

Pump Station Inspection – Outline

12-12-10

- I. Review plans, spec.s, addenda and applicable standards and make a list of questions
- II. Attend Pre-construction meeting
 - A. Bring up and discuss construction related questions
 - B. Obtain contacts for contractors, utilities and suppliers
 - C. Establish material testing procedures
- III. Arrange to meet the contractor for a project walk-through
 - A. Pre-construction video
 - B. Photograph key points and document
 - C. Schedule progress meetings
- IV. Initialize diaries, reports and files and keep current
 - A. Daily diary
 - B. Quantities diaries
 - C. Silt/erosion control reports
 - D. Project file
- V. Dirt work and subgrade approval (By others)
- VI. Concrete
 - A. Review drawings, including shop drawings, and material Specifications
 - B. Verify approved materials are used
 - C. Verify approved sub-contractors and suppliers are used
 - D. Approve or reject subgrade
 - E. Approve or reject forms
 - F. Approve or reject reinforcing steel placement
 - G. Verify that testing has been scheduled for the pour
 - H. Discuss with the contractor the requirements for placement, vibrating, finishing, curing and form removal
 - I. Discuss with the contractor special requirements for hot or cold weather conditions
 - J. Observe compliance during and after the pour
- VII. Storm sewers
 - A. Check plan grades
 - B. Verify correct pipe, fittings and bedding material
 - C. Observe requirements for trench safety and confined spaces
 - D. Verify proper installation, jointing and backfill
 - E. Observe moisture/density testing on backfill

VIII. Asphalt paving (By others)

IX. Equipment

A. Pumps

1. Verify manufacturer, model no. and physical condition of pumps
2. Observe proper handling, storage and installation, including guide rails, wiring and hangars
3. Verify that impeller stays have been removed
4. Match pump serial numbers to corresponding control cabinets
5. Verify proper length and accessibility of removal leads

B. Valve actuators

1. Verify manufacturer, model no. and condition of Actuator
2. Observe proper handling, storage and installation of actuator

C. Valves

1. Verify manufacturer, model no. and condition of Valves prior to installation
2. Observe storage, handling and installation of valves in Accordance with manufacturer's recommendations. Pay special attention to gaskets, lubrication, bolt torque and operating instructions
3. Keep threads of valve stem clean until actuator is Installed

X. Electrical

- A. Verify permits are obtained
- B. Check all hangars and supports for structural integrity
- C. Verify type and gauge of wiring used
- D. Check splices, if splices are allowed
- E. Verify that switches, panels, cabinets, HVAC, generator and lighting are installed per plan

XI. Finishes

- A. Make sure sealer, primer, paint and other finishes are as specified
- B. Observe that finishes are applied in an approved manner and to specified thickness
- C. Test finish thickness and uniformity. (wet thickness gauge and/or spark testing, etc.)

D. Repair or replace defective coatings as recommended by the engineer

XII. Masonry

- A. Verify materials are those specified
- B. Observe that masonry, reinforcement and insulation are installed in proper stages and increments, including curing times. Verify course patterns
- C. Verify proper temperatures are maintained during placement and curing
- D. Observe that sealing, painting or other coatings are applied in accordance with manufacturer's recommendations
- E. Check location and dimensions of openings (windows, vents, doors, etc.)

XIII. Structural steel

- A. Obtain shop drawings, welding certificates, qualification data and mill test reports for: structural steel, Bolts, nuts and washers, direct tension indicators, tension control, high strength bolt-nut-washer assemblies, shear stud connectors, shop primers, non-shrink grout
- B. Storage
 - 1. Easy access for determining condition and identification
 - 2. Keep off ground
 - 3. Protect from erosion or deterioration
 - 4. Store fasteners in a dry protected place
 - 5. Prevent distortion, damage or overload
- C. Erection
 - 1. Lift properly so as not to distort, damage or overload Member
 - 2. Make allowances for temperature differential
 - 3. Splice only where indicated
 - 4. use specified connectors
 - 5. Repair damaged coatings as specified

XIV. Doors and Windows

- A. Obtain shop drawings and certifications
- B. Store in a clean dry area
- C. Verify manufacturer, type and dimensions of each unit
- D. Install and seal in accordance with manufacturer's recommendations. Check for plumb
- E. Assure proper installation and operation of locks

- F. Get keys and/or access codes to operations engineer
- XV. Hatches
 - A. Obtain shop drawings and certifications
 - B. Inspect condition of hatches and gratings for damage to coatings, welds and hinges.
 - C. Check function of hinges and latches
 - D. Check dimension of each unit
 - E. Observe installation
 - 1. Square to structure (or as designed)
 - 2. Flush with surface (or as designed)
 - 3. Assure protection of doors, hinges and finish through construction
 - F. Adjust, lubricate and seal to allow to function properly
- XVI. Steps, railings and elevated walkways
 - A. Obtain shop drawings, certifications and welding certificates
 - B. Inspect components for damage and compliance
 - C. Store in a clean area off of the ground
 - D. Inspect installation in accordance with plans and specifications
 - E. Reinspect for damage and cleanliness at the time of acceptance
- XVII. Signage
 - A. Inspect the installation of signage and safety labels as indicated by the plans and as required by codes. Warning signs, regulatory signs and operational signs are included
 - B. Review signage with the operations engineer
- XVIII. Testing and training
 - A. Schedule and observe performance testing of the equipment including controls, valves, pumps and electronics, including generator (if applicable). Test valves and pumps with clean water is possible. Make changes or additions as advised after testing and retest if necessary. Operations personnel and manufacturer's representatives should be present for testing.
 - B. Schedule training for operations personnel, ideally in conjunction with testing.
- XIX. Operations and warranty manuals should be obtained in the Number and configuration required by the specifications
- XX. Schedule and observe post-construction inspection and video Taping of project