

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PAT MCCRORY GOVERNOR

DIVISION OF HIGHWAYS

ANTHONY J. TATA Secretary

August 26, 2015

Chatham County

Subject: Subdivision Final Plan Review – Phase III – Cedar Mountain Subdivision off of Jones Ferry Road (SR 1540)

Civil and Structural Engineering Services. PLLC C/O Mr. Samir Bahho, P.E 4612 Kaplan Drive Raleigh, NC 27606

Dear Mr. Bahho, P.E:

The N. C. Department of Transportation, Division of Highways has reviewed the construction plans signed and sealed by Samir Bahho P.E. on March 16, 2015 as submitted to this office and approval is granted subject to the following stipulations and recommendations:

- 1. All Construction is to be in accordance with the details as shown on the plans, as well as conform to the most recent edition of the *Standard Specifications for Roads and Structures*.
- 2. A Driveway Permit is not needed for this package.
- 3. The entire proposed right of way is to be cleared and grubbed throughout the whole phase of the project. Please be aware that the areas within the sight distance quadrants are to be treated as right of way.
- 4. All soil areas within the proposed right of way and any other soil areas disturbed during construction shall be seeded and mulched immediately upon completion of roadway construction. The seeding shall be done as outlined in the seeding specification attachment.
- 5. The crossline drainage is approved as proposed on the construction plans. If, however field conditions dictate any changes, these shall be made upon approval by NCDOT. If any of the property owners desire to pipe their ditches within the proposed NCDOT right of way, please advise them that this work should conform to NCDOT specifications for this type of work (see attached). If any ditches are piped and not satisfactorily completed to NCDOT specifications, this could result in the road not being accepted for addition to the state maintained system of roads. Any ditches piped or other encroachment prior to addition to the state maintained system are subject to an encroachment agreement, as are utility companies, when the road is added.

Phase III of the Cedar Mountain Subdivision Final Plan Approval Plans signed and sealed by Samir Bahho P.E. March 16, 2015 Page 2 of 13

- 6. The typicals as shown in the plans, are approved.
- 7. The Division of Highways will only allow mailboxes, with non-rigid type post, such as 4" x 4" wooden or small diameter metal type on new additions. Brick columns or mailboxes on rigid stands such as block, stone or any other type deemed to be a traffic hazard will not be allowed within the right of way. This policy applies to all roads being considered for addition to the State Maintained System.
- 8. An erosion control plan shall require approval from Chatham County. The developer should forward this plan to Mr. Jim Willis, Erosion and Sediment Control Officer, 80 East, P.O. Box 130, Pittsboro, N.C. 27312, phone (919) 545-8343 for his review and approval.
- 9. As this subdivision is proposed to be public and is likely to be requested to be added to the state maintained system of roads, the developer will be responsible for providing a PE Certification, (See Attached) and testing results for base and asphalt density stating that the streets have been built in accordance with the most current "Subdivision Roads: Minimum Construction Standards" manual and with the attached approved plans. Please be advised that this PE Certification does not approve the road for addition to the State Highway System for maintenance. When the proper home density is achieved and roads have been satisfactorily maintained, the developer or property owners must submit Form SR-1, Petition for Road Addition (copy attached to this correspondence), and four (4) copies of the recorded plat to request that the road or roads be added to the State Highway system. Any maintenance problems found when the road is requested to be added must be repaired by the developer prior to the road becoming state maintained. As stated in GS 136-102.6, final acceptance by the Division of Highways of the public streets and placing them on the State highway system for maintenance shall be conclusive proof that the streets have been constructed according to the minimum standards of the Board of Transportation.
- 10. The developer shall comply with all applicable local, state, and federal environmental regulations, and shall obtain all necessary local, state, and federal environmental permits, including, but not limited to, those related to sediment control, stormwater, wetlands, streams, endangered species, and historical sites.
- 11. A properly completed Verification of Compliance with the Department of Environment and Natural Resources (DENR)(page 35, attached) must be submitted prior to the road(s) being considered for addition to the NCDOT System.
- 12. In preparing the final plat for certification by this office and subsequent recording, the following information will be incorporated:
 - A. The sight distance quadrants at the intersections shall be shown either as a public easement or as the property line.
 - B. Public easements for drainage throughout the development.
 - C. All roads shall be shown as public and the right of way width shown

