

EROSION & SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT AN ADDITION TO EXISTING HOUSE AND PARKING LOCATED IN ROANOKE COUNTY, VIRGINIA OFF STARKEY ROAD.

EXISTING SITE CONDITIONS

THE EXISTING SITE CONSISTS OF AN EXISTING HOUSE AND DRIVE WAY. THE SITE TOWARD THE FRONT OF THE SITE TO STARKEY ROAD AND SLOPES TOWARD THE REAR TO AN EXISTING DRAINAGE CHANNEL.

ADJACENT AREAS

SEE PLAN AND PROFILE SHEETS FOR ADJACENT AREAS.

SOILS

SOIL ON THIS SITE ARE EDMONT CHANNERY SANDY LOAM, THEY SLOPE 7 TO 15% VERY DEEP, AND WELL DRAINED. THE SOIL HAVE A MEDIUM EROSION POTENTIAL, AND A LOW SHRINK SWELL POTENTIAL.

CRITICAL EROSION AREAS

THE POTENTIAL CRITICAL EROSION AREAS ARE:

1. RUN-OFF TO REAR DRAINAGE CHANNEL.
2. RUN-OFF TO STARKEY RD.

EROSION AND 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.

STRUCTURAL PRACTICES

1. TEMPORARY CONSTRUCTION ENTRANCE (SECTION 3.02)

ONE TEMPORARY CONSTRUCTION ENTRANCE WILL BE INSTALLED TO LIMIT TRACKING OF SEDIMENT ONTO PUBLIC ROADS. SHOULD TRACKING OCCUR THE ROAD WILL BE IMMEDIATELY CLEANED.

2. SILT FENCE (SECTION 3.05)

TEMPORARY SILT FENCES WILL BE INSTALLED AS INDICATED ON THE SITE PLAN. AFTER EVERY RUNOFF FOLLOWING RAINFALL THE SILT FENCE SHALL BE INSPECTED AND REPAIRED AS NEEDED.

VEGETATIVE PRACTICES

1. TEMPORARY SEEDING (SECT. 3.31)

ALL DENUDED AREAS WHICH WILL BE LEFT DORMANT FOR MORE THAN 30 DAYS SHALL BE SEED WITH FAST GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING. SELECTION OF THE SEED MIXTURE WILL DEPEND ON THE TIME OF YEAR IT IS APPLIED.

2. PERMANENT SEEDING (SECTION 3.32)

AFTER FINAL GRADING PERMANENT SEEDING WILL BE EMPLOYED TO ALL DENUDED AREAS TO REDUCE EROSION AND SEDIMENT YIELD.

3. MULCHING (SECTION 3.35)

MULCH SHALL BE USED OVER ALL SEEDED AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH STANDARD AND SPECIFICATION 3.35 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

MANAGEMENT STRATEGIES

1. CONSTRUCTION SHOULD BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.

2. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS THE FIRST STEP OF CONSTRUCTION.

3. AREAS WHICH ARE NOT TO BE DISTURBED SHALL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC.

4. 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 KEPT IN GOOD FUNCTIONAL ORDER THROUGHOUT THE EXTENT OF THE WORK ON THE SITE.

5. 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.

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

7. 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 WILL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RESEED AS NEEDED.

8. 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.

PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. SEEDING SHALL BE DONE WITH KENTUCKY 31 TALL FESCUE ACCORDING TO STD. & SPEC. 3.32, PERMANENT SEEDING, OF THE VIRGINIA EROSION SEDIMENT CONTROL HANDBOOK, LATEST EDITION. EROSION CONTROL BLANKETS WILL BE INSTALLED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEED TO PROTECT THE SLOPES FROM RILL AND GULLY EROSION AND TO ALLOW SEED TO GERMINATE PROPERLY. MULCH (STRAW OR FIBER) WILL BE USED ON RELATIVELY FLAT AREAS. IN ALL SEEDING OPERATIONS, SEED, FERTILIZER AND LIME WILL BE APPLIED PRIOR TO MULCHING.

