

UNIVERSITY OF NEW HAMPSHIRE
CONSTRUCTION AND RENOVATION STANDARDS

SECTION 16050 – MANHOLES

PART 1 - GENERAL

- 1.01 Manholes shall have minimum internal dimensions as indicated below:
a. 12'-0" by 6'-0" with minimum headroom of 7'.
- 1.02 Shall be heavy duty precast reinforced concrete manholes for electric installations. The concrete minimum compressive strength: 5000 psi. at 28 days in accordance with ASTM, reinforced in accordance with H-20 loading.
- 1.03 Precast units shall not have more than two (2) sections.
- 1.04 Provide precast concrete extension with mortared joints with full bearing under frame.
- 1.05 Joints between sections shall have self-aligning V-grooves and asphaltic butyl compound joint sealant.
- 1.06 All conduits shall be terminated in termaduct fittings precast into the manhole walls.
- 1.07 All concrete duct banks shall be doveled to the manholes walls and building foundation walls with rebar.
- 1.08 Frames and covers shall be cast iron heavy-duty type, suitable for H-20 street loading and have machined bearing surfaces. Electrical manholes shall have a minimum clear opening of 32 inches in diameter.
The word "Electrical" shall be cast on the upper side of each cover.
- 1.09 Accessories; manholes shall be provided with the following accessories.
All steel components shall be hot-dipped galvanized.
- a. 1" dia. eyebolt with a 2" pulling eye.
 - b. Provide a sump pit in the center of the manhole.
 - c. Ground grid, consisting of driven ground rods, and buried interconnecting conductors
 - d. Provide heavy-duty galvanized adjustable notched channel cable racks with plastisol arms.

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PART 2 - PRODUCTS

- 2.01 H 20 Rated Precast Manhole units shall be manufactured by:
George Roberts Co. Precast Concrete
Products,
Mitchie Corp Precast
or Owner approved equal.
- 2.02 H 20 Rated Precast Extension Collars:
George Roberts Co. Precast Concrete
Products
Mitchie Corp Precast
or Owner approved equal.
- 2.03 H 20 Rated Frames and Covers shall be manufactured by:
Neenah Foundry # R-1792-HL
LeBaron Foundry # LB388
or Owner approved equal.
- 2.04 Ground Rods shall be manufactured by:
Copperweld
or Owner approved equal.
- 2.05 Heavy-duty galvanized adjustable notched channel cable racks with plastisol
arms:
Chance Racks #C203-0435HG
Chance Plastisol Arms #C203-1127
or Owner approved equal.

PART 3 EXECUTION

- 3.01 Manhole locations shall be determined after final conduit and grading has
been determined.
- 3.02 In paved areas, set top of frame and cover flush with finished surface. In unpaved
areas, set top of frame and cover approximately 1/2 inch above finished grade.
- 3.03 The installation of manholes shall be in an excavated area free of obstructions for
a minimum 12 inches around outside perimeter, with a 6"-inch compact gravel
base of uniform thickness and level. The preparation of the base shall ensure that
no settlement occurs.

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- 3.04 Backfill shall consist of good compactable material, such as pea gravel, sand or clean earth fill. Backfilling should be done progressively from bottom to top surface.
- 3.05 Minimum earth cover from roof of manhole to finished grade shall be 8 inches.
- 3.06 All non-current carrying steel parts and accessories shall be grounded to the ground grid.
- 3.07 All cables shall be secured to heavy-duty galvanized adjustable notched channel cable racks with plastisol arms.
- 3.08 Splices shall be properly supported by heavy-duty galvanized adjustable notched channel cable racks with plastisol arms on both sides of the splice.
- 3.09 Manhole exterior walls, roofs, bottom, and the first 10'-0" portion of ductbanks either entering or leaving the manhole shall be waterproof coated with coal tar epoxy bitumastic.
- 3.10 Precast concrete extension collar lined with mortar with full bearing under frame. Set height in field per final grade elevations. Install per manufacturer's instructions.
- 3.11 Provide a complete ground grid around each manhole consisting of (4) 5/8-inch by 8'-0" long ground rods located at each corner of manhole. Interconnect ground rods with #4/0 AWG Bare Stranded Copper Wire looped around the exterior of the manhole, all connections made below grade shall be of the exothermic welded type. A #4/0 AWG Bare Stranded Copper Wire lead shall be brought into the manhole and connected to a #4/0 AWG Bare Stranded Copper Wire looped around the interior perimeter of the manhole securely attached at 2' intervals to the wall of the manhole at an elevation of 5'. Connections on the interior of the manhole shall be made by properly sized/rated split bolt connectors or properly sized/rated one bolt connectors.

END SECTION