

EROSION AND SEDIMENT CONTROL NOTES

- INLET PROTECTION IS REQUIRED FOR ALL PROPOSED INLETS. INLET PROTECTION SHALL BE INSTALLED AS SOON AS THE INLET IS IN PLACE AND SHALL REPAIR IN PLACE AND MAINTAINED UNTIL THE SITE IS STABILIZED. INLET PROTECTION HAS NOT BEEN SHOWN ON THE PLANS BUT DOES APPLY TO ALL PROPOSED INLETS. THIS INCLUDES THE OUTLET TO THE SEDIMENT TRAP AT THE ROUTE 419 ENTRANCE.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAN OUT THE EXISTING DRAINAGE DITCH ALONG ROUTE 419 AND THE EXISTING DRAINAGE CHANNELS ALONG ROUTE 220 SHOULD THEY BECOME SILTED OR BLOCKED IN ANY WAY AS A RESULT OF CONSTRUCTION OF THIS PROJECT.

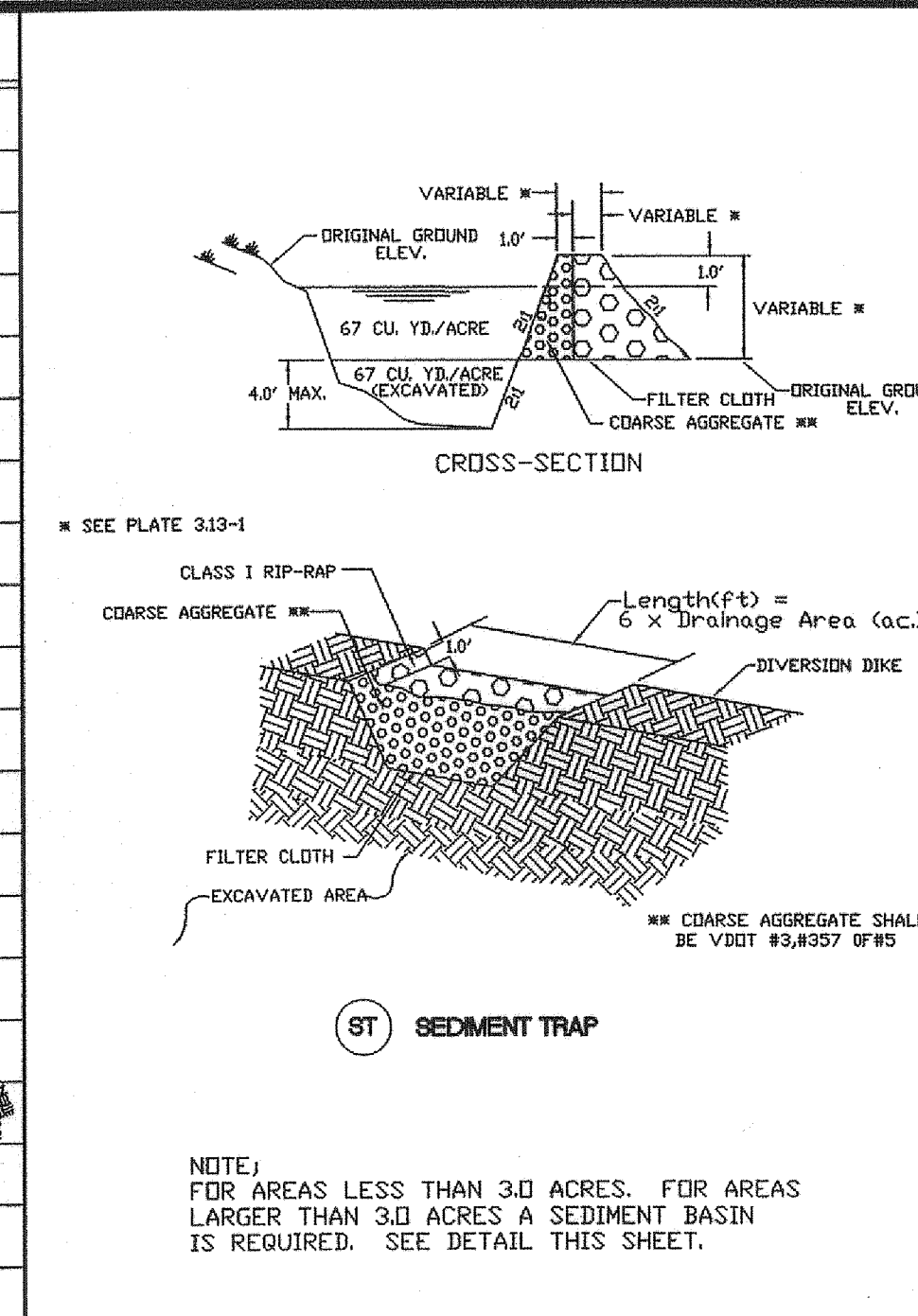
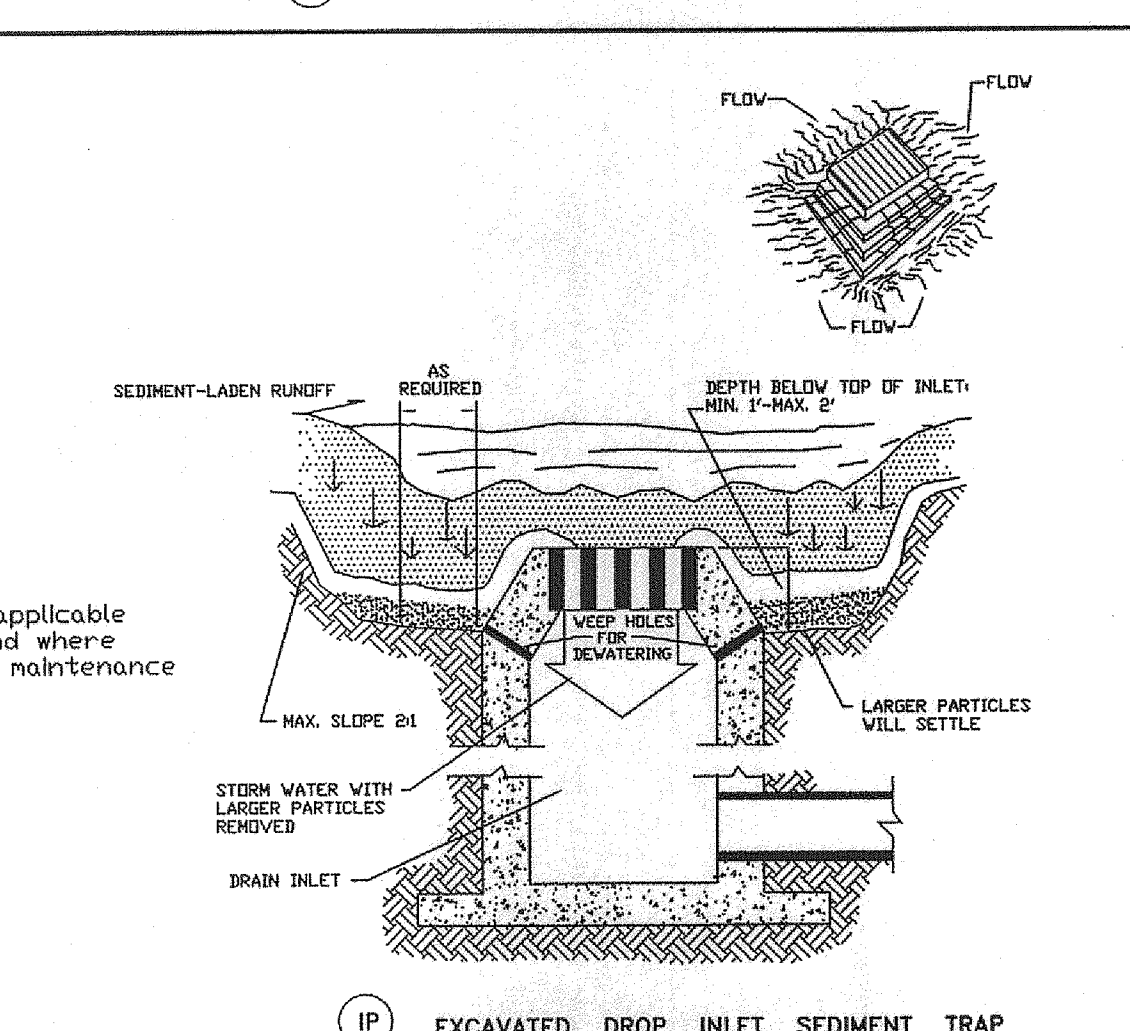
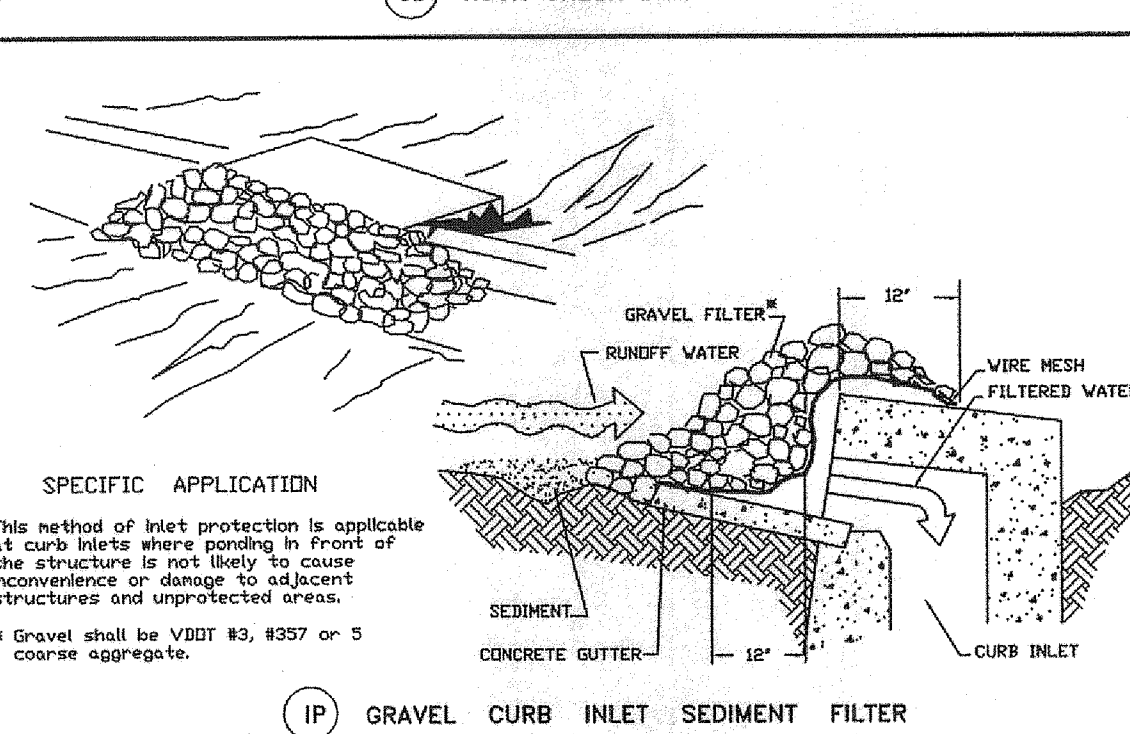
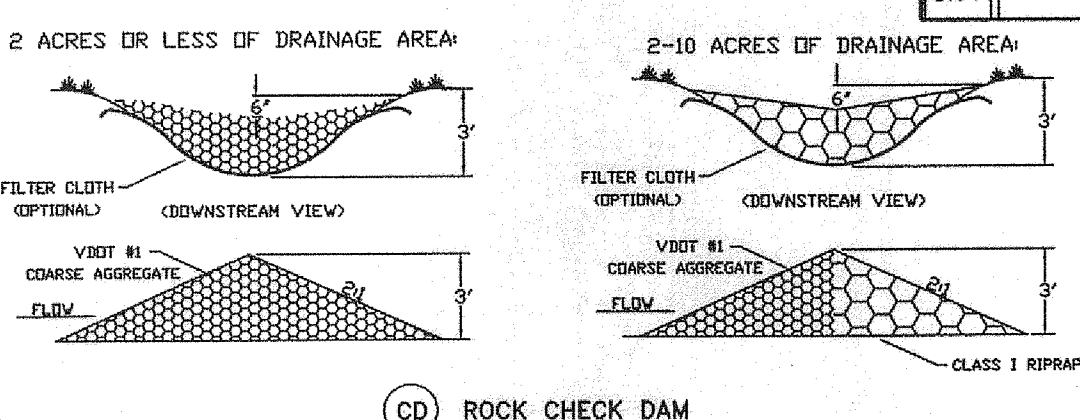
GENERAL NOTES

