

INFORMATION ON THIS DRAWING SHALL APPLY UNLESS NOTED OTHERWISE ON THE DRAWINGS OR IN THE SPECIFICATIONS

DESIGN

D1. THE PUMP STATION HAS BEEN DESIGNED IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS INCLUDING THE FOLLOWING:
AS 1170.0:2002 (+A5:2011) STRUCTURAL DESIGN ACTIONS - GENERAL PRINCIPLES
AS 1170.1:2002 (+A2:2009) STRUCTURAL DESIGN ACTIONS - PERMANENT, IMPOSED AND OTHER ACTIONS
AS 1170.2:2011 STRUCTURAL DESIGN ACTIONS - WIND ACTIONS
AS 1170.4:2007 STRUCTURAL DESIGN ACTIONS - EARTHQUAKE ACTIONS IN AUSTRALIA
AS 1657:1992 FIXED PLATFORMS, WALKWAYS, STAIRWAYS AND LADDERS - DESIGN, CONSTRUCTION AND INSTALLATION
AS / NZS 1664:1997 (+A1:1999) SAA ALUMINIUM STRUCTURES CODE
AS 3600:2009 (+A1:2010) CONCRETE STRUCTURES
AS 3735:2001 CONCRETE STRUCTURES RETAINING LIQUIDS
GRC-ES001 ELECTRICAL WORK
GRC-ES002 PREFERRED ELECTRICAL COMPONENTS
GRC-ES008 ELECTRICAL AND VALVE EQUIPMENT IDENTIFICATION LABELS
GRC-ES011 PLAIN, REINFORCED AND PRE-STRESSED CONCRETE (JWP-88-001)
GRC-ES013 FABRICATED METALWORK (JWP-88-002)
GRC-ES016 STANDARD CONSTRUCTION REQUIREMENTS SEWER PUMP STATIONS

GENERAL

G1. NO DIMENSION SHALL BE OBTAINED BY SCALING.
G2. ALL DIMENSIONS ARE IN MILLIMETRES U.N.O.
G3. ALL LEVELS ARE IN METRES U.N.O.
G4. ALL DIMENSIONS ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR BEFORE FABRICATION AND CONSTRUCTION.
G5. FIGURED DIMENSIONS SHALL BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.
G6. REFER ALL DISCREPANCIES TO THE WSM BEFORE PROCEEDING WITH THE WORKS.
G7. VERIFY ALL DIMENSIONS ON THE JOB BEFORE COMMENCING WORK OR PREPARING SHOP DRAWINGS.
G8. ALL DRAWINGS MUST BE APPROVED BY GRC BEFORE COMMENCING WORK.
G9. DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATIONS.
G10. THE APPLICANT SHALL BE RESPONSIBLE FOR PROTECTING STRUCTURES AGAINST FLOTATION DURING CONSTRUCTION.
G11. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, THE REQUIREMENTS OF RELEVANT SAA CODES, BCA AND THE LOCAL LAWS AND ORDINANCES OF THE RELEVANT GOVERNMENT AUTHORITY.
G12. NO PENETRATIONS, CHASES OR TEMPORARY FIXTURES ARE PERMITTED WITHOUT PRIOR APPROVAL FROM THE WSM. ALL DRAWINGS SHALL BE CHECKED AGAINST ARCHITECTURAL AND SERVICES DRAWINGS FOR PENETRATIONS, CONDUITS AND PIPES ETC.
G13. PUMPS MUST BE ABLE TO BE REMOVED FROM, AND REINSTALLED INTO THE WET WELL, WITHOUT DISMANTLING ANY EQUIPMENT, PIPEWORK, BRACKETS OR COVERS.

PIPEWORK

P1. WHERE CONNECTING TO EXISTING PIPEWORK, THE LEVEL AND DIAMETER OF THE EXISTING PIPEWORK, SHALL BE CONFIRMED BY THE CONTRACTOR, PRIOR TO THE CONNECTION.
P2. ALL FLANGES SHALL BE IN ACCORDANCE WITH AS 4087.
P3. ALL FLANGE BOLT HOLE ORIENTATIONS SHALL BE OFF-CENTRE U.N.O.
P4. ALL FLANGE BOLT SETS SHALL BE GRADE 316 STAINLESS STEEL.
P5. FLANGE GASKET MATERIAL AND THICKNESS SHALL BE IN ACCORDANCE WITH AS 4087.
P6. THRUST AND PUDDLE FLANGES SHALL BE CAST CENTRALLY WITHIN WALLS UNLESS SHOWN OTHERWISE.
P7. ALL FLANGED, SPIGOT AND SOCKET DICL PIPEWORK SHALL BE CLASS PN35.
P8. ALL GATE AND REFLUX VALVES SHALL BE INTERNALLY AND EXTERNALLY COATED WITH A POLYMERIC COATING.
P9. ALL GATE VALVES SHALL BE RESILIENT SEATED AND O-RING SEALED.

ELECTRICAL

E1. THE LOCATION OF ALL CONDUITS SHALL BE CONFIRMED BY THE WSM PRIOR TO CONSTRUCTION OF THE SWITCHBOARD SLAB.
E2. REFERENCE SHALL BE MADE TO GLADSTONE REGIONAL COUNCIL ELECTRICAL ENGINEERING STANDARDS.
E3. FOR GRC ELECTRICAL WORKS STANDARDS REFER GRC-ES001.
E4. FOR GRC PREFERRED ELECTRICAL COMPONENTS REFER GRC-ES002.
E5. FOR GRC PRE-FABRICATED SWITCHROOM STANDARDS REFER GRC-ES003.
E6. FOR GRC STANDARD LIGHT POWER DB REFER GRC-ES005.
E7. FOR GRC STANDARD ELECTRICAL & VALVE EQUIPMENT LABELS REFER GRC-ES008.
E8. FOR GRC PLAIN REINFORCED PRESTRESSED CONCRETE STANDARDS GRC-ES011.
E9. FOR GRC FABRICATED METALWORKS STANDARDS REFER GRC-ES013.
E10. FOR GRC STANDARD CONSTRUCTION REQUIREMENTS FOR SEWER PUMP STATIONS REFER GRC-ES016.

ABBREVIATIONS

A1. ABBREVIATIONS SHALL BE IN ACCORDANCE WITH STANDARDS AUSTRALIA PUBLICATION "SYMBOLS AND ABBREVIATIONS FOR BUILDING AND CONSTRUCTION" EXCEPT AS FOLLOWS:-

ECDP	ELECTRICAL CONDUIT DRAW PIT
FL	FLANGE
FSL	FINISHED SURFACE LEVEL
GJ	GIBAULT JOINT
RRJ	RUBBER RING JOINT
SP	SPIGOT
SC	SOCKET
SS	STAINLESS STEEL
STD DRG	STANDARD DRAWING
TWL	TOP WATER LEVEL
BWL	BOTTOM WATER LEVEL
UNO	UNLESS NOTED OTHERWISE
PWWF	PEAK WET WEATHER FLOW
PDWF	PEAK DRY WEATHER FLOW
ADWF	AVERAGE DRY WEATHER FLOW
MDWF	MINIMUM DRY WEATHER FLOW

AUTHORISED FOR CONSTRUCTION

ALL boxes MUST be signed prior to Construction

AUTHORISED BY APPLICANT

We certify that all the information provided on this drawing will ensure that the pump station is fully suited for its intended use and that it complies with all Gladstone Regional Council specifications and/or requirements.

----- Date:-----
Applicant / Applicants Authorised Officer

AUTHORISED BY DESIGN ENGINEER

We certify that all the information provided on this drawing will ensure that the pump station is fully suited for its intended use and that it complies with all Gladstone Regional Council specifications and/or requirements.

----- RPEQ: ----- Date:-----
Design Engineer / Design Engineers Authorised Officer

AUTHORISED BY OWNER

We certify that all the information provided on this drawing will ensure that the pump station is fully suited for its intended use and that it complies with all Gladstone Regional Council specifications and/or requirements.

----- Date:-----
Owner / Owners Authorised Officer

AUTHORISED BY GLADSTONE REGIONAL COUNCIL

You are advised that Gladstone Regional Council have NOT undertaken a detailed dimensional or design check and that this review in no way relieves your company of the responsibility for ensuring that all variable dimensions, levels, equipment and workmanship is in compliance with the relevant codes and specifications and for ensuring that the pump station design and equipment is fully suited for its intended use.

----- Date:-----
Water Services Manager OR Delegate

AUTHORISED BY GLADSTONE REGIONAL COUNCIL

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----- Date:-----
Technical Services Manager OR Delegate

AUTHORISED BY GLADSTONE REGIONAL COUNCIL

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----- Date:-----
Director of Engineering Services OR Delegate



APPLICABILITY TABLE

Council	BSC	CHRC	GRC	IRC	LSC	MRC	RRC
Applicable	No	No	Yes	No	No	No	No
Applicable DWG							

Capricorn Municipal Development Guidelines

Incorporating:

Banana Shire Council (BSC)	Livingstone Shire Council (LSC)
Central Highlands Regional Council (CHRC)	Maranoa Regional Council (MRC)
Gladstone Regional Council (GRC)	Rockhampton Regional Council (RRC)
Isaac Regional Council (IRC)	

STANDARD DRAWINGS
SEWERAGE PUMP STATIONS
NOTES AND CONSTRUCTION
AUTHORISATION

STANDARD
DRAWING
CMDG-S-050

REV. 0 1 A B

REVISIONS		DATE
B	IRC ADDED	11/2016
A	ORIGINAL CMDG ISSUE	05/2015
1	AMENDMENTS	—
0	ORIGINAL ISSUE	05/2012

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SEWERAGE PUMP STATIONS

STANDARD DRAWING INDEX

DRAWING NUMBER	DRAWING TITLE	REVISION
CMDG-S-050	NOTES AND CONSTRUCTION AUTHORISATION	B
CMDG-S-050A	STANDARD DRAWING INDEX	B
CMDG-S-050B	PUMP AND SYSTEM CURVES	B
CMDG-S-050C	SITE LAYOUT REQUIREMENTS	B
CMDG-S-050D	HYDRAULIC DESIGN DETAIL	B
CMDG-S-050E	GENERAL ARRANGEMENT 01 PUMPWELL FLOOR AND ROOF DETAILS	B
CMDG-S-050F	GENERAL ARRANGEMENT 02 OVERFLOW ARRANGEMENT	B
CMDG-S-050G	GENERAL ARRANGEMENT 03 EMERGENCY STORAGE TANK	B
CMDG-S-050H	GENERAL ARRANGEMENT 04 EMERGENCY STORAGE SCHEMATIC	B
CMDG-S-050I	GENERAL ARRANGEMENT 05 FLOW METER AND PIGGING PITS	B
CMDG-S-050J	GENERAL ARRANGEMENT 06 ELECTRICAL SERVICES LAYOUT 4-22kW	B
CMDG-S-050K	GENERAL ARRANGEMENT 07 ELECTRICAL SERVICES LAYOUT 30-105kW	B
CMDG-S-050L	GENERAL ARRANGEMENT 08 RAIN GAUGE POST	B
CMDG-S-050M	GENERAL ARRANGEMENT 09 BACK FLOW PREVENTION	B
CMDG-S-050N	GENERAL ARRANGEMENT 10 ODOUR FILTER, BOLLARDS, ROADS AND LANDSCAPING	B
CMDG-S-050O	LABELS	B
CMDG-S-050P	FENCE AND GATE DETAILS	B
CMDG-S-050Q	SCOUR AND AIR VALVE DETAILS	B
CMDG-S-050R	PIPING AND INSTRUMENTATION DIAGRAM	B

EQUIPMENT FUNCTION	PREFERRED COMPONENT
0-22kW PUMPS	KSB, FLYGT(XYLEM), GRUNDFOS, OR EQUIVALENT
30-105kW PUMPS	KSB, FLYGT(XYLEM), GRUNDFOS, OR EQUIVALENT
FLOW METERS	ABB WATERMASTER OR 24V DC
VENTILATION	MCBERNS OR EQUIVALENT
KNIFE VALVES	FULL STAINLESS STEEL CONSTRUCTION TYCO OR EQUIVALENT
SLUICE VALVES	RESILIENT SEAT O-RING SEALED TYCO OR EQUIVALENT
REFLUX VALVES	BALL CHECK FBE COATED CI SINKING EPDM BALL JOHN VALVES OR EQUIVALENT

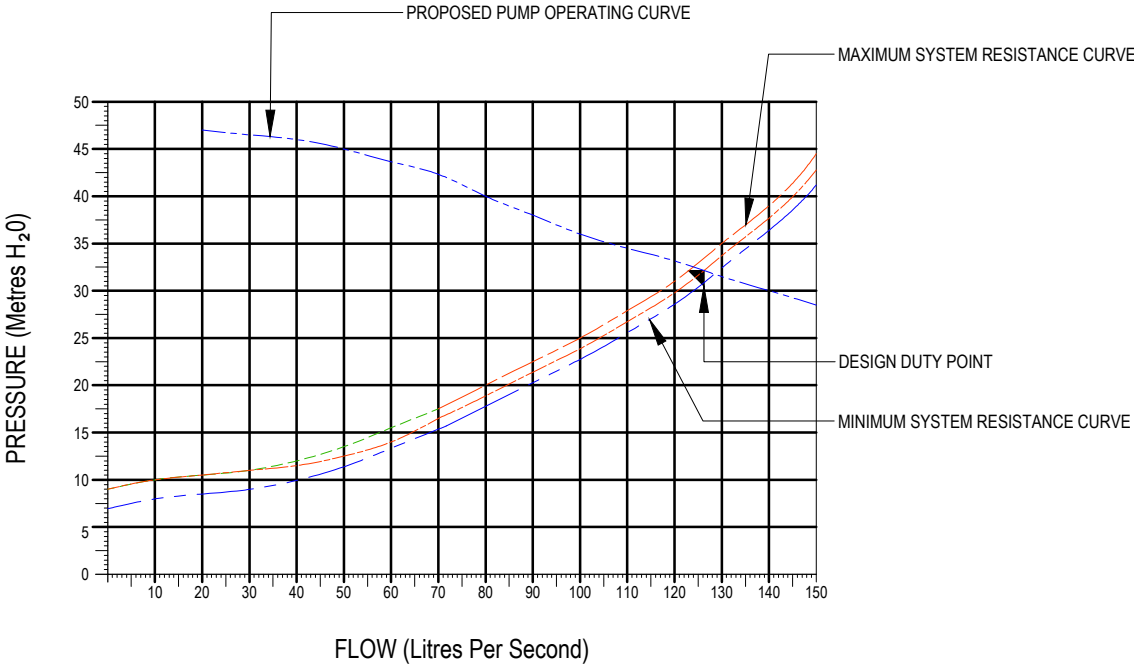


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B	AMENDMENTS	11/2016		<div>Incorporating:</div> <div>Banana Shire Council (BSC)</div> <div>Central Highlands Regional Council (CHRC)</div> <div>Gladstone Regional Council (GRC)</div> <div>Isaac Regional Council (IRC)</div> <div>Livingstone Shire Council (LSC)</div> <div>Maranoa Regional Council (MRC)</div> <div>Rockhampton Regional Council (RRC)</div>				STANDARD DRAWING CMDG-S-050A			
A	ORIGINAL CMDG ISSUE	05/2015									
2	AMENDMENTS	—									
1	AMENDMENTS	08/2012									
0	ORIGINAL ISSUE	05/2012									
REV.		0	1	2	A	B					

