

EROSION CONTROL NARRATIVE

PROJECT DESCRIPTION:
THIS PROJECT CONSISTS OF THE CONSTRUCTION OF THE PROPOSED DISTRICT VUE APARTMENT COMPLEX IN THE CITY OF ROANOKE. CONSTRUCTION ALSO INCLUDES THE ASSOCIATED STORMWATER MANAGEMENT, SANITARY SEWER, WATER LINE, RETAINING WALL, AND ASSOCIATED PARKING AREAS TO SERVE THE NEW FACILITY. APPROXIMATELY 18.6 ACRES TOTAL WILL BE DISTURBED DURING CONSTRUCTION.

EXISTING SITE CONDITIONS:
THIS PROJECT IS LOCATED ON 4 PARCELS OF LAND BETWEEN DALETON ROAD NE AND ORANGE AVENUE NE WITHIN THE CITY OF ROANOKE DIRECTLY NORTHEAST. THE SITE CONTAINS ONE COMMERCIAL BUILDING AND ONE RESIDENTIAL STRUCTURE WITH MOST OF THE SITE AREA BEING A GRASSSED FIELD. EXISTING DRAINAGE WITHIN THE PROJECT GENERALLY FLOWS TOWARDS THE NORTH AND SOUTH INTO GRATE INLETS ALONG DALETON ROAD OR ORANGE AVENUE.

ADJACENT AREAS:
THE PROJECT IS LOCATED ON 4 PARCELS OF LAND BETWEEN DALETON ROAD TO THE NORTH AND ORANGE AVENUE SOUTH. A VACANT WOODED LOT AND A RESIDENTIAL STRUCTURE LIE TO THE EAST AND A VACANT WOODED LOT LIES TO THE WEST.

OFFSITE AREAS:
NO OFFSITE FILL OR BORROW AREAS ARE COVERED BY THIS PLAN. ANY SUCH AREA WILL REQUIRE SEPARATE EROSION CONTROL PLAN.

SOILS:
SOILS INFORMATION IS BASED ON AN INSPECTION OF THE USDA SOIL SURVEY OF THE CITY OF ROANOKE AND HAS NOT BEEN FIELD VERIFIED. A SOILS MAP IS ATTACHED WHICH SHOWS THE LOCATION OF VARIOUS SOILS WITHIN THE CONSTRUCTION AREA. THE FOLLOWING SYMBOLS CORRESPOND WITH SOIL TYPES ON THE MAP:

SYMBOL SOIL TYPE
SC CHISWELL-LITZ COMPLEX, 7-15 PERCENT SLOPES

CHISWELL PROPERTIES:
COMPOSITION: 0 TO 2 INCHES, CHANNERY SILT LOAM
2 TO 12 INCHES, VERY CHANNERY SILT LOAM
12 TO 22 INCHES, BEDROCK
PERMEABILITY: WELL DRAINED
AVAILABLE WATER STORAGE: VERY LOW
DEPTH TO BEDROCK: MORE THAN 80 INCHES
HYDROLOGIC SOIL GROUP: D

LITZ PROPERTIES:
COMPOSITION: 0 TO 5 INCHES, CHANNERY SILT LOAM
5 TO 24 INCHES, VERY CHANNERY SILT LOAM
24 TO 34 INCHES, BEDROCK
PERMEABILITY: WELL DRAINED
AVAILABLE WATER STORAGE: LOW
DEPTH TO BEDROCK: 20 TO 40 INCHES
DEPTH TO WATER TABLE: MORE THAN 80 INCHES
HYDROLOGIC SOIL GROUP: C

SYMBOL SOIL TYPE
S50 CHISWELL-LITZ COMPLEX, 25-35 PERCENT SLOPES

CHISWELL PROPERTIES:
COMPOSITION: 0 TO 2 INCHES, CHANNERY SILT LOAM
2 TO 12 INCHES, VERY CHANNERY SILT LOAM
12 TO 22 INCHES, BEDROCK
PERMEABILITY: WELL DRAINED
AVAILABLE WATER STORAGE: VERY LOW
DEPTH TO BEDROCK: 10 TO 20 INCHES
DEPTH TO WATER TABLE: MORE THAN 80 INCHES
HYDROLOGIC SOIL GROUP: D

