## NOTES

A. DESIGN SPECIFICATIONS:
1. AASHTO Standard Specifications for Highway Bridges (Current Edition),
2. AASHTO Guide Specifications for Structural Design of Sound Barriers (Current Edition)
3. Florida Department of Transportation's Plans Preparation Manual, Volume I (Current Edition).

B. DESIGN CRITERIA:
The Precast Sound Barriers are pre-designed and based on the criteria in the Plans Preparation Manual, Volume 1.

C. CONCRETE AND GROUT:
1. Concrete Class and Compressive Strength:
   a. Cast-in-Place Collars: Class IV (f'c = 5500 psi)
   b. Precast Panels, Collars and Post Caps: Class IV (f'c = 5500 psi)
   c. Posts: Class IV (f'c = 5500 psi)
2. Grout for Auger Cast Piling:
   a. Maximum Working Compressive Strength = 2200 psi
   b. Minimum 28 Day Strength = 5500 psi
3. Minimum Compressive Strength for Form Removal and Handling of Posts and Panels:
   a. 2,500 psi for horizontally cast post and panels.
   b. 2,000 psi for vertically cast panels or when tilt-up form tables are used for horizontally cast panels.

D. REINFORCING STEEL:
1. Reinforcing steel shall conform to ASTM A 615, Grade 60.
2. Welded wire fabric shall conform to ASTM A 185 (smooth wire) or ASTM A497 (deformed wire).
3. Concrete Cover of 2" shall be provided, unless otherwise noted.
4. In addition to the requirements of Specification Section 415, tie post and pile stirrups at the following locations as a minimum:
   a. Post Stirrups – Tie at all four corner bars and at every third interior bar intersection.
   b. Pile Stirrups – Tie to the main vertical reinforcing at alternate intersections for circular configurations and for rectangular configurations at the four corners and at every third interior bar intersection.

E. SURFACE FINISHES:
Provide a Class 5 Finish in accordance with Specification Section 400, unless otherwise shown on the Wall Control Drawings. See Index No. 5201 for texture finish options.

F. PILING:
Construct Auger Cast Piling in accordance with the Plans and Specification Section 455.

G. UTILITIES:
Field verify the locations of all overhead and underground utilities shown in the Wall Control Drawings.

H. NEOPRENE PADS AND RESILIENT PADS:
1. Neoprene Pads for Panel Bearing Points Between the Stacked Panels:
The Neoprene pads for the panel bearing points shall be Plain Pads, Grade 50 durometer hardness in accordance with Specifications Sections 932-2.1.
2. Neoprene Pads for Collar Bearing Points:
Neoprene Pads shall be Fiber Reinforced Pads, with a durometer hardness between Grade 50 and Grade 80, in accordance with Specification Section 932-2.1. Plain Pads may be substituted for Fiber Reinforced Pads when sufficient bearing area is available on the concrete collar, as follows:
   a. 10' post spacing: 4" x 4" x ½" Plain Pads, Grade 50 durometer hardness.
   b. 20' post spacing and < 18' wall height: 4" x 4" x ½" Plain Pads, Grade 50 durometer hardness.
   c. 20' post spacing and ≥ 18' wall height: 4" x 5" x ½" Plain Pads, Grade 50 durometer hardness.

J. CASTING TOLERANCES:
1. Overall Height & Width: +/- ¼"
2. Thickness: +/- ¼"
3. Plane of side mold: +/- 1/16"
4. Openings: +/- ½"
5. Out of Square: ⅛" per 6 ft., but not more than ⅜" total along any side
6. Warping: 1/16" per foot distance to nearest corner
7. Bowing: 1/240 panel dimension
8. Surface Smoothness for Type "A" (Smooth) Surface Texture Option: +/- 1/16" along a 10 ft. straightedge.

P. TEST WALL:
The Contractor shall construct a test wall at the beginning of the project consistent with Specification Section 534. The Contractor shall demonstrate that all casting and erection tolerances can be met in order to assure that the prefabricated elements fit together as intended.

