

SUBMITTAL



Submittal number	3.0	Date	06/24/2018
Project	TRAILS AT CROWFOOT #1&9	6954 N. CROWFOOT VALLEY RD. PARKER, CO 80138	
Project number	201810		
Spec section			
Subsection		Status	Open
Current action	Submitted	Ball in court	
Topic	Storm Sewer (Plastic)		

Submitter	
Reviewer	
Cc	

Date submitted	06/24/2018	Submission due date	06/24/2018
Released for review	06/24/2018	Review due date	06/29/2018
Date returned		Required on site date	
Date closed			

Notes



LETTER OF TRANSMITTAL

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A-003

Project JBS Job No 0150

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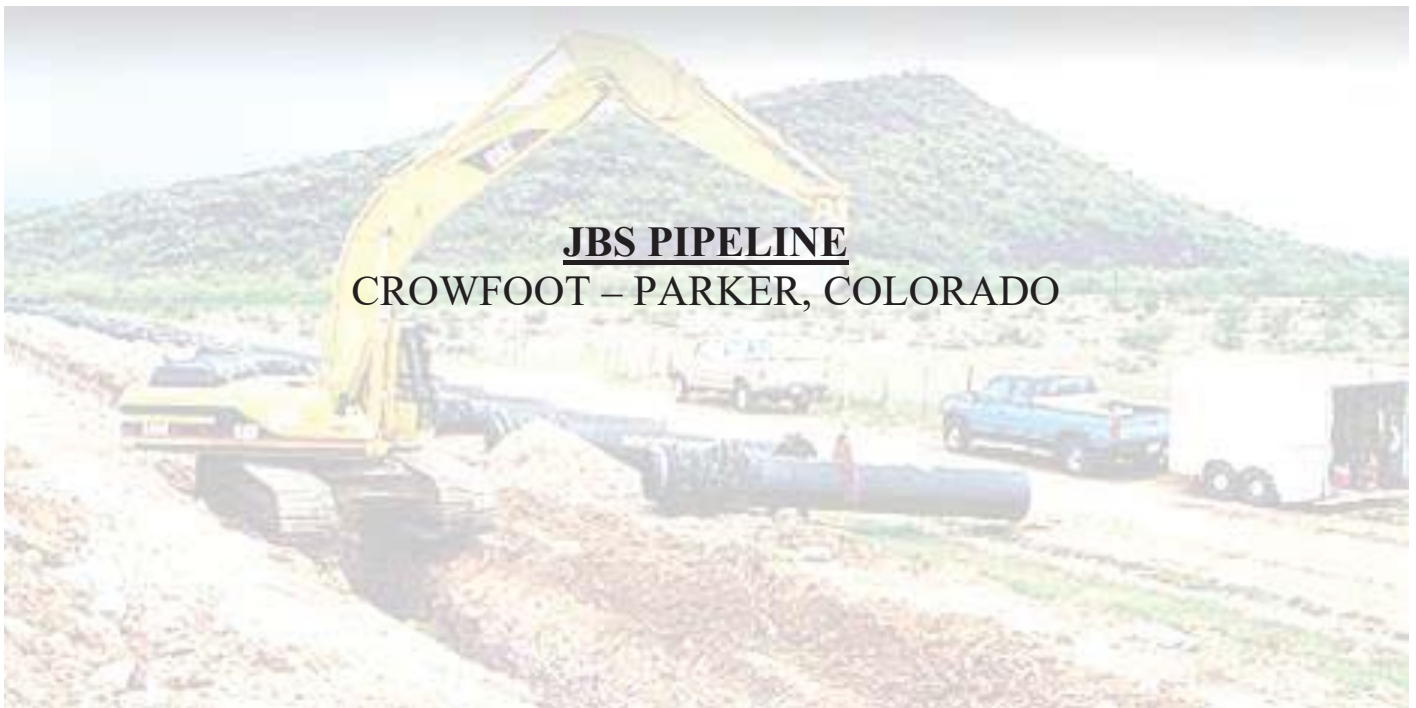
Amie Parent

Amie Parent

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We are proud to provide submittals for the following project:



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CROWFOOT – PARKER, COLORADO

STORM DRAIN

Storm Pipe



Sani-21™: PVC Sewer Pipe

SPECIFICATION DATA



D3034 & F679 SEWER SPECIFICATION DATA

Diamond gravity sewer pipe 4 inches through 48 inches shall be made of compounds conforming to material requirements of ASTM D3034 and ASTM F679 in accordance with ASTM D1784. Diamond PVC Sewer Pipe meets all the dimensional, chemical, and physical requirements as outlined in ASTM D3034 and ASTM F679.

The pipe sizes 4 inches through 48 inches are made with an integral bell "water-tight" joint that meets the requirements of ASTM D3212 and that utilizes a Rieber gasket system for sealing that meets the requirements of ASTM F477.



Each male end shall be beveled to facilitate joining and referencing marked for proper insertion depth. Diamond furnished lubricant is to be used in the joining process.

Physical Properties of ASTM D3034 & F679

Pipe Materials:

Pipe shall be made of PVC plastic having a minimum cell classification of 12454 or 12364 as defined in Specification D1784.

Property	ASTM Test	Minimum
Specific Gravity	D792	1.40
Tensile Strength, psi	D638	7,000
Tensile Modulus, psi	D638	400,000
IZOD Impact Strength,	D256	.65ft., lb./in.

