ADDENDUM NO. 2

TO

BIDDING AND CONTRACT REQUIREMENTS AND SPECIFICATIONS

FOR THE

WATER TRANSMISSION MAIN VALVE IMPROVEMENTS PROJECT

WP PROJECT NO. 14202

1/3/2024

PREPARED BY:

WRIGHT-PIERCE

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WATER TRANSMISSION MAIN VALVE IMPROVEMENTS PROJECT

ADDENDUM NO. 2

WP PROJECT NO. 14202

As a point of clarification, it should be understood that the Contract Documents govern all aspects of the project. Discussions held during the Pre-Bid Conference or over phone or email are informal and informational only. All official changes to the Contract Documents are made only by addenda. The following changes and additional information are hereby made a part of the Contract Documents:

SPECIFICATIONS

1. **NO CHANGES**

DRAWINGS

1. **NO CHANGES**

QUESTIONS AND ANSWERS

Questions Received During the Bidding Period

1. Q: Regarding Item 14, please clarify that the requirement is for a 24"x20" Tapping sleeve with a 20" valve, and that the intent is to complete these taps on the existing 24" PCCP Pipeline.
   A: Item 14 is intended to include furnishing all materials and equipment necessary to tap the existing 24" PCCP pipe with a tapping sleeve and install 20" valves on both sides of the project. The valves are for future use and will provide isolation for the proposed 24" HDPE subaqueous water main that will be installed as a part of a future project. Item 14 also includes installation of a 6 ft stub of 20" ductile iron pipe and a restrained cap after the valve. Note that test pits are required at each tapping location to confirm the diameter of the existing PCCP pipe and locations of the pipe joints.

2. Q: After corresponding with various insertion valve manufacturers, we are unable to find one who can meet AIS or BABA. Will the AIS and BABA requirements be waived for the insertion valves on this contract?
   A: Yes, we understand that there are no insertion valves manufactured to meet AIS or BABA requirements, and these requirements are waived for the insertion valves.

3. Q: Have you discussed lead time with any of the insertion valves manufacturers? We have been told the valve may be ~6 months out.
A: Discussion with leading insertion valve manufacturer indicates delivery of 4 – 20" valves can be accomplished within 2-4 weeks. For the 20" tapping valves we have been told less than 8-10 weeks for delivery at this time.

4. Q: Will 16' wide timber mats be allowed in lieu of 12'?
A: Yes, 16' long timbers mats are permissible. Mats shall not exceed 16' width at wetland crossings. Note this item was also addressed in Addendum 1.

5. Q: Please request the static pressure in the existing pipe. Also, please request the SP-5 specification sheets for the pipe the taps are supposed to go on so I can do a hoop stress calculation.
A: Based on the Newington Booster Tank Level, the static pressure at the bay level should be 60-70 psi. At the lowest point in the bay the static pressure should be 75-85 psi.

The best historic information available for the precast concrete cylinder pipe from the 1954 installation is included as Attachment A. The handwritten notes indicate from Bellamy Reservoir to Water Treatment Plant, however the approximate footage indicated for the 24-inch of 17,000 feet seems to indicate this is the pipe used to construct the finished water to Newington. This information is provided for the Contractor's benefit as the best available historic information; however, the Contractor is responsible for verifying the actual conditions, size, and location of the pipeline in its as-built conditions.

END OF ADDENDUM No. 2

Attachments Follow:

A. Attachment A – 1954 Interpace PCCP 24" and 20" pipe information.

G-471

Existing PCCP from J. R. Hunt Bob Daigle PORTSMOUTH, NEW HAMPSHIRE

SPECIFICATION NO. WH-SL-15-1

ADDENDUM 2, ATTACHMENT A

Lined Cylinder pipe

FOR 20" & 24" PRESTRESSED CONCRETE CYLINDER PIPE WITH RUBBER & STEEL JOINT

ARMY AIR FORCE BASE

PORTSMOUTH, NEW HAMPSHIRE

WHITMAN & HOWARD, ARCHITECTS - ENGINEERS

SEE DRAWING D-2-630-20"A & D-2-630-24"A

Nominal Pipe Diameter - inches	20	24
Approximate Footage - feet	16,300	29,800
Class - psi	150	150
Cylinder Gage - ga. ASTM A 245-52T, Grade B	16	16
Cylinder Area - sq. in./ft.	0.718	0.718
Cylinder Test Pressure - (25,000 psi) - psi	133	111
Wire Size - ASTM 227-47	#6 MSU	#6 MSU
Wire Spacing - in. c.c.	1.141	1.000
Wire Area - sq. in./ft.	0.394	0.347
Pressure when compression in concrete is zero - psi	233	218
Resultant compression in concrete - psi	1,540	1,495
Resultant tension in wire - psi	119,900	118,700
Gross wrapping stress - psi	140,000	140,000
Dynamometer (1 wire) - lbs.	4,055	4,055
Dynamometer (2 wires) - lbs.	8,105	8,105
Minimum compressive strength of centrifugated concrete at time of wrapping - psi	4,200	4,200
Core Thickness (including cylinder) - inches	1-1/4	1-1/2
Coating Thickness - inches	3/4	3/4
Joint Rings		
Spigot Ring - special section x 4-1/2"		
Bell Ring - 3/16" x 5" wide		
Both zinc coated		
Joint Depth - inches	3-1/4	3-1/4
Creep - feet	0.02	0.02
Average Laid Length - feet	16.02	16.02
Calculation Data: C =	0.61	0.73
n =	6	6

Pipe to be coated inside with a Bituminous Seal Coat.

LOCK JOINT PIPE CO. EAST ORANGE, N. J.

COMPILED HC CHECKED [illegible] APPROVED [illegible] 4-9-54

~~F. Thomas~~ Nancy White Portsmouth N. Hampshire

SPECIFICATION NO. WH-59-36-1

FOR 24" & 20" PRESTRESSED CONCRETE CYLINDER PIPE WITH RUBBER AND STEEL JOINT

SURFACE WATER SUPPLY SYSTEM - PEASE AIR FORCE BASE

PORTSMOUTH, N. H.

