
ORIGINATION FORM

Proposed Revisions to a Standard Plans Index

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

Contact Information:

Date: June 21, 2023

Originator: Andrew Pinkham

Phone: (352) 955-6684

Email: andrew.pinkham@dot.state.fl.us**Standard Plans:**

Index Number: 430-001

Sheet Number (s): 2

Index Title: Miscellaneous Drainage Details

Summary of the changes:

Deleted Notes 1 and 2 on Round Concrete Pipe Joint Detail; Added new Note 1 "Allowable tolerance for the last full wrap of circumferential reinforcement shall be within 3 inches from the spigot shoulder and meet ASTM C76 for round pipe or ASTM C507 for elliptical pipe."; renumbered notes on Elliptical Concrete Pipe Joint Detail; Updated Note 3 on Elliptical Concrete Pipe Joint Detail; Updated Profile Rubber Gasket and Preformed Plastic Joint to show 3" dimension and added Note 1 reference; deleted rebar to 3" dimension on all details; deleted Note 2 reference and changed "See Note 3" callout to "See Note 2" on Round Concrete Pipe Joint Detail

Commentary / Background:

A search in ASTM archives shows that the "within 3 inches of spigot shoulder" language has existed since about 1985 in both C76 and C507. Our standard Plans were updated in 2004 which moved the last wrap from inside the joint to the shoulder, but it is unknown why the 3" guidance was omitted. This change brings the Standard Plans in line with the ASTM specifications.

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 type="checkbox"/> | <input checked="" type="checkbox"/> | Standard Specifications – |
| <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 type="checkbox"/> | Revised or Proposed Standard Plan Instruction (SPI) |
| <input 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) |

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

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: 430-001

Sheet Number (s): 1, 2, and 3 of 7

Index Title: Miscellaneous Drainage Details

Summary of the changes:

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

Sheet 2: Updated Note 1 - "Filter Fabric" to "Type D-3 Geotextile"...

Sheet 3: Updated Note 2 "Install Type D-3 geotextile in accordance with Specification 514. Install securing device to hold the geotextile jacket on to the pipe." ; 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:

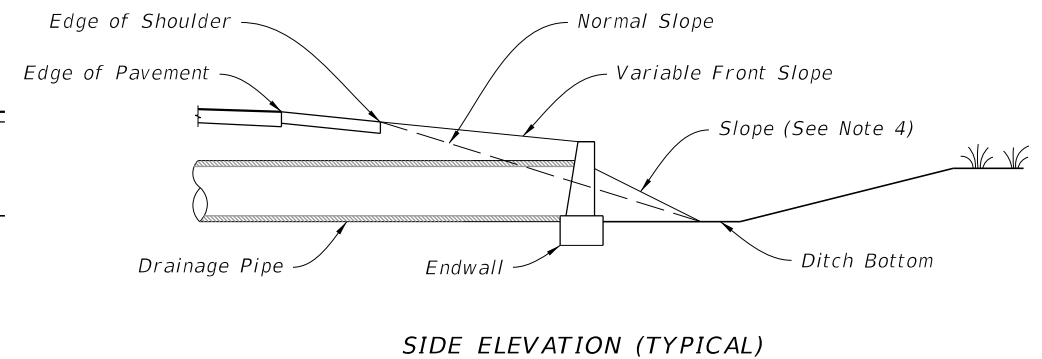
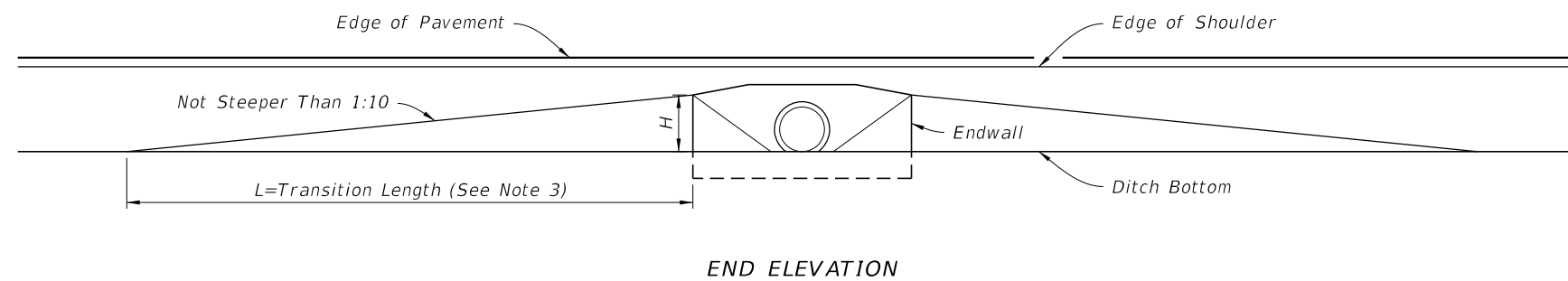
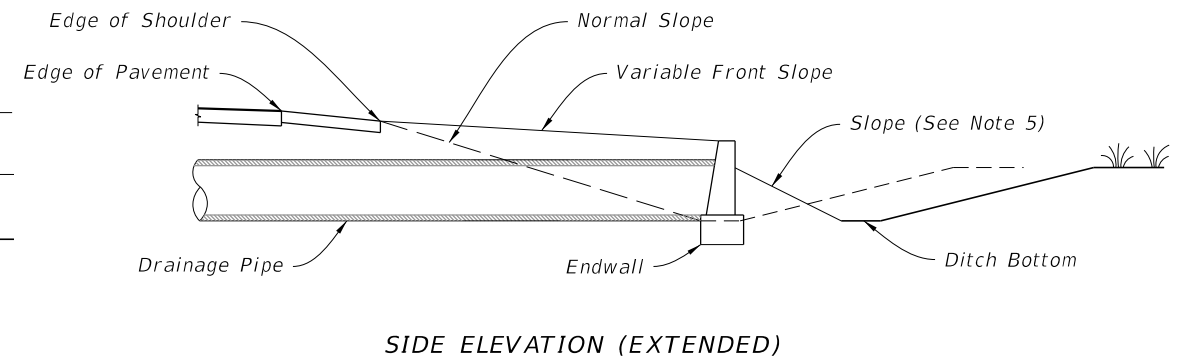
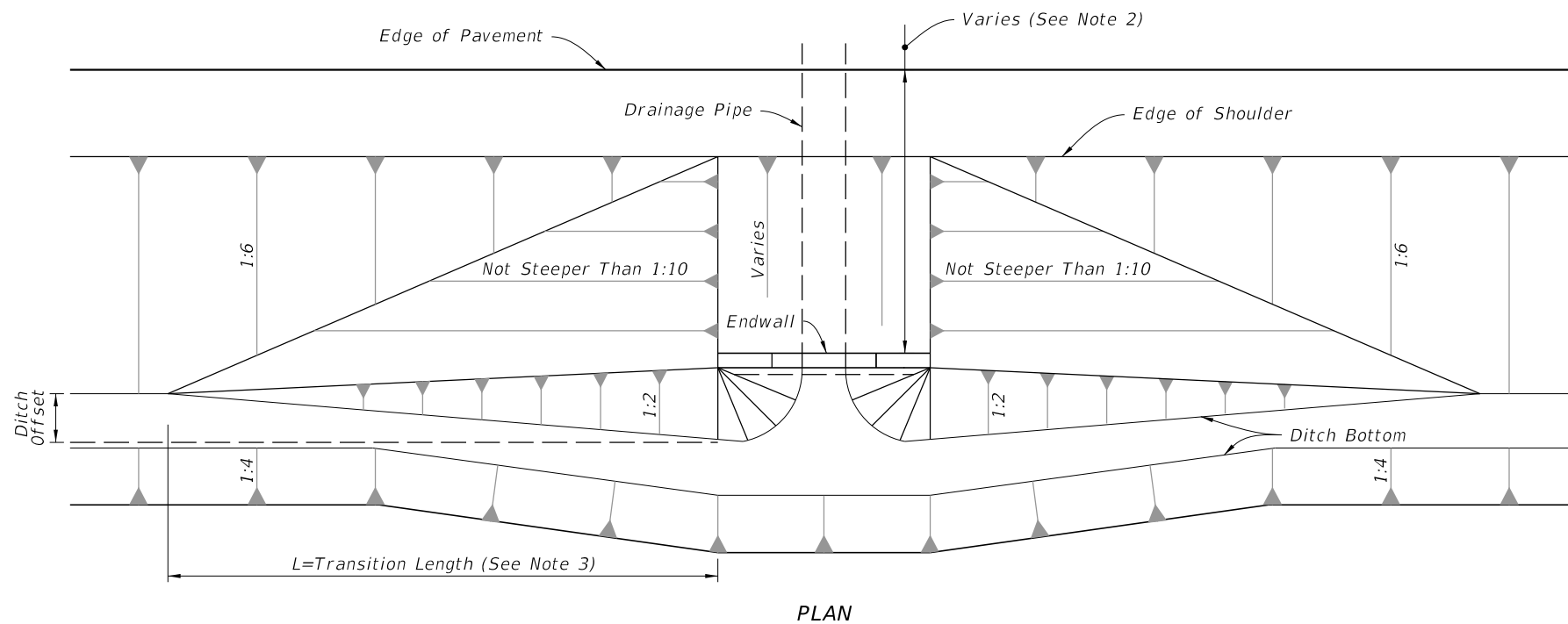
- | | |
|-------------------------------------|----------------------------------|
| <input type="checkbox"/> | Design Bulletin (Interim) |
| <input type="checkbox"/> | DCE Memo |
| <input type="checkbox"/> | Program Mgmt. Bulletin |
| <input checked="" type="checkbox"/> | FY-Standard Plans (Next Release)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