NOTES:

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2. VERIFY ALL DIMENSIONS ON THE JOB BEFORE COMMENCING WORK OR PREPARING SHOP DRAWINGS.
3. ALL SHOP DRAWINGS MUST BE APPROVED BY GRC BEFORE COMMENCING WORK.
4. DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATIONS.
5. EXAMPLE LAYOUT ONLY; PROJECT SPECIFIC LAYOUT TO BE SUBMITTED FOR APPROVAL PRIOR TO COMMENCEMENT.
6. THE CURVES SHOWN ON THIS DRAWING ARE GIVEN AS A SAMPLE ONLY AND SHOW A STATION WITH ONE DUTY PUMP OPERATING AND AT A SINGLE SPEED.
7. FOR STATIONS WITH MORE THAN ONE DUTY PUMP ADDITIONAL CURVES ARE REQUIRED FOR EACH ADDITIONAL PUMP RUNNING.
8. FOR INSTALLATIONS WITH VARIABLE SPEED DRIVES PUMP CURVES ARE REQUIRED FOR PUMP SPEED AT 5Hz INCREMENTS FROM 25Hz TO 50 Hz
9. THE PROJECT DRAWING MUST CONTAIN CURVES WHICH REFLECT THE PUMPS INSTALLED.
10. THE TABLES SHOWN ON THIS DRAWING MUST BE POPULATED AND INCLUDED IN THE PROJECT DRAWINGS.
11. PUMP DUTY POINT TO BE BASED ON THE GRC DESIGN GUIDELINES AND WSA 04-2005
12. PUMP TO BE CAPABLE OF ACHIEVING DUTY POINTS OVER THE RANGE BETWEEN THE MAXIMUM AND MINIMUM CURVES.



FLOW DETAILS				
FLOW RATES	FLOW RATE INTO PUMPING STATION (L/s)	VELOCITY IN RISING MAIN (m/s)	NUMBER OF PUMP STARTS PER HOUR	RISING MAIN RETENTION TIME (mins.)
PWWF				
PDWF				
ADWF				
MDWF				

PUMP DETAILS				
NUMBER OF DUTY PUMPS				
NUMBER OF STANDBY PUMPS				
TOTAL NUMBER OF PUMPS				
	PUMP 1		PUMP 2	
PUMP MANUFACTURER				
PUMP MODEL				
PUMP TYPE				
- SUBMERSIBLE				
- GRINDER				
- DRY				
PUMP IMPELLER DIAMETER				
PUMP MANUFACTURER CURVE No.				
OPERATING POINT (1 PUMP)	L/s @	m	L/s @	m
OPERATING POINT (2 PUMPS)	L/s @	m	L/s @	m
SHUT OFF HEAD	m		m	
COOLING JACKET	Yes/No		Yes/No	
NPSHr	m		m	
DISCHARGE DIAMETER 'X'	ø'X'	mm	ø'X'	mm
DISCHARGE STYLE (OFFSET OR CENTRE)				
GUIDE RAIL SIZE	mm		mm	
SHAPE OF GUIDE RAILS				
NUMBER OF GUIDE RAILS PER PUMP				
PUMP MASS	kg each		kg each	
MOTOR MANUFACTURER				
MOTOR kW RATING	kW @	PF	kW @	PF
MOTOR VOLTAGE	V	Phase	V	Phase
MOTOR SPEED AT 50 Hz				
MOTOR START TYPE				
NUMBER OF POLES				
FULL LOAD CURRENT	Amps		Amps	
THERMAL OL or CEF or CET				
CB TYPE & RATING	Amps		Amps	
NUMBER OF CORES PER PHASE				
THERMISTOR CABLE INCLUDED	Yes/No		Yes/No	
MOTOR CABLE LENGTH	Metres		Metres	
SYSTEM H-Q CURVE SHOWN	Yes/No		Yes/No	
PUMP H-Q CURVE SHOWN	Yes/No		Yes/No	

SWITCHBOARD DETAILS	
RATING	Amps
ELECTRICAL MAINS SIZE	mm²
RISING MAIN DETAILS	
PIPE NOMINAL DIAMETER	
PIPE MATERIAL	
PIPE MANUFACTURER	
PIPE INTERNAL DIAMETER	mm
PIPE OUTSIDE DIAMETER	mm
PIPE PN RATING	
VELOCITY AT 50 Hz FROM TWL	
VELOCITY AT MINIMUM Hz FROM BWL	
RISING MAIN VOLUME	m³

APPLICABILITY TABLE							
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Applicable DWG							

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STANDARD DRAWINGS
SEWERAGE PUMP STATIONS

PUMP AND SYSTEM CURVES

STANDARD
DRAWING
CMDG–S–050B

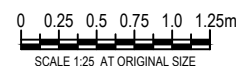
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WELL DETAILS

Station Number	-----
Location	-----
Pump Station Roof Slab	RL (A) -----
100 year ARI	RL (B) -----
Discharge C Level	RL (C) -----
Valve Pit Floor Level	RL (D) -----
Overflow Level	RL (E) -----
Inlet Level (Pipe Invert)	IL (F) -----
Alarm Level	RL (G) -----
Standby Pump Start	RL (H) -----
Duty Pump Start Level (TWL)	RL (J) -----
Pump Stop Level (BWL)	RL (K) -----
Floor Level	RL (L) -----
Ballast Ring	RL (M) -----
Dimension	'N' -----
Dimension	'P' -----
Inlet Sewer	Ø"W" -----
Pump Discharge Pipework	Ø"Y" -----
Sewer Pressure Main	Ø"Z" -----
Design Inflow Rate (ADWF)	-----
Estimated System Storage between Standby Pump Start	-----
Volume	----- kL
Time	----- hr

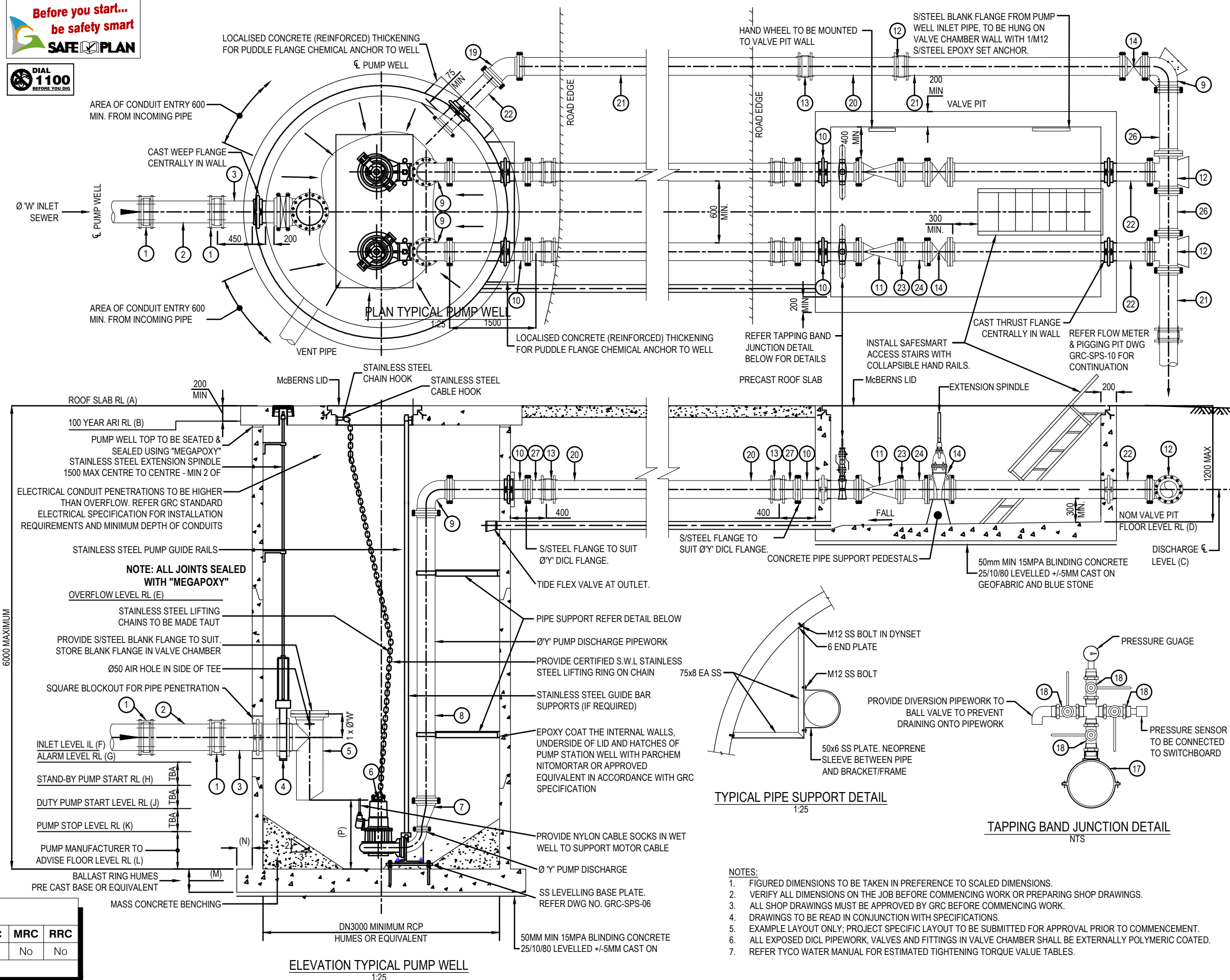
SCHEDULE OF PIPES AND FITTINGS

ITEM	DESCRIPTION
1	Ø"W" Gibault Joint
2	Ø"W" SP-SP S/Steel Pipe
3	Ø"W" FL-SP S/Steel Tailpipe With Puddle Flange
4	Ø"W" Lugged S/Steel Bi-directional Knife Gate Valve Complete with Support Bracket to Wall of Pump Station
5	Ø"W" x Ø"W" MDPE SP-FLxFL Fabricated Tee Complete With S/Steel Backing Rings
6	Submersible Wastewater Pump
7	Ø"X" x Ø"Y" FL-FL S/Steel Offset Taper (if required)
8	Ø"Y" FL-FL S/Steel Pipe
9	Ø"Y" x 90° FL-FL S/Steel Bend
10	Ø"Y" FL-SP S/Steel Pipe With Puddle Flange and Adaptor Flange within Valve Chamber
11	Ø"Y" REFLUX Valve, Ball Type NRV
12	Ø"Y" FL-FLxFL DICL Tee
13	Ø"Y" Gibault Joint
14	Ø"Y" FL GATE Valve
15	Ø"Y" FL-FL DICL Electro Magnetic Flow Meter
16	Ø"Y" FL-FL-FL DICL 'Y' Tee
17	Ø"Y" Tapping Saddle Ø20 BSP Outlet
18	Ø20 BSP Ball Valve
19	Ø"Y" 45° BEND FL-FL
20	Ø"Y" SP-SP DICL PIPE
21	Ø"Y" FL-SP DICL PIPE
22	Ø"Y" FL-FL DICL PIPE With Puddle Flange
23	Ø"Y" UNI-FLANGE
24	Ø"Y" 350mm LONG FL-FL DICL PIPE (Spool)
25	Ø"Y" - 150mm DICL FL-FL TAPER (Con)
26	Ø"Y" FL-FL DICL Pipe
27	Ø"Y" FL-SP CONNECTOR



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 - ALL EXPOSED DICL PIPEWORK, VALVES AND FITTINGS IN VALVE CHAMBER SHALL BE EXTERNALLY POLYMERIC COATED.
 - REFER TYCO WATER MANUAL FOR ESTIMATED TIGHTENING TORQUE VALUE TABLES.

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STANDARD DRAWINGS
SEWERAGE PUMP STATIONS

HYDRAULIC DESIGN DETAILS

STANDARD
DRAWING
CMDG-S-050D

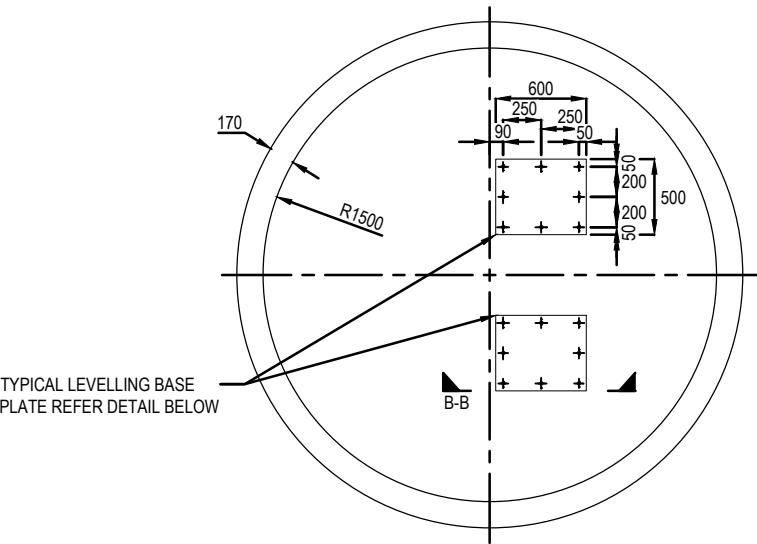
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1 AMENDMENTS	08-/2012
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DISCLAIMER.

