

Section 02633**ADJUSTING MANHOLES, INLETS, AND VALVE BOXES****1.0 GENERAL****1.01 SECTION INCLUDES**

- A Adjusting elevation of manholes, inlets, and valve boxes to new grades.
- B References to Technical Specifications:
 - 1. Section 01200 – Measurement and Payment Procedures
 - 2. Section 01350 – Submittals
 - 3. Section 03300 – Cast-in-Place Concrete
 - 4. Section 02542 – Concrete Manholes and Accessories
 - 5. Section 02318 – Excavation and Backfill for Utilities
 - 6. Section 02910 – Topsoil
 - 7. Section 02921 – Hydromulch Seeding
- C Referenced Standards:
 - 1. American Society for Testing and Materials (ASTM)
 - a. ASTM C 270, “Standard Specification for Mortar for Unit Masonry”

1.02 MEASUREMENT AND PAYMENT

- A Measurement for adjusting utility structures to grade is on a lump sum basis for:
 - 1. Adjusting manholes.
 - 2. Adjusting inlets.
 - 3. Adjusting valve boxes.
- B Refer to Section 01200 - Measurement and Payment Procedures.
- C Make Submittals required by this Section under the provisions of Section 01350 – Submittals.

2.0 PRODUCTS**2.01 CONCRETE MATERIALS**

- A For cast in place concrete, refer to Section 03300 – Cast-in-Place Concrete.
- B For precast concrete manhole sections and adjustment rings, refer to Section 02542 – Concrete Manholes and Accessories.
- C For mortar mix, conform to requirements of ASTM C 270, Type S using Portland cement.

2.02 CAST IRON ADJUSTING RINGS

- A For cast iron adjusting rings, refer to Section 02542 – Concrete Manholes and Accessories.

2.03 PIPING MATERIALS

- A For riser pipes and fittings, refer to applicable piping materials specifications in Sections 02542 – Concrete Manholes and Accessories.

3.0 EXECUTION**3.01 EXAMINATION**

- A Examine existing structure, valve box, frame and cover or inlet box, frame and cover or inlet, and piping and connections for damage or defects that would affect adjustment to grade. Report such damage or defects to the Engineer.

3.02 ESTABLISHING GRADE

- A Coordinate grade related items with existing grade and finished grade or paving, and relate to established bench mark or reference line.

3.03 ADJUSTING MANHOLES AND INLETS

- A Elevation of manhole or inlet can be raised using precast concrete rings or metal adjusting rings. Use of brick for adjustment to grade is prohibited. Elevation of manhole or inlet can be lowered by removing existing masonry, adjusting rings or the top section of the barrel below the new elevation and then rebuilding or raising the elevation to the proper height.
- B Grout inside and outside adjusting ring joints.
- C Salvage and reuse cast iron frame and cover or grate.
- D Protect or block off manhole or inlet bottom using wood forms shaped to fit so that no debris or soil falls to the bottom during adjustment.
- E Set the cast iron frame for the manhole cover or grate in a full mortar bed and adjust to the established elevation. In streets, adjust covers to be flush to 1/8 inch above pavement.
- F Verify that manholes and inlets are free of visible leaks as a result of reconstruction. Repair leaks in a manner subject to the Engineer's approval.

3.04 ADJUSTING VALVE BOXES

- A If usable, salvage and reuse valve box and surrounding concrete block.

- B Remove and replace 6 inch ductile iron riser pipe with suitable length for depth of cover required to establish the adjusted elevation to accommodate actual finish grade.
- C Reinstall in-kind adjustable valve box and riser piping plumbed in vertical position. Provide minimum 6 inches telescoping freeboard space between riser pipe top butt end and interior contact flange of valve box for vertical movement damping.
- D After valve box has been set, aligned, and adjusted so that top lid is level with final grade, pour a 24 inch by 24 inch by 8 inch thick concrete pad around valve box. Center valve box horizontally within concrete slab.

3.05 BACKFILL AND GRADING

- A Backfill the area of excavation surrounding each adjusted manhole, inlet, and valve box and compact according to requirements of Section 02318 – Excavation and Backfill for Utilities.
- B Grade the ground surface to drain away from each manhole and valve box. Place earth fill around manholes to the level of the upper rim of the manhole frame. Place earth fill around the valve box concrete block.
- C In unpaved areas, grade surface at a uniform slope of 1 to 5 from the manhole frame to natural grade. Provide a minimum of 4 inches of topsoil conforming to requirements of Section 02910 – Topsoil and seed in accordance with Section 02921 – Hydromulch Seeding.

END OF SECTION