

TYPICAL INSTALLATION OF POLYETHYLENE PIPES AND FITTINGS - NEW CONSTRUCTION

SCALE N.T.S.

NOTES:

1. REFER TO SD-5010 FOR FLANGED JOINTS DETAILS.
2. REFER TO SD-3011 FOR MAINS RENEWALS (PIPE BURSTING) WITH POLYETHYLENE.
3. ITEMS 8, 9, 10 AND 11 SHOWN ROTATED 90° FOR CLARITY.
4. ALL POLYETHYLENE PIPEWORK SHALL BE PE-100, SDR 11.
5. BUTT-WELDING SHALL BE CONDUCTED IN ACCORDANCE WITH WSA 01. IN-TRENCH BUTT-WELDING IS NOT PERMITTED.
6. FLANGED FITTINGS IN EITHER POLYETHYLENE (AS/NZS 4129) OR FBE COATED DI (AS/NZS 2280) MAY BE SUBSTITUTED IN LIEU OF BUTT-WELDING POLYETHYLENE FITTINGS. ELECTRO FUSION JOINTS ARE NOT PERMITTED.
7. POLYETHYLENE (PE100) PIPE MAY BE COLD-BENT TO A MINIMUM RADIUS OF 25 x DN ON THE PROVISO THAT ANY FORMERS USED SHALL NOT IMPOSE A POINT LOAD DURING THE BENDING OPERATION. FOR EXAMPLE, STAKES AND STAR PICKETS (OR SIMILAR ITEMS) SHALL NOT BE USED.
8. METAL-SEATED GATE VALVES SHALL BE USED FOR SCOUR APPLICATIONS.
9. INSTALL PIPEWORK PARALLEL TO PROPERTY BOUNDARIES.
10. CONSTRUCTOR TO MAKE ALLOWANCE FOR THE EXPANSION AND CONTRACTION OF POLYETHYLENE PIPE DUE TO TEMPERATURE CHANGES.
11. REFER TO SD-2101 AND WSA 03 (AS AMENDED BY ICON WATER IN STD-SPE-G-012) FOR DEPTH OF COVER REQUIREMENTS.
12. MARKER TAPE AND TRACER WIRE (NOT SHOWN FOR CLARITY) TO BE INSTALLED IN ACCORDANCE WITH WSA 03 (AS AMENDED BY ICON WATER) AND THE ICON WATER APPROVED PRODUCTS LIST.
13. ONLY ITEMS SPECIFICALLY LISTED IN ICON WATER'S APPROVED PRODUCTS LIST SHALL BE INSTALLED.
14. POLYETHYLENE MAINS SHALL NOT BE INSTALLED WITHOUT THE WRITTEN APPROVAL OF ICON WATER. ONLY PRE-APPROVED CONSTRUCTORS SHALL BE ENGAGED. CONTACT ICON WATER FOR THE LATEST LISTING OF APPROVED CONSTRUCTORS PRIOR TO COMPLETING DETAILED DESIGN ACTIVITIES.
15. CONCRETE THRUST BLOCKS ARE NOT REQUIRED IF FULL RESTRAINT HAS BEEN ACHIEVED THROUGH FLANGING AND BUTT-WELDING. REFER TO SD-5001, SD-5002 AND SD-5003 FOR GENERIC DETAILS. DUCK FOOT BEND ALSO NOT REQUIRED IF FULL RESTRAINT HAS BEEN ACHIEVED.
16. 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.

