SOIL EROSION CONTROL NARRATIVE

PROJECT DESCRIPTION:
THE PURPOSE OF THIS PROJECT IS THE CONSTRUCTION OF A NEW OFFICE BUILDING AND ASSOCIATED PARKING AREAS FOR MEMBER ONE FEDERAL CREDIT UNION. THE PROPOSED REDEVELOPMENT WILL RESULT IN A REDUCED AMOUNT OF MIPERVIOUS GROUND COVER. THIS PROJECT IS BEING PERFORMED FOR THE FACILITY OWNER, "MEMBER ONE FEDERAL CREDIT UNION". THE SITE IS LOCATED AT THE INTERSECTION OF KIMBALL AVENUE, N.E. AND 4TH STREET, N.E. IN THE CITY OF ROANOKE, VIRGINIA. IT IS ESTIMATED THAT THE TOTAL DISTURBED AREA WILL BE 1.94 AC. (84,940 SQ. FT.).

EXISTING SITE CONDITIONS:
AS SHOWN ON SHEET C-02 OF THESE PLANS, THE NEW BUILDING AND PARKING AREAS ARE SITUATED ON AREAS THAT WERE ONCE THE SITE OF A "HOWARD JONHNSON'S" MOTEL, AND A BITUMINOUS-PAVED STREET THAT WAS ONCE CITY OF ROANOKE OWNED "GILMER AVENUE". THE MAJORITY OF THE AREA OF CONSTRUCTION IS COVERED BY IMPERVIOUS SURFACES. UNDER PROPOSED CONDITIONS, THE LAND USE WILL BE SIMILAR TO CURRENT USES, EXCEPT THE IMPERVIOUS AREAS WILL BE REDUCED. THE SUBJECT SITE LIES WITHIN "ZONE X" AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAPS (FIRM), AND THEREFORE LIES ABOVE THE FEMA DESIGNATED ONE-HUNDRED YEAR FLOOD ELEVATIONS.

EXISTING SOIL CONDITIONS: (1) SECTION REVISED
SOILS: THERE HAVE BEEN NO COMPREHENSIVE SUBSURFACE INVESTIGATIONS FOR THE SUBJECT DEVELOPMENT. THE USDA "SOIL SURVEY OF ROANOKE COUNTY AND THE CITIES OF ROANOKE AND SALEM, VIRGINIA" DEFINES THE SITE SOILS AS BELONGING TO THE "UDORTHENTS-URBAN LAND COMPLEX" AND "URBAN LAND" CLASSIFICATIONS. ACCORDING TO THIS SURVEY, THE SOILS SURVEY DEFINES THESE MATERIALS AS INTERMINGLED SOILS OF VARYING DEPTHS AND COMPOSITIONS. BASED ON SURROUNDING SOIL CLASSIFICATIONS, A GENERAL PERMEABILITY OF 0.6 – 2.0 IN/HR MAY LIKELY BE ANTICIPATED, AND THE GENERAL ERODIBILITY OF THE SOILS SHOULD BE CONSIDERED LOW TO MODERATE.

ADJACENT PROPERTY:
THE AREA OF PROPOSED DEVELOPMENT IS BOUNDED TO THE SOUTH KIMBALL AVENUE, N.E.; TO THE WEST BY INTERSTATE 581; TO THE NORTH BY AN ON-RAMP TO I-581, AND BY THE MEMBER ONE MAIN ROANOKE BRANCH FACILITY, WHICH IS TO REMAIN OPERATIONAL; AND TO THE EAST BY 4TH STREET, N.E.

OFF-SITE AREAS:
IT IS THE ENGINEER'S ESTIMATE THAT THE PROPOSED REDEVELOPMENT WILL REQUIRE AN OVERALL NET EXPORT OF MATERIAL FROM THE SITE. THIS IS PRIMARILY DUE TO THE STRIPPING AND DISPOSAL OF HARD SURFACE AREAS FROM THE SITE. THE CONTRACTOR HOLDING THE LAND DISTURBING PERMIT WILL BE REQUIRED TO VERIFY THAT AN APPROVED SOIL EROSION CONTROL PLAN AND PERMIT ARE IN PLACE FOR ANY OFF-SITE BORROW, WASTE, OR STORAGE SITES USED IN CONJUNCTION WITH THIS PROJECT.
THE CITY OF ROANOKE OR ITS APPROVED AGENT RESERVES THE RIGHT TO PLACE A STOP WORK ORDER ON THE SUBJECT SITE AND ANY OFF-SITE WASTE OR BORROW SITES, SHOULD APPROVED PLANS AND PERMITS NOT EXIST FOR ALL SITES.

ANY SEDIMENT FROM THE PROPOSED DEVELOPMENT THAT ENCROACHES OUTSIDE THE LIMITS OF CONSTRUCTION OR ONTO ADJACENT PROPERTIES SHALL BE IMMEDIATELY REMOVED AND THE AFFECTED AREAS RESTORED TO PRE-CONSTRUCTION CONDITIONS OR BETTER, IN ACCORDANCE WITH THESE PLANS AND THE PROJECT MANUAL (AS APPLICABLE).

