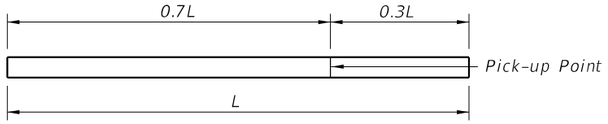
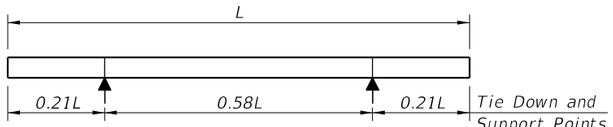
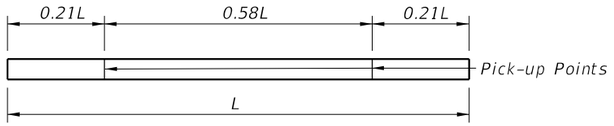


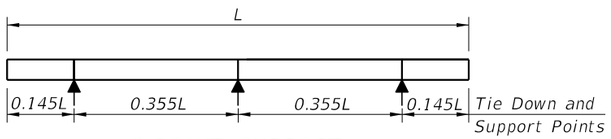
1-POINT PICK-UP



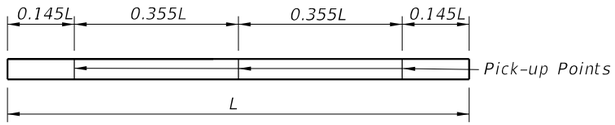
2-POINT SUPPORT



2-POINT PICK-UP

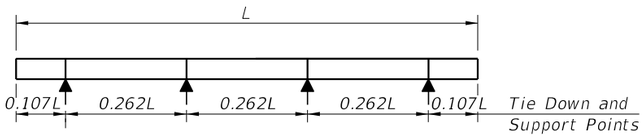


3-POINT SUPPORT



3-POINT PICK-UP

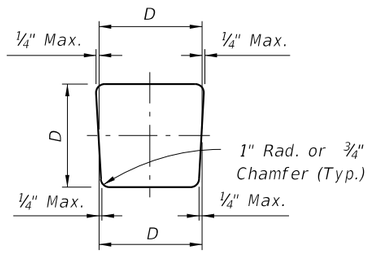
PILE PICK-UP DETAILS



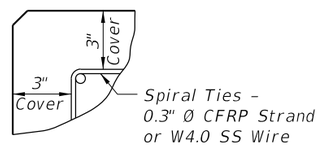
4-POINT SUPPORT

STORAGE AND TRANSPORTATION SUPPORT DETAILS

TABLE OF MAXIMUM PILE PICK-UP AND SUPPORT LENGTHS							
	D = Square Pile Size (inches)					Required Storage and Transportation Detail	Pick-Up Detail
	12	14	18	24	30		
Maximum Pile Length (Feet)	48	52	59	68	87	2, 3, or 4 point	1 Point
	69	75	85	98	124	2, 3, or 4 point	2 Point
	99	107	121	140	178	3 or 4 point	3 Point



TYPICAL PILE SHAPE FOR MOLD FORMS



DETAIL SHOWING TYPICAL COVER

PRESTRESSED CONCRETE PILE NOTES:

DESIGN SPECIFICATIONS:
Florida Department of Transportation (FDOT) "Structures Design Guidelines", current edition. American Association of State Highway and Transportation Officials (AASHTO) "LRFD Bridge Design Specifications", current edition.

SPIRAL TIES:
Each wrap of spirals shall be tied to at least two corner strands. One turn required for spiral splices.

CONCRETE CLASS:
Concrete for all CFRP & SS piles shall be Class V (Special). See "GENERAL NOTES" in Structures Plans for any specific locations where the use of Silica Fume is required for stainless steel reinforcing.

CONCRETE STRENGTH:
The pile cylinder strength shall be 4,000 psi minimum at time of transfer of the Prestressing Force.

SPLICE BONDING MATERIAL:
The material to fill dowel holes and form the joint between pile sections shall be a Type B Epoxy Compound in accordance with Specification Section 926 and shall be contained on the Approved Products List (APL). Use Epoxy Bonding Compound or Epoxy Mortar as recommended by the Manufacturer. For Epoxy Mortar only use sand or other filler material supplied by the manufacturer and in the proportions recommended.

PICK-UP POINTS:
Piles shall be marked at the pick-up points to indicate proper points for attaching handling lines.

REINFORCING BARS:
Stainless Steel: All reinforcing steel shall meet the requirements of Specification Section 931 for Type 304, Grade 75.
Carbon FRP: All reinforcing bars shall be CFRP meeting the requirements of Specification Section 932.

PRESTRESSING STRAND:
Stainless Steel: Prestressing steel shall be seven-wire HSSS, UNS S32205 (Type 2205) or UNS S31803 strand, meeting the requirements of Specification Section 933.
Carbon FRP: Prestressing strand shall be CFRP Strand meeting the requirements of Specification Section 933.

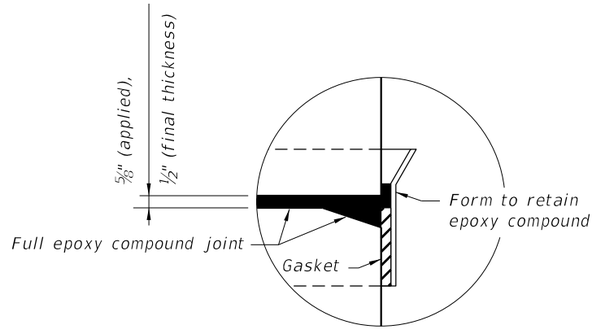
PROTECTION OF EXPOSED STRANDS:
For all pile ends exposed to the environment and not embedded under final conditions, protect strands in accordance with Specification Section 450.

12/17/2015 2:14:47 PM

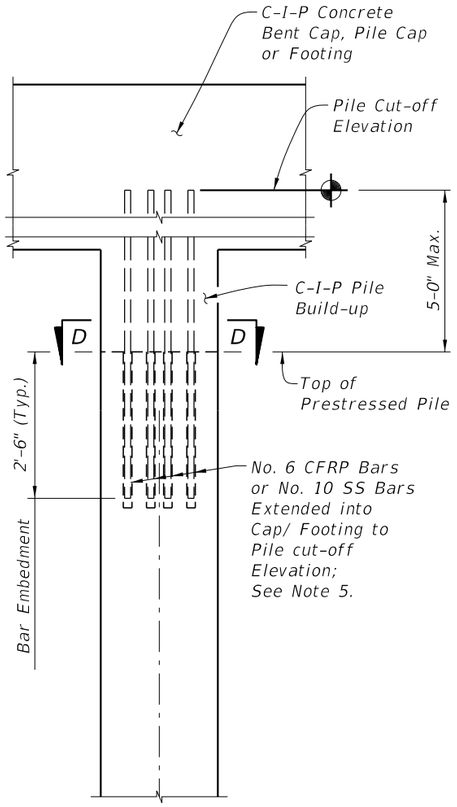
LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2016-17 DESIGN STANDARDS	NOTES AND DETAILS FOR SQUARE CFRP & SS PRESTRESSED CONCRETE PILES	INDEX NO.	SHEET NO.
01/01/16						22600	1 of 1

NOTES:

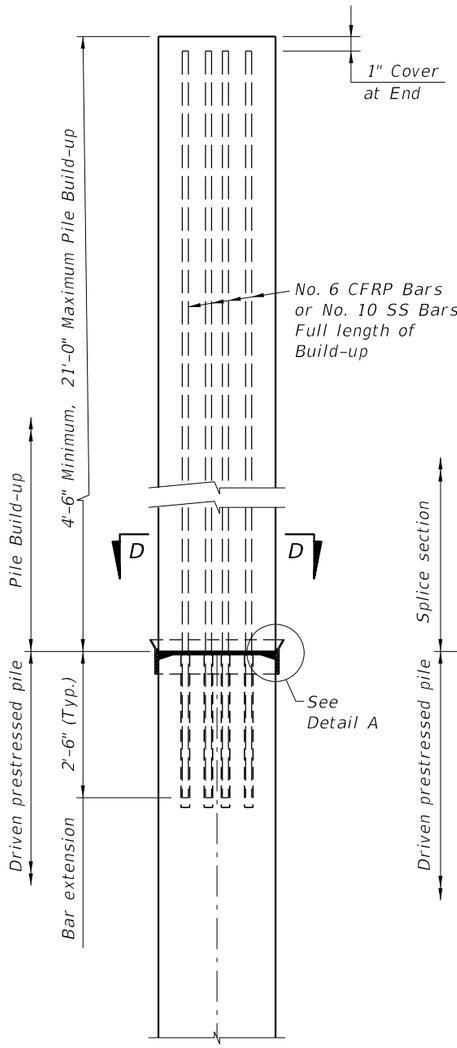
1. For Sections D-D, & E-E, see Index Nos. 22612, 22614, 22618, 22624 or 22630 for applicable concrete pile size and Pile Splice Reinforcement Details.
2. Prestressing strands, spiral ties and/or reinforcement are not shown for clarity.
3. In cases where pile splices are desired due to length limitations in shipping and/or handling, the "Drivable Preplanned Prestressed Precast Splice Detail" shall be used.
4. When preformed dowel holes are utilized, the 1" spiral tie pitch shall be continued to 4'-0" below the head of the pile, See Index Nos. 22618, 22624. Preformed holes shall utilize either removable preforming material or stay-in-place corrugated galvanized steel ducts. Stay-in-place ducts shall be fabricated from galvanized sheet steel meeting the requirements of ASTM A653, Coating Designation G90, 26 gauge. Ducts shall be 1½" diameter for CFRP Bars, and 2" diameter for SS Bars with a minimum corrugation (rib) height of 0.12 in. Ducts shall be fabricated with either welded or interlocked seams. Galvanizing of welded seams will not be required.
5. For tension piles where top of Prestressed Pile is less than 3 feet below Pile Cut-off Elevation, extend No. 6 CFRP Bars or No. 10 SS into cap beyond Pile Cut-off Elevation to achieve development as approved by the Engineer.



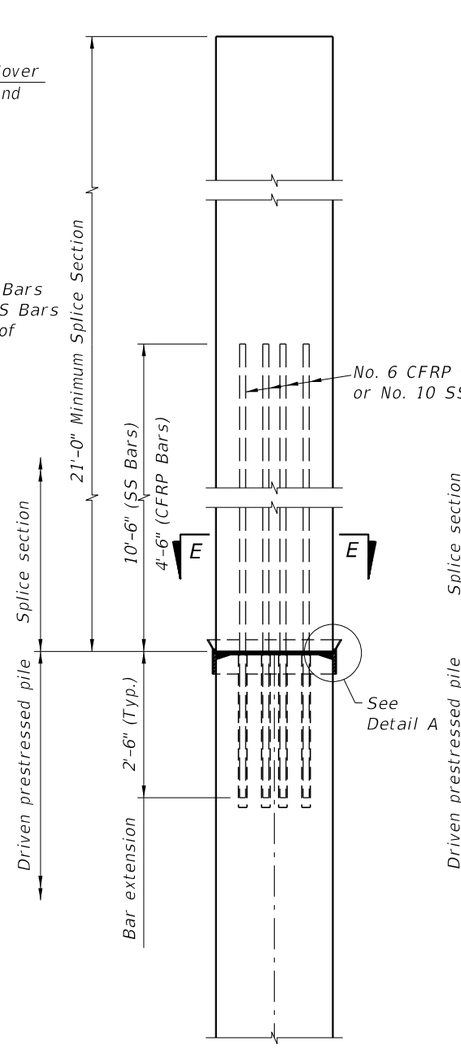
DETAIL A



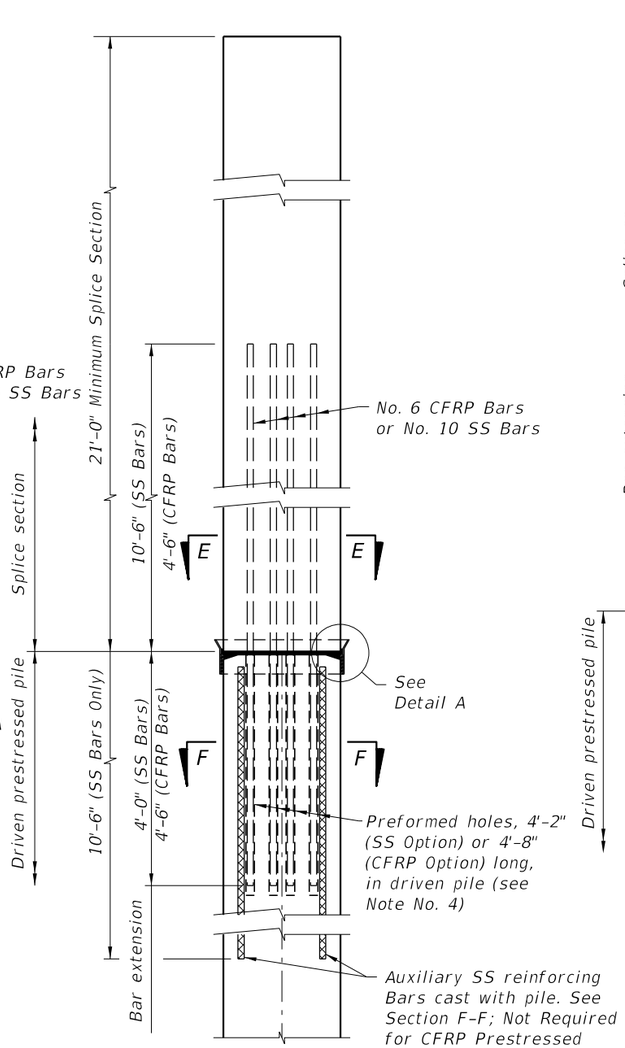
UNFORESEEN
REINFORCED C-I-P
PILE BUILD-UP DETAIL



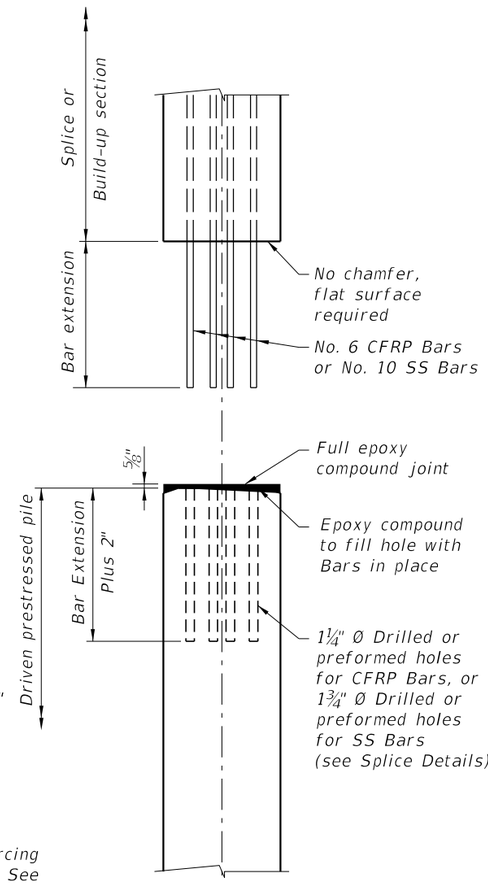
NONDRIVABLE UNFORESEEN
REINFORCED PRECAST
PILE BUILD-UP DETAIL



