SOIL EROSION CONTROL NARRATIVE

PROJECT DESCRIPTION:
THE PURPOSE OF THIS PROJECT IS THE REDEVELOPMENT OF A PORTION OF THE EXISTING SHOPPING MALL PARKING LOT, TO ALLOW CONSTRUCTION OF A NEW "CHILI'S" RESTAURANT, ALONG WITH RELOCATION OF AN EXISTING PUBLIC SANITARY SEWER LINE THAT CURRENTLY BISECTS THE SITE.
THE SITE GENERALLY SLOPES GENTLY TO THE NORTHEAST TO AN EXISTING STORM DRAIN COLLECTION SYSTEM THAT IS PROPOSED TO REMAIN ESSENTIALLY UNCHANGED. THE PROPERTY IS LOCATED AT THE NORTHWESTERN CORNER OF THE INTERSECTION OF ELECTRIC ROAD AND ELM VIEW ROAD IN THE CAVE SPRING MAGISTERIAL DISTRICT OF THE COUNTY OF ROANOKE, VIRGINIA. THE AREA OF LAND DISTURBANCE IS ESTIMATED TO BE 0.57 AC (24,870 SQ. FT.).

EXISTING SITE CONDITIONS:
THE SITE IS CURRENTLY A BITUMINOUS PAVED PARKING LOT, AND DRAINS AS DESCRIBED ABOVE. THE SUBJECT SITE LIES WITHIN "ZONE "X" AS SHOWN ON FEMA FLOOD INSURANCE RATE MAPS (FIRM MAP NUMBER 51161C0251G, EFFECTIVE DATE 09/28/2007).

EXISTING SOIL CONDITIONS:
A 'GEOTECHNICAL ENGINEERING REPORT' HAS BEEN PREPARED BY TERRACON CONSULTANTS, INC. OF GREENSBORO, NC (REF: PROJ. NO. 75215061) DATED MAY 28, 2021. THIS REPORT INDICATES THAT SOILS UNDERLYING THE EXISTING PAVEMENT ARE A MIXTURE OF CLAY, SAND AND SILT FILLS. THE CONTRACTOR IS DIRECTED TO THIS REPORT AND NOTES ON SHEET C-06 OF THESE PLANS FOR SPECIFIC REQUIREMENTS CONCERNING SUBGRADE PREPARATION.

THE USDA WEB SOIL SURVEY IDENTIFIES THE SOILS IN THE AREA OF PROPOSED CONSTRUCTION AS BELONGING TO THE SOIL UNIT GROUP NUMBER 53 "URBAN LAND", WHICH IS CHARACTERIZED AS BEING IN EXCESS OF 80% COVERED BY PAVEMENT OR OTHER IMPERVIOUS SURFACES, MOST OF WHICH LIKELY HAVE SUBGRADE MATERIAL THAT HAS BEEN ALTERED FROM ITS NATURAL STATE. AS SUCH, THE SOIL CHARACTERISTICS THAT MAY BE ENCOUNTERED WILL VARY. GENERALLY THESE SOILS ARE CLASSIFIED AS BEING HYDRAULIC SOIL GROUP (HSG) "D". THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF SUBSURFACE CONDITIONS THAT EXHIBIT RUTTING, PUMPING, OR EXCESSIVE LATERAL MOVEMENT OF SOILS, AS THESE MAY BE INDICATIVE OF UNSUITABLE SUBGRADE CONDITIONS.

ADJACENT PROPERTY:
THE PROJECT SITE IS BOUNDED TO THE SOUTH BY ELECTRIC ROAD (VA ROUTE 419), AND TO THE EAST, NORTH AND WEST BY REMAINING PROPERTY OF THE PARENT SHOPPING MALL.

OFF-SITE AREAS:
IT IS ESTIMATED THAT THIS PROJECT WILL REQUIRE AN IMPORT OF EARTHWORK MATERIAL. THE LOCATION OF ALL OFF-SITE FILL OR BORROW AREA ASSOCIATED WITH THE CONSTRUCTION PROJECT SHALL BE PROVIDED TO ROANOKE COUNTY DEPARTMENT OF COMMUNITY DEVELOPMENT. AN EROSION CONTROL PLAN OR MEASURES MAY BE REQUIRED FOR THIS AREA. THE COUNTY OF ROANOKE OR ITS APPROVED AGENT RESERVES THE RIGHT TO PLACE A STOP WORK ORDER ON THE SUBJECT SITE AND ANY OFF-SITE BORROW AREAS, SHOULD APPROVED PLANS AND PERMITS NOT EXIST FOR ALL SITES.

