

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

The purpose of this project is to construct a new retail hardware store and associated parking areas on 1.23 acres, the area of disturbance.

EXISTING SITE CONDITIONS

The proposed development is located along Williamson Road in Roanoke County, north of the intersection of Williamson with Plantation Road. The existing site has a parking area on it, which is to be removed.

ADJACENT AREAS

The developed area is bordered on the north and to the east by property owned by Team Hollins Commercial LLC, to the west by property owned by Hollins Properties, and to the south by Williamson Road.

SOILS

The Roanoke Soil Survey classifies the soils in this area as Udorthents Urban Land Complex, these soils range from very shallow to very deep, and consist of about 60% Udorthents, 25% Urban Land and 15% other soils. Onsite investigation is generally required to determine specifics of the soil in a particular area.

OFF-SITE AREAS

No off-site work is proposed at this time. The location of all off-site fill or borrow areas associated with the construction of this project will be provided to Roanoke County department of Community Development. An Erosion Control Plan or measures may be required for this area. All soil stockpile areas are to be stabilized.

CRITICAL EROSION AREAS

The potential critical erosion areas are the excavation of the bank at northern section of property, and the throat inlets along Williamson Road.

EROSION AND SEDIMENT CONTROL MEASURES

Unless otherwise indicated, all vegetative and structural erosion and sediment control practices shall be constructed and maintained according to minimum standards and specifications of the handbook. The minimum standards of the vesch shall be adhered to unless otherwise waived or approved by a variance.

STRUCTURAL PRACTICES

- Temporary Construction Entrance (Section 3.02)
One temporary construction entrance will be installed. Vehicles will be washed to limit tracking onto public roads. Should tracking occur the road will be immediately cleaned.
- Silt Fence (Section 3.05)
Temporary silt fences will be installed as indicated on the site plan.
- Temporary Seeding (Section 3.31)
Temporary seeding will be placed on all disturbed areas that will not be brought to final grade within one year or less. Temporary seeding will aid in the reduction of dust and sediment. Temporary seeding will be Annual Ryegrass (100#/ac), Feb 16 - April 30, German Millet (60#/ac), May 1 - Aug. 31.
- Permanent Seeding (Section 3.32)
After final grading permanent seeding will be employed to reduce erosion and sediment yield. Seeding specifications: permanent seeding will be Kentucky Bluegrass, blended to contain 4 or more varieties, with no one variety exceeding 30%. The seeding will be applied at 140 lb. per acre, on slopes 2:1 or greater a mixture of Crown Vetch (50%), Perennial Ryegrass (40%), and Redtop (10%) will be used. All seeding, with required associated practices, will be in accordance with all applicable sections of the Virginia Erosion and Sediment Control
- Inlet Protection (Section 3.07)
Inlet protection will be placed at all storm structure inlets to prevent sediment from entering the system.
- Right-of-Way Diversion (Section 3.15)
A Right-of-Way Diversion will divert stormwater runoff from paved areas to a stabilized outlet.
- Construction Road Stabilization (Section 3.03)
All roads and parking areas on the site shall be stabilized with gravel immediately after grading. Traffic is prohibited from entering drainage swales or streams unless absolutely necessary.

MANAGEMENT

- Construction should be sequenced so that grading operations can begin and end as quickly as possible.
- Erosion and Sediment control devices shall be installed as the first step of construction.
- Areas which are not to be disturbed shall be clearly marked by flags, signs, etc.
- The grading contractor shall be responsible for the installation and maintenance of all erosion and sediment control practices. Inspections are to be made periodically and after every significant rainfall.
- After achieving adequate stabilization, the temporary E&S controls will be cleaned up and removed.

