

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
**DRIVEWAY CONNECTION PERMIT
FOR ALL CATEGORIES****PART 1: PERMIT INFORMATION**APPLICATION NUMBER: 2025-A-292-00005Permit Category: A - less than 20 VTPD Access Classification: _____Project: US.441N Brown Residential Access (Columbia co.)Permittee: William BrownSection/Mile Post: / State Road: _____Section/Mile Post: / State Road: _____**PART 2: PERMITTEE INFORMATION**Permittee Name: William BrownPermittee Mailing Address: 772 ne Cemetary LoopCity, State, Zip: Lake City, Florida 32055Telephone: (386) 961-2526 ext. _____

Engineer/Consultant/or Project Manager: _____

Engineer responsible for construction inspection: _____
NAME P.E. #

Mailing Address: _____

City, State, Zip: _____

Telephone: _____ FAX, Mobile Phone, etc. Fax: / Mobile: _____**PART 3: PERMIT APPROVAL**

The above application has been reviewed and is hereby approved subject to all Provisions as attached.

Permit Number: 2025-A-292-00005
Department of TransportationSignature: Dan Morgan Title: MAINTENANCE MANAGER/PERMITSDepartment Representative's Printed Name Dan MorganTemporary Permit ☐ YES ☒ NO (If temporary, this permit is only valid for 6 months)Special provisions attached ☐ YES ☒ NODate of Issuance: 3/4/2025

If this is a normal (non-temporary) permit it authorizes construction for one year from the date of issuance. This can only be extended by the Department as specified in 14-96.007(6).

See following pages for General and Special Provisions

Approved
2025-A-292-00005
Dan Morgan
3/4/2025

PART 4: GENERAL PROVISIONS

1. Notify the Department of Transportation Maintenance Office at least 48 hours in advance of starting proposed work.
Phone: 3869617066 , Attention: Dan Morgan
2. A copy of the approved permit must be displayed in a prominent location in the immediate vicinity of the connection construction.
3. Comply with Rule 14-96.008(1), F.A.C., Disruption of Traffic.
4. Comply with Rule 14-96.008(7), F.A.C., on Utility Notification Requirements.
5. All work performed in the Department's right of way shall be done in accordance with the most current Department standards, specifications and the permit provisions.
6. The permittee shall not commence use of the connection prior to a final inspection and acceptance by the Department.
7. Comply with Rule 14-96.003(3)(a), F.A.C., Cost of Construction.
8. If a Significant Change of the permittee's land use, as defined in Section 335.182, Florida Statutes, occurs, the Permittee must contact the Department.
9. Medians may be added and median openings may be changed by the Department as part of a Construction Project or Safety Project. The provision for a median might change the operation of the connection to be for right turns only.
10. All conditions in NOTICE OF INTENT WILL APPLY unless specifically changed by the Department.
11. All approved connection(s) and turning movements are subject to the Department's continuing authority to modify such connection(s) or turning movements in order to protect safety and traffic operations on the state highway or State Highway System.
12. **Transportation Control Features and Devices in the State Right of Way.** Transportation control features and devices in the Department's right of way, including, but not limited to, traffic signals, medians, median openings, or any other transportation control features or devices in the state right of way, are operational and safety characteristics of the State Highway and are not means of access. The Department may install, remove or modify any present or future transportation control feature or device in the state right of way to make changes to promote safety in the right of way or efficient traffic operations on the highway.
13. The Permittee for him/herself, his/her heirs, his/her assigns and successors in interest, binds and is bound and obligated to save and hold the State of Florida, and the Department, its agents and employees harmless from any and all damages, claims, expense, or injuries arising out of any act, neglect, or omission by the applicant, his/her heirs, assigns and successors in interest that may occur by reason of this facility design, construction, maintenance, or continuing existence of the connection facility, except that the applicant shall not be liable under this provision for damages arising from the sole negligence of the Department.
14. The Permittee shall be responsible for determining and notify all other users of the right of way.
15. Starting work on the State Right of Way means that I am accepting all conditions on the Permit.

Approved
2025-A-292-00005
Dan Morgan
3/4/2025

PART 5: SPECIAL PROVISIONS

NON-CONFORMING CONNECTIONS: ☒ YES ☐ NO

If this is a non-conforming connection permit, as defined in Rule Chapters 14-96 and 14-97, then the following shall be a part of this permit.

1. The non-conforming connection(s) described in this permit is (are) not permitted for traffic volumes exceeding the Permit Category on page 1 of this permit, or as specified in "Other Special Provisions" below.
2. All non-conforming connections will be subject to closure or relocation when reasonable access becomes available in the future.

OTHER SPECIAL PROVISIONS:

Contact Permits Office min.48hrs prior to install.

Note: This location is permitted as a joint use driveway to serve all parties existing and future.

PART 6: APPEAL PROCEDURES

You may petition for an administrative hearing pursuant to sections 120.569 and 120.57, Florida Statutes. If you dispute the facts stated in the foregoing Notice of Intended Department Action (hereinafter Notice), you may petition for a formal administrative hearing pursuant to section 120.57 (1), Florida Statutes. If you agree with the facts stated in the Notice, you may petition for an informal administrative hearing pursuant to section 120.57(2), Florida Statutes. You must file the petition with:

Clerk of Agency Proceedings
Department of Transportation
Haydon Burns Building
605 Suwannee Street, M.S. 58
Tallahassee, Florida 32399-0458

The petition for an administrative hearing must conform to the requirements of Rule 28-106.201(2) or Rule 28-106.301(2), Florida Administrative Code, and be filed with the Clerk of Agency Proceedings by 5:00 p.m. no later than 21 days after you received the Notice. The petition must include a copy of the Notice, be legible, on 8 1/2 by 11 inch white paper, and contain:

1. Your name, address, telephone number, any Department of Transportation identifying number on the Notice, if known, the name and identification number of each agency affected, if known, and the name, address, and telephone number of your representative, if any, which shall be the address for service purposes during the course of the proceeding.
2. An explanation of how your substantial interests will be affected by the action described in the Notice;
3. A statement of when and how you received the Notice;
4. A statement of all disputed issues of material fact. If there are none, you must so indicate;
5. A concise statement of the ultimate facts alleged, including the specific facts you contend warrant reversal or modification of the agency's proposed action, as well as an explanation of how the alleged facts relate to the specific rules and statutes you contend require reversal or modification of the agency's proposed action;
6. A statement of the relief sought, stating precisely the desired action you wish the agency to take in respect to the agency's proposed action.

If there are disputed issues of material fact a formal hearing will be held, where you may present evidence and argument on all issues involved and conduct cross-examination. If there are no disputed issues of material fact an informal hearing will be held, where you may present evidence or a written statement for consideration by the Department.

