



LAND DEVELOPMENT PROCEDURES MANUAL

Volume 3: Standard Details



Effective: January 2024

LAND DEVELOPMENT PROCEDURES MANUAL

CITY OF JACKSONVILLE, FLORIDA

Effective January 2024

Approved and Adopted in Accordance with

Provisions of Chapter 654, Jacksonville Ordinance Code

(Code of Subdivision Regulations)

**CITY STANDARD DETAILS
FOR THE
CITY OF JACKSONVILLE, FLORIDA**

TABLE OF CONTENTS

- I. PAVING
- II. DRAINAGE
- III. ~~WATER~~ (DELETED – Refer to JEA Standards)
- IV. ~~SEWER~~ (DELETED – Refer to JEA Standards)
- V. TRAFFIC

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
ROADWAY STANDARD SECTION
INDEX

Series 100 ROADWAYS

P-108 Typical Valley Gutter
P-109 Rigid Pavement 60' R/W (Urban)
P-110 Rigid Pavement Joint Details
P-111 Standard Cul-De-Sac w/ C&G
P-112 Standard Cul-De-Sac w/ Swales
P-113 Special T Turn Around
P-114 Bicycle Facility Typical Standards
P-115 Truck Route – Rural ROW
P-116 Truck Route – Suburban ROW
P-117 Truck Route – Urban ROW
P-118 Truck Route – Urban Priority ROW
P-119 Thoroughfare
P-120 Boulevard
P-121 Downtown Boulevard
P-122 Avenue
P-123 Downtown Avenue
P-124 Limited Avenue
P-125 Neighborhood Commercial Street
P-126 Neighborhood Residential Street
P-127 Residential Local Subdivision Street
P-128 Industrial
P-129 Business Park

Series 200 PRIVATE D/W AND ROADWAYS

P-201 Driveway Entrance-Class II & III
P-202 Inverted Crown
P-203 Private Drive w/ Parking
P-204 Asphaltic Concrete Driveway
P-205 Class I Concrete Driveway
P-206 Class II Commercial Concrete Driveway

Series 300 CURB & GUTTER AND HANIDCAP

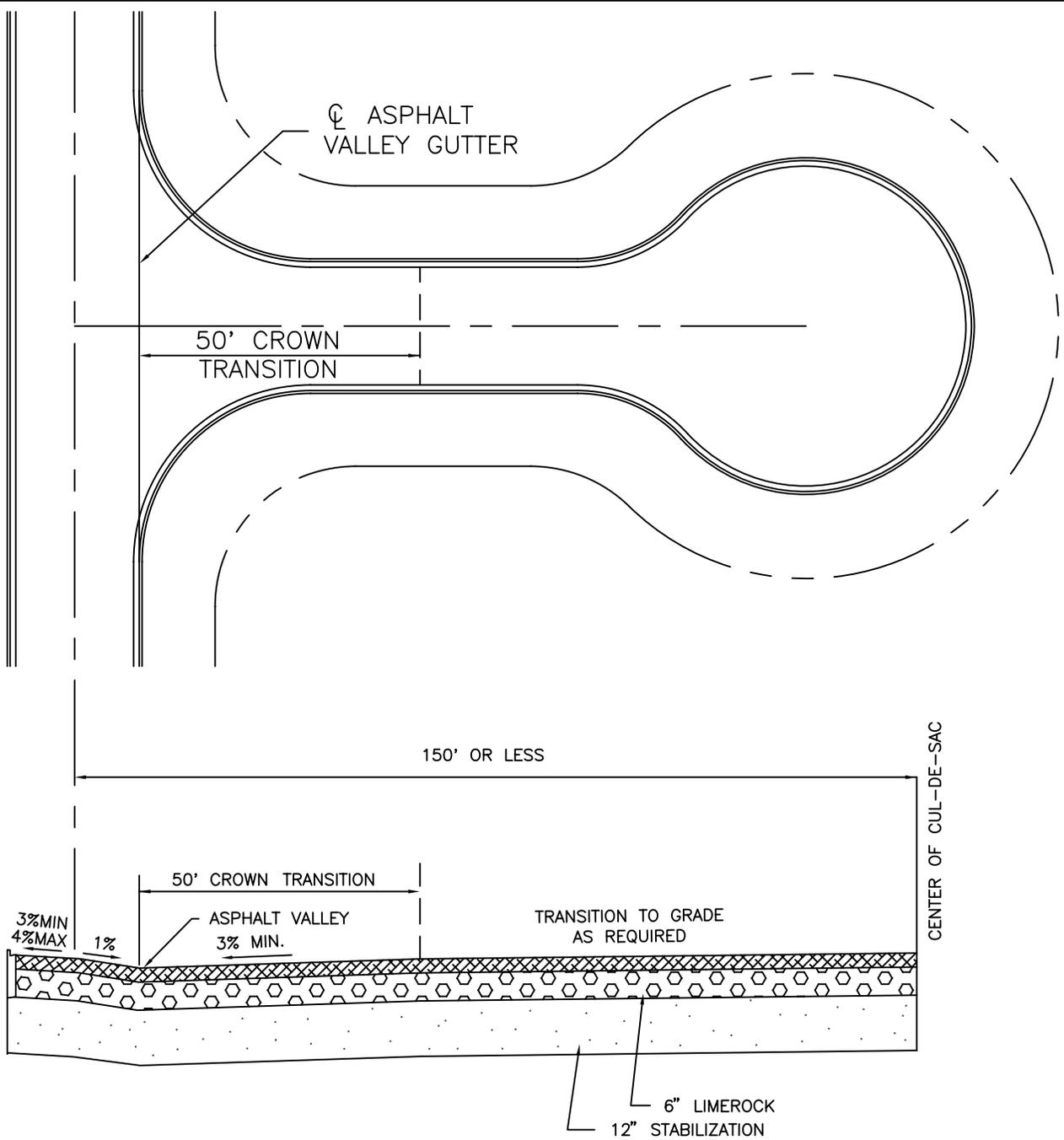
P-301 Standard Curb & Gutter Templates

Series 400 PAVEMENT REPAIRS

P-401	Manhole Adjustment Detail
P-402	Paving Repair Detail Case I
P-403	Paving Repair Detail Case II
P-404	Paving Repair Detail Case III
P-405	Paving Repair Detail Case IV
P-406	Paving Repair Detail Case V
P-407	Paving Repair Detail Case VI & VII
P-408	Paving Repair Detail Case IX
P-409	Paving Repair Detail Case X
P-410	Paving Repair Detail Case XI
P-411	Paving Repair Detail Case XII
P-412	Paving Repair Detail Case XIII
P-413	Paving Repair Detail Case XIV

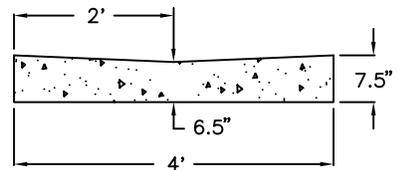
Series 500 TRADITIONAL NEIGHBORHOOD UTILITY LOCATION

P-501	TND Boulevard
P-502	TND Village Center Street
P-503	TND Local Street #1
P-504	TND Local Street #2
P-505	TND Local Street #3
P-506	TND Alley



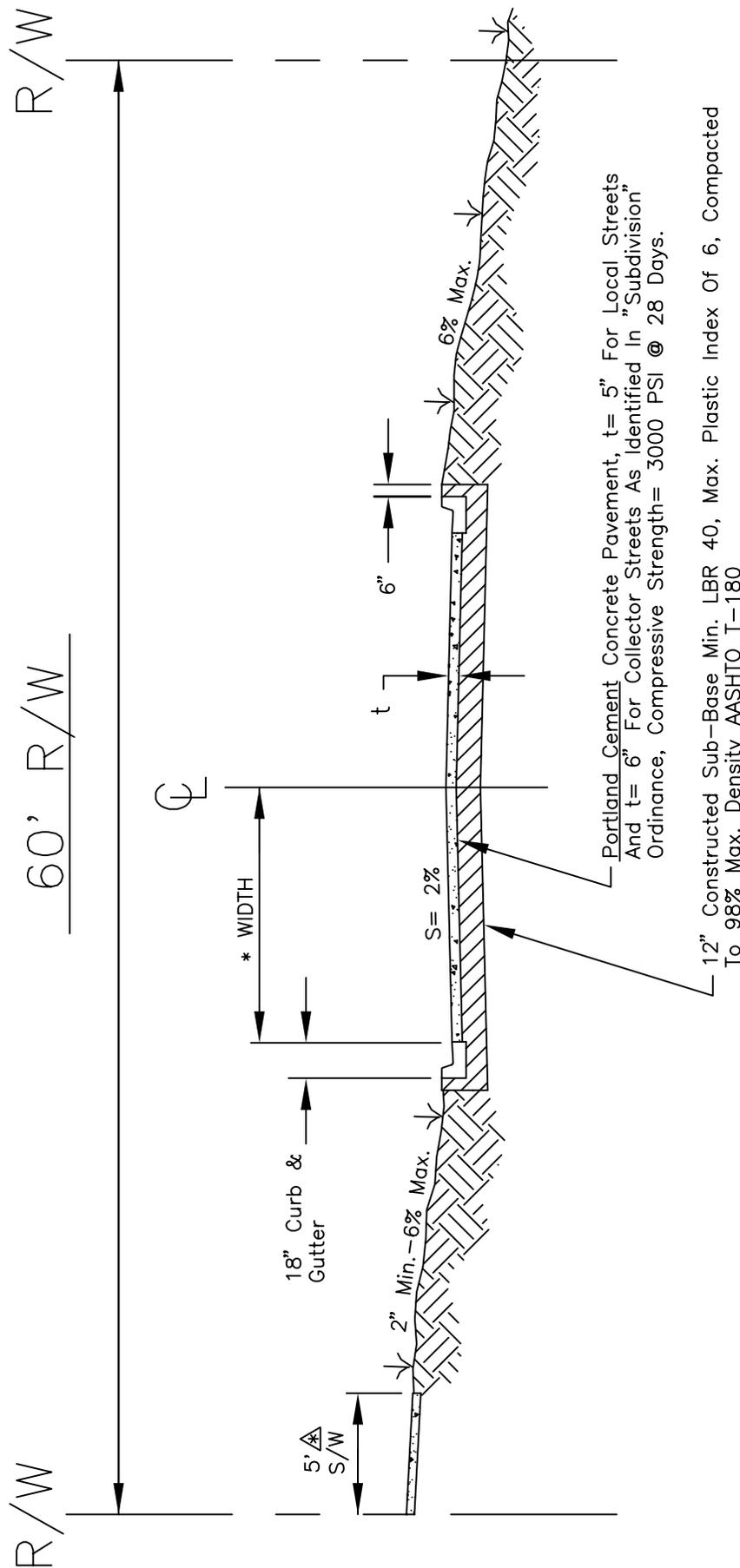
TYPICAL ASPHALT VALLEY GUTTER

NOTE: VALLEY GUTTERS WILL NOT BE ALLOWED AT THROUGH STREET INTERSECTIONS.



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

TYPICAL VALLEY GUTTER SECTION	<i>CITY OF JACKSONVILLE STANDARD</i>	N.T.S.	PLATE P-108
		DATE DRAWN	10-21-88
		REVISED DATE	10-9-97



Portland Cement Concrete Pavement, $t = 5''$ For Local Streets
 And $t = 6''$ For Collector Streets As Identified In "Subdivision"
 Ordinance, Compressive Strength = 3000 PSI @ 28 Days.

12" Constructed Sub-Base Min. LBR 40, Max. Plastic Index Of 6, Compacted
 To 98% Max. Density AASHTO T-180

* WIDTH:

- 12' TYPICAL, 10' MIN. w/o BICYCLE ACCOMODATION
- 14' WITH SHARED USE CAR/BIKE LANE
- 16' TYPICAL 15' MIN. WITH DEDICATED 4' BIKE LANE

NOTE:

Rigid Pavement Shall Be Designed And Constructed
 According To The Specifications.

OR IN ACCORDANCE WITH APPROVED CONSTRUCTION PLANS.

RIGID PAVEMENT

CITY OF
 JACKSONVILLE
 STANDARD

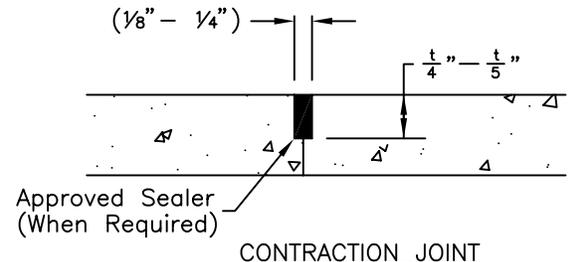
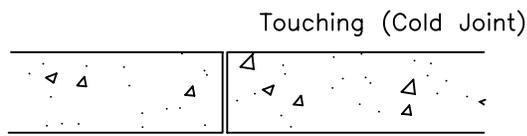
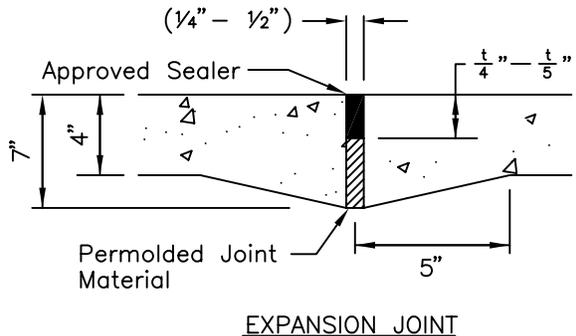
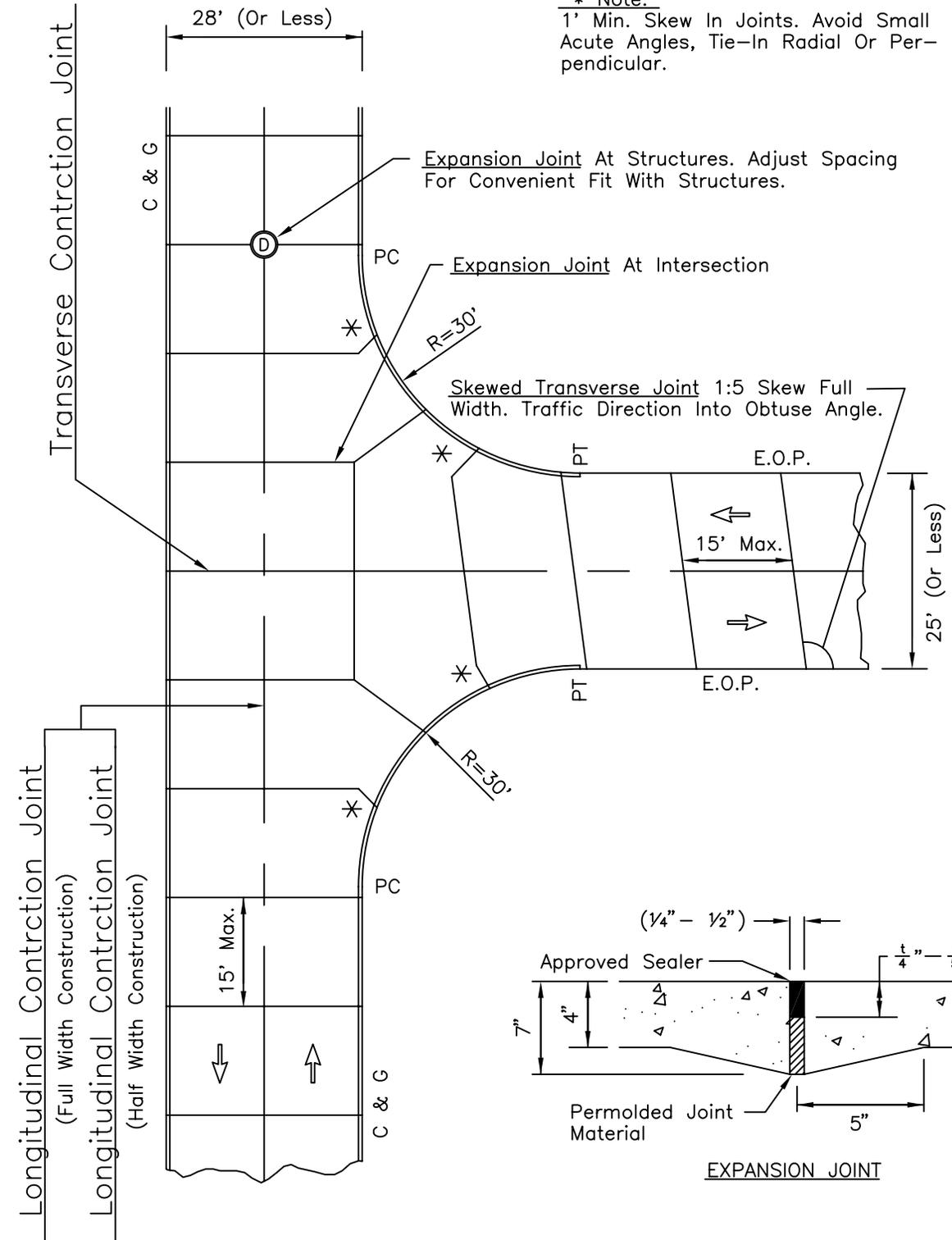
N.T.S.

PLATE P-109

DATE DRAWN 7-1-82

REVISED DATE 9/5/03

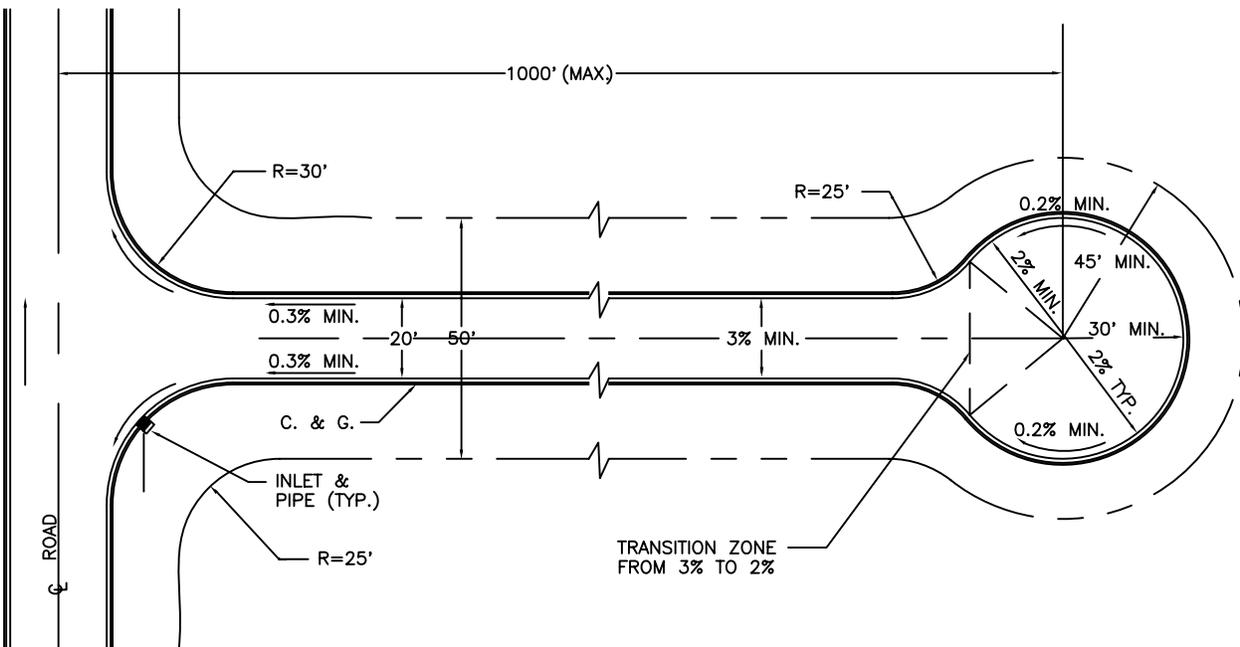
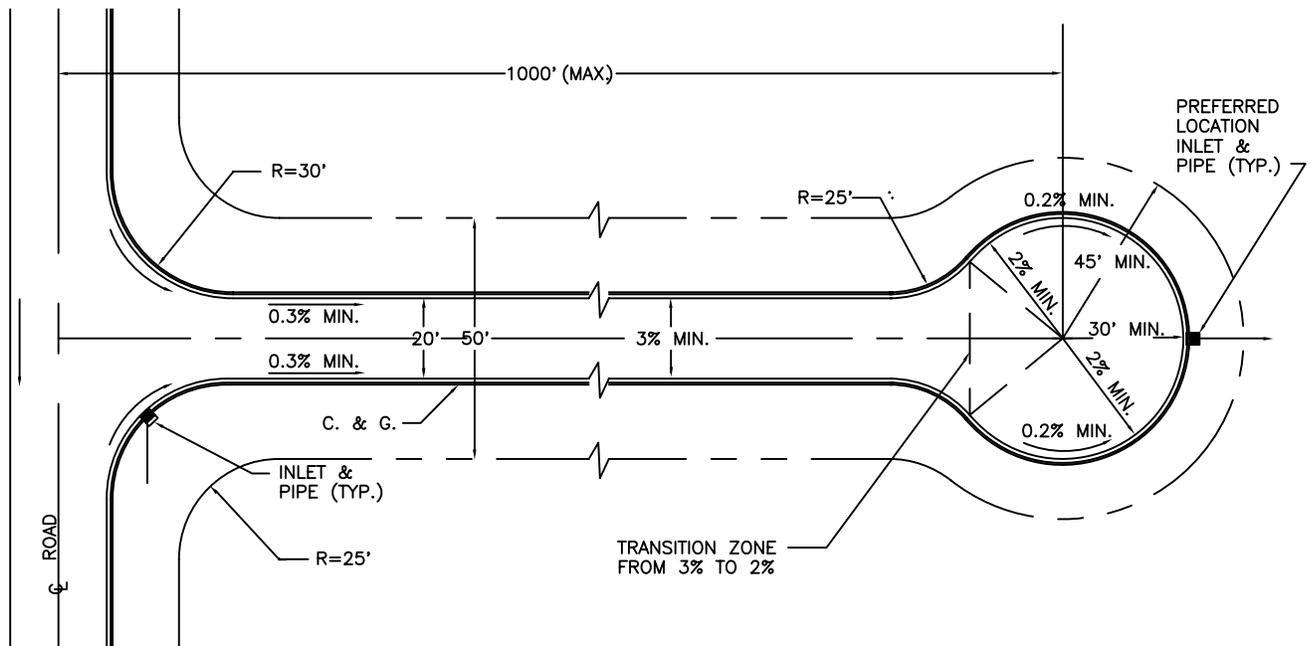
* Note:
 1' Min. Skew In Joints. Avoid Small Acute Angles, Tie-In Radial Or Perpendicular.



RIGID PAVEMENT
 JOINT DETAILS

*CITY OF
 JACKSONVILLE
 STANDARD*

N.T.S.	PLATE P-110
DATE DRAWN	8-3-79
REVISED DATE	10-14-97



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

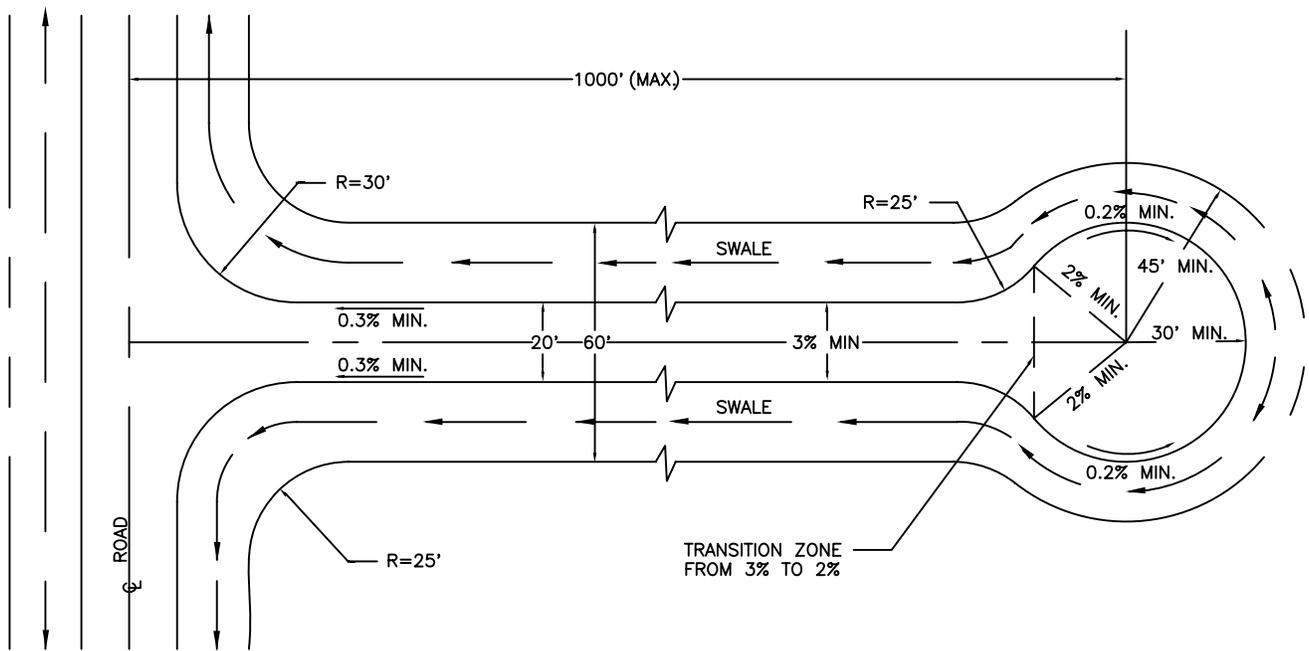
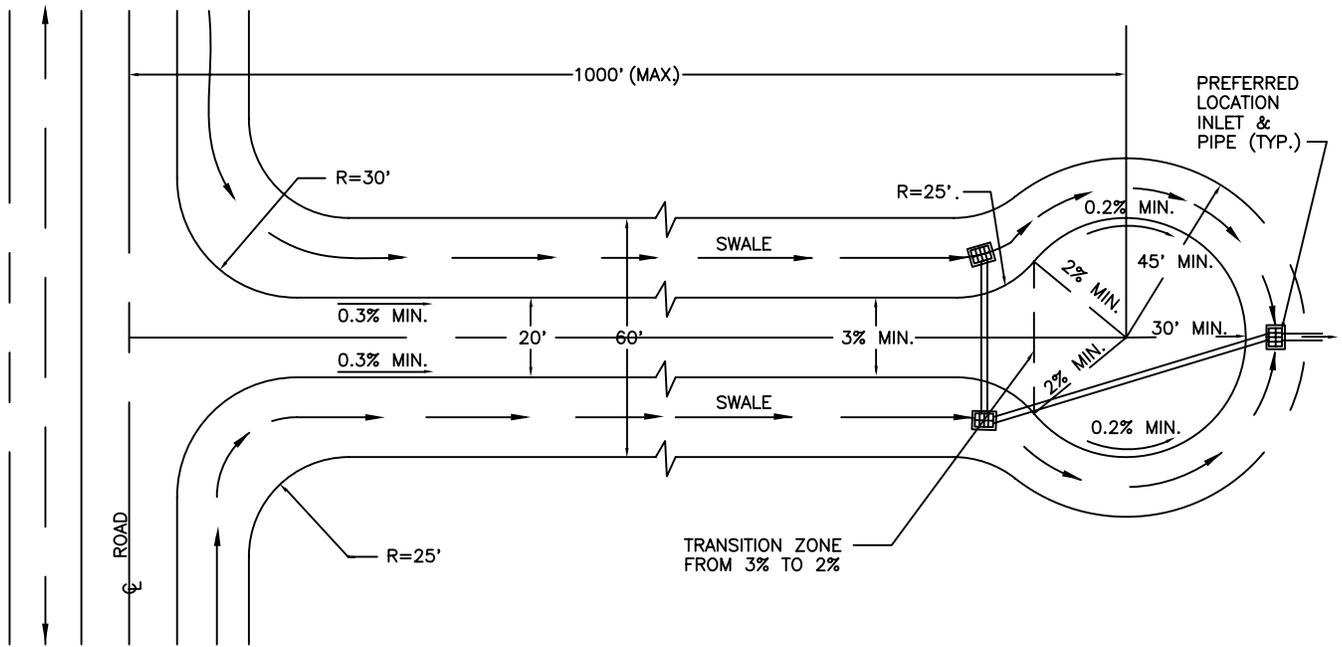
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE P-111

DATE DRAWN 3-29-89

REVISED DATE 10-15-97



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

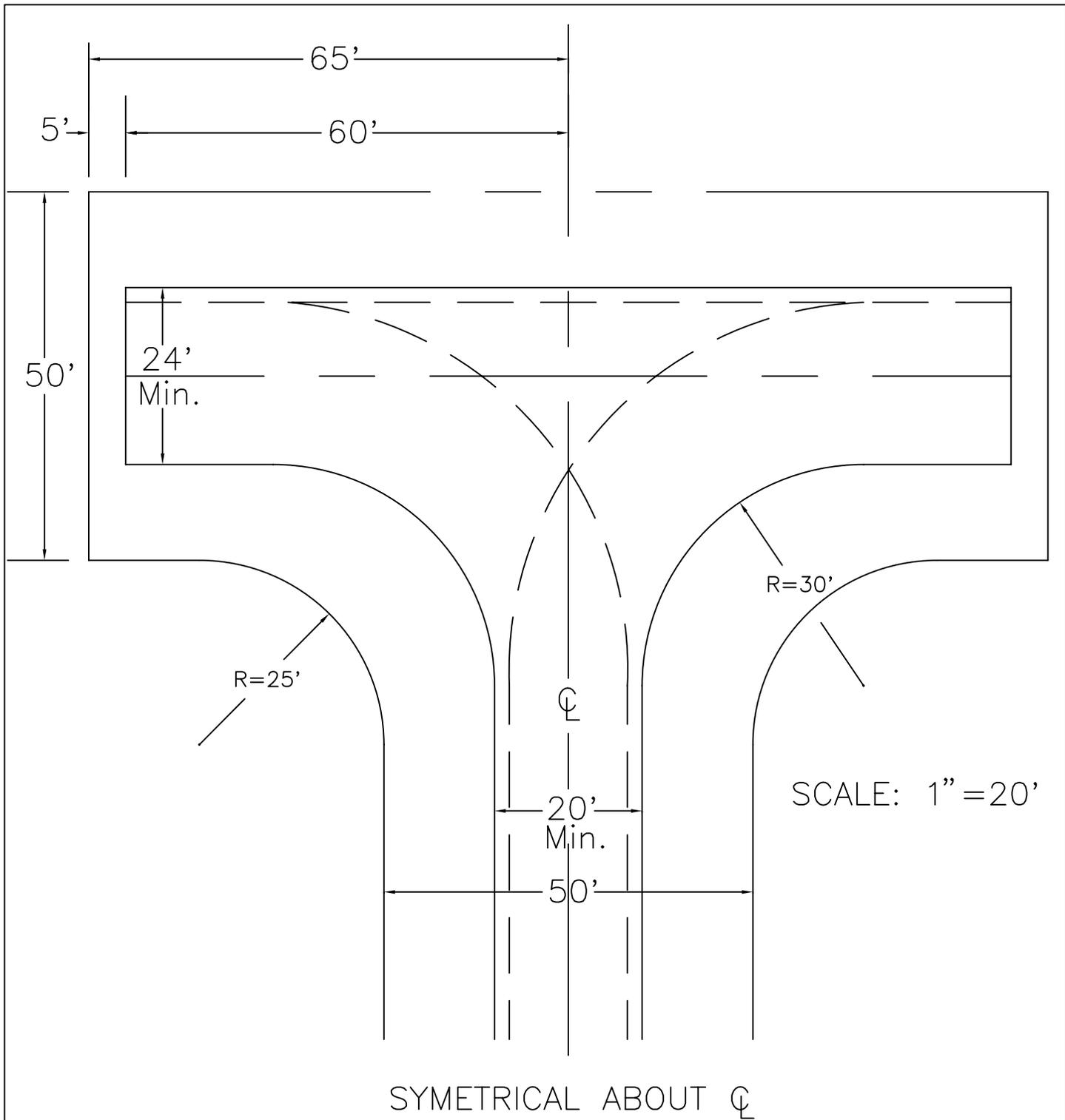
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE P-112

DATE DRAWN 3-23-89

REVISED DATE 10-16-97



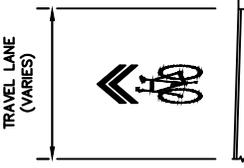
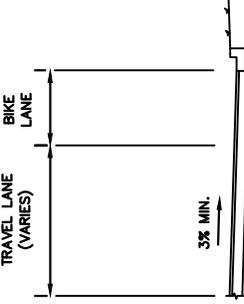
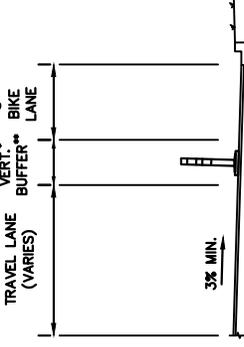
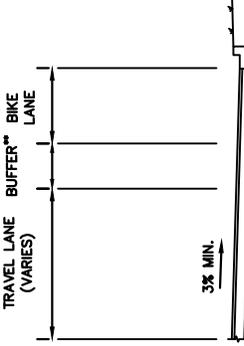
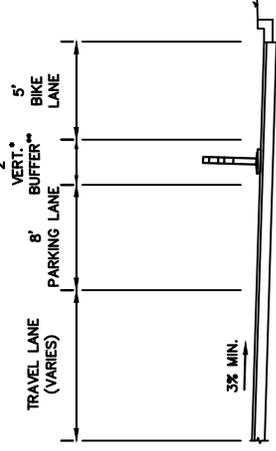
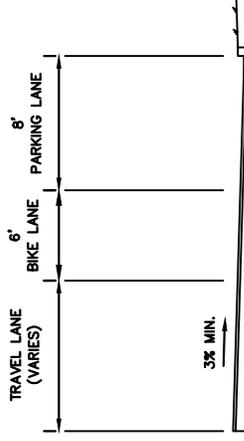
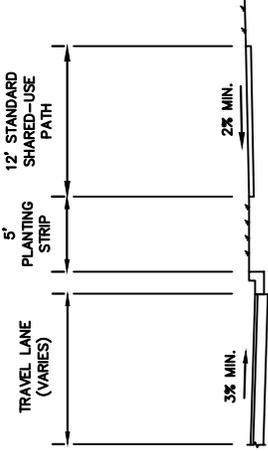
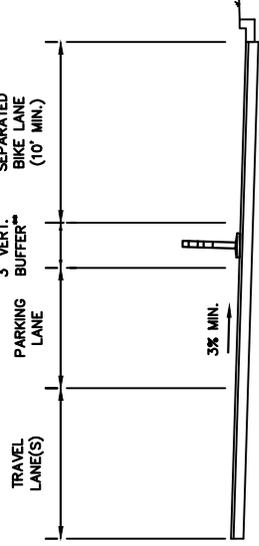
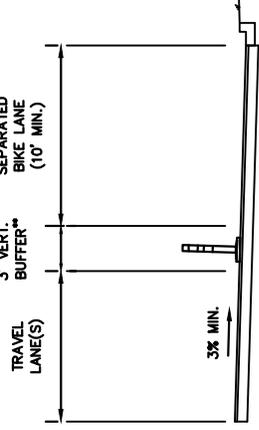
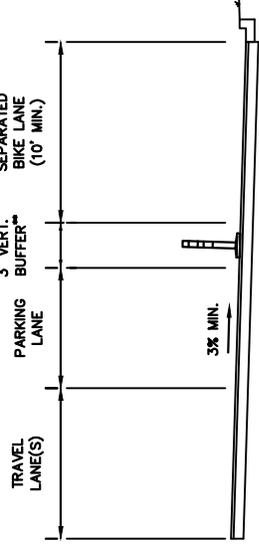
KEY:

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

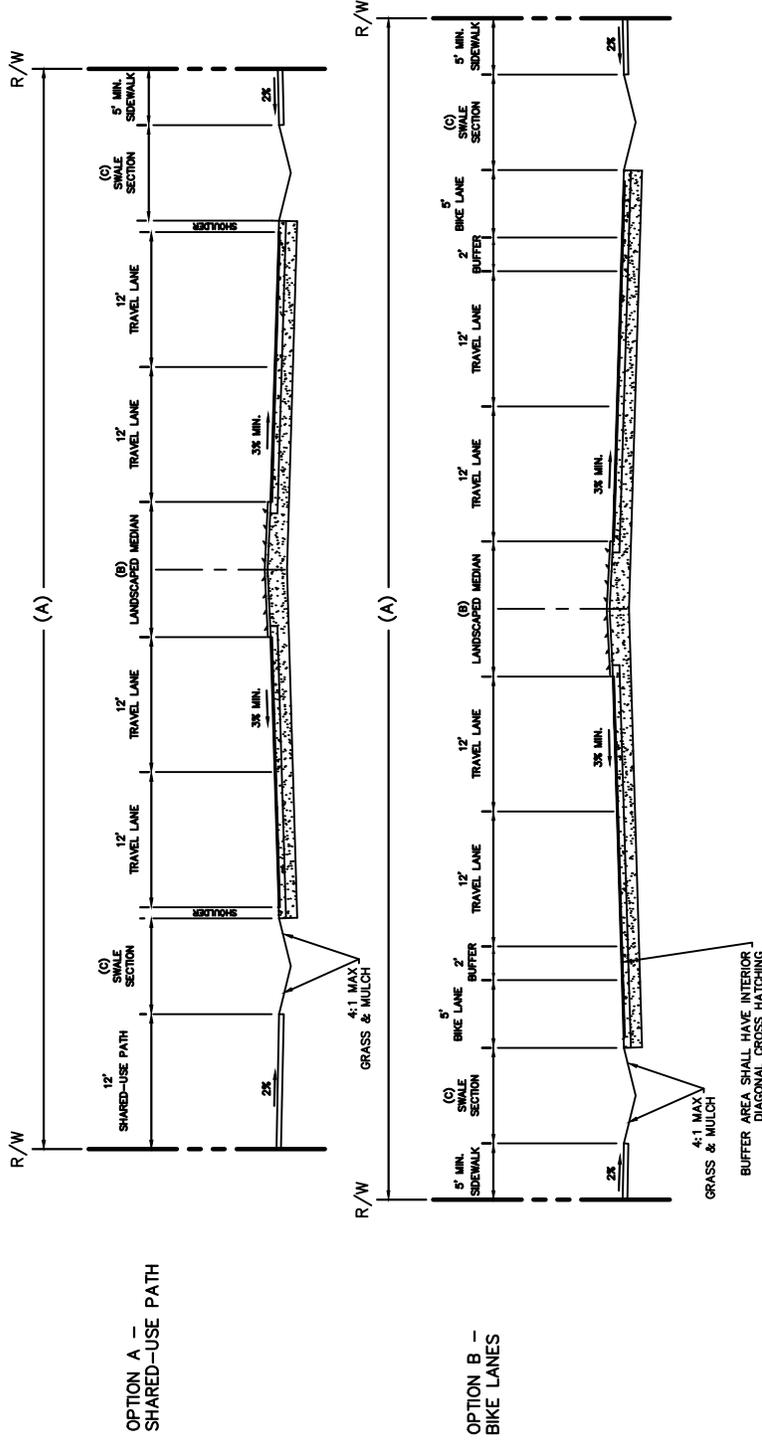
NOTE:

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

"T" SPECIAL TURNAROUND	<i>CITY OF JACKSONVILLE STANDARD</i>	N.T.S.	PLATE P-113
		DATE DRAWN	5-24-89
		REVISED DATE	10-15-97

 <p>TRAVEL LANE (VARIES)</p> <p>BICYCLE BOULEVARD & SHARED LANE MARKINGS ("SHARROWS")</p>	 <p>TRAVEL LANE (VARIES)</p> <p>5' BIKE LANE</p> <p>STANDARD BICYCLE LANE</p>	 <p>TRAVEL LANE (VARIES)</p> <p>2' VERT. BUFFER**</p> <p>5' BIKE LANE</p> <p>SEPARATED BICYCLE LANE</p>	 <p>TRAVEL LANE (VARIES)</p> <p>2' TRAVEL LANE BUFFER**</p> <p>5' BIKE LANE</p> <p>BUFFERED BICYCLE LANE</p>
 <p>TRAVEL LANE (VARIES)</p> <p>8' PARKING LANE</p> <p>2' VERT. BUFFER**</p> <p>5' BIKE LANE</p> <p>PARKING PROTECTED BICYCLE LANE</p>	 <p>TRAVEL LANE (VARIES)</p> <p>6' BIKE LANE</p> <p>8' PARKING LANE</p> <p>BICYCLE LANE ADJACENT TO PARKING</p>	 <p>TRAVEL LANE (VARIES)</p> <p>5' PLANTING STRIP</p> <p>12' STANDARD SHARED-USE PATH</p> <p>2% MIN.</p> <p>SHARED-USE PATH</p>	 <p>TRAVEL LANE(S)</p> <p>3' VERT. BUFFER**</p> <p>PARKING LANE</p> <p>SEPARATED BIKE LANE (10' MIN.)</p> <p>3% MIN.</p> <p>TWO-WAY CYCLE TRACK WITH PROTECTED PARKING</p>
<p>1. PAVEMENT MARKINGS AND SIGNAGE SHALL CONFORM WITH CURRENT FDOT DESIGN MANUAL AND CURRENT FHWA—MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. PROCEDURES MANUAL FOR ADDITIONAL DETAILS.</p> <p>2. REFER TO SECTION 3.0 OF THE LAND DEVELOPMENT PROCEDURES MANUAL FOR ADDITIONAL DETAILS.</p> <p>3. BIKE LANES AND TRAVEL LANES ARE MEASURED TO THE EDGE OF PAVEMENT.</p> <p>4. PARKING LANES ARE MEASURED TO THE FACE OF CURB.</p> <p>* VERTICAL BUFFER CAN BE MADE OF VARIOUS MATERIALS, INCLUDING: CONCRETE, PLANTERS, SOFT-HIT POSTS AND BOLLARDS.</p> <p>** BUFFER AREA SHALL HAVE INTERIOR DIAGONAL CROSS HATCHING.</p>	 <p>TRAVEL LANE(S)</p> <p>3' VERT. BUFFER**</p> <p>SEPARATED BIKE LANE (10' MIN.)</p> <p>3% MIN.</p> <p>TWO-WAY CYCLE TRACK</p>	 <p>TRAVEL LANE(S)</p> <p>3' VERT. BUFFER**</p> <p>PARKING LANE</p> <p>SEPARATED BIKE LANE (10' MIN.)</p> <p>3% MIN.</p> <p>TWO-WAY CYCLE TRACK WITH PROTECTED PARKING</p>	<p style="text-align: center;">CITY OF JACKSONVILLE STANDARD</p> <div style="display: flex; justify-content: space-between;"> <div data-bbox="1393 1843 1531 1990">  </div> <div data-bbox="1393 573 1531 1812"> <p style="text-align: center;">BICYCLE FACILITY TYPICAL STANDARDS</p> </div> <div data-bbox="1393 130 1531 573"> <p style="text-align: center;">N.T.S. PLATE P-114</p> <p style="text-align: center;">DATE DRAWN 1/31/17</p> <p style="text-align: center;">REVISED DATE 7/10/20</p> </div> </div>

TRUCK ROUTE TYPICAL SECTION



RURAL RIGHT OF WAY	
A	B
60'	N/A
80'	12'
100'	12'
120'	32'
	C
	6.5'
	10.5'
	8.5'
	8.5'

1. REFER TO SECTION 3.3 OF THE LAND DEVELOPMENT PROCEDURES MANUAL FOR ROADWAY PAVEMENT, SUB-BASE, BASE COURSE, SURFACE COURSE, AND CONCRETE REQUIREMENTS.
2. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODDED TO SATISFACTION OF OWNER.
3. BIKE LANES ALSO FUNCTION AS SHOULDERS.
4. POSTED SPEED IS BASED ON EXISTING ROADWAY CONDITIONS.



**CITY OF JACKSONVILLE
STANDARD**

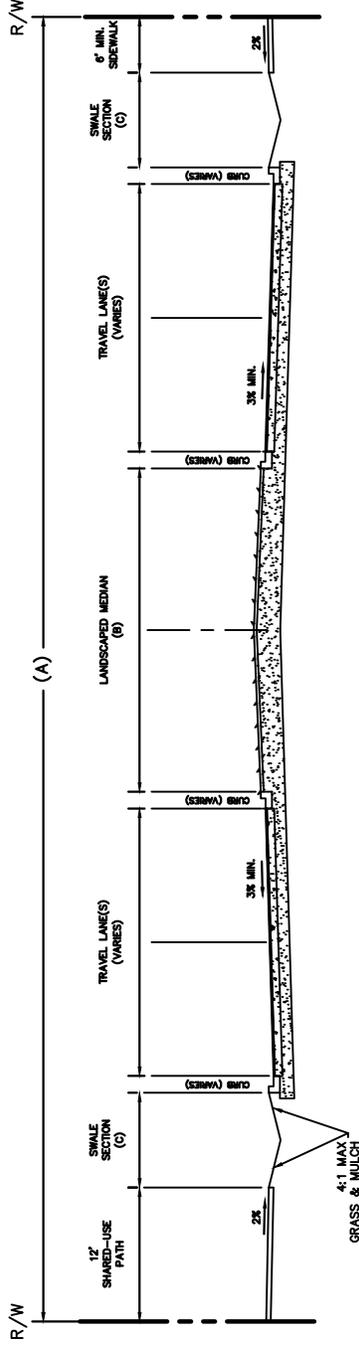
RURAL
RIGHT OF WAY

N.T.S. PLATE P-115

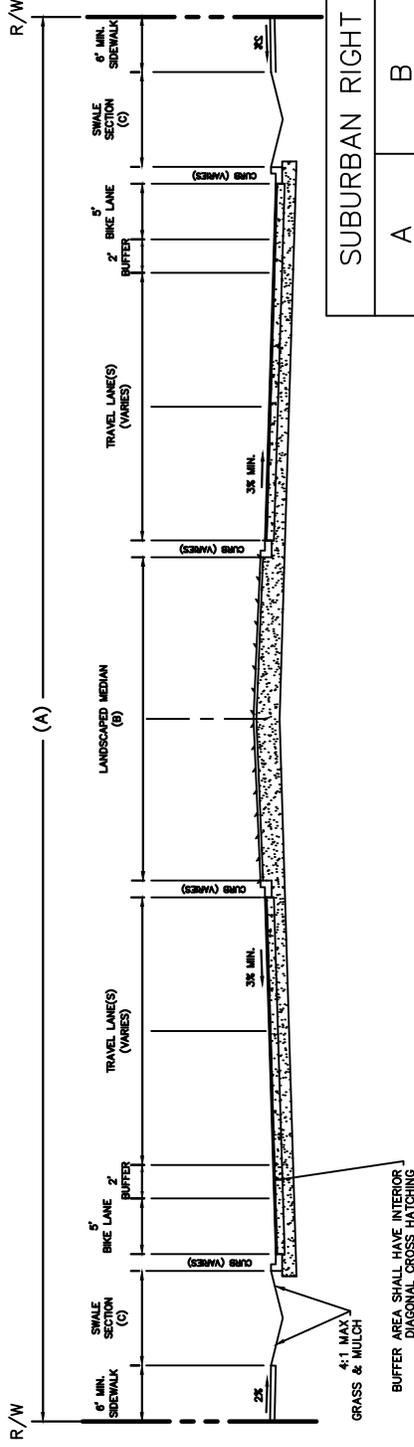
DATE DRAWN 1/31/17

REVISED DATE 2/21/20

TRUCK ROUTE TYPICAL SECTION



OPTION A - SHARED-USE PATH



OPTION B - BIKE LANES

SUBURBAN RIGHT OF WAY	
A	B C
60'	N/A 4.5'
80'	12' 8.5'
100'	12' 7.5'
120'	29' 7.5'

CITY STD., D.O.T. STD., OR D.O.T. TYPE "E" CURB MAY BE USED

- REFER TO SECTION 3.3 OF THE LAND DEVELOPMENT PROCEDURES MANUAL FOR ROADWAY PAVEMENT, SUB-BASE, BASE COURSE, SURFACE COURSE, AND CONCRETE REQUIREMENTS.
- ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODDED.
- POSTED SPEED IS BASED ON EXISTING ROADWAY CONDITIONS.



CITY OF JACKSONVILLE STANDARD

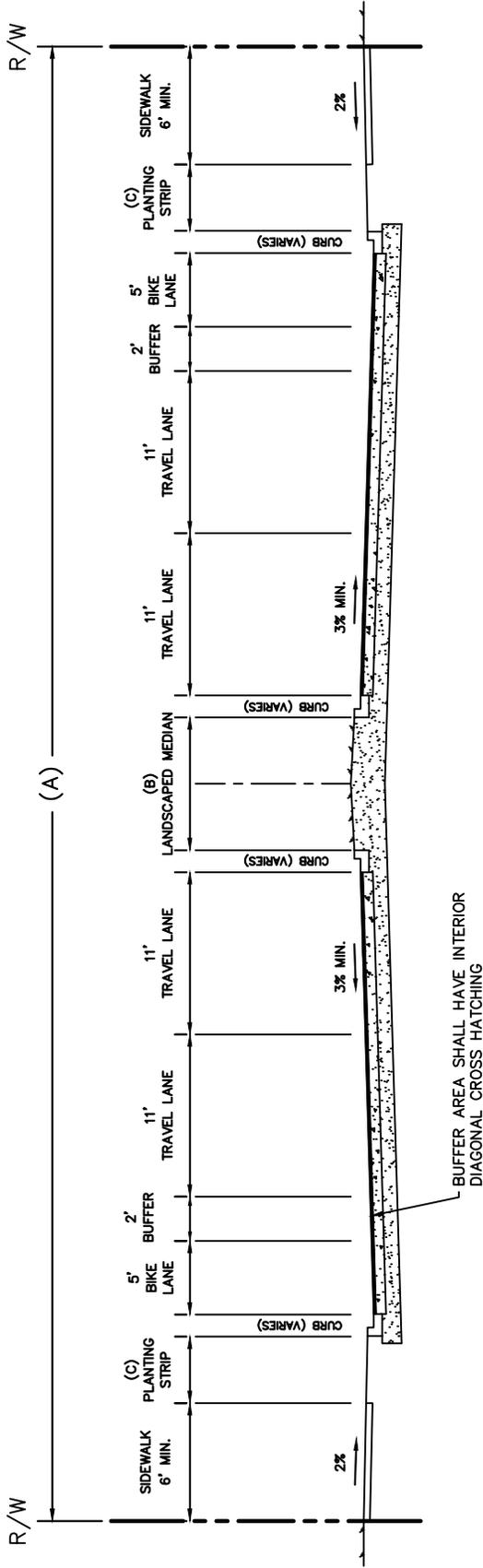
SUBURBAN RIGHT OF WAY

N.T.S. PLATE P-116

DATE DRAWN 1/31/17

REVISED DATE 2/21/20

TRUCK ROUTE TYPICAL SECTION



URBAN RIGHT OF WAY		
A	B	C
60'	N/A	4.5'
80'	12'	5.5'
100'	12'	4.5'
120'	29'	4.5'

CITY STD., D.O.T. STD., OR D.O.T. TYPE "E" CURB MAY BE USED

- REFER TO SECTION 3.3 OF THE LAND DEVELOPMENT PROCEDURES MANUAL FOR ROADWAY PAVEMENT, SUB-BASE, BASE COURSE, SURFACE COURSE, AND CONCRETE REQUIREMENTS.
- ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODDED.
- POSTED SPEED IS BASED ON EXISTING ROADWAY CONDITIONS.



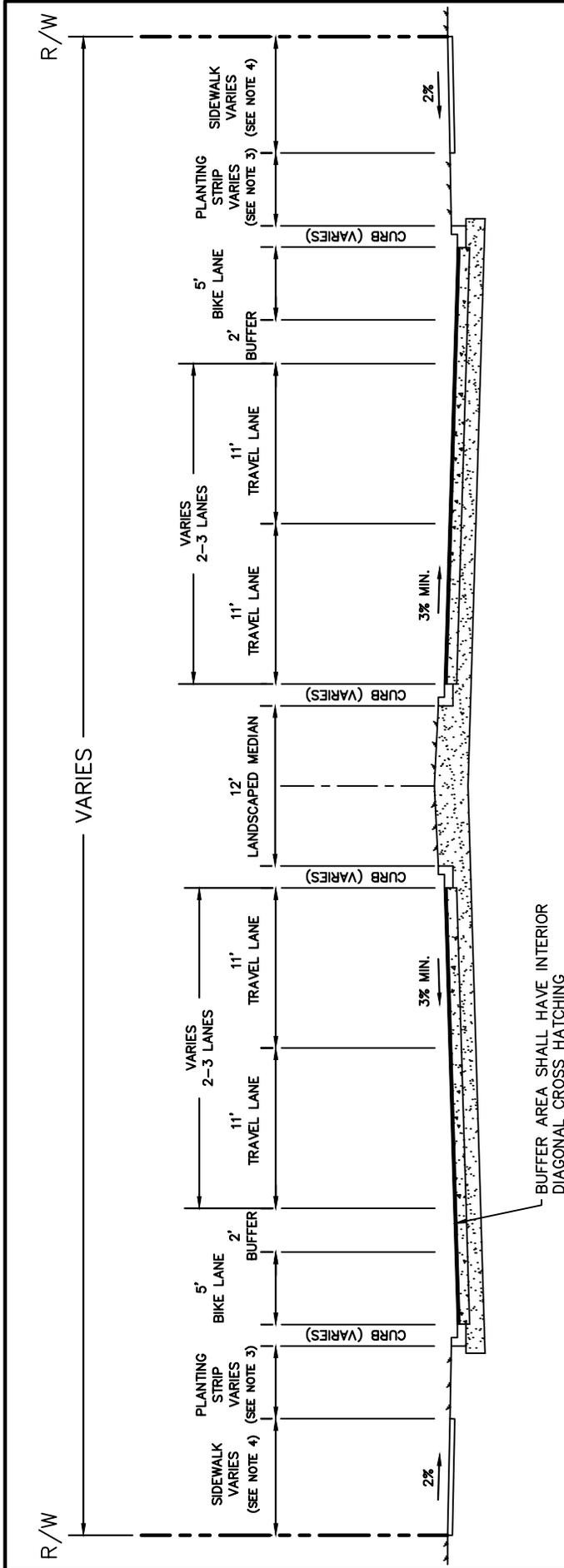
CITY OF JACKSONVILLE STANDARD

URBAN RIGHT OF WAY

N.T.S. PLATE P-117

DATE DRAWN 1/31/17

REVISED DATE 2/21/20



— BUFFER AREA SHALL HAVE INTERIOR DIAGONAL CROSS HATCHING

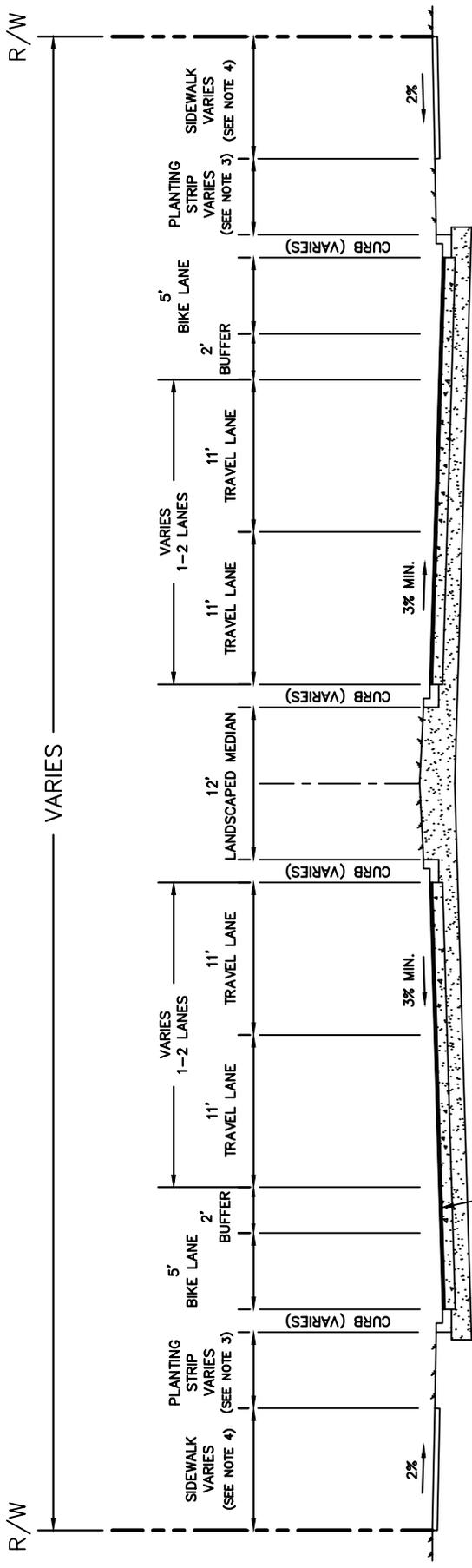
PAVING CURB & GUTTER W/ MEDIAN

1. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODED.
2. NUMBER OF THROUGH LANES VARIES BETWEEN 4 TO 6 DEPENDING ON RIGHT-OF-WAY WIDTH.
3. PLANTING STRIP TO HAVE A DESIRED MINIMUM OF 5' WIDTH. 8' IS DESIRED IF STREET TREES ARE INCLUDED.
4. MINIMUM SIDEWALK WIDTH DETERMINED BY DEVELOPMENT AREA:
 URBAN = 6' DOWNTOWN = 8'
 SUBURBAN = 6' URBAN PRIORITY = 8'
 RURAL = 5'
5. POSTED SPEED : ≥ 35 MPH.



CITY OF JACKSONVILLE STANDARD

STREET CLASSIFICATION THOROUGHFARE		N.T.S.	PLATE P-119
		DATE DRAWN	1/31/17
		REVISED DATE	2/21/20



BUFFER AREA SHALL HAVE INTERIOR
DIAGONAL CROSS HATCHING

**PAVING CURB &
GUTTER W/ MEDIAN**

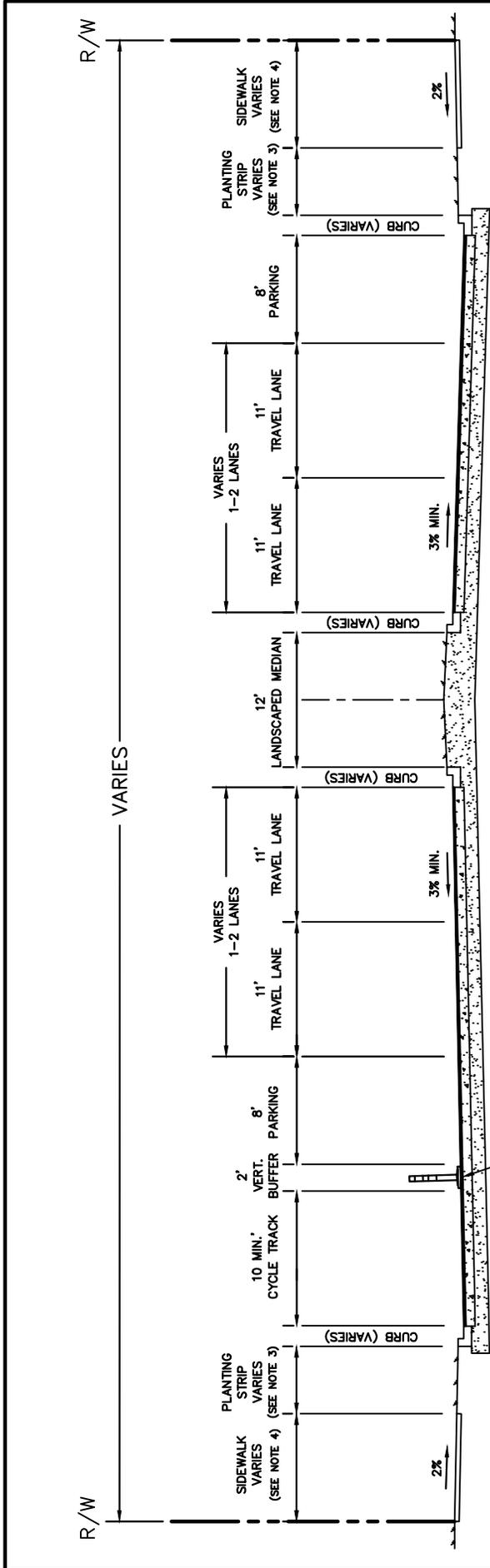
1. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODDED.
2. NUMBER OF THROUGH LANES VARIES BETWEEN 2 TO 4 DEPENDING ON RIGHT-OF-WAY WIDTH.
3. PLANTING STRIP TO HAVE A DESIRED MINIMUM OF 5' WIDTH. 8' IS DESIRED IF STREET TREES ARE INCLUDED.
4. MINIMUM SIDEWALK WIDTH DETERMINED BY DEVELOPMENT AREA:
 URBAN = 6' DOWNTOWN = 8'
 SUBURBAN = 6' URBAN PRIORITY = 8'
 RURAL = 5'
5. POSTED SPEED: ≤ 35 MPH.



**CITY OF JACKSONVILLE
STANDARD**

STREET CLASSIFICATION
BOULEVARD

N.T.S.	PLATE	P-120
DATE DRAWN	1/31/17	
REVISED DATE	2/21/20	



BUFFER AREA SHALL HAVE INTERIOR
DIAGONAL CROSS HATCHING

**PAVING CURB &
GUTTER W/ PARKING**

1. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODDED.
2. NUMBER OF THROUGH LANES VARIES BETWEEN 2 TO 4 DEPENDING ON RIGHT-OF-WAY WIDTH.
3. PLANTING STRIP TO HAVE A DESIRED MINIMUM OF 5' WIDTH. 8' IS DESIRED IF STREET TREES ARE INCLUDED.
4. MINIMUM SIDEWALK WIDTH DETERMINED BY DEVELOPMENT AREA:
 URBAN = 6' DOWNTOWN = 8'
 SUBURBAN = 6' URBAN PRIORITY = 8'
 RURAL = 5'
5. POSTED SPEED: ≤ 35 MPH.



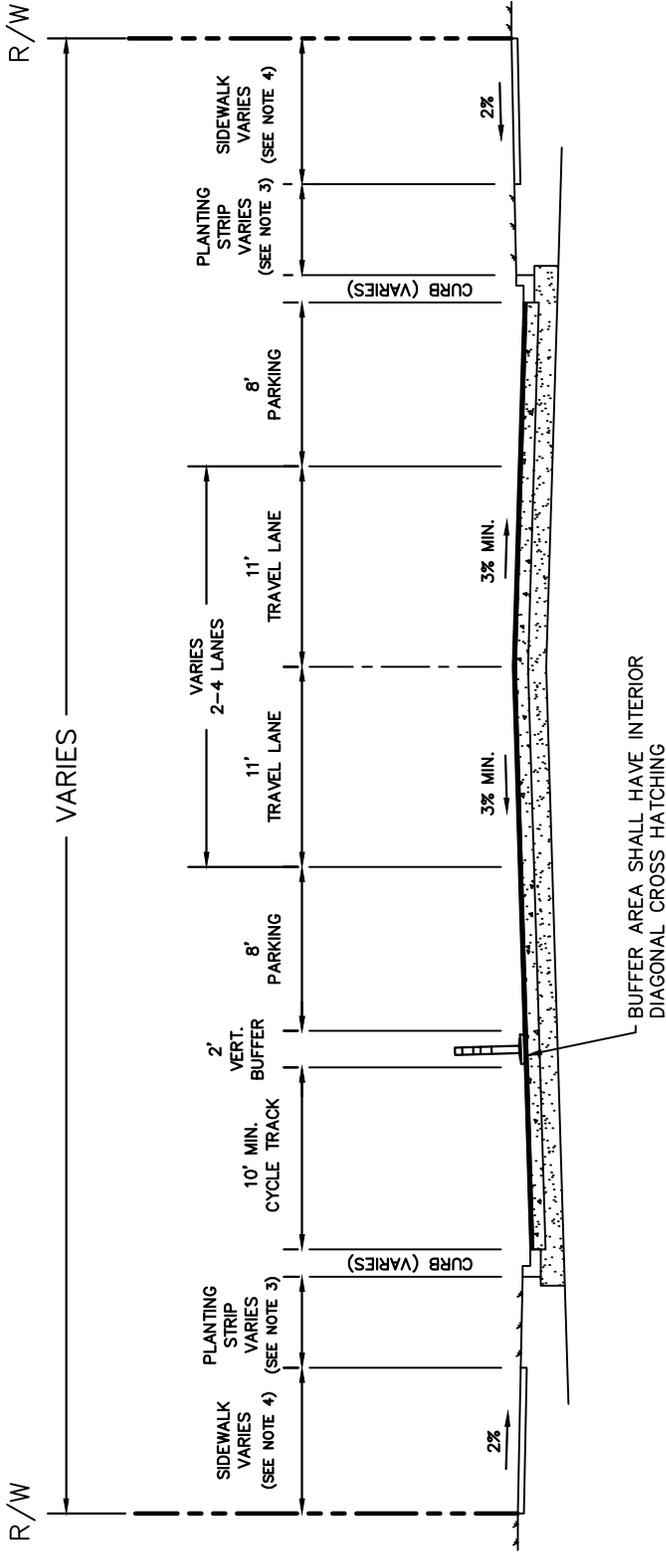
**CITY OF JACKSONVILLE
STANDARD**

STREET CLASSIFICATION
DOWNTOWN BOULEVARD

N.T.S. PLATE P-121

DATE DRAWN 1/31/17

REVISED DATE 7/10/20



PAVING CURB & GUTTER

1. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODED.
2. NUMBER OF THROUGH LANES VARIES BETWEEN 2 TO 4 DEPENDING ON RIGHT-OF-WAY WIDTH.
3. PLANTING STRIP TO HAVE A DESIRED MINIMUM OF 5' WIDTH. 8' IS DESIRED IF STREET TREES ARE INCLUDED.
4. MINIMUM SIDEWALK WIDTH DETERMINED BY DEVELOPMENT AREA:
 URBAN = 6' DOWNTOWN = 8'
 SUBURBAN = 6' URBAN PRIORITY = 8'
 RURAL = 5'
5. POSTED SPEED: ≤ 35 MPH.



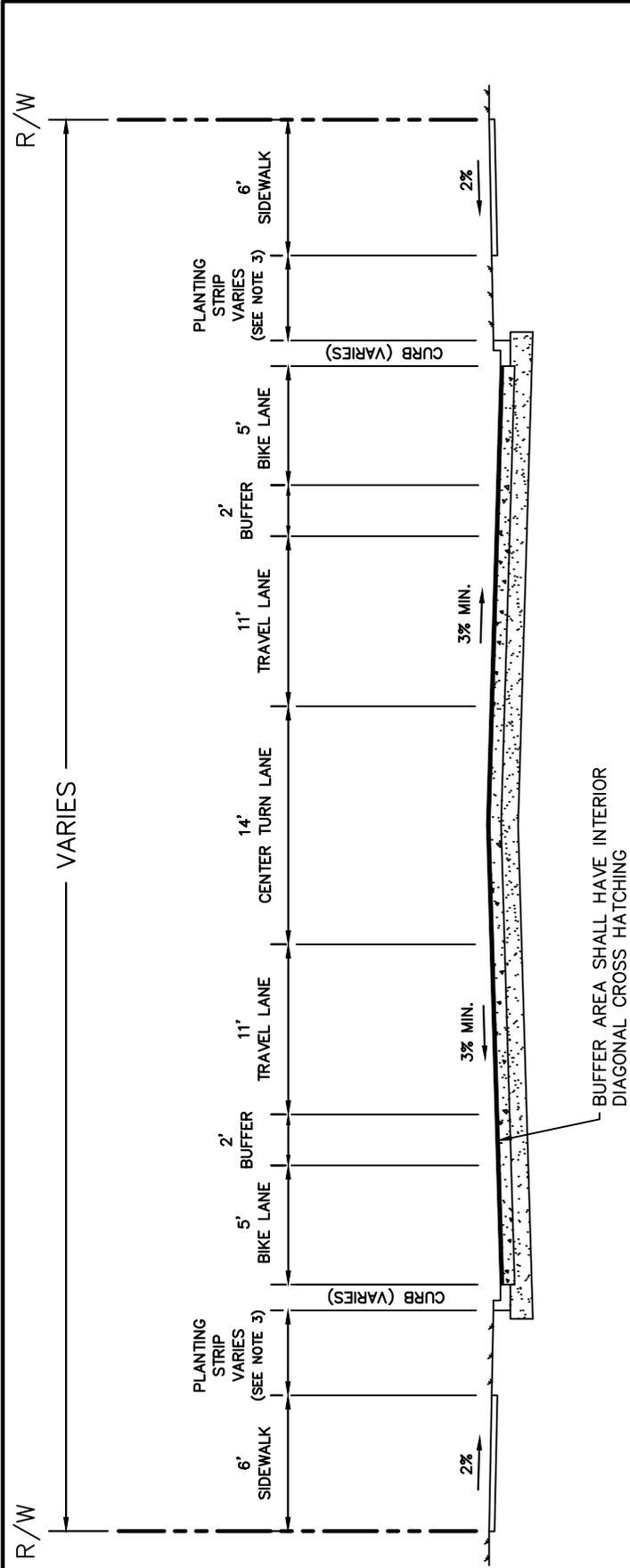
**CITY OF JACKSONVILLE
STANDARD**

**STREET CLASSIFICATION
DOWNTOWN AVENUE**

N.T.S. PLATE P-123

DATE DRAWN 1/31/17

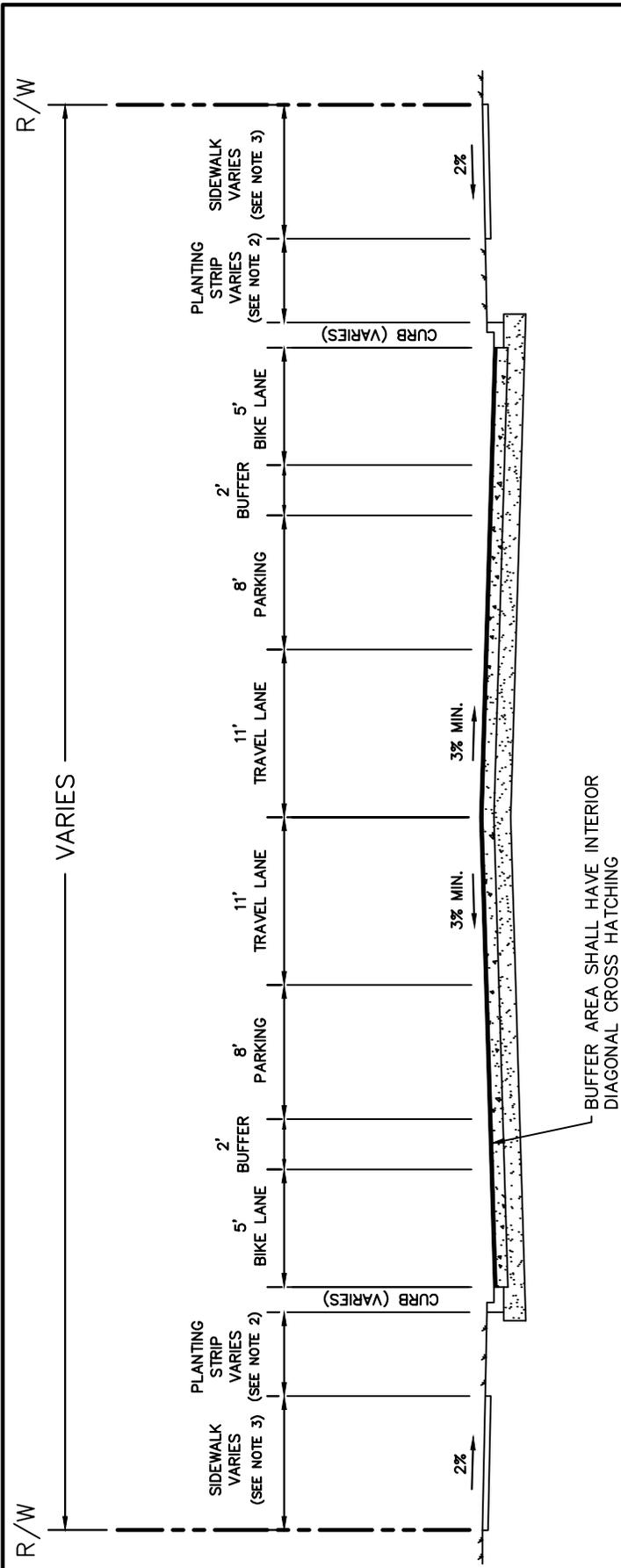
REVISED DATE 7/10/20



— BUFFER AREA SHALL HAVE INTERIOR DIAGONAL CROSS HATCHING

1. REFER TO SECTION 3.3 OF THE LAND DEVELOPMENT PROCEDURES MANUAL FOR REFER TO SECTION 3.3 OF THE LAND DEVELOPMENT PROCEDURES MANUAL FOR ROADWAY PAVEMENT, SUB-BASE, BASE COURSE, SURFACE COURSE, AND CONCRETE REQUIREMENTS.
2. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODED.
3. PLANTING STRIP TO HAVE A DESIRED MINIMUM OF 5' WIDTH. 8' IS DESIRED IF STREET TREES ARE INCLUDED.
4. POSTED SPEED: ≤ 35 MPH.

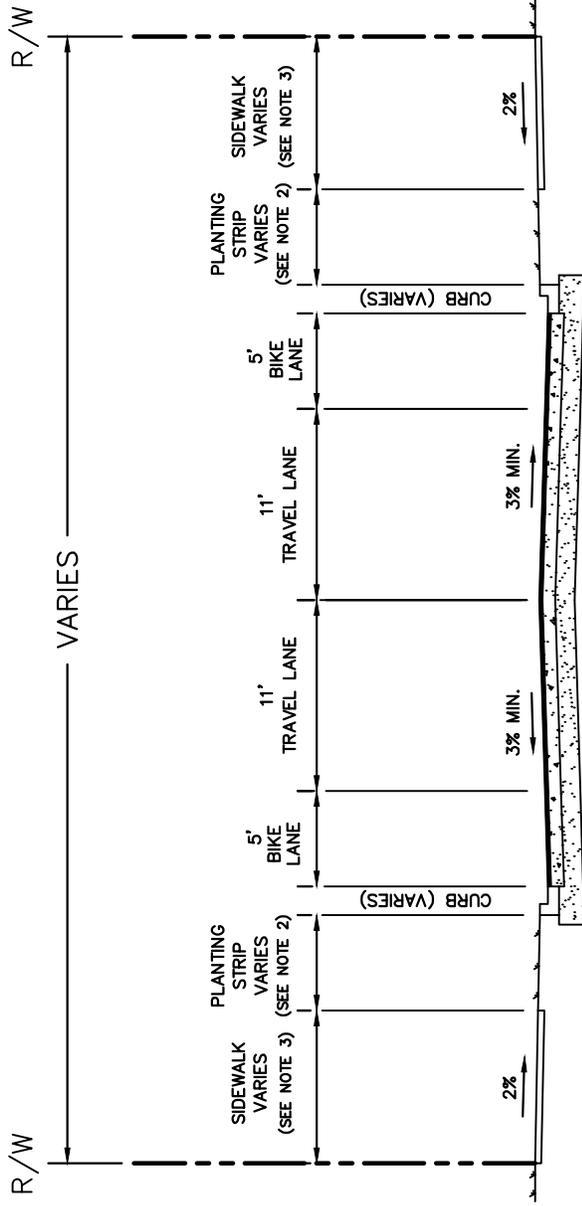
	<p>CITY OF JACKSONVILLE STANDARD</p>		<p>STREET CLASSIFICATION LIMITED AVENUE</p>	<p>N.T.S.</p>	<p>PLATE P-124</p>
	<p>DATE DRAWN 9/9/20</p>		<p>REVISD DATE ---/---/---</p>		



**CURB & GUTTER
W/ PARKING**

1. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODDED.
2. PLANTING STRIP TO HAVE A DESIRED MINIMUM OF 5' WIDTH. 8' IS DESIRED IF STREET TREES ARE INCLUDED.
3. MINIMUM SIDEWALK WIDTH DETERMINED BY DEVELOPMENT AREA:
 URBAN = 6' DOWNTOWN = 8'
 SUBURBAN = 6' URBAN PRIORITY = 8'
 RURAL = 5'
4. POSTED SPEED: ≤ 25 MPH.

