

EROSION & SEDIMENT CONTROL NARRATIVE:

1. PROJECT DESCRIPTION:

1.1 THE PURPOSE OF THIS PROJECT IS TO PERFORM GRADING, STORM DRAINAGE AND OTHER UTILITY INSTALLATION, PAVING, AND OTHER INCIDENTAL SITE INFRASTRUCTURE CONSTRUCTION REQUIRED FOR THE CONSTRUCTION OF TWO STREETS TO SUPPORT THE DEVELOPMENT OF A 16 LOT SINGLE-FAMILY DEVELOPMENT.

1.2 THE PROJECT SITE AREA IS CONTAINED WITHIN A SINGLE PARCEL OF LAND – ROANOKE COUNTY TAX PARCEL NUMBER 027.20-01-39.02-000 AND HAS A SITE AREA OF 10.963 ACRES. SEE THE OVERALL DEVELOPMENT PLAN (SHEET C-2) FOR ADDITIONAL INFORMATION REGARDING THE PROPERTY LINES WHICH DEFINE THE PROJECT SITE PROPERTY AREA.

1.3 THE TOTAL AREA OF PROPOSED LAND DISTURBANCE IS 2.71 ACRES.

1.4 TO MINIMIZE THE POTENTIAL FOR SILT-LADEN RUNOFF LEAVING THE SITE DURING CONSTRUCTION AND TO ENSURE DISTURBED SURFACES ARE RE-STABILIZED UPON COMPLETION OF CONSTRUCTION, EROSION AND SEDIMENT CONTROL (E&S) MEASURES SHALL BE PROVIDED AS SHOWN AND SPECIFIED ON THESE PLANS, AND AS OUTLINED IN THIS E&S NARRATIVE. THE E&S MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE "ROANOKE COUNTY EROSION AND SEDIMENT CONTROL ORDINANCE" AND THE DETAILS AND SPECIFICATIONS FOUND IN THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK", LATEST EDITION – AS SHOWN HEREON.

2. EXISTING SITE CONDITIONS:

2.1 LAND COVER: THE PROJECT SITE AREA IS GENERALLY FREE OF MATURE TREES AND VEGETATION. THERE IS EVIDENCE OF PRIOR CONSTRUCTION ON THE SITE FROM PRIOR PHASE OF DEVELOPMENT AND THE LAND USE OF THE PROJECT AREA IN RECENT PAST – A LANDSCAPE NURSERY.

2.2 SLOPES/TOPOGRAPHY: THE EXISTING TOPOGRAPHY (SHOWN AT 2-FOOT CONTOUR INTERVAL) IS SHOWN ON SHEET C-4. THE PROJECT AREA TOPOGRAPHY IS CHARACTERIZED BY A GENERALLY UNIFORMLY SLOPING AREA WHICH SLOPES FROM A SOUTH TO NORTH DIRECTION. SLOPES VARY FROM BETWEEN 14-PERCENT (IN THE SOUTHERN PORTION OF THE SITE) TO 4-PERCENT (IN THE NORTHERN PORTION OF THE SITE).

2.3 DRAINAGE FEATURES: STORMWATER RUN-OFF FROM THE PROJECT SITE DRAINS (SHEET FLOWS) ACROSS THE AREA FROM A SOUTH TO NORTH DIRECTION AND FLOW INTO THE ADJOINING PROPERTY AREA AT A CENTRALIZED LOW-POINT ALONG THE NORTHERN BOUNDARY. THERE ARE NO EXISTING STORM DRAINAGE INLETS OR PIPING SYSTEM ON THE PROPERTY AND THERE ARE NO MAN-MADE OR NATURAL CHANNELS PRESENT.

3. ADJACENT PROPERTY:

3.1 THE PROJECT AREA IS BORDERED ON THE NORTH BY A CLUSTER OF LOW-DENSITY SINGLE-FAMILY RESIDENCES AND LAND THAT WAS RESIDUAL FROM THE LANDSCAPE NURSERY OPERATION THAT WAS PRESENT ON THE PROJECT SITE. SINCE THE PROJECT AREA DRAINS TO THE NORTHERN PERIMETER, PROTECTING THIS AREA FROM EROSION AND DOWN-STREAM SEDIMENTATION WILL BE THE PRIMARY FOCUS OF THE E&S PLAN.

