

April 16, 2002

MEMORANDUM

TO: District Structures Design Engineers
(Gerard Moliere, Rod Nelson, John Golden, John Danielsen,
Neil Kenis, Kim Saing, Jose Rodriguez, Agnes Spielmann)
District Structures and Facilities Engineers
(Pepe Garcia, Bud Rosier, John Locke, Jorge Martos,
Ben McKinney, Frank Guyamier, Tom Reynolds)
District and Central Office Construction Engineers
(Dan Foss, Henry Haggerty, Steve Benak, Jennifer Olson,
Frank O'Dea, Mark Croft, Jim Moulton, Jr., Walt Lange,
And Anath Prasad)

FROM: William N. Nickas, State Structures Design Engineer

COPIES: Secretary Tom Barry, Assistant Secretary Ken Morefield, District Secretaries
(David Twiddy, Aage Schroder, Edward Prescott, Rick Chesser, Mike Snyder,
Jose Abreu, Ken Hartmann, Jim Ely) Freddie Simmons, Bill Albaugh, Bill
Domico, Jack Evans, Bob Nichols, Larry Sessions, Marcus Ansley, Doug
Edwards (FHWA), Greg Xanders, Sharon Holmes, Henry Bollmann, Steve
Plotkin, Tom Andres, Robert Robertson, Tony Mireles, Duane Brautigam

**SUBJECT: Temporary Design Bulletin C02-08
Effective April 16, 2002**

This bulletin supersedes Temporary Design Bulletin C02-03.

The FDOT has a court-ordered injunction prohibiting the use of certain details using auger cast piles in the construction of the FDOT Standard Noise Wall (Old Structures Standard and Old Semi- Standard Index Nos. 1530 – 1537). All Noise Wall Projects under construction or to be let before July 2002 will utilize the provisions in this Temporary Design Bulletin as a Technical Special Provision. Noise Wall projects to be let after July 2002 will utilize the new FDOT Standard Noise Wall (New Structures Standard and New Semi- Standard Index Nos. 1500 – 1508), which will be available for your use no later than April 24, 2002. After the June 2002 letting, Index numbers 1530 through 1537 shall not be utilized.

Please note this only concerns the details associated with Noise Walls constructed on auger cast piles. Noise Walls constructed on spread footings only require pay item changes for July 2002 and later.

As of February 15, 2002 all Noise Wall construction using auger cast piles will not utilize the old standard detail of installing the precast wall post rebar into a wet auger cast pile. In lieu therefore, the contractor will have 6 options to use to install the Noise Wall post; Options 1A, 1B, 2A, 2B, 3A, 3B. See "FDOT NOISE WALL PILE/POST CONNECTION OPTIONS" attached.

In addition to the Noise Wall Pile/Post Connection Options described above, the Noise Barrier Wall Specification Section 534 has been revised and the FDOT Standard Noise Wall (Structures Standard and Semi- Standard Index Nos. 1530 – 1537) have been revised, please see attachments.

Please keep in mind there will be revisions to the Basis of Estimates Handbook, Standard Specifications and new Structures Standard Indexes forthcoming.

If there are any questions please contact Michael Moilanen at 850-414-4279 or Suncom 994-4279.

MDM

Attachments:

FDOT Noise Wall Pile/Post Connection Options

- General Notes (Page 1 of 1)
- Option 1A (Page 1 & 2 of 2)
- Option 1B (Page 1 & 2 of 2)
- Option 2A (Page 1 & 2 of 2)
- Option 2B (Page 1,2 & 3 of 3)
- Option 3A (Page 1 & 2 of 2)
- Option 3B (Page 1 & 2 of 2)

Noise Barrier Wall Specification Section 534 (Rev. 2-20-02)(Pages 662-666)

New Revisions to FDOT Standard Noise Wall by this Reference Specification (Structures Standard and Semi- Standard Index Nos. 1530 – 1537)

FDOT NOISE WALL PILE/POST CONNECTION OPTIONS – GENERAL NOTES (Page 1 of 2)

Index No. S-1536, Delete Drawing 1 of 2 and replace with the following:

The Contractor is given six (6) options for providing the pile/post connection as detailed in the attached Appendix and labeled FDOT NOISE WALL PILE/POST CONNECTION – OPTIONS NOS. 1A (2 Sheets), 1B (2 Sheets), 2A (2 Sheets), 2B (3 Sheets), 3A (2 Sheets) AND 3B (2 Sheets).

Option 1A

Requires casting concrete around the reinforcement cage extending below the bottom of the post, prior to setting the post into the auger cast pile. The rectangular section shown on page 2 of 2 of Option No. 1A may be replaced with the post H-section shown in Section E-E. If used, contractor shall provide additional P1 bars, as required, in lieu of the P2 bars shown for the rectangular section.

Option 1B

Requires casting the concrete post an additional five (5) feet below the bottom of the post, using the modified section shown in Section F-F on page 2 of 2 of Option No. 1B. Reinforcement Bars A and B in the post shall be cut off five (5) feet below the bottom of post and disposed of by the contractor. The additional reinforcement, shown in the Augured Pile Reinforcement Detail shall be as follows:

Bars C shall be number 8 bars and shall extend from 6 inches above bottom of augured hole to 4 inches below top of collar. Bars P2 shall be number 4 bars, 7'-7" long and bent to a 1-0/2" radius.

Option 2A

Requires cutting reinforcement Bars A and B in the post 8/4" minimum below the bottom of post. The cut-offs of Bars A and B shall be used as Bars C to form a cage using the P2 tie bars. The bar cage shall be lowered into the auger cast pile and carefully positioned to allow for coupling Bars C with Bars A and B, at the base of the post, with mechanical couplers.

Option 2B

Requires cutting Reinforcement Bars A and B, in the post 1'-2" minimum below the bottom of post. The cut-offs of Bars A and B may be used as Bars C to form a cage using the P2 tie bars. Additional reinforcement Bars P2 shall be provided as shown in Augured Pile Reinforcement Detail on Page 2 of 2 of Option 2B, shown in the attached Appendix. Bars P2 shall be number 4 bars, 6'-1" long and bent to a 9/2" radius. If the pile cage is made from Bars A and B cut-offs, then the pile cage shall be raised to 1'-2" minimum above Elevation B. Otherwise Bars C shall be provided to lengths shown and shall be the same bar size as Bars A and B.

The top of all Bars C and the bottom of all Bars A and B shall be threaded and a mechanical anchor terminator installed in accordance with the manufacturer recommendation. The mechanical anchor terminator shall be submitted for approval.

Index No. S-1535 – "Concrete and Grout Quantity Summary" (Posts) Increase all post lengths by 4'-3/2" for Option 1B; decrease all post lengths by 4/2" for Options 2A and 2B. Options are shown in the Appendix under FDOT Noise Wall Pile/Post Connection.

Index No. S-1536, Drawing 2 of 2, "Pile/Post Reinforcing" (pile/post) the length of Bars A and B and/or the number of Bars P1 or P2 shall be changed in accordance with the details shown for Options 1A, 1B, 2A, or 2B as selected by the Contractor. (Reinforcing Steel Summary), (Posts/Piles) weight (each) and total shall be changed in accordance with the changes made to the bar lengths and/or number of bars referenced above.

FDOT NOISE WALL PILE/POST CONNECTION OPTIONS – GENERAL NOTES (Page 2 of 2)

Option 3A

Replaces precast concrete post with structural steel post assembly. Deletes auger cast pile reinforcement except that two-P2 Bars shall be added at the top of the auger cast pile. The P2 bars shall be number 4 bars, 6'-1" long and bent to a 9½" radius.

The post assembly shall be shop fabricated and coated in the shop with a three-coat system comprised of one coat of an approved self-curing Inorganic zinc primer as described in Section 561 followed by two coats of coal tar epoxy. 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 Elevation "A". After the post assembly is installed, it shall be coated with an approved compatible Class 5 Applied Finish Coating or anti-graffiti coating in accordance with the plans and specification.

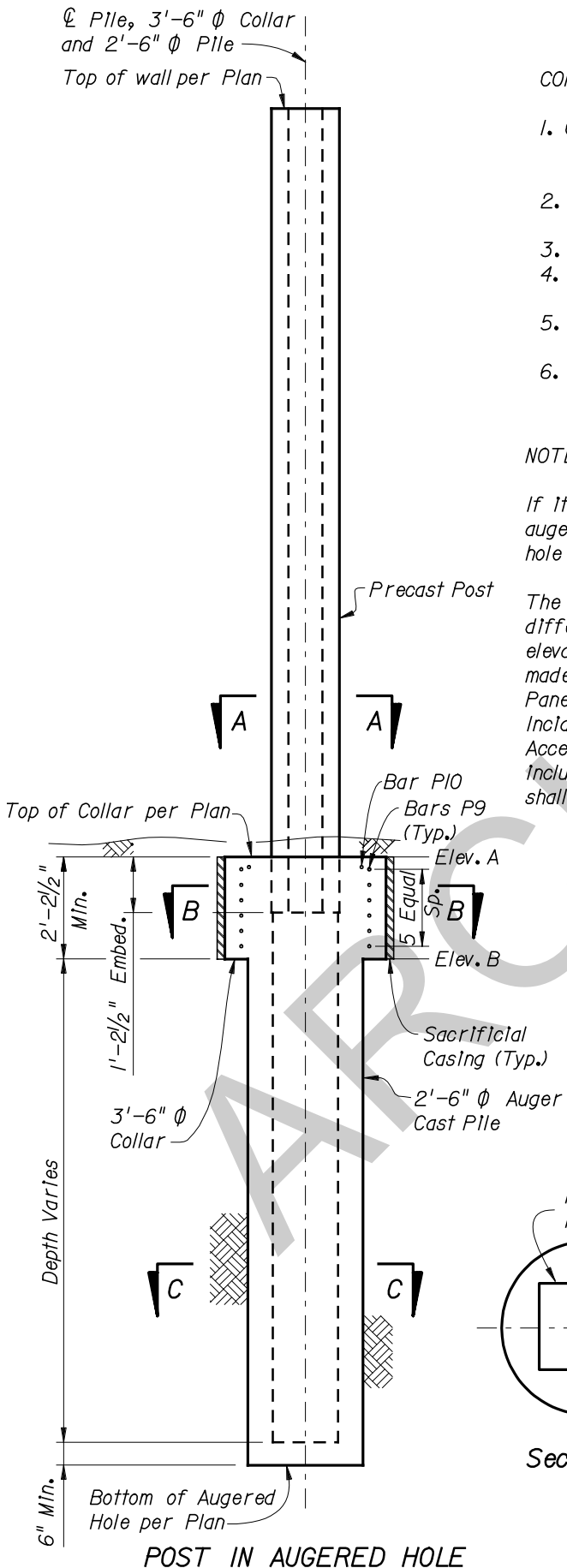
The length of the 19'-2" Panel is increased to 19'-10".

