Land Development Procedures Manual

VOLUME 3:

Standard Design Details

LAND DEVELOPMENT PROCEDURES MANUAL

VOLUME 3: STANDARD DESIGN DETAILS

CITY OF JACKSONVILLE, FLORIDA

2026

Approved and Adopted in Accordance with
Provisions of Chapter 654, Jacksonville Ordinance Code
(Code of Subdivision Regulations)

Prepared By:

CDM Smith

Effective: January 2026

LAND DEVELOPEMENT PROCEDURE MANUAL REVISIONS

Revision Number	Sections Revised	Effective Date
1	Replace all previous specifications with the enclosed specifications	January 31, 2025
2	Remove reference to the Context Sensitive Street Standards Committee	January 1, 2026
3	Updates to the following details: D-201, D-207, D-212, P-108, P-202, P-408.	January 1, 2026

GENERAL STATEMENT OF LAND DEVELOPMENT PROCEDURES AND CRITERIA

The Land Development Procedures Manual (LDPM) has been produced by the Subdivision Standards and Policy Advisory Committee in conjunction with the Department of Planning and Development, the Department of Public Works, JEA, the Office of General Counsel, and the Private Sector in order to assist in the development of land within the City of Jacksonville. In addition, hereto, certain criteria have been incorporated pursuant to various elements of the 2030 Comprehensive Plan, adopted per Chapter 650 of the Jacksonville Ordinance Code and Chapter 163, Part II, Florida Statutes.

The LDPM includes four volumes as outlined below which are adopted and approved as provided in Chapter 654 of the Jacksonville Ordinance Code to be used by the Divisions within the Department of Planning and Development, the Engineering Division of the Department of Public Works, and JEA in review and approval of permit applications and site development plans.

VOLUME 1: Land Development Review and Approval Procedures

VOLUME 2: Design Guidelines

VOLUME 3: Standard Design Details

VOLUME 4: Standard Specifications

The information contained in the LDPM Volumes 1 through 4 will apply to all development and construction projects, both public and private, within the jurisdiction of the Department of Planning and Development of the City of Jacksonville.

LAND DEVELOPMENT PROCEDURE MANUAL

VOLUME 3: STANDARD DETAILS

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Drainage Standard Details Index of Sheets

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ENGINEERING DIVISION
ROADWAY STANDARD SECTION
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P-402 Case I Standard Paving Repair Detail
P-403 Case II Standard Paving Repair Detail
P-404 Case III Standard Paving Repair Detail
P-405 Case IV Standard Paving Repair Detail
P-406 Case V Standard Paving Repair Detail
P-407 Case VI & VII Standard Paving Repair Detail
P-408 Case IX Standard Paving Repair Detail
P-409 Case X Standard Paving Repair Detail
P-410 Case XI Standard Paving Repair Detail
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P-412 Case XIII Standard Brick Street Repair Detail
P-413 Case XIV Standard Brick Street Repair Detail

Series 500 TRADITIONAL NEIGHBORHOOD UTILITY LOCATION

P-501 Vacant
P-502 Vacant
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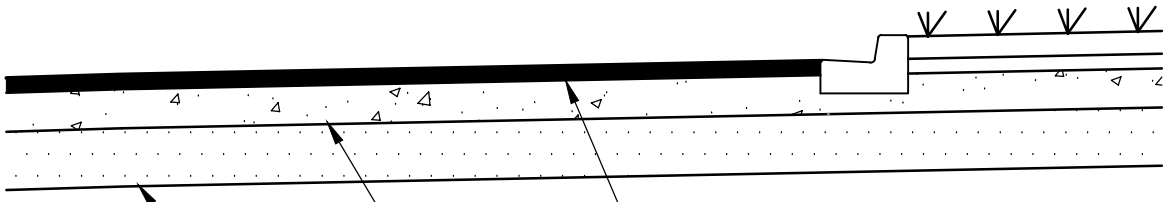
P-504 Vacant
P-505 Vacant
P-506 TND Alley

CITY OF JACKSONVILLE STANDARD

FLEXIBLE PAVEMENT DESIGN
FOR DESIGN CLASSIFICATION
GROUPS P&Q



MIN. 1.5-INCH TYPE
SP-9.5

6-INCH LIMEROCK OR EQUIVALENT, 98% MOD PROCTOR FM-1
T-180, SEE COJ STANDARD SPECIFICATION 402 OR 403

12-INCH STABILIZED SUBGRADE, MIN LBR 40, SEE COJ
STANDARD SPECIFICATION 401 STABILIZED SUBGRADE

NOTES:

1. A TWO-LIFT ASPHALT COURSE IS REQUIRED FOR ALL NEW ROADWAYS. TWO-LIFT PAVEMENT SYSTEM REQUIREMENTS ARE SPECIFIED IN VOLUME 2 OF THE LAND DEVELOPMENT PROCEDURES MANUAL.

2. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODDED TO SATISFACTION OF OWNER.

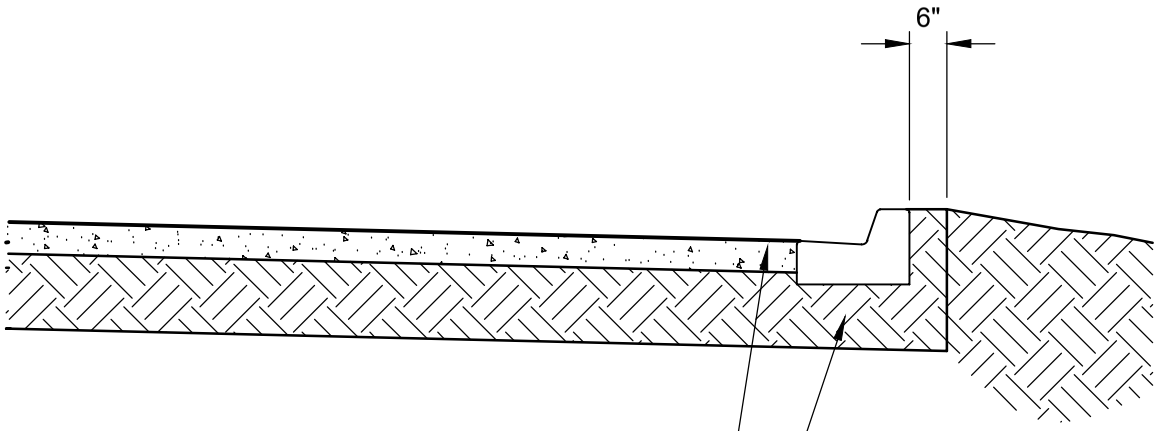
N.T.S. PLATE P-108

DATE DRAWN 03-21-89

REVISED DATE 11-20-25

RIGID PAVEMENT

CITY OF JACKSONVILLE STANDARD



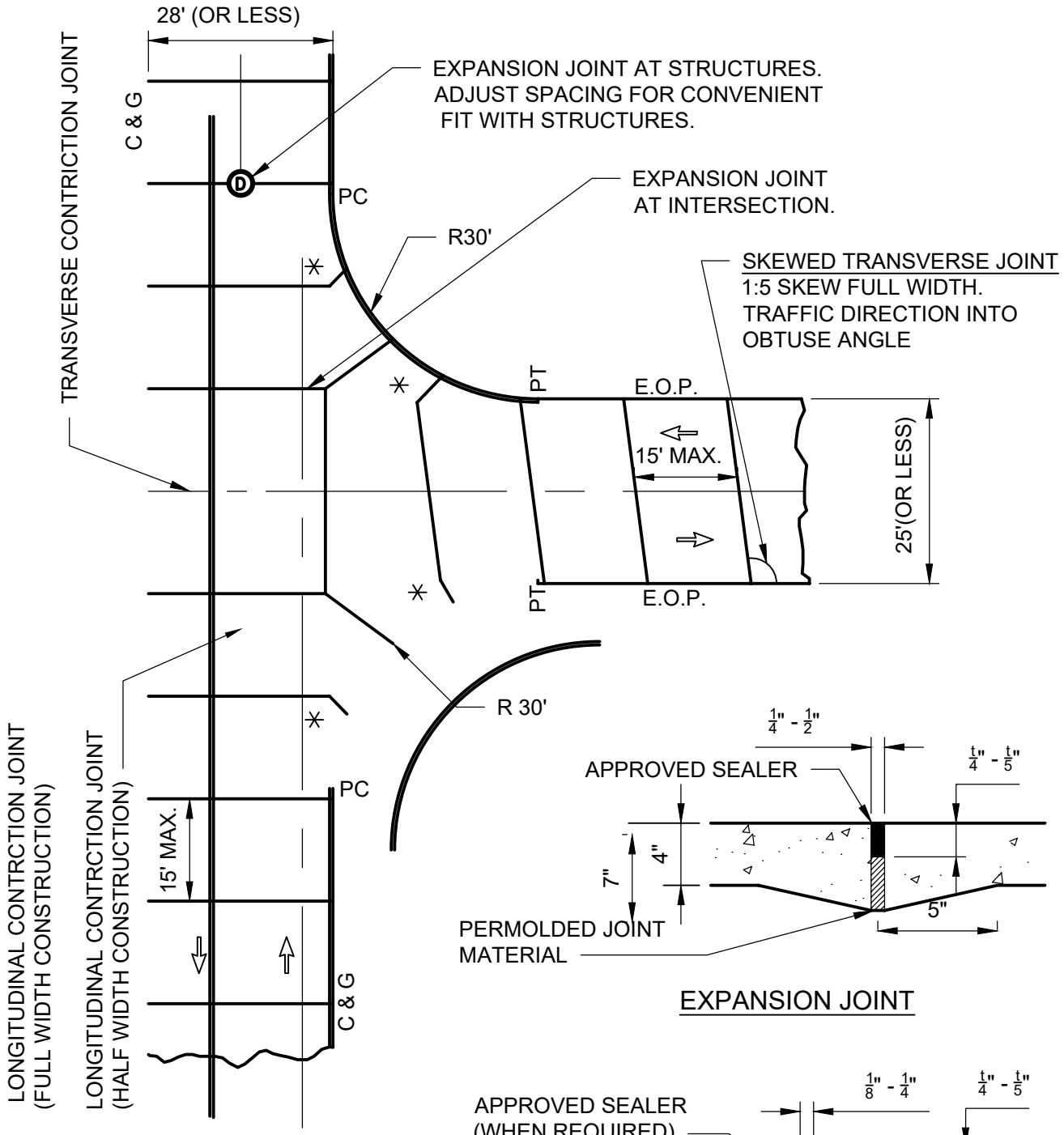
8-INCH PORTLAND CEMENT FOR DESIGN CLASSIFICATIONS A THROUGH O
6-INCH PORTLAND CEMENT FOR DESIGN CLASSIFICATIONS P, Q & R

12-INCH STABILIZED SUBGRADE, MIN LBR 40, SEE COJ STANDARD SPECIFICATIO 401 STABILIZED SUBGRADE

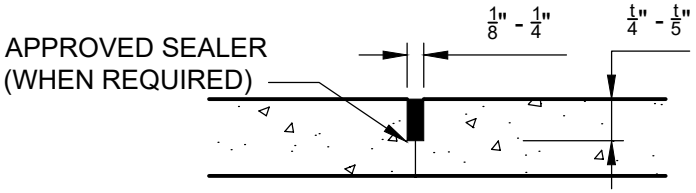
NOTE:

RIGID PAVEMENT SHALL BE DESIGNED AND CONSTRUCTED USING THE FDOT RIGID PAVEMENT DESIGN MANUAL, LATEST EDITION.

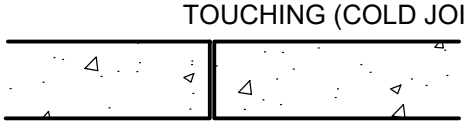
N.T.S.	PLATE P-109
DATE DRAWN 07-1-82	
REVISED DATE 12-06-24	



EXPANSION JOINT



CONTRACTION JOINT

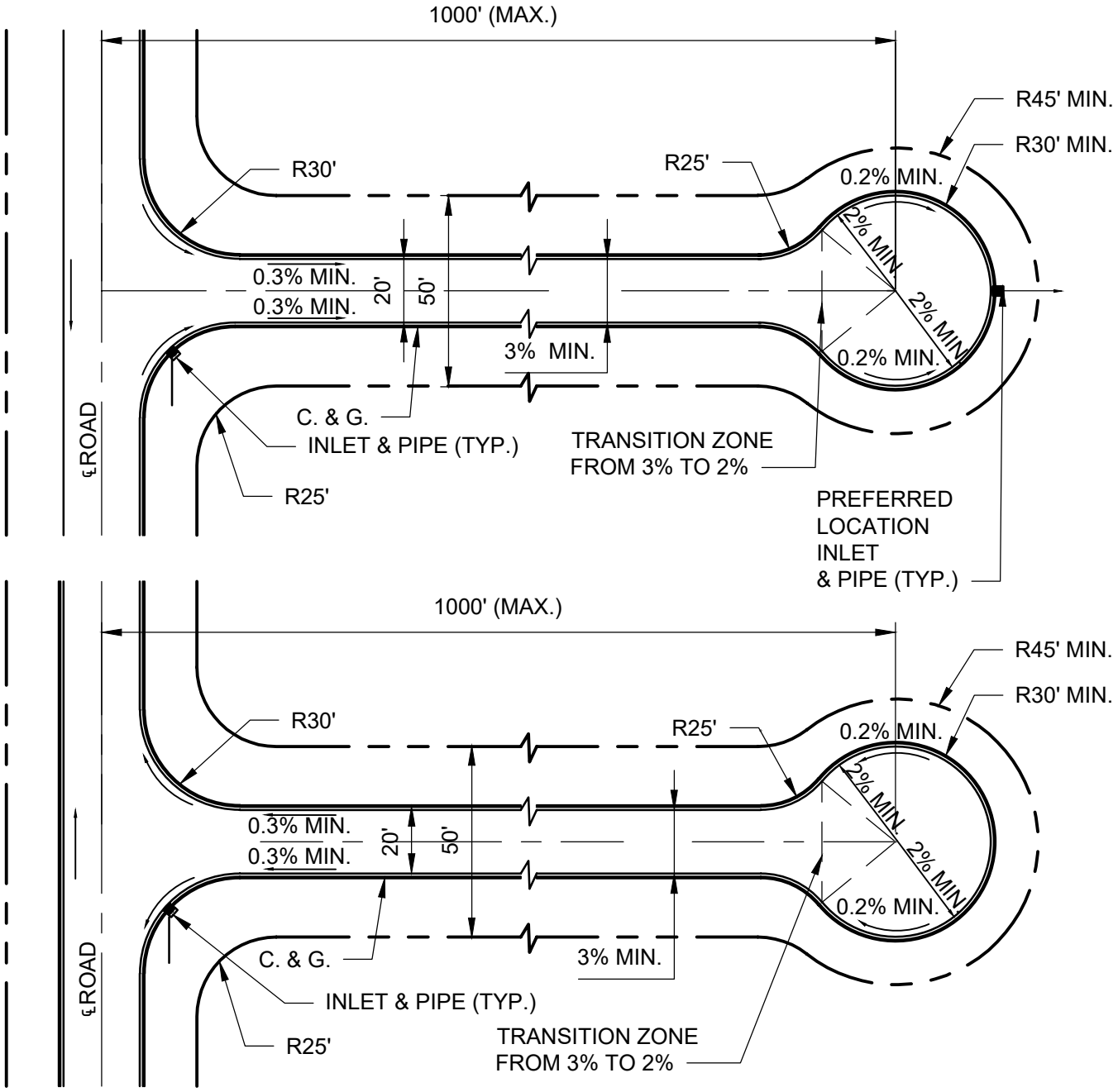


CONSTRUCTION JOINT

* NOTE:

1' MIN. SKEW IN JOINTS. AVOID SMALL ACUTE ANGLES, TIE-IN RADIAL OR PER-PENDICULAR.

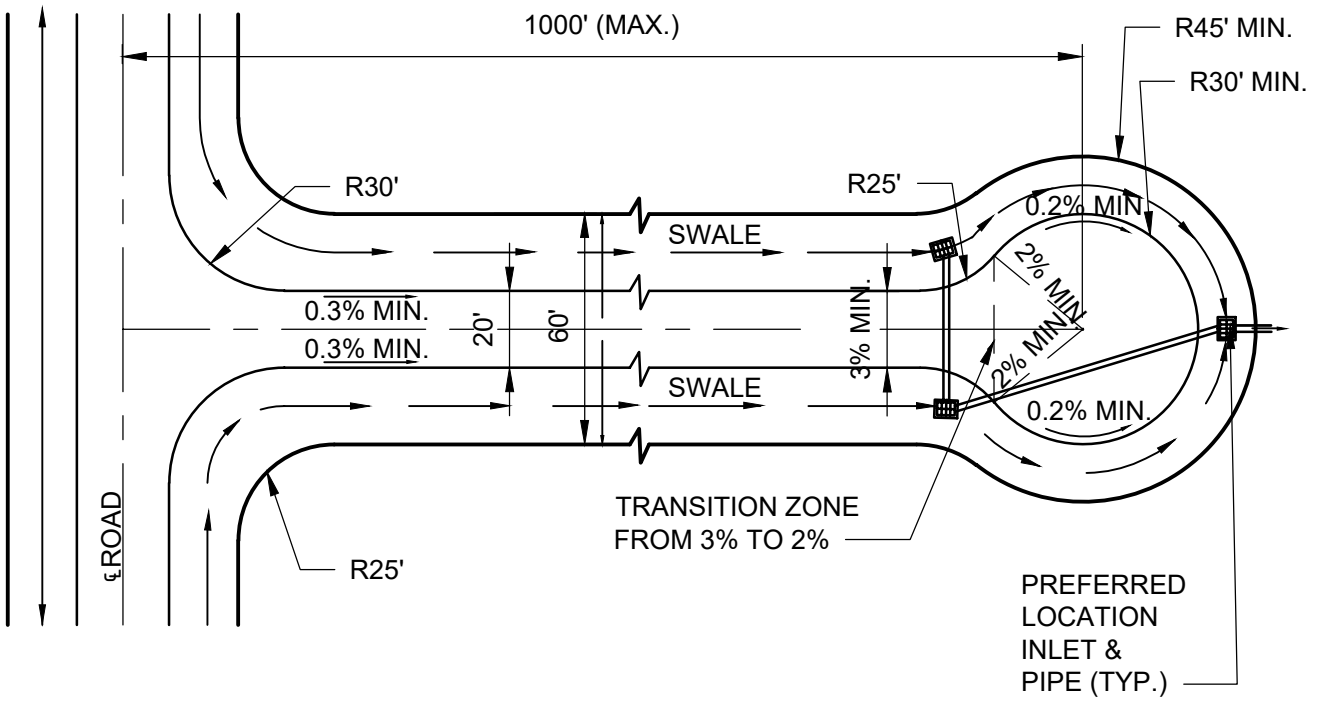
RIGID PAVEMENT JOINT DETAILS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-110
		DATE DRAWN	8-3-79
		REVISED DATE	12-06-24

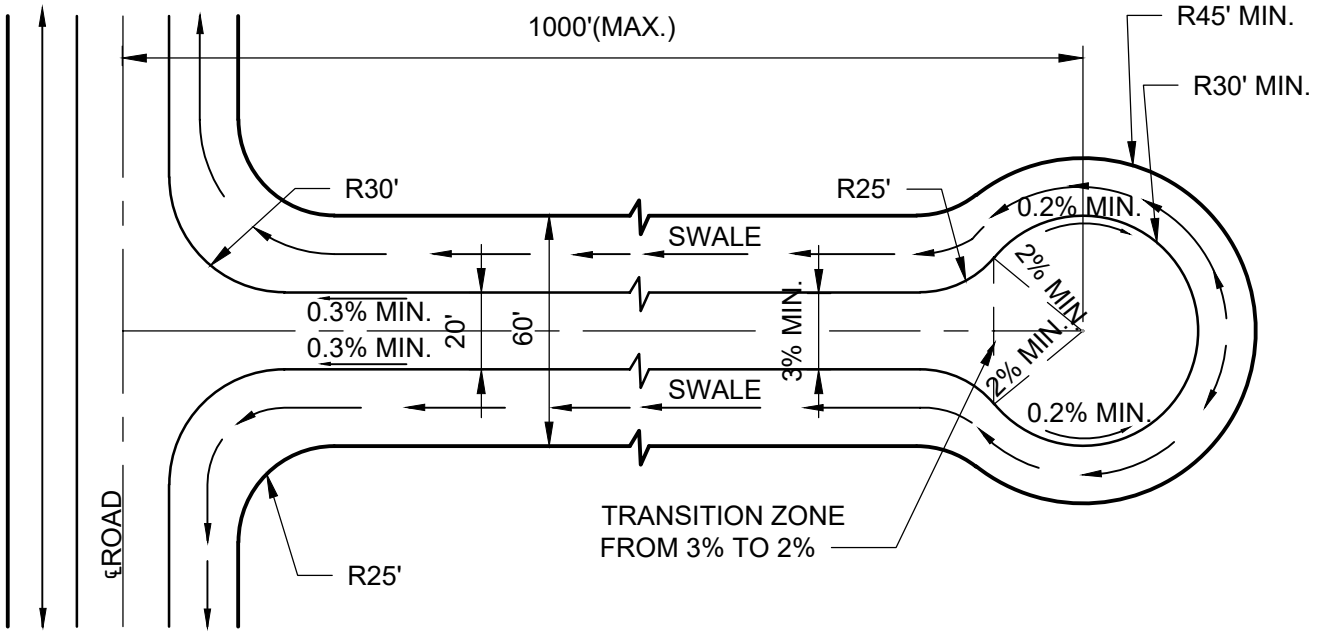


NOTES:

1. CURB & GUTTER ALONG ROAD TO MAINTAIN MIN. SLOPE OF 0.3% IN DIRECTION OF POSITIVE DRAINAGE.
2. CURB & GUTTER AROUND THE CUL-DE-SAC TO MAINTAIN MIN. SLOPE OF 0.2% IN DIRECTION OF POSITIVE DRAINAGE.
3. PAVING SHALL BE CROWNED MIN. OF 3% TO PROVIDE ADEQUATE RUN-OFF OFF PAVEMENT.
4. PAVING SHALL BE CROWNED MIN. OF 2% TO PROVIDE ADEQUATE RUN-OFF OFF CUL-DE-SAC PAVEMENT
5. VALLEY GUTTERS ARE NOT ALLOWED.
6. INLETS & PIPES TO BE LOCATED AS NECESSARY.

STANDARD CUL-DE-SAC WITH CURB & GUTTER	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-111
		DATE DRAWN	03-29-89
		REVISED DATE	12-06-24

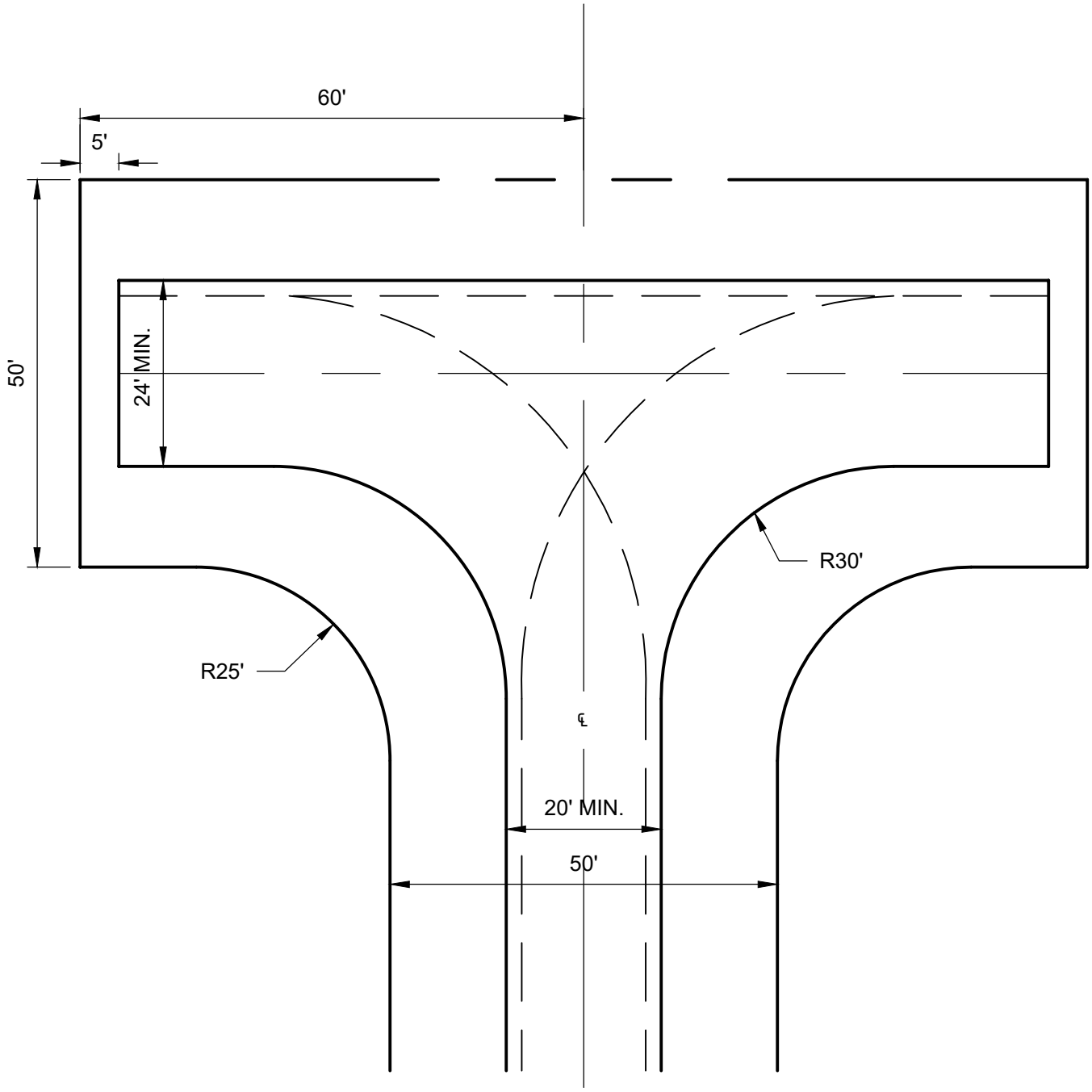




GENERAL NOTES:

1. SWALE SLOPE DEPENDS ON VELOCITY: MAX. 2 f.p.s.
2. PAVING SHALL BE CROWNED MIN. OF 3% TO PROVIDE ADEQUATE RUN-OFF OFF STREET PAVEMENT.
3. PAVING SHALL BE CROWNED MIN. OF 2% TO PROVIDE ADEQUATE RUN-OFF OFF CUL-DE-SAC PAVEMENT.
4. VALLEY GUTTERS ARE NOT ALLOWED.
5. INLETS & PIPES TO BE LOCATED AS NECESSARY.

STANDARD CUL-DE-SAC WITH SWALE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-112
		DATE DRAWN	03-23-89
		REVISED DATE	12-06-24



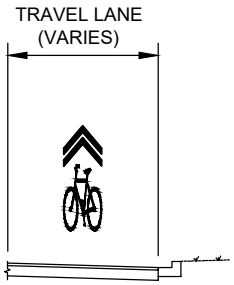
SYMMETRICAL ABOUT ℄

KEY: PATH OF RIGHT FRONT WHEEL
(S.U. DESIGN VEHICLE-AASHTO, A
POLICY ON GEOMETRIC DESIGN)

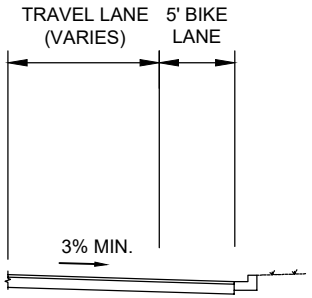
NOTE:

TO BE USED ONLY WHERE
CUL-DE-SAC IS INAPPROPRIATE

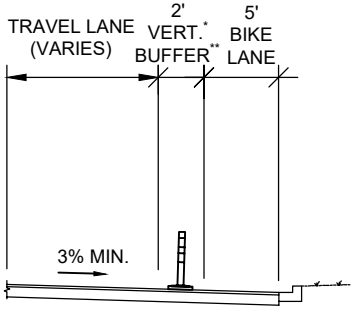
SPECIAL "T" TURNAROUND	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-113
		DATE DRAWN	5-24-89
		REVISED DATE	12-06-24



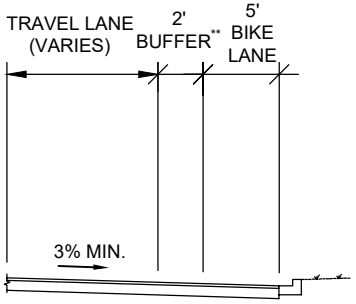
BICYCLE BOULEVARD &
SHARED LANE MARKINGS
("SHARROWS")



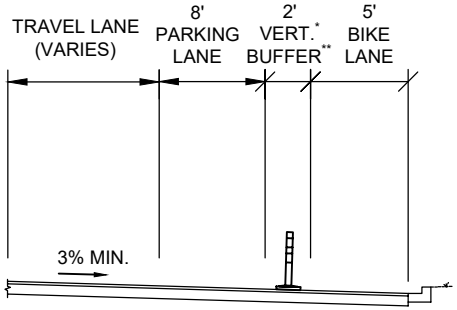
STANDARD
BICYCLE LANE



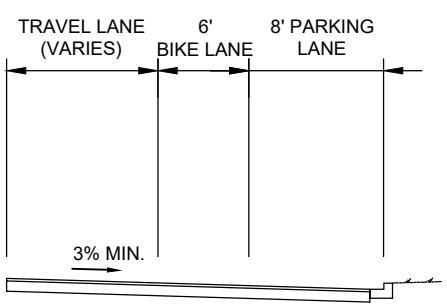
SEPARATED
BICYCLE LANE



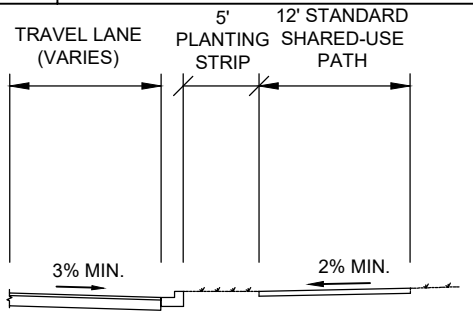
BUFFERED
BICYCLE LANE



PARKING PROTECTED BICYCLE LANE



BICYCLE LANE ADJACENT
TO PARKING

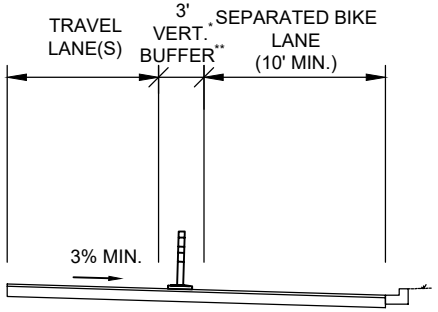


SHARED-USE PATH

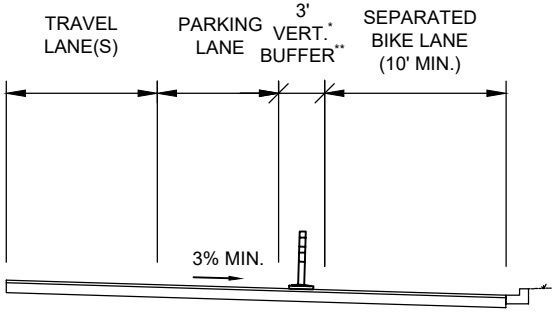
1. PAVEMENT MARKINGS AND SIGNAGE SHALL CONFORM WITH CURRENT FDOT DESIGN MANUAL AND CURRENT FHWA-MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. REFER TO SECTION 3.0 OF THE LAND DEVELOPMENT PROCEDURES MANUAL FOR ADDITIONAL DETAILS.
3. BIKE LANES AND TRAVEL LANES ARE MEASURED TO THE EDGE OF PAVEMENT.
4. PARKING LANES ARE MEASURED TO THE FACE OF CURB.

* VERTICAL BUFFER CAN BE MADE OF VARIOUS MATERIALS, INCLUDING: CONCRETE, PLANTERS, SOFT-HIT POSTS AND BOLLARDS.

** BUFFER AREA SHALL HAVE INTERIOR DIAGONAL CROSS HATCHING.

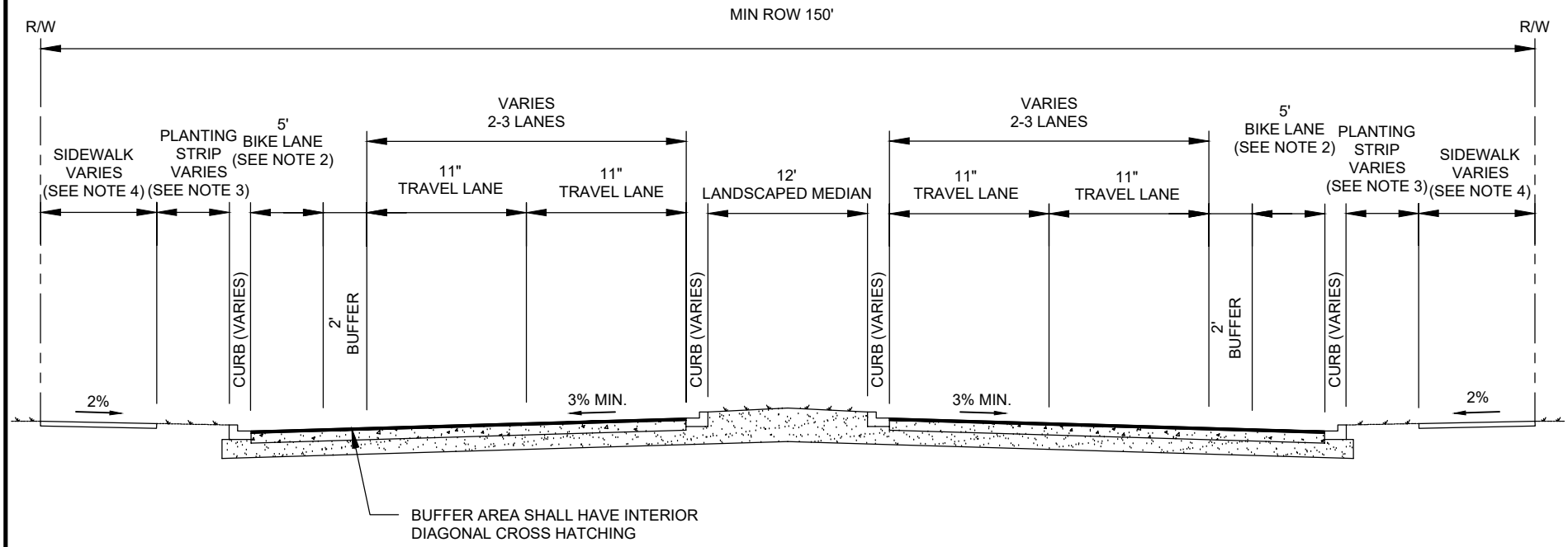


TWO-WAY
CYCLE TRACK



TWO-WAY CYCLE TRACK
WITH PROTECTED PARKING

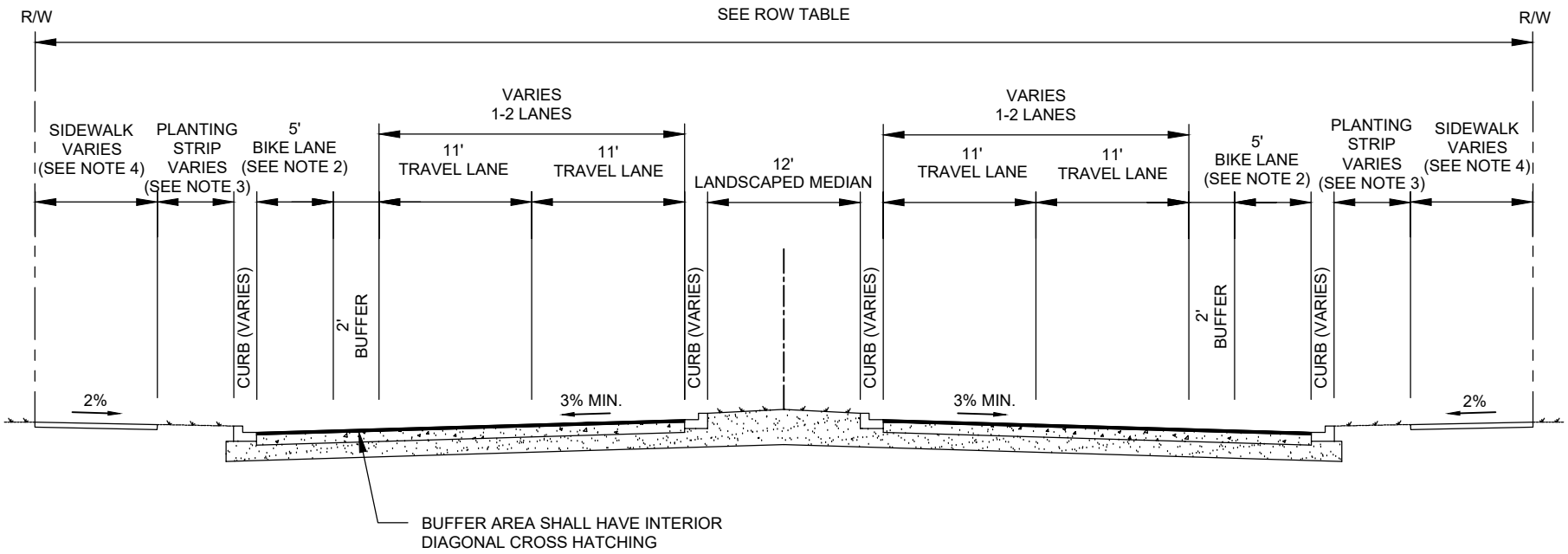
	CITY OF JACKSONVILLE STANDARD	BICYCLE FACILITY TYPICAL STANDARDS	N.T.S. / PLATE P-114
			DATE DRAWN 1-31-17
			REVISED DATE 11-22-24



NOTES:

1. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODDED.
2. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, SECTION 2.4 FOR BICYCLE FACILITY DESIGN REQUIREMENTS AND BIKE FACILITY PREFERENCES.
3. PLANTING STRIP TO HAVE A DESIRED MINIMUM OF 5' WIDTH. 8' IS DESIRED IF STREET TREES ARE INCLUDED.
4. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, TABLE 2.2-1 FOR SIDEWALK DESIGN REQUIREMENTS. SIDEWALKS MUST START WITHIN 12" OF THE ROW LINE.
5. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, SECTION 2.3 FOR PAVEMENT DESIGN REQUIREMENTS.

	CITY OF JACKSONVILLE STANDARD	DESIGN CLASSIFICATION A THOROUGHFARE	N.T.S.	PLATE P-119
			DATE DRAWN 1-31-17	
			REVISED DATE 11-22-24	



FUNCTIONAL HIGHWAY CLASSIFICATION	ROADWAY DESIGN MATRIX	DEVELOPMENT AREA	TYPICAL NUMBER OF TRAVEL LANES	MINIMUM ROW (FT)
MAJOR ARTERIAL	B	ALL	5	150
MINOR ARTERIAL	C	ALL	4	120

NOTES:

1. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODDED.
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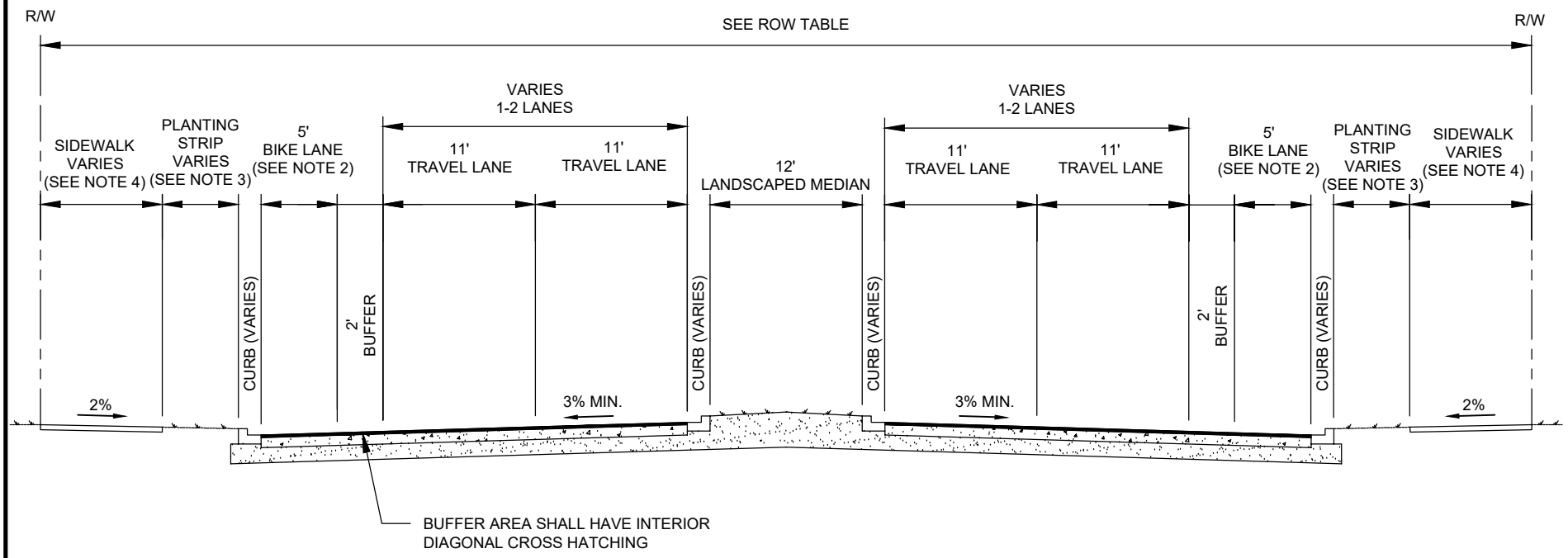
5. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, SECTION 2.3 FOR PAVEMENT DESIGN REQUIREMENTS.

	CITY OF JACKSONVILLE STANDARD	DESIGN CLASSIFICATION B/C BOULEVARD	N.T.S.	PLATE P-120
			DATE DRAWN 1-31-17	
			REVISED DATE 11-22-24	



NOTES:

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5. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, SECTION 2.3 FOR PAVEMENT DESIGN REQUIREMENTS

FUNCTIONAL HIGHWAY CLASSIFICATION	ROADWAY DESIGN MATRIX	DEVELOPMENT AREA	TYPICAL NUMBER OF TRAVEL LANES	MINIMUM ROW (FT)
MINOR ARTERIAL	D	ALL	4	120
COLLECTOR	G	DOWNTOWN, URBAN,URBAN PRIORITY, SUBURBAN	2	80
		RURAL		100

CITY OF JACKSONVILLE STANDARD

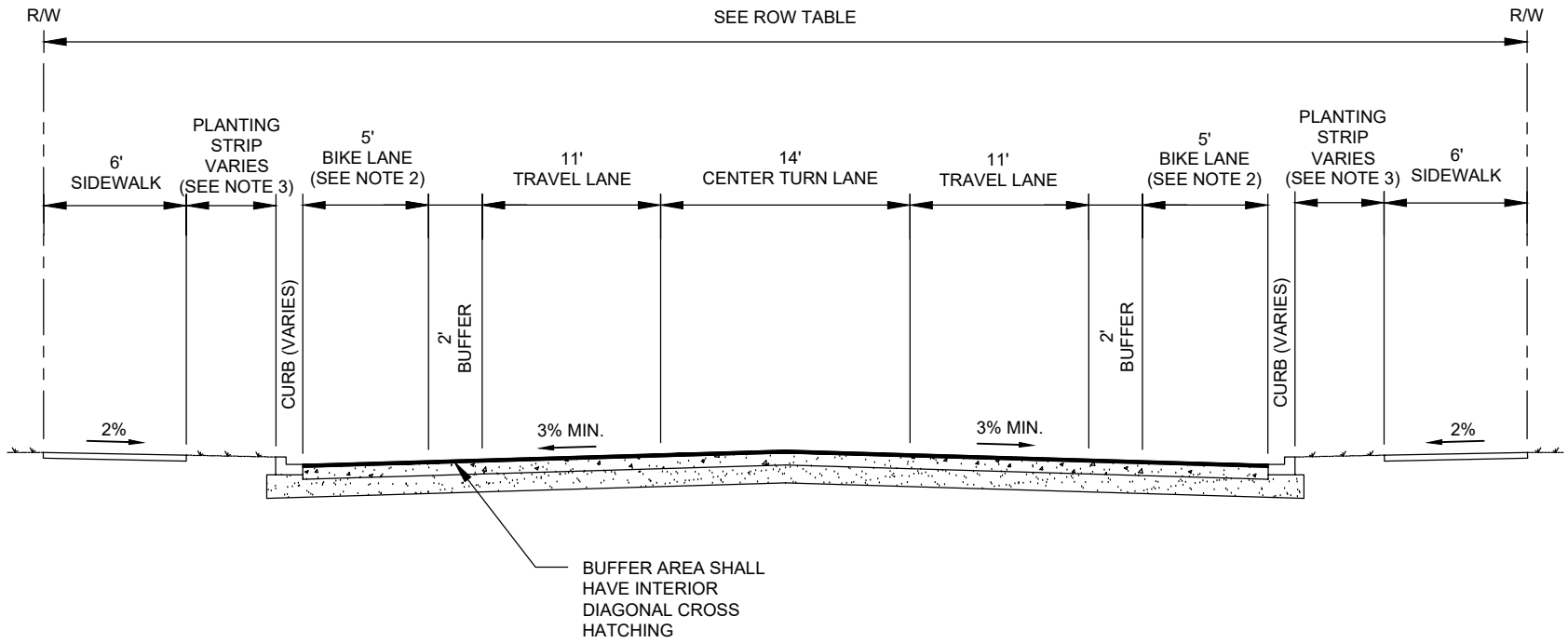
DESIGN CLASSIFICATION D/G AVENUE

N.T.S.

PLATE P-122

DATE DRAWN 1-31-17

REVISED DATE 11-22-24



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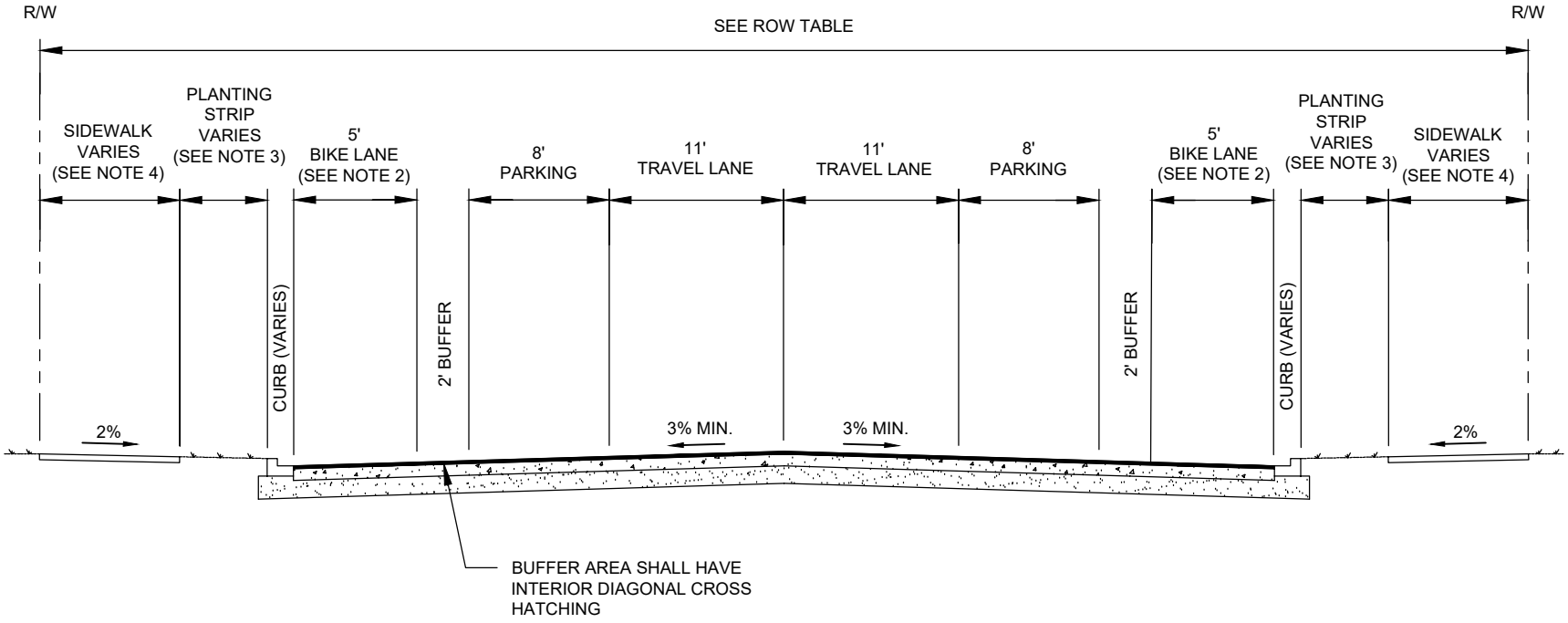
4. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, TABLE 2.2-1 FOR SIDEWALK DESIGN REQUIREMENTS. SIDEWALKS MUST START WITHIN 12" OF THE ROW LINE.
5. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, SECTION 2.3 FOR PAVEMENT DESIGN REQUIREMENTS.

FUNCTIONAL HIGHWAY CLASSIFICATION	ROADWAY DESIGN MATRIX	DEVELOPMENT AREA	TYPICAL NUMBER OF TRAVEL LANES	MINIMUM ROW (FT)
MINOR ARTERIAL	E	ALL	5	120
COLLECTOR	H	DOWNTOWN, URBAN,URBAN PRIORITY, SUBURBAN	3	80
		RURAL		100

	CITY OF JACKSONVILLE STANDARD	DESIGN CLASSIFICATION E/H LIMITED AVENUE	N.T.S.	PLATE P-124
			DATE DRAWN 9-9-20	
			REVISED DATE 11-22-24	



NOTES:

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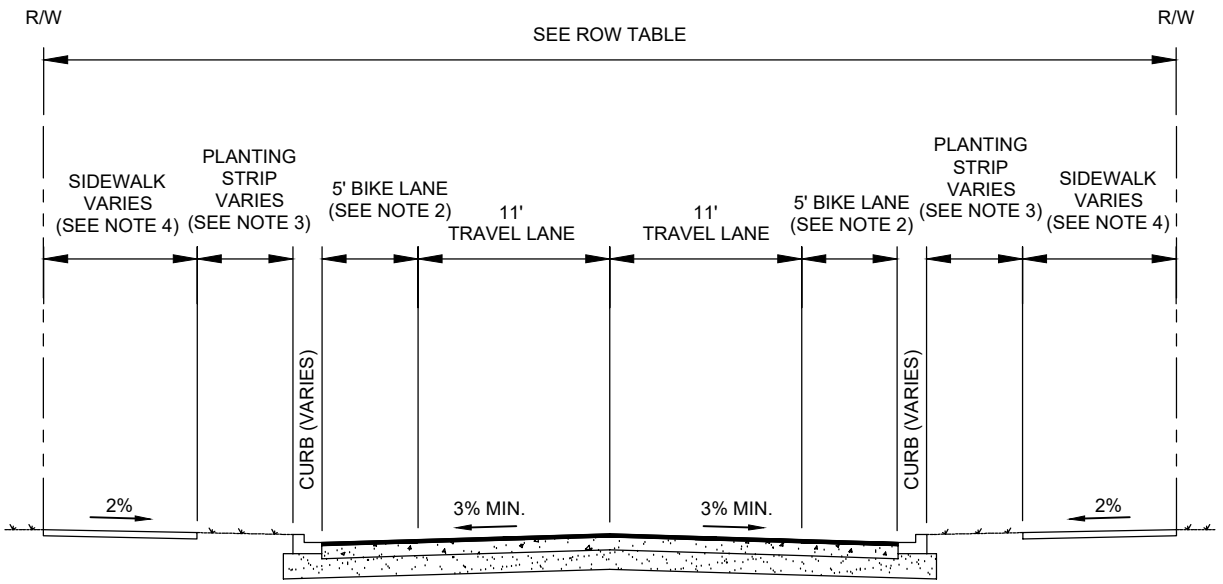
5. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, SECTION 2.3 FOR PAVEMENT DESIGN REQUIREMENTS.

FUNCTIONAL HIGHWAY CLASSIFICATION	ROADWAY DESIGN MATRIX	DEVELOPMENT AREA	TYPICAL NUMBER OF TRAVEL LANES	MINIMUM ROW (FT)
COLLECTOR	J	DOWNTOWN, URBAN, URBAN PRIORITY, SUBURBAN	3	100
		RURAL		120
LOCAL	N	DOWNTOWN, URBAN, URBAN PRIORITY, SUBURBAN	2	80
		RURAL		100

CITY OF JACKSONVILLE STANDARD	DESIGN CLASSIFICATION J/N NEIGHBORHOOD COMMERCIAL STREET	N.T.S.	PLATE P-125
		DATE DRAWN	1-31-17
		REVISED DATE	11-22-24



NOTES:

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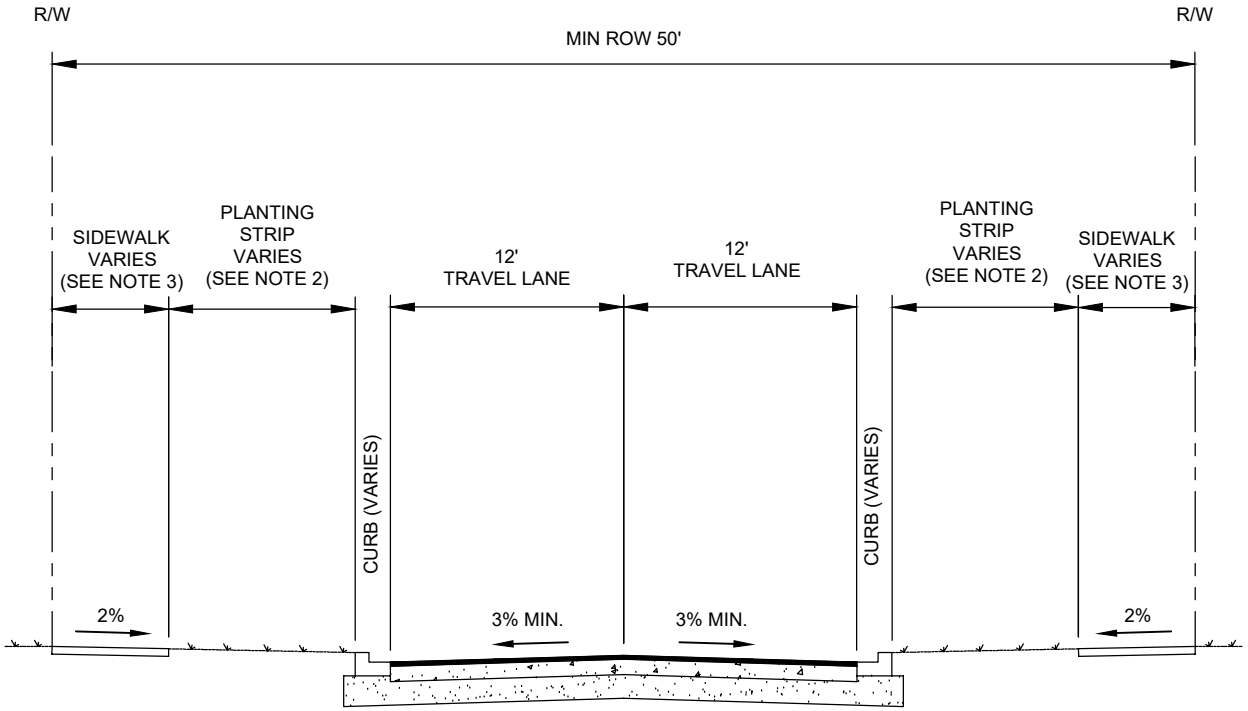
3. PLANTING STRIP TO HAVE A MINIMUM 5' WIDTH. 8' IS DESIRED IF STREET TREES ARE INCLUDED.
4. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, TABLE 2.2-1 FOR SIDEWALK DESIGN REQUIREMENTS. SIDEWALKS MUST START WITHIN 12" OF THE ROW LINE.
5. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, SECTION 2.3 FOR PAVEMENT DESIGN REQUIREMENTS.

FUNCTIONAL HIGHWAY CLASSIFICATION	ROADWAY DESIGN MATRIX	DEVELOPMENT AREA	TYPICAL NUMBER OF TRAVEL LANES	MINIMUM ROW (FT)
COLLECTOR	L	DOWNTOWN, URBAN, URBAN PRIORITY, SUBURBAN	3	80
		RURAL		100
LOCAL	P	DOWNTOWN, URBAN, URBAN PRIORITY, SUBURBAN	2	60
		RURAL		80

CITY OF JACKSONVILLE STANDARD	DESIGN CLASSIFICATION L/P NEIGHBORHOOD RESIDENTIAL STREET	N.T.S.	PLATE P-126
		DATE DRAWN	1-31-17
		REVISED DATE	11-22-24



NOTES:

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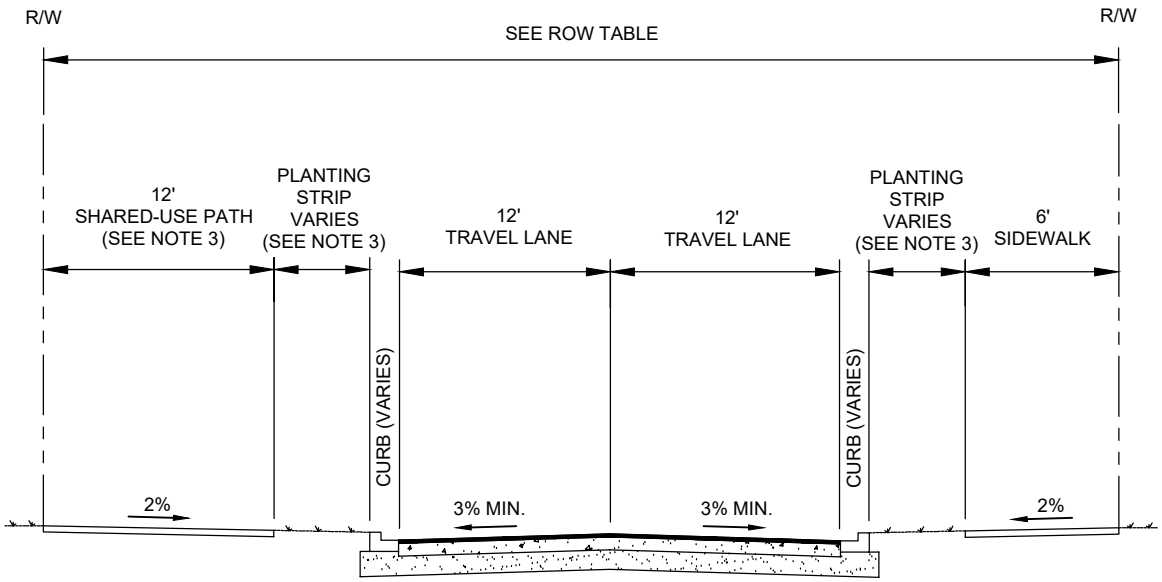
2. PLANTING STRIP TO HAVE A DESIRED MINIMUM OF 5' WIDTH. 8' IS DESIRED IF STREET TREES ARE INCLUDED.
3. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, TABLE 2.2-1 FOR SIDEWALK DESIGN REQUIREMENTS. SIDEWALKS MUST START WITHIN 12" OF THE ROW LINE.
4. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, SECTION 2.3 FOR PAVEMENT DESIGN REQUIREMENTS.

	CITY OF JACKSONVILLE STANDARD	DESIGN CLASSIFICATION Q RESIDENTIAL LOCAL SUBDIVISION	N.T.S.	PLATE P-127
			DATE DRAWN	10-6-17
			REVISED DATE	11-22-24

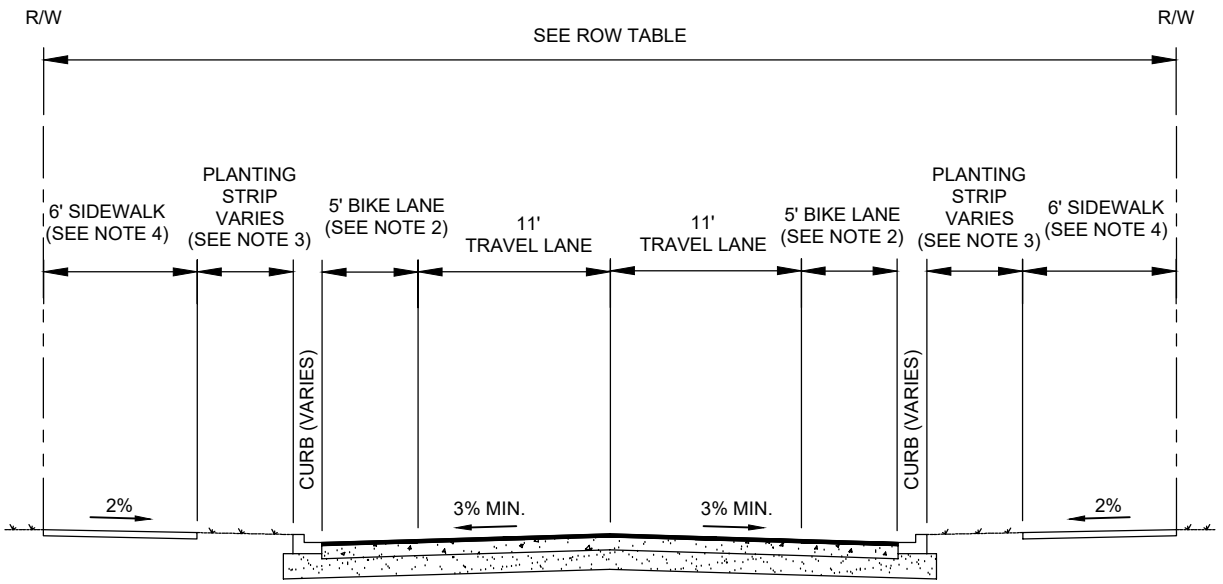


NOTES:

1. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODDED.
2. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, SECTION 2.4 FOR BICYCLE FACILITY DESIGN REQUIREMENTS AND BIKE FACILITY PREFERENCES.
3. PLANTING STRIP TO HAVE A MINIMUM 5' WIDTH. 8' IS DESIRED IF STREET TREES ARE INCLUDED.
4. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, TABLE 2.2-1 FOR SIDEWALK DESIGN REQUIREMENTS. SIDEWALKS MUST START WITHIN 12" OF THE ROW LINE.
5. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, SECTION 2.3 FOR PAVEMENT DESIGN REQUIREMENTS.

FUNCTIONAL HIGHWAY CLASSIFICATION	ROADWAY DESIGN MATRIX	DEVELOPMENT AREA	TYPICAL NUMBER OF TRAVEL LANES	MINIMUM ROW (FT)
MINOR ARTERIAL	F	ALL	4	120
COLLECTOR	I	DOWNTOWN, URBAN, URBAN PRIORITY, SUBURBAN	3	80
		RURAL		100
LOCAL	M	DOWNTOWN, URBAN, URBAN PRIORITY, SUBURBAN	2	60
		RURAL		80

	CITY OF JACKSONVILLE STANDARD	DESIGN CLASSIFICATION F/I/M INDUSTRIAL	N.T.S. / PLATE P-128
			DATE DRAWN 9-9-20
			REVISED DATE 11-22-24

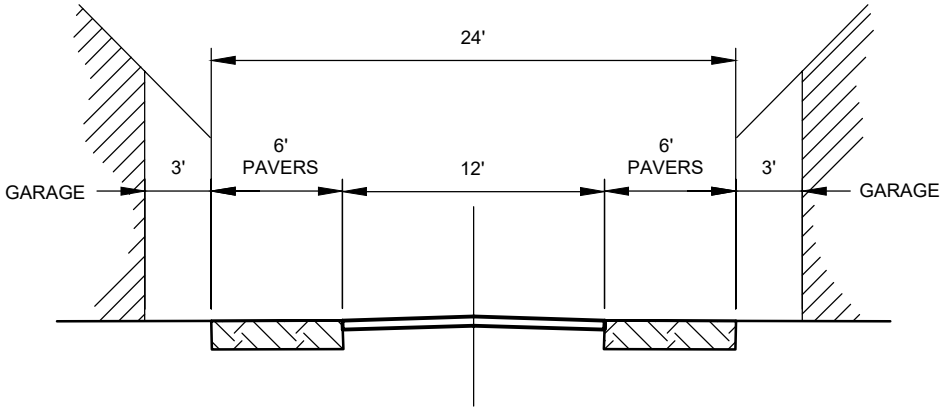


NOTES:

1. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODDED.
2. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, SECTION 2.4 FOR BICYCLE FACILITY DESIGN REQUIREMENTS AND BIKE FACILITY PREFERENCES.
3. PLANTING STRIP TO HAVE A MINIMUM 5' WIDTH. 8' IS DESIRED IF STREET TREES ARE INCLUDED.
4. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, TABLE 2.2-1 FOR SIDEWALK DESIGN REQUIREMENTS. SIDEWALKS MUST START WITHIN 12" OF THE ROW LINE.
5. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, SECTION 2.3 FOR PAVEMENT DESIGN REQUIREMENTS.

FUNCTIONAL HIGHWAY CLASSIFICATION	ROADWAY DESIGN MATRIX	DEVELOPMENT AREA	TYPICAL NUMBER OF TRAVEL LANES	MINIMUM ROW (FT)
COLLECTOR	K	DOWNTOWN, URBAN, URBAN PRIORITY, SUBURBAN	3	80
		RURAL		100
LOCAL	O	DOWNTOWN, URBAN, URBAN PRIORITY, SUBURBAN	2	60
		RURAL		80

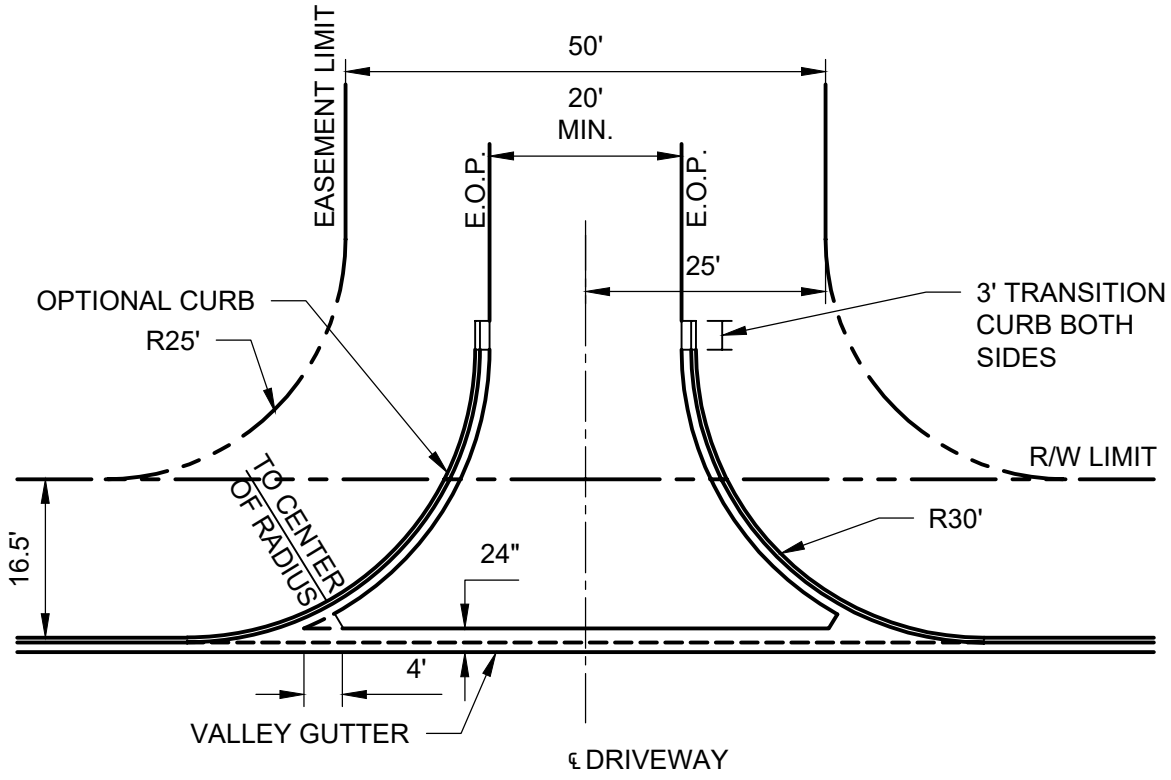
CITY OF JACKSONVILLE STANDARD	DESIGN CLASSIFICATION K/O BUSINESS PARK	N.T.S.	PLATE P-129
		DATE DRAWN	9-9-20
		REVISED DATE	11-22-24

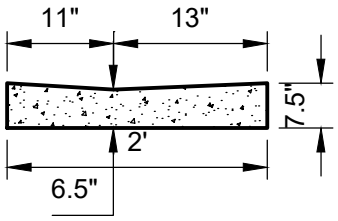


NOTE:

1. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, TABLE 2.2-1 FOR ROADWAY DESIGN REQUIREMENTS.

	CITY OF JACKSONVILLE STANDARD	STREET CLASSIFICATION R ALLEY	N.T.S.	PLATE P-130
			DATE DRAWN	9-9-20
			REVISED DATE	11-22-24



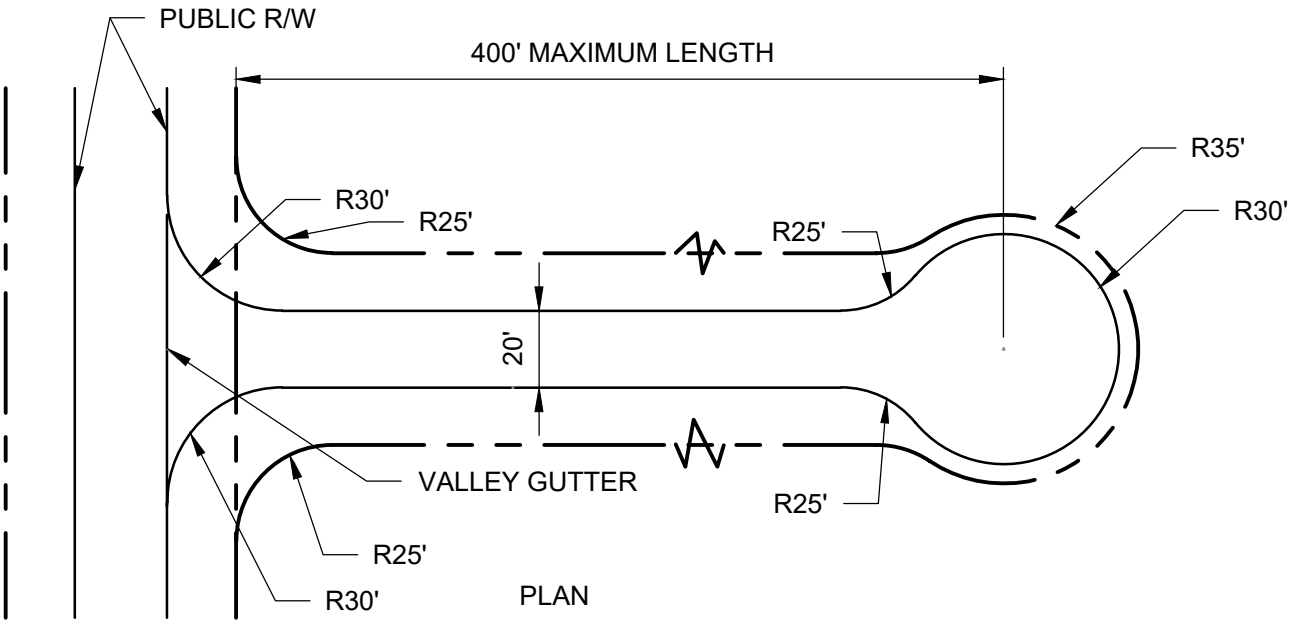


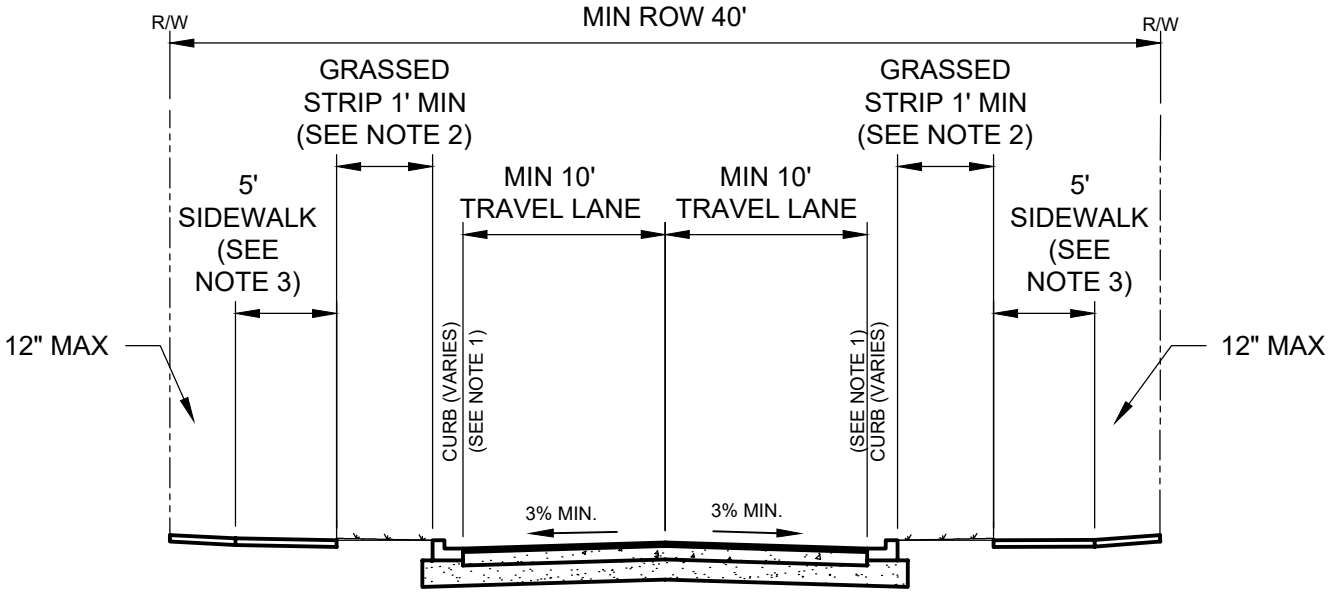
TYPICAL CONC. VALLEY
(MIN. 3500 PSI CONC.)

NOTE:

THAT PORTION OF DRIVEWAY THAT EXTENDS INTO PUBLIC R/W SHALL HAVE 1 1/4" ASPHALTIC CONCRETE ON 6" LIMEROCK BASE/ 12" STABILZED SUBGRADE OR 12" LIMEROCK BASE ON COMPACTED SUBGRADE.

PRIVATE ROAD DRIVEWAY ENTRANCES	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-201
		DATE DRAWN	11-5-81
		REVISED DATE	10-15-97



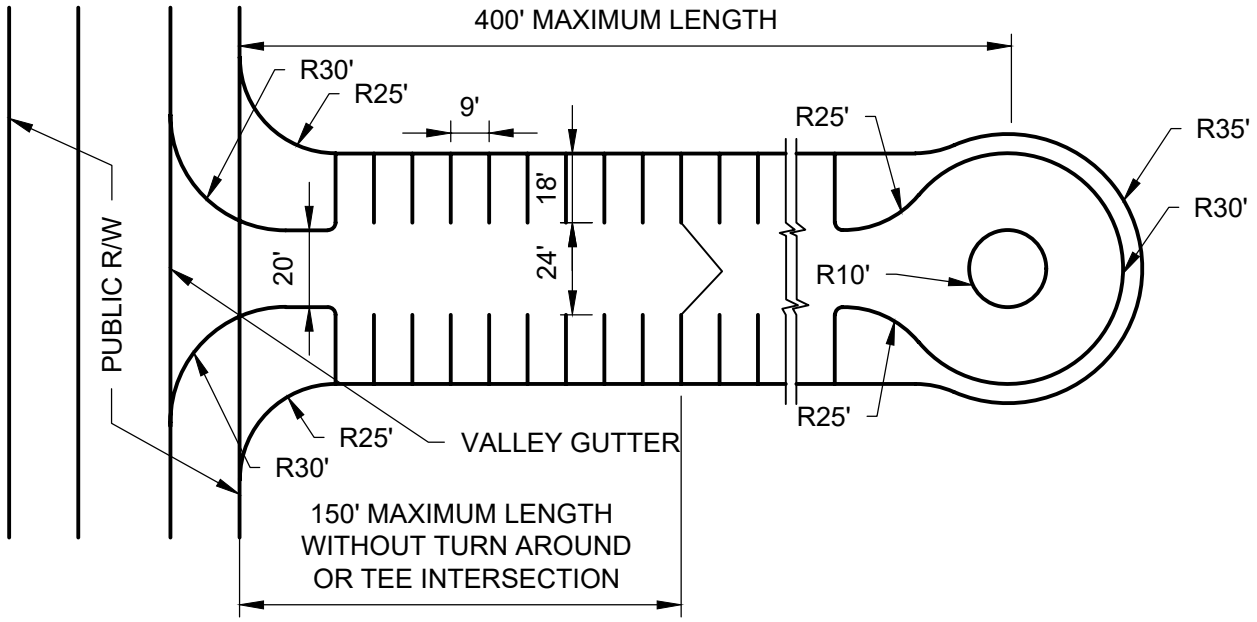


PRIVATE ROADS TYPICAL CROSS SECTION

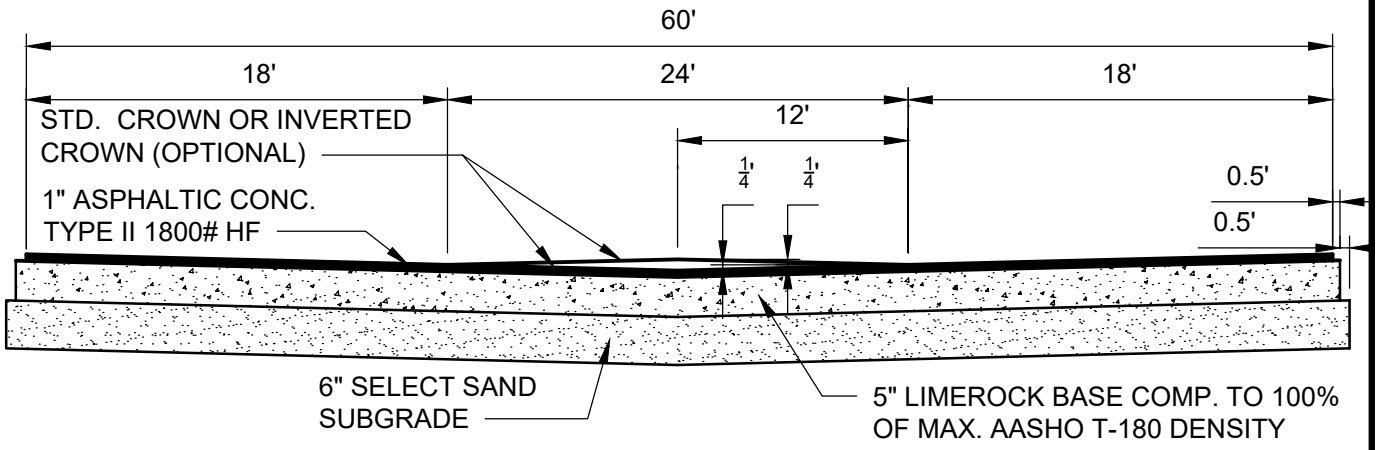
NOTES:

1. CITY STANDARD CURB & GUTTER OR RIBBON CURB IS REQUIRED ON ALL PRIVATE ROADS.
2. GRASSED STRIP IS REQUIRED ON BOTH SIDES FROM BACK OF CURB TO SIDEWALK.1 FT MIN GRASSED STRIP IS REQUIRED WITH STANDARD CURB AND GUTTER. 2FT MIN GRASSED STRIP IS REQUIRED FOR RIBBON CURB. GRASSED STRIPS LESS THAN 5 FT MAY NOT INCLUDE TREES.
3. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, TABLE 2.2-1 FOR SIDEWALK DESIGN REQUIREMENTS. SIDEWALKS MUST START WITHIN 12" OF THE ROW LINE.
4. SEE LAND DEVELOPMENT PROCEDURES MANUAL, VOLUME 2, SECTION 2.3 FOR PAVEMENT DESIGN REQUIREMENTS.
5. STANDARD ROADWAY CROWN MAY BE REPLACED WITH AN INVERTED CROWN WITH A 3% CROSS SLOPE TOWARD THE ROADWAY CENTER AND VALLEY GUTTER TO CONNECT TO PUBLIC ROADWAY DRAINAGE.

PRIVATE ROAD	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-202
		DATE DRAWN	5-10-89
		REVISED DATE	11-20-25



PLAN

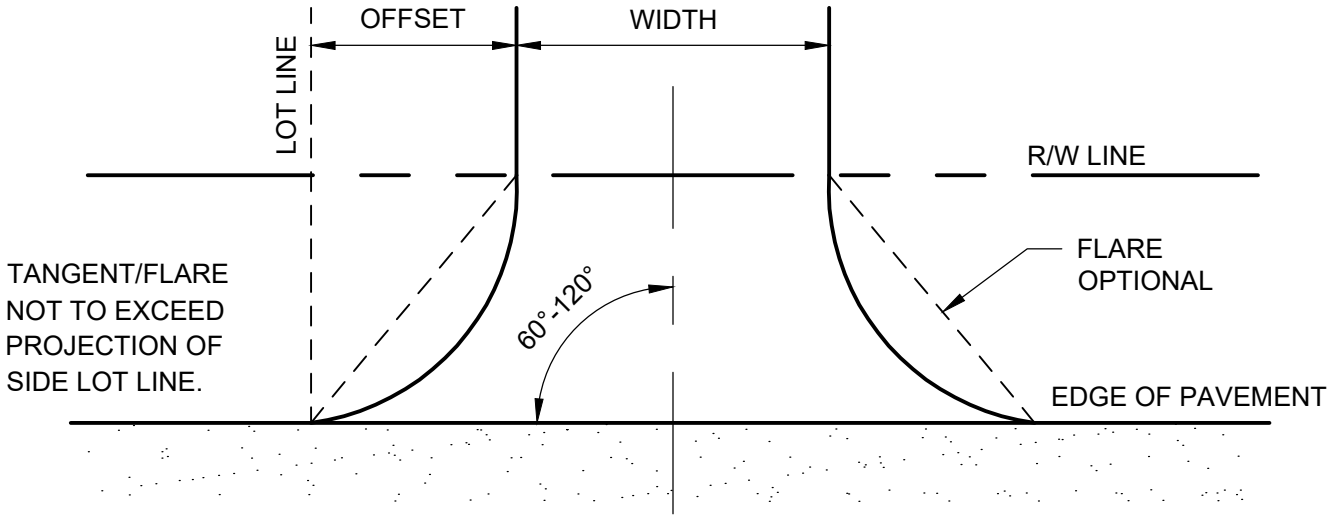


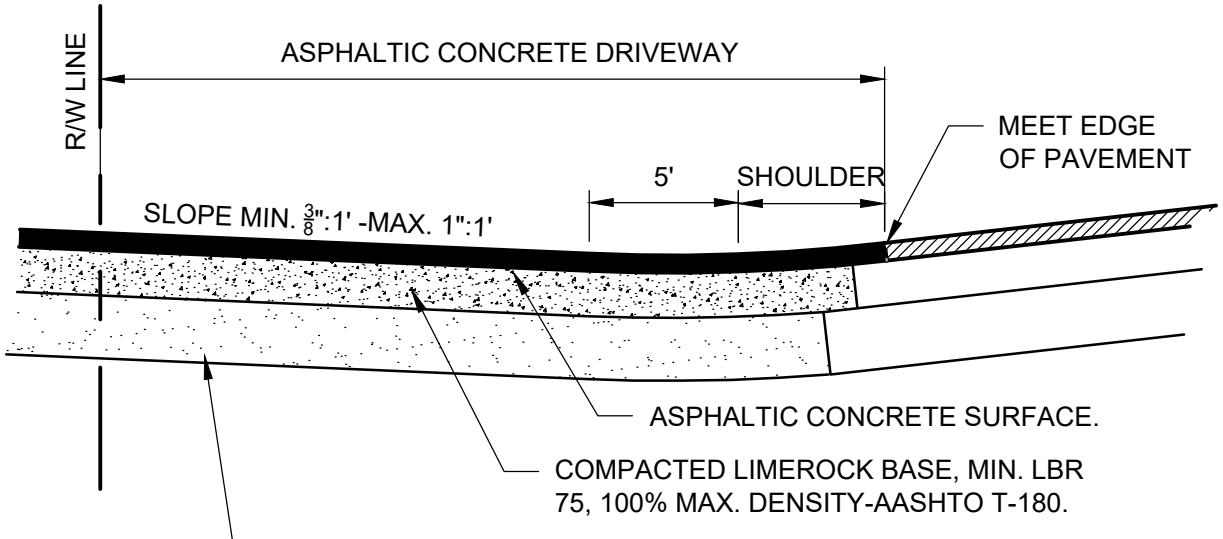
PRIVATE DRIVES ONLY TYPICAL CROSS SECTION

NOTES:

1. THAT PORTION OF DRIVEWAY THAT EXTENDS INTO PUBLIC R/W SHALL HAVE 1 1/4" ASPHALTIC CONCRETE ON 6" LIMEROCK BASE/ 12" STABILIZED SUBGRADE OR 12" LIMEROCK BASE ON COMPACTED SUBGRADE.
2. SUCH DRIVES ARE SPECIFICALLY PROHIBITED FROM BEING DEDICATED TO THE CITY OF JACKSONVILLE FOR MAINTENANCE.
3. THIS SECTION (PRIVATE DRIVE) IS FOR USE ONLY WITHIN PLANNED UNIT DEVELOPMENTS WHERE SUCH REZONING SPECIFICALLY PROVIDES FOR ITS USE. PAVEMENTS ARE TO BE OWNED BY AN UNDIVIDED, PROPORTIONATE SHARE INTEREST OF CONTIGUOUS PROPERTY OWNERS.