3.2 THE PROJECT AREA IS BORDERED ON THE WEST BY EXISTING ROAD (FLORA FARM ROAD). STORMWATER RUN-OFF FROM THE EXISTING ROAD IS COLLECTED BY STORM DRAINAGE INLETS IS PIPED TO THE EXISTING SWM BASIN LOCATED AT THE NORTHWEST CORNER OF THE PROJECT SITE. RUN-OFF TO AND FROM AREAS WEST OF THE PROJECT SITE IS NOT A PRIMARY CONCERN.

3.3 THE PROJECT SITE AREAS IS BORDERED ON THE SOUTH BY FUTURE SINGLE FAMILY LOTS (PART OF THE PROPOSED DEVELOPMENT) AND THE PROJECT DEVELOPMENT COMMUNITY CENTER. THE AREA TO THE SOUTH NATURALLY DRAINS INTO THE PROJECT SITE VIA SHEET FLOW. A DRAINAGE DIVIDE LOCATED ALONG THE SOUTHERN BOUNDARY OF THE PROJECT SITE LIMITS THE AREA DRAINING TO THE PROJECT SITE. SEE SHEET EC-1 FOR DRAINAGE DIVIDES.

4. SOILS:

4.1 A DETAILED SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION WAS NOT PERFORMED FOR THIS PORTION OF THE PROJECT. THE SOILS THAT ARE CURRENTLY IN-PLACE ARE FROM PRIOR GRADING ACTIVITIES OR NATURAL IN-SITU SOILS.

4.2 PER THE USDA WEB SOIL SURVEY (WSS), THE SOIL TYPES WITHIN THE PROJECT LIMITS ARE:

4.2.1 FREDERICK SILT LOAM – THIS SERIES CONSISTS OF VERY DEEP, WELL DRAINED SOILS FORMED IN RESIDUUM DERIVED MAINLY FROM DOLOMITIC LIMESTONE WITH INTERBEDS OF SANDSTONE, SILTSTONE, AND SHALE. THEY ARE ON ARE NEARLY LEVEL TO VERY STEEP UPLANDS. PERMEABILITY IS MODERATE. SLOPES RANGE FROM 0 TO 60 PERCENT.

4.3 BASED ON A REVIEW OF THE AVAILABLE DATA AND KNOWLEDGE OF THE ON-SITE SOILS, THE SOILS EROSION POTENTIAL IS DEEMED "MODERATE."

5. CRITICAL EROSION AREAS: NONE IDENTIFIED.

6. OFF-SITE DISPOSAL/BORROW AREAS

6.1 TOPSOIL STRIPPED FROM THE PROJECT SITE AND ANY OTHER UNSUITABLE MATERIAL WILL BE STOCKPILED AT THE LOCATION DESIGNATED AND RE-USED TO THE MAXIMUM EXTENT PRACTICABLE.

6.2 SHOULD IT BECOME NECESSARY TO REMOVE MATERIAL FROM THE SITE AND DISPOSE OF IT AT AN OFF-SITE LOCATION, THE CONTRACTOR SHALL PROVIDE DOCUMENTATION THAT THE DISPOSAL SITE IS CURRENTLY PERMITTED WITH A VALID LAND DISTURBANCE PERMIT. PRIOR TO REMOVAL OF MATERIAL FROM THE SITE THE CONTRACTOR SHALL PROVIDE THE LOCATION OF THE DISPOSAL SITE AND EVIDENCE OF A VALID LAND-DISTURBING PERMIT FOR THE DISPOSAL SITE.

6.3 IT IS ANTICIPATED THE EARTHWORK FOR THE PROJECT WILL REQUIRE AN IMPORT OF FILL MATERIAL – THE AMOUNT OF FILL REQUIRED TO CONSTRUCT THE PROJECT WILL BE GREATER THAN THE AMOUNT OF ON-SITE CUT PRODUCED. THE ADDITIONAL FILL MATERIAL WILL BE OBTAINED FROM AN APPROVED AND PERMITTED BORROW SITE. PRIOR TO IMPORTING MATERIAL TO THE SITE THE CONTRACTOR SHALL PROVIDE THE LOCATION OF THE BORROW SITE AND EVIDENCE OF A VALID LAND-DISTURBING PERMIT.