Option 3B

Replaces precast concrete post with structural steel post covered with concrete for durability and aesthetic reasons and to make connections to the panels. Deletes auger cast pile reinforcement. The 5" dia. holes are drilled into the steel post web to facilitate pouring concrete around structural member.

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FDOT NOISE WALL PILE/POST CONNECTION - OPTION NO. 1A (Page 1 of 2)



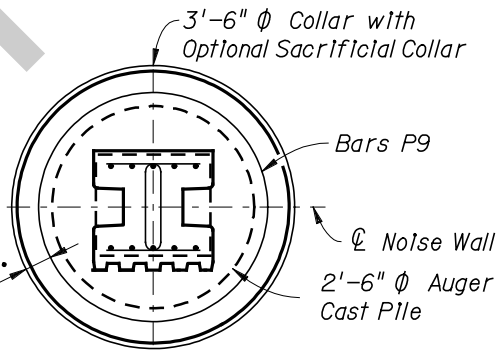
CONSTRUCTION SEQUENCE

1. Cast the concrete H Post and a 1'-5" x 1'-3" rectangular pile around the rebar below the H Post section using 1" of cover. See post detail on Page 2 of 2.
2. Temporarily excavate to Elev. B in the vicinity of the post. Drill and cast a 2'-6" φ auger cast pile. Fill the augered hole to Elev. B.
3. Place the sacrificial casing or collar form and collar reinforcement.
4. Construct a template to support and properly align the pile in the correct location in the 2'-6" φ hole.
5. Plunge the pile into the 2'-6" φ hole. The bottom of the H Post section (see section A-A) shall be 1'-2 1/2" below Elev. A (Top of Collar).
6. Finish the concrete to Elev. A (Top of Collar).

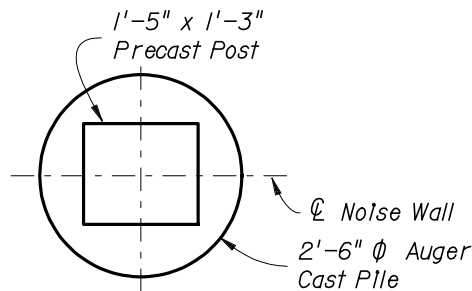
NOTES

If it is anticipated that the pile will be difficult to place into the wet concrete auger cast pile hole, at the contractor's expense, the contractor may drill the hole deeper to reduce the pressure at the pile tip.

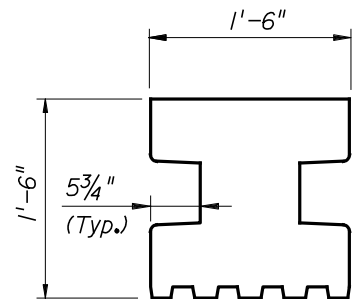
The final pay area shall be plan quantity based on the wall length and the difference between the top of top panel and the bottom of bottom panel elevations, without deductions for openings in panels. Payment shall be made on all quantities complete in place and accepted. Quantities include; Panels, Posts, Collars, and Foundations other than Auger Cast Piles. Incidental items including Neoprene Pads, Grating, Drain Holes, Fire Hose Access Holes, etc. and Class 5 Applied Finish Coating. Payment shall be included in Pay Item No. 534-72-2. Payment for the Auger Cast Pile shall be included in Pay Item No. 455-112-4.



Section B-B



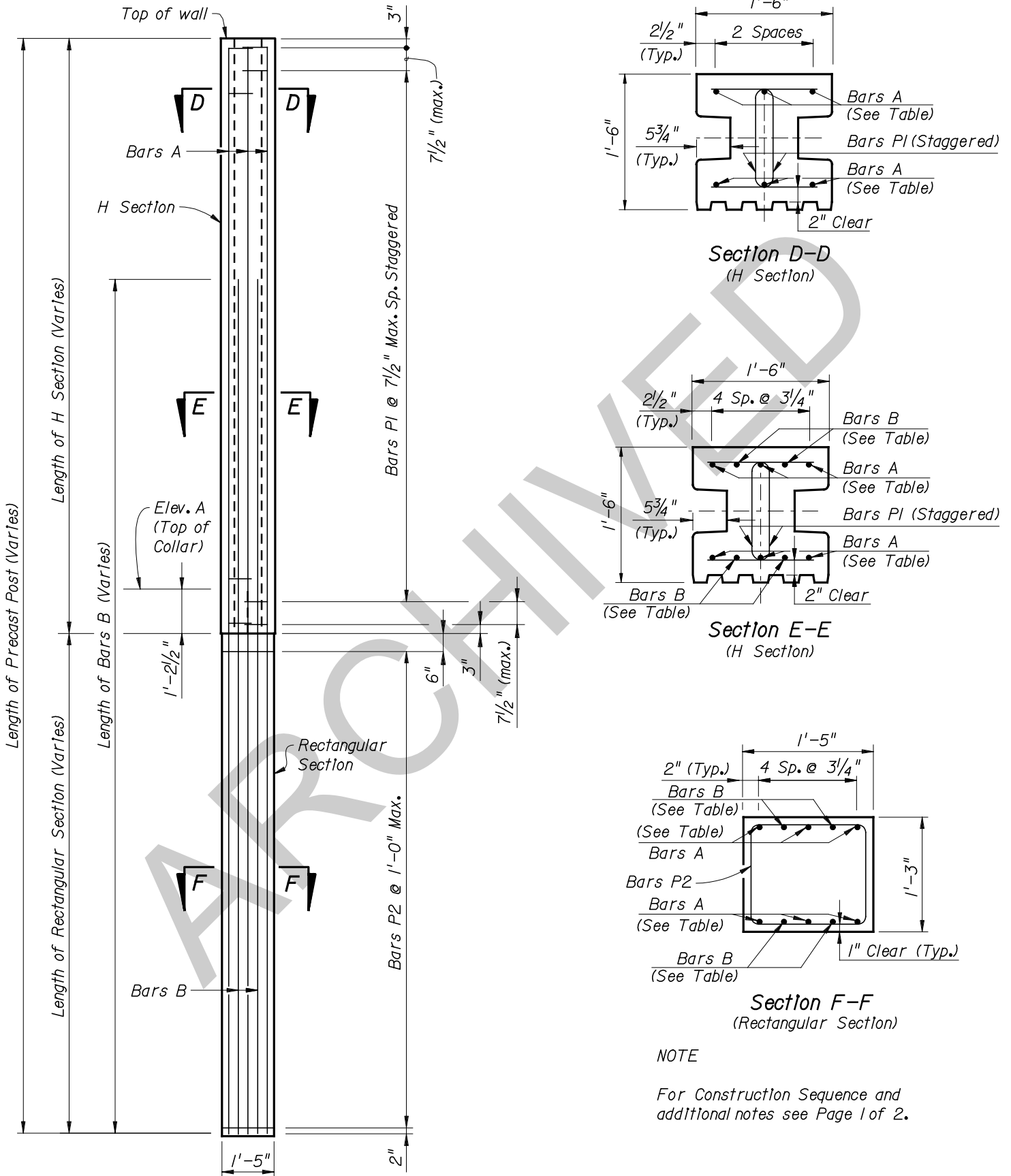
Section C-C



Section A-A

POST IN AUGERED HOLE

FDOT NOISE WALL PILE/POST CONNECTION - OPTION NO. 1A (Page 2 of 2)



POST DETAIL
(Prior to placement in augered hole)

NOTE

For Construction Sequence and additional notes see Page 1 of 2.

FDOT NOISE WALL PILE/POST CONNECTION - OPTION NO. 1B (Page 1 of 2)

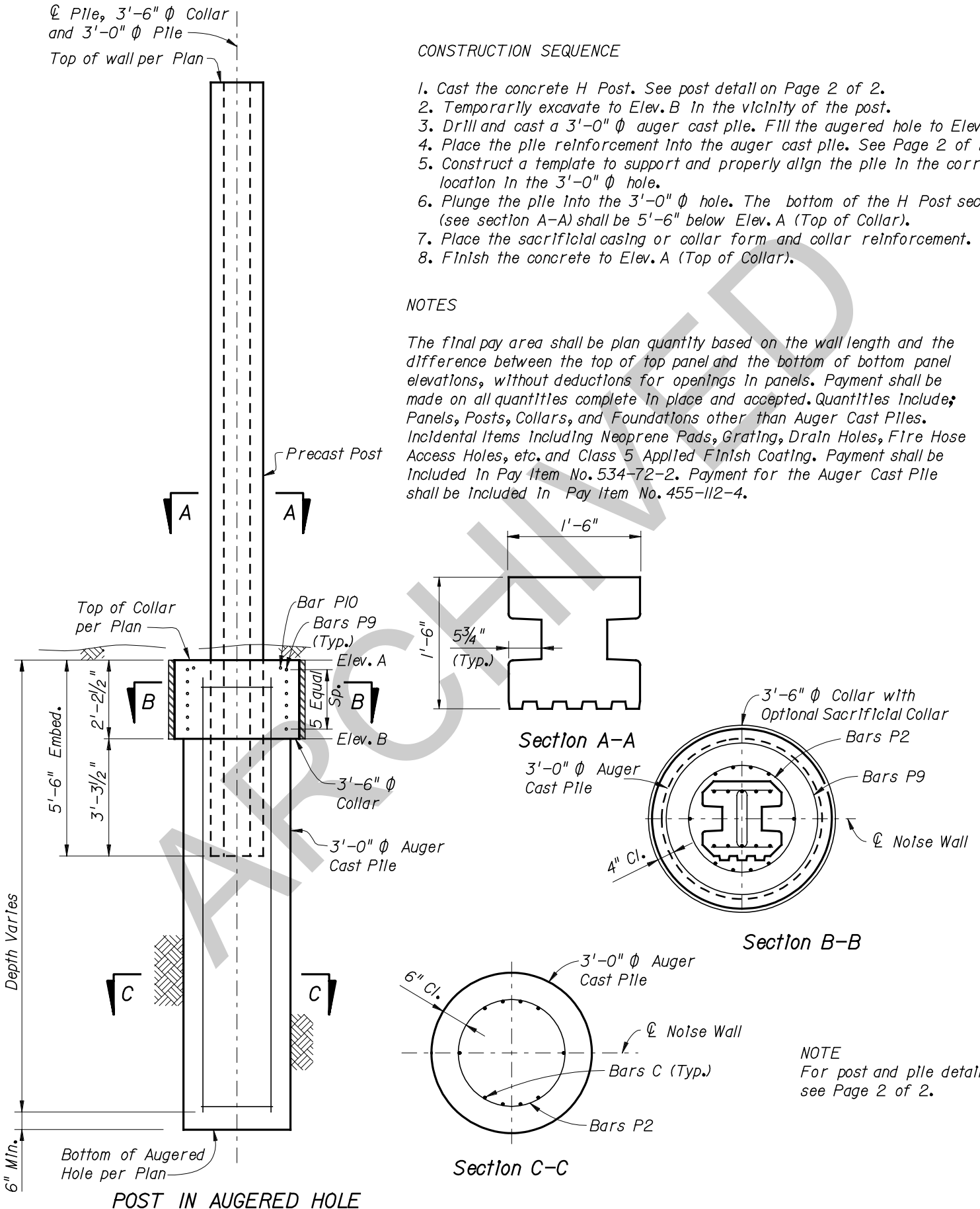
☉ Pile, 3'-6" ϕ Collar
and 3'-0" ϕ Pile
Top of wall per Plan

