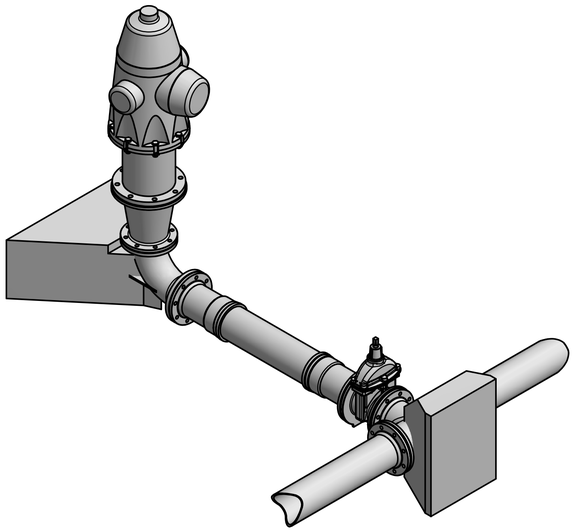
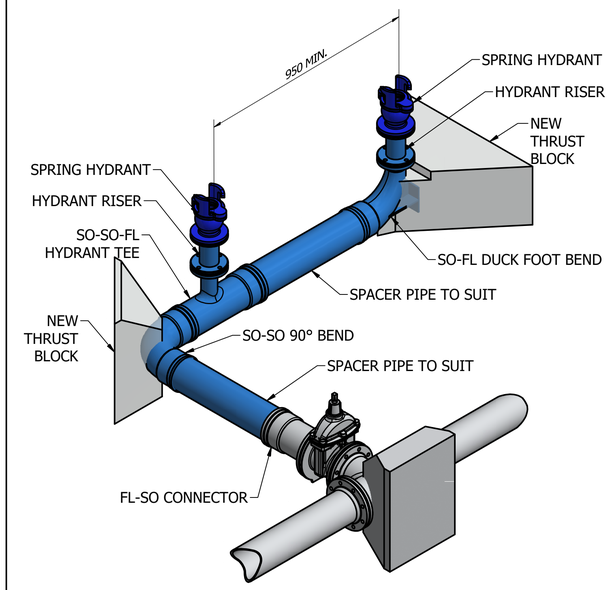


COLOUR KEY

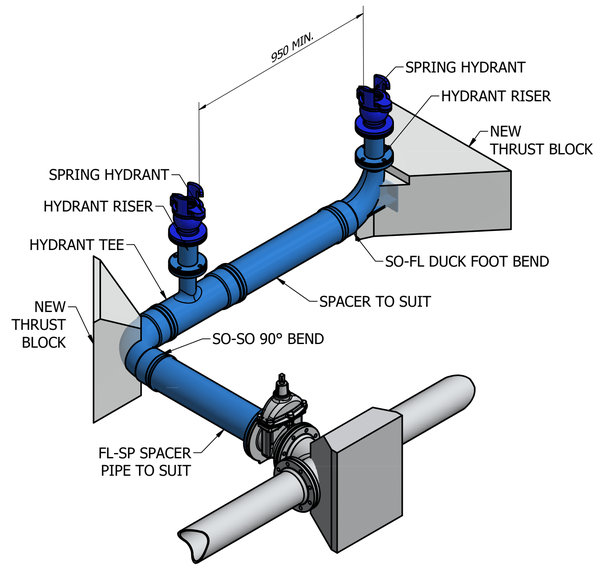
EXISTING

NEW

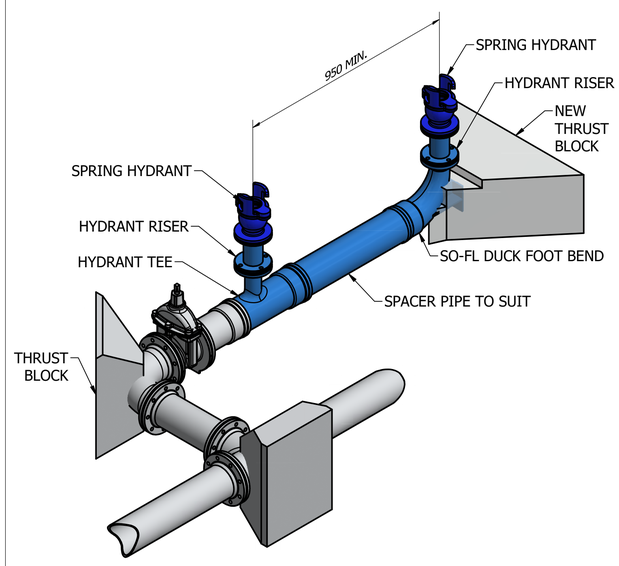
EXISTING " A"
HIGH CAPACITY HYDRANT ARRANGEMENT



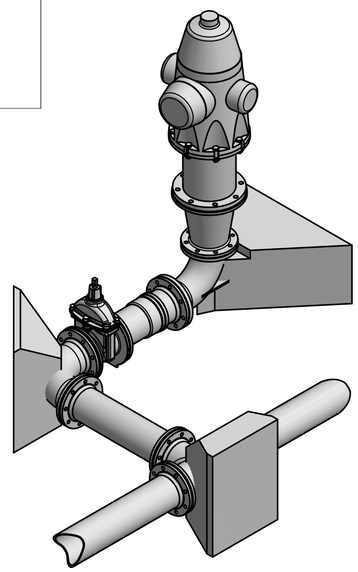
REPLACEMENT OPTION 1
ADJACENT TO MAIN CROSSING EXISTING SERVICE EASEMENTS



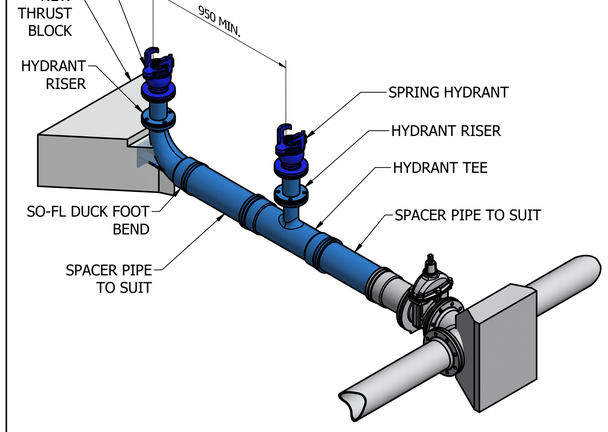
REPLACEMENT OPTION 2
ADJACENT TO MAIN



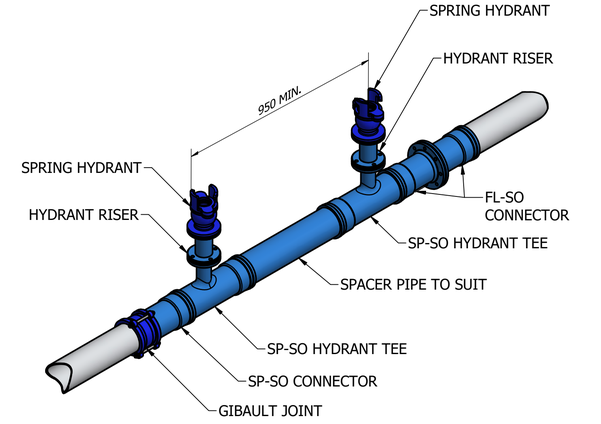
REPLACEMENT OPTION 3
ADJACENT TO MAIN ALTERNATIVE VALVE LOCATION



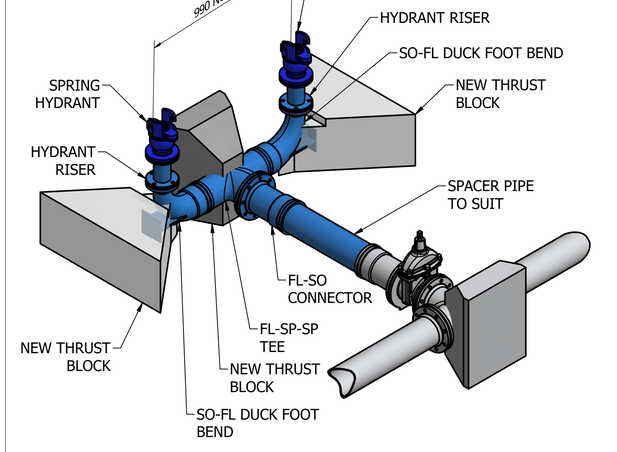
EXISTING "B"
HIGH CAPACITY HYDRANT ARRANGEMENT



REPLACEMENT OPTION 4
STANDARD REPLACEMENT



REPLACEMENT OPTION 5
DN150 TO DN225 MAINS ONLY



REPLACEMENT OPTION 6
ON DN150 BRANCH LINE

NOTES:

1. BURIED FLANGES, BOLTS, NUTS, ETC TO BE INSTALLED IN ACCORDANCE WITH SD-5010.

2. IN PAVED AREAS, INDICATOR PLATES SHALL BE USED. PLATE TO BE FIXED WITH EPOXY AND DRIVE PINS AT EACH CORNER (UNLESS NOTED OTHERWISE). REFER TO SD-1330.

3. IN NATURE STRIPS OR RURAL AREAS, SEMI FLEXIBLE OR FLEXIBLE MARKER POSTS OF STEEL CONSTRUCTION SHALL BE USED. REFER TO SD-1331.

4. VALVE AND HYDRANT COVERS NOT SHOWN FOR CLARITY. REFER TO SD-3202 FOR DETAILS.

5. VALVES LARGER THAN DN450 ARE TO BE INSTALLED IN A VALVE CHAMBER.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	15/06/2018	S. Essery	K. Danenbergsons	D. Eager

DAM		RES		SPS	
BWS		WAT	X	STP	
WTP		SEW			
WPS		REC			

ASSET AREA APPLICABILITY

icon WATER

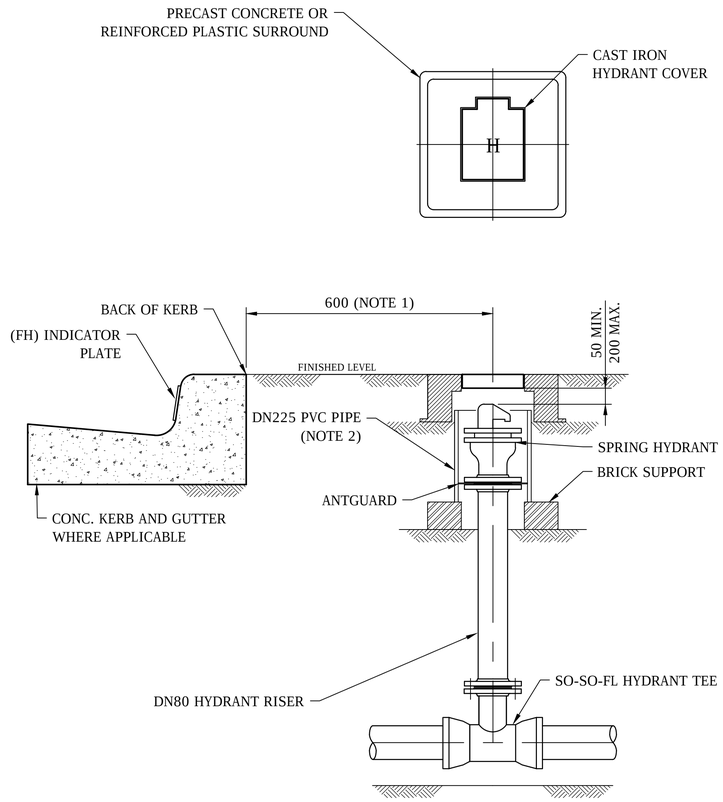
STANDARD DRAWING
WATER NETWORK
HIGH CAPACITY HYDRANTS
REPLACEMENT OPTIONS
TYPICAL ARRANGEMENTS