7. EROSION AND SEDIMENT CONTROL MEASURES:

7.1 UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS (STD. AND SPEC.) OF THE LATEST EDITION OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK." MEASURES SPECIFICALLY IDENTIFIED ON THESE PLANS ARE LISTED BELOW.

7.2 CONSTRUCTION ENTRANCE (CE) – SHALL BE INSTALLED IN ACCORDANCE WITH STD. & SPEC 3.02 WHERE SHOWN ON THE PLAN. THE CONTRACTOR SHALL ENSURE VEHICLES LEAVING THE WORK AREA ARE FREE OF EXCESS MUD, DIRT, AND DUST. VEHICLE WASH-DOWN PROVISIONS SHALL BE ADDED IF REQUIRED BY CITY E&S INSPECTOR.

7.3 SILT FENCE (SF/SSF): SILT FENCE SHALL BE INSTALLED AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN AND IN CONFORMANCE WITH STD. AND SPEC. 3.05 – IT WILL INTERCEPT SILT LADEN RUNOFF BEFORE IT EXITS THE SITE. SILT FENCE INSTALLATION SHALL BE COORDINATED WITH AND INSPECTED BY THE EROSION AND SEDIMENT CONTROL INSPECTOR OR REPRESENTATIVE. IN SOME STEEPER AREAS OF THE PROJECT SITE "SUPER SILT FENCE," WHICH USES WIRE BACKING TO HANDLE HIGHER VELOCITIES AND FLOWS, MAY BE SPECIFIED.

7.4 DIVERSION (DD): DIVERSIONS SHALL BE INSTALLED AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN AND IN CONFORMANCE WITH STD. AND SPEC. 3.12. THE DIVERSIONS WILL INTERCEPT AND DIVERT STORMWATER RUNOFF AT NON-EROSIVE VELOCITIES TO THE NEW STORM DRAIN SYSTEM OR OTHER APPROVED CONTROL MEASURES.

7.5 TEMPORARY SEDIMENT TRAP (ST): TEMPORARY SEDIMENT TRAPS SHALL BE INSTALLED IN THE LOCATION SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN AND IN CONFORMANCE WITH STD. AND SPEC. 3.13. TEMPORARY SEDIMENT TRAPS DETAINS SEDIMENT LADEN RUNOFF FROM SMALL DISTURBED AREAS LONG ENOUGH TO ALLOW THE MAJORITY OF THE SEDIMENT TO SETTLE OUT. REFER TO THE SEDIMENT TRAP DESIGN SUMMARY TABLE FOR ADDITIONAL INFORMATION.

7.6 TEMPORARY SEEDING / STABILIZATION (TS): SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE AND SHALL CONFORM TO STD. AND SPEC. 3.31. ADDITIONALLY, TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 30 DAYS IN CONFORMANCE WITH STD. AND SPEC. 3.31.

7.7 PERMANENT SEEDING (PS): ALL DISTURBED AREAS BROUGHT TO FINAL GRADE THAT ARE NOT BUILT UPON (BUILDING, PAVEMENT, WALKS, ETC.) OR THAT ARE NOT LANDSCAPED SHALL BE SEEDDED IN CONFORMANCE WITH STD. AND SPEC. 3.32. PERMANENT STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE.

7.8 INLET PROTECTION (IP): SHALL BE INSTALLED AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN AND IN CONFORMANCE WITH STD. AND SPEC. 3.07. INLET PROTECTIONS ARE PROVIDED IN ORDER TO FILTER RUNOFF BEFORE IT ENTERS THE STORM DRAINAGE SYSTEM.

7.9 SOIL STABILIZATION MATTING (BM): SHALL BE TYPE "TREATMENT 1" AND SHALL BE INSTALLED AT THE LOCATION SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN AND IN CONFORMANCE WITH STD. AND SPEC. 3.36. MATTING CAUSES SOIL/SEDIMENT TO DROP OUT OF STORMWATER AND FORMS AN EROSION RESISTANT VEGETATIVE COVER IN CHANNELS AND ON STEEP SLOPES.

7.10 OUTLET PROTECTION (OP): SHALL BE INSTALLED AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN AND IN CONFORMANCE WITH STD. AND SPEC. 3.18. OUTLET PROTECTION IS AN ENERGY DISSIPATING DEVICE WHICH PROTECTS THE OUTLET AND REDUCES DOWNSTREAM EROSION BY REDUCING THE VELOCITY OF CONCENTRATED STORMWATER FLOWS.