PERMANENT STABILIZATION

All areas disturbed by construction shall be stabilized with permanent seeding immediately following finish grading. Seeding shall be done with Kentucky 31 Tall Fescue according to Std. & Spec. 3.32, PERMANENT SEEDING, of the handbook. Erosion control blankets will be installed over fill slopes which have been brought to final grade and have been seeded to protect the slopes from fill and gully erosion and to allow seed to germinate properly. Mulch (straw or fiber) will be used on relatively flat areas. In all seeding operations, seed, fertilizer and lime will be applied prior to mulching.

MAINTENANCE

In general, all erosion and sediment control measures will be checked daily and after each significant rainfall. Any items not found in accordance with the Virginia Erosion and Sediment Control Handbook will be immediately replaced and/or repaired. The following items will be checked in particular:

- The gravel outlets will be checked regularly for sediment buildup which will prevent drainage. If the gravel is clogged by sediment, it shall be removed and cleaned or replaced.
- The silt fence barrier will be checked regularly for undermining or deterioration of the fabric. Sediment shall be removed when the level of sediment deposition reaches half way to the top of the barrier.
- The seeded areas will be checked regularly to ensure that a good stand is maintained. Areas should be fertilized and re-seeded as needed.
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- All soil stockpile areas are to be stabilized.

GENERAL

The erosion and sediment control measures shown on the construction plans are the minimum measures required. Due to construction phasing and other considerations all measures can not be shown. The owner, through his contractor, will employ whatever measures which may be required to assure that sediment laden runoff does not leave the site.

All materials and measures employed for erosion and sediment control will be in accordance with the Virginia Erosion and Sediment Control Handbook, latest edition.

If, during construction, additional Erosion and Sediment Control measures are deemed necessary, they shall be installed as directed by the Owner, Engineer or City agent.

