

EROSION & SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

The purpose of this project is to construct approximately 5,400 feet of 10" ductile iron waterline. The proposed disturbed area is approximately 0.75 acre.

EXISTING SITE CONDITIONS

The proposed development is located along Patterson Avenue, in the City of Roanoke, Virginia. All of the proposed waterline is located on property owned by, or within the right-of-way of Norfolk and Southern.

ADJACENT AREAS

The site is bordered by a railyard, the Roanoke River, and property owned by Virginia Holdings Corporation.

SOILS

Soils found at this site include Urban Land Speedwell, and Udorthents Urban Land. (USDA Soil Survey of Roanoke). Speedwell is a dark silty loam with moderate permeability, a slight erosion potential. Udorthents is existing fill from urban expansion.

CRITICAL EROSION AREAS

The potential critical erosion areas are:  
1. Along the travelway of Patterson Avenue.  
2. The Roanoke River.  
Every effort shall be made to prevent erosion from leaving the construction area.

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 VESCR shall be adhered to unless otherwise waived or approved by a variance.

STRUCTURAL PRACTICES

- Straw Bale Barrier (Section 3.04)  
Straw Bale Barriers will intercept and detain small amounts of sediment from disturbed areas.
- Silt Fence (Section 3.05)  
Temporary silt fences will be installed as indicated on the site plan to detain sediment laden runoff.
- 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 shall be 50% Kentucky 31 Tall Fescue, 20% Annual Rye, 20% Perennial Rye, and 10% Creeping Red Fescue blended to contain 4 or more varieties, with no one variety exceeding 50%. The seed-ing 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  
  
5. Dust Control (Section 3.39)  
If arid conditions prevail dust control practices will be employed as required.
- 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, and the sediment basins will be cleaned up.

PERMANENT STABILIZATION

All areas disturbed by construction shall be stabilized with permanent seeding immediately following finish grading. Seeding shall be done with 50% Kentucky 31 Tall Fescue, 20% Annual Rye, 20% Perennial Rye, and 10% Creeping Red Fescue. 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 rill 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.

STORMWATER MANAGEMENT

There is not an increase in Impervious area as a result of this project. Therefore, stormwater management does not apply.

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:

- All sediment basin will be cleaned out when the level of sediment buildup reaches the cleanout point indicated on the riser pipe.
- All 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.
- All 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.
- All seeded areas will be checked regularly to ensure that a good stand is maintained. Areas should be fertilized and re-seeded as needed.

