

## STORM DRAINAGE

### PRE-CAST: MANHOLES, JUNCTION BOXES AND PIPES

**Minimum Requirements:**

**Pre-Cast Manhole:**

- Shall meet or exceed ASTM C478.
- Shall have joints in conformance with ASTM C443.
- Cone to be concentric unless approved by the City of Sherman Engineering Department.

**Junction Box:**

- Meet or exceed ASTM C913.
- Steel to meet or exceed ASTM A615 Grade 60 or equal ASTM A1064 WWF.
- Steps are not permitted with in the structure.
- Design for HS-20 loading.

**Reinforced Concrete Pipe:**

- Circular to meet or exceed ASTM C76, CL III, Wall B.
- Class III is the minimum acceptable pipe class.
- Arch Pipe to meet or exceed ASTM C506
- Elliptical Pipe to meet or exceed ASTM C507
- Other Pipe Material - Such as metal, corrugated metals, high-density polyethylene pipe will not be allowed unless approved by the City Engineer.
- Non-Reinforced concrete pipe is not permitted with- in the City of Sherman.

**Reinforced Concrete Grade Ring:**

- All concrete grade rings are to conform to ASTM C478.
- Conform to HS-20 load ratings.
- Approved non-shrink grout between rings, rings and cone.
- 3 - 304 Stainless steel bolts, 3/4" diameter and the length to penetrate a minimum of 6" into the cone from the frame. Secured with approved epoxy.

**All materials are to conform to the City of Sherman standard details, as submitted for each use within the City.**



### PRE-APPROVED MANUFACTURES:

**MANHOLES:**

- ◆ Rinker Materials
- ◆ Old Castle
- ◆ The Turner Co.
- ◆ Thompson Pipe Group
- ◆ Del Zotto Products of Texas

**JUNCTION BOXES:**

- ◆ Rinker Materials
- ◆ Old Castle
- ◆ The Turner Co.
- ◆ Thompson Pipe Group
- ◆ Del Zotto Products of Texas

**REINFORCED CONCRETE PIPE:**

- ◆ Rinker Materials
- ◆ Old Castle
- ◆ The Turner Co.
- ◆ Thompson Pipe Group
- ◆ Del Zotto Products of Texas
- ◆ Ameri-Tex Pipe & Products, LLC

**REINFORCED CONCRETE GRADE RINGS:**

- ◆ American MAATCO - Grade Ring 24"
- ◆ Bass & Hays - Concrete Grade Ring, 24"
- ◆ Old Castle Extensions - **ONLY** used with Old Castle pre-cast components.

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Standard Detail XX-X00

**SHEET NUMBER**

**SW 1.0**

**STORM DRAINAGE**

**PRE-CAST:  
INLETS**

**Minimum Requirements:**

**Pre-Cast Inlets:**

- Shall meet or exceed ASTM C913.
- Reinforcement shall meet or exceed ASTM A615 Grade 60 or ASTM A1064 WWR.
- The standard sizes are to be 5-ft, 10-ft, 15-ft and 20-ft.

**Markers:**

- The Almetek marker is to be “Drains to Creek”, anodized aluminum, brass or stainless steel, in the color of blue. It is to be drive rivet only.
- The ACP International marker shall be the SD -C-CC. Attached with Sikaflex adhesive.
- The Berntsen marker shall be SDC, 4” dura-cast attached with RS-2225 das or RS-22211.



**PRE-APPROVED MANUFACTURES:**

**INLETS:**

- ◆ Rinker Materials
- ◆ Old Castle
- ◆ The Turner Co.
- ◆ Thompson Pipe Group
- ◆ Del Zotto Products of Texas

**MARKERS:**

- ◆ Almetek Industries, Inc.
- ◆ Berntsen International, Inc.
- ◆ Signs & Decals - ACP International

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**All materials are to conform to the City of Sherman standard details, as submitted for each use within the City.**

**SHEET NUMBER**

**SW 2.0**

**Minimum Requirements:**

**Gasket Material:**

- Meet or exceed ASTM requirement C443.
- The polymer shall be synthetic rubber; natural rubber will not be acceptable.