	CITY OF JACKSONVILLE STANDARD		STREET CLASSIFICATION NEIGHBORHOOD COMMERCIAL STREET		N.T.S.	PLATE P-125
			DATE DRAWN 1/31/17			
		REVISED DATE 7/10/20				



**PAVING CURB &
GUTTER**

1. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODDED.
2. PLANTING STRIP TO HAVE A DESIRED MINIMUM OF 5' WIDTH. 8' IS DESIRED IF STREET TREES ARE INCLUDED.
3. MINIMUM SIDEWALK WIDTH DETERMINED BY DEVELOPMENT AREA:
 URBAN = 6' DOWNTOWN = 8'
 SUBURBAN = 6' URBAN PRIORITY = 8'
 RURAL = 5'
4. CROSS SECTION CAN INCLUDE EITHER A 5' BIKE LANE AND NO PARKING OR PARKING LANES AND SHARROWS.
5. POSTED SPEED: ≤ 25 MPH.



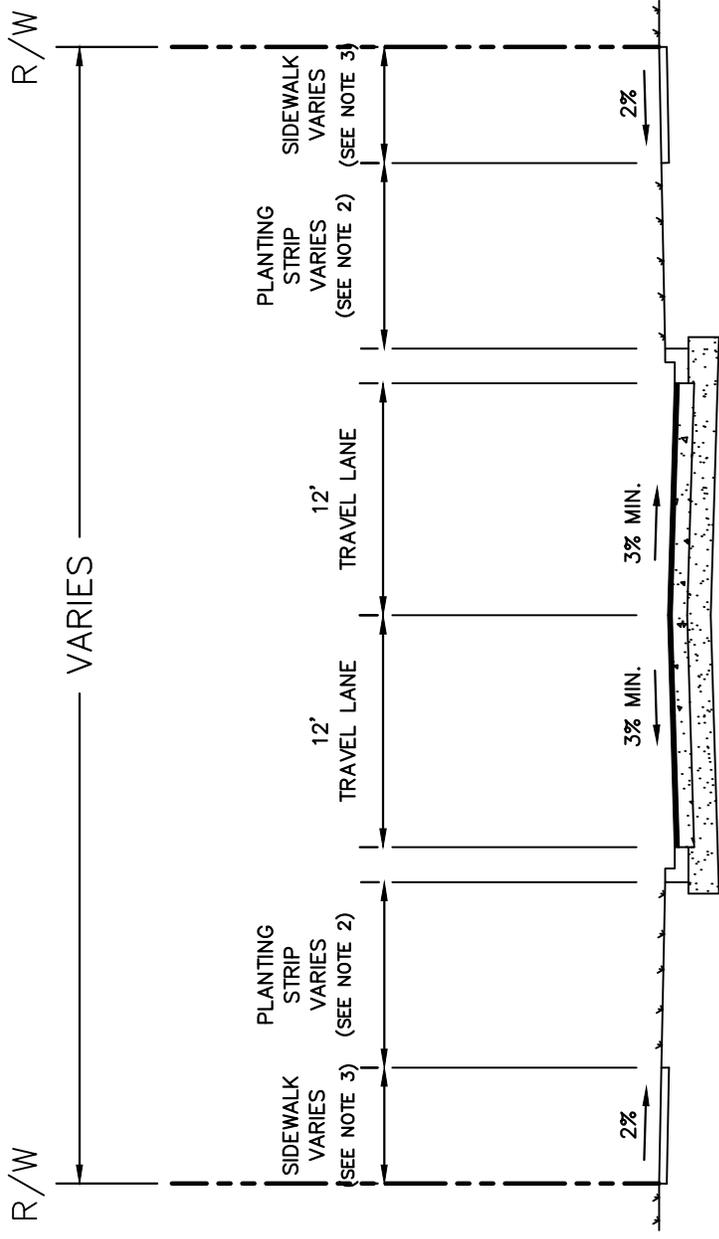
**CITY OF JACKSONVILLE
STANDARD**

STREET CLASSIFICATION
NEIGHBORHOOD
RESIDENTIAL STREET

N.T.S. PLATE P-126

DATE DRAWN 1/31/17

REVISED DATE 2/21/20



PAVING CURB & GUTTER

1. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESEEDDED.
2. PLANTING STRIP TO HAVE A DESIRED MINIMUM OF 5' WIDTH. 8' IS DESIRED IF STREET TREES ARE INCLUDED.
3. OPTION A) 5' SIDEWALK ON BOTH SIDES OF THE STREET
OPTION B) 6' SIDEWALK ON ONE SIDE OF THE STREET
4. POSTED SPEED : ≤ 25 MPH.



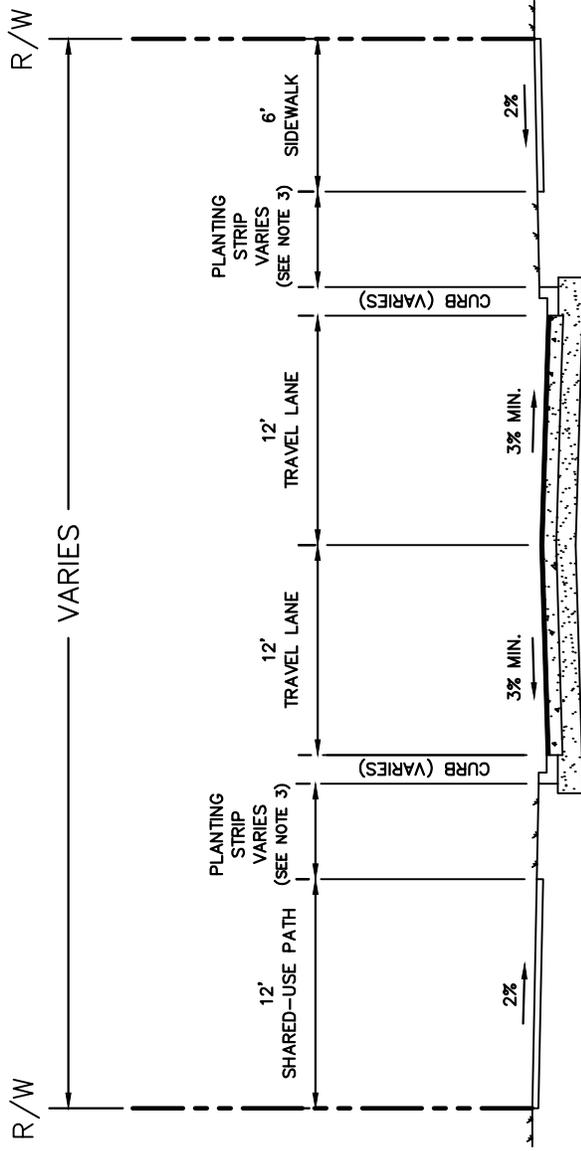
**CITY OF JACKSONVILLE
STANDARD**

**STREET CLASSIFICATION
RESIDENTIAL LOCAL
SUBDIVISION STREET**

N.T.S. PLATE P-127

DATE DRAWN 10/6/17

REVISED DATE 2/21/20



1. REFER TO SECTION 3.3 OF THE LAND DEVELOPMENT PROCEDURES MANUAL FOR REFER TO SECTION 3.3 OF THE LAND DEVELOPMENT PROCEDURES MANUAL FOR ROADWAY PAVEMENT, SUB-BASE, BASE COURSE, SURFACE COURSE, AND CONCRETE REQUIREMENTS.
2. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODED.
3. PLANTING STRIP TO HAVE A DESIRED MINIMUM OF 5' WIDTH. 8' IS DESIRED IF STREET TREES ARE INCLUDED.
4. POSTED SPEED: ≤ 35 MPH.



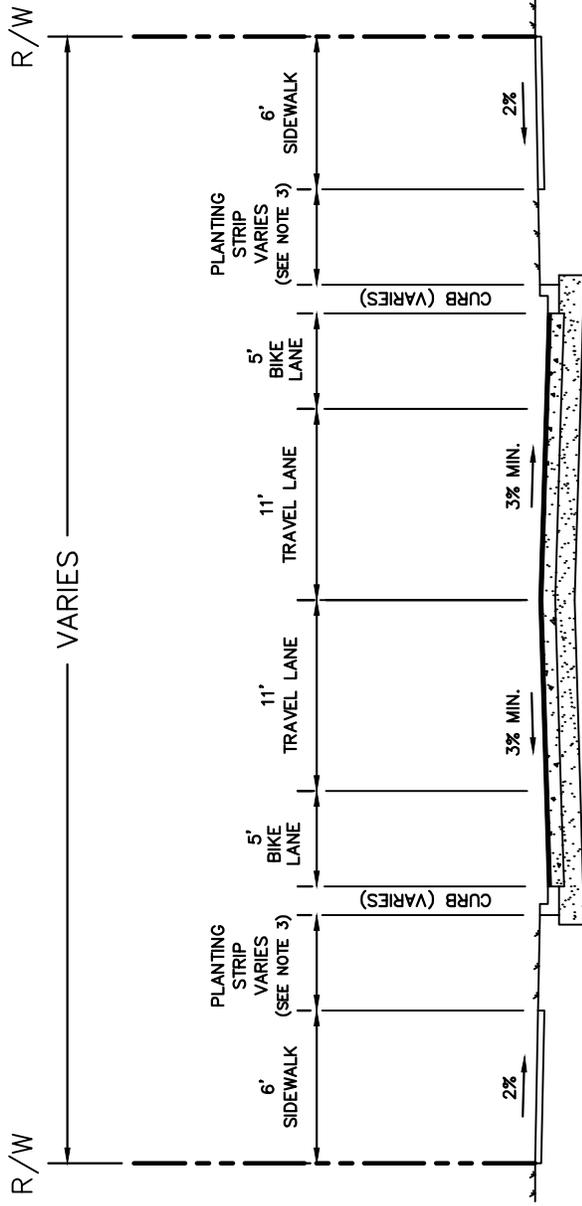
**CITY OF JACKSONVILLE
STANDARD**

STREET CLASSIFICATION
INDUSTRIAL STREET

N.T.S. PLATE P-128

DATE DRAWN 9/9/20

REVISED DATE --/--/--



1. REFER TO SECTION 3.3 OF THE LAND DEVELOPMENT PROCEDURES MANUAL FOR REFER TO SECTION 3.3 OF THE LAND DEVELOPMENT PROCEDURES MANUAL FOR ROADWAY PAVEMENT, SUB-BASE, BASE COURSE, SURFACE COURSE, AND CONCRETE REQUIREMENTS.
2. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE RESODDED.
3. PLANTING STRIP TO HAVE A DESIRED MINIMUM OF 5' WIDTH. 8' IS DESIRED IF STREET TREES ARE INCLUDED.
4. POSTED SPEED: ≤ 35 MPH.



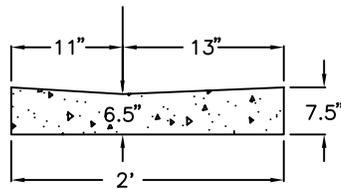
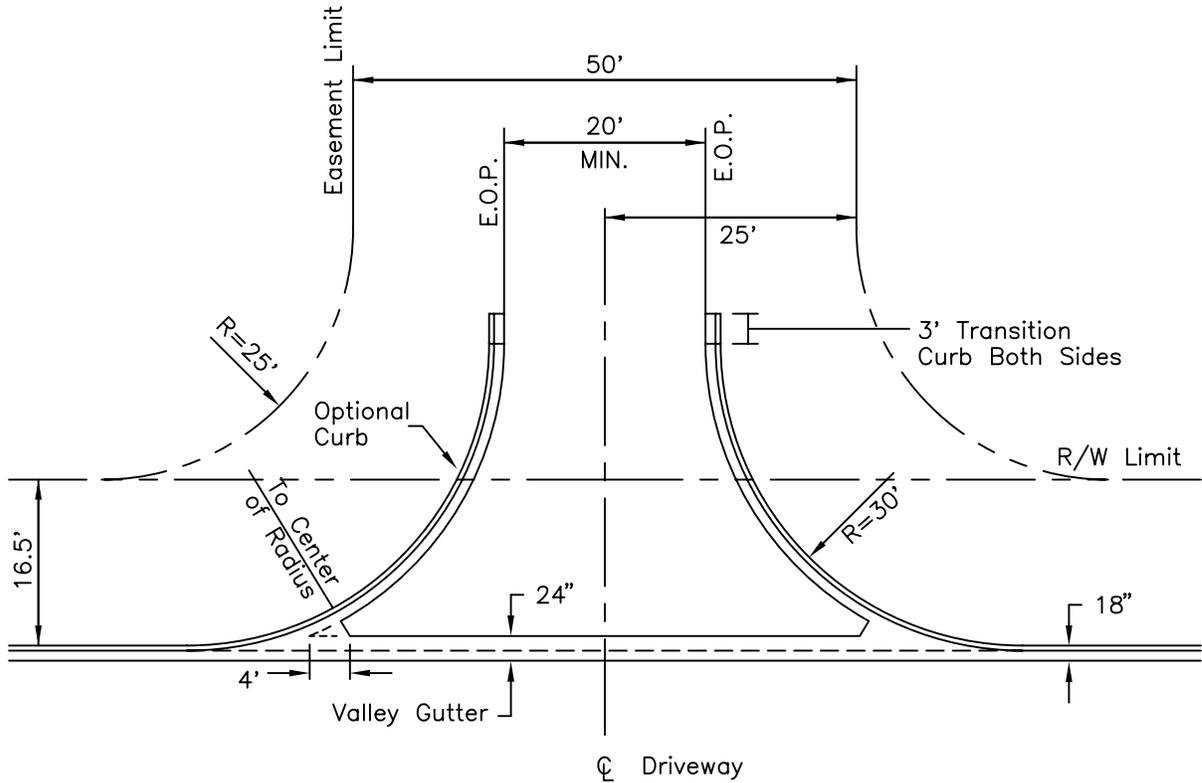
*CITY OF JACKSONVILLE
STANDARD*

STREET CLASSIFICATION
BUSINESS PARK STREET

N.T.S. PLATE P-129

DATE DRAWN 9/9/20

REVISED DATE --/--/---/---



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" STABILIZED SUBGRADE OR 12" LIMEROCK BASE ON COMPACTED SUBGRADE.

PRIVATE ROAD
DRIVEWAY ENTRANCES

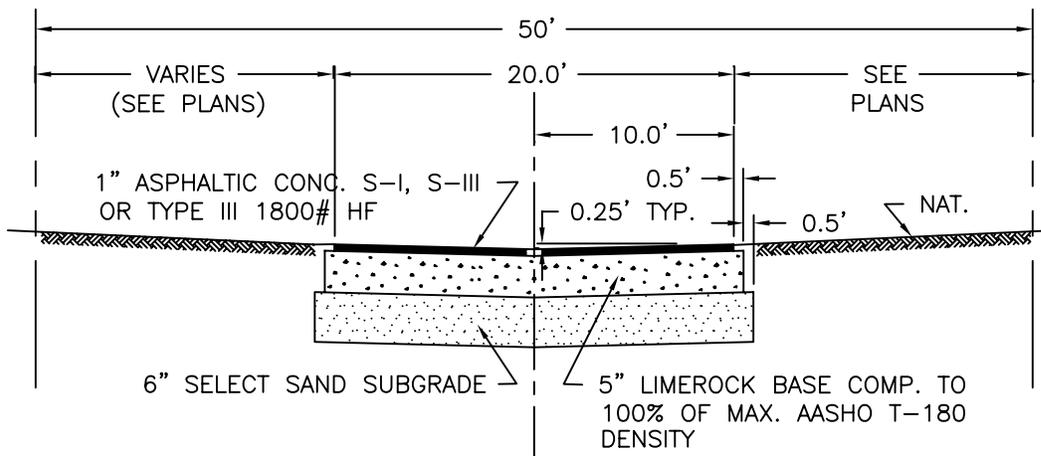
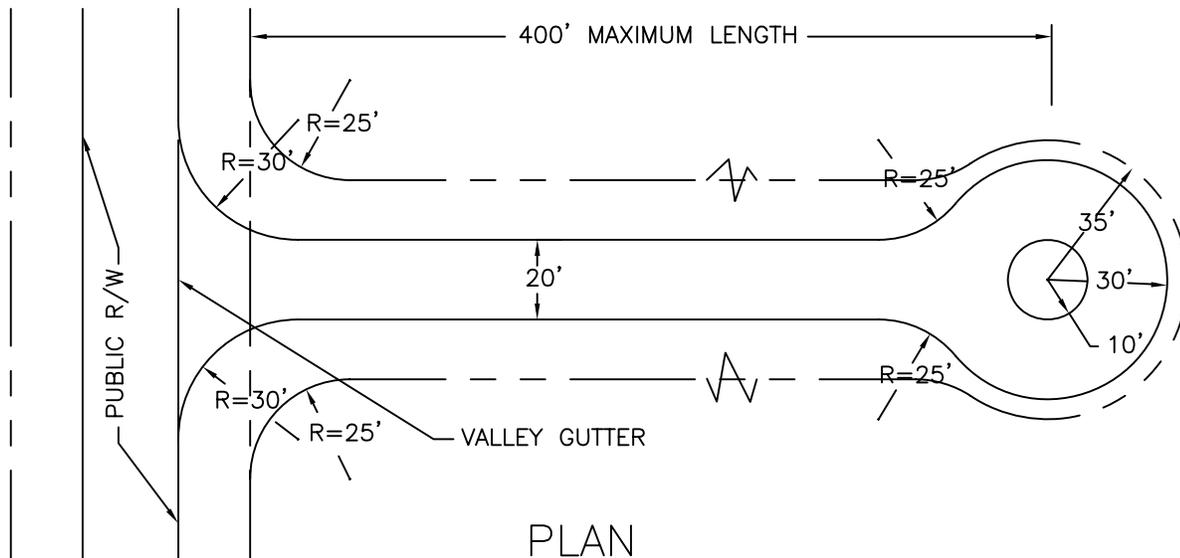
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE P-201

DATE DRAWN 11-5-81

REVISED DATE 10-15-97



PRIVATE DRIVES ONLY
TYPICAL CROSS SECTION

NOTE:

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.

NOTE:

SUCH DRIVES ARE SPECIFICALLY PROHIBITED FROM BEING DEDICATED TO THE CITY OF JACKSONVILLE FOR MAINTENANCE.

The use of inverted crown section (private drive) is for use ONLY within Planned Unit Developments where such rezoning specifically provides for its use. It is intended that such drives be utilized only within patio home/zero lot line developments and owned by an undivided, proportionate share interest of contiguous property owners.

INVERTED CROWN
PRIVATE DRIVE

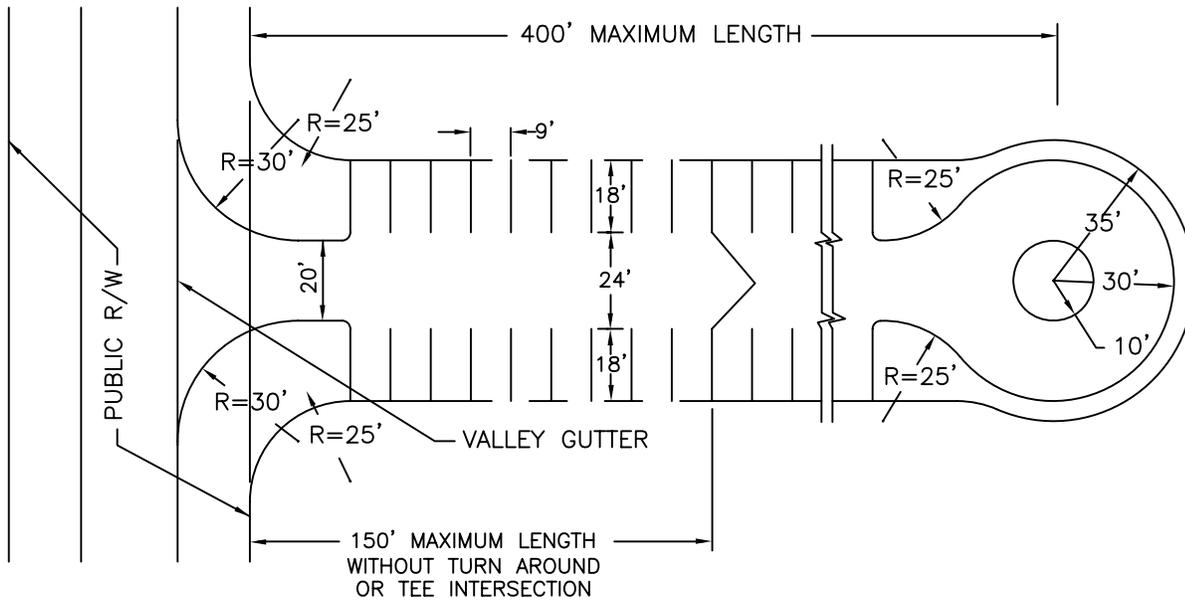
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

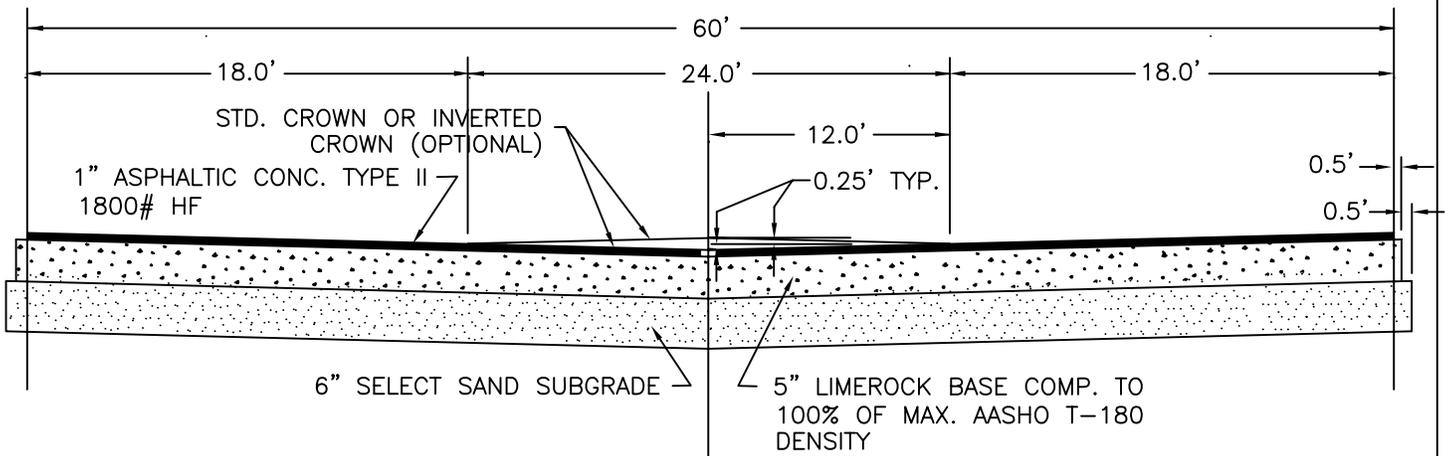
PLATE P-202

DATE DRAWN 5-10-89

REVISED DATE 10-15-97



PLAN
SCALE: 1" = 50'



PRIVATE DRIVES ONLY
TYPICAL CROSS SECTION

SCALE:
H: 1" = 10'
V: 1" = 2'

NOTE:

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.

NOTE:

SUCH DRIVES ARE SPECIFICALLY PROHIBITED FROM BEING DEDICATED TO THE CITY OF JACKSONVILLE FOR MAINTENANCE.

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

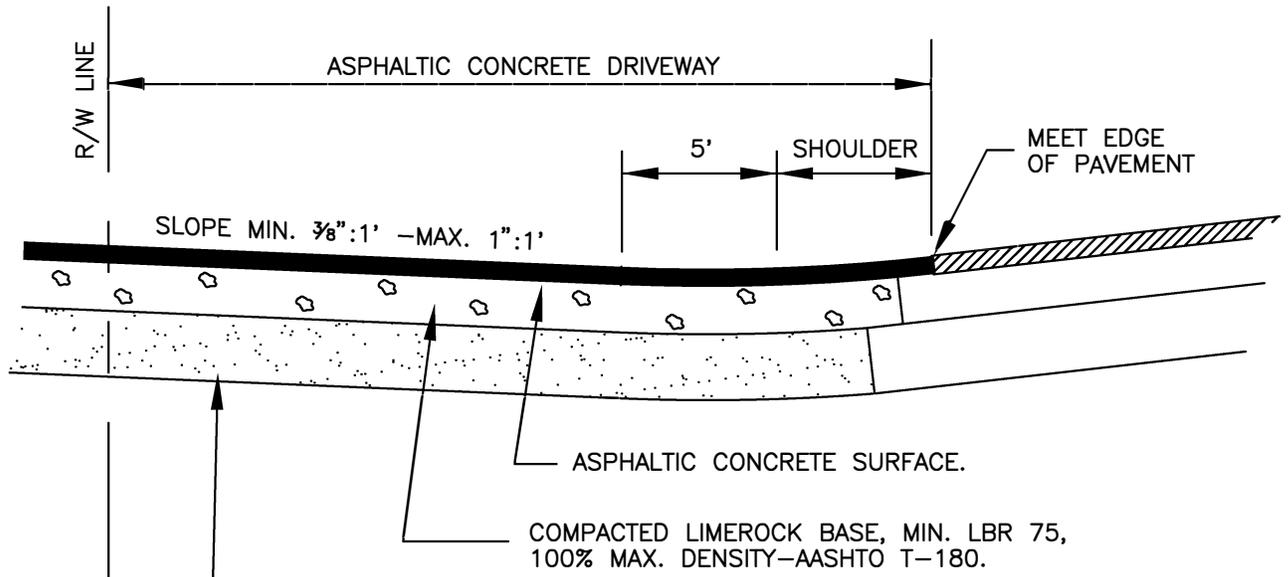
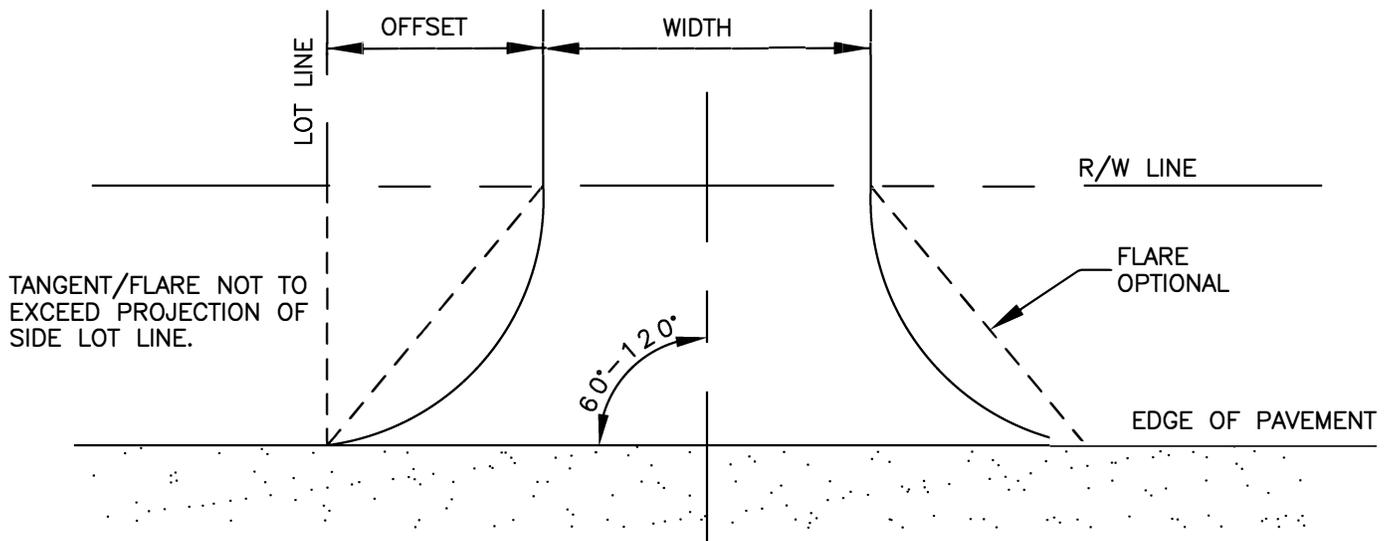
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE P-203

DATE DRAWN 5-24-89

REVISED DATE 10-16-97



- SUB-BASE OPTIONS (SEE CHART BELOW FOR THICKNESSES).
1. STABILIZED SUB-BASE MIN. LBR 30 COMPACTED TO 95% OF MAX. DENSITY AASHTO T-180.
 2. SUB-BASE COMPACTED TO 95% OF MAX. DENSITY AASHTO T-180.

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	LIMEROCK	STABILIZED SUB-BASE	ASPHALT	LIMEROCK	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 1/2"	8"	12"	1 1/4"	12"	12"	30'	30'	N/A

STANDARD ASPHALTIC
CONCRETE DRIVEWAY

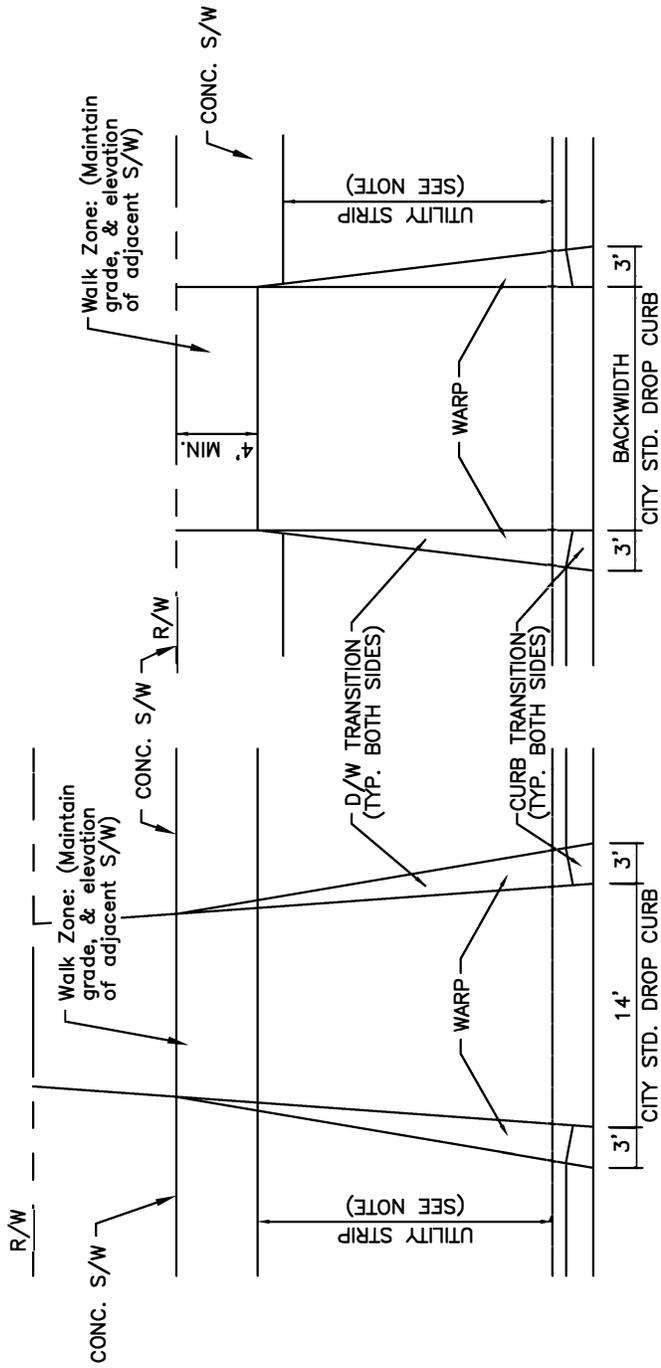
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE P-204

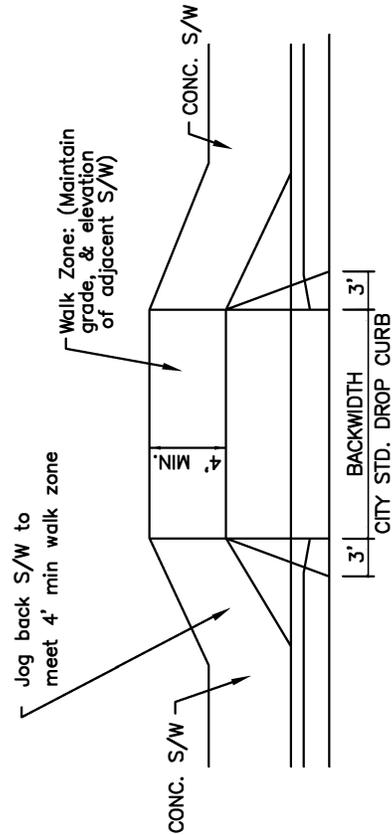
DATE DRAWN 11-19-81

REVISED DATE 10-9-97



Unconstrained Condition

Constrained Condition: Cannot Maintain Full Walk Zone Width



Constrained Condition: Utility Strip Too Short

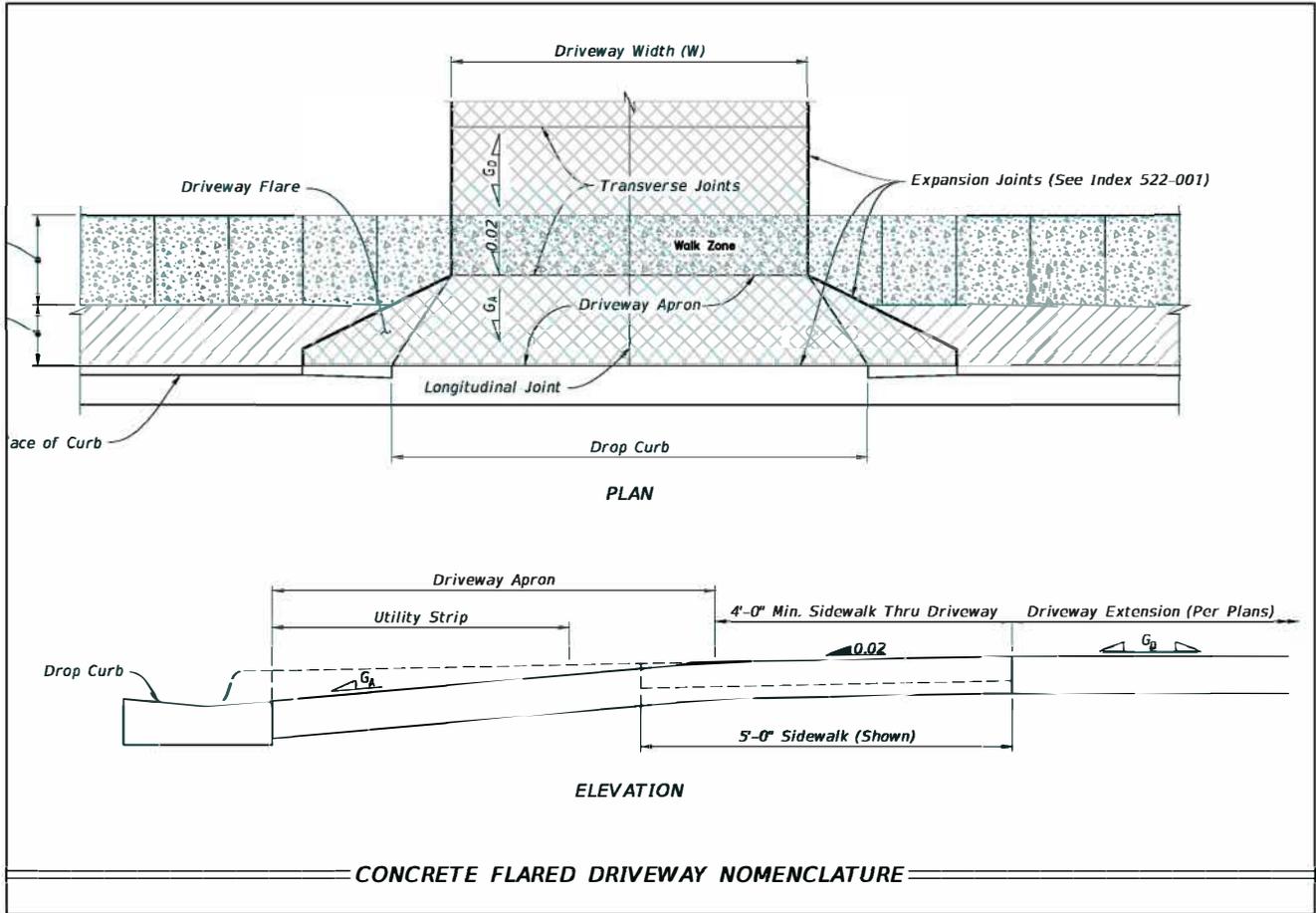
Notes:

If there is not enough R/W then the developer shall jog the S/W back and provide an easement to the City to maintain the minimum walk zone.

If the driveway crosses a shared-use-path then the minimum width of the walk zone shall be equal to the full width of the shared-use-path.

See LDPM Section 2.0 for additional requirements.

STANDARD FLARED DRIVEWAY CONSTRUCTION
 ENGINEERING DIVISION – CITY OF JACKSONVILLE, FLORIDA
PERMIT REQUIRED

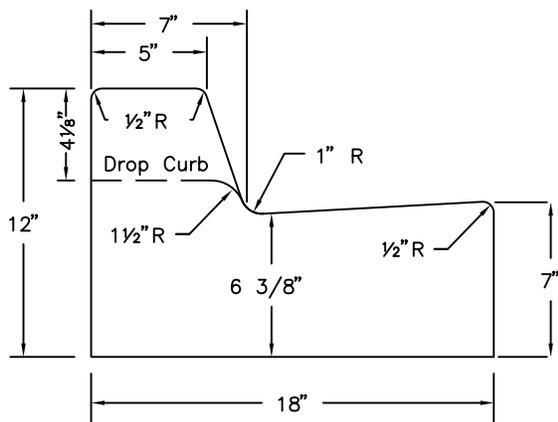


Source FDOT Index 522-003

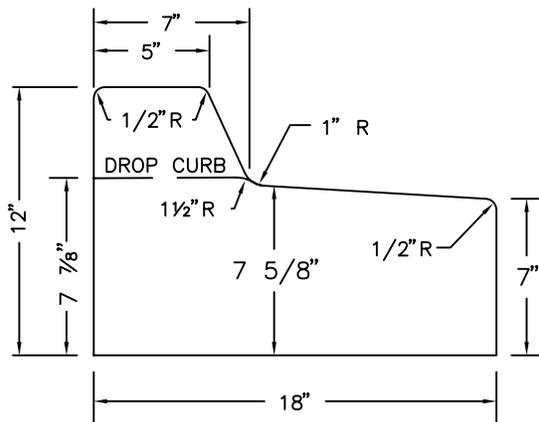
Notes:

- Use FDOT Index 522-003 for maximum grade requirements.
- Use a minimum of 2,500psi concrete per AASHTO T-180.
- Use a minimum concrete thickness of 5".
- See LDPM Section 2 for additional requirements.

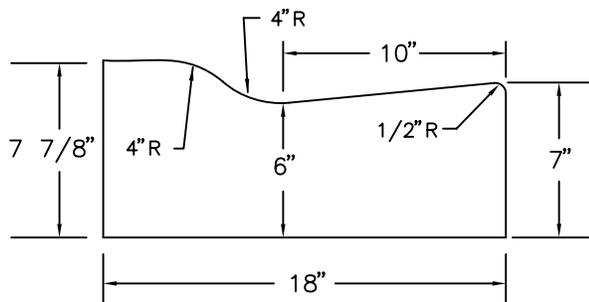
FLARED CONCRETE DRIVEWAY DETAILS	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-206
		DATE DRAWN	JULY 1978
		REVISED DATE	12-22-22



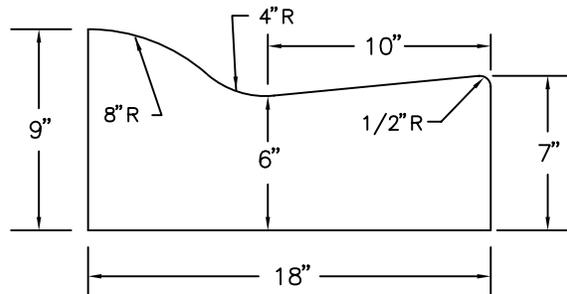
CITY STANDARD



MEDIAN CURB

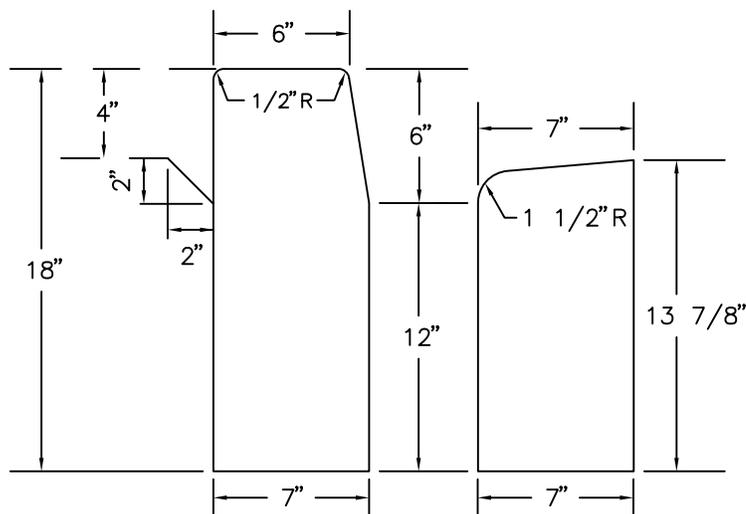


DROP CURB



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

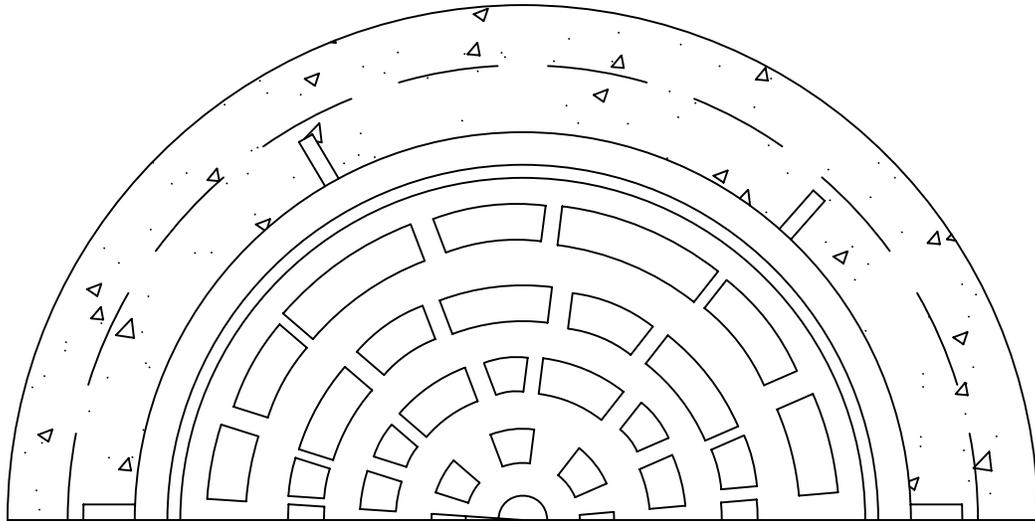
CITY OF JACKSONVILLE STANDARD

N.T.S.

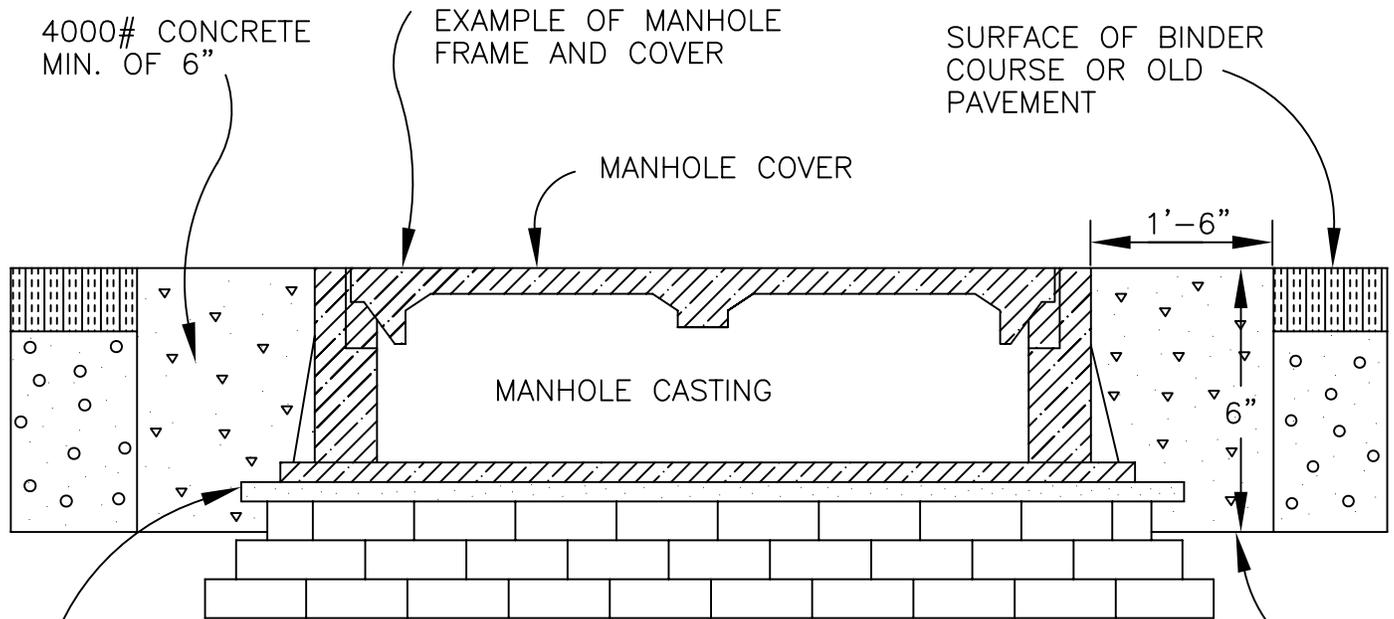
PLATE P-301

DATE DRAWN 11-07-72

REVISED DATE 08-12-81



HALF SECTION



4000# CONCRETE
MIN. OF 6"

EXAMPLE OF MANHOLE
FRAME AND COVER

SURFACE OF BINDER
COURSE OR OLD
PAVEMENT

MANHOLE COVER

1'-6"

MANHOLE CASTING

6"

GROUTED AND SEALED
MORTAR JOINT

WATER AND HARD TAMP
SUBGRADE TO 100% OF
AASHTO T180 OR ASTM D698-70

MANHOLE ADJUSTMENT DETAILS

REVISED 8-1-90

STANDARD PAVING
MANHOLE ADJUSTMENT
DETAILS

*CITY OF
JACKSONVILLE
STANDARD*

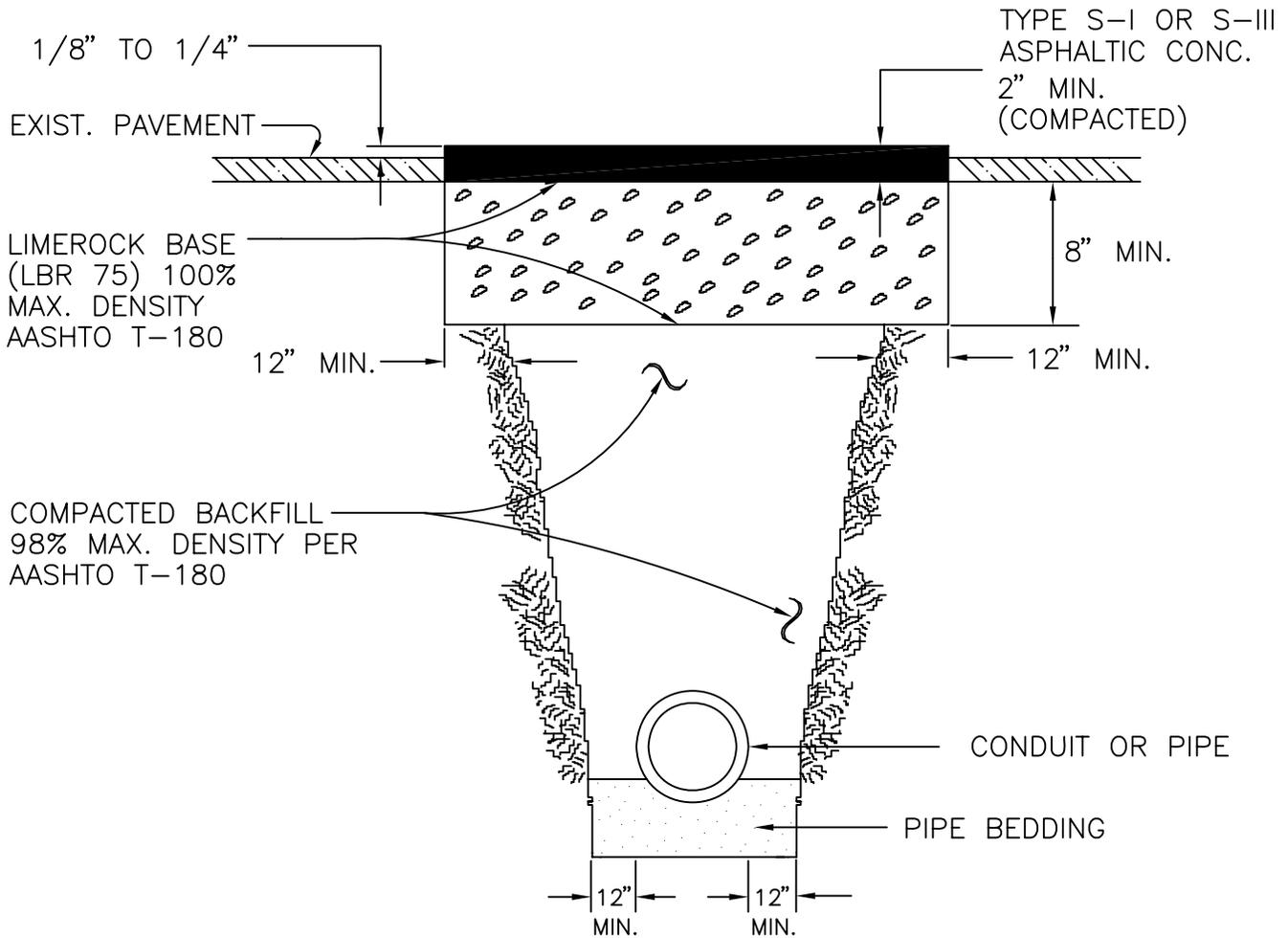
N.T.S.

PLATE P-401

DATE DRAWN 10-30-73

REVISED DATE 10-9-97

CASE I



NOTE:
METHOD AND MATERIALS OF REPAIR SUBJECT TO
CITY OF JACKSONVILLE CONSTRUCTION REQUIREMENTS
FOR NEW PAVEMENT TYPE S-I OR S-III ASPHALT.

STANDARD PAVING
REPAIR DETAIL

*CITY OF
JACKSONVILLE
STANDARD*

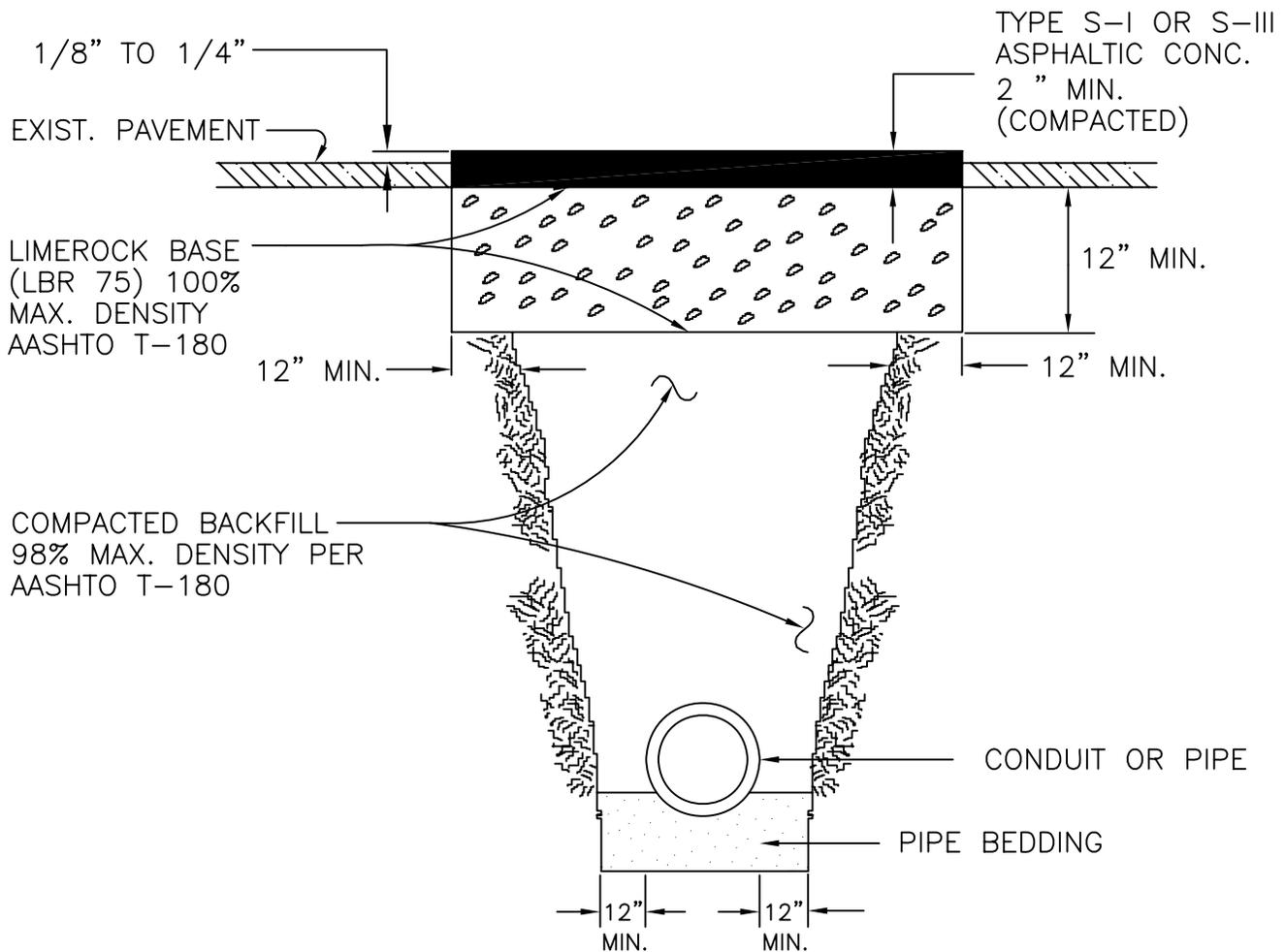
N.T.S.

PLATE P-402

DATE DRAWN DEC., 1971

REVISED DATE APRIL 1980

CASE II



NOTE:
METHOD AND MATERIALS OF REPAIR SUBJECT TO
CITY OF JACKSONVILLE CONSTRUCTION REQUIREMENTS
FOR NEW PAVEMENT TYPE S-I OR S-III ASPHALT.

STANDARD PAVING
REPAIR DETAIL

*CITY OF
JACKSONVILLE
STANDARD*

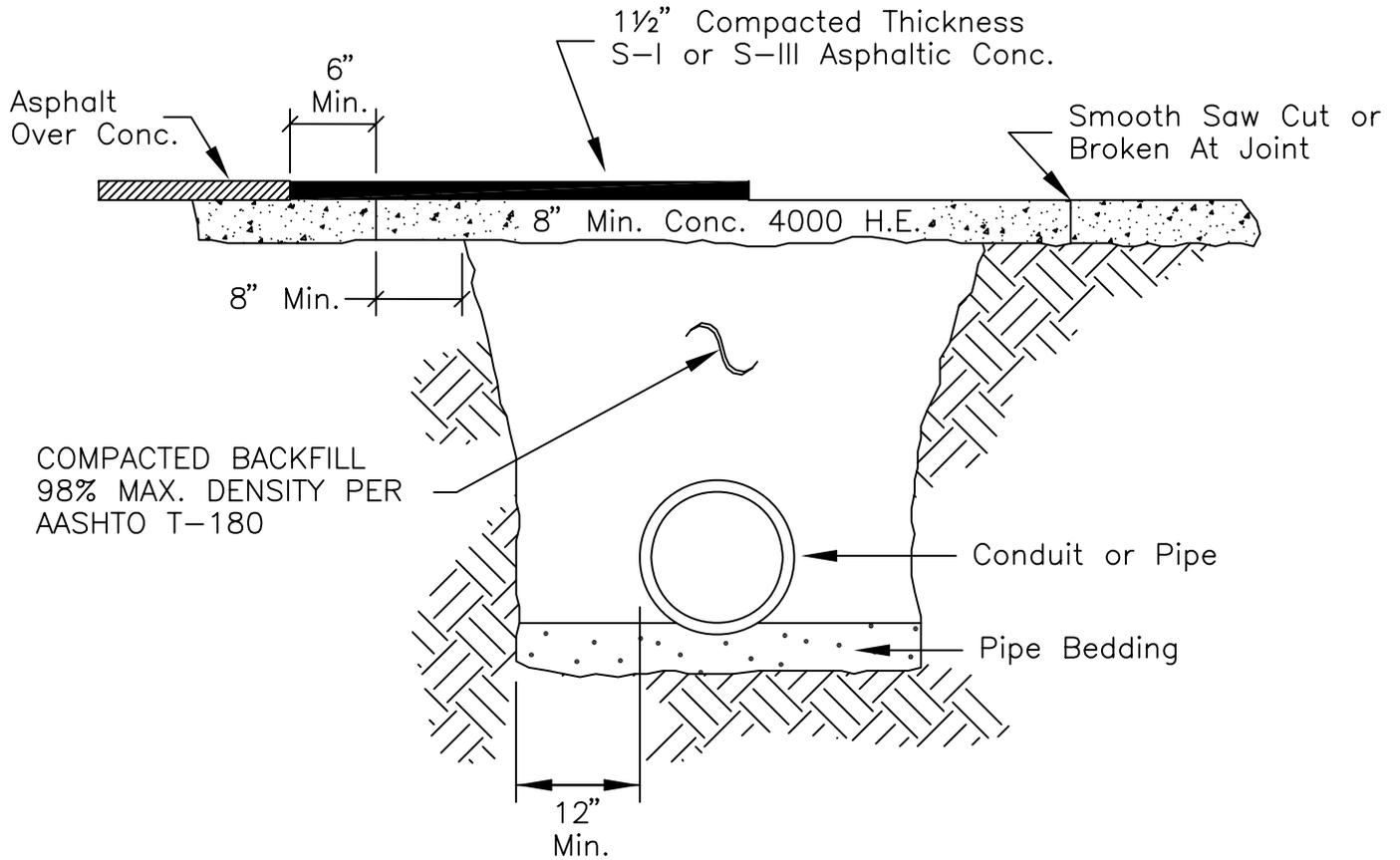
N.T.S.

PLATE P-403

DATE DRAWN DEC., 1971

REVISED DATE 9/22/97

CASE III



Note: Method And Materials Of Repair Subject To City Of Jacksonville Construction Requirements For New Pavement S-I Or S-III Asphaltic Conc.

STANDARD PAVING
REPAIR DETAIL

*CITY OF
JACKSONVILLE
STANDARD*

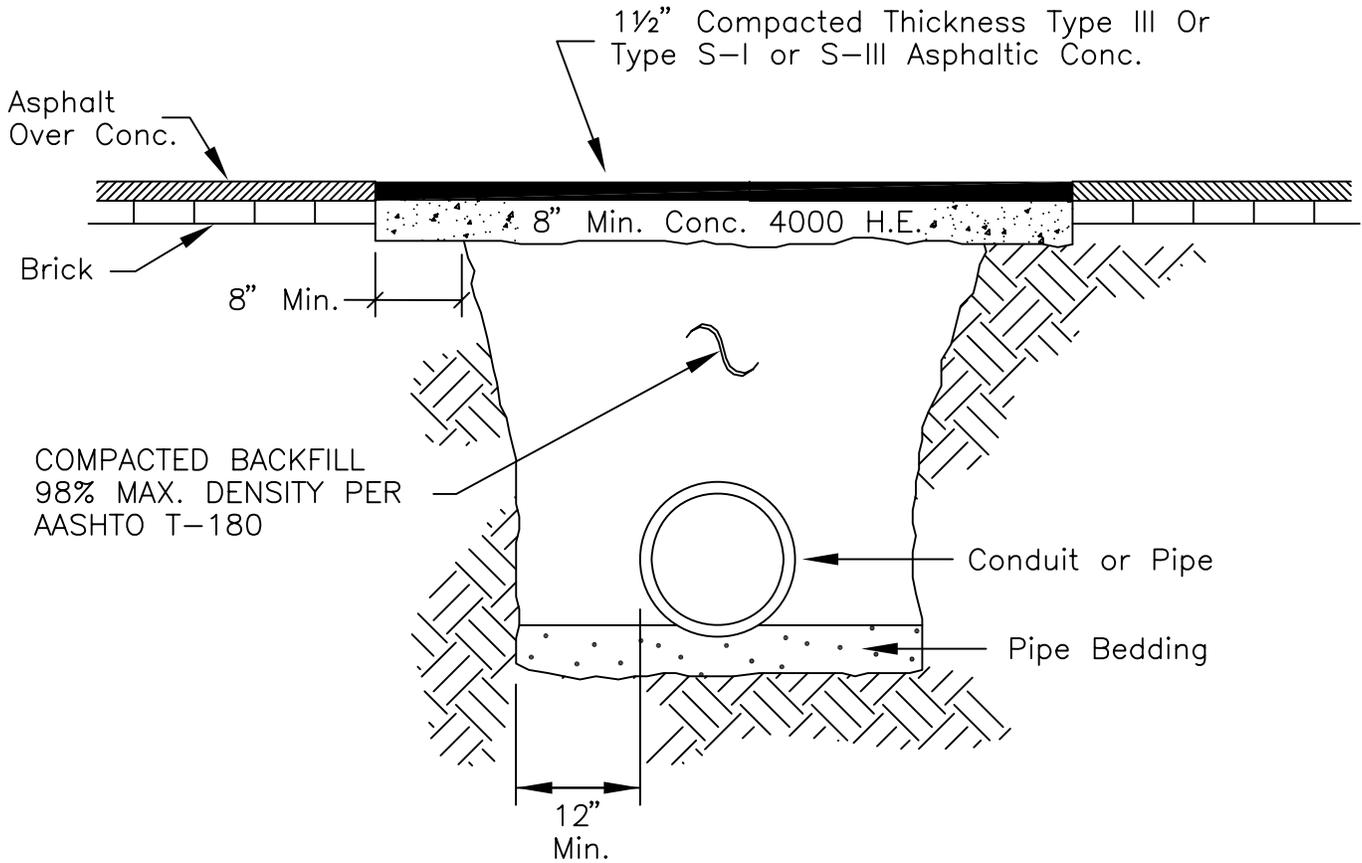
N.T.S.

PLATE P-404

DATE DRAWN 4/80

REVISED DATE 9/22/97

CASE IV



Note: Method And Materials Of Repair Subject To City Of Jacksonville Construction Requirements For New Pavement Type III, Type S-I Or S-III Asphaltic Conc.

STANDARD PAVING
REPAIR DETAIL

*CITY OF
JACKSONVILLE
STANDARD*

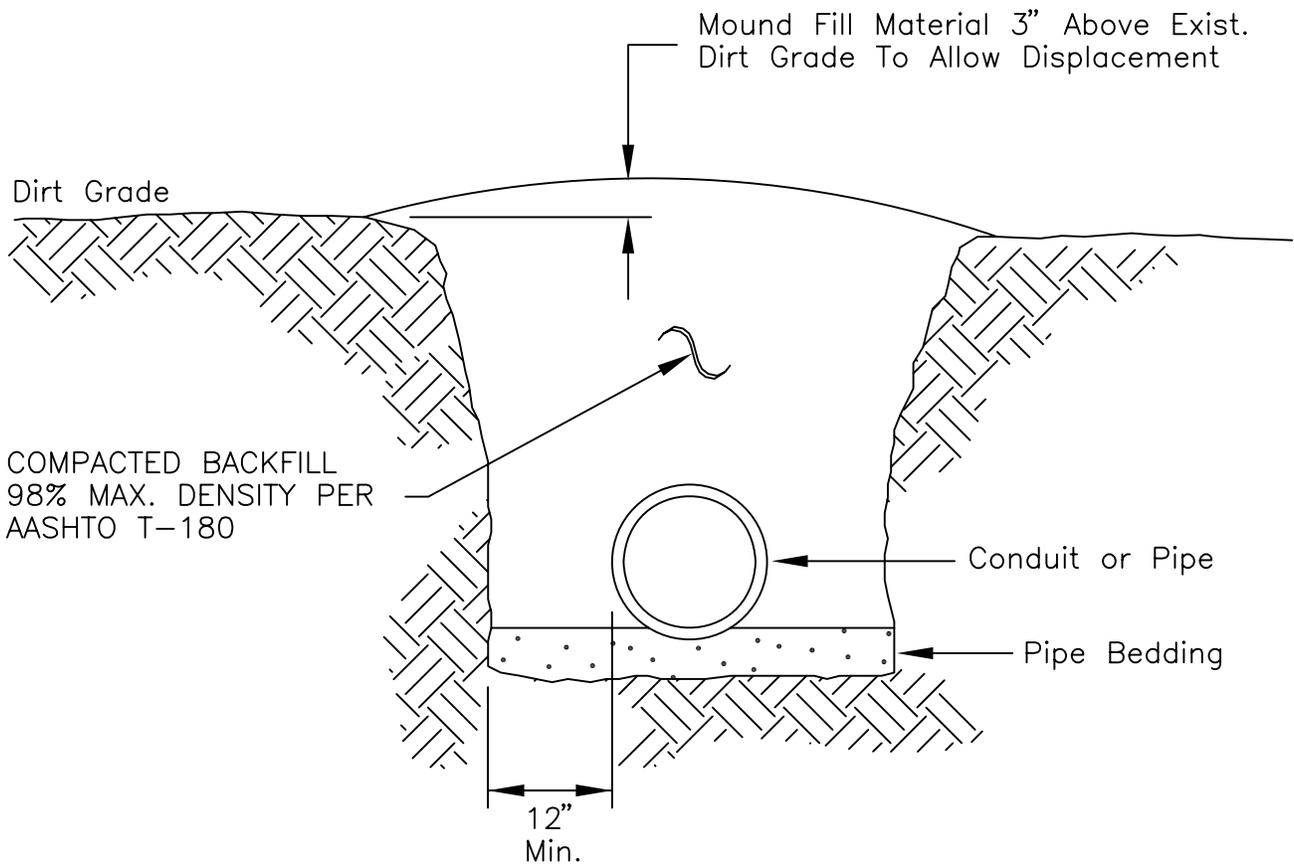
N.T.S.

PLATE P-405

DATE DRAWN 5/80

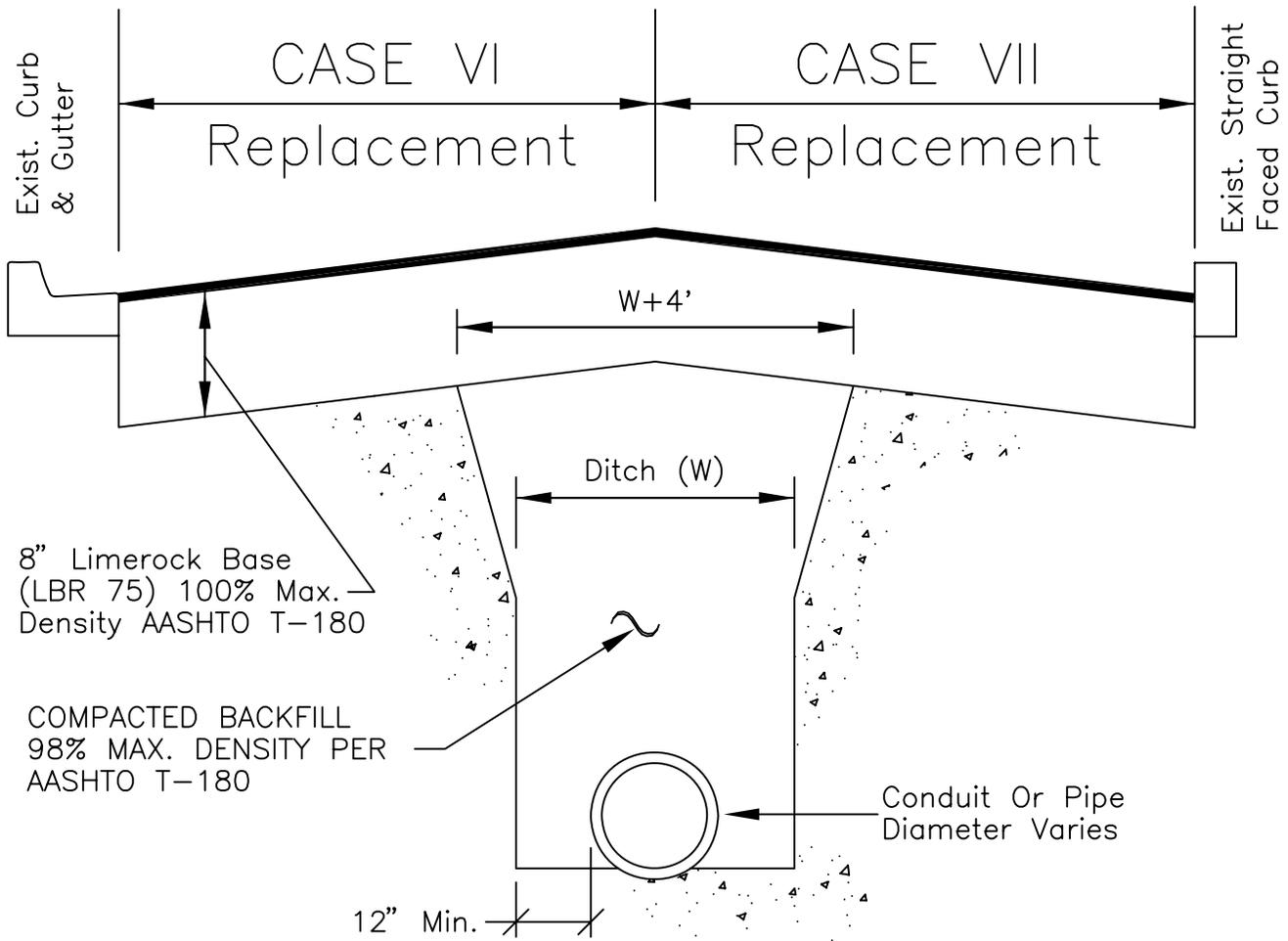
REVISED DATE 9/23/97

CASE V UNPAVED ROADS



UNPAVED ROADWAY REPAIR DETAIL	<i>CITY OF JACKSONVILLE STANDARD</i>		N.T.S.	PLATE P-406
			DATE DRAWN	4/80
			REVISED DATE	9/23/97

New Asphaltic Conc. Surface Course
 Type S-I, S-III, Or Type III 1½" Min.
 (Comp.) Thickness, Replacing Existing
 Pavement.



CASE VI, VII, & VIII PAVEMENT REPLACEMENT

Notes:

1. Case VI-A Thru VIII-A Replacement Shall Require 2" S-I, S-III, Or Type III 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 Sawn.
4. In The Absence Of Straight Faced Curb Or Curb & Gutter, The 1½" Or 2" Surface Course Shall Be Extended To The Edge Of The Exist. Pavement Removed (Case VIII & VIIIA Replacement).
5. Type S-I Or S-III Asphalt Shall Be Used On State & Federal Highways, S-I, S-III Or Type III Asphalt Shall Be Used On City Streets.
6. Methods, Materials, & Repair For State Highways Shall Be In Full Compliance With The Terms Of The Florida Utility Permit Obtained.
7. 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.

STANDARD PAVING
 REPAIR DETAIL

*CITY OF
 JACKSONVILLE
 STANDARD*

N.T.S.

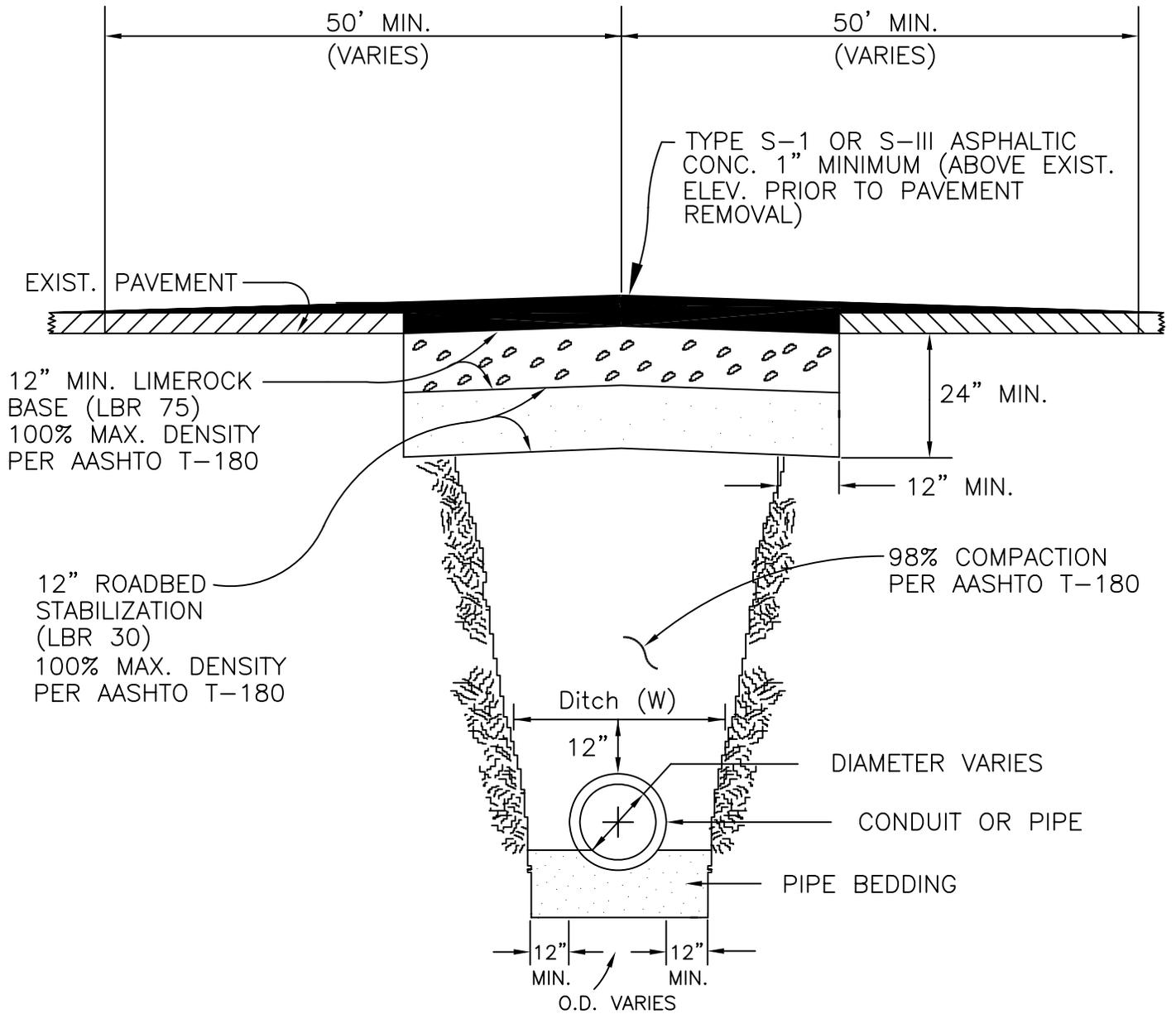
PLATE P-407

DATE DRAWN 4/80

REVISED DATE 9/23/97

CASE IX

NOTE: EXISTING PAVEMENT SHOULD BE MILLED PRIOR TO OVERLY



PAVEMENT REPLACEMENT

NO SCALE

STANDARD PAVING
REPAIR DETAIL

*CITY OF
JACKSONVILLE
STANDARD*

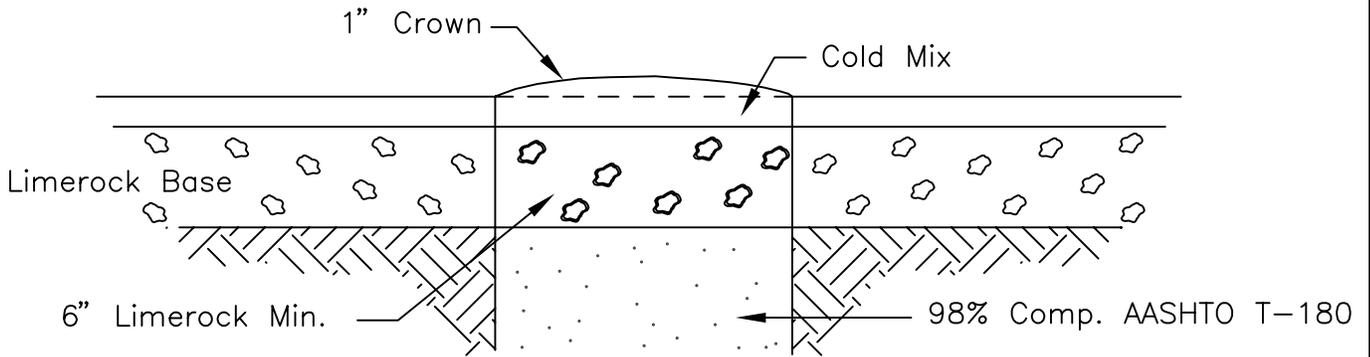
N.T.S.

