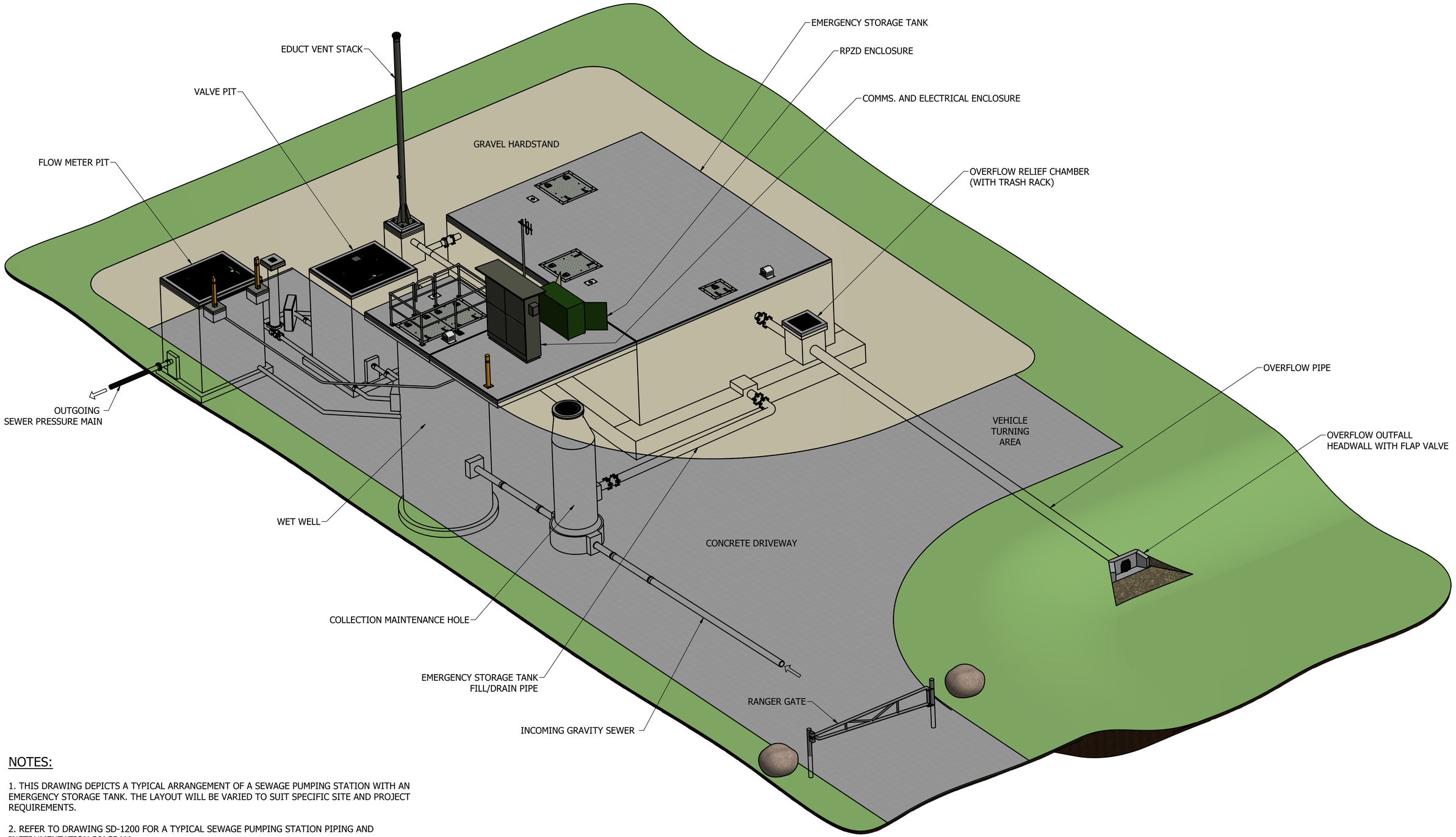


NOTES:

1. THIS DRAWING DEPICTS A TYPICAL ARRANGEMENT OF A SEWAGE PUMPING STATION WITH AN EMERGENCY STORAGE TANK. THE LAYOUT WILL BE VARIED TO SUIT SPECIFIC SITE AND PROJECT REQUIREMENTS.

2. REFER TO DRAWING SD-1200 FOR A TYPICAL SEWAGE PUMPING STATION PIPING AND INSTRUMENTATION DIAGRAM.

SEWAGE PUMPING STATION
SITE LAYOUT

SCALE: N.T.S.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	25/05/2018	M. Matusiak	K. Danenbergsons	C. Patrick

DAM		RES		SPS	X				
BWS		WAT		STP					
WTP		SEW	X						
WPS		REC							

ASSET AREA APPLICABILITY

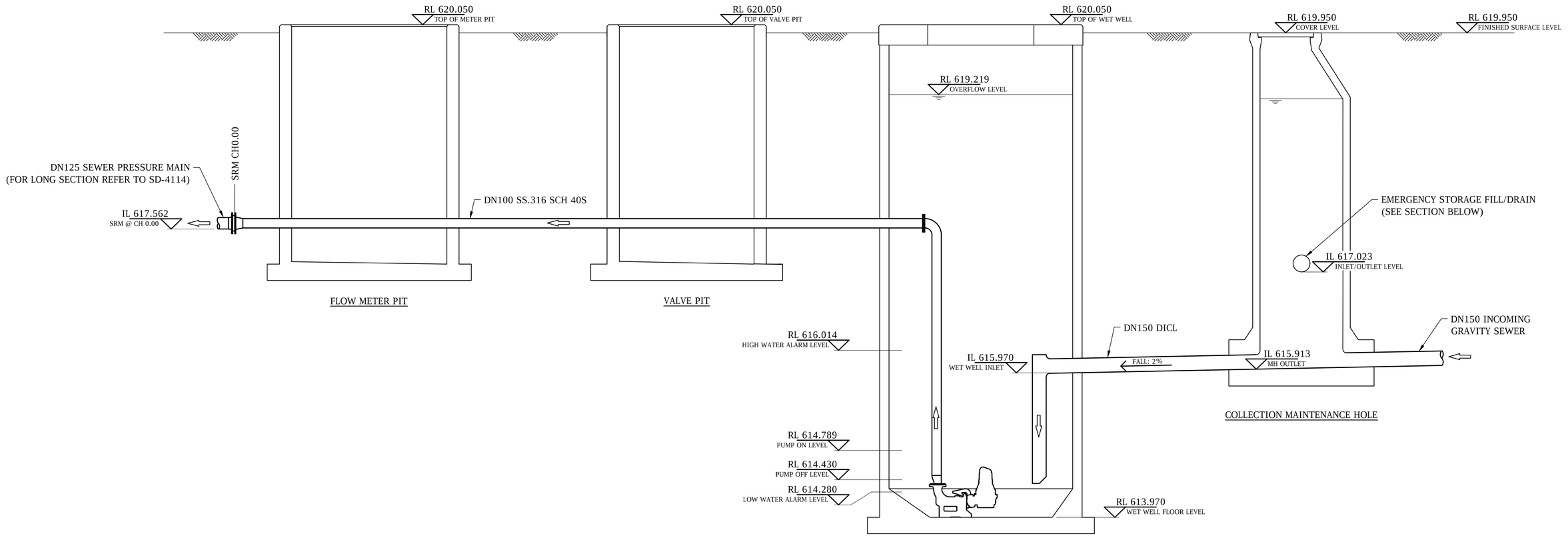
STANDARD DRAWING
SEWAGE PUMPING STATIONS
TYPICAL SITE LAYOUT

DRAWING STATUS: Current

SD-4100-C

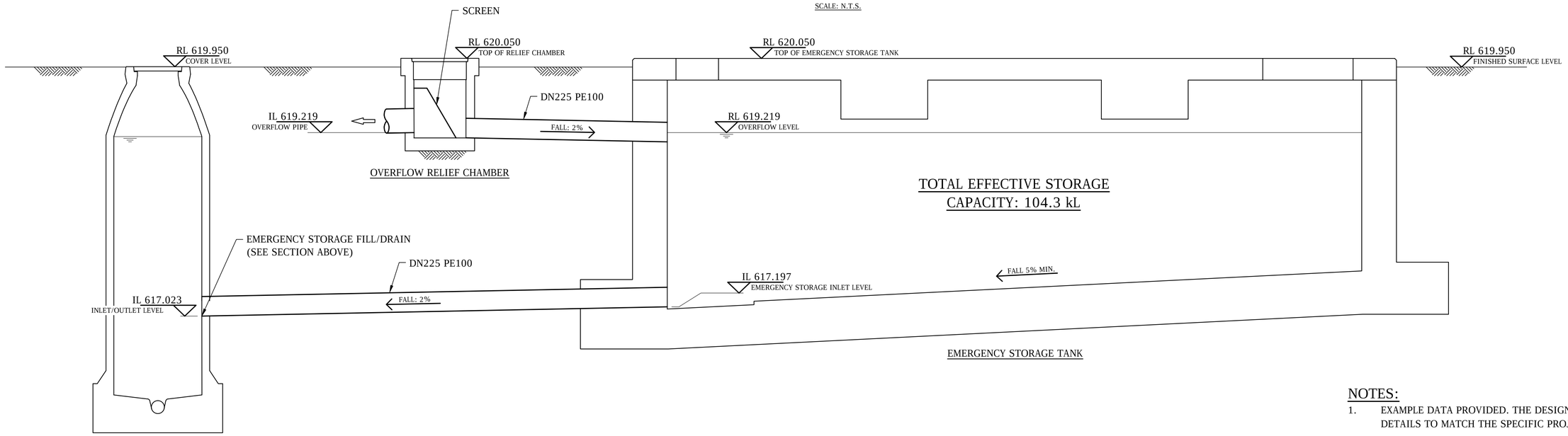
A1

ISSUE: A



COLLECTION MAINTENANCE HOLE THROUGH TO SEWER RISING MAIN

SCALE: N.T.S.



EMERGENCY STORAGE AND OVERFLOW

SCALE: N.T.S.

NOTES:

1. EXAMPLE DATA PROVIDED. THE DESIGNER SHALL MODIFY DETAILS TO MATCH THE SPECIFIC PROJECT.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	25/05/2018	M. Matusiak	K. Danenbergsons	C. Patrick

DAM		RES		SPS	X			
BWS		WAT		STP				
WTP		SEW	X					
WPS		REC						

ASSET AREA APPLICABILITY

STANDARD DRAWING
SEWAGE PUMPING STATIONS
TYPICAL HYDRAULIC PROFILE

DRAWING STATUS: Current

SD-4101-C

A1

ISSUE: A

Date Plotted: 2/07/2019 Plot Style: Water.ctb Plotted by: Essery, Scott CADD File Name:C:\Temp\BC-WorkSpace\S_ESSERY\M-Seappsprd37,D-DrwWaterdbP\Projects\CX10999\Standard_Drawing\4100\SD_4101_C.dwg

SCREEN TREES

1.5 m MIN.

EMERGENCY STORAGE TANK
REFER SD-4108

INDUCT VENT
(EMERGENCY STORAGE)
REFER SD-4111

OVERFLOW RELIEF CHAMBER
WITH TRASH RACK
REFER SD-4110

4.5 m MIN.

4.0 m MIN.

DN225 OVERFLOW PIPE

OVERFLOW RELIEF HEADWALL
WITH FLAP VALVE REFER SD-4110

620.0
619.8
619.6
619.4
619.2
619.0
618.8

GRAVEL
HARDSTAND

GRAVEL HARDSTAND

VEHICLE TURNING
AREA

VENTILATION PIPEWORK
REFER SD-4111

EDUCT VENT STACK
REFER SD-4112

VALVE CHAMBER
REFER SD-4104

DN160 EDUCT VENT

DN225 FILL / DRAIN PIPE

RPZD ENCLOSURE
REFER SD-5500

R8.0 m MIN.
TYP

RPZD
WATER SUPPLY

COMMUNICATIONS AND
ELECTRICAL ENCLOSURE

DN100 PRESSURE MAIN

DN100 DRAIN

DN100 PRESSURE MAIN

DN150 GRAVITY SEWER

DN150 GRAVITY MAIN

FLOWMETER PIT
REFER SD-4106

DN100 PRESSURE MAIN

DN100 SCOUR

DN100 DRAIN

4.5 m MIN.

1.5 m
MIN.

CONCRETE DRIVEWAY

RANGER GATE
REFER TCCS STANDARDS

OUTGOING
SEWER PRESSURE MAIN
REFER SD-4114

SRM

REMOVABLE
BOLLARDS
REFER SD-9013

COMMUNICATIONS
AND ELECTRICAL
CONDUITS (TYP.)

