SERVICE LEGEND

	NEW (0.7)	EXISTING (0.35)	DISUSED (0.25)
(lineweight)			
GRAVITY SEWER	S S	S S	S S
SEWER RISING MAIN	RM RM	RM RM	RM RM
SEWER VACUUM MAIN	VM VM	VM VM	VM VM
LOW PRESSURE SEWER	LPS LPS	LPS LPS	LPS LPS
DRINKING WATER MAIN	W W	W W	W W
NON-DRINKING WATER MAIN	NDW NDW	NDW NDW	NDW NDW
VENT MAIN	V V	V V	V V
WATER MAIN TO BE SUBSTITUTED	SUB SUB		
WATER SERVICE CONDUIT (with service size shown)	DN32 PE		
ENCASING/ENVELOPER PIPE	W W		
STORMWATER DRAINAGE		SW SW	
GAS MAIN		G G	
ELECTRICITY U/G		E E	
ELECTRICITY O/H		V V V	
TELECOMMUNICATION		T T	
OPTIC FIBRE		OF OF	
UNIDENTIFIED SERVICE		US US	
OIL PIPELINE		OIL OIL	
LIGHT POLE		E LP E	
ELECTRICITY/POWER POLE		V EP V	
STORMWATER GULLY		SW SW	
PIT (TELECOM/ELEC)		T E	
BACK OF KERB			
EDGE OF BITUMEN			
FENCE LINE		/ / /	
EASEMENT			
Q100 FLOOD LINE		(BELOW Q100 FLOOD LINE)	
CONTROL LEVEL		4.150 +	
CONTOUR LABEL		4.0	

WATER AND SEWERAGE SYSTEM SYMBOLS

	NEW	EXISTING	DISUSED
WATER			
FIRE HYDRANT	FH	FH	FH
ISOLATION VALVE			
SCOUR VALVE			
AIR VALVE	AV	AV	AV
DEAD END			
CONNECTOR			
TEST/CHLORINATION POINT			
REDUCER	150 100	150 100	150 100
PIPE MATERIAL CHANGE	PVC DICL	PVC DICL	PVC DICL
ISOLATION VALVE TO REMAIN CLOSED PENDING CLEARANCE OF NEW MAIN			
WATER SERVICE POINT			
FLUSHING POINT	F		
HYDRANT - OPERATIONAL PURPOSES ONLY	OH		
BOUNDARY VALVE			
FLOWMETER			
THRUST/ANCHOR BLOCK			
SEWERAGE			
MAINTENANCE HOLE and END OF LINE	1/1 E/1	1/1 E/1	1/1 E/1
MAINTENANCE SHAFT	1/1	1/1	1/1
HORIZONTAL/VERT BENDS	VB1/1 HB1/1	VB1/1 HB1/1	VB1/1 HB1/1
COMPOUND BENDS	CB1/1	CB1/1	CB1/1
STUB / TEMPORARY END			
OVERFLOW MAINTENANCE HOLE (FLAP VALVE CHAMBER)	OFMH		
PROPERTY CONNECTION			
RODDING POINT	R.P.		
ISOLATION VALVE			
SCOUR VALVE and CHAMBER			
GAS RELEASE VALVE	GRV		
FLUSHING POINT	F		
RISING MAIN DISCHARGE MAINTENANCE HOLE	DMH 1/1		
NON-RETURN/REFLUX VALVE			
VENT POLE / ODOUR CONTROL UNIT			
COLLECTION CHAMBERS	C.C. 4/2		
PROPERTY BOUNDARY ASSEMBLY/KIT (LPS)			

NOTE:
FOR EACH DRAWING, A CROSS ON A SERVICE PROVIDER'S NAME IN THE TITLE BLOCK BELOW MEANS THAT THE DRAWING IS **NOT** APPLICABLE TO THAT SERVICE PROVIDER

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-GEN-1101-1 VERSION B DATED 07/08/2014	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

GENERAL STANDARD DRAWING

WATER SUPPLY, SEWERAGE, VACUUM SEWERAGE AND PRESSURE SEWERAGE LEGEND

BRC	FCRC	GRC	NBRC	SBRC

DRAWING No. WBB-GEN-1100-1

VERSION A

NOT TO SCALE

ORG DATE:

SEWAGE PUMP STATION STANDARD DRAWINGS
DRAWING INDEX - SHEET 1 OF 2

DRAWING No.	DRAWING TITLE				REV No.
WBB-SPS-INDEX	SEWAGE PUMP STATION	DRAWING INDEX	SHEET 1 OF 2		A
WBB-SPS-INDEX	SEWAGE PUMP STATION	DRAWING INDEX	SHEET 2 OF 2		A
WBB-SPS-1100-1	TYPICAL LOCALITY AND SITE PLAN				A
WBB-SPS-1100-2	TYPICAL LONGITUDINAL SECTION	OF RISING MAIN			A
WBB-SPS-1101-1	TYPICAL P & ID DIAGRAM	DUTY - ASSIST OPERATION	OR DUTY-STANDBY		A
WBB-SPS-1101-2	TYPICAL P & ID DIAGRAM	DUTY STANDBY OPERATION		NOT USED	
WBB-SPS-1101-3	PUMP AND RISING MAIN DETAILS				A
WBB-SPS-1101-4	RISING MAIN CONCEPT DESIGN	SECTIONS AND MEAN	HEAD CALCULATIONS		A
WBB-SPS-1102-1	PREFERRED SITE LAYOUT				A
WBB-SPS-1102-2	TYPICAL SITE LAYOUT WITH	STORAGE AND BACK-UP POWER			A
WBB-SPS-1102-3	ALTERNATIVE LAYOUT WITH	STORAGE AND OPTIONAL FLOW-METER			A
WBB-SPS-1102-4	TYPICAL SITE LAYOUT WITH	PIG INSERTION/EMERGENCY PUMP POINT	AND ALTERNATIVE EMERGENCY STORAGE		A
WBB-SPS-1102-5	LEVEL AND CAPACITIES	INTERACTION DIAGRAM		NOT USED	
WBB-SPS-1102-6	LEVEL INTERACTION	DIAGRAM FOR SMALL STATIONS			A
WBB-SPS-1300-1	TYPICAL 1.8 M WET WELL	GENERAL ARRANGEMENT			A
WBB-SPS-1300-2	1.8 M WET WELL	SECTION DETAILS			A
WBB-SPS-1300-3	1.8 M WET WELL	PIPEWORK ARRANGEMENT			A
WBB-SPS-1300-4	FLOWMETER & SECTION VALVE CHAMBER				A
WBB-SPS-1300-5	2.4 M WET WELL	STRUCTURAL DETAILS		NOT USED	
WBB-SPS-1300-6	LEVEL CONTROL AND	WELL WASHER DETAILS			A
WBB-SPS-1300-7	1.8M WET WELL	NOTES SHEET 1 OF 2			A
WBB-SPS-1300-8	1.8M WET WELL	NOTES SHEET 2 OF 2			A
WBB-SPS-1300-9	TYPICAL 1800 DIA LIFT STATION				A
WBB-SPS-1300-10	TYPICAL 1800 DIA LIFT STATION	SECTIONS			A
WBB-SPS-1300-11	TYPICAL 1800 DIA LIFT STATION	MISCELLANEOUS DETAILS			A
WBB-SPS-1300-12	ALTERNATIVE LIFT STATION ARRANGEMENT	INCLUDING STORAGE OPTION		NOT USED	
WBB-SPS-1301-1	PUMP WELL GENERAL ARRANGEMENT	PLAN AT TOP SLAB LEVEL		NOT USED	
WBB-SPS-1301-2	PUMP WELL GENERAL ARRANGEMENT	PLAN AT HEADER PIPE LEVEL		NOT USED	
WBB-SPS-1301-3	PUMP WELL GENERAL ARRANGEMENT	SECTIONAL ELEVATION		NOT USED	
WBB-SPS-1301-4	CHAIN SUSPENDED	SUBMERSIBLE PUMP	TYPICAL INSTALLATION	NOT USED	
WBB-SPS-1304-0	ALUMINIUM ACCESS COVERS-OPTION 1	DRAWING INDEX AND GENERAL NOTES		NOT USED	
WBB-SPS-1304-1	ALUMINIUM ACCESS COVERS-OPTION 1	GENERAL ARRANGEMENT		NOT USED	
WBB-SPS-1304-2	ALUMINIUM ACCESS COVERS-OPTION 1	TYPICAL MULTI COVER ARRANGEMENT	AND SECTION DETAILS	NOT USED	
WBB-SPS-1304-3	ALUMINIUM ACCESS COVERS-OPTION 1	SECTION AND	HINGE DETAILS	NOT USED	
WBB-SPS-1304-4	ALUMINIUM ACCESS COVERS-OPTION 1	COVER SECTION DETAILS		NOT USED	
WBB-SPS-1304-5	ALUMINIUM ACCESS COVERS-OPTION 1	LOCK BOX MECHANISM DETAIL		NOT USED	
WBB-SPS-1304-6	ALUMINIUM ACCESS COVERS-OPTION 1	GRILLE HINGE DETAILS & SECTIONS		NOT USED	
WBB-SPS-1304-7	ALUMINIUM ACCESS COVERS-OPTION 1	CENTRE GRILLE HINGE	DETAILS & SECTIONS	NOT USED	
WBB-SPS-1304-8	ALUMINIUM ACCESS COVERS-OPTION 1	MISCELLANEOUS DETAILS		NOT USED	
WBB-SPS-1304-9	ALUMINIUM ACCESS COVERS-OPTION 1	RETAINING POST DETAILS		NOT USED	
WBB-SPS-1304-10	ALUMINIUM ACCESS COVERS-OPTION 2	NOTES AND PUMP WELL COVER PLAN		NOT USED	
WBB-SPS-1304-11	ALUMINIUM ACCESS COVERS-OPTION 2	PUMP WELL FRAME, SAFETY MESH PANELS	AND COVER UNDERSIDE DETAILS	NOT USED	
WBB-SPS-1304-12	ALUMINIUM ACCESS COVERS-OPTION 2	PUMP WELL HINGE AND SEAL DETAILS		NOT USED	
WBB-SPS-1304-13	ALUMINIUM ACCESS COVERS-OPTION 2	PUMP WELL AND VALVE PIT	LATCH MECHANISM BOX GENERAL ARRANGEMENT	NOT USED	
WBB-SPS-1304-14	ALUMINIUM ACCESS COVERS-OPTION 2	PUMP WELL AND VALVE PIT	LATCH MECHANISM BOX DETAILS	NOT USED	
WBB-SPS-1304-15	ALUMINIUM ACCESS COVERS-OPTION 2	PUMP WELL AND VALVE PIT	STRIKER PLATE ON FRAME DETAILS	NOT USED	
WBB-SPS-1304-16	ALUMINIUM ACCESS COVERS-OPTION 2	VALVE PIT GENERAL ARRANGEMENT		NOT USED	
WBB-SPS-1304-17	ALUMINIUM ACCESS COVERS-OPTION 2	VALVE PIT SECTIONS AND DETAILS		NOT USED	
WBB-SPS-1304-18	ALUMINIUM ACCESS COVERS-OPTION 3	DRAWING INDEX, NOTES AND LEGEND	SHEET 1 OF 12	NOT USED	
WBB-SPS-1304-19	ALUMINIUM ACCESS COVERS-OPTION 3	WET-WELL ACCESS COVERS	OPENING OPTIONS, SHEET 2 OF 12	NOT USED	
WBB-SPS-1304-20	ALUMINIUM ACCESS COVERS-OPTION 3	VALVE CHAMBER ACCESS COVERS	OPENING OPTIONS, SHEET 3 OF 12	NOT USED	
WBB-SPS-1304-21	ALUMINIUM ACCESS COVERS-OPTION 3	WET-WELL AND VALVE CHAMBER HANDRAILS	ARRANGEMENT OPTIONS, SHEET 4 OF 12	NOT USED	

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-INDEX VERSION C DATED 03/01/2017	

WBBROC WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

SEWAGE PUMP STATION
DRAWING INDEX
SHEET 1 OF 2

BRC	FCRC	GRC	NBRC	SBRC

DRAWING No.
WBB-SPS-INDEX

VERSION
A

NOT TO SCALE

ORG DATE:

SEWAGE PUMP STATION STANDARD DRAWINGS
DRAWING INDEX - SHEET 2 OF 2

DRAWING No.	DRAWING TITLE				REV No.
WBB-SPS-1304-22	ALUMINIUM ACCESS COVERS-OPTION 3	WET-WELL ACCESS COVERS	GENERAL ARRANGEMENT PLANS, SHEET 5 OF 12	NOT USED	
WBB-SPS-1304-23	ALUMINIUM ACCESS COVERS-OPTION 3	WET-WELL ACCESS COVERS	DETAILS, SHEET 6 OF 12	NOT USED	
WBB-SPS-1304-24	ALUMINIUM ACCESS COVERS-OPTION 3	VALVE CHAMBER ACCESS COVERS	GENERAL ARRANGEMENT PLANS-TYPE A, SHEET 7 OF 12	NOT USED	
WBB-SPS-1304-25	ALUMINIUM ACCESS COVERS-OPTION 3	VALVE CHAMBER ACCESS COVERS	GENERAL ARRANGEMENT PLANS-TYPE B, SHEET 8 OF 12	NOT USED	
WBB-SPS-1304-26	ALUMINIUM ACCESS COVERS-OPTION 3	VALVE CHAMBER ACCESS COVERS	AND SAFETY GRATE DETAILS, SHEET 9 OF 12	NOT USED	
WBB-SPS-1304-27	ALUMINIUM ACCESS COVERS-OPTION 3	HANDRAILS AND TOEBOARDS	DETAILS, SHEET 10 OF 12	NOT USED	
WBB-SPS-1304-28	ALUMINIUM ACCESS COVERS-OPTION 3	MISCELLANEOUS DETAILS 1OF 2	SHEET 11 OF 12	NOT USED	
WBB-SPS-1304-29	ALUMINIUM ACCESS COVERS-OPTION 3	MISCELLANEOUS DETAILS 1OF 2	SHEET 11 OF 12	NOT USED	
WBB-SPS-1305-1	ALUMINIUM LADDERS			NOT USED	
WBB-SPS-1305-2	ALUMINIUM EXTENDABLE	HANDGRIP STANCHION		NOT USED	
WBB-SPS-1305-3	ALUMINIUM HANDRAILS			NOT USED	
WBB-SPS-1305-4	FABRICATED METALWORK			NOT USED	
WBB-SPS-1308-1	RPZ DEVICE	TYPICAL LAYOUT			A
WBB-SPS-1400-1	GRIT COLLECTOR	MAINTENANCE HOLE	GENERAL ARRANGEMENT	NOT USED	
WBB-SPS-1401-1	GRIT COLLECTOR - MAINTENANCE HOLE	BAR SCREEN INSTALLATION	GENERAL ARRANGEMENT	NOT USED	
WBB-SPS-1401-2	GRIT COLLECTOR - MAINTENANCE HOLE	INLET PIPE & VALVE	INSTALLATION & DETAILS	NOT USED	
WBB-SPS-1402-1	ADDITIONAL STORAGE CHAMBER	GENERAL REQUIREMENTS			A
WBB-SPS-1405-2	TYPICAL VENT POLE				A
WBB-SPS-1406-1	RISING MAIN DISCHARGE	TO GRAVITY SEWER		NOT USED	
WBB-SPS-1406-2	PREFERRED RISING MAIN DISCHARGE	MANHOLE TO GRAVITY SEWER - 900mm DIA		NOT USED	
WBB-SPS-1406-3	DISCHARGE MAINTENANCE HOLE DETAILS				A
WBB-SPS-1406-4	RISING MAIN DISCHARGE MANHOLE	TO GRAVITY SEWER - 1200mm DIA		NOT USED	
WBB-SPS-1407-1	POLYETHYLENE LINING	TOP SLAB & WALL	TYPICAL DETAILS		A
WBB-SPS-1407-2	POLYETHYLENE LINING	WALL PIPE PENETRATION	TYPICAL DETAILS		A
WBB-SPS-1508-1	SURVEY PLATE, PUMP LABEL PLATE	VALVE SPINDLE ACCESS			A
WBB-SPS-1508-2	RISING MAIN VALVE MARKING				A
WBB-SPS-1509-1	GRIT COLLECTOR	MAINTENANCE HOLE	ABOVE GROUND GEARBOX	NOT USED	
WBB-SPS-1601-1	TYPICAL PIPE INSTALLATION, SUPPORT AND	TRENCH FILL - RISING MAINS <= DN300		NOT USED	
WBB-SPS-1602-1	RISING MAIN	SCOUR / DRAIN ARRANGEMENT			A
WBB-SPS-1603-1	SCOUR MAINTENANCE HOLE FOR	RISING MAINS DN300 OR SMALLER		NOT USED	
WBB-SPS-1604-1	SCOUR MAINTENANCE HOLE FOR	RISING MAINS LARGER THAN DN300		NOT USED	
WBB-SPS-1605-1	DN32 AIR BLEED ASSEMBLY FOR OD250	RISING MAINS OR SMALLER			A
WBB-SPS-1606-1	AUTOMATIC GAS RELEASE VALVES				A
WBB-SPS-1607-1	CAST IRON VALVE BOX AND COVER			NOT USED	
WBB-SPS-1608-1	COMBINATION	EMERGENCY PUMP CONNECTION	AND PIG INSERTION POINT DETAILS	NOT USED	

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-INDEX VERSION C DATED 03/01/2017	

WBBROC WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

SEWAGE PUMP STATION
DRAWING INDEX
SHEET 2 OF 2

BRC	FCRC	GRC	NBRC	SBRC

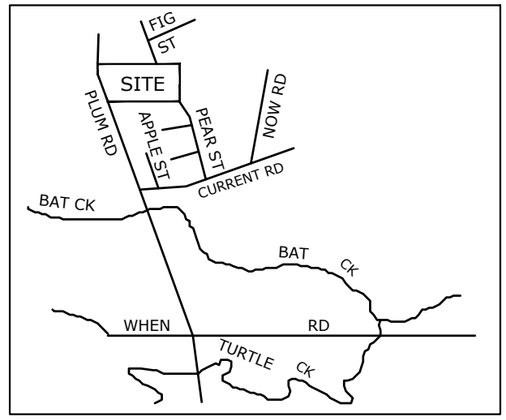
DRAWING No.
WBB-SPS-INDEX

VERSION
A

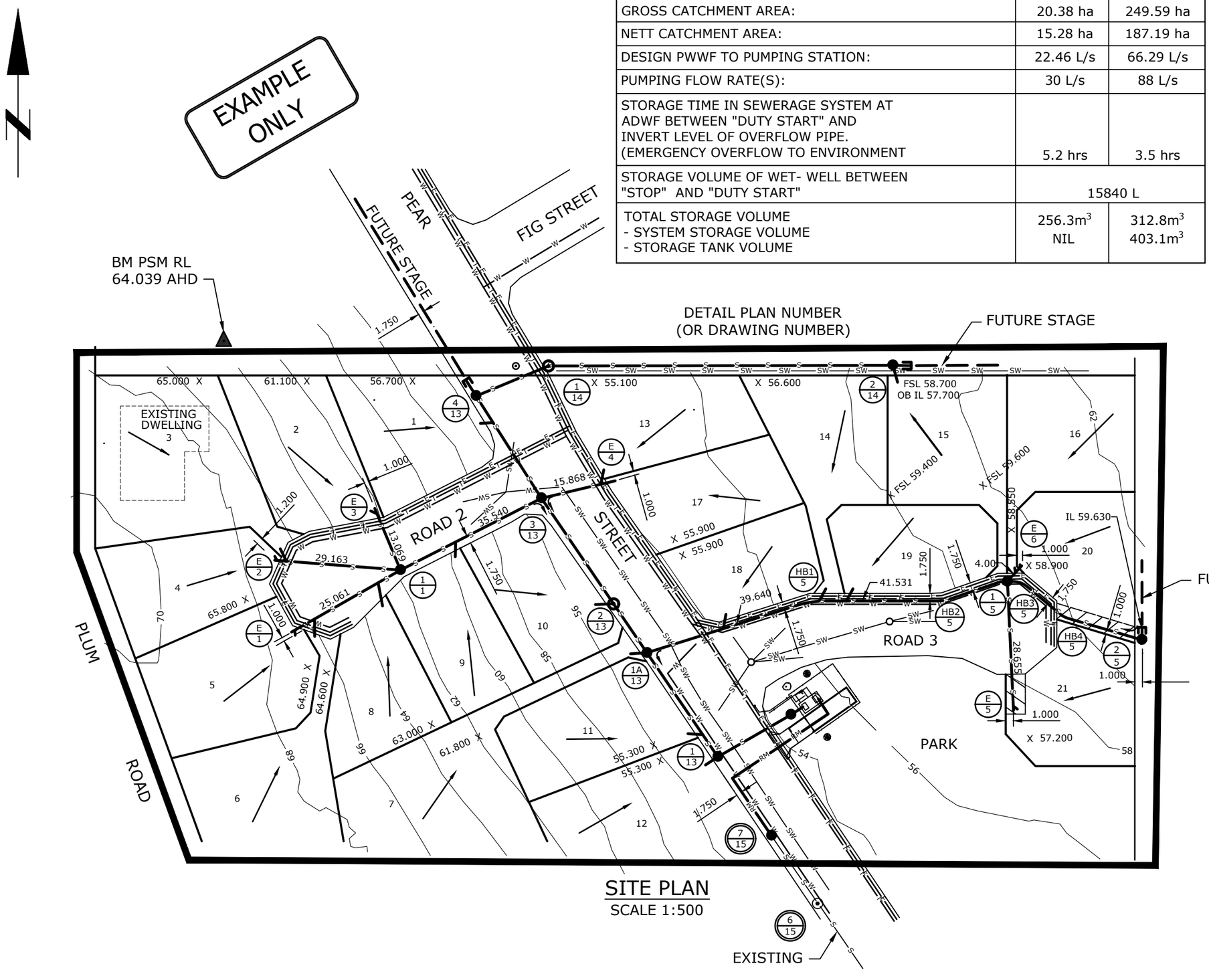
NOT TO SCALE

ORG DATE:

PARAMETER	INITIAL	ULTIMATE
GROSS CATCHMENT AREA:	20.38 ha	249.59 ha
NETT CATCHMENT AREA:	15.28 ha	187.19 ha
DESIGN PWWF TO PUMPING STATION:	22.46 L/s	66.29 L/s
PUMPING FLOW RATE(S):	30 L/s	88 L/s
STORAGE TIME IN SEWERAGE SYSTEM AT ADWF BETWEEN "DUTY START" AND INVERT LEVEL OF OVERFLOW PIPE. (EMERGENCY OVERFLOW TO ENVIRONMENT	5.2 hrs	3.5 hrs
STORAGE VOLUME OF WET- WELL BETWEEN "STOP" AND "DUTY START"	15840 L	
TOTAL STORAGE VOLUME - SYSTEM STORAGE VOLUME - STORAGE TANK VOLUME	256.3m^3 NIL	312.8m^3 403.1m^3



LOCALITY PLAN
SCALE 1:2500 MAP GRID NO. J10



SITE PLAN
SCALE 1:500

NOTES

1. LEGEND - SEE DRAWING WBB-GEN-1100-1

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1100-1 VERSION A	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL LOCALITY AND SITE PLAN

BRC	FCRC	GRC	NBRC	SBRC

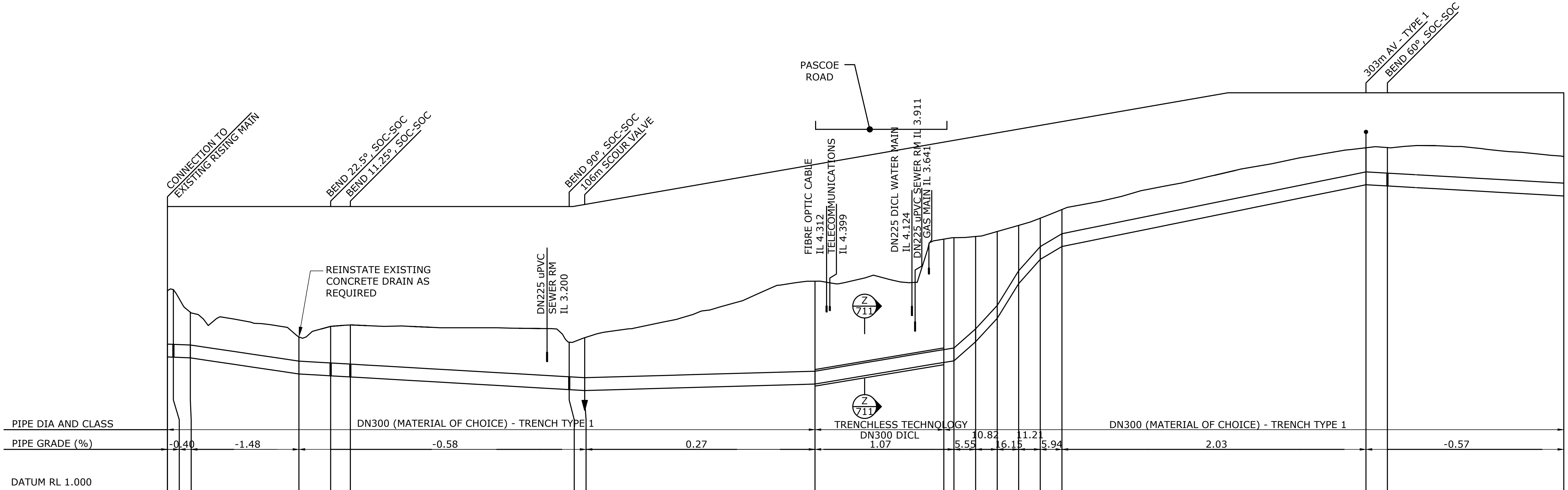
DRAWING No. WBB-SPS-1100-1

VERSION A

NOT TO SCALE

ORG DATE:

NOTE:
SHOW IL OF ALL SERVICE CROSSINGS



DEPTH TO INVERT	1.68	1.71	1.15	0.94	1.25	1.32	1.32	1.40
INVERT LEVEL	3.839	3.833	3.816	3.408	3.362	3.333	3.312	3.022
EXISTING NATURAL SURFACE LEVEL	5.516	5.543	4.970	4.344	4.613	4.649	4.633	4.418
CHAINAGE	0.000	1.500	5.790	33.287	41.319	46.304	50.000	100.000

DEPTH TO INVERT	1.20	1.34	2.602	3.118	3.117	2.66	2.20	1.47
INVERT LEVEL	3.012	2.990	3.153	3.702	3.739	4.225	4.817	5.694
EXISTING NATURAL SURFACE LEVEL	4.211	4.325	5.755	6.820	6.856	6.886	7.013	7.168
CHAINAGE	101.728	105.656	163.96	196.60	199.150	204.641	210.109	215.539

DEPTH TO INVERT	1.04	0.94	1.00	0.97	0.94	0.97	1.01	0.99
INVERT LEVEL	6.307	6.633	7.110	8.125	8.196	8.165	7.932	7.912
EXISTING NATURAL SURFACE LEVEL	7.349	7.568	8.113	9.091	9.131	9.135	8.943	8.902
CHAINAGE	221.005	226.495	250.000	300.000	303.479	308.989	350.000	353.558

LEGEND

GAS VALVE

SCOUR VALVE

NOTE:
AS PER WBBROC SEWER CODE, LONGITUDINAL SECTIONS SHALL BE PROVIDED AS DESIGN DRAWINGS AND SUBMITTED AS "AS CONS"

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1100-2 VERSION A	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

BRC | FCRC | GRC | NBRC | SBRC

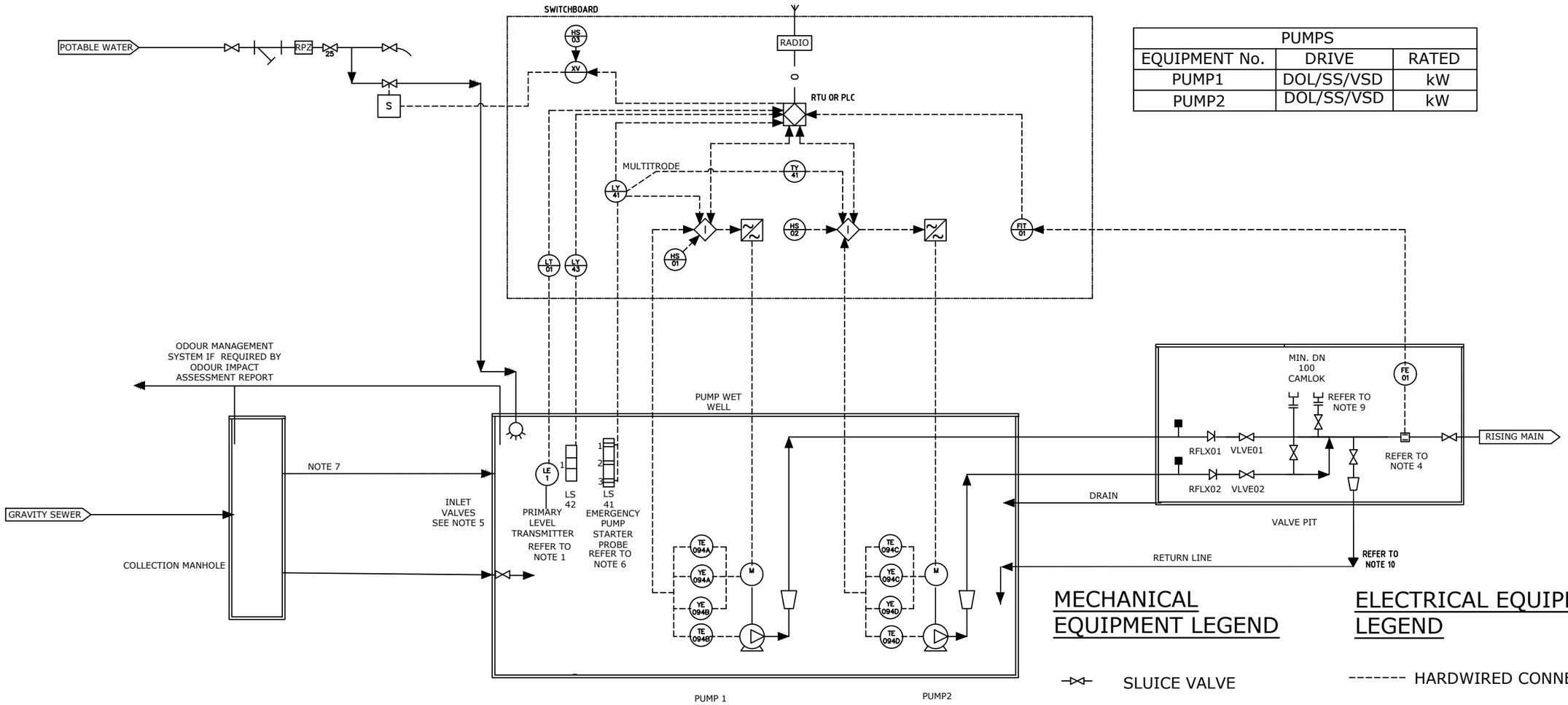
TYPICAL LONGITUDINAL SECTION OF RISING MAIN

DRAWING No. WBB-SPS-1100-2

VERSION A

NOT TO SCALE

ORG DATE:



PUMPS		
EQUIPMENT No.	DRIVE	RATED
PUMP1	DOL/SS/VSD	kW
PUMP2	DOL/SS/VSD	kW

NOTES:

1. PUMP START/STOP NORMALLY CONTROLLED BY RTU USING LEVEL TRANSMITTER LT 01.
2. UPON HIGH LEVEL (LS 41-1), PUMP START/STOP AUTOMATIC CONTROL IS BYPASSED BY HARD WIRED EMERGENCY/BACK-UP PUMP STARTER CIRCUIT ON MULTITRODE LEVEL CONTROL UNIT.
3. ALL INSTRUMENTS AND ALARM RL'S SHALL BE CONFIRMED BY WBBROC-SP.
4. FLOWMETER SHALL BE PROVIDED UNLESS OTHERWISE SPECIFIED BY WBBROC-SP, INSTALLATION REQUIREMENTS MAY REQUIRE SEPARATE PIT.
5. INLET VALVES WHERE REQUIRED BY WBBROC-SP.
6 REFER TO TYPICAL EMERGENCY/BACK-UP PUMP STARTER CIRCUIT SCHEMATIC. SEE WBBROC-SP ELECTRICAL DRAWINGS.
7. HIGH INLET PIPE WHERE REQUIRED BY WBBROC-SP.
8. WELL WASHER SHALL BE PROVIDED WHERE REQUIRED BY WBBROC-SP.
9. ONE OR TWO CAMLOK CONNECTIONS REQUIRED DEPENDING ON PHYSICAL LAYOUT (REFER TO WBBROC-SP DRAWINGS)
10. RETURN LINE MAY BE FROM VALVE PIT OR FROM RISING MAIN. (REFER TO WBBROC-SP DRAWINGS)

TAG	LEVEL	RL	COMMENTS
LT1	LSL	NOTE 3	ALL STOP
	LSM	NOTE 3	DUTY START
	LSH	NOTE 3	STANDBY START
	LSHH	NOTE 3	ALARM
LS42	1	NOTE 3	OVERFLOW ALARM
LS 41	1	NOTE 3	EMERG PUMP START/PUMP ALARM
	2	NOTE 3	
	3	NOTE 3	EMERG. PUMP STOP
PUMP 1			
094A	TE	STATOR HIGH TEMP.	
094B	TE	PUMP BEARING HIGH TEMP.	
094A	YE	JUNCTION BOX SEAL FAIL	
094B	YE	STATOR HOUSING SEAL FAIL	
PUMP 2			
094C	TE	STATOR HIGH TEMP.	
094D	TE	PUMP BEARING HIGH TEMP.	
094C	YE	JUNCTION BOX SEAL FAIL	
094D	YE	STATOR HOUSING SEAL FAIL	

MECHANICAL EQUIPMENT LEGEND

- SLUICE VALVE
- NON-RETURN VALVE
- 'Y' TYPE STRAINER
- ELECTRIC MOTOR
- PUMP
- TAPPING POINT
- RPZ — REDUCED PRESSURE ZONE BACKFLOW PREVENTION DEVICE
- WELL WASHER

ELECTRICAL EQUIPMENT LEGEND

- HARDWIRED CONNECTION
- COMMUNICATION/SOFTWARE CONNECTION
- DISCRETE INSTRUMENT - FIELD MOUNTED/OPERATOR NOT ACCESSIBLE
- DISCRETE INSTRUMENT - OPERATOR ACCESSIBLE
- RTU - OPERATOR NOT ACCESSIBLE
- LOGIC INTERLOCK (SOFTWARE OR HARDWARE)
- VARIABLE SPEED DRIVE
- SOFT STARTER
- MAGNETIC FLOWMETER

