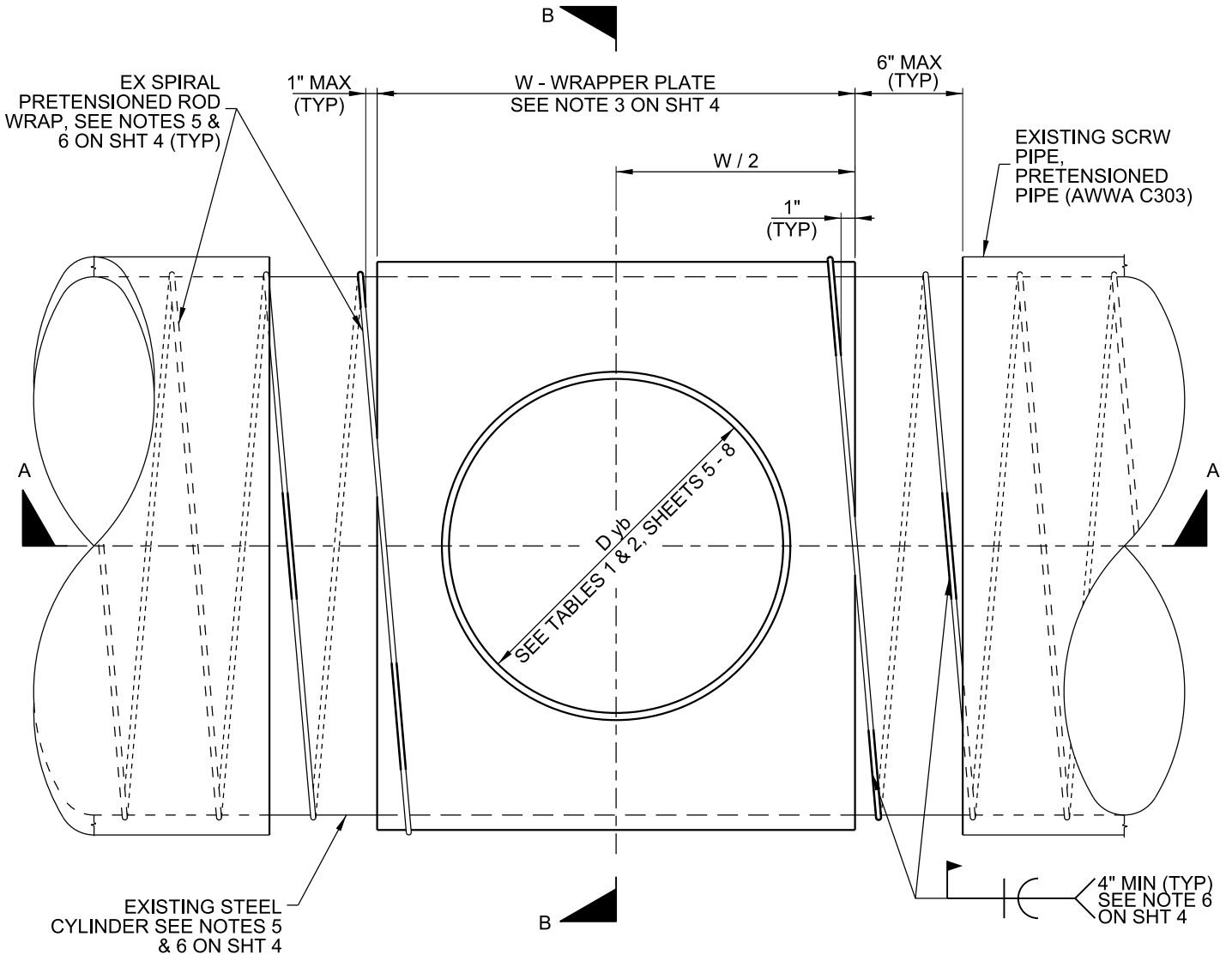


PLAN VIEW

NOTES:

1. FOR INSTALLATION INSTRUCTIONS AND NOTES, SEE SHEET 4.
2. FOR WRAPPER PLATE THICKNESS, FLANGE RATINGS, AND OUTLET Ø, SEE TABLES 1 & 2, SHEETS 5 - 8.
3. FOR FINAL MORTAR COATING DETAILS, SEE SECTION A - A.
4. BLIND FLANGE NOT SHOWN FOR CLARITY.

