

NORTH CAROLINA LAND QUALITY SECTION EROSION CONTROL NOTES

UPDATED JULY, 2019

GENERAL: ALL EROSION CONTROL MEASURES ARE TO BE PERFORMED IN STRICT ACCORDANCE WITH REQUIREMENTS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCEQ), DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES (DEMLR), LAND QUALITY SECTION. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE COMPLIED WITH FOR ALL WORK.

- PRIOR TO BEGINNING WORK ON THE PROJECT THE CONTRACTOR SHALL OBTAIN FROM THE OWNER A COPY OF THE "EROSION AND SEDIMENT CONTROL APPROVAL" FROM THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCEQ), DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES (DEMLR), DIVISION OF LAND QUALITY, OR THE LOCAL AUTHORIZED PROGRAM. THE APPROVAL NOTICE MUST BE AVAILABLE ON-SITE DURING ALL GRADING AND CONSTRUCTION ACTIVITIES.
- INSTALL ALL EROSION CONTROL MEASURES AS REQUIRED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES, LAND QUALITY SECTION.

NOTE: ALL UTILITY INSTALLATION WITHIN 25' OF A RIVER OR STREAM BANK SHALL BE INSTALLED PER STREAM PROTECTION DURING EXCAVATION DETAIL. SEEDING AND MULCHING SHALL BE COMPLETED DAILY IN AREAS NOTED AS STREAM PROTECTION AREAS. SILT FENCE IN THESE AREAS SHALL NOT BE INSTALLED CLOSER THAN 5' FROM CREEK BANK UNLESS FIELD CONDITIONS PREVENT SUFFICIENT CLEARANCE. ALL SILT FENCES SHALL BE INSPECTED AND CLEANED AS NEEDED AFTER EACH RAIN.

- CONTRACTOR IS TO PLACE PERMANENT STAKES MARKING CLEARLY THE 25' BUFFER FOR STREAMS WHERE SHOWN ON THE PLANS AND THE MARKERS ARE TO BE VISIBLE AT ALL TIMES DURING CONSTRUCTION.
- OBTAIN CERTIFICATE OF COMPLIANCE THROUGH ON-SITE INSPECTION BY A REPRESENTATIVE OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES, LAND QUALITY SECTION.
- CONSTRUCTION SHALL BE LIMITED TO 2000' OF CONTIGUOUS ROAD CORRIDOR UNTIL ALL CUTS, FILLS, AND DITCHES ARE STABILIZED FOR THAT 2000' SECTION. UPON STABILIZATION OF THAT SECTION ANOTHER 2000' SECTION CAN BE CONSTRUCTED AND STABILIZED.
- ALL STREAM CROSSINGS AND PERENNIAL STREAMS WILL BE ALIGNED WITH THE NATURAL STREAM PATTERNS ABOVE AND BELOW THE PROPOSED ROAD. ARCH CULVERTS WILL BE USED AND FOOTERS WILL BE CONSTRUCTED IN UNDISTURBED BANKS AWAY FROM THE STREAM FLOW.
- PROCEED WITH GRADING, CLEARING AND GRUBBING. NOTE: NO OFF SITE DISPOSAL OF MATERIAL IS ALLOWED UNLESS THE DISPOSAL SITE HAS AN APPROVED EROSION CONTROL PLAN.
- SEED AND PLACE EROSION CONTROL MATTING ON ALL CUT AND FILL SLOPES THAT ARE NOT ROCK IMMEDIATELY UPON COMPLETION OF SLOPE STABILIZATION.
- ALL TEMPORARY STREAM AND CREEK CROSSINGS FOR EQUIPMENT DURING CONSTRUCTION SHALL BE MADE USING TEMPORARY BRIDGES. NO STREAM BANK OR STREAM BED DISTURBANCE SHALL BE ALLOWED FOR EQUIPMENT CROSSINGS.
- SEED AND MULCH DENUDE AREA WITHIN TIME FRAME SPECIFIED (SEE TABLE). SEED AND SOIL AMENDMENTS SHALL BE PLACED ON A PREPARED SEEDBED AT THE FOLLOWING RATES PER ACRE. STRAW MULCH SHALL BE TACKED WITH TACKING AGENT APPLIED BY HYDROSEEDER.