ITEM	DESCRIPTION
1	HYDRANT RISER, DN80, DI, FL-FL, FBE COATED, FLANGED TO AS 4087 PN16. REFER NOTE 15
2	DUCK FOOT BEND, DI, FL-FL, FBE COATED, AS 4087 PN16
3	STUB FLANGE, PE100, C/W LOOSE BACKING RING, AS 4087 PN16, REFER NOTE 1
4	GATE VALVE, RESILIENT SEATED, FL-FL, FLANGED TO AS 4087 PN16, NOTE 8
5	POLYETHYLENE (PE100) PIPE, AS/NZS 4130, PN16, BUTT-WELDED, REFER NOTE 5
6	POLYETHYLENE (PE100) BUTT-WELDED TEE, C/W DN80 FLANGED TAKE-OFF, AS/NZS 4129, PN16, REFER NOTE 5 & 6
7	PIPE SADDLE, DI, FBE COATED, C/W THREADED BSP TAKE-OFF (UP TO DN50), PN16
8	PIPE SADDLE, DI, FBE COATED, C/W FLANGED TAKE-OFF (UP TO DN150), AS 4087, PN16
9	POLYETHYLENE (PE100), BUTT- WELDING ELBOW (OR BEND), AS/NZS 4129, PN16, REFER NOTE 6
10	POLYETHYLENE (PE100) BUTT- WELDING TEE, AS/NZS 4129, PN16, REFER NOTE 6
11	POLYETHYLENE (PE100) BUTT- WELDING REDUCER, AS/NZS 4129, PN16, REFER NOTE 6
12	EXTENSION SPINDLE, REFER NOTE 16
13	REDUCER, DI, FL-FL, FBE COATED, AS 4087 PN16

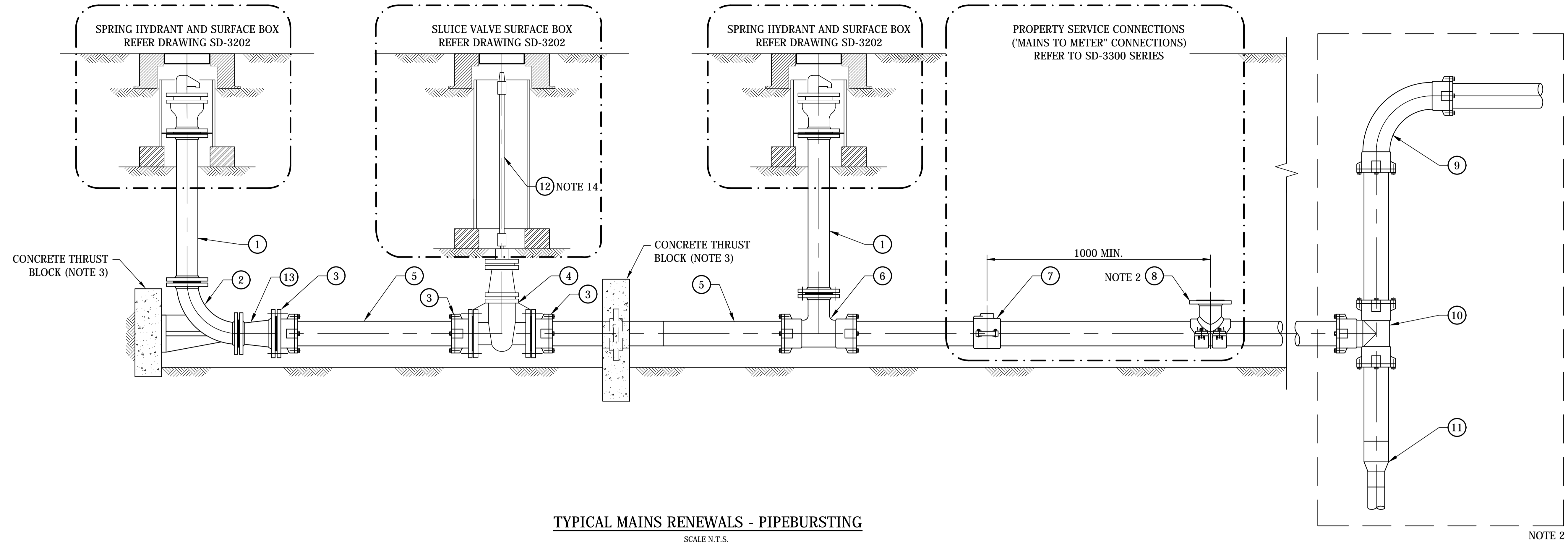
No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	15/06/2018	C. Dickson	K. Danenbergsons	D. Eager
B	EXTENSION SPINDLE NOTE UPDATE	10/12/2018	S. Essery	K. Danenbergsons	C. Patrick