WHITMAN & HOWARD - CORPS OF ENGINEERS

SEE DRAWING D-2-630-24", D-2-630-20"

Nominal Pipe Diameter - inches	24	20
Approximate Footage - feet	17,000	4,700
Design Conditions:		
Working Pressure	150	150
Cylinder Gage - ASTM A 245-57T, Grade B	16	16
Cylinder Area - sq.in./ft.	0.718	0.718
Cylinder Test Pressure (25,000 psi) psi	111	133
Wire Size - ASTM A 227-47	#6 MBU	#6 MBU
Wire Spacing - in. c.c.	1.000	1.200
Wire Area - sq.in./ft.	0.347	0.289
Pressure when compression in concrete is zero-psi	216	211
Resultant compression in concrete - psi	1,480	1,405
Resultant tension in wire - psi	118,300	119,705
Gross wrapping stress - psi	140,000	140,000
Dynamometer (1 wire) - lbs.	4,055	4,055
Minimum compressive strength of centrifugated concrete at time of wrapping - psi	4,100	4,000
Core Thickness (including cylinder) - inches	1-1/2	1-1/4
Coating Thickness - inch	7/8	7/8
Joint Rings:		
Spigot Ring - special section x 4-1/2" wide		
Bell Ring 3/16" x 5 inches		
Both zinc coated		
Joint Depth - inches	3-1/4	3-1/4
Creep - feet	0.02	0.02
Average Laid Length - feet	16.02	16.02
Calculation Data: C =	0.76	0.70
n =	6	6

Some may need to be painted outside

Sta 95+00 to 110+00

BELLAM RESERVOIR TO W.T.P.

LOCK JOINT PIPE CO. EAST ORANGE, N. J.

Schara - Rw333 Portsmouth N.H.

SPECIFICATION

NO. WH-68-63-1

FOR 20" PRESTRESSED CONCRETE CYLINDER PIPE WITH RUBBER & STEEL JOINT (SP-5)

20" WATER MAIN RELOCATION

PORTSMOUTH, NEW HAMPSHIRE

DEPARTMENT OF PUBLIC WORKS & HIGHWAYS

SEE DRAWING INTERPACE Engineering Manual, Section 1, Page 2

Nominal Pipe Diameter - inches	20
Approximate Footage - feet	3,200
Cylinder Gage - ASTM A-570-66T, Grade C	17
Minimum Yield Strength of Cylinder - psi	33,000
Cylinder Test Pressure - psi	112
Wire Size - ASTM A 227-64	#8 MBU
Wire Area - sq.in./ft.	0.221
No. of Wraps of Wire - per ft.	10.74
Minimum Ultimate Wire Strength - psi	231,000
Wire Wrapping Stress - psi	173,250
Dynamometer (1 wire) - lbs.	3,570
Pressure at zero concrete compression - psi	187
Resultant compression in concrete - psi	1,330
Minimum compressive strength of concrete at time of wrapping (Rodded or Vibrated Cylinders) - psi	3,500
Core Thickness (including cylinder) - inches	1-1/4
Minimum Coating Thickness - inches	13/16
Zinc Coated Joint Rings:	
Spigot Ring Width - inches	4-1/2
Bell Ring - inches x inches	3/16 x 4-1/2
Joint Depth - inches	3-1/4
Creep - feet	0.02
Average Laid Length - feet	16.02

Calculation Data: $n_i = 6.0$, $n_r = 5.0$, $R_1 = 0.05$, $R_2 = 0.00$, $C_r = 1.50$

Design Conditions:
In Accordance with AWWA Specification C-301-64

Working Pressure - psi	150
Test Pressure - psi	150
Cover - feet	9

NOTES:

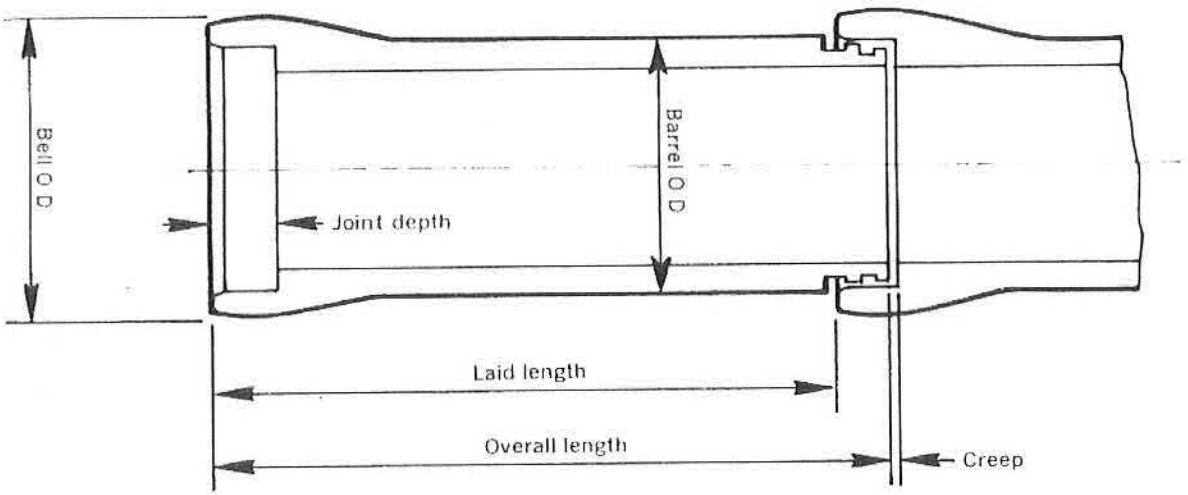
1. For details of specials see INTERPACE Engineering Manual.
2. All specials to be Type "B", Class 150.
3. For details of Dresser ends see Dwg. E-4-1503.
4. For details of Dresser ends x Flg Adapter see Dwg. SS-WH-68-63-1.

LJ02005150

International Pipe & Ceramics Corporation — LOCK JOINT PIPE PRODUCTS

DRAWN Dkh CHECKED JFK APPROVED DATE

Pipe Dimensions



The "Average Laid Length" of all pipe and fittings includes an allowance for "creep". "Creep" is the distance from the end of the spigot of one pipe to the seat of the bell of the adjacent pipe averaging 0.02" to 0.05" depending upon pipe diameter. The creep value is included in the spigot end length of fittings.

OD* (outside diameter) Dimensions for AWWA C-301 pipe with mortar coating are meant as nominal values. Local INTERPACE representative will confirm OD for critical situations.

