

SPECIFICATIONS AND/OR REQUIREMENTS:

Bidder(s) shall supply, where needed (on an "as needed" basis) in Hidalgo County or job site, "**PIPES, Inlets, Manholes & Miscellaneous Items**".

Bid information will be furnished to all Hidalgo County departments requiring pipes and **delivery** will involve numerous locations within Hidalgo County.

I. LOCATIONS – Departments requiring pipes.

II. DELIVERY INSTRUCTIONS

Delivery hours will be arranged with each department requiring pipes. **Bidder(s) shall deliver** the amount of product requested to **location or job site** required within 24 hours, or earlier, if requested. Bidder(s) agree(s) that, to the extent an item is unavailable from bidder's own inventory; bidder(s) will be responsible for locating an alternative supplier and for providing the product to Hidalgo County for the bid price. **VENDOR(S) MUST UNLOAD ANY/ALL PIPES AT THE REQUESTED SITE(S).**

III. BID AWARD

1. Hidalgo County may award the bid on a lump sum basis to one (1) bidder or to multiple bidders on an item by item basis in each category, whichever is in the best interest of the County. For evaluation and consideration of items bid, samples will be submitted upon request. Categories will be as follows:

- Category A: Pipes
- Category B: Inlets
- Category C: Manholes
- Category D: Miscellaneous

CATEGORY (A) – PIPES **CORRUGATED PVC STORM SEWER PIPE SPECIFICATION**

1.0 SCOPE:

Polyvinyl chloride (PVC) storm sewer/drain pipe and fitting shall be manufactured and tested in accordance with AASHTO Specifications M304.

2.0 MATERIAL AND DESIGN

The structural design of thermoplastic pipes shall be in accordance with AASHTO Standard Specifications for Highway Bridge; Section 8 titled "Soil-Thermoplastic Pipe Interaction Systems". To ensure long-term design strength properties, PVC Pipe shall be manufactured from 12454B or 12454C cell class material per ASTM D1784.

3.0 JOINING SYSTEM:

Joints may be either plastic sleeve with gaskets or an integral bell-gasket joint. When the joint is assembled, it shall prevent misalignment of adjacent pipes and form either a soil (2 psi hydrostatic test per AASHTO Standard Specifications for Highway Bridges: Section 26.4.2.4) or watertight joint (10.8 psi test per ASTM D3212 "Standard Specifications for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals" as required.

4.0 INSTALLATION

PVC thermoplastic pipe and fittings manufactured to this specifications, shall be installed in accordance with ASTM D2321-89.

Heights of Cover

DIAMETER	CORRUGATED PVC PIPE (AASHTO M304)
INCHES	FEET
12	49
15	47
18	51
24	50
30	50

*Minimum cover (H-20 live load) = (ASTM D2321 with Class A1 embedment)

CORRUGATED STEEL STORM SEWER PIPE SPECIFICATIONS

1.0 GENERAL

This item shall govern the furnishings of corrugated steel pipe and pipe-arch for culverts and storm sewer for the types, sizes and designations as specified in these specifications.

2.0 MATERIALS

This pipe shall be fabricated from sheets conforming to the current AASHTO M-274 (ASTM A819) specification for ALUMINIZED STEEL Type 2 material or the current AASHTO M-246 (ASTM 742) specification for POLYMER coated galvanized steel material.

3.0 MANUFACTURE

This pipe shall meet the requirements of AASHTO M-36 (ASTM A760) for corrugated steel pipe. All pipe shall be manufactured with a minimum of two-re-rolled annular ends.

4.0 CLASSIFICATION (TYPE) FOR DIAMETERS 46" THROUGH 96"

This pipe shall be manufactured to conform to the current AASHTO M-36 (ASTM A 760) specification and shall have an extended helical corrugation pattern of ¾ x ¾" 7 ½" as described in AASHTO M-36 (ASTM A 760).

All round pipe shall be manufactured to conform to the current AASHTO M 245 (ASTM A 762 & A 760) specification and shall have a full circular cross section with a smooth steel liner and helically corrugated shell, integrally attached at helical lock seams. All round pipe shall conform to the Type IA pipe classification. All pipe arch shall conform to the Type IIA classification.

Type I pipe classifications will also be considered. These pipes shall be manufactured out of ALUMINIZED STEEL Type 2 or POLYMER coated galvanized steel as referenced above.

5.0 POST APPLIED COATING

All Pipes manufactured with ALUMINIZED STEEL Type 2 shall be fully coated both inside and out with a minimum thickness of 0.05 in. (1.3 mm) measured from the crest of the corrugations, on the top of ribs, (as in Type IR pipe) or on the smooth inside surface of the pipe. The coating shall be uniform Class B (bituminous) or Class M (mastic) material as described in AASHTO M-190 (ASTM A 849).

6.0 GAUGE

Unless otherwise specified on the specifications, gauges shall be minimum as follows:

TYPE IR (SPIRAL CORRUGATION)	
DIAMETER	GAUGE
36-48"	16
54-60"	14
66-96"	12
TYPE I (STANDARD)	
54-138"	12
144"	10
All Types IA shall be 12 gauge shell and 18 gauge liner.	