CRITICAL AREAS
THE FOLLOWING AREAS HAVE THE POTENTIAL FOR SERIOUS SOIL EROSION OR WARRANT ADDITIONAL ATTENTION BY THE CONTRACTOR. THE CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO WORK IN AND STABILIZATION OF THESE AREAS:
- MAINTENANCE OF SILT FENCE BARRIERS AND INLET PROTECTIVE MEASURES WILL BE CRITICAL, TO ENSURE SEDIMENT LADEN RUNOFF IS PROPERLY FILTERED PRIOR TO ENTERING THE STORM DRAIN SYSTEM.
- EXISTING AND NEW STORM STRUCTURES SHALL BE PROTECTED PROPERLY. THIS IS THE MOST IMPORTANT AND USUALLY THE LEAST PROTECTED POINT OF SEDIMENT COLLECTION. IT IS CRITICAL THAT THE STRUCTURES ARE ADEQUATELY PROTECTED AGAINST SEDIMENTATION, WHICH WILL ENSURE MINIMAL CLEANING EFFORTS OF THE CONTRACTOR ON THE EXISTING AND NEW STORM DRAIN PIPEWORKS.

STORMWATER RUNOFF:
ENGINEERING COMPUTATIONS AND MAPS HAVE BEEN PROVIDED TO ROANOKE COUNTY TO SHOW THAT THE REDUCTION OF IMPERVIOUS SURFACE AREAS CAUSED BY THIS REDEVELOPMENT WILL REDUCE RUNOFF FOR THE DESIGN STORM EVENTS.

EROSION AND SEDIMENT CONTROL MEASURES:
UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK", THIRD EDITION.
1. 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 TO PROTECT AREAS FROM THE WORK WHICH IS TO FOLLOW. CONTROL AT CENTERS OF FLOW AND OTHER POINTS OF CONCENTRATION SHOWN HEREIN SHALL BE CONSTRUCTED FIRST.
2. FOLLOWING INSTALLATION OF THE PERIMETER CONTROLS, THE SITEWORK CONTRACTOR SHALL BEGIN EARTHWORK OPERATIONS. THE CONTRACTOR SHALL IMMEDIATELY PROCEED WITH CLEARING, GRUBBING, AND GRADING OPERATIONS. DENUDED AREAS INDICATED ON THESE PLANS TO RECEIVE PERMANENT SEEDING (STD & SPEC 3.32) SHALL BE SEEDED WITHIN SEVEN (7) DAYS AFTER FINAL GRADING, AND SHALL BE 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:
   A. THE CONSTRUCTION ENTRANCE (STD & SPEC 3.02) SHALL BE MAINTAINED IN A CONDITION TO PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAYS.
   B. ALL SILT FENCE BARRIERS (STD & SPEC 3.05) SHALL BE CHECKED REGULARLY FOR UNDERMINING AND SEDIMENT BUILDUP.
   C. INLET PROTECTION MEASURES SHALL BE INSPECTED TO INSURE FILTRATION MEASURES ARE EFFECTIVE, AND ARE NOT CHOKED WITH SILT. CLEAN AS NECESSARY TO PREVENT EXCESSIVE PONDING.
   D. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEEDED AS NEEDED.
4. THE SOIL EROSION CONTROL MEASURES INSTALLED FOR THIS CONTRACT SHALL REMAIN IN PLACE UNTIL REMOVAL IS APPROVED BY THE COUNTY OF ROANOKE INSPECTOR, AT WHICH TIME IT SHALL BE THE SITEWORK CONTRACTOR'S RESPONSIBILITY TO REMOVE ALL TEMPORARY MEASURES FROM THE SITE UNLESS, OTHERWISE REQUIRED HEREIN, AND STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH THESE PLANS.

MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES:
- SILT FENCE BARRIERS SHALL BE INSPECTED DAILY AND CLEANED OR REPLACED AS REQUIRED. CLEAN SILT FENCE WHEN SILT MEASURES ONE-HALF THE HEIGHT OF THE FENCE, OR AS REQUIRED.
- STORM DRAIN COLLECTION POINTS SHALL BE PROTECTED USING INLET PROTECTION MEASURES AS OUTLINED HEREIN. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF EXCESS SEDIMENT FROM THE STORM DRAIN STRUCTURES AT ALL TIMES UNTIL THE PROJECT IS COMPLETED AND TURNED OVER TO OWNER.
- PUBLIC STREETS AND ADJACENT PAVED AREAS SHALL REMAIN IN A DUST AND MUD-FREE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. SHOULD OFF-SITE SEDIMENTATION OCCUR, IT IS THE CONTRACTOR'S RESPONSIBILITY TO RETURN ALL AFFECTED AREAS TO A CONDITION EQUAL TO OR BETTER THAN THE ORIGINAL CONDITION, AT NO ADDED COST TO THE OWNER.
- DISTURBED AREAS THAT ARE NOT PERMANENTLY STABILIZED WITHIN FOURTEEN (14) DAYS SHALL BE TEMPORARILY SEEDED IN ACCORDANCE WITH STANDARD AND SPECIFICATION 3.31 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
- ALL PROTECTIVE MEASURES WHICH PERTAIN TO, OR INCLUDE CUT AND FILL SLOPES (SILT FENCE, DIVERSION DIKES, ETC.) SHALL BE INSTALLED AND MAINTAINED AS THE SLOPES COME TO GRADE. ADDITIONAL DIVERSION DIKES WILL BE REQUIRED TO PROTECT DISTURBED AREAS, UNTIL SUCH TIME THAT THE STORM DRAIN SYSTEM IS IN PLACE, AND FUNCTIONALLY PROTECTED FROM SEDIMENT INFILTRATION. TEMPORARY SEEDING OF SLOPES IS TO BE PERFORMED ON A WEEKLY BASIS, UNLESS THE SLOPES ARE TO FINAL GRADE. SLOPES AT FINAL GRADE ARE TO BE PERMANENTLY SEEDED WITHIN SEVEN DAYS OF REACHING FINAL GRADE.

THE CONTRACTOR IS REQUIRED TO PROVIDE AND MAINTAIN ALL EROSION CONTROL MEASURES AT THEIR OPTIMUM PERFORMANCE, SUCH THAT ADJOINING AREAS AND DRAINAGEWAYS ARE PROVIDED THE BEST AVAILABLE PROTECTION AT EVERY PHASE OF CONSTRUCTION. IT IS IMPERATIVE THAT SEDIMENT TRANSFER FROM THIS SITE IS MINIMIZED.

PERMANENT STABILIZATION:
UPON ACHIEVING FINISH GRADE ELEVATIONS, ALL DISTURBED AREAS NOT TO RECEIVE HARD SURFACING SHALL BE PERMANENTLY SEEDED (STD & SPEC 3.32) AS OUTLINED HEREON AND ON THE SOIL EROSION CONTROL PLAN AND DETAIL SHEETS, UNLESS OTHER STABILIZATION MEASURES SUCH AS LANDSCAPE MULCHING ARE PROVIDED.

MAINTENANCE:
THE RESPONSIBLE LAND DISTURBER ON RECORD WITH THE COUNTY FOR THIS PROJECT IS RESPONSIBLE FOR IMPLEMENTATION, MAINTENANCE, AND REMOVAL OF ALL EROSION CONTROL MEASURES, AS APPLICABLE.
ALL MEASURES REQUIRED HEREIN SHALL BE MAINTAINED AS OUTLINED IN "CRITICAL AREAS" AND "EROSION AND SEDIMENT CONTROL MEASURES" SECTIONS ABOVE.

GENERAL COMMENTS:
1. THE SITEWORK CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
2. THE COUNTY OF ROANOKE OR THEIR AUTHORIZED AGENT RESERVES THE RIGHT TO ADD TO, DELETE, OR OTHERWISE CHANGE EROSION CONTROL DEVICES AS MAY BE DEEMED NECESSARY, BY WRITTEN NOTIFICATION TO THE CONTRACTOR.
3. NO WORK SHALL PROCEED ON THE SITE UNTIL THE PROPER AUTHORIZATION OR PERMIT HAS BEEN OBTAINED FROM THE COUNTY OF ROANOKE.
4. THE ENGINEER, CALDWELL WHITE ASSOCIATES, ASSUMES NO RESPONSIBILITY FOR ANY WORK BEING PERFORMED.

STATE IMPOSED MINIMUM STANDARDS

THE FOLLOWING STANDARDS ARE TO BE PROVIDED OR ADDRESSED ON EVERY DEVELOPMENT PROJECT EXCEEDING 10,000 S.F. IN AREA OF DISTURBANCE THESE STANDARDS ARE CONSIDERED A MINIMUM AND MAY REQUIRE ADDITIONAL MEASURES AS DEEMED NECESSARY BY THE LOCAL APPROVING AUTHORITY OR THE CONSULTING ENGINEER.

