



## FOSTER MARINE CONTRACTORS, INC.

3180 FAIRLANE FARMS ROAD, SUITE 1

WELLINGTON, FLORIDA 33414

PHONE: 561-683-0034

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### Proposal

To: Mr. Scott Solomon

Date: February 26, 2016

City of Delray Beach

© 561-573-0470

434 S Swinton Ave

Delray Beach, FL 33444

E-mailed: Solomon@mydelraybeach.com

### 36" SE Interceptor Sanitary Sewer Pipelining

We are pleased to submit our Proposal for the following scope of work which generally includes:

1 Mobilize and setup MOT; Clear and Grub / Pavment Removal as necessary for pipe install

2 Slipling installation of the pipe will be in 2 phases as per attached Exhibit B Atlas schematic (MH 1 to MH -3 ~241'; and MH-3 to MH-4 ~ 290') . To slipline existing 36 Gravity Sewer w/new 30" A-2 PVC Pipe (+/- 540'); two separate access pits will have to be excavated and dewatered; a "coupon" will have to be removed from the top of the pipe to provide a launch "window" in the existing 36" Pipe in order to pushe the new 30" pipe in each direction and connect to existing upstream or dounstream Manhole.

2A Additonaly, to facilitate the installation from MH-1 to MH 3 it will be necessary to remove existing MH-2 (13' deep) and install a new "doghouse" MH-2 in the same location after the new 30" pipe is installed.

3 Restore all existing surface that is disturbed during construction; and the area where the pipe failure occurred to a "like or better conditon" per City of Delray Beach Standards; De-mobilize

**Total Proposal Amount**

**\$168,173.50**

**Prices include:** All labor, equipment and materials (as noted ) for **Turnkey installation** per above and attached Atlas Schematic. All pricing is in accordance with Unit Pricing from WPB Master Utility Contact #14570. Specific scope amount for this work is itemized per Exhibit A attached; and work limits per Exhibit B Atlas schematic plan

**Prices Exclude:** Permits fees; Performance and Payment Bond (add 2% to Contract Amount if required)

Respectfully Submitted by:

Howard Wight, President

**FOSTER MARINE CONTRACTORS, INC.**

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**Exhibit A****SE Interceptor Sliplinng of existing 36" pipe with 30" A2 Liner Pipe  
from MH-1 to MH-4 per Exhibit B attached**

All pricing in accordance w/ **FMC City of West Palm Beach Annual Contract # 14570-- Master Contract for Utility Construction** (see attached)

CONTRACT ITEM #	ITEM DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL
<b><u>General Conditions</u></b>					
	Equipment Mob / Demob	Included in Prices Below			
--	Portable Toilet	Included in Prices Below			
--	Preconstruction Video	1	LS	500.00	500.00
--	Red Line As-Built Record Drawings	By Others			
--	Bond and Insurances	NIC < \$200,000.00			
<b><u>CREW TIME</u></b>					
2	Pipe Crew up to 36"	120	HR	\$ 450.00	\$ 54,000.00
2A	Dump Truck (for dsiposal of misc piping/ structure debris; an	36	HR	\$ 75.00	\$ 2,700.00
2B.	Wellpoint Equipment (2 launching pits and new Manhole inst	90	HR	\$ 110.00	\$ 9,900.00
<b><u>Roadway (2 ea insertion pits; repair at pipe failure)</u></b>					
1	Remove Existing Roadway Pavement	300	SY	\$ 5.00	\$ 1,500.00
2	Remove Existing Roadway Base	300	SY	\$ 9.00	\$ 2,700.00
5	2" Type S-III Asphalt, Including Tack and Prime Coats	300	SY	\$ 23.00	\$ 6,900.00
6	Compacted Crushed Concrete Base - 10"	300	SY	\$ 25.00	\$ 7,500.00



All pricing in accordance w/ **FMC City of West Palm Beach Annual Contract # 14570-- Master Contract for Utility Construction** (see attached)

CONTRACT ITEM #	ITEM DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL
7	12" Compacted Subgrade (98% T-180)	300	SY	\$ 5.00	\$ 1,500.00
9	1" Mill and Resurface (up to 1" S-3)	0	SY	\$ 21.00	\$ -
14	Striping (Thermoplastic)	1000	LF	\$ 2.00	\$ 2,000.00
<u>Sanitary Sewer (Material only)</u>					
158	Sanitary Sewer Manhole (4') up to 6' depth	1	Ea	\$ 2,500.00	\$ 2,500.00
158A	Addl depth to Bid Item 158per 1 ft increment (# 158 MH is 13	7	LF	\$ 400.00	\$ 2,800.00
169	30"PVC SDR 26 Pipe	0	LF	\$ 120.00	\$ -
169 alternate	30" PVC (A2 Liner Pipe - see attached product info)	540	LF	\$ 120.00	\$ 64,800.00
---	Grout Material for Annular space (36" - 32" ID~ 2" around pipe)	35	CY	\$ 150.00	\$ 5,250.00
<u>MISCELLANEOUS</u>					
210	Supply & Installation of Floratum Sod --up to 1000 SF	1000	SF	\$ 1.00	\$ 1,000.00
<u>Maintenacnce of Traffic</u>					
220c	Standard Barricade w/Lights	1000	Ea	\$ 1.00	\$ 1,000.00
220d	Corral Barricades w/Lights	168	Ea	\$ 2.00	\$ 336.00
220e	Road Sign w/Lights	315	Ea	\$ 2.50	\$ 787.50
<u>Allowances</u>					
--	Testing Allowance	1	LS	500.00	500.00

**Total Proposal Amount \$ 168,173.50**

Foster Marine  
Contractors, Inc.

## Fee Schedule

Item	Item Description	Est. Quant.	Units	Unit Price	Amount
1	Road Finishing Crew consisting of a minimum of three (3) experienced operators, includes: motor grader, roller & water wagon when necessary requested, to prepare a shell, limerock, or crushed concrete road base, stabilized subgrade & asphalt roadway w/ striping in compliance with the latest City of WPB standard specifications. Payment shall be made by the hour for road finishing crew & shall include: equipment, labor, water, all required testing, and all misc associated costs. Material not included in this item.	XXX	HR	XXX	\$400.00
2	Crew - Concrete, Ductile Iron, PVC, HDPE, or Metal Pipe Laying: consisting of a foreman (with 30 hrs of OSHA training), a minimum of three (3) experienced men, including layout, excavating, installing, back filling equipment, and roadway repair necessary for laying pipe up to and including 36" diameter. Materials not included in this item.				\$450.00
A.	Dump Truck, 15-28 cu. yd. capacity when requested with item #2 only.	XXX	HR	XXX	\$75.00
B.	Well Point equipment up to 150 points complete including pump and jetting equipment when requested with item #2 only (Inc. Dewatering Permits).	XXX	HR	XXX	\$110.00
3	Crew - Concrete, Ductile Iron, PVC, HDPE, or Metal Pipe Laying: consisting of a foreman (with 30 hrs of OSHA training), a minimum of three (3) experienced men, including layout, excavating, installing, back filling equipment, and roadway repair necessary for laying pipe greater than 36" up to 84" diameter. Materials not included in this item.	XXX	HR	XXX	\$495.00
A.	Dump Truck, 15-18 cu. yd. capacity when requested with item #3 only	XXX	HR	XXX	\$75.00
B.	Well Point Equipment up to 150 points complete including pump and Jetting equipment when requested with item #3 only (including Dewatering Permit).	XXX	HR	XXX	\$110.00