CONSTRUCTION SEQUENCE

1. Cast the concrete H Post. See post detail on Page 2 of 2.
2. Temporarily excavate to Elev. B in the vicinity of the post.
3. Drill and cast a 3'-0" ϕ auger cast pile. Fill the augered hole to Elev. B.
4. Place the pile reinforcement into the auger cast pile. See Page 2 of 2.
5. Construct a template to support and properly align the pile in the correct location in the 3'-0" ϕ hole.
6. Plunge the pile into the 3'-0" ϕ hole. The bottom of the H Post section (see section A-A) shall be 5'-6" below Elev. A (Top of Collar).
7. Place the sacrificial casing or collar form and collar reinforcement.
8. Finish the concrete to Elev. A (Top of Collar).

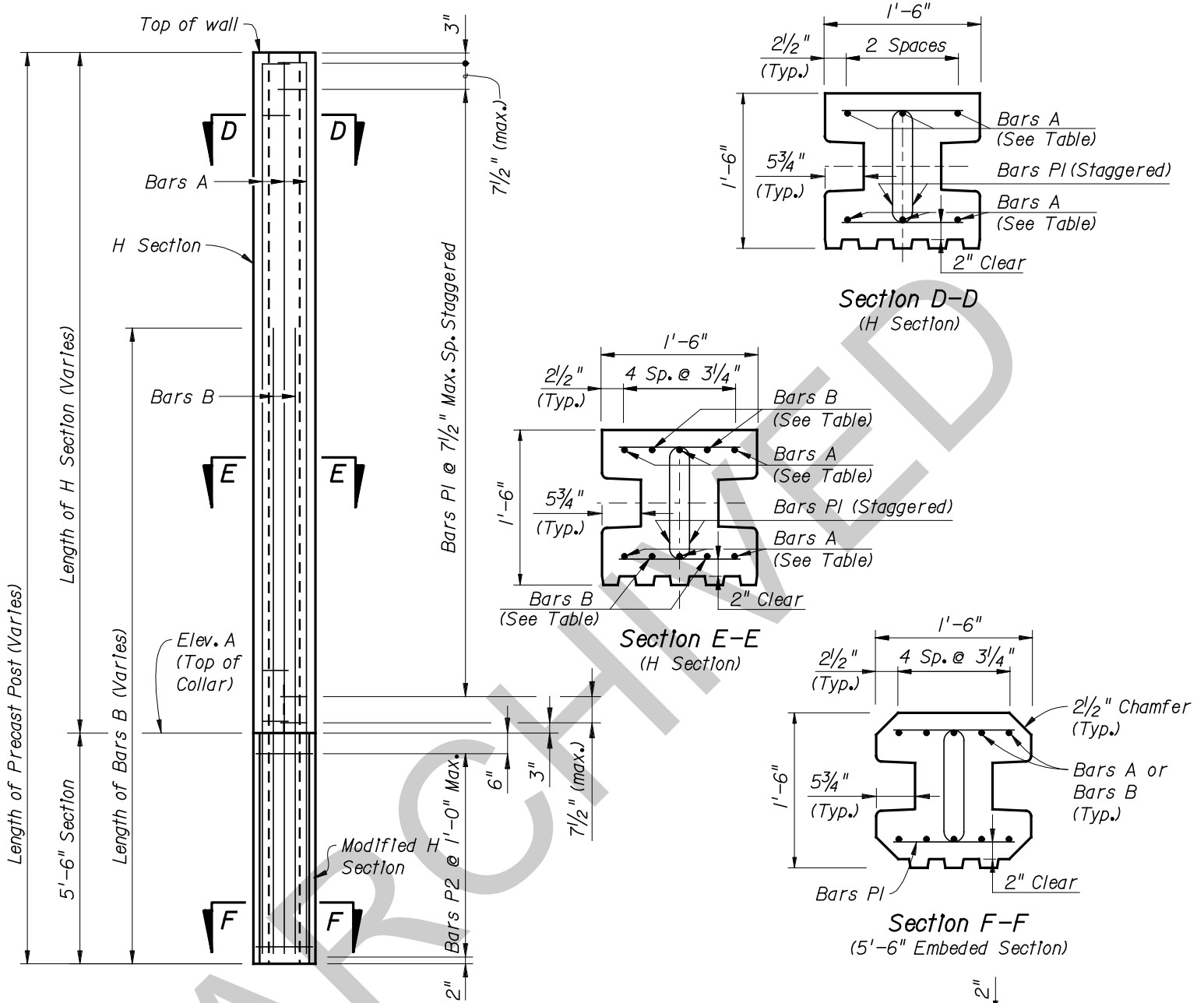
NOTES

The final pay area shall be plan quantity based on the wall length and the difference between the top of top panel and the bottom of bottom panel elevations, without deductions for openings in panels. Payment shall be made on all quantities complete in place and accepted. Quantities include; Panels, Posts, Collars, and Foundations other than Auger Cast Piles. Incidental items including Neoprene Pads, Grating, Drain Holes, Fire Hose Access Holes, etc. and Class 5 Applied Finish Coating. Payment shall be included in Pay Item No. 534-72-2. Payment for the Auger Cast Pile shall be included in Pay Item No. 455-112-4.

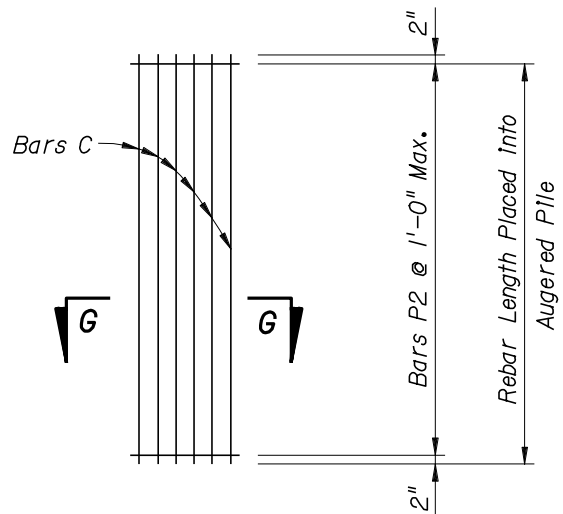
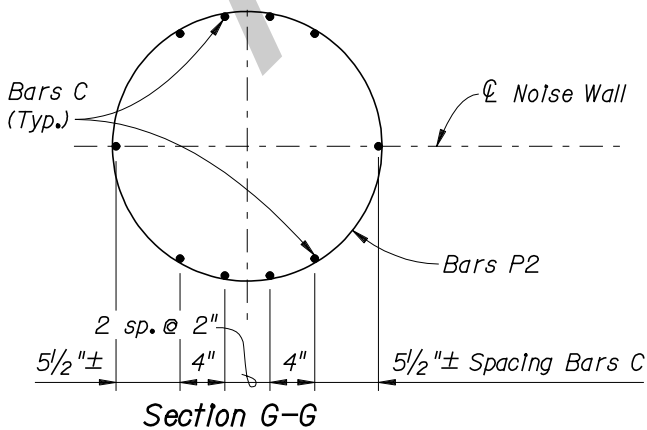


NOTE
For post and pile details see Page 2 of 2.

FDOT NOISE WALL PILE/POST CONNECTION - OPTION NO. 1B (Page 2 of 2)

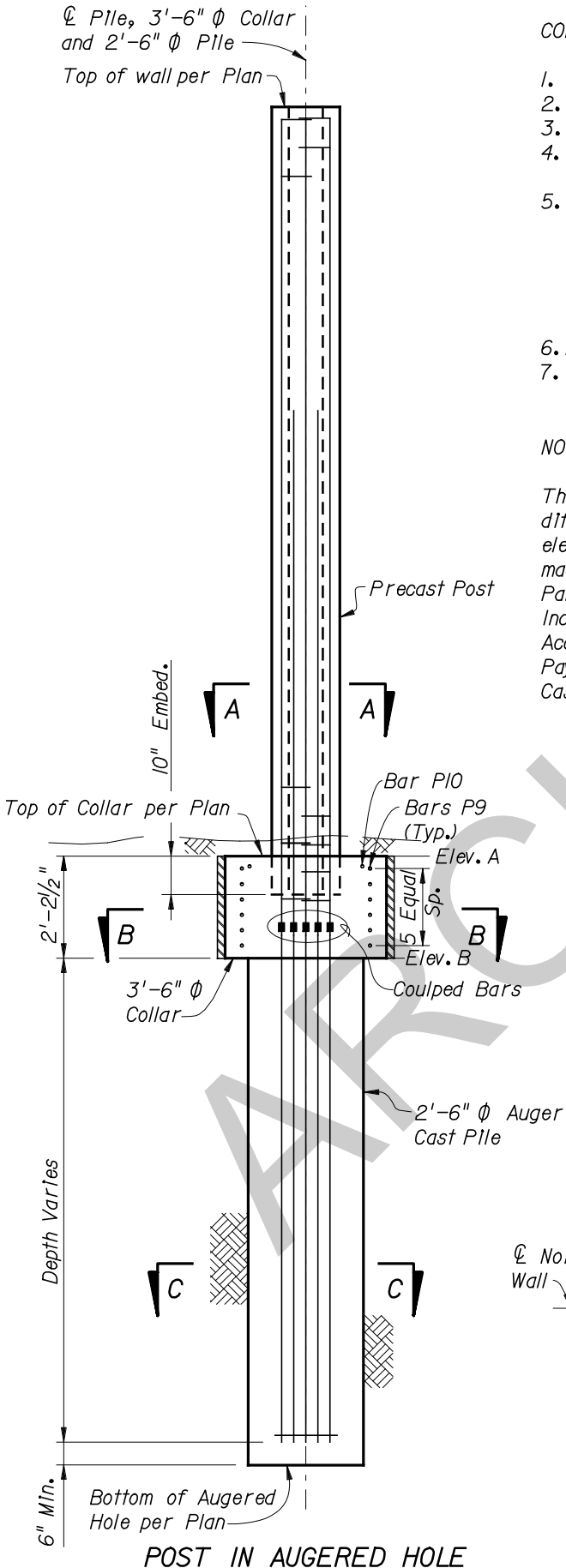


POST DETAIL
(Prior to placement in augered hole)