Pipe Stiffness



Pipe	Modulus	
	E = 400,000	E = 500,000
SDR 41	28	35
SDR 35	46	57
SDR 26	115	144

Standard laying lengths are 14 and 22 feet

SHORT FORM Specification for Diamond PVC Solid-Wall Sewer Pipe SDR 26 or SDR 35 or PS 46 or PS 115

All PVC Solid-Wall Sewer Pipe shall be made of compounds conforming to ASTM D1784 manufactured in accordance with the material requirements of ASTM D3034 or ASTM F679. All PVC Sewer Pipe must meet dimensional, chemical, and physical requirements as outlined in ASTM D3034 or ASTM F679. Joints shall meet the requirements of ASTM D3212 and shall be formed using Rieber Technology.

PVC Sewer Pipe shall be installed according to the requirements of ASTM D2321, Uni-Bell's Uni-Pub 6 and the manufacturer's recommendations.



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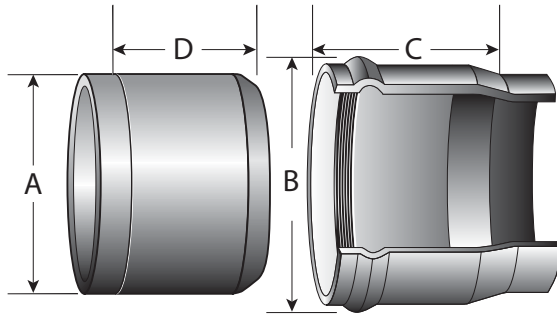


Sani-21™: PVC Sewer Pipe

SPECIFICATION DATA



Reiber Joint Illustration



Sani-21 is supplied in 14 foot and 22 foot laying lengths.

Sani-21™

D3034 & F679 SEWER SPECIFICATION DATA

Strength

Nominal Pipe Size in. (mm)	Outside Diameter A Inches	Bell Socket Diameter B Inches	Socket Depth C Inches	Insert Mark D Inches	Wall Thickness SDR26/PS115 (t) Inches	Wall Thickness SDR35/PS46 (t) Inches	
D-3034 Pipe Dimensions							
4"	(100)	4.215	5-1/4"	4-5/8"	4"	0.162	0.120
6"	(150)	6.275	7-1/2"	4-3/4"	4"	0.241	0.180
8"	(200)	8.400	9-7/8"	6-1/8"	5"	0.323	0.240
10"	(250)	10.500	12-3/8"	6-3/4"	5"	0.404	0.300
12"	(300)	12.500	14-5/8"	7-1/4"	5-1/2"	0.481	0.360
15"	(375)	15.300	18"	7-1/4"	6"	0.588	0.437
F-679 Pipe Dimensions							
18"	(450)	18.701	21-3/4"	9-1/2"	8-1/4"	0.671	0.499
21"	(525)	22.047	25-1/2"	10"	8-1/2"	0.791	0.588
24"	(600)	24.803	28-3/4"	11"	10"	0.889	0.661
27"	(675)	27.953	32-1/2"	11"	10"	1.002	0.745
30" ciod	(750)	32.000	37-1/4"	14"	13-1/2"	1.148	0.853
36" ciod	(900)	38.300	43-1/4"	15"	14"	1.373	1.021
42" ciod	(1050)	44.500	53"	18"	16-3/4"	1.596	1.187
48" ciod	(1200)	50.800	60"	18"	17"		1.355

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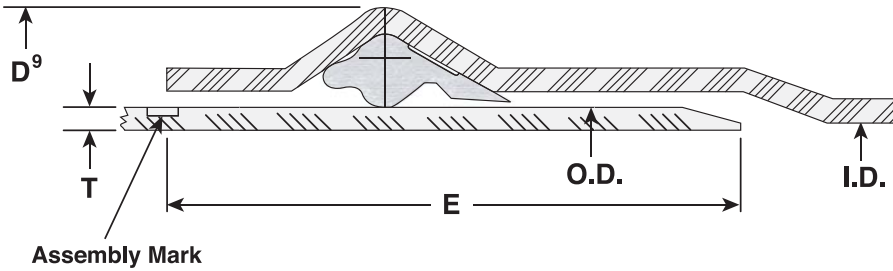