Item	Item Description	Est. Quant.	Units	Unit Price	Amount
4	Four Man Repair Crew, including one Foreman (with 30 hrs of OSHA training) and three experienced skilled tradesman, and all equipment and tools necessary for construction, maintenance, and emergency repairs of facility including Water Treatment Plants, Wastewater Treatment Plants, pump stations, and utility mains. Materials not included in this item.	XXX	HR	XXX	\$450.00
A.	Dump Truck, 15-18 cu. yd. capacity when requested with item #4 only.	XXX	HR	XXX	\$75.00
B.	Well Point Equipment up to 150 Points complete including pump and Jetting equipment when requested with item #4 only (including Dewatering Permit).	XXX	HR	XXX	\$110.00
<b>ROADWAY</b>					
1.	Remove Existing Roadway Pavement	100	S.Y.	\$ 5.00	\$ 500.00
2.	Remove Existing Roadway Base (aggregate)	100	S.Y.	\$ 9.00	\$ 900.00
3.	Remove Existing Roadway Base (concrete)	100	S.Y.	\$ 12.00	\$ 1,200.00
4.	2-1/2" A.C.S.C. Type S-1, incl. Tack Coats and Prime Coats	100	S.Y.	\$ 27.00	\$ 2,700.00
5.	2" A.C.S.C. Type S-III, incl. Tack Coats and Prime Coats	100	S.Y.	\$ 23.00	\$ 2,300.00
6.	Compacted Crushed Concrete/Limerock Roadway Base (10" thick)	100	S.Y.	\$ 25.00	\$ 2,500.00
7.	12" Compacted Subgrade	100	S.Y.	\$ 5.00	\$ 500.00
8.	Mill and Resurface (up to 1-1/4" A.C.S.C. Type S-I)	400	S.Y.	\$ 23.00	\$ 9,200.00
9.	Mill and Resurface (up to 1 A.C.S.C. Type S-III)	400	S.Y.	\$ 21.00	\$ 8,400.00
10.	Temporary Striping (4")	100	LF	\$ 1.00	\$ 100.00
11.	Temporary Striping (6")	100	LF	\$ 1.00	\$ 100.00
12.	Temporary Striping (12")	100	LF	\$ 1.50	\$ 150.00
13.	Striping (Thermoplastic, 4")	100	LF	\$ 1.50	\$ 150.00
14.	Striping (Thermoplastic, 6")	100	LF	\$ 2.00	\$ 200.00
15.	Striping (Thermoplastic, 12")	100	LF	\$ 4.00	\$ 400.00
16.	Special saw cuts for pavement	50	LF	\$ 3.00	\$ 150.00
17.	Supply and Installation of FDOT Concrete Bumper Guard	10	EA	\$ 300.00	\$ 3,000.00
18.	Furnish and Installation of ADA-compliant detectable surface	50	SF	\$ 60.00	\$ 3,000.00
19.	Supply and Installation of ADA compliant welded aluminum handrail	25	LF	\$ 25.00	\$ 625.00
<b>STORM SEWER:</b>					
20.	15" RCP, Class III	200	LF	\$ 20.00	\$ 4,000.00

Item	Item Description	Est. Quant.	Units	Unit Price	Amount
21.	18" RCP, Class III	200	LF	\$ 24.00	\$ 4,800.00
22.	24" RCP, Class III	200	LF	\$ 31.00	\$ 6,200.00
23.	30" RCP, Class III	100	LF	\$ 43.00	\$ 4,300.00
24.	36" RCP, Class III	100	LF	\$ 60.00	\$ 6,000.00
25.	42" RCP, Class III	100	LF	\$ 75.00	\$ 7,500.00
26.	48" RCP, Class III	100	LF	\$ 95.00	\$ 9,500.00
27.	60" RCP, Class III	100	LF	\$ 135.00	\$ 13,500.00
28.	72" RCP, Class III	100	LF	\$ 190.00	\$ 19,000.00
29.	Adjust Existing Storm Manhole/Inlet Top	25	EA	\$ 400.00	\$ 10,000.00
30.	Storm Inlet, Type C	15	EA	\$ 2,500.00	\$ 37,500.00
31.	Storm Inlet, Type E	15	EA	\$ 3,400.00	\$ 51,000.00
32.	Storm Inlet, Type P-5	15	EA	\$ 3,200.00	\$ 48,000.00
33.	Storm Inlet, Type P-6	15	EA	\$ 3,500.00	\$ 52,500.00
34.	Storm Manhole, Type P (3.5' x 6') (up to 6' depth)	1	EA	\$ 2,900.00	\$ 2,900.00
34a.	Additional depth to Bid Item 34 per 1 foot increment	1	LF	\$ 400.00	\$ 400.00
35.	Storm Manhole, Type J (3.5'x6') (up to 6' depth)	1	EA	\$ 2,900.00	\$ 2,900.00
35a.	Additional depth to Bid Item 35 per 1 foot increment	1	LF	\$ 450.00	\$ 450.00
36.	Storm Manhole, Type J (5'X5') (up to 6' depth)	1	EA	\$ 3,000.00	\$ 3,000.00
36a.	Additional depth to Bid Item 36 per 1 foot increment	1	LF	\$ 450.00	\$ 450.00
37.	Storm Manhole, Type J (6'X6') (up to 6' depth)	1	EA	\$ 3,700.00	\$ 3,700.00
37a.	Additional depth to Bid Item 37 per 1 foot increment	1	LF	\$ 500.00	\$ 500.00
38.	12"X18" Oval RCP	100	LF	\$ 36.00	\$ 3,600.00
	<b>PRESSURE PIPE (WATER MAIN):</b>				
39.	4" C-900 PVC Water Main	100	LF	\$ 5.00	\$ 500.00
40.	6" C-900 PVC Water Main	100	LF	\$ 7.00	\$ 700.00
41.	8" C-900 PVC Water Main	100	LF	\$ 12.00	\$ 1,200.00
42.	10" C-900 PVC Water Main	100	LF	\$ 18.00	\$ 1,800.00
43.	12" C-900 PVC Water Main	100	LF	\$ 24.00	\$ 2,400.00
44.	4" PVC Mega-Lug Kits	50	EA	\$ 50.00	\$ 2,500.00
45.	6" PVC Mega-Lug Kits	50	EA	\$ 70.00	\$ 3,500.00
46.	8" PVC Mega-Lug Kits	50	EA	\$ 85.00	\$ 4,250.00
47.	10" PVC Mega-Lug Kits	50	EA	\$ 135.00	\$ 6,750.00
48.	12" PVC Mega-Lug Kits	50	EA	\$ 145.00	\$ 7,250.00
49.	4" Cement-lined DIP Water Main Class 52	100	LF	\$ 29.00	\$ 2,900.00
50.	6" Cement-lined DIP Water Main Class 52	100	LF	\$ 32.00	\$ 3,200.00
51.	8" Cement-lined DIP Water Main Class 52	100	LF	\$ 35.00	\$ 3,500.00



