## STATEMENT OF COMPLIANCE WITH VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS - 9VAC25-840-40 - MINIMUM STANDARDS

**THE LAND-DISTURBING ACTIVITIES OF THIS PROJECT MUST COMPLY WITH THE 19 "MINIMUM STANDARDS" (MS) SPECIFIED IN SECTION 4VAC50-30-40 OF THE REGULATIONS (VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS) THAT ARE APPLICABLE TO THE PROJECT. THIS SECTION PROVIDES A RECITATION OF THE FULL TEXT OF THE 19 MINIMUM STANDARDS AND FOLLOWS WITH A "METHOD OF COMPLIANCE" WITH EACH MINIMUM STANDARD. THESE EROSION AND SEDIMENT CONTROL PLANS WERE PREPARED IN A MANNER TO ENSURE COMPLIANCE WITH THE MINIMUM STANDARDS.**

**THE CONTRACTOR AND THE CERTIFIED RESPONSIBLE LAND DISTURBER (RLD) SHALL PERFORM THE WORK OF THE PROJECT IN THE MANNER STATED AND IN A MANNER AND SEQUENCE SUCH THAT THE INTENT AND REQUIREMENTS OF THE MINIMUM STANDARDS ARE MET. REFER TO THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR ADDITIONAL INFORMATION.**

MS-1: 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.

**METHOD OF COMPLIANCE - PERMANENT SEEDING AND TEMPORARY SEEDING MEASURES ARE SHOWN AND SPECIFIED ON THE EROSION AND SEDIMENT CONTROL PLANS AND DETAILS. CONTRACTOR SHOULD REFER TO SHEETS EC-1 AND EC-2 AND WELL AND NARRATIVE AND DETAILS FOR SEEDING REQUIREMENTS AND SCHEDULES.**

MS-2: 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.

**METHOD OF COMPLIANCE - IT IS ANTICIPATED THAT TOPSOIL AND OR UN-SUITABLE WILL BE FOUND ON THE PROJECT SITE AND WILL NEED TO BE STOCKPILES. THE LOCATION OF THE TEMPORARY STOCKPILE AND THE REQUIRED E&SC MEASURES IS SHOWN ON SHEET EC-1 AND EC-2. IF TOPSOIL OR UN-SUITABLE MATERIAL IS REMOVED FROM THE SITE, IT SHALL BE DISPOSED OF IN A LEGAL MANNER AND AT A SITE THAT IS DULY PERMITTED FOR LAND DISTURBANCE ACTIVITIES.**

MS-3: 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.

**METHOD OF COMPLIANCE - PERMANENT SEEDING (PS), ALONG WITH TOPSOILING (TO), AND MULCHING (MU) MEASURES ARE SHOWN AND SPECIFIED ON THE E&SC PLAN AND DETAIL SHEETS AS WELL AND THE NARRATIVE AND SEQUENCE OF WORK.**

MS-4: Sediment basins and sediment 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.

**METHOD OF COMPLIANCE - THESE MEASURES (DD, ST, SF, ETC.) ARE SHOWN ON THE E&SC PLAN SHEET AND ARE SPECIFIED TO BE INSTALLED PRIOR TO MAJOR LAND DISTURBANCE ACTIVITIES. REFER TO THE GENERAL NOTES AND NARRATIVE / WORK SEQUENCE FOR ADDITIONAL INFORMATION AND REQUIREMENTS.**

MS-5: Stabilization measures shall be applied to earthen structures such as dams, dikes and diversions immediately after installation.

**METHOD OF COMPLIANCE - THE INSTALLATION OF THESE MEASURES (TS & PS) WHICH IS TO BE APPLIED TO AREAS DISTURBED BY THE CONSTRUCTION OF DIVERSION DIKES AND SEDIMENT TRAPS IS SPECIFIED BY THE GENERAL NOTES ON THE E&SC PLAN SHEETS AND THE NARRATIVE / WORK SEQUENCE.**

MS-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 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.

