

Specifications for Faddis Hessian Series Concrete Noise Barrier

January 10, 2000  
Rev. 071111

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 noise barrier system consisting of deeply textured panels made with a dry-cast concrete manufacturing methodology, and wet-cast concrete posts from the same manufacturer.
- B. Related Sections include: Foundation design for ground mounted barrier and structure design for structure mounted barrier, drainage, anchor bolt design, and anti-graffiti coating where applicable.

1.3 SUBMITTALS

- A. General: Submit listed submittal in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Design: Barrier design shall be in accordance with the requirements of the AASHTO Guide Specification for the Structural Design of Sound Barriers.
- 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 noise barriers.

## 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 safely store on-site prior to installation into the wall. Posts to be stored in a manner that will not result in staining of surfaces with mud or other materials. Installer must prepare to install panels directly from trucks upon arrival of the truck at the project site. Dunnage used for panel delivery is to be removed from trucks and safely stored for return to the supplier upon request.
- 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.

## PART 2 – PRODUCTS

### 2.1 PRECAST CONCRETE NOISE BARRIER

- A. Manufacturer: The pre-approved system shall be Hessian Series 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. Baseplates – if used: ASTM A-36 steel plate hot-dip galvanized to the requirements of ASMT A-123
- c. Size: Standard size to the heights as required by noise barrier design drawings
- d. Finish: Smooth form finish on three sides of post, one side hand finished. 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 panel surfaces.

B. Precast Concrete Noise Barrier panels

- a. Composition: 4000 psi minimum dry-cast concrete textured surface facing both sides, reinforced with welded wire fabric.
- b. Transmission Loss: measured per ASTM E-90 and E-413, minimum STC 25.
- c. Size: Standard 8" x 142 1/4" x 4" thick (nominal)
- d. Finish: Vertical ribbed finish concrete facing both sides of barrier. The panel 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 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 1/4" from shop drawing dimensions with respect to width or thickness. Length of units may vary up to 3/8" 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 baseplate template to accurately place anchor bolts and a measured spacer bar to 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 panels between post flanges taking care not to damage panel faces. Use tag lines to control panel orientation while suspended. Set panels 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. Related Products Installation: Anti-Graffiti Coating

### 3.5 CLEANING AND INSPECTION

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- A. Cleaning: Remove dirt from wall with water. Remove debris from site and legally dispose. Return dunnage to manufacture as directed.
- 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. A written punchlist of any and all items in need of correction shall be prepared. Action items required of the noise barrier manufacturer forwarded for review and preparation of a schedule for completion.

### 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 noise barrier wall shall be the square feet of wall surface area supplied measured from end to end of wall multiplied by the height of the wall.
- C. Measurement of Posts: The quantity to be paid for noise barrier posts shall be the linear feet of post supplied measured from bottom of baseplate to top of post for each post.
- D. Separate measurement and payment shall be made for site preparation, excavation and backfill, caissons, anchor bolts, wall erection, coatings, anti-graffiti protection, separate copings, doors, traffic barrier, appurtenances, and accessories.

End of section