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GRAVITY SEWER

SUBMITTAL AND DATA SHEET

PIPE SIZE (IN)	AVERAGE O.D. (IN)	NOM. I.D. (IN)	MIN. T. (IN)	MIN. E (IN)	APPROX. D (IN)	APPROX. WEIGHT (LBS/FT)
SDR 35 (PS46) ASTM D3034						
4	4.215	3.975	0.120	3.50	4.695	1.05
6	6.275	5.915	0.180	4.25	6.995	2.36
8	8.400	7.920	0.240	4.75	9.360	4.24
10	10.500	9.900	0.300	6.00	11.700	6.64
→ 12	12.500	11.780	0.360	6.25	13.940	9.50
15	15.300	14.426	0.437	7.25	17.048	14.19
SDR 26 (PS115) ASTM D3034						
4	4.215	3.891	0.162	3.50	4.863	1.40
6	6.275	5.793	0.241	4.25	7.239	3.11
8	8.400	7.754	0.323	4.75	9.692	5.63
10	10.500	9.692	0.404	6.00	12.116	8.84
12	12.500	11.538	0.481	6.25	14.424	12.56
15	15.300	14.124	0.588	7.25	17.652	18.90
PS46, ASTM F679						
18	18.701	17.629	0.499	8.00	20.845	21.43
21	22.047	20.783	0.588	9.50	24.575	29.88
24	24.803	23.381	0.661	9.60	27.647	38.96
27	27.953	26.351	0.745	10.10	31.157	49.47
30 CIOD	32.000	30.194	0.853	16.75	35.612	64.18
36 CIOD	38.300	36.042	1.021	19.02	42.816	93.00
42 CIOD	44.500	41.948	1.187	22.43	49.604	—
48 CIOD	50.800	47.888	1.355	24.78	56.624	—
PS115, ASTM F679						
18	18.701	17.261	0.671	8.00	21.581	28.49
21	22.047	20.349	0.791	9.50	25.443	—
24	24.803	22.891	0.889	9.60	28.627	—
27	27.953	25.799	1.002	10.10	32.261	—
30 CIOD	32.000	29.070	1.148	16.75	36.348	—
36 CIOD	38.300	35.464	1.373	19.02	45.438	—
42 CIOD	44.500	41.072	1.596	22.43	51.356	—
48 CIOD	50.800	46.886	1.822	24.78	58.628	—



I.D. : Inside Diameter
 O.D. : Outside Diameter
 T. : Wall Thickness
 D⁹ : Bell Outside Diameter
 E : Distance between Assembly Mark to
 the end of spigot.

Product Standard: ASTM 3034 (4"–15")
 ASTM F679 (18"–48")
 Pipe Compound: ASTM D1784 Cells Class 12454 or 12364
 Gasket: ASTM F477
 Integral Bell Joint: ASTM D3212
 Pipe Stiffness: ASTM D2412 $F/\Delta Y = 46 \text{ PSI}$ or 115 PSI
 Pipe Length: 14 or 20 feet laying length
 Installation: ASTM D 2321
 JM Eagle™ Installation Guide



North American Pipe Corporation™

ASTM D3034: Gasketed Gravity Sewer Pipe

North American Pipe's ASTM D3034 Gravity Sewer PVC product line is manufactured to meet the needs of modern municipal waste water systems, residential waste water control and other non-pressure applications. With top quality raw materials and modern processing technology, North American Pipe's ASTM D3034 Gravity Sewer pipe meets all industry standards; in addition to our own rigorous quality control standards. Our ASTM D3034 Gravity Sewer pipe utilizes Reiber style gaskets throughout the entire product offering. Whether specifying or installing our pipe, you can be assured that North American Pipe will provide the pipe "Right, On Time, All the Time".



Short Form Specification ASTM D3034 Gasketed Gravity Sewer Pipe

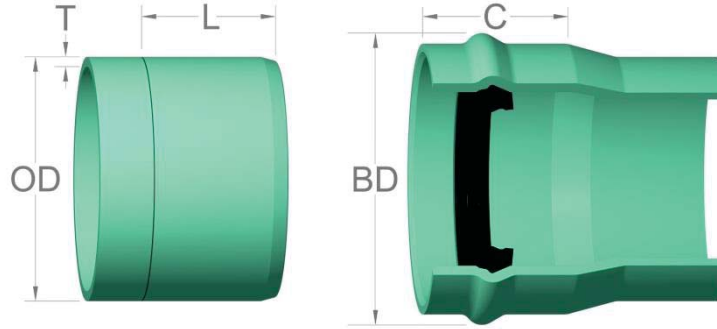
Pipe Standard:	ASTM D3034
Pipe Compound:	ASTM D1784 Cell Class 12454 or 12364
Gasket:	ASTM F477
Integral Bell Joint:	ASTM D3212
Wall Thickness:	ASTM D3034 SDR 35 (46 PS) or SDR 26 (115 PS)
Applications:	Wastewater & Storm Drainage
Color:	Green
Lay Length:	14' or 20'
Installation:	North American Pipe's Installation Guide for PVC Solid Wall Sewer Pipe

Rev: 04/2013



North American Pipe Corporation™

ASTM D3034: Gasketed Gravity Sewer Pipe



NOMINAL PIPE SIZE	OUTSIDE DIA. – NOM. (OD)	*APPROX. BELL DIA. (BD)	**APPROX. BELL DEPTH (C)	INSERT MARK (L)
4"	4.22	5.25	3.75	3.13
6"	6.28	7.50	4.63	4.00
8"	8.40	10.00	5.25	4.13
10"	10.50	12.25	5.88	5.13
12"	12.50	14.25	6.50	5.38
15"	15.30	17.25	7.75	7.38

NOMINAL PIPE SIZE	PS 46 SDR 35 (T)	PS 115 SDR 26 (T)
4"	.120	.162
6"	.180	.241
8"	.240	.323
10"	.300	.404
12"	.360	.481
15"	.437	.588

Note: These dimensions are for estimating purposes only * Dimension given for Approx. Bell Diameter (BD) is for highest pressure class ** Nominal depth, depth will vary by pressure class



North American Pipe Corporation™

ASTM F679: Gasketed Gravity Sewer Pipe

North American Pipe's ASTM F679 Gravity Sewer PVC product line is manufactured to meet the needs of modern municipal waste water systems, storm drainage systems, or other non-pressure large diameter applications. With top quality raw materials and modern processing technology, North American Pipe's ASTM F679 Gravity Sewer pipe meets all industry standards in addition to our own rigorous quality control standards. Our ASTM F679 Gravity Sewer pipe utilizes Reiber style gaskets throughout the entire product offering. Whether specifying or installing our pipe, you can be assured that North American Pipe will provide the pipe "Right, On Time, All the Time".