AUGERED PILE REINFORCEMENT DETAIL

FDOT NOISE WALL PILE/POST CONNECTION - OPTION NO. 2A (Page 1 of 2)



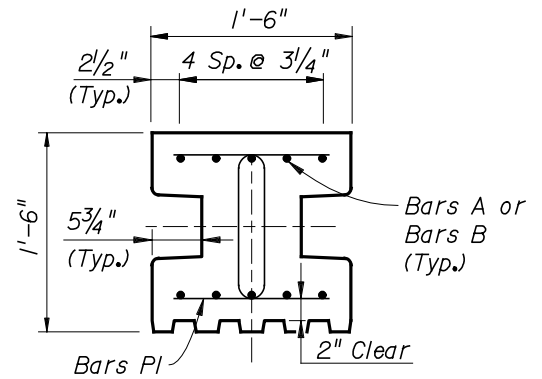
POST IN AUGERED HOLE

CONSTRUCTION SEQUENCE

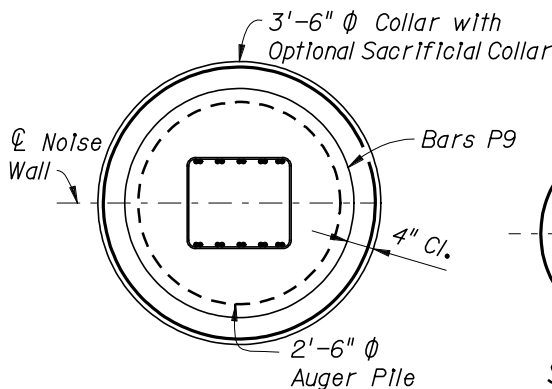
1. Cast the concrete H Post. See post detail on Page 2 of 2.
2. Temporarily excavate to Elev. B in the vicinity of the post.
3. Drill and cast a 2'-6" ϕ auger pile to Elev. B.
4. Place the rebar into the 2'-6" ϕ augered pile hole. See augered pile reinforcement Page 2 of 2.
5. Construct a template to properly align the precast post over the augered pile. Using mechanical couplers splice the precast post rebar with the rebar in the augered pile. The Contractor shall splice bars prior to placing pile reinforcement. Attachment and alignment may be made prior initial set of pile grout. The bottom of the H Post section (see section A-A) shall be 10" below Elev. A (Top of Collar).
6. Place the sacrificial casing or collar form and collar reinforcement.
7. Construct a 3'-6" ϕ collar to cover the mechanical splice. Cast the concrete collar and finish the concrete to Elev. A (Top of Collar).

NOTES

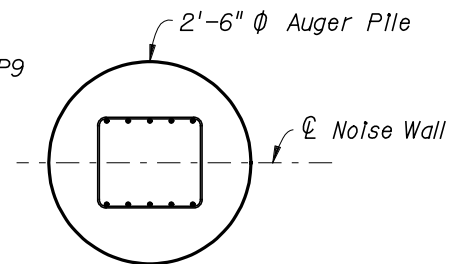
The final pay area shall be plan quantity based on the wall length and the difference between the top of top panel and the bottom of bottom panel elevations, without deductions for openings in panels. Payment shall be made on all quantities complete in place and accepted. Quantities include; Panels, Posts, Collars, and Foundations other than Auger Cast Piles. Incidental Items including Neoprene Pads, Grating, Drain Holes, Fire Hose Access Holes, Mechanical Couplers, etc. and Class 5 Applied Finish Coating. Payment shall be included in Pay Item No. 534-72-2. Payment for the Auger Cast Pile shall be included in Pay Item No. 455-112-4.



**Section A-A
(H Section)**

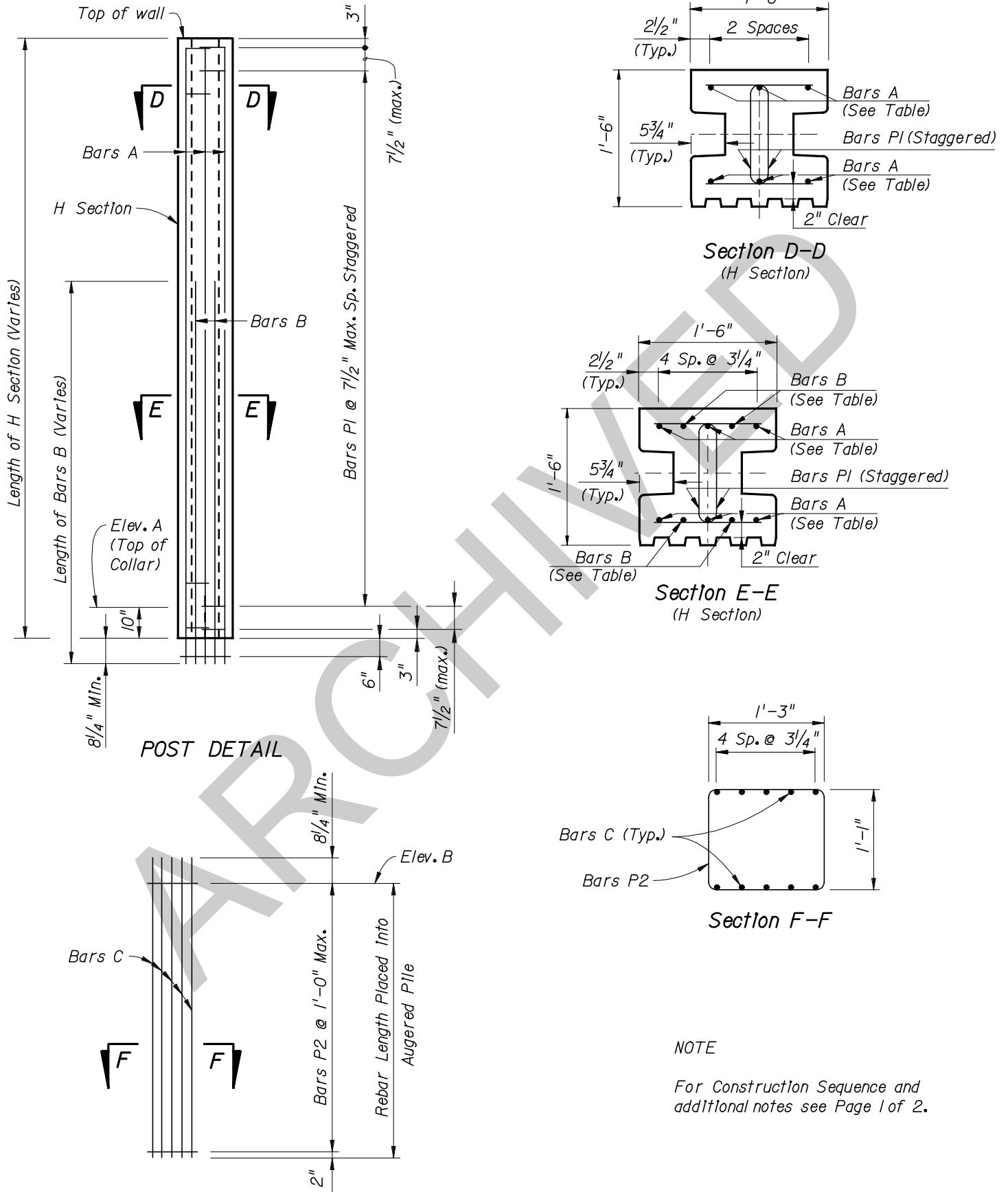


Section B-B



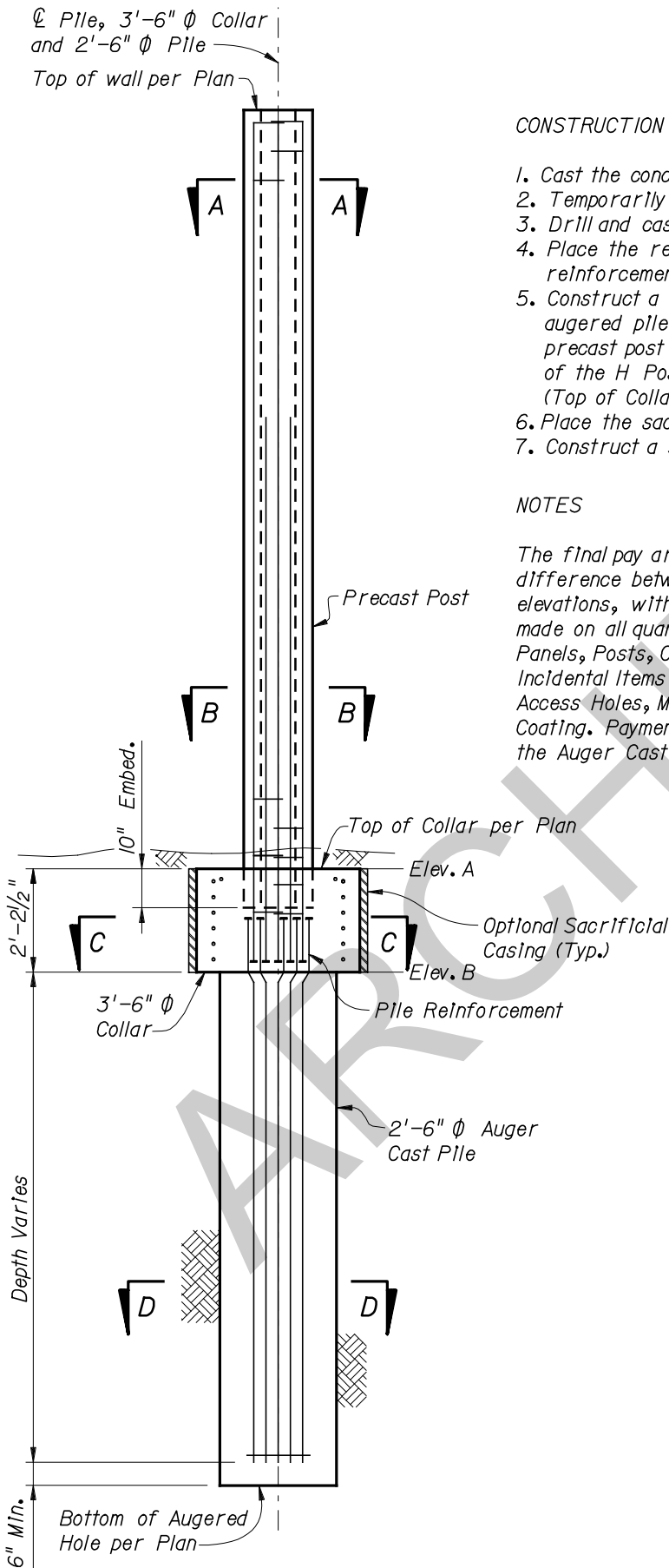
Section C-C

FDOT NOISE WALL PILE/POST CONNECTION - OPTION NO. 2A (Page 2 of 2)