<i>Item</i>	<i>Item Description</i>	<i>Est. Quant.</i>	<i>Units</i>	<i>Unit Price</i>	<i>Amount</i>
52.	10" Cement-lined DIP Water Main Class 52	100	LF	\$ 45.00	\$ 4,500.00
53.	12" Cement-lined DIP Water Main Class 52	100	LF	\$ 55.00	\$ 5,500.00
54.	16" Cement-lined DIP Water Main Class 51	100	LF	\$ 75.00	\$ 7,500.00
55.	18" Cement-lined DIP Water Main Class 51	100	LF	\$ 90.00	\$ 9,000.00
56.	20" Cement-lined DIP Water Main Class 51	100	LF	\$ 100.00	\$ 10,000.00
57.	24" Cement-lined DIP Water Main Class 51	100	LF	\$ 130.00	\$ 13,000.00
58.	30" Cement-lined DIP Water Main Class 51	100	LF	\$ 170.00	\$ 17,000.00
59.	36" Cement-lined DIP Water Main Class 51	100	LF	\$ 230.00	\$ 23,000.00
60.	4" Cement-lined DIP Fittings	1	TON	\$ 7,500.00	\$ 7,500.00
61.	6" Cement-lined DIP Fittings	1	TON	\$ 7,500.00	\$ 7,500.00
62.	8" Cement-lined DIP Fittings	1	TON	\$ 7,500.00	\$ 7,500.00
63.	10" Cement-lined DIP Fittings	1	TON	\$ 7,500.00	\$ 7,500.00
64.	12" Cement-lined DIP Fittings	1	TON	\$ 7,500.00	\$ 7,500.00
65.	16" Cement-lined DIP Fittings	1	TON	\$ 7,500.00	\$ 7,500.00
66.	18" Cement-lined DIP Fittings	1	TON	\$ 7,500.00	\$ 7,500.00
67.	20" Cement-lined DIP Fittings	1	TON	\$ 7,500.00	\$ 7,500.00
68.	24" Cement-lined DIP Fittings	1	TON	\$ 7,500.00	\$ 7,500.00
69.	30" Cement-lined DIP Fittings	1	TON	\$ 7,500.00	\$ 7,500.00
70.	36" Cement-lined DIP Fittings	1	TON	\$ 7,500.00	\$ 7,500.00
71.	1" Single Water Service (Type K, up to 10') incl. Meter Box, complete	20	EA	\$ 530.00	\$ 10,600.00
71a.	Additional length to Bid Item 71 per 1 foot increment	40	LF	\$ 10.00	\$ 400.00
72.	1" Single Water Service (Polytube, up to 10') incl. Meter Box complete	20	EA	\$ 490.00	\$ 9,800.00
72a.	Additional length to Bid Item 72 per 1 foot increment	40	LF	\$ 5.00	\$ 200.00
73.	2" Single Water Service (Type K, up to 10') incl. Meter Box complete	20	EA	\$ 1,430.00	\$ 28,600.00
73a.	Additional length to Bid Item 73 per 1 foot increment	40	EA	\$ 20.00	\$ 800.00
74.	2" Single Water Service (Polytube, up to 10') incl. Meter Box complete	20	EA	\$ 1,300.00	\$ 26,000.00
74a.	Additional length to Bid Item 74 per 1 foot increment	40	EA	\$ 15.00	\$ 600.00
75.	2" Temporary Water Main incl. temporary fittings and temporary service connections, complete	100	LF	\$ 35.00	\$ 3,500.00
76.	Air Release Valve Manhole, complete w/ exterior coating	1	EA	\$ 6,000.00	\$ 6,000.00
77.	Sample point and Bacteriological Testing	10	EA	\$ 500.00	\$ 5,000.00

<i>Item</i>	<i>Item Description</i>	<i>Est. Quant.</i>	<i>Units</i>	<i>Unit Price</i>	<i>Amount</i>
78.	4" R.S.G.V. with Valve Box	1	EA	\$ 850.00	\$ 850.00
79.	6" R.S.G.V. with Valve Box	1	EA	\$ 950.00	\$ 950.00
80.	8" R.S.G.V. with Valve Box	1	EA	\$ 1,250.00	\$ 1,250.00
81.	10" R.S.G.V. with Valve Box	1	EA	\$ 1,700.00	\$ 1,700.00
82.	12" R.S.G.V. with Valve Box	1	EA	\$ 2,100.00	\$ 2,100.00
83.	20" R.S.G.V. with Valve Box	1	EA	\$ 12,000.00	\$ 12,000.00
84.	24" R.S.G.V. with Valve Box	1	EA	\$ 18,000.00	\$ 18,000.00
85.	30" R.S.G.V. with Valve Box	1	EA	\$ 32,000.00	\$ 32,000.00
86.	36" R.S.G.V. with Valve Box	1	EA	\$ 40,000.00	\$ 40,000.00
87.	Fire Hydrant	5	EA	\$ 2,500.00	\$ 12,500.00
	<b>PRESSURE PIPE (FORCE MAIN):</b>				
88.	4" Epoxy-lined DIP Force Main, Class 52	100	LF	\$ 45.00	\$ 4,500.00
89.	6" Epoxy-lined DIP Force Main, Class 52	100	LF	\$ 50.00	\$ 5,000.00
90.	8" Epoxy-lined DIP Force Main, Class 52	100	LF	\$ 60.00	\$ 6,000.00
91.	10" Epoxy-lined DIP Force Main, Class 52	100	LF	\$ 70.00	\$ 7,000.00
92.	12" Epoxy-lined DIP Force Main, Class 52	100	LF	\$ 90.00	\$ 9,000.00
93.	16" Epoxy-lined DIP Force Main, Class 51	100	LF	\$ 115.00	\$ 11,500.00
94.	18" Epoxy-lined DIP Force Main, Class 51	100	LF	\$ 135.00	\$ 13,500.00
95.	20" Epoxy-lined DIP Force Main, Class 51	100	LF	\$ 135.00	\$ 13,500.00
96.	24" Epoxy-lined DIP Force Main, Class 51	100	LF	\$ 170.00	\$ 17,000.00
97.	30" Epoxy-lined DIP Force Main, Class 51	100	LF	\$ 210.00	\$ 21,000.00
98.	36" Epoxy-lined DIP Force Main, Class 51	100	LF	\$ 270.00	\$ 27,000.00
99.	4" Epoxy-lined DIP Fittings	1	TON	\$ 11,000.00	\$ 11,000.00
100.	6" Epoxy-lined DIP Fittings	1	TON	\$ 11,000.00	\$ 11,000.00
101.	8" Epoxy-lined DIP Fittings	1	TON	\$ 11,000.00	\$ 11,000.00
102.	10" Epoxy-lined DIP Fittings	1	TON	\$ 11,000.00	\$ 11,000.00
103.	12" Epoxy-lined DIP Fittings	1	TON	\$ 11,000.00	\$ 11,000.00
104.	16" Epoxy-lined DIP Fittings	1	TON	\$ 12,500.00	\$ 12,500.00
105.	18" Epoxy-lined DIP Fittings	1	TON	\$ 12,500.00	\$ 12,500.00
106.	20" Epoxy-lined DIP Fittings	1	TON	\$ 12,500.00	\$ 12,500.00
107.	24" Epoxy-lined DIP Fittings	1	TON	\$ 12,500.00	\$ 12,500.00
108.	30" Epoxy-lined DIP Fittings	1	TON	\$ 13,000.00	\$ 13,000.00
109.	36" Epoxy-lined DIP Fittings	1	TON	\$ 13,000.00	\$ 13,000.00
110.	4" Plug Valve w/Valve Box	1	EA	\$ 800.00	\$ 800.00
111.	6" Plug Valve w/Valve Box	1	EA	\$ 1,050.00	\$ 1,050.00
112.	8" Plug Valve w/Valve Box	1	EA	\$ 1,400.00	\$ 1,400.00