MAINTENANCE

IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL. ANY ITEMS NOT FOUND IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK WILL BE IMMEDIATELY REPLACED AND/OR REPAIRED. THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR:

SEE INDIVIDUAL DETAILS FOR DETAILED MAINTENANCE INSTRUCTIONS.

GENERAL

THE EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE CONSTRUCTION PLANS ARE THE MINIMUM MEASURES REQUIRED. DUE TO CONSTRUCTION PHASING AND OTHER CONSIDERATIONS ALL MEASURES CAN NOT BE SHOWN. THE OWNER, THROUGH HIS CONTRACTOR, WILL EMPLOY WHATEVER MEASURES WHICH MAY BE REQUIRED TO ASSURE THAT SEDIMENT LADEN RUNOFF DOES NOT LEAVE THE SITE.

ALL MATERIALS AND MEASURES EMPLOYED FOR EROSION AND SEDIMENT CONTROL WILL BE IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

IF, DURING CONSTRUCTION, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES ARE DEEMED NECESSARY, THEY SHALL BE INSTALLED AS DIRECTED BY THE OWNER, ENGINEER OR LOCAL GOVERNMENT AGENT.

THIS PROJECT IS TO BE CONSTRUCTED CONSISTENT WITH THE LATEST VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS.

TS TEMPORARY SEEDING

SEED:

1 SEPTEMBER TO 15 FEBRUARY
ANNUAL RYEGRASS @ 25 LB-50 LB / ACRE
CEREAL (WINTER) RYE @ 25 LB-50 LB / ACRE

16 FEBRUARY TO 30 APRIL
ANNUAL RYEGRASS @ 60 LB-100 LB / ACRE

MAY 1 TO 31 AUGUST
GERMAN MILLET @ 50 LB / ACRE

1 SEPTEMBER TO 15 OCTOBER
K-31 FESCUE @ 5 LB / 1000 SF
ANNUAL RYE @ 1/2 LB / 1000 SF

LIME:

PH BELOW 4.2 - 3 TONS PER ACRE OF AGRICULTURAL LIMESTONE
PH 4.2 TO 5.2 - 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE
PH 5.2 TO 6 - 1 TONS PER ACRE OF AGRICULTURAL LIMESTONE

FERTILIZER:

10-20-10 @ 600 LB / ACRE

MULCH:

SHALL BE USED OVER ALL SEEDED AREAS AND SHALL BE APPLIED IN ACCORDANCE WITH STANDARD AND SPECIFICATION 3.35 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

SURFACE ROUGHENING:

IF THE AREA HAS BEEN RECENTLY LOOSESED OR DISTURBED, NO FURTHER ROUGHENING IS REQUIRED. WHEN THE AREA IS COMPACTED, CRUSTED, OR HARDENED, THE SOIL SURFACE SHALL BE LOOSESED BY DISCING, RAKING, HARROWING, OR OTHER ACCEPTABLE MEANS (SEE SURFACE ROUGHENING, IN VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK STD. & SPEC. 3.29).

TRACKING:

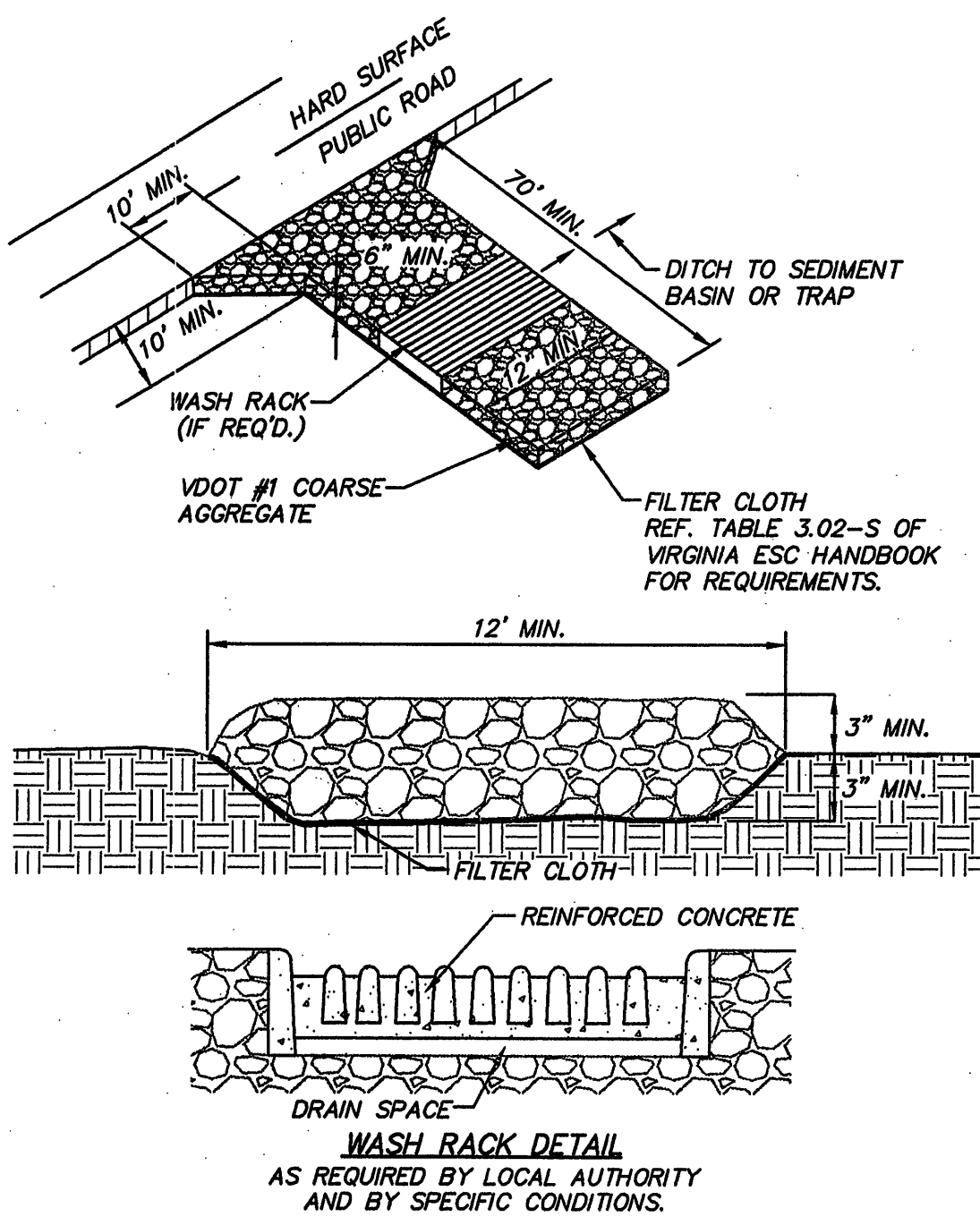
TRACKING WITH BULLDOZER CLEATS IS MOST EFFECTIVE ON SANDY SOILS. THIS PRACTICE OFTEN CAUSES UNDEE COMPACTION OF THE SOIL SURFACE, ESPECIALLY IN CLAYEY SOILS, AND DOES NOT AID PLANT GROWTH AS EFFECTIVELY AS OTHER METHODS OF SURFACE ROUGHENING.

SEEDING:

SEED SHALL BE EVENLY APPLIED WITH A BROADCAST SEEDER, DRILL CULTIPACKER SEEDER OR HYDROSEEDER. SMALL GRAINS SHALL BE PLANTED NO MORE THAN 1 1/2" DEEP. SMALL SEEDS, SUCH AS KENTUCKY BLUEGRASS, SHOULD BE PLANTED NO MORE THAN 1/4" DEEP. OTHER GRASSES AND LEGUMES SHOULD BE PLANTED 1/4" TO 1/2" DEEP.

RE-SEEDING:

AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION WILL BE RESEED AS SOON AS SUCH AREAS ARE IDENTIFIED.