LIME	4,000 LBS
FERTILIZER (10-10-10)	1,000 LBS
KY-31 FESCUE (POA PRATENSIS)	100 LBS (MOWED AND MAINTAINED AREAS ONLY)
OR	
CREeping RED FESCUE	100 LBS (NATURAL AREAS AND STREAMBANKS)
STRAW MULCH	60-80 BALES
FOR SUMMER SEEDING ADD TO THE ABOVE:	
GERMAN MILLET (SETARIA ITALICA)	40 LBS
SMALL-STEMMED SUDAN GRASS (SORGHUM BICOLOR)	50 LBS
FOR WINTER SEEDING ADD TO THE ABOVE:	
RYE GRAIN (SECALE CEREALE)	120 LBS

IF HYDROSEEDING, WOOD CELLULOSE MAY BE USED IN ADDITION TO STRAW MULCH AT THE RATE OF 1,000 LBS PER ACRE.

ALL SEEDING SHALL BE MAINTAINED, WATERED ETC., UNTIL A PERMANENT VEGETATIVE GROUND COVER IS ESTABLISHED OVER ALL DISTURBED AREAS. FOR ALL SLOPES 2:1 OR STEEPER ADD TO THE ABOVE:

PURGE LIVE SEED SWITCHGRASS	4 LBS
BROWNTOP MILLET OR PEARL MILLET (PENNISETUM GLAUCUM)	8 LBS
GRAIN SORGHUM (SORGHUM BICOLOR (L) MOENCH SSP. BICOLOR)	2 LBS

ALL SLOPES 2:1 OR STEEPER SHALL BE COVERED BY EROSION CONTROL MATTING.

NATIVE SEEDING:

THE CORRECT SEEDBED pH IS 5.5 TO 6.5.

APPLY ZERO NITROGEN AT PLANTING.

INCORPORATE SOIL AMENDMENTS INTO TOPSOIL/ROOT ZONE BEFORE SEEDING.

FIRM SEEDBED BEFORE SEEDING (TRAVEL WITH DOZER CLEATS).

SEEDING DEPTH FOR ALL NATIVE SSP. EXCEPT E.GAMAGRASS (TRIPSACUM DACTYLOIDES) NEED TO BE 1/4" - 1/2". GREATER DEPTHS CAUSE HIGH SEED MORTALITY.

SPECIALIZED SEEDING IMPLEMENTS ARE REQUIRED. SEED MIXES AND RATES TO MATCH SEEDER USED. A NO-TILL, DROP SEEDER OR BROADCASTER WITH PRECISION METERING TO CONTROL SMALL SEED FLOW AND PICKER WHEEL AGITATORS TO HANDLE FLUFFY SEED ARE BEST SUITED FOR NATIVE SEED.

NATIVE PLANT SEEDING MIX FOR STREAM OR RIVERBANK STABILIZATION

SEEDING FOR STREAM OR RIVERBANK STABILIZATION SHALL BE A MIXTURE OF NATIVE GRASSES, PLANTS AND TREES. NATIVE PLANT MIX SHALL INCLUDE THE FOLLOWING:

GRASSES - BIG BLUESTEM (ANDROPOGON GERARDII), INDIAN GRASS (SORGHASTRUM NUTANS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), SWITCHGRASS (PANICUM VIRGATUM),	15 LBS/ACRE EACH
AUGUST THRU MAY - GREENRYE (SECALE CEREALE)	25 LBS/ACRE EACH
MAY 1 THRU AUGUST - MILLET (PENNISETUM GLAUCUM)	25 LBS/ACRE EACH

TREES - SILKY DOGWOOD (CORNUS AMOMUM), SILKY WILLOW (SALIX SERICEA), HAZEL ALDER (ALNUS SERRULATA) AND ELDERBERRY (SAMBUBUS CANADENSIS)

NATIVE PLANT MIX VARIATIONS SHALL BE APPROVED BY ENGINEER
NOTE: NO FERTILIZER SHALL BE USED WITHIN 10' OF TOP OF STREAM OR RIVER BANK.

- MAINTAIN SOIL EROSION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
- REQUEST FINAL APPROVAL BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF ENERGY, MINERAL, AND LAND RESOURCES, LAND QUALITY SECTION.
- REMOVE SOIL EROSION CONTROL MEASURES AND STABILIZE THESE AREAS.

TEMPORARY SEEDING SPECIFICATION

SEEDING MIXTURE:	RATE (lb/acre)
SPECIES	
RYE (grain)	120

SEEDING DATES:
AUG 15 TO DEC 30

SOIL AMENDMENTS:
FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER.

