

Section 02087

STORM WATER BRICK MANHOLES

PART 1 GENERAL

1.01 SUMMARY

This Section includes:

- A. Brick masonry Work in utility construction for permanent or temporary installation of storm water manholes or junction boxes.
- B. Brick masonry in repair and rehabilitation of storm water lines and associated structures.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

- 1. Payment for brick manholes is on a unit price basis for each manhole installed.
- 2. No payment will be made for brick masonry work for repair and rehabilitation of storm water lines. Include payment in unit price for applicable utility structure section.
- 3. Payment for pile-supported concrete foundation used for unstable subgrade treatment for manhole base is on a unit price basis for each foundation installed.
- 4. Refer to Section 01270 - "Measurement and Payment for Unit Price Procedures."

- B. Stipulated Price (Lump Sum). When Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 REFERENCES

ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lb/ft³ (600kN-m/m³)).

1.04 SUBMITTALS

- A. Conform to requirements of Section 01330 - "Submittal Procedures".
- B. Submit certifications required by Section 04061 - "Mortar".

- C. Submit certifications required by Section 04210 - “Brick Masonry Utility Construction”.

1.05 RELATED REQUIREMENTS

- A. Section 01270 – “Measurement and Payment”
- B. Section 01330 – “Submittal Procedures”
- C. Section 02084 – “Frames, Grates, Rings and Covers”
- D. Section 02316 – “Excavation and Backfill for Structures”
- E. Section 02911 – “Topsoil”
- F. Section 02921 – “Hydromulch Seeding”
- G. Section 02922 – “Sodding”
- H. Section 03315 – “Concrete for Utility Construction”
- I. Section 04061 – “Mortar”
- J. Section 04210 – “Brick Masonry for Utility Construction”

1.06 – 1.07 NOT USED

1.08 DELIVERY, STORAGE AND HANDLING

- A. Handle and store brick to prevent damage.
- B. Store brick and mortar mix off ground and dry. Cover mortar mix to protect from weather.

1.09 – 1.13 NOT USED

PART 2 PRODUCTS

2.01 MANUFACTURER(S) (NOT USED)

2.02 MATERIALS AND/OR EQUIPMENT

- A. Brick Masonry Units

Concrete brick masonry units conforming to requirements of Section 04210 - “Brick Masonry for Utility Construction”.

B. Mortar

Conform to requirements of Section 04061 - "Mortar".

C. Concrete and Reinforcing Steel

1. Conform to requirements of Section 03315 - "Concrete for Utility Construction".
2. Provide Class A concrete with minimum compressive strength of 4000 psi unless otherwise indicated on Plans.

2.03 – 2.04 NOT USED

PART 3 EXECUTION

3.01 GENERAL / MANUFACTURER(S) (NOT USED)

3.02 PREPARATION

A. Examination

1. Verify lines and grades are correct.
2. Determine if subgrade, when scarified and recompact, can be compacted to be 95 percent of maximum Standard Proctor Density according to ASTM D698 prior to placement of foundation material and base section. When it cannot be compacted to that density, moisture condition subgrade until that density is reached or treat as unstable subgrade.
3. Do not build manholes in ditches, swales, or drainage paths unless approved by Project Manager.

3.03 ERECTION/INSTALLATION APPLICATION AND/OR CONSTRUCTION

A. Manholes

1. Construct manholes to dimensions shown on Plans. Commence construction as soon as possible after pipes are laid. On monolithic sewers, construct manholes at same time sewer is being constructed.
2. Unstable Subgrade Treatment: When unstable subgrade is encountered, notify Project Manager for examination of subgrade to determine if subgrade has heaved upwards after being excavated. When heaving has not occurred, over-excavate subgrade to allow for 24-inch-thick layer of crushed stone wrapped in filter fabric as foundation material under manhole base. When there is evidence of heaving, provide pile-supported concrete foundation, as detailed on the Plans, under manhole base.

3. Construct manhole on concrete slab in accordance with requirements of Section 04210 - "Brick Masonry for Utility Construction".

B. Pipe Connections

Use non-shrink grout to seal pipe connections to manholes unless otherwise shown on the Plans. Grout pipe penetration in place on both inside and outside of manhole.

C. Frame and Cover

Install frame and cover in accordance with Section 02084 - "Frame, Grates, Rings, and Covers".

D. Backfill

1. Place and compact backfill materials in area of excavation surrounding manholes in accordance with requirements of Section 02316 - "Excavation and Backfill for Structures". Use embedment zone backfill material for adjacent utilities over each pipe connected to the manhole. Provide trench zone backfill, as specified for adjacent utilities, above embedment zone backfill.
2. Backfill under existing sewer up to springline of pipe with Class B concrete or flowable fill in accordance with Section 03315 - "Concrete for Utility Construction".
3. In unpaved areas, grade surface at uniform slope of 5 to 1 from manhole frame to natural grade. Provide minimum of 4 inches of topsoil conforming to requirements of Section 02911 - "Topsoil". Seed in accordance with Section 02921 - "Hydromulch Seeding", or sod disturbed areas in accordance with Section 02922 - "Sodding".

3.04 REPAIR/RESTORATION (NOT USED)

3.05 FIELD QUALITY CONTROL

Visually inspect manhole for leakage.

3.06 – 3.08 NOT USED

3.09 PROTECTION

Protect manholes from damage until subsequent Work has been accepted. Repair or replace damaged elements of manholes at no additional cost.

3.10 SCHEDULES (NOT USED)

END OF SECTION