

CITY OF AUSTIN ELECTRIC UTILITY DEPARTMENT

PURCHASE SPECIFICATION

FOR

MANHOLE, CONCRETE, PRE-CAST, 36INCH, 48INCH

DATE	PREPARED BY	ISSUANCE/REVISION	APPROVAL PROCESS SUPV. / MATERIALS SUPV.
9/2/11	Arthur Gonzalez	Revision	
7/21/20	Julius Heslop	Revision	

<i>REASON FOR REVISION</i>	<i>AFFECTED PARAGRAPHS</i>
9/2/11- Added burial depth criteria and reference to new drawings. Also added applicable standards.	3.0, 4.0, and Attachment 1
7/21/20-Added to applicable standards, design loading, vendor physical requirements.	3.0, 4.0, and 5.0

This specification, until rescinded, shall apply to each future purchase and contract for the commodity described herein.
Retain for future reference.

AUSTIN ENERGY
PURCHASE SPECIFICATION
FOR
MANHOLE, CONCRETE, PRE-CAST, 36INCH, 48INCH

1.0 SCOPE

- 1.1 The Electric Utility Department of the City of Austin hereinafter referred to as Austin Energy or AE. AE requires a qualified Vendor to supply precast concrete manholes. The precast concrete manholes shall be engineered and fabricated to provide a structurally safe design.

2.0 CLASSIFICATION

- 2.1 The precast concrete manholes will be used by AE for the underground transmission, distribution, and communication systems.

3.0 APPLICABLE STANDARDS

The Manholes shall conform to or exceed applicable requirements of the following standards and codes:

- 3.1 ASTM A-615 Grade 60 for Rebar
- 3.2 ASTM A-185 Grade 65 for Mesh
- 3.3 ASTM C-857 Minimum Structural Design Loading for Underground Precast Concrete Utility Structures
- 3.4 AASHTO HS 20 Loading
- 3.5 ACI 318 for Structural Concrete
- 3.6 ASTM C150 for Portland Cement
- 3.7 ASTM C478 for Standard Specification for Precast Reinforced Concrete Manhole Sections
- 3.8 ASTM C858 Standard Specification for Underground Precast Concrete Utility Structures

4.0 DESIGN LOADS

- 4.1 The precast concrete manholes (Attachment I) shall be rated for AASHTO HS-20 loading. Traffic (live load= 16,000lbs) shall approach the structure from any direction.
- 4.2 The precast concrete manholes shall be designed to be installed with the top of the vault to have a burial depth 3 feet or 5 feet below grade, whichever is specified.
- 4.3 Manholes designed for a burial depth of 3 feet require access openings of 36" in diameter.
- 4.4 Manholes designed for a burial depth of 5 feet require access openings of 48" in diameter.

5.0 PHYSICAL REQUIREMENTS

- 5.1 The Vendor shall fabricate precast concrete manholes in accordance with Attachment I.
- 5.2 The precast concrete manhole windows shall be a non-reinforced concrete membrane. The dimensions of the windows and thickness of the non-reinforced concrete membrane shall be as shown on the attached drawings (Attachment I).
- 5.3 Minimum compressive strength of concrete shall not be less than 4,000 psi in 28 days
- 5.4 The concrete cover for reinforcement shall be provided as shown in the attached drawings (Attachment I). If not noted on drawings, the concrete cover for reinforcement shall be 1.5 inches minimum for main reinforcing bars and $\frac{3}{4}$ inch for stirrups and ties.
- 5.5 The concrete finish shall be free of rock pockets and honeycombed areas.
- 5.6 The interior walls, ceiling and exterior surfaces exposed shall be smooth.
- 5.7 Knockout and duct openings shall be beveled on the exterior surface.
- 5.8 Inserts shall be provided as shown in the attached drawings (Attachment 1)

6.0 VENDOR REQUIREMENTS

- 6.1 The Vendor shall supply all vehicles, equipment and accessories required to safely lift and place the manhole in the excavation for the manhole at the AE job site.
- 6.2 The Vendor shall present AE with the engineering data for the manholes, certified by the Vendor's registered professional engineer. The certified engineering data shall state the structural integrity for the manhole configurations listed in Attachment I.

ATTACHMENT I

AUSTIN ENERGY PRECAST CONCRETE MANHOLE DRAWINGS

DRAWING NUMBERS:

- 7B 1098 1, 5 X 5, designed for 3 ft burial depth
- 7B 1098 2, 6 X 6, designed for 3 ft burial depth
- 7B 1098 3, 12 X 12, designed for 3 ft burial depth
- 7B 1098 4, 6 X 12 X 7, designed for 3 ft burial depth
- 7B 1098 5, 6 X 12 Center Section, designed for 3 ft burial depth
- 7B 1098 6, 4 X 4, designed for 3 ft burial depth
- 7B 1098 7, 6 X 8, designed for 3 ft burial depth
- 7B 1098 8, 5 X 5, designed for 5 ft burial depth
- 7B 1098 9, 6 X 6, designed for 5 ft burial depth
- 7B 1098 10, 12 X 12, designed for 5 ft burial depth
- 7B 1098 11, 6 X 12 X 7, designed for 5 ft burial depth
- 7B 1098 12, 6 X 12 Center Section 2 ft Height, designed for 5 ft burial depth
- 7B 1098 13, 6 X 12 Center Section 2.5 Ft Height, designed for 5 ft burial depth
- 7B 1098 14, STD 6X12 Manhole
- 7B 1098 15, STD 12X12 Manhole
- 7B 1098 16, STD 6X8X4H Cable Vault