

Specifications for Faddis Shore-Wall Series Concrete Retaining Wall/Noise Barrier

August 1, 2000

Rev. 20071111

Part 1 - General

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes: Pre-approved precast concrete retaining wall which can be extended to provide an integral noise barrier system. The wall systems consists of concrete panels made with a dry-cast concrete manufacturing methodology, and concrete posts from the same manufacturer. Steel posts are an optional design feature in lieu of concrete posts.
- B. Related Sections include: Foundation design for ground mounted barrier.

1.3 SUBMITTALS

- A. General: Submit listed submittal in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Design: Retaining wall and noise barrier design shall be in accordance with manufacturer's standards.
- C. Product Data: Submit product data including shop drawings for specified products.
- D. Samples: Submit samples of concrete material exhibiting color and texture of material
- E. Quality Assurance Submittals: Submit the following:
 - a. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties including compressive strength test results.
 - b. Manufacturer's instructions: Manufacturers installation instructions.
- F. Closeout Submittals: Submit the following:
 - a. Anti-graffiti procedures.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Installer experienced in the construction of retaining walls, noise barriers, and the handling of precast concrete products.

1.5 DELIVERY AND HANDLING

- A. General: Comply with manufacturer's instructions and requirements.
- B. Ordering: Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction and shipment delays.
- C. Dunnage, Shipping, Handling, and Unloading: Installer must prepare suitable access for products shipped on flatbed trucks. Installer must prepare to off-load posts and panels safely to store on-site prior to installation into the wall. Posts and panels to be stored in a manner that will not result in staining of surfaces with mud or other materials.
- D. Delivery: Installer to inspect materials prior to off-loading, note damage on shipping bill of lading and inform the supplier of any damage resulting from shipment, prior to the departure of the delivery truck.

1.6 WARRANTY

- A. Project Warranty: Provide warranty to the project owner.
 - a. Warranty Period: One year from date of delivery.

PART 2 – PRODUCTS

2.1 PRECAST CONCRETE NOISE BARRIER

- A. Manufacturer: The pre-approved system shall be Shore-Wall Series Retaining Wall/Noise Barrier as manufactured by Faddis Concrete Products.
 - a. Contact: The pre-approved system shall be Stonewall as manufactured by Faddis Concrete Products, 3515 Kings Highway, Downingtown, PA 19335, Telephone: (610) 269-4685; Fax: (610) 873-8431; Contact Bob Hess or Gary Figallo (210) 888-1553.
- B. Noise barrier posts and panels:
 - a. Material Standard:
 - i. Aggregates: ASTM C33 – Standard Specification for Concrete Aggregates
 - ii. Portland Cement: ASTM C150 - Standard Specification for Portland Cement
 - iii. Reinforcing Steel: ASTM A-185 or ASTM A-497

2.2 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted

2.3 MANUFACTURED PRECAST CONCRETE POSTS AND PANELS

A. Precast Concrete Posts

- a. Composition: 4000 psi minimum concrete
- b. Foundation connection: Post shall be embedded into or bolted onto concrete foundation to provide a structural connection.
- c. Size: Standard sizes constructed from manufacturer's standard product components.
- d. Finish: Smooth form finish on three sides, one side hand finish of concrete post. The post concrete shall contain an integral pigment selected from the manufacturer's standard colors. Concrete shall contain chemical additives that prevent the formation of efflorescence on post surfaces.

B. Precast Concrete Noise Barrier panels

- a. Composition: 4000 psi minimum dry-cast concrete surface facing both sides, reinforced with welded wire fabric.
- b. Size:
 - i. Hessian - retaining wall panel standards 8" x 94" x 4 1/4" thick (nominal);
 - ii. Stone Wall Series panel standards – retaining wall panel 48" x 94" x 6"; Stone wall Series Noise barrier panels 48" x 190" x 5"
OR AS REQUIRED BY DESIGN
- c. Finish: Smooth finish concrete or textured surface achieved through the use of formliners or impressed patterns facing one or the other side of the noise barrier. Concrete shall contain chemical additives that prevent the formation of efflorescence on panel surfaces.

2.4 SOURCE QUALITY

- A. Source Quality: Obtain precast concrete products from a single manufacturer

B. Fabrication tolerances:

- a. Posts and panels: No unit will differ more than 1/8" from shop drawing dimensions with respect to width or thickness. Length of units may vary up to 1/8" from shop drawing dimensions.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's recommendations for installation.

3.2 - EXAMINATION

- A. Site Verification of Conditions: Verify geotechnical conditions, underground and overhead utilities or obstructions and ground elevations along wall alignment to confirm acceptability for installation of wall prior to preparation of shop drawings.
- B. Product Acceptance: Prior to installation, inspect delivered product for any defects. Installation of any defective products shall not be the responsibility of the manufacturer.

3.3 PREPARATION

- A. Site preparation: Install post foundations to the lines and grades shown on approved shop drawings. Slope ground to drain away from wall, or under wall where indicated. Use spacer bar to accurately gauge post to post distance.

3.4 INSTALLATION

- A. Post Installation: Lift posts with installer provided rigging and lifting devices in a safe manner. Set posts plumb and at locations as required by shop drawings.
- B. Post Installation Tolerances: Post shall be located within 1/2" of station location, and within 1/4" of plumb for every ten feet of wall height. Distance between posts shall not be less than 1/2" greater than panel length, nor more than 1 1/2" greater than panel length.
- C. Panel Installation: Lift panel with installer provided rigging and lifting devices in a safe manner. Lower bottom beam between post flanges taking care not to damage beam faces. Set beam level across the top and centered between posts. Bottom panels are to be supported at both end bearing points on elastomeric pads as supplied by the noise barrier manufacturer.
- D. Panel installation Tolerances: Panels shall be level within 1/4" for the panel length.
- E. Backfill shall conform to gradations and moisture content and shall be placed in controlled lifts and compacted in accordance with notes on approved shop drawings. Compaction effort within three feet of panels shall be controlled so that damage to panels does not occur.
- F. Retained backfill shall be free-draining crushed stone, with drainage pipe located at base of panel, slope 2% or greater to drain.

3.5 CLEANING AND INSPECTION

- A. Cleaning: Remove dirt from wall with water. Remove debris from site and legally dispose.
- B. Panel Inspection: When panel installation is completed on any single barrier wall, post and panel appearance and alignment shall be inspected for acceptance. The surface of walls shall be viewed from a distance of not less than 100 feet for architectural acceptability.

PART 4 – MEASUREMENT AND PAYMENT

- A. Measurement for payment quantities shall be made from approved shop drawings.
- B. Measurement of Panels: The quantity to be paid for retaining wall portion of the Shore-Wall shall be the square feet of wall surface area supplied measured from end to end of wall multiplied by the height of the retaining wall panels. The quantity to be paid for noise barrier portion of the Shore-Wall wall shall be the square feet of wall surface area supplied measured from end to end of wall multiplied by the height of the noise barrier wall panels.

End of section