

## **TECHNICAL SPECIFICATIONS**

### **PRECAST CONCRETE MANHOLES, PADS, SWITCH PITS AND OTHER PRODUCTS**

#### **1. STANDARDS**

- 1.1. Precast concrete products supplied under this specification shall meet the requirements of the latest revision of the following list of standards and guides except where they conflict with JEA specifications, in which case JEA specifications shall apply.
  - 1.1.1. American Standard for Testing Material (ASTM)
  - 1.1.2. American Concrete Institute Standard (ACI),
  - 1.1.3. AASHTO Standard Specification for Highway Bridges
  - 1.1.4. and other applicable standards

#### **2. STEEL**

- 2.1. All reinforcing steel, including welded wire mesh, shall be of the size and in the location as shown on the plans. All reinforcing shall be sufficiently tied to withstand any displacement during the pouring operation. All bars shall be intermediate or hard grade billet steel conforming to ASTM, Grade 60.
- 2.2. The steel shall conform to ASTM requirements or better. The design of the steel shall be such as to offer sufficient steel area to meet load requirements for the particular type of product specified.

#### **3. CONCRETE**

- 3.1. Concrete products described in this specification shall be of grade and type of concrete shown on the plans. Requirements for testing shall be necessary to assure product control. Modern vibratory techniques shall be used to minimize honeycomb.
- 3.2. Precast products shall be built in accordance with JEA specifications and drawings. Monolithic pour is required for the manholes, pads, and switch pits per the following definition: 1) Cast as a single piece. 2) Formed or composed of material without joints or seams. 3) Consisting of or constituting a single unit.

#### **4. SUBMITTAL DATA**

- 4.1. JEA construction standard drawings are offered as guides to the general dimensions and level of quality desired. Full design drawings and technical specifications, and any available test data must be presented and approved prior to the bid award. A sample of the finished product may be requested.
- 4.2. Manufacturers shall have in effect an approved quality control program with ACI certified test technicians and inspectors. Manufacturers shall provide (1) one copy of their quality control manual and copies of certification documents to JEA.
- 4.3. Concrete Plants shall also be inspected and certified by the National Precast Concrete Association, NPCA. JEA approved manufacture plant must have a current NPCA certification for the past consecutive 5 years and maintain certification throughout the course of the contract. The plant (manufacturing the items) is recommended to be within 150 miles of JEA's Commonwealth warehouse: 6674 Commonwealth Ave., Jacksonville Florida. Otherwise, must meet required lead times and delivery dates.
- 4.4. All of the above information and requirements must be submitted to:  
Manager, Electric T&D Standards  
JEA  
21 W. Church Street, Tower 10  
Jacksonville, Florida 32202  
Phone (904) 665-7498

It is recommended that the above information be submitted as far in advance of the bid opening as possible so as to expedite evaluation.

## **5. MANUFACTURERS NAME/LOGO**

All concrete items must bear the manufacturer's name and/or logo for identification purposes.

## **6. MANUFACTURE FORMS**

The manufacturer must have on site, at the approved plant, a quantity of forms sufficient to meet the quoted lead times.

## **7. DELIVERY OF CONCRETE PRODUCTS**

7.1. Delivery of concrete products may be to any of the following Jacksonville, Florida locations FOB destination:

7.1.1. Emerson Street Service Center, 2325 Emerson St.

7.1.2. Commonwealth warehouse, 6674 Commonwealth Avenue.

7.1.3. Westside Service Center, 6727 Broadway Avenue

7.1.4. Job Site Location within JEA Service Area

7.2. Loading, off loading and transportation shall be at supplier's expense. Unloading at JEA's Commonwealth warehouse will be done by JEA forces and equipment, or by a contractor representing JEA. Bidder shall allow two (2) hours "turn-around" time for unloading at the Commonwealth warehouse

7.3. The supplier must have trucks or equipment capable of off-loading and setting 6' x12' manholes.

## **8. PRECAST MANHOLES**

It is not the intent of this specification to minutely define concrete manhole design and construction criteria, but rather to say that the successful bidder must be an established company currently supplying concrete manholes to other Florida utilities, retaining on their staff an Engineer registered in the State of Florida and experienced in pre-cast concrete member design and equipped with workers and machinery geared to the timely production of concrete utility manholes.

First quality manholes are expected under this specification, and failure to consistently deliver such quality will result in removal of such a supplier from the list of acceptable bidders.

Manholes shall be used for splicing cables and housing subsurface switching equipment in underground distribution systems.

### **8.1. DESIGN LOADS**

Manholes shall be designed to withstand HS-20 Bridges Loads. (Engineer sealed Certification required)

All steel shall conform to requirements covered in the general specifications.

Concrete shall have a minimum compressive strength of 5000 psi at 28 days.

### **8.2. ENTRANCE OPENINGS**

Some of the JEA (DMD) drawings depict variations in dimensions and entrance openings which may be required. Supplier will be expected to provide whichever type opening is specified on the Purchase Order.

### 8.3. TERMINATORS

- 8.3.1. Terminators shall be provided in the wall of the manholes. The exact size and location of such will be defined by the project engineer and provided with the purchase order.

### 8.4. PULLING IRONS

- 8.4.1. Manholes shall be supplied with pulling irons, as required, cast into bottom section of the manhole as shown on the appropriate DMD drawings. Rings tension stress shall be 25,000 PSI minimum.

### 8.5. SUMP

- 8.5.1. A 12" diameter sump, 4" deep, shall be cast in the floor below each entrance opening of all manholes.
- 8.5.2. If MANHO009 requires a flat top, a 16" square sump, 5" deep, shall be cast in the floor of the vault, MANHO009, in all four corners, 15" from the 8' wall & 6" from the 16' wall.

### 8.6. DELIVERY OF PRECAST MANHOLES

- 8.6.1. Delivery of precast manholes shall be as outlined below.
- 8.6.2. Company shall give JEA advance notice of a pending delivery which shall be a minimum of seven (7) days prior to anticipated delivery. Exact date and time of delivery will be made by JEA or its representative and acknowledged by the supplier forty-eight (48) hours in advance.
- 8.6.3. Loading, off loading and transportation shall be performed by the supplier at the supplier's expense with delivery to a job site location within JEA's service area.
- 8.6.4. Precast Manholes shall be unloaded and set in place by supplier under the supervision of JEA operations personnel. Hole preparation shall be performed by JEA or contractor representing JEA. Supplier shall allow two (2) hours on-site time for unloading.
- 8.6.5. If a product is delivered which does not meet standards or quality requirements it shall be rejected and returned to the manufacturer for replacement or repair at the manufacturer's or company's expense.
- 8.6.6. Any expense, damages, or penalty encountered by JEA or its contractor or any interested third party due to the supplier not adhering to the agreed upon delivery date and time will be borne by the supplier.
- 8.6.7. Early deliveries may be acceptable by JEA or its contractor; however, attempt at early delivery will be at the risk of the supplier. JEA does not guarantee acceptance of early deliveries.

### 8.7. ITEMS:

JEA ITEM ID	DESCRIPTION
MANHO001	MANHOLE, 6' X 4' X 6' RECTANGULAR PRECAST CONCRETE, REINFORCED FOR HS-20 BRIDGE LOAD, TO INCLUDE 1 EA. MANHOLE FRAME, 1 EA. COVER AND 1 EA. 15" GRADE EXTENSION RING. WEIGHT OF MANHOLE IS 13000 LBS EACH.
MANHO002	MANHOLE, 12' X 6' X 7' RECTANGULAR PRECAST CONCRETE, REINFORCED FOR HS-20 BRIDGE LOAD. TO INCLUDE 2 EA. MANHOLE FRAMES, 2 EA. COVERS AND 2 EA. 15" GRADE EXTENSION RINGS. WEIGHT OF MANHOLE IS 30000 LBS.
MANHO003	MANHOLE, 12' X 8' X 7' RECTANGULAR PRECAST CONCRETE, REINFORCED FOR HS-20 BRIDGE LOAD. TO INCLUDE 2 EACH MANHOLE FRAMES, 2 EA. COVERS AND 2 EA. 15" GRADE EXTENSION RINGS. WEIGHT OF MANHOLE IS 43000 LBS.
MANHO006	MANHOLE, 9' X 6' X 7', PRECAST CONCRETE H-20 BRIDGE LOAD, PER DMD-84. TO INCLUDE 2 EA. 15" GRADE EXTENSION RINGS, 2 EA. FRAMES AND 2 EA. COVERS.
MANHO009	MANHOLE, 10' X 16' X 7' VAULT PRECAST CONCRETE REINFORCED FOR HS-20 BRIDGE LOAD TO INCLUDE 2 EA. MANHOLE FRAMES, 2 EA. COVERS AND 2 EA. 15" GRADE EXT RINGS

- 8.7.1. Details: Appendix I - Manhole Drawings

## 9. GRADE EXTENSION RINGS AND COVERS

9.1. Covers and concrete grade extension rings shall be designed and manufactured in accordance with JEA Construction Standards and shall withstand HS-20 loading. The covers and grade extension rings must be included in the unit price of manholes.

9.2. ITEMS:

JEA ITEM ID	DESCRIPTION
MANER001	RING, EXTENSION, GRADE, MANHOLE, 6" HEIGHT, 36" ID X 48" OD
MANER002	RING, EXTENSION, GRADE, MANHOLE, 9" HEIGHT, 36" ID X 48" OD
MANER003	RING, EXTENSION, GRADE, MANHOLE, 15" HEIGHT, 36" ID X 48" OD
COVMA001	COVER, MANHOLE, 34 $\frac{3}{4}$ " STANDARD MUST BE PALLETIZED/BANDED @ NO MORE THAN 5 EACH PER PALLET, SHIP ON OPEN FLAT-BED TRUCK SUITABLE FOR FORKLIFT UNLOADING
FRAMC001	FRAME, MANHOLE, DMD-27, 34 $\frac{3}{4}$ " MUST BE PALLETIZED AND BANDED @ NO MORE THAN 5-UNITS PER PALLET.

9.2.1. Details: Appendix II - Grade Extension Rings and Covers

## 10. EQUIPMENT MOUNTING PIT

10.1. Precast equipment mounting pits shall be built in accordance with JEA drawings.

10.2. DELIVERY OF PRECAST EQUIPMENT MOUNTING PIT

10.2.1. Delivery of equipment mounting pit shall be as outlined below.

10.2.2. Company shall give JEA advance notice of a pending delivery which shall be a minimum of seven (7) days prior to anticipated delivery. Exact date and time of delivery will be made by JEA or its representative and acknowledged by the supplier forty-eight (48) hours in advance.

10.2.3. Loading, off loading and transportation shall be performed by the supplier at the supplier's expense with delivery to a job site location within JEA's service area.

10.2.4. Equipment Mounting Pits shall be unloaded and set in place by supplier under the supervision of JEA operations personnel. Hole preparation shall be performed by JEA or contractor representing JEA. Supplier shall allow two (2) hours on-site time for unloading.

10.2.5. If a product is delivered which does not meet standards or quality requirements it shall be rejected and returned to the manufacturer for replacement or repair at the manufacturer's or company's expense.

10.2.6. Any expense, damages, or penalty encountered by JEA or its contractor or any interested third party due to the supplier not adhering to the agreed upon delivery date and time will be borne by the supplier.

10.2.7. Early deliveries may be acceptable by JEA or its contractor; however, attempt at early delivery will be at the risk of the supplier. JEA does not guarantee acceptance of early deliveries.

10.3. ITEMS:

JEA ITEM ID	DESCRIPTION
PITME001	PIT, MOUNTING 3-PHASE SWITCHING EQUIPMENT (INSIDE 72" X 72" & OUTSIDE 84" X 84") SEE SPECIFICATIONS & DMD-76 (WEIGHT 8600 LBS. EACH)
PITME003	PIT, MOUNTING 3 PHASE FUSING EQUIPMENT 46" X 35", (WEIGHT 5304 LBS. EACH)
PITME004	PIT, MOUNTING, EQUIPMENT, SPECIAL APPLICATION, PMH-5 SWITCHGEAR, 68" X 48" DMD-86, (WEIGHT 5330 LBS. EACH)
PITME005	PIT, EQUIPMENT MOUNTING FOR PRIMARY METERING ENCLOSURE PER DMD-75A (WEIGHT 7800 LBS. EACH)

10.3.1. Details: Appendix III - Equipment Mounting Pit

## 11. SPLICE BOX

11.1. Precast splice box shall be built in accordance with JEA drawing No. DMD-69 (Item BOX SP 002).

### 11.2. ITEMS:

JEA ITEM ID	DESCRIPTION
BOXSP002	BOX, SPLICE, HEAVY DUTY CONCRETE (HS-20 LOAD) (OUTSIDE DIMENSIONS 24"W X 32L X 24"D), (INSIDE DIMENSIONS 16"W X 24"L X 24"D) (COVER READS ELECTRIC) SEE DMD-69

11.2.1. Details: Appendix IV - Splice Box

## 12. ANCHOR BASES

12.1. Concrete anchor bases for street lighting shall be designed as specified.

### 12.2. ITEMS:

JEA ITEM ID	DESCRIPTION
ANCBA001	ANCHOR BASE, CONCRETE, 18" SQ TOP X 36" SQ BOTTOM X 48" HEIGHT W 14 1/2" BOLT CIRCLE.
ANCBA002	ANCHOR BASE, CONCRETE, 13 1/2" SQ TOP X 32" SQ BOTTOM X 50" HEIGHT W 11" BOLT CIRCLE.
ANCBA004	ANCHOR BASE, CONCRETE, 24" SQ TOP X 48" SQ BOTTOM X 48" HEIGHT W 14.5" BOLT CIRCLE.
ANCBA007	ANCHOR BASE, CONCRETE, 20" DIA X 48" HEIGHT W 11" BOLT CIRCLE.

12.2.1. Details: Appendix V – Anchor Bases

## 13. CONCRETE PADS

13.1. Concrete pads for transformers shall be designed as specified.

### 13.2. ITEMS:

JEA ITEM ID	DESCRIPTION
PADCO001	PAD, TRANSFORMER, CONCRETE, 56"L X 43"W X 4"H, SPLAY OPENING-30" X 13", FOR PAD- MOUNT DISTRIBUTION EQUIPMENT, JEA PLATE NO. DMD-56, (WEIGHT 746 LBS. EACH)
PADCO003	PAD, TRANSF. OPEN DELTA, CONCRETE, 86"L X 54"W X 6"H, SPLAY OPENING-26" X 11", (WEIGHT 2300 LBS. EACH) JEA PLATE NO. DMD-73
PADCO006	PAD, CONCRETE, PRECAST, 72" X 72" X 10", SPLAY OPENING 48"X16" TOP & BOTTOM, 3 PHASE TRANSFORMER, COMPACT SIZE, (WEIGHT 3821 LBS. EACH) ORDER AD REQUESTED, DMD-87
PADCO007	PAD, CONCRETE 3 PHASE, 72" X 96" X 10", SPLAY OPENING 54"X16" BOTTOM & MAX OF 56"X18" TOP (WEIGHT 5315 LBS. EACH)
PADCO008	PAD, CONCRETE, 3 PHASE, 96" X 96" X 10", SPLAY OPENING 54"X16" BOTTOM & MAX. 56"X18" TOP (WEIGHT 7307 LBS. EACH)

13.2.1. Details: Appendix VI – Concrete Pads