MULCH:
APPLY 4000lb/acre STRAW, ANCHOR STRAW BY TACKING w/ ASPHALT NETTING, OR A MULCH ANCHORING TOOL. A DISK w/ BLADES SER NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE:
RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RE-SEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

CUT/FILL SLOPES SEEDING SPECIFICATIONS - 3:1 AND STEEPER

SEEDING MIXTURE:	RATE (lb/acre)
SPECIES	
TALL FESCUE	100
SWITCHGRASS AND PARTRIDGE PEA MIX	30
KOBE LESPEDEZA	10

NURSE PLANTS:
BETWEEN MAY 1 AND AUG 15, ADD 10lb/acre GERMAN MILLET OR 15 lb/acre SUDANGRASS. PRIOR TO MAY 1 OR AFTER AUG 15, ADD 40 lb/acre RYE (GRAIN). IT MAY BE BENEFICIAL TO PLANT THE GRASSES IN LATE SUMMER AND OVERSEED THE LESPEDEZAS IN MARCH.

SEEDING DATES:	BEST	POSSIBLE
	AUG 25 - SEPT 15	AUG 20 - OCT 25
	FEB 15 - MAR 20	FEB 1 - APRIL 15

SOIL AMENDMENTS:
APPLY LIME AND FERTILIZER ACCORDING TO SOIL TEST, OR APPLY 4000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER.

MULCH:
APPLY 4000 lb/acre GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCHING MATERIAL. ANCHOR MULCH BY TACKING w/ ASPHALT, ROVING OR NETTING. NETTING IS THE PREFERRED ANCHORING METHOD ON STEEP SLOPES.

MAINTENANCE:
MOW NO MORE THAN ONCE A YEAR. RE-FERTILIZE IN THE SECOND YEAR UNLESS GROWTH IS FULLY ADEQUATE. RE-SEED, RE-FERTILIZE, RE-MULCH DAMAGED AREAS IMMEDIATELY.

DITCH/OPEN AREA PERMANENT SEEDING SPECIFICATION

SEEDING MIXTURE:	RATE (lb/acre)
SPECIES	
TALL FESCUE	250 (6 lb/1000 sq ft)

NURSE PLANTS:
BETWEEN MAY 1 AND AU 15, ADD 10 lb/acre GERMAN MILLET OR 15 lb/acre SUDANGRASS. PRIOR TO MAY 1 OR AFTER AUG 15, ADD 40 lb/acre RYE (GRAIN).

SOIL AMENDMENTS:
APPLY LIME AND FERTILIZER ACCORDING TO SOIL TEST, OR APPLY 4000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER.

MULCH:
USE CHANNEL LINING MATERIAL TO COVER THE BOTTOM OF DITCHES. THE LINING SHOULD EXTEND ABOVE THE HIGHEST CALCULATED DEPTH OF FLOW. ON CHANNEL SIDE SLOPES ABOVE THE HEIGHT, AND IN DRAINAGES NOT REQUIRING TEMPORARY LININGS, APPLY 4000 lb/acre GRAIN STRAW AND ANCHOR STRAW BY STAPLING NETTING OVER THE TOP.

MULCH AND ANCHORING MATERIALS MUST NOT BE ALLOWED TO WASH DOWN SLOPE WHERE THEY CAN CLOG DRAINAGE DEVICES.

MAINTENANCE:
INSPECT AND REPAIR MULCH FREQUENTLY. RE-FERTILIZE IN LATE WINTER ACCORDING TO SOIL TESTS OR APPLY 150 lb/acre 10-10-10 FERTILIZER (3 lb/1000 sq ft). MOW REGULARLY TO A HEIGHT OF 2" TO 4".

