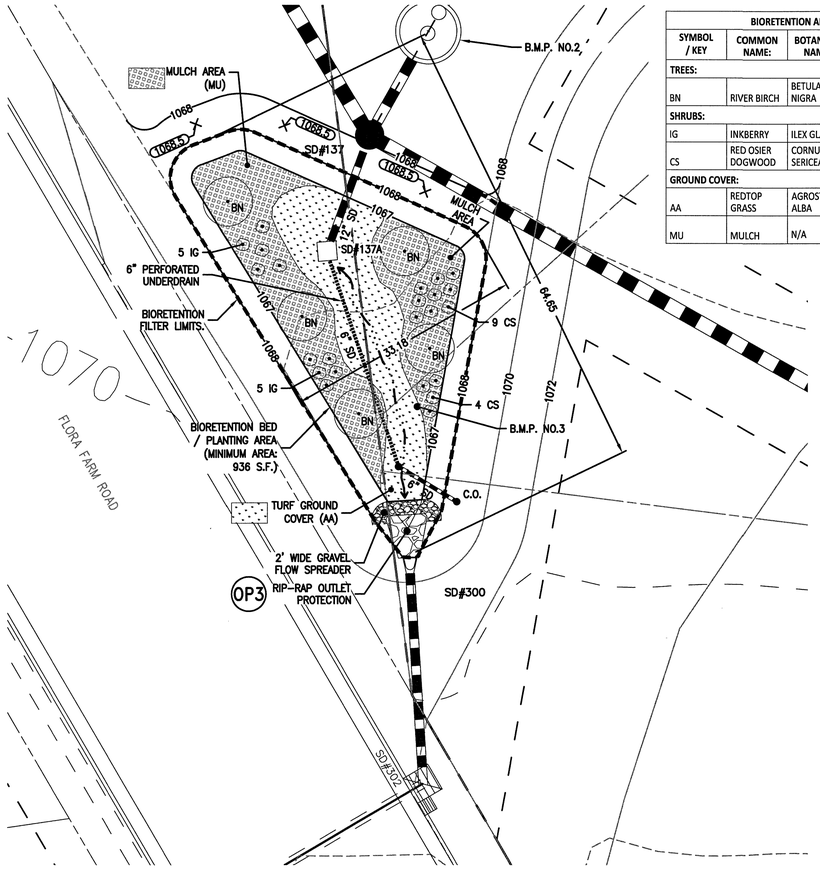
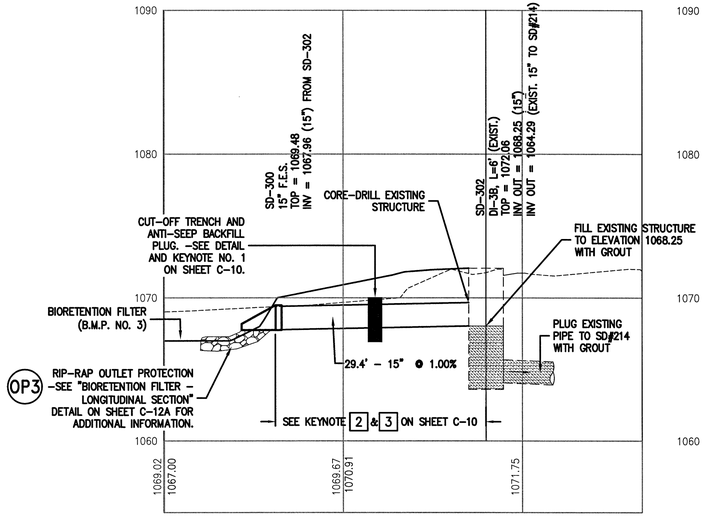