DAM	RES	SPS
BWS	WAT	STP
WTP	SEW	
WPS	REC	



STANDARD DRAWING
WATER NETWORK
TYPICAL NEW MAINS CONSTRUCTION
POLYETHYLENE MAINS

DRAWING STATUS	
Current	
SD-3010-C	
A1	ISSUE B
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TYPICAL MAINS RENEWALS - PIPEBURSTING
SCALE N.T.S.

NOTES:

1. REFER TO SD-5010 FOR FLANGED JOINTS DETAILS.
2. ITEMS 8, 9, 10 AND 11 SHOWN ROTATED 90° FOR CLARITY.
3. CONCRETE THRUST BLOCKS ARE NOT REQUIRED IF FULL RESTRAINT HAS BEEN ACHIEVED THROUGH FLANGING, BUTT-WELDING OR FULLY-RESTRAINED PIPE COUPLINGS. DUCK FOOT BEND ALSO NOT REQUIRED IF FULL RESTRAINT HAS BEEN ACHIEVED. REFER TO SD-5001, SD-5002 AND SD-5003 FOR GENERIC DETAILS.
4. BUTT-WELDING SHALL BE CONDUCTED IN ACCORDANCE WITH WSA 01. IN-TRENCH BUTT-WELDING IS NOT PERMITTED.
5. BUTT-WELDING AND FLANGING ARE THE REQUIRED JOINING METHODS. APPROVED COUPLINGS (ITEMS 3, 6, 9 & 10) MAY BE USED IF THIS IS NOT PRACTICABLE. ELECTROFUSION JOINTS ARE NOT PERMITTED EXCEPT FOR FINAL CLOSURES OR WHEN OTHER APPROVED METHODS ARE NOT PRACTICABLE.
6. POLYETHYLENE (PE100) PIPE MAY BE COLD-BENT TO A MINIMUM RADIUS OF 25 x DN ON THE PROVISIO THAT ANY FORMERS USED SHALL NOT IMPOSE A POINT LOAD DURING THE BENDING OPERATION. FOR EXAMPLE, STAKES AND STAR PICKETS (OR SIMILAR ITEMS) SHALL NOT BE USED.
7. METAL-SEATED GATE VALVES SHALL BE USED FOR SCOUR APPLICATIONS.
8. INSTALL PIPEWORK PARALLEL TO PROPERTY BOUNDARIES.
9. CONSTRUCTOR TO MAKE ALLOWANCE FOR THE EXPANSION AND CONTRACTION OF POLYETHYLENE PIPE DUE TO TEMPERATURE CHANGES.
10. REFER TO SD-2101 AND WSA 03 (AS AMENDED BY ICON WATER IN STD-SPE-G-012) FOR DEPTH OF COVER REQUIREMENTS.
11. MARKER TAPE AND TRACER WIRE (NOT SHOWN FOR CLARITY) TO BE INSTALLED IN ACCORDANCE WITH WSA 03 (AS AMENDED BY ICON WATER) AND THE ICON WATER APPROVED PRODUCTS LIST.
12. ONLY ITEMS SPECIFICALLY LISTED IN ICON WATER'S APPROVED PRODUCTS LIST SHALL BE INSTALLED.
13. PIPEBURSTING AND MAINS RENEWALS SHALL ONLY BE CONDUCTED BY APPROVED CONSTRUCTORS WHO ARE DIRECTLY CONTRACTED TO ICON WATER.
14. 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.