7.0 COUPLING BANDS

Coupling bands shall be of the same base material and coating as the pipe. Coupling bands shall lap evenly on each of the pipes being connected and shall fit securely into at least one full circumferential corrugation to form a tightly closed joint.

All pipe shall be field jointed with corrugated locking bands. Connecting bands shall be drawn together by means of not less than two bolts not less than ½ in. (13 mm) diameter through angles or bar and strap device suitable welded or riveted.

Coupling bands shall be no more than three normal sheet thickness lighter than the pipe to be connected and in no case thinner than 0.052 in. (1.32 mm).

8.0 INSTALLATION

Corrugated steel pipe shall be installed as outlined in AASHTO Standard Specifications for Highway Bridges, Section 26 and ASTM A798.

9.0 MEASUREMENT

Corrugated steel pipe will be measured by linear foot. Such measurements shall be made between the ends of the barrel along its central axis. Where spurs or branches, or connections to existing pipe lines are involved, measurements of the spur or new connecting pipe will be made from the intersection of the central axis with the outside surface of the pipe into which it connects. Where inlets, headwalls, catch basins, manholes, junction chambers or other structures are included in lines of pipe that length of pipe tying into the other structure wall will be included for measurement but no other portion of the structure length or width will be included.

For multiple pipes, the measured length will be the sum of the lengths of the barrels, measured as prescribed above.

In the event of a change in design which either increases or decreases the quantity of pipe, the variation in quantity will be measured as prescribed above and the quantity shown in the specifications will be increased or decreased as the case may be.

10.0 PAYMENT

Payment for corrugated steel pipe, measured as prescribed above will be made at the contract unit price bid per linear foot for various sizes, gauges and types of corrugated steel pipe.

Payments shall be full compensation for furnishings, transporting and installing the pipe. This includes materials, labor, equipment, tools and incidentals necessary to complete the installation in accordance to these specifications.

CATEGORY (A) – PIPES
REINFORCED CONCRETE PIPE - GASKET JOINT PIPE SPECIFICATIONS

REINFORCED CONCRETE PIPE - GASKET JOINT PIPE SPECIFICATIONS						
CLASS III - ASTM C76 STANDARDS						
PIPE I.D.	WALL THICKNESS	CONCRETE STRENGTH	CAGE			PIPE WEIGHT
(in)	(in)	(PSI)	TYPE	INNER	OUTER	(LBS)
15	3.00	4,000	SINGLE	3"x6"-W1.75/W2.5		1,520
18	3.25					1,920
24	3.75					2,840
30	4.25					4,020
36	4.75		DOUBLE	3"x6"-W2.5/W2.5	3"x6"-W1.75/W2.5	5,520
42	5.25					7,100
48	5.75			3"x6"-W4.0/W2.5	3"x6"-W2.5/W2.5	8,280
54	6.25			3"x8"-W5.25/W2.5	3"x6"-W3.5/W2.5	9,800
60	6.75			2"x6"-W4.5/W2.5	3"x6"-W4.0/W2.5	12,184
72	7.75			2"x6"-W6.0/W2.5	3"x8"-W5.75/W3.0	15,900

REINFORCED CONCRETE PIPE - GASKET JOINT PIPE SPECIFICATIONS						
CLASS IV - ASTM C76 STANDARDS						
PIPE I.D.	WALL THICKNESS	CONCRETE STRENGTH	CAGE			PIPE WEIGHT
(in)	(in)	(PSI)	TYPE	INNER	OUTER	(LBS)
15	3.00	4,000	SINGLE	3"x6"-W2.5/W2.5		1,520
18	3.25					1,920
24	3.75					2,840
30	4.25					4,020
36	4.75	5,000	DOUBLE	3"x6"-W3.5/W2.5	3"x6"-W2.0/W2.0	5,520
42	5.25			3"x8"-W5.0/W2.5	3"x6"-W3.0/W2.5	7,100
48	5.75			3"x6"-W6.5/W3.0	3"x6"-W4.0/W2.5	8,280
54	6.25			2"x8"-W5.75/W3.0	3"x8"-W5.0/W2.5	9,800
60	6.75		2"x8"-W7.0/W3.0	3"x6"-W6.25/W3.0	12,184	
72	7.75		2"x8"-W10.0/W4.0	2"x8"-W6.0/W2.5	15,900	