CE TEMPORARY STONE CONSTRUCTION ENTRANCE

TABLE 3.02-A
CONSTRUCTION SPECIFICATIONS
FOR FILTER CLOTH UNDER LINER

FABRIC ¹ PROPERTIES	LIGHT-DUTY ENTRANCE ² (GRADED SUBGRADE)	HEAVY-DUTY ENTRANCE ³ (ROUGH GRADED)	TEST METHOD
GRAB TENSILE STRENGTH (LBS)	200	220	ASTM D1682
ELONGATION AT FAILURE (%)	50	220	ASTM D1682
MULLEN BURST STRENGTH (LBS)	190	430	ASTM D3786
PUNCTURE STRENGTH (LBS)	40	125	ASTM D751 (MODIFIED)
EQUIVALENT OPENING SIZE (mm)	40-80	40-80	U.S. STANDARD SIEVE CW-02215

¹ FABRICS NOT MEETING THESE SPECIFICATIONS MAY BE USED ONLY WHEN DESIGN PROCEDURE AND SUPPORTING DOCUMENTATION ARE SUPPLIED TO DETERMINE AGGREGATE DEPTH AND FABRIC STRENGTH

² LIGHT DUTY ENTRANCE: SITES THAT HAVE BEEN GRADED TO SUBGRADE AND WHERE MOST TRAVEL WOULD BE SINGLE AXLE VEHICLES AND AN OCCASIONAL MULTI-AXLE TRUCK. EXAMPLES OF FABRIC WHICH CAN BE USED ARE: TREVIRA SPUNBOND 1115, MIRAFI 100X, TYFAR 3401, OR EQUIVALENT.

³ HEAVY DUTY ENTRANCE: SITES WITH ONLY ROUGH GRADING AND WHERE MOST TRAVEL WOULD BE MULTI-AXLE VEHICLES. EXAMPLES OF FABRICS WHICH CAN BE USED ARE: TREVIRA SPUNBOND 1135, MIRAFI 600X, OR EQUIVALENT.

SPECIFICATIONS

THE AREA OF THE ENTRANCE MUST BE EXCAVATED A MINIMUM OF 3 INCHES AND MUST BE CLEARED OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. THE FILTER UNDERLINER WILL THEN BE PLACED THE FULL WIDTH AND LENGTH OF THE ENTRANCE.

FOLLOWING THE INSTALLATION OF THE FILTER CLOTH, THE STONE SHALL BE PLACED TO THE SPECIFIED DIMENSIONS. IF WASH RACKS ARE USED, THEY SHOULD BE INSTALLED ACCORDING TO MANUFACTURE'S SPECIFICATIONS. A DRAINAGE FACILITIES REQUIRED. THE WASHING SHOULD BE CONSTRUCTED ACCORDING TO SPECIFICATIONS. CONVEYANCE OF SURFACE WATER UNDER ENTRANCE, THROUGH CULVERTS, SHALL BE PROVIDED AS REQUIRED. IF SUCH CONVEYANCE IS IMPOSSIBLE, THE CONSTRUCTION OF A "MOUNTAINABLE" BERM WITH 5:1 SLOPES WILL BE PERMITTED.

THE FILTER CLOTH UTILIZED SHALL BE WOVEN OR NON-WOVEN FABRIC CONSISTING ONLY OF CONTINUOUS CHAIN POLYMERIC FILAMENTS OR YARNS OF POLYESTER. THE FABRIC SHALL BE INERT TO COMMONLY ENCOUNTERED CHEMICALS AND HYDROCARBONS, BE MILDEW AND ROT RESISTANT, AND CONFORM TO THE PHYSICAL PROPERTIES NOTED IN TABLE 3.02-A

MAINTENANCE

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. THIS MAY 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.

5. LEGUME INOCULANTS SHOULD BE APPLIED 5 TIMES THE RECOMMENDED RATES WHEN INOCULANT IS INCLUDED IN THE HYDROSEEDER SLURRY.

MULCHING:

ALL PERMANENT SEEDING MUST BE MULCHED IMMEDIATELY UPON COMPLETION OF THE SEED APPLICATION. REFER TO MULCHING.