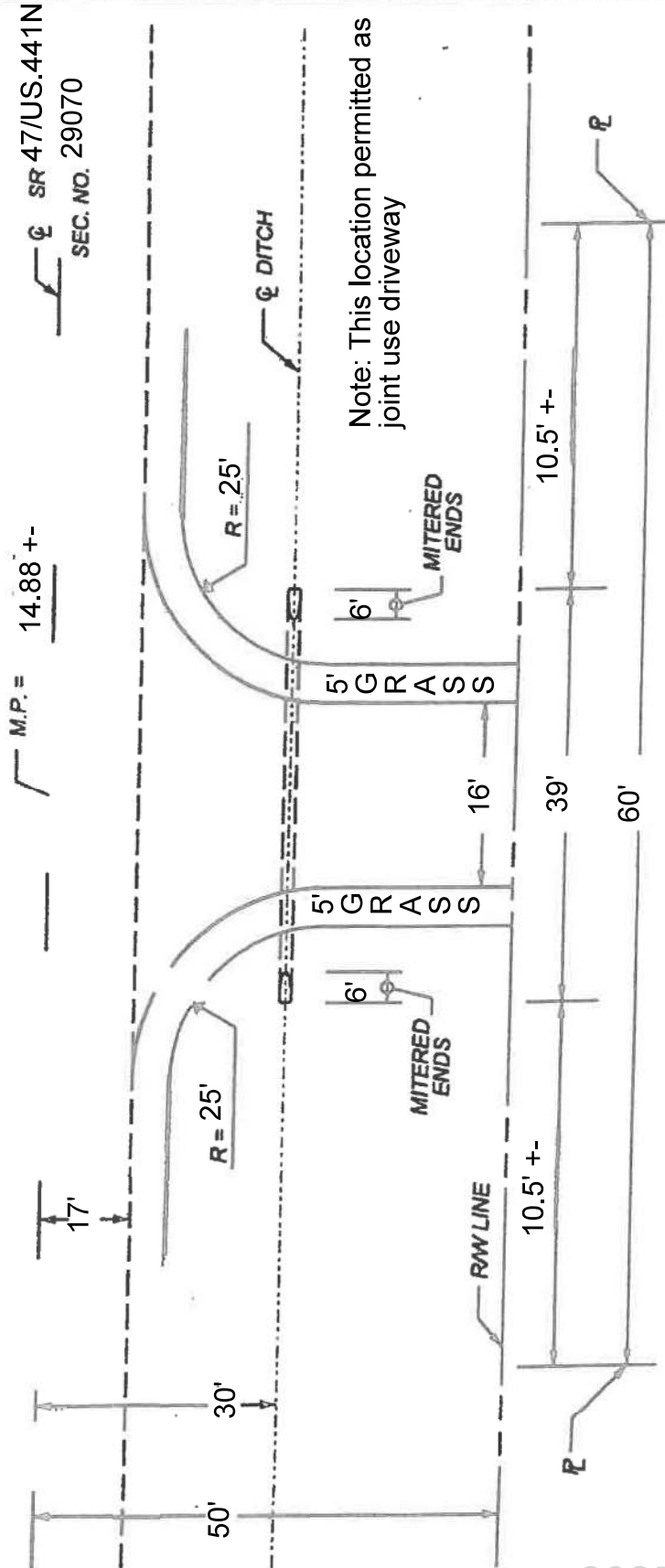
Mediation, pursuant to section 120.573, Florida Statutes, may be available if agreed to by all parties, and on such terms as may be agreed upon by all parties. The right to an administrative hearing is not affected when mediation does not result in a settlement.

Your petition for an administrative hearing shall be dismissed if it is not in substantial compliance with the above requirements of Rule 28-106.201(2) or Rule 28-106.301(2), Florida Administrative Code. If you fail to timely file your petition in accordance with the above requirements, you will have waived your right to have the intended action reviewed pursuant to chapter 120, Florida Statutes, and the action set forth in the Notice shall be conclusive and final.

Approved
0005
Dan Morgan
3/4/2025

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT 2 LAKE CITY MAINTENANCE - ACCESS CONNECTION
RESIDENTIAL DRIVEWAY - RURAL CLASS: 04 / (A)

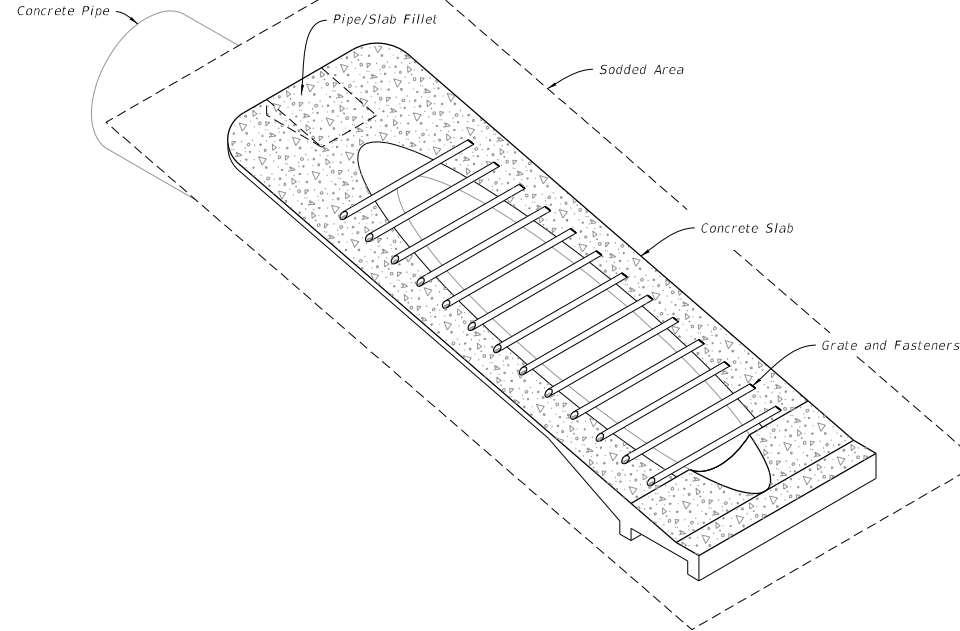
SEAL OF APPROVAL



16' wide earth & limerock or millings driveway with 5' grass shoulders and 25' radii. 39' of 18" cmp with concrete mitered ends and sod. Min. 6" of limerock or millings required.

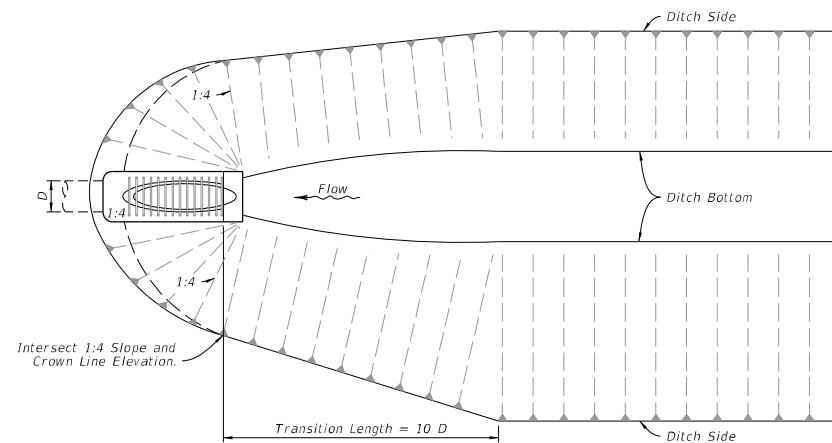
1. Unless otherwise designated in the plans, concrete pipe mitered end sections may be used with any type of side drain pipe; corrugated steel pipe mitered end sections may be used with any type of side drain pipe except aluminum pipe; and, corrugated aluminum mitered end sections may be used with any type of side drain pipe except steel pipe. When bituminous coated metal pipe is specified for side drain pipe, construct the mitered end sections with like pipe or concrete pipe. When the mitered end section pipe is dissimilar to the side drain pipe, construct a concrete jacket in accordance with Index 430-001.