GENERAL

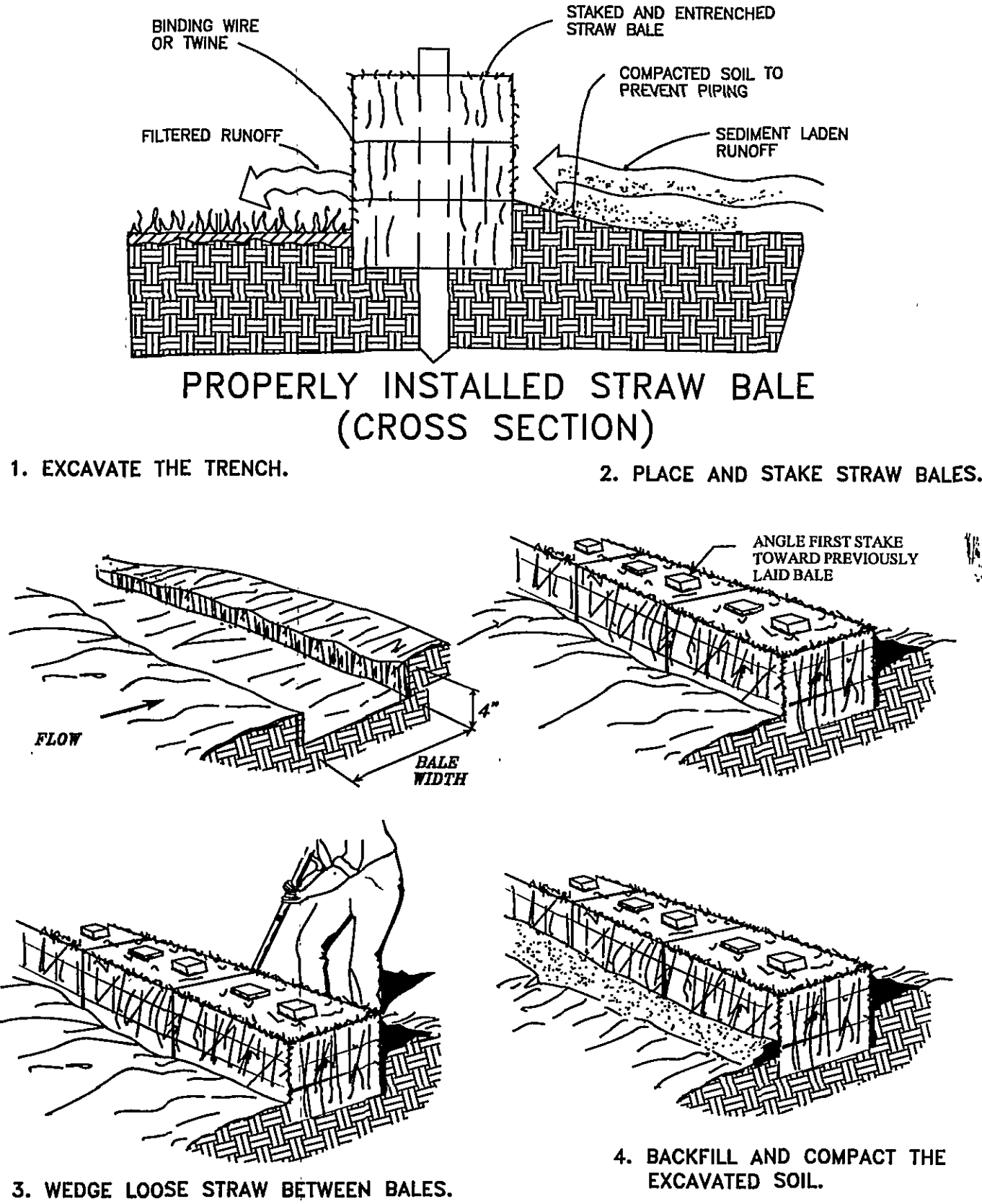
The erosion and sediment control measures shown on the construction plans are the minimum measures required. Due to construction phasing and other considerations all measures can not be shown. The owner, through his contractor, will employ whatever measures which may be required to assure that sediment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

This project is to be constructed consistent with the 1992 Virginia Erosion And Sediment Control Regulations.

STRAW BALE BARRIER (SBB)