ENLARGED PLAN VIEW SHOWING BMP NO. 3

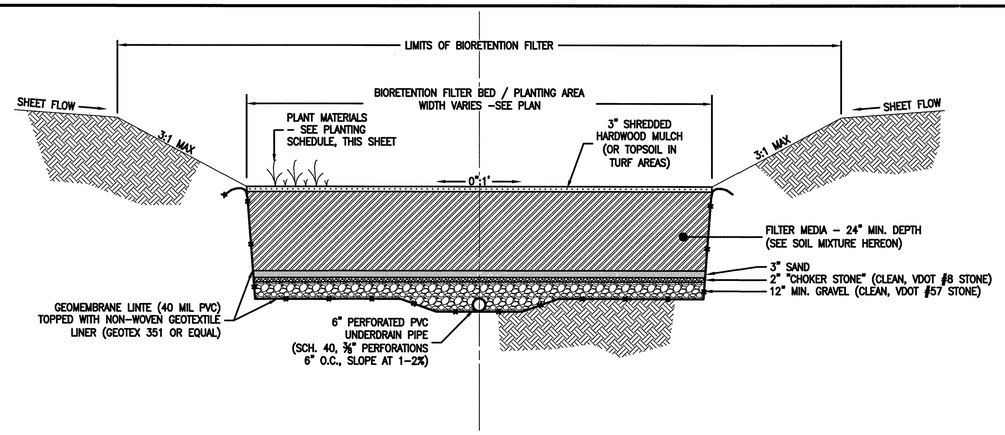
SCALE: 1"= 10'

BIORETENTION AREA PLANTING PLAN SCHEDULE					
SYMBOL / KEY	COMMON NAME:	BOTANICAL NAME:	SIZE	SPACING:	QUANTITY SHOWN
TREES:					
BN	RIVER BIRCH	BETULA NIGRA	1-INCH CAL.	15-FEET	5 EA
SHRUBS:					
IG	INKBERRY	ILEX GLABRA	24-INCH	3 - 4 FEET	10 EA
CS	RED OSIER DOGWOOD	CORNUS SERICEA	24-INCH	3 - 4 FEET	15 EA
GROUND COVER:					
AA	REDTOP GRASS	AGROSTIS ALBA	SOD	N/A	374 SF
MU	MULCH	N/A	3-INCH DEPTH	N/A	564 SF



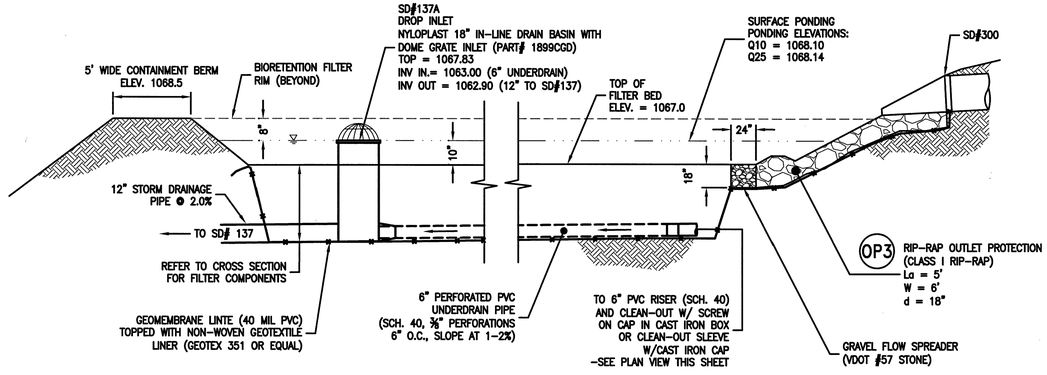
EXIST. SD#302 TO SD#300 PROFILE

SCALE: 1" = 10' HORIZONTAL
1" = 5' VERTICAL



BIO-RETENTION FILTER - TYPICAL CROSS SECTION

NO SCALE



BMP NO. 3 BIO-RETENTION FILTER - LONGITUDINAL SECTION

NO SCALE

BIORETENTION SYSTEM SEQUENCE OF CONSTRUCTION:

GENERAL: THIS SEQUENCE IS A GENERAL OUTLINE AND IS NOT INTENDED TO SPECIFY EACH AND EVERY STEP IN THE PROCESS OF CONSTRUCTION THE BIORETENTION SYSTEM. IN GENERAL EXCAVATION OF THE FILTER MAY BE SCHEDULED WITH THE ROUGH GRADING OF THE PROJECT TO PERMIT USE OF THE EXCAVATED MATERIAL AS FILL ELSEWHERE ON THE SITE; HOWEVER, THE BIORETENTION FILTER MUST NOT BE CONSTRUCTED OR PLACED IN SERVICE UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED. THE LOCATIONS OF INFILTRATION BIORETENTION FILTER MUST NOT BE USED FOR SEDIMENT BASINS FOR EROSION AND SEDIMENT PROTECTION DURING SITE CONSTRUCTION.

THE SEQUENCE OF CONSTRUCTION SHALL GENERALLY BE AS FOLLOWS:

1. INSTALL EROSION AND SEDIMENT CONTROL MEASURES FOR THE SITE. REFER TO EROSION & SEDIMENT CONTROL PLANS AND REFER TO THE E&SC NARRATIVE / SEQUENCE.
2. WHEN GRADING WORK ADJACENT TO THE FILTERS HAS PROGRESSED TO GENERALLY SUBGRADE ELEVATION, ROUGH GRADE FILTER AREA TO ELEVATIONS SHOWN ON PLAN. INITIALLY, THE FILTER MAY BE EXCAVATED TO WITHIN ONE FOOT OF ITS FINAL BOTTOM ELEVATION. EXCAVATION TO FINISHED GRADE SHALL BE DEFERRED UNTIL ALL DISTURBED AREAS WITHIN THE CONTRIBUTING WATERSHED HAVE BEEN STABILIZED AND PROTECTED. CONSTRUCT DROP INLET AS SPECIFIED ON THE PLAN. DROP INLET SHALL BE BLOCKED OR OTHER MEASURES TAKEN TO PROHIBIT SEDIMENT-LADEN DRAINAGE FROM ENTERING THE DOWNSTREAM SYSTEM AND OTHER DOWNSTREM BMP MEASURES. PROTECT EXCAVATED FILTER AREA WITH SILT FENCE OR OTHER APPROVED CONTROL MEASURES.
3. COMPLETE CONSTRUCTION OF UPSLOPE AREAS AND STABILIZE ALL AREAS DRAINING TO THE BIORETENTION FILTER.
4. REMOVE ALL ACCUMULATED SEDIMENT AND EXCAVATE THE BIORETENTION FILTER AREA TO PROPOSED DEPTH. USE RELATIVELY LIGHT, TRACKED EQUIPMENT TO AVOID UNNECESSARY COMPACTION OF THE BASIN FLOOR. AFTER FINAL GRADING IS COMPLETED, DEEPLY TILL THE BASIN FLOOR WITH ROTARY TILLERS OR DISC HARROWS TO PROVIDE A WELL-AERATED, HIGHLY POROUS SURFACE TEXTURE.
5. INSTALL NON-POROUS LINER (GEOMEMBRANE) AND PROTECTIVE NON-WOVEN LINER, THE PIPING, DRAINS, CLEAN-OUTS, AND STONE IN ACCORDANCE IN WITH THE INFORMATION ON THIS SHEET. INSTALL WASHED GRAVEL "CHOKER STONE" LAYER ABOVE THE INFILTRATION STONE. INSTALL SAND LAYER ON TOP OF THE "CHOKER STONE". LIGHTLY COMPACT WITH A LANDSCAPING ROLLER.
6. FILL BIORETENTION FILTER AREA WITH FILTER MEDIA SOIL AND TOPSOIL.
7. INSTALL VEGETATION AND GROUND COVER SPECIFIED IN THE PLANTING PLAN FOR BIORETENTION AREA. INSTALL MULCH LAYER.
8. PERFORM MODIFICATIONS TO SD# 302 AND INSTALL SD PIPE FROM SD# 302 TO SD# 300. INSTALL OUTLET PROTECTION STONE AND GRAVEL FLOW SPREADER AT OUTLET. IMMEDIATELY STABILIZE ALL AREAS DISTURBED DURING THIS PROCESS.
9. UPON STABILIZATION OF UPSLOPE DISTURBED AREAS, REMOVE ALL SEDIMENT CONTROLS AND STABILIZE ALL DISTURBED AREAS.

BIORETENTION FILTER MEDIA/PLANTING SOIL AND TOPSOIL REQUIREMENTS:

THE BIORETENTION AREAS SHALL CONTAIN A FILTER MEDIA / PLANTING SOIL MIXTURE CONSISTING OF: 85%-88% SAND, 8%-12% SOIL FINES, 3%-5% ORGANIC MATTER IN THE FORM OF LEAF COMPOST (FULLY COMPOSTED, NOT PARTIALLY ROTTED LEAVES). THE TOTAL VOLUME OF FILTER MEDIA PROVIDED SHALL BE 110% OF THE PLAN VOLUME, TO ACCOUNT FOR SETTLING OR COMPACTION. THE MEDIA MUST BE PROCURED FROM APPROVED FILTER MEDIA VENDORS AND SHALL BE TESTED AND CERTIFICATION TO THE ABOVE GRADATION / MIXTURE.

TOP SOIL FOR TURF COVER AREAS SHALL BE A LOAMY SAND OR SANDY LOAM TEXTURE, WITH LESS THAN 5% CLAY CONTENT, PH CORRECTED TO BETWEEN 6 AND 7, AND AN ORGANIC MATTER CONTENT OF AT LEAST 2% AND SHALL BE FREE OF STONES, STUMPS, ROOTS, OR SIMILAR OBJECTS GREATER THAN ONE INCH, BRUSH, OR ANY OTHER MATERIAL OR SUBSTANCE WHICH MAY BE HARMFUL TO PLANT GROWTH, OR A HINDRANCE TO PLANT GROWTH OR MAINTENANCE. THE TOP SOIL SHALL BE FREE OF PLANTS OR PLANT PARTS OF BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, MUGWORT, NUTSEDGE, POISON IVY, CANADIAN THISTLE OR OTHERS AS SPECIFIED. IT SHALL NOT CONTAIN TOXIC SUBSTANCES HARMFUL TO PLANT GROWTH. THE TOP SOIL SHALL BE TESTED AND CERTIFIED TO MEET THE FOLLOWING CRITERIA:

- PH RANGE: 6.0 - 7.0
- ORGANIC MATTER: GREATER THAN 2%
- MAGNESIUM (MG): 100+ UNITS
- PHOSPHORUS (P2O5): 150+ UNITS
- POTASSIUM (K2O): 120+ UNITS
- SOLUBLE SALTS: FOR SOIL - NOT TO EXCEED 900 PPM, FOR ORGANIC MIX NOT TO EXCEED 3,000 PPM

THE FOLLOWING TESTING FREQUENCIES SHALL APPLY TO THE ABOVE SOIL CONSTITUENTS:

- PH, ORGANIC MATTER: 1 TEST PER 90 CUBIC YARDS, BUT NO MORE THAN 1 TEST PER BIORETENTION AREA
- MAGNESIUM, PHOSPHORUS, POTASSIUM, SOLUBLE SALTS: 1 TEST PER 500 CUBIC YARDS, BUT NO LESS THAN 1 TEST PER BORROW SOURCE
- ONE GRAIN SIZE ANALYSIS SHALL PER PERFORMED PER 90 CUBIC YARDS OF PLANTING SOIL, BUT NO LESS THAN 1 TEST PER BIORETENTION AREA.

APPROVED

COMMONWEALTH OF VIRGINIA WM. THOMAS AUSTIN No. 030907 PROFESSIONAL ENGINEER 5/11/15

Revisions		Date
1	1ST. REVIEW COMMENTS	7/17/15
2	APPROVED SET	9/4/15

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Date: 5/11/15

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THE VILLAGE AT TINKER CREEK - PHASE IIIA

DETAILS & SECTIONS

ROANOKE COUNTY, VIRGINIA

Vertical Scale:

Horizontal Scale:

Commission Number: 1966-P3

Sheet No.: C-12A