**METHOD OF COMPLIANCE - THE SEDIMENT TRAP (ST) SHOWN ON THE E&SC PLAN AND SPECIFIED ON THE DETAIL SHEETS IS DESIGNED IN ACCORDANCE WITH THESE REQUIREMENTS.**

MS-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 stabilizing measures until the problem is corrected.

**METHOD OF COMPLIANCE: NEW CUT OR FILL SLOPES GREATER THAN 6 FEET IN HEIGHT, OR EXISTING STEEP SLOPES THAT WILL BE DISTURBED ARE CONSIDERER "HIGH EROSION POTENTIAL" AREA. THESE SLOPE ARE DENOTED ON THE E&SC PLAN TO RECEIVE SPECIFIC MEASURES (TOPSOIL, TEMPORARY OR PERMANENT SEEDING, AND BLANKET MATTING) TO ENSURE PROPER STABILIZATION.**

MS-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.

**METHOD OF COMPLIANCE - NEW CUT OR FILL SLOPES GREATER THAN 6 FEET IN HEIGHT, AND EXISTING STEEP SLOPES THAT ARE TO BE DISTURBED ARE CONSIDERER "HIGH EROSION POTENTIAL" AREA AND SHOULD BE PROTECTED AGAINST CONCENTRATED FLOWS DOWN THE FACE OF THE SLOPE. WHERE PRESENT ON THIS PROJECT, THESE SLOPES ARE DENOTED ON THE E&SC PLAN TO RECEIVE SPECIFIC MEASURES TO CONTROL RUN-OFF AND ENSURE PROPER STABILIZATION.**

MS-9: Whenever water seeps from a slope face, adequate drainage or other protection shall be provided.

**METHOD OF COMPLIANCE - BASED ON A REVIEW OF THE SUBSURFACE INVESTIGATION REPORT AND KNOWLEDGE OF THE GROUNDWATER CONDITIONS AT THE SITE THIS CONDITION IS NOT ANTICIPATED DURING THIS PROJECT. IF ENCOUNTERED DURING CONSTRUCTION IT WILL BE ADDRESSED WITH PLAN REVISION.**

MS-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.

**METHOD OF COMPLIANCE - INLET PROTECTION (IP) DEVICES ARE SPECIFIED AND SHOWN ON THE E&SC PLAN SHEETS AND IN THE NARRATIVE. THE GENERAL WORK SEQUENCE SPECIFIES THE TIMING FOR INSTALLATION OF THESE MEASURES.**

MS-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.

**METHOD OF COMPLIANCE - THE NEW STORMWATER CONVEYANCE SYSTEM DISCHARGES DIRECTLY IN TO THE EXISTING STORM DRAINAGE SYSTEM (INLET STRUCTURE) OR DIRECTLY IN AN EXISTING ADEQUATE CHANNELS. WHERE REQUIRED, CHANNEL LINING AND OUTLET PROTECTION MEASURES ARE SPECIFIED AND DETAILED ON THE E&SC PLAN SHEETS. THE TIMING OF INSTALLING LININGS AND OUTLET PROTECTIONS IS SPECIFIED IN THE NARRATIVE AND SEQUENCE OF WORK.**

MS-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 for these structures if armored by nonerodible cover materials.

**METHOD OF COMPLIANCE - NOT APPLICABLE. NO WORK IS PROPOSED IN A LIVE WATERCOURSE.**

MS-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.

**METHOD OF COMPLIANCE - NOT APPLICABLE. WORK DOES NOT INVOLVE THE CROSSING OF A LIVE WATERCOURSE.**

MS-14: All applicable federal, state and local requirements pertaining to working in or crossing live watercourses shall be met.

**METHOD OF COMPLIANCE - NOT APPLICABLE. WORK DOES NOT INVOLVE WORKING IN OR CROSSING OF A LIVE WATERCOURSE.**

MS-15: The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed.