PRIVATE DRIVE WITH PARKING	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-203
		DATE DRAWN	05-24-89
		REVISED DATE	12-06-24



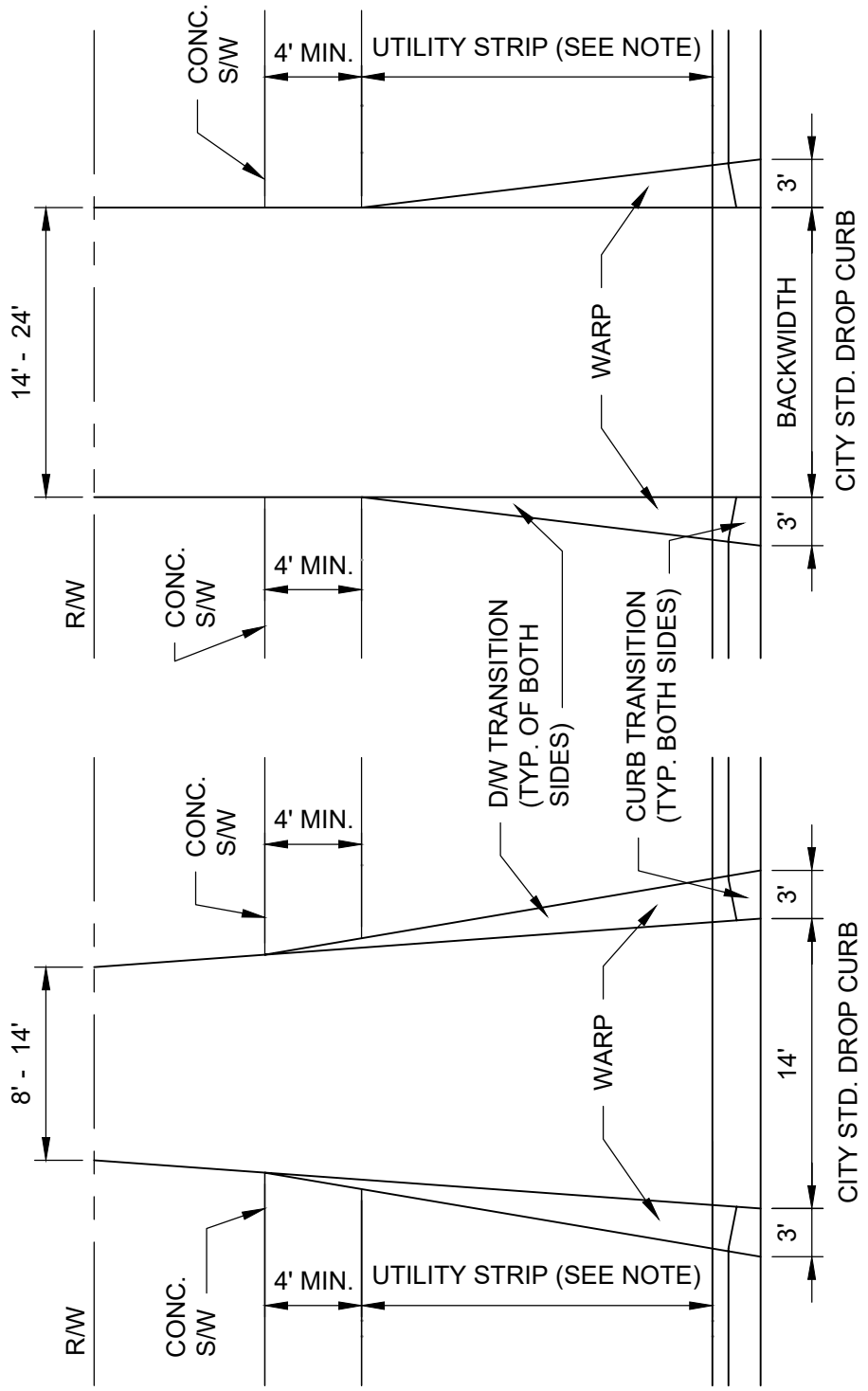


NOTES:

1. ALL DRIVEWAYS CONSTRUCTED WITHIN CITY MAINTAINED RIGHT-OF-WAYS SHALL CONFORM TO CITY STANDARDS. A PERMIT MUST BE ISSUED BY THE DEPARTMENT OF PUBLIC WORKS FOR ALL SUCH WORK.
2. ALL MATERIALS SHALL CONFORM TO CITY STANDARDS.
3. ALL DRIVEWAYS CONSTRUCTED WITHIN STATE MAINTAINED RIGHT-OF-WAYS SHALL CONFORM TO D.O.T. STANDARDS.

DRIVEWAY TYPE	MIN. WIDTH	MAX. WIDTH	PAVEMENT OPTION #1			PAVEMENT OPTION #2			MIN. RADIUS	MIN. OFFSET	OPTIONAL FLARE
			ASPHALT	LIME ROCK	STABILIZED SUB-BASE	ASPHALT	LIME ROCK	STABILIZED SUB-BASE			
CLASS I RESIDENTIAL	8'	24'	1 1/4"	6"	6"	1 1/4"	8"	4"	3'	3'	3'
CLASS II COMMERCIAL	24'	36'	1 1/4"	6"	12"	1 1/4"	8"	6"	30'	30'	7'
CLASS III HIGH VOLUME	24'	36'	1 1/4"	8"	12"	1 1/4"	12"	12"	30'	30'	N/A

STANDARD ASPHALTIC CONCRETE DRIVEWAY	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-204
		DATE DRAWN	11-19-81
		REVISED DATE	12-06-24



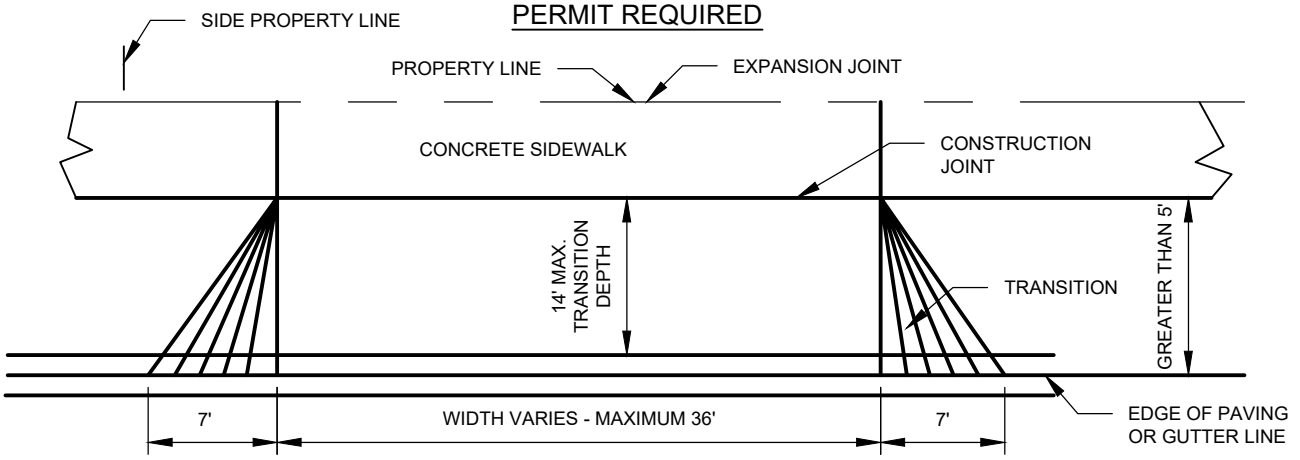
NOTE:

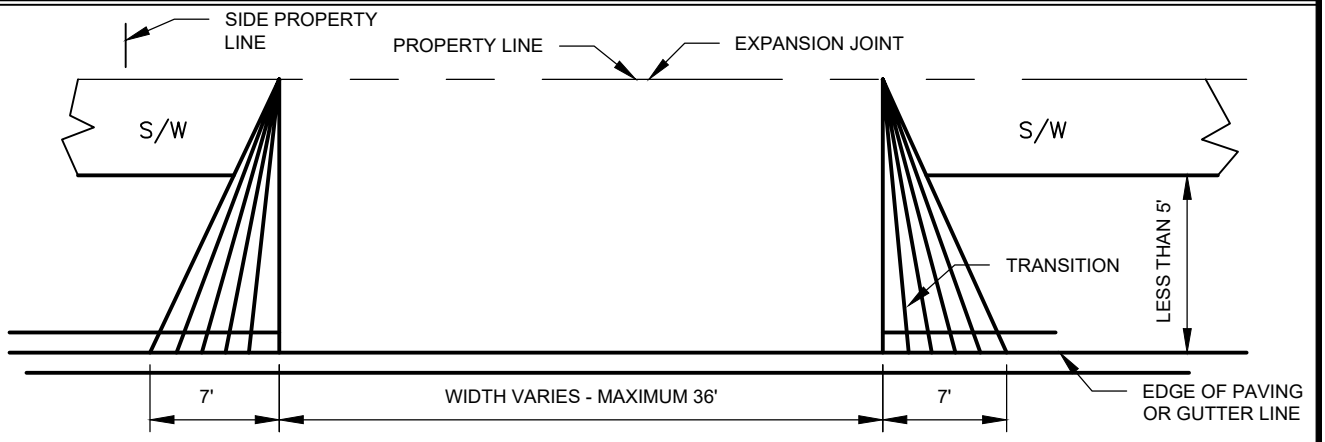
WHERE UTILITY STRIP IS LESS THAN 5', D/W TRANS. TO MEET BACK OF S/W. WHERE UTILITY STRIP IS 5' OR GREATER, D/W TRANS. TO MEET FRONT OF S/W.

STANDARD & OPTIONAL FLARED CONCRETE DRIVEWAY DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-205
		DATE DRAWN	10-10-97
		REVISED DATE	12-06-24

STANDARD DRIVEWAY CONSTRUCTION ENGINEERING DIVISION -
CITY OF JACKSONVILLE, FLORIDA

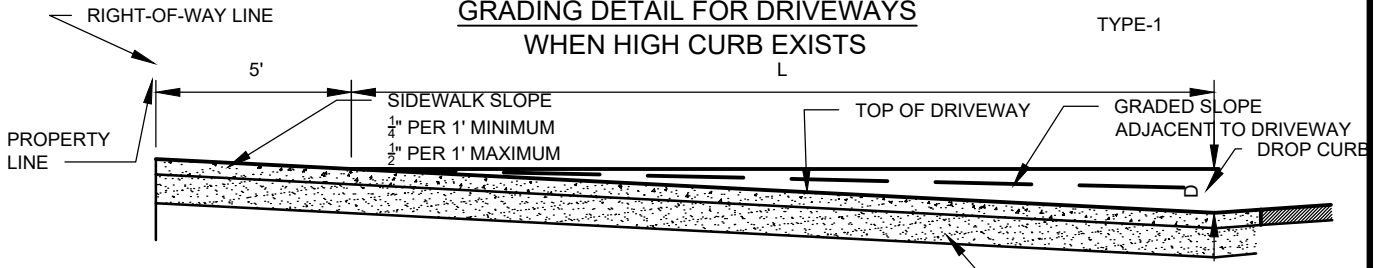
PERMIT REQUIRED





GRADING DETAIL FOR DRIVEWAYS WHEN HIGH CURB EXISTS

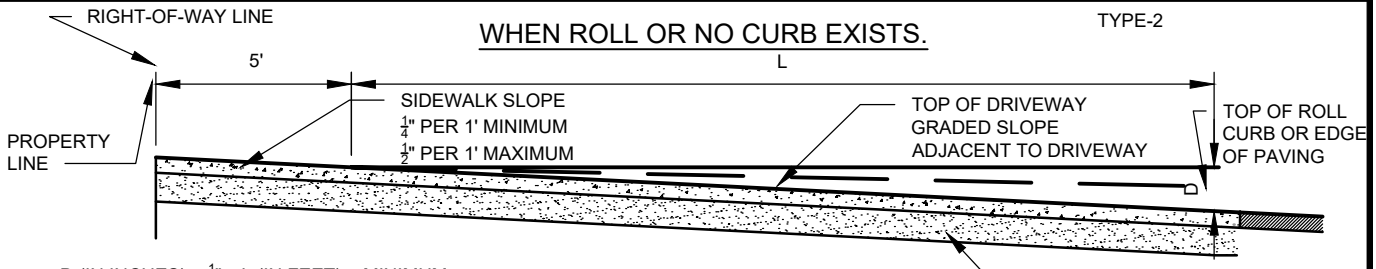
TYPE-1



D (IN INCHES) = 5" PLUS $\frac{1}{4}$" x L (IN FEET) = MINIMUM
D (IN INCHES) = 5" PLUS $\frac{3}{4}$" x L (IN FEET) = MAXIMUM

WHEN ROLL OR NO CURB EXISTS.

TYPE-2

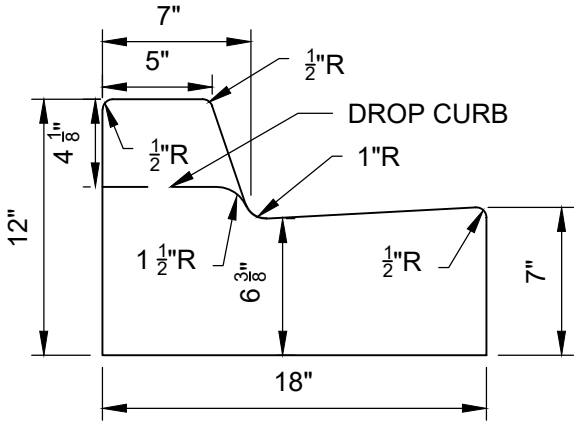


D (IN INCHES) = $\frac{1}{4}$" x L (IN FEET) = MINIMUM
D (IN INCHES) = 5" PLUS $\frac{3}{4}$" x L (IN FEET) = MAXIMUM

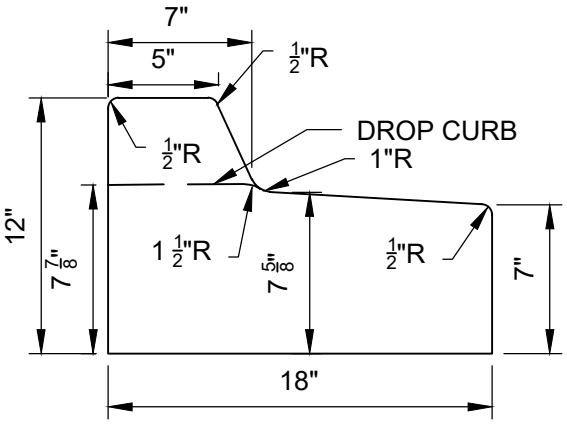
NOTE:

MOST DRIVEWAY GRADES CAN BE MADE TO FIT THE ABOVE STANDARDS. DRIVEWAYS AND CROSS-OVERS TO BE A MINIMUM OF 2500 P.S.I. CONCRETE. DRIVEWAY NOT TO EXCEED LIMIT OF SIDE PROPERTY LINE. UNDERGROUND UTILITIES MAY EXIST ON SITE. CONTACTOR SHALL CONTACT PROPER AUTHORITIES PRIOR TO CONSTRUCTION.

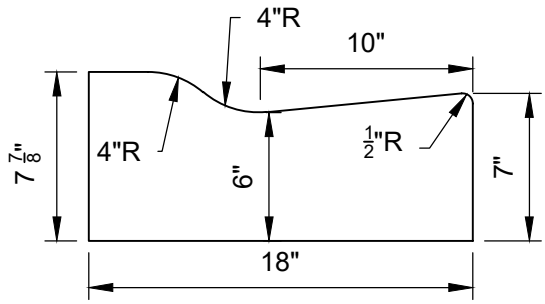
OPTIONAL FLARED COMMERCIAL CONCRETE DRIVEWAY DETAILS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-206
		DATE DRAWN	JULY 1978
		REVISED DATE	12-06-24



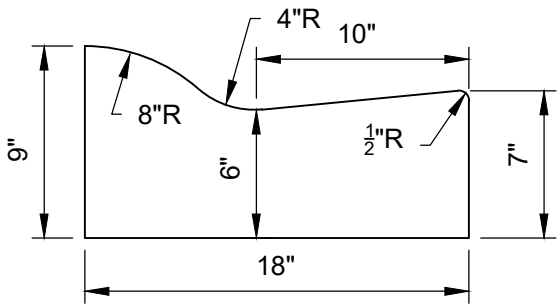
CITY STANDARD



MEDIAN CURB

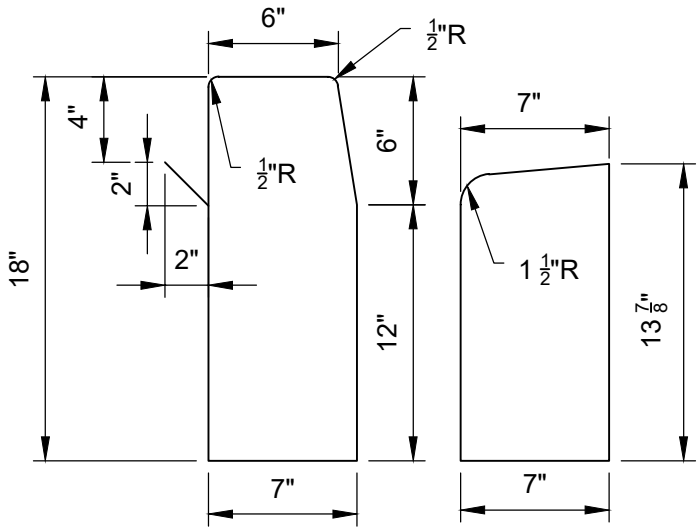


DROP CURB



MIAMI CURB

MONOLITHIC
CURB & SIDEWALK

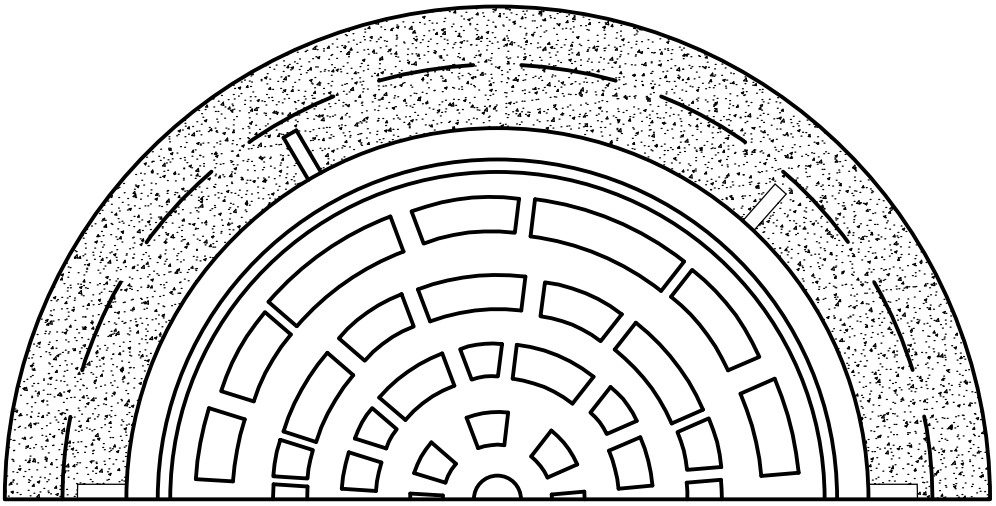


HEADER, DROP, &
MONOLITHIC CURB

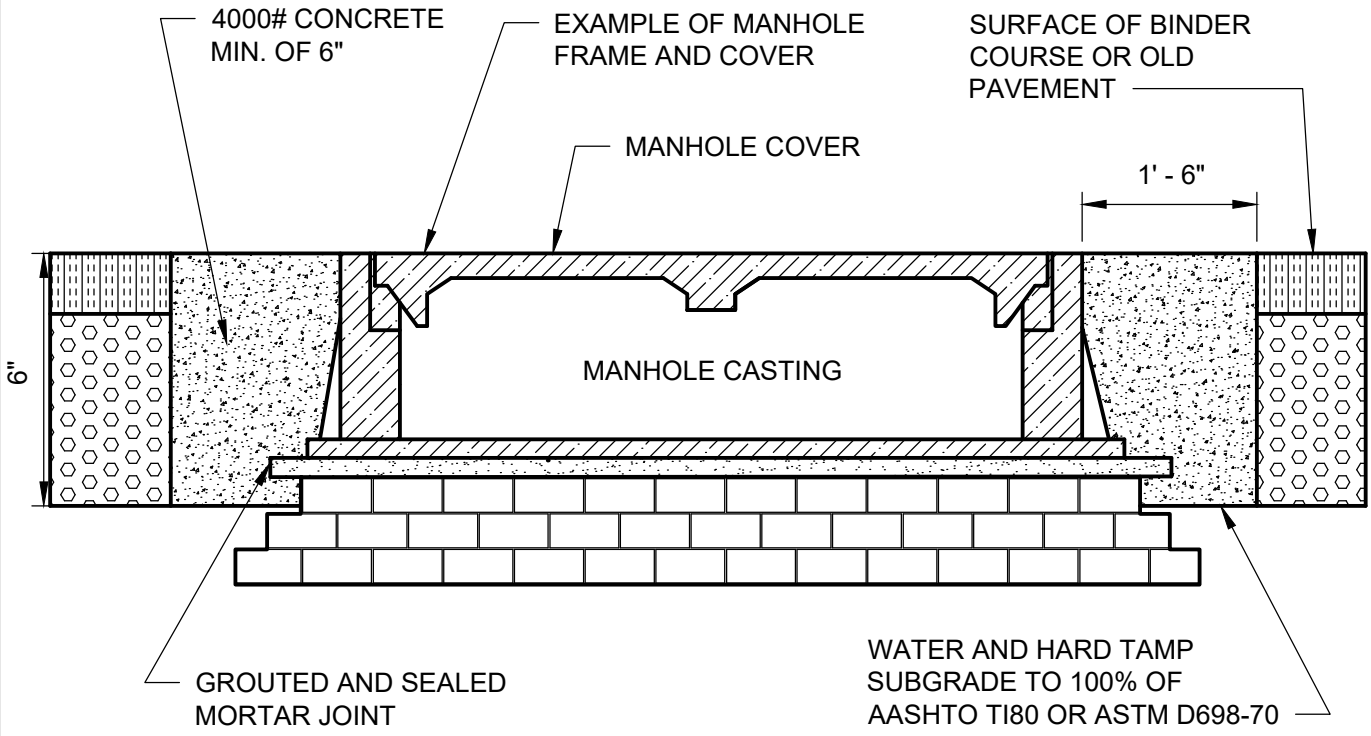
CONCRETE QUANTITIES

CITY STANDARD CURB	.0388889	CU. YD./LIN. FT.
STANDARD DROP CURB	.0322222	CU. YD./LIN. FT.
MEDIAN CURB	.0411111	CU. YD./LIN. FT.
MIAMI CURB	.0325926	CU. YD./LIN. FT.
HEADER CURB	.0314815	CU. YD./LIN. FT.
HEADER DROP CURB	.0244444	CU. YD./LIN. FT.

CITY STANDARD CURB TEMPLATES	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-301
		DATE DRAWN	11-07-72
		REVISED DATE	12-06-24



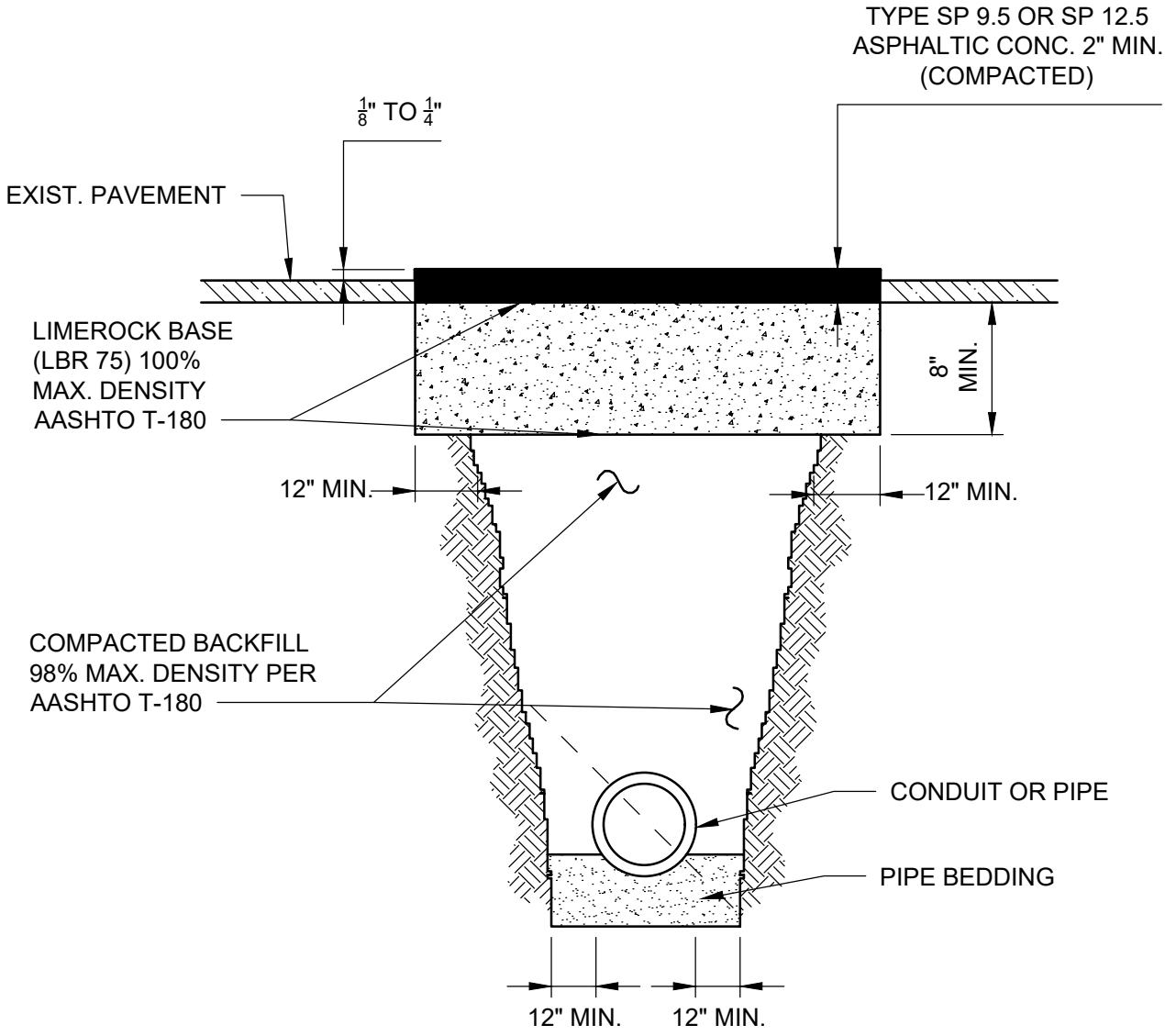
HALF SECTION



MANHOLE ADJUSTMENT DETAILS

STANDARD PAVING MANHOLE ADJUSTMENT DETAILS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-401
		DATE DRAWN	10-30-73
		REVISED DATE	12-06-24

CASE I

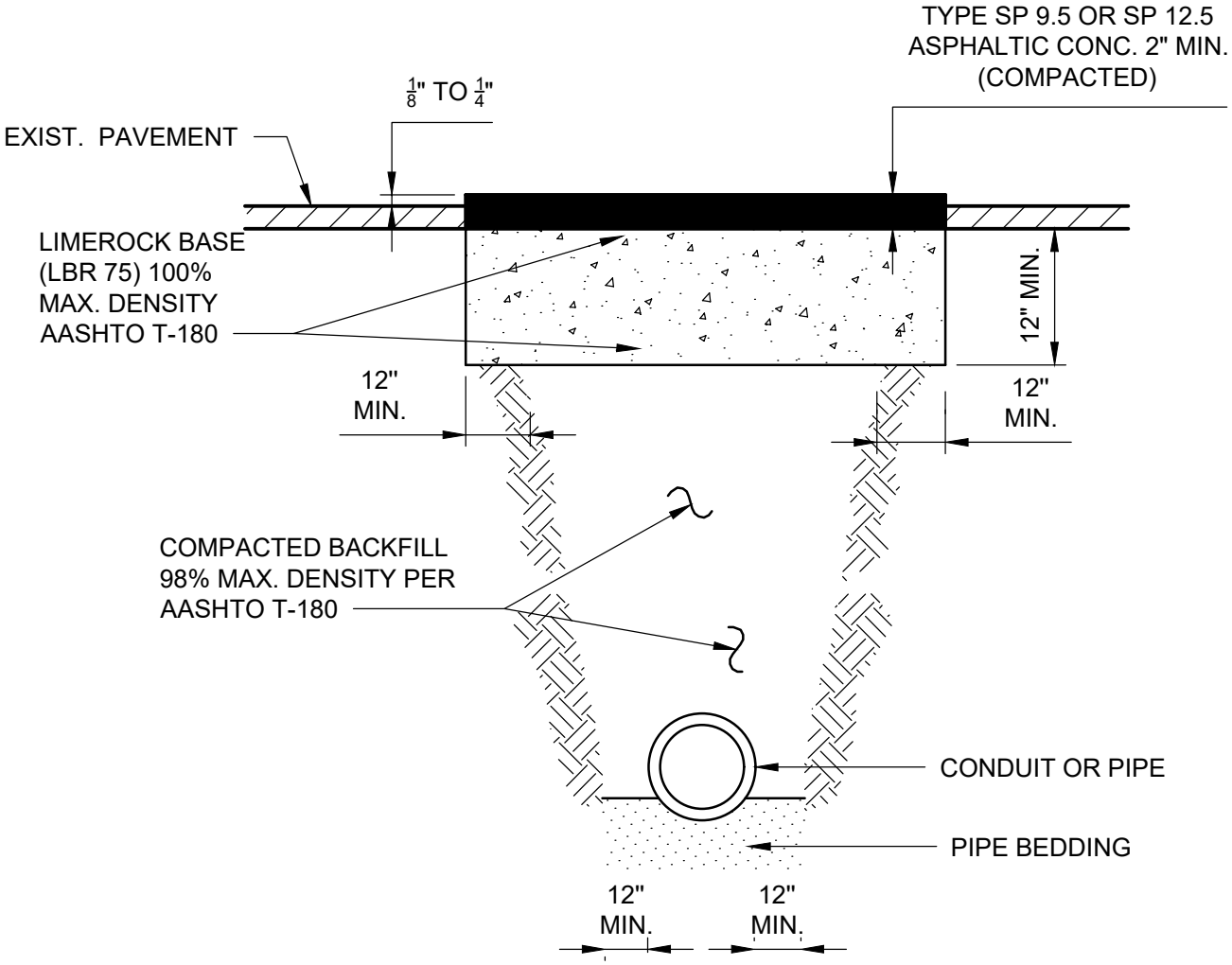


NOTE:

METHOD AND MATERIALS OF REPAIR SUBJECT TO CITY OF JACKSONVILLE CONSTRUCTION REQUIREMENTS FOR NEW FLEXIBLE PAVEMENT.

CASE I STANDARD PAVING REPAIR DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-402
		DATE DRAWN	DEC.,1971
		REVISED DATE	12-06-24

CASE II

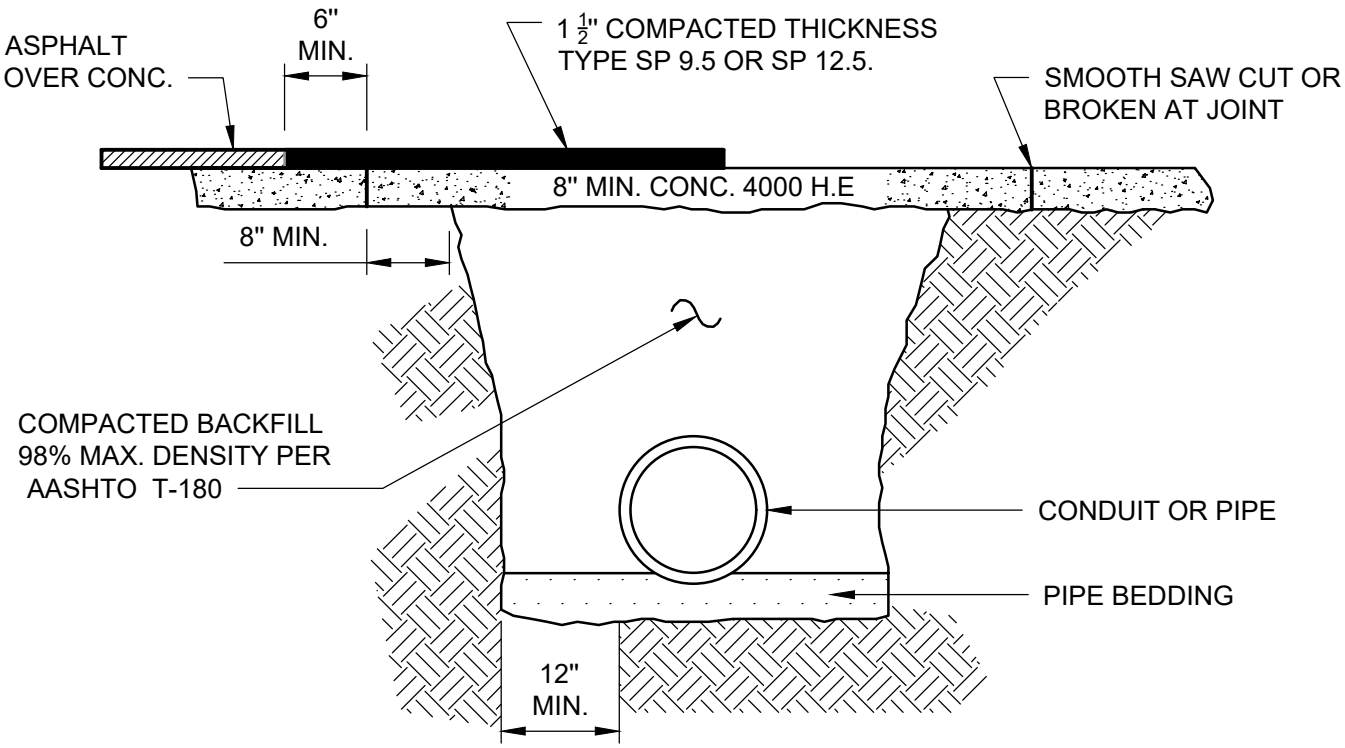


NOTE:

METHOD AND MATERIALS OF REPAIR SUBJECT TO CITY OF JACKSONVILLE CONSTRUCTION REQUIREMENTS FOR NEW FLEXIBLE PAVEMENT.

CASE II STANDARD PAVING REPAIR DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-403
		DATE DRAWN	DEC.,1971
		REVISED DATE	12-06-24

CASE III

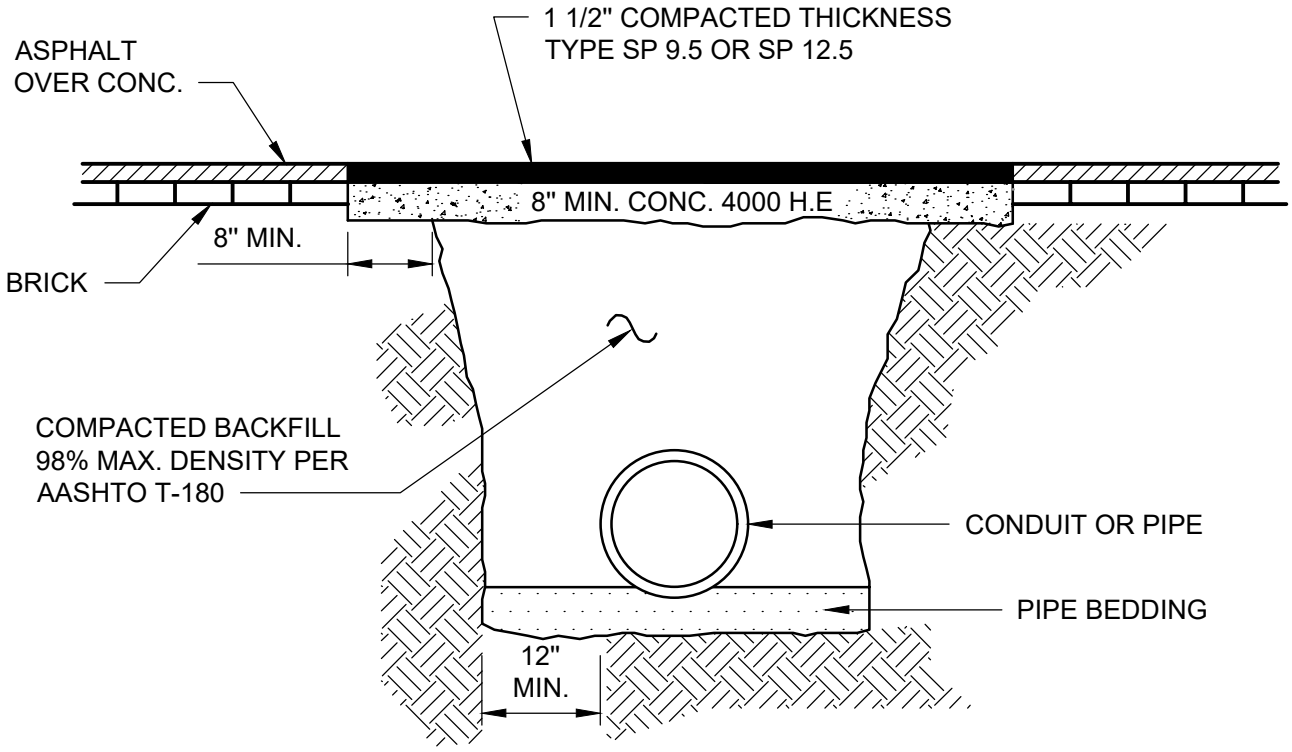


NOTE:

METHOD AND MATERIALS OF REPAIR SUBJECT TO CITY OF JACKSONVILLE CONSTRUCTION REQUIREMENTS FOR NEW FLEXIBLE PAVEMENT.

CASE III STANDARD PAVING REPAIR DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-404
		DATE DRAWN	4/80
		REVISED DATE	12-06-24

CASE IV



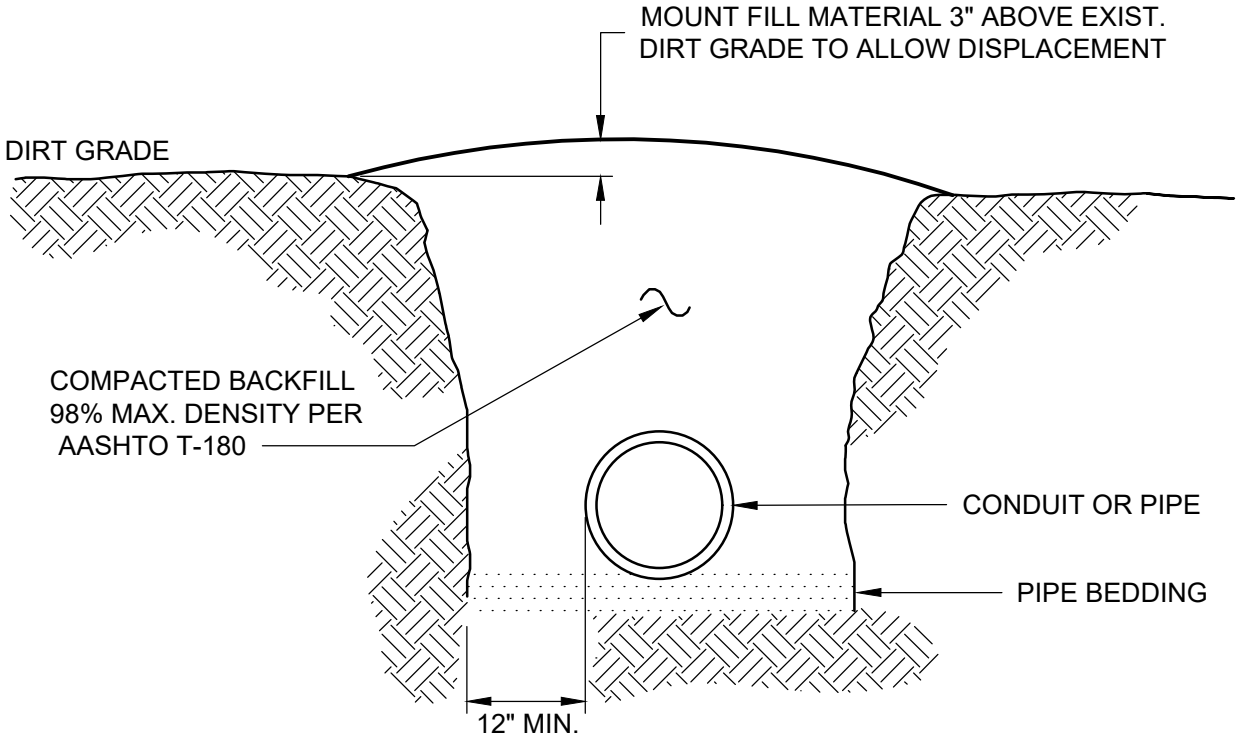
NOTE:

METHOD AND MATERIALS OF REPAIR SUBJECT TO CITY OF JACKSONVILLE CONSTRUCTION REQUIREMENTS FOR NEW FLEXIBLE PAVEMENT.

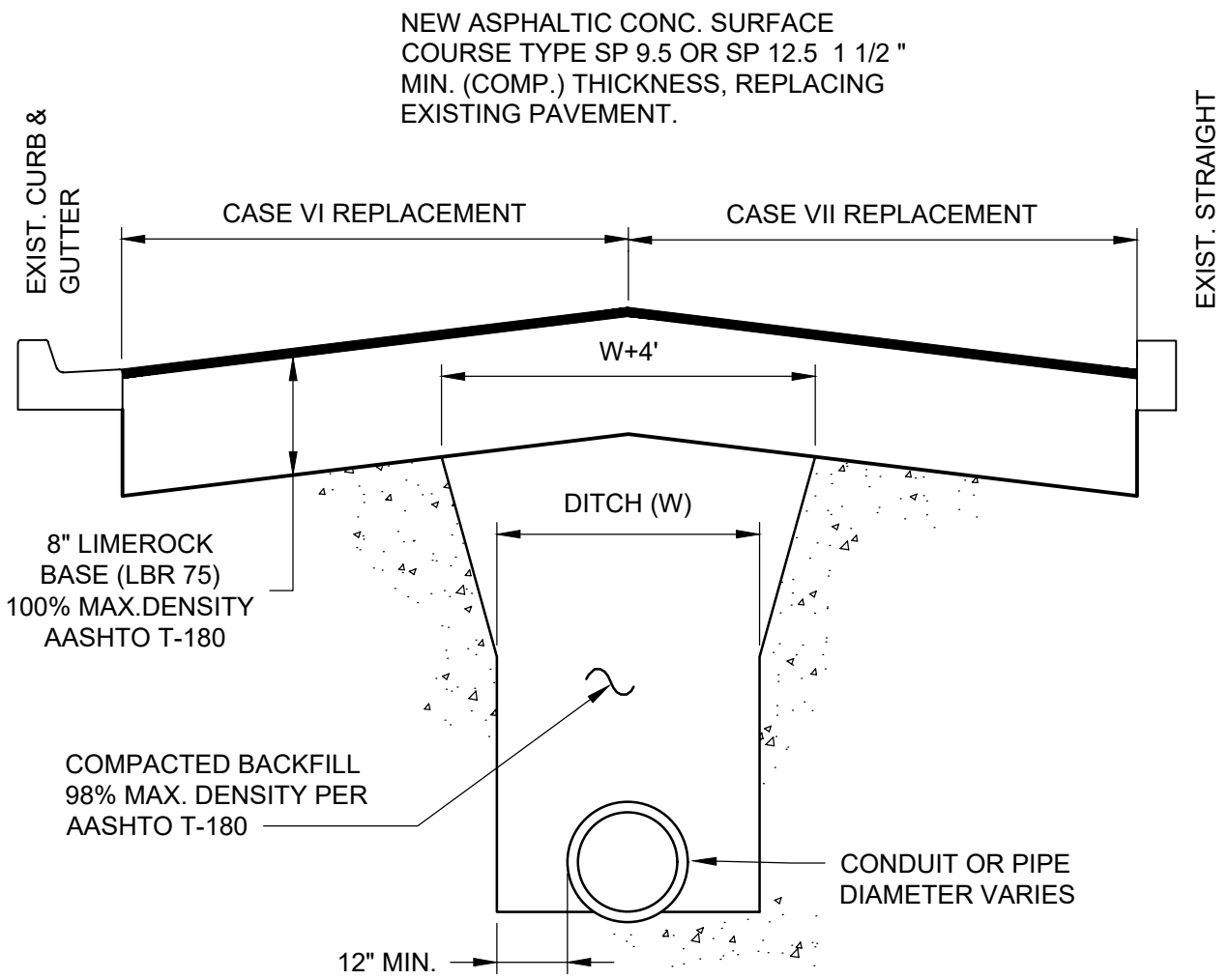
CASE IV STANDARD PAVING REPAIR DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-405
		DATE DRAWN	5/80
		REVISED DATE	12-06-24

CASE V

UNPAVED ROADS



CASE V UNPAVED ROADWAY REPAIR DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-406
		DATE DRAWN	4/80
		REVISED DATE	12-06-24



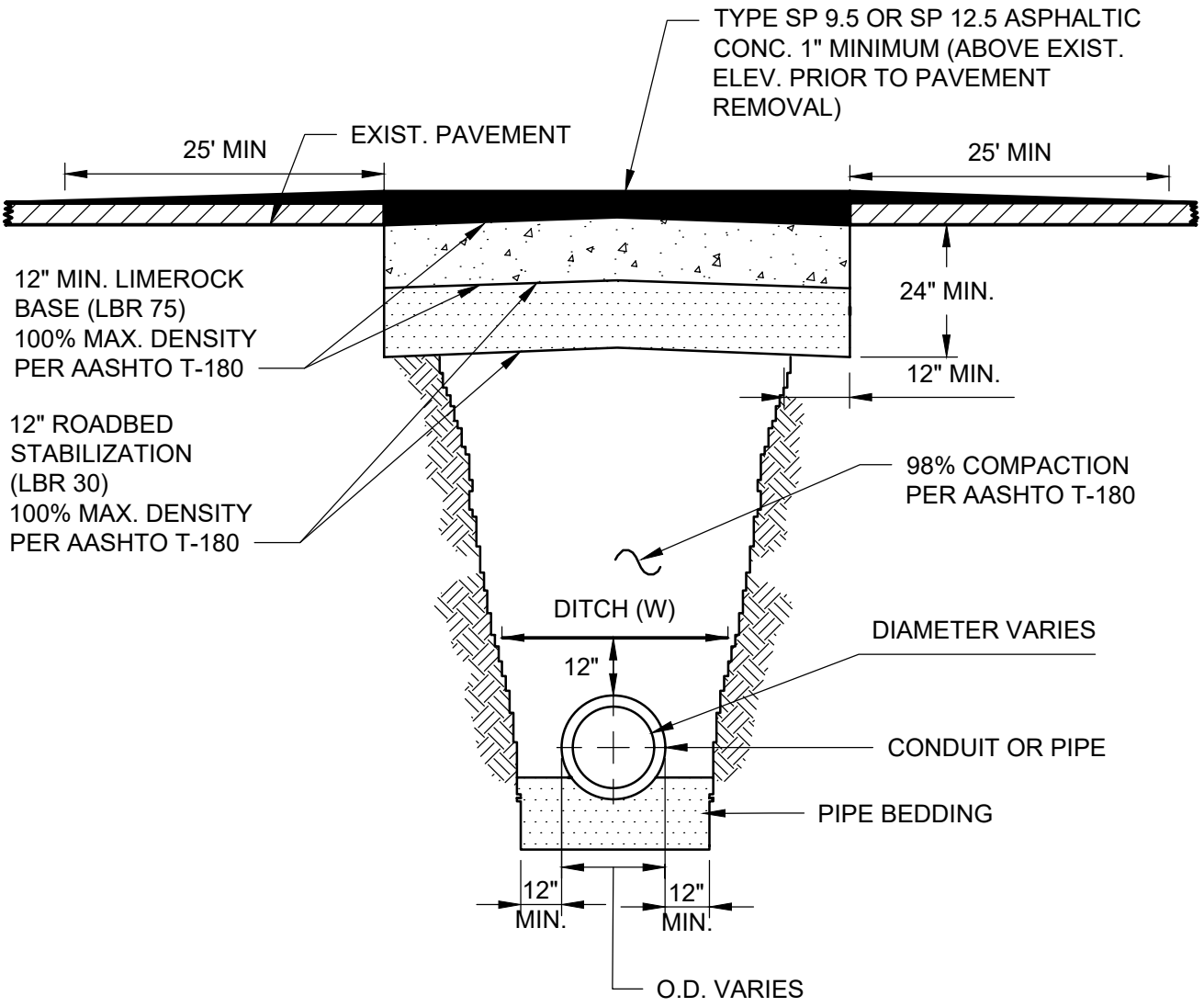
CASE VI, VII, & VIII PAVEMENT REPLACEMENT

NOTES:

1. CASE VI-A THRU VIII-A REPLACEMENT SHALL REQUIRE 2" SP 9.5 OR SP 12.5 ASPHALT SURFACE COURSE, 12" LIMEROCK (LBR 75).
2. BASE MATERIAL SHALL BE PLACED IN TWO LAYERS & EACH LAYER THOROUGHLY ROLLED OR TAMPED TO MAXIMUM DENSITY.
3. EXISTING PAVEMENT SHALL BE MECHANICALLY SAWED.
4. IN THE ABSENCE OF STRAIGHT FACED CURB OR CURB & GUTTER, THE 1 1/2" OR 2" SURFACE COURSE SHALL BE EXTENDED TO THE EDGE OF THE EXIST. PAVEMENT REMOVED (CASE VIII & VIIIA REPLACEMENT).
5. METHODS, MATERIALS, & REPAIR FOR STATE HIGHWAYS SHALL BE IN FULL COMPLIANCE WITH THE TERMS OF THE FLORIDA UTILITY PERMIT OBTAINED.
6. BACKFILL ABOVE 12" OVER TOP OF PIPE TO BE PLACED IN LAYERS NOT TO EXCEED A COMPACTED THICKNESS OF 6" WITHIN F.D.O.T. & FEDERAL R/W'S & 12" LOOSE WITHIN CITY R/W'S THEN COMPACTED.

CASE VI & VII STANDARD PAVING REPAIR DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-407
		DATE DRAWN	4/80
		REVISED DATE	12-06-24

CASE IX



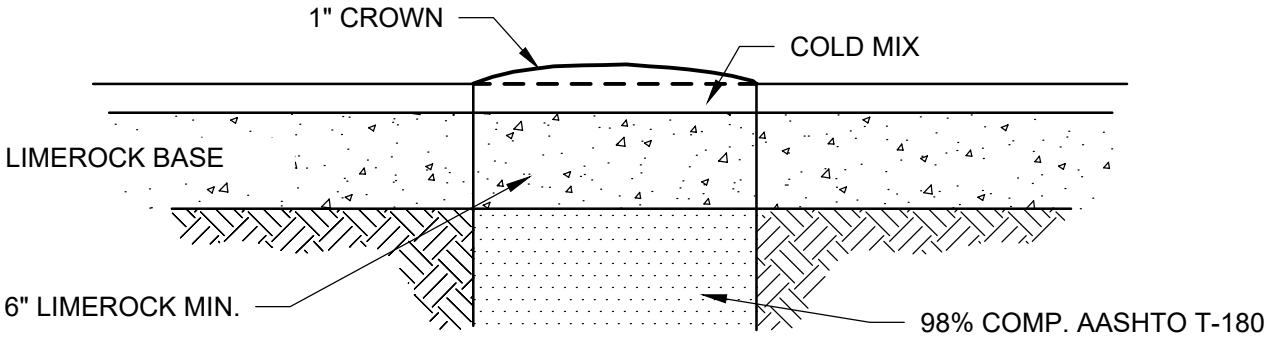
PAVEMENT REPLACEMENT

NOTE:

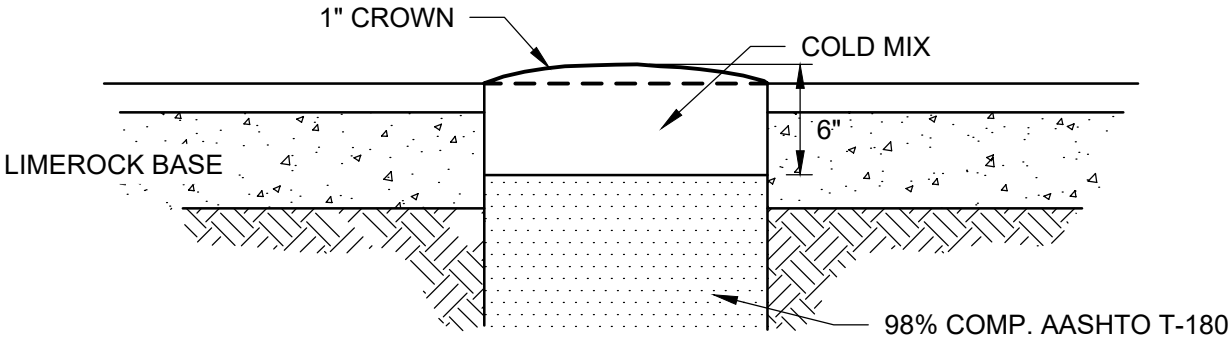
EXISTING PAVEMENT SHOULD BE MILLED PRIOR TO OVERLAY

CASE IX STANDARD PAVING REPAIR DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-408
		DATE DRAWN	04-80
		REVISED DATE	11-20-25

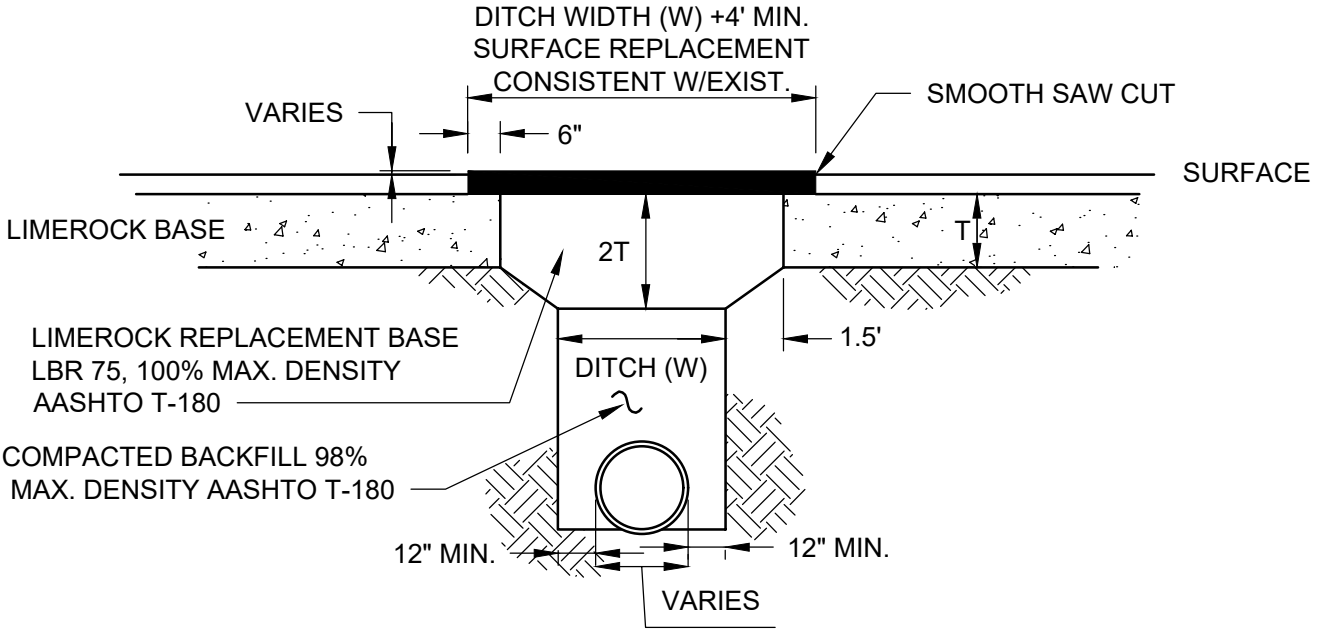
CASE X



TEMPORARY TYPE I REPAIR



TEMPORARY TYPE II REPAIR

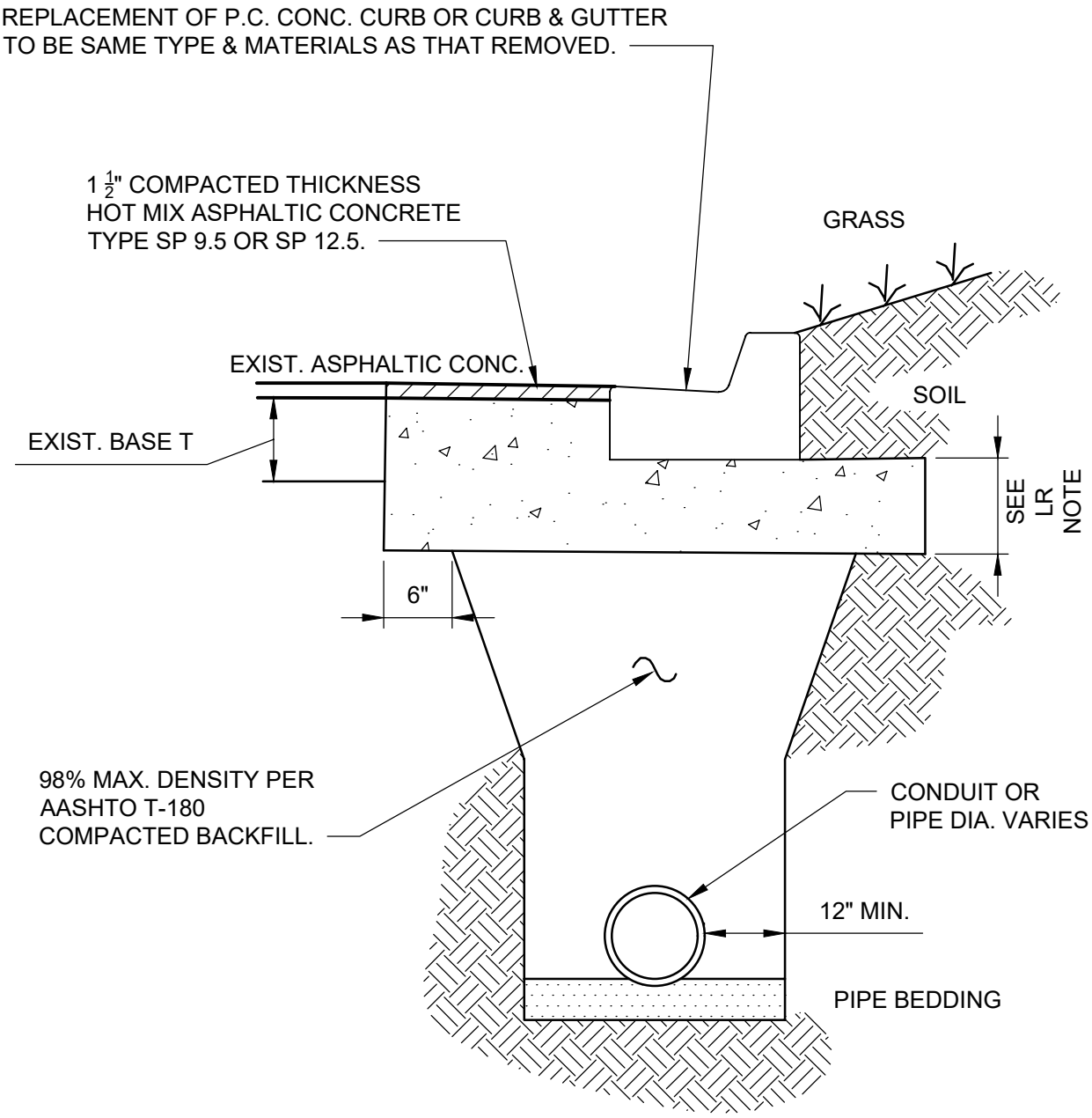


PERMANENT REPAIR

NOTE: IN SOME CASES PORTLAND CEMENT CONCRETE MAY BE CONSIDERED OR REQUIRED BY CITY ENGINEER FOR SURFACE REPLACEMENT.

CASE X STANDARD PAVING REPAIR DETAILS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-409
		DATE DRAWN	07-06-73
		REVISED DATE	12-06-24

CASE XI

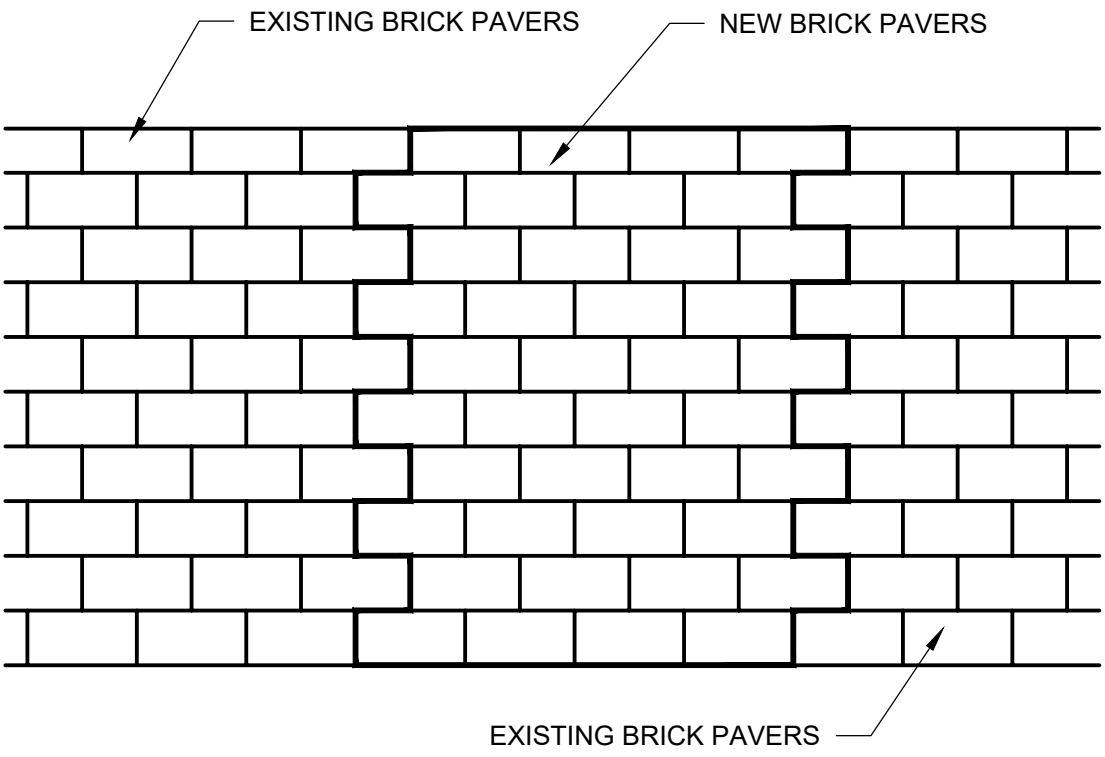


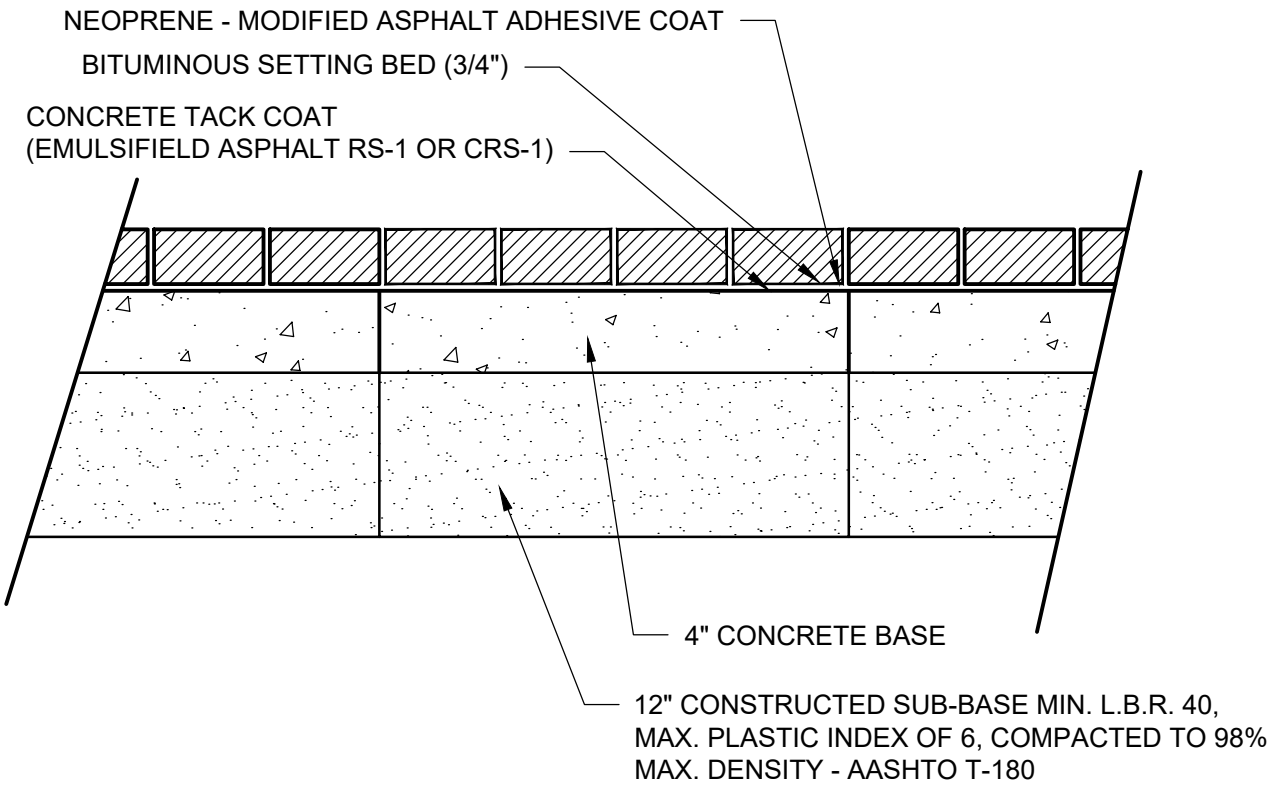
NOTES:

1. 6" MIN. OR EQUAL TO "T"≥ 6" LIMEROCK BASE (LBR 75).
2. 100% MAX. DENSITY AASHTO T-180

CASE XI STANDARD PAVING REPAIR DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-410
		DATE DRAWN	1980
		REVISED DATE	12-06-24

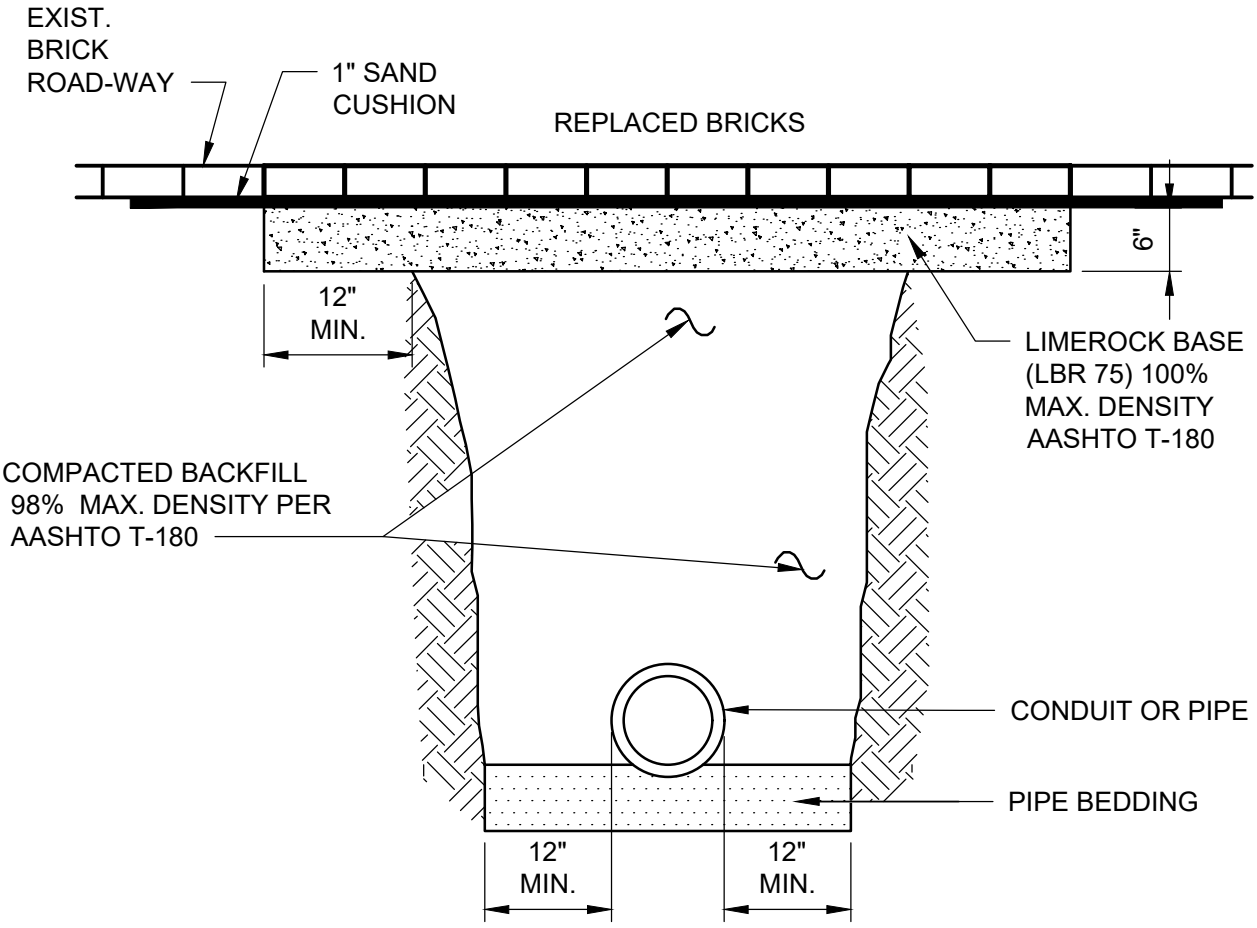
CASE XII





CASE XII STANDARD BRICK STREET REPAIR DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-411
		DATE DRAWN	05-20-92
		REVISED DATE	12-06-24

CASE XIII



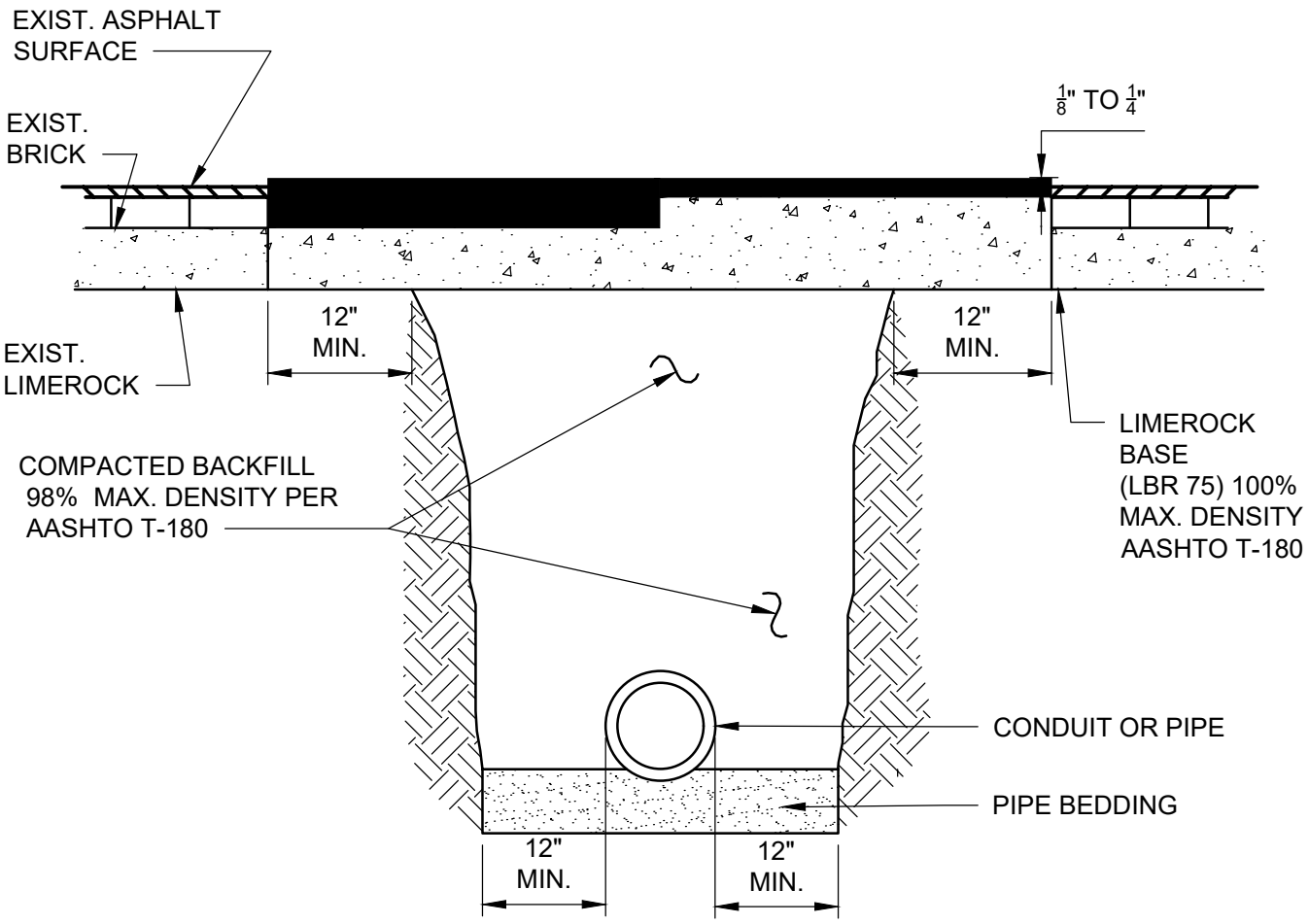
NOTE:

ALL BRICKS ARE TO BE REUSED IN EXCAVATED AREA. IF ADDITIONAL BRICKS ARE REQUIRED THEY ARE AVAILABLE IN LIMITED QUANTITIES FROM THE STREETS & DRAINAGE YARD. -Tel. No. 768-4888 - Address: 4767 Moncrief Road

CASE XIII STANDARD BRICK STREET REPAIR DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-412
		DATE DRAWN	05-20-92
		REVISED DATE	12-06-24

CASE XIV

RESTORATION OF THE EXCAVATION SHALL BE WITH EITHER FULL DEPTH ASPHALT OR ADDITIONAL COMPACTED LIMEROCK LEVEL WITH EXIST. BRICKS & 1-1/4" TYPE III ASPHALTIC CONCRETE SURFACE.

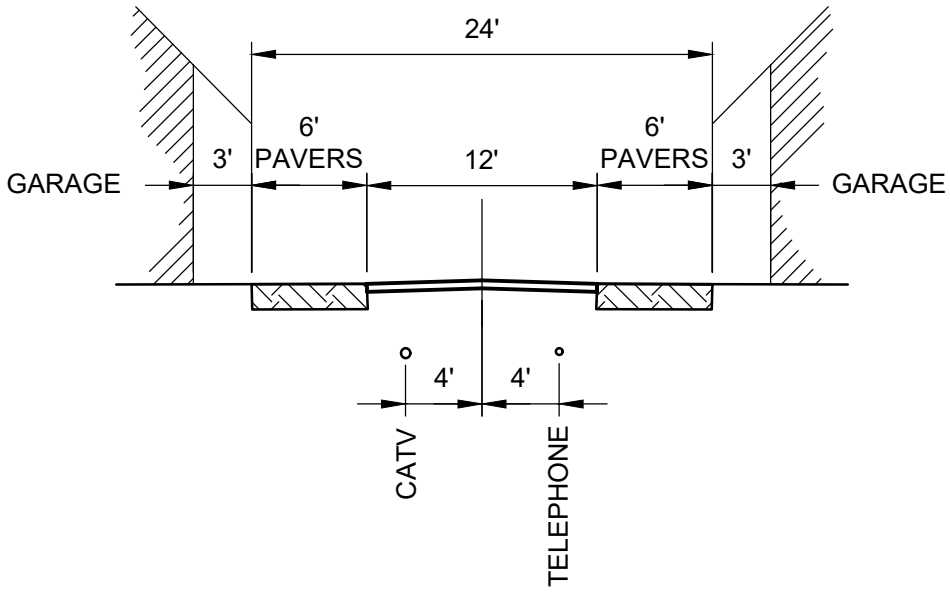


NOTE:

ALL EXIST. BRICKS NOT REUSED SHALL BE DELIVERED TO THE NORTH STREETS & DRAINAGE YARD.

CASE XIV STANDARD BRICK STREET REPAIR DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-413
		DATE DRAWN	DEC.,1971
		REVISED DATE	12-06-24

UTILITY LOCATION GUIDELINES TND ALLEY



DEPTHS AT FINISHED GRADE LOCATIONS:

ELECTRIC: 42"
RECLAIM WATER/GAS/FM/WATER/SEWER: 36"
CATV/TELEPHONE: 18" - 24" MIN.
SEWER SERVICE FROM R/W: 30" - 60" DEEP

TND ALLEY	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-506
		DATE DRAWN	03-12-97
		REVISED DATE	12-06-24

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
DRAINAGE STANDARD SECTION
INDEX

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D-406 Straight Endwall for 60” – 78” Concrete Pipe Culverts
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D-408 Concrete Endwall with 45° Wings for Pipe Culverts
D-409 Concrete Endwall with U-Type Wings for Pipe Culverts
D-410 Flared End Section for Pipe Culverts
D-411 Sand – Cement Rip Rap Endwall
D-412 Concrete Endwall for Multiple 60” – 78” Round Pipes
D-413 Dimensional and Quantitative Data for Multiple 60” – 78” Concrete Pipe Endwalls
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D-905 Drop Inlet Sediment Filter
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D-907 Turbidity Barriers
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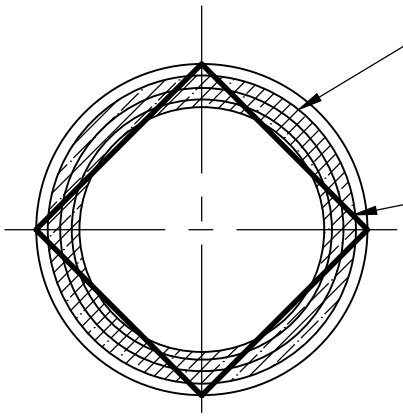
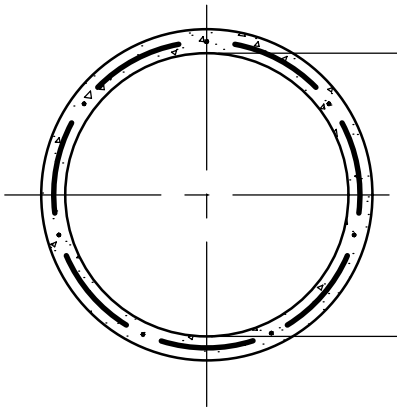
D-909 Construction Details for Silt Fences
D-910 Filter Barrier Construction Detail
D-911 Staked Bale
D-912 Bale Barriers Type I & II
D-913 Bale Barrier Construction Details
D-914 Diversion Dike
D-915 Plant Materials Temporary Seeding
D-916 Seeding Mixtures, Rates and Dates

Series 1000 STORMWATER PONDS
D-1001 Detention Pond Detail Case 1
D-1002 Detention Pond Detail Case 2 & 3
D-1003 Detention Pond Detail Case 4
D-1004 Detention Pond Detail Case 5



COVER



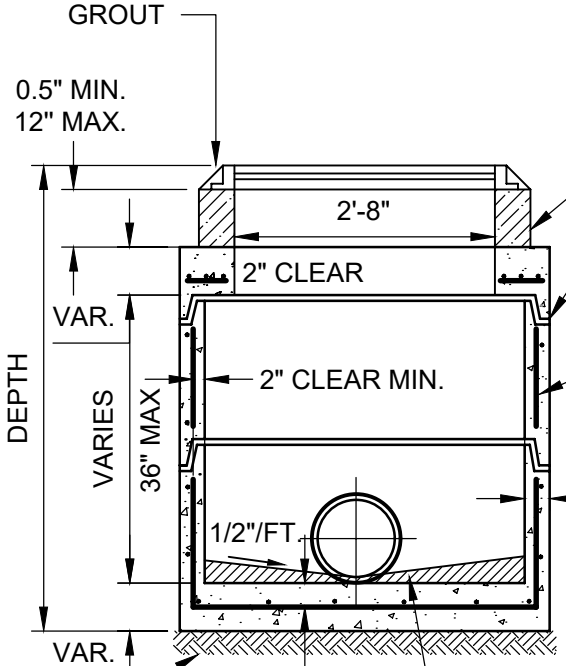
PLAN

SPECIAL SPECIAL

4'-0" J-1	5'-0" J-1-A	6'-0" J-1-B	7'-0" J-1-C	8'-0" J-1-D	9'-0" J-1-E	10'-0" J-1-F

PRECAST IN ACCORDANCE WITH LATEST EDITIONS OF ASTM C 478.