REVISION	BY	APPROVED	DATE
ORIGINAL	TH	J. NAGELVOORT	0918

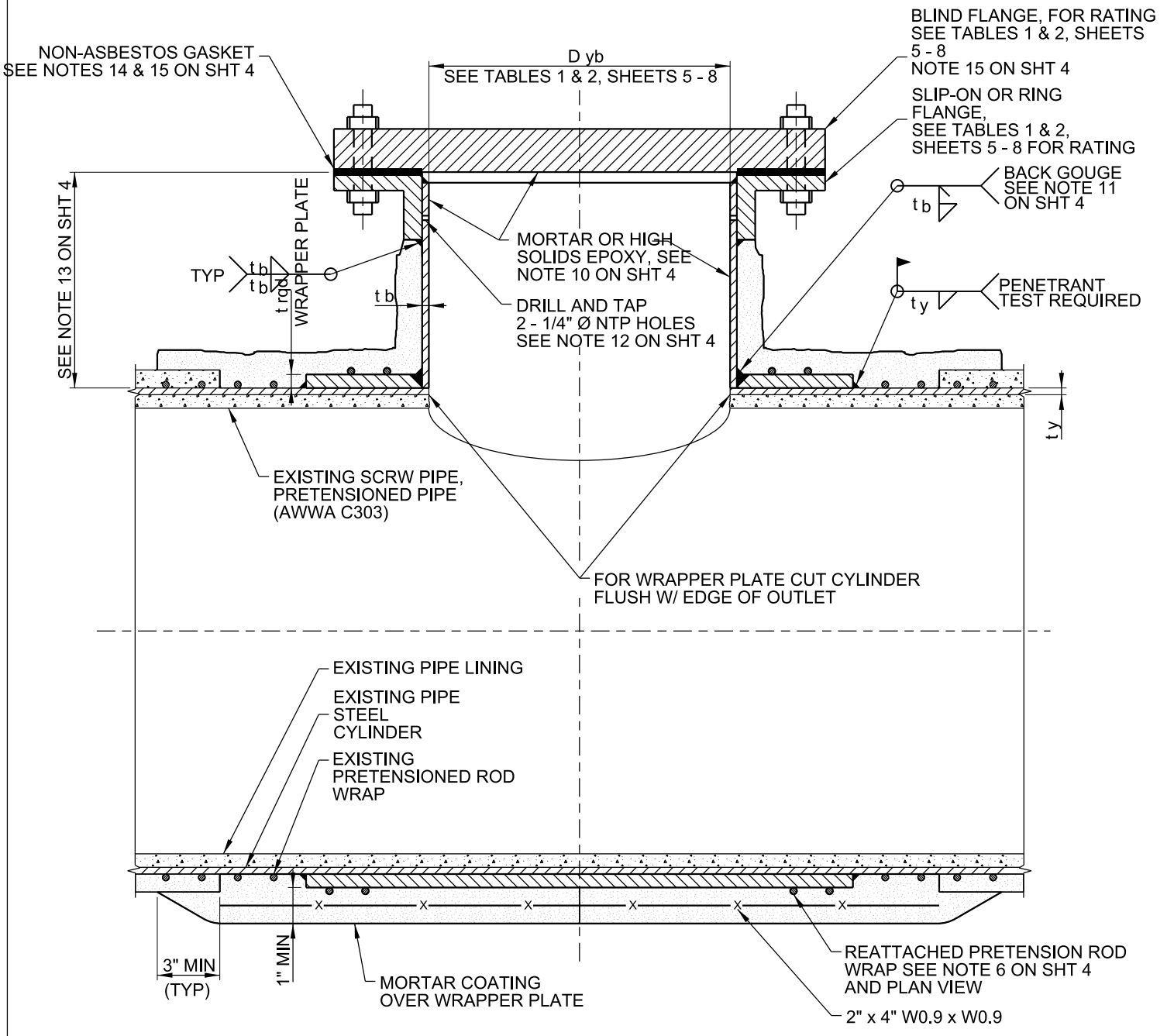
CITY OF SAN DIEGO – STANDARD DRAWING

WRAPPER PLATE & LINE STOP OUTLET FOR 20" TO 54" DIAMETER SCRW PIPE

RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE

COORDINATOR R.C.E. 56523 9/7/18 DATE

DRAWING NUMBER **SDW-176**



SECTION A - A

NOTES:

1. FOR INSTALLATION INSTRUCTIONS AND NOTES, SEE SHEET 4.
2. FOR WRAPPER PLATE THICKNESS, FLANGE RATINGS, AND OUTLET Ø, SEE TABLES 1 & 2, SHEETS 5 - 8.
3. WRAP BLIND FLANGE WITH WAX-TAPE PER AWWA C217.

