

SECTION 03100 - PRECAST CONCRETE VAULTS

PART 1 - GENERAL

1.1 WORK INCLUDED IN THIS SECTION

- A. The WORK of this Section includes the materials and installation of precast concrete vaults.

1.2 SUBMITTALS

- A. The following shall be submitted in compliance with Section 01300.
 - 1. Submit manufacturer's product data on precast items.
 - 2. Manufacturer's product data shall contain the following information:
 - a. Dimensions of vault.
 - b. Thickness of walls.
 - 3. Shop drawings showing reinforcing and materials of construction by ASTM reference and grade.
 - 4. Submit manufacturer's catalog data on electrical items and equipment specified herein.
 - 5. Submit electrical wiring plan and a single line diagram.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Sectional precast concrete vaults may be used where specified on the drawings or approved by the DISTRICT.
- B. Vault walls shall not exceed eight (8) feet nor be less than six (6) feet, as measured from the vault floor to the top of the vault wall, unless approved by the DISTRICT.

2.2 PRECAST CONCRETE VAULT

- A. Precast concrete vaults and covers shall be manufactured in a plant especially designed for that purpose and shall conform to the shapes and dimensions indicated on the plans.
- B. Design loads shall consist of dead load, live load, impact load, and loads due to water table and any other loads which may be imposed upon the structure. Live loads shall be for HS-20 per AASHTO standard specifications for highway bridges. Design wheel load shall be 16 kips. The live load shall be

that which produces the maximum shears and bending moments in the structure.

- C. Minimum wall thickness shall be 8 inches.
- D. Concrete shall be Class 560-C-3250.

2.3 VAULT ACCESS DOORS

- A. Vault access doors shall be fabricated aluminum, 4 feet wide by 4 feet long, unless otherwise specified by the DISTRICT. Access doors shall mount flush with the surrounding area.
- B. Access doors shall be equipped with heavy brass hinges, stainless steel pins, compression spring operators, an automatic hold-open arm with release handle and a locking device, to receive a padlock.
- C. All vaults located within roadways shall have H-20 rated traffic doors. Vaults in other locations shall have parkway doors, unless otherwise specified by the DISTRICT.
- D. Access doors shall be Type JD-AL as manufactured by the Bilco Company, New Haven, Conn., or equal.

2.4 LADDERS

- A. Ladders shall be of aluminum construction. Rung diameter shall be 1 inch minimum, with 12 inches between rungs, and 18 inches between side bars. Ladders shall exceed the requirements of CAL/OSHA and ANSI Standards.
- B. Material for ladders shall be high strength 6061-T6 aluminum alloy.
- C. Appropriate Bilco, or equal, ladder-up safety post for each ladder installation shall be provided.

2.5 SUMP

- A. Vault floor shall contain an 18 inch diameter hole for installation of a 24 inch deep sealed sump with a removable expanded metal safety grate. The vault floor shall be constructed such that there is a positive slope to the sump. A minimum 6-inch drain shall be provide where applicable or as directed by the DISTRICT.
- B. Sump Pump shall be Zoeller Model #M53, or equal.

2.6 EQUIPMENT

- A. Electrical
 - 1. Humidistat shall be Honeywell Model #H46C1000, or equal.

2. Load Center shall be GE Model TLM-612RH with Type THQL-GFCI Plug-In breaker, or equal.
3. Fused Safety Switch shall be GE Model # TH3221RH, or equal.
4. Lights shall be Hubbell Incandescent Wall Mounted, Model #NVX15GHG with NVB accessory, or equal. (A minimum of two lights shall be required for each vault.)
5. Light Switch shall be Hubbell Model #1221 with #1795 cover plate, or equal.
6. Ground Fault Receptacle shall be Hubbell Model #GF-5362 with WP-26 Wall Plate, or equal.

B. Vents

1. All vaults shall be equipped with vents as shown on the drawings.
2. Vents shall be constructed from 6 inch C-900 PVC pipe and fittings. Fittings shall be socket welded type.
3. Each vault shall have 2 vents, one upper and one lower. The exhaust fan shall discharge into the bottom vent.
4. Exhaust Fan shall be ILG Industries, Inc. Model PV. Fan shall be sized for 6 volume changes per hour.
5. A Type 304 stainless steel insect screen shall be installed over vent openings above ground.

PART 3 - EXECUTION

3.1 EARTHWORK

- A. The CONTRACTOR shall prepare an excavation large enough to accommodate the structure and permit grouting of openings and backfilling operations.
- B. The bottom of the structure shall be placed on 6 inches of compacted, crushed rock subbase, and graded level to the elevation as shown on the plans.
- C. Vault excavations shall be backfilled with imported granular material to a minimum relative density of 90 percent.

3.2 INSTALLATION

- A. Openings or "knockouts" in precast concrete vaults shall be located as shown on the drawings and shall be sized sufficiently to permit passage of the largest dimension of pipe and/or flange.

- B. Upon completion of installation, all voids or openings in the vault walls around pipes shall be filled with 3,000 psi non-shrink grout.
- C. After the structure and all appurtenances are in place and approved, backfill shall be placed to the original groundline or to the limits designated on the plans.
- D. All joints between precast concrete vault sections shall be made watertight. The plastic joint sealing compound shall be installed according to the manufacturer's recommendations to provide a watertight joint which remains impermeable throughout the design life of the structure. The outside of the entire structure shall be coated with an approved water proofing material.
- E. Access doors shall be built up such that the hatch is flush with the surrounding surface unless otherwise specified on the drawings or by the DISTRICT. The CONTRACTOR is responsible for placing the cover at the proper elevation where paving is to be installed and shall make all necessary adjustments so that the cover meets these requirements.
- F. Ladders shall be installed using Type 316 stainless steel capsule anchors.
- G. Ladders shall be attached a minimum of 3 places to the vault wall.
- H. Ladder shall be centered under access door opening.

3.3 ELECTRICAL

- A. Conduits, switches, breakers, receptacles and equipment shall be installed per NFPA 70 (National Electric Code), latest edition.
- B. All electrical materials used shall be moisture proof and suitable for wet locations.
- C. The exhaust fan shall energize when:
 - 1. The access door is opened.
 - 2. The humidistat signals a rise in humidity.
 - 3. Manually operated.

END OF SECTION