MANHOLE COVER AND FRAME PER CITY OF JAX. STD. PLATE D-301.



PIPE MUST NOT BE IN CONST. JOINT.

BRICK

GROUT, "RAMNEK" OR "O" RING JOINTS WHERE REQ'D.

RISER

MINIMUM WALL THICKNESS SHALL BE ONE TWELFTH OF THE DIAM. PLUS 1 INCH OF THE RISER, WITH A MINIMUM WALL THICKNESS OF 5".

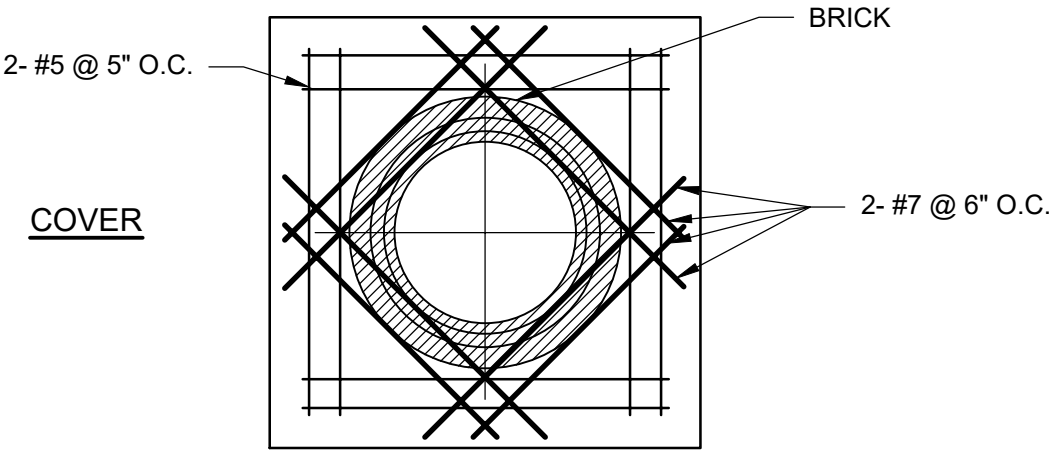
PIPES SHALL BE FLUSH WITH INSIDE WALL.

MIN. BEARING CAP 3000 P.S.F.

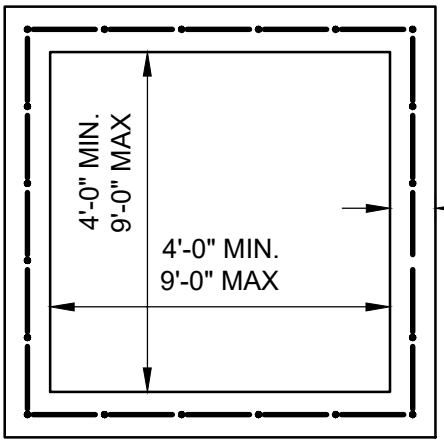
GROUT (3:1) SAND-CEMENT MIXTURE OF ANY CLASS CONCRETE.

NOTE: FOR ADDITIONAL STRUCTURAL DETAILS REFER TO PLATE D-110.

STORMWATER TYPE J-1 THRU J-1-F MANHOLE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-101
		DATE DRAWN	AUG. 1979
		REVISED DATE	7-2-24

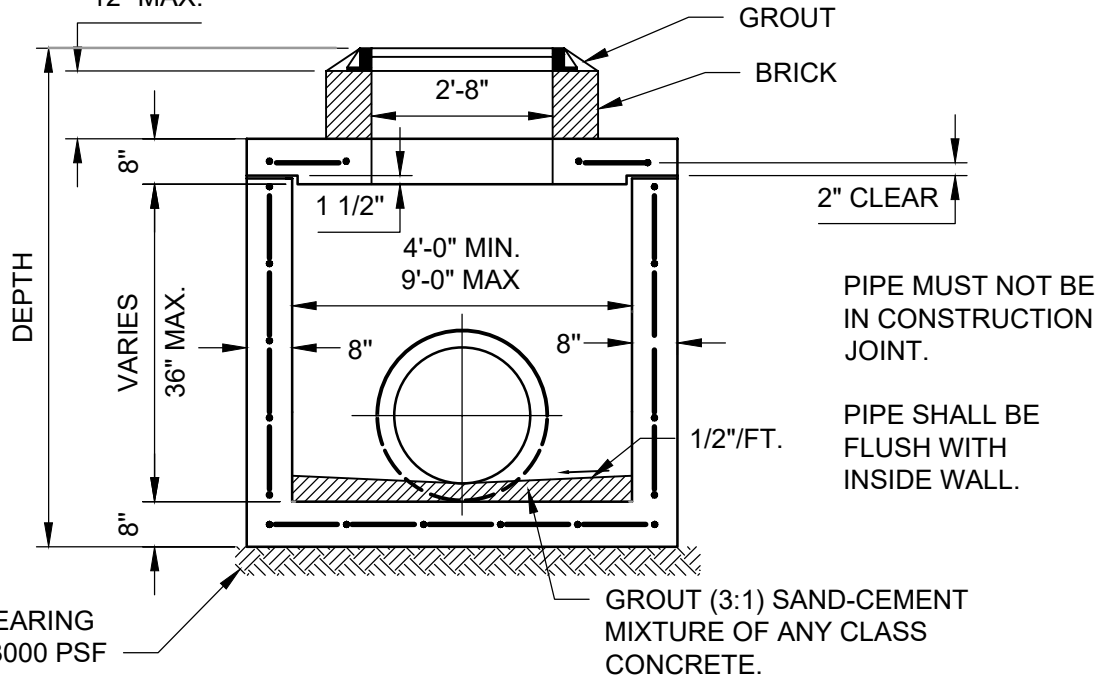


COVER



PLAN

MANHOLE COVER & FRAME PER CITY OF JAX. STD. PLATE D-301.



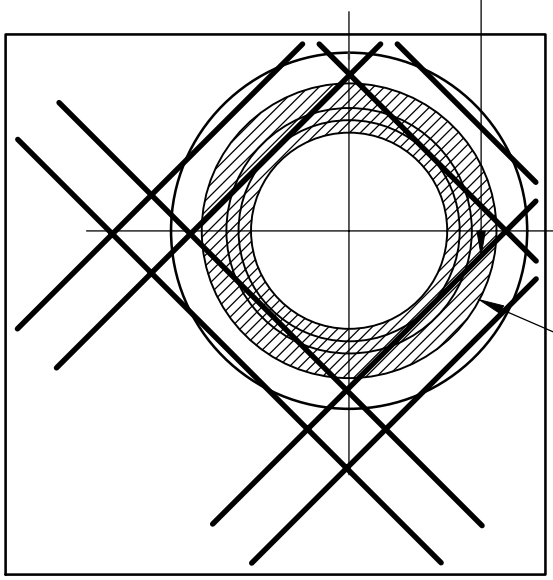
PIPE MUST NOT BE IN CONSTRUCTION JOINT.

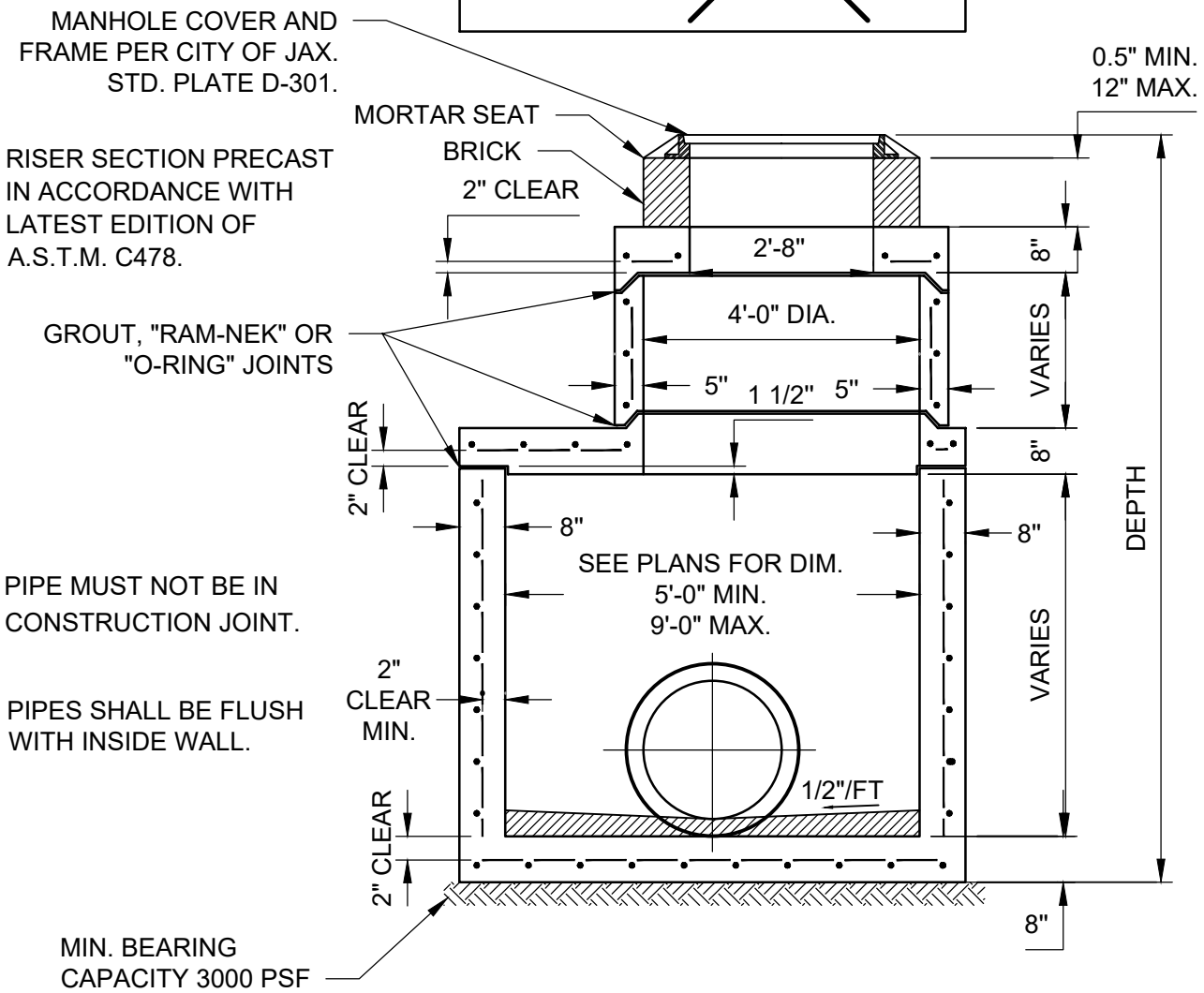
PIPE SHALL BE FLUSH WITH INSIDE WALL.

NOTE: FOR ADDITIONAL STRUCTURAL DETAIL REFER TO PLATES D-107, D-108, & D-109

STORMWATER TYPE J-2 MANHOLE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-102
		DATE DRAWN	1-31-89
		REVISED DATE	7-2-24

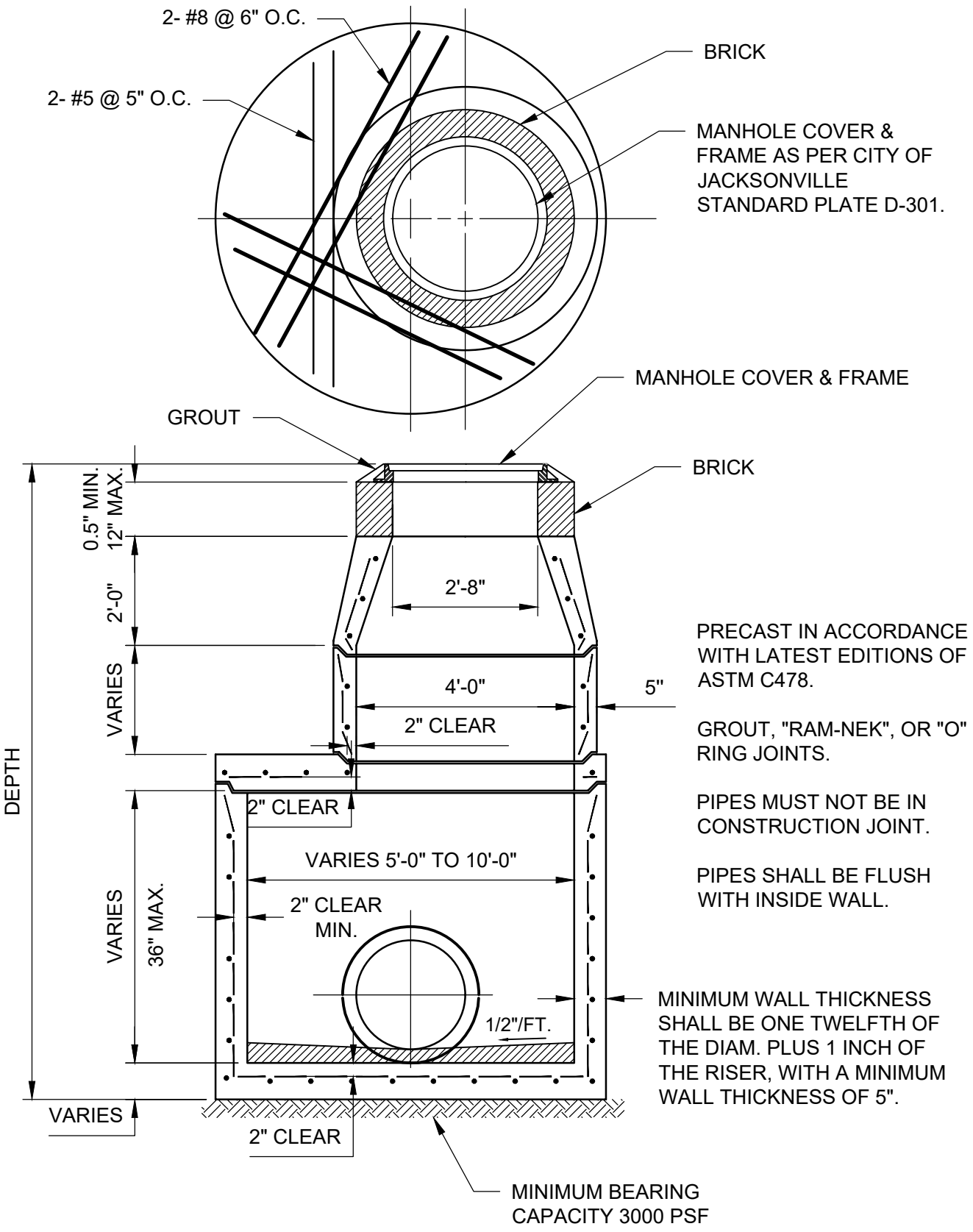
PLAN





NOTE: FOR ADDITIONAL STRUCTURAL DETAILS REFER TO PLATE D-107, D-108, D-109, & D-110

STORMWATER TYPE J-3 MANHOLE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-103
		DATE DRAWN	8-3-79
		REVISED DATE	7-2-24



PRECAST IN ACCORDANCE WITH LATEST EDITIONS OF ASTM C478.

GROUT, "RAM-NEK", OR "O" RING JOINTS.

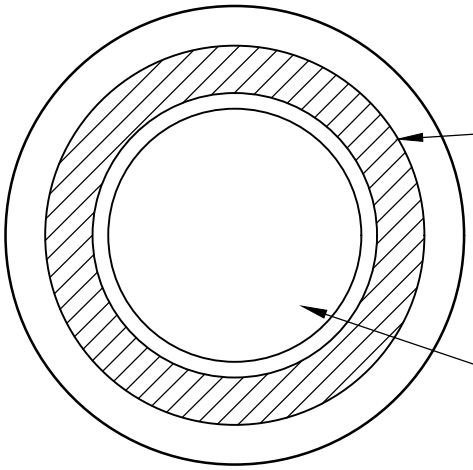
PIPES MUST NOT BE IN CONSTRUCTION JOINT.

PIPES SHALL BE FLUSH WITH INSIDE WALL.

MINIMUM WALL THICKNESS SHALL BE ONE TWELFTH OF THE DIAM. PLUS 1 INCH OF THE RISER, WITH A MINIMUM WALL THICKNESS OF 5".

NOTE: FOR ADDITIONAL STRUCTURAL DETAIL REFER TO PLATE D-110.

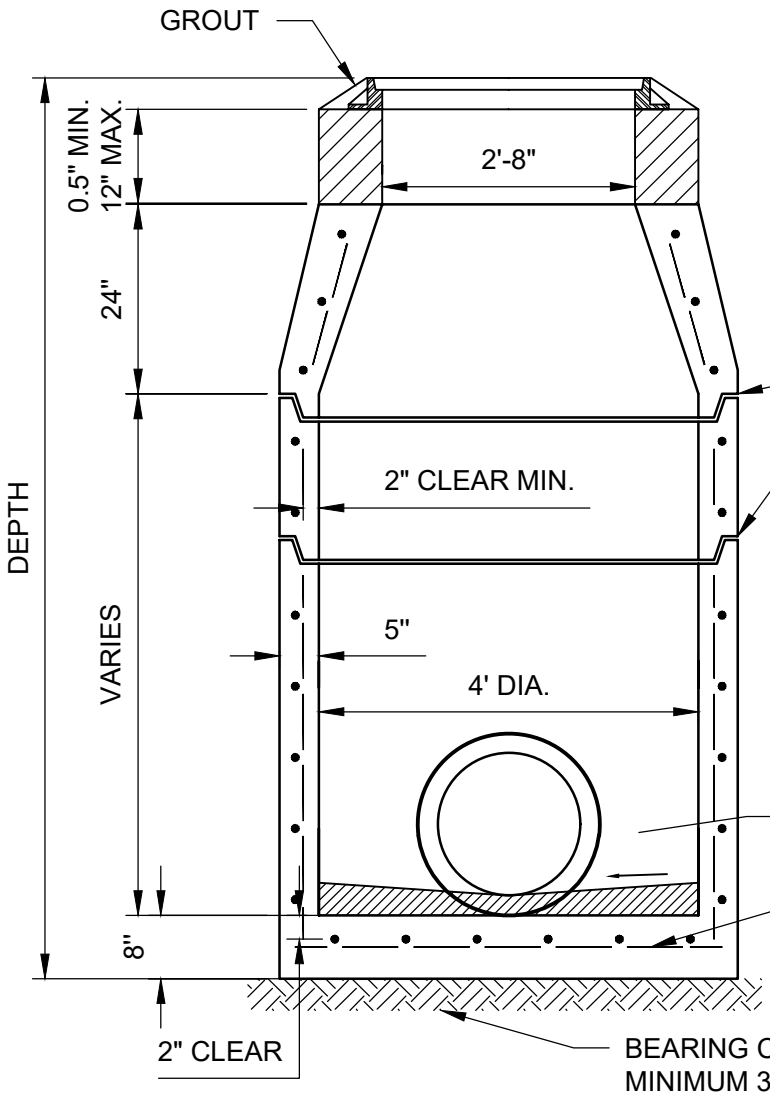
STORMWATER TYPE J-4 MANHOLE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-104
		DATE DRAWN	2-10-79
		REVISED DATE	7-2-24



BRICK

NOTE: CONC. DESIGN STRENGTH 4000 PSI

MANHOLE TOP/FRAME PER CITY OF JAX. STD. PLATE D-301.



PRECAST IN ACCORDANCE WITH LATEST EDITIONS OF ASTM C478.

GROUTED, OR "RAM-NEK", OR "O RING" JOINTS.

MAX. SERVICE LINES: 24" RCP THRU 180° 18" RCP THRU DOWN TO 90°

PIPES MUST NOT BE IN CONSTRUCTION JOINT.

PIPES SHALL BE FLUSH WITH INSIDE WALL.

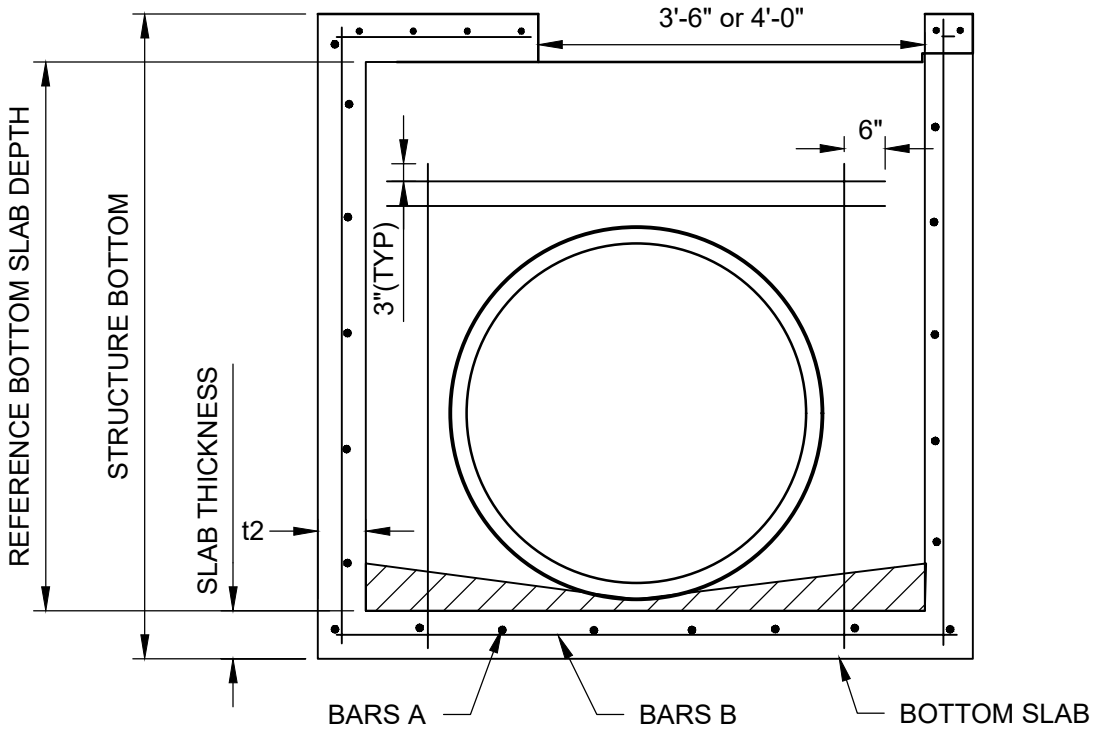
1/2" /FT

REINFORCE BOTTOM WITH #4 @ 9" O.C. B.W.

BEARING CAPACITY MINIMUM 3000 PSF

NOTE: FOR ADDITIONAL STRUCTURAL DETAIL REFER TO PLATE D-110

STORMWATER TYPE J-5 MANHOLE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-105
		DATE DRAWN	2-15-89
		REVISED DATE	7-2-24



NOTES:

1. REFER TO FDOT STANDARD PLANS INDEX 425-010 FOR REQUIREMENTS OF CAST-IN-PLACE MANHOLE BOX.
2. MANHOLES OVER 10' DEEP SHALL HAVE 12" WALL THICKNESS FOR ALL PORTIONS OF WALL OVER 10' DEEP.
3. MANHOLE COVER AND FRAME PER CITY OF JACKSONVILLE STANDARD.
4. BOTTOM SLAB TO BE 4000 P.S.I. CLASS "A" CONCRETE.

STORM SEWER CAST IN PLACE MANHOLE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-106
		DATE DRAWN	2-15-79
		REVISED DATE	12-19-24

1. FOR SQUARE OR RECTANGULAR PRECAST DRAINAGE STRUCTURES, EITHER DEFORMED OR SMOOTH WELDED WIRE FABRIC MAY BE USED PROVIDED:

a) THE SMOOTH WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A-185, AND DEFORMED WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A-497.

b) WIDTH AND LENGHT OF THE UNIT IS FOUR TIMES THE SPACING OF THE CROSS WIRES.

c) WIRE FABRIC SHALL BE CONTINUOUS AROUND THE BOX, SPLICED AT QUARTER POINT(S) WITH OVERLAP OF NOT LESS THAN THE SPACING OF THE CROSS WIRES PLUS TWO INCHES.

2. HORIZONTAL STEEL IN THE WALLS OF RECTANGLES STRUCTURES SHALL BE LAPPED A MINIMUM OF 24 BAR DIAMETER AT CORNERS.

3. WELDING OF SPLICES AND LAPS IS PERMITTED. THE REQUIREMENTS AND RESTRICTIONS PLACED ON WELDING IN AASHTO M-259 SHALL APPLY.

4. REBAR STRAIGHT END EMBEDDMENT OR PERIPHERAL REINFORCEMENT MAY BE USED IN LIEU OF ACI STANDARD HOOKS FOR TOP AND BOTTOM SLABS EXCEPT WHEN HOOKS ARE SPECIFICALLY CALLED FOR IN PLANS OR STANDARD DRAWINGS.

5. CONCRETE WHICH MEETS THE REQUIREMENTS OF ASTM C-478 SHALL BE USED FOR STRUCTURES CONSTRUCTED TO THESE DETAILS.

6. REINFORCEMENT CAN BE EITHER DEFORMED BAR REINFORCEMENT OR WELDED WIRE FABRIC. BAR REINFORCEMENT OTHER THAN 40 KSI MAY BE USED, HOWEVER ONLY TWO GRADES ARE RECOGNIZED: GRADE 40 AND GRADE 60. WELDED WIRE FABRIC, INCLUDING SMOOTH AND DEFORMED WELDED WIRE FABRIC, WILL BE RECOGNIZED AS HAVING A DESIGN STRENGHT OF 65 KSI AND 70 KSI RESPECTIVELY. THE AREA OF REINFORCEMENT REQUIRED MAY BE REDUCED IN ACCORDANCE WITH THE EQUIVALENT STEEL AREA TABLE PROVIDED. FOR BARS AND SPACING NOT GIVEN, THE STEEL AREA REQUIRED CAN BE DETERMINED BY THE FOLLOWING EQUATIONS:

GRADE 60 STEEL AREA = AS 60 = 40K/60K X AS 40

WELDED WIRE FABRIC STEEL AREA = AS 65 = 40K/65K X AS 40

IN NO CASE WILL FABRIC WITH WIRES SMALLER THAN W3.1 OR SPACING GREATER THAN 8" BE PERMITTED. BAR REINFORCEMENT SHALL SHOW THE MINIMUM YIELD DESIGNATION GRADE MARK OF EITHER THE NUMBER 60 OR ONE (1) GRADE MARK LINE TO BE ACCEPTABLE AT THE HIGHER VALUE. MAXIMUM BAR SPACING SHALL NOT BE GREATER THAN THREE (3) TIMES THE WALL THICKNESS OR 12".

EQUIVALENT STEEL AREA TABLE

GRADE 40 REINFORCING BAR		EQUIVALENT GRADE 60 REINFORCING BAR		EQUIVALENT 65 KSI SMOOTH WELDED WIRE FABRIC		EQUIVALENT 70 KSI DEFORMED WELDED WIRE FABRIC	
Bar Size & Spacing	Steel Area (in^2/ft)	Bar Size & Spacing	Min Steel Area	Style Designation	Min Steel Area	Style Designation	Min Steel Area
#4 @ 12"CCEW	0.20	#3 @ 9 1/2" CCEW	.1333	3"x3"-W3.1xW3.1 or 4"x4"-W4.5xW4.5 or 6"x6"-W6.5xW6.5	.1230	3"x3"-D4.3xD4.3 or 4"x4"-D5.7xD5.7 or 6"x6"-D8.6xD8.6	0.1714
#4 @ 9" CCEW	0.20	#3 @ 13 1/2" CCEW or #3 @ 7" CCEW	.1778	3"x3"-W3.1xW3.1 or 4"x4"-W5.5xW5.5 or 6"x6"-W8.5xW8.5	.1641	3"x3"-D5.7xD5.7 or 4"x4"-D7.6xD7.6 or 6"x6"-D11.4xD11.4	0.2289
#6 @ 6" CCEW	0.20	#3 @ 9 1/2" CCEW or #6 @ 9" CCEW	.5867	4"x4"-W20xW20 or 6"x6"-W30xW30	.5415	3"x3"-D15.6xD15.6 or 4"x4"-D20.9xD20.9 or 6"x6"-D31.3xD31.3	0.6257
#7 @ 6" CCEW	0.20	#3 @ 6 1/2" CCEW or #7 @ 9" CCEW	.80	4"x4"-W26xW26	.7385	3"x3"-D31.3xD31.3 or 4"x4"-D41.7xD41.7	1.2514

NOTES FOR MANHOLES & INLETS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-107
		DATE DRAWN	07/12/79
		REVISED DATE	7-2-24

SLAB DESIGNS - SQUARE AND RECTANGULAR STRUCTURES
(ALL SLABS 8" THICK - REINFORCING PARALLEL TO SHORT WAY AND LONG WAY)

LONG-WAY		SHORT-WAY	
SLAB DEPTH	SCHEDULE	SLAB DEPTH	SCHEDULE
SIZE: 4'-0"xUNLIMITED			
≥0.5' < 19'	B	≥ 0.5' < 34'	B
19'< 29'	C	34'-40'	C
29'-40'	D		
SIZE: 5'x5'			
≥ 0.5' < 3'	C	≥ 0.5' < 3'	C
3' < 19'	B	3' < 19'	B
19'< 28'	C	19' < 28'	C
28' < 38'	D	28' < 38'	D
38'-40'	F	38'-40'	F
SIZE: 5'x6'			
≥0.5' < 3'	C	≥ 0.5'< 3'	C
3' < 16'	B	3'< 20'	B
16' < 24'	C	20'< 29'	C
24' < 34'	D	29'-40'	D
34'-40'	F		
SIZE: 5'x7'			
≥0.5' < 3'	C	≥0.5' < 3'	C
3' < 14'	B	3' < 22'	B
14' < 21'	C	22' < 33'	C
21'< 39'	D	33'-40'	D
39'-40'	F		
SIZE: 5'x8'			
≥0.5' < 3'	C	≥ 0.5' < 39'	B
3'< 8'	B	39'-40'	C
8' < 17'	C		
17'< 23'	D		
23'-40'	F		
SIZE: 5'x9'			
≥0.5' < 3'	C	≥ 0.5' < 32'	B
3' < 8'	B	32'-40'	C
8' < 17'	C		
17' < 23'	D		
23'-40'	F		
SIZE: 6'x6'			
≥0.5' < 3'	D	≥ 0.5'< 3'	D
3' < 4'	C	3' < 4'	C
4' < 14'	B	4' < 14'	B
14' < 21'	C	14' < 21'	C
21' < 28'	D	21' < 28'	D
28'-40'	F	28'-40'	F
SIZE: 6'x7'			
≥0.5' < 3'	D	≥ 0.5' < 3'	D
3'< 4'	C	3' < 4'	C
4' < 12'	B	4' < 15'	B
12' < 19'	C	15' < 21'	C
19'< 26'	D	21'< 30'	D
26'-40'	F	30'-40'	F

LONG-WAY		SHORT-WAY	
SLAB DEPTH	SCHEDULE	SLAB DEPTH	SCHEDULE
SIZE: 6'x8'			
≥0.5' < 3'	D	≥ 0.5' < 3'	D
3' < 4'	C	3' < 4'	C
4' < 7'	B	4' < 16'	B
7' < 16'	C	16' < 23'	C
16' < 23'	D	23'< 32'	D
23'-40'	F	32'-40'	F
SIZE: 6'x9'			
≥ 0.5' < 3'	D	≥ 0.5' < 3'	D
3' < 15'	C	3' < 4'	C
15' < 21'	D	4' < 18'	B
21' < 27'	E	18' < 27'	C
27'-40'	G	27' < 37'	D
		37'-40'	E
SIZE: 7'x7'			
≥ 0.5'< 3'	E	≥ 0.5' < 3'	E
3' < 4'	D	3' < 4'	D
4' < 16'	C	4' < 16'	C
16' < 22'	D	16' < 22'	D
22' < 28'	E	22'< 28'	E
28'-40'	G	28'-40'	G
SIZE: 7'x8'			
≥ 0.5'< 3'	E	≥ 0.5' < 3'	E
3' < 4'	D	3' < 4'	D
4' < 15'	C	4' < 17'	C
15' < 21'	D	17' < 23'	D
21'< 27'	E	23' < 29'	E
27'-40'	G	29'-40'	G
SIZE: 7'x9'			
≥ 0.5'< 3'	E	≥ 0.5'< 3'	E
3' < 4'	D	3'< 4'	D
4' < 12'	C	4' < 18'	C
12' < 18'	D	18' < 24'	D
18' < 24'	E	24' < 32'	E
24'-40'	G	32'-40'	G
SIZE: 8'x8'			
≥ 0.5'< 3'	D	≥ 0.5' < 3'	D
3'< 4'	C	3' < 4'	C
4' < 9'	B	4' < 9'	B
9' < 17'	C	9' < 17'	C
17' < 31'	D	17' < 31'	D
31'-40'	G	31'-40'	G
SIZE: 8'x9'			
≥ 0.5' < 3'	D	≥ 0.5' < 3'	E
3' < 4'	C	3' < 4'	D
4' < 16'	B	4' < 18'	C
16' < 22'	C	18' < 25'	D
22' < 29'	D	25' < 32'	F
29'-40'	F	32'-40'	G
SIZE: 9'x9'			
≥ 0.5' < 3'	F	≥0.5' < 3'	F
3' < 14'	C	3' < 14'	C
14' < 20'	D	14' < 20'	D
20' < 26'	E	20'< 26'	E
26'-40'	G	26'-40'	G

SLAB DESIGN SQUARE AND RECTANGULAR STRUCTURES	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-108
		DATE DRAWN	1-31-79
		REVISED DATE	7-2-24

WALL DESIGNS - RECTANGULAR STRUCTURES

HORIZONTAL REINFORCING		VERTICAL REINFORCING	
WALL DEPTH	SCHEDULE	WALL DEPTH	SCHEDULE
SIZE: 3'-0"			
≥ 1.17'-40'	A	≥ 1.17'-40'	B
SIZE: 4'-0"			
≥ 1.17'-40'	A	≥ 1.17'-40'	B
SIZE: 5'-0"			
≥ 1.17'-40'	A	≥1.17' < 33'	B
		33'-40'	C
SIZE: 6'-0"			
≥ 1.17'-40'	A	≥ 1.17'< 22'	B
		22'-40'	C
SIZE: 7'-0"			
≥ 1.17'-40'	A	≥ 1.17' < 15'	B
		15' < 25'	C
		25'-40'	D
SIZE: 8'-0"			
≥ 1.17'-40'	A	≥ 1.17' < 11'	B
		11' < 19'	C
		19' < 29'	D
		29'-40'	F
SIZE: 9'-0"			
≥ 1.17'-40'	A	≥ 1.17'< 15'	C
		15' < 22'	D
		22'-40'	F

NOTES:

1. SLAB REINFORCEMENT IS APPROPRIATE FOR TOP, INTERMEDIATE, AND BOTTOM SLABS.
2. SLAB DEPTH IS MEASURED FROM FINISHED GRADE TO TOP OF SLAB.
3. WALL DESIGN DEPTH IS MEASURED TO THE TOP OF THE BOTTOM SLAB FOR BOXES AND TO THE TOP OF THE INTERMEDIATE SLAB FOR RISERS.
4. WALL HEIGHT IS THE DISTANCE BETWEEN TOP OF LOWER SLAB TO BOTTOM OF UPPER SLAB.

REINFORCING SCHEDULE

SCHEDULE	GRADE 60 STEEL OR 65 KSI (WELDED WIRE FABRIC) 2 in /ft
A	0.20
B	0.24
C	0.37
D	0.53
E	0.73
F	1.06
G	1.45

WALL DESIGNS RETANGULAR STRUCTURES	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-109
		DATE DRAWN	2-5-79
		REVISED DATE	7-2-24

SLAB DESIGNS - ROUND STRUCTURES

SLAB THICKNESS	SLAB DEPTH	(2 WAYS) REINFORCING SCHEDULE
SIZE: 4'-0"		
≥ 0.5' - 40'	8"	C
SIZE: 5'-0"		
≥ 0.5' < 30'	8"	C
30' - 40'	8"	D
SIZE: 6'-0"		
≥ 0.5' < 8'	8"	B
8' < 18'	8"	C
18' < 30'	8"	D
30' < 37'	8"	E
37' - 40'	8"	G
SIZE: 8'-0"		
≥ 0.5' < 9'	10"	C
9' < 15'	10"	D
15' < 23'	10"	E
23' < 33'	12"	E
33' - 40'	12"	G
SIZE: 10'-0"		
≥ 0.5' < 6'	10"	C
6' < 11'	10"	D
11' < 17'	10"	E
17' < 23'	12"	E
23' - 40'	12"	G
SIZE: 12'-0"		
≥ 0.5' < 6'	12"	C
6' < 11'	12"	D
11' < 16'	12"	E
16' < 20'	14"	E
20' - 40'	14"	G

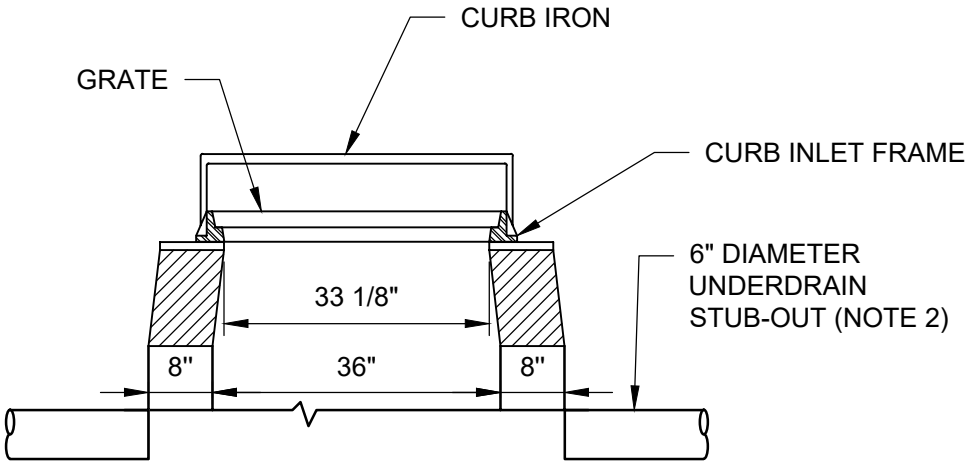
NOTES:

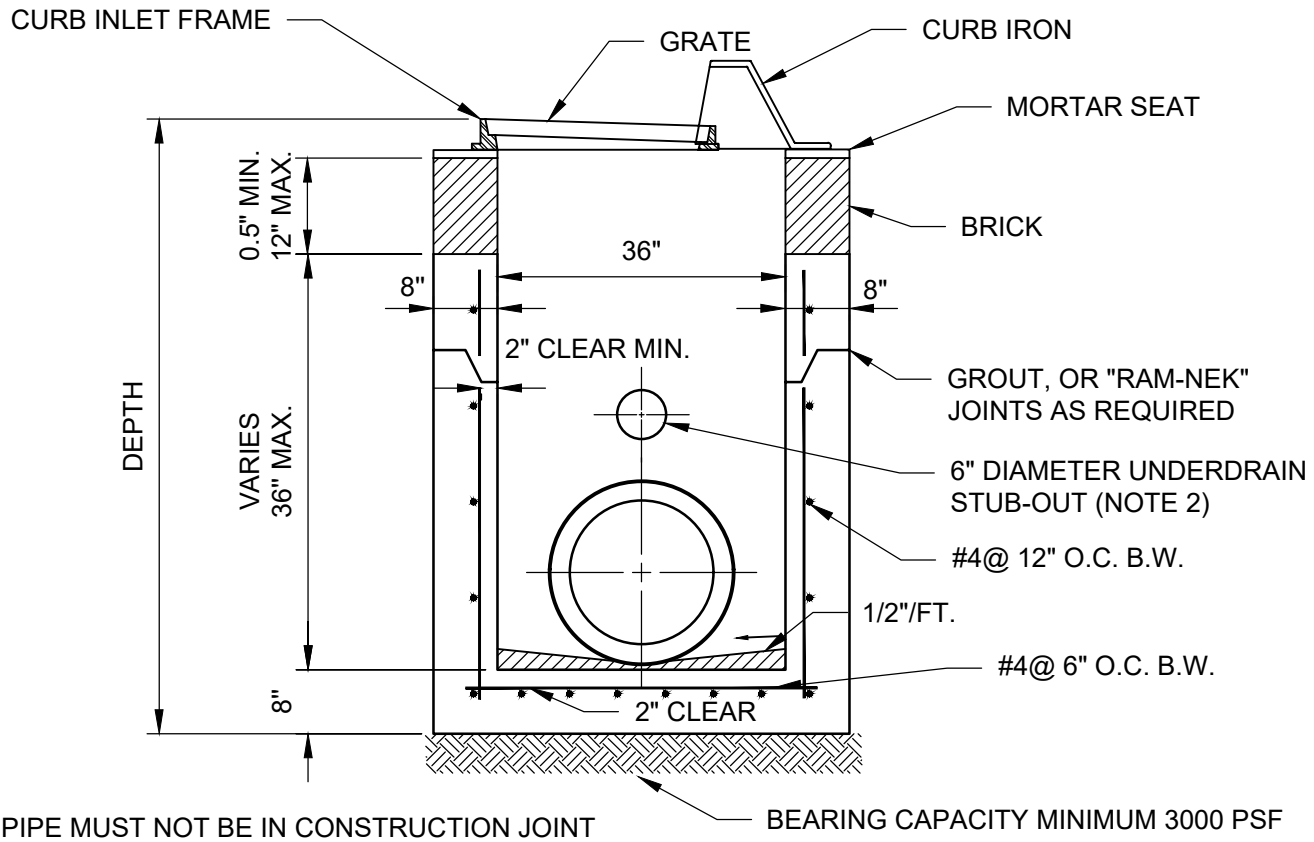
1. SLAB REINFORCEMENT IS APPROPRIATE FOR TOP, INTERMEDIATE, AND BOTTOM SLABS.
2. SLAB DEPTH IS MEASURED FROM FINISHED GRADE TO TOP OF SLAB.
3. WALL DESIGN DEPTH IS MEASURED TO THE TOP OF THE BOTTOM SLAB FOR BOXES AND TO THE TOP OF THE INTERMEDIATE SLAB FOR RISERS.
4. WALL HEIGHT IS THE DISTANCE BETWEEN TOP OF LOWER SLAB TO BOTTOM OF UPPER SLAB.

REINFORCING SCHEDULE

SCHEDULE	GRADE 60 STEEL OR 65 KSI (WELDED WIRE FABRIC) 2 in /ft
A	0.20
B	0.24
C	0.37
D	0.53
E	0.73
F	1.06
G	1.45

SLAB DESIGN ROUND STRUCTURES	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-110
		DATE DRAWN	1-31-79
		REVISED DATE	7-2-24





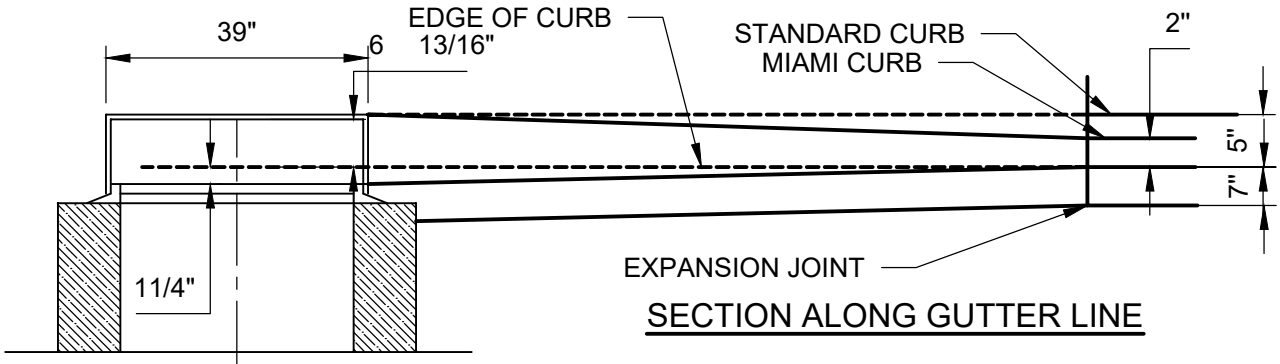
PIPE MUST NOT BE IN CONSTRUCTION JOINT

PIPES SHALL BE FLUSH WITH INSIDE WALL

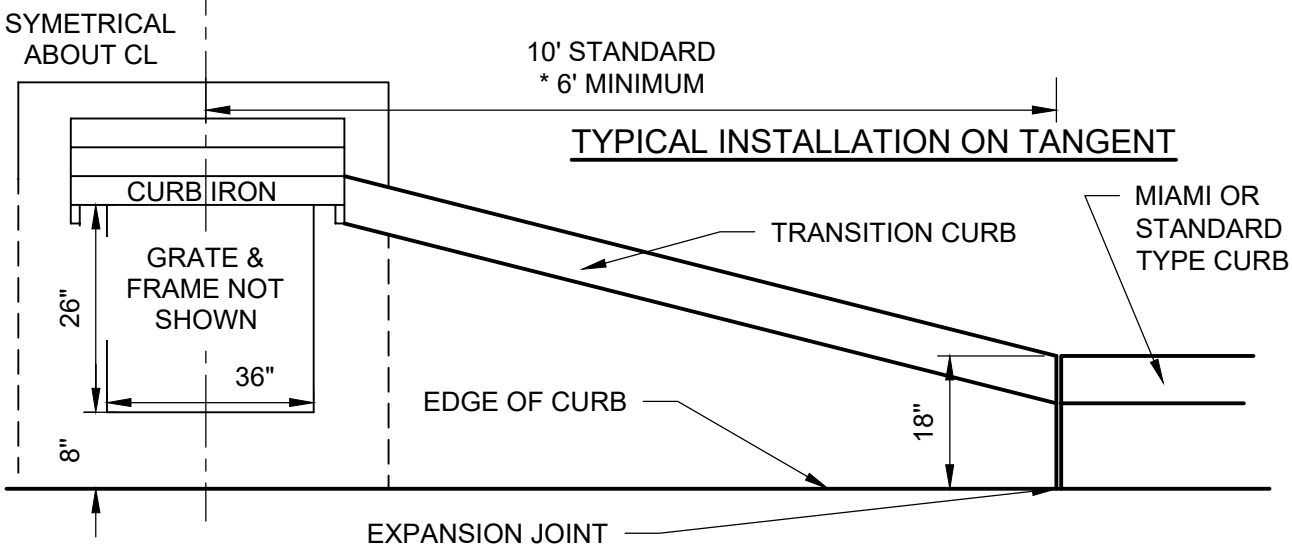
NOTES:

1. CONSTRUCT PRECAST STRUCTURES WITH REINFORCED CONCRETE ONLY. DESIGN STRENGTH 4000 PSI.
2. NEW STORM INLETS TO INCLUDE A 20-FT FUNCTIONAL UNDERDRAIN STUB-OUT PER DETAIL D-701 ON EACH SIDE OF THE INLET. CONNECT UNDERDRAIN PIPES USING A 6-INCH DIAMETER SDR 35 INLET COUPLER CAST INTO THE INLET WALL. UNDERDRAIN INVERT SHALL BE LOCATED AT A MINIMUM DEPTH OF 30-IN AND ADJUSTED FOR FIELD CONDITIONS.
3. STUB-OUT ENDS REQUIRE A CAP OR FILTER-FABRIC WRAP.

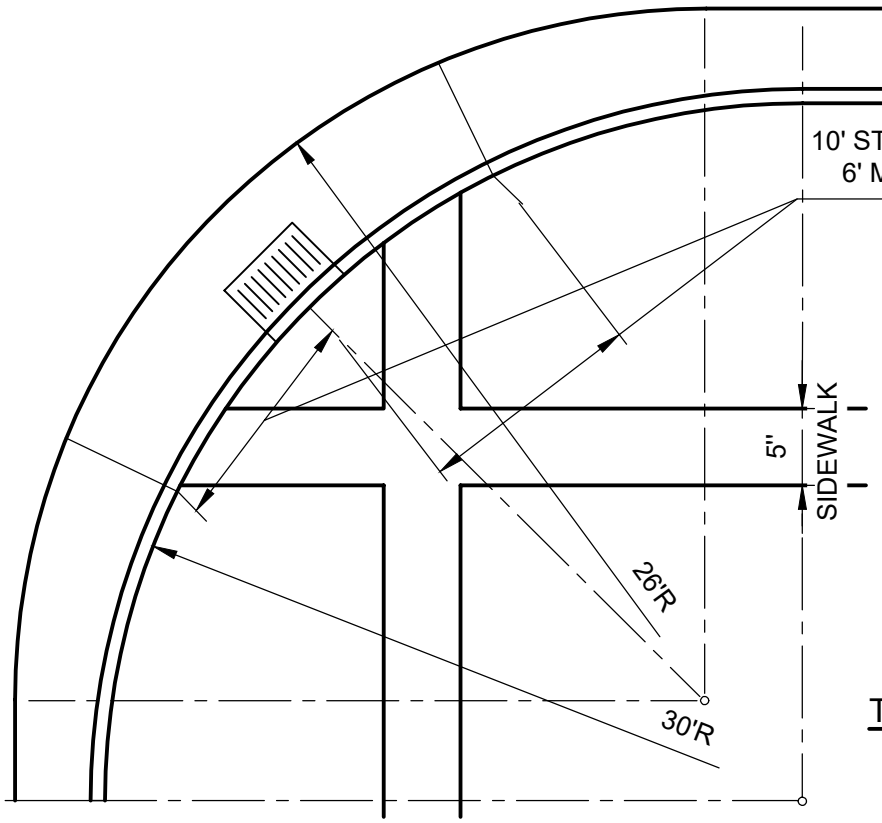
CURB INLET	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-201
		DATE DRAWN	2-10-79
		REVISED DATE	9-11-25



SECTION ALONG GUTTER LINE



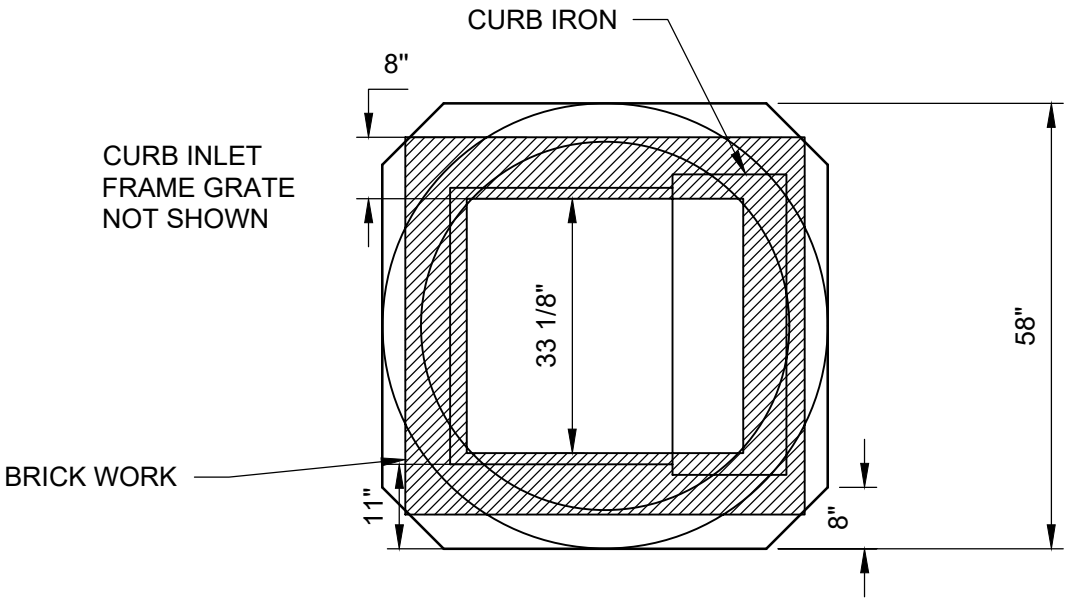
TYPICAL INSTALLATION ON TANGENT



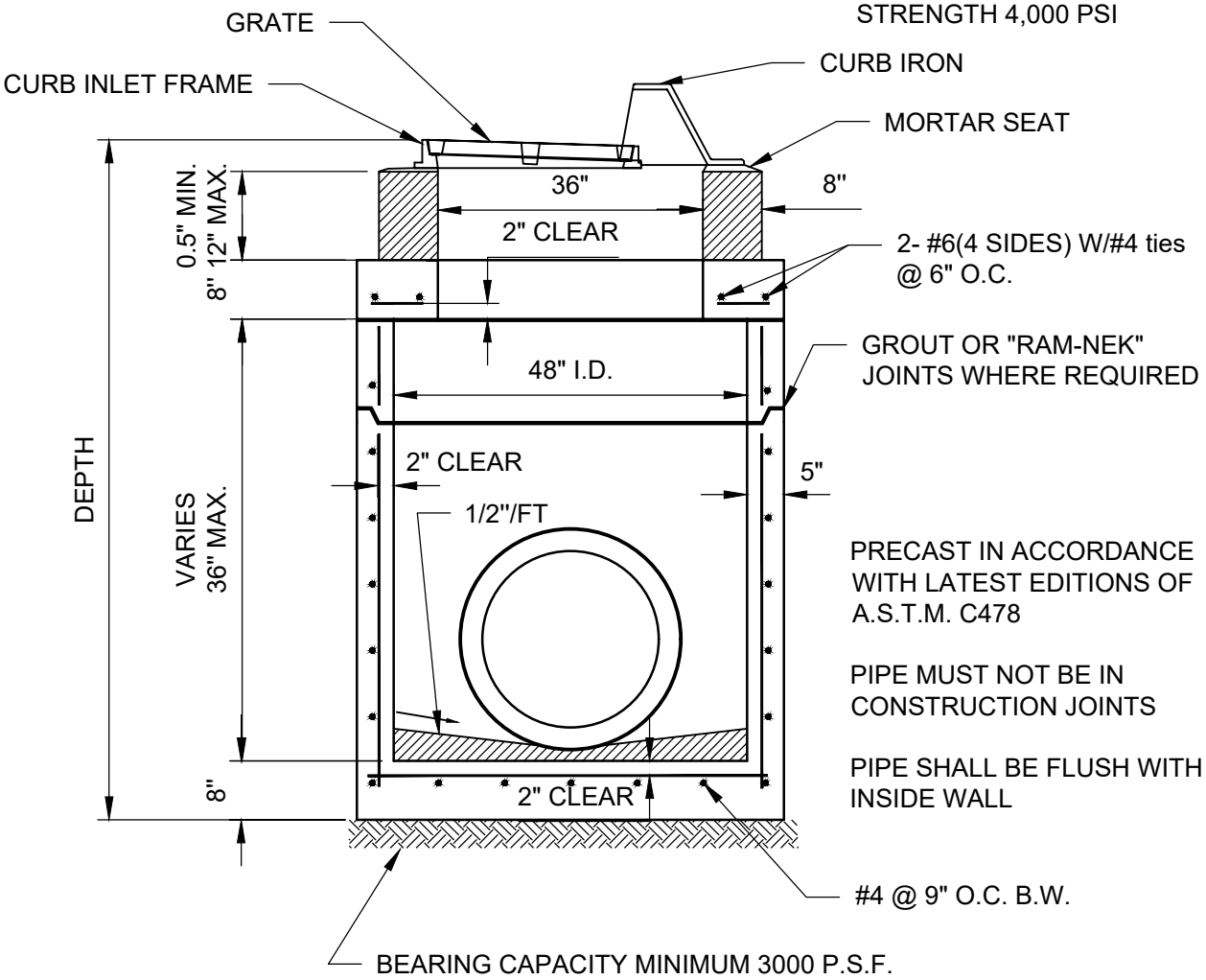
* CURB TRANSITION LESS THAN 10' TO BE USED WHERE LOT FRONTAGE IS 60' OR LESS, IN CASE OF HANDICAP RAMP CONFLICTS, OR AS APP'D. BY THE CITY ENGINEER.

TYPICAL INSTALLATION ON CURB RETURN

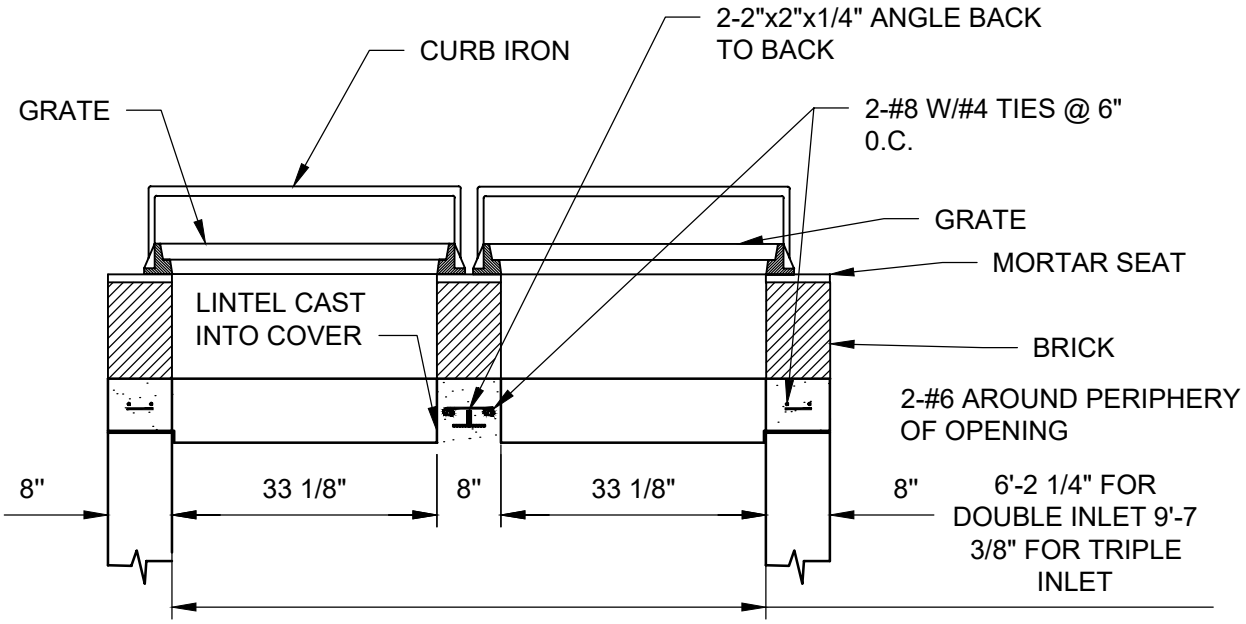
STANDARD CURB INLET INSTALLATION	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-202
		DATE DRAWN	2-10-79
		REVISED DATE	01/14/03

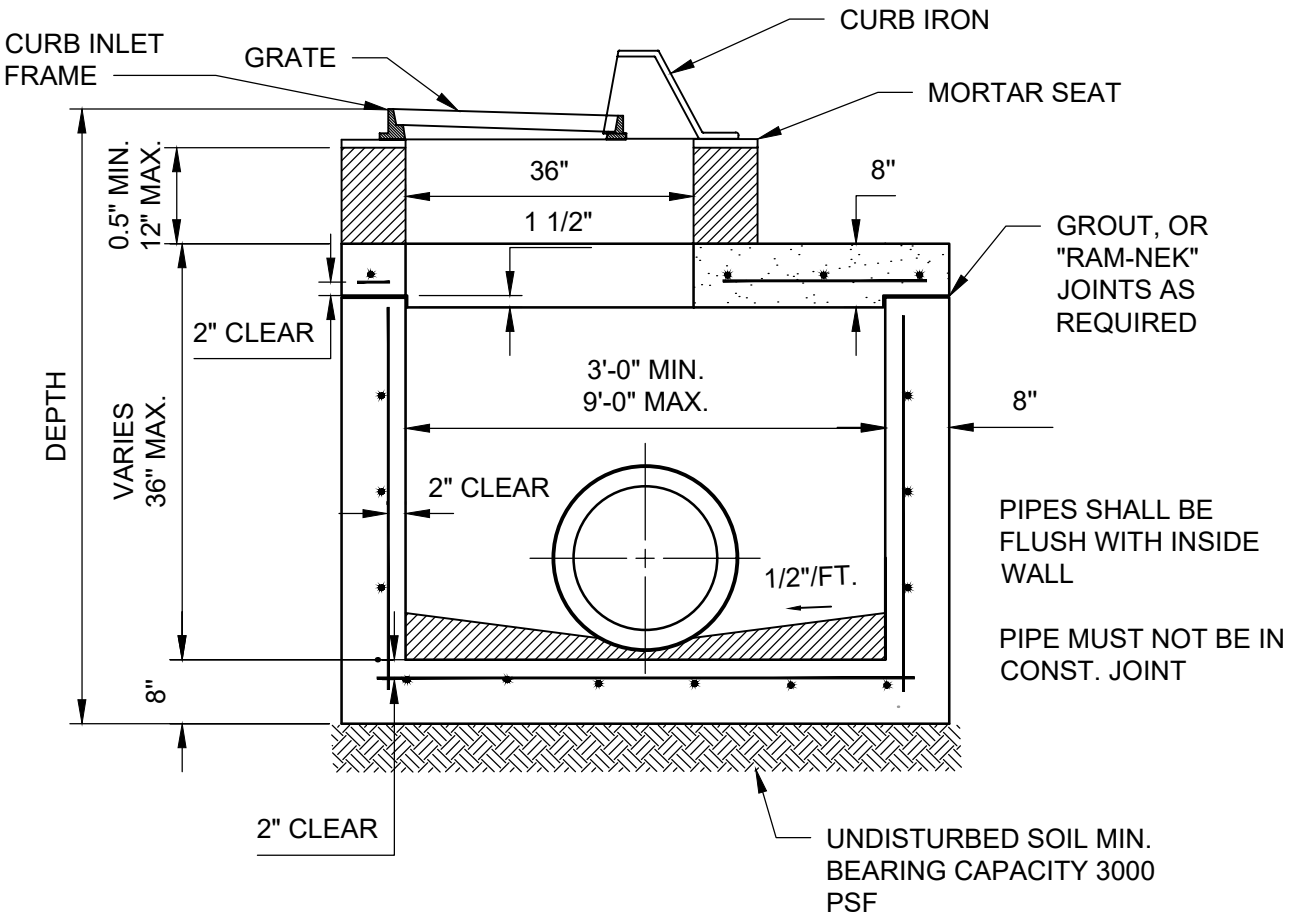


NOTE: CONC. DESIGN
STRENGTH 4,000 PSI



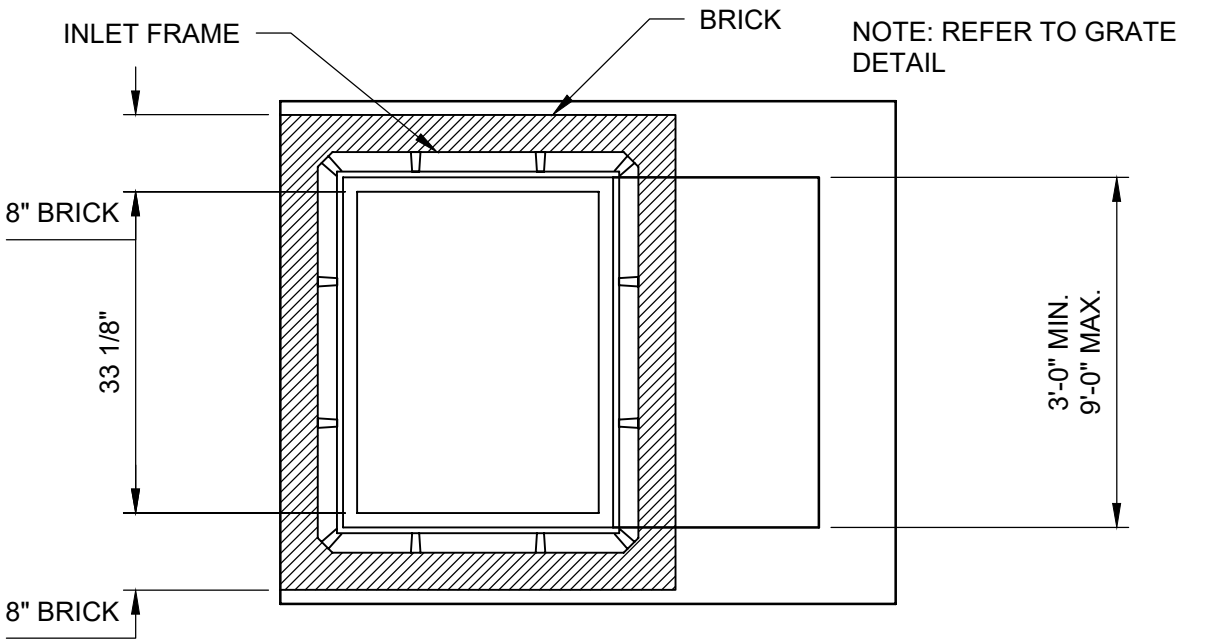
48" I.D. CURB INLET	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-203
		DATE DRAWN	4-21-79
		REVISED DATE	5-12-94

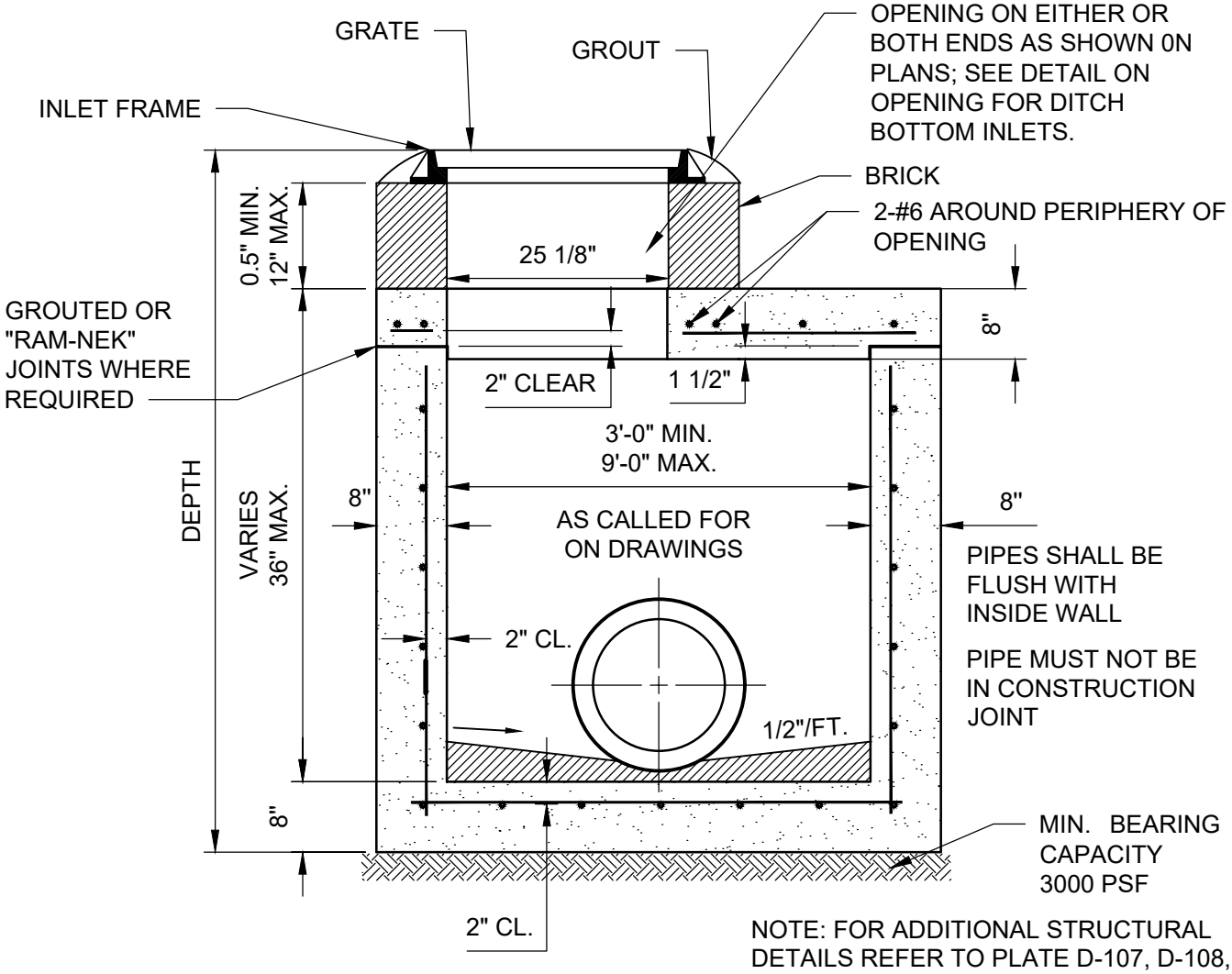




NOTE: FOR ADDITIONAL STRUCTURAL DETAIL
REFER TO PLATE D-107, D-108, & D-109

DOUBLE AND TRIPLE CURB INLET	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-204
		DATE DRAWN	4-26-79
		REVISED DATE	5-12-94

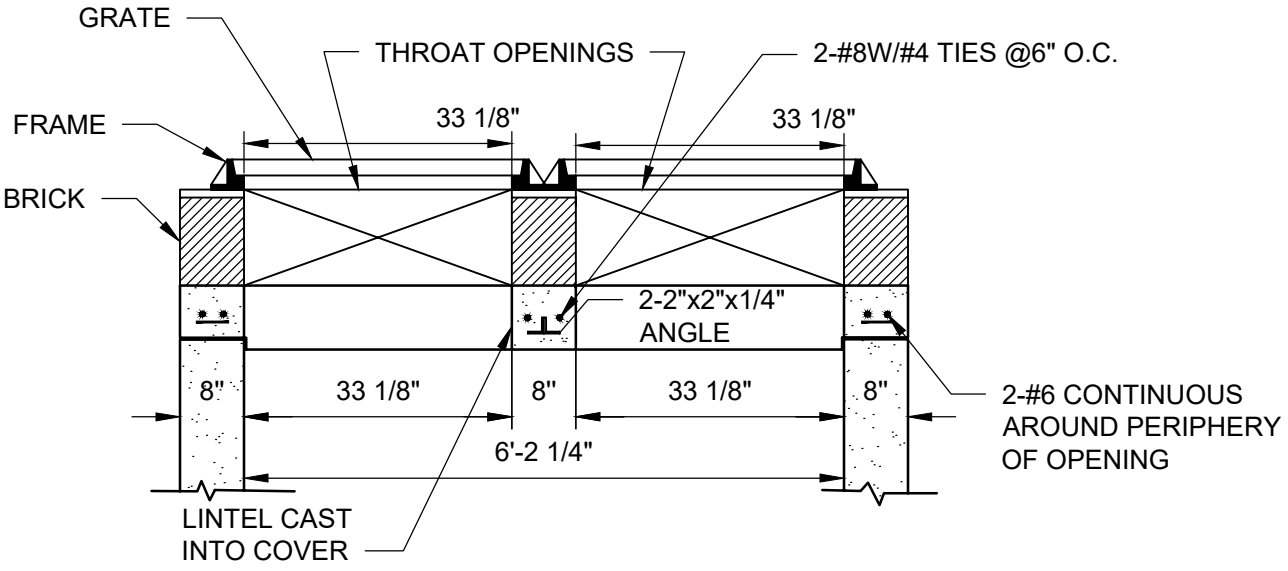


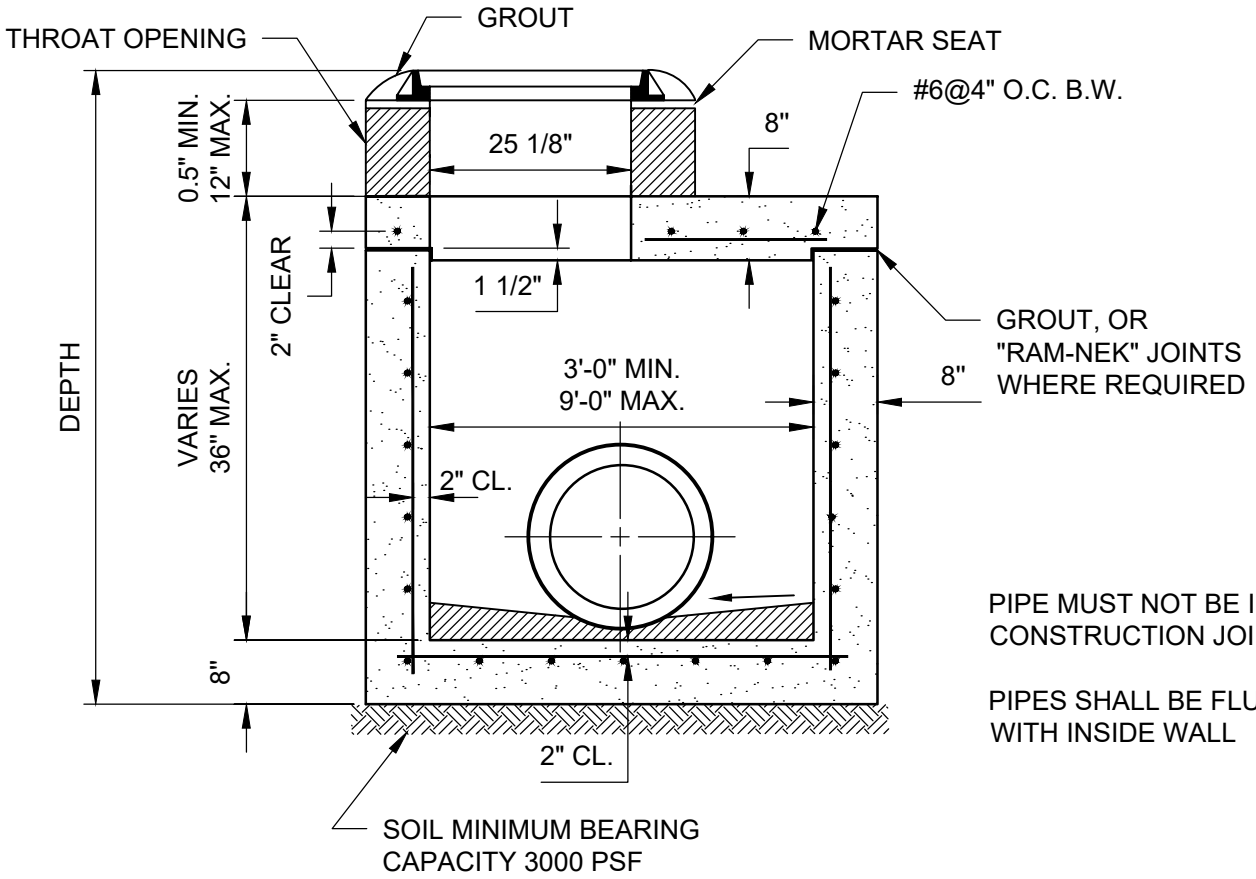


NOTE: FOR ADDITIONAL STRUCTURAL DETAILS REFER TO PLATE D-107, D-108, & D-109

TYPE "B" INLET	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-205
		DATE DRAWN	5-15-79
		REVISED DATE	5-12-94

THROAT OPENING ON EITHER OR BOTH SIDES AS SHOWN ON PLANS; SEE DETAILS ON OPENING FOR DITCH BOTTOM INLETS.



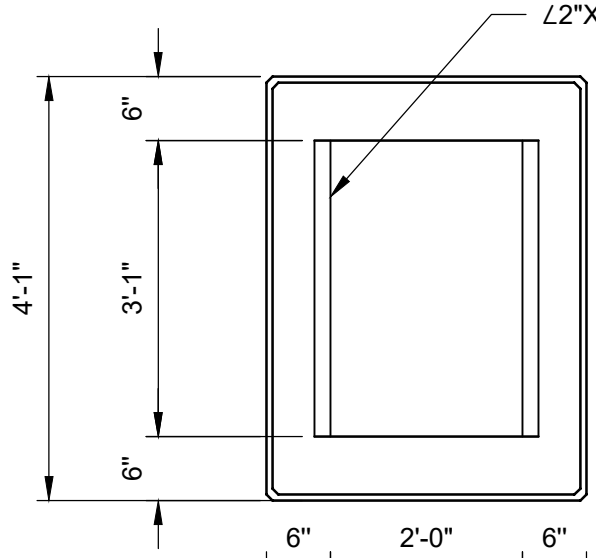


PIPE MUST NOT BE IN CONSTRUCTION JOINT

PIPES SHALL BE FLUSH WITH INSIDE WALL

NOTE: FOR ADDITIONAL STRUCTURAL DETAIL REFER TO PLATE D-107,D-108, & D-109

DOUBLE TYPE "B" INLET	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-206
		DATE DRAWN	5-16-79
		REVISED DATE	5-12-94



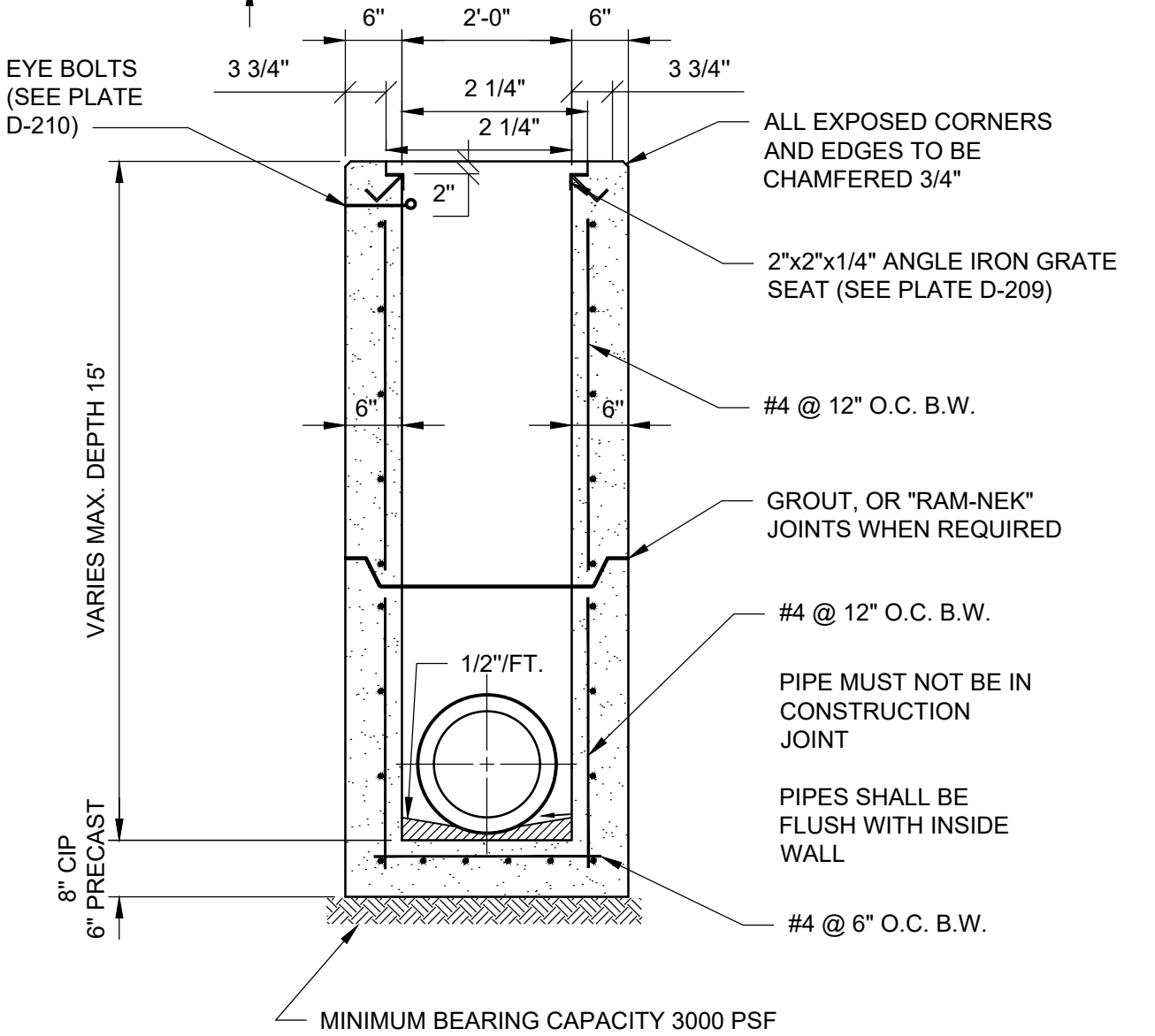
NOTE:

REFER TO GRATE DETAIL

SLOT OPENINGS SHALL NOT BE IN WALLS WITH GRATE SEAT

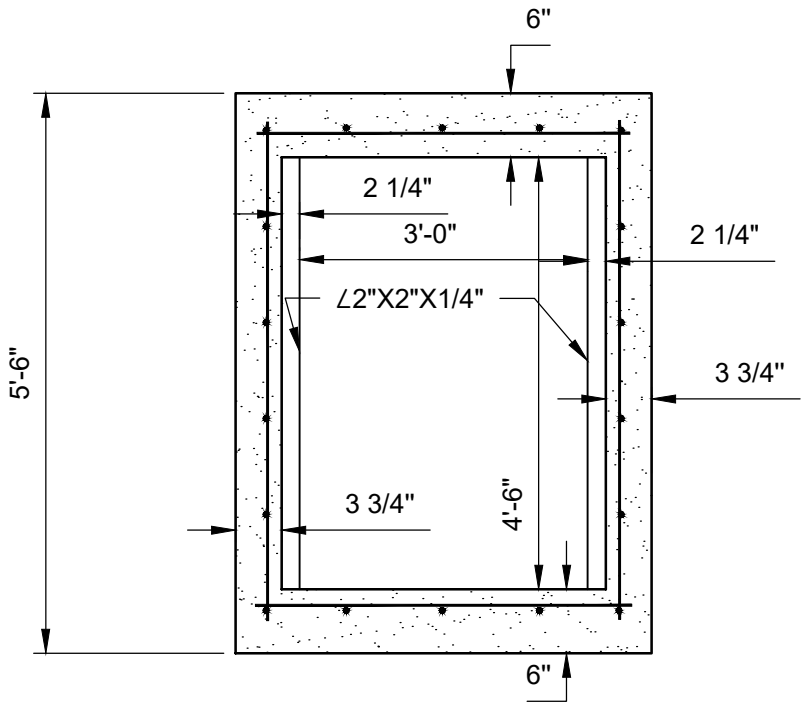
NOTE:

CONC. DESIGN STRENGTH 4000 P.S.I.