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CITY OF SAN DIEGO – STANDARD DRAWING

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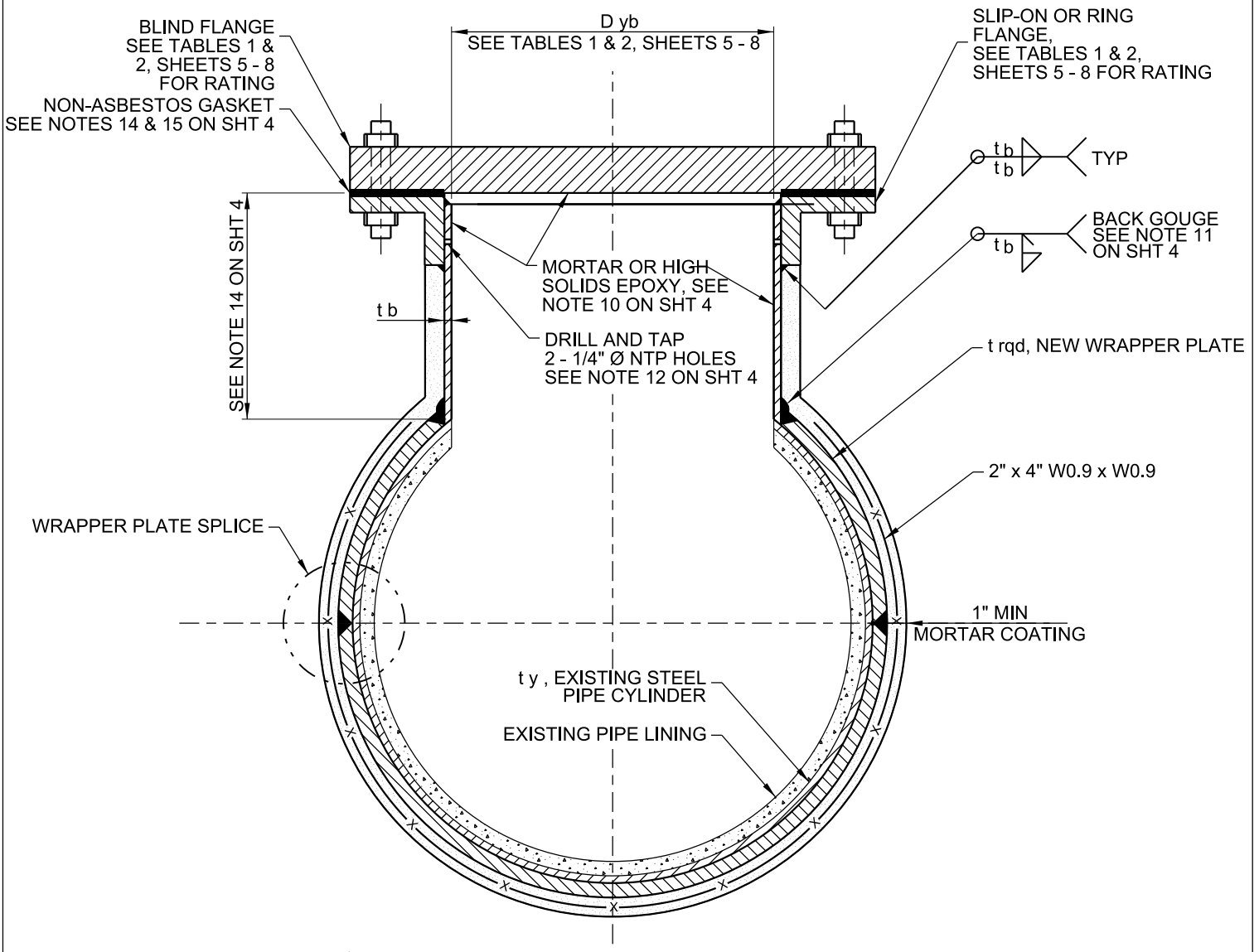
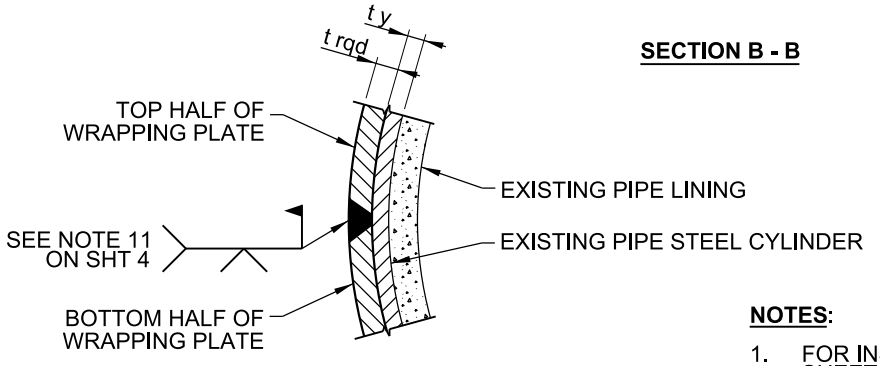