7. Saddle Slope:
- 1:4 Miter - Slope to $\frac{1}{4}$ of pipe for round pipes less than or equal to 18" diameter and 1:1 for round pipes greater than or equal to 24" diameter.
Slope to the major axis for elliptical pipes 24"x38" or smaller and 1:2 for pipes 29"x45" or larger.
Slope to the span line for pipe arch 28"x20" or smaller and 1:2 for pipe arch 35"x24" or larger.
- 1:2 Miter - Slope to $\frac{1}{2}$ of pipe for round pipes less than or equal to 18" diameter and 1:2 for round pipes greater than or equal to 24" diameter.
Slope to the major axis for elliptical pipes 29"x45" or smaller and 1:1 for pipes 34"x53" or larger.
Slope 1:1 for all pipe arch sizes.

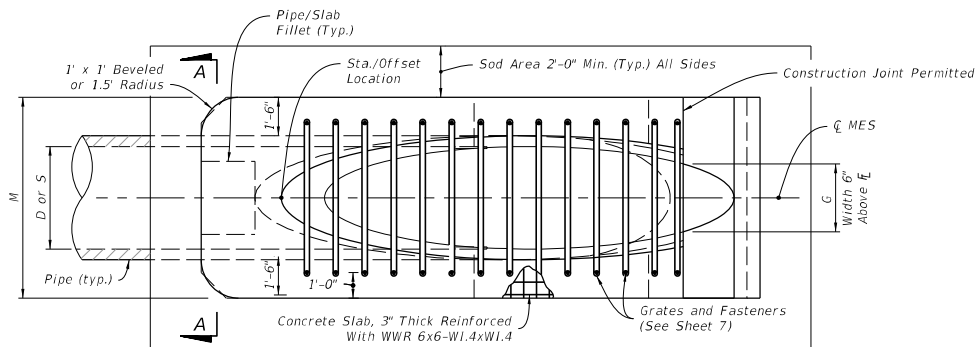


== SIDEDRAIN MITERED END SECTION ==
(Concrete Pipe Shown, Corrugated Metal Pipe Similar)

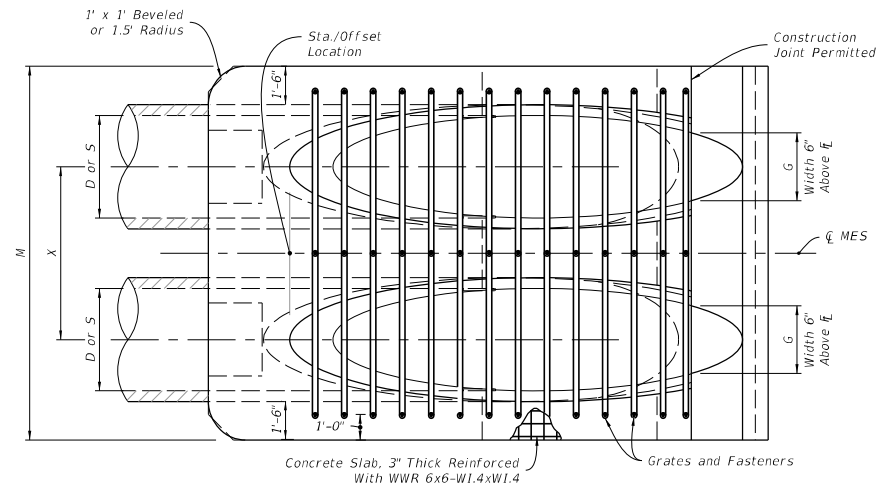
TABLE OF CONTENTS:	
Sheet	Description
1	General Notes and Contents
2	Single and Multiple Concrete Pipe
3	Concrete Pipe Dimensions and Quantities and Permissible Pavement Modifications
4	Single and Multiple Corrugated Metal Pipe
5	Corrugated Metal Dimensions and Quantities
6	Concrete Pipe Connection and Corrugated Metal Pipe Anchor Details
7	Fastener Unit and Grate Details



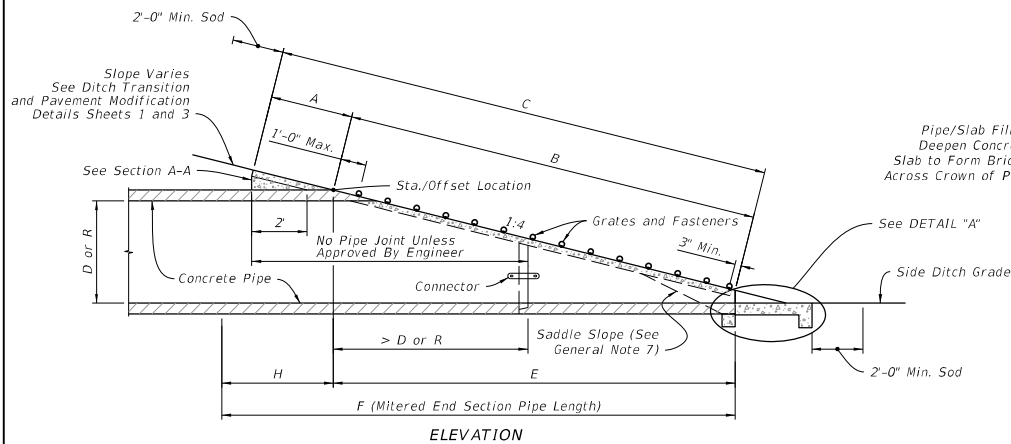
\equiv DITCH TRANSITION



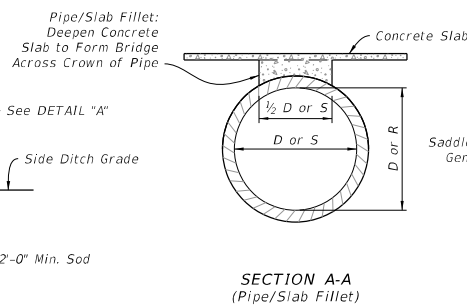
PLAN - SINGLE PIPE



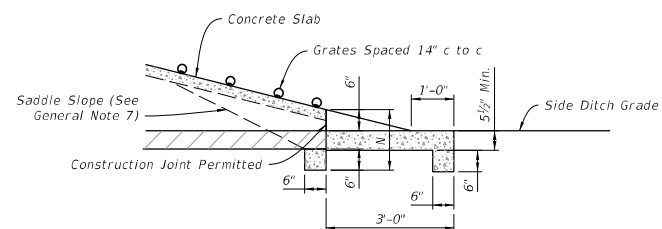
PLAN - MULTIPLE PIPE



ELEVATION



SECTION A-A
(Pipe/Slab Fillet)



DETAIL "A"

ROUND CONCRETE PIPE
(Elliptical Pipe Similar)

SINGLE AND MULTIPLE CONCRETE PIPE

LAST REVISION 11/01/18	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	SIDE DRAIN MITERED END SECTION	INDEX 430-022	SHEET 2 of 7
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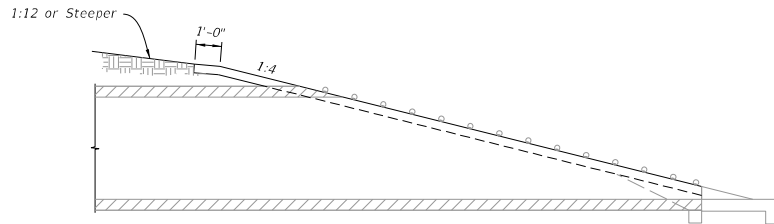
Approved
2025-A-292-00005
Dan Morgan
3/4/2025

