GENERAL NOTES:

1. Work this Index with Index 425-001 and Index 425-010.

2. Chamfer all exposed edges and corners ¾" chamfer or tooled to ¼" radius.

3. All reinforcing is Grade 60 bars with 2" minimum. cover unless otherwise noted. Cut or bend bars for 1½" clearance around pipe opening. Provide one additional #4 bar above and at each side of pipe opening.

4. Use Concrete Apron on inlets without slots and inlets with non-traversable slots only when called for in the Plans.

5. Quantities are for informational and estimating purposes only.

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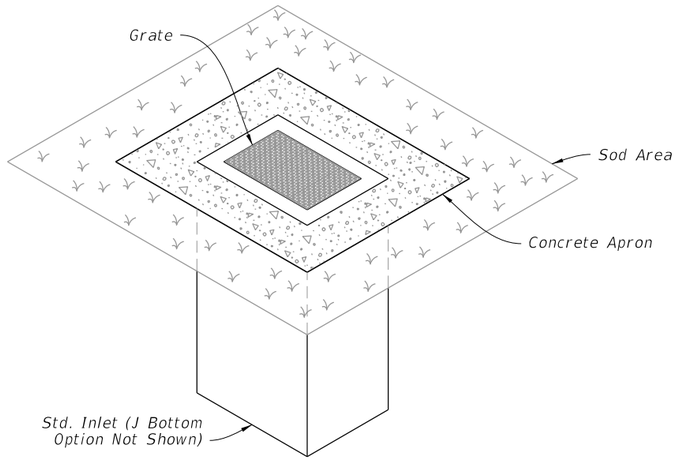
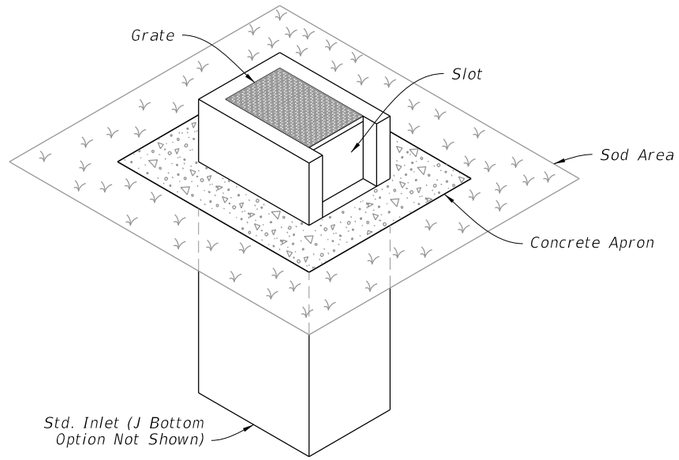
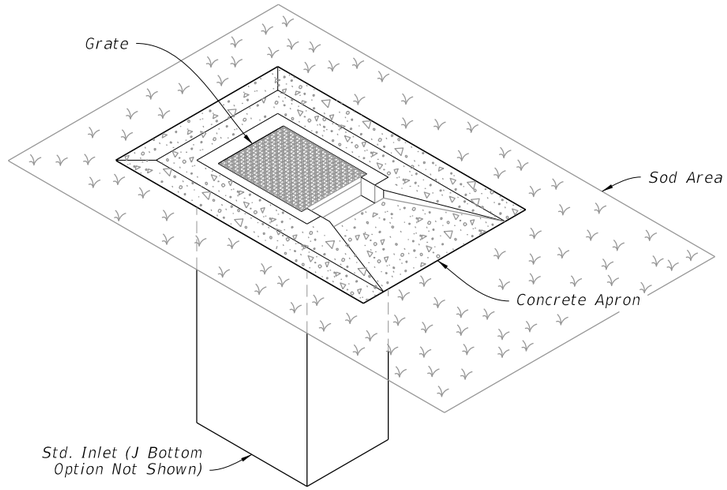
Sheet	Description
1	General Notes and Contents
2	Type C – Dimensional, Reinforcing, and Grate Details
3	Type D – Dimensional, Reinforcing, and Grate Details
4	Type E – Dimensional, Reinforcing, and Grate Details
5	Type H (2 & 3 Grate) – Dimensional, Reinforcing, and Steel Grate Details
6	Type H (4 Grate) – Dimensional, Reinforcing, and Steel Grate Details
7	Cast Iron Grate Details
8	Non-Traversable Inlet Details
9	Traversable Inlet Without Slot Details
10	Traversable Inlet With Slot Details
11	Case 1 – Add Traversable Slots to Existing Inlets
12	Case 2 – Add Traversable Slots (Partial) to Existing Inlets
13	Case 3 – Add Traversable Slots (Partial) to Existing Inlets and Ditch Block
14	Alternate A Structure Bottom – Top Slab Details



DITCH BOTTOM INLET TYPE C
TRAVERSABLE
(Without Slot – Type D, E, and H Similar, Pipe Connection Not Shown)

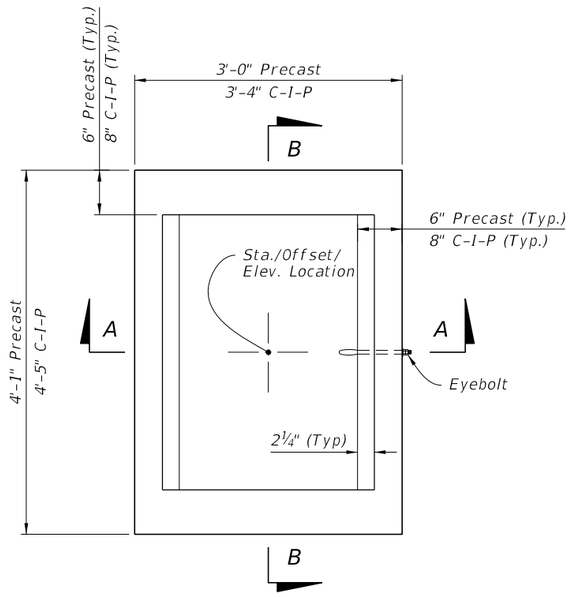


DITCH BOTTOM INLET TYPE C
NON-TRAVERSABLE
(Slot > 7" Shown – Type D, E, and H Similar, Pipe Connection Not Shown)

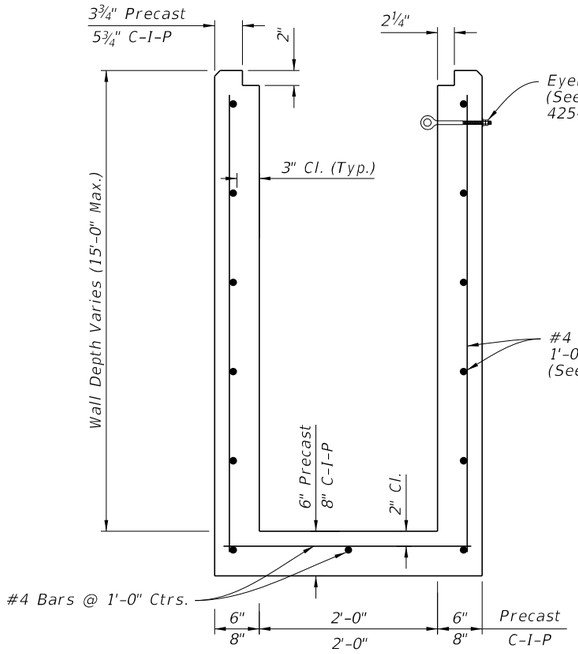


DITCH BOTTOM INLET TYPE C
TRAVERSABLE
(Single Slot < 7" Shown, Double Slot, Type D, and E Similar, Pipe Connection Not Shown)

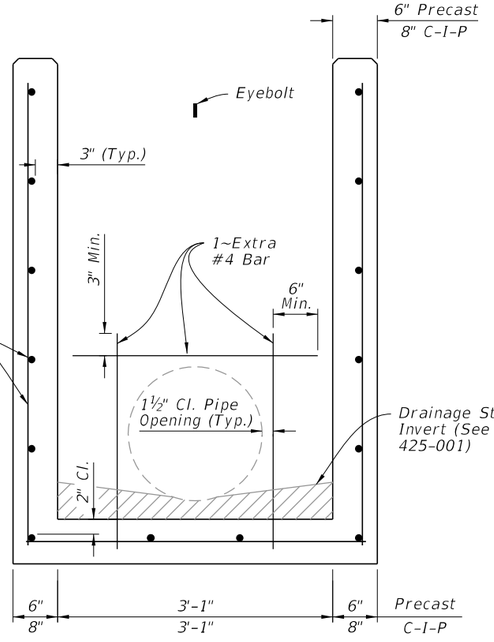
10/20/2022 8:14:23 AM



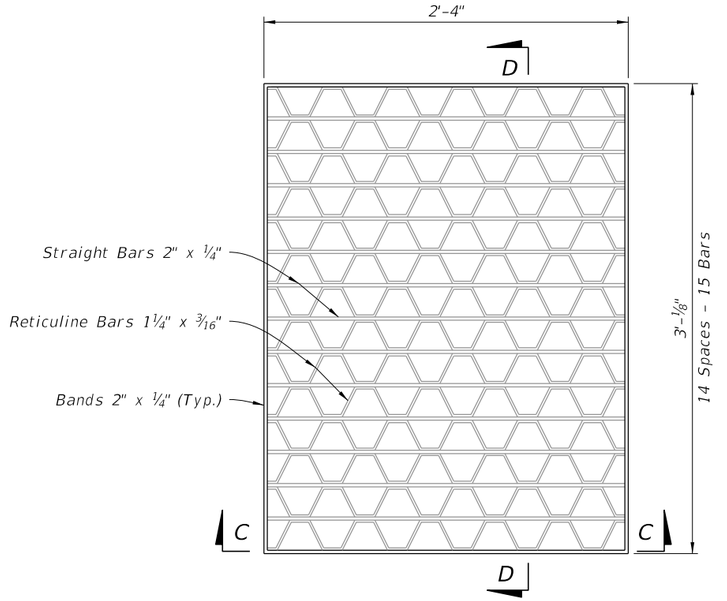
PLAN

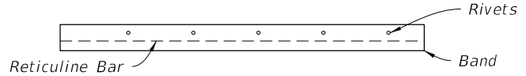


SECTION A-A
(Pipe Opening Not Shown)

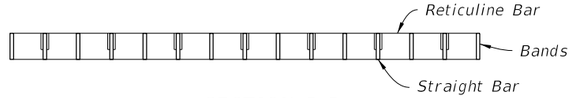


SECTION B-B
(Pipe Opening Shown)





SECTION C-C



SECTION D-D

STEEL GRATE DETAIL

(Approx. 104 Lbs. – See Sheet 7 For Cast Iron Grates)

TABLE 1
HORIZONTAL WALL REINFORCING SCHEDULE

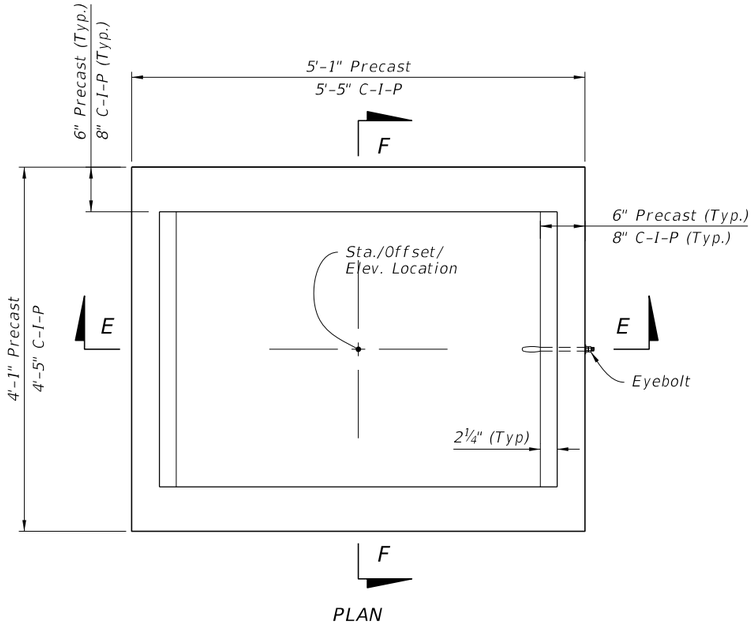
WALL DEPTH	SCHEDULE	AREA (in.²/ft.)	MAX. SPACING	
			BARS	WWF
0' – 15'	A12	0.20	12"	8"