TYPE "C" INLET	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-207
		DATE DRAWN	5-19-79
		REVISED DATE	11-20-25

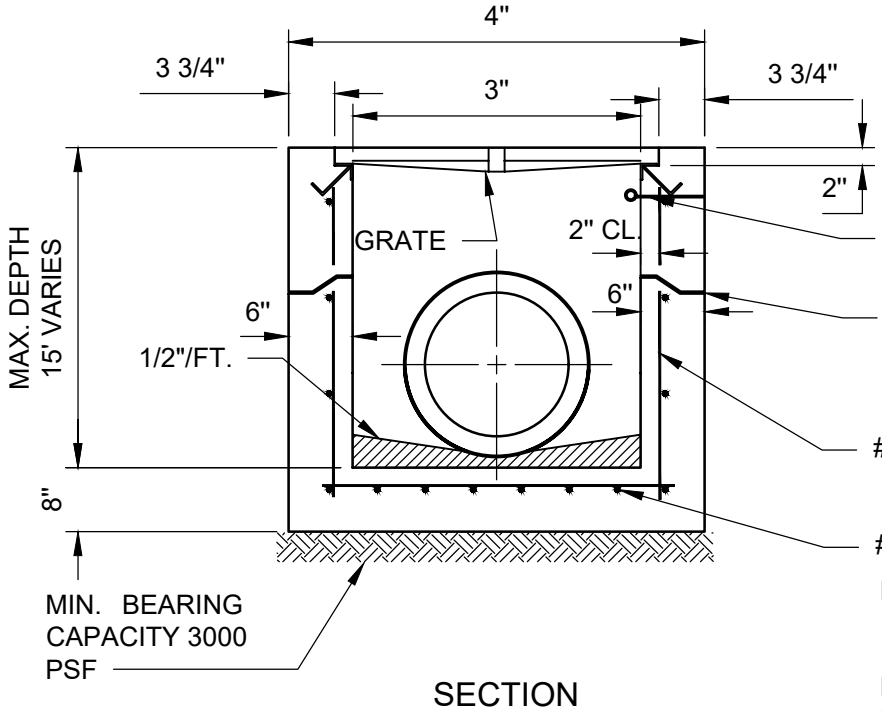
SEE PLATE D-307 FOR GRATE DETAIL



SLOT OPENINGS SHALL NOT BE IN WALLS WITH GRATE SEAT

NOTE: CONC. DESIGN STRENGTH 4,000 P.S.I.

PLAN



EYE BOLTS (SEE PLATE D-210)

GROUTED OR "RAM-NEK" JOINTS WHERE REQUIRED

#4 @ 8" O.C.

#4 BARS @ 12" O.C.

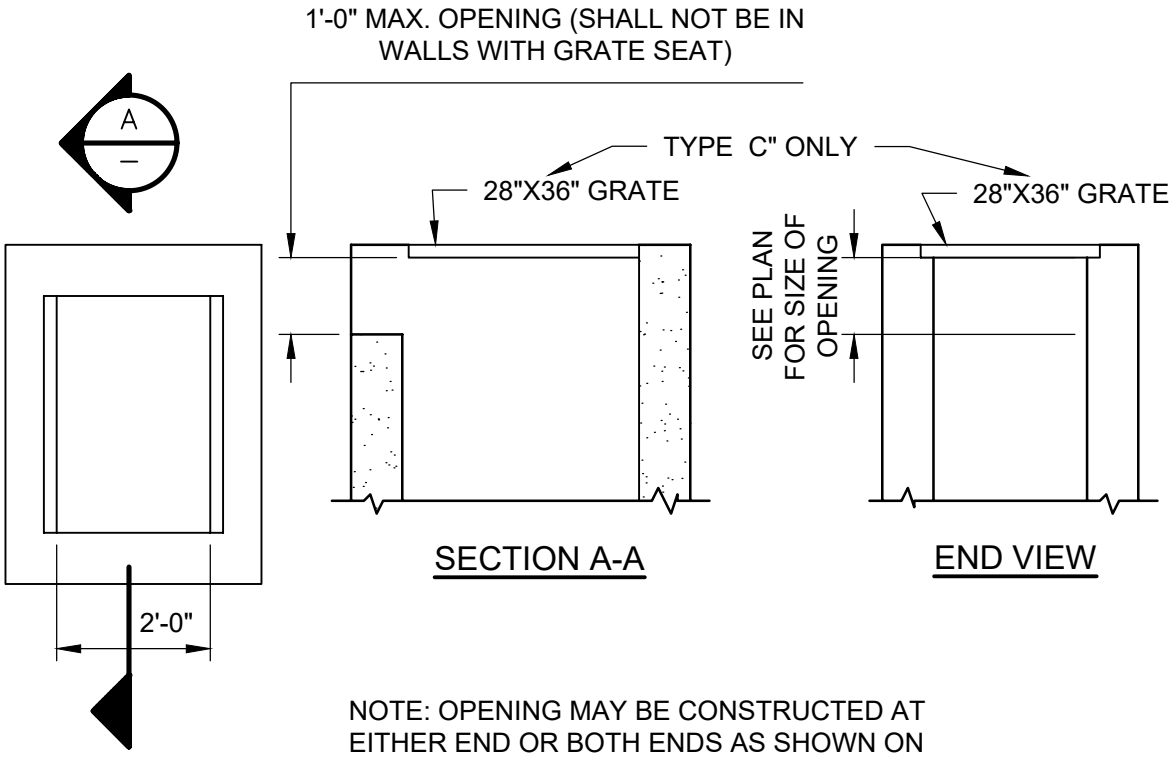
PIPES MUST NOT BE IN CONSTRUCTION JOINTS

PIPES SHALL BE FLUSH WITH INSIDE WALL

SECTION

TYPE "E" INLET	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-208
		DATE DRAWN	5-23-79
		REVISED DATE	5-12-94

NOTE:
ALL TYPE C" & E" INLETS WITH SLOTS DEEPER THAN 6" SHALL BE CONSTRUCTED WITH A HORIZONTAL BAR(S) MAXIMUM SPACING 6". 1" DIAMETER GALV. PIPE EMBEDDED 2" IN PRE-CAST OR OTHER APPROVED METHOD.

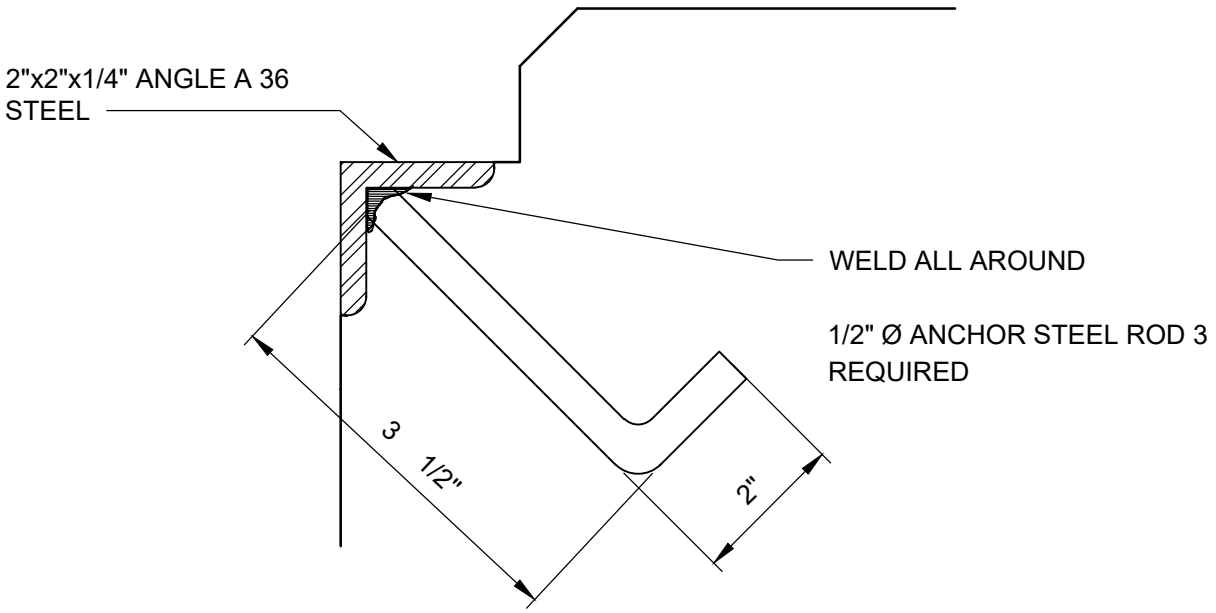


SECTION A-A

END VIEW

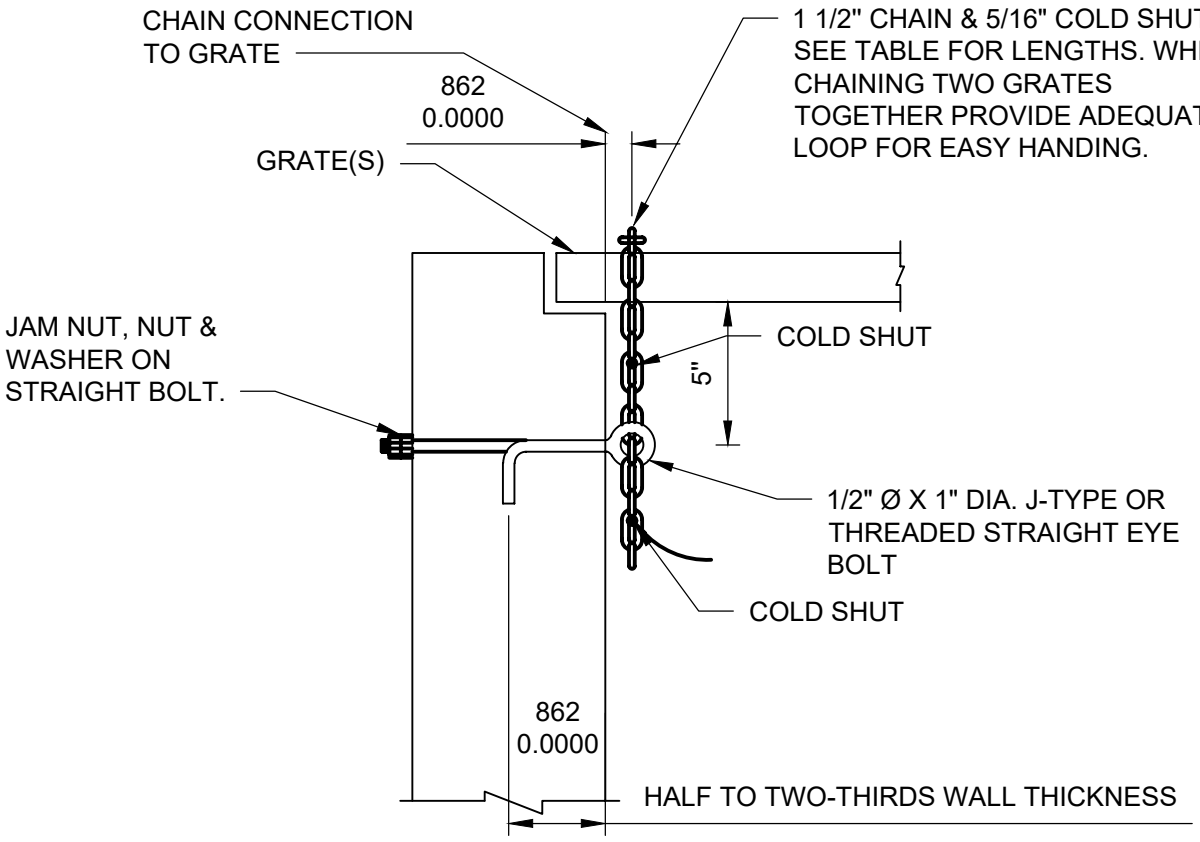
NOTE: OPENING MAY BE CONSTRUCTED AT EITHER END OR BOTH ENDS AS SHOWN ON PLANS TYPE C" OR E"

DETAILS OF OPENINGS IN DITCH BOTTOM INLETS



GRATE SEAT DETAIL

DETAIL FOR TYPE "C & E" INLET	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-209
		DATE DRAWN	5-24-79
		REVISED DATE	5-12-94

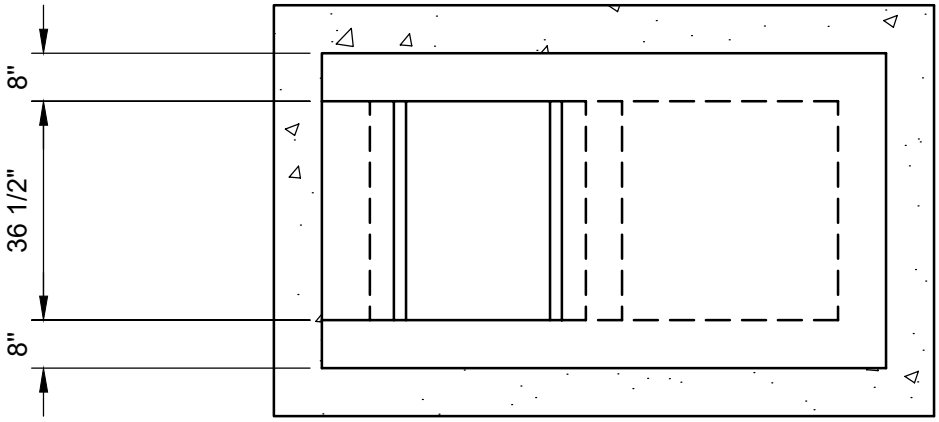


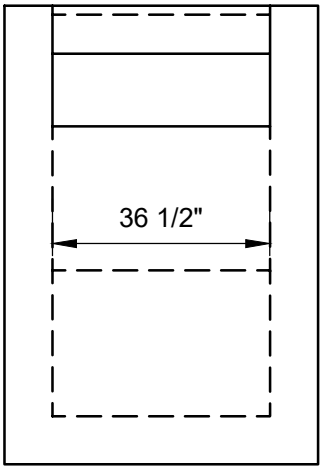
COST OF GALVANIZED EYE BOLT AND CHAIN TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR INLET.

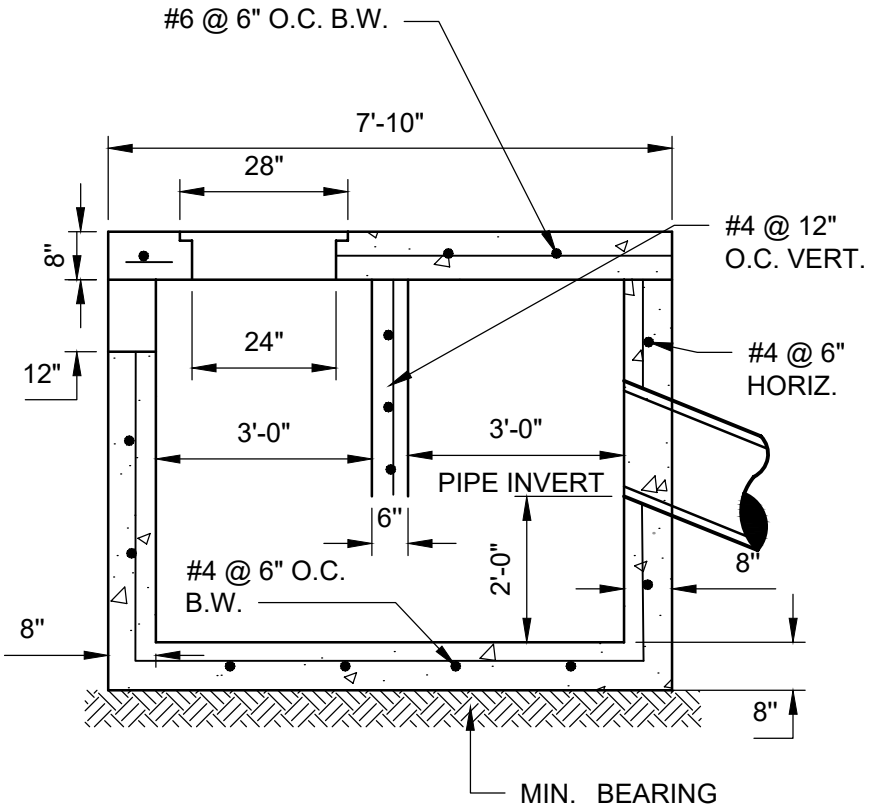
EYE BOLT AND CHAIN REQUIREMENTS

PLATE NUMBER	INLET TYPE	EYE BOLT	LENGTH OF CHAIN	HANDLING AND REMARKS
207	C	1	2'-6"	SLIDE AND SPIN
208	E	2	2 @ 2'-6"	SLIDE AND SPIN

EYE BOLT AND CHAIN FOR LOCKING GRATES TO INLET	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-210
		DATE DRAWN	7-15-79
		REVISED DATE	5-12-94





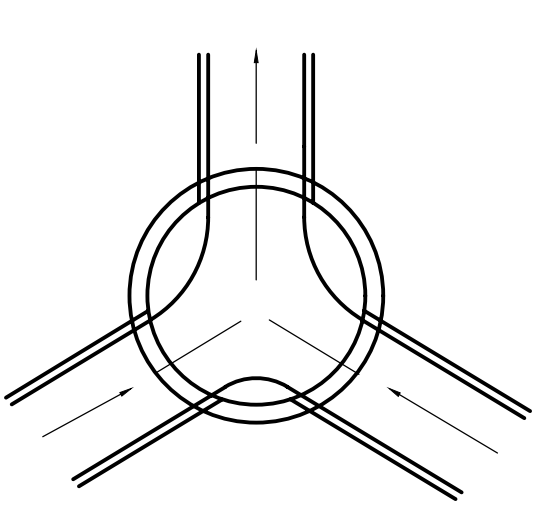


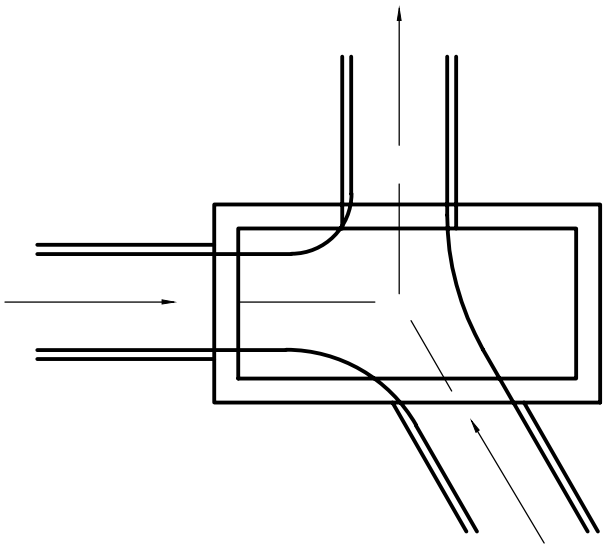
NOTE: CONC. DESIGN STRENGTH 4,000 P.S.I.

SAND TRAP BASIN	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-211
		DATE DRAWN	05-09-79
		REVISED DATE	5-12-94

GENERAL NOTE:

MORTAR USED TO SEAL THE PIPE INTO THE WALLS OF PRECAST UNITS WILL BE OF SUCH A MIX THAT SHRINKAGE WILL NOT CAUSE LEAKAGE INTO OR OUT OF THE UNITS. MAXIMUM OPENING FOR PIPE SHALL BE THE O.D. OF THE PIPE REQUIRED PLUS 6".

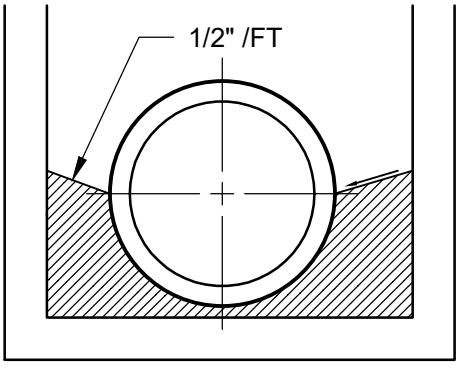




DETAIL OF CHANNELIZATION

NOTE:

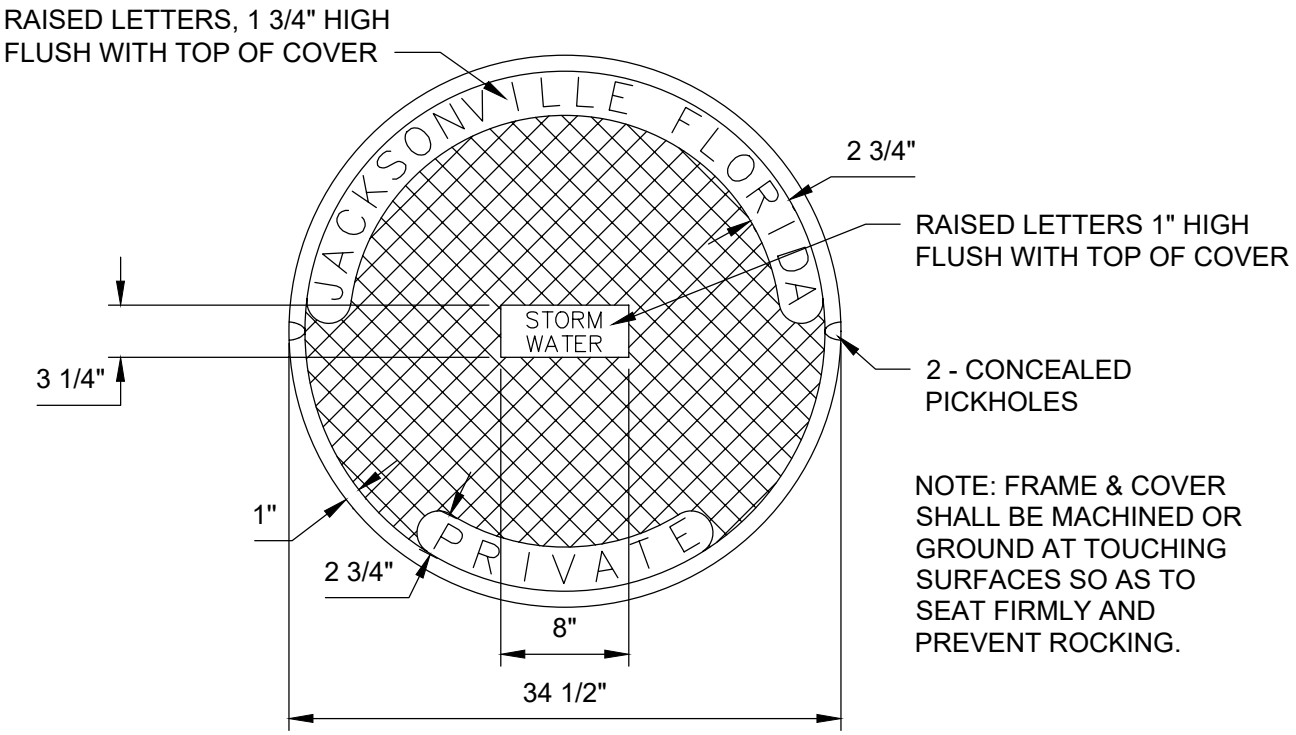
CHANNELIZATION REQUIRED AT ALL DRAINAGE STRUCTURES



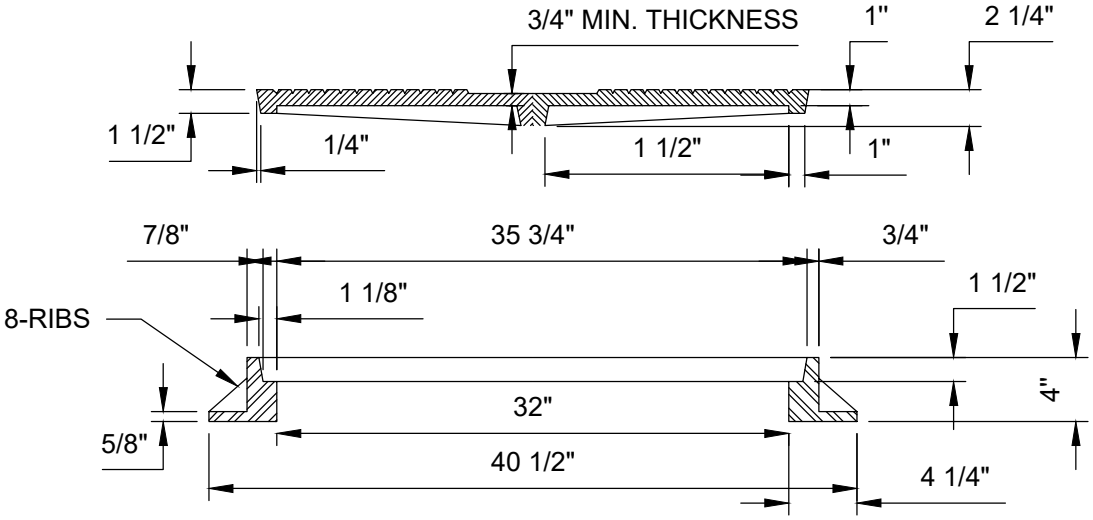
NOTE:

SMOOTH FLOW CHANNELS COMPOSED OF CONCRETE OR BRICK AND MORTAR SHALL BE CONSTRUCTED ON THE BOTTOMS OF ALL STRUCTURES TO A DEPTH EQUAL TO HALF THE DIAMETER OF THE LARGEST PIPE.

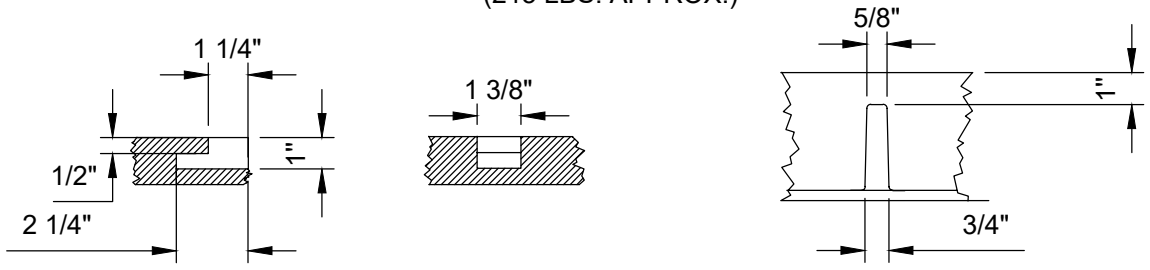
INVERT DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-212
		DATE DRAWN	08-05-79
		REVISED DATE	11-20-25



COVER
(265 LBS.± 5 LBS.)



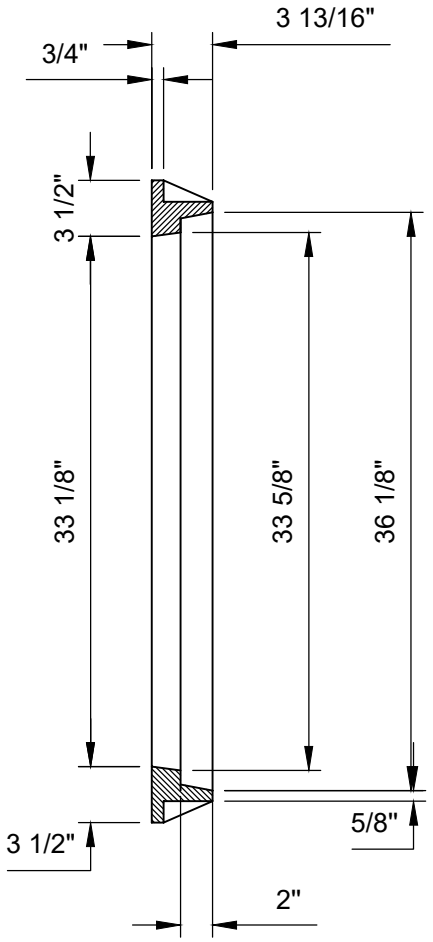
FRAME
(215 LBS. APPROX.)



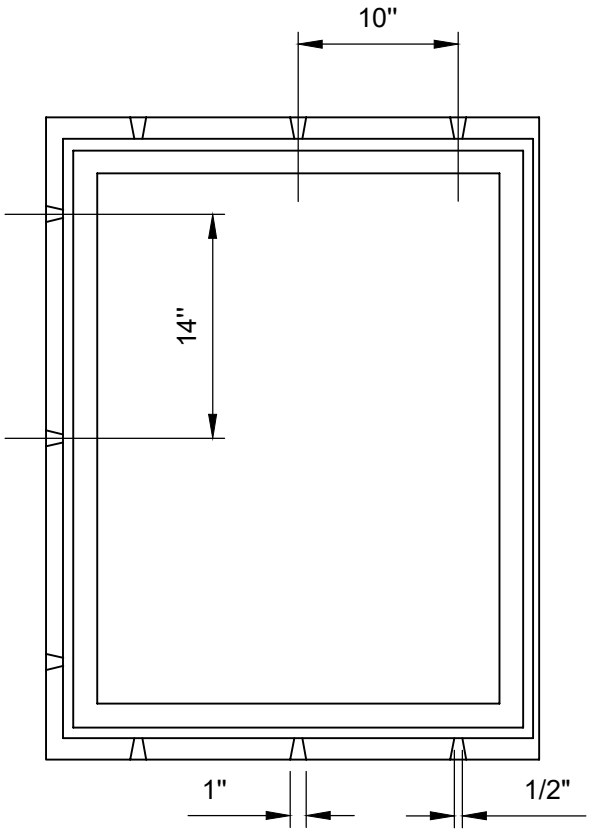
PICKHOLE DETAILS

RIB DETAIL

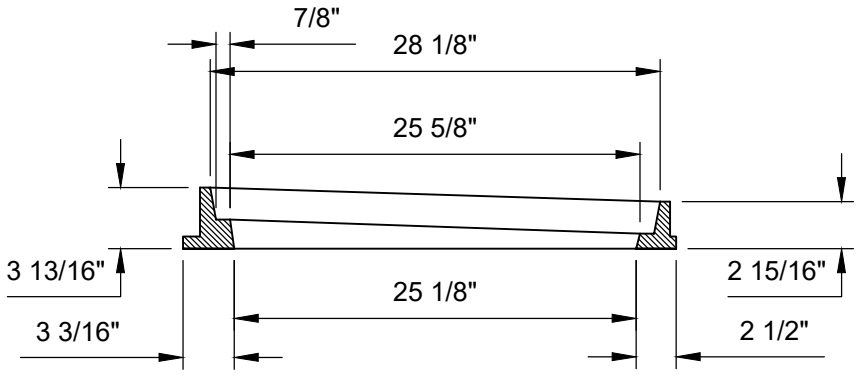
STORM SEWER MANHOLE COVER AND FRAME	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-301
		DATE DRAWN	4-26-89
		REVISED DATE	5-12-94



SECTION



PLAN

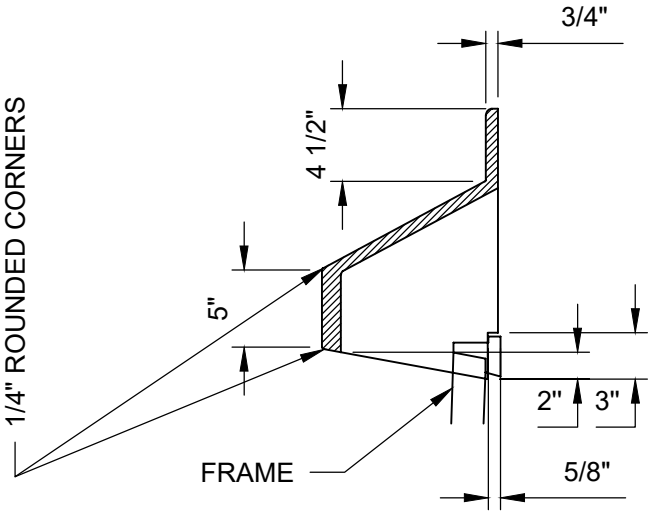


SECTION

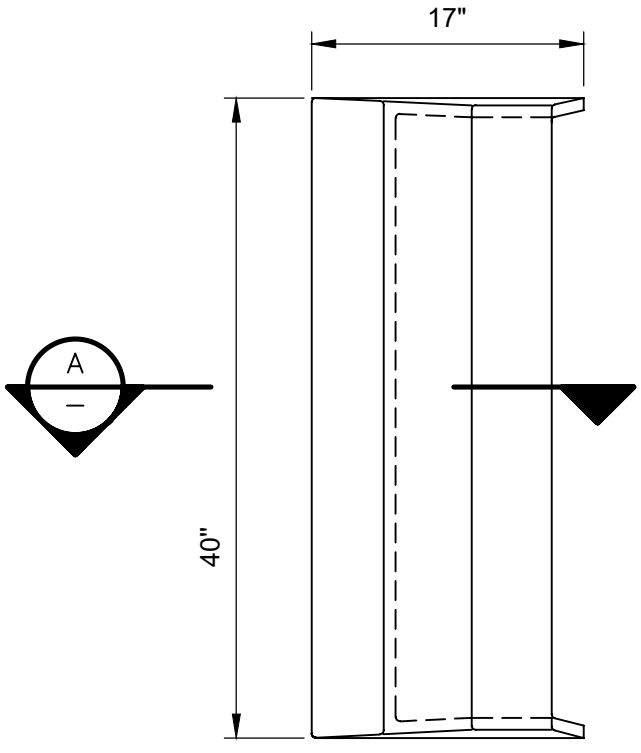
APPROX. 180 LBS.

STORM SEWER CURB INLET FRAME	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-302
		DATE DRAWN	4-24-89
		REVISED DATE	5-12-94

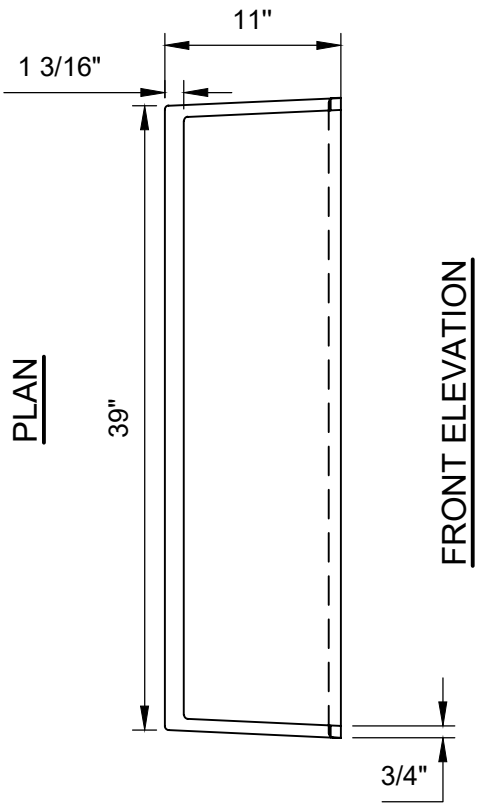
APPROXIMATELY 230 LBS.



SECTION A-A



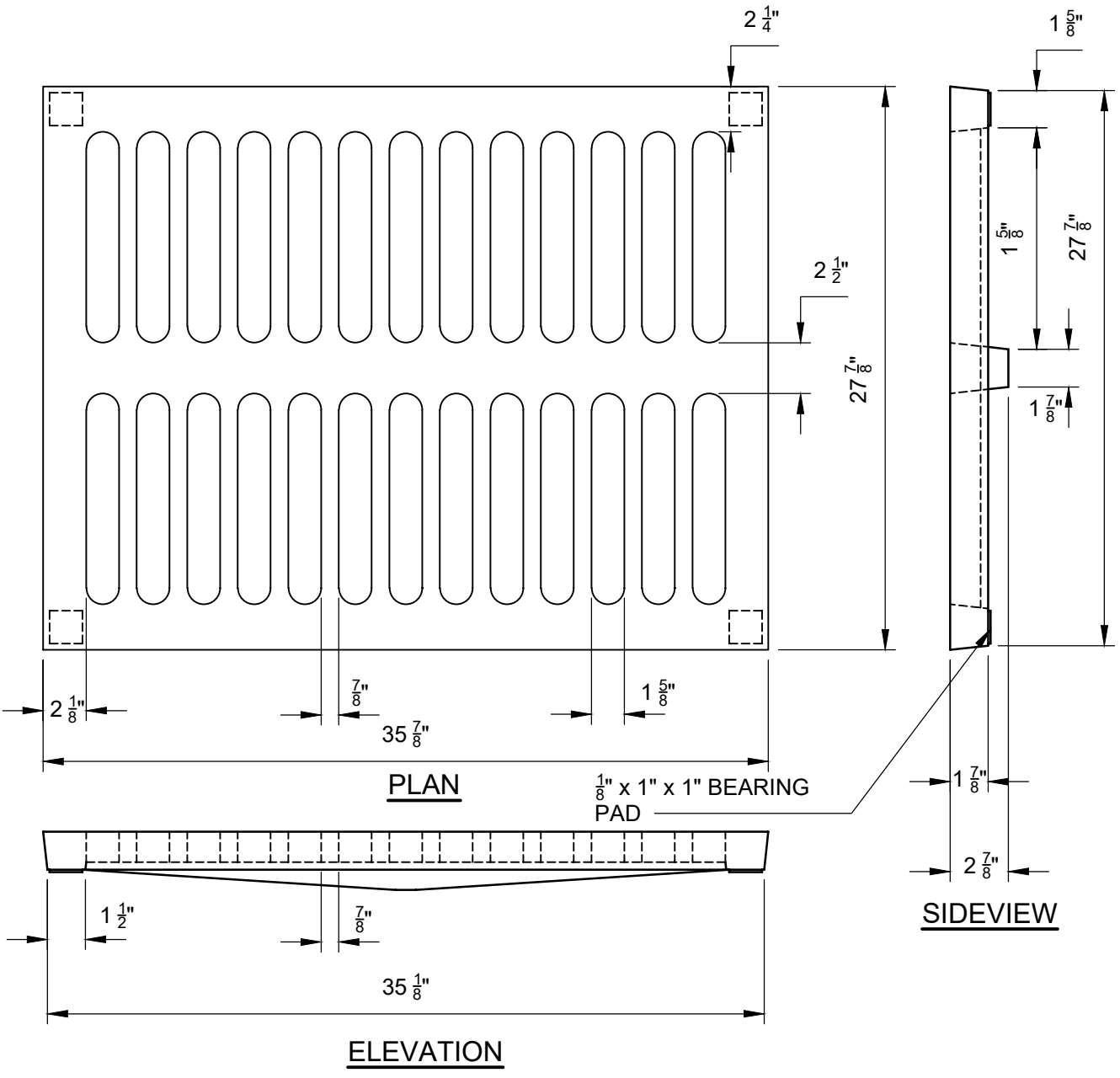
PLAN



FRONT ELEVATION

STORM SEWER CURB IRON	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-303
		DATE DRAWN	4-24-89
		REVISED DATE	5-12-94

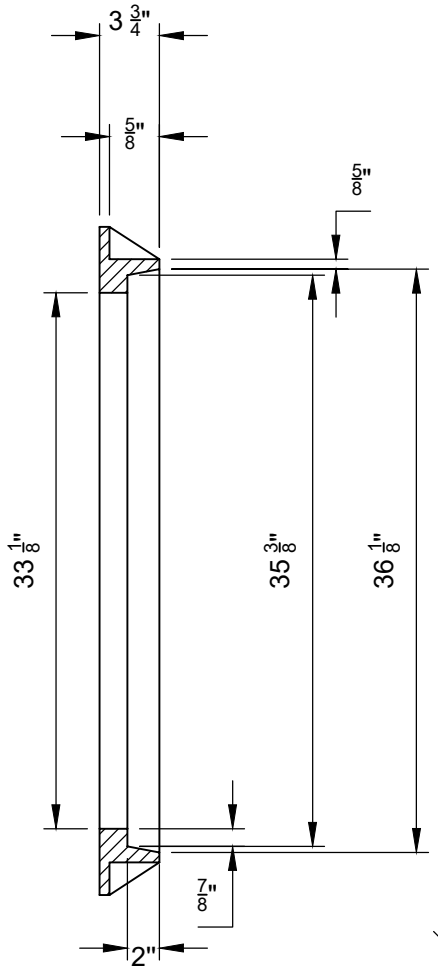
APPROX. 240 LBS.



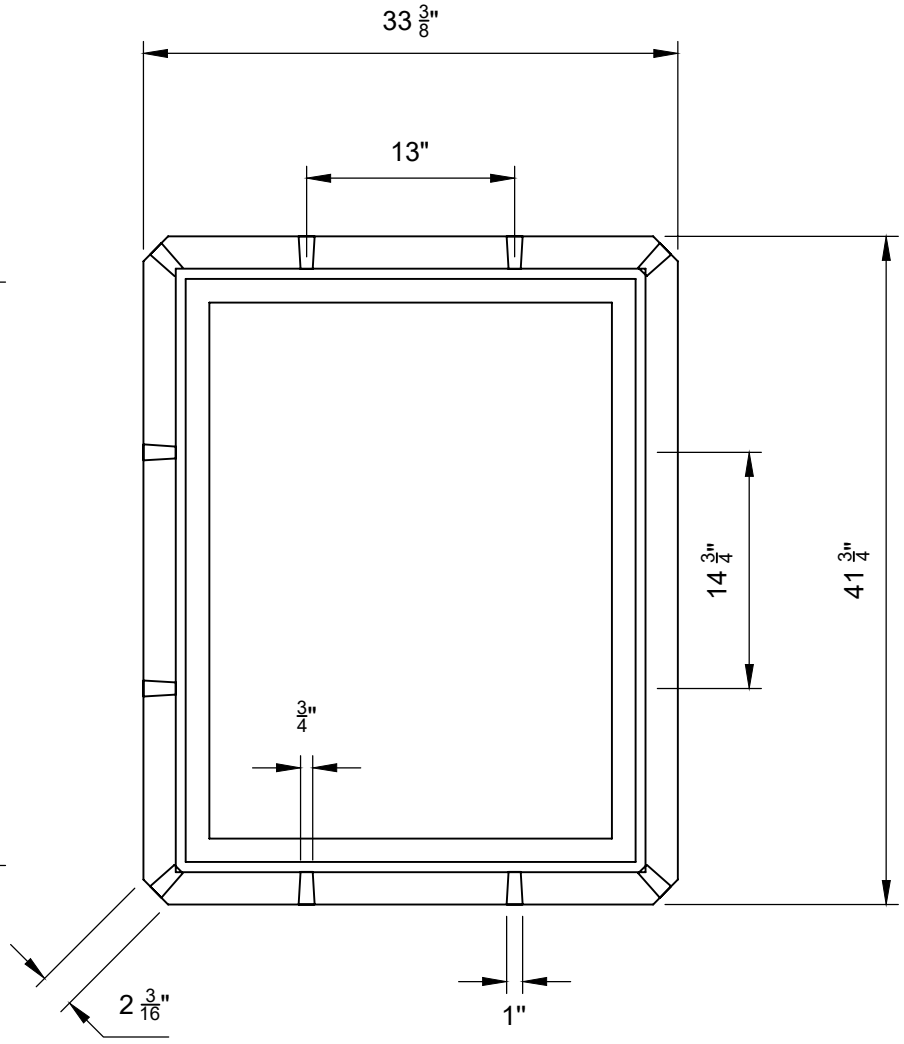
NOTES:

1. STEEL GRATES ARE REQUIRED ON INLETS WITH TRAVERSABLE SLOTS AND ON INLETS WHERE BICYCLE TRAFFIC IS ANTICIPATED.

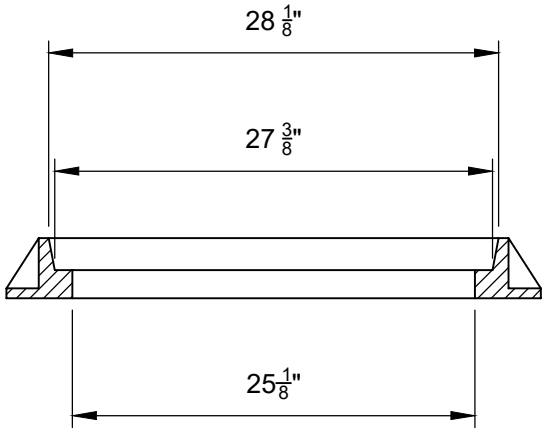
STORM SEWER INLET GRATE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-304
		DATE DRAWN	05-07-90
		REVISED DATE	11-21-24



SECTION



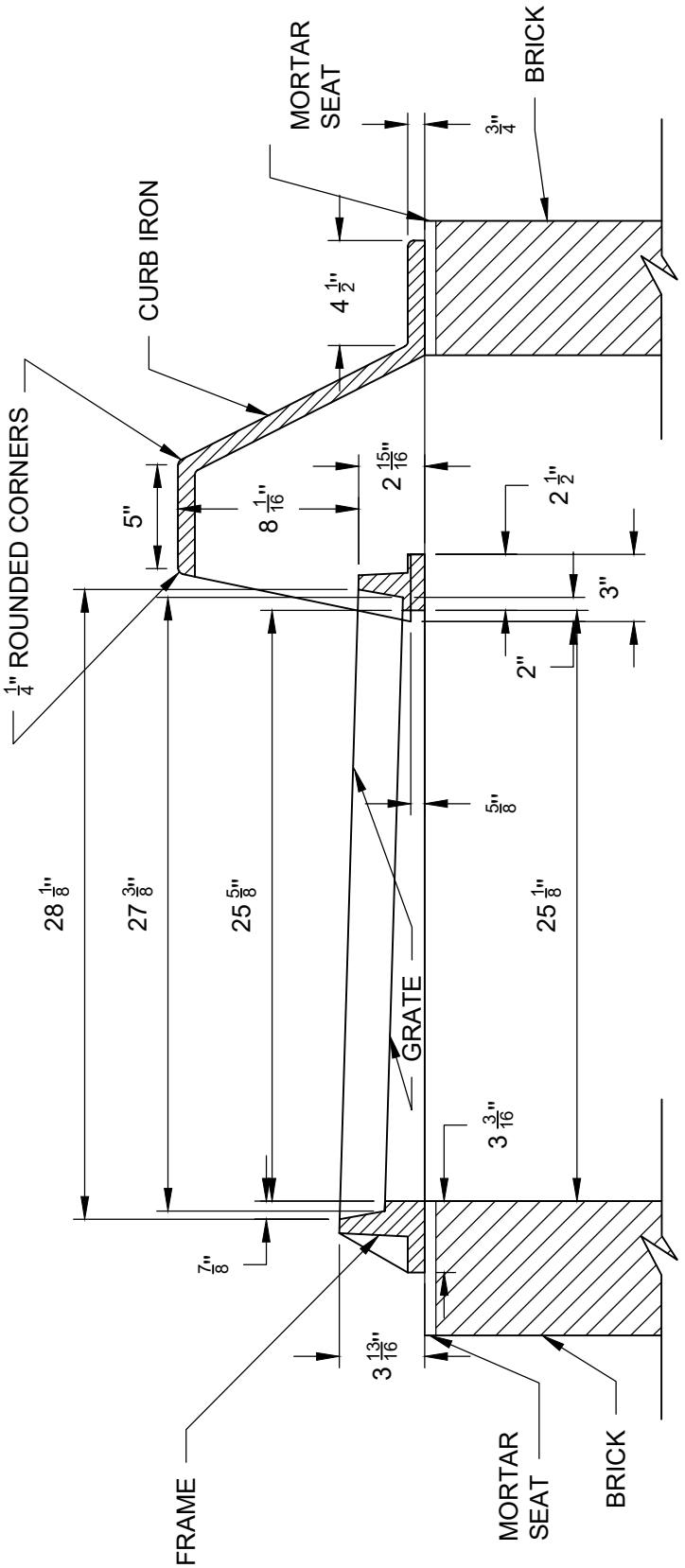
PLAN



SECTION

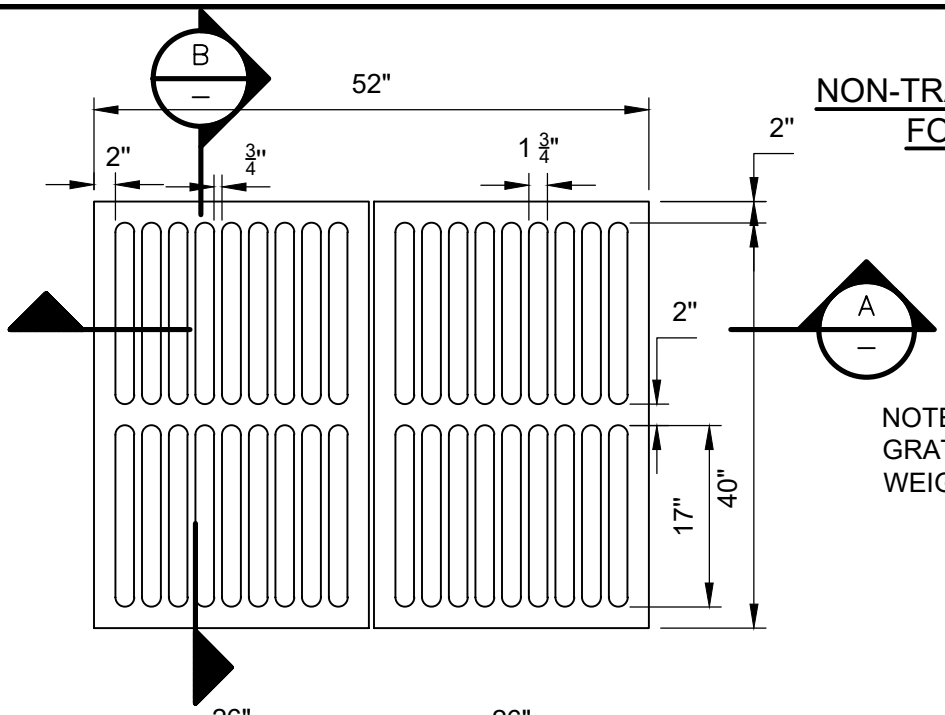
APPROX. 220 LBS.

STORM SEWER CATCH BASIN FRAME	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-305
		DATE DRAWN	3-12-79
		REVISED DATE	11-21-24

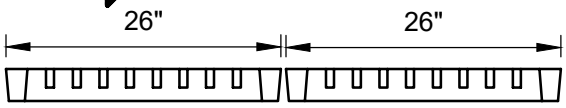


CURB IRON WITH GRATE & FRAME	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-306
		DATE DRAWN	9-9-75
		REVISED DATE	11-21-24

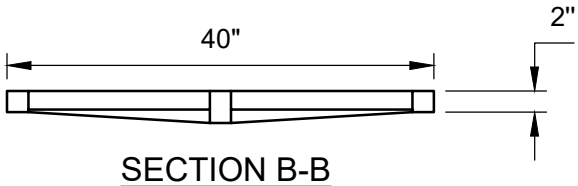
NON-TRAFFIC BEARING GRATE FOR TYPE "E" INLET



NOTE: 2 GRATES SHOWN EACH GRATE SHALL HAVE A MIN. WEIGHT OF 240 LBS.

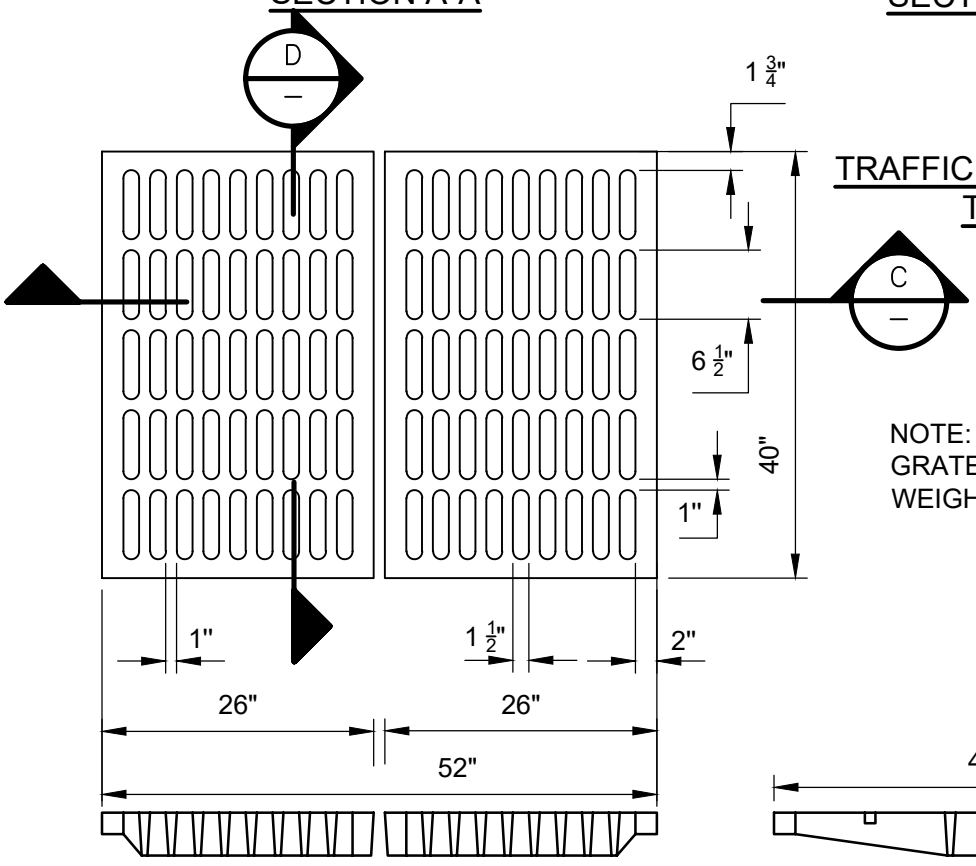


SECTION A-A



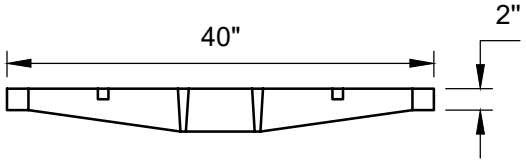
SECTION B-B

TRAFFIC BEARING GRATE FOR TYPE "E" INLET



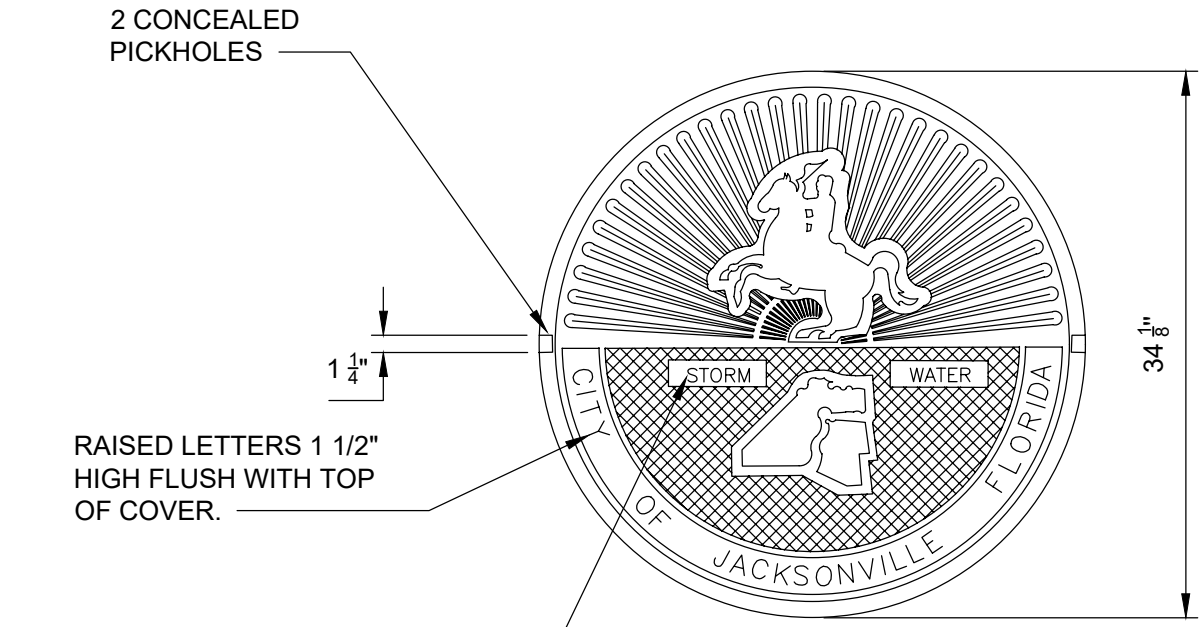
NOTE: 2 GRATES SHOWN EACH GRATE SHALL HAVE A MIN. WEIGHT OF 316 LBS.

SECTION C-C

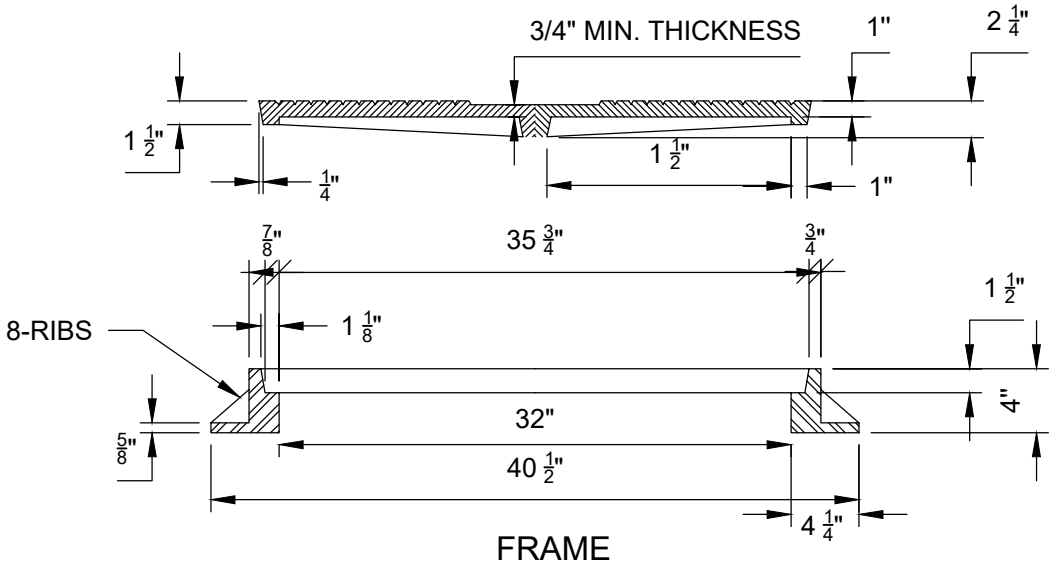


SECTION D-D

GRATE DETAIL FOR TYPE "E" INLET	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-307
		DATE DRAWN	5-16-89
		REVISED DATE	11-21-24

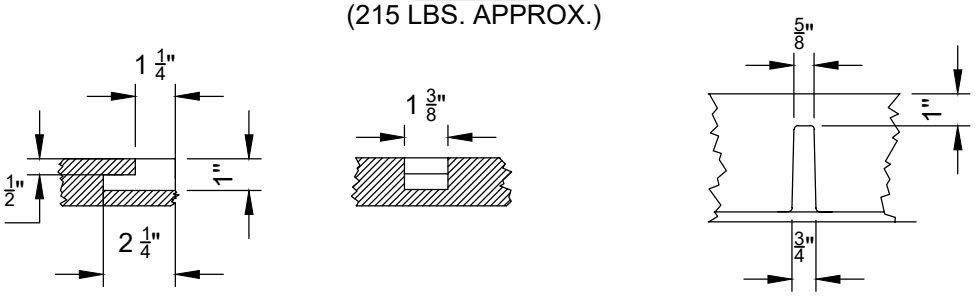


COVER DETAIL



FRAME

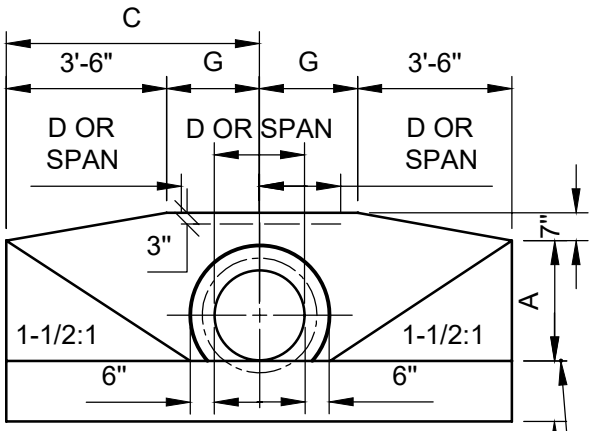
(215 LBS. APPROX.)



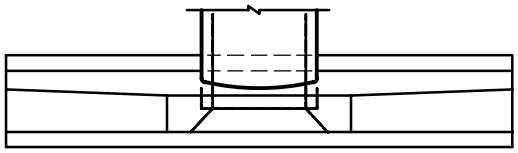
PICKHOLE DETAILS

RIB DETAIL

M/H COVER DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-308
		DATE DRAWN	07-01-82
		REVISED DATE	11-21-24

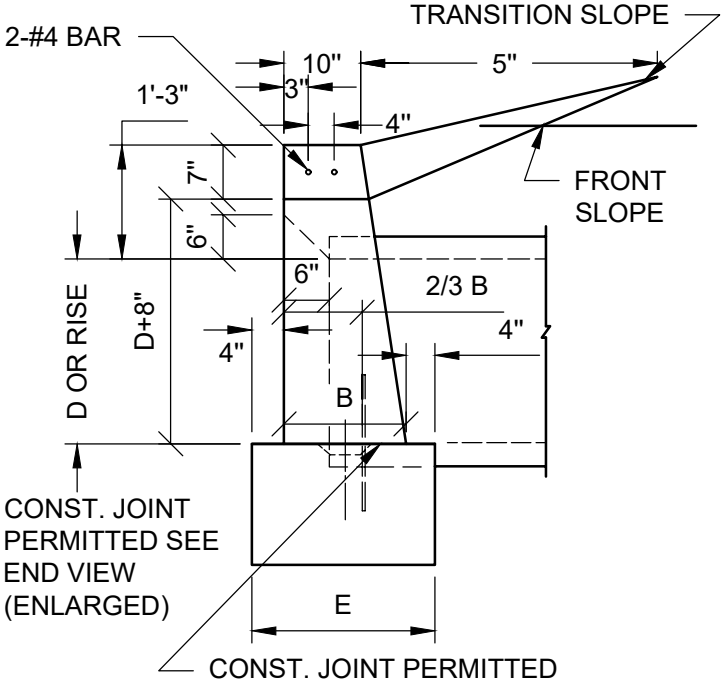


FRONT VIEW

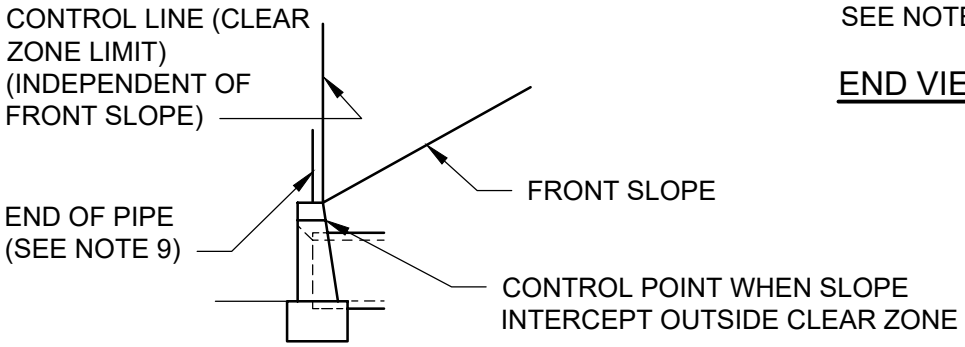


TOP VIEW

ENDWALL DIMENSIONS
(EXCLUSIVE OF MULTIPLE PIPE SPACING)



END VIEW (ENLARGED)

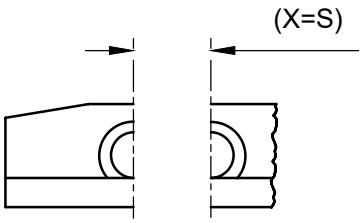


END VIEW

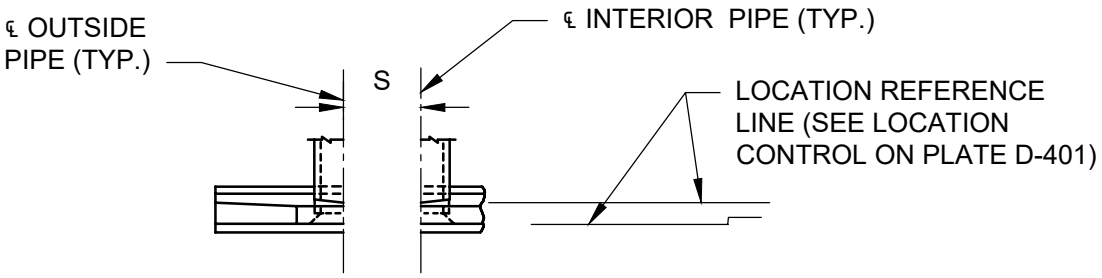
STANDARD LOCATION CONTROL

1. ENDWALL DIMENSIONS, LOCATIONS AND POSITIONS ARE FOR ROUND AND ELLIPTICAL CONCRETE PIPE AND FOR ROUND AND PIPE-ARCH CORRUGATED METAL PIPE. ROUND CONCRETE PIPE SHOWN. SEE PLATES D-403, 404, & 405 FOR ADDITIONAL DIMENSIONS.
2. ENDWALLS MAY BE CAST IN PLACE OR PRECAST CONCRETE. REINFORCING STEEL SHALL BE GRADES 40 OR 60. ADDITIONAL REINFORCEMENT NECESSARY FOR HANDLING PRECAST UNITS SHALL BE DETERMINED BY THE CONTRACTOR OR THE SUPPLIER. COST OF REINFORCEMENT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR CONCRETE, (ENDWALLS).
3. ALL EXPOSED CORNERS AND EDGES OF CONCRETE ARE TO BE CHAMFERED 3/4".
4. CONCRETE MEETING THE REQUIREMENTS OF ASTM C-478 (4000 PSI) MAY BE USED IN LIEU OF CLASS ~ CONCRETE IN PRECAST ITEMS MANUFACTURED IN PLANTS WHICH ARE UNDER THE STANDARD OPERATING PROCEDURES FOR THE INSPECTION OF PRECAST DRAINAGE PRODUCTS.
5. ON OUTFALL DITCHES WITH SIDE SLOPES FLATTER THAN 1 1/2:1 PROVIDE 20' TRANSITIONS FROM THE ENDWALL TO THE FLATTER SIDE SLOPES, RIGHT OF WAY PERMITTING.
6. PIPE LENGTH PLAN QUANTITIES SHALL BE BASED ON THE PIPE END LOCATIONS SHOWN IN THE STANDARD LOCATION CONTROL END VIEW, OR LENGTHS BASED ON SPECIAL ENDWALL LOCATIONS CALLED FOR IN THE PLANS.

STRAIGHT CONCRETE ENDWALLS-SINGLE AND MULTIPLE PIPE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-401
		DATE DRAWN	8-11-79
		REVISED DATE	11-21-24

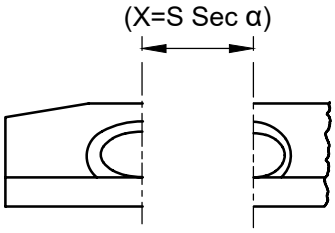


FRONT VIEW

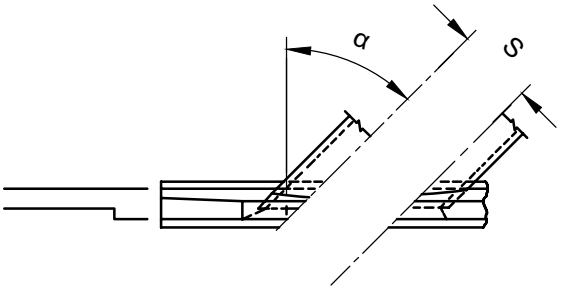


TOP VIEW

NORMAL PIPE



FRONT VIEW



TOP VIEW

SKEWED PIPE

LEGEND

α PIPE SKEW

S CENTER TO CENTER PIPE SPACING

X CENTERLINE TO CENTERLINE DIMENSION AT FACE OF HEADWALL

ENDWALL POSITIONS FOR SINGLE AND MULTIPLE PIPE AND SPACING FOR MULTIPLE PIPE

STRAIGHT CONCRETE ENDWALLS-SINGLE AND MULTIPLE PIPE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-402
		DATE DRAWN	8-11-79
		REVISED DATE	11-21-24

ROUND CONCRETE AND CORRUGATED METAL PIPE															
D	OPENING AREA (SF)				DIMENSIONS							DIMENSIONS			
	NUMBER OF PIPES				A	B	C	E	F	G	S	X			
	1	2	3	4								0°	15°	30°	45°
15"	1.23	2.46	3.69	4.92	1'-11"	1'-2"	4-0"	1'-10"	1'-2"	0'-6"	2'-7"	2'-7"	2'-8"	3'-0"	3'-8"
18"	1.77	3.54	5.31	7.08	2'-2"	1'-3"	4'-6"	1'-11"	1'-3"	1'-0"	2'-10"	2'-10"	2'-11"	3'-3"	4'-0"
24"	3.14	6.28	9.42	12.56	2'-8"	1'-4"	5'-6"	2'-0"	1'-4"	2'-0"	3'-5"	3'-5"	3'-6"	3'-11"	4'-10"
30"	4.91	9.82	14.73	19.64	3'-2"	1'-6"	6'-6"	2'-2"	1'-6"	3'-0"	4'-3"	4'-3"	4'-5"	4'-11"	6'-0"
36"	7.07	14.14	21.21	28.28	3'-8"	1'-8"	7'-6"	2'-4"	1'-8"	4'-0"	5'-1"	5'-1"	5'-3"	5'-10"	7'-2"
42"	9.62	19.24	28.86	38.48	4'-2"	1'-10"	8'-6"	2'-6"	2'-0"	5'-0"	6'-0"	6'-0"	6'-3"	6'-11"	8'-6"
48"	12.57	25.14	37.71	50.28	4'-8"	2'-1"	9'-6"	2'-9"	2'-0"	6'-0"	6'-9"	6'-9"	7'-0"	7'-10"	9'-7"
54"	15.90	31.80	47.70	63.60	5'-2"	2'-6"	10'-6"	3'-2"	2'-3"	7'-0"	7'-8"	7'-8"	7'-11"	8'-10"	10'-10"

CONCRETE (CY)										
NUMBER AND TYPE OF PIPE AND SKEW ANGLE OF PIPE										
D	DOUBLE									
	SINGLE	DOUBLE								
	CONC.	METAL	CONC.				METAL			
	0°	0°	0°	15°	30°	45°	0°	15°	30°	45°
15"	1.23	1.24	1.59	1.60	1.65	1.74	1.62	1.63	1.68	1.78
18"	1.56	1.59	1.99	2.01	2.06	2.17	2.04	2.06	2.11	2.23
24"	2.24	2.29	2.82	2.84	2.91	3.06	2.91	2.93	3.01	3.17
30"	3.26	3.34	4.13	4.16	4.26	4.49	4.28	4.31	4.43	4.67
36"	4.53	4.64	5.73	5.77	5.92	6.23	5.95	6.00	6.15	6.49
42"	6.33	6.49	8.11	8.17	8.39	8.85	8.43	8.50	8.73	9.23
48"	8.15	8.38	10.40	10.48	10.75	11.33	12.64	12.80	13.34	14.50
54"	11.71	11.77	15.23	15.35	15.78	16.69				

CONCRETE (CY)								
D	NUMBER AND TYPE OF PIPE AND SKEW ANGLE OF PIPE							
	TRIPLE							
	CONC.				METAL			
	0°	15°	30°	45°	0°	15°	30°	45°
15"	1.94	1.96	2.05	2.23	1.99	2.02	2.11	2.30
18"	2.43	2.46	2.56	2.79	2.51	2.54	2.65	2.89
24"	3.39	3.43	3.57	3.87	3.52	3.56	3.71	4.03
30"	4.98	5.04	5.25	5.69	5.20	5.27	5.49	5.97
36"	6.92	7.00	7.29	7.91	7.25	7.34	7.65	8.33
42"	9.90	10.02	10.45	11.38	10.38	10.52	10.98	11.99
48"	12.64	12.80	13.34	14.50	13.34	13.51	14.11	15.39
54"	18.77	19.02	19.86	21.69				

CONCRETE (CY)								
D	NUMBER AND TYPE OF PIPE AND SKEW ANGLE OF PIPE							
	QUADRUPLE							
	CONC.				METAL			
	0°	15°	30°	45°	0°	15°	30°	45°
15"	2.30	2.34	2.47	2.74	2.37	2.41	2.75	2.84
18"	2.86	2.91	3.06	3.40	2.96	3.01	3.17	3.53
24"	3.97	4.03	4.24	4.69	4.14	4.20	4.43	4.91
30"	5.84	5.93	6.24	6.91	6.13	6.23	6.56	7.29
36"	8.13	8.26	8.69	9.62	8.57	8.71	9.18	10.20
42"	11.68	11.87	12.51	13.89	12.32	12.52	13.22	14.73
48"	14.89	15.13	15.93	17.68	15.82	16.08	16.97	18.90
54"	22.29	22.66	23.93	26.67				

STRAIGHT CONCRETE ENDWALLS SINGLE AND MULTIPLE PIPE

CITY OF JACKSONVILLE STANDARD

N.T.S.

PLATE D-403

DATE DRAWN 07-14-79

REVISED DATE 11-21-24

CORRUGATED METAL PIPE ARCH																
SPAN	RISE	OPENING AREA (SF)				DIMENSIONS										
		NUMBER OF PIPES				A	B	C	E	F	G	S	X			
		1	2	3	4								0°	15°	30°	45°
17"	13"	1.1	2.2	3.3	4.4	1'-9"	1'-2"	3'-10"	1'-10"	1'-2"	0'-4"	2'-6"	2'-6"	2'-7"	2'-11"	3'-6"
21"	15"	1.6	3.2	4.8	6.4	1'-11"	1'-2"	4'-3"	1'-10"	1'-2"	0'-9"	2'-10"	2'-10"	2'-11"	3'-3"	4'-0"
28"	20"	2.8	5.6	8.4	11.2	2'-4"	1'-3"	5'-2"	1'-11"	1'-3"	1'-8"	3'-5"	3'-5"	3'-6"	3'-11"	4'-10"
35"	24"	4.3	8.6	12.9	17.2	2'-8"	1'-4"	5'-111/2"	2'-0"	1'-4"	2'-51/2"	4'-0"	4'-0"	4'-2"	4'-7"	5'-8"
42"	29"	5.9	11.8	17.7	23.6	3'-1"	1'-5"	6'-101/2	2'-1"	1'-5"	3'-41/2"	4'-9"	4'-9"	4'-11"	5'-6"	6'-9"
49"	33"	8.4	16.8	25.2	33.6	3'-5"	1'-6"	7'-8"	2'-2"	1'-6"	4'-2"	5'-6"	5'-6"	5'-8"	6'-4"	7'-9"
57"	38"	10.6	21.2	31.8	42.4	3'-10"	1'-7"	8'-71/2	2'-3"	1'-7"	5'-11/2"	6'-4"	6'-4"	6'-7"	7'-4"	8'-11"
64"	43"	13.2	26.4	39.6	52.8	4'-3"	1'-8"	9'-61/2"	2'-4"	1'-8"	6'-01/2"	7'-1"	7'-1"	7'-4"	8'-2"	10'-0"
71"	47"	16.9	33.8	50.7	67.6	4'-7"	1'-10"	10'-4"	2'-6"	2'-0"	6'-10"	7'-10"	7'-10"	8'-1"	9'-1"	11'-1"

CORRUGATED METAL PIPE ARCH															
SPAN	RISE	CONCRETE (CY)													APPOX. EQUIV. ROUND PIPE
		NUMBER OF PIPE AND SKEW ANGLE OF PIPE													
		SINGLE	DOUBLE				TRIPLE				QUADRUPLE				
		0°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	
17"	13"	1.16	1.47	1.48	1.52	1.60	1.78	1.80	1.88	2.04	2.09	2.12	2.23	2.48	15"
21"	15"	1.33	1.69	1.70	1.75	1.84	2.04	2.06	2.15	2.33	2.40	2.44	2.57	2.84	18"
28"	20"	1.78	2.31	2.33	2.39	2.53	2.83	2.87	2.99	3.26	3.36	3.42	3.60	4.01	18"
35"	24"	2.34	3.03	3.05	3.14	3.32	3.72	3.77	3.93	4.29	4.40	4.47	4.72	5.25	30"
42"	29"	3.13	4.06	4.09	4.20	4.45	4.99	5.06	5.28	5.76	5.93	6.03	6.36	7.09	36"
49"	33"	3.83	5.00	5.04	5.18	5.48	6.16	6.24	6.52	7.12	7.32	7.44	7.86	8.76	42"
57"	38"	4.87	6.31	6.36	6.53	6.91	7.74	7.84	8.18	8.93	9.18	9.33	9.85	11.00	48"
64"	43"	5.88	7.64	7.70	7.91	8.37	9.40	9.52	9.94	10.90	11.20	11.30	12.00	13.30	54"
71"	47"	7.80	10.20	10.20	10.50	11.10	12.50	12.70	13.20	14.40	14.90	15.10	15.90	17.80	60"

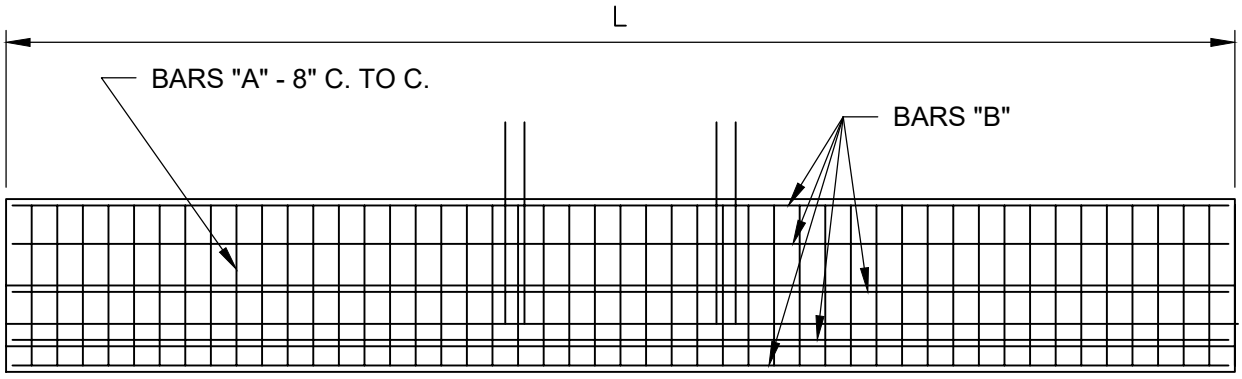
STRAIGHT CONCRETE ENDWALLS SINGLE AND MULTIPLE PIPE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-404
		DATE DRAWN	07-13-79
		REVISED DATE	11-21-24

	SPAN	RISE	OPENING AREA (SF)				CONCRETE ELLIPTICAL PIPE										
			NUMBER OF PIPES				DIMENSIONS							X			
			1	2	3	4	A	B	C	E	F	G	S	0°	15°	30°	45°
	18"	12"	1.3	2.6	3.9	5.2	1'-8"	1'-2"	3'-9"	1'-10"	1'-2"	0'-3"	2'-10"	2'-10"	2'-11"	3'-3"	4'-0"
	23"	14"	1.8	3.6	5.4	7.2	1'-10"	1'-3"	4'-21/2"	1'-11"	1'-3"	81/2"	3'-5"	3'-5"	3-6"	3'-11"	4'-10"
	30"	19"	3.3	6.6	9.9	13.2	2'-3"	1'-4"	5'- 11/2"	2'-0"	1'-4"	1'-71/2"	4'-2"	4'-2"	4'-4"	4'-10"	5'-11"
	38"	24"	5.1	10.2	15.3	20.4	2'-8"	1-5"	6'-3"	2'-1"	1'-5"	2'-9"	5'-2"	5'-2"	5'-4"	6'-0"	7'-4"
	45"	29"	7.4	14.8	22.2	29.6	3'-1"	1'-6"	7'-0"	2'-2"	1'-6"	3'-6"	6'-0"	6'-0"	6'-3"	6'-11"	8'-6"
	53"	34"	10.2	20.4	30.6	40.8	3'-6"	1'-7"	7'-111/2"	2'-3"	1'-7"	4'-51/2"	7'-1"	7'-1"	7'-4"	8'-2"	10'-0"
	60"	38"	12.9	25.8	38.7	51.6	3'-10"	1'-8"	8'-9"	2'-4"	1'-8"	5'-3"	7'-11"	7'-11"	8'-2"	9'-2"	11'-2"
	68"	43"	16.6	33.2	49.8	66.4	4'-3"	1'-10"	9'-81/2"	2'-6"	1'-10"	6'-21/2"	8'-10"	8'-10"	9'-2"	10'-2"	12'-6"
	76"	48"	20.5	41.0	61.5	82.0	4'-8"	2'-1"	10'-8"	2'-9"	2'-0"	7'-2"	9'-9"	9'-9"	10'-1"	11'-3"	13-9"
*	83"	53"	24.8	49.6	74.4	99.2	5'-1"	2'-6"	11'-7"	3'-2"	2'-6"	8'-1"	10'-7"	10'-7"	10'-11"	12'-3"	15-0"
	91"	58"	29.5	59.0	88.5	118.0	5'-6"	2'-10"	12'-61/2"	3'-6"	2'-10"	9'-01/2"	11'-4"	11'-4"	11'-9"	13'-1"	16-0"

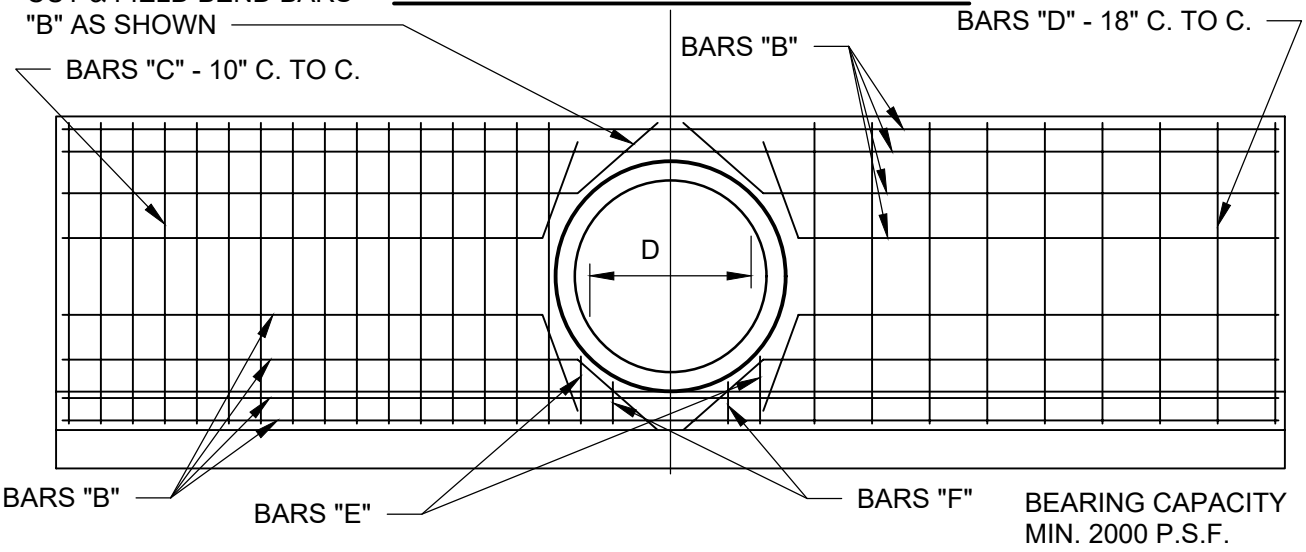
	CONCRETE ELLIPTICAL PIPE															
	SPAN	RISE	CONCRETE (CY)													APPOX. EQUIV. ROUND PIPE
			NUMBER OF PIPE AND SKEW ANGLE OF PIPE													
			SINGLE	DOUBLE				TRIPLE				QUADRUPLE				
			0°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°	
	12"	18"	1.09	1.45	1.46	1.51	1.60	1.80	1.82	1.91	2.09	2.16	2.20	2.33	2.60	15"
	14"	23"	1.36	1.82	1.84	1.89	2.01	2.29	2.32	2.43	2.68	2.75	2.80	2.97	3.33	18"
	19"	30"	1.89	2.55	2.57	2.65	2.82	3.22	3.27	3.43	3.77	3.88	3.95	4.19	4.70	24"
	24"	38"	2.64	3.55	3.58	3.69	3.93	4.48	4.54	4.77	5.24	5.39	5.49	5.82	6.53	30"
	29"	45"	3.32	4.48	4.52	4.66	4.96	5.64	5.72	6.00	6.60	6.80	6.92	7.34	8.24	36"
	34"	53"	4.24	5.76	5.81	6.00	6.39	7.29	7.40	7.76	8.55	8.81	8.97	9.52	10.70	42"
	38"	60"	5.22	7.16	7.23	7.46	7.96	9.10	9.24	9.70	10.70	11.10	11.20	12.00	13.50	48"
	43"	68"	6.63	9.01	9.09	9.38	10.00	11.40	11.60	12.10	13.40	13.80	14.00	14.90	16.70	54"
	48"	76"	8.66	11.70	11.80	12.20	13.00	14.80	15.00	15.80	17.40	17.90	18.20	19.30	21.70	60"
*	53"	83"	12.50	16.90	16.90	17.70	18.80	21.50	21.80	22.90	25.20	26.00	26.40	28.10	31.60	66"
	58"	91"	16.50	22.30	22.50	23.20	24.70	28.00	28.50	29.90	32.90	33.90	34.50	36.60	41.00	72"

* SPECIAL ORDER; NOT STANDARD SIZE

STRAIGHT CONCRETE ENDWALLS SINGLE AND MULTIPLE PIPE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-405
		DATE DRAWN	07-13-79
		REVISED DATE	11-21-24

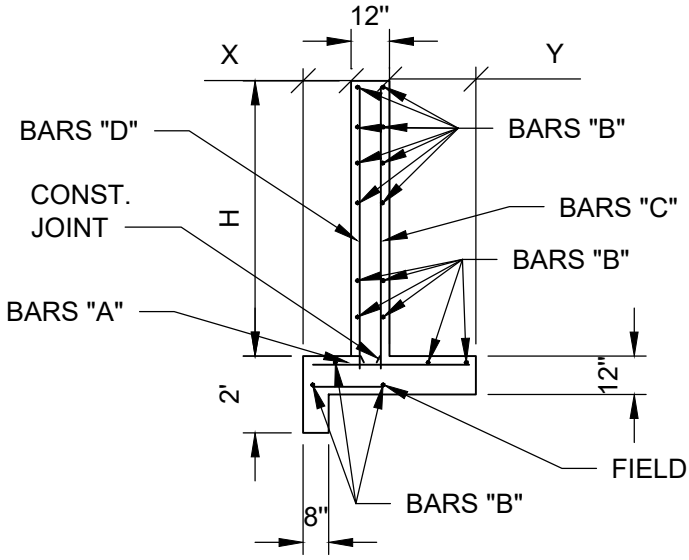


PLAN - SHOWING BARS IN FOOTING



HALF ELEV. SHOWING BARS IN BACK FACE OF WALL

HALF ELEV. SHOWING BARS IN FRONT FACE OF WALL



PROFILE - SHOWING BARS

NOTES:

1. CUT AND FIELD BEND BARS "B" AS SHOWN.
2. CONC. DESIGN STRENGTH 3000 P.S.I.
3. CHAMFER ALL EXPOSED EDGES 3/4".
4. 2" CLEARANCE ON ALL BARS.