DRAWING STATUS: Current

SD-3201-D

A1

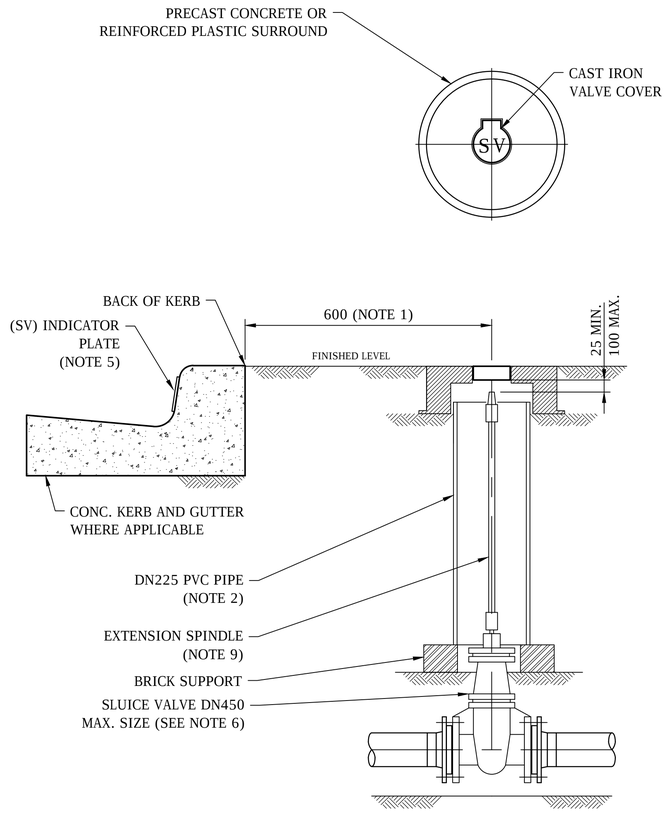
ISSUE: A



SECTIONAL ELEVATION

SPRING HYDRANT SURFACE BOX

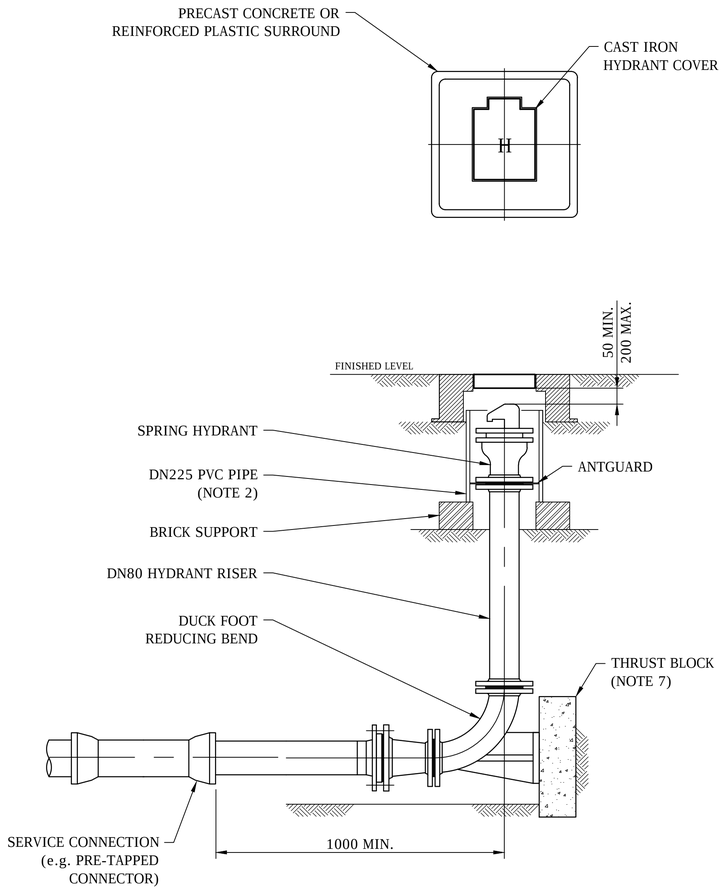
SCALE: N.T.S.



SECTIONAL ELEVATION

SLUICE VALVE SURFACE BOX

SCALE: N.T.S.



SECTIONAL ELEVATION

SPRING HYDRANT ARRANGEMENT
FOR DEAD END MAINS

SCALE: N.T.S.

NOTES:

1. KERB OFFSET TO BE 600 mm FROM THE BACK OF THE KERB OR AS DIRECTED ON THE PROJECT DRAWINGS.
2. DN225 PVC STORMWATER PIPE TO BE USED AS A SHROUD.
3. REFER TO SD-5010 FOR FLANGED JOINT DETAILS.
4. ON PUBLIC (NON-SUBURBAN) LAND, RURAL AREAS AND NATURE PARKS ETC. , MARKER POSTS SHALL BE INSTALLED IN ACCORDANCE WITH SD-1330 AND SD-1331.
5. REFER TO SD-1330 FOR MARKER LABEL DETAILS.
6. SLUICE VALVES OF SIZES LARGER THAN DN450 SHALL BE INSTALLED IN A VALVE CHAMBER.
7. REFER TO SD-5002 AND SD-5003 FOR STANDARD THRUST BLOCK, THRUST ANCHOR AND THRUST WALL DETAILS.
8. SLUICE VALVE SURFACE BOXES ARE REQUIRED TO BE COLOUR CODED FOR SPECIAL INSTALLATIONS AS FOLLOW:
   ZONE VALVE = YELLOW
   FIRE SERVICE = RED
   KIDNEY DIALYSIS PATIENT = BLUE
9. VALVE EXTENSION SPINDLES SHALL BE INSTALLED FOR ALL MAINS WHERE THE DEPTH FROM FINISHED SURFACE LEVEL TO THE TOP OF THE GATE VALVE STEM CAP EXCEEDS 350. A UNIVERSAL JOINT SHALL BE INCORPORATED INTO EXTENSION SPINDLES WHERE THE GRADE OF THE MAIN EXCEEDS 1:50. THE EXTENSION SPINDLE LENGTH SHALL BE CONFIRMED BY THE CONSTRUCTOR AND RECORDED ON THE WORK AS EXECUTED DRAWINGS ONCE INSTALLED.
10. REINFORCED PLASTIC SURROUNDS FOR SURFACE FITTINGS SHALL NOT BE USED IN TRAFFICABLE AREAS. VALVE AND HYDRANT COVERS SHALL BE EITHER INSTALLED IN CONCRETE SURROUNDS OR DIRECTLY INTO THE ROAD PAVEMENT FOR TRAFFICABLE AREAS.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	15/06/2018	C. Dickson	K. Danenbergsons	D. Eager
B	ANT GUARD, KERB LABEL AND NOTE 1 UPDATED	10/09/2018	S. Essery	K. Danenbergsons	C. Patrick

DAM		RES		SPS	
BWS		WAT	X	STP	
WTP		SEW			
WPS		REC			

ASSET AREA APPLICABILITY

icon WATER

STANDARD DRAWING
WATER NETWORK
INGROUND SLUICE VALVE
AND HYDRANT INSTALLATIONS
TYPICAL DETAILS

DRAWING STATUS: Current

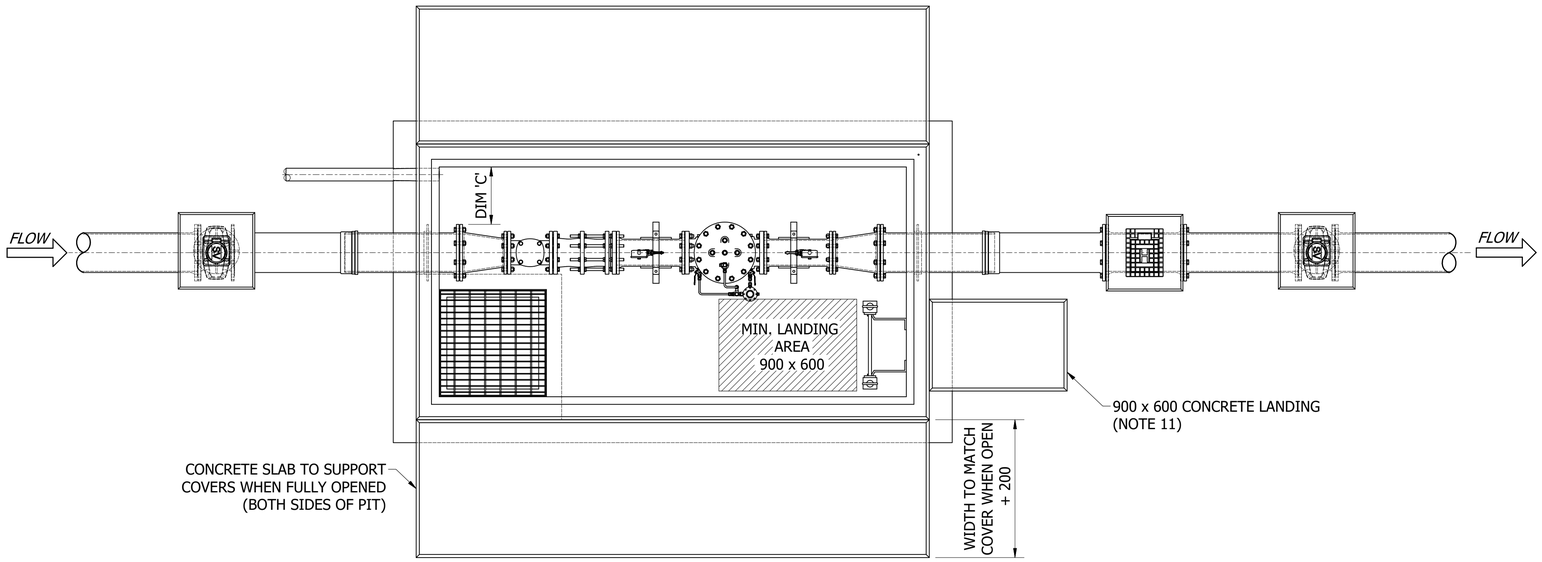
SD-3202-D

A1

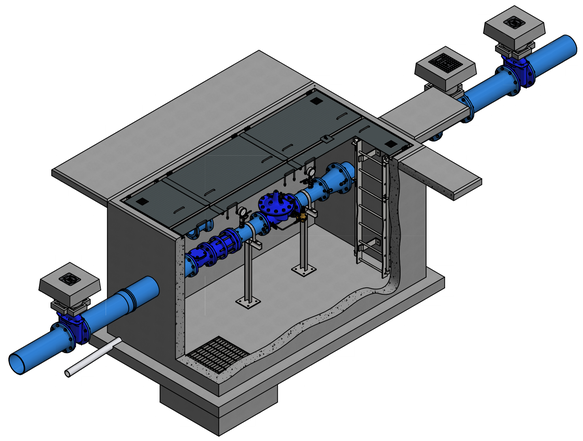
ISSUE: B

PRV SETTINGS			
PRV	INLET HEAD (m)	OUTLET HEAD (m)	BONNET RL. (m)

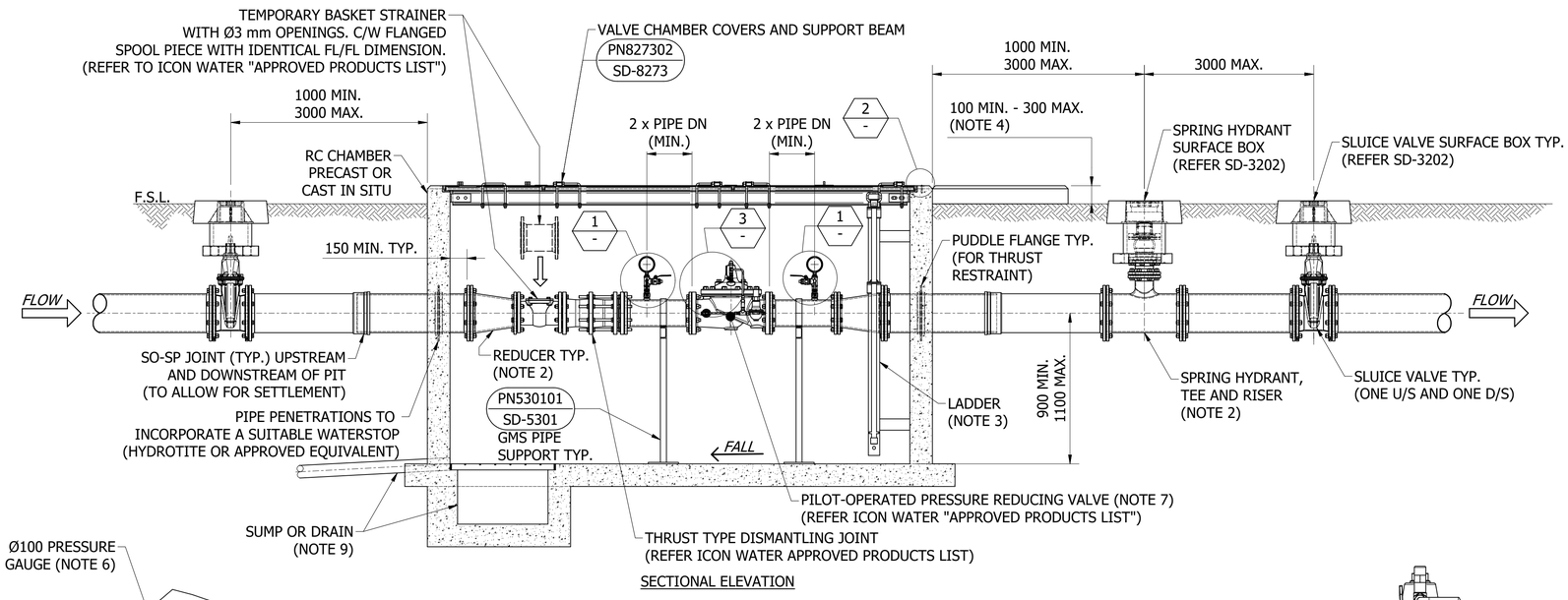
(EXAMPLE PRV SETTINGS TABLE - NOTE 7)



