THE PURPOSE OF THIS PROJECT IS TO DEVELOP THE ROADS AND INFRASTRUCTURE ASSOCIATED WITH A RESIDENTIAL SUBDIVISION. THE PROPOSED DEVELOPMENT WILL RESULT IN 4.09 ACRES OF IMPERVIOUS AREA IN THE FORM OF PAVED ROADS. THE EROSION & SEDIMENT CONTROL MEASURES SHOWN HERE ARE DESIGNED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VA ESCH). THE TOTAL DISTURBED AREA FOR THIS PROJECT IS 32.06 ACRES.

THE EXISTING SITE IS MOSTLY UNDEVELOPED, WITH OPEN SPACE AND WOODED AREAS AS WELL AS A GRAVEL ROAD AND A SINGLE FAMILY HOME.

THE SITE IS SURROUNDED BY SINGLE FAMILY RESIDENTIAL LOTS TO THE SOUTHWEST, DILLARDS HILL ROAD TO THE NORTHWEST, AND SMITH MOUNTAIN LAKE TO THE NORTHEAST AND SOUTHEAST.

THIS PROJECT DOES NOT ANTICIPATE OFF-SITE WASTE/BORROW AREAS SHOULD THE PROJECT REQUIRE OFF-SITE WASTE AREAS OR BORROW AREAS, THE LOCATION OF THESE AREAS SHALL BE SUBMITTED TO THE GOVERNING AUTHORITY. EROSION CONTROL PLANS OR MEASURES WILL BE REQUIRED FOR THESE OFF-SITE LOCATIONS OR MAY ALREADY BE IN PLACE. THE DEMOLITION ITEMS SHALL BE DISPOSED IN ACCORDANCE WITH LOCAL GOVERNING REQUIREMENTS.

PLEASE SEE APPENDIX A OF THE ESC-SWM SUBMITTAL CALCULATIONS.

BLANKET MATTING IS PLANNED FOR THE STEEP SLOPES. SHOULD EROSION BECOME EVIDENT IN OTHER AREAS, CONTRACTOR SHALL STABILIZE AREAS WITH TEMPORARY SEEDING. BLANKET MATTING AND/OR HYDROMULCHING. ANY OUTFALLS TO SMITH MOUNTAIN LAKE SHALL BE CLOSELY MONITORED FOR EROSION WITH APPROPRIATE MEASURES TAKEN TO PREVENT EROSION IN COORDINATION WITH THE FRANKLIN COUNTY E&S INSPECTOR.

AT TIE-INS FROM PROPOSED BASIN AND POND OUTFALLS TO JURISDICTIONAL STREAMS, CONTRACTOR SHALL ENSURE NO DISTURBANCE OR STREAM IMPACTS OUTSIDE THE PROPOSED LIMITS OF CLEARING AND GRADING OCCURS. 2' DEEP RIP-RAP TO BE KEYED INTO GRADE. AND EXISTING GRADE MATCHED PRIOR TO THE PROVIDED LIMITS OF CLEARING AND GRADING. ADDITIONAL CONTROL MEASURES, INCLUDING OUTLET PROTECTION RIP-RAP AND SUPER SILT FENCE ARE TO BE UTILIZED AS NECESSARY TO ENSURE NO STREAM IMPACTS OUTSIDE THE CLEARING LIMITS TAKES PLACE. CONTRACTOR TO CONTACT PARKER DESIGN GROUP AT 540-387-1153 FOR ADDITIONAL CLARIFICATION AND/OR STAKING TO ENSURE NO JURISDICTIONAL STREAMS OUTSIDE THE LIMITS OF CLEARING AND GRADING ARE DISTURBED IN ANY WAY.

EROSION & SEDIMENT CONTROL MEASURES:

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED. ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK", THIRD EDITION.