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	REVISION DETAILS BASED ON SEQ-SPS-1101-1	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL P & ID DIAGRAM
DUTY - ASSIST OPERATION
OR DUTY-STANDBY

BRC	FCRC	GRC	NBRC	SBRC

DRAWING No. WBB-SPS-1101-1

VERSION A

NOT TO SCALE

ORG DATE:

PUMP DETAILS

NUMBER OF DUTY PUMPS	
NUMBER OF ASSIST PUMPS	
NUMBER OF STANDBY PUMPS	
TOTAL NUMBER OF PUMPS	
PUMP MANUFACTURER	
PUMP MODEL	
PUMP IMPELLER DIAMETER	
IMPELLER TYPE (eg NON-CLOG)	
PUMP MANUFACTURER CURVE NO.	
MOTOR MANUFACTURER	
MOTOR KW RATING	
MOTOR START TYPE (dol,ss,vsd)	
MOTOR VOLTAGE	
MOTOR SPEED AT 50 Hz	
CABLE LENGTH (SEE NOTE 4.)	
DUTY POINT (FLOW & HEAD) (ACTUAL)	l/sec & m
HYDRAULIC EFFICIENCY @ DUTY POINT %	

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 M^3	
MEAN STATIC HEAD AT ZERO FLOW	
HYDRAULIC TEST PRESSURE kPA	

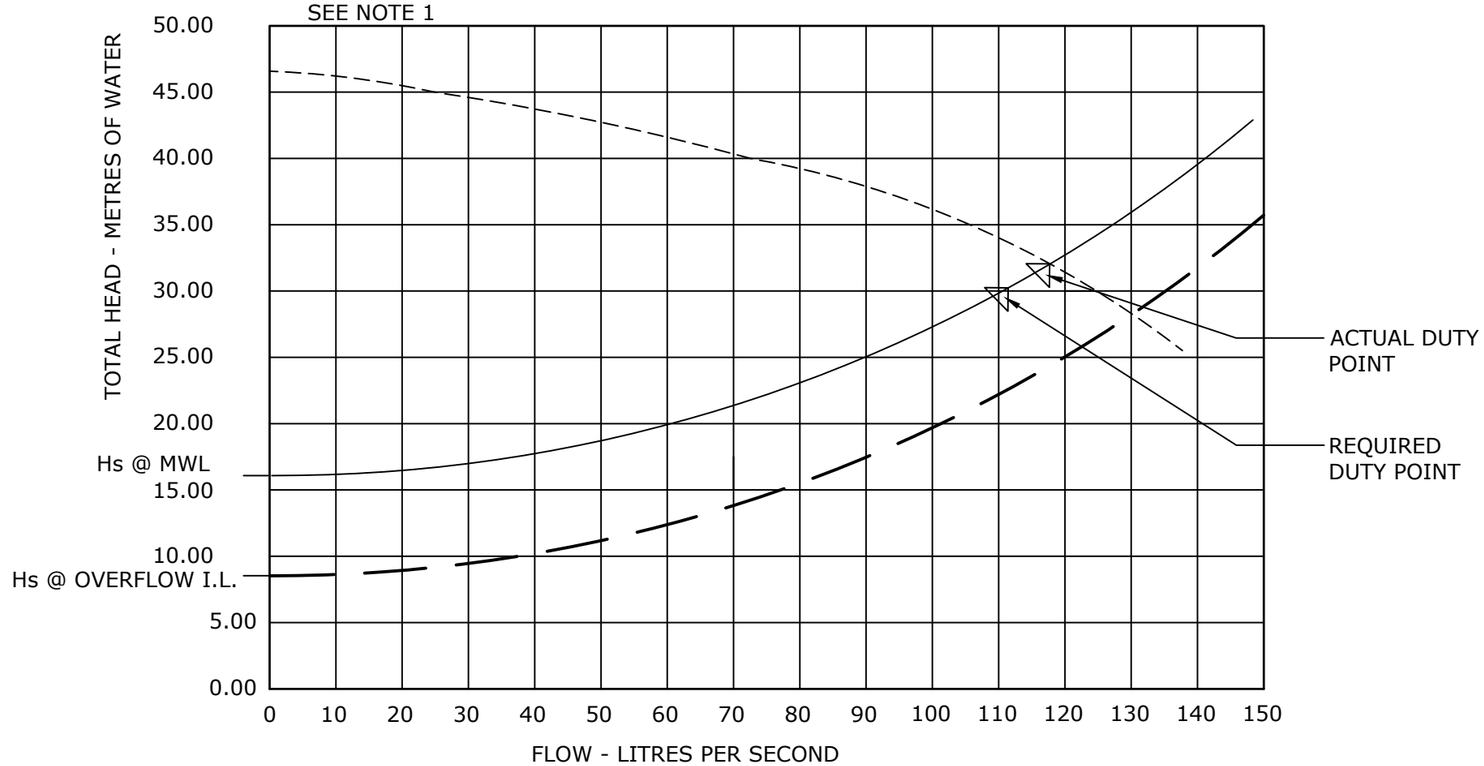
FLOW DETAILS

	FLOW RATE INTO PUMPING STATION L/S	VELOCITY IN RISING MAIN M/S	NUMBER OF PUMP STARTS PER HOUR	RISING MAIN DETENTION TIME. MINUTES
PWWF				
PDWF				
ADWF				

NOTES

1. 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. FOR STATIONS WITH MORE THAN ONE DUTY PUMP ADDITIONAL PUMP CURVES ARE REQUIRED FOR EACH ADDITIONAL PUMP RUNNING. FOR INSTALLATIONS WITH VARIABLE SPEED DRIVES PUMP CURVES ARE REQUIRED FOR PUMP SPEED AT 5Hz INCREMENTS FROM 30Hz TO 55Hz.
2. THE PROJECT DRAWING SHALL CONTAIN CURVES WHICH REFLECT THE PUMPS INSTALLED.
3. THE TABLES SHOWN ON THIS DRAWING SHALL BE POPULATED AND INCLUDED IN THE PROJECT DRAWINGS.
4. THE MINIMUM CABLE LENGTH FOR ANY PUMP IS 10 m (15.0m FOR QUU)
5. TWL - TOP WATER LEVEL (AT DUTY PUMP START LEVEL)
   BWL - BOTTOM WATER LEVEL (AT DUTY PUMP STOP LEVEL)
   MWL - MEAN WATER LEVEL (HALF WAY BETWEEN TWL & BWL)
6. MEAN STATIC AND TOTAL MEAN HEAD DEFINED ON DRAWING SEQ-SPS-1101-4.

SPS XXX SAMPLE ST. PUMP STATION
SEE NOTE 1



PUMP CURVE

SYSTEM CURVE AT MWL (TOTAL MEAN HEAD) CURVE WITH FRICTION FACTORS DERIVED AS PER CODE REQUIREMENTS

SYSTEM CURVE AT OVERFLOW LEVEL WITH FRICTION FACTORS DERIVED AS PER CODE REQUIREMENTS

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1101-3 VERSION A	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

PUMP AND RISING MAIN DETAILS

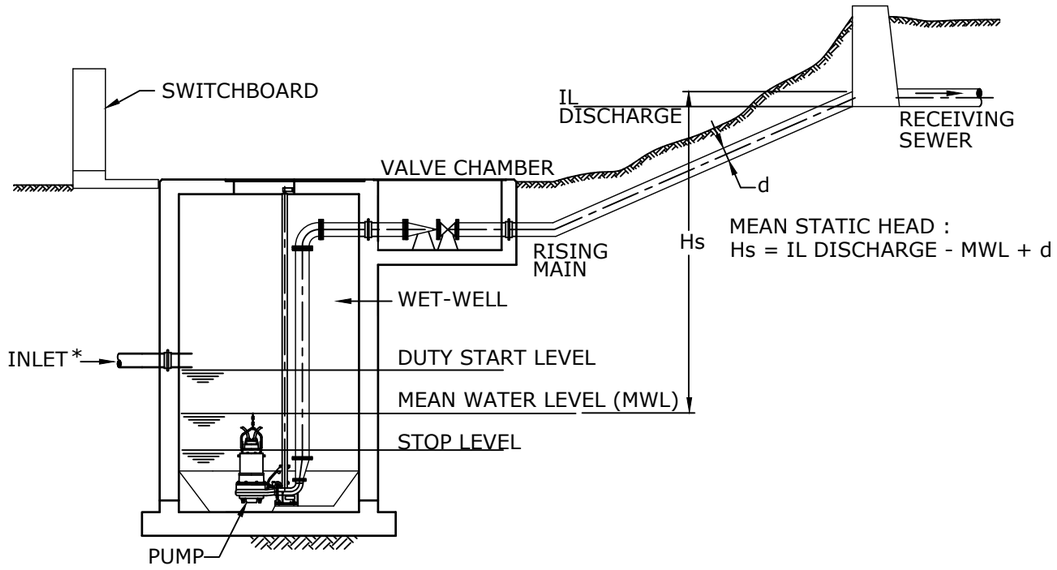
BRC	FCRC	GRC	NBRC	SBRC

DRAWING No. WBB-SPS-1101-3

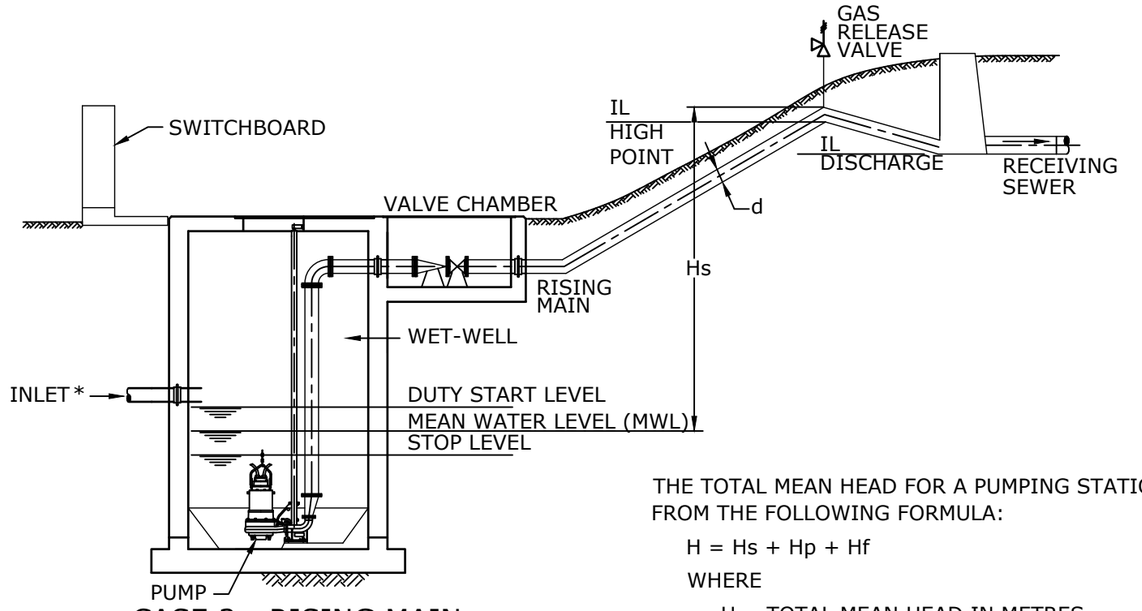
VERSION A

NOT TO SCALE

ORG DATE:



CASE 1 - CONTINUOUS RISING MAIN



CASE 2 - RISING MAIN WITH A HIGH POINT

THE TOTAL MEAN HEAD FOR A PUMPING STATION (H) IS DERIVED FROM THE FOLLOWING FORMULA:

H = Hs + Hp + Hf

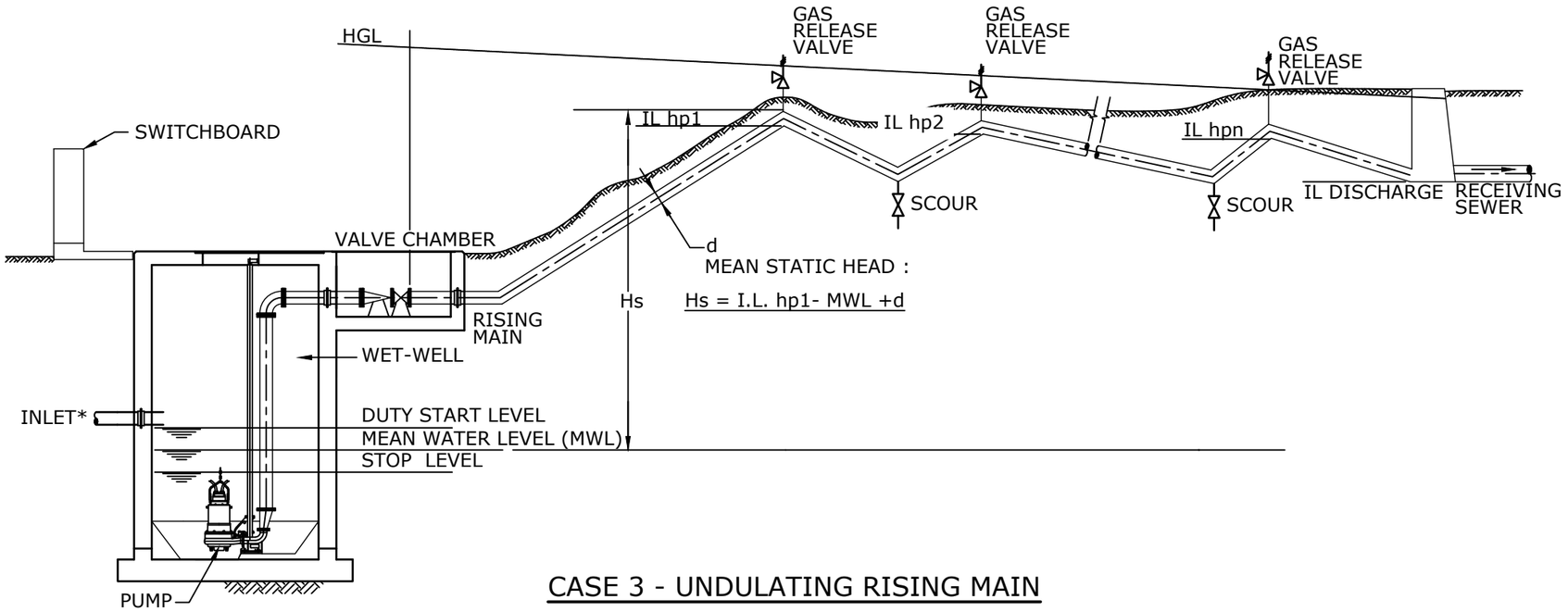
WHERE

H = TOTAL MEAN HEAD IN METRES

Hs = MEAN STATIC HEAD IN METRES

Hp = FRICTION HEAD LOSS OF THE MAIN IN METRES

Hf = TOTAL FRICTION HEAD LOSS OF FITTINGS AND VALVES USED IN PIPEWORK AND RISING MAIN IN METRES



CASE 3 - UNDULATING RISING MAIN

MEAN STATIC HEAD

MEAN STATIC HEAD, Hs = INVERT LEVEL OF THE RISING MAIN AT THE CRITICAL POINT - MEAN OPERATING LEVEL IN WET-WELL + d

WHERE d = RISING MAIN INTERNAL DIAMETER IN METERS.

THE CRITICAL POINT IS THE HIGHEST POINT ON THE RISING MAIN THAT IS ON (TOUCHING) THE HGL.

FOR MOST RISING MAINS, THE CRITICAL POINT IS EITHER AT THE DISCHARGE POINT OR AT THE HIGHEST PHYSICAL POINT ON THE MAIN. FOR UNDULATING MAINS, THE CRITICAL POINT MAY OCCUR AT LOCAL HIGH POINTS BETWEEN THE HIGHEST PHYSICAL POINT ON THE MAIN AND THE DISCHARGE POINT, AND MAY BE DIFFERENT FOR DIFFERENT FLOW RATES.

THE CRITICAL POINT IS DETERMINED BY CALCULATING THE TOTAL MEAN HEAD FOR EACH POTENTIAL CRITICAL POINT- THE HIGHEST VALUE OBTAINED INDICATES THE CRITICAL POINT.

FRICTION HEAD LOSSES ARE ONLY INCLUDED FOR THE SECTION OF MAIN BETWEEN THE PUMP AND THE CRITICAL POINT.

NOTES

1."DUTY START LEVEL" ALSO KNOWN AS "CUT-IN" LEVEL AND TWL.

2. "STOP LEVEL" ALSO KNOWN AS "CUT-OUT" LEVEL AND BWL.

* A HIGH INLET PIPE MAY BE REQUIRED ON SOME SITES

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1101-4 VERSION A	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

RISING MAIN CONCEPT DESIGN SECTIONS AND MEAN HEAD CALCULATIONS

BRC	FCRC	GRC	NBRC	SBRC

DRAWING No.

WBB-SPS-1101-4

VERSION

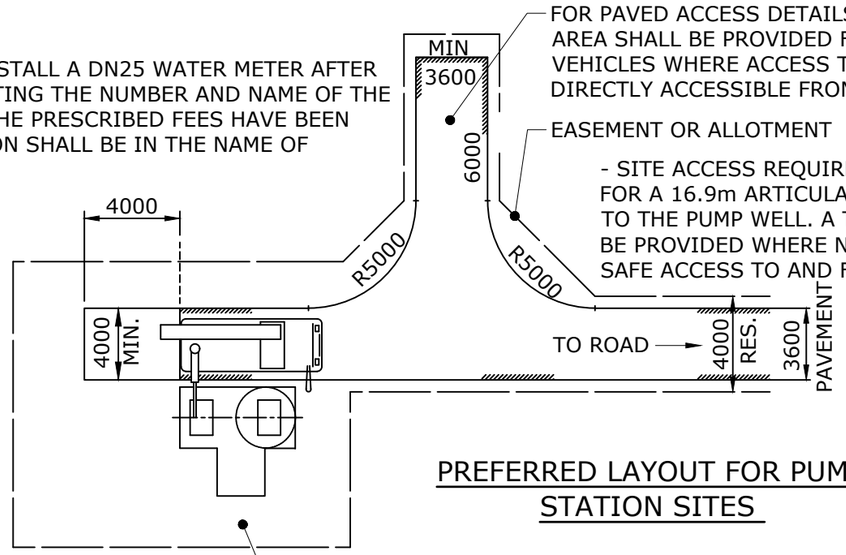
A

NOT TO SCALE

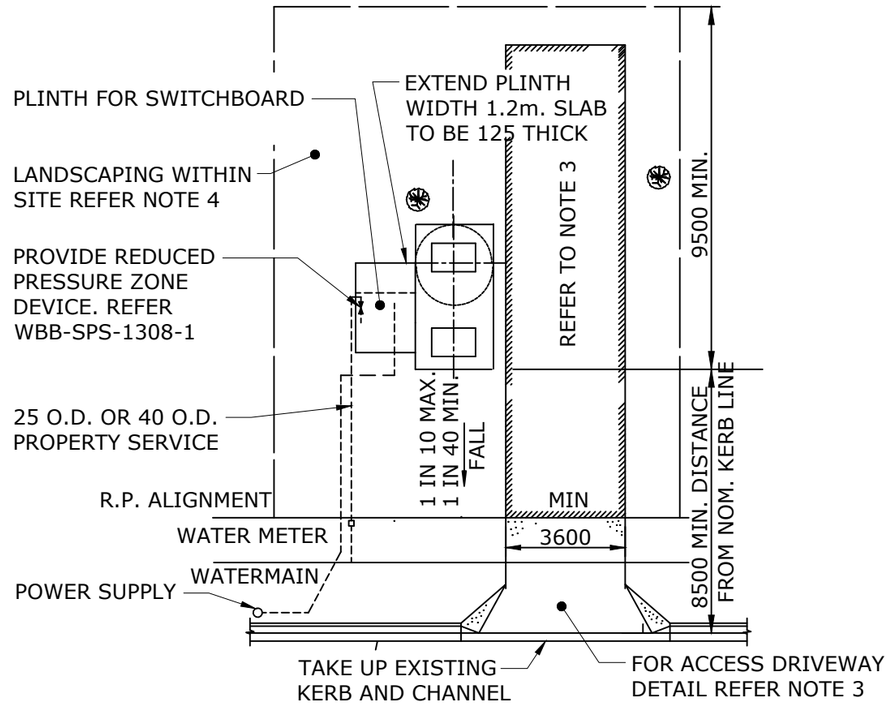
ORG DATE:

WATER METER

1. WBBROC-SP SHALL INSTALL A DN25 WATER METER AFTER AN APPLICATION STATING THE NUMBER AND NAME OF THE PUMP STATION AND THE PRESCRIBED FEES HAVE BEEN PAID. THE APPLICATION SHALL BE IN THE NAME OF WBBROC-SP.



PREFERRED LAYOUT FOR PUMP STATION SITES

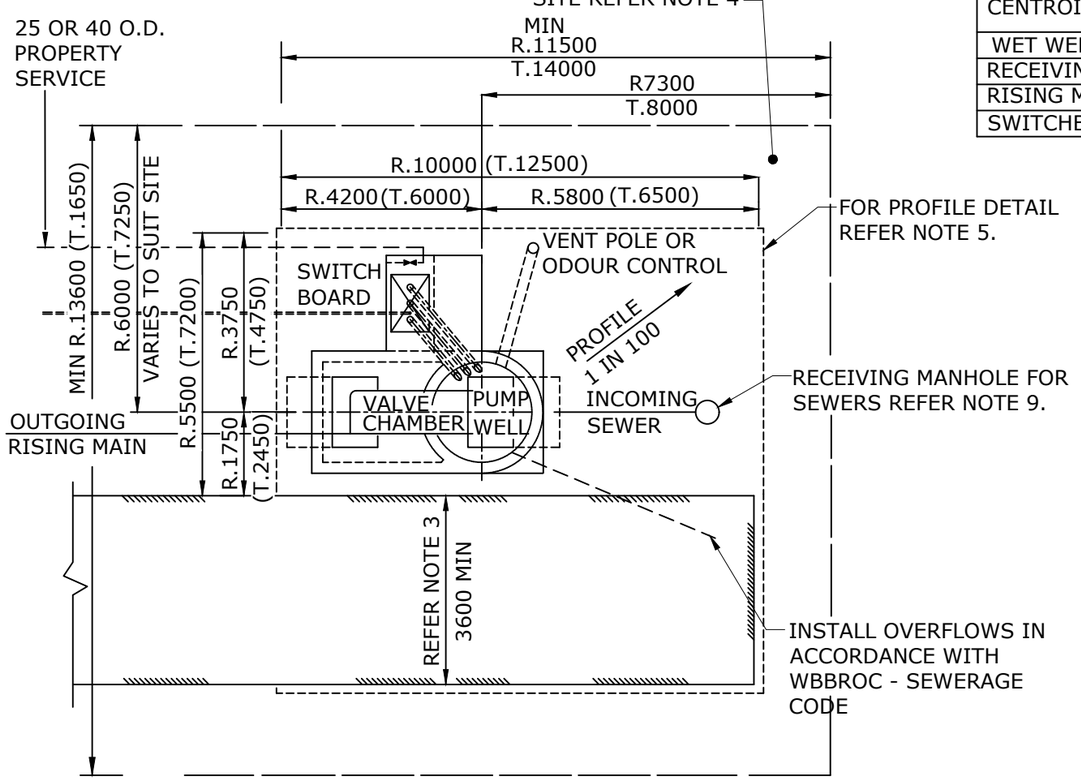


ALTERNATIVE LAYOUT FOR PUMP STATION SITES ACCESSIBLE FROM ADJACENT ROADWAY

(SUBJECT TO NOTE 3 (d) & NOTE 10 REQUIREMENTS)

MGA CO-ORDINATES

CENTROID OF	X (m)	Y (m)
WET WELL		
RECEIVING MANHOLE		
RISING MAIN VALVE		
SWITCHBOARD		



ALTERNATIVE SITE PLAN

(SUBJECT TO NOTE 10)

NOTES: GENERAL

1. THE DETAILS SHOWN ON THIS DRAWING ARE TYPICAL ONLY. THE LOCATION OF ALL ITEMS SHALL BE AS SHOWN ON THE APPROVED DRAWINGS. RETIC = R, TRUNK = T.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH WBBROC STANDARD DRAWINGS
3. DRIVEWAY ACCESS TO ALL PUMP AND LIFT STATIONS SHALL BE PROVIDED AS FOLLOWS:
   (a) LONGITUDINAL GRADE SHALL BE MAXIMUM 10%.
   (b) LOCATED SO VEHICULAR TRAFFIC WILL NOT TRAVERSE THE COVERS.
   (c) HEAVY VEHICLE ACCESS DRIVEWAYS SHALL BE REINFORCED CONCRETE.
   (d) IN ACCORDANCE WITH ROAD SAFETY AUDIT PER RELEVANT ROAD AUTHORITY.
4. THE PUMP AND LIFT STATION SITE AREA SHALL BE A MINIMUM OF 400m² OR AS DIRECTED BY THE WBBROC-SP.
   THE SURROUNDS SHALL BE LANDSCAPED WITH SHRUBS AND MULCH. INTERNAL LANDSCAPING -WEED MAT AND MULCH.
5. PUMP STATION PLATFORM SHALL BE PROFILED TO SLOPE1 IN 100 AWAY FROM OPENINGS AND SWITCHBOARD PLINTH & THEN BATTER AT 1 IN 6 (MAX.) TO NATURAL SURFACE.
6. WHERE REQUIRED BY WBBROC-SP PROVIDE A 1.8m HIGH PERSON PROOF FENCE AND 4.0m WIDE DOUBLE LEAF LOCKABLE GATE.
7. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
8. ACCESS ROAD SHALL THE SAME FLOOD IMMUNTY CRITERIA AS REQUIRED FOR CONNECTING ROADS.
9. (NOTE DELETED)
10. USED ONLY WITH APPROVAL FROM WBBROC-SP.

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SPS-1102-1 VERSION A	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

PREFERRED SITE LAYOUT

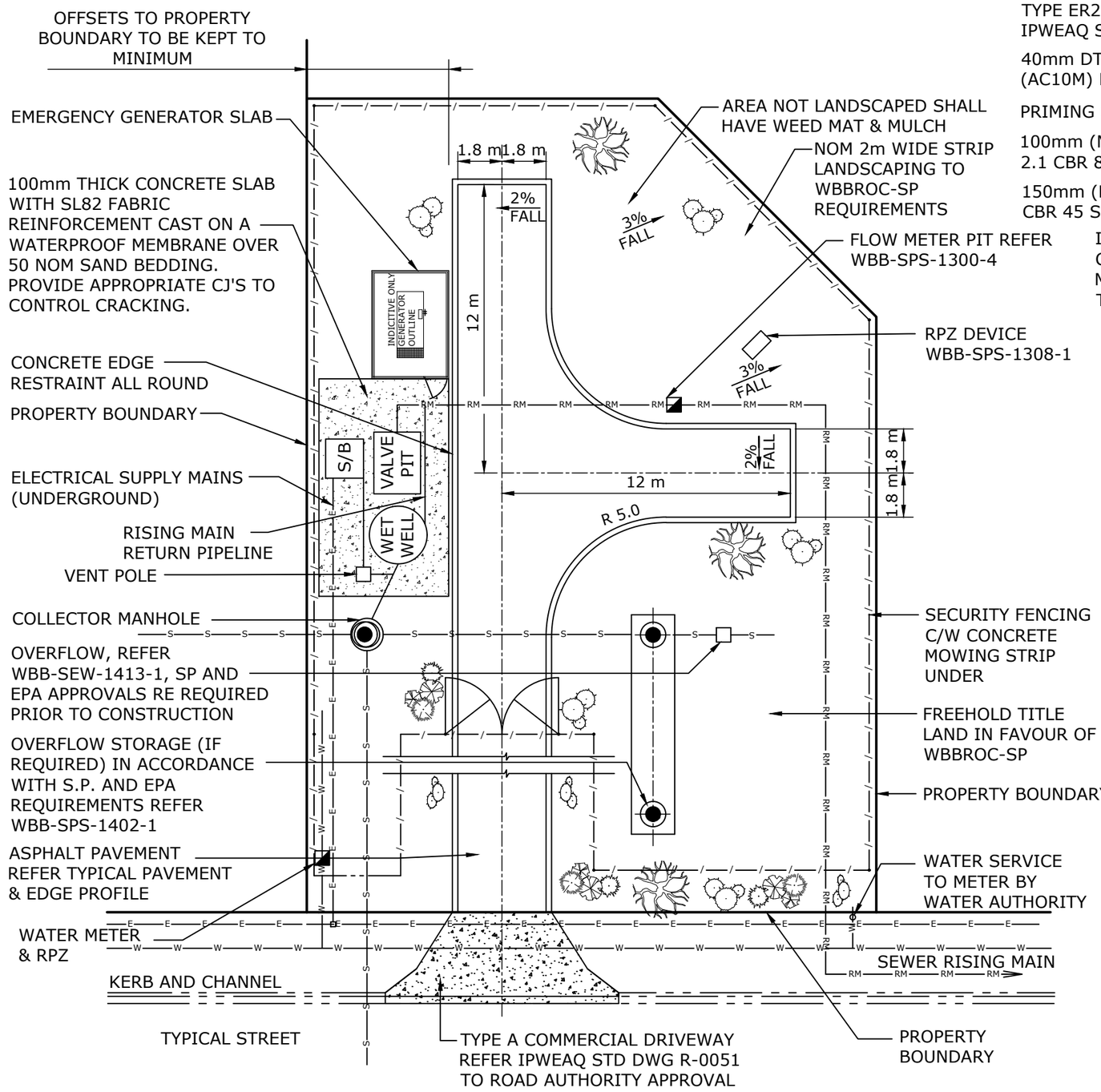
BRC	FCRC	GRC	NBRC	SBRC

DRAWING No. WBB-SPS-1102-1

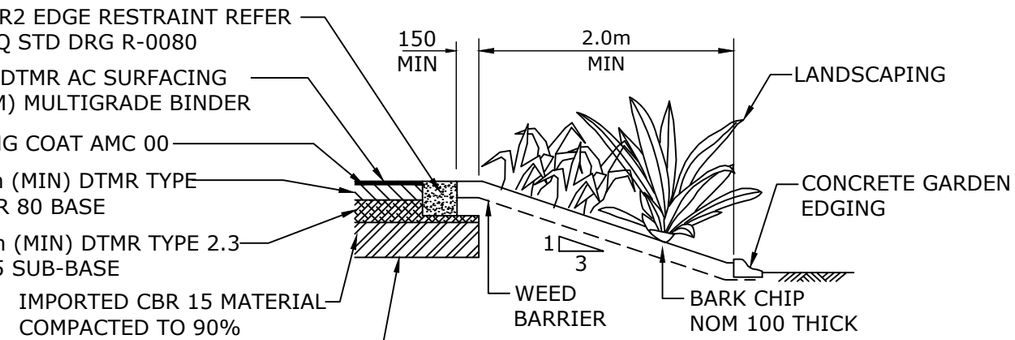
VERSION A

NOT TO SCALE

ORG DATE:



TYPICAL LAYOUT FOR PUMP STATION SITE



TYPICAL PAVEMENT AND EDGE PROFILE FOR AC PAVEMENT

NOT TO SCALE

GENERAL

1. DETAIL SHOWN IN THIS DRAWING IS TYPICAL ONLY. THE LOCATION OF ALL ITEMS WILL BE AS SHOWN ON THE APPROVED DRAWINGS AND READ IN CONJUNCTION WITH WBBROC-SP SPECIFICATIONS FOR SEWAGE PUMPING STATIONS.
2. SECURITY FENCING INCLUDING 4M WIDE DOUBLE LEAF LOCKABLE GATE -REFER PRODUCTS AND MATERIALS - LIST (CIVIL).
3. SURFACE RUNOFF TO BE ADDRESSED AND MANAGED APPROPRIATELY.
4. DRIVEWAY ACCESS TO ALL PUMP AND LIFT STATIONS SHALL BE IN ACCORDANCE WITH ROAD SAFETY AUDIT PER RELEVANT ROAD AUTHORITY.
5. ROADWAY DIMENSIONS ARE TO CATER FOR TURNING/MANOEVERING OF 8.8m SERVICE VEHICLE.

ELECTRICAL

1. ELECTRICAL SWITCHBOARD TO BE MINIMUM 1.5M FROM EDGE OF ANY OPENING.

ODOUR CONTROL

1. ODOUR CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH THE ODOUR IMPACT ASSESSMENT REPORT.

LANDSCAPING

1. CONSTRUCT CONCRETE CAST IN SITU GARDEN EDGING AT THE BASE OF THE LANDSCAPED AREA. THE LINE AND LEVEL OF THE GARDEN EDGING SHALL BE ESTABLISHED TO THE SATISFACTION OF THE SUPERINTENDENT.
2. SUPPLY AND PLACE WOODCHIP 100MM DEEP OVER AN APPROVED WEED INHIBITING MEDIUM. THE WHOLE AREA SHALL BE CLEARED OF WEEDS AND GRASS PRIOR TO PLACING THE ABOVE MATERIALS.
3. SUPPLY, PLANT AND ESTABLISH TREES AND SHRUBS AS APPROVED. TOPSOIL STRIPPED PRIOR TO CONSTRUCTION SHALL BE REPLACED ON ALL SURFACES NOT PAVED, INCLUDING BATTER SLOPES AND GARDEN BEDS.
4. AREA INSIDE FENCE TO BE FULLY LANDSCAPED WITH LOW MAINTENANCE PLANTS AND NO GRASSED AREAS.

PAVEMENT

1. PAVEMENT SHALL BE DRY AND THOROUGHLY BROOMED BEFORE SURFACING IS UNDERTAKEN.
2. ANY DEPRESSIONS GREATER THAN 25MM SHALL BE TACK COATED AND BROUGHT UP TO THE LEVEL OF THE PAVEMENT.
3. PAVEMENT SHALL COMPLY WITH DTMR SPECIFICATION "UNBOUND PAVEMENTS" MRTS 05
4. ASPHALTIC CONCRETE SHALL COMPLY WITH DTMR SPECIFICATION "ASPHALT PAVEMENTS" MRTS 30.
5. ALL ACCESS ROADS SHALL HAVE THE SAME FLOOD IMMUNITY CRITERIA AS REQUIRED FOR THE CONNECTING ROAD NETWORK.
6. QDTMR - QUEENSLAND DEPARTMENT OF TRANSPORT AND MAIN ROADS.