- DESIGN OF DETENTION BASINS SHALL CONFORM TO THE REQUIREMENTS OF THE COUNTY OF ROANOKE DESIGN STANDARDS (REF. SECTIONS 503.02, 503.03, AND 505.02). THE DESIGN OF THE FACILITY AND PREPARATION OF AS-BUILT PLANS SHALL BE BY A CERTIFIED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE COMMONWEALTH OF VIRGINIA.
- ACCESS TO THE FACILITY MUST BE PROVIDED IN ACCORDANCE WITH THE COUNTY OF ROANOKE DESIGN AND CONSTRUCTION STANDARDS FOR DETENTION PONDS, LATEST EDITION.
- IF THE FACILITY IS OVER FOUR (4) FEET DEEP, TAKES OVER TWO (2) HOURS TO DRAIN, OR THE INTERIOR SLOPE EXCEEDS 3 HORIZONTAL TO 1 VERTICAL, PERMANENT FENCING MAY BE REQUIRED. ADDITIONALLY, IF THE FACILITY IS IN A CONGESTED AREA OR WILL IN ANY WAY POSE A HAZARD TO THE GENERAL PUBLIC, FENCING MAY BE REQUIRED. FENCING SHALL BE A MINIMUM OF SIX (6) FEET HIGH, A MINIMUM OF STANDARD NINE GAUGE LINK FENCE, AND MUST HAVE ONE OR MORE LOCKING DOUBLE GATES (MINIMUM TEN FEET WIDE) FOR ACCESS.
- DETENTION PONDS SHALL BE BONDED IN ACCORDANCE WITH THE ROANOKE COUNTY BONDING POLICY FOR SUBDIVISION AND SITE DEVELOPMENT. A SEPARATE BOND FOR THE DETENTION FACILITY WILL BE REQUIRED AND ADMINISTERED APART FROM THE SUBDIVISION DEVELOPMENT BOND. REFERENCE ESTIMATE - THIS SHEET.
- REFERENCE THE COUNTY OF ROANOKE DESIGN AND CONSTRUCTION STANDARDS FOR DETENTION PONDS, LATEST EDITION, FOR ACCEPTANCE AND MAINTENANCE OF THE FACILITY. CERTIFIED AS-BUILTS ARE REQUIRED AND MUST INCLUDE:
 - DIMENSIONS OF THE FACILITY
 - VOLUME & MAXIMUM DEPTH
 - ELEVATIONS OF STRUCTURES, SPILLWAYS, AND TOP
 - MATERIALS VERIFICATION INCLUDING RESULTS OF DENSITY TESTS CONDUCTED BY AN INDEPENDENT SOIL TESTING LABORATORY
 - LOCATION AND ELEVATION OF BENCHMARK
- ONE FOOT MINIMUM FREEBOARD REQUIRED FOR THE 100 YR WATER SURFACE ELEVATION.