Short Form Specification ASTM F679 Gasketed Gravity Sewer Pipe

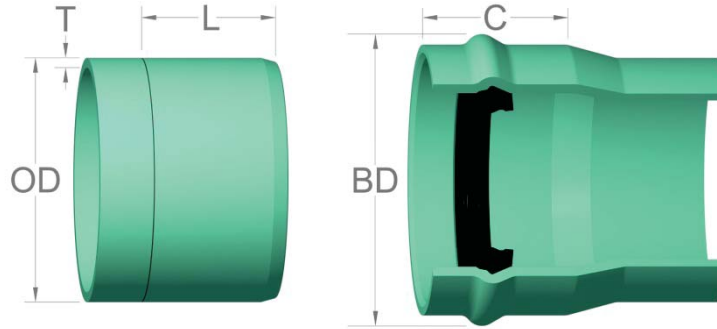
Pipe Standard:	ASTM F679
Pipe Compound:	ASTM D1784 Cell Class 12454 or 12364
Gasket:	ASTM F477
Integral Bell Joint:	ASTM D3212
Wall Thickness:	ASTM F679
Pipe Stiffness:	ASTM D3412 46 PS or 115 PS
Applications:	Wastewater & Storm Drainage
Color:	Green
Lay Length:	14' or 20'
Installation:	North American Pipe's Installation Guide for PVC Solid Wall Sewer Pipe

Rev:04/2013



North American Pipe Corporation™

ASTM F679: Gasketed Gravity Sewer Pipe



MINIMUM WALL THICKNESS (T)	OUTSIDE DIA. – NOM. (OD)	*APPROX. BELL DIA. (BD)	**APPROX. BELL DEPTH (C)	INSERT MARK (L)
18"	18.70	21.25	9.50	8.50
21"	22.05	24.75	10.25	9.25
24"	24.80	28.00	11.00	10.00
27"	27.95	31.50	12.25	11.25
30"	32.00	36.25	15.13	14.13
36"	38.30	42.75	19.13	18.13

MINIMUM WALL THICKNESS (T)	PS 46 (T)	PS 115 (T)
18"	.499	.671
21"	.588	.791
24"	.661	.89
27"	.745	1.0002
30"	.853	1.148
36"	1.021	1.373

Note: These dimensions are for estimating purposes only * Dimension given for Approx. Bell Diameter (BD) is for highest pressure class
 ** Nominal depth, depth will vary by pressure class

VINYLTECH SEWER PIPE

TECHNICAL DATA SUBMITTAL



CONFORMANCE

These specifications designate the requirements for manufacturing and installing Vinyltech PVC sewer pipe.

ASTM D3034 - Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings

ASTM F679 - Standard Specification for Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings

ASTM D3212 - Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals

ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

ASTM D1784 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds

ASTM D2152 - Standard Test Method for Extruded Poly (Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion

ASTM D2444 - Standard Test Method for Determination of the Impact Resistance of Thermoplastic Pipe and Fittings by Means of Tup (Falling Weight)

ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and other Gravity-Flow Applications

ASTM D2412 - Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading

IAPMO (File No. 2128) - Uniform Plumbing Code (UPC) - Vinyltech sewer pipe is IAPMO listed for ASTM D3034 SDR 35 4-15 inch and SDR 26 4-12 inch.

PIPE COMPOUND

The pipe shall be extruded from compounds meeting the requirements of Cell Classification 12454, as defined in ASTM D1784, Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.

PIPE

Vinyltech pipe shall be manufactured in accordance with ASTM D3034 and ASTM F679.

GASKET JOINT

The gasket shall be reinforced with a steel ring and meet the requirements of ASTM F477. Vinyltech pipe shall have an integral bell end with a locked-in factory installed gasket and shall meet the requirements of ASTM D3212.

MARKING

The pipe shall be marked in accordance with ASTM D3034 and F679.

QUALITY CONTROL

Requirements for manufacturing and testing are conducted in strict accordance with ASTM specifications and are outlined in ASTM D3034 and F679.

INSTALLATION

Recommended installation procedure of Vinyltech Corporation and the Uni-Bell PVC Pipe Association are outlined in ASTM D2321, Underground Installation of Flexible Thermoplastic Sewer Pipe. Vinyltech recommends the Uni-Bell Handbook of PVC Pipe as an invaluable resource guide.