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

NOTES:

1. Fill or excavate variable slopes during normal grading operations.
2. Minimum distance as required to comply with safety criteria.
3. Use Larger Value Of Either:
 $L=10 \times H$ (No Maximum)
 $L=10 \times \text{Ditch Offset}$ (Maximum $L=100'$)
4. Slope to normal slope if possible. Slope not to be steeper than 1:2. See side elevation (extended) below if 1:2 slope must go beyond toe of normal slope.
5. 1:2 slope if necessary to go beyond normal toe of slope and maintain ditch width by moving out back slope.



FRONT SLOPES AT DRAINAGE STRUCTURES

TABLE OF CONTENTS:	
Sheet	Description
1	Limits of Variable Front Slopes at Drainage Structures
2	Round and Elliptical Concrete Pipe Joint
3	Filter Fabric Jacket, Concrete Jacket, and Pipe Plug
4	Concrete Collars
5	Single Pipe End Guard
6	Double Pipe End Guard
7	Retaining Wall Concrete Gutter and Drains

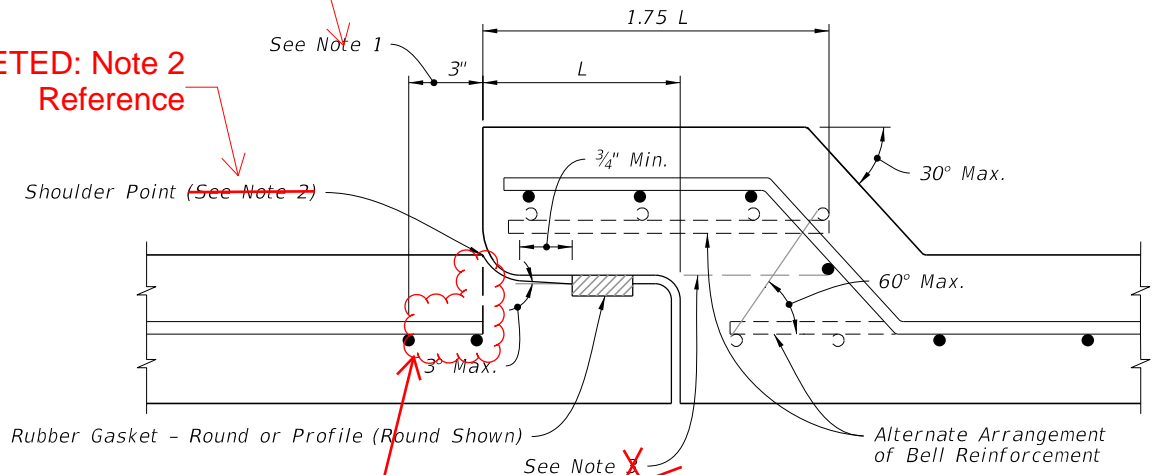
UPDATED TITLE: Geotextile

LIMITS OF VARIABLE FRONT SLOPES AT DRAINAGE STRUCTURES

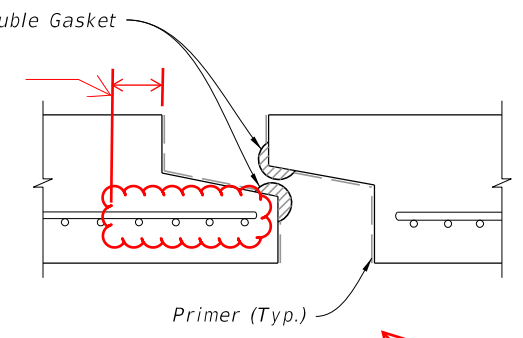
10/20/2022 8:48:33 AM

3" Max (See Note 1)