STORMWATER MANAGEMENT

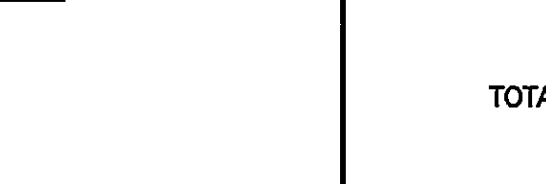
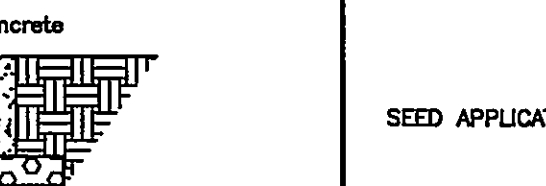
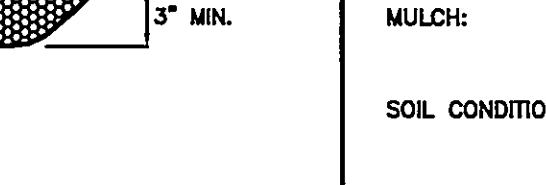
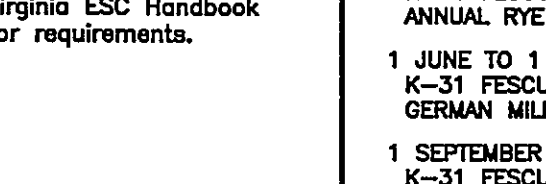
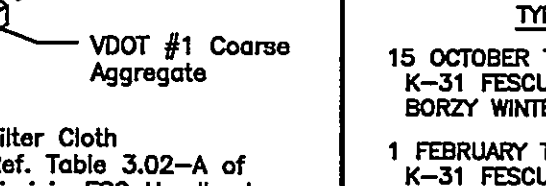
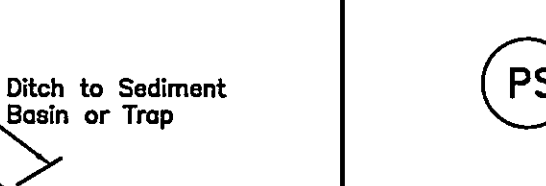
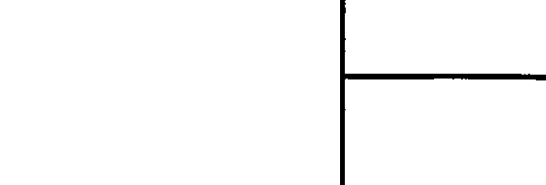
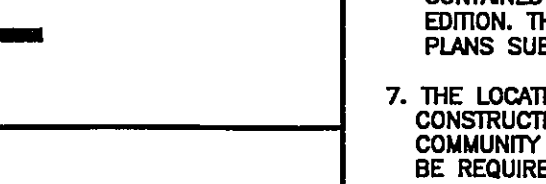
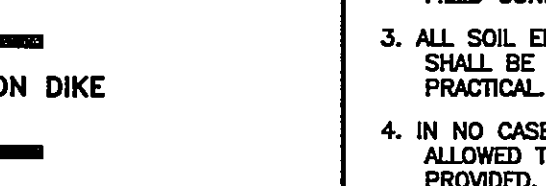
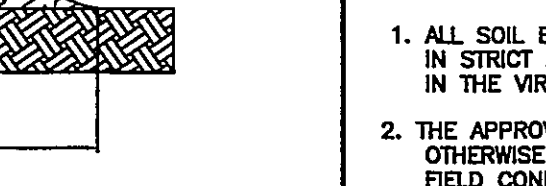
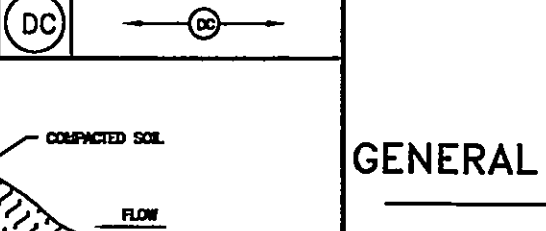
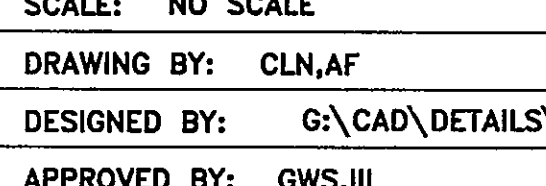
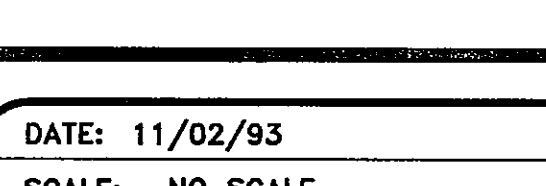
