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## ORIGINATION FORM

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### 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

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**Standard Plans:**

Index Number: 425-001

Sheet Number (s): 1, 3 and 4 of 8

Index Title: Supplementary Details for Drainage Structures

**Summary of the changes:**

Sheet 1: Updated the Table of Contents to reflect title change on Sheet 3.

Sheet 3: Added Note "Wrap with geotextile in accordance with Specification 514." to the PIPE TO STRUCTURE FILTER FABRIC WRAP detail; Changed all references of "Filter Fabric" to "Geotextile".

Sheet 4: Added Note 4 "Install Type D-3 geotextile in accordance with Specifications 514." to the SUMP BOTTOM detail.; Changed all references of "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                                  |   |
|-------------------------------------|-------------------------------------|---|
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Other Standard Plans –  |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | FDOT Design Manual –  |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Basis of Estimates Manual –   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Standard Specifications – Various sections where 985 is referenced. |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Approved Product List –   |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Construction –  |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Maintenance –   |

**Origination Package Includes:** (Submit package to Rick Jenkins)

- | Yes                                 | N/A                                 |   |
|-------------------------------------|-------------------------------------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Redline Mark-ups                                    |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Revised or Proposed Standard Plan Instruction (SPI) |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Other Support Documents                             |

**Implementation:**

- |                                     |                                  |
|-------------------------------------|----------------------------------|
| <input type="checkbox"/>            | Design Bulletin (Interim)        |
| <input type="checkbox"/>            | DCE Memo                         |
| <input type="checkbox"/>            | Program Mgmt. Bulletin           |
| <input checked="" type="checkbox"/> | FY-Standard Plans (Next Release) |

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Contact the Roadway Design Office for assistance in completing this form

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Email to: Rick Jenkins [rick.jenkins@dot.state.fl.us](mailto:rick.jenkins@dot.state.fl.us) and Darren Martin [darren.martin@dot.state.fl.us](mailto:darren.martin@dot.state.fl.us)

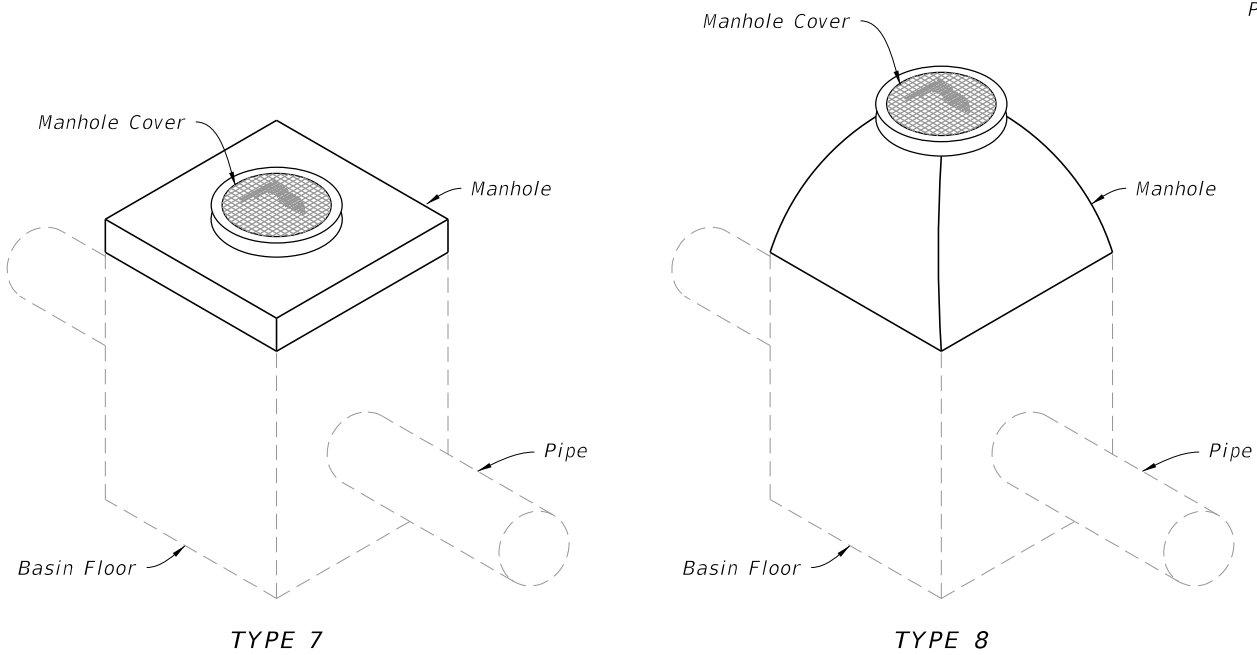
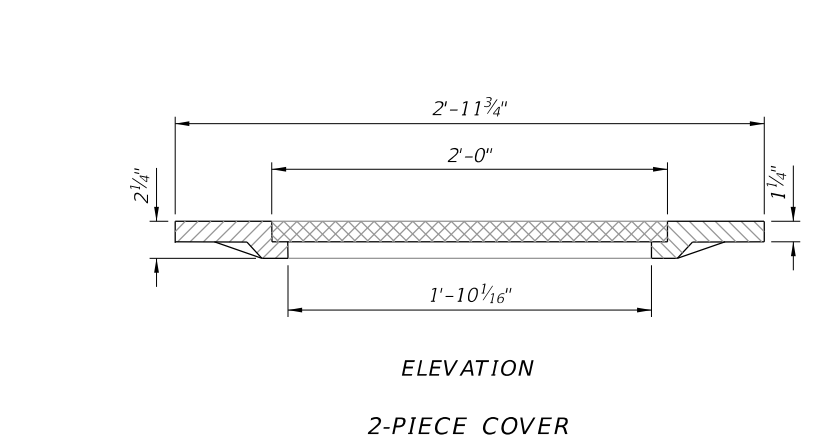
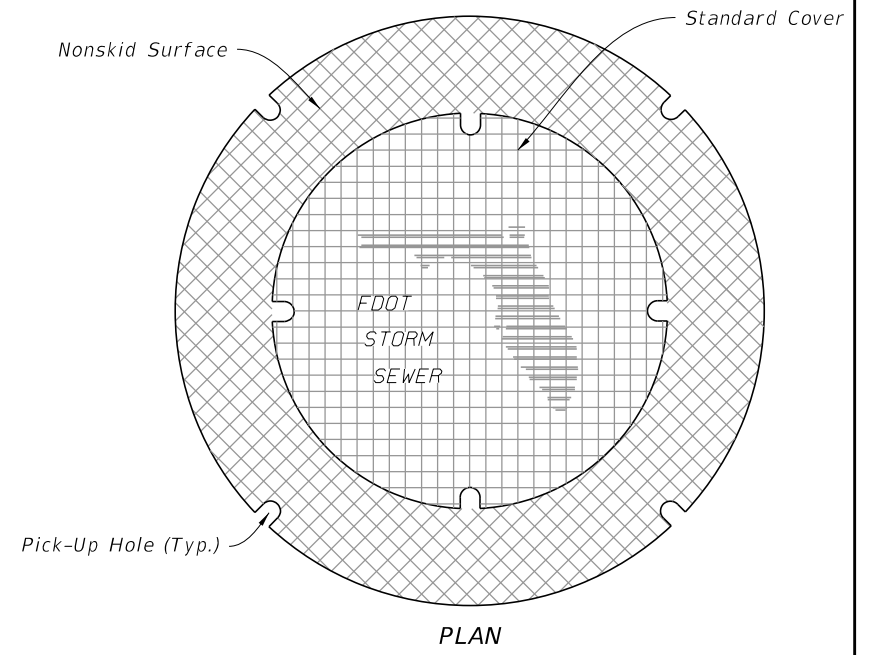
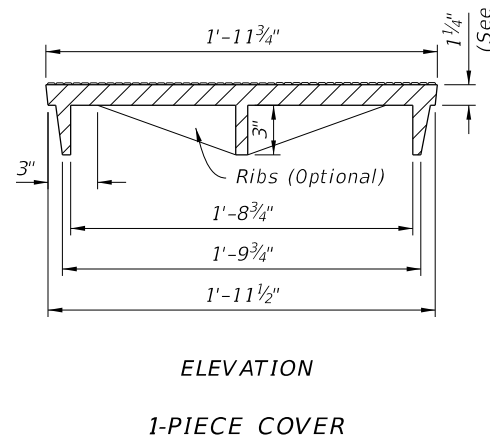
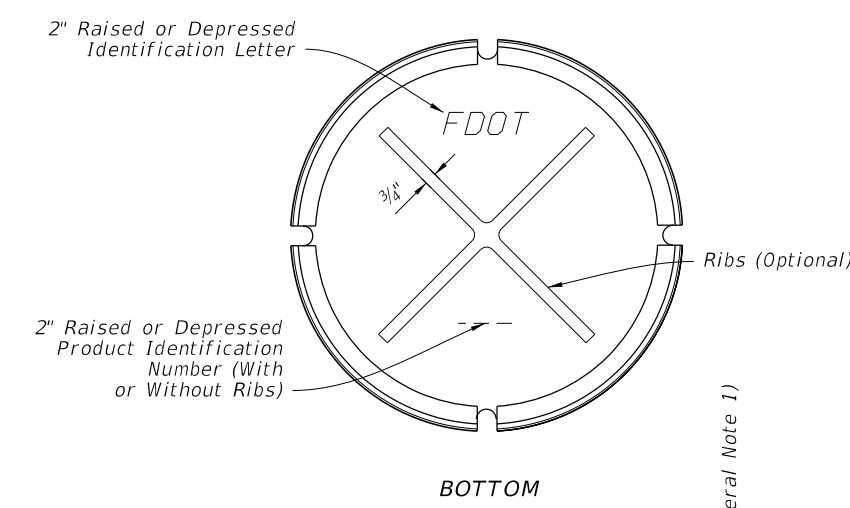
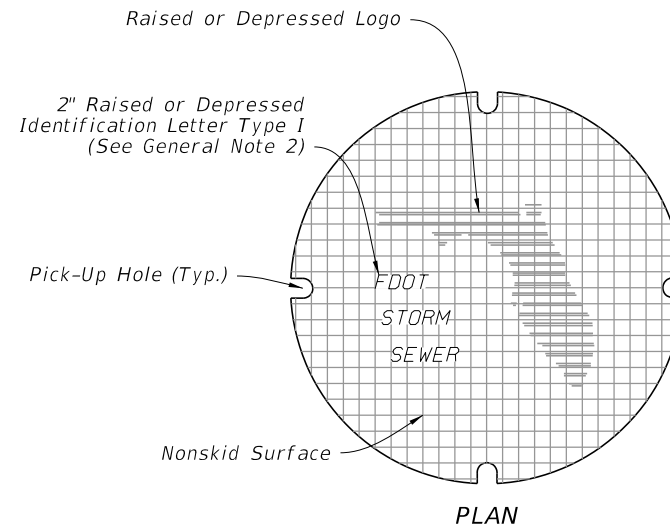
**GENERAL NOTES:**