PLAN
(COVERS AND SUPPORT BEAM NOT SHOWN FOR CLARITY)



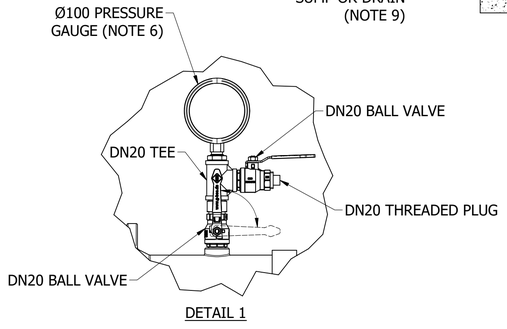
ISOMETRIC CUT-AWAY
NOT TO SCALE



SECTIONAL ELEVATION

PRESSURE REDUCING VALVE CHAMBER

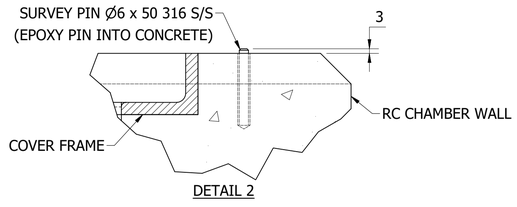
SCALE: 1 :20



DETAIL 1

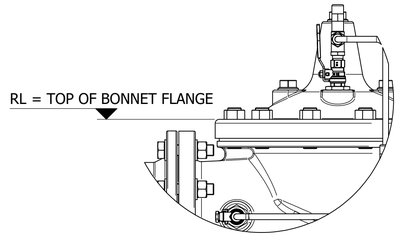
PRESSURE GAUGE x2

(UPSTREAM AND DOWNSTREAM OF PRV)



DETAIL 2

SURVEY PIN (NOTE 8)



DETAIL 3

PRV
BONNET RL REFERENCE POINT

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. FOR MAINS DN225 AND ABOVE, TAPER PIPE TO ONE SIZE SMALLER FROM THE FIRST FLANGE IN THE CHAMBER TO THE LAST FLANGE IN THE CHAMBER AND INSTALL TWO (RATHER THAN ONE) SPRING HYDRANTS DOWNSTREAM.

3. FOR CHAMBER DEPTHS LESS THAN 2000 VERTICAL RUNG (TWIN STILE) LADDERS MAY BE USED IN LIEU OF INCLINED RUNG (TWIN STILE) LADDERS. FOR DEPTHS GREATER THAN 2000 A FIXED INCLINED RUNG LADDER SHALL BE INSTALLED. EXTENDABLE STANCHIONS ARE TO BE FITTED WHEREVER PRACTICABLE.

4. 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.

5. BEDDING AND BACKFILL DETAILS SHALL BE CHOSEN TO SUIT THE SPECIFIC SITE AND PIPELINE SIZING DETAILS.

6. UNLESS THE ZONE PRESSURE DICTATES OTHERWISE, PRESSURE GAUGES ARE TO BE GLYCERINE FILLED, 3/4" BSP (DN20) THREADED WITH (0-100 m HEAD @ 1 m GRADUATIONS). REFER TO THE ICON WATER APPROVED PRODUCTS LIST FOR ACCEPTABLE MAKES AND MODELS.

7. PRV SETTINGS (AS CONFIRMED BY THE ICON WATER ENGINEER) ARE TO BE SHOWN IN TABULAR FORM INCLUDING THE BONNET RL. WHICH SHALL BE DETERMINED BY A LICENSED SURVEYOR TO AN ACCURACY OF +/-5.0 mm (AND SHALL BE SHOWN ON WORK AS EXECUTED DRAWINGS).

8. TOP OF PIN RL TO BE PROVIDED BY A LICENSED SURVEYOR TO AN ACCURACY OF +/- 5.0 mm (AND SHALL BE SHOWN ON WORK AS EXECUTED DRAWINGS).

9. GRADE FLOOR TO DRAIN AND CONNECT TO SUITABLE STORMWATER OR DRAINAGE SYSTEM VIA DN80 MIN. PVC PIPE. IF NO SUITABLE DRAINAGE SYSTEM IS NEARBY THEN INSTALL A 600 SQ x 400 DEEP SUMP AND SUMP PUMP.

10. ALL PIPEWORK IN-CHAMBER AND BETWEEN UPSTREAM AND DOWNSTREAM SLUICE VALVES TO BE DICL.

11. 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.

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

DAM		RES		SPS	
BWS		WAT	X	STP	
WTP		SEW			
WPS		REC			

ASSET AREA APPLICABILITY

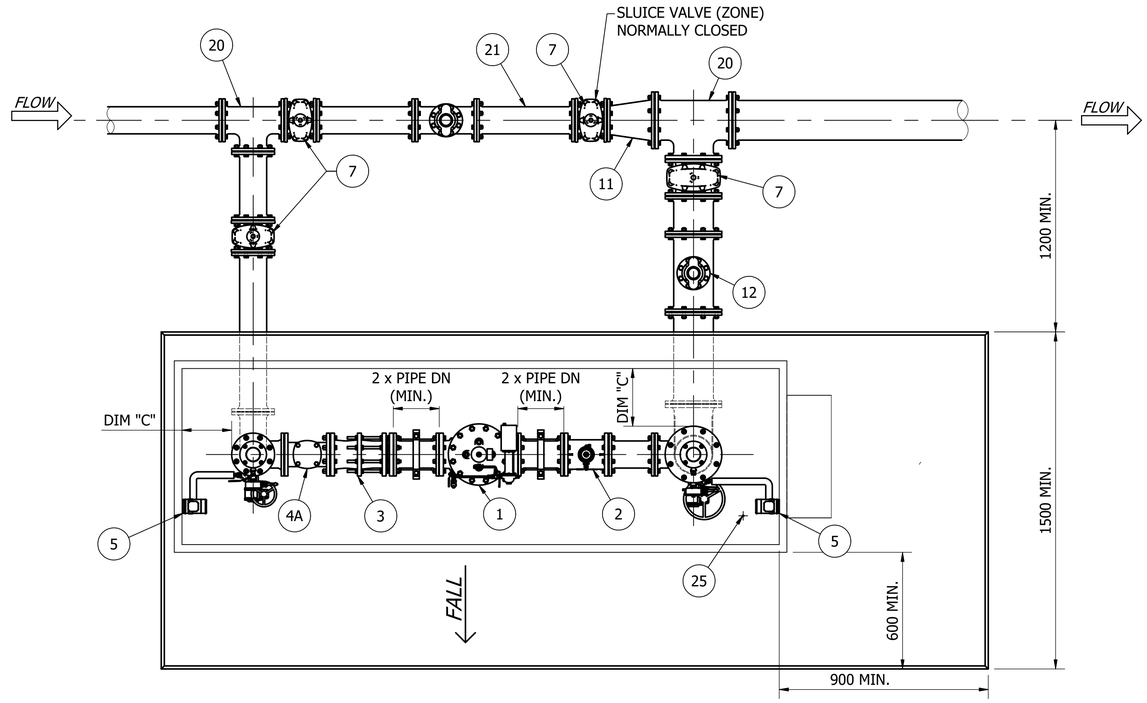
STANDARD DRAWING
"PASSIVE" PRESSURE REDUCING VALVES
VALVE CHAMBER
GENERAL ARRANGEMENT AND DETAILS

DRAWING STATUS: Current

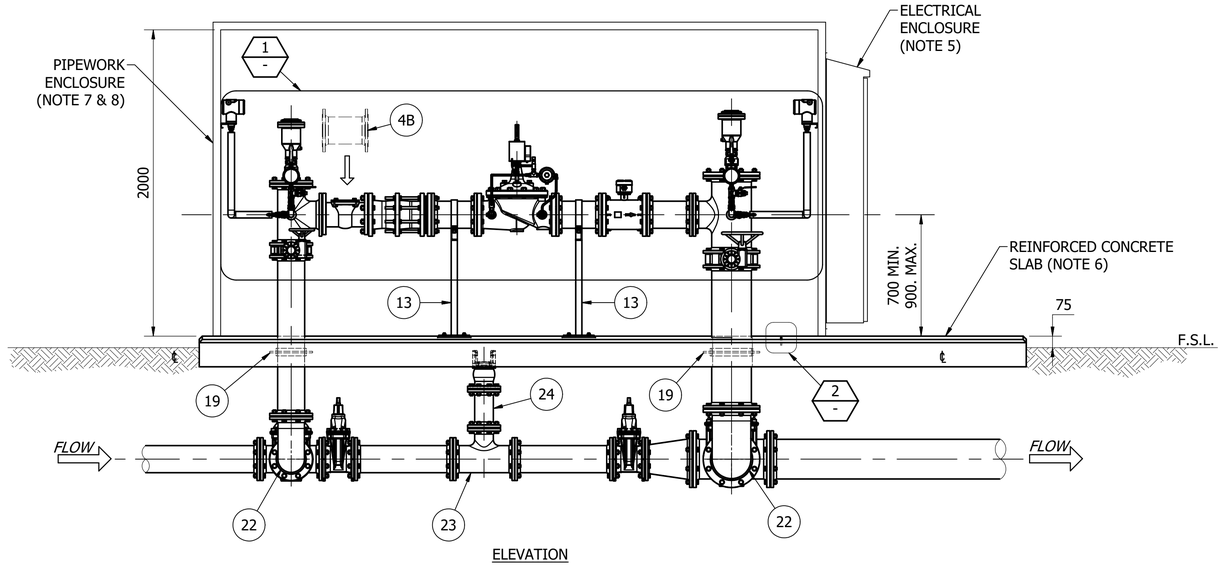
SD-3203-C

A1

ISSUE: A



PLAN
(VALVE COVERS, HYDRANT BOXES AND DOORS NOT SHOWN FOR CLARITY)



ELEVATION

PRESSURE REDUCING VALVE ABOVE GROUND ENCLOSURE

(ENCLOSURE DOORS NOT SHOWN FOR CLARITY)
SCALE: 1 : 20

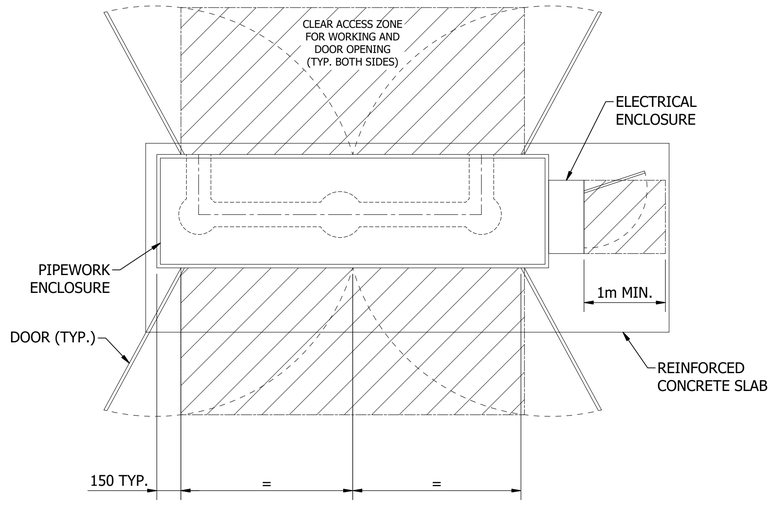
PRV SETTINGS			
PRV	INLET HEAD (m)	OUTLET HEAD (m)	BONNET RL. (m)

EXAMPLE PRV SETTINGS TABLE (NOTE 1)