SECTION B - B



WRAPPER PLATE SPLICE

NOTES:

1. FOR INSTALLATION INSTRUCTIONS AND NOTES, SEE SHEET 4.
2. FOR WRAPPER PLATE THICKNESS, FLANGE RATINGS, AND OUTLET Ø, SEE TABLES 1 & 2, SHEETS 5 - 8.
3. WRAP BLIND FLANGE WITH WAX-TAPE PER AWWA C217.

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CITY OF SAN DIEGO – STANDARD DRAWING

WRAPPER PLATE & LINE STOP OUTLET FOR 20" TO 54" DIAMETER SCRW PIPE

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COORDINATOR R.C.E. 56523 9/7/18 DATE

DRAWING NUMBER **SDW-176**

NOTES:

1. DETERMINE THE PIPE DIAMETER, CYLINDER THICKNESS AND PRESSURE RATING OF THE EXISTING PIPELINE. IF THE CYLINDER THICKNESS IS LESS THAN 10 GAUGE (0.134"), SPECIAL WELDING PROCEDURES SHALL BE SUBMITTED, OR THE ENTIRE PIPE SECTION SHALL BE REMOVED AND REPLACED.

2. FOR LINE STOPS THE CONTRACTOR SHALL SUBMIT CALCULATIONS SHOWING PIPE IS ADEQUATELY ANCHORED FOR THRUST.

3. FABRICATE THE WRAPPER PLATE USING THE DIMENSIONS SHOWN ON TABLES 1 OR 2. FOR THE WRAPPER PLATE DIMENSIONS SHOWN ON TABLES 1 AND 2, A CORRESPONDING ALLOWED MAXIMUM OUTLET Ø IS GIVEN. THE CITY SHALL PROVIDE THE Ø OF OUTLET OR THE OUTLET Ø SHALL BE DETERMINED BY PROJECT REQUIREMENTS.

4. REDUCE THE LIVE PRESSURE INSIDE THE PIPE TO LESS THAN OR EQUAL TO THE MAXIMUM ALLOWABLE INSTALLATION PRESSURE SHOWN ON TABLES 1 AND 2. THE INSTALLATION PRESSURE SHOWN IN TABLES 1 AND 2 IS THE MAXIMUM ALLOWABLE PRESSURE THE PIPE CAN WITHSTAND WHILE THE WRAPPER PLATE IS BEING INSTALLED (NOTE THAT THE MAXIMUM PRESSURE SHOWN IS OPERATING PRESSURE WITHOUT SURGE).

5. REMOVE THE MORTAR COATING AND MARK THE INSTALLATION LOCATION OF THE WRAPPER PLATE. THE OUTER EDGE OF THE WRAPPER PLATE SHALL BE LOCATED AND MARKED ON THE STEEL CYLINDER OF THE PIPELINE. DO NOT CUT THE EXISTING PRETENSIONED REINFORCING ROD WRAP AT THIS TIME.