LITZ PROPERTIES:
COMPOSITION: 0 TO 5 INCHES, CHANNERY SILT LOAM
5 TO 24 INCHES, VERY CHANNERY SILT LOAM
24 TO 34 INCHES, BEDROCK
PERMEABILITY: WELL DRAINED
AVAILABLE WATER STORAGE: LOW
DEPTH TO BEDROCK: 20 TO 40 INCHES
DEPTH TO WATER TABLE: MORE THAN 80 INCHES
HYDROLOGIC SOIL GROUP: C

SYMBOL SOIL TYPE
SE CHISWELL-LITZ COMPLEX, 25-50 PERCENT SLOPES

CHISWELL PROPERTIES:
COMPOSITION: 0 TO 2 INCHES, CHANNERY SILT LOAM
2 TO 12 INCHES, VERY CHANNERY SILT LOAM
12 TO 22 INCHES, BEDROCK
PERMEABILITY: WELL DRAINED
AVAILABLE WATER STORAGE: VERY LOW
DEPTH TO BEDROCK: 10 TO 20 INCHES
DEPTH TO WATER TABLE: MORE THAN 80 INCHES
HYDROLOGIC SOIL GROUP: D

LITZ PROPERTIES:
COMPOSITION: 0 TO 5 INCHES, CHANNERY SILT LOAM
5 TO 24 INCHES, VERY CHANNERY SILT LOAM
24 TO 34 INCHES, BEDROCK
PERMEABILITY: WELL DRAINED
AVAILABLE WATER STORAGE: LOW
DEPTH TO BEDROCK: 20 TO 40 INCHES
DEPTH TO WATER TABLE: MORE THAN 80 INCHES
HYDROLOGIC SOIL GROUP: C

SYMBOL SOIL TYPE
S2 UDORTHERNTS-URBAN LAND COMPLEX

PERMEABILITY: WELL DRAINED
AVAILABLE WATER STORAGE: VERY LOW
DEPTH TO BEDROCK: 10 INCHES
DEPTH TO WATER TABLE: MORE THAN 80 INCHES
HYDROLOGIC SOIL GROUP: D

CRITICAL AREAS:
THE CONTRACTOR SHALL TAKE SPECIAL CARE TO INSURE THAT SEDIMENT IS NOT ALLOWED TO FLOW INTO THE BIORETENTION FILTER AREAS, NEW STORM DRAIN OR THE EXISTING DOWNSTREAM RECEIVING CHANNELS. ENSURE THAT ALL 2:1 SLOPES ARE PROPERLY PROTECTED AND THAT ALL ESC MEASURES ARE STABILIZED AND FUNCTIONING TO MINIMIZE THE POTENTIAL FOR ANY SEDIMENT LEAVING THE SITE.

MINIMUM STANDARDS
REFER TO DEQ MINIMUM STANDARDS.

EROSION AND SEDIMENT CONTROL MEASURES

CONSTRUCTION ENTRANCE (3.02) - A STONE CONSTRUCTION ENTRANCE WILL BE INSTALLED TO MINIMIZE THE AMOUNT OF MUD TRANSPORTED INTO EXISTING ROADS.

CONSTRUCTION ROAD STABILIZATION (3.03) - A 6" WOOD #1 STONE COURSE TO REDUCE THE EROSION AND SUBSEQUENT REGRADING OF PERMANENT ROADS BETWEEN THE TIME OF INITIAL GRADING AND FINAL STABILIZATION, THESE ROADS WILL BE TEMPORARILY STABILIZED WITH STONE IMMEDIATELY AFTER GRADING.

SILT FENCE (3.05) - SILT FENCE WILL BE INSTALLED AT THE LOWER ENDS OF THE PROJECT SITE TO INTERCEPT SEDIMENT LADEN RUN-OFF PRIOR TO EXITING THE SITE.

INLET PROTECTION (3.07) - INLET PROTECTION WILL BE INSTALLED AT EACH STORM DRAIN INLET TO MINIMIZE THE AMOUNT OF SEDIMENT LADEN RUNOFF FROM ENTERING THE STORM DRAIN SYSTEM.

TEMPORARY DIVERSION DIKE (3.08) - A TEMPORARY RIDGE OF COMPACTED SOIL WILL BE CONSTRUCTED TO DIVERT UPSLOPE RUNOFF AWAY FROM A DISTURBED AREA, AND/OR TO DIVERT SEDIMENT LADEN RUNOFF FROM A DISTURBED AREA TO A SEDIMENT TRAPPING MEASURE.