Nominal Dia.	Creep Feet
16" thru 30"	0.02
~~36" thru 72"~~	~~0.03~~
~~78" thru 102"~~	~~0.04~~
~~108" thru 144"~~	~~0.05~~

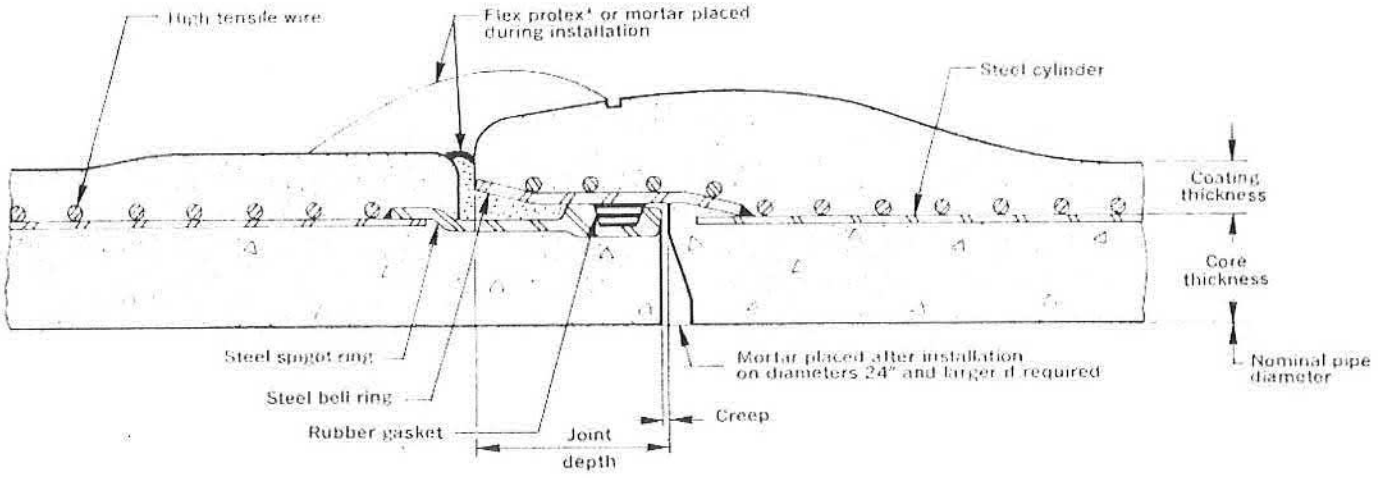
Nominal Dia.	SP-5 PIPE		SP-12 PIPE STANDARD CORE		SP-12 PIPE-D/16 CORE	
	Bell OD	Barrel OD	Bell OD*	Barrel OD*	Bell OD	Barrel OD
~~16~~	~~22½~~	~~19⅝~~				
~~18~~	~~24¼~~	~~21⅞~~				
20	27	24⅛				
24	31½	28⅝	32¼	30⅛		
~~27~~	~~34⅞~~	~~32~~				
~~30~~	~~38¼~~	~~35⅜~~	38¼	36⅛		
~~36~~	~~45~~	~~42⅛~~	44¼	~~42⅛~~	44¼	~~42⅛~~
~~42~~	~~51¼~~	~~48⅞~~	50¾	~~48⅞~~	50¾	~~48⅞~~
~~48~~	~~58~~	~~55⅝~~	56¾	~~55⅝~~	56¾	~~55⅝~~
~~54~~			63⅝	63⅝	63⅝	62⅜
~~60~~			70⅝	70⅝	70⅝	69⅛

All Dimensions in Inches and based upon 13/16" mortar coating.

*For larger SP-12 pipe, Barrel OD = Bell OD. To compute OD values add nominal ID plus twice the core plus twice the coating. See pages 7 and 9 of this section for core and coating values.

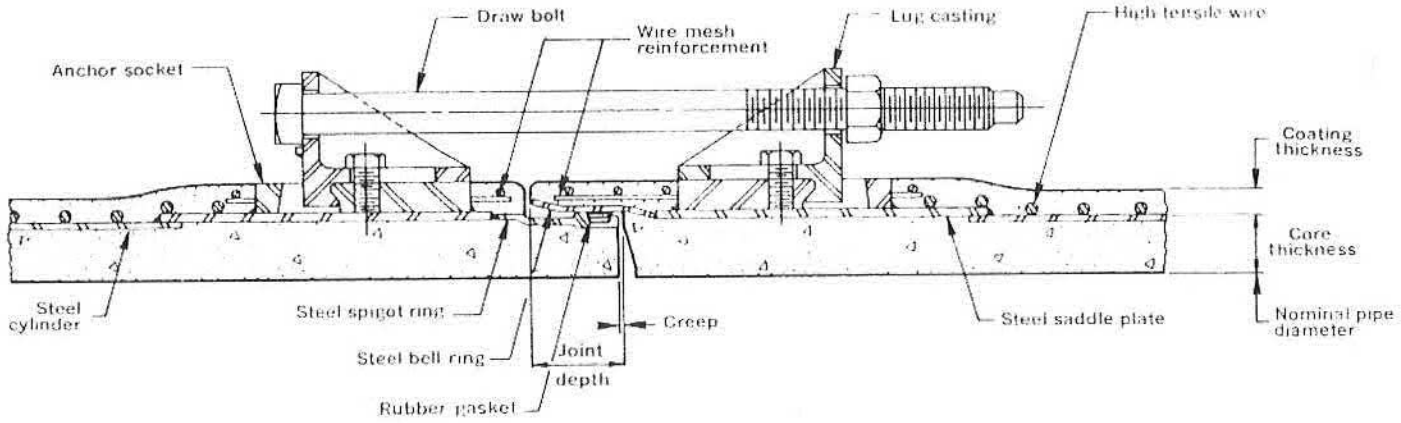
Lock Joint Prestressed Concrete Cylinder Pipe with Rubber and Steel Joint

AWWA C-301 INTERPACE SP-5



Lock Joint Subaqueous Prestressed Concrete Cylinder Pipe with Rubber and Steel Joint

AWWA C-301 INTERPACE SP-11



SP-5 and SP-11 DIMENSIONS				
Nominal Diameter	Core Thickness	Weight lbs./ft.	Joint Depth	Avg. Laid Length of Straight in feet*
~~16~~	~~1~~	~~125~~	~~3¼~~	↑
~~18~~	~~1⅛~~	~~145~~	~~3¼~~	
20	1¼	170	3¼	
24	1½	225	3¼	16.02 or 20.02
~~27~~	~~1⅝~~	~~270~~	~~3¼~~	
~~30~~	~~1⅞~~	~~320~~	~~3¼~~	↓
~~36~~	~~2¼~~	~~430~~	~~3⅜~~	↑
~~42~~	~~2⅝~~	~~555~~	~~3¾~~	16.03 or 20.03
~~48~~	~~3~~	~~700~~	~~3⅞~~	↓