1. Use a 1-piece cover, unless the 2-piece cover is called for in the Plans, except at inlets and manholes with sump bottoms. Use the 2-piece cover when the sump depth exceeds 2', unless otherwise noted.
2. Include "Adjustable" on the cover for Type I manhole adjustable frames.
3. For square or rectangular precast drainage structures, use either deformed or smooth WWR meeting the requirements of Specification 931. WWR must be continuous around the box and lapped in accordance with Option 1 or 3 as shown in the Wall Reinforcing Splice Details.
4. Lap splice horizontal steel in the walls of rectangular structures in accordance with Option 1, 2 or 3 as shown in the Wall Reinforcing Splice Details.
5. Welding of splices and laps is permitted. Use AASHTO M259 requirements and restrictions on welds.
6. Rebar straight end embedment of peripheral reinforcement may be used in lieu of ACI standard hooks for top and bottom slabs, except when hooks are specifically called for in the Plans.
7. Precast opening for pipe must be the pipe OD plus 6" ( $\pm 2"$  tolerance). Use mortar to seal the pipe into the opening of such a mix that shrinkage will not cause leakage into or out of the structure. Dry-pack mortar may be used to seal openings less than 2½" wide.

UPDATED TITLE: Geotextile

**TABLE OF CONTENTS:**

Sheet	Description
1	General Notes, Contents, Manhole Top Overview, and Manhole Covers
2	Manhole Frames and Manhole Tops
3	Inlet Locking Grates, Subgrade and Base Temporary Drains, and Pipe to Structure <del>Filter Fabric</del> Wrap
4	Drainage Structure Invert, Sump Bottom, Wall Reinforcing Splice Details, and Typical Slab to Wall Details
5	Precast Option and Equivalent Reinforcement substitution
6	Construction Joints and Minimum Box Riser Segment Dimensions
7	Skewed Pipe in Rectangular Structures
8	Miscellaneous Pipe Connection Details

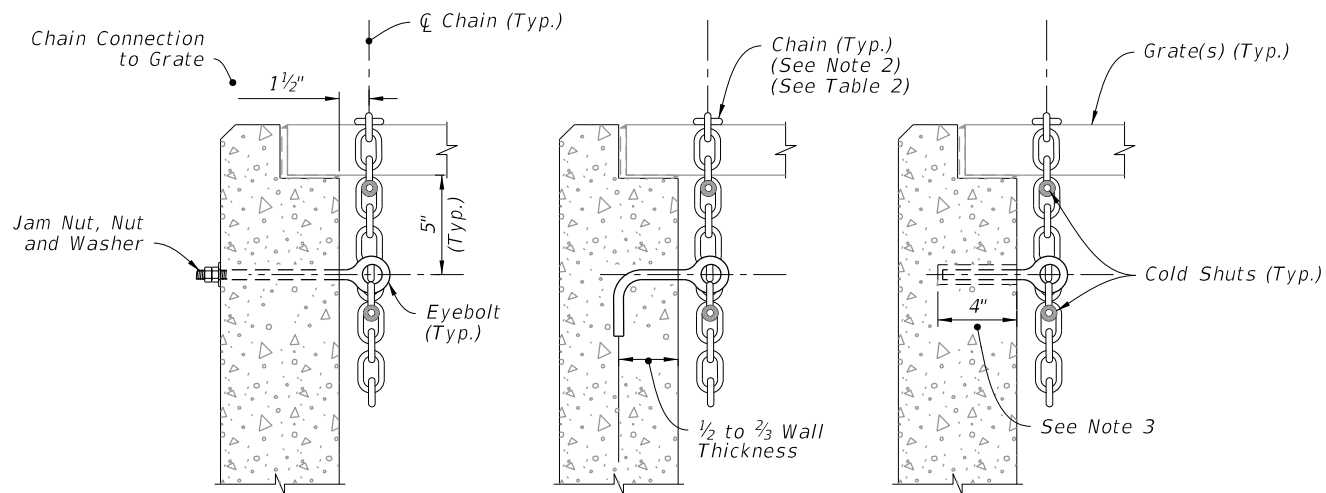


MANHOLE TOPS

MANHOLE COVERS

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LAST REVISION	DESCRIPTION:
<del>11/01/20</del>	
11/01/23	