Phase III of the Cedar Mountain Subdivision Final Plan Approval Plans signed and sealed by Samir Bahho P.E. March 16, 2015 Page 3 of 13

- 13. If the plans of this subdivision change in a way that would cause a change in the classification of these roads from Local Residential to Residential Collector the developer will be responsible for upgrading roads to meet Residential Collector standards prior to addition the state maintenance system.
- 14. This approval does not approve the utilities within this subdivision. Any utilities shall be submitted for approval to this office via a properly executed Encroachment Agreement to be approved at the time the roads within the subdivision are petitioned to be added to the state system for maintenance. Please note that water valves should be located a minimum of 6' from edge of pavement, fire hydrants should be behind the right of way line and all service taps should be installed prior to paving.

If you have any further questions regarding this matter, please do not hesitate to call this office at 336. 318.4000

Yours truly,

Jeff Loflin

2D8073931376436...

Jeff B. Loflin, PE

District Engineer

Attachments

cc: Rob W. Stone II, P.E., Division Engineer Justin Bullock, P.E., Chatham County Maintenance Engineer Lynn Richardson, Chatham County Planning File



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PAT MCCRORY GOVERNOR DIVISION OF HIGHWAYS

ANTHONY J. TATA SECRETARY

PROFESSIONAL ENGINEER CERTIFICATION SUBDIVISIONS AND COMMERCIAL DRIVEWAYS DIVISION 8, DISTRICT 1

DATE:			
COUNTY:			
SUBDIVISION NAME:			
STREET NAMES	From Sta. No.	To Sta. No.	
This is to certify that the above	listed roads have been con	nstructed in accordance with the	approved plans and all
aspects of the most current Sub	division Roads: Minimum	Construction Standards manual.	
	NAME:		
SIG	NATURE:		
NC PE LI	CENSE #:		

Professional Engineer Seal

North Carolina Department of Transportation Division of Highways Petition for Road Addition

ROADWAY INFORMATION: (Please Print/Type)

County:	Road Name: (Please list addition	al street names and lengths on th	e back of this form.)
Subdivision Name:		Length (miles):	
Number of occupied home	es having street frontage:	Located (miles):	
miles N	of the intersection of Route	and Route	(SR, NC, US)
We, the undersigned, being	ng property owners and/or develope	rs of	in
County,	do hereby request the Division of H	ighways to add the ab	ove described road.
	ame and Address of First Petitioner. (Please Print	t/Type) Phone Number:	
Ctua at Address			
Mailing Address:			
	PROPERTY OWNERS	3	
<u>Name</u>	Mailing Address		<u>Telephone</u>

INSTRUCTIONS FOR COMPLETING PETITION:

- 1. Complete Information Section
- 2. Identify Contact Person (This person serves as spokesperson for petitioner(s)).
- 3. Attach four (4) copies of recorded subdivision plat or property deeds, which refer to candidate road.
- 4. Adjoining property owners and/or the developer may submit a petition. Subdivision roads with prior NCDOT review and approval only require the developer's signature.
- 5. If submitted by the developer, encroachment agreements from all utilities located within the right of way shall be submitted with the petition for Road addition. However, construction plans may not be required at this time.
- 6. Submit to District Engineer's Office.