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1102-2 VERSION A	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL SITE LAYOUT WITH STORAGE AND BACK-UP POWER

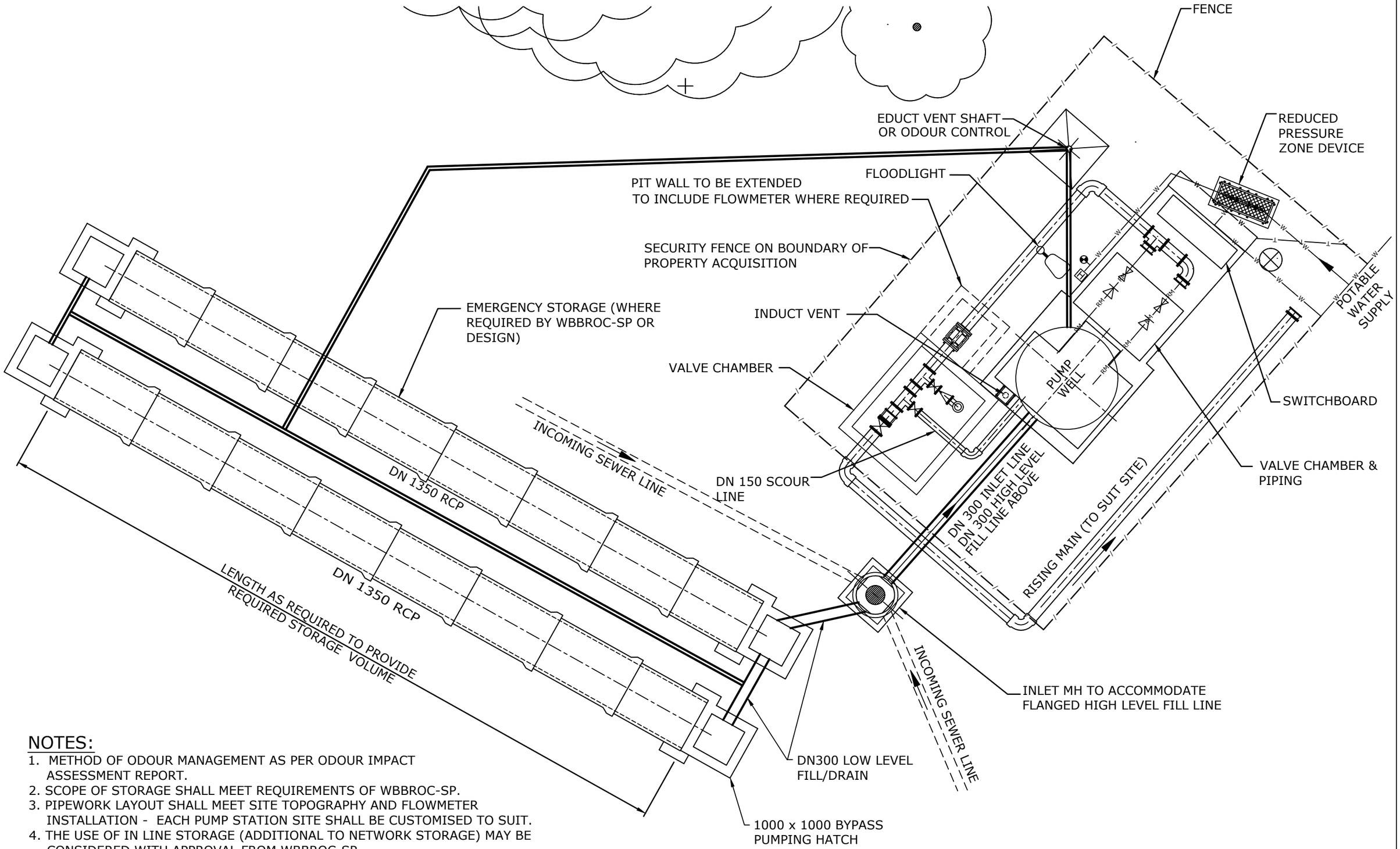
BRC	FCRC	GRC	NBRC	SBRC

DRAWING No. WBB-SPS-1102-2

VERSION A

NOT TO SCALE

ORG DATE:



NOTES:

1. METHOD OF ODOUR MANAGEMENT AS PER ODOUR IMPACT ASSESSMENT REPORT.
2. SCOPE OF STORAGE SHALL MEET REQUIREMENTS OF WBBROC-SP.
3. PIPEWORK LAYOUT SHALL MEET SITE TOPOGRAPHY AND FLOWMETER INSTALLATION - EACH PUMP STATION SITE SHALL BE CUSTOMISED TO SUIT.
4. THE USE OF IN LINE STORAGE (ADDITIONAL TO NETWORK STORAGE) MAY BE CONSIDERED WITH APPROVAL FROM WBBROC-SP.

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1102-3 VERSION A	

WBBROC WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALTERNATIVE SITE LAYOUT WITH
STORAGE AND OPTIONAL FLOW-METER

BRC	FCRC	GRC	NBRC	SBRC

DRAWING No.
WBB-SPS-1102-3

VERSION
A

NOT TO SCALE

ORG DATE:

INCOMING ELECTRICAL SUPPLY TO BE UNDERGROUND

CHAIN WIRE SECURITY FENCE WITH TRUCK ACCESS GATES TO BE INSTALLED ON SITES AS DIRECTED BY WBBROC-SP.

PROPERTY BOUNDARIES TO BE INDICATED ON PROJECT DRAWINGS. THE SEWERAGE PUMPING STATION IS TO BE LOCATED ON FREEHOLD PROPERTY OWNED BY WBBROC-SP. THE PROPERTY DESCRIPTIONS ARE TO BE SHOWN ON THE PROJECT DRAWINGS.

VENT POLE NO. 2 FOR VENTILATION OF EMERGENCY STORAGE CHAMBER.

EMERGENCY STORAGE CHAMBER VOLUME AND SHAPE TO SUIT PROJECT

ACCESS MAINTENANCE HOLES ON EMERGENCY STORAGE CHAMBER. THE NUMBER AND LOCATION TO SUIT PROJECT

CONCRETE BOX CULVERT OVERFLOW

LOCATION AND LEVEL OF OVERFLOW DISCHARGE POINT MUST COMPLY WITH ALL LAWS AND REGULATIONS AND MUST BE ABOVE MAXIMUM HIGH TIDE LEVEL AND ABOVE NORMAL CREEK WATER LEVEL

OVERFLOW OUTLET. TO BE FULLY DETAILED ON PROJECT DRAWINGS

OVERFLOW FLAP VALVE CHAMBER TYPE TO BE INDICATED ON PROJECT DRAWINGS

PROJECT SPECIFIC LANDSCAPING

SEWER RISING MAIN FROM PUMPING STATION. TO BE DETAILED ON PROJECT DRAWINGS

ELECTRICAL SWITCHBOARD TO BE MINIMUM OF 2000mm FROM EDGE OF ANY OPENING. NOTE: A FIELD DISCONNECT BOX IS REQUIRED BETWEEN SWITCHBOARD AND PUMPS FOR PUMPS GREATER THAN 30 kW.

THE PUMPING STATION NAME IS TO BE TAKEN FROM THE FRONTING STREET AND THE SEWERAGE PUMPING STATION SP. NUMBER IS TO BE OBTAINED FROM WBBROC-SP.

LOCATION OF ALL EXISTING SERVICES ARE TO BE SHOWN ON THE PROJECT DRAWINGS

CONCRETE ACCESS ROAD WITH 300mm HIGH VERTICAL KERB ADJACENT TO PUMP WELL AND GRIT COLLECTOR MAINTENANCE HOLE. FOR SMALL STATIONS (<30L/S CAPACITY) ALTERNATIVE CONSTRUCTION MAY BE CONSIDERED REFER WBB-SPS-1102-6.

POTABLE WATER SERVICE FROM WATER METER AT PROPERTY ALIGNMENT

MAINTENANCE FREE SURFACE TREATMENT

COMBINATION EMERGENCY PUMP AND PIG INSERTION POINT. NOTE: TO BE THE SAME DIAMETER AS THE RISING MAIN

VALVE PIT INTEGRAL WITH PUMP WELL. FOR SMALL STATIONS (<30L/S CAPACITY) REFER WBB-SPS-1102-6.

PUMP WELL WITH VACTOR PIPE COUPLING ADJACENT TO ACCESS ROAD. NOTE: TOP SLAB LEVEL MUST BE 300mm ABOVE ACCESS ROAD LEVEL

MAGNETIC FLOWMETER AND PIT WHERE REQUIRED. NOTE: THE DIAMETER OF THE FLOWMETER TO BE THE SAME AS THE RISING MAIN. NOTE: FLOWMETER PIT IS TO DRAIN TO THE VALVE PIT. NOTE: FOR SMALL STATIONS (<30L/S CAPACITY) REFER WBB-SPS-1102-6.

BORE HOLE DETAILS AND LOCATIONS ARE TO BE SHOWN ON THE PROJECT DRAWINGS

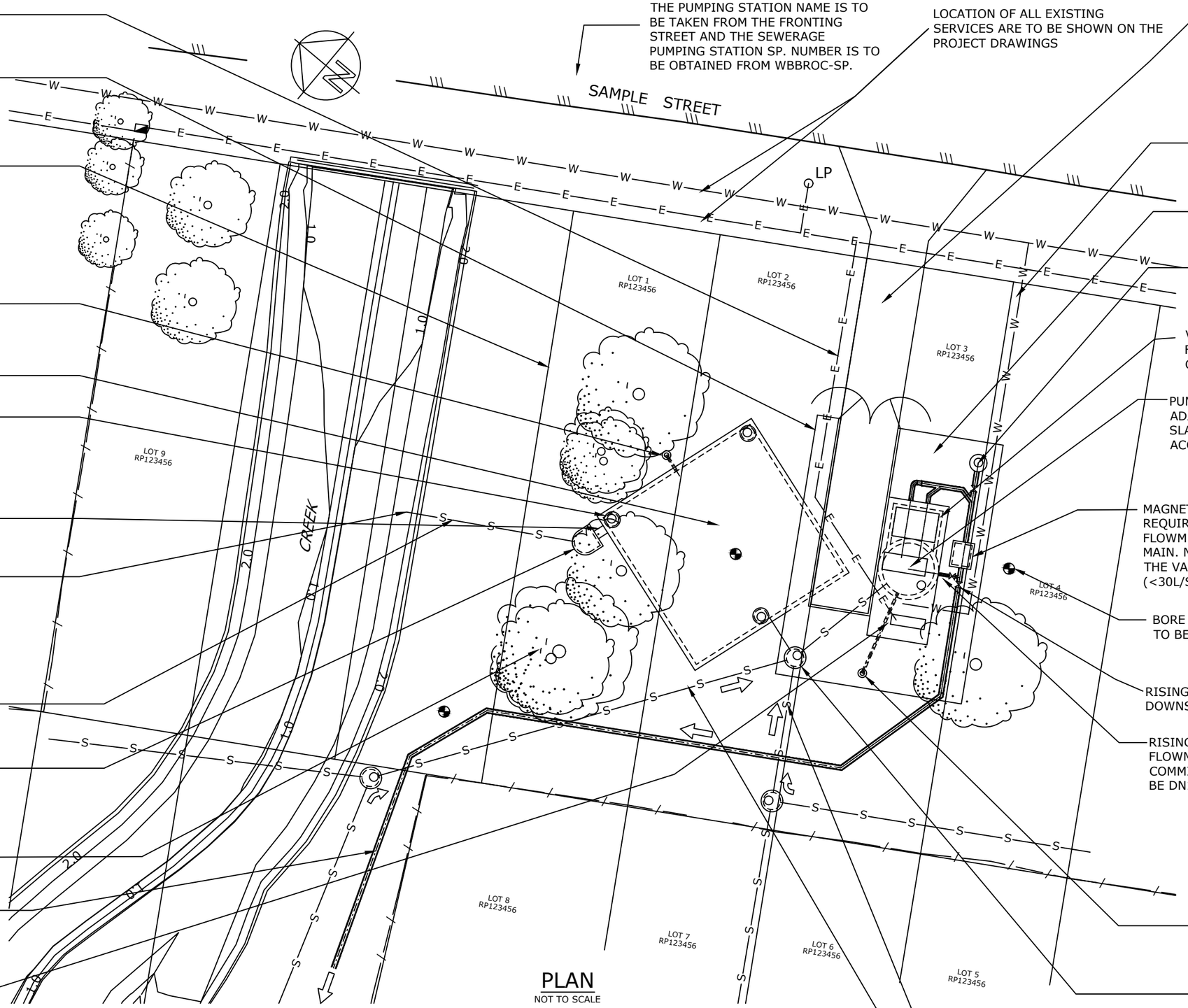
RISING MAIN ISOLATING VALVE TO BE DOWNSTREAM OF SCOUR

RISING MAIN SCOUR TO BE DOWNSTREAM OF FLOWMETER AND TO BE UTILISED DURING COMMISSIONING. MINIMUM DIAMETER TO BE DN100

VENT POLE NO. 1 FOR VENTILATION OF PUMP WELL AND GRIT COLLECTOR MAINTENANCE HOLE.

DIVERSION MAINTENANCE HOLE. NOTE: MAINTENANCE HOLE TO BE UPSTREAM OF GRIT COLLECTOR ISOLATING VALVE. THIS MAINTENANCE HOLE TO BE Ø 1200 F TYPE OR X TYPE.

INCOMING SEWERS TO BE DETAILED ON PROJECT DRAWINGS



PLAN

NOT TO SCALE

THIS PLAN CONTAINS THE SEWERAGE PUMPING STATION COMPONENTS WHICH MUST BE FULLY DETAILED ON THE PROJECT DRAWINGS. OMITTED FROM THIS DRAWING ARE AN OVERHEAD GANTRY AND AN ELECTRICAL FIELD DISCONNECT BOX WHICH MAY BE REQUIRED ON SOME PUMPING STATIONS.

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1102-4 VERSION B DATED 06/05/2014	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

BRC	FCRC	GRC	NBRC	SBRC

TYPICAL SITE LAYOUT WITH PIG INSERTION/EMERGENCY PUMP POINT AND ALTERNATIVE EMERGENCY STORAGE

DRAWING No. WBB-SPS-1102-4

VERSION A

NOT TO SCALE

ORG DATE:

TABULATION OF PUMP STATION LEVELS

REF.	DESCRIPTION	LEVEL
LEVEL 1	SURFACE LEVEL (ACCESS ROAD)	X.XXX
LEVEL 2	INVERT LEVEL OF OVERFLOW	X.XXX
LEVEL 3	INVERT LEVEL OF BASE OF VALVE PIT	X.XXX
LEVEL 4	INVERT LEVEL OF INLET SEWER AT PUMP WELL	X.XXX
LEVEL 5	TOP WATER LEVEL OF PUMP WELL	X.XXX
LEVEL 6	BOTTOM WATER LEVEL OF PUMP WELL	X.XXX
LEVEL 7	INVERT OF PUMP WELL	X.XXX
LEVEL 8	BOTTOM OF BASE SLAB OF PUMP WELL	X.XXX
LEVEL 9	TOP OF ROOF SLAB OF PUMP WELL	X.XXX
LEVEL 10	INVERT LEVEL OF RISING MAIN THROUGH PIT WALL	X.XXX

NOTE. THIS TABLE IS TO BE COMPLETED AND INCLUDED ON THE PROJECT DRAWING FOR THE LEVEL INTERACTION DIAGRAM

NOTES:

G1. THIS DRAWING MAY BE USED AS AN ALTERNATIVE TO DRAWING WBB-SPS-1102-5 FOR SMALL STATIONS (<30L/S CAPACITY) ONLY .

G2. THIS DRAWING IS PROVIDED TO DESIGNERS TO SHOW THE LEVEL RELATIONSHIPS BETWEEN THE VARIOUS COMPONENTS OF A SEWERAGE PUMPING STATION.
THE PROJECT DRAWINGS MUST CONTAIN A LEVEL INTERACTION DIAGRAM. THE PROJECT DRAWING MUST CONTAIN ALL THE INVERT LEVELS AND GRADES OF ALL THE PIPES. ALSO TO BE INCLUDED ARE ALL THE LEVELS OF THE STRUCTURES AND ALL THE WATER LEVELS AS INDICATED ON THIS DRAWING. THE PROJECT DRAWING IS TO CONTAIN THE TABLES SHOWN ON THIS DRAWING.

G3. THE LEVELS OF THE TOP SLABS OF THE PUMP WELL, VALVE PIT, FLOWMETER PIT (WHERE REQUIRED) AND SWITCHBOARD FOUNDATION ARE TO BE ABOVE THE Q100 FLOOD LEVEL.

G4. THE INTERNAL DIAMETER OF THE INLET SEWER TO THE PUMP WELL IS TO BE A MINIMUM OF ID225.

G5. THE MINIMUM TOTAL EMERGENCY STORAGE CAPACITY IS TO BE 3 HOURS AT PEAK DRY WEATHER FLOW. THE EMERGENCY STORAGE VOLUMES IN THE PUMP WELL AND THE GRIT COLLECTOR MAINTENANCE HOLE ARE TO BE MEASURED FROM THE TOP WATER LEVEL TO THE OVERFLOW LEVEL.

G6. VACTOR PIPE MAY NOT BE REQUIRED IN WET WELLS <3 M IN DEPTH SUBJECT TO WBBROC-SP APPROVAL.

G7. SEPARATE WET WELL AND VALVE PIT MAY BE CONSIDERED FOR SMALL STATIONS PROVIDED DIFFERENTIAL SETTLEMENT CAN BE ADEQUATELY ADDRESSED.

G8. SUMP PUMPS MAY BE OMITTED AND A GRAVITY DRAIN TO WET WELL MAY BE USED AS AN ALTERNATIVE. THE GRAVITY DRAIN MUST HAVE SEALS INCLUDING WATER TRAPS AND FLAP VALVES.

G9. FLOWMETERS ARE GENERALLY NOT REQUIRED FOR SMALL STATIONS WHICH DO NOT PUMP DIRECTLY TO A WWTP OR INTO A COMMON RISING MAIN SYSTEM UNLESS DIRECTED BY WBBROC-SP.

G10. PRECAST UNITS MAY BE CONSIDERED FOR THE CONCRETE WET WELL WALLS FOR SMALL STATIONS. WHERE PRECAST UNITS ARE APPROVED, INDIVIDUAL SECTIONS MUST BE POSITIVELY FIXED TOGETHER WITH STAINLESS STEEL ANCHORS AND JOINTS MUST BE SEALED WITH AN APPROVED SEALANT.
PE LINING MUST BE WELDED AT JOINTS TO PROVIDE A CONTINUOUS BARRIER.

G11. WHERE APPROVED EPOXY COATING MAY BE CONSIDERED AS AN ALTERNATIVE TO PE LINING FOR SMALL STATIONS.

G12. ALTERNATIVE ACCESS ROAD CONSTRUCTION MAY BE CONSIDERED FOR SMALL STATIONS PROVIDED IT IS SUITABLY DURABLE FOR THE SITE CONDITIONS AND IS ABLE TO WITHSTAND THE LOADING & TURNING CIRCLE OF FULL MAINTENANCE TRUCKS WITH 24/7 ALL WEATHER ACCESS.

G13. WHERE APPROVED GRIT COLLECTOR MAINTENANCE HOLE MAY BE OMITTED FOR SMALL STATIONS.

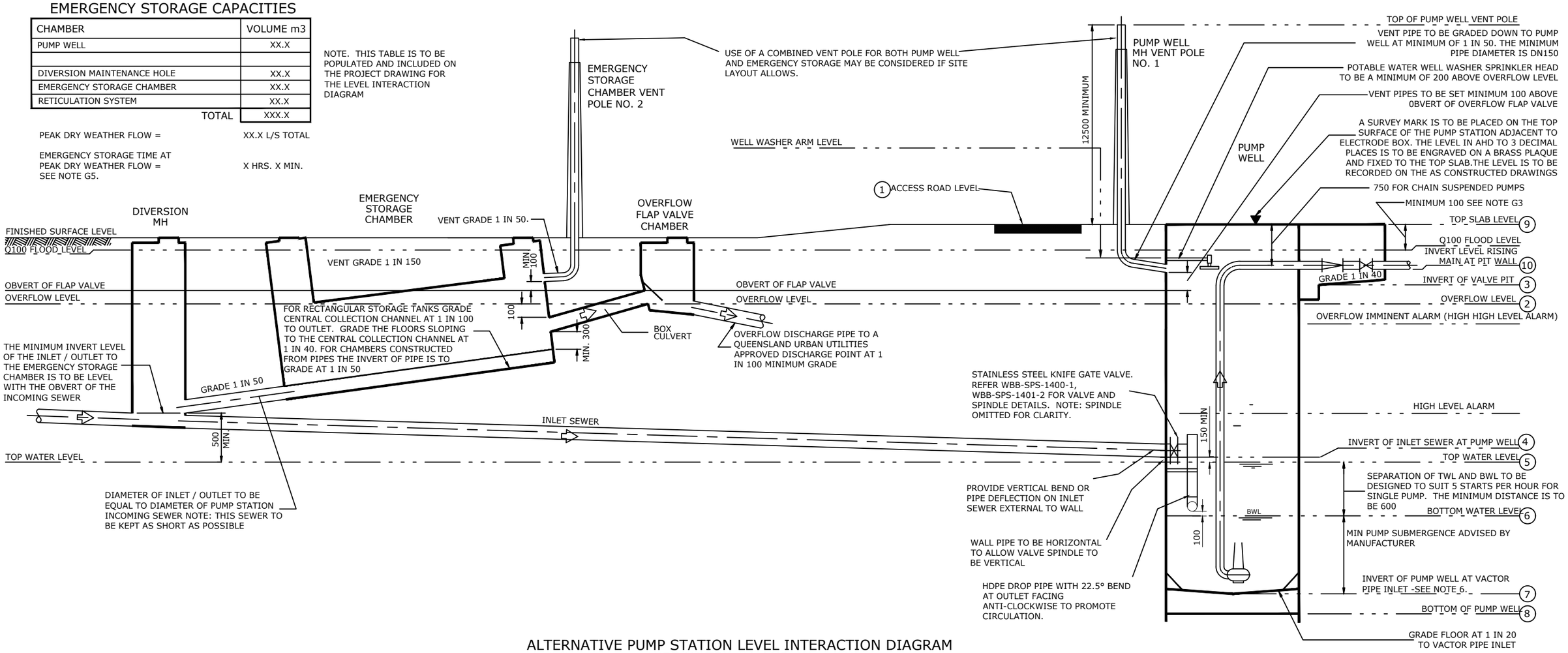
EMERGENCY STORAGE CAPACITIES

CHAMBER	VOLUME m3
PUMP WELL	XX.X
DIVERSION MAINTENANCE HOLE	XX.X
EMERGENCY STORAGE CHAMBER	XX.X
RETICULATION SYSTEM	XX.X
TOTAL	XXX.X

NOTE. THIS TABLE IS TO BE POPULATED AND INCLUDED ON THE PROJECT DRAWING FOR THE LEVEL INTERACTION DIAGRAM

PEAK DRY WEATHER FLOW = XX.X L/S TOTAL

EMERGENCY STORAGE TIME AT PEAK DRY WEATHER FLOW = SEE NOTE G5. X HRS. X MIN.



ALTERNATIVE PUMP STATION LEVEL INTERACTION DIAGRAM
NOT TO SCALE
(SEE NOTES G1 AND G6 - G13)

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1102-6 VERSION B DATED 14/05/2014	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

LEVEL INTERACTION DIAGRAM FOR SMALL STATIONS

BRC	FCRC	GRC	NBRC	SBRC

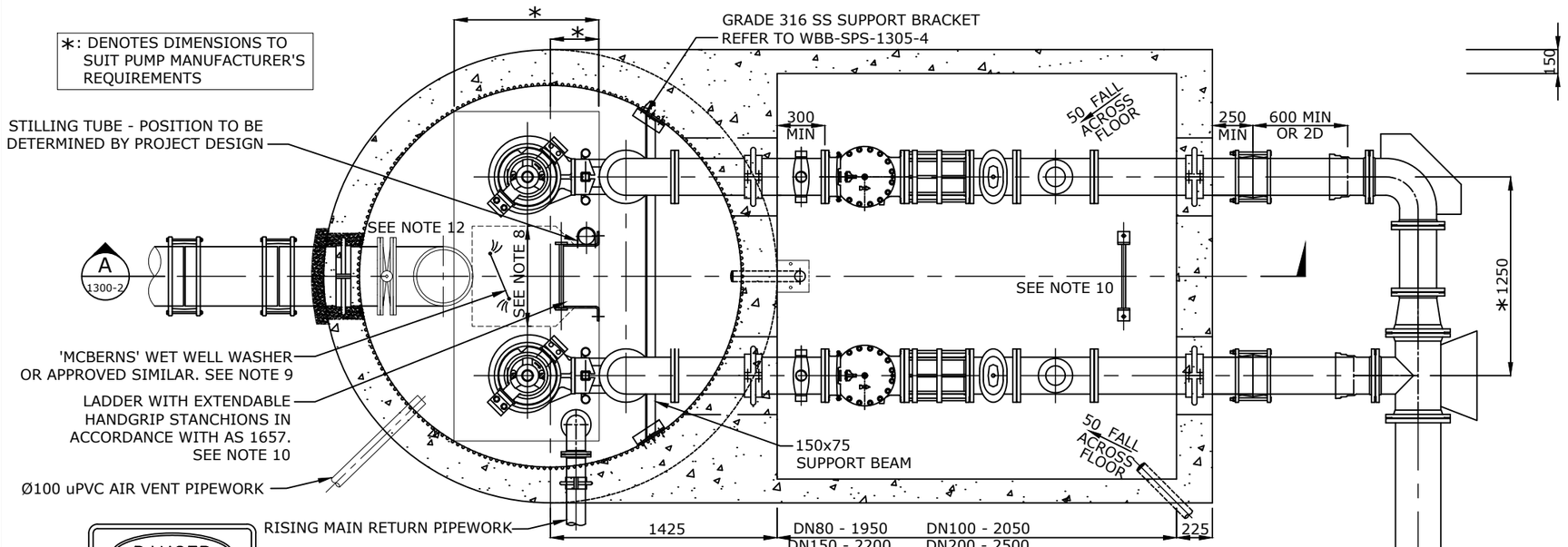
DRAWING No. WBB-SPS-1102-6

VERSION A

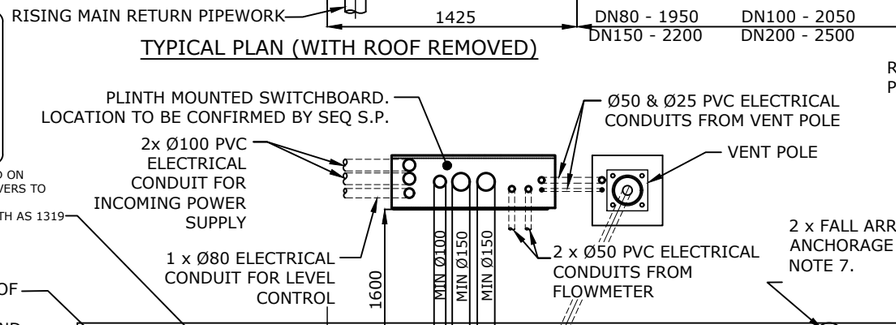
NOT TO SCALE

ORG DATE:

∗: DENOTES DIMENSIONS TO SUIT PUMP MANUFACTURER'S REQUIREMENTS



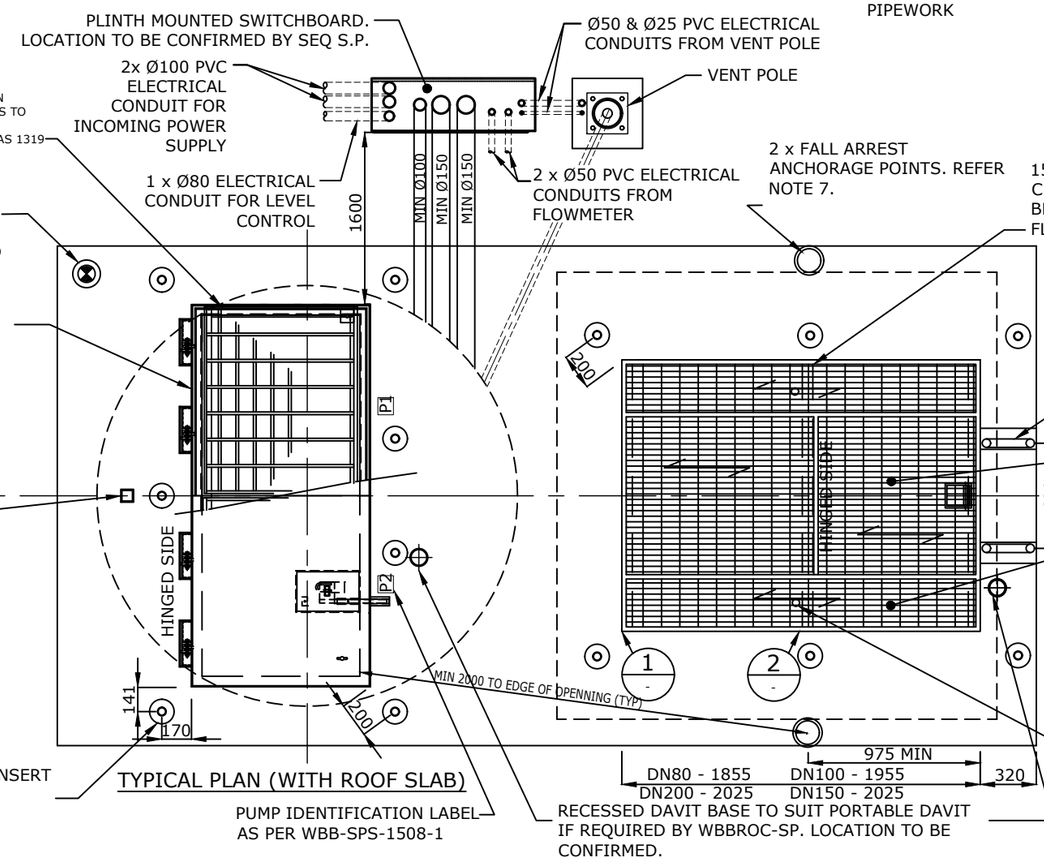
TYPICAL PLAN (WITH ROOF REMOVED)



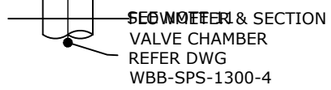
POLYPROPYLENE SIGN TO BE PLACED ON UNDERSIDE OF HINGED ACCESS COVERS TO PUMP STATION AND VALVE PITS. SIGN SHALL BE IN ACCORDANCE WITH AS 1319

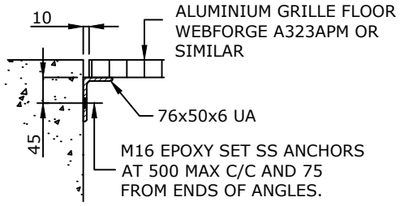
SAFETY SIGN

NOT TO SCALE



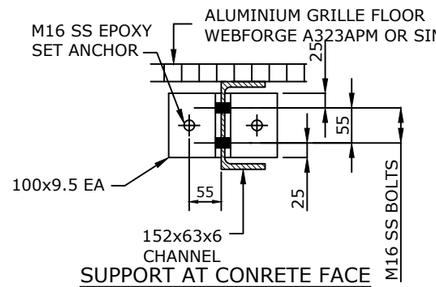
TYPICAL PLAN (WITH ROOF SLAB)





SUPPORT AT CONRETE FACE

DETAIL 1 SCALE -



SUPPORT AT CONRETE FACE

DETAIL 2 SCALE -

NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH WBB-SP-1300-7 AND 1300-8.
2. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
3. PUMP BASEPLATES AND GUIDE RAILS SHALL BE FIXED TO THE FLOOR AND TOP OF SLAB WITH GRADE 316 STAINLESS STEEL DROP FLUSH ANCHOR MASONRY FASTENERS IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION.
4. PROVIDE STAINLESS STEEL DROP PIPE SUPPORT BRACKETS AT 2500 MAX. CENTRES FIXED TO WALL WITH GRADE 316 SS MASONRY FASTENERS. REFER NOTE 6.
5. ALL INTERNAL VERTICAL, SOFFIT & COVER OPENING WET WELL SURFACES SHALL HAVE AN APPROVED POLYETHYLENE LINER (MIN 2.5mm THICK) MECHANICALLY BONDED TO WALL VIA ANCHORS CAST INTO CONCRETE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. POLYETHYLENE LINING SHALL BE AS PER WBBROC-SP PRODUCTS AND MATERIALS LIST. BENCHING SHALL NOT BE COATED.
6. ALL ENTRIES THROUGH THE CONCRETE STRUCTURE AND ALL FITMENT HOLES THROUGH THE POLYETHYLENE LINER SHALL BE SEALED WITH AN APPROVED SEALANT IN ACCORDANCE WITH DWGS WBB-SPS-1407-1 AND WBB-SPS-1407-2.
7. FALL ARREST FLUSH MOUNT ANCHORAGE POINT. REFER WBBROC-SP PRODUCTS AND MATERIALS LIST.
8. MINIMUM CIRCULATION CLEARANCES TO RUNG TYPE LADDER AS PER AS1657 CLAUSE 5.1.
9. NO WELL WASHER UNLESS SPECIFICALLY REQUESTED
10. NO LADDER UNLESS SPECIFICALLY REQUESTED.
11. FLOWMETER IS REQUIRED UNLESS SPECIFIED OTHERWISE.
12. INLET VALVE REQUIRED UNLESS SPECIFIED OTHERWISE.