WET WELL
REFER SD-4104

INCOMING
ELECTRICAL
FEED

INDUCT VENT
(WET WELL)
REFER SD-4111

STANDARD DUTY
BOLLARD
REFER SD-9012

COLLECTION MAINTENANCE HOLE
REFER SD-4103

INCOMING GRAVITY SEWER

NOTES:

1. EXAMPLE DATA PROVIDED. THE DESIGNER SHALL MODIFY DETAILS TO MATCH THE SPECIFIC PROJECT.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/05/2018	M. Matusiak	K. Danenbergsons	C. Patrick

DAM		RES		SPS	X
BWS		WAT		STP	
WTP		SEW	X		
WPS		REC			

ASSET AREA APPLICABILITY

STANDARD DRAWING
SEWAGE PUMPING STATIONS
TYPICAL SITE PLAN

DRAWING STATUS: Current

SD-4102-C

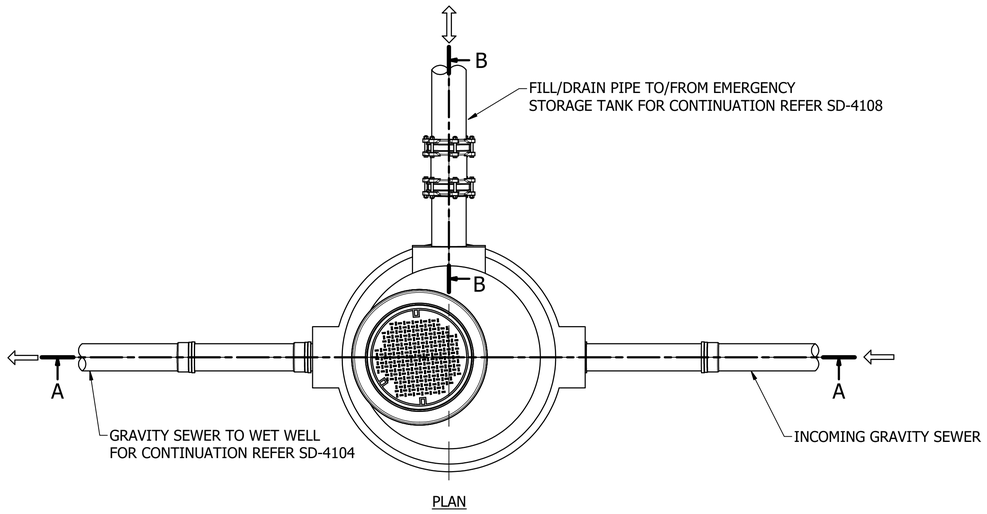
A1

ISSUE: A

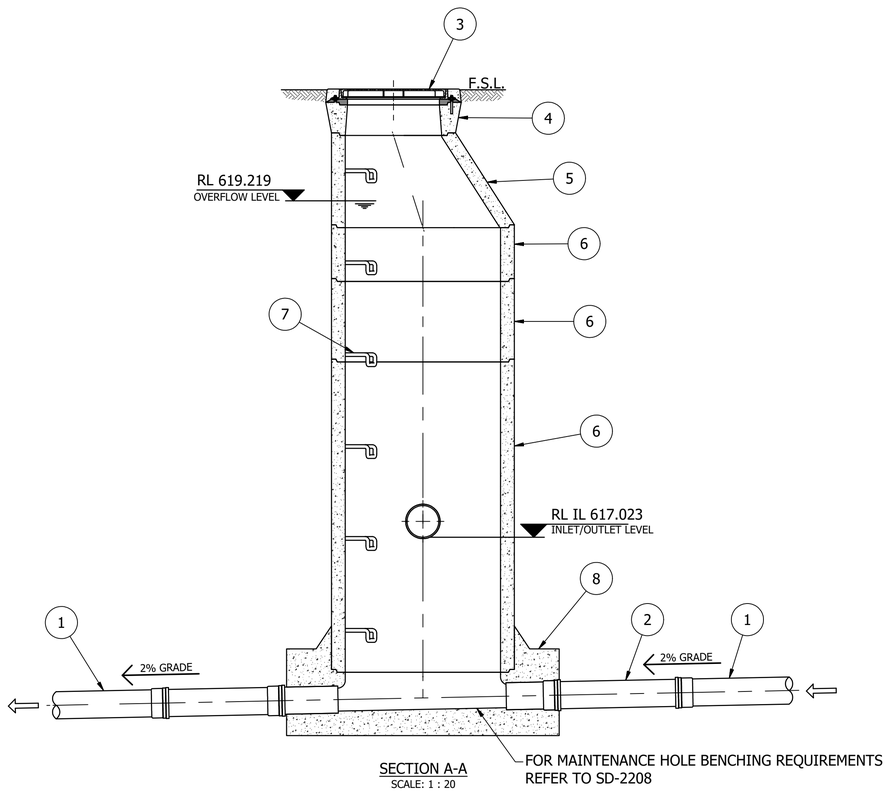
Date Plotted: 2/07/2019 Plot Style: Water.ctb Plotted by: Essery, Scott CADD File Name:C:\Temp\BC-WorkSpace\S_ESSERY\M-Seappspd37,D-DrwWaterdbP\Projects\CX10999\Standard_Drawing\4100\SD_4102_C.dwg

PARTS LIST

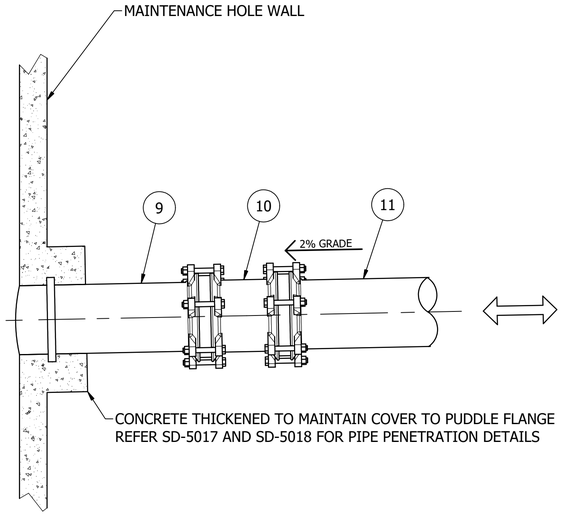
ITEM	DESCRIPTION	QTY
1	DN150 DICL INCOMING GRAVITY SEWER	N/A
2	DN150 DICL ROCKER PIPE	1
3	CLASS D (TRAFFICABLE) MAINTENANCE HOLE COVER AND FRAME (BOLT DOWN), REFER SD-2204	1
4	MAKE-UP RING, REFER SD-2207	1
5	STRAIGHT BACK TAPER, REFER SD-2207	1
6	SHAFT SECTION, REFER SD-2207	VARIES WITH DEPTH
7	STEP IRON, REFER SD-8108	VARIES WITH DEPTH
8	MAINTENANCE HOLE BASE, REFER SD-2201	1
9	DN225 PN6.3 SDR26 PE100 FILL/DRAIN PIPE C/W FACTORY FITTED PUDDLE FLANGE	1
10	DN200 MECHANICAL COUPLING	1
11	DN225 PN6.3 SDR26 PE100 FILL/DRAIN PIPE	1
22		1
23		1



PLAN



SECTION A-A
SCALE: 1 : 20



SECTION B-B

EMERGENCY STORAGE FILL/DRAIN PIPE CONNECTION
SCALE: 1 : 10

NOTES:

1. MAINTENANCE HOLE CONSTRUCTION MAY BE PRECAST OR CAST IN SITU (PRECAST SHOWN). FOR ADDITIONAL MAINTENANCE HOLE DETAILS REFER TO SD-2200 SERIES OF DRAWINGS.

2. EXAMPLE DATA PROVIDED. THE DESIGNER SHALL MODIFY DETAILS TO MATCH THE SPECIFIC PROJECT.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	13/06/2018	M. Matusiak	K. Danenbergsons	C. Patrick

DAM		RES		SPS	X
BWS		WAT		STP	
WTP		SEW	X		
WPS		REC			

ASSET AREA APPLICABILITY

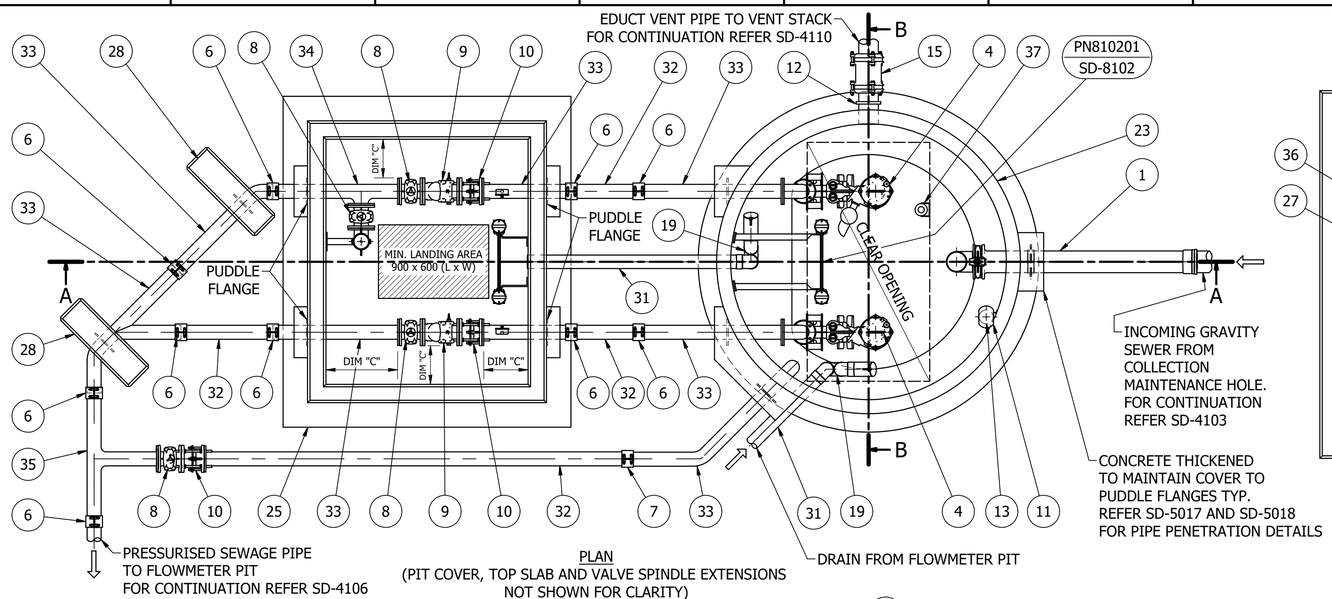
STANDARD DRAWING
SEWAGE PUMPING STATIONS
COLLECTION MAINTENANCE HOLE
GENERAL ARRANGEMENT AND DETAILS

