

APPENDIX C

LANCASTER COUNTY

MANUAL OF SPECIFICATION AND STANDARD DETAILS



July 24, 2016

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LANCASTER COUNTY
STANDARD SPECIFICATIONS
SECTION 1



July 24, 2016

SECTION 01000- TECHNICAL SPECIFICATIONS

Unless otherwise indicated in the construction plans and MSSD, all work elements associated with improvements in Lancaster County shall be constructed in accordance with the South Carolina Department of Transportation's "Specifications For Highway Construction, Latest Edition", Standard Drawings for Road Construction, including the Supplemental Specifications, and the Special Provisions, as applicable. Unless otherwise indicated within the construction documents and MSSD, all bid items will be measured and paid in accordance with the South Carolina Department of Transportation's "Specifications For Highway Construction, Latest Edition", Standard Drawings for Road Construction, including the Supplemental Specifications, and the Special Provisions, as applicable. All references to testing pertaining to quality control to be conducted by "The Research and Materials Laboratory" shall be considered the responsibility of the developer at his own expense.

Delete Paragraph 101.3.27 (the) Engineer, of the 2007 Version of the Standard Specifications for Highway Construction in its entirety and replace with the following:

*Lancaster County, acting directly or through his duly authorized representative, such representative acting within the scope of particular assigned duties or authority. **Lancaster County** shall function as the Engineer's duly authorized representative with authority as described in Section 105, "CONTROL OF WORK" of the Standard Specifications for Highway Construction, latest Edition.*

In the specifications where the terms "SCDOT" or "Department" or other like terms are used to describe the facility Owner, it shall be interpreted as meaning Lancaster County, as appropriate.

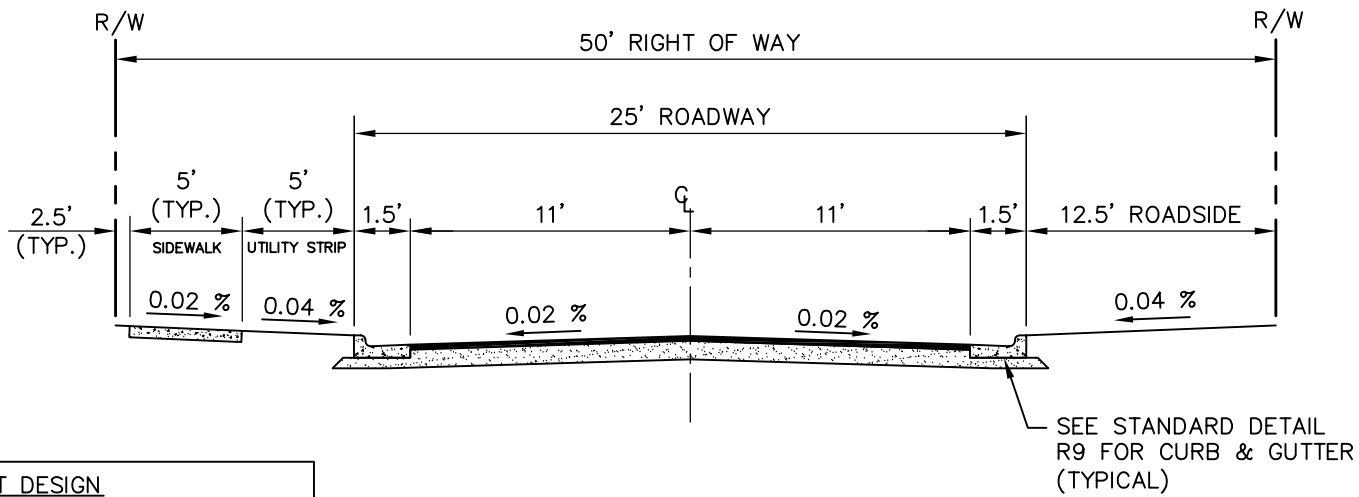
LANCASTER COUNTY

STANDARD ROADWAY DETAILS

SECTION 2



July 24, 2016



PAVEMENT DESIGN

1.5" TYPE C SURFACE COURSE
 1.5" TYPE C INTERMEDIATE COURSE
 8.0" A.B.C.

**50' RIGHT OF WAY
 25' ROADWAY SECTION
 SECTION VIEW**

NOTES:

1. NORMAL CROWN OF 2% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
2. PAVEMENT DESIGN SHALL BE THE GREATER AS SHOWN OR AS DETERMINED BY A CBR ANALYSIS.

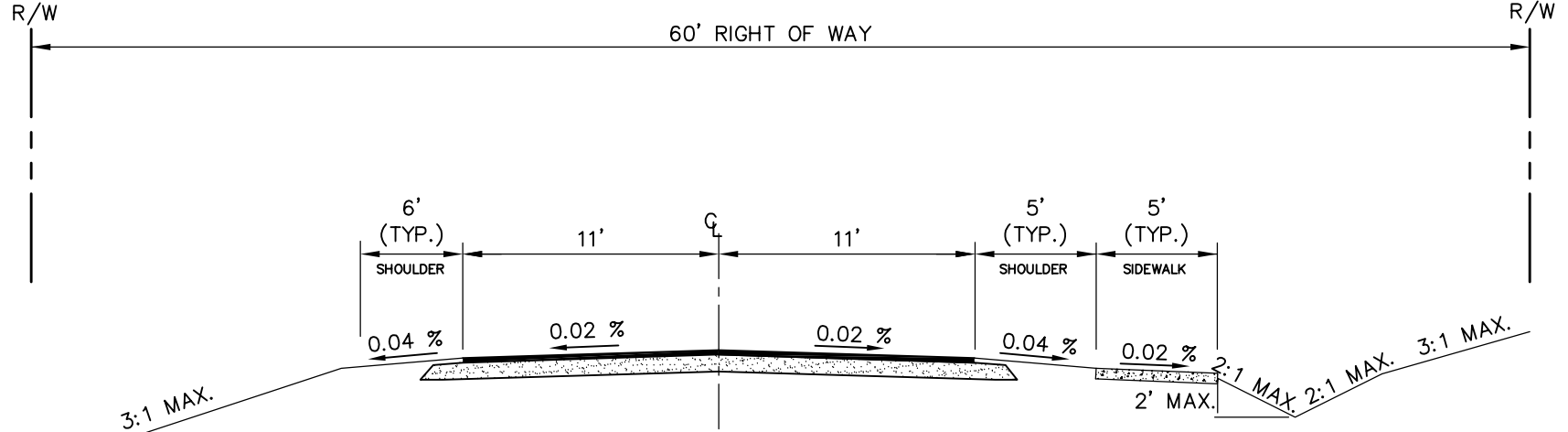


EFFECTIVE: XX/XX/XX

LOCAL STREET (URBAN)

DETAIL No.

R1
 SHEET 1 OF 1



PAVEMENT DESIGN
 1.5" TYPE C SURFACE COURSE
 1.5" TYPE C INTERMEDIATE COURSE
 8" A.B.C.

60' RIGHT OF WAY
22' ROADWAY SECTION
SECTION VIEW

NOTES:

1. NORMAL CROWN OF 2% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
2. PAVEMENT DESIGN SHALL BE THE GREATER AS SHOWN OR AS DETERMINED BY A CBR ANALYSIS.
3. SWALE SYSTEM DESIGNED TO CARRY AT LEAST THE 25 YEAR STORM.
4. VELOCITY WITHIN THE SWALE SHALL BE NON-EROSIVE.
5. DETAILED DRAINAGE CALCULATIONS REQUIRED.
6. ROADSIDE DITCHES SHALL BE LINED WITH NORTH AMERICAN GREEN SC 150BN OR APPROVED EQUAL.



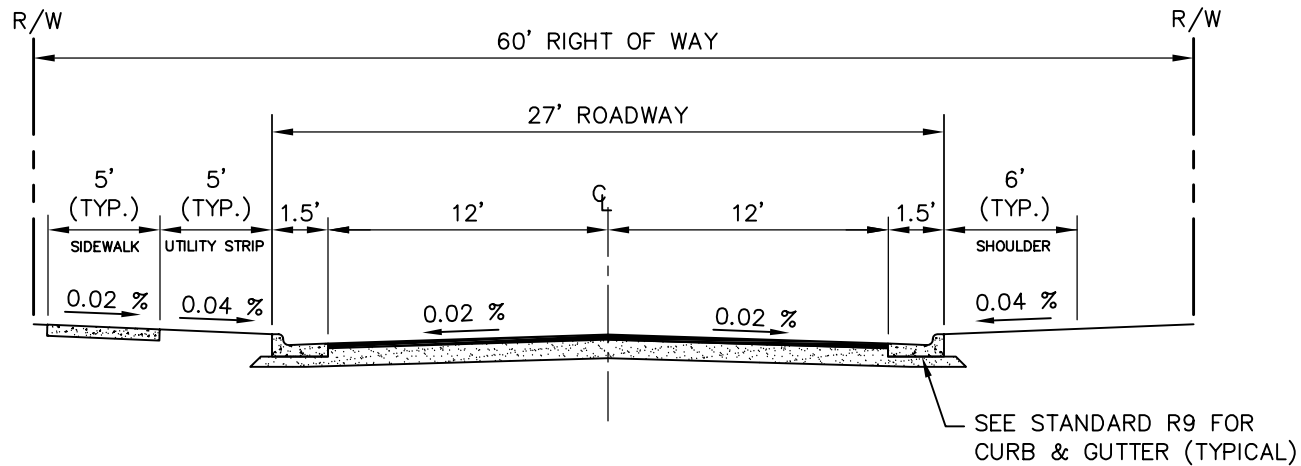
EFFECTIVE: XX/XX/XX

LOCAL STREET (RURAL)

DETAIL No.

R2

SHEET 1 OF 1



60' RIGHT OF WAY
27' ROADWAY SECTION
SECTION VIEW

PAVEMENT DESIGN

2.0" TYPE C SURFACE COURSE
 3.0" TYPE C INTERMEDIATE COURSE
 8.0" A.B.C.

NOTES:

1. NORMAL CROWN OF 2% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
2. PAVEMENT DESIGN SHALL BE THE GREATER AS SHOWN OR AS DETERMINED BY A CBR ANALYSIS.
3. SWALE SYSTEM DESIGNED TO CARRY AT LEAST THE 25 YEAR STORM.
4. VELOCITY WITHIN THE SWALE SHALL BE NON-EROSIVE.
5. DETAILED DRAINAGE CALCULATIONS REQUIRED.
6. ROADSIDE DITCHES SHALL BE LINED WITH NORTH AMERICAN GREEN SC 150BN OR APPROVED EQUAL.



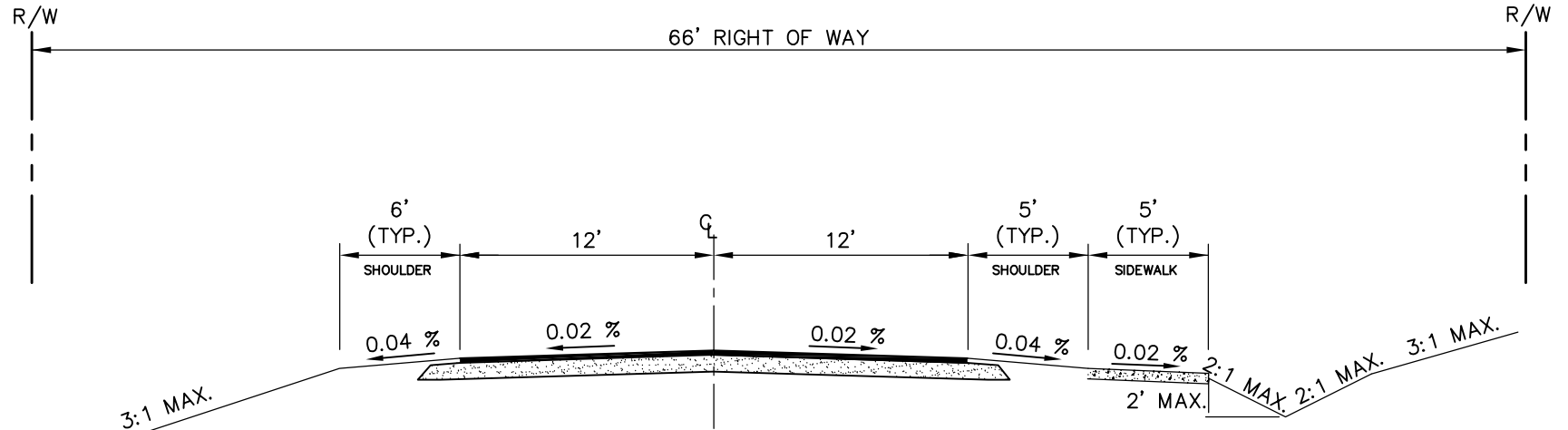
EFFECTIVE: XX/XX/XX

COLLECTOR (URBAN)

DETAIL No.

R3

SHEET 1 OF 1



PAVEMENT DESIGN

2.0" TYPE C SURFACE COURSE
3.0" TYPE C INTERMEDIATE COURSE
8.0" A.B.C.

66' RIGHT OF WAY 24' ROADWAY SECTION SECTION VIEW

NOTES:

1. NORMAL CROWN OF 2% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
2. PAVEMENT DESIGN SHALL BE THE GREATER AS SHOWN OR AS DETERMINED BY A CBR ANALYSIS.
3. SWALE SYSTEM DESIGNED TO CARRY AT LEAST THE 25 YEAR STORM.
4. VELOCITY WITHIN THE SWALE SHALL BE NON-EROSIVE.
5. DETAILED DRAINAGE CALCULATIONS REQUIRED.
6. ROADSIDE DITCHES SHALL BE LINED WITH NORTH AMERICAN GREEN SC 150BN OR APPROVED EQUAL.



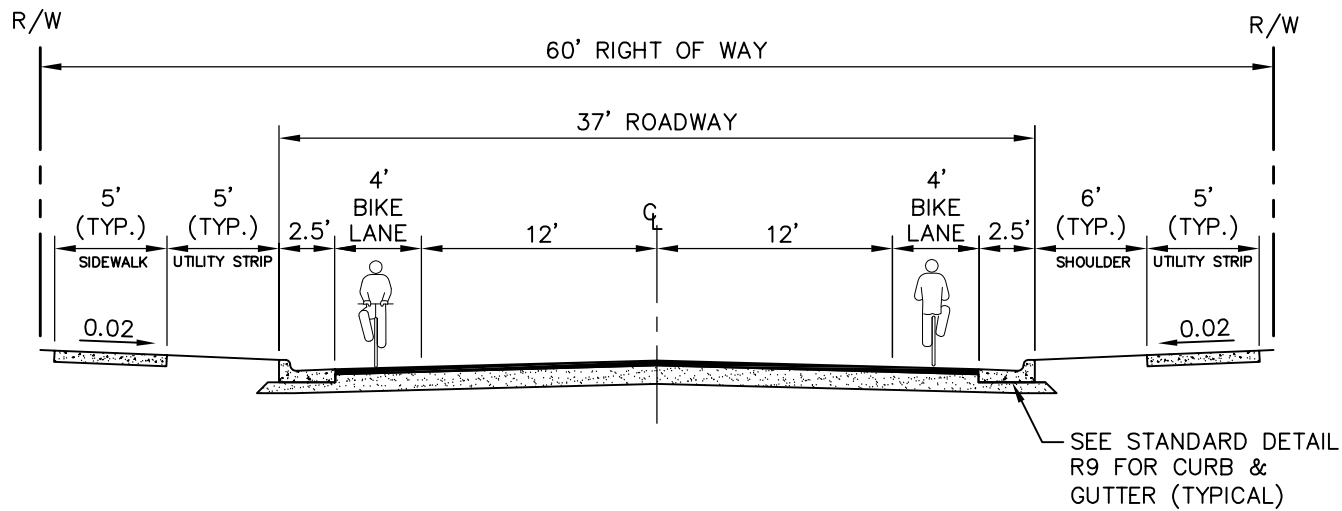
EFFECTIVE: XX/XX/XX

COLLECTOR (RURAL)

DETAIL No.