K. SOUND BARRIER WALL NOTES:
1. Distance between piles shall be a maximum of 20 ft. from centerline to centerline. These Sound Barrier Wall Standard Indexes allow for 5 Pile/Post connection options based on either 10 or 20 ft. post spacing. The panel system depicted in Index Nos. 5202 through 5204 is based on a 20 ft. post spacing.
2. Walls greater than 12 ft. in height shall consist of 2 or 3 stacked panels (upper and lower), each less than 12 ft. in height. The height of the upper panel shall be a minimum 8 ft. or greater as necessary to any graphic relief (if applicable). The lower panel(s) shall be not less than 4 ft. in height. Walls equal to or less than 12 ft. in height shall consist of either a single panel or 2 stacked panels with an 8 ft. upper panel provided that any graphic relief (if applicable) will fit within the upper panel.
3. Horizontal panel joints shall be located outside of the graphic relief (if applicable). Horizontal panel joints shall be held at a constant elevation for a given wall, where possible.
4. Posts shall be "H" type cross-section with panels installed from above.
5. See Index No. 5205 for the five pile/post connection options. The Contractor may choose any of these options, unless specifically excluded in the Wall Control Drawings. The patents associated with Pile/Post Connection Option E, Index 5205 (Sheets 6 & 7 of 7), have an expiration date of August 10, 2010. Any use of Pile/Post Connection Option E on or before August 10, 2010 is subject to the rights of the patent holder (U.S. Patent Nos. 5,234,288 & 5,429,455) and all patent royalties or license fees shall be the sole responsibility of the user. To construct Pile/Post Connection Option E on or before the patent expiration date, contact:
   State Contracting and Engineering, Corp.
   3800 North 29th Street
   Hollywood, FL 33020
   Phone: (954) 923-4747
6. All posts shall be held plumb in auger cast piles with an installation template. The template shall be adjustable for horizontal placement, vertical placement and plumbness of posts. The template shall be such that the installation tolerances can be held. Template shall remain in place for a minimum of 12 hours after post installation.
7. The Contractor shall be responsible for meeting OSHA requirements. Any utility adjustments, charges for power stoppages, all realignments, special erection methods, etc. to meet these requirements shall be included in bid.
8. Structural Steel shall be in accordance with ASTM A 36.
9. Structural Steel – Pile/Post Connection Option D: Post assemblies shall be shop fabricated in accordance with Specification Section 460. Welding details and welding operations shall be in accordance with the current edition of ANSI/AWS D1.1 Welding Code. Field welding is not permitted.
10. Structural Steel with Concrete Casting – Pile/Post Connection Option C: Store steel posts in a location protected against environmental conditions. Prior to pouring the concrete around the structural post, post shall be free of loose rust, scale, dirt, paint, oil and foreign material.
11. Shimming of wall panels above the pile collar, beneath the bearing pads is permitted up to a maximum of 1½" height. Shims must be either stainless steel (Type 304 or 316) or engineered polymer (copolymer or multipolymer) plastic. Plastic shims must have a minimum compressive strength of 8,000 psi without any fractures. Stacking of shims is permitted as follows:
   a. For shimming height of 1" or less, provide up to 4 ~ ¼" shims;
   b. For shimming heights greater than 1", use a minimum ¾" thick single shim and up to 3 ~ ¼" shims.
Stacked shim plates must be bonded together with a compatible epoxy adhesive.

L. VECP OR CONTRACTOR REDESIGN:
1. In no case will VECP's or Contractor Redesigns be allowed to modify foundation designs, or post spacing.
2. Substitution of proprietary panels or systems not listed in the Wall Control Drawings will not be allowed.

M. QUALIFIED PRODUCTS LIST:
Manufacturers seeking approval of proprietary sound barrier panels, posts and foundations or systems for inclusion on the Qualified Products List as pre-approved suppliers must submit a QPL Product Evaluation Application along with design documentation, vendor drawings and other information as required in the Sound Barrier QPL Acceptance Criteria showing the proprietary product is designed to meet all specified requirements. Project specific Shop Drawings are required for sound barrier projects in accordance with Specification Section 534.

N. ALTERNATES
The Contractor shall construct the standard precast 20'-0" panel option depicted in the plans or shall construct one of the proprietary sound barrier panel or proprietary system options (panel and foundation) listed in the Wall Control Drawings.

O. FINISH COATING:
1. All wall areas not shown to receive an anti-graffiti coating shall be coated in accordance with Specification Section 400 of the Specifications with a Class 5 Applied Finish Coating. The color of the system shall be same as the anti-graffiti system or as directed by the Engineer.
2. Structural Steel Post Assembly Coating System – Pile/Post Connection Option D: The steel post assembly shall receive a shop applied three-coat system comprised of one coat of inorganic zinc primer and two coats of Type M coal tar-epoxy in accordance with Specifications Section 560. The limits of the coating system shall be the exposed surface area of the post assembly from the top of post to 2'-0" below Top of Collar (Elev. A). After the post assembly is installed, it shall be coated with an approved compatible Class 5 Applied Finish Coating in accordance with Specification Section 400 or an anti-graffiti coating. The color of the Class 5 Coating shall match the color of the panel unless otherwise noted in the plans. All components of coating system shall be on the Department's Qualified Products List. The material supplier shall certify compatibility of paint system.

REVISIONS

| DATE | BY | DESCRIPTION | DATE | BY | DESCRIPTION |
|---|---|---|---|---|---|
| 01/01/10 | CMH | Changed Note K. 4.<br>Added patent information to Note K. 5. | | | |
| 07/01/10 | CMH | Changed Note B and Note H.2. | | | |

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

2010 Interim Design Standard

# PRECAST SOUND BARRIERS - GENERAL NOTES

Interim Date 07/01/10

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Index No. 5200