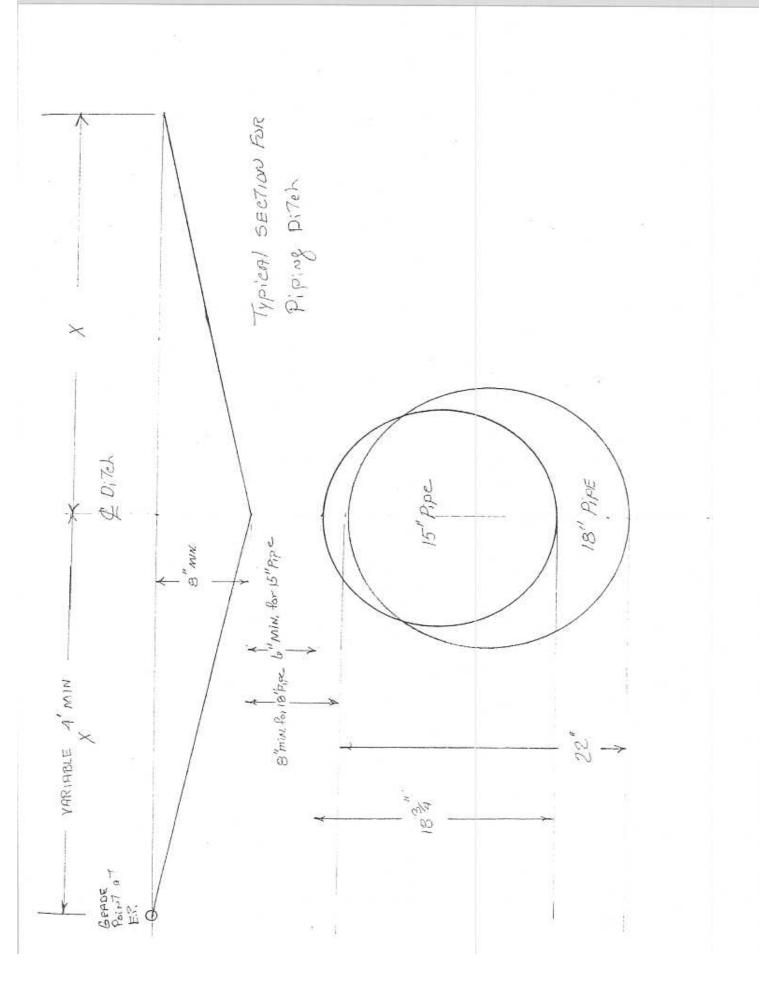
FOR NCDOT	USE ONLY: Please check the appropriate	e block
☐ Rural Road	☐ Subdivision platted prior to October 1, 1975	☐ Subdivision platted after September 30, 1975

REQUIREMENTS FOR ADDITION

If this road meets the requirements necessary for addition, we agree to grant the Department of Transportation a right-of-way of the necessary width to construct the road to the minimum construction standards of the NCDOT. The right-of-way will extend the entire length of the road that is requested to be added to the state maintained system and will include the necessary areas outside of the right-or-way for cut and fill slopes and drainage. Also, we agree to dedicate additional right-of-way at intersections for sight distance and design purposes and execute said right-of-way agreement forms that will be submitted to us by representatives of the NCDOT. The right-of-way shall be cleared at no expense to the NCDOT, which includes the removal of utilities, fences, other obstructions, etc.

General Statute 136-102.6 (see page 29 for Statute) states that any subdivision recorded on or after October 1, 1975, must be built in accordance with NCDOT standards in order to be eligible for addition to the State Road System.