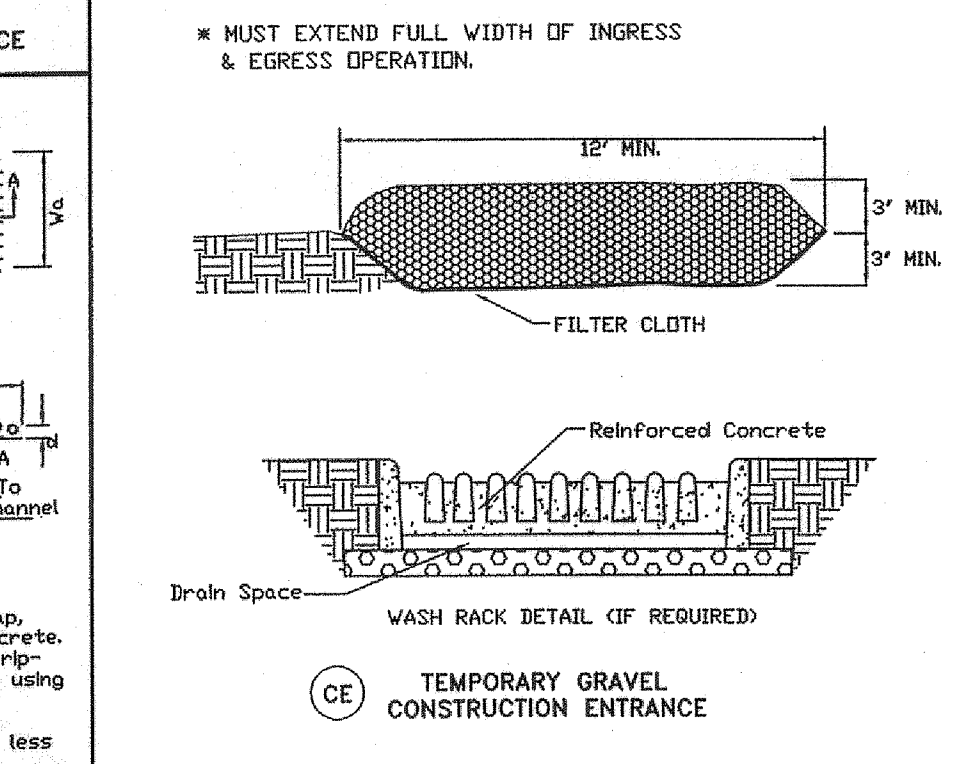
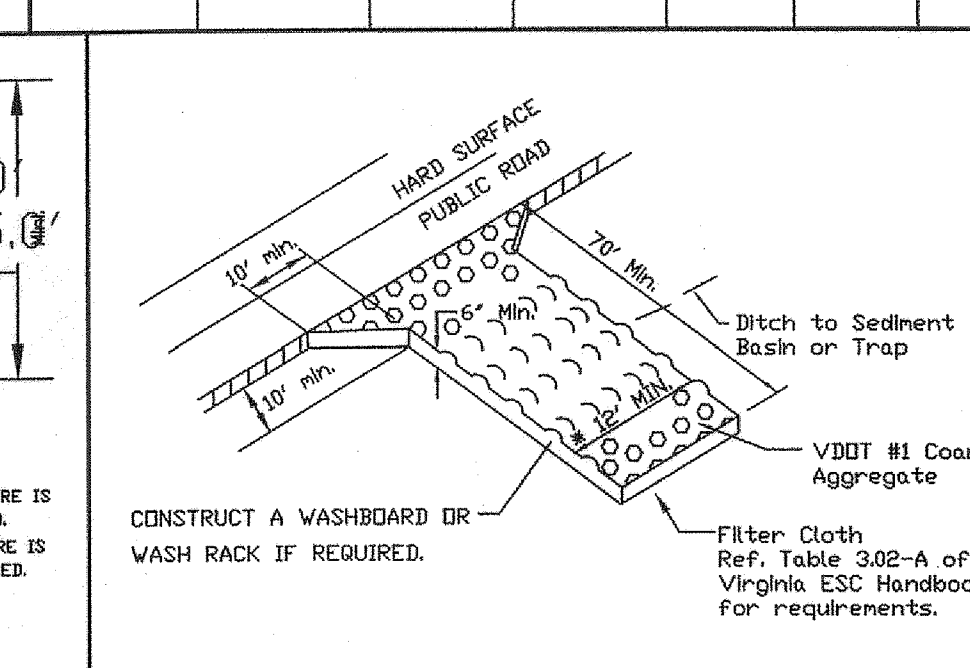
CONSTRUCTION NOTES