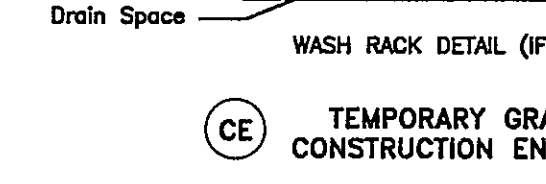
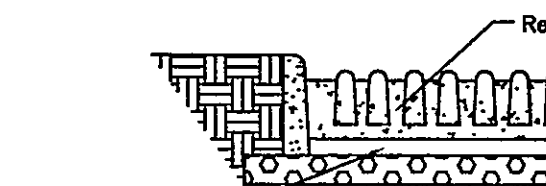
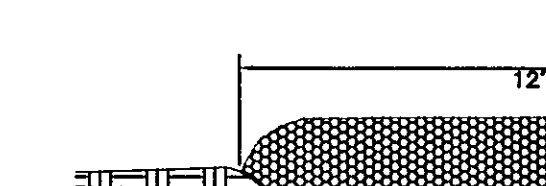
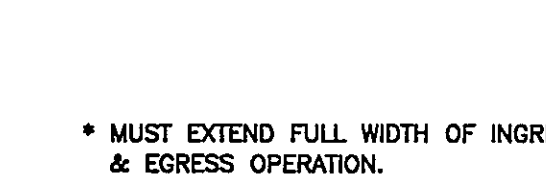
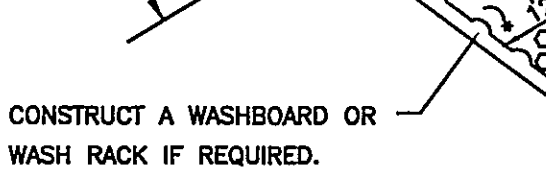
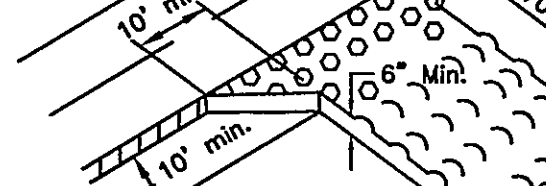
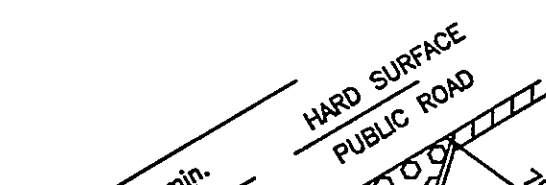
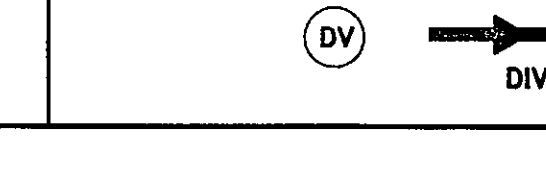
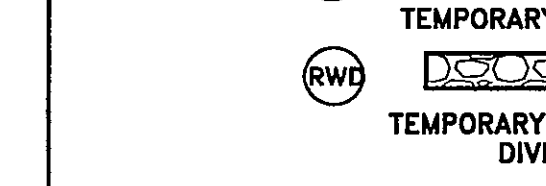
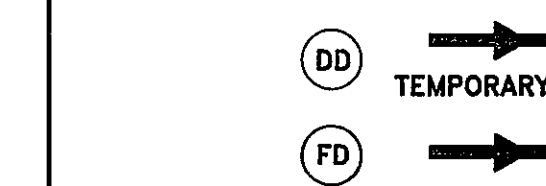
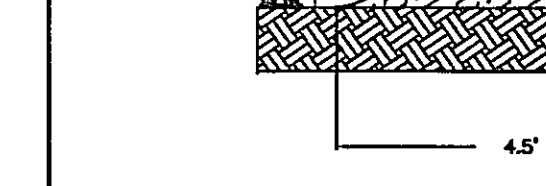
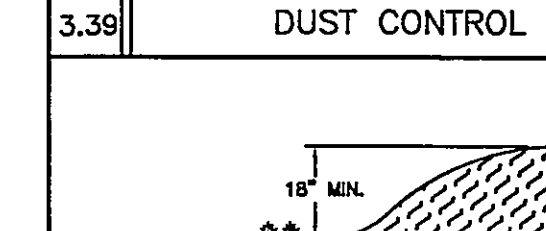
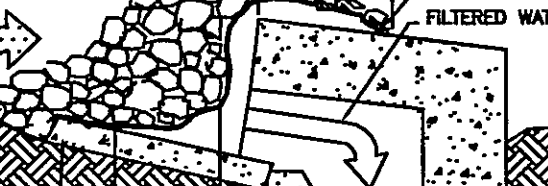
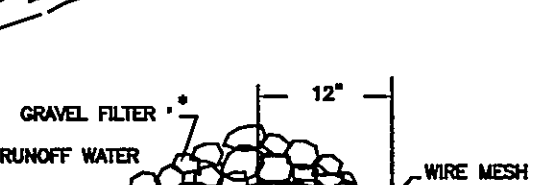
