

SPECIFICATION NUMBER ENG 97-07

SPECIFICATION

FOR

MANHOLE/PULL BOX

4' X 6' - 6" X 4' - 6"

REVISED AUGUST 18, 1998

**LAKELAND ELECTRIC & WATER
ELECTRIC SYSTEM ENGINEERING
LAKELAND, FLORIDA**

1.0 GENERAL DESCRIPTION

1.1 Precast reinforced concrete manholes/pull box consisting of two sections, top and bottom, with bell ends cast in place in each end wall, a knockout window in each side wall, pulling eyes, and a two (2) part hinged traffic bearing cover.

2.0 INTERIOR DIMENSIONS

2.1 4' - 0" wide X 6' - 6" long X 4' - 6" deep.

3.0 DESIGN LOADING

3.1 Design loading shall include dead load, live load, impact load, load due to water table, and any other loads which may be placed upon the structure. Live loading design shall conform to AASHTO HS-20-44 specifications. Live load shall be the loading which produces the maximum shear and bending moments in the structure.

4.0 CONCRETE

4.1 All aggregates, fine or course, shall conform to ASTM C-33 specifications. The concrete shall reach 4500 PSI in 28 days.

5.0 REINFORCEMENT

5.1 Pull box shall be reinforced with No. 5 rebar, spaced as required for traffic bearing design loading specified above.

6.0 SEALANT

6.1 A bituminous type sealant shall be supplied by the manufacturer, with each pull box, in quantities sufficient for sealing the seam between the top and bottom sections of the pull box upon installation.

7.0 PULLING EYES

7.1 Pulling Eyes shall be Galvanized steel rod, 7/8" minimum diameter. Install one pulling eye at the base of each end wall, centered below the duct entrances and tied to the reinforcing rods.

8.0 SUMP

8.1 A 10 inch diameter by 3 inch deep sump is to be located in the center of the pull box floor. The sump is to have a watertight bottom. Install a 2 inch wide channel sloped towards the sump from each of the four corner (See Standards Plate E21TBPB023 for details).

9.0 GROUND ACCESS HOLE

- 9.1 Install 2-1" PVC sleeves for ground wire to run between interior and exterior (See Standards Plate E21TBPB023 for locations).

10.0 THREADED INSERTS

- 10.1 Twelve (12) 1/2" threaded inserts shall be located as shown on Standards Plate E21TBPB023 (in the **bottom half only**).

11.0 FRAME AND COVER

- 11.1 The frame and cover assembly shall be traffic bearing and shall conform to AASHTO HS-20-44 specifications.
- 11.2 The frame and cover shall be galvanized and integrated into the concrete box such that the top of the box will be perfectly flush.
- 11.3 The cover (measuring 42" X 60") shall consist of two 1/4" thick steel diamond plates, adequately reinforced for the loading specified above.

11.4 HINGE ASSEMBLY

11.4.1 All frame and cover doors are required to have a mechanical locking device that engages when the doors are fully opened. The device should be located at or near the hinge mechanism and be concealed when doors are closed. The device is to be constructed so as to not interfere with access into or out of the box. The device is to eliminate the possibility of accidental closing when open.

11.4.2 Doors shall be spring loaded to reduce the force required to open each lid section to 35 - 40 lbs. Springs shall be located so as to not interfere with useable space inside the box, or with access into or out of the box.

11.4.3 U.S.F. Fabrications, Inc. "Horizontal Spring Assist," Oldcastle / Brooks Products "Torsion Assist," or approved equivalent frame / cover / hinge assembly shall be furnished. Design must be approved by Lakeland Electric and Water, System Engineering, Transmission and Distribution Section before construction.

11.5 SECURITY

10.4.1 Cover shall fit securely so as to prevent vandal probes (e.g. a wire) from entering the pullbox.

10.4.2 Cover construction shall include a recessed lock box suitable for locking the cover closed with a padlock (see Standards Plate E21TBPB023, p. 12-37 for details). "Lock Box" cover shall be 1/4" thick galvanized diamond plate steel, hinged and secured with flat head counter-sunk screws.

11.4.3 As an additional level of security, both doors shall be bolted down with penta head bolts, also recessed into the cover.

11.6 The word "ELECTRIC" shall be bead welded on the cover with 2" letters before galvanizing.

11.7 All hardware (e.g. hinges, springs, screws, nuts, bolts, etc.) shall be stainless steel.

12.0 DUCT ENTRANCES

12.1 Install four - 6 inch and six - 4 inch diameter PVC Schedule 40 bell ends, in each end wall (see Standards Plate E21TBPB023 for details). End bells are to be "Long End Bells" manufactured by Carlon (Catalog No. E949R6) or equivalent approved by Lakeland Electric and Water, System Engineering, Transmission and Distribution Section.

12.2 Install one 12"x25" Thin-wall knock-out window in each side wall, (see Standards Plate E21TBPB023 for details).

13.0 LIFTING EYES

13.1 Dayton Superior Catalog No. P-52 SL (Swift Lift System) or equivalent 4 ton anchors and round recesses shall be installed, for use in handling and setting the box sections. Install four (4) each, in both the top and bottom sections.

14.0 APPROVED MANUFACTURERS

14.1 The following are approved to supply Manholes/Pullboxes for the City of Lakeland Electric System:

1. Oldcastle Pre-Cast East
DBA Brooks Products
690 Taft-Vineland Road
Orlando, Florida 32824
2. Southern Pre-Cast, Inc.
Rt. 3 Box 229
Alachua, Florida 32615
3. Quikset, Inc.
DeKalb Concrete Products Division
3408 Highway 17 North

Green Cove Springs, Florida 32043