MAINTENANCE OF NEW SEEDINGS:

IN GENERAL, A STAND OF VEGETATION CANNOT BE DETERMINED TO BE FULLY ESTABLISHED UNTIL IT HAS BEEN MAINTAINED FOR ONE YEAR AFTER PLANTING.

IRRIGATION:

NEW SEEDINGS SHALL BE SUPPLIED WITH ADEQUATE MOISTURE. SUPPLY WATER AS NEEDED, ESPECIALLY LATE IN THE SEASON, IN ADVERSELY HOT OR DRY WEATHER, OR ON ADVERSE SITES. WATER APPLICATION RATES SHOULD BE CONTROLLED TO PREVENT EXCESSIVE RUNOFF. INADEQUATE AMOUNTS OF WATER MAY BE MORE HARMFUL THAN NO WATER.

RE-SEEDING:

INSPECT SEEDED AREAS FOR FAILURE AND MAKE NECESSARY REPAIRS AND RE-SEEDINGS WITHIN THE SAME SEASON, IF POSSIBLE.

- A. IF VEGETATIVE COVER IS INADEQUATE TO PREVENT RILL EROSION, OVER-SEED AND FERTILIZE IN ACCORDANCE WITH SOIL TEST RESULTS.
- B. 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 SEEDED 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 30 DAYS AFTER PLANTING.

APPLY MAINTENANCE LEVELS OF FERTILIZER AS DETERMINED BY SOIL TEST. IN ABSENCE OF A SOIL TEST, FERTILIZATION SHOULD FOLLOW:

COOL SEASON GRASSES

4 LBS. NITROGEN (N) PER 1000 SQ.FT. PER YEAR
1 LB. PHOSPHORUS (P) PER 1000 SQ.FT. PER YEAR
2 LBS. POTASH (K) PER 1000 SQ.FT. PER YEAR

75% OF THE TOTAL REQUIREMENTS SHOULD BE APPLIED BETWEEN SEPTEMBER 1 AND DECEMBER 31. THE BALANCE SHOULD BE APPLIED DURING THE REMAINDER OF THE YEAR. MORE THAN 1 LB. OF SOLUBLE NITROGEN PER 1000 SQ.FT. SHOULD NOT BE APPLIED AT ANY ONE TIME.

WARM SEASON GRASSES

4-5 LBS. NITROGEN (N) PER 1000 SQ.FT. BETWEEN MAY 1 AND AUGUST 15 PER YEAR. PHOSPHORUS (P) AND POTASH (K) SHOULD ONLY BE APPLIED ACCORDING TO SOIL TEST. THE USE OF SLOW-RELEASE FERTILIZER FORMULATIONS FOR MAINTENANCE OF TURF IS ENCOURAGED TO REDUCE THE NUMBER OF APPLICATIONS AND THE IMPACT ON GROUNDWATER.

PS PERMANENT SEEDING

TABLE 3.32-D

SITE SPECIFIC MIXTURES FOR PIEDMONT AREA

MINIMUM CARE LAWN

- COMMERCIAL OR RESIDENTIAL
- KENTUCKY 31 OR TURF-TYPE TALL FESCUE
- IMPROVED PERENNIAL RYEGRASS
- KENTUCKY BLUEGRASS

HIGH MAINTENANCE LAWN

- KENTUCKY 31 OR TURF-TYPE TALL FESCUE

GENERAL SLOPE (3:1 OR LESS)

- RED TOP GRASS
- SEASONAL NURSE CROP (*)

LOW MAINTENANCE SLOPE (STEEPER THAN 3:1)

- KENTUCKY 31 FESCUE
- RED TOP GRASS
- SEASONAL NURSE CROP (*)
- CROWNVECH (*)

(*) USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES STATED BELOW:

FEBRUARY 16 THROUGH APRIL..... ANNUAL RYE
MAY 1 THROUGH AUGUST 15..... FOXTAIL MILLET
AUGUST 16 THROUGH OCTOBER..... ANNUAL RYE
NOVEMBER THROUGH FEBRUARY 15..... WINTER RYE

(**) SUBSTITUTE SERICEA LESPEDEZA FOR CROWNVECH EAST OF FARMVILLE, VA (MAY THROUGH SEPTEMBER USE HULLED SERICEA, ALL OTHER PERIODS, USE UNHULLED SERICEA) IF FLATPEA IS USED IN LIEU OF CROWNVECH, INCREASE RATE TO 30 LBS/ACRE. ALL LEGUME SEED MUST BE PROPERLY INOCULATED. WEEPING LOVEGRASS MAY BE ADDED TO ANY SLOPE OR LOW-MAINTENANCE MIX DURING WARMER SEEDING PERIODS; ADD 10-20 LBS/ACRE IN MIXES.

SEEDED REQUIREMENTS

VEGETATION SHOULD BE ESTABLISHED ON SLOPES THAT ARE UNSUITABLE DUE TO INAPPROPRIATE SOIL TEXTURE, POOR INTERNAL STRUCTURE OR INTERNAL DRAINAGE, VOLUME OF OVERLAND FLOW, OR EXCESSIVE STEEPNESS, UNTIL MEASURES HAVE BEEN TAKEN TO CORRECT THESE PROBLEMS. TO MAINTAIN A GOOD STAND OF VEGETATION, THE SOIL MUST MEET CERTAIN MINIMUM REQUIREMENTS AS A GROWTH MEDIUM. THE EXISTING SOIL MUST HAVE THESE CHARACTERISTICS:

1. ENOUGH FINE-GRAINED MATERIAL TO MAINTAIN ADEQUATE MOISTURE AND NUTRIENTS SUPPLY.
2. SUFFICIENT PORE SPACE TO PERMIT ROOT PENETRATION. A BULK DENSITY OF 1.2 TO 1.5 INDICATES THAT SUFFICIENT PORE SPACE IS PRESENT. A FINE GRANULAR OR CRUMB-LIKE STRUCTURE IS ALSO FAVORABLE.
3. SUFFICIENT DEPTH OF SOIL TO PROVIDE AN ADEQUATE ROOT ZONE. THE DEPTH TO ROCK OR IMPERMEABLE LAYERS SUCH AS HARDNESS SHALL BE 12 INCHES OR MORE, EXCEPT ON SLOPES STEEPER THAN 2:1 WHERE THE ADDITION OF SOIL IS NOT FEASIBLE.
4. A FAVORABLE PH RANGE FOR PLANT GROWTH. IF THE SOIL IS SO ACIDIC THAT A PH RANGE OF 6.0-7.0 CANNOT BE ATTAINED BY ADDITION OF PH-MODIFYING, THEN THE SOIL IS CONSIDERED AN UNSUITABLE ENVIRONMENT FOR PLANT ROOTS AND FURTHER SOIL MODIFICATION WOULD BE REQUIRED.
5. FREEDOM FROM TOXIC AMOUNTS OF MATERIAL HARMFUL TO PLANT GROWTH.
6. FREEDOM FROM EXCESSIVE QUANTITIES OF ROOT, BRANCHES, LARGE STONES, LARGE CLODS OF EARTH, OR TRASH OF ANY KIND. CLODS OF STONES MAY BE LEFT ON SLOPES STEEPER THAN 3:1 IF THEY DO NOT SIGNIFICANTLY IMPROVE GOOD SEED SOIL CONTACT. IF ANY OF THE ABOVE CRITERIA CANNOT BE MET, I.E., IF THE EXISTING SOIL IS TOO COARSE, DENSE, SHALLOW, ACIDIC, OR CONTAMINATED TO FOSTER VEGETATION, THEN TOPSOIL SHALL BE APPLIED IN ACCORDANCE WITH TOPSOILING, STANDARD AND SPECIFICATION 3.30.

TOTAL LBS. PER ACRE
175-200 LBS.
95-100%
0-5%
0-5%

TOTAL LBS. PER ACRE
200-250 LBS.
100%

TOTAL LBS. PER ACRE
128 LBS.
2 LBS.
20 LBS.
150 LBS.