TEMPORARY R/W DIVERSION (3.11) - A RIDGE OF COMPACTED SOIL OR LOOSE GRAVEL CONSTRUCTED ACROSS A R/W LEADING TO A SEDIMENT TRAPPING DEVICE.

TEMPORARY SEDIMENT TRAP (3.13) - A SMALL PONDING AREA, FORMED BY CONSTRUCTING AN EARTHEN EMBANKMENT WITH A STONE OUTLET ACROSS A DRAINAGE SWALE USED TO TRAP SEDIMENT LADEN RUNOFF.

TEMPORARY SEDIMENT BASIN (3.14) - A TEMPORARY BARRIER OR DAM WITH CONTROLLED STORMWATER RELEASE STRUCTURE WHICH IS FORMED BY CONSTRUCTING AN EMBANKMENT OF COMPACTED SOIL ACROSS A DRAINAGEWAY USED TO TRAP SEDIMENT LADEN RUNOFF.

OUTLET PROTECTION (3.18) - THE INSTALLATION OF RIPRAP AT THE END OF A PIPE TO REDUCE EROSION AND UNDER-CUTTING FROM SCOUR.

RIEPRAP (3.19) - A PERMANENT, EROSION RESISTANT GROUND COVER OF LARGE, LOOSE, ANGULAR STONE.

TEMPORARY SEEDING (3.31) - TEMPORARY SEEDING SHALL BE APPLIED TO TEMPORARY DIVERSION DIKES, TOPSOIL STOCKPILES, AND ALL AREAS TO BE ROUGH GRADED, BUT NOT FINISHED GRADED DURING THE INITIAL PHASE OF CONSTRUCTION. TEMPORARY SEEDING SHALL BE FAST GERMINATING, TEMPORARY VEGETATION AND INSTALLED IMMEDIATELY FOLLOWING GRADING, OR INSTALLATION IF A PERMANENT MEASURE. SEE ALSO MINIMUM STANDARDS.

PERMANENT SEEDING (3.32) - PERMANENT SEEDING SHALL BE INSTALLED ON ALL DISTURBED AREAS OF THE SITE NOT OTHERWISE STABILIZED.

MULCHING (3.35) - ALL DISTURBED AREAS SHALL BE MULCHED AFTER SEEDING. STRAW MULCH SHALL BE APPLIED AT A RATE OF TWO TONS PER ACRE AND ANCHORED WITH 750 LBS PER ACRE OF FIBER MULCH OVER THE SEEDED AREA.

SOIL STABILIZATION BLANKETS & MATING (3.36) - THE INSTALLATION OF PROTECTIVE BLANKETS (TYPE 1) ON A PREPARED PLANTING OF A STEEP SLOPE.

PERMANENT STABILIZATION:
ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING WITHIN 7 DAYS OF REACHING FINAL GRADES. SEEDING SHALL BE DONE IN ACCORDANCE WITH DEQ SPECIFICATION 3.32 (PERMANENT SEEDING), OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION AND WITH THE DETAILS SHOWN ON THIS PLAN. MULCH (STRAW OR FIBER) SHALL BE USED ON ALL SEEDED AREAS. IN ALL SEEDING OPERATIONS, SEED, FERTILIZER, AND LIME SHALL BE APPLIED PRIOR TO MULCHING.

MAINTENANCE:
ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED ONCE EVERY FOUR (4) BUSINESS DAYS OR AT LEAST ONCE EVERY FIVE (5) BUSINESS DAYS AND NO LATER THAN 48 HOURS AFTER A MEASURABLE STORM EVENT. A LOG OF DATES AND INSPECTIONS SHALL BE KEPT. ANY DEFICIENCIES THAT ARE FOUND SHALL BE CORRECTED IMMEDIATELY. ACCUMULATED SEDIMENT AT TRAPPING MEASURES SHALL BE ROUTINELY REMOVED.

ALL DITCHES, SWALES, AND NATURAL WATERCOURSES DOWNSTREAM OF THIS PROJECT SHALL BE FIELD INSPECTED DURING AND AFTER CONSTRUCTION BY THE RLD TO ENSURE COMPLIANCE WITH DEQ'S MS-19. IF EROSION OR SCOUR IS OCCURRING, THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL CORRECTIVE MEASURES.

EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL AFTER ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED AND THEN TEMPORARY MEASURES PROPERLY REMOVED ONCE THE CITY OF ROANOKE HAS GRANTED APPROVAL.

STORMWATER MANAGEMENT CONSIDERATION:
NO INCREASE IN SITE RUNOFF PEAK FLOW RATE IS EXPECTED FOR THIS PROJECT. A DOWNSTREAM CHANNEL ANALYSIS HAS BEEN CONDUCTED TO VERIFY THE PROPOSED MANMADE CHANNEL BEING THE STORM DRAIN SYSTEM WHICH DISCHARGES DIRECTLY INTO TINKER CREEK WILL RESULT IN NO INCREASE IN EROSION POTENTIAL TO THE APPROPRIATE LIMITS OF ANALYSIS. WATER QUALITY WILL BE ACHIEVED THROUGH THE USE OF (3) LEVEL 2 BIORETENTION FILTERS AND THE REMAINING REQUIRED TREATMENT THROUGH THE PURCHASE OF OFFSITE NUTRIENT CREDITS.

CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO THE FOLLOWING MINIMUM STANDARDS:

- 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 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year. **APPLY SEEDING MIXTURES IN ACCORDANCE WITH SPECIFICATIONS 3.31 AND 3.32 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESC) TO ALL AREAS THAT DO NOT HAVE A NON-ERODIBLE SURFACE AS SHOWN ON THIS PLAN.**
- During construction of the project, soil stock piles 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. **ANY ONSITE SOIL STOCKPILE SHALL HAVE SILT FENCE ALONG THE DOWNHILL PERIMETER. ALSO, A TEMPORARY SEED MIX IS TO BE APPLIED OVER THE SOIL STOCKPILE IF TO REMAIN AS-IS FOR LONGER THAN 30 DAYS. NO ONSITE STOCKPILE IS CURRENTLY PLANNED FOR THIS PROJECT.**
- 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. **SEE MINIMUM STANDARD 1.**
- 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. **INSTALL EROSION CONTROL MEASURES AS OUTLINED IN THE CONSTRUCTION SEQUENCE.**
- Stabilization measures shall be applied to earthen structures such as dams, dikes and diversions immediately after installation. **INSTALL RIPRAP STRUCTURES AS SHOWN ON THIS PLAN.**
- 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 25-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. **INSTALL SEDIMENT TRAP AND BASIN AS SHOWN ON THIS PLAN.**
- 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. **RESERVE ANY AREAS THAT DO NOT HAVE AN ESTABLISHMENT OF A GOOD STAND OF GRASS AFTER INITIAL APPLICATION OF PERMANENT SEEDING. ADDITIONAL SLOPE STABILIZATION MEASURES ARE TO BE CONSIDERED AS CONDITIONS WARRANT.**
- Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume or slope drain structure. **NO CONCENTRATED RUNOFF SHALL FLOW DOWN CUT OR FILL SLOPES AND SHALL BE DIVERTED AS NECESSARY.**
- Whenever water seeps from a slope face, adequate drainage or other protection shall be provided. **THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY UPON THE DISCOVERY OF ANY WATER SEEPS.**
- 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. **INLET PROTECTION SHALL BE INSTALLED AS STORM DRAIN SYSTEM IS INSTALLED. SEE CONSTRUCTION SEQUENCE FOR MORE INFORMATION.**
- 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. **NEW STORM DRAIN LINES SHALL DISCHARGE DIRECTLY INTO THE EXISTING STORM DRAIN SYSTEMS AS SHOWN ON THIS PLAN.**
- 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 nonerodible cover materials. **NOT APPLICABLE. NO LIVE WATERCOURSES EXIST WITHIN THIS PROJECT.**
- 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. **NOT APPLICABLE. NO LIVE WATERCOURSES EXIST WITHIN THIS PROJECT.**
- All applicable federal, state and local regulations pertaining to working in or crossing live watercourses shall be met. **NOT APPLICABLE. NO LIVE WATERCOURSES EXIST WITHIN THIS PROJECT.**
- The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed. **NOT APPLICABLE. NO LIVE WATERCOURSES EXIST WITHIN THIS PROJECT.**
- Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:
 - 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 property.
 - Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization.
 - Restabilization shall be accomplished in accordance with these regulations.
 - Applicable safety regulations shall be complied with.**UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS ABOVE.**
- Where construction vehicle access routes intersect paved or public roads, provisions shall be made to minimize the transport of sediment by vehicular tracking 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. **FOLLOW ABLE REQUIREMENTS FOR ACCESS TO SITE. SEE CONSTRUCTION SEQUENCE FOR MORE INFORMATION.**
- 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. **EROSION & SEDIMENT CONTROL MEASURES SHALL NOT BE REMOVED WITHOUT ROANOKE CITY PERMISSION AND SHALL BE IN ACCORDANCE WITH ABOVE REQUIREMENTS.**