STRAIGHT ENDWALL FOR 60"-78" CONC. PIPE CULVERTS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-406
		DATE DRAWN	5-8-79
		REVISED DATE	11-21-24

STRAIGHT ENDWALLS

DIMENSIONS					BAR SCHEDULE				
PIPE SIZE	L	H	X	Y	BAR	SIZE	LENGTH	NO. REQ.	SPACE
60"	32'-0"	7'-2"	1'-3"	2'-3"	A	6	4'-2"	48	8"
					B	4	31'-8"	17	
					C	6	9'-9"	32	10"
					D	4	7'-10"	18	18"
					E	6	2'-6"	4	
					F	6	1'-6"	4	
66"	34'-0"	7'-8"	1'-3"	2'-8"	A	6	4'-7'	51	8"
					B	4	33'-8"	17	
					C	6	10'-3'	34	10"
					D	4	8'-4"	20	18"
					E	6	2'-6'	4	
					F	6	1'-6'	4	
72"	36'-0"	8'-3"	1'-4"	3'-1"	A	6	5'-1"	54	8"
					B	4	35'-8"	17	
					C	6	10'-11"	36	10"
					D	4	8'-11"	22	18"
					E	6	2'-6"	4	
					F	6	1'-6"	4	
78"	38'-0"	8'-10"	1'-4"	3'-8"	A	6	5'-8"	57	8"
					B	4	37'-8"	17	
					C	6	11'-6"	38	10"
					D	4	9'-6"	22	18"
					E	6	2'-6"	4	
					F	6	1'-6"	4	

ESTIMATED QUANTITIES

PIPE SIZE	CONC. (CU. YDS.)	STEEL (LBS.)
60"	13.58	1247
66"	15.44	1392
72"	17.63	1563
78"	20.07	1733

DIMENSIONAL AND QUANTITATIVE DATA FOR 60"-78" CONC. PIPE ENDWALLS

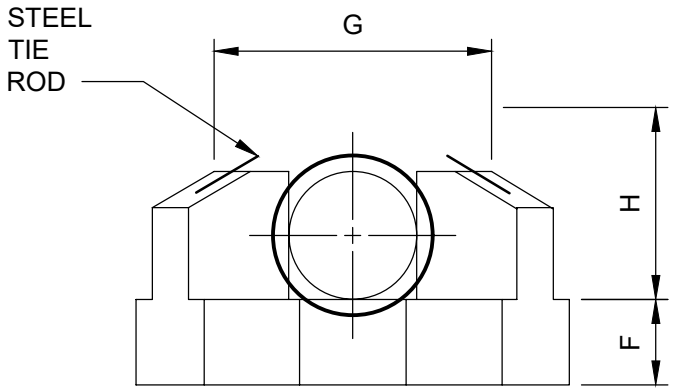
CITY OF JACKSONVILLE STANDARD

N.T.S.

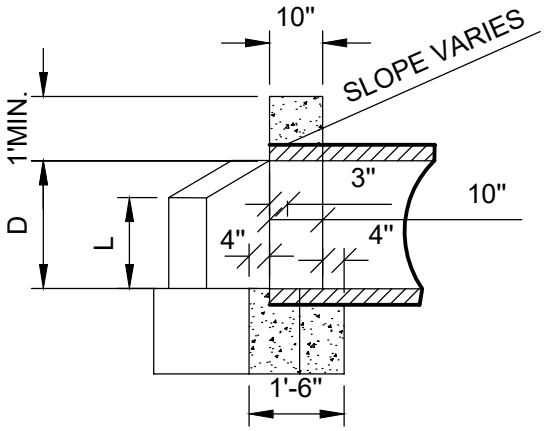
PLATE D-407

DATE DRAWN 5-9-79

REVISED DATE 11-21-24

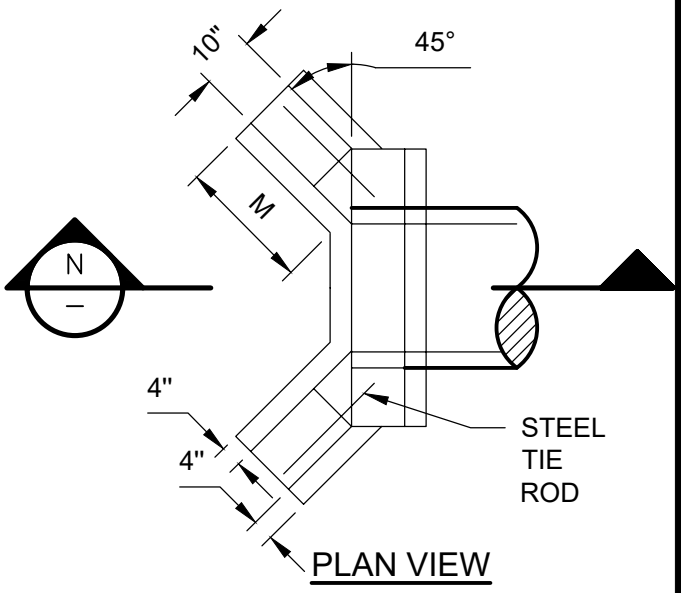


FRONT ELEVATION



SECTION N-N

NOTE:
1. CHAMFER ALL EXPOSED EDGES 3/4" MIN.
2. BEARING CAPACITY 2000 P.S.I.
3. WHERE TIE RODS ARE REQUIRED, THE COST SHALL BE INCLUDED IN THE UNIT BID PRICE.
4. CONCRETE DESIGN STRENGTH 3000 P.S.I.



PLAN VIEW

DIMENSIONS							QUANTITIES IN ONE ENDWALL			
OPENING		WALL				FOOTING	CONCRETE 3,000 P.S.I.			STEEL
							TOTAL CU. YARDS			
D	AREA SQ. FT.	H	G	L	M	F	CONC. PIPE	C.M. PIPE	C.I. PIPE	TIE RODS
15"	1.2	2'-3"	3'-7"	1'-0"	1'-3"	1'-3"	0.58	0.61	0.61	NONE
18"	1.8	2'-6"	3'-10"	1'-2"	1'-7"	1'-3"	0.76	0.79	0.79	NONE
24"	3.1	3'-0"	4'-4"	1'-5"	2'-1"	1'-4"	1.03	1.08	1.08	2-3/4"ØX2'-0"
30"	4.9	3'-6"	4'-10"	1'-9"	2'-5"	1'-6"	1.34	1.42	1.41	2-3/4"ØX2'-0"
36"	7.1	4'-0"	5'-4"	2'-0"	2'-11"	1'-8"	1.74	1.85	1.84	2-3/4"ØX3'-0"
42"	9.6	4'-6"	5'-10"	2'-3"	3'-5"	2'-0"	2.36	2.49		2-3/4"ØX3'-0"
48"	12.6	5'-0"	6'-4"	2'-6"	4'-0"	2'-0"	2.76	2.92		2-3/4"ØX3'-0"

CONCRETE ENDWALL WITH 45° WINGS FOR PIPE CULVERTS

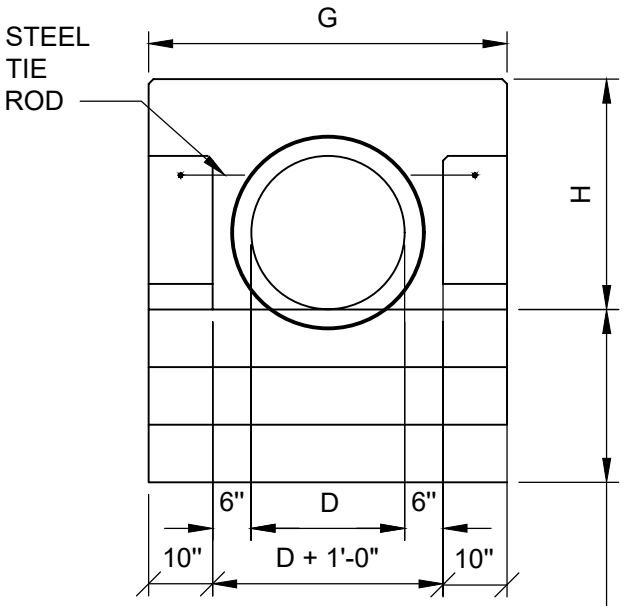
CITY OF JACKSONVILLE STANDARD

N.T.S.

PLATE D-408

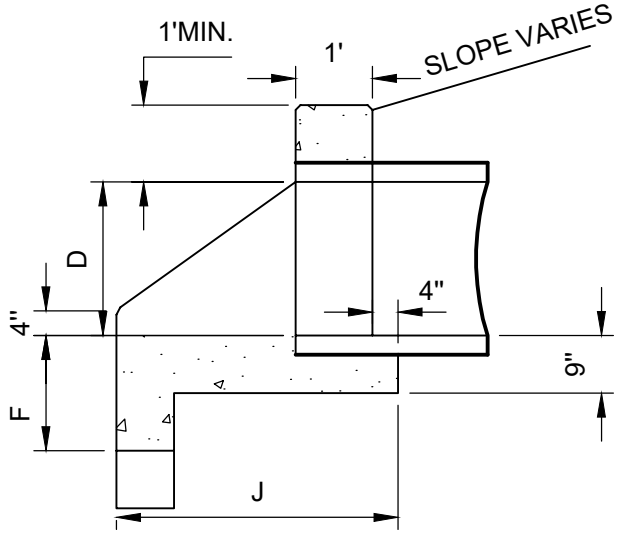
DATE DRAWN 7-12-79

REVISED DATE 11-21-24

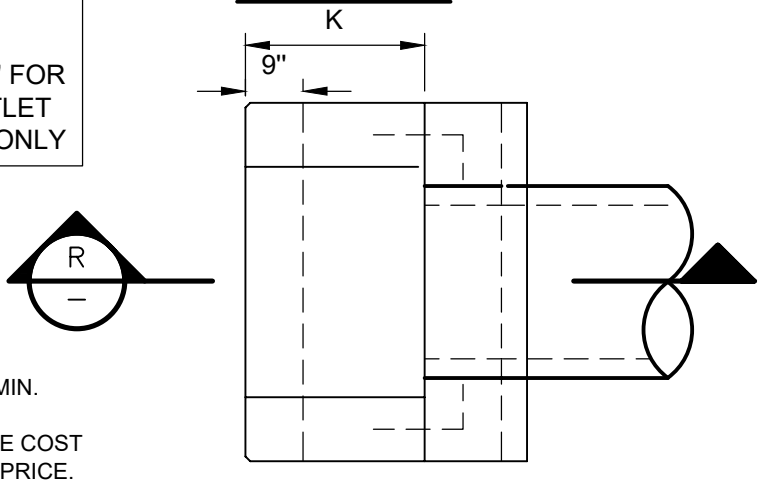


FRONT ELEVATION

F + 9" FOR OUTLET END ONLY



SECTION R-R



NOTE:

1. CHAMFER ALL EXPOSED EDGES 3/4" MIN.
2. BEARING CAPACITY 2000 P.S.I.
3. WHERE TIE RODS ARE REQUIRED, THE COST SHALL BE INCLUDED IN THE UNIT BID PRICE.
4. CONCRETE DESIGN STRENGTH 3000 P.S.I.

PLAN VIEW

TABLE OF DIMENSIONS AND ESTIMATED QUANTITIES
PIPE CULVERT ENDWALLS WITH U-TYPE WINGS

DIMENSIONS							QUANTITIES IN ONE ENDWALL						
OPENING		WALL			FOOTING		TOTAL CU. YDS. CONCRETE, 3000 P.S.I.						STEEL TIE RODS
							CONC. PIPE		C.M. PIPE		C.I. PIPE		
D	AREA SQ.FT.	G	H	K	F	J	INLET	OUTLET	INLET	OUTLET	INLET	OUTLET	
12"	0.8	3'-8"	2'-0"	1'-0"	1'-3"	2'-4"	0.50	0.57	0.51	0.59	0.51	0.59	NONE
15"	1.2	3'-11"	2'-3"	1'-5"	1'-3"	2'-9"	0.61	0.69	0.64	0.72	0.63	0.72	NONE
18"	1.8	4'-2"	2'-6"	1'-9"	1'-3"	3'-1"	0.72	0.81	0.76	0.84	0.76	0.84	NONE
24"	3.1	4'-8"	3'-0"	2'-6"	1'-6"	3'-10"	1.03	1.13	1.08	1.18	1.08	1.18	2-3/4" Ø x 2'-0"
30"	4.9	5'-2"	3'-6"	3'-3"	1'-6"	4'-7"	1.35	1.46	1.43	1.53	1.42	1.53	2-3/4" Ø x 2'-0"
36"	7.1	5'-8"	4'-0"	4'-0'	1'-9"	5'-4"	1.75	1.87	1.86	1.98	1.84	1.96	2-3/4" Ø x 2'-6"
42"	9.6	6'-2"	4'-6"	4'-9"	2'-0"	6'-1"	2.21	2.34	2.34	2.47			2-3/4" Ø x 2'-6"
48"	12.6	6'-8"	5'-0"	5'-6"	2'-0"	6'-10"	2.66	2.80	2.83	2.97			2-3/4" Ø x 3'-0"

CONCRETE ENDWALL WITH U-TYPE WINGS FOR PIPE CULVERTS

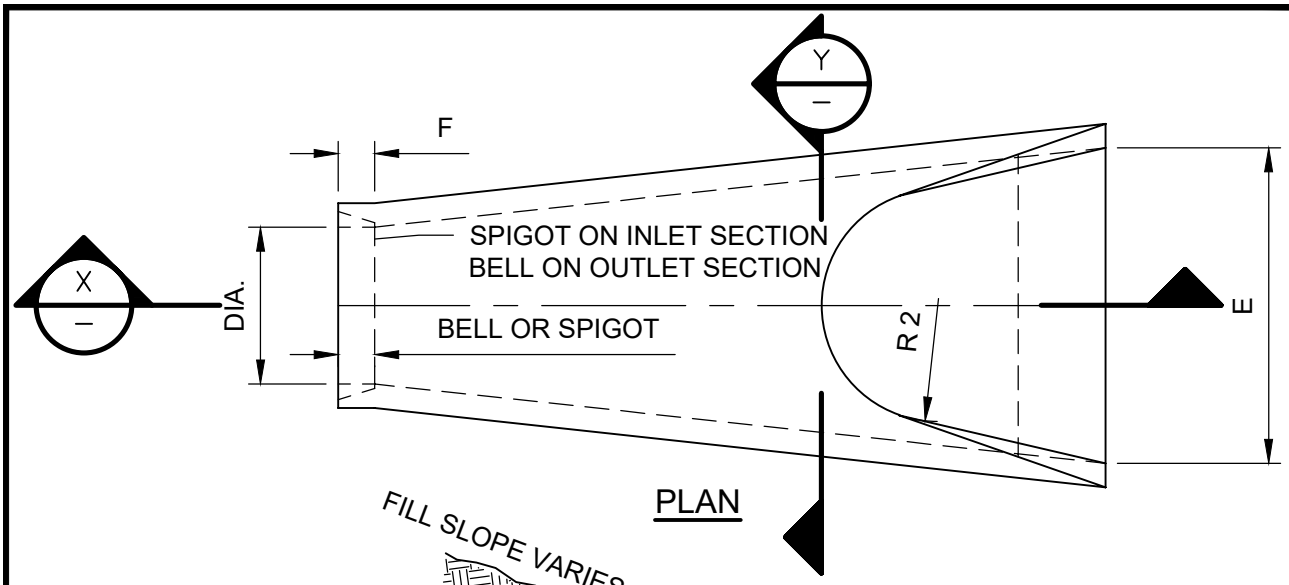
CITY OF JACKSONVILLE STANDARD

N.T.S.

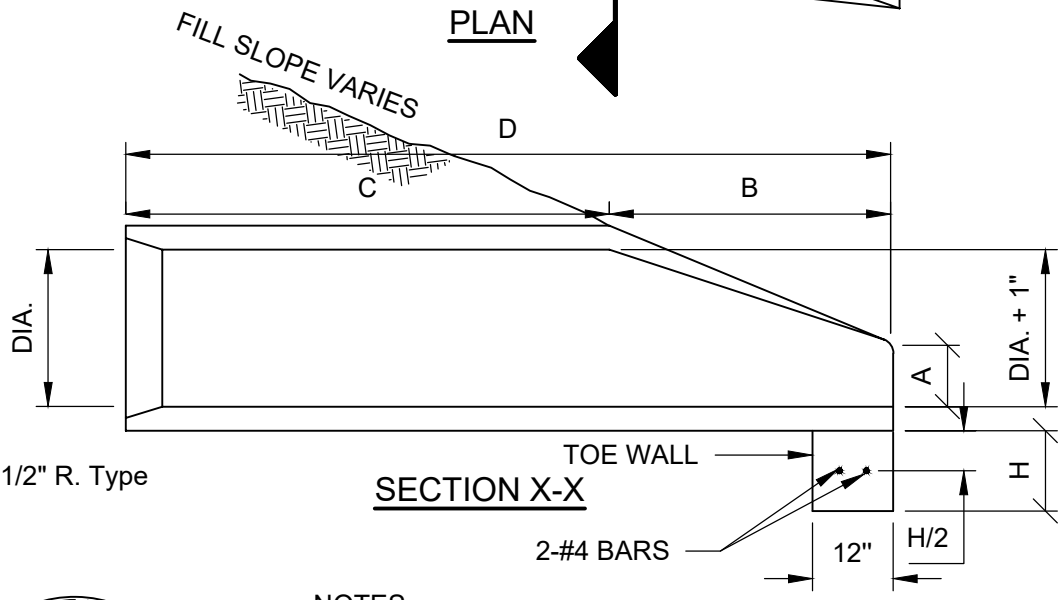
PLATE D-409

DATE DRAWN 7-14-79

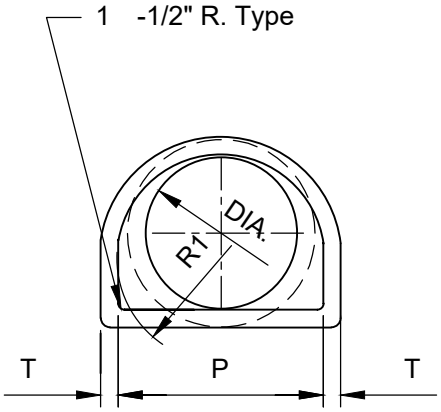
REVISED DATE 11-21-24



PLAN



SECTION X-X



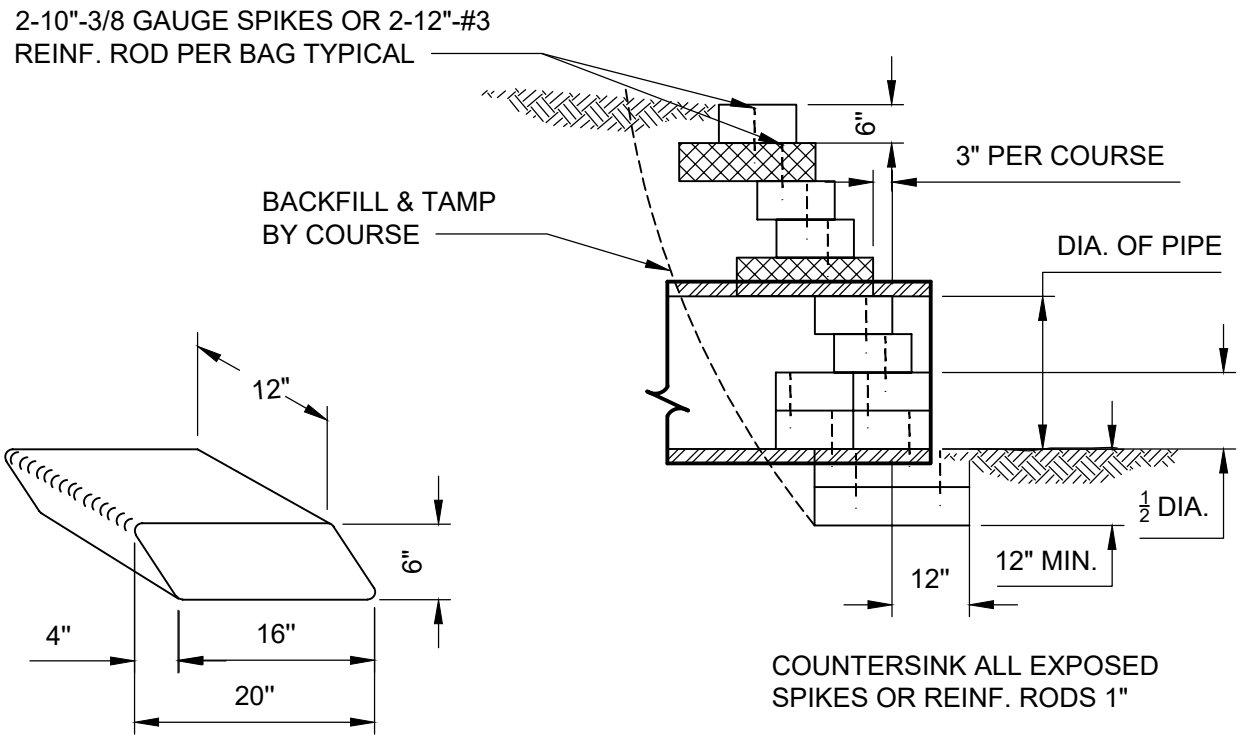
SECTION Y-Y

NOTES:

1. END SECTIONS SHALL CONFORM TO STANDARD STRENGTH REINFORCED CONCRETE PIPE OF LIKE DIAMETER AS PER STANDARD SPECIFICATIONS.
2. JOINT BETWEEN END SECTION & PIPE CULVERT TO BE MADE BY REINFORCED CONCRETE COLLAR OR COLD ADHESIVE PREFORMED PLASTIC GASKET.
3. END SECTIONS TO BE USED ONLY WHEN SPECIFIED ON THE PLANS OR AT LOCATIONS AS DIRECTED BY THE ENGINEER.
4. TOE WALL TO BE CONSTRUCTED WHEN SHOWN ON THE PLANS OR DESIGNATED BY THE ENGINEER.

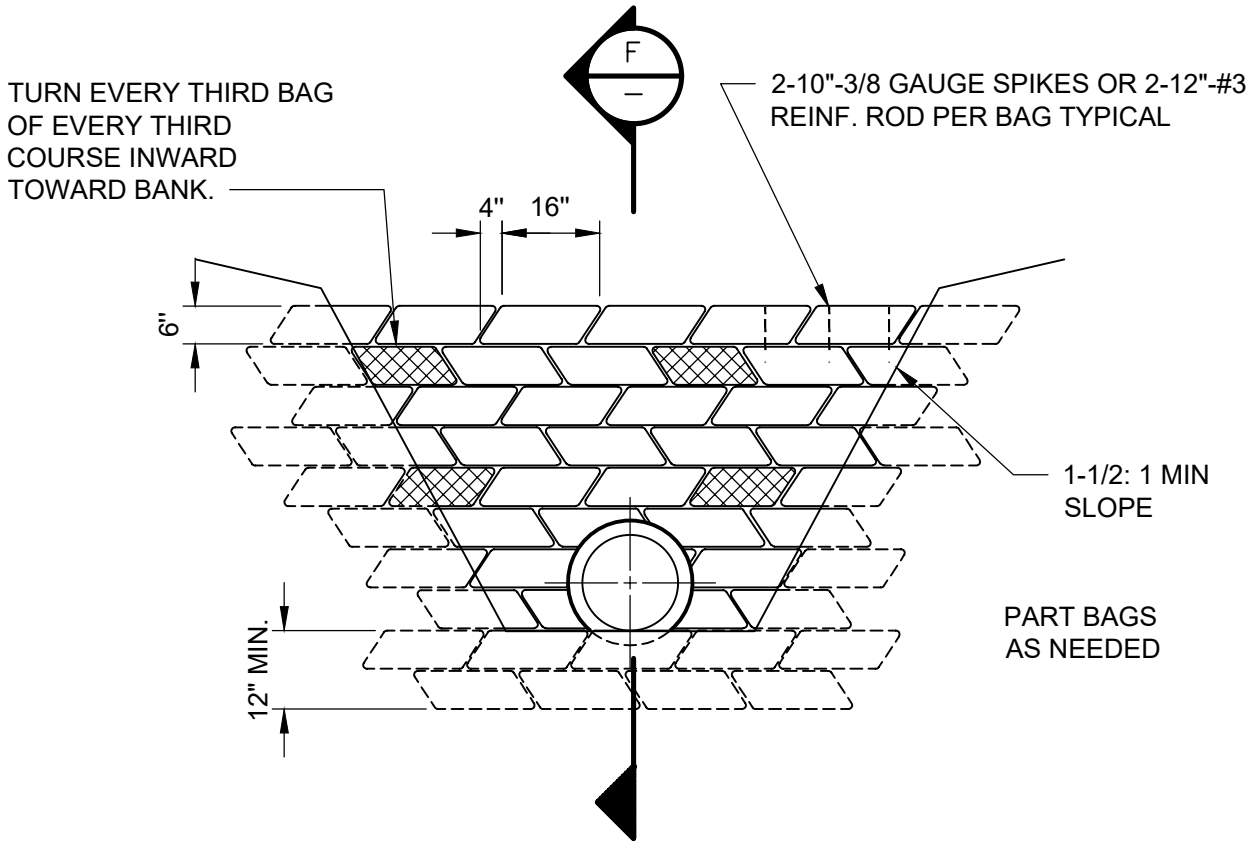
DIA	T	BELL OR SPIGOT	A	B	C	D	E	P	R1	R2	F	H	WEIGHT (LBS.)
15"	2-1/4 "	2"	6"	2'-3"	3'-10"	6'-1"	2'-6"	24-5/16"	12-1/2"	11"	3-1/2"	12"	740
18"	2-1/2"	2-1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	29"	15-1/2"	12"	4"	15"	990
24"	3"	2-1/2"	9-1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	33-3/16"	16-13/16"	14"	4-1/2"	18"	1520
30"	3-1/2"	3"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	37"	18-1/2"	15"	5"	21"	2190
36"	4"	3-1/2"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	47-13/16"	24-5/16"	20"	5-1/2"	21"	4100
42"	4-1/2"	3-3/4"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	53-7/8"	27-1/2"	22"	5-1/2"	24"	5380
48"	5"	4-1/4"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	56-1/2"	28-1/2"	22"	5-3/4"	24"	6550
54"	5-1/2"	4-3/4"	2'-3"	5'-5"	2'-11"	8'-4"	7'-6"	65-1/2"	33-1/8"	24"	6-1/4"	24"	8040
60"	6"	5"	2'-6"	5'-0"	3'-3"	8'-3"	8'-0"	72-1/2"	36-11/16"	24"	6-3/4"	24"	8750
66"	6-1/2"	5-1/2"	2'-0"	6'-6"	1'-9"	8'-3"	8'-6"	72"	36-1/8"	24"	7-1/4"	24"	10630
72"	7"	6"	2'-0"	6'-6"	1'-9"	8'-3"	9'-0"	77-13/16"	3- 15/16"	24"	7-3/4"	24"	12520

FLARED END SECTION FOR PIPE CULVERTS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-410
		DATE DRAWN	2-5-79
		REVISED DATE	11-21-24

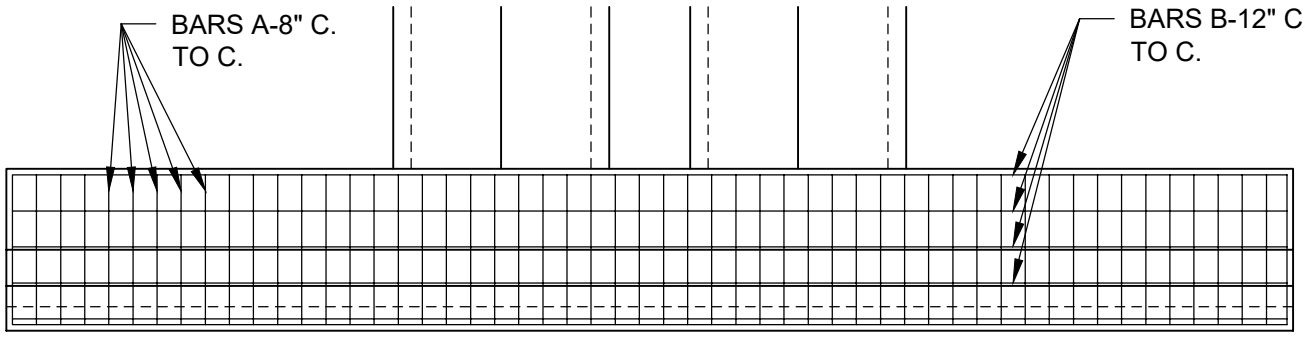


BAG DETAIL

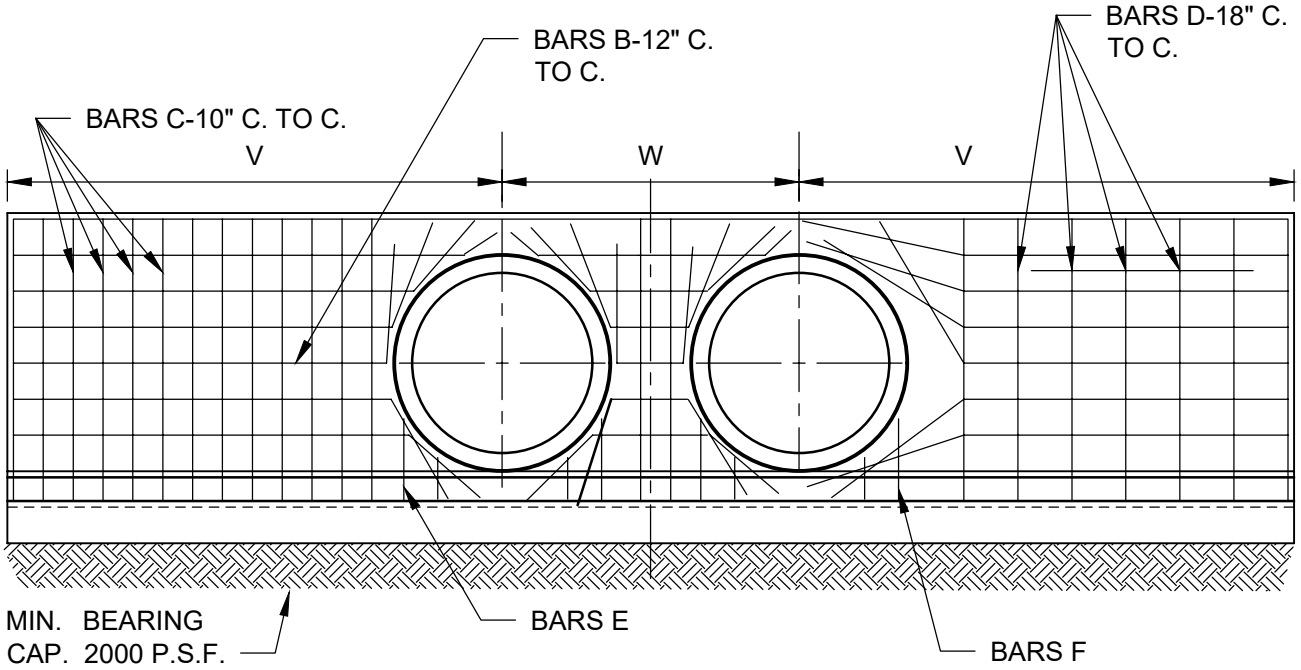
SECTION F-F



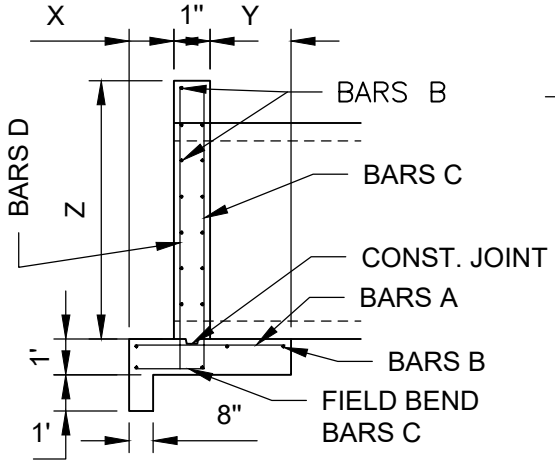
SAND - CEMENT RIP RAP ENDWALL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-411
		DATE DRAWN	3-18-79
		REVISED DATE	11-22-24



PLAN SHOWING BARS IN FOOTING

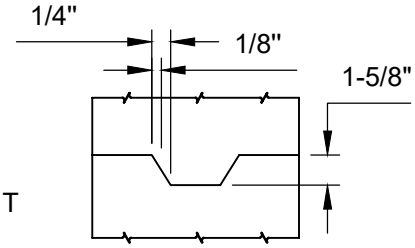


HALF ELEV. SHOWING BARS IN BACK FACE OF WALL



PROFILE SHOWING BARS

HALF ELEV. SHOWING BARS IN FRONT FACE OF WALL



CONST. JOINT DETAIL

NOTES:

1) CUT & FIELD BEND BARS B AS SHOWN.
2) CONC. DESIGN STRENGTH 3000 PSI.
3) CHAMFER ALL EXPOSED EDGES 3/4".
4) 2" CLEARANCE ON ALL BARS.

CONC. ENDWALL FOR MULTIPLE 60" - 78" ROUND PIPES	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-412
		DATE DRAWN	1-26-79
		REVISED DATE	11-21-24

PIPE SIZE	DIMENSIONS								NO. BARS REQ.		
	V	W	X	Y	Z	BAR	SIZE	LENGTH	2-PIPES	3-PIPES	4-PIPES
60"	13'-9"	8'-3"	1'-3"	2'-3"	7'-2"	A	6	4'-2"	54	66	78
						B	4	*	17	17	17
						C	6	9'-9"	29	31	34
						D	4	7'-10"	18	20	22
						E	6	2'-6"	8	12	16
						F	6	1'-6"	8	12	16
66"	14'-9"	9'-1"	1'-3"	2'-8"	7'-8"	A	6	4'-7"	58	71	84
						B	4	*	17	17	17
						C	6	10'-3"	31	34	37
						D	4	8'-4"	18	20	22
						E	6	2'-6"	8	12	16
						F	6	1'-6"	8	12	16
72"	15'-9"	9'-8"	1'-4"	3'-1"	8'-3"	A	6	5'-1"	62	77	92
						B	4	*	17	17	17
						C	6	10'-11"	33	36	39
						D	4	8'-11"	20	22	24
						E	6	2'-6"	8	12	16
						F	6	1'-6"	8	12	16
78"	16'-9"	10'-3"	1'-4"	3'-8"	8'-10"	A	6	5'-8"	66	81	96
						B	4	*	17	17	17
						C	6	11'-6"	35	38	41
						D	4	9'-6"	20	22	24
						E	6	2'-6"	8	12	16
						F	6	1'-6"	8	12	16

* WIDTH OF ENDWALL LESS 4"

ESTIMATED QUANTITIES						
PIPE SIZE	2-PIPES		3-PIPES		4-PIPES	
	CONC. CU. YD.	STEEL LB.	CONC. CU. YD.	STEEL LB.	CONC. CU. YD.	STEEL LB.
60"	14.24	1307	16.97	1555	19.69	1802
66"	16.43	1459	19.63	1733	22.83	2007
72"	18.88	1645	22.51	1955	26.15	2264
78"	21.62	1835	25.76	2167	29.90	2501

DIMENSIONAL AND QUANTITATIVE DATA FOR MULTIPLE 60"-78" CONC. PIPE ENDWALLS

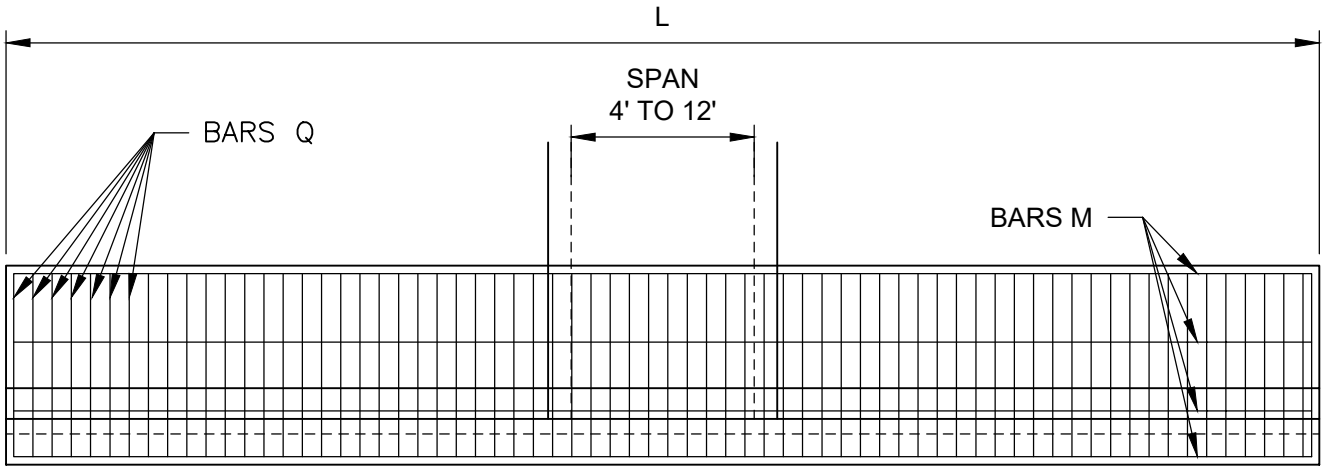
CITY OF JACKSONVILLE STANDARD

N.T.S.

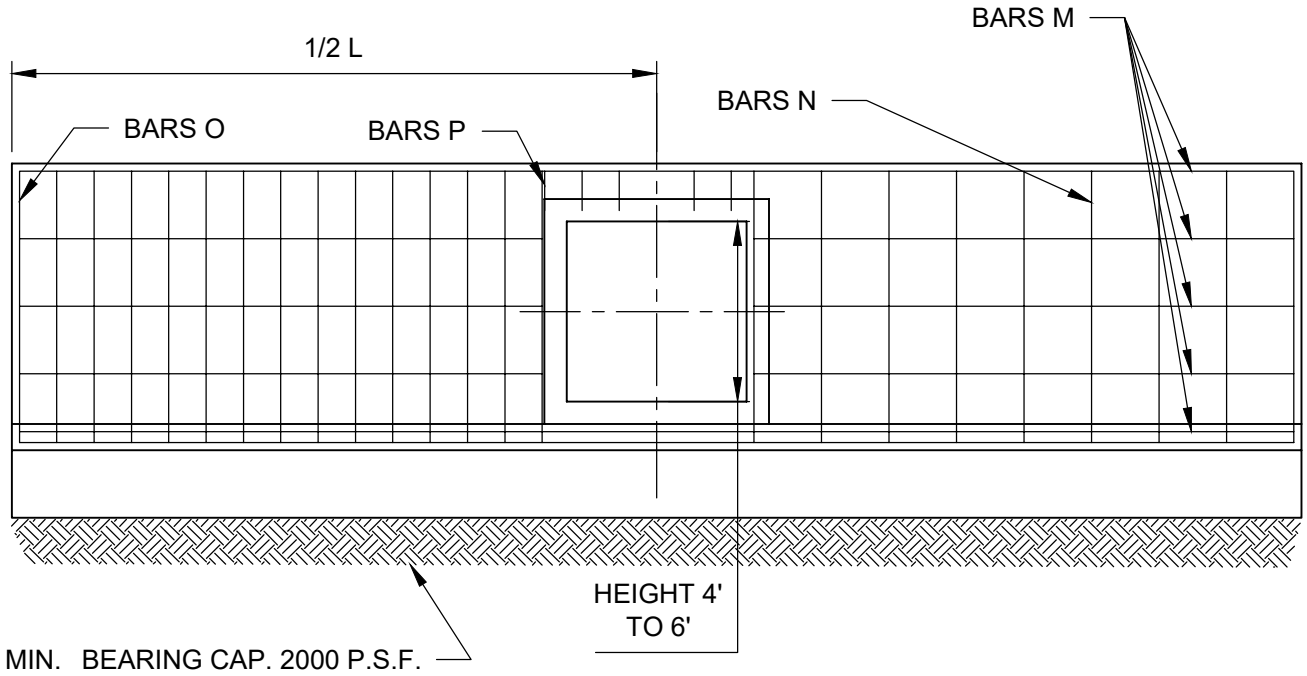
PLATE D-413

DATE DRAWN 2-17-79

REVISED DATE 11-21-24



PLAN-SHOWING BARS IN FOOTING



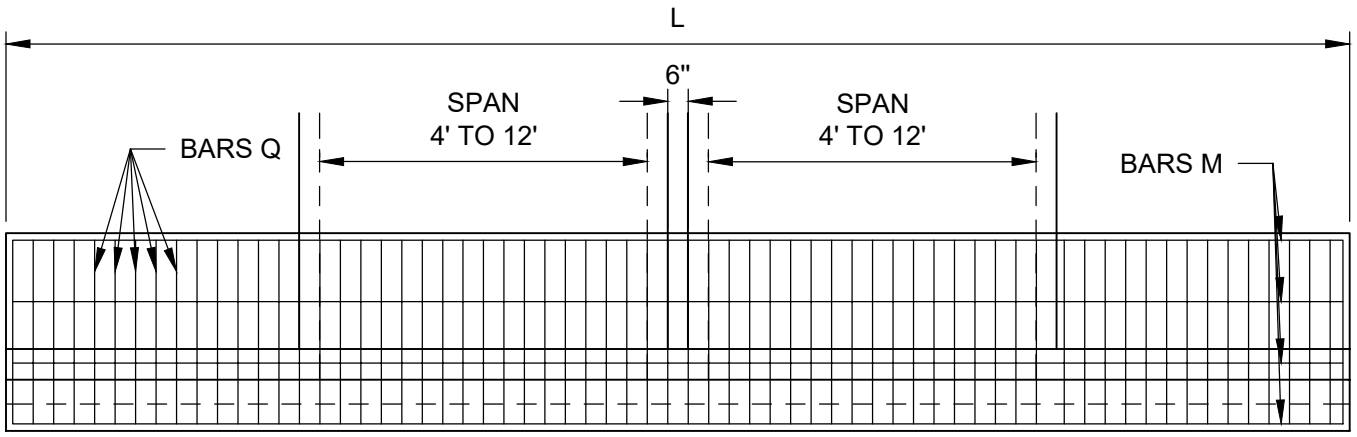
HALF ELEV. SHOWING BARS IN BACK FACE OF WALL

HALF ELEV. SHOWING BARS IN FRONT FACE OF WALL

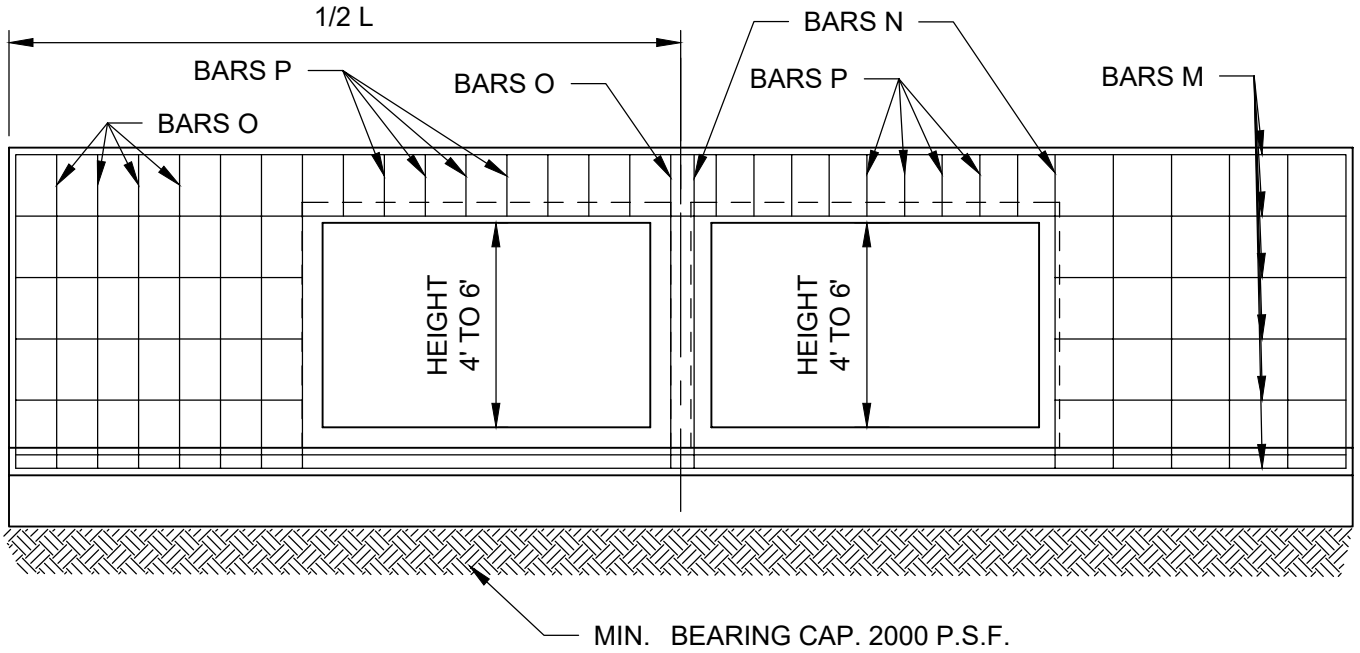
NOTES:

1) CONC. DESIGN STRENGTH 3400 P.S.I. (CLASS II F.D.O.T.)
2) CHAMFER ALL EXPOSED EDGES 3/4".
3) 2" CLEARANCE ON ALL BARS.
4) FIELD BEND BARS EXTENDING FROM PRECAST BOX CULVERT AND TIE TO ENDWALL STEEL.

STRAIGHT ENDWALL FOR SINGLE PRECAST CONC. BOX CULVERT	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-414
		DATE DRAWN	2-2-79
		REVISED DATE	11-21-24



PLAN-SHOWING BARS IN FOOTING



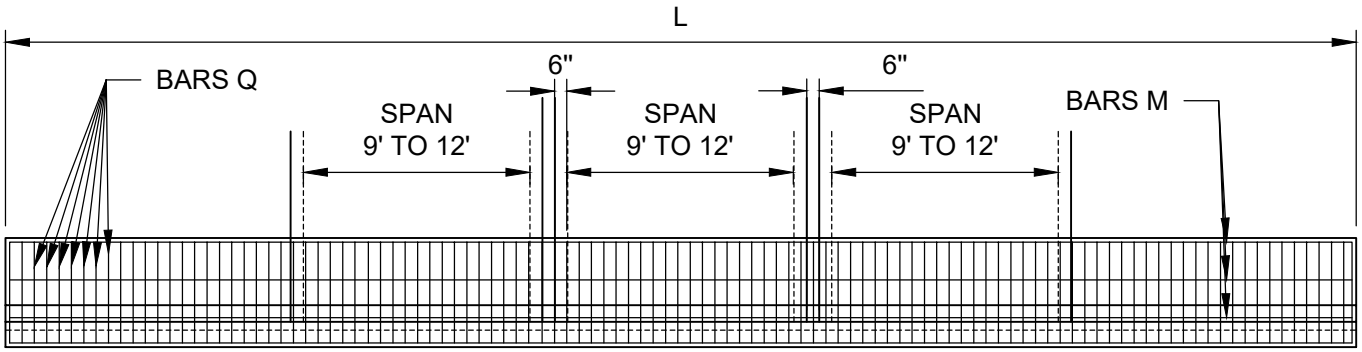
HALF ELEV. SHOWING BARS IN BACK FACE OF WALL

HALF ELEV. SHOWING BARS IN FRONT FACE OF WALL

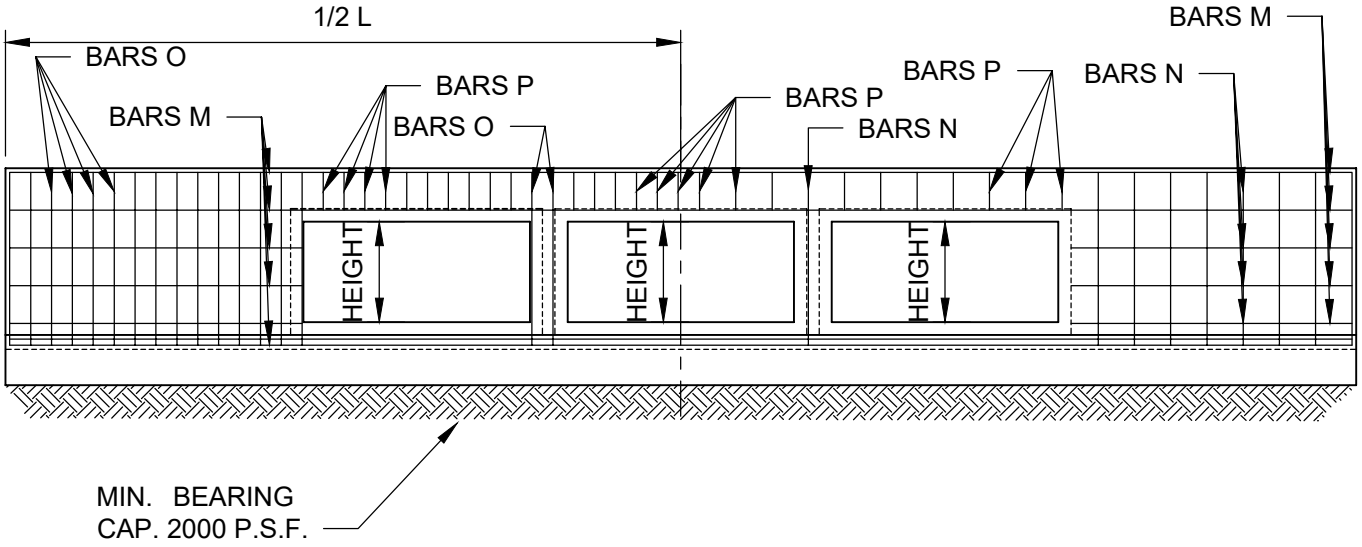
NOTES:

1) CONC. DESIGN STRENGTH 3400 P.S.I. (CLASS II F.D.O.T.)
2) CHAMFER ALL EXPOSED EDGES 3/4".
3) 2" CLEARANCE ON ALL BARS.
4) FIELD BEND BARS EXTENDING FROM PRECAST BOX CULVERT AND TIE TO ENDWALL STEEL.

STRAIGHT ENDWALL FOR DOUBLE PRECAST CONC. BOX CULVERT	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-415
		DATE DRAWN	2-2-79
		REVISED DATE	11-21-24



PLAN SHOWING BARS IN FOOTING

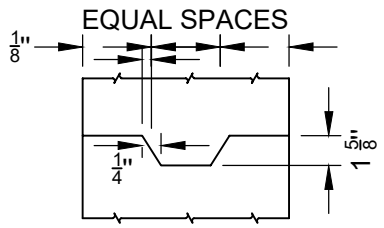


HALF ELEV. SHOWING BARS IN BACK FACE OF WALL

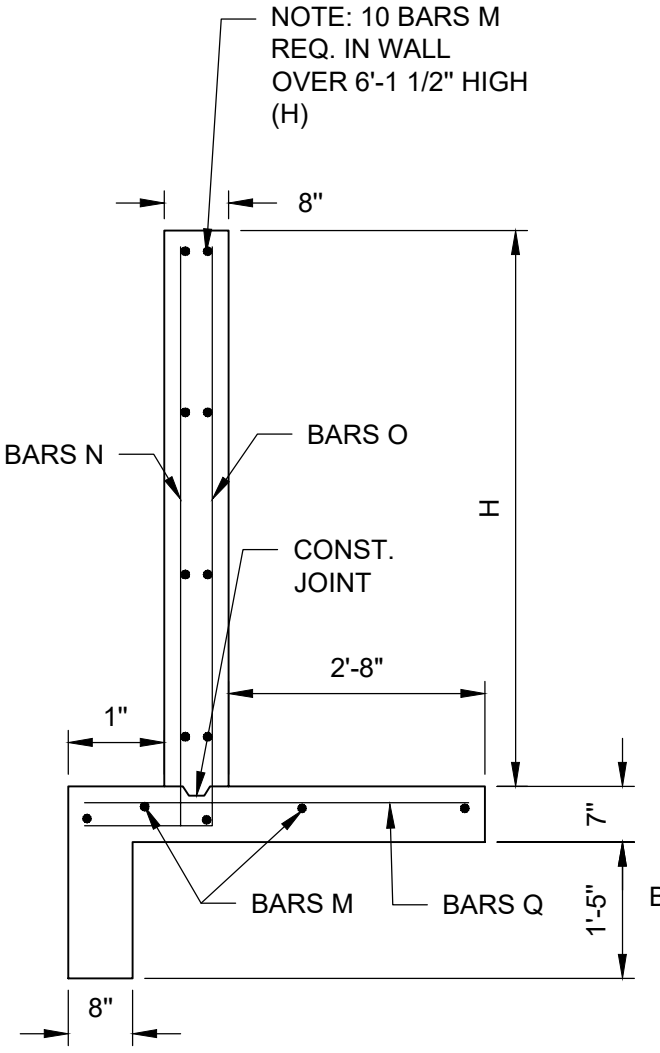
HALF ELEV. SHOWING BARS IN FRONT FACE OF WALL

NOTES:
1) CONC. DESIGN STRENGTH 3400 P.S.I. (CLASS II F.D.O.T.)
2) CHAMFER ALL EXPOSED EDGES 3/4".
3) 2" CLEARANCE ON ALL BARS.
4) FIELD BEND BARS EXTENDING FROM PRECAST BOX CULVERT AND TIE TO ENDWALL STEEL.

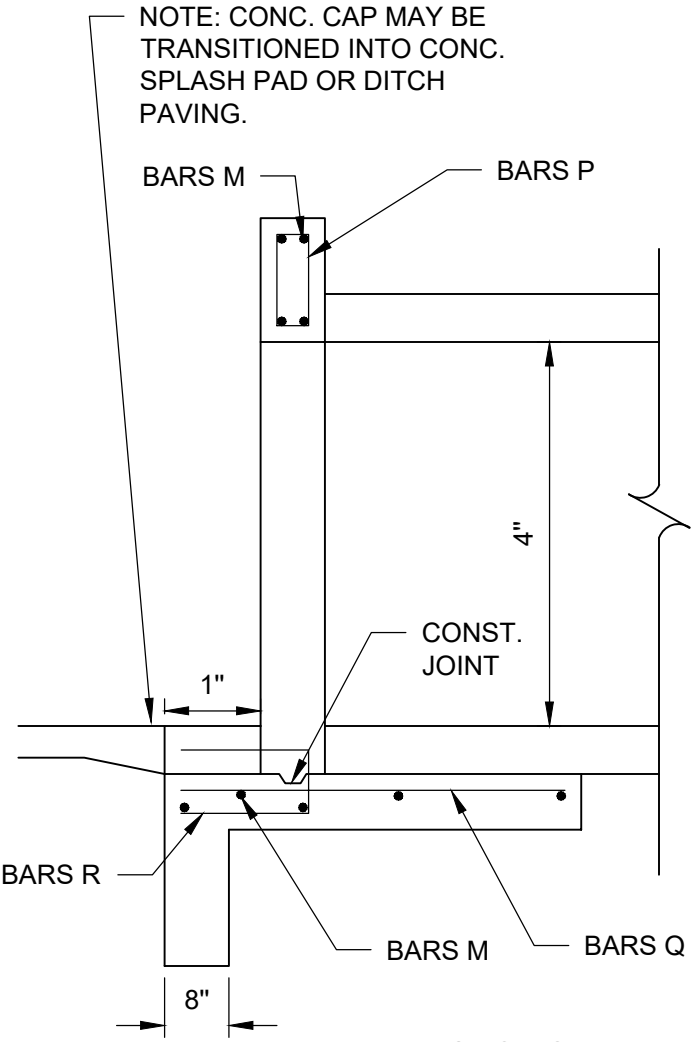
STRAIGHT ENDWALL FOR TRIPLE PRECAST CONC. BOX CULVERTS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-416
		DATE DRAWN	4-5-79
		REVISED DATE	11-21-24



CONST. JOINT DETAIL

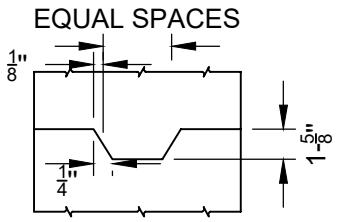


SECTION THRU WING

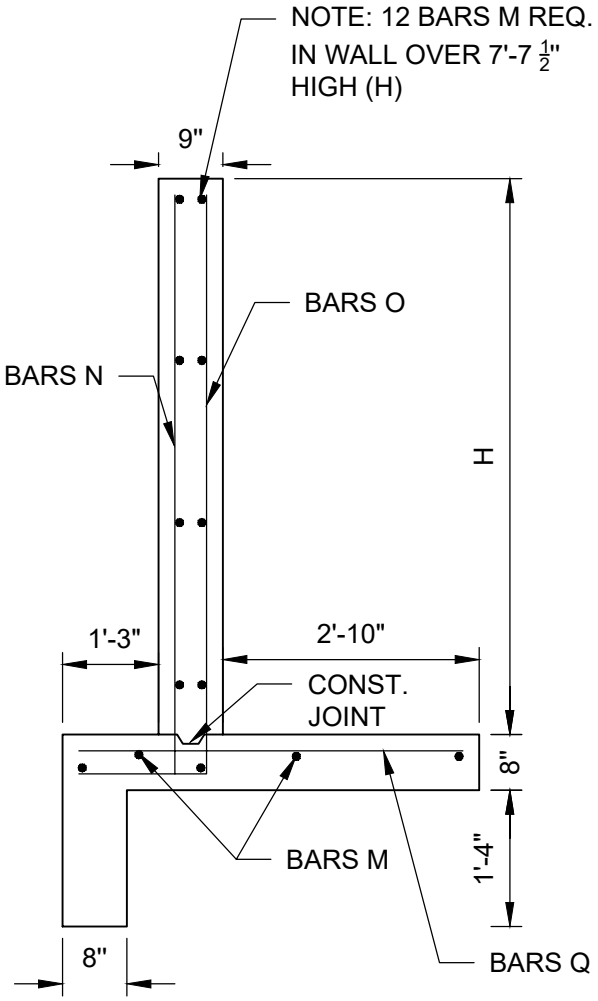


HALF SECTION THRU BOX

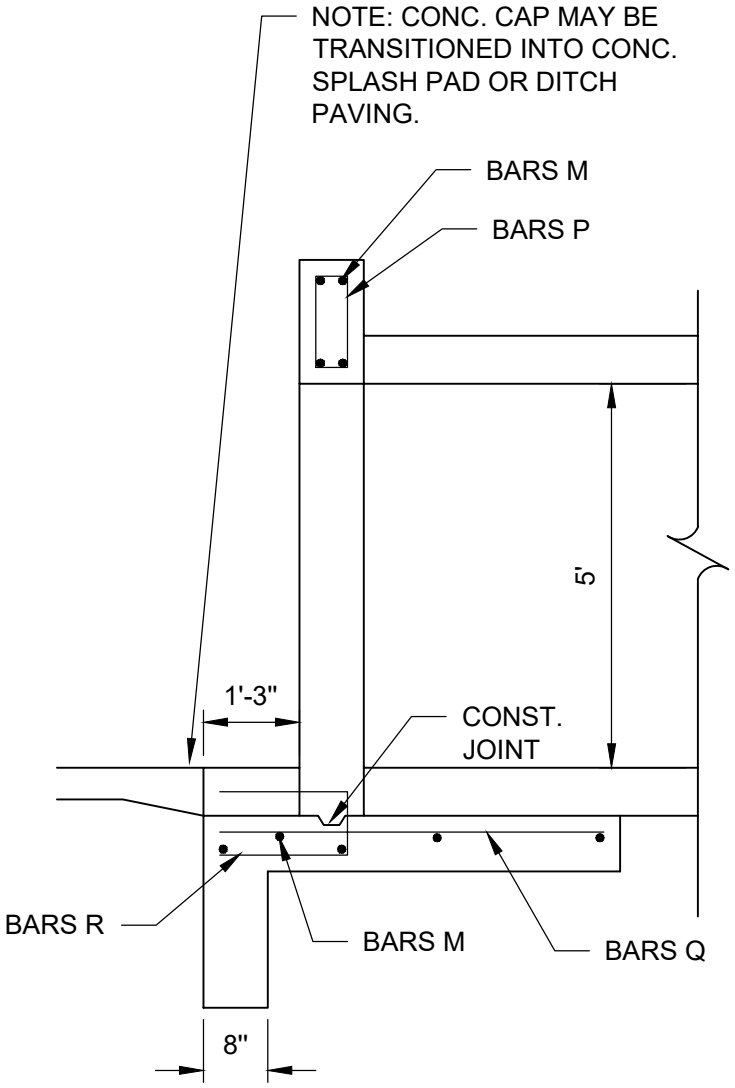
SECTIONS OF ENDWALL FOR 4' HIGH SINGLE, DOUBLE, & TRIPLE PRECAST CULVERTS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-417
		DATE DRAWN	4-5-79
		REVISED DATE	11-21-24



CONST. JOINT
DETAIL

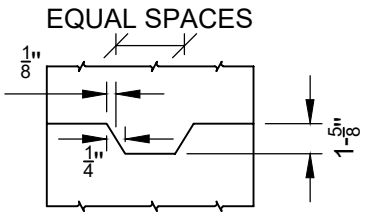


SECTION THRU WING

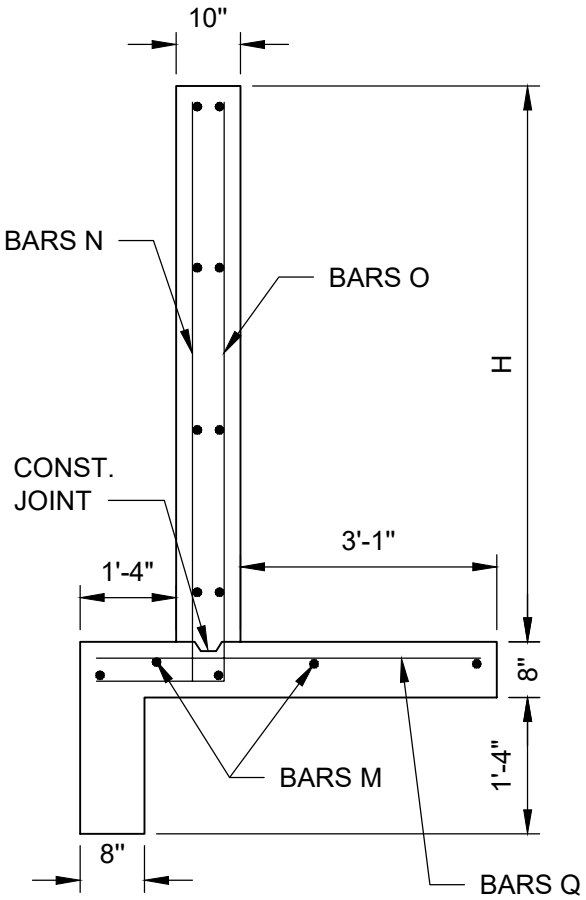


HALF SECTION
THRU BOX

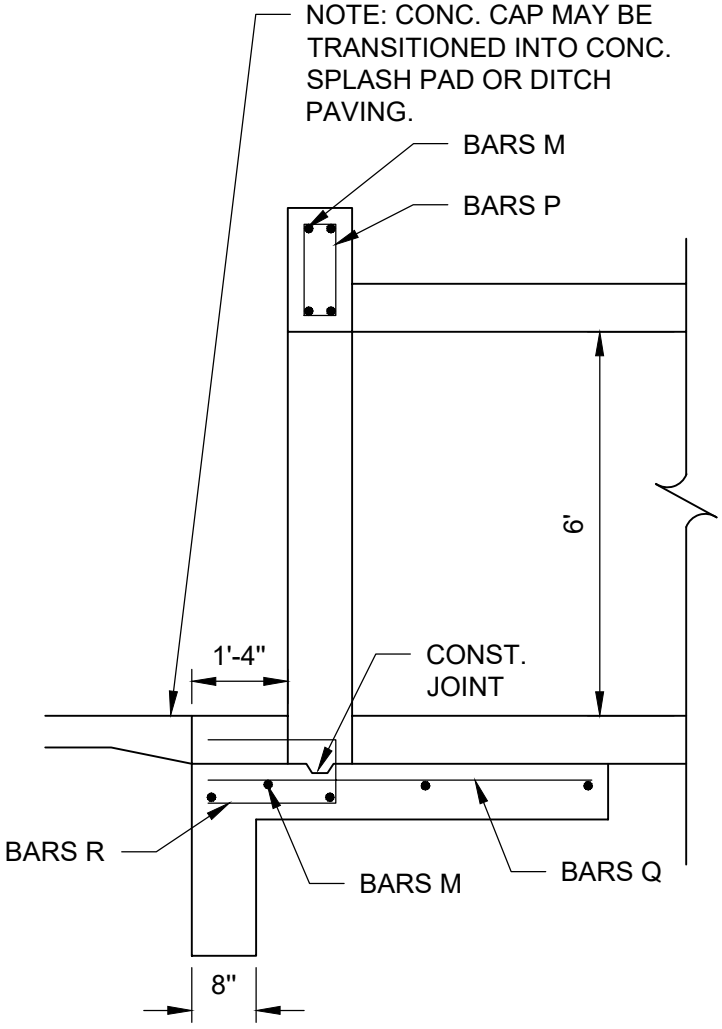
SECTIONS OF ENDWALL FOR 5' HIGH SINGLE, DOUBLE, & TRIPLE PRECAST CULVERTS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-418
		DATE DRAWN	2-27-79
		REVISED DATE	11-21-24



CONST. JOINT DETAIL

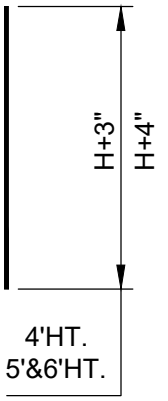


SECTION THRU WING

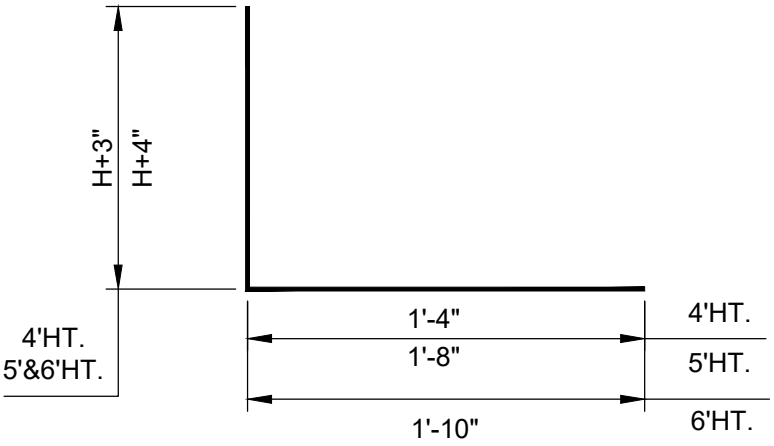


HALF SECTION THRU BOX

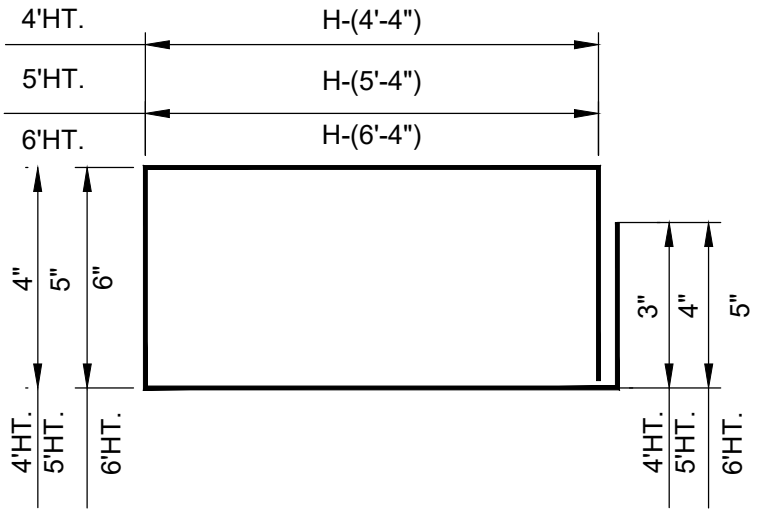
SECTIONS OF ENDWALL FOR 6' HIGH SINGLE, DOUBLE, & TRIPLE PRECAST CULVERTS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-419
		DATE DRAWN	4-3-79
		REVISED DATE	11-21-24



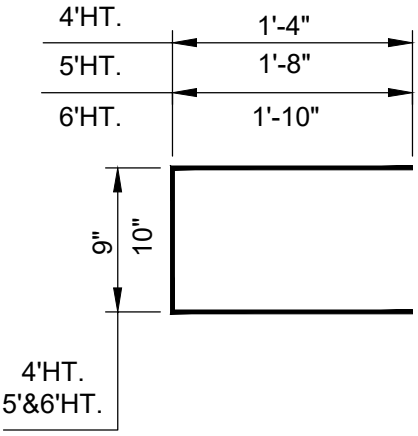
BARS N



BARS O



BARS P



BARS R

NOTE: REINFORCING STEEL SHALL CONFORM TO CURRENT F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION BARS M & Q ARE STRAIGHT BARS.

BAR BENDING DIAGRAM FOR STEEL IN ENDWALL FOR SINGLE, DOUBLE & TRIPLE PRECAST BOX CULVERTS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-420
		DATE DRAWN	2-5-79
		REVISED DATE	11-21-24

DIMENSIONAL & QUANTITATIVE DATA FOR SINGLE BOX CULVERT ENDWALLS

CITY OF JACKSONVILLE STANDARD

N.T.S.

DATE DRAWN 7-10-79

REVISED DATE 11-21-24

PLATE D-421

DIMENSIONAL & QUANTITATIVE DATA

CULVERT		MAX. FILL HEIGHT	L	H	CU. YDS.	BAR	SIZE	LENGTH	NO.	SPACE	BAR	SIZE	LENGTH	NO.	SPACE
SPAN	HEIGHT														
4'-0"	4'-0"	6'-0"	28'-8"	5'-9 1/2"	7.34	M	4	*	13	18"	P	4	3'-11"	5	10"
						N	4	6'-1"	18	18"	Q	4	4'-0"	69	5"
						O	4	7'-5"	30	10"	R	4	3'-3"	5	10"
	5'-0"	6'-0"	31'-4"	6'-9 1/2"	10.07	M	4	*	15	18"	P	5	4'-2"	4	12"
						N	4	7'-2"	20	17 3/4"	Q	5	4'-6"	46	8 1/2"
						O	5	8'-10"	28	12"	R	4	4'-0"	4	12"
	6'-0"	5'-0"	35'-4"	7'-9 1/2"	13.41	M	4	*	17	18"	P	5	4'-5"	5	10"
						N	4	8'-2"	24	16 7/8"	Q	5	4'-11"	61	7"
						O	5	10'-0"	38	10"	R	4	4'-4"	5	10"
5'-0"	4'-0"	6'-0"	29'-6"	5'-10 1/4"	7.49	M	4	*	13	18"	P	4	3'-11 1/4"	6	10"
						N	4	6'-1 1/4"	18	17 7/8"	Q	4	4'-0"	62	5 3/4"
						O	4	7'-5 1/4"	30	10"	R	4	3'-3"	6	10"
	5'-0"	6'-0"	32'-4"	6'-10 1/4"	10.34	M	4	*	15	18"	P	5	4'-2 1/4"	5	12"
						N	4	7'-2 1/4"	20	17 3/4"	Q	5	4'-6"	49	8"
						O	5	8'-10 1/4"	28	12"	R	4	4'-0"	5	12"
	6'-0"	5'-0"	36'-2"	7'-10 1/4"	13.61	M	4	*	17	18"	P	5	4'-5 1/2"	6	10"
						N	4	8'-2 1/4"	22	18"	Q	5	4'-11"	67	6 1/2"
						O	5	10'-1/4"	38	10"	R	4	4'-4"	6	10"
6'-0"	4'-0"	6'-0"	32'-0"	5'-11"	8.11	M	4	*	13	18"	P	4	4'-1"	7	10"
						N	4	6'-2"	20	16 7/8"	Q	4	4'-0"	70	5 1/2"
						O	4	7'-6"	32	10"	R	4	3'-3"	7	10"
	5'-0"	6'-0"	33'-4"	6'-11"	10.53	M	4	*	15	18"	P	5	4'-4"	6	12"
						N	4	7'-3"	20	17 3/4"	Q	5	4'-6"	49	8 1/4"
						O	5	8'-11"	28	12"	R	4	4'-0"	6	12"
	6'-0"	5'-0"	37'-0"	7'-11"	13.80	M	4	*	17	18"	P	5	4'-7"	7	10"
						N	4	8'-3"	22	18"	Q	5	4'-11"	81	5 1/2"
						O	5	10'-1"	38	10"	R	4	4'-4"	7	10"
7'-0"	4'-0"	6'-0"	32'-10"	5'-11 1/2"	8.26	M	4	*	13	18"	P	4	4'-2"	8	10"
						N	4	6'-2 1/2"	20	16 3/4"	Q	4	4'-0"	66	6 1/4"
						O	4	7'-6 1/2"	32	10"	R	4	3'-3"	8	10"
	5'-0"	5'-0"	34'-4"	6'-11 1/2"	10.76	M	4	*	15	18"	P	5	4'-5"	7	12"
						N	4	7'-3 1/2"	20	17 3/4"	Q	5	4'-6"	49	8 1/2"
						O	5	8'-11 1/2"	28	12"	R	4	4'-0"	7	12"
	6'-0"	5'-0"	37'-10"	7'-11 1/2"	13.98	M	4	*	17	18"	P	5	4'-8"	8	10"
						N	4	8'-3 1/2"	22	18"	Q	5	4'-11"	76	6"
						O	5	10'-1 1/2"	38	10"	R	4	4'-4"	8	10"

* WIDTH OF WALL LESS 4"

DIMENSIONAL & QUANTITATIVE DATA FOR SINGLE BOX CULVERT ENDWALLS

CITY OF JACKSONVILLE STANDARD

N.T.S.

DATE DRAWN 9-9-79

REVISED DATE 11-21-24

PLATE D-422

DIMESIONAL AND QUANTITATIVE DATA															
CULVERT		MAX. FILL HEIGHT	L	H	CU. YDS.	BAR	SIZE	LENGTH	NO.	SPACE	BAR	SIZE	LENGTH	NO.	SPACE
SPAN	HEIGHT														
8'-0"	4'-0"	5'-0"	33'-8"	6'-0"	8.41	M	4	*	13	18"	P	4	4'-3"	9	10"
						N	4	6'-3"	18	18"	Q	4	4'-0"	65	6 1/4"
						O	4	7'-7"	30	10"	R	4	3'-3"	9	10"
	5'-0"	5'-0"	37'-4"	7'-0"	11.68	M	4	*	15	18"	P	5	4'-6"	8	12"
						N	4	7'-4"	22	17"	Q	5	4'-6"	54	8 3/8"
						O	5	9'-0"	30	12"	R	4	4'-0"	8	12"
	6'-0"	5'-0"	38'-8"	8'-0"	14.16	M	4	*	17	18"	P	5	4'-9"	9	10"
						N	4	8'-4"	22	18"	Q	5	4'-11"	55	8 1/2"
						O	5	10'-2"	36	10"	R	4	4'-4"	9	10"
9'-0"	4'-0"	5'-0"	35'-4"	6'-1/2"	8.79	M	4	*	13	18"	P	4	4'-4"	11	10"
						N	4	6'-3 1/2"	20	17"	Q	4	4'-0"	71	6"
						O	4	7'-7 1/2"	32	10"	R	4	3'-3"	11	10"
	5'-0"	5'-0"	38'-4"	7'-1/2"	11.91	M	4	*	15	18"	P	5	4'-7"	9	12"
						N	4	7'-4 1/2"	22	17"	Q	5	4'-6"	58	8"
						O	5	9'- 1/2"	30	12"	R	4	4'-0"	9	12"
	6'-0"	5'-0"	40'-4"	8'-1/2"	14.49	M	4	*	17	18"	P	5	4'-10"	11	10"
						N	4	8'-4 1/2"	22	18"	Q	5	4'-11"	81	6"
						O	5	10'-2 1/2"	38	10"	R	4	4'-4"	11	10"
10'-0"	4'-0"	5'-0"	36'-2"	6'-1 1/2"	8.97	M	4	*	13	18"	P	4	4'-6"	12	10"
						N	4	6'-4 1/2"	20	17"	Q	4	4'-0"	79	5 1/2"
						O	4	7'-8 1/2"	32	10"	R	4	3'-3"	12	10"
	5'-0"	5'-0"	39'-4"	7'-1 1/2"	12.18	M	4	*	15	18"	P	5	4'-9"	10	12"
						N	4	7'-5 1/2"	22	17"	Q	5	4'-6"	79	6"
						O	5	9'-1 1/2"	30	12"	R	4	4'-0"	10	12"
	6'-0"	5'-0"	41'-2"	8'-1 1/2"	14.92	M	4	*	17	18"	P	5	5'-0"	12	10"
						N	4	8'-5 1/2"	22	18"	Q	5	4'-11"	78	6 3/8"
						O	5	10'-3 1/2"	38	10"	R	4	4'-4"	12	10"
11'-0"	4'-0"	5'-0"	37'-0"	6'-2 1/2"	9.17	M	4	*	15	18"	P	4	4'-8"	13	10"
						N	4	6'-5 1/2"	20	16 3/8"	Q	4	4'-0"	76	5 7/8"
						O	4	7'-9 1/2"	32	10"	R	4	3'-3"	13	10"
	5'-0"	5'-0"	40'-4"	7'-2 1/2"	12.47	M	4	*	15	18"	P	5	4'-11"	11	12"
						N	4	7'-6 1/2"	22	17"	Q	5	4'-6"	6	8"
						O	5	9'-2 1/2"	30	12"	R	4	4'-0"	11	12"
	6'-0"	5'-0"	43'-8"	8'-2 1/2"	15.86	M	4	*	17	18"	P	5	5'-2"	13	10"
						N	4	8'-6 1/2"	24	17 3/8"	Q	5	4'-11"	81	6 1/2"
						O	5	10'-4 1/2"	40	10"	R	4	4'-4"	13	10"

* WIDTH OF WALL LESS 4"

DIMESIONAL AND QUANTITATIVE DATA

CULVERT		MAX. FILL HEIGHT	L	H	CU. YDS.	BAR	SIZE	LENGTH	NO.	SPACE	BAR	SIZE	LENGTH	NO.	SPACE
SPAN	HEIGHT														
12'-0"	4'-0"	5'-0"	37'-10"	6'-3 1/2"	9.37	M	4	*	15	18"	P	4	4'-10"	14	10"
						N	4	6'-6 1/2"	20	16 3/4"	Q	4	4'-0"	8	5 3/4"
						O	4	7'-10 1/2"	32	10"	R	4	3'-3"	14	10"
	5'-0"	5'-0"	41'-4"	7'-3 1/2"	12.76	M	4	*	15	18"	P	5	5'-1"	12	12"
						N	4	7'-7 1/2"	22	17"	Q	5	4'-6"	59	8 1/2"
						O	5	9'-3 1/2"	30	12"	R	4	4'-0"	12	12"
	6'-0"	5'-0"	44'-6"	8'-3 1/2"	16.10	M	4	*	17	18"	P	5	5'-4"	14	10"
						N	4	8'-7 1/2"	24	17 1/4"	Q	5	4'-11"	84	6 3/8"
						O	5	10'-5 1/2"	40	10"	R	4	4'-4"	14	10"

* WIDTH OF WALL LESS 4"

DIMENSIONAL & QUANTITATIVE DATA FOR SINGLE BOX CULVERT ENDWALLS

CITY OF JACKSONVILLE STANDARD

N.T.S.

PLATE D-423

DATE DRAWN 5-7-79

REVISED DATE 11-21-24

DIMENSIONAL & QUANITATIVE DATA FOR DOUBLE BOX CULVERT ENDWALLS

CITY OF JACKSONVILLE STANDARD

N.T.S.

