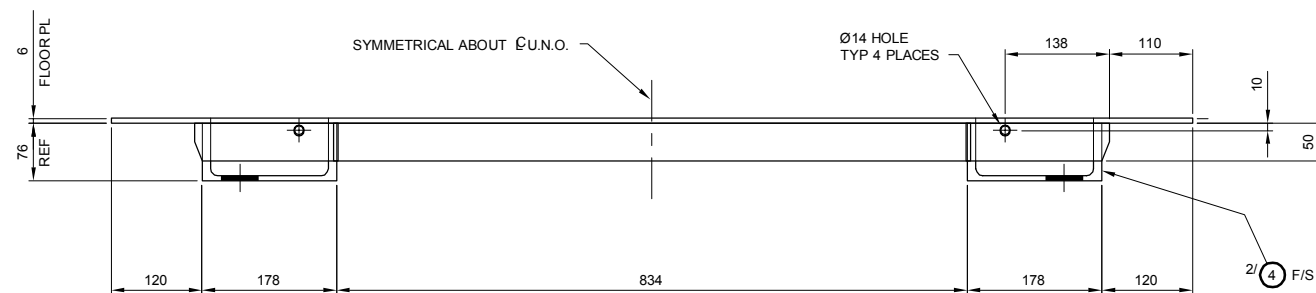
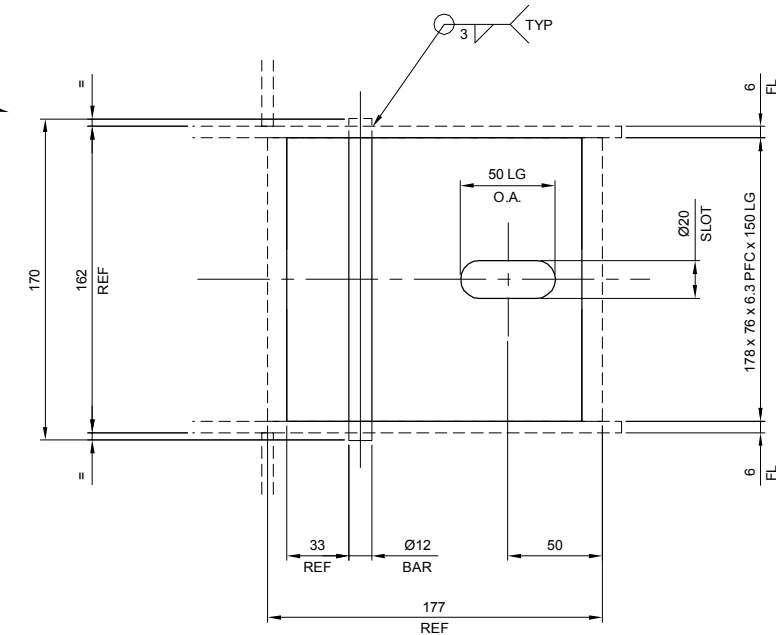
NOTES:

1. FOR GENERAL ARRANGEMENT REFER TO DRG 486/5/7-0256-036
2. FOR PARTS LIST REFER TO DRG 486/5/7-0256-045
3. FOR GENERAL NOTES REFER TO DRG 486/5/7-0256-032