REINFORCED CONCRETE PIPE - GASKET JOINT PIPE SPECIFICATIONS						
CLASS V - ASTM C76 STANDARDS						
PIPE I.D.	WALL THICKNESS	CONCRETE STRENGTH	CAGE			PIPE WEIGHT
(in)	(in)	(PSI)	TYPE	INNER	OUTER	(LBS)
15	3.00	6,000	SINGLE	3"x6"-W2.5/W2.5		1,520
18	3.25					1,920
24	3.75		DOUBLE	3"x6"-W3.0/W2.5	3"x6"-W2.5/W2.5	2,840
30	4.25			3"x6"-W4.5/W2.5	3"x6"-W3.0/W2.5	4,020
36	4.75			2"x6"-W4.5/W2.5	3"x6"-W4.0/W2.5	5,520
42	5.25			2"x8"-W6.0/W2.5	3"x8"-W5.75/W3.0	7,100
48	5.75			2"x8"-W8.0/W3.5	3"x8"-W7.0/W3.0	8,280
54	6.25			2"x8"-W10.0/W4.0	2"x8"-W6.0/W2.5	9,800
60	6.75			2"x8"-W11.5/W4.5	2"x8"-W7.0/W3.0	12,184
72	7.75			2"x6"-W8.5/W6.5	2"x8"-W10.0/W4.0	15,900

General Note:

1. Concrete gasket pipe shall meet Bureau of Reclamation R-4 Joint O-Ring gasket ASTM C361 Standards and price quote shall be included with the pipes.
2. All welded Wire Fabric Steel shall meet ASTM 82 and ASTM 185 Standards.
3. Aggregates shall meet ASTM C 33 Standards.
4. Fly Ash shall meet ASTM C 618-97 Standards.
5. Type II Cement shall meet ASTM C 150 Standards.
6. The maximum lengths of pipe sections shall be 8 feet.

The following are the technical requirements for the Reinforced Gasket Joint Concrete Pipe ASTM C-76 Class III.

D.1 GENERAL:

Pipe shall be manufactured and tested according to ASTM Designation: C-361 except as hereinafter changed and further specified. The requirements for cement, admixture, concrete strength, wall thickness, joints, manufacture and handling of pipe shall be in accordance with Paragraphs C-2, C-3, C-4, C-5, C-6, C-7, C-8, C-10, C-11, C-12, C-13 and C-14, respectively.

D.2 STEEL REINFORCEMENTS:

The reinforcing steel shall conform to requirements of Class III reinforced pipe, ASTM Designation: C-76. Reinforcements may be circular or elliptical.

D-3 PHYSICAL TEST REQUIREMENTS:

The test for internal hydrostatic pressure on the pipe shall not be less than that shown in Table "A" Paragraph C-10 thereof. The test for minimum 3-edge bearing load (pounds per linear foot) shall not be less than that required for Class III reinforced concrete pipe, ASTM Designation C-76.

RELATED PARAGRAPHS C-2 CEMENT:

The cement shall be Type II, low alkali in accordance with Federal Specifications SS-C 1960/3. The Contractor shall furnish certificates from the mill manufacturing the cement evidencing compliance with these specifications.

C-3 ADMIXTURE:

All concrete in concrete pipe placed by the placing and vibrated method shall have air-entraining agent conforming to ASTM Designations: C260. The amount of air-entraining agent used shall be such as will effect the entrainment of $2\text{-}1/2 \pm 1$ percent of air by volume, of the concrete as discharged from the mixer. Natural cement, slag cement, pozzolon or other mixtures shall not be added to the concrete without the written authorization of the Engineer in charge of the project.

C-4 CONCRETE STRENGTH:

The strength requirements shall be 4,000 pounds per square inch in 28 days. The 4,000 PSI concrete test shall be in accordance with the latest edition of ASTM Designation: C-76.

C-5 CONCRETE MIXTURE:

The aggregate requirements of the latest ASTM Designation: C361 are changed to include, "the maximum size coarse aggregate shall be of the largest size practicable for placement considering the wall thickness of the pipe but shall not exceed 1-1/2 inches. The percentage of coarse aggregate to the total aggregate shall be as high as practicable for manufacture of the pipe".

C-6 CURING REQUIREMENTS:

The curing requirements in the latest edition of ASTM Designation: C361 are changed to include this additional requirement at the end of the paragraph: "If forms are stripped immediately after the pipe is cast and moved to the curing area, the concrete pipe shall not be lifted or tipped until a minimum concrete compressive strength of 2,500 PSI is attained. Determination of the required strength shall be accomplished by tests of concrete cylinders as described in the latest edition of ASTM Designation: C361".

C-7 WALL THICKNESS:

The thickness of the pipe wall shall be not less than that shown in Table A, Paragraph C-10, Physical Test Requirements", hereof.

C-8 PIPE LENGTHS:

The maximum lengths of pipe sections shall be 8 feet.

C-10 PHYSICAL TEST REQUIREMENTS:

The hydrostatic test pressures for the pipe and rubber gasket joint required in the latest edition of ASTM Designations 361 are changed to those specified in Table A. The Contractor shall also perform external load crushing strength test on the pipe. The external load crushing strength test shall be in accordance with the minimum three-edge bearing load as specified in Table A.