MINIMUM STANDARDS CONTINUED:

- 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. Stream restoration and relocation projects that incorporate natural channel design concepts are not man-made channels and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels:
 - 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 shall be performed.
- 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 question; or
 - 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.
 - 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 applicant shall:
 - Improve the channels to a condition where a ten-year storm will not overtop the banks and a two-year storm will not cause erosion to channel bed or banks; or
 - Improve the pipe or pipe system to a condition where the ten-year storm is contained within the appurtenances.
- 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 pre-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 VESCP 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 subject project.
- If the applicant chooses an option that includes stormwater detention, he shall obtain approval from the VESCP 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 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.
- 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.
- Any plan approved prior to July 1, 2014, that provides for stormwater management that addresses any flow rate capacity and velocity requirements for natural or man-made channels shall satisfy the flow rate capacity and velocity requirements for natural and man-made channels if the practices are designed to:
 - detain the water quality volumes and release it over 48 hours;
 - detain and release over 24-hour period the expected rainfall resulting from the one year, 24-hour storm and;
 - reduce the allowable peak flow rate resulting from the 1.5, 2, and 10-year, 24-hour storms to a level that is less than or equal to the peak flow rate from the site assuming it was in good forested condition, achieved through multiplication of the forested peak flow rate by a reduction factor that is equal to the runoff volume from the site when it was in a good forested condition divided by the runoff volume from the site in its proposed condition, and shall be exempt from any flow rate capacity and velocity requirements for natural or man-made channels as defined in any regulations promulgated pursuant to 62.1-44.15:54 or 62.1-44.15:65 of the Act.
- For plans approved on or after July 1, 2014, the flow rate capacity and velocity requirements of 62.1-44.15:52 a of the Act and this subsection shall be satisfied by compliance with water quantity requirements in the Stormwater Management Act (62.1-44.15:24 et seq. of the Code of Virginia) and attendant regulations, unless such land-disturbing activities are in accordance with 9VAC25-870-48 of the Virginia Stormwater Management Program (VSMP) Permit Regulations.
- Compliance with the water quantity minimum standards set out in 9VAC25-870-56 of the Virginia Stormwater Management Program (VSMP) Permit Regulations shall be deemed to satisfy the requirements of Minimum Standard 19.

THE ASSOCIATED "PROJECT CALCULATIONS" PROVE THE PROJECT IS IN COMPLIANCE WITH MS-19 BY SATISFYING THE ABOVE SECTION "N". THIS PROJECT IS SHOWN TO SATISFY VSMP WATER QUANTITY REGULATIONS.

GENERAL EROSION AND SEDIMENT CONTROL NOTES, ROANOKE CITY, VIRGINIA

ES-1-UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS.

ES-2-THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRECONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

ES-3-ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.

ES-4-A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND NARRATIVE, AS WELL AS A COPY OF THE LAND DISTURBING PERMIT AND SWPPP SHALL BE MAINTAINED ON THE SITE AT ALL TIMES. THE EROSION AND SEDIMENT CONTROL ADMINISTRATOR WILL DELIVER THESE MATERIALS AT THE PRECONSTRUCTION CONFERENCE.