DRIVABLE UNFORESEEN
PRESTRESSED PRECAST
PILE SPLICE DETAIL



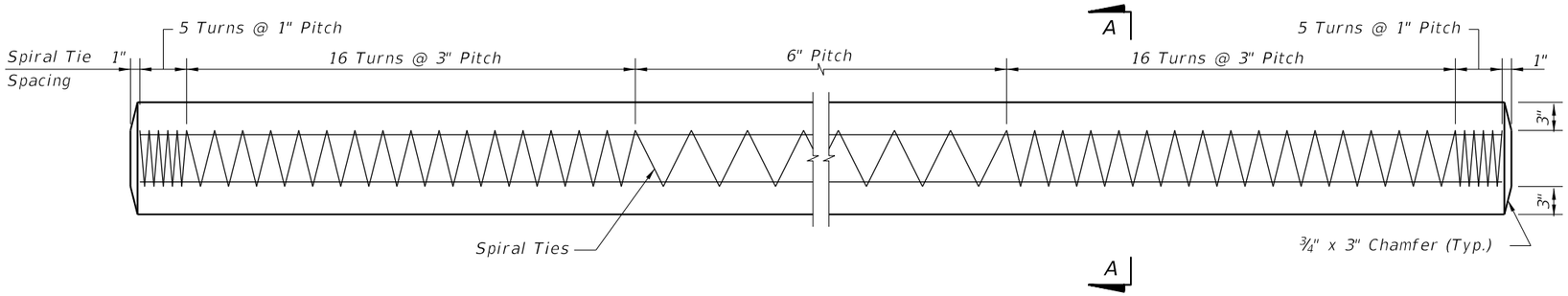
DRIVABLE PREPLANNED
PRESTRESSED PRECAST
PILE SPLICE DETAIL



TYPICAL SPLICE
BEFORE BONDING

12/17/2015 2:15:26 PM

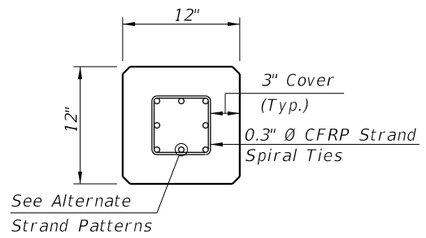
LAST REVISION	REVISION	DESCRIPTION:			
01/01/16			FY 2016-17 DESIGN STANDARDS	SQUARE CFRP & SS PRESTRESSED CONCRETE PILE SPLICES	INDEX NO. 22601 / SHEET NO. 1 of 1



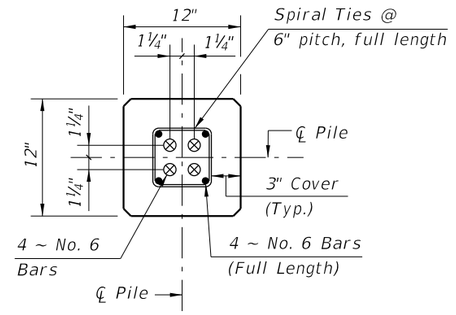
ELEVATION

ALTERNATE STRAND PATTERNS

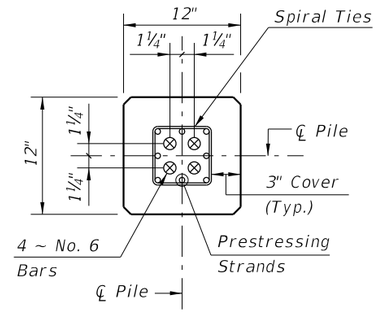
8 ~ 0.6" Ø, CFRP 7-Strand, at 24 kips
8 ~ ½" Ø, CFRP Single-Strand, at 23.5 kips



SECTION A-A



SECTION D-D
(See Nondrivable Unforeseen Reinforced Precast Pile Build-Up Detail)



SECTION E-E
(See Drivable Unforeseen Prestressed Precast Pile Splice Detail)

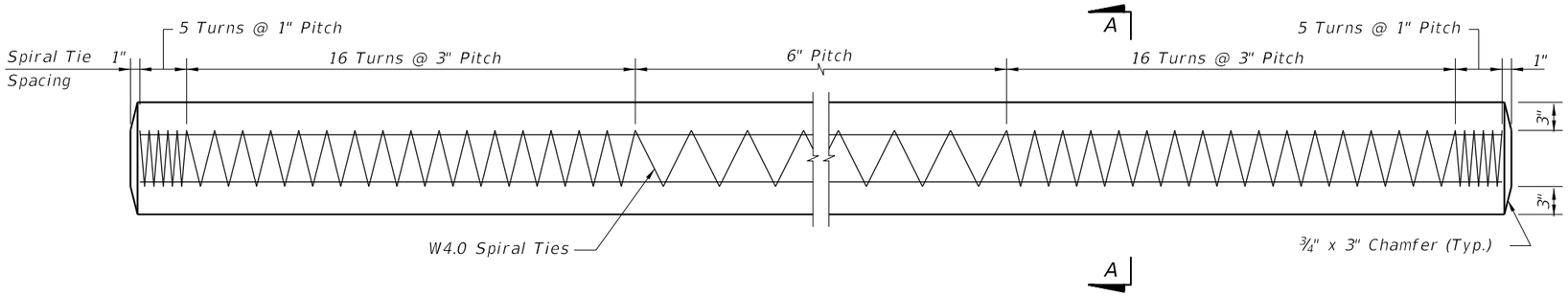
CFRP PILE SPLICE REINFORCEMENT DETAILS

NOTES:
1. Work this Index with Index No. 22600 – Notes and Details for Square CFRP & SS Prestressed Concrete Piles and Index No. 22601 – Square CFRP & SS Prestressed Concrete Pile Splices.
2. Any of the given Alternate Strand Patterns may be utilized. The strands shall be located as follows:
   Place one strand at each corner and place the remaining strands equally spaced between the corner strands.
   The total strand pattern shall be concentric with the nominal concrete section of the pile.

CFRP PRESTRESSED PILE DETAILS

12/17/2015 2:15:38 PM

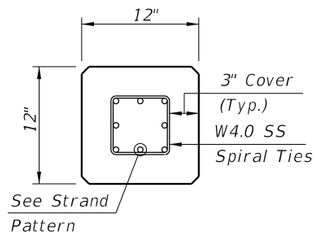
LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/16			FDOT FY 2016-17 DESIGN STANDARDS	12" SQUARE CFRP & SS PRESTRESSED CONCRETE PILE	22612	1 of 2



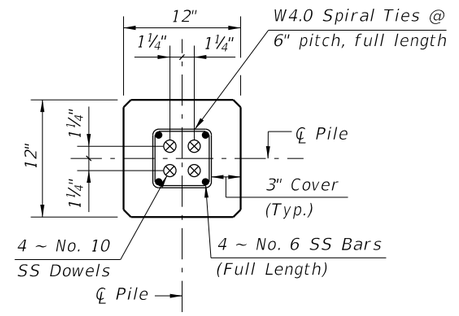
ELEVATION

STRAND PATTERN

8 ~ ½" Ø, HSSS at 24 kips

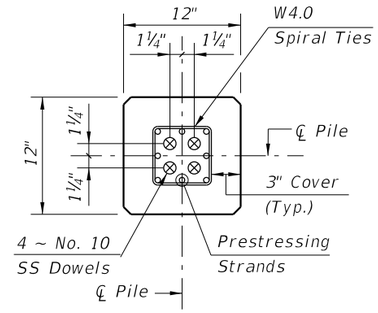


SECTION A-A



SECTION D-D

(See Nondrivable Unforeseen Reinforced Precast Pile Build-Up Detail)



SECTION E-E

(See Drivable Unforeseen Prestressed Precast Pile Splice Detail)

SS PILE SPLICE REINFORCEMENT DETAILS

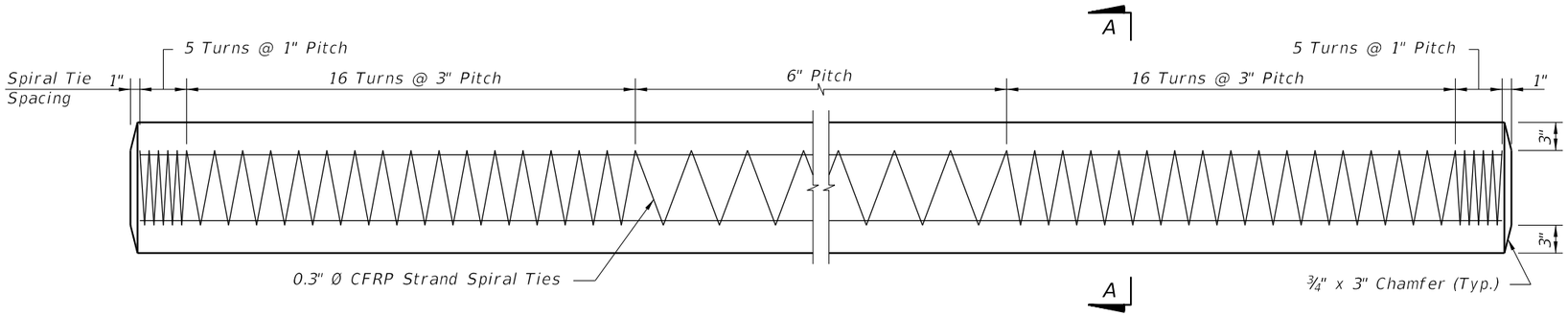
NOTES:

1. Work this Index with Index No. 22600 – Notes and Details for Square CFRP & SS Prestressed Concrete Piles and Index No. 22601 – Square CFRP & SS Prestressed Concrete Pile Splices.
2. Any of the given Strand Patterns may be utilized.
   The strands shall be located as follows:
   Place one strand at each corner and place the remaining strands equally spaced between the corner strands.
   The total strand pattern shall be concentric with the nominal concrete section of the pile.

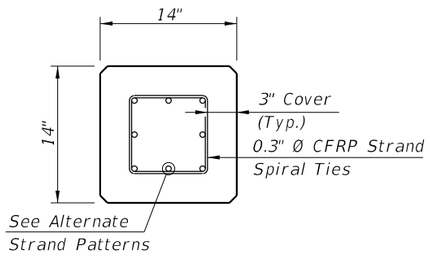
SS PRESTRESSED PILE DETAILS

12/17/2015 2:15:39 PM

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/16			FDOT FY 2016-17 DESIGN STANDARDS	12" SQUARE CFRP & SS PRESTRESSED CONCRETE PILE	22612	2 of 2



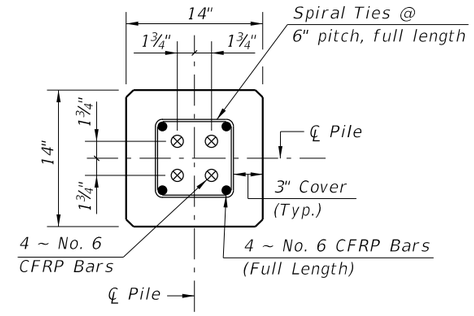
ELEVATION



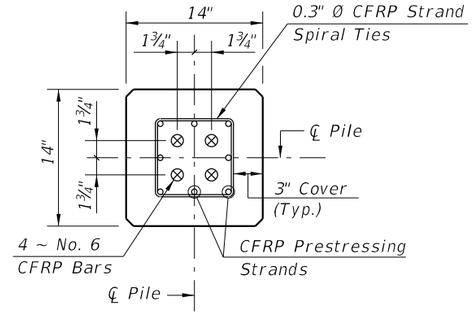
SECTION A-A

ALTERNATE STRAND PATTERNS

8 ~ 0.6" Ø, CFRP 7-Strand, at 31.5 kips
8 ~ ½" Ø, CFRP Single-Strand, at 30.5 kips



SECTION D-D
(See Nondrivable Unforeseen Reinforced Precast Pile Build-Up Detail)



SECTION E-E
(See Drivable Unforeseen Prestressed Precast Pile Splice Detail)

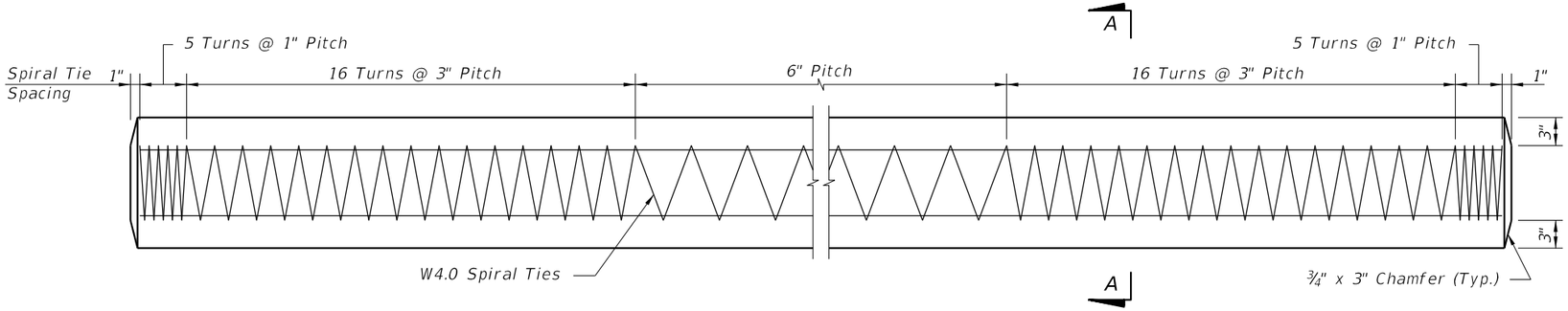
CFRP PILE SPLICE REINFORCEMENT DETAILS

NOTES:
1. Work this Index with Index D22600 – Notes and Details for Square CFRP & SS Prestressed Concrete Piles and Index D22601 – Square CFRP & SS Prestressed Concrete Pile Splices.
2. Any of the given Alternate Strand Patterns may be utilized. The strands shall be located as follows:
   Place one strand at each corner and equally space the remaining strands between the corner strands.
   The total strand pattern shall be concentric with the nominal concrete section of the pile.