- SITE PREPARATION SHALL BE IN ACCORDANCE WITH THE COUNTY OF ROANOKE DESIGN AND CONSTRUCTION STANDARDS FOR DETENTION PONDS, LATEST EDITION.
- SLOPES STEEPER THAN 3 TO 1 (HORIZONTAL TO VERTICAL) SHALL BE BENCHES OR STEPPED PRIOR TO PLACING FILL ON THEM.
- ON-SITE FILL MATERIAL OR BORROW FILL MATERIAL MAY BE UTILIZED. FILL MATERIAL SHALL BE:
 - SHALL BE COMPACTABLE
 - SHALL BE WITHIN AN ACCEPTABLE RANGE OF MOISTURE CONTENT WHICH IS READILY CONTROLLED
 - SHALL NOT BE HIGHLY SUSCEPTIBLE TO VOLUME CHANGE (SHRINKAGE OR SWELL) OR SETTLEMENT
- FILL MATERIALS CONTAINING ROCKS LARGER THAN SIX (6) INCHES (USE 20) SHALL NOT BE USED. THE UPPERMOST TWO (2) FEET (61 CM) SHALL NOT HAVE ANY ROCK LARGER THAN TWO (2) INCHES (51 CM) IN DIAMETER.
- THE APPROVED FILL SHALL BE PLACED IN EIGHT (8) INCH (203 MM) LOOSE LIFTS. EACH LIFT SHALL BE SPREAD IN UNIFORM LAYERS. FILL SOIL SHALL BE UTILIZED ONLY WITHIN A MOISTURE RANGE OF $\pm 1\%$ OF THE OPTIMUM MOISTURE CONTENT. COMPACTION OF THE FILL SHALL BE PERFORMED WITH APPROVED EQUIPMENT. COMPACTION OF THE LAYERS SHALL BE CONTINUOUS AND UNIFORM.
- EMBANKMENT MATERIAL IN FILL AREAS SHALL BE PLACED IN LIFTS NOT EXCEEDING EIGHT (8) INCHES AND SHALL BE COMPACTED TO A MINIMUM 95% DENSITY IN ACCORDANCE WITH SECTION 303 OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS.
- FIELD DENSITY TESTS ARE TO BE CONDUCTED BY AN INDEPENDENT SOILS TESTING LABORATORY UNDER THE DIRECTION OF A QUALIFIED GEOTECHNICAL ENGINEER. THE RESULTS OF THESE TESTS SHALL BE SUBMITTED TO THE COUNTY OF ROANOKE WITH AS-BUILT PLANS AS A CONDITION OF ACCEPTANCE OF THE FACILITY BY THE COUNTY. FIELD DENSITY TESTS, AS DIRECTED BY THE ENGINEER, SHALL BE PERFORMED PERIODICALLY TO DETERMINE THE DEGREE OF COMPACTION. ANY AREAS FAILING TO MEET THE ABOVE REQUIREMENTS SHALL BE REWORKED AND/OR RECOMPACTED UNTIL THE REQUIRED DEGREE OF COMPACTION IS ACHIEVED.
- ANTI-SLEEP COLLARS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
- ALL DISTURBED AREAS SHALL BE COVERED WITH FOUR (4) INCHES OF TOPSOIL AND SEED.
- THE MINIMUM SLOPE OF THE BASIN FLOOR SHALL BE ONE (1) PERCENT GRADED TO DRAIN TO THE PRINCIPAL SPILLWAY.