10/6/2022 1:54:32 PM

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SINGLE AND MULTIPLE CONCRETE PIPE DIMENSIONS AND QUANTITIES																										
Pipe	Dia. D	Rise R	Span S	X	A	B	C	E	F	G	H	M				N	GRATE SIZES		3" CONC. SLAB (CY)				SODDING (SY)			
												Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe		STANDARD WEIGHT PIPE	EXTRA STRONG PIPE	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe
Round Concrete	15"	—	—	2'-7"	2.27'	4.09'	6.36'	4.03'	8'	1.22'	4.0'	4.63'	7.21'	9.79'	12.37'	1.19'			0.76	1.16	1.54	1.94	8	10	11	12
	18"	—	—	2'-10"	2.36'	5.12'	7.48'	5.03'	9'	1.41'	4.0'	4.92'	7.75'	10.58'	13.42'	1.21'			0.85	1.28	1.71	2.17	9	10	12	13
	24"	—	—	3'-5"	2.53'	7.18'	9.71'	7.03' Δ	11'	1.73'	4.0'	5.50'	8.92'	12.33'	15.75'	1.25'			1.02	1.58	2.15	2.75	10	12	13	15
	30"	—	—	4'-3"	2.70'	9.25'	11.95'	9.03'	13'	2.00'	4.0'	6.08'	10.33'	14.58'	18.83'	1.29'	2 1/2"	3"	1.23	1.98	2.74	3.50	12	14	15	17
	36"	—	—	5'-1"	2.87'	11.31'	14.18'	11.03' Δ	15'	2.24'	4.0'	6.67'	11.75'	16.83'	21.92'	1.33'	2 1/2"	3"	1.40	2.38	3.33	4.24	13	15	17	20
	42"	—	—	6'-0"	3.05'	13.37'	16.42'	13.03'	17'	2.45'	4.0'	7.25'	13.25'	19.25'	25.25'	1.38'	2 1/2"	3 1/2"	1.60	2.83	4.04	5.26	14	17	19	22
	48"	—	—	6'-9"	3.22'	15.43'	18.65'	15.03'	19'	2.65'	4.0'	7.83'	14.58'	21.33'	28.08'	1.42'	2 1/2"	3 1/2"	1.81	3.26	4.70	6.14	15	18	21	24
	54"	—	—	7'-8"	3.39'	17.49'	20.88'	17.03'	21'	2.83'	4.0'	8.42'	16.08'	23.75'	31.42'	1.46'	3"	4"	2.03	3.78	5.54	7.28	17	20	23	27
	60"	—	—	8'-6"	3.56'	19.55'	23.11'	19.03'	23'	3.00'	4.0'	9.00'	17.50'	26.00'	34.50'	1.50'	3"	4"	2.28	4.36	6.43	8.50	18	22	25	29
Elliptical Concrete	12"	18"	2'-10"	2.36'	3.06'	5.42'	3.03'	5'	1.50'	2.0'	4.92'	7.75'	10.58'	13.42'	1.21'				0.68	1.04	1.41	1.77	8	9	11	12
	14"	23"	3'-4"	2.44'	3.75'	6.19'	3.70'	6'	1.90'	2.3'	5.38'	8.71'	12.04'	15.38'	1.23'				0.76	1.19	1.63	2.05	9	10	12	13
	19"	30"	4'-0"	2.62'	5.47'	8.09'	5.36'	8'	2.37'	2.6'	6.04'	10.04'	14.04'	18.04'	1.27'	2 1/2"	3"	0.95	1.52	2.09	2.65	10	12	13	15	
	24"	38"	5'-0"	2.79'	7.18'	9.97'	7.03'	10'	2.85'	3.0'	6.79'	11.79'	16.79'	21.79'	1.31'	2 1/2"	3"	1.18	1.95	2.74	3.53	11	13	15	18	
	29"	45"	5'-11"	3.05'	8.90'	11.95'	8.70'	12'	3.19'	3.3'	7.50'	13.42'	19.33'	25.25'	1.38'	2 1/2"	3 1/2"	1.41	2.42	3.44	4.45	12	15	18	20	
	34"	53"	7'-0"	3.22'	10.62'	13.84'	10.36'	13'	3.57'	2.6'	8.25'	15.25'	22.25'	29.25'	1.42'	3"	3 1/2"	1.63	2.92	4.22	5.52	13	17	20	23	
	38"	60"	7'-10"	3.39'	11.99'	15.38'	11.70'	15'	3.95'	3.3'	8.92'	16.75'	24.58'	32.42'	1.46'	3"	4"	1.83	3.36	4.89	6.41	14	18	21	25	
	43"	68"	8'-11"	3.56'	13.71'	17.27'	13.36'	17'	4.28'	3.6'	9.67'	18.58'	27.50'	36.42'	1.50'	3"	4"	2.09	3.95	5.80	7.65	16	20	23	27	
	48"	76"	9'-11"	3.73'	15.43'	19.16'	15.03'	19'	4.59'	4.0'	10.42'	20.33'	30.25'	40.17'	1.54'	3"	HSS 5"x5/16"	2.37	4.54	6.73	8.92	17	21	26	30	
	53"	83"	10'-8"	3.91'	17.15'	21.06'	16.70'	20'	4.77'	3.3'	11.08'	21.75'	32.42'	43.08'	1.58'	3"	HSS 5"x5/16"	2.61	5.09	7.56	10.03	18	23	27	32	
58"	91"	11'-8"	4.08'	18.87'	22.95'	18.36'	22'	5.01'	3.6'	11.83'	23.50'	35.17'	46.83'	1.63'	3 1/2"	HSS 5"x3/8"	2.91	5.77	8.64	11.50	19	24	29	35		

△6.42' △6.25' Dimensions permitted to allow use of 8' standard pipe lengths.
◇10.40' ◇10.10' Dimensions permitted to allow use of 12' standard pipe lengths.