PERMANENT STABILIZATION: (1) SECTION ADDED
ALL DENUDED AREAS NOT TO RECEIVE HARD SURFACING SHALL BE STABILIZED AS REQUIRED BY THE TEMPORARY AND PERMANENT SEEDING REQUIREMENTS SHOWN HEREON. AREAS TO RECEIVE BITUMINOUS PAVEMENT OR CONCRETE SHALL BE STABILIZED WITH BASE STONE AS SOON AS PRACTICAL FOLLOWING FINAL GRADING OPERATIONS.

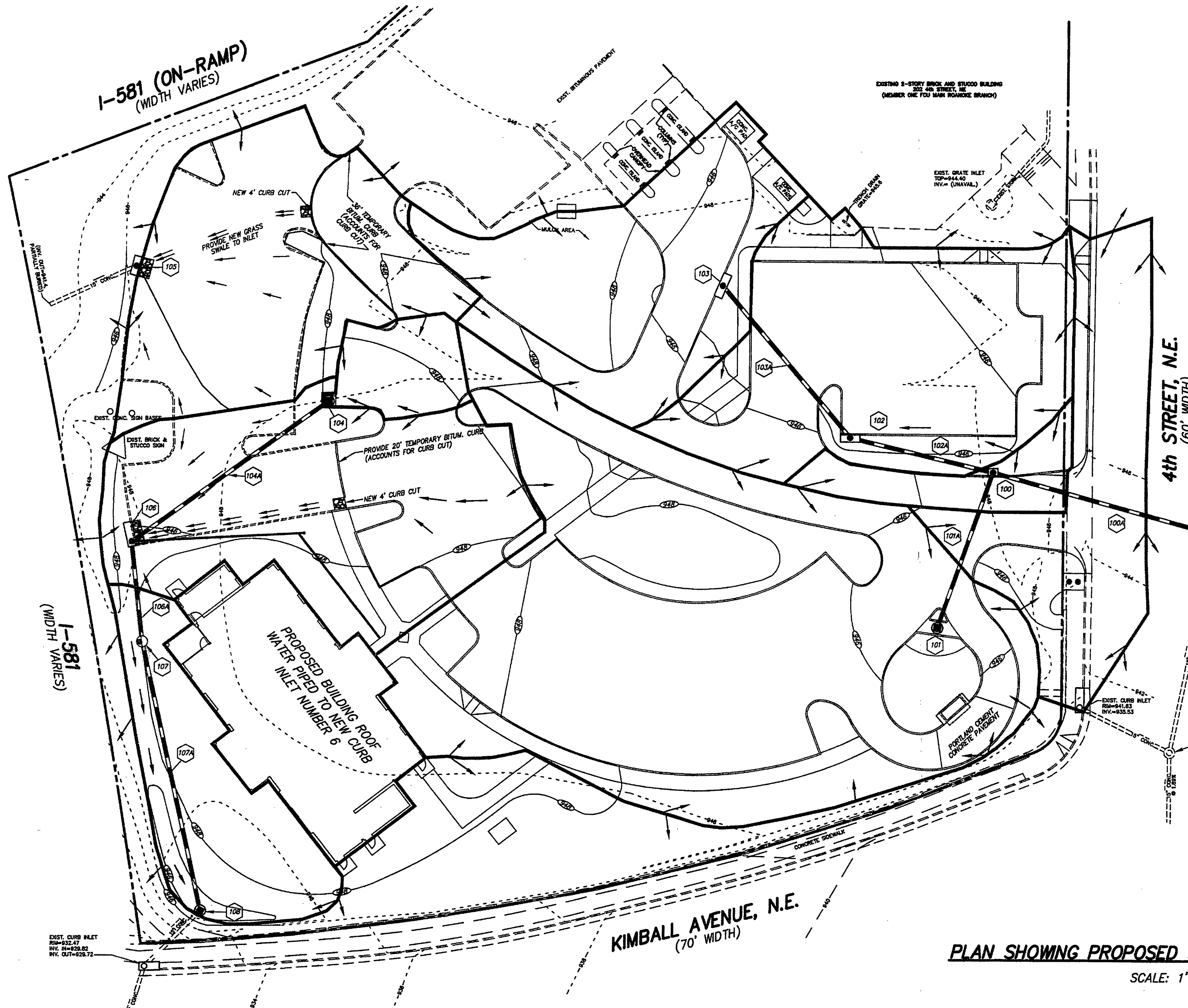
STORMWATER MANAGEMENT: (1) SECTION ADDED
THE PROPOSED REDEVELOPMENT WILL REDUCE THE AMOUNT OF IMPERVIOUS COVER ON THE PROPERTY, AND WILL ALSO REDUCE PEAK RUNOFF RATES FROM ALL DESIGN STORM EVENTS. AS SUCH, THERE ARE NO NEW STRUCTURAL STORMWATER MANAGEMENT FACILITIES REQUIRED FOR THIS PROJECT.