NO.	TITLE	KEY	SYMBOL	NO.	TITLE	KEY	SYMBOL
3.01	SAFETY FENCE	SAF		3.20	ROCK CHECK DAMS	CD	
3.02				3.21	LEVEL SPREADER	LS	
3.03				3.22	VEGETATIVE STREAMBANK STABILIZATION	VSS	
3.04				3.23	STRUCTURAL STREAMBANK STABILIZATION	SSS	
3.05				3.24	TEMPORARY VEHICULAR STREAM CROSSING	VSC	
3.06				3.25	UTILITY STREAM CROSSING	USC	
3.07				3.26	DEWATERING STRUCTURE	DS	
3.08	CULVERT INLET PROTECTION	CIP		3.27	TURBIDITY CURTAIN	TC	
3.09				3.28	SUBSURFACE DRAIN	SD	
3.10				3.29	SURFACE ROUGHENING	SR	
3.11				3.30	TOPSOILING	TD	
3.12				3.31	TEMPORARY SEEDING	TS	
3.13				3.32	PERMANENT SEEDING	PS	
3.14				3.33	SODDING	SD	
3.15				3.34	BERMUDA GRASS AND ZOYSIAURASS ESTABLISHMENT	BZ	
3.16				3.35	MULCHING	MU	
3.17				3.36	SOIL STABILIZATION BLANKETS AND MATTING	SB	
3.18				3.37	TREES, SHRUBS, VINES AND GROUND COVERS	VEG	
3.19				3.38	TREE PRESERVATION AND PROTECTION	TP	
				3.39	DUST CONTROL	DC	