DRAWING STATUS: Current

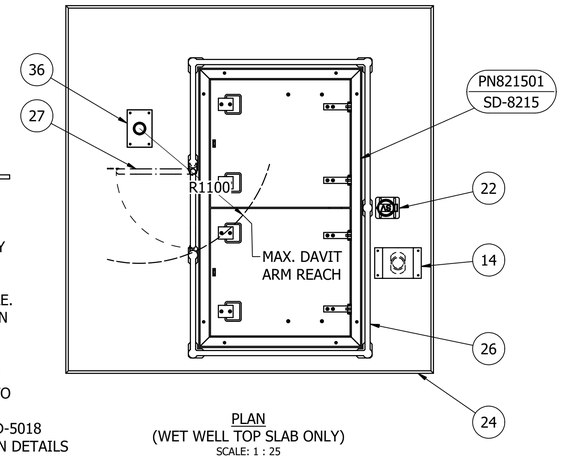
SD-4103-C

A1

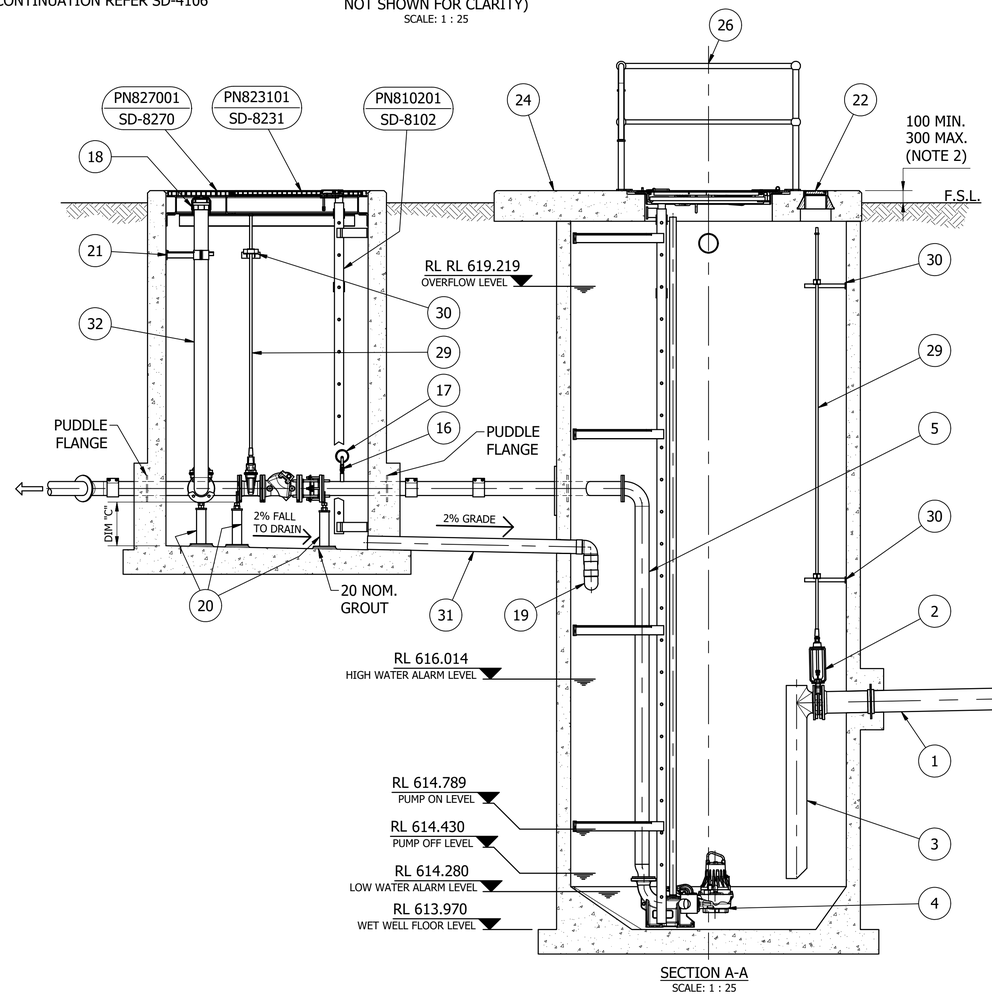
ISSUE: A



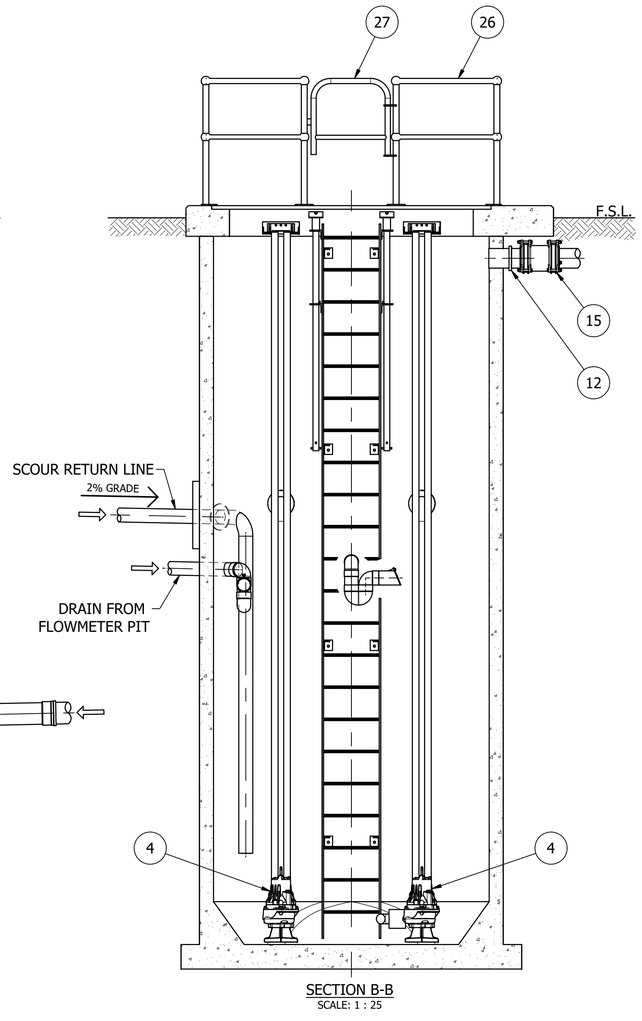
PLAN
(PIT COVER, TOP SLAB AND VALVE SPINDLE EXTENSIONS NOT SHOWN FOR CLARITY)
SCALE: 1 : 25



PLAN
(WET WELL TOP SLAB ONLY)
SCALE: 1 : 25



SECTION A-A
SCALE: 1 : 25



SECTION B-B
SCALE: 1 : 25

PARTS LIST

ITEM	DESCRIPTION	QTY
1	DN150 DICL INLET SEWER PIPE	1
2	DN150 KNIFE GATE VALVE	1
3	DN150 SS INLET SEWER DROPPER PIPE	1
4	CENTRIFUGAL PUMP, SUBMERSIBLE (ONE UNIT SUPPLIED WITH FLUSH VALVE)	2
5	DN80 TO DN100 SS PUMP RISER PIPE	2
6	DN100 MECHANICAL COUPLING, NON AXIALLY RESTRAINED, C/W CENTRE LIMIT STOP	10
7	MECHANICAL COUPLING, AXIALLY RESTRAINED	1
8	DN100 GATE VALVE	4
9	DN100 CHECK VALVE	2
10	DN100 DOUBLE FLANGED DISMANTLING JOINT	3
11	DN100 PVC AIR ADMITTANCE VENT	1
12	DN160 PN6.3 SDR26 PE100 VENT PIPE C/W FACTORY FITTED PUDDLE FLANGE	1
13	DN100 PVC-U VENT PIPE	1
14	SS INDUCT VENT COVER	1
15	DN125 MECHANICAL CONNECTOR	1
16	DN15 BALL VALVE, BRASS BODY, BALL CERTIFIED TO WATER MARK CIM 11CR	2
17	DIA 100 PRESSURE GAUGE	2
18	DN100 KAMLOK FEMALE	1
19	DN100 DWV DISCONNECTOR TRAP WITH FLAP VALVE	2
20	DN100 ADJUSTABLE PIPE SUPPORT (FLANGE MOUNTED)	5
21	DN100 SS WALL MOUNTED PIPE SUPPORT	1
22	DI VALVE COVER	2
23	RC WET WELL CHAMBER (PRECAST OR CAST IN SITU)	1
24	RC WET WELL TOP SLAB (PRECAST OR CAST IN SITU)	1
25	RC VALVE PIT CHAMBER (PRECAST OR CAST IN SITU)	1
26	WEBFORGE HANDRAILS (NOTE 2)	1
27	WEBFORGE SELF CLOSING GATE 750 C/O (NOTE 2)	1
28	CONCRETE THRUST BLOCK (REFER SD-5003)	2
29	SS VALVE SPINDLE EXTENSION	4
30	SS VALVE SPINDLE EXTENSION BRACKET	5
31	DN100 PVC-U DRAIN PIPE	2
32	DN100 SCHED 40S 316 SS PIPE	6
33	DN100 SCHED 40S 316 SS PIPE C/W FACTORY FITTED PUDDLE FLANGE	8
34	DN100 SCHED 40S 316 SS PIPE C/W FACTORY FITTED PUDDLE FLANGE AND FLANGED TEE	1
35	DN100 SCHED 40S 316 SS PIPE WITH FLANGED TEE	1
36	DBI SALA 'FLUSH MOUNT' DAVIT SLEEVE, CAST IN	1
37	LEVEL SENSOR, RADAR OR ULTRASONIC (NOTE 3)	1

NOTES:

1. DIM "C" EQUALS DN + 150 AND SHALL BE NO LESS THAN 300 UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE ICON WATER PRINCIPAL ENGINEER.

2. THE DETAILS RELATING TO ACCESS/EGRESS AND HEIGHT SAFETY AS DEPICTED ON THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE REQUIREMENTS DETAILED IN ICON WATER SPECIFICATIONS STD-SPE-G-008 AND G-009. THE DESIGNER SHALL PRODUCE PROJECT SPECIFIC (ISSUED FOR CONSTRUCTION) DESIGNS AS APPROPRIATE BASED ON THIS DRAWING AND THE REQUIREMENTS OF THE ABOVE-MENTIONED SPECIFICATIONS.

3. LEVEL SENSOR TO BE POSITIONED WHERE THERE ARE NO OBSTRUCTIONS BELOW THE SENSORS BEAM.

4. EXAMPLE DATA PROVIDED. THE DESIGNER SHALL MODIFY DETAILS TO MATCH THE SPECIFIC PROJECT.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	31/05/2018	M. Matusiak	K. Danenbergsons	C. Patrick

DAM		RES		SPS	X			
BWS		WAT		STP				
WTP		SEW	X					
WPS		REC						

ASSET AREA APPLICABILITY

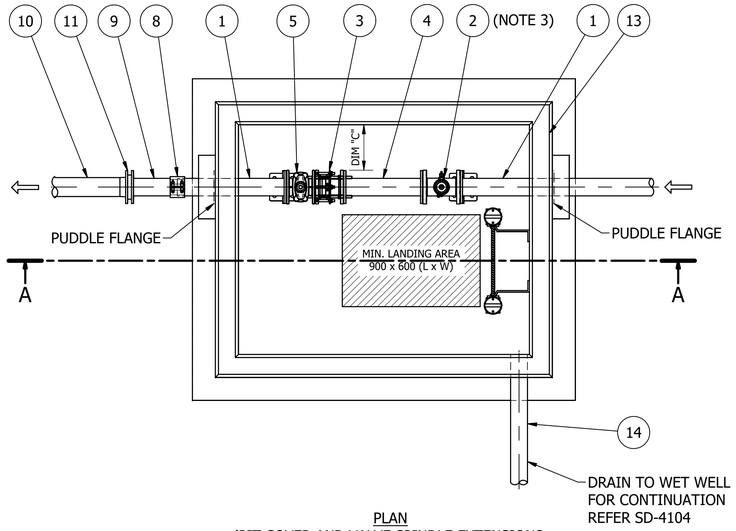
STANDARD DRAWING
SEWAGE PUMPING STATIONS
WET WELL AND VALVE PIT
GENERAL ARRANGEMENT AND DETAILS

DRAWING STATUS: Current

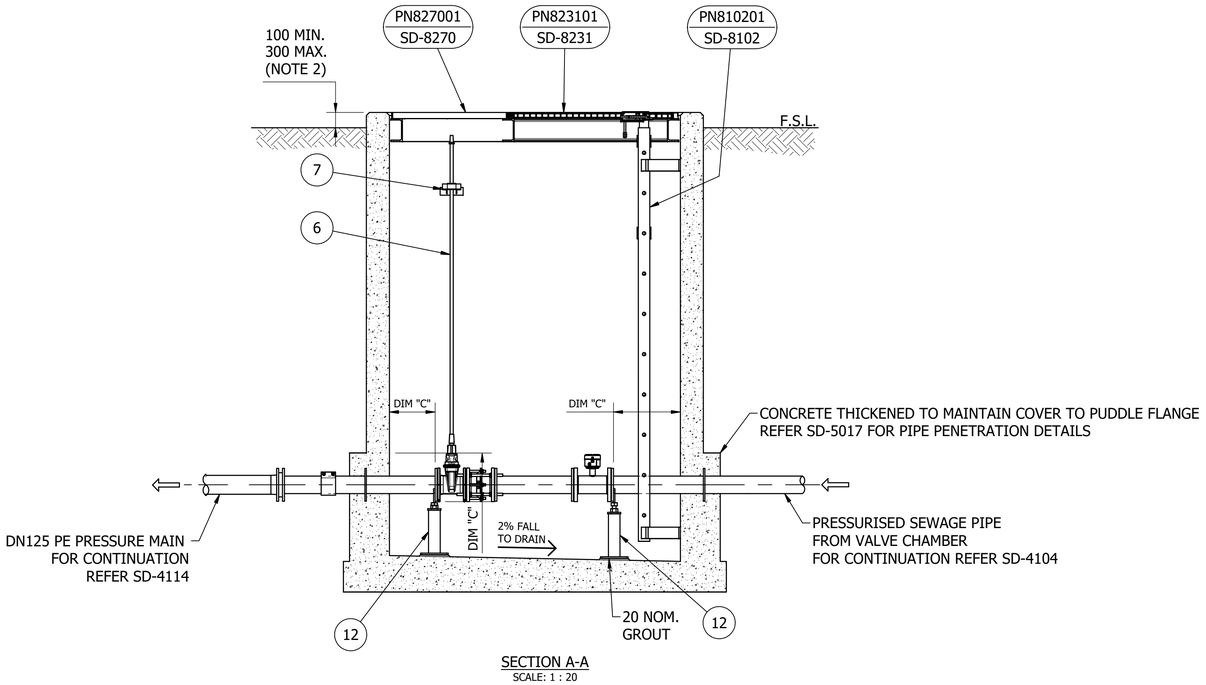
SD-4104-C

A1

ISSUE: A



PLAN
(PIT COVER AND VALVE SPINDLE EXTENSIONS
NOT SHOWN FOR CLARITY)
SCALE: 1 : 20



SECTION A-A
SCALE: 1 : 20

PARTS LIST

ITEM	DESCRIPTION	QTY
1	DN100 SCHED 40S 316 SS PIPE C/W FACTORY FITTED PUDDLE FLANGE	1
2	ELECTRO-MAGNETIC FLOWMETER, FULL BORE TYPE (NOTE 3)	1
3	DN100 DOUBLE FLANGE DISMANTLING JOINT	3
4	DN100 SCHED 40S 316 SS FL-FL SPOOL PIECE	1
5	DN100 GATE VALVE	1
6	SS VALVE SPINDLE EXTENSION	1
7	SS VALVE SPINDLE EXTENSION BRACKET	1
8	MECHANICAL COUPLING, AXIALLY RESTRAINED	1
9	DN100 - DN125 SCHED 40S 316 SS PIPE WITH CONCENTRIC REDUCER AND DN125 TABLE D FLANGE	1
10	DN125 PN16 PE100 SDR11 PRESSURE MAIN WITH PE STUB FLANGE	1
11	STAINLESS STEEL BACKING RING	1
12	DN100 ADJUSTABLE PIPE SUPPORT	2
13	CONCRETE VALVE PIT (PRECAST OR CAST IN SITU)	1
14	DN100 PVC-U DRAIN PIPE	1

NOTES:

1. DIM "C" EQUALS DN + 150 AND SHALL BE NO LESS THAN 300 UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE ICON WATER PRINCIPAL ENGINEER.

2. THE DETAILS RELATING TO ACCESS/EGRESS AND HEIGHT SAFETY AS DEPICTED ON THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE REQUIREMENTS DETAILED IN ICON WATER SPECIFICATIONS STD-SPE-G-008 AND G-009. THE DESIGNER SHALL PRODUCE PROJECT SPECIFIC (ISSUED FOR CONSTRUCTION) DESIGNS AS APPROPRIATE BASED ON THIS DRAWING AND THE REQUIREMENTS OF THE ABOVE-MENTIONED SPECIFICATIONS.