DELETED: Note 2 Reference



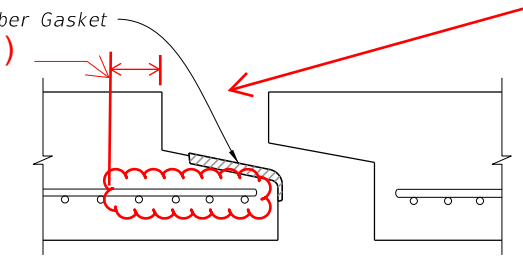
3" Max (See Note 1)



PREFORMED PLASTIC JOINT

UPDATED DETAILS:
To show 3" dimension;
added Note 1 reference;
deleted rebar to 3" dimension

3" Max (See Note 1)



PROFILE RUBBER GASKET

TABLE 1
SCHEDULE OF BELL REINFORCEMENT
Classes II,III,IV,V; Wall A,B,C

Nominal Pipe Diameter	Design Bell Reinforcement	Maximum Reinforcement Under Tolerance
	in ² per foot	in ² per foot
15"	0.07	0.010
18"	0.07	0.010
24"	0.09	0.010
30"	0.12	0.010
36"	0.14	0.010
42"	0.16	0.010
48"	0.19	0.011
54"	0.21	0.012
60"	0.23	0.0135
66"	0.26	0.015
72"	0.28	0.0165
78"	0.30	0.018
84"	0.33	0.0195
90"	0.35	0.021
96"	0.37	0.0225
102"	0.40	0.024
108"	0.42	0.0255

ADDED: New Note 1
Locate the last full wrap of reinforcement within 3 inches of the spigot shoulder and meet ASTM C507 for elliptical pipe.

UPDATED: Note 2
Type D-3 Geotextile

NOTES:
~~1. Allowable Tolerance for the last full wrap of reinforcing when using single elliptical cage.~~
~~2. Extend the last full wrap of reinforcing to the shoulder point and meet ASTM C 76 requirements.~~
 2. All circumferential steel located above this line and within the 1.75 L is defined as bell reinforcement.

Deleted Note 1 and 2

NOTES:
 2. Filter Fabric Jacket is required on both type of joints.
 3. Details shown before pull up.

UPDATED: "Joint is homed."

ROUND CONCRETE PIPE JOINT DETAIL

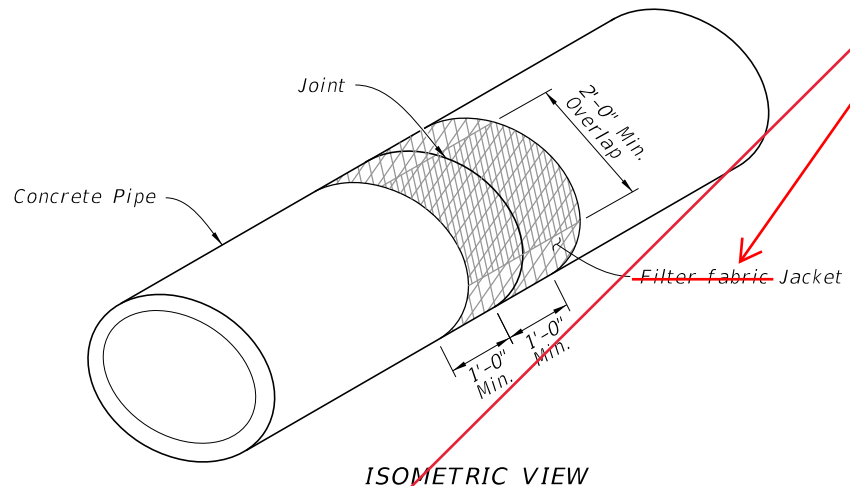
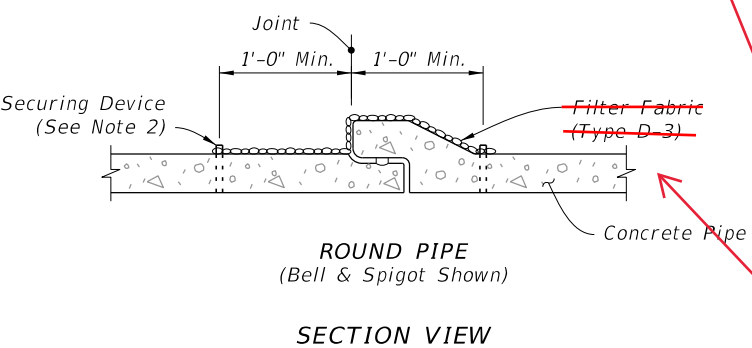
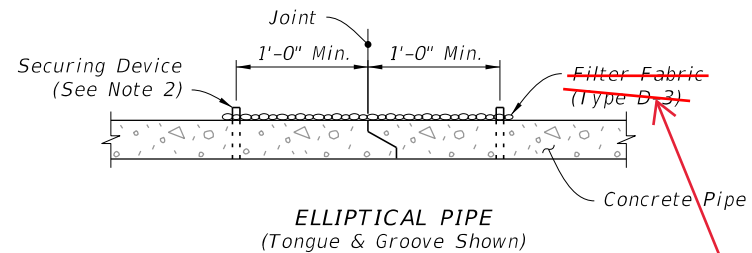
ADDED: New Note 1
Locate the last full wrap of reinforcement within 3 inches of the spigot shoulder and meet ASTM C76 for round pipe.