PLATE P-408

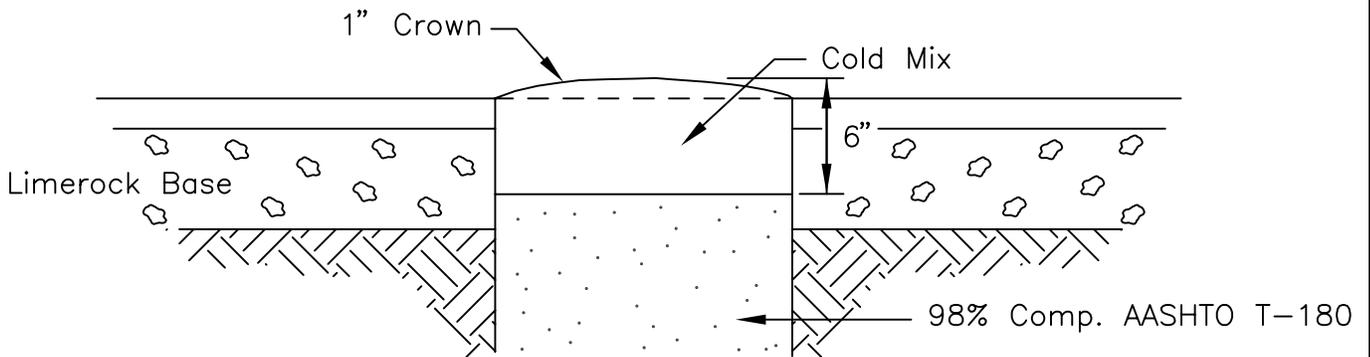
DATE DRAWN APRIL, 1980

REVISED DATE 9/5/03

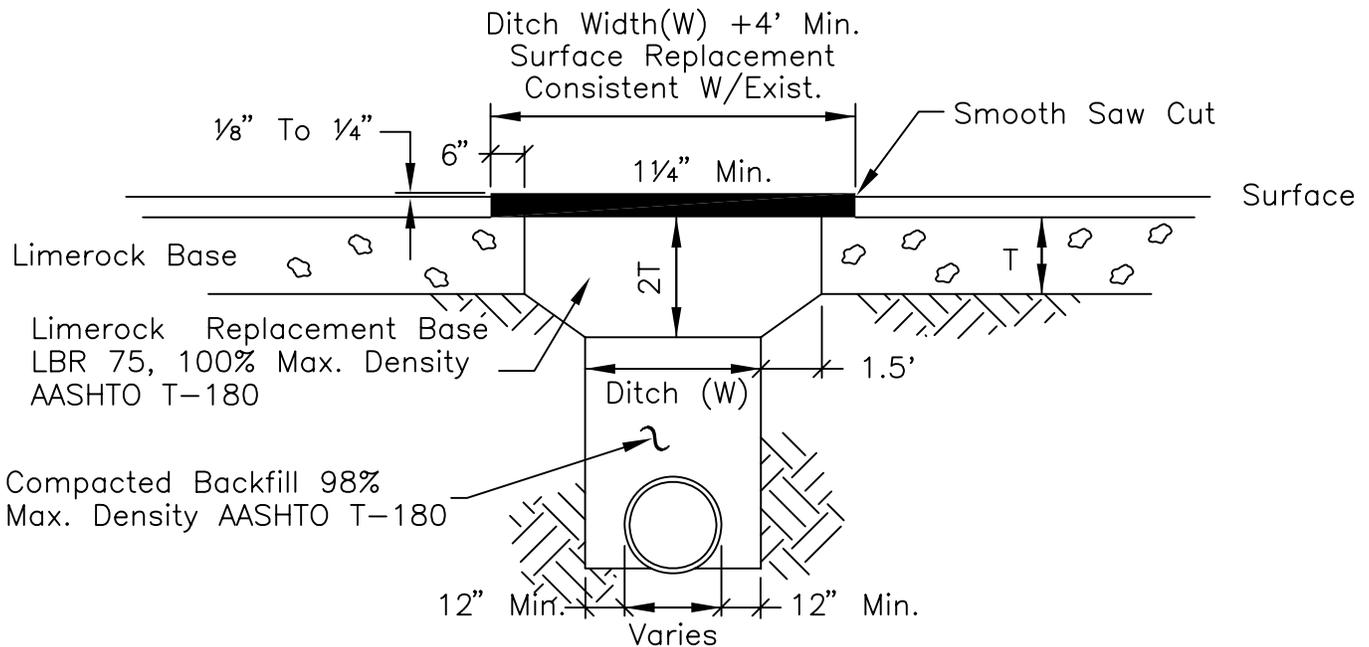
Case X



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.

STANDARD PAVING
REPAIR DETAILS

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE P-409

DATE DRAWN 7-6-73

REVISED DATE 9-18-96

Case XI

Replacement of P.C. Conc. Curb or
Curb & Gutter to be Same type &
Materials as That Removed.

1½" Compacted Thickness Hot
Mix Asphaltic Concrete Type S-I,
S-III Or Type III.

Exist. Asphaltic Conc.

Exist. Base T

Grass

Soil

See
LR
Note

6"

98% Max. Density Per
AASHTO T-180 Compacted
Backfill.

Conduit Or Pipe
Dia. Varies

12" Min.

Pipe Bedding

LR. Note: 6" Min. Or Equal To "T" ≥ 6" Limerock
Base (LBR 75), 100% Max. Density
AASHTO T-180

STANDARD PAVING
REPAIR DETAIL

*CITY OF
JACKSONVILLE
STANDARD*

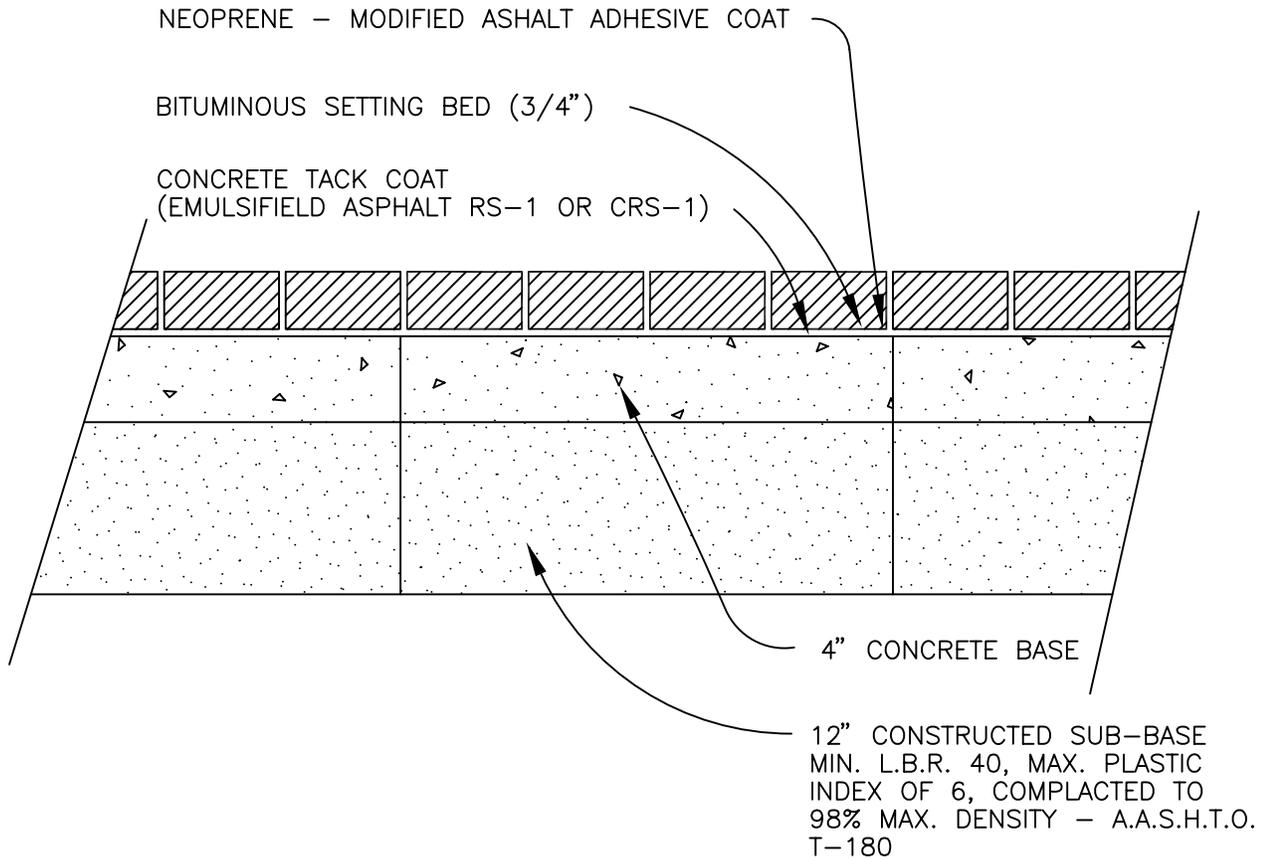
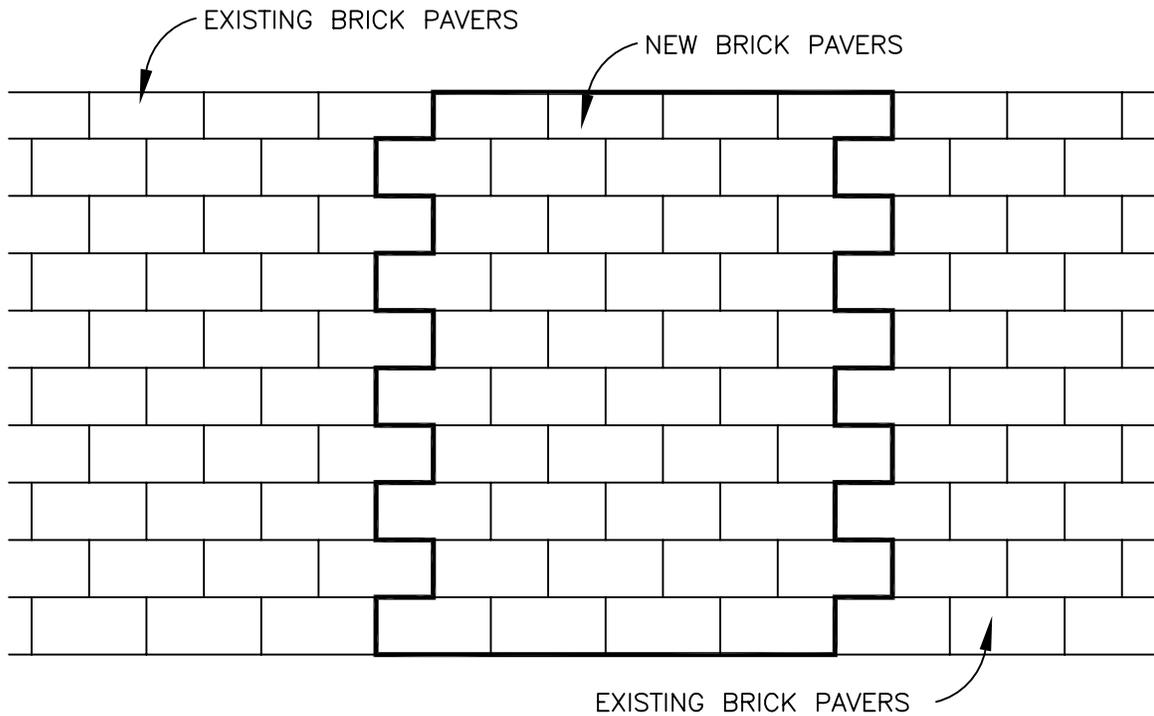
N.T.S.

PLATE P-410

DATE DRAWN 1980

REVISED DATE 9/19/97

CASE XII



STANDARD BRICK
STREET
REPAIR DETAIL

*CITY OF
JACKSONVILLE
STANDARD*

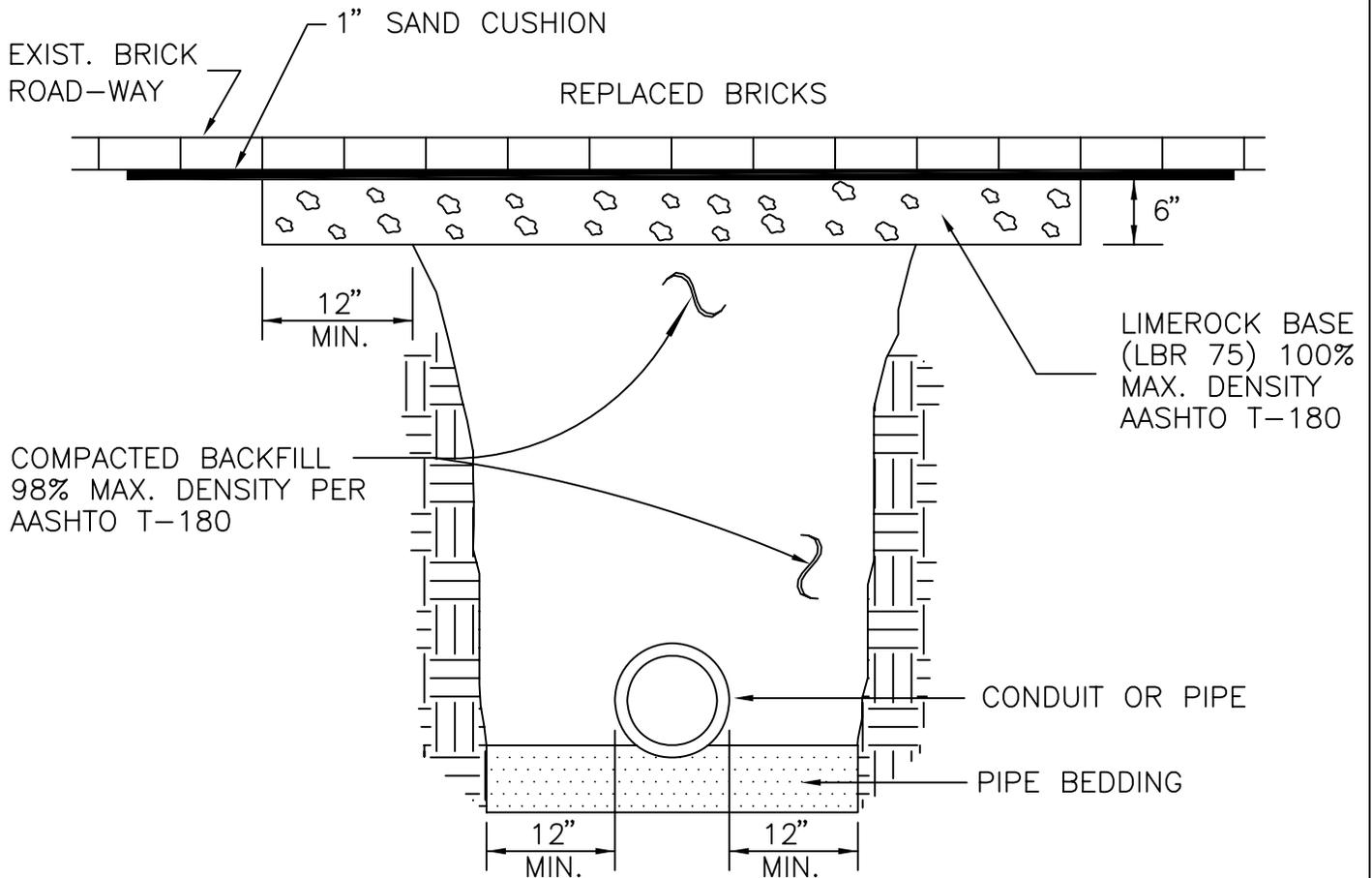
N.T.S.

PLATE P-411

DATE DRAWN 5-20-92

REVISED DATE REVDATA

CASE XIII

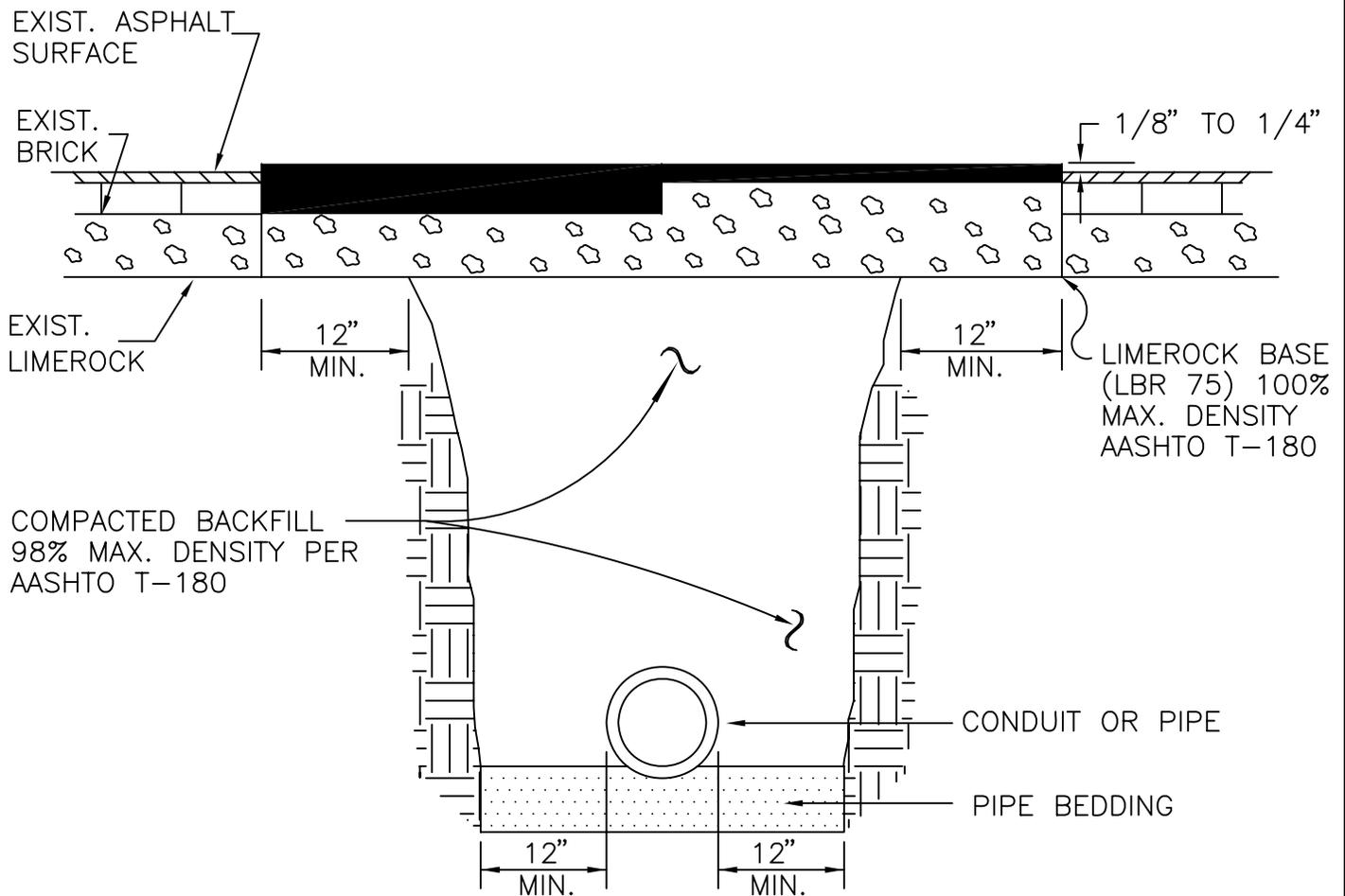


ALL BRICKS ARE TO BE REUSED IN EXCAVATED AREA.
 IF ADDITIONAL BRICKS ARE REQUIRED THEY ARE
 AVAILABLE IN LIMITED QUANTITIES FROM THE STREETS &
 DRAINAGE YARD. -Tel. No. 768-4888
 -Address: 4767 Moncrief Road

STANDARD BRICK STREET REPAIR DETAIL	<i>CITY OF JACKSONVILLE STANDARD</i>	N.T.S.	PLATE P-412
		DATE DRAWN	5-20-92
		REVISED DATE	8-12-92

CASE XIV

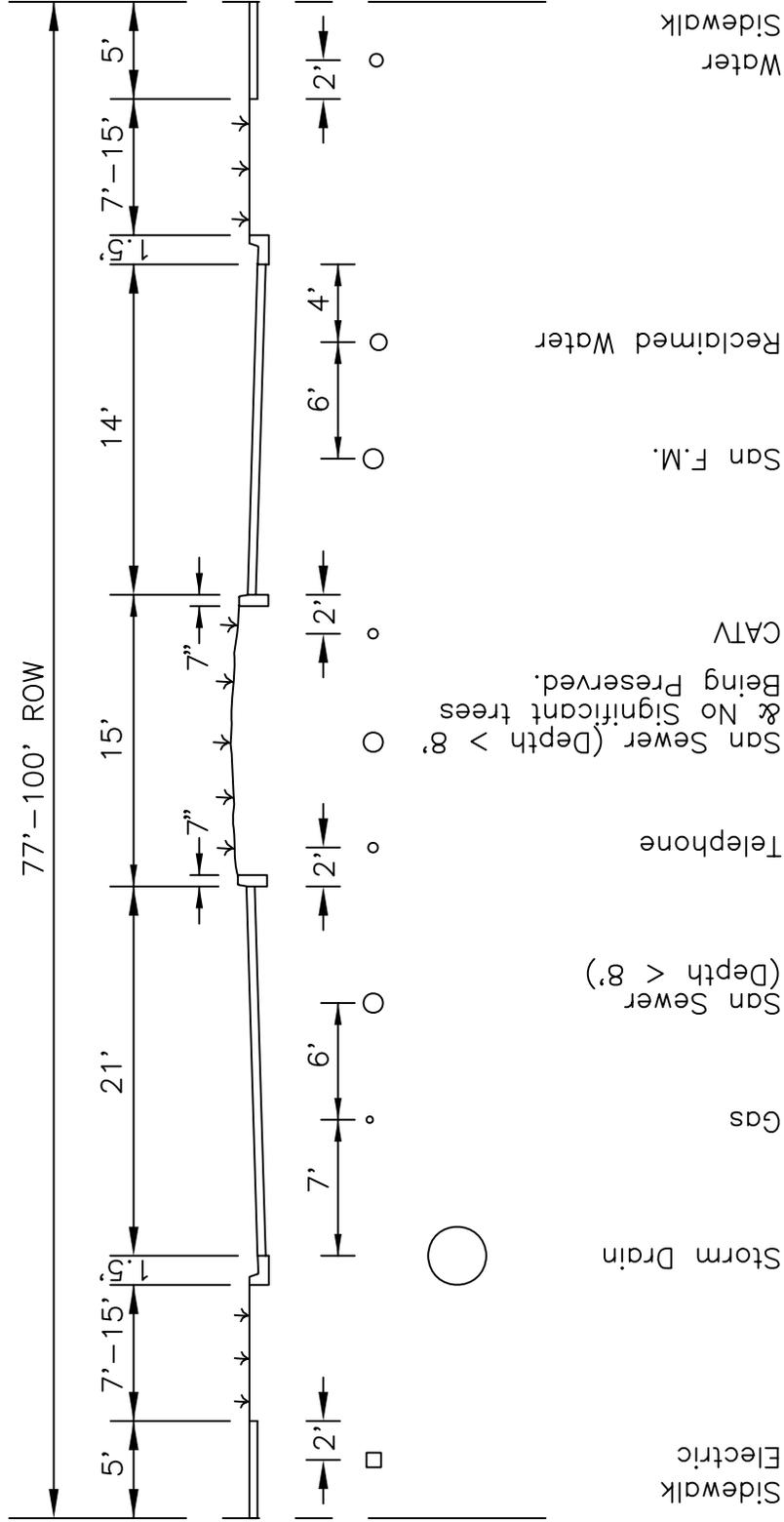
RESTORATION OF THE EXCAVATION SHALL BE WITH EITHER FULL DEPTH ASPHALT OR ADDITIONAL COMPACTED LIMEROCK LEVEL WITH EXIST. BRICKS & 1 1/4" TYPE III ASPHALTIC CONCRETE SURFACE.



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

STANDARD BRICK STREET REPAIR DETAIL	<i>CITY OF JACKSONVILLE STANDARD</i>	N.T.S.	PLATE P-413
		DATE DRAWN	DEC., 1971
		REVISED DATE	MARCH 1992

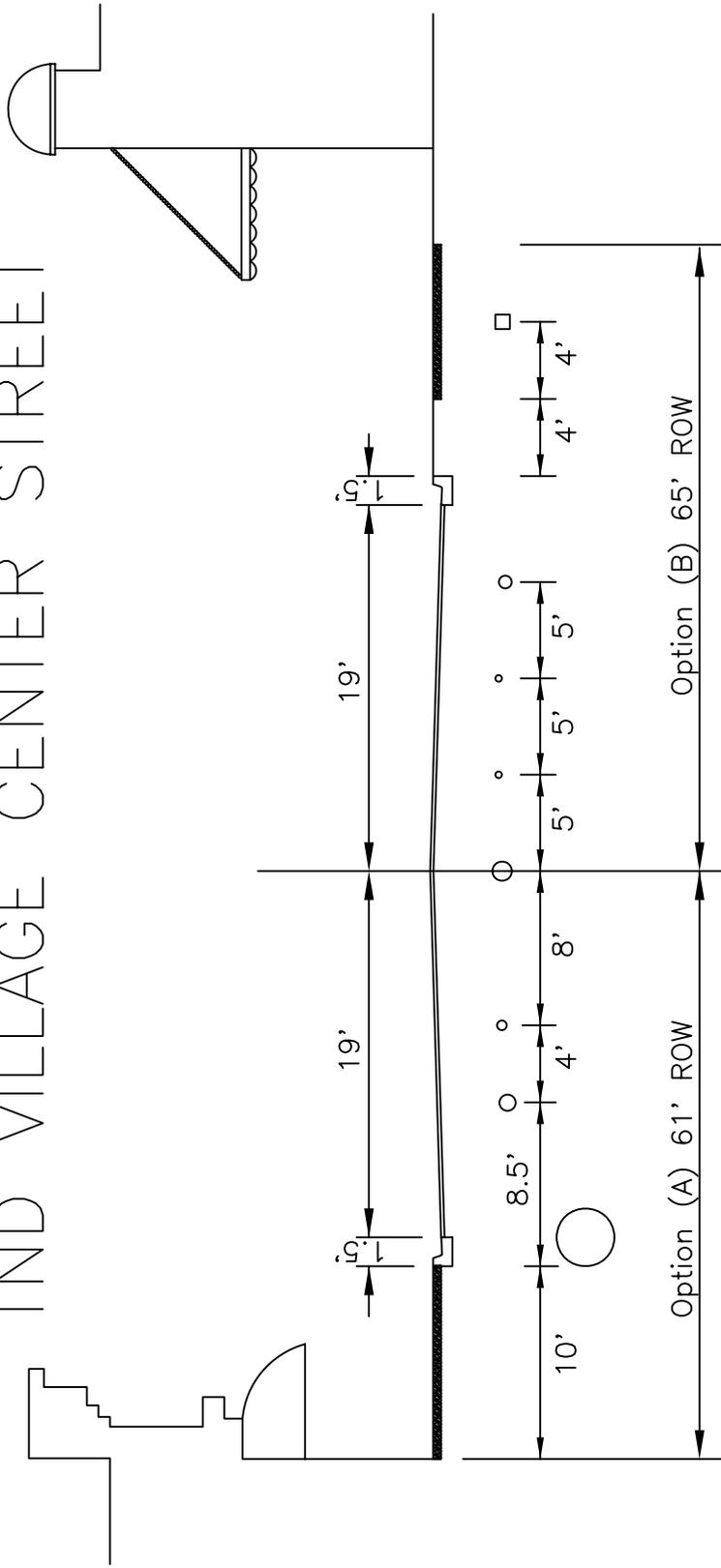
UTILITY LOCATION GUIDELINES TND BOULEVARD



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 BOULEVARD	CITY OF JACKSONVILLE STANDARD	N.T.S.	PLATE P-501
		DATE DRAWN	3/12/97
		REVISED DATE	

UTILITY LOCATION GUIDELINES TND VILLAGE CENTER STREET



- Sidewalk
- Storm Drain
- Reclaimed Water
- CATV
- San Sewer
- Gas
- Telephone
- Water
- Sidewalk
- Electric

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
VILLAGE CENTER
STREET

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

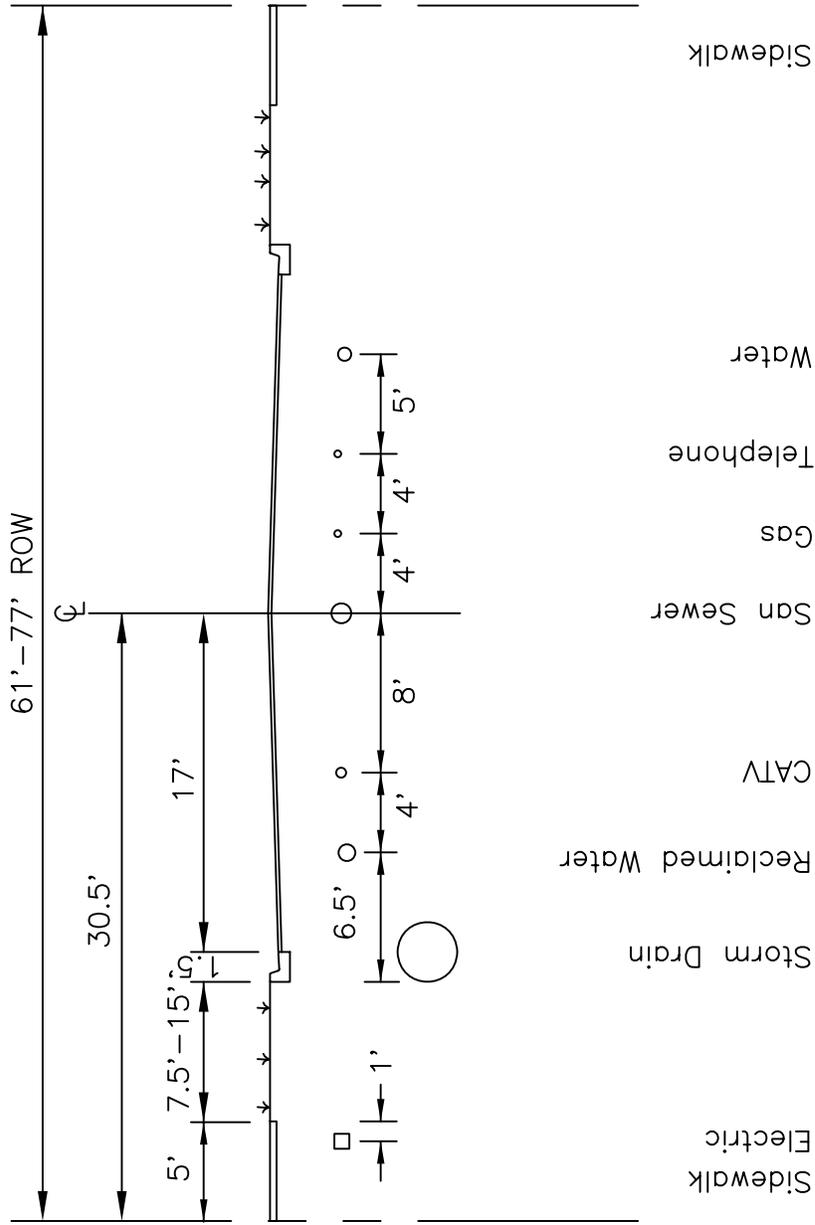
PLATE P-502

DATE DRAWN

3/12/97

REVISED DATE

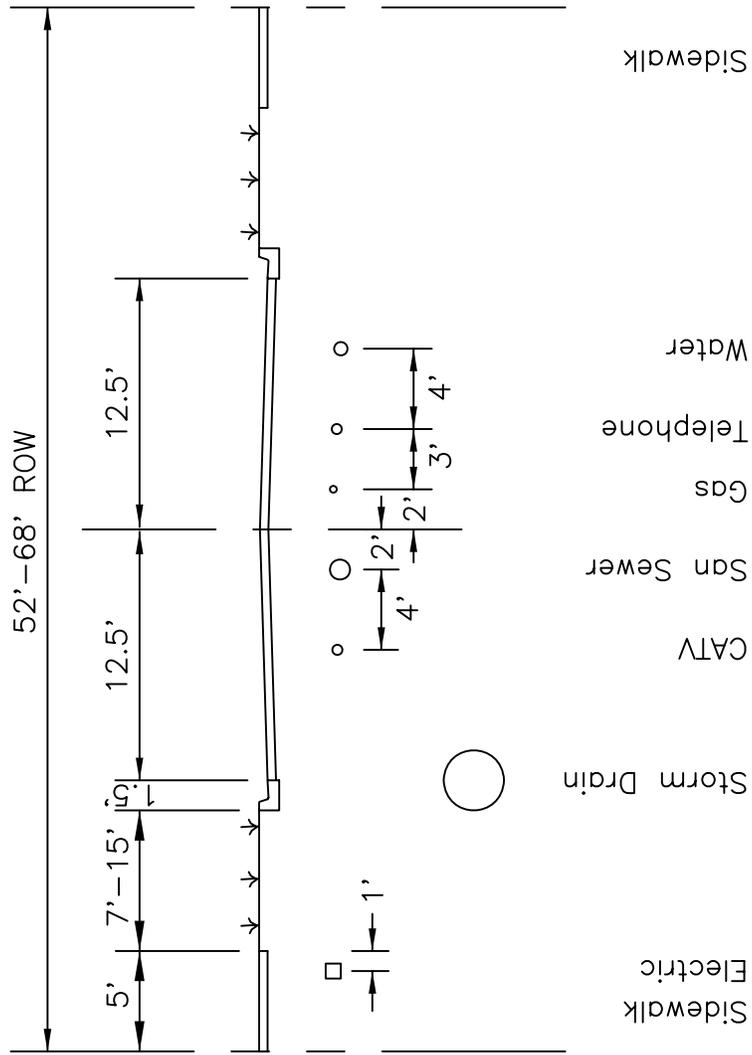
UTILITY LOCATION GUIDELINES TND LOCAL STREET - #1



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 LOCAL STREET #1	CITY OF JACKSONVILLE STANDARD		N.T.S.	PLATE P-503
			DATE DRAWN	3/12/97
			REVISED DATE	

UTILITY LOCATION GUIDELINES TND LOCAL STREET - #2



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

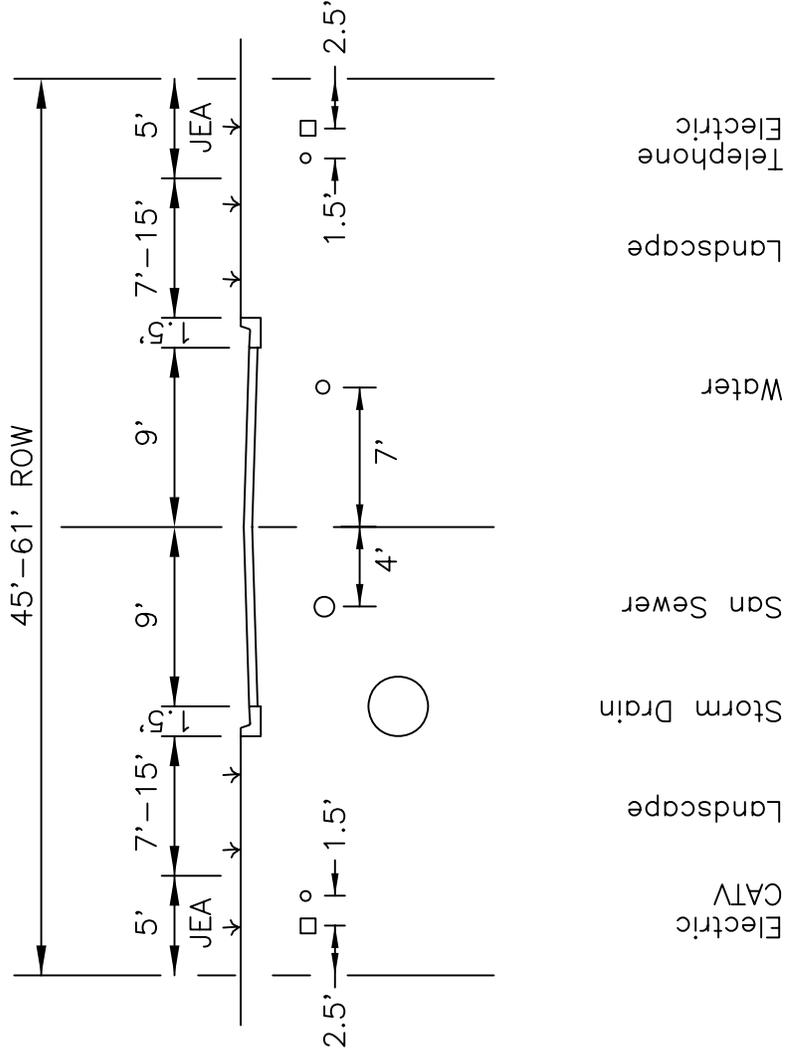
TND
LOCAL STREET
#2

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.
DATE DRAWN
REVISED DATE

PLATE P-504
3/12/97

UTILITY LOCATION GUIDELINES LOCAL STREET - #3



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
LOCAL STREET
#3

*CITY OF
JACKSONVILLE
STANDARD*

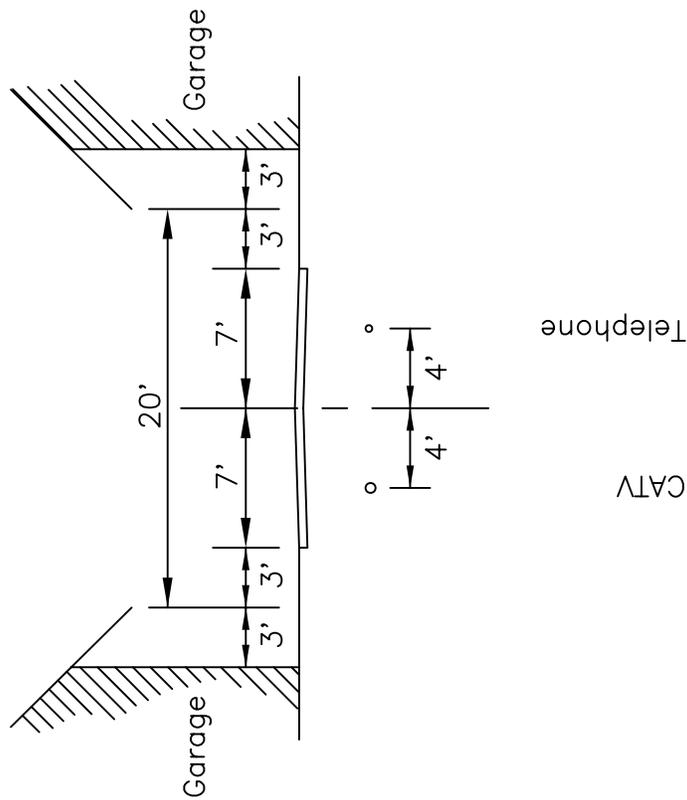
N.T.S.

PLATE P-505

DATE DRAWN 3/12/97

REVISED DATE

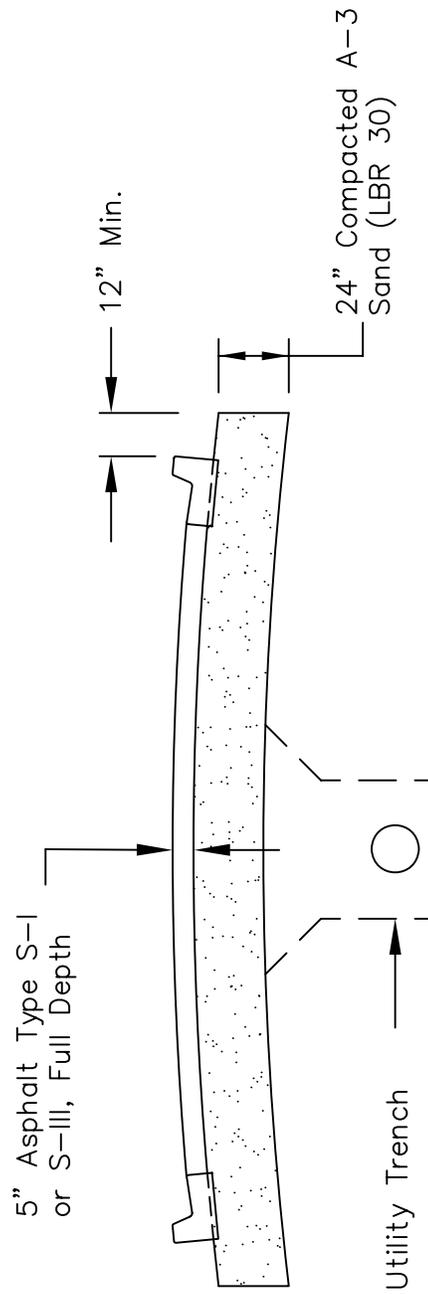
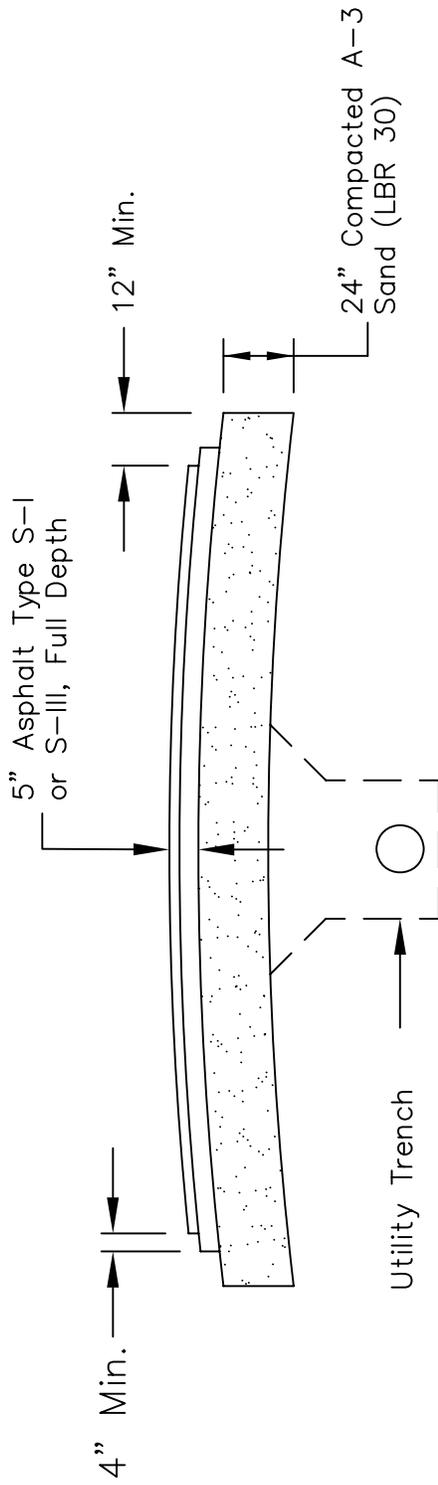
UTILITY LOCATION GUIDELINES TND ALLEY



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	<i>CITY OF JACKSONVILLE STANDARD</i>	N.T.S.	PLATE P-506
		DATE DRAWN	3/12/97
		REVISED DATE	



Note: Full Depth Pavement Shall Be Constructed In 2 Lifts Consisting of a 3" (Compacted) Base & a 2" (Compacted) Surface.

Type III Asphalt Pavement May Be Constructed In Lieu of the Type S Pavement, If the Compacted A-3 Sand Sub-Base Is Constructed to Min. LBR 35.

PAVEMENT
REPLACEMENT OVER
UTILITY TRENCH

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE

DATE DRAWN

11/19/97

REVISED DATE

REVDAT

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
DRAINAGE STANDARD SECTION
INDEX

Series 100 MANHOLES

D-101	Storm Sewer Type J-1 Through J-1-F Manhole
D-102	Storm Sewer Type J-2 Manhole
D-103	Storm Sewer Type J-3 Manhole
D-104	Storm Sewer Type J-4
D-105	Manhole Storm Sewer Type J-5
D-106	Manhole Storm Sewer Brick Manhole
D-107	Notes For Manholes & Inlets
D-108	Slab Design-Square & Rectangular Structures
D-109	Wall Design-Rectangular Structures
D-110	Slab Design-Round Structures

Series 200 INLETS

D-201	Storm Sewer Curb Inlet
D-202	Standard Curb Inlet Installation
D-203	Storm Sewer 46" I.D. Inlet
D-204	Storm Sewer Double & Triple Curb Inlet
D-205	Storm Sewer Type "B" Inlet
D-206	Storm Sewer Double Type "B" Inlet
D-207	Storm Sewer Type "C" Inlet
D-208	Storm Sewer Type "E" Inlet
D-209	Detail For Type "C & E" Inlet
D-210	Eye Bolt & Chain For Locking Grates To Inlets
D-211	Sand Trap Basin
D-212	Invert Detail

Series 300 CASTINGS

D-301	Storm Sewer Manhole Cover & Frame Storm
D-302	Sewer Curb Inlet Frame
D-303	Storm Sewer Curb Iron
D-304	Storm Sewer Inlet Grate
D-305	Storm Sewer Catch Basin Frame
D-306	Curb Iron W/Grate & Frame
D-307	Grate Detail For Type "E" Inlet
D-308	Manhole Cover Detail

Series 400 ENDWALLS

D-401	Straight Concrete Endwalls-Single & Multiple Pipe
D-402	Straight Concrete Endwalls-Single & Multiple Pipe
D-403	Straight Concrete Endwalls-Single & Multiple Pipe
D-404	Straight Concrete Endwalls-Single & Multiple Pipe
D-405	Straight Concrete Endwalls-Single & Multiple Pipe
D-406	Straight Endwall For 60"-78" Concrete Pipe Culverts
D-407	Dimensional & Quantitative Data For 60"-78" Concrete Pipe Endwalls
D-408	Concrete Endwall With 45' Wings For Pipe Culverts
D-409	Concrete Endwall With U-Shaped 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 & Quantitative Data For Multiple 60"-78" Concrete Pipe Endwalls
D-414	Straight Endwall For Single Precast Concrete Box Culverts
D-415	Straight Endwall For Double Precast Concrete Box Culverts
D-416	Straight Endwall For Triple Precast Concrete Box Culverts
D-417	Sections Of Endwall For 4' High Single, Double, & Triple Precast Box Culverts
D-418	Sections Of Endwall For 5' High Single, Double, & Triple Precast Box Culverts
D-419	Sections Of Endwall For 6' High Single, Double, & Triple Precast Box Culverts
D-420	Bar Bending Diagram For Steel In Endwall For Single, Double, & Triple Precast Box Culverts
D-421	Dimensional & Quantitative Data For Single Box Culvert Endwalls
D-422	Dimensional & Quantitative Data For Single Box Culvert Endwalls
D-423	Dimensional & Quantitative Data for Single Box Culvert Endwalls
D-424	Dimensional & Quantitative Data for Double Box Culvert Endwalls
D-425	Dimensional & Quantitative Data for Double Box Culvert Endwalls

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
DRAINAGE STANDARD SECTION
INDEX

D-426	Dimensional & Quantitative Data for Double Box Culvert Endwalls
D-427	Dimensional & Quantitative Data for Triple Box Culvert Endwalls
D-428	Concrete Endwall with L-Type Wing for Pipe Culverts
D-429	Precast Mitered End for Driveway Culverts
D-430	Precast Mitered End for Elliptical Driveway Culverts
D-431	Standard Mitered End Section for RCP or CMP
D-432	Standard Table of Dimensions for Mitered End Section
D-433	Standard Flared End Sections for Corrugated Metal Pipe
D-434	Dimensional Data of Flared End Sections for Corrugated Metal Pipe
D-435	Mitered End Section for RCP or ERCP Cross Drain Type B Section
D-436	Connector Detail for Mitered End Section
D-437	Tables of Dimension for Mitered End Sections Type B

Series 500 DITCH PAVING

D-501	Concrete Ditch Paving & Weep Hole Arrangement
D-502	Alternate Weephole Detail

Series 600 CHECK DAM

D-601	Temporary Sand-Cement Rip Rap Check Dam
D-602	Concrete Check Dam

Series 700 UNDERDRAIN

D-701	Underdrain Installation Type I
D-702	Underdrain Installation Type II
D-703	Underdrain Installation Type III
D-704	Underdrain Cleanout Detail
D-705	Paved Outfall for Underdrain
D-706	Prefabricated Edge Drain Detail

Series 800 PIPE BEDDING

D-801	Pipe Bedding Case 1
D-802	Pipe Bedding Case 2
D-803	Pipe Bedding Case 3
D-804	Culvert Placement with Less Than 12" Cover

Series 900 EROSION & SEDIMENT CONTROL

D-901	Hay Bale Location
D-902	Block & Gavel Curb Inlet Sediment Filter
D-903	Gravel Inlet Sediment Trap
D-904	Block & Grovel Drop Inlet Sediment Filter
D-905	Drop Inlet Sediment Filter
D-906	Spacing Recommendation for Silt Fences & Hay Bales
D-907	Turbidity Barriers
D-908	Silt Fence Type III & IV
D-909	Construction Details for Silt Fences
D-910	Filter Barrier Construction Detail
D-911	Staked Hay Bale
D-912	Hay Bale Barriers Type I & II
D-913	Hay Bale Construction Details
D-914	Diversion Dike
D-915	Temporary Seeding Plant Materials
D-916	Seeding Mixtures Rates & Dates

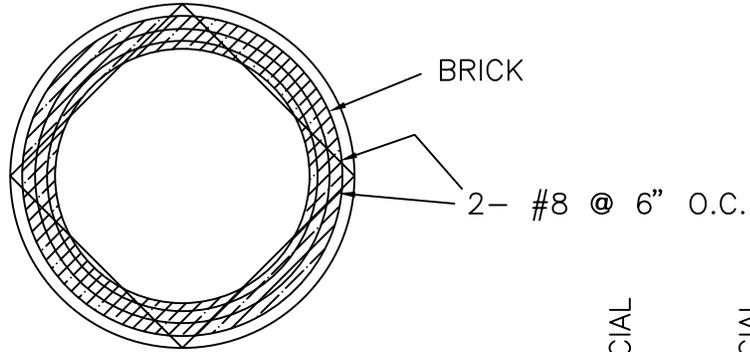
Series 1000 STORMWATER PONDS

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

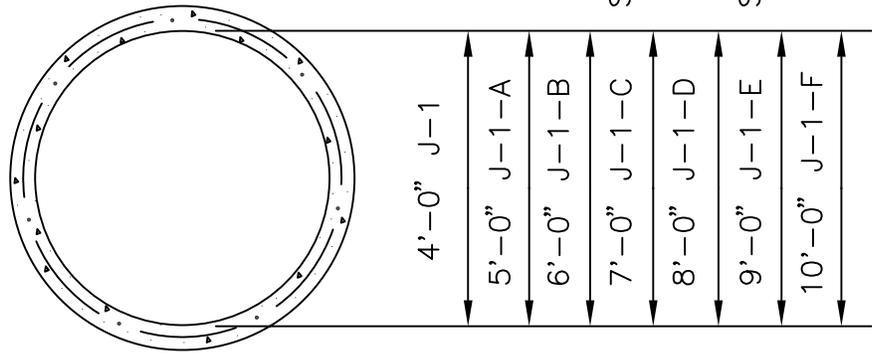
Series 1100 POLYETHYLENE PIPE

D-1101	Polyethylene Pipe Trench Detail
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COVER

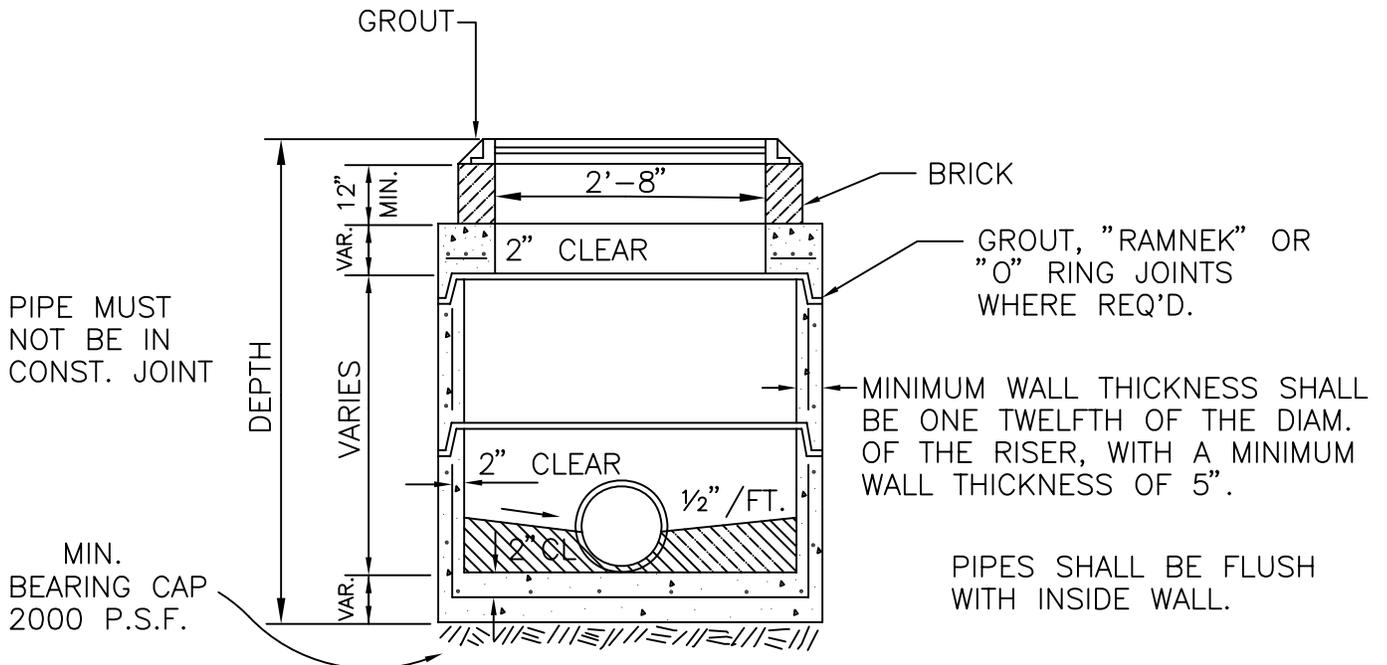


PLAN



PRECAST IN ACCORDANCE
WITH LATEST EDITIONS
OF ASTM C 478

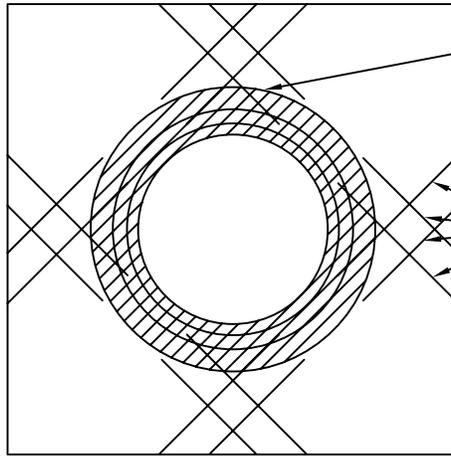
MANHOLE COVER AND FRAME
PER CITY OF JAX. STD.



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

STORM SEWER TYPE J-1 THRU J-1-F MANHOLE	<i>CITY OF JACKSONVILLE STANDARD</i>	N.T.S.	PLATE D-101
		DATE DRAWN	AUG. 1979
		REVISED DATE	5-12-94

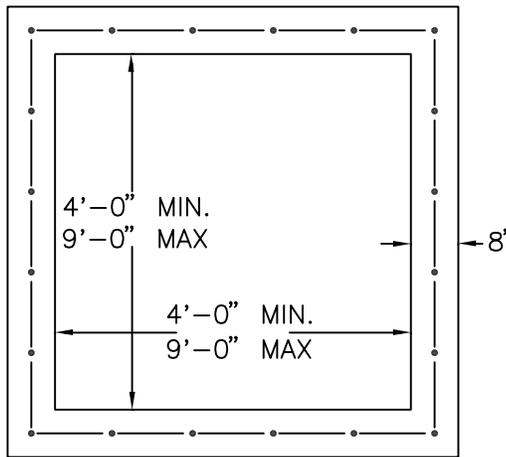
COVER



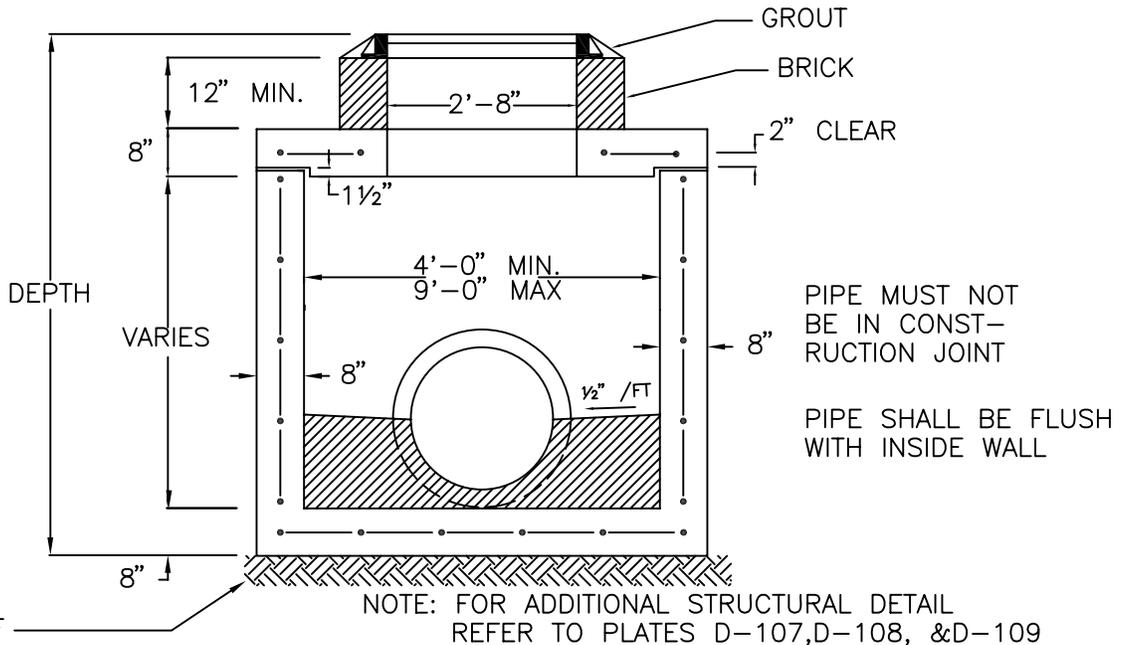
BRICK

2- #8 @ 6" O.C.

PLAN



MANHOLE COVER & FRAME PER CITY OF JAX. STD.



STORM SEWER
TYPE J-2
MANHOLE

*CITY OF
JACKSONVILLE
STANDARD*

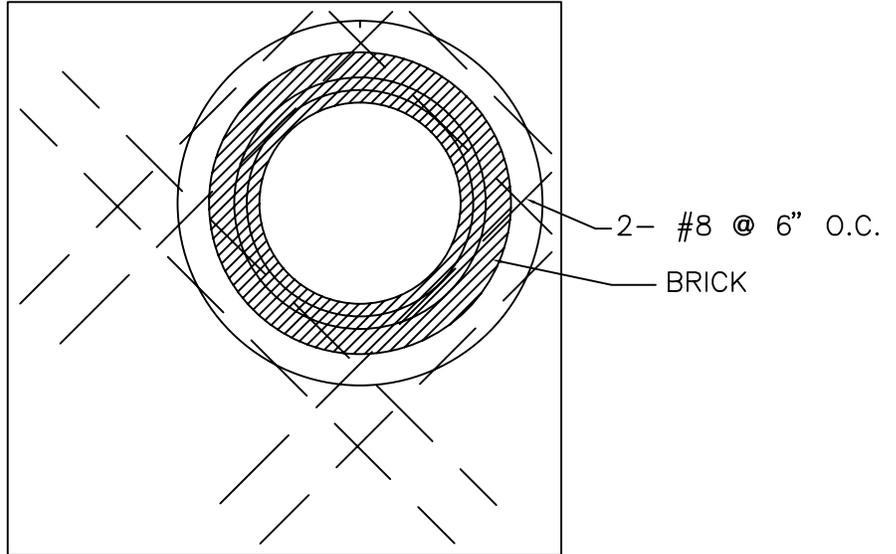
N.T.S.

PLATE D-102

DATE DRAWN 1-31-89

REVISED DATE 5-12-94

PLAN



MANHOLE COVER AND FRAME
PER CITY OF JAX. STD.

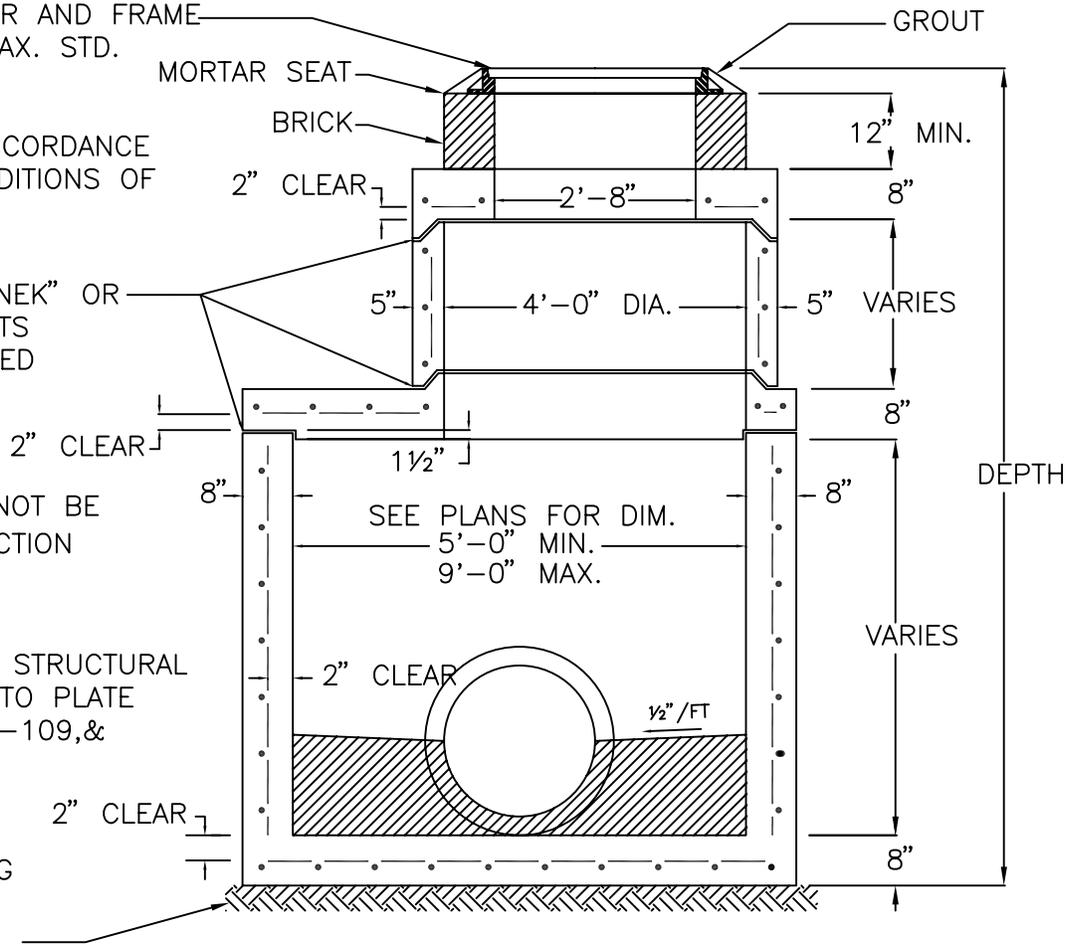
RISER SECTION
PRECAST IN ACCORDANCE
WITH LATEST EDITIONS OF
A.S.T.M. C478

GROUT, "RAM-NEK" OR
"O-RING" JOINTS
WHERE REQUIRED

PIPE MUST NOT BE
IN CONSTRUCTION
JOINT.

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

MIN. BEARING
CAPACITY
2000 PSF



PIPES SHALL BE FLUSH WITH INSIDE WALL

STORM SEWER
TYPE J-3
MANHOLE

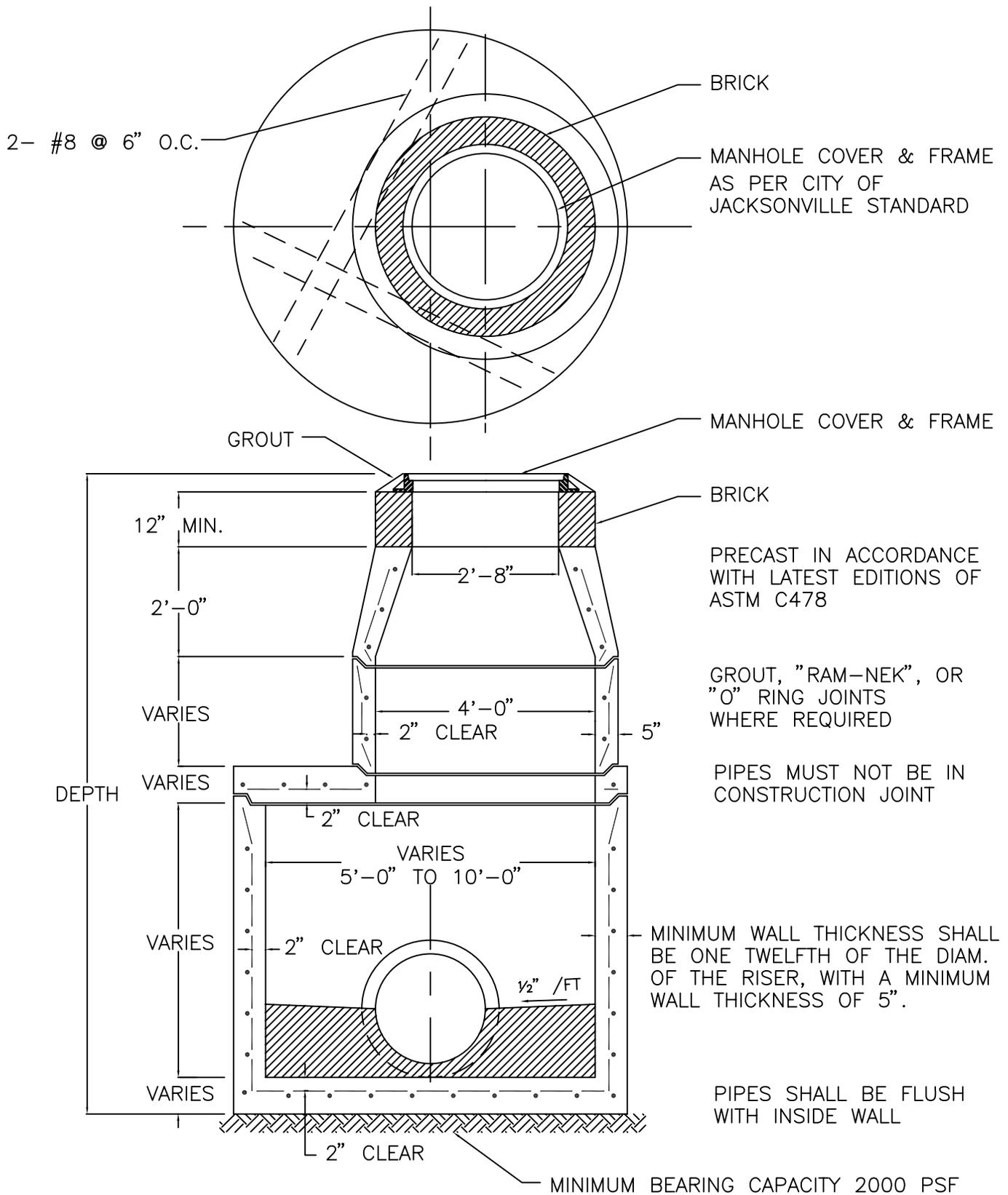
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-103

DATE DRAWN 8-3-79

REVISED DATE 5-12-94



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

STORM SEWER
TYPE J-4
MANHOLE

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

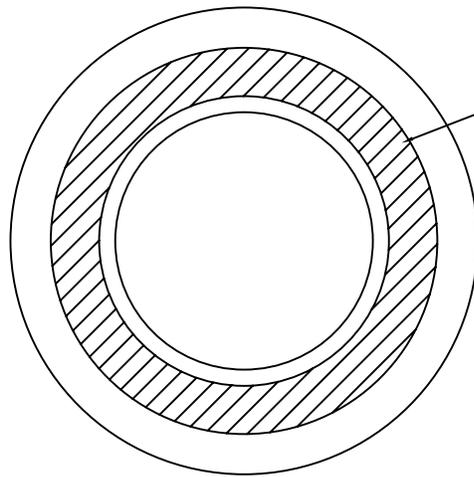
PLATE D-104

DATE DRAWN

2-10-79

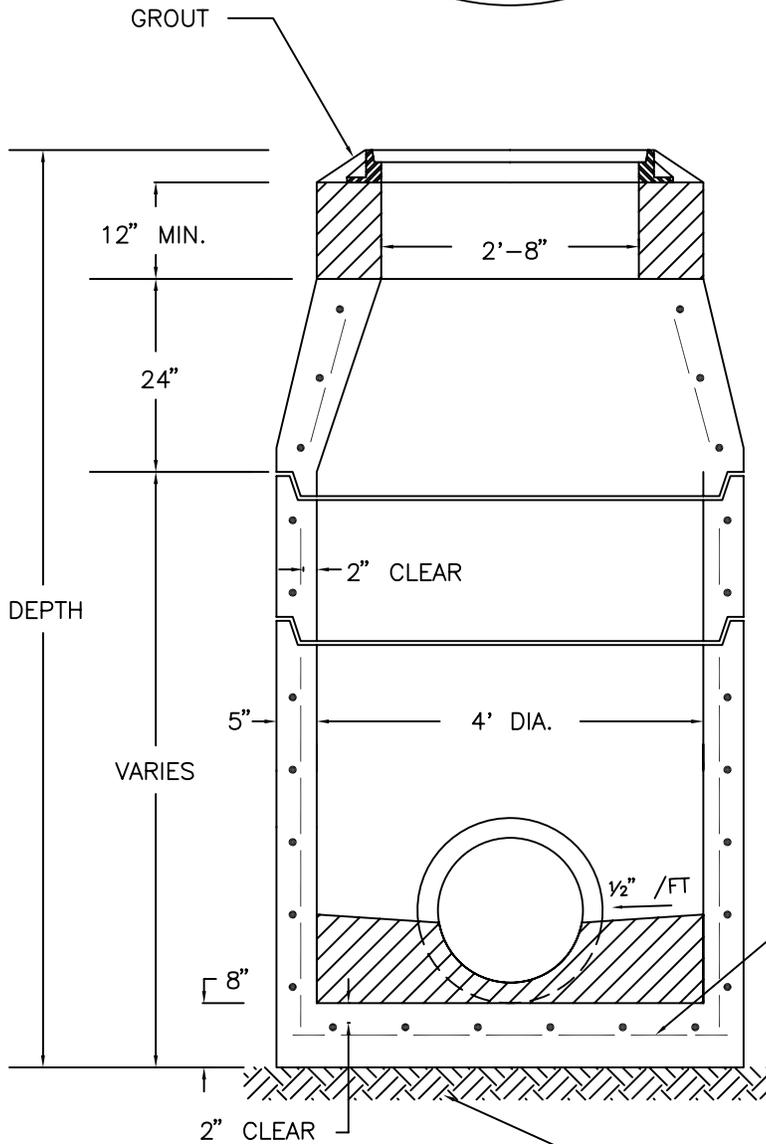
REVISED DATE

5-12-94



BRICK

NOTE: CONC. DESIGN STRENGTH 4000 PSI



MANHOLE TOP/FRAME PER CITY OF JAX. STD.