NOTES:

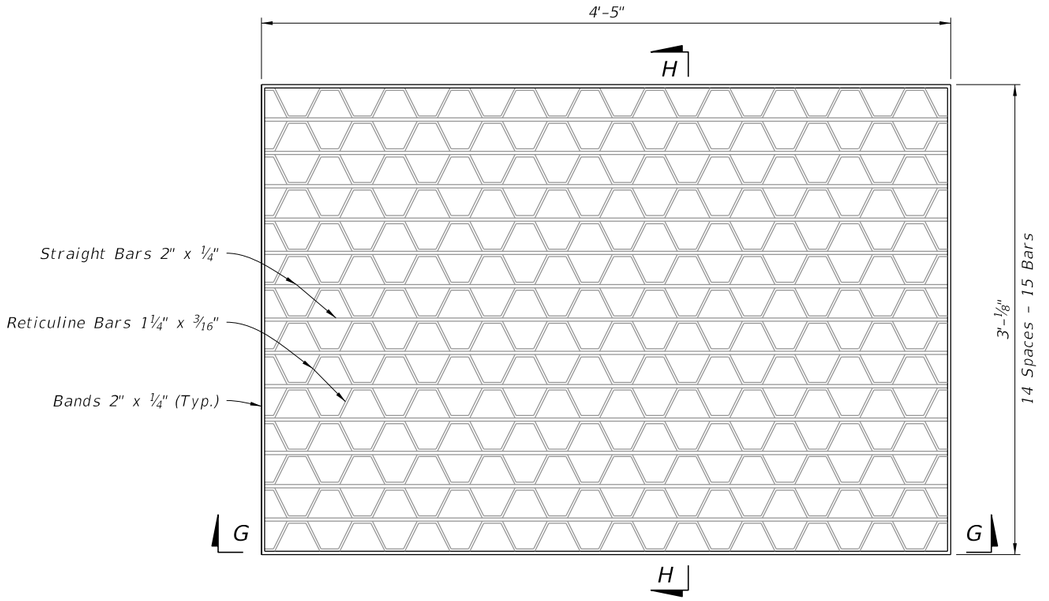
1. Grate, Concrete Apron, and Sod not shown on structure detail.
2. See Sheet 8, 9, and 10 for Concrete Apron and Sodded Area details.

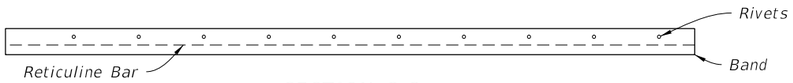
DIMENSIONAL AND REINFORCING DETAILS

10/20/2022 8:14:24 AM

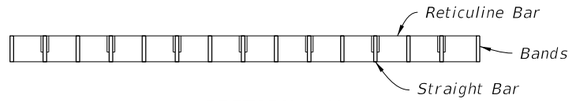


PLAN

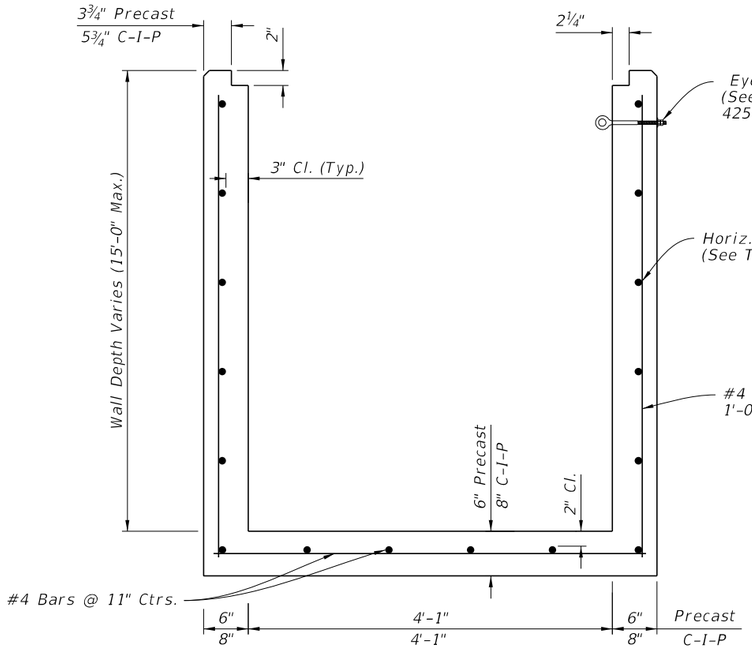




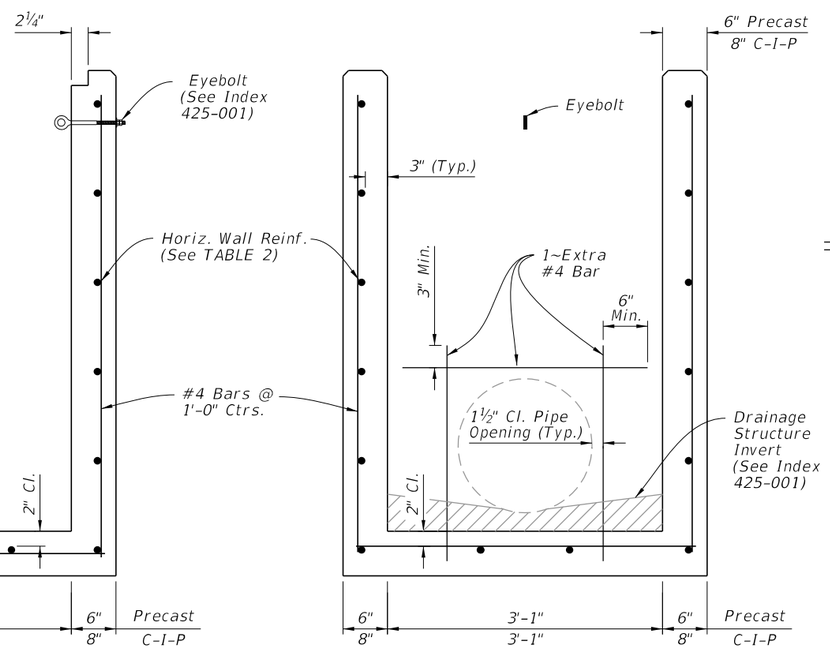
SECTION G-G



SECTION H-H



SECTION E-E
(Pipe Opening Not Shown)



SECTION F-F
(Pipe Opening Shown)

STEEL GRATE DETAIL

(Approx. 190 lbs. – See Sheet 7 For Cast Iron Grates)

TABLE 2
HORIZONTAL WALL REINFORCING SCHEDULE

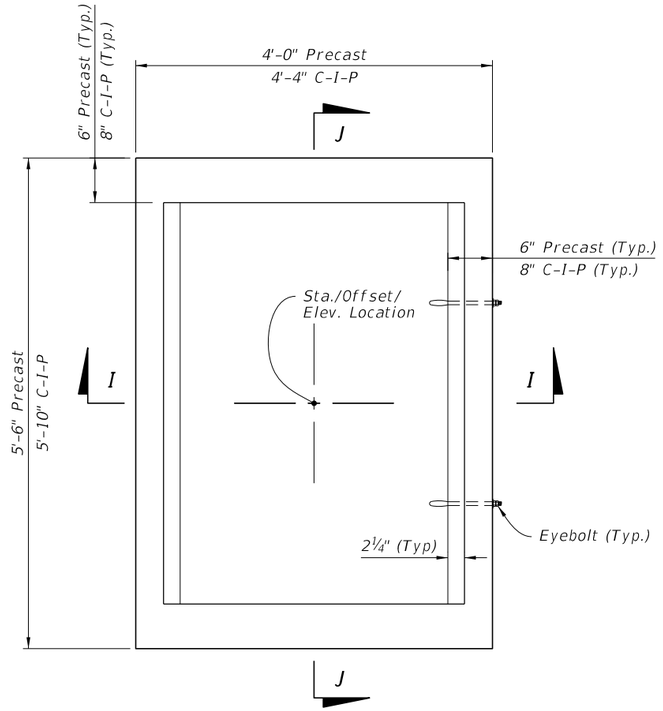
WALL DEPTH	SCHEDULE	AREA ($in.^2/ft.$)	MAX. SPACING	
			BARS	WWR
0' – 6'	A12	0.20	12"	8"
6' – 10'	A6	0.20	6"	5"
10' – 13'	A4	0.20	4"	3"
10' – 15'	B5.5	0.24	5½"	5"

NOTES:

1. Grate, Concrete Apron, and Sod not shown on structure details.
2. See Sheet 8, 9, and 10 for Concrete Apron and Sodded Area details.
3. Cast Iron Grate is not permitted on inlet Type D.

DIMENSIONAL AND REINFORCING DETAILS

TYPE D - DIMENSIONAL, REINFORCING, AND STEEL GRATE DETAILS



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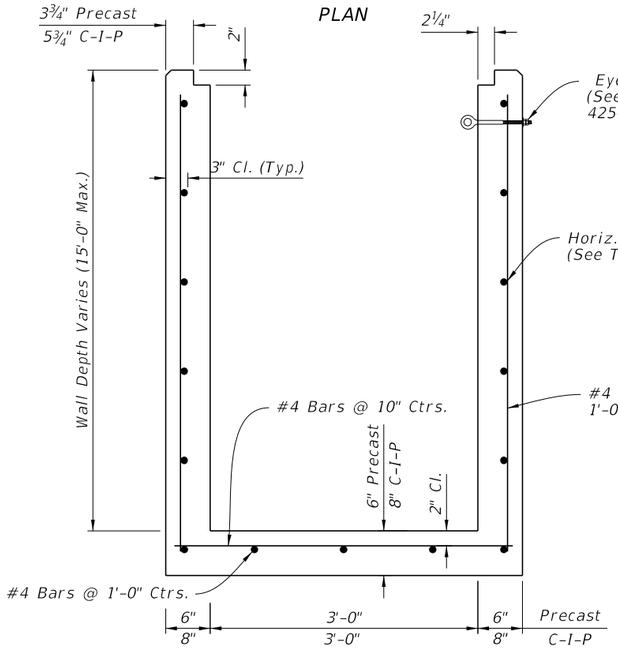
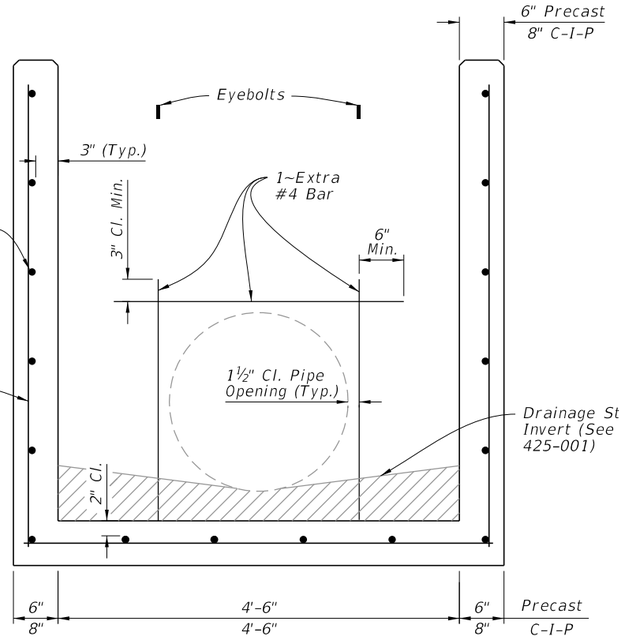