THRU-BOLT

J-TYPE

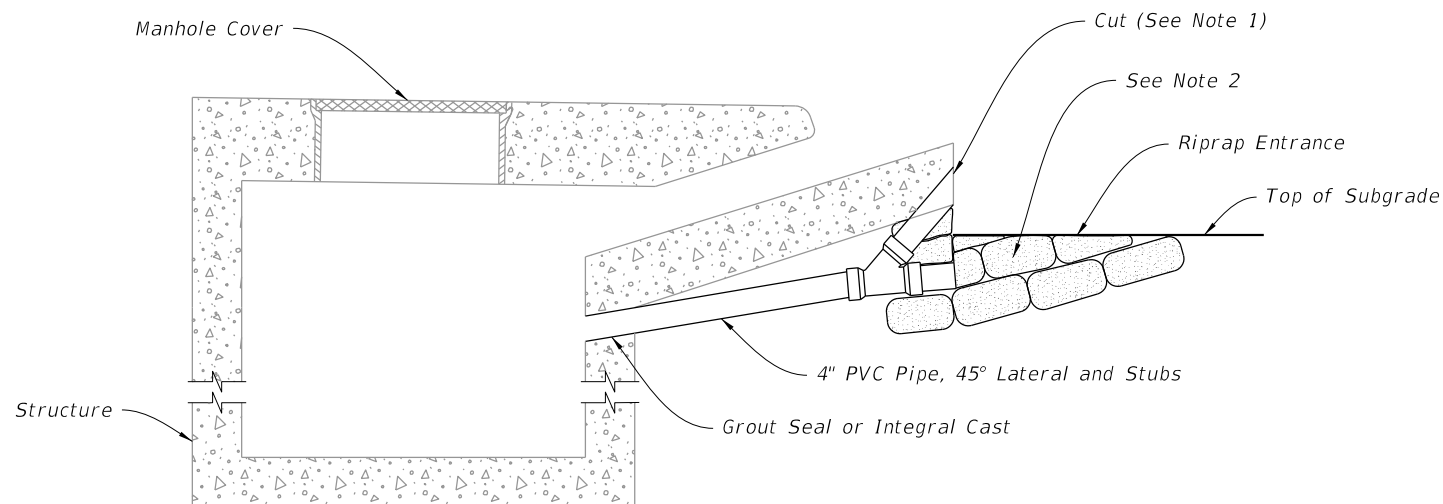
ADHESIVE BONDED ANCHOR

NOTES:

1. Install either a 1/2" Ø x 1" Diameter Threaded Straight (Thru-Bolt), a J-Type, or an adhesive Bonded Anchor Eyebolt.
2. Install a 5/16" Chain and 3/16" Cold Shuts. When chaining two grates together provide adequate loop for easy handling.
3. Install adhesive bonded anchor option with a minimum of 4" embedment, and in accordance with Specification 416.

TABLE 2  
EYEBOLT AND CHAIN REQUIREMENTS

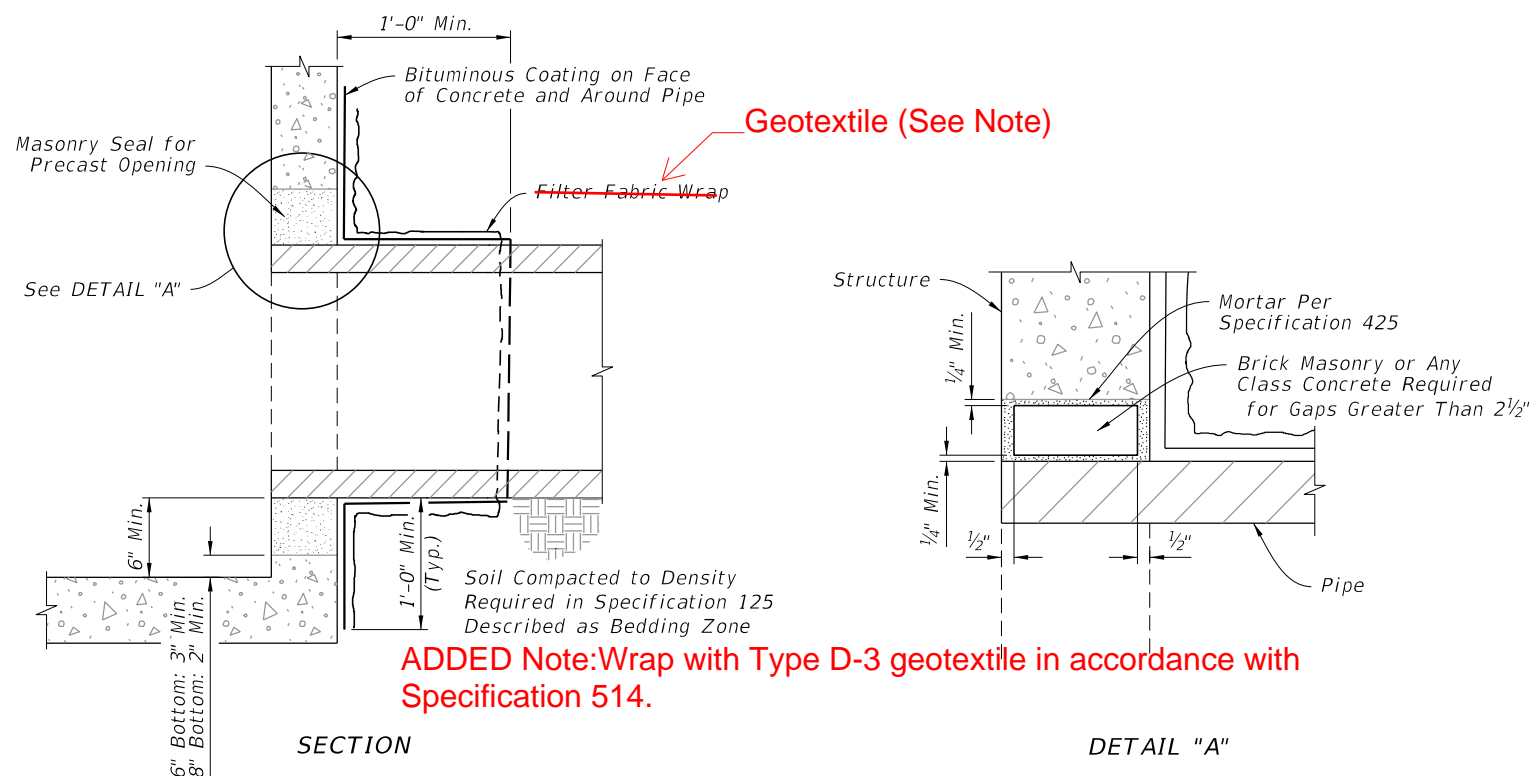
Index Number	Inlet Type	Eye-Bolts	Length of Chain	Handling & Remarks
425-030	1	1	4'-0"	Slide & Spin
	2	2	2 @ 4'-0"	Slide & Spin
425-031	N/A	1	3'-8"	Slide or Slide & Spin
425-032	N/A	1	4'-0"	Slide & Spin
425-040	S	1	4'-0"	Slide & Spin
425-041	V	1	4'-0"	Slide & Spin
425-050	A	1	3'-0"	Slide
425-051	B	1	5'-0"	Slide & Spin
	C	1	2'-6"	Slide & Spin
	D	1	2'-6"	Slide & Spin
	E	2	2 @ 2'-6"	Slide & Spin
425-052	H	2	2 @ 2'-6"	Flip Ctr. Gate and Slide & Spin Single Free Gate
			1 or 2 @ 1'-6"	Center Gate(s) Chained to One End Gate
425-053	F	1	3'-6"	Flip or Slide & Spin
	G	1	6'-0"	Slide
425-054	J	1	2'-0"	Lifting Loop
			4'-0"	Slide & Spin



NOTES:

1. Bevel cut upper stub to match forming for apron face. Capping or plugging of upper stub is not required. Remove friable base material at stub opening to permit covering of opening with structural course material.
2. Remove riprap, cement PVC cap on lower stub, and place compacted fill in entrance prior to placing base material.