PRECAST IN ACCORDANCE WITH LATEST EDITIONS OF ASTM C478

GROUTED, OR "RAM-NEK", OR "O RING" JOINTS WHERE REQUIRED

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

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

BEARING CAPACITY MINIMUM 2000 PSF

NOTE: FOR ADDITIONAL STRUCT. DETAIL REFER TO PLATE D0110

STORM SEWER
TYPE J-5
MANHOLE

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-105

DATE DRAWN

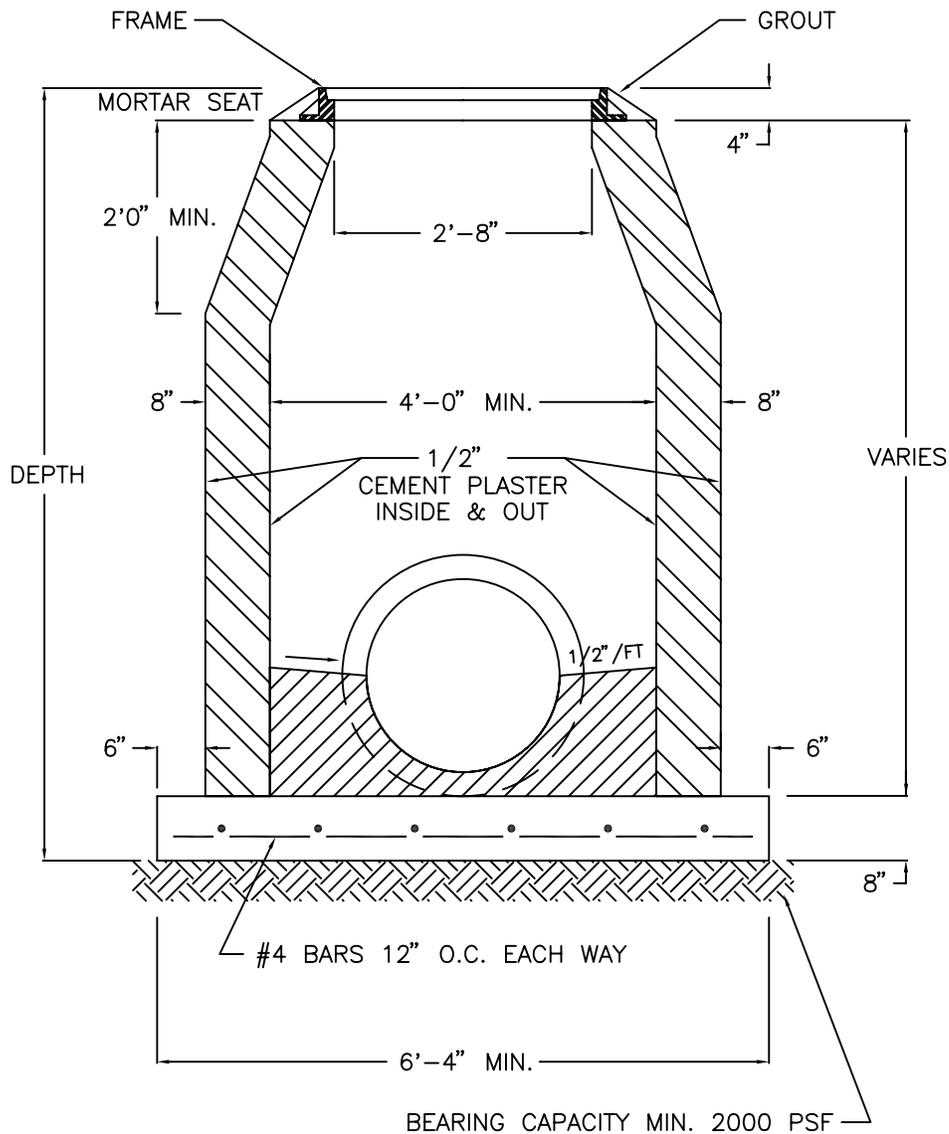
2-15-89

REVISED DATE

5-12-94

NOTES:

1. MANHOLES OVER 10' DEEP SHALL HAVE 12" WALL THICKNESS FOR ALL PORTIONS OF WALL OVER 10' DEEP.
2. MANHOLE COVER AND FRAME PER CITY OF JACKSONVILLE STANDARD.
3. BOTTOM SLAB TO BE 4000 P.S.I. CLASS "A" CONCRETE.



STORM SEWER
BRICK
MANHOLE

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-106

DATE DRAWN 2-15-79

REVISED DATE 5-12-94

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 length 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 embedment 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 deformed welded wire fabric, will be recognized as having a design strength of 65 KSI. 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:

$$\text{Grade 60 Steel Area} = A_s 60 = 40k/60k \times A_s 40$$

$$\text{Welded Wire Fabric Steel Area} = A_s 65 = 40k/65k \times A_s 40$$

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 two (2) times the slab thickness with a maximum spacing shall not be the wall thickness, with a maximum spacing of 18".

EQUIVALENT STEEL AREA TABLE					
GRADE 40 REINFORCING BAR		EQUIVALENT GRADE 60 REINFORCING BAR		EQUIVALENT 65 KSI WELDED WIRE FABRIC	
Bar Size & Spacing	Steel Area	Bar Size & Spacing	Min Steel Area	Style Designation	Min Steel Area
#4 @ 12" CCEW	0.20	#3 @ 9½" CCEW	.1333	3" x 3" - W3.1 x W3.1 or 4" x 4" - W4.5 x W4.5 or 6" x 6" - W6.5 x W6.5	.1230
#4 @ 9" CCEW	0.20	#3 @ 13½" CCEW or #3 @ 7" CCEW	.1778	3" x 3" - W3.1 x W3.1 or 4" x 4" - W5.5 x W5.5 or 6" x 6" - W8.5 x W8.5	.1641
#6 @ 6" CCEW	0.20	#3 @ 9½" CCEW or #6 @ 9" CCEW	.5867	4" x 4" - W20 x W20 or 6" x 6" - W30 x W30	.5415
#7 @ 6" CCEW	0.20	#3 @ 6½" CCEW or #7 @ 9" CCEW	.80	4" x 4" - W26 x W26	.7385

NOTES FOR MANHOLES & INLETS	<i>CITY OF JACKSONVILLE STANDARD</i>	N.T.S.	PLATE D-107
		DATE DRAWN	07/12/79
		REVISED DATE	5-12-94

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

SHORT-WAY		LONG-WAY	
SLAB DEPTH	SCHEDULE	SLAB DEPTH	SCHEDULE
SIZE: 4'-0" x UNLIMITED			
≥ 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

SHORT-WAY		LONG-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

WALL DESIGNS – RECTANGULAR STRUCTURES

VERTICAL REINFORCING		HORIZONTAL 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

GENERAL 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 (WIRE FABRIC) in ² /ft
A	0.20
B	0.24
C	0.37
D	0.53
E	0.73
F	1.06
G	1.45

WALL DESIGNS
RECTANGULAR
STRUCTURES

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-109

DATE DRAWN 2-5-79

REVISED DATE 5-12-94

SLAB DESIGNS – ROUND STRUCTURES

SLAB DEPTH	SLAB THICKNESS	REINFORCING (2 WAYS) 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

GENERAL 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 (WIRE FABRIC) in ² /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

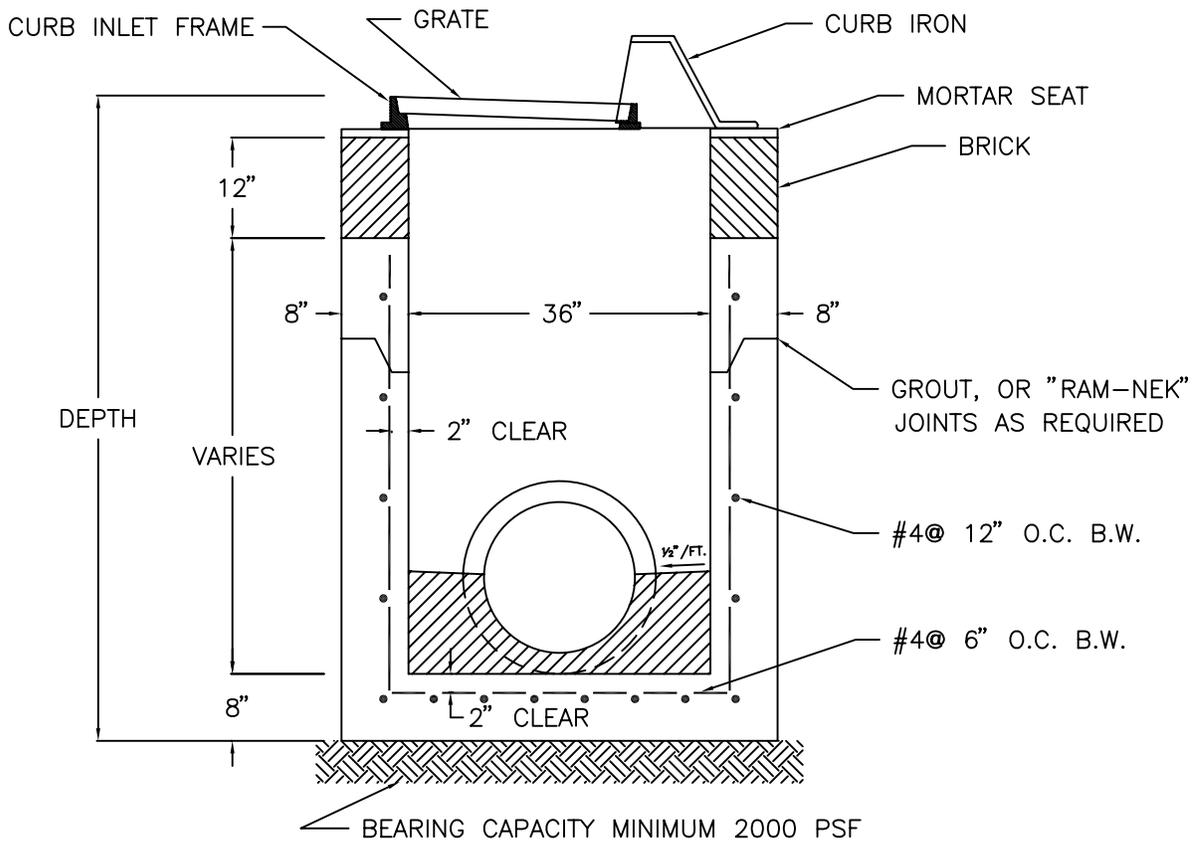
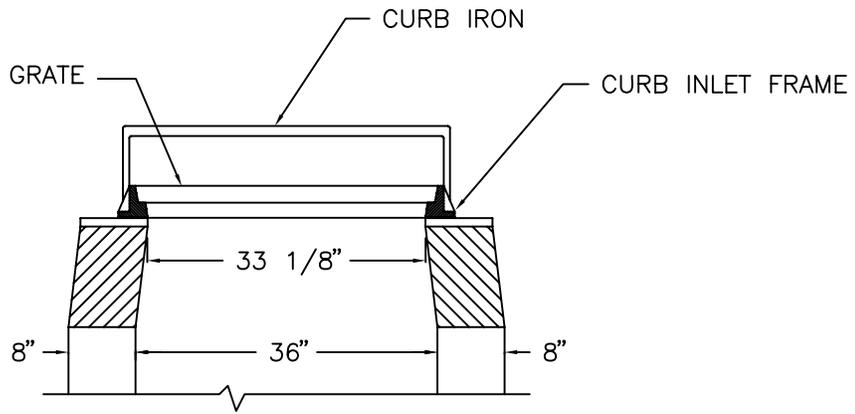
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-110

DATE DRAWN 1-31-79

REVISED DATE 5-12-94



PIPES SHALL BE FLUSH WITH INSIDE WALL

NOTE: CONC. DESIGN STRENGTH 4,000 PSI

PIPE MUST NOT BE IN CONST. JOINT

STORM SEWER
CURB INLET

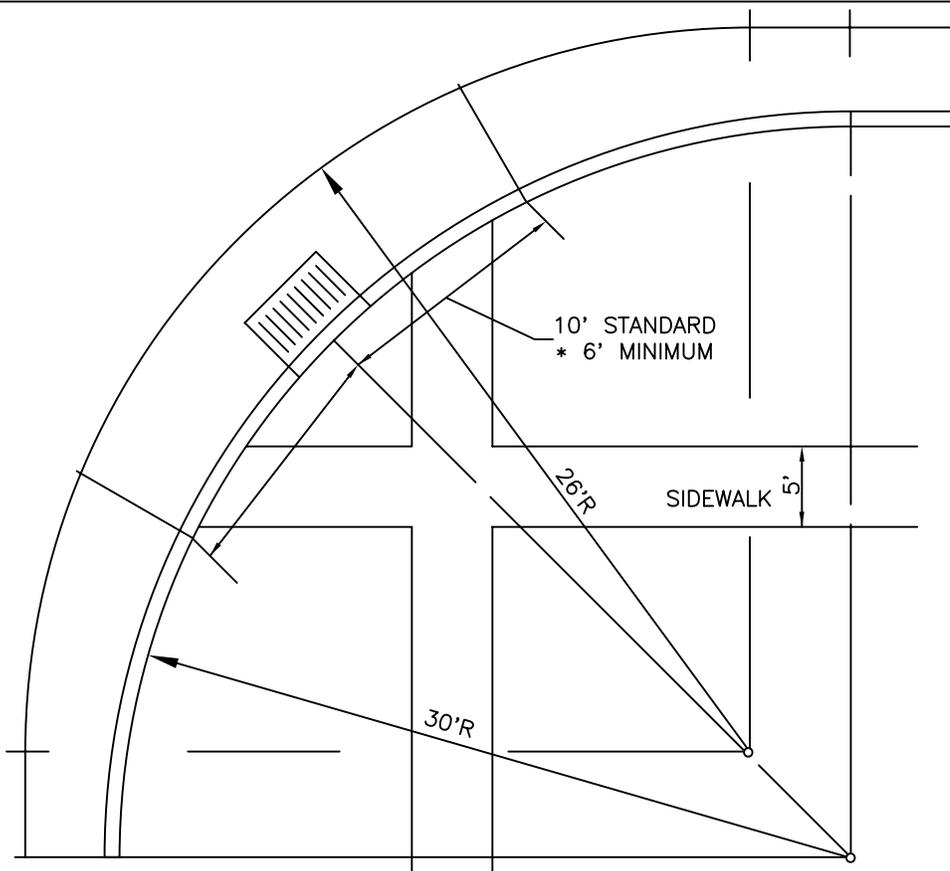
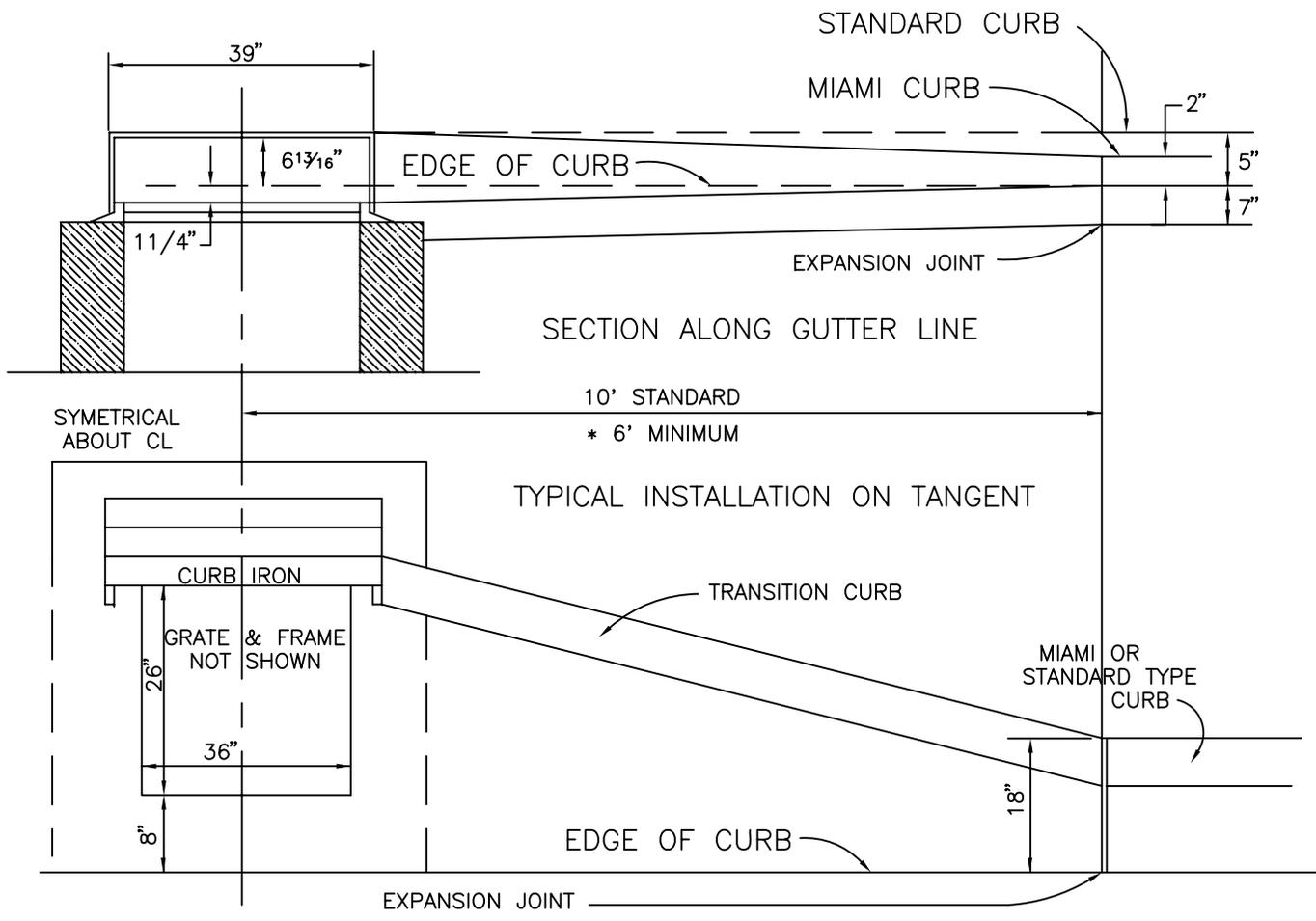
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-201

DATE DRAWN 2-10-79

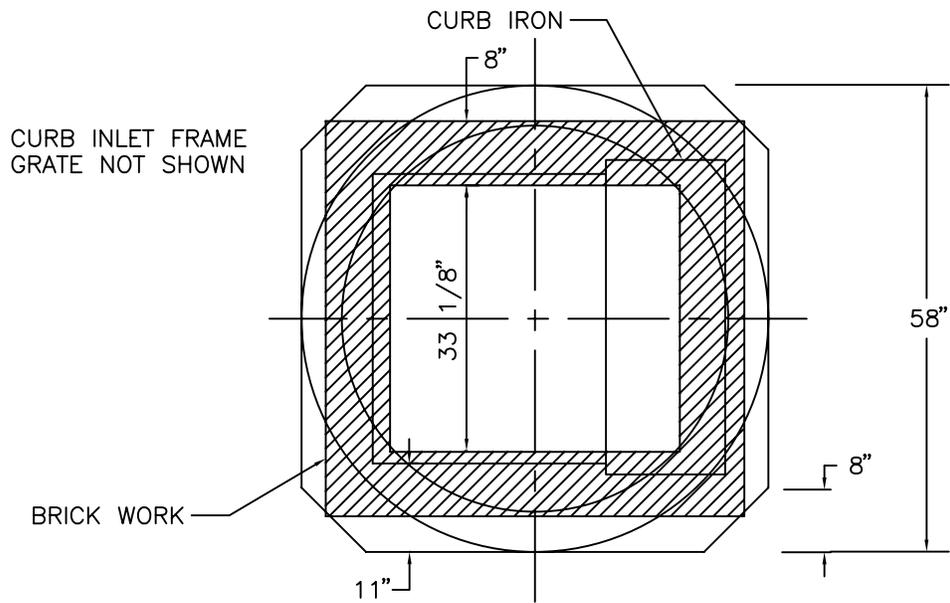
REVISED DATE 5-12-94



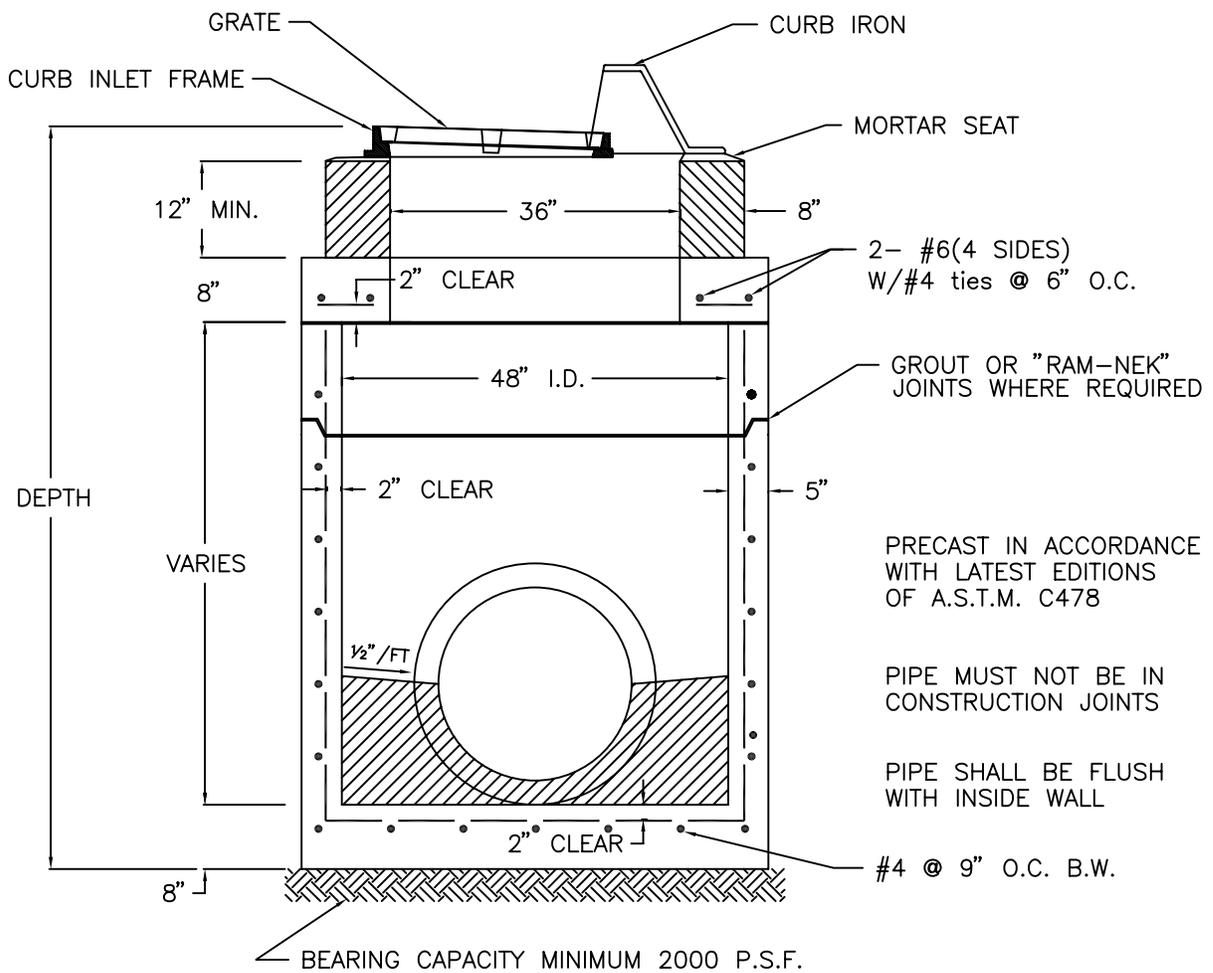
TYPICAL INSTALLATION ON CURB RETURN

* 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.

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



NOTE: CONC. DESIGN STRENGTH 4,000 PSI



STORM SEWER
48" I.D.
CURB INLET

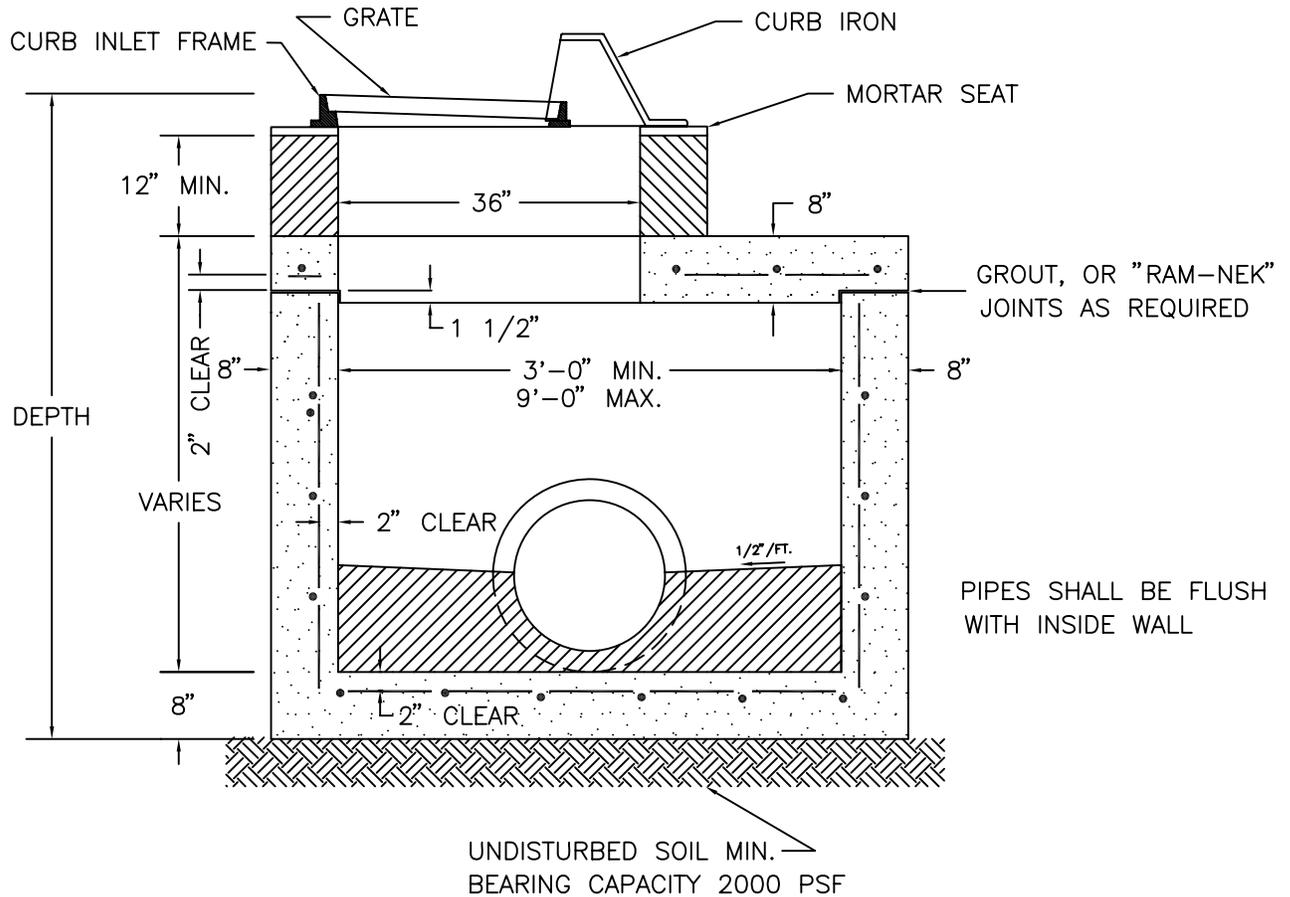
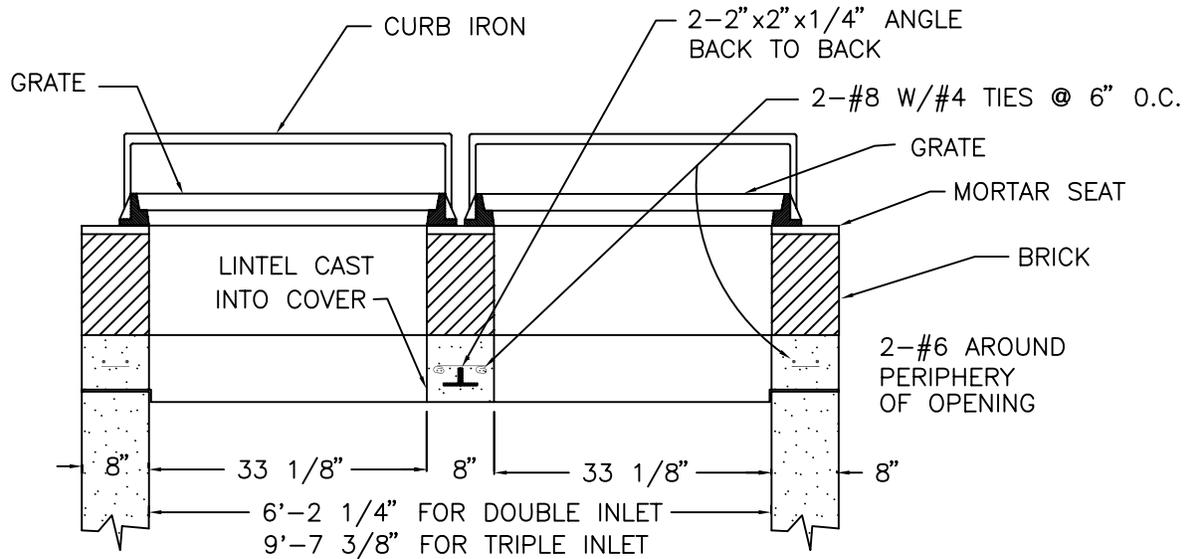
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-203

DATE DRAWN 4-21-79

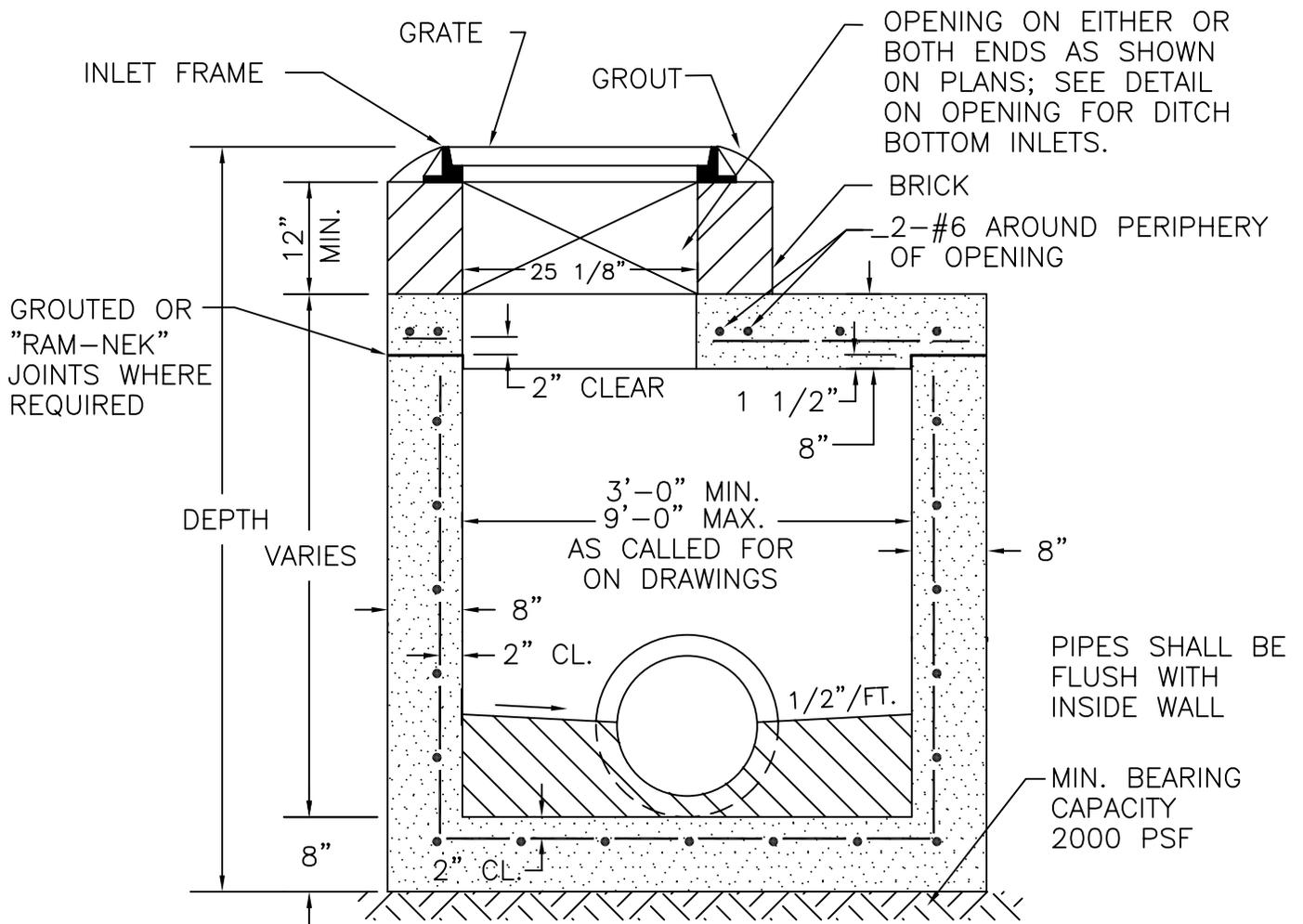
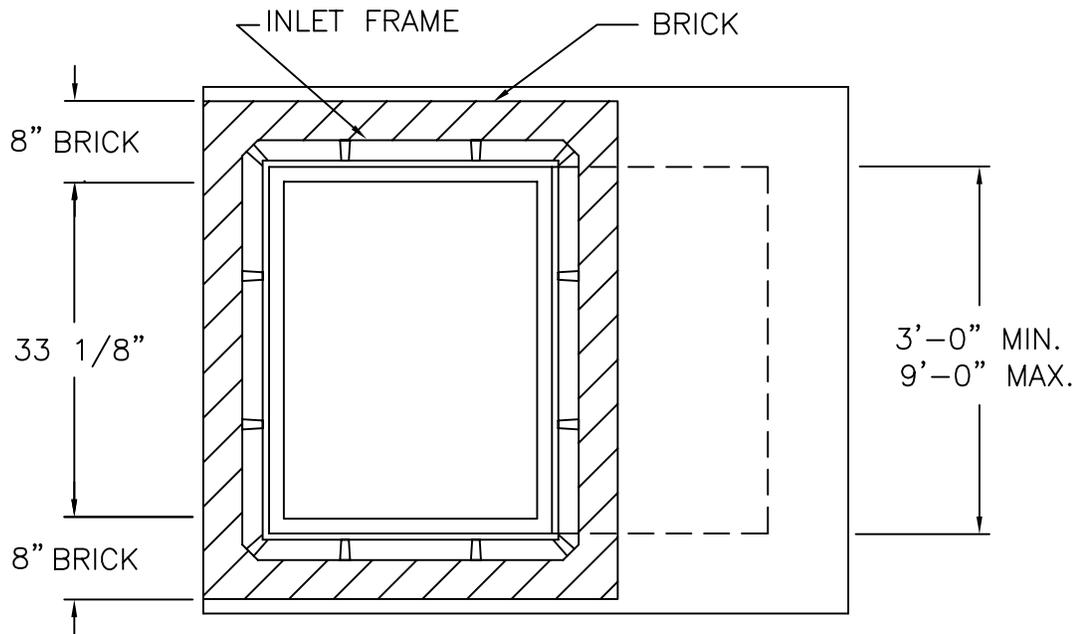
REVISED DATE 5-12-94



PIPE MUST NOT BE IN CONST. JOINT

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

STORM SEWER DOUBLE AND TRIPLE CURB INLET	<i>CITY OF JACKSONVILLE STANDARD</i>		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

PIPE MUST NOT BE IN CONSTRUCTION JOINT

STORM SEWER
TYPE "B" INLET

*CITY OF
JACKSONVILLE
STANDARD*

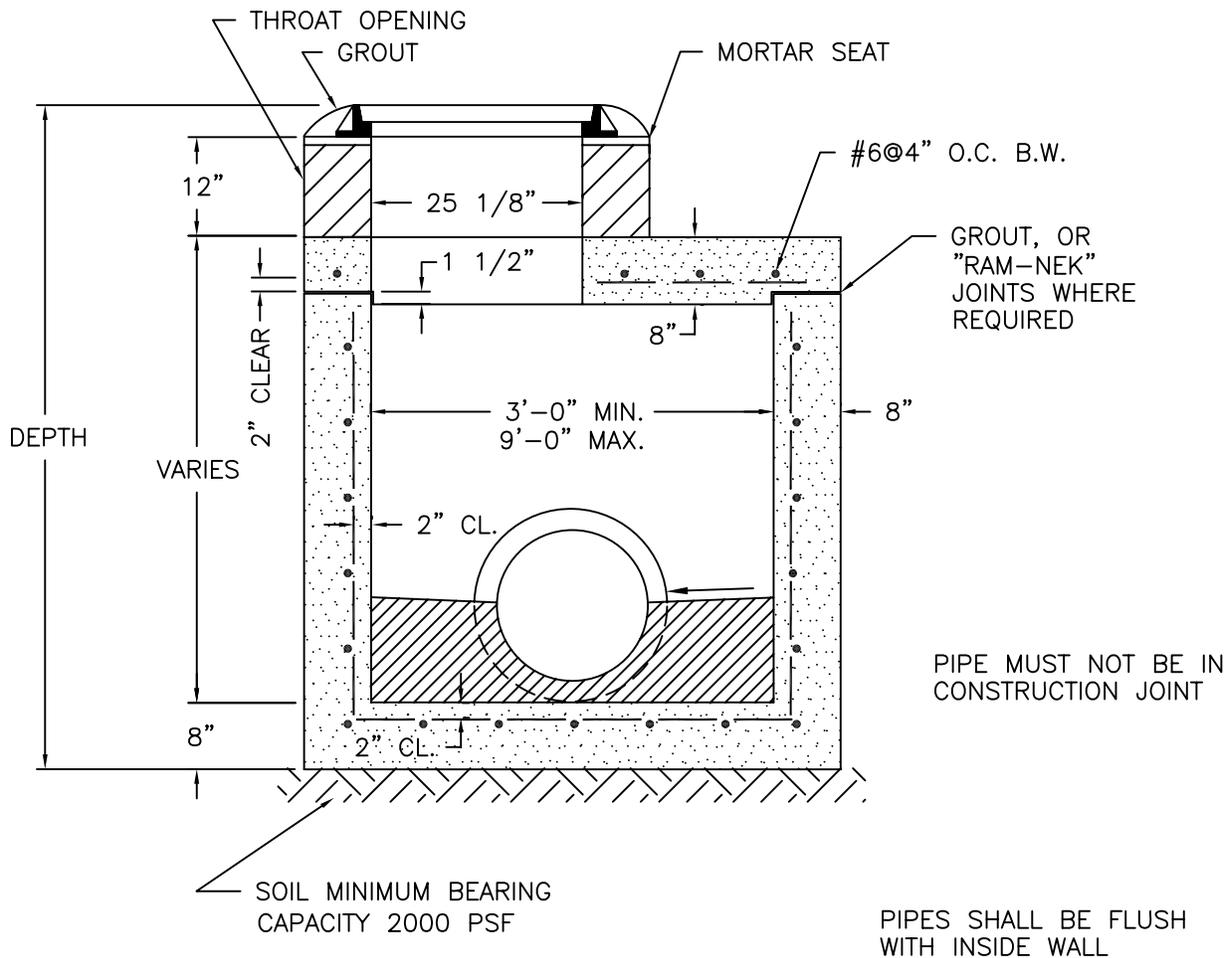
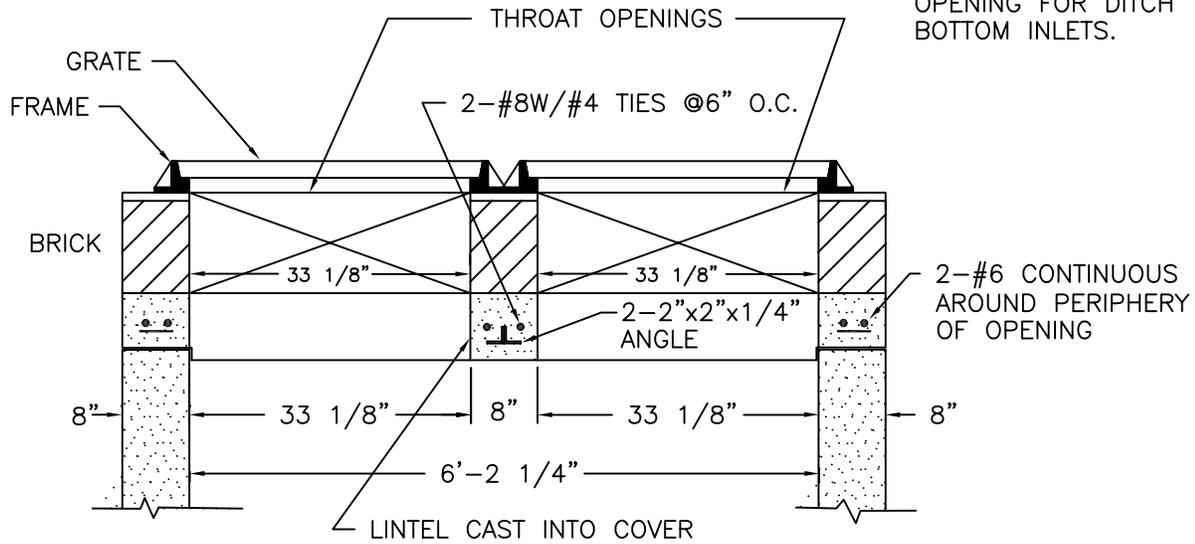
N.T.S.

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.



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

STORM SEWER
DOUBLE TYPE "B"
INLET

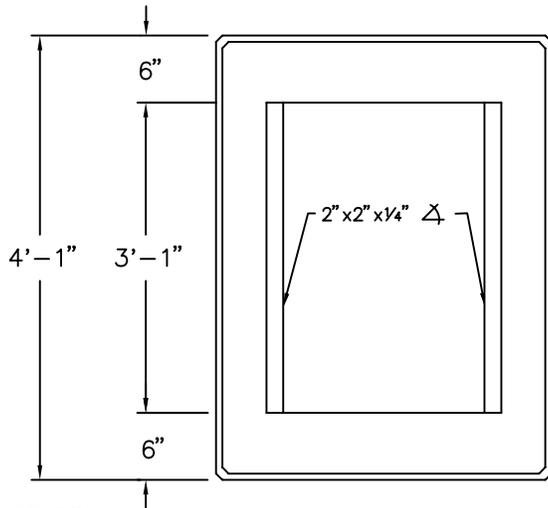
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-206

DATE DRAWN 5-16-79

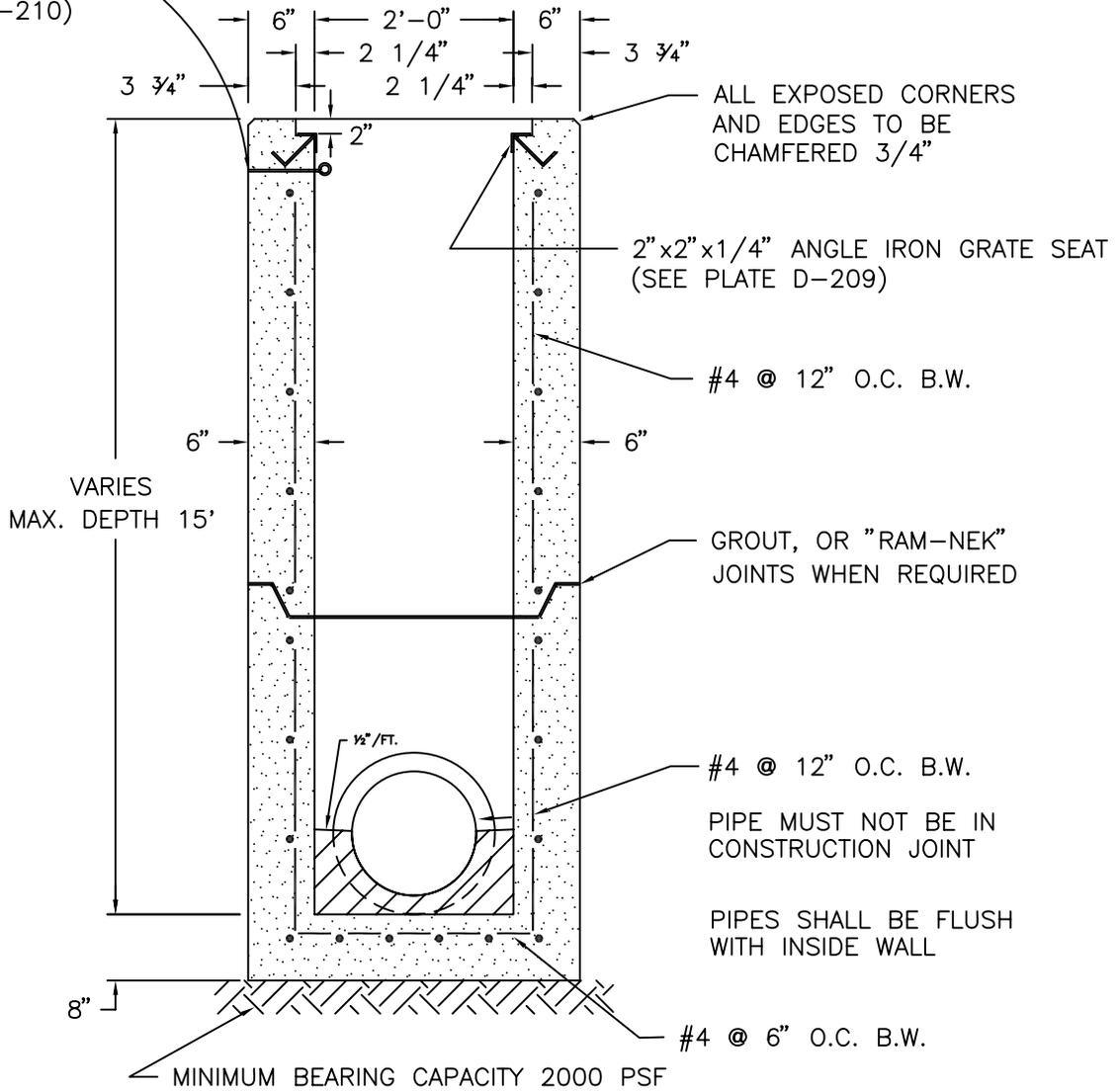
REVISED DATE 5-12-94



SLOT OPENINGS SHALL NOT BE IN WALLS WITH GRATE SEAT

NOTE: CONC. DESIGN STRENGTH 4000 P.S.I.

EYE BOLTS (SEE PLATE D-210)



ALL EXPOSED CORNERS AND EDGES TO BE CHAMFERED 3/4"

2" x 2" x 1/4" ANGLE IRON GRATE SEAT (SEE PLATE D-209)

#4 @ 12" O.C. B.W.

GROUT, OR "RAM-NEK" JOINTS WHEN REQUIRED

#4 @ 12" O.C. B.W.

PIPE MUST NOT BE IN CONSTRUCTION JOINT

PIPES SHALL BE FLUSH WITH INSIDE WALL

#4 @ 6" O.C. B.W.

MINIMUM BEARING CAPACITY 2000 PSF

STORM SEWER
TYPE "C" INLET

*CITY OF
JACKSONVILLE
STANDARD*

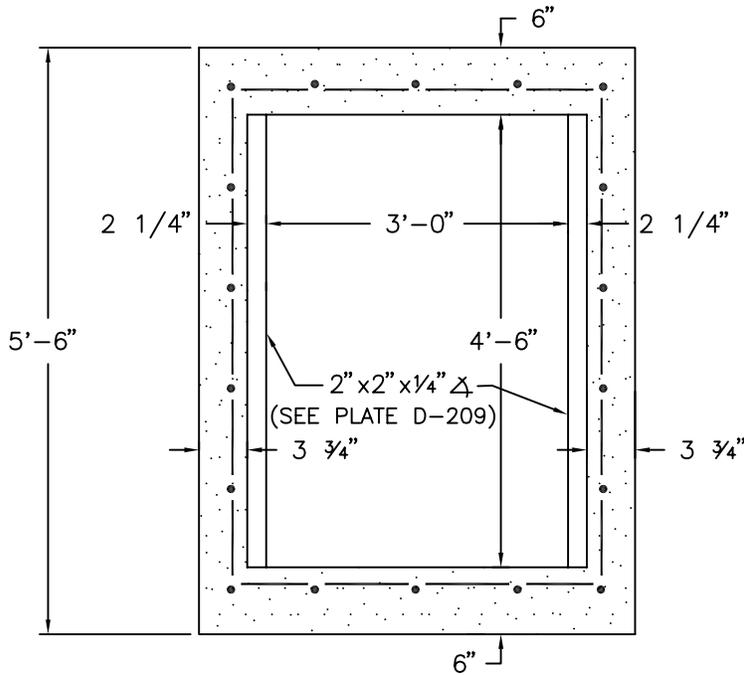
N.T.S.

PLATE D-207

DATE DRAWN 5-19-79

REVISED DATE 5-12-94

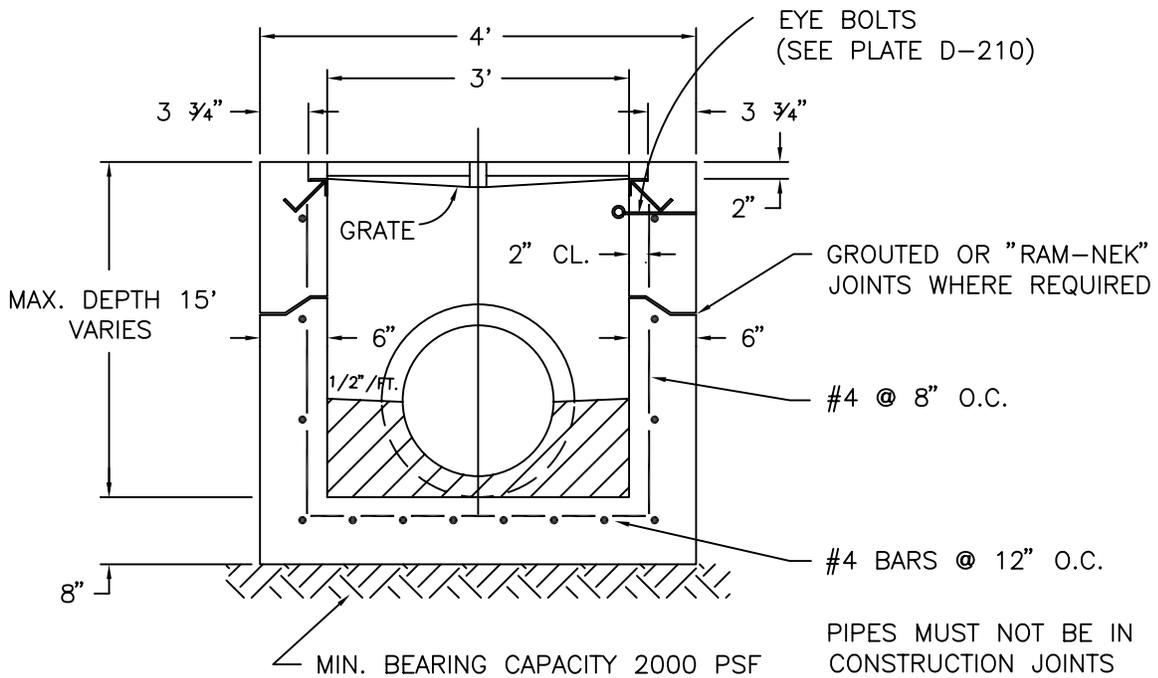
SEE PLATE D-307 FOR GRATE DETAIL



SLOT OPENINGS SHALL NOT BE IN WALLS WITH GRATE SEAT

PLAN

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



SECTION

PIPES MUST NOT BE IN CONSTRUCTION JOINTS

PIPES SHALL BE FLUSH WITH INSIDE WALL

STORM SEWER
TYPE "E" INLET

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

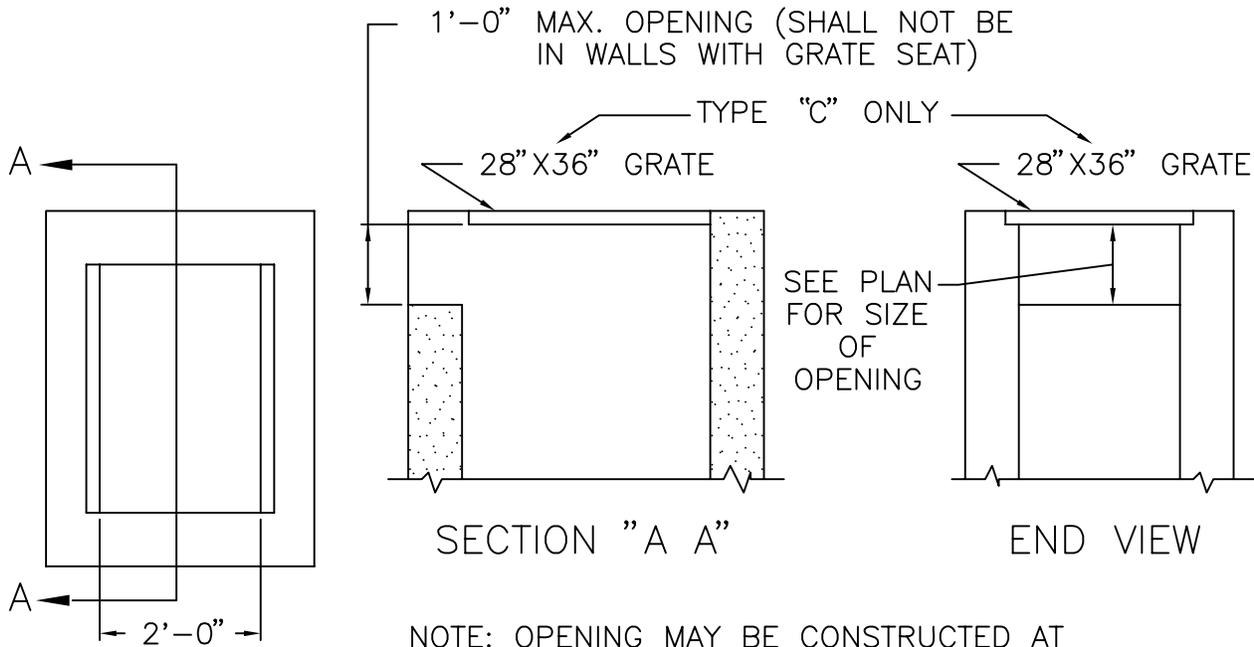
PLATE D-208

DATE DRAWN 5-23-79

REVISED DATE 5-12-94

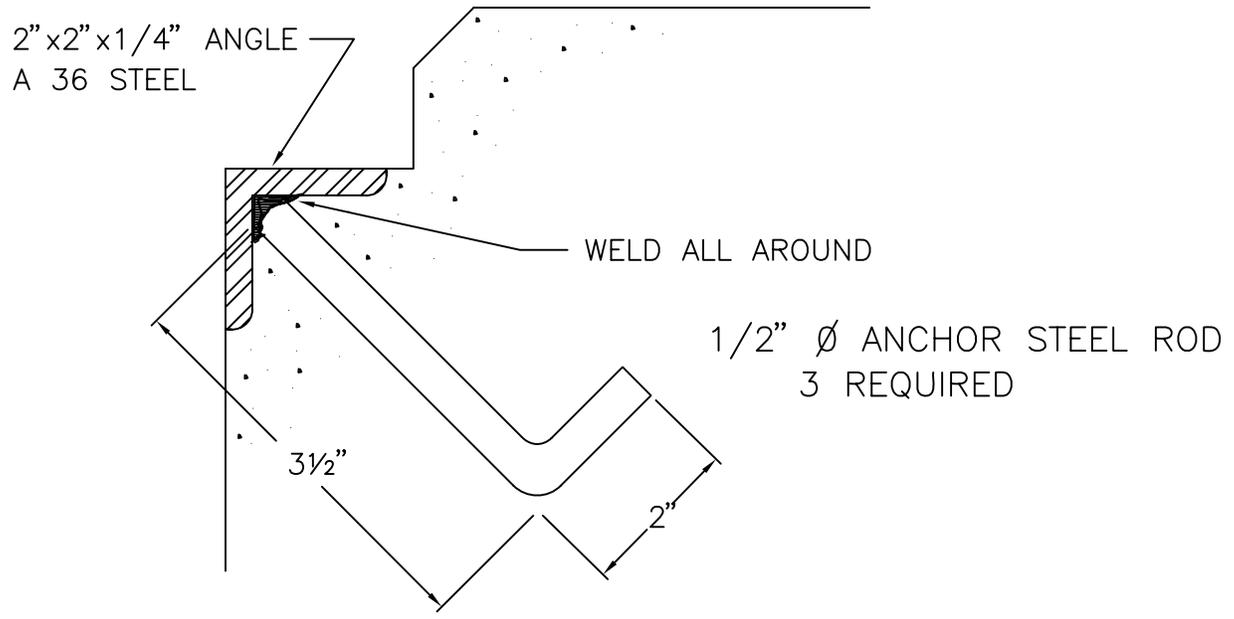
Note:

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.



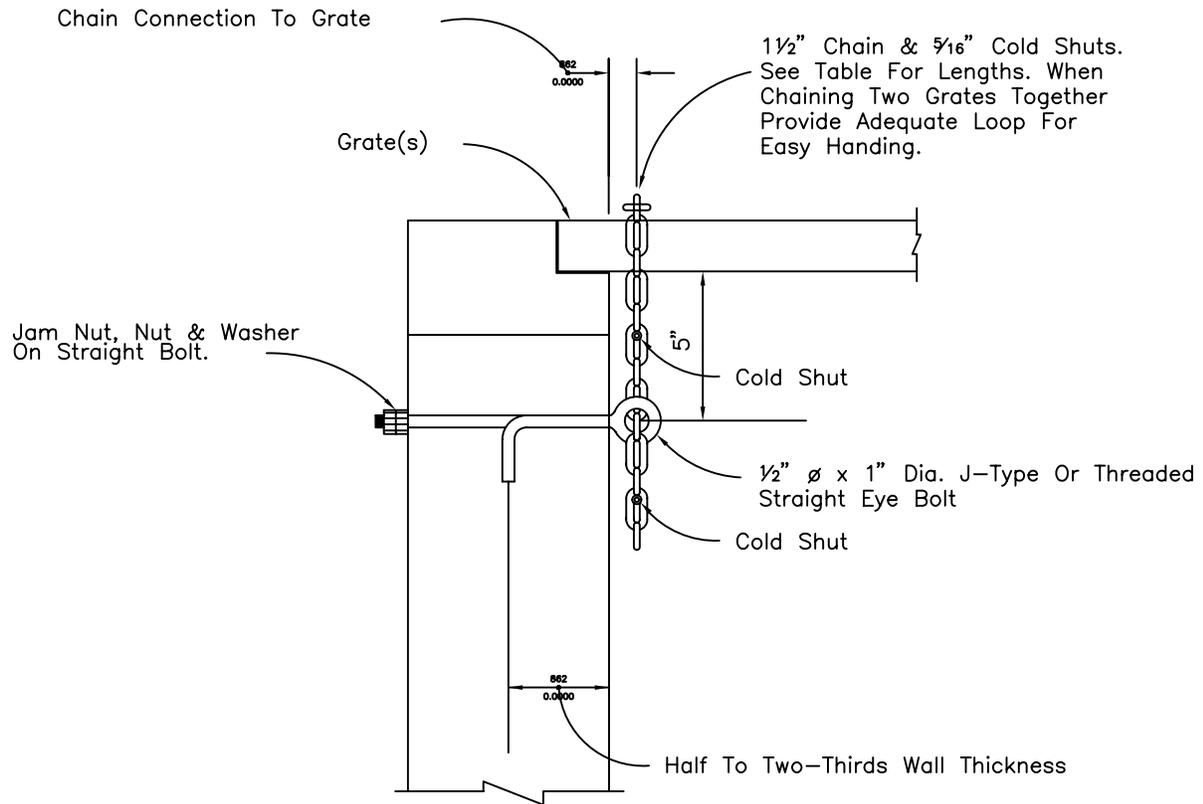
NOTE: OPENING MAY BE CONSTRUCTED AT EITHER END OR BOTH ENDS AS SHOWN ON PLANS TYPE "C" OR "E"

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 & Remarks
207	C	1	2'-6"	Slide & Spin
208	E	2	2@ 2'-6"	Slide & Spin

EYE BOLT AND
CHAIN FOR LOCKING
GRATES TO INLETS

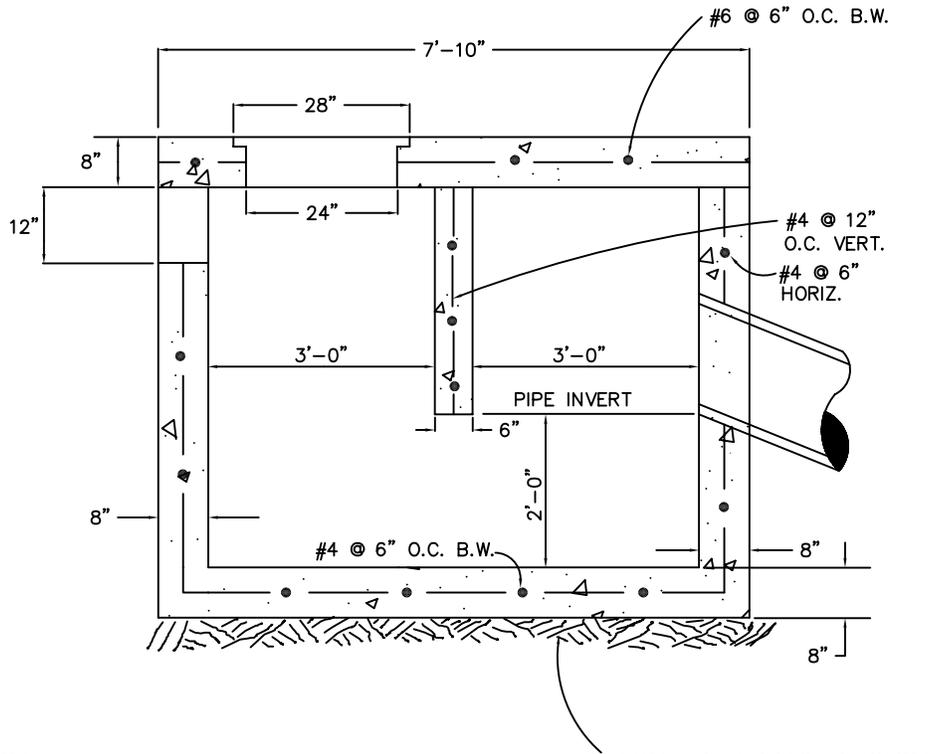
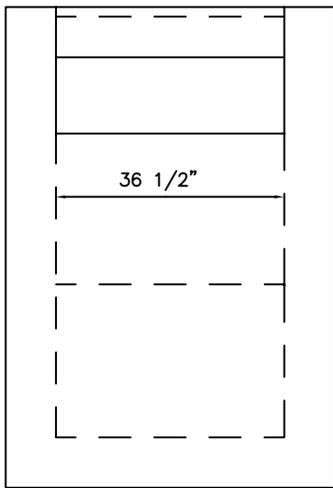
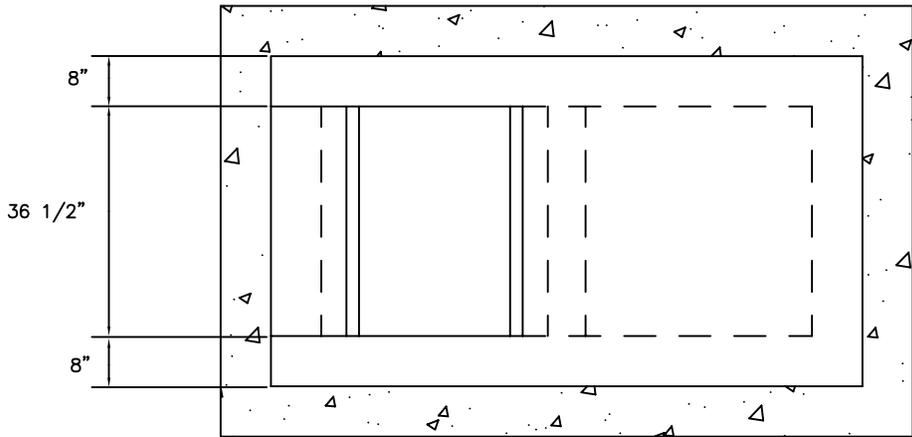
*CITY OF
JACKSONVILLE
STANDARD*

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.

MIN. BEARING DESIGN
CAPACITY 2000 PSF

SAND TRAP
BASIN

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

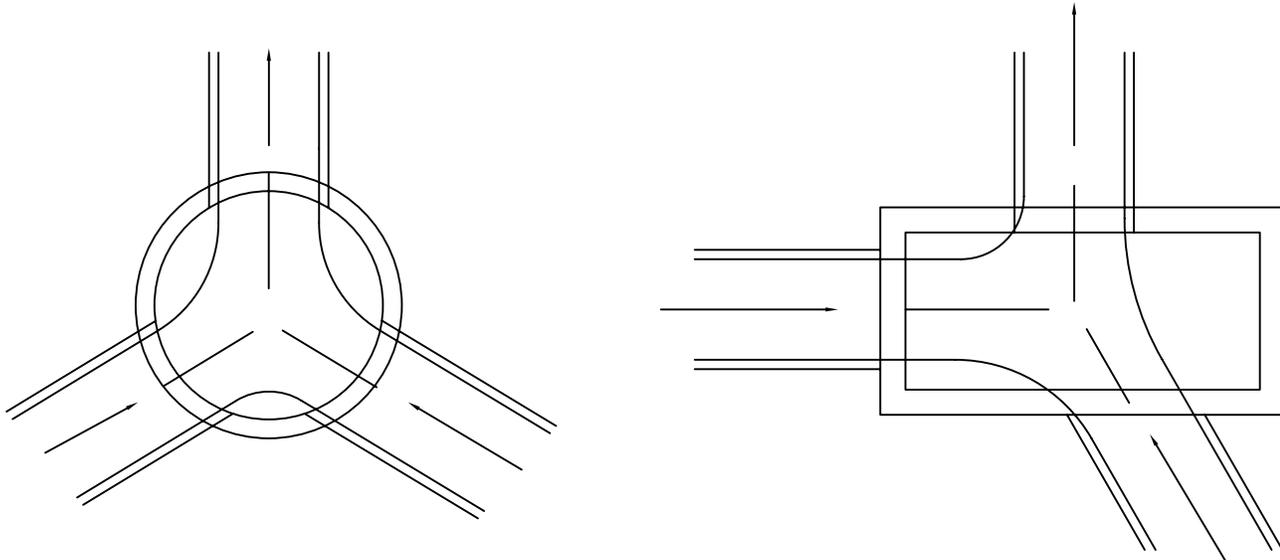
PLATE D-211

DATE DRAWN 05-09-79

REVISED DATE 5-12-94

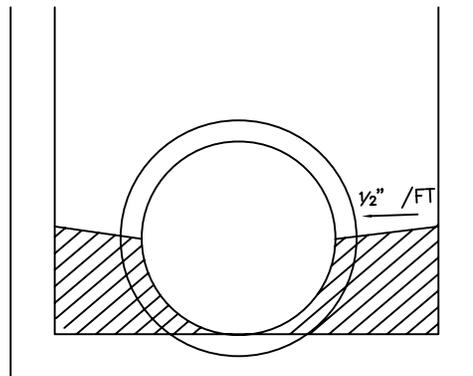
GENERAL NOTE:

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



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.

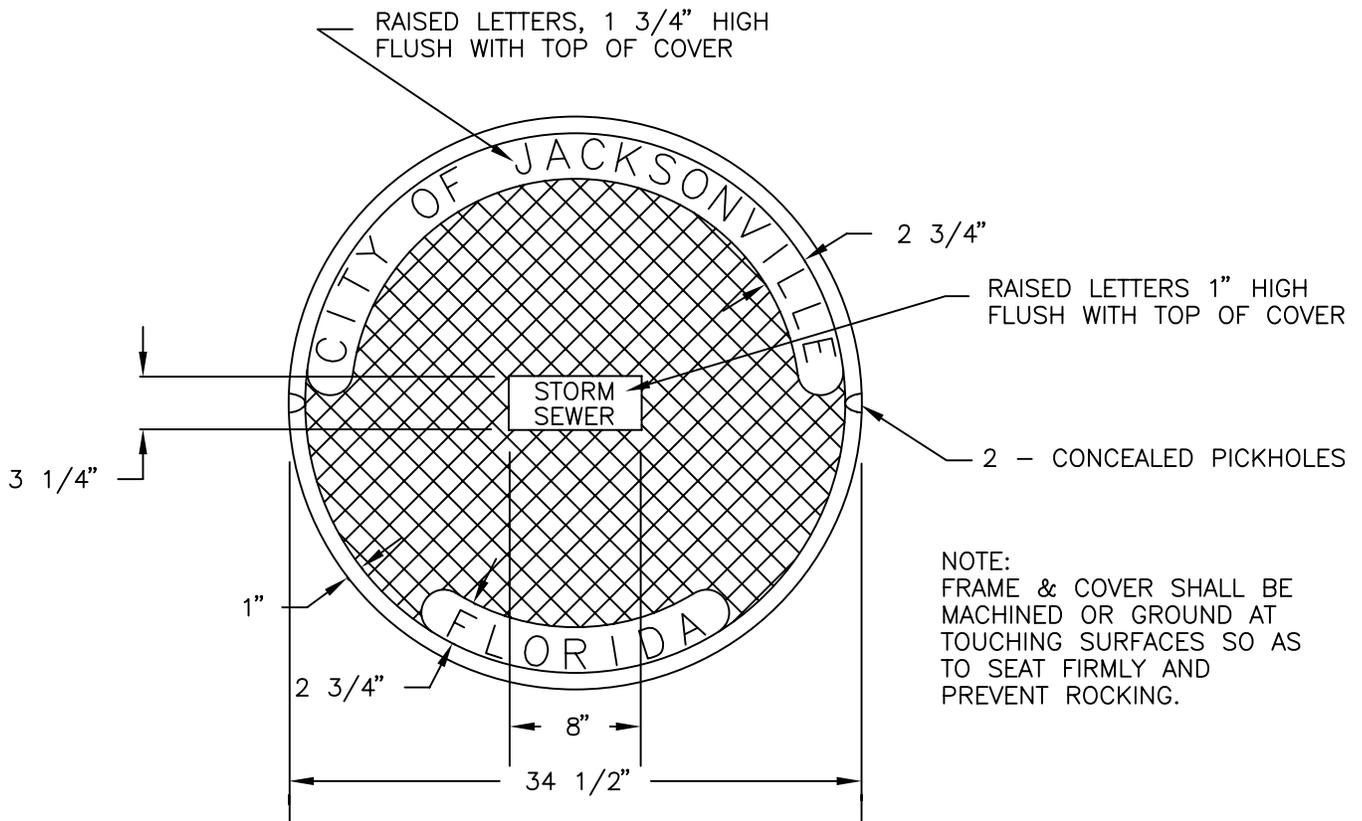
PLATE D-212

DATE DRAWN

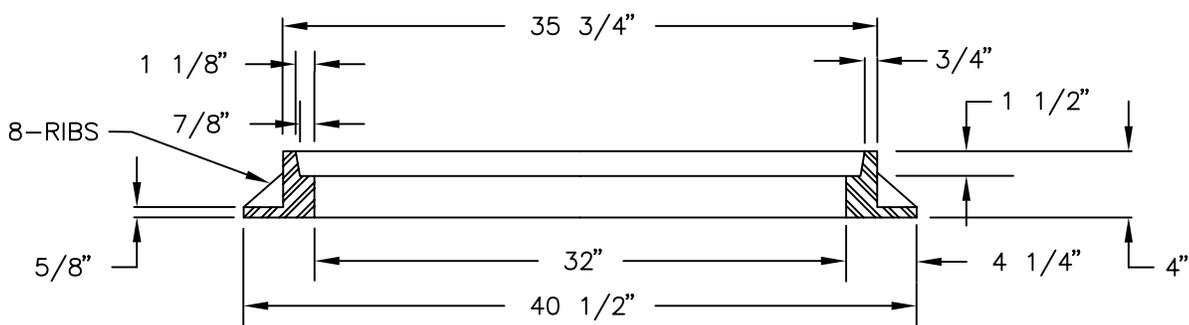
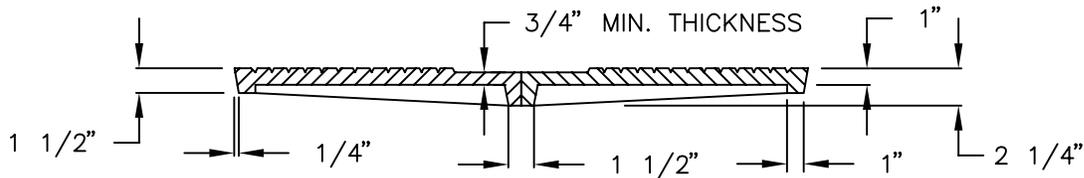
8-5-1979

REVISED DATE

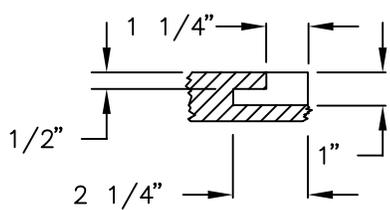
5-12-94



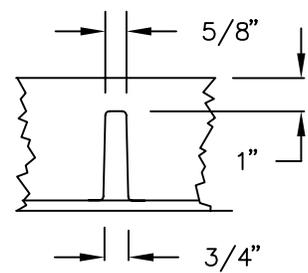
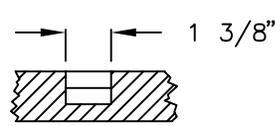
COVER
(265 LBS. ± 5 LBS.)



FRAME
(215 LBS. APPROX.)