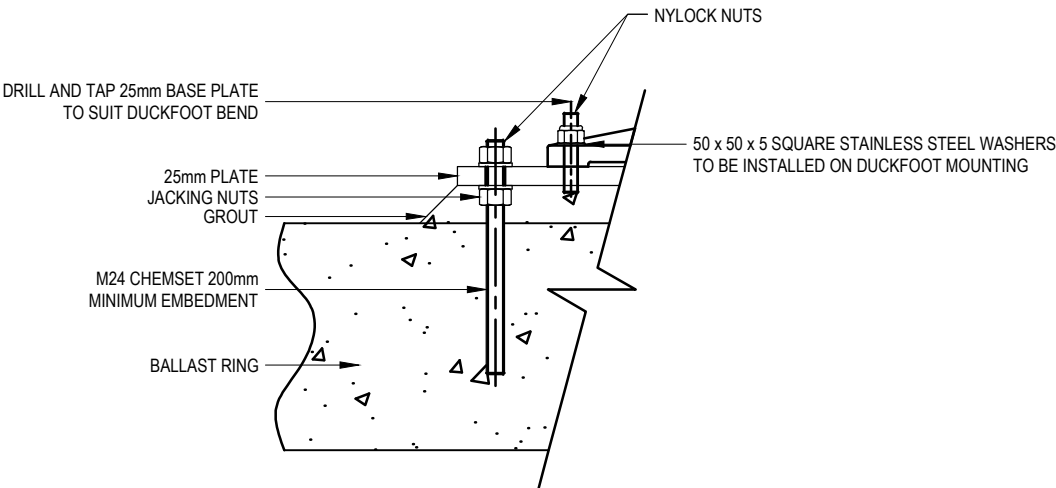
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 - 5. EXAMPLE LAYOUT ONLY; PROJECT SPECIFIC LAYOUT TO BE SUBMITTED FOR APPROVAL PRIOR TO COMMENCEMENT.
 - 6. SAFETY GRATE TO BE A NON-COATED ALUMINIUM SUITABLE FOR HIGH CORROSIVE ENVIRONMENT.
 - 7. STAINLESS STEEL PLATE TO BE INSTALLED ON UNDERSIDE OF PUMP STATION ACCESS LID, INDICATING PUMP 1 AND PUMP 2 AS DETAILED ON GRC-SPS-16.



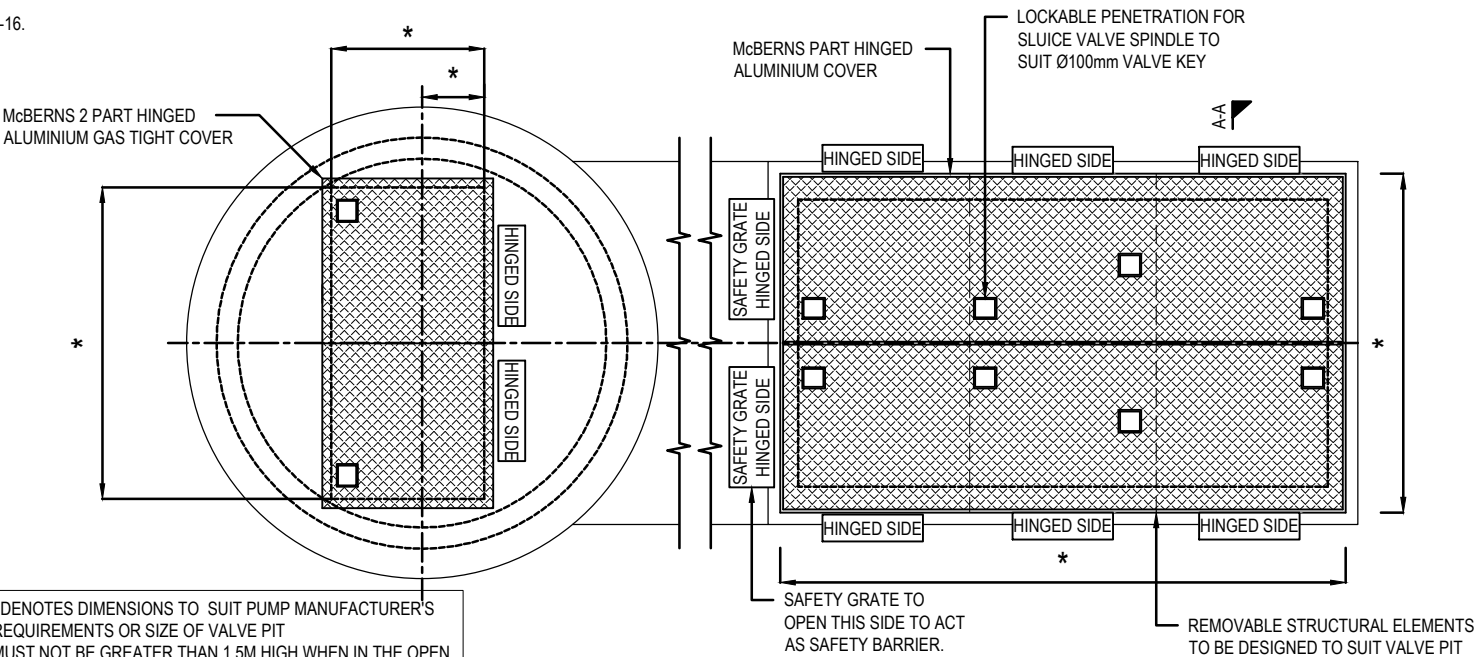
PLAN VIEW - LEVELLING BASE PLATE AND HOLD DOWN BOLTS

1:25
25mm 316 SS PLATE TO BE SIZED & DESIGNED BASED ON PUMP SELECTION



SECTION B-B HOLD DOWN BOLT & BASE PLATE DETAIL

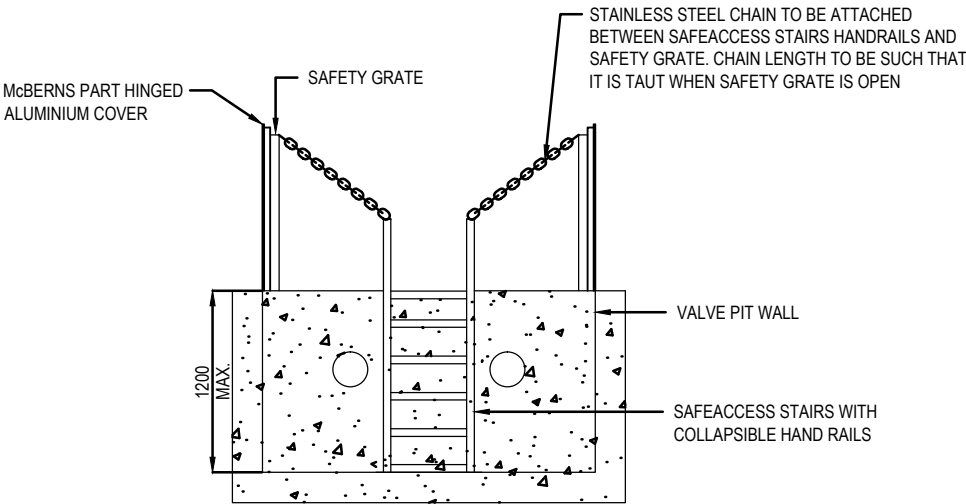
1:5
ALL MATERIALS GRADE 316 SS



PLAN VIEW - ROOF SLAB

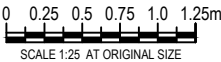
1:25

ALL ALUMINIUM FLOOR PLATE COVERS SHALL BE EXTERNALLY COATED WITH 'ENVELON - TREDGRIP' OR SIMILAR APPROVED WATER BASED, RUBBERISED NON-SLIP FINISH COLOUR - YELLOW



ELEVATION A-A

1:25



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Gladstone Regional Council (GRC)
Isaac Regional Council (IRC)
Livingstone Shire Council (LSC)
Maranoa Regional Council (MRC)
Rockhampton Regional Council (RRC)

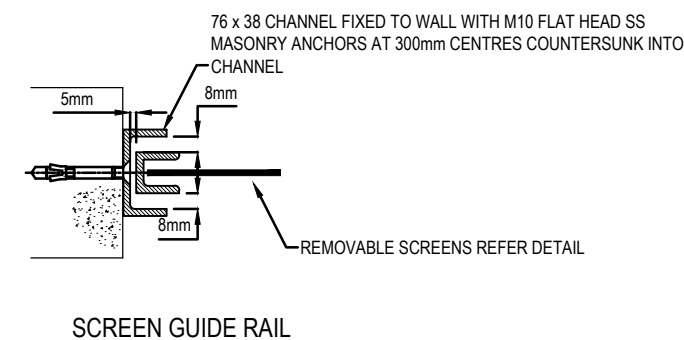
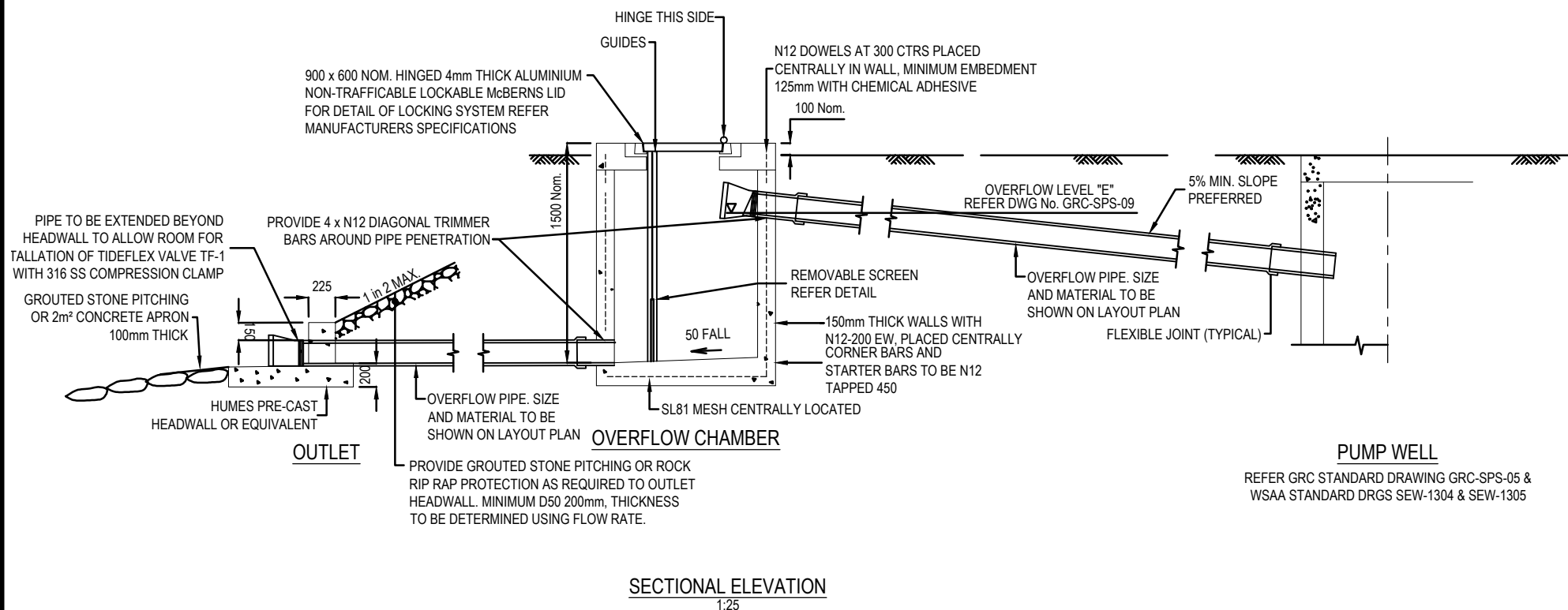
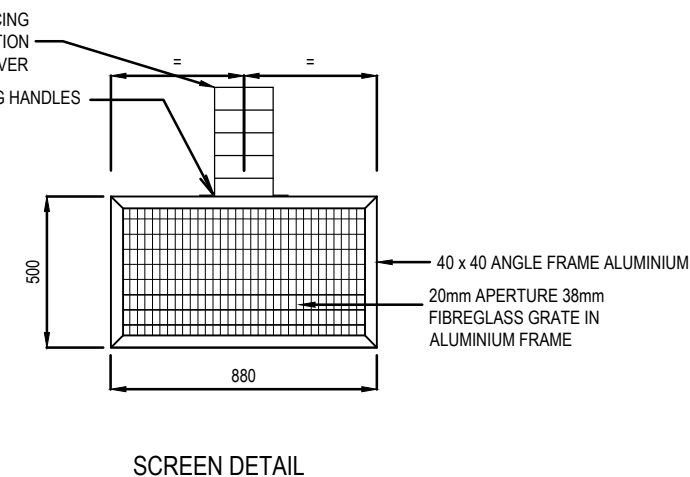
STANDARD DRAWINGS
SEWERAGE PUMP STATIONS

HYDRAULIC DESIGN DETAILS

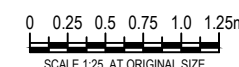
STANDARD
DRAWING
CMDG-S-050E

REV. 0 1 2 A B

1. FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.
2. VERIFY ALL DIMENSIONS ON THE JOB BEFORE COMMENCING WORK OR PREPARING SHOP DRAWINGS.
3. ALL SHOP DRAWINGS MUST BE APPROVED BY GRC BEFORE COMMENCING WORK.
4. DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATIONS.
5. EXAMPLE LAYOUT ONLY: PROJECT SPECIFIC LAYOUT TO BE SUBMITTED FOR APPROVAL PRIOR TO COMMENCEMENT.