PARTS LIST - PIPEWORK (NOTES 2, 12)		
ITEM	DESCRIPTION	QTY
1	PILOT-OPERATED PRESSURE REDUCING VALVE (REFER ICON WATER TECHNICAL SPECIFICATION STD-SPE-M-003). (NOTE 15)	1
2	ELECTRO-MAGNETIC FLOW METER, FULL-BORE TYPE.	1
3	THRUST-TYPE DISMANTLING JOINT.	1
4A	TEMPORARY BASKET STRAINER, WITH Ø3 mm HOLES (NOTE 3)	1
4B	PIPE SPOOL, FL-FL DIMENSIONS TO MATCH ITEM 4A (NOTE 3)	1
5	PRESSURE TRANSMITTER	2
6	BUTTERFLY VALVE, WAFER LUGGED, SEAL ON DISK, C/W WITH 90 DEGREE G/BOX, POSITION INDICATOR AND HANDWHEEL FOR SIZES LARGER THAN DN225 (NOTE 4)	2
7	SLUICE (GATE) VALVE, C/W VALVE SURFACE BOX (NOTE 4)	4
8	EQUAL TEE, DICL, FL-FL-FL, C/W DN20 BSP TAPPING	1
9	REDUCING TEE, DICL, FL-FL-FL, C/W DN20 BSP TAPPING (NOTE 4)	1
10	BLANK FLANGE, DI, C/W DN50 BSP TAPPING & HEX NIPPLE (NOTE 4)	2
11	REDUCER, DICL, FL-FL, C/W FBE COATING	1
12	SPRING HYDRANT, DI, C/W SURFACE BOX (NOTE 4)	2
13	PIPE SUPPORT, GALV. CARBON STEEL, REF. PN530101 ON SD-5301, C/W CHEMICAL ANCHORS	2
14	AIR VALVE, DOUBLE ACTING TYPE, THREADED, DN50 BSP	2
15	BALL VALVE, DN50 BSP	2
16	PRESSURE GAUGE, Ø100 mm FACE, DN20 BSP GLYCERINE FILLED, 0-100 m HEAD @ 1 m GRADUATIONS	2
17	BALL VALVE, DN20 BSP	6
18	THREADED HEX PLUG, DN20 BSP	2
19	PUDDLE FLANGE (NOTE 4)	2
20	EQUAL TEE, DICL, FL-FL-FL, C/W FBE COATING	2
21	PIPE, DICL, FL-FL (ALL BURIED FITTINGS TO BE FBE COATED)	LENGTH AND DIA. TO SUIT
22	BEND, 90°, DICL, FL-FL, C/W FBE COATING	2
23	HYDRANT TEE, DICL, FL-FL-FL, C/W FBE COATING	2
24	HYDRANT RISER, DICL, FL-FL, C/W FBE COATING.	2
25	SURVEY PIN Ø6 x 50 316 S/S	1

NOTES:

1. REFER TO DRAWING SD-3205 FOR ALL NOTES AND DETAILS.



DETAIL

DOOR LOCATIONS AND CLEAR WORKING AREAS

SCALE: N.T.S.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	15/06/2018	M. Matusiak	K. Danenbergsons	D. Eager
B	NOTE NUMBERS UPDATED	23/11/2018	S. Essery	K. Danenbergsons	C. Patrick

DAM		RES		SPS					
BWS		WAT	X	STP					
WTP		SEW							
WPS		REC							

ASSET AREA APPLICABILITY

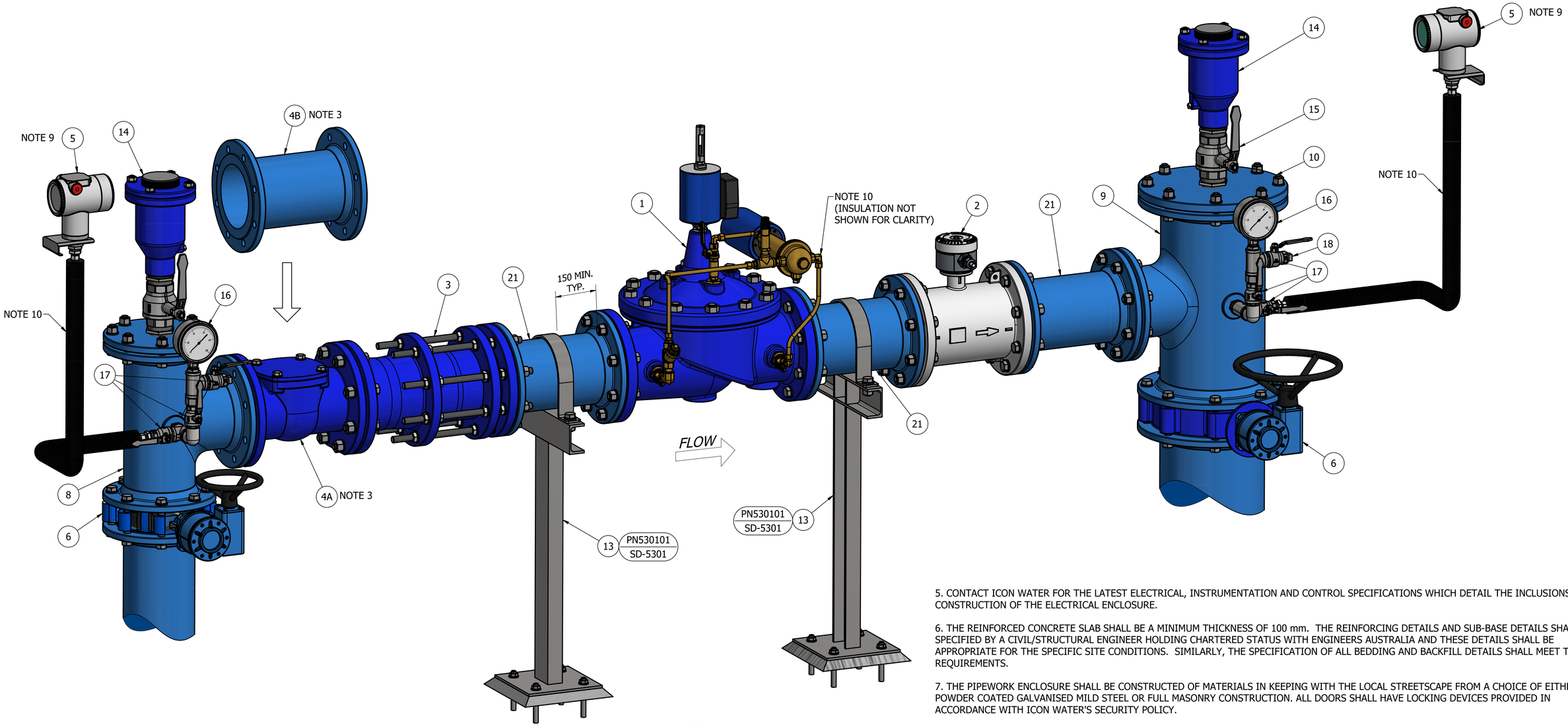
STANDARD DRAWING
"ACTIVE" PRESSURE REDUCING VALVES
ABOVE GROUND INSTALLATIONS
GENERAL ARRANGEMENT

DRAWING STATUS: Current

SD-3204-C

A1

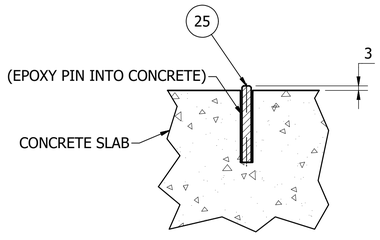
ISSUE B



DETAIL 1

"ACTIVE" PRESSURE REDUCING VALVE ARRANGEMENT WITHIN ENCLOSURE

SCALE: 1 : 5



DETAIL 2

SURVEY PIN (NOTE 14)

SCALE: N.T.S.

NOTES:

1. PRV SETTINGS (AS CONFIRMED BY THE ICON WATER ENGINEER) ARE TO BE SHOWN IN TABULAR FORM INCLUDING THE BONNET RL WHICH SHALL BE DETERMINED BY A LICENSED SURVEYOR TO AN ACCURACY OF ± 5.0 mm (AND SHOWN ON THE WORK AS EXECUTED DRAWINGS).

2. THE PARTS LIST PROVIDED ON DRAWING SD-3204 IS INDICATIVE ONLY AND IS LIMITED TO PIPEWORK AND INSTRUMENTATION.

3. ITEM 4B (PIPE SPOOL) SHALL BE SUPPLIED AS A LOOSE ITEM AT THE SAME TIME AS ITEM 4A (BASKET STRAINER) IS INSTALLED IN THE ABOVE-GROUND PIPEWORK. ICON SHALL REPLACE ITEM 4A WITH ITEM 4B AT A FUTURE TIME. ITEM 4B SHALL BE STORED IN THE ENCLOSURE (WITH ENDS CAPPED).

4. FOR MAINS DN225 AND ABOVE, THE DISCHARGE PIPEWORK SHALL BE TAPERED TO ONE PIPE SIZE LARGER THAN THE INLET PIPEWORK AS SHOWN. THIS PRACTICE IS NOT REQUIRED FOR MAINS OF SIZE SMALLER THAN DN225. PARTS LIST QUANTITIES SHALL BE ADJUSTED APPROPRIATELY.

5. CONTACT ICON WATER FOR THE LATEST ELECTRICAL, INSTRUMENTATION AND CONTROL SPECIFICATIONS WHICH DETAIL THE INCLUSIONS AND CONSTRUCTION OF THE ELECTRICAL ENCLOSURE.

6. THE REINFORCED CONCRETE SLAB SHALL BE A MINIMUM THICKNESS OF 100 mm. THE REINFORCING DETAILS AND SUB-BASE DETAILS SHALL BE SPECIFIED BY A CIVIL/STRUCTURAL ENGINEER HOLDING CHARTERED STATUS WITH ENGINEERS AUSTRALIA AND THESE DETAILS SHALL BE APPROPRIATE FOR THE SPECIFIC SITE CONDITIONS. SIMILARLY, THE SPECIFICATION OF ALL BEDDING AND BACKFILL DETAILS SHALL MEET THE SAME REQUIREMENTS.

7. THE PIPEWORK ENCLOSURE SHALL BE CONSTRUCTED OF MATERIALS IN KEEPING WITH THE LOCAL STREETSCAPE FROM A CHOICE OF EITHER POWDER COATED GALVANISED MILD STEEL OR FULL MASONRY CONSTRUCTION. ALL DOORS SHALL HAVE LOCKING DEVICES PROVIDED IN ACCORDANCE WITH ICON WATER'S SECURITY POLICY.

8. POWDER COATED GALVANISED ENCLOSURES SHALL HAVE:

-A FINISHED COLOUR OF G66 ENVIRONMENT GREEN TO AS 2700 UNLESS THE PROJECT ARCHITECT OR TCCS ADVISE OTHERWISE.

-"KNAUF CLIMAFOAM XPS" INSULATION BOARDS INSTALLED TO ALL INTERNAL SURFACES (INCLUDING DOORS) OF 30 mm MIN. THICKNESS.

9. PRESSURE TRANSMITTERS SHALL BE FIXED TO THE INNER WALL OF THE PIPEWORK ENCLOSURE USING SUITABLE BRACKETS.

10. ALL PIPEWORK AND TUBING DN50 AND SMALLER SHALL BE INSULATED TO PREVENT FREEZING.

11. DIM "C" EQUALS DN+150 AND SHALL BE NO LESS THAN 300 mm.

12. ALL PIPEWORK AND INSTRUMENTS SHALL BE OF THE TYPE AND MATERIALS SHOWN. ONLY THE MATERIALS AND MAKES/MODELS OF EQUIPMENT LISTED IN ICON'S APPROVED PRODUCTS LIST ARE TO BE INSTALLED. THE USE OF "NON LISTED" ITEMS IS STRICTLY PROHIBITED.

13. ALLOWANCE SHALL BE MADE FOR THE INSTALLATION OF AN AERIAL OF HEIGHT UP TO 5 METRES IF A RADIO SURVEY SHOWS SUCH A REQUIREMENT.

14. TOP OF PIN RL TO BE PROVIDED BY A LICENSED SURVEYOR TO AN ACCURACY OF +/- 5.0 mm AND SHOWN ON WORK AS EXECUTED DRAWINGS.