ROAD NAME	<u>HOMES</u>	<u>LENGTH</u>	ROAD NAME	<u>HOMES</u>	<u>LENGTH</u>



POSSIBLE SUPPLIERS FOR GRATES AND FRAMES

SOUTHERN FOUNDRY P.O. BOX 186 APEX, N.C. 27502 (919) 362-7744 NORFOLK CAST, INC. P.O. BOX 328 NORFOLK, VA. 23501

VULCAN FOUNDRY CORP. P.O. BOX 905 DENHAM SPRINGS, LA. 1(800)626-4653 US FOUNDRY 8351 N. W.93RD ST MEDLEY, FLA.33166 (305)885-0301 FAX (305) 844-3253

SUPER CAST, INC. 1104 US HWY. 117 BYPASS, S. GOLDSBORO, N.C. 27530 (919)736-9010 FAX (919)736-0290

BUNCH PATTERN WORKS, INC. P.O. BOX 267 HWY 308 N. LEWISTON-WOODVILLE,N.C. 27849

CAPITAL FOUNDRY OF VIRGINIA, INC. P.O. BOX 2212 VIRGINIA BEACH, VIRGINIA 23450

EMPORIA FOUNDRY, INC. 620 REESE STREET EMPORIA, VIRGINIA 23847

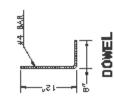
ENNIS ENTERPRISES P.O. BOX 931 WILMINGTON, N.C. 28402 (910) 371-9323

840.15

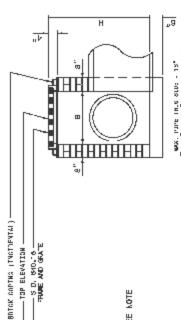
12" THRU 30" PIPE BHICK DHOP INLET ENGLISH STANDARD DRAWING FOR

1-12| STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

SEE STANDARD DRAWING 840,25 FOR ATTACHMENT OF FRANES AND GRATES. DO NOT USE BRICK MASOWRY DROP INLET IN LOCATIONS SUBJECT TO TRAFFIC.



 1



-SEE NOTE

CTION Y-Y	HEIGHT, M)	DEDUCTIONS FOR ONE PIPE
SECT	FOR DROP INLET(BASED ON MIN. I	CUBIC YARDS BRICK MASONRY
	FÓR DRÓP	BIO YARDS

SECTION X-X

.9

Î	TIONS	ONE PIPE		9	٦ D.	0	8	0
HEIGHT,	DEDUCTIONS	8	C.S.	0.020	0.331	0.074	0.078	0.122
ED ON MICH.	CUBIC YARDS	BAICK MASONAY	H '14815H 'N.M PVB3M5A EUS LUTAT EUSON	3.622	0.600	0.578	5.885	0.991
INLET (846	CUBIC	BAICK	MAII PER FOOT HT.	0.313	0.913	6.818	0.913	0.913
ES FOR DROP	CUBIC YARDS	CONCRETE	ROTTON SLAB	0.268	0.268	0.260	B53" Q	0.288
DINENGIÓNS AND DUANTITIES FOR DRÓP INLET(BASED ON MIN. HEIGHT, H)	DIMENSIONS OF BOX & PIPE	NIN. HCIGHT	Н	5'-D"	.8-,2	.9-,2	.,0-,0	36"
ENGIONS	0F BQ)	WIDTH	В	2'-0"	1	/	/	00
DIM	NENSI DYS	SPAN	٧	30	1	/	1	3,-0%
	DIR	PIPE	D	15"	15"	18"	24"	36"

.085 .085 .178

IT REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STO. NO. 040.00.
FOR 6.0" IN HIGHT OR LESS, USE 8" WALL, OVER 8'-0" IN HIGHT, USE 18" WALL AND 8" WALL FOR THE REMAINING 6'-0". QLANITIES O OF ADJUSTED ACCORDINGLY. USE BRICK OF CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 540 OF THE STANDARD SPECIFICATIONS. PROVIDE ALL CATCH BASINS OVER 5'-8" IN DEPTH WITH STEPS 12" ON CENTER, USE STEPS WHICH COMPLY WITH STD, DRAWING 840,88 DEDJOT FOR FIPE(S) FROM TOTAL CU. YOS. OF BRICK MASCURY. USE FÜRMS FOR CONSTRUCTION OF THE BOTTOM RIAB USE CLASS "E" CONCRETE THROUGHOUT. HSP #4 B4R COMPLIS AT 12" CENTERS MORTAN JOINTE 15" +/- 16" THICK.