SUBGRADE AND BASE TEMPORARY DRAINS



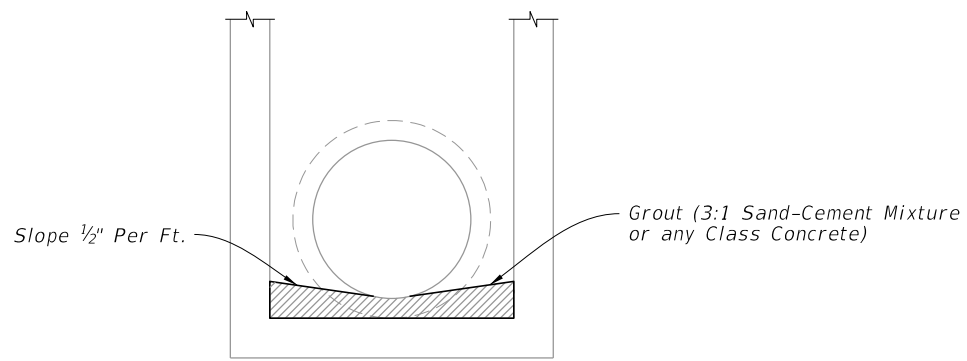
LOCKING GRATES TO INLETS

PIPE TO STRUCTURE FILTER FABRIC WRAP

LOCKING GRATES, SUBGRADE AND BASE TEMPORARY DRAINS, AND PIPE TO STRUCTURE FILTER FABRIC WRAP

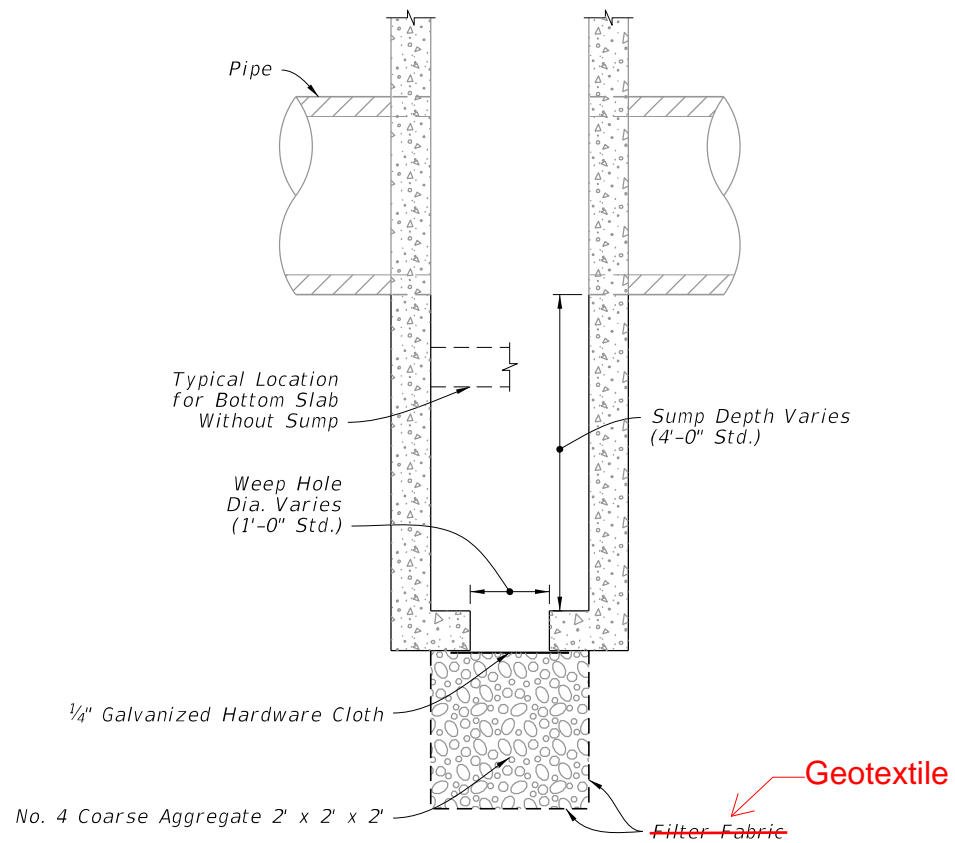
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LAST REVISION 11/01/20	REVISION	DESCRIPTION:		FY 2023-24 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX 425-001	SHEET 3 of 8
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NOTE: For all structures unless excluded by special detail.

**DRAINAGE STRUCTURE INVERT**

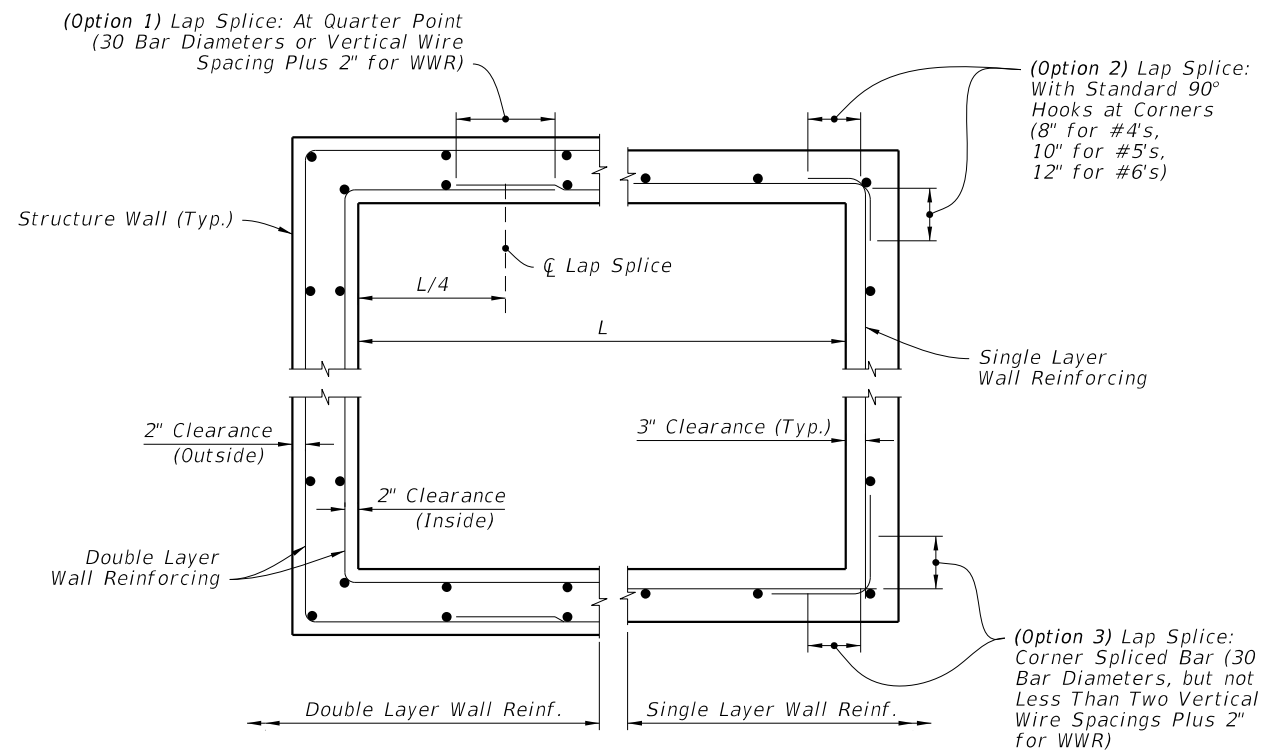


**NOTES:**

1. Construct sumps in inlets and manholes connecting to French Drains unless excluded in the Plans.
2. Construct sumps only where called for in the Plans at all other locations.
3. Construct weep holes in sump bottom only where called for in the Plans.