15. REFER TO STANDARD SPECIFICATION: STD-SPE-M-003 FOR A TABULATION OF PRV. SIZE AND CONFIGURATION COMPARED TO PIPE SIZE.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	15/06/2018	M. Matusiak	K. Danenbergsons	D. Eager
B	ENCLOSURE COLOUR UPDATED	23/11/2018	S. Essery	K. Danenbergsons	C. Patrick

DAM		RES		SPS					
BWS		WAT	X	STP					
WTP		SEW							
WPS		REC							

ASSET AREA APPLICABILITY

icon WATER

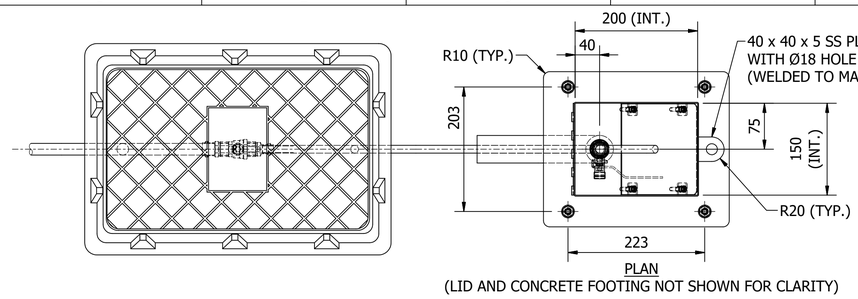
STANDARD DRAWING
"ACTIVE" PRESSURE REDUCING VALVES
ABOVE GROUND INSTALLATIONS
DETAILS AND NOTES

DRAWING STATUS: Current

SD-3205-C

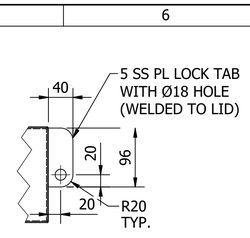
A1

ISSUE: B



PLAN

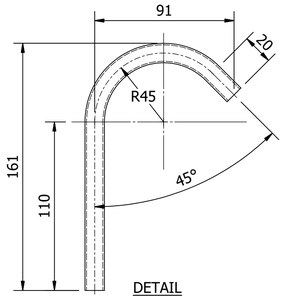
(LID AND CONCRETE FOOTING NOT SHOWN FOR CLARITY)



DETAIL

LOCKING TAB/HANDLE (LID ONLY)

SCALE: 1 : 5



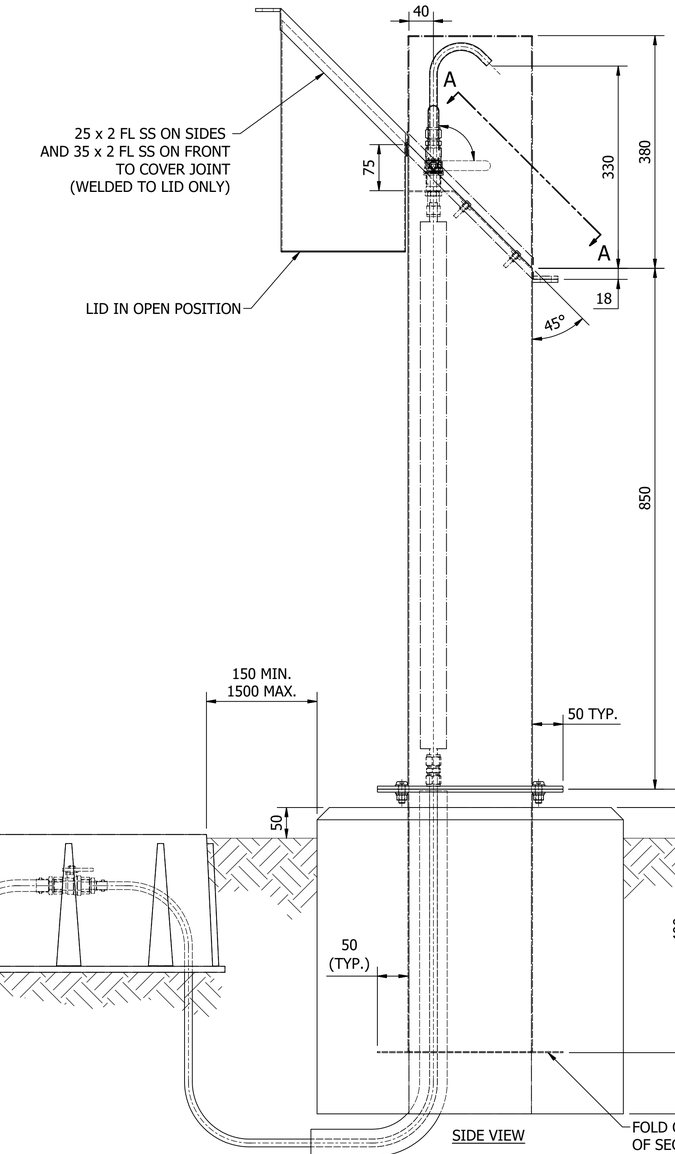
DETAIL

SPOUT (ITEM 14)

SCALE: 1 : 2

PARTS LIST

ITEM	DESCRIPTION	QTY
1	500 SQ x 500 DEEP CONCRETE FOOTING	0.1 m³ Approx
2	1.6PL SS CAST IN BASE (FOLDED RECTANGULAR SECTION) WITH 300 x 250 x 5 PL SS FLANGE	1
3	1.6PL SS SAMPLE POINT BODY (FOLDED RECTANGULAR SECTION) WITH 300 x 250 x 5 PL SS FLANGE	1
4	1.6PL SS SAMPLE POINT LID (FOLDED RECTANGULAR SECTION)	1
5	1.6PL SS SAMPLE POINT ACCESS PLATE (AS PER DETAIL ON THIS DRAWING)	1
6	75 x 150 x 1.6PL SS PLATE WELDED INSIDE TUBE WITH CENTRALLY PLACED HOLE TO SUIT BULKHEAD FITTING	1
7	40 SS UNDRILLED PIANO HINGE (150 LENGTH)	1
8	DN15 BALL VALVE, BRASS BODY, BALL CERTIFIED TO WATER MARK CIM 11CR	1
9	DN15 INLINE BALL VALVE, COMPACT HANDLE, BRASS BODY, BALL CERTIFIED TO WATER MARK CIM 11CR	1
10	DN15 THREADED COMPRESSION FITTING	1
11	DN15 BULKHEAD COMPRESSION FITTING	1
12	DN15 UNION COMPRESSION FITTING	1
13	PRESS FIT COUPLING	2
14	SPOUT - DN15 COPPER TUBE AS PER AS1432, TYPE B (AS PER DETAIL ON THIS DRAWING)	1
15	DN15 COPPER TUBE AS PER AS1432, TYPE B	2 m Approx
16	ARMAFLEX SOLAR LAGGING 15 THK, WEATHER RESISTANT, PRE-FORMED FOR DN15 TUBE	2 m Approx
17	M10 x 30 SS SOCKET HEAD BOLTS AND M10 NUTS WITH LOCKING WASHERS	4
18	M6 x 30 SS SOCKET HEAD CAP BOLTS	4
19	20 x 20 x 3 PL SS TAB WITH M6 SS "NUTSERT" (AS PER DETAIL ON THIS DRAWING)	4
20	DN20 PLASTIC METER BOX	1
21	METER BOX COVER - COLOUR: RAW/POTABLE = JADE (GREEN), RECYCLED = LILAC	1
22	SAND BACKFILL	0.02 m³ Approx
23	TRAFFOLYTE LABEL (NOTE 3)	1

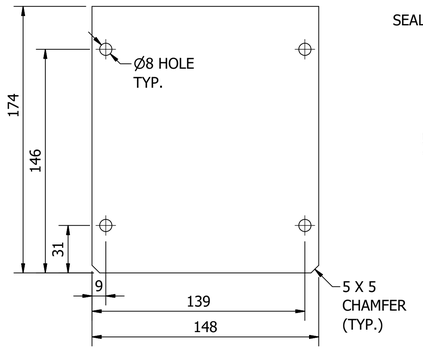


SIDE VIEW

WATER SAMPLING POINT

SCALE: 1 : 5

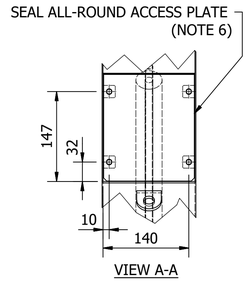
MATERIAL: STAINLESS STEEL GRADE 316
COATING: N/A
FINISH COLOUR: N/A
MASS: 21 kg (EXCL. CONCRETE, SAND AND PIPEWORK)



DETAIL

ACCESS PLATE (ITEM 5)

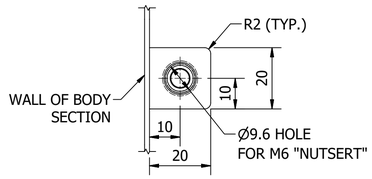
SCALE: 1 : 2



VIEW A-A

ACCESS PLATE INSTALLATION

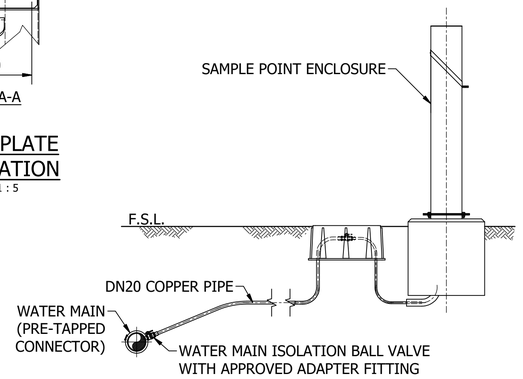
SCALE: 1 : 5



DETAIL

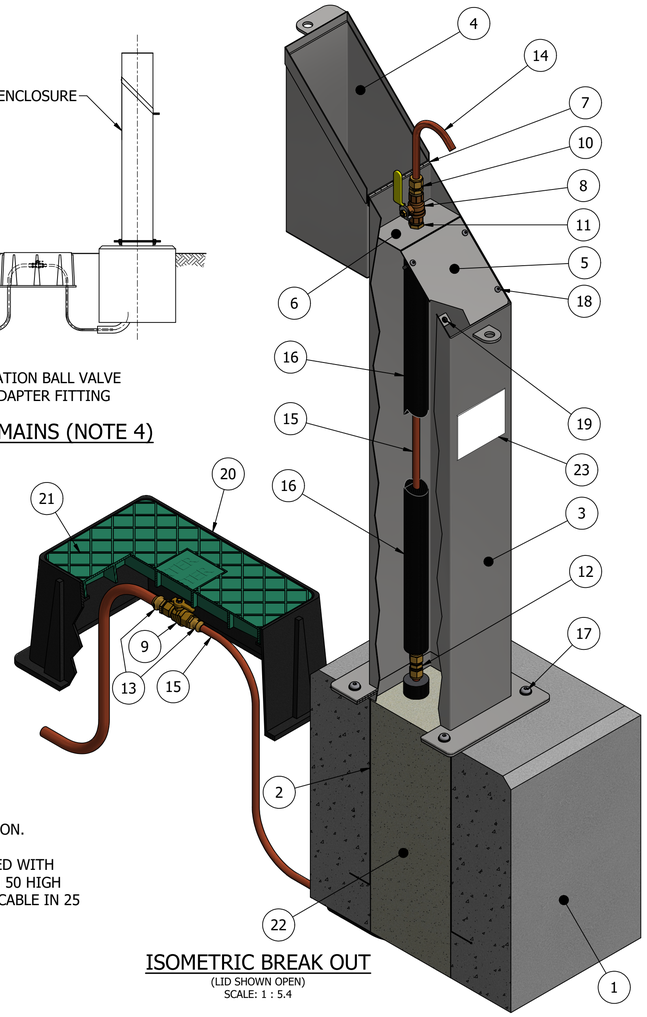
FIXING TABS FOR ACCESS PLATE (ITEM 18)

SCALE: 1 : 1



CONNECTION TO WATER MAINS (NOTE 4)

SCALE: 1 : 20



ISOMETRIC BREAK OUT

(LID SHOWN OPEN)
SCALE: 1 : 5.4

NOTES:

1. ALL EXPOSED STAINLESS STEEL SURFACES SHALL HAVE A BEAD BLASTED FINISH.
2. COPPER PIPE TO BE LAGGED AND NOT IN DIRECT CONTACT WITH ANY STEEL SECTIONS OF THE INSTALLATION.
3. TRAFFOLYTE LABEL TO BE 100 x 100 WITH ENGRAVED BLACK LETTERING ON WHITE BACKGROUND AND FIXED WITH EITHER SCREWS OR RIVETS. LABEL SHALL DISPLAY THE SAMPLE POINT NUMBER ASSIGNED BY ICON WATER IN 50 HIGH LETTERING, AND SHALL DISPLAY EITHER " POTABLE WATER" , "RAW WATER" OR "RECYCLED WATER" AS APPLICABLE IN 25 HIGH LETTERING.
4. REFER TO SD-3306 FOR ADDITIONAL REQUIREMENTS FOR WATER MAIN CONNECTIONS.
5. ALL EXPOSED CONCRETE EDGES TO HAVE 20 CHAMFER.
6. SEAL ALL-ROUND ITEM 5 UPON INSTALLATION WITH AN APPROVED WET AREA SILICONE SEALANT.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
B	INITIAL ISSUE	15/06/2018	M. Matusiak	K. Danenbergsons	D. Eager
A	NON-POTABLE WATER CONFIGURATION INCLUDED	10/12/2018	S. Essery	K. Danenbergsons	C. Patrick