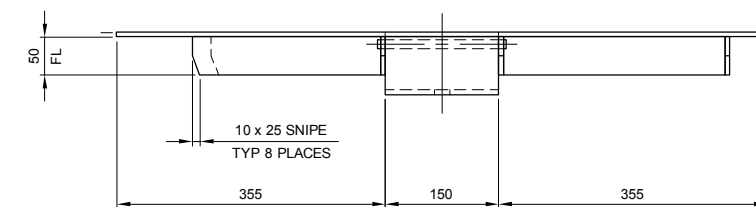
PLAN

SCALE 1:5 FULL SIZE A1 SHEET



SIDE ELEVATION

SCALE 1:5 FULL SIZE A1 SHEET



END ELEVATION

SCALE 1:5 FULL SIZE A1 SHEET

VALVE COVER TYPE 1

1 REQ'D

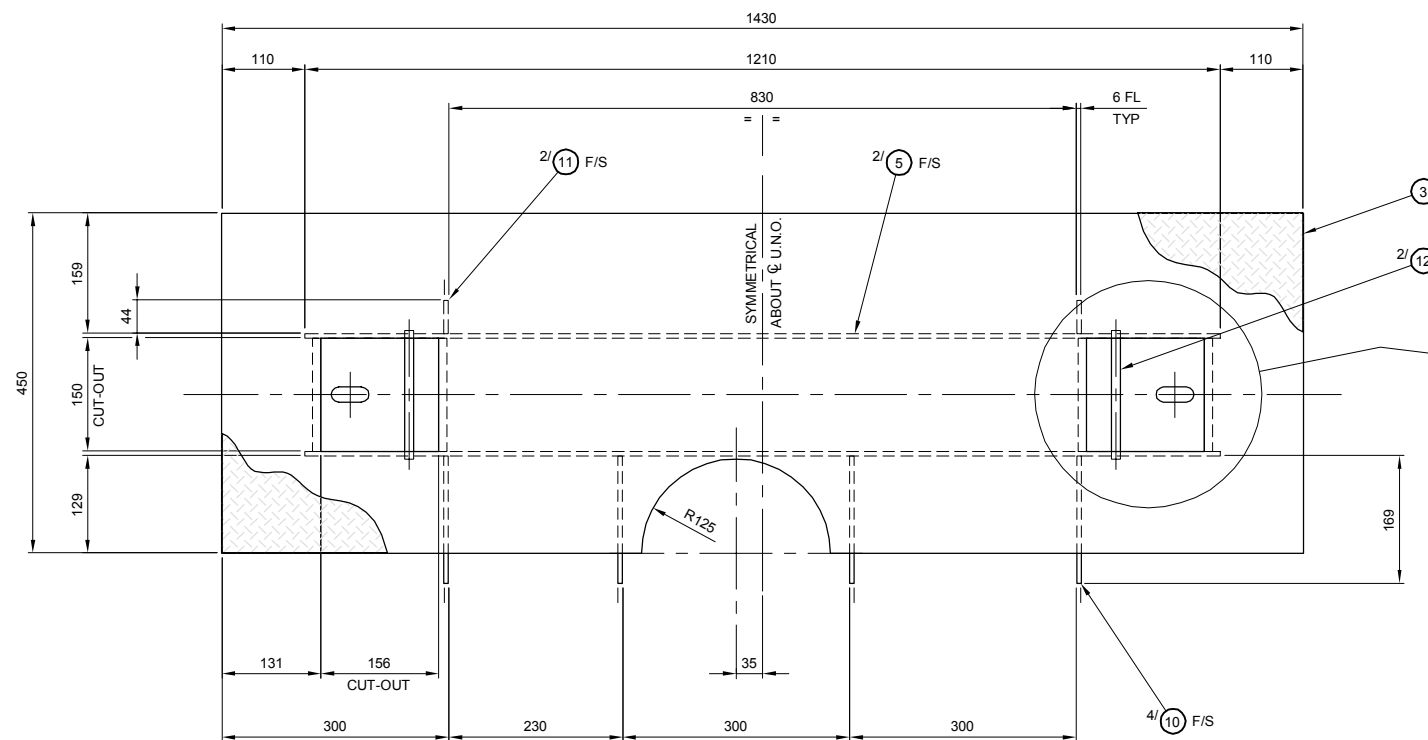
AS CONSTRUCTED



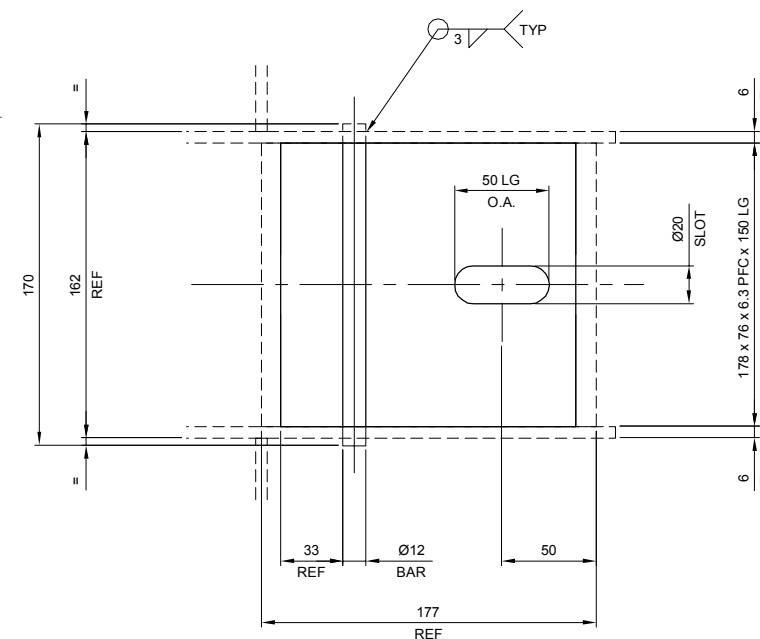
No.		DATE	AMENDMENT	DRAFT	APPR	FUNDING	DRAFTED	A. WOOLLEY	D. DAKIN	DESIGN	R.P.E.Q. No.	DATE	MANAGER ENGINEERING SERVICES	DATE	ASSET/PROJECT	DRAWING TITLE	SHEET No.	OF	QUEENSLAND URBAN UTILITIES DRAWING No.	AMEND.
01	15.06.12	AS CONSTRUCTED		S.W.	A.T.	CONSTRUCTION W.O. No.	DRAFTING CHECK	D. DAKIN	DESIGN	002	3325	12/01/12			HOPKINS STREET BEAUDESERT	VALVE PIT COVER DETAILS	486/5/7-0256-046	01	486/5/7-0256-046	01
No.		DATE	AMENDMENT	DRAFT	APPR	FUNDING	DRAFTED	A. WOOLLEY	D. DAKIN	DESIGN	R.P.E.Q. No.	DATE	MANAGER ENGINEERING SERVICES	DATE	ASSET/PROJECT	DRAWING TITLE	SHEET No.	OF	QUEENSLAND URBAN UTILITIES DRAWING No.	AMEND.
						FUNDED BY B.C.C. (✓) EXTERNAL ()														

NOTES:

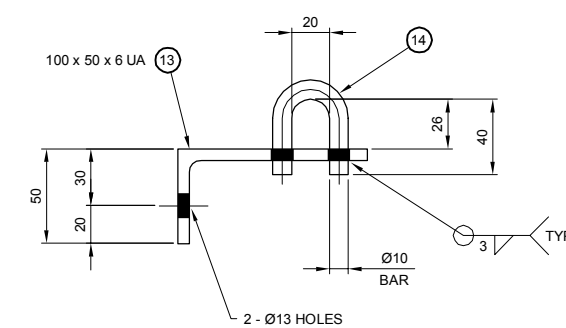
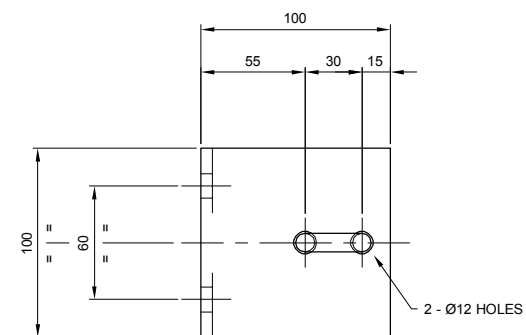
1. FOR LOCALITY PLAN REFER TO DRG 486/5/7-0256-036
2. FOR PARTS LIST REFER TO DRG 486/5/7-0256-045
3. FOR GENERAL NOTES REFER TO DRG 486/5/7-0256-032