7.11 TOPSOILING (TO): SHALL BE APPLIED TO ALL DISTURBED AREAS WHICH ARE TO RECEIVE PERMANENT SEEDING AS INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN AND SHALL BE APPLIED IN ACCORDANCE WITH THE STD. AND SPEC. 3.30. TOPSOILING PROVIDES A METHOD FOR PRESERVING AND RE-USING THE SURFACE LAYER OF SOIL, OFTEN ENRICHED IN ORGANIC MATTER, IN ORDER TO OBTAIN A MORE DESIRABLE PLANTING AND GROWTH MEDIUM.

8. MANAGEMENT STRATEGY AND SEQUENCE OF CONSTRUCTION:

8.1 CONSTRUCTION SHALL BE SEQUENCED SO LAND DISTURBING AND GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE. REFER TO THE "GENERAL SEQUENCE OF WORK" FOR ADDITIONAL INFORMATION.

8.2 SEDIMENT TRAPPING AND PERIMETER CONTROL MEASURES (SF, ETC.) SHALL BE INSTALLED AS THE FIRST STEP IN THE GRADING/LAND DISTURBANCE OPERATION. THE MEASURES (WHERE APPLICABLE) AND THE AREAS DISTURBED DUE TO THE INSTALLATION OF THESE MEASURES SHALL BE SEEDDED AND MULCHED IMMEDIATELY FOLLOWING INSTALLATION.

8.3 THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY MARKED PRIOR TO START OF WORK.

8.4 TEMPORARY SEEDING (TS) OR OTHER STABILIZATION MEASURES SHALL BE PLACED IMMEDIATELY FOLLOWING GRADING.

8.5 THE PROJECT SUPERINTENDENT OR THE RESPONSIBLE LAND DISTURBER (RLD) SHALL BE DIRECTLY RESPONSIBLE TO ENSURE THE MEASURES SPECIFIED HEREIN ARE INSTALLED AND MAINTAINED AND THE SEQUENCE OF WORK IS FOLLOWED.

8.6 AFTER ACHIEVING ADEQUATE STABILIZATION, THE TEMPORARY E&S MEASURES WILL BE CLEANED UP AND REMOVED.

9. PERMANENT STABILIZATION / REMOVAL OF MEASURES:

9.1 AFTER THE INSTALLED EROSION AND SEDIMENTATION CONTROL DEVICES ARE FOUND TO BE FUNCTIONAL, THE CONTRACTOR SHALL IMMEDIATELY PROCEED WITH CLEARING, GRUBBING, AND PRELIMINARY GRADING OPERATIONS. PERMANENT OR TEMPORARY 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 APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR.

9.2 FOLLOWING THE COMPLETION OF DEVELOPMENT AND STABILIZATION OF ALL AREAS, AND IT HAS BEEN DETERMINED THAT EROSION OR SEDIMENTATION IS NO LONGER OCCURRING ON THE SITE OR AT ITS BOUNDARIES, AND DRAINAGE FLOWS ARE FUNCTIONING ACCORDING TO DESIGN, THE CONTRACTOR MAY THEN BEGIN TO REMOVE THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES. THIS WORK SHALL BE DONE IN A CAREFUL, NEAT, AND ORGANIZED MANNER.

9.3 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.

10. INSPECTION & MAINTENANCE REQUIREMENTS:

10.1 THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL MAINTENANCE REQUIREMENTS OF THE EROSION AND SEDIMENT CONTROL MEASURES AS OUTLINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

10.2 ALL EROSION AND SEDIMENT MEASURES WILL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL. THE ITEMS LISTED BELOW WILL BE CHECKED IN ACCORDANCE WITH THE REQUIREMENTS FOR EACH PARTICULAR ITEM.

10.3 STD & SPEC 3.02 – TEMPORARY STONE CONSTRUCTION ENTRANCE (CE) – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. THIS WILL 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.

10.4 STD & SPEC 3.05 – SILT FENCE (SF): SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH A DEPTH OF 6-INCHES. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDD.