PICKHOLE DETAILS



RIB DETAIL

STORM SEWER
MANHOLE COVER
AND FRAME

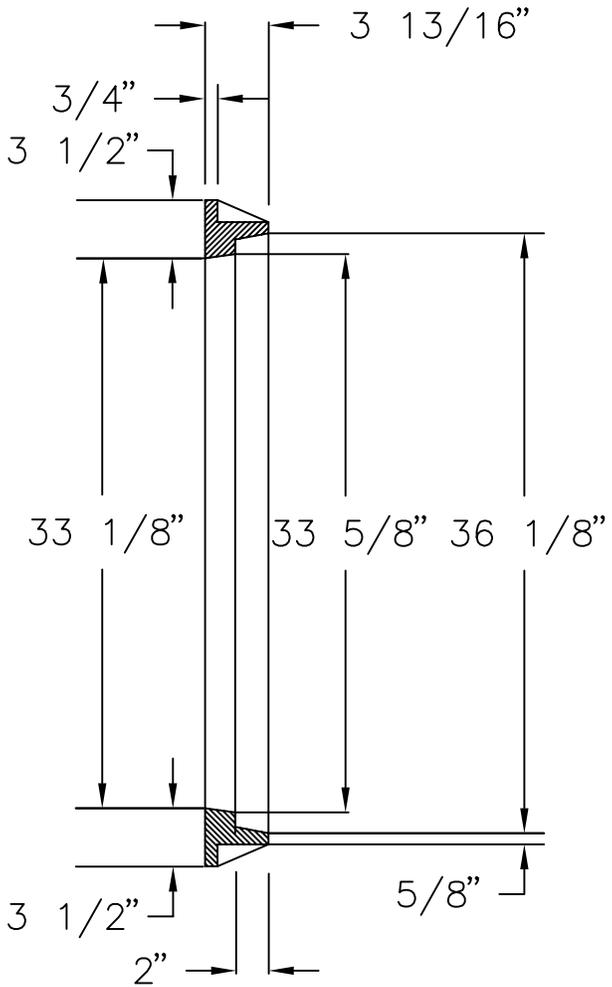
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

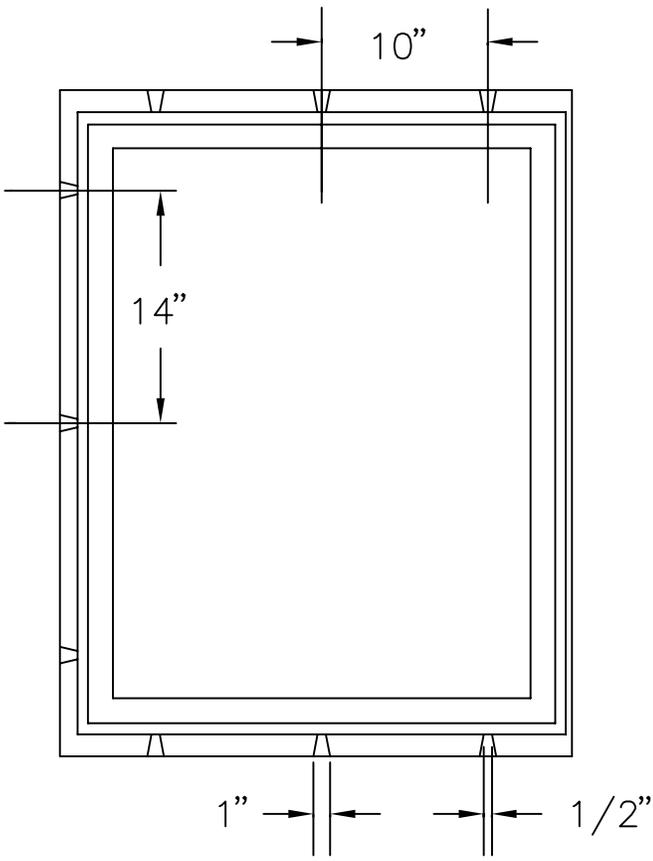
PLATE D-301

DATE DRAWN 4-26-89

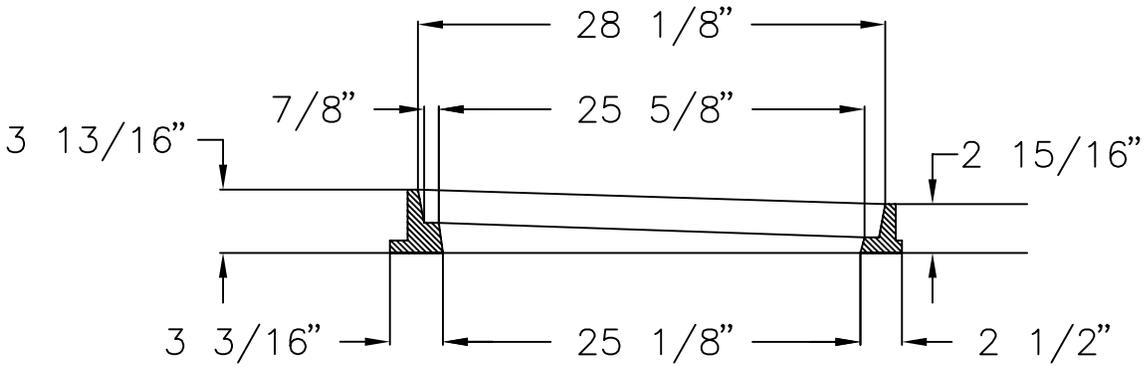
REVISED DATE 5-12-94



SECTION



PLAN

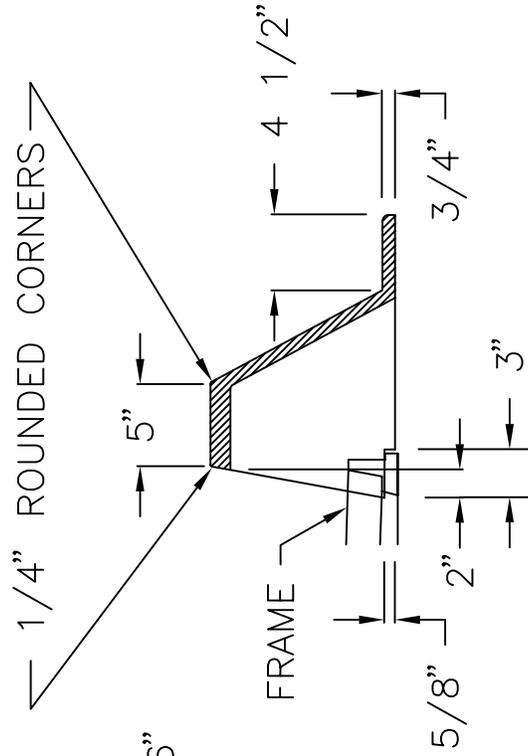
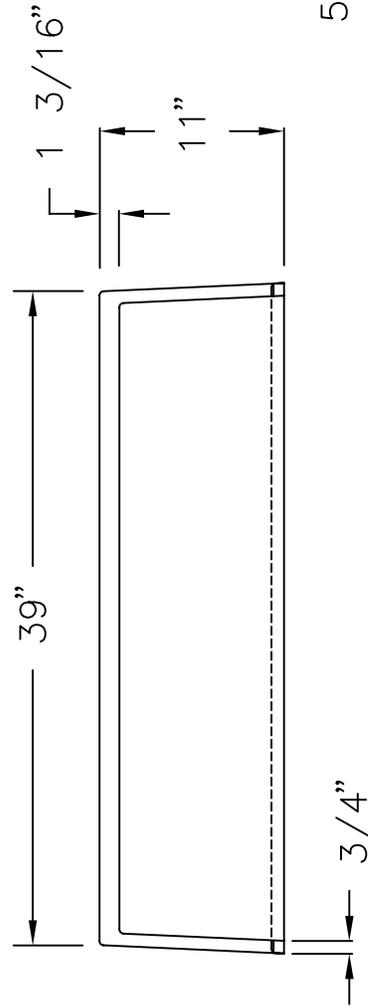
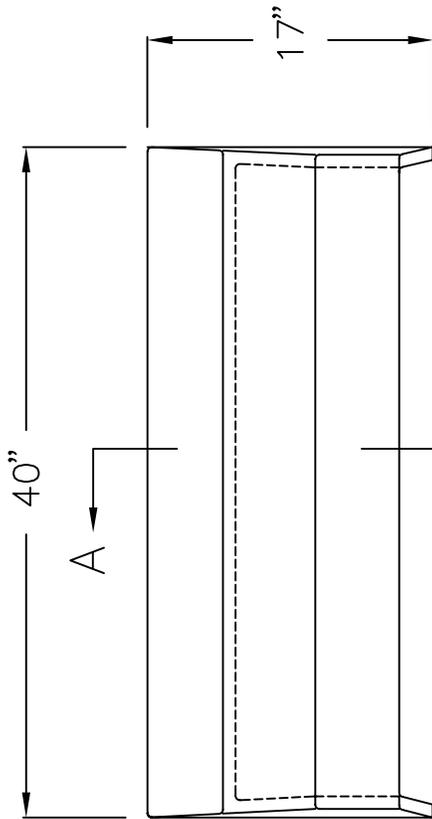


SECTION

APPROX. 180 LBS.

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

APPROXIMATELY 230 LBS.



STORM SEWER
CURB IRON

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

D-303

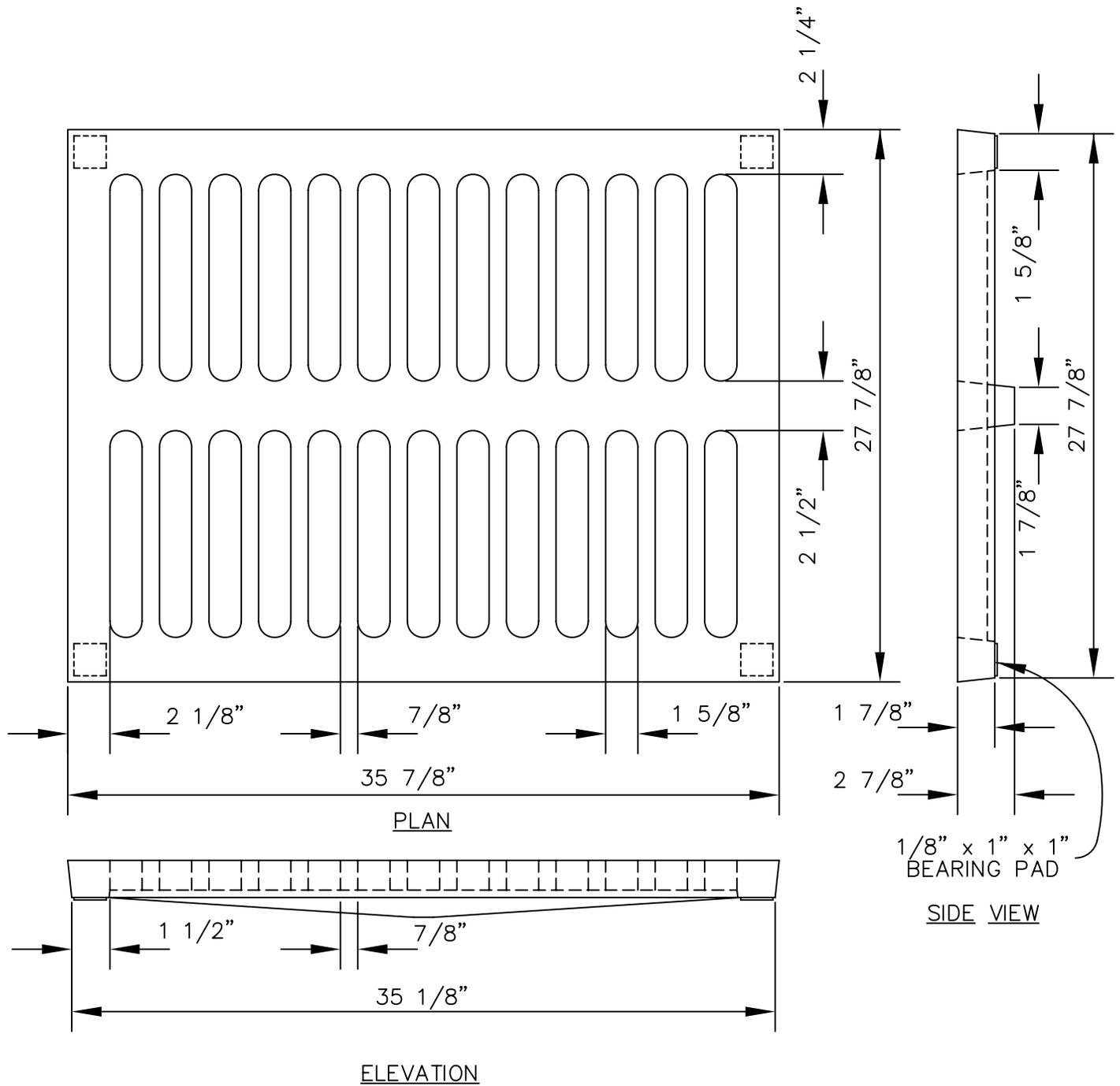
DATE DRAWN

4-24-89

REVISED DATE

5-12-94

APPROX. 240 LBS.



STORM SEWER
INLET GRATE

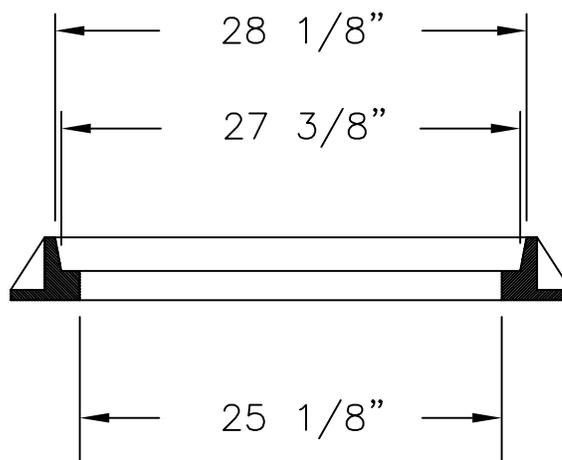
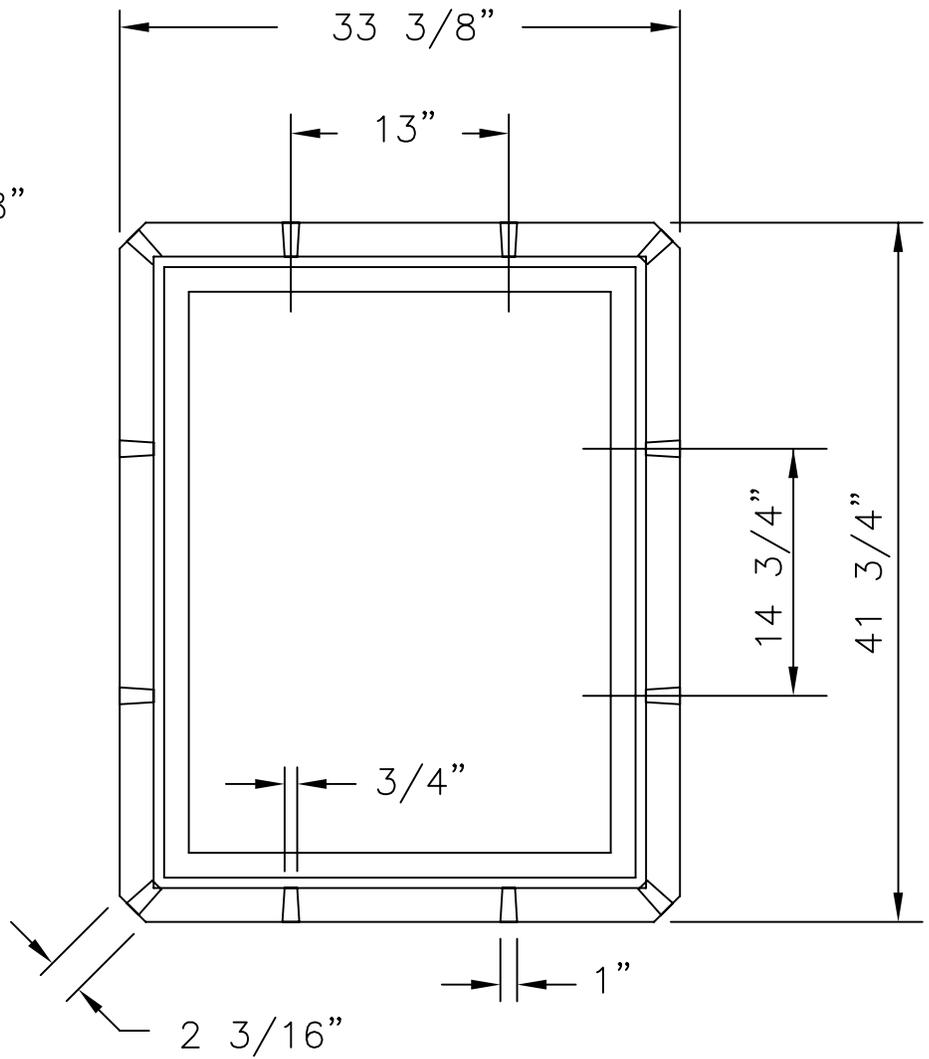
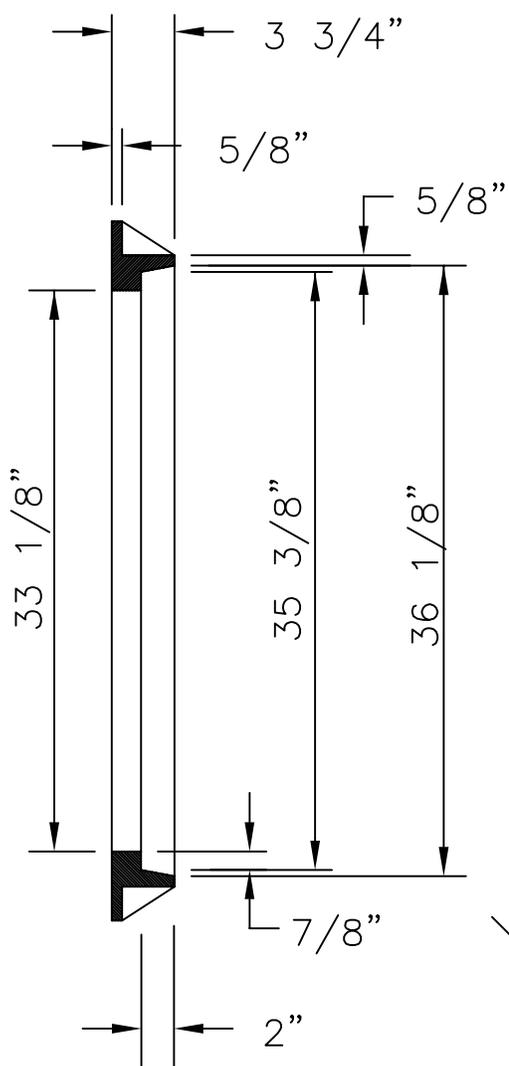
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-304

DATE DRAWN 05-07-90

REVISED DATE 5-12-94



APPROX. 220 LBS.

STORM SEWER
CATCH BASIN
FRAME

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-305

DATE DRAWN 3-12-79

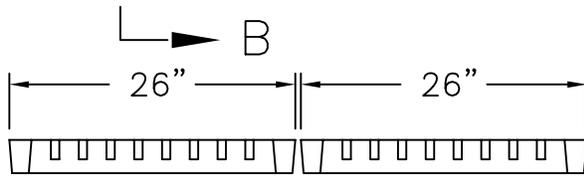
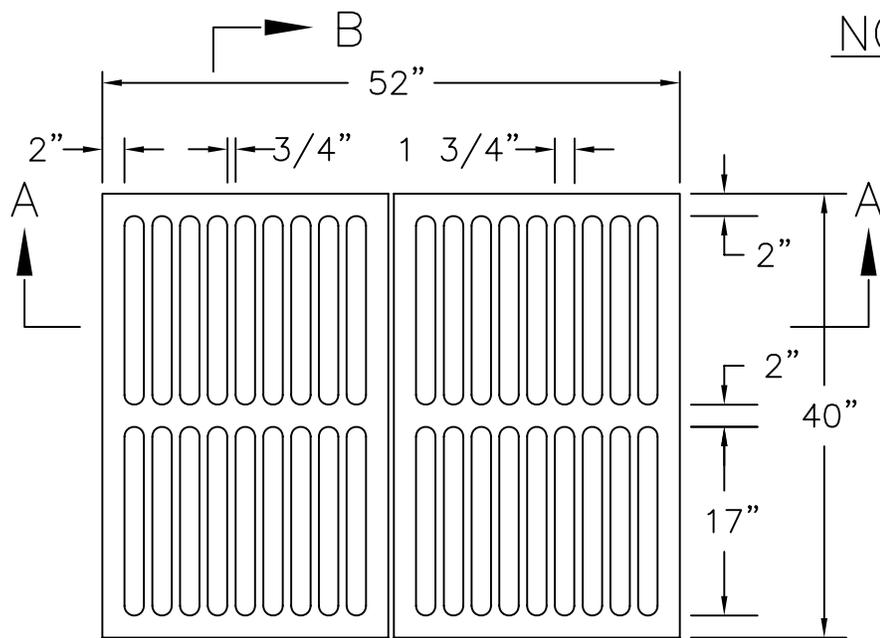
REVISED DATE 5-12-94

NON-TRAFFIC BEARING

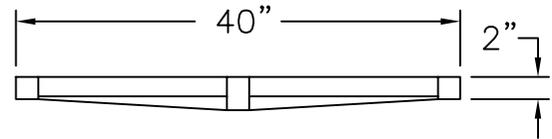
GRATE FOR
TYPE "E" INLET

NOTE: 2 GRATES SHOWN

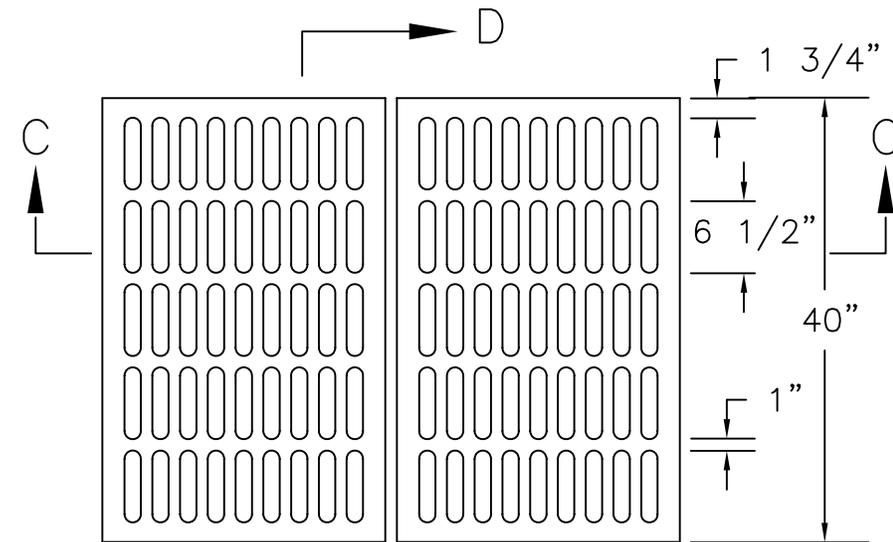
EACH GRATE SHALL HAVE A
MIN. WEIGHT OF 240 LBS.



SECTION A-A



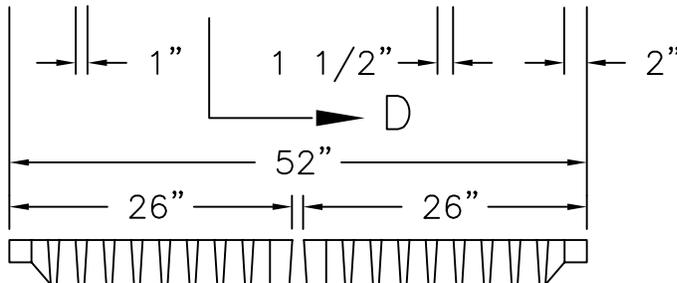
SECTION B-B



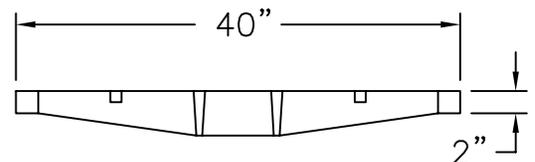
TRAFFIC BEARING
GRATE FOR
TYPE "E" INLET

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

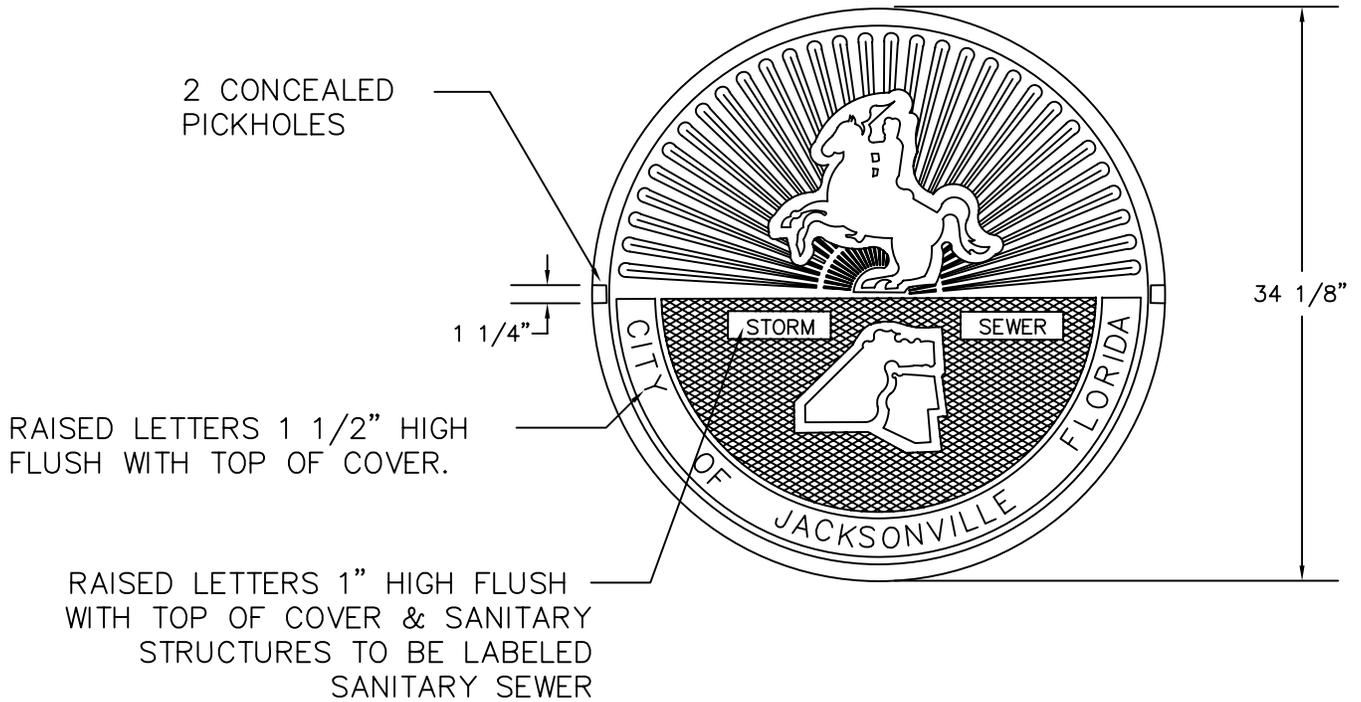
N.T.S.

PLATE D-307

DATE DRAWN 5-16-89

REVISED DATE 5-12-94

COVER DETAIL



M/H COVER
DETAIL

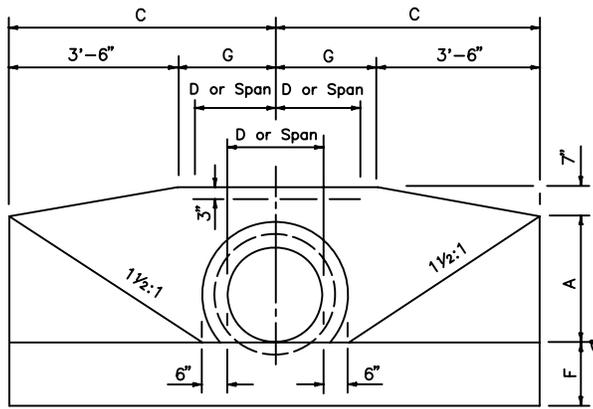
*CITY OF
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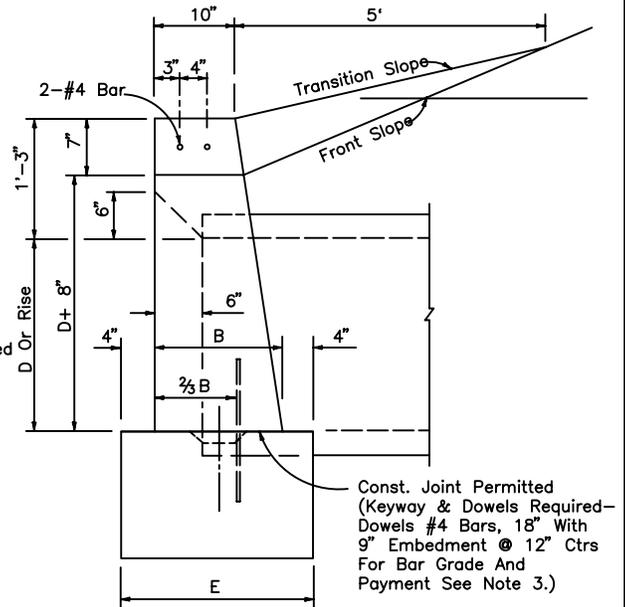
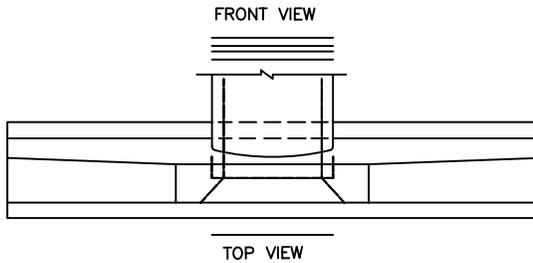
PLATE D-308

DATE DRAWN 07-01-82

REVISED DATE 5-12-94



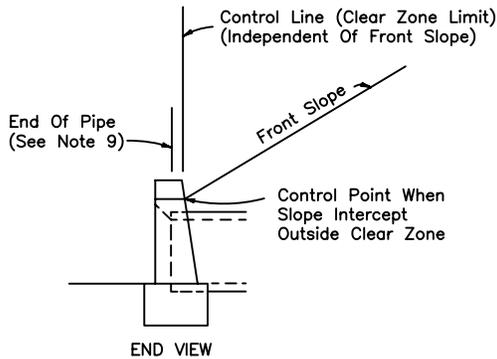
Const. Joint Permitted
See End View
(Enlarged)



END VIEW (ENLARGED)

ENDWALL DIMENSIONS (EXCLUSIVE OF MULTIPLE PIPE SPACING)

GENERAL NOTES



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.
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 $\frac{3}{4}$ ".
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

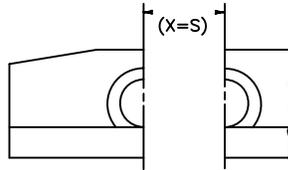
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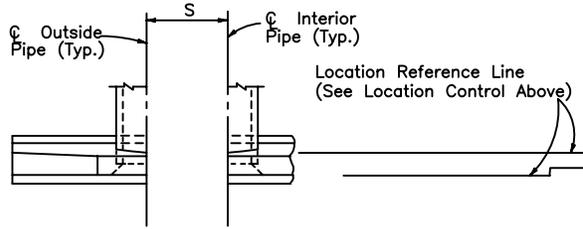
PLATE D-401

DATE DRAWN 8-11-79

REVISED DATE 5-12-94

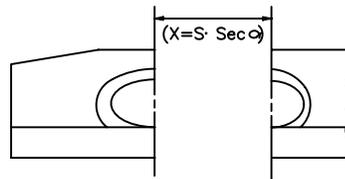


FRONT VIEW

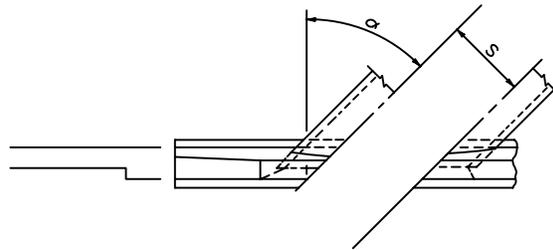


TOP VIEW

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 5-12-94

ROUND CONCRETE AND CORRUGATED METAL PIPE										Dimensions					
D	Opening Area (SF)				Dimensions						X				
	Number of Pipes				A	B	C	E	F	G	S	0°	15°	30°	45°
	1	2	3	4											
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"

D	Concrete (CY)									
	Number And Type Of Pipe And Skew Angle Of Pipe									
	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				

D	Concrete (CY)							
	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				

D	Concrete (CY)							
	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 5-12-94

		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'-11 1/2"	2'-0"	1'-4"	2'-5 1/2"	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'-10 1/2"	2'-1"	1'-5"	3'-4 1/2"	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'-7 1/2"	2'-3"	1'-7"	5'-11 1/2"	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'-6 1/2"	2'-4"	1'-8"	6'-0 1/2"	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															
Concrete (CY)															
Number Of Pipe And Skew Angle Of Pipe															
Single	Double				Triple				Quadruple				Span	Rise	Approx. Equiv. Round Pipe
0°	0°	15°	30°	45°	0°	15°	30°	45°	0°	15°	30°	45°			
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	17'	13'	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	21'	15'	18'
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	28'	20'	18'
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	35'	24'	30'
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	42'	29'	36'
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	49'	33'	42'
4.87	6.31	6.36	6.53	6.91	7.74	7.84	8.18	8.93	9.18	9.33	9.85	11.0	57'	38'	48'
5.88	7.64	7.70	7.91	8.37	9.40	9.52	9.94	10.9	11.2	11.3	12.0	13.3	64'	43'	54'
7.80	10.2	10.2	10.5	11.1	12.5	12.7	13.2	14.4	14.9	15.1	15.9	17.8	71'	47'	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 5-12-94

Rise	Span	Opening Area (SF)				CONCRETE ELLIPTICAL PIPE											
						Dimensions											
		Number of Pipes												X			
		1	2	3	4	A	B	C	E	F	G	S	0°	15°	30°	45°	
12'	18'	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"	
14'	23'	1.8	3.6	5.4	7.2	1'-10"	1'-3"	4'-21/2"	1'-11"	1'-3"	8 1/2"	3'-5"	3'-5"	3'-6"	3'-11"	4'-10"	
19'	30'	3.3	6.6	9.9	13.2	2'-3"	1'-4"	5'-11 1/2"	2'-0"	1'-4"	1'-7 1/2"	4'-2"	4'-2"	4'-4"	4'-10"	5'-11"	
24'	38'	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"	
29'	45'	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"	
34'	53'	10.2	20.4	30.6	40.8	3'-6"	1'-7"	7'-11 1/2"	2'-3"	1'-7"	4'-5 1/2"	7'-1"	7'-1"	7'-4"	8'-2"	10'-0"	
38'	60'	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"	
43'	68'	16.6	33.2	49.8	66.4	4'-3"	1'-10"	9'-8 1/2"	2'-6"	1'-10"	6'-2 1/2"	8'-10"	8'-10"	9'-2"	10'-2"	12'-6"	
48'	76'	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"	
* 53'	83'	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"	
58'	91'	29.5	59.0	88.5	118.0	5'-6"	2'-10"	12'-6 1/2"	3'-6"	2'-10"	9'-0 1/2"	11'-4"	11'-4"	11'-9"	13'-1"	16'-0"	

Rise	Span	CONCRETE ELLIPTICAL PIPE														Span	Rise	Approx. Equiv. Round Pipe
		Concrete (CY)																
		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°	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	12'	18"	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	14'	23"	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	19'	30"	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	24'	38"	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	29'	45"	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	10.7	34'	53"	42"	
38'	60"	5.22	7.16	7.23	7.46	7.96	9.10	9.24	9.70	10.7	11.1	11.2	12.0	13.5	38'	60"	48"	
43'	68"	6.63	9.01	9.09	9.38	10.0	11.4	11.6	12.1	13.4	13.8	14.0	14.9	16.7	43'	68"	54"	
48'	76"	8.66	11.7	11.8	12.2	13.0	14.8	15.0	15.8	17.4	17.9	18.2	19.3	21.7	48'	76"	60"	
* 53'	83"	12.5	16.9	16.9	17.7	18.8	21.5	21.8	22.9	25.2	26.0	26.4	28.1	31.6	53'	83"	66"	
58'	91"	16.5	22.3	22.5	23.2	24.7	28.0	28.5	29.9	32.9	33.9	34.5	36.6	41.0	58'	91"	72"	

* SPECIAL ORDER; NOT STANDARD SIZE

STRAIGHT CONCRETE
ENDWALLS SINGLE AND
MULTIPLE PIPE

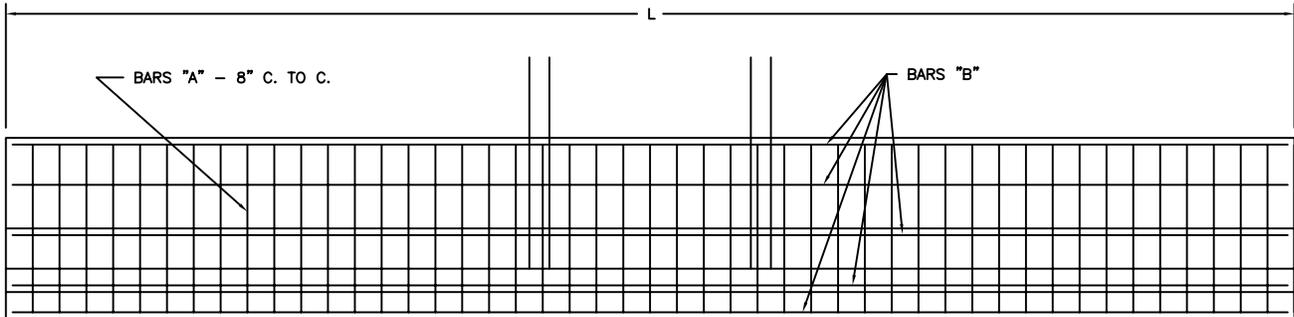
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STANDARD*

N. T. S.

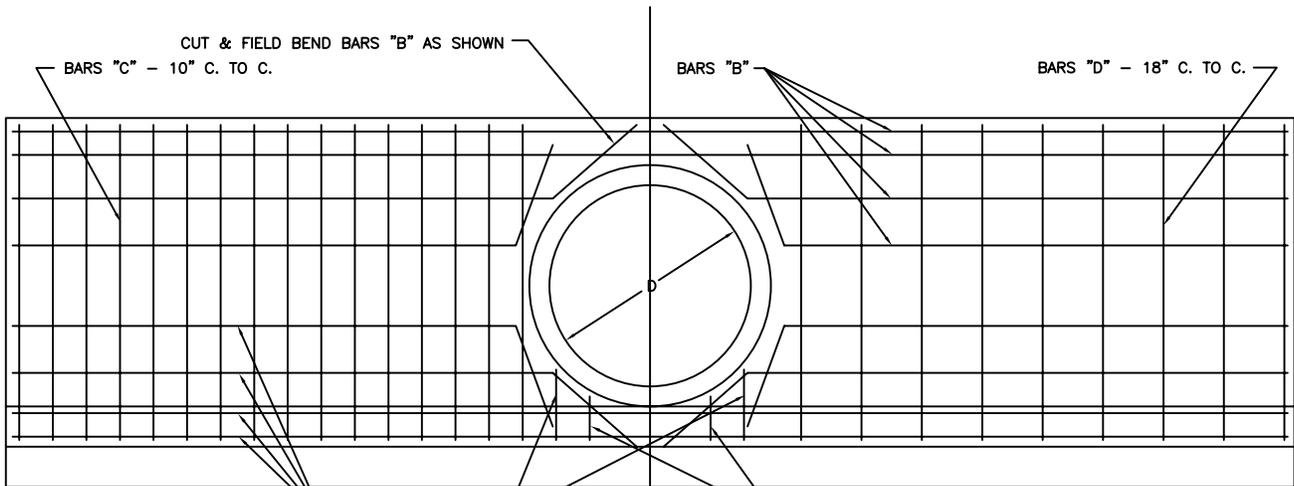
PLATE D-405

DATE DRAWN 07/13/79

REVISED DATE 5-12-94

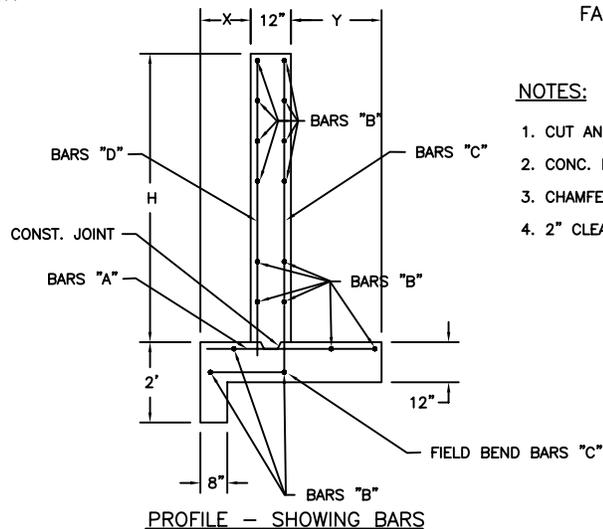


PLAN - SHOWING BARS IN FOOTING



HALF ELEV.
SHOWING BARS IN BACK
FACE OF WALL

BEARING CAPACITY MIN. 2000 P.S.F.
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

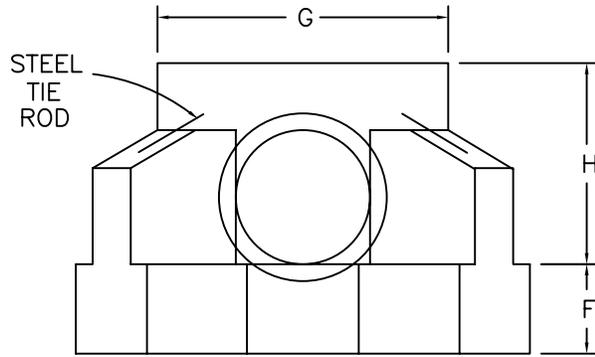
REVISED DATE 5-12-94

STRAIGHT ENDWALLS

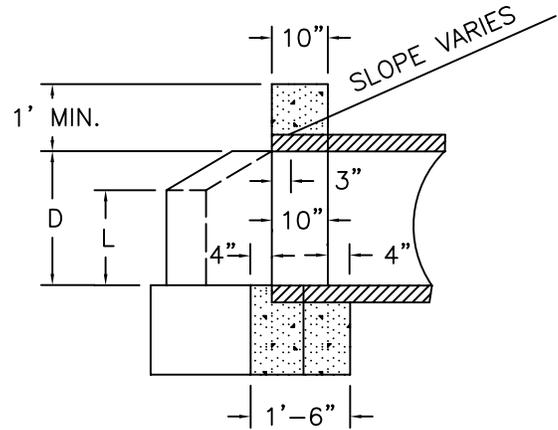
DIMENSIONS					BAR SCHEDULE				
PIPE SIZE	L	H	X	Y	BAR	SIZE	LENGTH	NO. REQ.	SPACE
60"	32'-0"	7'-2"	1'-3"	2'-3"	A	6	4'-2"	48	8"
					B	4	31'-8"	17	
					C	6	9'-9"	32	10"
					D	4	7'-10"	18	18"
					E	6	2'-6"	4	
					F	6	1'-6"	4	
66"	34'-0"	7'-8"	1'-3"	2'-8"	A	6	4'-7'	51	8"
					B	4	33'-8"	17	
					C	6	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	<i>CITY OF JACKSONVILLE STANDARD</i>	N.T.S.	PLATE D-407
		DATE DRAWN	5-9-79
		REVISED DATE	5-12-94



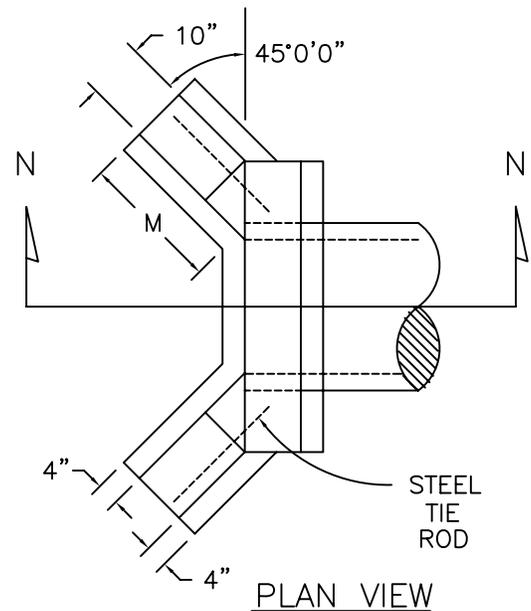
FRONT ELEVATION



SECTION N-N

NOTE:

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



PLAN VIEW

DIMENSIONS							QUANTITIES IN ONE ENDWALL			
OPENING		WALL			FOOTING	CONCRETE 3,000 P.S.I.			STEEL	
D	AREA SQ.FT.	H	G	L	M	F	TOTAL CU. YARDS			TIE RODS
							CONC.PIPE	C.M.PIPE	C.I.PIPE	
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"φ x 2'-0"
30"	4.9	3'-6"	4'-10"	1'-9"	2'-5"	1'-6"	1.34	1.42	1.41	2-3/4"φ x 2'-0"
36"	7.1	4'-0"	5'-4"	2'-0"	2'-11"	1'-8"	1.74	1.85	1.84	2-3/4"φ x 3'-0"
42"	9.6	4'-6"	5'-10"	2'-3"	3'-5"	2'-0"	2.36	2.49		2-3/4"φ x 3'-0"
48"	12.6	5'-0"	6'-4"	2'-6"	4'-0"	2'-0"	2.76	2.92		2-3/4"φ x 3'-0"

CONCRETE ENDWALL
WITH 45° WINGS
FOR PIPE CULVERTS

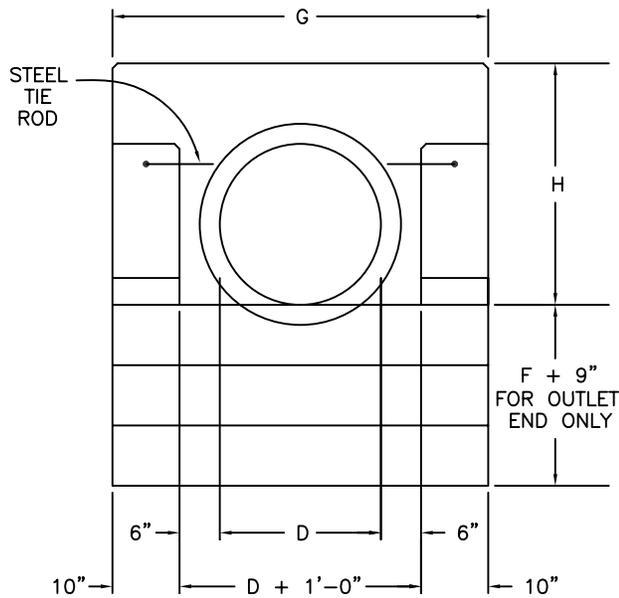
*CITY OF
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STANDARD*

N.T.S.

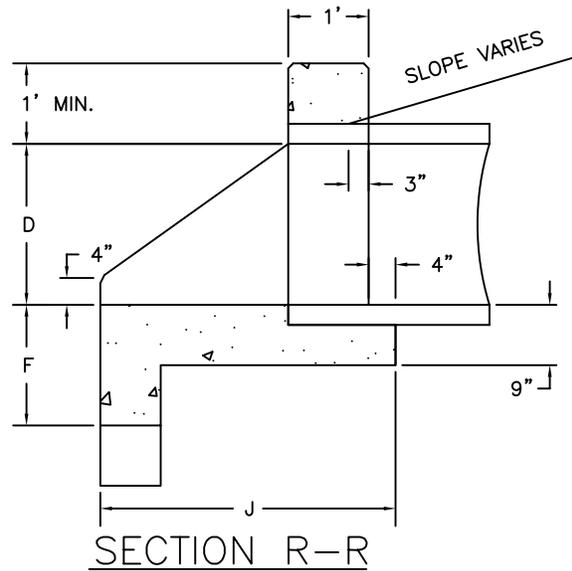
PLATE D-408

DATE DRAWN 7-12-79

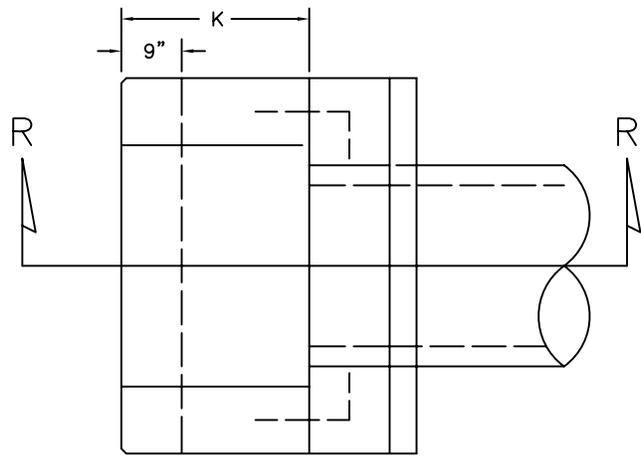
REVISED DATE 5-12-94



FRONT ELEVATION



SECTION R-R



PLAN VIEW

NOTE:

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

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. Δ						STEEL TIE RODS
D	AREA SQ.FT.	G	H	K	F	J	CONC. PIPE		C.M. PIPE		C.I. PIPE		
							INLET	OUTLET	INLET	OUTLET	INLET	OUTLET	
12"	0.8	3'-8"	2'-0"	1'-0"	1'-3"	2'-2"	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'-7"	0.61	0.69	0.64	0.72	0.63	0.72	NONE
18"	1.8	4'-2"	2'-6"	1'-9"	1'-3"	2'-11"	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'-8"	1.03	1.13	1.08	1.18	1.08	1.18	2-3/4" φ x 2'-0"
30"	4.9	5'-2"	3'-6"	3'-3"	1'-6"	4'-5"	1.35	1.46	1.43	1.53	1.42	1.53	2-3/4" φ x 2'-0"
36"	7.1	5'-8"	4'-0"	4'-0"	1'-9"	5'-2"	1.75	1.87	1.86	1.98	1.84	1.96	2-3/4" φ x 2'-6"
42"	9.6	6'-2"	4'-6"	4'-9"	2'-0"	5'-11"	2.21	2.34	2.34	2.47			2-3/4" φ x 2'-6"
48"	12.6	6'-8"	5'-0"	5'-6"	2'-0"	6'-8"	2.66	2.80	2.83	2.97			2-3/4" φ x 3'-0"

CONCRETE ENDWALL
WITH U-TYPE WINGS
FOR PIPE CULVERTS

*CITY OF
JACKSONVILLE
STANDARD*

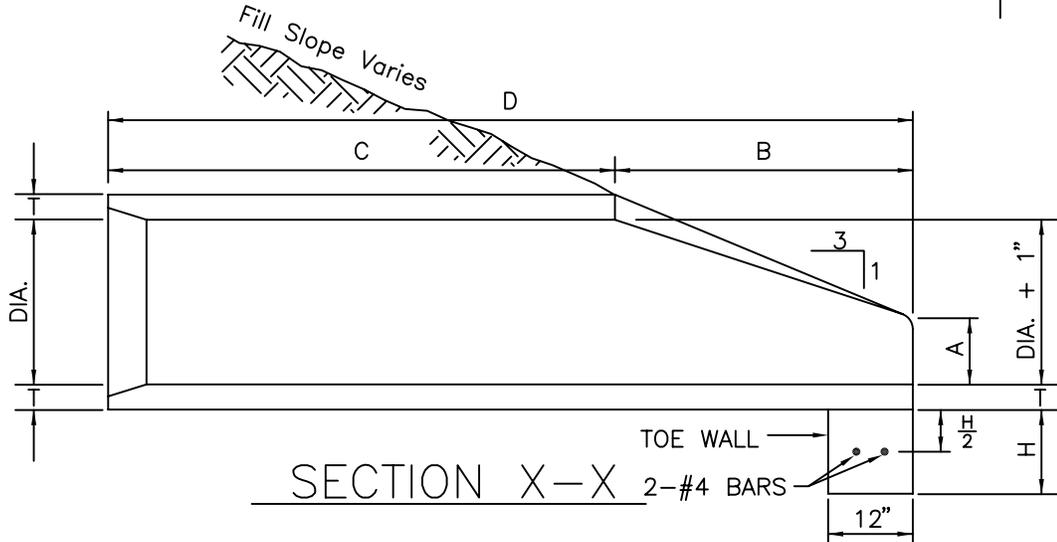
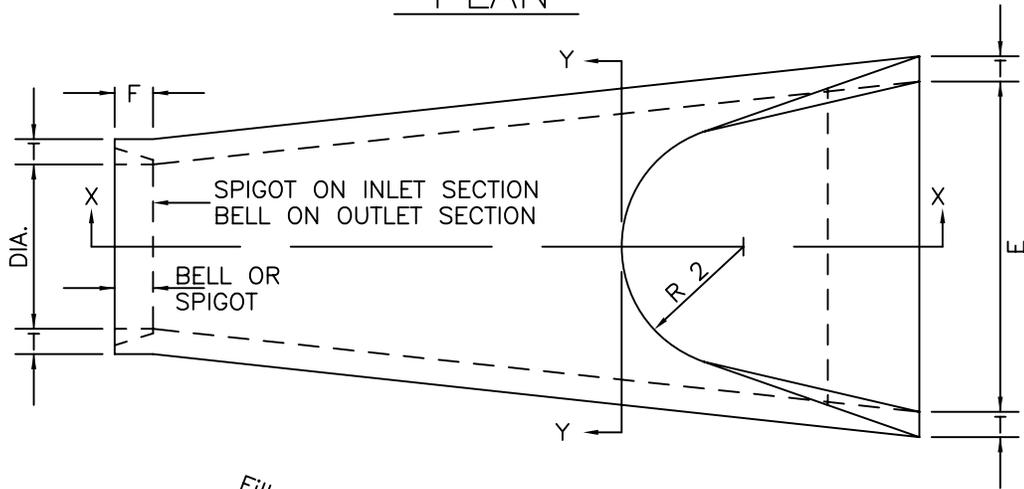
N.T.S.

PLATE D-409

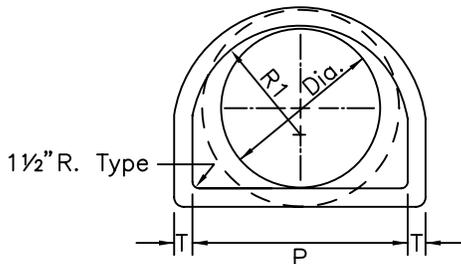
DATE DRAWN 7-14-79

REVISED DATE 5-12-94

PLAN



SECTION Y-Y



GENERAL 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 casket.
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	R 1	R 2	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 7/16"	16 1 3/16"	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 1 3/16"	24 9/16"	20"	5 1/2"	21"	4100
42"	4 1/2"	3 3/4"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	53 3/8"	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 3/8"	24"	6 1/4"	24"	8040
60"	6"	5"	2'-6"	5'-0"	3'-3"	8'-3"	8'-0"	72 1/2"	36 1 1/16"	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 3/8"	24"	7 1/4"	24"	10630
72"	7"	6"	2'-0"	6'-6"	1'-9"	8'-3"	9'-0"	77 1 3/16"	38 1 9/16"	24"	7 3/4"	24"	12520

FLARED END
SECTION FOR
PIPE CULVERTS

*CITY OF
JACKSONVILLE
STANDARD*

N. T. S.

PLATE D-410

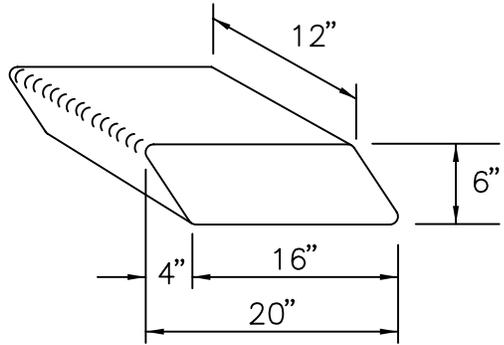
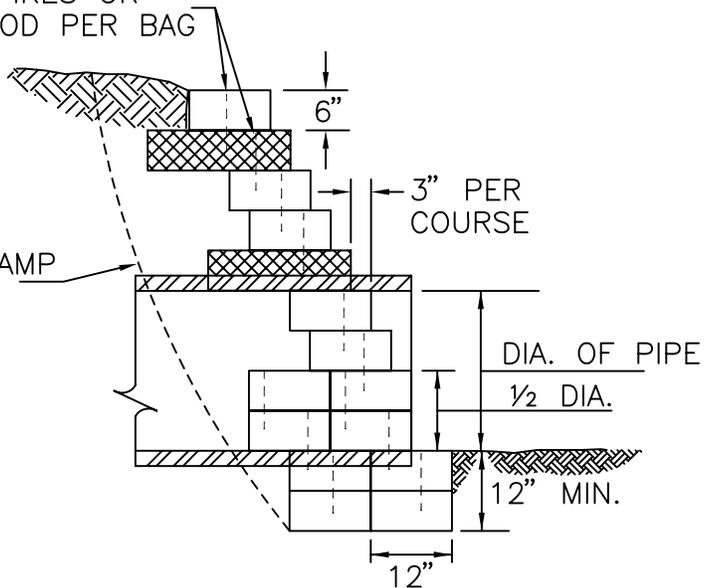
DATE DRAWN

2-5-79

REVISED DATE

5-12-94

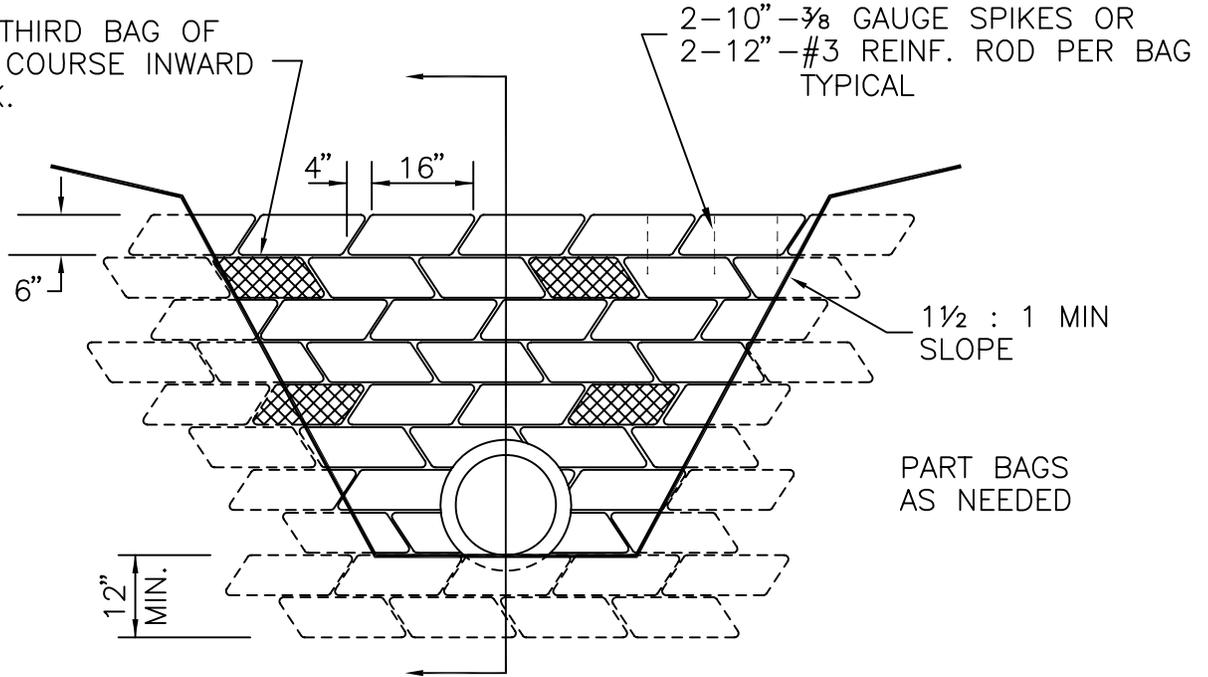
2-10" - 3/8 GAUGE SPIKES OR
2-12" - #3 REINF. ROD PER BAG
TYPICAL



BAG DETAIL

COUNTERSINK ALL EXPOSED
SPIKES OR REINF. RODS 1"

TURN EVERY THIRD BAG OF
EVERY THIRD COURSE INWARD
TOWARD BANK.



PART BAGS
AS NEEDED

SAND - CEMENT
RIP RAP
ENDWALL

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-411

DATE DRAWN

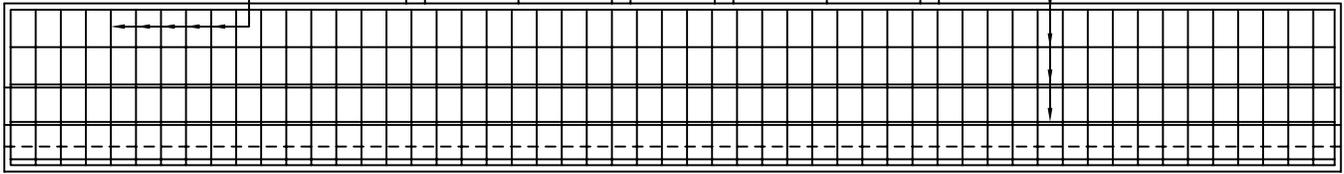
3-18-79

REVISED DATE

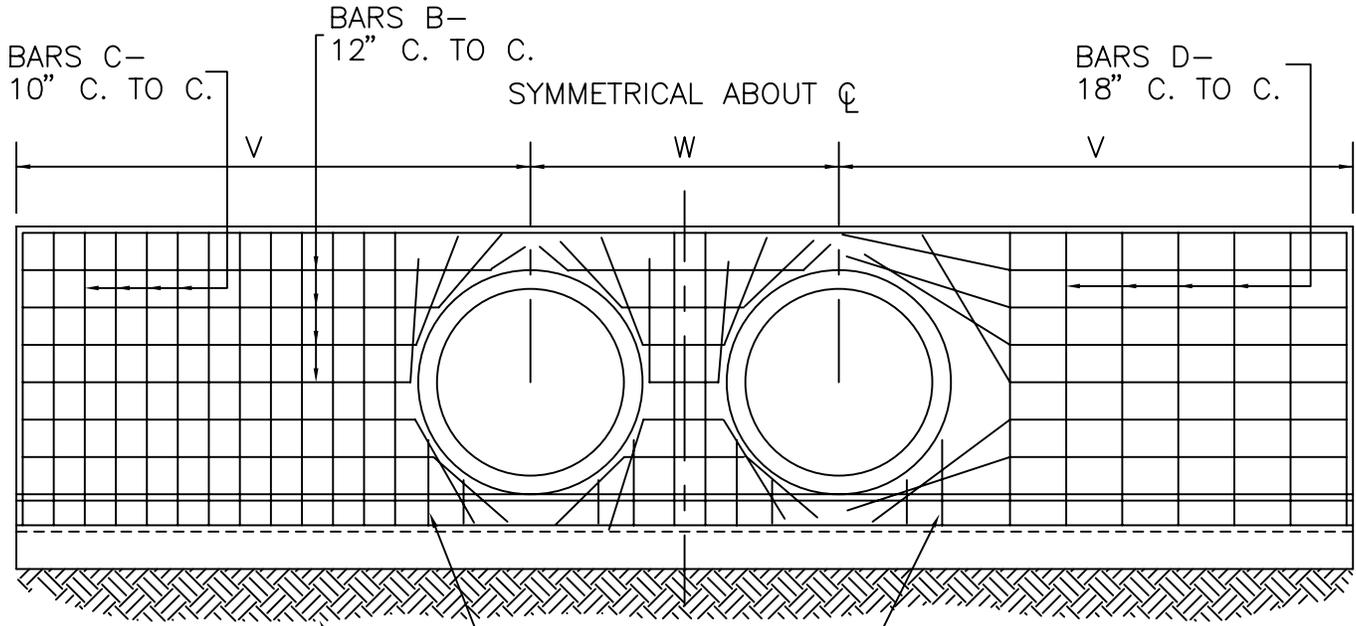
5-12-94

BARS A-
8" C. TO C.

BARS B-
12" C. TO C.



PLAN SHOWING BARS IN FOOTING

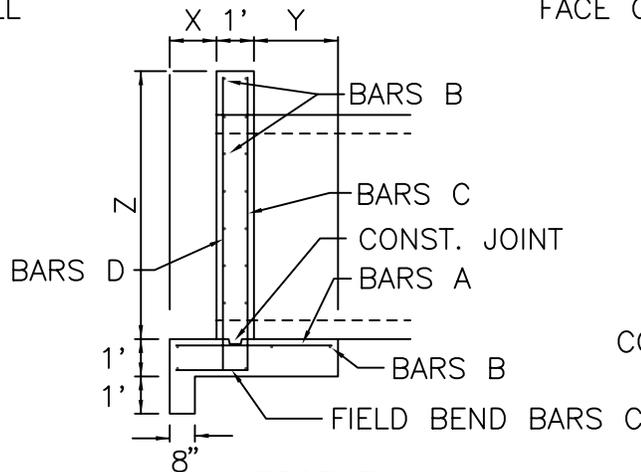


MIN. BEARING CAP.
2000 P.S.F.

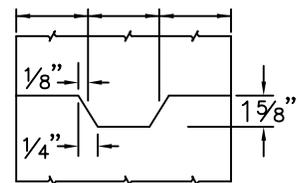
HALF ELEV.
SHOWING BARS IN BACK
FACE OF WALL

HALF ELEV.
SHOWING BARS IN FRONT
FACE OF WALL

- NOTES:
- 1) CUT & FIELD BEND BARS B AS SHOWN.
 - 2) CONC. DESIGN STRENGTH 3000 PSI.
 - 3) CHAMFER ALL EXPOSED EDGES $\frac{3}{4}$ ".
 - 4) 2" CLEARANCE ON ALL BARS.



PROFILE
SHOWING BARS



CONST. JOINT DETAIL

CONC. ENDWALL FOR
MULTIPLE 60" - 78"
ROUND PIPES

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-412

DATE DRAWN 1-26-79

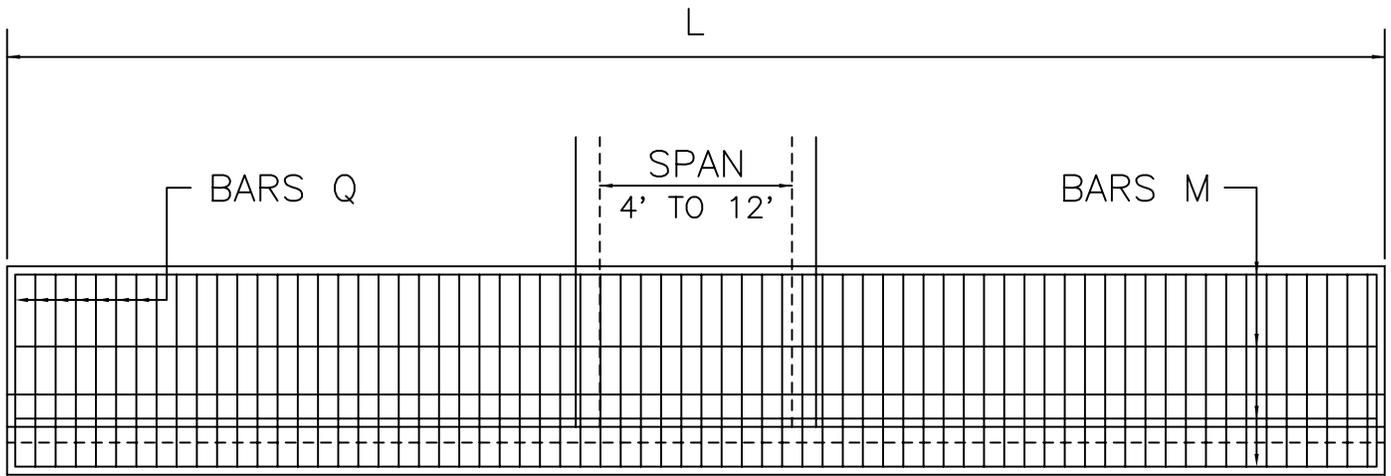
REVISED DATE 5-12-94

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

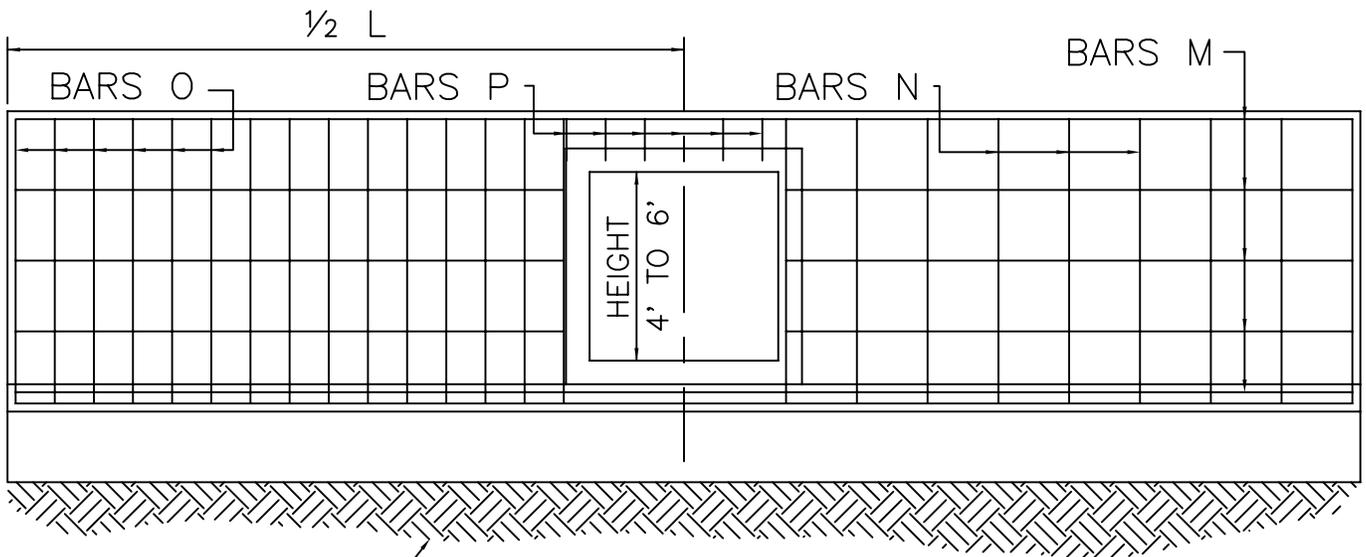
* WIDTH OF ENDWALL LESS 4"

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	<p style="text-align: center;"><i>CITY OF JACKSONVILLE STANDARD</i></p>		N.T.S.	PLATE D-413
			DATE DRAWN	2-17-79
			REVISED DATE	5-12-94



PLAN—SHOWING BARS IN FOOTING



MIN. BEARING
CAP. 2000 P.S.F.

HALF ELEV.
SHOWING BARS IN BACK
FACE OF WALL

HALF ELEV.
SHOWING BARS IN FRONT
FACE OF WALL

NOTE:

- 1) CONC. DESIGN STRENGTH 3400 P.S.I. (CLASS II F.D.O.T.)
- 2) CHAMFER ALL EXPOSED EDGES $\frac{3}{4}$ "
- 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

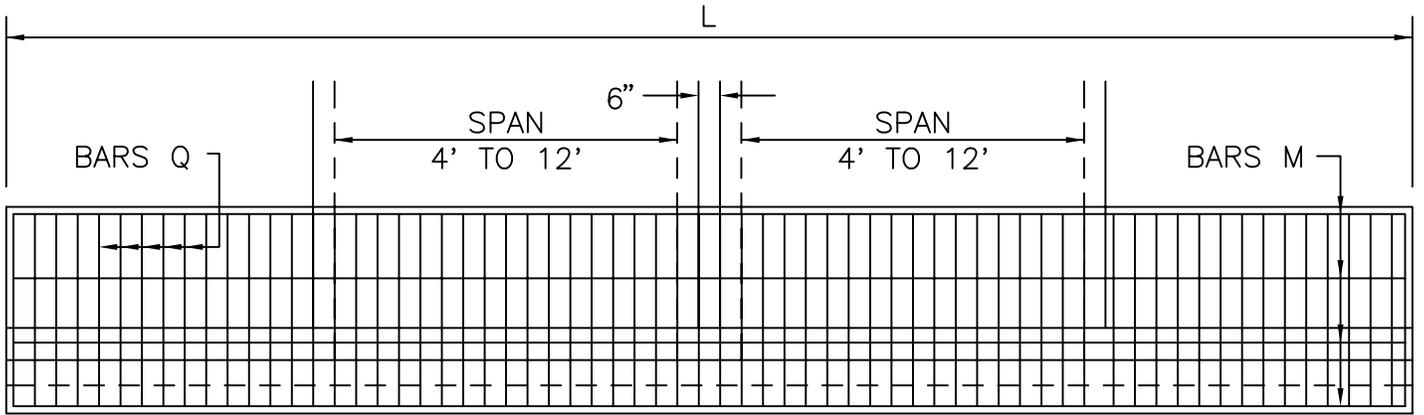
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N.T.S.

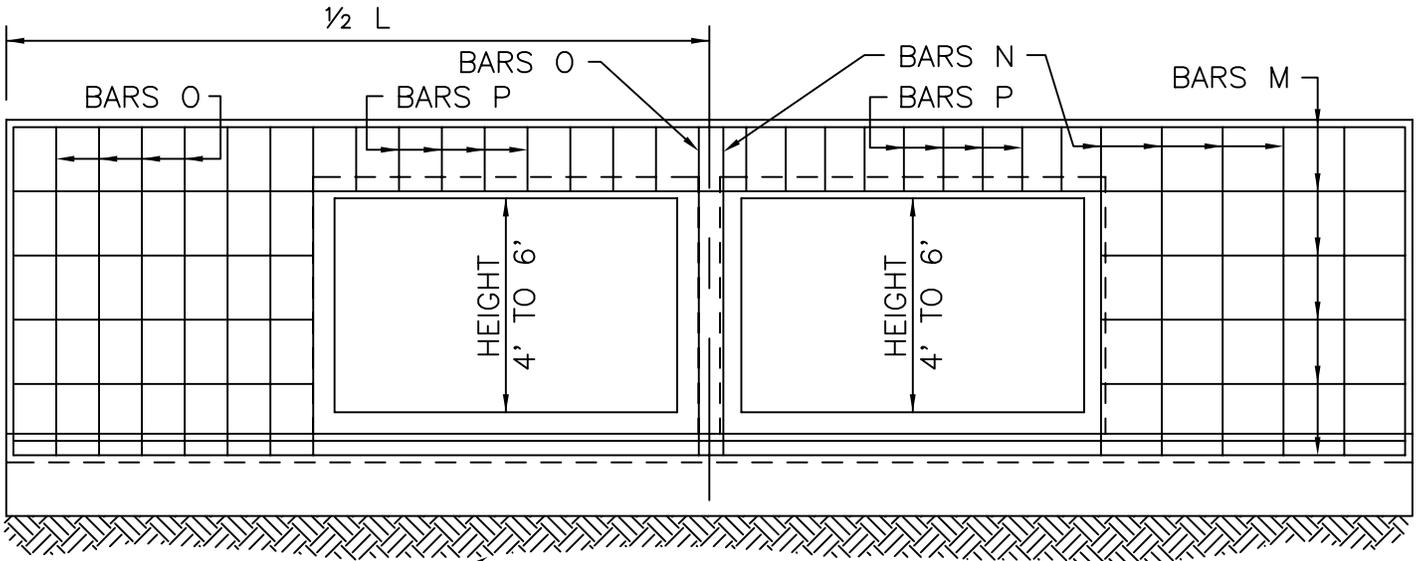
PLATE D-414

DATE DRAWN 2-2-79

REVISED DATE 5-12-94



PLAN—SHOWING BARS IN FOOTING



MIN. BEARING
CAP. 2000 P.S.F.

HALF ELEV.
SHOWING BARS IN BACK
FACE OF WALL

HALF ELEV.
SHOWING BARS IN FRONT
FACE OF WALL

NOTE:

- 1) CONC. DESIGN STRENGTH 3400 P.S.I. (CLASS II F.D.O.T.)
- 2) CHAMFER ALL EXPOSED EDGES $\frac{3}{4}$ "
- 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

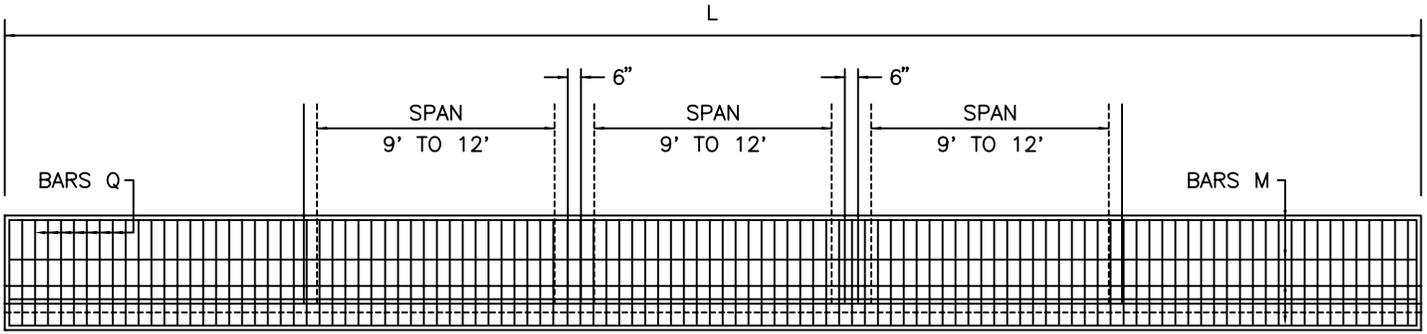
*CITY OF
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STANDARD*

N.T.S.