APPLICABILITY TABLE							
Council	BSC	CHRC	GRC	IRC	LSC	MRC	RRC
Applicable	No	No	Yes	No	No	No	No
Applicable DWG							



REVISIONS		DATE
B	IRC ADDED	11/2016
A	ORIGINAL CMDG ISSUE	05/2015
1	AMENDMENTS	—
0	ORIGINAL ISSUE	05/2012

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Capricorn Municipal Development Guidelines

Incorporating:

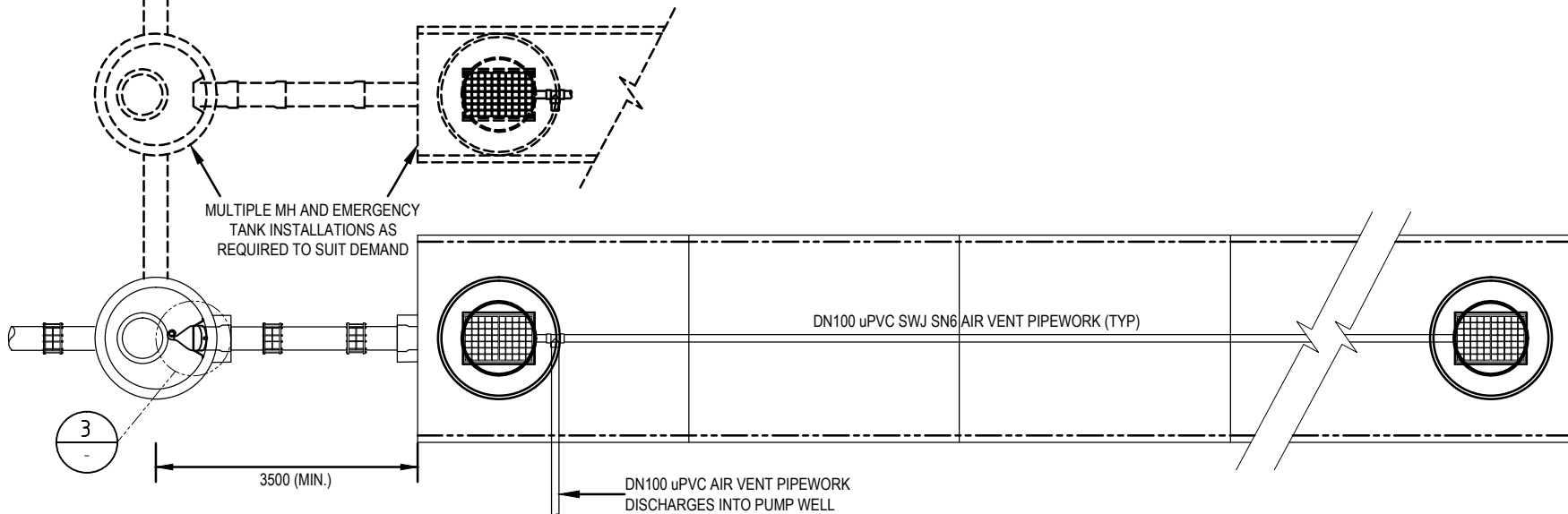
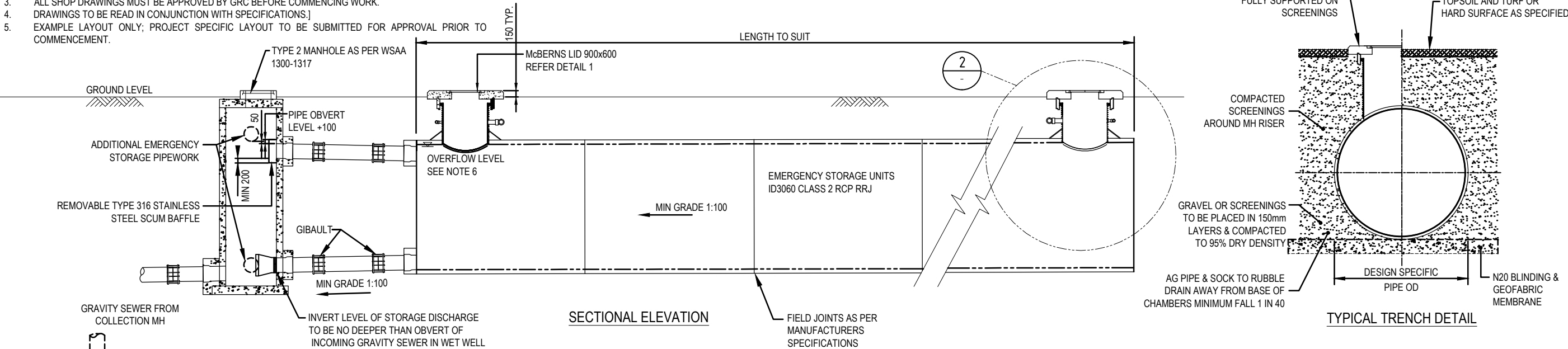
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Gladstone Regional Council (GRC)	Rockhampton Regional Council (RRC)
Isaac Regional Council (IRC)	

STANDARD DRAWINGS
SEWERAGE PUMP STATIONS
GENERAL ARRANGEMENT 02
OVERFLOW ARRANGEMENT

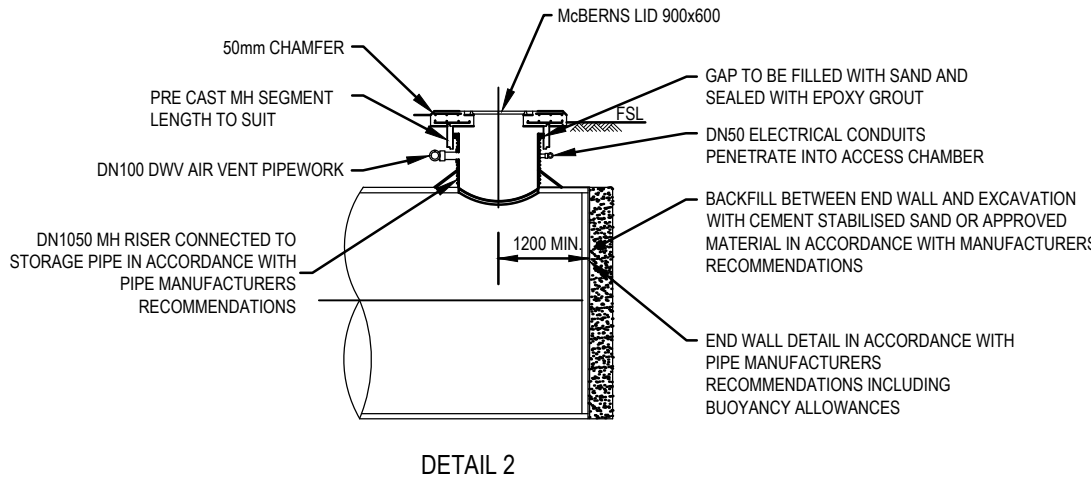
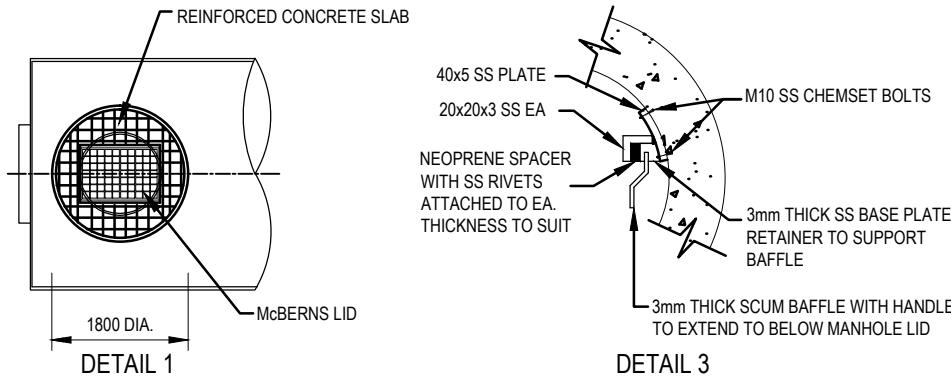
STANDARD
DRAWING
CMDG-S-050F

REV.	0	1	A	B		
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- NOTES:
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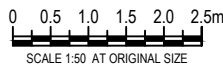


- NOTES:
- IT IS CRITICAL TO ENSURE THAT THE STORAGE PIPE IS PREVENTED FROM FLOATING IN WATERLOGGED TRENCHES DURING AND AFTER INSTALLATION.
 - STORAGE PIPES MUST BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
 - MINIMUM PIPE SEPARATION DISTANCE TO BE IN ACCORDANCE WITH PIPE MANUFACTURERS RECOMMENDATIONS.
 - FINAL STORAGE PIPE TYPE & CONFIGURATION TO BE CONFIRMED BY GRC.
 - STRUCTURAL STABILITY OF STORAGE TANKS IN RELATION TO FILL TO BE REVIEWED & SIGNED OFF BY SUITABLY QUALIFIED STRUCTURAL AND/OR GEOTECHNICAL ENGINEER WITH RPEQ SIGN-OFF TO DRAWINGS & DESIGN.
 - OVERFLOW LEVEL AT EMERGENCY STORAGE TO TAKE INTO ACCOUNT HEAD LOSSES BETWEEN SYSTEM OVERFLOW POINT RL AND EMERGENCY STORAGE TOP WATER LEVEL. EMERGENCY STORAGE IS TO BE DESIGNED TO FILL TO DESIGN CAPACITY BEFORE SYSTEM OVERFLOW OCCURS.
 - NUMBER OF EMERGENCY STORAGE PIPE ARRAYS SUBJECT TO GRC APPROVAL.
 - ONLY ONE CHAMBER TO FILL/DRAIN AT A TIME.



APPLICABILITY TABLE

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Applicable DWG							



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STANDARD DRAWINGS
SEWERAGE PUMP STATIONS
GENERAL ARRANGEMENT 03
EMERGENCY STORAGE TANK

STANDARD
DRAWING
CMDG-S-050G

REV. 0 1 2 A B

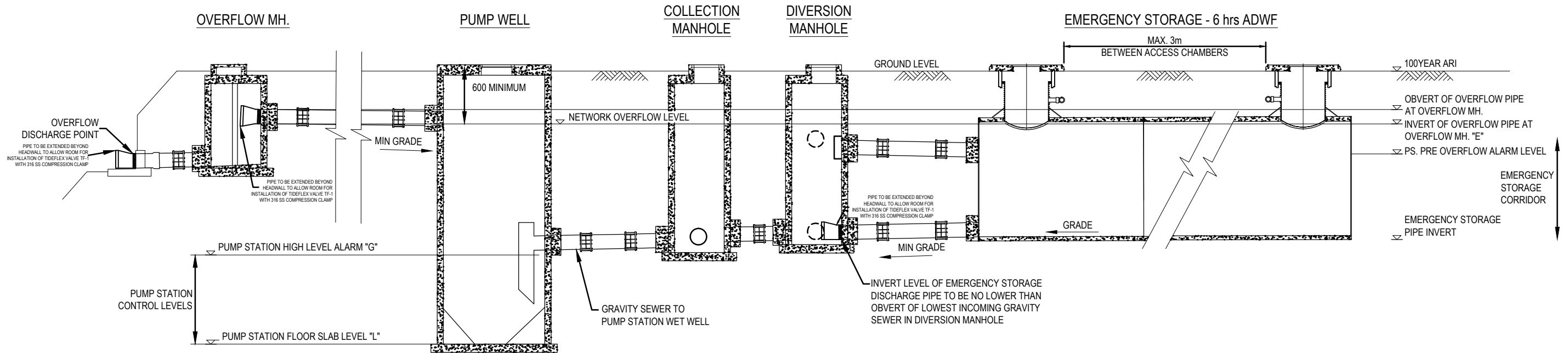
REVISIONS	DATE
B IRC ADDED	11/2016
A ORIGINAL CMDG ISSUE	05/2015
2 AMENDMENTS	-
1 AMENDMENTS	08/2012
0 ORIGINAL ISSUE	05/2012

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NOTE: ALL COVERS TO EMERGENCY STORAGE TANK AND MANHOLES TO BE 150mm ABOVE FINISHED GROUND LEVEL



WELL DETAILS

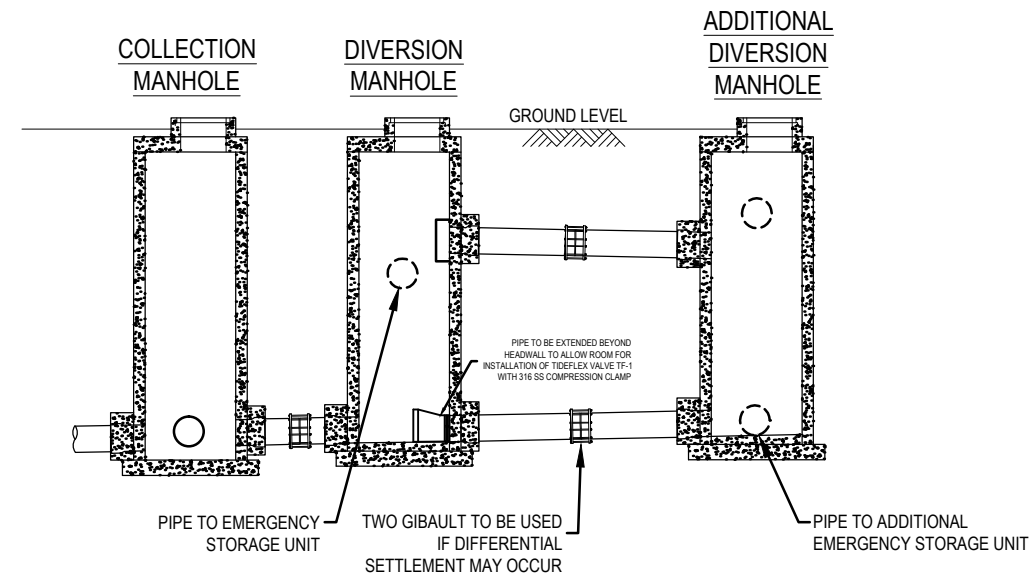
Station Number _____
Location _____

Pump Station Roof Slab	RL (A)	_____
100 year ARI	RL (B)	_____
Discharge C Level	RL (C)	_____
Valve Pit Floor Level	RL (D)	_____
Overflow Level	RL (E)	_____
Inlet Level (Pipe Invert)	IL (F)	_____
Alarm Level	RL (G)	_____
Standby Pump Start	RL (H)	_____
Duty Pump Start Level (TWL)	RL (J)	_____
Pump Stop Level (BWL)	RL (K)	_____
Floor Level	RL (L)	_____
Ballast Ring	RL (M)	_____
Dimension 'N'	'N'	_____
Dimension 'P'	'P'	_____
Inlet Sewer	Ø'W'	_____
Pump Discharge Pipework	Ø'Y'	_____
Sewer Pressure Main	Ø'Z'	_____
Design Inflow Rate (ADWF)		_____
Estimated System Storage between Standby Pump Start		_____
Volume		_____ kL
Time		_____ hr

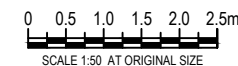
NOTES:

- NETWORK OVERFLOW LEVEL =
 - LOWEST OVERFLOW RELIEF GULLY (ORG) LEVEL IN THE CATCHMENT
 - LESS 300mm SAFETY FACTOR
 - LESS HEAD LOSS BETWEEN ORG AND OVERFLOW POINT
 - LESS OVERFLOW PIPE DIAMETER
- FOR CONTROL LEVELS WITHIN PUMP STATION REFER STANDARD DRAWING GRC-SPS-05
- VENT PIPE CONNECTIONS TO BE SET MINIMUM 100mm ABOVE OVERFLOW OBVERT LEVEL

SCHEMATIC ELEVATION



SCHEMATIC ELEVATION OF ADDITIONAL EMERGENCY STORAGE UNIT MANHOLE AND PIPEWORK ARRANGEMENT



APPLICABILITY TABLE

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REVISIONS	DATE
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Maranoa Regional Council (MRC)
Rockhampton Regional Council (RRC)

STANDARD DRAWINGS SEWERAGE PUMP STATIONS GENERAL ARRANGEMENT 03 EMERGENCY STORAGE SCHEMATIC

STANDARD
DRAWING
CMDG-S-050H
REV. 0 1 A B

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5. EXAMPLE LAYOUT ONLY; PROJECT SPECIFIC LAYOUT TO BE SUBMITTED FOR APPROVAL PRIOR TO COMMENCEMENT.
6. VALVE MARGINS AND EXTENSION PIPES TO BE PROVIDED FOR ALL UNDERGROUND SLUICE VALVES.



