NOTES:
1. ALL MANHOLE FRAMES AND COVERS SHALL BE EAST JORDAN IRON WORKS, INC. WATERTIGHT MANHOLE FRAME (NON-ROCKING), WATERTIGHT COVER MODEL #1040AGSS AND BOLT-DOWN MANHOLE COVER MODEL #1040ALCR, OR APPROVED EQUAL. BOLT-DOWN MODEL TO BE USED IN AREAS SUBJECTED TO FLOODING OR AS DIRECTED BY THE AUTHORITY.
2. STEPS TO BE VERTICALLY ALIGNED.
3. THE FRAME AND COVER SHALL BE PROPERLY ALIGNED WITH THE 2 ROOT GRAINING OF THE MANHOLE STRUCTURE AND BOLTED IN PLACE.
4. FLAT TOP MANHOLES MAY ONLY BE SUBSTITUTED WITH THE PERMISSION OF THE UTILITY DIRECTOR. WHEN USED, THE ECCENTRIC OPENING MUST LINE UP WITH THE STEPS.
5. SAMPLING MANHOLES IN TRAFFIC AREAS SHALL BE CONSTRUCTED AS FOR MANHOLE DETAILS.
6. FLEXIBLE JOINT MANHOLE CONNECTION SHALL BE AS MANUFACTURED BY PRESS-SEAL GASKET CORPORATION OR EQUAL.
7. GROUT ANNULAR SPACE BETWEEN PIPE AND PRECAST MANHOLE ON INSIDE OF MANHOLE.

INVERTS WILL BE THE SAME SIZE AS THE PIPE AND BE FORMED AND FLOWED AND TESTING EQUIPMENT.

STAINLESS STEEL BAND
FLEXIBLE BOOT
4.0'
FLEXIBLE BOOT
STAINLESS STEEL BAND
SECTION A-A

8" 2.00' 8"
3/4" THREADED RODS
GRADE RING IF NECESSARY
BUTYL MASTIC JOINT SEALER (NO MORTAR BETWEEN SEC AND G.I. TOP AND BETWEEN GRADE RINGS
1.00' MAX.
4"MIN.
BUTYL MASTIC JOINT SEALER OR GASKETS MEETING ASTM C443 AND ASTM C1244 TESTING STANDARD (NO MORTAR)
VARIES
STEP SHALL BE ALIGNED VERTICALLY
VARIES
4.00'
A
1.33' MAX
A
VARIES
MINIMUM SLOPE SERVICE CONNECTION FOR 6"=1/4" PER 1 ft 8"=1/8" PER 1
SLOPE 1" PER 1'
SLOPE 1" PER 1'
VARIES
STAINLESS STEEL BAND
FLEXIBLE BOOT
4.00'
SERVICE CONNECTION
4.00'
8" MIN.
8" MIN. STONE BASE #57 OR EQUIVALENT
CONCENTRIC MANHOLE WITH PRECAST INVERT

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS		
REVISION DATE: 07/01/04, 03/01/06	1 C7 C12 — 4' STANDARD MANHOLE FOR PIPE 15" OR SMALLER	S-01

B
B
PLAN
A
A
SLP TO DRAIN TO INV OF OUTLET PIPE
TRANSITION BET PIPE DIA'S WHEN DIFFERENT SIZES OF PIPE ARE ENCOUNTERED
SHAPE TO CONTOUR OF PIPE
SHAPE TO EL OF MID-POINT OF LARGEST PIPE
SLP TO DRAIN TO INV OF OUTLET PIPE
SECTION B-B METHOD OF TREATMENT IN MANHOLES
SECTION A-A METHOD OF TREATMENT IN DROP INLETS

NOTES:
1. SURFACES SHALL BE LEFT SMOOTH BY HAND TROWELING. COARSE AGGR SHALL NOT REMAIN EXPOSED.
2. DET'S OF INV SHAPING AS SHOWN HEREON ARE FOR EXAMPLE PURPOSES ONLY. EACH MH OR DI SHALL BE SHAPED INDIVIDUALLY TO FIT THE PARTICULAR INLET AND OUTLET CONFIGURATION AND FLOW LINES.