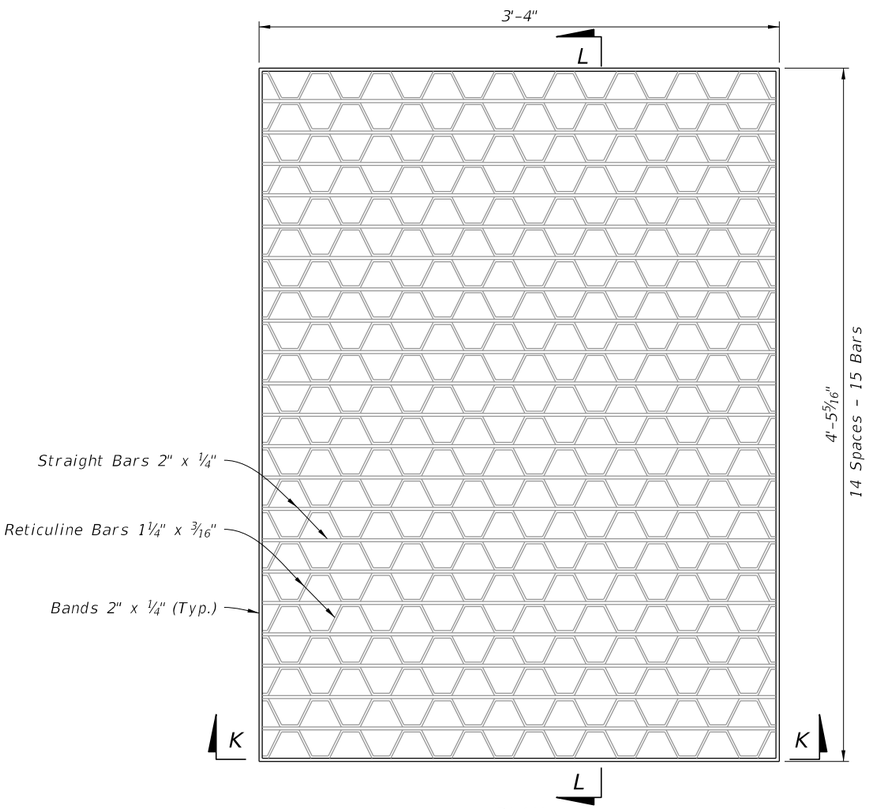
SECTION I-I

(Pipe Opening Not Shown)

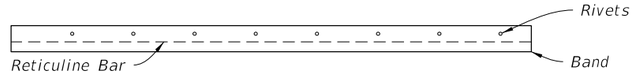


SECTION J-J

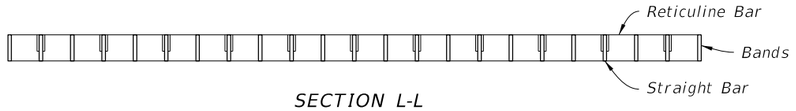
(Pipe Opening Shown)



PLAN



SECTION K-K



SECTION L-L

STEEL GRATE DETAIL

(Approx. 215 lbs. – See Sheet 7 For Cast Iron Grates)

TABLE 3
HORIZONTAL WALL REINFORCING SCHEDULE

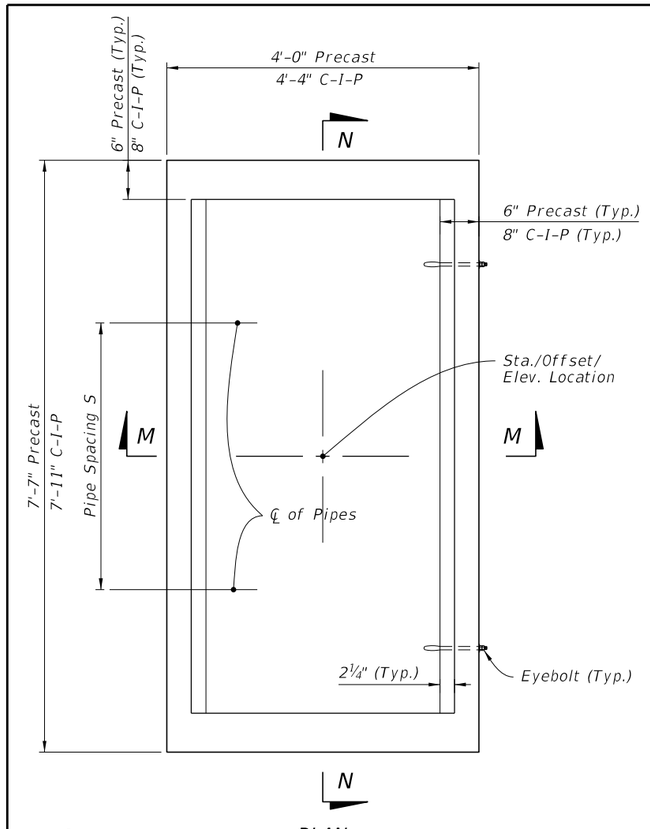
WALL DEPTH	SCHEDULE	AREA (in.²/ft.)	MAX. SPACING	
			BARS	WWR
0' – 5'	A12	0.20	12"	8"
0' – 7.5'	A6	0.20	6"	5"
7.5' – 10'	B5.5	0.24	5½"	5"
10' – 15'	C6.5	0.37	6½"	6"

NOTES:

1. Grate, Concrete Apron, and Sod not shown on structure detail.
2. See Sheet 8, 9, and 10 for Concrete Apron and Sodded Area details.

DIMENSIONAL AND REINFORCING DETAILS

TYPE E - DIMENSIONAL, REINFORCING, AND STEEL GRATE DETAILS



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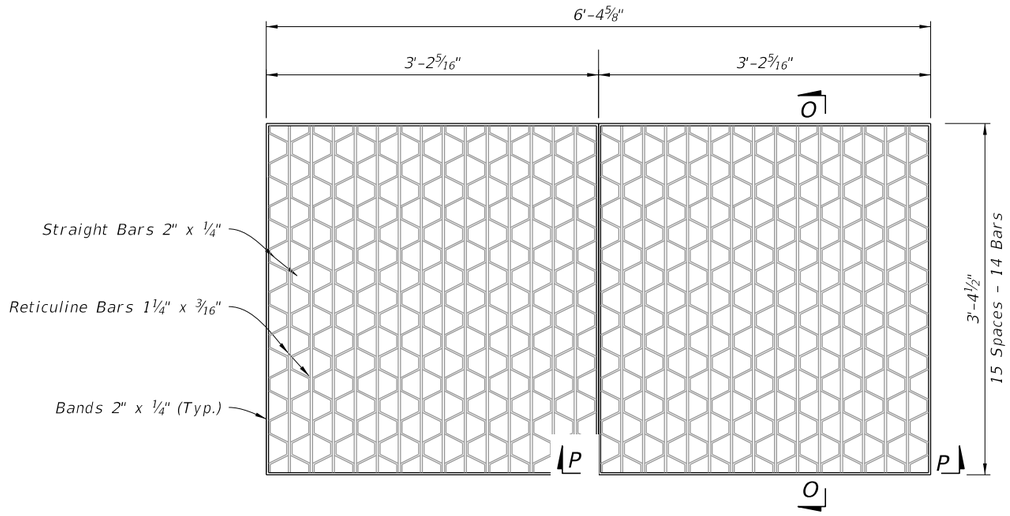

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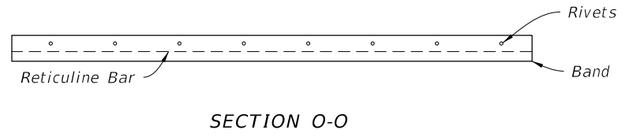
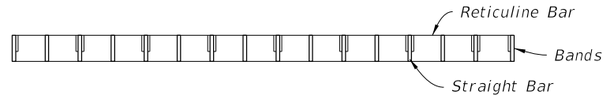


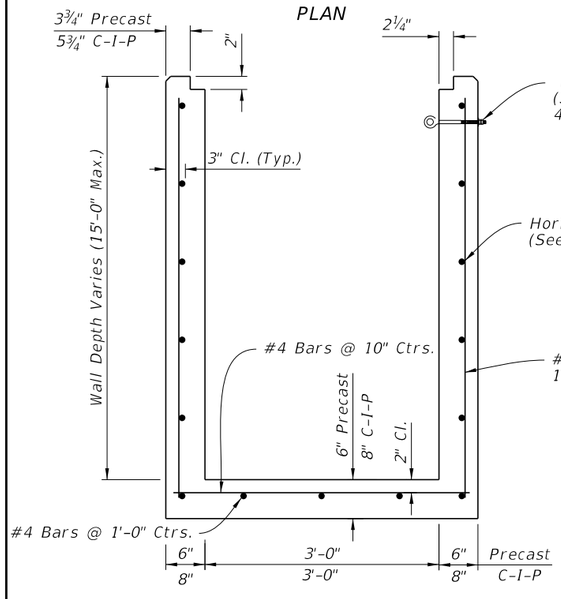
SECTION O-O



SECTION P-P

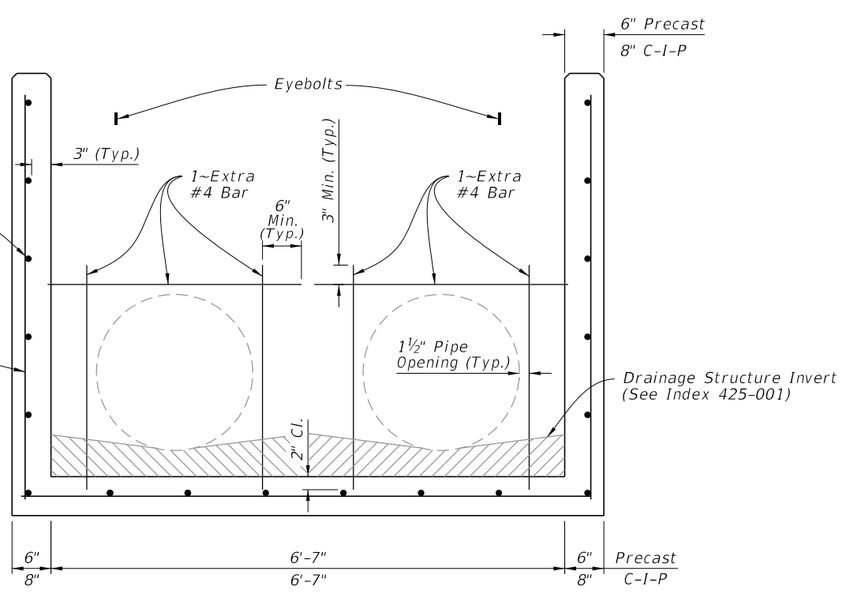
STEEL GRATE DETAIL

(2-Grates Shown, Approx. 310 lbs. - See Sheet 7 For Cast Iron, 3-Grates)



SECTION M-M

(Pipe Opening Not Shown)



SECTION N-N

(Pipe Opening Shown)

TABLE 4 HORIZONTAL WALL REINFORCING SCHEDULE				
WALL DEPTH	SCHEDULE	AREA (in.²/ft.)	MAX. SPACING	
			BARS	WWR
0' - 5'	B5.5	0.24	5½"	5"
5'-7'	C6.5	0.37	6½"	6"
7' - 15'	D4.5	0.53	4½"	4"

NOTES:

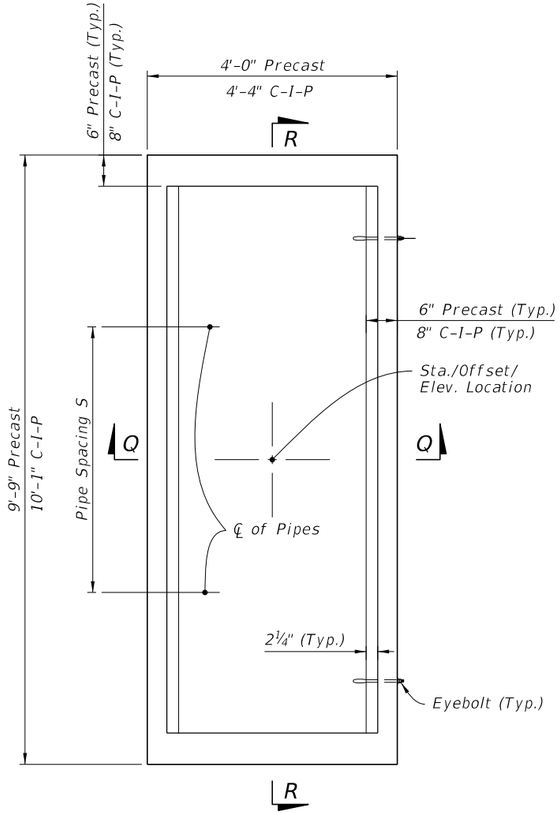
1. Grate, Concrete Apron, and Sod not shown on structure details.
2. See Sheet 8, 9, and 10 for Concrete Apron and Sodded Area details.
3. Pipe Spacing S = 3'-5"