11/01/23

ELLIPTICAL CONCRETE PIPE JOINT DETAIL

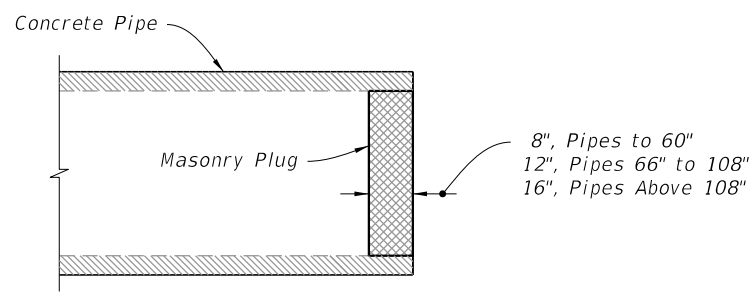
ROUND AND ELLIPTICAL CONCRETE PIPE JOINT

10/20/2022 8:48:33 AM



FILTER FABRIC JACKET

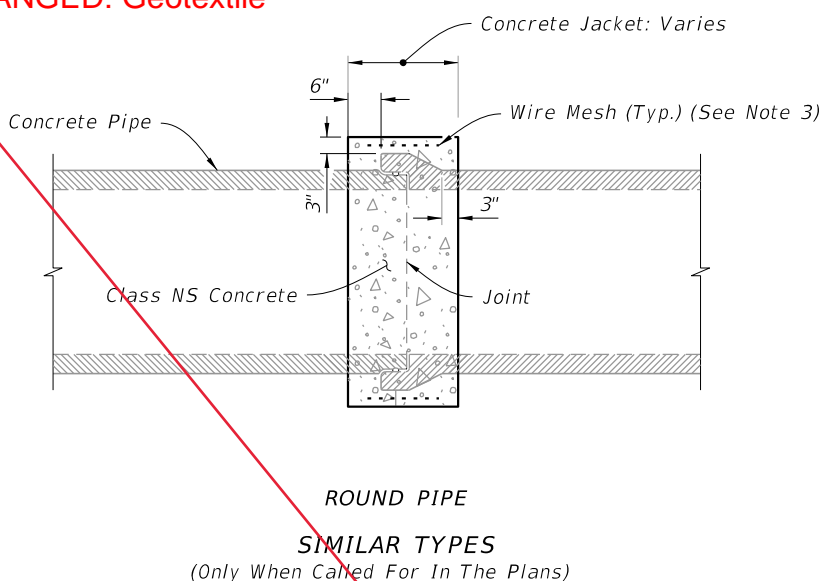
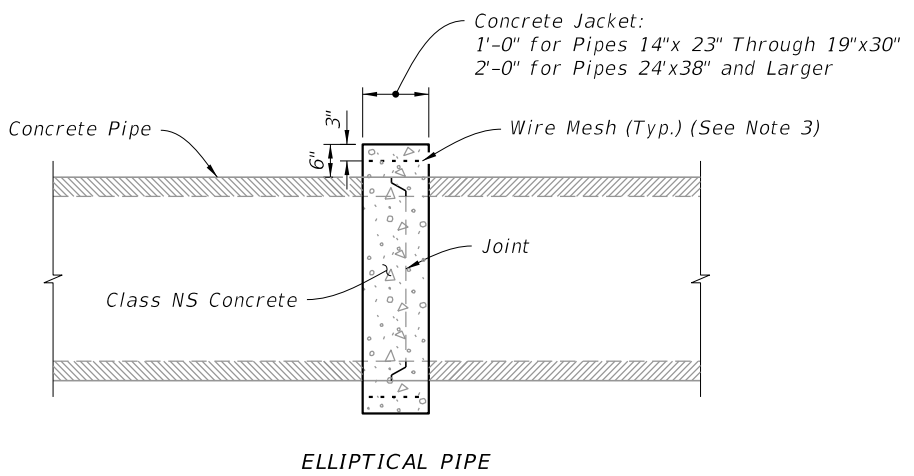
(For All Pipe Types - Concrete Elliptical Pipe Shown)



PIPE PLUG

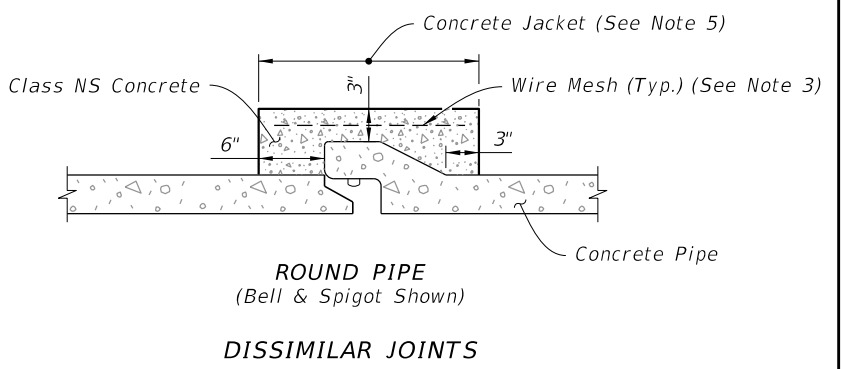
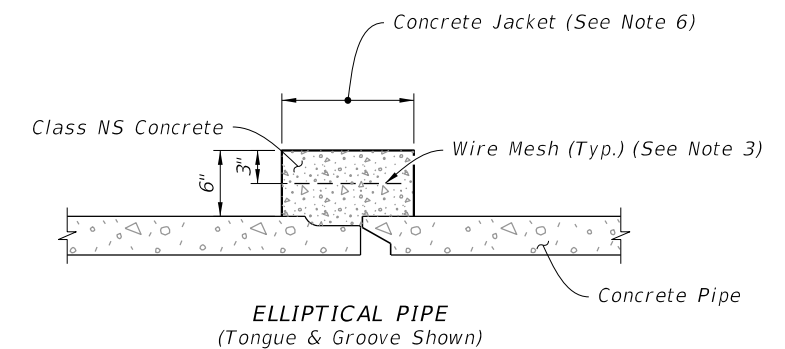
11/01/23

CHANGED: Geotextile

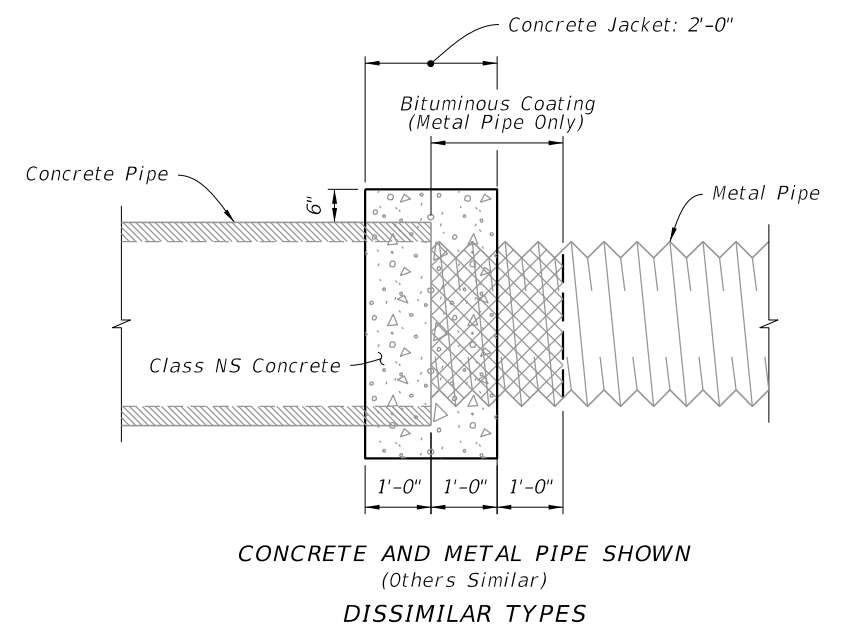


ROUND PIPE

SIMILAR TYPES
(Only When Called For In The Plans)