APPLICABILITY TABLE							
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STANDARD DRAWINGS
SEWERAGE PUMP STATIONS
GENERAL ARRANGEMENT 05
FLOW METER AND PIGGING PITS

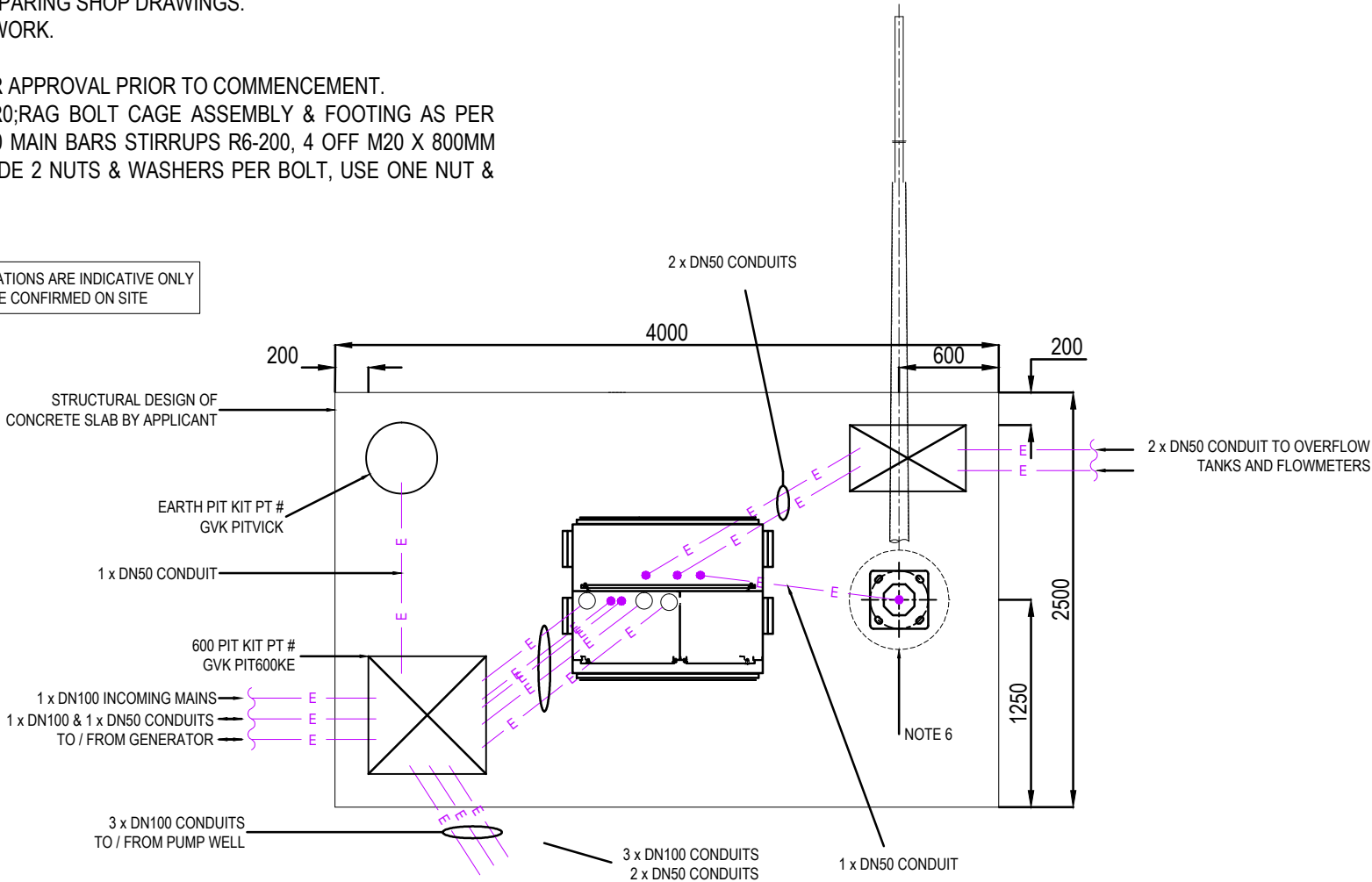
STANDARD
DRAWING
CMDG-S-050I

REV.	0	1	2	A	R
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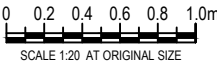
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5. EXAMPLE LAYOUT ONLY; PROJECT SPECIFIC LAYOUT TO BE SUBMITTED FOR APPROVAL PRIOR TO COMMENCEMENT.
6. AUSPOLE 6MTR. HINGED WATERCORP SPEC, REFER TO AUS-1806-11-D0-R0;RAG BOLT CAGE ASSEMBLY & FOOTING AS PER MANUFACTURERS DETAIL/.LOCAL SLAB THICKENING 600Ø X 1450D, 8 X N20 MAIN BARS STIRRUPS R6-200, 4 OFF M20 X 800MM LONG HOOK BOLTS 105MM THREAD, SET 95MM ABOVE CONCRETE; PROVIDE 2 NUTS & WASHERS PER BOLT, USE ONE NUT & WASHER UNDER BASE PLATE FOR LEVELLING.
7. ORIENTATION OF SWITCHBOARD MAY BE CHANGED UPON SUBMITTAL.

CONDUIT LOCATIONS ARE INDICATIVE ONLY
AND ARE TO BE CONFIRMED ON SITE



4-22kW SWITCHBOARD CONDUIT LAYOUT
PLAN VIEW
NTS



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Capricorn Municipal Development Guidelines

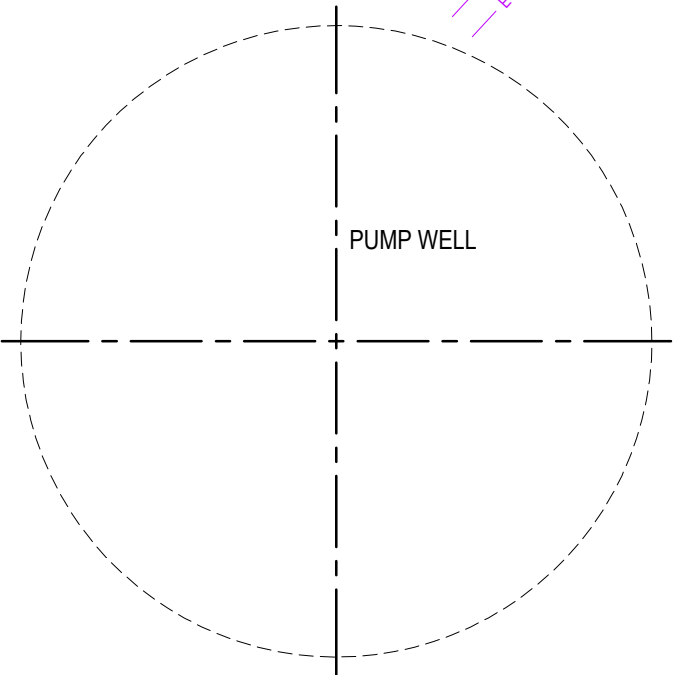
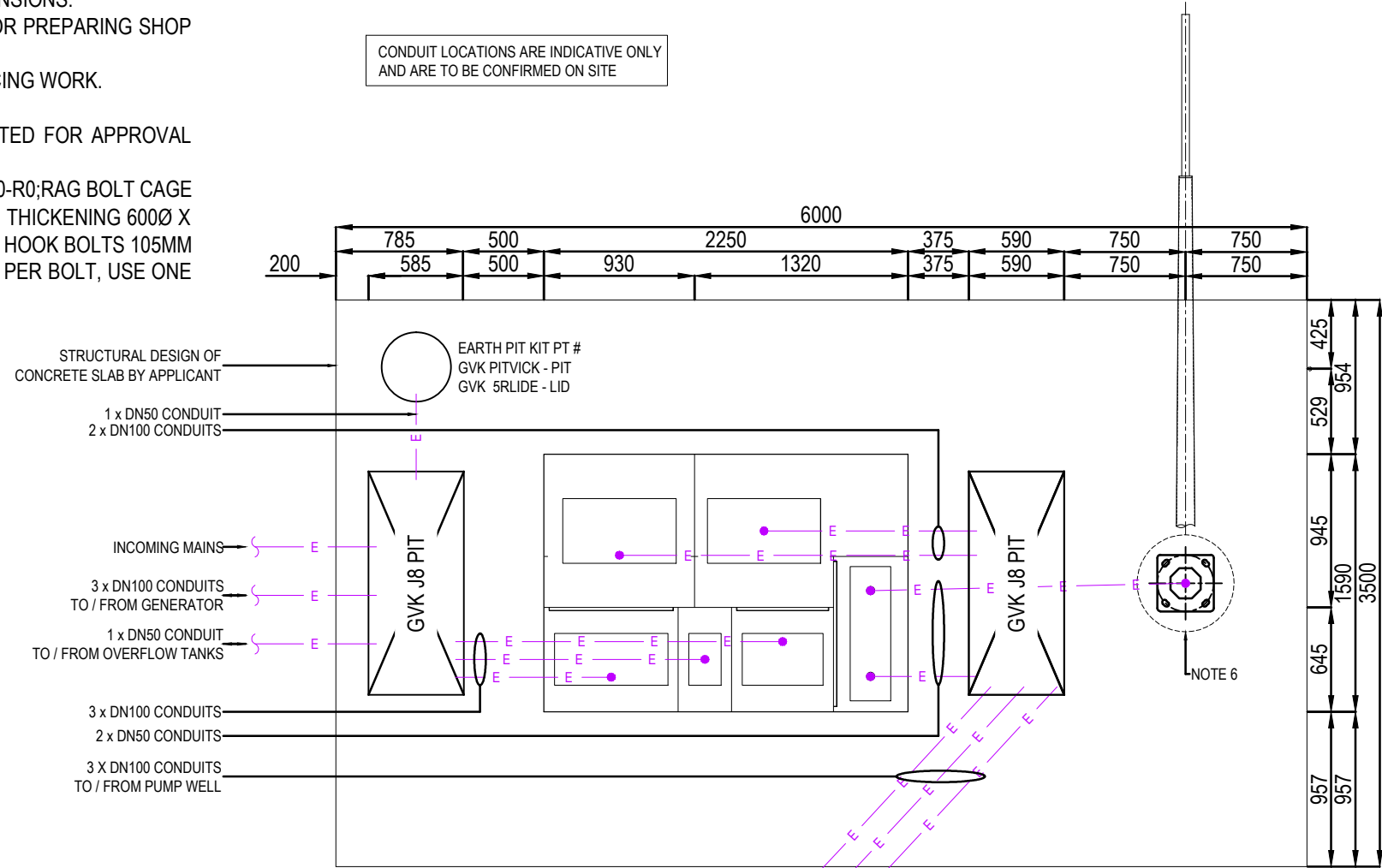
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STANDARD DRAWINGS
SEWERAGE PUMP STATIONS
GENERAL ARRANGEMENT 06
ELECTRICAL SERVICES LAYOUT 4–22kW

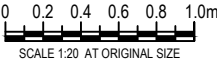
STANDARD
DRAWING
CMDG–S–050J

REV. 0 1 2 A B

- NOTES:
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 - 7. ORIENTATION OF SWITCHBOARD MAY BE CHANGED UPON SUBMITTAL.



22-160kW SWITCHBOARD CONDUIT LAYOUT
PLAN VIEW
NTS



APPLICABILITY TABLE							
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Applicable DWG							

REVISIONS		DATE
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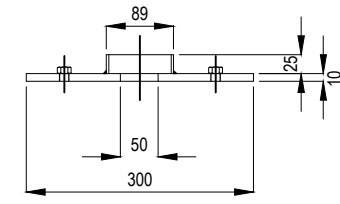
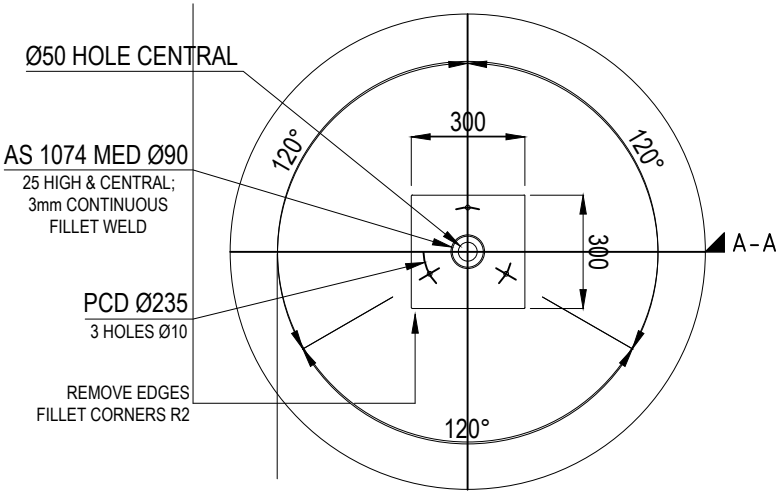
Livingstone Shire Council (LSC)
Maranoa Regional Council (MRC)
Rockhampton Regional Council (RRC)

STANDARD DRAWINGS
SEWERAGE PUMP STATIONS
GENERAL ARRANGEMENT 07
ELECTRICAL SERVICES LAYOUT 30–105kW

STANDARD
DRAWING
CMDG–S–050K

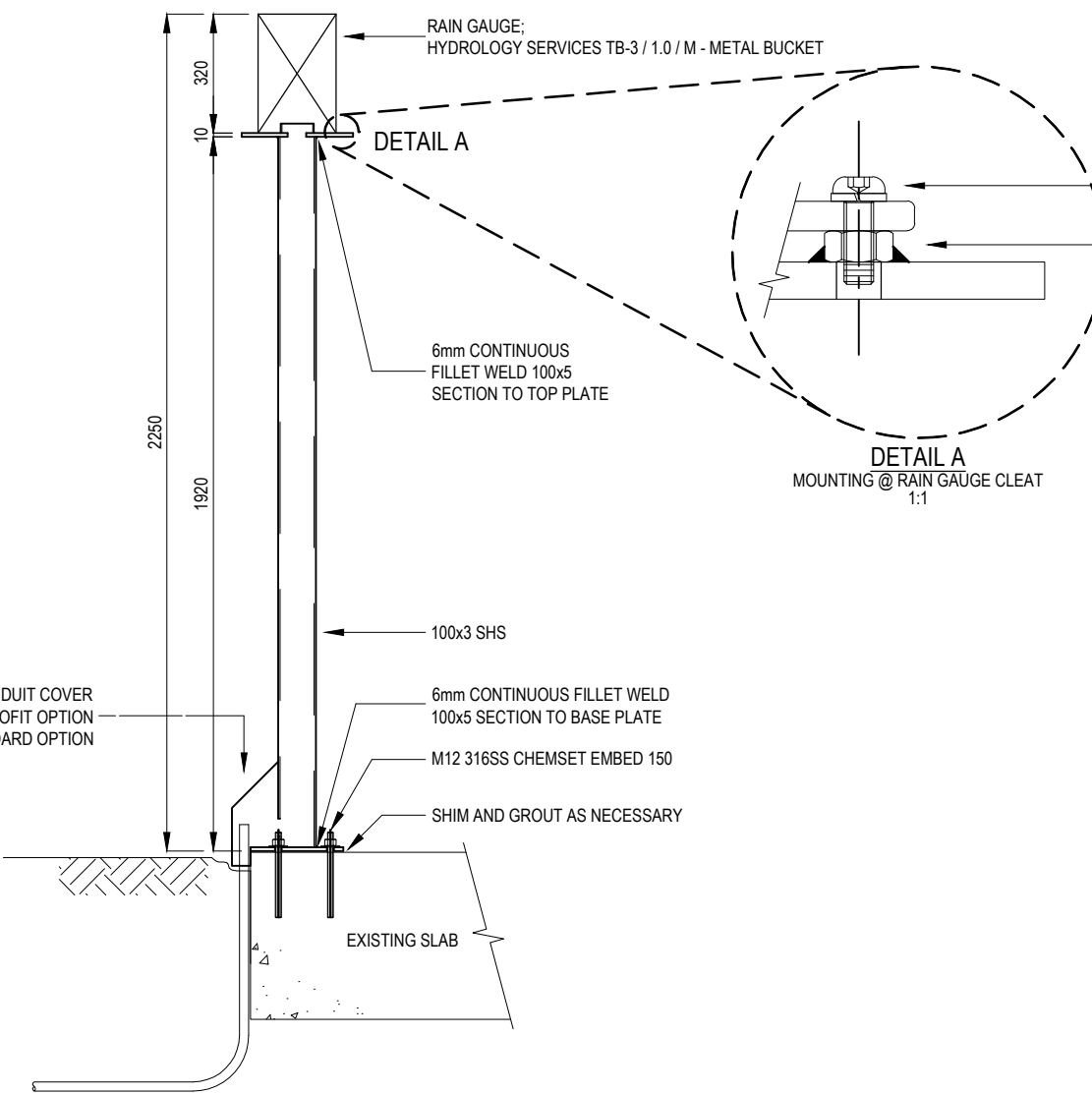
REV. | 0 | 1 | 2 | A | B |

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 - ALL PRE-FABRICATED STRUCTURAL MEMBERS, SHEET, NUTS & BOLTS ETC. TO BE 316SS & POWDER COATED PALE EUCALYPT - DULUX 84221.