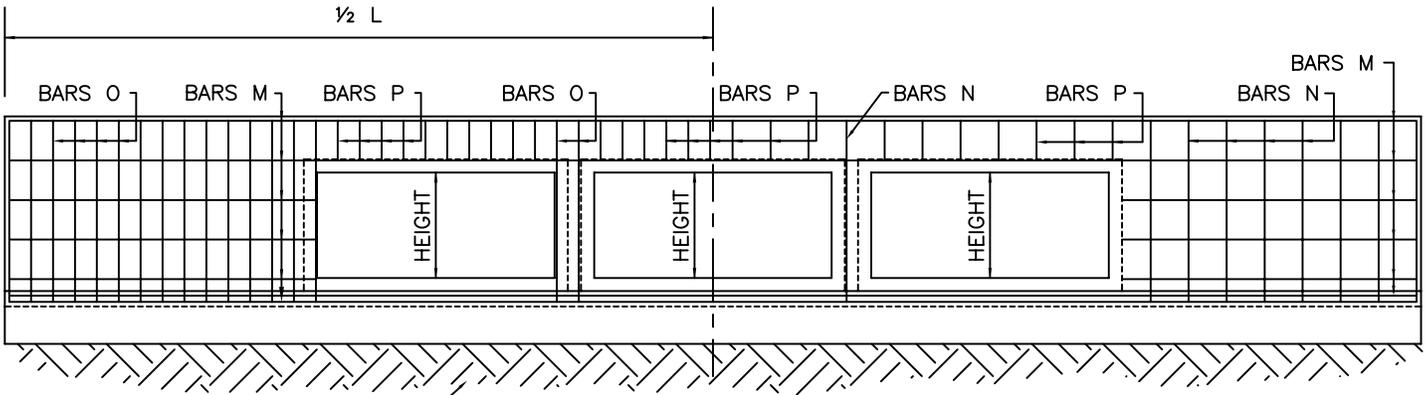
PLATE D-415

DATE DRAWN 2-2-79

REVISED DATE 5-12-94



PLAN SHOWING BARS IN FOOTING



MIN. BEARING
CAP. 2000 P.S.F.

HALF ELEV.
SHOWING BARS IN BACK
FACE OF WALL

HALF ELEV.
SHOWING BARS IN FRONT
FACE OF WALL

NOTE:

- 1) CONC. DESIGN STRENGTH 3400 P.S.I. (CLASS II F.D.O.T.)
- 2) CHAMFER ALL EXPOSED EDGES $\frac{3}{4}$ "
- 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*

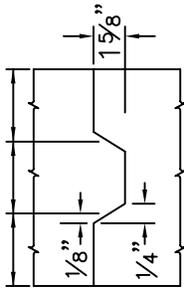
N.T.S.

PLATE D-416

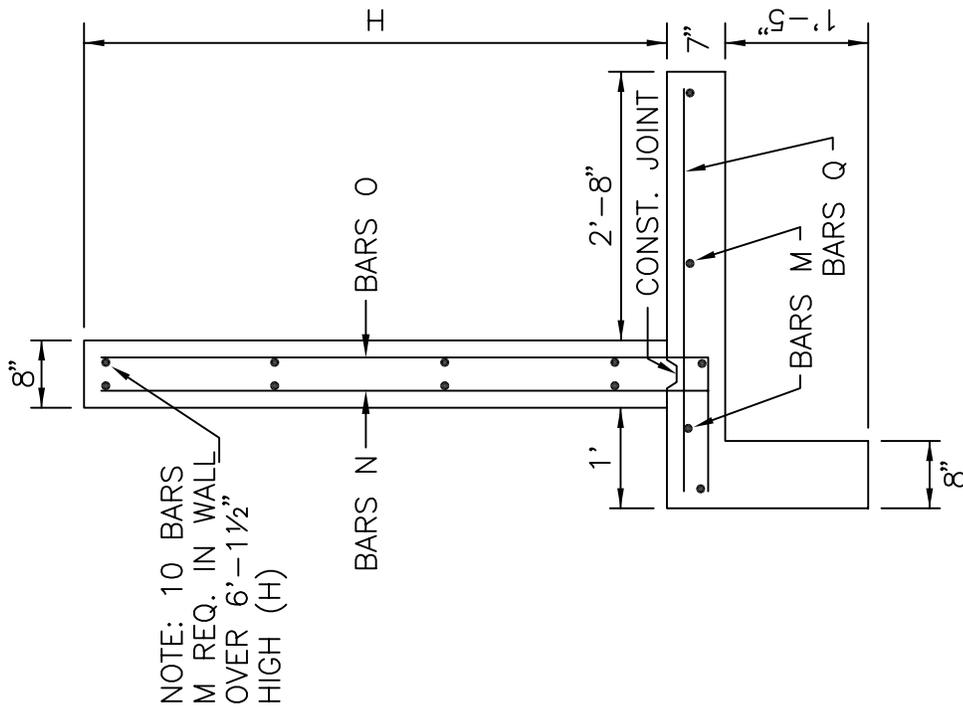
DATE DRAWN 4-5-79

REVISED DATE 5-12-94

EQUAL SPACES



CONST. JOINT DETAIL



NOTE: 10 BARS M REQ. IN WALL OVER 6'-1 1/2" HIGH (H)

NOTE: CONC. CAP MAY BE TRANSITIONED INTO CONC. SPLASH PAD OR DITCH PAVING.

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

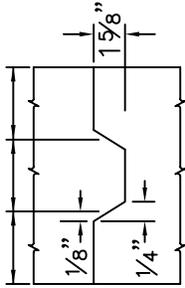
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4-5-79

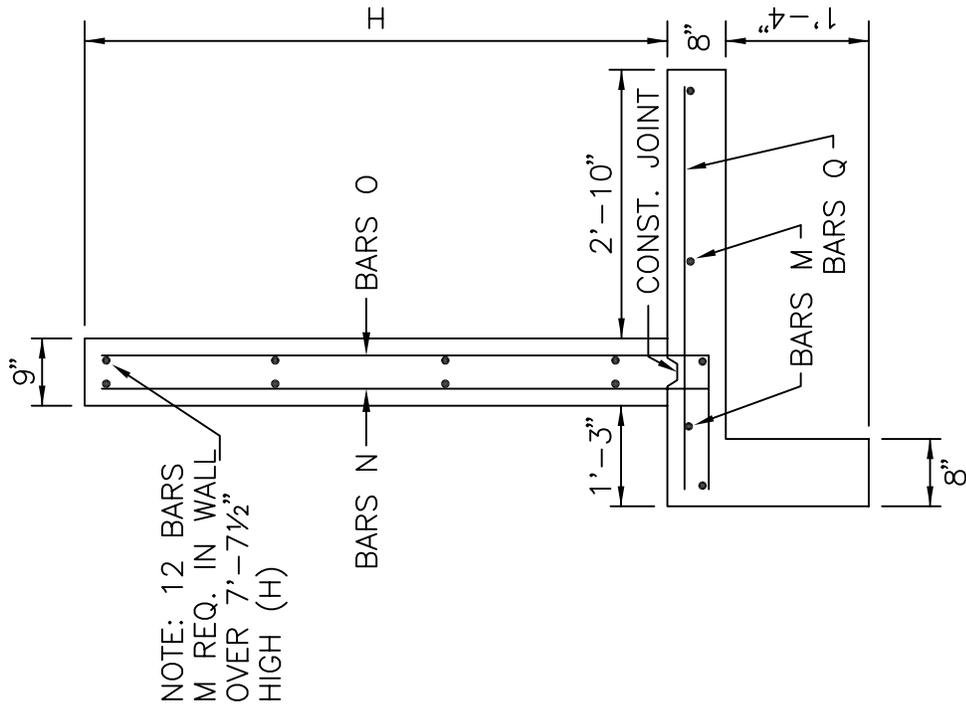
REVISED DATE

5-12-94

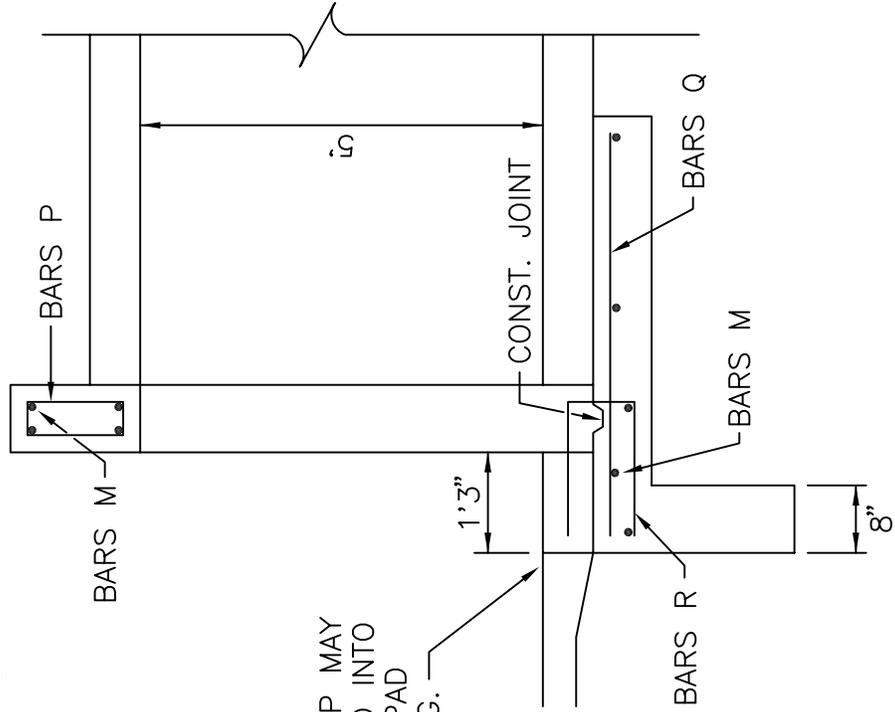
EQUAL SPACES



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

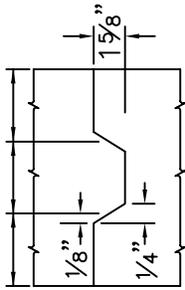
DATE DRAWN

2-27-79

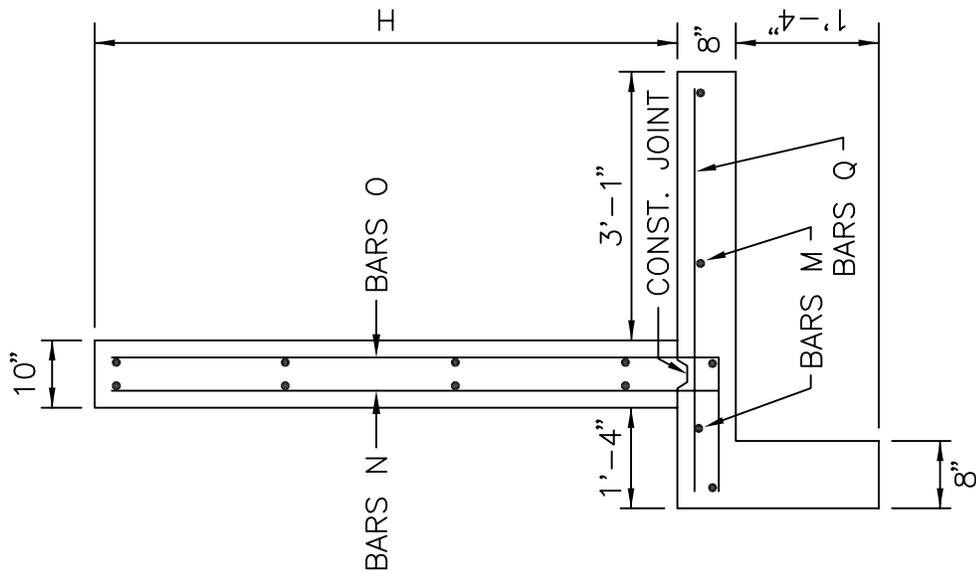
REVISED DATE

5-12-94

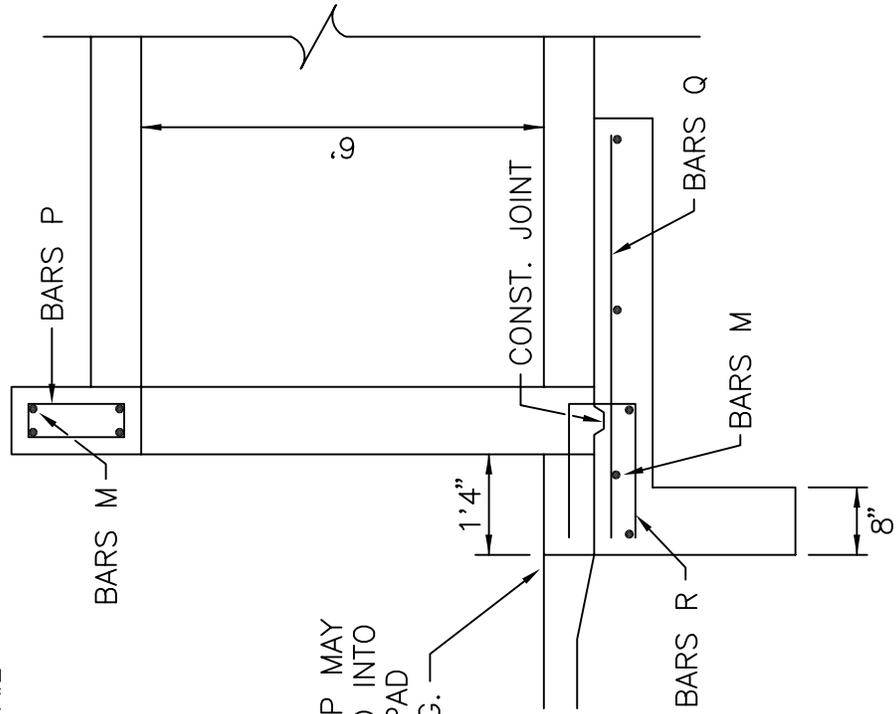
EQUAL SPACES



CONST. JOINT DETAIL



SECTION THRU WING



HALF SECTION
THRU BOX

NOTE: CONC. CAP MAY BE TRANSITIONED INTO CONC. SPLASH PAD OR DITCH PAVING.

SECTIONS OF ENDWALL FOR 6' HIGH SINGLE, DOUBLE, & TRIPLE PRECAST CULVERTS

CITY OF JACKSONVILLE STANDARD

N.T.S.

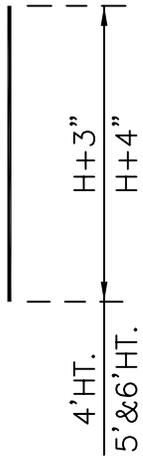
PLATE D-419

DATE DRAWN

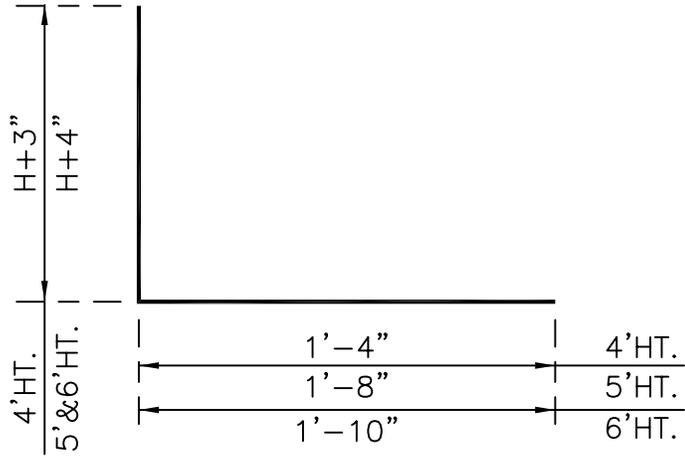
4-3-79

REVISED DATE

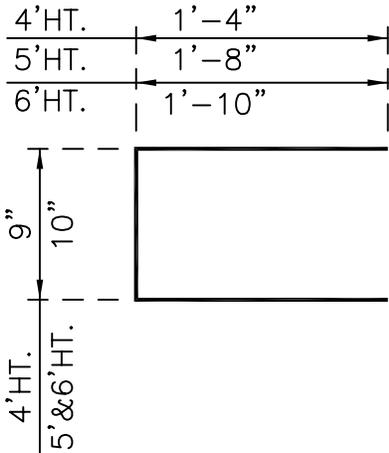
5-12-94



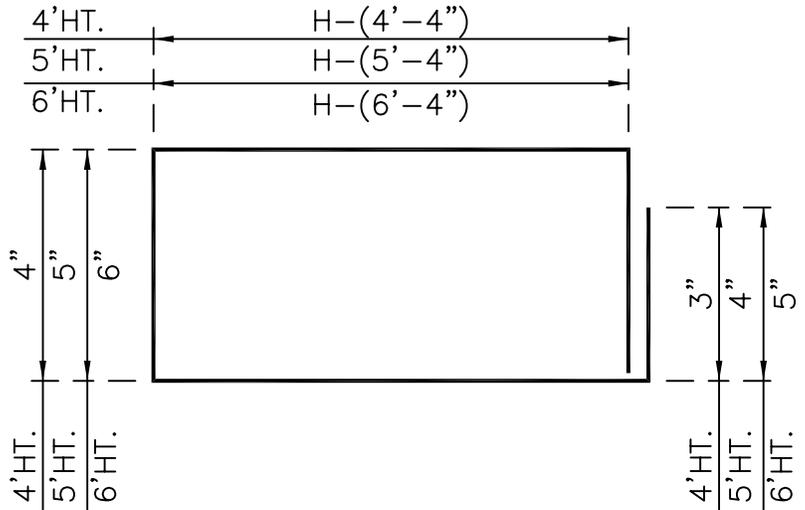
BARS N



BARS O



BARS R



BARS P

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 5-12-94

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"
	5'-0"	6'-0"	31'-4"	6'-9 1/2"	10.07	N	4	6'-1"	18	18"	Q	4	4'-0"	69	5"
							4	7'-5"	30	10"	R	4	3'-3"	5	10"
6'-0"	6'-0"	5'-0"	35'-4"	7'-9 1/2"	13.41	O	4	*	15	18"	P	5	4'-2"	4	12"
							4	7'-2"	20	17 3/4"	Q	5	4'-6"	46	8 1/2"
							5	8'-10"	28	12"	R	4	4'-0"	4	12"
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"
							4	6'-1 1/4"	18	17 7/8"	Q	4	4'-0"	62	5 3/4"
							4	7'-5 1/4"	30	10"	R	4	3'-3"	6	10"
6'-0"	5'-0"	6'-0"	32'-4"	6'-10 1/4"	10.34	N	4	*	15	18"	P	5	4'-2 1/4"	5	12"
							4	7'-2 1/4"	20	17 3/4"	Q	5	4'-6"	49	8"
							5	8'-10 1/4"	28	12"	R	4	4'-0"	5	12"
6'-0"	6'-0"	5'-0"	36'-2"	7'-10 1/4"	13.61	M	4	*	17	18"	P	5	4'-5 1/2"	6	10"
							4	8'-2 1/4"	22	18"	Q	5	4'-11"	67	6 1/2"
							5	10'-1 1/4"	38	10"	R	4	4'-4"	6	10"
6'-0"	4'-0"	6'-0"	32'-0"	5'-11"	8.11	N	4	*	13	18"	P	4	4'-1"	7	10"
							4	6'-2"	20	16 7/8"	Q	4	4'-0"	70	5 1/2"
							4	7'-6"	32	10"	R	4	3'-3"	7	10"
6'-0"	5'-0"	6'-0"	33'-4"	6'-11"	10.53	M	4	*	15	18"	P	5	4'-4"	6	12"
							4	7'-3"	20	17 3/4"	Q	5	4'-6"	49	8 1/4"
							5	8'-11"	28	12"	R	4	4'-0"	6	12"
7'-0"	6'-0"	5'-0"	37'-0"	7'-11"	13.80	N	4	*	17	18"	P	5	4'-7"	7	10"
							4	8'-3"	22	18"	Q	5	4'-11"	81	5 1/2"
							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"
							4	6'-2 1/2"	20	16 3/4"	Q	4	4'-0"	66	6 1/4"
							4	7'-6 1/2"	32	10"	R	4	3'-3"	8	10"
7'-0"	5'-0"	5'-0"	34'-4"	6'-11 1/2"	10.76	M	4	*	15	18"	P	5	4'-5"	7	12"
							4	7'-3 1/2"	20	17 3/4"	Q	5	4'-6"	49	8 1/2"
							5	8'-11 1/2"	28	12"	R	4	4'-0"	7	12"
7'-0"	6'-0"	5'-0"	37'-10"	7'-11 1/2"	13.98	M	4	*	17	18"	P	5	4'-8"	8	10"
							4	8'-3 1/2"	22	18"	Q	5	4'-11"	76	6"
							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. PLATE D-421
 DATE DRAWN 7-10-79
 REVISED DATE 5-12-94

DIMENSIONAL & 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"
	5'-0"	5'-0"	37'-4"	7'-0"	11.68	N	4	6'-3"	18	18"	Q	4	4'-0"	65	6 1/4"
9'-0"	5'-0"	5'-0"	37'-4"	7'-0"	11.68	M	4	*	15	18"	P	5	4'-6"	8	12"
	6'-0"	5'-0"	38'-8"	8'-0"	14.16	O	5	9'-0"	30	12"	R	4	4'-0"	8	12"
10'-0"	4'-0"	5'-0"	35'-4"	6'-1/2"	8.79	M	4	*	13	18"	P	4	4'-4"	11	10"
	5'-0"	5'-0"	38'-4"	7'-1/2"	11.91	N	4	7'-7 1/2"	32	10"	R	4	3'-3"	11	10"
11'-0"	5'-0"	5'-0"	38'-4"	7'-1/2"	11.91	M	4	*	15	18"	P	5	4'-7"	9	12"
	6'-0"	5'-0"	40'-4"	8'-1/2"	14.49	N	4	8'-4 1/2"	22	18"	Q	5	4'-10"	11	10"
10'-0"	4'-0"	5'-0"	36'-2"	6'-1 1/2"	8.97	O	5	10'-2 1/2"	38	10"	R	4	4'-4"	12	10"
	5'-0"	5'-0"	39'-4"	7'-1 1/2"	12.18	M	4	7'-8 1/2"	32	10"	R	4	3'-3"	12	10"
10'-0"	5'-0"	5'-0"	39'-4"	7'-1 1/2"	12.18	M	4	*	15	18"	P	5	4'-9"	10	12"
	6'-0"	5'-0"	41'-2"	8'-1 1/2"	14.92	N	4	8'-5 1/2"	22	18"	Q	5	5'-0"	12	10"
11'-0"	4'-0"	5'-0"	37'-0"	6'-2 1/2"	9.17	O	5	10'-3 1/2"	38	10"	R	4	4'-4"	12	10"
	5'-0"	5'-0"	40'-4"	7'-2 1/2"	12.47	M	4	7'-9 1/2"	32	10"	R	4	3'-3"	13	10"
11'-0"	5'-0"	5'-0"	40'-4"	7'-2 1/2"	12.47	M	4	*	15	18"	P	5	4'-11"	11	12"
	6'-0"	5'-0"	43'-8"	8'-2 1/2"	15.86	O	5	9'-2 1/2"	30	12"	R	4	4'-0"	11	12"
* WIDTH OF WALL LESS 4"	6'-0"	5'-0"	43'-8"	8'-2 1/2"	15.86	M	4	*	17	18"	P	5	5'-2"	13	10"
	5'-0"	5'-0"	40'-4"	7'-2 1/2"	12.47	N	4	10'-4 1/2"	40	10"	R	4	4'-4"	13	10"

DIMENSIONAL & QUANTITATIVE DATA FOR SINGLE BOX CULVERT ENDWALLS

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-422

DATE DRAWN 9-9-79

REVISED DATE 5-12-94

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"	32'-10"	6'-4"	8.35	M	4	*	15	18"	P	4	3'-11"	10	10"
	5'-0"	6'-0"	36'-1"	7'-4"	11.54	N	4	6'-7"	19	17"	Q	4	4'-0"	66	6"
							4	7'-11"	30	10"	R	4	3'-3"	10	10"
6'-0"	6'-0"	6'-0"	37'-10"	8'-4"	14.17	M	4	*	15	18"	P	5	4'-2"	8	11"
							4	7'-8"	21	17"	Q	5	4'-6"	53	8 1/2"
							5	9'-4"	32	12"	R	4	4'-0"	8	11"
4'-0"	6'-0"	6'-0"	34'-6"	6'-4"	8.66	N	4	*	17	18"	P	5	4'-5"	10	10"
							4	8'-8"	21	18"	Q	5	4'-11"	76	6"
							5	10'-6"	36	10"	R	4	4'-4"	10	10"
5'-0"	6'-0"	6'-0"	37'-11"	7'-4"	11.88	M	4	*	15	18"	P	5	4'-2"	10	11"
							4	6'-7"	19	16 3/4"	Q	4	4'-0"	74	5 7/8"
							4	7'-11"	30	10"	R	4	3'-3"	12	10"
6'-0"	6'-0"	6'-0"	41'-2"	8'-4"	15.14	N	4	*	15	18"	P	5	4'-5"	12	10"
							4	7'-8"	21	17"	Q	5	4'-6"	54	8 1/2"
							5	9'-4"	32	11"	R	4	4'-0"	10	11"
4'-0"	6'-0"	6'-0"	37'-10"	6'-4"	9.38	M	4	*	17	18"	P	5	4'-5"	12	10"
							4	8'-8"	21	17 1/4"	Q	5	4'-11"	61	6 1/2"
							5	10'-6"	38	10"	R	4	4'-4"	12	10"
6'-0"	6'-0"	6'-0"	39'-6"	7'-4"	12.13	N	4	*	15	18"	P	5	4'-2"	14	10"
							4	6'-7"	19	17 1/2"	Q	5	4'-6"	58	8 1/4"
							4	7'-11"	30	10"	R	4	3'-3"	14	10"
5'-0"	6'-0"	6'-0"	42'-10"	8'-4"	15.42	M	4	*	15	18"	P	5	4'-5"	14	10"
							4	8'-8"	23	17"	Q	5	4'-11"	86	6"
							5	10'-6"	38	10"	R	4	4'-4"	14	10"
4'-0"	5'-0"	5'-0"	39'-6"	6'-4"	9.63	N	4	*	15	18"	P	5	4'-5"	16	10"
							4	6'-7"	19	17 1/2"	Q	4	4'-0"	81	5 7/8"
							4	7'-11"	32	10"	R	4	3'-3"	16	10"
7'-0"	5'-0"	5'-0"	42'-10"	7'-4"	12.98	M	4	*	15	18"	P	5	4'-2"	16	10"
							4	7'-8"	21	17 1/2"	Q	5	4'-6"	61	8 1/2"
							5	9'-4"	36	10"	R	4	4'-0"	16	10"
6'-0"	5'-0"	5'-0"	44'-6"	8'-4"	15.69	M	4	*	17	18"	P	5	4'-5"	16	10"
							4	8'-8"	23	17"	Q	5	4'-11"	84	6 3/8"
							5	10'-6"	38	10"	R	4	4'-4"	16	10"

* WIDTH OF WALL LESS 4"

DIMENSIONAL & 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'-3 1/2"	6'-5 1/2"	10.32	M	4	*	15	18"	P	4	4'-2"	20	9 1/2"
	5'-0"	5'-0"	45'-5 1/2"	7'-5 1/2"	13.75	N	4	6'-8 1/2"	19	18"	Q	4	4'-0"	98	5 3/16"
	6'-0"	5'-0"	48'-7 1/2"	8'-5 1/2"	17.19	O	4	8'-1/2"	31	9 1/2"	R	4	3'-3"	20	10"
9'-0"	4'-0"	5'-0"	43'-1"	6'-5 1/2"	10.32	M	4	*	15	18"	P	4	4'-5"	20	9 1/2"
	5'-0"	5'-0"	46'-10"	7'-5 1/2"	13.92	N	4	7'-9 1/2"	23	17 1/2"	Q	5	4'-6"	65	8 7/16"
	6'-0"	5'-0"	49'-1"	8'-5 1/2"	16.96	O	5	10'-7 1/2"	42	9 1/2"	R	4	4'-1"	20	9 1/2"
10'-0"	4'-0"	5'-0"	46'-2"	6'-7 1/4"	11.14	M	4	*	15	18"	P	4	4'-5 1/2"	24	10"
	5'-0"	5'-0"	49'-4"	7'-7 1/4"	14.70	N	4	7'-11 1/4"	21	18"	Q	5	4'-6"	70	8 1/8"
	6'-0"	5'-0"	52'-10"	8'-7 1/4"	18.36	O	5	10'-9 1/4"	40	10"	R	4	4'-0"	20	12"
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"
	5'-0"	5'-0"	51'-4"	7'-7 1/4"	15.21	N	4	6'-10 1/4"	19	17 1/2"	Q	4	4'-0"	96	6"
	6'-0"	5'-0"	54'-2"	8'-7 1/4"	18.51	O	5	10'-9 1/4"	40	10"	R	4	4'-4"	24	10"

* WIDTH OF WALL LESS 4"

DIMENSIONAL & QUANTITATIVE DATA FOR DOUBLE BOX CULVERT ENDWALLS

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-425

DATE DRAWN 7-5-79

REVISED DATE 5-12-94

DIMENSIONAL & QUANTITATIVE DATA

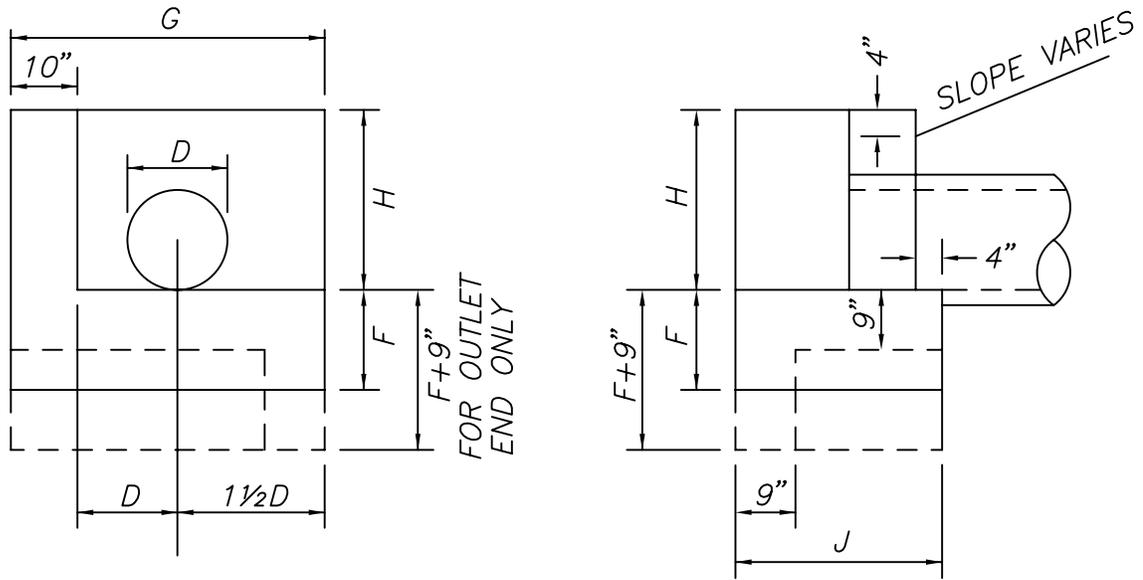
CULVERT		MAX. FILL HEIGHT	L	H	CU. YDS.	BAR	SIZE	LENGTH	NO.	SPACE	BAR	SIZE	LENGTH	NO.	SPACE
SPAN	HEIGHT														
9'-0"	4'-0"	5'-0"	53'-8"	6'-7 1/2"	12.50	M	4	*	15	18"	P	4	4'-6"	33	10"
						N	4	6'-10 1/2"	20	18 1/4"	Q	4	4'-0"	110	5 7/8"
						O	4	8'-2 1/2"	32	10"	R	4	3'-3"	33	10"
						M	4	*	15	18"	P	5	4'-9"	27	11 1/2"
9'-0"	5'-0"	5'-0"	55'-11"	7'-7 1/2"	15.97	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"
						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"
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"
						M	4	*	17	18"	P	5	4'-10 1/2"	30	11 1/2"
10'-0"	5'-0"	5'-0"	58'-9 1/2"	7'-8 1/4"	16.62	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"
						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"
11'-0"	4'-0"	5'-0"	60'-4"	6'-9"	13.95	O	5	10'-10 1/4"	40	10"	R	4	4'-4"	36	10"
						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"
11'-0"	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"
						M	4	*	17	18"	P	5	5'-3"	39	10"
12'-0"	6'-0"	5'-0"	65'-4"	8'-9"	21.21	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"
						M	4	*	15	18"	P	4	4'-11"	44	10"
						N	4	7'-1"	20	17"	Q	4	4'-0"	126	6"
12'-0"	4'-0"	5'-0"	62'-10"	6'-10"	14.46	O	4	8'-5"	32	10"	R	4	3'-3"	44	10"
						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"
12'-0"	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"
						M	4	*	17	18"	P	5	5'-2"	39	11"

* WIDTH OF WALL LESS 4"

DIMENSIONAL & QUANTITATIVE DATA FOR TRIPLE BOX CULVERT ENDWALLS

CITY OF JACKSONVILLE STANDARD

N.T.S.	PLATE D-427
DATE DRAWN	7-5-79
REVISED DATE	5-12-94



NOTE:

1. CHAMFER ALL EXPOSED EDGES $\frac{3}{4}$ ".
2. MIN. BEARING CAPACITY 2000 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.

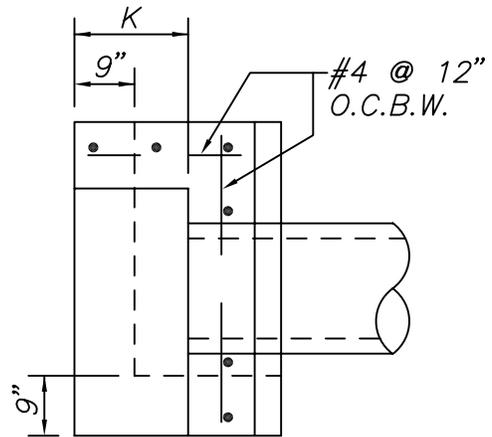


TABLE OF DIMENSIONS & ESTIMATED QUANTITIES
PIPE CULVERT ENDWALLS WITH L-TYPE WINGS

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

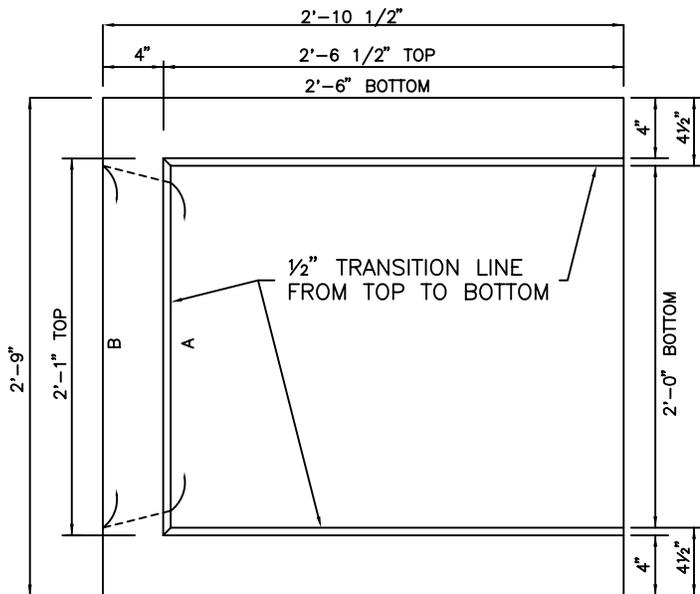
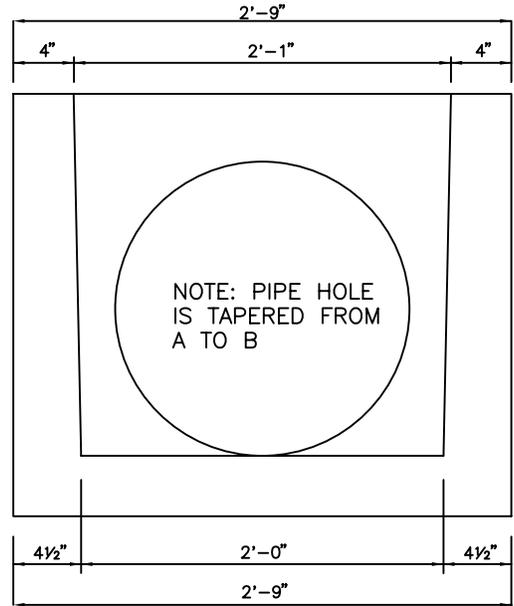
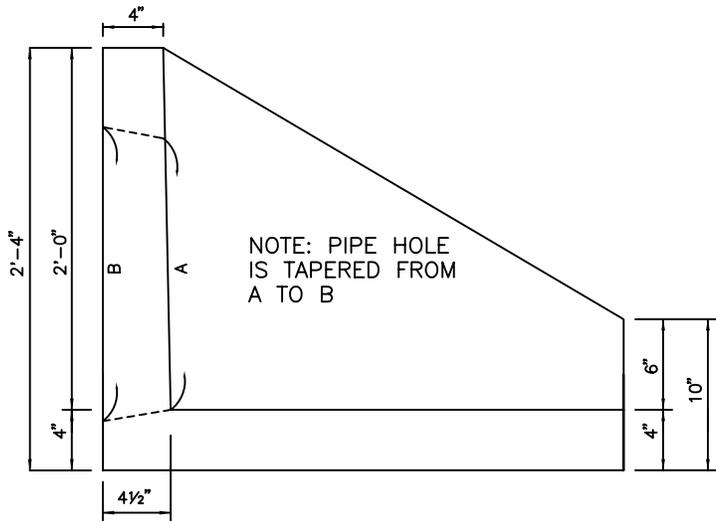
CITY OF
JACKSONVILLE
STANDARD

N.T.S.

PLATE D-428

DATE DRAWN 2-78

REVISED DATE 5-12-94



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

	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"

PRECAST MITERED END
FOR DRIVEWAY CULVERTS

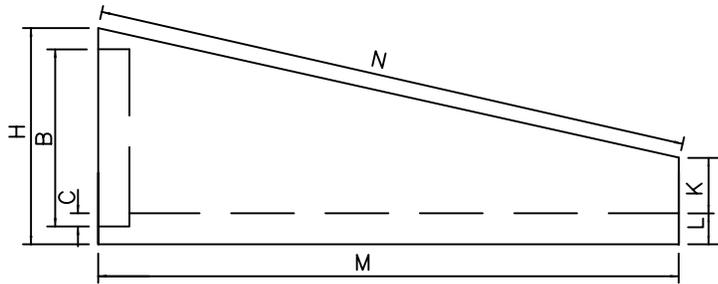
*CITY OF
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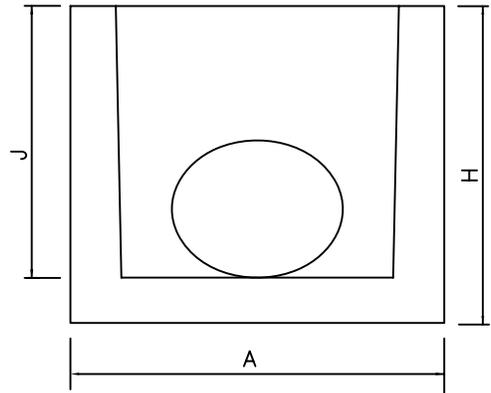
PLATE D-429

DATE DRAWN 7-12-79

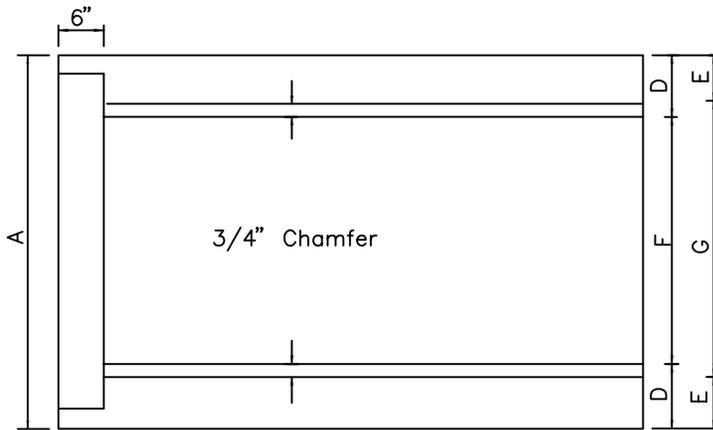
REVISED DATE 5-12-94



SIDE VIEW



END VIEW



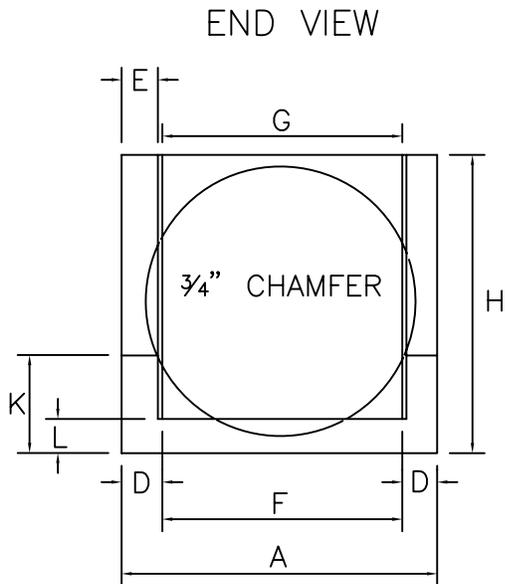
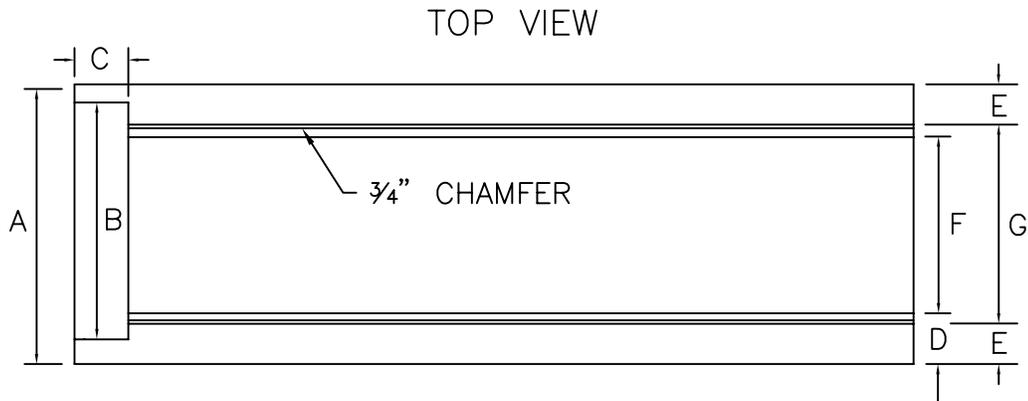
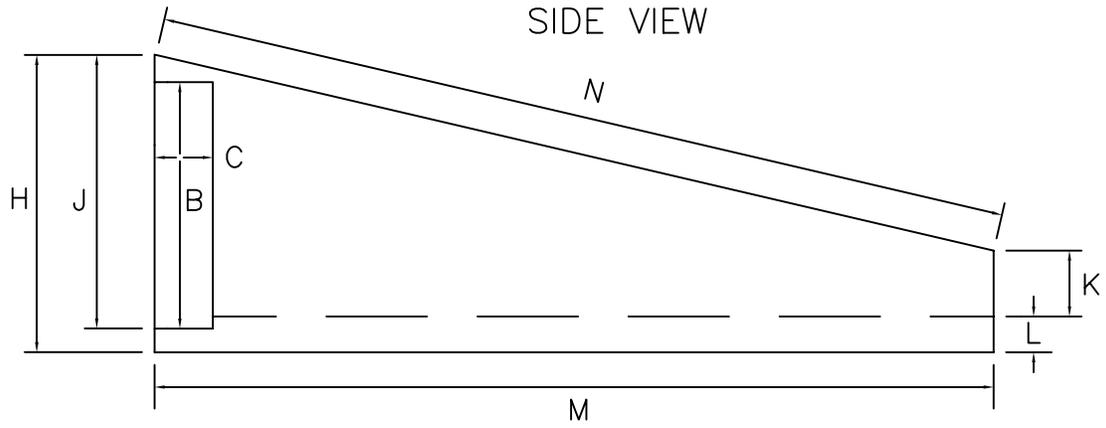
TOP VIEW

SPECIFICATIONS:

1. Steel - #4 @ 12" E.W., with 1 #6 over pipe opening. (1/2" of concrete cover over steel, 1/2" tolerance.)
2. 4,000 P.S.I. concrete

ERCPC	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	<i>CITY OF JACKSONVILLE STANDARD</i>		N.T.S.	PLATE D-430
			DATE DRAWN	07-12-79
			REVISED DATE	5-12-94



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 5-12-94

TABLE OF DIMENSIONS

RCP/CMP	A	B	C	D	E	F	G
15" - 18"	2'-7"	2'-1"	6"	6"	6¾"	1'-6"	1'-7"
24"	2'-11"	2'-8"	6"	5"	4½"	1'-11"	2'-0"
30"	3'-6"	3'-2"	6"	6"	5½"	2'-5"	2'-6½"
36"	4'-1"	3'-10"	6"	7"	5½"	2'-9"	3'-0"

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"	7½"	5"	10'-0"	10'-3½"
30"	3'-9"	3'-5"	7"	5"	11'-5"	11'-8¼"
36"	4'-6"	4'-0"	6"	6"	14'-0"	14'-4½"

STANDARD TABLE
OF DIMENSIONS
FOR MITERED
END SECTION

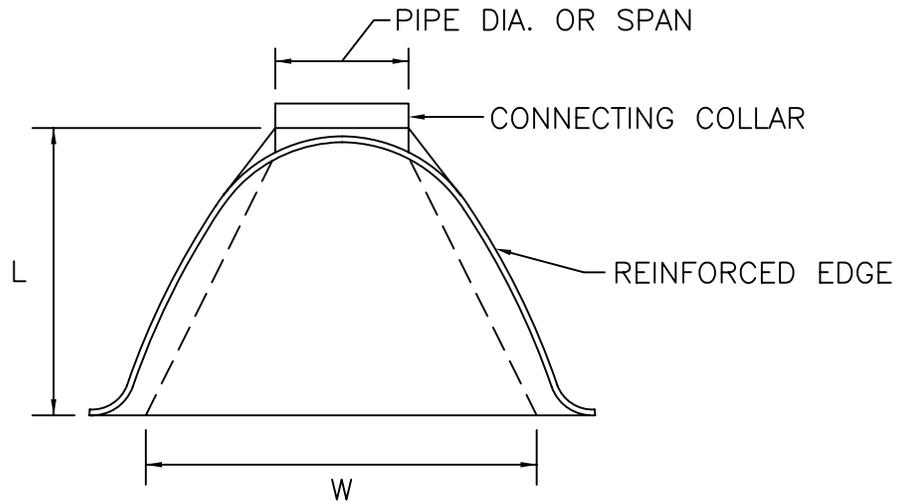
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

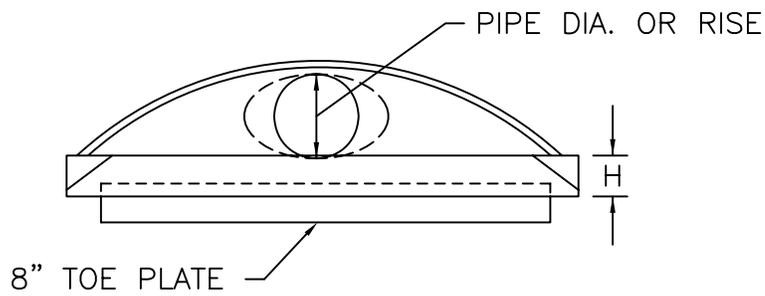
PLATE D-432

DATE DRAWN 8-9-79

REVISED DATE 5-12-94

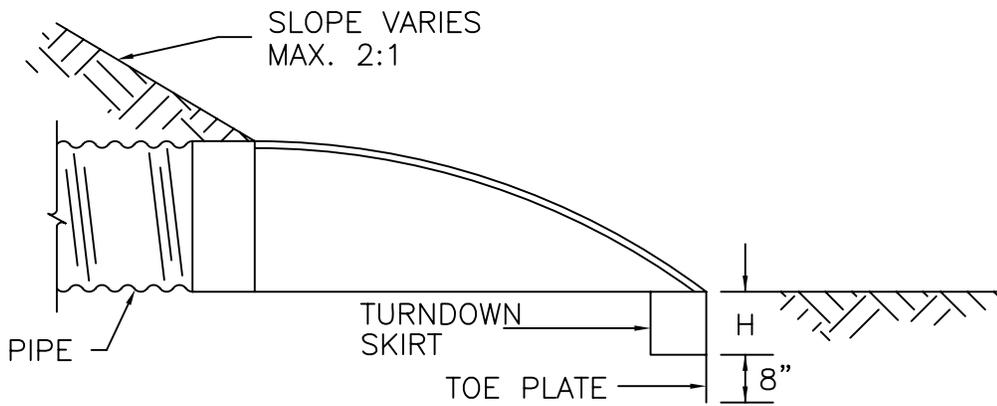


PLAN VIEW



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 5-12-94

DIMENSIONS OF FLARED END SECTION
FOR CIRCULAR CORRUGATED METAL PIPE

PIPE DIA. (IN.)	GAUGE	H (IN.)	L * (IN.)	W * (IN.)
15	16	6	26¼	30
18	16	6	31½	36
21	16	6	36¾	42
24	14	6	42	48
30	14	7½	52½	60
36	12	9	63	72
42	12	10½	73½	84
48	12	12	84	96
54	12	12	94½	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	6¾	46	104
49	33	12	7¾	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

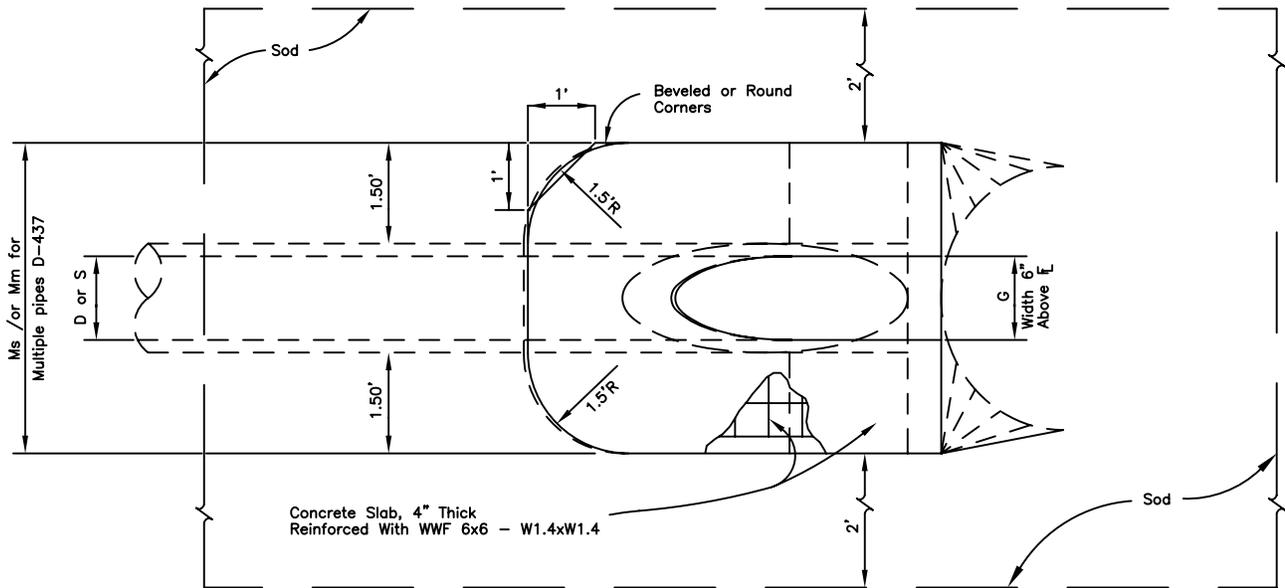
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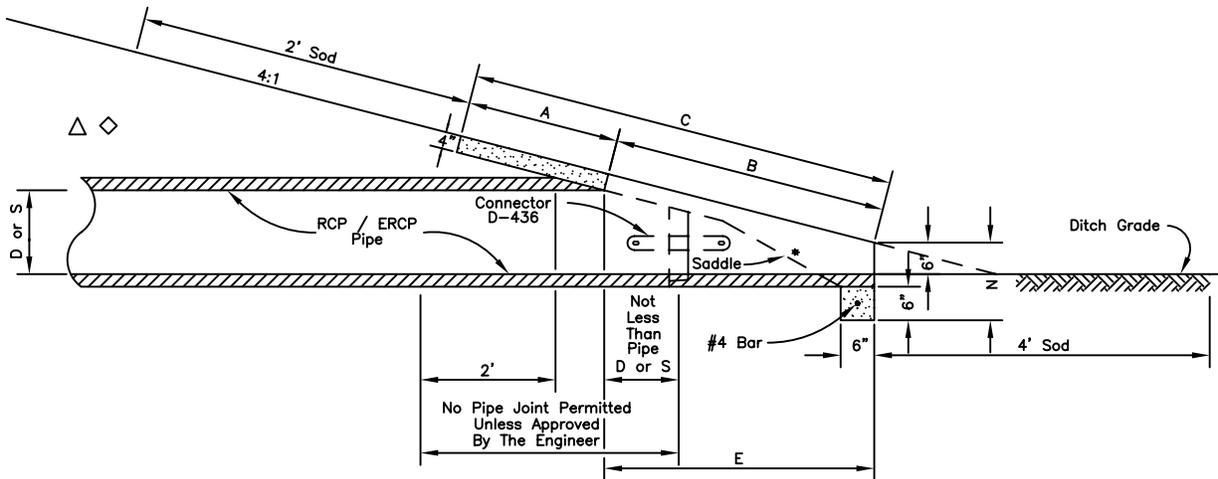
PLATE D-434

DATE DRAWN 12/20/79

REVISED DATE 5-12-94



TOP VIEW - SINGLE PIPE



SECTION

• Slope:

4:1 Miter To C 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

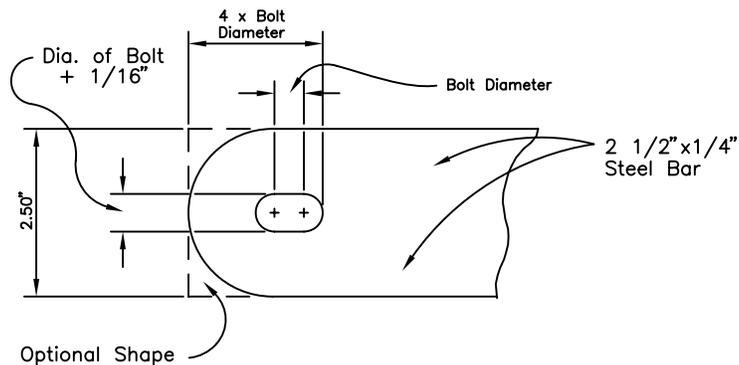
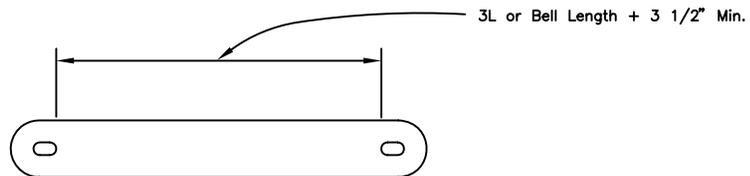
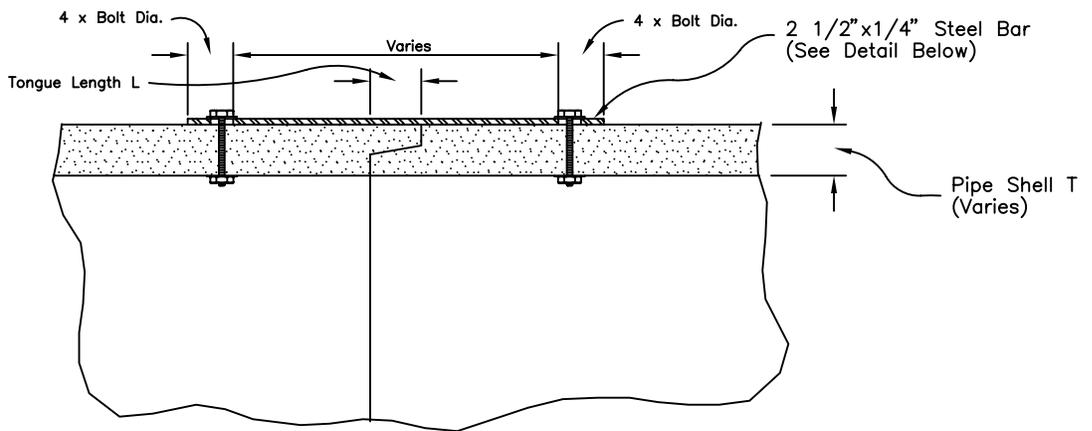
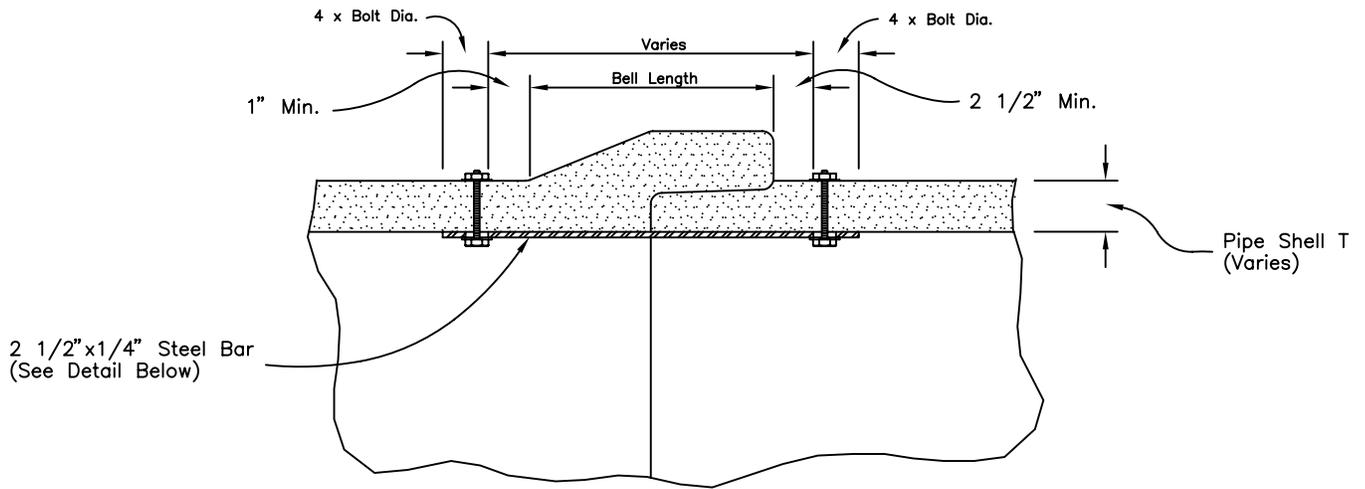
*CITY OF
 JACKSONVILLE
 STANDARD*

N.T.S.

PLATE D-435

DATE DRAWN 06/22/89

REVISED DATE 5-12-94



All bars, bolts, nuts and washers are to be galvanized steel.
 Bolts diameter shall be 3/8" for 15" to 36" pipe and 5/8" for 42" to 72" pipe.
 Two connectors required per joint, located 60° right and left of bottom center of pipe.
 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 5-12-94

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*

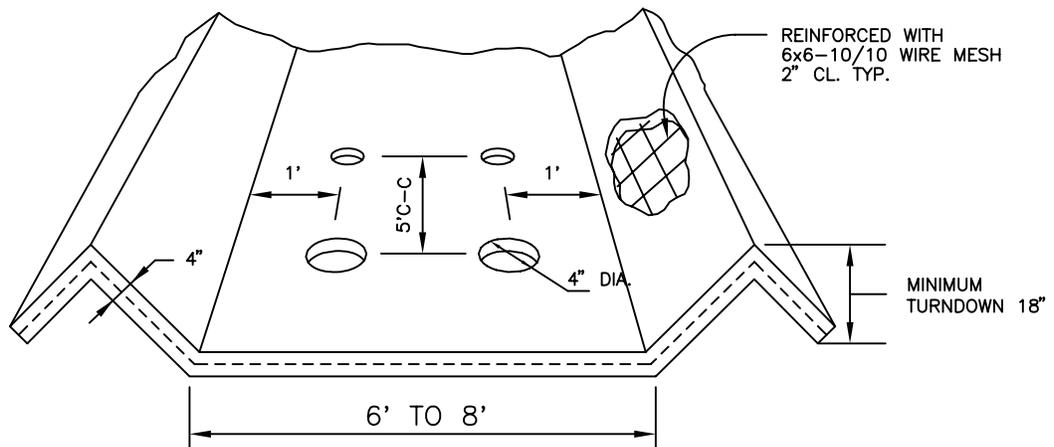
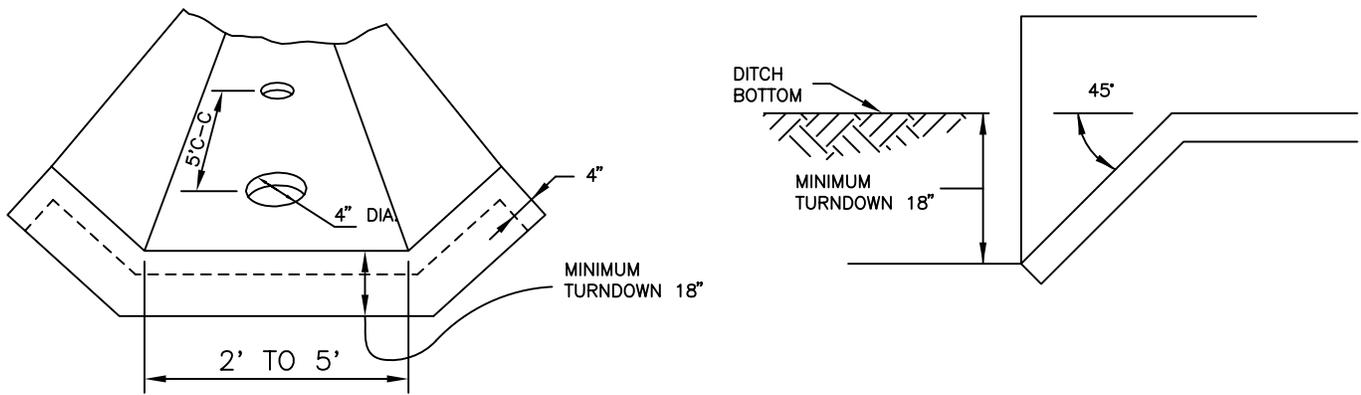
N.T.S.

PLATE D-437

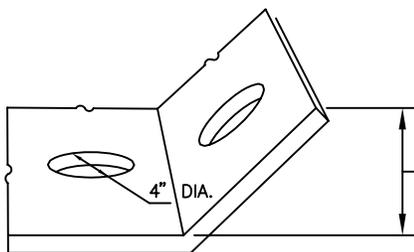
DATE DRAWN 12-14-93

REVISED DATE 5-12-94

TOP OF BANK



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

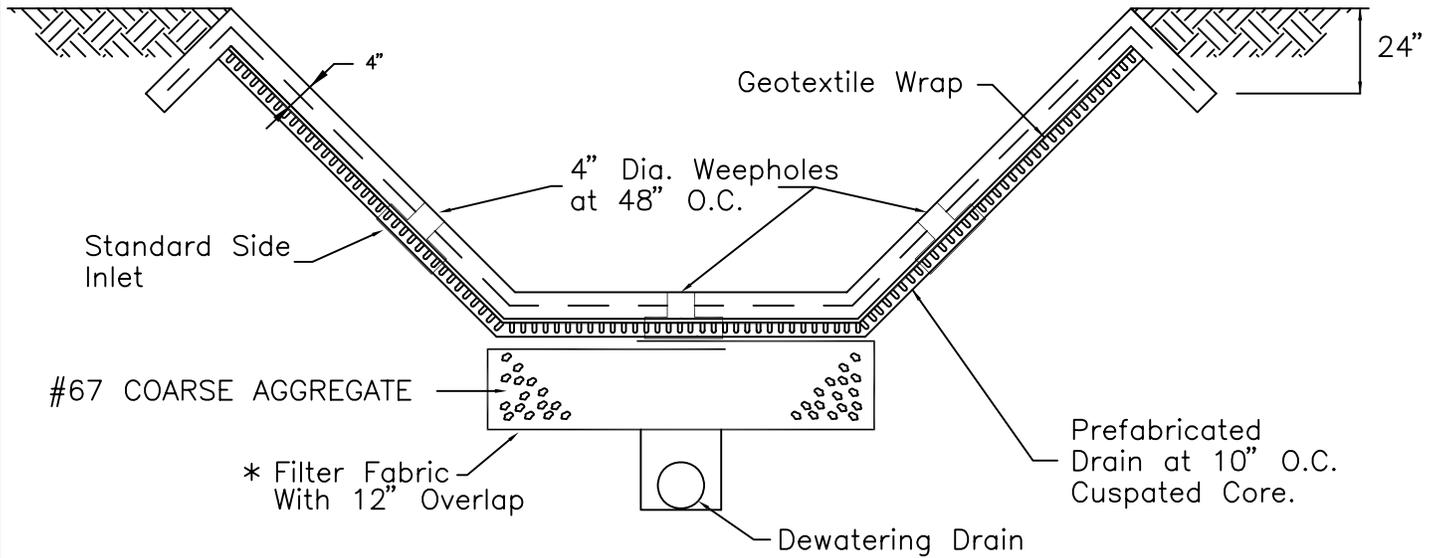
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

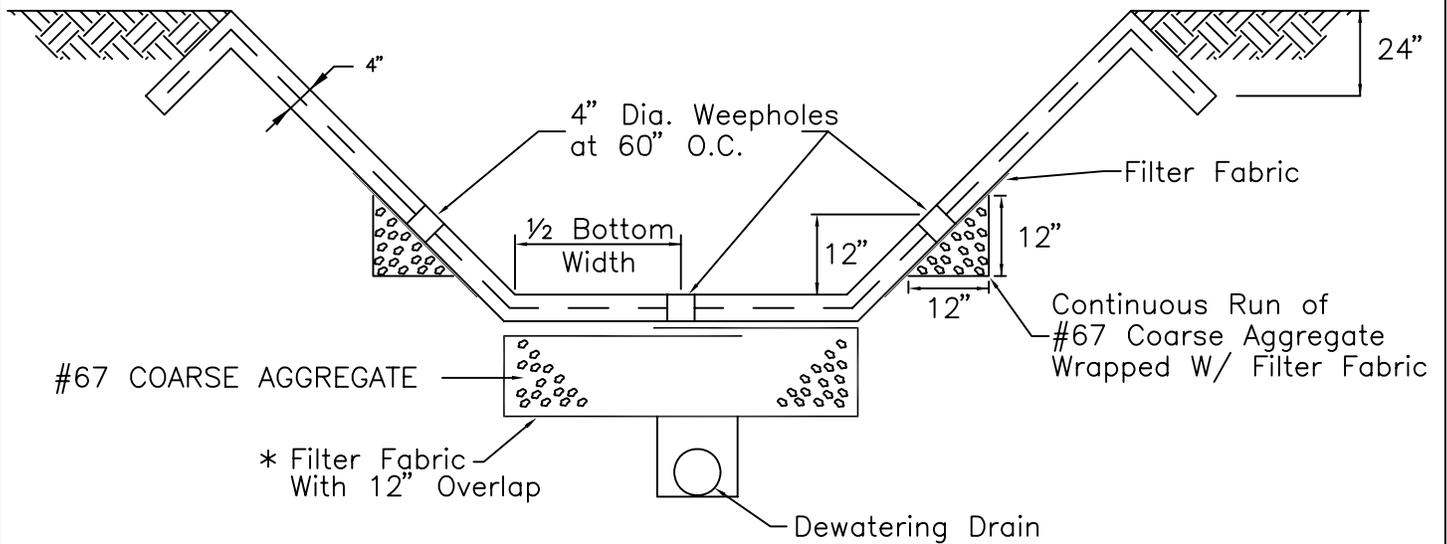
PLATE D-501

DATE DRAWN 7-14-79

REVISED DATE 5-12-94



* When dewatering requires crushed stone and/or dewatering drain the entire system shall be wrapped in filter fabric.



ALTERNATE
WEEPHOLE
DETAIL

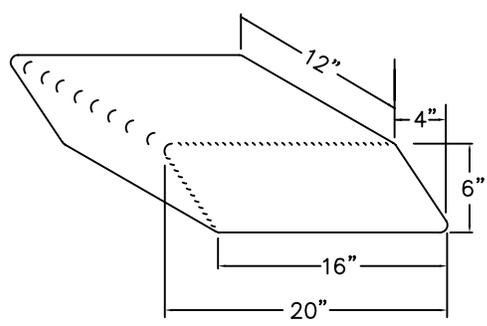
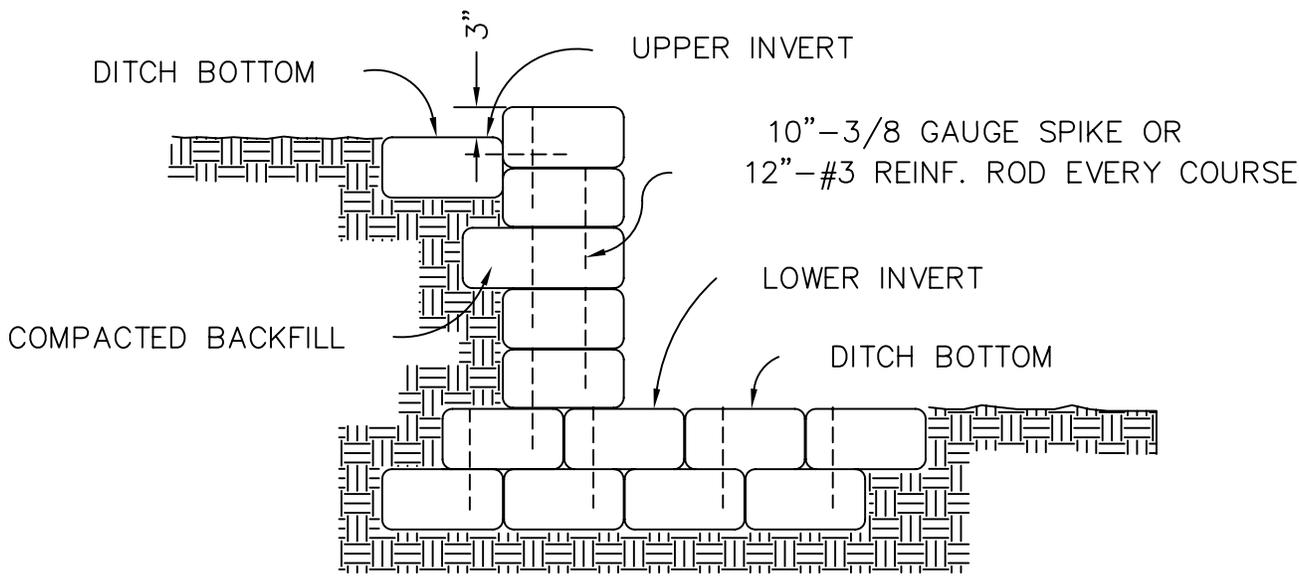
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-502

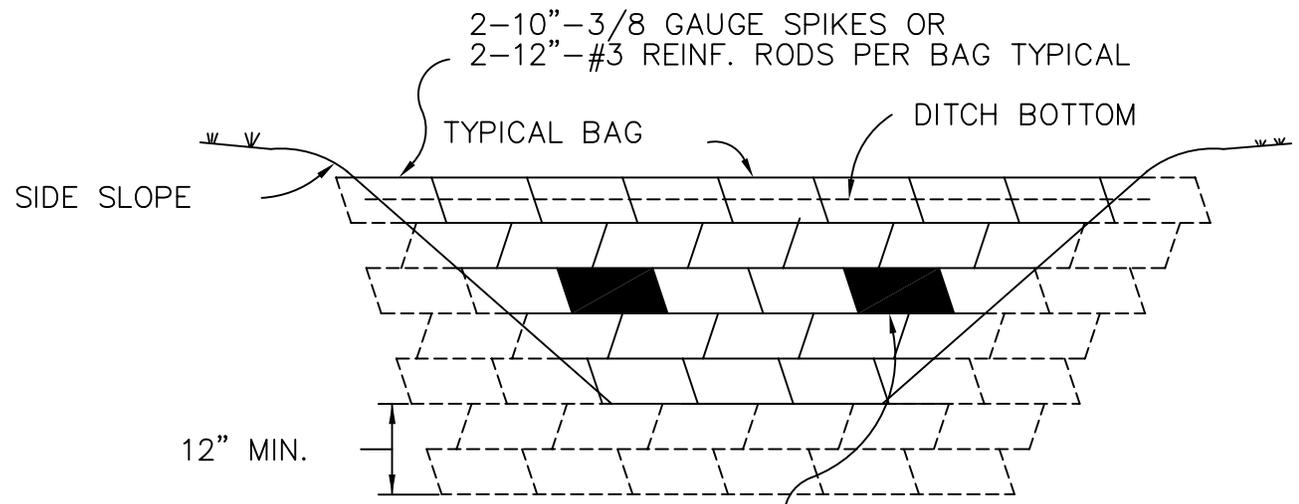
DATE DRAWN 5-12-94

REVISED DATE



COUNTERSINK ALL EXPOSED SPIKES OR REINF. RODS 1"

BAG DETAIL

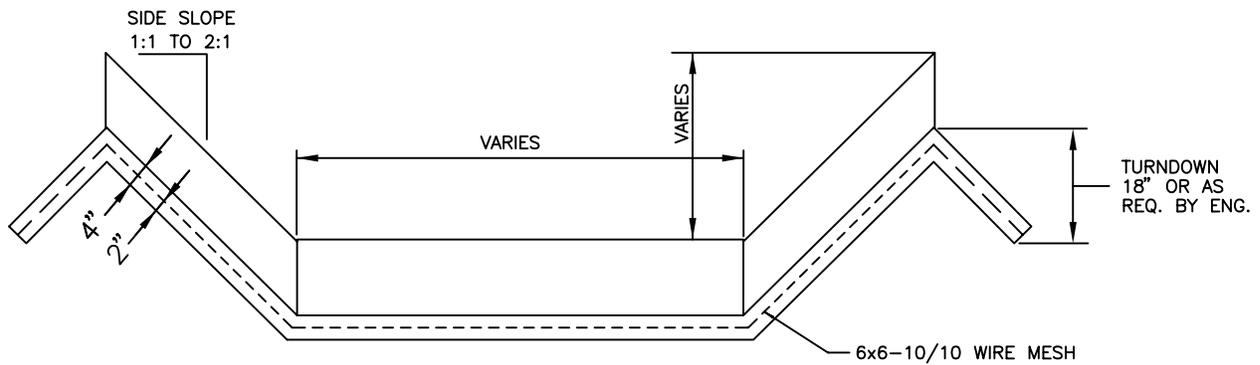
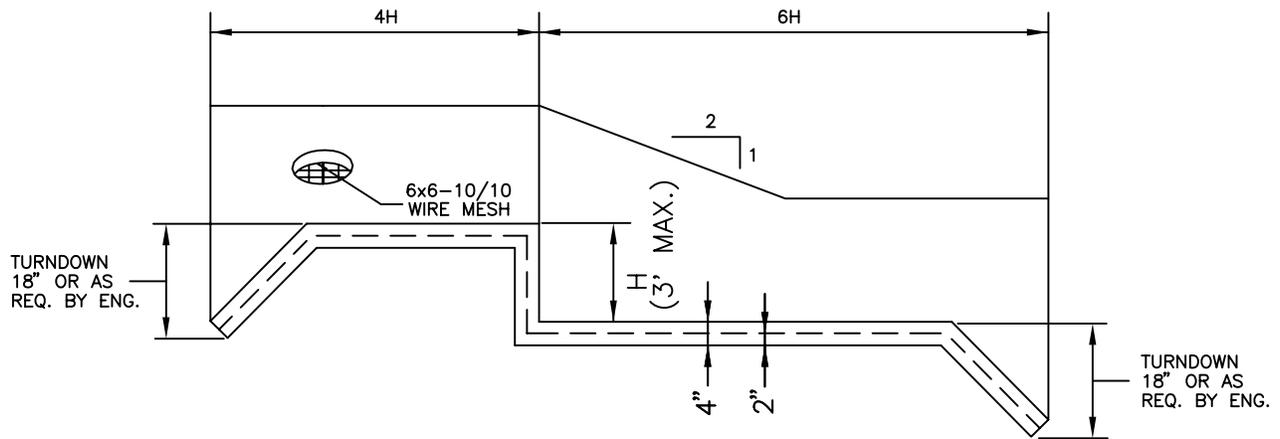


TURN EVERY THIRD BAG OF EVERY THIRD COURSE INWARD TOWARD BANK

TEMPORARY
SAND-CEMENT
RIP RAP CHECK DAM

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.	PLATE D-601
DATE DRAWN	2-10-79
REVISED DATE	5-12-94



NOTE: CONC. DESIGN STRENGTH 2500 P.S.I. MIN.
FOR WEEP HOLE NEEDS—SEE PLATE D-501

CONC. CHECK
DAM

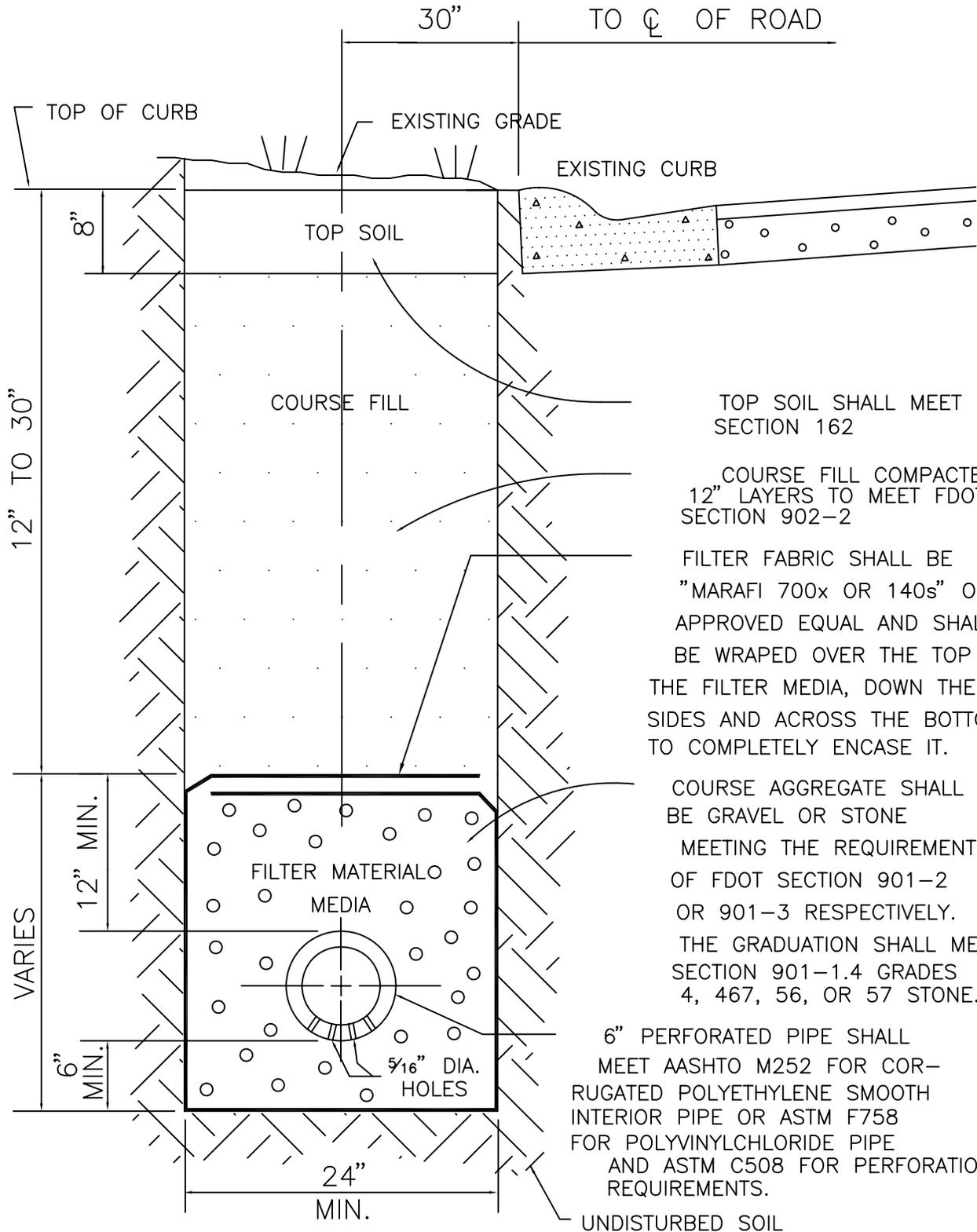
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-602

DATE DRAWN 7-14-79

REVISED DATE 5-12-94



TOP SOIL SHALL MEET FDOT SECTION 162

COURSE FILL COMPACTED IN 12" LAYERS TO MEET FDOT SECTION 902-2

FILTER FABRIC SHALL BE "MARAFI 700x OR 140s" OR APPROVED EQUAL AND SHALL BE WRAPED OVER THE TOP OF THE FILTER MEDIA, DOWN THE SIDES AND ACROSS THE BOTTOM TO COMPLETELY ENCASE IT.