No.	CRITERIA, TECHNIQUE OR METHOD	REMARKS
1	PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE HAS BEEN REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN FOURTEEN (14) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE (1) YEAR.	SEE "PERMANENT SEEDING" AND "TEMPORARY SEEDING" REQUIREMENTS, THIS SHEET AND SHEET C-07.
2	DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.	NOT APPLICABLE – NO STOCKPILES ANTICIPATED
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, IN THE OPINION OF THE LOCAL PROGRAM ADMINISTRATOR OR DESIGNATED AGENT, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.	SELF EXPLANATORY – REFER TO THE SEEDING SPECIFICATIONS HEREIN.
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.	SELF EXPLANATORY – REFER TO SILT FENCE BARRIER REQUIREMENTS
5	STABILIZATION METHODS SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.	NOT APPLICABLE TO SUBJECT DEVELOPMENT
6	SEDIMENT TRAPS AND BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.	NOT APPLICABLE TO SUBJECT DEVELOPMENT
7	CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE (1) YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZATION MEASURES UNTIL THE PROBLEM IS CORRECTED.	NOT APPLICABLE TO SUBJECT DEVELOPMENT
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.	SELF-EXPLANATORY
9	WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.	REPORT EVIDENCE OF SEEPS TO ENGINEER IMMEDIATELY UPON DISCOVERY. ADDITIONAL MEASURES MAY BE REQUIRED.
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.	PROVIDE INLET PROTECTION AS OUTLINED ON THE PLAN
11	BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS 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.	NOT APPLICABLE TO SUBJECT DEVELOPMENT
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.	NOT APPLICABLE TO SUBJECT DEVELOPMENT
13	WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX (6) MONTH PERIOD, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL.	NOT APPLICABLE TO SUBJECT DEVELOPMENT
14	ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET. THE BEDS AND BANKS OF ANY WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	NOT APPLICABLE TO SUBJECT DEVELOPMENT
15	THE BEDS AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	NOT APPLICABLE TO SUBJECT DEVELOPMENT
16	UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA: 1)NO MORE THAN 500 LINEAR FEET OF ANY TRENCH MAY BE OPENED AT ONE TIME. 2)EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. 3)EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION. 5)RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS. 6)APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.	SELF-EXPLANATORY. NEW UTILITY LINE CONSTRUCTION SHALL CONFORM TO THESE REQUIREMENTS.
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.	PROVIDE NEW TEMPORARY CONSTRUCTION ENTRANCE AS REQUIRED BY THE PLAN
18	ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.	REMOVAL OF TEMPORARY MEASURES SHALL BE IN ACCORDANCE WITH MS-18.
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. 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. 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 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 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 PLAN-APPROVING AUTHORITY TO PREVENT DOWNSTREAM EROSION. D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS. E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT OF THE SUBJECT PROJECT. 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 DISSIPATERS 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. 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. 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. 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 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 § 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 A 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 LAND-DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 4VAC50-60-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) PERMIT REGULATIONS. 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 STANDARD 19.	WATER QUALITY: NUTRIENT CREDITS WILL BE PURCHASED TO MEET THE REQUIRED RATES OF PHOSPHOROUS REMOVAL RUNOFF QUANTITY – CHANNEL PROTECTION: COMPUTATIONS HAVE BEEN PROVIDED TO THE REVIEW AGENCIES TO SHOW THAT THE PROPOSED REDEVELOPMENT WILL DECREASE THE TWO-YEAR RUNOFF RATE TO LESS THAN THE PRE-DEVELOPMENT RUNOFF RATE. AS THERE ARE NO EROSION CONCERNS UNDER TODAY'S CONDITIONS, THIS REDUCTION WILL CERTAINLY NOT CAUSE ANY EROSION OF THE RECEIVING SYSTEMS, AND THEREFORE MEETS THE REQUIREMENTS OF 9VAC25-870-66(B)(1)(a). RUNOFF QUANTITY – FLOOD PROTECTION: COMPUTATIONS HAVE BEEN PROVIDED TO THE REVIEW AGENCIES TO SHOW THAT THE PROPOSED REDEVELOPMENT WILL DECREASE THE TEN-YEAR RUNOFF RATE TO LESS THAN THE PRE-DEVELOPMENT RUNOFF RATE, THEREBY MEETING THE REQUIREMENTS OF OF 9VAC25-870-66(C)(2)(b).