PLAN
SCALE 1:5 FULL SIZE A1 SHEET

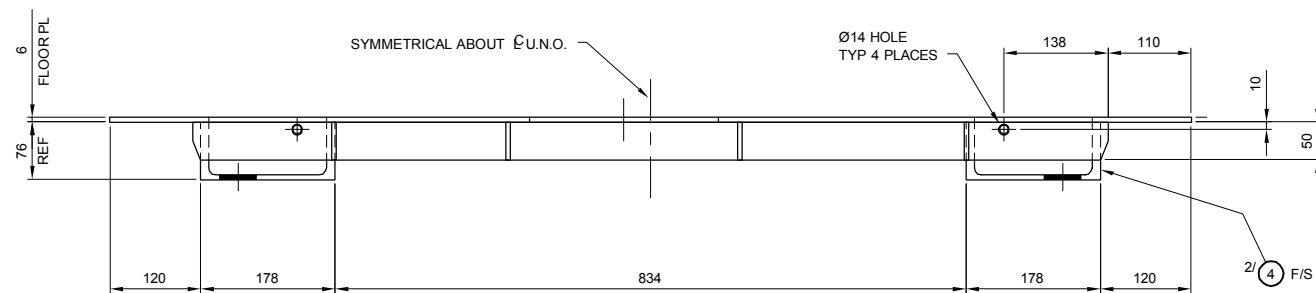


END ELEVATION
SCALE 1:5 FULL SIZE A1 SHEET



LOCK BRACKET ASSY

6 REQ'D
SCALE 1:2



SIDE ELEVATION
SCALE 1:5 FULL SIZE A1 SHEET

VALVE COVER TYPE 3

1 REQ'D

AS CONSTRUCTED

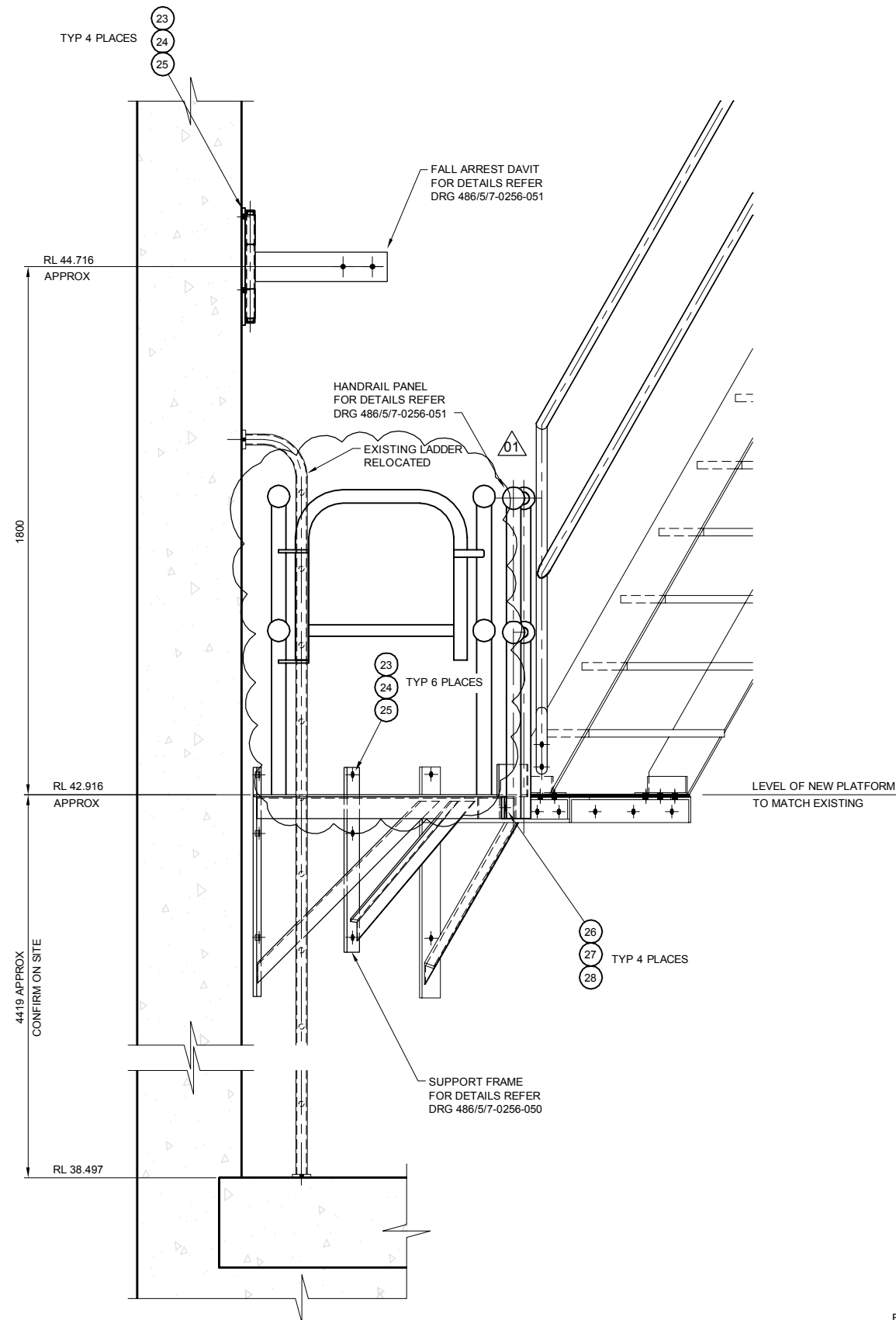


FUNDING				DRAFTED				DESIGN				ASSET/PROJECT				DRAWING TITLE				SHEET No. OF			
DESIGN W.O. No.				DRAFTING CHECK				R.P.E.Q. No.				MANAGER ENGINEERING SERVICES				VALVE PIT COVER DETAILS				SHEET No. OF			
CONSTRUCTION W.O. No.				CAD FILE				3325				HOPKINS STREET BEAUDESERT				SHEET 3 OF 3				486/5/7-0256-048			
FUNDED BY B.C.C. (✓) EXTERNAL ()				B.C.C. FILE No.				R.P.E.Q. No.				FIELD SERVICES DELEGATE								AMEND.			
																				01			

NOTES:

- 1 FOR LOCALITY PLAN REFER TO DRG 486/5/7-0256-039
- 2 FOR SITE GENERAL ARRANGEMENT REFER TO DRG 486/5/7-0256-031
- 3 FOR GENERAL NOTES REFER TO DRG 486/5/7-0256-032
- 4 THIS DRG TO BE READ IN CONJUNCTION WITH DRGS 486/5/7-0256-050 & 486/5/7-0256-051

ITEM	QTY	DESCRIPTION	LENGTH	GRADE	REF. / REMARKS
1	1	75 x 6 EA	990	300+	DETAIL DRG 486/5/7-0256-050
2	1	75 x 6 EA	832	300+	DETAIL DRG 486/5/7-0256-050
3	1	75 x 6 EA	486	300+	DETAIL DRG 486/5/7-0256-050
4	1	75 x 6 EA	579	300+	DETAIL DRG 486/5/7-0256-050
5	1	75 x 6 EA	197	300+	DETAIL DRG 486/5/7-0256-050
6	1	50 x 6 EA	876	300+	DETAIL DRG 486/5/7-0256-050
7	1	50 x 6 EA	671	300+	DETAIL DRG 486/5/7-0256-050
8	1	90 x 12 FL	780	300+	DETAIL DRG 486/5/7-0256-050
9	1	90 x 12 FL	630	300+	DETAIL DRG 486/5/7-0256-050
10	1	867 x 6 FLOOR PLATE	1112	250	
11	1	110 x 6 FL	683	300+	
12	1	150 x 12 FL	400	300+	
13	1	100 x 12 FL	450	300+	
14	2	20 x 6 FL	100	300+	
15	1	Ø25 BAR	380	300+	DETAIL DRG 486/5/7-0256-051
16	2	25 NB PIPE - SCHED 80	100	350	
17	1	25 NB PIPE - SCHED 80	150	350	
18	1	Ø4 ROLL PIN	35	SS 316	
19	1	Ø42.4 CHS x 3.2 W.T.	420	350	MONOWILLS OR EQUIVALENT
20	1	Ø33.7 CHS x 3.2 W.T.	420	350	MONOWILLS OR EQUIVALENT
21	1	STANCHION - TYPE 'S' - DL50	1055	GALV	MONOWILLS OR EQUIVALENT
22	1	STANCHION - TYPE 'S' - DR50	1055	GALV	MONOWILLS OR EQUIVALENT
23	10	M16 CHEMICAL ANCHOR	190	SS316	RAMSET OR EQUIVALENT
24	10	M16 HEX NUT	-	SS 316	
25	10	M16 PLAIN WASHER	-	SS316	
26	4	M16 HEX HD BOLT	40	4.6 GALV	
27	4	M16 HEX NUT	-	4.6 GALV	
28	4	M16 PLAIN WASHER	-	4.6 GALV	
29	1	25 NIB PIPE - SCHED 80	5	350	