TABLE A: PHYSICAL TEST REQUIREMENTS

Internal diameter (inches)	Minimum Shell Thickness (inches)	Internal Hydrostatic Pressure On Individual Section of Pipe (PSI)	Minimum 3-Edge Bearing Load (pounds per linear foot)
15	2	50	1,700
16	2	50	1,800
18	2	50	1,900
21	2 – ¼	45	2,100
24	2 – ½	40	2,200
30	2 – ¾	35	2,500
36	3	30	4,050
42	4 – ½	30	4,725
48	5	30	5,400
54	4 – ½	25	6,075
60	6	25	6,750
72	7	25	8,100

C-11 JOINTS:

Joints shall be made with round rubber gasket in conformance with the latest edition of ASTM Designation: C-361 and price quote shall be included with the pipes.

REINFORCED CONCRETE PIPE - TONGUE & GROOVE PIPE SPECIFICATIONS

REINFORCED CONCRETE PIPE - TONGUE & GROOVE PIPE SPECIFICATIONS						
CLASS III - ASTM C76 STANDARDS						
PIPE I.D.	WALL THICKNESS	CONCRETE STRENGTH	CAGE			PIPE WEIGHT
(in)	(in)	(PSI)	TYPE	INNER	OUTER	(LBS)
15	2.25	4,000	SINGLE	3"x6"-W1.75/W2.5		1,045
18	2.50					1,400
24	3.00					2,100
30	3.50					3,050
36	4.00					4,200
42	5.25		DOUBLE	3"x8"-W3.0/W2.0	3"x6"-W1.75/W2.5	6,250
48	5.75					8,100
54	6.25					9,420
60	6.75					11,500
72	7.75					15,900

**EXHIBIT "A" - SPECIFICATIONS
HIDALGO COUNTY
"PIPES & Miscellaneous Items"
RFB No. 2015-013-00-00-MEG**

REINFORCED CONCRETE PIPE - TONGUE & GROOVE PIPE SPECIFICATIONS						
CLASS IV - ASTM C76 STANDARDS						
PIPE I.D.	WALL THICKNESS	CONCRETE STRENGTH	CAGE			PIPE WEIGHT
(in)	(in)	(PSI)	TYPE	INNER	OUTER	(LBS)
15	3.00	4,000	SINGLE	3"x6"-W2.5/W2.5		1,045
18	3.25			2"x6"-W2.5/W2.5		1,400
24	3.75			2"x6"-W4.5/W2.5		2,100
30	4.25			2"x8"-W6.0/W2.5		3,050
36	4.75		DOUBLE	2"x8"-W5.0/W3.0	3"x8"-W4.5/W2.5	4,200
42	5.25			3"x6"-W5.0/W2.5	3"x6"-W3.0/W2.5	6,250
48	5.75			3"x6"-W6.5/W3.0	3"x6"-W4.0/W2.5	8,100
54	6.25			2"x8"-W5.75/W3.0	3"x6"-W5.0/W2.5	9,420
60	6.75			2"x8"-W7.0/W3.0	3"x8"-W6.25/W3.0	11,500
72	7.75			2"x8"-W10.0/W4.0	2"x8"-W6.0/W2.5	15,900
		5,000				

REINFORCED CONCRETE PIPE - TONGUE & GROOVE PIPE SPECIFICATIONS						
CLASS V - ASTM C76 STANDARDS						
PIPE I.D.	WALL THICKNESS	CONCRETE STRENGTH	CAGE			PIPE WEIGHT
(in)	(in)	(PSI)	TYPE	INNER	OUTER	(LBS)
15	3.00	6,000	SINGLE	3"x6"-W3.5/W2.5		1,045
18	3.25			3"x8"-W4.75/W2.5		1,400
24	3.75			3"x8"-W6.0/W2.5		2,100
30	4.25		DOUBLE	2"x8"-W7.0/W3.0	3"x8"-W6.25/W3.0	3,050
36	4.75			2"x8"-W8.25/W3.5	2"x8"-W5.0/W3.0	4,200
42	5.25			2"x8"-W6.0/W2.5	3"x8"-W5.75/W3.0	6,250
48	5.75			2"x8"-W8.0/W3.5	3"x8"-W7.0/W3.0	8,100
54	6.25			2"x8"-W10.0/W4.0	2"x8"-W6.0/W2.5	9,420
60	6.75			2"x8"-W11.5/W4.5	2"x8"-W7.0/W3.0	11,500
72	7.75			2"x6"-W8.5/W6.5	2"x8"-W10.0/W4.0	15,900

General Note:

1. All welded wire fabric steel shall meet ASTM 82 and ASTM 185 standards.
2. Aggregates shall meet ASTM C 33 standards.
3. Fly ash shall meet ASTM C 618-97 standards.
4. Type II cement shall meet ASTM C 150 standards.
5. Concrete joint sealant shall meet ASTM C 990 standards.
6. Concrete joint primer shall meet ASTM D 41 standards.
7. The maximum lengths of pipe sections shall be 8 feet.

REINFORCED POLYETHYLENE PIPE SPECIFICATIONS

SCOPE

This specification(s) describes reinforced polyethylene pipe for use in gravity flow storm drain and culvert applications in 24" through 96" nominal diameters.