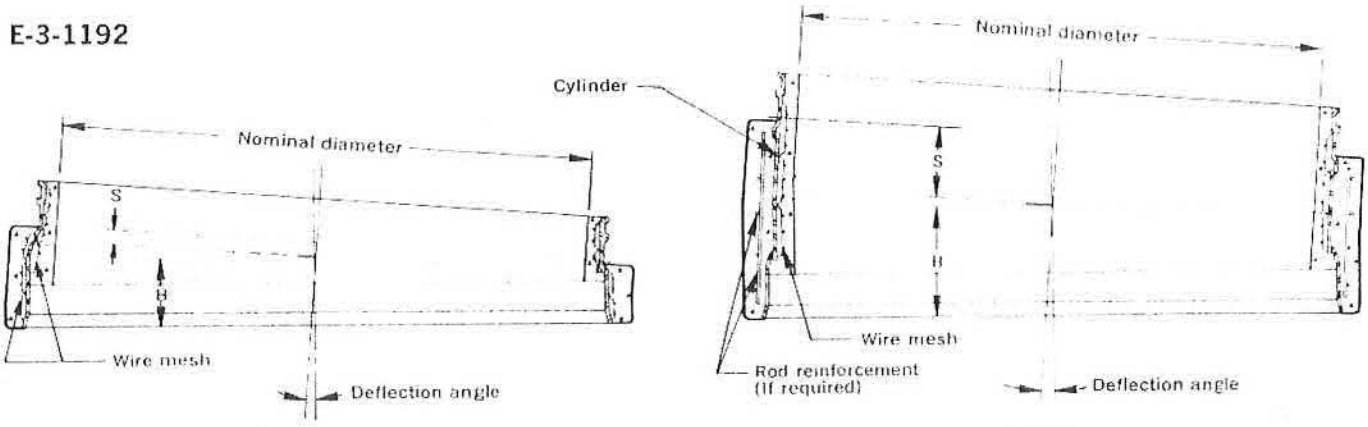
All dimensions in inches unless noted.

Weights based upon 13/16" mortar coating.

* Local INTERPACE representative will confirm available lengths.

Bevel Adapters

E-3-1192



TYPE I

TYPE II

Nominal Dia. inches	Bevel Amount inches	AWWA C-301 SP-5 Prestressed Concrete Cylinder Pipe: Deflection Angle	S feet	B feet	AWWA C302, C300, C301 SP-1,32†,3,12 R.C. Pressure & Cylinder Pipe & P.C. Embedded Cylinder Pipe: Deflection Angle	S feet	B feet
~~16~~	~~1 1/16~~	~~4°-04′~~	~~0.10~~	~~0.35~~			
~~18~~	~~1½~~	~~4°-09′~~	~~0.09~~	~~0.34~~			
20	1 1/16	4°-12′	0.09	0.34			
~~21*~~	~~1¾~~				4°-00′	0.09	0.34
24	1	2°-05′	0.13	0.33	2°-07′	0.13	0.33
	2	4°-10′	0.08	0.33	4°-15′	0.08	0.33
~~27**~~	~~1⅛~~	~~2°-05′~~	~~0.13~~	~~0.33~~	2°-09′	0.13	0.33
	~~2¼~~	~~4°-11′~~	~~0.08~~	~~0.32~~	4°-18′	0.08	0.32
~~30~~	~~1¼~~	~~2°-05′~~	~~0.13~~	~~0.33~~	2°-10′	0.13	0.32
	~~2½~~	~~4°-11′~~	~~0.18~~	~~0.42~~	4°-20′	0.18	0.42
~~36~~	~~1½~~	~~2°-06′~~	~~0.09~~	~~0.34~~	2°-12′	0.09	0.34
	~~3~~	~~4°-12′~~	~~0.17~~	~~0.42~~	4°-24′	0.17	0.42
~~42~~	~~1¾~~	~~2°-07′~~	~~0.15~~	~~0.45~~	2°-14′	0.12	0.45
	~~3½~~	~~4°-15′~~	~~0.35~~	~~0.63~~	4°-27′	0.32	0.63
~~48~~	~~2~~	~~2°-07′~~	~~0.14~~	~~0.44~~	2°-14′	0.12	0.44
	~~4~~	~~4°-15′~~	~~0.36~~	~~0.65~~	4°-28′	0.34	0.65
~~54~~	~~2¼~~				2°-14′	0.35	0.60
	~~4½~~				4°-28′	0.40	0.65
~~60~~	~~2½~~				2°-15′	0.34	0.60
	~~5~~				4°-29′	0.39	0.65
~~66~~	~~2¾~~				2°-15′	0.33	0.65
	~~5½~~				4°-30′	0.38	0.69
~~72~~	~~3~~				2°-15′	0.34	0.67
	~~6~~				4°-30′	0.41	0.73

Nominal Dia. inches	Bevel Amount inches	AWWA C302, C300, C301 SP-1, 3, 12 R.C. Pressure & Cylinder Pipe & P.C. Embedded Cylinder Pipe: Deflection Angle	S feet	B feet
78	3¼	2°-15′	0.43	0.67
	6½	4°-31′	0.49	0.73
84	3½	2°-16′	0.41	0.71
	7	4°-31′	0.47	0.77
90	3¾	2°-16′	0.41	0.71
	7½	4°-32′	0.47	0.77
96	4	2°-16′	0.43	0.73
	8	4°-32′	0.51	0.81
102	4¼	2°-17′	0.43	0.73
	8½	4°-34′	0.51	0.81
108	4½	2°-17′	0.51	0.81
	9	4°-34′	0.57	0.90
114	4¾	2°-15′	0.51	0.83
	9½	4°-33′	0.61	0.94
120	5	2°-16′	0.51	0.83
	10	4°-32′	0.61	0.94
126	5¼	2°-16′	0.51	0.83
	10½	4°-32′	0.61	0.94
132	5½	2°-16′	0.53	0.85
	11	4°-32′	0.66	0.98
138	5¾	2°-17′	0.53	0.85
	11½	4°-33′	0.66	0.98
144	6	2°-17′	0.53	0.85
	12	4°-33′	0.66	0.98

Type I Bevel Adapters 16" thru 36", 42" 1¾" Bevel, and 48" 2" Bevel.

Type II Bevel Adapters 42" 3½" Bevel, and 48" 4" Bevel thru 144" 12" Bevel.

Deflection Angles listed above are for 0" joint opening. See various deflection tables in this section to find maximum available deflection.