R4

SHEET 1 OF 1



PAVEMENT DESIGN
3" S-9.5 B
8" A.B.C.

60' RIGHT OF WAY
37' ROADWAY SECTION
SECTION VIEW

NOTES:

1. NORMAL CROWN OF 0.02' PER FOOT UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
2. PAVEMENT DESIGN SHALL BE AS SHOWN OR AS CALCULATED ACCORDING TO SPECIFICATIONS, WHICHEVER IS GREATER.
3. REVIEW QUALIFYING CRITERIA AND CROSS SECTIONS FOR "COLLECTOR AVENUE".



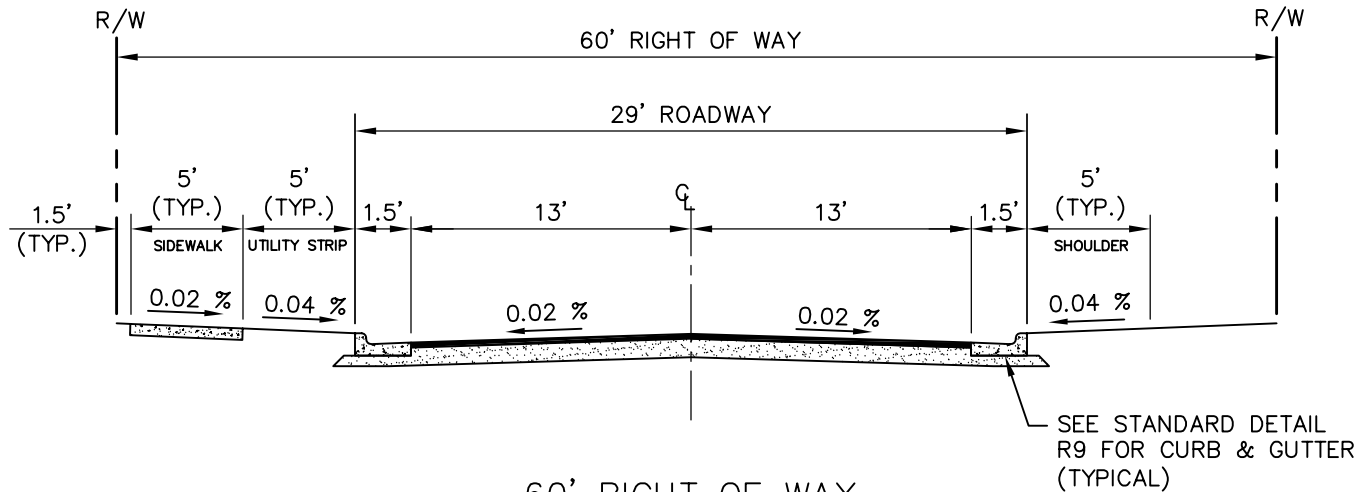
EFFECTIVE: XX/XX/XX

STANDARD COLLECTOR (BIKE LANES)

DETAIL No.

R5

SHEET 1 OF 1



60' RIGHT OF WAY
29' ROADWAY SECTION
SECTION VIEW

PAVEMENT DESIGN

2.0" TYPE C SURFACE COURSE
 4.0" TYPE C INTERMEDIATE COURSE
 8.0" A.B.C.

NOTES:

1. NORMAL CROWN OF 2% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
2. PAVEMENT DESIGN SHALL BE THE GREATER AS SHOWN OR AS DETERMINED BY A CBR ANALYSIS.
3. SWALE SYSTEM DESIGNED TO CARRY AT LEAST THE 25 YEAR STORM.
4. VELOCITY WITHIN THE SWALE SHALL BE NON-EROSIVE.
5. DETAILED DRAINAGE CALCULATIONS REQUIRED.
6. ROADSIDE DITCHES SHALL BE LINED WITH NORTH AMERICAN GREEN SC 150BN OR APPROVED EQUAL.

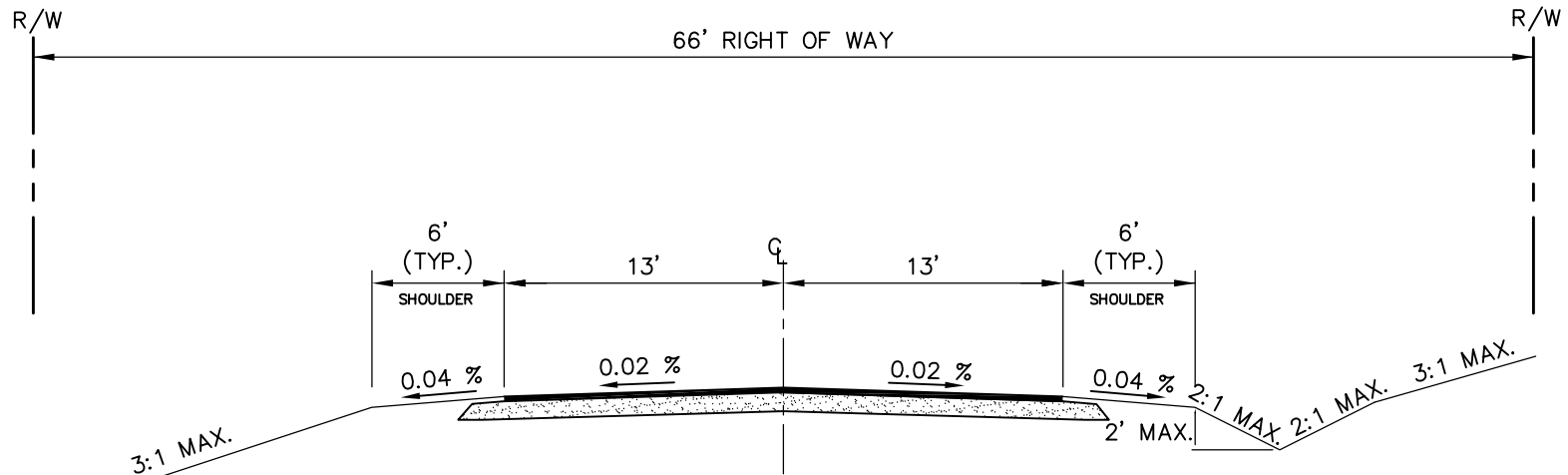


EFFECTIVE: XX/XX/XX

COMMERCIAL/ARTERIAL (URBAN)

DETAIL No.

R6
 SHEET 1 OF 1



PAVEMENT DESIGN
 2.0" TYPE C SURFACE COURSE
 4.0" TYPE C INTERMEDIATE COURSE
 8.0" A.B.C.

66' RIGHT OF WAY
26' ROADWAY SECTION
SECTION VIEW

NOTES:

1. NORMAL CROWN OF 2% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
2. PAVEMENT DESIGN SHALL BE THE GREATER AS SHOWN OR AS DETERMINED BY A CBR ANALYSIS.
3. SWALE SYSTEM DESIGNED TO CARRY AT LEAST THE 25 YEAR STORM.
4. VELOCITY WITHIN THE SWALE SHALL BE NON-EROSIVE.
5. DETAILED DRAINAGE CALCULATIONS REQUIRED.
6. ROADSIDE DITCHES SHALL BE LINED WITH NORTH AMERICAN GREEN SC 150BN OR APPROVED EQUAL.



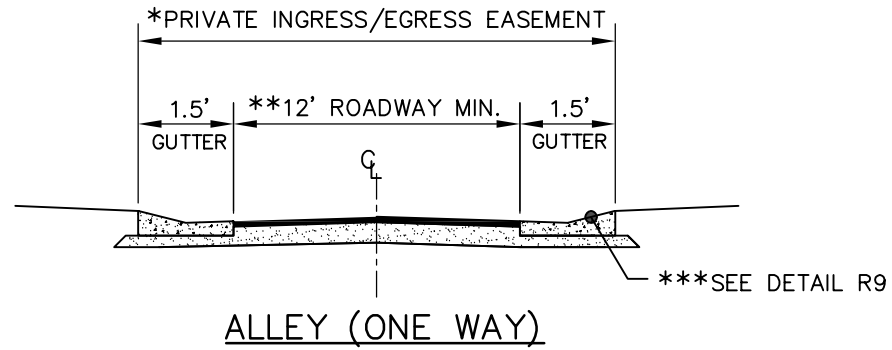
EFFECTIVE: XX/XX/XX

COMMERCIAL/ARTERIAL (RURAL)

DETAIL No.

R7

SHEET 1 OF 1



PAVEMENT DESIGN
 1.5" TYPE C SURFACE COURSE
 1.5" TYPE C INTERMEDIATE COURSE
 8.0" A.B.C.

NOTES:

1. NORMAL CROWN OF 2% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
2. PAVEMENT DESIGN SHALL BE THE GREATER AS SHOWN OR AS DETERMINED BY A CBR ANALYSIS.
3. INCREASE ROADWAY WIDTH TO 16' FOR TWO WAY OPERATION.



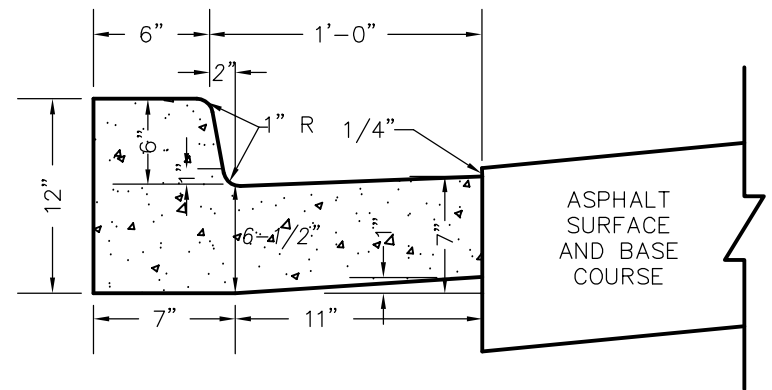
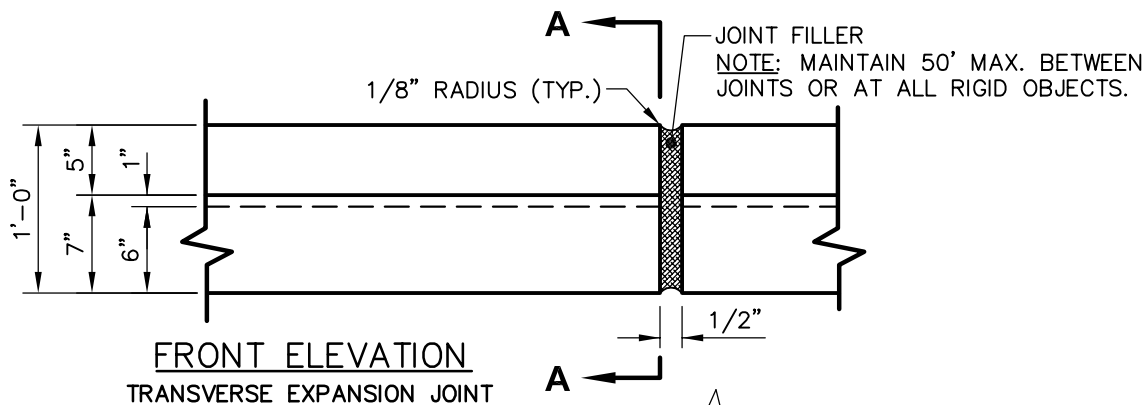
EFFECTIVE: XX/XX/XX

ALLEY

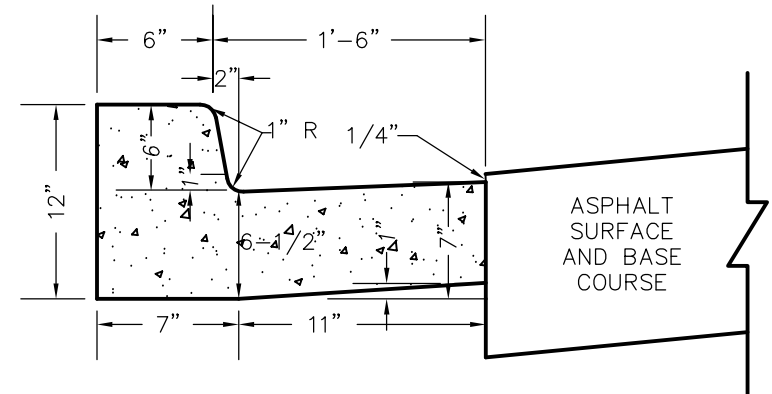
DETAIL No.

R8

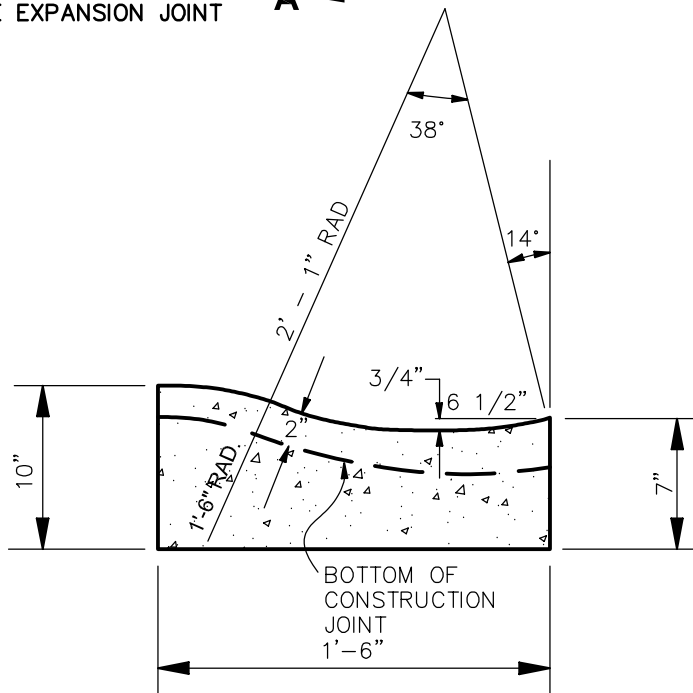
SHEET 1 OF 1



18" BARRIER CURB



24" BARRIER CURB



18" ROLLED CURB

NOTES:

1. CONCRETE SHALL BE 3,600 P.S.I.
2. CONTRACTION JOINTS SHALL BE SPACED AT 10' INTERVALS.
(A 15' SPACING WILL BE ALLOWED WHEN A MACHINE IS USED.)
3. FINISH ALL CONCRETE WITH CURING COMPOUND.
4. TOP 6" OF SUBGRADE SHALL BE COMPACTED TO 100% STANDARD PROCTOR DENSITY.



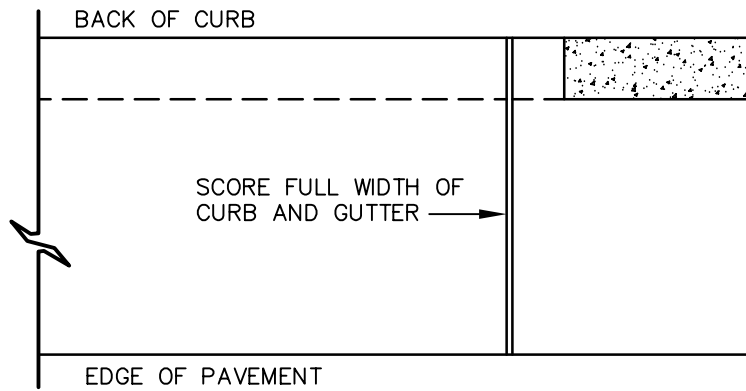
EFFECTIVE: XX/XX/XX

STANDARD CONCRETE CURB & GUTTER

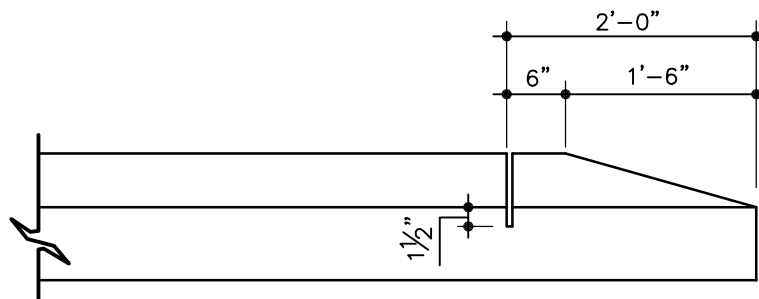
DETAIL No.