**METHOD OF COMPLIANCE - NOT APPLICABLE. WORK DOES NOT INVOLVE WORKING IN OR CROSSING OF A LIVE WATERCOURSE.**

MS-16: Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:

a. No more than 500 linear feet of trench may be opened at one time.

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.

d. Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization.

e. Restabilization shall be accomplished in accordance with this chapter.

f. Applicable safety requirements shall be complied with.

**METHOD OF COMPLIANCE -SPECIFIC REQUIREMENTS ARE IDENTIFIED IN THE SEQUENCE OF WORK AND THE E&SC NARRATIVE.**

MS-17: 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.

**METHOD OF COMPLIANCE - THE E&SC PLAN SHEETS INDICATE THE LOCATION OF THE PROPOSED CONSTRUCTION ENTRANCE (CE) AND THE SEQUENCE OF INSTALLATION IS SPECIFIED IN THE NARRATIVE AND GENERAL SEQUENCE OF WORK. ALL CONSTRUCTION VEHICLES SHALL ENTER AND LEAVE THE SITE AT THE SPECIFIED LOCATION.**

MS-18: 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 VESCP 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.

**METHOD OF COMPLIANCE - REFER TO NARRATIVE AND WORK SEQUENCE ON THE E&SC PLAN SHEETS AND THE GENERAL NOTES FOR STATED REQUIREMENTS REGARDING THE PROVISIONS OF REMOVAL OF E&SC MEASURES.**

MS-19: 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:

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 shall be performed.

**METHOD OF COMPLIANCE: CONCENTRATED RUN-OFF FROM THE DEVELOPED SITE IS COLLECTED BY NEW STORM DRAINAGE PIPING AND IS DISCHARGED DIRECTLY IN TO AN EXISTING SWM BASIN. DISCHARGES FROM THE EXISTING SWM BASIN OUTFALL INTO AN ADEQUATE CHANNEL.**

b. Adequacy of all channels and pipes shall be verified in the following manner:
(1) 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
(2) (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.
(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.

**METHOD OF COMPLIANCE: ALL EXISTING PIPING SYSTEMS AND MAN-MADE CHANNELS HAVE BEEN ANALYZED USING THE 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. SEE THE SWM CALCULATIONS FOR DEMONSTRATION OF CHANNEL ADEQUACY FOR EXISTING MAN-MADE CHANNELS. ALL NEW PIPES AND STORM SEWER SYSTEMS HAVE BEEN ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPING SYSTEM.**

c. If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant shall:
(1) 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 the channel, the bed, or the banks; or
(2) Improve the pipe or pipe system to a condition where the ten-year storm is contained within the appurtenances;
(3) 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
(4) Provide a combination of channel improvement, stormwater detention or other measures which is satisfactory to the VESCP authority to prevent downstream erosion.

**METHOD OF COMPLIANCE: ALL EXISTING NATURAL AND MAN-MADE CHANNELS AFFECTED BY THIS PROJECT ARE DEEMED ADEQUATE. SEE THE SWM CALCULATIONS FOR DEMONSTRATION OF CHANNEL ADEQUACY.**

d. The applicant shall provide evidence of permission to make the improvements.

**METHOD OF COMPLIANCE: ALL SWM IMPROVEMENTS ARE LOCATED ON THE PROJECT SITE, WITHIN PUBLIC RIGHT-OF-WAY, OR ON PROPERTY UNDER THE CONTROL OF THE DEVELOPER/HOME OWNERS ASSOCIATION.**

e. All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development condition of the subject project.

**METHOD OF COMPLIANCE: SEE SWM CALCULATIONS AND ACCOMPANYING WATERSHED MAPS WHICH DEPICT THE EXISTING ADJOINING AND THE PROPOSED ON-SITE DEVELOPMENT CONDITIONS. NO FUTURE DEVELOPMENT IS ANTICIPATED.**

f. 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.