2 C16 C12 METHOD OF SHAPING MANHOLE AND INLET INVERTS NO SCALE

24"X24" FRAME & GRATE
3 C7 C13
PROPOSED GROUND ELEV. 1143.0
2'-6"
2'-0"
4' DIA PRECAST CONCRETE MANHOLE
8" HEAVY WALL PVC OUTLET PIPE
ELEV. 1136.0
18" RCP INLET PIPE
4"
4" 22" 4"
SIDE VIEW
2'-6"
2'-0"
ELEV. 1143.0
8" SCH 80 HEAVY WALL PVC OUTLET PIPE
18" RCP
FRONT VIEW

3 C7 C12 PRECAST STORMWATER MANAGEMENT DRAINAGE OUTLET (STRUCTURE 1.0(B)) NO SCALE

9'-0"
VARIES
7'-6"R TYP.
PARKING STALL
4" WIDE WHITE STRIPE, TYP
PARKING STALL
36'-0"
2'-0" SPA
4" WIDE YELLOW STRIP
1'-0"
6" WIDE YELLOW STRIPE
STRIPING PATTERN FOR ISLAND

4 C5 C12 PAVEMENT MARKING DETAILS

FOR DETAILS, DIMENSIONS, AND REINF STEEL ABOVE THIS LINE SEE STD DET FOR DI-3
1'-10"
D
A
#4@ 8 OC EF
A
OPTIONAL CJ
8"
#5@12 EW EF
8"
3'-10"
2'-6"
8"
8" 2'-8" 8"
4'-0"
SECTION A-A
8"
2"
#5@12 EW EF
VERTICAL SECTION
NOTE:
THIS ITEM MAY BE CAST IN PLACE OR PRECAST

8 C12 C12 STANDARD CURB INLET VDOT DI-3 DEPTH 8' TO 20' NO SCALE

2'-6"
DI-3A
L
FLOW
DI-3B
L
FLOW FLOW
DI-3C

8 C12 C12 AS REQUIRED
BARS C
BARS G
3-#5X3'-2"
5 1/2"
9 C12 C12
8"
9" 12"
8"
3"D WEEP HOLE
7 1/4"
1'-4" TYP.
D MIN. (DIA+24")
8"
MH STEPS REQD WHEN D DIM EXCEEDS 4' SEE STD SET
8" 2'-8" 8"
SECTION A-A

PAVEMENT
THROAT DET WHERE GUTTER NOT INDICATED

REINF BAR SCHEDULE - ALL #5				
BARS	LENGTH EA BAR	NO. PER INLET TYPE 3A	3B	3C
C	5'-7"	1	3	5
F	1'-6"	–	3	6
G	1'-0"	6	4	2

L2 1/2X2 1/2X1/4 GALV
1/2"X4" WELDED STUDS @ 2' C TO C
NOSE DETAIL

10 C7 C12 STANDARD CURB INLET VDOT DI-3 MAX DEPTH 8' NO SCALE

6'-0"
40"
3000 P.S.I. CONCRETE
18"
6" CLR.
4 X 4 TREATED POST
2 X 4 TREATED STRINGER
1 X 6 TREATED SLAT
15'-0"
7'-6"
7'-6"
15'-0"
7'-6"
7'-6"
HEAVY DUTY HINGES
BOARD-ON-BOARD GATE WITH LATCH

11 C7 C12 BOARD ON BOARD TRANSFORMER SCREEN

BARS C
3'-10"
INLET FR & COVER SEE STD DET
#5@6
BARS F
5-#5
BARS G
CURB
3-#5X3'-2"
WARPED GUTTER
PEJ FILLER
8" R
PLAN
8"
LENGTH(L) - SEE SITE PLAN
8"
2'-0"
2'-6"
A
NOSE-SEE DET
3'-0"
B
2"
2"
B
BARS G
BARS F
B
4-#5
3"D WEEP HOLE W/12" SQ 1/4" MESH HDW CLOTH
A
FRONT ELEVATION (GUTTER REMOVED)
BARS F
6" 6" 6"
#5@6
8" 8" 8"
APPROACH GUTTER
WARPED GUTTER
8"
1'-11" TO 2'-2"
NOTE:
THIS UNIT MAY BE CAST IN PLACE OR PRECAST.
4-#5
#5@6
8" 1'-8" 8"
SECTION B-B