R9

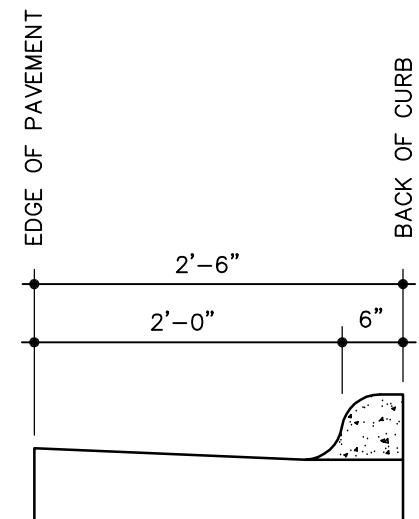
SHEET 1 OF 1



PLAN



FRONT



END

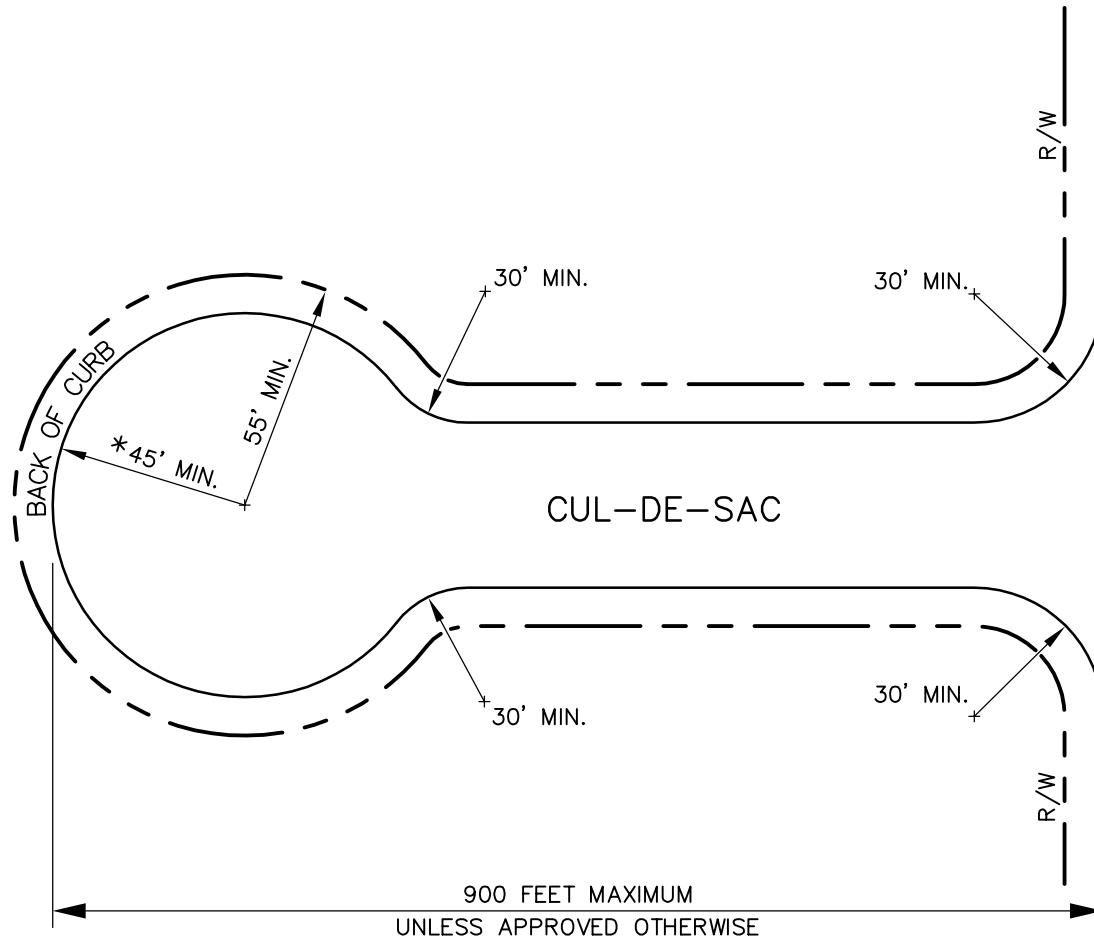


EFFECTIVE: XX/XX/XX

CURB END TAPER STANDARD METHOD OF ENDING CURB & GUTTER

DETAIL No.

R10
SHEET 1 OF 1



* RADIUS MAY BE REDUCED TO 42.5'
IF CURB & GUTTER IS NOT USED.

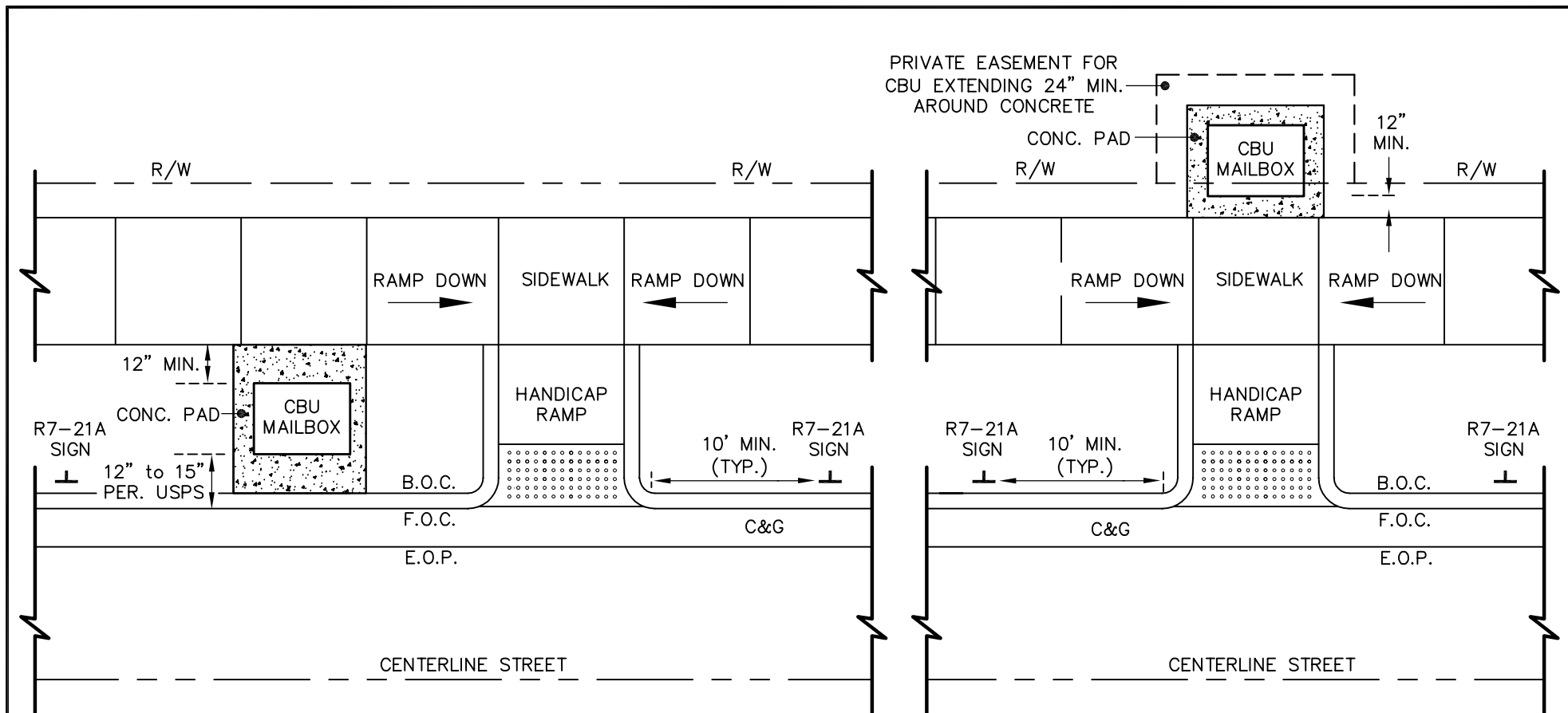


EFFECTIVE: XX/XX/XX

RESIDENTIAL CUL-DE-SAC DIMENSIONS

DETAIL No.

R11
SHEET 1 OF 1



TYPE I-A

TYPE I-B

NOTES:

1. CBU SHALL CONTAIN NO MORE THAN 13 MAIL RECEPTACLES.
2. LOCATE CBU IN COMMON OPEN AREAS OR ON PROPERTY LINE IF POSSIBLE.
3. MAXIMUM HEIGHT OF CBU SHALL BE 62".
4. CBU SHALL NOT BE LOCATED NEAR UTILITY LINES, WATER METERS, OR CLEAN-OUTS.
5. ACCESS TO CBU BY RESIDENCES SHALL BE BY SIDEWALK SIDE ONLY.
6. R7-21A SIGN SHALL READ "MAIL PARKING, 15 MINUTE LIMIT".



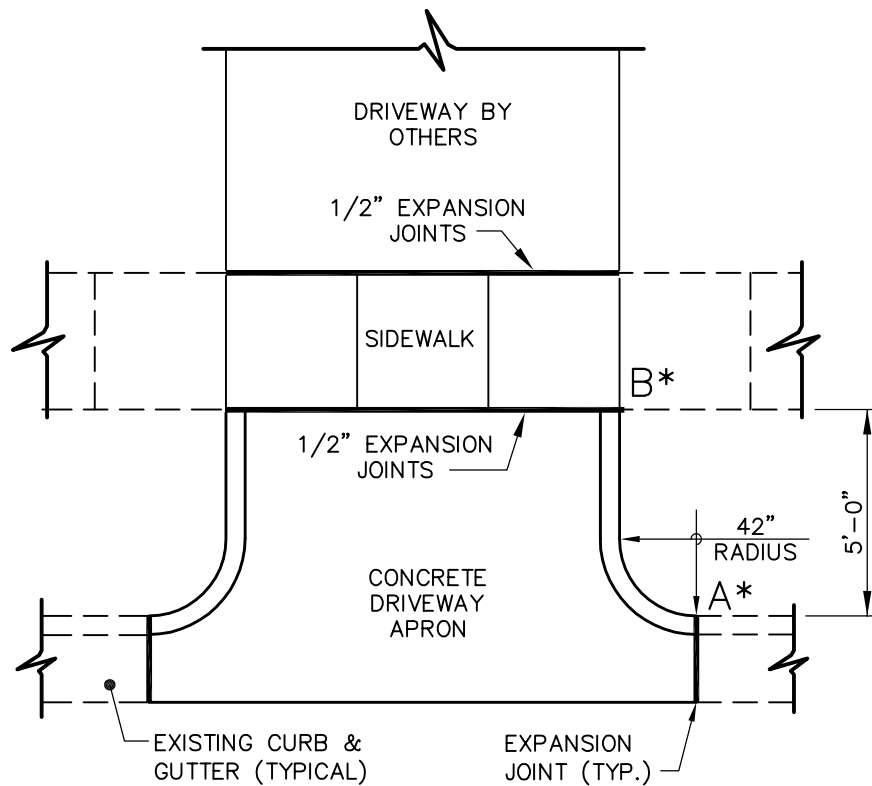
EFFECTIVE: XX/XX/XX

CLUSTER BOX UNIT (CBU) MAILBOX - TYPE I

DETAIL No.

R12

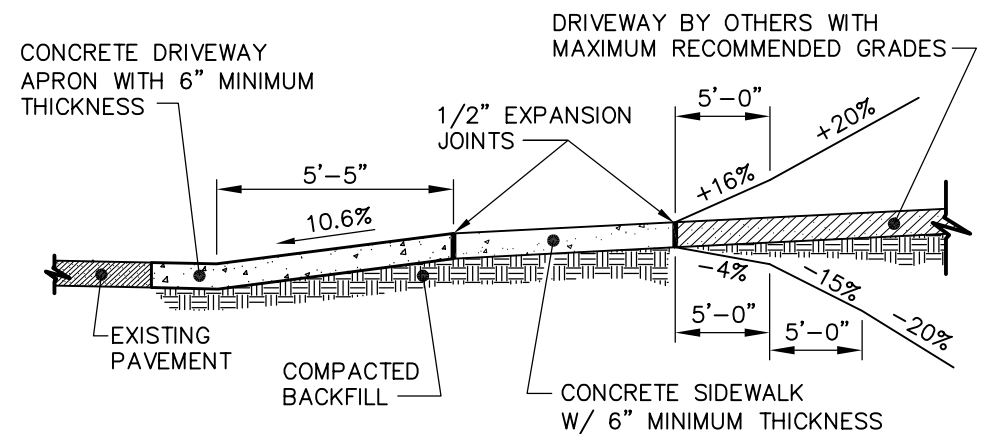
SHEET 1 OF 1



PLAN VIEW

NOTES TO CONTRACTOR:

- RESIDENTIAL DRIVEWAYS TO BE 12 FEET TO 18 FEET IN WIDTH.
- COMMERCIAL AND INDUSTRIAL DRIVEWAYS TO BE A MINIMUM OF 20 FEET FOR 2-WAY, 16 FEET FOR 1-WAY, AND A MAXIMUM OF 40 FEET WIDE.
- ALL CONCRETE SHALL BE 3600 P.S.I.
- * ELEVATION "B" MINUS ELEVATION "A" EQUALS 1 INCH.



TYPICAL SECTION

NOTES:

1. CURB SHALL BE TAPERED TO FINISH FLUSH WITH SIDEWALK.
2. BEGINNING RADIUS SHALL NOT ENCROACH ON ADJACENT PROPERTIES BASED ON A PROJECTION OF THE PROPERTY LINE FROM THE RIGHT OF WAY TO THE CURB LINE.
3. THE COUNTY IS NOT RESPONSIBLE FOR VEHICLES THAT DRAG DUE TO GRADE OF DRIVEWAY. THE DRIVEWAY IS PRIVATELY MAINTAINED.



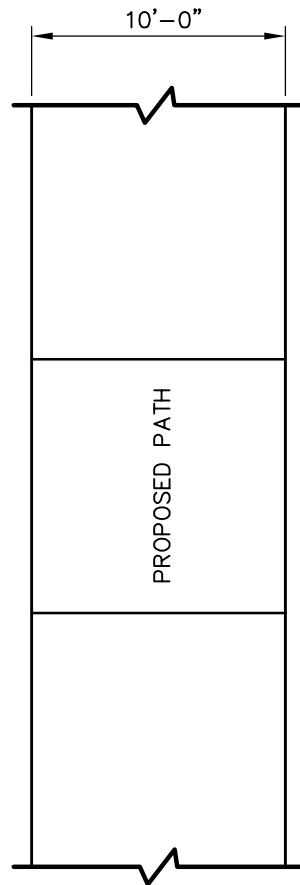
EFFECTIVE: XX/XX/XX

STANDARD DRIVEWAY APRON

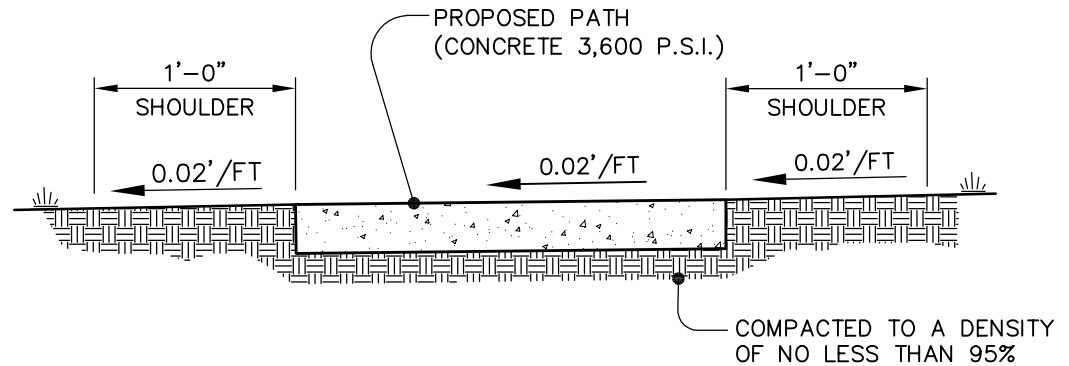
DETAIL No.

R14

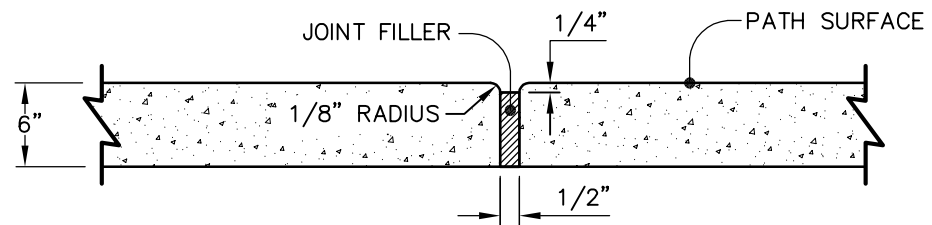
SHEET 1 OF 1



PLAN VIEW



TYPICAL SECTION



TRANSVERSE EXPANSION JOINT

NOTES:

1. TRANSVERSE EXPANSION JOINTS TO BE A MAXIMUM OF 50 FEET.
2. ALL CONCRETE TO BE FINISHED WITH CURING COMPOUND.
3. A 6 INCH DEPTH IS REQUIRED.
4. SAW CUT JOINTS EVERY 10 FEET OR WIDTH.
5. NO UTILITY SURFACE COVERS/PLATES/MANHOLES (i.e. WATERLINE VALVE COVERS, ETC.) SHALL BE LOCATED WITHIN TRAIL AND SHALL BE MINIMUM 2 FEET FROM THE EDGE OF TRAIL.
6. ALL TRAILS SHALL BE LOCATED MINIMUM 5 FEET FROM THE BACK OF CURB.



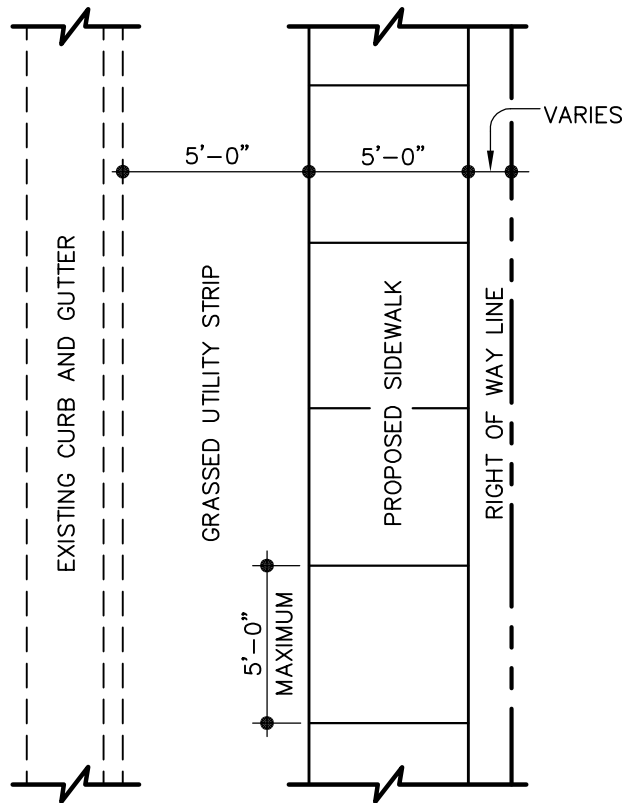
EFFECTIVE: XX/XX/XX

STANDARD CONCRETE MULTI-USE PATH

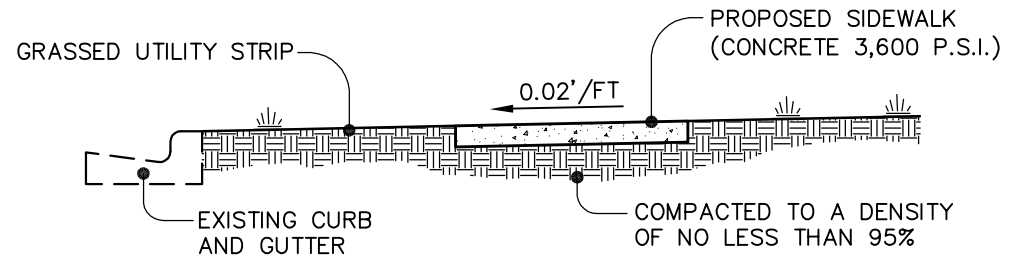
DETAIL No.

R15

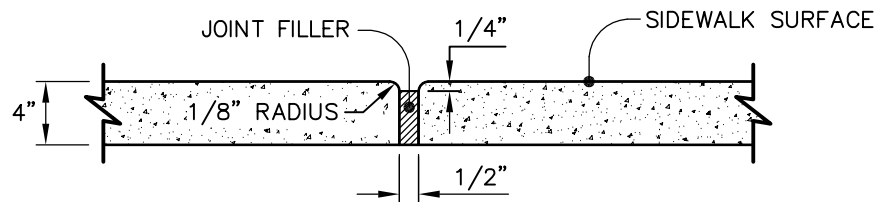
SHEET 1 OF 1



PLAN VIEW



TYPICAL SECTION



TRANSVERSE EXPANSION JOINT

NOTES:

1. TRANSVERSE EXPANSION JOINTS TO BE A MAXIMUM OF 50 FEET.
2. ALL CONCRETE TO BE FINISHED WITH CURING COMPOUND.
3. A 6 INCH DEPTH IS REQUIRED AT LOCATIONS OF DRIVEWAY CROSSINGS, AT STREET INTERSECTIONS (ALONG THE LENGTH OF RADIUS CURB RETURNS), AND IN THE HANDICAP RAMPS.
4. NO UTILITY SURFACE COVERS/PLATES/MANHOLES (i.e. WATERLINE VALVE COVERS, ETC.) SHALL BE LOCATED WITHIN SIDEWALK AND SHALL BE MINIMUM 2 FEET FROM THE EDGE OF SIDEWALK.



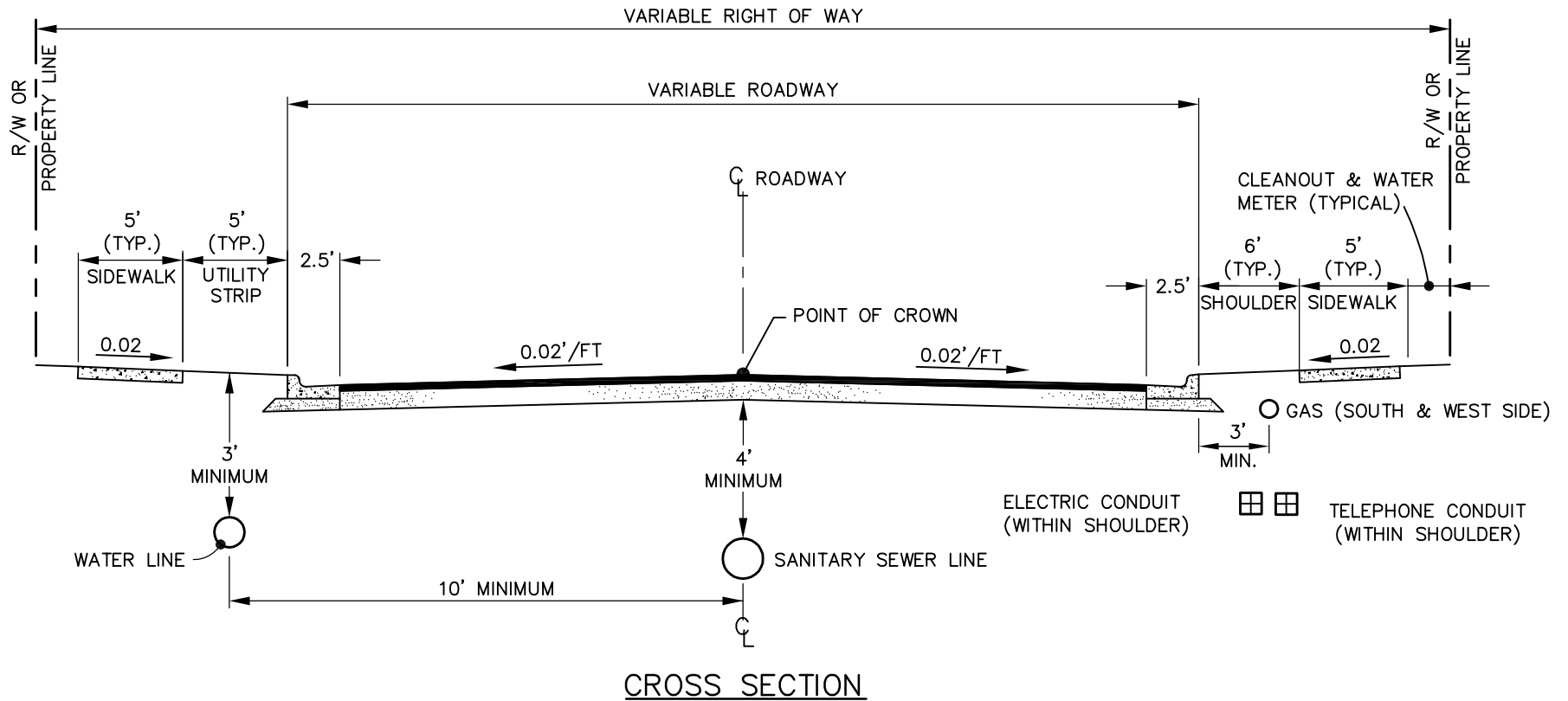
EFFECTIVE: XX/XX/XX

STANDARD CONCRETE SIDEWALK

DETAIL No.

R16

SHEET 1 OF 1



NOTES:

1. THERE SHALL BE AN 18 INCH VERTICAL SEPARATION BETWEEN WATER AND SEWER LINES WHEN DIRECTLY OVERHEAD.
2. WATER AND/OR SANITARY SEWER LINES SHALL BE A MINIMUM OF TWO FEET FROM THE EDGE OF THE CURB AND GUTTER.
3. ENCROACHMENT ONTO ROAD RIGHT OF WAY SHALL FOLLOW CONDITIONS OF THE APPLICABLE ENCROACHMENT AGREEMENT.



EFFECTIVE: XX/XX/XX

STANDARD UTILITY LOCATIONS IN STREET

DETAIL No.

R17
SHEET 1 OF 1

LANCASTER COUNTY

STANDARD STORM WATER DETAILS

SECTION 3



July 24, 2016

GENERAL NOTES:

1. FOR CHANNELS CARRYING 500 ACRES OR MORE OF SURFACE RUNOFF, THE EASEMENT REQUIREMENT IS TO BE THE WIDTH OF THE CHANNEL FROM TOP OF BANK TO TOP OF BANK, PLUS (+) 10' ON EACH SIDE OF STREAM. (40' MINIMUM WIDTH)
2. FOR OPEN CHANNELS THE MINIMUM EASEMENT MUST CONTAIN THE WIDTH OF THE CHANNEL FROM TOP OF BANK TO TOP BANK.
3. WIDER EASEMENT WIDTHS MAY BE REQUIRED FOR PIPE DEPTHS GREATER THAN TEN FEET.
4. PIPE SYSTEMS AND OPEN CHANNELS ON PRIVATE PROPERTY SHALL BE PLACED IN A STORM DRAINAGE EASEMENT.

Easement Requirements for Open Storm Drainage Channels

Area in Acreage	Easement Requirement
0-45 ac.	20'
45-120 ac.	30'
120-500 ac.	40'
500 ac.+	see note

Easement Requirements for Storm Drain Pipe

Pipe Size	Easement Requirement
15"	15'
18"	15'
24"	15'
30"	20'
36"	20'
42"	25'
48"	25'
54"+	30'MIN (VARIES)



EFFECTIVE: XX/XX/XX

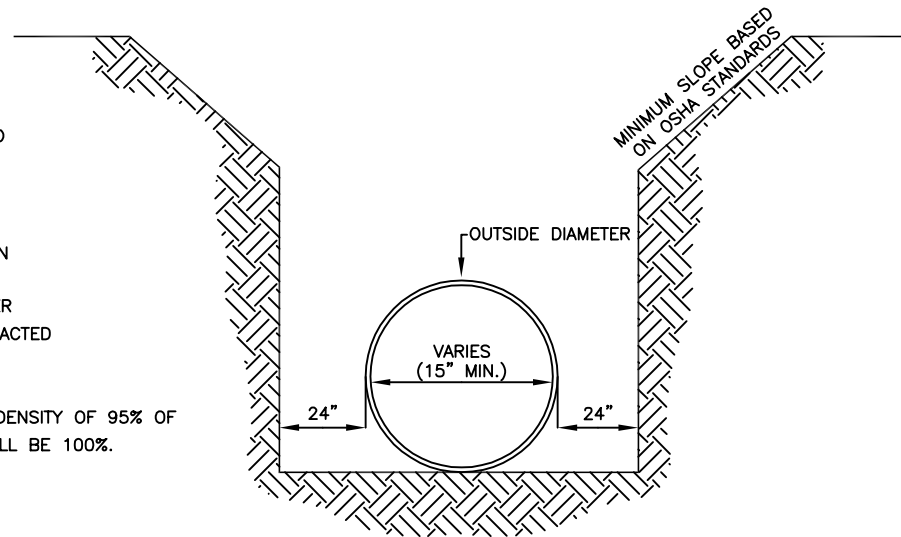
MINIMUM DRAINAGE EASEMENT REQUIREMENTS FOR STORM DRAIN PIPES AND OPEN CHANNELS

DETAIL No.

SD1
SHEET 1 OF 1

NOTES:

1. A MINIMUM OF 24" FROM OUTSIDE DIAMETER OF PIPE TO SIDE OF TRENCH MUST BE ALLOWED FOR COMPACTION OF FILL MATERIAL. BACKFILLING OF TRENCHES SHALL BE ACCOMPLISHED IMMEDIATELY AFTER THE PIPE IS LAID. THE FILL AROUND THE PIPE SHALL BE PLACED IN LAYERS NOT TO EXCEED 6". UNDER NO CIRCUMSTANCES SHALL WATER BE PERMITTED TO RISE IN UNBACKFILLED TRENCHES AFTER THE PIPE HAS BEEN PLACED. COMPACTION REQUIREMENTS SHALL BE ATTAINED BY THE USE OF MECHANICAL TAMPS ONLY. EACH AND EVERY LAYER OF BACKFILL SHALL BE PLACED LOOSE AND THOROUGHLY COMPACTED INTO PLACE.
2. ALL BACKFILL MATERIAL SHALL HAVE AN IN PLACE COMPACTED DENSITY OF 95% OF STANDARD PROCTOR. THE FINAL 2' BELOW FINISHED GRADE SHALL BE 100%.
3. ALL TRENCHING OPERATIONS SHALL MEET OSHA STANDARDS.
4. BACKFILL MATERIAL BENEATH ROADWAY SHALL BE SELECT BACKFILL MATERIAL.



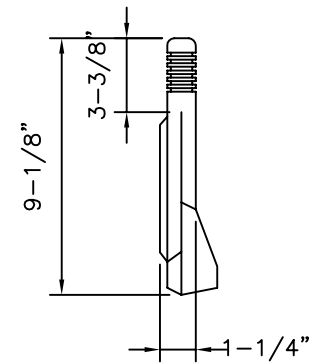
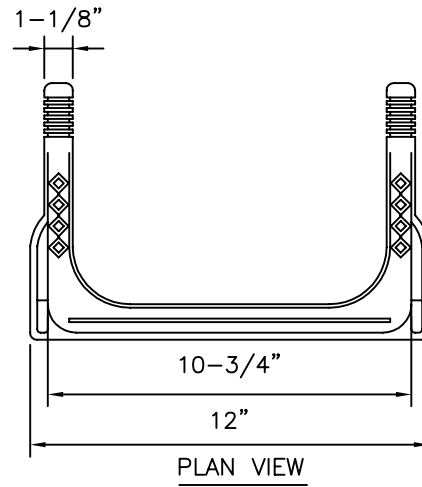
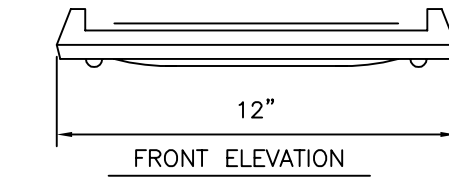
EFFECTIVE: XX/XX/XX

TRENCH DETAIL FOR STORM DRAIN PIPES

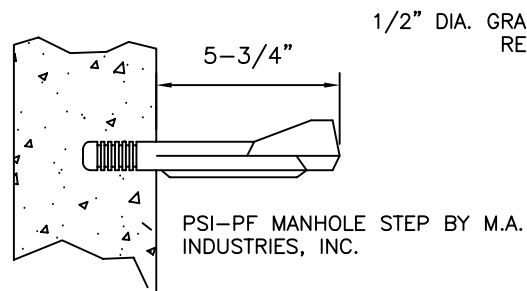
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SD2

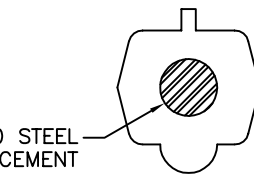
SHEET 1 OF 1



SIDE ELEVATION



1/2" DIA. GRADE 60 STEEL REINFORCEMENT



SECTION " A - A "

NOTE:
STEPS TO BE PLACED 16"
OFF-CENTER VERTICALLY



EFFECTIVE: XX/XX/XX

STRUCTURE STEPS

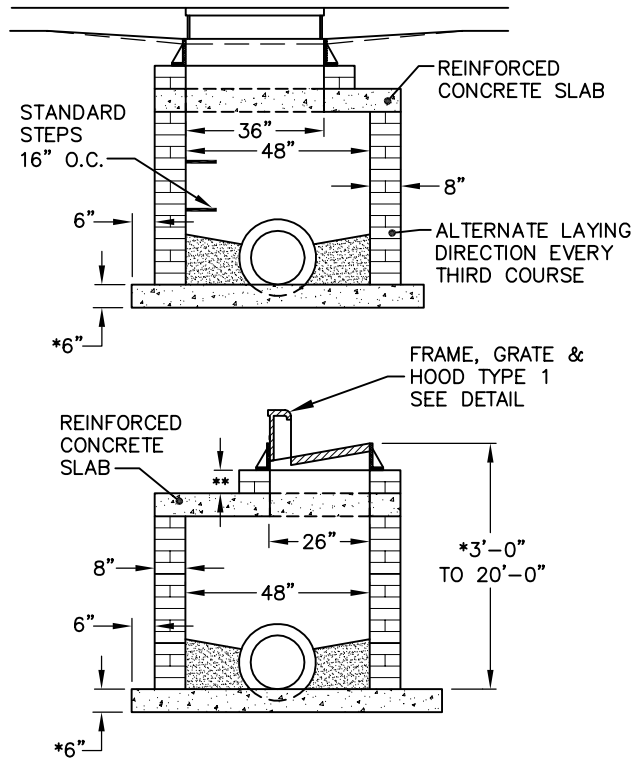
DETAIL No.

SD3

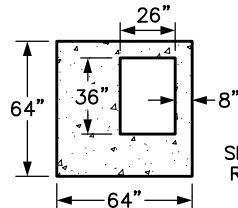
SHEET 1 OF 1

REGULAR TYPE (4'X4')

(3 FEET TO 20 FEET IN DEPTH)



SLAB DETAIL



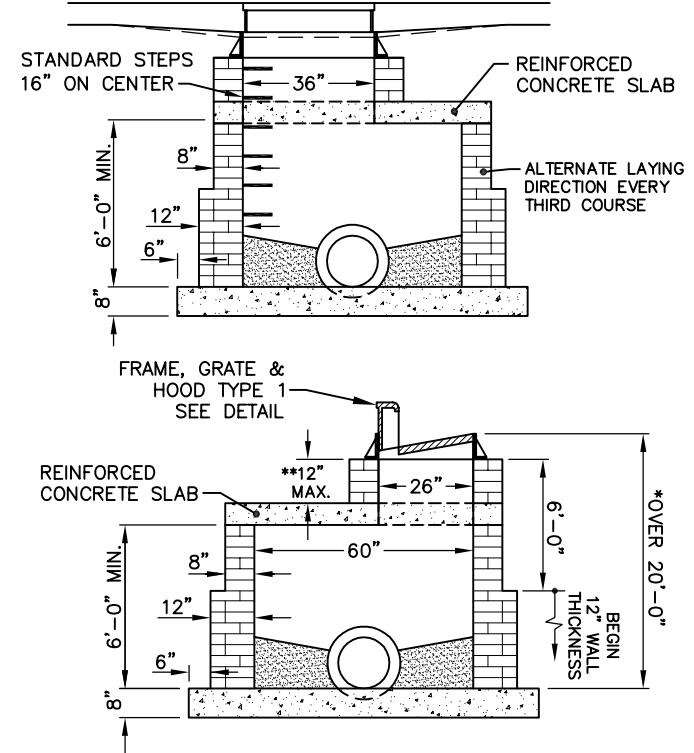
SLAB THICKNESS AND REINFORCEMENT FOR SOIL AND TRAFFIC LOADING BY AN ENGINEER

* OVER 8' IN DEPTH, 12" WALL THICKNESS TO 6' FROM TOP OF WALL, AND 8" BOTTOM SLAB SHALL BE USED.

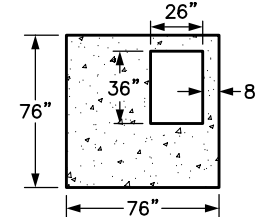
** BRICK MAY BE USED TO ADJUST FRAME, GRATE & HOOD TO SURFACE ELEVATION A MAXIMUM OF 12 INCHES.

DEEP TYPE (5'X5')

(OVER 20 FEET IN DEPTH)



SLAB DETAIL



SLAB THICKNESS AND REINFORCEMENT FOR SOIL AND TRAFFIC LOADING BY AN ENGINEER



EFFECTIVE: XX/XX/XX

STANDARD CONCRETE BLOCK OR BRICK CATCH BASIN

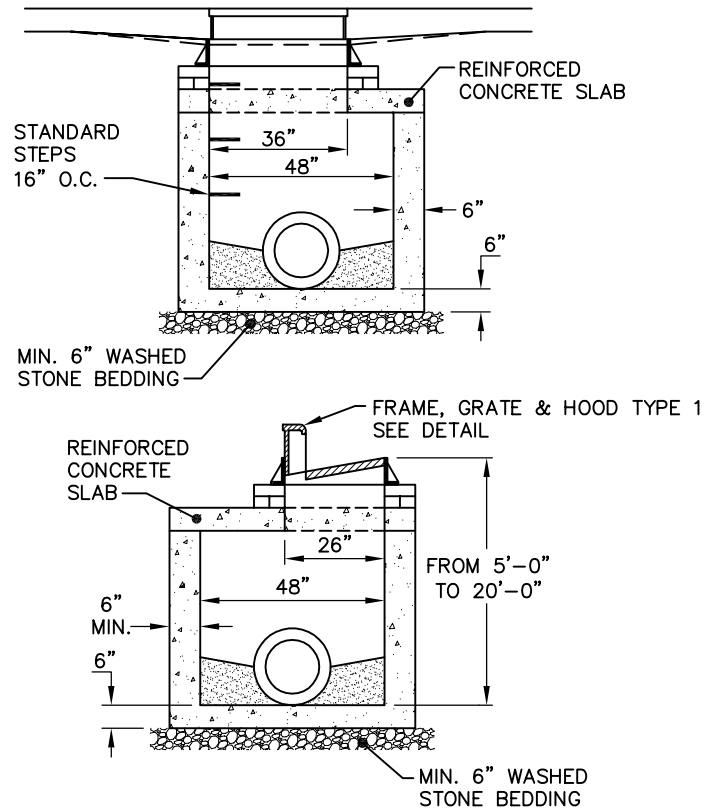
DETAIL No.

SD4

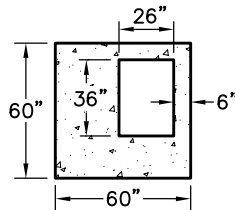
SHEET 1 OF 1

INTERMEDIATE TYPE (4'X4')

(3 FEET TO 20 FEET IN DEPTH)



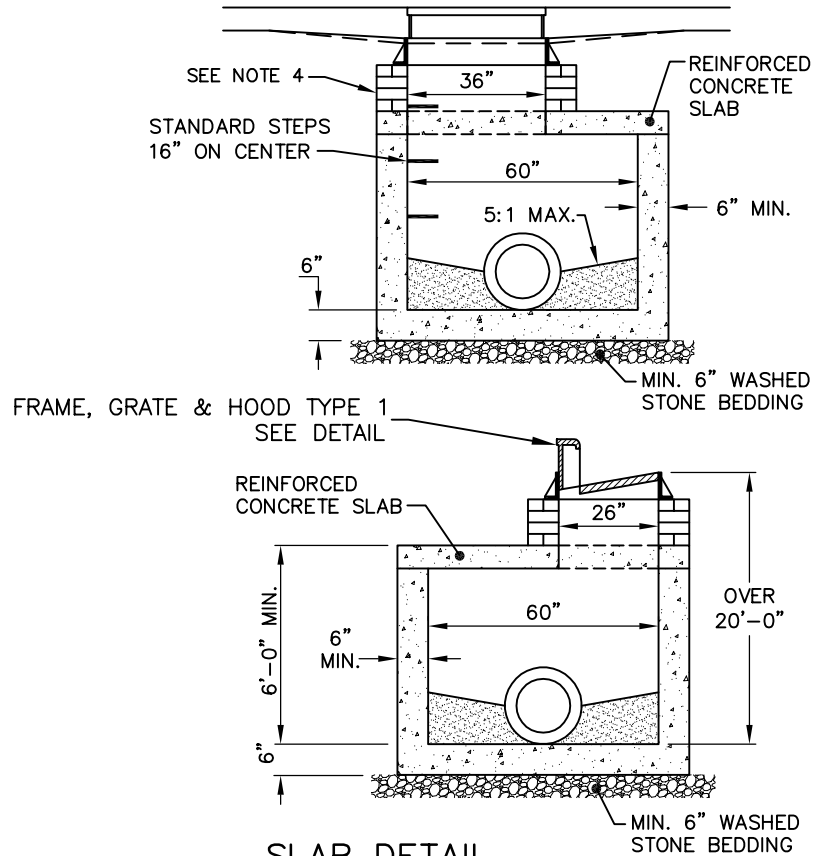
SLAB DETAIL



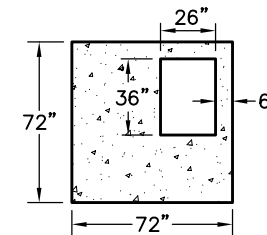
SLAB THICKNESS AND REINFORCEMENT FOR SOIL AND TRAFFIC LOADING BY AN ENGINEER

DEEP TYPE (5'X5')

(OVER 20 FEET IN DEPTH)



SLAB DETAIL



SLAB THICKNESS AND REINFORCEMENT FOR SOIL AND TRAFFIC LOADING BY AN ENGINEER



EFFECTIVE: XX/XX/XX

STANDARD PRECAST CONCRETE CATCH BASIN

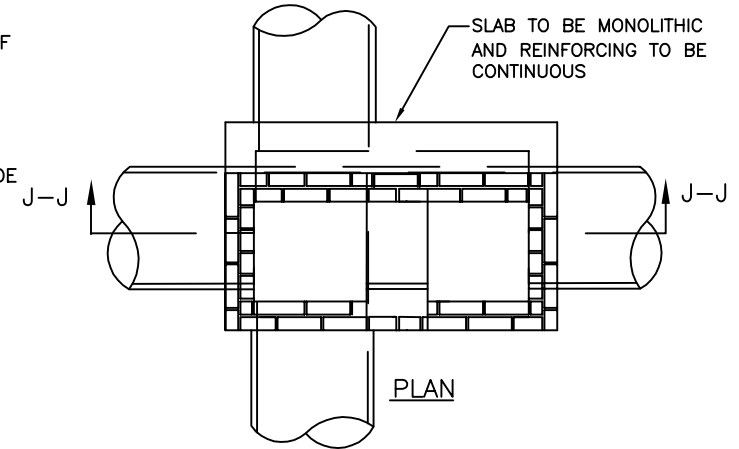
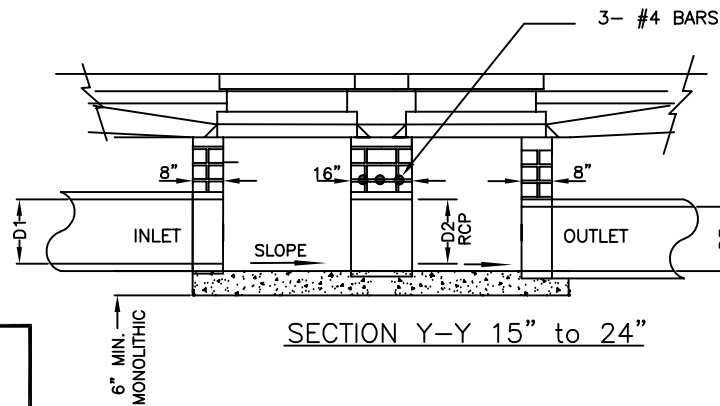
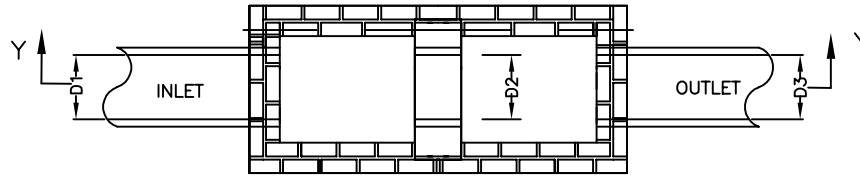
DETAIL No.