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

ASSET AREA APPLICABILITY

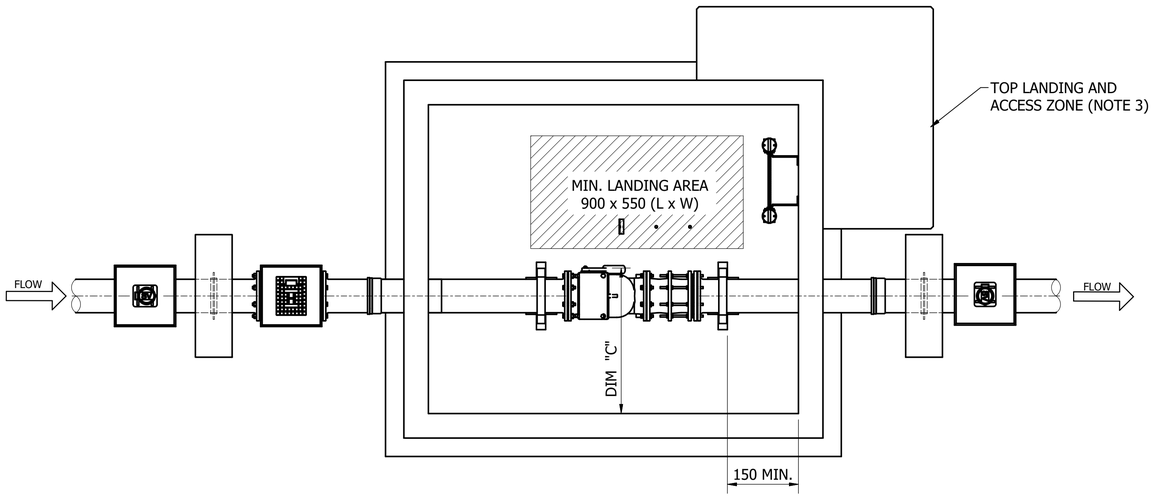
icon WATER

STANDARD DRAWING
WATER NETWORK
POTABLE AND NON-POTABLE WATER SAMPLING POINT
ARRANGEMENT AND DETAILS

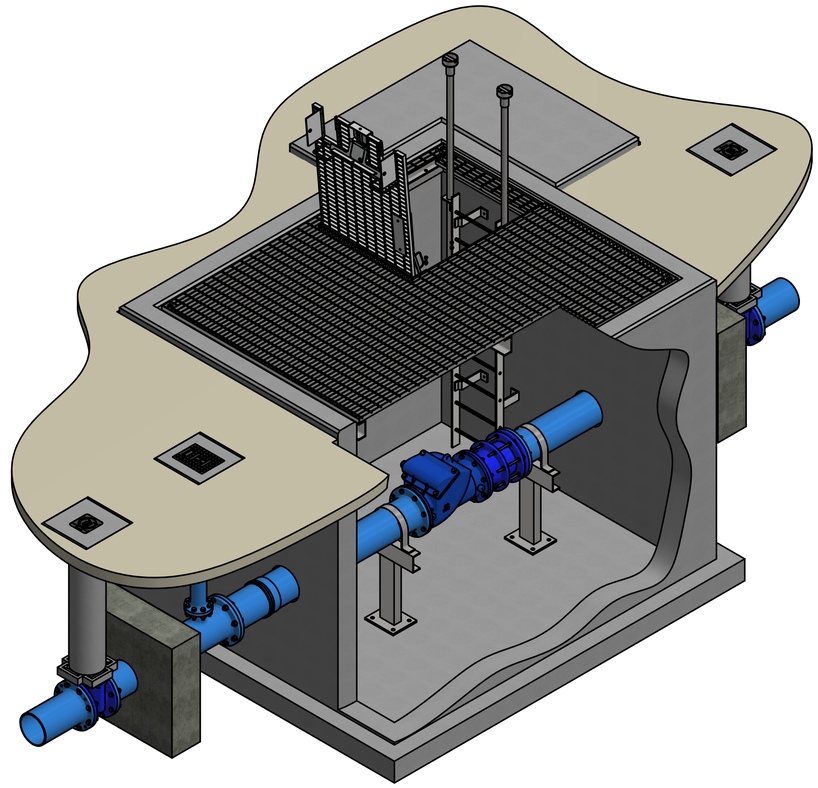
DRAWING STATUS: Current

SD-3206-D

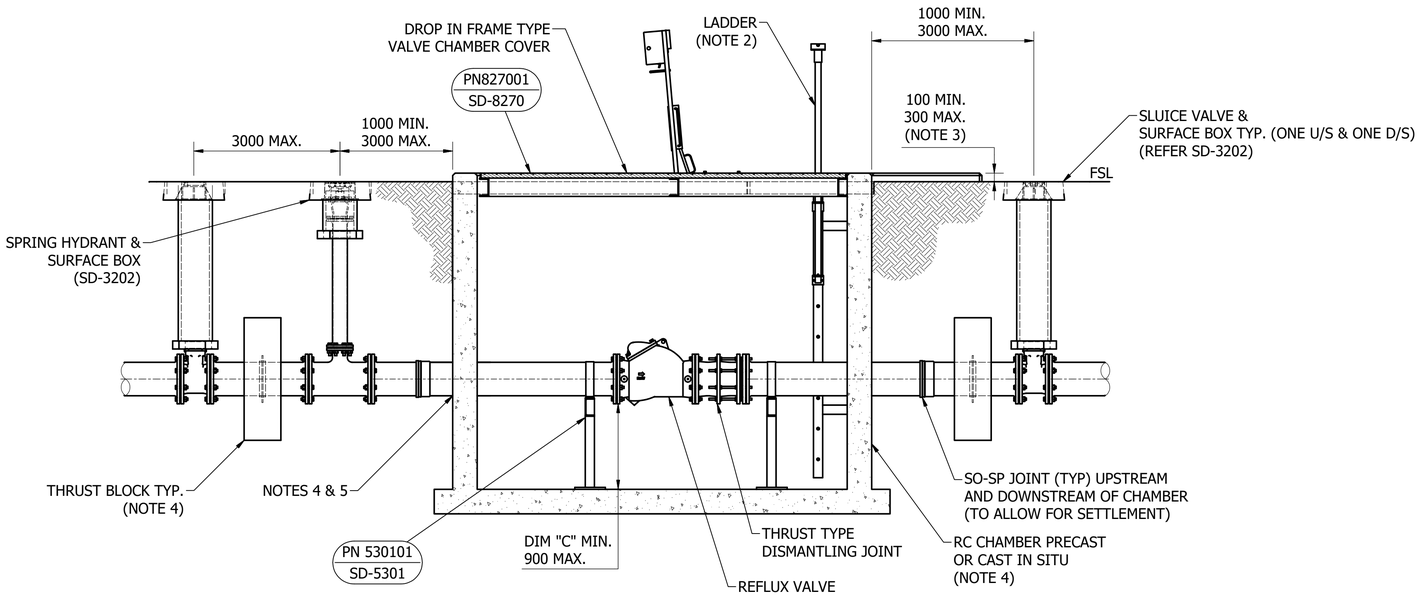
ISSUE B



PLAN
(COVERS AND SUPPORT BEAMS NOT SHOWN FOR CLARITY)



ISOMETRIC CUT-AWAY
SCALE: NTS



SECTIONAL ELEVATION

REFLUX VALVE CHAMBER

SCALE : NTS

NOTES:

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

2. FOR CHAMBER DEPTHS LESS THAN 3000 mm, VERTICAL RUNG (TWIN STILE) LADDERS MAY BE USED IN LIEU OF INCLINED RUNG (TWIN STILE) LADDERS. FOR DEPTHS GREATER THAN 3000 mm, A FIXED INCLINED RUNG LADDER SHALL BE INSTALLED. EXTENDABLE STANCHIONS ARE TO BE FITTED WHEREVER PRACTICABLE.

3. 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.

4. THRUST BLOCKS (EXTERNAL TO THE CHAMBER) ARE NOT REQUIRED FOR CAST IN SITU VALVE CHAMBERS WHERE PUDDLE FLANGES CAN BE CAST IN THE WALL WITH APPROPRIATE REINFORCEMENT. REFER TO DRAWINGS SD-5001, SD-5002 AND SD-5003 FOR GENERIC THRUST BLOCK REQUIREMENTS. PURPOSE ENGINEERED THRUST BLOCK DETAILS SHALL BE PROVIDED BY THE DESIGNER IN LIEU OF GENERIC DETAILS WHERE APPROPRIATE (e.g. POOR SOILS, MULTIPLE PIPELINES IN CLOSE PROXIMITY AND HIGHER PIPELINE PRESSURES etc).

5. ALL PIPE PENETRATIONS THROUGH THE VALVE CHAMBER WALLS SHALL INCORPORATE AN APPROVED HYDROPHYLIC WATERSTOP.

6. ALL MATERIALS AND PRODUCTS (e.g. VALVES, PIPES, FITTINGS etc.) SHALL BE SELECTED FROM THE ICON WATER APPROVED PRODUCTS LIST. UNLISTED PRODUCTS AND MATERIALS SHALL NOT BE USED.

7. REFLUX VALVES OF SIZES LESS THAN DN450 SHALL BE INSTALLED IN AN AIR VALVE CHAMBER (SUITABLY MODIFIED) FOR RURAL/SEMI-RURAL AREAS AS SHOWN ON DRAWING SD-3210.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	15/06/2018	S. Essery	K. Danenbergsons	D. Eager
B	MODEL AND DRAWING CORRECTION. NOTES 2 & 4 UPDATED	10/09/2018	S. Essery	K. Danenbergsons	C. Patrick

