

ORIGINATION FORM

Proposed Revisions to a Standard Plans Index

(Please provide all information — Incomplete forms will be returned)

Contact Information:

Date: June 5, 2023

Originator: Dino Jameson

Phone: (352) 955-2933

Email: dino.jameson@dot.state.fl.us

Standard Plans:

Index Number: 455-400

Sheet Number (s): 1 of 4

Index Title: Precast Concrete Sheet Pile Wall
(Conventional)



Summary of the changes:

Sheet 1: Changed the "PLASTIC FILTER FRABRIC" Note in the SHEET PILE DESIGN CRITERIA AND NOTES to "GEOTEXTILE: Provide and install Type D-2 or D-3 geotextile in accordance with Specifications 514. Extend the geotextile to the bottom of the "X" dimension."; Changed all references of "Filter Fabric" or "Plastic Filter Fabric" to "Geotextile".

Areas of the Standard Plans where 985 is referenced for drainage details needs to now reference Specs 514 (Division II specs). The Contractor is not responsible for the producer requirements division III specs, but ensure that the product used is on the APL and used for appropriate intended use. Specs 514 essentially does reference 985 to meet the materials requirement.



Commentary / Background:

In the July 2022 SSRBC workbook, construction requirements for the Contractor for geosynthetic materials from Section 985 was removed. The reason for it was that the construction requirements doesn't belong in Division III of the specifications, as this is for producer requirements. Instead of applying specific requirements to each individual specs that references 985 in Division II, the Department is going to modify specification 514 to cover geosynthetics used for drainage applications. Specs 145 covers the reinforcement (structural) applications and construction requirements and erosion control has specific requirements in various areas of Division II, therefore, both erosion and reinforcement are covered. The only missing link in Division II is the drainage applications. Proposed changes to 514 cover construction requirements and material acceptance. In addition, specs 514 ensures that the Contractor obtains geosynthetic product from a manufacturer that meets 985 spec requirements.

Other Affected Offices / Documents: (Provide name of person contacted)

Yes No

- | | | |
|-------------------------------------|-------------------------------------|---|
| ☐ | ☒ | Other Standard Plans – |
| ☐ | ☒ | FDOT Design Manual – |
| ☐ | ☒ | Basis of Estimates Manual – |
| ☒ | ☐ | Standard Specifications – Various sections where 985 is referenced. |
| ☐ | ☒ | Approved Product List – |
| ☐ | ☒ | Construction – |
| ☐ | ☒ | Maintenance – |

Origination Package Includes: (Submit package to Rick Jenkins)

Yes N/A

- | | | |
|--------------------------|-------------------------------------|---|
| ☐ | ☒ | Redline Mark-ups |
| ☐ | ☒ | Revised or Proposed Standard Plan Instruction (SPI) |
| ☐ | ☒ | Other Support Documents |

Implementation:

- | | |
|-------------------------------------|----------------------------------|
| ☐ | Design Bulletin (Interim) |
| ☐ | DCE Memo |
| ☐ | Program Mgmt. Bulletin |
| ☒ | FY-Standard Plans (Next Release) |

————— Contact the Roadway Design Office for assistance in completing this form —————

Email to: Rick Jenkins rick.jenkins@dot.state.fl.us and Darren Martin darren.martin@dot.state.fl.us

SHEET PILE DESIGN CRITERIA AND NOTES

DESCRIPTION:
This Index includes details for five types of piles with two thicknesses.
Types "B1", "B2", "C1" and "C2" piles (corner piles) are of reinforced concrete construction, and Type "A" is of prestressed concrete construction. The piles shall be manufactured, cured and installed in accordance with the requirements of the contract documents.

MATERIALS: (for materials not listed refer to the Specifications)
CONCRETE
Class: V for slightly and moderately aggressive environments
V with Highly Reactive Pozzolans for extremely aggressive environments
Unit weight: 150 pcf
Modulus of Elasticity: Based on the use of Florida limerock concrete

REINFORCING STEEL
ASTM A615 Grade 60

PRESTRESSING STEEL
ASTM A416 Grade 270 (Low-Relaxation Strand)

DESIGN PARAMETERS:
Type "A"
Concrete Compressive Strength at release of prestressing: 4000 psi minimum
Uniform compression after prestressing losses: 1000 psi minimum
Pick-up, Storage and Transportation: 0.0 psi tension with 1.5 times pile self weight
Types "B1", "B2", "C1" & "C2"
Pick-up, Storage and Transportation: Minimum compressive strength $f'_{ci} \geq 4000$ psi required.

ENVIRONMENT:
The pile designs are applicable to all Environments.

PLASTIC FILTER FABRIC:
The plastic filter fabric shall extend to the bottom of the "X" dimension.

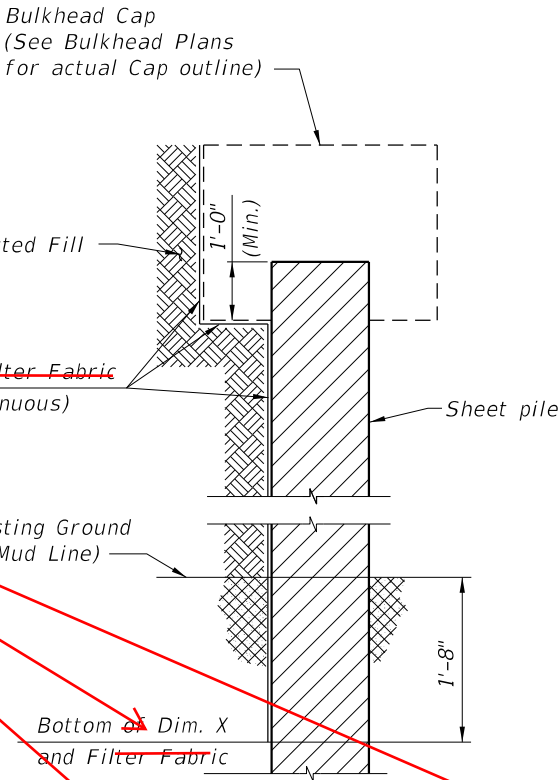
PILE PICK-UP AND HANDLING:
Type "A"
Pick-up of pile may be either a single point pick-up or a two point pick-up as shown below.
Types "B1", "B2", "C1" & "C2"
Two point pick-up for lifting out of forms & two point support for storage & transportation.
Single point pick-up for installation only.

PILE FIT-UP:
The 2'-6" Sheet Pile dimension is nominal. This dimension may be shortened by the Manufacturer up to 1/2" to allow for Sheet Pile fit-up in its final position. Minimum Sheet Pile width is 2'-5 1/2". No changes shall be made to the tongues or grooves.

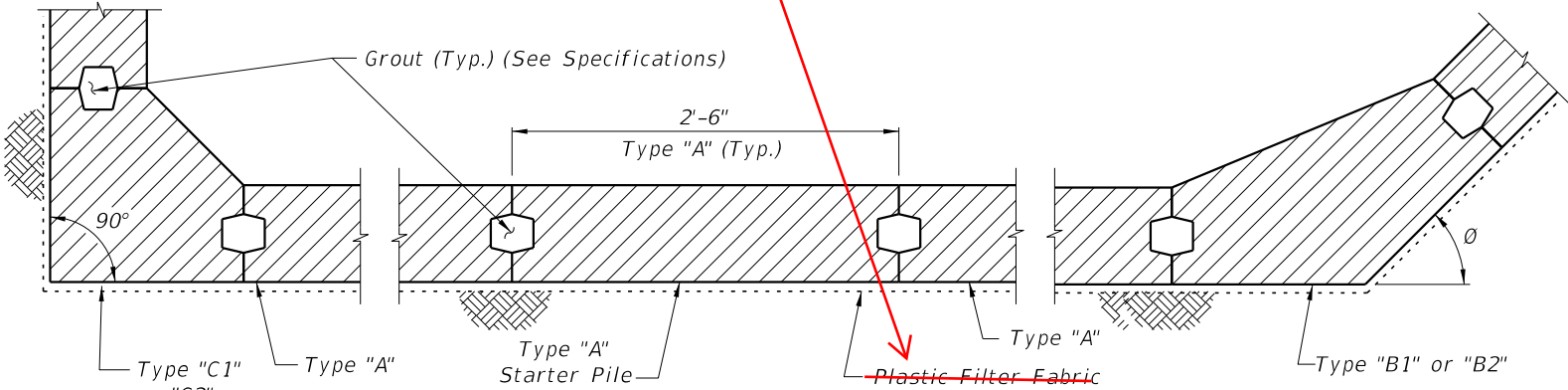
CHANGED: Geotextile

CHANGED: Provide and install Type D-2 or D-3 geotextile in accordance with Specifications 514. Extend the geotextile to the bottom of the "X" dimension.

CROSS REFERENCES:
For Dimensions L and X see Sheet Pile Wall Data Table in Structures Plans.

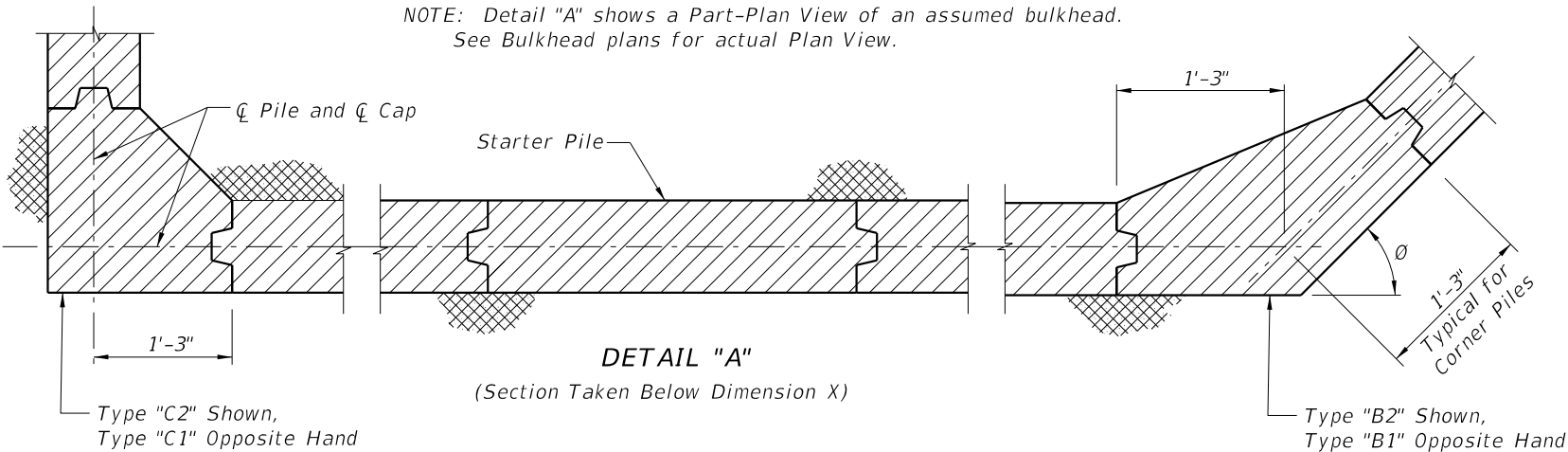


SECTION THRU BULKHEAD
(Showing Plastic Filter Fabric)

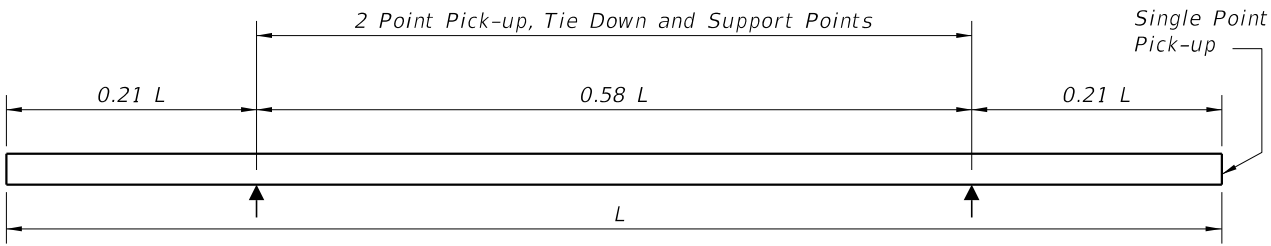


DETAIL "A"
(Cap and Anchoring System Not Shown)
(Section Taken Above Dimension X)

NOTE: Detail "A" shows a Part-Plan View of an assumed bulkhead.
See Bulkhead plans for actual Plan View.



DETAIL "A"
(Section Taken Below Dimension X)



PILE STORAGE AND TRANSPORTATION SUPPORT DETAILS

NOTES AND DETAILS

LAST REVISION		DESCRIPTION:		FY 2023-24 STANDARD PLANS		PRECAST CONCRETE SHEET PILE WALL (CONVENTIONAL)		INDEX	SHEET
11/01/22		11/01/23		FDOT				455-400	1 of 4

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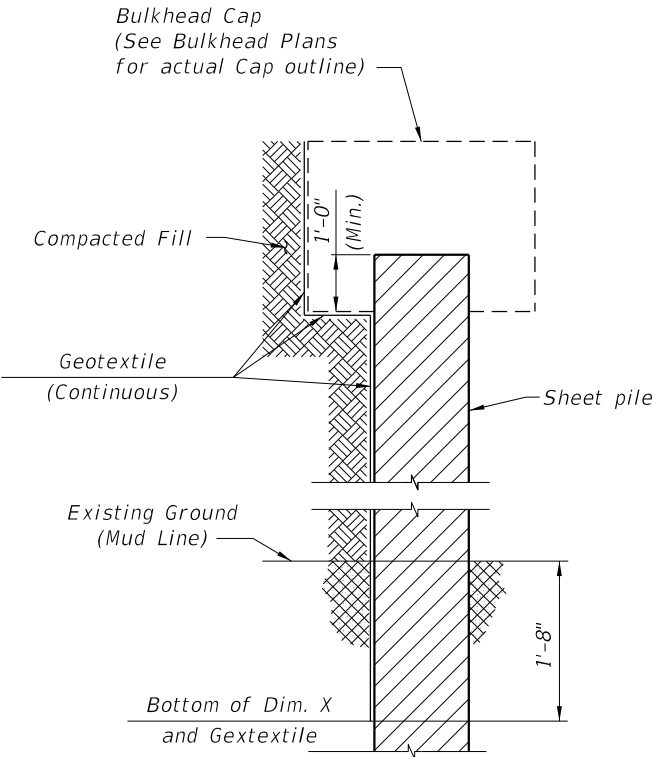
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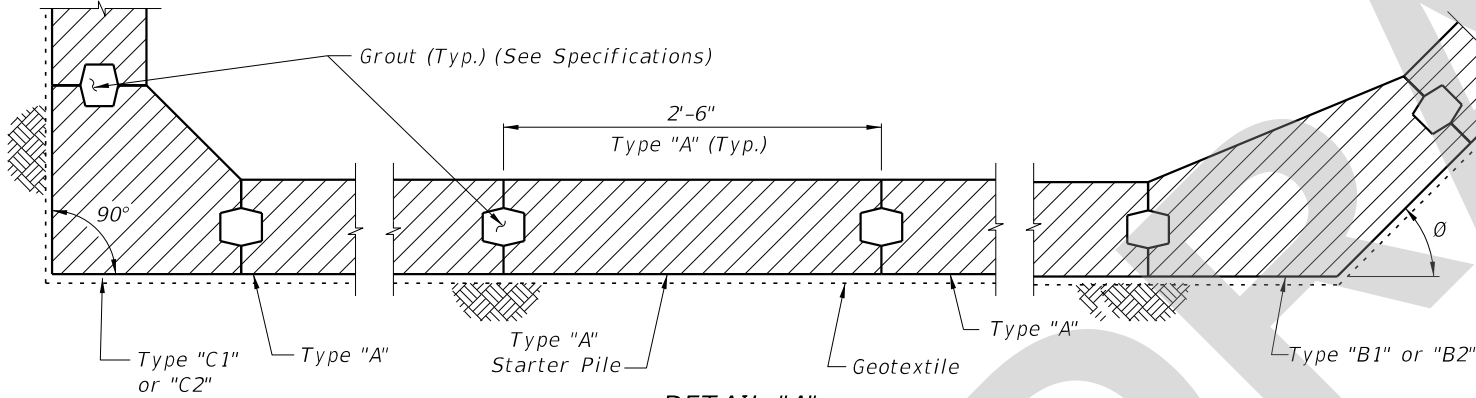
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Pile Wall Data Table in Structures Plans.

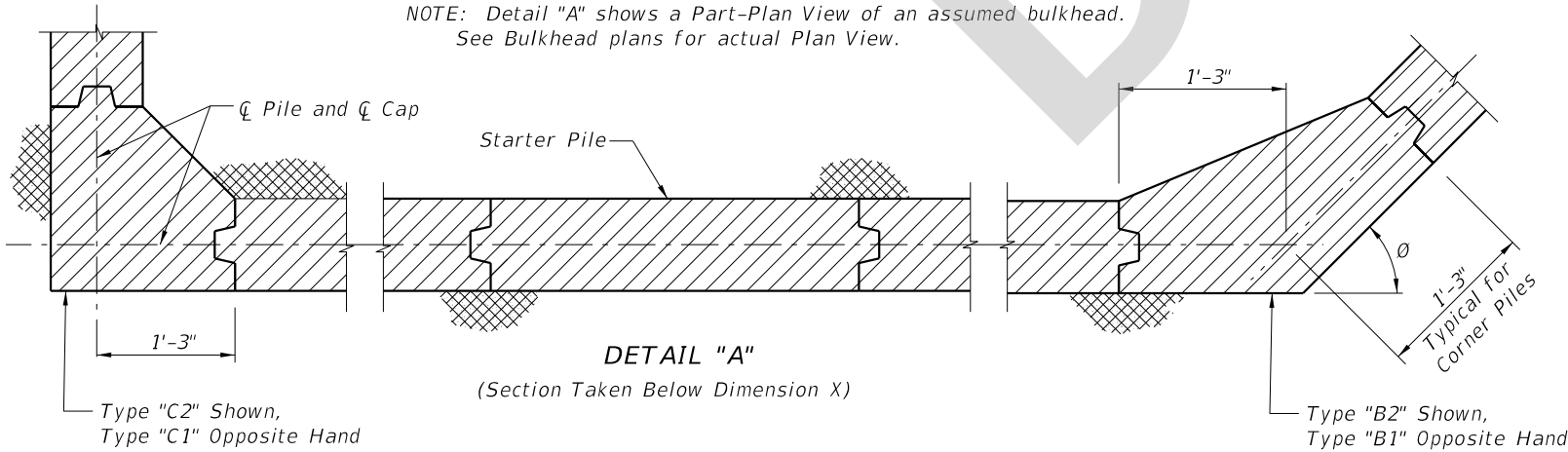


SECTION THRU BULKHEAD
(Showing Geotextile)

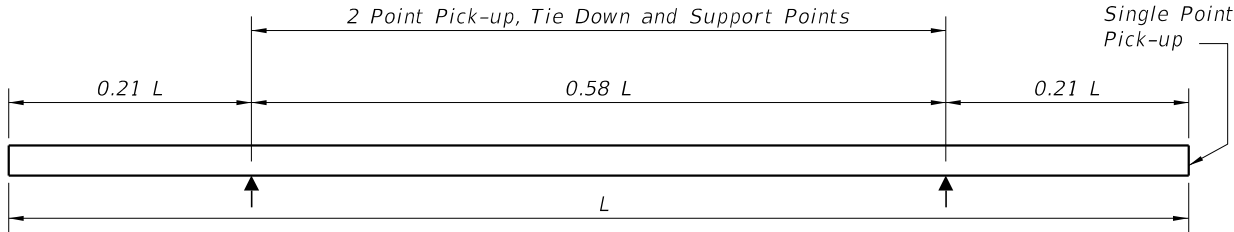


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PILE STORAGE AND TRANSPORTATION SUPPORT DETAILS

NOTES AND DETAILS

LAST REVISION 11/01/23	REVISION	DESCRIPTION:	FDOT FY 2024-25 STANDARD PLANS	PRECAST CONCRETE SHEET PILE WALL (CONVENTIONAL)	INDEX 455-400	SHEET 1 of 4
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