6. WELD THE EXISTING ROD WRAP TO THE STEEL CYLINDER WITHIN 6 INCHES OF THE WRAPPER PLATE INSTALLATION LOCATION AS SHOWN. NOTE THE ROD WRAP IS IN TENSION AND CANNOT BE CUT UNTIL IT IS PROPERLY WELDED TO THE STEEL CYLINDER. AFTER WELDING THE ROD WRAP TO THE STEEL CYLINDER, CUT THE ROD WRAP AT THE CENTER OF THE WRAPPER PLATE INSTALLATION LOCATION, MOVING ASIDE THE LOOSE COILS SO THE WRAPPER PLATE CAN BE INSTALLED (DO NOT BEND THE REINFORCING ROD). ONCE THE WRAPPER PLATE IS WELDED IN PLACE (SEE NOTE 7), REPOSITION THE LOOSELY COILED ROD WRAP BACK OVER THE STEEL CYLINDER AND WRAPPER PLATE AS SHOWN KEEPING THE ROD WRAP'S ORIGINAL ON-CENTER SPACING. PULL TAUT AND WELD TO THE WRAPPER PLATE AS SHOWN. CUT OFF EXCESS LOOSE ROD WRAPPING COILS. THE LENGTH OF THE WELDS ALONG ALL REINFORCING ROD SHALL BE A MINIMUM OF 4 INCHES. ALL WELDING SHALL BE PERFORMED USING E60XX WELDING RODS AND THE WELDERS SHALL BE CERTIFIED WELDERS PER ASME BPVC, SECTION IX.

7. WELD ON THE WRAPPER PLATE WITH OUTLET TO THE STEEL CYLINDER. THE LONGITUDINAL AND CIRCUMFERENTIAL WELDS MUST BE COMPLETED PRIOR TO CUTTING THE OUTLET HOLE IN THE CYLINDER.

8. INSTALL THE LINE STOP VALVE, GATE VALVE, OR BFV PER PROJECT REQUIREMENTS.

9. AFTER LINE STOP VALVE IS REMOVED, INSTALL THE BLIND FLANGE AND APPLY WAX-TAPE COATING PER AWWA C217.

10. FOR LINE STOP OUTLETS, A HIGH SOLIDS EPOXY (16 MILS) SHALL BE SHOP APPLIED TO SURFACES NOT COVERED BY THE NON-ASBESTOS GASKET. EPOXY SHALL BE CURED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION PRIOR TO SUBJECTING IT TO IMMERSION. EPOXY SHALL BE NSF 61 APPROVED.

    FOR NON LINE STOP APPLICATIONS, THE OUTLET NOZZLE SHALL BE LINED WITH CEMENT-MORTAR AND THE DAMAGED MAINLINE LINING SHALL BE REPAIRED PER AWWA C205.

11. PENETRANT TESTING SHALL BE PERFORMED ON THE GROOVE WELD ROOT PASS AND WHERE NOTED.

12. FOR SLIP ON FLANGES DRILL AND TAP HOLES PRIOR TO WELDING, CONTRACTOR SHALL PLUG WELD TAPPED HOLES ON COMPLETION OF SOAP AND AIR TEST.

13. LENGTH OF OUTLET SHALL BE PER LINE STOP VENDOR RECOMMENDATION FOR WRAPPER PLATE OUTLETS. ALL OTHER OUTLET LENGTHS SHALL BE 8" MIN AND 12" MAX OR AS NECESSARY TO ACCOMMODATE THE BFV.

14. ALL GASKETS SHALL BE FULL FACED.

15. CLASS D FLANGES MAY USE RUBBER, COMPRESSED FIBER OR POLYTETRAFLUORETHYLENE GASKETS. CLASS E & F FLANGES MUST USE COMPRESSED FIBER OR POLYTETRAFLUORETHYLENE GASKETS. CLASS F FLANGES HAVE A MAXIMUM ALLOWABLE PRESSURE OF 300 PSI. IF PRESSURE IS HIGHER THAN 300 PSI CONTRACTOR SHALL SUBMIT ALTERNATIVE FLANGE.