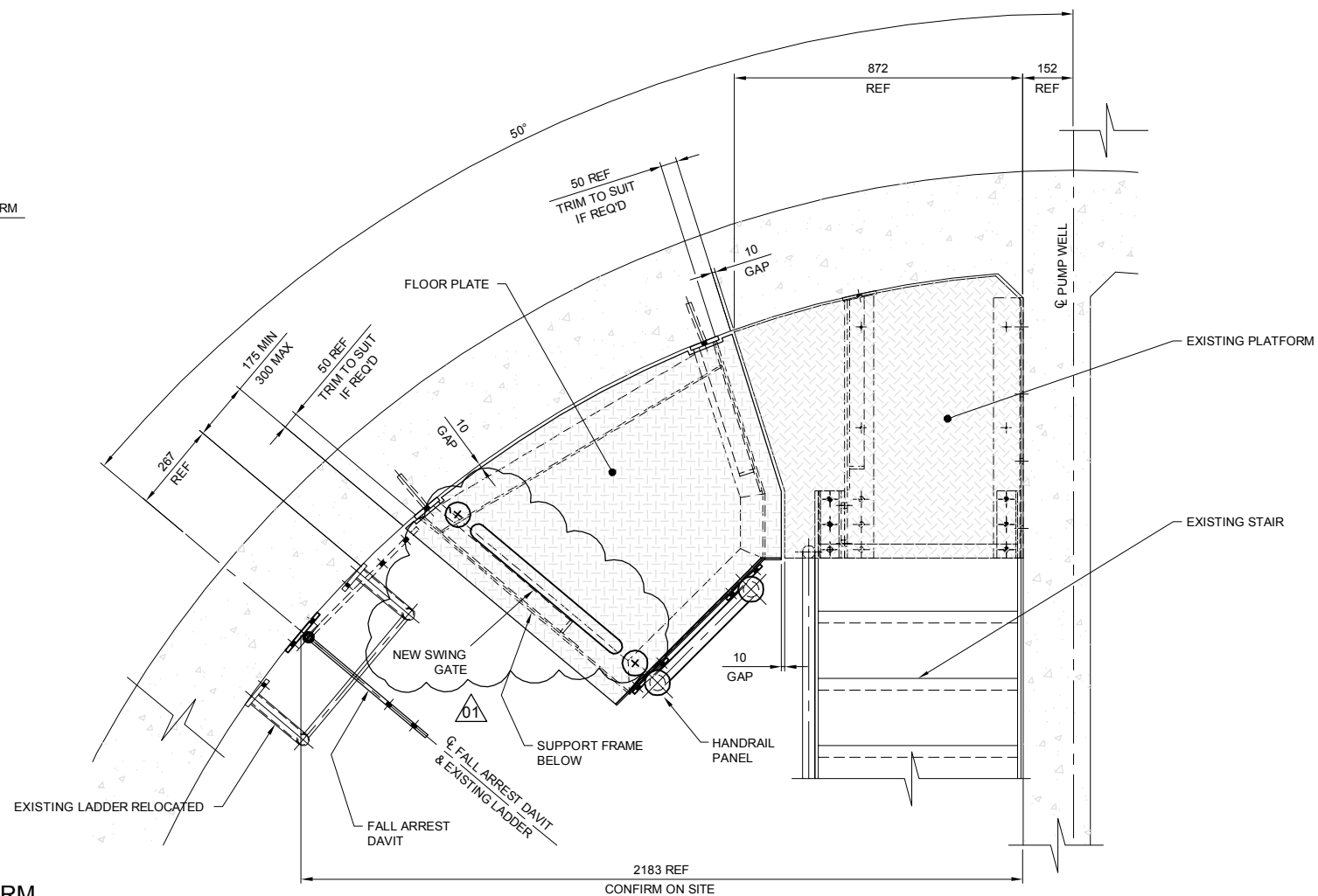


DETAIL 1
SCALE 1:10 FULL SIZE A1 SHEET

AS CONSTRUCTED

0 100 200 400 600
Full Size 1:10; Half Reduction 1:20
SCALE (mm)

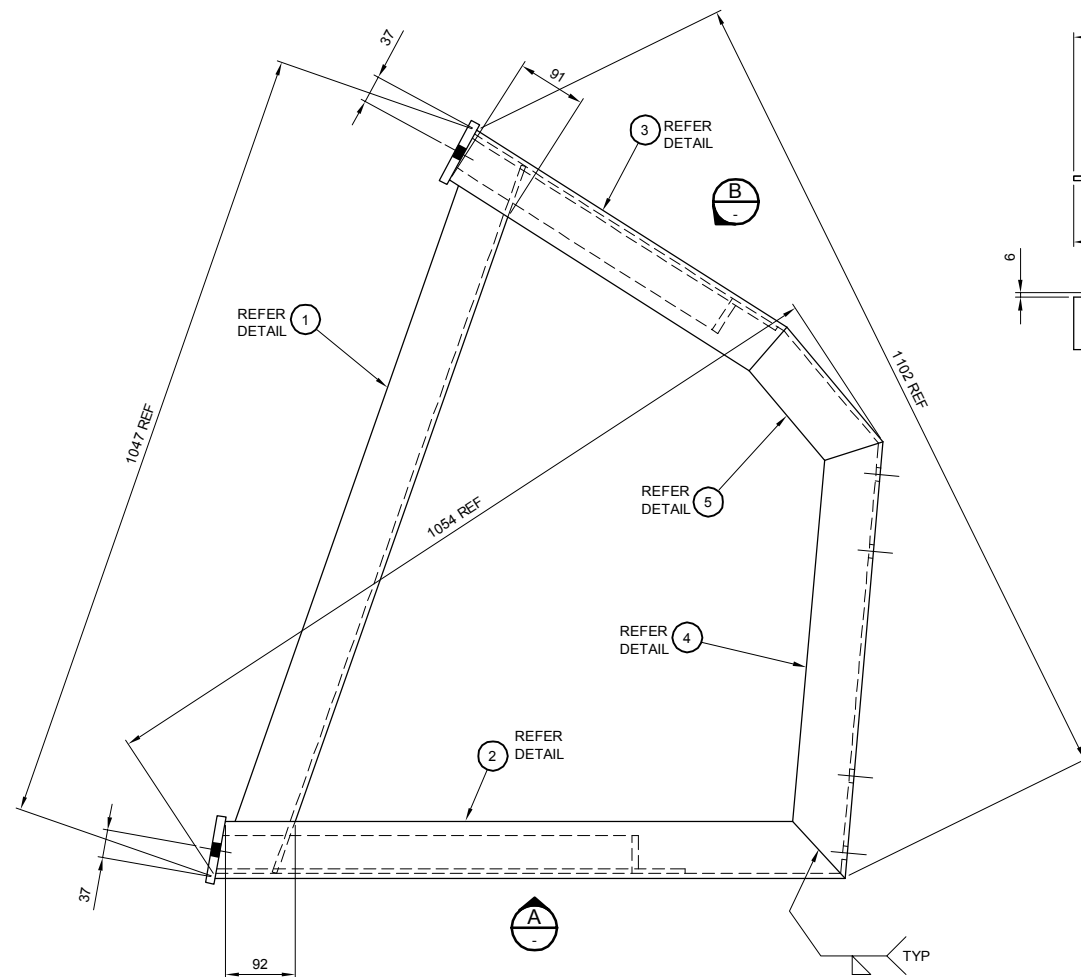
ACCESS PLATFORM
GENERAL ARRANGEMENT
1 REQ'D