DIMENSIONAL AND REINFORCING DETAILS

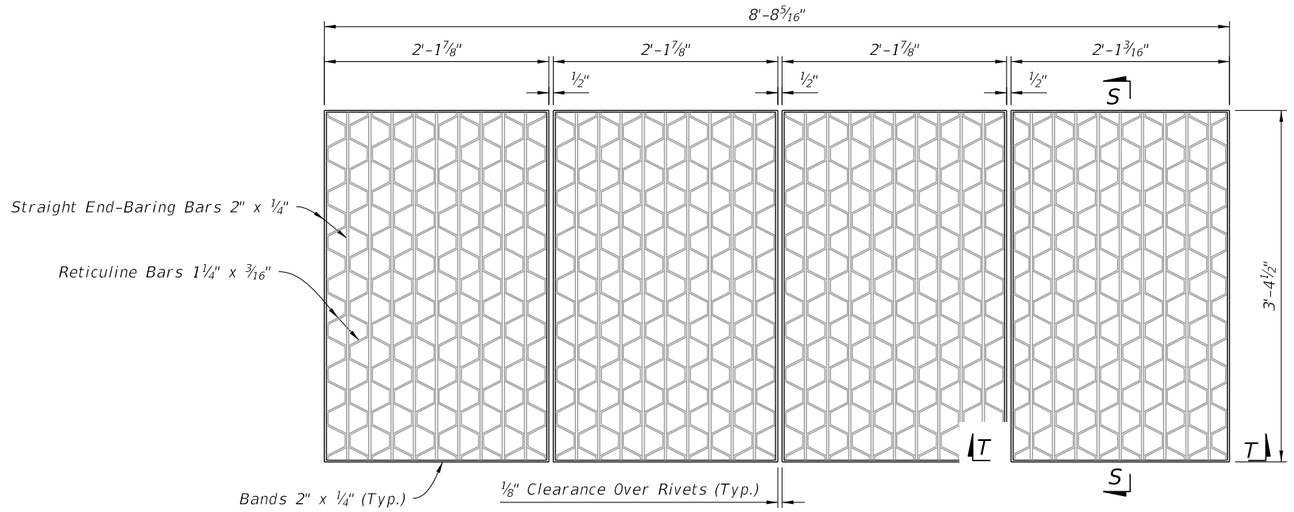
TYPE H (2 & 3 GRATE) - DIMENSIONAL, REINFORCING, AND STEEL GRATE DETAILS

10/20/2022 8:14:26 AM

LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
10/01/20			FY 2023-24 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	425-052	5 of 14



PLAN



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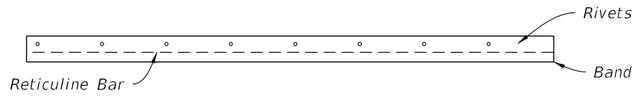
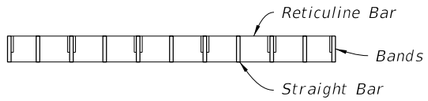


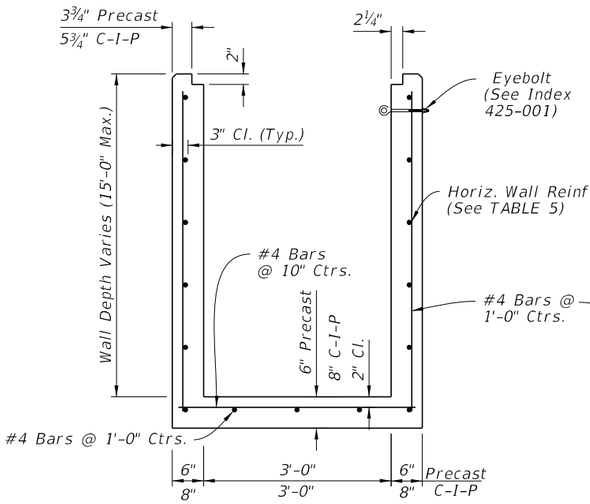
SECTION S-S



SECTION T-T

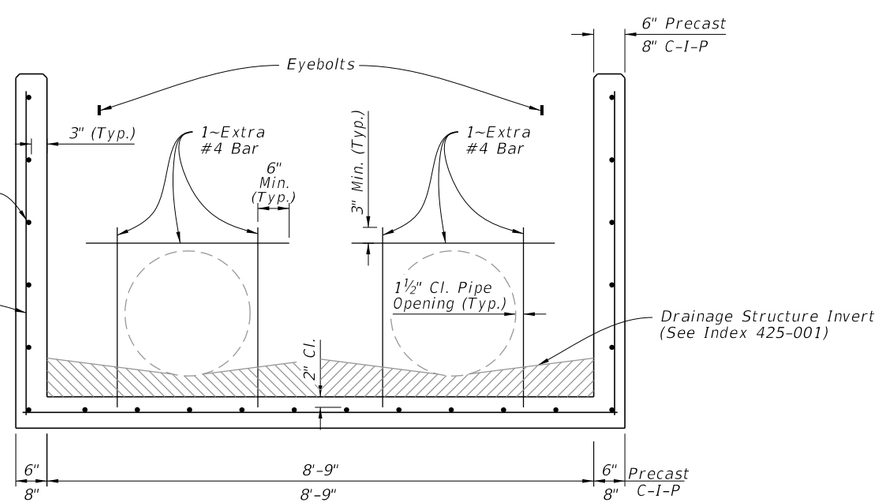
STEEL GRATE DETAIL

(Approx. 388 lbs. – See Sheet 7 For Cast Iron Grates)



SECTION Q-Q

(Pipe Opening Not Shown)



SECTION R-R

(Pipe Opening Shown)

TABLE 5 HORIZONTAL WALL REINFORCING SCHEDULE				
WALL DEPTH	SCHEDULE	AREA (in.²/ft.)	MAX. SPACING	
			BARS	WWR
0' – 5'	C3.5	0.37	3½"	3"
5'-10'	D4.5	0.53	4½"	4"

NOTES:

1. Grate, Concrete Apron, and Sod not shown on structure details.
2. See Sheet 8, 9, and 10 for Concrete Apron and Sodded Area details.
3. Pipe Spacing S = 4'-3"

DIMENSIONAL AND REINFORCING DETAILS

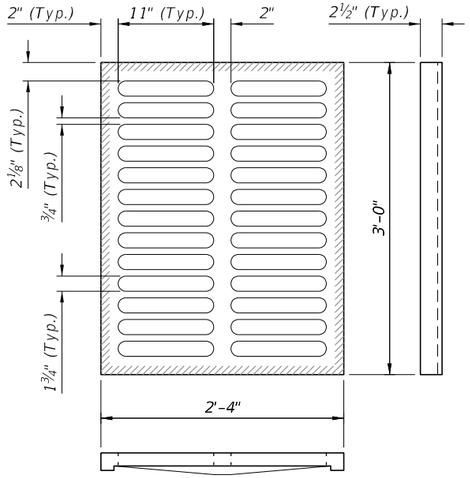
TYPE H (4 GRATE) - DIMENSIONAL, REINFORCEMENT, AND STEEL GRATE DETAILS

1/6/2025 10:23:06 AM

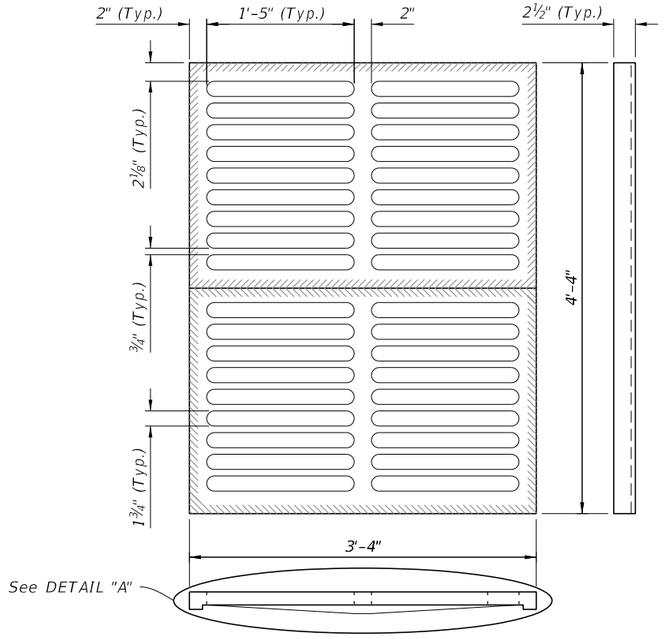
LAST REVISION	REVISION	DESCRIPTION:				
11/01/20			FY 2023-24 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	INDEX 425-052	SHEET 6 of 14

NOTES:

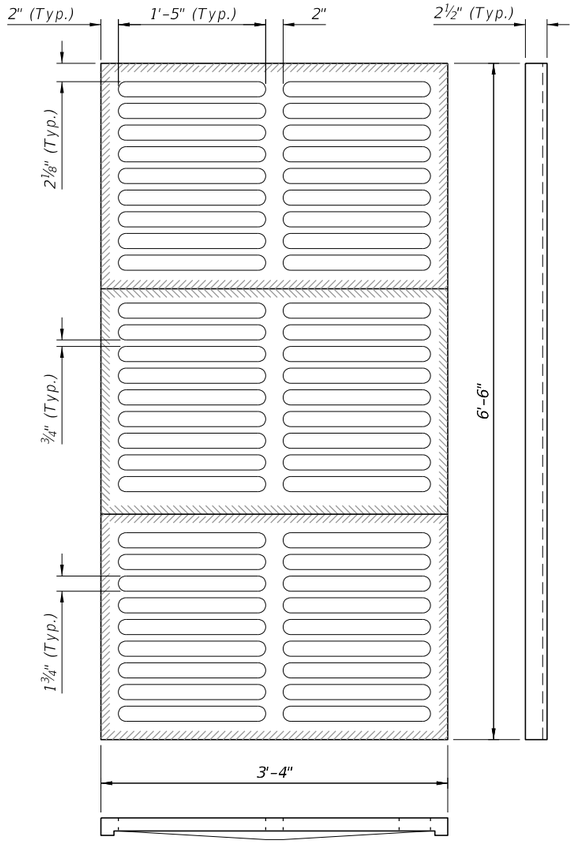
1. Steel Grates are required on inlets with traversable slots and on Inlets where bicycle traffic is anticipated.
2. Cast Iron Grates are not permitted on Inlet Type D.



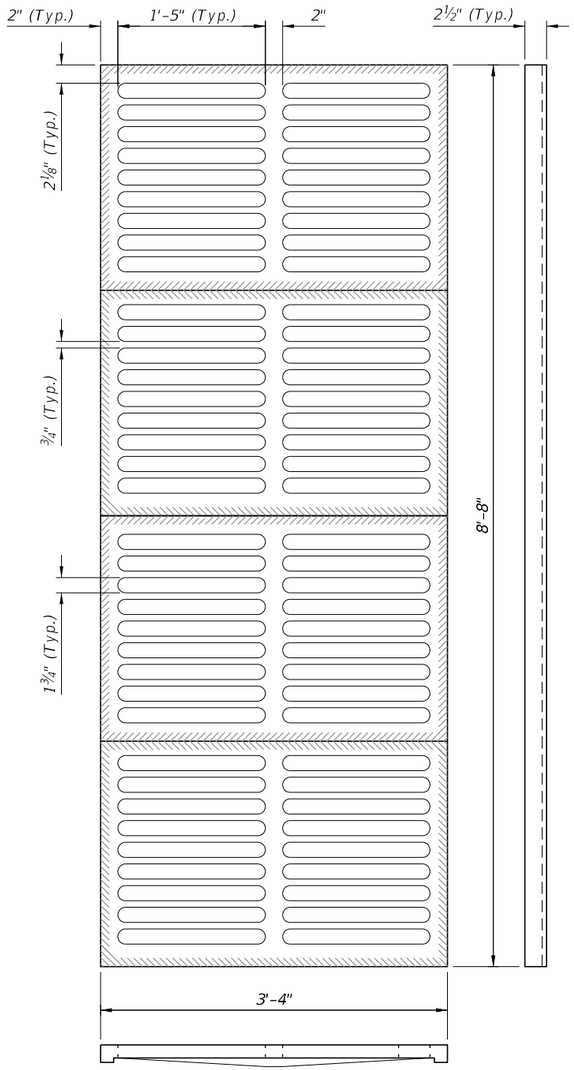
TYPE C
Approx. 235 lbs.