3. FLOWMETER TO HAVE A MINIMUM OF 5D OF STRAIGHT PIPE UPSTREAM AND 3D OF STRAIGHT PIPE DOWNSTREAM (FREE FROM DISMANTLING JOINTS AND OTHER FITTINGS) WHERE "D" EQUALS THE NOMINAL DIAMETER OF THE PIPE.

4. EXAMPLE DATA PROVIDED. THE DESIGNER SHALL MODIFY DETAILS TO MATCH THE SPECIFIC PROJECT.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	14/06/2018	M. Matusiak	K. Danenbergsons	C. Patrick

DAM		RES		SPS	X	ASSET AREA APPLICABILITY		
BWS		WAT		STP				
WTP		SEW	X					
WPS		REC						

icon WATER

STANDARD DRAWING
SEWAGE PUMPING STATIONS
FLOWMETER PIT
GENERAL ARRANGEMENT AND DETAILS

DRAWING STATUS: Current

SD-4106-C

A1

ISSUE: A

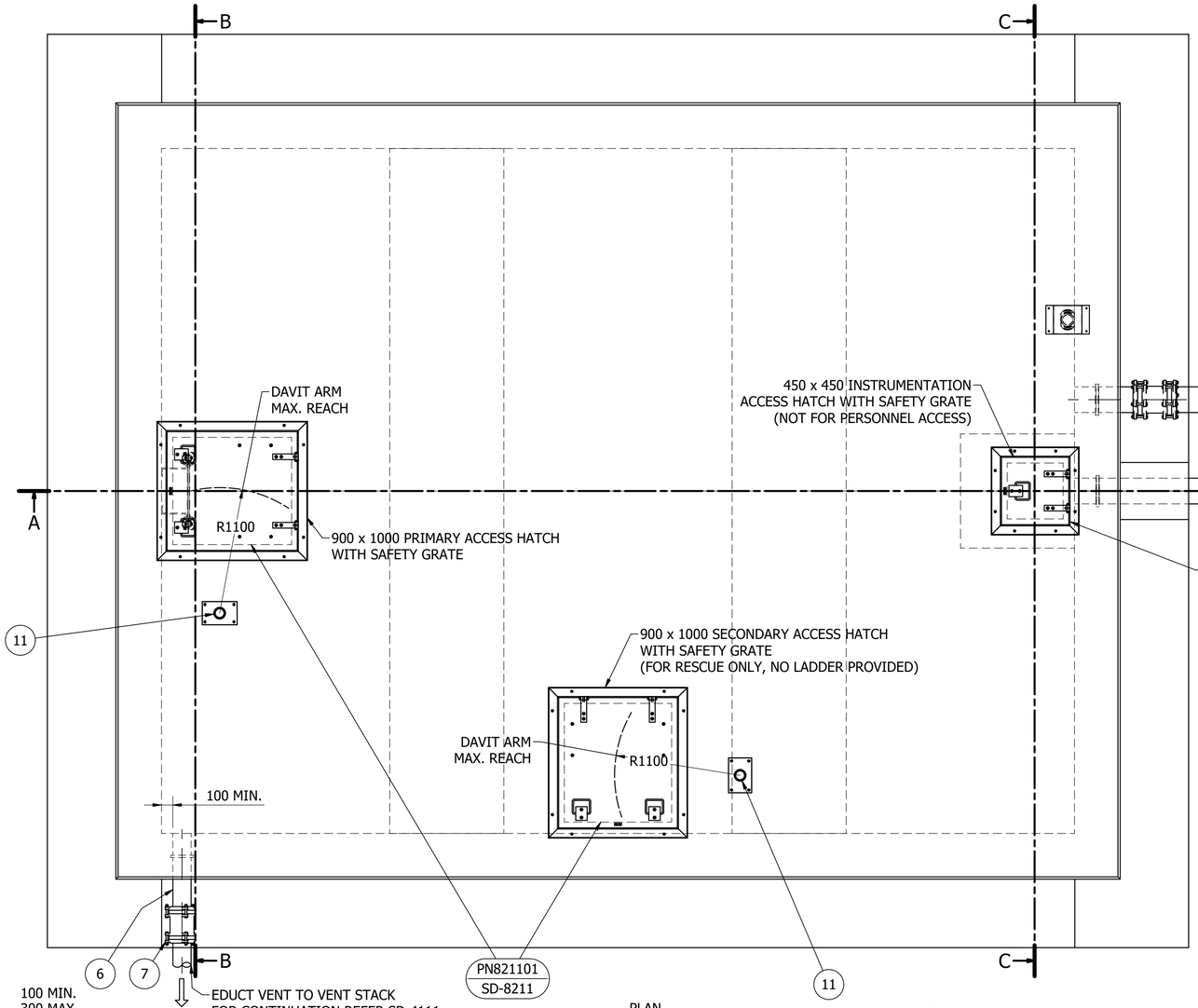
PARTS LIST		
ITEM	DESCRIPTION	QTY
1	REINFORCED CONCRETE EMERGENCY STORAGE TANK STRUCTURE	1
2	REINFORCED CONCRETE EMERGENCY STORAGE TANK ROOF SLAB	1
3	DN225 PN6.3 SDR11 PE100 FILL/DRAIN PIPE C/W FACTORY FITTED PUDDLE FLANGE	1
4	DN225 PN6.3 SDR11 PE100 OVERFLOW PIPE C/W FACTORY FITTED PUDDLE FLANGE	1
5	DN200 MECHANICAL CONNECTOR	2
6	DN160 PN6.3 SDR11 PE100 EDUCT VENT PIPE C/W FACTORY FITTED PUDDLE FLANGE	1
7	DN160 MECHANICAL CONNECTOR	1
8	DN100 PVC-U INDUCT VENT PIPE	1
9	DN100 PVC AIR ADMITTANCE VENT	1
10	SS INDUCT VENT COVER	1
11	DBI SALA 'FLUSH MOUNT' DAVIT SLEEVE, CAST IN	2
12	DN100 SS PIPE SADDLE	3

NOTES:

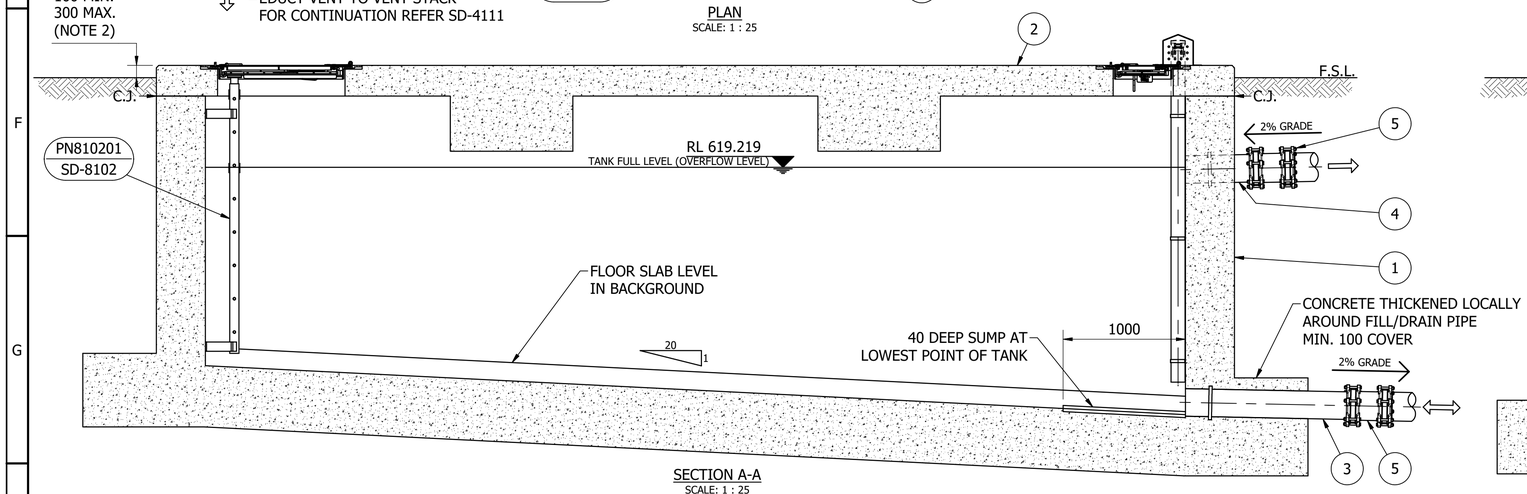
1. THE EMERGENCY STORAGE TANK STRUCTURE SHOWN IS INDICATIVE ONLY. FULL STRUCTURAL DESIGN OF THE TANK AND ROOF SLAB MUST BE PROVIDED TO SPECIFIC PROJECT/SITE REQUIREMENTS.

2. THE DETAILS RELATING TO ACCESS/EGRESS AND HEIGHT SAFETY AS DEPICTED ON THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE REQUIREMENTS DETAILED IN ICON WATER SPECIFICATIONS STD-SPE-G-008 AND G-009. THE DESIGNER SHALL PRODUCE PROJECT SPECIFIC (ISSUED FOR CONSTRUCTION) DESIGNS AS APPROPRIATE BASED ON THIS DRAWING AND THE REQUIREMENTS OF THE ABOVE-MENTIONED SPECIFICATIONS.

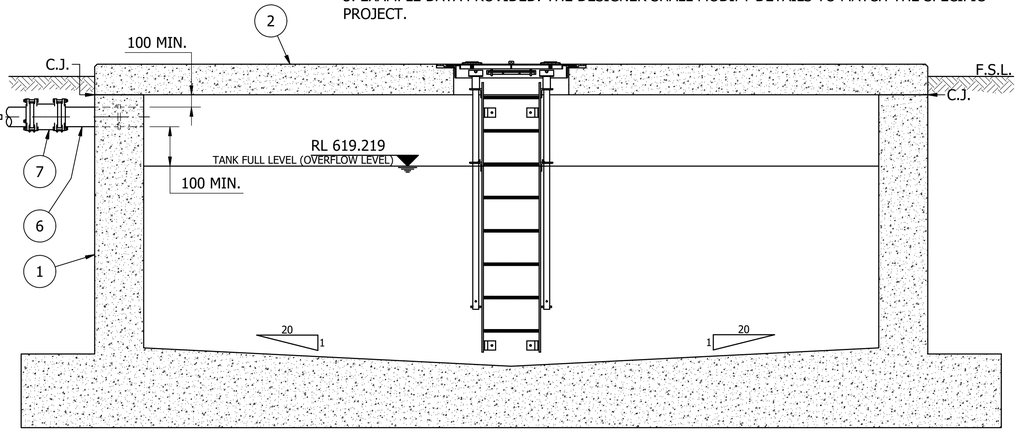
3. EXAMPLE DATA PROVIDED. THE DESIGNER SHALL MODIFY DETAILS TO MATCH THE SPECIFIC PROJECT.



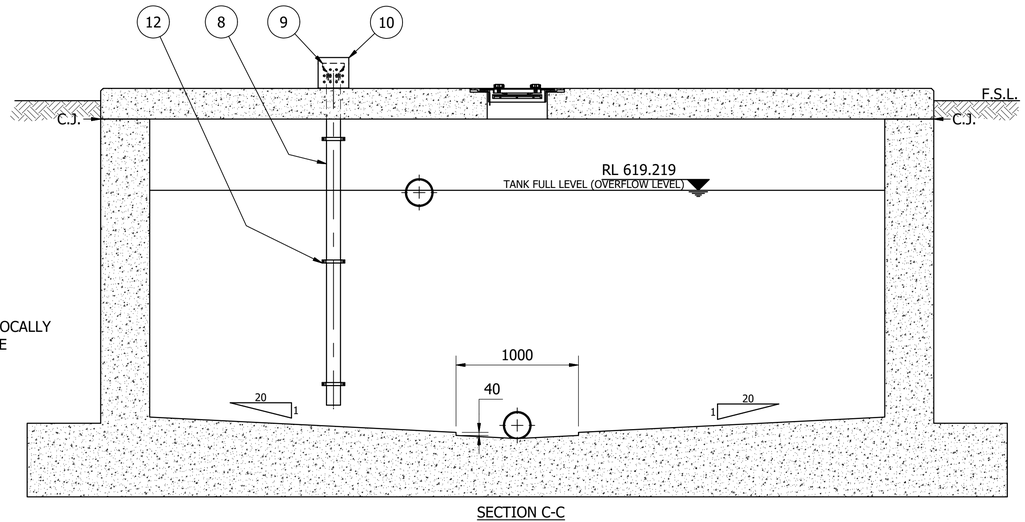
PLAN
SCALE: 1 : 25



SECTION A-A
SCALE: 1 : 25



SECTION B-B
SCALE: 1 : 25



SECTION C-C
SCALE: 1 : 25

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	15/06/2018	M. Matusiak	K. Danenbergsons	C. Patrick