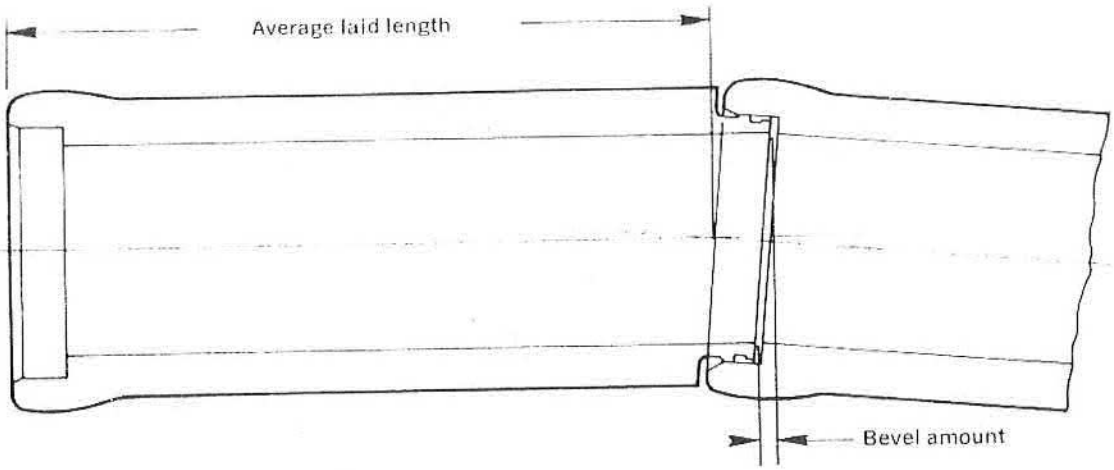
* Available as C-302 pipe, SP-32, only.

** Available as C-301, SP-5, SP-11, and C-302, SP-32 only.

† SP-32 range, 16" dia. thru 54" dia. For 16" & 18" dia. use SP-5 dimensions.