CRITICAL AREAS:
- SILT FENCE BARRIERS SHALL BE INSPECTED DAILY AND CLEANED OR REPLACED AS REQUIRED.
- INLET PROTECTION MEASURES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD, SUCH THAT SILTATION OF THE STORM DRAIN SYSTEM IS KEPT AT A MINIMUM.
- EXISTING AND PROPOSED SLOPES SHALL BE PROTECTED FROM EROSION. UNDER NO CIRCUMSTANCES SHALL CONCENTRATED RUNOFF BE ALLOWED TO FLOW DOWN SLOPES, OR ONTO UNPROTECTED AREAS. SURFACE ROUGHENING OF ALL DISTURBED SLOPES SHALL BE MAINTAINED AT ALL TIMES.
- 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 THIRTY (30) 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.

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. PRIOR TO ANY WORK BEING PERFORMED ON THE PROPOSED PROJECT, A TEMPORARY CONSTRUCTION ENTRANCE SHALL BE PROVIDED OFF OF THE EXISTING PAVEMENT. THE ENTRANCE SHALL BE COMPOSED OF GRADED 3" STONE TO A MINIMUM DEPTH OF 6". THE ENTRANCE SHALL ALSO RUN FOR A MINIMUM DISTANCE OF NOT LESS THAN 70' BACK FROM THE EXISTING PAVEMENT EDGES. THE ENTRANCE SHALL BE CONTINUALLY MAINTAINED, INSPECTED, REPAIRED, OR OTHERWISE BE KEPT IN GOOD FUNCTIONAL ORDER THROUGHOUT THE EXTENT OF THE WORK ON THE SITE.
2. 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.
3. 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 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.
4. IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL. IN PARTICULAR:
   A. THE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION 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 SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEEDED AS NEEDED.
5. THE SOIL EROSION CONTROL MEASURES INSTALLED FOR THIS CONTRACT SHALL REMAIN IN PLACE UNTIL REMOVAL IS APPROVED BY THE CITY 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, REMOVE ACCUMULATED SEDIMENT FROM THE NEW STORMWATER MANAGEMENT AND STORM DRAIN SYSTEMS TO AN APPROVED WASTE AREA, AND STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH THESE PLANS. IF NO DIRECTIVE IS GIVEN TO THE CONTRACTOR FOR REMOVAL OF TEMPORARY MEASURES, THE CONTRACTOR SHALL REMOVE THESE ITEMS WITHIN 30 DAYS OF PERMANENT STABILIZATION OF THE DISTURBED AREAS.

GENERAL COMMENTS:
1. THE SITEWORK CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
2. THE CITY 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 CITY OF ROANOKE.
4. THE ENGINEER, CALDWELL WHITE ASSOCIATES, ASSUMES NO RESPONSIBILITY FOR ANY WORK BEING PERFORMED.



PLAN SHOWING PROPOSED STORM DRAINAGE DIVIDES

SCALE: 1" = 30'

30' 15' 0' 30' 60' 1" = 30'
GRAPHIC SCALE

STATE IMPOSED MINIMUM STANDARDS

THE FOLLOWING STANDARDS ARE TO BE PROVIDED OR ADDRESSED ON EVERY DEVELOPMENT PROJECT EXCEEDING 5000 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 THIRTY (30) 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, SHEET C-04 AND THIS SHEET.
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.	SEE "TOPSOILING" REQUIREMENTS, SHEET C-04 AND THIS SHEET.
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 SPECS, THIS SHEET.
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.	INSTALL NEW PERIMETER CONTROLS AS REQUIRED BY SHEET C-04 AND THIS SHEET, PRIOR TO LAND DISTURBANCE.
5	STABILIZATION METHODS SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION. (1) "REMARKS" REVISED	STABILIZATION OF TEMPORARY DIVERSION DIKES SHALL BE PER SHEET C-04 AND "TS" REQUIREMENTS SHOWN HEREON.
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.	SELF EXPLANATORY
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.	SEE REQUIREMENTS FOR INLET PROTECTION MEASURES, SHEET C-04
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
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.	SELF EXPLANATORY
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.	SELF EXPLANATORY
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 APPLICABLE CRITERIA.	THE PROPOSED REDEVELOPMENT WILL RESULT IN AN OVERALL REDUCTION OF RUNOFF, DUE TO A LESSER AMOUNT OF IMPERVIOUS SURFACES. FURTHERMORE, COMPUTATIONS HAVE BEEN PROVIDED TO THE CITY OF ROANOKE SHOWING ADEQUACY OF THE RECEIVING SYSTEMS.

(PS) PERMANENT SEEDING MIXTURE

NOTE TO SEEDING CONTRACTOR:
IN THE EVENT LANDSCAPING SHEETS PROVIDE SEEDING SPECIFICATIONS, MIXTURES, OR RATES OF APPLICATION DIFFERENT FROM THOSE SHOWN HEREON, THE LANDSCAPING SHEETS SHALL GOVERN.

DISTURBED AREAS SHALL BE PERMANENTLY SEEDED WITHIN SEVEN (7) DAYS OF ACHIEVING FINAL GRADE, OR ON DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE WITHIN ONE YEAR.