PERMISSIBLE PAVEMENT MODIFICATION

CONCRETE PIPE DIMENSIONS AND QUANTITIES
AND PERMISSIBLE PAVEMENT MODIFICATION



FY 2023-24
STANDARD PLANS

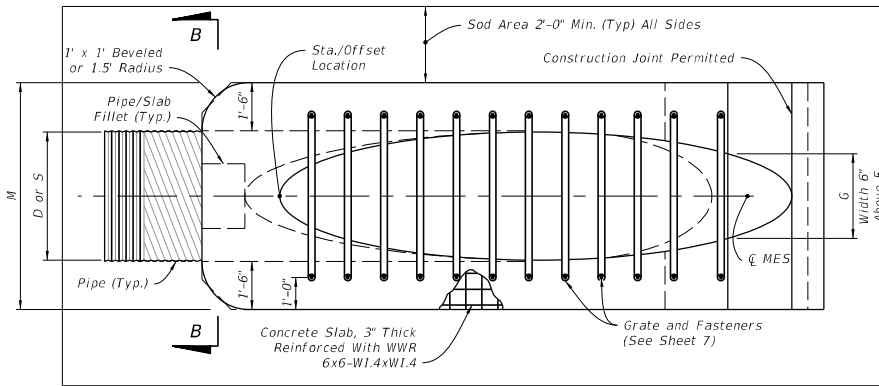
SIDE DRAIN MITERED END SECTION

INDEX SHEET
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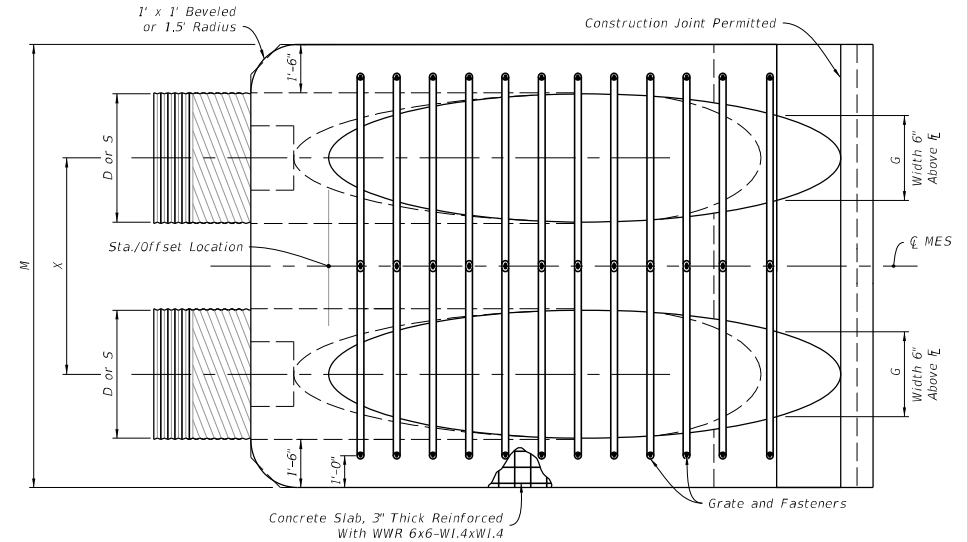
LAST
REVISION
11/01/19

REVISION
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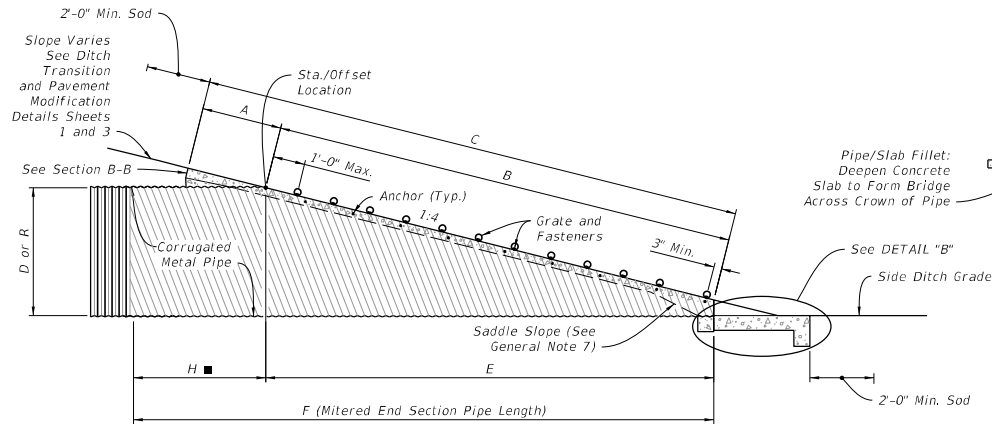
2025-A-292-00005
Dan Morgan
3/4/2025



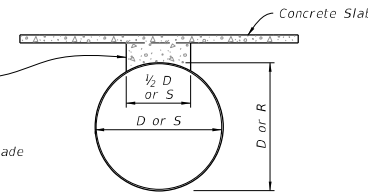
PLAN - SINGLE PIPE



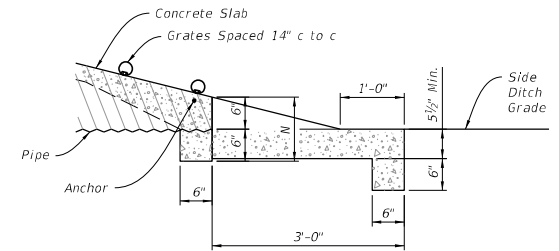
PLAN - MULTIPLE PIPE



ELEVATION



SECTION B-B
(Pipe/Slab Fillet)



DETAIL "B"

ROUND CORRUGATED PIPE
(Arched Pipe Similar)


SINGLE AND MULTIPLE CORRUGATED METAL PIPE

LAST REVISION 11/01/19	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	SIDE DRAIN MITERED END SECTION	INDEX 430-022	SHEET 4 of 7
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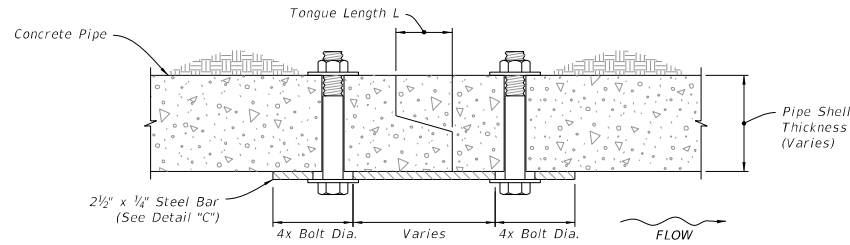
Approved
2025-A-292-00005
Dan Morgan
3/4/2025

