534 SOUND BARRIERS.
(REV 6-27-03) (FA 8-6-03) (1-04)

SECTION 534 (Pages 603-607) is deleted and the following substituted:

SECTION 534
SOUND BARRIERS

534-1 Description.
Furnish and install sound barriers with either panels constructed in accordance with Structures Design Standard Index No.1501 or with pre-approved alternatives listed on the Department's Qualified Products List (QPL), unless the plans otherwise indicate limitations based on specific design or aesthetic criteria unique to the project.

534-2 Approved Proprietary Sound Barrier Panels.
Use only approved proprietary panels listed in the plans, that have been pre-determined by the Engineer to be in compliance with the project design and aesthetic criteria and are listed on the QPL.

Manufacturers seeking evaluation of products for inclusion on the QPL must submit an application in accordance with Section 6, independently certified test reports, and written certification that the product meets the requirements of this Section, Structures Design Standard Index No.1501 and the Sound Barrier Evaluation Criteria contained in the State Structures Design Office's Structures Manual, which may be viewed at the following URL:
www.dot.state.fl.us/structures/structuresmanual/Qualified_Products_List/QPL_Chapter_2_-_Sound_Barriers.htm .

534-3 Product Certification.
Provide written certification from the manufacturer of the panels that the product meets the requirements of this Section and is the same product listed on the QPL.

534-4 Post-Auger Cast Pile Connection
Construct Sound Barriers only in accordance with FDOT Sound Barrier Pile/Post Connection Options contained in the Contract Documents. The Department will not accept Value Engineering Change Proposals or Contractor Redesigns related to Sound Barriers, unless concepts have been reviewed by the State Structures Design Office. Due to pending patent litigation, the Department will not consider proposals utilizing precast posts with reinforcing bars extending into auger cast piles from other than State Contracting & Engineering Corp. and only as authorized by the Department's June 25, 2002 letter to State Contracting & Engineering Corp. (a copy of the 6/25/02 letter can be viewed on the State Structures Office website: www.dot.state.fl.us/structures/default.htm)

534-5 Shop Drawing Submittal.
Do not include shop drawings of the basic panel details, submit only the information requested. Submit shop drawings in accordance with Section 5, showing a plan and elevation of the sound walls with the following project specific information provided:

1. Begin and end wall stations with offsets
2. Horizontal and vertical alignments of the wall
3. Fire hose access hole locations
4. Drainage panel locations and type
5. Graphic details and graphic panel location

6. Panel locations
7. Post locations
8. Elevations of top of panel, bottom of panel, and panel joints
9. Existing and proposed ground elevations
10. Utility locations
11. Special post and panel details
12. Post and pile connection details
13. Lifting devices

534-6 Construction Methods.

A. Prior to beginning earthwork on the project, stake the wall location in the field, and establish the final groundline elevations at the barrier walls. Use these elevations to develop the shop plans, including a complete elevation view of each wall indicating top and bottom elevations as well as the roadway grade. Protect the final ground elevations established in the field for the duration of the project, and do not adjust without prior approval of the Engineer. Keep to a minimum the clearing and grubbing, and trimming of trees as necessary to construct the walls.

B. Do not mix wall types or colors at any one site. Install the walls in accordance with the plans, and in accordance with shop drawings submitted to and approved by the Engineer. Secure joints and connections in such a manner as to be structurally sound with no visible openings for sound transmission. Ensure metal walls do not produce a secondary source of noise transmission due to vibration.

C. Repair marred, chipped, scratched, or spalled areas of walls at no expense to the Department in accordance with the manufacturer's recommendations or at the Engineer's direction.

D. The Contractor may substitute welded for fixed bolt connections or vice versa on metal walls, where applicable, provided load calculations are submitted for the specific modified connection and uses a minimum safety factor of 3.0.

E. Place trench backfill for wall construction in accordance with 125-8. Use select materials for the trench backfill.

If, in the opinion of the Engineer, the trench is too narrow to compact, backfill the trench excavation with concrete grout to the satisfaction of the Engineer at no expense to the Department.

F. Dispose of all excess excavation in a manner satisfactory to the Engineer.

G. Keep right-of-way fence that is scheduled to be salvaged in place until completing the wall or, in the opinion of the Engineer, as long as possible.

H. Stain concrete walls the color shown in the plans.

I. After erecting the wall, leave the disturbed area in a finished condition at the direction of the Engineer, and grass or sod the area as indicated in the plans.

J. Erection Tolerances:

1. Variation from plumb: ± 1/4"[6mm]
2. Panel alignment: ± 1/4"[6mm]
3. Top of panel elevation: ± 3/4"[20mm]
4. Elevation difference of adjacent panels: ± 1/2"[13mm]
5. Joint taper over panel length: ± 1/2"[13mm]
6. Top of collar elevation: ± 3/4"[20mm]
7. Post alignment: ± 1"[25mm]
8. Post placement:
    a. Variation from specified location ± 1/2"[13mm]
    b. variation from specified elevation ± 1/4"[6mm]
9. Continuity of graphics, fracture fins, etc across joints: 1/4"[6mm]

K. When building sound barriers on top of earth berms, construct the berms of fill material compacted to 95% of the maximum density as determined by AASHTO T 99.

L. Provide the concrete wall (Precast or Cast-in-Place) with a uniform color, pattern, and texture.

534-7 Test Wall.

Erect a test wall section not less than 50 feet [15.0 m] in length before starting general wall construction at the project site. The Engineer will use the erection of the test wall to determine if the Contractor's methods and equipment are sufficient to produce a sound barrier that meets the requirements of the Contract Documents. The Contractor may revise his methods and equipment as necessary, at any time during the positioning of the test wall, in order to satisfactorily meet all Contract requirements. Build the test wall at a permanent wall location, as directed by the Engineer. If the test wall does not meet the construction tolerances, remove and dispose of it at no expense to the Department. Include the cost of the test wall in the cost of the sound barrier.

534-8 Method of Measurement.

The quantity to be paid for will be the plan quantity, in square feet [square meters], measured in place, completed and accepted, of the area bounded by the top of the top panel and the bottom of the bottom panel without deductions for openings in the panels, and the beginning to end limits shown in the control drawings. The pay area for anti-graffiti coating will be the plan quantity, in square feet [square meters], measured in place, completed and accepted, of the wall without allowances for striations or openings.

534-9 Basis of Payment.

Price and payment will be full compensation for all work specified in this Section, including but not limited to: furnishing all materials, labor, panels, special panels, posts, collars, reinforcing steel, foundations, drain holes, fire hose access holes, grating, neoprene pads, equipment, alignment pins, etc. necessary to construct the sound barriers. Include in this price, the cost of any charges for power stoppages, sound barrier wall realignments, special erection methods, etc. required to construct the wall.

Payment will be made under:

Item No.	534-72-	Sound Barrier . - per square foot.
Item No.	2534-72-	Sound Barrier. - per square meter.