COURSE AGGREGATE SHALL BE GRAVEL OR STONE MEETING THE REQUIREMENTS OF FDOT SECTION 901-2 OR 901-3 RESPECTIVELY. THE GRADUATION SHALL MEET SECTION 901-1.4 GRADES 4, 467, 56, OR 57 STONE.

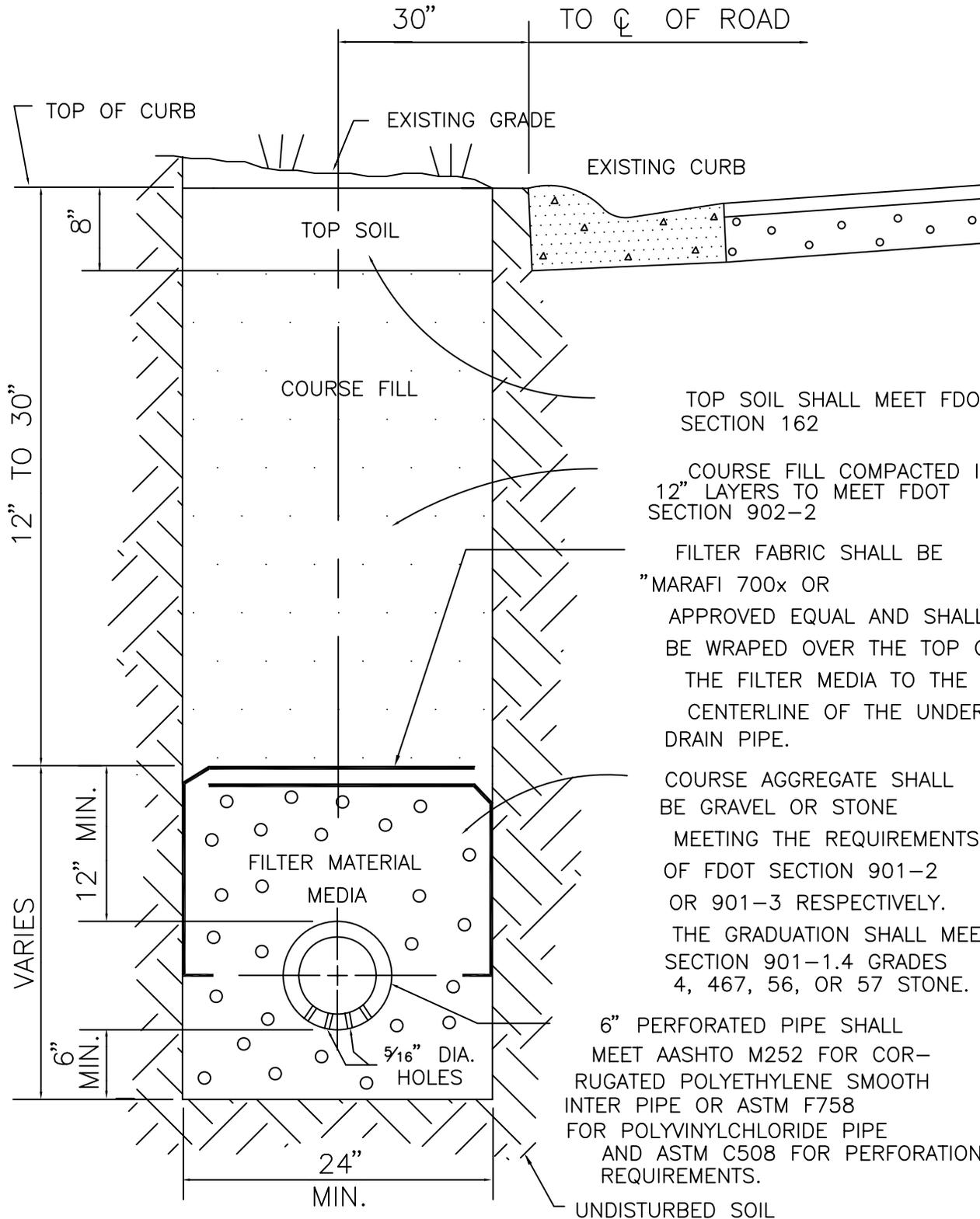
6" PERFORATED PIPE SHALL MEET AASHTO M252 FOR CORRUGATED POLYETHYLENE SMOOTH INTERIOR PIPE OR ASTM F758 FOR POLYVINYLCHLORIDE PIPE AND ASTM C508 FOR PERFORATION REQUIREMENTS.

UNDISTURBED SOIL

NOTE: MINIMUM PIPE SLOPE OF 0.30%

TYPE I UNDERDRAIN WITH "MARAFI 700x" IS TO BE USED WHERE MODERATE CHEMICAL CLOGGING OF FILTER MATERIAL IS EXPECTED.

UNDERDRAIN INSTALLATION TYPE I	<i>CITY OF JACKSONVILLE STANDARD</i>		N.T.S.	PLATE D-701
			DATE DRAWN	05-12-79
			REVISED DATE	5-12-94



TOP SOIL SHALL MEET FDOT SECTION 162

COURSE FILL COMPACTED IN 12" LAYERS TO MEET FDOT SECTION 902-2

FILTER FABRIC SHALL BE "MARAFI 700x OR APPROVED EQUAL AND SHALL BE WRAPED OVER THE TOP OF THE FILTER MEDIA TO THE CENTERLINE OF THE UNDER-DRAIN PIPE.

COURSE AGGREGATE SHALL BE GRAVEL OR STONE MEETING THE REQUIREMENTS OF FDOT SECTION 901-2 OR 901-3 RESPECTIVELY. THE GRADUATION SHALL MEET SECTION 901-1.4 GRADES 4, 467, 56, OR 57 STONE.

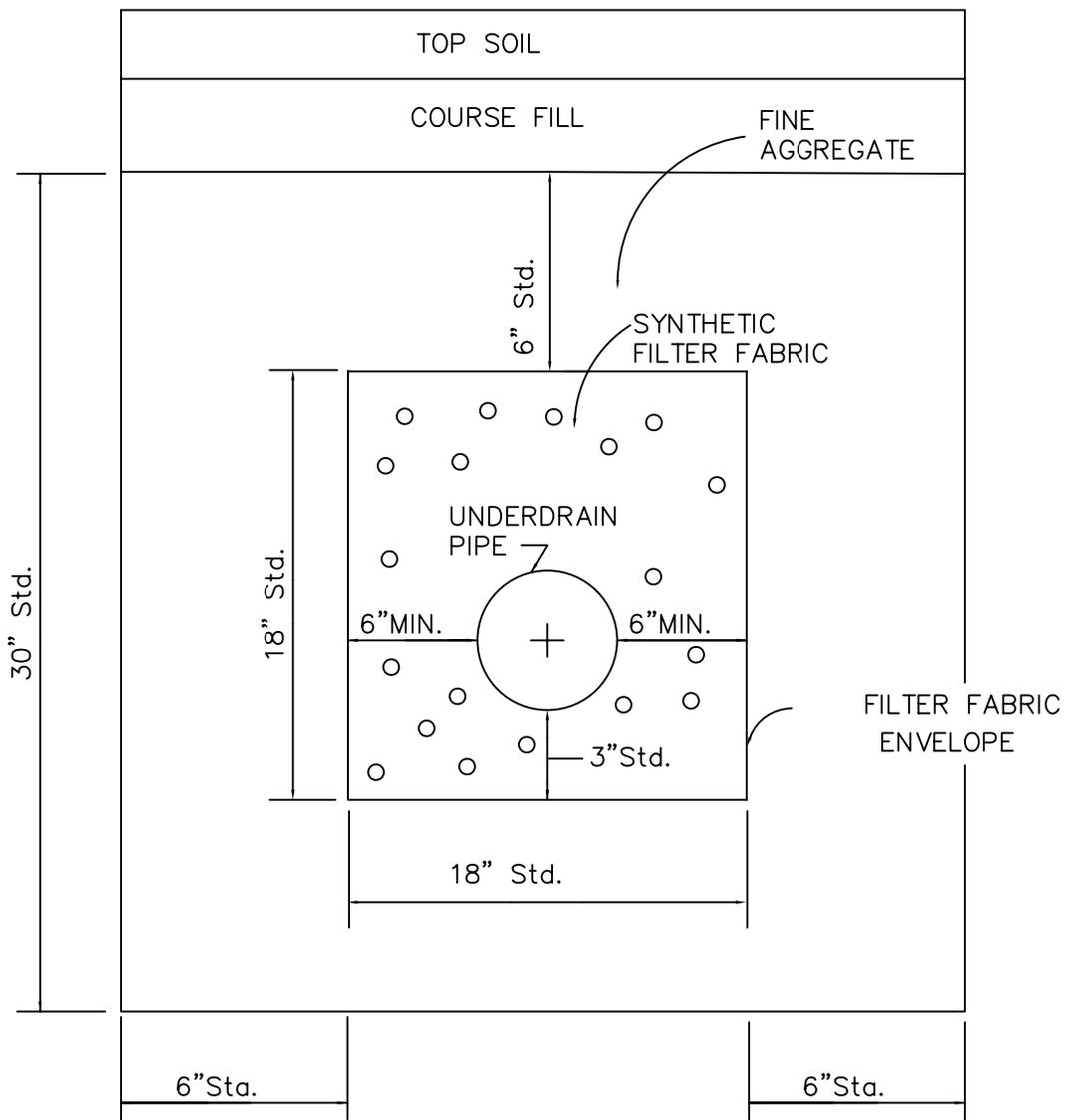
6" PERFORATED PIPE SHALL MEET AASHTO M252 FOR CORRUGATED POLYETHYLENE SMOOTH INTER PIPE OR ASTM F758 FOR POLYVINYLCHLORIDE PIPE AND ASTM C508 FOR PERFORATION REQUIREMENTS.

UNDISTURBED SOIL

NOTE: MINIMUM PIPE SLOPE OF 0.30%

TYPE II UNDERDRAIN IS TO BE USED WHERE CHEMICAL CLOGGING OF FILTER FABRIC IS ANTICIPATED

UNDERDRAIN INSTALLATION TYPE II	<i>CITY OF JACKSONVILLE STANDARD</i>		N.T.S.	PLATE D-702
			DATE DRAWN	05-12-79
			REVISED DATE	5-12-94



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.

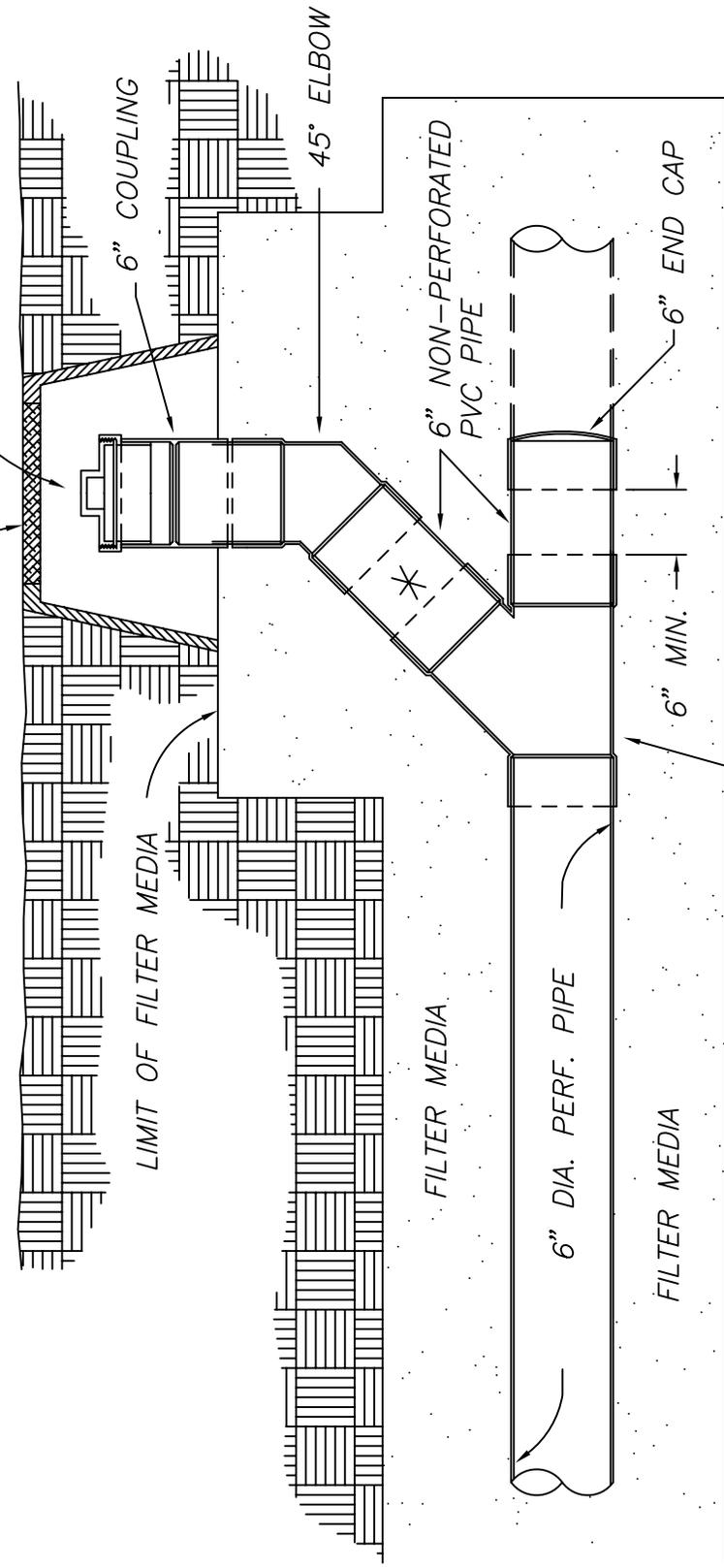
2. FINE AGGREGATE SHALL BE QUARTZ SAND MEETING THE REQUIREMENTS OF SECTION 902-4 OF THE STANDARD SPECIFICATIONS.

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

UNDERDRAIN INSTALLATION TYPE III	<i>CITY OF JACKSONVILLE STANDARD</i>	N.T.S.	PLATE D-703
		DATE DRAWN	5-12-79
		REVISED DATE	5-12-94

SCREW TYPE PLUG
W/CLEANOUT ADAPTER
CLEARANCE 1" MIN. - 3" MAX.

UNDERDRAIN ACCESS 1 1/4" x 19 1/2" x 12"
DEEP, PLASTIC WATER METER BOX WITH
SOLID COVER.



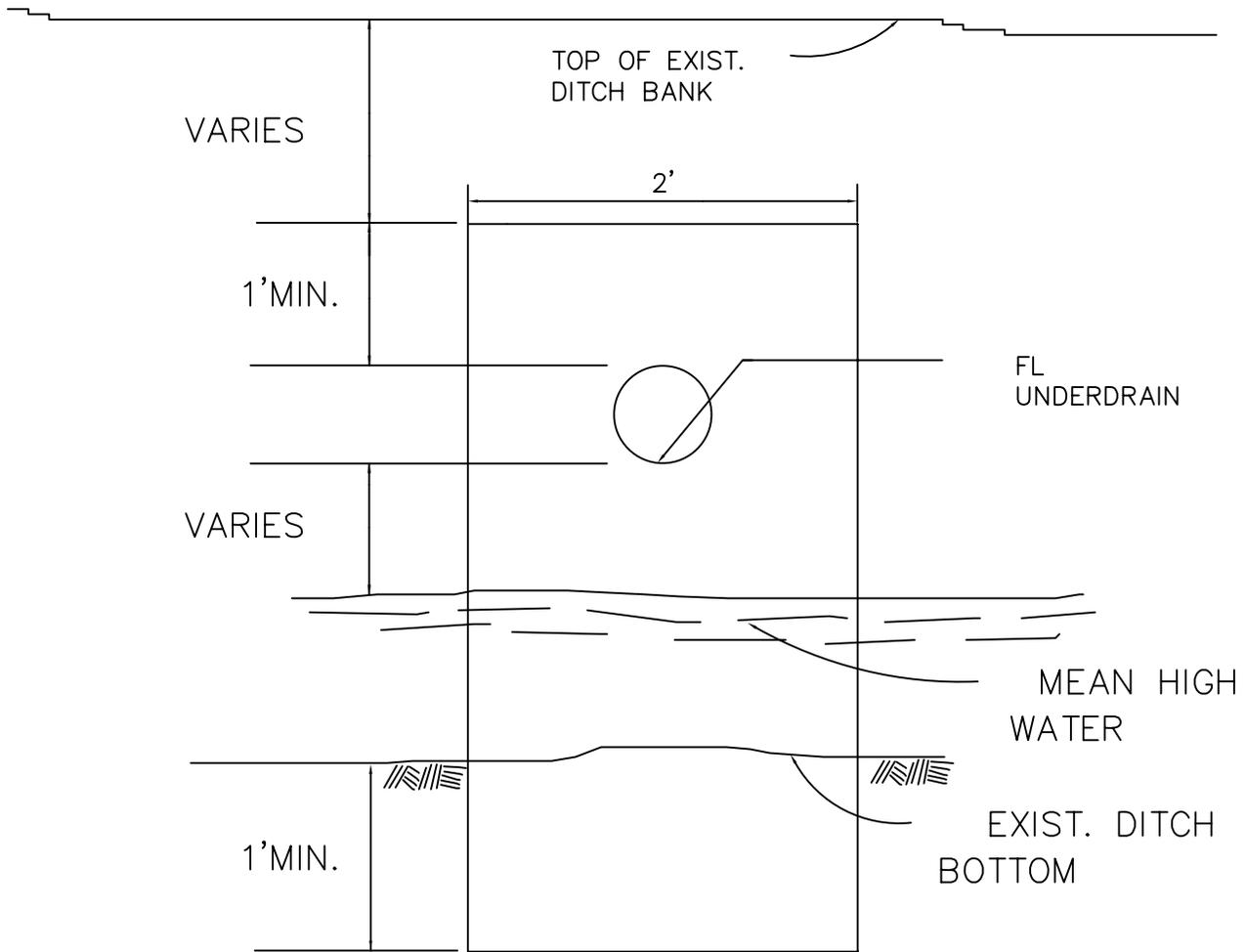
NOTES: ALL PIPE AND FITTINGS TO MEET ASTM F758-82 SPECIFICATIONS.
300' MAXIMUM DISTANCE BETWEEN CLEANOUTS

* COUPLING PIPE LENGTH TO BE FIELD ADJUSTED.

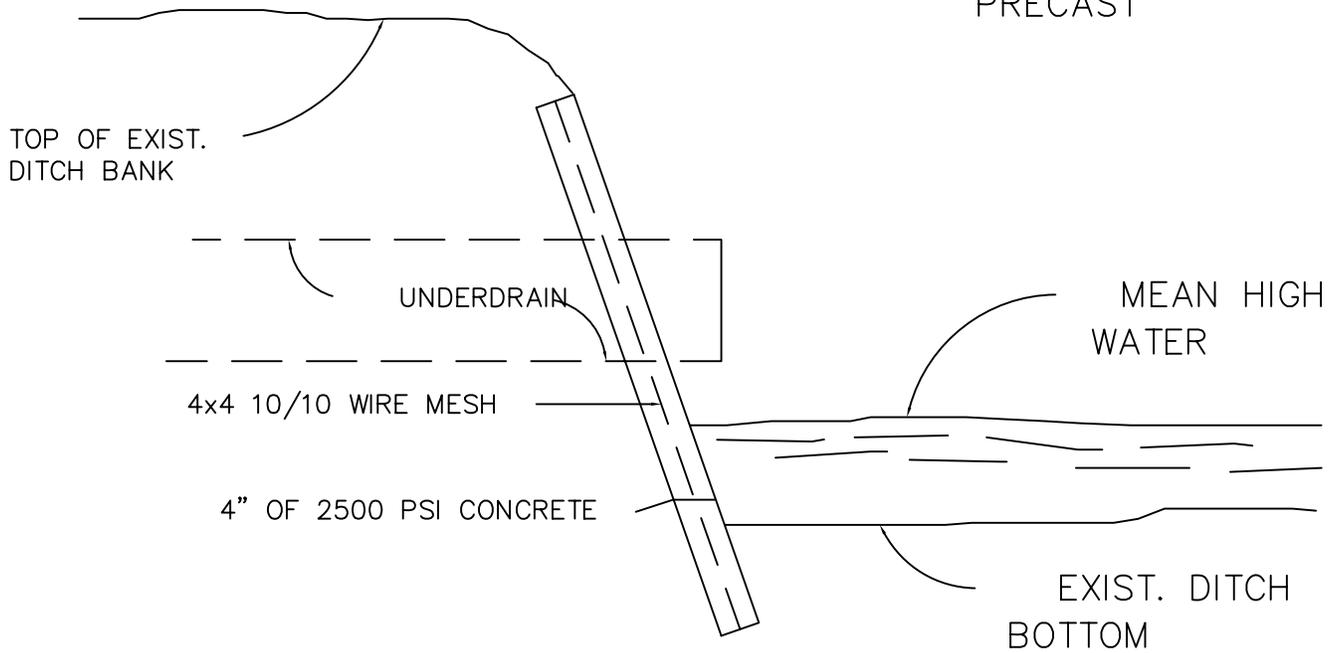
UNDERDRAIN
CLEANOUT
DETAIL

CITY OF
JACKSONVILLE
STANDARD

N.T.S.	PLATE D-704
DATE DRAWN	5-07-79
REVISED DATE	9-10-03



NOTE: SLAB MAY BE PRECAST



PAVED OUTFALL
FOR UNDERDRAIN

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-705

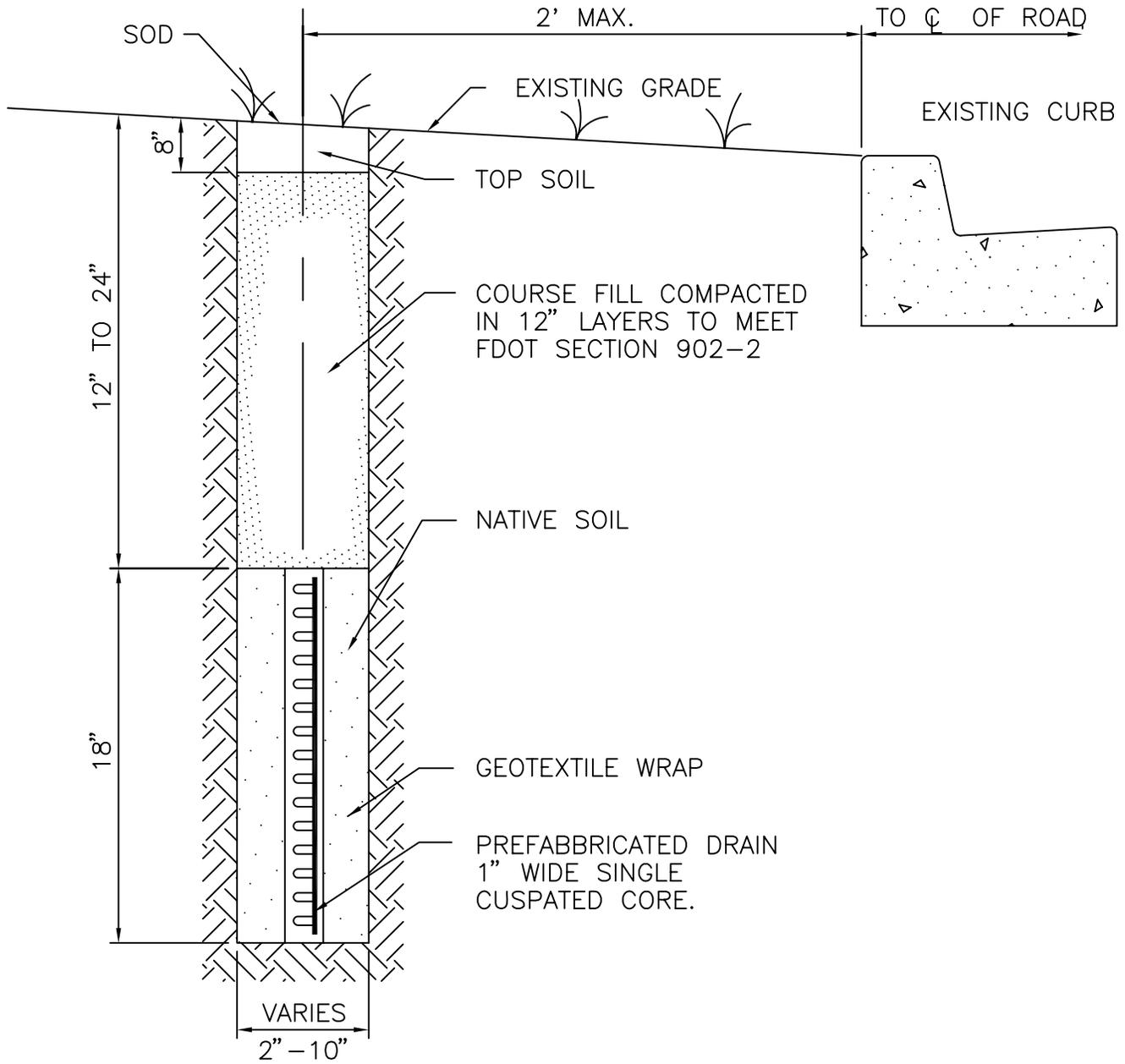
DATE DRAWN

5-5-79

REVISED DATE

5-12-94

TYPICAL PREFABRICATED EDGE DRAIN



NOTE: MINIMUM PIPE SLOPE OF 0.30%

PREFABRICATED
EDGE DRAIN
DETAIL

*CITY OF
JACKSONVILLE
STANDARD*

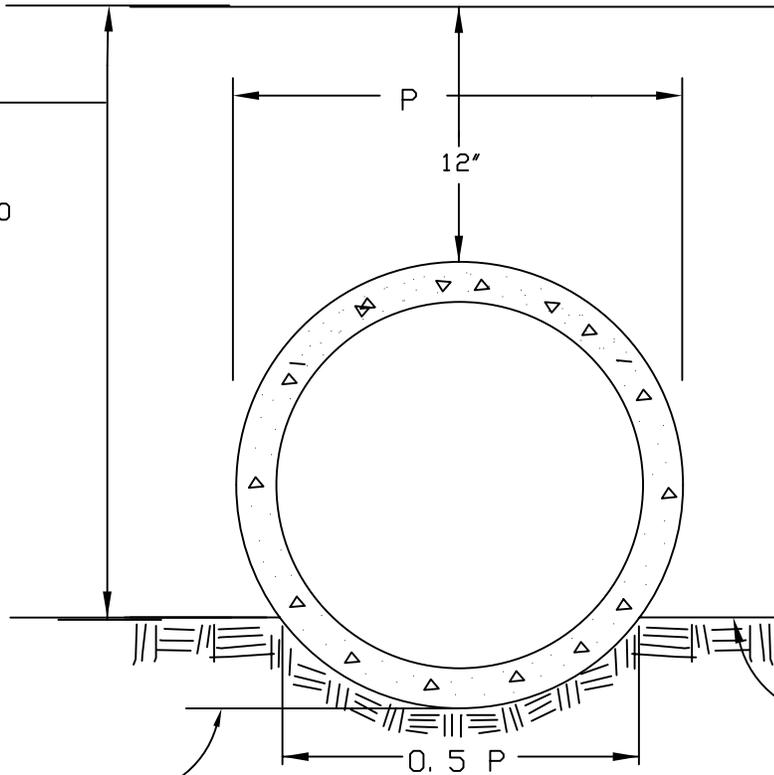
N.T.S.

PLATE D-706

DATE DRAWN 4-28-79

REVISED DATE 5-12-94

ALL FILL TO
BE COMPACTED
TO MIN. 98%
MAX. DENSITY
PER AASHTO T180



SHAPE TO SUPPORT
PIPE WITH EXTRA
CUT AT BELL

ACCEPTABLE EXISTING
FIRM UNDISTURBED
MATERIAL.

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

PIPE BEDDING
CASE 1

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

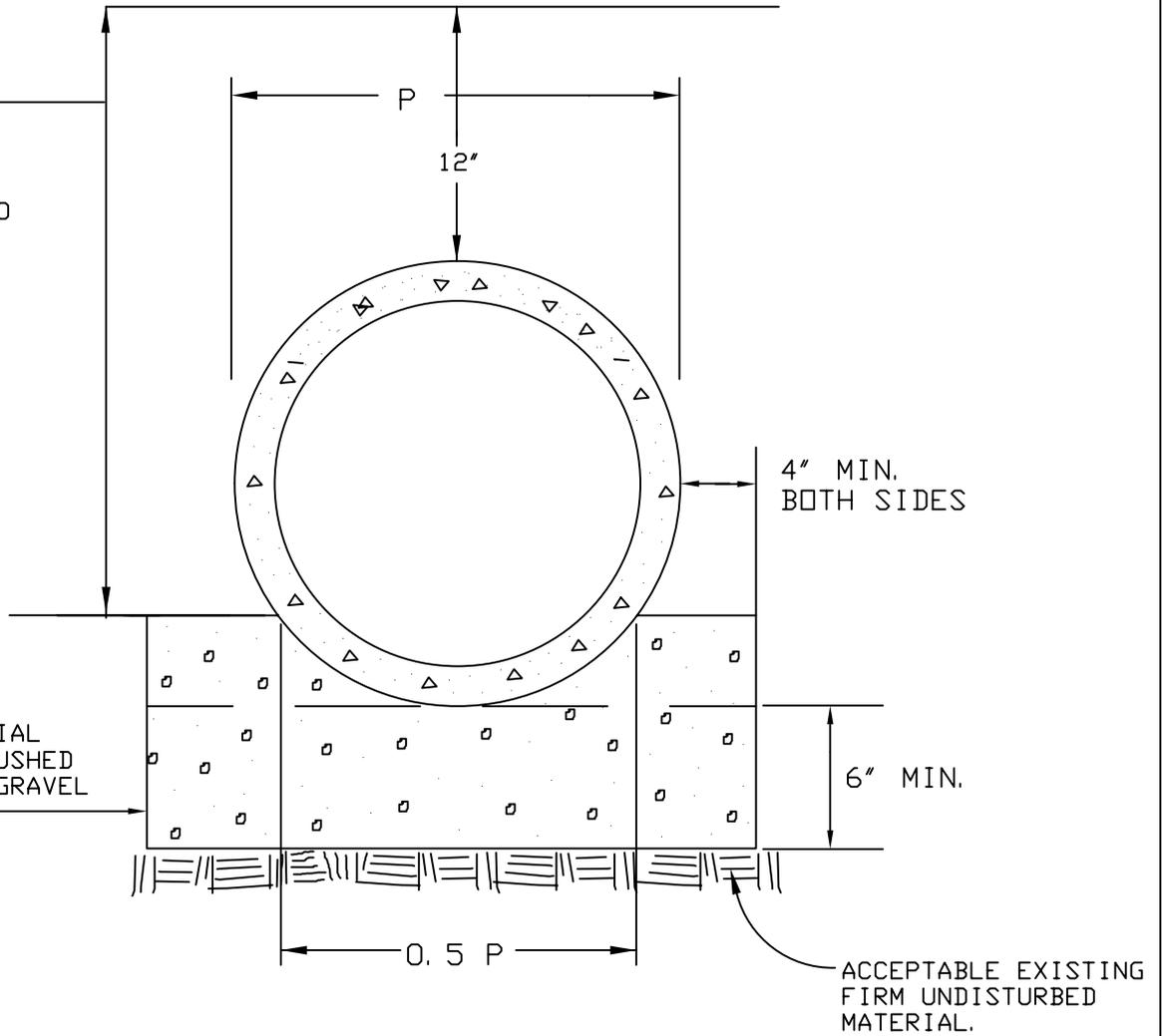
PLATE D-801

DATE DRAWN 8-5-79

REVISED DATE 5-12-94

ALL FILL TO BE COMPACTED TO MIN. 98% MAX. DENSITY PER AASHTO T180

BEDDING MATERIAL TO INCLUDE CRUSHED STONE, SLAG, GRAVEL OR "SOLITE".



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

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

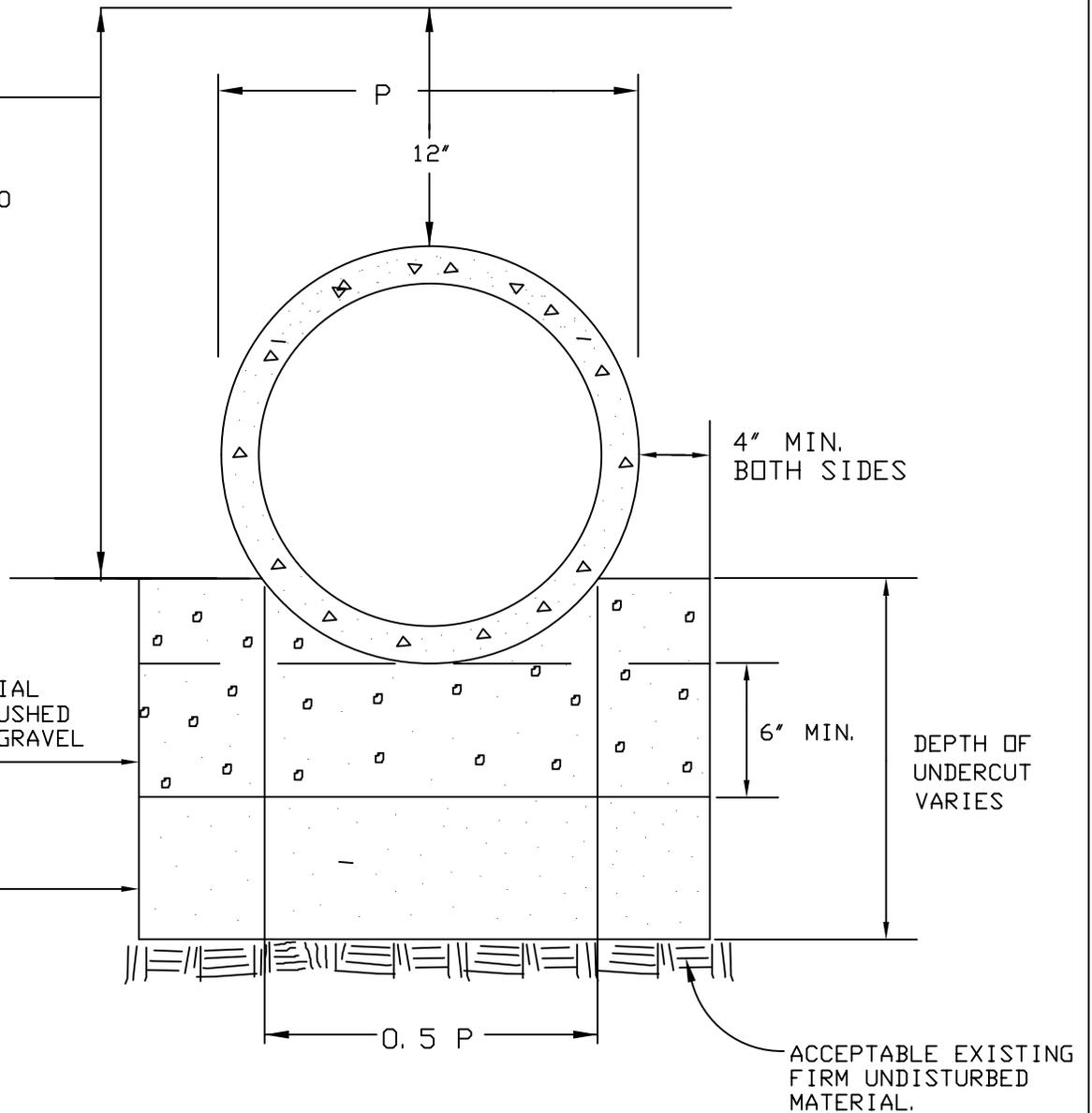
DATE DRAWN 8-5-79

REVISED DATE 5-12-94

ALL FILL TO BE COMPACTED TO MIN. 98% MAX. DENSITY PER AASHTO T180

BEDDING MATERIAL TO INCLUDE CRUSHED STONE, SLAG, GRAVEL OR "SOLITE".

APPROVED FILL MATERIAL



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

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

PIPE BEDDING
CASE 3

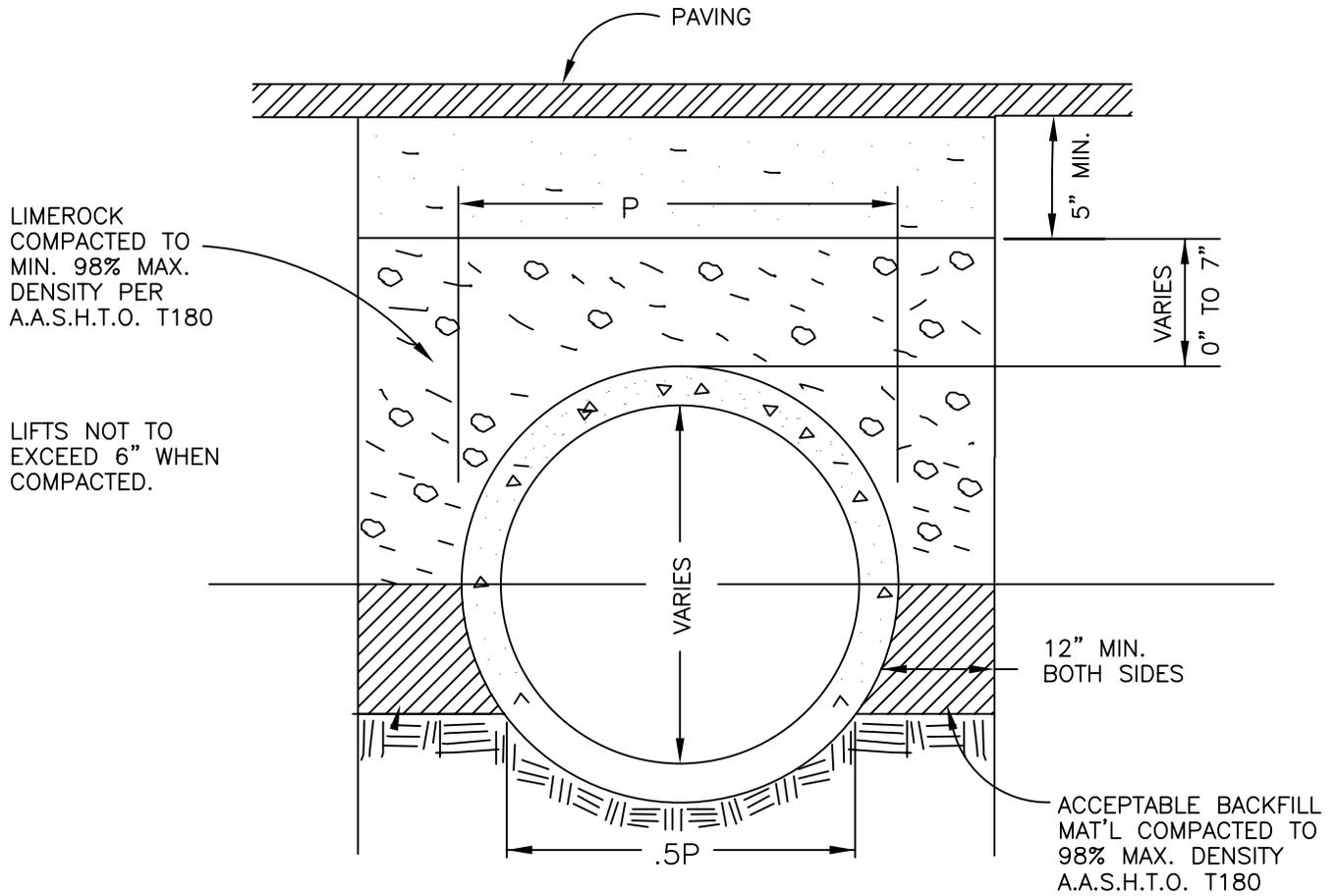
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-803

DATE DRAWN 8-5-79

REVISED DATE 5-12-94



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 PLACE-
MENT WITH LESS
THAN 12" COVER

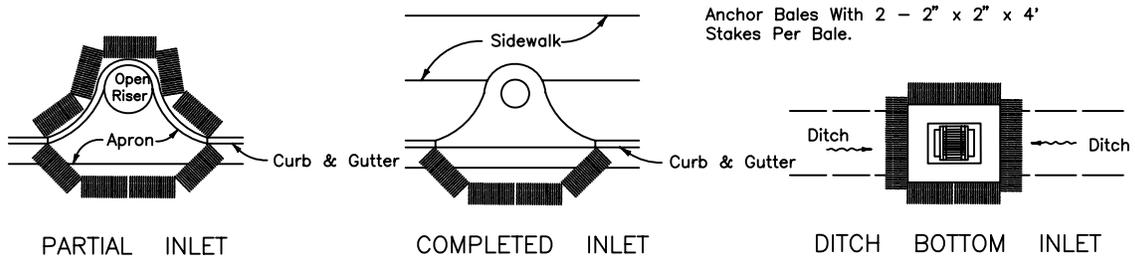
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

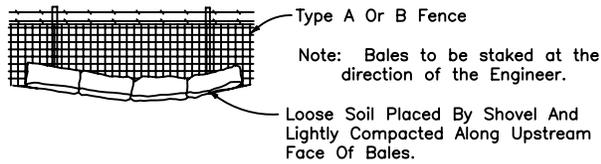
PLATE D-804

DATE DRAWN 8-5-79

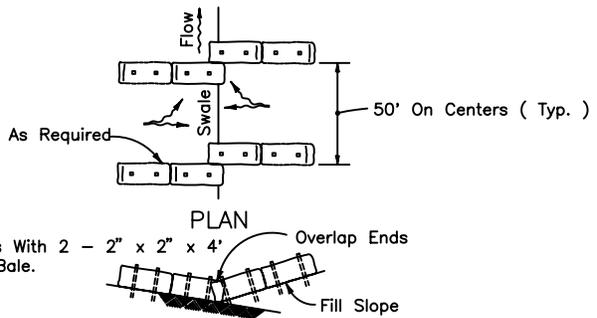
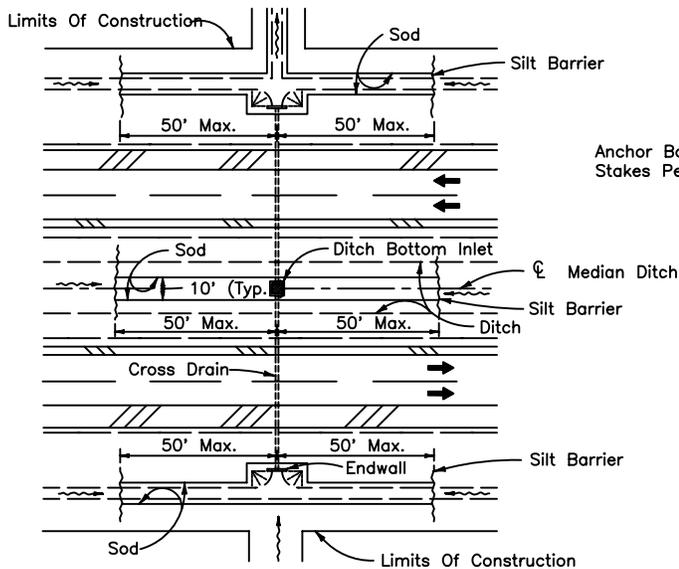
REVISED DATE 5-12-94



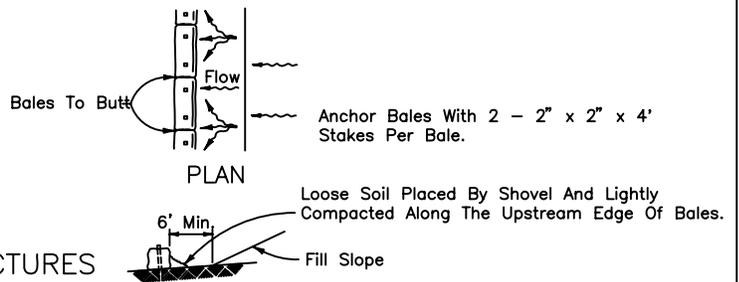
PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



BALES BACKED BY FENCE



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



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

DITCH INSTALLATIONS AT DRAINAGE STRUCTURES

BARRIERS FOR FILL SLOPES

HAY BALE
LOCATION

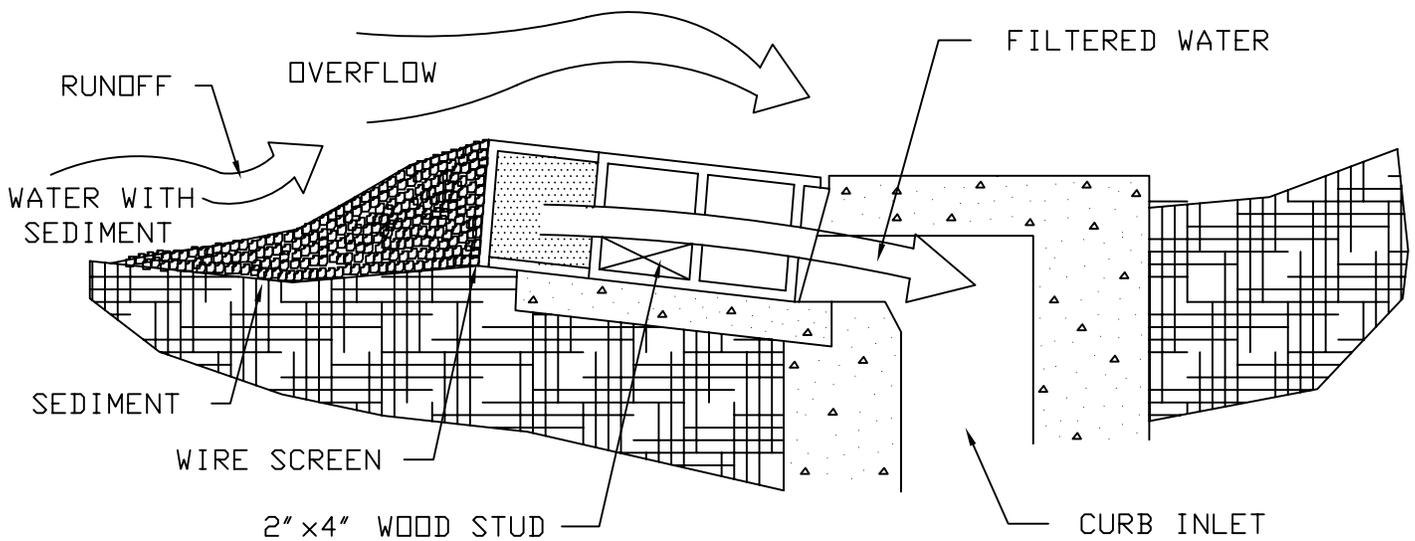
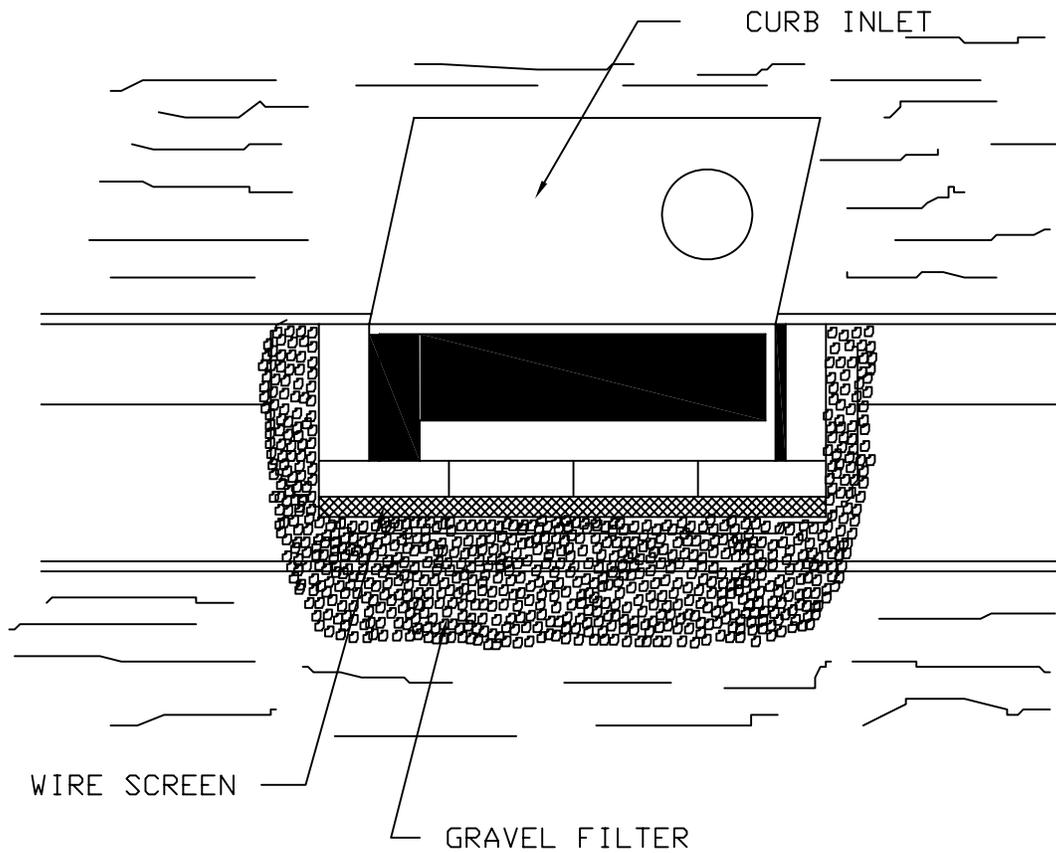
CITY OF
JACKSONVILLE
STANDARD

N.T.S.

PLATE D-901

DATE DRAWN 2-20-79

REVISED DATE 5-12-94



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

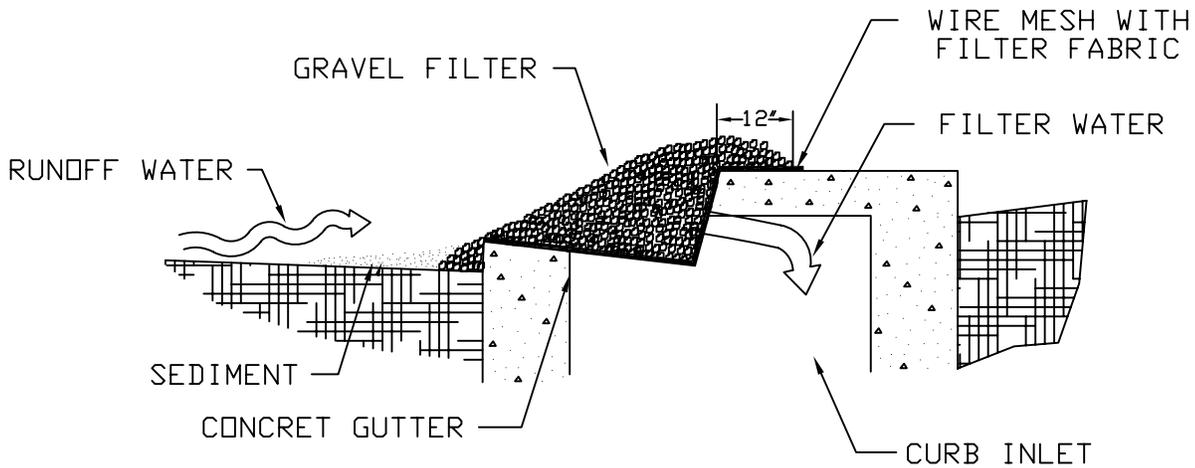
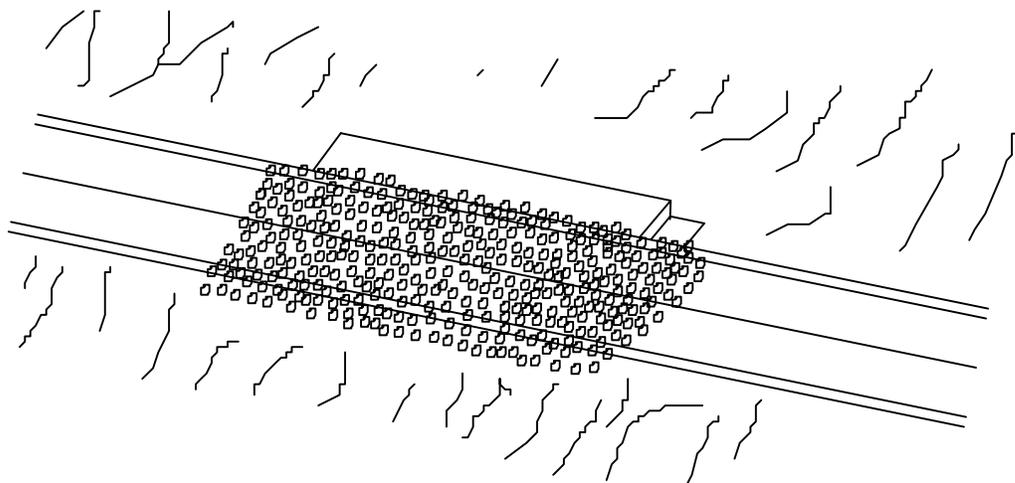
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-902

DATE DRAWN 8-4-79

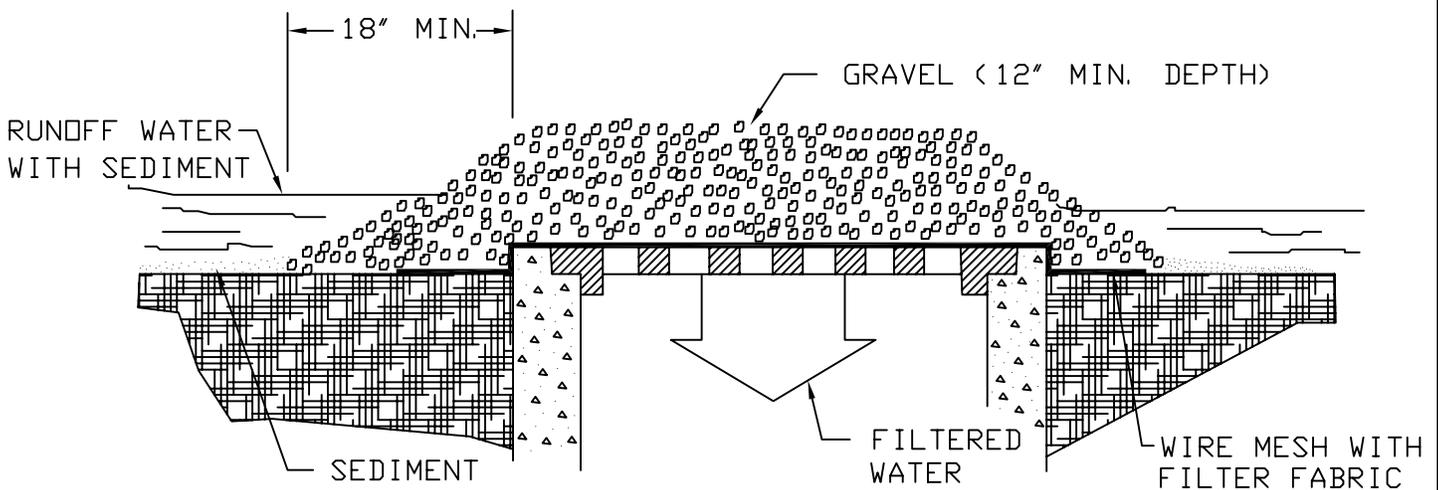
REVISED DATE 5-12-94



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

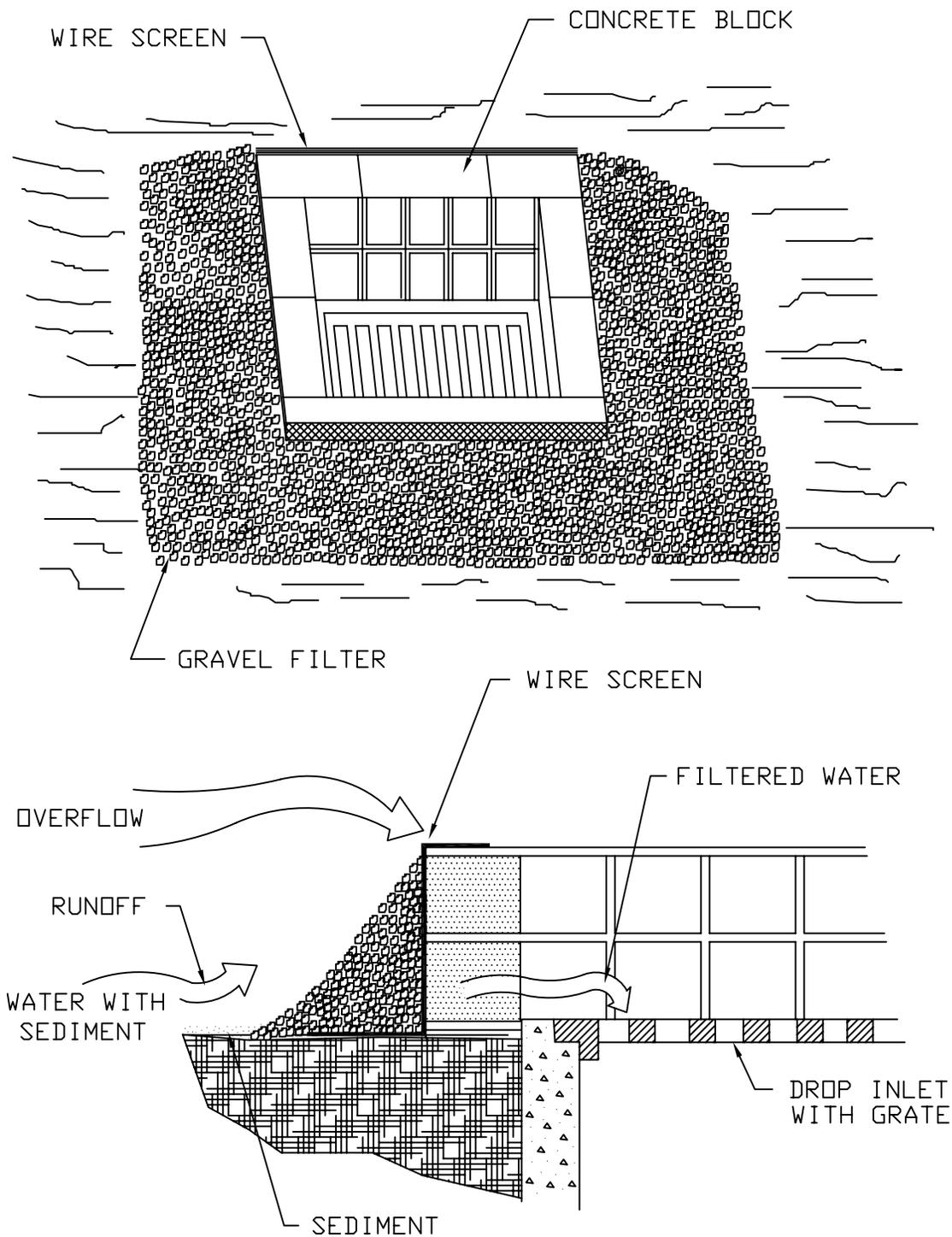


SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED 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

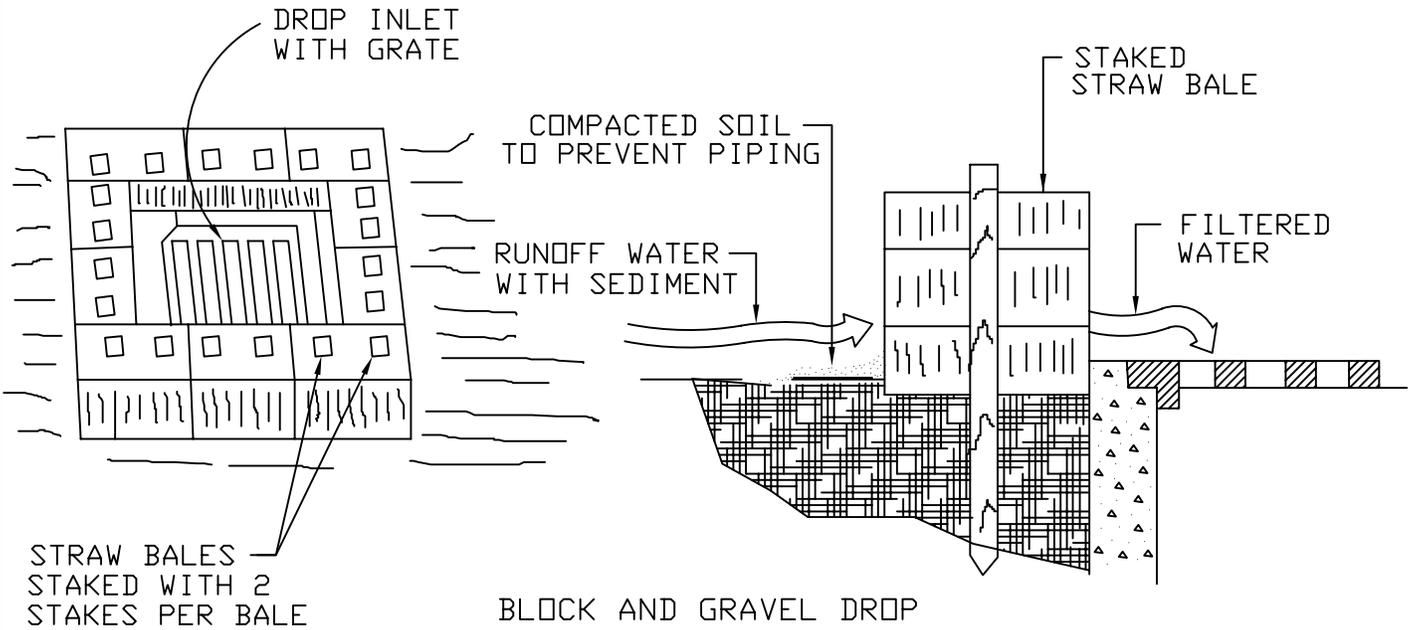
GRAVEL INLET SEDIMENT TRAP	<i>CITY OF JACKSONVILLE STANDARD</i>	N.T.S.	PLATE D-903
		DATE DRAWN	8-4-79
		REVISED DATE	5-12-94



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.

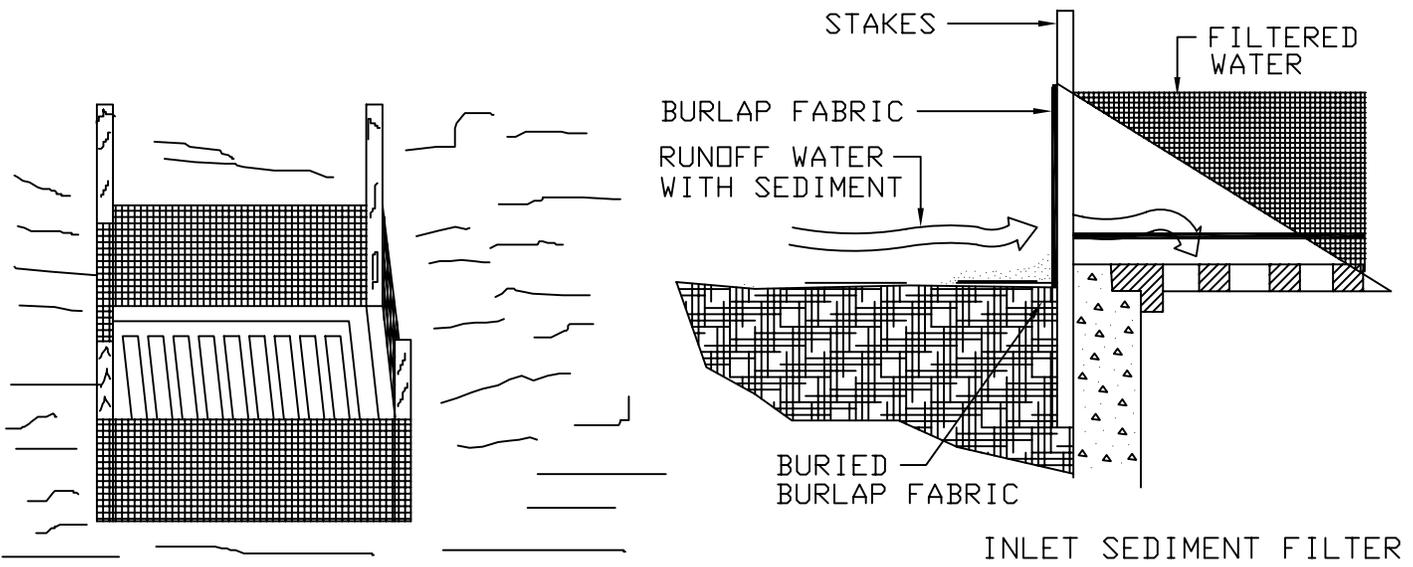
BLOCK AND GRAVEL DROP INLET SEDIMENT FILTER	<i>CITY OF JACKSONVILLE STANDARD</i>		N.T.S.	PLATE D-904
			DATE DRAWN	8-4-79
			REVISED DATE	5-12-94



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	<i>CITY OF JACKSONVILLE STANDARD</i>	N.T.S.	PLATE D-905
		DATE DRAWN	8-5-79
		REVISED DATE	5-12-94

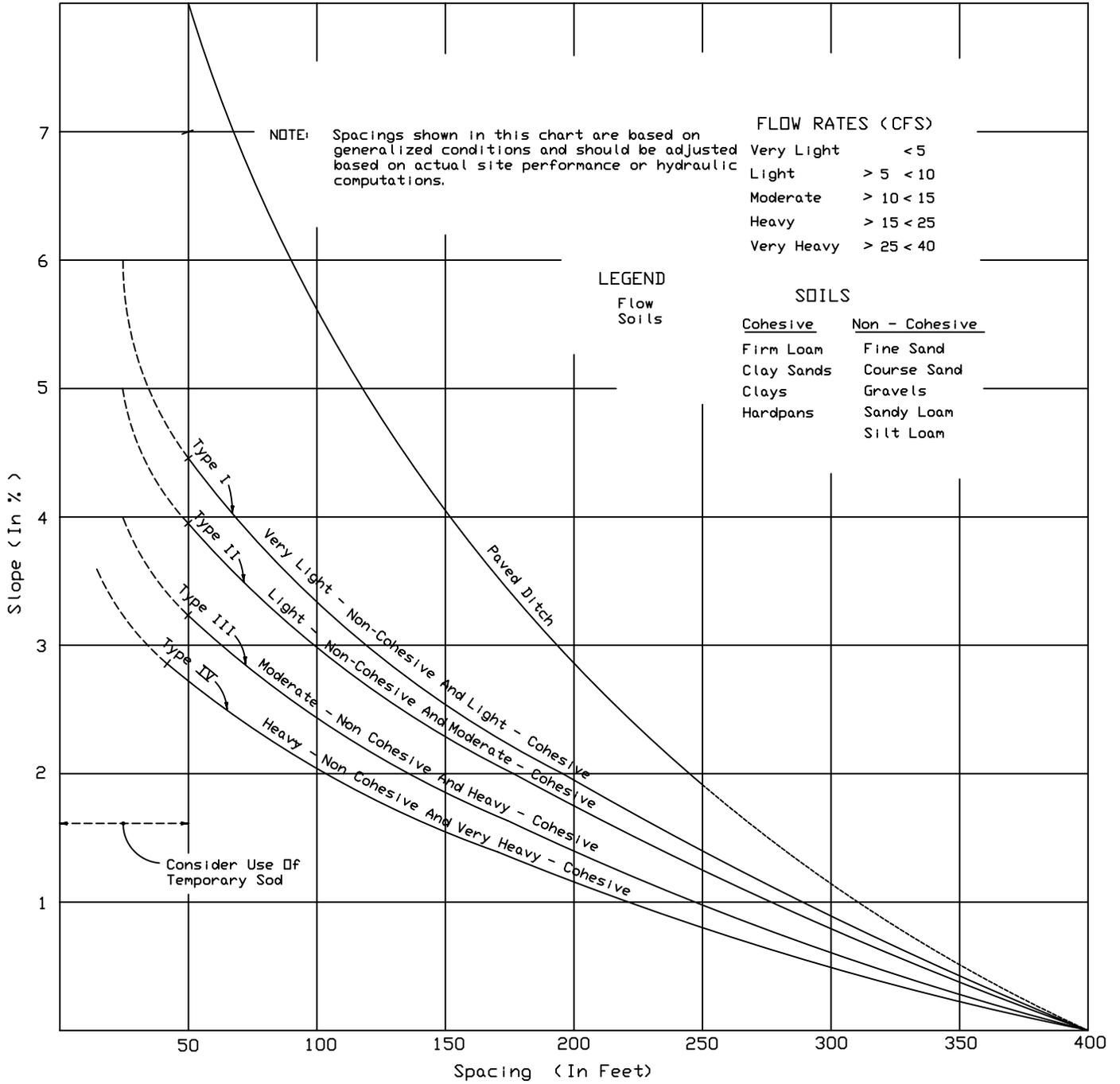


CHART I

RECOMMENDED SPACING FOR TYPE I AND TYPE II HAY BALE BARRIERS, AND TYPE III AND TYPE IV SILT FENCES AND PAVED DITCH HAY BALE BARRIERS

SPACING RECOMMENDATION
 FOR SILT FENCES
 AND HAY BALES

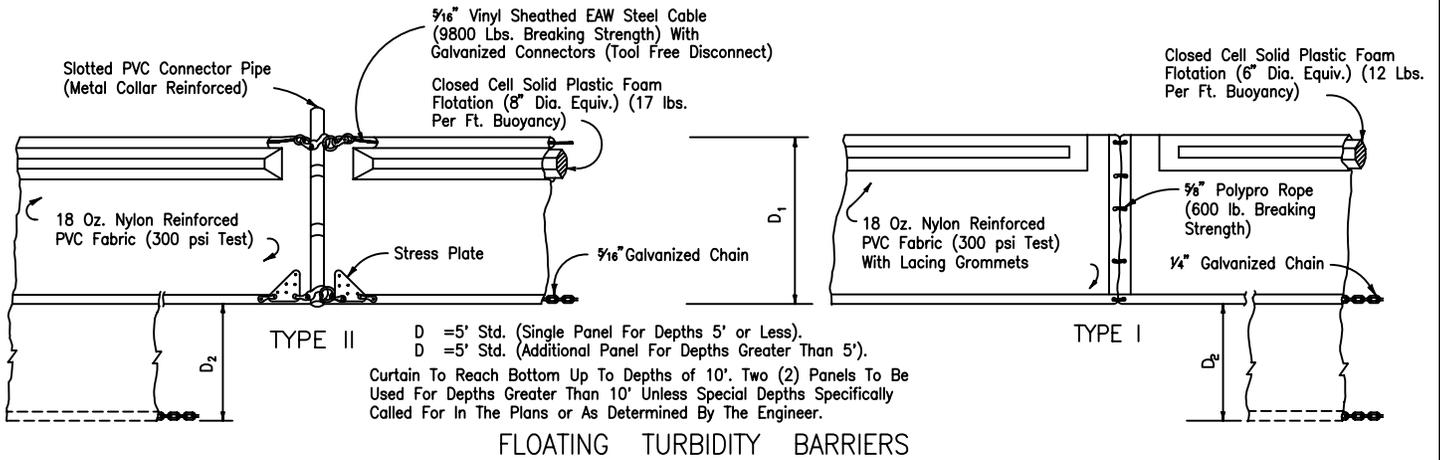
*CITY OF
 JACKSONVILLE
 STANDARD*

N.T.S.