DISSIMILAR JOINTS



CONCRETE AND METAL PIPE SHOWN

(Others Similar)
DISSIMILAR TYPES

CONCRETE JACKET

NOTES:

1. Alternate connection must be approved by the Engineer.
2. Install securing device in accordance with Specification 985.
3. Any wire mesh arrangement which provides 0.126 square inches of steel area per linear foot both ways may be used, provided the wires are spaced a minimum of 2" and/or a maximum of 6" on centers.
4. Do not use a concrete jacket to join dissimilar metal pipes.
5. 12" for pipes 15" through 24"; 24" for pipes 30" and larger.
6. 12" for pipes 14" x 23" through 19" x 30"; 24" for pipes 24" x 38" and larger.

UPDATED Note 2: Install Type D-3 geotextile in accordance with Specification 514. Install securing device to hold the geotextile jacket on to the pipe.

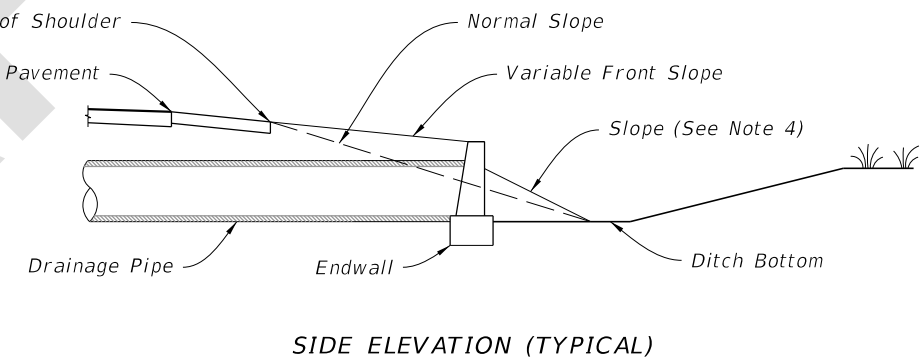
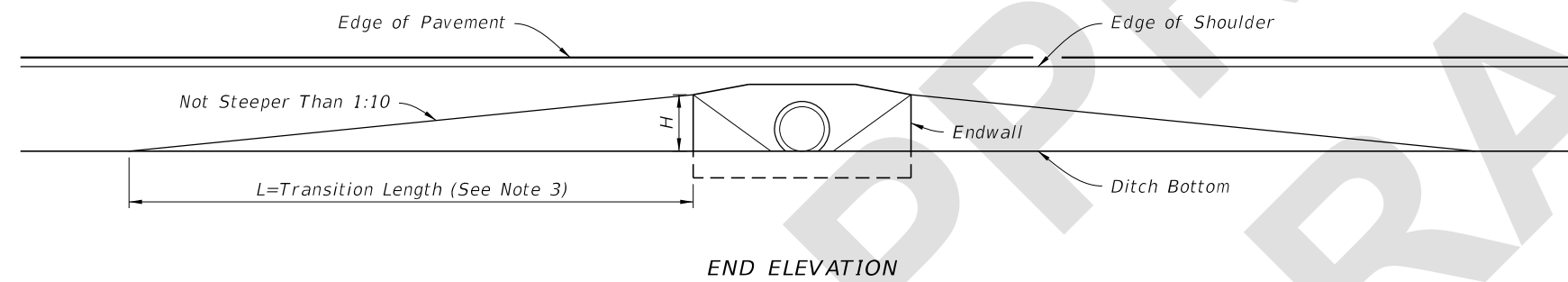
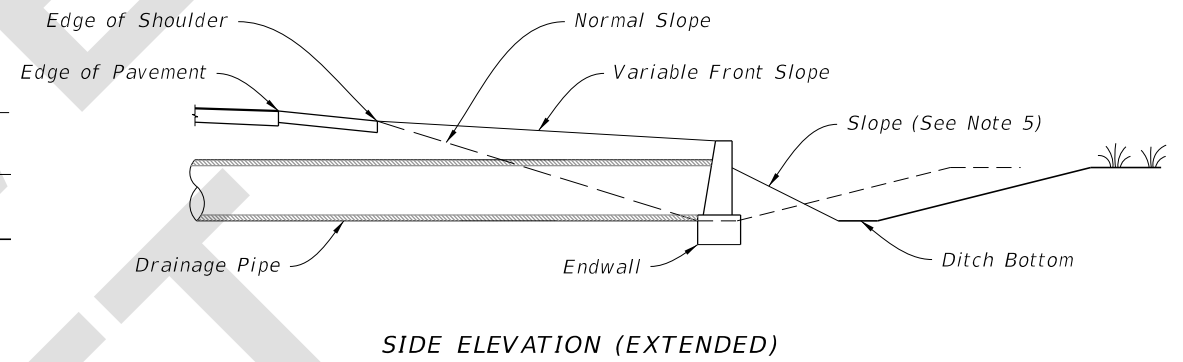
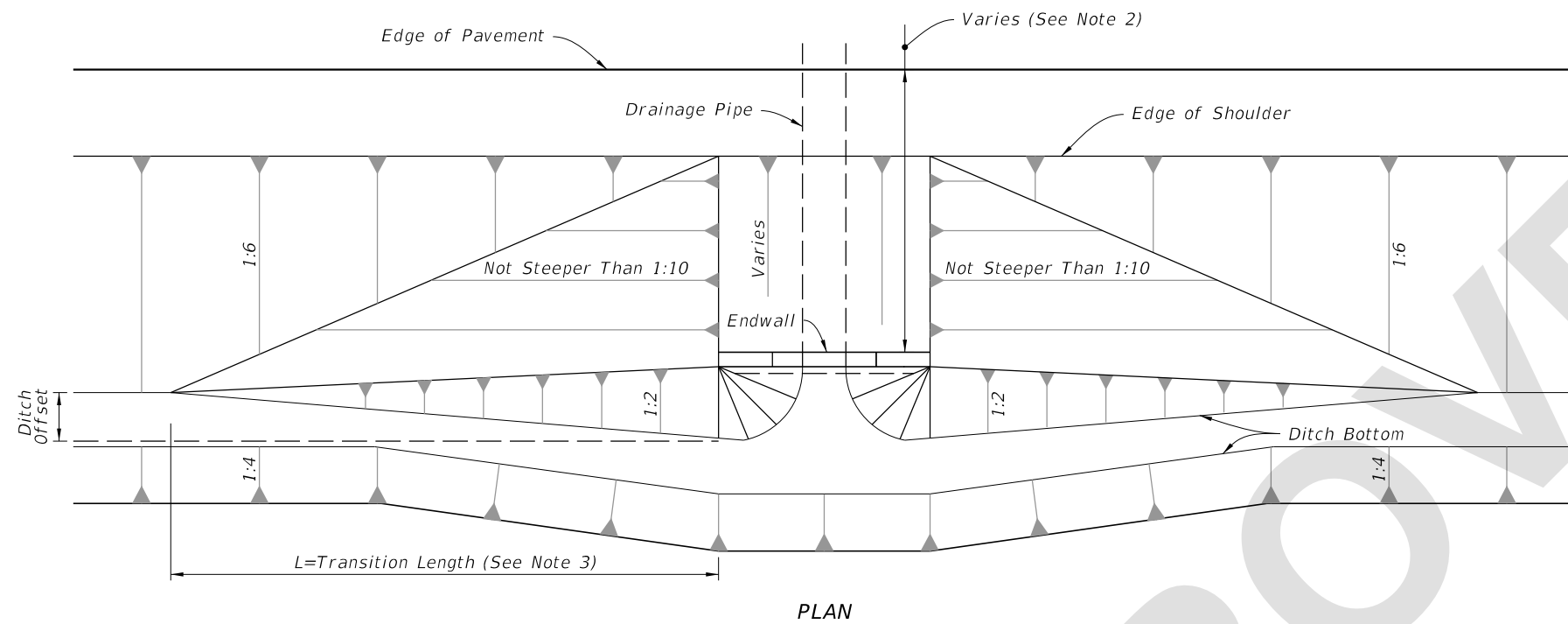
FILTER FABRIC JACKET, CONCRETE JACKET, AND PIPE PLUG