DESCRIPTION

This pipe shall have a smooth waterway and exterior profile that is reinforced with high strength galvanized steel ribs. The continuous reinforcing ribs are completely encased within the polyethylene profile. Reinforced polyethylene pipe is manufactured using a helical winding process that results in continuously fusion welded circumferential lap seam. The pipe profile is manufactured using high pressure-rated thermoplastic meeting the requirements of ASTM F2562 "Standard Specification for Steel Reinforced Thermoplastic Ribbed Pipe and Fittings for Non-Pressure Drainage and Sewerage". For the purposes of hydraulic design, the recommended Manning's "n" value shall be 0.013 for pipe diameters included within this specification.

MATERIAL PROPERTIES

Virgin high density polyethylene pressure-related resins are used to manufacture reinforced polyethylene pipe and complimentary fabricated fittings. Resins shall conform to be minimum requirements of cell classification 345464 C as defined and described in the latest version of ASTM D3350 "Standard Specification for Polyethylene Plastic Pipe and Fittings Materials".

JOINT PERFORMANCE

Pipe lengths shall be joined on site using bell & spigots especially designed for reinforced polyethylene pipe. Both bell and spigot shall be reinforced with steel that is fully encased in pressure rated high density polyethylene meeting the requirements set forth in the above Material Properties paragraph and shall be watertight to an internal water pressure of 15 PSI when tested in accordance with ASTM D3212 "Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastometric Seals".

FITTINGS

All fittings shall be fabricated from reinforced polyethylene pipe using fusion welded construction to ensure no loss of structural integrity of water-tightness at welded seams and joints.

INSTALLATION

Installation shall be in accordance with ASTM D2321 "Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications" along with product-specific recommendation by the manufacturer. Minimum cover shall be 1 ft. and maximum cover shall be 30 ft.

AWWA C900 PVC PLASTIC PRESSURE PIPE SPECIFICATIONS

SCOPE

This specification designates general requirements for 4" through 12" C.I.O.D.'s pipe produced in blue or white un-plasticized polyvinyl chloride (PVC) plastic pressure pipe with integral bell and spigot joints for the conveyance of water and other fluids. This pipe shall meet the requirements of AWWA Standard C900 "Polyvinyl Chloride (PVC) Water Distribution Pipe".

MATERIALS

All pipe shall be made from quality PVC resin, compounded to provide physical and mechanical properties that equal or exceed cell class 12454 as defined in ASTM D1784.

HYDROSTATIC PROOF TESTING

Each standard length of pipe is tested up to 400 psi for Pressure Class 165; 600 psi for Pressure Class 235; 800 psi for Pressure Class 305 for a minimum of 5 seconds. The integral bell shall be tested with the pipe.

STANDARD LAYING LENGTHS

Standard laying lengths are 20 feet for all sizes.

PIPE

All pipe shall be suitable for use as pressure conduit. Provisions must be made for expansion and contraction at each joint with an elastomeric gasket. The bell shall consist of an integral wall section with a factory installed, solid cross section Rieber or other elastomeric gasket, which meets the requirements of ASTM F477. The bell section shall be designed to be at least as hydrostatically strong as the pipe barrel and meet the requirements of AWWA C900. The joint design shall meet the requirements of ASTM D3139 under both pressure and 22 in. Hg vacuum. Sizes and dimensions shall be as shown in this specification.

QUICK BURST TEST

Randomly selected samples testing in accordance with AWWA C900 and UL 1285 shall withstand, without failure, the pressures listed below when applied for 60-70 seconds.

DR	PRESSURE CLASS (psi)		MINIMUM BURST PRESSURE AT 73 F (psi)
	AWWA C900-97/FM 1612	AWWA C900-07	
25	100	165	535
18	150	235	755
14	200	305	985

DROP IMPACT TEST

Pipe shall withstand, without failure using Tup "B" and Flat Rate Holder "B", at 73 F, a tup impact energy of 100 ft-lbf for all Pressure Class of 4"-12" trade sizes. There shall be no visible evidence of shattering or splitting when the energy is imposed.

AWWA C905 PVC PLASTIC WATER PIPE SPECIFICATIONS

SCOPE

This specification designates general requirements for 14" through 48" un-plasticized polyvinyl chloride (PVC) plastic water pipe with integral bell and spigot joints for the conveyance of water and other fluids. This pipe shall meet AWWA C905 ANSI/NSF-61 and ANSI/UL 1285 (14" – 24").

MATERIALS

Pipe shall meet the requirements of AWWA Standard C905 "Polyvinyl Chloride (PVC) Water Transmission Pipe." All pipe shall be made from quality PVC resin, compounded to provide physical and mechanical properties that equal or exceed cell class 12454 as defined in ASTM D1784.

STANDARD LAYING LENGTHS

Standard laying lengths are 20 feet for all sizes.