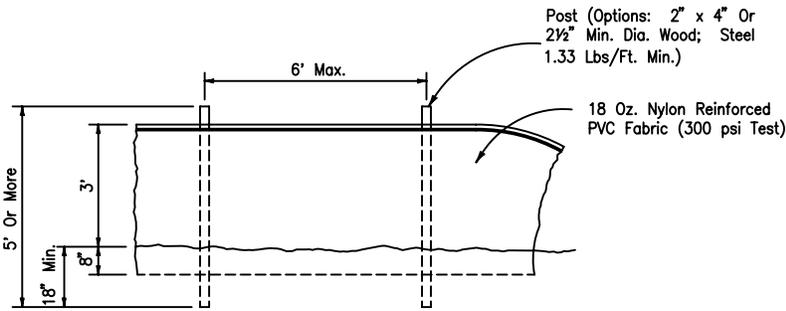
PLATE D-906

DATE DRAWN 8-9-79

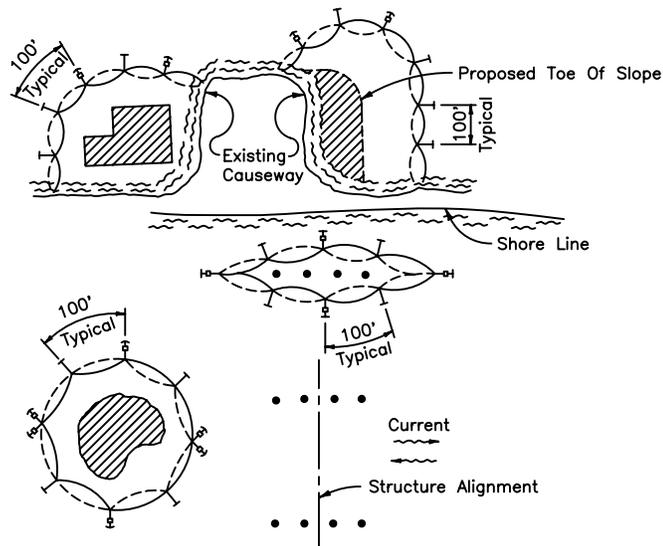
REVISED DATE 5-12-94



FLOATING TURBIDITY BARRIERS

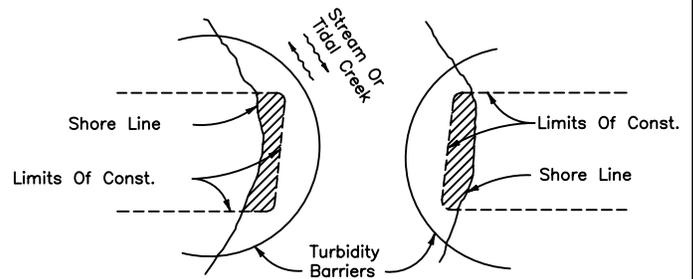


STAKED TURBIDITY BARRIER



LEGEND

- Pile Locations
- ▨ Dredge Or Fill Area
- Mooring Buoy w/Anchor
- Anchor
- Barrier Movement Due To Current Action



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.

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.

TURBIDITY BARRIER APPLICATIONS

TURBIDITY
BARRIERS

CITY OF
JACKSONVILLE
STANDARD

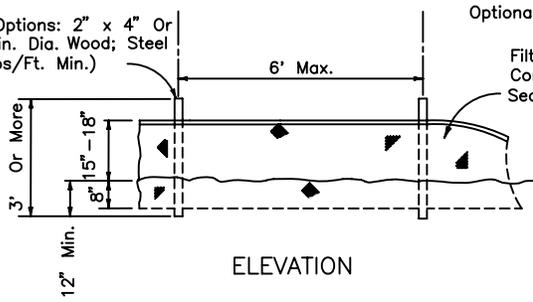
N.T.S.

PLATE D-907

DATE DRAWN 08/09/93

REVISED DATE 5-12-94

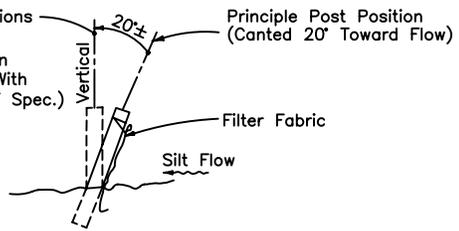
Post (Options: 2" x 4" Or 2½" Min. Dia. Wood; Steel 1.33 Lbs/Ft. Min.)



ELEVATION

Optional Post Positions

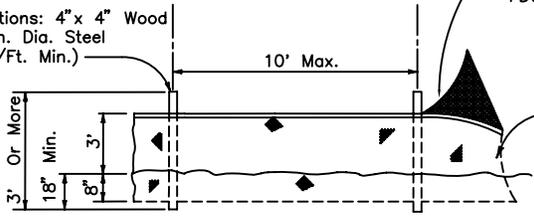
Filter Fabric (In Conformance With Sec. 985 FDOT Spec.)



SECTION

TYPE III SILT FENCE

Post (Options: 4" x 4" Wood or 3" Min. Dia. Steel 1.33 Lbs/Ft. Min.)

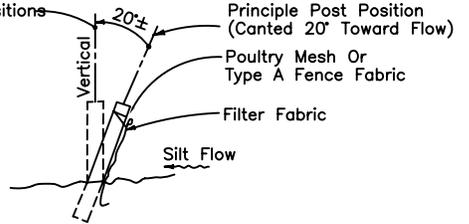


ELEVATION

Poultry Mesh (20. Ga. Min.) Or Type A Fence Fabric (Index No. 452 & Sec. 985 FDOT Spec.)

Filter Fabric (In Conformance With Sec. 985 FDOT Spec.)

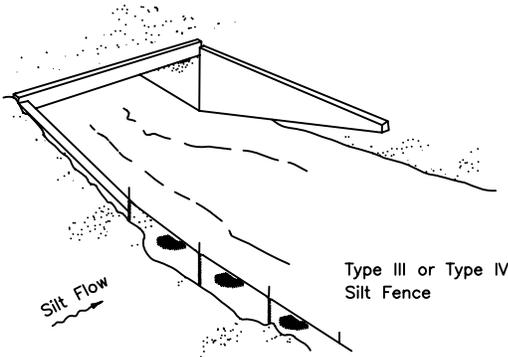
Optional Post Positions



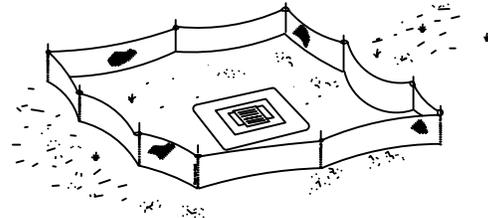
SECTION

Note: Silt Fence to be paid for under the contract unit price for Staked Silt Fence (LF).

TYPE IV SILT FENCE



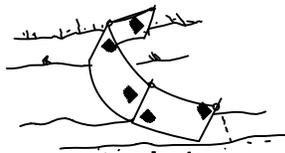
Type III or Type IV Silt Fence



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



Type IV Silt Fence

Silt Flow



Type III Silt Fence

Silt Flow

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

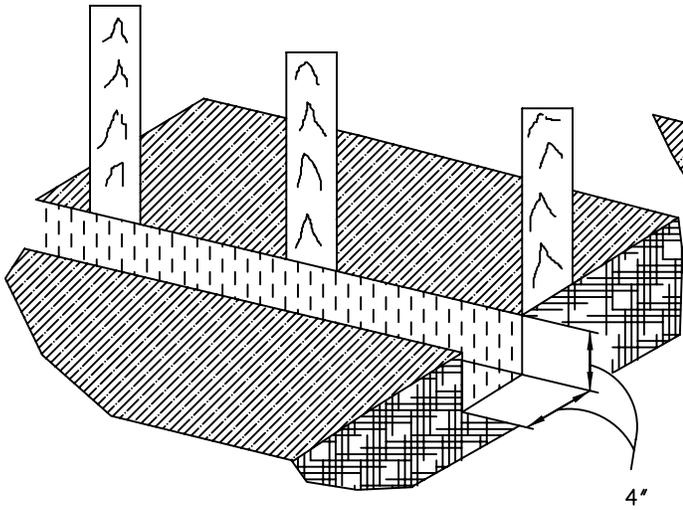
N.T.S.

PLATE D-908

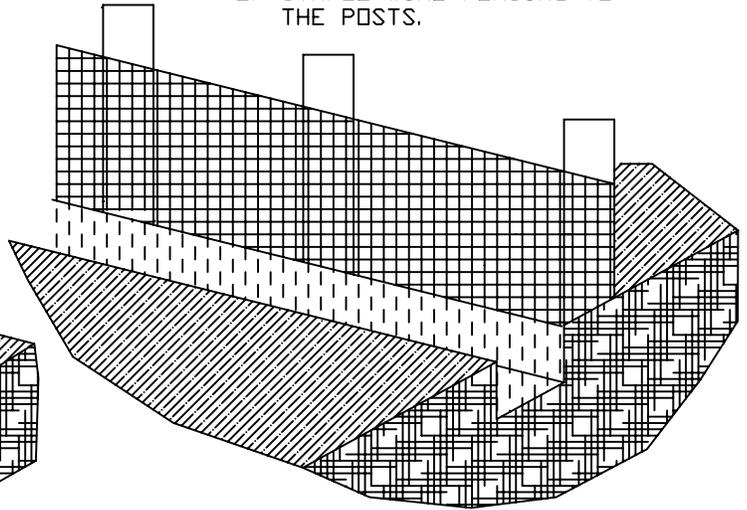
DATE DRAWN 8-9-93

REVISED DATE 5-12-94

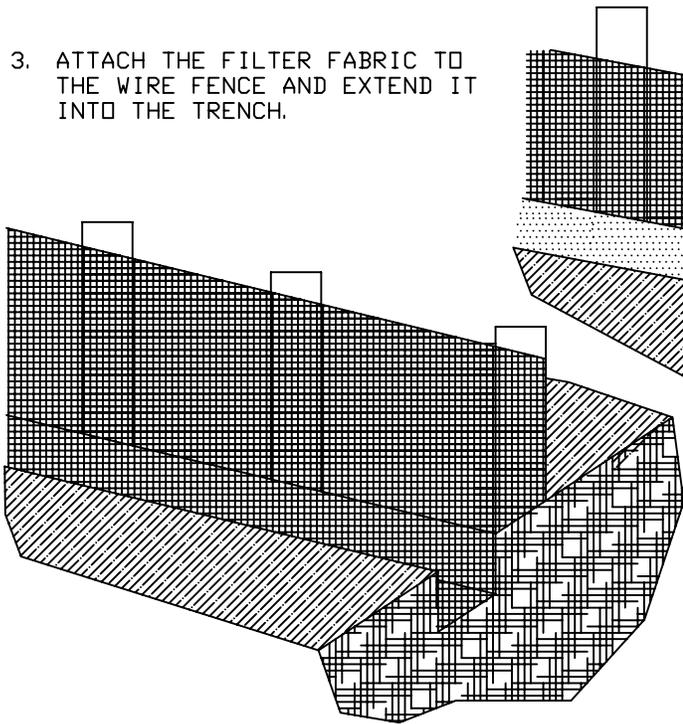
1. SET POSTS AND EXCAVATE A 4"×4" TRENCH UPSLOPE ALONG THE LINE OF POSTS



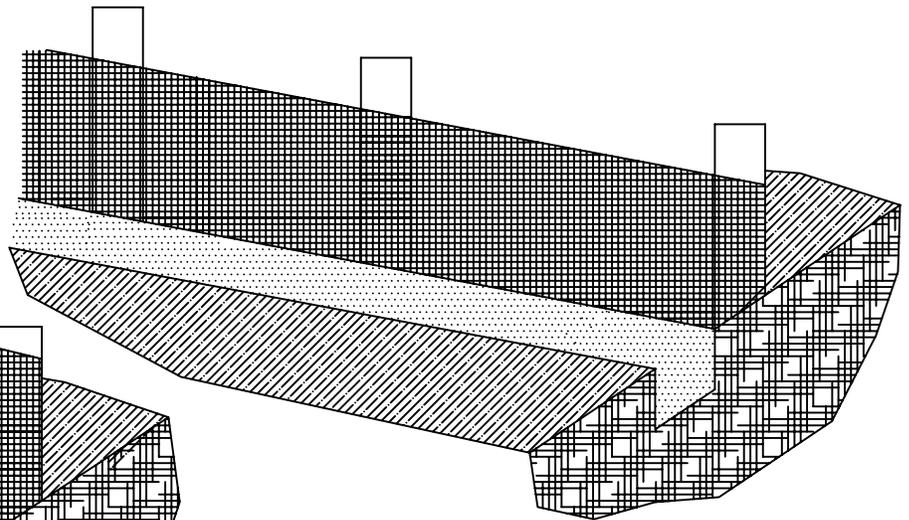
2. STAPLE WIRE FENCING TO THE POSTS.



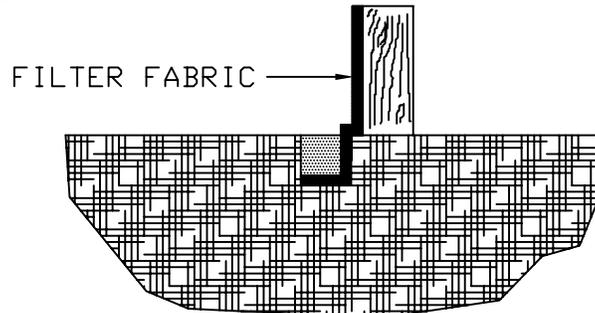
3. ATTACH THE FILTER FABRIC TO THE WIRE FENCE AND EXTEND IT INTO THE TRENCH.



4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



EXTENSION OF FABRIC AND WIRE INTO THE TRENCH.



CONSTRUCTION DETAILS
FOR
SILT FENCES

*CITY OF
JACKSONVILLE
STANDARD*

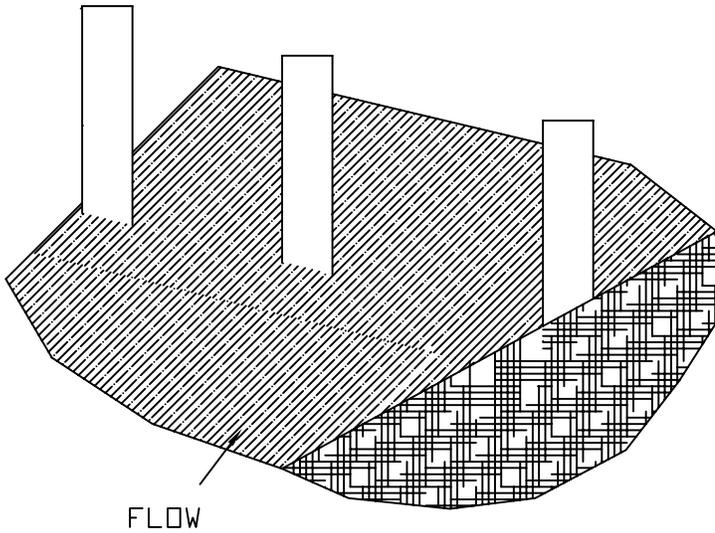
N.T.S.

PLATE D-909

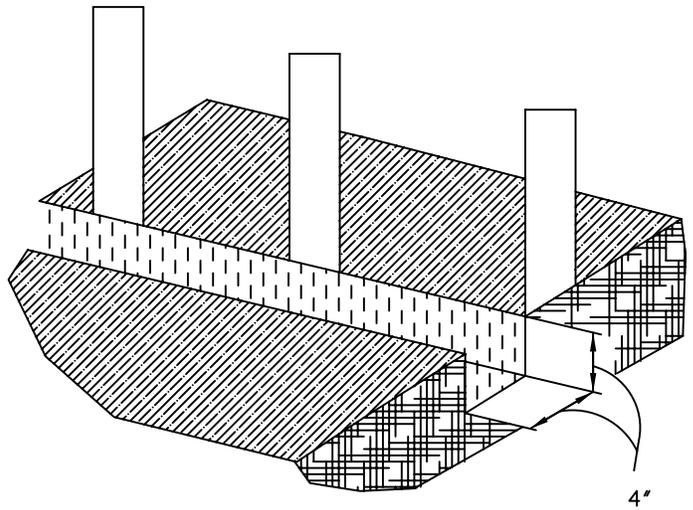
DATE DRAWN 08/05/93

REVISED DATE 5-12-94

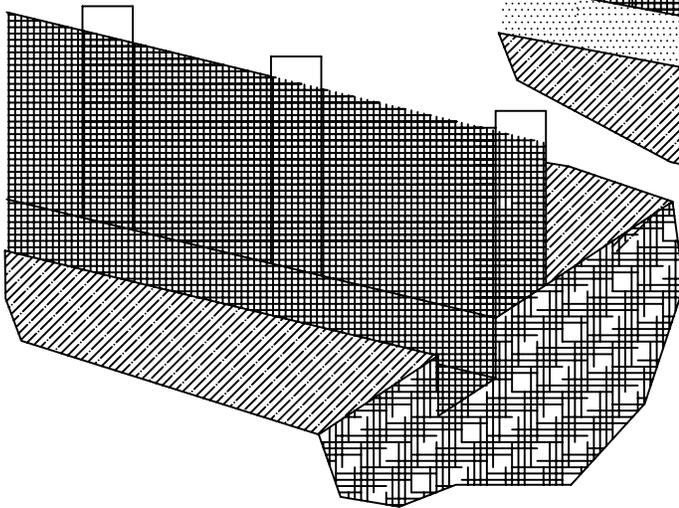
1. SET THE STAKES.



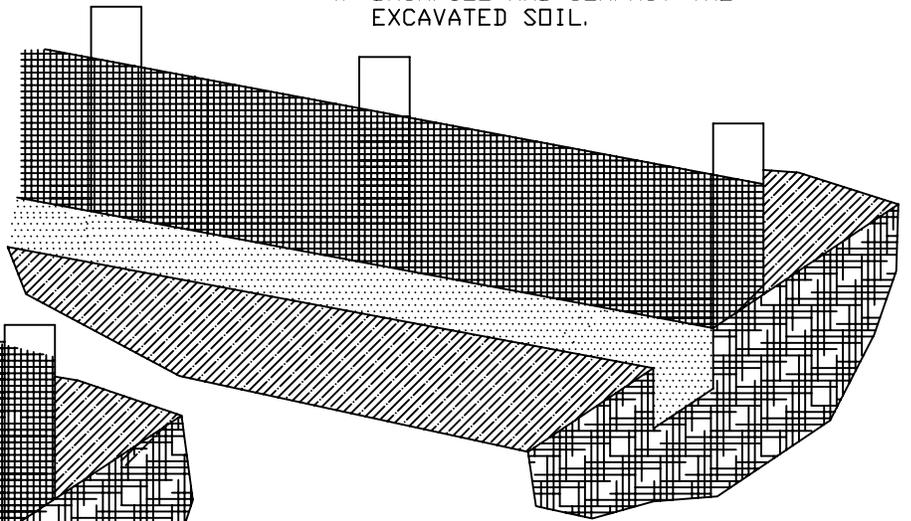
2. EXCAVATE A 4" x 4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.



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



4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



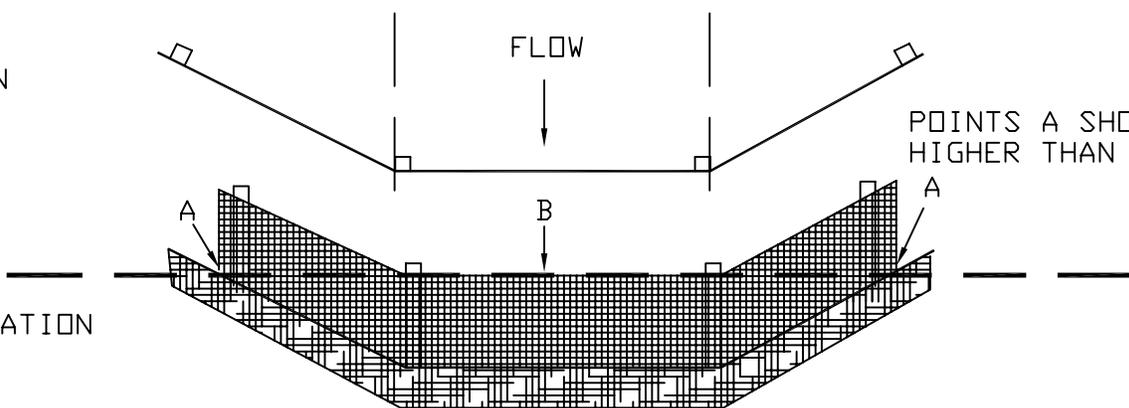
CONSTRUCTION OF A FILTER BARRIER

PLAN

FLOW

POINTS A SHOULD BE HIGHER THAN B

ELEVATION



PROPER PLACEMENT OF A FILTER BARRIER IN A DRAINAGE WAY

FILTER BARRIER
CONSTRUCTION DETAIL

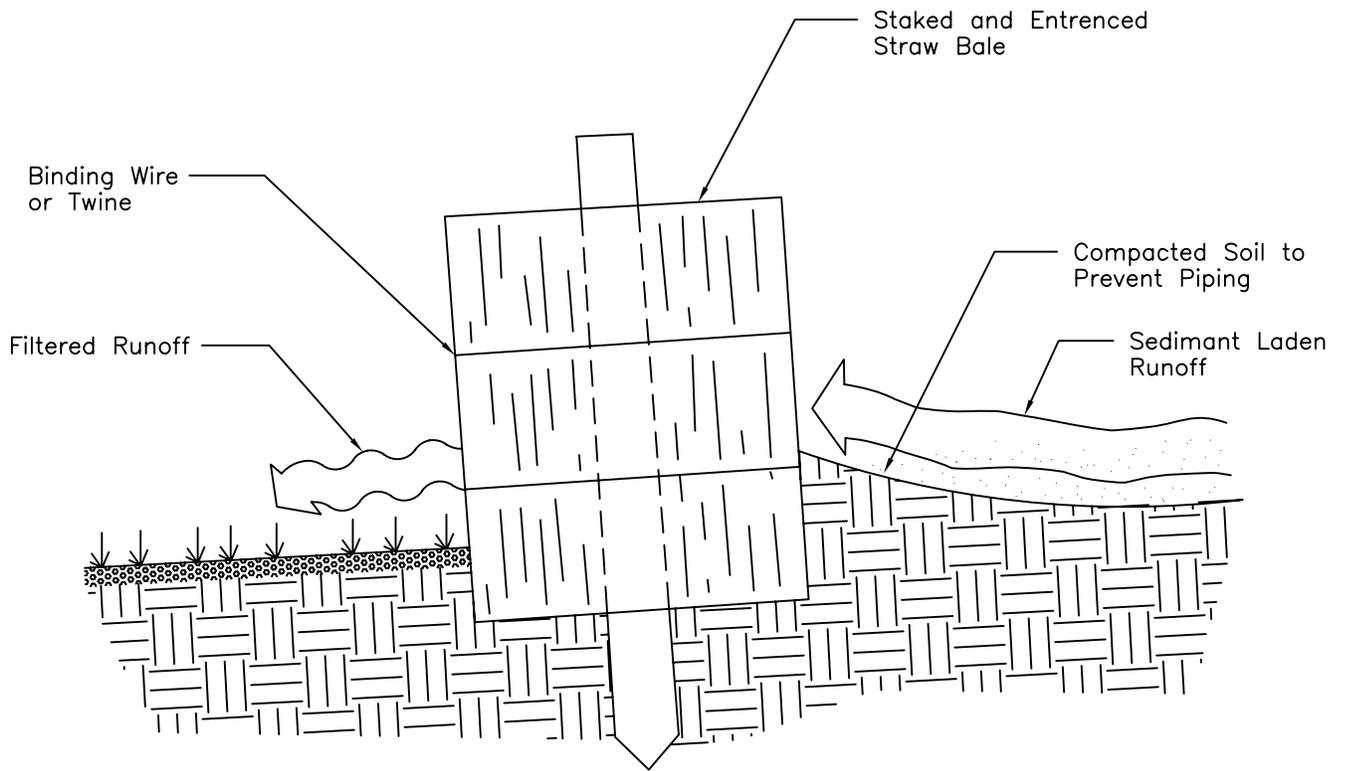
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-910

DATE DRAWN 08/05/93

REVISED DATE 5-12-94



CROSS-SECTION OF A
PROPERLY INSTALLED STRAW BALE

STAKED HAY
BALE

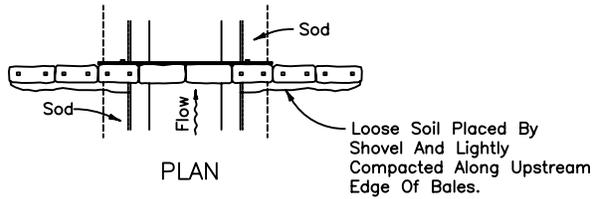
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-911

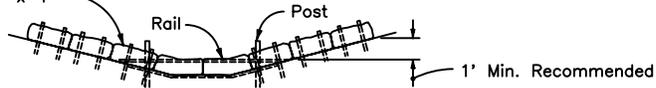
DATE DRAWN 05-07-90

REVISED DATE 5-12-94



PLAN

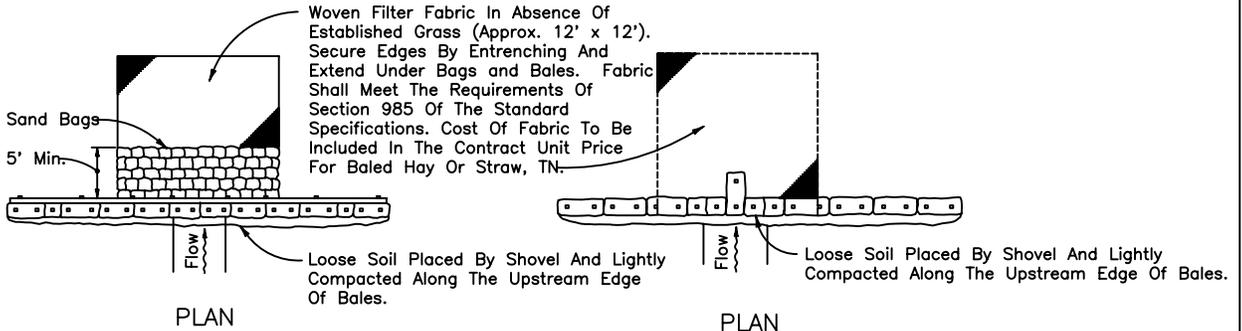
Anchor Bales With 2 - 2" x 2" x 4' Stakes Per Bale.



ELEVATION

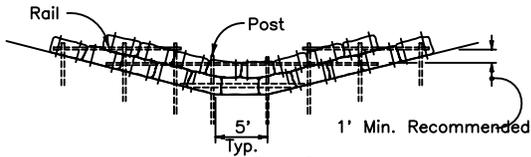
Spacing: Bale barriers for paved ditches should be spaced in accordance with Chart I, Sheet 1 of 3, Index No. 102

BARRIER FOR PAVED DITCH



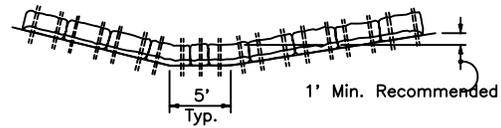
PLAN

PLAN



ELEVATION

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

Anchor Bales With 2 - 2" x 2" x 4' Stakes Per Bale

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.)

TYPE II

TYPE I

BARRIER FOR UNPAVED DITCHES

HAY BALE BARRIERS
TYPE I & II

CITY OF
JACKSONVILLE
STANDARD

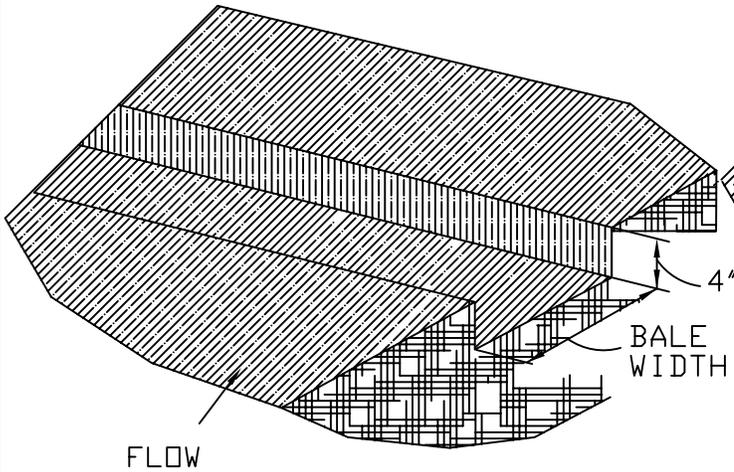
N.T.S.

PLATE D-912

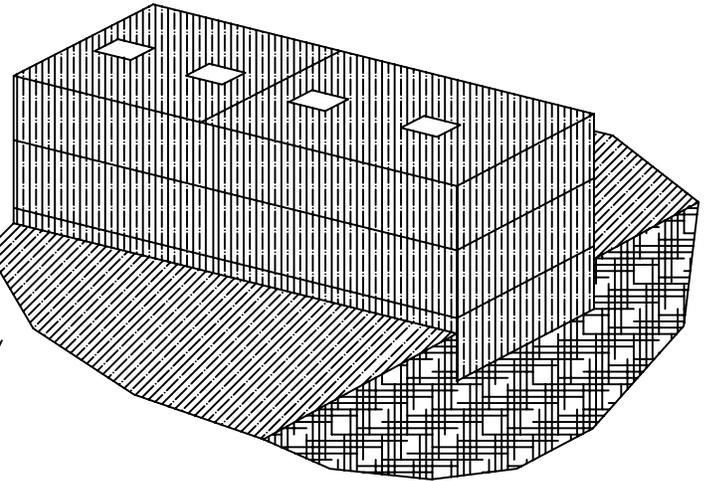
DATE DRAWN 08/09/93

REVISED DATE 5-12-94

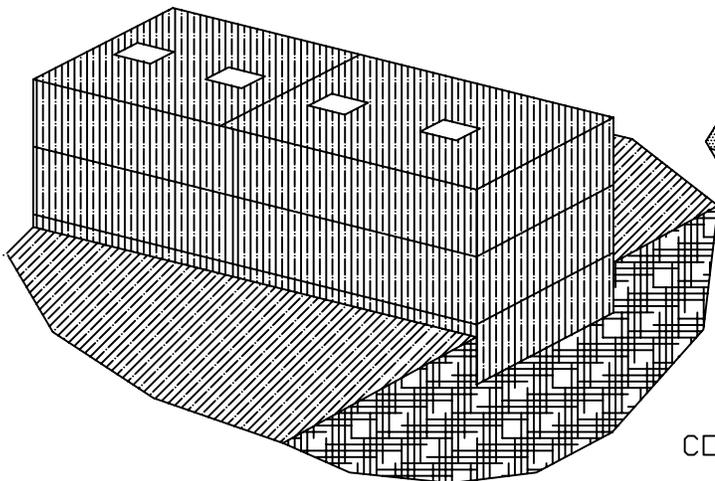
1. EXCAVATE THE TRENCH.



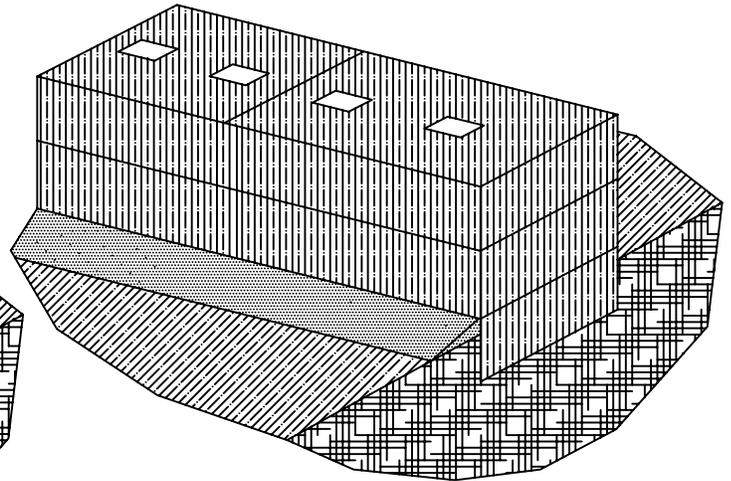
2. PLACE AND STAKE STRAW BALES.



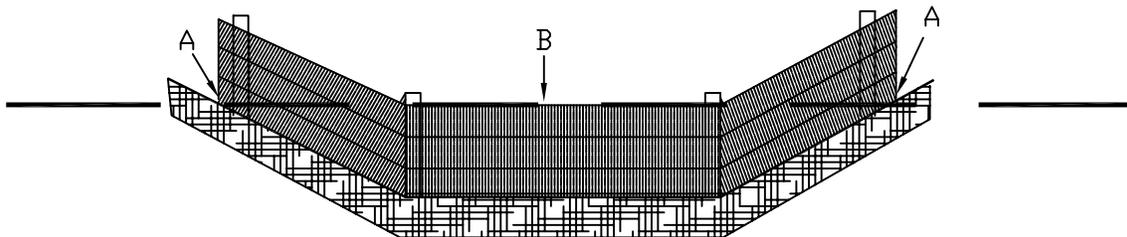
3. WEDGE LOOSE STRAW BETWEEN BALES.



4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



CONSTRUCTION OF A HAY BALE BARRIER.



POINTS A SHOULD BE HIGHER THAN POINT B

PROPER PLACEMENT OF HAY BALE BARRIER IN DRAINAGE WAY

HAY BALE BARRIER
CONSTRUCTION DETAILS

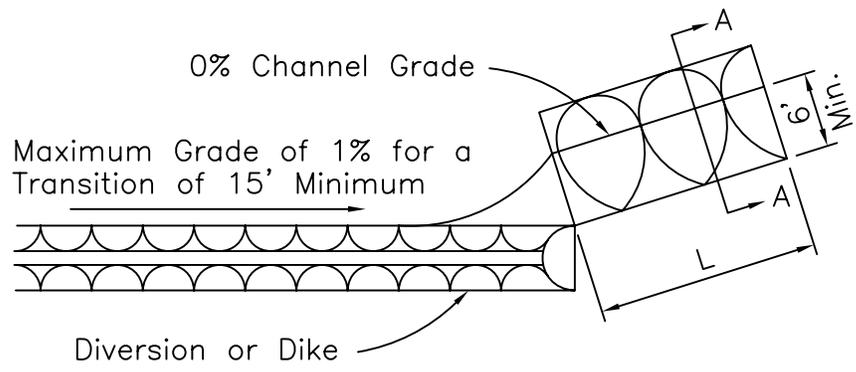
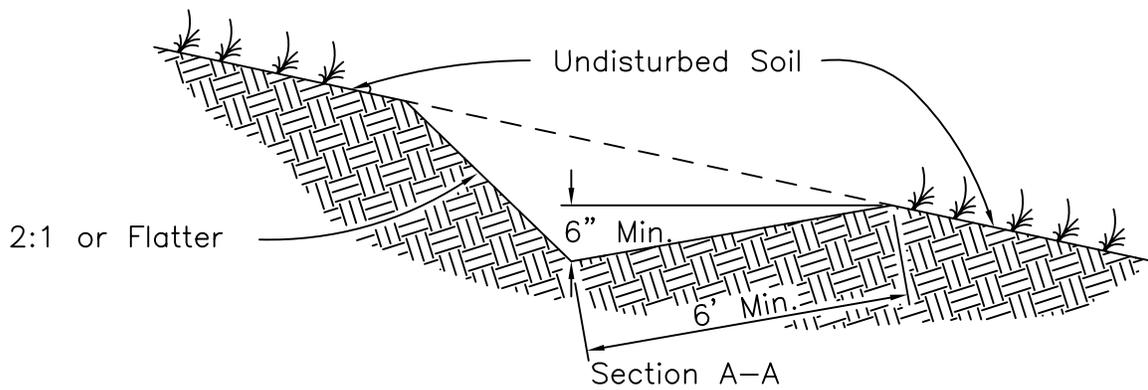
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

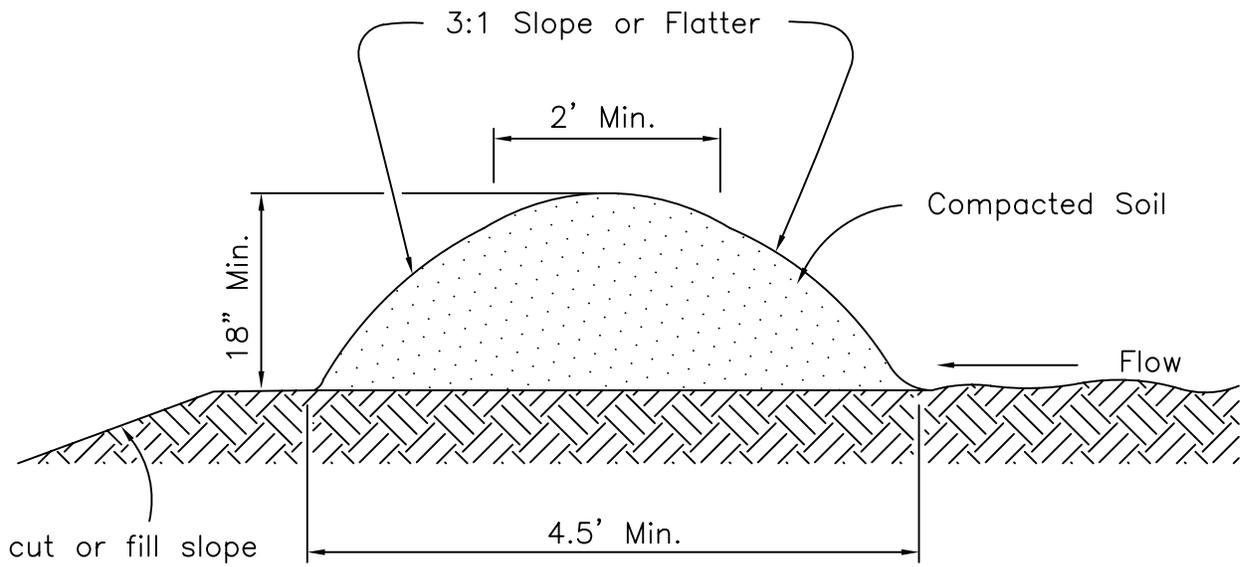
PLATE D-913

DATE DRAWN 08/05/93

REVISED DATE 5-12-93



LEVEL SPREADER



TEMPORARY DIVERSION DIKE

DIVERSION DIKE	<i>CITY OF JACKSONVILLE STANDARD</i>		N.T.S.	PLATE D-914
			DATE DRAWN	05-09-90
			REVISED DATE	5-12-94

TEMPORARY SEEDING
PLANT MATERIALS

CITY OF
JACKSONVILLE
STANDARD

N.T.S.

PLATE D-915

DATE DRAWN

05-08-90

REVISED DATE

5-12-94

Common Name (Botanical Name)	Seeding Rate		Planting Dates	Comments
	Acre	1000 ft ²		
OATS (<i>Avena sativa</i>)	3 Bu (125 lbs)	3 lbs	N. FLA. September- February	Will not tolerate flooding, high water table soils.
RYE (<i>Secale cereale</i>)	3 Bu (170 lbs)	4 lbs	September- February	Tolerates cold and drought.
WHEAT (<i>Triticum sp.</i>)	3 Bu (120 lbs)	3 lbs	September- February	Volunteers may return.
ANNUAL RYEGRASS (<i>Lolium multiflorum</i>)	60 lbs	1.5 lbs	September- February	Annual winter legume. Inoculate seed at 5 times recommended rate. Does poorly on deep dry sands, will not tolerate flooding.
CRIMSON CLOVER (<i>Trifolium incarnatum</i>)	25 lbs	9 oz	September- November	Annual winter legume. Inoculate seed at 5 times recommended rate.
RED CLOVER (<i>Trifolium pratense</i>)	15 lbs	6 oz	September- December	Grows best on moist soils, will not tolerate flooding. Easily hurt by drought.
WHITE CLOVER (<i>Trifolium repens</i>)	6 lbs	2.5 oz	September- December	Annual winter legume. Inoculate seed at 5 times recommended rate.
ANNUAL SWEETCLOVER (<i>Melilotus altissima</i>)	15 lbs	6 oz	September- December	Annual winter legume. Inoculate seed at 3-5 times recommended rate.
ARROWLEAF CLOVER (<i>Trifolium vesiculosum</i>)	15 lbs	6 oz	September- December	Grows well on both flatwoods and upland soils. Will not tolerate flooding.
LUerne CLOVER (<i>Lupinus sp.</i>)	60 lbs	1.5 lbs	September- December	Grows on soil too wet for crimson, tolerates some flooding. Use scarified seed.
ALFALFA (<i>Medicago sativa</i>)	22 lbs	8 oz	September- December	Annual winter legume. Inoculate seed at 3-5 times recommended rate. Susceptible to freeze damage at time of emergence. Use scarified seed.
AUSTRIAN WINTER PEAS	45 lbs	1 lb	September- December	Short lived perennial. Some drought resistance. Grows best on well-drained, fertile soils. Will not tolerate wet soils.
HAIry VETCH (<i>Vicia villosa</i>)	25 lbs	9 oz	September- December	Grows best on well-drained soils with high clay content.
ALYCECLOVER (<i>Alysicarpus vaginalis</i>)	15 lbs	6 oz	April- July	Grows best on well-drained, loamy soils.
COMMON LESPEDEZA (<i>Lespedeza striata</i>)	30 lbs	11 oz	March- July	Warm season annual legume. Grows best on well-drained sandy soils.
HAIry INDIGO (<i>Indigofera hirsuta</i>)	8 lbs (120 ls)	3 oz	March- July	Warm season annual. Needs inoculation on eroded soils. Grows best on sandy loams. Fairly drought resistant.
JOINT VETCH (<i>Aeschynomera americana</i>)	8 lbs	3 oz	March- August	Warm season annual legume.
MILLET (<i>Setaria sp.</i>)	30 lbs	11 oz	March- August	Most suitable of summer legumes for use in low, wet areas.
SESBANIA (<i>Sesban macrocarpa</i>)	30 lbs	11 oz	March- July	Warm season annual. Does not tolerate flooding. Grows best in fertile, moist soils. Pearl and Browntop are good varieties to use.
SORGHAM SUNDANGRASS HYBRID	30 lbs	11 oz	March- July	Warm season annual legume. Does well under extremely wet conditions.
WEEPING LOVEGRASS (<i>Eragrostis curvula</i>)	5 lbs	2 oz	March- August	Warm season annual. Rapid grower. Tolerates dryer soils than millet. Grows best on well-drained soils. Can also use Sudangrass alone. 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.

SEEDING MIXTURES, RATES AND DATES

Site Conditions	Seeding Mixtures	Seeding Rate		Seeding Dates	Comments
		Per Acre	Per 1000 Ft ²		
High Maintenance Lawns				N. Fla.	
General Use	1. Bahiagrass 2. Bahiagrass Bermudagrass (hulled) 3. Bahiagrass with one of the following: Southern White Clover Annual White Sweetclover Crimson Clover Arrowleaf Clover Alyce Clover Hairy Indigo Aschynamene	40-60 lbs 40-60 lbs 8-12 lbs 20-30 lbs 3 lbs 8 lbs 12 lbs 8 lbs 8 lbs 4 lbs 12 lbs	1 lb 1 lb 4 oz .5 lb 1.2 oz 3 oz 4.5 oz 3 oz 3 oz 3 oz 1.5 oz 4.5 oz	2/15-8/31 2/15-8/15 9/1-1/1 9/1-1/1 9/1-1/1 9/1-1/1 2/15-7/15 2/15-7/15 2/15-7/15	Use 50% scarified seed. Use 50% scarified Bahia seed. Use 50% scarified Bahia seed. Innoculate legumes.
Slopes	1. Sericea lespedeza 2. Serica lespedeza with one of the following: Bahiagrass Tall Fescue Weeping Lovegrass	a. 40-50 lbs b. 75 lbs 15 lbs 20 lbs 3 lbs	1.2 lbs 1.7 lbs 7 oz 8 oz 1.2 oz	1/1-7/15 7/15-1/1 2/15-8/15 10/1-11/15 2/15-8/15	For scarified seed. For unhulled seed. Use seeding rate specified above. Best adapted to N. Florida
Droughty Areas	1. Weeping Lovegrass 2. Weeping Lovegrass with one of the following: a. Bahiagrass (50% scarified seed) b. Bermudagrass (Hulled) c. Hairy panicum d. Serica lespedeza	5 lbs 5 lbs 30-40 lbs 8-12 lbs 8-12 lbs	2 oz 2 oz 12 oz 4 oz 4 oz	2/15-8/15 2/15-8/15 2/15-8/15 2/15-8/15 2/15-8/15	Gives quick summer cover. Use seeding rate and dates specified above.

SEEDING MIXTURES, RATES AND DATES

CITY OF JACKSONVILLE STANDARD

N.T.S.

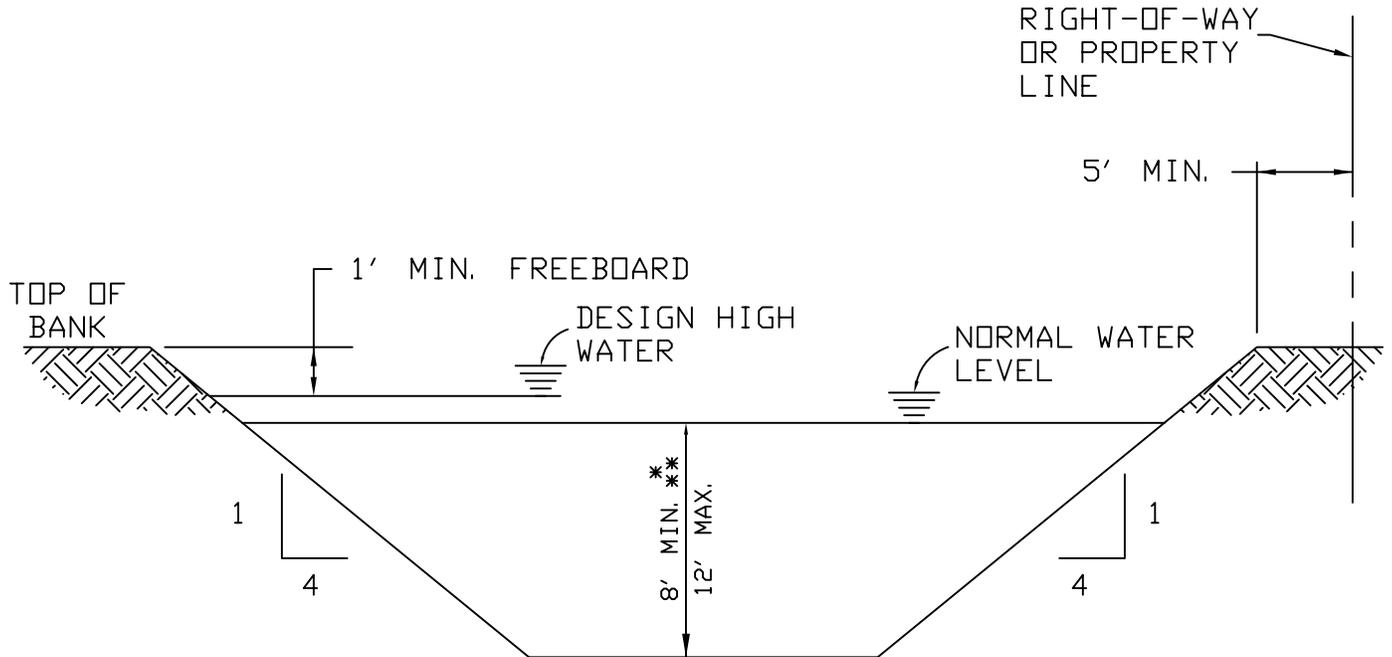
PLATE D-916

DATE DRAWN

05-09-90

REVISED DATE

5-12-94



STANDARD DETENTION POND DETAIL
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.

DETENTION POND
DETAIL
CASE 1

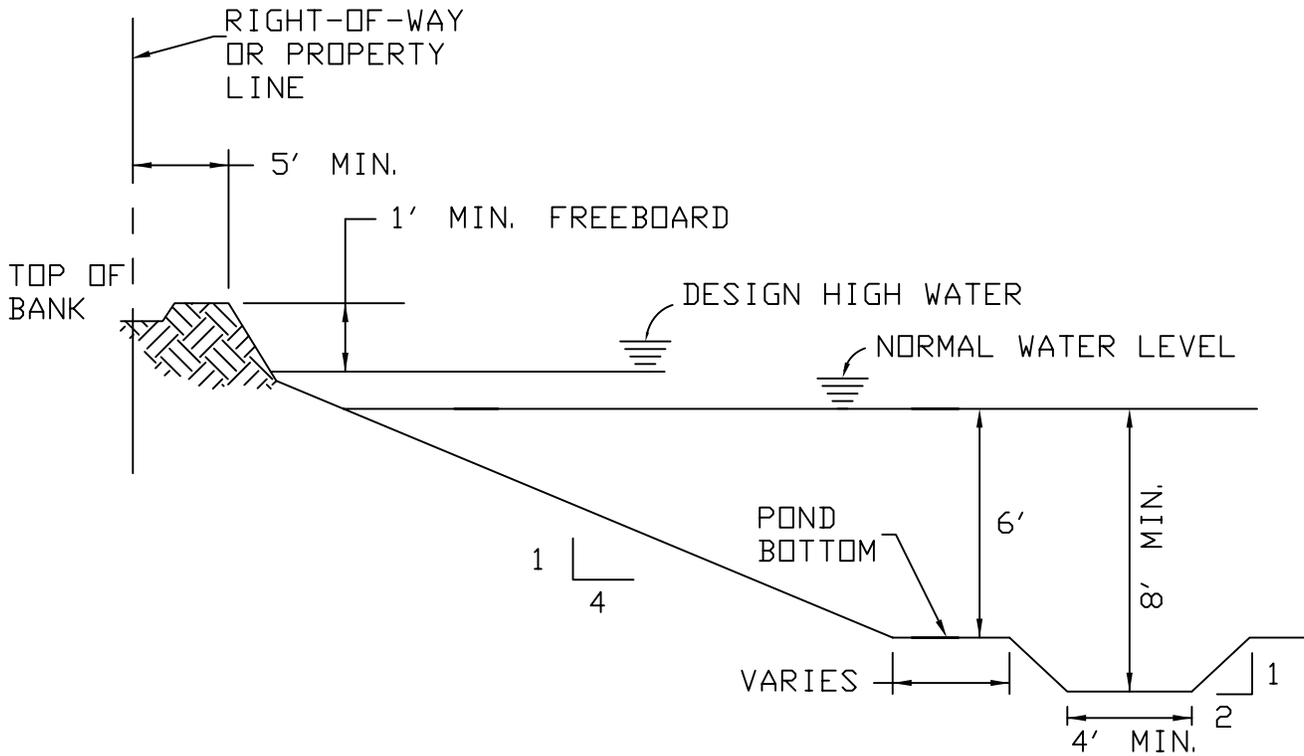
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

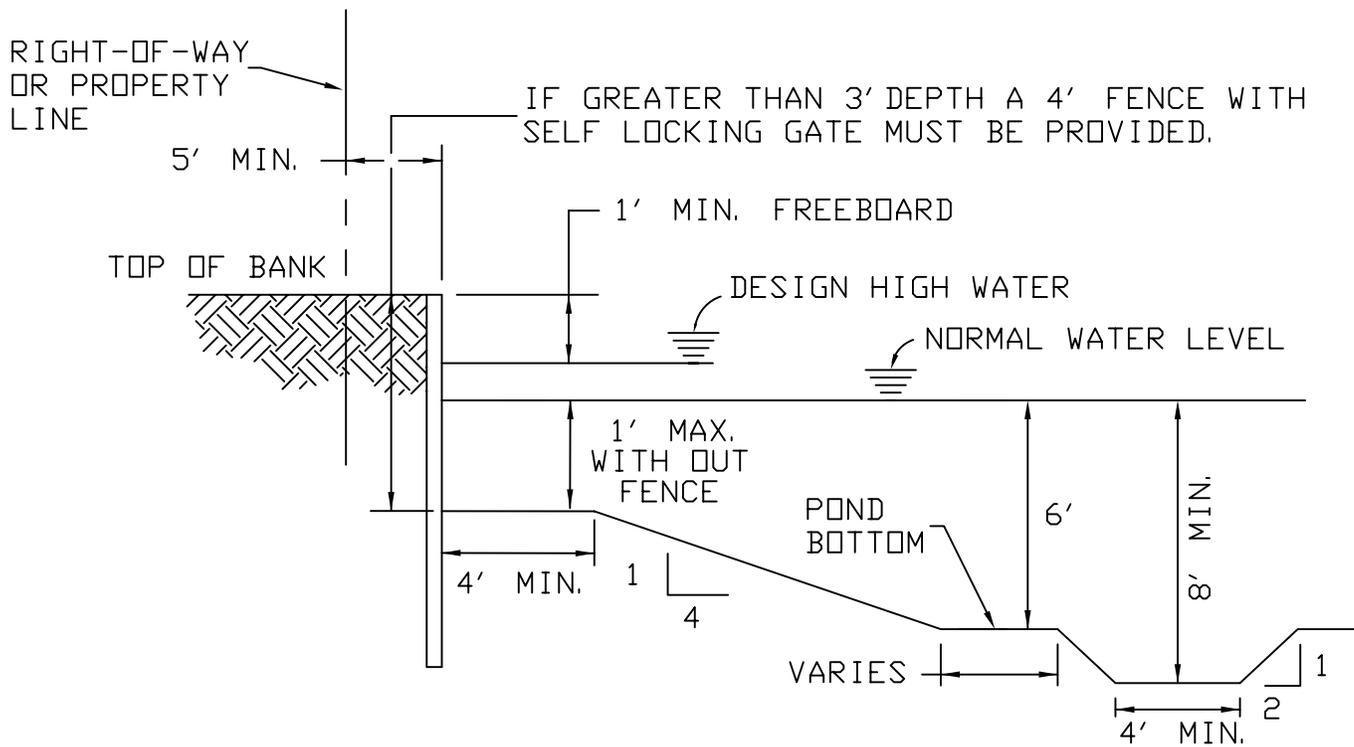
PLATE D-1001

DATE DRAWN 7-20-93

REVISED DATE 5-12-94



CASE 2
WET DETENTION POND DETAIL



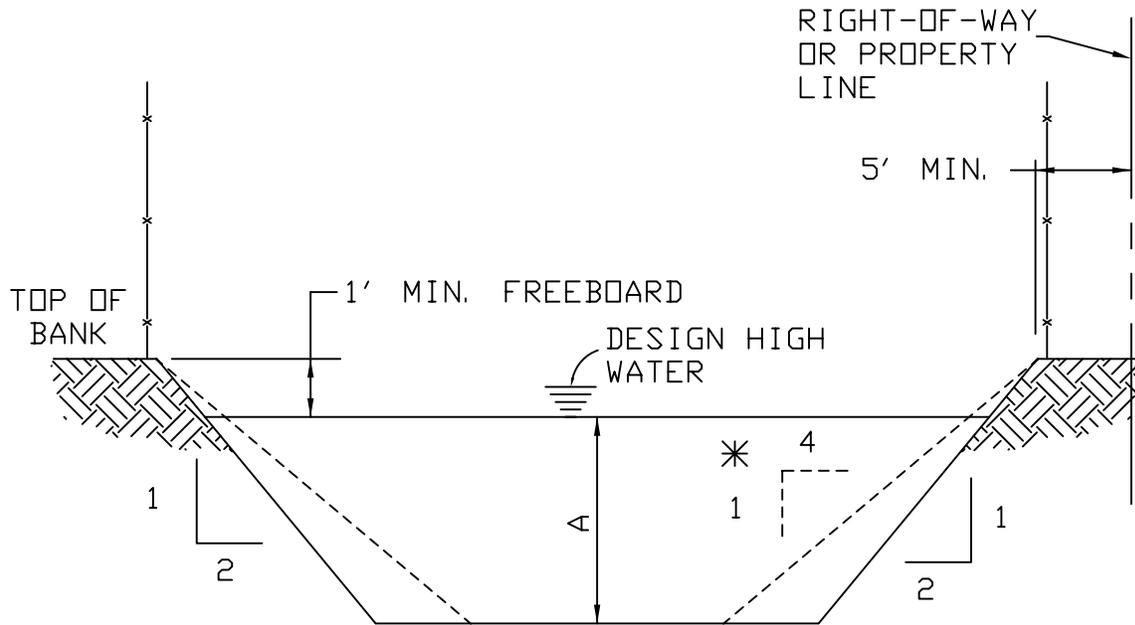
CASE 3
WET DETENTION POND DETAIL

DETENTION POND DETAIL CASE 2 & 3	<i>CITY OF JACKSONVILLE STANDARD</i>	N.T.S.	PLATE D-1002
		DATE DRAWN	7-20-93
		REVISED DATE	5-12-94

CASE 4

DRY DETENTION POND DETAIL

4' FENCE WITH SELF LOCKING GATE WHERE REQUIRED.



A

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

DETENTION POND
DETAIL
CASE 4

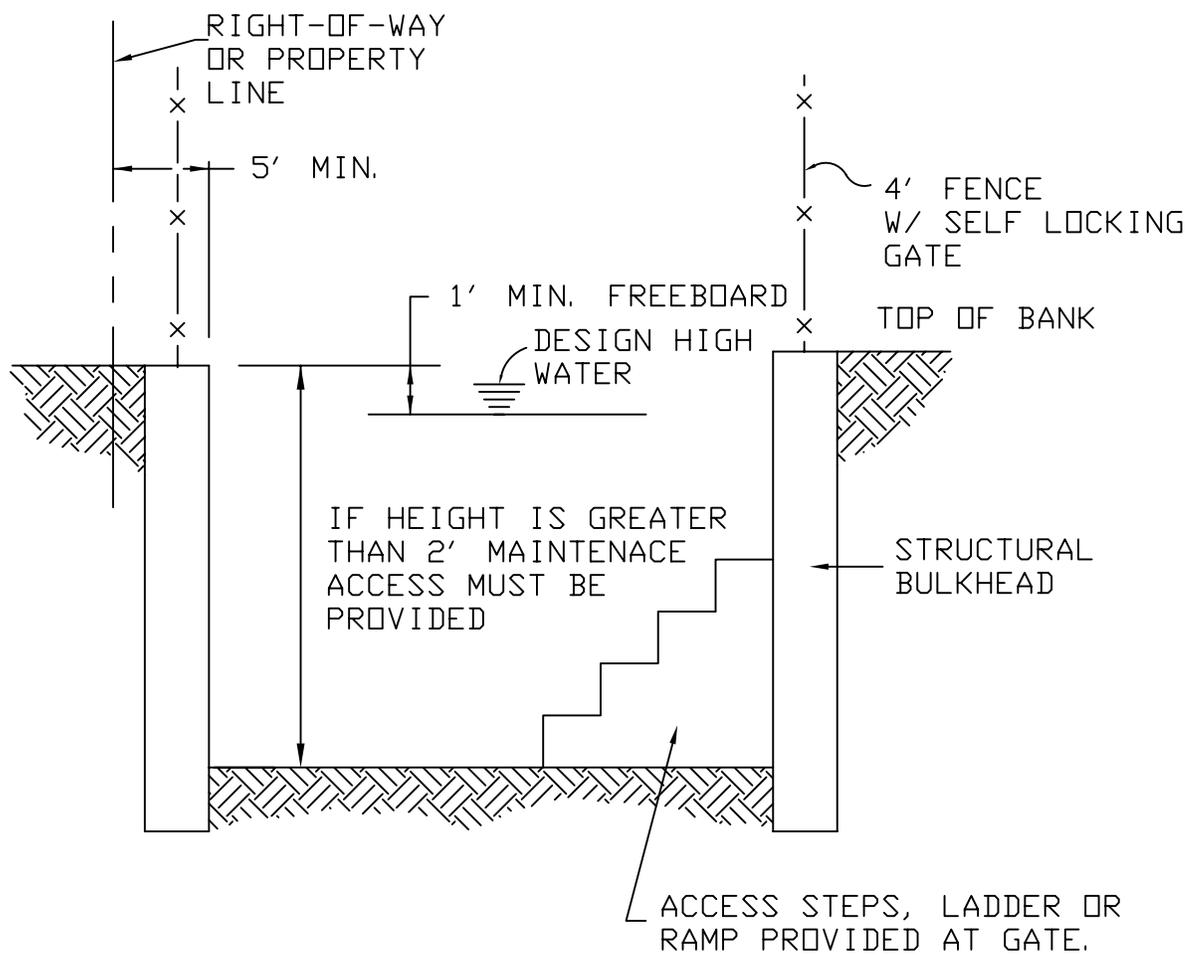
*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE D-1003

DATE DRAWN 7-20-93

REVISED DATE 5-12-94



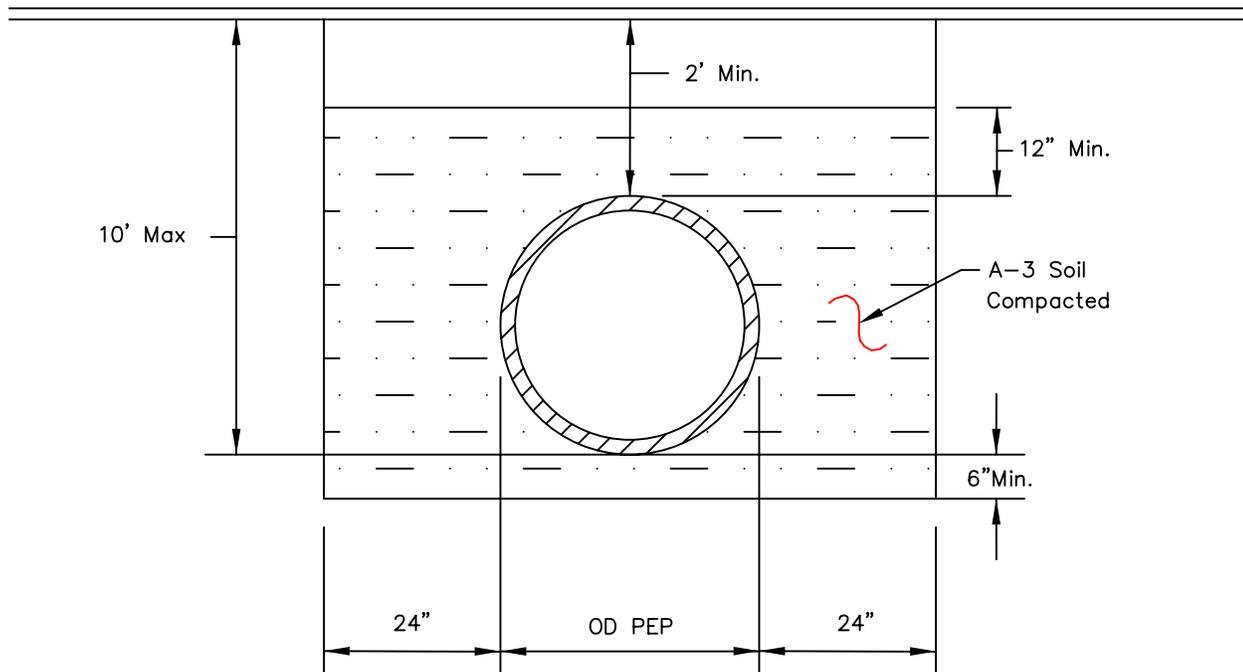
CASE 5

DRY DETENTION POND DETAIL

DETENTION POND DETAIL CASE 5	<i>CITY OF JACKSONVILLE STANDARD</i>	N.T.S.	PLATE D-1004
		DATE DRAWN	7-20-93
		REVISED DATE	5-12-94

POLYETHYLENE PIPE

- * PIPE SIZES ALLOWED 15" THROUGH 36"
- * PIPE SIZES LARGER THAN 24 INCHES MAY NOT BE INSTALLED UNDER ROADWAYS.
- * RUBBER OR NEOPRENE GASKETS REQUIRED
- * HYDROSTATIC FIELD TESTING REQUIRED OR FILTER FABRIC
- * MAXIMUM FILL HEIGHT IS TEN FEET
- * MINIMUM COVER OVER PIPE IS TWO FEET
- * MAXIMUM DEFLECTION IS 5%
- * PIPES SIZES LARGER THAN 24" SHALL BE TESTED FOR DEFLECTION USING A MANDREL. HOWEVER DURING VISUAL INSPECTION, SHOULD THE CITY ENGINEER [OR HIS DESIGNEE] DETERMINE THAT THESE APPLICATIONS [FOR PIPE 24" OR LESS] WARRANT MANDREL TESTING, A MANDREL TEST WILL BE REQUIRED
- * PIPE TRENCH SHALL BE EXCAVATED A MINIMUM OF 6" BELOW AND 24" ON EITHER SIDE OF THE PIPE
- * BEDDING AND BACKFILL SHALL BE EITHER CRUSHED STONE / GRAVEL OR A - 3 SOIL
- * MITERED END SECTIONS MUST BE FABRICATED FROM ANOTHER APPROVED CULVERT MATERIAL
- * PIPE SPECIFICATIONS TO BE IN ACCORDANCE WITH THE CITY'S LAND DEVELOPMENT PROCEDURES MANUAL



POLYETHYLENE PIPE
TRENCH DETAIL

*CITY OF
JACKSONVILLE
STANDARD*

N.T.S.

PLATE P-1101

DATE DRAWN 9/18/03

REVISED DATE

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
WATER STANDARD SECTION
INDEX

DELETED

Note: All water mains, reclaimed water mains, sanitary sewer mains, and sewer pump stations shall be constructed in accordance with the latest JEA Water and Sewer Standards Manual. The JEA standards are available on the JEA website at the following address:

https://www.jea.com/Working_With_JEA/Engineering_and_Construction/Reference_Materials/Reference_Materials.aspx.

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
SANITARY SEWER STANDARD SECTION
INDEX

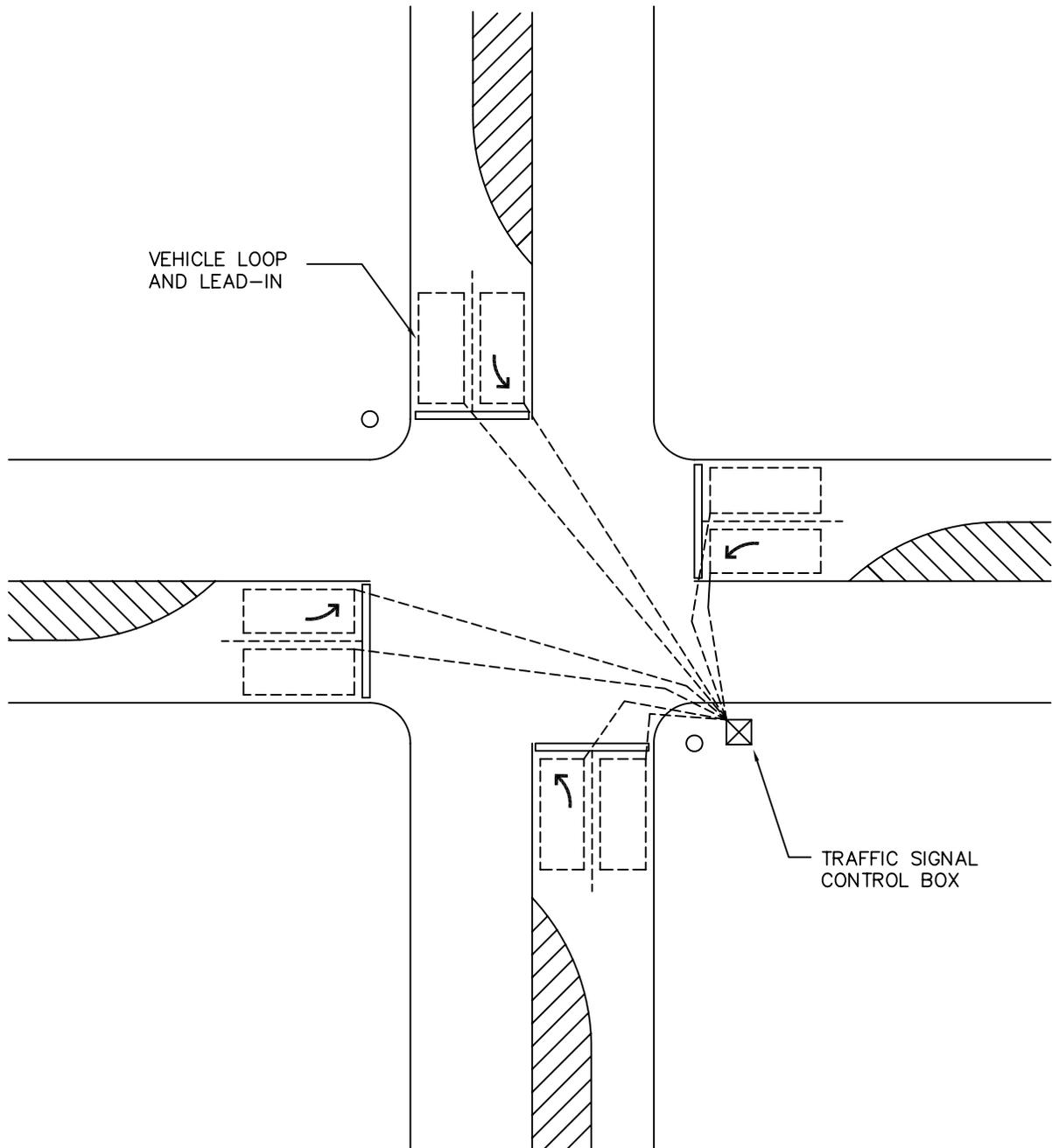
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Note: All water mains, reclaimed water mains, sanitary sewer mains, and sewer pump stations shall be constructed in accordance with the latest JEA Water and Sewer Standards Manual. The JEA standards are available on the JEA website at the following address:

https://www.jea.com/Working_With_JEA/Engineering_and_Construction/Reference_Materials/Reference_Materials.aspx.

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
TRAFFIC STANDARD SECTION
INDEX

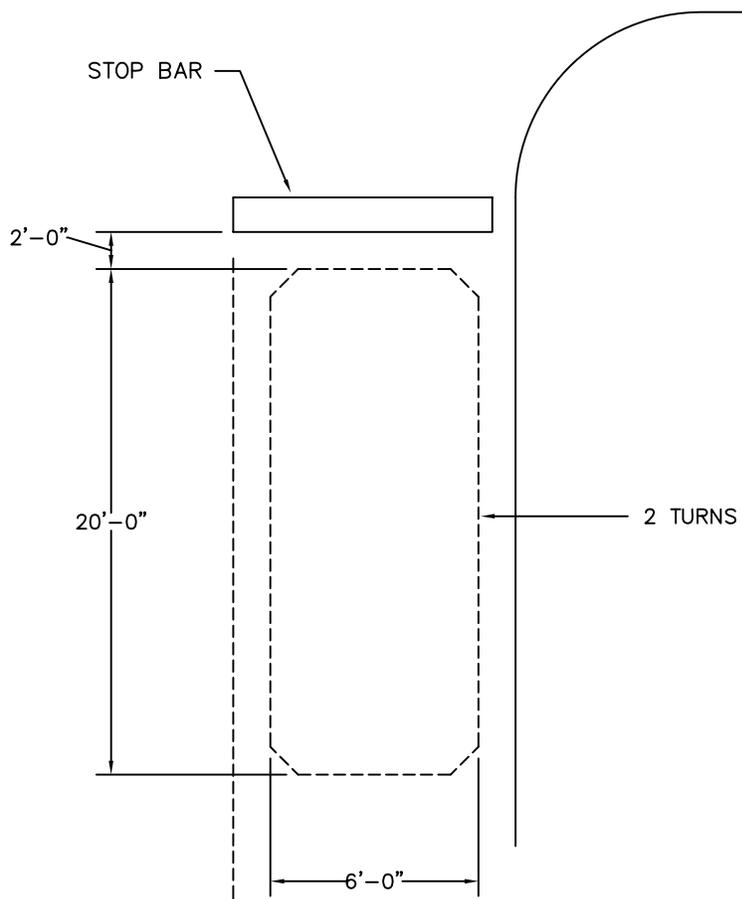
T-1	Intersection Loop Installation Plan View
T-2	Loop Detail
T-3	Wire Splice Detail



TYPICAL VEHICLE
LOOP INSTALLATION

CITY OF JACKSONVILLE
STANDARD DETAIL

PLATE T-1
NOVEMBER 2004



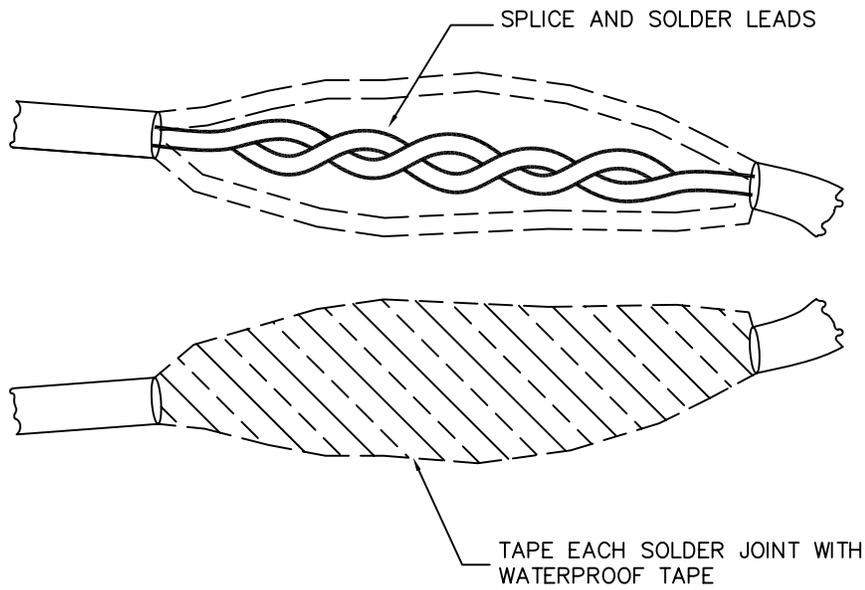
NOTE:

1. THE "NUMBER OF TURNS" INDICATED AT THE SPECIFIED POINT ON THE LOOP REFERS TO THE NUMBER OF PASSES OF LOOP WIRES WHICH ARE PLACED IN THE SAW CUT IN FORMING THE COMPLETE LOOP.
2. DRAWING NOT TO SCALE.
3. LOOP IS CENTERED IN A SINGLE LANE.

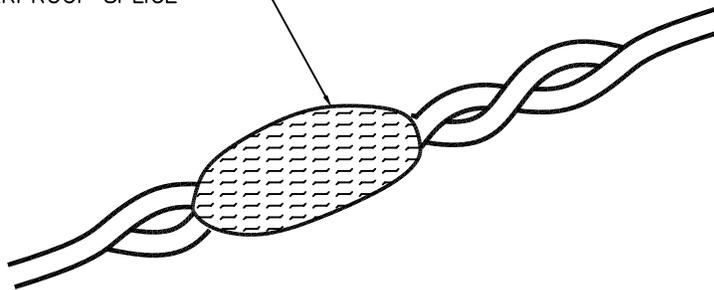
VEHICLE LOOP
INSTALLATION

CITY OF JACKSONVILLE
STANDARD DETAIL

PLATE T-2
NOVEMBER 2004



BOTH WIRES SEALED IN ONE
100% WATERPROOF SPLICE



NOTE:

1. ELECTRICAL LEAKAGE OF ROADWAY LOOP WIRES WITH LEAD IN NOT TO BE LESS THAN 10 MEGA-OHMS TO GROUND.
2. COLD SOLDER JOINTS AT SPLICES ARE NOT ACCEPTABLE.

WIRE SPLICE
DETAIL

CITY OF JACKSONVILLE
SPECIFICATION

PLATE T-3
NOVEMBER 2004