ITEM	DESCRIPTION
1	HYDRANT RISER, DN80, DI, FL-FL, FBE COATED, FLANGED TO AS 4087 PN16. REFER NOTE 3.
2	DUCK FOOT BEND, DN80, DI, FL-FL, FBE COATED, FLANGED TO AS 4087 PN16
3	FULLY RESTRAINED COUPLING WITH FLANGE, DI, EPOXY COATED, PN16
4	GATE VALVE, RESILIENT SEATED, FL-FL, FLANGED TO AS 4087 PN16, REFER NOTE 7
5	POLYETHYLENE (PE100) PIPE, AS/NZS 4130, PN16, BUTT-WELDED, REFER NOTE 5
6	TEE, FULLY RESTRAINED COUPLING WITH FLANGE, DI, EPOXY COATED, REFER NOTE 5
7	PIPE SADDLE, DI, FBE COATED, C/W THREADED BSP TAKE-OFF (UP TO DN50), PN16
8	PIPE SADDLE, DI, FBE COATED, C/W FLANGED TAKE-OFF (UP TO DN150), AS 4087, PN16
9	90° ELBOW, DI, FULLY RESTRAINED COUPLINGS, EPOXY COATED, REFER NOTE 5
10	TEE, FULLY RESTRAINED COUPLING, EPOXY COATED, REFER NOTE 5
11	POLYETHYLENE (PE100) BUTT- WELDING REDUCER, AS/NZS 4129, PN16, REFER NOTE 5
12	EXTENSION SPINDLE, REFER NOTE 14
13	REDUCER, DI, FL-FL, FBE COATED, AS 4087 PN16

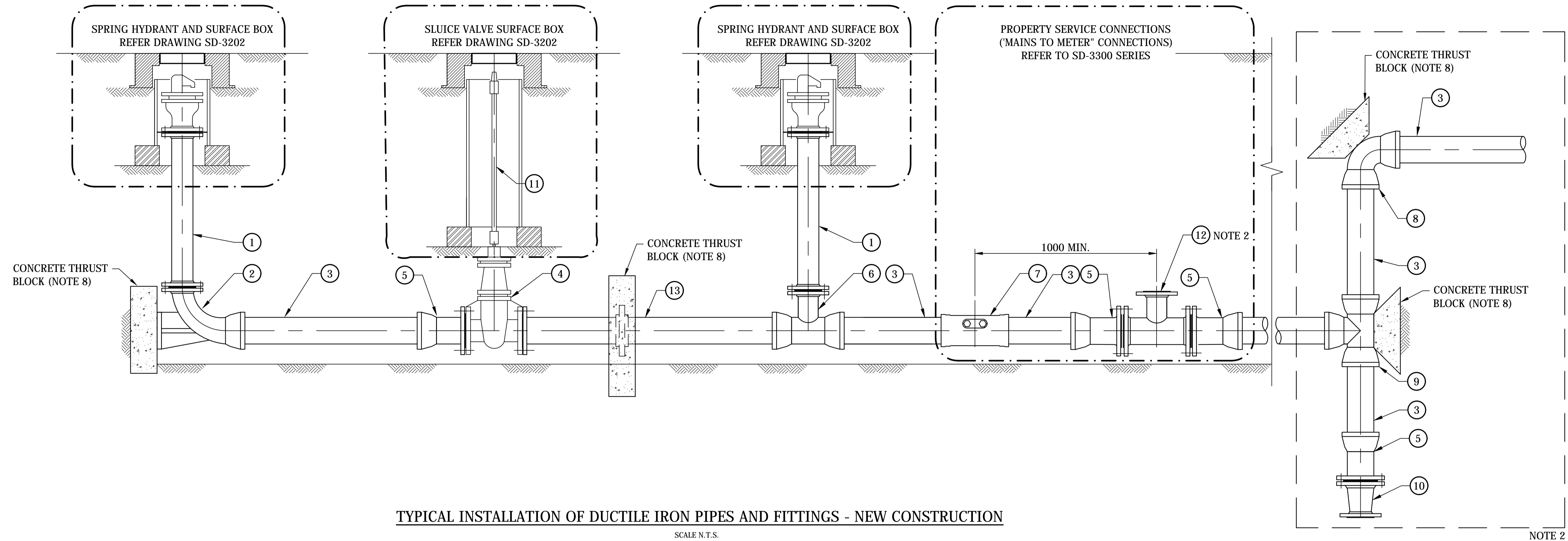
A	INITIAL ISSUE	15/06/2018	C. Dickson	K. Danenbergsons	D. Eager
B	NOTES UPDATED	10/09/2018	S. Essery	K. Danenbergsons	C. Patrick
No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED

DAM	RES	SPS
BWS	WAT	STP
WTP	SEW	
WPS	REC	



STANDARD DRAWING
WATER NETWORK
TYPICAL MAINS RENEWALS - PIPEBURSTING
POLYETHYLENE MAINS

DRAWING STATUS	
Current	
SD-3011-C	
A1	ISSUE B
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TYPICAL INSTALLATION OF DUCTILE IRON PIPES AND FITTINGS - NEW CONSTRUCTION

SCALE N.T.S.

NOTES:

1. REFER TO SD-5010 FOR FLANGED JOINTS DETAILS.
2. ITEMS 3, 5, 8, 9, 10 & 12 SHOWN ROTATED 90° FOR CLARITY.
3. ONLY ITEMS SPECIFICALLY LISTED IN ICON WATER'S APPROVED PRODUCTS LIST SHALL BE INSTALLED.
4. METAL-SEATED GATE VALVES SHALL BE USED FOR SCOUR APPLICATIONS.
5. INSTALL PIPEWORK PARALLEL TO PROPERTY BOUNDARIES.
6. REFER TO SD-2101 AND WSA 03 (AS AMENDED BY ICON WATER IN STD-SPE-G-012) FOR DEPTH OF COVER REQUIREMENTS.
7. MARKER TAPE AND TRACER WIRE (NOT SHOWN FOR CLARITY) TO BE INSTALLED IN ACCORDANCE WITH WSA 03 (AS AMENDED BY ICON WATER) AND THE ICON WATER APPROVED PRODUCTS LIST.
8. CONCRETE THRUST BLOCKS, ANCHORS AND THRUST WALLS TO BE EITHER ENGINEERED FOR THE SPECIFIC PROJECT OR IN ACCORDANCE WITH SD-5001, SD-5002 AND SD-5003 AS APPROPRIATE.
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.

ITEM	DESCRIPTION
1	HYDRANT RISER, DN80, DI, FL-FL, FBE COATED, FLANGED TO AS 4087 PN16.
2	DUCK FOOT BEND, REDUCING TYPE, DI, FL-SO, FBE COATED, FLANGED TO AS 4087 PN16
3	DUCTILE PIPE, DI, PN35, AS/NZS 2280
4	GATE VALVE, RESILIENT SEATED, FL-FL, FLANGED TO AS 4087 PN16, REFER NOTE 4
5	CONNECTOR, DI, FL-SO, PN16
6	REDUCING TEE, DI, FBE COATED, SO-SO-FL, PN16
7	PRE-TAPPED CONNECTOR, DI, FBE COATED, PN16
8	90° ELBOW, DI, FBE COATED, SO-SO, PN16
9	TEE, DI, FBE COATED, SO-SO-SO, PN16
10	FLANGE TAPER, DI, FBE COATED, FL-FL, PN16
11	EXTENSION SPINDLE, REFER NOTE 9
12	REDUCING TEE, DI, FBE COATED, FL-FL-FL, PN16
13	DUCTILE PIPE, DI, PN35, FL-SP FLANGED TO AS 4087 PN16, C/W FACTORY FITTED THRUST FLANGE