AUGERED PILE REINFORCEMENT DETAIL

FDOT NOISE WALL PILE/POST CONNECTION - OPTION NO. 2B (Page 1 of 3)



CONSTRUCTION SEQUENCE

1. Cast the concrete H Post. See post detail on Page 2 of 2.
2. Temporarily excavate to Elev. B in the vicinity of the post.
3. Drill and cast a 2'-6" ϕ auger pile to Elev. B.
4. Place the rebar into the 2'-6" ϕ augered pile hole. See augered pile reinforcement Page 2 of 2.
5. Construct a template to properly align the precast post over the augered pile. Using mechanical anchor terminators connect the precast post rebar with the rebar in the augered pile. The bottom of the H Post section (see section A-A) shall be 10" below Elev. A (Top of Collar).
6. Place the sacrificial casing or collar form and collar reinforcement.
7. Construct a 3'-6" ϕ collar. Finish the concrete to Elev. A (Top of Collar).

NOTES

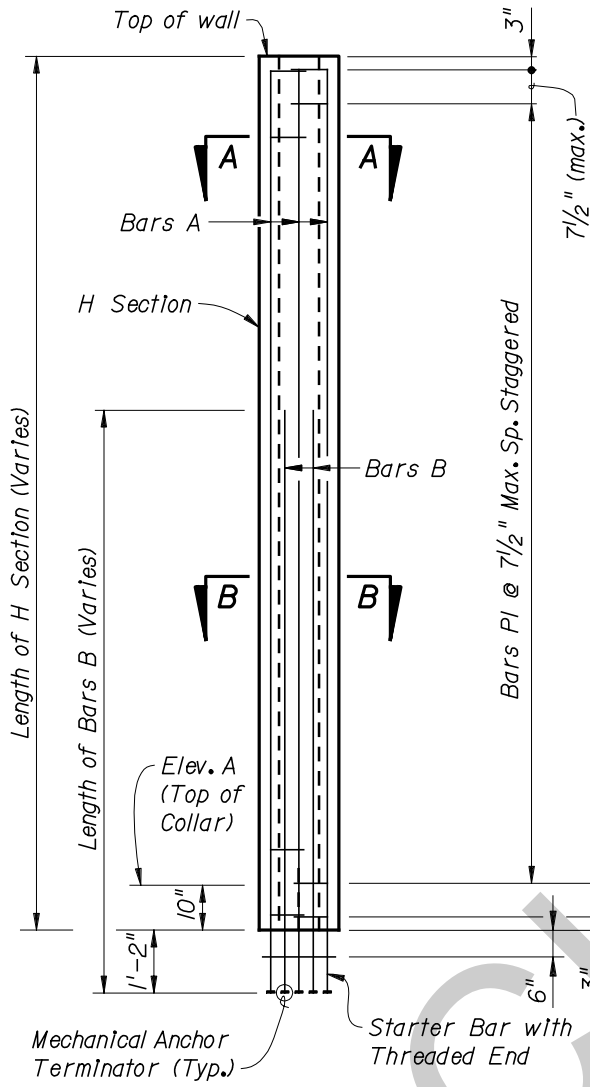
The final pay area shall be plan quantity based on the wall length and the difference between the top of top panel and the bottom of bottom panel elevations, without deductions for openings in panels. Payment shall be made on all quantities complete in place and accepted. Quantities include; Panels, Posts, Collars, and Foundations other than Auger Cast Piles. Incidental Items including Neoprene Pads, Grating, Drain Holes, Fire Hose Access Holes, Mechanical Anchor Terminators, etc. and Class 5 Applied Finish Coating. Payment shall be included in Pay Item No. 534-72-2. Payment for the Auger Cast Pile shall be included in Pay Item No. 455-112-4.

NOTE

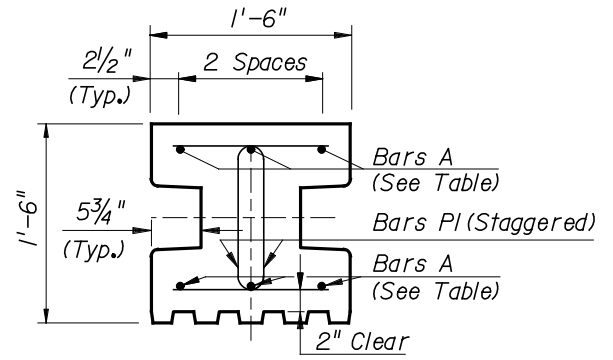
For Sections A-A, B-B, C-C and D-D see Page 2 of 3 and Page 3 of 3.

POST IN AUGERED HOLE

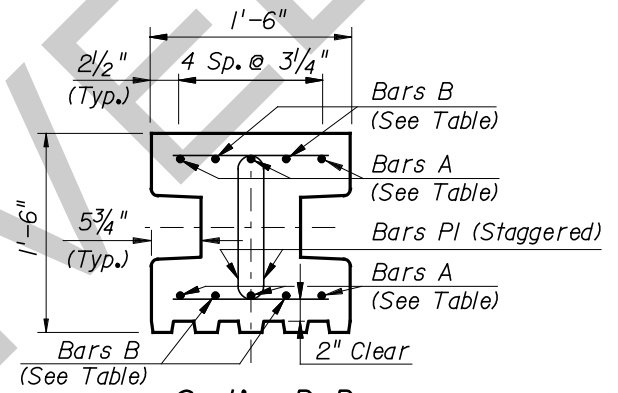
FDOT NOISE WALL PILE/POST CONNECTION - OPTION NO. 2B (Page 2 of 3)



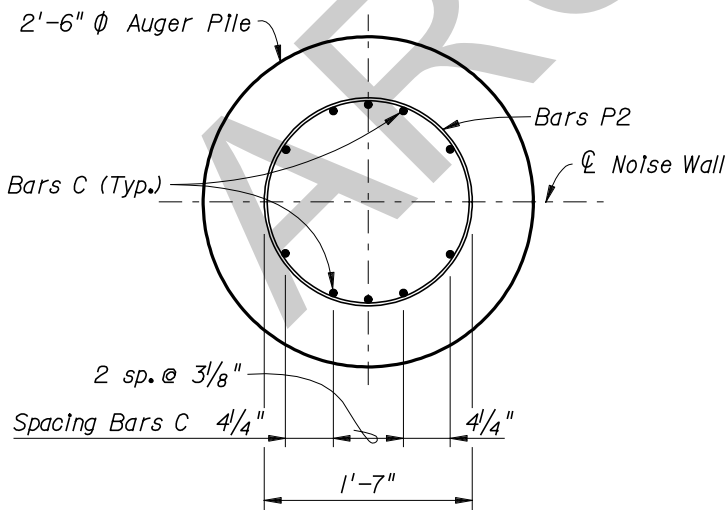
POST DETAIL



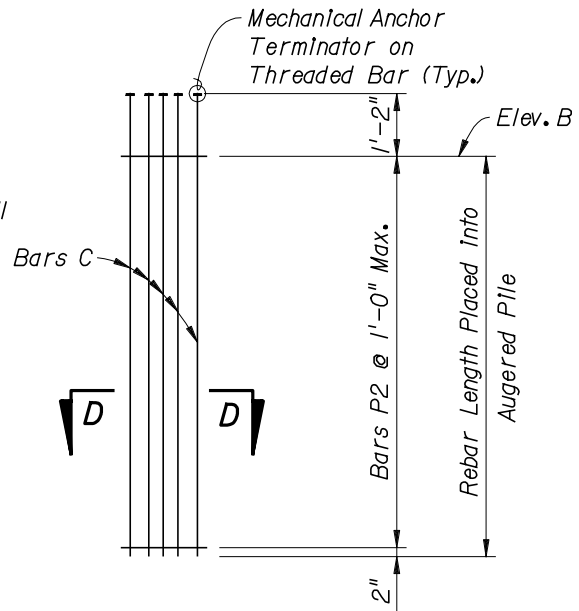
Section A-A (H Section)



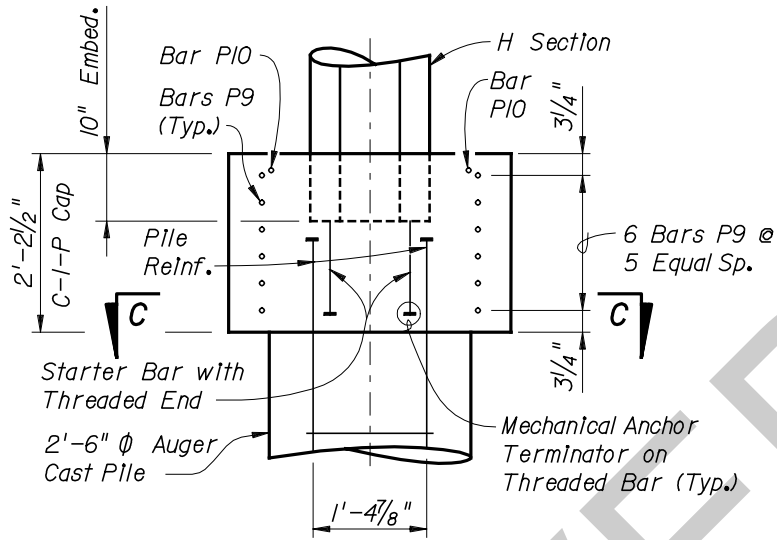
Section B-B (H Section)