PIPE

All pipe shall be suitable for use as pressure conduit. Provisions must be made for expansion and contraction at each joint with an elastomeric gasket. The bell shall consist of an integral wall section with a factory installed, solid cross section Rieber/other elastomeric gasket, which meets the requirements of ASTM F477. The bell section shall be designed to be at least as hydrostatically strong as the pipe barrel and meet the requirement of AWWA C905. The joint designs shall meet requirements of ASTM D3139, under both pressure and 22 in. Hg vacuum. Sizes and dimensions shall be as shown in this specification.

QUICK BURST TEST

Randomly selected samples tested in accordance with ANSI/UL 1285 shall withstand, without failure, the pressures listed below when applied for 60-70 seconds.

DR	PRESSURE RATING (psi)	MINIMUM BURST
18	235	755
25	165	535
32.5	125	400
41	100	315
51	80	255

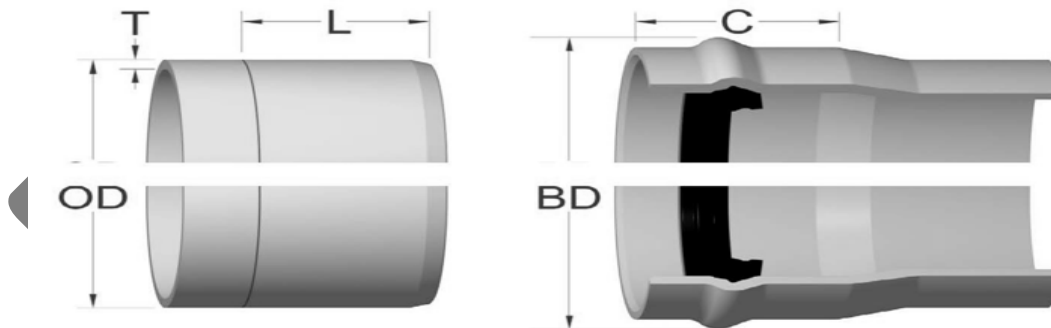
FLATTENING TEST

Specimens of pipe, a minimum of 6 in. (150 mm) long, shall be flattened between parallel plates in a suitable press until the distance between the plates is 40 percent of OD of the pipe. The rate of flattening shall be uniform and such that the compression is completed within 2 to 5 minutes. There shall be no evidence of splitting, cracking or breaking.

SDR 26 AND SDR 35 GASKETED GRAVITY SANITARY SEWER PIPE

PVC gravity sewer pipe shall be made from a compound conforming to a cell classification of 12454 or 12364 as defined by ASTM D1784 and in accordance with ASTM D3034 for sizes four inch through fifteen inch. The wall thickness, when tested according to ASTM D3412, shall correspond to a dimension ratio of SDR 35 with a pipe stiffness value of 46 or SDR 26 with a pipe stiffness of 115 for heavy wall pipe. Integral bells shall incorporate locked in gaskets meeting the requirements of ASTM D3212 and F477. The pipe shall be provided in lengths of 14 feet or 20 feet as required.

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"	4.215	5.25	3.75	3.13
6"	6.275	7.50	4.63	4.00
8"	8.400	10.00	5.25	4.13
10"	10.500	12.25	5.88	5.13
12"	12.500	14.25	6.50	5.38
15"	15.300	17.25	7.75	7.38

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

HIGH PERFORMANCE POLYPROPYLENE STORM PIPE

1.0 SCOPE:

This specification includes materials and test methods for 12 to 60 inch diameter HP Polypropylene Pipe. The requirements of this specification are intended to provide pipe and fittings suitable for underground use in gravity-flow applications such as storm sewers, drainage and under-drains.

2.0 PIPE:

12 to 30 inch HP Polypropylene Pipe shall have a smooth interior and annular exterior corrugation and are required to meet or exceed ASTM F2736 and AASHTO M330. 36 to 60 inch pipe shall have a smooth interior and annular exterior corrugations and are required to meet or exceed ASTM F2881 and AASHTO M330. Pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions or other injurious defects.

3.0 FITTINGS:

Fittings shall conform to ASTM F2736, ASTM F2881 and AASHTO M330, for the respective diameters. Bell & spigot connections shall utilize a spun-on, welded or integral bell and spigot with gaskets meeting ASTM F477. Bell & spigot fittings joint shall meet the watertight joint performance requirements of ASTM D3212. Corrugated couplings shall be split collar, engaging at least 2 full corrugations.

4.0 JOINTS:

HP Polypropylene Pipe shall be joined with a gasketed integral bell & spigot joint meeting the requirements of ASTM F2736 or F2881, for the respective diameters.

HP Polypropylene Pipe shall be watertight according to the requirements of ASTM D3212. Spigots shall have gaskets meeting the requirements of ASTM F477. Gasket shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly.

HP Polypropylene Pipe shall have a reinforced bell with a polymer composite band installed by the manufacturer.

5.0 MATERIAL PROPERTIES:

Polypropylene compound for pipe and fitting production shall be impact modified copolymer meeting the material requirements of ASTM F2736, Section 4, ASTM F2881, Section 5 and AASHTO M330, Section 6.1, for the respective diameters.

6.0 INSTALLATION:

Installation shall be in accordance with ASTM D2321, manufacturers recommended installation guidelines and plan specifications.