<i>Item</i>	<i>Item Description</i>	<i>Est. Quant.</i>	<i>Units</i>	<i>Unit Price</i>	<i>Amount</i>
113.	12" Plug Valve w/Valve Box	1	EA	\$ 2,500.00	\$ 2,500.00
114.	16" Plug Valve w/Valve Box	1	EA	\$ 4,600.00	\$ 4,600.00
115.	18" Plug Valve w/Valve Box	1	EA	\$ 5,000.00	\$ 5,000.00
116.	20" Plug Valve w/Valve Box	1	EA	\$ 6,600.00	\$ 6,600.00
117.	24" Plug Valve w/Valve Box	1	EA	\$ 13,000.00	\$ 13,000.00
118.	30" Plug Valve w/Valve Box	1	EA	\$ 21,000.00	\$ 21,000.00
119.	36" Plug Valve w/Valve Box	1	EA	\$ 36,000.00	\$ 36,000.00
	<b>PRESSURE PIPE (WATER/FORCE MAIN):</b>				
120.	8" HDPE (SDR11) Pipe	100	LF	\$ 18.00	\$ 1,800.00
121.	10" HDPE (SDR11) Pipe	100	LF	\$ 27.00	\$ 2,700.00
122.	12" HDPE (SDR11) Pipe	100	LF	\$ 37.00	\$ 3,700.00
123.	16" HDPE (SDR11) Pipe	100	LF	\$ 64.00	\$ 6,400.00
124.	18" HDPE (SDR11) Pipe	100	LF	\$ 80.00	\$ 8,000.00
125.	20" HDPE (SDR11) Pipe	100	LF	\$ 100.00	\$ 10,000.00
126.	24" HDPE (SDR11) Pipe	100	LF	\$ 140.00	\$ 14,000.00
127.	30" HDPE (SDR11) Pipe	100	LF	\$ 215.00	\$ 21,500.00
128.	36" HDPE (SDR11) Pipe	100	LF	\$ 330.00	\$ 33,000.00
129.	12" Butterfly Valve w/Valve Box	1	EA	\$ 1,400.00	\$ 1,400.00
130.	16" Butterfly Valve w/Valve Box	1	EA	\$ 2,000.00	\$ 2,000.00
131.	20" Butterfly Valve w/Valve Box	1	EA	\$ 4,000.00	\$ 4,000.00
132.	24" Butterfly Valve w/Valve Box	1	EA	\$ 5,000.00	\$ 5,000.00
133.	30" Butterfly Valve w/Valve Box	1	EA	\$ 10,000.00	\$ 10,000.00
134.	36" Butterfly Valve w/Valve Box	1	EA	\$ 11,500.00	\$ 11,500.00
135.	4" Field-Lok Gaskets	50	EA	\$ 95.00	\$ 4,750.00
136.	6" Field-Lok Gaskets	50	EA	\$ 125.00	\$ 6,250.00
137.	8" Field-Lok Gaskets	50	EA	\$ 175.00	\$ 8,750.00
138.	10" Field-Lok Gaskets	50	EA	\$ 250.00	\$ 12,500.00
139.	12" Field-Lok Gaskets	50	EA	\$ 290.00	\$ 14,500.00
140.	16" Field-Lok Gaskets	50	EA	\$ 650.00	\$ 32,500.00
141.	18" Field-Lok Gaskets	50	EA	\$ 900.00	\$ 45,000.00
142.	20" Field-Lok Gaskets	50	EA	\$ 1,000.00	\$ 50,000.00
143.	24" Field-Lok Gaskets	50	EA	\$ 1,350.00	\$ 67,500.00
144.	30" Field-Lok Gaskets	50	EA	\$ 1,800.00	\$ 90,000.00
145.	36" Field-Lok Gaskets	50	EA	\$ 2,200.00	\$ 110,000.00
146.	4" DIP Mega-Lug Kits	50	EA	\$ 55.00	\$ 2,750.00
147.	6" DIP Mega-Lug Kits	50	EA	\$ 65.00	\$ 3,250.00
148.	8" DIP Mega-Lug Kits	50	EA	\$ 80.00	\$ 4,000.00
149.	10" DIP Mega-Lug Kits	50	EA	\$ 300.00	\$ 15,000.00
150.	12" DIP Mega-Lug Kits	50	EA	\$ 350.00	\$ 17,500.00
151.	16" DIP Mega-Lug Kits	50	EA	\$ 350.00	\$ 17,500.00
152.	18" DIP Mega-Lug Kits	50	EA	\$ 350.00	\$ 17,500.00
153.	20" DIP Mega-Lug Kits	50	EA	\$ 450.00	\$ 22,500.00
154.	24" DIP Mega-Lug Kits	50	EA	\$ 700.00	\$ 35,000.00
155.	30" DIP Mega-Lug Kits	50	EA	\$ 1,500.00	\$ 75,000.00



Item	Item Description	Est. Quant.	Units	Unit Price	Amount
156.	36" DIP Mega-Lug Kits	50	EA	\$ 1,800.00	\$ 90,000.00
157.	Air Release Valve Manhole, complete w/ interior and exterior coating	5	EA	\$ 6,000.00	\$ 30,000.00
	<b>SANITARY SEWER:</b>				
158.	Sanitary Sewer MH (4' Dia., up to 6' depth), complete	5	EA	\$ 2,500.00	\$ 12,500.00
158a.	Additional depth to Bid Item 158 per 1 foot increment	5	LF	\$ 400.00	\$ 2,000.00
159.	Sanitary Sewer MH (6' Dia., up to 6' depth), complete	1	EA	\$ 3,500.00	\$ 3,500.00
159a.	Additional depth to Bid Item 159 per 1 foot increment	5	LF	\$ 500.00	\$ 2,500.00
160.	MH Drop Connection (up to 6' depth)	5	EA	\$ 1,500.00	\$ 7,500.00
160a.	Additional depth to Bid Item 160 per 1 foot increment	5	LF	\$ 300.00	\$ 1,500.00
161.	6" Sanitary Sewer Lateral (up to 20') incl. Cleanout, complete	1	EA	\$ 500.00	\$ 500.00
161a.	Additional length to Bid Item 161 per 1 foot increment	5	LF	\$ 10.00	\$ 50.00
162.	Adjust San. MH Top	5	EA	\$ 350.00	\$ 1,750.00
163.	6" PVC SDR 26	100	LF	\$ 10.00	\$ 1,000.00
164.	8" PVC SDR 26	100	LF	\$ 12.00	\$ 1,200.00
165.	10" PVC SDR 26	100	LF	\$ 16.00	\$ 1,600.00
166.	12" PVC SDR 26	100	LF	\$ 22.00	\$ 2,200.00
167.	15" PVC SDR 26	100	LF	\$ 30.00	\$ 3,000.00
168.	24" PVC SDR 26	100	LF	\$ 70.00	\$ 7,000.00
169.	30" PVC SDR 26	100	LF	\$ 120.00	\$ 12,000.00
170.	6" x 6" PVC SDR 26 Wye	10	EA	\$ 75.00	\$ 750.00
171.	8" x 6" PVC SDR 26 Wye	10	EA	\$ 85.00	\$ 850.00
172.	10" x 6" PVC SDR 26 Wye	10	EA	\$ 175.00	\$ 1,750.00
173.	12" x 6" PVC SDR 26 Wye	10	EA	\$ 180.00	\$ 1,800.00
174.	15" x 6" PVC SDR 26 Wye	10	EA	\$ 325.00	\$ 3,250.00
175.	24" x 6" PVC SDR 26 Wye	10	EA	\$ 500.00	\$ 5,000.00
176.	30" x 6" PVC SDR 26 Wye	10	EA	\$ 750.00	\$ 7,500.00
177.	4" Fernco Coupling w/shear rings	10	EA	\$ 25.00	\$ 250.00
178.	6" Fernco Coupling w/shear rings	10	EA	\$ 35.00	\$ 350.00
179.	8" Fernco Coupling w/shear rings	10	EA	\$ 41.00	\$ 410.00
180.	10" Fernco Coupling w/shear rings	10	EA	\$ 55.00	\$ 550.00
181.	12" Fernco Coupling w/shear rings	10	EA	\$ 65.00	\$ 650.00
182.	15" Fernco Coupling w/shear rings	10	EA	\$ 160.00	\$ 1,600.00
183.	24" Fernco Coupling w/shear rings	10	EA	\$ 300.00	\$ 3,000.00
184.	30" Fernco Coupling w/shear rings	10	EA	\$ 500.00	\$ 5,000.00
	<b>CONCRETE:</b>				
185.	Removal & Disposal of 4" thick Concrete	100	SF	\$ 4.00	\$ 400.00
186.	Removal & Disposal of 6" thick Concrete	100	SF	\$ 4.00	\$ 400.00



