



Iowa Department of Transportation

DEVELOPMENTAL SPECIFICATIONS FOR PRECAST NOISE WALL

Effective Date
July 16, 2013

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE DEVELOPMENTAL SPECIFICATIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

12044.01 DESCRIPTION.

- A. Construct and install precast noise wall units according to this specification and the contract documents.
- B. Noise walls are precast concrete panels held in place by columns placed on concrete drilled shafts used to reduce noise pollution.

12044.02 MATERIALS.

A. Concrete Drilled Shafts.

- 1. **Slurry.**
Comply with Article 2433.02, A, of the Standard Specifications.
- 2. **Concrete.**
Comply with Article 2433.02, B, of the Standard Specifications.
- 3. **Reinforcing Steel.**
Shall be epoxy coated and comply with Section 4151 of the Standard Specifications.

B. Precast Noise Wall Panels and Columns.

Construct according to Materials I.M. 445.06. Manufacturer must be approved per Materials I.M. 445.06, Appendix A.

C. Neoprene Bearing Pads and Shims.

Neoprene for bearing pads shall be sized as shown in the contract documents and shall have a hardness of 70 durometer. Shims shall provide contact area equal to the neoprene bearing pad. Shims shall have a compressive strength of 5075 psi (35 MPa) or greater and shall not rust or rot. Shim material shall be approved by the Engineer.

12044.03 CONSTRUCTION.

A. Concrete Drilled Shafts.

1. Construction Tolerances.

Comply with Article 2433.03, A, of the Standard Specifications, with the following exceptions:

- a. Set reinforcing steel as detailed in the contract documents.
- b. The top elevation of the shaft may have a tolerance of plus 1 inch (25 mm) or minus 2 inches (50 mm) from the plan top of shaft elevation. Ensure sufficient reinforcement bar splice length for splices above the shaft.

2. Control and Disposal of Materials.

Comply with Article 2433.03, C, of the Standard Specifications.

3. Shaft Excavation.

Comply with Article 2433.03, D, of the Standard Specifications with the following exceptions:

- a. A drilling log will not be required.
- b. Shaft construction need not immediately follow shaft excavation.

4. Final Cleaning.

- a. Comply with Articles 2433.03, F, 1; 2; and 3, of the Standard Specifications.
- b. For slurry shafts, the Engineer will check the cleanliness of the bottom of the shaft with a weighted tape.

5. Excavation Inspection.

Comply with Article 2433.03, G, of the Standard Specifications.

6. Reinforcing Steel Cage Construction and Placement.

Comply with Article 2433.03, H, of the Standard Specifications.

7. Concrete Placement.

Comply with Article 2433.03, I, of the Standard Specifications except that rock sockets shall not apply.

B. Precast Noise Wall.

1. Concrete Columns.

Place concrete columns as follows:

- a. Set plum, unless otherwise shown in the contract documents.
- b. Set and secured in place to the dimensions shown in the contract documents, prior to concrete placement, unless temporary casing is used.
- c. Final vertical and horizontal position of the concrete columns shall be within a 1/2 inch (13 mm) of that shown in the contract documents.
- d. The wall panel seat area shall be level and within 1/4 inch (6 mm) of the elevation shown in the contract documents.
- e. If temporary casing is used, concrete columns can be pushed into plastic shaft concrete a maximum of 5 feet (1.5 m). Confirm correct location of reinforcing steel cage after removal of temporary casing and before setting the concrete column in the plastic shaft concrete. Vibrate around embedded concrete columns to consolidate the plastic concrete without causing segregation.

2. Wall Panels.

Place wall panels on neoprene bearing pads between concrete columns as shown in the contract documents. Do not trim precast wall panels for fit.

12044.04 METHOD OF MEASUREMENT.

Quantity of Precast Noise Wall will be the quantity, in square feet (square meters), shown in the contract documents.

12044.05 BASIS OF PAYMENT.

- A. For the number of square feet (square meters) of Precast Noise Wall shown in the contract documents, Contractor will be paid the contract unit price per square foot (square meter). This payment is full compensation for furnishing and erecting precast noise wall, including panels, columns, and concrete drilled shafts according to the contract documents.
- B. Any additional length of drilled shaft required by Engineer due to unsuitable conditions at proposed shaft tip elevations will be paid according to Article 1109.03, B.