PLATE D-424

DATE DRAWN 7-5-79

REVISED DATE 11-21-24

DIMESIONAL AND QUANTITATIVE DATA

CULVERT		MAX. FILL HEIGHT	L	H	CU. YDS.	BAR	SIZE	LENGTH	NO.	SPACE	BAR	SIZE	LENGTH	NO.	SPACE
SPAN	HEIGHT														
4'-0"	4'-0"	6'-0"	32'-10"	6'-4"	8.35	M	4	*	15	18"	P	4	3'-11"	10	10"
						N	4	6'-7"	19	17"	Q	4	4'-0"	66	6"
						O	4	7'-11"	30	10"	R	4	3'-3"	10	10"
	5'-0"	6'-0"	36'-1"	7'-4"	11.54	M	4	*	15	18"	P	5	4'-2"	8	11"
						N	4	7'-8"	21	17"	Q	5	4'-6"	53	8 1/2"
						O	5	9'-4"	32	12"	R	4	4'-0"	8	11"
	6'-0"	6'-0"	37'-10"	8'-4"	14.17	M	4	*	17	18"	P	5	4'-5"	10	10"
						N	4	8'-8"	21	18"	Q	5	4'-11"	76	6"
						O	5	10'-6"	36	10"	R	4	4'-4"	10	10"
5'-0"	4'-0"	6'-0"	34'-6"	6'-4"	8.66	M	4	*	15	18"	P	4	3'-11"	12	10"
						N	4	6'-7"	19	16 3/4"	Q	4	4'-0"	74	5 5/8"
						O	4	7'-11"	30	10"	R	4	3'-3"	12	10"
	5'-0"	6'-0"	37'-11"	7'-4"	11.88	M	4	*	15	18"	P	5	4'-2"	10	11"
						N	4	7'-8"	21	17"	Q	5	4'-6"	54	8 1/2"
						O	5	9'-4"	32	11"	R	4	4'-0"	10	11"
	6'-0"	6'-0"	41'-2"	8'-4"	15.14	M	4	*	17	18"	P	5	4'-5"	12	10"
						N	4	8'-8"	21	17 1/2"	Q	5	4'-11"	61	6 1/2"
						O	5	10'-6"	38	10"	R	4	4'-4"	12	10"
6'-0"	4'-0"	6'-0"	37'-10"	6'-4"	9.38	M	4	*	15	18"	P	4	3'-11"	14	10"
						N	4	6'-7"	19	17 1/2"	Q	4	4'-0"	76	6"
						O	4	7'-11"	30	10"	R	4	3'-3"	14	10"
	5'-0"	6'-0"	39'-6"	7'-4"	12.13	M	4	*	15	18"	P	5	4'-2"	14	10"
						N	4	7'-8"	21	17"	Q	5	4'-6"	58	8 1/4"
						O	5	9'-4"	34	10"	R	4	4'-0"	14	10"
	6'-0"	6'-0"	42'-10"	8'-4"	15.42	M	4	*	17	18"	P	5	4'-5"	14	10"
						N	4	8'-8"	23	17"	Q	5	4'-11"	86	6"
						O	5	10'-6"	38	10"	R	4	4'-4"	14	10"
7'-0"	4'-0"	5'-0"	39'-6"	6'-4"	9.63	M	4	*	15	18"	P	4	3'-11"	16	10"
						N	4	6'-7"	19	17 1/2"	Q	4	4'-0"	81	5 7/8"
						O	4	7'-11"	32	10"	R	4	3'-3"	16	10"
	5'-0"	5'-0"	42'-10"	7'-4"	12.98	M	4	*	15	18"	P	5	4'-2"	16	10"
						N	4	7'-8"	21	17 1/2"	Q	5	4'-6"	61	8 1/2"
						O	5	9'-4"	36	10"	R	4	4'-0"	16	10"
	6'-0"	5'-0"	44'-6"	8'-4"	15.69	M	4	*	17	18"	P	5	4'-5"	16	10"
						N	4	8'-8"	23	17"	Q	5	4'-11"	84	6 3/8"
						O	5	10'-6"	38	10"	R	4	4'-4"	16	10"

* WIDTH OF WALL LESS 4"

DIMENSIONAL & QUANITATIVE DATA FOR DOUBLE BOX CULVERT ENDWALLS

CITY OF JACKSONVILLE STANDARD

N.T.S.

DATE DRAWN 7-5-79

REVISED DATE 11-21-24

PLATE D-425

DIMESIONAL AND QUANTITATIVE DATA															
CULVERT		MAX. FILL HEIGHT	L	H	CU. YDS.	BAR	SIZE	LENGTH	NO.	SPACE	BAR	SIZE	LENGTH	NO.	SPACE
SPAN	HEIGHT														
8'-0"	4'-0"	5'-0"	42'-1/2 "	6'-5 1/2"	10.32	M	4	*	15	18"	P	4	4'-2"	20	9 1/2"
						N	4	6'-8 1/2"	19	18"	Q	4	4'-0"	98	5 3/16"
						O	4	8'- 1/2"	31	9 1/2"	R	4	3'-3"	20	10"
	5'-0"	5'-0"	45'-5 1/2"	7'-5 1/2"	13.75	M	4	*	15	18"	P	5	4'-5"	20	9 1/2"
						N	4	7'-9 1/2"	23	17 1/2"	Q	5	4'-6"	65	8 7/16"
						O	5	9'-5 1/2"	38	9 1/2"	R	4	4'-1"	20	9 1/2"
	6'-0"	5'-0"	48'-7 1/2"	8'-5 1/2"	17.19	M	4	*	17	18"	P	5	4'-8"	20	9 1/2"
						N	4	8'-9 1/2"	23	18"	Q	5	4'-11"	92	6 3/8"
						O	5	10'-7 1/2"	42	9 1/2"	R	4	4'-4"	20	9 1/2"
9'-0"	4'-0"	5'-0"	43'-1"	6'-5 1/2"	10.32	M	4	*	15	18"	P	4	4'-2"	24	9"
						N	4	6'-8 1/2"	19	17"	Q	4	4'-0"	90	5 3/4"
						O	4	8'-1/2"	34	9"	R	4	3'-3"	24	9"
	5'-0"	5'-0"	46'-10"	7'-5 1/2"	13.92	M	4	*	15	18"	P	5	4'-5"	24	9"
						N	4	7'-9 1/2"	21	18"	Q	5	4'-6"	70	8 1/8"
						O	5	9'-5 1/2"	39	9"	R	4	4'-0"	24	9"
	6'-0"	5'-0"	49'-1"	8'-5 1/2"	16.96	M	4	*	17	18"	P	5	4'-8"	24	9"
						N	4	8'-9 1/2"	23	17"	Q	5	4'-11"	91	6 1/2"
						O	5	10'-7 1/2"	42	9"	R	4	4'-4"	24	9"
10'-0"	4'-0"	5'-0"	46'-2"	6'-7 1/2"	11.14	M	4	*	15	18"	P	4	4'-5 1/2"	24	10"
						N	4	6'-10 1/4"	19	18"	Q	4	4'-0"	101	5 1/2"
						O	4	8'-2 1/4"	32	10"	R	4	3'-3"	24	10"
	5'-0"	5'-0"	49'-4"	7'-7 1/4"	14.70	M	4	*	15	18"	P	5	4'-8 1/2"	22	12"
						N	4	7'-11 1/4"	21	18"	Q	5	4'-6"	70	8 1/2"
						O	5	9'-7 1/4"	30	12"	R	4	4'-0"	20	12"
	6'-0"	5'-0"	52'-10"	8'-7 1/4"	18.36	M	4	*	17	18"	P	5	4'-11 1/2"	24	10"
						N	4	8'-11 1/4"	23	18"	Q	5	4'-11"	98	6 1/2"
						O	5	10'-9 1/4"	40	10"	R	4	4'-4"	24	10"
11'-0"	4'-0"	5'-0"	47'-10"	6'-7 1/4"	11.39	M	4	*	15	18"	P	4	4'-5 1/2"	26	10"
						N	4	6'-10 1/4"	19	17 1/2"	Q	4	4'-0"	96	6"
						O	4	8'-2 1/4"	32	10"	R	4	3'-3"	26	10"
	5'-0"	5'-0"	51'-4"	7'-7 1/4"	15.21	M	4	*	15	18"	P	5	4'-8 1/2"	22	12"
						N	4	7'-11 1/4"	21	18"	Q	5	4'-6"	73	8 1/2"
						O	5	9'-7 1/4"	30	12"	R	4	4'-0"	22	12"
	6'-0"	5'-0"	54'-2"	8'-7 1/4"	18.51	M	4	*	17	18"	P	5	4'-11 1/2"	26	10"
						N	4	8'-11 1/4"	23	18"	Q	5	4'-11"	101	6 1/2"
						O	5	10'-9 1/4"	40	10"	R	4	4'-4"	26	10"

* WIDTH OF WALL LESS 4"

DIMENSIONAL & QUANTITATIVE DATA FOR DOUBLE BOX CULVERT ENDWALLS

DIMESIONAL AND QUANTITATIVE DATA

CULVERT SPAN	HEIGHT	MAX. FILL HEIGHT	L	H	CU. YDS.	BAR	SIZE	LENGTH	NO.	SPACE	BAR	SIZE	LENGTH	NO.	SPACE
12'-0"	4'-0"	5'-0"	51'-2"	6'-9"	12.31	M	4	*	15	18"	P	4	4'-9"	28	10"
						N	4	7'-0"	21	16 1/2"	Q	4	4'-0"	107	5 3/4"
						O	4	8'-4"	34	10"	R	4	3'-3"	28	10"
	5'-0"	5'-0"	53'- 1/2"	7'-9"	15.62	M	4	*	17	18"	P	5	5'-0"	24	11 1/2"
						N	4	8'-1"	21	17 3/4"	Q	5	4'-6"	80	8"
						O	5	9'-9"	32	11 1/2"	R	4	4'-0"	24	11 1/2"
	6'-0"	5'-0"	56'-2"	8'-9"	19.19	M	4	*	17	18"	P	5	5'-3"	28	10"
						N	4	9'-1"	23	18"	Q	5	4'-11"	104	6 1/2"
						O	5	10'-11"	40	10"	R	4	4'-4"	28	10"

* WIDTH OF WALL LESS 4"

CITY OF JACKSONVILLE STANDARD

N.T.S.

DATE DRAWN 7-5-79

REVISED DATE 11-21-24

PLATE D-426

DIMENSIONAL & QUANTITATIVE DATA FOR TRIPLE BOX CULVERT ENDWALLS

CITY OF JACKSONVILLE STANDARD

N.T.S.

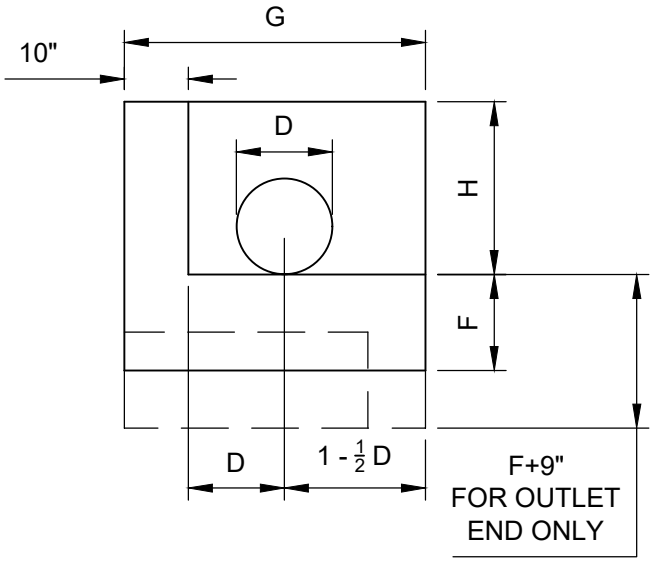
DATE DRAWN 7-5-79

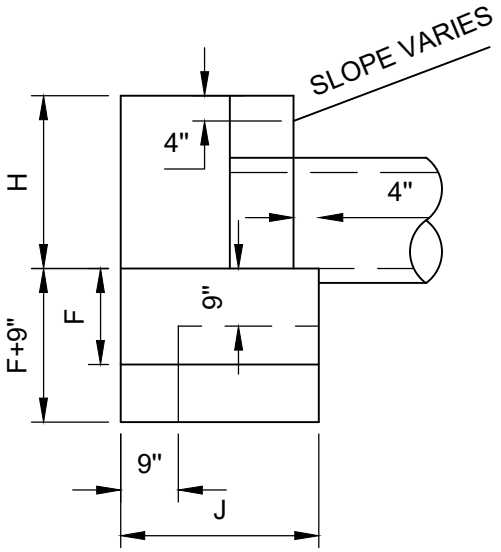
REVISED DATE 11-21-24

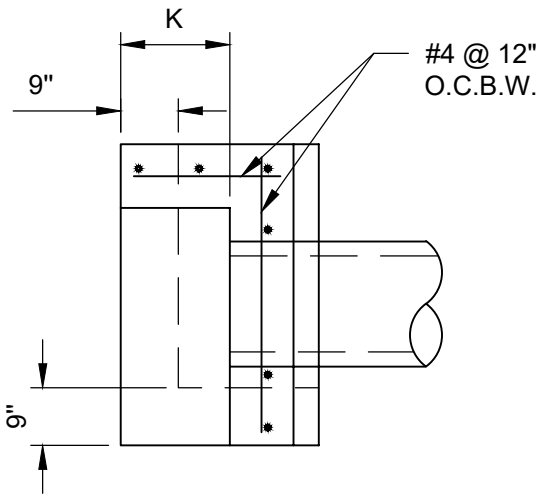
PLATE D-427

DIMENSIONAL & QUANTITATIVE DATA															
CULVERT		MAX. FILL HEIGHT	L	H	CU. YDS.	BAR	SIZE	LENGTH	NO.	SPACE	BAR	SIZE	LENGTH	NO.	SPACE
SPAN	HEIGHT														
9'-0"	4'-0"	5'-0"	53'-8"	6'-7 1/2"	12.50	M	4	*	15	18"	P	4	4'-6"	33	10"
						N	4	6'-10 1/2"	20	18 1/4"	Q	4	4'-0"	110	5 7/8"
						O	4	8'-2 1/2"	32	10"	R	4	3'-3"	33	10"
	5'-0"	5'-0"	55'-11"	7'-7 1/2"	15.97	M	4	*	15	18"	P	5	4'-9"	27	11 1/2"
						N	4	7'-11 1/2"	22	16 1/2"	Q	5	4'-6"	83	8 1/8"
						O	5	9'-7 1/2"	32	11 1/2"	R	4	4'-0"	27	11 1/2"
	6'-0"	5'-0"	58'-8"	8'-7 1/2"	20.22	M	4	*	17	18"	P	5	5'-0"	33	10"
						N	4	8'-11 1/2"	24	16 1/2"	Q	5	4'-11"	113	6 1/4"
						O	5	10'-9 1/2"	38	10"	R	4	4'-4"	33	10"
10'-0"	4'-0"	5'-0"	56'-2"	6'-8 1/4"	12.98	M	4	*	15	18"	P	4	4'-7 1/2"	36	10"
						N	4	6'-11 1/4"	20	16 3/4"	Q	4	4'-0"	115	5 7/8"
						O	4	8'-3 1/4"	32	10"	R	4	3'-3"	36	10"
	5'-0"	5'-0"	58'-9 1/2"	7'-8 1/4"	16.62	M	4	*	17	18"	P	5	4'-10 1/2"	30	11 1/2"
						N	4	8'-1/4"	20	18"	Q	5	4'-6"	109	6 1/2"
						O	5	9'-8 1/4"	32	11 1/2"	R	4	4'-0"	30	11 1/2"
	6'-0"	5'-0"	62'-10"	8'-8 1/4"	20.65	M	4	*	17	18"	P	5	5'-1 1/2"	36	10"
						N	4	9'-1/4"	24	17 1/2"	Q	5	4'-11"	121	6 1/4"
						O	5	10'-10 1/4"	40	10"	R	4	4'-4"	36	10"
11'-0"	4'-0"	5'-0"	60'-4"	6'-9"	13.95	M	4	*	15	18"	P	4	4'-9"	39	10"
						N	4	7'-0"	20	17 3/4"	Q	4	4'-0"	121	6"
						O	4	8'-4"	34	10"	R	4	3'-3"	39	10"
	5'-0"	5'-0"	62'-5 1/2"	7'-9"	17.60	M	4	*	17	18"	P	5	5'-0"	38	10 1/2"
						N	4	8'-1"	22	17"	Q	5	4'-6"	90	8 3/8"
						O	5	9'-9"	34	10 1/2"	R	4	4'-0"	38	10 1/2"
	6'-0"	5'-0"	65'-4"	8'-9"	21.21	M	4	*	17	18"	P	5	5'-3"	39	10"
						N	4	9'-1"	24	17"	Q	5	4'-11"	121	6 1/2"
						O	5	10'-11"	40	10"	R	4	4'-4"	39	10"
12'-0"	4'-0"	5'-0"	62'-10"	6'-10"	14.46	M	4	*	15	18"	P	4	4'-11"	44	10"
						N	4	7'-1"	20	17"	Q	4	4'-0"	126	6"
						O	4	8'-5"	32	10"	R	4	3'-3"	44	10"
	5'-0"	5'-0"	66'-4"	7'-10"	18.69	M	4	*	17	18"	P	5	5'-2"	39	11"
						N	4	8'-2"	22	17 3/4"	Q	5	4'-6"	100	8"
						O	5	9'-10"	34	11"	R	4	4'-0"	39	11"
	6'-0"	5'-0"	67'-6"	8'-10"	22.56	M	4	*	17	18"	P	5	5'-5"	44	10"
						N	4	9'-2"	24	17 7/8"	Q	5	4'-11"	100	8 3/8"
						O	5	11'-0"	40	10"	R	4	4'-4"	44	10"

* WIDTH OF WALL LESS 4"







NOTES:

1. CHAMFER ALL EXPOSED EDGES 3/4".
2. MIN. BEARING CAPACITY 3000 P.S.I.
3. ALL REINF. STEEL TO BE CENTERED.
4. COST OF REINF. STEEL SHALL BE INCLUDED IN THE UNIT BID PRICE FOR "L" TYPE ENDWALL.

TABLE OF DIMENSIONS & ESTIMATED QUANTITIES PIPE CULVERT ENDWALLS WITH L-TYPE WINGS

DIMENSIONS							QUANTITIES IN ONE ENDWALL			
OPENING		WALL			FOOTING		TOTAL CU. YDS. CONC. 3000 P.S.I.			
D	AREA SQ. FT.	G	H	K	F	J	CONC. PIPE		C.M. PIPE	
							INLET	OUTLET	INLET	OUTLET
15"	1.2	3'-11"	2'-3"	1'-5"	1'-3"	2'-7"	.68	0.8	0.7	0.82
18"	1.8	4'-7"	2'-6"	1'-9"	1'-3"	2'-11"	.86	1.0	0.89	1.03
24"	3.1	5'-10"	3'-0"	2'-6"	1'-6"	3'-8"	1.39	1.58	1.45	1.63
30"	4.9	7'-1"	3'-6"	3'-3"	1'-6"	4'-5"	1.98	2.2	2.05	2.28
36"	7.1	8'-4"	4'-0"	4'-0"	1'-9"	5'-2"	2.74	3.01	2.85	3.11
42"	9.6	9'-7"	4'-6"	4'-9"	2'-0"	5'-11"	3.63	3.94	3.77	4.08
48"	12.6	10'-10"	5'-0"	5'-6"	2'-0"	6'-8"	4.75	5.1	4.93	5.28

CONCRETE ENDWALL WITH L-TYPE WING FOR PIPE CULVERTS

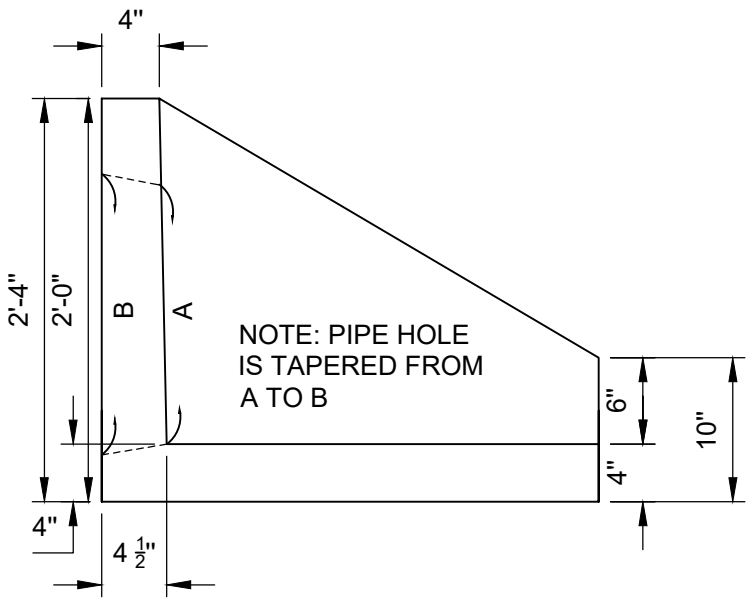
CITY OF JACKSONVILLE STANDARD

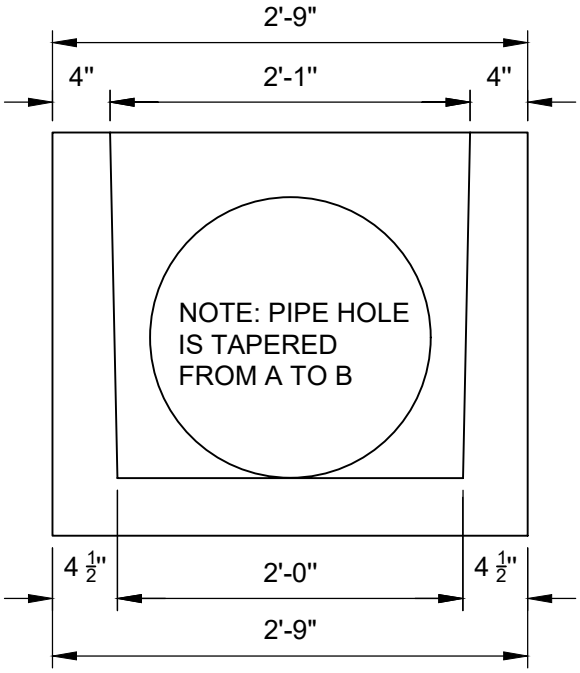
N.T.S.

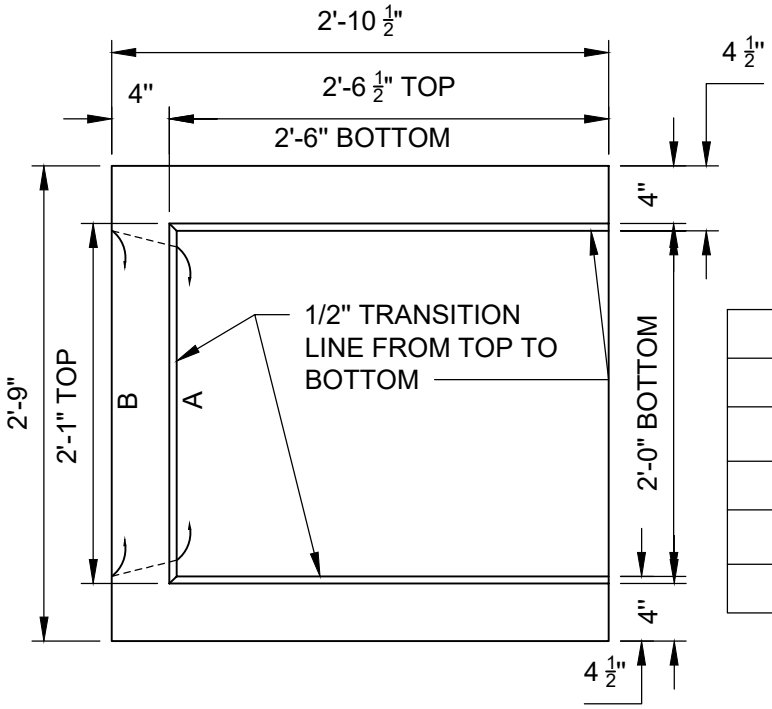
PLATE D-428

DATE DRAWN 5-12-94

REVISED DATE 11-21-24





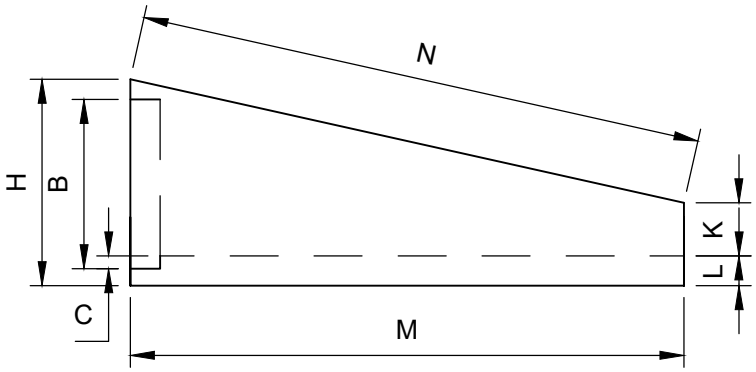


	A	B
15" RCP	20"	21"
15" CMP	15 1/2"	17"
18" RCP	25"	26"
18" CMP	18"	19 1/2"
24" CMP	25"	26"

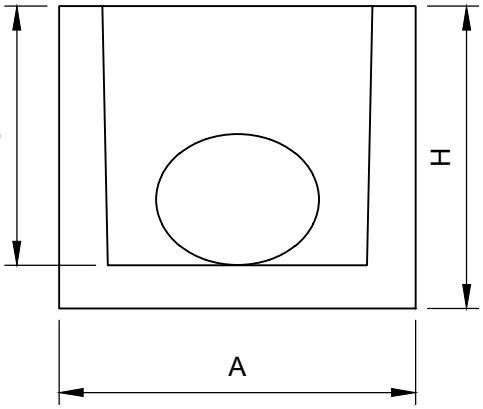
SPECIFICATIONS:

1. BASE SLAB #4 BARS @ 9" O.C.E.W. WALLS #4 BARS @ 9" O.C.E.W.
2. 4,000 P.S.I. CONCRETE

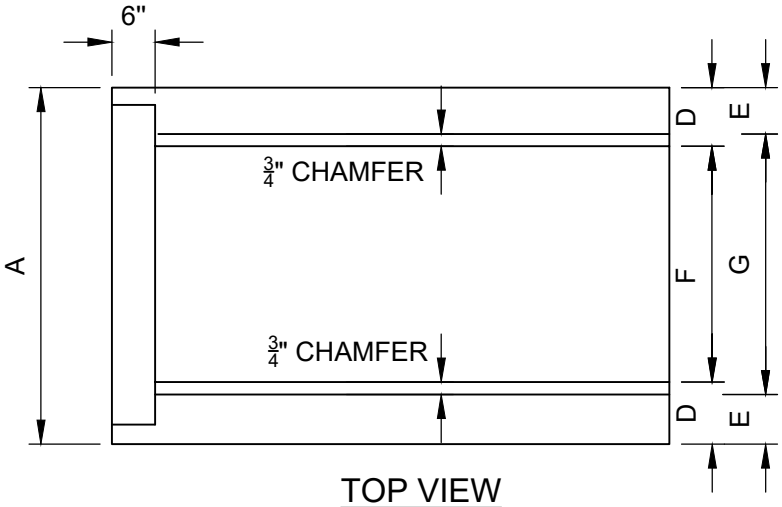
PRECAST MITERED END FOR DRIVEWAY CULVERTS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-429
		DATE DRAWN	7-12-79
		REVISED DATE	11-21-24



SIDE VIEW



END VIEW



TOP VIEW

SPECIFICATIONS:

1. STEEL - #4 @ 12" E.W., WITH 1 #6 OVER PIPE OPENING. (1-1/2" OF CONCRETE COVER OVER STEEL, 1/2" TOLERANCE.)
2. 4,000 P.S.I. CONCRETE

ERCP	CMPA	A	B	C	D	E	F	G	H	J	K	L	M	N
12" x 18"	13" x 17"	2'-7"	18 x 24	2 1/2"	6 1/2"	6"	1'-6"	1'-7"	2'-4"	1'-10"	8"	6"	4'-8"	4'-9 3/4"
14" x 23"	15" x 21"	3'-0"	21 x 30	2 3/4"	6 1/2"	6"	1'-11"	2'-0"	2'-7"	2'-1"	8"	6"	5'-8"	5'-10 1/4"
19" x 30"	20" x 28"	3'-8"	27 x 38	3 1/4"	6 1/2"	6"	2'-7"	2'-8"	3'-0"	2'-6"	8"	6"	7'-4"	7'-6 3/4"

PRECAST MITERED END FOR ELLIPTICAL DRIVEWAY CULVERTS

CITY OF JACKSONVILLE STANDARD

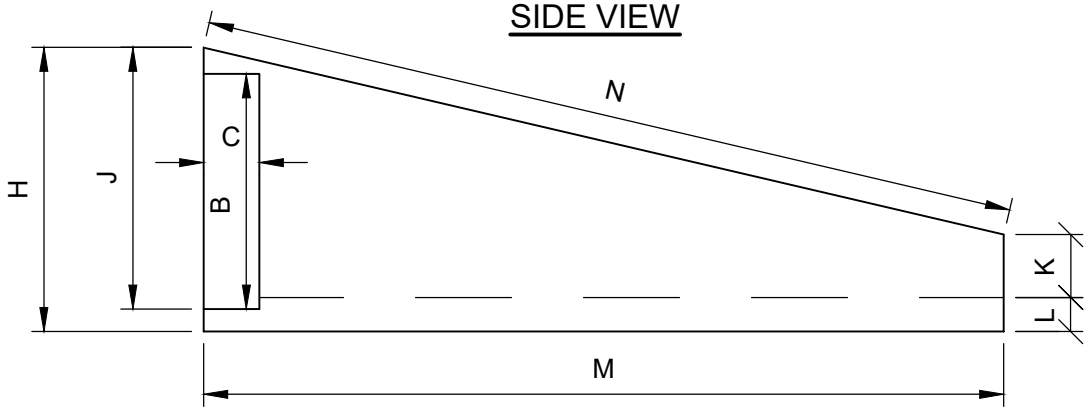
N.T.S.

PLATE D-430

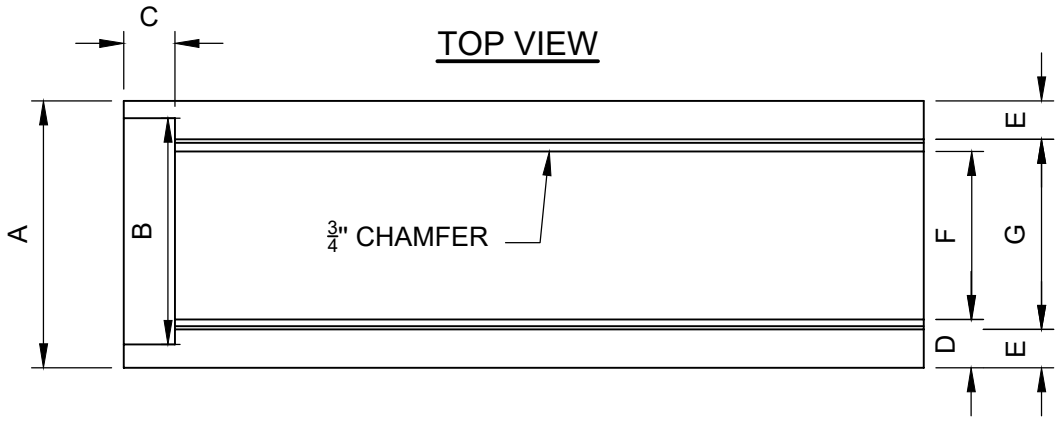
DATE DRAWN 07-12-79

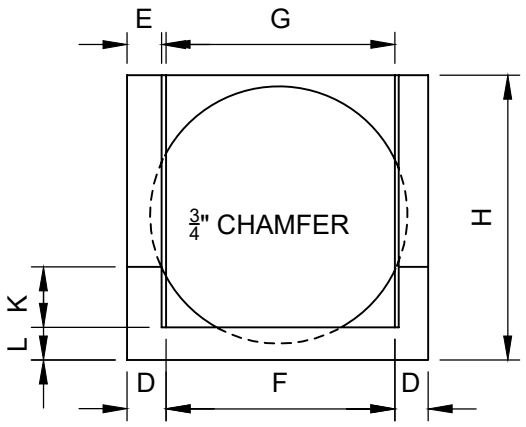
REVISED DATE 11-21-24

SIDE VIEW



TOP VIEW





END VIEW

CONCRETE: 4,000 P.S.I.

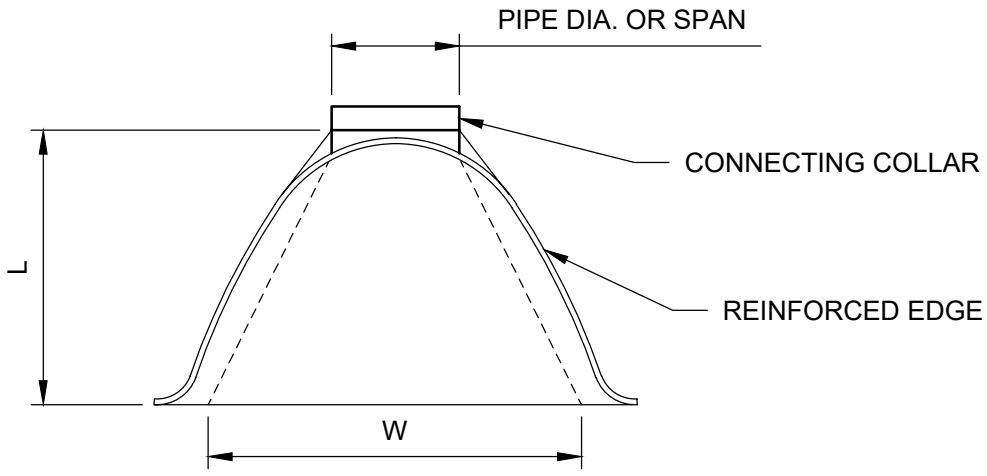
STEEL: #4 @ 12" E.W., WITH 1 #6 OVER PIPE OPENING. (2" CLEARANCE OVER STEEL, REINF. BARS, 1/2" TOLERANCE).

STANDARD MITERED END SECTION FOR RCP OR CMP	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-431
		DATE DRAWN	12-16-79
		REVISED DATE	11-21-24

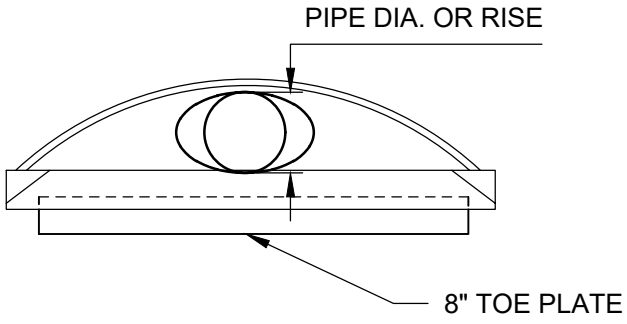
TABLE OF DIMENSIONS							
RCP/CMP	A	B	C	D	E	F	G
15" - 18"	2'-7"	2'-1"	6"	6"	6 3/4"	1'-6"	1'-7"
24"	2'-11"	2'-8"	6"	5"	4 1/2"	1'-11"	2'-0"
30"	3'-6"	3'-2"	6"	6"	5 1/2"	2'-5"	2'-6 1/2"
36"	4'-1"	3'-10"	6"	7"	5 1/2"	2'-9"	3'-0"

TABLE OF DIMENSIONS						
RCP/CMP	H	J	K	L	M	N
15" - 18"	2'-10"	2'-4"	8"	6"	6'-10"	7'-0"
24"	3'-6"	3'-1"	7 1/2"	5"	10'-0"	10'-3 1/2"
30"	3'-9"	3'-5"	7"	5"	11'-5"	11'-8 1/4"
36"	4'-6"	4'-0"	6"	6"	14'-0"	14'-4 1/2"

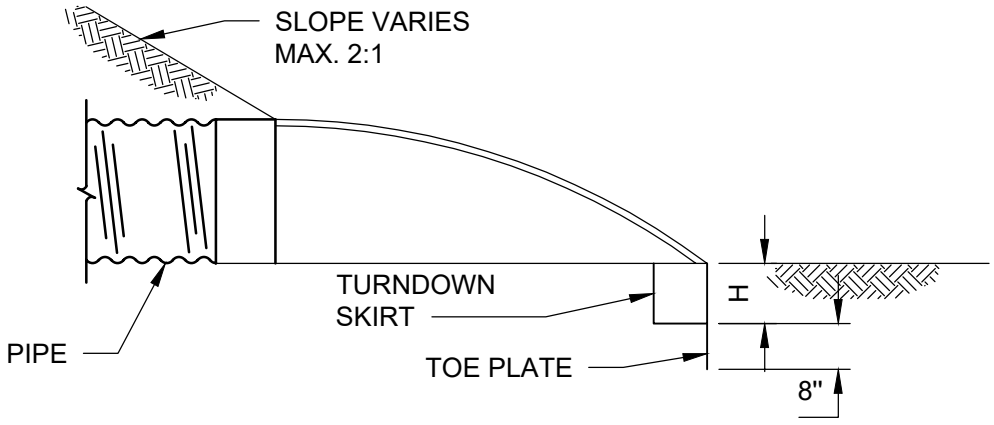
STANDARD TABLE OF DIMENSIONS FOR MITERED END SECTION	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-432
		DATE DRAWN	8-9-79
		REVISED DATE	11-21-24



PLAN VIEW



FRONT VIEW



FOR DIMENSIONAL DATA
SEE PLATE D-434

CROSS SECTION

STANDARD FLARED END SECTIONS FOR CORRUGATED METAL PIPE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-433
		DATE DRAWN	12-17-79
		REVISED DATE	11-21-24

DIMENSIONS OF FLARED END SECTION FOR CIRCULAR CORRUGATED METAL PIPE

PIPE DIA	GAUGE	H (IN.)	L* (IN.)	W * (IN.)
15	16	6	26 1/4	30
18	16	6	31 1/2	36
21	16	6	36 3/4	42
24	14	6	42	48
30	14	7 1/2	52 1/2	60
36	12	9	63	72
42	12	10 1/2	73 1/2	84
48	12	12	84	96
54	12	12	94 1/2	109

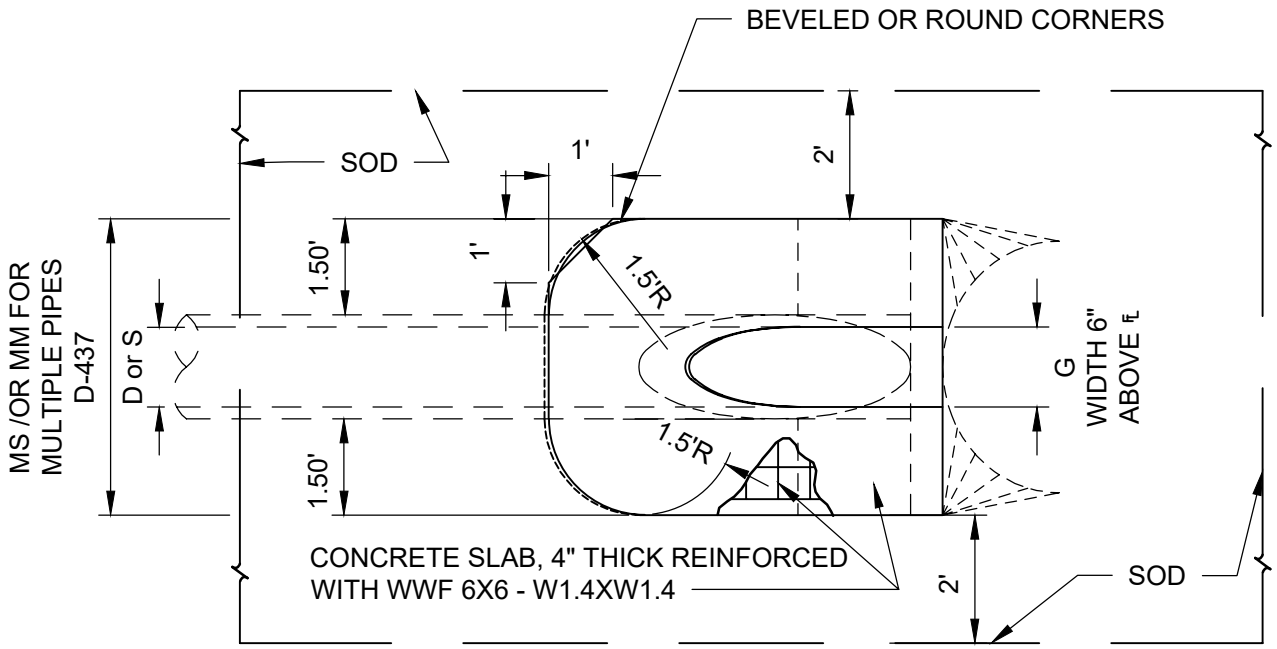
* L = 1.75 x DIA.
* W = 2 x DIA.

DIMENSIONS OF FLARED END SECTION FOR ARCHED CORRUGATED METAL PIPE

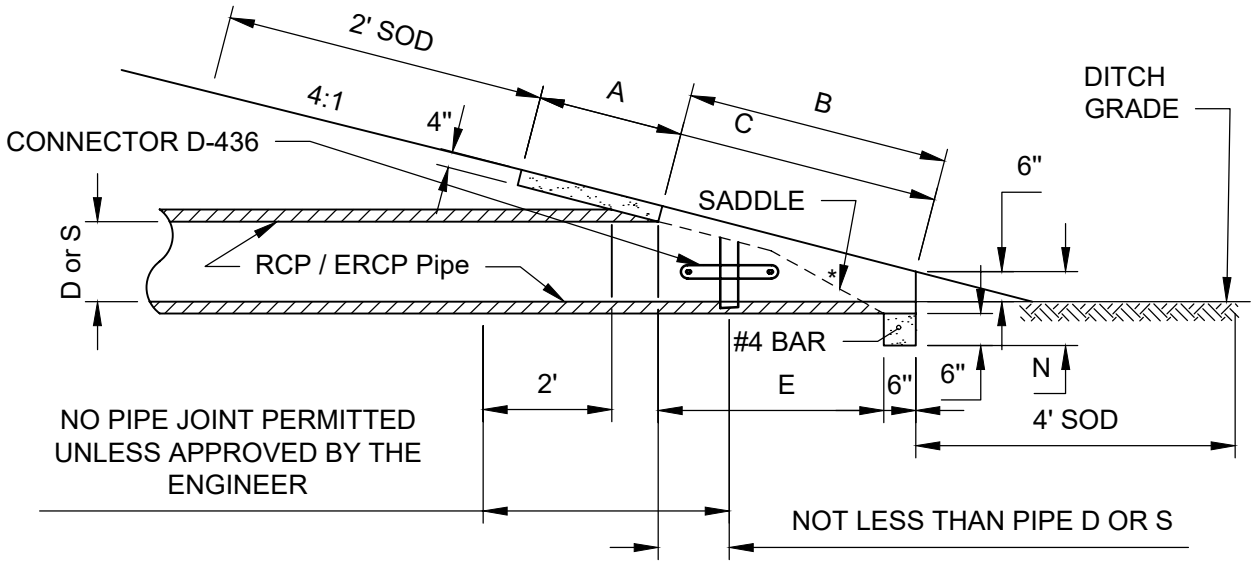
SPAN (IN.)	RISE (IN.)	GAUGE	H (IN.)	L±2 (IN.)	MAX WIDTH (IN.)
17	13	16	6	20	52
21	15	16	6	24	58
24	18	16	6	28	63
28	20	14	6	32	70
35	24	14	6	39	85
42	29	12	6 3/4	46	104
49	33	12	7 3/4	53	117
57	38	12	9	62	132
64	43	12	10	69	144

NOTES:
1. END SECTION TO BE CONSTRUCTED OF SAME MATERIAL AS CONNECTING PIPE.
2. APPROVED RIGID, VANDAL-PROOF CONNECTORS SHALL BE USED TO CONNECT THE END SECTION TO PIPE.
3. DIMENSIONS L AND W MAY VARY BY 10% ±.
4. STANDARD 8" TOE PLATES SHALL BE ATTACHED TO ALL END SECTIONS BY SHOP RIVETING OR BY GALVANIZED BOLTS.
5. TOE PLATE AND CONNECTOR SECTION TO BE CONSTRUCTED OF SAME GAUGE MATERIAL AS END SECTION.

FLARED END SECTIONS DIMENSIONAL DATA FOR CORRUGATED METAL PIPE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-434
		DATE DRAWN	12-20-79
		REVISED DATE	11-21-24



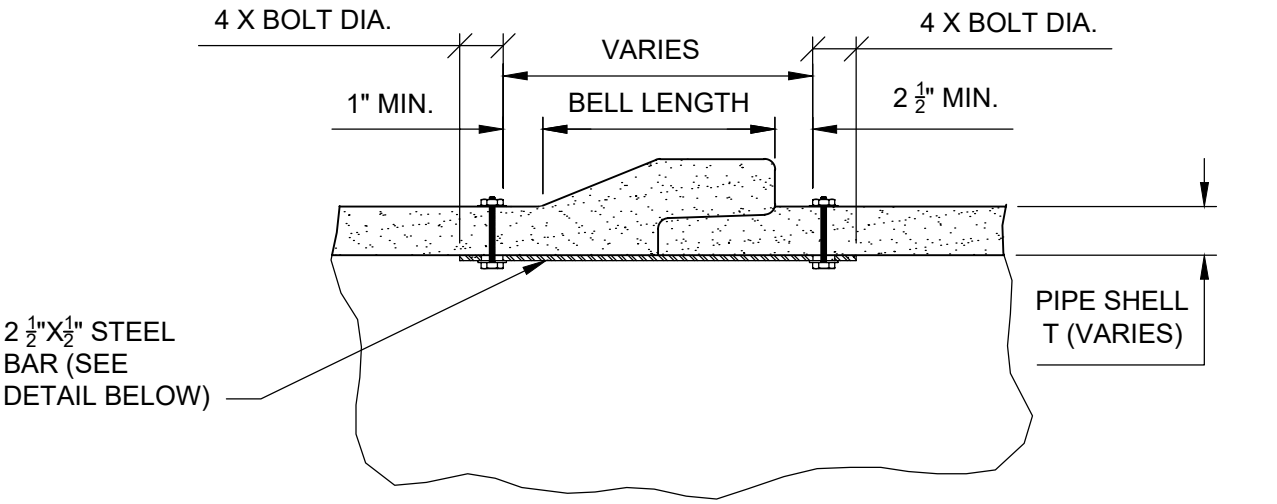
TOP VIEW - SINGLE PIPE

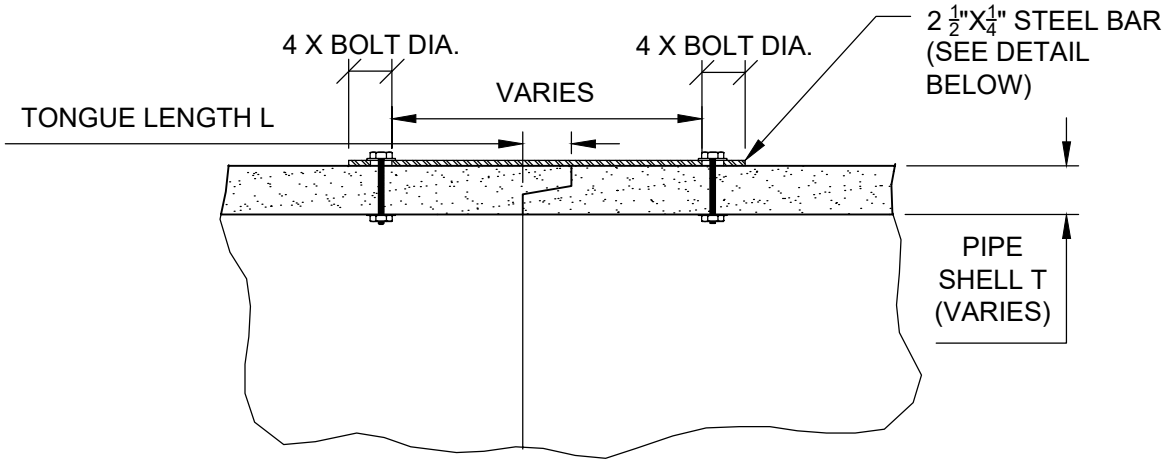


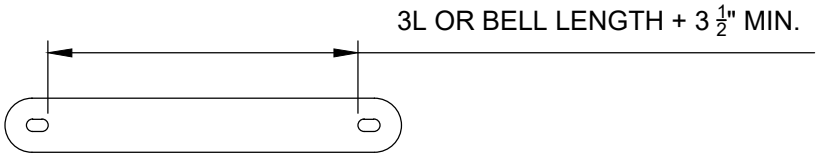
SECTION

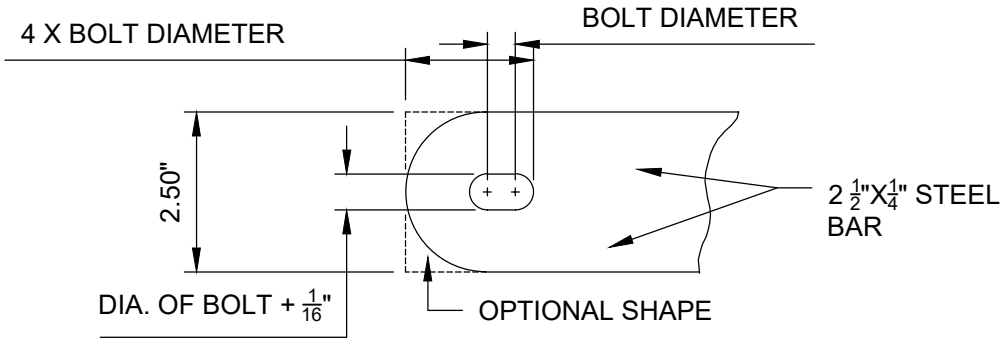
* SLOPE:
4:1 MITER TO ℄ OF PIPE FOR PIPES 18" & SMALLER
2:1 MITER FOR PIPES 24" & LARGER, FOR RCP.
4:1 MITER TO MAJOR AXIS FOR PIPES 24"X 38" & SMALLER.
2:1 MITER FOR PIPES 29"X 45" & LARGER, FOR ERCP.

MITERED END SECTION FOR R.C.P. OR E.R.C.P. CROSS DRAIN TYPE B	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-435
		DATE DRAWN	06-22-89
		REVISED DATE	11-21-24









NOTES:

1. ALL BARS, BOLTS, NUTS AND WASHERS ARE TO BE GALVANIZED STEEL.
2. BOLTS DIAMETER SHALL BE 3/8" FOR 15" TO 36" PIPE AND 5/8" FOR 42" TO 72" PIPE.
3. TWO CONNECTORS REQUIRED PER JOINT, LOCATED 60° RIGHT AND LEFT OF BOTTOM CENTER OF PIPE.
4. BOLT HOLES IN PIPE SHELL ARE TO BE DRILLED.

CONNECTOR DETAIL FOR MITERED END SECTION	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-436
		DATE DRAWN	06-22-89
		REVISED DATE	11-21-24

DIMENSIONS FOR R.C.P.									
D	X	A	B	C	E	F	G	Ms	N
15"	2.58'	2.27'	4.09'	6.36'	4.03'	8'	1.22'	4.63'	1.19'
18"	2.83'	2.36'	5.12'	7.48'	5.03'	9'	1.41'	4.92'	1.21'
24"	3.42'	2.53'	7.18' Δ	9.71'	7.03' Δ	11'	1.73'	5.50'	1.25'
30"	4.25'	2.70'	9.25'	11.95'	9.03'	13'	2.00'	6.08'	1.29'
36"	5.08'	2.87'	11.31' ◊	14.18'	11.03' ◊	15'	2.24'	6.67'	1.33'
42"	6.00'	3.05'	13.37'	16.42'	13.03'	17'	2.45'	7.25'	1.38'
48"	6.75'	3.22'	15.43'	18.65'	15.03'	19'	2.63'	7.83'	1.42'
54"	7.67'	3.39'	17.49'	20.88'	17.03'	21'	2.83'	8.42'	1.46'
60"	8.50'	3.56'	19.55'	23.11'	19.03'	23'	3.00'	9.00'	1.50'

Δ 6.42' Δ 6.25' DIMENSIONS PERMITTED TO ALLOW USE OF 8' STANDARD PIPE LENGTHS.

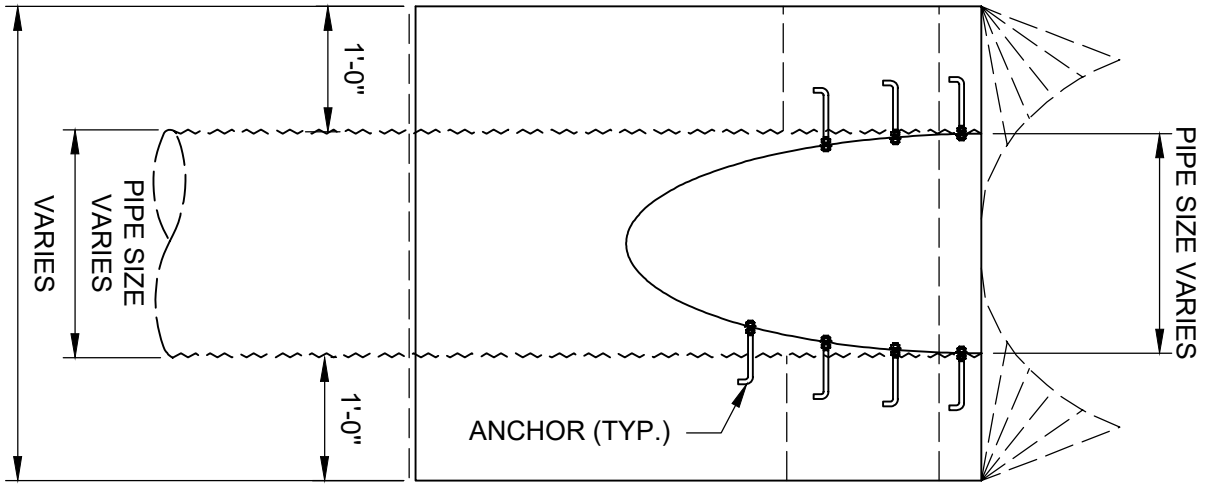
◊ 10.40' ◊ 10.10' DIMENSIONS PERMITTED TO ALLOW USE OF 12' STANDARD PIPE LENGTHS.

Δ ◊ CONCRETE SLAB SHALL BE DEEPENED TO FROM BRIDGE ACROSS CROWN OF PIPE. SEE SECTION.

DIMENSIONS FOR E.R.C.P.										
RISE R	SPAN S	X	A	B	C	E	F	G	Ms	N
12"	18"	2.83'	2.36'	3.06'	5.42'	3.03'	5'	1.50'	4.92'	1.21'
14"	23"	3.33'	2.44'	3.75'	6.19'	3.70'	6'	1.90'	5.38'	1.23'
19"	30"	4.00'	2.62'	5.47'	8.09'	5.36'	8'	2.37'	6.04'	1.27'
24"	38"	5.00'	2.79'	7.18'	9.97'	7.03'	10'	2.85'	6.79'	1.31'
29"	45"	5.92'	3.05'	8.90'	11.95'	8.70'	12'	3.19'	7.50'	1.38'
34"	53"	7.00'	3.22'	10.62'	13.84'	10.36'	13'	3.57'	8.25'	1.42'
38"	60"	7.83'	3.39'	11.99'	15.38'	11.70'	15'	3.95'	8.92'	1.46'
43"	68"	8.92'	3.56'	13.71'	17.27'	13.36'	17'	4.28'	9.67'	1.50'
48"	76"	9.92'	3.73'	15.43'	19.16'	15.03'	19'	4.59'	10.42'	1.54'
* 53"	83"	10.67'	3.91'	17.15'	21.06'	16.70'	20'	4.77'	11.08'	1.58'
58"	91"	11.67'	4.08'	18.87'	22.95'	18.36'	22'	5.01'	11.83'	1.63'

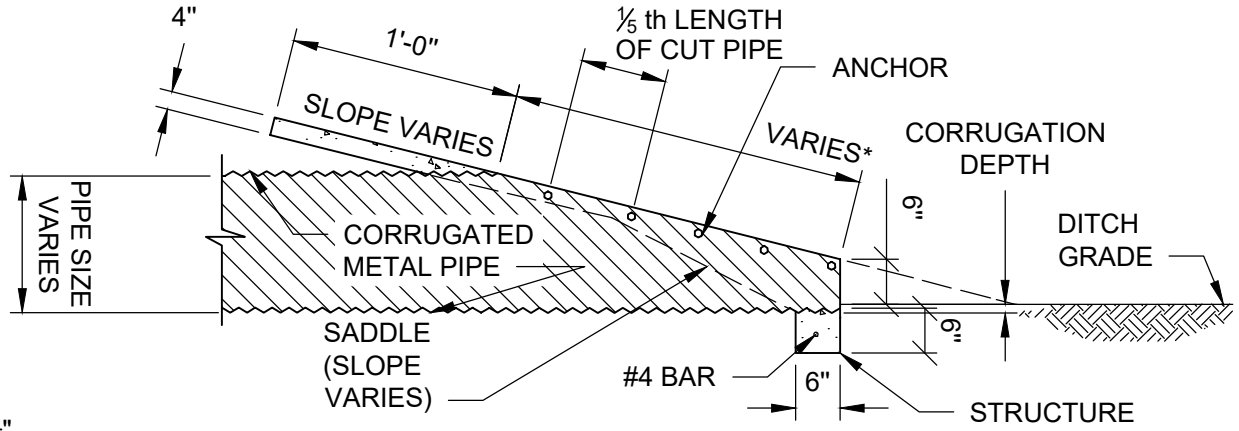
"X"=DISTANCE FROM CENTER OF PIPE TO CENTER OF PIPE.
"Mm"=DIMENSIONS FOR MULTIPLE PIPES.
FORMULA TO DETERMINE "Mm" FOR MULTIPLE PIPES = Ms+X (NO. OF PIPES -1)
FOR "Ms" AND "X" DIMENSIONS, SEE TABLE ABOVE.
* SPECIAL ORDER; NOT STANDARD SIZE

TABLES OF DIMENSION FOR MITERED END SECTIONS TYPE B	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-437
		DATE DRAWN	12-14-93
		REVISED DATE	11-21-24

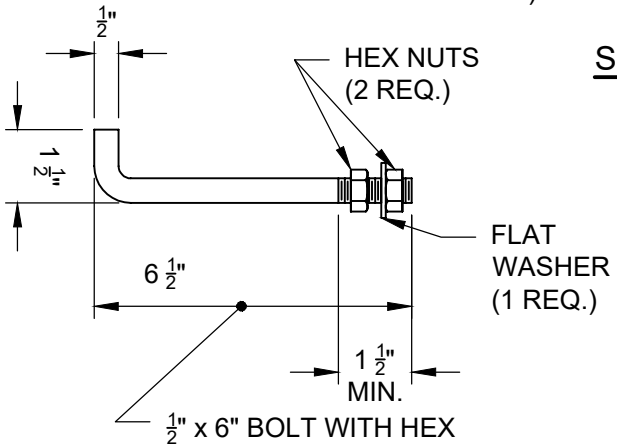


* VARIES BASED ON PIPE SIZE AND MES SLOPE.

TOP VIEW-SINGLE PIPE



SECTION



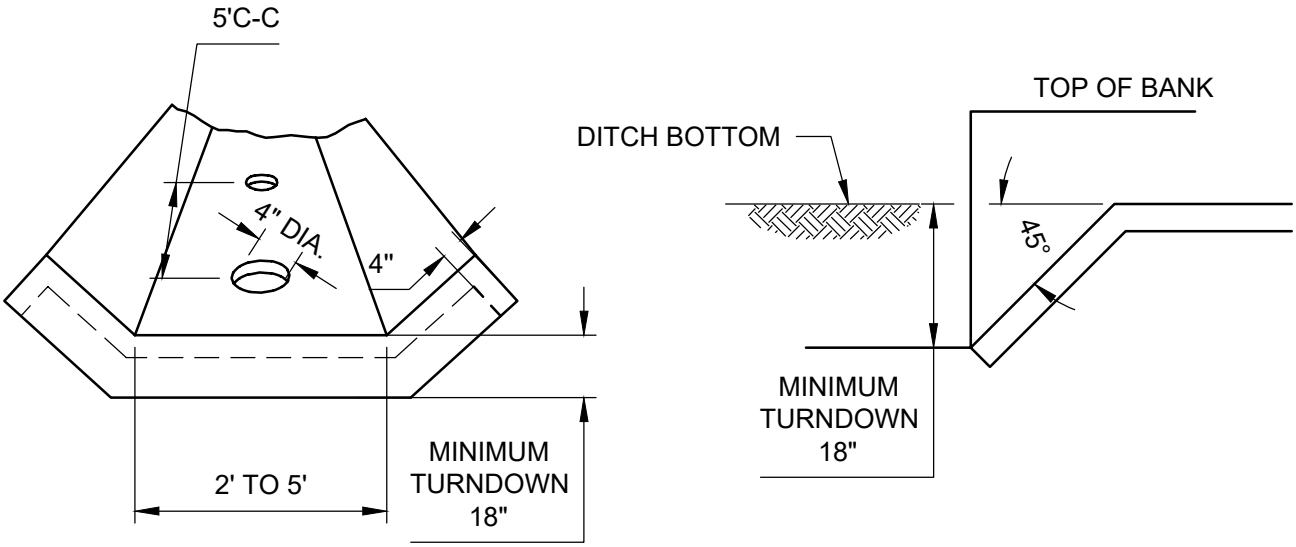
ANCHOR DETAIL

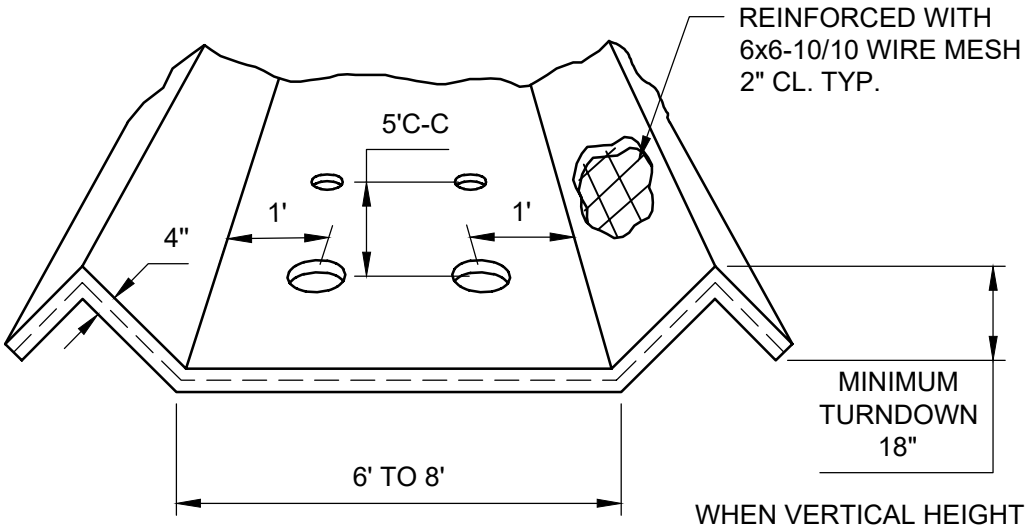
ANCHOR NOTES:

1. ANCHOR, WASHER AND NUTS TO BE GALVANIZED STEEL.
2. BEND ANCHOR WHERE REQUIRED TO CENTER IN CONCRETE SLAB. DAMAGED SURFACES TO BE REPAIRED AFTER BENDING. ANCHORS ARE TO BE SPACED A DISTANCE EQUAL TO FOUR (4) CORRUGATIONS.
3. PLACE THE ANCHORS IN THE OUTSIDE CREST OF CORRUGATION. FLAT WASHERS TO BE PLACED ON INSIDE WALL OF PIPE.
4. HOLES IN THE MITERED END PIPE ARE TO BE DRILLED OR PUNCHED: BURNING NOT PERMITTED.

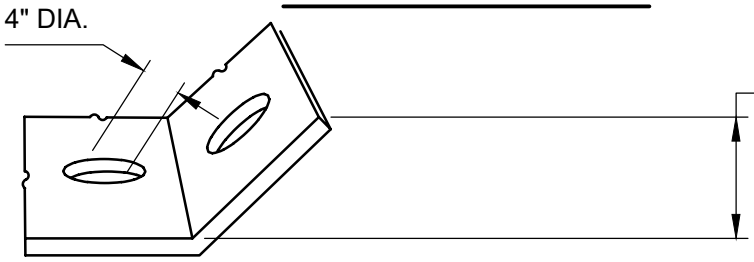
NOTE: THE COST OF ALL REINFORCING ANCHORS AND CONCRETE SHALL BE INCLUDED IN THE COST FOR THE MITERED END SECTION. NO PIPING SHALL BE INCLUDED IN THE COST FOR THE MITERED END SECTION. MITERED END SECTIONS WILL BE PAID FOR UNDER THE CONTRACT PRICE FOR MITERED END SECTION (EACH) AS ESTABLISHED IN THE BID PROPOSAL.

CMP OR CMPA MITERED END SECTION DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-438
		DATE DRAWN	9-02-11
		REVISED DATE	11-21-24





DITCH PAV'T. SECTION

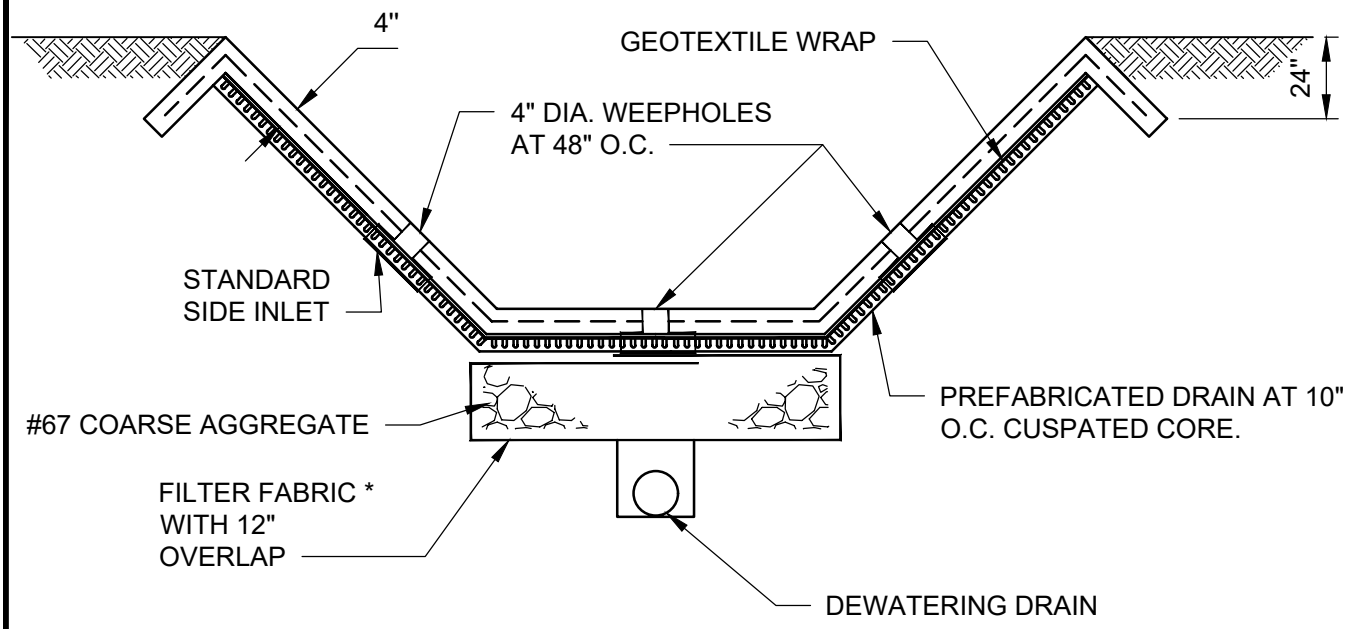


WHEN VERTICAL HEIGHT IS GREATER THAN 3' CONST. WEEP HOLES HALFWAY UP THE SIDE IN LINE WITH BOTTOM WEEP HOLES.

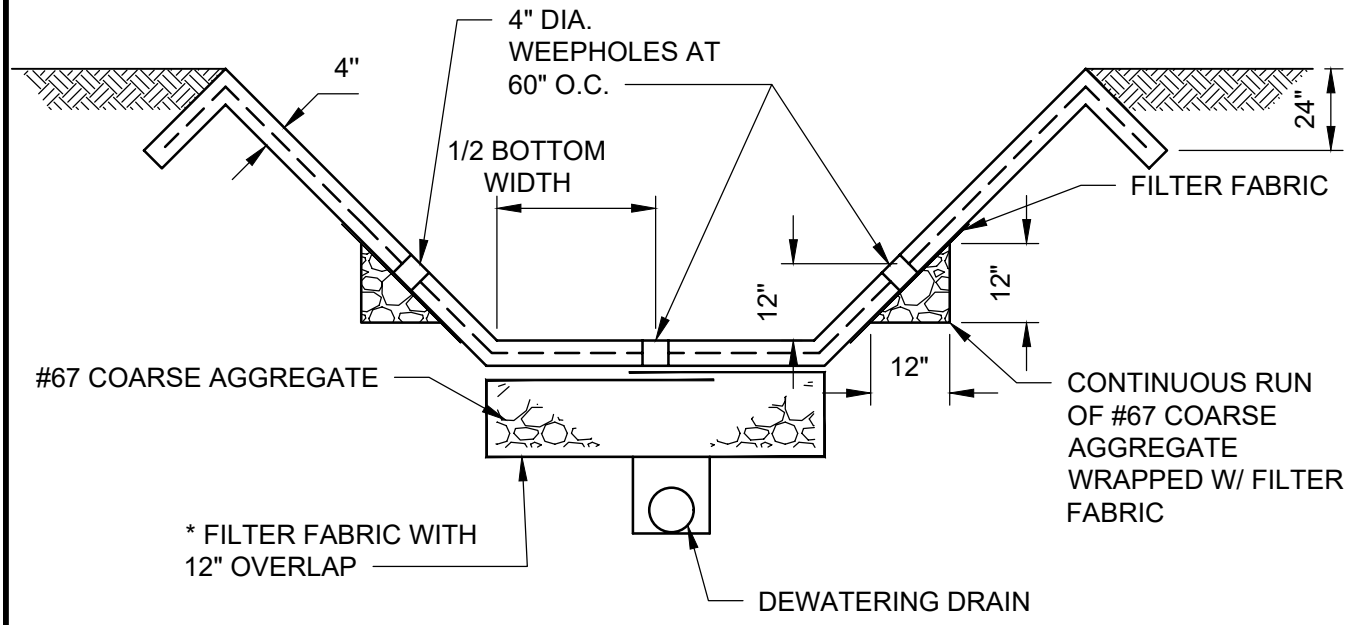
NOTES:

1) JOINTS SHALL BE OF EITHER THE OPEN TYPE OR THE TOOLED (DUMMY) TYPE AND NOT SPACED MORE THAN 10 FT. APART.
2) CONC. DESIGN STRENGTH 2500 P.S.I. MIN.
3) ONE CU.FT. OF #67 COARSE AGGREGATE AND 1/4" GALV. HARDWARE CLOTH BETWEEN GRAVEL AND UNDERSIDE OF THE DITCH PAV'T. TO BE PLACED BENEATH EACH WEEP HOLE.
4) WEEP HOLE ARRANGEMENT MAY BE MODIFIED OR ADDITIONAL WEEP HOLES REQUIRED AT THE DIRECTION OF THE ENGINEER.

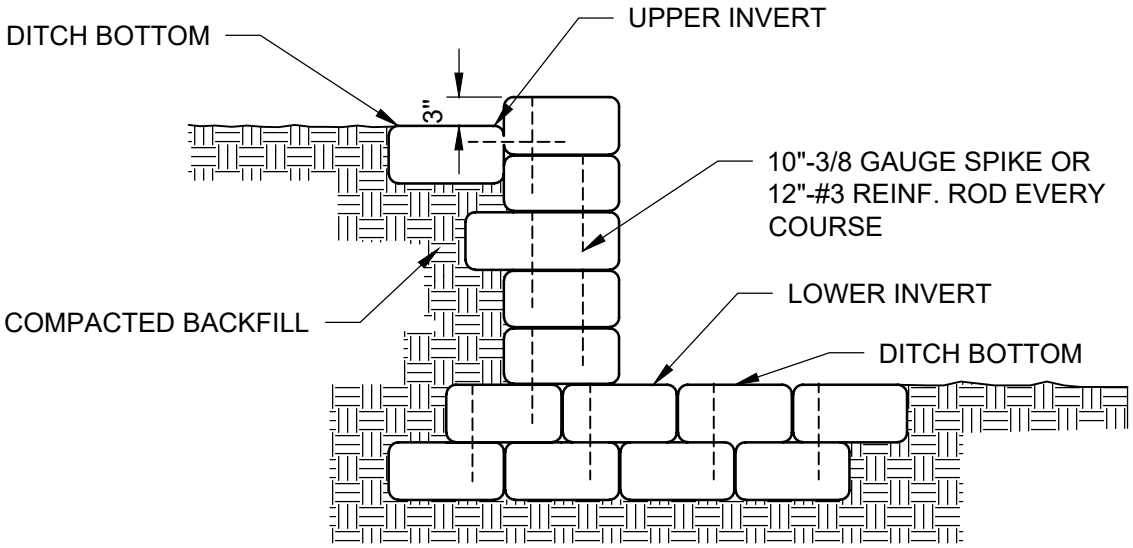
CONC. DITCH PAVING AND WEEP HOLE ARRANGEMENT	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-501
		DATE DRAWN	7-14-79
		REVISED DATE	11-21-24

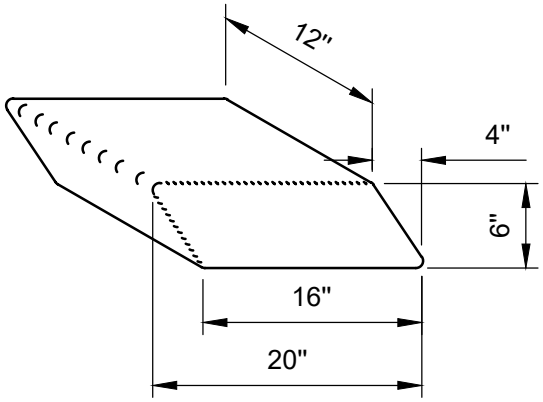


* WHEN DEWATERING REQUIRES CRUSHED STONE AND/OR DEWATERING DRAIN THE ENTIRE SYSTEM SHALL BE WRAPPED IN FILTER FABRIC.



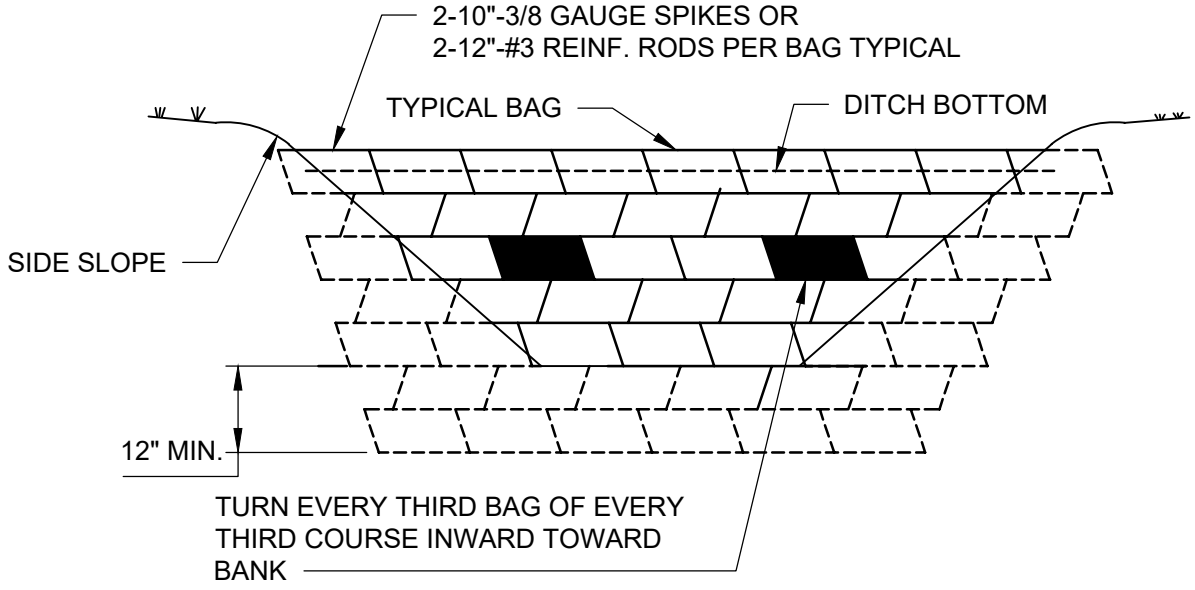
ALTERNATE WEEPHOLE DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-502
		DATE DRAWN	5-12-94
		REVISED DATE	11-21-24



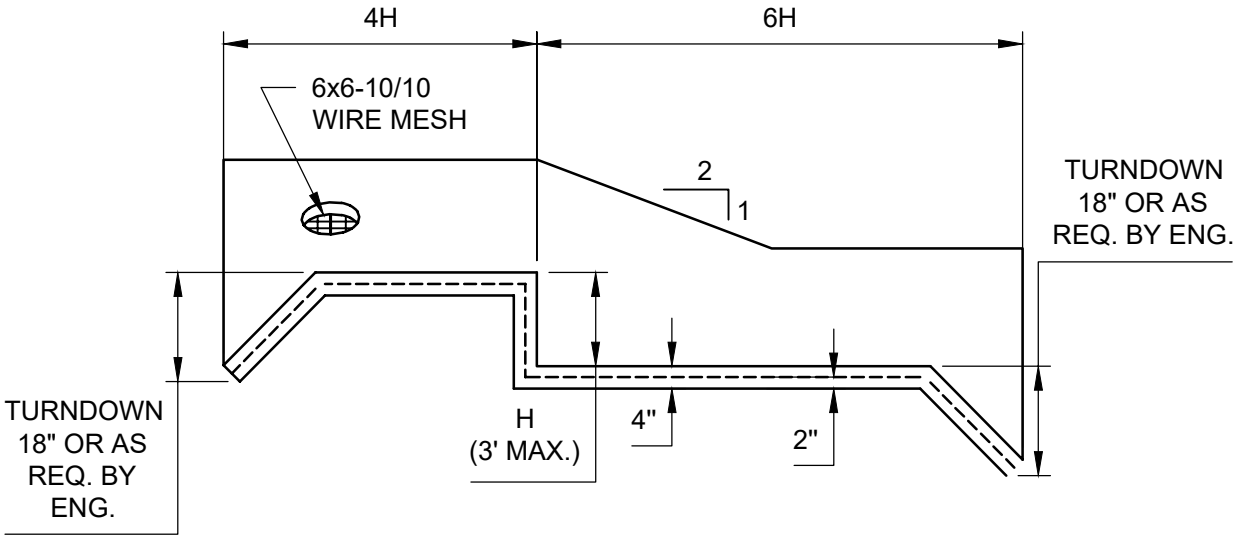


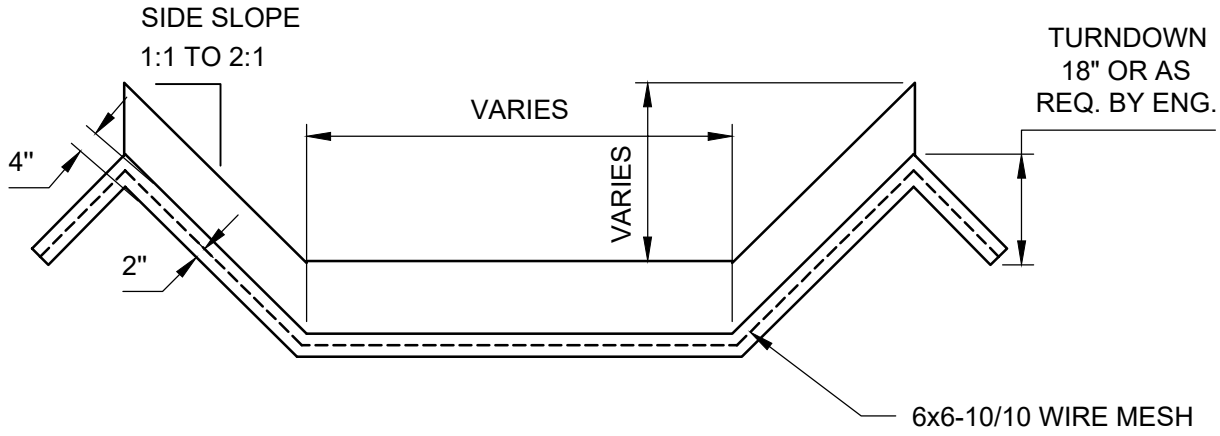
COUNTERSINK ALL EXPOSED
SPIKES OR REINF. RODS 1"

B-G DET-IL



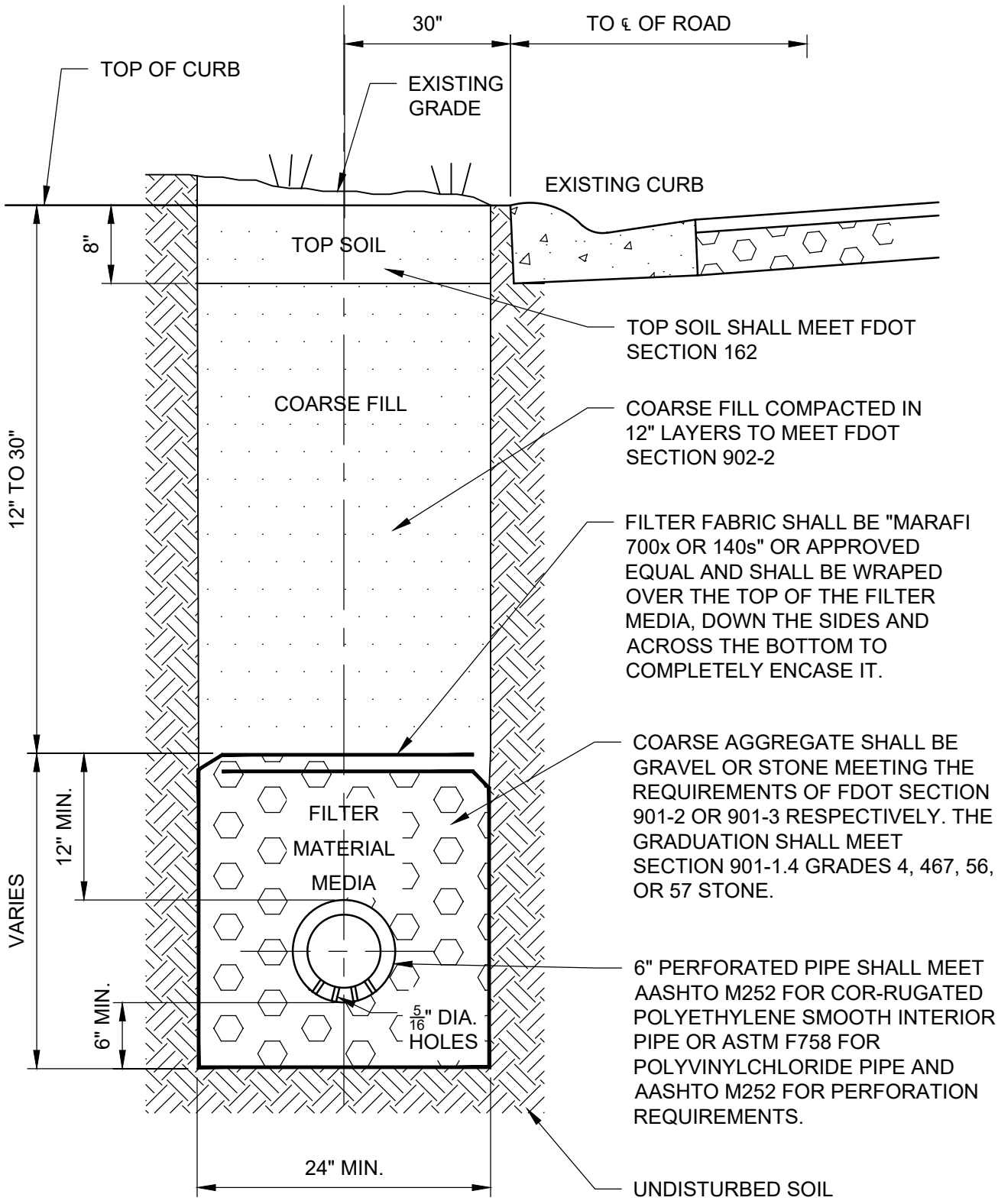
TEMPORARY SAND-CEMENT RIP RAP CHECK DAM	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-601
		DATE DRAWN	2-10-79
		REVISED DATE	11-21-24





NOTES:
1. CONC. DESIGN STRENGTH 2500 P.S.I. MIN.
2. FOR WEEP HOLE NEEDS-SEE PLATE D-501

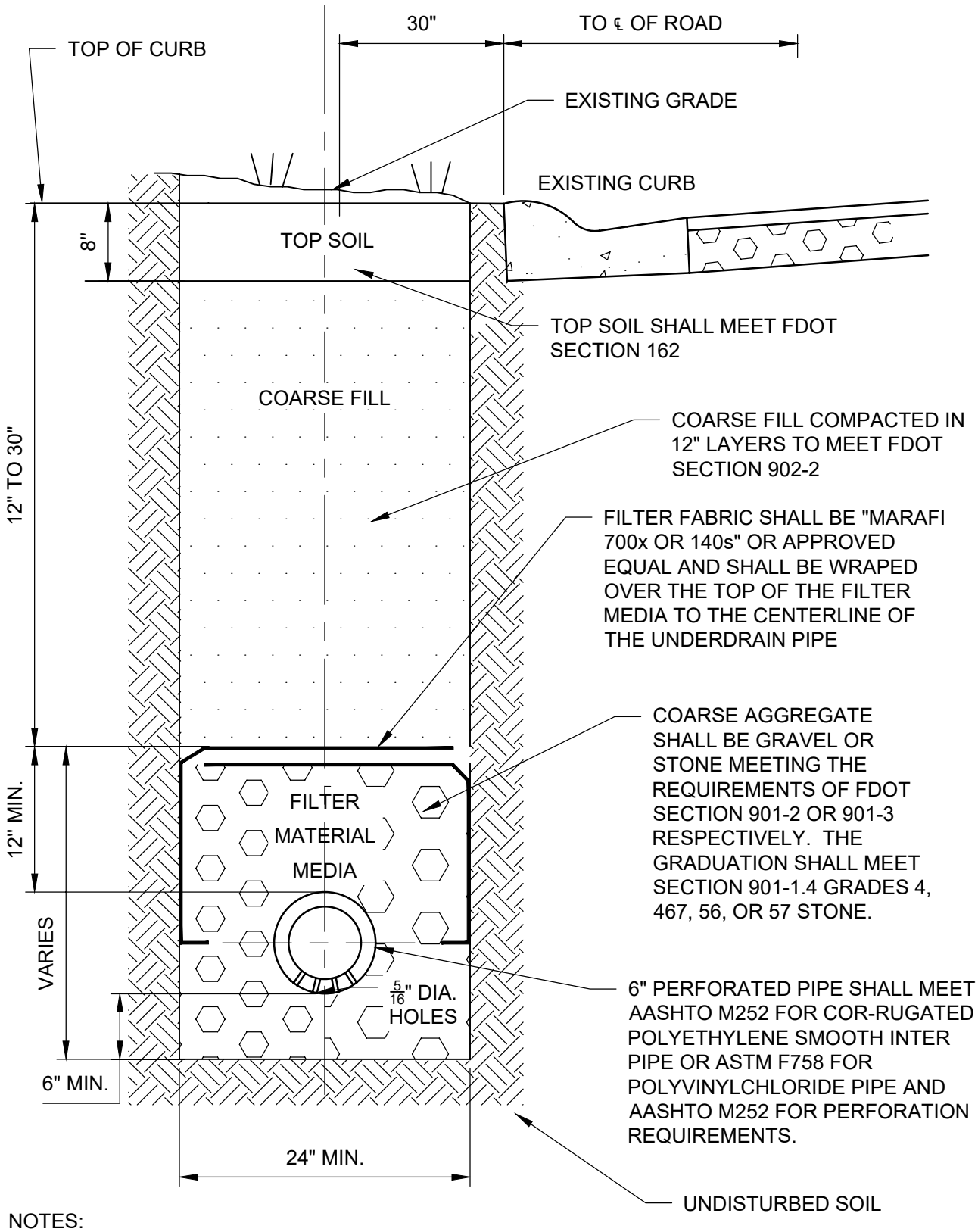
CONC. CHECK DAM	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-602
		DATE DRAWN	7-14-79
		REVISED DATE	11-21-24



NOTES:

1. MINIMUM PIPE SLOPE OF 0.30%
2. TYPE I UNDERDRAIN WITH "MARAFI 700x" OR APPROVED EQUAL IS TO BE USED WHERE MODERATE CHEMICAL CLOGGING OF FILTER MATERIAL IS EXPECTED.