THE CONTRACTOR SHALL IMMEDIATELY INSTALL EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE PLANS. THIS WORK SHALL BE COORDINATED IN ORDER OF THE WORK WHICH IS TO FOLLOW: CONTROL AT CENTERS OF FLOW, AND OTHER POINTS OF CONCENTRATION SHOWN SHALL BE CONSTRUCTED IN PLACE FIRST.

AFTER THE INSTALLED CONTROL DEVICES ARE FOUND TO BE FUNCTIONAL, THE CONTRACTOR SHALL IMMEDIATELY PROCEED WITH DEMOLITION, CLEARING, AND PRELIMINARY GRADING OPERATIONS. ALL EXPOSED DENUDED AREAS SHALL BE SEEDED WITHIN SEVEN (7) DAYS AFTER FINAL GRADING, AND SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK". THIRD EDITION.

- 3. IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL. IN PARTICULAR:
- MEASURES SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAYS.
- ALL SILT FENCE BARRIERS AND INLET PROTECTIONS SHALL BE CHECKED REGULARLY FOR UNDERMINING AND SEDIMENT BUILDUP. C. ALL SEEDED AREAS WILL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEEDED AS NEEDED.
- 4. FOLLOWING THE COMPLETION OF DEVELOPMENT AND STABILIZATION OF ALL AREAS AND AFTER IT HAS BEEN DETERMINED THAT EROSION OR SEDIMENTATION IS NO LONGER OCCURRING ON THE SITE OR AT ITS BOUNDARIES AND THAT 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, ORGANIZED MANNER.

STRUCTURAL PRACTICES

Listed and described below are various structural practices used for this project.

Temporary Construction Entrance (3.02) — A stone pad, located at points of vehicular ingress and egress on a construction site, to reduce the soil transported onto public roads and other paved areas. A wash rack shall be installed with each construction entrance.

Super Silt Fence (3.05) — A temporary sediment barrier constructed of posts, filter fabric and, in some cases, a wire support fence, placed across or at the toe of a slope or in a minor drainage way to intercept and detain sediment and decrease flow velocities from drainage areas of limited size; applicable where sheet and rill erosion or small concentrated flows may be a problem. Maximum effective life of 6 months. Areas requiring wire support have been designated as "SSF" on the E&S plans.

Storm Drain Inlet Protection (3.07) — The installation of various kinds of sediment trapping measures around drop inlets or curb inlet structures prior to permanent stabilization of the disturbed area; limited to drainage areas not exceeding one acre, and not intended to control large, concentrated stormwater flows. Storm Drain Inlet Protection will be used on this project and is shown on the drawings.

Culvert Inlet Protection (3.08) — A sediment filter located at the inlet to storm sewer culverts which prevents sediment from entering, accumulating in and being transferred by the culvert. It also provides erosion control at culverts during the phase of a project where elevations and drainage patterns are changing, causing original control measures to be ineffective. Temporary Diversion Dike (3.09) — A ridge of compacted soil constructed at the top or base of a sloping disturbed area which diverts off—site runoff away from unprotected slopes and to a stabilized outlet, or to divert sediment—laden runoff to a sediment trapping structure. Maximum effective life is 18 months.

Temporary Diversion (3.12) - A channel constructed across a slope with a supporting earthen ridge on the lower side. This device diverts off-site runoff away from unprotected slopes and to a stabilized outlet, or to divert sediment—laden runoff to a sediment trapping structure. Maximum effective life is 18 months.

Temporary Sediment Trap (3.13) - 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. Maximum effective life is 18 months.

Temporary Sediment Basin (3.14) - A temporary barrier or dam with a controlled stormwater release structure which is formed by construction an embankment of

compacted soil across a drainage way. It is used to detain sediment—laden runoff from drainage areas 3 acres or greater for enough time to allow most of the suspended solids to settle out. It can be constructed only where there is sufficient space and appropriate topography. Maximum effective life is 18 moths unless designed as a permanent pond by a qualified professional

Temporary CMP Clean Water Bypass Drains - Temporary CMP installations shall be utilized as designated on this E&S plan. Special care shall be taken for drains utilized as clear water bypasses to ensure no sediment is discharged into these pipes, and that water exiting is flowing clear. These drains are to remain in place and be filled over while grading activities are taking place, but shall be removed once drainage ditches are established and stabilized.