SEEDBED PREPARATION

- THE CONTRACTOR SHALL CUT AND SATISFACTORILY DISPOSE OF WEEDS OR OTHER UNACCEPTABLE GROWTH ON THE AREAS TO BE SEED. UNEVEN AND ROUGH AREAS OUTSIDE OF THE GRADED SECTION, SUCH AS CROP ROWS, FARM CONTOURS, DITCHES AND DITCH SPOIL BANKS, FENCE LINE AND HEDGEROW SOIL ACCUMULATIONS, AND OTHER MINOR IRREGULARITIES WHICH CANNOT BE OBLITERATED BY NORMAL SEEDBED PREPARATION OPERATIONS, SHALL BE SHAPED AND SMOOTHED AS DIRECTED BY THE ENGINEER TO PROVIDE FOR MORE EFFECTIVE SEEDING AND FOR EASE OF SUBSEQUENT MOWING OPERATIONS.
- THE SOIL SHALL THEN BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF NOT LESS THAN 6 INCHES EXCEPT AS OTHERWISE PROVIDED BELOW OR OTHERWISE DIRECTED BY THE ENGINEER. CLODS SHALL BE BROKEN AND THE TOP 2 TO 3 INCHES OF SOIL SHALL BE WORKED INTO AN ACCEPTABLE SEEDBED BY THE USE OF SOIL PULVERIZERS, DRAGS, OR HARROWS; OR BY OTHER METHODS APPROVED BY THE ENGINEER.
- ON 2:1 SLOPES A SEEDBED PREPARATION WILL BE REQUIRED THAT IS THE SAME DEPTH AS THAT REQUIRED ON FLATTER AREAS, ALTHOUGH THE DEGREE OF SMOOTHNESS MAY BE REDUCED FROM THAT REQUIRED ON THE FLATTER AREAS IF SO PERMITTED BY THE ENGINEER.
- ON CUT SLOPES THAT ARE STEEPER THAN 2:1, BOTH THE DEPTH OF PREPARATION AND THE DEGREE OF SMOOTHNESS OF THE SEEDBED MAY BE REDUCED AS PERMITTED BY THE ENGINEER, BUT IN ALL CASES THE SLOPE SURFACE SHALL BE SCARIFIED, GROOVED, TRENCHED, OR PUNCTURED SO AS TO PROVIDE POCKETS, RIDGES, OR TRENCHES IN WHICH THE SEEDING MATERIALS CAN LODGE.
- ON CUT SLOPES THAT ARE EITHER 2:1 OR STEEPER, THE ENGINEER MAY PERMIT THE PREPARATION OF A PARTIAL OR COMPLETE SEEDBED DURING THE GRADING OF THE SLOPE. IF AT THE TIME OF SEEDING AND MULCHING OPERATIONS SUCH PREPARATION IS STILL IN A CONDITION ACCEPTABLE TO THE ENGINEER, ADDITIONAL SEEDBED PREPARATION MAY BE REDUCED OR ELIMINATED.
- THE PREPARATION OF SEEDBEDS SHALL NOT BE DONE WHEN THE SOIL IS FROZEN, EXTREMELY WET, OR WHEN THE ENGINEER DETERMINES THAT IT IS IN AN OTHERWISE UNFAVORABLE WORKING CONDITION.
- LIMESTONE MAY BE APPLIED AT THE RATE DESCRIBED HEREIN AS A PART OF THE SEEDBED PREPARATION, PROVIDED IT IS IMMEDIATELY WORKED INTO THE SOIL. IF NOT SO APPLIED, LIMESTONE AND FERTILIZER SHALL BE APPLIED AS DESCRIBED HEREIN.

L:\BROADSTREET\DRAWINGS\2014\14.00708 - FFLP ACME\DESIGN\SOLID WASTE\DRAWINGS\CONSTRUCTION\DWGS\14.00708-CD-COVERER.DWG PLOT DATE: 12/20/2019 3:16 PM DAVE PASKO

BID DOCUMENTS

FRANCIS FARM LANDFILL
RESTRICTIVE COVER IMPLEMENTATION

HAYWOOD COUNTY

HAYWOOD COUNTY, NORTH CAROLINA

GENERAL EROSION CONTROL NOTES

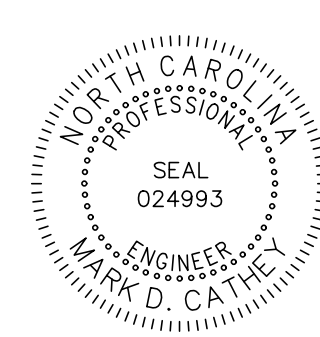
OFFICE MANAGER	DESIGNER	DATE	PROJECT #	FUNDING #
MDC	DAP	DECEMBER 2019	14.00708	N/A
PROJECT MANAGER	REVIEWER			
SEB	JRB			

SHEET

G-003



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SIGNED AND DATED:			
THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED IN ACCORDANCE WITH THE STANDARD CERTIFICATION REQUIREMENTS FOUND IN NC ADMINISTRATIVE CODE 21-58.1103(E). THIS DIGITAL SIGNATURE HAS BEEN FOUND BY THE NC BOARD OF EXAMINERS FOR ENGINEERS AND SURVEYORS TO MEET THESE STANDARDS. PLEASE CONTACT THE SIGNER IF YOU NEED ASSISTANCE IN VALIDATING THE SIGNATURE.			
NO.	DATE	BY	DESCRIPTION