10.5 STD & SPEC 3.07 – STORM DRAIN INLET PROTECTION (IP) – THE STRUCTURE 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 HAS ACCUMULATED TO ONE HALF THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

10.6 STD & SPEC 3.13 – TEMPORARY SEDIMENT TRAP – SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN VOLUME OF THE WET STORAGE. SEDIMENT REMOVAL FROM THE BASIN SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE AND CAUSE SEDIMENTATION PROBLEMS. THE FILTER STONE SHALL BE REGULARLY CHECKED TO ENSURE THAT FILTRATION PERFORMANCE IS MAINTAINED. STONE CHOKED WITH SEDIMENT SHALL BE REMOVED AND CLEANED OR REPLACED. THE STRUCTURE SHOULD BE CHECKED REGULARLY TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. THE HEIGHT OF THE STONE OUTLET SHOULD BE CHECKED TO ENSURE THAT ITS CENTER IS AT LEAST 1 FOOT BELOW THE TOP OF THE EMBANKMENT.

10.7 STD & SPEC 3.32 – PERMANENT SEEDING (PS) – IN GENERAL, A STAND OF VEGETATION CANNOT BE DETERMINED TO BE FULLY ESTABLISHED UNTIL IT HAS BEEN MAINTAINED FOR ONE FULL YEAR AFTER PLANTING. IRRIGATION – NEW SEEDING SHOULD BE SUPPLIED WITH ADEQUATE MOISTURE. SUPPLY WATER AS NEEDED, ESPECIALLY LATE IN THE SEASON, IN ABNORMALLY HOT OR DRY WEATHER, OR ON ADVERSE SITES. WATER APPLICATION RATES SHOULD BE CONTROLLED TO PREVENT EXCESSIVE RUNOFF. RE-SEEDING – INSPECT SEEDD AREAS FOR FAILURE AND MAKE NECESSARY REPAIRS AND RESEEDINGS WITHIN THE SAME SEASON, IF POSSIBLE. IF VEGETATIVE COVER IS INADEQUATE TO PREVENT RILL EROSION, OVER-SEED AND FERTILIZE IN ACCORDANCE WITH SOIL TEST RESULTS. IF A STAND HAS LESS THAN 40% COVER, RE-EVALUATE CHOICE OF PLANT MATERIALS AND QUANTITIES OF LIME AND FERTILIZER. THE SOIL MUST BE TESTED TO DETERMINE IF ACIDITY OR NUTRIENT IMBALANCES ARE RESPONSIBLE. RE-ESTABLISH THE STAND FOLLOWING SEEDBED PREPARATION AND SEEDING RECOMMENDATIONS. FERTILIZATION – COOL SEASON GRASSES SHOULD BEGIN TO BE FERTILIZED 90 DAYS AFTER PLANTING TO ENSURE PROPER STAND AND DENSITY. WARM SEASON FERTILIZATION SHOULD BEGIN AT 30 DAYS AFTER PLANTING. APPLY MAINTENANCE LEVELS OF FERTILIZER AS DETERMINED BY SOIL TEST. IN THE ABSENCE OF A SOIL TEST, FERTILIZATION SHOULD BE AS INDICATED ON THE SEED SCHEDULE.

11. STORMWATER MANAGEMENT

11.1 STORMWATER RUN-OFF FROM THE PROJECT SITE AREAS WILL BE COLLECTED BY NEW AND/OR EXISTING STROM DRAINAGE INLETS, CONVEYED BY PIPE, AND DISCHARGED IN A NON-EROSIVE MANNER IN TO THE EXISTING STORMWATER MANAGEMENT BASIN LOCATED AT THE NORTHWEST CORNER OF THE SITE.

11.2 ALL AREAS OF THE PROJECT WILL DRAIN DIRECTLY IN TO THE EXISTING SWM BASIN THAT IS DESIGNED TO PROVIDE DETENTIONS AND POST-DEVELOPMENT PEAK RUN-OFF REDUCTION.

11.3 AN ADEQUATE CHANNEL IS DETERMINED TO EXIST BETWEEN THE POINT OF DISCHARGE INTO THE SWM BASIN AND THE POINT OF OUTFALL INTO TINKER CREEK, WHERE THE AREA OF THE PROJECT SITE IS LESS THAN 1-PERCENT OF THE TOTAL CONTRIBUTING AREA.