<i>Item</i>	<i>Item Description</i>	<i>Est. Quant.</i>	<i>Units</i>	<i>Unit Price</i>	<i>Amount</i>
187.	Concrete (4" thick)	100	SY	\$ 50.00	\$ 5,000.00
188.	Concrete (6" thick)	100	SY	\$ 55.00	\$ 5,500.00
189.	FDOT Handicap Ramp	100	SY	\$ 55.00	\$ 5,500.00
190.	Installation of FDOT Type "D" curb – by hand	50	LF	\$ 35.00	\$ 1,750.00
191.	Installation of FDOT Type "D" curb – by machine	50	LF	\$ 25.00	\$ 1,250.00
192.	Installation of FDOT Type "F" curb – by hand	50	LF	\$ 35.00	\$ 1,750.00
193.	Installation of FDOT Type "F" curb – by machine	50	LF	\$ 25.00	\$ 1,250.00
194.	Installation of FDOT Valley Gutter – by hand	50	LF	\$ 35.00	\$ 1,750.00
195.	Installation of FDOT Valley Gutter – by machine	50	LF	\$ 25.00	\$ 1,250.00
196.	Installation of Header Curb – by hand	50	LF	\$ 50.00	\$ 2,500.00
197.	Installation of FDOT Asphaltic Concrete Curb	50	LF	\$ 35.00	\$ 1,750.00
198.	Installation of FDOT mitered end section for 15" diameter RCP	10	EA	\$ 750.00	\$ 7,500.00
199.	Installation of FDOT mitered end section for 15" diameter HDPE pipe	10	EA	\$ 600.00	\$ 6,000.00
200.	Installation of FDOT mitered end section for 18" diameter HDPE pipe	10	EA	\$ 1,000.00	\$ 10,000.00
201.	Installation of FDOT mitered end section for 18" diameter RCP	10	EA	\$ 700.00	\$ 7,000.00
202.	Special saw cuts for concrete	100	LF	\$ 5.00	\$ 500.00
	<b>MISCELLANEOUS:</b>				
203.	Removal & disposal of soil to implement improvements	100	CY	\$ 10.00	\$ 1,000.00
204.	Supply, replace & compact clean fill	100	CY	\$ 16.00	\$ 1,600.00
205.	Supply & installation of natural stone riprap	200	TON	\$ 250.00	\$ 50,000.00
206.	Supply & installation of broken concrete riprap	200	TON	\$ 200.00	\$ 40,000.00
207.	Supply & install sand-cement riprap	100	CY	\$ 500.00	\$ 50,000.00
208.	Removal & disposal of existing culvert pipe (any material)	50	LF	\$ 25.00	\$ 1,250.00
209.	Supply & installation of Bahia Sod – up to 1000 SF	1000	SF	\$ 0.75	\$ 750.00
210.	Supply & installation of Bahia Sod – over 1000 SF	2000	SF	\$ 0.50	\$ 1,000.00
211.	Supply & installation of Floratam Sod – up to 1000 SF	1000	SF	\$ 1.00	\$ 1,000.00
212.	Supply & installation of Floratam Sod – over 1000 SF	2000	SF	\$ 0.75	\$ 1,500.00
213.	Supply & installation of FDOT Seed & Mulch Mix	1000	SF	\$ 0.50	\$ 500.00
214.	Furnish Operator, Water Truck and Irrigate Sod or Seed Mix	10	HR	\$ 70.00	\$ 700.00

Item	Item Description	Est. Quant.	Units	Unit Price	Amount
215.	FDOT Guard Rail with no end treatment	50	FT	\$ 60.00	\$ 3,000.00
216.	Canal Excavation (sand & silt)	100	CY	\$ 20.00	\$ 2,000.00
217.	Lake Canal Bank Restoration	100	SF	\$ 6.00	\$ 600.00
218.	Surveyor (as-built records approved by City of W.P.B.)	XXX	HR	XXX	\$225.00
218a.	Field Crew	XXX	HR	XXX	\$250.00
218b.	Drafting/Cad.	XXX	HR	XXX	\$125.00
<b>APPROVED MOT:</b>					
219a.	Arrow Board	1	EA	\$ 100.00	\$ 100.00
219b.	Sign Board	1	EA	\$ 120.00	\$ 120.00
220c.	Standard Barricades w/Lights	1	EA	\$ 1.00	\$ 1.00
220d.	Corral Barricades w/Lights	1	EA	\$ 2.00	\$ 2.00
220e.	Road Sign w/Lights	1	EA	\$ 2.50	\$ 2.50
220f.	FDOT-approved Traffic Cones	10	EA	\$ 1.00	\$ 10.00
<b>LABOR RATE</b> (For any other work not mentioned above, the contractor will apply the labor to the quote)					
	Foreman	XXX	HR	XXX	\$ 85.00
	Laborer	XXX	HR	XXX	\$ 40.00
<b>ALTERNATE BID</b>					
	The following equipment is to be furnished with operator				
1.	One tractor bulldozer, size D-5 or equivalent offering. (Make/Model) _____	XXX	HR	XXX	\$140.00
2.	One self-loading scraper, pan and tractor, rubber-tired, 20 cu. yd. capacity.	XXX	HR	XXX	\$250.00
3.	One dragline, 1 Cu. Yd. Capacity	XXX	HR	XXX	\$250.00
4.	One road pothole patch crew, including truck and hot mix asphalt, and necessary crew to patch potholes.	XXX	HR	XXX	\$350.00
5.	One dragline, 2-1/2 Cu. Yd. Capacity	XXX	HR	XXX	\$315.00
6.	One front end loader, 2 Cu. Yd. Capacity	XXX	HR	XXX	\$100.00
7.	One front end loader, 3 Cu. Yd. Capacity	XXX	HR	XXX	\$110.00
8.	One crawler tractor hydraulic backhoe 3/4 Cu. Yd. Capacity	XXX	HR	XXX	\$115.00
9.	One backhoe 1.5 Cu. Yd. Capacity	XXX	HR	XXX	\$135.00
10.	One backhoe 3 Cu. Yd. Capacity	XXX	HR	XXX	\$175.00
11.	One backhoe 4 Cu. Yd. Capacity	XXX	HR	XXX	\$300.00
12.	One backhoe 5 Cu. Yd. Capacity	XXX	HR	XXX	\$360.00
13.	Heavy equipment low boy with tractor, minimum width 10", 50 ton capacity.	XXX	HR	XXX	\$100.00
14.	One self-propelled vibrating, small size compactor.	XXX	HR	XXX	\$85.00
15.	One tandem dump truck with sideboards, 12 Cu. Yd.	XXX	HR	XXX	\$65.00
16.	One triaxle dump truck, 18 Cu. Yd.	XXX	HR	XXX	\$75.00



