

### 29.3.11 Drainage Manhole Rehabilitation

- A. It is the intent of this portion of the work to provide for all aspects of drainage manhole rehabilitation including type of repair, methods of repair, and the materials that are appropriate for each manhole scheduled for rehabilitation. Any manhole or individual element of the manhole which in the opinion of the Contractor cannot be rehabilitated shall be reported to the Engineer for his confirmation that the Contractor's opinion is correct.
- B. Drainage manhole rehabilitation includes the following procedures:
- i. Rehabilitation of manhole walls and bases by plugging, patching, and coating with mortars, coatings, sealants and liners to improve the structural condition, eliminate infiltration, and provide corrosion protection.
  - ii. Reinstallation or replacement of manhole frames and covers to adjust manhole to grade, eliminate infiltration under frame, and eliminate inflow through cover.
  - iii. Removal and replacement of ladders, handrails and sealing plates.
  - iv. Installation of safety chains and grab bars as required by the Engineer's Instruction.
- C. However the rehabilitation work may only be required for one, some or all of the above procedures as agreed with the Engineer.
- D. Rehabilitation of manholes.
- i. Break out defective concrete to sound concrete surface.
  - ii. The Contractor shall take all necessary precautions to prevent falling debris from damaging the manhole and/or entering the network.
  - iii. Surface preparation on bare concrete surfaces shall consist of thorough cleaning to remove all loose material and surface contaminants.
    - Cleaning may be accomplished by water blasting, sandblasting, or applying a 10 percent solution of muriatic acid or hydrochloric acid over all surfaces. If an acid solution is used, the surface shall be thoroughly rinsed and neutralised prior to the application of mortars and coatings.
- E. After surface preparation and prior to the application of mortars, coatings infiltration shall be stopped by sealing as specified in Clause 3.4.
- F. Apply approved epoxy bonding agent and reinstate concrete using an approved concrete repair material.