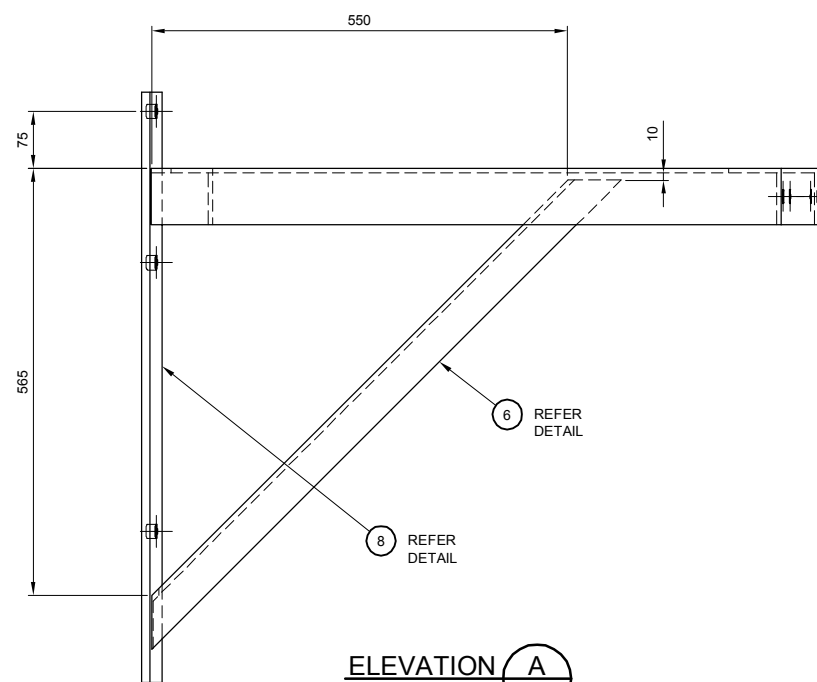
SECTION A
SCALE 1:10 FULL SIZE A1 SHEET



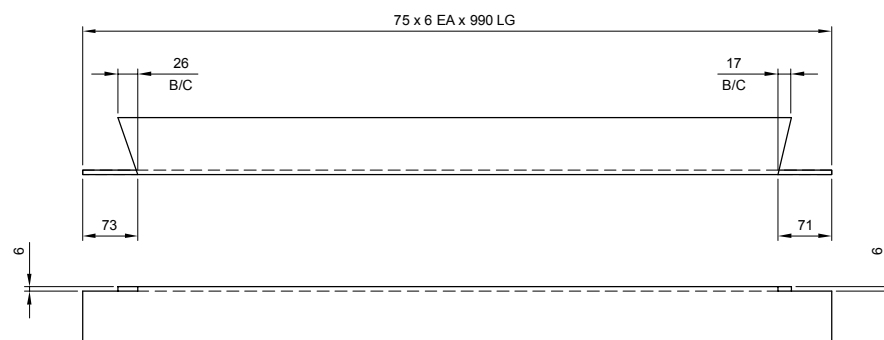
No.	DATE	AMENDMENT	DRAFT	APPR	FUNDING	DRAFTED	A. WOOLLEY	D.DAKIN	R.P.E.Q. No.	MANAGER ENGINEERING SERVICES	DATE	ASSET/PROJECT	DRAWING TITLE	SHEET No.	1 OF 1	QUEENSLAND URBAN UTILITIES DRAWING No.	AMEND.
01	15.06.12	AS CONSTRUCTED	S.W.	A.T.	DESIGN W.O. No.	DRAFTING CHECK	D.DAKIN	DESIGN	3325	12/01/12		HOPKINS STREET BEAUDESERT	EXISTING PUMP STATION ACCESS PLATFORM GENERAL ARRANGEMENT	486/5/7-0256-049	01		
					CONSTRUCTION W.O. No.	CAD FILE	570256049.dwg	A.THRIS	3325	12/01/12							
					FUNDED BY B.C.C. (✓) EXTERNAL ()	B.C.C. FILE No.	486/5/7-0256-031	DESIGN CHECK									



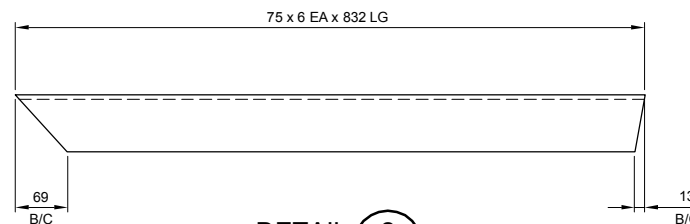
PLAN
SCALE 1:5 FULL SIZE A1 SHEET



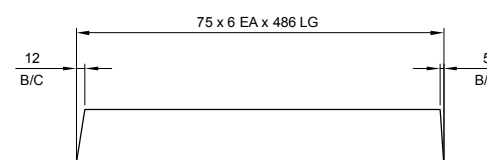
ELEVATION A
SCALE 1:10 FULL SIZE A1 SHEET



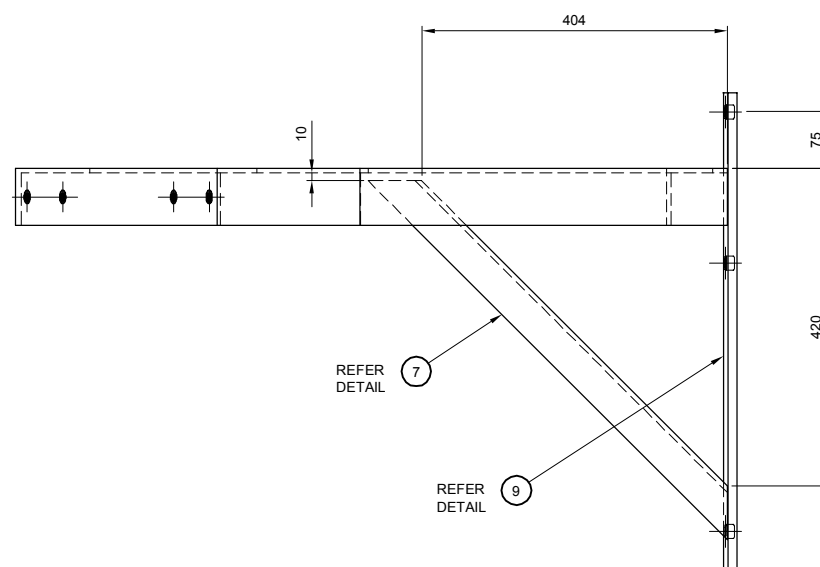
DETAIL 1
SCALE 1:5 FULL SIZE A1 SHEET
1 REQ'D



DETAIL 2
SCALE 1:5 FULL SIZE A1 SHEET
1 REQ'D

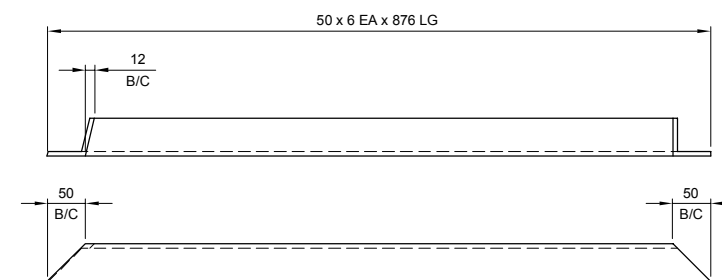


DETAIL 3
SCALE 1:5 FULL SIZE A1 SHEET
1 REQ'D

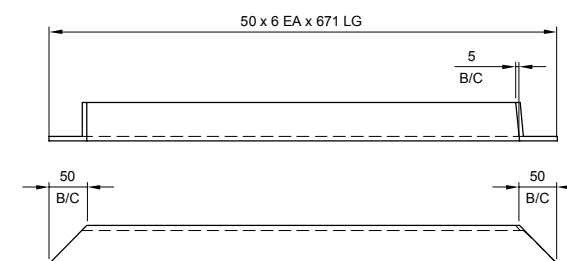


SUPPORT FRAME
1 REQ'D

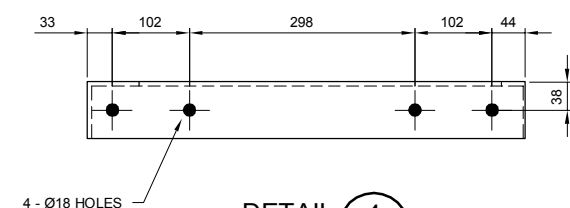
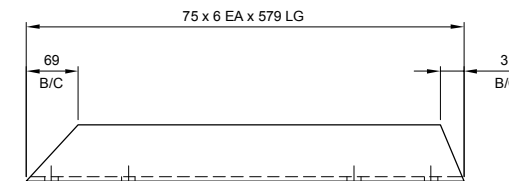
ELEVATION B
SCALE 1:10 FULL SIZE A1 SHEET



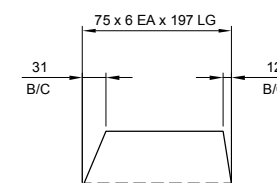
DETAIL 6
SCALE 1:5 FULL SIZE A1 SHEET
1 REQ'D