11.4 WATER QUALITY REQUIREMENTS FOR THE PROJECT ARE PROVIDED THROUGH THE USE OF A STRUCTURE BMP/STORMWATER FILTERING DEVICE. THIS UNIT WILL REDUCE THE POST-DEVELOPED POLLUTANT LOAD FROM THE STORMWATER RUN-OFF TO A LEVEL REQUIRED BY CURRENT SWM CODE.

END OF EROSION & SEDIMENT CONTROL NARRATIVE

GENERAL SEQUENCE OF WORK:

1. GENERAL – IN ORDER TO MINIMIZE THE POTENTIAL FOR SOIL EROSION AND SEDIMENTATION OF DOWNSTREAM WATERWAYS AND PROPERTIES, THE WORK OF THE PROJECT SHOULD BE STAGED AND EXECUTED GENERALLY CHRONOLOGICALLY IN ACCORDANCE WITH THE "GENERAL SEQUENCE OF WORK" OUTLINED BELOW. THIS SEQUENCE OF WORK IS NOT INTENDED TO PROVIDE THE CONTRACTOR AND THE RESPONSIBLE LAND DISTURBER (RLD) WITH SPECIFIC DIRECTION REGARDING MEANS AND METHODS OF CONSTRUCTION NOR IS IT INTENDED TO ADDRESS EACH AND EVERY REQUIRED STEP TO COMPLY WITH THE INTENT OF THE EROSION AND SEDIMENT CONTROL PLAN AND THE REGULATIONS OF THE COMMONWEALTH OF VIRGINIA AND ROANOKE COUNTY. THE CONTRACTOR SHOULD BE FAMILIAR WITH AND AWARE OF THE SEQUENCING PROVISIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS" AND THOSE CONTAINED IN THE ROANOKE COUNTY "EROSION AND SEDIMENT CONTROL ORDINANCE." THE GENERAL SEQUENCE OF WORK MAY BE ALTERED UPON THE SUBMISSION AND APPROVAL OF WRITTEN AMENDMENTS OR APPROVED FIELD REVISIONS.

2. FLAG THE LIMITS OF LAND DISTURBANCE AND STAKE THE LOCATION OF THE CONSTRUCTION ENTRANCE. SEE SHEET EC-1

3. CONSTRUCTION ENTRANCE (CE):

3.1 INSTALL SILT FENCE DOWNSLOPE OF THE PROPOSED CONSTRUCTION ENTRANCE (CE) TO ENSURE EROSION DOES NOT OCCUR DURING THE INSTALLATION. CLEAR THE AREA OR DEMOLISH EXISTING ASPHALT AS REQUIRED FOR THE CONSTRUCTION ENTRANCE (CE).

3.2 CLEAR AND GRUBB THE AREA OF THE (CE) AND PLACE FILL MATERIAL OR CUT GRADE AS REQUIRED TO BRING THE (CE) TO AN ACCESSIBLE GRADE. INSTALL THE (CE) IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS.

3.3 UPON COMPLETION OF THE CONSTRUCTION ENTRANCE, STABILIZE ANY DISTURBED AREAS ADJOINING THE (CE) WITH TEMPORARY SEEDING (TS).

4. PERIMETER MEASURES:

4.1 INSTALL SILT FENCE (SF) ALONG THE PERIMETER OF THE LAND DISTURBANCE LIMITS WHERE SHOWN ON SHEET EC-1 OR WHERE REQUIRED TO CONTROL RUNOFF. NOTE THAT SOME SILT FENCE MAY BE DESIGNATED "SUPER" SILT FENCE (SSF).

4.2 INSTALL TEMPORARY DIVERSION DIKE (DD) AND OR RIGHT-OF-WAY DIVERSION (RWD) ALONG THE PERIMETER OF THE LAND DISTURBANCE LIMITS WHERE SHOWN ON SHEET EC-1 OR WHERE REQUIRED TO CONTROL RUNOFF. ENSURE RWD SLOPE TO AND FLOWS TOWARD THE RIP-RAP FILTER (RR).

4.3 IMMEDIATELY SEED/STABILIZE (TS) ANY AREAS DISTURBED BY THE INSTALLATION OF THE PERIMETER MEASURES AND ADJOINING DOWN-SLOPE DISTURBED AREAS.