CONSTRUCT WITH PIPE CROWNS MATCHING.

CHYMMER ALL EXPOSED CORNERS I"

DRAWING NOT TO SCALE.

- 5 D, 640, 6 --TOP ELEVATION

ut.

WITH COPING REMOVES PLAN

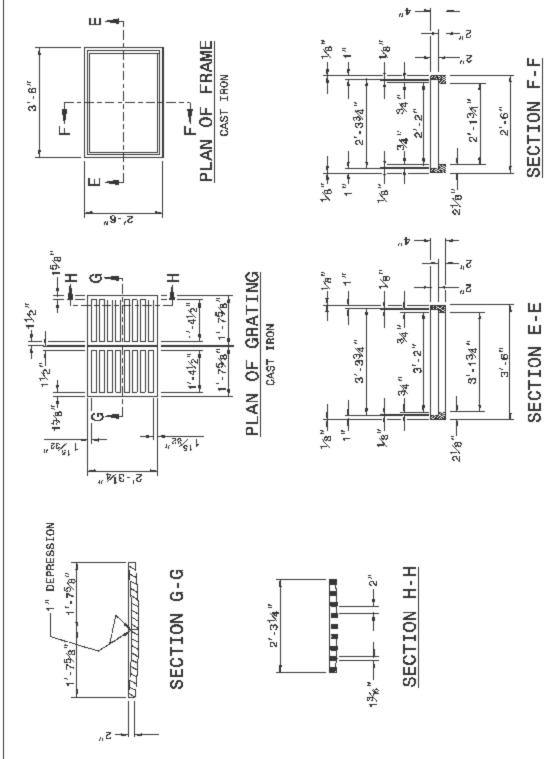
STATE OF 11-12
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR BRICK DROP INLET 12" THRU 30" PIPE

840.15

ENGLISH STANDAND DRAWING FOR DROP INLET FRAME AND GRATES FOR USE WITH SID. DWG.S 840.14 AND 840.15

NING FOR S40.15 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DEPT. OF TRANSPORTATION OF HIGHWAYS BALEIGH, N.C.



STATE OF U-12
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR DROP INLET FRAME AND GRATES
FOR USE WITH STD. DWG.S 840.14 AND 840.15

VERIFICATION OF COMPLIANCE WITH ENVIRONMENTAL REGULATIONS

(Check Appropriate Box)

Permits from the N.C. Department of Er U.S. Army Corp of Engineers are not applicable federal and state regulations have	required for this p	aral Resources and the project. However, all
The required permits from the N.C. Resources and the U.S. Army Corp of En Copies of permits and Completion Certific	gineers have been of	ironment and Natural otained for this project.
All applicable NPDES Stormwater Permit (The applicant should contact the N.C. determine if a stormwater permit is require	Division of Water	een met for this project. Quality in Raleigh to
The project is in compliance with all applications.	cable sedimentation a	nd erosion control
Project Name:		
Township:	County:	
Project Engineer:	Phone No.:	
Project Contact:		
Applicants Name:		P.E. SEAL
Date Submitted:		
(Reference Page 11, Item 10)		11/07/2003
	35	

ATTACHMENT "A"

Seeding and mulching shall be in accordance with Section 880 of the North Carolina Standard Specifications for Roads and Structures, except that Articles 880-8(B) shall not apply. Final determination of soil type shall be made by the Engineer. The following rates in pounds per acre shall apply:

SANDY SOIL

CLAY SOIL

50# - KY 31 Tall Fescue or Alta Tall Fescue 100# - KY 31 Tall Fescue or Alta Tall Fescue