<i>Item</i>	<i>Item Description</i>	<i>Est. Quant.</i>	<i>Units</i>	<i>Unit Price</i>	<i>Amount</i>
17.	One tractor trailer dump truck, 20 Cu. Yd.	XXX	HR	XXX	\$90.00
18.	One long arm (50' min.) Backhoe 3 Cu. Yd. Capacity	XXX	HR	XXX	\$320.00
19.	Welding Machine	XXX	HR	XXX	\$10.00
20.	Portable Generator	XXX	HR	XXX	\$10.00
21.	Quick Cut Saw	XXX	HR	XXX	\$25.00
22.	Asphalt/Concrete Saw	XXX	HR	XXX	\$25.00
23.	Steel Wheel Roller	XXX	HR	XXX	\$90.00
24.	Plate Tamper	XXX	HR	XXX	\$35.00
25.	Pickup w/tools	XXX	HR	XXX	\$60.00
26.	Fuel truck	XXX	HR	XXX	\$96.00
27.	Crane-45 ton	XXX	HR	XXX	\$300.00
28.	Bobcat with grapple or excavator	XXX	HR	XXX	\$85.00
29.	Boat with motor	XXX	HR	XXX	\$100.00
30.	Chainsaw	XXX	HR	XXX	\$25.00

FAX: 561-683-0335

= EXISTING 36" O.D. PIPE TO BE LINED W/ 30" I.D. A-2 LINER (VOC)



## A2 Liner Pipe for Trenchless Technology





# A2 Liner Pipe Restores Deteriorated Sewers

## Cost-Effective Rehabilitation

The increasing rate of sanitary and storm sewer deterioration requires an efficient and cost-effective rehabilitation solution. Contech A2™ Liner Pipe uses proven trenchless installation methods to slipline existing sewer lines without the disruptions associated with open trenching—while increasing productivity and lowering costs.

## Proven Trenchless Installation Methods

### A2 Liner is Less Costly Than Cured-In-Place

A2 Liner provides a tremendous cost savings over cured-in-place pipe—up to 50% depending on the installation. Relining with A2 Liner eliminates costly bypass operations because normal flow is maintained. Additionally, sliplining with A2 Liner gives you a new pipe with direct-bury strength of 46 psi stiffness—which means it doesn't depend on the host pipe for long-term structural performance as cured-in-place liners do. Plus, the double-wall design provides extra stiffness for improved shape-control during installation and grouting.

### Restores Hydraulic Capacity

With a Manning's "n" of .009, A2 Liner Pipe restores hydraulic capacity to your sewer. Its glossy-smooth interior allows the relined pipe to carry as much or more flow than the existing host pipe, even with diameter reductions (see page 3).

## Easy Installation

Contech provides A2 Liner in 12-36 inch diameters and lengths of 10 and 20 feet. Custom lengths as short as 2.5 feet are available for installation within small insertion pits or manholes. Field installations demonstrate that workers can slipline with A2 Liner Pipe at a rate in excess of 200 feet per hour. And because it is lightweight, you can use smaller, less expensive equipment for handling and joining—another savings.

## Joint Tightness You Can Depend On

A2 Liner Pipe's patented gasketed STAB-JOINT® meets the joint tightness test requirements of ASTM D3212. It is also designed to remain

watertight up to 5 degrees angularity.

Unlike other gasketed joints for segmental sliplining, the A2 Liner STAB-JOINT ensures a positive connection even when sliplining misaligned, obstructed or curvilinear sewers.

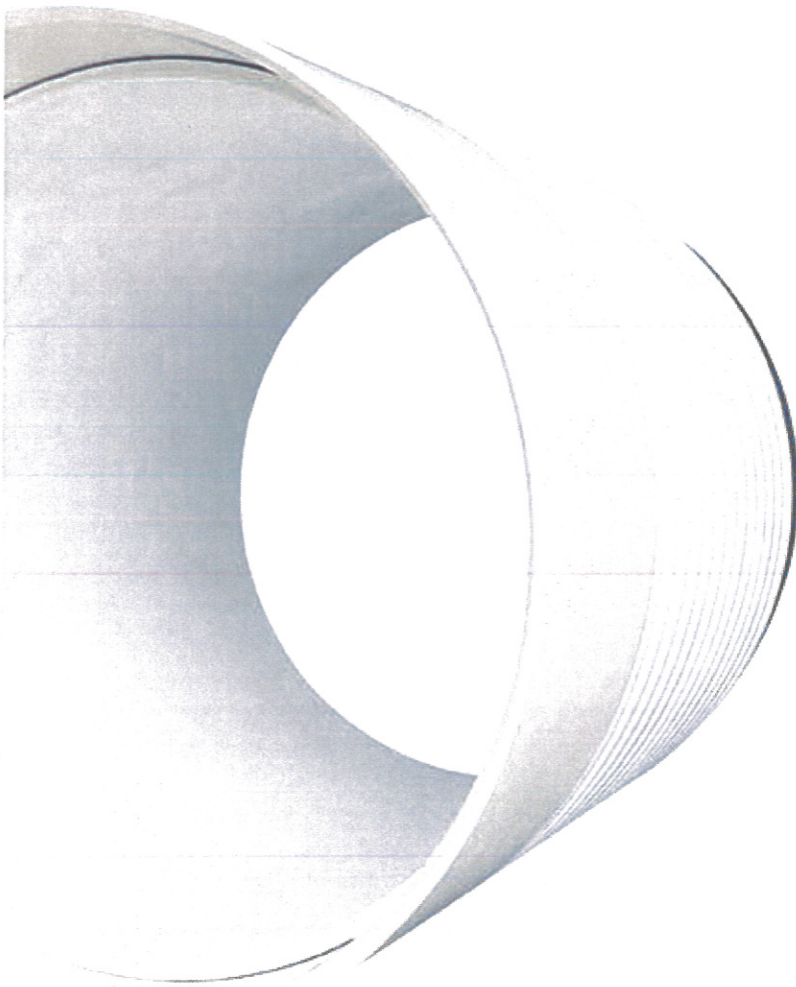
Additionally, this joint system incorporates a PVC coupling that maintains a constant outside and inside diameter.