SINGLE AND MULTIPLE CORRUGATED METAL PIPE DIMENSIONS AND QUANTITIES																										
Pipe	Dia. D	Span S	Rise R	X	A	B	C	E	F	G	H	M				N	GRATE SIZES		3" CONC. SLAB (CY)				SODDING (SY)			
												Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe		STANDARD WEIGHT PIPE	EXTRA STRONG PIPE	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe
Round Corrugated Metal Pipe	8"	---	---	2'-0"	2.5'	0.72'	3.22'	0.7'	4.0'	0.58'	3.3'	3.75'	5.75'	7.75'	9.75'	1.04'			0.52	0.90	1.22	1.54	7	8	8	9
	10"	---	---	2'-2"	2.5'	1.34'	3.84'	1.3'	5.0'	0.81'	3.7'	3.92'	6.08'	8.25'	10.41'	1.04'			0.64	0.99	1.34	1.70	7	8	9	10
	12"	---	---	2'-4"	2.5'	2.06'	4.56'	2.0'	6.0'	1.00'	4.0'	4.08'	6.42'	8.75'	11.08'	1.04'			0.68	1.09	1.48	1.88	7	8	10	11
	15"	---	---	2'-7"	2.5'	3.09'	5.59'	3.0'	7.0'	1.23'	4.0'	4.33'	6.92'	9.50'	12.08'	1.04'			0.64	1.00	1.35	1.71	8	9	10	11
	18"	---	---	2'-10"	2.5'	4.12'	6.62'	4.0'	8.0'	1.41'	4.0'	4.58'	7.42'	10.25'	13.08'	1.04'			0.69	1.09	1.49	1.89	9	10	11	12
	24"	---	---	3'-5"	2.5'	6.18'	8.68'	6.0'	10.0'	1.73'	4.0'	5.08'	8.50'	11.92'	15.33'	1.04'			0.83	1.34	1.82	2.34	10	11	13	14
	30"	---	---	4'-3"	2.5'	8.25'	10.75'	8.0'	12.0'	2.00'	4.0'	5.58'	9.83'	14.08'	18.33'	1.04'	2 1/2"	3"	0.96	1.63	2.32	2.99	11	13	15	17
	36"	---	---	5'-1"	2.5'	10.31'	12.81'	10.0'	14.0'	2.24'	4.0'	6.08'	11.17'	16.25'	21.33'	1.04'	2 1/2"	3"	1.08	1.92	2.77	3.62	12	14	17	19
	42"	---	---	6'-0"	2.5'	12.37'	14.87'	12.0'	16.0'	2.45'	4.0'	6.58'	12.58'	18.58'	24.58'	1.04'	2 1/2"	3 1/2"	1.20	2.26	3.34	4.61	13	16	18	21
	48"	---	---	6'-9"	2.5'	14.43'	16.93'	14.0'	18.0'	2.65'	4.0'	7.08'	13.83'	20.58'	27.33'	1.04'	2 1/2"	3 1/2"	1.60	3.11	4.62	6.12	14	17	20	23
Corrugated Metal Pipe Arch	54"	---	---	7'-8"	2.5'	16.49'	18.99'	16.0'	20.0'	2.83'	4.0'	7.58'	15.25'	22.92'	30.58'	1.04'	3"	4"	1.76	3.56	5.34	7.14	15	19	22	26
	60"	---	---	8'-6"	2.5'	18.55'	21.05'	18.0'	22.0'	3.00'	4.0'	8.08'	16.58'	25.08'	33.58'	1.04'	3"	4"	1.94	4.03	6.12	8.20	17	20	24	28
	17"	13"	2'-6"	2.5'	2.41'	4.91'	2.33'	7'	1.39'	4.7'	4.50'	7.00'	9.50'	12.00'	1.04'			0.62	0.95	1.27	1.60	8	9	10	11	
	21"	15"	2'-10"	2.5'	3.09'	5.59'	3.00'	8'	1.76'	5.0'	4.83'	7.67'	10.50'	13.33'	1.04'			0.69	1.06	1.44	1.77	8	9	11	12	
	28"	20"	3'-5"	2.5'	4.81'	7.31'	4.67'	9'	2.22'	4.3'	5.42'	8.83'	12.25'	15.67'	1.04'			0.81	1.26	1.73	2.19	9	11	12	14	
	35"	24"	4'-0"	2.5'	6.18'	8.68'	6.00'	11'	2.55'	5.0'	6.00'	10.00'	14.00'	18.00'	1.04'	2 1/2"	3"	0.94	1.51	2.09	2.66	10	12	14	15	
	42"	29"	4'-9"	2.5'	7.90'	10.40'	7.67'	12'	2.97'	4.3'	6.58'	11.33'	16.08'	20.83'	1.04'	2 1/2"	3 1/2"	1.06	1.76	2.46	3.16	11	13	15	17	
	49"	33"	5'-6"	2.5'	9.28'	11.78'	9.00'	14'	3.34'	5.0'	7.17'	12.67'	18.17'	23.67'	1.04'	2 1/2"	3 1/2"	1.19	2.02	2.84	3.68	12	14	17	19	
	57"	38"	6'-4"	2.5'	11.00'	13.50'	10.67'	16'	3.65'	5.3'	7.83'	14.17'	20.50'	26.83'	1.04'	3"	4"	1.35	2.35	3.35	4.36	13	16	19	22	
	64"	43"	7'-1"	2.5'	12.71'	15.21'	12.33'	17'	3.89'	4.7'	8.42'	15.50'	22.58'	29.67'	1.04'	3"	4"	1.50	2.70	3.86	5.03	14	17	20	24	
71"	47"	7'-10"	2.5'	14.09'	16.59'	13.67'	19'	4.14'	5.3'	9.00'	16.83'	24.67'	32.50'	1.04'	3"	4"	1.62	2.94	4.27	5.59	15	18	22	25		

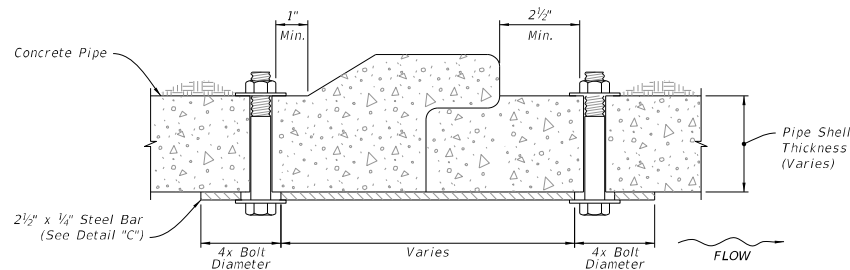
CORRUGATED METAL PIPE DIMENSIONS AND QUANTITIES

LAST REVISION 11/01/19	DESCRIPTION:	 FY 2023-24 STANDARD PLANS	SIDE DRAIN MITERED END SECTION	INDEX 430-022	SHEET 5 of 7
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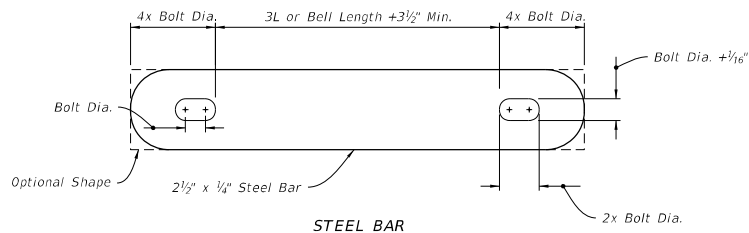
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2025-A-292-00005
Dan Morgan
3/4/2025



TONGUE AND GROOVE CONNECTOR DETAIL



BELL AND SPIGOT CONNECTOR DETAIL



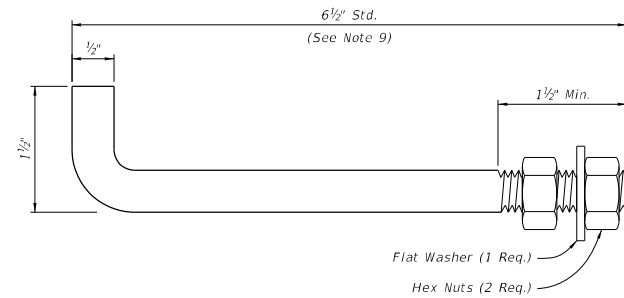
STEEL BAR

NOTES:

1. Use galvanized steel for all bars, bolts, nuts, and washers.
2. Two connectors required per joint, located 60° right and left of bottom center of pipe.
3. Bolt holes in pipe shell are to be drilled.

Bolt Dia.	Pipe Dia.
3/8"	15" to 36"
1/2"	42" to 72"

**CONCRETE PIPE CONNECTION DETAIL
DETAIL "C"**



NOTES:

1. Anchors required for CMP only.
2. Use galvanized steel for all anchors, nuts, and washers.
3. Bend anchor where required to center in concrete slab.
4. Repair damaged surfaces after bending.
5. Space anchors a distance equal to four (4) corrugations.
6. Place the anchors in the outside crest of corrugation.
7. Place flat washers on inside wall of pipe.
8. Drill or punch holes in the mitered end pipe; burning not permitted.
9. A 6" x 1/2" bolt substitution is permitted.