ASSEMBLING THE PIPE

Assembling of PVC Sewer Pipe is easily accomplished by hand or by using a bar and block. A depth of entry mark serves as a visual check for rapid, accurate joint inspection. **Do not over insert.**

- 1) Remove any mud, sand, or other foreign matter from the belled and spigot ends of the pipe. Carefully clean the gasket area.
- 2) With a clean applicator (a brush or hand) lubricate the entire surface of the pipe from the spigot end to the depth of entry mark and the contact surface of the gasket with **Vinyltech Brand Lubricant**.
- 3) Brace the bell to avoid disturbing the already installed joints. Align the pipe, insert the spigot into the bell and push.
- 4) **Do not insert past the entry mark line.**



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AN OTTERTAIL COMPANY

SEWER PIPE

GRAVITY SEWER MAIN

TECHNICAL DATA SUBMITTAL

SEWER PIPE

ASTM D3034 SDR 35/PS 46 PVC SEWER PIPE

NOMINAL SIZE (IN) (mm)	OUTER DIAMETER (IN)	MINIMUM WALL	14' LENGTH WEIGHT (LB/100')	20' LENGTH WEIGHT (LB/100')
4 (100)	4.215	0.120	105.7	104.2
6 (150)	6.275	0.180	232.6	229.0
8 (200)	8.400	0.240	417.8	410.3
10 (250)	10.500	0.300	657.4	643.9
12 (300)	12.500	0.360	944.1	922.7
15 (375)	15.300	0.437	1390.0	1361.0

ASTM D3034 SDR 26/PS 115 PVC SEWER PIPE

NOMINAL SIZE (IN) (mm)	OUTER DIAMETER (IN)	MINIMUM WALL	14' LENGTH WEIGHT (LB/100')
4 (100)	4.215	0.162	150.0
6 (150)	6.275	0.241	320.0
8 (200)	8.400	0.323	580.0
10 (250)	10.500	0.404	900.0
12 (300)	12.500	0.481	1300.0
15 (375)	15.300	0.588	2000.0

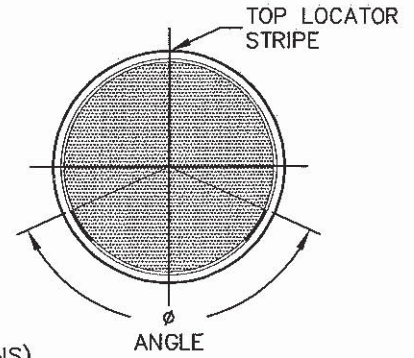
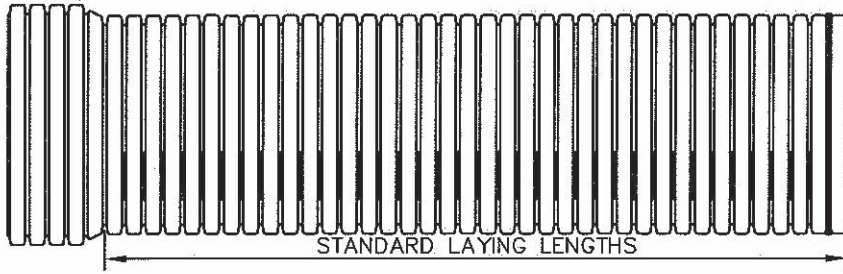
ASTM F679 PS 46 PVC SEWER PIPE

NOMINAL SIZE (IN) (mm)	OUTER DIAMETER (IN)	MINIMUM WALL	14' LENGTH LB/100'
18 (475)	18.701	0.499	2115.0
* 21 (560)	22.047	0.588	2962.0
* 24 (630)	24.803	0.661	3740.0

ASTM F679 PS 115 PVC SEWER PIPE

NOMINAL SIZE (IN) (mm)	OUTER DIAMETER (IN)	MINIMUM WALL	14' LENGTH LB/100'
18 (475)	18.701	0.671	2790.0
* 21 (560)	22.047	0.791	3940.0
* 24 (630)	24.803	0.889	4980.0

* Northern Pipe Products



4" THRU 10" DIAMETERS = 12'-6"
 12" THRU 18" DIAMETERS = 14'-0" (SLOTTED PERFORATIONS)
 15" THRU 36" DIAMETERS = 14'-0" AND 22'-0" (ROUND PERFORATIONS)

NOMINAL DIAMETERS (IN.)	AVERAGE O.D. (SPIGOT) (IN.)	AVERAGE I.D. (IN.)	SLOT LENGTH (IN.)	SLOT WIDTH (IN.)	SLOT CENTERS (IN.)	ANGLE (DEG.)	PIPE STIFFNESS (PSI)	STANDARD PERFORATION OPEN AREA PER FOOT (IN ²)	STANDARD ROUND HOLE OPEN AREA PER FOOT (IN ²)	FULLY PERFORATED OPEN AREA PER FOOT (IN ²)
→ 4	4.3	3.9	1.062	0.031	0.413	152	46	1.92		
6	6.4	5.9	1.375	0.031	0.516	134	46	1.99		
8	8.6	7.9	1.800	0.031	0.689	132	46	1.90		3.80
10	10.8	9.8	2.188	0.031	0.826	114	46	1.98		3.96
12	12.8	11.7	1.688	0.051	1.033	122	46	2.00		4.00
15	15.7	14.3	2.250	0.051	1.377	124	46	2.00	1.71	4.00/3.42
18	19.2	17.6	2.250	0.051	1.377	120	46	2.00	1.71	4.00/3.42
21	22.6	20.7					46		2.70	5.40
24	25.6	23.5					46		2.70	5.40
30	32.2	29.5					46		2.20	4.40
36	38.7	35.5					46		2.00	4.00

SCOPE

THIS SPECIFICATION INCLUDES MATERIALS, TEST METHODS AND INSTALLATION REQUIREMENTS FOR 4 TO 36-INCH DIAMETER POLYVINYL CHLORIDE (PVC) CORRUGATED PIPE WITH A SMOOTH INTERIOR. THE REQUIREMENTS OF THIS SPECIFICATION ARE INTENDED TO PROVIDE PIPE AND FITTINGS SUITABLE FOR UNDERGROUND USE IN NON-PRESSURE APPLICATIONS SUCH AS SANITARY SEWERS, STORM SEWERS, DRAINAGE AND UNDERDRAINS.