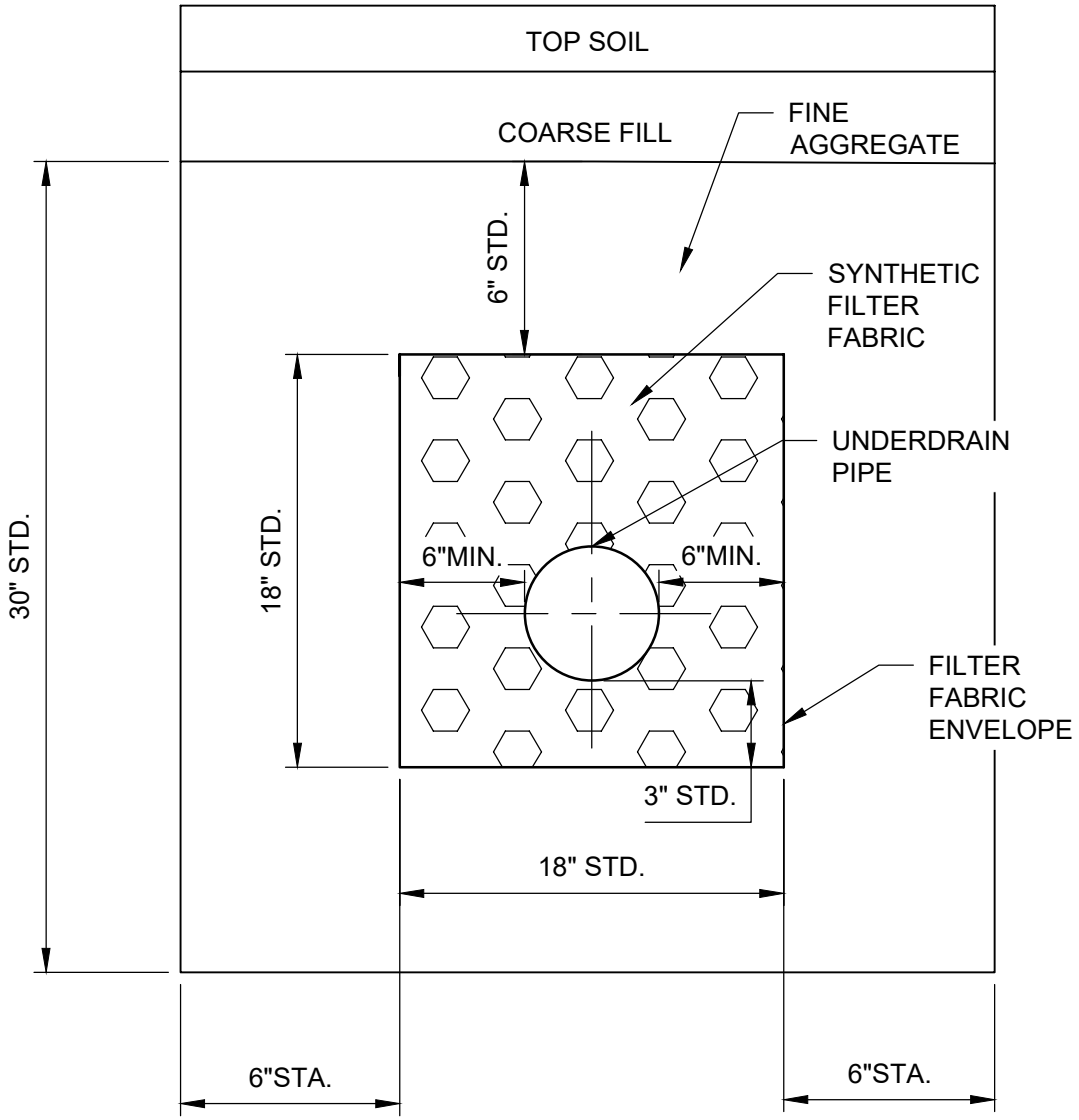
UNDERDRAIN INSTALLATION TYPE I	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-701
		DATE DRAWN	05-12-79
		REVISED DATE	11-21-24



NOTES:

1. MINIMUM PIPE SLOPE OF 0.30%
2. TYPE II UNDERDRAIN IS TO BE USED WHERE CHEMICAL CLOGGING OF FILTER FABRIC IS ANTICIPATED

UNDERDRAIN INSTALLATION TYPE II	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-702
		DATE DRAWN	05-12-79
		REVISED DATE	11-21-24



TYPE III

GENERAL NOTES FOR UNDERDRAIN:

1. TYPE III UNDERDRAIN IS INTENDED FOR MAXIMUM WATER REMOVAL CONDITIONS. THE FILTER FABRIC SEPARATION IS REQUIRED BETWEEN THE COARSE AGGREGATE OR FINE AGGREGATE INCLUDING THOSE DESCRIBED IN GENERAL NOTES 2 AND 3 WHERE REACTIVE CONDITIONS MAY CREATE CHEMICAL CLOGGING, THE USE OF AN INERT MATERIAL AND/OR ELIMINATION OF THE FILTER FABRIC MAY BE NECESSARY.

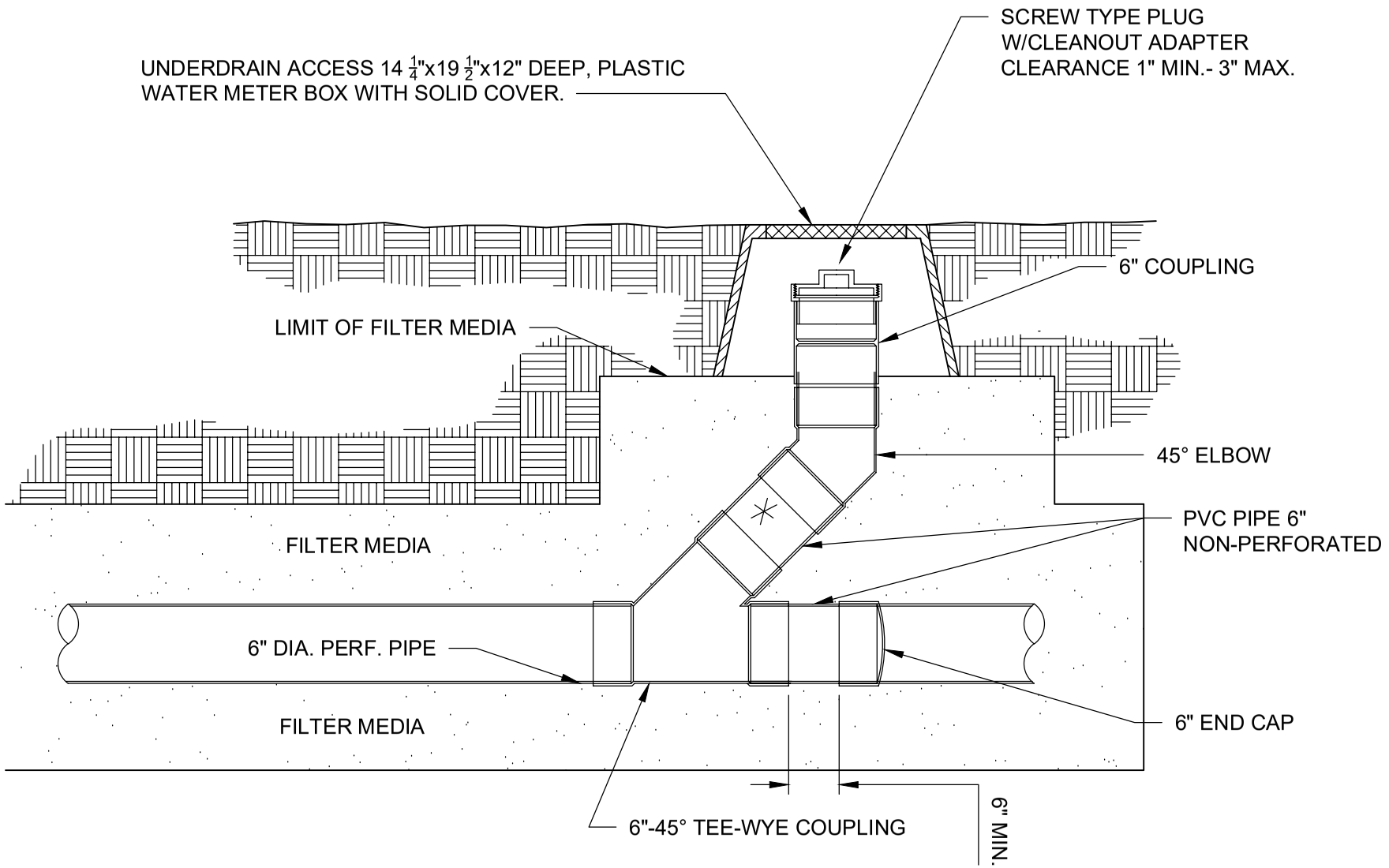
2. FINE AGGREGATE SHALL BE QUARTZ SAND MEETING THE REQUIREMENTS OF FDOT SECTION 902-4 OF THE STANDARD SPECIFICATIONS.

3. COARSE AGGREGATE SHALL BE GRAVEL OR STONE MEETING THE REQUIREMENTS OF SECTION 901-2 OR 901-3 RESPECTIVELY. THE GRADATION SHALL MEET FDOT SECTION 901-6, GRADES 4, 467, 5, 56, OR 57 STONE UNLESS RESTRICTED IN THE PLANS.

UNDERDRAIN INSTALLATION TYPE III	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-703
		DATE DRAWN	5-12-79
		REVISED DATE	11-21-24

UNDERDRAIN CLEANOUT DETAIL

CITY OF JACKSONVILLE STANDARD



NOTES:

ALL PIPE AND FITTINGS TO MEET ASTM F758-82 SPECIFICATIONS. 300' MAXIMUM DISTANCE BETWEEN CLEANOUTS .

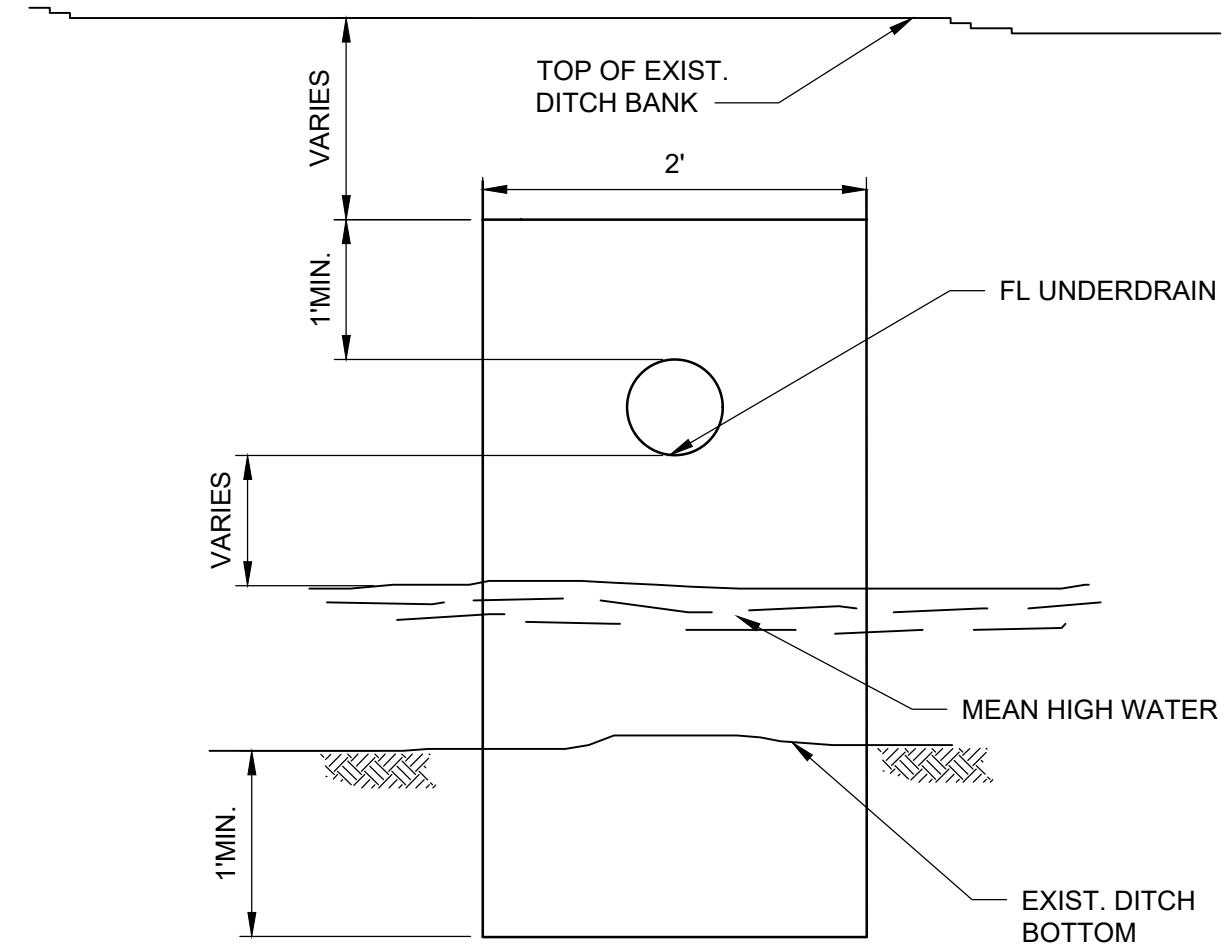
* COUPLING PIPE LENGTH TO BE FIELD ADJUSTED.

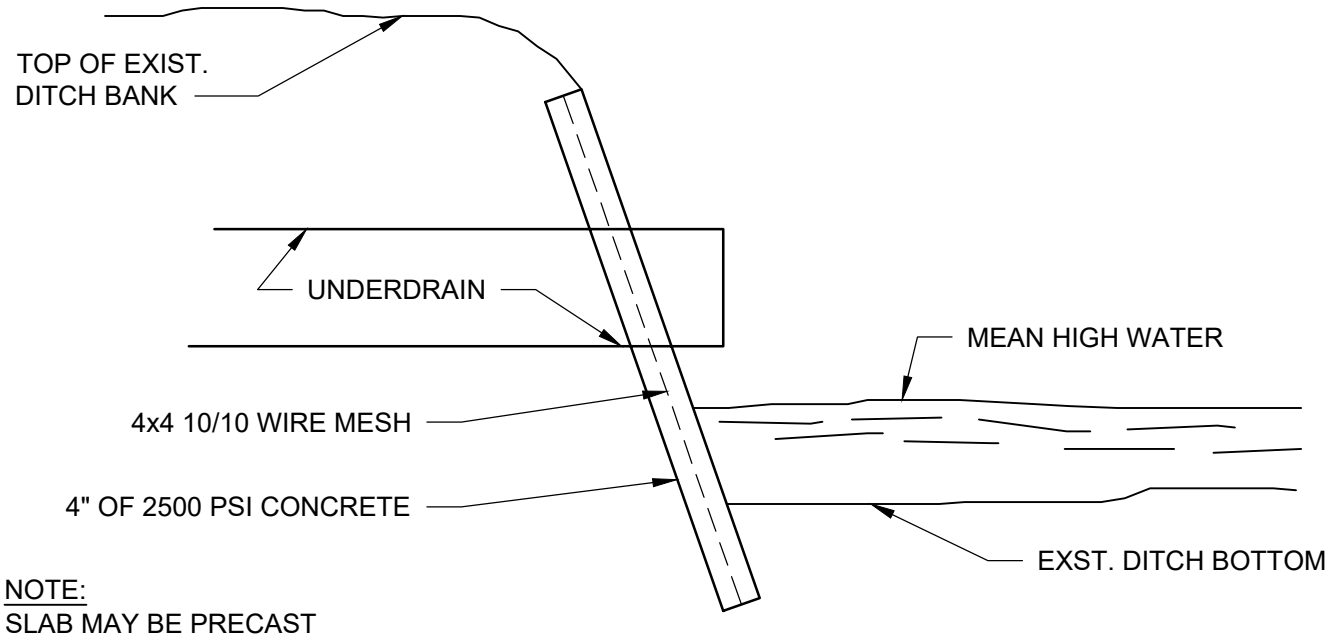
N.T.S.

DATE DRAWN 5-07-79

REVISED DATE 11-21-24

PLATE D-704

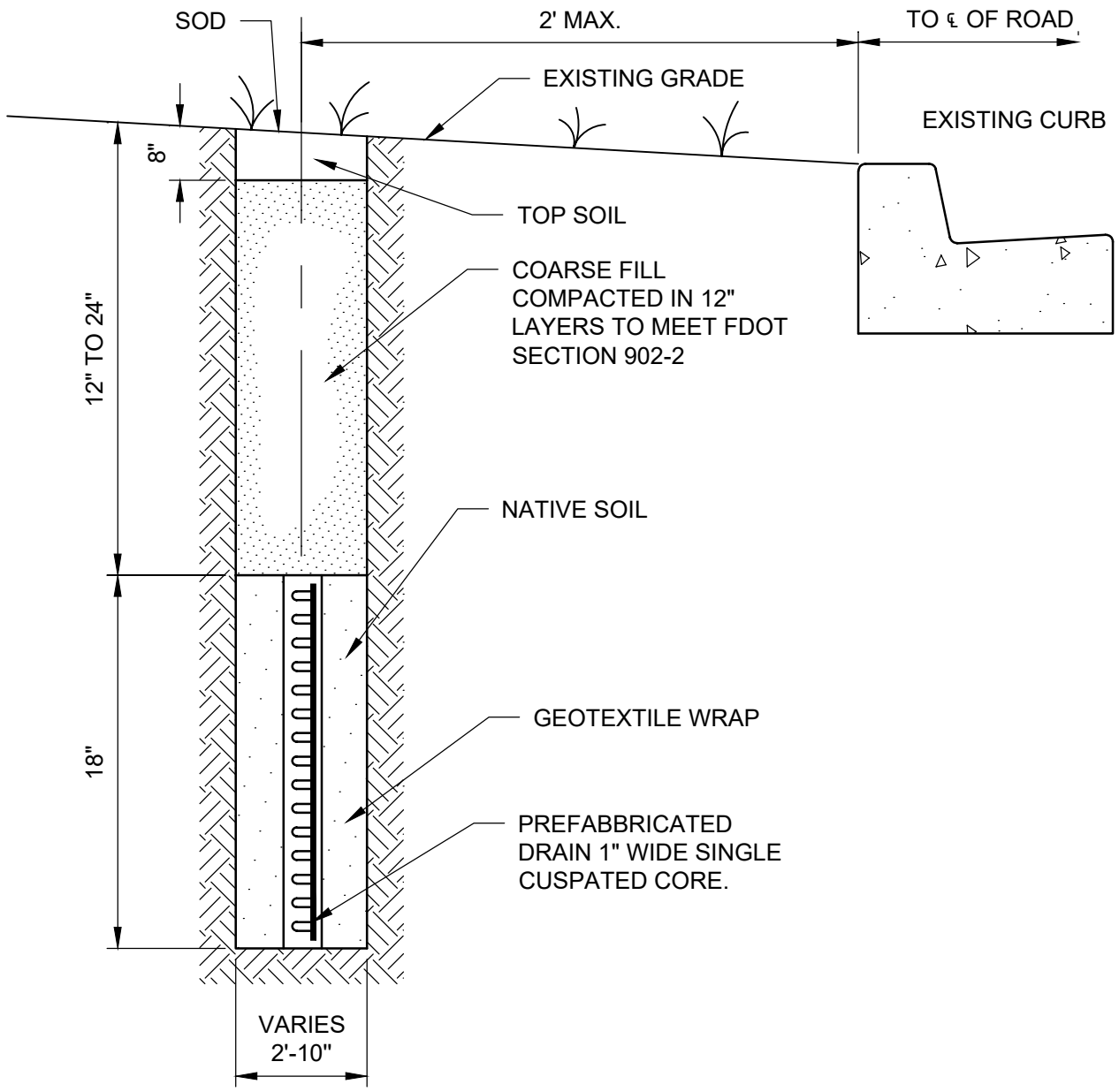




NOTE:
SLAB MAY BE PRECAST

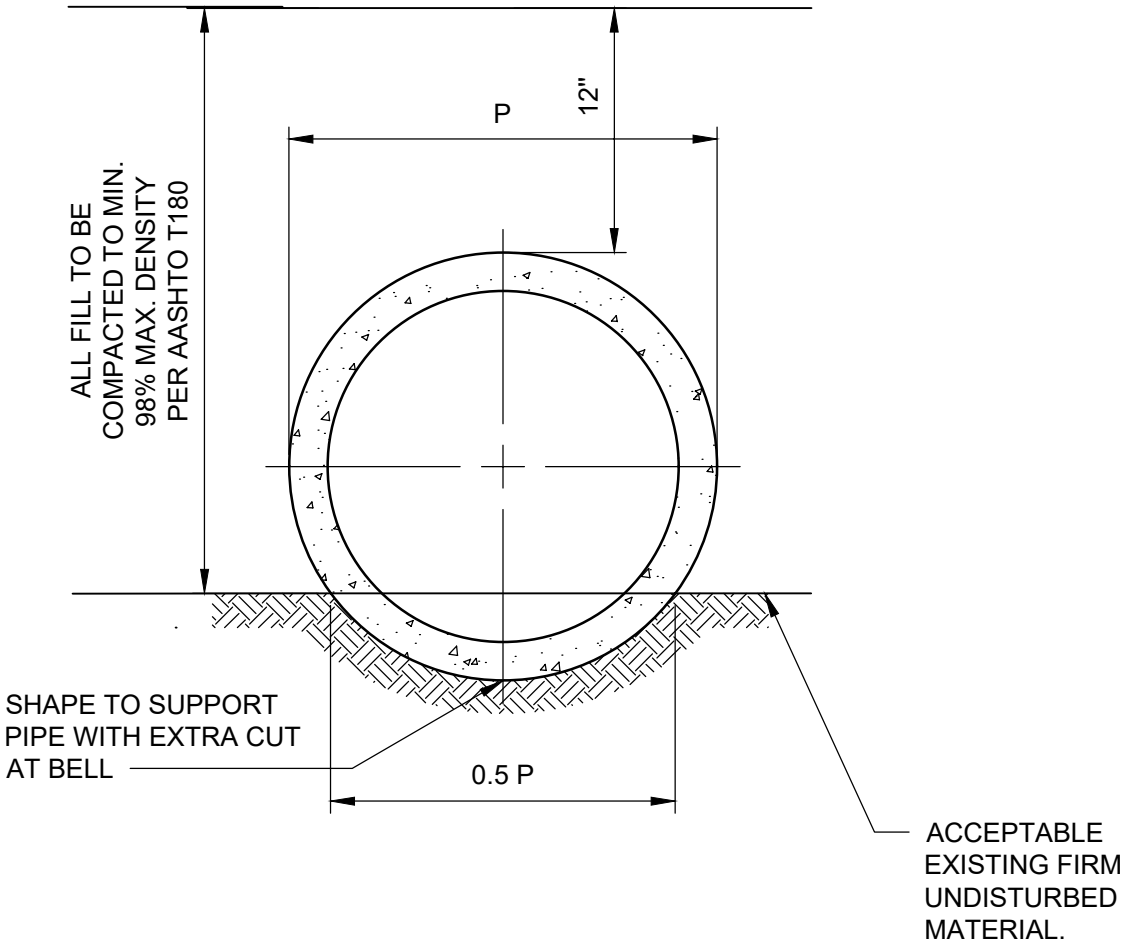
PAVED OUTFALL FOR UNDERDRAIN	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-705
		DATE DRAWN	5-5-79
		REVISED DATE	11-21-24

TYPICAL PREFABRICATED EDGE DRAIN



NOTE:
MINIMUM PIPE SLOPE OF 0.30%

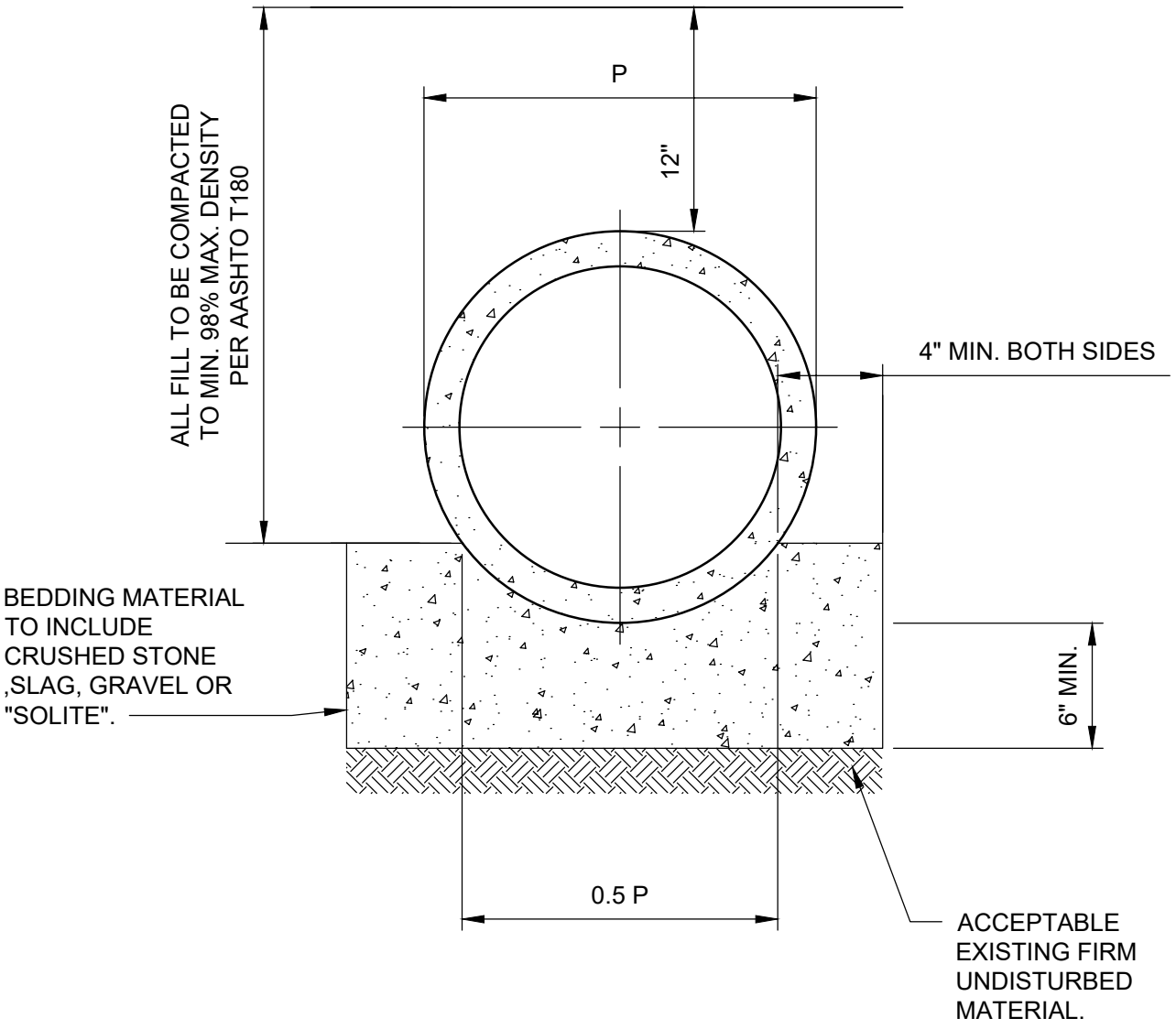
PREFABRICATED EDGE DRAIN DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-706
		DATE DRAWN	4-28-79
		REVISED DATE	11-21-24



NOTES:

1. EACH LIFT TO BE COMPLETELY COMPACTED TO REQUIRED DENSITY BEFORE STARTING NEXT LIFT.
2. NO LIFT TO EXCEED 6" WHEN COMPACTED.

PIPE BEDDING CASE 1	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-801
		DATE DRAWN	8-5-79
		REVISED DATE	11-21-24

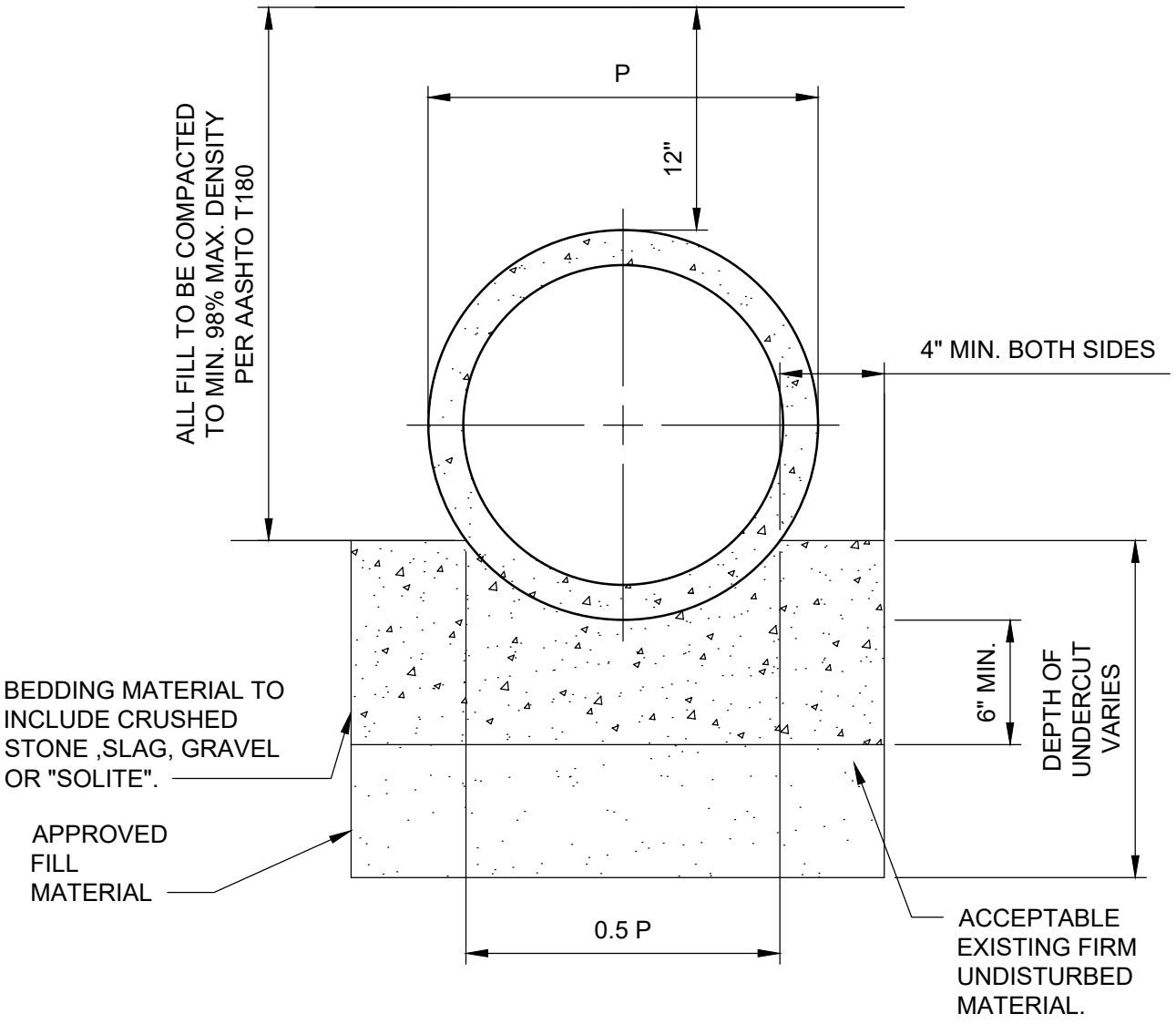


NOTES:

1. TO FACILITATE DEWATERING, POCKETS CAN BE UNDERCUT AT CONVENIENT INTERVALS & FILLED WITH GRAVEL TO ESTABLISH LOCATIONS FOR SUCTION END OF DEWATERING PUMP.

2. EACH LIFT TO BE COMPLETELY COMPACTED TO REQUIRED DENSITY BEFORE STARTING NEXT LIFT. NO LIFT TO EXCEED 6" WHEN COMPACTED.

PIPE BEDDING CASE 2	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-802
		DATE DRAWN	8-5-79
		REVISED DATE	11-21-24

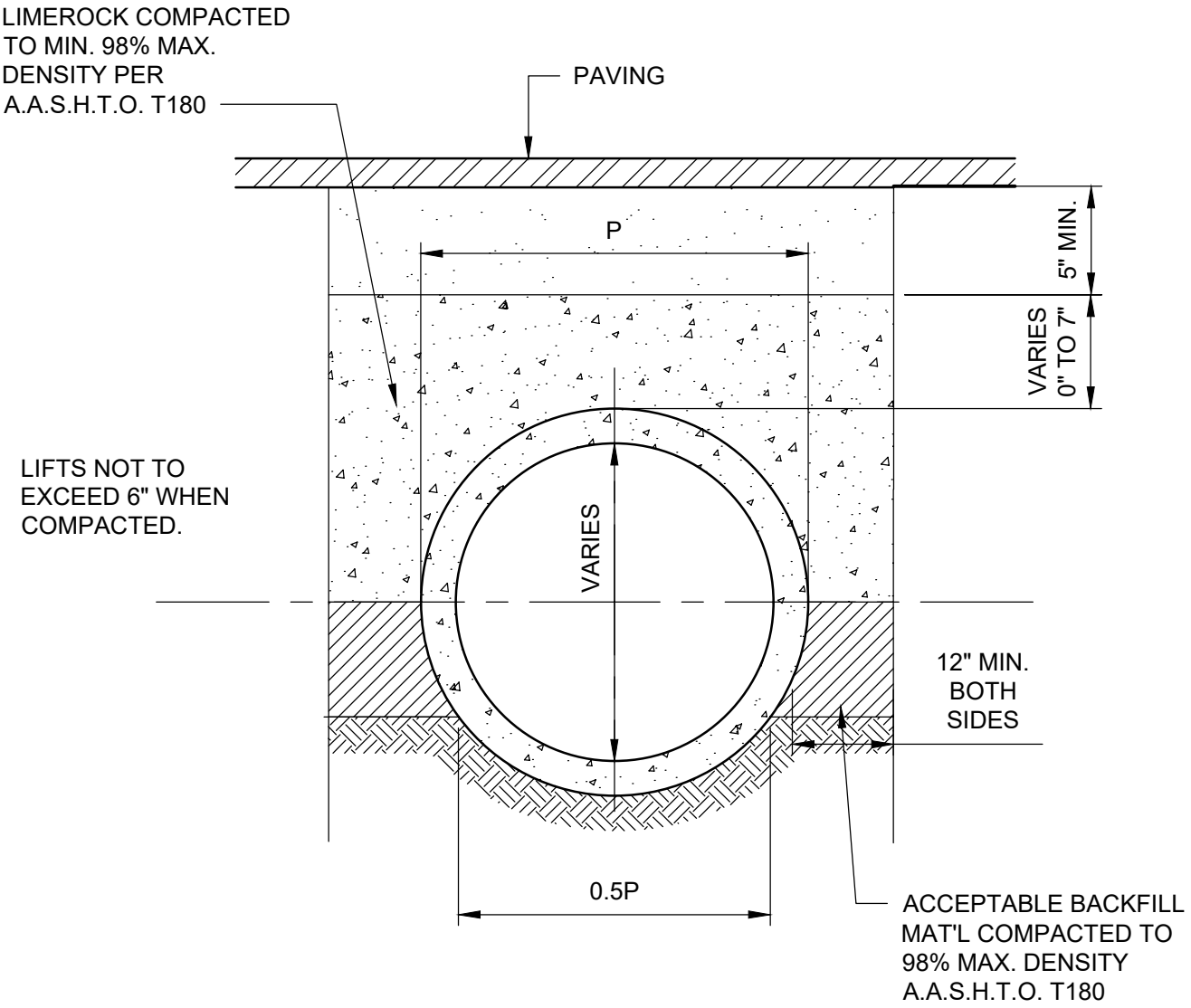


NOTES:

1. TO FACILITATE DEWATERING, POCKETS CAN BE UNDERCUT AT CONVENIENT INTERVALS & FILLED WITH GRAVEL TO ESTABLISH LOCATIONS FOR SUCTION END OF DEWATERING PUMP.

2. EACH LIFT TO BE COMPLETELY COMPACTED TO REQUIRED DENSITY BEFORE STARTING NEXT LIFT. NO LIFT TO EXCEED 6" WHEN COMPACTED.

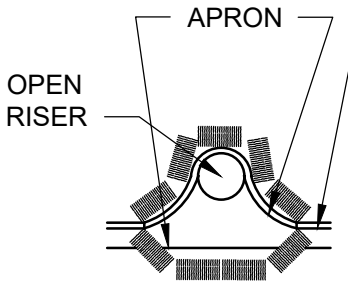
PIPE BEDDING CASE 3	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-803
		DATE DRAWN	8-5-79
		REVISED DATE	11-21-24



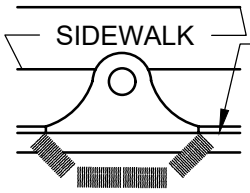
NOTE:

THIS STANDARD IS TO BE USED ONLY WHEN EXISTING CONDITIONS REQUIRED LESS THEN THE STANDARD 12" OF COVER & WHEN IT IS SHOWN THAT TRAFFIC LOADS WILL NOT DAMAGE THE PIPE. SPECIAL APPROVAL BY CITY ENGINEER IS REQUIRED FOR USE OF THIS STANDARD.

CULVERT PLACEMENT WITH LESS THAN 12" COVER	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-804
		DATE DRAWN	8-5-79
		REVISED DATE	11-21-24

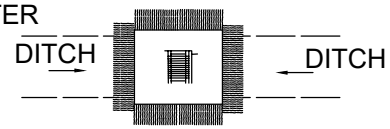


PARTIAL INLET



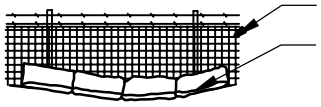
COMPLETED INLET

ANCHOR BALES WITH 2 - 2" X 2" X 4' STAKES PER BALE.



DITCH BOTTOM INLET

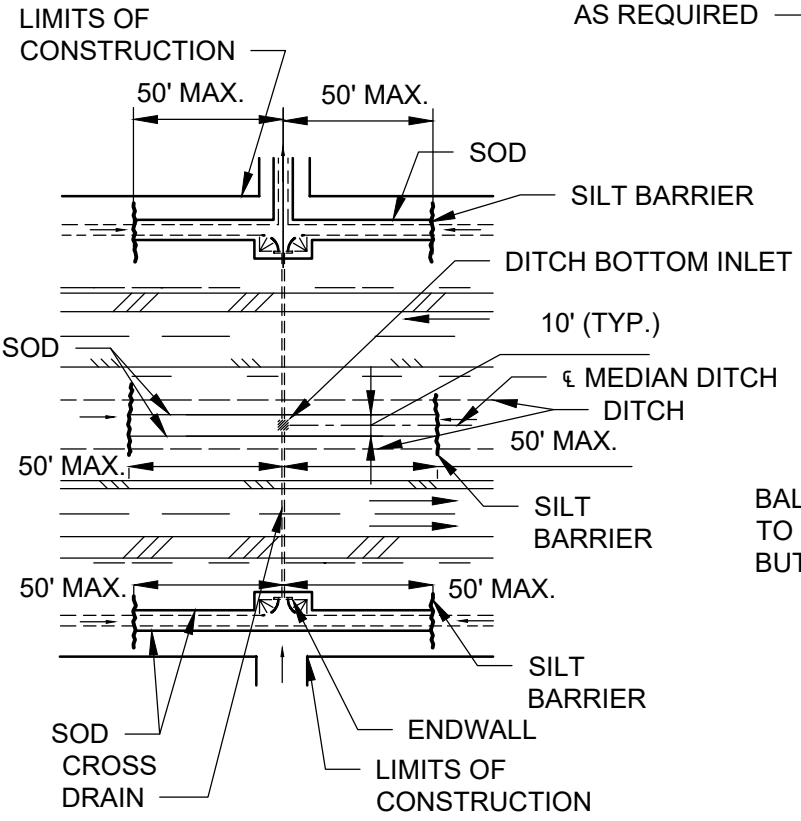
PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



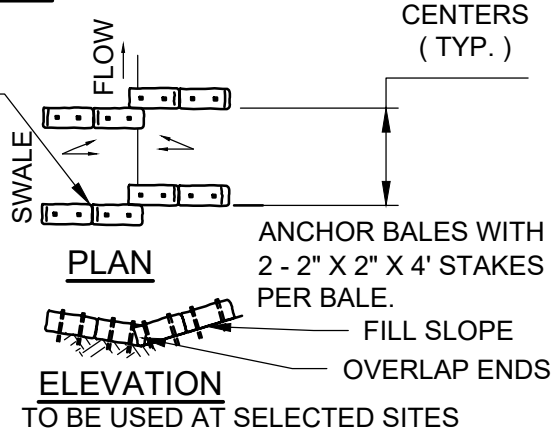
TYPE A OR B FENCE

LOOSE SOIL PLACED BY SHOVEL AND LIGHTLY COMPACTED ALONG UPSTREAM FACE OF BALES.

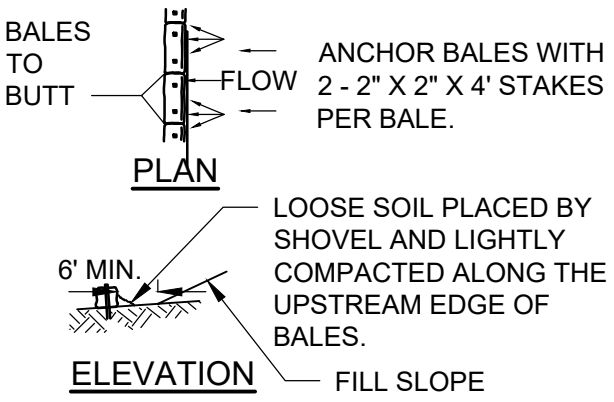
BALES BACKED BY FENCE



DITCH INSTALLATIONS AT DRAINAGE STRUCTURES



TO BE USED AT SELECTED SITES WHERE THE NATURAL GROUND SLOPES TOWARD THE TOE OF SLOPE

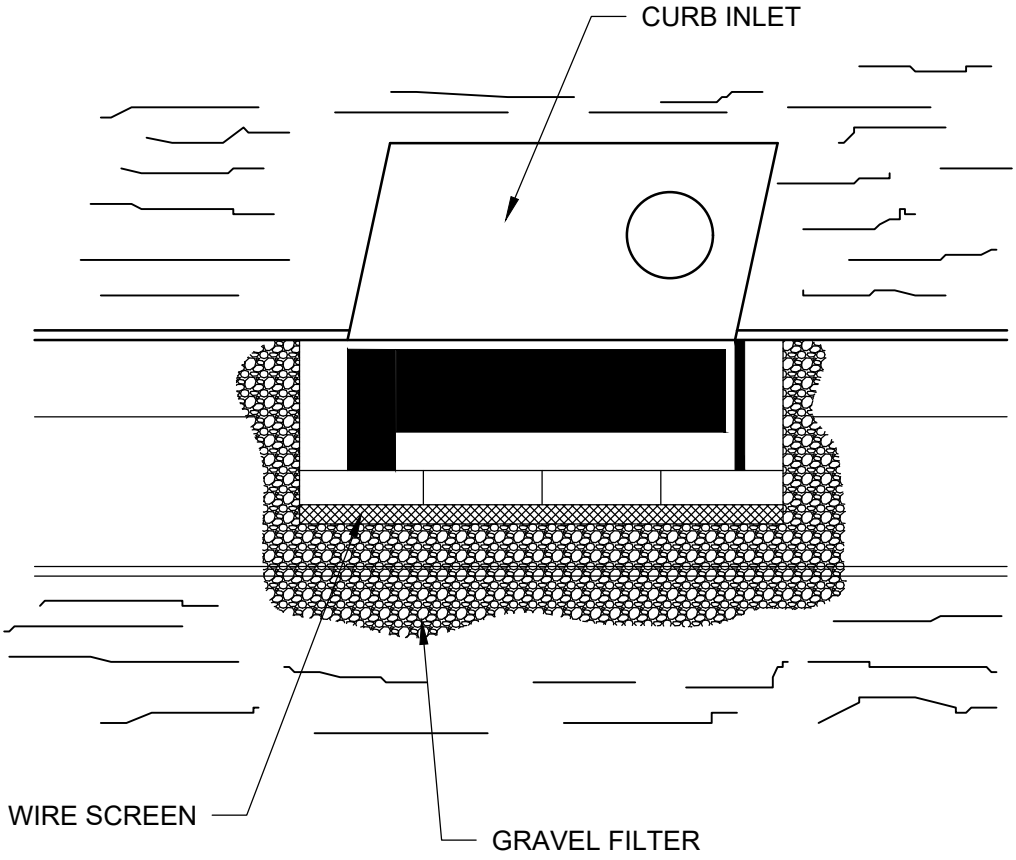


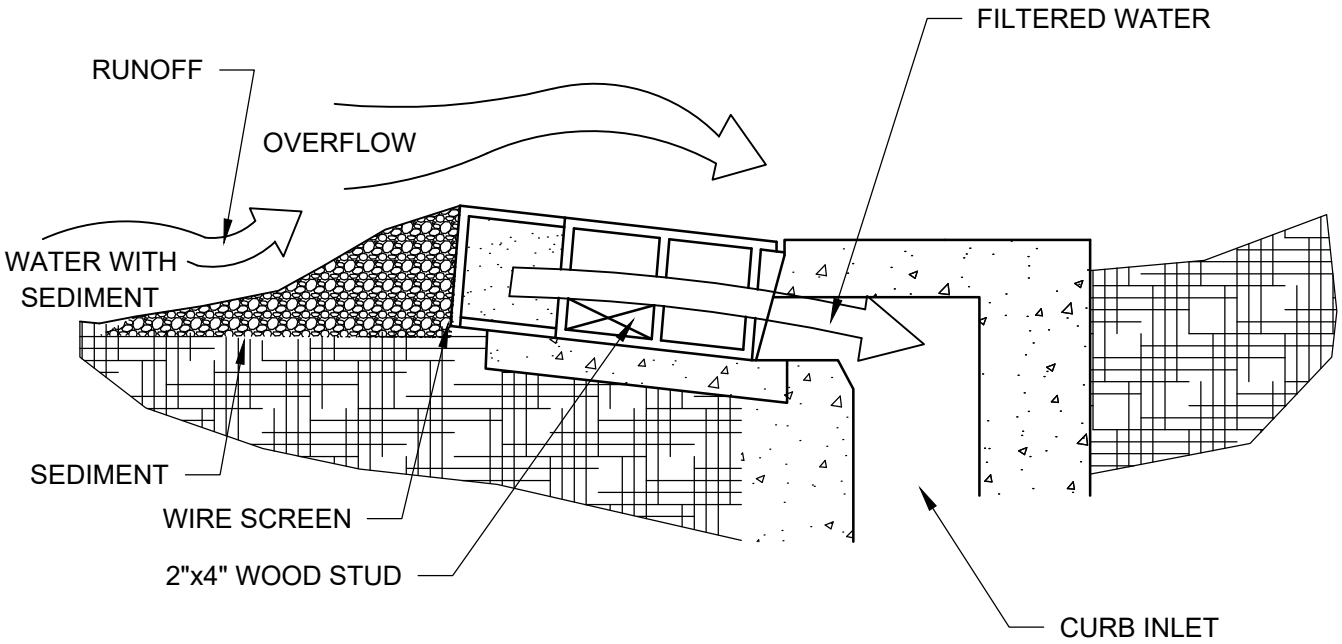
TO BE USED AT SELECTED SITES WHERE THE NATURAL GROUND SLOPES AWAY FROM THE TOE OF SLOPE

BARRIERS FOR FILL SLOPES

NOTE: BALES TO BE STAKED AT THE DIRECTION OF THE ENGINEER.

BALE LOCATION	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-901
		DATE DRAWN	2-20-79
		REVISED DATE	11-21-24

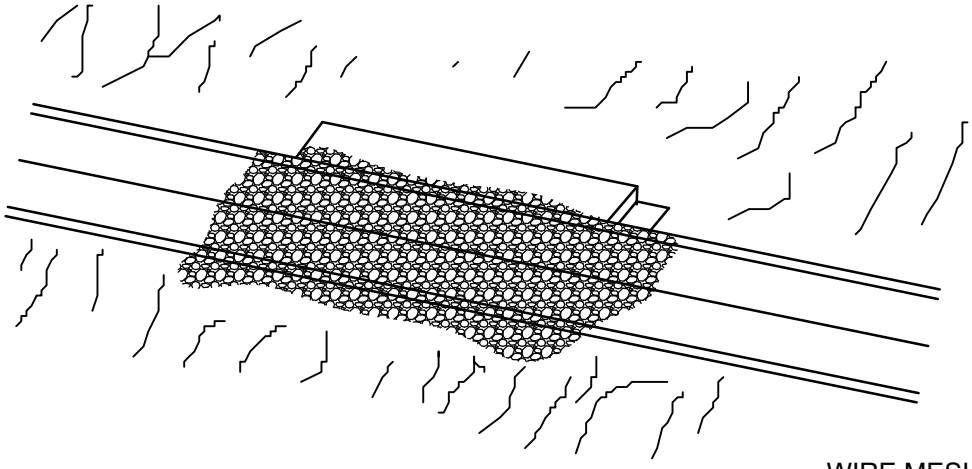


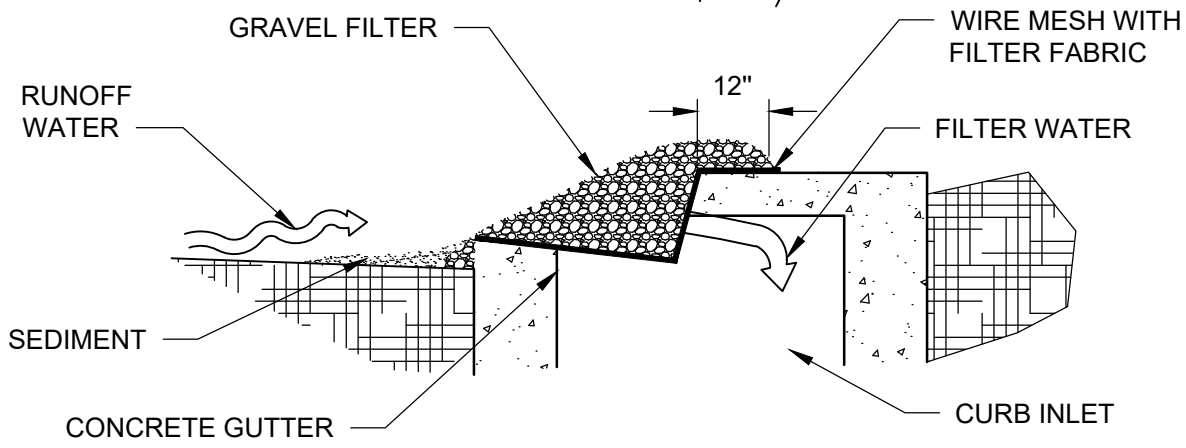


SPECIFIC APPLICATION:

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

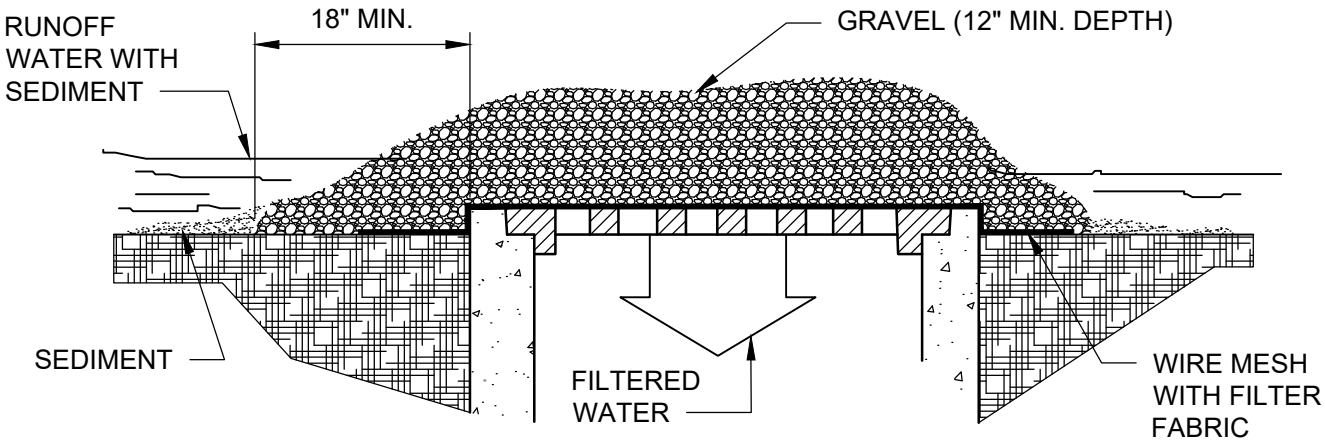
BLOCK AND GRAVEL CURB INLET SEDIMENT FILTER	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-902
		DATE DRAWN	8-4-79
		REVISED DATE	11-21-24





SPECIFIC APPLICATION:
THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

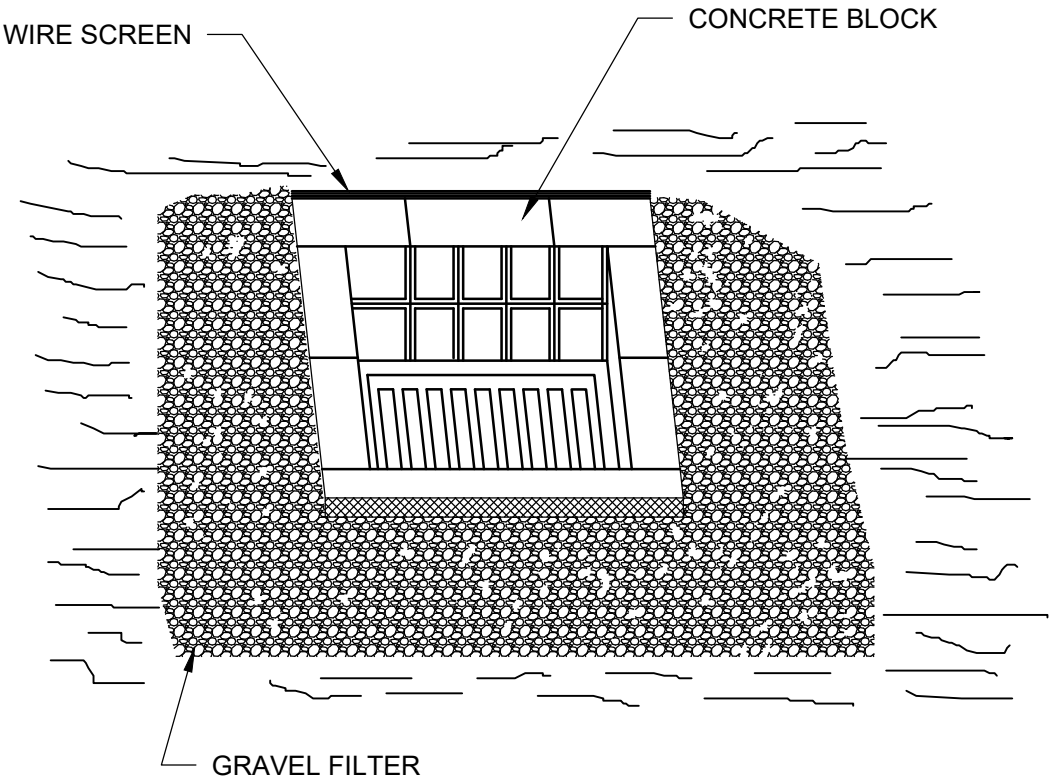
GRAVEL CURB INLET SEDIMENT FILTER

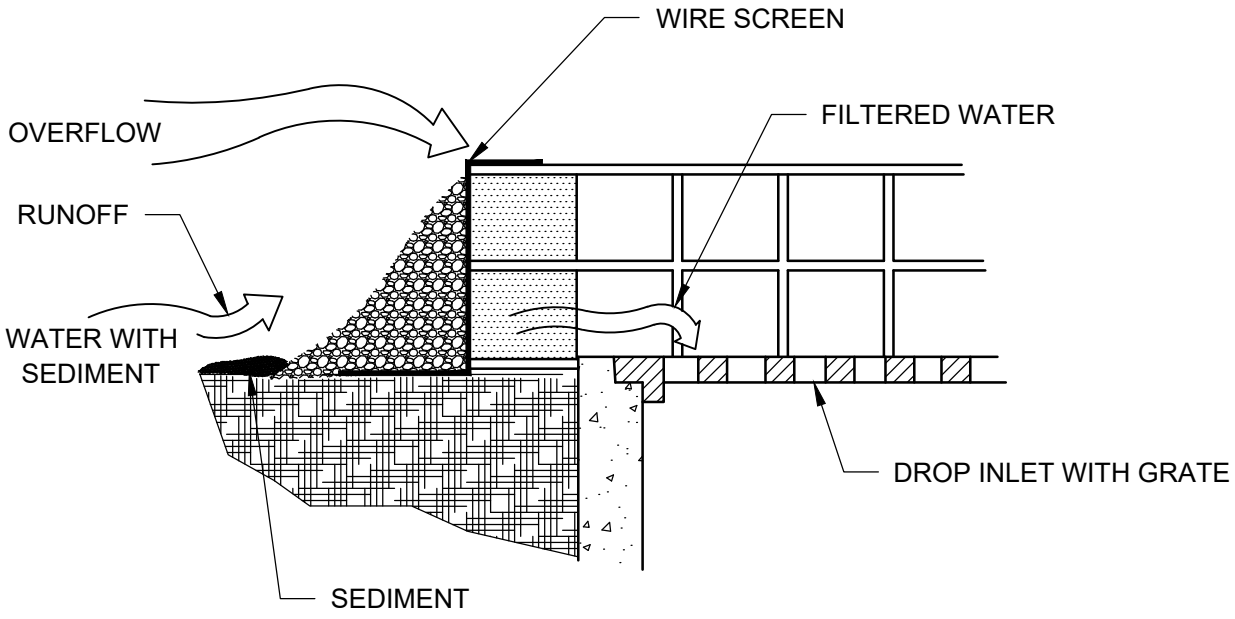


SPECIFIC APPLICATION:
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCEN-TRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

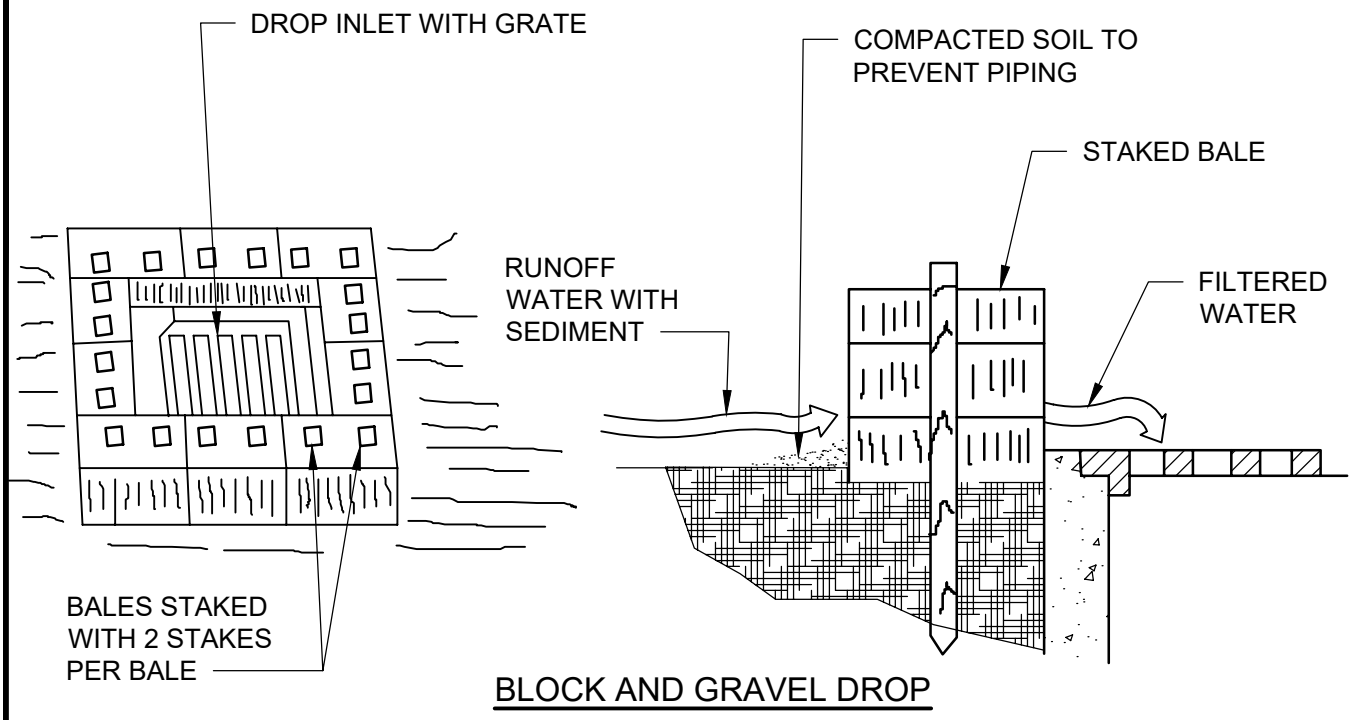
GRAVEL INLET SEDIMENT TRAP	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-903
		DATE DRAWN	8-4-79
		REVISED DATE	11-21-24





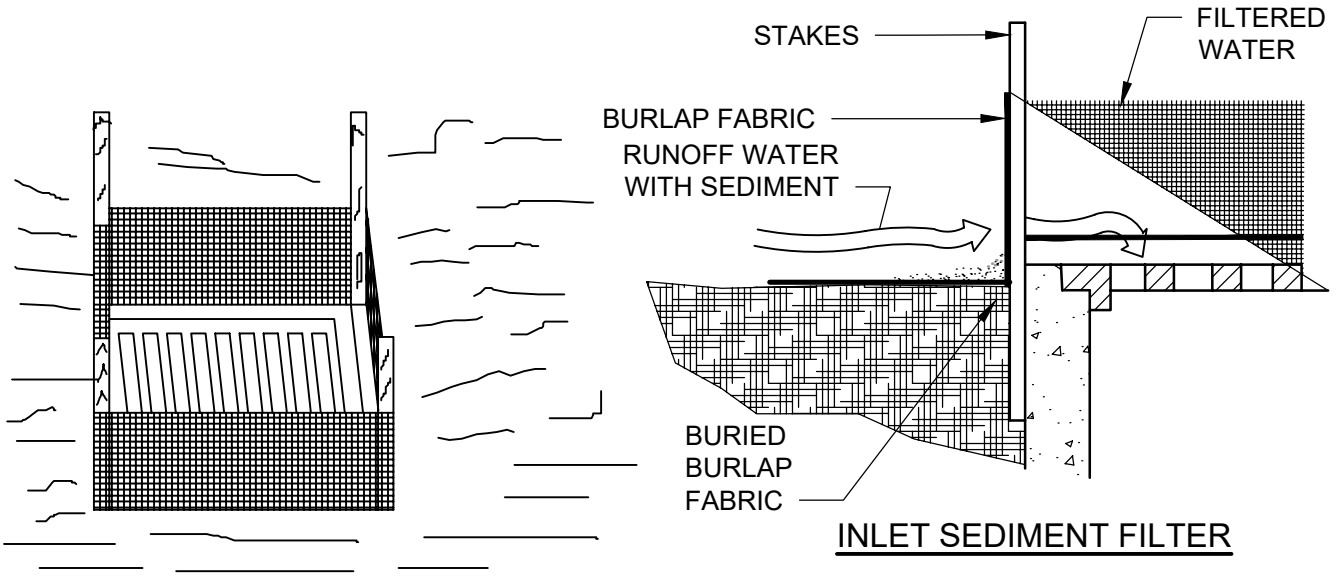
SPECIFIC APPLICATION :
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.

BLOCK AND GRAVEL DROP INLET SEDIMENT FILTER	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-904
		DATE DRAWN	8-4-79
		REVISED DATE	11-21-24



BLOCK AND GRAVEL DROP

SPECIFIC APPLICATION :
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.



INLET SEDIMENT FILTER

SPECIFIC APPLICATION:
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS. SUCH AS IN STREET OR HIGHWAY MEDIANS.

DROP INLET SEDIMENT FILTER	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-905
		DATE DRAWN	8-5-79
		REVISED DATE	11-21-24

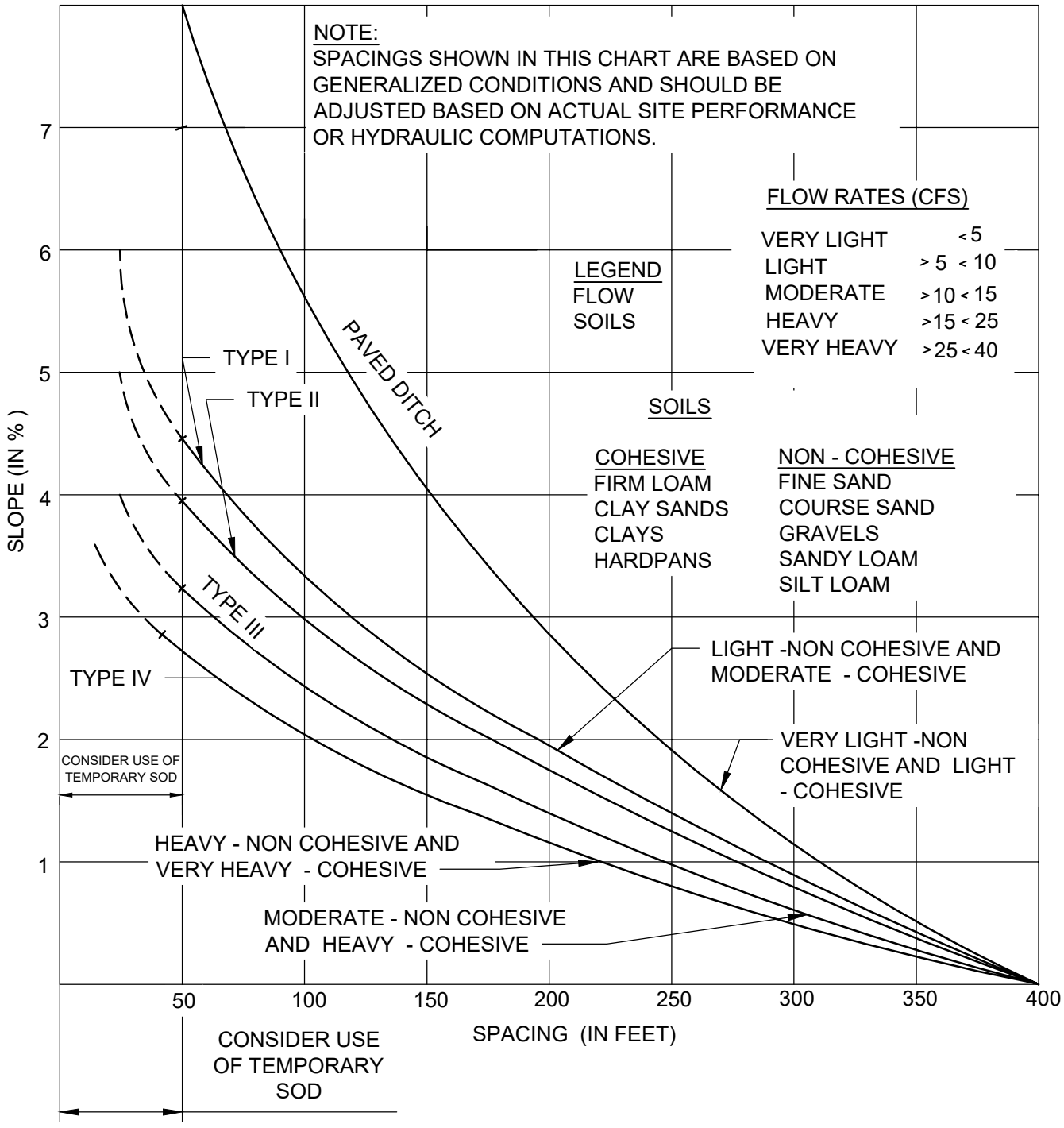
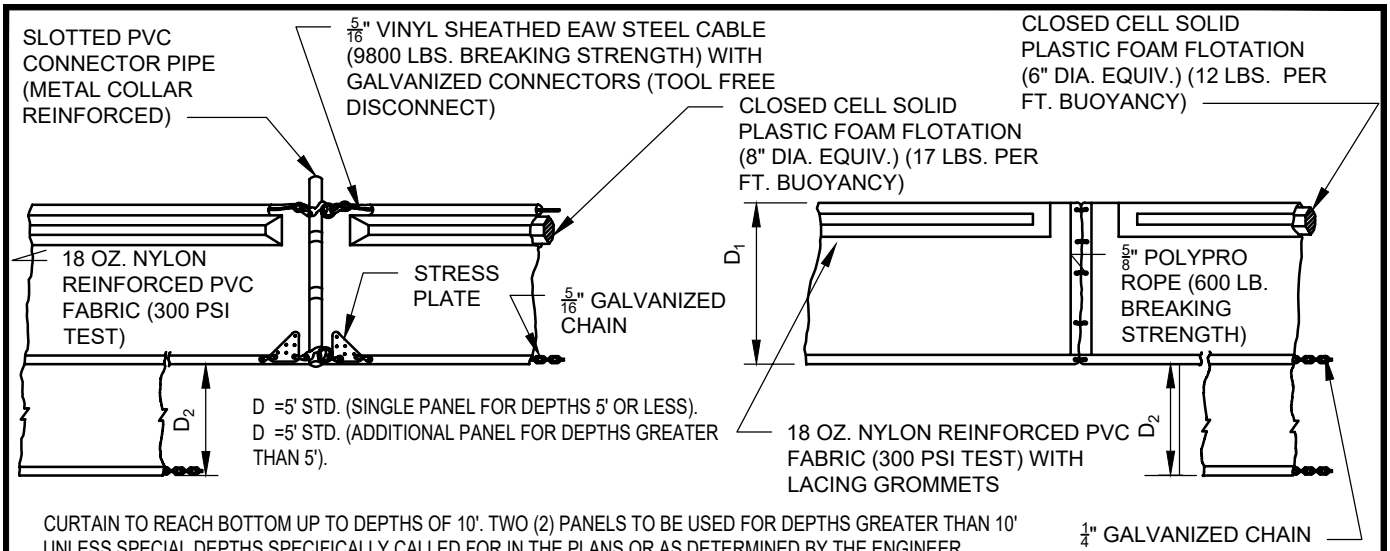


CHART I

RECOMMENDED SPACING FOR TYPE III AND TYPE IV SILT FENCES

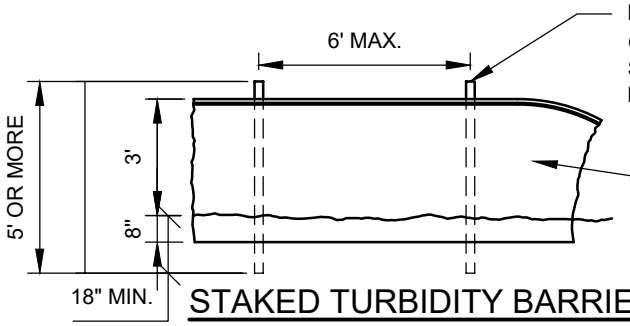
SPACING RECOMMENDATION FOR SILT FENCES	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-906
		DATE DRAWN	8-9-79
		REVISED DATE	11-21-24



TYPE II

TYPE I

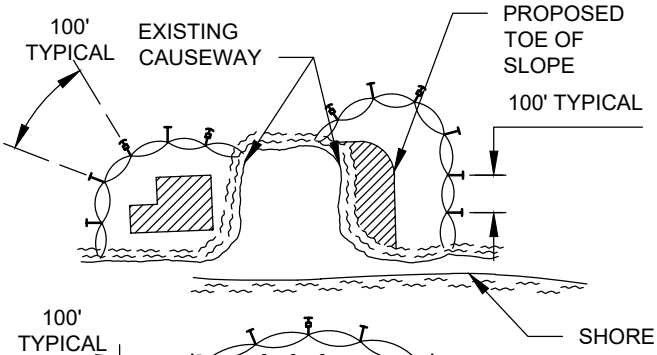
FLOATING TURBIDITY BARRIERS

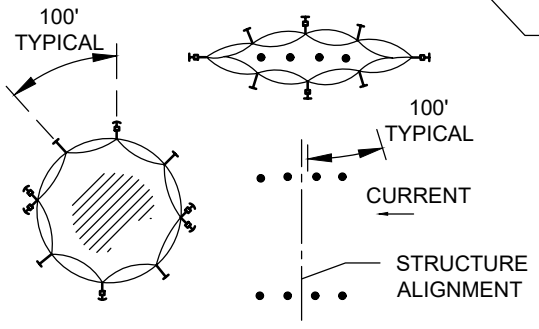


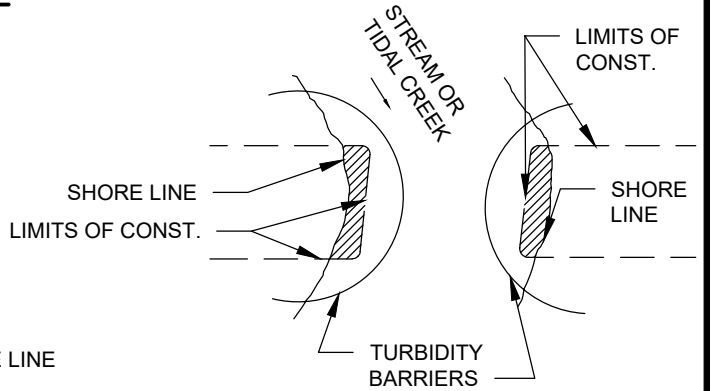
STAKED TURBIDITY BARRIER

LEGEND

- PILE LOCATIONS
- DREDGE OR FILL AREA
- MOORING BUOY W/ANCHOR
- ANCHOR
- BARRIER MOVEMENT DUE TO CURRENT ACTION





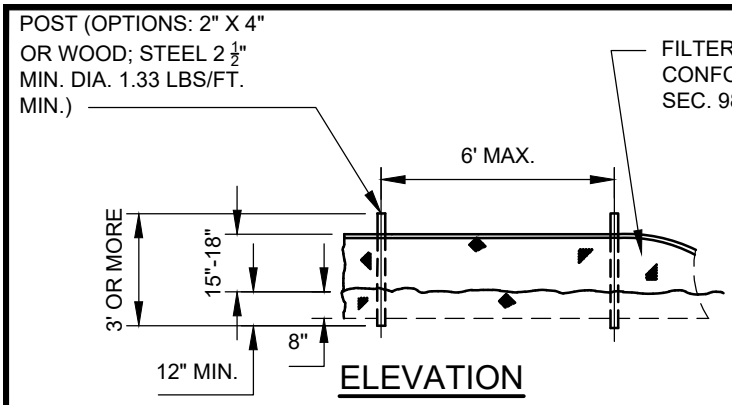


NOTE:
TURBIDITY BARRIERS FOR FLOWING STREAMS AND TIDAL CREEKS MAY BE EITHER FLOATING, OR STAKED TYPES OR ANY COMBINATIONS OF TYPES THAT WILL SUIT SITE CONDITIONS AND MEET EROSION CONTROL AND WATER QUALITY REQUIREMENTS. THE BARRIER TYPE(S) WILL BE AT THE CONTRACTORS OPTION UNLESS OTHERWISE SPECIFIED IN THE PLANS, HOWEVER PAYMENT WILL BE UNDER THE PAY ITEM(S) ESTABLISHED IN THE PLANS FOR FLOATING TURBIDITY BARRIER AND/OR STAKED TURBIDITY BARRIER. POSTS IN STAKED TURBIDITY BARRIERS TO BE INSTALLED IN VERTICAL POSITION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

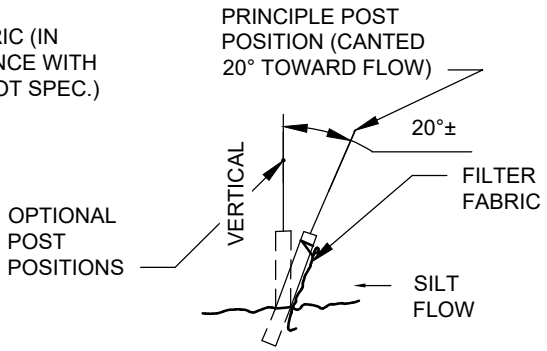
NOTES:
1. TURBIDITY BARRIERS ARE TO BE USED IN ALL PERMANENT BODIES OF WATER REGARDLESS OF WATER DEPTH.
2. NUMBER AND SPACING OF ANCHORS DEPENDENT ON CURRENT VELOCITIES.
3. DEPLOYMENT OF BARRIER AROUND PILE LOCATIONS MAY VARY TO ACCOMMODATE CONSTRUCTION OPERATIONS.
4. NAVIGATION MAY REQUIRE SEGMENTING BARRIER DURING CONSTRUCTION OPERATIONS.

TURBIDITY BARRIER APPLICATIONS

TURBIDITY BARRIERS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-907
		DATE DRAWN	08-09-93
		REVISED DATE	11-21-24

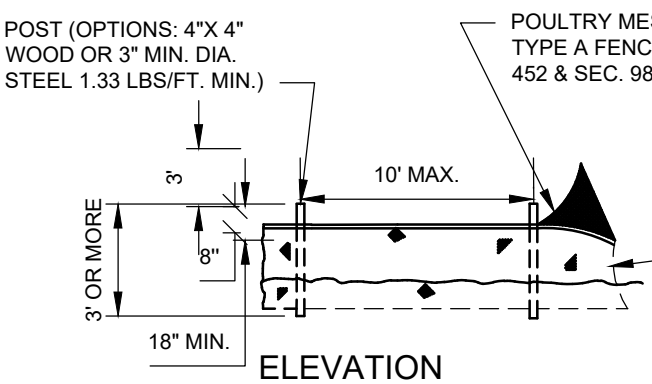


ELEVATION

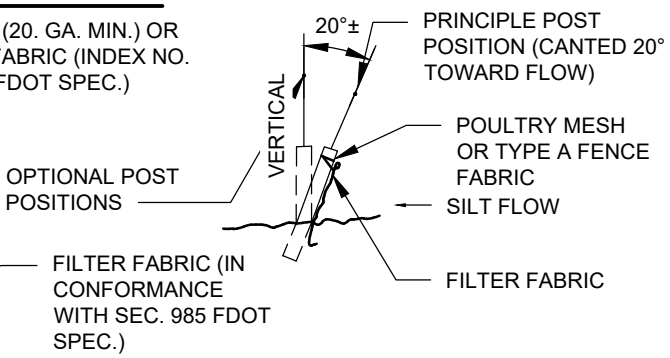


SECTION

TYPE III SILT FENCE



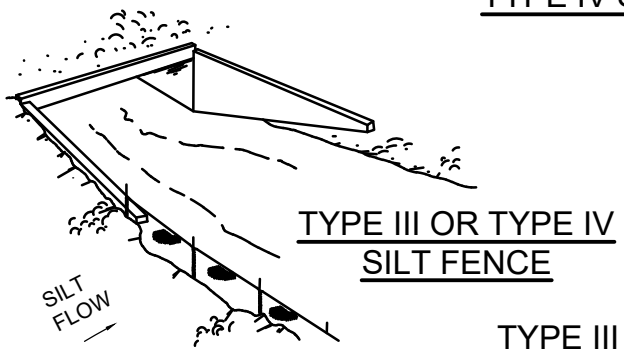
ELEVATION



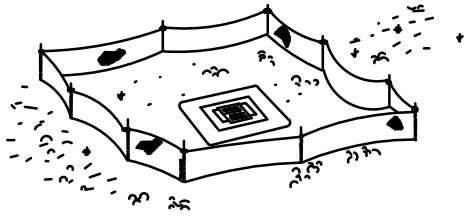
SECTION

NOTE: SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE (LF).