9 C12 C12 CURB DROP INLET DI-3 MAX. DEPTH(D) 8'

6" WIDE YELLOW STRIPE OR FACE OF CURB
18'-0"
4" WIDE WHITE STRIPE, TYP
9'-0"
STRIPING PATTERN FOR SINGLE PARKING STALL

LINE OF CURB
2'-6"
7 1/2"
CTR SYMBOL BET PARKING STRIPES
6" DIA.
6"
3"
6" TYP
1'-6"
3'-6"
3"
1'-0" R
3'-0"
4 1/2"
6 C5 C12 HANDICAPPED SYMBOL

45°
2'-6"
ACCESSIBLE SIGN (TYP)
18'-0"
PRECAST CONC WHEEL STOP
1'-0" SPA.
4" WIDE WHITE STRIPE
4" WIDE WHITE STRIPE, TYP
1'-0"
13'-0"
5'-0"
13'-0"
* 8'-0" REQD. FOR VAN ACCESSIBLE SPACE
TYPICAL ACCESSIBLE PARKING SPACES

5 C5 C12 PAVEMENT MARKING DETAILS

SET POSTS IN SLEEVES & CAULK W/ NON-SHRINK GROUT (TYP)
3"
W (SEE PLANS)
6"
2-#5 CONT IN EA SIDEWALL
5"
2"
6"
5"
CROSS SECTION

1 1/4" X 1 1/4" SQ OR 2" DIA AL HANDRAIL. RAILS @ 16" & 36" ABV TREAD SURF. MAX HORIZ POST SPA - 6' OC.
L (SEE PLANS)
SAFETY NOSING ON TREADS AS SPECIFIED
L (SEE PLANS)
EJ W/ 3/8" JT FILLER
CONC WALK
12"
1'-0"
12"
2-#5 CONT IN EA SIDEWALL
H (SEE PLANS)
2"
12"
1"
5"
#3 TYP EA RISER
6"
1'-0"
#4 @10 EW
NOTE:
FOR WIDTH GREATER THAN 8 FEET PROVIDE CENTER HANDRAIL
EJ W/ 3/8" JT FILLER
1'-0"
LONGITUDINAL SECTION

11 C6 C12 TYPICAL CONCRETE STAIRS

1½" R
¾"
¾"
RESERVED PARKING
4½"
4½"
4½"
3"
3"
18"
VAN ACCESSIBLE
4½"
1" LETTERING (SEE NOTE 1)
PENALTY $100-$500 FINE TOW-AWAY ZONE
7½"
1" LETTERING (SEE NOTE 2)
GALVANIZED U-CHANNEL STEEL POST, ASTM A499, GRADE 60, MIN. 3 LBS/FT
60"-72" ABOVE FINISH GRADE
24"
8" MIN.

NOTES:
1) FOR SPACE DESIGNATED ON PLAN AS VAN ACCESSIBLE, PROVIDE "VAN ACCESSIBLE" SIGN WITH MINIMUM 1-INCH HIGH LETTERING MOUNTED DIRECTLY BELOW "RESERVED PARKING" SIGN.

2) PROVIDE " PENALTY $100-$500 FINE TOW-AWAY ZONE" SIGN WITH 1-INCH HIGH LETTERING DIRECTLY BELOW "RESERVED PARKING" OR "VAN ACCESSIBLE" SIGN.

3) SIGNS SHALL BE MOUNTED ON A POST OR ATTACHED TO BUILDING DIRECTLY IN FRONT OF PARKING SPACE. MOUNT NO LOWER THAN 4-FEET NOR HIGHER THAN 7-FEET FROM THE PARKING SURFACE TO BASE OF THE LOWEST SIGN.