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

icon WATER

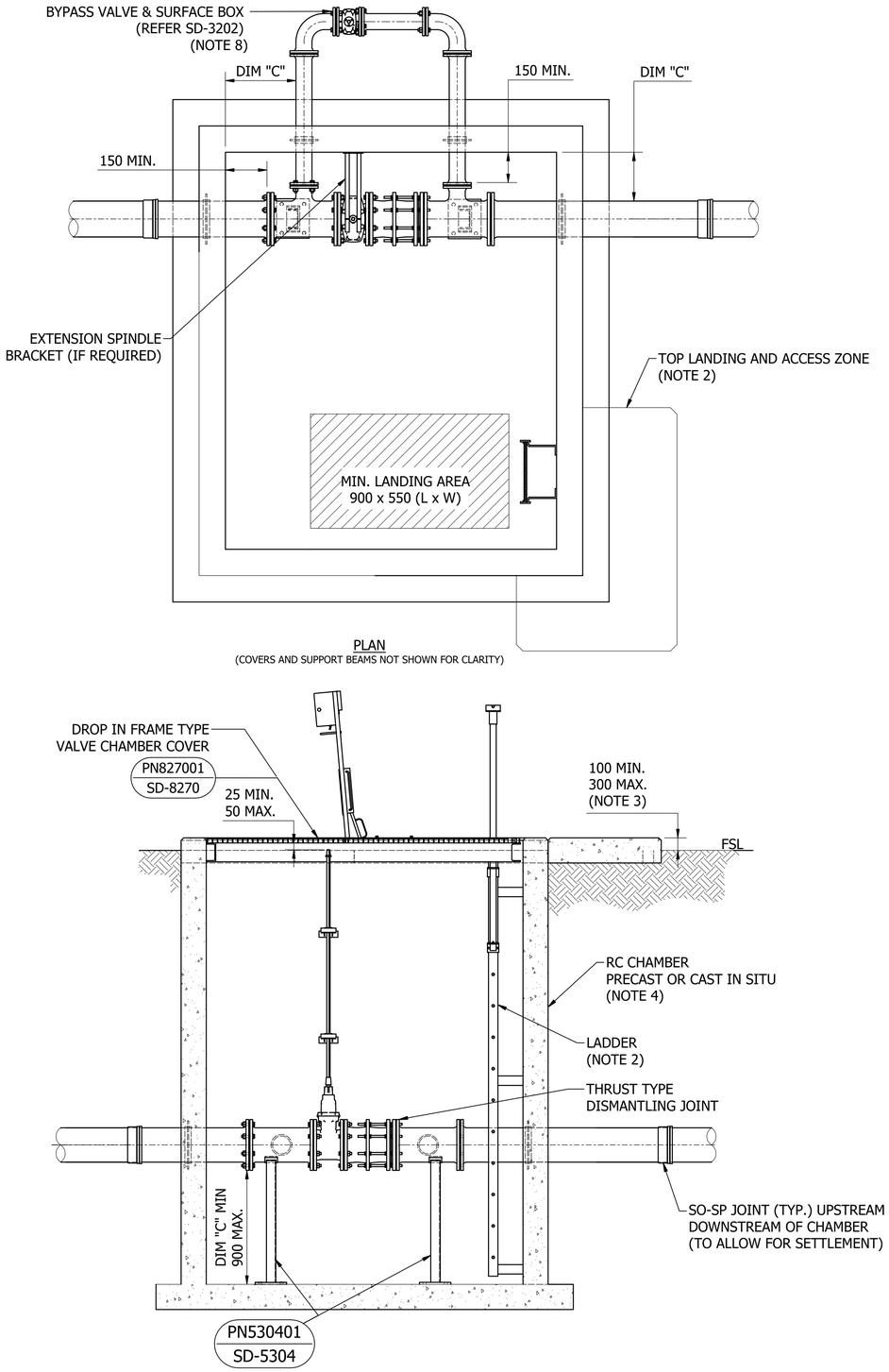
STANDARD DRAWING
VALVE CHAMBER
TYPICAL REFLUX VALVE INSTALLATION
ARRANGEMENT

DRAWING STATUS: Current

SD-3207-C

A1

ISSUE: B

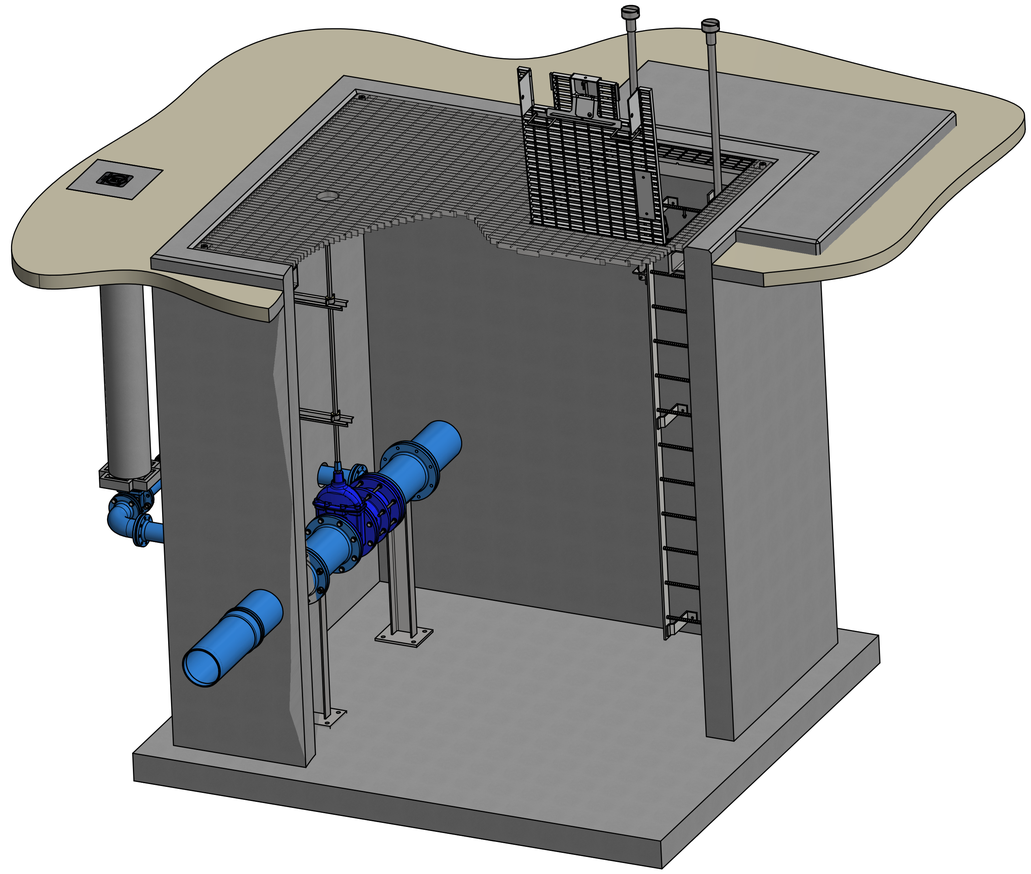


PLAN
(COVERS AND SUPPORT BEAMS NOT SHOWN FOR CLARITY)

SECTIONAL ELEVATION

SLUICE VALVE CHAMBER

SCALE : NTS



ISOMETRIC CUT-AWAY
SCALE : NTS

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. FOR CHAMBER DEPTHS LESS THAN 3000, VERTICAL RUNG (TWIN STILE) LADDERS MAY BE USED IN LIEU OF INCLINED RUNG (TWIN STILE) LADDERS. FOR DEPTHS GREATER THAN 3000, A FIXED INCLINED RUNG LADDER SHALL BE INSTALLED. EXTENDABLE STANCHIONS ARE TO BE FITTED WHEREVER PRACTICABLE.

3. 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.

4. THRUST BLOCKS (EXTERNAL TO THE CHAMBER) ARE NOT REQUIRED FOR CAST IN SITU VALVE CHAMBERS WHERE PUDDLE FLANGES CAN BE CAST IN THE WALL WITH APPROPRIATE REINFORCEMENT. REFER TO DRAWINGS SD-5001, SD-5002 AND SD-5003 FOR GENERIC THRUST BLOCK REQUIREMENTS. PURPOSE ENGINEERED THRUST BLOCK DETAILS SHALL BE PROVIDED BY THE DESIGNER IN LIEU OF GENERIC DETAILS WHERE APPROPRIATE (e.g. POOR SOILS, MULTIPLE PIPELINES IN CLOSE PROXIMITY AND HIGHER PIPELINE PRESSURES etc).

5. ALL PIPE PENETRATIONS THROUGH THE VALVE CHAMBER WALLS SHALL INCORPORATE AN APPROVED HYDROPHYLIC WATERSTOP.

6. ALL MATERIALS AND PRODUCTS (e.g. VALVES, PIPES, FITTINGS etc.) SHALL BE SELECTED FROM THE ICON WATER APPROVED PRODUCTS LIST. UNLISTED PRODUCTS AND MATERIALS SHALL NOT BE USED.

7. STOP VALVES OF SIZES SMALLER THAN DN450 MAY BE DIRECT BURIED. REFER TO SD-3202 FOR DETAILS.

8. WHILST THIS DRAWING DEPICTS AN EXTERNAL BYPASS, IT IS ICON WATER'S PREFERENCE THAT STOP VALVES BE PURCHASED/INSTALLED WITH AN INTEGRAL BYPASS ARRANGEMENT FULLY LOCATED INSIDE THE CHAMBER.

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	15/06/2018	S. Essery	K. Danenbergsons	D. Eager
B	NOTES 2 & 4 UPDATED	19/06/2019	S. Essery	K. Danenbergsons	C. Patrick

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

icon WATER

STANDARD DRAWING
VALVE CHAMBER
TYPICAL STOP VALVE INSTALLATION ARRANGEMENT

DRAWING STATUS: Current

SD-3208-C

A1

ISSUE: B

NOTES:

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

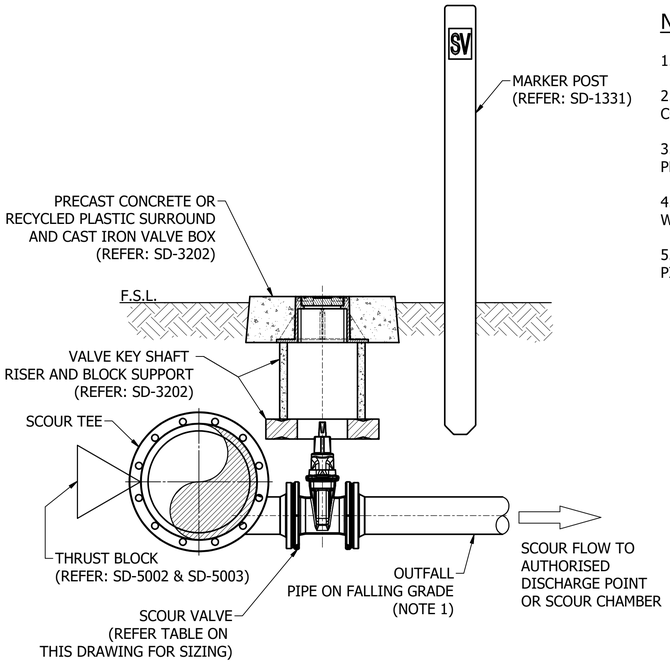
2. REFER TO THE TABLE ON THIS DRAWING FOR SIZING AND ENSURE SCOUR CONNECTION IS WITHIN 50 METRES OF PUMP SCOUR CHAMBER.

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

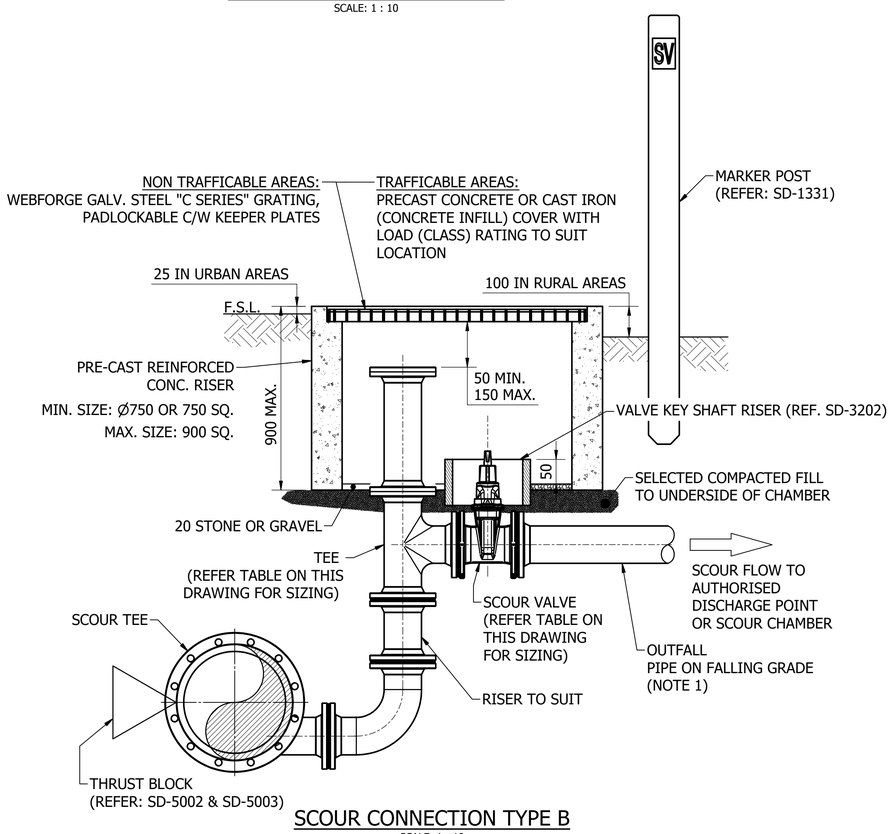
4. ALL PIPE PENETRATIONS THROUGH THE CHAMBER WALL ARE TO BE SEALED WITH AN APPROVED WATERSTOP (e.g. HYDROTITE).

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

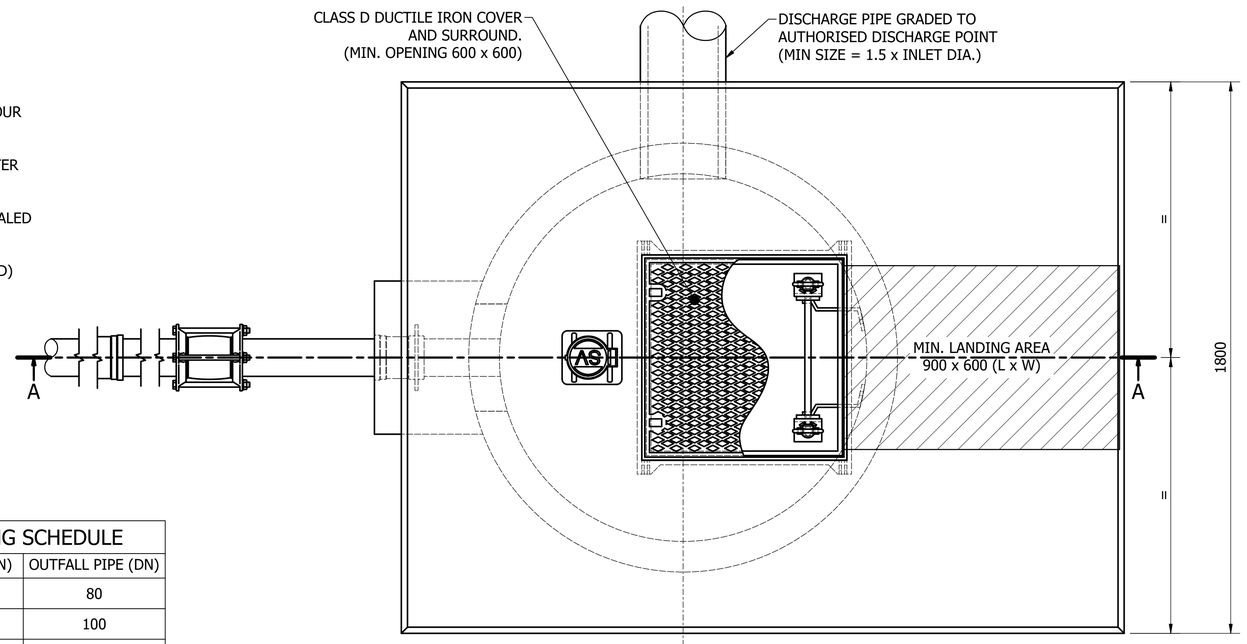
SCOUR OUTLET PIPEWORK SIZING SCHEDULE			
MAINS DIA. (DN)	SCOUR VALVE (DN)	TEE (DNxDN)	OUTFALL PIPE (DN)
150-200	80	80 x 80	80
225-300	100	100 x 100	100
375-600	150	150 x 100	100
750	225	225 x 150	150