TYPE A	TYPE B (SLOPES 3:1 OR STEEPER)
15 OCTOBER TO 1 FEBRUARY K-31 FESCUE @ 5 LB / 1000 SF BORZY WINTER RYE @ 1/2 LB / 1000 SF	15 MARCH TO 1 MAY CROWN VETCH @ 1/2 LB / 1000 SF PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF RED TOP @ 1/8 LB / 1000 SF
1 FEBRUARY TO 1 JUNE K-31 FESCUE @ 5 LB / 1000 SF ANNUAL RYE @ 1/2 LB / 1000 SF	15 AUGUST TO 1 OCTOBER CROWN VETCH @ 1/2 LB / 1000 SF PERENNIAL RYEGRASS @ 1/2 LB / 1000 SF RED TOP @ 1/8 LB / 1000 SF
1 JUNE TO 1 SEPTEMBER K-31 FESCUE @ 5 LB / 1000 SF GERMAN MILLET @ 1/2 LB / 1000 SF	
1 SEPTEMBER TO 15 OCTOBER K-31 FESCUE @ 5 LB / 1000 SF ANNUAL RYE @ 1/2 LB / 1000 SF	

LIME: 140 LB / 1000 SF PULVERIZED AGRICULTURAL LIMESTONE

FERTILIZER: 5-20-10 @ 25 LB / 1000 SF
38-0-0 @ 7 LB / 1000 SF

MULCH: IF REQUIRED, SHALL BE USED OVER ALL SEEDED AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH SECTION 1.75 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

SOIL CONDITIONING:
INCORPORATION OF LIME AND FERTILIZER, SELECTION OF CERTIFIED SEED, MULCHING, MAINTENANCE OF NEW SEEDLINGS, AND RESEEDING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITHIN THE VIRGINIA SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. ADDITIONAL SEEDING TO BE PERFORMED AS REQUIRED BY THE INSPECTOR.

SEED APPLICATION: APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER ON A FIRM, FRIABLE, SEEDBED. MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.

(TS) TEMPORARY SEEDING

DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE STABILIZED WITH TEMPORARY SEEDING MEASURES AS SHOWN HEREON, AND AS FURTHER DETAILED AS "STANDARD AND SPECIFICATION 3.31 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK", LATEST EDITION. IN ADDITION TO AREAS OF GENERAL GRADING THAT WILL NOT BE FINE-GRADED FOR GREATER THAN 30 DAYS, THE FOLLOWING SPECIFIC E&S MEASURES SHALL BE STABILIZED WITH TEMPORARY SEEDING IMMEDIATELY UPON COMPLETION OF CONSTRUCTION OF THE TEMPORARY MEASURE:
- SOIL STOCKPILES
- DIKES, DAMS, AND SIDES OF SEDIMENT BASINS
- TEMPORARY ROADWAY EMBANKMENTS

PRIOR TO SEEDING, INSTALL NECESSARY EROSION CONTROL PRACTICES SUCH AS DIKES, WATERWAYS, AND BASINS. PROVIDE PLANTS AS SPECIFIED HEREIN, OR ENGINEER-APPROVED EQUAL.
SEEDBED PREPARATION:
LIME SHALL BE APPLIED IF DISTURBED AREAS WILL REMAIN DORMANT BETWEEN 30 DAYS AND 120 DAYS. IF REQUIRED, LIME SHALL BE APPLIED AS SHOWN, BASED ON SOIL ACIDITY.

pH	APPLICATION OF AGRICULTURAL LIMESTONE
BELOW 4.2	3 TONS PER ACRE
4.2 TO 5.2	2 TONS PER ACRE
5.2 TO 6.0	1 TON PER ACRE
ABOVE 6.0	LIME NOT REQUIRED

FERTILIZER SHALL BE APPLIED AS 600 LBS/ACRE OF 10-20-10 OR EQUIVALENT NUTRIENTS. LIME (AS APPLICABLE) AND FERTILIZER SHALL BE INCORPORATED INTO THE TOP 2 TO 4 INCHES OF SOIL, IF POSSIBLE.

SURFACE ROUGHENING SHALL BE REQUIRED WHERE AREAS TO BE SEEDED HAVE BEEN COMPACTED, CRUSTED, OR HARDENED BY CONSTRUCTION TRAFFIC. AS REQUIRED, SEEDBEDS SHALL BE ROUGHENED IN ACCORDANCE WITH STANDARD AND SPECIFICATION 3.29 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. (TRACKING WITH BULLDOZER CLEATS SHALL BE USED IN SANDY SOILS)

SEEDING:
SEED SHALL BE EVENLY APPLIED WITH THE SAME MEANS SPECIFIED HEREIN FOR PERMANENT SEEDING. SMALL GRAINS SHALL BE PLANTED NO MORE THAN ONE INCH DEEP. GRASSES AND LEGUMES SHALL BE PLANTED WITH NO LESS THAN 1/4" OF SOIL COVER.