4.4 INSTALL THE TEMPORARY SEDIMENT TRAP (ST) AT THE LOCATION SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE DIMENSIONS, DETAIL, AND SCHEDULE SHOWN ON THE DRAWINGS (SHEET EC-7). NOTE: DUE TO THE PRESENCE OF KARST TOPOGRAPHY IN THE AREA OF THE PROPOSED TEMPORARY SEDIMENT TRAP (ST), THE (ST) SHALL BE UNDERLAIN BY AN IMPERMEABLE GEOMEMBRANE LINED (MINIMUM 40 MIL PVC OR HDPE) AS INDICATED ON THE DETAIL. IMMEDIATELY SEED/STABILIZE (TS) ANY AREAS DISTURBED BY THE INSTALLATION OF THE SEDIMENT TRAP AND ADJOINING DOWN-SLOPE DISTURBED AREAS.

4.5 IN ORDER TO ENSURE THE SEDIMENT TRAP AND THE UPSLOPE AREA CONTRIBUTING TO THE SEDIMENT TRAP HAVE AN ADEQUATE OUTFALL, THE STORM DRAINAGE SYSTEM FROM SD# 408 DOWNSTREAM TO SD# 401, AND THE OUTFALL CHANNEL FROM SD# 401 TO TINKER CREEK SHALL BE CONSTRUCTED AND PLACED IN SERVICE BEFORE UPSLOPE WHOLESALE CLEARING AND GRUBBING AND MASS GRADING CAN BE PERFORMED. INSTALL THE SYSTEM FROM THE DOWNSTREAM POINT TO THE UPSTREAM POINT AND STABILIZE AREAS AS THE WORK PROGRESSES. REFER TO OTHER RELEVANT SECTION OF THIS WORK SEQUENCE – ESPECIALLY PARAGRAPH 8 PERTAINING TO UTILITY INSTALLATION FOR ADDITIONAL REQUIREMENTS.

4.6 UPON COMPLETION OF ABOVE TASKS CALL FOR INSPECTION OF THE INSTALLED MEASURES. MAKE ADJUSTMENTS AS NEEDED TO ENSURE COMPLIANCE WITH THE SPECIFICATIONS SHOWN ON THE PLANS AND MAKE ADJUSTMENTS AND/OR ADD ADDITIONAL MEASURES BASED ON INSPECTION BY ROANOKE COUNTY E&S INSPECTOR FINDINGS/RECOMMENDATIONS.

5. CLEAR VEGETATION (THERE ARE NO MATURE TREES ON THE SITE) FROM THE PROJECT WORK AREA. CONSIDER USING INCREMENTAL CLEARING (I.E. REMOVE VEGETATION ONLY AS WORK IS TO START IN A SPECIFIC AREA).

6. DEMOLITION – WHERE INDICATED OR REQUIRED, DEMOLISH EXISTING BUILDINGS AND REMOVE ASPHALT PAVING. IF POSSIBLE, STABILIZE DEMOLISHED AREAS WITH CRUSHED STONE AND USE THESE AREAS AS STAGING AREAS FOR NEW CONSTRUCTION. REMOVE ASPHALT PAVEMENT ONLY WHEN MASS GRADING IS IMMINENT – DO NOT DISTURB AREAS/REMOVE ASPHALT UNTIL GRADING IS TO START IN THAT AREA.

7. MASS GRADING:

7.1 BEGIN GRADING IN ACCORDANCE WITH THE CONTOURS AND LINES SHOWN ON THE PLANS.

7.2 WHERE PRESENT, STRIP TOPSOIL AND PLACE IN A STOCKPILE FOR RE-USE ON FINISHED GRADED AREAS.

7.3 INSTALL STORM DRAINAGE SYSTEM AS SHOWN ON PLANS AS EARLY IN THE SEQUENCE AS POSSIBLE. INSTALL INLET PROTECTION (IP) AT END OF OPEN PIPES AND ON ALL INLETS AS THEY ARE INSTALLED. ENSURE DOWNSTREAM STORM DRAINAGE SYSTEM IS COMPLETE AND FUNCTIONING AS WORK PROGRESSES. INSTALL OUTLET PROTECTION (OP) AT THE OUTLET END OF OPEN PIPES AS THEY ARE INSTALLED.

7.4 SHAPE GRADE OF ROADWAY AND ADJOINING AREA TO DRAIN TO NEW STORM DRAIN INLETS AND CHANNELS AS SOON AS PRACTICABLE. AS SOON AS THE SUBGRADE ELEVATION IS REACHED WITHIN THE ROADWAY INSTALL PAVEMENT STONE BASE OR CONSTRUCTION ROAD STABILIZATION (CRS).