TEMPORARY SEDIMENT TRAP DATA				
STRUCTURE	DRAINAGE AREA (ACRES)	STORAGE (C.Y.) REQ'D	DESIGN	WEIR LENGTH (FT.)
DD				
FD				
RWD				
DV				



Erosion-Siltation Control Cost Estimate				
Description	Unit	Quantity	Unit Cost	Total Cost
Construction Entrance	Ea	2	\$1,200.00	\$2,400.00
Silt Fence	LF	4,754	\$3.00	\$14,262.00
Construction Road Stabil.	Ton	1,137	\$12.00	\$13,644.00
Inlet Protection	Ea	70	\$100.00	\$7,000.00
Temporary Diversion Dike	LF	0	\$0.00	\$0.00
Temporary Fill Diversion	LF	0	\$0.00	\$0.00
Sediment Trap	Ea	1	\$1,000.00	\$1,000.00
Check Dam	Ea	0	\$0.00	\$0.00
Permanent Seeding	1000 SF	62	\$30.00	\$1,860.00
Outlet Protection	Ea	1	\$100.00	\$100.00
Sediment Basin	Ea	0	\$0.00	\$0.00
Right of Way Diversion	LF	126	\$5.00	\$630.00
TOTAL				\$40,896.00

NOTE THAT THERE ARE EXISTING EROSION AND SEDIMENT CONTROL MEASURES FROM THE PREVIOUS GRADING PROJECT THAT ARE IN PLACE AND FUNCTIONING. THE ABOVE ESTIMATE IS ONLY FOR THE MEASURES REQUIRED FOR THIS PROJECT.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- ALL SOIL EROSION & SEDIMENT CONTROL MEASURES SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
- THE APPROVING AUTHORITY MAY ADD TO, DELETE, RELOCATE, CHANGE, OR OTHERWISE MODIFY CERTAIN EROSION AND SEDIMENT CONTROL MEASURES WHERE FIELD CONDITIONS ARE ENCOUNTERED THAT WARRANT SUCH MODIFICATIONS.
- ALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLAN SHALL BE PLACED IN ADVANCE IF THE WORK BEING PERFORMED, AS FAR AS
- IN NO CASE DURING CONSTRUCTION SHALL WATER RUNOFF BE DIVERTED OR ALLOWED TO FLOW TO LOCATIONS WHERE ADEQUATE PROTECTION HAS NOT BEEN
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LEAVE THE SITE ADEQUATELY PROTECTED AGAINST EROSION, SEDIMENTATION, OR ANY DAMAGE TO ANY ADJACENT PROPERTY AT THE END OF EACH DAY'S WORK.
- FOR THE EROSION CONTROL KEY SYMBOLS SHOWN ON THE PLANS, REFER TO THE VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL PRACTICES CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THESE SYMBOLS AND KEYS ARE TO BE UTILIZED ON ALL EROSION CONTROL PLANS SUBMITTED TO ROANOKE COUNTY.