MULCHING:
SEEDINGS MADE IN FALL FOR WINTER COVER AND DURING HOT AND DRY SUMMER MONTHS SHALL BE MULCHED ACCORDING TO STANDARD AND SPECIFICATION 3.35 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, EXCEPT THAT FIBER MULCH MAY NOT BE USED. STRAW MULCH SHALL BE USED DURING THESE PERIODS.

TEMPORARY SEEDINGS MADE UNDER FAVORABLE SOIL AND SITE CONDITIONS DURING OPTIMUM SPRING AND FALL SEEDING DATES MAY NOT REQUIRE MULCH.

RE-SEEDING:
AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION SHALL BE RE-SEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED.

ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS BY RANGE OF PLANTING DATES:

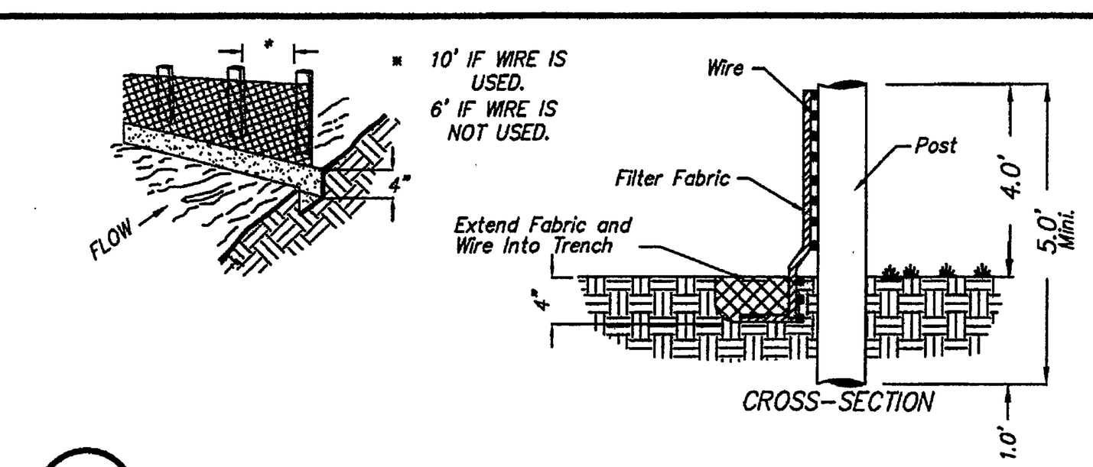
09/01 TO 02/15	ANNUAL RYEGRASS @ 50 LB / ACRE WINTER RYE @ 50 LB / ACRE
02/16 TO 04/30	ANNUAL RYEGRASS @ 100 LB / ACRE
05/01 TO 08/31	GERMAN MILLET @ 50 LB / ACRE

GENERAL EROSION AND SEDIMENT CONTROL NOTES

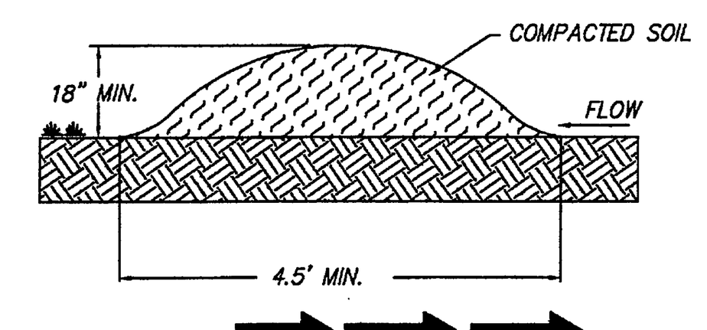
1. ALL SOIL EROSION & SEDIMENT CONTROL MEASURES SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS CONTAINED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
2. THE APPROVING AUTHORITY MAY ADD TO, DELETE, RELOCATE, CHANGE, OR OTHERWISE MODIFY CERTAIN EROSION AND SEDIMENT CONTROL MEASURES WHERE FIELD CONDITIONS ARE ENCOUNTERED THAT WARRANT SUCH MODIFICATIONS.
3. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE PLAN SHALL BE PLACED IN ADVANCE OF THE WORK BEING PERFORMED.
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.