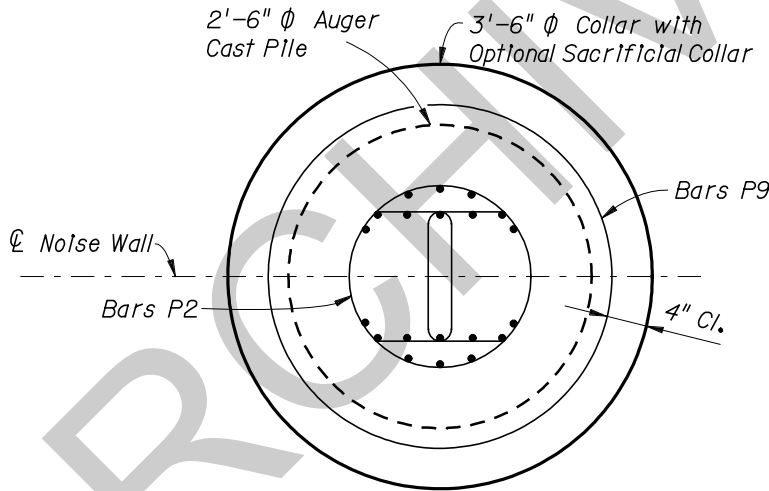
Section D-D (Showing 2'-6" Auger Cast Pile)



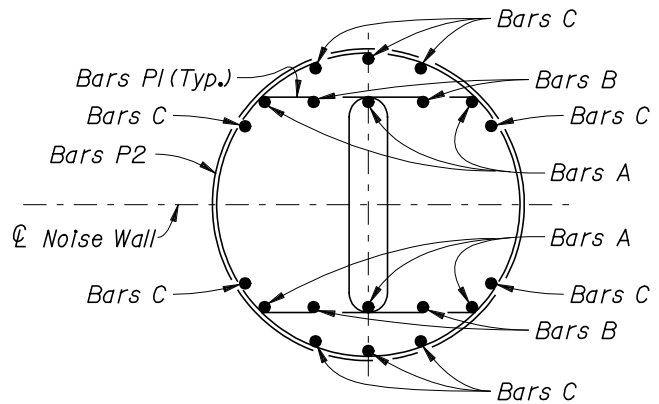
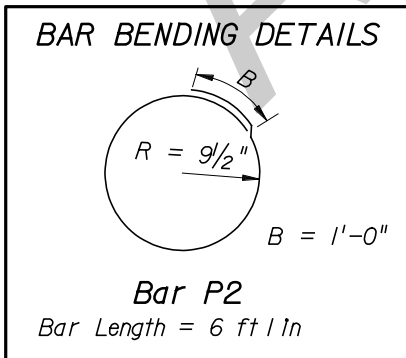
AUGERED PILE REINFORCEMENT DETAIL



Lap and Collar Detail
(Looking Down the Wall)



Section C-C



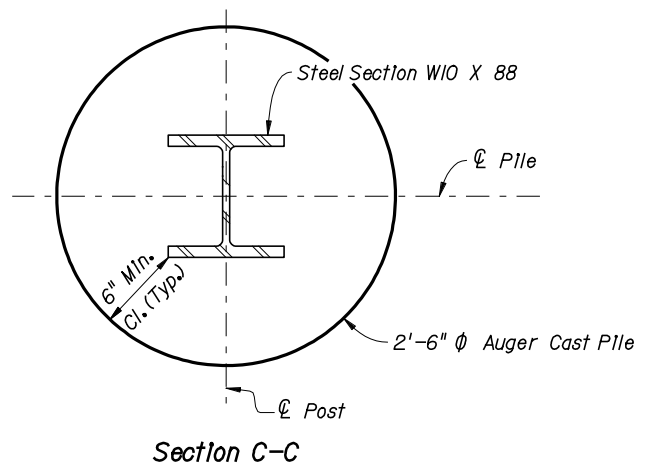
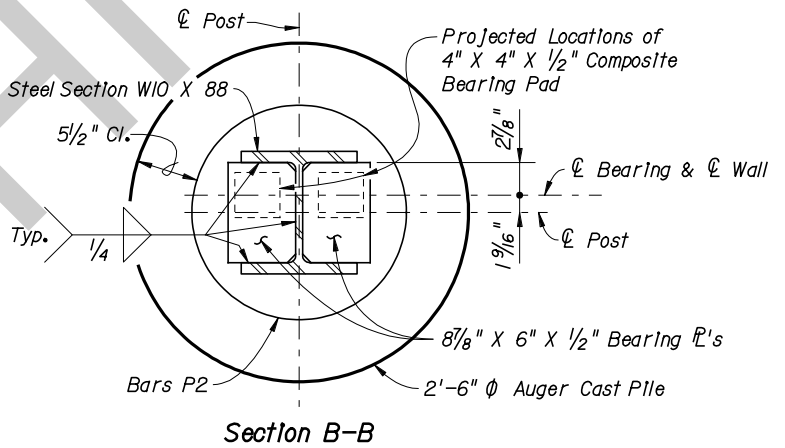
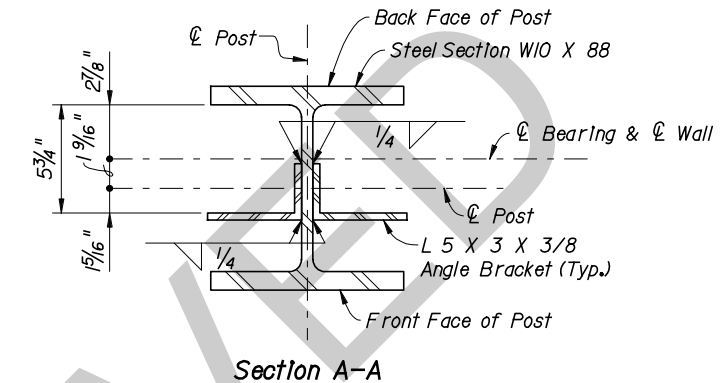
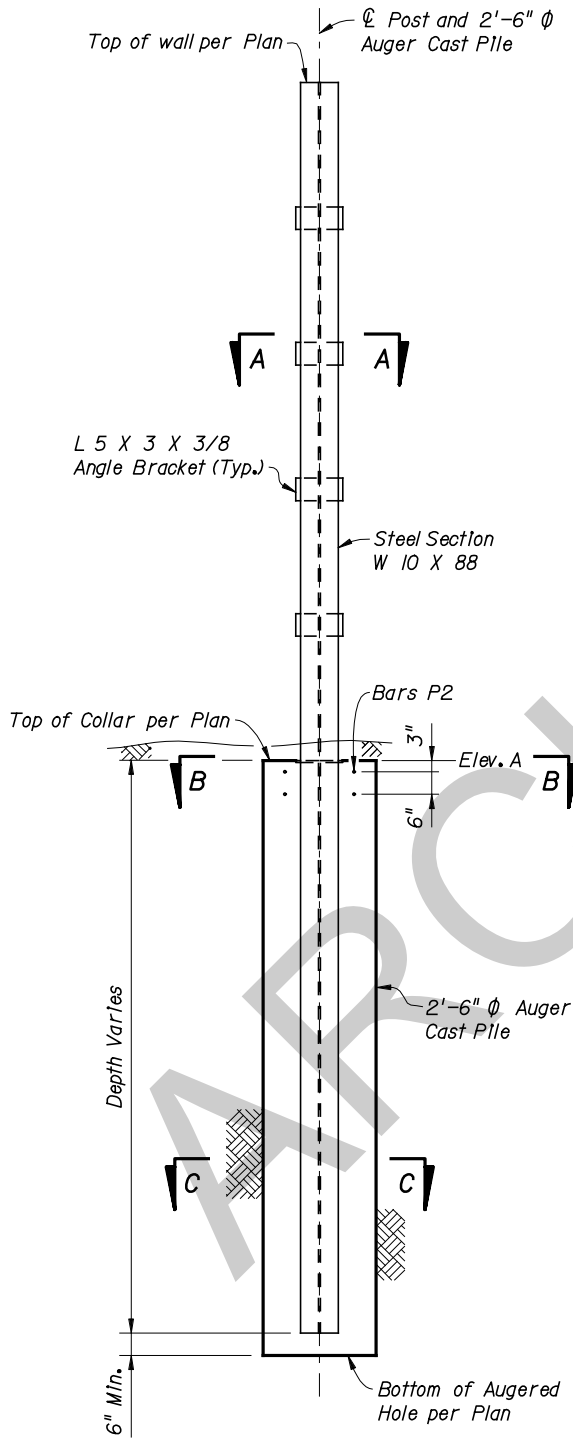
Section C-C
(Showing Post & Pile Reinforcement)

FDOT NOISE WALL PILE/POST CONNECTION - OPTION NO. 3A (Page 1 of 2)