**METHOD OF COMPLIANCE: THE RUN-OFF FROM THE PROJECT AREAS DRAINS DIRECTLY IN TO AN EXISTING SWM DETENTION / RETENTION BASIN AND THEN DISCHARGES INTO AN ADEQUATE OUTFALL CHANNEL.**

g. 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 channel.

**METHOD OF COMPLIANCE: THE RUN-OFF FROM THE PROJECT AREAS DRAINS DIRECTLY IN TO AN EXISTING SWM DETENTION / RETENTION BASIN AND THEN DISCHARGES INTO AN ADEQUATE OUTFALL CHANNEL PROTECTED BY EXISTING OUTLET PROTECTION (RIP-RAP).**

h. All on-site channels must be verified to be adequate.

**METHOD OF COMPLIANCE: NEW MAN-MADE CHANNELS ARE DEEMED ADEQUATE BY DESIGN COMPUTATIONS.**

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.

**METHOD OF COMPLIANCE: THE PROJECT DOES NOT RESULT IN AN INCREASE IN VOLUMES OF SHEET FLOW THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY. THE PROJECT REDUCED THE VOLUMES AND VELOCITY OF SHEET FLOW THAT FLOWS ON TO ADJACENT PROPERTY.**

j. In applying these stormwater management 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.

**METHOD OF COMPLIANCE: THE PROJECT STORMWATER SYSTEM, WATER QUALITY STRUCTURE, AND EROSION & SEDIMENT CONTROL MEASURES ACCOUNT FOR FUTURE DEVELOPMENT. THIS IS SHOWN ON THE OVERALL DEVELOPMENT PLANS AND THE DRAINAGE DIVIDES AND STORMWATER RUN-OFF CALCULATIONS.**

k. 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.

**METHOD OF COMPLIANCE: ALL TEMPORARY AND PERMANENT E&SC MEASURES ARE TO COMPLY WITH THE STANDARDS OF THE VA E&SC HANDBOOK. WATER QUALITY FOR THE PROJECT SITE HAS BEEN PROVIDED BY INSTALLATION OF A PROPRIETARY STORMWATER FILTRATION MEASURES. REFER TO THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND THE SPECIFIC MEASURES SHOWN ON THESE PLANS FOR ADDITIONAL INFORMATION.**

l. 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 or man-made channels if the practices are designed to (i) detain the water quality volume and to release it over 48 hours; (ii) detain and release over a 24-hour period the expected rainfall resulting from the one year, 24-hour storm; and (iii) 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 a 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.

**METHOD OF COMPLIANCE: NOT APPLICABLE.**

m. For plans approved on and 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) Regulations.

**METHOD OF COMPLIANCE: ALL CHANNELS AND PIPING SYSTEMS CONVEYING RUN-OFF ON AND FROM THE SITE HAVE BEEN EVALUATED AND DEEMED ADEQUATE. WATER QUALITY FOR THE PROJECT SITE HAS BEEN PROVIDED BY INSTALLATION OF A PROPRIETARY STORMWATER FILTRATION MEASURE.**

n. Compliance with the water quantity minimum standards set out in 9VAC25-870-66 of the Virginia Stormwater Management Program (VSMP) Regulations shall be deemed to satisfy the requirements of subdivision 19 of this subsection.

**METHOD OF COMPLIANCE: WATER QUALITY FOR THE PROJECT SITE HAS BEEN PROVIDED BY USING A PROPRIETARY STORMWATER FILTRATION MEASURES. SEE PLAN SHEETS FOR A TABULATION OF SWM AND WATER QUALITY PARAMETERS.**

END OF STATEMENT OF COMPLIANCE WITH VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS - 9VAC25-840-40 - MINIMUM STANDARDS

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THE VILLAGE AT TINKER CREEK – PHASE IIIA

# EROSION & SEDIMENT CONTROL STATEMENT OF COMPLIANCE

ROANOKE COUNTY, VIRGINIA

Vertical Scale: N/A

Horizontal Scale: N/A

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