SECTION A-A
1:5
MATERIAL: 316 STAINLESS STEEL
FINISH: POWDER COATED MIST GREEN DULUX 84221

PLAN ON TOP PLATE
1:10
MATERIAL: 316 STAINLESS STEEL
FINISH: POWDER COATED MIST GREEN DULUX 84221

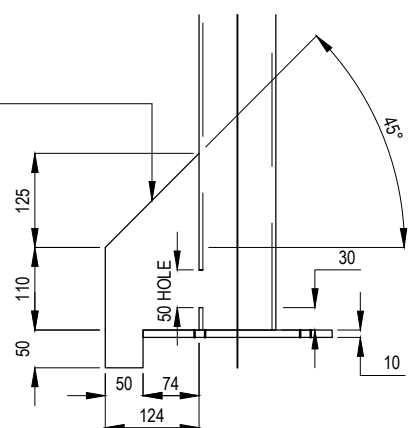


FRONT ELEVATION
GENERAL ARRANGEMENT - RAIN GAUGE DETAILED AS RETROFIT OPTION
1:10
MATERIAL: 316 STAINLESS STEEL
FINISH: POWDER COATED MIST GREEN DULUX 84221

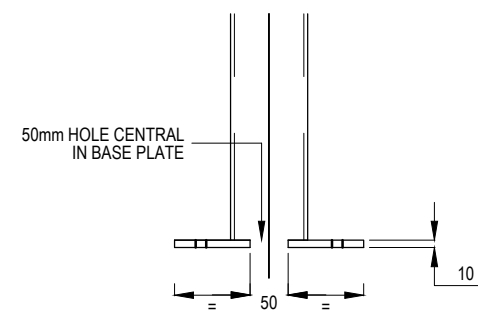
M8x20 SETSCREW BUTTON HEAD SOCKET
M8 SPRING WASHER
M8 WELD NUT &
Ø10 HOLE TO SUIT PLUG WELD

2mm SHEET METAL CONDUIT COVER
3 SIDES, OPEN ON BOTTOM, FLUSH WITH SHS
CFW GRIND WELDS FLUSH, CLEAN SPATTER

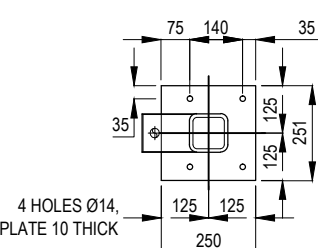
DETAIL A
MOUNTING @ RAIN GAUGE CLEAT
1:1



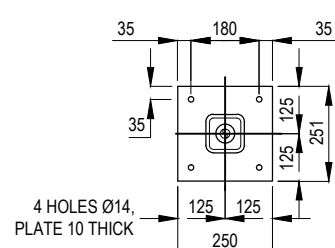
DETAIL B - RETROFIT OPTION
SHEET METAL CONDUIT COVER
1:5
MATERIAL: 316 STAINLESS STEEL
FINISH: POWDER COATED MIST GREEN DULUX 84221



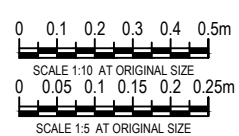
DETAIL C - STANDARD OPTION
SHEET METAL CONDUIT COVER
1:5
MATERIAL: 316 STAINLESS STEEL
FINISH: POWDER COATED MIST GREEN DULUX 84221



PLAN ON BASE PLATE - RETROFIT OPTION
1:10
MATERIAL: 316 STAINLESS STEEL
FINISH: POWDER COATED MIST GREEN DULUX 84221



PLAN ON BASE PLATE - STANDARD OPTION
1:10
MATERIAL: 316 STAINLESS STEEL
FINISH: POWDER COATED MIST GREEN DULUX 84221



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STANDARD DRAWINGS
SEWERAGE PUMP STATIONS
GENERAL ARRANGEMENT 08
RAIN GAUGE POST

STANDARD DRAWING CMDG-S-050L
REV. 0 1 2 A B

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NON-POTABLE WATER NOTICE TO
BE INSTALLED ABOVE HOSE COCK



DO NOT
DRINK

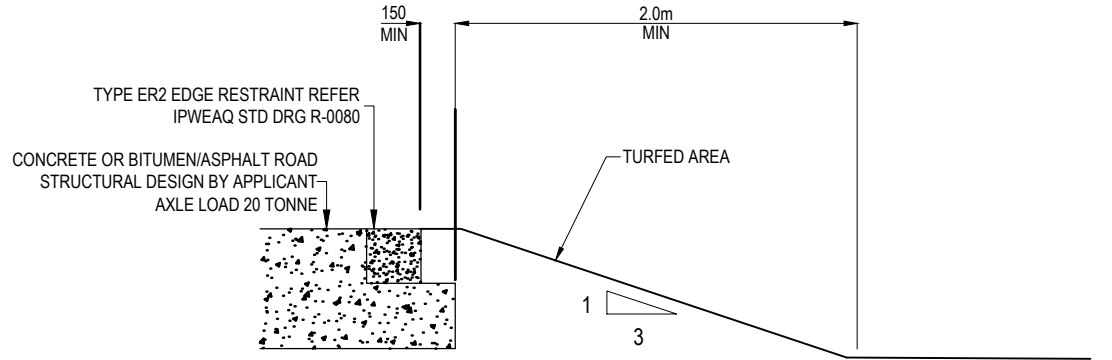
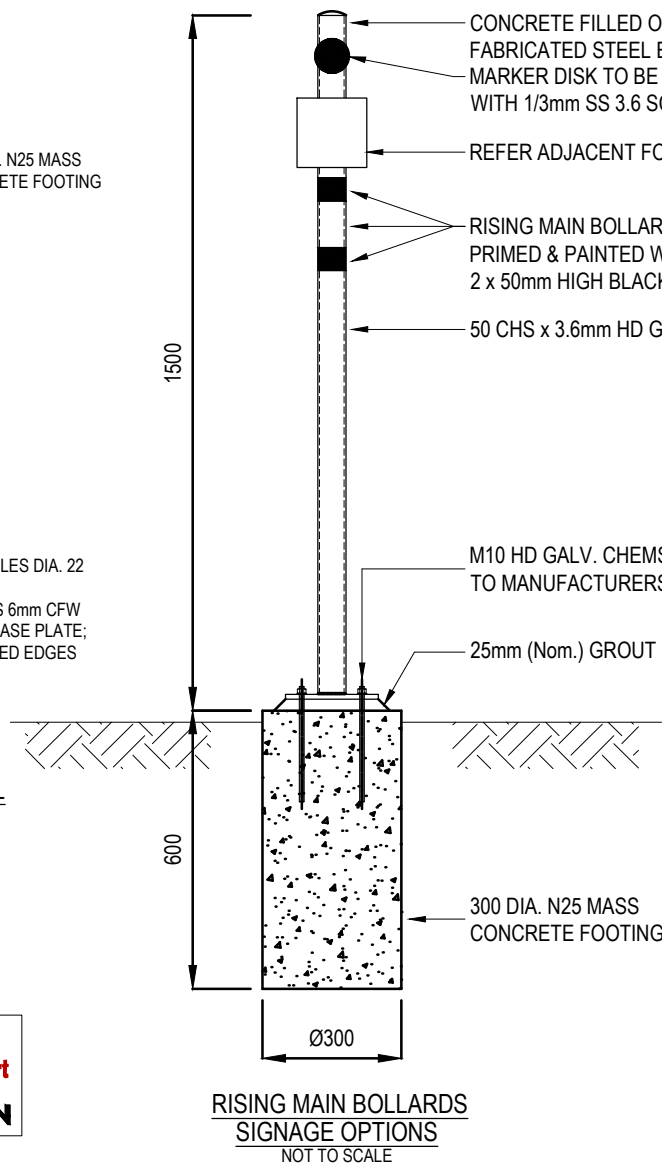
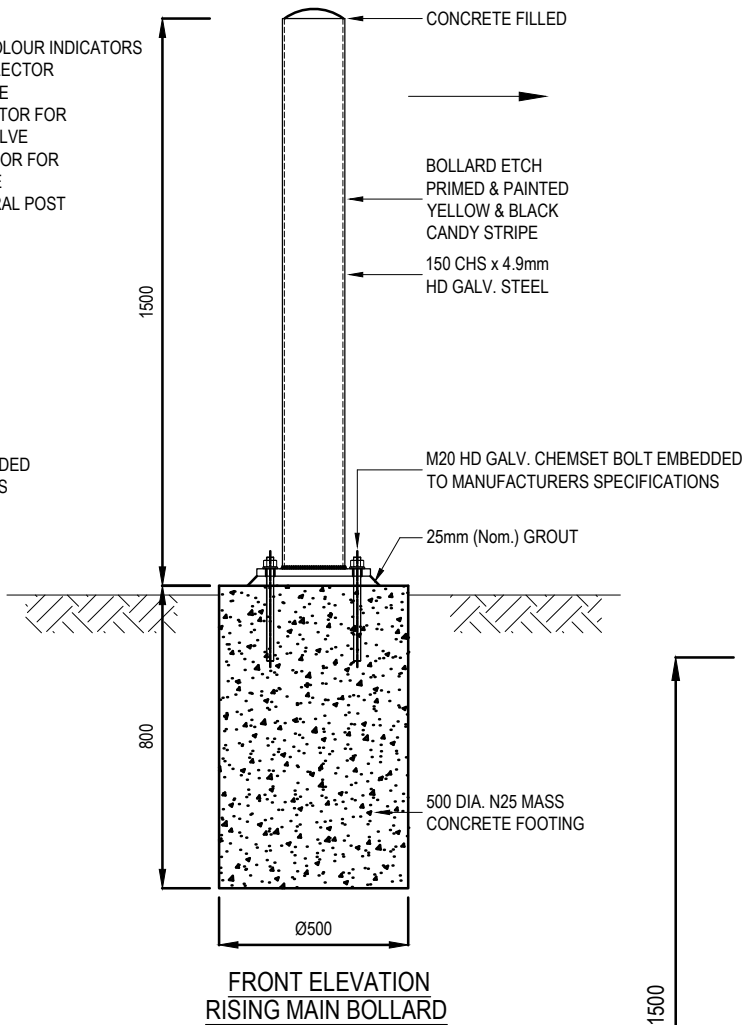
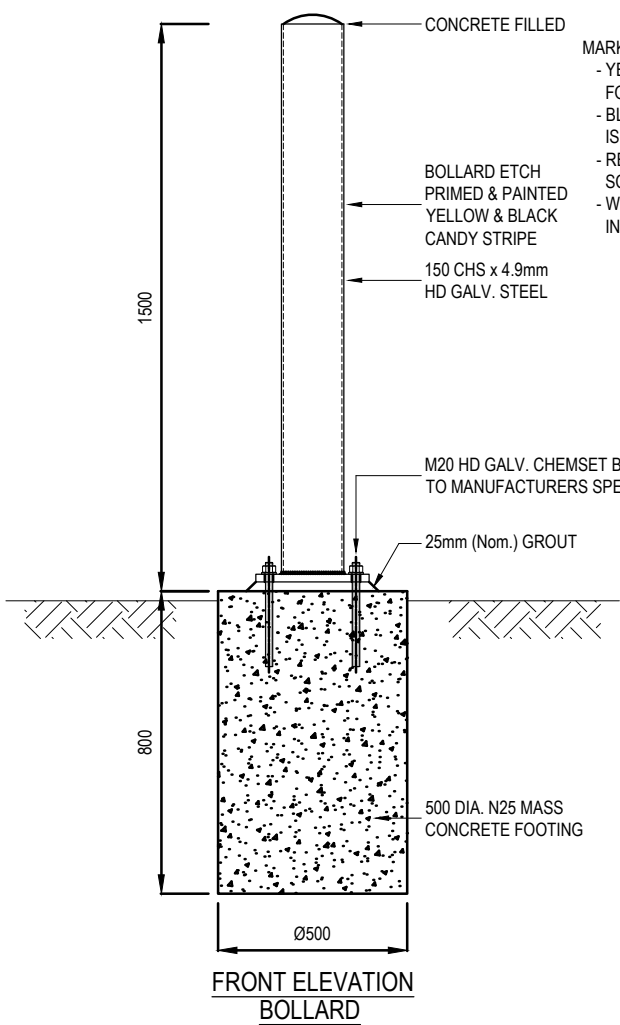
NON-POTABLE SAFETY SIGNAGE
NOT TO SCALE