**Flexible Joint Sealant:**

- Preformed butyl rubber sealant.
- Meet or exceed ASTM requirement C990.
- Flexible sealants should not depend on oxidizing, evaporating or chemical action for its adhesive or cohesive strength.

**Rubber Gasket:**

- Meet or exceed ASTM requirement C443, ASTM C1619 Class A or Class C.
- The polymer shall be synthetic rubber; natural rubber will not be acceptable.
- Profile gaskets are to meet or exceed ASTM C-443 and ASTM C-361

**Grout:**

- Meet or exceed ASTM C1107, ASTM C1090 and ASTM C191.
- One-component, non-shrinking, non-metallic, cement based grout.
- Extended working time.



**PRE-APPROVED MANUFACTURES:**

**FLEXIBLE JOINT SEALANT for RCP:**

- ◆ Hamilton-Kent "Kent Seal No. 2."
- ◆ Press Seal "E-Z Stik"
- ◆ K.T. Synder RAM-NEK

**WATERSTOP:**

- ◆ SF-312 - SYNO-FLEX® WATERSTOP FR
- ◆ W.R. Meadows SealTight - Waterstop EC

**RUBBER GASKET, O-RING:**

- ◆ Press-Seal Corporation
- ◆ Hamilton-Kent - TSS Series, Tylox SOC

**GROUT:**

- ◆ Master Builder Solutions US, LLC - Master-Flow 928
- ◆ Euclid Chemical - Hi-Flow Grout
- ◆ MAPEI - Planigrout 712
- ◆ Sika - SikaGrout 212

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**Minimum Requirements:**

**Sealant Material:**

- Self-Leveling
  - \* Meet or exceed ASTM D5893 Type SL.
  - \* FAA P-605 for silicone joint sealants
- Non-Sag (NS)
  - \* The polymer shall be synthetic rubber; natural rubber will not be acceptable.

**Expansion Joint Material:**

- Timber Boards
  - \* To meet TxDOT Item 492 requirements
  - \* Asphalt Boards to meet or exceed ASTM D994
  - \* Preformed Fiber Sheets to meet or exceed ASTM D1751
  - \* Rebonded Neoprene Filler consist of ground closed-cell neoprene particles, sheets meeting or exceeding ASTM D1752, Type I



**PRE-APPROVED MANUFACTURES:**

**SELF-LEVELING SEALANT:**

- ◆ Pourthane SL - W.R. Meadows
- ◆ Pourthane NS - W.R. Meadows
- ◆ DOWSIL 890 -SL - Dow Chemical
- ◆ DOWSIL 888 - Dow Chemical
- ◆ DOWSIL 790 - Dow Chemical

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## STORM DRAINAGE

### RING & LID INLET BOXES

#### Minimum Requirements:

#### Ring and Cover:

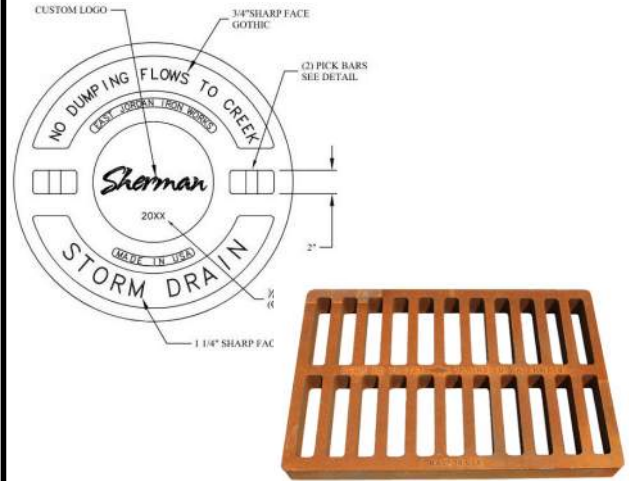
- All covers shall conform to meet or exceed ASTM A-48, Gray iron castings, Class 35 B.
- All covers are to be a minimum of 24-inch in diameter.
- All covers are to have two integrally cast pick bar points.
- Covers shall weigh approximately 134 lbs.
- Locking covers are NOT permitted.
- All rings shall conform to meet or exceed ASTM A-48, Gray iron castings, Class 35 B.
- All rings are to be a minimum of 24-1/4-inch in diameter.
- Rings shall weigh approximately 170 lbs.