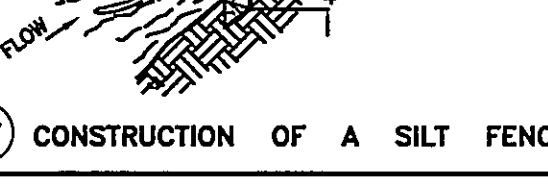
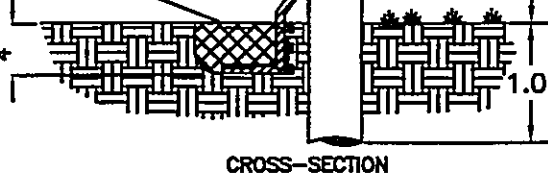
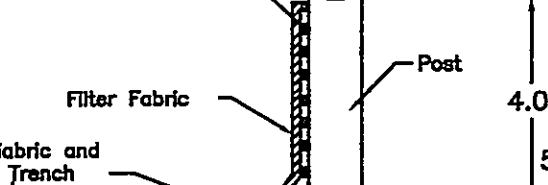
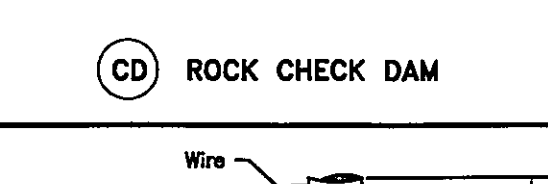
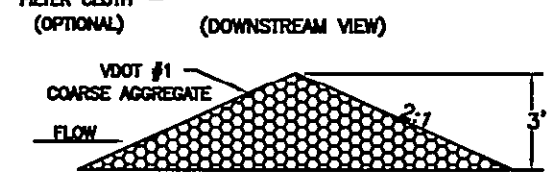
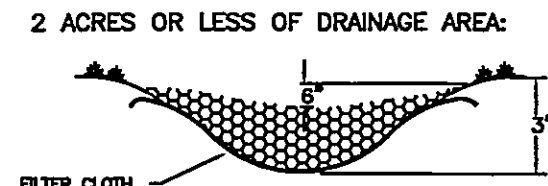
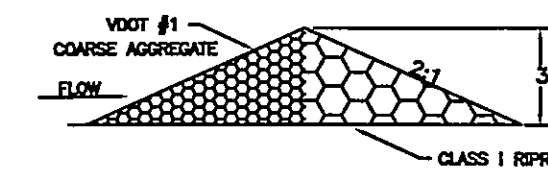
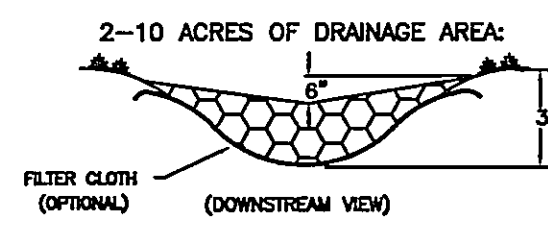
Calculation of runoff before and after development indicates that there will be a net increase in peak runoff as a result of project development. Consequently, stormwater will be managed by a underground stormwater detention system.