TYPE IV SILT FENCE



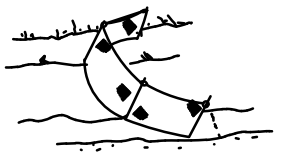
TYPE III OR TYPE IV SILT FENCE



TYPE III OR TYPE IV SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS.

DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.

SILT FENCE APPLICATIONS



SILT FLOW

TYPE IV SILT FENCE

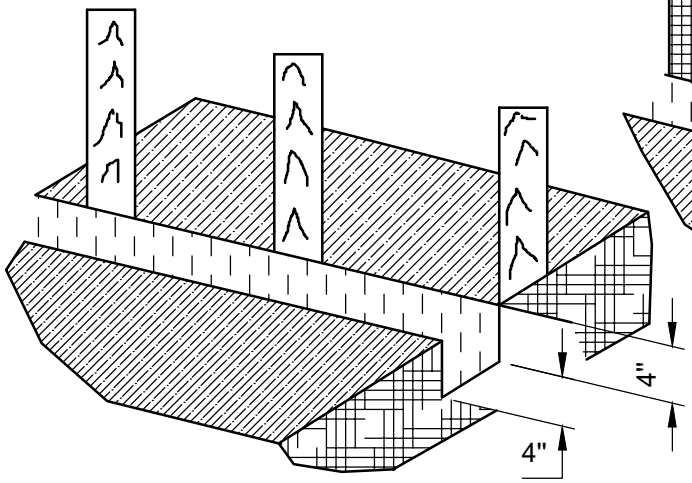
SILT FLOW

TYPE III SILT FENCE

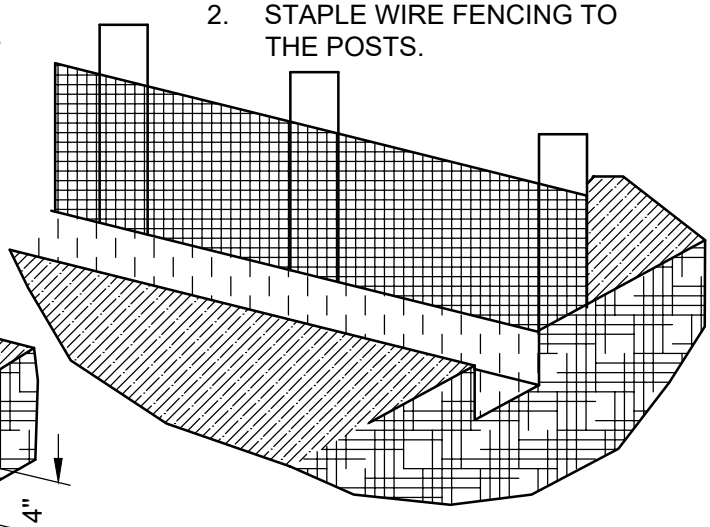
NOTE: SPACING FOR TYPE III FENCE TO BE IN ACCORDANCE WITH CHART I, PLATE D-906 AND DITCH INSTALLATIONS AT DRAINAGE STRUCTURES ABOVE.

SILT FENCE TYPE III & IV	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-908
		DATE DRAWN	8-9-93
		REVISED DATE	11-21-24

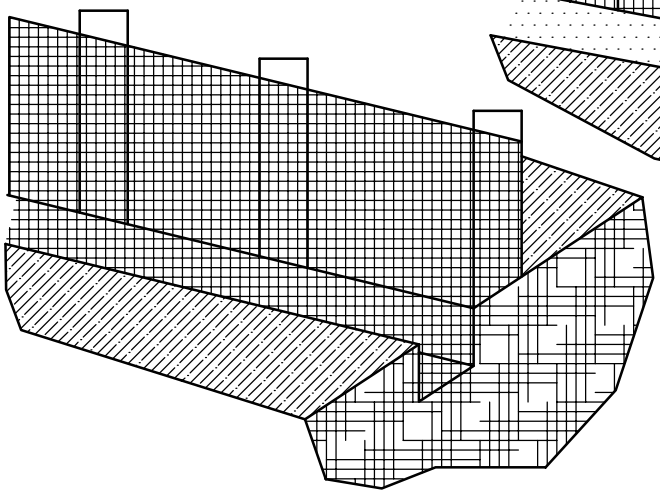
1. SET POSTS AND EXCAVATE A 4"x4" TRENCH UPSLOPE ALONG THE LINE OF POSTS



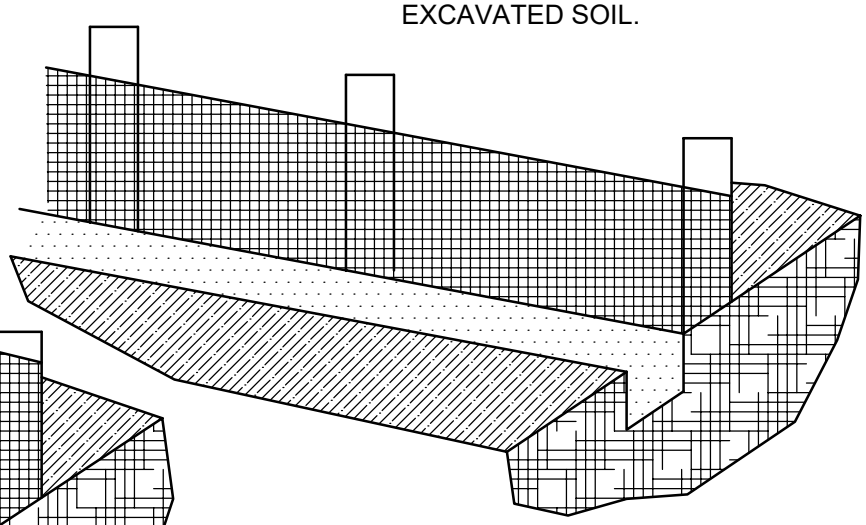
2. STAPLE WIRE FENCING TO THE POSTS.



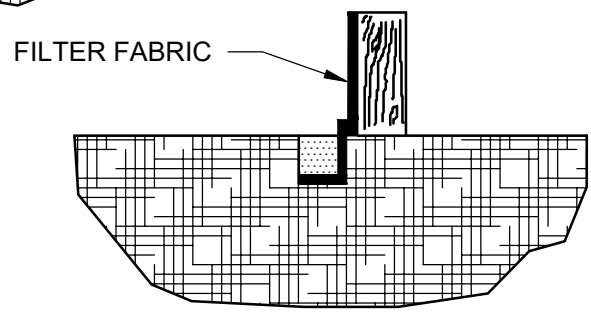
3. ATTACH THE FILTER FABRIC TO THE WIRE FENCE AND EXTEND IT INTO THE TRENCH.



4. BACKFILL AND COMPACT THE EXCAVATED SOIL.

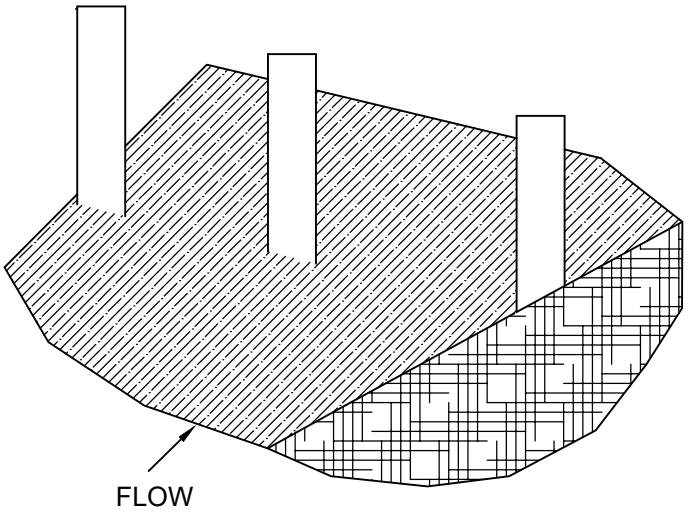


EXTENSION OF FABRIC AND WIRE INTO THE TRENCH.

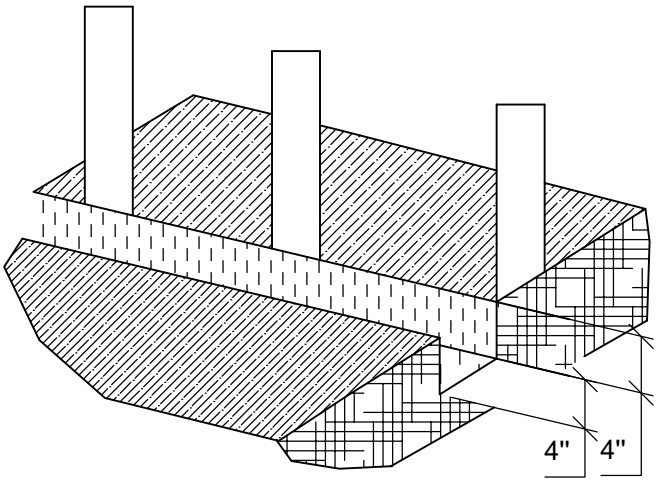


CONSTRUCTION DETAILS FOR SILT FENCES	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-909
		DATE DRAWN	08-05-93
		REVISED DATE	11-21-24

1. SET THE STAKES.

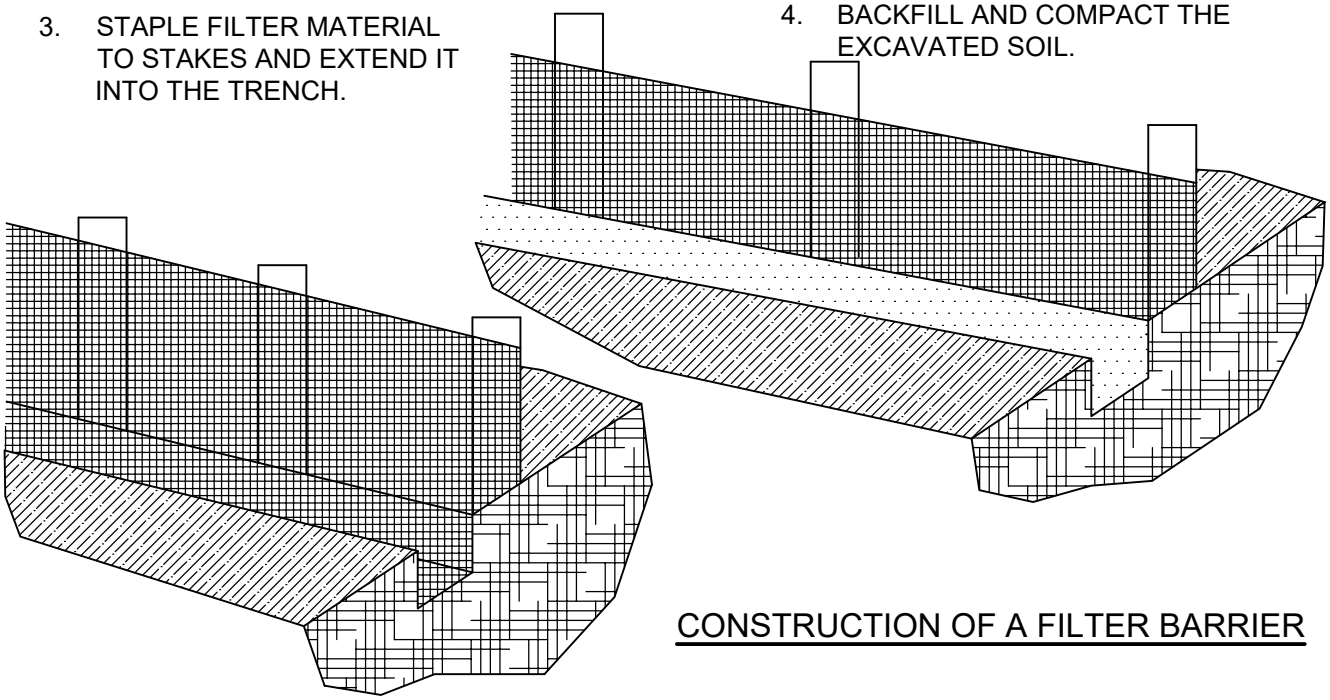


2. EXCAVATE A 4"x4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.



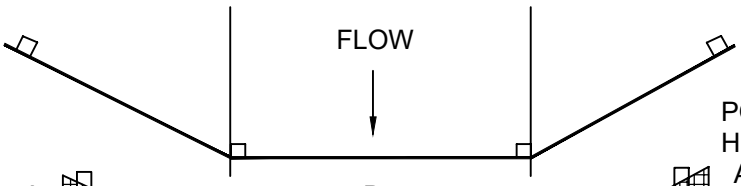
3. STAPLE FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.

4. BACKFILL AND COMPACT THE EXCAVATED SOIL.

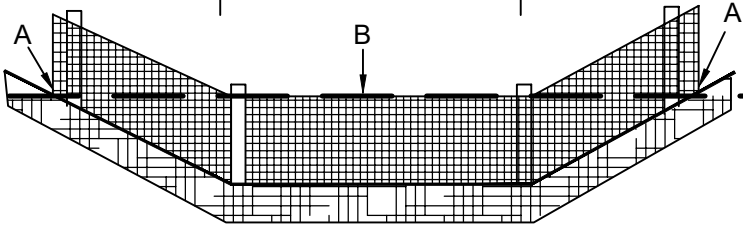


CONSTRUCTION OF A FILTER BARRIER

PLAN

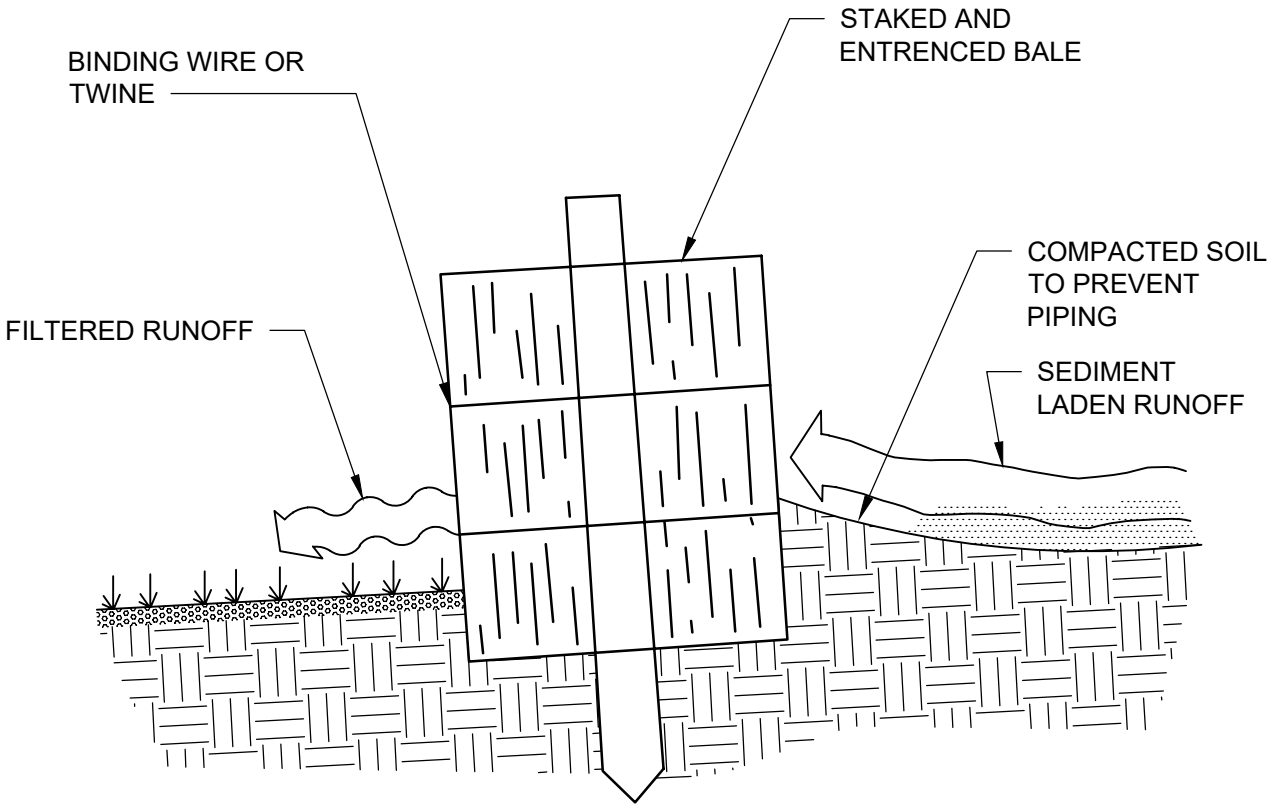


ELEVATION



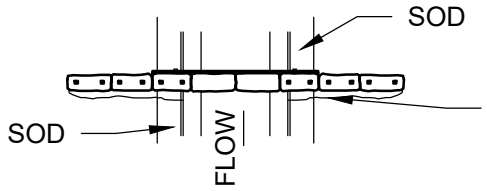
PROPER PLACEMENT OF A FILTER BARRIER IN A DRAINAGE WAY

FILTER BARRIER CONSTRUCTION DETAIL	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-910
		DATE DRAWN	08-05-93
		REVISED DATE	11-21-24



CROSS-SECTION OF A PROPERLY INSTALLED BALE

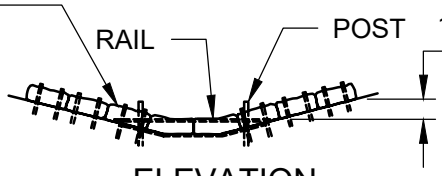
STAKED BALE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-911
		DATE DRAWN	05-07-90
		REVISED DATE	5-12-94



LOOSE SOIL PLACED BY SHOVEL AND LIGHTLY COMPACTED ALONG UPSTREAM EDGE OF BALES.

PLAN

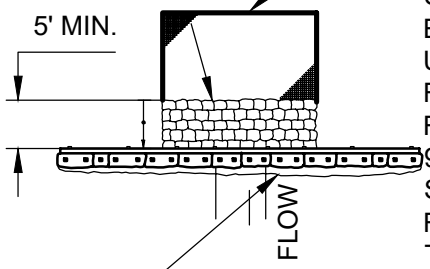
ANCHOR BALES WITH 2 - 2" X 2" X 4' STAKES PER BALE.



ELEVATION

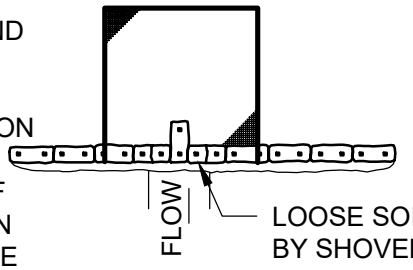
SPACING: BALE BARRIERS FOR PAVED DITCHES SHOULD BE SPACED IN ACCORDANCE WITH CHART I, SHEET 1 OF 3, INDEX NO. 102

BARRIER FOR PAVED DITCH



PLAN

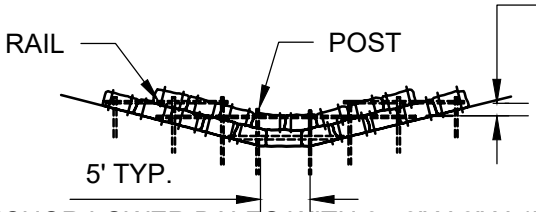
WOVEN FILTER FABRIC IN ABSENCE OF ESTABLISHED GRASS (APPROX. 12' X 12'). SECURE EDGES BY ENTRENCHING AND EXTEND UNDER BAGS AND BALES. FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 985 OF THE STANDARD SPECIFICATIONS. COST OF FABRIC TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR BALES, TN.



PLAN

LOOSE SOIL PLACED BY SHOVEL AND LIGHTLY COMPACTED ALONG THE UPSTREAM EDGE OF BALES.

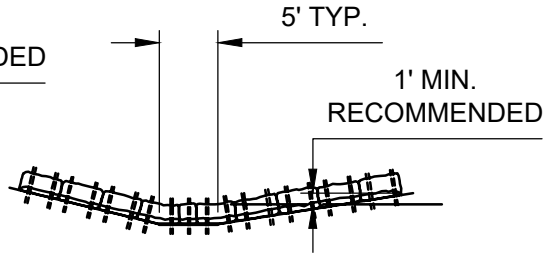
LOOSE SOIL PLACED BY SHOVEL AND LIGHTLY COMPACTED ALONG THE UPSTREAM EDGE OF BALES.



ANCHOR LOWER BALES WITH 2 - 2" X 2" X 4' STAKES PER BALE. ANCHOR TOP BALES TO LOWER BALES WITH 2 - 2" X 2" X 4' STAKES PER BALE.

ELEVATION

TYPE II



ANCHOR BALES WITH 2 - 2" X 2" X 4' STAKES PER BALE

ELEVATION

TYPE I

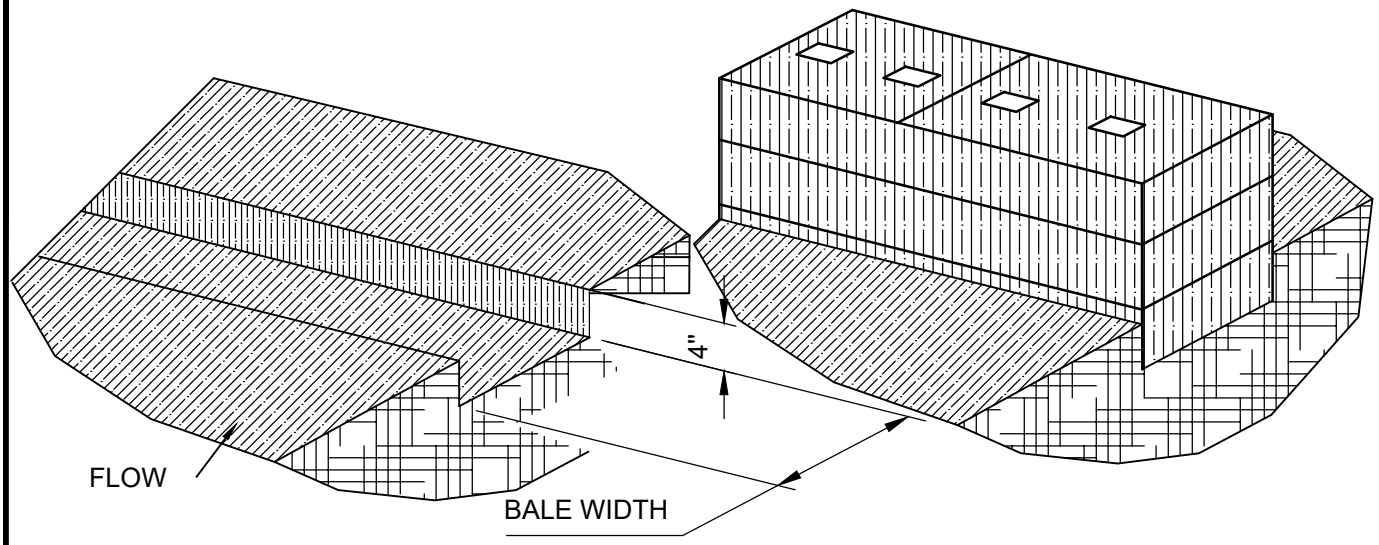
APPLICATION AND SPACING: THE USE OF TYPES I & II BALE BARRIERS SHOULD BE LIMITED TO THE CONDITIONS OUTLINED IN CHART I, SHEET 1 OF 3, INDEX NO. 102 (F.D.O.T.)

BARRIER FOR UNPAVED DITCHES

BALE BARRIERS TYPE I & II	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-912
		DATE DRAWN	08-09-93
		REVISED DATE	5-12-94

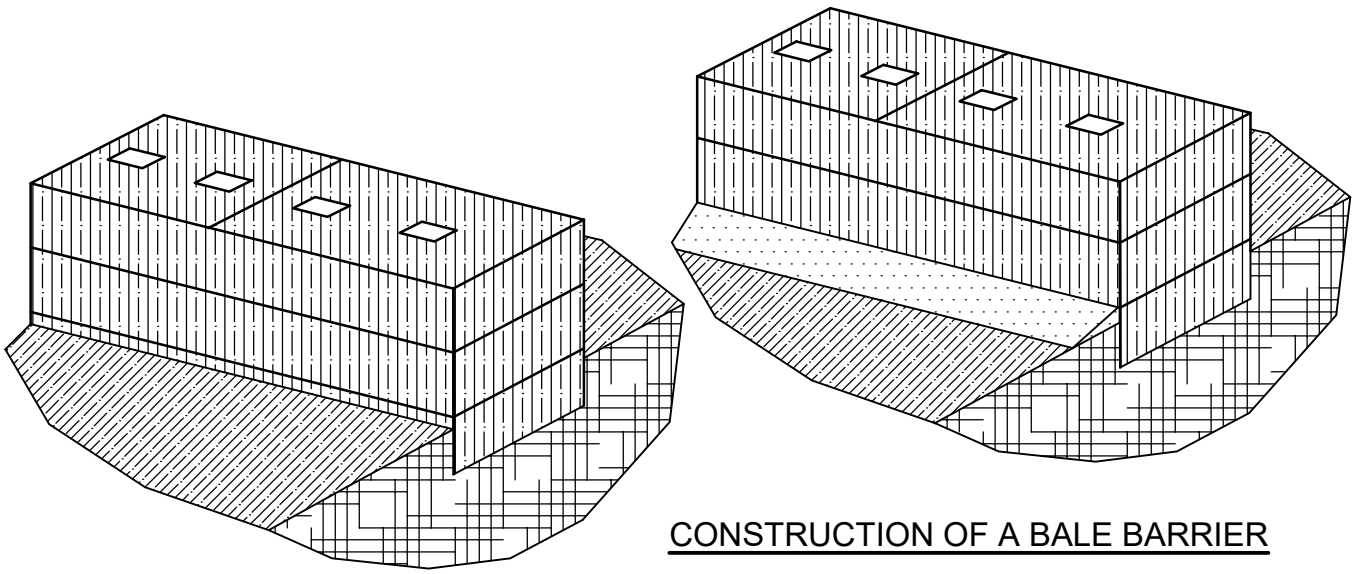
1. EXCAVATE THE TRENCH.

2. PLACE AND STAKE BALES.

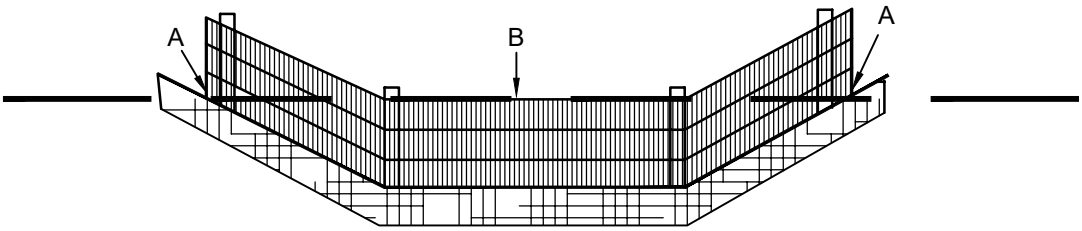


3. WEDGE LOOSE MATERIAL BETWEEN BALES.

4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



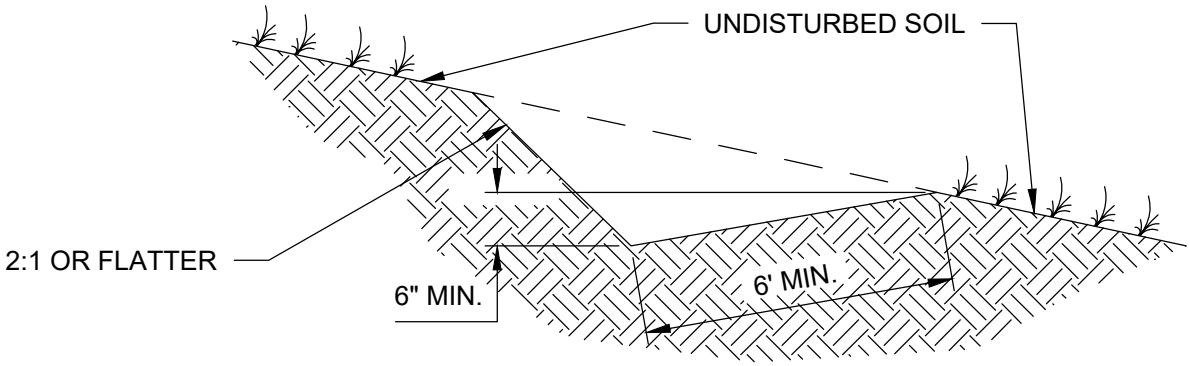
CONSTRUCTION OF A BALE BARRIER



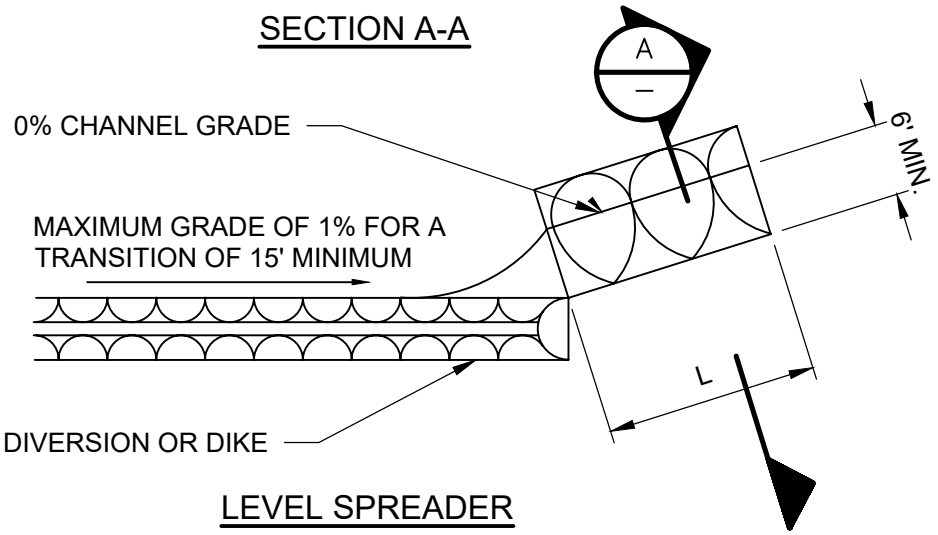
POINTS A SHOULD BE HIGHER THAN POINT B

PROPER PLACEMENT OF BALE BARRIER IN DRAINAGE WAY

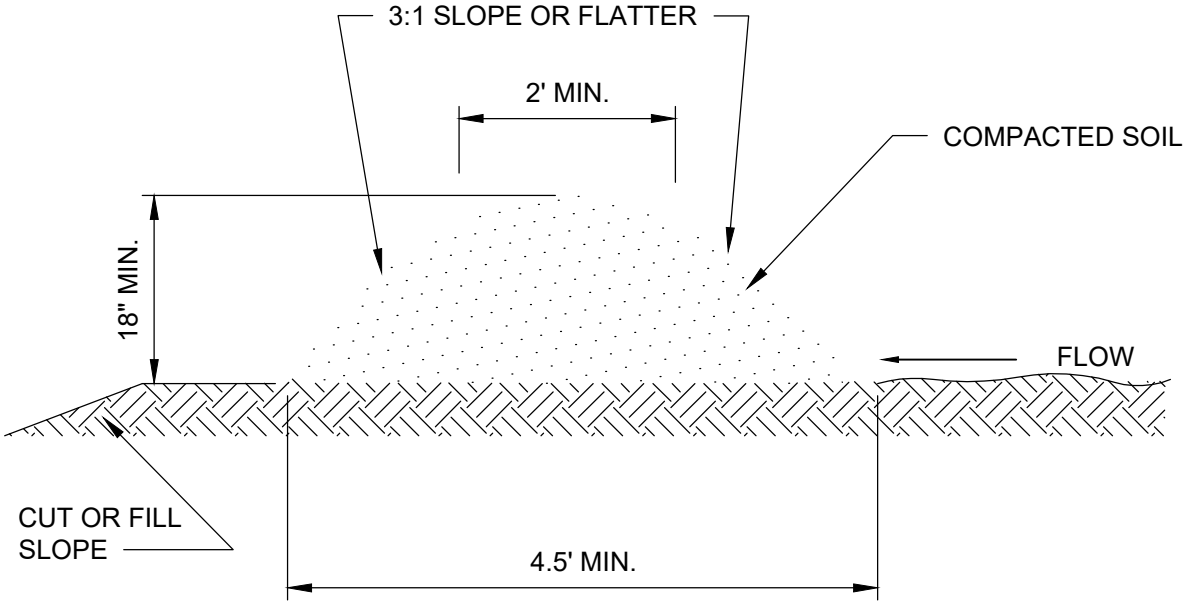
BALE BARRIER CONSTRUCTION DETAILS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-913
		DATE DRAWN	08/05/93
		REVISED DATE	5-12-93



SECTION A-A



LEVEL SPREADER



TEMPORARY DIVERSION DIKE

DIVERSION DIKE	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-914
		DATE DRAWN	05-09-90
		REVISED DATE	11-21-24

PLANT MATERIALS TEMPORARY SEEDING

CITY OF JACKSONVILLE STANDARD

	SEEDING RATE		PLANTING DATES	COMMENTS
COMMON NAME (BOTANICAL NAME)	ACRE	1000 FT2	N. FLA.	
OATS (Avena saliva)	3 Bu (125 lbs)	3 lbs	SEPTEMBER- FEBRUARY	WILL NOT TOLERATE FLOODING, HIGH WATER TABLE SOILS.
RYE (Secale cereale)	3 Bu (170 lbs)	4 lbs	SEPTEMBER- FEBRUARY	TOLERATES COLD AND DROUGHT.
WHEAT (Triticum sp)	3 Bu (120 lbs)	3 lbs	SEPTEMBER- FEBRUARY	
ANNUAL RYEGRASS (Lolium multiflorum)	60 lbs	1.5 lbs	SEPTEMBER- FEBRUARY	VOLUNTEERS MAY RETURN.
CRIMSON CLOVER (Trifolium incarnatum)	25 lbs	9 oz	SEPTEMBER- NOVEMBER	ANNUAL WINTER LEGUME. INOCULATE SEED AT 5 TIMES RECOMMENDED RATE. DOES POORLY ON DEEP DRY SANDS, WILL NOT TOLERATE FLOODING.
RED CLOVER (Trifolium pratense)	15 lbs	6 oz	SEPTEMBER- DECEMBER	ANNUAL WINTER LEGUME. INOCULATE SEED AT 5 TIMES RECOMMENDED RATE. GROWS BEST ON MOIST SOILS, WILL NOT TOLERATE FLOODING. EASILY HURT BY DROUGHT.
WHITE CLOVER (Trifolium repens)	6 lbs	2.5 oz	SEPTEMBER- DECEMBER	ANNUAL WINTER LEGUME. INOCULATE SEED AT 5 TIMES RECOMMENDED RATE. GROWS BEST ON MOIST-WET SOILS, TOLERATES SOME FLOODING.
ANNUAL SWEETCLOVER (Melilotus altissima)	15 lbs	6 oz	SEPTEMBER- DECEMBER	ANNUAL WINTER LEGUME. INOCULATE SEED AT 3-5 TIMES RECOMMENDED RATE. GROWS WELL ON BOTH FLATWOODS AND UPLAND SOILS. WILL NOT TOLERATE FLOODING.
ARROWLEAF CLOVER (Trifolium vesiculosum)	15 lbs	6 oz	SEPTEMBER- DECEMBER	ANNUAL WINTER LEGUME. INOCULATE SEED AT 3-5 TIMES RECOMMENDED RATE. GROWS ON SOIL TOO WET FOR CRIMSON, TOLERATES SOME FLOODING. USE SCARIFIED SEED.
LUAINE CLOVER (Lupinus sp.)	60 lbs	1.5 lbs	SEPTEMBER- DECEMBER	ANNUAL WINTER LEGUME. INOCULATE SEED AT 3 TIMES RECOMMENDED RATE. SUSCEPTIBLE TO FREEZE DAMAGE AT TIME OF EMERGENCE. USE SCARIFIED SEED.
ALFALFA (Medicago sativa)	22 lbs	8 oz	SEPTEMBER- DECEMBER	SHORT LIVED PERENNIAL. SOME DROUGHT RESISTANCE. GROWS BEST ON WELL-DRAINED, FERTILE SOILS. WILL NOT TOLERATE WET SOILS.
AUSTRIAN WINTER PEAS	45 lbs	1 lb	SEPTEMBER- DECEMBER	GROWS BEST ON WELL-DRAINED SOILS WITH HIGH CLAY CONTENT.
HAIRY VETCH (Vicia villosa)	25 lbs	9 oz	SEPTEMBER- DECEMBER	GROWS BEST ON WELL-DRAINED, LOAMY SOILS.
ALYCECLOVER (Alysicarpus vaginalis)	15 lbs	6 oz	APRIL- JULY	WARM SEASON ANNUAL LEGUME. GROWS BEST ON WELL-DRAINED SANDY SOILS.
COMMON LESPEDEZA (Lespideza striata)	30 lbs	11 oz	MARCH- JULY	WARM SEASON ANNUAL. NEEDS INOCULATION ON ERODED SOILS. GROWS BEST ON SANDY LOANS. FAIRLY DROUGHT RESISTANT.
HAIRY INDIGO (Indigofera hirsuta)	8 lbs (120 ls)	3 oz	MARCH- JULY	
JOINT VETCH (Aeschynomera americana)	8 lbs	3 oz	MARCH- AUGUST	WARM SEASON ANNUAL LEGUME. MOST SUITABLE OF SUMMER LEGUMES FOR USE IN LOW, WET AREAS.
MILLET (Setaria sp)	30 lbs	11 oz	MARCH- AUGUST	WARM SEASON ANNUAL. DOES NOT TOLERATE FLOODING. GROWS BEST IN FERTILE, MOIST SOILS. PEARL AND BROWNTOP ARE GOOD VARIETIES TO USE.
SESBANIA (Sesban macrocarpa)	30 lbs	11 oz	MARCH- JULY	WARM SEASON ANNUAL LEGUME. DOES WELL UNDER EXTREMELY WET CONDITIONS.
SORGHAM SUNDANGRASS HYBRID	30 lbs	11 oz	MARCH- JULY	WARM SEASON ANNUAL. RAPID GROWER. TOLERATES DRYER SOILS THAN MILLET. GROWS BEST ON WELL-DRAINED SOILS. CAN ALSO USE SUDANGRASS ALONE.
WEEPING LOVEGRASS (Eragrostis curvula)	5 lbs	2 oz	MARCH- AUGUST	SHORT-LIVED PERENNIAL, 2-3 YEARS. TOLERATES HOT, DRY SLOPES AND ACID, INFERTILE SOILS.

USUALLY MIXTURES OF THE ABOVE PLANT MATERIALS ARE BETTER THAN A SINGLE PLANT ALONE. EACH OF THE LEGUMES DISCUSSED ABOVE CAN BE GROWN IN MIXTURE WITH ANNUAL RYEGRASS AND/OR THE SMALL GRAINS. IN A TWO-CROP MIXTURE CUT THE SEEDING RATE OF EACH CROP TO ONE-HALF OF THE RECOMMENDED PLANTING RATE WHEN GROWN ALONE. SIMILARLY THREE PLANT TYPES IN A MIXTURE REQUIRES APPROXIMATELY ONE-THIRD OF THE NORMAL SEEDING RATE FOR EACH PLANT. IN A THREE PLANT MIXTURE CONTAINING A SINGLE LEGUME, THE LEGUME SHOULD BE PLANTED AT ONE-HALF OF THE PURE STAND SEEDING RATE.

N.T.S.

DATE DRAWN 05-08-90

REVISED DATE 11-21-24

PLATE D-915

SEEDING MIXTURES, RATES AND DATES

CITY OF JACKSONVILLE STANDARD

N.T.S.

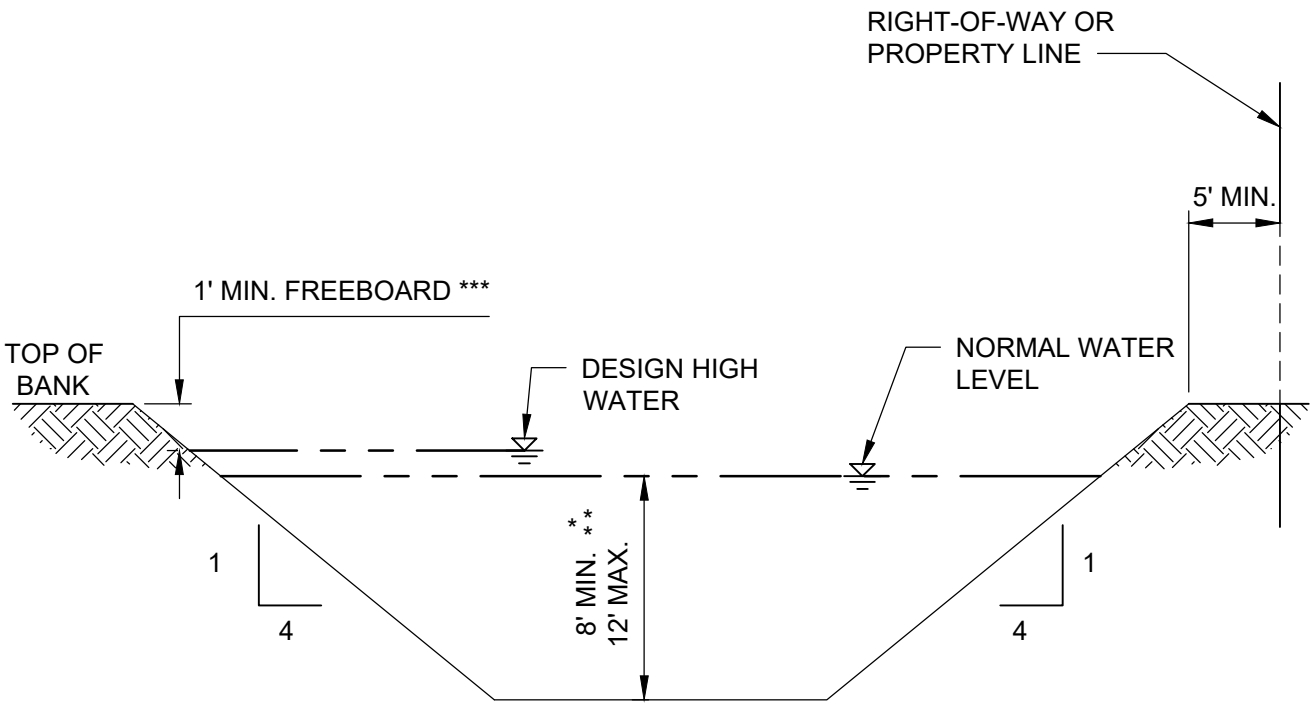
DATE DRAWN 05-09-90

REVISED DATE 11-21-24

PLATE D-916

SEEDING, MIXTURES, RATES AND DATES

SITE CONDITIONS	SEEDING MIXTURES	SEEDING RATE PER ACRE	SEEDING RATE PER 1000 FT^2	SEEDING DATES N. FLA.	COMMENTS
HIGH MAINTENANCE LAWNS					
GENERAL USE	1. BAHIAGRASS	40-60 LBS	1 LB	2/15-8/31	USE 50% SCARIFIED SEED.
	2. BAHIAGRASS	40-60 LBS	1 LB	2/15-8/15	USE 50% SCARIFIED BAHIA SEED.
	BERMUDAGRASS (HULLED)	8-12 LBS	4 OZ		
	3. BAHIAGRASS WITH ONE OF THE FOLLOWING:	20-30 LBS	.5 LB	9/1-1/1	USE 50% SCARIFIED BAHIA SEED.
	SOUTHERN WHITE CLOVER	3 LBS	1.2 OZ	9/1-1/1	INNOCULATE LEGUMES.
	ANNUAL WHITE SWEETCLOVER	8 LBS	3 OZ	9/1-1/1	
	CRIMSON CLOVER	12 LBS	4.5 OZ	9/1-1/1	
	ARROWLEAF CLOVER	8 LBS	3 OZ	2/15-7/15	
	ALYCE CLOVER	8 LBS	3 OZ	2/15-7/15	
	HAIRY INDIGO	4 LBS	1.5 OZ	2/15-7/15	
	ASCHYNAMENE	12 LBS	4.5 OZ		
SLOPES	1. SERICEA LESPEDEZA	A. 40-50 LBS	1.2 LBS	1/1-7/15	FOR SCARIFIED SEED.
		B. 75 LBS	1.7 LBS	7/15-1/1	FOR UNHULLED SEED.
	2. SERICA LESPEDEZA WITH ONE OF THE FOLLOWING:				USE SEEDING RATE SPECIFIED ABOVE.
	BAHIAGRASS	15 LBS	7 OZ	2/15-8/15	
	TALL FESCUE	20 LBS	8 OZ	10/1-11/15	BEST ADAPTED TO N. FLORIDA
	WEEPING LOVEGRASS	3 LBS	1.2 OZ	2/15-8/15	
DROUGHTY AREAS	1. WEEPING LOVEGRASS	5 LBS	2 OZ	2/15-8/15	GIVES QUICK SUMMER COVER.
	2. WEEPING LOVEGRASS WITH ONE OF THE FOLLOWING:				
	A. BAHIAGRASS (50% SCARIFIED SEED)	5 LBS	2 OZ	2/15-8/15	
	B. BERMUDAGRASS (HULLED)	30-40 LBS	12 OZ	2/15-8/15	
	C. HAIRY PANICUM	8-12LBS	4 OZ	2/15-8/15	
	D. SERICA LESPEDEZA	8-12 LBS	4 OZ	2/15-8/15	USE SEEDING RATE AND DATES SPECIFIED ABOVE.



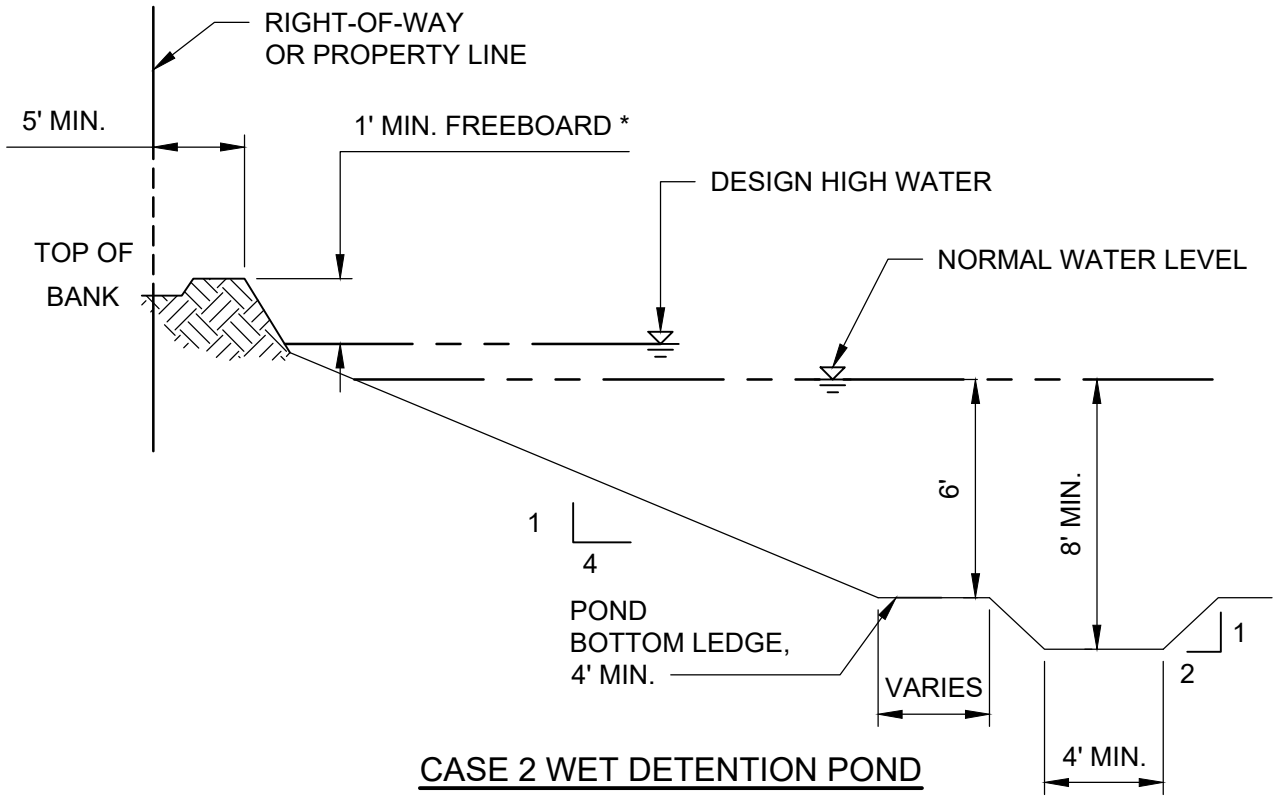
STANDARD DETENTION POND-PREFERRED OPTION

* LESSER DEPTHS ARE ACCEPTABLE IF PUBLIC STORMWATER INFLOWS ARE NOT INVOLVED. THIS ALSO APPLIES TO PLATES D-1003, AND D-1004.

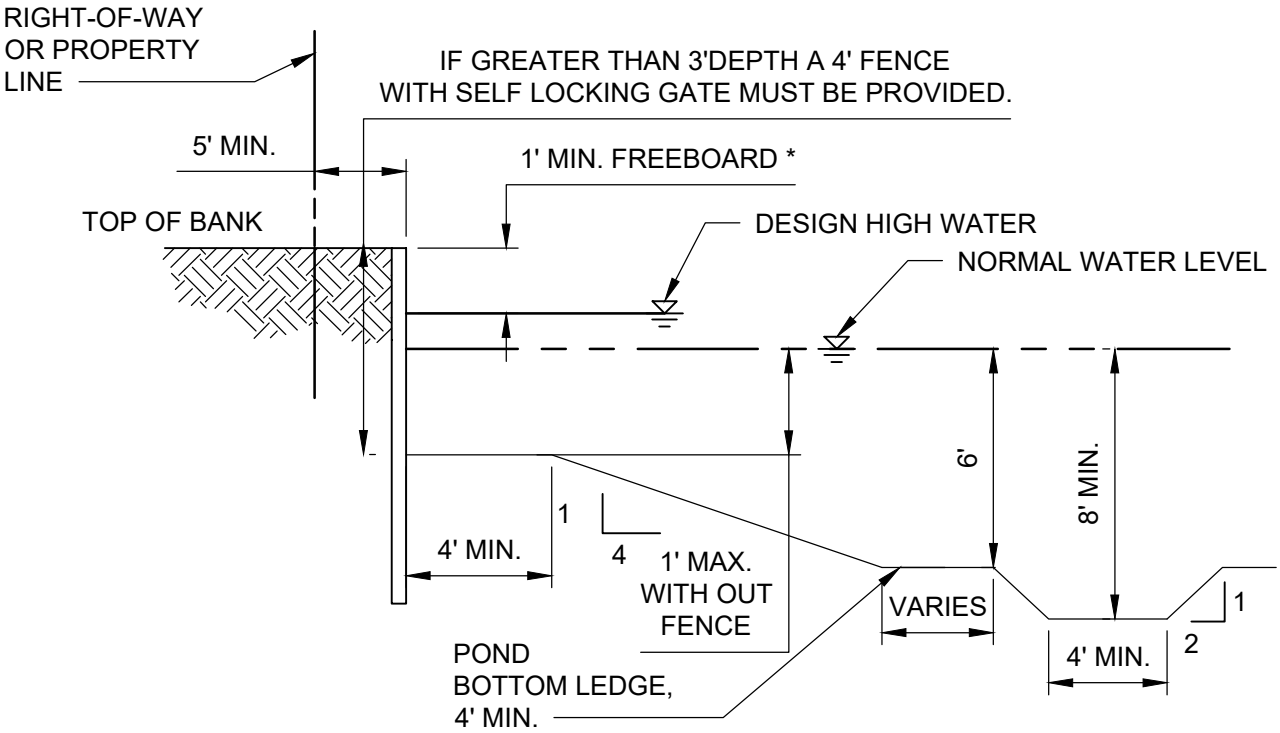
** FOR INTERCONNECTIONS OF DETENTION AREAS WITH PUBLIC STORMWATER INFLOWS, THE INTERCONNECTING PORTIONS MAY BE APPROVED FOR LESSER DEPTH WITH JUSTIFICATION ON A CASE BY CASE BASIS. ABSOLUTE MINIMUM DEPTH WILL BE 4.0 FEET.

*** IF THE BASIN IS CONSTRUCTED HIGHER THAN THE ADJACENT LAND, A 1-FOOT MIN. FREEBOARD IS REQUIRED FOR ALL DESIGN STORMS.

DETENTION POND DETAIL CASE 1	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-1001
		DATE DRAWN	7-20-93
		REVISED DATE	11-21-24



CASE 2 WET DETENTION POND

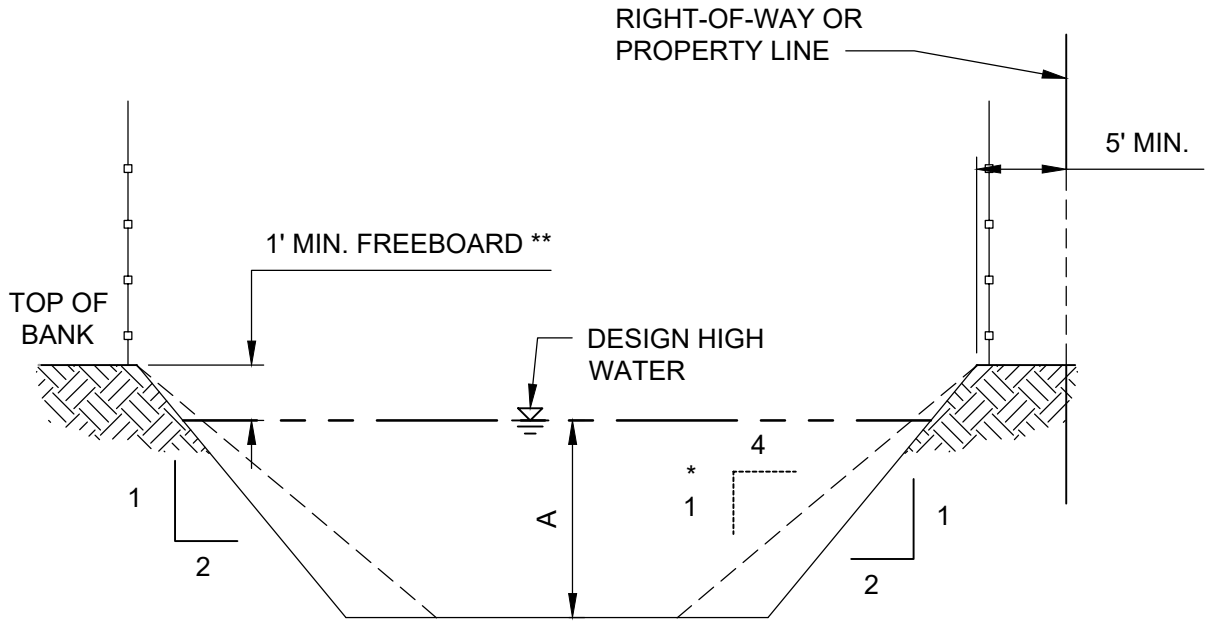


CASE 3 WET DETENTION POND

*IF THE BASIN IS CONSTRUCTED HIGHER THAN THE ADJACENT LAND, A 1-FOOT MIN. FREEBOARD IS REQUIRED FOR ALL DESIGN STORMS.

DETENTION POND DETAIL CASE 2 & 3	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-1002
		DATE DRAWN	7-20-93
		REVISED DATE	11-21-24

4' FENCE WITH SELF LOCKING GATE
WHERE REQUIRED.

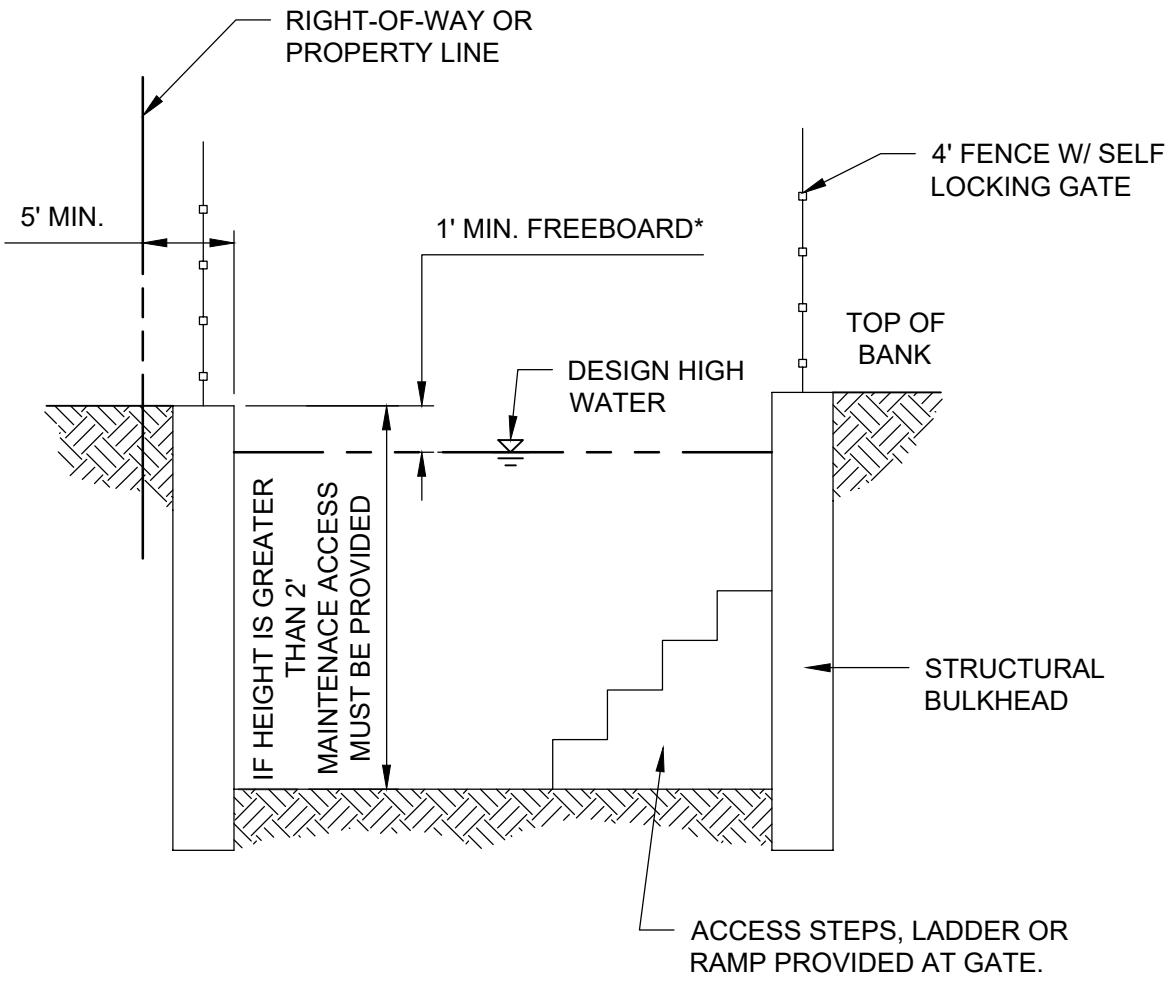


CASE 4 DRY DETENTION POND

	A	
	0' - 2'	NO FENCE REQUIRED
*	> 2'	FENCE REQUIRED OR 4 TO 1 SIDE SLOPES

**IF THE BASIN IS CONSTRUCTED HIGHER THAN THE ADJACENT LAND, A 1-FOOT MIN. FREEBOARD IS REQUIRED FOR ALL DESIGN STORMS.

DETENTION POND DETAIL CASE 4	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-1003
		DATE DRAWN	7-20-93
		REVISED DATE	11-21-24



CASE 5 DRY DETENTION POND

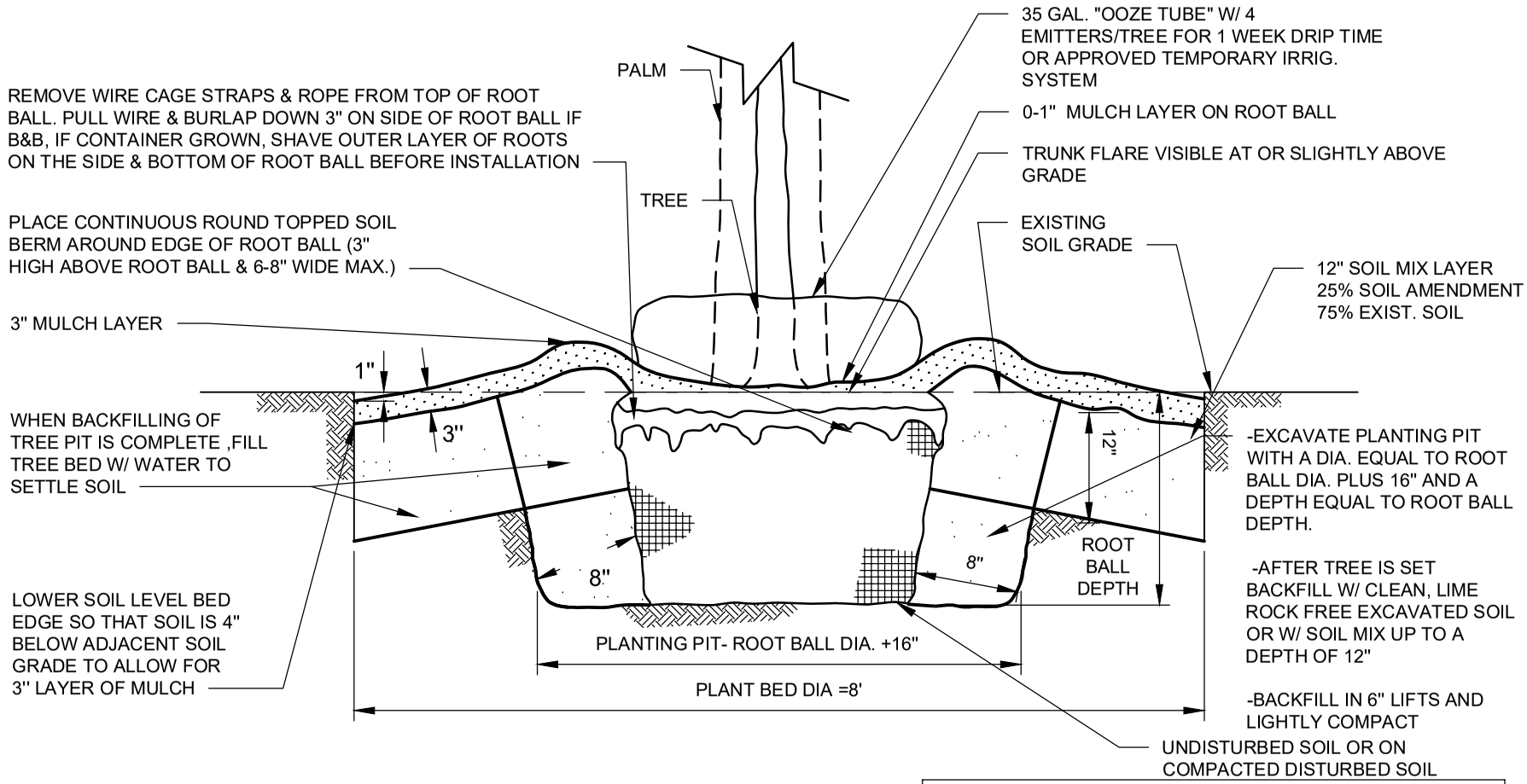
*IF THE BASIN IS CONSTRUCTED HIGHER THAN THE ADJACENT LAND, A 1-FOOT MIN. FREEBOARD IS REQUIRED FOR ALL DESIGN STORMS.

DETENTION POND DETAIL CASE 5	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE D-1004
		DATE DRAWN	7-20-93
		REVISED DATE	11-21-24

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
LANDSCAPE STANDARD SECTION
INDEX

TREE/PALM PLANTING

CITY OF JACKSONVILLE STANDARD



NOTES:

1. ALL PLANTS TO CONFORM TO FL. NO. 1 GRADE OR BETTER.
2. EMERGENT SHADE TREES MAY BE EITHER BALLED AND BURLAPPED OR TREE SPADED. SMALL AND MEDIUM-SIZED TREES MAY BE CONTAINER GROWN (CG), BALLED AND BURLAPPED (B&B), OR TREE SPADED.
3. ALL TREES TO HAVE A SINGLE TRUNK AND DOMINANT CENTRAL STRAIGHT LEADER WITH SUBORDINATED BRANCHES, UNLESS OTHERWISE SPECIFIED AS MULTI-TRUNKED.
4. ALL REQUIRED TRUNKS OF SPECIFIED MULTI-TRUNKED TREES SHALL ORIGINATE FROM THE ROOT BALL.
5. BALLED AND BURLAPPED TREES SHALL HAVE A SOLID ROOT BALL WITH FIBROUS ROOTS THAT HAVE BEEN "HARDENED OFF" FOR A MINIMUM OF 4 WEEKS.
6. ALL CONTAINERIZED TREES SHALL HAVE A SOLID ROOT BALL THE SIZE OF THE SPECIFIED CONTAINER BUT SHALL NOT BE ROOT BOUND

TREE OR PALM PLANTING BED DIAMETER		
*SINGLE TRUNK TREE CALIPER	*SMALL OR MULTI-TRUNKED TREE HEIGHT	*PLANTING BED DIAMETER
1" CAL	4'	6'
2" CAL	6'	8'
3" CAL	10'	8'
4" CAL	12'	10'
5" CAL	14'	10'
6"-7" CAL	18'	10'
PALMS	-	8'

N.T.S.

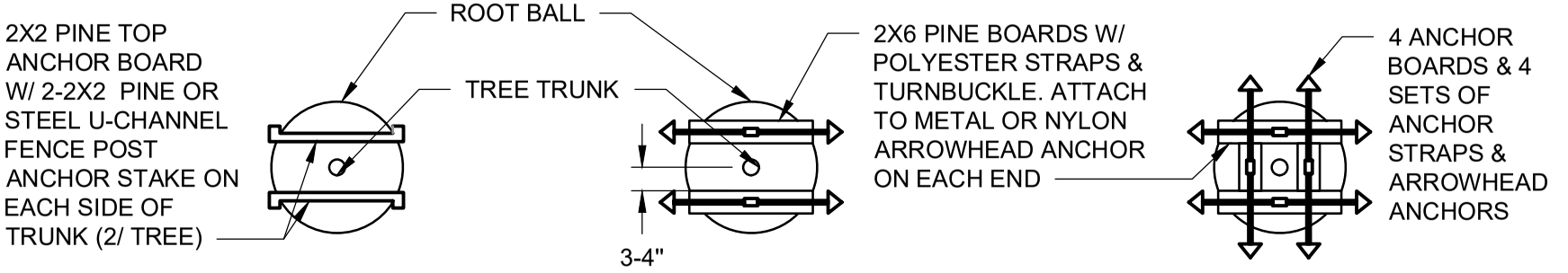
DATE DRAWN 1-6-25

REVISED DATE 1-6-25

PLATE L-101

ROOTBALL ANCHORING SYSTEM

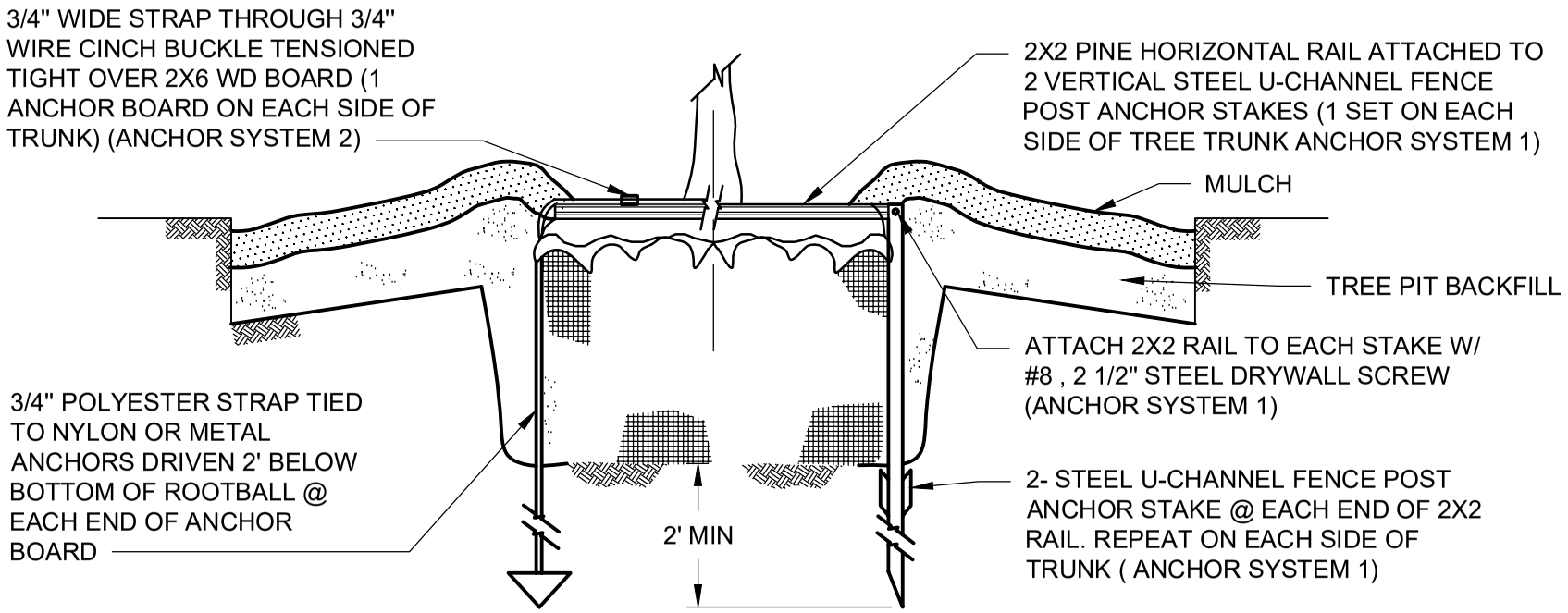
CITY OF JACKSONVILLE STANDARD



ANCHOR SYSTEM 1
TO 3 1/2" CAL. TREE

ANCHOR SYSTEM 2
TO 4 1/2" CAL. TREE

ANCHOR SYSTEM 3
TO 6 1/2" CAL. TREE



NOTE:

1. CITY'S CERTIFIED ARBORIST MAY SPECIFY ALTERNATIVE SUPPORT SYSTEMS FOR ROOT BALLS WITH LESS SOIL STRUCTURE AND/OR TREES WITH MORE GRAVITATIONAL OR WINDFORCE LEVERAGE IN THE CANOPY.

N.T.S.

DATE DRAWN 1-6-25

REVISED DATE 1-6-25

PLATE L-102

SHRUB/GROUNDCOVER PLANTING

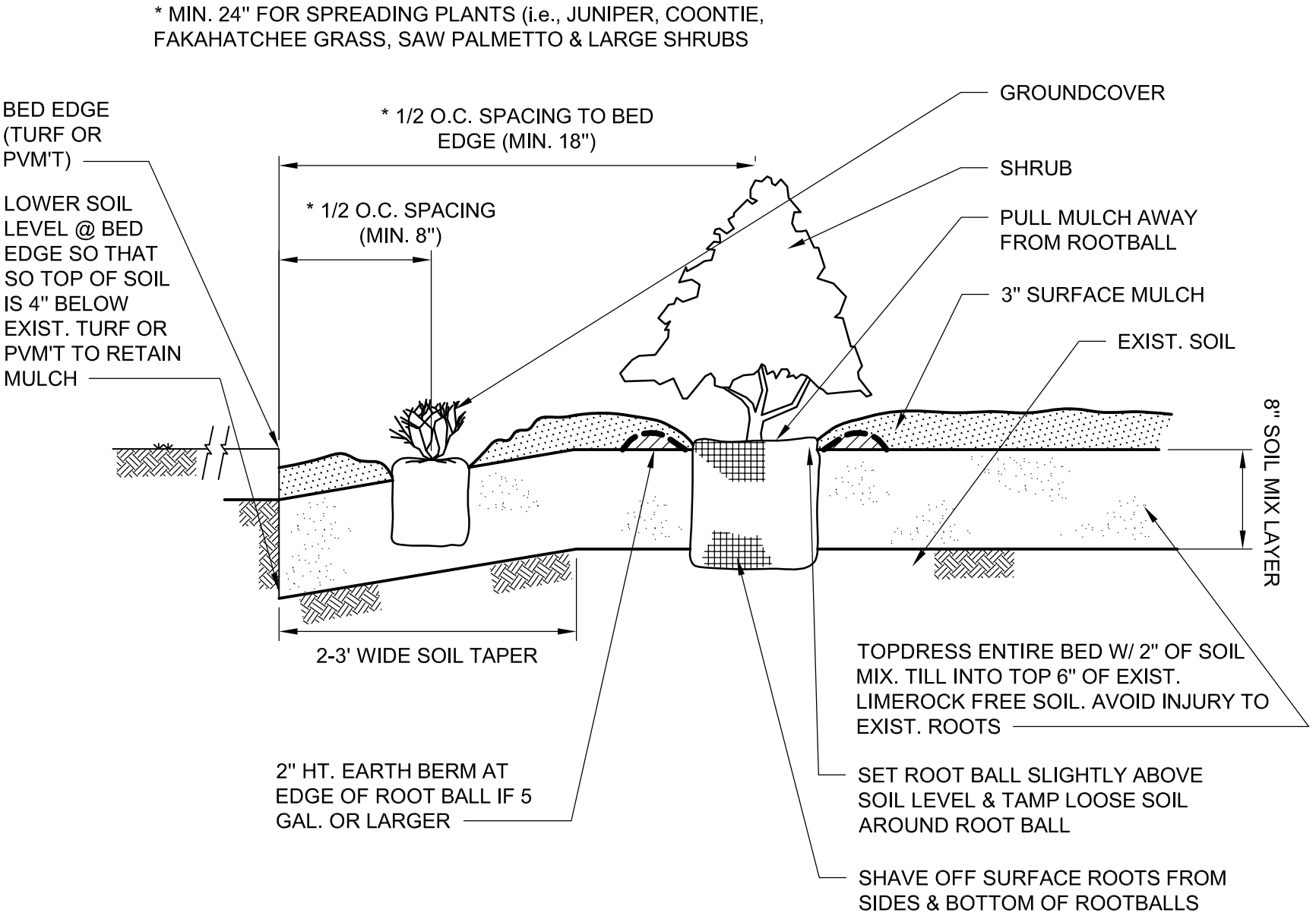
CITY OF JACKSONVILLE STANDARD

N.T.S.

DATE DRAWN

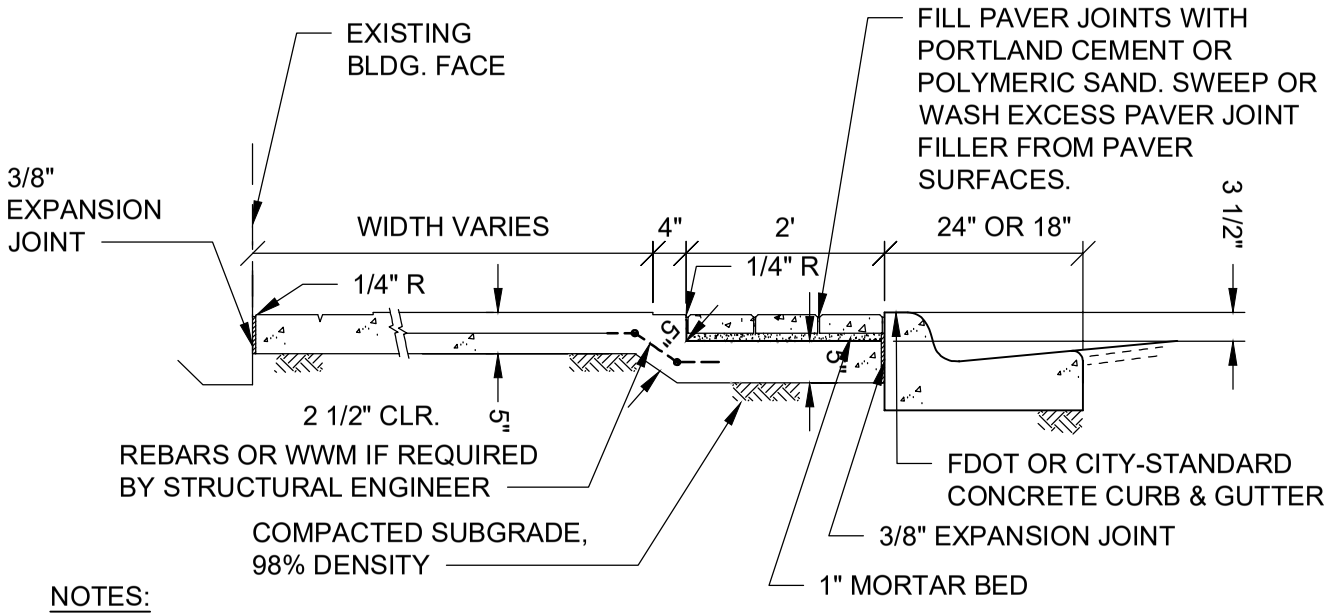
REVISED DATE

PLATE L-103



PAVER BAND DETAIL

CITY OF JACKSONVILLE STANDARD



NOTES:

1. PAVERS CAN HAVE MORTARED JOINTS AS AN ALTERNATIVE INSTALLATION, IF DESIRED.
2. REFER TO COJ STANDARD SIDEWALK DETAILS AND DOWNTOWN DESIGN GUIDELINES FOR SIDEWALK JOINTS AND FINISH DETAIL STANDARDS.

SIDEWALK PAVER BAND - RIGID INSTALLATION

N.T.S.

DATE DRAWN 1-6-25

REVISED DATE 1-6-25

PLATE L-104

PALM TREE STAKING IN TREE WELL

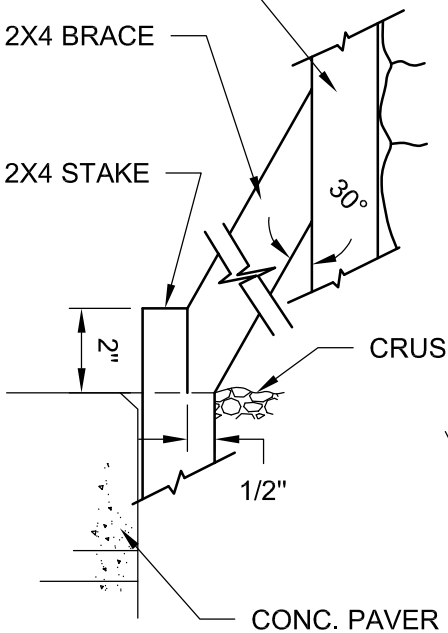
CITY OF JACKSONVILLE STANDARD

1"=1'

DATE DRAWN

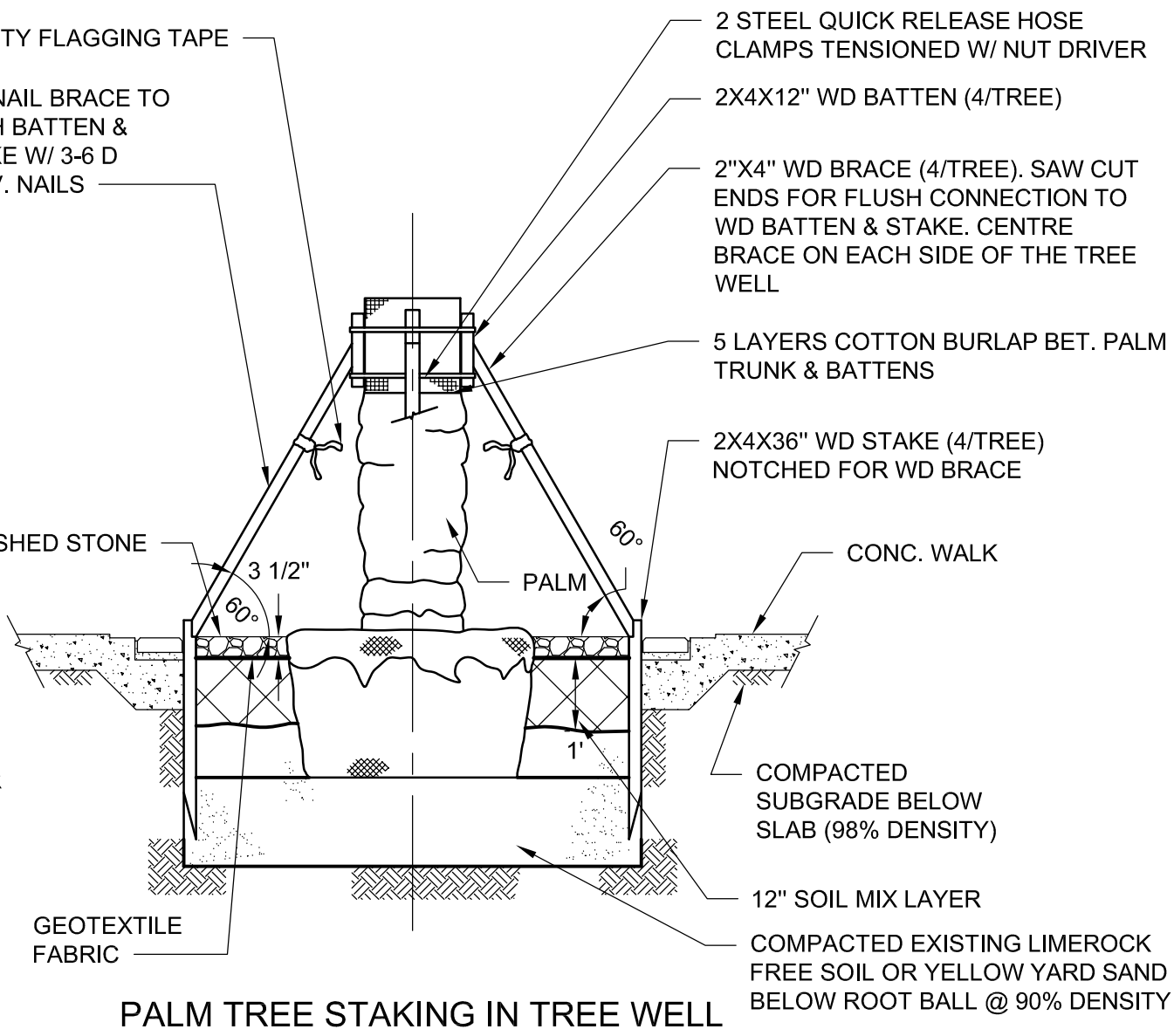
REVISED DATE

PLATE L-105



BRACE CONNECTION DETAIL

NTS



PALM TREE STAKING IN TREE WELL