DAM		RES			SPS	X
BWS		WAT			STP	
WTP		SEW	X			
WPS		REC				

ASSET AREA APPLICABILITY

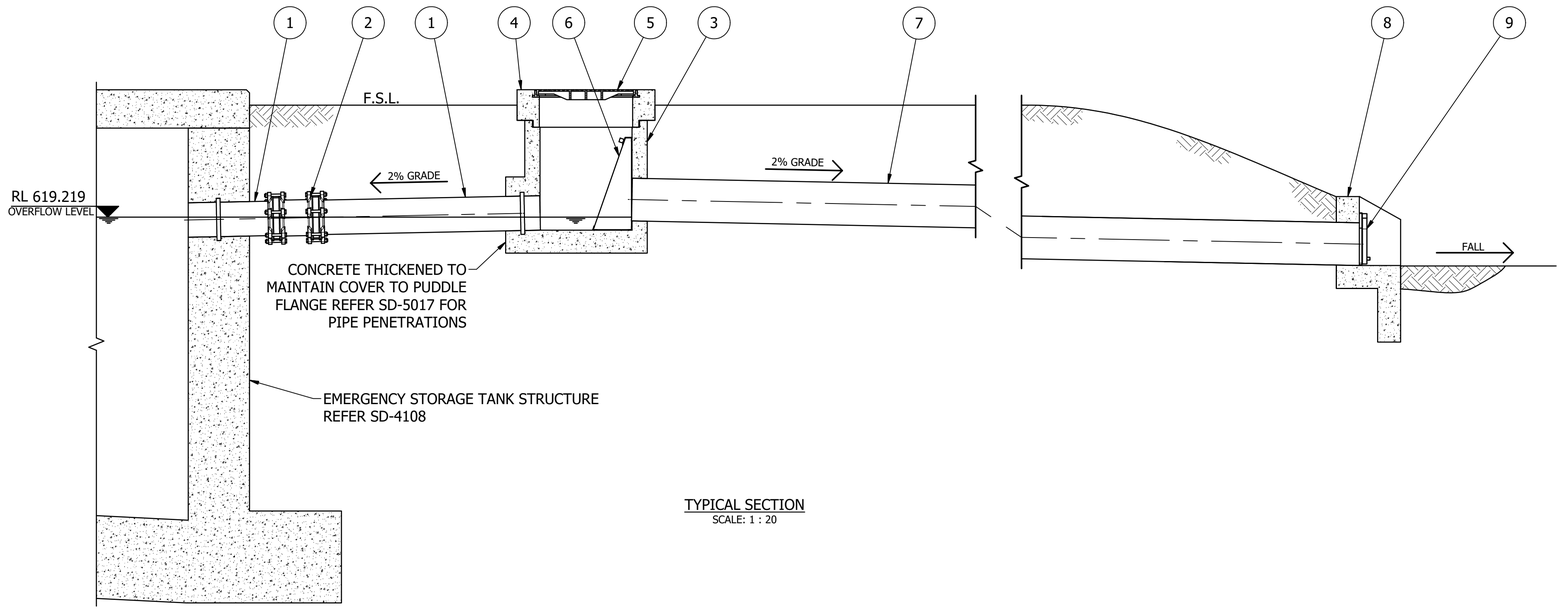
STANDARD DRAWING
SEWAGE PUMPING STATIONS
EMERGENCY STORAGE TANK
GENERAL ARRANGEMENT AND DETAILS

DRAWING STATUS: Current

SD-4108-C

A1

ISSUE: A



TYPICAL SECTION
SCALE: 1 : 20

PARTS LIST

ITEM	DESCRIPTION	QTY
1	DN225 PN6.3 SDR11 PE100 OVERFLOW PIPE C/W FACTORY FITTED PUDDLE FLANGE	2
2	DN200 MECHANICAL CONNECTOR	1
3	REINFORCED CONCRETE PIT (PRECAST OR CAST IN SITU)	1
4	CONCRETE SURROUND FOR CAST IRON COVER	1
5	CLASS D CAST IRON COVER (GAS-TIGHT)	1
6	STAINLESS STEEL TRASH RACK	1
7	DN225 CLASS 2 RCP OUTFALL PIPE	1
8	REINFORCED CONCRETE HEADWALL (TO TCCS REQUIREMENTS)	1
9	DN225 PE FLAP VALVE	1
231		1
232		1

NOTES:

1. EXAMPLE DATA PROVIDED. THE DESIGNER SHALL MODIFY DETAILS TO MATCH THE SPECIFIC PROJECT.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	22/06/2018	M. Matusiak	K. Danenbergsons	C. Patrick

DAM		RES		SPS	X	
BWS		WAT		STP		
WTP		SEW	X			
WPS		REC				

ASSET AREA APPLICABILITY

STANDARD DRAWING
SEWAGE PUMPING STATIONS
EMERGENCY RELIEF STRUCTURES
SECTION AND DETAILS

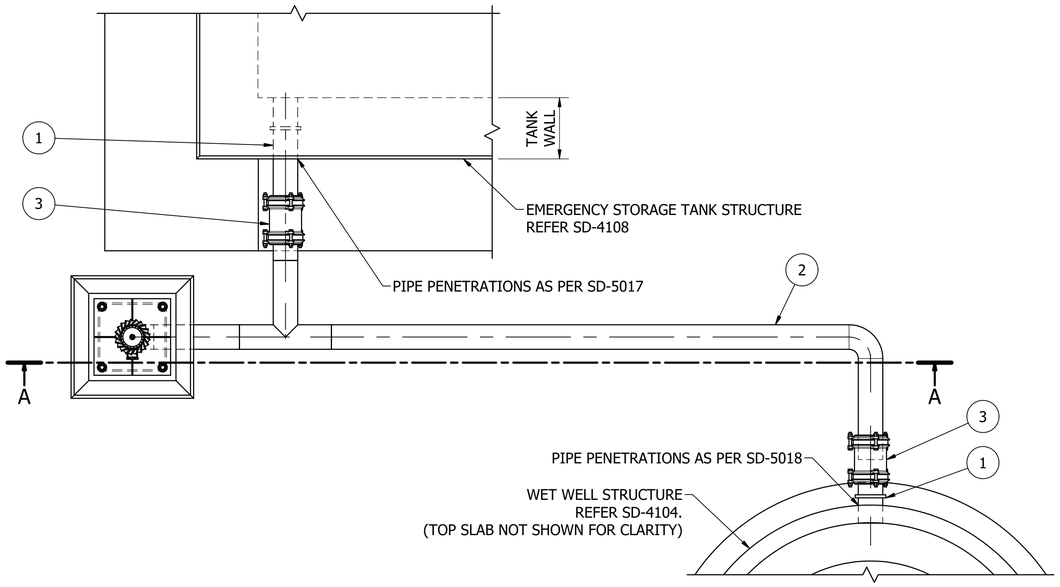
DRAWING STATUS
Current

SD-4110-C

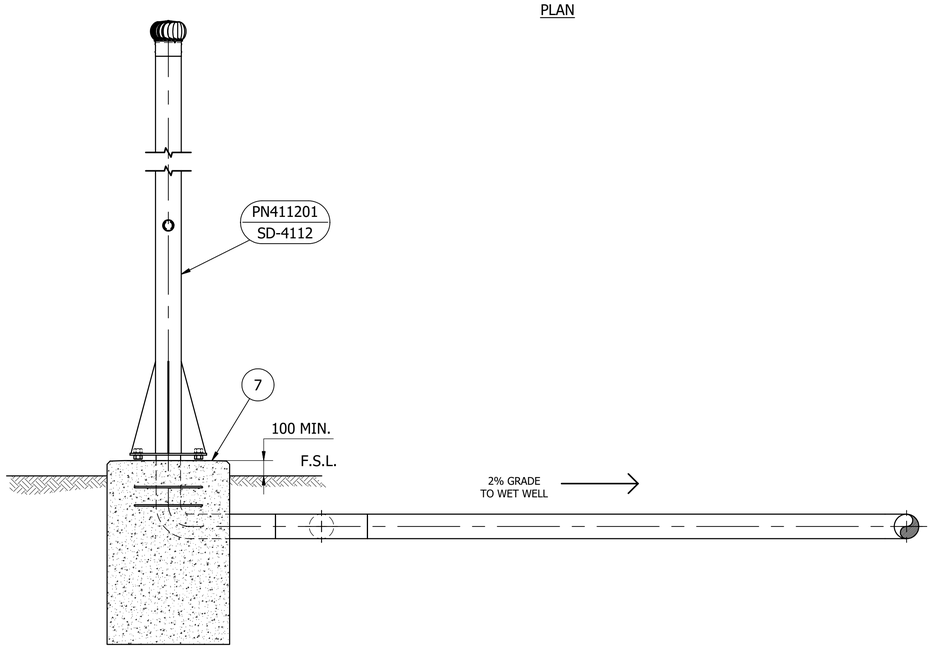
A1

ISSUE A

PARTS LIST		
ITEM	DESCRIPTION	QTY
1	DN160 PN6.3 SDR26 PE100 VENT PIPE C/W FACTORY FITTED PUDDLE FLANGE	1
2	DN160 PN6.3 SDR26 PE100 VENT PIPE WITH BUTT WELDED FITTINGS	1
3	DN160 MECHANICAL COUPLING	2
4	DN100 PVC-U INDUCT VENT PIPE	1
5	DN100 PVC AIR ADMITTANCE VENT	2
6	DN100 PIPE SADDLE	6
7	VENT STACK CONCRETE FOOTING	1
222		1
223		1



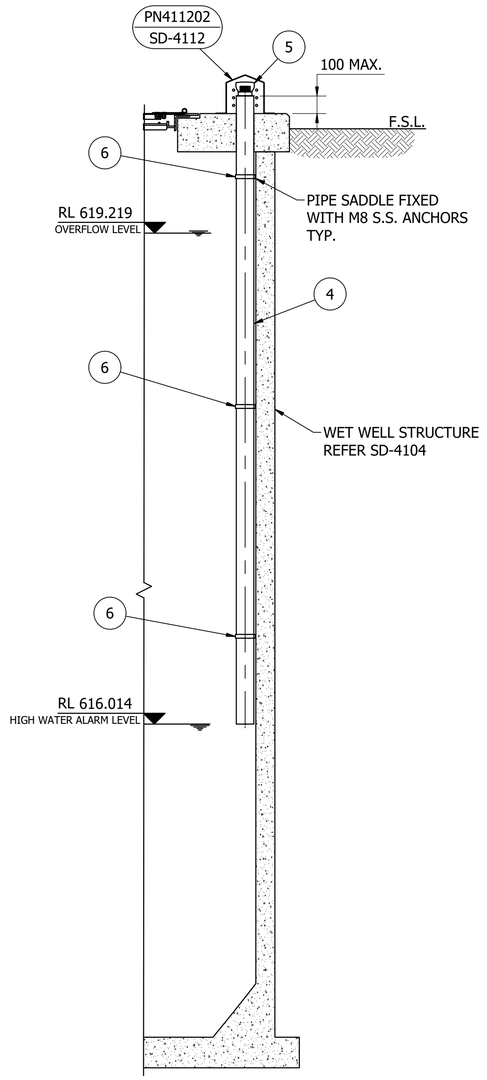
PLAN



SECTION A-A

EDUCT VENTILATION SYSTEM

SCALE: 1 : 20



SECTION

WET WELL - INDUCT VENT

SCALE: 1 : 20

SECTION

INDUCT VENT - EMERGENCY STORAGE TANK

SCALE: 1 : 20

NOTES:

1. INDUCT VENTS TO BE POSITIONED AT THE MAXIMUM PRACTICAL DISTANCE FROM THE EDUCT OUTLET OF THE INDIVIDUAL STRUCTURE TO MAXIMISE AIR CIRCULATION THROUGHOUT THE CHAMBER. COMPLEX CHAMBERS MAY NEED SPECIFIC VENTILATION DESIGN TO PREVENT STALE AIR POCKETS.

2. EXAMPLE DATA PROVIDED. THE DESIGNER SHALL MODIFY DETAILS TO MATCH THE SPECIFIC PROJECT.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	21/06/2018	M. Matusiak	K. Danenbergsons	C. Patrick

ASSET AREA APPLICABILITY						
DAM		RES		SPS	X	
BWS		WAT		STP		
WTP		SEW	X			
WPS		REC				

icon WATER

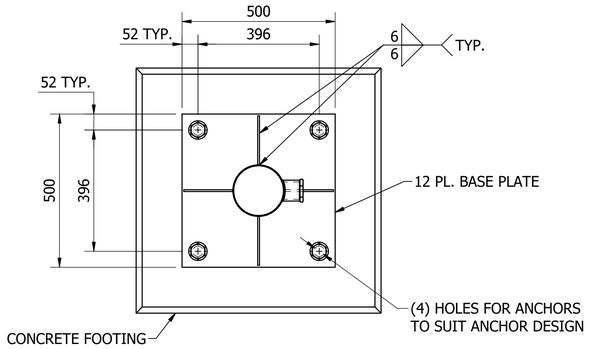
STANDARD DRAWING
SEWAGE PUMPING STATIONS
VENTILATION SYSTEM
GENERAL ARRANGEMENT AND DETAILS