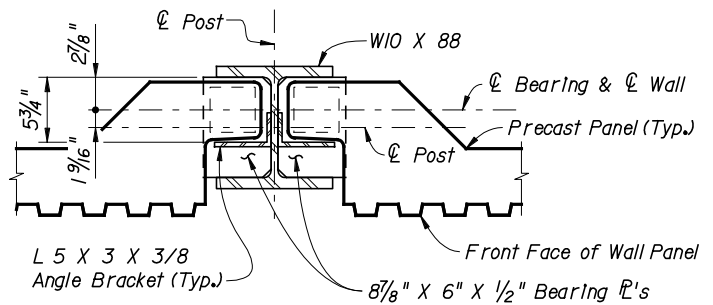
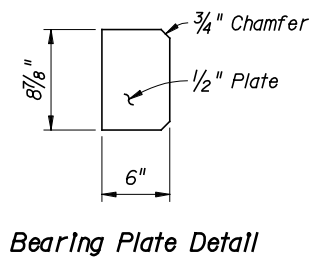
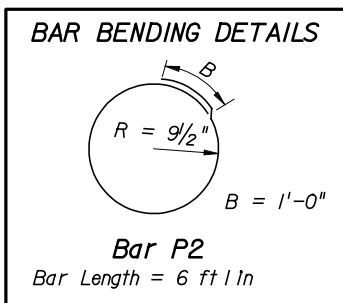
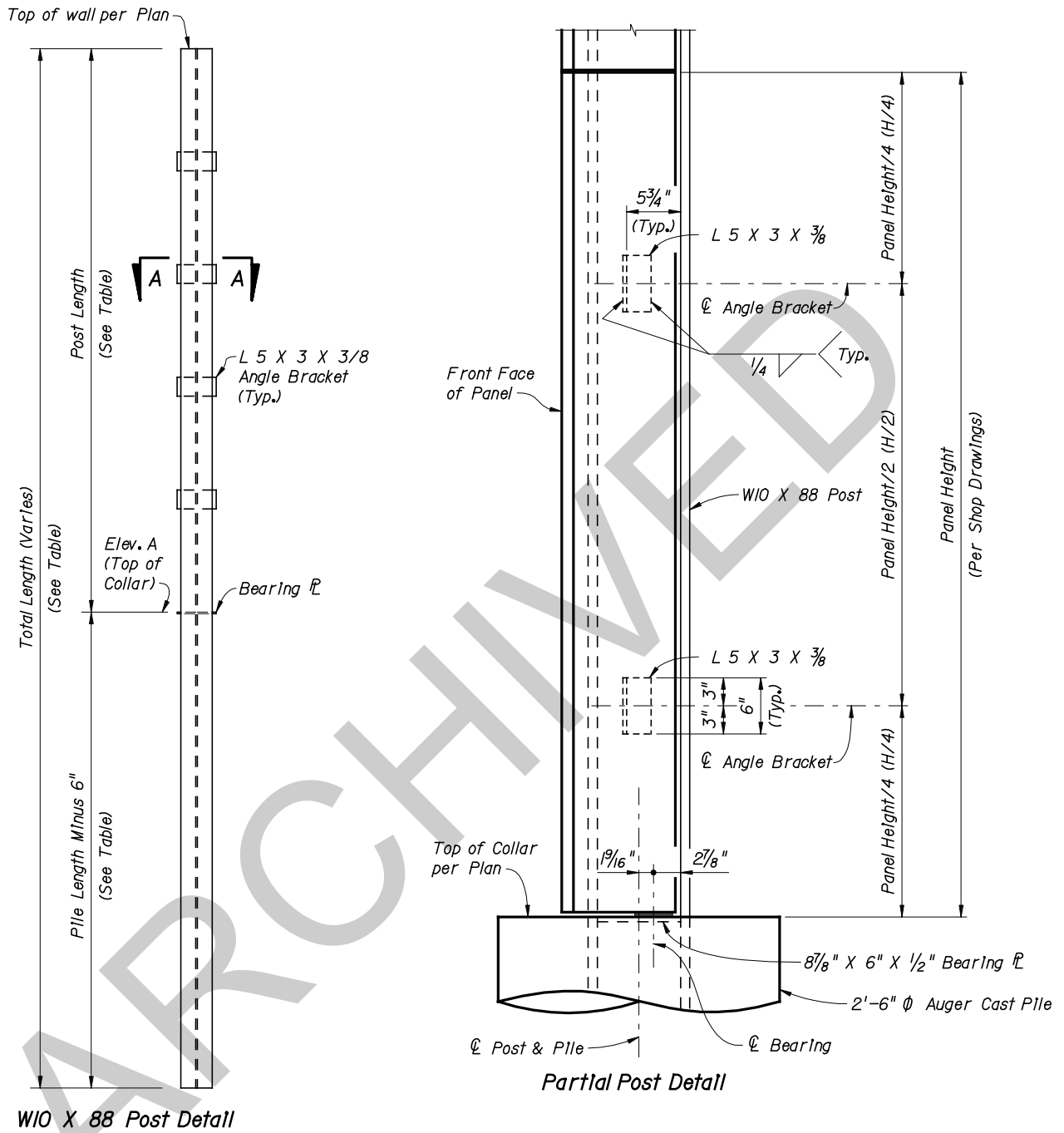
NOTES

For this Pile/Post Connection Option the Wall Panel Length Increases 8" to 19'-10".

The final pay area shall be plan quantity based on the wall length and the difference between the top of top panel and the bottom of bottom panel elevations, without deductions for openings in panels. Payment shall be made on all quantities complete in place and accepted. Quantities include: Panels, Posts and Foundations other than Auger Cast Piles. Incidental items including Neoprene Pads, Grating, Drain Holes, Fire Hose Access Holes, etc. and Class 5 Applied Finish Coating. Payment shall be included in Pay Item No. 534-72-2. Payment for the Auger Cast Pile shall be included in Pay Item No. 455-112-4.



Post In Augered Hole



FDOT NOISE WALL PILE/POST CONNECTION - OPTION NO. 3B (Page 1 of 2)

NOTES:

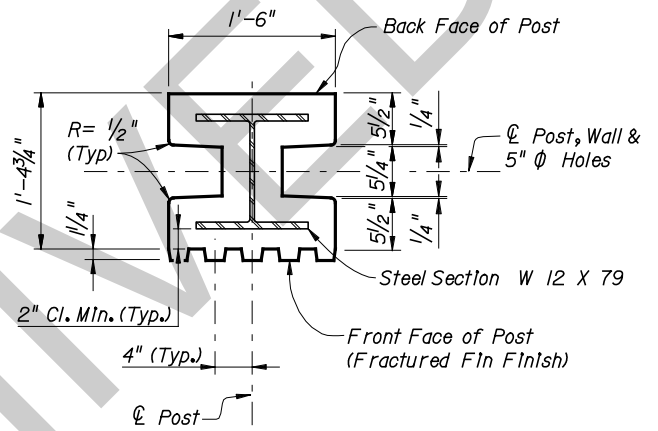
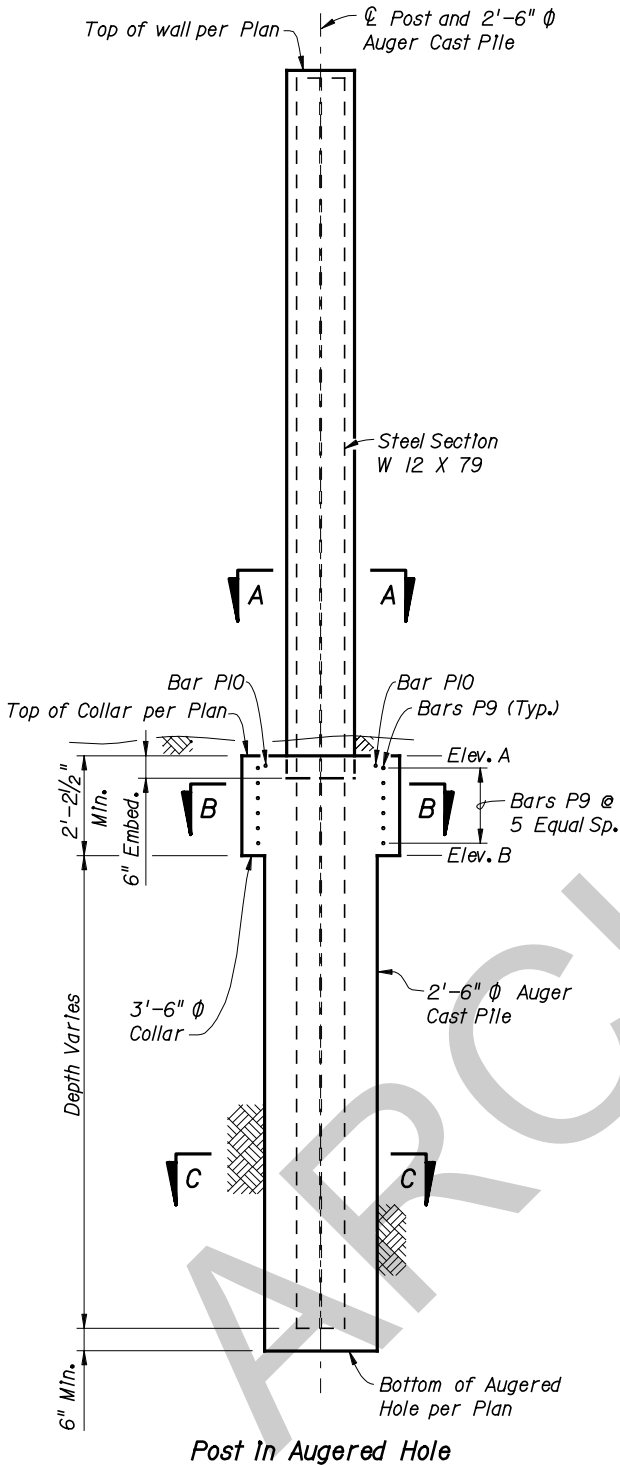
The W 12 X 79 load carrying member is coated with concrete for durability, aesthetic reasons and to make the connection to the panels.

The steel and concrete post assembly is not a reinforced concrete design.

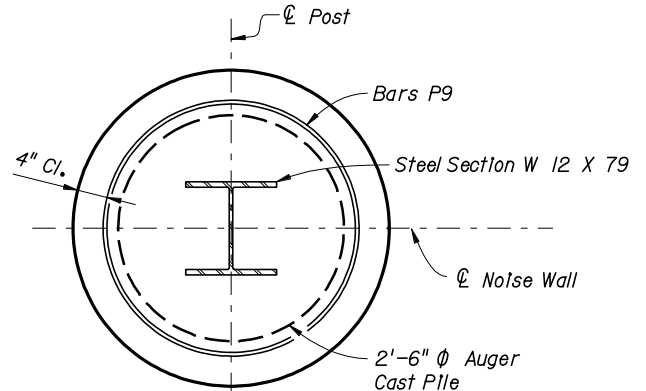
The steel and concrete post assembly shall be cast vertical or cast horizontal according to the casting orientation shown on page 2 of 2.

All Structural Steel shall be in accordance with ASTM A36.

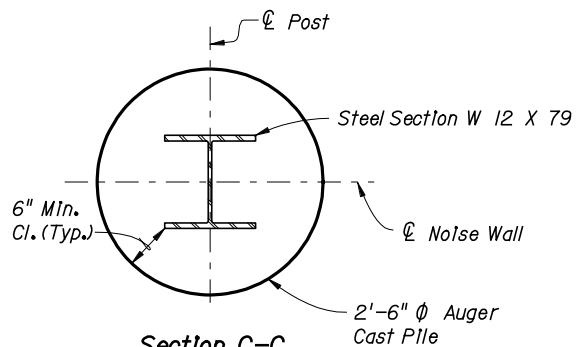
The final pay area shall be plan quantity based on the wall length and the difference between the top of top panel and the bottom of bottom panel elevations, without deductions for openings in panels. Payment shall be made on all quantities complete in place and accepted. Quantities include; Panels, Posts, Collars, and Foundations other than Auger Cast Piles. Incidental Items including Neoprene Pads, Grating, Drain Holes, Fire Hose Access Holes, etc. and Class 5 Applied Finish Coating. Payment shall be included in Pay Item No. 534-72-2. Payment for the Auger Cast Pile shall be included in Pay Item No. 455-112-4.