7.0 PIPE DIMENSIONS:

Nominal Pipe I.D. in (mm)	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)	36 (900)	42 (1050)	48 (1200)	60 (1500)
Average Pipe I.D. In (mm)	12.1 (307)	14.9 (378)	18.0 (457)	24.1 (612)	30.1 (765)	35.7 (907)	41.8 (1062)	47.3 (1201)	59.3 (1506)
Average Pipe O.D. in (mm)	14.5 (368)	17.6 (447)	21.2 (538)	28.0 (711)	35.4 (899)	41.1 (1044)	47.2 (1199)	53.8 (1367)	66.5 (1689)
Minimum Pipe Stiffness * @ 5% Deflection* #/in./in. (kN/m²)	75 (520)	60 (411)	56 (385)	50 (343)	46 (320)	40 (275)	35 (240)	35 (240)	30 (205)

HIGH DENSITY POLYPROPYLENE PIPE (HDPE)

SCOPE

This specification describes 4- through 60 inch (100 to 1500 mm) HDPE pipe (per ASTM F2648) for use in gravity-flow land drainage applications.

PIPE Requirements

HDPE pipe (per ASTM F2648) shall have a smooth interior and annular exterior corrugations.

- 4-through 60 inch (100 to 1500 mm) shall meet ASTM F2648
- Manning’s “n” value for use in design shall be 0.012

Joint Performance:

Pipe shall be joined using a bell & spigot joint meeting ASTM F4248. The joint shall be soil-tight and gaskets, when applicable, shall meet the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable wrap to ensure the gasket is free from debris. A joint lubricant supplied by the manufacturer shall be used on the gasket and bell during assembly.

Fittings

Fittings shall conform to ASTM F 2306. Bell and spigot connections shall utilize a spun-on or welded bell and valley or saddle gasket meeting the soil-tight joint performance requirements of ASTM F 2306.

Material Properties

Material for pipe production shall be an engineered compound of virgin and recycled high density polyethylene conforming with the minimum requirements of cell classification 424420C (ESCR Test Condition B) for 4-through 10 inch (100 to 250 mm) diameters, and 435420C (ESCR Test Condition B) for 12 through 60 inch (300 to 1500 mm) diameters, as defined and described in the latest version of ASTM D3350, except that carbon black content should not exceed 4%. The design engineer shall verify compatibility with overall system including structural, hydraulic, material and installation requirements for a given application.

Installation

Installation shall be in accordance with ASTM D2321 and manufacture published installation guidelines, with the exception that minimum cover in trafficked areas for 4-through 48 inch (100 to 1200 mm) diameters shall be one foot. (0.3 m) and for 60 inch (1500 mm) diameters, the minimum cover shall be 2 ft. (0.6 m) in single run applications. Backfill for minimum fill heights depend on embedment material and compaction level; Please refer to manufactures guide.

Pipe I.D. In mm	4 (100)	6 (150)	8 (200)	10 (250)	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)	36 (900)	42 (1050)	48 (1200)	60 (1500)
Pipe O.D. In mm	4.8 (122)	6.9 (175)	9.1 (231)	11.4 (290)	14.5 (368)	18 (457)	22 (559)	28 (711)	36 (914)	42 (1067)	48 (1219)	54 (1372)	67 (1702)
Perforations	All diameters availability with or without perforation												

Pipe O.D. values are provided for reference purposes only. Values stated for 12 through 60 inch are + 1 inch.

TERMS & CONDITIONS:

1. The contract term will be for a period of one (1) year period with Hidalgo County's option to extend the contract for an additional one (1) year under the same rates, terms and conditions.
2. Hidalgo County reserves the right to continue this bid for an additional sixty (60) day grace period at the end of the contract term for unforeseen delay in award of new bid for next contract.
3. Hidalgo County reserves the right to hold the bids received for a period of ninety (90) days without taking action hereon.
4. Hidalgo County may award the bid on a lump sum basis to one (1) bidder or to multiple bidders on an item by item basis in each category, whichever is in the best interest of the County. For evaluation and consideration of items bid, samples will be submitted upon request. Categories will be as follows.
5. Hidalgo County reserves the right to reject any/all bids, to waive any/all formalities or Technicalities, or to accept the bid considered the best and most advantageous to the County.
6. After bid is awarded and low bidder(s) default(s) in meeting the general instructions to bidders and/or comply with contractual agreement, Hidalgo County reserves the right to seek services from the next low bidder(s). In such event, County shall charge the successful bidder(s) the difference for any additional cost of such item(s).
7. Any contract awarded to a successful bidder will be in effect until:
 - (a) The contract expires,
 - (b) Delivery and acceptance of products and/or performance of service ordered,
 - (c) Terminated by County with thirty (30) days written notice prior to cancellation.
8. It is understood and agreed that in case Hidalgo County should need "any items listed" and it is not available within the time frame needed from the successful Bidder during the term of this contract, Hidalgo County reserves the right to purchase these items from other sources other than the successful Bidder and shall not be in violation of any terms or conditions of said contract.
9. After Bid is awarded and successful awarded contractor(s) default(s) in meeting the general instructions to bidder(s) and/or compiling with Bid agreement, Hidalgo County reserves the right to seek services from the next low bidder. In such event, County shall charge the successful bidder the difference for any additional cost to such item.
10. Hidalgo County reserves the right to seek purchases from State awarded vendors or any other Cooperative Purchasing programs, whenever it is in the best interest of the County to do so.
11. Insurance requirements for this project to be maintained throughout the contract term (Refer to limits on the Exhibit "C" for limits); insurance certificate must be submitted to the Purchasing Department prior to any services being performed by the awarded bidder.
12. The bidder(s) awarded the contract **cannot** engage the services of a **subcontractor without prior written consent of Hidalgo County** to perform services hereunder. The successful bidder(s) must present evidence that the proposed subcontractor possess all the necessary licenses and permits to perform the services and that subcontractor has obtained the required insurance.