Outlet Protection (3.18) — The installation of riprap channel sections and/or stilling basins below storm drain outlets to reduce erosion and under—cutting from scouring at outlets and to reduce flow velocities before stormwater enters receiving channels below these outlets. Reference sheet C29 for ultimate outlet protection installation details which is to be utilized unless not listed. Filter fabric shall be installed underneath all rip—rap outlet protection to help prevent any scouring or sediment discharge.

Rip-Rap (3.19) - 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. Filter fabric shall be installed underneath all rip-rap to help prevent any scouring or sediment discharge. Temporary Seeding (3.31) - Establishment of temporary vegetative cover on disturbed areas that will not be brought to final grade for periods of 7 days to one year by seeding with appropriate rapidly—growing plants.

Permanent Seeding (3.32) — Establishment of perennial vegetative cover by planting seed on rough—graded areas that will not be brought to final grade for a year or more or where permanent, long—lived vegetative cover is needed on fine—graded areas. Permanent Seeding will be used on all finished areas outside of the parking areas. Mulching (3.35) — Application of plant residues or other suitable materials to disturbed surfaces to prevent erosion and reduce overland flow velocities. Fosters plan growth by increasing

available moisture and providing insulation against extreme heat or cold. Should be applied to all seeding operations, themselves, and bare areas which cannot be seeded due to the season but which still need protection to prevent soil loss.

PHASE 1 E&S CONTROL CONSTRUCTION SEQUENCE

1. OWNER TO OPBAIN GRADING PERMIT AND VPDES PERMIT, OWNER, CONTRACTOR, RESPONSIBLE LAND DISTURBER, AND PROJECT ENGINEER SHALL ATTEND A PRE-CONSTRUCTION MEETING WITH THE FRANKLIN COUNTY E&S INSPECTOR PRIOR TO STARTING ANY LAND DISTURBING ACTIVITIES. 2. INSTALL CONSTRUCTION ENTRANCES AS SHOWN ON PHASE 1 PLAN. PROVIDE THE CONSTRUCTION ENTRANCES WITH WASH RACKS AS SHOWN ON THE PHASE 1 PLAN, AND ESTABLISH A PROTECTED STAGING AND

4. CONTACT THE FRANKLIN COUNTY E&S INSPECTOR FOR AN INSPECTION OF PERIMETER CONTROLS. HAVE THESE CONTROLS APPROVED.

5. INSTALL GRADING-RELATED CONTROLS, SUCH AS TEMPORARY CMP BYPASS DRAINS, TEMPORARY CULVERT CROSSINGS, DIVERSIONS, SEDIMENT BASINS, AND SEDIMENT TRAPS. APPROPRIATE INLET

PROTECTION/OUTLET PROTECTION TO BE PROVIDED DURING INSTALLATION OF THESE ITEMS

6. STABILIZE AREAS AND REQUEST INSPECTION BY FRANKLIN COUNTY E&S INSPECTOR OF GRADING-RELATED CONTROLS. HAVE THESE CONTROLS APPROVED. 7. BEGIN CLEARING AND GRUBBING, MASS GRADING, UTILITY INSTALLATION, AND ROADWAY INSTALLATION ACTIVITIES, REMOVING PERIMETER AND GRADING-RELATED E&S CONTROLS ONLY ONCE A GRADED AREA HAS

BEEN STABILIZED AND SEEDED. AND AT THE APPROVAL OF THE FRANKLIN COUNTY E&S INSPECTOR.