Deflection Table

PRESTRESSED CONCRETE CYLINDER PIPE . . . . . AWWA C-301 INTERPACE SP-5, ~~SP-4~~

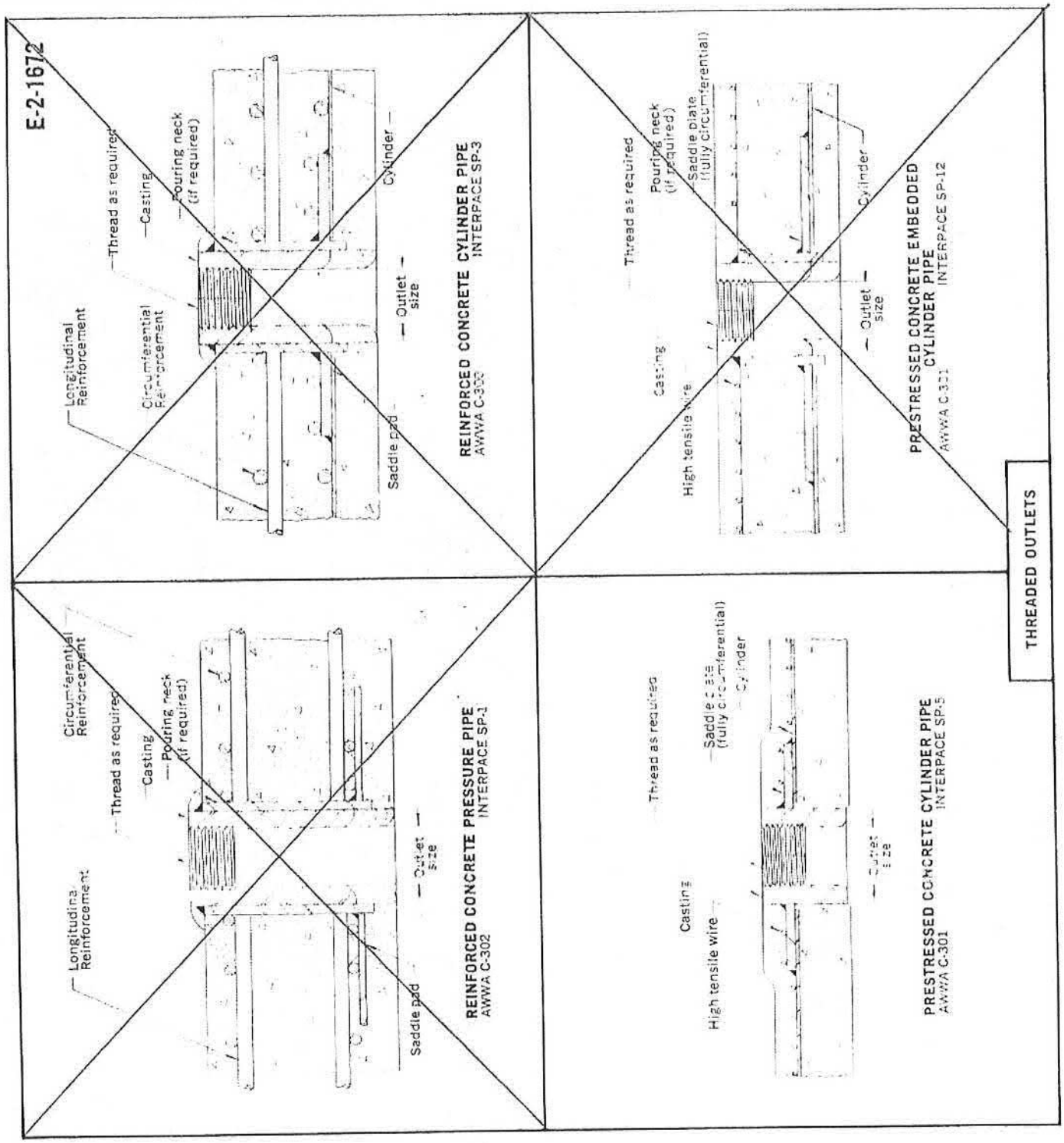


Nominal Dia. inches	Pipe Description	Joint Opening* inches	Deflection Angle	16′ NOMINAL LENGTHS			20′ NOMINAL LENGTHS		
				Avg. Laid Length feet	Radius of Curve feet	Tangent Offset feet	Avg. Laid Length feet	Radius of Curve feet	Tangent Offset feet
~~16~~	STRAIGHT 1 7/16″ BEVEL	3/4 3/4	2°-19′ 6°-23′	16.03 15.98	395 143	0.65 1.78	20.03 19.98	494 179	0.81 2.22
~~18~~	STRAIGHT 1½″ BEVEL	3/4 3/4	2°-04′ 6°-13′	16.03 15.97	445 147	0.58 1.73	20.03 19.97	554 184	0.72 2.16
20	STRAIGHT 1 11/16″ BEVEL	3/4 3/4	1°-52′ 6°-04′	16.03 15.96	490 150	0.52 1.69	20.03 19.96	614 188	0.65 2.11
24	STRAIGHT 1″ BEVEL 2″ BEVEL	3/4 3/4 3/4	1°-34′ 3°-39′ 5°-44′	16.03 15.99 15.95	585 251 159	0.44 1.02 1.59	20.03 19.99 19.95	734 314 199	0.55 1.27 1.99
~~27~~	STRAIGHT 1⅛″ BEVEL 2¼″ BEVEL	3/4 3/4 3/4	1°-24′ 3°-29′ 5°-34′	16.03 15.98 15.94	660 263 164	0.39 0.97 1.55	20.03 19.98 19.94	824 329 205	0.49 1.21 1.93
30	STRAIGHT 1¼″ BEVEL 2½″ BEVEL	3/4 3/4 3/4	1°-15′ 3°-21′ 5°-26′	16.03 15.98 15.93	730 273 167	0.35 0.93 1.51	20.03 19.98 19.93	914 342 210	0.44 1.17 1.89
36	STRAIGHT 1½″ BEVEL 3″ BEVEL	3/4 3/4 3/4	1°-03′ 3°-09′ 5°-14′	16.03 15.97 15.91	875 291 174	0.29 0.88 1.45	20.03 19.97 19.91	1,094 363 217	0.37 1.10 1.82
42	STRAIGHT 1¾″ BEVEL 3½″ BEVEL	7/8 7/8 7/8	1°-04′ 3°-11′ 5°-18′	16.04 15.97 15.89	865 287 171	0.30 0.89 1.47	20.04 19.97 19.89	1,082 359 214	0.37 1.11 1.84
48	STRAIGHT 2″ BEVEL 4″ BEVEL	1 1 1	1°-04′ 3°-11′ 5°-18′	16.04 15.96 15.87	865 287 171	0.30 0.89 1.47	20.04 19.96 19.87	1,082 359 214	0.37 1.11 1.84

* Joint opening is maximum recommended by INTERPACE Corporation for layout purposes. For max mum watertight extensibility see page 1 of this section.

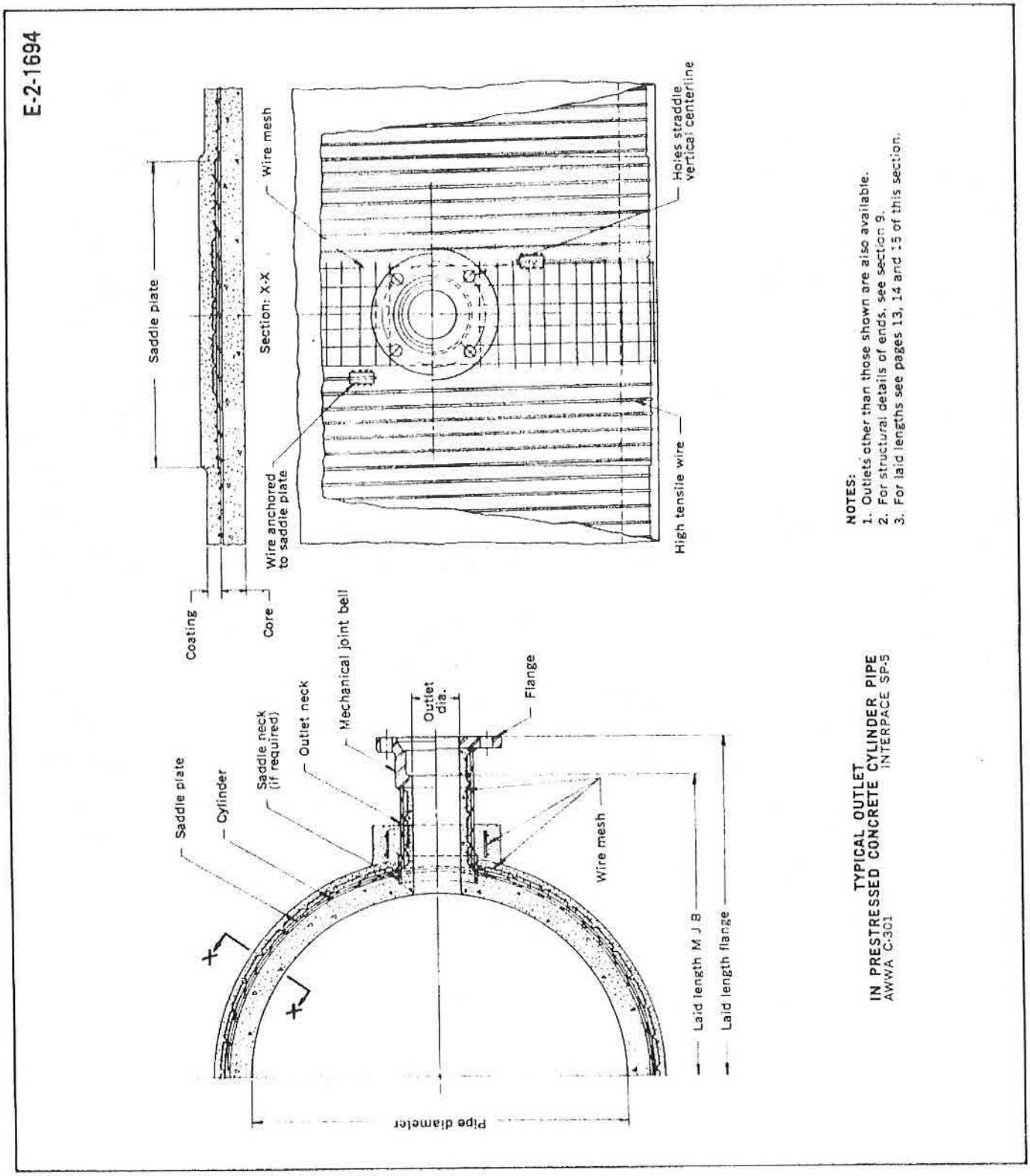
Threaded Outlets

Reinforced Concrete Pressure Pipe . . . . . AWWA C302 INTERPACE SP-1
Reinforced Concrete Cylinder Pipe . . . . . AWWA C300 INTERPACE SP-3
Prestressed Concrete Cylinder Pipe . . . . . AWWA C301 INTERPACE SP-5
Prestressed Concrete Embedded Cylinder Pipe . . . . . AWWA C301 INTERPACE SP-12



Typical Outlet in Prestressed Concrete Cylinder Pipe

AWWA C301 INTERPACE SP-5



Outlet Saddles

Prestressed Concrete Cylinder Pipe.....AWWA C301 INTERPACE SP-5

SADDLE PLATE THICKNESS (Inches)