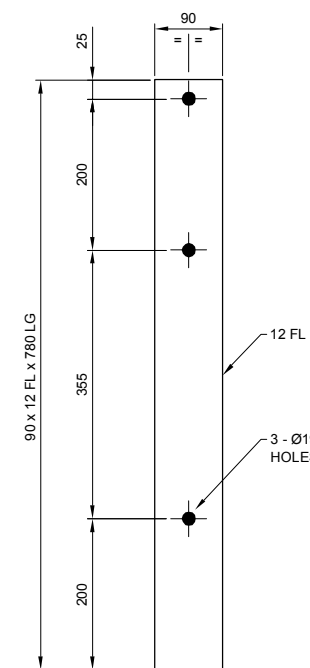
DETAIL 7
SCALE 1:5 FULL SIZE A1 SHEET
1 REQ'D



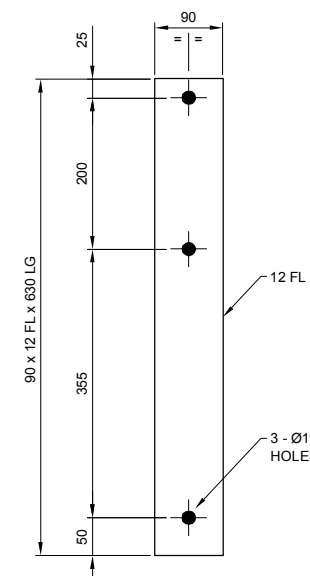
DETAIL 4
SCALE 1:5 FULL SIZE A1 SHEET
1 REQ'D



DETAIL 5
SCALE 1:5 FULL SIZE A1 SHEET
1 REQ'D



DETAIL 8
SCALE 1:5 FULL SIZE A1 SHEET
1 REQ'D



DETAIL 9
SCALE 1:5 FULL SIZE A1 SHEET
1 REQ'D

NOTES:

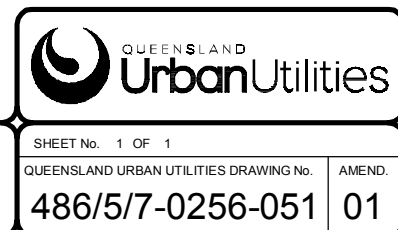
- 1 FOR GENERAL ARRANGEMENT REFER TO DRG 486/5/7-0256-049
- 2 FOR PARTS LIST REFER TO DRG 486/5/7-0256-049
- 3 FOR GENERAL NOTES REFER TO DRG 486/5/7-0256-032
- 4 ALL STEEL ITEMS TO BE HOT DIP GALVANISED

AS CONSTRUCTED

0 50 100 200 300
Full Size 1:5 : Half Reduction 1:10
SCALE (mm)

0 100 200 400 600
Full Size 1:10 : Half Reduction 1:20
SCALE (mm)

FUNDING				DRAFTED				ASSET/PROJECT				DRAWING TITLE			
DESIGN W.O. No.				A. WOOLLEY				HOPKINS STREET BEAUDESERT				EXISTING PUMP STATION ACCESS PLATFORM DETAILS - SHEET 1 OF 2			
CONSTRUCTION W.O. No.				D.DAKIN				MANAGER ENGINEERING SERVICES				SHEET No. 1 OF 1			
FUNDED BY B.C.C. (✓) EXTERNAL ()				570256050.dwg				DATE				486/5/7-0256-050			
B.C.C. FILE No.				486/5/7-0256-050				FIELD SERVICES DELEGATE				AMEND.			
DATE				12/01/12				DATE				01			

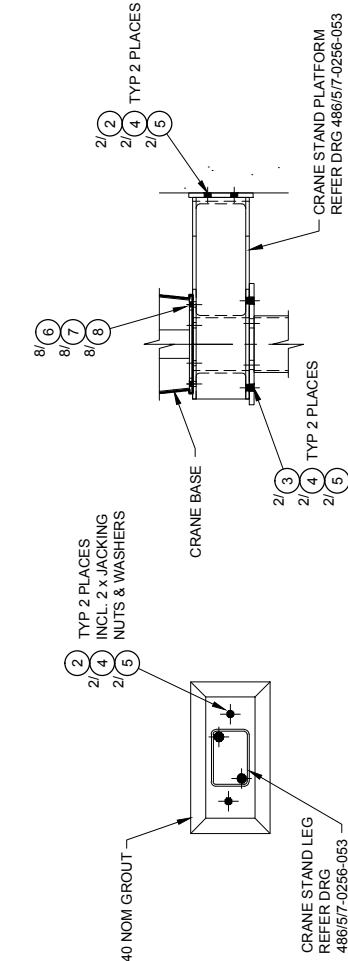


1 FOR GENERAL ARRANGEMENT REFER TO DRG 570256049
2 FOR PARTS LIST REFER TO DRG 570256049
3 FOR GENERAL NOTES REFER TO DRG 570256032
4 ALL STEEL ITEMS TO BE HOT DIP GALVANISED

ITEM	QTY	DESCRIPTION	LENGTH	GRADE	REF. / REMARKS
1	1	1.5T CRANE - KEVREK 1500	-	-	HYDRAULIC SLEW
2	8	M16 CHEMICAL ANCHOR	190	SS316	RAMSET OR EQUIVALENT
3	4	M16 HEX HD BOLT	50	SS316	
4	16	M16 HEX NUT	-	SS 316	
5	16	M16 PLAIN WASHER	-	SS316	
6	8	M12 HEX HD BOLT	40	8.8 GALV	
7	8	M12 HEX NUT	-	GALV	
8	6	M12 PLAIN WASHER	-	GALV	

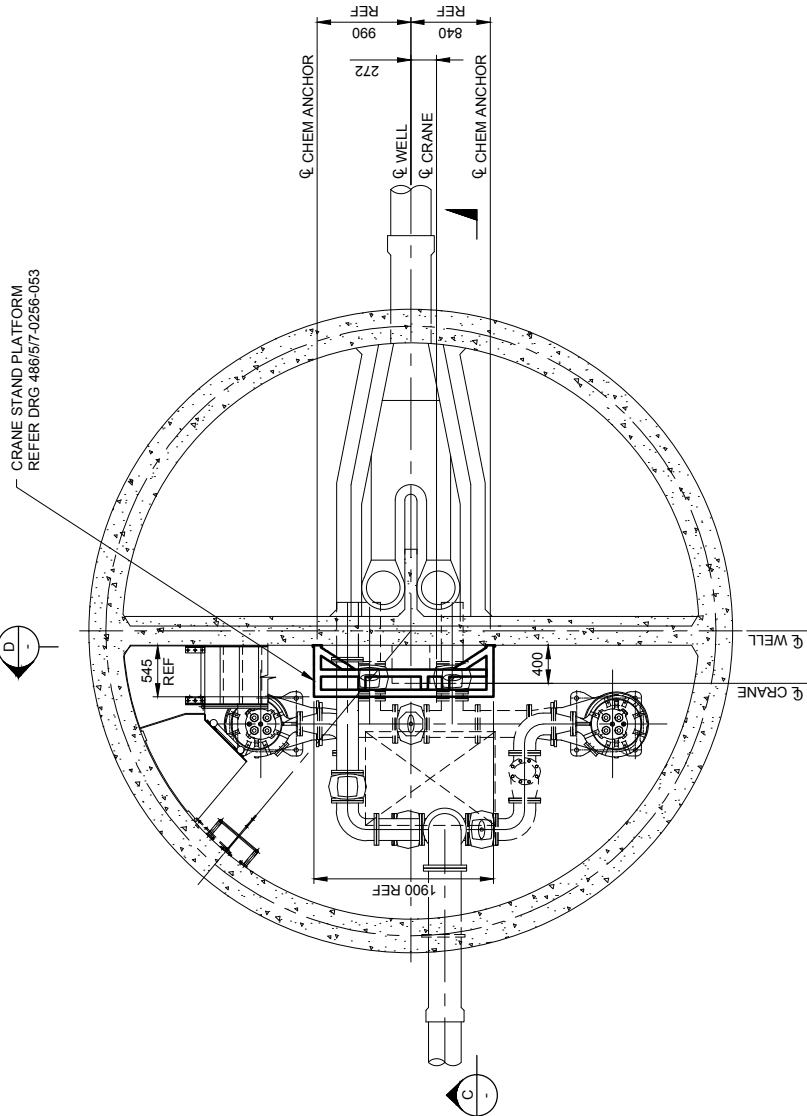
NOTES:

- FOR GENERAL NOTES REFER TO DRG.486/57-0256-032
- THIS DRG TO BE READ IN CONJUNCTION WITH DRG 486/57-0256-053

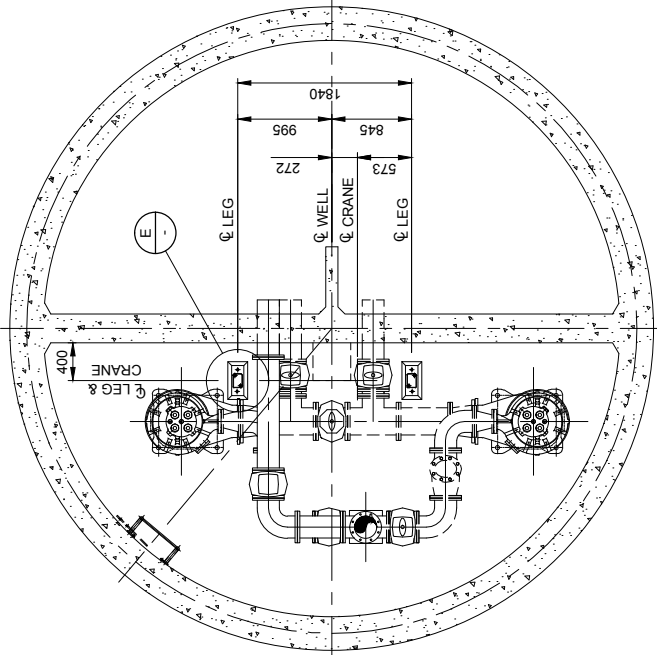
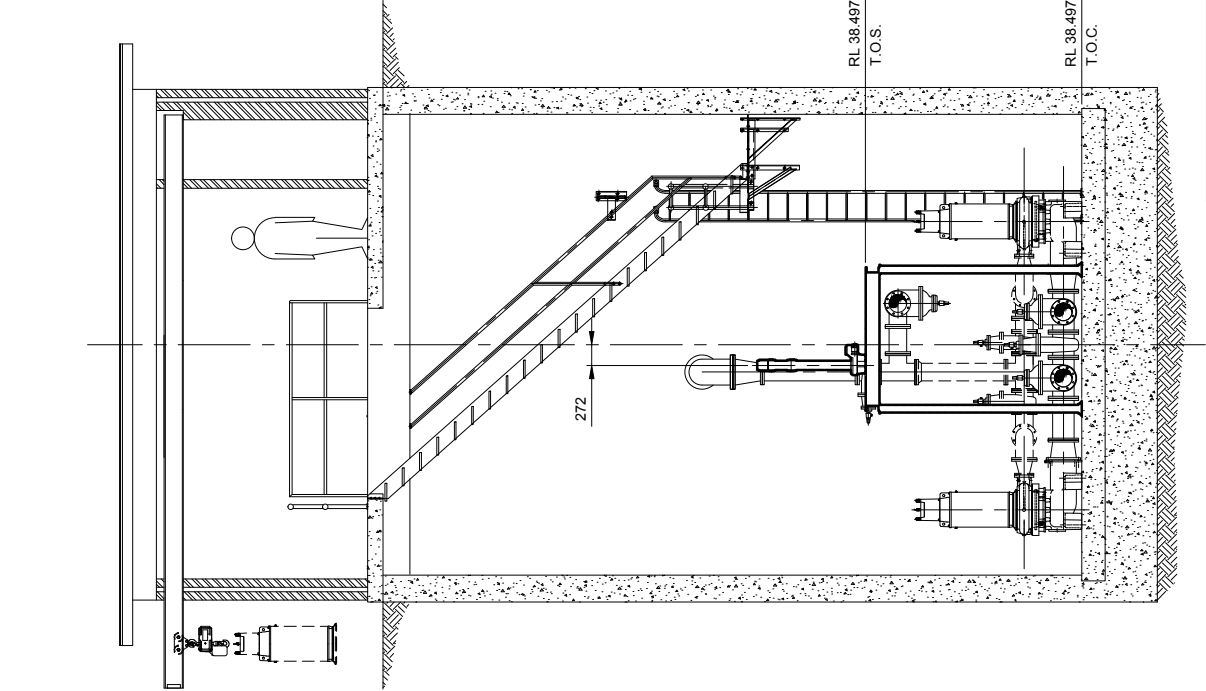


DETAIL (F)
SCALE 1:10

DETAIL (E)
SCALE 1:10
TYP 2 PLACES



SECTION (A)
SCALE 1:40
CRANE OMITTED FOR CLARITY



SECTION (B)
SCALE 1:40

AS CONSTRUCTED

SECTION (C)
SCALE 1:50

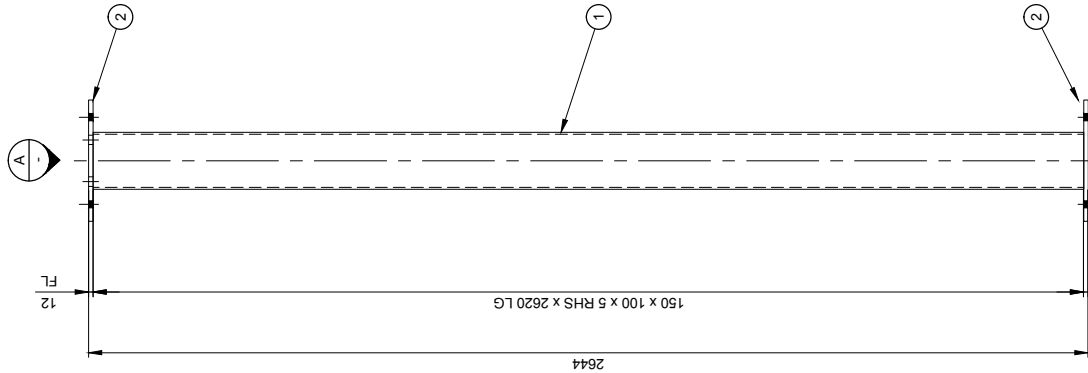
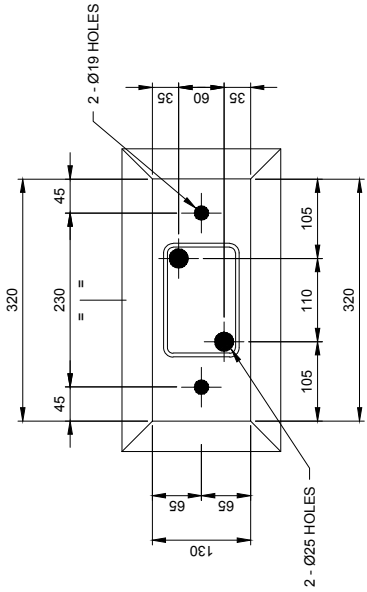
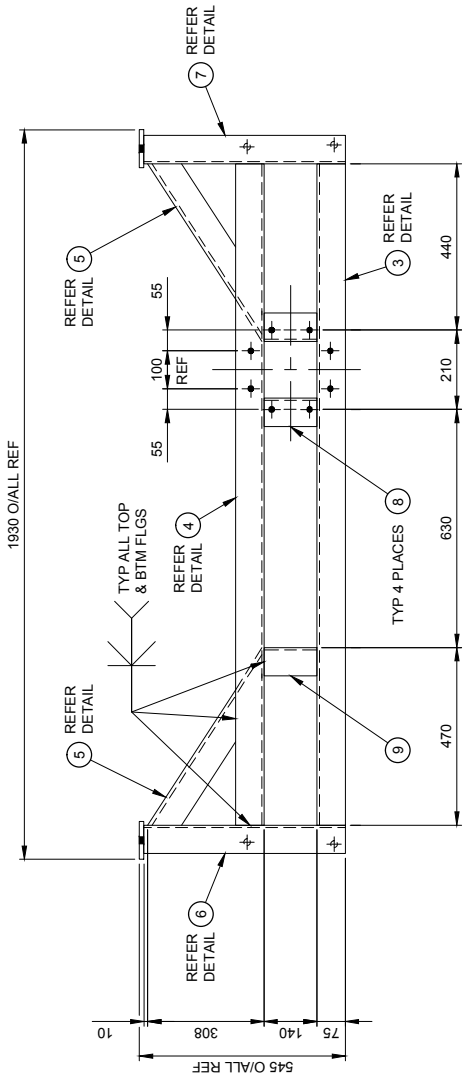
SECTION (D)
SCALE 1:50