VESCH TABLE 6-1: GENERAL EROSION AND SEDIMENT CONTROL NOTES:

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 4VAC50-30 EROSION AND SEDIMENT CONTROL REGULATIONS

ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE- CONSTRUCTION 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 SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THE 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 LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

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

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

CONSTRUCTION SEQUENCING – LANDLORD WORK – SITE SPECIFIC

DURING ALL PHASES OF THIS PROJECT, THE CONTRACTOR SHALL LIMIT LAND DISTURBANCE TO THE AREAS SHOWN HEREIN. ANY LAND DISTURBANCE, SOIL COMPACTION, OR ANY TYPE OF IMPACT TO THE SOILS BEYOND THE APPROVED LIMITS OF CONSTRUCTION MAY RESULT IN A STOP WORK ORDER, NEW DESIGN REQUIREMENTS, ADDITIONAL REVIEW TIME, AND ADDITIONAL CONSTRUCTION REQUIREMENTS.

1. CONTRACTOR SHALL PERFORM REMOVAL OF EXISTING PAVEMENT AS NECESSARY, AND INSTALL THE RELOCATED PUBLIC SANITARY SEWER LINE.
2. UPON COMPLETION OF THE SANITARY LINE, THE CONTRACTOR SHALL PERFORM PAVEMENT REMOVAL WITHIN THE LIMITS OF CONSTRUCTION, AND SHALL IMMEDIATELY INSTALL SOIL EROSION CONTROL BARRIERS AND CONSTRUCTION ENTRANCES SHOWN HEREIN. ALL DEMOLISHED MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL RULES AND REGULATIONS PERTAINING THERETO.
3. CONCURRENT WITH PLACING EARTHEN FILL FOR THE NEW BUILDING PAD, THE CONTRACTOR SHALL INSTALL UTILITY STUBS AS REQUIRED HEREIN, ALWAYS MAINTAINING SEDIMENT PROTECTIONS DOWN-GRADIENT OF DISTURBED AREAS, UNLESS THOSE DISTURBED AREAS ARE PIPE OR CABLE TRENCHES THAT WILL BE BACKFILLED AND COVERED WITH COMPACTED BASE STONE THE SAME DAY AS OPENING THE TRENCH.
4. UNLESS OTHERWISE DIRECTED BY THE OWNER, ALL WORK PERFORMED IS UNCLASSIFIED, AND THE CONTRACTOR IS REQUIRED TO PERFORM CUT / FILL OPERATIONS NECESSARY TO PERFORM HIS TRADE, INCLUDING DISPOSAL OF EXCESS MATERIALS OR IMPORTING MATERIAL FROM OFF-SITE SOURCES.
5. WHILE IT IS THE RESPONSIBILITY OF THE LANDLORD'S CONTRACTOR TO CONSTRUCT THE NEW PERIMETER CURBING, THE LANDLORD'S CONTRACTOR SHALL COORDINATE CLOSELY WITH THE TENANT'S CONTRACTOR THE TIME OF CURB INSTALLATION. IF THE CURB IS PLACED PRIOR TO SUBSTANTIAL COMPLETION OF THE TENANT'S WORK INSIDE THE CURB, THE LANDLORD'S CONTRACTOR SHALL DOCUMENT THE CONDITION OF THE NEW CURBING IMMEDIATELY UPON PLACEMENT, AS ANY REPAIRS DUE TO DAMAGES BY THE TENANT'S CONTRACTOR WILL BE THE RESPONSIBILITY OF THE TENANT'S CONTRACTOR.

CONSTRUCTION SEQUENCING – TENANT WORK – SITE SPECIFIC

DURING ALL PHASES OF THIS PROJECT, THE CONTRACTOR SHALL LIMIT LAND DISTURBANCE TO THE AREAS SHOWN HEREIN. ANY LAND DISTURBANCE, SOIL COMPACTION, OR ANY TYPE OF IMPACT TO THE SOILS BEYOND THE APPROVED LIMITS OF CONSTRUCTION MAY RESULT IN A STOP WORK ORDER, NEW DESIGN REQUIREMENTS, ADDITIONAL REVIEW TIME, AND ADDITIONAL CONSTRUCTION REQUIREMENTS.