0 0.1 0.2 0.3 0.4 0.5m
SCALE 1:10 AT ORIGINAL SIZE

REVISIONS		DATE	<p>DISCLAIMER.</p> <p>The authors and sponsoring organisations shall have no liability or responsibility to the user or any other person or entity with respect to any liability, loss or damage caused or alleged to be caused, directly or indirectly, by the adoption and use of these Standard Drawings including, but not limited to, any interruption of service, loss of business or anticipatory profits, of consequential damages resulting from the use of these Standard Drawings. Persons must not rely on these Standard Drawings as the equivalent of, or a substitute for, project-specific design and assessment by an appropriately qualified professional.</p>	<p>Capricorn Municipal Development Guidelines</p> <p>Incorporating:</p> <table><tr><td>Banana Shire Council (BSC)</td><td>Livingstone Shire Council (LSC)</td></tr><tr><td>Central Highlands Regional Council (CHRC)</td><td>Maranoa Regional Council (MRC)</td></tr><tr><td>Gladstone Regional Council (GRC)</td><td>Rockhampton Regional Council (RRC)</td></tr><tr><td>Isaac Regional Council (IRC)</td><td></td></tr></table>		Banana Shire Council (BSC)	Livingstone Shire Council (LSC)	Central Highlands Regional Council (CHRC)	Maranoa Regional Council (MRC)	Gladstone Regional Council (GRC)	Rockhampton Regional Council (RRC)	Isaac Regional Council (IRC)		<p>STANDARD DRAWINGS</p> <p>SEWERAGE PUMP STATIONS</p> <p>GENERAL ARRANGEMENT 09</p> <p>BACK FLOW PREVENTION</p>		<p>STANDARD DRAWING</p> <p>CMDG-S-050M</p>	
Banana Shire Council (BSC)	Livingstone Shire Council (LSC)																
Central Highlands Regional Council (CHRC)	Maranoa Regional Council (MRC)																
Gladstone Regional Council (GRC)	Rockhampton Regional Council (RRC)																
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B	IRC ADDED	11/2016															
A	ORIGINAL CMDG ISSUE	05/2015															
1	AMENDMENTS	—															
0	ORIGINAL ISSUE	05/2012															
REV.		0	1	A	B												

- NOTES:
- FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.
 - VERIFY ALL DIMENSIONS ON THE JOB BEFORE COMMENCING WORK OR PREPARING SHOP DRAWINGS.
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 - EXAMPLE LAYOUT ONLY; PROJECT SPECIFIC LAYOUT TO BE SUBMITTED FOR APPROVAL PRIOR TO COMMENCEMENT.



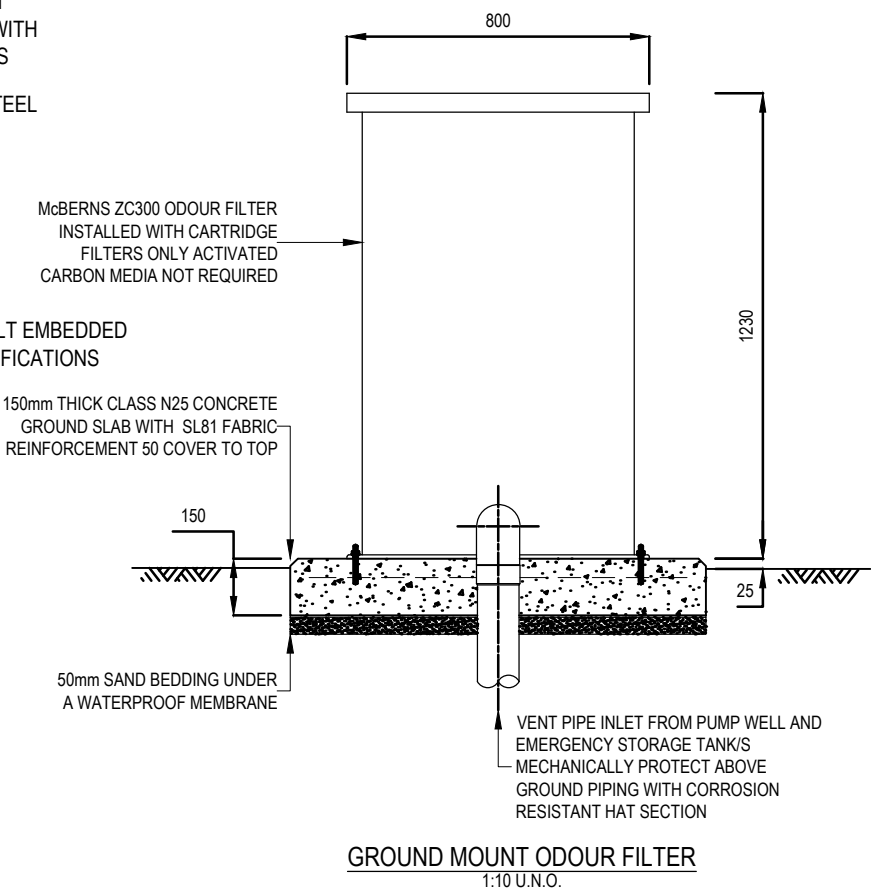
LANDSCAPING

- SUPPLY AND ESTABLISH TURF ON ALL SURFACES NOT PAVED AS APPROVED. TOPSOIL STRIPPED PRIOR TO CONSTRUCTION SHALL BE REPLACED ON ALL SURFACES NOT PAVED, INCLUDING BATTER SLOPES.

PAVEMENT

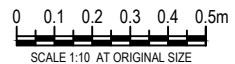
- PAVEMENT SHALL BE DRY AND THOROUGHLY BROOMED BEFORE SURFACING IS UNDERTAKEN. ANY DEPRESSIONS GREATER THAN 25mm SHALL BE TACK COATED AND BROUGHT UP TO THE LEVEL OF THE PAVEMENT.
- PAVEMENT SHALL COMPLY WITH MAIN ROADS SPECIFICATION "UNBOUND PAVEMENTS" MRS 11.05
- ASPHALTIC CONCRETE SHALL COMPLY WITH MAIN ROADS SPECIFICATION "DENSE GRADED ASPHALT PAVEMENTS" MRS 11.30

TYPICAL EDGE PROFILE FOR AC PAVEMENT
Not To Scale



APPLICABILITY TABLE

Council	BSC	CHRC	GRC	IRC	LSC	MRC	RRC
Applicable	No	No	Yes	No	No	No	No
Applicable DWG							



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Isaac Regional Council (IRC)	

STANDARD DRAWINGS
SEWERAGE PUMP STATIONS
GENERAL ARRANGEMENT 10
ODOUR FILTER, BOLLARDS, ROADS AND LANDSCAPING

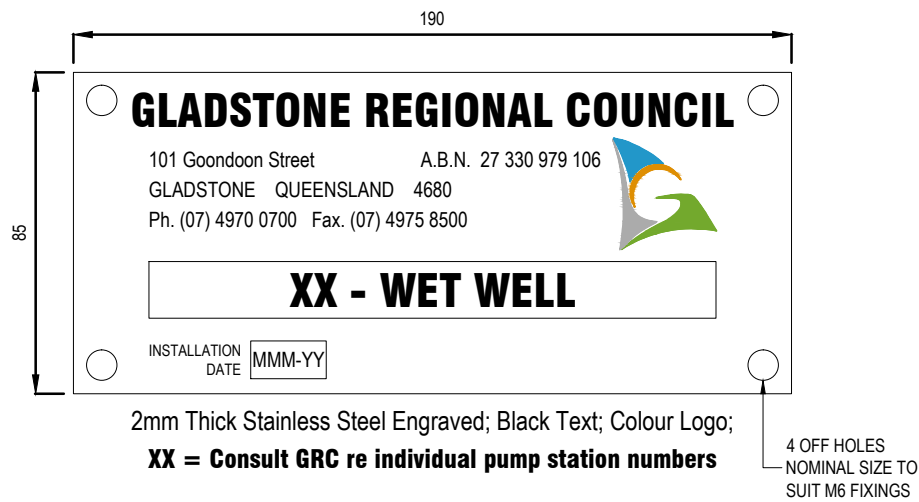
STANDARD
DRAWING
CMDG-S-050N
REV. 0 1 2 A B

REVISIONS	DATE
B IRC ADDED	11/2016
A ORIGINAL CMDG ISSUE	05/2015
2 AMENDMENTS	-
1 AMENDMENTS	08/2012
0 ORIGINAL ISSUE	05/2012

DISCLAIMER.

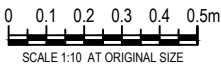
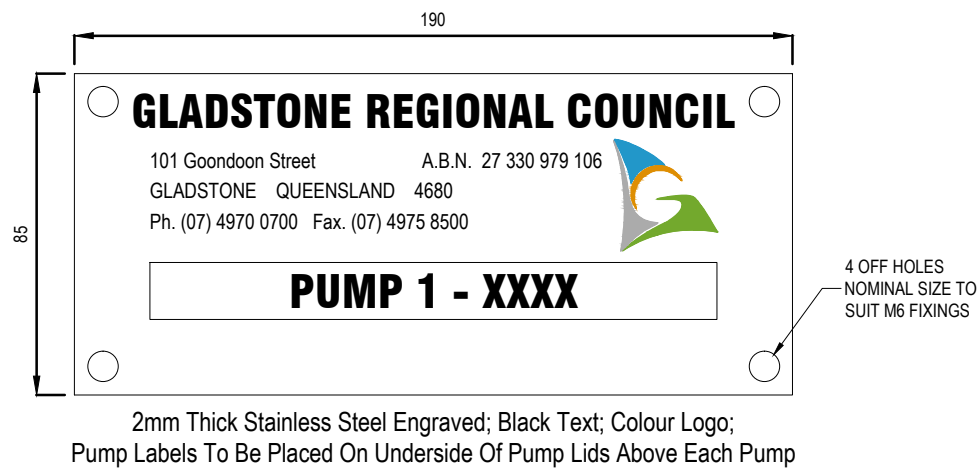
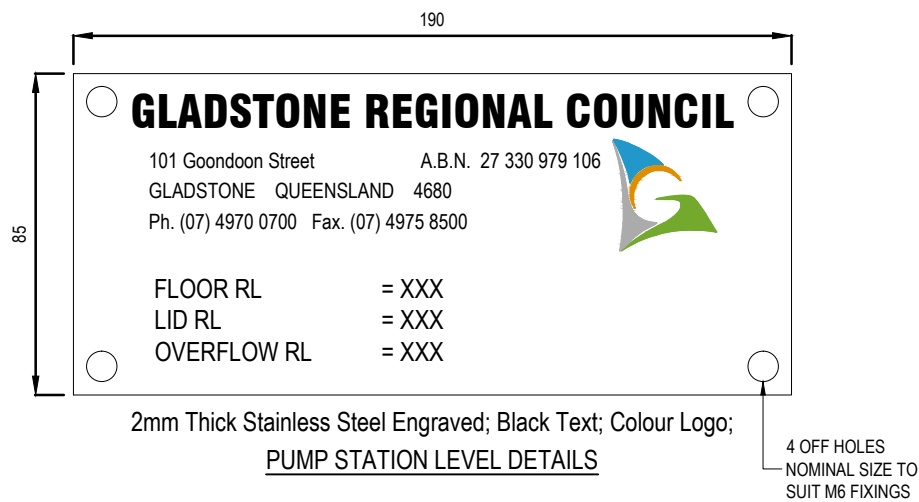
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 - 6. REFER GRC TAGGING AND LABELLING SPECIFICATION FOR REQUIREMENTS.



FABRICATE AND INSTALL LABELS FOR THE FOLLOWING ITEMS OF PLANT:

- XX - VALVE PIT
- XX - FLOW METER CHAMBER
- XX - PIGGING CHAMBER
- XX - COLLECTION MAN HOLE
- XX - OVERFLOW MAN HOLE
- XX - OVERFLOW TANK 1
- XX - OVERFLOW TANK 2
- XX - OVERFLOW SCREEN CHAMBER
- XX - SCOUR VALVE



APPLICABILITY TABLE							
Council	BSC	CHRC	GRC	IRC	LSC	MRC	RRC
Applicable	No	No	Yes	No	No	No	No
Applicable DWG							

REVISIONS		DATE
B	IRC ADDED	11/2016
A	ORIGINAL CMDG ISSUE	05/2015
1	AMENDMENTS	—
0	ORIGINAL ISSUE	05/2012

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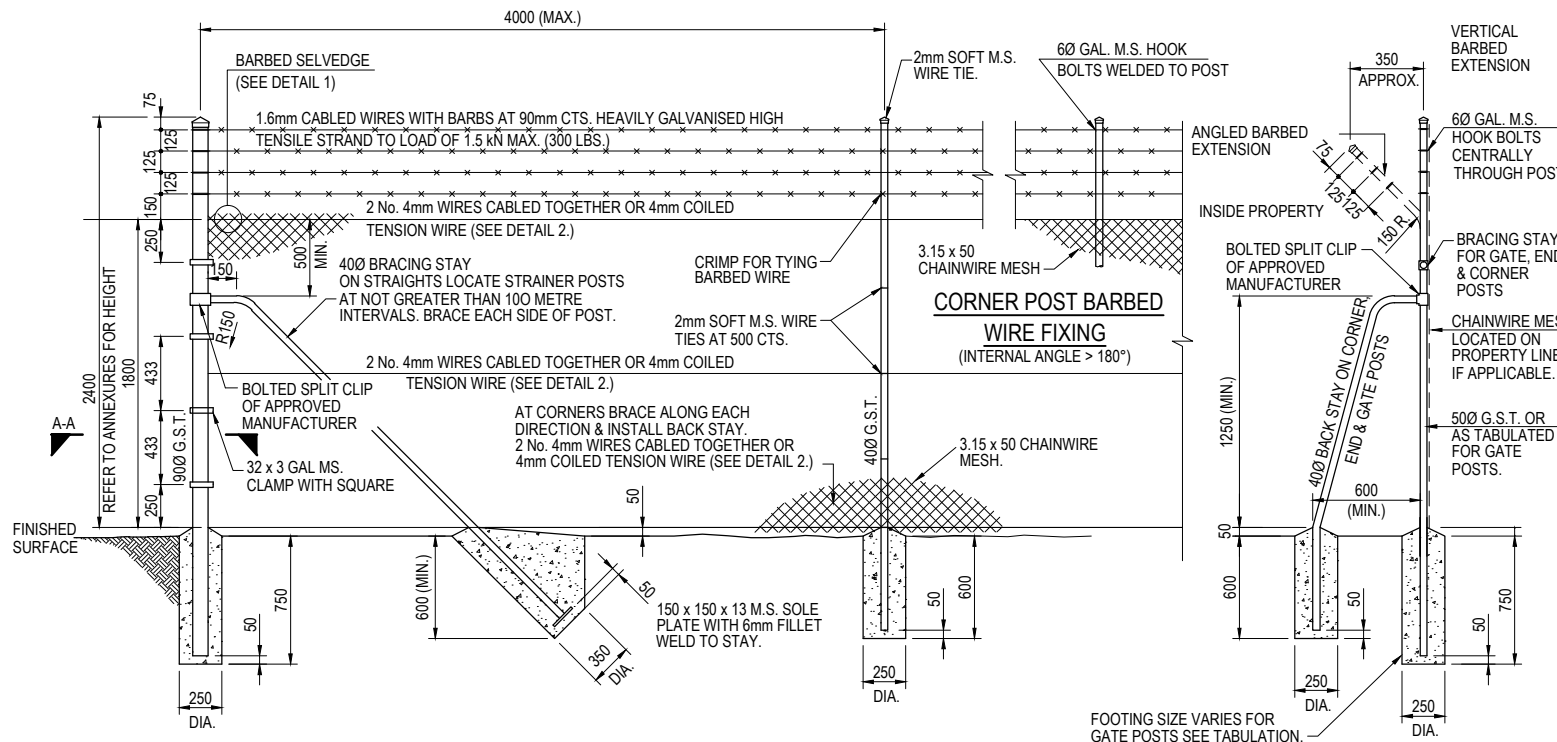
Rockhampton Regional Council (RRC)