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1300-1 VERSION B DATED 01/06/2014	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL 1.8 M WET WELL GENERAL ARRANGEMENT

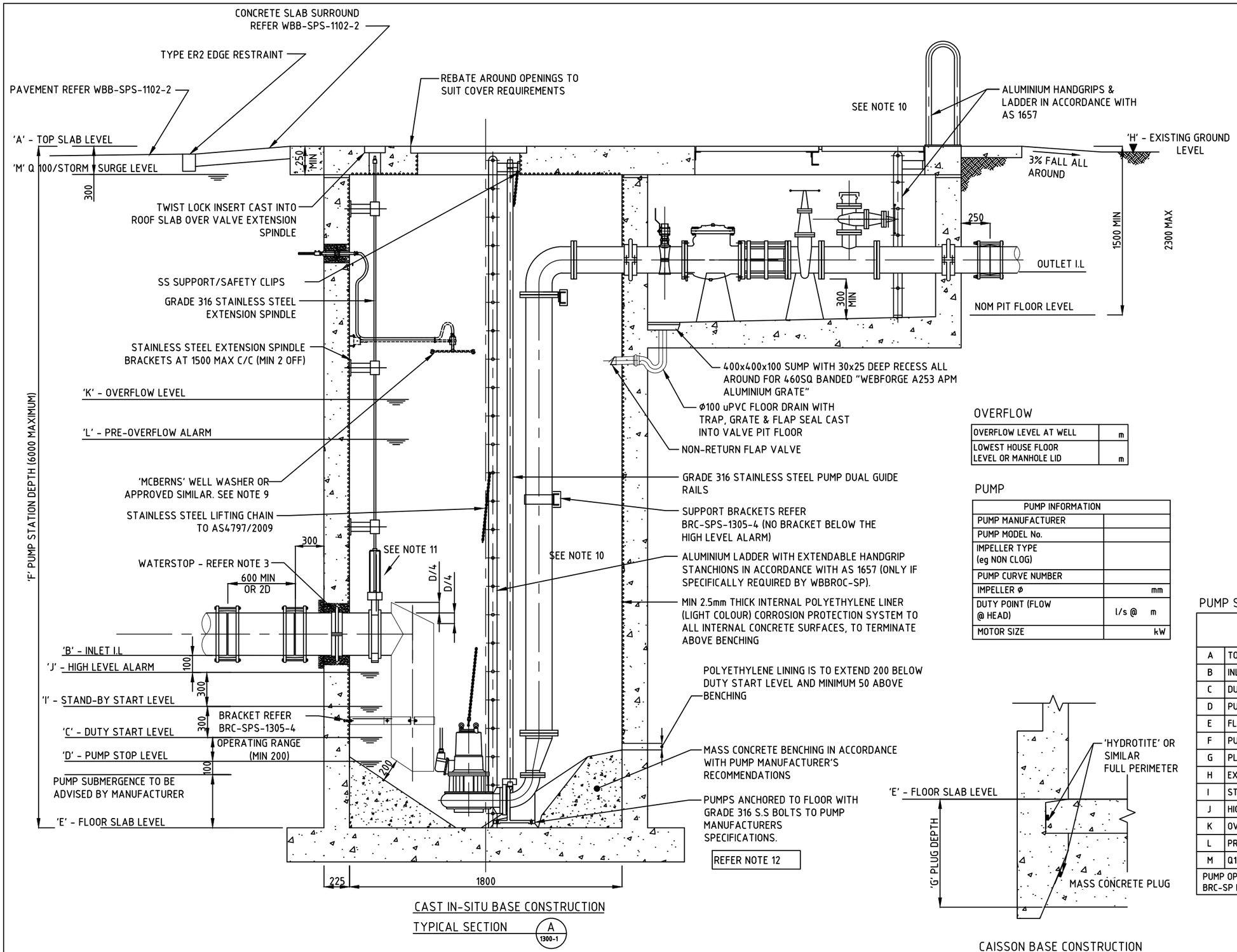
BRC	FCRC	GRC	NBRC	SBRC

DRAWING No. WBB-SPS-1300-1

VERSION A

NOT TO SCALE

ORG DATE:



CAST IN-SITU BASE CONSTRUCTION

TYPICAL SECTION A 1300-1

NOTE:

1. ALL CRITICAL LEVELS AND DIMENSIONS SHALL BE CONFIRMED ON SITE PRIOR TO COMMENCING CONSTRUCTION.
2. PUMP STATION LID THICKNESS SHALL ALLOW FOR RECESSED DAVIT BASE - MIN 250.
3. PROVIDE 'HYDROTITE' OR SIMILAR APPROVED HYDROPHILIC WATERSTOP ON INSIDE & OUTSIDE FACE OF ALL PUDDLE FLANGES.
4. ALL WALL PENETRATIONS SHALL BE VIA CONCRETE BLOCKOUT WITH WATER PROOFING AS PER NOTE 3.
5. WHERE CONSTRUCTION JOINTS ARE REQUIRED, PROVIDE 'HYDROTITE' OR SIMILAR APPROVED HYDROPHILIC WATERSTOP.
6. SPACING BETWEEN PUMPS AND CLEARANCE BETWEEN PUMP & FINISHED FLOOR SHALL BE IN ACCORDANCE WITH PUMP MANUFACTURER'S RECOMMENDATIONS.
7. BENCHING SHALL BE CLEAR OF PIPEWORK & BOLTS AS PER PUMP MANUFACTURER RECOMMENDATIONS.
8. FOR DETAILS OF LEVEL SENSORS AND OTHER ELECTRICAL EQUIPMENT, REFER TO APPROPRIATE BRC ELECTRICAL SPECIFICATIONS.
9. NO WELL WASHER UNLESS SPECIFICALLY REQUESTED.
10. NO LADDER UNLESS SPECIFICALLY REQUESTED
11. INLET VALVE REQUIRED UNLESS SPECIFIED OTHERWISE.
12. PUMP PEDESTAL SHALL COMPLY WITH WSA 101 SPECIFICATION, UNITYWATER REQUIRES "FORRERS" TYPE PUMPS PEDESTAL WITH "FORRERS" LOCKING PLATE FITTED TO PUMP.
13. DISTANCE B-E 2000MIN.

OVERFLOW

OVERFLOW LEVEL AT WELL	m
LOWEST HOUSE FLOOR LEVEL OR MANHOLE LID	m

PUMP

PUMP INFORMATION	
PUMP MANUFACTURER	
PUMP MODEL No.	
IMPELLER TYPE (eg NON CLOG)	
PUMP CURVE NUMBER	
IMPELLER Ø	mm
DUTY POINT (FLOW @ HEAD)	l/s @ m
MOTOR SIZE	kW

PUMP STATION CONTROL LEVELS

	ITEM	LEVEL (A.H.D)	HEIGHT FROM BASE (m)
A	TOP OF SLAB	m	
B	INLET	m	
C	DUTY START	m	
D	PUMP STOP	m	
E	FLOOR SLAB	m	
F	PUMP STATION DEPTH	N.A.	
G	PLUG DEPTH	m	
H	EXISTING GROUND LEVEL	m	
I	STAND-BY START	m	
J	HIGH LEVEL ALARM	m	
K	OVERFLOW LEVEL	m	
L	PRE-OVERFLOW ALARM	m	
M	Q100/STORM SURGE LEVEL	m	

PUMP OPERATING LEVELS AND DEFAULT SETTINGS SHALL BE AS PER THE BRC-SP FUNCTIONAL DESCRIPTION.

CAISSON BASE CONSTRUCTION

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1300-2 VERSION C DATED 30/01/2017	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

1.8 m WET WELL
SECTION DETAILS

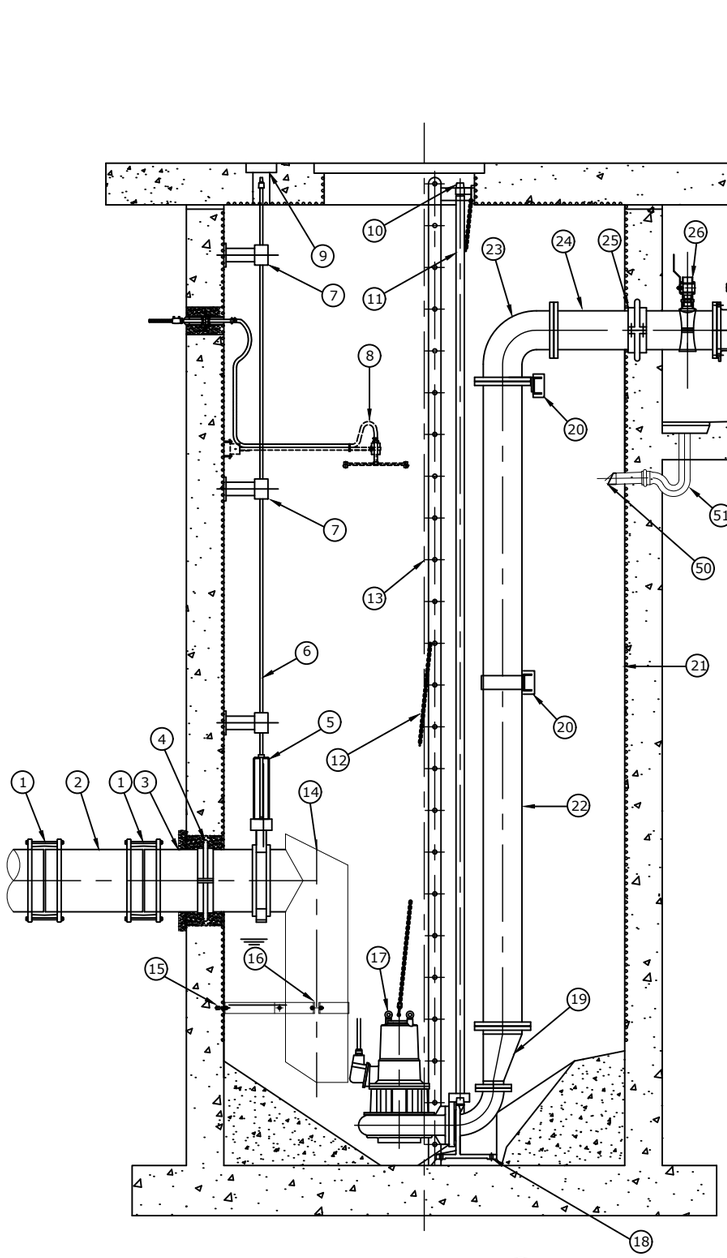
BRC | FCRC | GRC | NBRC | SBRC

DRAWING No.
WBB-SPS-1300-2

VERSION
A

NOT TO SCALE

ORG DATE:



TYPICAL SECTION A

CAST IN-SITU BASE CONSTRUCTION

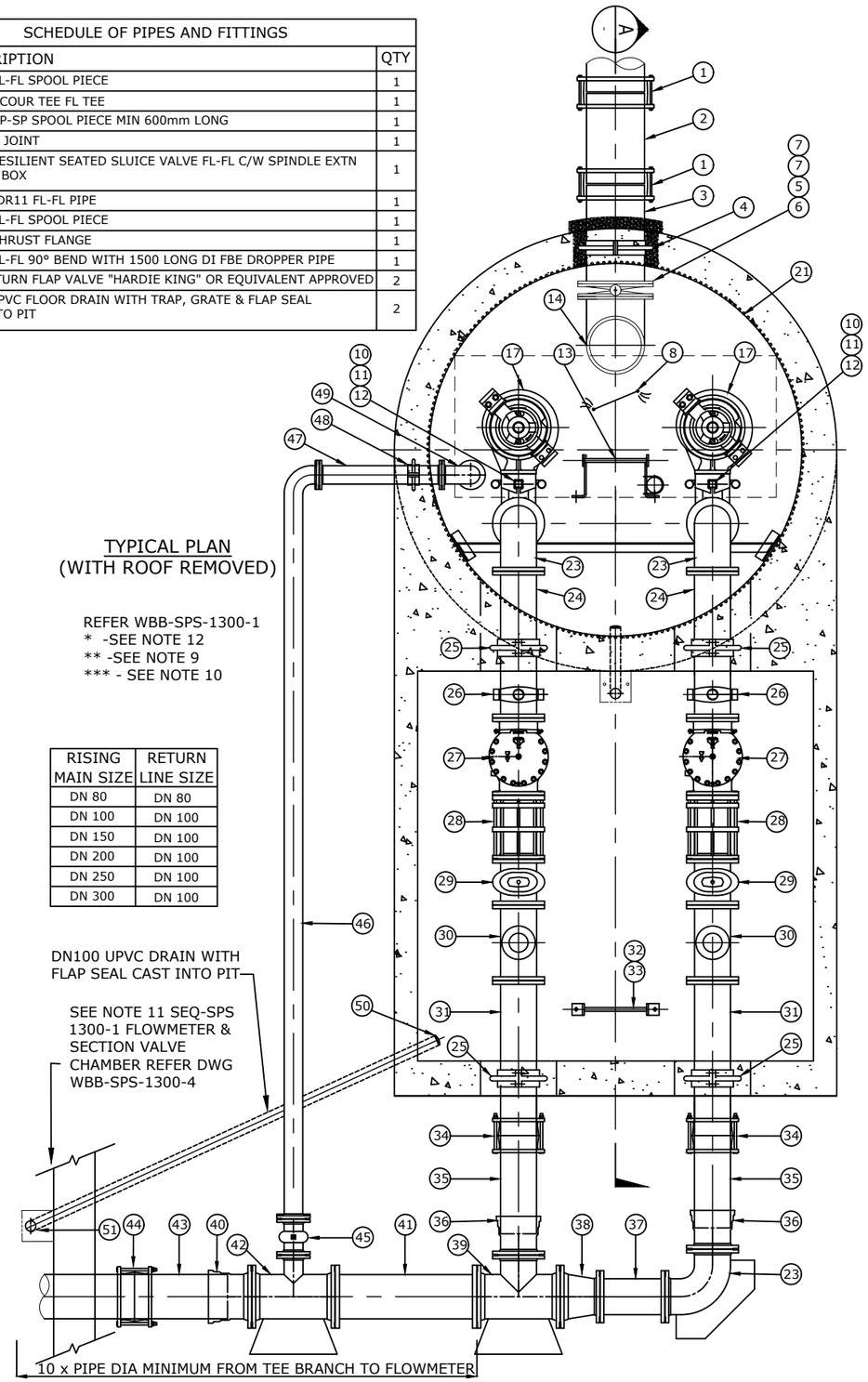
SCHEDULE OF PIPES AND FITTINGS		
ITEM	DESCRIPTION	QTY
1	GIBAULT JOINT	2
2	DI FBE PN 20 SP-SP ROCKER PIPE 600 LONG	1
3	DI FBE PN 20 SPOOL PIECE SP - FL	1
4	DI FBE PUDDLE FLANGE	1
5	VALVE KNIFE GATE LUGGED STAINLESS STEEL UNI-DIRECTIONAL *	1
6	GRADE 316 STAINLESS STEEL EXTENSION SPINDLE *	1
7	GRADE 316 SS EXTENSION SPINDLE BRACKETS AT 1500 MAX C/C (MIN 2 OFF) *	2
8	'MCBERNS' WELL WASHER OR APPROVED SIMILAR **	1
9	TWIST LOCK INSERT CAST INTO ROOF SLAB OVER VALVE EXTENSION SPINDLE	1
10	GRADE 316 SS SUPPORT/SAFETY CLIPS	2
11	GRADE 316 STAINLESS STEEL PUMP GUIDE RAILS	2
12	GRADE 316 STAINLESS STEEL LIFTING CHAIN TO AS4797/2009	2
13	LADDER WITH EXTENDABLE HANDGRIP STANCHIONS IN ACCORDANCE WITH AS 1657 ***	1
14	HDPE DROPPER PIPE	1
15	PIPE SUPPORT ANCHORED WITH S.S CHEMSET BOLTS TO CAISSON WALL	1
16	SUPPORT BRACKETS AS PER WBB-SPS-1305-4	1
17	SUBMERSIBLE WASTEWATER PUMP SIZED TO DUTY	2
18	PUMPS ANCHORED WITH S.S BOLTS TO MANUFACTURERS SPECIFICATIONS	2
19	DI FBE ECCENTRIC TAPER FL-FL	2
20	SUPPORT BRACKETS AS PER WBB-SPS-1305-4 (MIN 2 OF)	6
21	INTERNAL CORROSIVE PROTECTION POLYETHYLENE LINER MIN 2.5mm THICK	
22	DI FBE FL-FL PIPE	2
23	90° DI FBE BEND FL-FL	3
24	DI FBE FL-FL SPOOL PIECE	2
25	DI FBE THRUST FLANGE	5
26	S.S. TAPPING BAND WITH S.S. BALL VALVE FOR AIR RELEASE GAUGE	2
27	DI FBE SWING FLEX CHECK VALVE FL-FL	2
28	THRUST TYPE DISMANTLING JOINT	2
29	DI FBE RESILIENT SEATED SLUICE VALVE FL-FL	2
30	DI FBE FL TEE WITH DI FBE DN100 SLUICE VALVE MALE G316 SS CAMLOCK FITTING	2
31	DI FBE FL-SP SPOOL PIECE	2
32	LADDER IN ACCORDANCE WITH AS 1657 ***	1
33	HANDGRIP STANCHIONS IN ACCORDANCE WITH AS1657	1
34	GIBAULT JOINT	2
35	DI FBE SP-SP SPOOL PIECE MIN 600mm LONG	2
36	DI FBE FL-SO CONNECTOR	2
37	DI FBE FL-FL SPOOL PIECE	1
38	DI FBE CONCENTRIC TAPER FL-FL	1
39	DI FBE REDUCING FL TEE	1
40	DI FBE FL-SO CONNECTOR	1

SCHEDULE OF PIPES AND FITTINGS		
ITEM	DESCRIPTION	QTY
41	DI FBE FL-FL SPOOL PIECE	1
42	DI FBE SCOUR TEE FL TEE	1
43	DI FBE SP-SP SPOOL PIECE MIN 600mm LONG	1
44	GIBAULT JOINT	1
45	DI FBE RESILIENT SEATED SLUICE VALVE FL-FL C/W SPINDLE EXTN & VALVE BOX	1
46	PE100 SDR11 FL-FL PIPE	1
47	DI FBE FL-FL SPOOL PIECE	1
48	DI FBE THRUST FLANGE	1
49	DI FBE FL-FL 90° BEND WITH 1500 LONG DI FBE DROPPER PIPE	1
50	NON-RETURN FLAP VALVE "HARDIE KING" OR EQUIVALENT APPROVED	2
51	DN100 uPVC FLOOR DRAIN WITH TRAP, GRATE & FLAP SEAL CAST INTO PIT	2

TYPICAL PLAN
(WITH ROOF REMOVED)

REFER WBB-SPS-1300-1
* -SEE NOTE 12
** -SEE NOTE 9
*** - SEE NOTE 10

RISING MAIN SIZE	RETURN LINE SIZE
DN 80	DN 80
DN 100	DN 100
DN 150	DN 100
DN 200	DN 100
DN 250	DN 100
DN 300	DN 100



REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1300-3 VERSION C DATED 30/01/2017	

WBBROC WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

1.8 m WET WELL
PIPEWORK ARRANGEMENT

BRC	FCRC	GRC	NBRC	SBRC

DRAWING No.
WBB-SPS-1300-3

VERSION
A

NOT TO SCALE

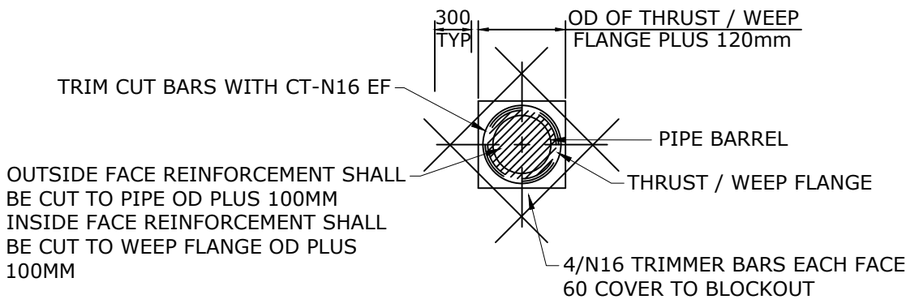
ORG DATE:

TABLE OF PIT DIMENSIONS

PIPE DN (mm)	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'
100	1100	600	1250	300	450	500	250	200
150	1100	600	1350	300	450	600	250	200
200	1150	650	1500	300	500	700	250	200
250	1150	650	1650	300	500	800	300	200
300	1200	700	2000	300	550	900	400	300
375	1250	750	2100	300	600	1060	400	300
450	1300	800	2300	300	650	1220	400	300
500	1300	800	2450	300	650	1375	400	300
600	1350	850	2600	350	700	1635	400	300
750	1450	950	3100	400	800	1975	400	300

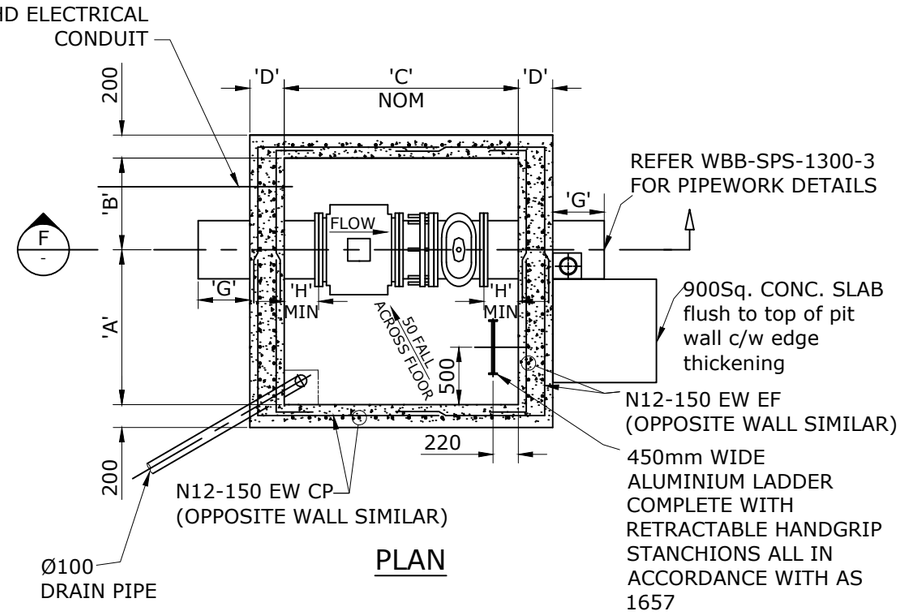
SCHEDULE OF PIPES AND FITTINGS

ITEM	DESCRIPTION	QTY
1	DI FBE FL-SP SPOOL PIECE	2
2	DI FBE THRUST FLANGE	2
3	FBE ELECTROMAGNETIC BIDIRECTIONAL FLOWMETER FL-FL	1
4	DI FBE FL-SP CONNECTOR	1
5	NON-THRUST TYPE DISMANTLING JOINT	1
6	DI FBE RESILIENT SEATED SLUICE VALVE FL-FL	1



"SALA" WALL MOUNT SLEEVE, MIN. ANCHOR SPEC.

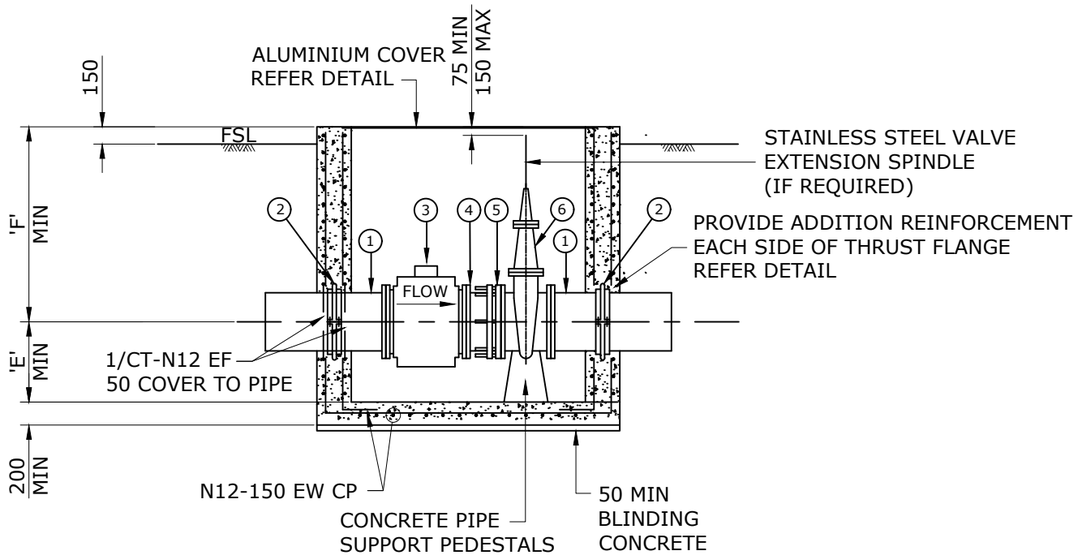
- 4/M16 316 S/STEEL "CHEMSET" ANCHORS
- HOLE DIA.: 18mm
- HOLE DEPTH: 125mm
- MIN. CONCRETE THICKNESS: 200mm
- MIN. DISTANCE OF ANCHOR C/LINE TO CONCRETE EDGE :150mm
- EPOXY RESIN SPEC. : HILTI HIT-RE-500 OR FISCHER FIS VS 360 S
- EACH ANCHOR TO BE LOAD TESTED AFTER CURING TO 13.5 kN.



PLAN

TYPICAL DETAIL OF ADDITIONAL REINFORCEMENT AT PIPE PENETRATIONS

NOT TO SCALE

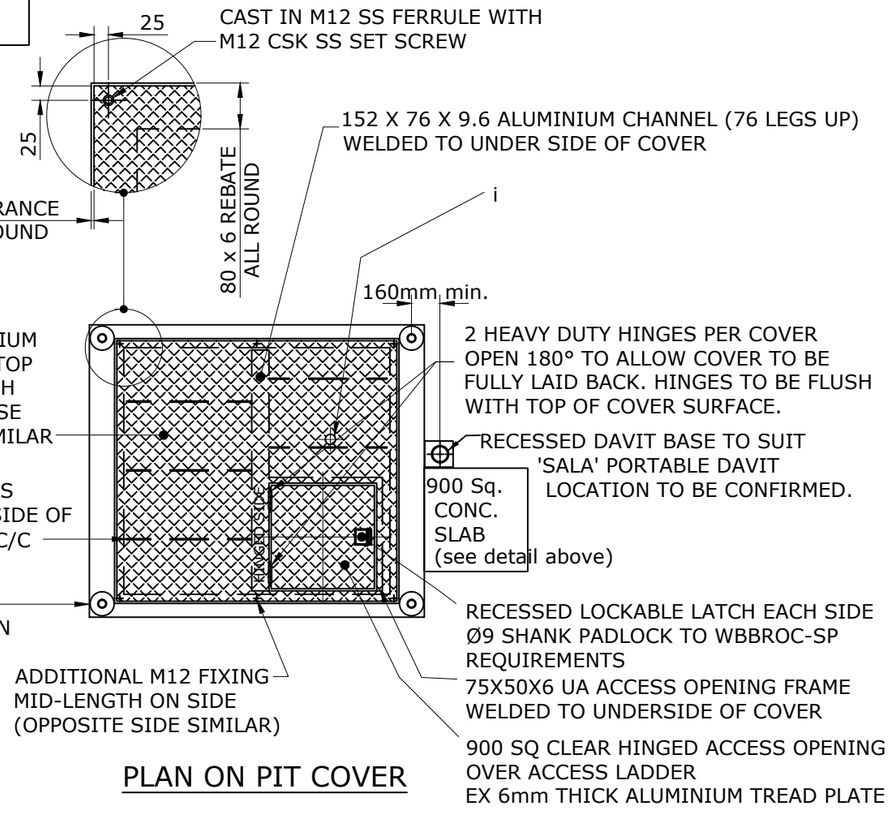


SECTION F

NOT TO SCALE

200 0 400 800 1200mm

A3 COPY HALF SCALE



PLAN ON PIT COVER

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1300-4 VERSION B DATED 07/08/2014	

WBBROC WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

FLOWMETER & SECTION VALVE CHAMBER

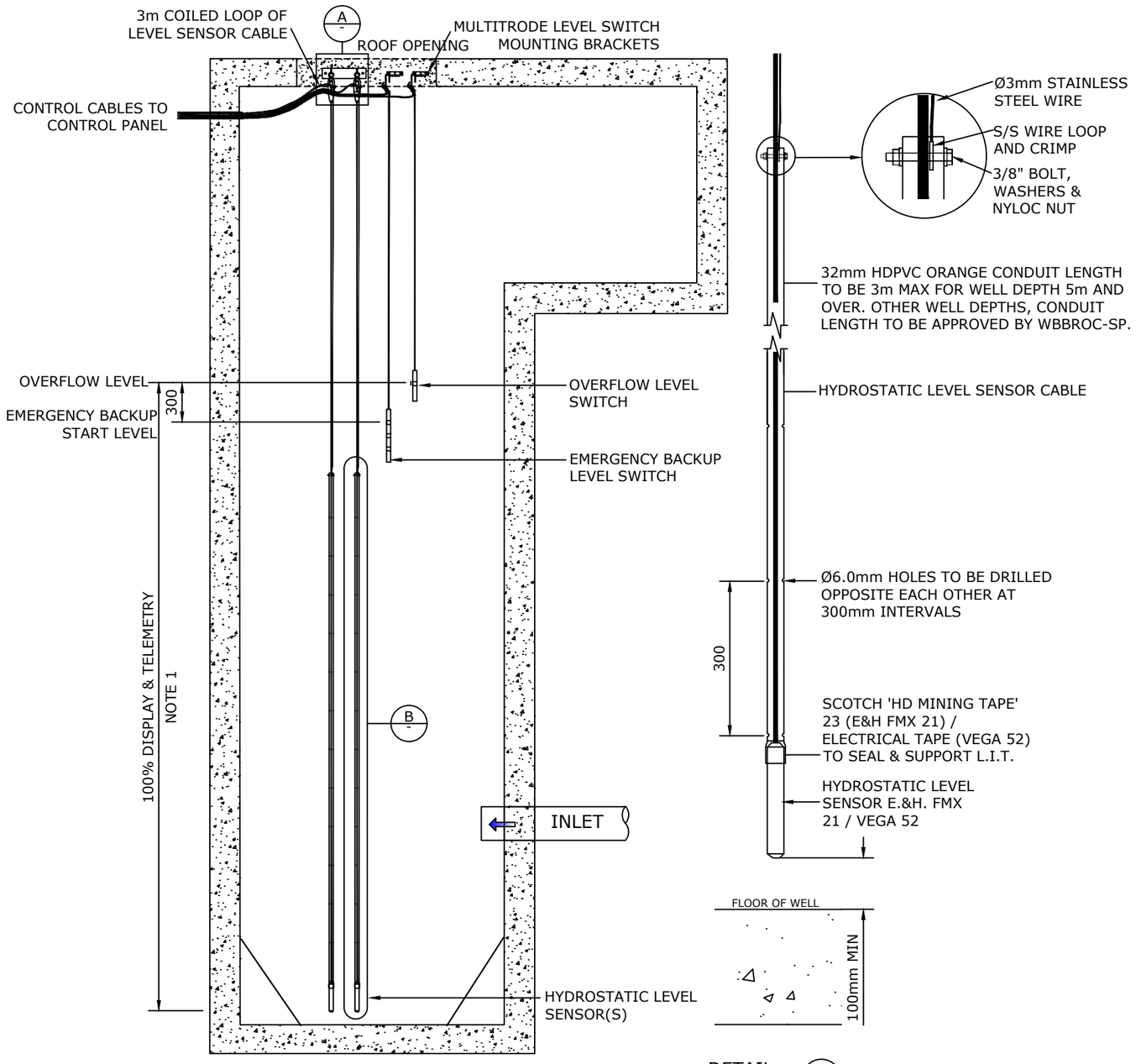
BRC	FCRC	GRC	NBRC	SBRC

DRAWING No. WBB-SPS-1300-4

VERSION A

NOT TO SCALE

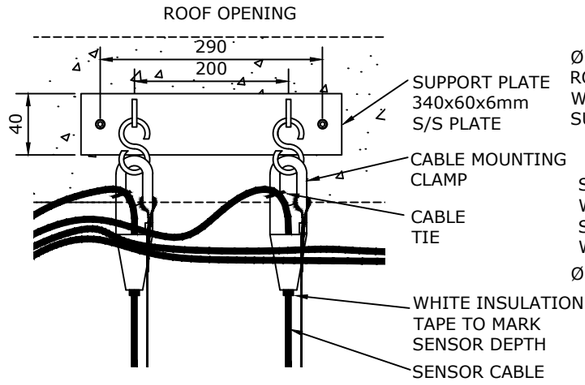
ORG DATE:



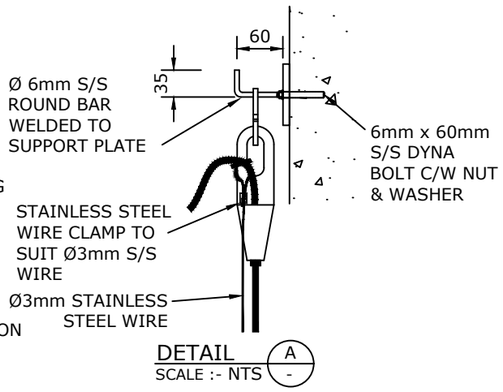
SECTION ELEVATION OF PUMP WELL

DETAIL B
SCALE :- NTS

LEVEL SENSOR & CONDUIT DETAILS



HYDROSTATIC CLAMP MOUNTING AND SUPPORT BRACKET DETAIL - FRONT VIEW
(REFER NOTE 6.)



DETAIL A
SCALE :- NTS

HYDROSTATIC CLAMP MOUNTING AND SUPPORT BRACKET DETAIL - SIDE VIEW
(REFER NOTE 6.)

GENERAL NOTES
1. (NOTE DELETED)
2. (NOTE DELETED)
3. (NOTE DELETED)
4. ALL STAINLESS STEEL IS TO BE GRADE 316.
5. ALL STAINLESS STEEL BOLTS AND NUTS ARE TO BE INSTALLED WITH ANTI GALLING COMPOUND. THIS IS TO INCLUDE THE BOLTS IN THE LINK SEAL.
6. REFER TO WBBROC-SP FOR PREFERRED CABLE MOUNTING METHOD.

NOTES:
1. HYDROSTATIC LEVEL SENSOR TO BE SPANNED 0-120% (4-20mA)

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1300-6 VERSION A	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

BRC | FCRC | GRC | NBRC | SBRC

LEVEL CONTROL AND WELL WASHER DETAILS

DRAWING No. WBB-SPS-1300-6

VERSION A

NOT TO SCALE

ORG DATE:

INFORMATION ON THIS DRAWING SHALL APPLY UNLESS NOTED OTHERWISE ON THE DRAWINGS

DESIGN

D1. THE PUMP STATION HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT RELEVANT AUSTRALIAN STANDARDS INCLUDING THE FOLLOWING:-

AS 1170: 2002 PARTS 1, 2 & 4 SAA LOADING CODE
AS 1657: 1992 FIXED PLATFORMS, WALKWAYS, STAIRWAYS AND LADDERS
AS/NZS 1664: 1997 SAA ALUMINIUM STRUCTURES CODE
AS 3600: 2001 CONCRETE STRUCTURES
AS 3735: 1991 CONCRETE STRUCTURES FOR RETAINING LIQUID

D2. THE STRUCTURE(S) HAVE BEEN DESIGNED TO CARRY THE FOLLOWING LOADS:-

(A) SELF WEIGHT

(B) WIND LOAD BASIC WIND SPEEDS Vu : 55 M/S
Vp : 46 M/S
Vs : 37 M/S

REGION	B
TERRAIN CATEGORY	2
SHIELDING MULTIPLIER	1.0
TOPOGRAPHIC MULTIPLIER	1.0
IMPORTANCE MULTIPLIER	1.0

FOR STRUCTURES THAT DO NOT COMPLY WITH THE ABOVE PARAMETERS, PARTICULARLY WHERE THE STRUCTURE IS LOCATED IN REGION C OF AS 1170.2 STRUCTURAL DESIGN ACTIONS PART 2: WIND ACTIONS (WITHIN 50KM OF THE COAST NORTH FROM BUNDABERG), SPECIFIC DESIGN IS REQUIRED.