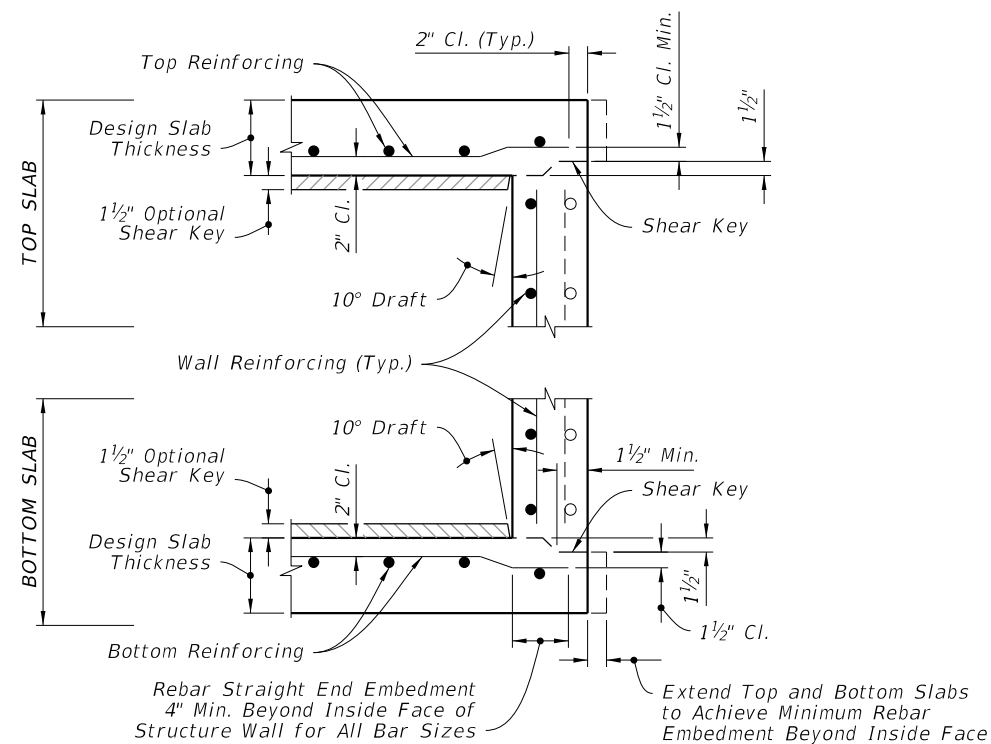
**Note 4: Install Type D-3 geotextile in accordance with Specifications 514.**

**SUMP BOTTOM**



HALF PLAN                      HALF PLAN

**WALL REINFORCING SPLICE DETAILS**



**NOTES:**

1. See Sheet 6 for optional construction joints.
2. Bend bars as required to maintain cover.

**TYPICAL SLAB TO WALL DETAILS  
(PRECAST STRUCTURE SHOWN)**

**DRAINAGE STRUCTURE INVERT, SUMP BOTTOM, WALL REINFORCING SPLICE DETAILS, AND TYPICAL SLAB TO WALL DETAILS**

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LAST REVISION	DESCRIPTION:
11/01/20	
11/01/23	



FY 2023-24  
STANDARD PLANS

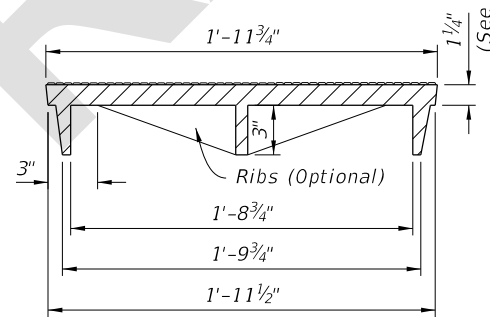
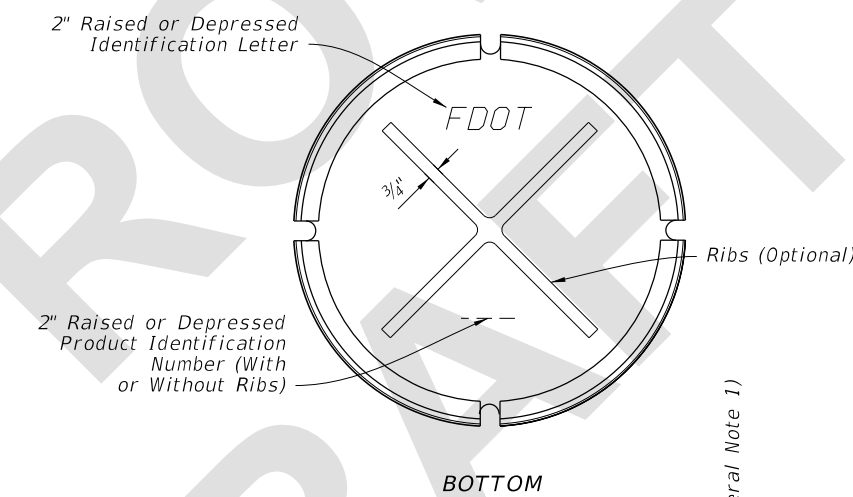
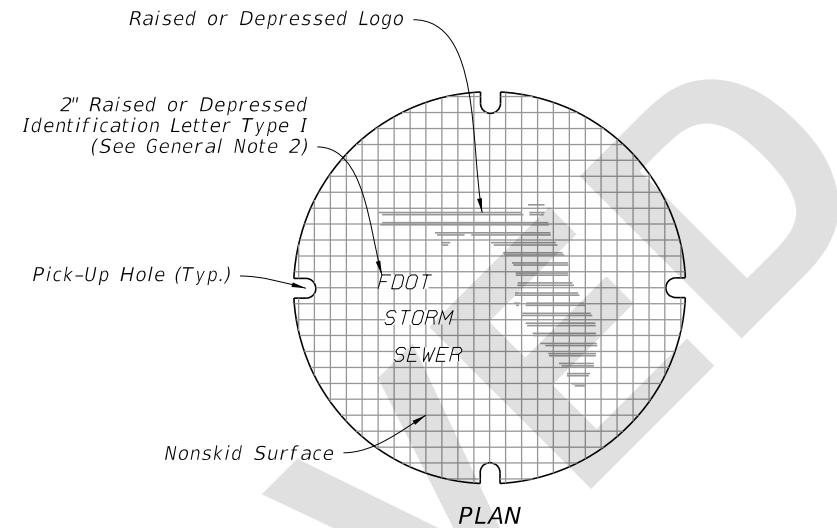
SUPPLEMENTARY DETAILS  
FOR DRAINAGE STRUCTURES

