

## SECTION 13120

### PRE-CAST CONCRETE PIPELINE WEIGHTS

#### **PART I - GENERAL**

##### 1.01 SUMMARY

Contractor to furnish precast concrete bolt-on pipeline weights as manufactured by Lonestar Prestress Mfg., Inc., Houston, Texas or approved equal. The pipeline weights provided by the manufacturer shall consist of two pieces clamped on the pipe using coil bolt hardware. The pipeline weights shall be supplied with the required opening for the pipe(s), attachment hardware and weight as specified by the design engineer or as specified in the contract documents.

##### 1.02 CODES, STANDARDS AND REFERENCES

- A. ACI-318-08, "Building Code Requirements for Structural Concrete".
- B. PCI Design Handbook, Precast/Prestressed Concrete Institute.
- C. "Manual of Standard Practice", Concrete Reinforcing Institute.
- D. ASTM, American Society for Testing and Materials:
  - 1. C150 - Standard Spec. for Type I and Type II – Low Alkali Portland Cement.
  - 2. C33 - Standard Spec. for Concrete Aggregates.
  - 3. A615 - Standard Spec. for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
  - 4. A185 - Standard Spec. for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
  - 5. A123 - Standard Spec. for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

##### 1.03 QUALITY ASSURANCE

- A. Pipeline weight manufacturer shall have a minimum of 5 years experience manufacturing pre-cast concrete pipeline weights.
- B. Pipeline weight manufacturer shall be a producer member of the National Precast Concrete Association (NPCA) and the precast plant shall be NPCA Certified.

##### 1.03 DESIGN REQUIREMENTS

- A. Dimensions: To be determined based on pipe OD and the required weight as set forth by the design engineer or as specified in the contract documents.
- B. The pipeline weight shall be square or rectangular in overall shape and cast in two separate pieces connected by coil bolts and cast-in coil inserts using large flat square washers under the head of the coil bolts. The top piece of the pipeline weight shall make up 40% of the total weight and the bottom piece shall make up the remaining 60% so the pipeline weight will float upright in water and resist rolling.

- C. The concrete pipeline weights shall be placed directly on the HDPE pipe with no rubber padding or liner required. The concrete surface on the inside radius of the circular hole shall be roughened to allow for better grip of weight on pipe to prevent slippage.
- D. The top portion of the pipeline weights shall have a cast-in lifting insert at the centerline to aid in transportation and installation. The lifting inserts shall only be used to transport and install the pipeline weights. The lifting inserts in the pipeline weights shall not be used to move the pipe after the installation of the weights.

### 1.03 SUBMITTALS

- A. Manufacturer shall submit three (3) copies of the pipeline weight fabrication drawings.
- B. At a minimum the fabrication drawings shall include the following information: the outside dimensions of the weight, total weight including all attachment hardware, coil bolt location, radius of opening for the pipe, location of coil bolts, coil inserts and lifting inserts, coil bolt length and diameter, coil insert type and diameter, plate washer location, steel type for coil bolts, coil inserts, washers, gap between top and bottom pieces following installation on pipe, reinforcement size and location and the 28 day concrete strength.

## **PART 2 - PRODUCTS**

### 2.01 MATERIALS

- A. Concrete: Steel-reinforced, 6000 PSI minimum 28-day compressive strength. Low alkali Portland cement per ASTM C150 shall be used in the production of the concrete. Sand and coarse aggregate to conform to ASTM C33.
- B. Reinforcing Steel: ASTM A615, grade 60 or ASTM A185, grade 80 unless otherwise indicated.
- C. Pipeline Weight Connections: The pipeline weight will be constructed from top and bottom pieces connected by coil bolts, flat square washers under the bolt head and cast-in coil inserts. Steel for the coil bolts, washers and coil inserts shall be fabricated from Type 304 stainless steel. Coil bolts, washers and coil inserts shall be supplied as manufactured by Dayton Superior or Meadowe Burke.
- D. Lifting Inserts: The lifting insert for the top piece of the pipeline weight shall be supplied with a hot dipped galvanized finish as supplied by Dayton Superior or Meadowe Burke.

### 2.02 FABRICATION

- A. The pipeline weights shall be supplied with a wood or steel form finish on the sides and bottom of the individual pieces with a trowelled finish on the top.