PERMANENT SEEDING MIXTURE

- TYPE A
- 15 OCTOBER TO 1 FEBRUARY
K-31 FESCUE @ 5 LB / 1000 SF
BOKRY WINTER RYE @ 1/2 LB / 1000 SF
- 1 FEBRUARY TO 1 JUNE
K-31 FESCUE @ 5 LB / 1000 SF
ANNUAL RYE @ 1/2 LB / 1000 SF
- 1 JUNE TO 1 SEPTEMBER
K-31 FESCUE @ 5 LB / 1000 SF
GERMAN MILLET @ 1/2 LB / 1000 SF
- 1 SEPTEMBER TO 15 OCTOBER
K-31 FESCUE @ 5 LB / 1000 SF
ANNUAL RYE @ 1/2 LB / 1000 SF
- TYPE B (SLOPES 3:1 OR STEEPER)
- 15 MARCH TO 1 MAY
CROWN VETCH @ 1/2 LB / 1000 SF
PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF
RED TOP @ 1/8 LB / 1000 SF
- 15 AUGUST TO 1 OCTOBER
CROWN VETCH @ 1/2 LB / 1000 SF
PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF
RED TOP @ 1/8 LB / 1000 SF
- LIME: 140 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTONE
- FERTILIZER: 5-20-10 @ 25 LB / 1000 SF
30-0-0 @ 7 LB / 1000 SF
- MULCH: IF REQUIRED, SHALL BE USED OVER ALL SEEDER AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 1.75 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
- SOIL CONDITIONING: INCORPORATION OF LIME AND FERTILIZER, SELECTION OF CERTIFIED SEED, MULCHING, MAINTENANCE OF NEW SEEDLINGS, AND RESEEDING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITHIN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. ADDITIONAL SEEDING TO BE PERFORMED AS REQUIRED BY THE INSPECTOR.
- SEED APPLICATION: APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPAC

DEPARTMENT OF ENGINEERING AND INSPECTIONS

NO.	REVISIONS	DATE
1	ENGR. & INSP.	04-10-93
2	ENGR. & INSP.	08-05-93
3	ENGR. & INSP.	10-27-93
4		
5		
6		

COUNTY OF ROANOKE

DATE: 11/02/93
SCALE: NO SCALE
DRAWING BY: CLN,AF
DESIGNED BY: G:\CAD\DETAILS\EROSION\EROSION)
APPROVED BY: GWS,III

EROSION & SEDIMENT CONTROL STORMWATER MANAGEMENT DETAILS

parker
DESIGN GROUP
816 Boulevard
Salem, Virginia 24153
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www.parkerdg.com

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COMMONWEALTH OF VIRGINIA
GREGORY S. TAYLOR
No. 038009
3/20/07
PROFESSIONAL ENGINEER

Site Development Plan
Prepared for Slate Hill II, LLC
Cave Spring Magisterial District
Roanoke, Virginia

REVISIONS:

County & VDOT Comment Revisions	August 8, 2006
County & VDOT Comment Revisions	October 10, 2006
County, WVWA & VDOT Revisions	December 8, 2006
County, WVWA & VDOT Revisions	January 12, 2007
County, WVWA & VDOT Revisions	March 2, 2007
County, WVWA Revisions	March 30, 2007

DESIGNED BY: GST
DRAWN BY: GST
CHECKED BY: SRB
SCALE: AS NOTED
DATE: April 7, 2006

SHEET TITLE:
Erosion & Sediment Control Details

C56
56 OF 60
PROJECT NUMBER:
S05047-03