13. Bidder(s) agree that to the extent an item(s) is unavailable for Bidder's own inventory, Bidder(s) will be responsible for locating an alternative supplier and for providing the product or service to Hidalgo County.

All costs and expenses associated with the preparation and submission of proposals shall be the responsibility of the submitter and no reimbursements for such charges or expenses shall be passed onto the County.

Market Volatility and Unit Price Adjustments:

Hidalgo County recognizes that during periods of national crisis and unstable economic conditions, unforeseen price increases might affect costs for goods and services contracted on an annual basis. The following procedure may be employed to mediate price volatility:

- **Requesting Price Adjustment:** Upon written request of the Vendor to the County Purchasing Agent, the County may review evidence of prevailing industry-wide market conditions that warrant an adjustment in bid prices contained in the contract.
- A Vendor must tie any price change clause to an industry-wide or otherwise nationally recognized index, or some other form of verifiable document. Such written request must be accompanied by a certified copy of the supplier's advisory or notification to the vendor of the price changes.
- The Vendor must put the Purchasing Agent on the mailing lists for such publications so that the Purchasing Agent can monitor said changes. Such membership shall be at no cost to the County.
- The County Purchasing Agent retains the right to determine whether or not such proposed price changes are in the best interest of the County.
- No price escalation will be authorized in excess of the amount of the increase referred to in the supplier's notice.
- The County may only grant a price increase if the evidence presented is deemed reliable. Should the County allow a price increase, the approved price change shall be honored for all orders received by the vendor or contractor after the effective date of such price change. Approved price changes are not applicable to orders already issued and in process at time of price change.
- **Price Reduction:** Vendor shall notify the County at the time when the Vendor's costs for items and/or supplies reduce due to stabilization in the market at which time prices for items on this contract shall be reduced accordingly. Failure by the Vendor to notify the County of a decrease in costs for items and/or supplies for which the Vendor was granted a price adjustment, may result in immediate termination of this contract and the County shall not be obligated to pay the Vendor the difference between the contract price and the price adjustment.
- **Time Frame for Adjusted Price Increases:** Price increases are only valid for the quarter in which they are requested and approved. Prices shall return to the original contract price at the beginning of the following quarter unless a Vendor notifies the County in writing within ten (10) days of expiration of the quarter in which the price increase is in effect, that it desires to have the price increase continue or that the Vendor

is requesting a different price increase for the following quarter. Such request must be supplemented with sufficient justification to demonstrate that the price increase remains necessary. The County Purchasing Department shall have sole discretion whether to grant the price increase extension. The County too, shall have discretion to unilaterally reduce, eliminate or extend a price adjustment to the Vendor at any time upon written notice from the County to the Vendor demonstrating justification for such reduction, elimination or extension of the price adjustment.

- **Allowable Review Periods:** Price adjustment reviews may only be requested by the Vendor on a quarterly basis. However, the County may at its own discretion, conduct temporary price adjustment reviews at any time. The County Purchasing Agent and/or the County Auditor reserve the right to audit and/or examine any pertinent books, documents, papers, records or invoices relating directly to the contract transaction in question after reasonable notice and during normal business hours.
- **Dollar Limit to Price Changes:** The total increase in contract price shall not exceed twenty-five percent (25%) of the original contract price during the contract term.

ADDITIONAL INFORMATION

Further information for this project can be addressed through the Hidalgo County Purchasing Department through Elena Gomez. Hidalgo County is also requesting that any and all questions, inquiries and clarifications regarding this bid be addressed to Martha L. Salazar, CPPB/Purchasing Agent at 2802 S. Business Highway 281, Edinburg, Texas 78539. **TELEPHONE INQUIRIES WILL NOT BE ACCEPTED.**

All written inquiries will be accepted via facsimile (956) 318-2629 or e-mail elena.gomez@co.hidalgo.tx.us no later than, Wednesday, _____, 2015 at 5:00 p.m. Responses to said inquiries will be sent to all applicants via-facsimile by no later than 5:00 p.m., Friday, _____, 2015.