1. UPON TURNOVER OF THE PRE-GRADED BUILDING PAD FROM THE LANDLORD'S CONTRACTOR TO THE TENANT'S CONTRACTOR, THE TENANT'S CONTRACTOR SHALL MAINTAIN THE SILT FENCE AS SHOWN HEREIN. IT IS THE TENANT'S CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THIS BARRIER THROUGHOUT CONSTRUCTION, UNTIL SUCH TIME THAT THE UPGRADIENT DISTURBED AREAS ARE PERMANENTLY STABILIZED. REMOVAL OF THE SILT FENCE CANNOT OCCUR UNTIL WRITTEN AUTHORIZATION IS PROVIDED BY ROANOKE COUNTY.
2. FOLLOWING FINE GRADING OF THE BUILDING PAD, THE CONTRACTOR SHALL COMMENCE BUILDING CONSTRUCTION AND CONSTRUCTION OF WALLS, RAMPS AND STEPS AT THE REAR OF THE SITE.
3. CONCURRENTLY, INSTALL NEW PIPING TO EXTEND UTILITIES AND STORM DRAIN TO THE NEW BUILDING. AS SOON AS REASONABLY POSSIBLE FOLLOWING PLACEMENT OF THE ROOF, THE CONTRACTOR SHALL MAKE INTERCONNECTIONS TO THE NEW ROOF COLLECTOR SYSTEM, AS THIS WILL DRASTICALLY LIMIT THE AMOUNT OF SURFACE RUNOFF EXITING THE SITE, AS WELL AS REDUCING THE POSSIBILITY OF SEDIMENT TRANSPORT BEYOND THE NEW CURB LINE.
4. UNLESS OTHERWISE DIRECTED BY THE OWNER, ALL WORK PERFORMED IS UNCLASSIFIED, AND THE CONTRACTOR IS REQUIRED TO PERFORM CUT / FILL OPERATIONS NECESSARY TO PERFORM HIS TRADE, INCLUDING DISPOSAL OF EXCESS MATERIALS OR IMPORTING MATERIAL FROM OFF-SITE SOURCES.
5. WHILE IT IS THE RESPONSIBILITY OF THE LANDLORD'S CONTRACTOR TO CONSTRUCT THE NEW PERIMETER CURBING, THE TENANT'S CONTRACTOR SHALL COORDINATE CLOSELY WITH THE LANDLORD'S CONTRACTOR THE TIME OF CURB INSTALLATION. IF THE CURB IS PLACED PRIOR TO SUBSTANTIAL COMPLETION OF THE TENANT'S WORK INSIDE THE CURB, THE LANDLORD'S CONTRACTOR WILL HAVE DOCUMENTATION OF THE CONDITION OF THE NEW CURBING IMMEDIATELY UPON PLACEMENT, AS ANY REPAIRS DUE TO DAMAGES BY THE TENANT'S CONTRACTOR WILL BE THE RESPONSIBILITY OF THE TENANT'S CONTRACTOR.

LAND DISTURBANCE NOTES

ALL OFF-SITE DISPOSAL OF MATERIALS, AND ASSOCIATED FEES, WILL BE THE SITEWORK CONTRACTOR'S RESPONSIBILITY, AND IS TO BE PERFORMED IN A LEGAL FASHION (APPROVED WASTE SITE). ALL HAULING IS TO BE PERFORMED IN STRICT ACCORDANCE WITH LOCAL, STATE, AND FEDERAL RULES AND REGULATIONS PERTAINING THERETO.

COMMONWEALTH OF VIRGINIA
CORBIN L. WHITE
License No. 23843
10-27-2021
PROFESSIONAL ENGINEER

EROSION CONTROL NARRATIVE, MEASURES & CONSTRUCTION SEQUENCING
FOR
PROPOSED CHILI'S RESTAURANT
TO BE CONSTRUCTED AT
TANGLEWOOD MALL
PREPARED FOR
BRINKER INTERNATIONAL LLC & TANGLEWOOD VENTURE LLC
SITUATE ELECTRIC ROAD (VA ROUTE 419)
CAVE SPRING MAGISTERIAL DISTRICT
COUNTY OF ROANOKE, VIRGINIA

Designed: C.L. White
Drawn: C.L. White
Checked:
Date: October 27, 2021
Scale: N/A
Tax Parcel: 077.16-01-02.00-0000
Field Book: CH-22
W.O. No.: 21-0043/0084/0123

CWA
CALDWELL WHITE ASSOCIATES
ENGINEERS / SURVEYORS / PLANNERS
4203 MELROSE AVENUE
P.O. BOX 6260
ROANOKE, VIRGINIA 24017-0260
(540) 366-3400
FAX: (540) 366-8702

APPROVED, 1/19/2022