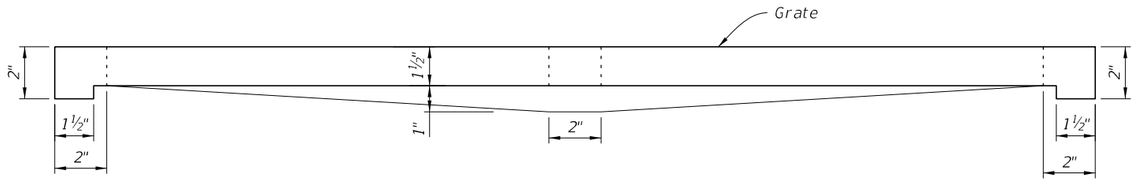
TYPE E
Approx. 465 lbs.



TYPE H
(3-Grate Inlet)
Approx. 725 lbs.



TYPE H
(4-Grate Inlet)
Approx. 967 lbs.

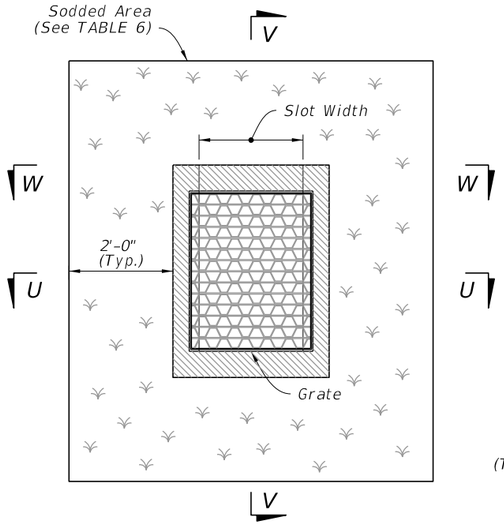


DETAIL "A"
(Typical Section)

CAST IRON GRATE DETAILS

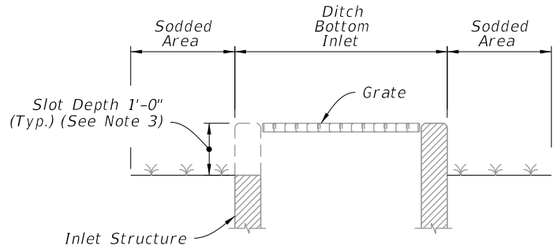
10/20/2022 8:14:28 AM

LAST REVISION	REVISION	DESCRIPTION:				
10/01/20			FDOT FY 2023-24 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	INDEX 425-052	SHEET 7 of 14

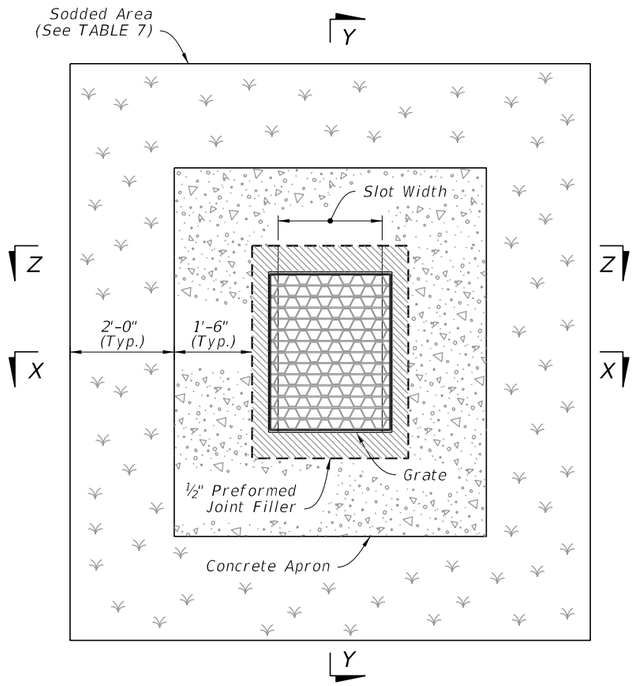


PLAN

TABLE 6 SOD ONLY QUANTITIES	
Inlet Type	Sod SY
C	6
D	6
E	7
H	8

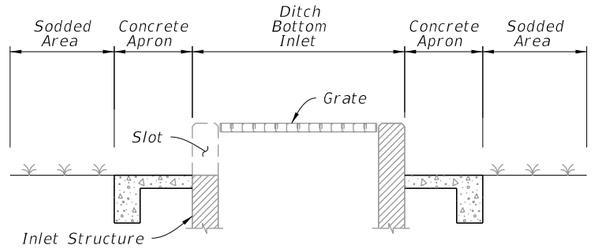


SECTION V-V

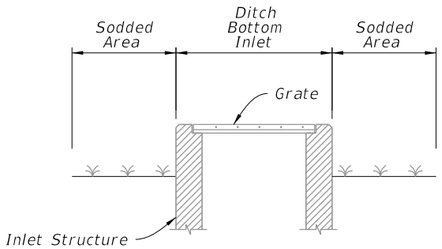


PLAN

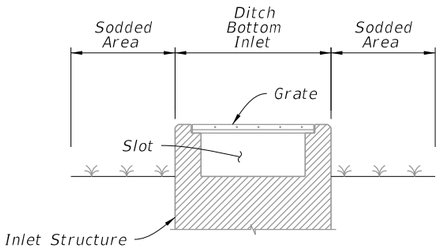
TABLE 7 SOD AND CONCRETE APRON QUANTITIES		
Inlet Type	Sod SY	Conc. CY
C	8	0.30
D	9	0.36
E	9	0.37
H	11	0.45



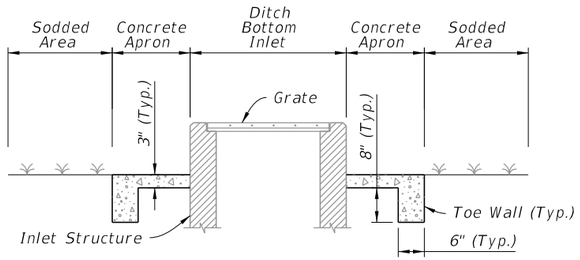
SECTION Y-Y



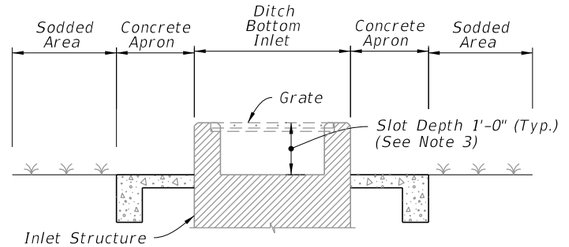
SECTION U-U



SECTION W-W



SECTION X-X



SECTION Z-Z

SODDING ONLY

(Slot Shown, Non-Slot Similar)

SODDING AND PAVEMENT

(Slot Shown, Non-Slot Similar)

NOTES:

1. Concrete Apron installed only where called for in the Plans.
2. Sod always required.
3. Slots are not permitted on sides with grate seats.

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NON-TRAVERSABLE INLET DETAILS

LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
10/01/20			FY 2023-24 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	425-052	8 of 14

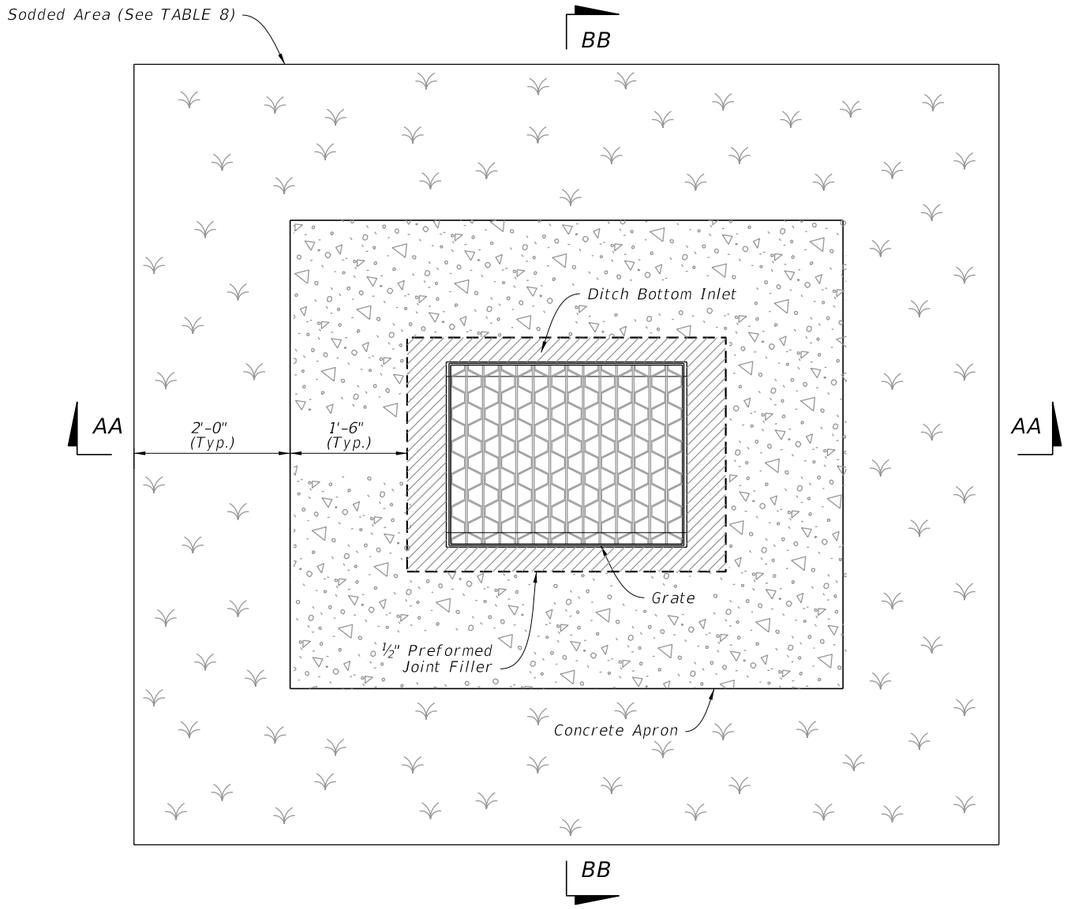
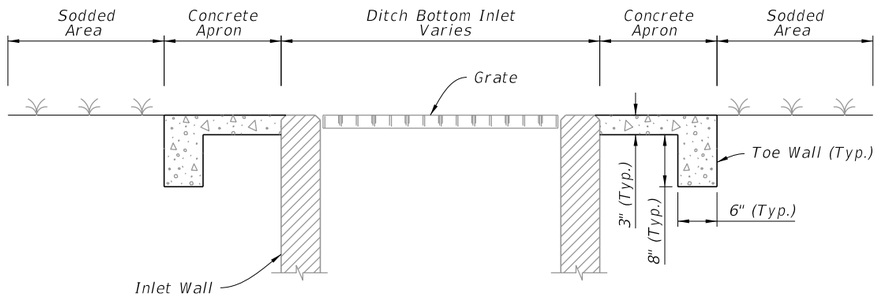


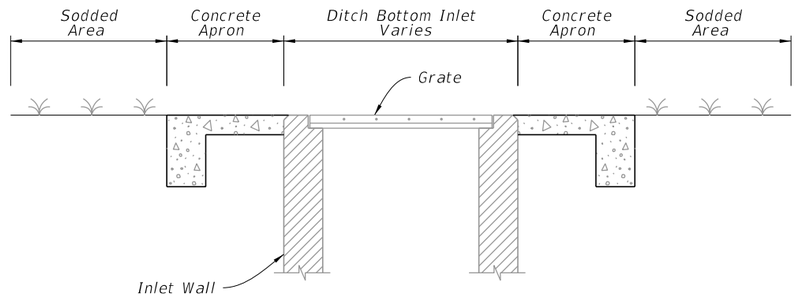
TABLE 8 CONCRETE APRON AND SOD QUANTITIES		
SOD AND PAVEMENT		
Inlet Type	Sod SY	Conc. CY
C	8	0.30
D	9	0.36
E	9	0.37
H	11	0.45

