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AND ASSOCIATES, INC.
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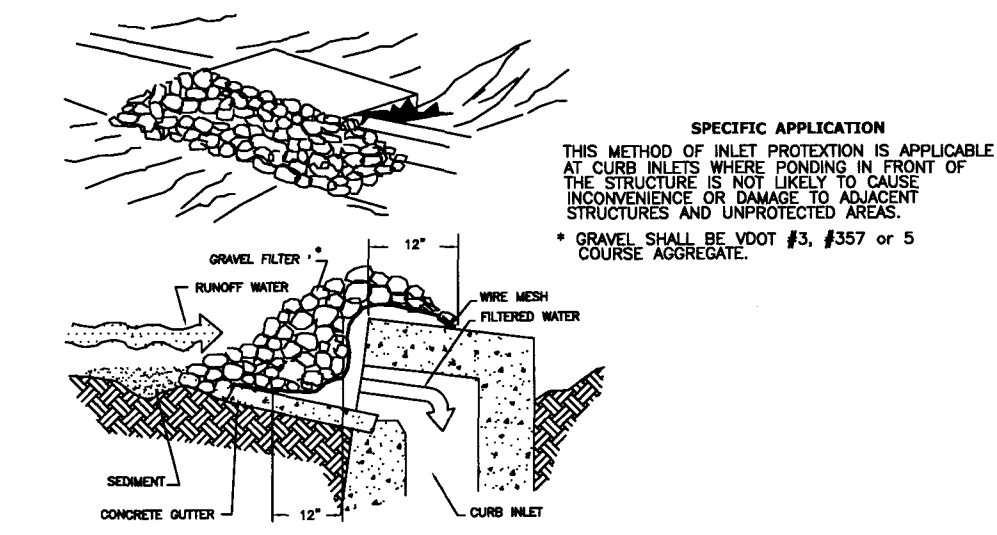
New River Valley
Richmond
Roanoke
Shenandoah Valley

RESIDENTIAL LAND DEVELOPMENT ENGINEERING
SITE DEVELOPMENT ENGINEERING
LAND USE PLANNING & ZONING
LANDSCAPE ARCHITECTURE
LAND SURVEYING
ARCHITECTURE
STRUCTURAL ENGINEERING
TRANSPORTATION ENGINEERING
ENVIRONMENTAL & SOIL SCIENCE
WETLAND DELINEATIONS & STREAM EVALUATIONS

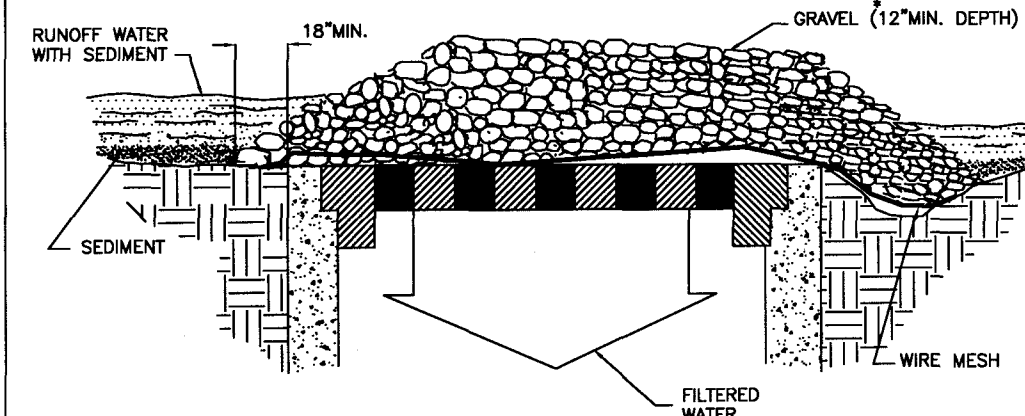
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COMMONWEALTH OF VIRGINIA
CHRISTOPHER P. BURNS
Lic. No. 047338
07/22/14
PROFESSIONAL ENGINEER

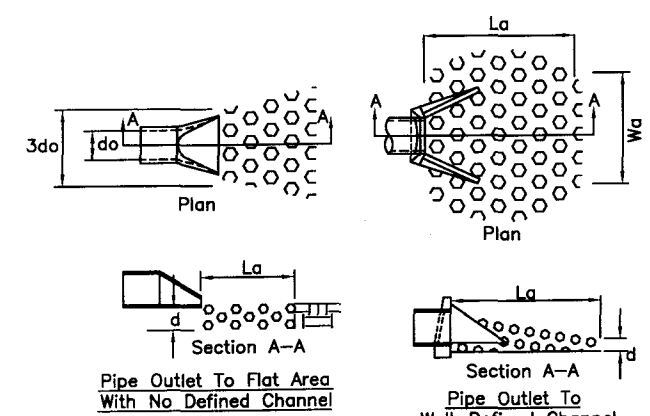
THE BRIDGES - PHASE II
E.S.C. PLAN - PHASE 2
CITY OF ROANOKE, VIRGINIA