**CORRUGATED METAL PIPE (CMP) ANCHOR DETAIL
DETAIL "D"**

CONCRETE PIPE CONNECTION AND CORRUGATED PIPE ANCHOR DETAILS

SIDE DRAIN MITERED END SECTION

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REVISION	DESCRIPTION
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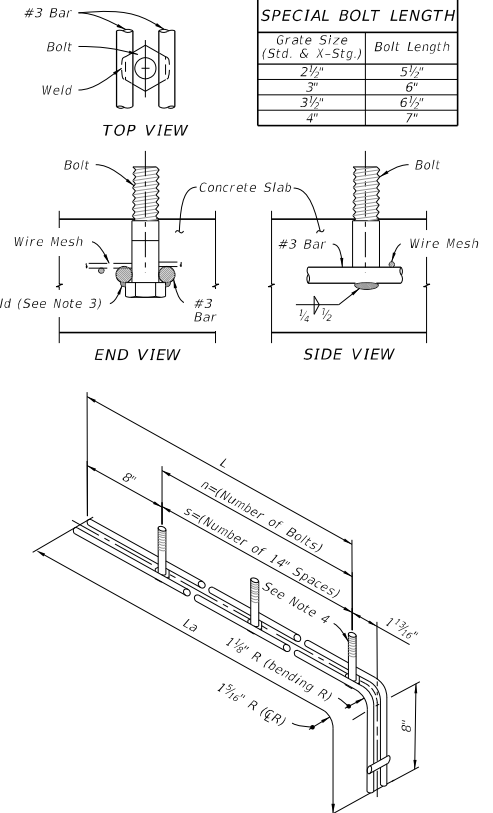
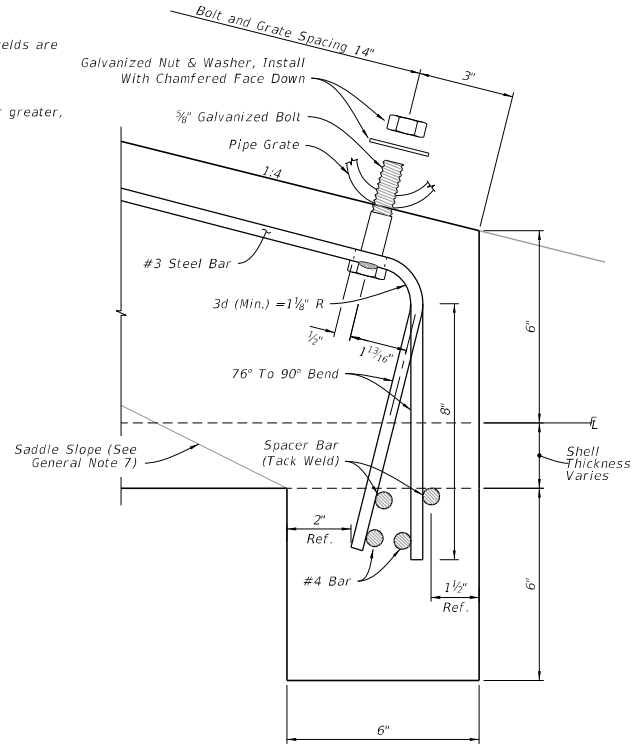
NOTES:

1. $\frac{5}{8}$ " x 3" bolts are standard for all grate fasteners, except when the contractor elects to use the slotted upper holes for the intermediate fasteners on multiple drain pipes, which will require bolt lengths in the Special Bolt Length Table.
2. $\frac{5}{8}$ " galvanized bolt hex head bolt shown; either hex head or square head bolt may be used. Use only hex nuts.
3. Make the specified weld when the fabricated unit is subject to hazardous hauls and repeated handling. Tack welds are permitted for local or job site fabrication. Galvanizing over welded surface not required.
4. Omit on trailing downstream ends on divided roadways.
5. Use grates on all round pipes 30" or greater, Pipe arches 35" x 24" or greater, and elliptical pipe 19" x 30" or greater, unless excluded in the Plans. Use grates on smaller pipes only when called for in the Plans.

CONCRETE PIPE									
ROUND PIPE					ELLIPTICAL PIPE				
Pipe Dia.	s	n	L	La	Drain Size	s	n	L	La
*15"	3	4	4'-0"	4'-11"	*12"x18"	2	3	2'-10"	3'-9"
*18"	4	5	5'-2"	6'-1"	*14"x23"	3	4	4'-0"	4'-11"
*24"	6	7	7'-6"	8'-5"	19"x30"	4	5	5'-2"	6'-1"
30"	7	8	8'-8"	9'-7"	24"x38"	5	6	6'-4"	7'-3"
36"	9	10	11'-0"	11'-11"	29"x45"	7	8	8'-8"	9'-7"
42"	11	12	13'-4"	14'-3"	34"x53"	8	9	9'-10"	0'-9"
48"	13	14	15'-8"	16'-7"	38"x60"	10	11	12'-2"	13'-1"
54"	14	15	16'-10"	17'-9"	43"x68"	11	12	13'-4"	14'-3"
60"	16	17	19'-2"	20'-1"	48"x76"	13	14	15'-8"	16'-7"
					53"x83"	14	15	16'-10"	17'-9"
					58"x91"	15	16	18'-0"	18'-11"

CORRUGATED METAL PIPE									
ROUND PIPE					ARCHED PIPE				
Pipe Dia.	s	n	L	La	Drain Size	s	n	L	La
*15"	2	3	2'-10"	3'-9"	*17"x13"	1	2	1'-8"	2'-7"
*18"	3	4	4'-0"	4'-11"	*21"x15"	2	3	2'-10"	3'-9"
*24"	5	6	6'-4"	7'-3"	*28"x20"	4	5	5'-2"	6'-1"
30"	7	8	8'-8"	9'-7"	35"x24"	5	6	6'-4"	7'-3"
36"	8	9	9'-10"	10'-9"	42"x29"	6	7	7'-6"	8'-5"
42"	10	11	12'-2"	13'-1"	49"x33"	7	8	8'-8"	9'-7"
48"	12	13	14'-6"	15'-5"	57"x38"	9	10	11'-0"	11'-11"
54"	14	15	16'-10"	17'-9"	64"x43"	10	11	12'-2"	13'-1"
60"	15	16	18'-0"	18'-11"	71"x47"	12	13	14'-6"	15'-5"

* See Note 5



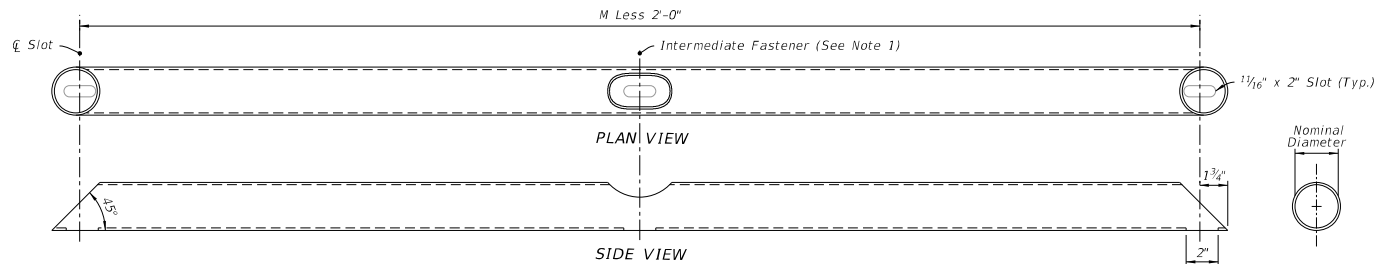
MULTIPLE FASTENER UNIT DETAIL (For Single and Multiple Pipes)

NOTE:

1. Install intermediate slot and fastener for multiple drain pipes only.

Options for top opening:
a. 4" of 6" mill head cut, 1" deep
b. 2" diameter drilled hole
c. $1\frac{1}{16}$ " x 2" slot

Bottom opening: $1\frac{1}{16}$ " x 2" slot.



