

10-3. FIBER OPTIC VAULT

Fiber optic vaults shall be 52" (L) x 34" (W) x 24" (D) nominal inside dimensions and shall conform to Section 86-2.06, "Pull Boxes," of the Standard Specifications. Covers shall be in one or two sections. Hold down bolts or cap screws and nuts shall be of brass, stainless steel or other non-corroding metal material. Each cover portion shall have inset lifting pull slots. Cover marking shall be "CALTRANS TOS COMMUNICATION" on the cover. Vault, cover and extensions may be constructed of reinforced portland cement concrete or of non-PCC material with concrete gray color.

Non-PCC vaults and covers shall be of sufficient rigidity that when a 100 lb concentrated point force is applied perpendicularly to the midpoint of one of the long sides at the top while the opposite long side is supported by a rigid surface, it shall be possible to remove the cover without the use of tools. When a vertical force of 1500 lb is applied, through a 0.5" x 3" x 6" steel plate, to a non-PCC cover in place on a splice vault, the cover shall not fail and shall not deflect more than 0.25".

Fiber optic vaults shall be installed as detailed and as shown on the plans. All fiber optic vaults and covers shall have an AASHTO HS 20-44 rating. Fiber optic vaults shall be installed at grade. Metallic or non-metallic cable racks shall be installed on the interior of both long sides of the fiber optic vaults. The racks shall be capable of supporting a load of 100 lb, minimum, per rack arm. Racks shall be supplied in lengths appropriate to the box in which they will be placed. All metallic cable racks shall be fabricated from ASTM Designation: A36 steel plate and shall be hot-dip galvanized after fabrication. Steel plate, hardware and galvanizing shall be in accordance with the requirements of Section 75, "Miscellaneous Metal," of the Standard Specifications. Metallic cable racks shall be bonded and grounded.

Unless otherwise shown on the plans or as directed by the engineer, vaults shall be located outside the pavement with the lid centerline 5 feet from the edge of the pavement or back of the dike. Vaults may be moved farther from the roadway to accommodate buried objects, existing conduits, or similar items that prevent installation 5 feet from the pavement, but no part of the vault, concrete encasement ring, or backfill material shall be less than 18 inches from the edge of the pavement or back of the dike, to allow for future electrical conduit installations between the vault and roadway. The top of the vault lid shall match the final grade within 1 inch +/-0.5 inch.

Some locations along the roadway may have existing conduits, pipes, or drains parallel to the roadway and next to the shoulder, which may make it impossible to route conduits to the vault. At other locations, buried objects, steep drop-offs, or other object may make installation of a vault outside the pavement impossible. At these locations or as directed by the engineer, vaults may be installed in the pavement of the shoulder or in the pavement of chain on/off areas. Vaults placed inside the pavement shall be installed with the centerline of the vault not more 3 feet from the edge of pavement or back of dike, and with the entire top of vault lid 0.1 inch +/- 0.05 inch below the surface of the pavement, when all pavement work specified in the job is completed.

Vaults located at bridges where exposed conduit must be used, such as at undercrossings, shall be located as close as possible to the end of the structure unless otherwise specified on the plans, If not specified otherwise in the plans, the location of vaults at bridge structures shall be between the first and second guardrail posts. Unless otherwise directed by the engineer, the top of the vault lid at these locations shall be located entirely behind the guardrail and shall conform to the final grade of the surrounding fill at the vault location. No part of the vault or vault lid shall be exposed or extend past the edge of the hinge point for the bridge, or otherwise deform the earth fill at the vault location.

Conduits shall enter the fiber optic vault through the sidewall at not more than 6 inches from the bottom of the vault.. Conduits shall not enter through the bottom of the vault. Conduits shall not protrude more than 2 inches inside the pull box and shall enter the vault at about 20 degrees

in both the vertical and horizontal directions. Watertight sealing plugs as specified elsewhere in this special provisions are required around all conduits.