8. ONCE AN AREA HAS COMPLETED INSTALLATION OF ALL UTILITIES AND ROADWAY. STABILIZED, AND APPROVED BY THE FRANKLIN COUNTY E&S INSPECTOR. PERIMETER CONTROLS PER THE PHASE 2 E&S PLAN TO BE

SEDIMENT BASIN OUTFALL CONSTRUCTION SEQUENCE

I. REFER TO PHASING/ GENERAL SEQUENCE OF CONSTRUCTION FOR ITEMS TO BE INSTALLED PRIOR TO INSTALLING OUTLET PIPE AND EXCAVATING THE SEDIMENT BASIN.

2. INSTALL THE OUTLET PIPE AND OUTLET PROTECTION AS PART OF THE SEDIMENT BASIN CONSTRUCTION. CONTRACTOR SHALL CONTINUE COMPACTION TO THE CONSTRUCTED TOP OF BERM.

4. CONTRACTOR SHALL INSTALL RISER STRUCTURE FOR ULTIMATE POND DESIGN, WITH BMP ORIFICES CLOSED WITH A METAL PLATE WHILE IN USE AS A SEDIMENT BASIN. RISER TOP TRASH RACK SHALL ALSO BE INSTALLED AT THIS TIME.

5. CONTRACTOR SHALL IMMEDIATELY STABILIZE EMBANKMENT AREA ONCE TOP OF BERM HAS BEEN ACHIEVED.

. THE CONTRACTOR SHALL EXCAVATE THE SEDIMENT BASINS AS SHOWN ON E&S PHASE 1 SHEETS.

'. THE SEDIMENT BASIN SHALL OUTFALL AS DESCRIBED IN PHASE 1 E&S PLAN SHEETS, AND THE BASIN CLEANED WHEN SEDIMENT REACHES THE CLEANOUT ELEVATION NOTED IN THE SCHEMATIC. 8. CONTRACTOR SHALL PERIODICALLY INSPECT BERM AND SPILLWAY FOR EVIDENCE OF EROSION. IF ANY EROSION IS EVIDENT, ADEQUATE MEASURES SHALL BE APPLIED TO STABILIZE AREA.

CONVERSION FROM SEDIMENT BASIN TO SWM POND

- 1. CONVERSION FROM SEDIMENT BASIN TO SWM POND SHALL NOT OCCUR UNTIL THE UPSTREAM AREAS HAVE BEEN STABILIZED.
- 2. THE CONTRACTOR SHALL DRAIN THE SEDIMENT BASIN USING A FILTER BAG, EXCAVATE SEDIMENT AND ACHIEVE PLANNED GRADES FOR THE SWM POND.
- 3. BASIN DEWATERING ORIFICE TO BE REMOVED. AND PLUGS TAKEN OUT FOR THE ULTIMATE POND ORIFICE CONFIGURATION TO OPERATE.
- 4. OUTLET PROTECTION SHALL BE CLEANED OR REPLACED TO PROVIDE CLEAN OUTLET PROTECTION. 5. CONTRACTOR SHALL REMOVE BMP ORIFICE PLATE AND INSTALL BMP TRASH RACKS. ORIFICE FOR SEDIMENT BASIN ONLY TO BE PERMANENTLY CLOSED BY METAL PLATE.
- 6. THE CONTRACTOR SHALL ENSURE THAT THE RIPRAP PORTION OF THE DRAINAGE CHANNEL IS INSTALLED.
- 7. ALL DISTURBED AREAS SHALL ACHIEVE PERMANENT VEGETATIVE COVER BY PLACING ADEQUATE AMOUNT OF TOPSOIL AND PLACING PERMANENT SEEDING AND/OR BLANKET MATTING ON SLOPES STEEPER THAN

STORMWATER CONSIDERATIONS:

THE SITE IS EVALUATED AS FOLLOWS:

- THE SITE ANTICIPATES GREATER THAN 1 ACRE OF DISTURBANCE THEREFORE QUALITY AND QUANTITY MUST BE MET.
- QUALITY HAS BEEN ADDRESSED BY PURCHASING OF PHOSPHORUS CREDITS FROM A NUTRIENT
- QUANTITY IS MET BY IMPLEMENTING DETENTION PONDS TO REDUCE PEAK RUNOFF FLOW RATES BELOW THAT OF PRE-DEVELOPMENT CONDITIONS. THE 100-YR STORM WILL BE CONTAINED WITHIN THE DETENTION PONDS AND 10-YR STORM CHANNELS THROUGHOUT THE SITE.
- WITH RESPECT TO MS-19. ADJACENT PROPERTIES ARE PROTECTED FROM INCREASES IN VELOCITIES. VOLUMES, AND PEAK RUNOFF RATES. PEAK RUNOFF RATES ARE LESS THAN PRE-DEVELOPED.

FUTURE HOME CONSTRUCTION STORMWATER CONSIDERATIONS:

- THE SITE IS EVALUATED AS FOLLOWS:
- STORMWATER QUANTITIES ASSOCIATED WITH FUTURE ULTIMATE HOME CONSTRUCTION ARE TAKEN INTO ACCOUNT WITH THIS SITE PLAN, WITH RESPECT TO POND SIZING, DRAINAGE DITCH DESIGN, AND STORM SEWER SIZING.
- STORMWATER QUALITY CONSIDERATIONS ASSOCIATED WITH FUTURE ULTIMATE HOME CONSTRUCTION SHALL BE ADDRESSED THROUGH THE CONSTRUCTION OF A MINIMUM OF ONE (1) MICRO—BIORETENTION (RAIN GARDEN) PER RESIDENTIAL LOT. A MORE DETAILED BMP CONSTRUCTION REQUIREMENTS PACKAGE HAS BEEN PROVIDED TO FRANKLIN COUNTY UNDER SEPARATE COVER, AND SHALL BE CONSULTED PRIOR TO THE ISSUANCE OF ANY BUILDING PERMITS FOR HOME CONSTRUCTION. THIS CONSTRUCTION GUIDE IS ENTITLED "KENNEDY SHORES SUBDIVISION: STORMWATER MANAGEMENT CONSTRUCTION GUIDE". CONTACT THE FRANKLIN COUNTY STORMWATER ADMINISTRATOR FOR ADDITIONAL DETAILS.
- STORMWATER QUALITY CONSIDERATIONS ASSOCIATED WITH THIS SITE PLAN. EXCLUDING THE FUTURE HOMES, IS ADDRESSED THROUGH THE PURCHASE OF NUTRIENT CREDITS FROM THE GLADE HILL NUTRIENT BANK IN FRANKLIN COUNTY, VIRGINIA.

ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE CHECKED WEEKLY AND AFTER ALL SIGNIFICANT RAINFALL EVENTS. IN PARTICULAR:

26. SILT FENCE AND INLET/OUTLET PROTECTION SHALL BE CHECKED REGULARLY TO ENSURE THAT THE FABRIC HAS NOT BEEN UNDERMINED OR HAS DETERIORATED. SEDIMENT SHALL BE REMOVED WHEN LEVEL OF BUILDUP REACHES HALFWAY UP THE BARRIER.

27. AREAS WHICH HAVE RECEIVED SEEDING SHALL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND OF GRASS IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEEDED AS REQUIRED.

SPECIFIC REQUIREMENTS RELATED TO INSPECTION AND MAINTENANCE OF EACH EROSION CONTROL MEASURE ARE DISCUSSED IN THE VESCH STANDARDS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL EROSION CONTROL MEASURES TO THE SATISFACTION OF LOCAL REVIEWING AUTHORITIES, AS WELL AS THE INSTALLATION OF ADDITIONAL MEASURES AS NEEDED TO ENSURE THAT SEDIMENT LADEN RUNOFF DOES NOT LEAVE THE SITE.