(C) LIVE LOADS ALUMINIUM ACCESS COVERS 2.5 kPA
CONCRETE ROOF SLAB W7 WHEEL LOAD

(D) OTHER LOADS EXTERNAL EARTH LOADS KO = 0.5
SOIL DENSITY = 20 kN/m³

EXTERNAL GROUND WATER FULL DEPTH

MAXIMUM PIPELINE TEST PRESSURE 900 kPA

FOUNDATIONS

F1. ALL TOPSOIL AND VEGETATION SHALL BE REMOVED BEFORE EXCAVATION.

F2. FOUNDATIONS HAVE BEEN DESIGNED FOR THE FOLLOWING SAFE ALLOWABLE GROUND BEARING CAPACITIES:-

ELEMENT	ALLOWABLE BEARING CAPACITY (kPA)
VALVE PIT	100
PUMP WELL	200

F3. WBBROC-SP SHALL APPROVE FOUNDATION MATERIAL PRIOR TO PLACING REINFORCEMENT OR CONCRETE.

F4. ANY OVER-EXCAVATIONS OR CAVITIES OF FOUNDATIONS SHALL BE FILLED WITH BLINDING CONCRETE.

GENERAL

G1. NO DIMENSION SHALL BE OBTAINED BY SCALING.

G2. ALL DIMENSIONS ARE IN MILLIMETRES UNO.

G3. ALL LEVELS ARE IN METRES UNO.

G4. ALL DIMENSIONS ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR BEFORE FABRICATION AND CONSTRUCTION.

G5. REFER ALL DISCREPANCIES TO WBBROC BEFORE PROCEEDING WITH THE WORKS.

G6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE AND NEIGHBOURING STRUCTURES IN A SAFE AND STABLE CONDITION DURING CONSTRUCTION. NO PART SHALL BE OVERSTRESSED.

G7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING STRUCTURES AGAINST FLOATATION DURING CONSTRUCTION.

G9. NO PENETRATIONS, CHASES OR TEMPORARY FIXTURES ARE PERMITTED WITHOUT PRIOR APPROVAL FROM WBBROC-SP. ALL DRAWINGS SHALL BE CHECKED AGAINST ARCHITECTURAL AND SERVICES DRAWINGS FOR PENETRATIONS, CONDUITS AND PIPES ETC.

G10. NOMINATION OF PROPRIETARY ITEMS DOES NOT INDICATE EXCLUSIVE PREFERENCE BUT INDICATES THE REQUIRED PROPERTIES OF THE ITEM. SIMILAR ALTERNATIVES WITH THE REQUIRED PROPERTIES MAY BE OFFERED FOR WRITTEN APPROVAL.

G11. PUMPS MUST BE ABLE TO BE REMOVED FROM, AND REINSTALLED INTO THE WET WELL, WITHOUT DISMANTLING ANY EQUIPMENT, PIPEWORK, BRACKETS OR COVERS.

G12. FOR REFERENCED DOCUMENTS USE THE LATEST EDITIONS WITH AMENDMENTS, EXCEPT WHERE OTHER EDITIONS OR AMENDMENTS ARE REQUIRED BY STATUTORY AUTHORITIES.

ALUMINIUM

A1. ALL WORKMANSHIP SHALL BE IN ACCORDANCE WITH AS/NZS 1664.

A2. ALL MATERIALS SHALL BE IN ACCORDANCE WITH AS/NZS 1734, AS/NZS 1865, AS/NZS 1866 OR AS/NZS 1867.

A3. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO WBBROC-SP FOR APPROVAL PRIOR TO FABRICATION.

A4. ALUMINIUM MEMBERS SHALL HAVE THE FOLLOWING ALLOY GRADES UNO:-

ALL EXTRUSIONS SHALL BE ALLOY	6061-T6.
PLATE 3MM AND THICKER SHALL BE ALLOY	5083-H321.
TREAD PLATE SHALL BE ALLOY	5251-0.

A5. ALL METALWORK CONNECTIONS NOT SHOWN BOLTED, SHALL BE WELDED AS FOLLOWS:-

(a) ALL WELDING SHALL BE WELD QUALITY B IN ACCORDANCE WITH AS 1665.
(b) WELDS SHALL BE CONTINUOUS 6MM FILLET OR FULL PENETRATION BUTT WELDS ALL ROUND USING FILLER ALLOY 5556.
(c) ALL JOINTS SHALL BE FULLY SEAL WELDED UNLESS SHOWN OTHERWISE.
(d) GRIND WELDS FLUSH ONLY AT CONTACT POINTS WITH OTHER MEMBERS AND CONCRETE SURFACES.

A6. ALL FASTENERS SHALL BE GRADE 316 STAINLESS STEEL.

A7. NYLON OR POLYETHYLENE WASHERS, TOP HAT SECTIONS AND SPACERS SHALL BE USED TO SEPARATE STAINLESS STEEL FASTENERS FROM ALUMINIUM. HOLE SIZES SHALL BE DRILLED ONLY SUFFICIENTLY LARGE ENOUGH TO ACCOMMODATE THE FASTENER AND ISOLATOR CHOSEN. OVERSIZED HOLES WILL NOT BE ACCEPTED.

A8. ALL ALUMINIUM SURFACES PLACED IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH TWO HEAVY COATS OF ALKALI-RESISTANT BITUMINOUS PAINT OR OTHER COATING PROVIDING EQUIVALENT PROTECTION BEFORE INSTALLATION.

STAINLESS STEEL

SS1. ALL STAINLESS STEEL SHALL BE GRADE 316 IN ACCORDANCE WITH AS 1769 OR AS 2837 UNLESS SHOWN OTHERWISE.

SS2. ALL WELDS SHALL BE 6MM CONTINUOUS FILLET OR FULL PENETRATION BUTT WELDS ALL ROUND IN ACCORDANCE WITH AS 1554.6 UNLESS SHOWN OTHERWISE.

SS3. STAINLESS STEEL SURFACES SHALL HAVE THE SCALE REMOVED BY PICKLING AND SHALL BE PASSIVATED OR SURFACE TREATED TO PLACE THE ALLOY NEAR THE CATHODIC END OF THE GALVANIC SERIES. ALL AREAS OF STAINLESS STEEL WHICH ARE SUBSEQUENTLY MACHINED, GROUND OR WORKED IN ANY MANNER WHICH TENDS TO DESTROY THE ORIGINAL PASSIVATED CONDITION SHALL AGAIN BE PASSIVATED AS A FINAL CLEANING OPERATION. AFTER PASSIVATING, THE SURFACES SHALL BE FREE FROM PITTING OR SURFACE DEFECTS.

SS4. FABRICATED HANDRAILS, LADDERS, STAIRWAYS, PLATFORMS AND WALKWAYS SHALL COMPLY WITH AS1657.

SS5. LADDERS SHALL BE 450MM WIDE, FIXED IN PLACE WITH M20 FIXINGS.

CONCRETE

C1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 UNLESS SHOWN OTHERWISE.

C2. QUALITY OF CONCRETE ELEMENTS SHALL BE:-

ELEMENT	EXPOSURE CLASSIFICATION	MINIMUM COVER TO REINFORCEMENT (mm)	CONCRETE GRADE (MPa)
WET WELL - INTERNAL	B2	70	N40
WET WELL - EXTERNAL	B2	50	N40
VALVE PITS	B2	50	N40
ROOF SLAB	B2	50	N40
CAISSON PLUG	B1	65	N32
PUMP WELL BENCHING	-	-	N32
BLINDING	-	- *	N15
SLABS ON GROUND	B1	45	N25

* COVER FOR SLAB CAST ON BLINDING CONCRETE.
WHERE CONCRETE IS CAST ON OR AGAINST GROUND, THE COVER SHALL BE INCREASED BY 10MM IF THE CONCRETE IS PROTECTED BY A WATERPROOF MEMBRANE OR 20MM OTHERWISE.

C3. THE DRYING SHRINKAGE AT 56 DAYS, FOR CONCRETE USED IN WATER RETAINING STRUCTURES, SHALL NOT EXCEED 700 MICROSTRAIN AS DETERMINED IN ACCORDANCE WITH AS 1012.13.

C4. NOMINAL MAXIMUM AGGREGATE SIZE SHALL BE 20MM UNO.

C5. ADMIXTURES SHALL NOT BE USED WITHOUT WRITTEN APPROVAL.

C6. ALL CONCRETE SHALL BE READY MIXED CONCRETE COMPLYING WITH AS 1379.

C7. THE TYPE OF CEMENT TO BE USED SHALL BE TYPE GP - GENERAL PURPOSE PORTLAND CEMENT UNLESS SPECIFIED OTHERWISE.

C8. PROVIDE ALL EXPOSED EDGES AND CORNERS WITH A 20MM X 20MM CHAMFER OR FILLET.

C9. CONCRETE SHALL BE COMPACTED BY MECHANICAL VIBRATION.

C10. ALL CONCRETE SURFACES SHALL BE CURED BY APPROVED MEANS FOR A MINIMUM CONTINUOUS DURATION OF 7 DAYS COMMENCING IMMEDIATELY AFTER THE INITIAL SET OF THE CONCRETE.

C11. CONCRETE FACES AT CONSTRUCTION JOINTS SHALL BE THOROUGHLY SCABBLED, FREE OF LAITANCE, CLEANED AND WETTED THOROUGHLY PRIOR TO THE PLACEMENT OF ABUTTING CONCRETE.

C12. NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR APPROVAL OF WBBROC-SP.

C13. PROVIDE A FINE NON-SLIP SURFACE WITH A WOOD FLOAT TO THE TOPS OF ALL WALLS AND FLOORS.

C14. CONSTRUCTION JOINTS WHERE NOT SHOWN ON THE DRAWINGS SHALL BE LOCATED TO THE APPROVAL OF WBBROC-SP.

C15. ALL INTERNAL CONCRETE SURFACES OF THE PUMP WELL, COLLECTOR MANHOLE AND EMERGENCY STORAGE SHALL BE PAINTED WITH "APPROVED SEALANT" IN STRICT ACCORDANCE WITH THE MANUFACTURERS WRITTEN INSTRUCTIONS.

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1300-7 VERSION A	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

1.8M WET WELL
NOTES SHEET 1 OF 2

BRC	FCRC	GRC	NBRC	SBRC

DRAWING No. WBB-SPS-1300-7

VERSION A

NOT TO SCALE

ORG DATE:

INFORMATION ON THIS DRAWING SHALL APPLY UNLESS NOTED OTHERWISE ON THE DRAWINGS

REINFORCEMENT

R1. REINFORCEMENT SYMBOL - 23/S-N16-200 EW

23	NUMBER OF BARS IN GROUP (IF SHOWN)
S	BAR SHAPE CODE, REFER AS1100.501 (IF SHOWN)
N16	BAR GRADE/TYPE AND DIAMETER
200	SPACING BETWEEN BARS IN MILLIMETRES
EW	LOCATION CODE (IF SHOWN)

REINFORCEMENT SYMBOL, STANDARD AND GRADE DESIGNATIONS ARE AS FOLLOWS:-

N	GRADE 500N DEFORMED BAR TO AS/NZS 4671.
SL	SQUARE REINFORCING FABRIC TO AS/NZS 4671.

LOCATION CODES (IF SHOWN) :-

B	BOTTOM FACE	HORIZ	HORIZONTAL
BB	BOTTOM BOTTOM (LAID FIRST)	IL	INNER LAYER
CP	CENTRALLY PLACED	INTF	INTERNAL FACE
EF	EACH FACE	NF	NEAR FACE
ES	EQUALLY SPACED	OL	OUTER LAYER
EW	EACH WAY	T	TOP FACE
EXTF	EXTERNAL FACE	TT	TOP TOP (LAID LAST)
FF	FAR FACE	VERT	VERTICAL

R2. REINFORCEMENT IS REPRESENTED ON THE DRAWINGS DIAGRAMMATICALLY, AND IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.

R3. REINFORCEMENT SHALL BE CUT OR DISPLACED TO PROVIDE 50MM COVER TO PIPES OR OPENINGS AS DIRECTED BY WBBROC-SP.

R4. REINFORCEMENT SHALL BE KEPT 40MM CLEAR OF WATERSTOPS.

R5. MINIMUM DEVELOPMENT/LAP LENGTHS FOR MINIMUM 25 MPA CONCRETE UNO SHALL BE:-

BAR DIAMETER	VERTICAL BARS AND HORIZONTAL BARS WITH LESS THAN 300mm OF CONCRETE CAST BELOW	HORIZONTAL BARS WITH MORE THAN 300mm OF CONCRETE CAST BELOW
N10	250	325
N12	300	375
N16	400	600

R6. MINIMUM LAP LENGTH FOR SLAB REINFORCING FABRICS SHALL BE ONE FULL MESH PLUS 25MM.
MINIMUM LAP LENGTH FOR FABRIC MESH AND BARS SHALL BE 300MM.

R7. LAPS IN REINFORCEMENT SHALL BE MADE ONLY IN THE LOCATIONS SHOWN ON THE DRAWINGS OR AS OTHERWISE APPROVED BY WBBROC-SP.

R8. WELDING OF REINFORCEMENT IS ONLY PERMITTED WHERE SHOWN ON THE DRAWINGS OR IF APPROVED BY WBBROC-SP.

PIPEWORK

P1. WHERE CONNECTING TO EXISTING PIPEWORK, THE LEVEL AND DIAMETER OF THE EXISTING PIPEWORK, SHALL BE CONFIRMED BY THE CONTRACTOR, PRIOR TO CONNECTION.

P2. ALL FLANGES SHALL BE IN ACCORDANCE WITH AS 4087, CLASS 14 FOR CAST IRON AND, CLASS 16 FOR DUCTILE IRON AND STEEL, UNO.

P3. ALL FLANGE BOLT HOLE ORIENTATIONS SHALL BE OFF-CENTRE UNO.

P4. ALL FLANGE BOLT SETS SHALL BE GRADE 316 STAINLESS STEEL.
REFER AS 4087 - TABLE C1 FOR CLASS.

P5. FLANGE GASKET MATERIAL AND THICKNESS SHALL BE IN ACCORDANCE WITH AS 4087 - TABLE C1.

P6. THRUST AND PUDDLE FLANGES SHALL BE CAST CENTRALLY WITHIN WALLS UNLESS SHOWN OTHERWISE.

P7. ALL 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. ALL GATE VALVES SHALL BE RESILIENT SEATED. ALL REFLUX VALVES SHALL BE RESILIENT SEATED SWING FLEX CHECK VALVE OR SIMILAR APPROVED TOP OPENING VALVE.

ELECTRICAL

EL1. THE LOCATION OF ALL CONDUITS SHALL BE CONFIRMED BY WBBROC-SP PRIOR TO CONSTRUCTION OF THE SWITCHBOARD SLAB.

EL2. ALL CABLES AND CONDUITS SHALL COMPLY WITH AS/NZS 3000 AND AUSTEL REQUIREMENTS.

EL3. UNDERGROUND CONDUITS SHALL BE HEAVY DUTY RIGID PVC WITH 600MM MINIMUM COVER.

EL4. POLYMERIC CABLE COVER STRIPS COMPLYING WITH AS 4702 SHALL BE USED AS ADDITIONAL MECHANICAL PROTECTION OF ALL UNDERGROUND WIRING ENCLOSURES.

EL5. ALL EXTERNAL ABOVEGROUND CONDUITS SHALL BE GALVANISED STEEL UNO.

EL6. ALL INTERNAL ABOVE GROUND ELECTRICAL CONDUITS SHALL BE MEDIUM DUTY RIGID PVC UNO.

EL7. ALL CONDUITS SHALL HAVE LONG RADIUS BENDS.

ABBREVIATIONS

1. 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
UNO	UNLESS NOTED OTHERWISE

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1300-8 VERSION A	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

1.8M WET WELL
NOTES SHEET 2 OF 2

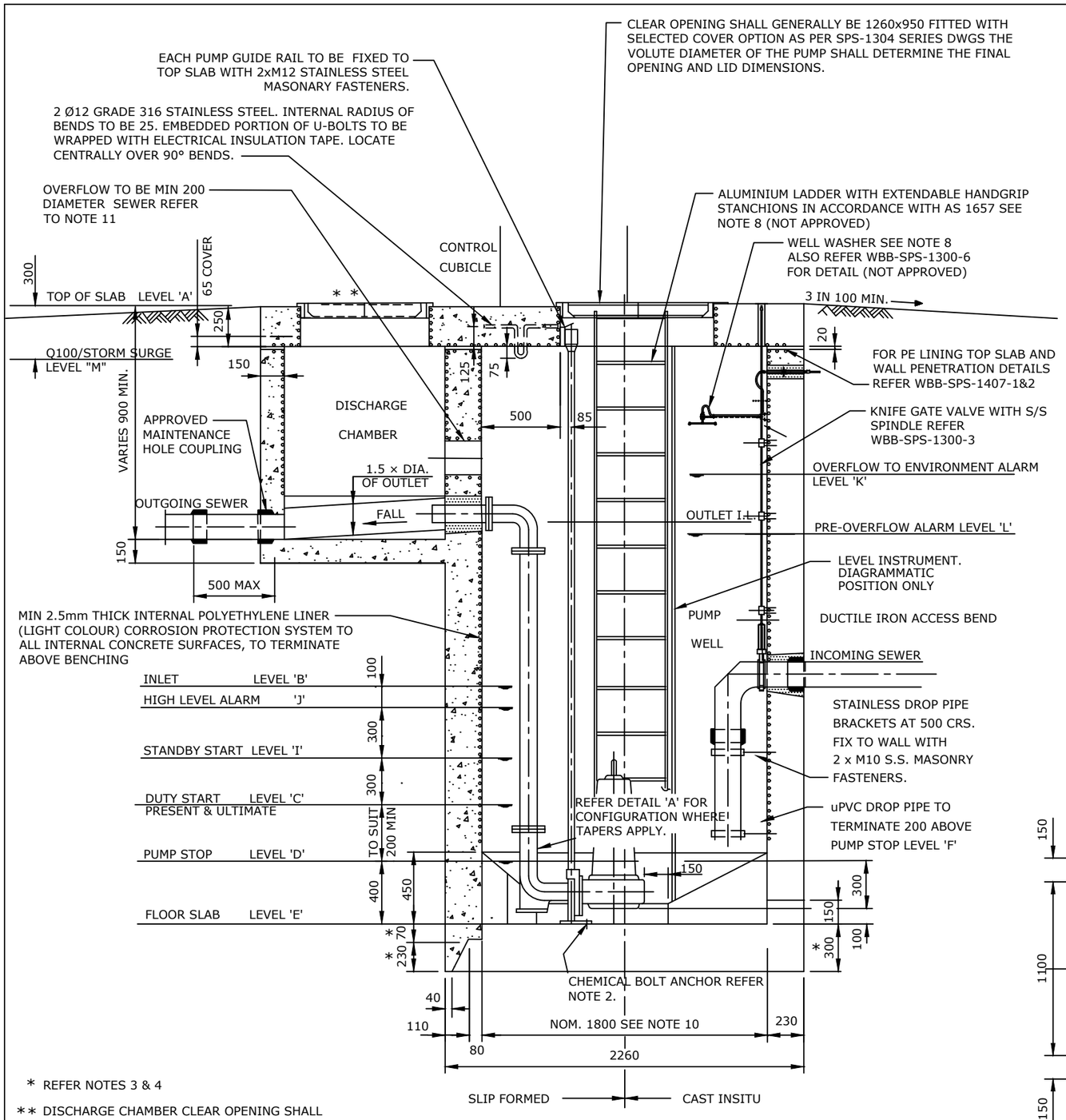
BRC	FCRC	GRC	NBRC	SBRC

DRAWING No. WBB-SPS-1300-8

VERSION A

NOT TO SCALE

ORG DATE:



* REFER NOTES 3 & 4

** DISCHARGE CHAMBER CLEAR OPENING SHALL BE 1000 x 800 FITTED WITH SELECTED COVER OPTION AS PER SPS-1304 DWGS

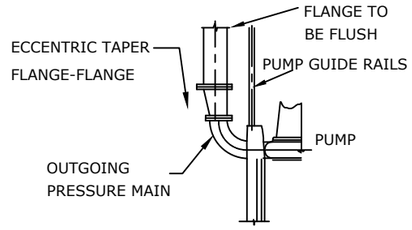
SECTIONAL ELEVATION

NOTES

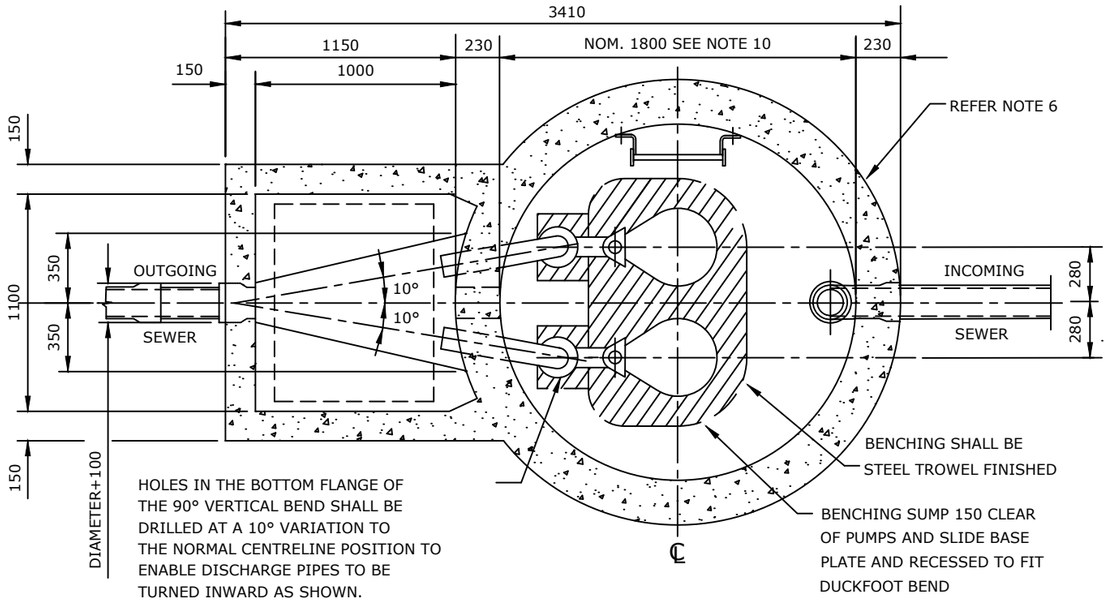
1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WBB-SPS-1300 SERIES DRAWINGS
2. PUMP BASEPLATES AND SLIDE SUPPORTS SHALL BE FIXED TO FLOOR AND TOP OF SLAB WITH STAINLESS STEEL DROP IN FLUSH ANCHOR MASONRY FASTENER'S IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION.
3. THE THICKNESS OF THE BASE SHOWN IS FOR LIFT STATIONS TO A MAX. DEPTH OF 4.0m.
4. FOR DEPTHS OF LIFT STATIONS GREATER THAN 4.0m THE BASE THICKNESS SHALL BE INCREASED TO COVER FLOATATION OF THE STRUCTURE WHEN EMPTY OF PUMPS, PIPEWORK, FITTINGS AND LIQUID AND SHALL BE AS DETAILED ON THE DRAWINGS.
5. RCC - ALL INTERNAL VERTICAL, SOFFIT, COVER OPENING WET WELL AND DISCHARGE CHAMBER SURFACES SHALL BE COATED WITH AN APPROVED PROTECTIVE COATING MANUFACTURER'S SYSTEM IN ACCORDANCE WITH THE RECOMMENDATIONS. BENCHING SHALL NOT BE COATED.
6. RCC - THE PROTECTIVE COATING SYSTEM SHALL BE SEALED AT BENCHING EDGES, ALL ENTRIES THROUGH THE CONCRETE STRUCTURE AND AT ALL FITMENT HOLES WITH AN APPROVED SILICON ADHESIVE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
8. NO LADDER, NO WELL WASHER UNLESS SPECIFICALLY REQUESTED.
9. FALL PREVENTION INSERTS TO BE IN ACCORDANCE WITH SELECTED OPTION FOR COVERS SEE WBB-SPS-1304 SERIES DRAWINGS.
10. MINIMUM CIRCULATION CLEARANCE FOR RUNG TYPE LADDERS AS PER AS1657 CLAUSE 5.1 WITH EXCEPTION THAT WBB-SP ACCEPTS NO LEVEL LANDING AREA AT THE BASE OF WET WELL IS PROVIDED.
11. OVERFLOW LEVEL TO BE 150mm BELOW UPSTREAM NETWORK OVERFLOW LEVEL.
12. ALL OTHER REQUIREMENTS AS PER PUMP STATION DRAWINGS.
13. A FROG FLAP IS REQUIRED ON THE INLET OF DOWNSTREAM MANHOLE TO PREVENT BACKFLOW OF NETWORK INTO LIFT STATION.

PUMP STATION CONTROL LEVELS

ITEM		LEVEL (A.H.D)	HEIGHT FROM BASE (m)
A	TOP OF SLAB	m	
B	INLET	m	
C	DUTY START	m	
D	PUMP STOP	m	
E	FLOOR SLAB	m	
F	PUMP STATION DEPTH	N.A.	
G	PLUG DEPTH	m	
H	EXISTING GROUND LEVEL	m	
I	STAND-BY START	m	
J	HIGH LEVEL ALARM	m	
K	OVERFLOW LEVEL TO ENV.	m	
L	PRE-OVERFLOW ALARM	m	
M	Q100/STORM SURGE LEVEL	m	
PUMP OPERATING LEVELS AND DEFAULT SETTINGS SHALL BE AS PER THE WBB-SP FUNCTIONAL DESCRIPTION.			



DETAIL 'A'



TYPICAL SECTIONAL PLAN

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1300-9 VERSION B DATED 25/01/2017	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

BRC | FCRC | GRC | NBRC | SBRC

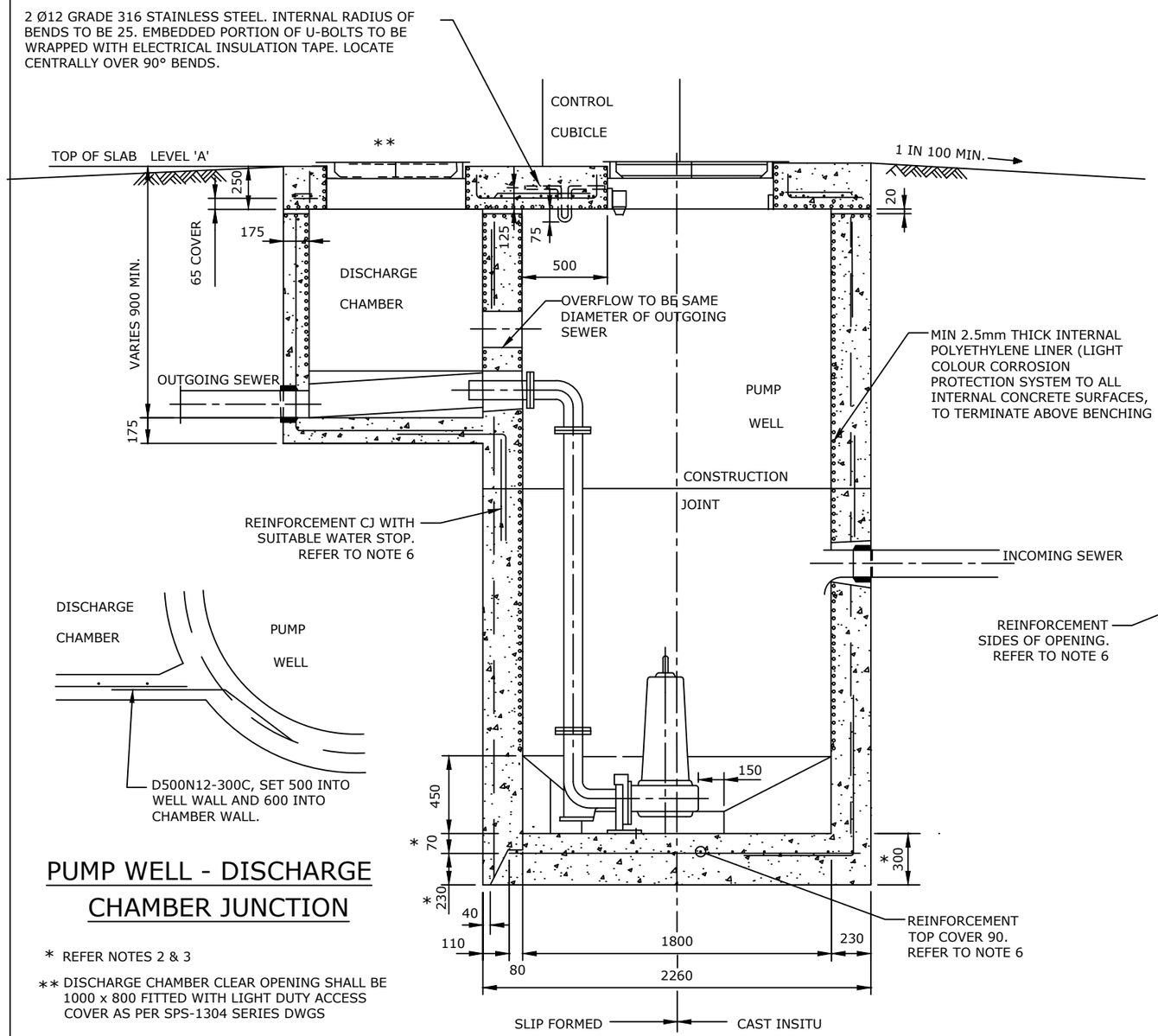
TYPICAL 1.8m DIA LIFT STATION GENERAL ARRANGEMENT

DRAWING No. WBB-SPS-1300-9

VERSION A

NOT TO SCALE

ORG DATE:

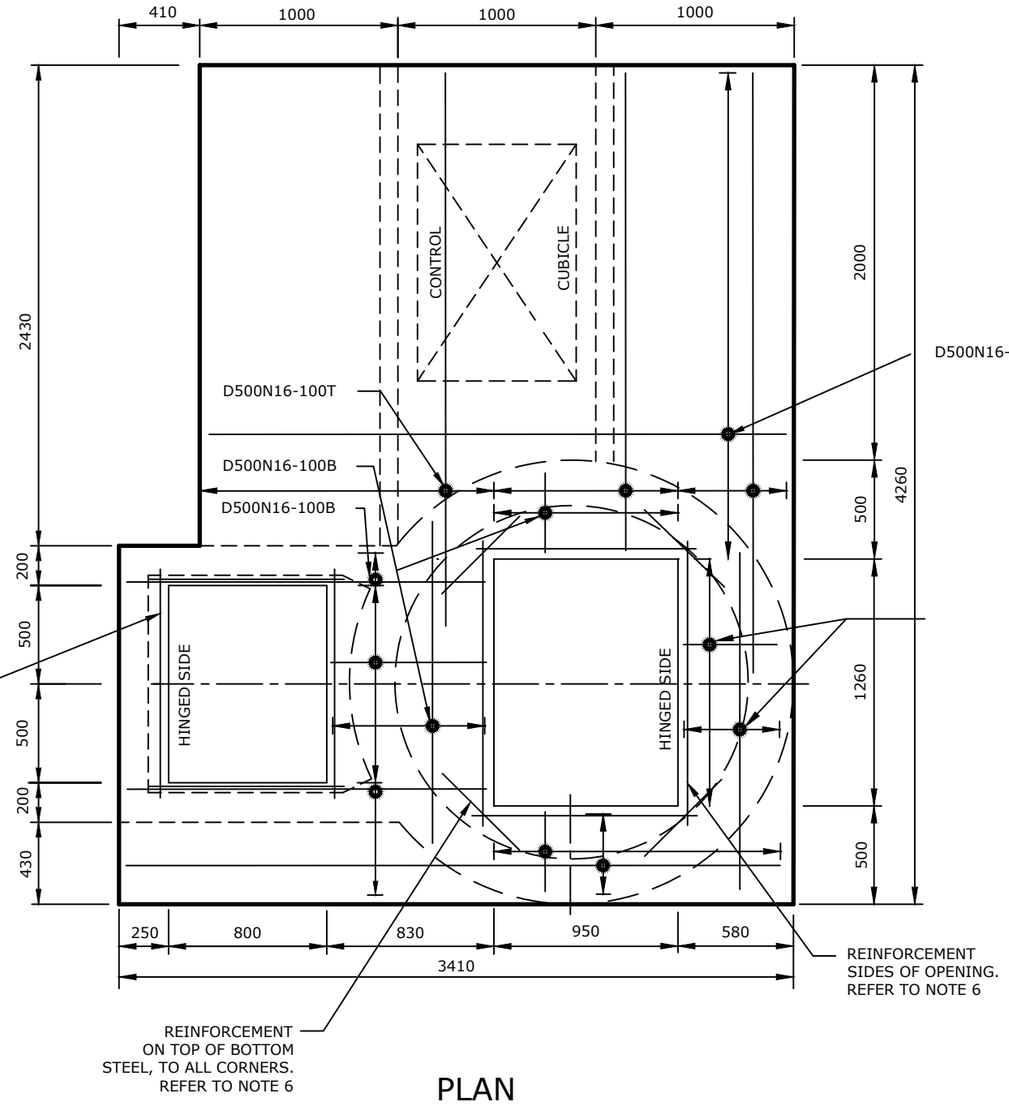


PUMP WELL - DISCHARGE CHAMBER JUNCTION

* REFER NOTES 2 & 3

** DISCHARGE CHAMBER CLEAR OPENING SHALL BE 1000 x 800 FITTED WITH LIGHT DUTY ACCESS COVER AS PER SPS-1304 SERIES DWGS

SECTIONAL ELEVATION



PLAN

NOTES:

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH WBB-SPS-1300 SERIES DRAWINGS.
2. THE THICKNESS OF THE BASE SHOWN IS FOR LIFT STATIONS TO A MAX. DEPTH OF 4.0m.
3. FOR DEPTHS OF LIFT STATIONS GREATER THAN 4.0m THE BASE THICKNESS SHALL BE INCREASED TO COVER FLOTATION OF THE STRUCTURE WHEN EMPTY OF PUMPS, PIPEWORK, FITTINGS AND LIQUID AND SHALL BE AS DETAILED ON THE DRAWINGS.
4. ALL CONCRETE SHALL:
   (a) BE GRADE S40
   (b) COMPLY WITH THE REQUIREMENTS OF WBB-SP STANDARD SPECIFICATIONS
5. ALL CORED HOLES IN LIFT WELL WALLS SHALL BE TAPERED TO BE Ø25 LARGER IN DIAMETER ON THE OUTSIDE FACE THAN THE INSIDE FACE. PACK HOLES WITH 3:1 CEMENT MORTAR UNLESS OTHERWISE DIRECTED.
6. ALL REINFORCING TO AS/NZS 4671:2001. DETAILS OF REINFORCEMENT SPECIFIED BY DESIGNER.
7. LAPS IN REINFORCING SHALL BE 600 MINIMUM FOR BARS AND ONE (1) MESH SPACING FOR FABRIC.
8. CONCRETE COVER TO REINFORCEMENT SHALL BE A MINIMUM 65 UNLESS OTHERWISE DIRECTED.
9. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1300-10 VERSION B DATED 27/01/2017	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL 1.8m DIA LIFT STATION
SECTIONS

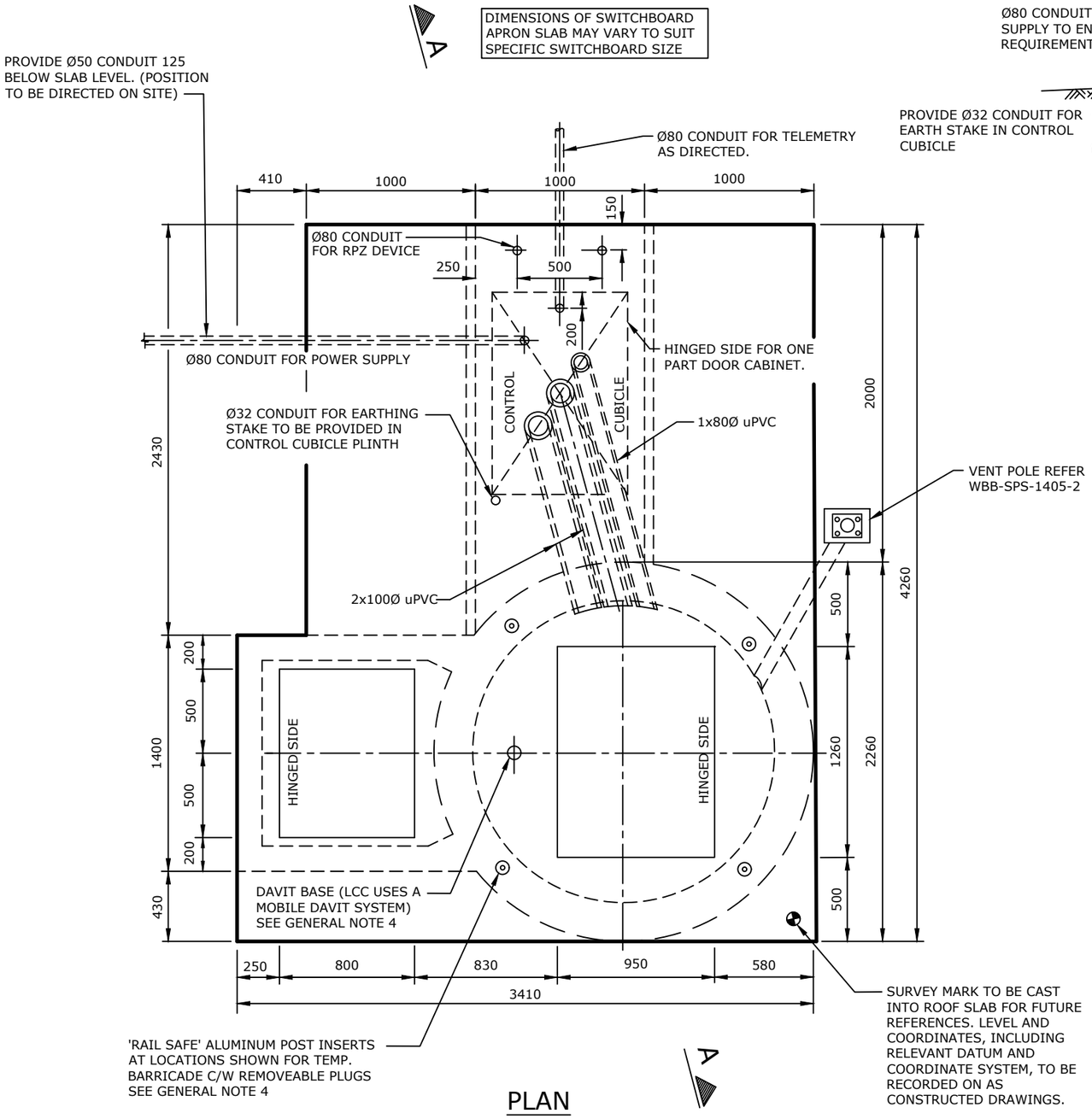
BRC	FCRC	GRC	NBRC	SBRC

DRAWING No. WBB-SPS-1300-10

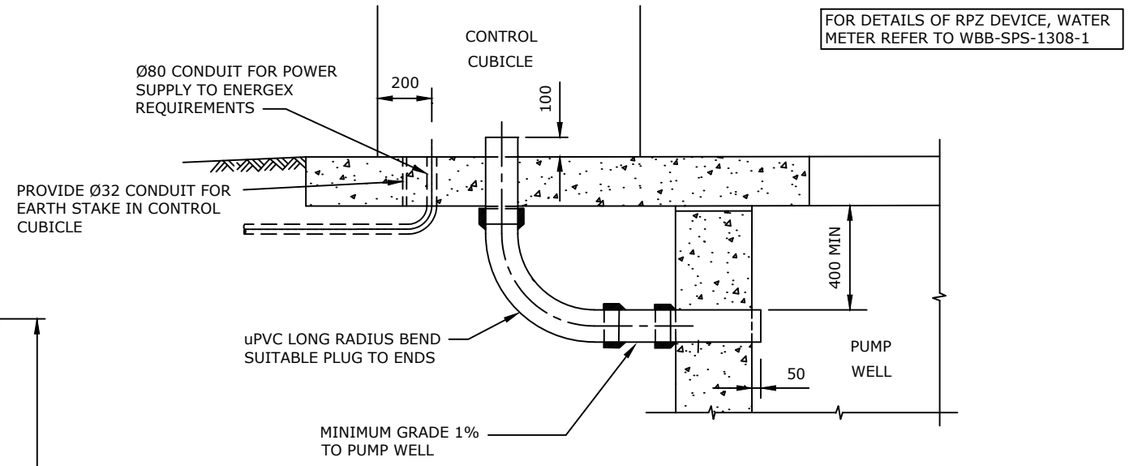
VERSION A

NOT TO SCALE

ORG DATE:



PLAN



SECTION A-A TYPICAL CONDUIT DETAIL

NOTES

GENERAL

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH WBB-SPS-1300 SERIES DRAWINGS.
2. THE LOCATION OF THE LIFT STATION SHALL BE AS SHOWN ON THE APPROVED DRAWINGS.
3. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
4. FALL PREVENTION INSERTS NOT REQUIRED FOR MCBERNS FLUSH MOUNTS 4 SIDED VOID PROTECTION SYSTEM.

ELECTRICAL CONDUITS

1. CONDUITS TO BE MINIMUM 100 NOMINAL DIAMETER FOR EACH PUMP AND MINIMUM 80 NOMINAL DIAMETER FOR CONTROL CABLES OR TWICE THE OUTSIDE DIAMETER OF THE INSTALLED CABLE WHICHEVER IS THE GREATER.
2. PUMP CONDUITS AND CONTROL CONDUIT SHALL BE SEPARATED BY A MINIMUM 300. PUMP CONDUITS SHALL BE SEPARATED BY 30.
3. CONDUITS SHALL BE INSTALLED IN ACCORDANCE WITH AS/NZS3000.
4. CONDUITS SHALL BE IN ACCORDANCE WITH AS.2053.

COMPONENTS

1. ALL PIPES, FITTINGS, ASSOCIATED COMPONENTS AND PROTECTION SYSTEMS SHALL COMPLY WITH WBBROC-SP STANDARD SPECIFICATIONS.

LEVELS

1. THE FINISHED LEVEL OF THE ACCESS COVERS AND CONTROL CUBICLE SHALL BE 300 ABOVE THE HIGHEST RECORDED FLOOD LEVEL (OR Q100 FLOOD LEVEL WHICH EVER IS HIGHER) AND A 1 IN 6 GRADE EXTENDED TO NATURAL LEVEL.

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1300-11 VERSION B DATED 27/01/2017	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL 1.8m DIA LIFT STATION MISCELLANEOUS DETAILS

BRC	FCRC	GRC	NBRC	SBRC

DRAWING No. WBB-SPS-1300-11

VERSION A

NOT TO SCALE

ORG DATE:

NOTES:

G1. PIPE MATERIAL:
THE PIPE MATERIAL BELOW GROUND AND NOT UNDER CONCRETE SLABS SHALL BE POLYETHYLENE PE 100 PN16 SDR 11. PLASSON OR APPROVED SIMILAR COMPRESSION FITTINGS MAY BE USED ON THE POLYETHYLENE PIPES. THE EXCEPTION TO USING POLYETHYLENE IS IN LOCATIONS OF LAND FILL OR GROUND CONTAMINATED WITH HYDROCARBONS. IN SUCH LOCATIONS GRADE 316 STAINLESS STEEL OR PROTECTED COATED COPPER SHALL BE USED. IN ABOVE GROUND LOCATIONS COPPER OR GRADE 316 STAINLESS STEEL SHALL BE USED. FOR LOCATIONS UNDER CONCRETE SLABS SCHEDULE 40S GRADE 316 STAINLESS STEEL IS TO BE USED. BSP THREADED STAINLESS STEEL FITTINGS SHALL BE USED ON THE STAINLESS STEEL PIPE.

G2. PIPE DIAMETER AND PIPE CAPACITIES:
THE POTABLE WATER SUPPLY PIPE FROM THE WATER MAIN SHALL BE SIZED TO PROVIDE 1 l/s (AT 250 kPa MAINS PRESURE) ON THE DOWNSTREAM SIDE OF THE RPZD. THIS SERVICE PIPE AND THE RPZD AND ASSOCIATED FITTINGS SHALL HAVE A MINIMUM DIAMETER OF DN25 FOR COPPER AND STAINLESS STEEL AND DN32 FOR POLYETHYLENE. THE HOSE COCK AND THE WELL WASHER PIPE SHALL BE DN20 FOR COPPER AND STAINLESS STEEL AND DN25 FOR POLYETHYLENE.

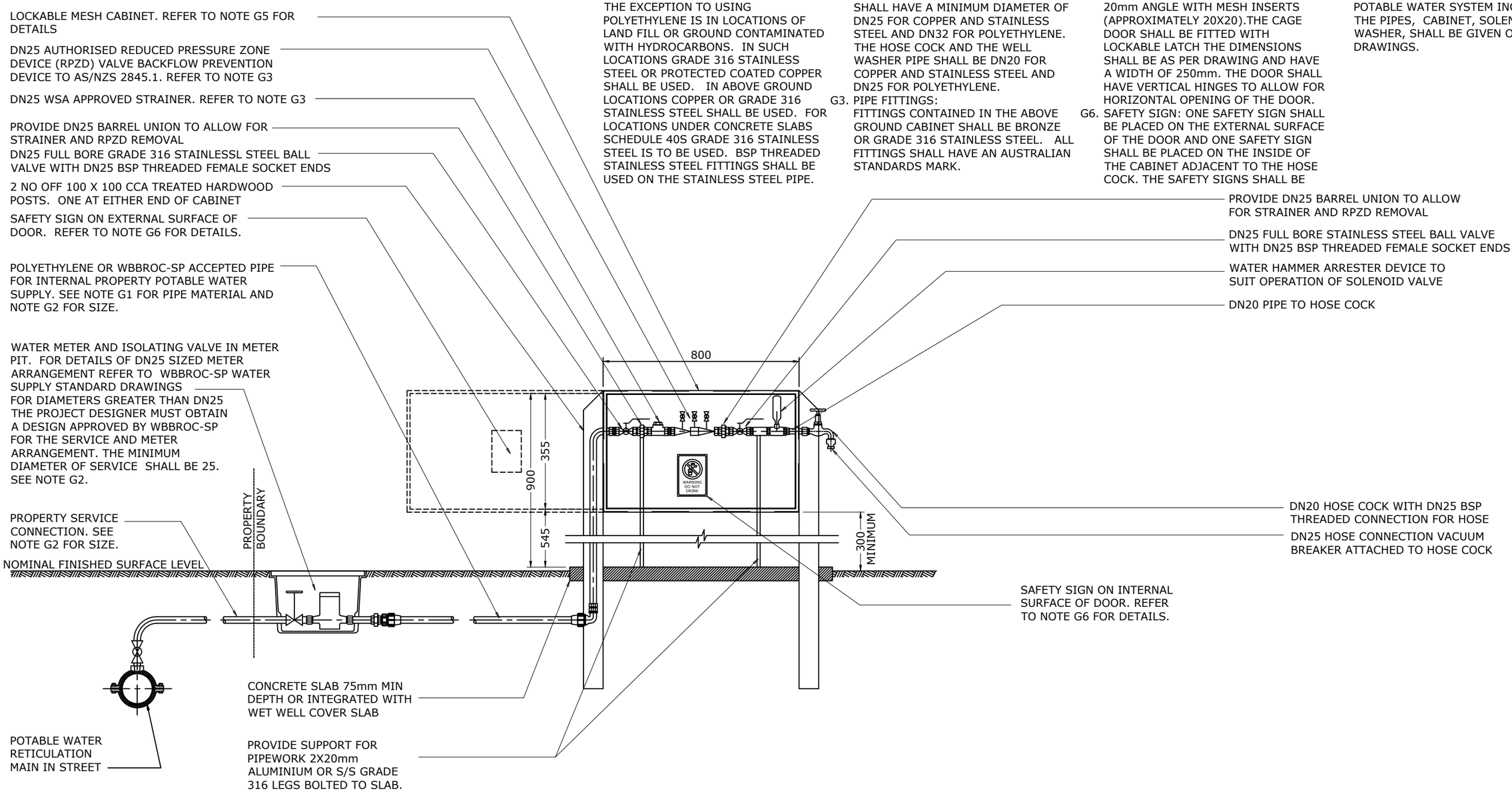
G3. PIPE FITTINGS:
FITTINGS CONTAINED IN THE ABOVE GROUND CABINET SHALL BE BRONZE OR GRADE 316 STAINLESS STEEL. ALL FITTINGS SHALL HAVE AN AUSTRALIAN STANDARDS MARK.

G4. ALL STAINLESS STEEL THREADS SHALL BE ASSEMBLED WITH THREAD TAPE OR ANTI- GALLING COMPOUND.

G5. CABINET: THE CABINET FOR THE RPZD SHALL BE CONSTRUCTED FROM 3mm THICK GRADE 5052 ALUMINIUM OR 1.6 THICK GRADE 316 STAINLESS STEEL 20mm ANGLE WITH MESH INSERTS (APPROXIMATELY 20X20).THE CAGE DOOR SHALL BE FITTED WITH LOCKABLE LATCH THE DIMENSIONS SHALL BE AS PER DRAWING AND HAVE A WIDTH OF 250mm. THE DOOR SHALL HAVE VERTICAL HINGES TO ALLOW FOR HORIZONTAL OPENING OF THE DOOR.

G6. SAFETY SIGN: ONE SAFETY SIGN SHALL BE PLACED ON THE EXTERNAL SURFACE OF THE DOOR AND ONE SAFETY SIGN SHALL BE PLACED ON THE INSIDE OF THE CABINET ADJACENT TO THE HOSE COCK. THE SAFETY SIGNS SHALL BE INSTALLED AS INDICATED IN AS3500.1 SECTION 4.4.5 AND THE SIGN SHALL BE A VERBAL PICTOGRAM AS SHOWN IN AS3500.1 SECTION 9 AND SHALL BE INSCRIBED "WARNING DO NOT DRINK".

G7. LOCATION AND DETAILS: THE LOCATION AND FULL DETAILS OF THE POTABLE WATER SYSTEM INCLUDING THE PIPES, CABINET, SOLENOID, WELL WASHER, SHALL BE GIVEN ON PROJECT DRAWINGS.



TYPICAL SECTIONAL VIEW OF POTABLE WATER SUPPLY

NOT TO SCALE

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1308-1 VERSION A	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

RPZ DEVICE
TYPICAL LAYOUT

BRC	FCRC	GRC	NBRC	SBRC

DRAWING No.
WBB-SPS-1308-1

VERSION
A

NOT TO SCALE

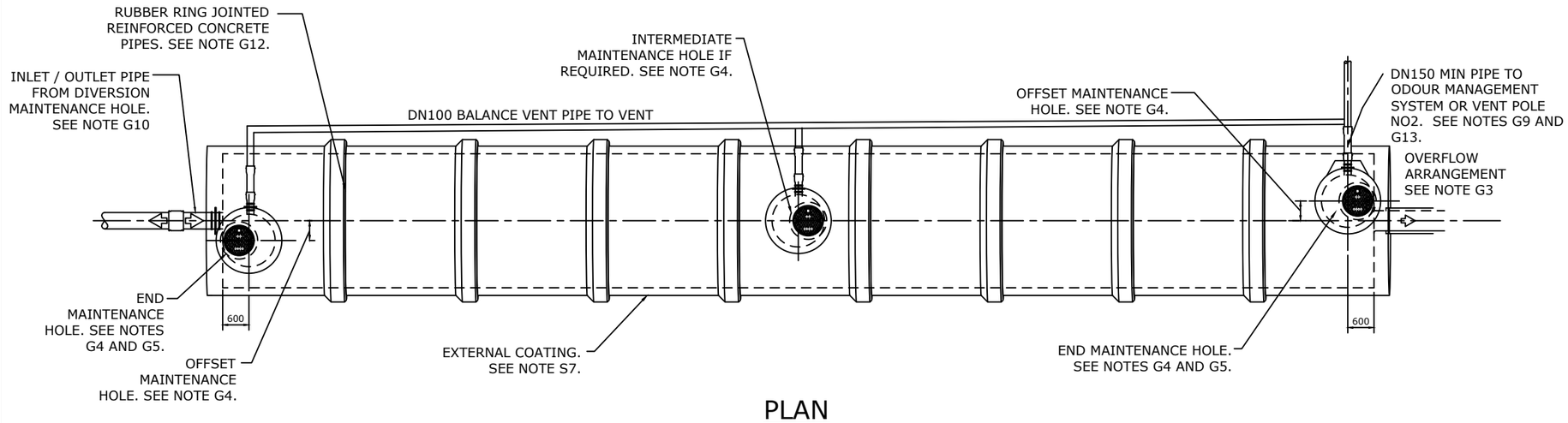
ORG DATE:

STRUCTURAL NOTES

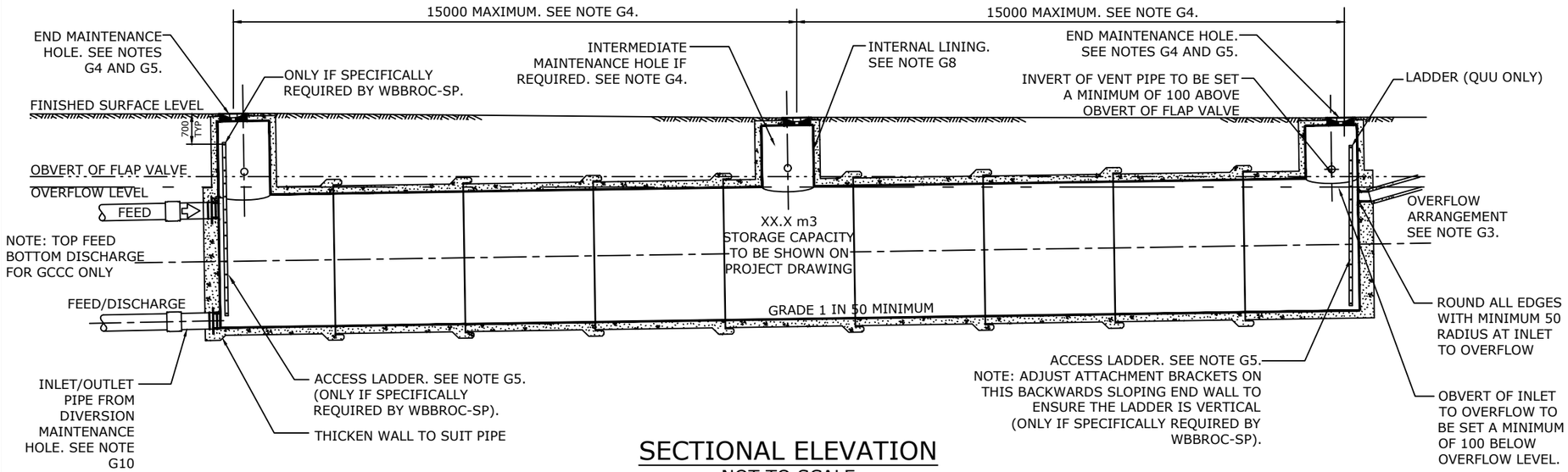
S1. THE STRUCTURE SHALL BE DESIGNED TO ALL RELEVANT CODES AND PRACTICES INCLUDING AS3735 AND AS3600.
S2. THE CHAMBER SHALL BE DESIGNED FOR TRAFFICABLE LOADS OF AT LEAST W80 TO AS5100.HOWEVER THE DESIGN SHALL COMPLY WITH ALL REQUIREMENTS SET OUT IN AS5100.
S3. THE MINIMUM EXPOSURE CLASS OF THE INTERNAL CONCRETE SURFACE SHALL BE B2 TO AS3735 AND THE COVER SHALL BE MEASURED FROM THE REINFORCEMENT STEEL TO THE EMBEDMENT LUGS OF THE POLYETHYLENE OR PVC LINING.
S4. THE CONCRETE CLASS SHALL BE SPECIAL CLASS SCC40 TO WATER SERVICES ASSOCIATION OF AUSTRALIA INDUSTRY STANDARD FOR CONCRETE SPECIAL CLASS WSA 114.
S5. THE STRUCTURE SHALL BE TESTED IN ACCORDANCE WITH AS3735.
S6. THE DESIGN SHALL INCLUDE PROVISIONS TO PREVENT UPLIFT OF THE STRUCTURE DURING EXTERNAL FLOODING.
S7. ALL EXTERNAL CONCRETE SURFACES IN CONTACT WITH SOIL SHALL BE COATED WITH "OXYDUR PTB" OR A WBBROC-SP APPROVED EQUIVALENT.

GENERAL NOTES CONT.

G14. WHERE PERMITTED BY WBBROC-SP, A HIGH BUILD SOLVENT FREE EPOXY COATING SYSTEM MAY BE USED FOR ALL INTERNAL SURFACES. THE COATING SYSTEM SHALL BE WBBROC-SP APPROVED AND COMPLY WITH THE PRODUCT MANUFACTURER'S SURFACE PREPARATION AND APPLICATION REQUIREMENTS.
THE COATING SYSTEM SHALL BE APPLIED BY THE PRODUCT MANUFACTURER'S APPROVED APPLICATION CONTRACTOR.



PLAN
NOT TO SCALE



SECTIONAL ELEVATION
NOT TO SCALE

NOTES

GENERAL NOTES

G1. THIS DRAWING SHOWS AN EMERGENCY STORAGE CHAMBER CONSTRUCTED USING PIPES.
G2. THE OVERFLOW FLAP VALVE CHAMBER CONNECTING BOX CULVERT SHALL BE LOCATED AT THE FURTHEST POINT FROM THE INLET TO THE EMERGENCY STORAGE CHAMBER.
THE OVERFLOW IS SITUATED IN THIS LOCATION TO MINIMISE THE SOLID AND FLOATING MATERIAL DISCHARGED INTO THE ENVIRONMENT IF AN OVERFLOW OCCURS. IF NO SUITABLE DISCHARGE POINT IS AVAILABLE AT THE PUMPING STATION SITE THEN SEQ-SP AND WHERE APPROPRIATE D.E.R.M. APPROVAL SHALL BE SOUGHT TO SITE THE OVERFLOW FLAP VALVE CHAMBER AT A UPSTREAM CATCHMENT MAINTENANCE HOLE LOCATION.
G3. THE OVERFLOW FLAP VALVE CHAMBER SHALL BE A TYPE 1, 2 OR 3 AS SHOWN ON STANDARD DRAWINGS NOS. WBB-SEW 1409 TO 1413.
THE OUTLET TO THE OVERFLOW FLAP VALVE CHAMBER SHALL BE A PIPE. A SEPARATE AS CONSTRUCTED PLAN SHALL BE PRODUCED OF THE OVERFLOW FLAP VALVE CHAMBER.
G4. A MAINTENANCE HOLE COVER ACCESS IS REQUIRED AT BOTH ENDS OF THE EMERGENCY STORAGE CHAMBER REGARDLESS OF THE LENGTH OF THE CHAMBER. THE MAXIMUM DISTANCE BETWEEN THE MAINTENANCE HOLE COVERS SHALL BE 15000. WHERE THE DISTANCE EXCEEDS 15000 INTERMEDIATE MAINTENANCE HOLES ARE REQUIRED. THESE INTERMEDIATE MAINTENANCE HOLES DO NOT REQUIRE LADDERS. AS SHOWN ON THIS DRAWING THE MAINTENANCE HOLE MAY NEED TO BE OFFSET AS THE LADDERS SHALL NOT COVER ANY PIPES OR OPENINGS IN THE CHAMBER. THE MAINTENANCE HOLES SHALL BE 1200 TYPE F BARRELS AND TOP SLABS OR WBBROC-SP APPROVED SIMILAR. THE BARRELS SHALL BE INTEGRAL AND FULLY SEALED WITH THE EMERGENCY STORAGE CHAMBER PIPES. THE MAINTENANCE HOLE COVERS SHALL BE CLASS D BOLT DOWN COVERS SUITABLE FOR TRAFFICABLE LOCATIONS.
G5. LADDERS SHALL ONLY BE INSTALLED WHERE SPECIFICALLY REQUIRED BY WBBROC-SP. ANY LADDER SHALL COMPLY WITH AS 1657 AND SHALL BE OF SUITABLE APPROVED MATERIAL.
G6. FOR DETAILS OF LEVEL INTERACTION WITH OTHER PUMPING STATION STRUCTURES AND STORAGE CAPACITY REQUIREMENTS REFER TO ALL OTHER WBBROC DRAWINGS.
G7. NOT ALL LEVELS AND DIMENSIONS ARE SHOWN ON THIS TYPICAL DRAWING.FULL DETAILS SHALL BE PROVIDED ON THE PROJECT DRAWINGS.
G8. ALL INTERNAL SURFACES OF A CHAMBER SHALL BE LINED WITH A LIGHT COLOURED MECHANICAL ANCHORED PE LINING AS DESCRIBED ON DRAWING WBB-SPS-1407-1. SPUN CAST CONCRETE PIPES WITH NON CONTINUOUS PE LINING ARE NOT PERMITTED. SEE NOTE 14 FOR A COATING SYSTEM ALTERNATIVE.
G9. AN ODOUR CONTROL SYSTEM IN ACCORDANCE WITH THE ODOUR IMPACT ASSESSMENT REPORT IS REQUIRED. IF A VENT POLE (NO. 2) IS REQUIRED, IT SHALL BE SEPARATE FROM THE PUMP WELL AND GRIT COLLECTOR MH VENT POLE. IT SHALL BE LOCATED AT THE OPPOSITE END TO INLET SEWER. PIPE SIZES SHALL MEET THE FLOWS REQUIRED BY THE OMS.
G10. THE INLET / OUTLET PIPE FROM THE DIVERSION MAINTENANCE HOLE TO THE EMERGENCY STORAGE CHAMBER SHALL BE SIZED TO CARRY MAXIMUM WET WEATHER FLOW. THE PIPE SHALL BE GRADED AT A MINIMUM 1 IN 50.
THE PIPE SHOWN ON THIS DRAWING IS POLYETHYLENE. IF VC PIPES ARE USED A SHORT LENGTH OF PLAIN AND SOCKET PIPE IS REQUIRED ADJACENT TO THE STRUCTURE.
G11. THE EMERGENCY STORAGE CHAMBER SHALL BE LOCATED WITHIN FREEHOLD PROPERTY OWNED BY WBBROC-SP.
G12. THE PIPES USED TO FORM THE EMERGENCY STORAGE CHAMBER SHALL BE RUBBER RING JOINTED REINFORCED CONCRETE. THE MINIMUM CLASS OF PIPE SHALL BE CLASS 4. SEE NOTES S2 AND S5. THIS DRAWING SHOWS SOCKET RUBBER RING JOINTS, HOWEVER FOR LARGER DIAMETER PIPES AN IN WALL RUBBER RING JOINT IS SUITABLE. SEE NOTE G8 FOR CONCRETE PIPES WHICH ARE NOT APPROVED.
G13. A 2000 MINIMUM CLEARANCE SHALL BE PROVIDED FROM ANY MAINTENANCE HOLE COVER ACCESS IN THE TOP SLAB OF THE CHAMBER TO ANY ABOVE GROUND EQUIPMENT OR STRUCTURE.

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1402-1 VERSION C DATED 19/01/2017	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ADDITIONAL STORAGE CHAMBER GENERAL REQUIREMENTS

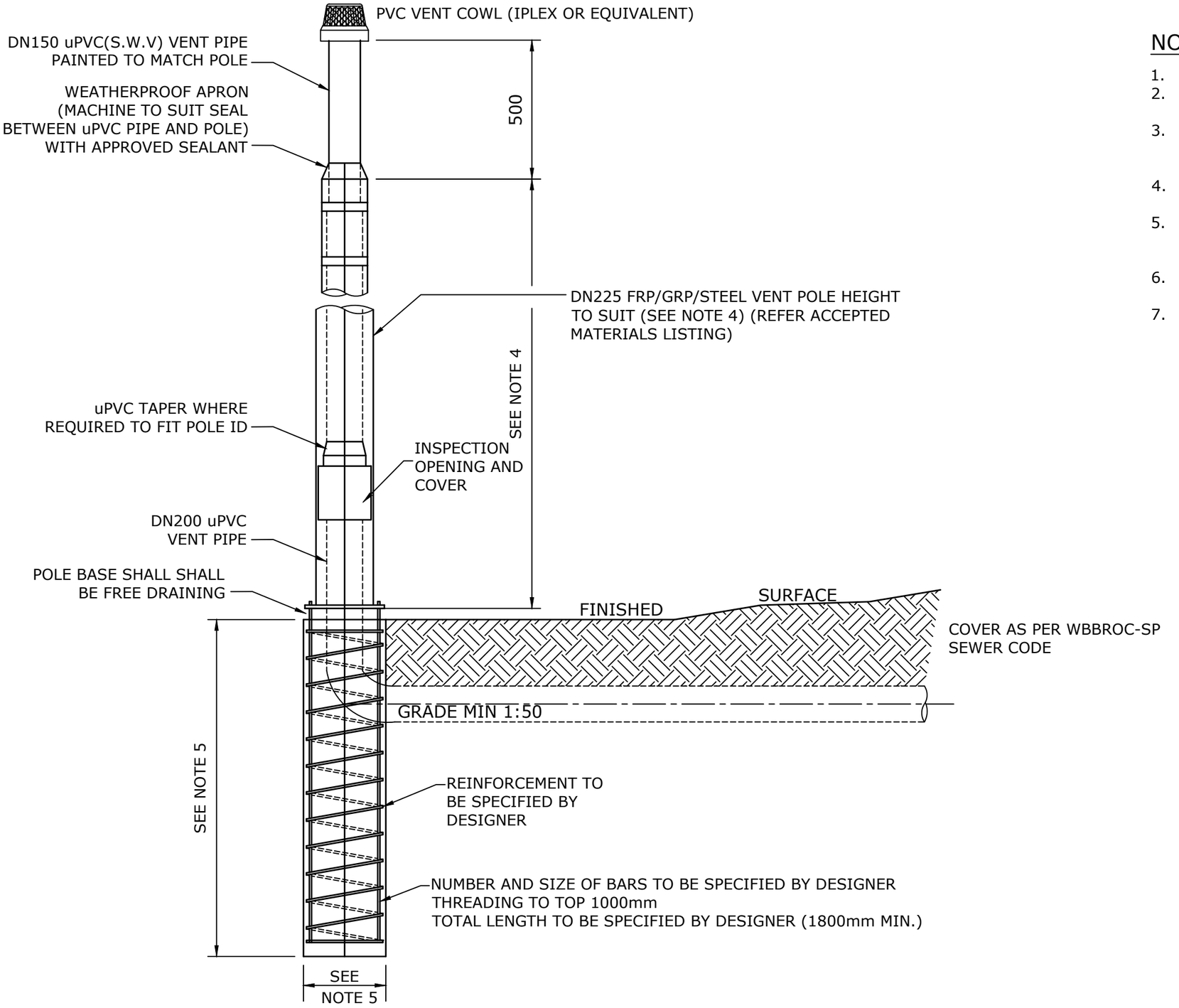
BRC	FCRC	GRC	NBRC	SBRC

DRAWING No. WBB-SPS-1402-1

VERSION A

NOT TO SCALE

ORG DATE:



VENT POLE DETAIL

NOT TO SCALE

NOTES

1. WHERE STEEL POLES USED -PVC LINER REQUIRED.
2. PREFERRED LOCATION OF TELEMETRY ANTENNA IS ATTACHED TO THE SWITCHBOARD.
3. VENT POLES SHALL BE DESIGNED TO ACHIEVE ODOUR AND AIR MOVEMENT AS PER ODOUR ASSESSMENT IMPACT REPORT.
4. HEIGHT AS PER ODOUR ASSESSMENT IMPACT REPORT, PREFERRED COLOURS ARE HERITAGE OR MIST GREEN.
5. THE VENT POLE SUPPORT SHALL BE DESIGNED AND CERTIFIED BY A RPEQ STRUCTURAL ENGINEER TO CURRENT AUSTRALIA STANDARDS AND CODES.
6. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
7. VENT IS TO BE SIZED TO COMPLY WITH ODOUR REPORT RECOMMENDATIONS.