INDEX  
425-001

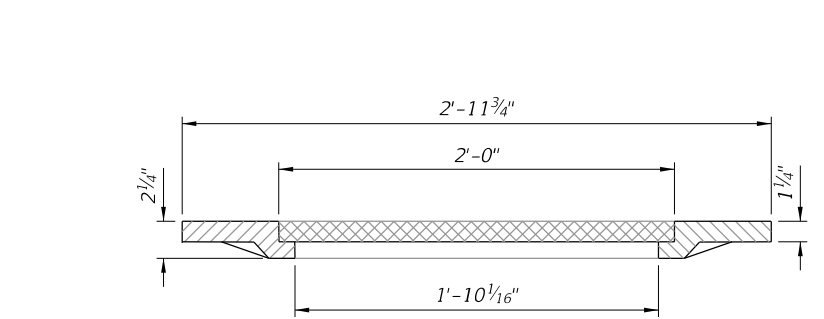
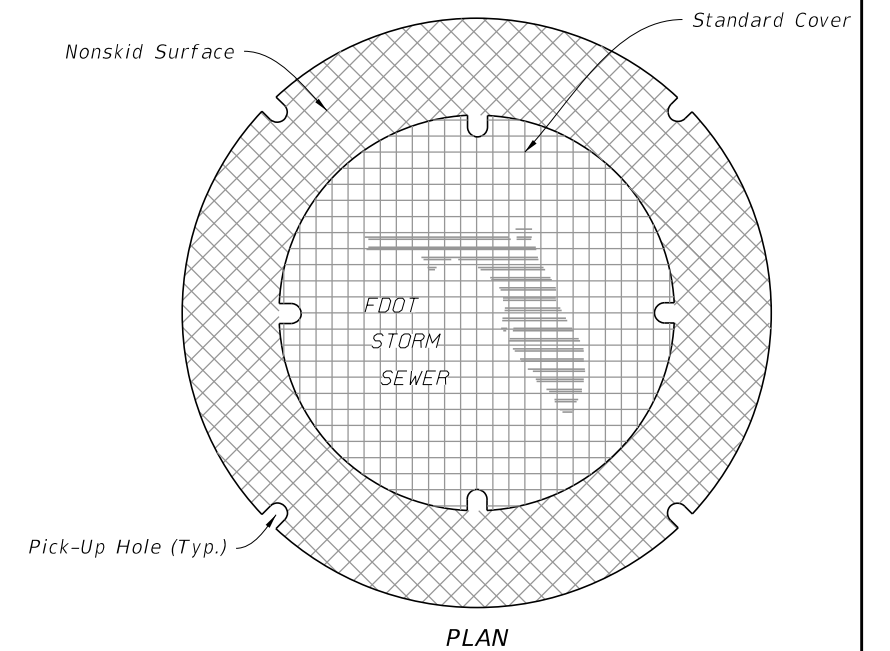
SHEET  
4 of 8

**GENERAL NOTES:**

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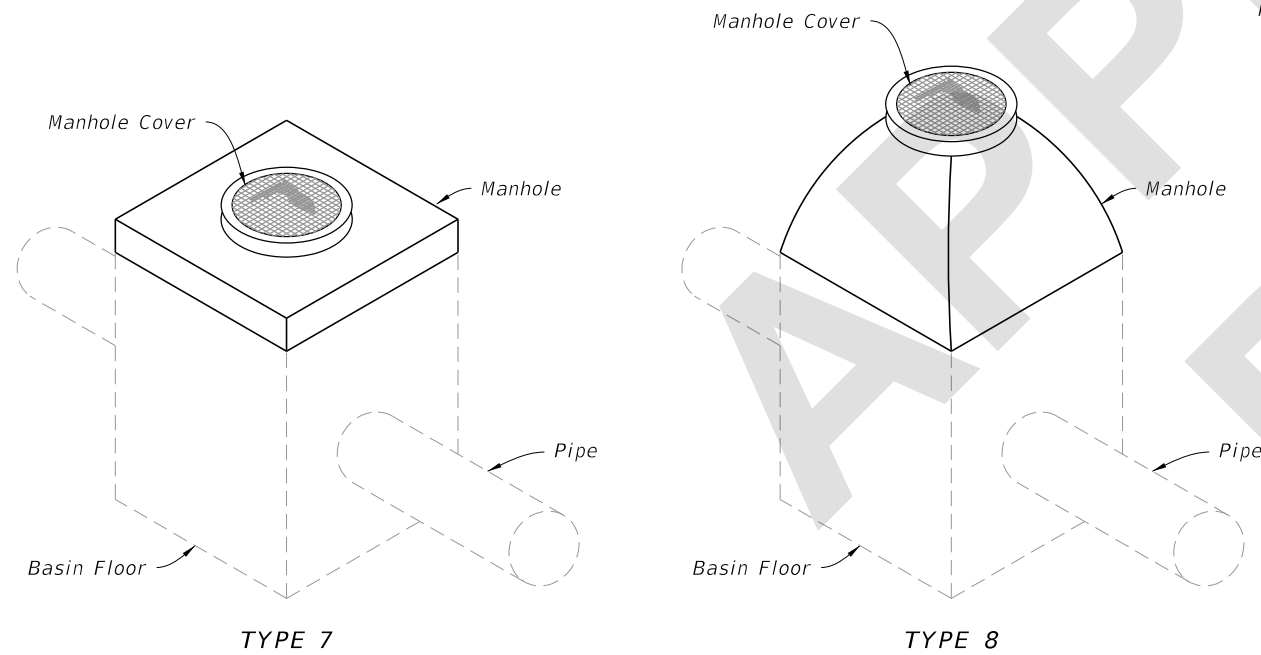
**ELEVATION  
1-PIECE COVER**



**ELEVATION  
2-PIECE COVER**

**TABLE OF CONTENTS:**

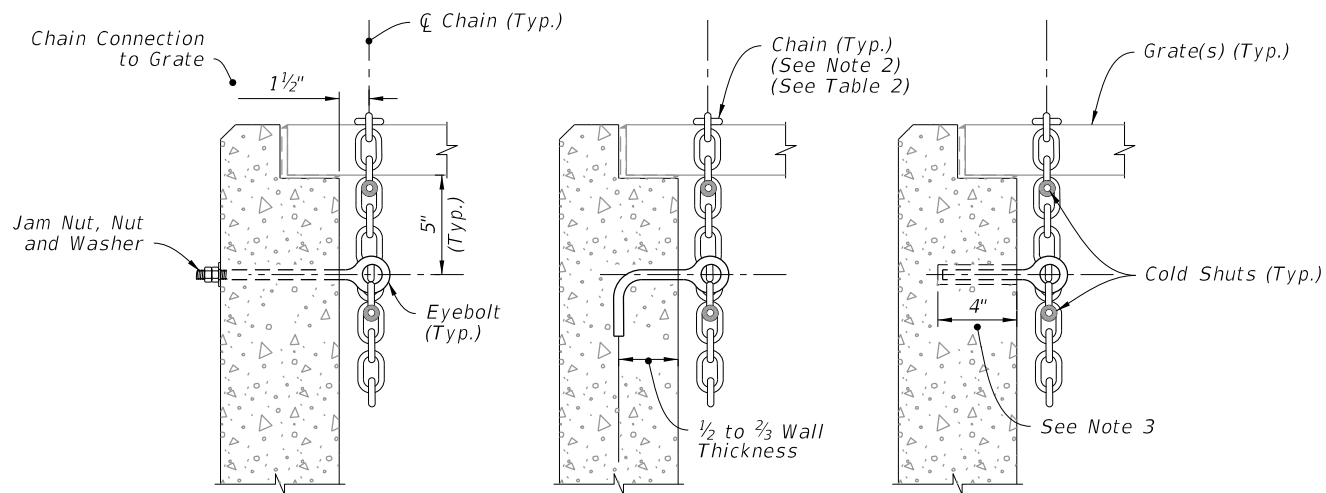
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**MANHOLE TOPS**