EROSION & SEDIMENT CONTROL MEASURES

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK", LATEST EDITION.

REGARDLESS OF FUTURE DEVELOPMENT PLANS, THE CONTRACTOR SHALL IMMEDIATELY INSTALL EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE PLANS. THIS WORK SHALL BE COORDINATED IN ORDER OF THE WORK WHICH IS TO FOLLOW: CONTROL AT CENTERS OF FLOW, AND OTHER POINTS OF CONCENTRATION SHOWN SHALL BE CONSTRUCTED IN PLACE FIRST.

2. AFTER THE INSTALLED CONTROL DEVICES ARE FOUND TO BE FUNCTIONAL, THE CONTRACTOR SHALL IMMEDIATELY PROCEED WITH DEMOLITION, CLEARING, AND PRELIMINARY GRADING OPERATIONS, ALL EXPOSED DENUDED AREAS SHALL BE SEEDED WITHIN SEVEN (7) DAYS AFTER FINAL GRADING, AND SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK", THIRD EDITION.

3. IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL. IN PARTICULAR:

AREAS SHALL BE FERTILIZED AND RESEEDED AS NEEDED.

A. MEASURES SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAYS. B. ALL SILT FENCE BARRIERS AND INLET PROTECTIONS SHALL BE CHECKED REGULARLY FOR UNDERMINING AND SEDIMENT BUILDUP. C. ALL SEEDED AREAS WILL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED.

4. FOLLOWING THE COMPLETION OF DEVELOPMENT AND STABILIZATION OF ALL AREAS AND AFTER IT HAS BEEN DETERMINED THAT EROSION OR SEDIMENTATION IS NO LONGER OCCURRING ON THE SITE OR AT ITS BOUNDARIES AND THAT 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. ORGANIZED MANNER.

GENERAL EROSION & SEDIMENT CONTROL NOTES

1. ALL SOIL EROSION & SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLAN SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

2. THE APPROVING AUTHORITY MAY ADD TO, DELETE, RELOCATE, CHANGE, OR OTHERWISE MODIFY CERTAIN EROSION AND SEDIMENT CONTROL MEASURES WHERE FIELD CONDITIONS ARE ENCOUNTERED THAT WARRANT SUCH MODIFICATIONS. IN PARTICULAR, ADDITIONAL CHECK DAMS MAY BE REQUIRED THROUGHOUT THE SITE, AND SHALL BE INSTALLED IF REQUESTED BY THE APPROVING AUTHORITY.

3. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLAN SHALL BE PLACED IN ADVANCE OF THE WORK BEING PERFORMED, AS FAR AS PRACTICAL.

4. IN NO CASE DURING CONSTRUCTION SHALL WATER RUNOFF BE DIVERTED OR ALLOWED TO FLOW TO LOCATIONS WHERE ADEQUATE PROTECTION HAS NOT BEEN PROVIDED. 5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LEAVE THE SITE ADEQUATELY PROTECTED

AGAINST EROSION, SEDIMENTATION, OR ANY DAMAGE TO ANY ADJACENT PROPERTY AT THE END OF EACH DAY'S WORK.

6. FOR THE EROSION CONTROL KEY SYMBOLS SHOWN ON THE PLANS, REFER TO THE VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL PRACTICES CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

7. ALL TEMPORARY CMP BYPASS DRAINS ARE TO BE REMOVED ONCE FINAL DITCH GRADING IS ACHIEVED AND SEEDED / STABILIZED. THESE DRAINS ARE TO FUNCTION DURING GRADING ACTIVITIES. AND MAY REQUIRE INVERT ADJUSTMENTS DURING THE CONSTRUCTION PROCESS TO ENSURE THEY ARE FUNCTIONAL. COORDINATION WITH THE FRANKLIN COUNTY E&S INSPECTOR MAY BE NEEDED DURING ACTIVITIES GRADING OVER A TEMPORARY CMP BYPASS DRAIN.