GRATE DETAIL (For Single and Multiple Pipes)

FASTENER UNIT AND GRATE DETAILS





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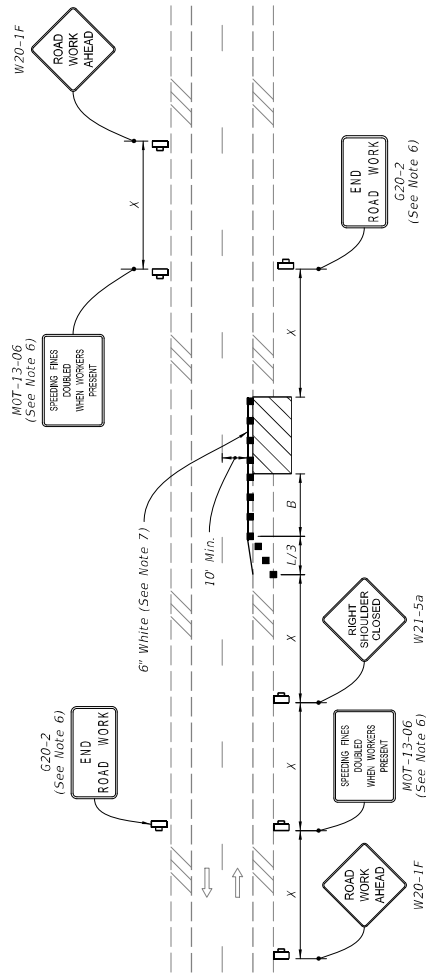
Dan Morgan
3/4/2025

NOTE:

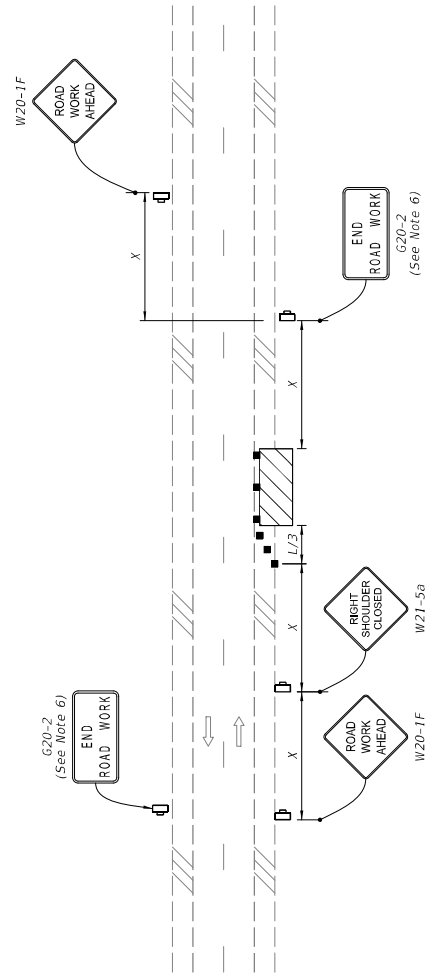
1. This Index applies to Two-Lane, Two-Way and Multilane Roadways, including Medians of divided roadways, with work on the shoulder.
2. L = Taper Length
 X = Work Zone Sign Spacing
 B = Buffer Length
See Index 102-600 for "L", "X", "B", and channelizing device spacing values.
3. Where work activities are between 2' and 15' from the edge of traveled way, the Engineer may omit signs and channelizing devices for work operations 60 minutes or less.
4. When four or more work vehicles enter the through traffic lanes in a one hour period (excluding establishing and terminating the work area), use a flagger or lane closure to accommodate work vehicle ingress and egress.
5. For work less than 2' from the traveled way and work zone speed is greater than 45 MPH, use a lane closure.
6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" Signs (G20-2) along with the associated work zone sign spacing distances may be omitted when the work operation is in place for 24 hours or less.
7. Temporary pavement markings may be omitted when the work operation is in place for 3 days or less.
8. Omit "Shoulder Closed" signs (W21-5a) along with associated work zone sign spacing distances for work on the median.
9. When there is no paved shoulder, the "Worker" sign (W21-1) may be used instead of the "Shoulder Closed" sign (W21-5a).

SYMBOLS:

-  Work Area
-  Channelizing Device (See Index 102-600)
-  Work Zone Sign
-  Lane Identification and Direction of Traffic



**TWO-LANE ROADWAY
SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY
WITH WORK ZONE SPEED OF 45 MPH OR LESS**



**TWO-LANE ROADWAY
SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY**

LAST
REVISION
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DESCRIPTION:

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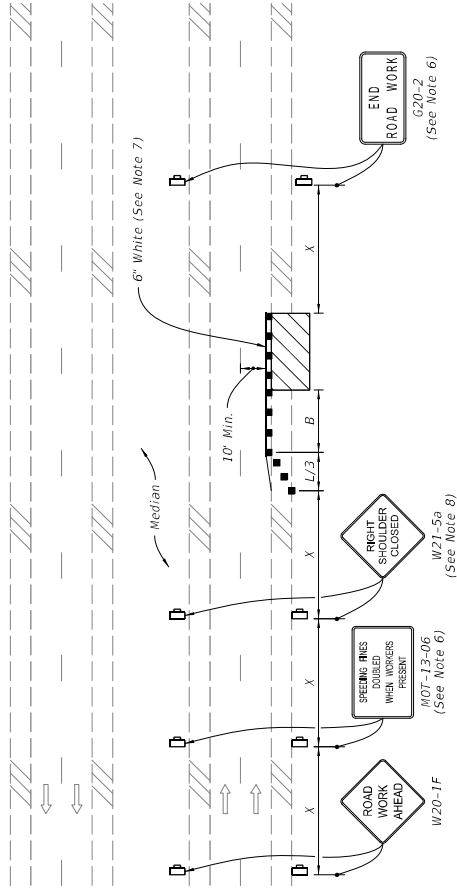
TWO-LANE AND MULTILANE, WORK ON SHOULDER

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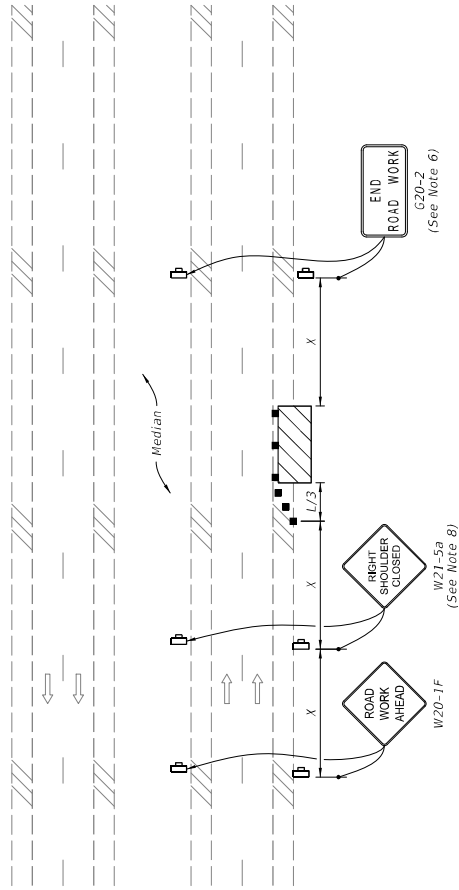
SHEET
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2025-A-29
Dan Mc
3/4/2025

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9/23/2021



MULTILANE ROADWAY
SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY
WITH WORK ZONE SPEED OF 45 MPH OR LESS



MULTILANE ROADWAY
SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY

- SYMBOLS:**
- Work Area
 - Channelizing Device (See Index 102-600)
 - Work Zone Sign
 - Lane Identification and Direction of Traffic

DESCRIPTION:	
LAST REVISION 11/01/20	NO. 1005

FY 2022-23
STANDARD PLANS



TWO-LANE AND MULTILANE, WORK ON SHOULDER

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