ES-5-PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

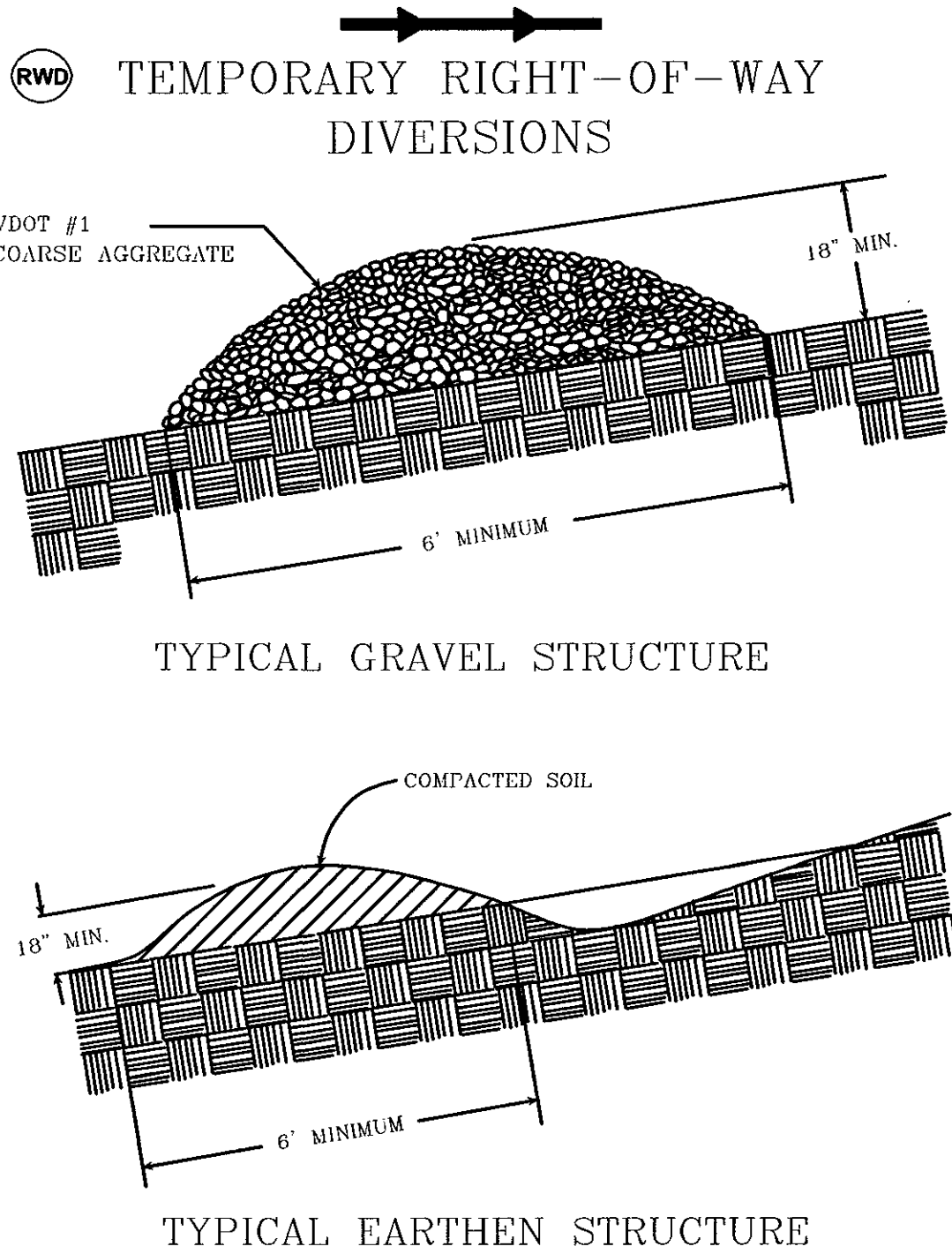
ES-6-THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

ES-7-ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING THE LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

ES-8-DURING DEWATERING OPERATION, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

ES-9-THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

City of Roanoke
Planning, Building, & Development
COMPREHENSIVE DEVELOPMENT PLAN
APPROVED
by Adrian Gilbert 05/16/2017



LUMSDEN ASSOCIATES, P.C.
ENGINEERS-SURVEYORS-PLANNERS
ROANOKE, VIRGINIA



COMPREHENSIVE DEVELOPMENT PLAN
FOR
DISTRICT VUE APARTMENTS
PREPARED FOR
SOUTHEASTERN SITE ACQUISITIONS
SITUATED ALONG ORANGE AVENUE
THE CITY OF ROANOKE, VIRGINIA

REVISIONS		DESCRIPTION	
NO.	DATE	DESCRIPTION	
1			
2			
3			
4			
5			
DATE:		April 6, 2017	
SCALE:		NO SCALE	
COMMISSION NO.:		14-201	
		SHEET 19 OF 22	

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