SOIL EROSION CONTROL CONSTRUCTION SEQUENCING

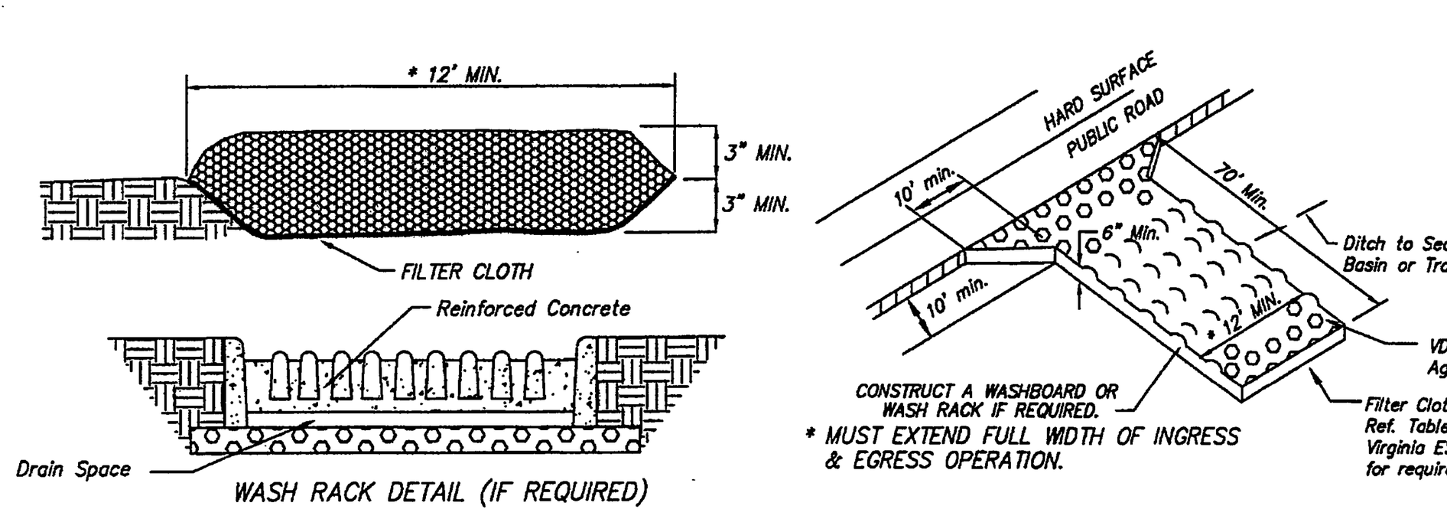
FOLLOWING ISSUANCE OF A LAND DISTURBING PERMIT FROM THE CITY OF ROANOKE, THE CONTRACTOR SHALL PERFORM HIS SITEWORK IN GENERAL CONFORMANCE WITH THE FOLLOWING:
1. INSTALL NEW CONSTRUCTION ENTRANCE.
2. PROVIDE AND INSTALL PERIMETER CONTROLS. INCLUDED IS THE INSTALLATION OF SILT FENCE BARRIERS, TEMPORARY DIVERSION DIKES, SEDIMENT TRAPS, TEMPORARY SEDIMENT BASINS, ETC. SEE PLAN FOR APPLICABILITY OF REFERENCED MEASURES. TEMPORARY DIVERSIONS SHALL BE MAINTAINED AS EARTHWORK PROGRESSES TO DIRECT RUNOFF TO THE PERIMETER CONTROLS.
3. PROVIDE AND INSTALL PROTECTIONS AT EXISTING POINTS OF STORM DRAIN COLLECTION. THE CONTRACTOR SHALL INSURE THAT ALL COLLECTION POINTS ARE PROTECTED FROM SEDIMENTATION THROUGHOUT EVERY PHASE OF CONSTRUCTION. PARTICULAR ATTENTION SHALL BE GIVEN TO PROTECTING COLLECTION POINTS DURING THE CONSTRUCTION PERIOD REQUIRING DEMOLITION/ADJUSTMENT OF EXISTING STRUCTURES, AND THE PERIOD OF INSTALLATION OF NEW STORM DRAINAGE SYSTEMS.
4. STRIP AND STOCKPILE TOPSOIL. ALL TOPSOIL SHALL BE STOCKPILED ON-SITE. PERIMETER SILT FENCE BARRIER OR OTHER APPROVED PERIMETER CONTROLS SHALL PROTECT STOCKPILES FROM EROSION AND OFF-SITE SEDIMENTATION. THE CONTRACTOR SHALL PROVIDE TEMPORARY SEEDING OF STOCKPILED MATERIALS.
5. PERFORM CUT AND FILL OPERATIONS IN CONJUNCTION WITH INSTALLATION OF THE NEW STORM DRAIN STRUCTURES AND PIPE CONDUITS. IT IS STRONGLY SUGGESTED THAT THE NEW STORM DRAIN BE INSTALLED AS SOON AS PRACTICALLY POSSIBLE, AND INLET PROTECTIVE MEASURES BE INSTALLED IMMEDIATELY THEREAFTER. UNTIL SUCH TIME THAT THE PROTECTED STORM DRAINAGE SYSTEM IS IN PLACE AND FUNCTIONAL, THE CONTRACTOR SHALL INSTALL AND MAINTAIN DIVERSIONS TO DIRECT RUNOFF TO PROTECTED AREAS.
6. ALL DISTURBED AREAS NOT TO RECEIVE HARD SURFACING SHALL BE SEEDED, FERTILIZED, LIMED, MULCHED, AND WATERED IN ACCORDANCE WITH THESE PLANS AND THE VIRGINIA EROSION AND SEDIMENTATION CONTROL HANDBOOK.
7. THE SITEWORK CONTRACTOR SHALL CLEAN, REPAIR, OR OTHERWISE MAINTAIN CONTROL MEASURES THROUGHOUT THE CONSTRUCTION, INCLUDING THE INSTALLATION OF NEW UTILITIES.
8. THE BUILDING CONTRACTOR SHALL, UPON INSTALLATION OF THE BUILDING FLOOR SLAB, DIRECT ALL BUILDING PAD RUNOFF TO PROTECTED AREAS OF STORM DRAIN COLLECTION. UNDER NO CIRCUMSTANCES SHALL BUILDING PAD RUNOFF BE ALLOWED TO FLOW DOWN SLOPES OR TO FLOW ONTO UNPROTECTED AREAS. UPON COMPLETION OF THE BUILDING ROOF AND DOWNSPOUT SYSTEM, THE BUILDING CONTRACTOR SHALL IMMEDIATELY CONNECT DOWNSPOUTS TO THE UNDERGROUND COLLECTOR SYSTEM, AS APPLICABLE.
9. AS SOON AS POSSIBLE FOLLOWING COMPLETION OF THE SITEWORK, THE SITE CONTRACTOR SHALL INSTALL THE PAVEMENT BASE STONE AND SURFACE COURSE.
10. WITHIN 30 DAYS FOLLOWING SUBSTANTIAL VEGETATIVE COVER OF DISTURBED AREAS (80% MIN. COVERAGE), THE CONTRACTOR SHALL REMOVE ALL TEMPORARY MEASURES FROM THE SITE.