DRAWING STATUS: Current

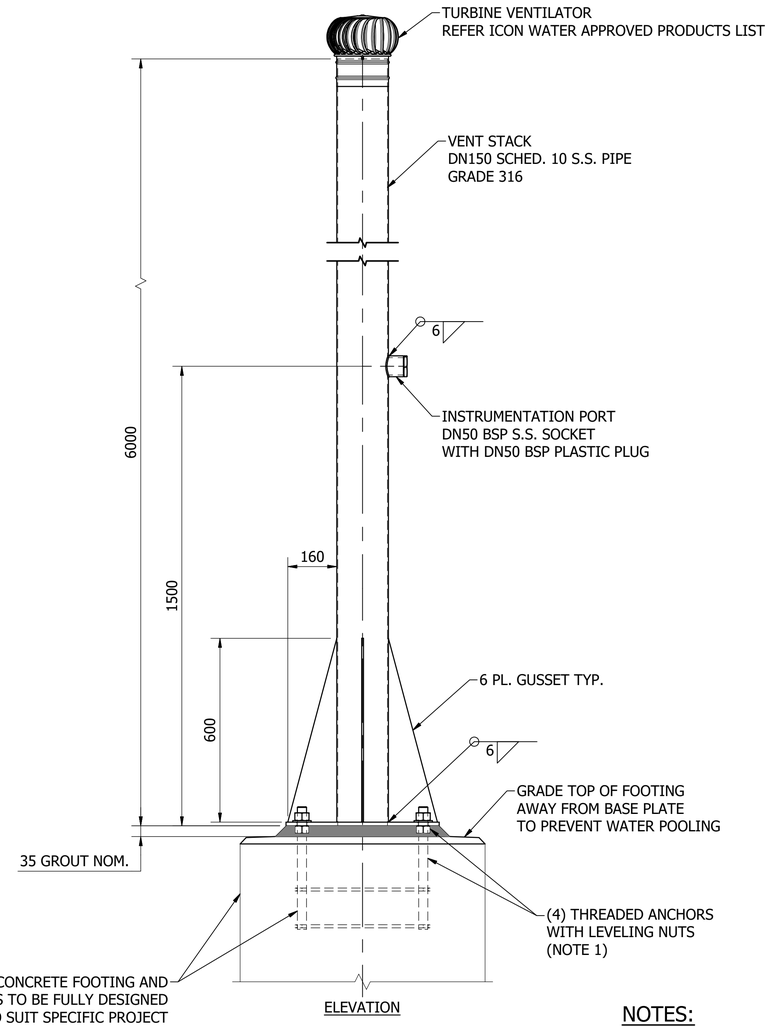
SD-4111-C

A1

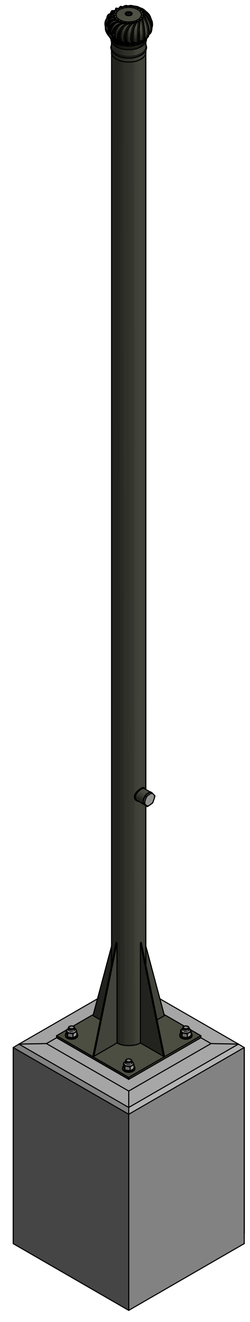
ISSUE: A



PLAN
(TURBINE VENTILATOR NOT SHOWN FOR CLARITY)



ELEVATION



ISOMETRIC VIEW

EDUCT VENT STACK

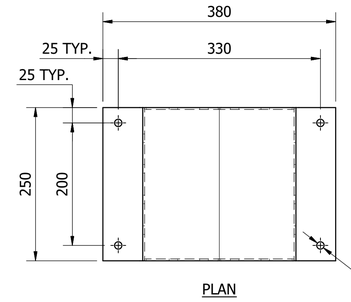
SCALE: 1 : 10

MATERIAL: STAINLESS STEEL
COATING: PAINTED (DULUX "AU_SD14048")
FINISH COLOUR: G66 ENVIRONMENT GREEN (AS 2700)
MASS: 120 kg

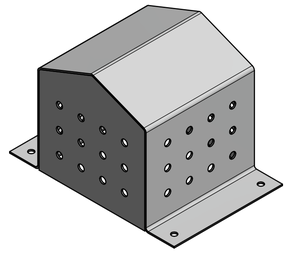
NOTES:

1. NYLON ISOLATION WASHERS TO BE INSTALLED BETWEEN DISSIMILAR MATERIALS.

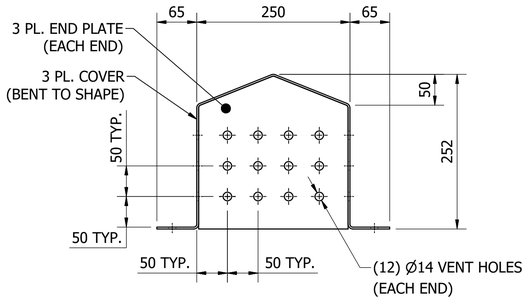
2. VENT STACK DESIGNED FOR A DESIGN WIND SPEED OF 45 m/s. FOR HIGHER DESIGN WIND SPEEDS, THE DESIGN IS NOT APPLICABLE.



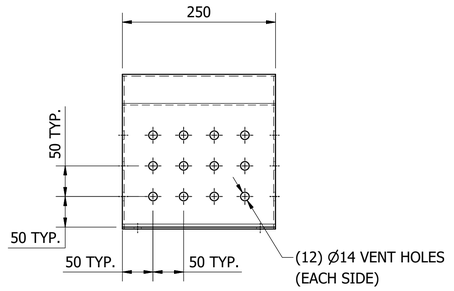
PLAN



ISOMETRIC VIEW



FRONT VIEW



SIDE VIEW

INDUCT VENT COVER

SCALE: 1 : 5

MATERIAL: ALUMINIUM 6106-T6
COATING: N/A
FINISH COLOUR: N/A
MASS: 2.5 kg

ITEM	AMDT.
PN411201	

ITEM	AMDT.
PN411202	

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	21/06/2018	M. Matusiak	K. Danenbergsons	C. Patrick

ICON WATER ACKNOWLEDGES HUNTER WATER CORPORATION IN THE DEVELOPMENT OF PARTS OF THIS DRAWING

DAM		RES		SPS	X			
BWS		WAT		STP				
WTP		SEW	X					
WPS		REC						

ASSET AREA APPLICABILITY

icon WATER

STANDARD DRAWING
SEWAGE PUMPING STATIONS
VENTILATION
EDUCT VENT STACK AND INDUCT VENT COVER
DETAILS

DRAWING STATUS: Current

SD-4112-D

A1

ISSUE: A

PUMP STATION & PRESSURE MAIN PERFORMANCE/SYSTEM CURVES

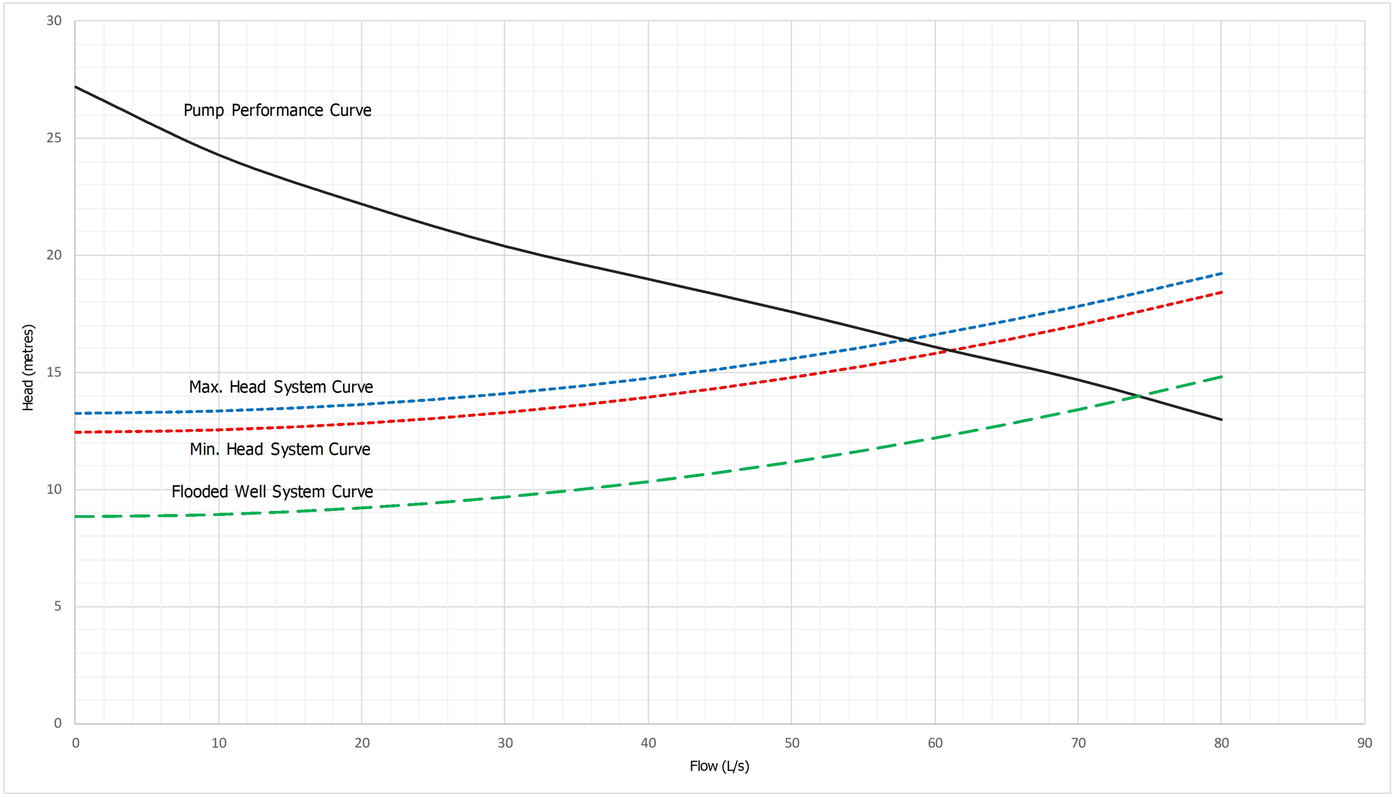


TABLE 1 - DESIGN DATA

FLOW ESTIMATION	
ADWF:	5.2 L/s
PDWF:	14.0 L/s
PWWF:	52.6 L/s
WET WELL	
PUMP ARRANGEMENT:	DUTY/STANDBY
PUMP MAKE:	ACME BRAND X
PUMP MODEL:	ABC1234
PUMP IMPELLER:	DIA. 261 mm
RATED POWER:	12.5 kW
OPERATING POINT - NORMAL OPERATION:	59.5 L/s @ 16.5 m
OPERATING POINT - WET WELL FLOODED:	74.2 L/s @ 14.0 m
WET WELL CONTROL VOLUME:	7.33 m^3
MAX. PUMP STARTS PER HOUR:	7.4
CUT-IN/CUT-OUT TIME AT ADWF:	134 s
CUT-IN/CUT-OUT TIME AT PDWF:	159 s
VALVE CHAMBER	
PIPING:	DN200 PN35 DICL
PIPE INTERNAL DIAMETER:	216 mm
DESIGN SPECIFIC ROUGHNESS:	0.30 mm
VELOCITY (NORMAL OPERATION):	1.55 m/s @ 60 L/s
VELOCITY (FLOODED OPERATION):	1.92 m/s @ 74.2 L/s
CONFIGURATION:	REF: DRAWING LMXXX-9999
PRESSURE MAIN	
PIPE:	DN315 PN16 SDR11 PE100
PIPE INTERNAL DIAMETER:	256 mm
LENGTH TO DISCHARGE MAINTENANCE HOLE:	490 m
DESIGN SPECIFIC ROUGHNESS:	0.60 mm
VELOCITY (NORMAL OPERATION):	1.17 m/s @ 60 L/s
VELOCITY (FLOODED OPERATION):	1.44 m/s @ 74.2 L/s
CONFIGURATION:	REF: DRAWING LMXXX-9999

NOTES

1. DESIGN SPECIFIC ROUGHNESS VALUES BASED ON "WALLINGFORD & BARR".
2. SYSTEM CURVES BASED ON COLEBROOK-WHITE AND DARCY-WEISBACH EQUATIONS.