## High-Quality PVC

Manufactured exclusively from low fill, cell class 12454 PVC compound—the most widely accepted sewer pipe material—A2 Liner Pipe provides excellent durability and resistance to abrasion. It withstands corrosive attack from both acidic and alkaline soils and is unaffected by chemicals found in normal sewage.

**A2 Liner Pipe's gasketed coupling allows sliplining of deteriorating pipelines without diverting the flow of the existing sewer.**





## A2 Liner Pipe Increases Hydraulic Capacity

When reinforced concrete and vitrified clay pipe have offset joints, cracks, spalling or protrusions, there is greater resistance to flow, reducing hydraulic capacity. Significant hydraulic improvements are achieved when these deteriorated pipes are sliplined with A2 Liner. Its Manning's "n" of .009 can actually result in increased flow capacity and higher flow velocities for improved self-cleaning.

The Manning equation can be used to determine the flow capacities for circular pipes before and after rehabilitation with A2 Liner Pipe:

$$\% \text{ Existing Flow} = \frac{n_{\text{existing}}}{n_{\text{A2 Liner}}} \left[ \frac{D_{\text{A2 Liner}}}{D_{\text{existing}}} \right]^{8/3}$$

Table 1 compares the flow of existing concrete pipe after it is relined with A2 Liner Pipe, in which:

n = Manning's coefficient:

A2 Liner "n" = .009

Existing RCP "n" = 0.015

D = inside diameter

This analysis is based upon closed-system flow for sewers or outlet-controlled flow for culverts.



Table 1  
Hydraulic Comparisons  
Existing Vs. Reline Pipe

Existing Diameter (Inches)	A2 Liner Diameter (Inches)	Percent Existing Flow*
15	12	92
18	15	103
21	18	111
24	21	117
27	24	122
30	27	126
36	30	103
42	36	111

\* Sliplining with A2 Liner can actually increase the hydraulic capacity of exist RCP drainage systems



# Installation Procedures

## Sliplining Considerations

- Inspect and clean the existing pipeline and verify the liner clearance prior to sliplining.
- Remove any obstructions, protrusions, joint offsets, debris, out-of-roundness or other irregularities that could damage or prohibit passage of the liner pipe.  
Install the liner pipe by either pushing or pulling it through the existing pipe. The leading pipe spigot end is usually fitted with a nose cone to help the liner pipe ride over small joint misalignments and other small obstructions or inconsistencies in the existing host pipe.
- The pipe jacking/pushing loads should be monitored. Excessive force could telescope pipe joints or damage the liner pipe. The safe compressive/jacking loads for A2 Liner Pipe are listed in Table 2. The pushing distances shown are based on the following:
  - Dry conditions
  - Unobstructed, clear, straight pushing/pulling
  - Coefficient of sliding friction – 0.75
- When required, service reconnections can be accomplished by small point repairs using PVC tapping saddles or INSERTATEE® fittings.
- The annular space between the liner pipe and the host pipe is usually filled with cement or cellular grout, depending on site conditions. Low-strength grouts (150-1,000 psi compressive strength) are typically used.

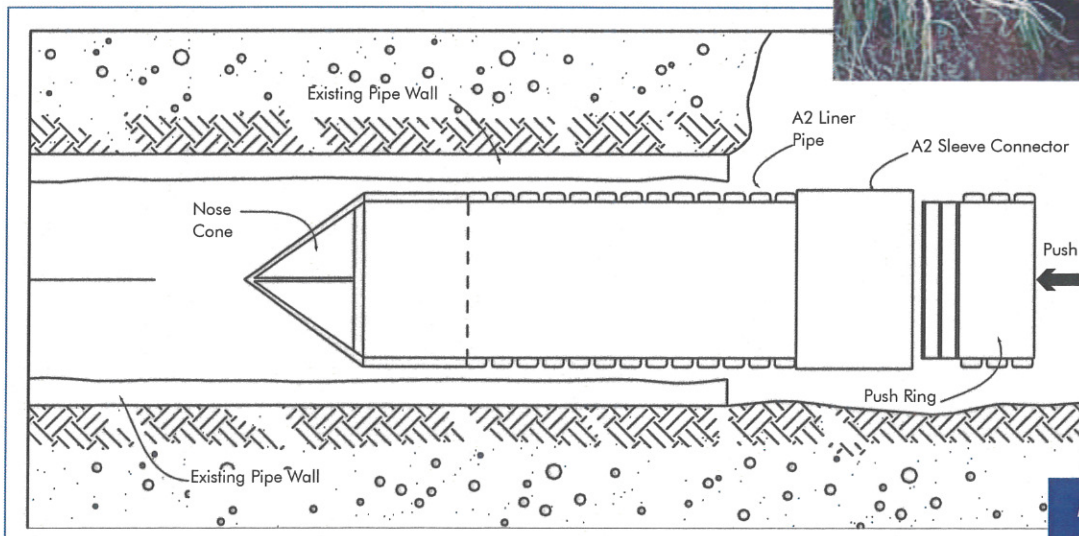
Table 2:  
Safe Compressive/Jacking Loads  
and Pushing Distances for A2 Liner Pipe

Pipe Diameter (Inches)	Safe Compressive Jacking Loads (Pounds)	Unobstructed Pushing Distances (Feet)
12	3,200	1,000
15	9,100	1,250
18	14,000	1,250
21	19,000	1,250
24	23,830	1,250
27	27,760	1,250
30	30,900	1,250
36	37,000	1,500

\* For straight pushing of A2 Liner Pipe

\*\* Greater pushing/pulling distances are possible depending on site conditions

Additional installation instructions can be found in the "Instructions for Unloading, Handling and Installing Contech A2 Liner Pipe" booklet available from your local Contech representative.



A2 Liner Pipe insertion detail



# A2 Liner Pipe Rapidly Renovates Culverts

In addition to repairing sanitary and storm sewers, A2 Liner Pipe's design features make it the obvious choice for relining distressed culverts. The corrugated exterior design provides high strength and high stiffness without the additional weight of solid wall pipe alternatives.

A2 Liner's lightweight design, coupled with a unique gasketed STAB-JOINT, makes joining easy. Lubricant, two chains and one or two come-alongs are usually all that is required to join sections. The light, easy-to-handle sections allow for maneuvering in tight workspaces. They can be installed either manually or with assistance from a backhoe.

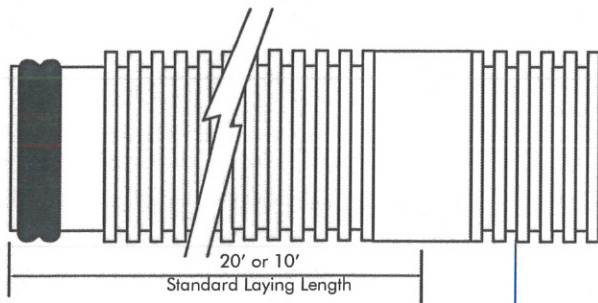
In most cases, a small crew with minimal equipment can reline at a fraction of the time and expense of replacement. And because pavement cuts are usually eliminated, traffic disruption in congested areas and the potential for future pavement settlement is minimized.



