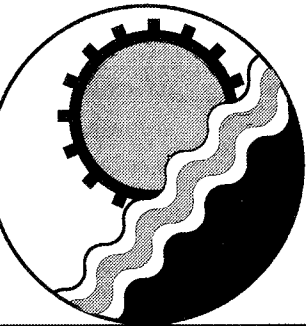


<div>EROSION & SEDIMENT CONTROL NARRATIVE I</div> <div>EROSION AND SEDIMENT CONTROL NARRATIVE Broad Street & Charter Avenue Extensions</div> <div>PROJECT DESCRIPTION This project consists of the extension of existing streets within the TND core area of the project known as Daleville Town Center. The total disturbed area for this project is 2.15 Acres. The streets of interest for this project are Broad Street and Charter Avenue. Broad Street will be extended to the North to tie in at the intersection with Charter Avenue. Charter Avenue will be extended east to tie into the existing portion of Charter Avenue. The extension of these streets will include parking, and the infrastructure to include water, sewer, and stormsewer.</div> <div>EXISTING SITE CONDITIONS The site is located within the existing Daleville Town Center. Contact address is 90 Town Center Street, Daleville, VA.</div> <div>ADJACENT AREAS The parcels adjacent to this site have stabilized drainage patterns and will not be impacted by this development.</div> <div>OFFSITE AREAS The proposed development at this site has been designed to balance therefore no off site areas will be impacted or used as host for stockpiles, etc., by the construction.</div> <div>SOILS Source of soils information is SSURGO Database (USDA). (See section III) Site Soils #1, 20C—Frederick loam, 7 to 15 percent slopes, Hydrologic Soil Group: B Site Soils #2, 21D—Frederick silty clay loam: 15 to 30 percent slopes, severely eroded, <i>Hydrologic Soil Group: B</i> Site Soils #3, 53B—Timberville silt loam, 0 to 7 percent slopes, occasionally flooded, <i>Hydrologic Soil Group: B</i> The project sites listed above are all in the Hydrologic Soil Group B which is well drained.</div> <div>CRITICAL AREAS Critical erosion areas are areas where slopes are 2:1 or steeper and areas of proposed ditches. There are no critical erosion areas within the project limits</div> <div>The following is required for this project:</div> <div>EROSION AND SEDIMENT CONTROL MEASURES (Construction Sequence and Phasing) 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 1992 Virginia Erosion and Sediment Control Handbook, or latest edition. The minimum standards of the Virginia Erosion and Sediment Control Regulations shall be adhered to unless otherwise waived or approved by a variance. The following order of erosion control practices shall be adhered to in preparing this site for construction:</div> <div><div>1. The contractor to secure all required permits from Botetourt County, DEQ, VDH and VDOT.</div><div>2. The contractor shall have on-site at all times a copy of the approved signed site plans as well as required permits given by the required scoping agencies previously mentioned above.</div><div>3. Contractor to install silt fence as shown</div><div>4. Install construction entrances as shown.</div><div>5. Contractor to use temporary sediment trap that is to be installed during the Multi-Family Apartments Phase 2.</div><div>6. Contractor to install temporary construction entrances as shown</div><div>7. Contractor to install temporary diversion berm and/or ditches as required or as shown</div><div>8. Contractor to begin general construction activities to develop site</div><div>9. Contractor to inspect at the end of each day (as well as after any precipitation) all erosion control devices for any possible damage to be repaired.</div><div>10. Contractor to clean any mud or debris that accumulates on US Route 220 that is deposited from construction site.</div><div>11. After site development is complete, and all disturbed areas have stabilized, contractor to seek approval from Botetourt County E&S Inspector to remove all temporary diversion berms/ditches & temporary sediment trap. The sediment traps will then be converted into SWM Detention Basins as shown with a sediment forebays as shown on the grading plan.</div><div>12. The existing Stockpile shall be enclosed in a silt fence and seeded as required after dumping any excess soils from this project. Contractor to secure all permits for offsite soil disposal and stabilization as required by the County.</div></div> <div>STRUCTURAL PRACTICES</div> <div><div>CE – TEMPORARY STONE CONSTRUCTION ENTRANCE – 3.02 A stabilized stone pad with a filter fabric under liner located at points of vehicular ingress and egress on a construction site. This pad reduces the amount of mud transported onto paved public roads by motor vehicles or runoff.</div><div>IP- STORM DRAIN INLET PROTECTION – 3.07 A sediment filter or an excavated impounded area around a storm drain drop inlet or curb inlet. This filter prevents sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area.</div></div>	<div>VEGETATIVE PRACTICES</div> <div><div>1. TS - TEMPORARY SEEDING - 3.31 All denuded areas, which will be left dormant for more than 7 days, shall be seeded with fast germinating temporary vegetation immediately following grading.</div><div>2. PS - PERMANENT SEEDING - 3.32 All final-graded areas where permanent cover is desired or rough-graded areas that will not be brought to final grade for a year or more shall be seeded with perennial vegetation within 7 days of reaching final grade.</div><div>3. MU – MULCHING – 3.35 Application of plant residues or other suitable materials to the soil surface to prevent erosion by protecting the soil surface from raindrop impact and reducing the velocity of overland flow. Mulching also fosters the growth of vegetation by increasing available moisture and providing insulation against extreme heat and cold.</div></div> <div>PERMANENT STABILIZATION All areas disturbed by construction shall be stabilized with permanent seeding within 7 days of reaching final grades. Seeding shall be done with Kentucky 31 Tall Fescue according to Std. and Spec. 3.32, PERMANENT SEEDING, of the 1992 Virginia Erosion and Sediment Control Handbook, latest edition. Mulch (straw or fiber) will be used on all seeded areas. In all seeding operations, seed, fertilizer and lime will be applied prior to mulching. Erosion control blankets may be installed over fill slopes which have been brought to final grade and have been seeded to protect the slopes properly.</div> <div>MAINTENANCE In general, all erosion and sediment control measures will be checked daily and after each significant rainfall. The following items will be checked in particular:</div> <div><div>1. Construction Entrance - The entrance shall be maintained in a condition which will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with additional stone or the washing and reworking of existing stone as conditions demand and repair and/or cleanout of any structures used to trap sediment. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately. The use of water trucks to remove materials dropped, washed, or tracked onto roadways will not be permitted under any circumstances.</div><div>2. Sediment Barriers - The sediment trapping devices such as silt fence, outlet protection, traps, forebay and detention basin will be checked regularly for sediment clean-out levels.</div><div>3. Silt Fence - The silt fence barriers 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.</div><div>4. Culvert & Inlet protection shall be checked after each rain and repairs made as needed. Aggregate shall be replaced or cleaned when inspection reveals that clogged voids are causing ponding problems which interfere with onsite construction.</div></div> <div>5. The seeded areas will be checked regularly to ensure that a good stand of grass is maintained. Areas shall be fertilized and re-seeded as needed.</div>	<div>SOIL DESCRIPTIONS</div> <div>20C—Frederick loam, 7 to 15 percent slopes</div> <div>Map Unit Setting National map unit symbol: k73q Elevation: 900 to 2,600 feet Mean annual precipitation: 30 to 45 inches Mean annual air temperature: 50 to 57 degrees F Frost-free period: 153 to 196 days Farmland classification: Farmland of statewide importance</div> <div>Map Unit Composition Frederick and similar soils: 80 percent Estimates are based on observations, descriptions, and transects of the mapunit.</div> <div>Description of Frederick</div> <div>Setting Landform: Hills Landform position (two-dimensional): Summit, shoulder, backslope Landform position (three-dimensional): Side slope, nose slope, intertuffe Down-slope shape: Convex Across-slope shape: Convex Parent material: Residuum weathered from limestone</div> <div>Typical profile H1 - 0 to 11 inches: loam H2 - 11 to 29 inches: clay H3 - 29 to 55 inches: clay H4 - 55 to 65 inches: clay</div> <div>Properties and qualities Slope: 7 to 15 percent Depth to restrictive feature: More than 80 inches Natural drainage class: Well drained Runoff class: Medium 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 storage in profile: High (about 9.3 inches)</div> <div>Interpretive groups Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3c Hydrologic Soil Group: B Hydric soil rating: No</div> <div>20D—Frederick loam, 15 to 30 percent slopes</div> <div>Map Unit Setting National map unit symbol: k73r Elevation: 900 to 2,600 feet Mean annual precipitation: 30 to 45 inches Mean annual air temperature: 50 to 57 degrees F Frost-free period: 153 to 196 days Farmland classification: Not prime farmland</div> <div>Map Unit Composition Frederick and similar soils: 85 percent Estimates are based on observations, descriptions, and transects of the mapunit.</div> <div>Description of Frederick</div> <div>Setting Landform: Hills Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope, nose slope Down-slope shape: Convex Across-slope shape: Convex Parent material: Residuum weathered from limestone</div> <div>Typical profile H1 - 0 to 11 inches: loam H2 - 11 to 29 inches: clay H3 - 29 to 55 inches: clay H4 - 55 to 65 inches: clay</div> <div>Properties and qualities Slope: 15 to 30 percent Depth to restrictive feature: More than 80 inches Natural drainage class: Well drained Runoff class: High 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 storage in profile: High (about 9.3 inches)</div> <div>Interpretive groups Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4c Hydrologic Soil Group: B Hydric soil rating: No</div> <div>53B—Timberville silt loam, 0 to 7 percent slopes, occasionally flooded</div> <div>Map Unit Setting National map unit symbol: k5fy Elevation: 1,400 to 3,600 feet Mean annual precipitation: 30 to 45 inches Mean annual air temperature: 50 to 57 degrees F Frost-free period: 153 to 196 days Farmland classification: All areas are prime farmland</div> <div>Map Unit Composition Timberville and similar soils: 80 percent Estimates are based on observations, descriptions, and transects of the mapunit.</div> <div>Description of Timberville</div> <div>Setting Landform: Drainageways Landform position (two-dimensional): Footslope Landform position (three-dimensional): Base slope Down-slope shape: Linear Across-slope shape: Concave Parent material: Local alluvium and/or colluvium derived from limestone and shale</div> <div>Typical profile H1 - 0 to 11 inches: silt loam H2 - 11 to 43 inches: silty clay loam H3 - 43 to 65 inches: clay</div> <div>Properties and qualities Slope: 0 to 7 percent Depth to restrictive feature: More than 80 inches Natural drainage class: Well drained Runoff class: Medium 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 storage in profile: Moderate (about 8.9 inches)</div> <div>Interpretive groups Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2e Hydrologic Soil Group: B Hydric soil rating: No</div>
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ENGINEERING CONCEPTS, INC.

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DALEVILLE, VIRGINIA 24083
540.473.1253



Drawn	ECI	ESC NARRATIVE & SOIL DESCRIPTIONS BROAD ST. & CHARTER AVE. EXTENSIONS	NO SCALE
Designed	ECI		DATE: FEB 7, 2018
Checked	ECI	DALEVILLE TOWN CENTER BOTETOURT COUNTY, VIRGINIA	PROJECT: 17056
Approved	ECI		C12