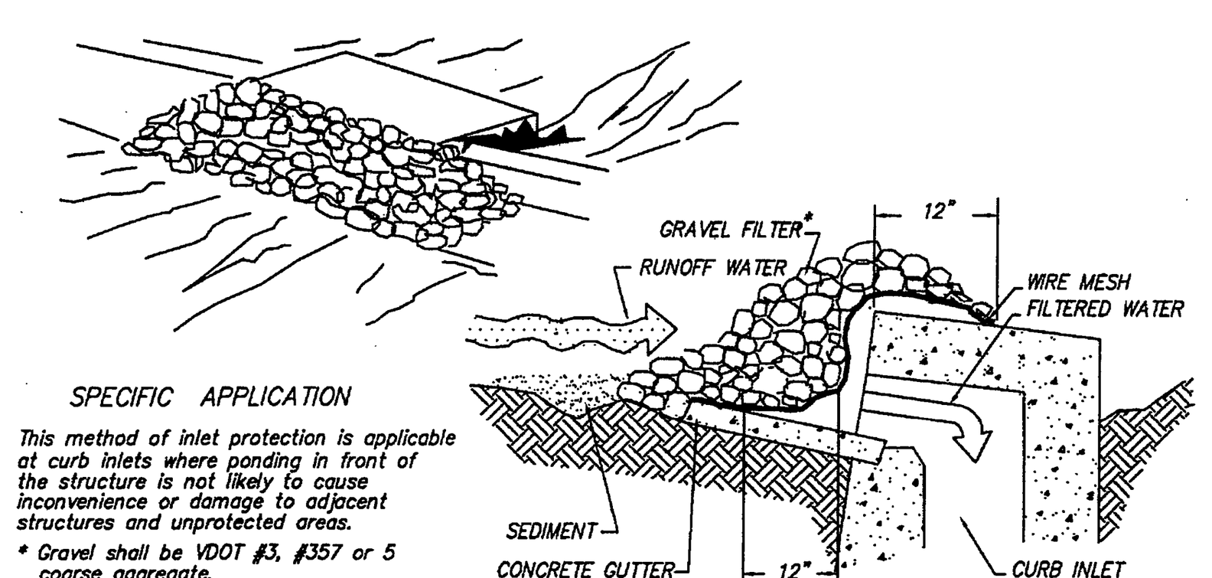
(SF) CONSTRUCTION OF A SILT FENCE



(DD) TEMPORARY DIVERSION DIKE

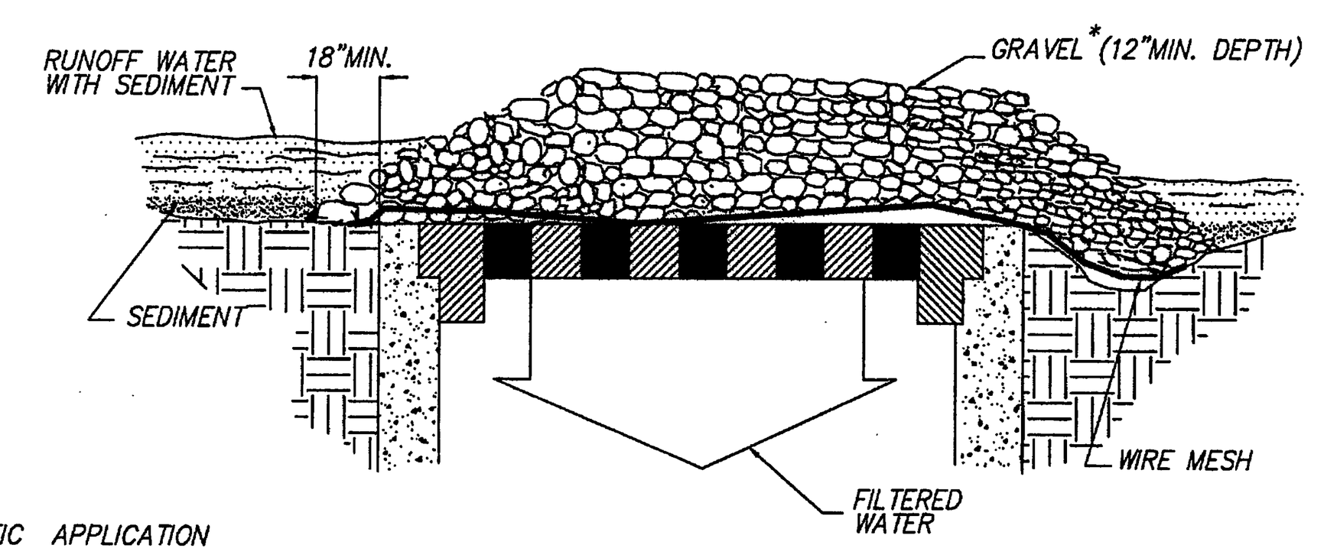


(CE) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE



SPECIFIC APPLICATION
This method of inlet protection is applicable at curb inlets where ponding in front of the structure is not likely to cause inconvenience or damage to adjacent structures and unprotected areas.
* Gravel shall be VDOT #3, #357 or 5 coarse aggregate.

(IP) GRAVEL CURB INLET SEDIMENT FILTER



SPECIFIC APPLICATION
This method of inlet protection is applicable where heavy concentrated flows are expected, but not where ponding around the structure might cause excessive inconvenience or damage to adjacent structures and unprotected areas.

* Gravel shall be VDOT #3, #357 or #5 coarse aggregate.

(IP) GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

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.

TOPSOIL NOTES

UPON STRIPPING OF TOPSOIL FROM APPLICABLE AREAS OF CONSTRUCTION, THE CONTRACTOR SHALL STOCKPILE TOPSOIL IN AREAS PROTECTED FROM EROSION, OR PROVIDE SAID PROTECTIONS AROUND THE PERIMETER OF THE STOCKPILES. A MINIMUM OF SIX INCHES OF TOPSOIL SHALL BE PLACED ON ALL AREAS FLATTER THAN 2H:1V SLOPE. SLOPES AT 2H:1V SHALL RECEIVE A MINIMUM OF FOUR INCHES OF TOPSOIL. THIS TOPSOIL SHALL BE FINE GRADED AND RESTORED IN ACCORDANCE WITH "RESTORATION NOTES", THIS SHEET.

RESTORATION NOTES