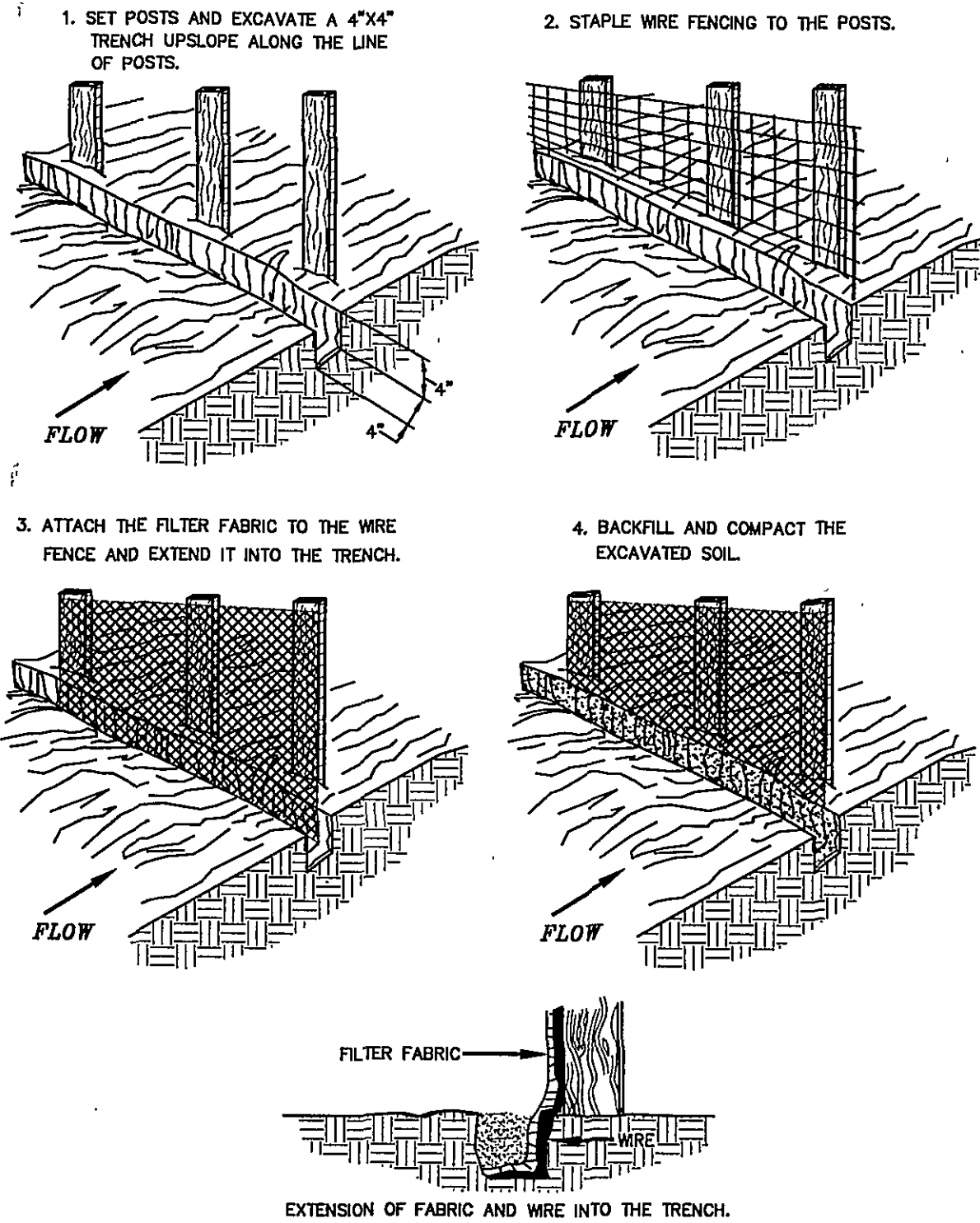


CONSTRUCTION OF STRAW BALE BARRIER

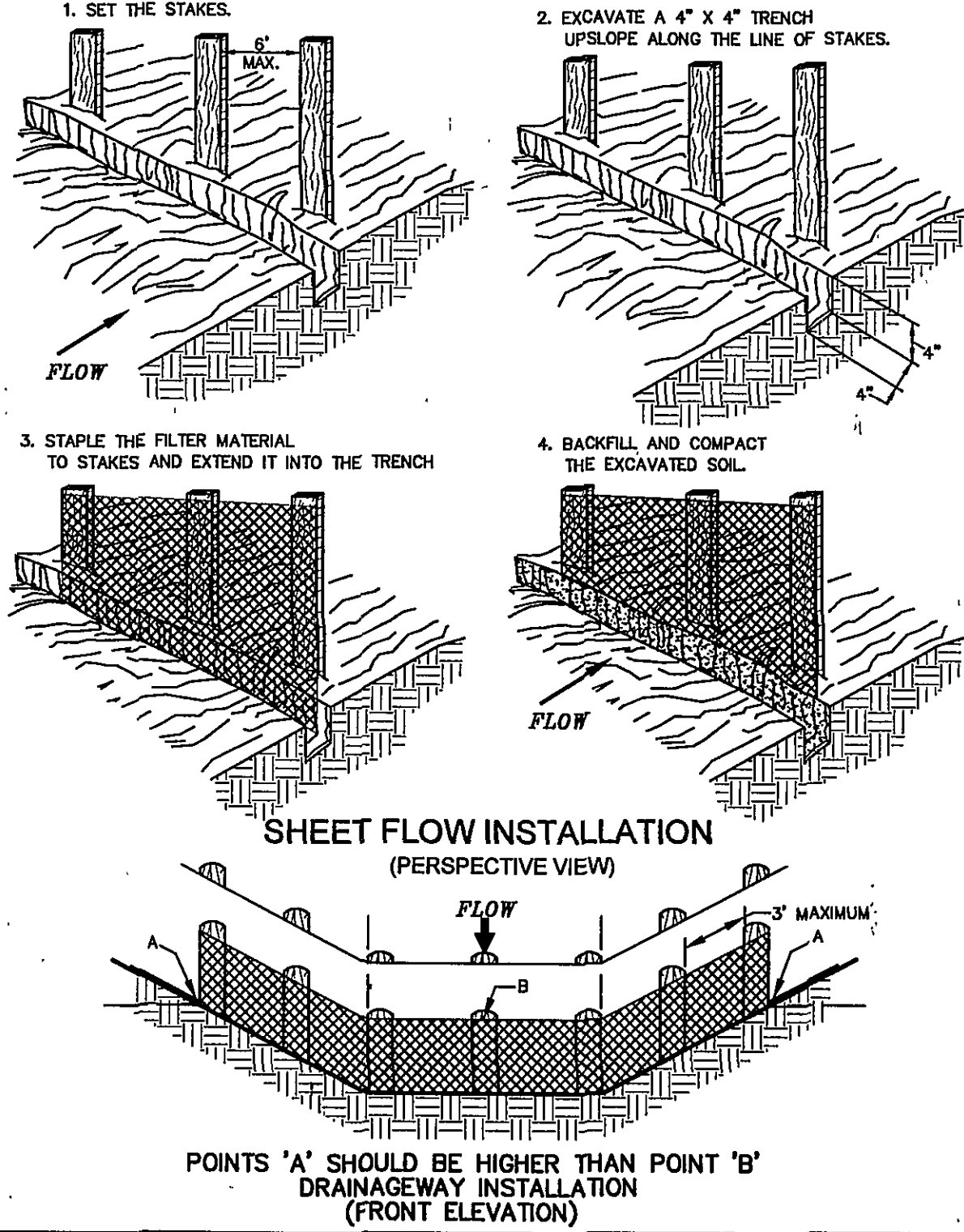
E&S BOND ESTIMATE CALCULATION				
DESCRIPTION	UNIT	UNIT COST	QUANTITY	TOTAL COST
CONSTRUCTION ROAD STABILIZATION	SY	\$3.00	135	\$405.00
STRAW BALE BARRIER	LF	\$3.00	385	\$1,155.00
10% CONTINGENCY				\$156.00
TOTAL				\$1,716.00

PUBLIC UTILITY BOND ESTIMATE CALCULATION				
DESCRIPTION	UNIT	UNIT COST	QUANTITY	TOTAL COST
12" WATERLINE AND PAVEMENT PATCH	LF	\$50	255	\$12,750.00
F.H., VALVE, AND REDUCER	LS	\$3,600	1	\$3,600.00
12" GATE VALVE	LS	\$2,500	1	\$2,500.00
CONC. WATER VAULT	LS	\$8,000	1	\$8,000.00
10% CONTINGENCY				\$2,685.00