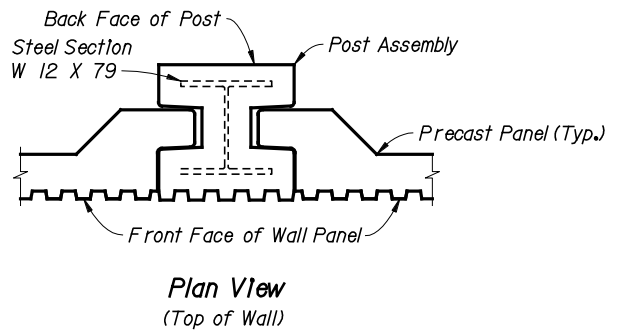
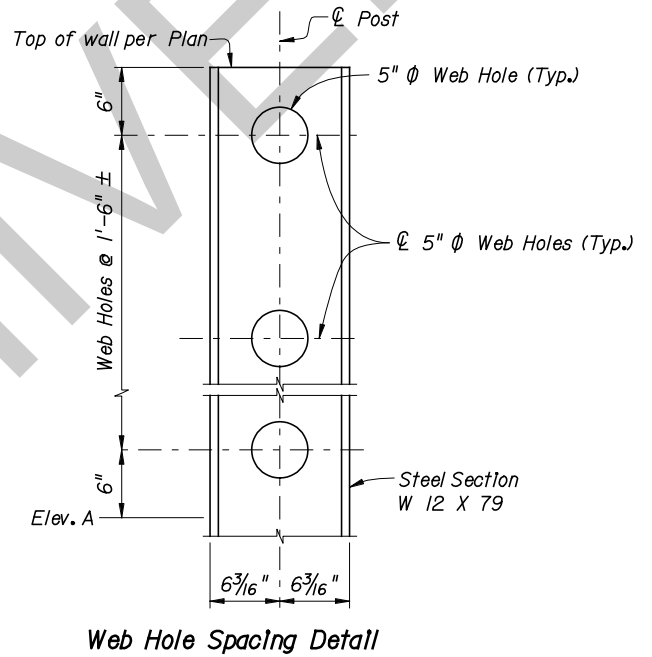
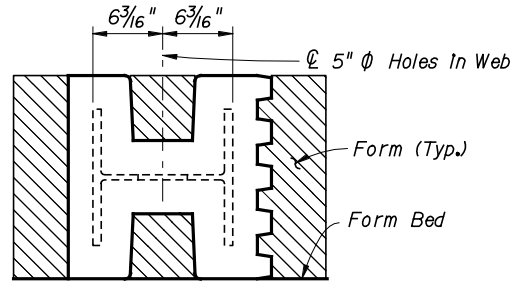
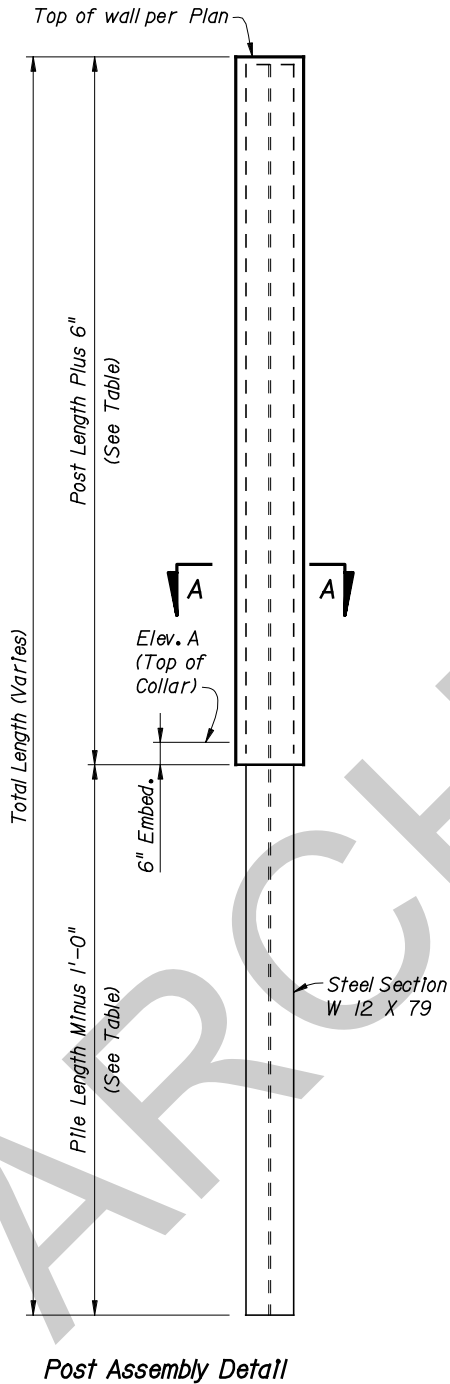
Section A-A
(Post Assembly)



Section B-B



Section C-C



NOISE BARRIER WALL.
(REV 2-20-02)

SECTION 534 (Pages 662-666) is expanded by the following:

Construct Noise Barrier Walls only in accordance with FDOT Noise Wall Pile/Post Connection Options contained in the Appendices. The Department will not accept Value Engineering Change Proposals related to Noise Barrier Walls, unless concepts have been reviewed in advance by the State Structures Design Office. The Department will not consider proposals utilizing precast posts with reinforcing bars extending into auger cast piles.

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STRUCTURES STANDARD DRAWINGS.

(REV 4-16-02)

Standard Drawings Load and Resistance Factor Design (Customary US Units), dated 2000 Edition is modified as follows:

Index No. 1531, 'K - SOUND BARRIER WALL NOTES', delete note 5 and substitute the following:

5. Posts shall not have the pile reinforcement cages integrally cast with same. Pile reinforcement cages, when required, shall be placed in the pile prior to installing the post.

Index No. 1531, 'K - SOUND BARRIER WALL NOTES', delete note 9 and substitute the following:

9. All Collars except as specified below shall be cast-in-place in accordance with the details in the Contract Documents. The Option 3A collar shall be constructed in accordance with the details shown herein.

Index No. 1531, 'K - SOUND BARRIER WALL NOTES', expand to include note 12 below:

12. Structural Steel, Option 3A: Post assemblies shall be shop fabricated in accordance with 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.

Structural Steel shall be in accordance with ASTM A36.

For special corner post details, utilize Index No. 1533 and Post Options 1A, 1B, 2A, or 2B.

Index No. 1531, 'K - SOUND BARRIER WALL NOTES', expand to include note 13 below:

13. Structural Steel, Option 3B: Structural Steel shall be in accordance with ASTM A36.

Store steel posts in location protected against environmental conditions that produce rust. Prior to pouring concrete around structural post, make sure post is free of loose rust, scale, dirt, paint, oil or foreign material.

For special corner post details, utilize Index No. 1533 and Post Options 1A, 1B, 2A, or 2B.

Index No. 1531, 'L - FINISH COATING', expand to include the following:

Steel Post Assembly Coating System, Option 3A: The steel post assembly shall receive a shop applied three-coat system comprised of one coat of an approved self-curing inorganic zinc primer as described in Section 561 followed by two coats of an approved coal tar epoxy consisting of a minimum dry film thickness of 8 mils each to yield a minimum total dry film thickness

of 16 mils. The application of the coal tar epoxy coating shall be in strict conformance with the Manufacturer's published specifications. 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 Elevation "A". After the post assembly is installed, it shall be coated with an approved compatible Class 5 Applied Finish Coating or an anti-graffiti coating system in accordance with the plans and specification. The color of the Class 5 Coating or anti-graffiti coating shall match the color of the panel or as approved by the Engineer. All components of coating system shall be on the Department's Qualified Products List. Material supplier shall certify compatibility of paint system.

Index No. 1531, 'M - PAYMENT', add the following pay item note: Pay Item No. 455-112-4 shall be for both 30 and 36 inch Auger Cast Piles, whichever option is chosen by the Contractor. At the option of the Contractor, in lieu of Auger Cast piles, the Contractor may construct drilled shafts in accordance with the requirements contained in Section 455 for Mast Arms.

Index No. 1532, (Drawing No. 1 of 2), 'TYPICAL ELEVATION', the 2'-6" dia. Auger Cast Pile may be replaced with a 3'-0" dia. Auger Cast Pile, whichever option is chosen by the Contractor.

Index No. 1532, (Drawing No. 2 of 2), 'TYPICAL PANEL ELEVATION', the '18'-4 1/2 " Max.' dimension shall be '19'-0 1/2 " Max.' for Option 3A.

Index No. 1532, (Drawing No. 2 of 2), 'SECTION D-D', the '19'-2 " Max.' dimension shall be '19'-10 " Max.' for Option 3A.

Index No. 1534, 'FIRE HOSE ACCESS HOLE TYPICAL DETAIL', the '19'-2 " Max.' dimension shall be '19'-10 " Max.' for Option 3A. The '9'-7 " Max.' dimensions shall be '9'-11 " Max.' for Option 3A.

Index No. 1534, 'DRAINAGE HOLES TYPES A, B, C & D', the '19'-2 " Max.' dimension shall be '19'-10 " Max.' for Option 3A. The outer '4'-2 " ' dimensions shall be '4'-6 "' for Option 3A.

Index No. S-1535, 'DETAIL C' and 'SECTION J-J'. If Option No. 1B of the FDOT NOISE WALL PILE/POST CONNECTION (see Appendices) is chosen by the Contractor, then a 3'-0" dia. Auger Cast Pile shall be used in lieu of the 2'-6" dia. Auger Cast Pile shown.

Index No. S-1535, delete both the detail and associated views pertaining to "PRECAST OPTION".

Index No. S-1535, 'CONCRETE & GROUT QUANTITY SUMMARY', (POSTS and PILES) delete all volume and total values.
(COLLARS*) delete all values and related note.

Index No. S-1536, (Drawing 2 of 2), (COLLAR REINFORCING), delete all Precast values.
(REINFORCING STEEL SUMMARY).
(*COLLARS) delete all Precast values and related note.