**MANHOLE COVERS**

6/28/2023 7:36:32 AM



THRU-BOLT

J-TYPE

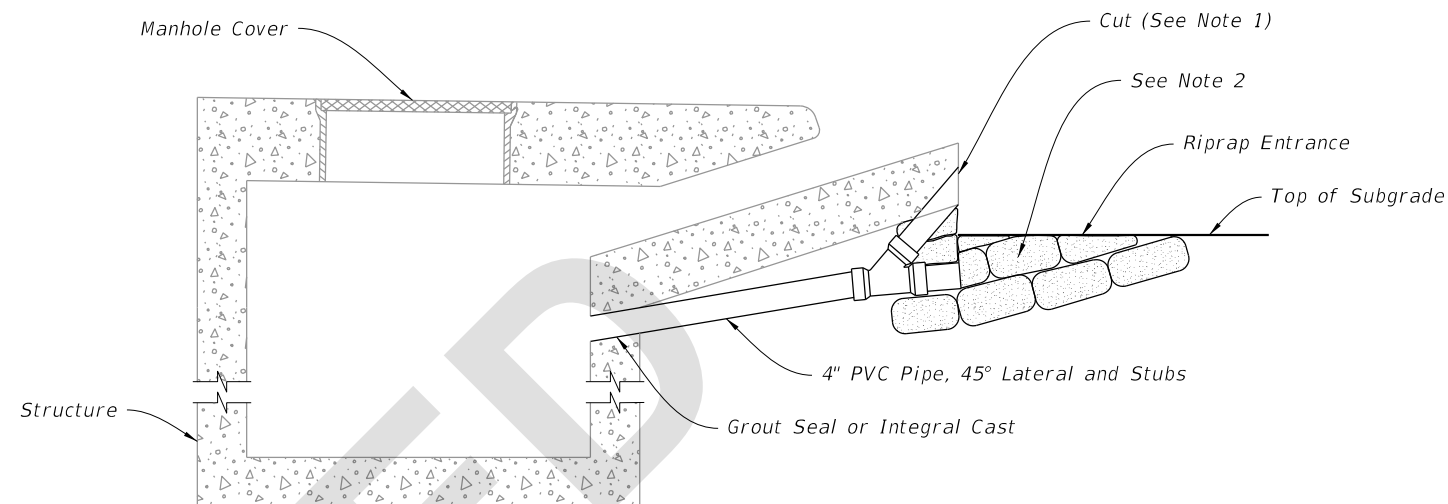
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NOTES:

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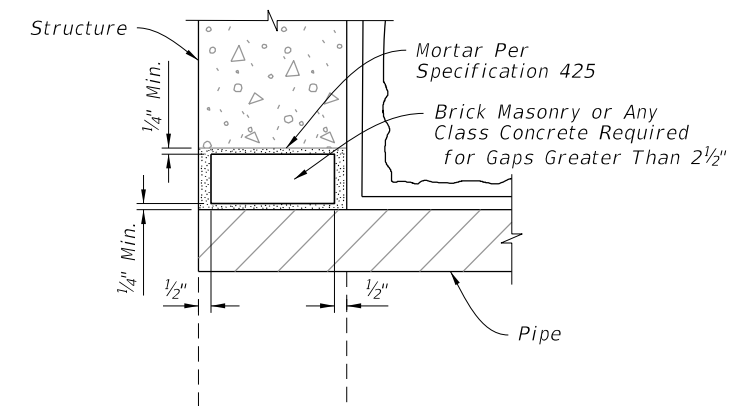
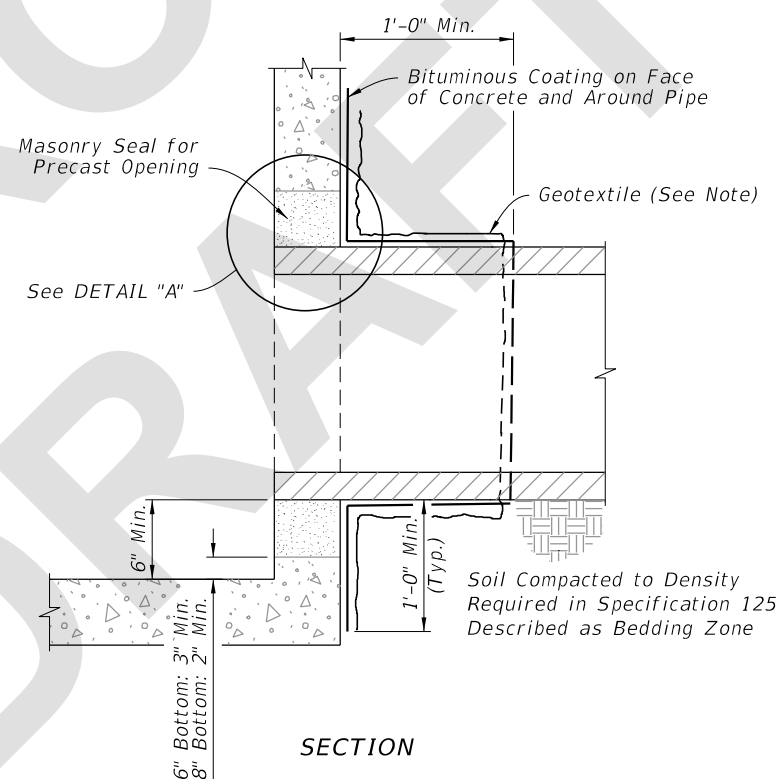
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	C	1	2'-6"	Slide & Spin
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NOTES:

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SUBGRADE AND BASE TEMPORARY DRAINS



SECTION

DETAIL "A"

NOTE:

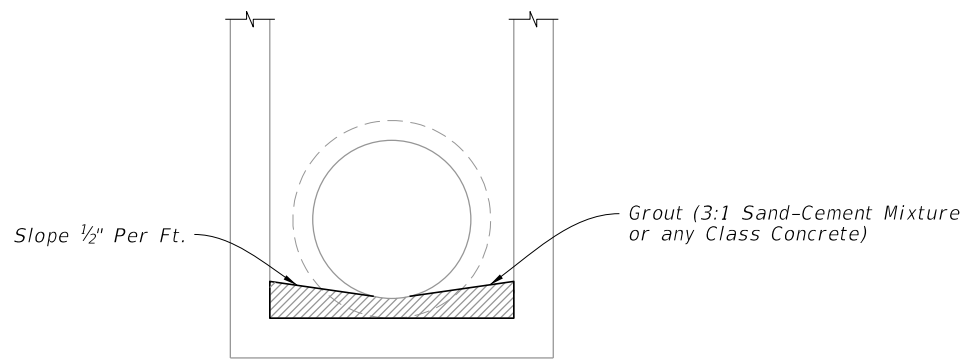
Wrap with Type D-3 geotextile in accordance with Specification 514.

LOCKING GRATES TO INLETS

PIPE TO STRUCTURE GEOTEXTILE WRAP

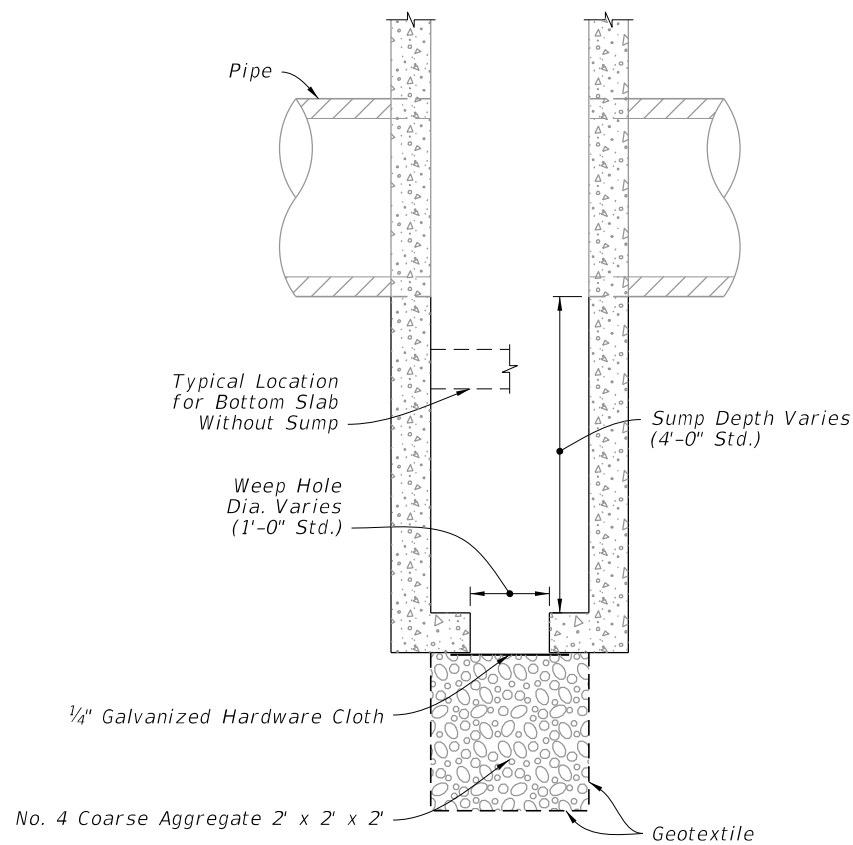
LOCKING GRATES, SUBGRADE AND BASE TEMPORARY DRAINS, AND PIPE TO STRUCTURE GEOTEXTILE WRAP

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NOTE: For all structures unless excluded by special detail.