NOTES:

1. EXAMPLE DATA AND NOTES PROVIDED. DESIGNER SHALL MODIFY DETAILS TO MATCH THE SPECIFIC PROJECT.
2. MULTI-STAGE DEVELOPMENTS WILL REQUIRE MULTIPLE PERFORMANCE CURVES AND DESIGN DATA SETS.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	11/07/2018	S. Essery	K. Danenbergsons	C. Patrick

DAM		RES		SPS	X
BWS		WAT		STP	
WTP		SEW	X		
WPS		REC			

ASSET AREA APPLICABILITY

STANDARD DRAWING
SEWAGE PUMPING STATIONS
TYPICAL PUMP & PRESSURE MAIN CURVES

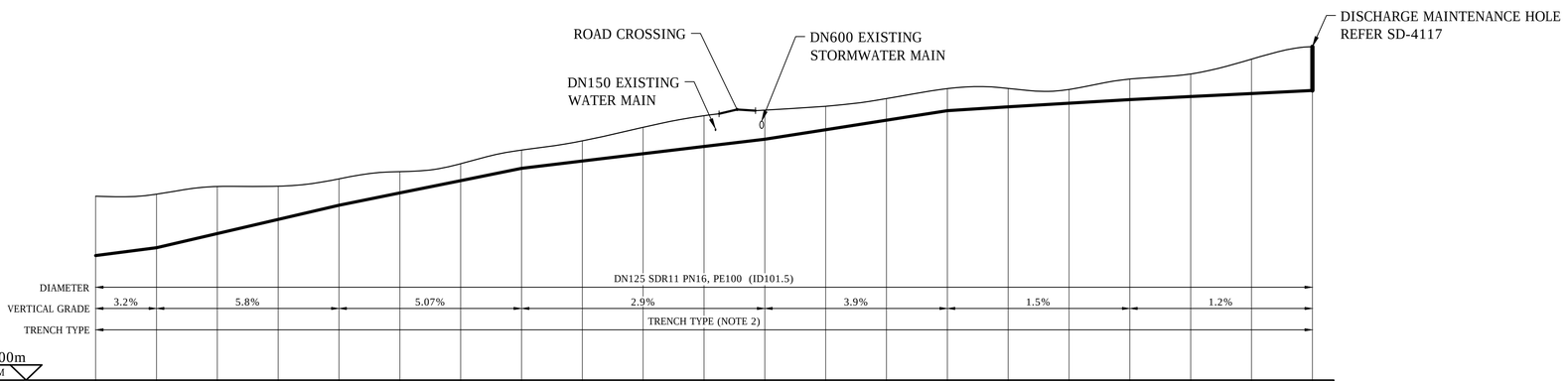
DRAWING STATUS: Current

SD-4113-C

A1

ISSUE: A

Date Plotted: 2/07/2019 Plot Style: Water.ctb Plotted by: Essery, Scott CADD File Name:C:\Temp\BC-WorkSpace\S_ESSERY\M-Seappsprd37,D-DrwWaterdbP\Projects\CX10999\Standard_Drawing\4100\SD_4113_C.dwg



RL 610.00m
DATUM

NATURAL SURFACE LEVEL	620.000	620.084	620.403	620.412	620.715	621.011	621.337	621.898	622.278	622.835	623.312	623.546	623.701	624.014	624.426	624.435	624.392	624.819	625.029	625.650	626.147
NATURAL SURFACE LEVEL	620.000	620.084	620.403	620.412	620.715	621.011	621.337	621.898	622.278	622.835	623.312	623.546	623.701	624.014	624.426	624.435	624.392	624.819	625.029	625.650	626.147
DEPTH TO INVERT	2.438	2.203	1.939	1.365	1.085	0.875	0.695	0.750	0.829	1.086	1.265	1.200	0.963	0.885	0.905	0.759	0.569	0.844	0.930	1.427	1.800
PRESSURE MAIN INVERT LEVEL	617.562	617.881	618.464	619.047	619.63	620.136	620.642	621.148	621.449	621.749	622.047	622.346	622.738	623.129	623.521	623.676	623.823	623.975	624.099	624.223	624.347
CHAINAGE	0.00	10.00	20.00	30.00	40.00	50.00	60.00	70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00	150.00	160.00	170.00	180.00	190.00	200.00

LONGITUDINAL SECTION - TYPICAL SEWER PRESSURE MAIN

SCALE: HOR - 1:500, VERT - 1:100

NOTES:

1. EXAMPLE DATA PROVIDED. DESIGNER SHALL MODIFY DETAILS TO MATCH THE SPECIFIC PROJECT. INCLUDING SPECIFIC DETAILS FOR SPECIAL FEATURES SUCH AS ROAD, RAIL AND RIVER CROSSINGS ETC.
2. TRENCH, EMBEDMENT AND BACKFILL TO BE DESIGNED TO MEET PROJECT AND SITE SPECIFIC REQUIREMENTS. REFER SD-2100 SERIES DRAWINGS FOR GUIDANCE

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	25/05/2018	M. Matusiak	K. Danenbergsons	C. Patrick

DAM		RES		SPS	X			
BWS		WAT		STP				
WTP		SEW	X					
WPS		REC						

ASSET AREA APPLICABILITY

STANDARD DRAWING
SEWAGE PRESSURE MAIN
TYPICAL LONGITUDINAL SECTION

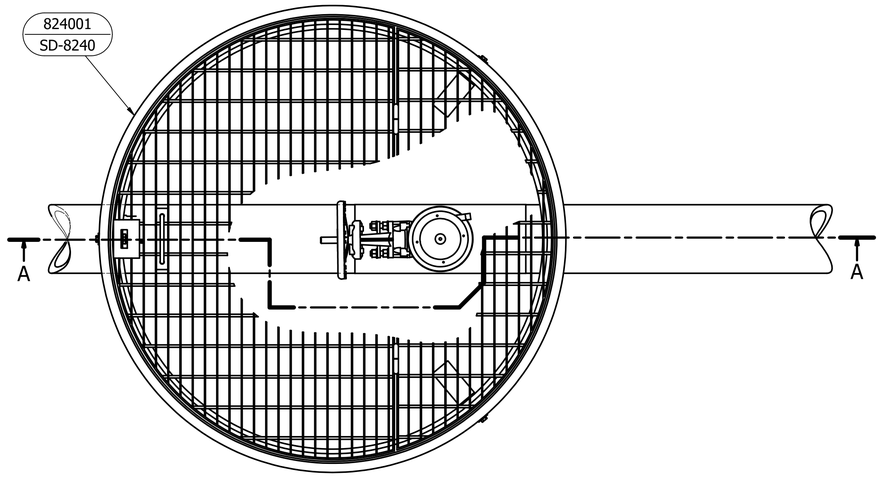
DRAWING STATUS: Current

SD-4114-C

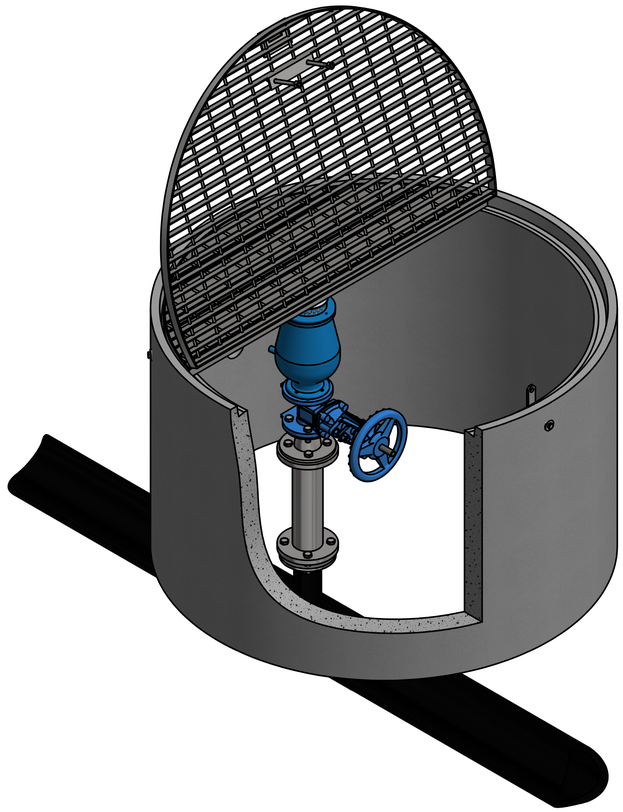
A1

ISSUE: A

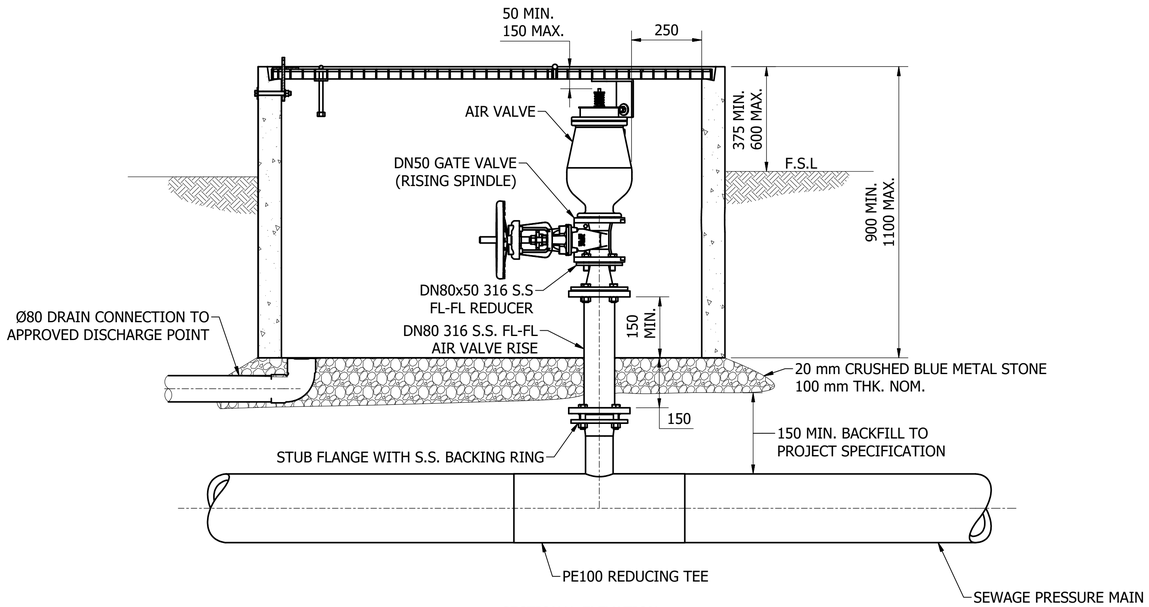
Date Plotted: 2/07/2019 Plot Style: Water.ctb Plotted by: Essery, Scott CADD File Name:C:\Temp\BC-WorkSpace\S_ESSERY\M-Seappspd37,D-DrwWaterdbP\Projects\CX10999\Standard_Drawing\4100\SD_4114_C.dwg



PLAN VIEW



ISOMETRIC VIEW



SECTIONAL ELEVATION

AIR VALVE INSTALLATION

SCALE: N.T.S

NOTES

1. CHAMBER MUST BE SELF DRAINING. DRAIN MUST BE SITUATED BELOW THE AIR VALVE INLET/OUTLET NOZZLE TO AVOID THE AIR VALVE BEING MADE INOPERABLE DUE TO FLOODING.

2. CHAMBER TO BE LOCATED A MINIMUM CLEARANCE OF 6.0 m AWAY FROM ROADWAYS. SEEK ADVICE FROM THE ICON WATER PRINCIPAL ENGINEER IF THIS CLEARANCE IS NOT ACHIEVABLE.

3. THE DESIGNER SHALL FAMILIARISE THEMSELVES WITH THE REQUIREMENTS OF ICON WATER SPECIFICATIONS STD-SPE-G-008 AND 009 PRIOR TO DESIGNING ANY STRUCTURE WHICH REQUIRES HEIGHT SAFETY TO BE TAKEN INTO CONSIDERATION.

4. INDICATIVE SEWAGE PRESSURE MAIN DETAILS SHOW AS PE100 POLYETHYLENE. THE DESIGN OF THE AIR VALVE INSTALLATION IS APPLICABLE FOR OTHER SEWAGE PRESSURE MAIN MATERIALS OF CONSTRUCTION WITH THE REDUCING TEE AND RISER TO BE SUBSTITUTED AS APPROPRIATE.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	19/11/2018	S. Essery	K. Danenbergsons	C. Patrick

DAM		RES		SPS	X				
BWS		WAT		STP					
WTP		SEW	X						
WPS		REC							

ASSET AREA APPLICABILITY

icon WATER

STANDARD DRAWING
SEWAGE PRESSURE MAIN
AIR VALVE
ARRANGEMENT AND DETAILS

DRAWING STATUS: Current

SD-4115-D

A1

ISSUE: A

NOTES:

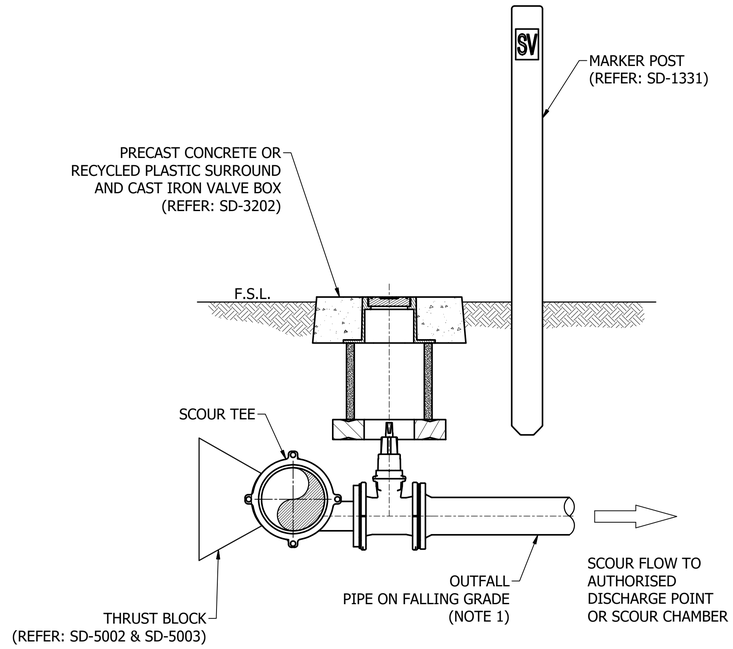
1. DEPTH OF OUTLET PIPE IS SITE/LOCATION DEPENDENT.