REVISION	BY	APPROVED	DATE
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CITY OF SAN DIEGO – STANDARD DRAWING

WRAPPER PLATE & LINE STOP OUTLET FOR 20" TO 54" DIAMETER SCRW PIPE

RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE

COORDINATOR R.C.E. 56523 DATE 9/7/18

DRAWING NUMBER **SDW-176**

Line Stop Valve Outlet and Wrapper Plate - Table 1

Pipe Diameter Inches D	Pressure Class psi P	C303 Steel Cylinder thickness inches (gauge) ty	Maximum Outlet Diameter For Line Stop inches D_{yb}	Minimum Line Stop Outlet thickness inches t_b	Branch Angle degrees D	Maximum Allowable installation Pressure psi $P_{max\ cyl}$	AWWA C207 Flange Class	Minimum Wrapper Plate Thickness inches t_{rqd}	Minimum Wrapper Plate Width inches W
20	125	0.06 (16)	See note 1 on sheet 4						
20	175	0.075 (14)	See note 1 on sheet 4						
20	250	0.105 (12)	See note 1 on sheet 4						
20	325	0.134 (10)	14	0.375	90	187	F	0.3125 (5/16)	28
21	125	0.06 (16)	See note 1 on sheet 4						
21	175	0.075 (14)	See note 1 on sheet 4						
21	250	0.105 (12)	See note 1 on sheet 4						
21	325	0.134 (10)	14	0.375	90	179	F	0.375 (3/8)	28
24	150	0.075 (14)	See note 1 on sheet 4						
24	225	0.105 (12)	See note 1 on sheet 4						
24	275	0.134 (10)	16	0.375	90	158	E	0.3125 (5/16)	32
24	350	0.164 (8)	16	0.375	90	194	F	0.4375 (7/16)	32
27	125	0.075 (14)	See note 1 on sheet 4						
27	200	0.105 (12)	See note 1 on sheet 4						
27	250	0.134 (10)	16	0.375	90	141	E	0.375 (3/8)	32
27	300	0.164 (8)	16	0.375	90	173	F	0.4375 (7/16)	32
30	125	0.075 (14)	See note 1 on sheet 4						
30	175	0.105 (12)	See note 1 on sheet 4						
30	225	0.134 (10)	24	0.375	90	127	E	0.375 (3/8)	48
30	275	0.164 (8)	24	0.375	90	156	E	0.5 (1/2)	48
30	325	0.188	24	0.375	90	179	F	0.75 (3/4)	48
33	100	0.075 (14)	See note 1 on sheet 4						
33	150	0.105 (12)	See note 1 on sheet 4						
33	200	0.134 (10)	24	0.375	90	116	E	0.3125 (5/16)	48
33	250	0.164 (8)	24	0.375	90	142	E	0.4375 (7/16)	48
33	300	0.188	24	0.375	90	163	F	0.625 (5/8)	48
36	100	0.09 (13)	See note 1 on sheet 4						
36	150	0.105 (12)	See note 1 on sheet 4						
36	175	0.134 (10)	24	0.375	90	107	D	0.3125 (5/16)	48
36	225	0.164 (8)	24	0.375	90	131	E	0.4375 (7/16)	48
36	275	0.188	24	0.375	90	150	E	0.625 (5/8)	48
36	350	0.25	24	0.375	90	201	F	0.875 (7/8)	48

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CITY OF SAN DIEGO – STANDARD DRAWING

WRAPPER PLATE & LINE STOP OUTLET FOR 20" TO 54" DIAMETER SCRW PIPE

RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE

COORDINATOR R.C.E. 56523 9/7/18 DATE

DRAWING NUMBER **SDW-176**

Line Stop Valve Outlet and Wrapper Plate - Table 1 (continued)

Pipe Diameter Inches D	Pressure Class psi P	C303 Steel Cylinder thickness inches (gauge) ty	Maximum Outlet Diameter For Line Stop inches D_{yb}	Minimum Line Stop Outlet thickness inches t_b	Branch Angle degrees D	Maximum Allowable installation Pressure psi $P_{max\ cyl}$	AWWA C207 Flange Class	Minimum Wrapper Plate Thickness inches t_{rqd}	Minimum Wrapper Plate Width inches W
39	100	0.09 (13)	See note 1 on sheet 4						
39	125	0.105 (12)	See note 1 on sheet 4						
39	175	0.134 (10)	24	0.375	90	99	D	0.375 (3/8)	48
39	200	0.164 (8)	24	0.375	90	121	E	0.375 (3/8)	48
39	250	0.188	24	0.375	90	139	E	0.5 (1/2)	48
39	325	0.25	24	0.375	90	186	F	0.75 (3/4)	48
42	125	0.105 (12)	See note 1 on sheet 4						
42	150	0.134 (10)	24	0.375	90	92	D	0.3125 (5/16)	48
42	200	0.164 (8)	24	0.375	90	113	E	0.4375 (7/16)	48
42	225	0.188	24	0.375	90	130	E	0.5 (1/2)	48
42	300	0.25	24	0.375	90	173	F	0.625 (5/8)	48
45	100	0.105 (12)	See note 1 on sheet 4						
45	150	0.134 (10)	30	0.375	90	86	D	0.375 (3/8)	60
45	175	0.164 (8)	30	0.375	90	106	D	0.375 (3/8)	60
45	200	0.188	30	0.375	90	121	E	0.4375 (7/16)	60
45	275	0.25	30	0.375	90	162	E	0.75 (3/4)	60
45	300	0.312	30	0.375	90	202	F	0.875 (7/8)	60
48	100	0.105 (12)	See note 1 on sheet 4						
48	125	0.134 (10)	36	0.375	90	81	D	0.3125 (5/16)	72
48	175	0.164 (8)	36	0.375	90	99	D	0.5 (1/2)	72
48	200	0.188	36	0.375	90	114	E	0.625 (5/8)	72
48	225	0.25	36	0.375	90	152	E	0.75 (3/4)	72
48	250	0.25	not permitted						
48	300	0.312	not permitted						
51	125	0.134 (10)	36	0.375	90	76	D	0.3125 (5/16)	72
51	150	0.164 (8)	36	0.375	90	94	D	0.375 (3/8)	72
51	175	0.188	36	0.375	90	107	D	0.5 (1/2)	72
51	225	0.25	36	0.375	90	143	E	0.625 (5/8)	72
51	250	0.25	not permitted						
51	300	0.312	not permitted						
54	125	0.134 (10)	36	0.375	90	72	D	0.375 (3/8)	72
54	150	0.164 (8)	36	0.375	90	89	D	0.4375 (7/16)	72
54	175	0.188	36	0.375	90	102	D	0.5 (1/2)	72
54	225	0.25	36	0.375	90	135	E	0.75 (3/4)	72
54	250	0.312	36	0.375	90	169	E	0.875 (7/8)	72
54	275	0.312	not permitted						
54	350	0.375	not permitted						