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1405-2 VERSION B DATED 01/06/2014	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL VENT POLE

BRC	FCRC	GRC	NBRC	SBRC

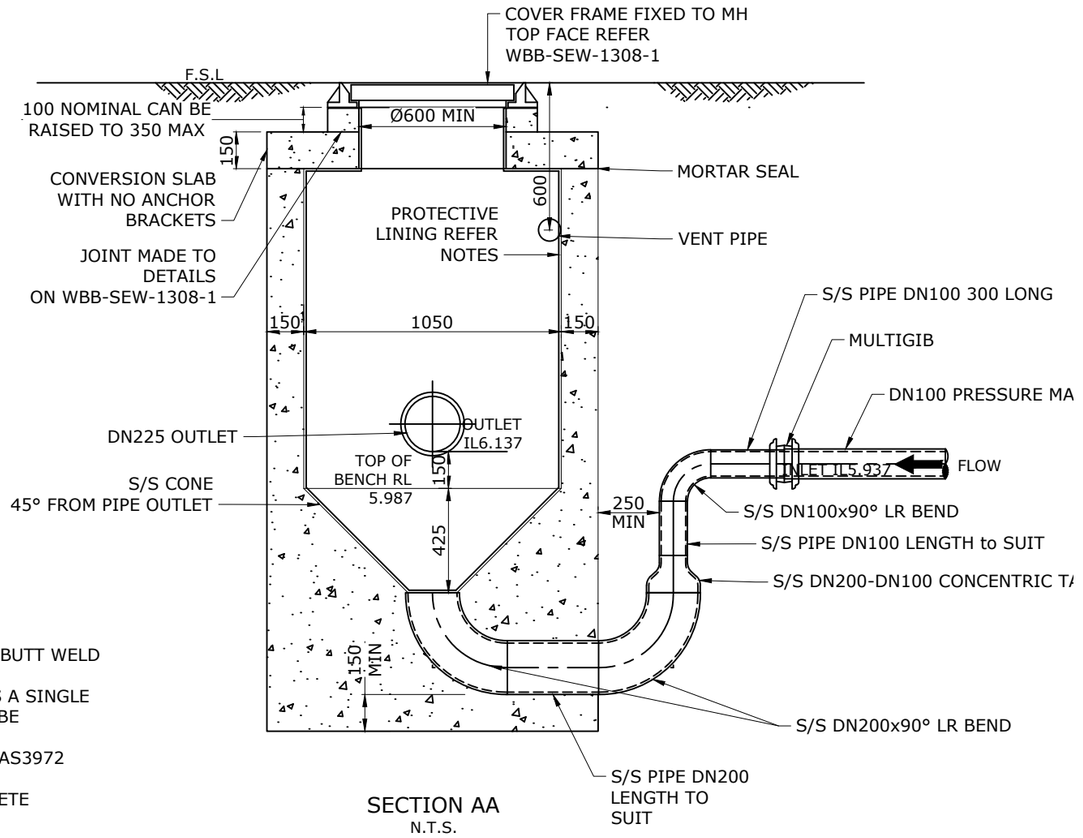
DRAWING No. WBB-SPS-1405-2

VERSION A

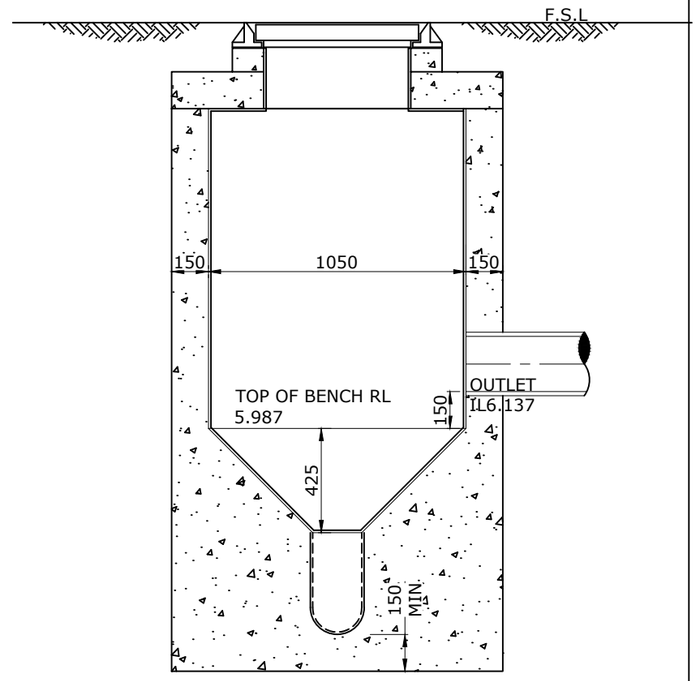
NOT TO SCALE

ORG DATE:

PRECAST LID FROM HUMES OR ROCLA (OR EQUIVALENT LID) COULD BE USED FOR MH



SECTION AA
N.T.S.



SECTION BB
N.T.S.

GENERAL NOTES

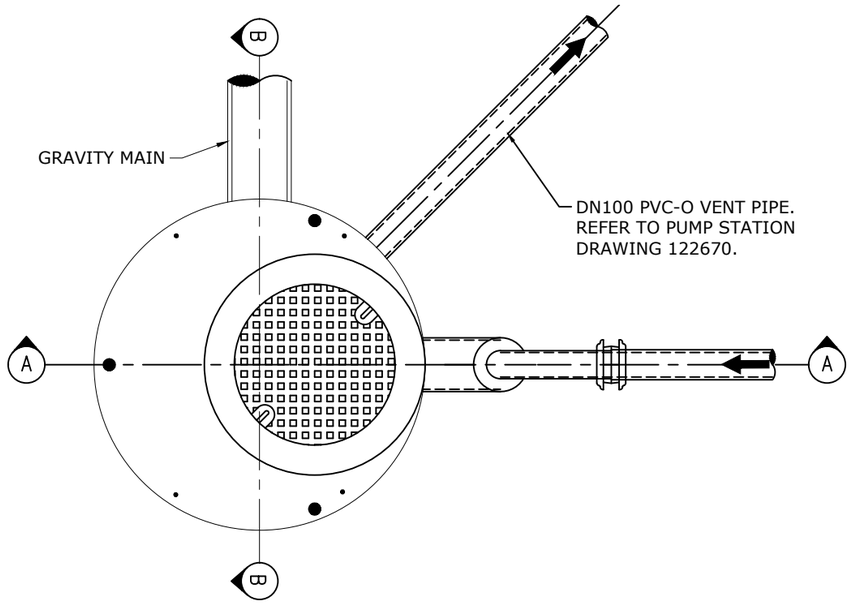
1. ALL WORK AND MATERIALS SHALL COMPLY WITH WBBROC-SP SPECIFICATIONS & STANDARDS.
2. ALL DIMENSIONS ARE IN MILLIMETRES.
3. PIPEWORK SHALL FINISH FLUSH WITH INTERNAL FACE OF WALL.
4. STAINLESS STEEL PIPES & FITTINGS SHALL BE 316 S/S SCH. 10S BUTT WELD FITTINGS. BENDS SHALL BE LONG RADIUS BENDS.
5. MAINTENANCE HOLE TOP & COVER SURROUND TO BE PRECAST AS A SINGLE UNIT. PROVIDE CORED HOLES TO ALLOW R16 GALV. DOWELS TO BE INSERTED THROUGH TOP INTO MAINTENANCE HOLE WALLS.
6. CONCRETE SHALL BE CLASS N32 IN ACCORDANCE WITH AS1379, AS3972 AND AS3600.
7. ALL INTERNAL SURFACES OF DISCHARGE MH SHALL HAVE CONCRETE PROTECTION SYSTEM APPLIED (REFER BELOW).
8. ALL REINFORCEMENT SHALL HAVE 50mm COVER.

PROTECTIVE LINING

OPTION 1:
WALLS AND TOP SLAB SOFFIT SHALL BE COATED WITH A 5mm THICK LAYER OF PEERLESS INDUSTRIAL SYSTEMS "EPIGEN" 1311 OR AN EQUIVALENT APPROVED PRODUCT, THE LINING IS TO BE INSTALLED AS PER MANUFACTURERS SPECIFICATION.

OPTION 2:
AN ALTERNATIVE METHOD OF CORROSION PROTECTION APPROVED BY SERVICE AUTHORITY:
MIX:
-1 PART BONDCRETE
-5 TO 6 PARTS WATER
-1 TO 1.5 PARTS FINE WHITE OR BROWN SAND
-1 PART CEMENT - TYPE SR (SULPHATE RESISTING)
APPLICATION
1. WATER BLAST CONCRETE (3000 PSI)
2. SPRAY MIX TO CHAMBER WALL
3. FINISH WITH HAND TROWEL TO A MINIMUM THICKNESS OF 5mm

OPTION 3:
PE LINER CL PE100 TO AS/NZS 4130 AND 4131 OR APPROVED EQUIVALENT



DISCHARGE MAINTENANCE HOLE 1/S2 PLAN
N.T.S.

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON BRC 122677 VERSION C DATED 03/2017	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

DISCHARGE MAINTENANCE HOLE DETAILS

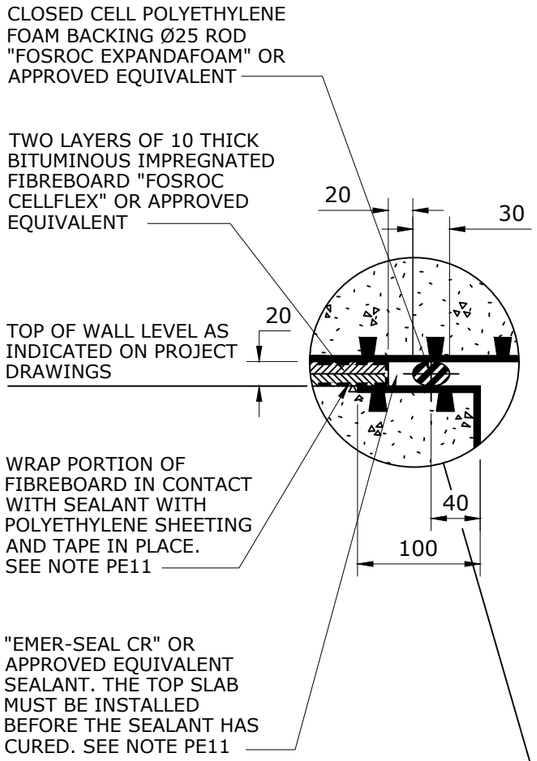
BRC	FCRC	GRC	NBRC	SBRC

DRAWING No.
WBB-SPS-1406-3

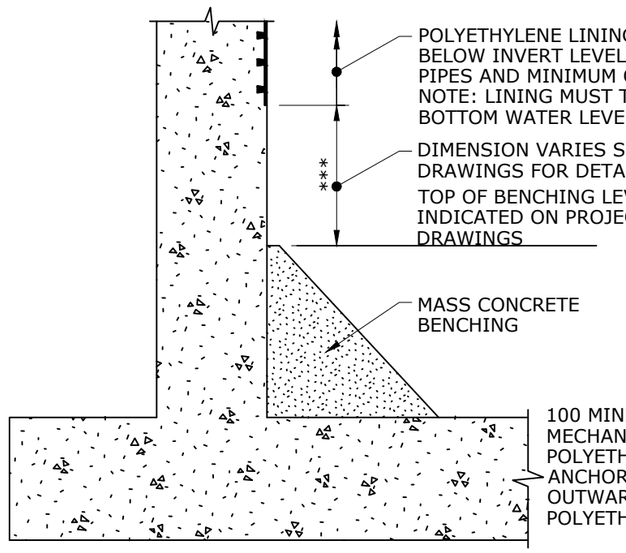
VERSION
A

NOT TO SCALE

ORG DATE:

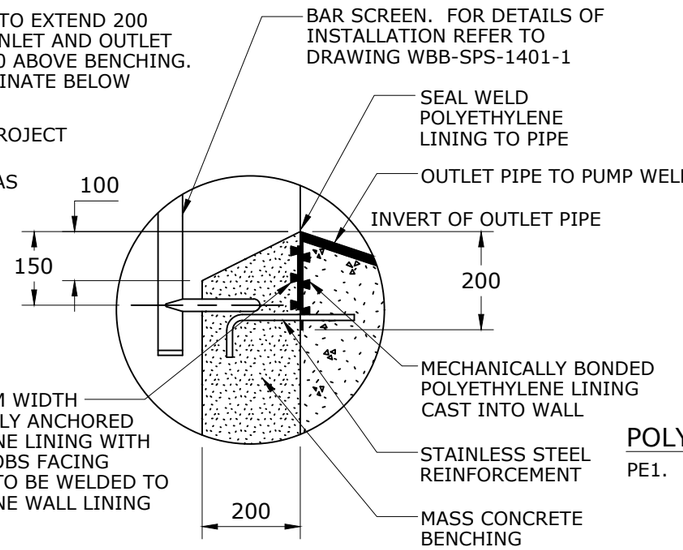


DETAIL OF TOP SEAL



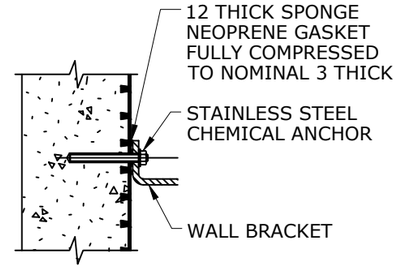
BENCHING AND WALL JUNCTION

NOT TO SCALE



BAR SCREEN BENCHING

NOT TO SCALE SEE NOTE PE10



WALL BRACKET ATTACHMENT

NOT TO SCALE

NOTES:

G1. MECHANICALLY ANCHORED POLYETHYLENE LINING IS REQUIRED ON ALL PUMPING STATIONS AND MAY ONLY BE OMITTED IF PRIOR WRITTEN APPROVAL IS GIVEN BY WBBROC-SP.

G2. THE DIMENSIONS OF THE STRUCTURES WILL VARY AND THE DIMENSIONS SHOW *** ARE TO BE INDICATED ON THE PROJECT DRAWINGS.

POLYETHYLENE LINING

PE1. POLYETHYLENE LINING TO BE A MECHANICALLY ANCHORED LINING CAST INTO WALL AND TOP SLAB. "STEULER LINING 400" OR WBBROC-SP APPROVED EQUIVALENT. LINING IS TO HAVE MINIMUM SHEET THICKNESS OF 2.5mm. THE LINING IS TO BE WHITE OR A WBBROC-SP APPROVED LIGHT COLOUR.

PE2. THE LINING IS TO BE INSTALLED BY AN INSTALLER ACCREDITED BY THE LINING MANUFACTURER.

PE3. THE LINING IS TO BE CONTINUOUS OVER ALL INTERNAL SURFACES.

PE4. THE LINING IS TO BE EXTRUSION WELDED TO ALL PIPES PASSING THROUGH WALL.

PE5. ALL THE JOINS IN THE LINING ARE TO BE EXTRUSION WELDED. WHERE A FILLER ROD IS REQUIRED IT IS TO BE TO THE LINING MANUFACTURER'S SPECIFICATION.

PE6. ALL HOLES DRILLED THROUGH LINER FOR ANCHOR BOLTS, ETC, SHOULD BE SEALED WITH A 12 THICK SPONGE NEOPRENE GASKET COMPRESSED BETWEEN LINING AND EQUIPMENT WALL PLATE.

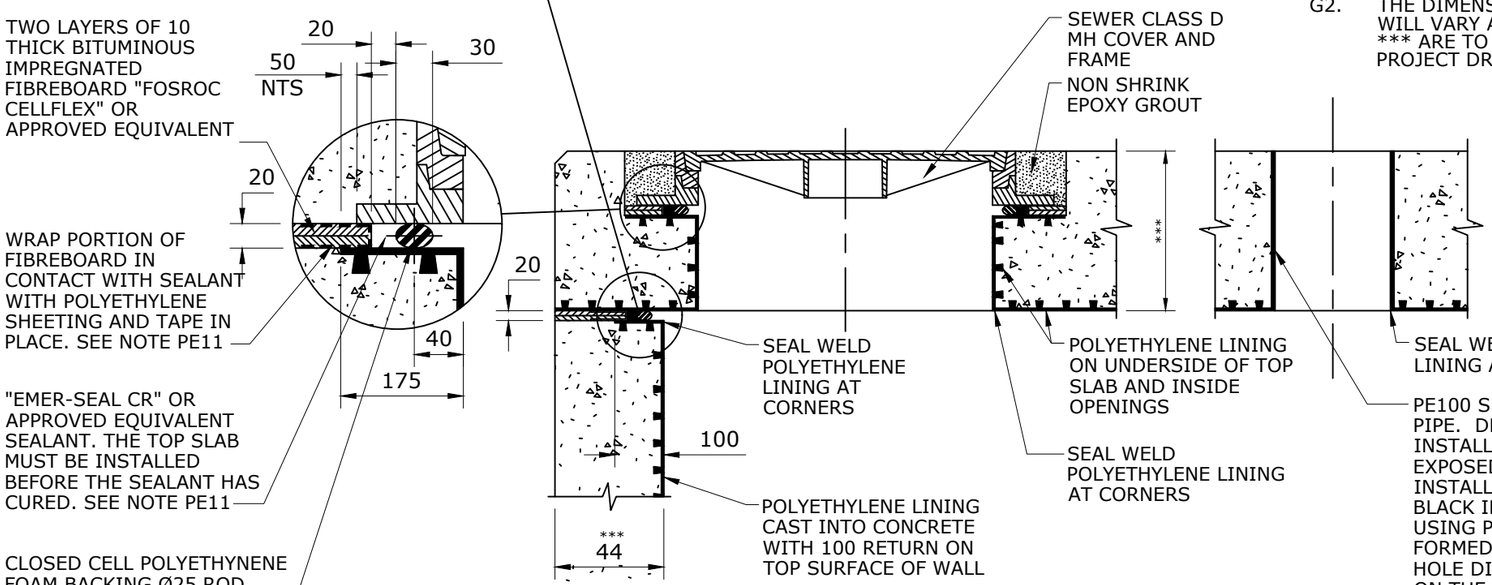
PE7. THE POLYETHYLENE LINING IS TO BE INSTALLED TO THE MANUFACTURER'S REQUIREMENTS TO PREVENT DISTORTION WHEN THE CONCRETE IS POURED.

PE8. IF WHITE COLOURED NATURAL POLYETHYLENE IS USED IT IS NOT TO BE EXPOSED TO DIRECT SUNLIGHT AT ANY TIME. THE POLYETHYLENE MANUFACTURER'S REQUIREMENTS FOR STORAGE AND HANDLING AND SHELF LIFE MUST BE FOLLOWED.

PE9. AFTER INSTALLATION THE LINING IS TO BE TESTED IN ACCORDANCE WITH WSA 02 OR WBBROC-SP REQUIREMENTS. THE TESTING INCLUDES SPARK TESTING AND PULL-OUT TESTS WHICH ARE TO BE CARRIED OUT BY AN NATA ACCREDITED INDEPENDENT TESTER. THE TEST RESULTS MUST BE SUBMITTED TO WBBROC-SP AS PART OF THE COMMISSIONING. THE AFOREMENTIONED TESTING IS IN ADDITION TO THE TESTING REQUIRED UNDER AS3735.

PE10. THE POLYETHYLENE LINING IS TO FINISH 200 MINIMUM BELOW BOTTOM WATER LEVEL. THE LINING IS TO FINISH WHERE POSSIBLE ABOVE THE BENCHING LEVEL. THE EXCEPTION IS THE BENCHING FOR THE GRIT COLLECTOR MAINTENANCE HOLE BAR SCREEN BENCHING.

PE11. THE "EMER-SEAL CR" SEALANT MUST NOT COME IN CONTACT WITH THE BITUMINOUS IMPREGNATED FIBREBOARD.



WALL AND TOP SLAB JUNCTION

NOT TO SCALE

VALVE SPINDLE OPENING

NOT TO SCALE

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1407-1 VERSION A	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

BRC | FCRC | GRC | NBRC | SBRC

POLYETHYLENE LINING
TOP SLAB & WALL
TYPICAL DETAILS

DRAWING No.

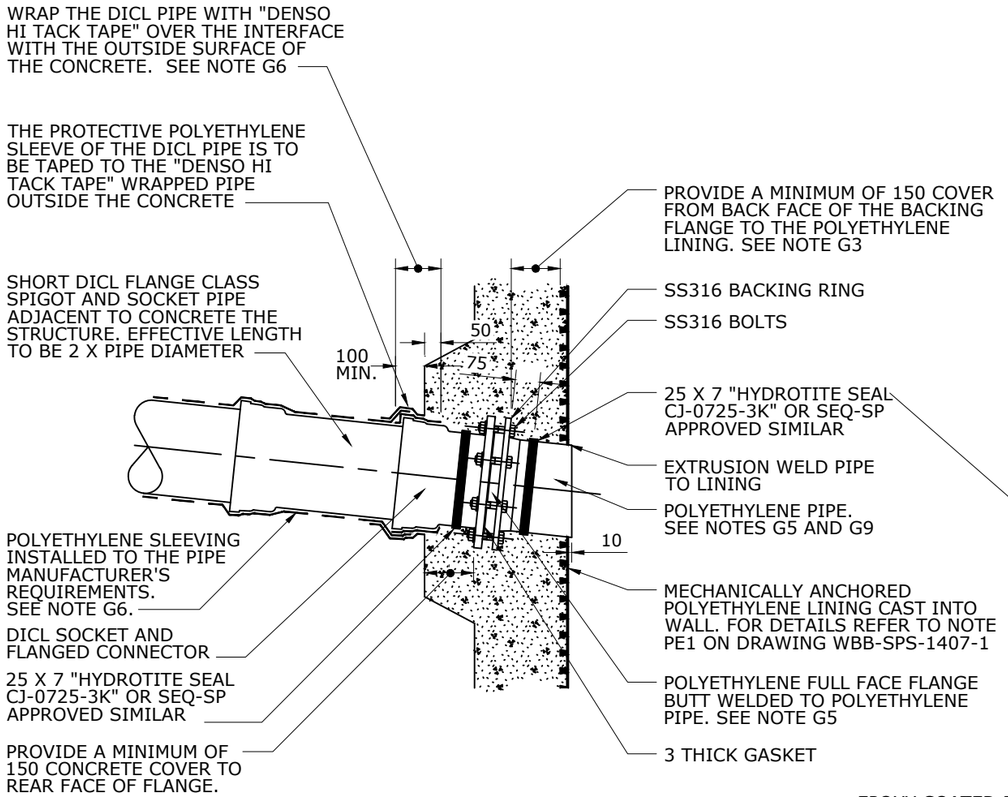
WBB-SPS-1407-1

VERSION

A

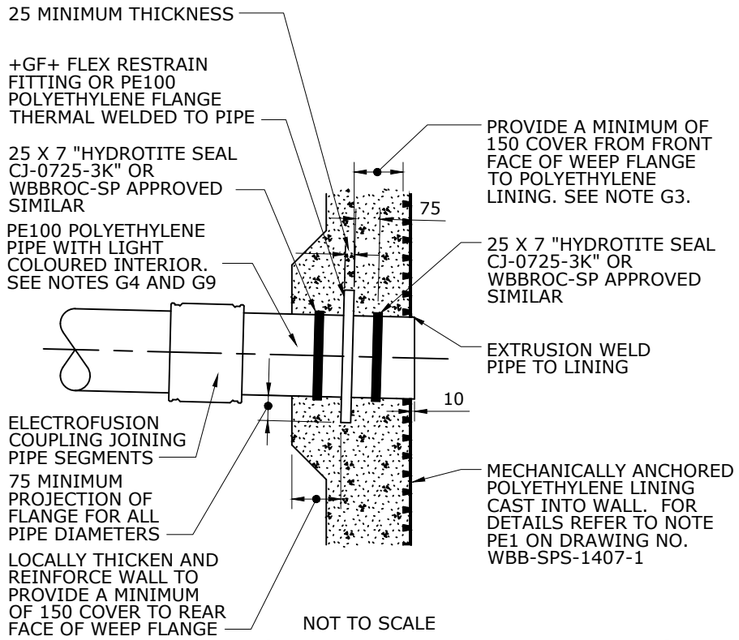
NOT TO SCALE

ORG DATE:



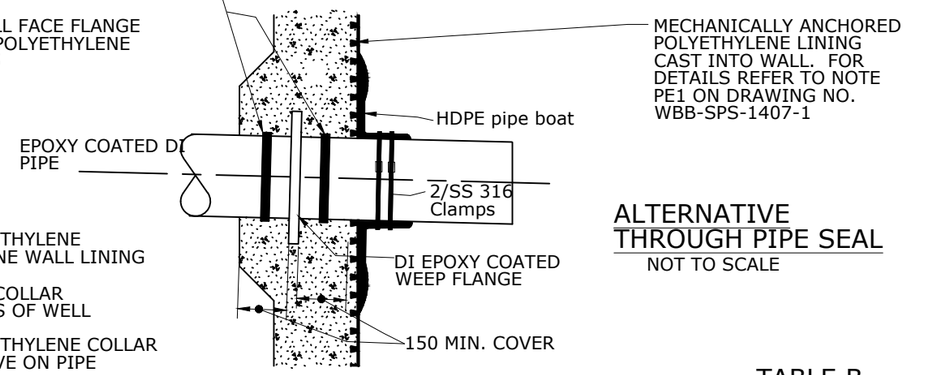
TYPICAL DICL PIPE PENETRATION

NOT TO SCALE



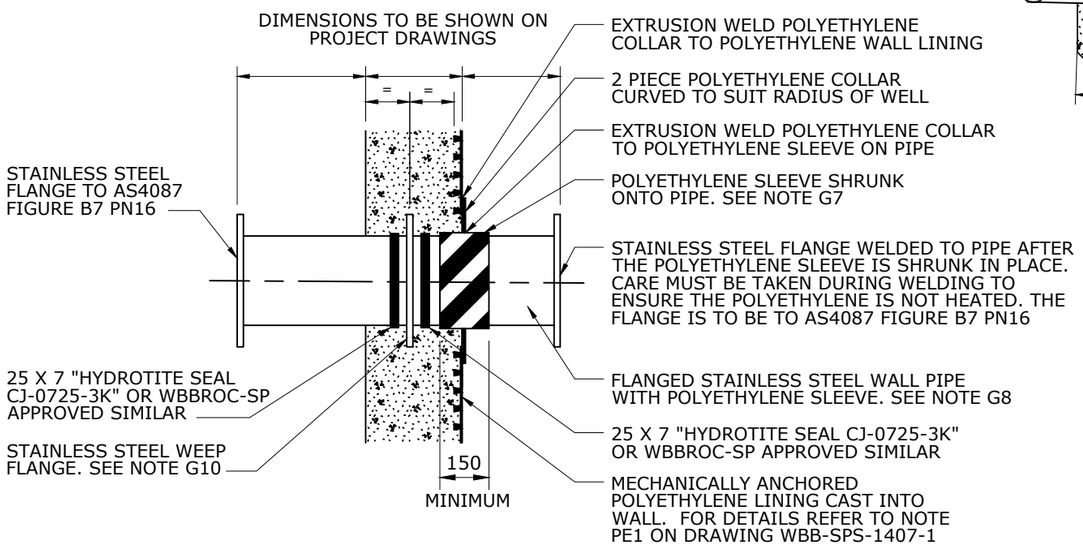
NOT TO SCALE

TYPICAL POLYETHYLENE PIPE PENETRATION



ALTERNATIVE THROUGH PIPE SEAL

NOT TO SCALE



TYPICAL STAINLESS STEEL WALL PIPE PENETRATION

NOT TO SCALE

TABLE A
STAINLESS STEEL PIPE SIZES

NOMINAL PIPE DIAMETERS	PIPE OUTSIDE DIAMETER	MINIMUM * WALL THICKNESS
100	114.30	6.02 **
150	168.28	7.11 **
200	219.08	5
250	273.05	5
300	323.85	5
350	355.60	5
400	406.40	5
450	457.20	6
500	508.00	6

* SEE NOTE G8
** SCHEDULE 40 PIPE

TABLE B
POLYETHYLENE PIPE SIZES

PIPE OUTSIDE DIAMETER
110
160
250
315
400
500
630

SEE NOTE G9

NOTES:

G1. FOR NOTES ON POLYETHYLENE REFER TO DRAWING WBB-SPS-1407-1.

G2. FOR DETAILS OF POTABLE WATER PIPE WALL PENETRATION REFER TO WBBROC-SP. FOR DETAILS OF AIR BLEED PIPE WALL PENETRATION REFER TO WBBROC-SP FOR DETAILS OF SUMP PUMP DISCHARGE PIPE WALL PENETRATION REFER WBBROC-SP FOR GENERAL DETAILS OF BLOCKOUTS AND THE TREATMENT OF THE REINFORCEMENT REFER WBBROC-SP.

G3. THE 150 COVER IS TO BE MEASURED FROM THE CLOSEST SURFACE OF THE FLANGE TO THE EMBEDMENT LUGS OF THE POLYETHYLENE LINING.

G4. THE POLYETHYLENE WALL PIPE USED IN CONJUCTION WITH A POLYETHYLENE GRAVITY SEWER IS TO BE THE SAME DIAMETER PE100 PIPE WITH THE SAME SDR AND PN CLASS AS THE GRAVITY SEWER. SEE NOTE G9. THIS WALL PIPE IS TO HAVE A LIGHT COLOURED INTERIOR.

G5. THE POLYETHYLENE WALL PIPE USED IN CONJUNCTION WITH A DICL GRAVITY SEWER IS TO BE PE100 PIPE WITH THE MINIMUM CLASS OF SDR21 AND PN8. THE INTERNAL DIAMETER OF THE POLYETHYLENE PIPE CANNOT BE LESS THAN THE INTERNAL DIAMETER OF THE FLANGE CLASS DICL PIPE. SEE NOTE G9. THIS SHORT SECTION OF POLYETHYLENE PIPE AND THE BUTT WELDED FULL FACE FLANGE THAT CONNECTS TO THE DICL PIPE MAY BE BLACK IN INTERNAL COLOUR.

G6. IF THE SEWER PIPE IS DICL THEN THE PIPE AT THE INTERFACE OF THE OUTSIDE CONCRETE WALL IS TO BE WRAPPED WITH "DENSO HI TACK TAPE" OVER THE AREA INDICATED ON THIS DRAWING. THE SURFACE IS TO BE PREPARED AS REQUIRED BY THE TAPE MANUFACTURER AND PRIMED WITH A THIN FILM OF "DENSO PRIMER" THE PIPE IS THEN TO BE WRAPPED WITH THE "DENSO HI TACK TAPE" WITH EACH BINDING OVERLAPPING THE PREVIOUS BINDING BY A MINIMUM OF 50%. THE PROTECTIVE POLYETHYLENE SLEEVING TO THE DICL PIPE IS THEN TO BE TAPED TO THE "DENSO" WRAPPED PIPE EXTERNAL TO THE CONCRETE WITH THE TAPE SUPPLIED BY THE PIPE MANUFACTURER FOR TAPING THE POLYETHYLENE SLEEVING.

G7. THE POLYETHYLENE SLEEVE ON THE STAINLESS STEEL WALL PIPE IS TO HAVE A MINIMUM THICKNESS OF 6mm. THE SLEEVE IS TO BE SHRUNK TO THE PIPE BEFORE ONE END FLANGE IS WELDED IN PLACE. THE SLEEVE IS TO HAVE AN INTERFERENCE FIT AND IS TO BE HEATED TO EXPAND TO ALLOW INSTALLATION. THE SLEEVE IS TO BE MACHINED FROM PIPE OR SOLID AND IS NOT TO BE FABRICATED AND SHALL NOT HAVE ANY WELDED JOINTS. THE POLYETHYLENE SLEEVE MAY BE BLACK IN COLOUR. CARE MUST BE TAKEN WHEN WELDING ON THE REMAINING FLANGE TO PREVENT HEATING OF THE POLYETHYLENE SLEEVE. THE POLYETHYLENE SLEEVE MAY ONLY BE OMITTED IF PRIOR APPROVAL IS GIVEN BY WBBROC-SP FOR THE OMISSION OF THE POLYETHYLENE LINING FROM THE WALLS OF THE GRIT COLLECTOR MAINTENANCE HOLE.

G8. THE NOMINAL DIAMETERS AND WALL THICKNESS FOR STAINLESS STEEL PIPES ARE GIVEN IN TABLE A. STAINLESS STEEL GRADE 316 SCHEDULE 40 PIPE IS TO BE USED FOR DN100 AND DN150 PIPES. FOR PIPES OVER DN150 STAINLESS STEEL GRADE 316 SCHEDULE 40 OR SPIRAL WELDED PIPE MAY BE USED PROVIDED THE MINIMUM WALL THICKNESS IS MET.

G9. THE OUTSIDE DIAMETERS (OD) OF POLYETHYLENE PIPES USED FOR GRAVITY SEWERS ARE GIVEN IN TABLE B. THE POLYETHYLENE PIPE IS TO BE PE100 WITH A MINIMUM SDR21 AND PN8 AND LIGHT COLOURED INTERIOR. THE DETAILS OF THE PIPES ARE TO BE SHOWN ON THE PROJECT DRAWINGS. SEE ALSO NOTE G4. THE SHORT LENGTH OF POLYETHYLENE PIPE CONNECTING TO THE DICL PIPE NEED NOT CONFORM WITH TABLE B. SEE ALSO NOTE G5.

G10. THE WEEP FLANGE ON THE STAINLESS STEEL WALL PIPE IS TO BE WELDED AT AN ANGLE TO THE PIPE TO SUIT CURVATURE OF THE CONCRETE WALL. THE FLANGE IS TO BE PLACED CENTRALLY IN THE WALL. FULL DETAILS OF PIPES ARE TO BE GIVEN IN THE PROJECT DRAWINGS PIPE LIST AND PIPE SPECIALS DETAILS. THESE WEEP FLANGES ARE TO BE DESIGNED TO TRANSFER THE FULL THRUST LOADS OF A PN16 PIPE. THE MINIMUM DIAMETER OF A FLANGE WELDED AT 90| TO THE PIPE IS TO BE IN ACCORDANCE WITH AS4087 FIGURE B7.