FOLLOWING THE PROGRESSION OF ROUGH GRADING, INSTALLATION OF NEW UTILITIES, STORM DRAIN, AND PRIOR TO PAVING OPERATIONS, THE SITEWORK CONTRACTOR SHALL FINE GRADE ALL AREAS FROM TEN FEET (10') OUTSIDE THE BUILDING LINES TO A TOLERANCE OF ± 0.20' (SLOPES STEEPER THAN 3H:1V TO A TOLERANCE OF ± 0.33'). INCLUDED IN THIS FINE GRADING IS THE REMOVAL OF ALL ROOT MASS, ROCKS IN EXCESS OF 2" IN THEIR GREATEST DIMENSION, AND OTHER MATERIALS DELETERIOUS TO THE GROWTH OF LAWN GRASSES, WITHIN THE UPPER 8" OF SOIL. THIS MAY BE ACCOMPLISHED BY NORMAL METHODS (MECHANICAL ROCK RAKE, HAND RAKE, ETC.), OR OTHER INNOVATIVE METHODS APPROVED BY THE ENGINEER. ALL DISTURBED AREAS SHALL BE PERMANENTLY SEEDED IN ACCORDANCE WITH SEEDING MIXTURES AND RATES SPECIFIED HEREON.
MULCHES USED FOR STABILIZATION SHALL BE HIGH QUALITY OAT OR WHEAT STRAW. HAY MIXTURES, FESCUES, AND OTHER WEED-LADEN MULCHES ARE PROHIBITED FROM USE WITH PERMANENT SEEDING MIXTURES.

TOTAL DISTURBED AREA = 1.95 AC. = 84,940 SQ. FT.

Designed:	C.L. White
Drawn:	C.L. White
Checked:	
Tax Parcel:	3015008
Field Book:	WES-59
W.O. No.:	08-0104

CWA
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P.O. BOX 8260
ROANOKE, VIRGINIA 24017-0260
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05-01-09
PROFESSIONAL ENGINEER

THOR INC.
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P.540.563.0567 F.540.563.0577

Revisions	Date
(1) Per 1st City Review	05/01/09

SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

NEW CORPORATE OFFICES
MEMBER ONE FEDERAL CREDIT UNION
SITUATE 202 4TH STREET, NE
CITY OF ROANOKE, VIRGINIA

New Construction for
MemberOne FEDERAL CREDIT UNION
Roanoke, Virginia

Date	APRIL 08, 2009
Scale	AS NOTED
Drawn	
Job	0836
Sheet	C-08