

Section 02084

FRAMES, GRATES, RINGS AND COVERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Iron castings for manhole frames and covers, inlet frames and grates, catch basin frames and grates, meter vault frames and covers, adjustment rings, and extensions.
- B. Ring grates.

1.02 MEASUREMENT AND PAYMENT

- A. Unit Prices.
 - 1. No payment will be made for frames, grates, rings, covers, and seals under this Section. Include payment in unit price for related item.
 - 2. Payment to rack over existing manhole is on a unit price basis for each manhole.
 - 3. Refer to Section 01270 - Measurement and Payment for unit price procedures
- B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 REFERENCES

- A. AASHTO - American Association of State Highway and Transportation Officials Standard Specification for Highway Bridges
- B. ASTM A 48 - Standard Specification for Gray Iron Castings
- C. ASTM A 615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
- D. AWS - D 12.1 Welding Reinforcing Steel.

1.04 SUBMITTALS

- A. Conform to requirements of Section 01330 - Submittal Procedures.
- B. Submit copies of manufacturer's specifications, load tables, dimension diagrams, anchor details, and installation instructions.

- C. Submit shop drawings for fabrication and installation of casting assemblies that are not included in Drawings or standard City of Tomball details. Include plans, elevations, sections and connection details. Show anchorage and accessory items. Include setting drawings for location and installation of castings and anchorage devices.

PART 2 PRODUCTS

2.01 CASTINGS

- A. Use castings for frames, grates, rings and covers conforming to ASTM A 48, Class 30. Provide locking covers if indicated on Drawings.
- B. Use clean castings capable of withstanding application of AASHTO HS-20 vehicle loading without permanent deformation.
- C. Fabricate castings to conform to shapes, dimensions, and with wording or logos shown on Drawings. Standard dimensions for manhole covers are 32 inches in diameter.
- D. Use clean castings, free from blowholes and other surface imperfections. Use clean and symmetrical cast holes in covers, free of plugs.

2.02 BEARING SURFACES

- A. Machine bearing surfaces between covers or grates and their respective frames so that even bearing is provided for position in which casting may be seated in frame.

2.03 SPECIAL FRAMES AND COVERS

- A. Where indicated on Drawings, provide watertight manhole frames and covers with minimum of four bolts and gasket designed to seal cover to frame. Supply watertight manhole covers and frames, Model R-1916H (32 inch cover diameter) manufactured by Neenah Foundry Company, Model V-2420 by Vulcan Foundry, or approval equal.
- B. Where shown on Drawing, provide manhole frames and covers with 48 inch diameter clear opening, with inner cover for 22 inch diameter clear opening. Provide inner cover with pattern shown on Drawings, Vulcan Foundry V-7, Neenah Foundry, Model R-1741-F, or approved equal.

2.04 FINISH

- A. Unless otherwise specified, coat iron castings with manufacturer's standard asphaltic paint.

2.05 FABRICATED RING GRATES

- A. Fabricate ring grates from reinforcing steel conforming to ASTM A 615.
- B. Conform to welds connecting bars to AWS D 12.1.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install castings according to approved shop drawings, instructions in related specifications, and applicable directions from manufacturer's printed materials.
- B. Set castings accurately at required locations to proper alignment and elevation. Keep castings plumb, level, true, and free of rack. Measure location accurately from established lines and grades. Brace or anchor frames temporarily in form work until permanently set.
- C. Fabricate ring grates in accordance with City of Tomball standard detail, Ring Grate for Open End of 18 inch to 72 inch Stubs to Ditch and set in mortar in mouth of pipe bell.

END OF SECTION