EROSION & SEDIMENT CONTROL MINIMUM STANDARDS

MS-1 PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER OBTAINING FINAL GRADE ON ANY PORTION OF THE SITE. TEMPORARY STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO ALL AREAS THAT ARE TO BE DORMANT FOR MORE THAN ONE YEAR. TEMPORARY AND PERMANENT SEEDING ARE NEEDED FOR THIS PROJECT AND SHALL BE UTILIZED PER VESCH STANDARDS AND SPECIFICATIONS.

MS-2 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. 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. ADEQUATE SYMBOLS, DETAILS, AND NOTES ARE PROVIDED ON THE PLAN FOR DIRECTION.

MS-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. APPROPRIATE CONTROL MEASURES ARE SHOWN ON THE PLAN WHERE NEEDED AND SHALL BE INSTALLED PRIOR TO GRADING.

MS-5 STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION. DIVERSIONS AND DIVERSION DIKES ARE UTILIZED ON THE SITE AND SHOWN ON THE PLANS. 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 BASINS. TEMPORARY SEDIMENT TRAPS AND BASINS ARE SHOWN ON PLANS TO SCALE AND SIZED BASED ON THE TOTAL DRAINAGE AREA SERVED.

FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED. SLOPE STABILIZING MEASURES ARE IDENTIFIED ON THE PLANS, SPECIFICALLY BLANKET MATTING.

MS-7 CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE

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. PERMANENT CHANNELS ARE PROVIDED ON THE PLANS FOR THE PURPOSE OF CONVEYING CONCENTRATION RUNOFF.

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. INLET PROTECTION IS SHOWN ON THE PLANS. LESS THAN THE MAXIMUM OF 1.0 ACRE DRAINS TO EACH INLET.

N/A MS-9 WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

MS-11 BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPE 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. ADEQUATE SYMBOLS, DETAILS, AND NOTES ARE PROVIDED ON THE PLAN FOR DIRECTION. N/A 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. N/A 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.

N/A MS-14 ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET. N/A MS-15 THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS

COMPLETED. MS-16 UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER

A. NO MORE THAN 500 LINEAR FEET OF TRENCH SHALL BE OPEN AT ONE TIME. 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 D. 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.

THE CONTRACTOR SHALL FOLLOW MS-16 WHEN INSTALLING STORM SYSTEMS & UTILITIES. 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 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. MEASURES TO ADDRESS THE CONSTRUCTION ENTRANCE IS PROVIDED ON THE PLAN.

MS-18 ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 14 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 EASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION. FOLLOW MS-18 ONCE FINAL GRADE IS MET AND CONSTRUCTION IS FINISHED.

MS-19 PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITIONS, 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 ANALYSIS AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE 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 ONÉ 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; 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 SEWERS 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 EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:

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 2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES; OR

3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RATE RUNOFF FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL CAUSE THE PRE-DEVELOPMENT PEAK RATE RUNOFF 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 WIHICH IS SATISFACTORY TO THE PLAN-APPROVING AUTHORITY TO PREVENT DOWNSTREAM EROSION. D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS. ALL HYDROLOGIC ANALYSIS SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT

OF THE SUBJECT PROPERTY. 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 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. H. 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. J. 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 A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING 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. 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

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 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 § 10.1-562 OR 10.1-570 OF THE ACT.

M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 10.1-561 OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 10.1-603.2 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LANDDISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 4VAC50-60-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP)

ADDRESSED ON THE STORMWATER COMPUTATIONS SHEETS OF THE PLANS AND IN THE STORMWATER SUBMITTAL

N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 4VAC50-60-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF MINIMUM

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REVISIONS:

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> DATE: 6 JANUARY, 2017

> > SHEET TITLE: **E&S CONTROL** NARRATIVE

SCALE: N/A SHEET NO.