10/20/2022 8:48:34 AM

LAST REVISION 10/01/20	REVISION	DESCRIPTION:		FY 2023-24 STANDARD PLANS	MISCELLANEOUS DRAINAGE DETAILS	INDEX 430-001	SHEET 3 of 7
---------------------------	----------	--------------	--	------------------------------	--------------------------------	------------------	-----------------

NOTES:

1. Fill or excavate variable slopes during normal grading operations.
2. Minimum distance as required to comply with safety criteria.
3. Use Larger Value Of Either:
 $L=10 \times H$ (No Maximum)
 $L=10 \times \text{Ditch Offset}$ (Maximum $L=100'$)
4. Slope to normal slope if possible. Slope not to be steeper than 1:2. See side elevation (extended) below if 1:2 slope must go beyond toe of normal slope.
5. 1:2 slope if necessary to go beyond normal toe of slope and maintain ditch width by moving out back slope.




FRONT SLOPES AT DRAINAGE STRUCTURES

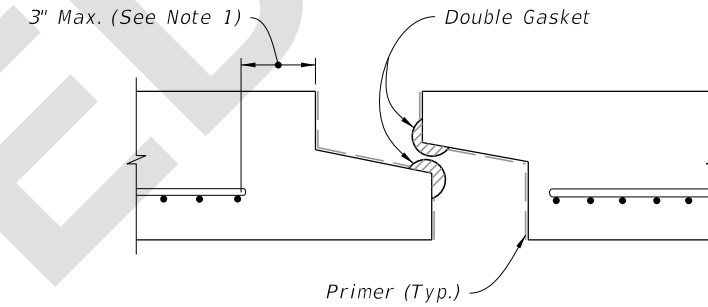
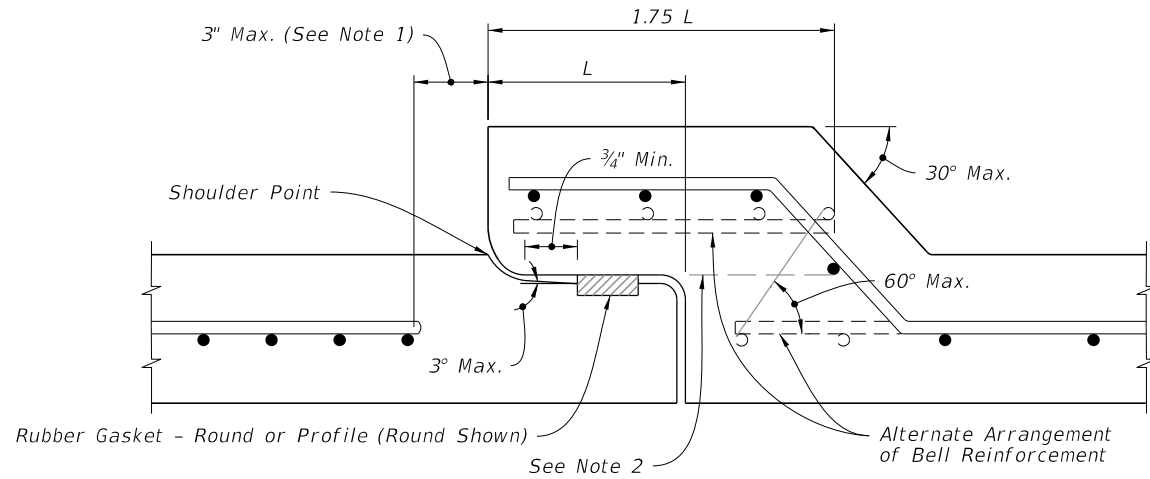
TABLE OF CONTENTS:

Sheet	Description
1	Limits of Variable Front Slopes at Drainage Structures
2	Round and Elliptical Concrete Pipe Joint
3	Geotextile Jacket, Concrete Jacket, and Pipe Plug
4	Concrete Collars
5	Single Pipe End Guard
6	Double Pipe End Guard
7	Retaining Wall Concrete Gutter and Drains

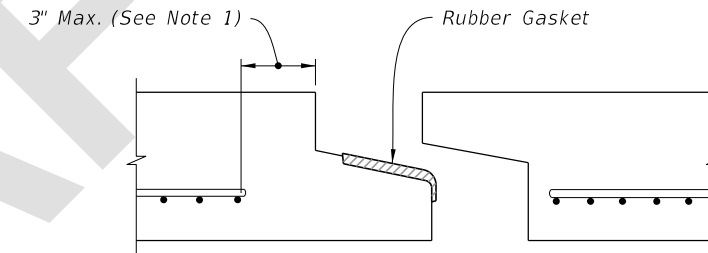
LIMITS OF VARIABLE FRONT SLOPES AT DRAINAGE STRUCTURES