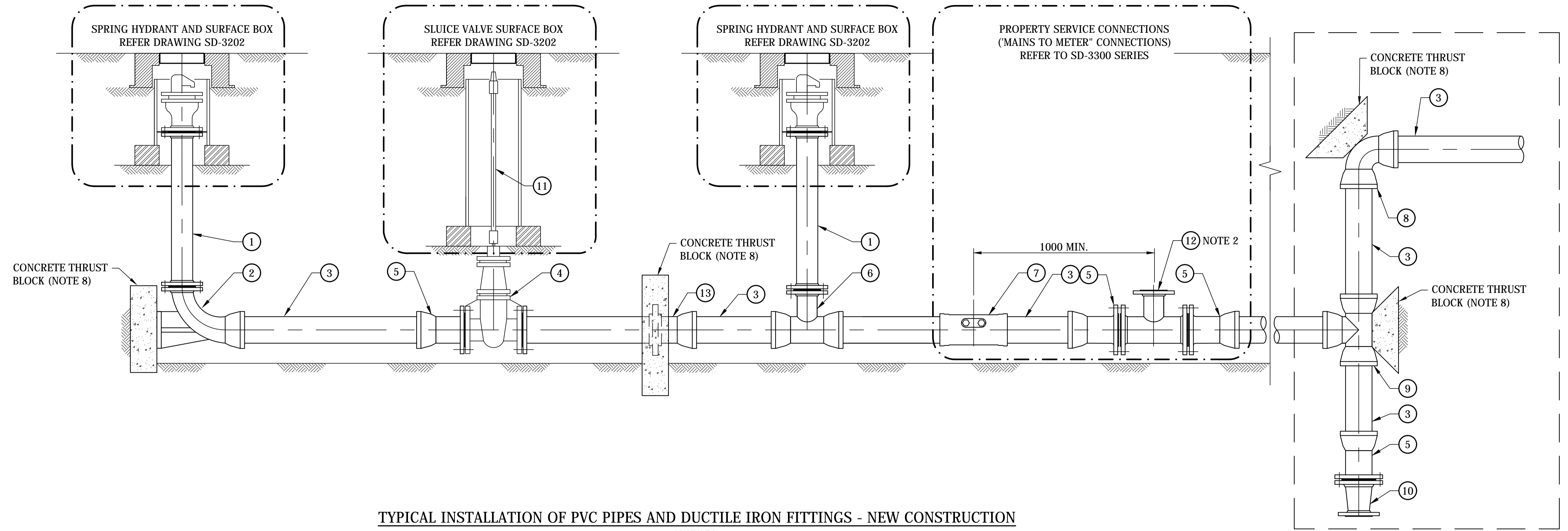
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A	INITIAL ISSUE	15/06/2018	C. Dickson	K. Danenbergsons	D. Eager
B	SPINDLE AND THRUST BLOCK NOTES UPDATED	10/12/2018	S. Essey	K. Danenbergsons	C. Patrick

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



STANDARD DRAWING
WATER NETWORK
TYPICAL NEW MAINS CONSTRUCTION
DUCTILE IRON MAINS

DRAWING STATUS	
Current	
SD-3012-C	
A1	ISSUE B
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TYPICAL INSTALLATION OF PVC PIPES AND DUCTILE IRON FITTINGS - NEW CONSTRUCTION

SCALE N.T.S.

NOTE 2

NOTES:

1. REFER TO SD-5010 FOR FLANGED JOINTS DETAILS.
2. ITEMS 3, 5, 8, 9, 10 & 12 SHOWN ROTATED 90° FOR CLARITY.
3. ONLY ITEMS SPECIFICALLY LISTED IN ICON WATER'S APPROVED PRODUCTS LIST SHALL BE INSTALLED.
4. METAL-SEATED GATE VALVES SHALL BE USED FOR SCOUR APPLICATIONS.
5. INSTALL PIPEWORK PARALLEL TO PROPERTY BOUNDARIES.
6. REFER TO SD-2101 AND WSA 03 (AS AMENDED BY ICON WATER IN STD-SPE-G-012) FOR DEPTH OF COVER REQUIREMENTS.
7. MARKER TAPE AND TRACER WIRE (NOT SHOWN FOR CLARITY) TO BE INSTALLED IN ACCORDANCE WITH WSA 03 (AS AMENDED BY ICON WATER) AND THE ICON WATER APPROVED PRODUCTS LIST.
8. CONCRETE THRUST BLOCKS, ANCHORS AND THRUST WALLS TO BE EITHER ENGINEERED FOR THE SPECIFIC PROJECT OR IN ACCORDANCE WITH SD-5001, SD-5002 AND SD-5003 AS APPROPRIATE.
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.