Pipe Dia. inches	Pipe Class psi	Maximum Outlet Dia. inches	Outlet Dia. Range (inches)					
			3-6	8-12	14-18	20-24	27-30	
			Saddle Width (inches)					
			20	30	42	54	72	
16	150	12	3/16	3/16				
	175		3/16	1/4				
	200		3/16	1/4				
18	150	12	3/16	3/16				
	175		3/16	1/4				
	200		3/16	1/4				
20	150	14	3/16	3/16	3/16			
	175		3/16	1/4	1/4			
	200		1/4	1/4	1/4			
24	150	18	3/16	1/4	1/4			
	175		1/4	1/4	1/4			
	200		1/4	5/16	5/16			
27	150	20	1/4	1/4	1/4	1/4		
	175		1/4	5/16	3/8	5/16		
	200		5/16	3/8	3/8	5/16		
30	150	20	1/4	5/16	5/16	5/16		
	175		5/16	5/16	3/8	5/16		
	200		5/16	3/8	3/8	3/8		
36	100	24	3/16	1/4	1/4	1/4		
	150		5/16	3/8	3/8	3/8		
	175		5/16	7/16	7/16	7/16		
	200		3/8	1/2	1/2	1/2		
42	100	27	1/4	5/16	5/16	5/16	1/4	
	150		3/8	7/16	7/16	7/16	5/16	
	175		3/8	1/2	1/2	1/2	3/8	
	200		7/16	1/2	1/2	1/2	7/16	
48	100	30	1/4	5/16	5/16	5/16	1/4	
	150		3/8	1/2	1/2	1/2	3/8	
	175		3/8	1/2	9/16	9/16	1/2	
	200		1/2	5/8	11/16	11/16	1/2	

NOTES: 1. For 14" x 16" or smaller type manholes use saddle for 18" outlets. 2. For 16" x 18" or smaller type manholes use saddle for 20" outlets.

General Information — Tapping of Pipe

INTERPACE carries in stock tapping assemblies for threaded connections in sizes 3/4" to 2" diameter, for most sizes and types of pipe. These assemblies will be supplied, drilled and tapped for standard pipe thread or AWWA standard corporation stop thread as specified. Flanged tapping assemblies for large diameter connections are not generally carried in stock but can be fabricated for prompt delivery. Outlet flanges of these larger connections will be faced and drilled to match the tapping valve being used.

THREADED PRESSURE TAPS

Mueller E-4 and D-4 drilling machines are normally used for making pressure taps in reinforced concrete pressure pipe. The E-4 machine is used for sizes up to a 1" tap. The D-4 machine is used for sizes up to a 2" tap. Mueller A and B machines cannot be used.

High speed, carbide tipped or a combination of high speed and carbide tipped masonry drills may be used. A formed tip, spiral flute carbide tipped drill is recommended. INTERPACE carries common sizes of these carbide drills in stock and will supply them on request.

FLANGED PRESSURE TAPS

Tapping valves for making large diameter taps are available from most valve manufacturers. U.S. Pipe and Foundry Company (Smith V & H Division) and the Mueller Company are the prime manufacturers of tapping machines and equipment.

Carbide tipped shell cutters and pilot drills and power operated automatic feed tapping machines are recommended for making taps in concrete pressure pipe.

When specifying tapping valves larger than 12" in diameter it is important to check on the availability of a tapping machine and cutter.

The following tables represent the maximum size outlets which may be tapped into AWWA C-301 pipe.

SP-5	
Pipe Dia. inches	Maximum Tap Diameter inches
16	12
18	14
20	16
24	20
27	20
30	24
36	30
42	36
48	36

SP-12	
Pipe Dia. inches	Maximum Tap Diameter inches
24	18
30	20
36	24
42	30
48	36
54-144	42*

* Size restricted by current availability of tapping machines.

Method of Making ¾″ to 2″ Threaded Pressure Taps in Prestressed Concrete Cylinder Pipe (16″ thru 30″ dia.)

Prestressed Concrete Cylinder Pipe . . . . . AWWA C301 INTERPACE SP-5

E-1-231

Attach saddle (1) to outside of pipe, using U-bolts (2). Chip away mortar coating of pipe (3), to expose circumferential wires (4). Make chipped opening 4″ in diameter and remove the coating. Remove exposed circumferential wires.

Place rubber gasket (5) in groove of gland (6). Insert gland through hole in saddle. Place square head bolts (7) in saddle slot hole and through hole in gland. Thread nuts (8) on bolts, compressing rubber gasket against cylinder of pipe to make watertight seal.

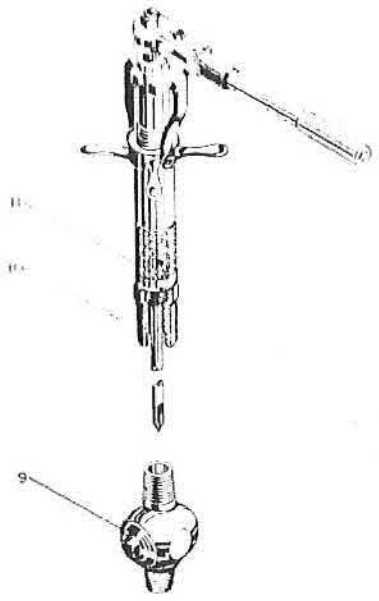
Screw corporation stop (9) into gland and attach adapter nipple (10) and drilling machine (11).

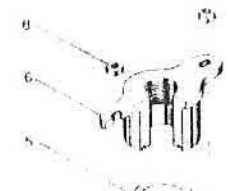
Drill through cylinder and concrete core of pipe. Retract drill, close stop and remove drilling machine and adapter. Open stop to flush out cement dust.

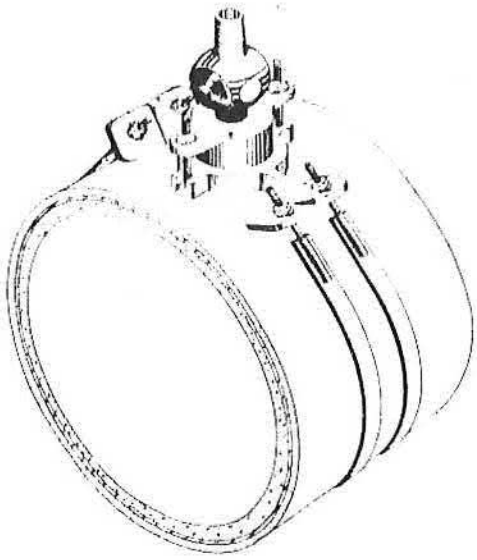
Pack recess between gland and saddle with mortar.

Protect saddle and U bolts by concrete encasement.

For detailed instructions, see operational specifications No. 56.







Method of Making ¾″ to 2″ Threaded Pressure Taps in Concrete Cylinder Pipe

Reinforced Concrete Cylinder Pipe . . . . . AWWA C300 — INTERPACE SP-3
Prestressed Concrete Cylinder Pipe* . . . . . AWWA C301 — INTERPACE SP-5
Prestressed Concrete Embedded Cylinder Pipe . . . . . AWWA C301 — INTERPACE SP-12

* 36" thru 48"

E-1-169

Attach saddle (2) to outside of pipe (1) using U-bolts (3). If outside surface of pipe is irregular, place thin layer of cement mortar on pipe before placing saddle.