6/28/2023 11:38:53 AM

LAST REVISION 11/01/23	REVISION	DESCRIPTION:	 FY 2024-25 STANDARD PLANS	MISCELLANEOUS DRAINAGE DETAILS	INDEX 430-001	SHEET 1 of 7
---------------------------	----------	--------------	---	--------------------------------	------------------	-----------------



PREFORMED PLASTIC JOINT



PROFILE RUBBER GASKET

TABLE 1
SCHEDULE OF BELL REINFORCEMENT
Classes II, III, IV, AND V;
Wall A, B, AND C

Nominal Pipe Diameter	Design Bell Reinforcement	Maximum Reinforcement Under Tolerance
	in ² per foot	in ² per foot
15"	0.07	0.010
18"	0.07	0.010
24"	0.09	0.010
30"	0.12	0.010
36"	0.14	0.010
42"	0.16	0.010
48"	0.19	0.011
54"	0.21	0.012
60"	0.23	0.0135
66"	0.26	0.015
72"	0.28	0.0165
78"	0.30	0.018
84"	0.33	0.0195
90"	0.35	0.021
96"	0.37	0.0225
102"	0.40	0.024
108"	0.42	0.0255

NOTES:

1. Locate the last full wrap of reinforcement within 3 inches of the spigot shoulder and meet ASTM C76 for round pipe.
2. All circumferential steel located above this line and within the 1.75 L is defined as bell reinforcement.

NOTES:

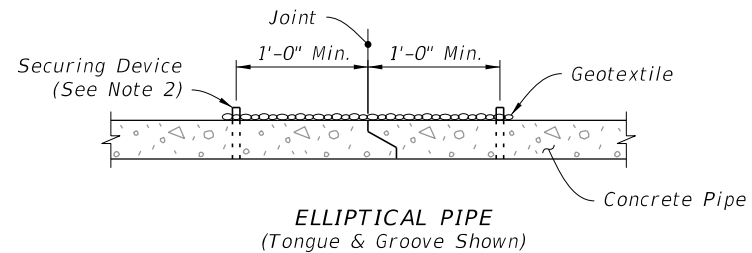
1. Locate the last full wrap of reinforcement within 3 inches of the spigot shoulder and meet ASTM C507 for elliptical pipe.
2. Type D-3 Geotextile Jacket is required on both type of joints.
3. Details shown before joint is homed.

ROUND CONCRETE PIPE JOINT DETAIL

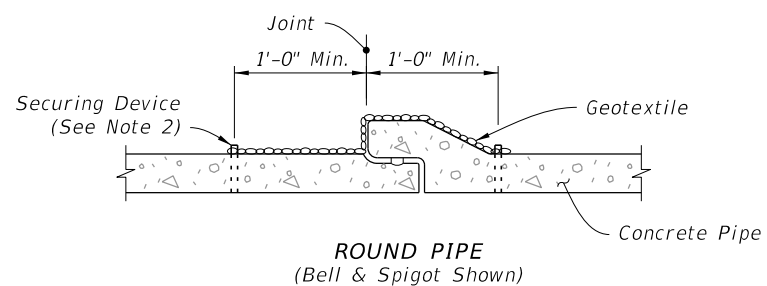
ELLIPTICAL CONCRETE PIPE JOINT DETAIL

ROUND AND ELLIPTICAL CONCRETE PIPE JOINT

7/17/2023 11:17:25 AM

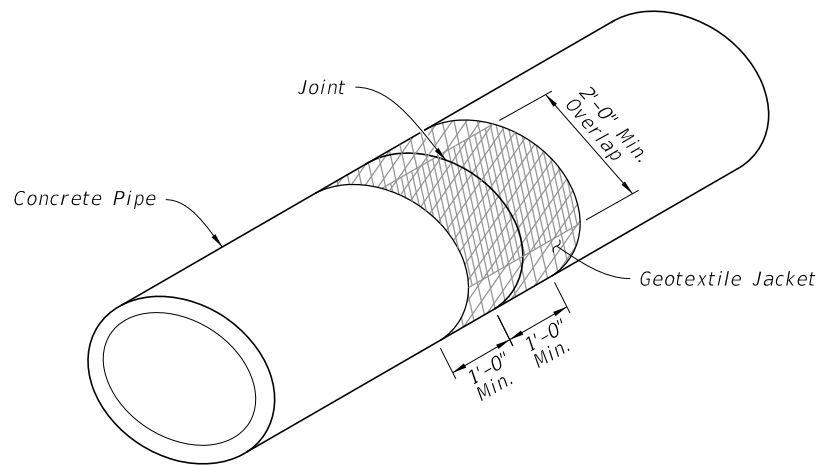


ELLIPTICAL PIPE
(Tongue & Groove Shown)



ROUND PIPE
(Bell & Spigot Shown)