IP GRAVEL CURB INLET SEDIMENT FILTER



IP GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER



OP OUTLET PROTECTION

NOTES:
1. Apron lining may be rip-rap, grouted rip-rap, or concrete.
2. La is the length of the rip-rap apron as calculated using plates 1.36d and 1.36e.
3. d = 1.5 times the maximum stone diameter, but not less than 6".

OUTLET PROTECTION DATA:
OUTLET PROTECTION #1 (STR. #60)
EC-1 CLASS 1 RIP RAP
LENGTH OF APRON=8' (La)
WIDTH OF APRON=12' (Wa)
MIN. STONE SIZE=6"
3Do = 6"

E&SC CONSTRUCTION SEQUENCE (PHASE2)

- CONSTRUCTION ENTRANCE #1 SHALL CONTINUE TO BE UTILIZED FOR ALL CONSTRUCTION TRAFFIC. CONSTRUCTION TRAFFIC SHALL BE ALLOWED THROUGH CONSTRUCTION ENTRANCE #2 AT SUCH TIME AS THE RAILROAD CROSSING HAS BEEN INSTALLED BY NORFOLK SOUTHERN, OPERATIONAL, AND APPROVED FOR TRAFFIC.
- INSTALL STORM SEWER IMPROVEMENTS WITH ASSOCIATED INLET PROTECTION AND CULVERT INLET PROTECTION. SITE RUNOFF SHALL BE DIRECTED TO STORM SEWER INLETS WITH POSITIVE DRAINAGE. COORDINATE TIMING WITH CITY OF ROANOKE E&S INSPECTOR. OUTLET PROTECTION SHALL BE INSTALLED WHERE APPLICABLE. ALL INLET PROTECTION SHALL BE MAINTAINED AND FUNCTIONAL THROUGHOUT THE ENTIRE CONSTRUCTION PROJECT UNTIL SUCH TIME WHERE THE SITE IS STABILIZED AND THE INLET PROTECTION HAS BEEN APPROVED FOR REMOVAL BY THE CITY OF ROANOKE INSPECTOR.
- INSTALL SANITARY SEWER AND WATERLINE IMPROVEMENTS AS SHOWN ON THE PLAN AND PROVIDE DEWATERING AS REQUIRED FOR THE CONSTRUCTION.
- ALL OTHER SITE UTILITIES SHALL BE INSTALLED AT THIS TIME INCLUDING ELECTRICAL, LIGHTING, GAS, CONDUIT, ETC.
- DISTURBED AREAS ON-SITE SHALL HAVE POSITIVE FLOWS TO AN EXISTING SEDIMENT PROTECTED INLET.
- PAVEMENT AND CURBING INSTALLATION, AND LANDSCAPING SHALL BE INSTALLED AT THIS TIME.
- PERMANENT SEEDING OR MULCHING SHALL BE APPLIED TO ALL LANDSCAPE AREAS AND AREAS NOT RECEIVING HARDSCAPE ELEMENTS.
- AFTER STABILIZATION OF ALL UPSTREAM AREAS, THE INLET PROTECTION AND SILT FENCE MAY BE REMOVED. ADDITIONAL E&S PLAN, NOTES & DETAILS WILL BE PROVIDED UNDER A SEPARATE PLAN FOR FUTURE PHASES OF THE PROJECT.
- CITY OF ROANOKE SHALL INSPECT/APPROVE REMOVAL OF REQUIRED MEASURES PRIOR TO ESC MEASURE REMOVAL.

E&SC MEASURES

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|------|---------------------------------------|-----|
| 3.02 | TEMPORARY STONE CONSTRUCTION ENTRANCE | CE |
| 3.05 | SILT FENCE | SF |
| 3.07 | INLET PROTECTION | IP |
| 3.08 | CULVERT INLET PROTECTION | CIP |
| 3.18 | OUTLET PROTECTION | OP |
| 3.31 | TEMPORARY SEEDING | TS |
| 3.32 | PERMANENT SEEDING | PS |
| 3.35 | MULCHING | MU |

DRAWN BY BTC
DESIGNED BY BTC
CHECKED BY CPB
DATE 05/21/2014
SCALE 1"=30'

REVISIONS:
7/22/2014

APPROVED
AUG 20 2014
SHEET NO.

C08
JOB NO. R1200033.02