

They shall be designed for tongue-and-groove placement between upper and lower sections with a mastic sealant between sections (Rotondo Model #998-547-509, or equal). Other references that apply to the utility holes but not limited to the following: ASTM A153, A48, A123, ACI301, 318, 347 and CRSI. The complete utility manhole shall include a 36" diameter cast iron reversible frames and covers (Neenah 5900-J or equal). The top of the cover shall have a logo in stand-up letters to read "TELEPHONE"

The Contractor shall install the frame to accommodate the distance from the top of manhole to the finish surface, including throats and extensions. The precast throats shall be 36" inside diameter opening to match utility hole with 8" thick wall. Wherever utility holes are located in streets, the throat shall be concrete from the top of the utility hole up to 10" below finish grade. Adjustments for finish grade from the top of the concrete to cover ring shall be accomplished with mortared brick. A sealant shall be applied to all joint locations (throat-utility hole, throat-brick, brick-covering). Elsewhere the throat from the top of utility hole to the ring shall be concrete with a sealant provided between the throat, ring and top of utility hole. The concrete throat shall be installed so that the cover ring is flush with the finish surface. The actual height of the throat shall be determined on location prior to construction of forms. Further, each vault shall have one (1), 12" diameter sump hole directly under a 36" diameter hole in the roof. The floor of the utility hole shall slope towards the sump hole at the rate of 1/8" per 1' -0".

All vaults shall be equipped with 1-1/4" galvanized shank pulling eyes with 2" eye and 4" square washer on each side of the walls each wall opposite conduit penetrations. The pulling eye shall be suitable for a minimum 15,200 lbs @ 180 degree pull, and 3800 lbs @ 90 degree pull. Also, the vaults shall be manufactured with conduit penetration knockouts, (Condux Formex Duct Terminators or equal) and waterproof duct plugs for all ducts. A break membrane shall be on all terminators connected to ducts.

CATV HANDHOLES. Utility Handholes shall be precast units meeting the requirements for H-20 wheel loads, 30% impact and soil pressure of 130 lbs/ft³. The Handholes shall be heavy duty adjust to grade type composite concrete box with collar and cover 3'x6'x4' deep (CDR Systems Corporation, Menlo Park, California - CDR Model or equal)

The complete utility hole shall include a 36" diameter cast iron reversible frame and cover (Neenah 5900-J or equal). The top of the cover shall have a logo in stand-up letters to read "CATV"

The Contractor shall install the frame to accommodate the distance from the top of manhole to the finish surface, including throats and extensions. The handhole shall be equipped with 1-1/4" galvanized shank pulling eyes with 2" eye and 4" square washer on each side of the walls.

541.03. DESIGN AND DRAWINGS. The Fabricator shall submit concrete mix design, design calculations, and working drawings in accordance with subsection 105.03. The precast concrete utility manholes and handholes shall be designed for 0' to 5' of earth cover, high water table at finish grade, and H-20 wheel loads in accordance with the current AASHTO Standard Specifications for Highway Bridges and shall be designed to protect against buoyancy.

541.04. QUALITY CONTROL. The Fabricator shall demonstrate a level of quality control testing that satisfies the Agency as to his/her ability and commitment to produce concrete to the requirements of this specification. A satisfactory program of quality control shall include gradation and moisture determinations of the aggregates, as well as slump, air content, and strength determinations of the concrete. These tests shall be performed at regular and suitable