Chip away mortar pipe coating from outside of cylinder even with edge of hole in saddle plate, and remove exposed circumferential wires (4).

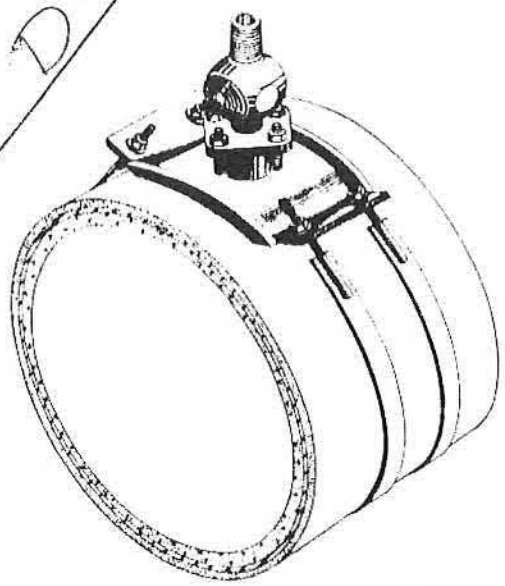
Place rubber gland gasket (5) in groove of gland (6). Insert gland through hole in saddle. Using studs and nuts (7) pull gland toward cylinder, compressing gasket to make watertight seal.

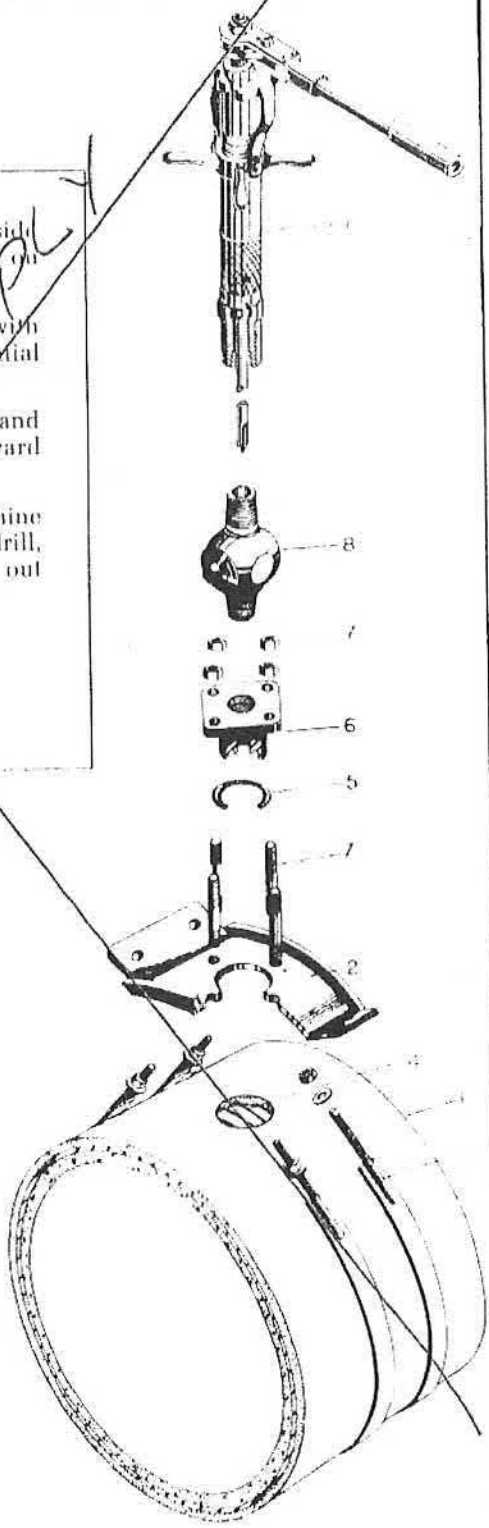
Screw corporation stop (8) into gland and attach drilling machine (9). Drill through cylinder and concrete core of pipe. Retract drill, close stop and remove drilling machine. Open stop to flush out cement dust.

Pack recess between gland and saddle with mortar.

Protect steel saddle and U-bolts by concrete encasement.

For detailed instructions, see operational specification No. 27.





DOES NOT APPLY

Method of Making Flanged Pressure or Dry Taps in Concrete Cylinder Pipe

Reinforced Concrete Cylinder Pipe	AWWA C300	INTERPACE SP-3
Prestressed Concrete Cylinder Pipe	AWWA C301	INTERPACE SP-5
Prestressed Concrete Embedded Cylinder Pipe	AWWA C301	INTERPACE SP-12

Wire rubber gaskets (4) under edges of saddle (2). Assemble saddle on concrete cylinder pipe (1) with U-bolts (3). Draw up saddle lightly against gaskets to seal space between saddle and pipe.

Pour mortar grout into space between saddle plate and pipe through grout holes (5). After grout between saddle and pipe has taken its initial set, tighten saddle firmly against grout.

Chip mortar or concrete (6) from outside of pipe cylinder even with edge of hole in saddle. Cut circumferential steel wires (7) or rods away from outside of cylinder, even with edge of hole in saddle.

If area of cylinder to be tapped includes a longitudinal seam, carefully file weld down to sheet and fill recess with hot or cold solder.

For outlets larger than 12", attach concrete lining of pipe to steel cylinder as described in notes on "Methods of Core Retention", Spec. No. 49.

Place rubber gland gasket (8) into groove of gland (9). Insert gland through hole in saddle. Using studs and nuts (10), pull gland toward the cylinder, compressing the gasket to make a watertight seal.

Place special blind flange (not shown) on gland flange. Fill outlet with water and apply pressure to check tightness of gland gasket. Remove blind flange.

For outlets 12" in diameter and larger, wire form around outside of gland flange and saddle flange and pour mortar grout into space between flanges and between necks of saddle and gland. Allow mortar to "set-up" before cutting. For outlets 12" and smaller, this operation can be done after completing the cut.

Fill recess between inner end of gland and surface of cylinder with neat cement or mortar.

Attach tapping valve and tapping machine (not shown) equipped with pilot drill and carbide tipped cutter. Drill and cut through cylinder and concrete pipe core. Retract drill and cutter, close valve, and remove tapping machine.

Even if the pipe is dewatered the preferred method for cutting through the cylinder and inner core is with the use of standard tapping machine, cutting as usual, thru the valve. However, it is possible to remove the cylinder and inner core without the use of the valve and tapping machine.

Protect steel saddle and U-bolts by concrete encasement.

For detailed instructions see operational specification No. 24.