

SITE LOCATION AND DESCRIPTION

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF APPROXIMATELY 6,000- FEET OF 12-INCH DUCTILE IRON WATERLINE LOCATED IN THE CAVE SPRING MAGISTERIAL DISTRICT OF ROANOKE COUNTY, VIRGINIA. MULTIPLE TAX MAP AND PARCEL IDENTIFICATION FOR THE PROPERTIES INVOLVED ARE AS SHOWN ON THE PLANS. THE PROJECT IS EXPECTED TO BEGIN IN THE WINTER OF 2008 AND TAKE 6 TO 8 MONTHS TO COMPLETE.

EXISTING SITE CONDITIONS

THE EXISTING CONDITIONS VARY, BUT CONSISTS OF INSTALLING THE WATERLINE ON THE SHOULDER OF U.S. ROUTE 220.

ADJACENT AREAS

THE VDOT RIGHT OF WAY IS BOUNDED BY NUMEROUS PROPERTY OWNERS AS SHOWN ON PLANS.

OFF-SITE AREAS

AT THIS TIME, OFF-SITE GRADING IS NOT ANTICIPATED. SHOULD ADDITIONAL SOIL BE NECESSARY TO COMPLETE THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE EROSION & SEDIMENT CONTROL REGULATIONS AT THE OFF-SITE LOCATION.

CRITICAL AREAS

CRITICAL AREAS ASSOCIATED WITH THIS SITE:

1. THE STREAM CROSSINGS ARE THE MOST CRITICAL AREAS OF THE SITE. STREAM BANKS SHALL BE PROTECTED WITH SILT FENCE TO MINIMIZE THE AMOUNT OF SEDIMENT ENTERING THE STREAM.

EROSION & SEDIMENT CONTROL MEASURES

IN ACCORDANCE WITH THE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK (VESCH), EROSION AND SEDIMENT CONTROL MEASURES SHALL BE USED TO CONTROL THE MOVEMENT OF SURFACE WATER AND DEPOSITION OF SEDIMENT ON SITE DURING CONSTRUCTION ACTIVITIES, TO ENSURE THE STORAGE CAPACITY OF THE DRAINAGE SYSTEM, AND FOR THE ESTABLISHMENT OF A PROPER VEGETATIVE COVER AFTER CONSTRUCTION. BASED ON THE CONSTRUCTION DESIGN AND PROPERTY ATTRIBUTES, SPECIFIC EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN IDENTIFIED AND ARE EXPLAINED IN THE FOLLOWING SECTIONS. THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE.

SILT FENCE (VESCH STANDARD AND SPEC. 3.05)

SILT FENCE WILL BE USED TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT FROM DISTURBED AREAS DURING CONSTRUCTION OPERATIONS AND TO MINIMIZE SEDIMENT FROM LEAVING THE SITE.

CULVERT INLET PROTECTION (VESCH STANDARD AND SPEC. 3.08)

CULVERT INLET PROTECTION WILL BE USED TO MINIMIZE SEDIMENT FROM ENTERING THE CULVERT AND BEING TRANSFERRED DOWNSTREAM.

TEMPORARY SEEDING (VESCH STANDARD AND SPEC. 3.31)

TEMPORARY SEEDING WILL BE USED TO ESTABLISH VEGETATIVE COVER AND TO REDUCE SILT RUNOFF FROM DISTURBED AREAS.

PERMANENT SEEDING (VESCH STANDARD AND SPEC. 3.32)

PERMANENT SEEDING WILL BE USED TO ESTABLISH VEGETATIVE COVER AND TO REDUCE SILT RUNOFF FROM DISTURBED AREAS NOT BEING DEVELOPED.

MULCHING (VESCH STANDARD AND SPEC. 3.35)

MULCHING WILL BE USED TO MINIMIZE EROSION BY PROTECTING THE SOIL SURFACE FROM RAINDROP IMPACT AND REDUCING THE VELOCITY OF OVERLAND FLOW. PRIMARY MULCHING WILL BE DONE WITH STRAW, AND SOIL STABILIZATION MATTING WILL BE APPLIED TO AREAS THAT DO NOT PROVIDE A GOOD STAND OF GRASS AFTER THE FIRST SEEDING OPERATION.

SOIL STABILIZATION BLANKETS AND MATTING (VESCH STANDARD AND SPEC. 3.36)

PROTECTIVE BLANKETS WILL BE UTILIZED ON PREPARED SLOPES 2:1 OR STEEPER AND ALSO TO LINE DITCH CHANNELS WHERE VELOCITIES EXCEED THE ALLOWABLE FOR GRASS LINED CHANNELS.

MANAGEMENT STRATEGIES

CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE. AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FLAGS.

EROSION AND SEDIMENT CONTROLS WILL BE CONDUCTED IN THE FOLLOWING SEQUENCE:

- > INSTALL SILT FENCE GRADIENT OF DISTURBED AREAS AS NOTED ON THE PLAN SHEETS.
- > PERMANENT SEEDING AND MULCH WILL BE PLACED ON NON-DEVELOPED DISTURBED AREAS WITHIN 7 DAYS.
- > REMOVE ALL TEMPORARY SEDIMENT AND EROSION CONTROL FEATURES ONCE FINAL STABILIZATION HAS BEEN OBTAINED.

THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.

PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED IMMEDIATELY FOLLOWING FINISHED CLEARING. SEEDING SHALL BE DONE WITH KENTUCKY 31 TALL FESCUE OR TURF-TYPE FESCUE ACCORDING TO VESCH STANDARD AND SPEC. 3.32, UNLESS A SPORTS-TYPE TURF GRASS IS INSTALLED FOR HIGHER TRAFFIC. IN ALL SEEDING OPERATIONS, SEED, FERTILIZER, AND LIME WILL BE APPLIED TO HELP PROMOTE A HEALTHY STAND OF VEGETATION.

MAINTENANCE

ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY DURING CONSTRUCTION AND AFTER EACH SIGNIFICANT RAINFALL. THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR:

- > THE SILT FENCE BARRIER WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF THE SEDIMENT DEPOSITION REACHES HALF WAY TO THE TOP OF THE BARRIER.
- > SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND OF GRASS IS MAINTAINED. AREAS SHOULD BE FERTILIZED, IRRIGATED, AND RE-SEED AS NECESSARY.

EXISTING SOIL INFORMATION:

NOT ALL MAPPING UNIT DESCRIPTIONS ARE SHOWN. SOILS LISTED BELOW RELATE TO THE PROJECT AREA.

8A—Combs loam, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting
Elevation: 750 to 2,600 feet
Mean annual precipitation: 30 to 45 inches
Mean annual air temperature: 50 to 57 degrees F
Frost-free period: 171 to 207 days
Map Unit Composition
Combs and similar soils: 75 percent
Minor components: 5 percent
Description of Combs
Setting
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium
Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water capacity: High (about 9.8 inches)
Interpretive groups
Land capability (nonirrigated): 2w
Typical profile
0 to 18 inches: Loam
18 to 72 inches: Loam
Minor Components
Clubfoot
Percent of map unit: 5 percent
Landform: Depressions on flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave

26C—Hayesville fine sandy loam, 7 to 15 percent slopes

Map Unit Setting
Elevation: 1,200 to 2,600 feet
Mean annual precipitation: 30 to 45 inches
Mean annual air temperature: 50 to 57 degrees F
Frost-free period: 171 to 207 days
Map Unit Composition
Hayesville and similar soils: 75 percent
Description of Hayesville
Setting
Landform: Mountains
Landform position (two-dimensional): Shoulder, summit
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from granite and gneiss and schist
Properties and qualities
Slope: 7 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water capacity: High (about 10.4 inches)
Interpretive groups
Land capability (nonirrigated): 4e
Typical profile
0 to 8 inches: Fine sandy loam
8 to 51 inches: Clay
51 to 62 inches: Sandy clay loam
Minor Components
Clubfoot
Percent of map unit: 5 percent
Landform: Depressions on flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave

13A—Derrac cobbly sandy loam, 0 to 4 percent slopes, occasionally flooded

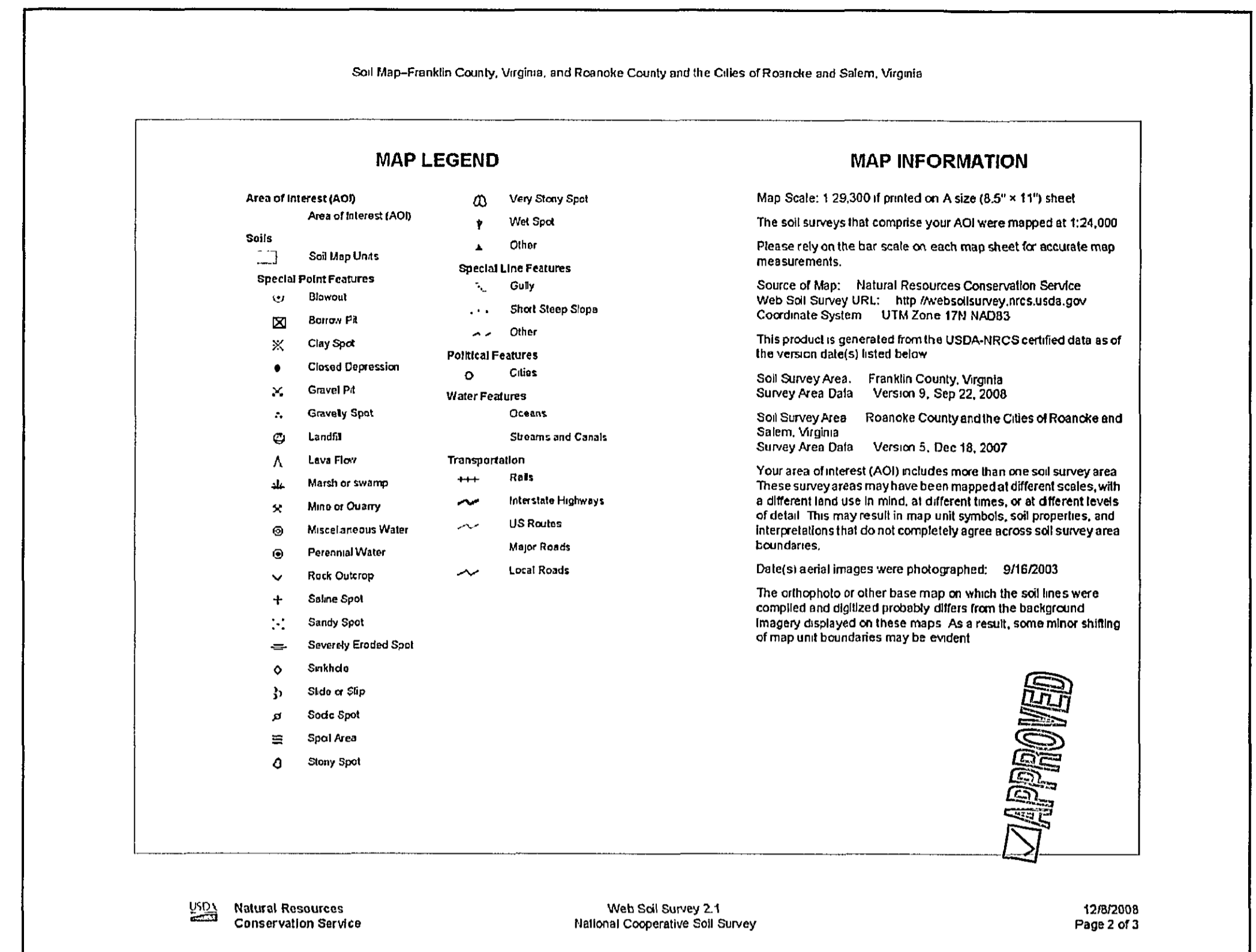
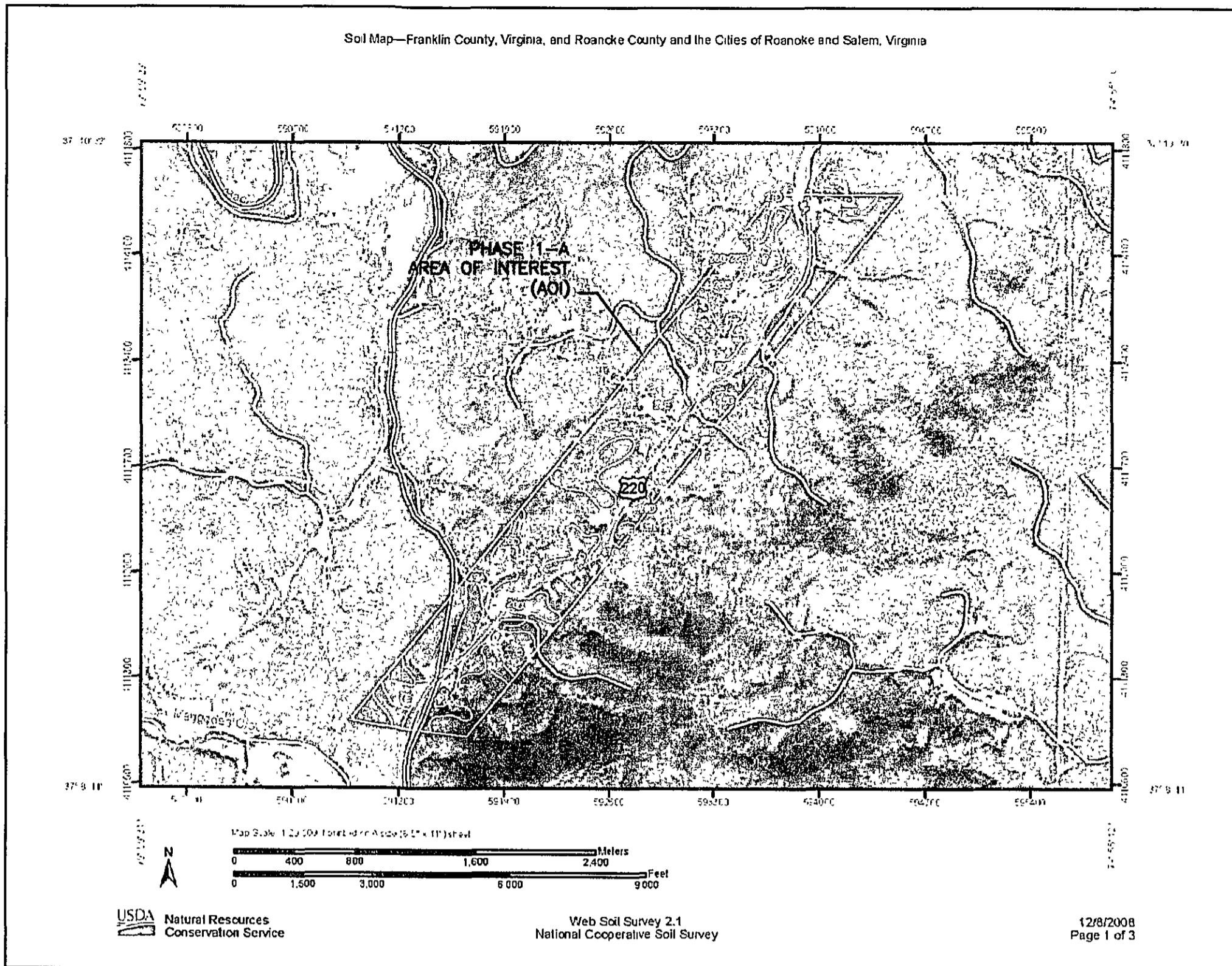
Map Unit Setting
Elevation: 1,200 to 2,600 feet
Mean annual precipitation: 30 to 45 inches
Mean annual air temperature: 50 to 57 degrees F
Frost-free period: 171 to 207 days
Map Unit Composition
Derrac and similar soils: 75 percent
Minor components: 5 percent
Description of Derrac
Setting
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from granite and gneiss and schist
Properties and qualities
Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water capacity: Low (about 4.4 inches)
Interpretive groups
Land capability (nonirrigated): 2s
Typical profile
0 to 4 inches: Cobbly sandy loam
4 to 31 inches: Very cobbly sandy loam
31 to 65 inches: Extremely cobbly loamy sand
Minor Components
Clubfoot
Percent of map unit: 5 percent
Landform: Depressions on flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave

26D—Hayesville fine sandy loam, 15 to 25 percent slopes

Map Unit Setting
Elevation: 1,200 to 2,600 feet
Mean annual precipitation: 30 to 45 inches
Mean annual air temperature: 50 to 57 degrees F
Frost-free period: 171 to 207 days
Map Unit Composition
Hayesville and similar soils: 75 percent
Description of Hayesville
Setting
Landform: Mountains
Landform position (two-dimensional): Summit, backslope, shoulder
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from granite and gneiss and schist
Properties and qualities
Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water capacity: High (about 10.4 inches)
Interpretive groups
Land capability (nonirrigated): 6e
Typical profile
0 to 8 inches: Fine sandy loam
8 to 51 inches: Clay
51 to 62 inches: Sandy clay loam
Minor Components
Clubfoot
Percent of map unit: 5 percent
Landform: Depressions on flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave

28E—Hayesville channery fine sandy loam, 25 to 50 percent slopes, very stony

Map Unit Setting
Elevation: 1,200 to 2,600 feet
Mean annual precipitation: 30 to 45 inches
Mean annual air temperature: 50 to 57 degrees F
Frost-free period: 171 to 207 days
Map Unit Composition
Hayesville and similar soils: 75 percent
Description of Hayesville
Setting
Landform: Mountains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from granite and gneiss and schist
Properties and qualities
Slope: 25 to 50 percent
Surface area covered with cobbles, stones or boulders: 1.5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 10.4 inches)
Interpretive groups
Land capability (nonirrigated): 7s
Typical profile
0 to 8 inches: Fine sandy loam
8 to 51 inches: Clay
51 to 62 inches: Sandy clay loam



Soil Map—Franklin County, Virginia, and Roanoke County and the Cities of Roanoke and Salem, Virginia

Map Unit Legend

Franklin County, Virginia (VA887)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
20E	Hayesville loam, 25 to 45 percent slopes, very stony	7.4	1.0%
Subtotals for Soil Survey Area		7.4	1.0%
Totals for Area of Interest		748.7	100.0%

Roanoke County and the Cities of Roanoke and Salem, Virginia (VA161)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
8A	Combs loam, 0 to 2 percent slopes, occasionally flooded	4.7	0.8%
17E	Evard fine sandy loam, 25 to 55 percent slopes	22.4	3.0%
26B	Hayesville fine sandy loam, 2 to 7 percent slopes	7.9	1.1%
28C	Hayesville fine sandy loam, 7 to 15 percent slopes	56.1	7.5%
26D	Hayesville fine sandy loam, 15 to 25 percent slopes	139.0	18.4%
27D	Hayesville gravelly fine sandy loam, 15 to 25 percent slopes	0.0	0.0%
28E	Hayesville channery fine sandy loam, 25 to 50 percent slopes, very stony	486.2	64.8%
34E	Peaks gravelly loam, 35 to 60 percent slopes, very stony	6.7	0.9%
34F	Peaks gravelly loam, 60 to 75 percent slopes, very stony	5.8	0.8%
42A	Sndon loam, 0 to 2 percent slopes, occasionally flooded	11.8	1.5%
47C	Thurmont sandy loam, 7 to 15 percent slopes	1.9	0.3%
Subtotals for Soil Survey Area		741.4	88.0%
Totals for Area of Interest		748.7	100.0%

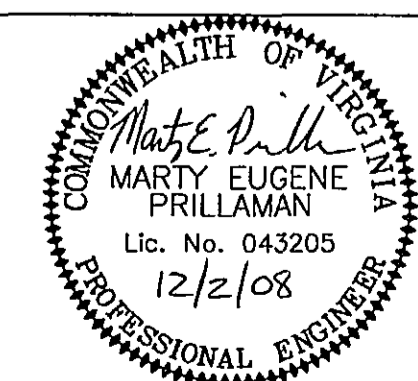
USDA Natural Resources Conservation Service Web Soil Survey 2.1 National Cooperative Soil Survey 12/2/2008 Page 2 of 3

No:	Revisions:	Date:
1	ROANOKE COUNTY COMMENTS	12/2
2		
3		
4		
5		
6		

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WESTERN VIRGINIA WATER AUTHORITY

Franklin County

DESIGN BY: BKS/MEP	PROJECT: ROANOKE/FRANKLIN COUNTY WATERLINE EXTENSION PHASE I-A U.S. ROUTE 220 ROANOKE COUNTY, VA	DATE: 8/12/08
DRAWN BY: BKS	TITLE: EROSION & SEDIMENT CONTROL NARRATIVE	DRAWING NUMBER: C5
REVIEWED BY: MEP	PROJECT NUMBER: FCPP1004	SHEET NUMBER: 7 of 9
DRAWING NAME: C5 E&S NARRATIVE.dwg	SCALE: NO SCALE	