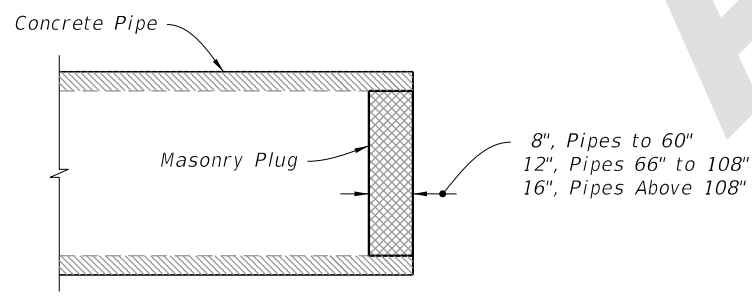
SECTION VIEW



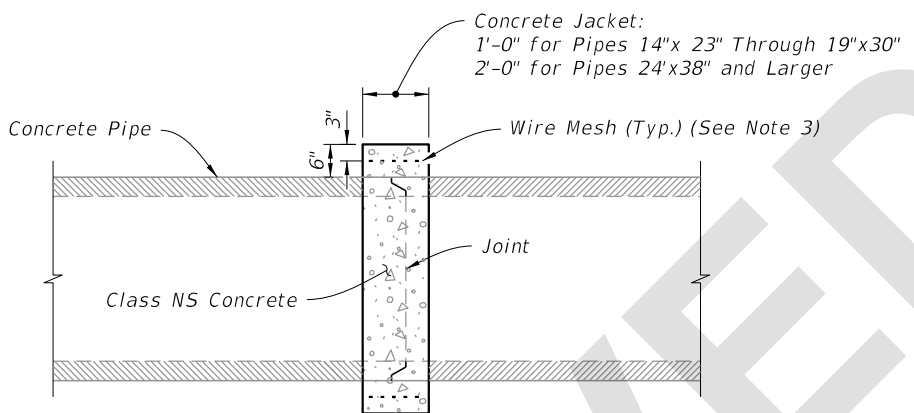
ISOMETRIC VIEW

GEOTEXTILE JACKET

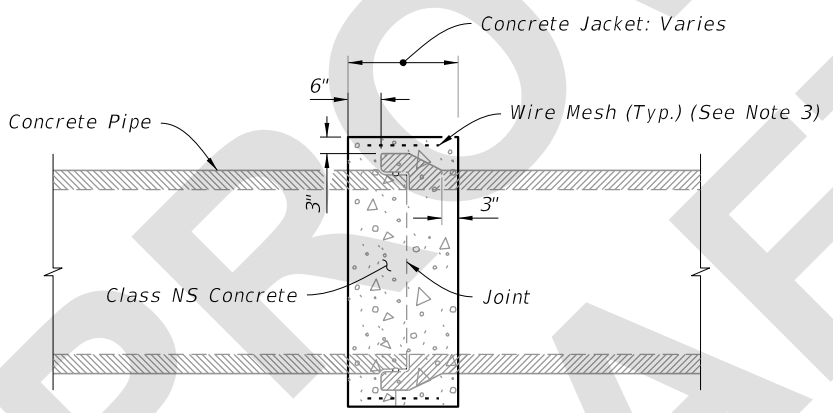
(For All Pipe Types - Concrete Elliptical Pipe Shown)



PIPE PLUG

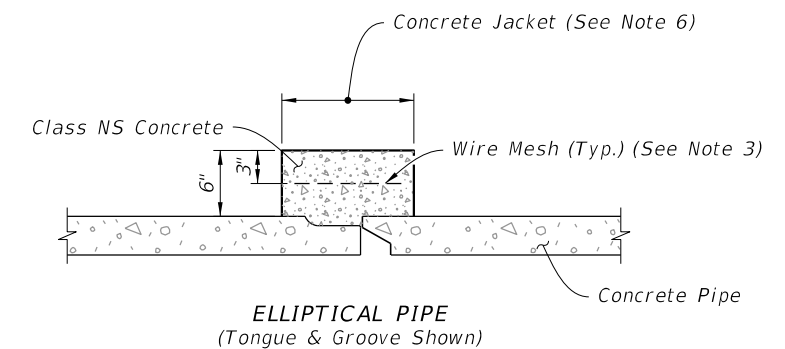


ELLIPTICAL PIPE

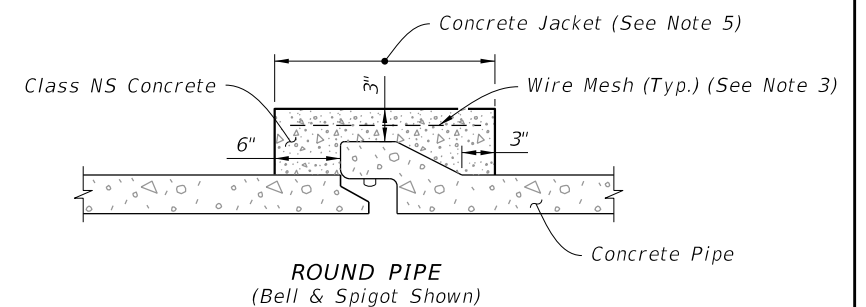


ROUND PIPE

SIMILAR TYPES
(Only When Called For In The Plans)

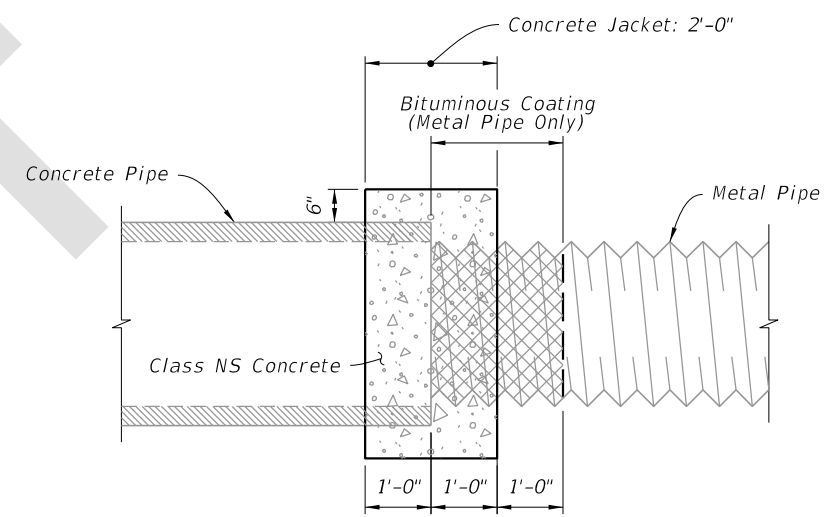


ELLIPTICAL PIPE
(Tongue & Groove Shown)



ROUND PIPE
(Bell & Spigot Shown)

DISSIMILAR JOINTS



CONCRETE AND METAL PIPE SHOWN
(Others Similar)

DISSIMILAR TYPES


CONCRETE JACKET

NOTES:

1. Alternate connection must be approved by the Engineer.
2. Install Type D-3 geotextile in accordance with Specification 514. Install securing device to hold the geotextile jacket on to the pipe.
3. Any wire mesh arrangement which provides 0.126 square inches of steel area per linear foot both ways may be used, provided the wires are spaced a minimum of 2" and/or a maximum of 6" on centers.
4. Do not use a concrete jacket to join dissimilar metal pipes.
5. 12" for pipes 15" through 24"; 24" for pipes 30" and larger.
6. 12" for pipes 14" x 23" through 19" x 30"; 24" for pipes 24" x 38" and larger.

GEOTEXTILE JACKET, CONCRETE JACKET, AND PIPE PLUG

6/28/2023 11:39:07 AM

LAST REVISION 11/01/23	DESCRIPTION:	 FY 2024-25 STANDARD PLANS	MISCELLANEOUS DRAINAGE DETAILS	INDEX 430-001	SHEET 3 of 7
---------------------------	--------------	--	--------------------------------	------------------	-----------------