PIPE

PVC CORRUGATED PIPE WITH A SMOOTH INTERIOR SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION F949. PIPE AND FITTINGS SHALL BE HOMOGENEOUS THROUGHOUT AND FREE FROM VISIBLE CRACKS, HOLES, FOREIGN INCLUSIONS OR OTHER INJURIOUS DEFECTS. PIPE SHALL BE MANUFACTURED TO 46 PSI STIFFNESS WHEN TESTED IN ACCORDANCE WITH ASTM TEST METHOD D2412. THERE SHALL BE NO EVIDENCE OF SPLITTING, CRACKING OR BREAKING WHEN THE PIPE IS TESTED PER ASTM TEST METHOD D2412 IN ACCORDANCE WITH ASTM F949 SECTION 7.5 AND ASTM F794 SECTION 8.5. THE PIPE SHALL BE MADE OF PVC COMPOUND HAVING A MINIMUM CELL CLASSIFICATION OF 12454 AS DEFINED IN ASTM SPECIFICATION D1784.

FITTINGS:

ALL FITTINGS FOR PVC CORRUGATED SEWER PIPE WITH A SMOOTH INTERIOR SHALL CONFORM TO ASTM F949, SECTION 5.2.3 OR F794, SECTION 7.2.4. TO INSURE COMPATIBILITY, THE PIPE MANUFACTURER SHALL PROVIDE ALL FITTINGS.

JOINTS:

ALL JOINTS SHALL BE MADE WITH INTEGRALLY-FORMED BELL AND SPIGOT GASKETED CONNECTIONS. THE MANUFACTURER SHALL PROVIDE DOCUMENTATION SHOWING NO LEAKAGE WHEN GASKETED PIPE JOINTS ARE TESTED IN ACCORDANCE WITH ASTM TEST METHOD D3212. ELASTOMERIC SEALS (GASKETS) SHALL MEET THE REQUIREMENTS OF ASTM DESIGNATION F477.

PERFORATIONS:

FOR SLOTTED, STANDARD PERFORATED PIPE, THE PERFORATION DIMENSIONS SHALL BE IN ACCORDANCE WITH ASTM F949 TABLE 5 AND SECTION 7.9. INSTEAD OF SLOTS, ROUND HOLES (MIN. 1/4"Ø) MAY BE USED FOR 15"-18" DIAMETER PIPE AND (MIN. 3/8"Ø) FOR 21"-36" DIAMETER PIPE.

CONTECH ID# 0000



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A-2000 PERFORATED PIPE

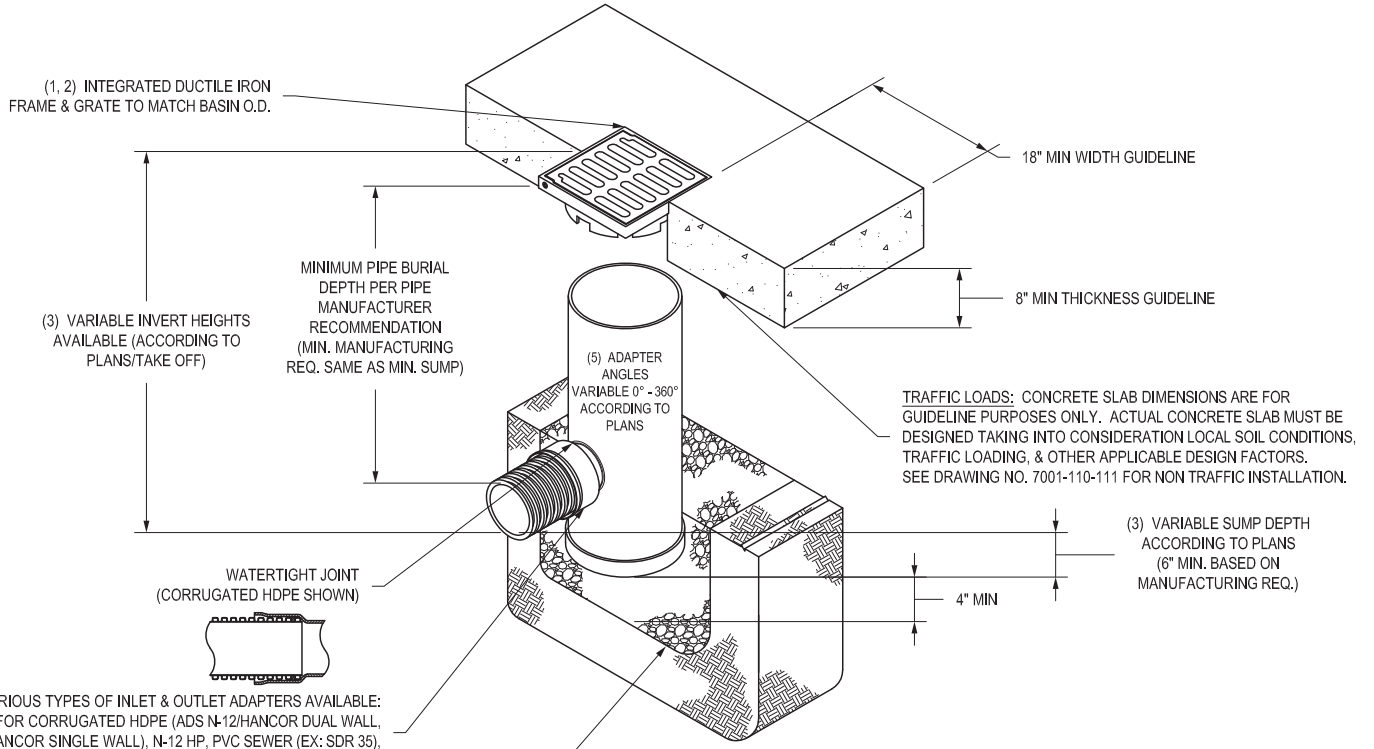
PRODUCT SPECIFICATION
 FOR (F949) PVC PIPE
 (ENGLISH)