STANDARD DRAWINGS

SEWERAGE PUMP STATIONS

LABELS

STANDARD DRAWING			
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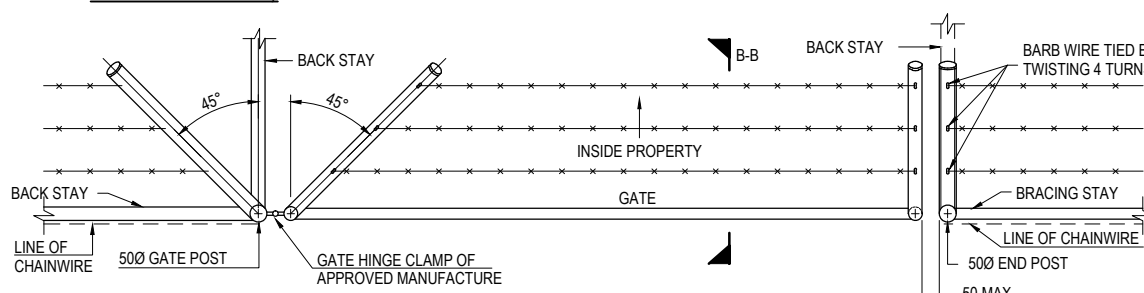


CORNER, END & STRAINER POST
(USE BACK STAY FOR GATE, END & CORNER POSTS.)

BRACING STAY FOR GATE CORNER, END & STRAINER POSTS.

INTERMEDIATE POST

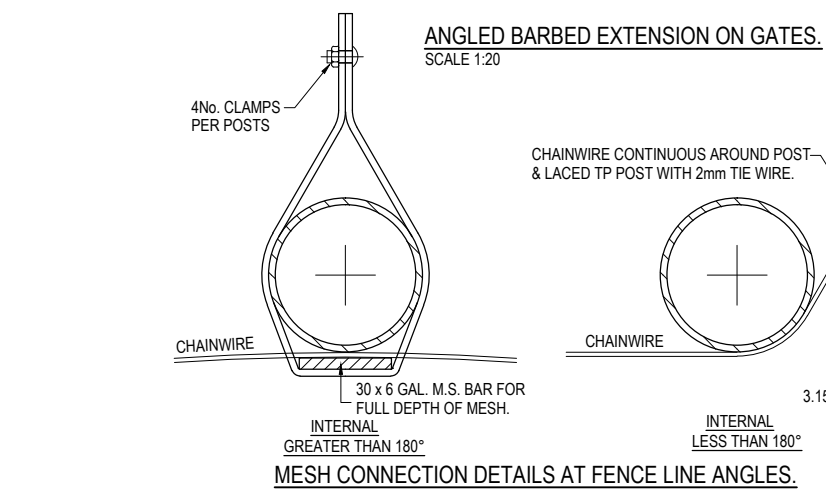
BACK STAY FOR GATE, END & CORNER POSTS.



SECTION B-B

FOOTING SIZE WHEN IN ROCK.

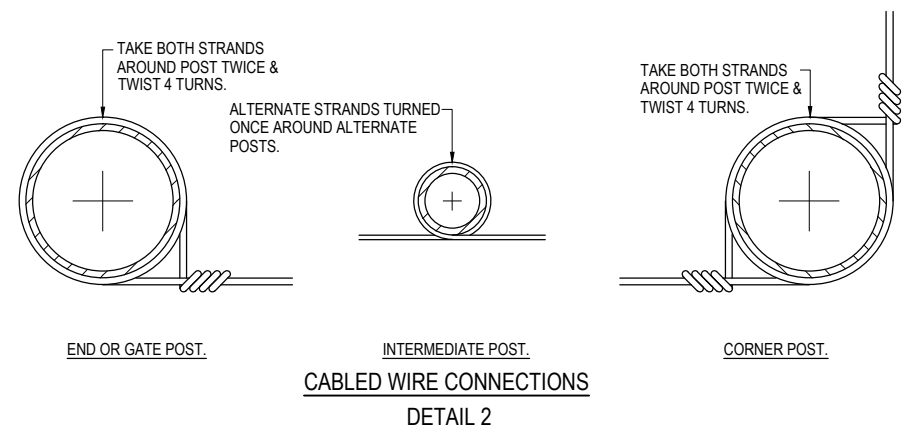
DETAIL 3



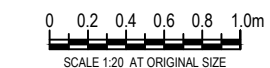
MESH CONNECTION DETAILS AT FENCE LINE ANGLES.




DETAIL 1

SECTION A-A



CABLED WIRE CONNECTIONS
DETAIL 2



GATES:- FRAMES, POSTS AND FOOTINGS							
END POST  50 MIN. 75 MAX.	OUTER FRAME	INNER BRACING	DIAG. BRACING	GATE POST	GATE POST FOOTINGS		NUMBER REQUIRED
					DIA.	DEPTH	
					(NOMINAL DIAMETERS.)		
	32	25	-	50	250	1000	-
 REFER DETAIL 3.	32	25	-	50	250	1000	-
	32	25	-	50	250	1000	-
	32	25	-	80	300	1000	-
 DROP BOLT	40	32	-	100	400	1100	-

NOTE: OMIT HANDHOLES WHEN OPENING FROM ONE SIDE ONLY IS REQUIRED.

- NOTE:**
- ALL FENCES SHALL COMPLY WITH AUSTRALIAN STANDARD 1725 - SECURITY FENCES AND GATE POSTS TO BE MEDIUM THICKNESS.
 - CHARACTERISTIC COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 20MPa. AT 28 DAYS MAX. AGGREGATE SIZE 20mm
 - SHAPE GROUND ALONG FENCE LINE TO ELIMINATE GAPS GREATER THAN 50mm UNDER THE SELVEDGE, TO A WIDTH OF ONE METRE EACH SIDE.
 - PAINT ALL DAMAGED SECTIONS WITH ZINC RICH PAINT (2 COATS)
 - POST CAPS SHALL BE DRIVE ON FITTED TO ALL POSTS TO APPROVAL.
 - ALL DIMENSIONS ARE IN MILLIMETRES.
 - BRACED PANELS MAY BE USED IN ACCORDANCE WITH CLAUSE 45,AS1725
 - WHERE FENCE CROSSES OPEN DRAIN PROVIDE 40 DIA. G.M.S. POSTS AT 300 CTS. CAST IN CONCRETE TO 600 BELOW F.S.L.



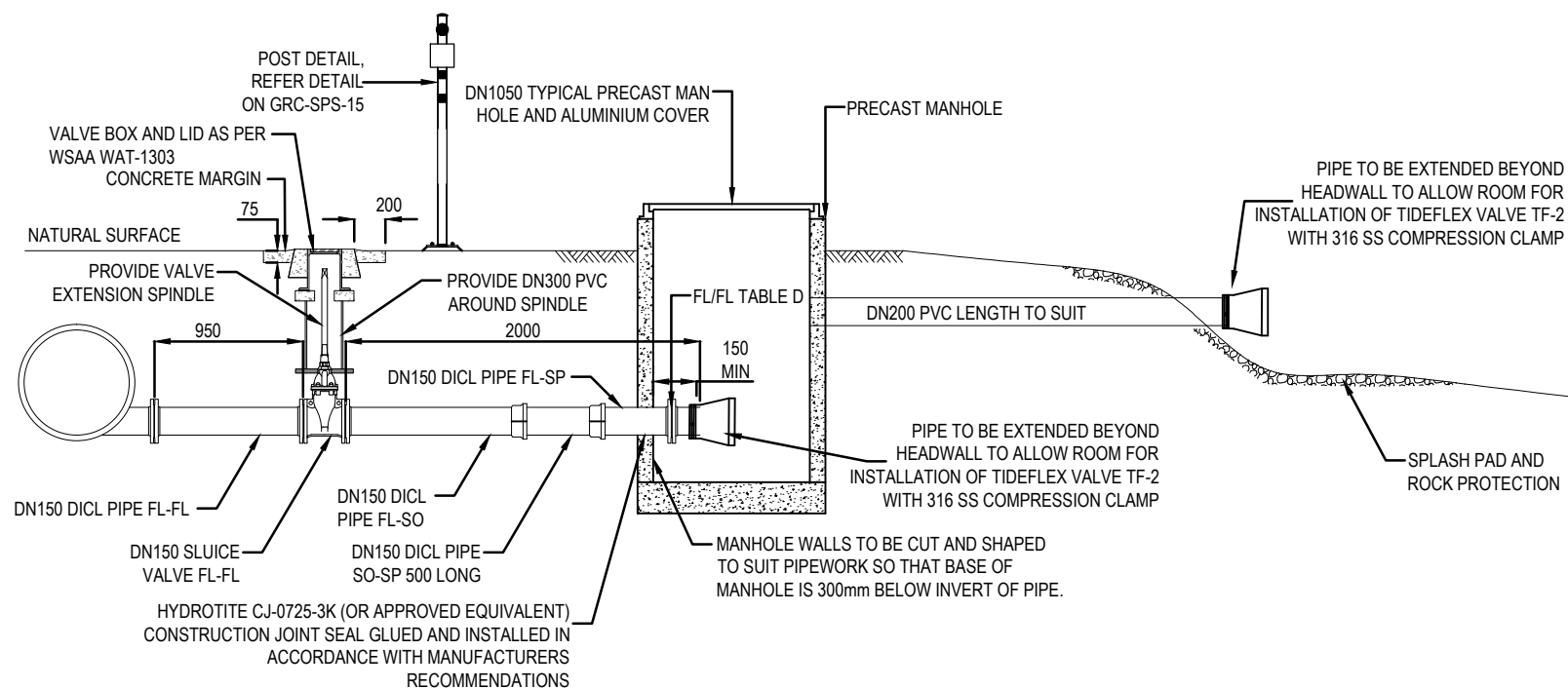
REVISIONS	DATE
B IRC ADDED	11/2016
A ORIGINAL CMDG ISSUE	05/2015
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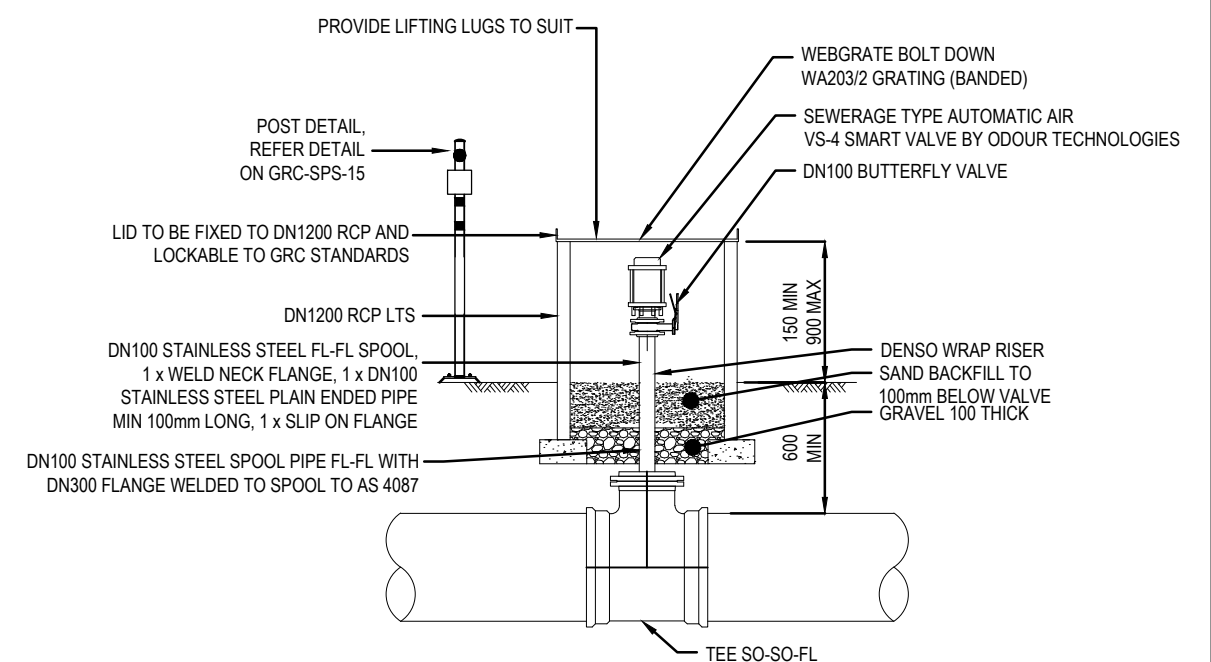
STANDARD DRAWINGS
SEWERAGE PUMP STATIONS
GENERAL ARRANGEMENT 02
FENCE AND GATE DETAILS

APPLICABILITY TABLE							
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Applicable DWG							



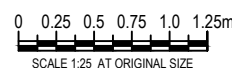
SCOUR DETAIL
SCALE 1:25

- NOTE:
1. FOR FURTHER DETAILS REFER WSAA STD DWG WAT-1307.
 2. IF RISING MAIN IS HIGHER THEN DISCHARGE POINT MANHOLE IS NOT REQUIRED



TYPICAL AIR RELEASE VALVE
SCALE 1:25

NOTE: AIR VALVE TO BE LOCATED ABOVE GROUND WATER LEVEL, AIR VALVE AND RCP TO BE LIFTED 900 MAX ABOVE GROUND TO SUIT



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STANDARD DRAWINGS SEWERAGE PUMP STATIONS

SCOUR AND AIR VALVE DETAILS

STANDARD
DRAWING
CMDG-S-050Q
REV.

0	A	B			
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1. REFER GRC LABELLING SPECIFICATION FOR DETAILS.



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STANDARD DRAWINGS
SEWERAGE PUMP STATIONS
PIPING AND INSTRUMENTATION DIAGRAM

STANDARD
DRAWING
CMDG-S-050R

REV.	0	A	B			
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