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CITY OF SAN DIEGO – STANDARD DRAWING

WRAPPER PLATE & LINE STOP OUTLET FOR 20" TO 54" DIAMETER SCRW PIPE

RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE

COORDINATOR R.C.E. 56523 9/7/18 DATE

DRAWING NUMBER **SDW-176**

Standard Outlet and Wrapper Plate Detail - Table 2

Pipe Diameter Inches D	Pressure Class psi P	C303 Steel Cylinder thickness inches (gauge) ty	Maximum Outlet Diameter For Line Stop inches D_{yb}	Minimum Line Stop Outlet thickness inches t_b	Branch Angle degrees D	Maximum Allowable installation Pressure psi $P_{max\ cyl}$	AWWA C207 Flange Class	Minimum Wrapper Plate Thickness inches t_{rqd}	Minimum Wrapper Plate Width inches W
20	125	0.06 (16)	See note 1 on sheet 4						
20	175	0.075 (14)	See note 1 on sheet 4						
20	250	0.105 (12)	See note 1 on sheet 4						
20	325	0.134 (10)	12	0.375	90	187	F	0.3125 (5/16)	24
21	125	0.06 (16)	See note 1 on sheet 4						
21	175	0.075 (14)	See note 1 on sheet 4						
21	250	0.105 (12)	See note 1 on sheet 4						
21	325	0.134 (10)	12	0.375	90	179	F	0.375 (3/8)	24
24	150	0.075 (14)	See note 1 on sheet 4						
24	225	0.105 (12)	See note 1 on sheet 4						
24	275	0.134 (10)	12	0.375	90	158	E	0.3125 (5/16)	24
24	350	0.164 (8)	12	0.375	90	194	F	0.4375 (7/16)	24
27	125	0.075 (14)	See note 1 on sheet 4						
27	200	0.105 (12)	See note 1 on sheet 4						
27	250	0.134 (10)	12	0.375	90	141	E	0.3125 (5/16)	24
27	300	0.164 (8)	12	0.375	90	173	F	0.375 (3/8)	24
27	350	0.188	12	0.375	90	199	F	0.5 (1/2)	24
30	125	0.075 (14)	See note 1 on sheet 4						
30	175	0.105 (12)	See note 1 on sheet 4						
30	225	0.134 (10)	12	0.375	90	127	E	0.3125 (5/16)	24
30	275	0.164 (8)	12	0.375	90	156	E	0.375 (3/8)	24
30	325	0.188	12	0.375	90	179	F	0.5 (1/2)	24
33	100	0.075 (14)	See note 1 on sheet 4						
33	150	0.105 (12)	See note 1 on sheet 4						
33	200	0.134 (10)	12	0.375	90	116	E	0.3125 (5/16)	24
33	250	0.164 (8)	12	0.375	90	142	E	0.375 (3/8)	24
33	300	0.188	12	0.375	90	163	F	0.5 (1/2)	24
36	100	0.09 (13)	See note 1 on sheet 4						
36	150	0.105 (12)	See note 1 on sheet 4						
36	175	0.134 (10)	12	0.375	90	107	D	0.3125 (5/16)	24
36	225	0.164 (8)	12	0.375	90	131	E	0.375 (3/8)	24
36	275	0.188	12	0.375	90	150	E	0.5 (1/2)	24
36	350	0.25	12	0.375	90	201	F	0.625 (5/8)	24