NOTES:

1. Concrete Apron to be installed only where called for in the Plans.
2. Sod always required.



SECTION AA-AA



SECTION BB-BB

10/20/2022 8:14:29 AM

TRAVERSABLE INLET WITHOUT SLOT DETAILS

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	INDEX	SHEET
10/01/20						425-052	9 of 14

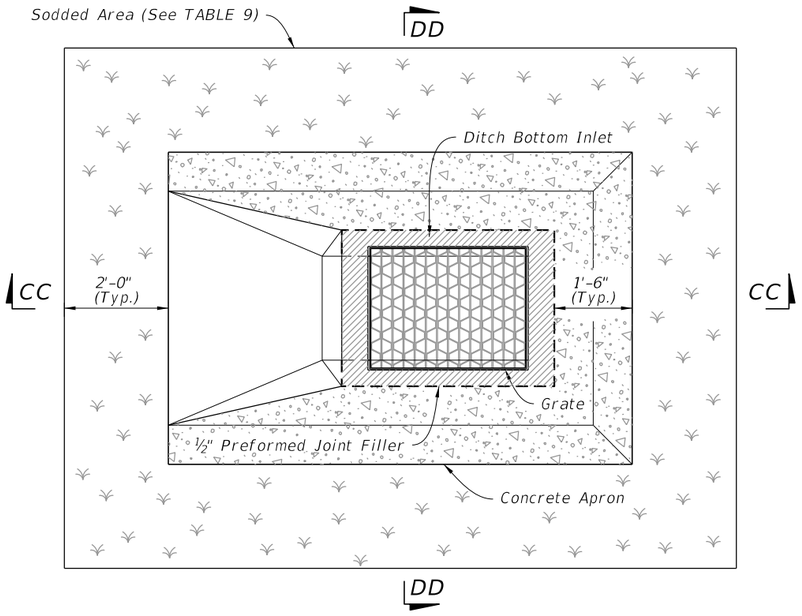


TABLE 9 CONCRETE APRON AND SOD QUANTITIES		
SINGLE SLOT		
Inlet Type	Sod SY	Conc. CY
C	12	0.77
D	14	0.91
E	14	0.91
H	--	--

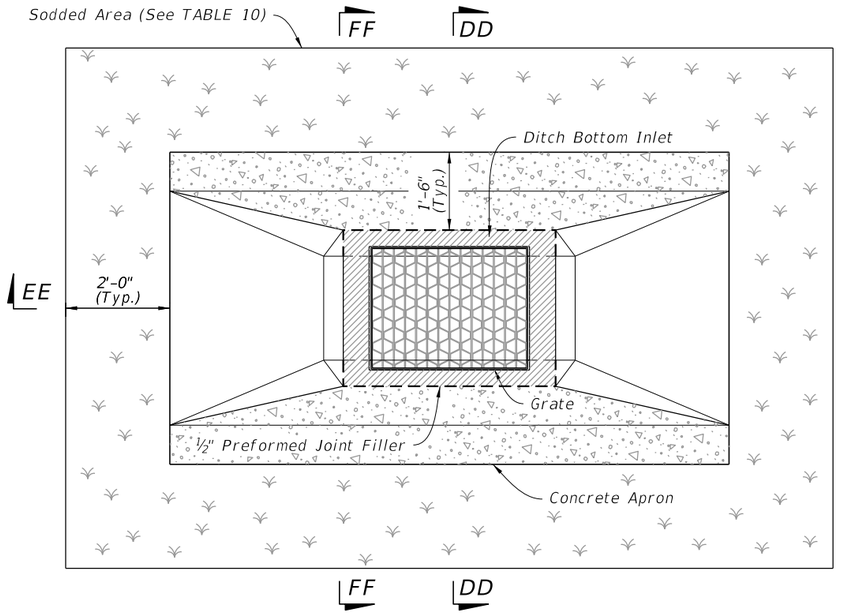
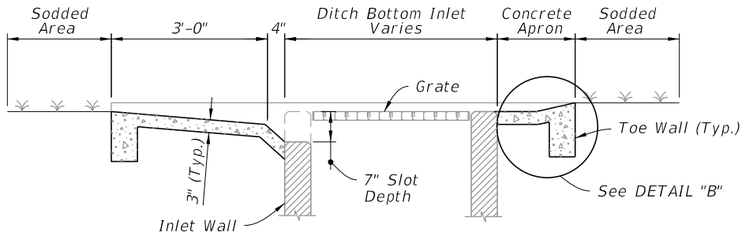
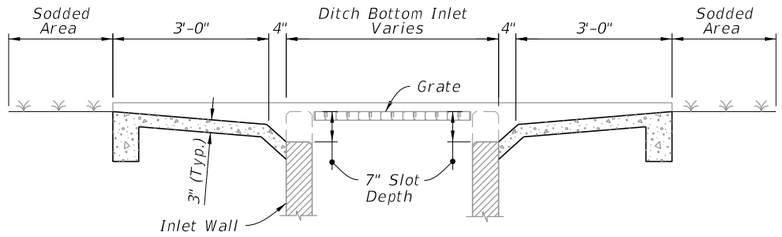


TABLE 10 CONCRETE APRON AND SOD QUANTITIES		
SLOT		
Inlet Type	Sod SY	Conc. CY
C	16	0.93
D	19	1.10
E	18	1.08
H	--	--



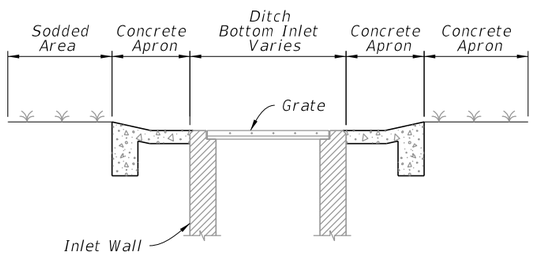
SECTION CC-CC



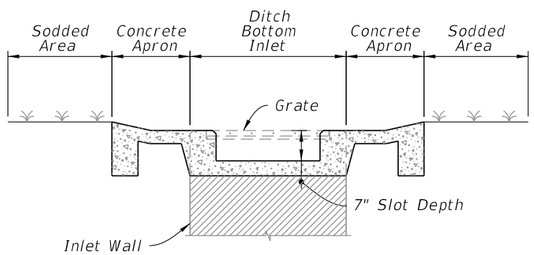
SECTION EE-EE

SINGLE SLOT

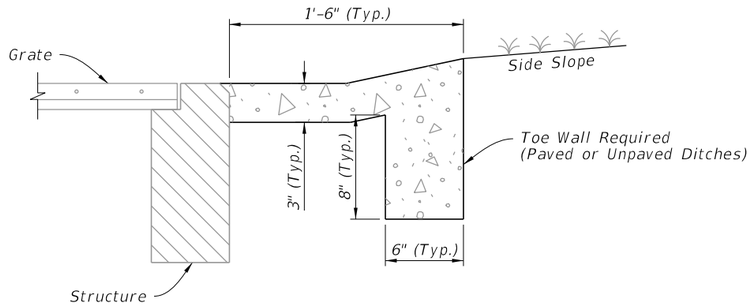
DOUBLE SLOT



SECTION DD-DD



SECTION FF-FF



DETAIL "B"

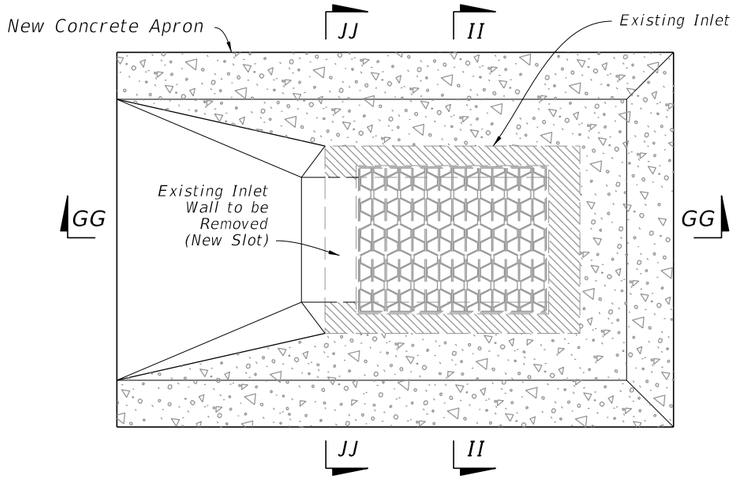
NOTE:

Sod always required.

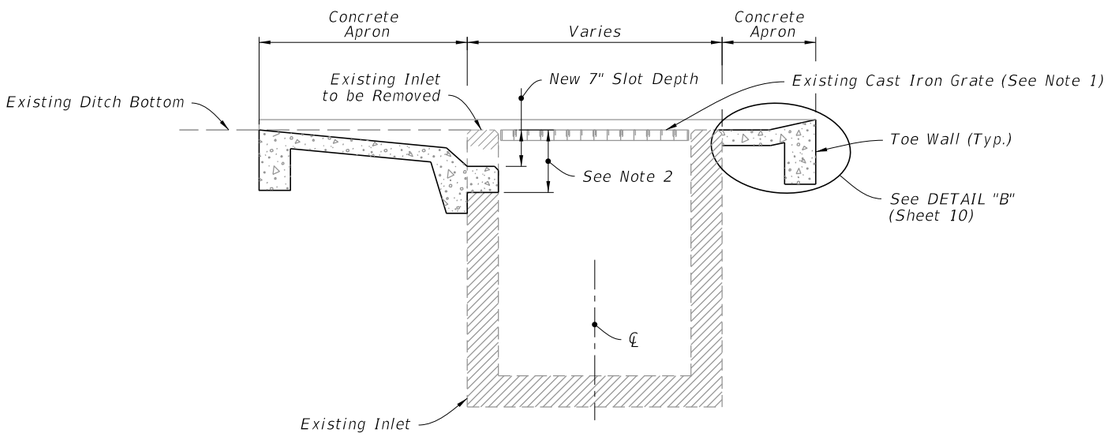
TRAVERSABLE INLET WITH SLOT DETAILS

LAST REVISION	REVISION	DESCRIPTION:				
10/01/20			FY 2023-24 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	INDEX 425-052	SHEET 10 of 14