VESCH STATE MINIMUM STANDARDS

YES
NO
N/A

- ☐ ☐ ☐ MS-1 Have temporary and permanent stabilization been addressed in the narrative? YES-VESCH SECTION NOTED. Are practices shown on the plan? YES, DENOTED WITH SYMBOLS Seed specifications? YES, IN NARRATIVE Mulching? NO, NOT APPLICABLE Gravel? NO, NOT APPLICABLE
- ☒ ☒ ☒ MS-2 Has stabilization of soil stockpiles been addressed in the narrative? YES, UNDER MAINTENANCE. Are sediment trapping measures provided? NO, NOT REQUIRED
- ☒ ☒ ☒ MS-3 Has maintenance of permanent stabilization been addressed? YES, IN NARRATIVE.
- ☒ ☒ ☒ MS-4 Are sediment trapping facilities to be constructed as a first step in LDA? NOT REQUIRED
- ☒ ☒ ☒ MS-5 Has stabilization of earthen structures been addressed? YES, IN NARRATIVE.
- ☒ ☒ ☒ MS-6 Are sediment basins required where needed? NOT REQUIRED
- ☒ ☒ ☒ MS-7 Detailed design calculations and specifications included for all proposed sediment traps and basins? NOT REQUIRED
- ☒ ☒ ☒ MS-7.8 Has stabilization of cut and fill slopes been adequately addressed? YES, IN NARRATIVE.
- ☒ ☒ ☒ MS-9 (i.e. Surface Roughening, Outlet Protection, NOT APPLICABLE.
- ☒ ☒ ☒ MS-8 Are paved flumes, channels, or slope drains required where necessary? NOT REQUIRED.
- ☒ ☒ ☒ MS-10 Is adequate inlet protection required on all operational storm sewer inlets? YES, SEE PLAN.
- ☒ ☒ ☒ MS-11 Are channel lining and/or outlet protection required on stormwater conveyance channels? NOT APPLICABLE.
- ☒ ☒ ☒ MS-12 Are in-stream construction measures required so that channel damage is minimized? NOT APPLICABLE.
- ☒ ☒ ☒ MS-13 Are stream crossings of non-erodible material required where applicable? NOT APPLICABLE.
- ☒ ☒ ☒ MS-14 (NOTE: This regulation requires that all applicable federal, state and local regulations pertaining to working in or crossing live watercourses be followed. NOT APPLICABLE.
- ☒ ☒ ☒ MS-15 Has restabilization of areas subject to in-stream construction been adequately addressed? NOT APPLICABLE.
- ☒ ☒ ☒ MS-16 Is stabilization of utility trenches addressed? NOT APPLICABLE.
- ☒ ☒ ☒ MS-17 Is the transport of soil and mud onto public roadways properly controlled? (i.e. Construction Entrances, Wash Racks, daily cleaning of road ways, transport of sediment to a trapping facility)? CONSTRUCTION ENTRANCE AND RIGHT OF DIVERSIONS PROVIDED.
- ☒ ☒ ☒ MS-18 Has the removal of temporary practices been addressed? YES, IN NARRATIVE.
- ☒ ☒ ☒ MS-19 Has maintenance of practices been addressed? (i.e. repair of structures and removal of accumulated sediment)? YES, IN NARRATIVE.
- ☒ ☒ ☒ MS-19 Are properties and waterways downstream from development adequately protected from erosion and sediment deposition due to increases in peak stormwater runoff? YES.

NO.	TITLE	KEY	SYMBOL	NO.	TITLE	KEY	SYMBOL
3.01	SAFETY FENCE	SAF		3.20	ROCK CHECK DAMS	CD	
3.02	TEMPORARY GRAVEL CONSTRUCTION ENTRANCE	CE		3.21	LEVEL SPREADER	LS	
3.03	CONSTRUCTION ROAD STABILIZATION	CRS		3.22	VEGETATIVE STREAMBANK STABILIZATION	VSS	
3.04	STRAW BALE BARRIER	STB		3.23	STRUCTURAL STREAMBANK STABILIZATION	SSS	
3.05	SILT FENCE	SF		3.24	TEMPORARY VEHICULAR STREAM CROSSING	VSC	
3.06	BRUSH BARRIER	BB		3.25	UTILITY STREAM CROSSING	USC	
3.07	STORM DRAIN INLET PROTECTION	IP		3.26	DEWATERING STRUCTURE	DS	
3.08	CULVERT INLET PROTECTION	CIP		3.27	TURBIDITY CURTAIN	TC	
3.09	TEMPORARY DIVERSION DIKE	DD		3.28	SUBSURFACE DRAIN	SD	
3.10	TEMPORARY FILL DIVERSION	FD		3.29	SURFACE ROUGHENING	SR	
3.11	TEMPORARY RIGHT-OF-WAY DIVERSION	RWD		3.30	TOPSOILING	TO	
3.12	DIVERSION	DV		3.31	TEMPORARY SEEDING	TS	
3.13	TEMPORARY SEDIMENT TRAP	ST		3.32	PERMANENT SEEDING	PS	
3.14	TEMPORARY SEDIMENT BASIN	SB		3.33	SODDING	SO	
3.15	TEMPORARY SLOPE DRAIN	TS		3.34	BERMUDA GRASS AND ZOYSIAURASS ESTABLISHMENT	BZ	
3.16	PAVED FLUME	PF		3.35	MULCHING	MU	
3.17	STORMWATER CONVEYANCE CHANNEL	SCC		3.36	SOIL STABILIZATION BLANKETS AND MATTING	SW	
3.18	OUTLET PROTECTION	OP		3.37	TREES, SHRUBS, VINES AND GROUND COVERS	VEG	
3.19	RIPRAP	RR		3.38	TREE PRESERVATION AND PROTECTION	TP	
				3.39	DUST CONTROL	DC	



