

4VAC5O-30-40 Minimum Standards. An erosion and sediment control program adopted by a district or locality must be consistent with the following

Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven days to denuded areas that may not be at 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.

- 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
- 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.
- 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
- Stabilization measures shall be applied to earthen structures such as dams, dikes and diversions immediately after
- Sediment traps and sediment basins shall be designed and constructed based upon the total drainage area to be
- served by the trap or basin 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.

- 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 a sediment basin shall be 134 cubic yards per acre of drainage area. The outfall system shall, at a minimum, maintain the structural integrity 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.
- 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 stabilizing measures until the problem is corrected.
- Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume or slope drain structure. Whenever water seeps from a slope face, adequate drainage or other protection shall be provided.
- 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.
- 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
- 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 for these structures if armored by
- 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.
- All applicable federal, state and local regulations pertaining to working in or crossing live watercourses shall be met.
- The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed. Underground utility lines shall be installed in accordance with the following standards in addition to other applicable
- No more than 500 linear feet of trench may be opened at one time.
- Excavated material shall be placed on the uphill side of trenches.
- 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
- Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote
- Restabilization shall be accomplished in accordance with these regulations. Applicable safety regulations shall be complied with.
- Where construction vehicle access routes intersect paved or public roads, provisions shall be made to minimize the transport of sediment by vehicular tacking onto the paved surface. Where sediment is transported onto a paved or public road surface, the road surface shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a 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.
- All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization or after the temporary measures are no 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.
- Properties and waterways downstream from development sites shall be protected from sediment deposition, erosion and damage due to increases 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. For those sites where runoff is discharged into a pipe or pipe system, downstream stability analyses at the outfall of the pipe or pipe system
- Adequacy of all channels and pipes shall be verified in the following manner:
 - 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
 - (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 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

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.

- If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the
- (1) 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
- 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 natural channel or will not cause the re-development peak runoff rate from a ten-year storm to increase when runoff outfalls into a man-made channel; or
- Provide a combination of channel improvement, stormwater detention or other measures which is satisfactory to the plan-approving authority to prevent downstream erosion.
- The applicant shall provide evidence of permission to make the improvements
- All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development of the
- 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.
- Outfall from a detention facility shall be discharged to a receiving channel, and energy dissipators shall be placed at the outfall of all detention facilities as necessary to provide a stabilized transition from the facility to the receiving
- All on-site channels must be verified to be adequate.
- 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 be separate development projects. Instead, the development, as a whole, shall be considered to be a single development project. Hydrologic parameters that reflect the ultimate development condition 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.

The purpose of this project is to develop a facility for a short term residential treatment program with associated infrastructure total disturbed area will be 5.6 Acres. Utilities are planned for this development. The amount of disturbance to the ground surface will be confined to within the site and along Hollins Road. Cut material will need to be hauled from the site to reach finished grade. This project is located at 3003 Hollins Road, Roanoke City. The contractor shall provide a seperate erosion and sediment control plan for offsite haul areas prior to permit issuance.

EXISTING SITE CONDITIONS

The existing house is postitioned on a ridge that contiunes north for approximately 260 feet. Runoff from this ridge runs to Tinker Creek from the north and east slopes of the ridge and to Hollins Road from the south and west slopes of the ridge. A portion of the property is in the floodway. Slopes range from 3% to 50%.

The Spirit of Liberty Worship Center, zoned IN, is to the south and the City of Roanoke Redevelopment, zoned RM1, is to the east. This property is bounded on the northeast by Tinker Creek and west by Hollins Road. A residential property is located along Hollins Road and is zoned RM1. No adjacent properties will be impeded by construction.

This site receives runoff from Hollins Road and properties along the east side Hollins Road. A storm drainage system is planned to convey this runoff to a Tinker Creek outfall.