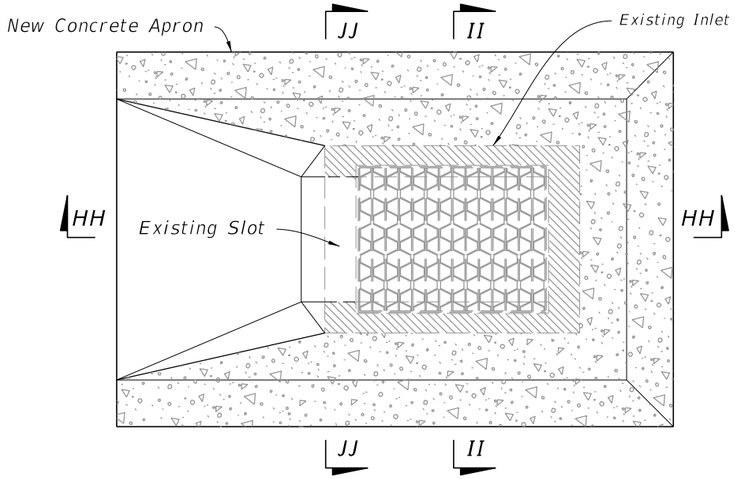
10/20/2022 8:14:30 AM



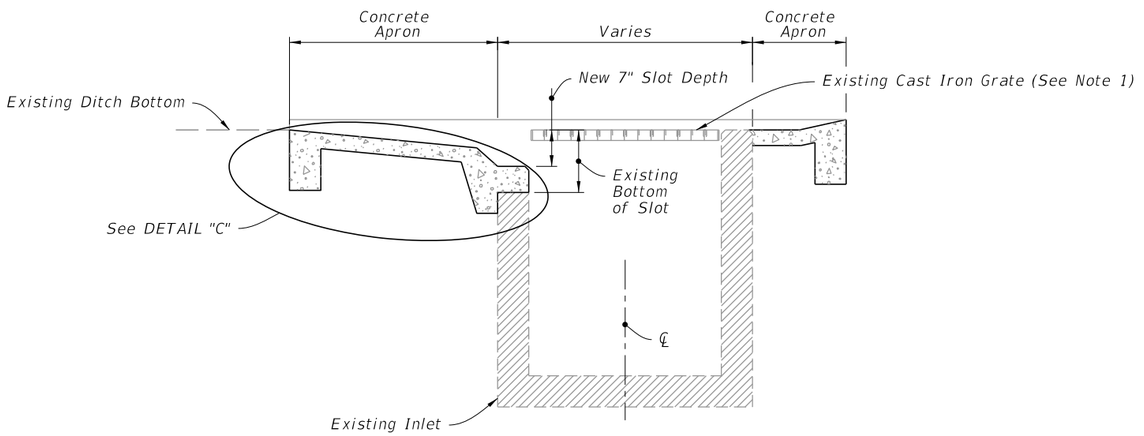
PLAN



SECTION GG-GG

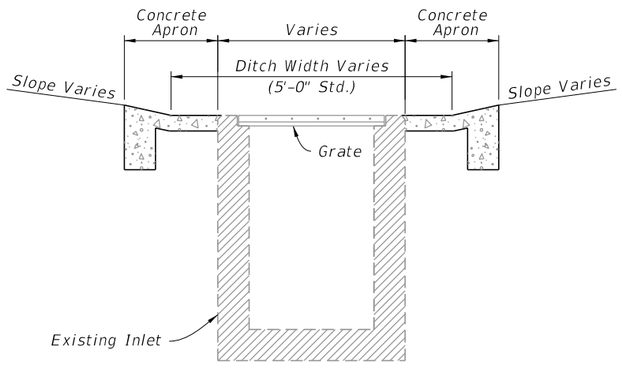


PLAN

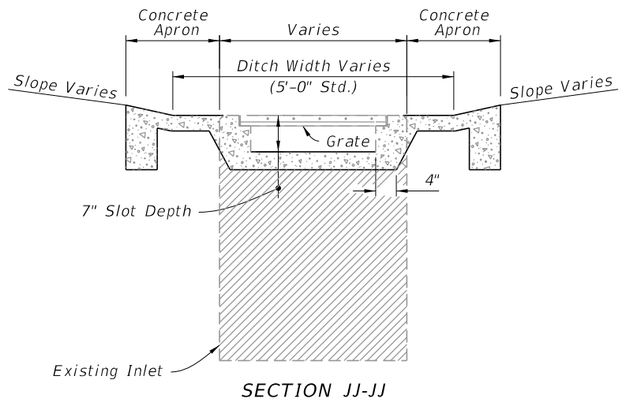


SECTION HH-HH

WITHOUT SLOT

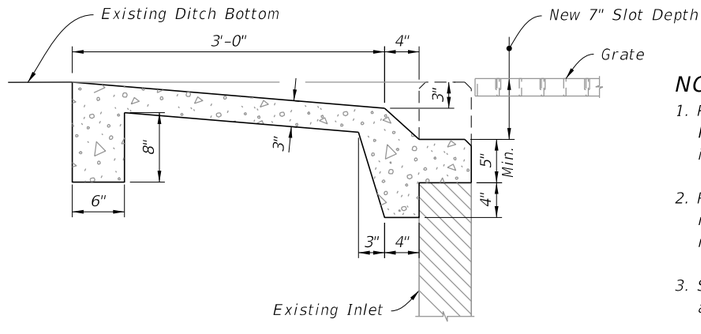


SECTION II-II



SECTION JJ-JJ

WITH SLOT



DETAIL "C"

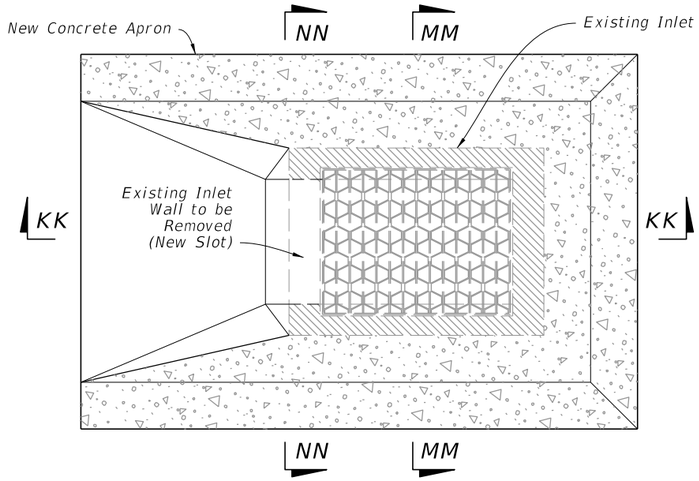
NOTES:

1. Replace existing cast iron grate with steel grate. Replace existing steel grate when called for in the plans or as directed by the Engineer.
2. Remove existing wall to this line (exposed rebar in pavement zone may be either removed or embedded)
3. Single Slot shown, Double Slots symmetrical about the Inlet centerline.

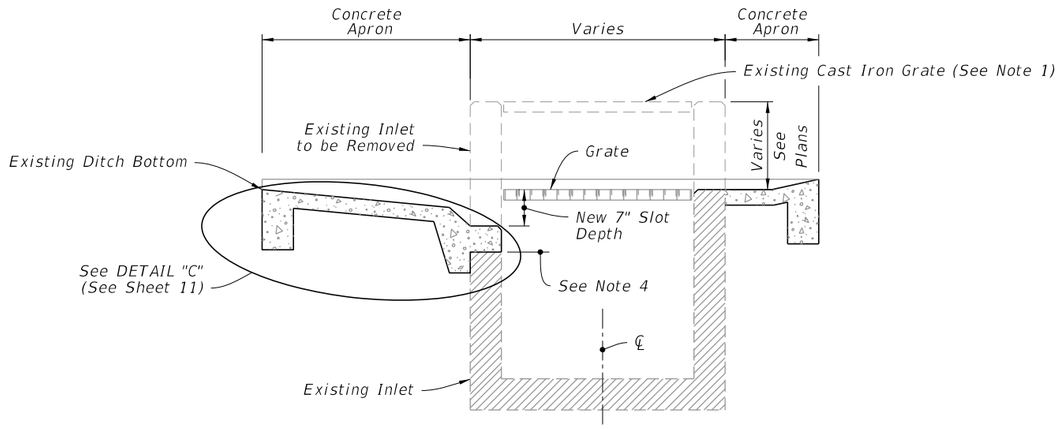
CASE 1 - ADD TRAVERSABLE SLOTS TO EXISTING INLETS

10/20/2022 8:14:30 AM

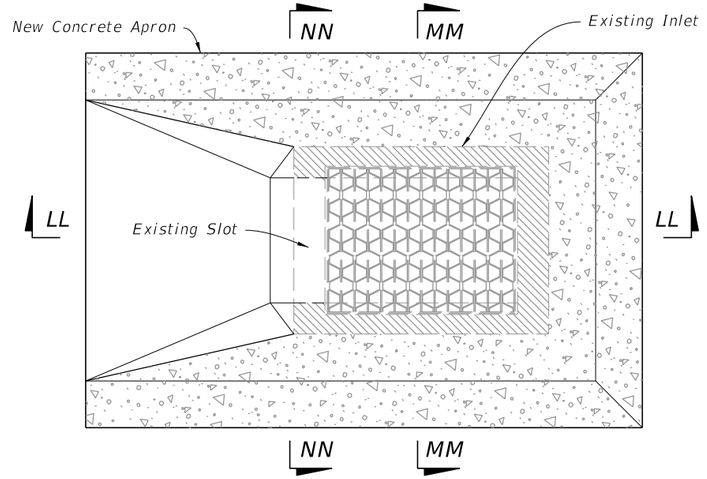
LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	INDEX	SHEET
10/01/20					425-052	11 of 14



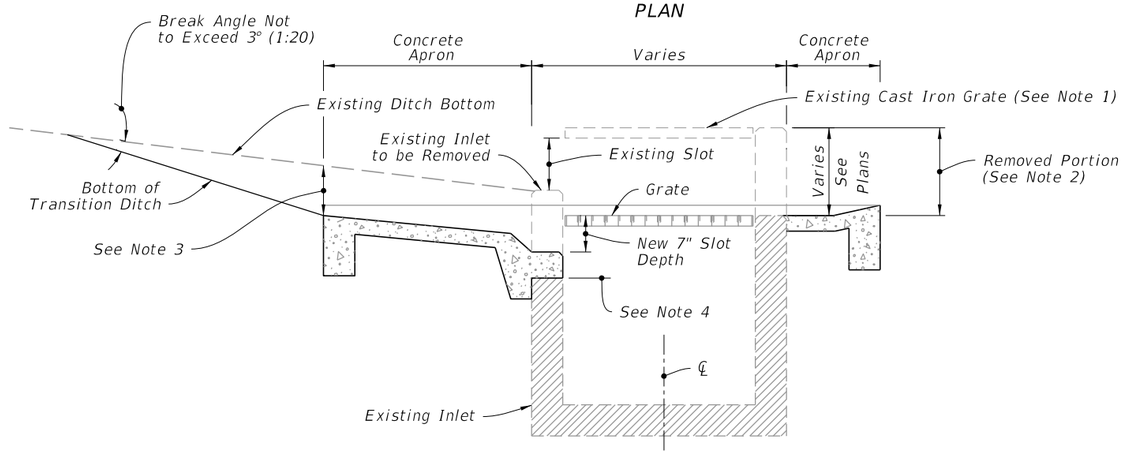
PLAN



SECTION KK-KK

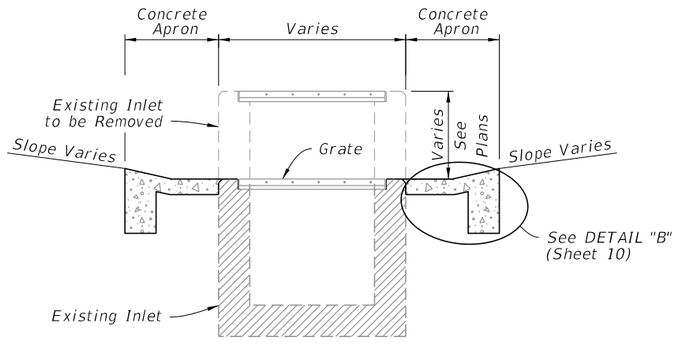


PLAN

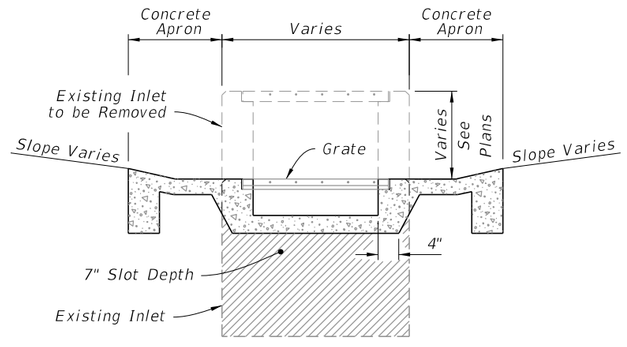


SECTION LL-LL

WITHOUT SLOT



SECTION MM-MM



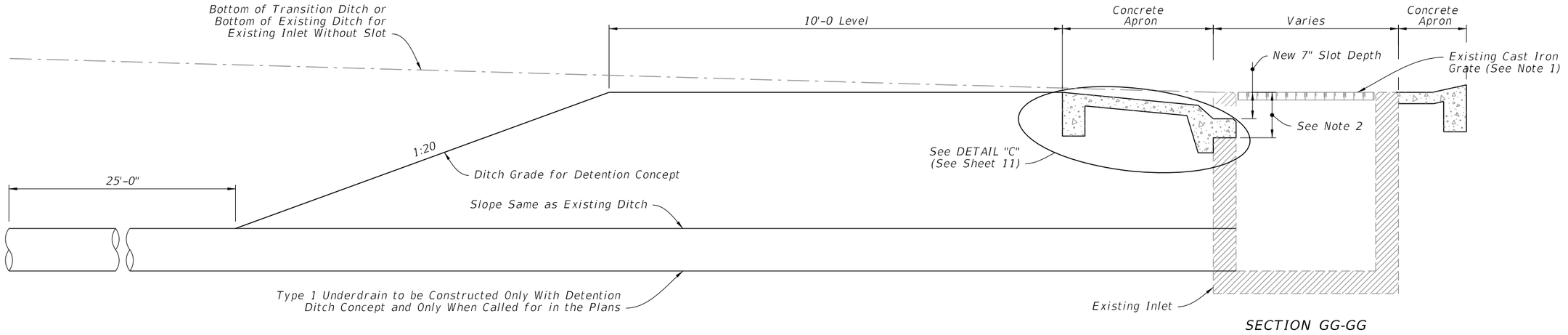
SECTION NN-NN

WITH SLOT

NOTES:

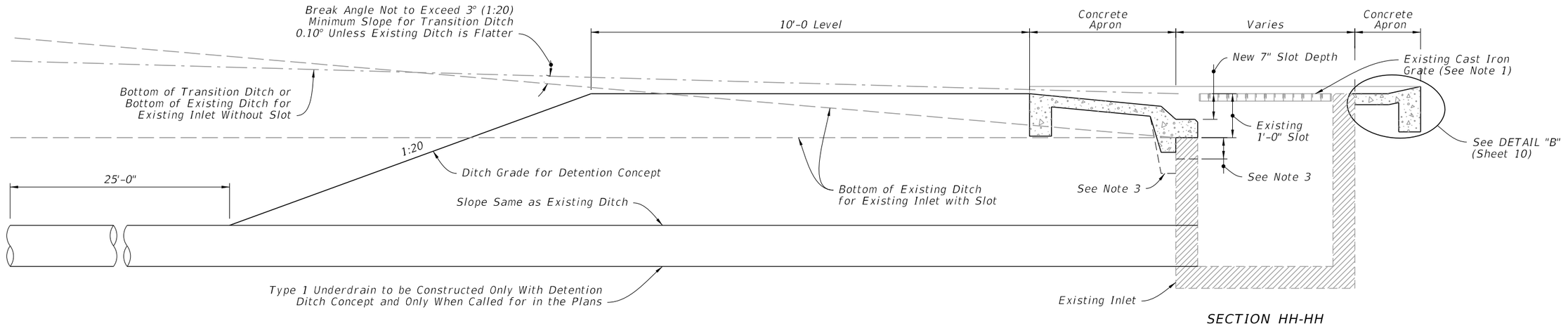
1. Existing cast iron grate to be replaced with steel grate. Existing steel reticuline grate to be replaced when called for in the Plans or as directed by the Engineer.
2. Remove this portion of box and construct new, concrete ditch pavement, seats and slot (s) (slots if required).
3. These points can be the same or nearly the same where ditch grades are flat.
4. Remove exist. wall to this line (exposed rebar in pavt. zone may be either removed or embedded).
5. Single Slot shown, Double Slots symmetrical about the Inlet centerline.

CASE 2 - ADD TRAVERSABLE SLOTS (PARTIAL) TO EXISTING INLETS



SECTION GG-GG

WITHOUT SLOT

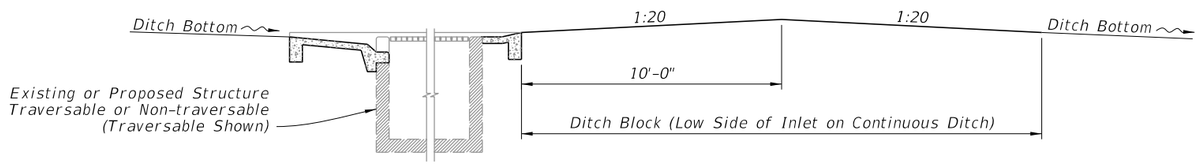


SECTION HH-HH

WITH SLOT

NOTES:

1. Existing cast iron grate to be replaced with steel grate. Existing steel reticuline grate to be replaced when called for in the Plans or as directed by the Engineer.
2. Remove existing wall to this line (exposed rebar in pavement zone may be either removed or embedded)
3. Install extra apron when existing slot exceeds 12" in depth.
4. Inlet details (With or Without Slots) similar to details on Sheet 11.

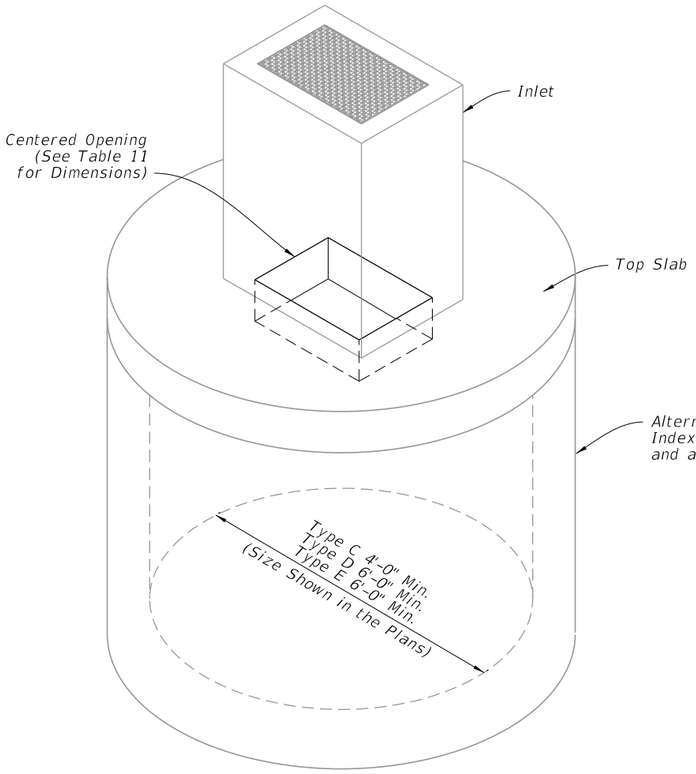


DITCH BLOCK FOR INLETS WITH OR WITHOUT SLOTS

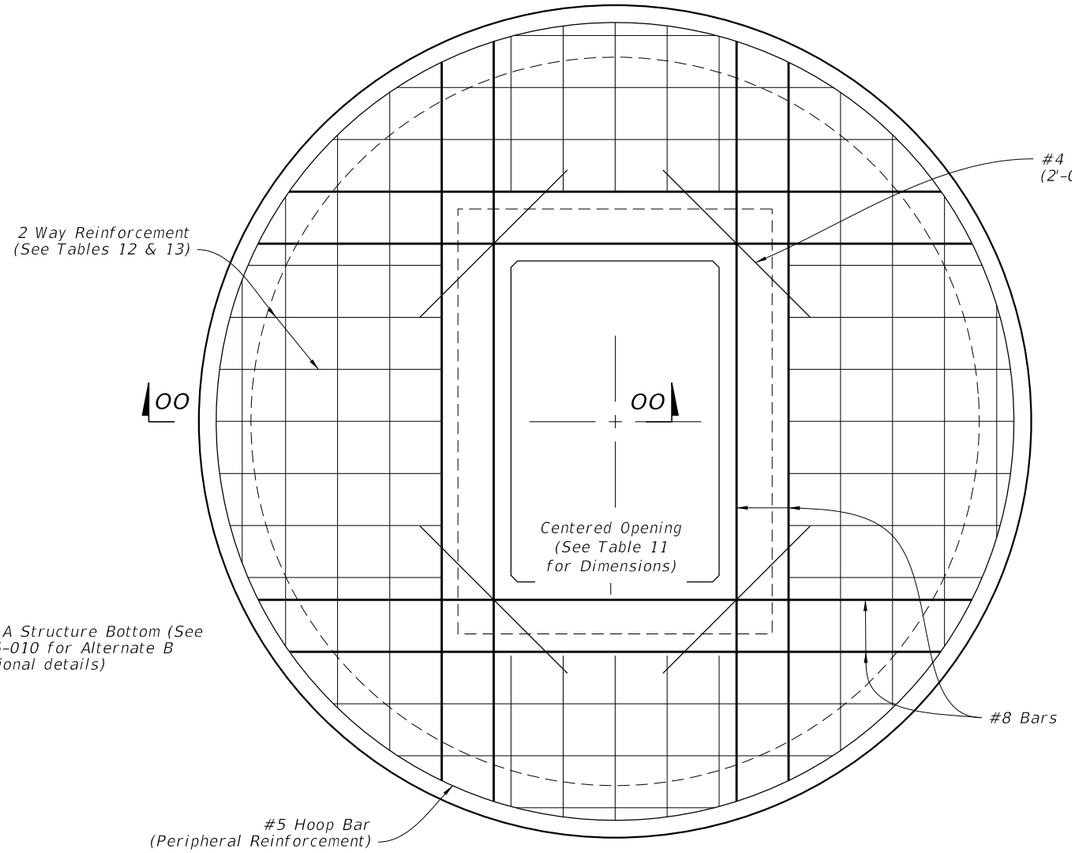
CASE 3 - ADD TRAVERSABLE SLOTS (PARTIAL) TO EXISTING INLETS AND DITCH BLOCK

LAST REVISION	REVISION	DESCRIPTION:	FY 2023-24 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E, AND H	INDEX	SHEET
10/01/20					425-052	13 of 14

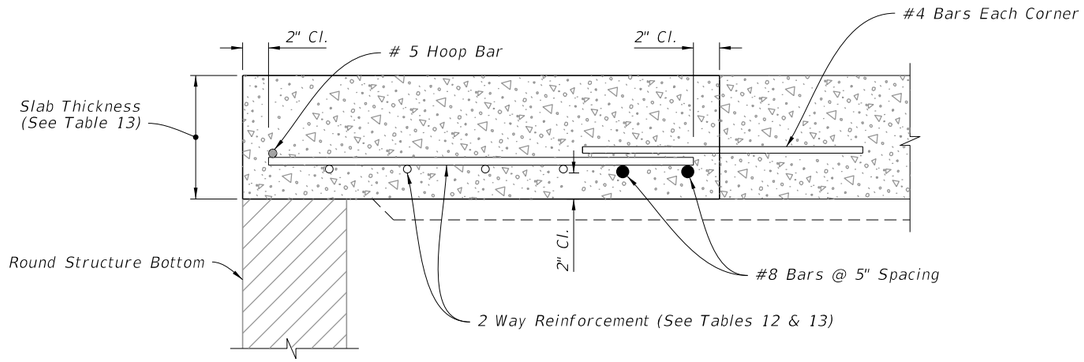
10/20/2022 8:14:32 AM



ISOMETRIC VIEW



PLAN



SECTION OO-OO

TOP SLAB REINFORCEMENT DETAILS

TABLE 11
TOP SLAB OPENINGS

DIAMETER	OPENING SIZE	
	Min.	Max.
4'-0"	2'-0" x 3'-1"	2'-0" x 3'-1"
5'-0"	2'-0" x 3'-1"	3'-1" x 4'-1"
6'-0"	2'-0" x 3'-1"	3'-0" x 4'-6"
8'-0"	2'-0" x 3'-1"	3'-0" x 4'-6"

TABLE 12
TOP SLAB
REINFORCING SCHEDULE

SCHEDULE	GRADE 60 (BAR) OR 65 KSI & 70 KSI (WIRE REINFORCING) $In.^2/ft.$
A	0.20
B	0.24
C	0.37
D	0.53
E	0.73
F	1.06
G	1.45

TABLE 13
TOP SLAB WITH
CENTERED OPENING

STRUCTURE DEPTH	SLAB THICKNESS	REINFORCING (2 WAY) SCHEDULE
SIZE: 4'-0"		
≥0.5'<40'	9½"	B
SIZE: 5'-0"		
≥0.5'<30'	9½"	C
30'-40'	9½"	D
SIZE: 6'-0"		
≥0.5'<8'	9½"	B
8'<18'	9½"	C
18'<30'	9½"	D
30'<37'	9½"	E
37'-40'	9½"	G
SIZE: 8'-0"		
≥0.5'<9'	11½"	C
9'<15'	11½"	D
15'<23'	11½"	E
23'<33'	11½"	E
33'-40'	11½"	G

ALTERNATE A STRUCTURE BOTTOM - TOP SLAB DETAILS