TOTAL LBS. PER ACRE
108 LBS.
2 LBS.
20 LBS.
20 LBS.
150 LBS.

NECESSARY STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED PRIOR TO SEEDING. GRADING WILL BE CARRIED OUT ACCORDING TO THE APPROVED PLAN.

SURFACES WILL BE ROUGHENED IN ACCORDANCE WITH SURFACE ROUGHENING, STANDARD AND SPECIFICATION 3.29

SOIL CONDITIONERS IN ORDER TO MODIFY THE TEXTURE, STRUCTURE, OR DRAINAGE CHARACTERISTICS OF A SOIL, THE FOLLOWING MATERIALS MAY BE ADDED TO THE SOIL:

1. PEAT IS A VERY COSTLY CONDITIONER, BUT WORKS WELL. IF ADDED, IT SHALL BE SPAGNUM MOSS PEAT, HYPMUM MOSS PEAT, REED-SEDGE PEAT OR PEAT HUMUS, FROM FRESH-WATER SOURCES. PEAT SHALL BE SHREDDED AND CONDITIONED IN STORAGE PILES FOR AT LEAST SIX MONTHS AFTER EXCAVATION.
2. SAND SHALL BE CLEAN AND FREE OF TOXIC MATERIALS. SAND MODIFICATION IS INEFFECTIVE UNLESS YOU ARE ADDING 80 TO 90% SAND ON A VOLUME BASIS. THIS IS EXTREMELY DIFFICULT TO DO ON-SITE. IF THIS PRACTICE IS CONSIDERED, CONSULT A PROFESSIONAL AUTHORITY TO ENSURE THAT IT IS DONE PROPERLY.
3. VERMICULITE SHALL BE HORTICULTURAL GRADE AND FREE OF TOXIC SUBSTANCE. IT IS AN IMPRACTICAL MODIFIER FOR LARGER AREAS DUE TO EXPENSE.
4. RAW MANURE IS MORE COMMONLY USED IN AGRICULTURAL APPLICATIONS. HOWEVER, WHEN STORED PROPERLY AND ALLOWED TO COMPOST, IT WILL STABILIZE NITROGEN AND OTHER NUTRIENTS. MANURE, IN ITS COMPOSTED FORM, IS A VIABLE SOIL CONDITIONER. HOWEVER, ITS USE SHOULD BE BASED ON SITE-SPECIFIC RECOMMENDATIONS OFFERED BY A PROFESSIONAL IN THIS FIELD.
5. THOROUGHLY ROTTED SAWDUST SHALL HAVE 6 LBS. OF NITROGEN ADDED TO EACH CUBIC YARD AND SHALL BE FREE OF STONES, STICKS, AND TOXIC SUBSTANCES.
6. THE USE OF TREATED SEWAGE SLUDGE HAS BENEFITTED FROM CONTINUING ADVANCEMENTS IN ITS APPLICATIONS IN THE AGRICULTURAL COMMUNITY. WHEN COMPOSTED, IT OFFERS AN ALTERNATIVE SOIL AMENDMENT. LIMITATIONS INCLUDED A POTENTIALLY UNDESIRABLE PH (BECAUSE OF LIME ADDED DURING THE TREATMENT PROCESS) AND THE POSSIBLE PRESENCE OF HEAVY METALS. THIS PRACTICE SHOULD BE THOROUGHLY EVALUATED BY A PROFESSIONAL AND BE USED IN ACCORDANCE WITH ANY LOCAL, STATE AND FEDERAL REGULATIONS.

LIME:

2 TONS/ACRE PULVERIZED AGRICULTURAL GRADE LIMESTONE (90 LBS/1000 SQ.FT.)

FERTILIZER:

MIXED GRASSES AND LEGUMES: 1000 LBS./ACRE 10-20-10 OR EQUIVALENT NUTRIENTS (23 LBS./1000 SQ.FT.)