COLORS:
BORDER - BLUE OR GREEN
TEXT - BLUE OR GREEN
SYMBOL - WHITE ON BLUE
SYMBOL BACKGROUND
SIGN BACKGROUND - WHITE

7 C5 C12 ADA PARKING SIGN NO SCALE

6" CONCRETE
#4 @ 12" EW
3 1/2"
2'-6" MIN.
2-#5
4" POROUS FILL, 213
1'-0"
COMPACTED SUBGRADE

12 C7 C12 TYPICAL TRANSFORMER PAD

WATER AND SEWER NOTES

1. EXISTING UTILITIES ACROSS OR ALONG THE LINE OF THE PROPOSED WORK ARE SHOWN ONLY IN AN APPROXIMATE LOCATION ON THE PLANS. CONTRACTOR SHALL, ON HIS OWN INITIATIVE AND AT NO ADDITIONAL COST, LOCATE ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. CONTRACTOR SHALL CALL MISS UTILITY AT 1-800-552-7001 PRIOR TO CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND LINES OR STRUCTURES.
2. NO STRUCTURES OR PLANTING OF TREES SHALL BE PERMITTED WITHIN 5' OF UTILITIES.
3. FINAL ACCEPTANCE SHALL NOT BE MADE UNTIL ALL WORK SHOWN ON APPROVED UTILITY PLANS IS COMPLETED INCLUDING PAVING, GRADING, AND ALL REQUIRED ADJUSTMENTS.
4. CONTRACTOR WILL INSPECT ALL WATER AND SANITARY SEWER MAINS, CONNECTIONS, AND APPURTENANCES THERETO, AS SHOWN ON THE APPROVED UTILITY PLANS.
5. CONTRACTOR SHALL COORDINATE ALL INSPECTIONS BY ROANOKE COUNTY BUILDING INSPECTIONS AND WVWA.
6. CONTRACTOR SHALL INSTALL WATER UTILITIES USING NATIVE SOIL MATERIAL FREE OF ROCK OR GRAVEL LARGER THAN 2 INCHES IN ANY DIMENSION AND FREE OF DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION, AND OTHER DELETERIOUS MATTER.

APPROVED:

COUNTY ENGINEER DATE

COUNTY PLANNER DATE

KEYPLAN

Draper Aden Associates
Engineering • Surveying • Environmental Services
2206 South Main Street, Blacksburg, VA 24060, 540-552-0444 Fax: 540-552-0291
Richmond, VA, Charlottesville, VA, Hampton Roads, VA

COMMONWEALTH OF VIRGINIA
STEVEN P. SOUPIR
No. 037043
5/14/06
PROFESSIONAL ENGINEER

PROJECT TITLE

COX COMMUNICATIONS RENOVATIONS AND ADDITIONS

COX COMMUNICATIONS
ROANOKE COUNTY, VIRGINIA

SFCS Architecture Engineering Planning Interiors
SFCS Inc. • 305 South Jefferson Street
Roanoke, Virginia 24011.2003
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www.sfcs.com

PROJECT DESIGNER	:
PROJECT ARCHITECT	:
PROJECT ENGINEER	: STEVEN P. SOUPIR, P.E.
DESIGNED BY	: SPS
DRAWN BY	: SPS
CHECKED BY	: CAH

NO.	REVISION DESCRIPTION	DATE
	CONSTRUCTION DRAWING SUBMITTAL	3/14/06
	COUNTY COMMENT REVISIONS	4/06/06
	COUNTY COMMENT REVISIONS	5/01/06

DRAWING TITLE
DETAILS

COMM. NO.	DATE
5515.00	MARCH 14, 2006
DRAWING C12	SHEET 13 OF 19

MENU

CADD VERSION 2005
PLOT SCALE
PLOT DATE May 02, 2006
COMM NO.
DRAWING NO. C12

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