7.5 AS EXCAVATION PROGRESSES AND IS COMPLETED, PLACE THE SITE TO FINISHED GRADE AS SOON AS PRACTICAL. APPLY TEMPORARY SEEDING (TS), OR TOPSOIL (TO) AND PERMANENT SEEDING (PS), TO DISTURBED AREA AND CUT SLOPES THAT WILL REMAIN DORMANT FOR LONGER THAN THIRTY (30) DAYS AND/OR WHEN FINAL GRADE IS REACHED.

7.6 FOR PERMANENT STABILIZATION OF DISTURBED AREAS, APPLY TOPSOIL (TO), SEEDING (PS), AND MULCH (MU), AND IMMEDIATELY PLACE SOIL STABILIZATION BLANKET/MATTING (B/M) WHERE SHOWN.

8. UTILITY INSTALLATION (STORM DRAINAGE, WATER, & SANITARY SEWER):

8.1 ONCE GRADING HAS REACHED SUB-GRADE LEVEL OR AS OTHERWISE STIPULATED HEREIN, BEGIN INSTALLATION OF NEW STORM DRAINAGE PIPING SYSTEM, CHANNELS, AND CULVERTS. INSTALL NEW STORM DRAINAGE SYSTEM PIPING FROM LOWEST POINT IN SYSTEM TO HIGHEST POINT IN SYSTEM. INSTALL INLET PROTECTION (IP) AT THE END OF OPEN PIPES AND AROUND EACH STORM DRAIN INLET AS IT BECOMES OPERATIONAL. OTHER UTILITY INSTALLATION REQUIREMENTS INCLUDE:

8.1.1 NO MORE THAN 200 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.

8.1.2 EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.

8.1.3 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.

8.1.4 MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.

8.1.5 COMPLY WITH ALL APPLICABLE SAFETY REGULATIONS REGARDING TRENCHING.

8.1.6 FOR UTILITY TRENCHES OUTSIDE AREAS OF MASS GRADING, INSTALL TEMPORARY SEEDING OR PERMANENT SEEDING AND BLANKET MATTING (WHERE SPECIFIED) OVER THE BACKFILLED TRENCH. INSTALL OTHER E&S MEASURES SPECIFIED ALONG CLEARED ROUTE.

9. MAINTENANCE OF E&S MEASURES:

9.1 ALL EROSION AND SEDIMENT MEASURES WILL BE CHECKED DAILY AND AFTER EACH MEASURABLE RAINFALL. THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL MAINTENANCE REQUIREMENTS OF THE EROSION AND SEDIMENT CONTROL MEASURES AS OUTLINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND THE E&S NARRATIVE.

10. REMOVAL OF MEASURES:

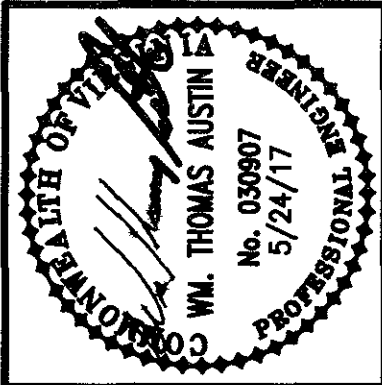
10.1 PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM AND MATURE ENOUGH TO SURVIVE AND INHIBIT EROSION.

10.2 UPON STABILIZATION OF ALL DISTURBED SURFACES, CALL-FOR FINAL INSPECTIONS.

10.3 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 E&S INSPECTOR. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

END OF GENERAL SEQUENCE OF WORK

ADDITIONAL SEQUENCING REQUIREMENTS ARE SPECIFIED ON SHEET EC-1.



| Revisions | Date | Issue |
|-----------|----------|---------------------------------|
| 0 | 10/06/17 | RESPONSE TO 1ST REVIEW COMMENTS |

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THE VILLAGE AT TINKER CREEK – PHASE IIIB
EROSION & SEDIMENT CONTROL NARRATIVE
ROANOKE COUNTY, VIRGINIA

Vertical Scale:
N/A

Horizontal Scale:
N/A

Commission Number:
1966-P4

Sheet No.:

EC-3