SD5

SHEET 1 OF 1

GENERAL NOTES:

1. CONSTRUCT TWO SINGLE BASINS WITH DOUBLE INTERIOR WALL.
2. ALL CONCRETE TO BE 3600 P.S.I COMPRESSIVE STRENGTH.
3. BASE SLAB SHALL BE MONOLITHIC.
4. PIPE SECTION D2 CONNECTING CATCH BASINS SHALL HAVE A MINIMUM DIAMETER SAME AS OF OUTLET PIPE D3.
5. ALL REINFORCING STEEL SHOWN ON DETAIL IS TO BE PROVIDED AS CONTINUOUS MEMBERS. (NO LAPS, USED AS A SINGLE CONTINUOUS BAR IN THE SLAB)
6. WEEP HOLES SHALL BE PLACED IN BACK WALL WITH FILTER FABRIC OR STONE ON BACK SIDE



BRICK DOUBLE CATCH BASIN
15" THROUGH 36" PIPE

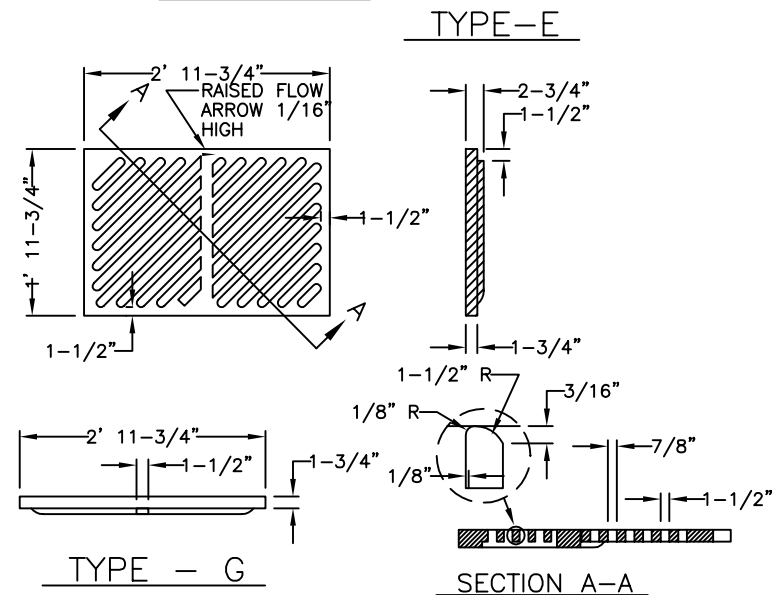
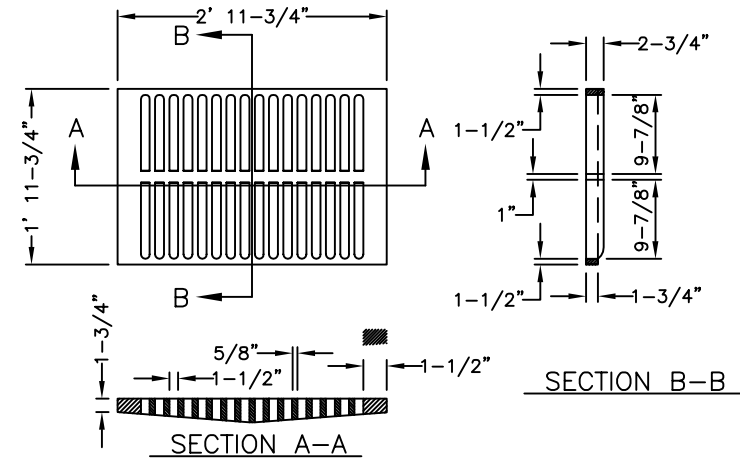
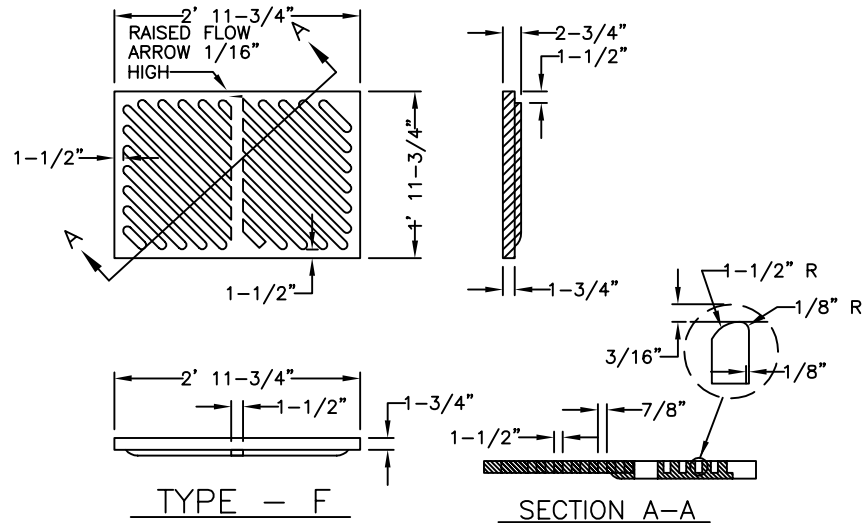
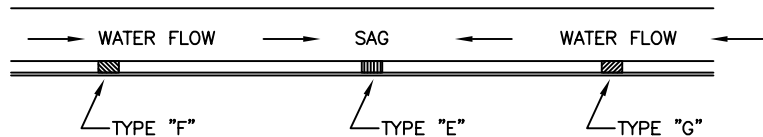
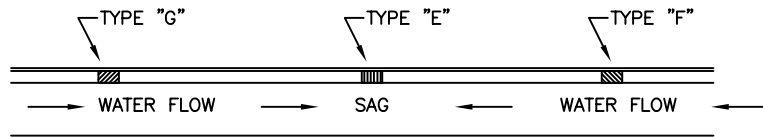
DETAIL No.

SD6

SHEET 1 OF 1

EFFECTIVE: XX/XX/XX

DETAIL SHOWING TYPES OF GRATES TO BE USED
ACCORDING TO WATER FLOW



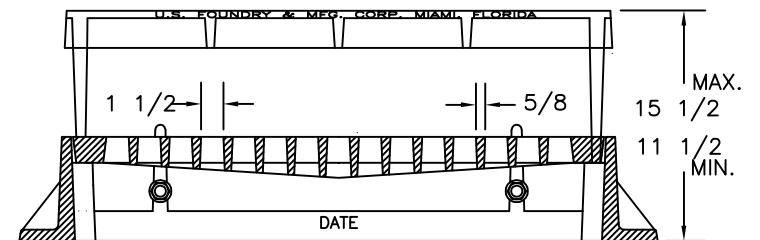
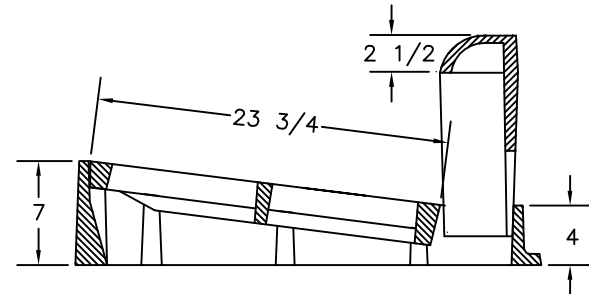
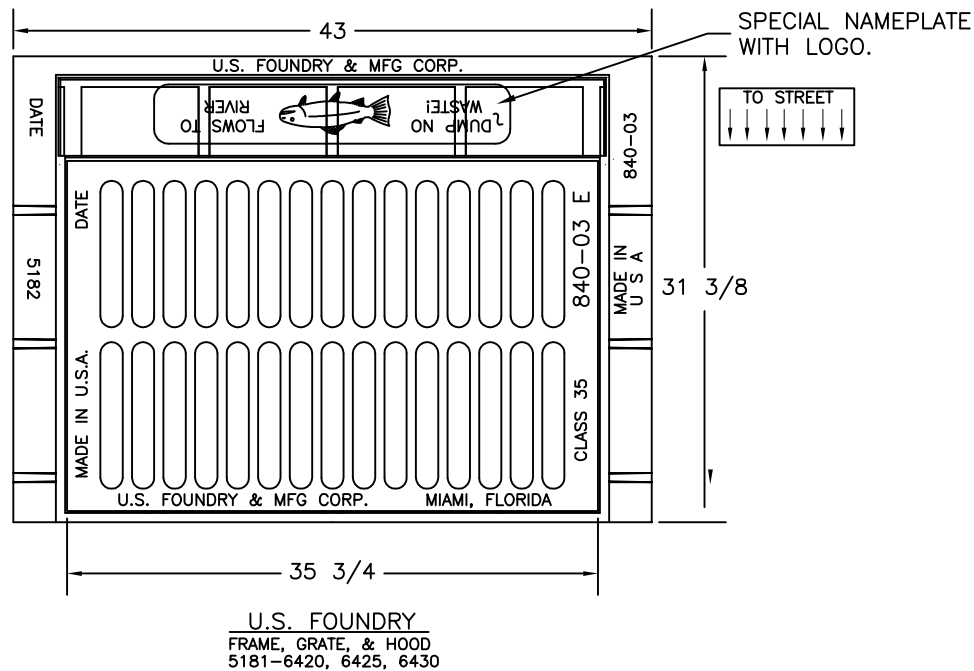
EFFECTIVE: XX/XX/XX

TYPE 1 CATCH BASIN GRATE TYPES

DETAIL No.

SD7

SHEET 1 OF 1



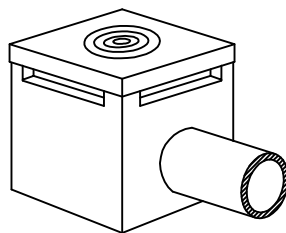
EFFECTIVE: XX/XX/XX

TYPE 1 CATCH BASIN HOOD & GRATE

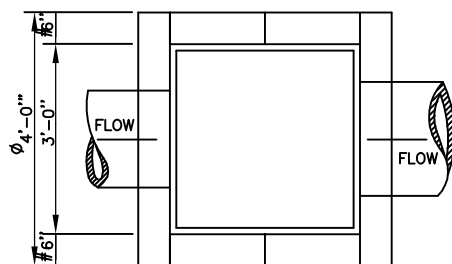
DETAIL No.

SD8

SHEET 1 OF 1



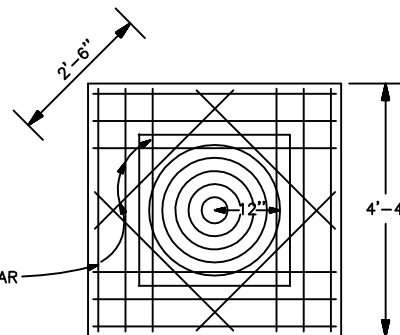
ISOMETRIC VIEW



PLAN

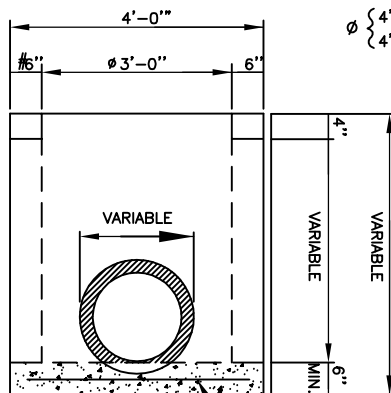
{ 6" FOR CONCRETE
8" FOR BRICK

DETAIL OF COVER



PLAN

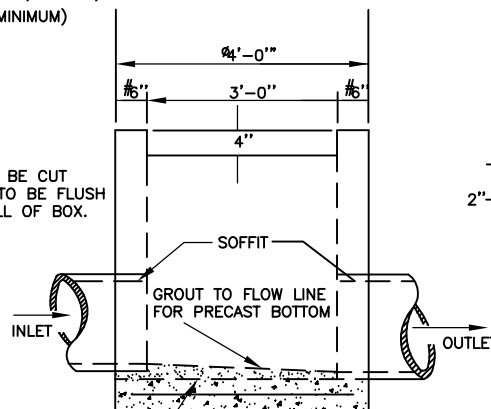
NO. 4 REBAR



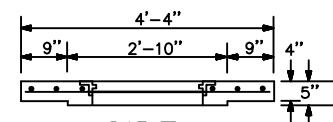
SIDE

Ø { 4'-0" FOR CONCRETE (MINIMUM)
4'-4" FOR BRICK (MINIMUM)

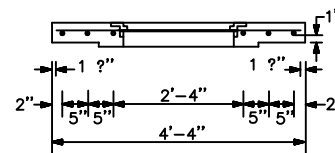
ALL PIPE SHALL BE CUT
AS NECESSARY TO BE FLUSH
WITH INSIDE WALL OF BOX.



FRONT



SIDE



FRONT

NO. 4 REBAR - 12" O.C. WITH
1-1/2" MINIMUM COVER ALL DIRECTIONS

SUMTER MACHINERY CO.
MANHOLE FRAME & COVER
(MF-513 & MC-513)
OR EQUAL OUTSIDE OF
TRAFFIC AREAS.

SUMTER MACHINERY CO.
MANHOLE FRAME & COVER
(MF-9 & MC-12)
OR EQUAL INSIDE OF
TRAFFIC AREAS.



EFFECTIVE: XX/XX/XX

TYPE 9 CATCH BASIN

DETAIL No.

SD9

SHEET 1 OF 2

NOTES:

1. FOR IN PLACE CONSTRUCTION OF THE CATCH BASINS, THE WALLS MAY BE EITHER BRICK MASONRY OR CLASS 3000 CONCRETE MAY BE USED. CONCRETE WALLS ARE TO BE 6 IN. THICK WITH A REINFORCING STEEL AREA OF 0.20 SQ. INCH PER FT. BRICK WALLS ARE TO BE 8 IN. THICK. CONCRETE BRICK AND SIMILAR SOLID UNITS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 55, GRADE S-II.
2. THE BOTTOM SLAB OF THE BOX SHALL BE A MINIMUM OF 6 IN. THICK CLASS 3000 CONCRETE WITH A REINFORCING STEEL AREA OF 0.20 SQ. INCH PER FT. WIRE MESH MAY BE USED IN LIEU OF STEEL BARS PROVIDED A MINIMUM OF 0.20 SQ. INCH PER FT. IS MET.
3. FOR CONSTRUCTION OF THE CATCH BASIN TOP CLASS 4000P OR BETTER CONCRETE SHALL BE USED WITH REINFORCING STEEL AS SHOWN.
4. MORTAR SHALL BE TYPE S OR M.
5. REINFORCING STEEL SHALL BE ASTM A-706, LOW-ALLOY DEFORMED BARS FOR CONCRETE REINFORCEMENT, GRADE 60. WIRE MESH SHALL CONFORM TO AASHTO M 55, AND M 221.
6. IF STRUCTURE DEPTH EXCEEDS 3'-6", STEPS ARE TO BE PLACED ON WALL. SEE STEP DETAIL ON SHEET C.6.3.
7. THE NUMBER OF BOX OPENINGS SHALL BE CONSTRUCTED, AS DIRECTED BY THE ENGINEER, TO FIT FIELD CONDITIONS.
8. WHEN CATCH BASIN IS USED IN CONJUNCTION WITH A VALLEY GUTTER SECTION THE FACE OF THE BASIN SHALL BE A MINIMUM OF 3' FROM THE GUTTER AND THE SLOPE OF THE FLUME IN FRONT OF THE BASIN SHALL BE A MAXIMUM SLOPE OF 12:1. THE COST OF SLOPING THE VALLEY IN FRONT OF THE BASIN SHALL BE INCLUDED IN THE PRICE BID FOR UNCLASSIFIED EXCAVATION.
9. THE SOFFIT (INSIDE TOP OF PIPE) OF THE OUTLET PIPE SHOULD BE NO HIGHER THAN THE FLOW-LINE OF THE INLET PIPE, UNLESS A PRECAST STRUCTURE IS SPECIFIED.
10. 10. LIFT HOLES AND/OR DEVICES MAY BE PLACED AS NECESSARY. ALL LIFT HOLES SHALL BE GROUTED SHUT PRIOR TO COMPLETION OF INSTALLATION. ALL LIFTING METHODS MUST MEET OSHA REGULATIONS.



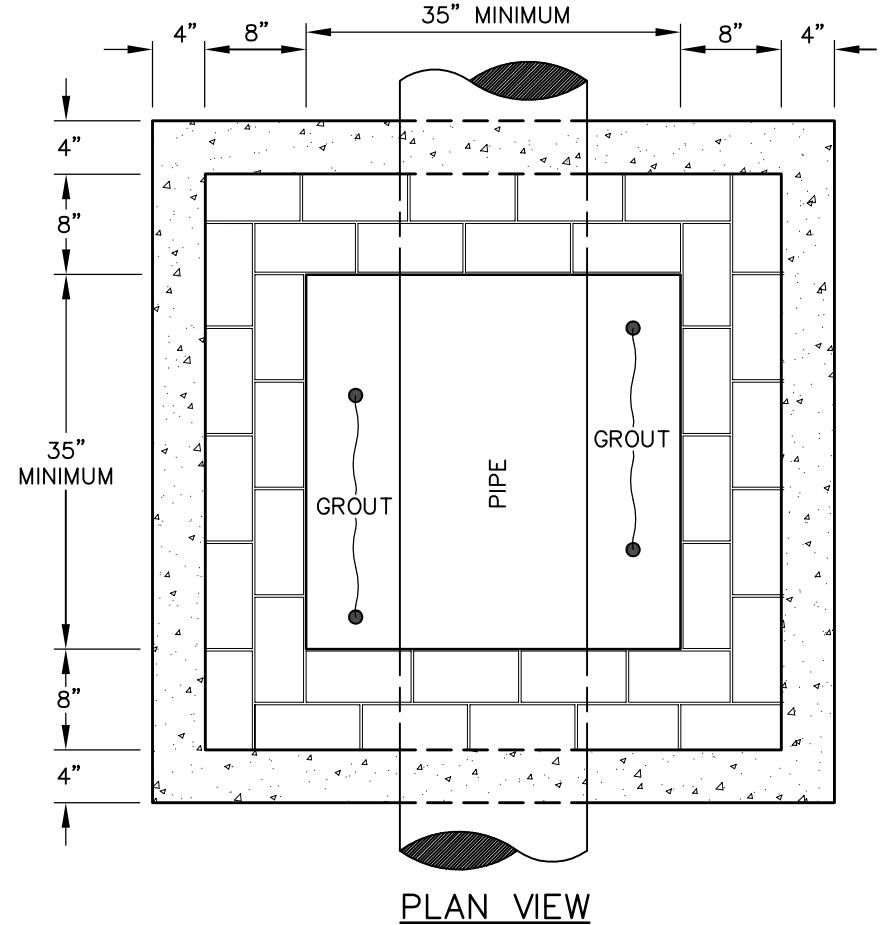
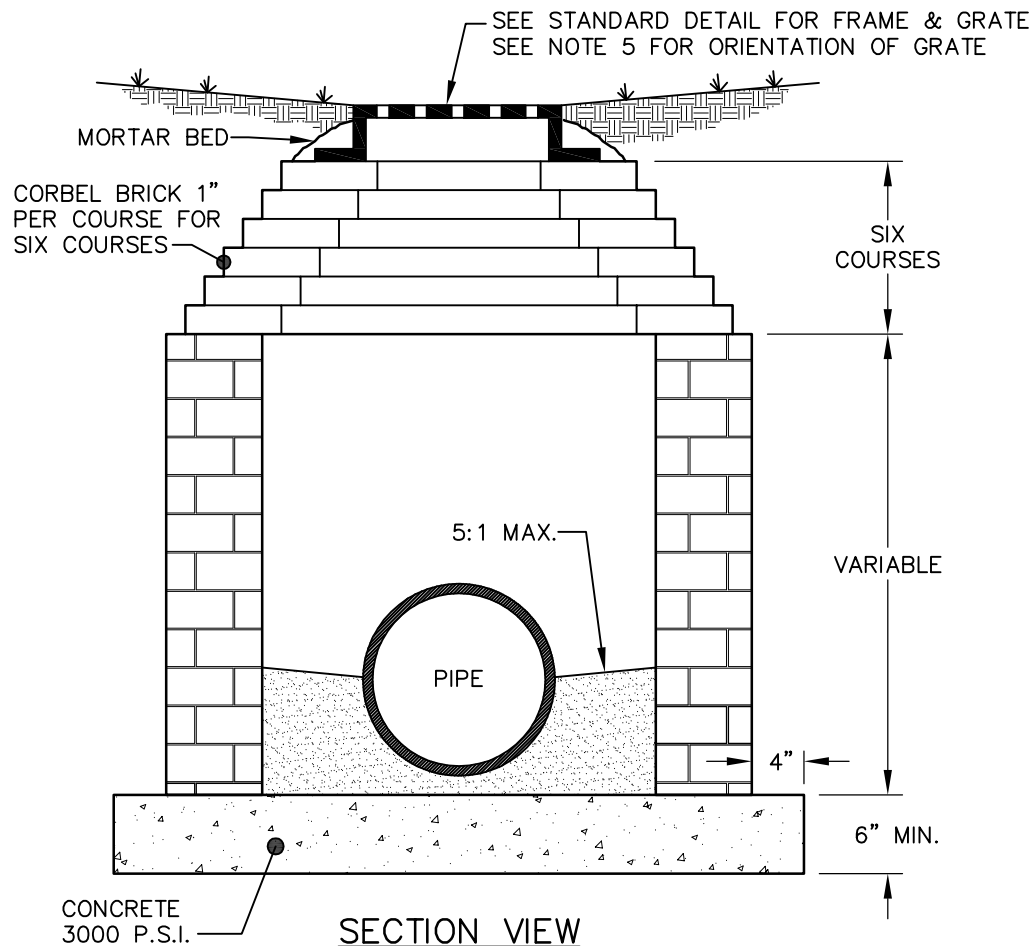
EFFECTIVE: XX/XX/XX

TYPE 9 CATCH BASIN

DETAIL No.

SD9

SHEET 2 OF 2



NOTES:

1. EITHER SOLID BRICK OR SOLID BLOCK MAY BE USED.
2. FOR 24 INCH R.C.P. AND LARGER USE PIPE DIAMETER PLUS 12 INCHES FOR MINIMUM INSIDE DIMENSION.
3. GRATED INLETS SHALL NOT BE USED WITHIN TRAVEL AREAS.
4. STANDARD STEPS REQUIRED @ 16 INCHES O.C. WHERE DEPTH EXCEEDS 3 FEET.
5. WHERE STEPS ARE REQUIRED, USE OF PRECAST CONCRETE SLAB SHALL BE USED AS TOP AND GRATE POSITIONED OVER STEPS.
6. YARD INLETS DEEPER THAN 10 FEET SHALL REQUIRE DOUBLE WALLS.

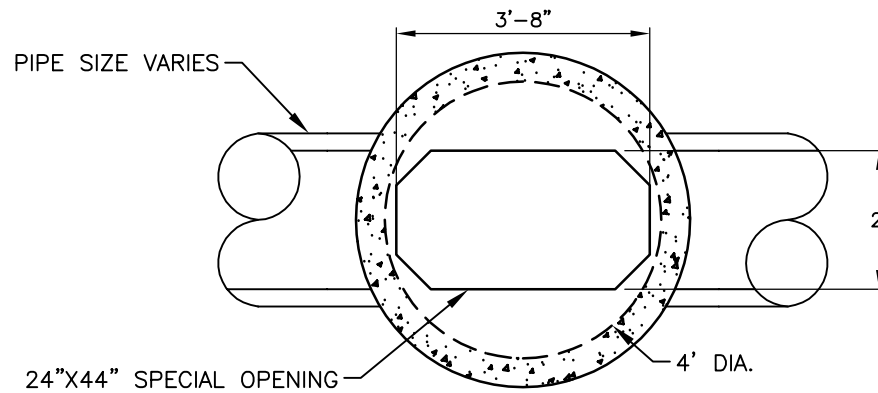
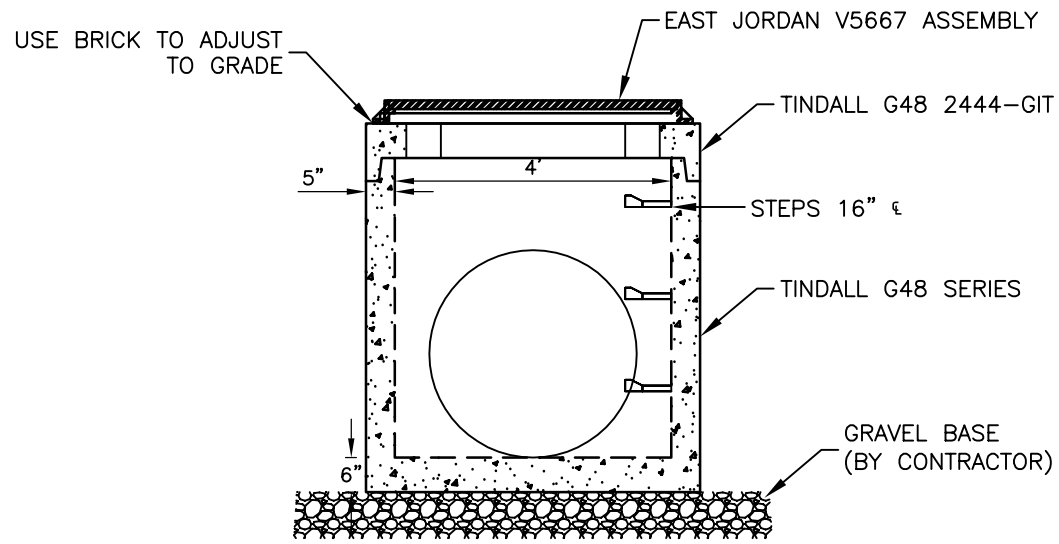


EFFECTIVE: XX/XX/XX

STANDARD BRICK DROP INLET

DETAIL No.

SD10
SHEET 1 OF 1



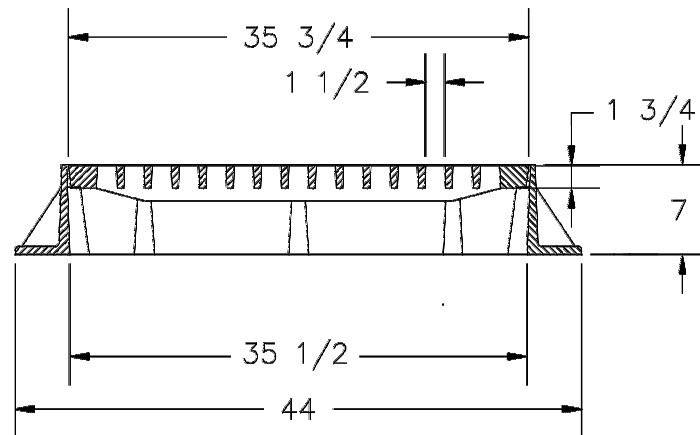
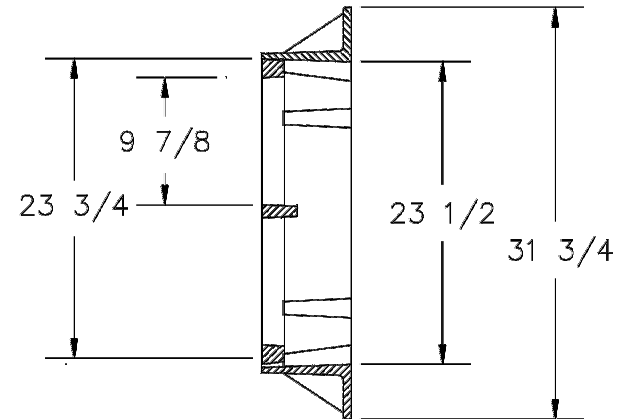
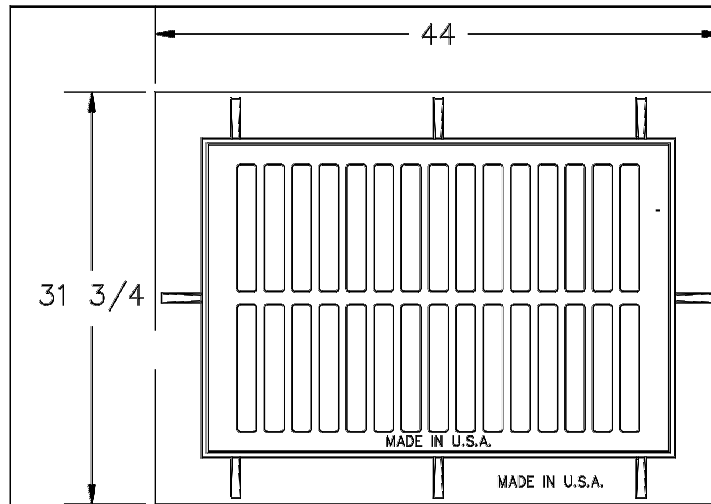
EFFECTIVE: XX/XX/XX

STANDARD PRECAST DROP INLET

DETAIL No.

SD11

SHEET 1 OF 1



NOTES:

- 1- MATERIAL; ASTM-A48
CLASS 35B GRAY IRON
- 2- FRAME WT: 240 LBS. APP.
- 3- GRATE WT: 170 LBS. APP.

U.S. FOUNDRY & MFG. CORP.
MIAMI, FLORIDA

USF 4137 FRAME
AND 6237 GRATE

DWN. BY: A.M. DATE: 04/10/91

CHK. BY: DWG. NO: A2495



EFFECTIVE: XX/XX/XX

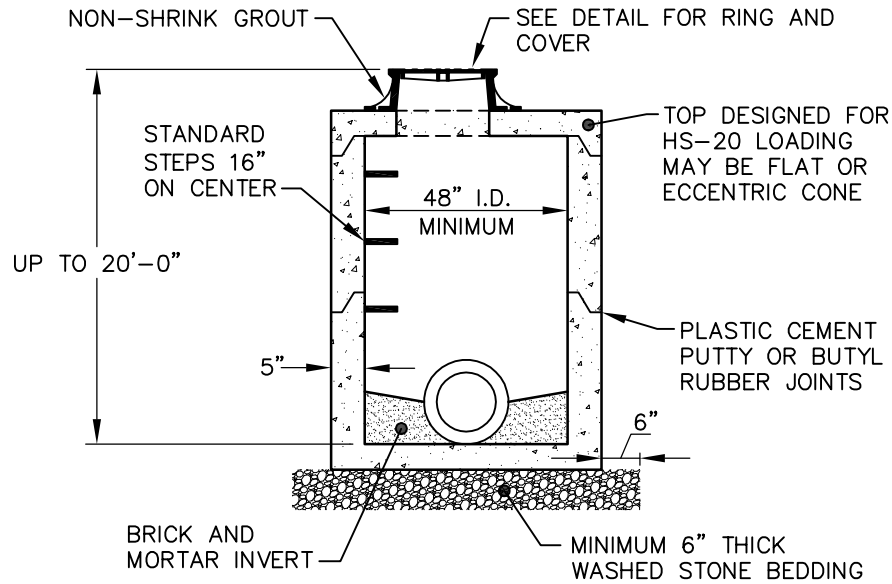
FRAME & GRATE FOR DROP INLETS

DETAIL No.