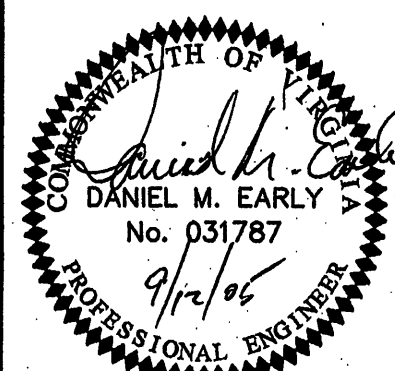
LEGUMES STAND ONLY: 1000 LBS./ACRE 5-20-10 (23 LBS./1000 SQ.FT.) IS PREFERRED; HOWEVER, 1000 LBS./ACRE OF 10-20-10 OR EQUIVALENT MAY BE USED.

GRASS STANDS ONLY: 1000 LBS./ACRE 10-20-10 OR EQUIVALENT NUTRIENTS, (23 LBS./1000 SQ. FT.)

OTHER FERTILIZER FORMULATIONS, INCLUDING SLOW-RELEASE SOURCES OF NITROGEN (PREFERRED FROM A WATER QUALITY STANDPOINT), MAY BE USED PROVIDED THEY CAN SUPPLY THE SAME AMOUNTS AND PROPORTIONS OF PLANT NUTRIENTS. LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE TOP 4-6 INCHES OF THE SOIL BY DISCING OR OTHER MEANS WHENEVER POSSIBLE. FOR EROSION CONTROL, WHEN APPLYING LIME AND FERTILIZER WITH A HYDRO SEEDER, APPLY TO A ROUGH, LOOSE SURFACE.

SEEDING

1. CERTIFIED SEED WILL BE USED FOR ALL PERMANENT SEEDING WHENEVER POSSIBLE. CERTIFIED SEED IS INSPECTED BY THE VIRGINIA CROP IMPROVEMENT ASSOCIATION OR THE CERTIFYING AGENCY IN OTHER STATES. THE SEED MUST MEET PUBLISHED STATE STANDARDS AND BEAR AN OFFICIAL "CERTIFIED SEED" LABEL.
2. LEGUME SEED SHOULD BE INOCULATED WITH THE INOCULANT APPROPRIATE TO THE SPECIES. SEED OF THE LESPEDEZAS, THE CLOVES, AND CROWNVECH SHOULD BE SCARIFIED TO PROMOTE UNIFORM GERMINATION.
3. APPLY SEED UNIFORMLY WITH A BROADCAST SEEDER, DRILL, CULTI-PACKER SEEDER, OR HYDRO SEEDER ON A FIRM, FRIABLE SEEDED. SEEDING DEPTH SHOULD BE 1/4 TO 1/2 INCH.
4. TO AVOID POOR GERMINATION RATES AS A RESULT OF SEED DAMAGE DURING HYDROSEEDING, IT IS RECOMMENDED THAT IF A MACHINERY BREAKDOWN OF 30 MINUTES TO 2 HOURS OCCURS, 50% MORE SEED SHOULD BE ADDED TO THE TANK, BASED ON THE PROPORTION OF THE SLURRY REMAINING IN THE TANK. BEYOND 2 HOURS, A FULL RATE OF NEW SEED MAY BE NECESSARY. OFTEN, HYDROSEEDING CONTRACTORS PREFER NOT TO APPLY LIME IN THEIR RIGS AS IT IS ABRASIVE. IN INACCESSIBLE AREAS, LIME MAY HAVE TO BE APPLIED SEPARATELY IN PELLETED OR LIQUID FORM. SURFACE ROUGHENING IS PARTICULARLY IMPORTANT WHEN HYDROSEEDING, BECAUSE A ROUGHENED SLOPE WILL PROVIDE SOME NATURAL COVERAGE OF LIME, FERTILIZER AND SEED.



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DESIGN

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PHASE 2 SITE PLAN
FOR
CAVENESS PROPERTIES
ROANOKE COUNTY, VIRGINIA

DRAWN BY: M.L.L.

DESIGNED BY: M.L.L.

CHECKED BY:

DATE: Aug. 1, 2005

SCALE:

REVISIONS

NO.	DATE	DESCRIPTION
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