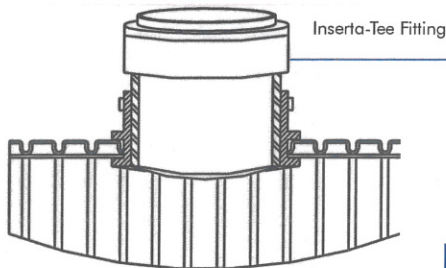
Small crews and minimal equipment required



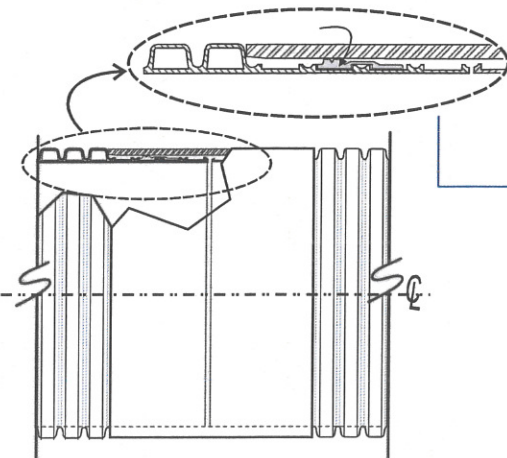
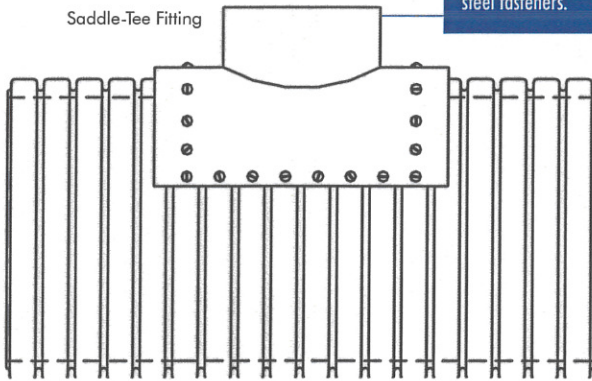
# Product Details



A2 Liner Pipe is available in standard lengths of 10 and 20 feet. 2.5-foot lengths are available for insertion via manholes.



Either INSERTATEE or saddle tee fittings allow easy-to-make connections for A2 Liner Pipe. Saddle tee fittings employ stainless steel fasteners.



A2 Liner Pipe's patented STAB-JOINT coupler fits flush with the outer wall surface for easy insertion.

Table 3  
A2 Liner Pipe  
Sizes & Dimensions

Nominal Diameter (Inches)	Average O.D. (Inches)	Average I.D. (Inches)
12	12.8	11.7
15	15.7	14.3
18	19.2	17.6
21	22.6	20.7
24	25.6	23.5
27	28.9	26.4
30	32.2	29.5
36	38.7	35.5



# PVC Corrugated Sewer Pipe with a Smooth Interior for Sliplining Installation

## **PART I General:**

### **1.01 PVC Profile Wall Sewer Pipe**

This specification covers PVC Corrugated Sewer Pipe With a Smooth Interior for Sliplining Applications.

### **1.02 References**

- A. ASTM F949—Standard Specification for Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe With a Smooth Interior and Fittings.
- B. ASTM D3212—Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
- C. ASTM D1784—Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
- D. ASTM D2412—Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading.
- E. ASTM F477—Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
- F. ASTM D2122—Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings.

### **3.03 Specifications**

The specifications contained herein govern, unless otherwise agreed upon between purchaser and manufacturer.

## **PART 2 Products**

### **2.01 Materials**

- A. PVC Compound: Pipe and fittings shall be made of PVC compound having a minimum cell classification of 12454 in accordance with ASTM D1784. Additional fillers (such as calcium carbonate for modulus enhancement) that lower the tensile strength of the compound and change the minimum cell classification shall not be allowed.
- B. Elastomeric Gaskets: Gaskets shall meet the requirements of ASTM F477 and be suitable for the service intended.

### **2.02 Manufacture and Construction**

- A. Pipe: Pipe shall be manufactured as a single extrusion of the smooth inner and the corrugated outer walls. The corrugated exterior profile shall be annular and seamless.
- B. Joints: Pipe shall be field connected with molded or fabricated PVC couplings. Couplings shall not increase the outside diameter or reduce the inside diameter when assembled. The joint shall utilize elastomeric sealing gaskets as the sole means to maintain joint water tightness and shall meet the requirements of ASTM D3212.
- C. Fittings: Couplings, elbows, reducers, tees, wyes, laterals and other fittings shall be capable of withstanding all operating conditions when installed. They may be molded or fabricated.

- D. Manufacturer: The acceptable manufacturer shall be Contech Engineered Solutions INC.

### **2.03 Dimensions**

- A. Diameters: The actual outside diameters of the pipe barrel for 12"-36" nominal diameters shall be in accordance with ASTM F949.
- B. Lengths: Pipe shall be supplied in nominal lengths of 10 or 20 feet. When required by radius curves, pit size or sewer misalignment, etc., pipe shall be supplied in special lengths that are an even division of 20 feet. The minimum laying length shall be 2.5 feet.
- C. Wall Thickness: The minimum wall thickness shall be as stated in Table 1 of ASTM F949 when measured in accordance with ASTM D2122.
- D. Sockets: All socket (bell) dimensions shall be sufficiently deep to allow for maximum joint angularity without joint separation. The minimum socket depth shall be 4.25 inches. The outside diameter of sockets shall be equal to the pipe outside diameter.

### **2.04 Testing**

- A. Pipes: Pipes shall be manufactured and tested in accordance with ASTM F949.
- B. Joints: Joints shall meet the requirements of ASTM D3212 and shall remain watertight at 5 degrees angularity.
- C. Stiffness: The minimum pipe stiffness shall be 46 psi when tested in accordance with ASTM D2412.

### **2.05 Owner Inspection**

- A. The owner or other designated representative shall be entitled to inspect pipes or witness the pipe manufacturing.

### **2.06 Packaging, Handling and Shipping**

- A. Packaging, handling and shipping shall be performed in accordance with the manufacturer's instructions.

## **PART 3 Execution**

### **3.01 Installation**

- A. Unloading, Handling and Installation: Unloading, handling and installation of pipe and fittings shall be in accordance with the project plans and spec and the manufacturer's requirements booklet: "Instructions for Unloading, Handling and Installing Contech A2 Liner Pipe."
- B. Pipe Grouting: Annular space grouting shall be in accordance with project plans and specs and the manufacturer's requirements. The grouting shall not damage the pipe liner.
- C. Acceptance: Acceptance of the installed liner shall be based on a video taped inspection after installation to assure that all joints are properly assembled and that no damage exists.



Contech Engineered Solutions provides site solutions for the civil engineering industry. Contech's portfolio includes bridges, drainage, retaining walls, sanitary sewer, stormwater, erosion control and soil stabilization products.



**For more information, call one of Contech's Regional Offices located in the following cities:**

<b>Ohio (Corporate Office)</b>	<b>513-645-7000</b>
California (Long Beach)	562-733-0733
Colorado (Denver)	720-587-2700
Florida (Tampa)	727-544-8811
Maine (Scarborough)	207-885-9830
Maryland (Baltimore)	410-740-8490
Oregon (Portland)	503-258-3180
Texas (Dallas)	972-590-2000

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800.338.1122**

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