SCALE: N/A
 DRAWN BY: FAM
 DATE: 10/10/08
 REV. BY: --
 DATE: --
 SHEET: 1 of 1

H:\DRAINAGE SOLUTIONS\ACAD DATA\DRAINAGE DETAILS\A-2000\CHG\A-2000 PERFORATED PIPE (10-10-08 FAM).chg 10/21/2008 8:19:27 AM EDT

Miscellaneous

NYLOPLAST 12" DRAIN BASIN: 2812AG __ X



THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I OR CLASS II MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	1299CGP	7001-110-202
STANDARD	MEETS H-20	1299CGS	7001-110-203
SOLID COVER	MEETS H-20	1299CGC	7001-110-204
PEDESTRIAN BRONZE	N/A	1299CGPB	7001-110-205
DOME	N/A	1299CGD	7001-110-206
DROP IN GRATE	LIGHT DUTY	1201DI	7001-110-021


- 1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05, WITH THE EXCEPTION OF THE BRONZE GRATE.
- 2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
- 3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065
- 4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
- 5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.

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DRAWN BY	EBC	MATERIAL
DATE	03-29-06	
REVISED BY	CCA	PROJECT NO./NAME
DATE	08-27-13	
DWG SIZE	A	SCALE 1:20 SHEET 1 OF 1

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 BUFORD, GA 30518
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Nyloplast

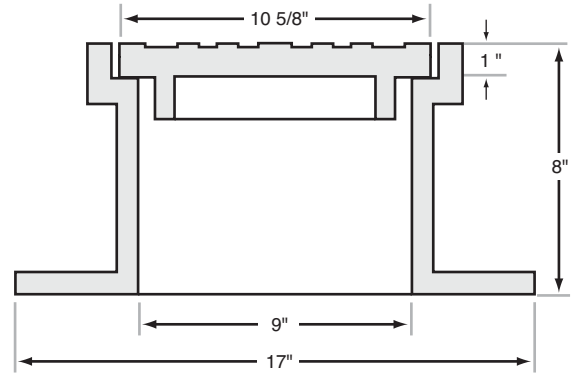
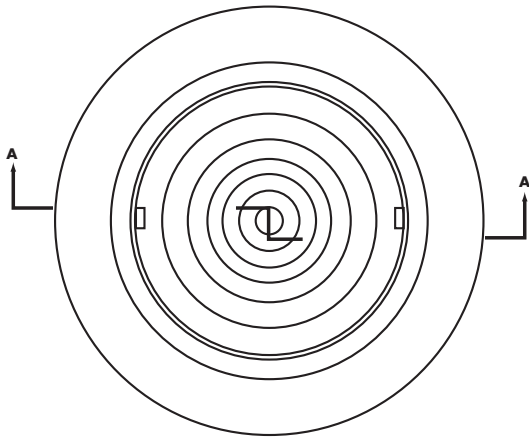
TITLE		
12 IN DRAIN BASIN QUICK SPEC INSTALLATION DETAIL		
DWG NO.	7001-110-189	REV D

CO8030CI

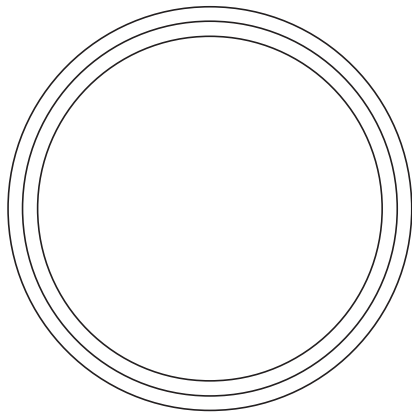
APPROXIMATE WEIGHT 67 lb

LID 20 lb
BODY 47 lb
1 1/2" RISER—10 lb
2" RISER—13 lb

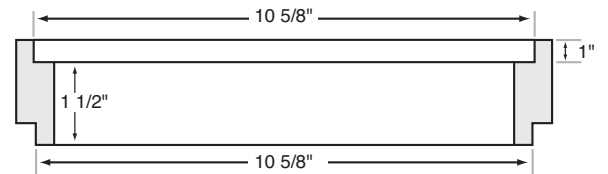
NOTE:
FINISH—BLACK BITUMINOUS PAINT
"SEWER" LID AVAILABLE