ITEM	DESCRIPTION
1	HYDRANT RISER, DN80, DI, FL-FL, FBE COATED, FLANGED TO AS 4087 PN16
2	DUCK FOOT BEND, REDUCING TYPE, DI, FL-SO, FBE COATED, FLANGED TO AS 4087 PN16
3	PIPE, PVC-M TO AS/NZS 4441, SERIES 2, PN16
4	GATE VALVE, RESILIENT SEATED, FL-FL, FLANGED TO AS4087 PN16, NOTE 4
5	CONNECTOR, DI, FBE COATED, FL-SO, PN16
6	TEE, DI, FBE COATED, SO-SO-FL, PN16
7	PRE-TAPPED CONNECTOR, DI, FBE COATED, PN16
8	90° ELBOW, DI, FBE COATED, SO-SO, PN16
9	TEE, DI, FBE COATED, SO-SO-SO, PN16
10	FLANGE TAPER, DI, FBE COATED, FL-FL, PN16
11	EXTENSION SPINDLE, REFER NOTE 9
12	TEE, DI, FBE COATED, FL-FL-FL, PN16
13	PIPE, DICTL, FL-SO, FBE COATED, PN35, AS/NZS 2280, C/W FACTORY FITTED THRUST FLANGE

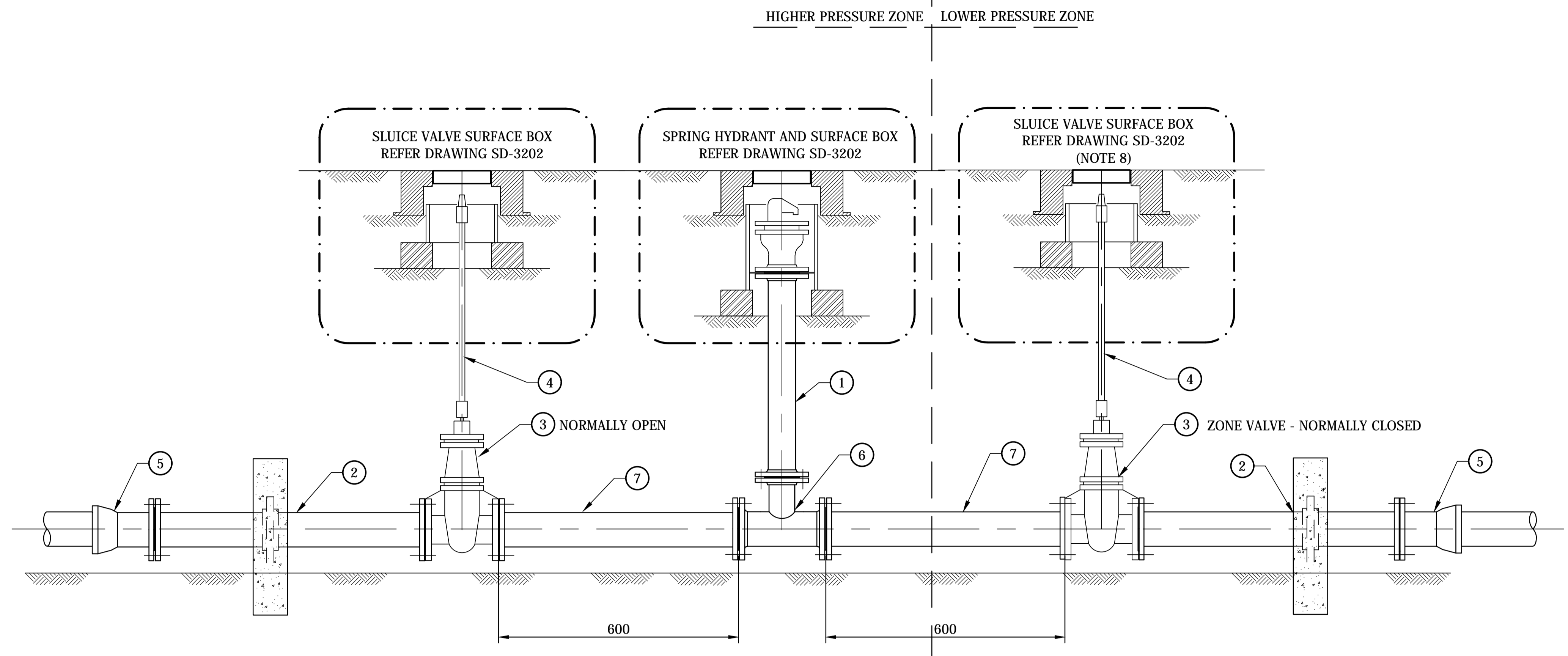
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A	INITIAL ISSUE	15/06/2018	C. Dickson	K. Danenbergsons	D. Eager
B	SPINDLE NOTE UPDATED	10/12/2018	S. Essey	K. Danenbergsons	C. Patrick