#### Grate:

- Minimum open area to be 260 square-inches for the standard grate.
- Minimum open area to be 160 square-inches for the ADA & Pedestrian grate.
- Grate to be 814® 18"x30".
- To be rated for H-20 traffic rated, TxDOT standard specifications apply.
- Materials are to meet or exceed ASTM A48, CL 35B or better, AASHTO M306-10.

#### Reinforced Concrete Grade Ring:

- All concrete grade rings are to conform to ASTM C478.
- Conform to HS-20 load ratings.
- Approved non-shrink grout between rings, rings and cone.
- 3 - 304 Stainless steel bolts, 3/4" diameter and the length to penetrate a minimum of 6" into the cone from the frame. Secured with approved epoxy.
- The number of extension rings shall be kept to a minimum.



#### PRE-APPROVED MANUFACTURES:

#### RING and COVER:

- ♦ East Jordan Iron Works Product #2023A, Product Number 00202365.
- ♦ Bass&Hays - Pattern 300-24, H-20 traffic rated

#### GRATE:

- ♦ Bass & Hays 814 Standard Grate
- ♦ Bass & Hays 814 ADA & Pedestrian Grate

#### CONCRETE EXTENSION RING:

- ♦ America MAATCO - Grade Rings 30"
- ♦ Bass & Hays - Concrete Grade Rings, 30"

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SW 5.0



**Minimum Requirements:**

**Mortar:**

- Shall be Type M and produces a minimum compressive strength of 2,500 psi at 28 days.
- Shall meet ASTM C270 and ASTM C91.
- Shall have a minimum air content of 12%
- The aggregate shall be no less than 2.25 and no more than 3.5 times the sum of the separate volumes of cementitious materials.

**Non-Shrink Grout:**

- Shall meet ASTM C1170 and Corps of Engineers CRD-C 621, when tested at 72°F.
- Shall meet ASTM C109(Modified).
- Shall meet or exceed ASTM C1107 (plastic and flowable).

**Filter Fabric:**

- Shall meet AASHTO M288 Class 3 for Elongation > 50%.
- Shall be a nonwoven geotextile composed polypropylene fibers.
- Meets or exceed ASTM D6241, CBR Puncture Strength of 310lbs.
- Have an Apparent Opening Size (AOS) meeting or exceeding ASTM D4751, 70 U.S. Sieve.
- Permittivity  $\text{sec}^{-1}$  between 1.7 and 2.3, and a flow rate of 110 to 135 gal/min/ft<sup>2</sup> as tested by ASTM D4491.



**PRE-APPROVED MANUFACTURES:**

**MORTAR:**

- ◆ Quickrete, Type M
- ◆ Amerimix, Type M
- ◆ Lehigh Masonry Cement, Type M

**NON-SHRINK GROUT:**

- ◆ Quickrete, Non-Shrink Precision Grout
- ◆ Sakrete, Non-Shrink Grout
- ◆ SikaGrout®-328

**FILTER FABRIC:**

- ◆ Mirafi 140N
- ◆ ACF Environmental, N040 or N045
- ◆ US Fabrics:
  - ◆ US 80NW
  - ◆ US 90NW
  - ◆ US 100NW
  - ◆ US 105NW
  - ◆ US 120NW

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**STORM DRAINAGE**

**PUBLIC WORKS ONLY  
CORRUGATED METAL PIPE**

**Minimum Requirements:**

**Material:**

- Type 1 or Type 2 Aluminized
- 16 Gage minimum thickness
- 2 2/3" x 1/2" corrugation in accordance with ASTM A760
- In accordance with AASHTO M36 (ASTM A760) and conforming to AASHTO M274 (ASTM A819).
- Gaskets and sealants to meet ASTM D1056.

**Bands:**

- Double bolt attachment strap.
- Bolts to meet ASTM A449
- Nuts to meet ASTM A563, Grade C

**City of Sherman Public Works Depart. Use ONLY**



**PRE-APPROVED MANUFACTURES:**

**CMP:**

- CORLIX by Contech, Min 18" dia.
- St. Regis Culvert, Min 18" dia

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