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DRAWING NUMBER **SDW-176**

Standard Outlet and Wrapper Plate Detail - Table 2 (continued)

Pipe Diameter Inches D	Pressure Class psi P	C303 Steel Cylinder thickness inches (gauge) ty	Maximum Outlet Diameter For Line Stop inches D_{yb}	Minimum Line Stop Outlet thickness inches t_b	Branch Angle degrees D	Maximum Allowable installation Pressure psi $P_{max\ cyl}$	AWWA C207 Flange Class	Minimum Wrapper Plate Thickness inches t_{rqd}	Minimum Wrapper Plate Width inches W
39	100	0.09 (13)	See note 1 on sheet 4						
39	125	0.105 (12)	See note 1 on sheet 4						
39	175	0.134 (10)	12	0.375	90	99	D	0.3125 (5/16)	24
39	200	0.164 (8)	12	0.375	90	121	E	0.375 (3/8)	24
39	250	0.188	12	0.375	90	139	E	0.5 (1/2)	24
39	325	0.25	12	0.375	90	186	F	0.625 (5/8)	24
42	125	0.105 (12)	See note 1 on sheet 4						
42	150	0.134 (10)	12	0.375	90	92	D	0.3125 (5/16)	24
42	200	0.164 (8)	12	0.375	90	113	E	0.375 (3/8)	24
42	225	0.188	12	0.375	90	130	E	0.4375 (7/16)	24
42	300	0.25	12	0.375	90	173	F	0.625 (5/8)	24
45	100	0.105 (12)	See note 1 on sheet 4						
45	150	0.134 (10)	12	0.375	90	86	D	0.3125 (5/16)	24
45	175	0.164 (8)	12	0.375	90	106	D	0.375 (3/8)	24
45	200	0.188	12	0.375	90	121	E	0.4375 (7/16)	24
45	275	0.25	12	0.375	90	162	E	0.625 (5/8)	24
45	300	0.312	12	0.375	90	202	F	0.625 (5/8)	24
48	100	0.105 (12)	See note 1 on sheet 4						
48	125	0.134 (10)	12	0.375	90	81	D	0.25 (1/4)	24
48	175	0.164 (8)	12	0.375	90	99	D	0.375 (3/8)	24
48	200	0.188	12	0.375	90	114	E	0.4375 (7/16)	24
48	225	0.25	12	0.375	90	152	E	0.5 (1/2)	24
48	250	0.25	12	0.375	90	152	E	0.625 (5/8)	24
48	300	0.312	12	0.375	90	190	F	0.75 (3/4)	24
51	125	0.134 (10)	12	0.375	90	76	D	0.3125 (5/16)	24
51	150	0.164 (8)	12	0.375	90	94	D	0.3125 (5/16)	24
51	175	0.188	12	0.375	90	107	D	0.4375 (7/16)	24
51	225	0.25	12	0.375	90	143	E	0.5 (1/2)	24
51	250	0.25	12	0.375	90	143	E	0.625 (5/8)	24
51	300	0.312	12	0.375	90	179	F	0.75 (3/4)	24
54	125	0.134 (10)	12	0.375	90	72	D	0.3125 (5/16)	24
54	150	0.164 (8)	12	0.375	90	89	D	0.375 (3/8)	24
54	175	0.188	12	0.375	90	102	D	0.4375 (7/16)	24
54	225	0.25	12	0.375	90	135	E	0.625 (5/8)	24
54	250	0.312	12	0.375	90	169	E	0.625 (5/8)	24
54	275	0.312	12	0.375	90	169	E	0.75 (3/4)	24
54	350	0.375	12	0.375	90	204	F	0.875 (7/8)	24

REVISION	BY	APPROVED	DATE
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CITY OF SAN DIEGO – STANDARD DRAWING

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RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE

COORDINATOR R.C.E. 56523 9/7/18 DATE

DRAWING NUMBER **SDW-176**