APPENDIX C

LANCASTER COUNTY

MANUAL OF SPECIFICATION AND STANDARD DETAILS

November 28, 2016
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LANCASTER COUNTY

STANDARD SPECIFICATIONS

SECTION 1

November 28, 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

November 28, 2016
LOCAL STREET (URBAN)

R/W

50' RIGHT OF WAY

5' (TYP.)
SIDEWALK
1.5%

5' (TYP.)
UTILITY STRIP
4.0%

1.5' 2.0% 11'
25' ROADWAY
11'

1.5' 2.0% 1.5'
12.5' ROADSIDE
4.0%

SEE STANDARD DETAIL R9 FOR CURB & GUTTER (TYPICAL)

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.
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.
NOTES:
1. NORMAL CROWN OF 2% UNLESS OTHERWISE DIRECTED BY DIRECTOR OF ENGINEERING.
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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.
STANDARD COLLECTOR (BIKE LANES)

NOTES:
1. NORMAL CROWN OF 2.0% 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".
DETAIL No. 11/26/2016

COMMERCIAL/ARTERIAL (URBAN)

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.

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

SEE STANDARD DETAIL R9 FOR CURB & GUTTER (TYPICAL)
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.

COMMERICAL/ARTERIAL (RURAL)
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.
NOTE: MAINTAIN 50' MAX. BETWEEN JOINTS OR AT ALL RIGID OBJECTS.

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.
SCORE FULL WIDTH OF CURB AND GUTTER

PLAN

1/2'

6"

1'-6"

2'-0"

FRONT

BACK OF CURB

EDGE OF PAVEMENT

EDGE OF PAVEMENT

BACK OF CURB

2'-6"

2'-0"

6"

END

CURB END TAPER
STANDARD METHOD OF ENDING CURB & GUTTER

EFFECTIVE DATE
11/26/2016

DETAIL No.
R10

SHEET 1 OF 1
RESIDENTIAL CUL-DE-SAC DIMENSIONS

800 FEET MAXIMUM UNLESS APPROVED OTHERWISE

* RADIUS MAY BE REDUCED TO 42.5' IF CURB & GUTTER IS NOT USED.
CLUSTER BOX UNIT (CBU) MAILBOX - TYPE I

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".
NOTES:
1. CBU SHALL CONTAIN NO MORE THAN A TOTAL OF 26 MAIL RECEPTACLES.
2. LOCATE CBU ON PROPERTY LINE OR NEAR COMMON AREAS, 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. ACCESSIBLE SPACE SHALL HAVE LONGITUDINAL AND TRANSVERSE SLOPES NOT EXCEEDING 2%.
7. R7–21A SIGN SHALL READ "MAIL PARKING, 15 MINUTE LIMIT".

CLUSTER BOX UNIT (CBU) MAILBOX - TYPE II
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.

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.
PROPOSED PATH

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.

STANDARD CONCRETE MULTI-USE PATH
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.

STANDARD CONCRETE SIDEWALK
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.
OPEN CUT REPAIR FOR ROADWAYS

2" ASPHALTIC CONCRETE SURFACE COURSE (TYPE 1)

2" DEEP SAW CUT

EXISTING PAVEMENT

APPLY TACK

8" 2500 PSI CONCRETE

4" STABILIZED AGGREGATE BASE COURSE

TRENCH TO BE BACKFILLED WITH SELECT MATERIAL IN 6" LAYERS TO 95% AASHTO DENSITY.

12" PIPE 12"
1.) ALL TRAIL MATERIAL SHALL COMPLY WITH GEOTECHNICAL REPORT AND BE APPROVED BY THE ENGINEER/LANDSCAPE ARCHITECT. 
2.) THE CONTRACTOR IS RESPONSIBLE FOR STABILIZING ALL DISTURBED AREAS OF TRAIL CONSTRUCTION. 
3.) ALL LAND CLEARING SHALL BE CONTAINED WITHIN A 20' LIMIT OF DISTURBANCE. SEE PLANS FOR LIMIT OF DISTURBANCE. 
4.) ALL LAND CLEARING, GRUBBING, AND DEMOLITION MATERIALS SHALL BE REMOVED AND LEGALLY DISPOSED OFF SITE. 
5.) ALL TREES WITH DIAMETERS 6" OR GREATER SHALL BE FLAGGED AND APPROVED BY THE LANDSCAPE ARCHITECT/OWNER BEFORE REMOVAL. 
6.) THE CONTRACTOR IS TO ENSURE POSITIVE DRAINAGE FOR THE ENTIRE TRAIL AREA AND NO PONDING SHALL OCCUR. 
7.) ALL TRAIL ARE TO HAVE A CROSS SLOPE OR BE CROWNED WITH A 1% MIN. AND 2% MAX SLOPE. 
8.) ALL PROOF ROLES SHALL BE COMPLETE USING TANDEM AXLE 15 TON MIN. CONSTRUCTION EQUIPMENT. 
9.) REFER TO CONSTRUCTION PLAN FOR ADDITIONAL INFORMATION. 
NOTES:
1.) SEE PLANS FOR DETERMINATION FOR TRAIL SLOPES.
2.) SIDE SLOPE USED TO TIE INTO EXISTING GRADE SHALL NOT EXCEED 2:1.

### TRAIL DETAIL

#### TRAIL WIDTH REQUIREMENTS

<table>
<thead>
<tr>
<th>TRAIL TYPE</th>
<th>TRAIL WIDTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHARED USE TRAIL</td>
<td>10' MIN. – 12' PREFERRED (2' MIN. SHOULDER ON BOTH SIDES OF TRAIL)</td>
</tr>
<tr>
<td>FOOTPATH HIKING</td>
<td>3' MIN. – 6' PREFERRED</td>
</tr>
<tr>
<td>BOARDWALKS</td>
<td>8' MIN. (UP TO 14' IF EMERGENCY VEHICLES IS REQUIRED)</td>
</tr>
<tr>
<td>EQUESTRIAN</td>
<td>4' MIN. – 6' PREFERRED (CAN BE ADDED TO ONE SIDE OF SHARED USE TRAIL)</td>
</tr>
</tbody>
</table>

NOTE: IN HIGH USE ZONES THE COUNTY RESERVES THE RIGHT TO INCREASE THE WIDTH OF SHARED USE TRAILS UP TO 14'.
PARKING STANDARDS

PARKING ANGLE 90°
(TWO WAY OPERATION ONLY)

PARKING ANGLE 60°
(ONE WAY OPERATION ONLY)

PARKING ANGLE 45°
(ONE WAY OPERATION ONLY)

NOTES:
1. PAVEMENT MARKINGS SHALL BE 4" WHITE PAINT.
2. ALTERNATIVE PARKING ANGLES, AISLE WIDTHS, AND OPERATION (TWO-WAY ANGLED PARKING OR REVERSE-ANGLE PARKING) WILL BE CONSIDERED ON A CASE-BY-CASE BASIS.
SIDEWALK ADJACENT TO HEAD-IN OR BACK-IN PARKING SHALL BE AT LEAST 7 FEET WIDE.

PARKING ON ONE SIDE OF A SIDEWALK

CONCRETE SIDEWALK

PARKING SPACE (TYP.)

6" HIGH CURB (GUTTER NOT SHOWN)

7' (MIN)

SIDEWALK BETWEEN TWO ROWS OF HEAD-IN OR BACK-IN PARKING SHALL BE AT LEAST 9 FEET WIDE.

PARKING ON BOTH SIDES OF A SIDEWALK

CONCRETE SIDEWALK

PARKING SPACE (TYP.)

6" HIGH CURB (GUTTER NOT SHOWN)

9' (MIN)

NOTES:
1. A 2-FOOT-WIDE PLANTING STRIP LOCATED AT THE BACK OF CURB CAN BE USED IN LIEU OF 2 FEET OF SIDEWALK WIDTH.
2. PARKING AT ANY ANGLE OTHER THAN PARALLEL SHALL BE SUBJECT TO THIS STANDARD.
3. IF MONOLITHIC CURB & SIDEWALK IS USED, ADD 6" TO ALL DIMENSIONS (1" IF PARKING ON BOTH SIDES).
4. WHEELSTOPS SHALL ONLY BE USED IN LIEU OF 2 FEET OF SIDEWALK WITH THE APPROVAL OF THE COUNTY AND WHEN EXISTING CONDITIONS PREVENT CONSTRUCTION OF A 7-FOOT/9-FOOT SIDEWALK. WHEELSTOPS SHALL BE 6" HIGH, MADE OUT OF 3600-PSI REINFORCED CONCRETE, AND ANCHORED WITH #5 OR GREATER REBAR (2' MINIMUM LENGTH). REBAR HOLES SHALL BE GROUTED UPON INSTALLATION. WHEELSTOPS SHALL BE PLACED AT 2 FEET FROM THE EDGE OF SIDEWALK OR OBSTRUCTION.
PARALLEL PARKING STANDARDS

NOTES:

1. REVERSE CURVES/CHAMFERS NOT NECESSARY IF ADEQUATE DRAINAGE CAN BE PROVIDED THAT WILL ENSURE THAT SEDIMENT, WATER, DEBRIS, ETC., DOES NOT COLLECT IN 90-DEGREE CORNERS.

2. PARALLEL ACCESSIBLE SPACES AND LOADING ZONES TO BE REVIEWED ON A CASE-BY-CASE BASIS.

3. FOR PARKING BAYS THAT ARE 8 FEET IN WIDTH OR GREATER, THE PAVEMENT MARKINGS SHALL BE SET AT ONE (1) FOOT LESS THAN THE STALL WIDTH.

4. GREATER SEPARATION FROM INTERVENING STREETS THAN THE DISTANCES PROVIDED IN THE MATRIX MAY BE REQUIRED AT THE COUNTY'S DISCRETION.

5. POSITIVE DRAINAGE SHALL BE PROVIDED EITHER BY INSTALLATION OF APPROPRIATE DRAINAGE STRUCTURES OR SLOPE PARKING AREA TO STREET FLOW LINE. SLOPING PARKING AREA TO STREET FLOW LINE ONLY PERMITTED IF ROAD GRADE IS GREATER THAN 2%.

6. IF A BIKE LANE IS REQUIRED ADJACENT TO PARALLEL PARKING, THE MINIMUM WIDTH OF BIKE LANE IS 6'.
**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**

<table>
<thead>
<tr>
<th>Area in Acreage</th>
<th>Easement Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–45 ac.</td>
<td>20'</td>
</tr>
<tr>
<td>45–120 ac.</td>
<td>30'</td>
</tr>
<tr>
<td>120–500 ac.</td>
<td>40'</td>
</tr>
<tr>
<td>500 ac.+</td>
<td>see note</td>
</tr>
</tbody>
</table>

**Easement Requirements for Storm Drain Pipe**

<table>
<thead>
<tr>
<th>Pipe Size</th>
<th>Easement Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>15&quot;</td>
<td>15'</td>
</tr>
<tr>
<td>18&quot;</td>
<td>15'</td>
</tr>
<tr>
<td>24&quot;</td>
<td>15'</td>
</tr>
<tr>
<td>30&quot;</td>
<td>20'</td>
</tr>
<tr>
<td>36&quot;</td>
<td>20'</td>
</tr>
<tr>
<td>42&quot;</td>
<td>25'</td>
</tr>
<tr>
<td>48&quot;</td>
<td>25'</td>
</tr>
<tr>
<td>54&quot;+</td>
<td>30'MIN (VARIES)</td>
</tr>
</tbody>
</table>
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 tampers 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.
STRUCTURE STEPS

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

PSI-PF MANHOLE STEP BY M.A.
INDUSTRIES, INC.

1/2" DIA. GRADE 60 STEEL
REINFORCEMENT

SECTION " A - A "

SIDE ELEVATION

PLAN VIEW

FRONT ELEVATION
**STANDARD CONCRETE BLOCK OR BRICK CATCH BASIN**

---

**REGULAR TYPE (4'X4')**

- Standard steps 16" O.C.
- Reinforced concrete slab
- Alternate laying direction every third course
- Frame, grate & hood type 1, see detail
- Slab detail

---

**DEEP TYPE (5'X5')**

- Standard steps 16" on center
- Reinforced concrete slab
- Alternate laying direction every third course
- Frame, grate & hood type 1, see detail
- Slab detail

---

**NOTES:**

- * 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.

---

**DETAIL No.**

SD4

**SHEET 1 OF 1**
GENERAL NOTES:
1. CONSTRUCT TWO SINGLE BASINS WITH DOUBLE INTERIOR WALL.
2. ALL CONCRETE TO BE 3600 P.S.I COMPRRESSIVE 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 SHOWING TYPES OF GRATES TO BE USED ACCORDING TO WATER FLOW

TYPE "G"

WATER FLOW  SAG  WATER FLOW

TYPE "E"

WATER FLOW  SAG  WATER FLOW

TYPE "F"

RAISING FLOWS ARROW 1/16"

1-1/2"

1-3/4"

1-1/2"

2' 11-3/4"

1-1/2"

1-3/4"

1-1/2"

1/8" R

1/8" R

1-1/2"

1-1/2"

1-3/4"

1-1/2"

SECTION A-A

TYPE - F

SECTION B-B

SECTION A-A

TYPE - E

TYPE - G

TYPE 1 CATCH BASIN GRATE TYPES
DETAIL No.

EFFECTIVE DATE
11/26/2016

TYPE 1 CATCH BASIN HOOD & GRATE

SD8
SHEET 1 OF 1
DETAIL OF COVER

PLAN

ISOMETRIC VIEW

PLAN

SIDE

FRONT

TYPE 9 CATCH BASIN

No. 4 Rebar

3'-4" FOR BRICK (MINIMUM)

1'-0" FOR CONCRETE (MINIMUM)

4'-0"

4'-0"

5'-10"

5'-10"

2'-4"

4'-4"

1'-0"

1'-0"

2'

SOFIT

VARIABLE

VARIABLE

INLET

OUTLET

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

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

"FLOW"

"FLOW"

SUMTER MACHINERY CO.
MANHOLE FRAME & COVER
(MH-511 & MC-513) FOR PEDESTRIAN OUTSIDE OF TRAFFIC AREAS.

SUMTER MACHINERY CO.
MANHOLE FRAME & COVER
(MH-9 & MC-12) FOR PEDESTRIAN INSIDE OF TRAFFIC AREAS.
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 W.

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.


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. 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.
STANDARD BRICK DROP INLET

**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.

**SECTION VIEW**
- MORTAR BED
- CORBEL BRICK 1” PER COURSE FOR SIX COURSES
- CONCRETE 3000 P.S.I.
- PIPE 5:1 MAX.
- SIX COURSES 6” MIN.

**PLAN VIEW**
- 8” 4” 35” MINIMUM
- 8” 4” 35” MINIMUM
- PIPE
- GROUT

**SEE STANDARD DETAIL FOR FRAME & GRATE**
**SEE NOTE 5 FOR ORIENTATION OF GRATE**
DETAIL No.

EFFECTIVE DATE
11/26/2016

FRAME & GRATE FOR DROP INLETS

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

OWN. BY: A.M. DATE:04/10/91
CHK. BY: DWG. NO: A2495
STANDARD PRECAST CONCRETE JUNCTION BOX

**STANDARD TYPE**
(UP TO 20 FEET IN DEPTH)

- Non-Shrink Grout
- See detail for ring and cover
- Standard steps 16" on center
- Top designed for HS-20 loading may be flat or eccentric cone
- 48" I.D. minimum
- Plastic cement putty or butyl rubber joints
- Brick and mortar invert
- Minimum 6" thick washed stone bedding

FLAT TOP DETAIL

**DEEP TYPE**
(OVER 20 FEET IN DEPTH)

- Non-Shrink Grout
- See detail for ring and cover
- Top designed for HS-20 loading may be flat or eccentric cone
- 60" I.D. minimum
- Plastic cement putty or butyl rubber joints
- Brick and mortar invert
- Minimum 6" thick washed stone bedding

FLAT TOP DETAIL

**EFFECTIVE DATE**
11/26/2016

**DETAIL No.**
SD13

**SHEET 1 OF 1**

Lancaster County
South Carolina

**EFFECTIVE DATE**
11/26/2016

**REVISIONS:**

- Standard steps 16" on center
- Top designed for HS-20 loading may be flat or eccentric cone
- 48" I.D. minimum
- Plastic cement putty or butyl rubber joints
- Brick and mortar invert
- Minimum 6" thick washed stone bedding

FLAT TOP DETAIL

**EFFECTIVE DATE**
11/26/2016

**REVISIONS:**

- Standard steps 16" on center
- Top designed for HS-20 loading may be flat or eccentric cone
- 60" I.D. minimum
- Plastic cement putty or butyl rubber joints
- Brick and mortar invert
- Minimum 6" thick washed stone bedding

FLAT TOP DETAIL
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.
RING AND COVER FOR STORM SYSTEM

Lancaster County
South Carolina

EFFECTIVE DATE 11/26/2016

DETAIL No. SD15
SHEET 1 OF 1
**TABLE OF DIMENSIONS**

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**GENERAL NOTES:**

1. REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF REINFORCED CONCRETE PIPE OR LIKE DIAMETER PER AASHTO M170, TABLE 2, WALL B.
2. ALL CONCRETE TO BE 3600 P.S.I COMPRESSION 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 SC DOT MAINTAINED RIGHT OF WAY.
GROOVE END ON OUTLET END SECTIONS
SPIGOT END ON INLET END SECTIONS

PLAN

SECTION X-X

END SECTION DIMENSIONS

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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.

BEVELED END SECTION