KEYPLAN **Erosion & Sediment Control Narrative** Cox Communications Renovations and Additions Roanoke County, Virginia A. PROJECT DESCRIPTION The project site is located in Roanoke County, Virginia. It is located along Fallowater Lane at the existing building. Access to the site will be through the existing site entrances to Fallowater Lane. Total disturbance for the initial land disturbance permit is expected to be approximately the project is approximately 2.94 acres. The project generally consists of approximately 3,500 cubic yards of grading, drainage improvements, utilities installation, and asphalt paving. EXISTING SITE CONDITIONS The approximately 6.0 acres site is located in Roanoke County west of Fallowater Lane. The new building addition is to be located in areas of existing building, parking, and lawn areas. Removed parking areas removed for the building addition. Access for the site as well as for parking areas removed for the building addition. Access for the site will remain unchanged with the use of the three existing entrances to Fallowater Lane. Stormwater is currently controlled through a series of drainage structures, pipes and a detention pond adjacent to the property. The majority of the existing development area. Existing buildings on site consist of the main building of approximately 26,400 square feet, a small 1500 square foot mobile building, and a small 172 square foot building near the existing parking area. C. ADJACENT PROPERTY The property to the west of the development area is owned by Roanoke Hills Associates and is zoned R4. Its current use is an apartment complex. The property to the east is owned by Woodhill Corporation and its current use is for a sediment detention pond. The development property is adjoined to the southeast by a 50' right-of-way for Fallowater Lane. D. PLANNED EARTHWORK ACTIVITIES / OFF-SITE AREAS The site will require 3,500 cubic yards of earth work to establish the proposed grades for the development based on the survey completed on February 3, 2006. The earthwork operation with approximately 1000 cubic yards of material to be exported for imported topsoil for the project. According to the SCS soils information posted on-line, there are approximately two map unit soil groups in the project site. These are the Chiswell-Litz complex and the Chiswell-Litz-Urban land complex. Map unit descriptions for these soils are as follows: Chiswell is a steep to very steep, shallow, well drained soil. Typically the surface layer is channery silt loam about 2 inches thick. The solution is 7e. The Virginia soil management group is JJ. This soil is not hydric. Litz is a steep to very steep, moderately deep, well drained soil. Typically the surface layer has a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The land capability classification is 7e. The Virginia soil management group is JJ. This soil is not hydric. 6C - Chiswell-Litz-Urban land complex, 2 to 15 percent slopes Chiswell is a gently sloping to moderately steep, shallow, well drained soil. Typically the surface layer is channery silt loam about 2 inches thick. The surface layer has a moderate ly low content of organic matter. The slowest permeability is moderate. It has a very low available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The land capability classification is 4e. The Virginia soil management group is JJ. This soil is not hydric. Litz is a gently sloping to moderately deep, well drained soil. Typically the surface layer has a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The land capability classification is 3e. The Virginia soil management group is JJ. This soil is not hydric. CRITICAL AREAS Several critical erosion conditions will be encountered during grading operations as follows: Existing slopes Stormwater management structures The proposed erosion and sediment control measures are intended to minimize any potential problems and promote stabilization. G. EROSION AND SEDIMENT CONTROL MEASURES All structural and vegetative erosion and sediment control practices will be constructed and maintained in accordance with the minimum standards and specifications of the "Virginia Erosion and Sediment Control Handbook" (VESCH), latest edition. TEMPORARY STONE CONSTRUCTION ENTRANCE - STD. & SPEC. 3.02 Temporary stone construction entrance shall be installed as shown on the plan to reduce the soil transported onto public roads and other paved areas. CONSTRUCTION ROAD STABILIZATION - STD. & SPEC. 3.03 Construction road stabilization shall be installed as shown on the Plan to reduce erosion of permanent roadbeds between the time of initial grading and final stabilization. Silt fence shall be installed as shown on the Plan to detain sediment from disturbed areas during construction operations preventing sediment from leaving the site, as well as to decrease the velocity of low-to-moderate level channel flows. 4. STORM DRAIN INLET PROTECTION - STD. & SPEC, 3.07 Storm drain inlet protection shall be placed at the existing grate inlet to prevent sediment traps have been specified. A small ponding area, formed by constructing an earthen embankment with a stone outlet across a drainage swale, to detain sediment-laden runoff from small disturbed areas for enough time to allow most of the suspended solids to settle out. A Permanent channel designed to carry concentrated flow without erosion. Applicable to man-made channels, including roadside ditches, and natural channels that are modified to accommodate increased flows generated by land development. A permanent, erosion-resistant ground cover of large, loose, angular stone installed wherever soil conditions, water turbulence and velocity, expected vegetative cover, etc., are such that soil may erode under design flow conditions. 8. SOIL STABILIZATION BLANKETS AND MATTING - STD. & SPEC. 3.36 Soil stabilization blankets and matting shall be placed on critical slope areas and slopes exceeding 3:1 where indicated as such on the plans Reducing surface and air movement of dust during land disturbance, demolition or construction activity to ensure the survival of desirable trees where they will be effective for erosion and sediment control and provide other environmental and aesthetic benefits. GENERAL: A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized by pavement. Permanent vegetation shall be maintained at a minimum of one full year after planting. New seeding shall be supplied with adequate moisture, especially late in the season, and in abnormally hot or dry weather. Stabilization practices shall be accomplished in accordance with the appropriate VESCH Standard and Specification and the Erosion and Sediment Control Plan. Permanent or temporary soil stabilization shall be applied to denuded areas within seven (7) days after final grade is reached on any portion of the site. Temporary soil stabilization shall be used on all areas that are not at final grade and that will be left dormant for a period of more than 1 year. 1. TEMPORARY SEEDING - STD. & SPEC. 3.31 Temporary seeding shall be applied over cleared areas that will not be brought to final grade within 30 days. Temporary seeding mixes shall be as described on the detail sheets of the Erosion and Sediment Control Plan. Permanent seeding is proposed over all cleared areas. Permanent seeding mixes shall be as described on the Erosion and Sediment Control Plan or as shown on the detail drawings. Mulch shall be applied in conjunction with temporary and permanent seeding as specified in TEMPORARY and PERMANENT SEEDING - Std. & Spec. 3.31 & 3.32. J. STORMWATER CONSIDERATIONS Draper Aden Associates The site is generally developed with existing stormwater structures and drainage channels. The proposed fevelopment will result in the removal of approximately 2.94 acres of the building, parking to construct the proposed fevelopment will result in the removal of approximately 2.94 acres of the building, parking and undeveloped areas in order to construct the proposed fevelopment will result in the removal of approximately 2.94 acres of the building, parking to construct the proposed fevelopment will result in the removal of approximately 2.94 acres of the building, parking to construct the proposed fevelopment will result in the removal of approximately 2.94 acres of the building, parking to construct the proposed fevelopment will result in the removal of approximately 2.94 acres of the building, parking to construct the proposed fevelopment will result in the removal of approximately 2.94 acres of the building, parking to construct the proposed fevelopment will result in the removal of approximately 2.94 acres of the building, and parking construct the proposed fevelopment will result in the removal of approximately 2.94 acres of the building, and parking construct the proposed fevelopment will result in the removal of approximately 2.94 acres of the building, and parking construct the proposed fevelopment will result in the removal of approximately 2.94 acres of the building, and parking construct the proposed fevelopment will result in the removal of approximately 2.94 acres of the building, and parking construct the proposed fevelopment will result in the removal of approximately 2.94 acres of the building approximately 2.94 acres of the buildi outfall points and proposed stormwater structures. The primary stormwater detention area for this addition construction will be with sediment traps in undeveloped areas and a permanent stormwater for the northeast portion of the project development area in 2206 South Main Street proximity of the proposed building addition as well as areas between the proposed parking and offsite drainage. 540-552-0444 Fax: 540-552-0291 K. MANAGEMENT STRATEGIES As a first step measure, perimeter controls (silt fence) shall be installed before any upslope land-disturbing activity takes place. Inlet protection, as indicated on the Plans, shall be installed in front of the existing structures. Construction road stabilization shall be installed on the roadways and other areas to remain graveled as soon as the subgrade elevation is obtained. Sediment Traps shall be installed at the locations indicated on the plans. Areas that are not to be disturbed shall be clearly marked Permanent seeding will be used on all disturbed areas that are not scheduled to receive paved surfacing, gravel or other landscaping (hardwood mulch, etc.). Excavated material required to be re-used for backfilling shall be stockpiled on site, with erosion control measures in place. . Soil stockpiles shall be protected as indicated on the plan and details. 9. Installation of proposed stormwater management structures. 10. All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization or after temporary measures are no longer needed unless otherwise authorized by the local program authority. Trapped sediment and the disturbed soil areas resulting from the removal of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation. 11. Contractor shall have an on-site employee certified as the "Responsible Land Disturber" by the Commonwealth of Virginia, Department of Conservation and Recreation, who will inspect erosion and siltation control devices and measures for proper installation. This employee shall also inspect erosion and siltation control devices and measures for proper installation. This employee certified as the "Responsible Land Disturbance Permit, the Owner will provide the name of the "Responsible Land Disturber" to Roanoke County. All erosion and sediment control measures shall be checked, at a minimum, weekly and after each runoff-producing rainfall event. The following areas will be checked in particular. PROJECT TITLE The silt fence barriers shall be checked regularly for undermining or deteriorations of the fabric. Sediment shall be removed when the level of sediment depositions reaches halfway to the top of the barrier. All damaged silt fences shall be replaced or repaired. All vegetated areas shall be checked regularly to ensure that a good stand is maintained. Areas shall be fertilized and repaired as necessary. Inlet protection shall be inspected after each rain and repairs made as needed. 4. Sediment traps shall be inspected after each rain and repairs made as needed. Sediment shall be removed and the trap restored to its original dimensions when the sediment shall be deposited in a suitable area and in such a manner that it will not erode. Specific requirements related to inspection and maintenance of each erosion control measures are discussed in the VESCH Standards and Specifications. The Contractor shall be responsible for maintenance of all erosion control measures as needed to ensure that sediment-laden runoff does not leave the site. MINIMUM STANDARDS COMMUNICATIONS Erosion control methods incorporated on site must comply with the following criteria, techniques and methods: Premanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade but will remain dormant for longer than 30 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year. COX COMMUNICATIONS During construction of the project, soil stockpiles and borrow areas shall be stabilized or protected with sediment trapping measures. The applicant is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as borrow areas and soil intentionally transported from the project site. ROANOKE COUNTY, VIRGINIA A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that, is uniform, mature enough to survive and will inhibit erosion. 4. Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment shall be constructed as a first step in any land-disturbing activity and shall be made functional before upslope land disturbance takes place. Stabilization measures shall be applied to earthen structures such as dams, dikes and diversions immediately after installation. 6. Sediment traps and sediment basins shall be designed and constructed based upon the total drainage area to be served by the trap or basin. a. The minimum storage capacity of a sediment trap shall be 134 cubic yards per acre of drainage area and the trap shall only control drainage areas less than three acres. b. Surface runoff from disturbed areas that is comprised of flow from drainage areas greater than or equal to three acres shall be controlled by a sediment basin. The minimum storage capacity of the basin during a twenty-five year storm of 24-hour duration. Runoff coefficients used in runoff calculations shall correspond to a bare earth condition or those conditions expected to exist while the sediment basin is utilized. SFCS Inc. • 305 South Jefferson Street 7. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Slopes that are found to be eroding excessively within one year of permanent stabilization shall be provided with additional slope stabilization measures until the problem is corrected. Roanoke, Virginia 24011.2003 8. Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume or slope drain structure. 540.344.6664 **Fax** 540.343.6925 9. Whenever water seeps from a slope face, adequate drainage or other protection shall be provided. www.sfcs.com 10. All storm sewer inlets that are made operable during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment. 11. Before newly constructed stormwater conveyance channels or pipes are made operational, adequate outlet protection and any required temporary or permanent channel lining shall be installed in both the conveyance channel and receiving channel. 12. When work in a live watercourse is performed, precautions shall be taken to minimize encroachment, control sediment transport and stabilize the work area to the greatest extent possible during construction. Nonerodible material shall be used for the construction of causeways and cofferdams. Earthen fill may be used to these structures if armored by nonerodible cover materials. 13. When a live watercourse must be crossed by construction vehicles more than twice in any six-month period, a temporary vehicular stream crossing constructed of nonerodible material shall be provided. 14. All applicable federal, state and local regulations pertaining to working in or crossing live watercourse shall be met.
15. The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed. PROJECT DESIGNER PROJECT ARCHITECT 16. Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria: PROJECT ENGINEER a. No more than 500 linear feet of trench may be opened at one time DESIGNED BY b. Excavated material shall be placed on the uphill side of trenches. c. Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property. DRAWN BY d. Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization. CHECKED BY e. Restabilization shall be accomplished in accordance with these regulations. f. Applicable safety regulations shall be compiled with. 17. Where construction vehicle access routes intersect paved or public roads, provisions shall be made to minimize the transported onto a paved or public road surface, the road surface, the road surface shall be removed from the roads by shoveling or sweeping and transported to a sediment control disposal area. Street washing shall be **APPROVED:** allowed only after sediment control disposal area. Street washing shall be allowed only after sediment is removed in this manner. This provision shall apply to individual development lots as well as to larger land-disturbing activities. 18. All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization or after the temporary measures are not longer needed, unless otherwise authorized by the local program authority. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation. 19. Properties and waterways downstream from development sites shall be protected from sediment deposition, erosion and damage due to increase in volume, velocity and peak flow rate of stormwater runoff for the stated frequency storm of 24-hour duration in accordance with the following standards and criteria. a. Concentrated stormwater runoff leaving a development site shall be discharged directly into an adequate natural or man-made receiving channel, pipe or storm sewer system, downstream stability analyses at the outfall of the pipe or pipe system shall be performed. b. Adequacy of all channels and pipes shall be verified in the following manner: DRAWING TITLE The applicant shall demonstrate that the total drainage area to the point of analysis within the channel is one hundred times greater than the contributing drainage area of the project in question; or a. Natural channels shall be analyzed by the use of a two-year storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks; and b. All previously constructed man-made channels shall be analyzed by the use of a ten-year storm to verify that stormwater will not overtop its banks and by the use of a two-year storm to demonstrate that stormwater will not cause erosion of channel bed or banks; and c. Pipes and storm sewer systems shall be analyzed by the use of a ten-year storm to verify that stormwater will be contained within the pipe or system. c. If exiting natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant shall: **COUNTY ENGINEER** DATE Improve the channel to a condition where a ten-year storm will not overtop the banks and a two-year storm will not cause erosion to the channel bed or banks; or Improve the pipe or pipe system to a condition where the ten-year storm is contained within the appurtenances; or Develop a site design that will not cause the pre-development peak runoff rate from a two-year storm to increase when runoff outfalls into a man-made channel; or 4. Provide a combination of channel improvement, stormwater detention or other measures which is satisfactory to the plan-approving authority to prevent downstream erosion. d. The applicant shall provide evidence of permission to make improvements. 5515.00 e. All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development of the subject project. f. If the applicant chooses an option that includes stormwater detention he shall obtain approval from the locality of a plan for maintenance of the detention facilities. The plan shall set forth the maintenance requirements of the facility and the person responsible for performing the maintenance. g. Outfall from a detention facility shall be discharged to a receiving channel, and energy dissipater shall be placed at the outfall of all detention facilities as necessary to provide a stabilized transition from the facility to the receiving channel. COUNTY PLANNER DATE h. All on-site channels must be verified to be adequate. i.Increased volumes of sheet flows that may cause erosion or sedimentation on adjacent property shall be diverted to a stable outlet, adequate channel, pipe or pipe system, or to a detention facility. In applying these stormwater runoff criteria, individual lots or parcels in a residential, commercial or industrial development shall not be considered to e separate development projects. Instead, the development projects. Instead, the development projects as a whole, shall be used in all engineering calculations. . All measures used to protect properties and waterways shall be employed in a manner which minimizes impacts on the physical, chemical and biological integrity of rivers, streams and other waters of the state.

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CADD VERSION

PLOT SCALE

PLOT DATE

COMM NO.

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May 02, 2006

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DRAWING

Charlottesville, VA

Hampton Roads, VA

: STEVEN P. SOUPIR, P.E

MARCH 14, 2006

18 OF 19

SHEET

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: SPS

: CAH

REVISION DESCRIPTION CONSTRUCTION

EROSION AND SEDIMENT

CONTROL NARRATIVE

No. 037043