Soils as classified in the Soil Survey of Roanoke City. 52 Udorthents-Urban land complex. Udorthents consist of material that has been graded. The properties of this area complex are varied and onsite investigation is recommended. 41—C Shottower—Urban land complex generally 4 to 15% slopes this map unit is about 40% Shottower, 35% Urban land and 25%

CRITICAL EROSION AREAS

Critical erosion areas include any disturbed 2:1 slopes. All 2:1 slopes will receive turf reinforcement matting. Ditch linings will receive turf reinforcement matting and vegetation. 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. The minimum standards of the Virginia Erosion and Sediment Control Regulations shall be adhered to unless otherwise waived or approved by a variance.

STRUCTURAL PRACTICES 1. CE-TEMPORARY CONSTRUCTION ENTRANCE-3.02 A temporary construction entrance shall be installed where the access area intersects with Hollins Road.

2. CRS-CONSTRUCTION RCAD STABILIZATION- 3.03

Temporary stabilize access road with stone immediately after grading. The design aggregate base section shown on the pavement section details on sheet 3.01 of the plan set will act as the CRS.

Silt fence barriers will be installed down slope of areas with minimal grade to filter sediment runoff from sheet flow.

4. IP-STORM DRAIN INLET PROTECTION- 3.07 All storm sewer drains shall be protected during construction

5. CIP-CULVERT INLET SEDIMENT TRAP-3.08 Prevents sediment from entering the outflow pipe and depositing downstream.

A temporary ridge constructed at the top or base of a sloping drainage area to divert sediment runoff to the sediment

traps as shown on the plans.

7. RWD-TEMPORARY RIGHT OF WAY DIVERSION-3.11 A ridge of stone placed across the drivway to divert storm runoff to the sediment trap.

8. ST-SEDIMENT TRAP-3.13 Sediment traps shall be installed to intercept sediment laden runoff.

9. OP-OUTLET PROTECTION-3.18

A stone lined apron will be placed at the outlet of the pipes as shown on the development plans to prevent scour.

1.TS-TEMPORARY SEEDING-3.31

All denuded areas, which will be left dormant for more than 30 days, shall be seeded with fast germinating temporary vegetation immediately following grading. 2. PS-PERMANENT SEEDING-3.32

All final —graded areas where permanent cover is desired or rough—graded areas that will not be brought of final grade for a year or more shall be seeded with perennial vegetation within 7 days of reaching final grade. 3.MU-MULCH-3.35

Mulching prevents erosion and increases moisture for new plant growth.

4. BM-BLANKET MATTING-3.36 Soil stabilization mat aplied to slopes 3:1 or greater to promote new vegetation.

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: 1. The sediment trapping devices will be checked regularly for sediment cleanout.

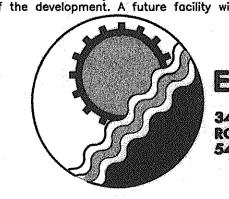
2. The gravel outlet's will be checked regularly for sediment buildup that may prevent drainage. If the gravel is clogged by sediment, it shall be removed and cleaned, or replaced. 3. The silt fence barriers will be checked regularly for undermining or deterioration of the fabric. Sediment shall be removed when the level of sediment deposition reaches half way to the top of the barrier.

4. The seeded areas will be checked regularly to ensure that a good stand is maintained. Areas shall be fertilized and

re-seeded as needed.

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. an Spec. 3.32, PERMANENT SEEDING, of the 1992 Virginia Erosion and Sediment Control Handbook. 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.

STORM WATER MANAGEMENT This site will be serviced by two storm water management facilities. These ponds are designed to handle conditions at buildout of the development. A future facility will be constructed as shown. The facilities meet water quality criteria.



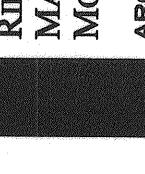
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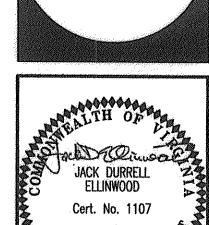
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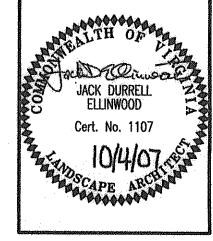
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