TOTAL				\$29,535.00

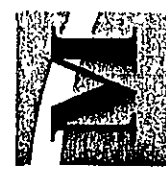
CONSTRUCTION OF A SILT FENCE (SF) (WITH WIRE SUPPORT)



CONSTRUCTION OF A SILT FENCE (SF) (WITHOUT WIRE SUPPORT)



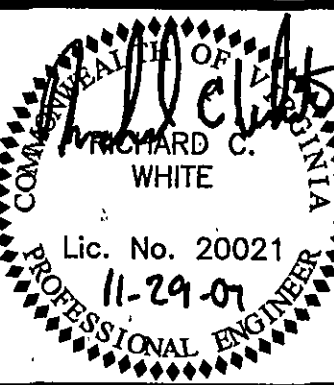
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Engineering  
Architecture  
Surveying  
Landscape Design

STEEL DYNAMICS  
WATERLINE EXTENSION  
ROANOKE, VIRGINIA

CHW	CHW	BY
Per City & N.W. Comments	Per City & N.W. Comments	DESCRIPTION
DATE	DATE	
11/01/07	10/16/07	
NO.		



Designed By	RCW
Drawn By	CHW
Checked By	RCW
Approved By	RCW
Submitted By	RCW
Drawing	3391E&S
Date	08/06/2007
Scale	NONE
Commission No.	3391