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1407-2 VERSION B DATED 23/06/2014	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

BRC | FCRC | GRC | NBRC | SBRC

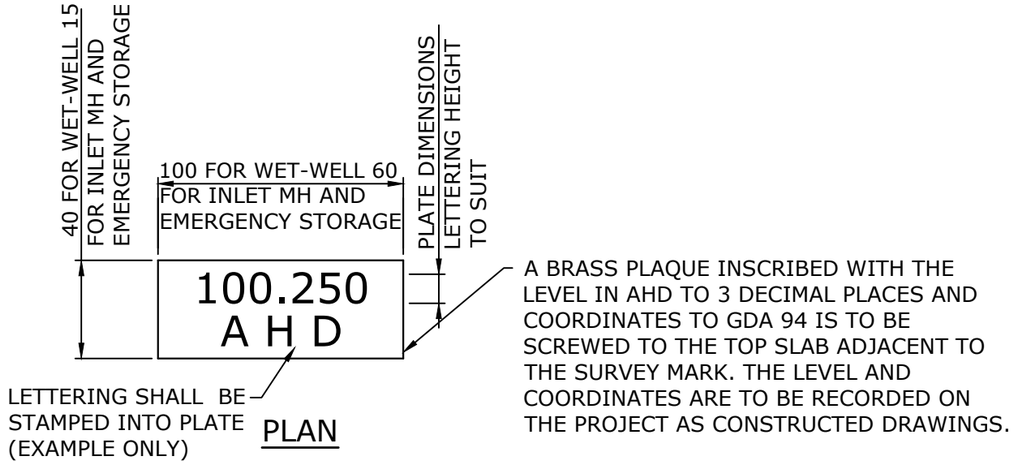
POLYETHYLENE LINING WALL PIPE PENETRATION TYPICAL DETAILS

DRAWING No. WBB-SPS-1407-2

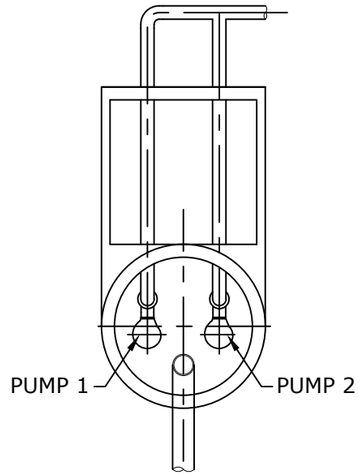
VERSION A

NOT TO SCALE

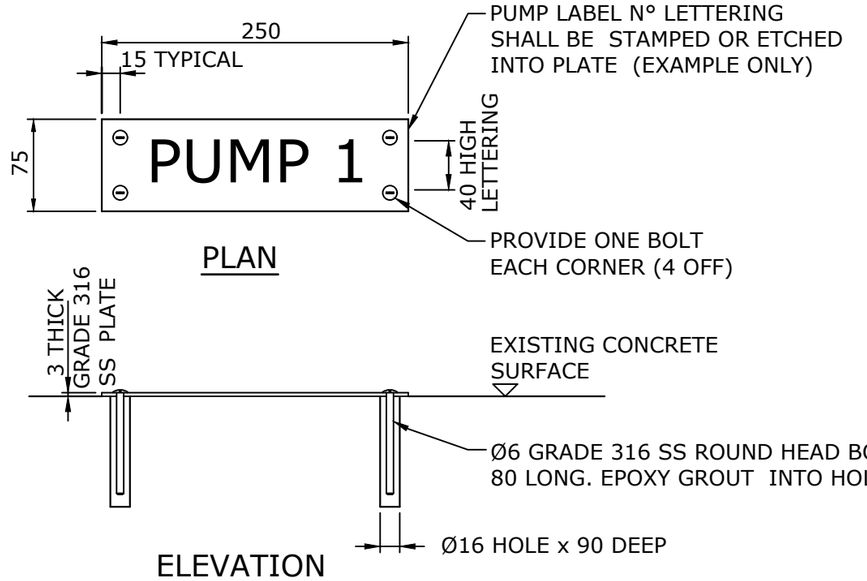
ORG DATE:

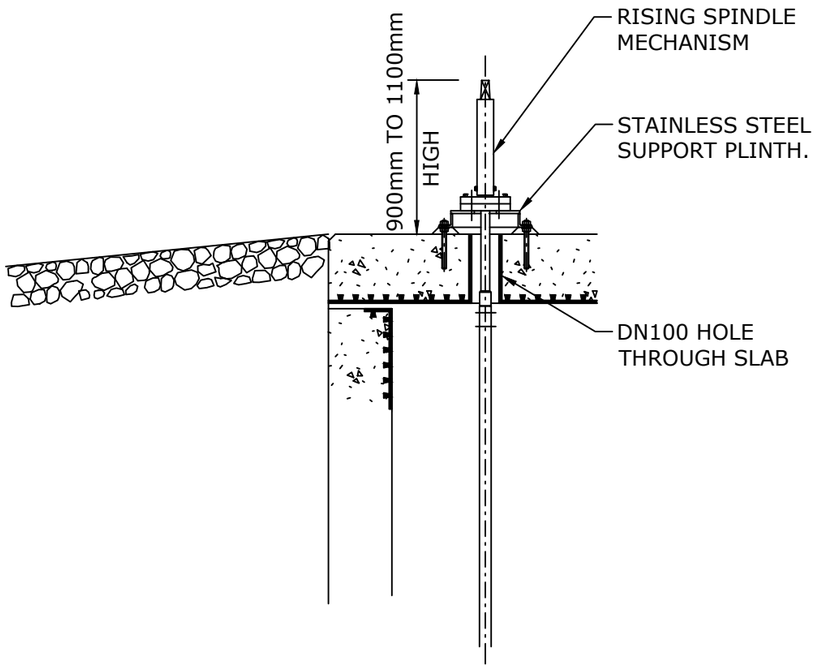


SURVEY LABEL PLATE DETAILS



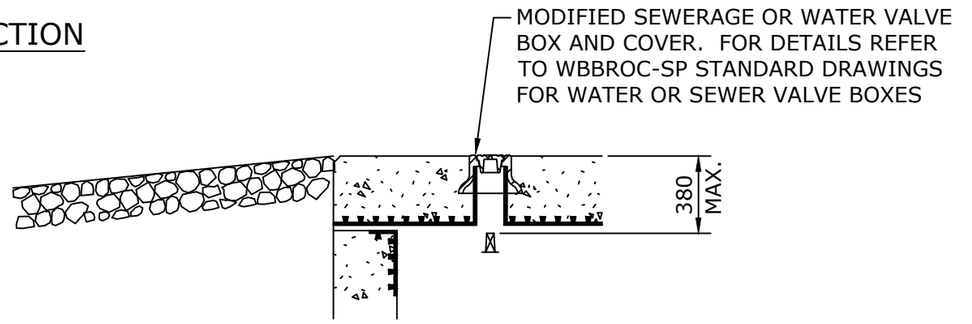
NUMBERING CONNECTION





TYPICAL RISING SPINDLE MECHANISM ABOVE GROUND

(SECURITY FENCED AREAS ONLY)



RISING SPINDLE MECHANISM UNDER SLAB

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1508-1 VERSION B DATED 28/05/2014	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

SURVEY PLATE, PUMP LABEL PLATE VALVE SPINDLE ACCESS

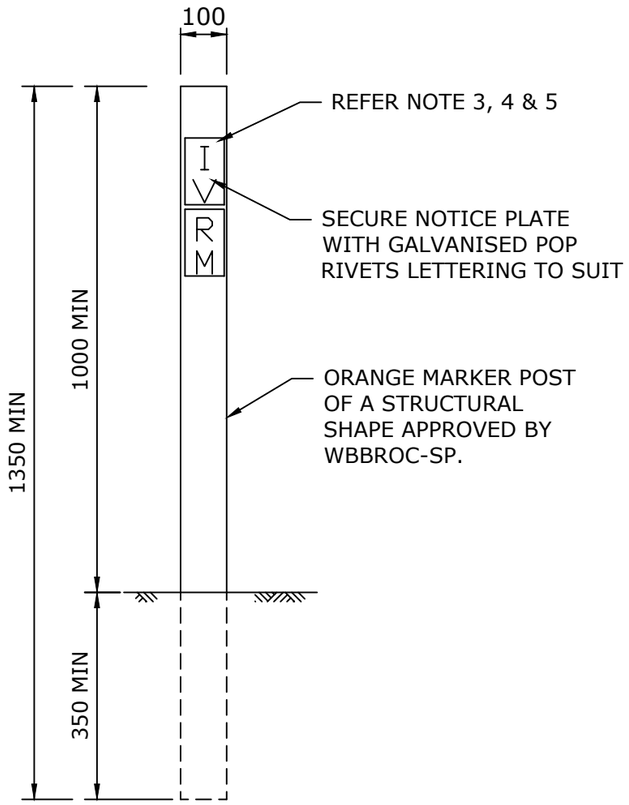
BRC	FCRC	GRC	NBRC	SBRC

DRAWING No. WBB-SPS-1508-1

VERSION A

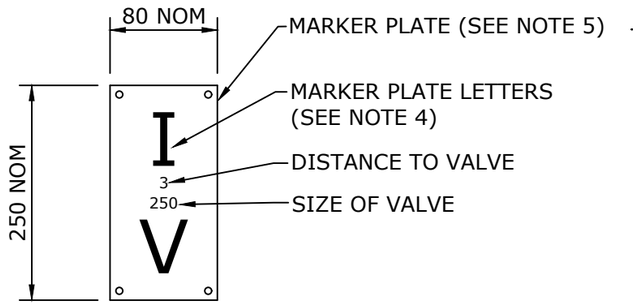
NOT TO SCALE

ORG DATE:



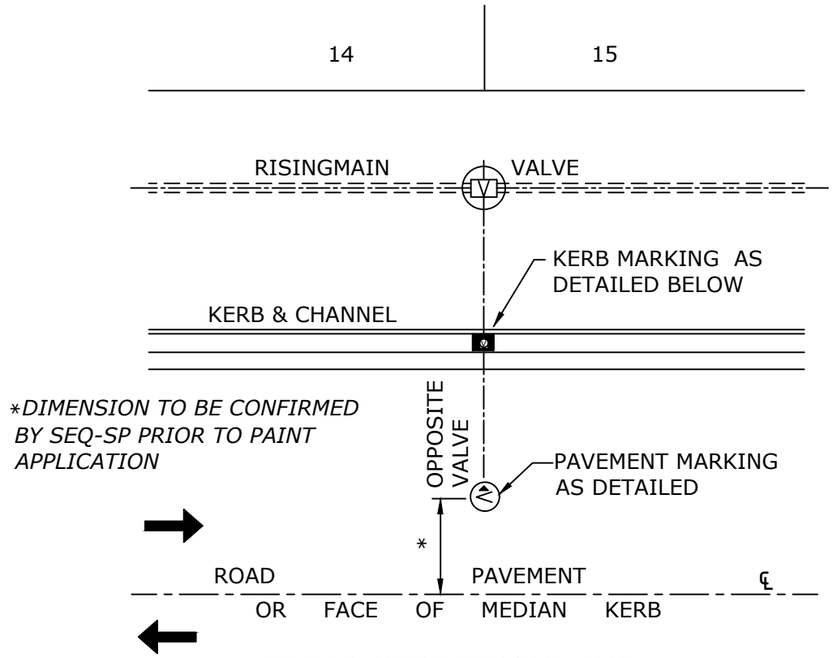
MARKER POST

APPROVED MARKER POST
PARK INTERNATIONAL UTILITY MARKER SYSTEM POLYMER 1350 LONG X 100 WIDE X 4 THICK OR EQUAL



TYPICAL NOTICE PLATE ARRANGEMENT

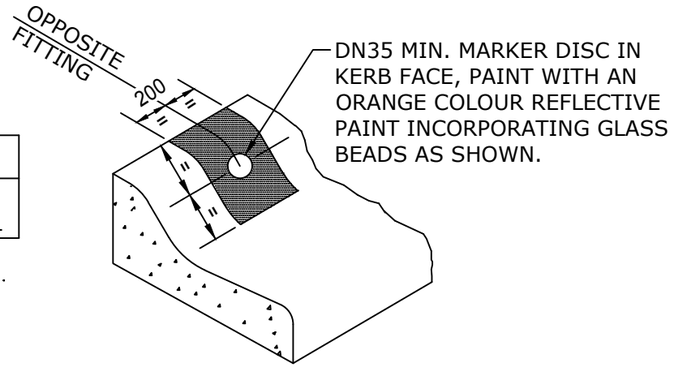
FIXED TO POST



KERBED STREETS/ROADS

TYPICAL PAVEMENT MARKING PLAN FOR VALVES

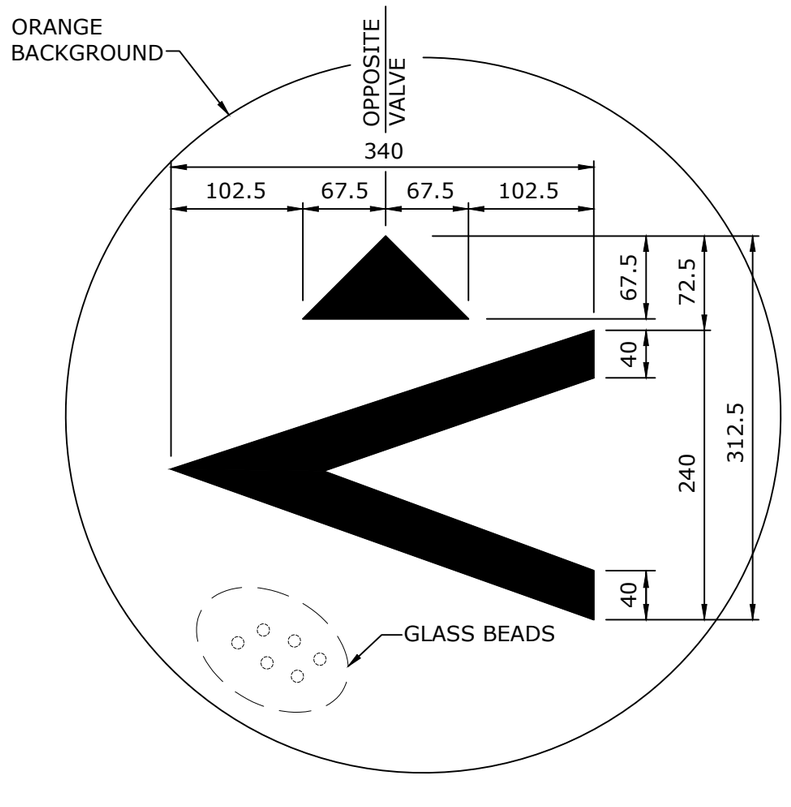
REFER NOTES



KERB MARKING

IV - ISOLATION VALVE
GV - GAS VALVE
SV - SCOUR VALVE
VV - VACUUM SECTION VALVE
RM - RISING MAIN

MARKER DISCS & NOTICE PLATE CODES



PAVEMENT MARKING FOR VALVES

NOTES:

1. ALL SEWERAGE KERB, PAVEMENT & BOX MARKINGS SHALL BE BLACK WITH THE ORANGE PAINTED CIRCLE BACKGROUND TO CONTAIN GLASS BEADS.
2. PAVEMENT MARKING FOR VALVES SHALL BE PROVIDED ON A ORANGE PAINTED BACKGROUND CIRCLE LOCATED CLEAR OF THE PARKING LANE SO THAT TYRE WEAR IS MINIMISED.
   THE EXACT LOCATION SHALL BE DETERMINED BY THE WBBROC-SP FOLLOWING SITE INSPECTIONS.
3. MARKER POSTS SHALL ONLY BE USED IN STREETS AND ROADS WHERE THERE IS NO KERB & CHANNEL OR AS DIRECTED BY THE WBBROC-SP.
4. THE NOTICE PLATE SHALL BE REFLECTORIZED ALUMINIUM WITH BLACK LETTERING ON A ORANGE BACKGROUND.
5. MARKER POSTS SHALL BE POSITIONED AT THE FRONT OF THE PROPERTY BOUNDARY OPPOSITE THE FITTING.
6. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1508-2 VERSION C DATED 27/07/2015	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

RISING MAIN VALVE MARKING

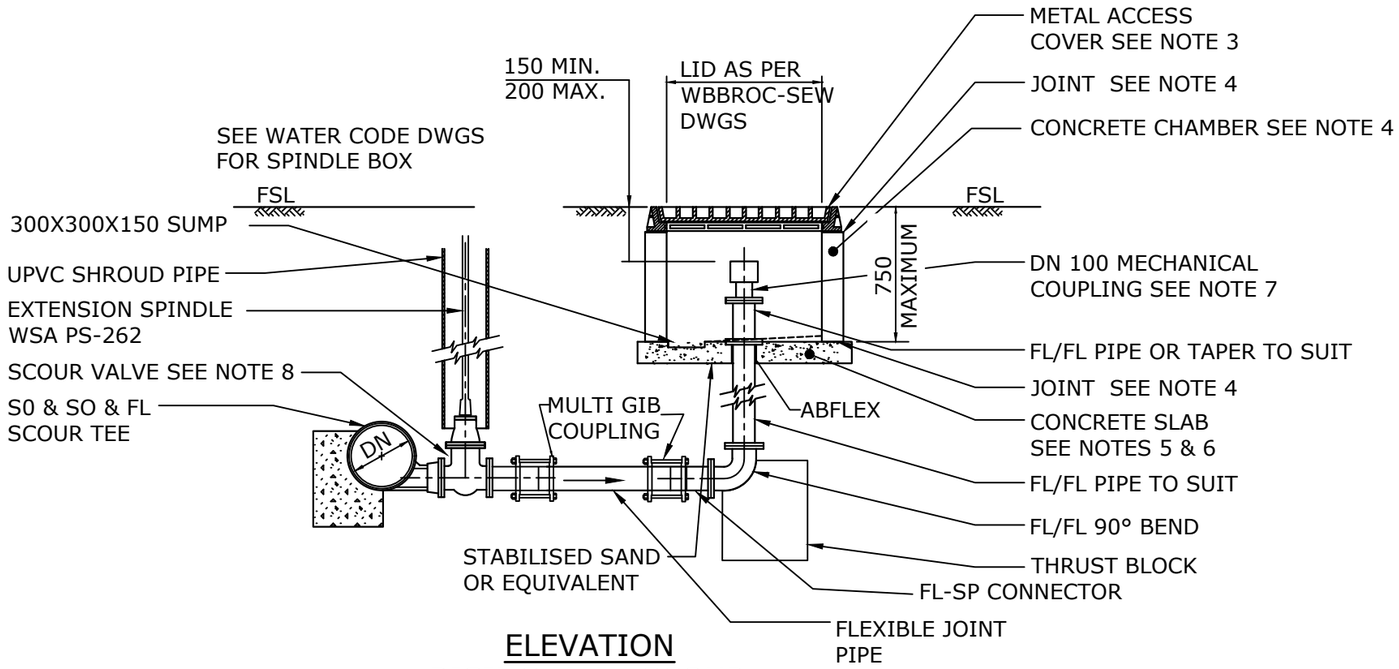
BRC	FCRC	GRC	NBRC	SBRC

DRAWING No. WBB-SPS-1508-2

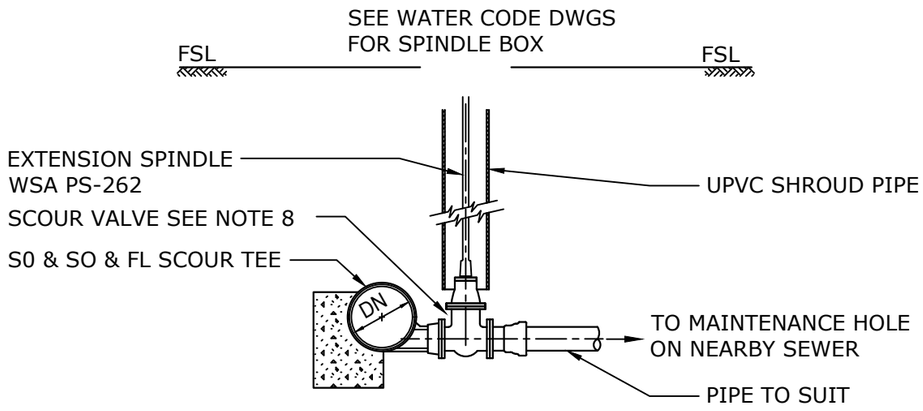
VERSION A

NOT TO SCALE

ORG DATE:



ELEVATION
RISING MAIN SCOUR
SEE NOTE 2



ELEVATION
RISING MAIN SCOUR
SEE NOTE 2

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
2. LOCATION AND SIZE OF SCOUR INSTALLATION SHALL BE AS SHOWN ON DESIGN PLANS. FLANGED DICL PIPE AND FITTINGS SHOWN. OTHER PIPE SYSTEMS MAY BE SPECIFIED.
3. METAL ACCESS COVERS SHALL BE 900x600 :CLASS "B" FOR FOOTWAYS CLASS "D" FOR ROADWAYS. ACCESS COVERS FOR SCOUR CHAMBERS SHALL BE MARKED "SEWER" (OFFSET CAM LOCK TO ALLOW ACCESS TO MH).
4. PRECAST CHAMBERS MAY BE USED IN NON-TRAFFICABLE AREAS. JOINTS SHALL BE 20 TO 50 THICK FOR CEMENT MORTAR. ALTERNATIVELY, A 6 THICK BED OF BUTYL MASTIC MAY BE USED.
5. CONCRETE FOR SLAB SHALL BE N20.
6. REINFORCING FABRIC FOR CONCRETE SLAB SHALL BE TO AS 1304. EQUIVALENT REINFORCEMENT IN DEFORMED
7. MALE CAMLOCK-TYPE COUPLING TO SUIT: (i) TRAILER MOUNTED PUMP UNITS AS USED BY WBBROC-SP AND (ii) TANKERS WITH 16,000/21,000 LITRES CAPACITY.
8. RESILIENT SEATED GATE VALVE TO WSA PS-260.

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1602-1 VERSION A	

WBBROC WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

BRC	FCRC	GRC	NBRC	SBRC

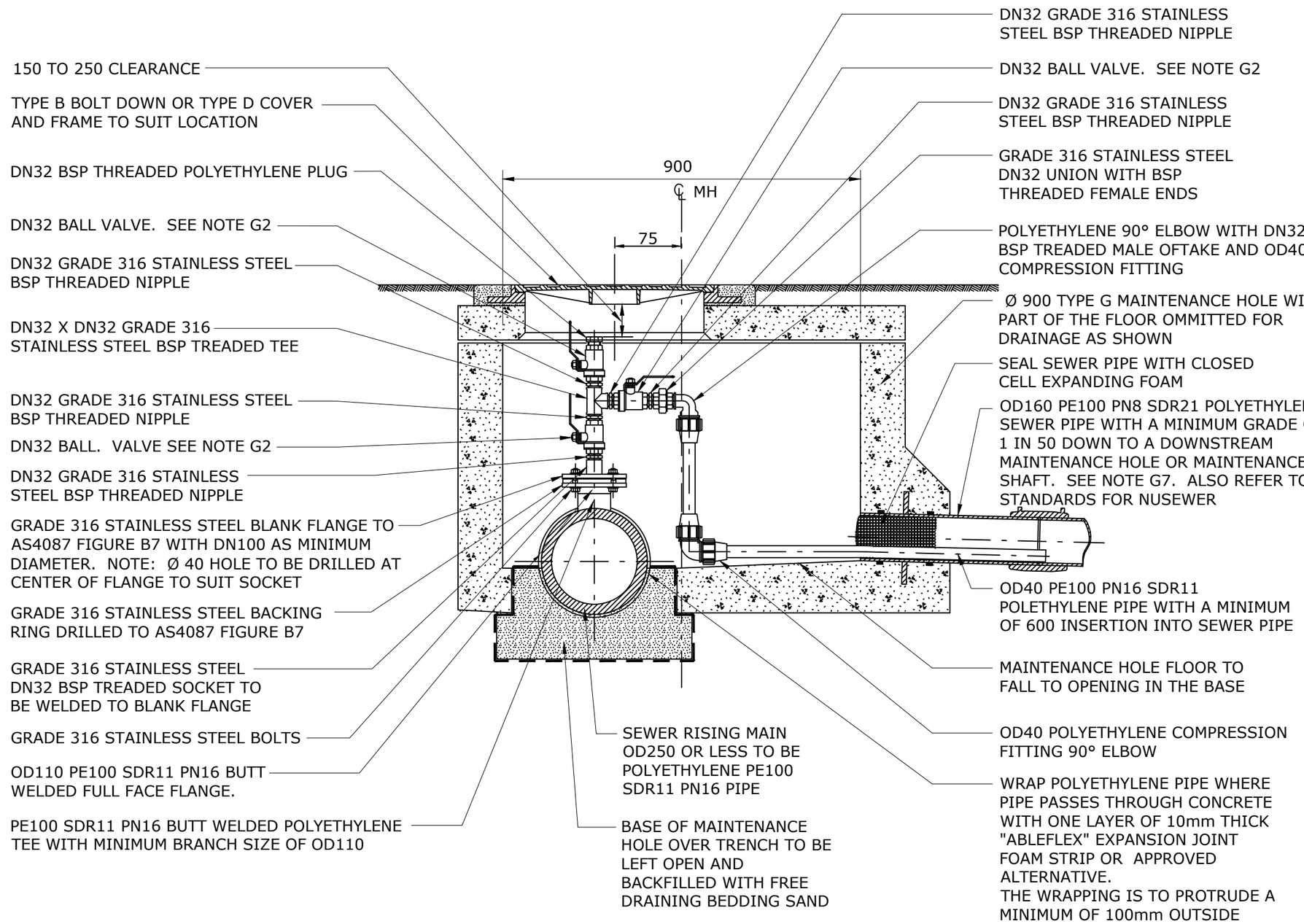
RISING MAIN
SCOUR / DRAIN ARRANGEMENT

DRAWING No.
WBB-SPS-1602-1

VERSION
A

NOT TO SCALE

ORG DATE:



SECTIONAL ELEVATION
DN32 AIR BLEED ASSEMBLY
NOT TO SCALE

NOTES:

G1. THIS DRAWING SHOWS THE AIR BLEED ARRANGEMENT FOR RISING MAINS OF OD250 OR SMALLER AND IS ONLY SUITABLE FOR USE WITH DN32 BALL VALVES.

G2. THE BALL VALVES ARE TO BE DN32 FULL BORE AND ALL GRADE 316 STAINLESS STEEL WITH Ø32 (11/4") BSP THREADED FEMALE SOCKET ENDS.

G3. THE RISING MAIN AND BRANCH SHOWN ON THIS DRAWING ARE POLYETHYLENE. ALTERNATE MATERIALS MAY BE APPROVED BY WBBROC-SP AND WILL BE ASSESSED ON AN INDIVIDUAL PROJECT BASIS.

G4. AIR BLEED ASSEMBLIES ARE TO BE LOCATED AT ALL HIGH POINTS ALONG THE RISING MAIN.
WHERE POSSIBLE THE RISING MAIN SHOULD ALWAYS GRADE UP CONTINUOUSLY TO THE DISCHARGE MAINTENANCE HOLE THUS ELIMINATING THE NEED FOR AN AIR BLEED ASSEMBLY.
THE ABOVE WILL REQUIRE APPROVAL FROM WBBROC-SP WHERE THE MAIN EXCEEDS A COVER OF 1500.

G5. WHERE THE MAINTENANCE HOLE COVER IS LOCATED IN A ROADWAY THE COVER SHOULD BE SITED AWAY FROM THE NORMAL WHEEL TRACKS OF VEHICLES.

G6. ALL AIR BLEED ASSEMBLY MAINTENANCE HOLES ARE TO BE LOCATED IN POSITIONS THAT ARE EASILY ACCESSIBLE WITH MAINTENANCE VEHICLES.

G7. WHERE POSSIBLE THE OD40 PE AIR RELEASE PIPE IS TO DISCHARGE INTO AN OD160 PE SEWER WHICH GRADES DOWN TO THE NEAREST SEWERAGE RETICULATION MAINTENANCE HOLE OR MAINTENANCE SHAFT.
WHERE A SUITABLE SEWERAGE RETICULATION MAINTENANCE HOLE OR MAINTENANCE SHAFT IS NOT AVAILABLE THEN A TYPE G MAINTENANCE HOLE IS TO BE CONSTRUCTED.
THIS NEW MAINTENANCE HOLE SHOULD NOT BE POSITIONED IN THE ROADWAY AND THE LOCATION MUST BE SUCH THAT IT IS ACCESSIBLE WITH A VACTOR TRUCK FOR CLEANING.

G8. THE LOCATION AND DETAILS INCLUDING LEVELS FOR EVERY AIR BLEED ON THE RISING MAIN ARE TO BE SHOWN ON THE PROJECT DRAWINGS.

G9. ALL STAINLESS STEEL FITTINGS ARE TO BE GRADE 316.

G10. ALL THREADED STAINLESS STEEL IS TO BE ASSEMBLED WITH ANTI-GALLING COMPOUND "DURALAC" OR APPROVED EQUIVALENT.

G11. INSTALLATION IN ACCORDANCE WITH ODOUR STUDY REPORT RECOMMENDATIONS

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1605-1 VERSION B DATED 20/05/2014	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

DN32 AIR BLEED ASSEMBLY FOR OD250 RISING MAINS OR SMALLER

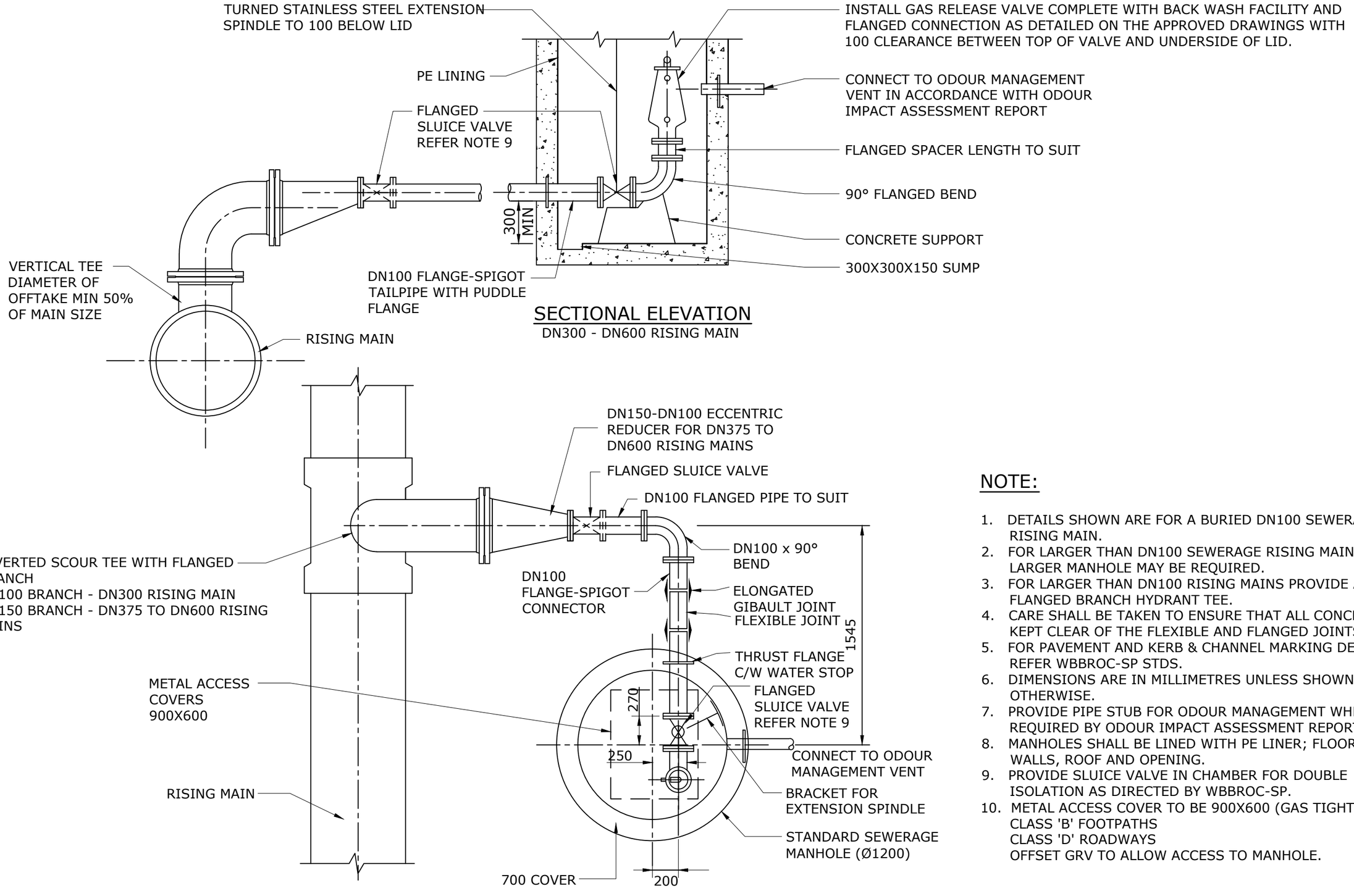
BRC	FCRC	GRC	NBRC	SBRC

DRAWING No. WBB-SPS-1605-1

VERSION A

NOT TO SCALE

ORG DATE:



NOTE:

1. DETAILS SHOWN ARE FOR A BURIED DN100 SEWERAGE RISING MAIN.
2. FOR LARGER THAN DN100 SEWERAGE RISING MAINS A LARGER MANHOLE MAY BE REQUIRED.
3. FOR LARGER THAN DN100 RISING MAINS PROVIDE A DN100 FLANGED BRANCH HYDRANT TEE.
4. CARE SHALL BE TAKEN TO ENSURE THAT ALL CONCRETE IS KEPT CLEAR OF THE FLEXIBLE AND FLANGED JOINTS.
5. FOR PAVEMENT AND KERB & CHANNEL MARKING DETAILS REFER WBBROC-SP STDS.
6. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
7. PROVIDE PIPE STUB FOR ODOUR MANAGEMENT WHERE REQUIRED BY ODOUR IMPACT ASSESSMENT REPORT.
8. MANHOLES SHALL BE LINED WITH PE LINER; FLOOR, WALLS, ROOF AND OPENING.
9. PROVIDE SLUICE VALVE IN CHAMBER FOR DOUBLE ISOLATION AS DIRECTED BY WBBROC-SP.
10. METAL ACCESS COVER TO BE 900X600 (GAS TIGHT)
    CLASS 'B' FOOTPATHS
    CLASS 'D' ROADWAYS
    OFFSET GRV TO ALLOW ACCESS TO MANHOLE.

REV. No.	DATE	DESCRIPTION	AUTH.
A	19/03/2018	BASED ON SEQ-SPS-1606-1 VERSION A	

WBBROC WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

AUTOMATIC GAS RELEASE VALVES

BRC	FCRC	GRC	NBRC	SBRC

DRAWING No.

WBB-SPS-1606-1

VERSION

A

NOT TO SCALE

ORG DATE: