

FILE:H:\34301\ES-4\_E&S Narrative.sht

ES-15. ALL AREAS DISTURBED BY THE WORK OF THIS PROJECT SHALL BE STABILIZED BY EITHER THE CONSTRUCTION OF A PERMANENT SURFACE SUCH AS CURB, PAVEMENT, OR CONCRETE SIDEWALK, OR STABILIZED BY MEANS OF PERMANENT SEEDING (PS) OR ANOTHER APPROVED STABILIZATION METHOD.

ES-16. FOLLOWING THE COMPLETION OF SITE DEVELOPMENT CONSTRUCTION/GRADING, CONFIRMED STABILIZATION OF ALL DISTURBED AREAS, CONFIRMATION THAT EROSION OR SEDIMENTATION IS NO LONGER OCCURRING ON THE PROJECT SITE OR AT ITS BOUNDARIES, CONFIRMATION THAT DRAINAGE FLOWS ARE FUNCTIONING ACCORDING TO DESIGN, AND APPROVAL HAS BEEN GRANTED BY THE PLAN APPROVING EROSION AND SEDIMENT CONTROL INSPECTOR, THE CONTRACTOR MAY THEN BEGIN TO REMOVE THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES. THIS WORK SHALL BE DONE IN A CAREFUL, NEAT, AND ORGANIZED MANNER. IF DEWATERING IS REQUIRED, WATER SHALL BE PUMPED TO AN APPROVED FILTERING DEVICE.

ES-17. A CERTIFIED RESPONSIBLE LAND DISTURBER (RLD) SHALL OVERSEE AND BE INVOLVED IN ALL ASPECTS OF THE LAND DISTURBANCE ACTIVITIES (FROM INITIAL LAND DISTURBANCE THROUGH FINAL STABILIZATION). THE NAME OF THE RLD SHALL BE PROVIDED TO THE CITY OF ROANOKE AT OR PRIOR TO THE PRECONSTRUCTION CONFERENCE. THIS PERSON SHALL ATTEND THE PRECONSTRUCTION CONFERENCE AND PROVIDE THE CITY OF ROANOKE WITH A COPY OF HIS RLD CERTIFICATE.

ES-18. MS-16: UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:  
A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.  
B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.  
C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.  
D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.  
E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THIS CHAPTER.  
F. APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.

END OF EROSION & SEDIMENT CONTROL GENERAL NOTES (TABLE 6-1)

STORMWATER MANAGEMENT NARRATIVE AND COMPLIANCE WITH VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATION

STATEMENT OF COMPLIANCE WITH 9VAC25-870-66

THE PROJECT CONTROLS STORMWATER DISCHARGE FROM THE DEVELOPED AREAS THROUGH THE USE APPROPRIATELY DESIGNED CONVEYANCE SYSTEMS. ALL ON-SITE STORMWATER CONVEYANCE SYSTEMS (PIPES & CHANNELS) ARE DESIGNED TO CONVEY THE PEAK DISCHARGE FROM THE APPROPRIATE DESIGN STORM WITHOUT CAUSING EROSION OF THE SYSTEM AND CONFINING THE PEAK FLOW RATE WITHIN THE STORMWATER CONVEYANCE SYSTEM. THE PROJECT COMPLIES WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25-870-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS; SPECIFICALLY THE CHANNEL PROTECTION AND FLOOD PROTECTION REQUIREMENTS AS MET AS OUTLINED BELOW.

CHANNEL PROTECTION (9VAC25-870-66 B.1.A.):

REQUIREMENT: "WHEN STORMWATER FROM A DEVELOPMENT IS DISCHARGED TO A MANMADE STORMWATER CONVEYANCE SYSTEM, FOLLOWING THE LAND-DISTURBING ACTIVITY, EITHER: A. THE MANMADE STORMWATER CONVEYANCE SYSTEM SHALL CONVEY THE POST-DEVELOPMENT PEAK FLOW RATE FROM THE TWO-YEAR 24-HOUR STORM EVENT WITHOUT CAUSING EROSION OF THE SYSTEM. DETENTION OF STORMWATER OR DOWNSTREAM IMPROVEMENTS MAY BE INCORPORATED INTO THE APPROVED LAND-DISTURBING ACTIVITY TO MEET THIS CRITERION"

STATEMENT OF COMPLIANCE: THE NEW / PROPOSED CONVEYANCE SYSTEMS (PIPES, FLUME, AND CHANNELS) ARE DESIGNED TO ENSURE THE POST-DEVELOPMENT PEAK FLOW RATE FROM THE TWO-YEAR 24-HOUR STORM EVENT IS CONVEYED WITHOUT CAUSING EROSION OF THE SYSTEM. REFER TO THE PIPE SYSTEM ANALYSIS AND THE DITCH DESIGN CALCULATIONS AND SCHEDULE FOR ADDITIONAL INFORMATION. THE LIMIT OF ANALYSIS POINT IS WHERE THE CONVEYANCE SYSTEMS DISCHARGE INTO GLADE CREEK - TRIBUTARY 'A'. SEE SECTION BELOW FOR DISCUSSION OF "LIMIT OF ANALYSIS."

FLOOD PROTECTION (9VAC25-870-66 C.1.):

REQUIREMENT: "THE POINT OF DISCHARGE RELEASES STORMWATER INTO A STORMWATER CONVEYANCE SYSTEM THAT, FOLLOWING THE LAND-DISTURBING ACTIVITY, CONFINES THE POST-DEVELOPMENT PEAK FLOW RATE FROM THE 10-YEAR 24-HOUR STORM EVENT WITHIN THE STORMWATER CONVEYANCE SYSTEM. DETENTION OF STORMWATER OR DOWNSTREAM IMPROVEMENTS MAY BE INCORPORATED INTO THE APPROVED LAND-DISTURBING ACTIVITY TO MEET THIS CRITERION, AT THE DISCRETION OF THE VSMP AUTHORITY."

STATEMENT OF COMPLIANCE: THE NEW / PROPOSED CONVEYANCE SYSTEMS (PIPES, FLUMES, AND CHANNELS) ARE DESIGNED TO CONFINED THE POST-DEVELOPMENT PEAK FLOW RATE FROM THE 10-YEAR 24-HOUR STORM EVENT WITHIN THE STORMWATER CONVEYANCE SYSTEM. REFER TO THE PIPE SYSTEM ANALYSIS AND THE DITCH DESIGN CALCULATIONS AND SCHEDULE FOR ADDITIONAL INFORMATION. THE LIMIT OF ANALYSIS POINT IS WHERE THE CONVEYANCE SYSTEMS DISCHARGE INTO GLADE CREEK - TRIBUTARY 'A'. SEE SECTION BELOW FOR DISCUSSION OF "LIMIT OF ANALYSIS."

LIMIT OF ANALYSIS (9VAC25-870-66 B.4 AND C.3.):

FOR BOTH THE CASE OF CHANNEL PROTECTION AND FLOOD PROTECTION THE LIMITS OF ANALYSIS ARE DETERMINED TO THE POINT WHERE THE NEW STORM DRAINAGE SYSTEM (CHANNEL AND/OR PIPE) DISCHARGES INTO GLADE CREEK - TRIBUTARY 'A'. AT THESE POINTS OF DISCHARGE, THE TOTAL DRAINAGE AREA OF GLADE CREEK - TRIBUTARY 'A' IS DETERMINED TO BE +/- 1 SQUARE MILES (OR 640 ACRES). THIS DATA IS TAKE FROM THE FLOOD INSURANCE STUDY PREPARE BY FEMA. 1-PERCENT OF THE CONTRIBUTING WATERSHED AREA IS EQUAL TO 6.4 ACRES.

THERE ARE THREE (3) POINTS OF CONCENTRATED DISCHARGE FROM THE PROJECT SITE INTO GLADE CREEK - TRIBUTARY 'A': DITCH 'A' (WHICH COLLECTS DITCH B & D), DITCH 'D', AND THE FLUME LOCATED ON BERKLEY ROAD. THE PROJECT SITE AREAS THAT DISCHARGE AT EACH POINT OF OUTFALL ARE: DITCH 'A' = 0.47 ACRES; DITCH 'D' = 0.42 ACRES; AND FLUME = 0.19 ACRES. THESE AREAS CORRESPOND TO BETWEEN 0.03 AND 0.07-PERCENT OF THE TOTAL WATERSHED AREA AND ARE SIGNIFICANTLY LESS THAN 1-PERCENT. THEREFORE THE LIMIT OF ANALYSIS IS

DETERMINED TO BE THE POINT WHERE THE NEW CHANNELS AND FLUME DISCHARGE IN TO GLADE CREEK TRIBUTARY 'A'.

WATER QUALITY DESIGN CRITERIA REQUIREMENTS (9VAC25-870-63)

SITE TABULATIONS:

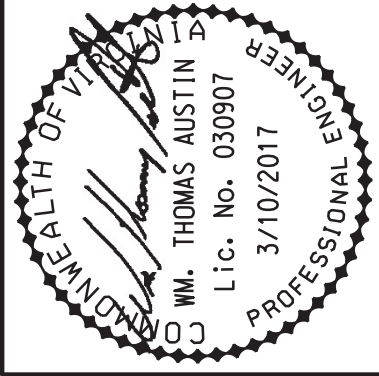
PROJECT AREA / LAND DISTURBANCE AREA = 1.359 ACRES

- PRE-DEVELOPMENT:
- FOREST/OPEN SPACE (ACRES) = 0.10
  - MANAGED TURF (ACRES) = 1.00
  - IMPERVIOUS COVER (ACRES) = 0.26

- POST-DEVELOPMENT:
- FOREST/OPEN SPACE (ACRES) = 0.00
  - MANAGED TURF (ACRES) = 0.92
  - IMPERVIOUS COVER (ACRES) = 0.44


THE TOTAL POLLUTANT LOAD (TP) REDUCTION REQUIRED FOR THE WORK OF THIS PROJECT IS 0.56 LBS/YEAR AS DETERMINED BY THE "VIRGINIA RUNOFF REDUCTION METHOD (VRRM) WORKSHEET."

THE POLLUTANT LOAD (TP) REDUCTION FOR THE WORK OF THIS PROJECT WILL BE PROVIDED THROUGH THE PURCHASE OF NUTRIENT CREDITS FROM RESOURCE ENVIRONMENTAL SOLUTIONS, LLC'S HAWKINS FOREST NUTRIENT BANK FACILITY LOCATED WITHIN THE ROANOKE RIVER WATERSHED (HUC 03010101). (VIRGINIA ADMINISTRATIVE CODE 9 VAC 25-820-10 ET SEQ.)



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City of Roanoke  
Planning, Building, & Development  
COMPREHENSIVE DEVELOPMENT PLAN

APPROVED  
by Adrian Gilbert 03/15/2018

BERKLEY ROAD OVER GLADE CREEK TRIBUTARY A

E&S GENERAL NOTES/  
SWM NARRATIVE

CITY OF ROANOKE, VIRGINIA

Vertical Scale: N/A
Horizontal Scale: N/A
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