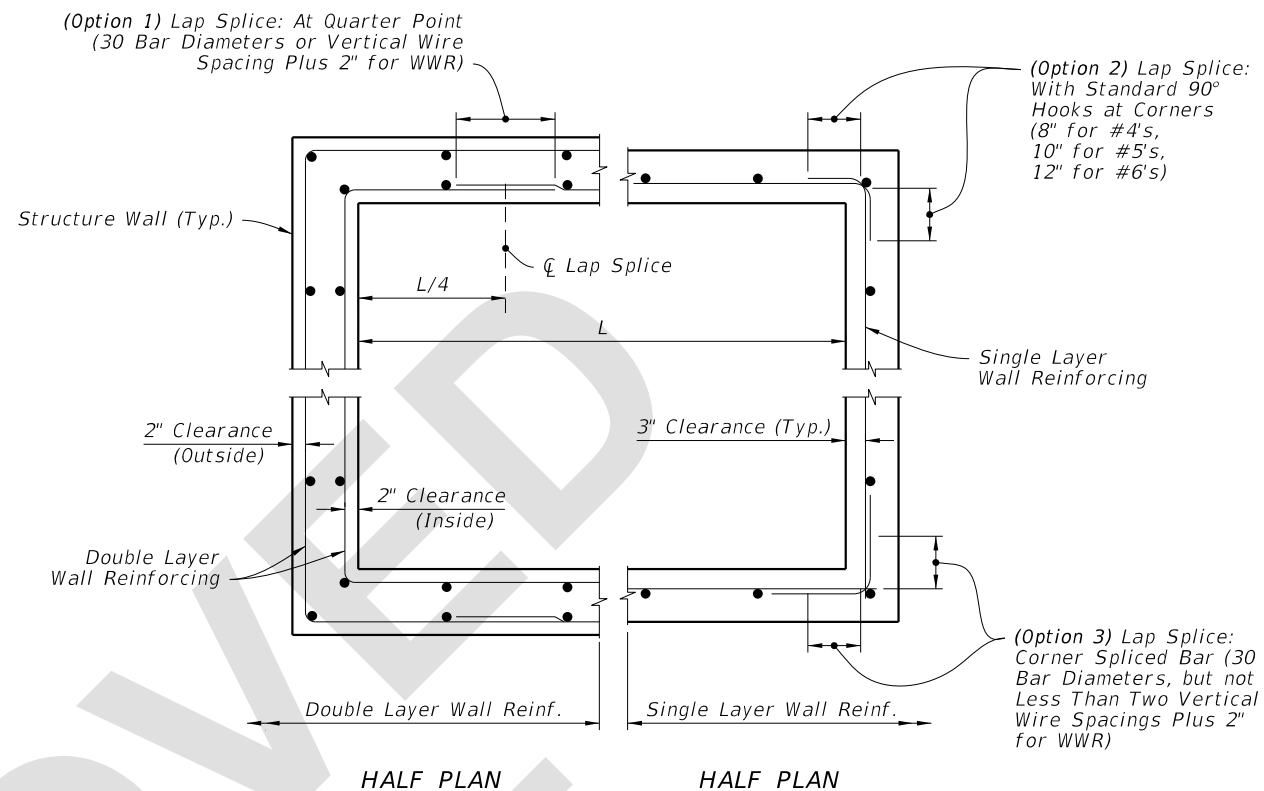
**DRAINAGE STRUCTURE INVERT**



**NOTES:**

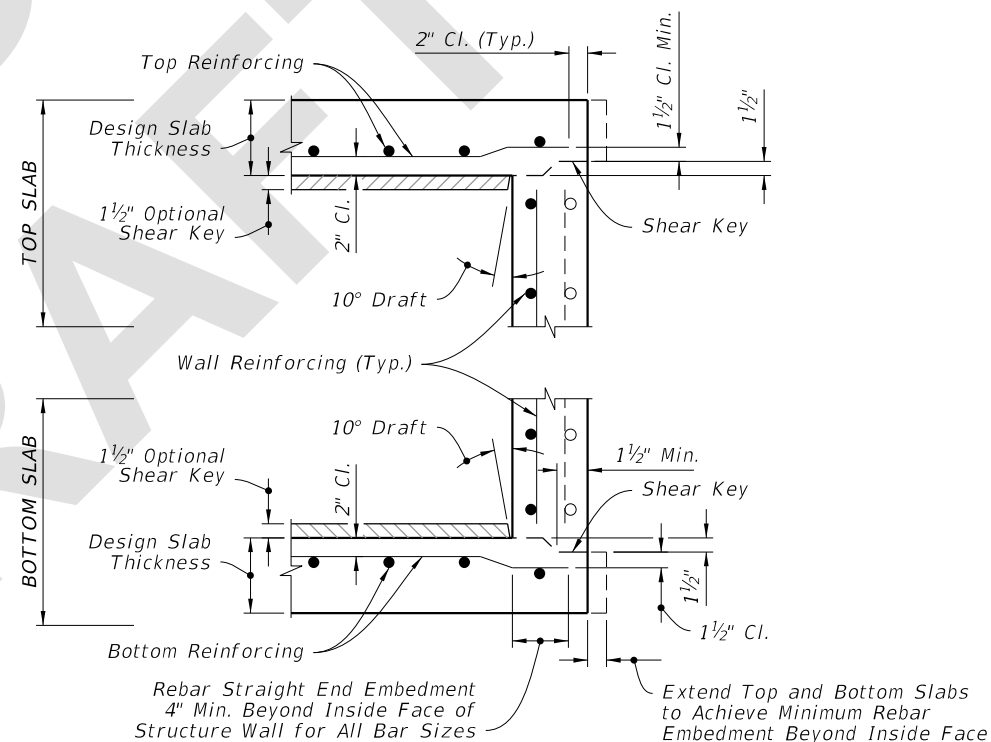
1. Construct sumps in inlets and manholes connecting to French Drains unless excluded in the Plans.
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3. Construct weep holes in sump bottom only where called for in the Plans.
4. Install Type D-3 geotextile in accordance with Specification 514.

**SUMP BOTTOM**



HALF PLAN      HALF PLAN

**WALL REINFORCING SPLICE DETAILS**



**NOTES:**

1. See Sheet 6 for optional construction joints.
2. Bend bars as required to maintain cover.

**TYPICAL SLAB TO WALL DETAILS  
(PRECAST STRUCTURE SHOWN)**

**DRAINAGE STRUCTURE INVERT, SUMP BOTTOM, WALL REINFORCING SPLICE DETAILS, AND TYPICAL SLAB TO WALL DETAILS**

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LAST REVISION 11/01/23	REVISION	DESCRIPTION:		FY 2024-25 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX 425-001	SHEET 4 of 8
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