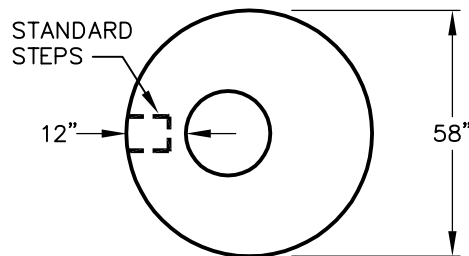
SD12

SHEET 1 OF 1

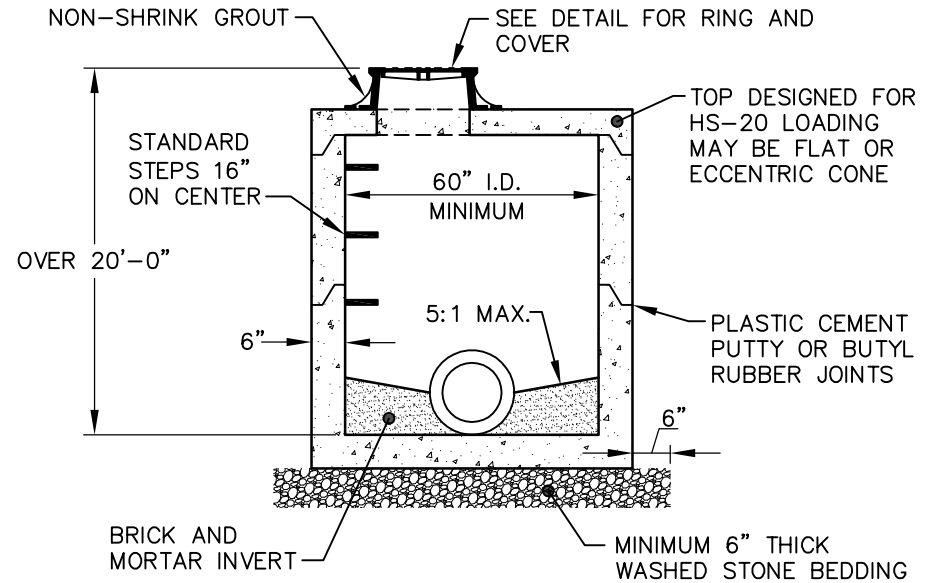
STANDARD TYPE
(UP TO 20 FEET IN DEPTH)



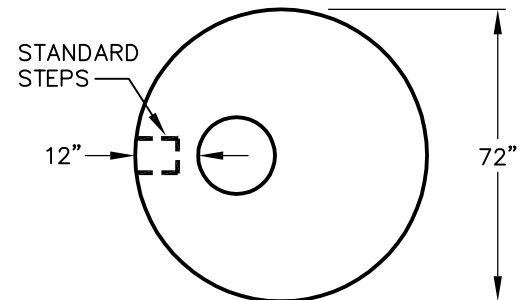
FLAT TOP DETAIL



DEEP TYPE
(OVER 20 FEET IN DEPTH)



FLAT TOP DETAIL



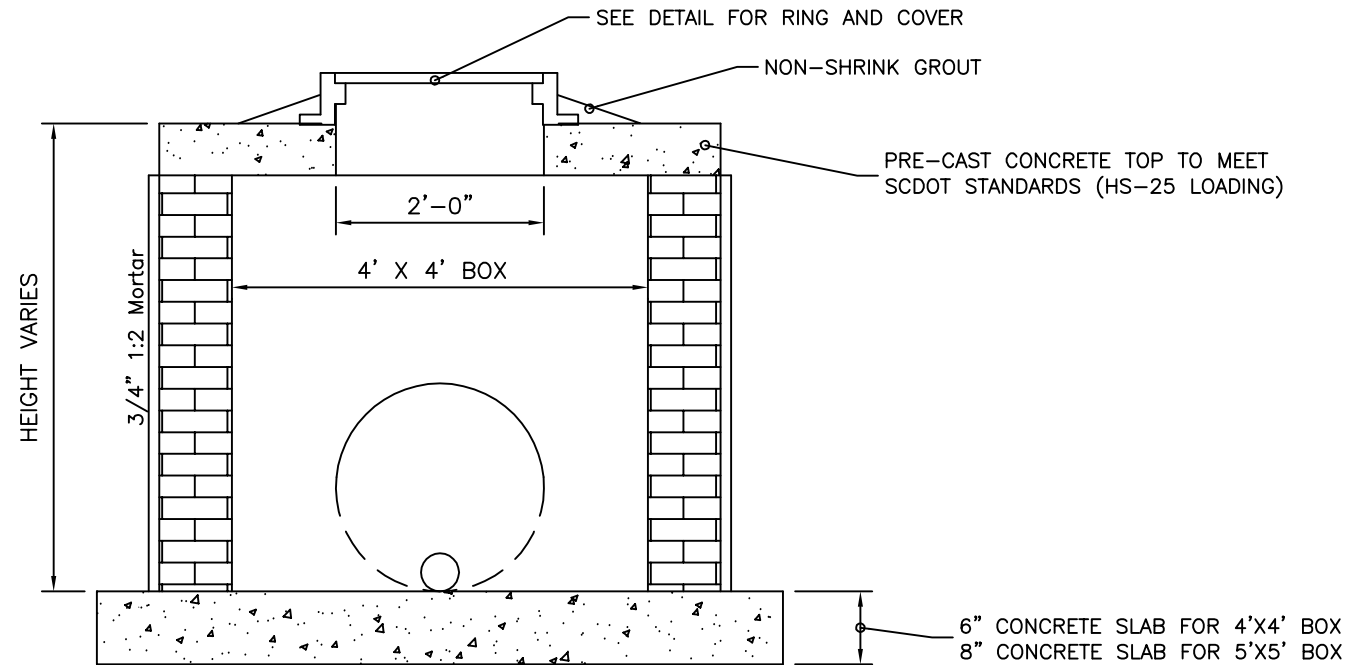
EFFECTIVE: XX/XX/XX

STANDARD PRECAST CONCRETE JUNCTION BOX

DETAIL No.

SD13

SHEET 1 OF 1



TYPICAL SECTION

GENERAL NOTES:

1. MORTAR JOINTS 1/2" +/- 1/8" THICK.
2. ALL CONCRETE TO BE 3600 P.S.I COMPRESSIVE STRENGTH.
3. STRUCTURES SHALL CONFORM TO SC DOT SPECIFICATIONS.
4. CONCRETE BRICK MAY BE USED IN LIEU OF HARD COMMON CLAY BRICK.
5. JUMBO BRICK WILL BE PERMITTED.
6. FOR 8'-0" IN HEIGHT OR LESS USE 8" WALL. OVER 8'-0" IN HEIGHT USE 12" WALL TO 6'-0" FROM TOP OF WALL, AND 8" WALL FOR THE REMAINING 6'-0".
7. ALL PIPE IN STORM DRAIN STRUCTURES SHALL BE STRUCK EVEN WITH THE INSIDE WALL, GROUTED AND BRUSHED SMOOTH.
8. WEEP HOLE(S) SHALL BE PLACED IN BACK WALL. A STONE DRAIN CONSISTING OF 1 (ONE) CUBIC FOOT OF NUMBER 78M STONE CONTAINED IN A BAG OF POROUS FABRIC SHALL BE PLACED AT WEEP HOLE.
9. BRICK SHALL BE BONDED WITH FULL HEADERS EVERY 3 COURSES.



EFFECTIVE: XX/XX/XX

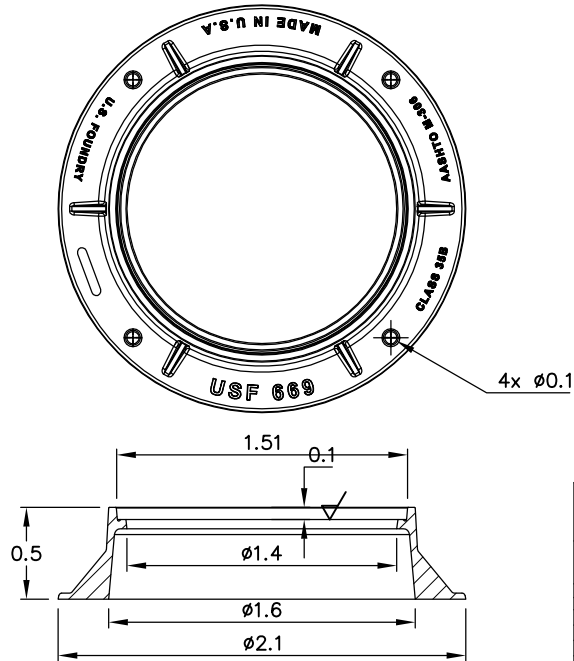
STANDARD BRICK JUNCTION BOX

DETAIL No.

SD14

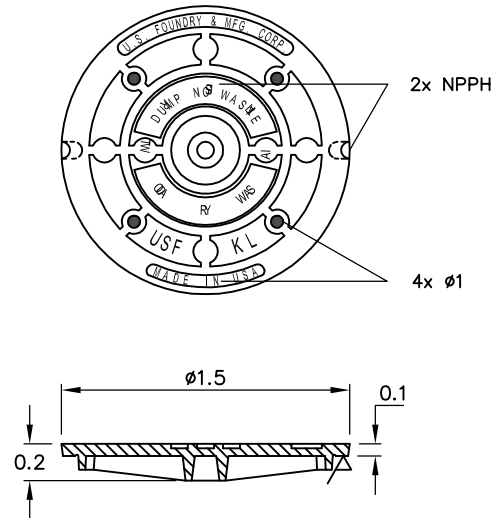
SHEET 1 OF 1

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USF 669 Ring	
LOAD CLASSIFICATION: Heavy Duty	8351 NW 93rd Street Moultrie, FL 33166-2025 ph: 1-800-432-0709 fax: 305-887-9429 www.usfoundry.com © 2016 All Rights Reserved
MATERIAL: ASTM-A48 GRAY IRON CLASS35B	DATE: 11/13/2006 DRW BY: NR/ULS
Ring No: 8020190	REV: 2 DATE: 1/22/2015 REV BY: ULS QUOTE#

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USF KL Cover	
LOAD CLASSIFICATION: Heavy Duty	8351 NW 93rd Street Moultrie, FL 33166-2025 ph: 1-800-432-0709 fax: 305-887-9429 www.usfoundry.com © 2016 All Rights Reserved
MATERIAL: ASTM-A48 GRAY IRON CLASS35B	DATE: 4/20/2016 DRW BY: OD/ULS
Ring No:	REV: 0 DATE: REV BY: QUOTE#



EFFECTIVE: XX/XX/XX

RING AND COVER FOR STORM SYSTEMS

DETAIL No.

SD15
SHEET 1 OF 1

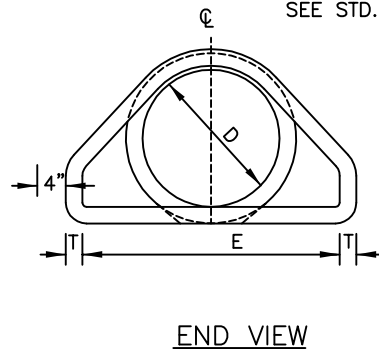
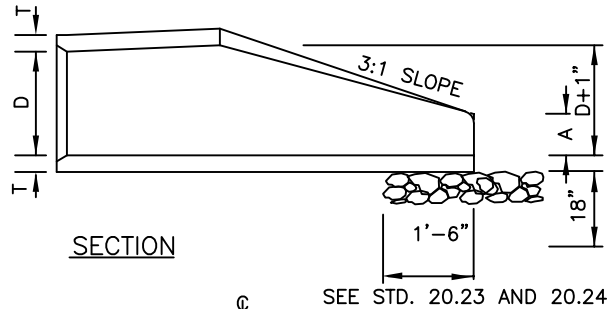
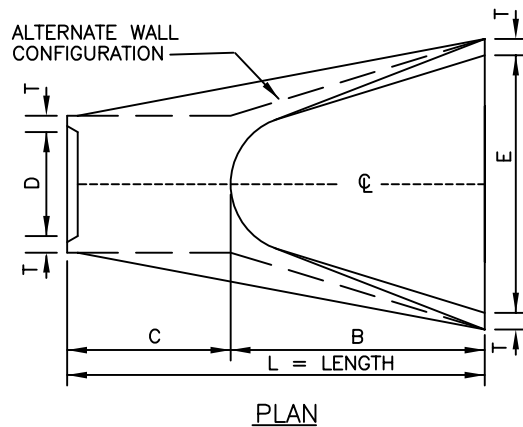


TABLE OF DIMENSIONS							
D	T	A	B	C	E	L	WT.
12"	2-1/4"	4"	2'-0"	4'-1"	2'-0"	6'-1"	730
15"	2-1/4"	6"	2'-3"	3'-10"	2'-0"	6'-1"	730
18"	2-1/2"	9"	2'-3"	3'-10"	3'-0"	6'-1"	1190
24"	3"	10"	3'-8"	2'-6"	4'-0"	6'-2"	1770
30"	3-1/2"	1'-0"	4'-6"	1'-8"	5'-0"	6'-2"	2380
36"	4"	1'-3"	5'-3"	2'-11"	6'-0"	8'-2"	5320
42"	4-1/2"	1'-9"	5'-3"	2'-11"	6'-6"	8'-2"	5920
48"	5"	2'-0"	6'-0"	2'-2"	7'-0"	8'-2"	7470
54"	5-1/2"	2'-3"	5'-6"	2'-10"	7'-6"	8'-4"	8810
60"	6"	2'-6"	5'-0"	3'-3"	8'-0"	8'-3"	11180
66"	6-1/2"	3'-0"	6'-0"	2'-3"	8'-6"	8'-3"	12530
72"	7"	3'-0"	6'-6"	1'-9"	9'-0"	8'-3"	13980

GENERAL NOTES:

1. REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF REINFORCED CONCRETE PIPE OF LIKE DIAMETER PER AASHTO M170, TABLE 2, WALL B.
2. ALL CONCRETE TO BE 3600 P.S.I COMPRESSIVE STRENGTH.
3. PROVIDE TONGUE OR SPIGOT JOINT AT INLET END SECTION.
4. PROVIDE GROOVE OR BELL JOINT AT OUTLET END SECTION.
5. THE DIMENSIONS FOR END SECTIONS SHALL SUBSTANTIALLY AGREE WITH THE TABLE. MINOR VARIATIONS WILL BE PERMITTED BASED ON THE MANUFACTURER'S STANDARD FORMS AND TEMPLATES.
6. NOT TO BE USED IN SCDOT MAINTAINED RIGHT OF WAY.



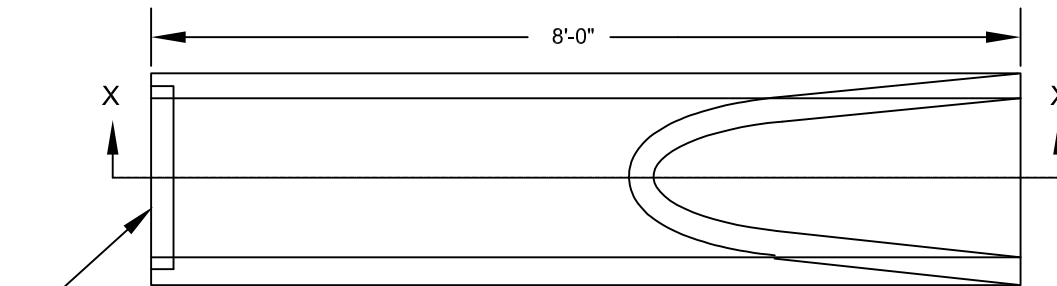
EFFECTIVE: XX/XX/XX

FLARED END SECTION 12" THROUGH 72" PIPE

DETAIL No.

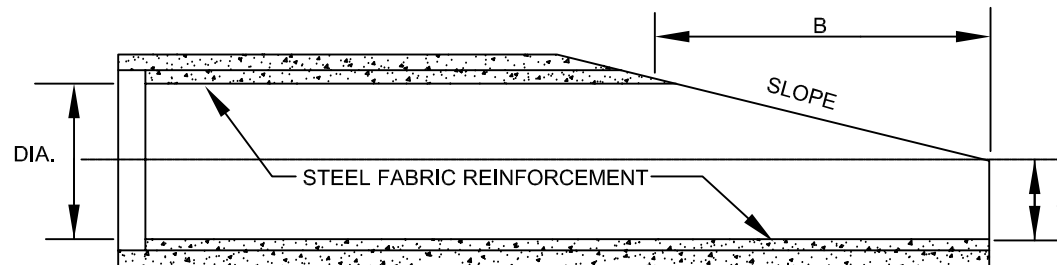
SD16

SHEET 1 OF 1



GROOVE END ON OUTLET END SECTIONS
SPIGOT END ON INLET END SECTIONS

PLAN



SECTION X-X

END SECTION DIMENSIONS			
DIA.	A	B	SLOPE
15"	0'-6"	3'-0"	4:1
18"	0'-9"	3'-0"	4:1
24"	0'-10"	4'-6"	4:1
30"	1'-0"	4'-8"	3:1
36"	1'-3"	5'-3"	3:1
42"	1'-8"	5'-6"	3:1
48"	2'-0"	6'-0"	3:1

NOTE:

1. BEVELED END SECTIONS WILL BE MANUFACTURED IN ACCORDANCE WITH SECTION 714 OF SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION. THESE SPECIAL PIPE SECTIONS WILL BE MADE DURING THE MANUFACTURE OF OTHER STATE APPROVED REINFORCED CONCRETE PIPE.



EFFECTIVE: XX/XX/XX

BEVELED END SECTION

DETAIL No.

SD17

SHEET 1 OF 1