2. ENSURE SCOUR CONNECTION IS WITHIN 50 METRES OF PUMP SCOUR CHAMBER.

3. FOR CHAMBER DEPTHS GREATER THAN 3.0 m REFER TO THE ICON WATER PRINCIPAL ENGINEER FOR GUIDANCE.

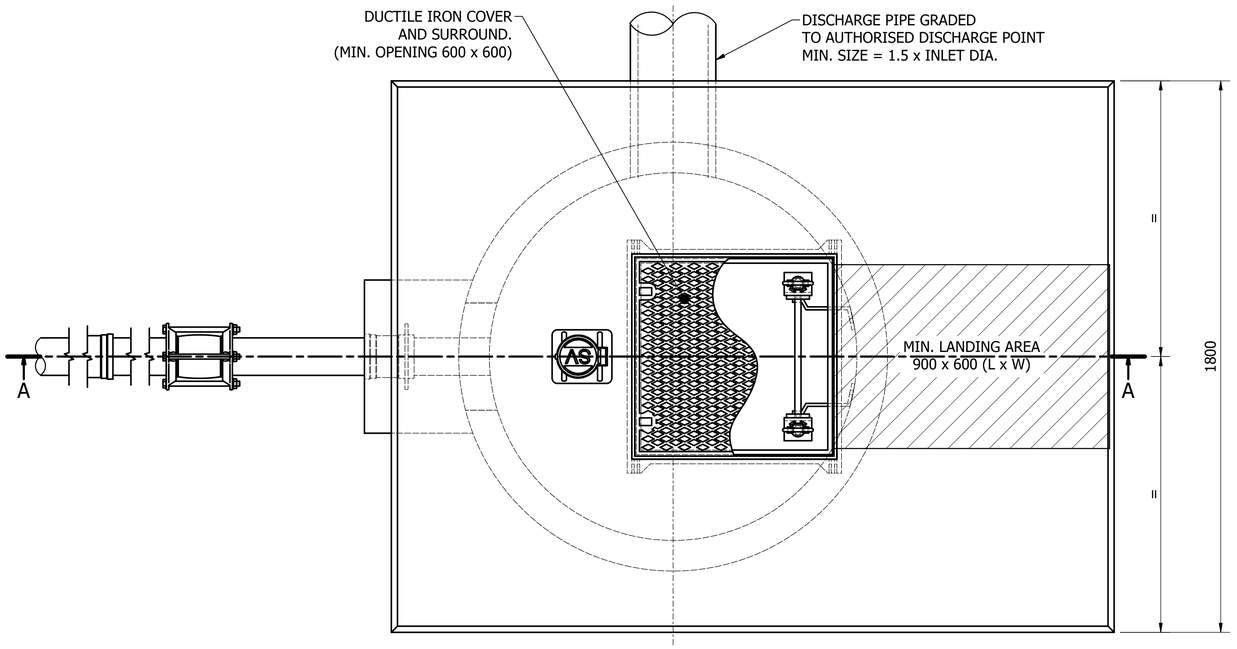
4. ALL PIPE PENETRATIONS THROUGH THE CHAMBER WALL ARE TO BE SEALED WITH AN APPROVED WATERSTOP (e.g. HYDROTITE) AND COMPLY WITH DRAWINGS SD-5017 AND SD-5018.

5. THRUST BLOCKS NOT REQUIRED FOR FULLY RESTRAINED (e.g. FLANGED) PIPE.



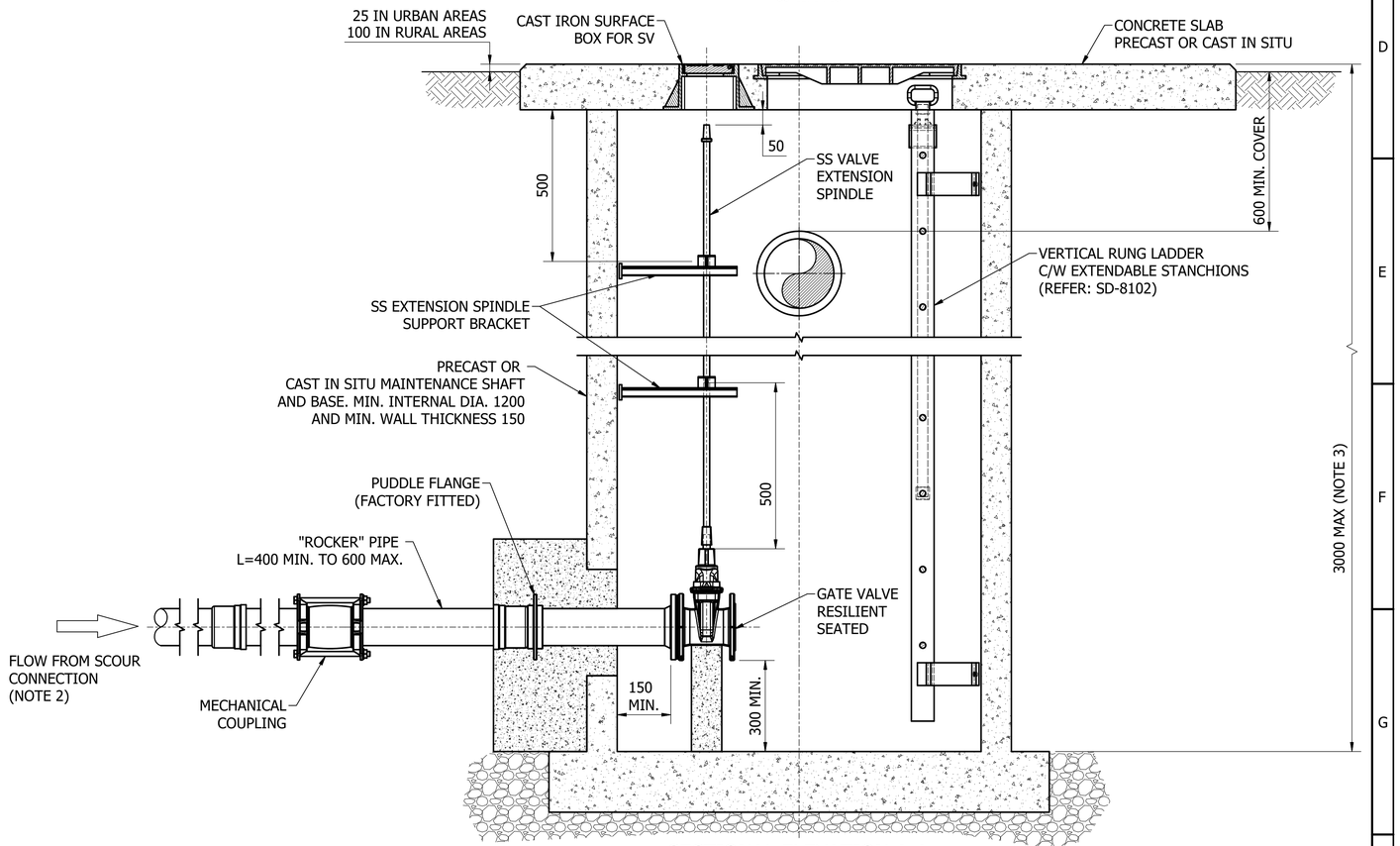
SCOUR CONNECTION

SCALE: 1 : 10



PUMP SCOUR CHAMBER

SCALE: 1 : 10



SECTIONAL ELEVATION A-A

SCALE: 1 : 10

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	27/06/2018	M. Matusiak	K. Danenbergsons	C. Patrick

DAM		RES		SPS	X			
BWS		WAT		STP				
WTP		SEW	X					
WPS		REC						

ASSET AREA APPLICABILITY

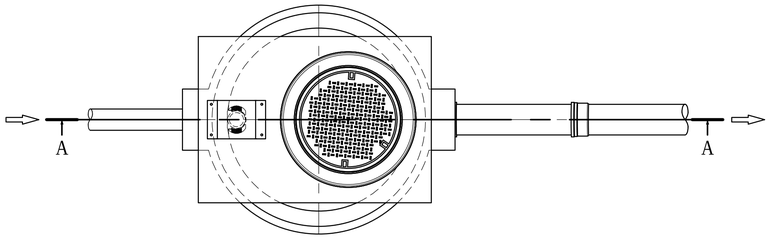
icon WATER

STANDARD DRAWING
SEWAGE PRESSURE MAIN
SCOUR INSTALLATIONS
GENERAL ARRANGEMENT, PLAN
SECTION AND DETAILS

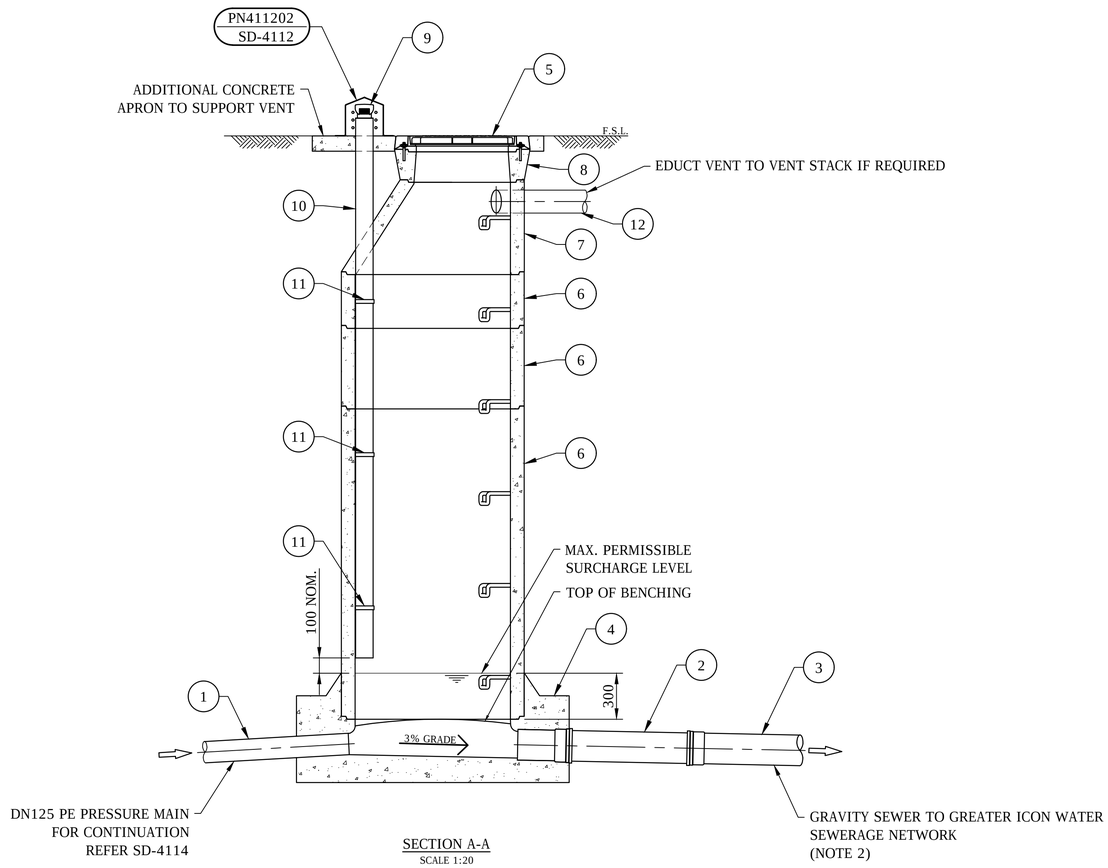
DRAWING STATUS: Current

SD-4116-C

ISSUE: A



PLAN



SECTION A-A
SCALE 1:20

PARTS LIST

ITEM	DESCRIPTION	QTY
1	DN125 PN16 PE100 SDR11 PRESSURE MAIN	1
2	ROCKER PIPE (NOTE 2)	1
3	SEWER MAIN (NOTE 2)	1
4	MAINTENANCE HOLE BASE, REFER SD-2201	1
5	CLASS B (OR CLASS D IF TRAFFICABLE) MAINTENANCE HOLE COVER AND FRAME, REFER SD-2204	1
6	SHAFT SECTION, REFER SD-2207	VARIES WITH DEPTH
7	STRAIGHT BACK TAPER, REFER SD-2207	1
8	MAKE-UP RING, REFER SD-2207	1
9	DN100 PVC-U AIR ADMITTANCE VENT	1
10	DN100 PVC-U VENT PIPE	1
11	DN100 SS PIPE SADDLE	3
12	DN150 PVC-U EDUCT VENT (IF REQUIRED)	1

NOTES:

1. FOR MAINTENANCE HOLE DETAILS INCLUDING PIPE CONNECTIONS REFER TO "SD-2200" SERIES DRAWINGS.
2. DOWNSTREAM SEWER TO BE SIZED TO PREVENT UPSTREAM SURCHARGE.
3. DISCHARGE MAINTENANCE HOLE CONCRETE TO BE PROVIDED WITH INTERNAL CORROSION PROTECTION, IN ACCORDANCE WITH WSA 201 AS AMENDED BY ICON WATER IN STD-SPE-G-005.
4. EXAMPLE DATA PROVIDED. THE DESIGNER SHALL MODIFY DETAILS TO MATCH THE SPECIFIC PROJECT.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	14/06/2018	S. Essery	K. Danenbergsons	C. Patrick

DAM		RES		SPS	X
BWS		WAT		STP	
WTP		SEW	X		
WPS		REC			

ASSET AREA APPLICABILITY

STANDARD DRAWING
SEWAGE PRESSURE MAINS
DISCHARGE MAINTENANCE HOLE
ARRANGEMENT AND DETAILS
MAINS DN375 AND SMALLER

DRAWING STATUS: Current

SD-4117-C

A1

ISSUE: A

Date Plotted: 2/07/2019 Plot Style: Water.ctb Plotted by: Essery, Scott CADD File Name:C:\Temp\BC-WorkSpace\S_ESSERY\M-Seappsprd37,D-DrwWaterdbP\Projects\CX10999\Standard_Drawing\4100\SD_4117_C.dwg