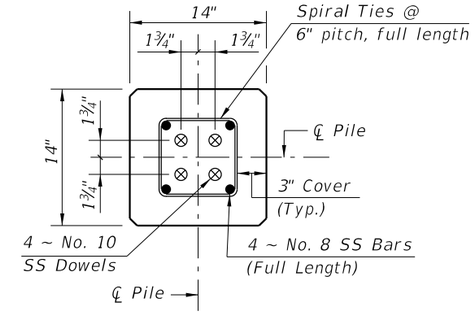
CFRP PRESTRESSED PILE DETAILS

12/17/2015 2:16:08 PM

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/16			FDOT FY 2016-17 DESIGN STANDARDS	14" SQUARE CFRP & SS PRESTRESSED CONCRETE PILE	22614	1 of 2

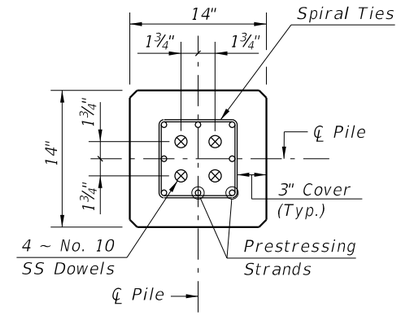


ELEVATION



SECTION D-D

(See Nondrivable Unforeseen Reinforced Precast Pile Build-Up Detail)

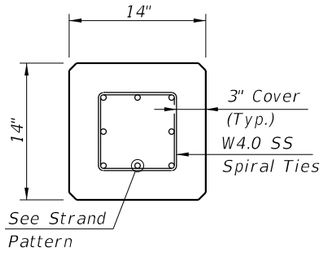


SECTION E-E

(See Drivable Unforeseen Prestressed Precast Splice Detail)

STRAND PATTERN

12 ~ ½" Ø, HSSS at 23 kips



SECTION A-A

SS PILE SPLICE REINFORCEMENT DETAILS

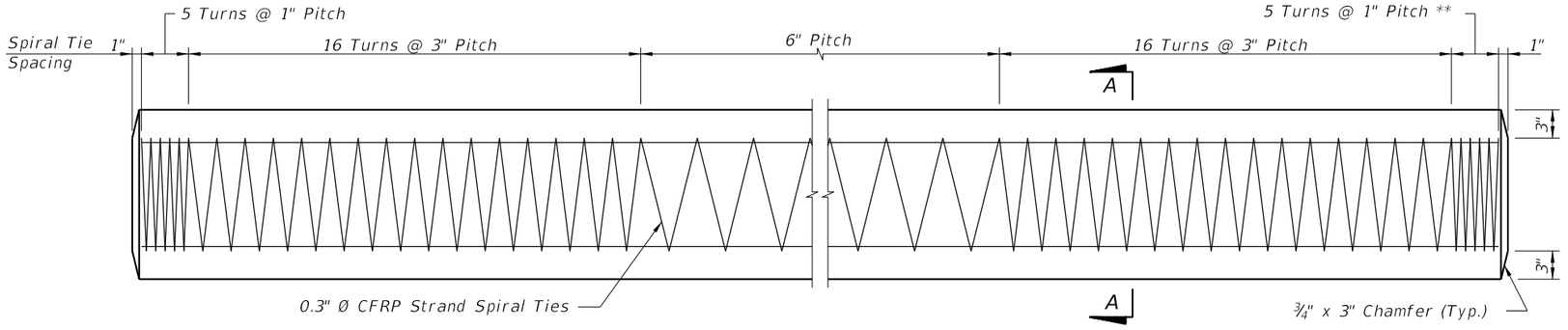
NOTES:

1. Work this Index with Index No. 22600 – Notes and Details for Square CFRP & SS Prestressed Concrete Piles and Index No. 22601 – Square CFRP & SS Prestressed Concrete Pile Splices.
2. Any of the given Alternate Strand Patterns may be utilized. The strands shall be located as follows:
   Place one strand at each corner and place the remaining strands equally spaced between the corner strands.
   The total strand pattern shall be concentric with the nominal concrete section of the pile.

SS PRESTRESSED PILE DETAILS

12/17/2015 2:16:09 PM

LAST REVISION	REVISION	DESCRIPTION:				
01/01/16			FDOT FY 2016-17 DESIGN STANDARDS	14" SQUARE CFRP & SS PRESTRESSED CONCRETE PILE	INDEX NO. 22614	SHEET NO. 2 of 2

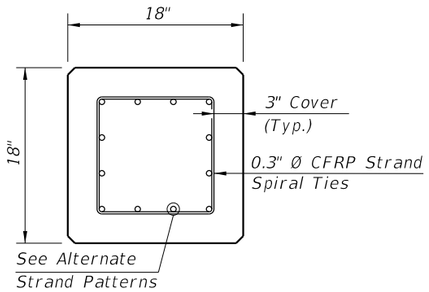


ELEVATION

** See Note No. 4 on Index No. 22601

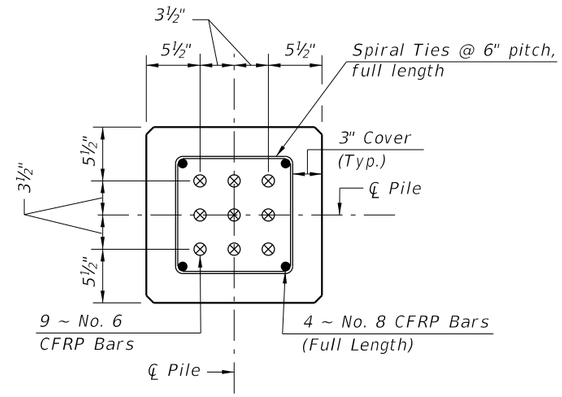
ALTERNATE STRAND PATTERNS

12 ~ 0.6" Ø, CFRP 7-Strand, at 34 kips
12 ~ ½" Ø, CFRP Single-Strand, at 33 kips

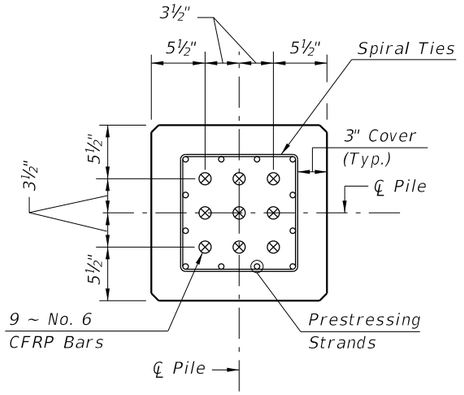


SECTION A-A

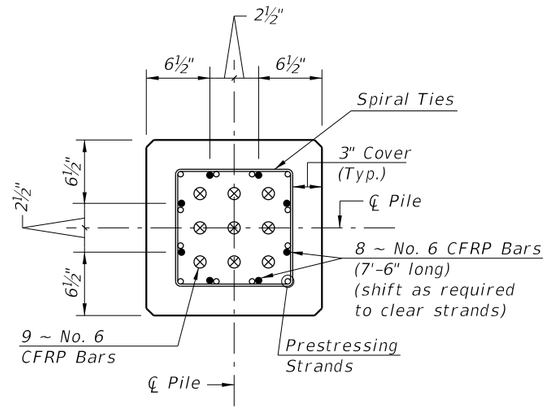
NOTES:
1. Work this Index with Index 22600 – Notes and Details for Square CFRP & SS Prestressed Concrete Piles and Index 22601 – Square CFRP & SS Prestressed Concrete Pile Splices.
2. Any of the given Strand Patterns may be utilized. The strands shall be located as follows: Place one strand at each corner and place the remaining strands equally spaced between the corner strands. The total strand pattern shall be concentric with the nominal concrete section of the pile.



SECTION D-D
(See Nondrivable Unforeseen Reinforced Precast Pile Build-Up Detail)



SECTION E-E
(See Drivable Prestressed Precast Splice Detail)



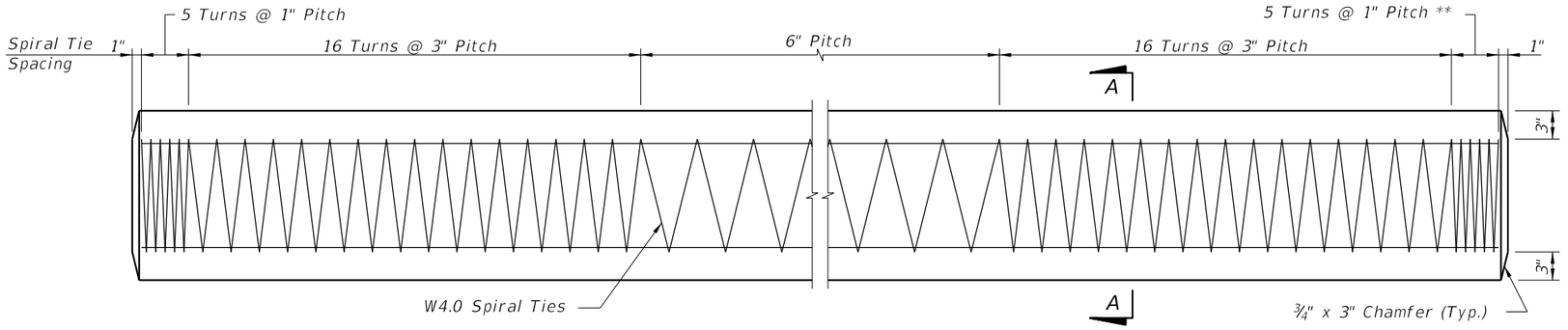
SECTION F-F
(See Drivable Preplanned Prestressed Precast Splice Detail)

CFRP PILE SPLICE REINFORCEMENT DETAILS

12/17/2015 2:16:47 PM

CFRP PRESTRESSED PILE DETAILS

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2016-17 DESIGN STANDARDS	18" SQUARE CFRP & SS PRESTRESSED CONCRETE PILE	INDEX NO.	SHEET NO.
01/01/16						22618	1 of 2

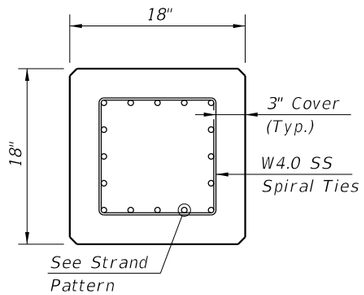


ELEVATION

** See Note No. 4 on Index No. 22601

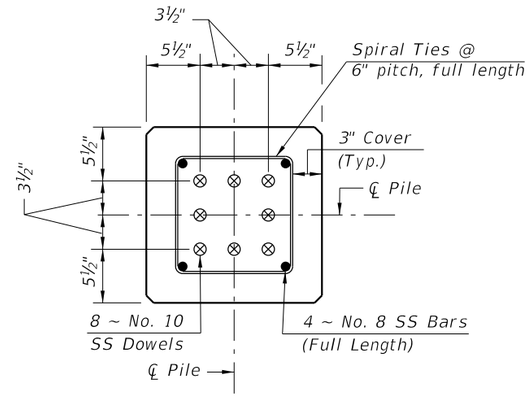
STRAND PATTERN

16 ~ ½" Ø, HSSS, at 26 kips



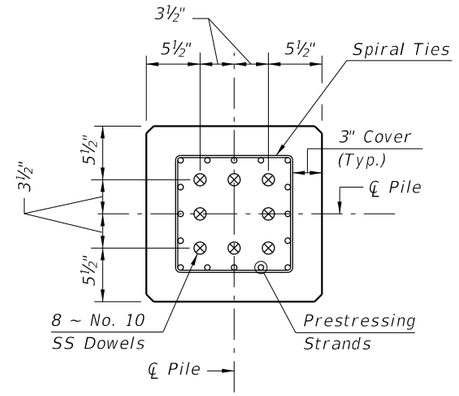
SECTION A-A

NOTES:
1. Work this Index with Index No. 22600 – Notes and Details for Square CFRP & SS Prestressed Concrete Piles and Index No. 22601 – Square CFRP & SS Prestressed Concrete Pile Splices.
2. Any of the given Strand Patterns may be utilized. The strands shall be located as follows: Place one strand at each corner and place the remaining strands equally spaced between the corner strands. The total strand pattern shall be concentric with the nominal concrete section of the pile.



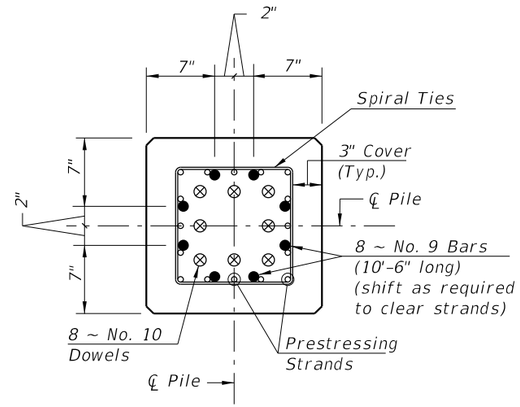
SECTION D-D

(See Nondrivable Unforeseen Reinforced Precast Pile Build-Up Detail)



SECTION E-E

(See Drivable Prestressed Precast Splice Detail)



SECTION F-F

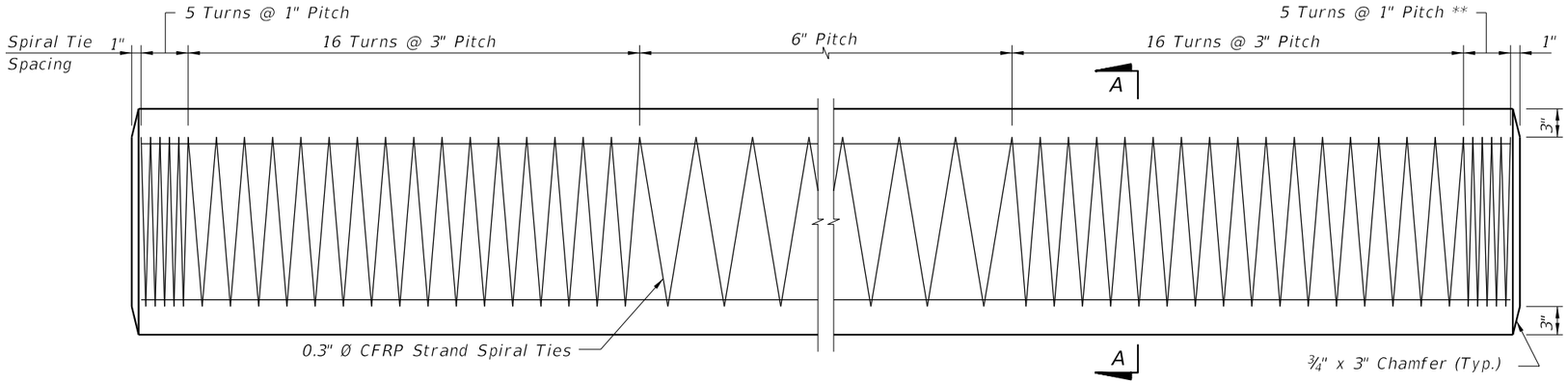
(See Drivable Preplanned Predtresses Precast Splice Detail)

SS PILE SPLICE REINFORCEMENT DETAILS

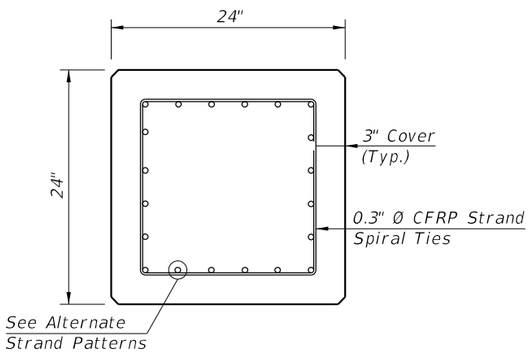
SS PRESTRESSED PILE DETAILS

12/23/2015 10:38:56 AM

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2016-17 DESIGN STANDARDS	18" SQUARE CFRP & SS PRESTRESSED CONCRETE PILE	INDEX NO.	SHEET NO.
01/01/16					22618	2 of 2



SPIRAL TIE ELEVATION

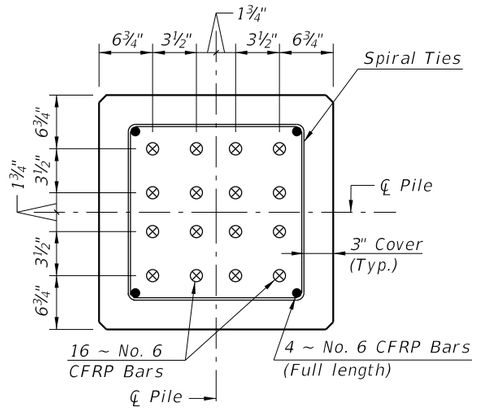


SECTION A-A

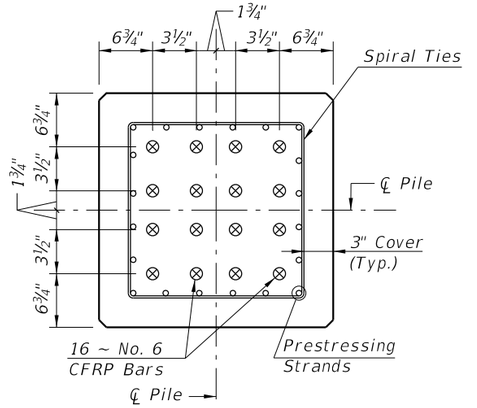
ALTERNATE STRAND PATTERNS

20 ~ 0.6" Ø, CFRP 7-Strand, at 34 kips
20 ~ ½" Ø, CFRP Single-Strand, at 33 kips

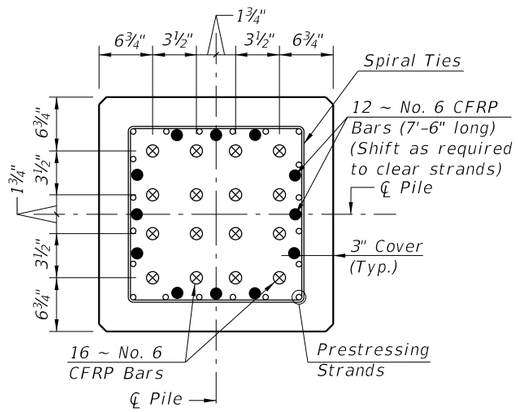
NOTES:
1. Work this Index with Index D22600 – Notes and Details for Square CFRP & SS Prestressed Concrete Piles and Index D22601 – Square CFRP & SS Prestressed Concrete Pile Splices.
2. Any of the given Strand Patterns may be utilized.
   The strands shall be located as follows:
   Place one strand at each corner and place the remaining strands equally spaced between the corner strands.
   The total strand pattern shall be concentric with the nominal concrete section of the pile.



SECTION D-D
(See Nondrivable Unforeseen Reinforced Precast Pile Build-Up Detail)



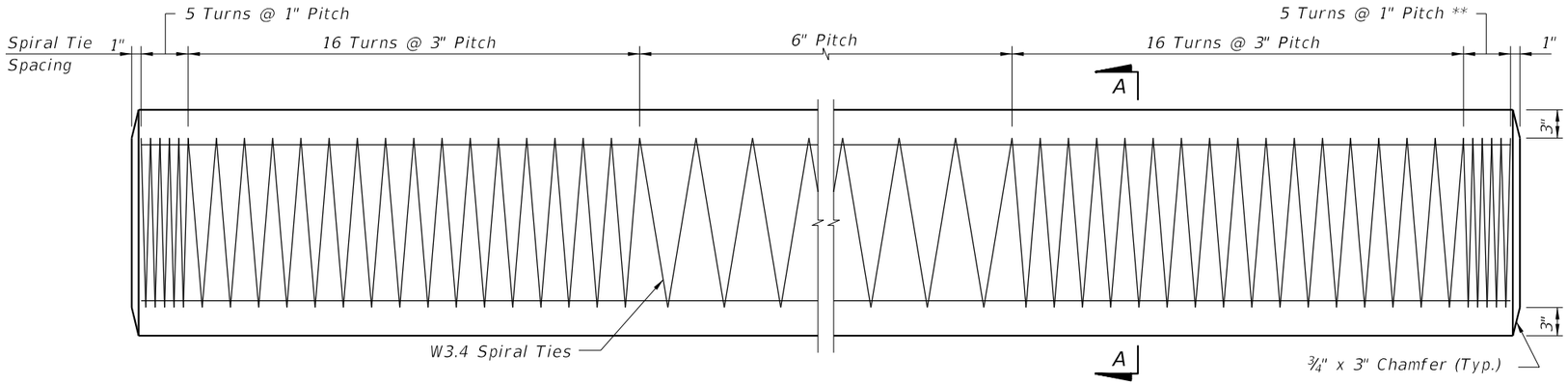
SECTION E-E
(See Drivable Prestressed Precast Pile Splice Detail)



SECTION F-F
(See Drivable Preplanned Prestressed Precast Pile Splice Detail)

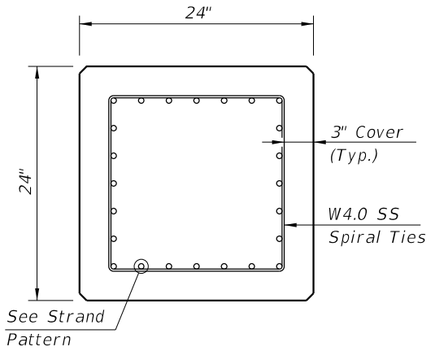
CFRP PILE SPLICE REINFORCEMENT DETAILS

12/17/2015 2:17:05 PM



ELEVATION

** See Note No. 4 on Index No. 22601

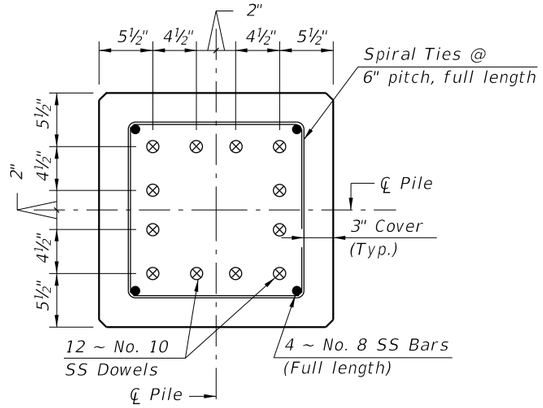


SECTION A-A

STRAND PATTERN

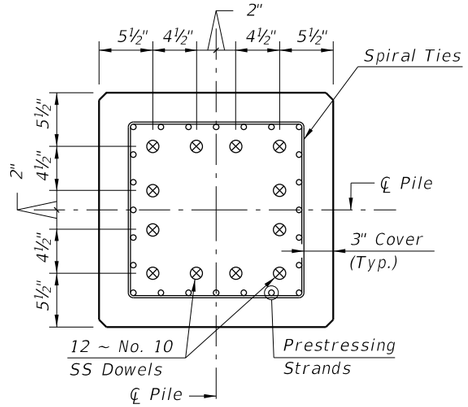
28 ~ ½" Ø, HSSS at 26 kips

NOTES:
1. Work this Index with Index No. 22600 – Notes and Details for Square CFRP & SS Prestressed Concrete Piles and Index No. 22601 – Square CFRP & SS Prestressed Concrete Pile Splices.
2. Any of the given Strand Patterns may be utilized. The strands shall be located as follows: Place one strand at each corner and place the remaining strands equally spaced between the corner strands. The total strand pattern shall be concentric with the nominal concrete section of the pile.



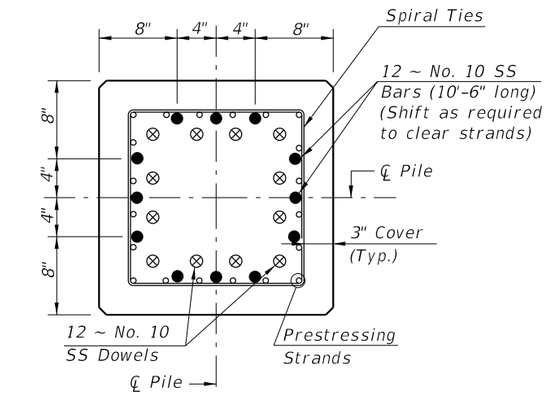
SECTION D-D

(See Nondrivable Unforeseen Reinforced Precast Pile Build-Up Detail)



SECTION E-E

(See Drivable Prestressed Precast Pile Splice Detail)



SECTION F-F

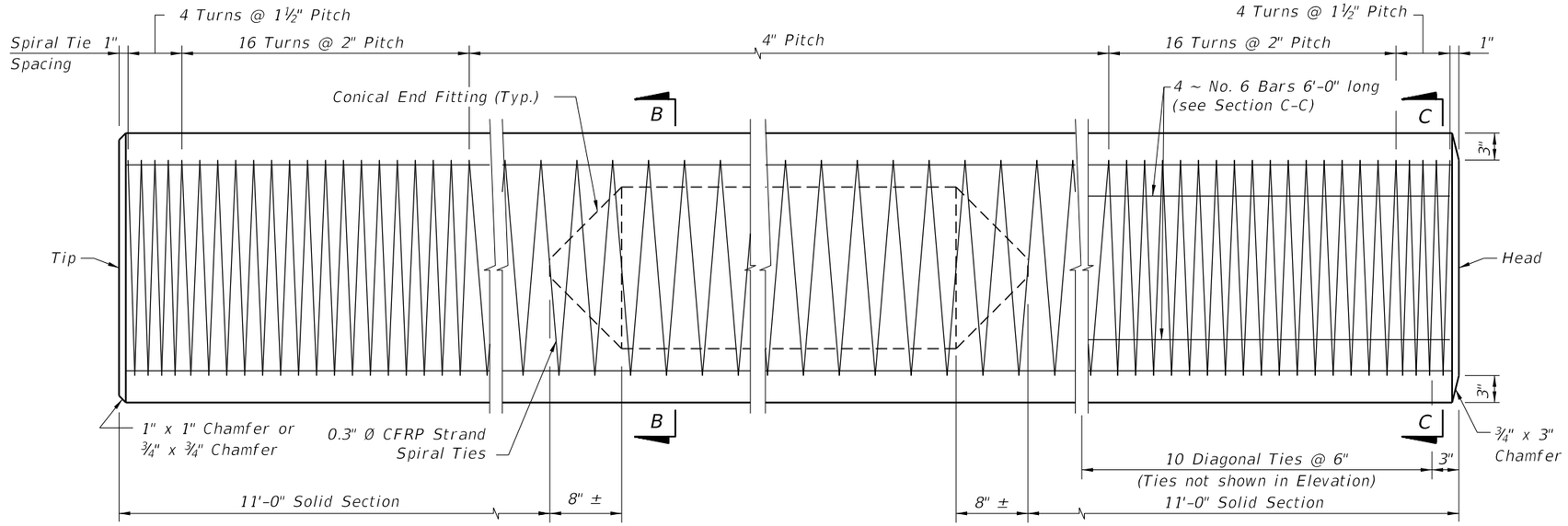
(See Drivable Preplanned Pile Splice Detail)

SS PILE SPLICE REINFORCEMENT DETAILS

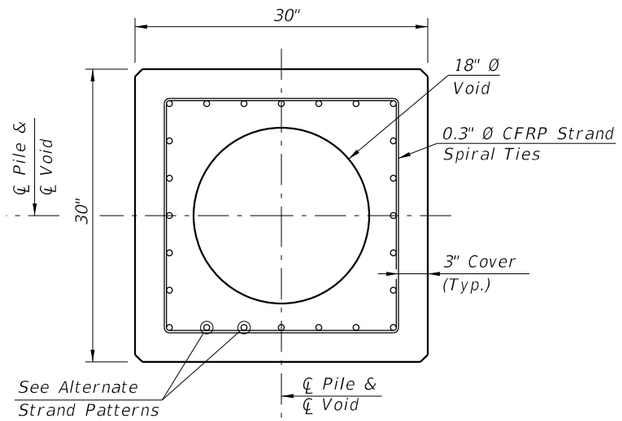
SS PRESTRESSED PILE DETAILS

12/23/2015 10:39:16 AM

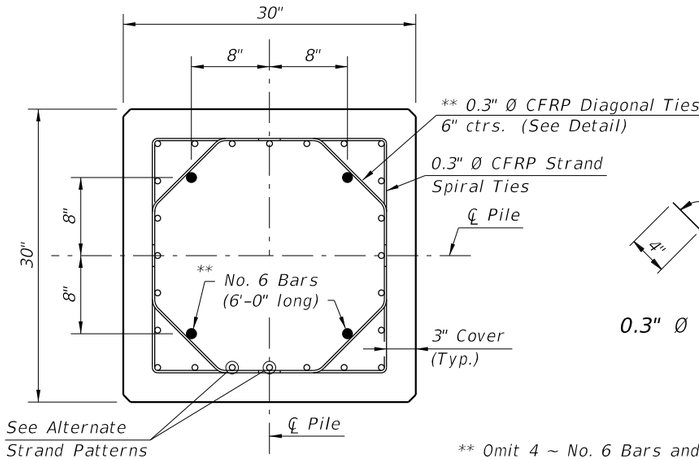
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2016-17 DESIGN STANDARDS	24" SQUARE CFRP & SS PRESTRESSED CONCRETE PILE	INDEX NO.	SHEET NO.
01/01/16					22624	2 of 2



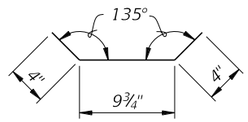
ELEVATION



SECTION B-B
(See Pile Splice Reinforcement Details)



SECTION C-C
(See Pile Splice Reinforcement Details)



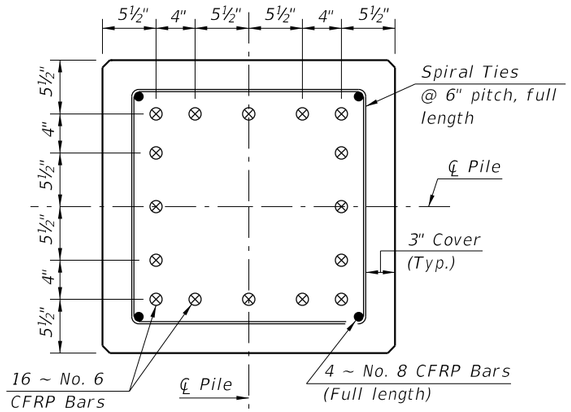
0.3" Ø DIAGONAL TIE DETAIL

** Omit 4 ~ No. 6 Bars and Diagonal Ties in pre-planned mechanical splice.

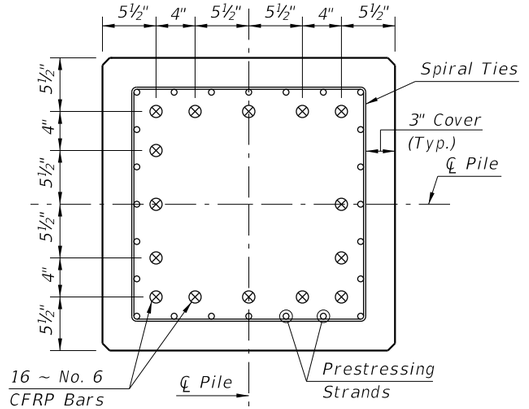
ALTERNATE STRAND PATTERNS

20 ~ 0.6" Ø, CFRP 7-Strand at 38 kips
20 ~ ½" Ø, CFRP Single-Strand at 37 kips

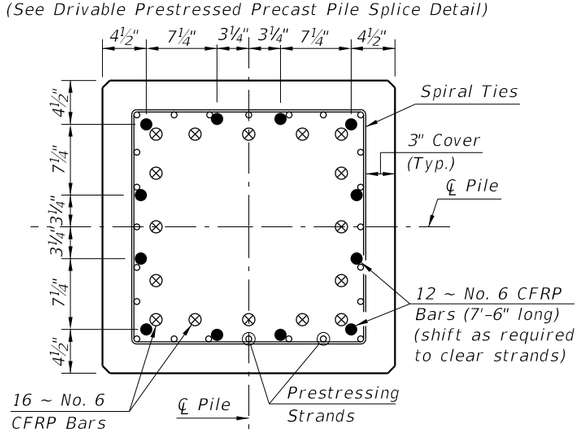
NOTES:
1. Any of the given Strand Patterns may be utilized. The strands shall be located as follows: Place one strand at each corner and place the remaining strands equally spaced between the corner strands. The total strand pattern shall be concentric with the nominal concrete section of the pile.
2. CONTRACTOR OPTION: The 30" pile may be cast SOLID by omitting the 18" Ø void. In this event, the Contractor shall submit calculations for approval and a proposed strand configuration that provide net prestressing after losses equal to 1000 psi. Alternate configurations for the Diagonal Ties, to maintain the position of the 4 ~ No. 6 Bars, may be approved by the Engineer.
3. Work this Index with Index No. 22600 – Notes and Details for Square CFRP & SS Prestressed Concrete Piles and Index No. 22601 – Square CFRP & SS Prestressed Concrete Pile Splices.



SECTION D-D
(See Nondrivable Unforeseen Reinforced Precast Pile Build-Up Detail)



SECTION E-E
(See Drivable Prestressed Precast Pile Splice Detail)



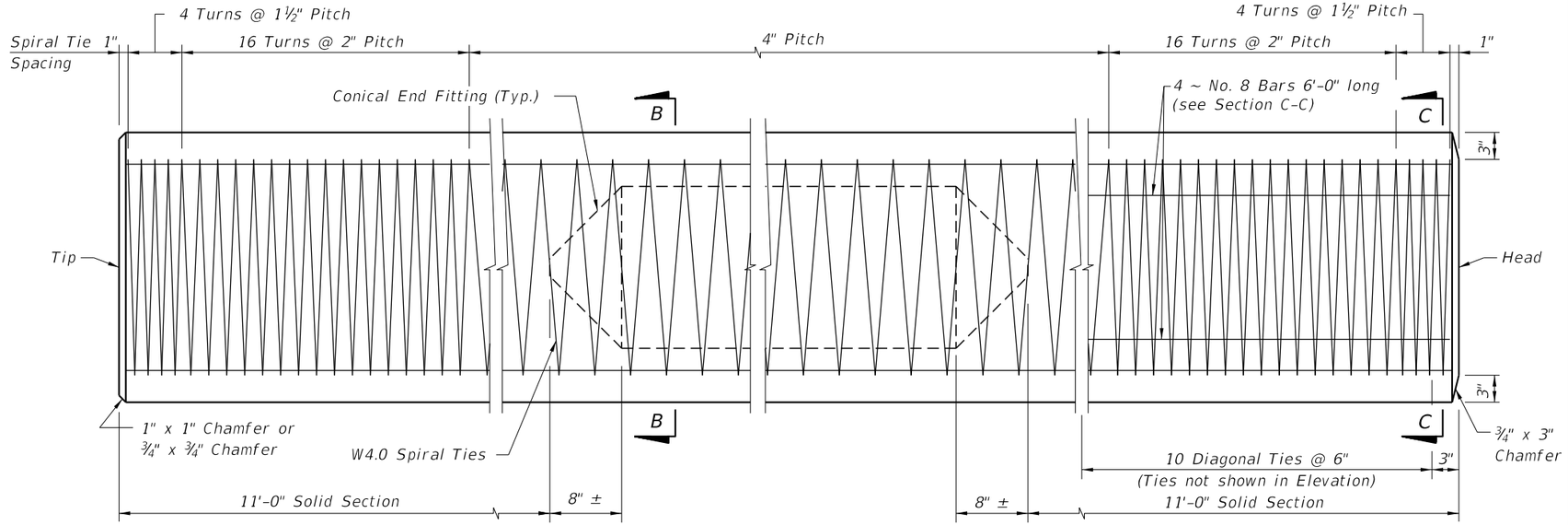
SECTION F-F
(See Drivable Preplanned Prestressed Precast Pile Splice Detail)

CFRP PILE SPLICE DETAILS

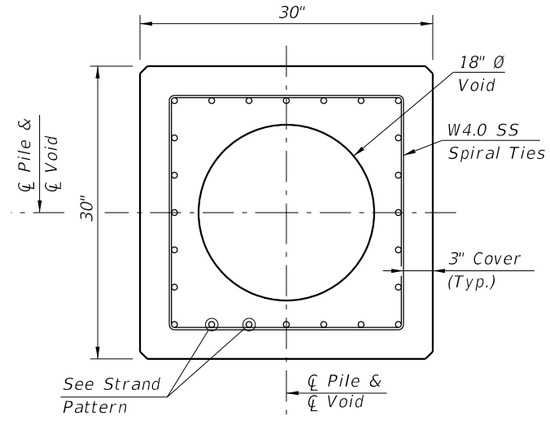
CFRP PRESTRESSED PILE DETAILS

12/17/2015 2:17:27 PM

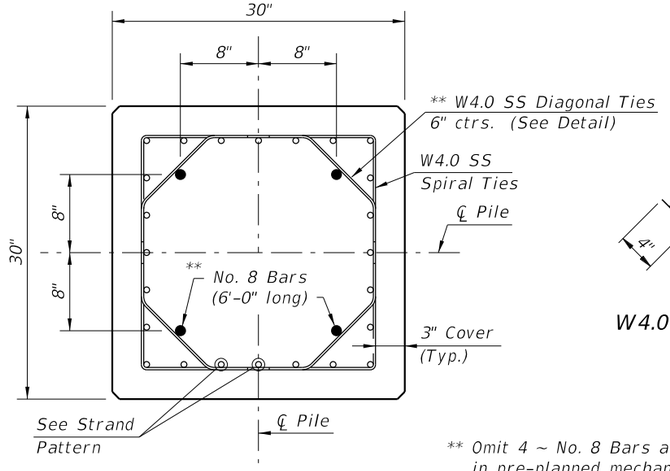
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2016-17 DESIGN STANDARDS	30" SQUARE CFRP & SS PRESTRESSED CONCRETE PILE	INDEX NO.	SHEET NO.
01/01/16					22630	1 of 2



ELEVATION

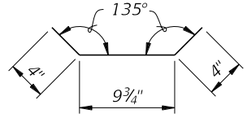


SECTION B-B
(See Pile Splice Reinforcement Details)



SECTION C-C
(See Pile Splice Reinforcement Details)

** Omit 4 ~ No. 8 Bars and Diagonal Ties in pre-planned mechanical splice.

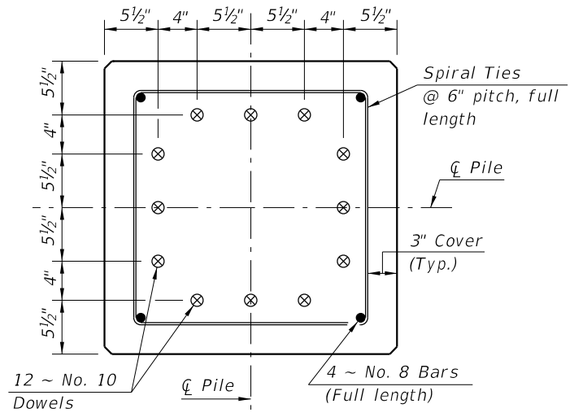


W4.0 DIAGONAL TIE DETAIL

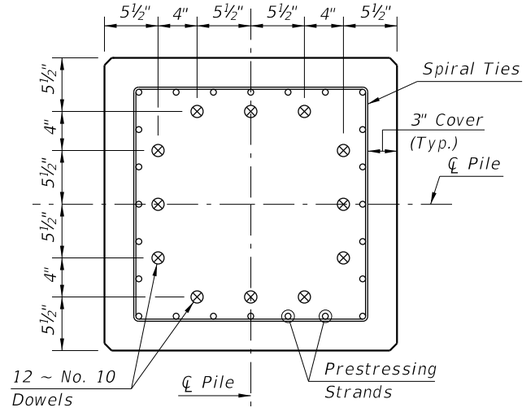
STRAND PATTERN

32 ~ ½" Ø, HSSS at 26 kips

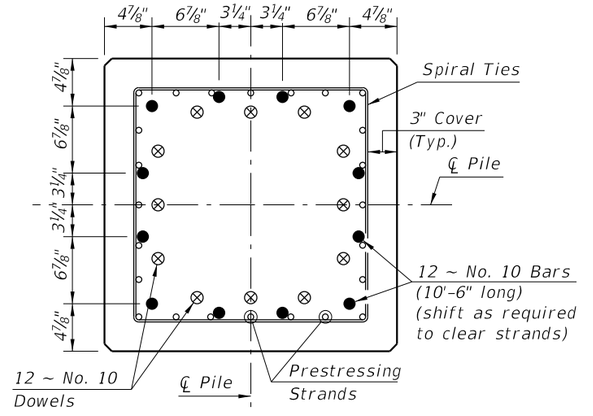
NOTES:
1. Any of the given Strand Patterns may be utilized. The strands shall be located as follows: Place one strand at each corner and place the remaining strands equally spaced between the corner strands. The total strand pattern shall be concentric with the nominal concrete section of the pile.
2. CONTRACTOR OPTION: The 30" pile may be cast SOLID by omitting the 18" Ø void. In this event, the Contractor shall submit calculations for approval and a proposed strand configuration that provide net prestressing after losses equal to 1000 psi. Alternate configurations for the Diagonal Ties, to maintain the position of the 4 ~ No. 8 Bars, may be approved by the Engineer.
3. Work this Index with Index No. 22600 – Notes and Details for Square CFRP & SS Prestressed Concrete Piles and Index No. 22601 – Square CFRP & SS Prestressed Concrete Pile Splices.



SECTION D-D
(See Nondrivable Unforeseen Reinforced Precast Pile Build-Up Detail)



SECTION E-E
(See Drivable Prestressed Precast Pile Splice Detail)



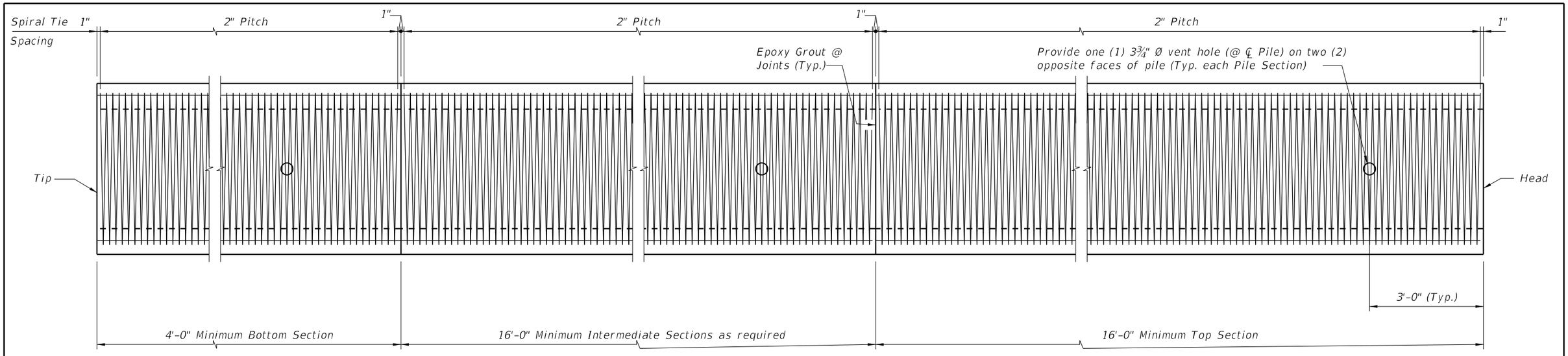
SECTION F-F
(See Drivable Preplanned Prestressed Precast Pile Splice Detail)

SS PILE SPLICE DETAILS

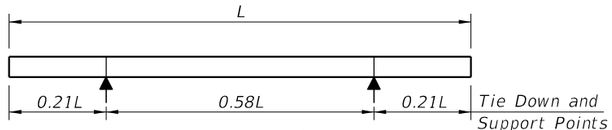
SS PRESTRESSED PILE DETAILS

12/23/2015 10:39:36 AM

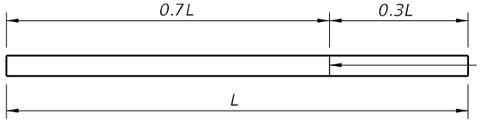
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2016-17 DESIGN STANDARDS	30" SQUARE CFRP & SS PRESTRESSED CONCRETE PILE	INDEX NO.	SHEET NO.
01/01/16					22630	2 of 2



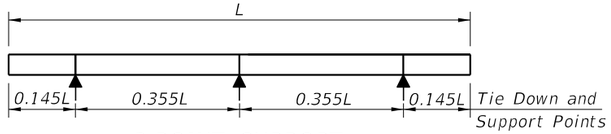
ELEVATION



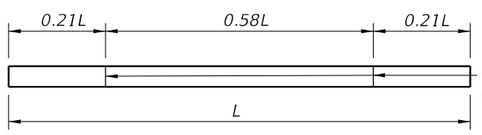
2-POINT SUPPORT



1-POINT PICK-UP

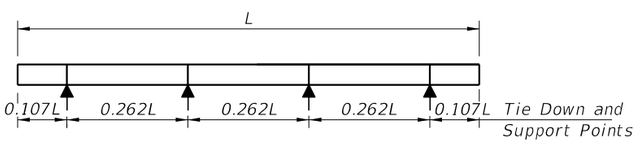


3-POINT SUPPORT



2-POINT PICK-UP

PILE PICK-UP DETAILS



4-POINT SUPPORT

STORAGE AND TRANSPORTATION SUPPORT DETAILS

TABLE OF MAXIMUM PILE PICK-UP AND SUPPORT LENGTHS		
Maximum Pile Length (Feet)	Required Storage and Transportation Detail	Pick-Up Detail
119	2, 3, or 4 point	1 Point
170	2, 3, or 4 point	2 Point

NOTES

DESIGN SPECIFICATIONS:
Florida Department of Transportation (FDOT) "Structures Design Guidelines", Current Edition.
American Association of State Highway and Transportation Officials (AASHTO) "LRFD Bridge Design Specifications", Current Edition.

SPIRAL TIES:
One full wrap of spirals is required at both the head and tip of pile. One half turn required for spiral splices.

CONCRETE CLASS:
Concrete for all piles shall be Class V (Special). Concrete for pile splices shall be Class IV. See "GENERAL NOTES" in Structures Plans for any specific locations where the use of Silica Fume is required.

CONCRETE STRENGTH:
The cylinder strength shall be 6,000 psi minimum at time of transfer of the Prestressing Force.

SPLICE BONDING MATERIAL:
The material to form the joint between pile sections shall be a Type B Epoxy Compound in accordance with Section 926 of the Specifications. The bonding agent used on internal pile surfaces shall be a Type A Epoxy Compound in accordance with Section 926 of the Specifications. Epoxy Compounds used shall be contained on the Approved Products List (APL). Use Epoxy Bonding Compound or Epoxy Mortar as recommended by the Manufacturer. For Epoxy Mortar only use sand or other filler material supplied by the manufacturer and in the proportions recommended.

PICK-UP POINTS:
Piles shall be marked at the pick-up points to indicate proper points for attaching handling lines.

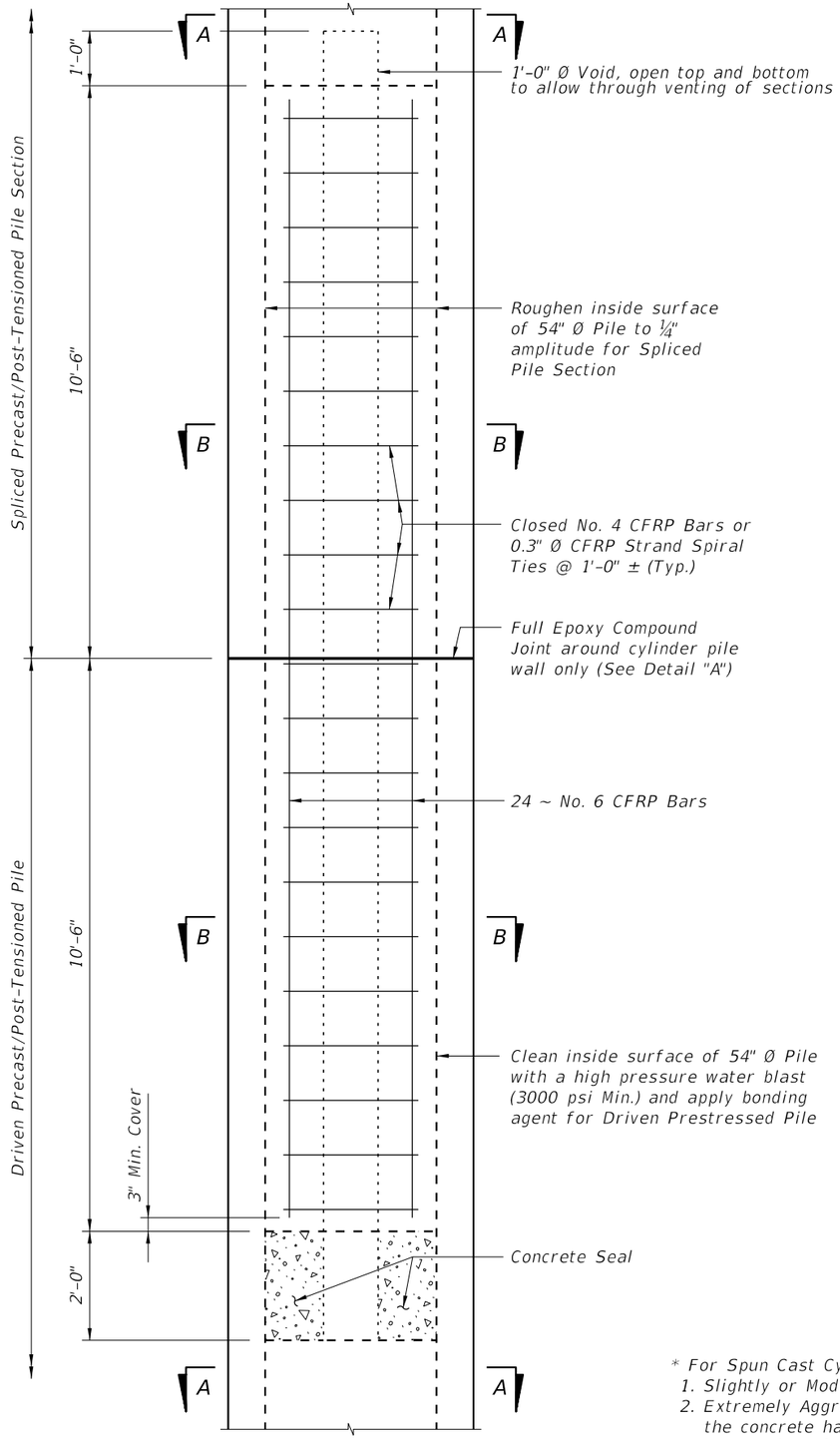
REINFORCING STEEL:
Stainless Steel: All reinforcing steel shall meet the requirements of Specification Section 931 for Type 304, Grade 75.
Carbon FRP: All reinforcing bars shall be CFRP meeting the requirements of Specification Section 932.

PRESTRESSING STEEL:
Stainless Steel: Prestressing steel shall be seven-wire strand HSSS, UNS S32205 (Type 2205) or UNS S31803 strand, meeting the requirements of Specification Section 933.
Carbon FRP: Prestressing strand shall be CFRP Strand meeting the requirements of Specification Section 933.

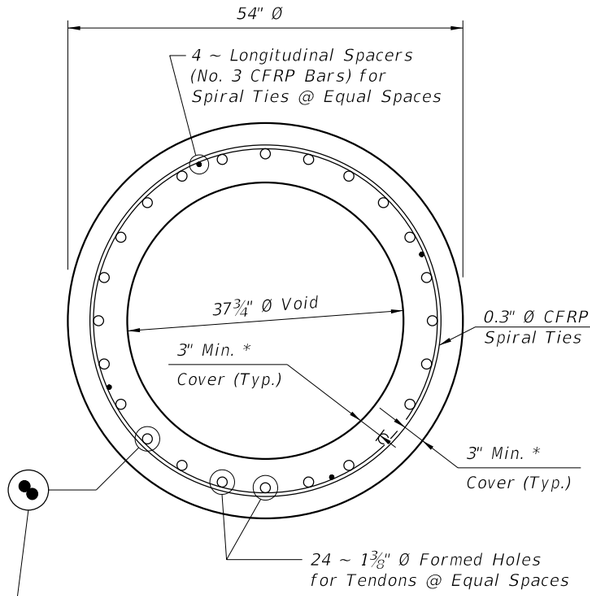
PILE DRIVING AFTER SPLICING:
Pile splices shall reach a minimum strength of 5500 psi before driving is resumed.

12/17/2015 2:17:43 PM

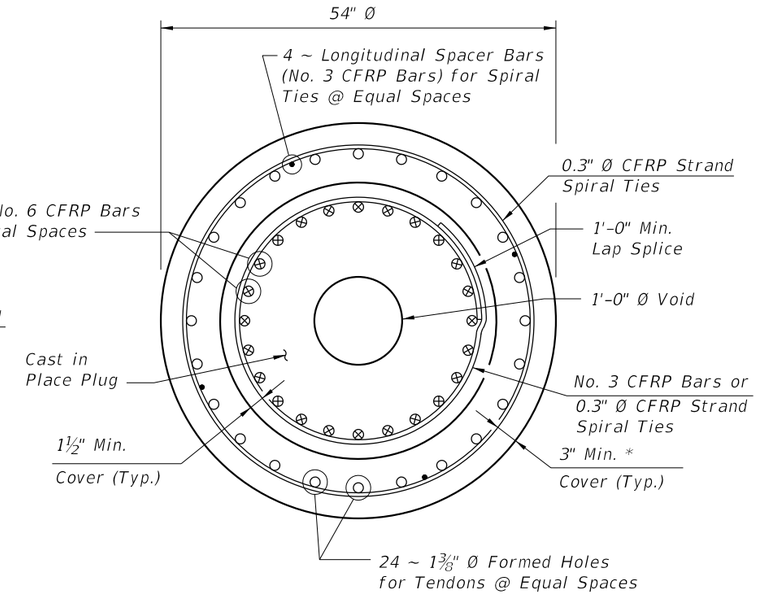
LAST REVISION	REVISION	DESCRIPTION:	FY 2016-17 DESIGN STANDARDS	54" PRECAST/POST-TENSIONED CFRP & SS CONCRETE CYLINDER PILE	INDEX NO.	SHEET NO.
01/01/16					22654	1 of 3



DRIVABLE UNFORESEEN FIELD SPLICE DETAIL
(Cast-In-Place Plug)



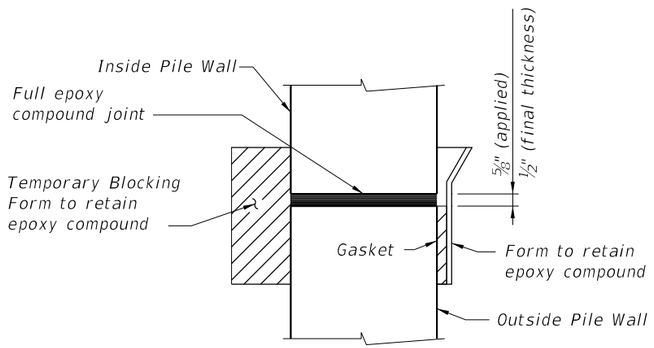
SECTION A-A



SECTION B-B

ALTERNATE STRAND PATTERNS

48 ~ 0.5" Ø, Single-Strand, at 28 kips
48 ~ 0.6" Ø, 7-Strand, at 29 kips



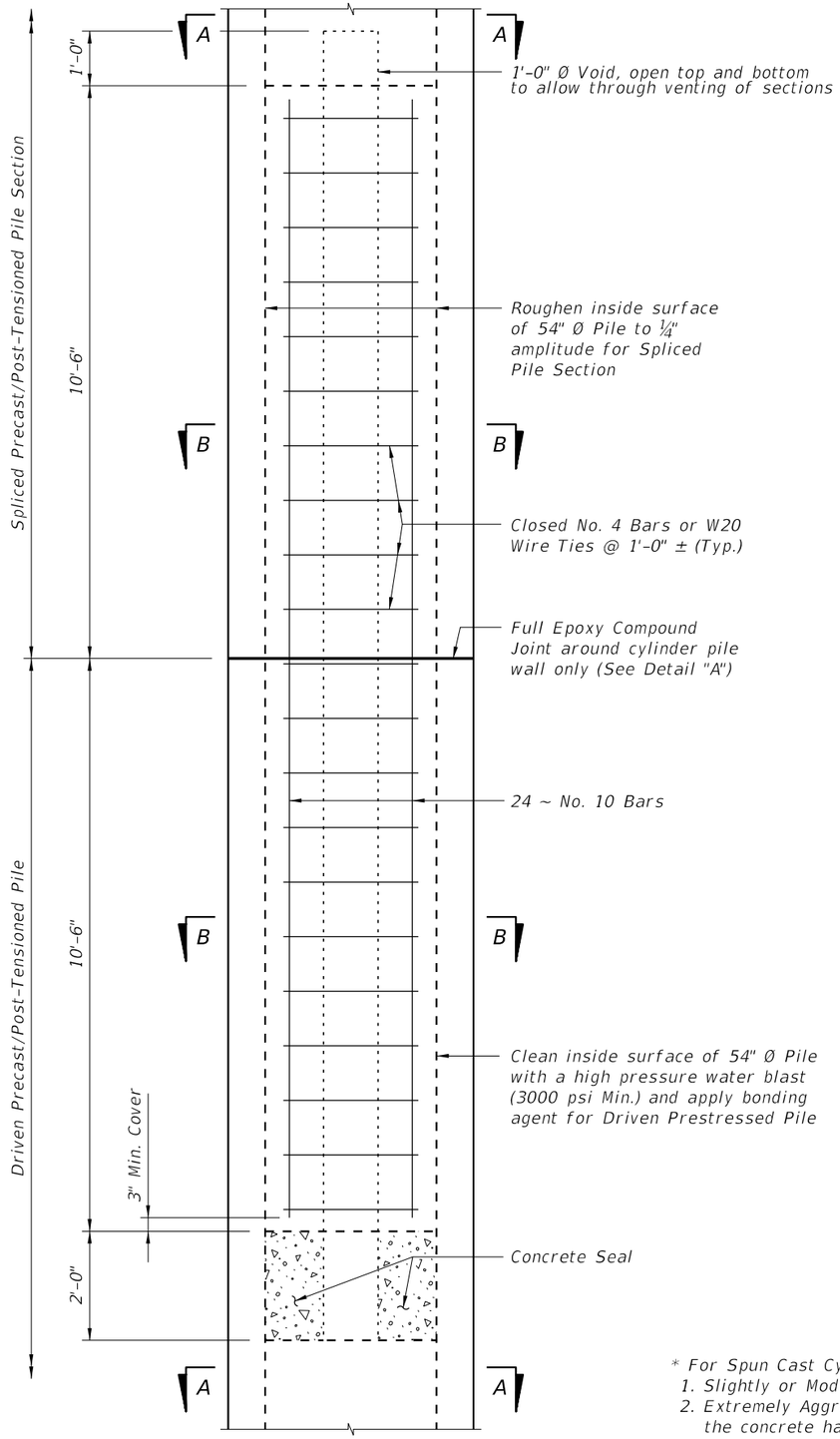
DETAIL "A"

* For Spun Cast Cylinder Piles, the following requirements for concrete cover apply:
1. Slightly or Moderately Aggressive Environments: The concrete cover may be reduced to 2 inches.
2. Extremely Aggressive Environments: The concrete cover may be reduced to 2 inches as long as the concrete has a documented chloride ion penetration apparent diffusion coefficient with a mean value of 0.005 in² per year or less; otherwise, a 3-inch concrete cover is required.

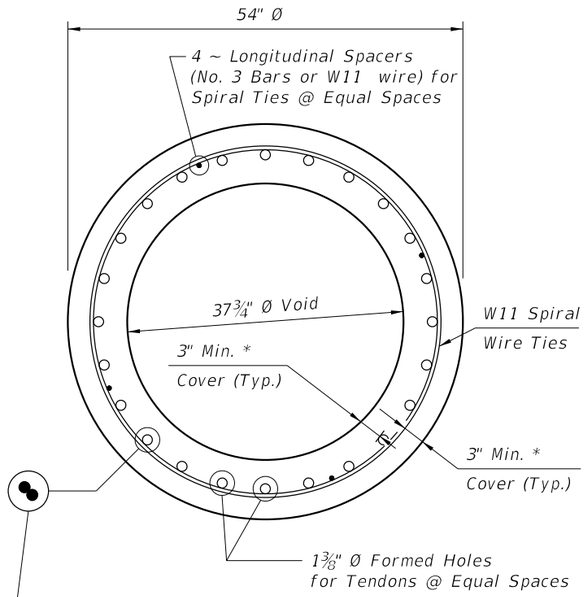
CFRP POST-TENSIONED PILE DETAILS

LAST REVISION	REVISION	DESCRIPTION:			INDEX NO.	SHEET NO.
01/01/16			FY 2016-17 DESIGN STANDARDS	54" PRECAST/POST-TENSIONED CFRP & SS CONCRETE CYLINDER PILE	22654	2 of 3

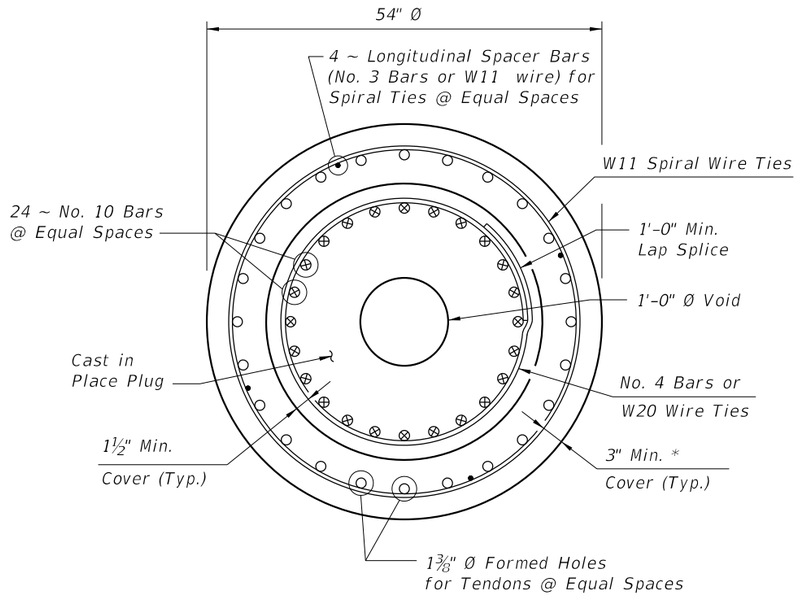
12/17/2015 2:17:44 PM



DRIVABLE UNFORESEEN FIELD SPLICE DETAIL
(Cast-In-Place Plug)



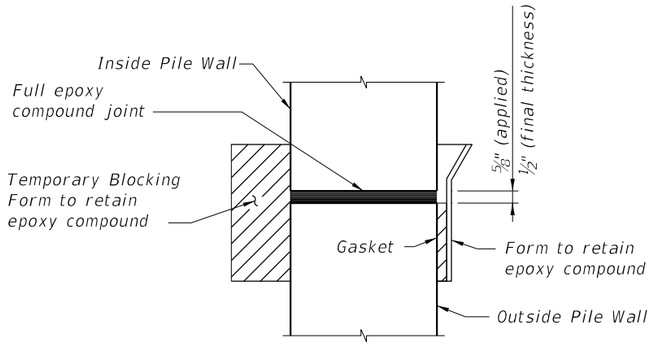
SECTION A-A



SECTION B-B

ALTERNATE STRAND PATTERNS

72 ~ ½" Ø, HSSS Strands, at 21 kips (24~3 strand tendons)
58 ~ ½" Ø, HSSS Strands, at 24 kips (29~2 strand tendons)
48 ~ 0.6" Ø, HSSS Strands, at 32 kips (24~2 strand tendons)



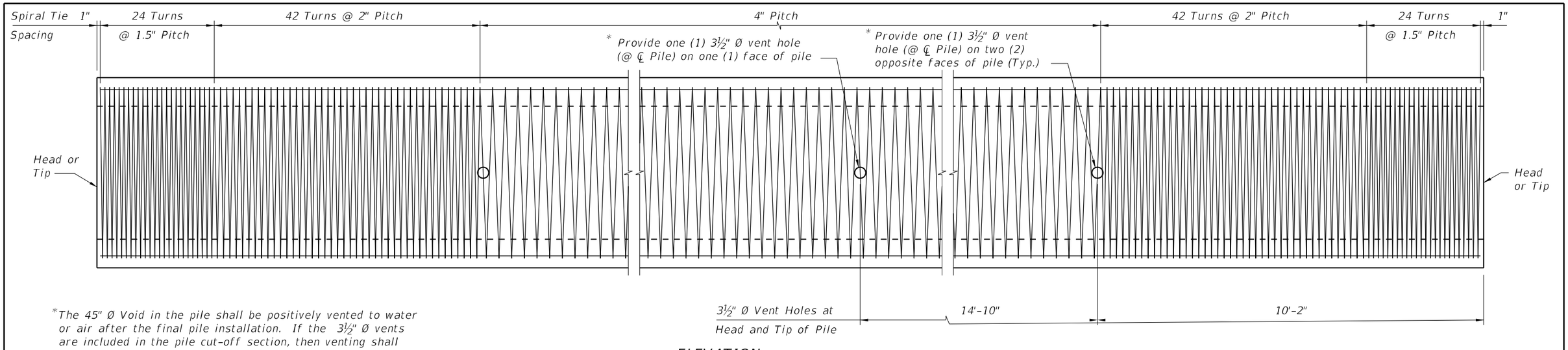
DETAIL "A"

* For Spun Cast Cylinder Piles, the following requirements for concrete cover apply:
1. Slightly or Moderately Aggressive Environments: The concrete cover may be reduced to 2 inches.
2. Extremely Aggressive Environments: The concrete cover may be reduced to 2 inches as long as the concrete has a documented chloride ion penetration apparent diffusion coefficient with a mean value of 0.005 in² per year or less; otherwise, a 3-inch concrete cover is required.

SS POST-TENSIONED PILE DETAILS

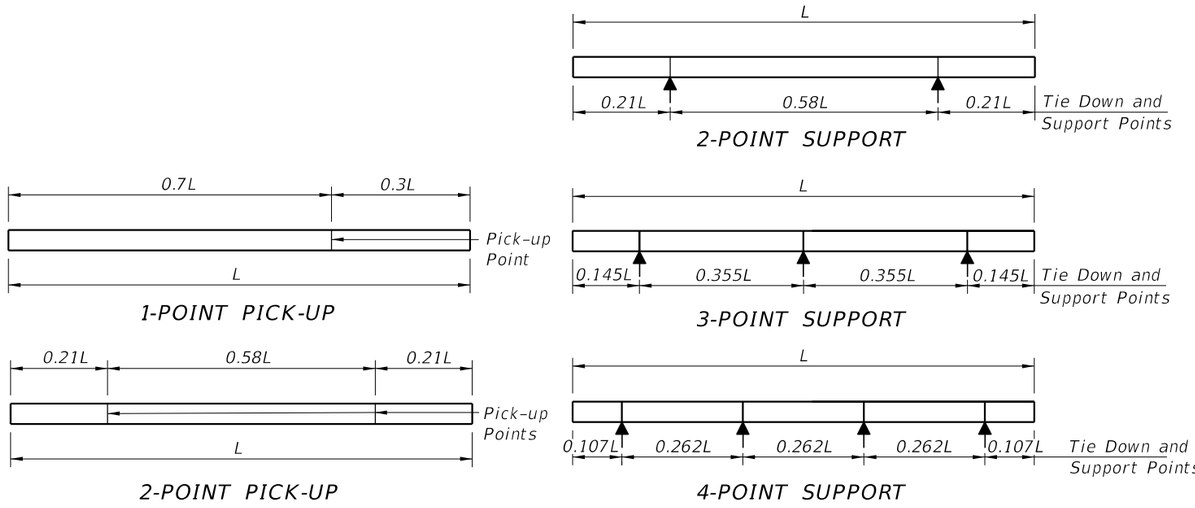
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2016-17 DESIGN STANDARDS	54" PRECAST/POST-TENSIONED CFRP & SS CONCRETE CYLINDER PILE	INDEX NO.	SHEET NO.
01/01/16					22654	3 of 3

12/17/2015 2:17:45 PM



*The 45" Ø Void in the pile shall be positively vented to water or air after the final pile installation. If the 3½" Ø vents are included in the pile cut-off section, then venting shall be provided by the use of a 1" Ø PVC conduit through the substructure cap or column.

ELEVATION



PILE PICK-UP DETAILS

STORAGE AND TRANSPORTATION SUPPORT DETAILS

TABLE OF MAXIMUM PILE PICK-UP AND SUPPORT LENGTHS		
Maximum Pile Length (Feet)	Required Storage and Transportation Detail	Pick-Up Detail
122	2, 3, or 4 point	1 Point
174	2, 3, or 4 point	2 Point

NOTES

DESIGN SPECIFICATIONS:
Florida Department of Transportation (FDOT) "Structures Design Guidelines", current edition.
American Association of State Highway and Transportation Officials (AASHTO) "LRFD Bridge Design Specifications", current edition.

SPIRAL TIES:
One full wrap of spirals is required at both the head and tip of pile. One half turn required for spiral splices.

CONCRETE CLASS:
Concrete for all piles shall be Class V (Special). Concrete for pile splices shall be Class IV.
See "GENERAL NOTES" in Structures Plans for any specific locations where the use of Silica Fume is required for stainless steel reinforcing.

CONCRETE STRENGTH:
The cylinder strength shall be 4,000 psi minimum at time of transfer of the Prestressing Force.

SPLICE BONDING MATERIAL:
The material to form the joint between pile sections shall be a Type B Epoxy Compound in accordance with Specification Section 926. The bonding agent used on internal pile surfaces shall be a Type A Epoxy Compound in accordance with Specification Section 926. Epoxy Compounds used shall be contained on the Approved Products List (APL).
Use Epoxy Bonding Compound or Epoxy Mortar as recommended by the Manufacturer. For Epoxy Mortar only use sand or other filler material supplied by the manufacturer and in the proportions recommended.

PICK-UP POINTS:
Piles shall be marked at the pick-up points to indicate proper points for attaching handling lines.

REINFORCING BARS:
Stainless Steel: All reinforcing steel shall meet the requirements of Specification Section 931 for Type 304, Grade 75.
Carbon FRP: All reinforcing bars shall be CFRP meeting the requirements of Specification Section 932.

PRESTRESSING STRAND:
Stainless Steel: Prestressing steel shall be seven-wire strand HSSS, UNS S32205 (Type 2205) or UNS S31803 strand meeting the requirements of Specification Section 933.
Carbon FRP: Prestressing strand shall be CFRP Strand meeting the requirements of Specification Section 933.

PILE DRIVING AFTER SPLICING:
Pile splices shall reach a minimum strength of 5500 psi before driving is resumed.