FUNDING		ASSET/PROJECT		MANAGER ENGINEERING SERVICES		FIELD SERVICES DELEGATE		D.DAKIN		A. WOOLLEY		DRAFTING CHECK		DRAFT		DATE		DRAWING TITLE		SHEET No. 1 OF 1		AMEND.	
01	15.06.12	AS CONSTRUCTED	A.W.	AMENDMENT	DATE	09/05/12	3325	09/05/12	3325	570256052.dwg	486/57-0256-052	570256052.dwg	486/57-0256-052	DATE	01	01	01	EXISTING PUMP STATION MAINTENANCE CRANE GENERAL ARRANGEMENT	486/57-0256-052	01	01	01	01

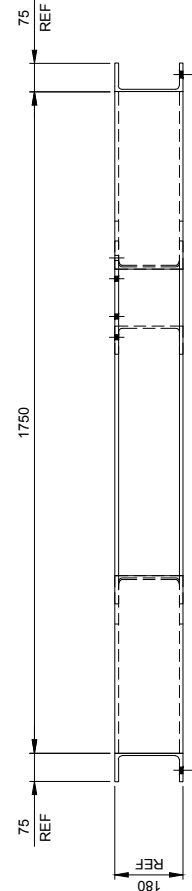
ITEM	QTY	DESCRIPTION	LENGTH	GRADE	REF. / REMARKS
1	2	150 x 100 x 5 RHS	2620	300+	
2	4	130 x 12 FL	320	300+	
3	1	180 PFC	1750	300+	REFER DETAIL
4	1	180 PFC	1750	300+	REFER DETAIL
5	2	180 PFC	549	300+	REFER DETAIL
6	1	180 PFC	533	300+	REFER DETAIL
7	1	180 PFC	533	300+	REFER DETAIL
8	2	180 PFC	140	300+	REFER DETAIL
9	1	180 PFC	140	300+	REFER DETAIL
10	2	100 x 12 FL	200	300+	

1 FOR GENERAL NOTES REFER TO DRG 486/5/7-0256-032
2 THIS DRG TO BE READ IN CONJUNCTION WITH DRG 486/5/7-0256-052

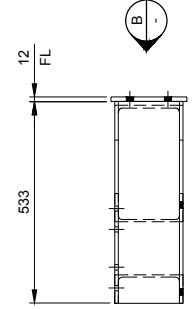


2 REQ'D

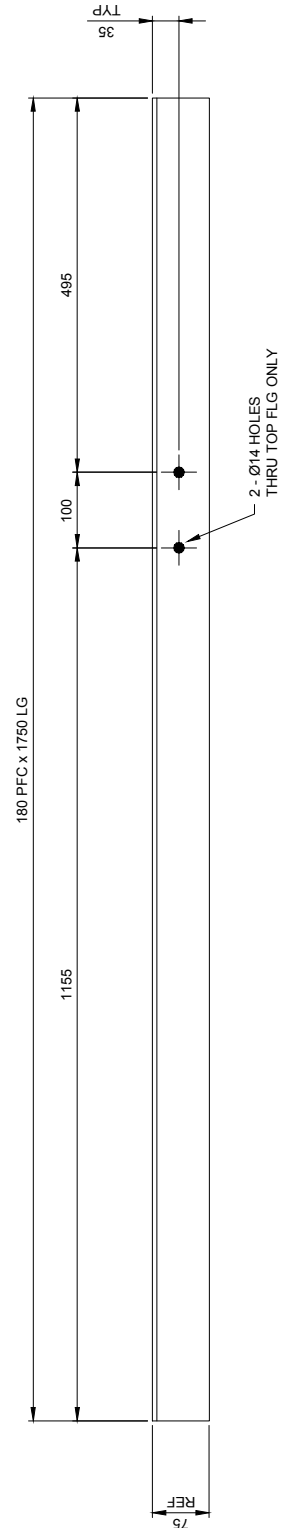
CRANE STAND LEG



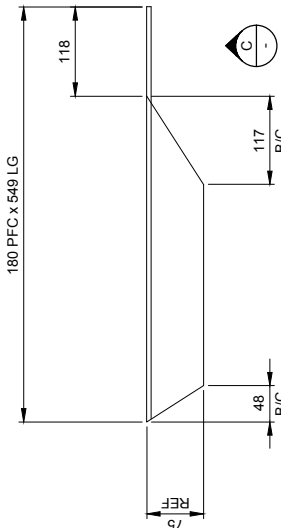
CRANE STAND PLATFORM




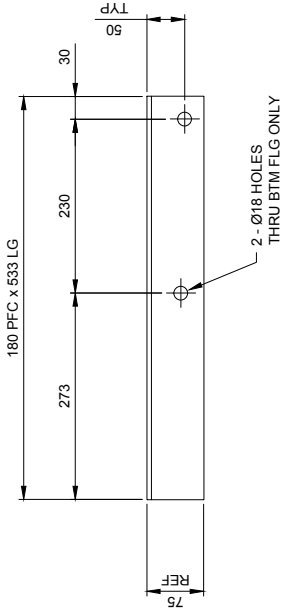
VIEW $\frac{B}{-}$
SCALE 1:5



SCALE 1:5



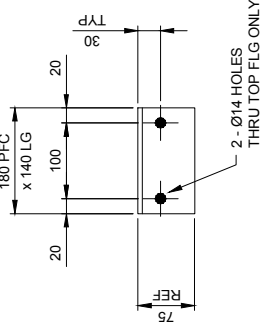
VIEW  SCALE 1:5



DETAIL ITEM 6
1 REQ'D AS DRAWN

DETAIL ITEM 7
1 REQ'D OPP HAND

SCALE 1:5

SCALE 1:5
2 REQ'D[illegible]