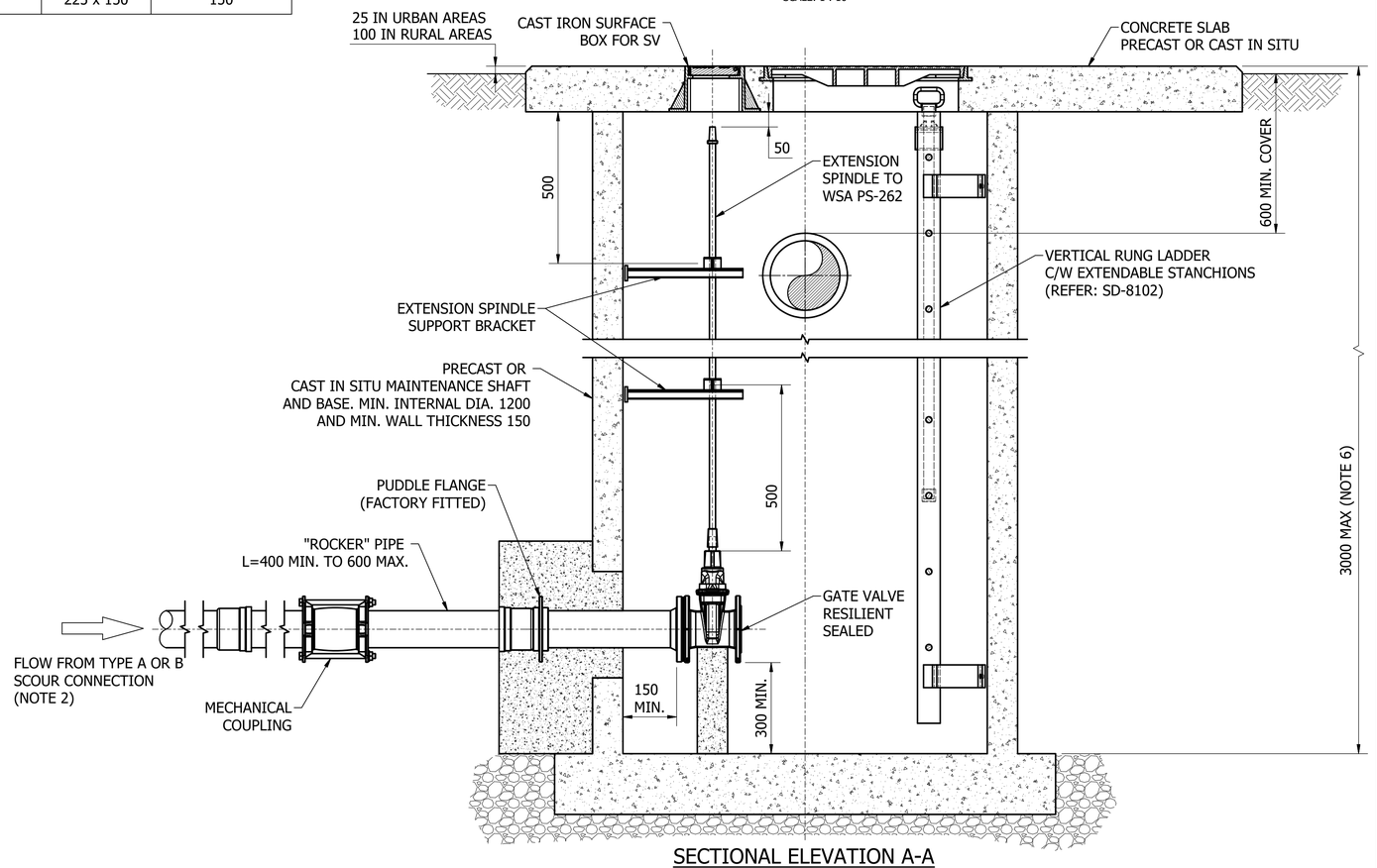
SCOUR CONNECTION TYPE A
SCALE: 1 : 10



SCOUR CONNECTION TYPE B
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	15/06/2018	M. Matusiak	K. Danenbergsons	D. Eager
B	NOTE NUMBERING CORRECTION	19/06/2019	S. Essery	K. Danenbergsons	C. Patrick

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

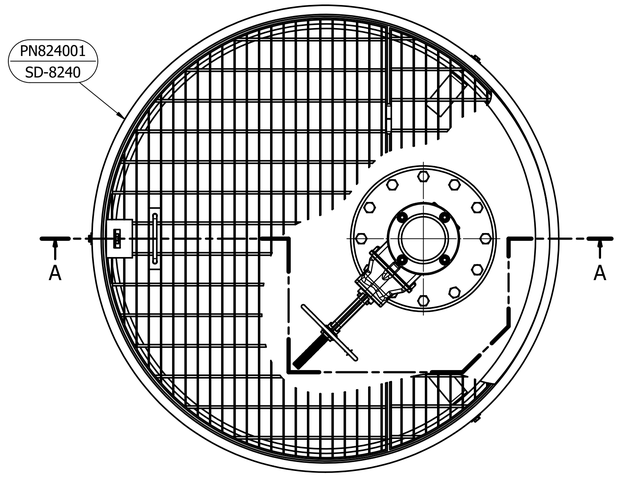
icon WATER

STANDARD DRAWING
WATER NETWORK
SCOUR INSTALLATIONS
GENERAL ARRANGEMENTS AND DETAILS

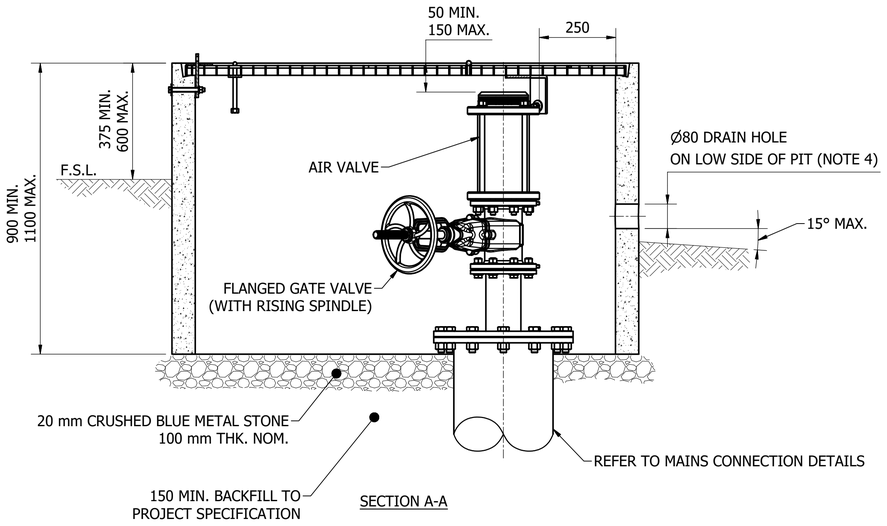
DRAWING STATUS: Current

SD-3209-C

ISSUE B



PLAN VIEW

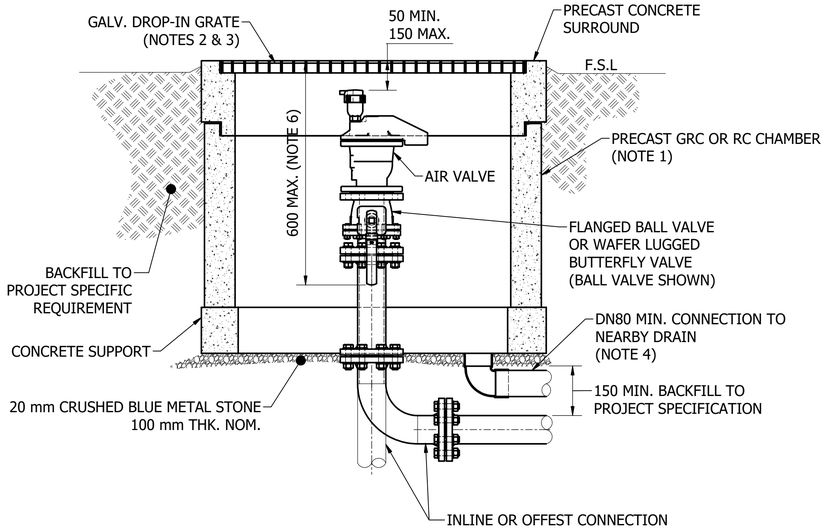


SECTION A-A

AIR VALVE INSTALLATION
(RURAL & SEMI RURAL AREAS)

COVER PANELS PARTIALLY SHOWN FOR CLARITY

SCALE: 1 : 10



AIR VALVE INSTALLATION
(URBAN AREAS, UNPAVED)

SCALE: 1 : 10

NOTES

1. CONSTRUCT CHAMBER FROM PRECAST GRC OR RC PITS AND RISERS TO SUIT REQUIRED DEPTH. PREFERRED MINIMUM SIZE OF 900 x 900 (INTERNAL DIMS.) RISERS TO COME WITH "SWIFT LIFT" LIFTING ANCHORS OR SIMILAR.

2. GALVANISED GRATE TO BE PAD-LOCKABLE AND BOLTED IN PLACE USING KEEPER PLATES TO PREVENT UNAUTHORISED ACCESS. 32 kg MAX. WEIGHT; CAPABLE OF MAX. MID-SPAN DEFLECTION OF 5 mm UDL @ 2.5 kPa.

3. TOP OF COVER TO SIT 25-35 ABOVE FINISHED GROUND LEVEL.

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

5. CHAMBERS 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.

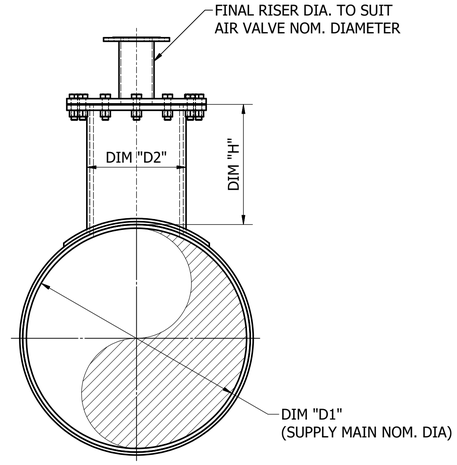
6. IF ISOLATION VALVE HANDLE TIP EXCEEDS MAXIMUM DIMENSION STATED, ISOLATION VALVE WITH GEARBOX SHALL BE INSTALLED. COVER TO INCLUDE A BANDED HOLE TO ALLOW AN EXTENSION SPINDLE TO MANUALLY OPERATE THE VALVE. IF THIS IS NOT PRACTICAL, LOCATE THE VALVE SO THAT A RURAL/SEMI-RURAL INSTALLATION CAN BE EMPLOYED.

7. 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.

CONNECTION TO SUPPLY MAINS

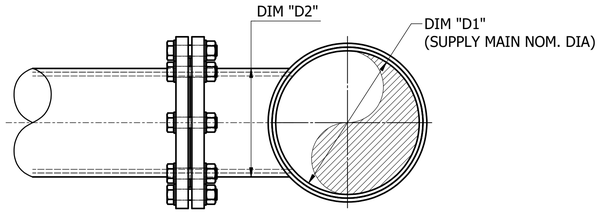
8. NOMINAL RISER DIAMETER "D2" SHALL BE A MINIMUM OF HALF THE SUPPLY MAIN DIAMETER "D1" EXCEPT WHERE "D1" EXCEEDS DN750, THEN "D2" SHALL BE DN300.

9. DIM "H" SHALL BE A MINIMUM OF HALF OF THE SUPPLY MAINS NOMINAL DIAMETER.



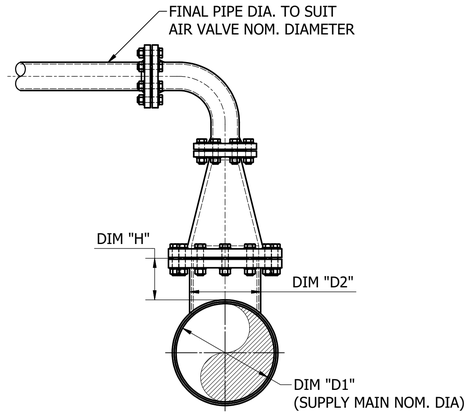
DETAIL A - IN LINE CONNECTION

SCALE: 1 : 10



DETAIL B - OFFSET CONNECTION
(FOR MAINS DN250 AND SMALLER)

SCALE: 1 : 5



DETAIL C - OFFSET CONNECTION
(FOR MAINS DN300 AND LARGER)

SCALE: 1 : 10

No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	15/06/2018	M. Matusiak	K. Danenbergsons	D. Eager
B	ACCESS GRATING ARRANGEMENT UPDATED	10/09/2018	S. Essery	K. Danenbergsons	C. Patrick

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

STANDARD DRAWING
WATER NETWORK
AIR VALVES AND CONNECTION TO MAINS
GENERAL ARRANGEMENT AND DETAILS

DRAWING STATUS: Current

SD-3210-D

ISSUE: B