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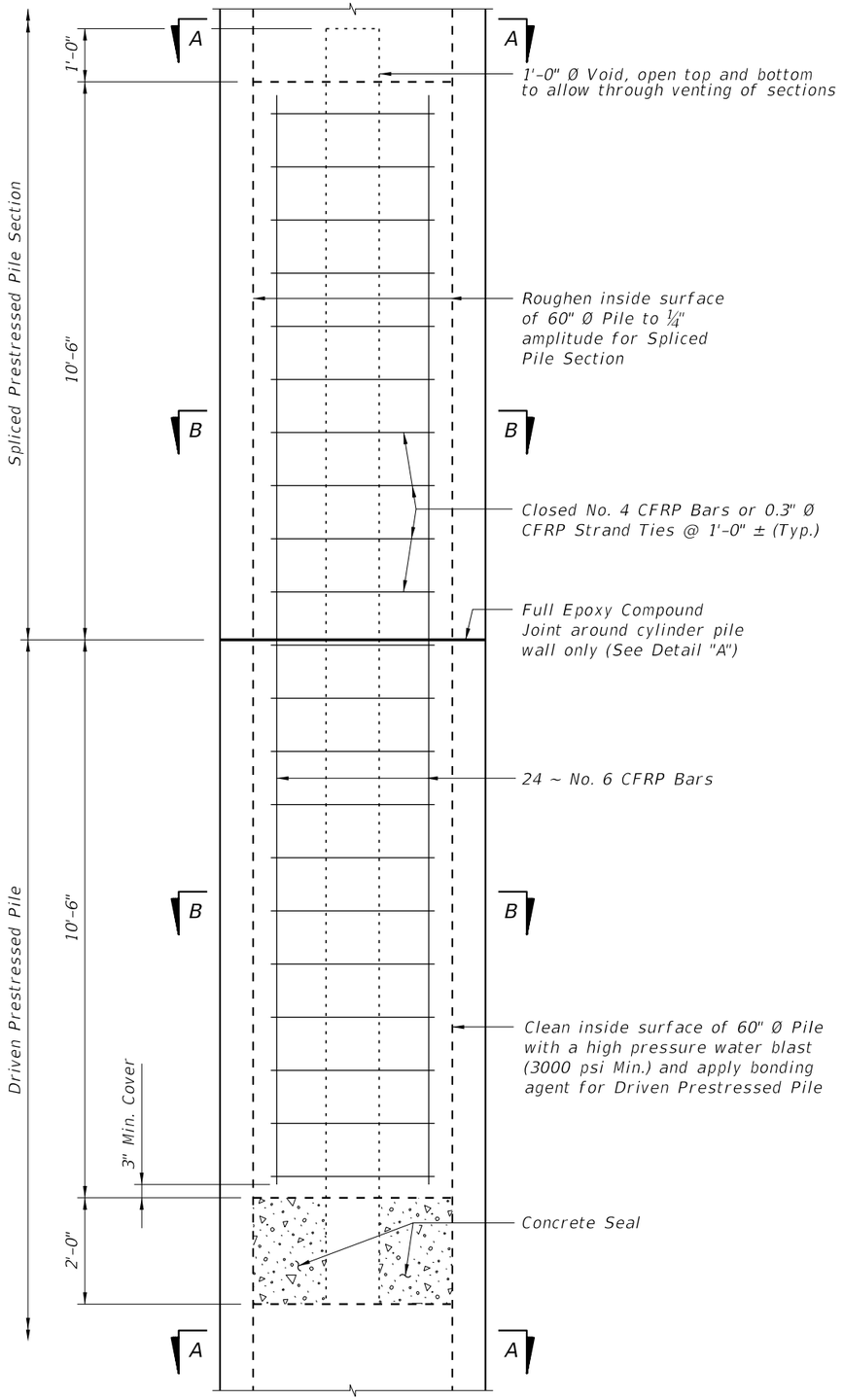
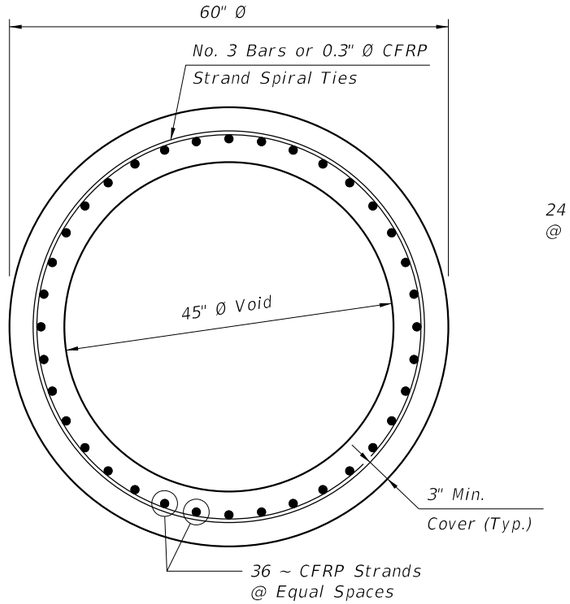
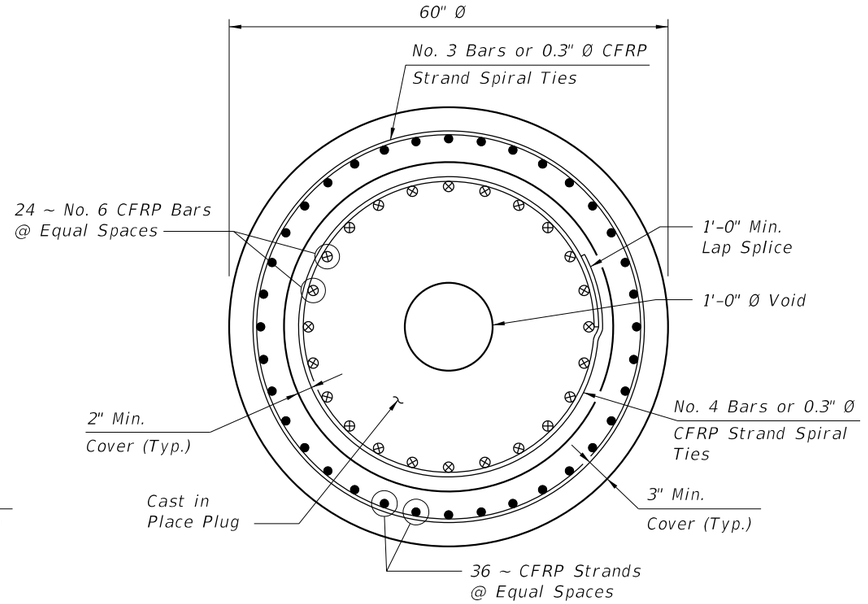
LAST REVISION	REVISION	DESCRIPTION:	FY 2016-17 DESIGN STANDARDS	60" PRESTRESSED CFRP & SS CONCRETE CYLINDER PILE	INDEX NO.	SHEET NO.
01/01/16					22660	1 of 3



DRIVABLE UNFORESEEN FIELD SPLICE DETAIL
(Cast in Place Plug)



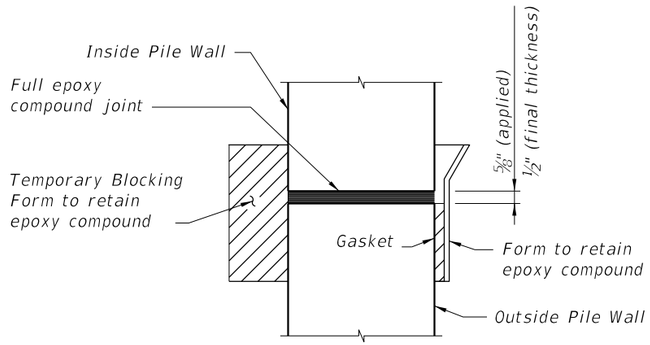
SECTION A-A



SECTION B-B

ALTERNATE STRAND PATTERNS

0.5" Ø, CFRP Single-Strand, at 39 kips
0.6" Ø, CFRP 7-Strand, at 40 kips



DETAIL "A"

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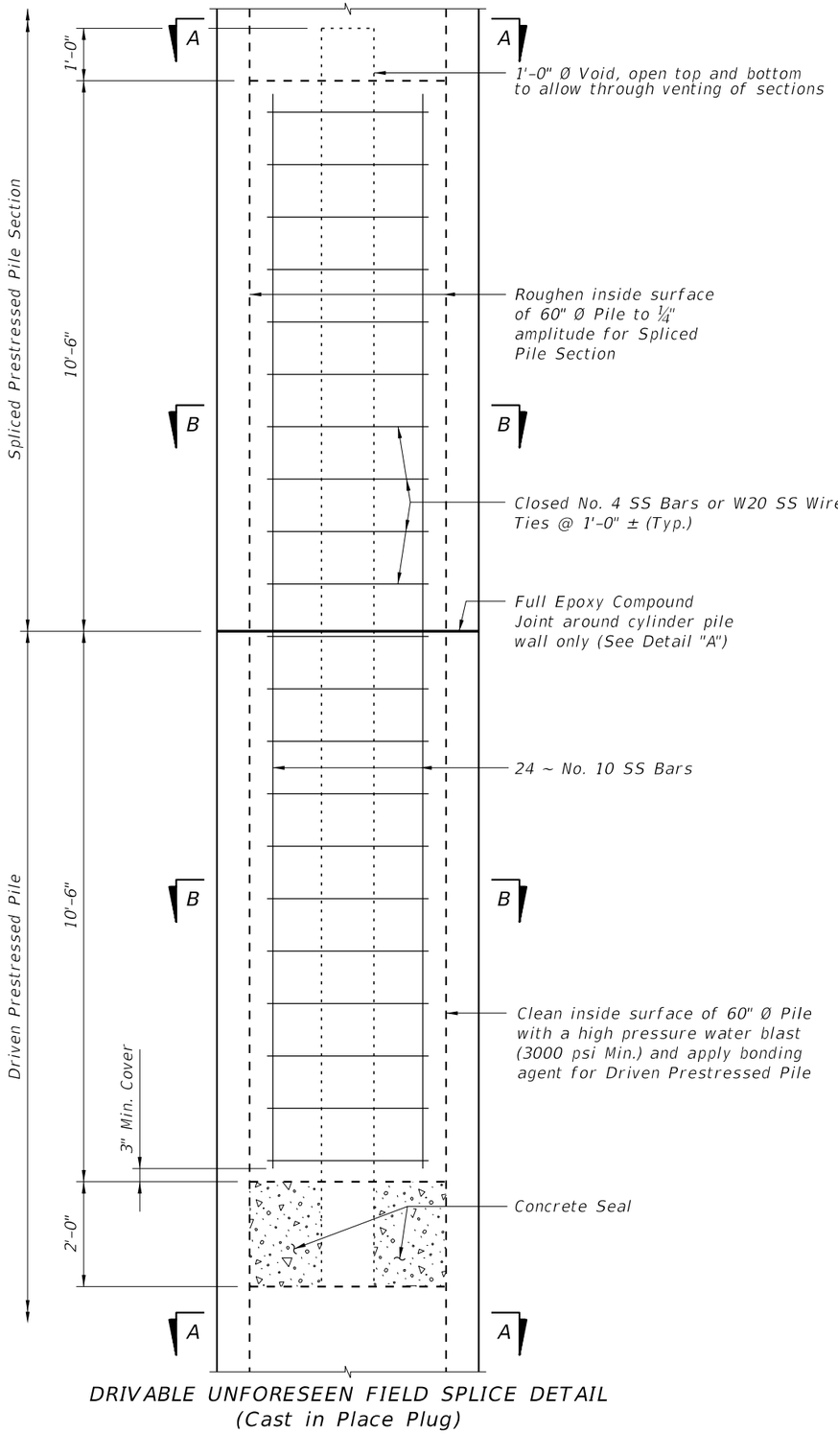
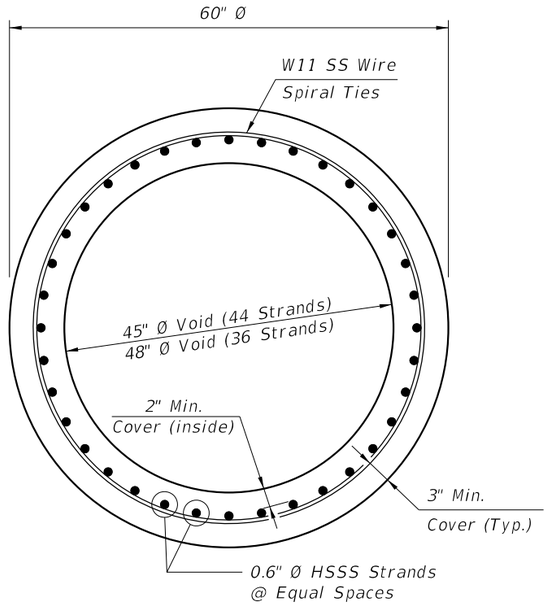
CFRP POST-TENSIONED PILE DETAILS

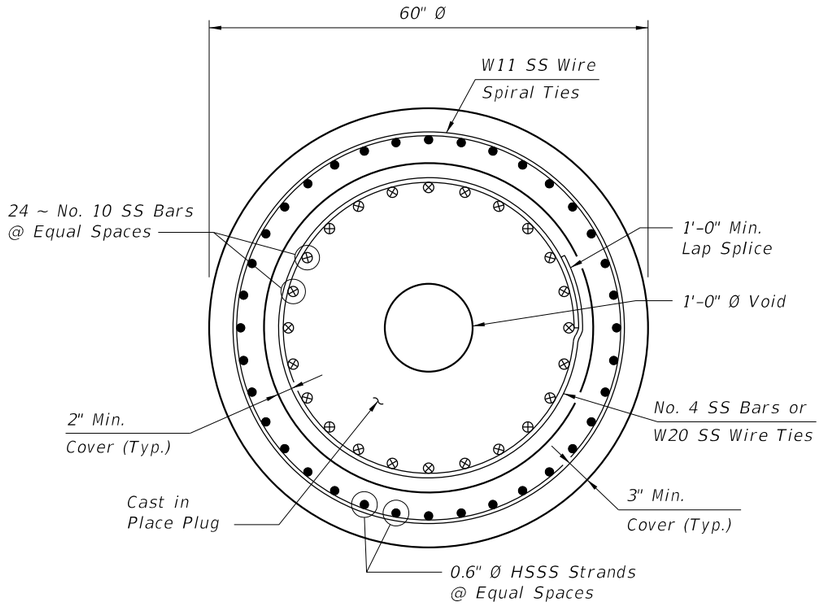
LAST REVISION	REVISION	DESCRIPTION:	FY 2016-17 DESIGN STANDARDS	60" PRESTRESSED CFRP & SS CONCRETE CYLINDER PILE	INDEX NO.	SHEET NO.
01/01/16					22660	2 of 3



DRIVABLE UNFORESEEN FIELD SPLICE DETAIL
(Cast in Place Plug)



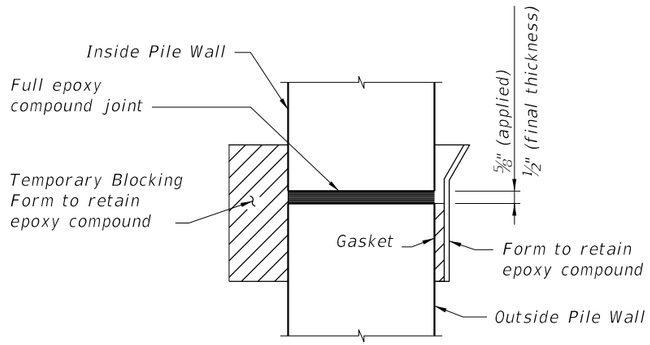
SECTION A-A



SECTION B-B

ALTERNATE STRAND PATTERNS

44 ~ 0.6" Ø, HSSS Strand, at 36 kips
36 ~ 0.6" Ø, HSSS Strand, at 36 kips



DETAIL "A"

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SS POST-TENSIONED PILE DETAILS

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2016-17 DESIGN STANDARDS	60" PRESTRESSED CFRP & SS CONCRETE CYLINDER PILE	INDEX NO.	SHEET NO.
01/01/16					22660	3 of 3