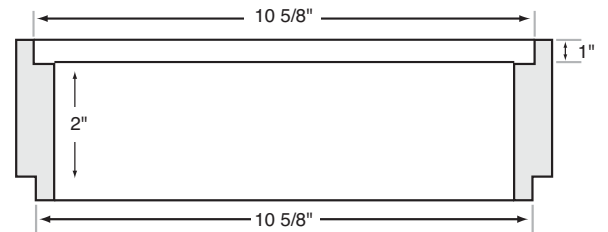
SECTION A-A



RISER



CO8030 RR 1 1/2



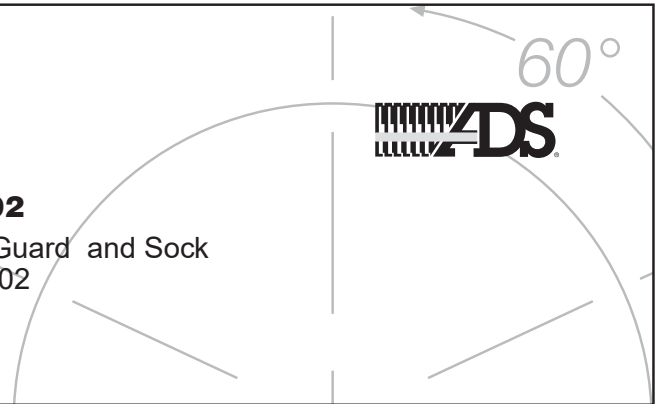
CO8030 RR2



Product Notes

Product Note 3.102

Re: ADS Drain Guard and Sock
Date: March 1, 2002



Solutions to Tough Siltation Problems

Now Advanced Drainage Systems offers you two ways to meet tough siltation challenges head on.

These synthetic wrap materials combine with ADS corrugated polyethylene pipe to give an extra-strong, tough screen that stabilizes soils and keeps water flowing.

Both feature opening sizes that have proven effective for moving water without blockage in a wide range of soils. The entire length of drain is covered, and corrugations are spanned by the materials, maintaining effective inlet areas which promote rapid drainage.



DRAIN GUARD®
protective wrap

For drainage installations that require a tough, durable screen under normal handling conditions:

ADS DRAIN GUARD®

protective wrap, a complete, one-step drainage system for sandy and other problem soils, installed with conventional drainage equipment.



ADS SOCK
drain envelope

For jobs where the protective covering is subjected to unusually rough installation and handling conditions:

ADS SOCK

a flexible drain envelope that meets the needs of a wide range of soil conditions, installed with conventional drainage equipment.

Choose the ADS Synthetic envelope that's right for each job.

ADS DRAIN GUARD®

For normal routine installations.

Manufactured of 100% nylon, tough and durable DRAIN GUARD WEIGHS just 0.85 ounce per square yard. The material's unique bonding process gives you an ultraporous filter that restrains and stabilizes the soil, yet allows free entry of water.

ADS SOCK

For more rough-and-tumble installations.

A polyester machine-knitted envelope that provides the needed water entry and sediment protection. SOCK weighs approximately three ounces per square yard. SOCK stretches to fit snugly over the pipe and gives the extra protections required by rough handling conditions.

TECHNICAL INFORMATION

	DRAIN GUARD	ADS SOCK
Material	Nylon (100%)	Polyester (100%)
Fabric	Spun Bond	Knitted
Fiber size (denier per filament)	5	100 to 200
Weight (ounces per square yard) (ATSM D 3776)	0.85	2.5 to 3.5
Burst Strength (pounds per square inch) (ATSM D 3786)	28	100-135
Air Permeability (CFM per square foot) (ATSM D 737)	650	700
Equivalent Opening Size (Army Corps of Engineers) (W 02215)	50	30 to 40
Water Flow Rate (gal/min/ft ²) (ATSM D 4491)	163	————
Melt Temperature (ATSM D 3786)	218°C (425°F.)	258°C (496°F.)

If either Drain Guard or Sock is not scheduled for immediate installation, it should be protected from sunlight's UV Rays. Drain Guard is normally bagged in UV resistant bags for shipping.
*Nominal values for Drain Guard and Sock Filter material.

For applications in agriculture, highway construction and the building industry, ADS has the synthetic drain envelope for every job.



Each is strong, non-biodegradable and gives you the excellent filtering and soil stabilizing characteristics you need. Both **DRAIN GUARD** and **ADS SOCK** perform equally well in the ground for the life of your drainage installation. And, because these materials are factory installed on ADS pipe, you'll save valuable labor costs in the field.

STANDARD FEATURES

ADS DRAIN GUARD AND SOCK synthetic wrap materials — admit fine silt and clay; restrain sands and coarse silts — non-toxic, non-irritating — inert in soil — non-biodegradable — resist alkalis and acids — will not rot — not affected by freezing or thawing — continuous lengths up to 5000' — available for drainage pipe sizes from 3" to 24" diameter — factory applied, ready for installation — lower labor costs in the field.

Applicable Specifications

SCS Engineering Standards Code 606 —
ASTM D 6707 — ASTM F405 — ASTM F667 —
ASTM F449 — AASHTO M252, M294

