

**Supplemental Specification  
2005 Standard Specification Book**

**SECTION 13552M**

**RAMP METER SIGNALS AND SIGNING**

**Delete Article 1.1 paragraph A and replace with the following:**

- A. Furnish and install conduit, junction boxes, signal heads, signing, mounting brackets, wire, grounding, and foundations. Install all state furnished items. Includes all materials, labor, workmanship, equipment, testing, documentation, and incidental items required to install and test a complete and operational Ramp Meter system as shown on the plans and details.

**Delete Article 1.3 and replace with the following:**

- A. AASHTO Standard Specifications for Highway Bridges
- B. AASHTO Standard Specifications for Highway Bridges: Division II - Construction, Section 5: Drilled Piles and Shafts
- C. AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals (current edition)
- D. American Iron and Steel Institute (AISI)
- E. American National Standards Institute (ANSI)
- F. Manual on Uniform Traffic Control Devices (MUTCD)
- G. National Electric Code (NEC)
- H. Underwriters Laboratories (UL)

**Delete Article 2.2 and replace with the following:**

**2.2 RAMP METER POLE MOUNT SIGNAL ASSEMBLY**

- A. 8-inch 1 section signal head with red LED Module for enforcement. No back plate required.
- B. For all signal heads: Refer to Section 02892. Louvered back plate required.
- C. Regulatory Sign: MUTCD R10-6; 24-inch x 36-inch.
- D. 24-inch x 18-inch 1 VEHICLE PER GREEN Sign: Refer to AT series Standard Drawings.
- E. All signal head housings: yellow with hoods.
- F. Signal Pole: Refer to Section 02892 and SL series Standard Drawings.
- G. Foundation Concrete: Class AA(AE) Concrete (Refer to Section 03055).
- H. Provide two “Z” bars on the back of the sign to support against thrown snow. Refer to SL Series Standard Drawings.

**Delete Article 2.3 and replace with the following:**

**2.3 RAMP METER MAST ARM SIGNAL ASSEMBLY**

- A. For 12-inch signal heads: Refer to Section 02892. Louvered back plate required.
- B. 60-inch x 36-inch 1 VEHICLE PER GREEN EACH LANE Sign: Refer to AT series Standard Drawings.
- C. All signal head housings: yellow with hoods.
- D. Signal Pole: Refer to SL series Standard Drawings.
- E. Reinforcing Steel: Coated steel (Refer to Section 03211).
- F. Concrete: Class AA(AE) Concrete (Refer to Section 03055).

**Delete Article 2.4 and replace with the following:**

**2.4 ADVANCE FLASHING BEACON SIGN**

- A. Two 8-inch signal heads with yellow LED Module: Refer to Section 02892. No back plate required.
- B. Warning Sign: WS3-3, 36-inch x 36-inch. Refer to AT Series Standard Drawings.
- C. 30-inch x 24-inch black on yellow METERING WHEN FLASHING Sign: Refer to AT series Standard Drawings.
- D. All signal head housings: yellow with hoods.
- E. Signal Pole: Refer to Section 02892 and SL series Standard Drawings.
- F. Foundation Concrete: Class AA(AE) Concrete (Refer to Section 03055).
- G. Provide two “Z” bars on the back of the sign to support against snow plow activity. Refer to SL Series Standard Drawings.

**Delete Article 2.5 and replace with the following:**

**2.5 BOLTS AND NUTS**

- A. Follow Section 02892.

**Delete Article 2.6 and replace with the following:**

**2.6 WIRE**

- A. Provide one 7-conductor signal cable to each signal head. Follow section 02892 for signal cable specifications.

**Add the following to Article 2.8:**

- C. Use 240-volt 400 watt luminaries if 480-volt power service is not available.

**Delete Article 3.2 and replace with the following:**

**3.2 FOUNDATION**

- A. Conform to AASHTO's Standard Specifications for Highway Bridges for all material and workmanship.
- B. Prior to work, verify that the installation of the signal heads, mast arm, pole, and foundation in the location marked in the field has no conflict with existing utilities, underground and overhead. Comply with all utility and Blue Stakes requirements.
- C. See AT Series Standard Drawings for ramp meter signal assembly and advance flashing beacon assembly details and placement.
- D. Excavation: Refer to Section 13551.
- E. Construct caissons to conform to AASHTO Standard Specifications for Highway Bridges: Division II - Construction, Section 5: Drilled Piles and Shafts. Drill caissons into either native soil or compacted fill.
  - 1. If formwork is required during drilling, the forms may be withdrawn during concrete placement.
  - 2. Cast the top of the caisson against the formwork for appearance.
- F. Place concrete directly into the excavation. Use minimum forming.
- G. Do not weld reinforcing steel, conduit, or anchor bolts; tie reinforcing steel and conduit securely in place.
- H. Install Reinforcing Steel according to Section 03211.
- I. Use Class AA(AE) for all cast-in-place concrete. Cap all conduits before placing concrete.
- J. Install weep hole in foundation per SL series Standard drawings.