EROSION-SILTATION CONTROL COST ESTIMATE

ALL COSTS GIVEN ARE COMPLETE IN PLACE

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
CONSTRUCTION ENTRANCE	EA	1	\$ 1000.00	\$1000.00
SILT FENCE	LF	750	\$ 2.00	\$1,500.00
INLET PROTECTION	EA	4	\$ 25.00	\$100.00
CONSTRUCTION ROAD STABILIZATION	SY	2870	\$ 3.00	\$8,610.00
TEMPORARY R/W DIVERSION	LF	60	\$ 2.00	\$120.00
SEDIMENT TRAP	EA			
CHECK DAM	EA			
PERMANENT SEEDING	1000 SF	54	\$ 30.00	\$1,620.00
TEMPORARY SEEDING	1000 SF	54	\$ 30.00	\$1,620.00
SEDIMENT BASIN	EA			
OUTLET PROTECTION	EA			
SUB-TOTAL				\$ 14,570.00
10% CONTINGENCY				\$ 1,457.00
TOTAL PROJECT COST				\$ 16,027.00

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 SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLAN SHALL BE PLACED IN ADVANCE OF THE WORK BEING PERFORMED, AS FAR AS PRACTICAL.
- IN NO CASE DURING CONSTRUCTION SHALL WATER RUNOFF BE DIVERTED OR ALLOWED TO FLOW TO LOCATIONS WHERE ADEQUATE PROTECTION HAS NOT BEEN PROVIDED.
- 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.
- THE LOCATION OF ALL OFF-SITE OR BORROW AREAS ASSOCIATED WITH THE CONSTRUCTION PROJECT WILL BE PROVIDED TO ROANOKE COUNTY DEPARTMENT OF COMMUNITY DEVELOPMENT. AN EROSION SEDIMENT CONTROL PLAN OR MEASURES MAY BE REQUIRED FOR THIS AREA.

PS PERMANENT SEEDING MIXTURE

- TYPE A**
- 15 OCTOBER TO 1 FEBRUARY
K-31 FESCUE • 5 LB / 1000 SF
BORZY 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
38-0-0 • 7 LB / 1000 SF
- MULCH:** IF REQUIRED, SHALL BE USED OVER ALL SEEDING AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITHIN THE VIRGINIA SOIL 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, CULTIPACKER SEEDER, OR HYDROSEEDER ON A FIRM, FRABLE, SEEDBED. MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.

TOTAL DISTURBED AREA = 1.23 AC. = 53,579 SQ. FT.

DEPARTMENT
OF
ENGINEERING AND INSPECTIONS

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

NORTHWEST TRUE VALUE HARDWARE
COUNTY OF ROANOKE, VIRGINIA

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

SHEET
3
OF
8