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



STANDARD DRAWING
WATER NETWORK
TYPICAL NEW MAINS CONSTRUCTION
PVC MAINS

DRAWING STATUS	
Current	
SD-3013-C	
A1	ISSUE B
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TYPICAL INSTALLATION OF PRESSURE ZONE BOUNDARY ZONE VALVE
SCALE: N.T.S.

NOTES:

1. THIS DRAWING SHOWS THE EQUIPMENT ARRANGEMENT ONLY. PIPE MATERIALS AND RATINGS ARE TO BE SPECIFIED BY THE DESIGNER ON THE PROJECT SPECIFIC DRAWINGS.
2. REFER TO SD-5010 FOR FLANGED JOINTS DETAILS.
3. ONLY ITEMS SPECIFICALLY LISTED IN ICON WATER'S APPROVED PRODUCTS LIST SHALL BE INSTALLED.
4. REFER TO SD-2101 AND WSA 03 (AS AMENDED BY ICON WATER IN STD-SPE-G-012) FOR DEPTH OF COVER REQUIREMENTS.
5. MARKER TAPE AND TRACER WIRE (NOT SHOWN FOR CLARITY) TO BE INSTALLED IN ACCORDANCE WITH WSA 03 (AS AMENDED BY ICON WATER) AND THE ICON WATER APPROVED PRODUCTS LIST.
6. CONCRETE THRUST BLOCKS, ANCHORS AND THRUST WALLS TO BE EITHER ENGINEERED FOR THE SPECIFIC PROJECT OR IN ACCORDANCE WITH SD-5001, SD-5002 AND SD-5003 AS APPROPRIATE.
7. 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.
8. THE ZONE VALVE SURFACE BOX IS REQUIRED TO BE COLOURED YELLOW.

ITEM	DESCRIPTION
1	HYDRANT RISER, DI, FL-FL, FBE COATED, AS4087 PN16.
2	PIPE, DI, FL-FL, FBE COATED, PN35, AS/NZS 2280, C/W FACTORY FITTED THRUST FLANGE
3	SLUICE VALVE, FL-FL, AS4087 PN16
4	EXTENSION SPINDLE, REFER NOTE 7
5	CONNECTOR, DI, FL-SOC, PN16.
6	TEE, FL-FL-FL, PN16
7	DUCTILE PIPE, DI, PN35, FL-FL, FLANGED TO PN16

A	INITIAL ISSUE	27/06/2019	S. Essery	K. Danenbergsons	C. Patrick
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DAM	RES	SPS
BWS	WAT	STP
WTP	SEW	
WPS	REC	
ASSET AREA APPLICABILITY		



STANDARD DRAWING
WATER NETWORK
TYPICAL NEW MAINS CONSTRUCTION
PRESSURE ZONE BOUNDARY ZONE VALVE
ARRANGEMENT AND DETAILS

DRAWING STATUS	
Current	
SD-3014-C	
A1	ISSUE A
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