5# - Centipede

15# - Kenblue Bluegrass

50# - Pensacola Bahiagrass

500# - Fertilizer

500# - Fertilizer

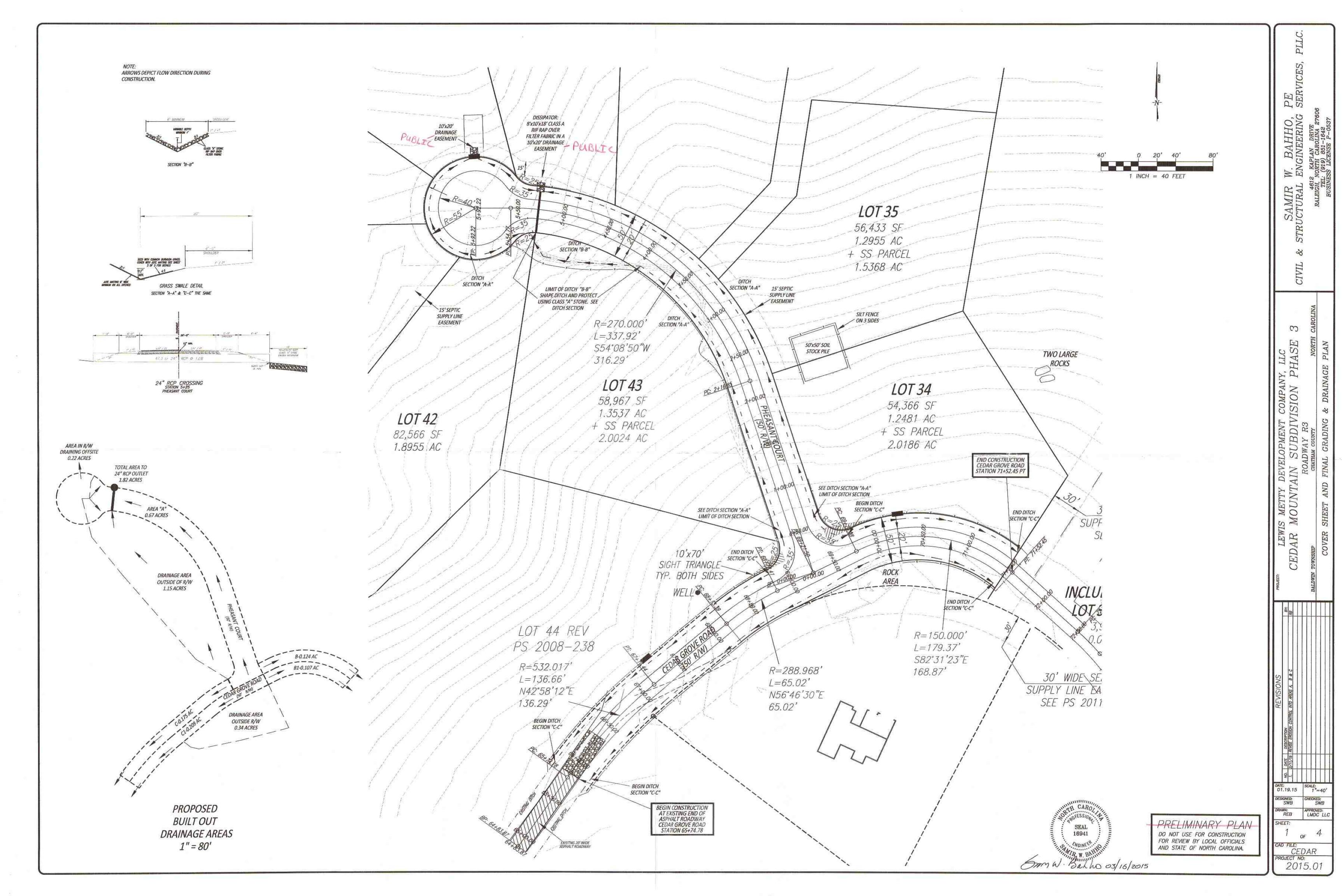
4000# - Limestone

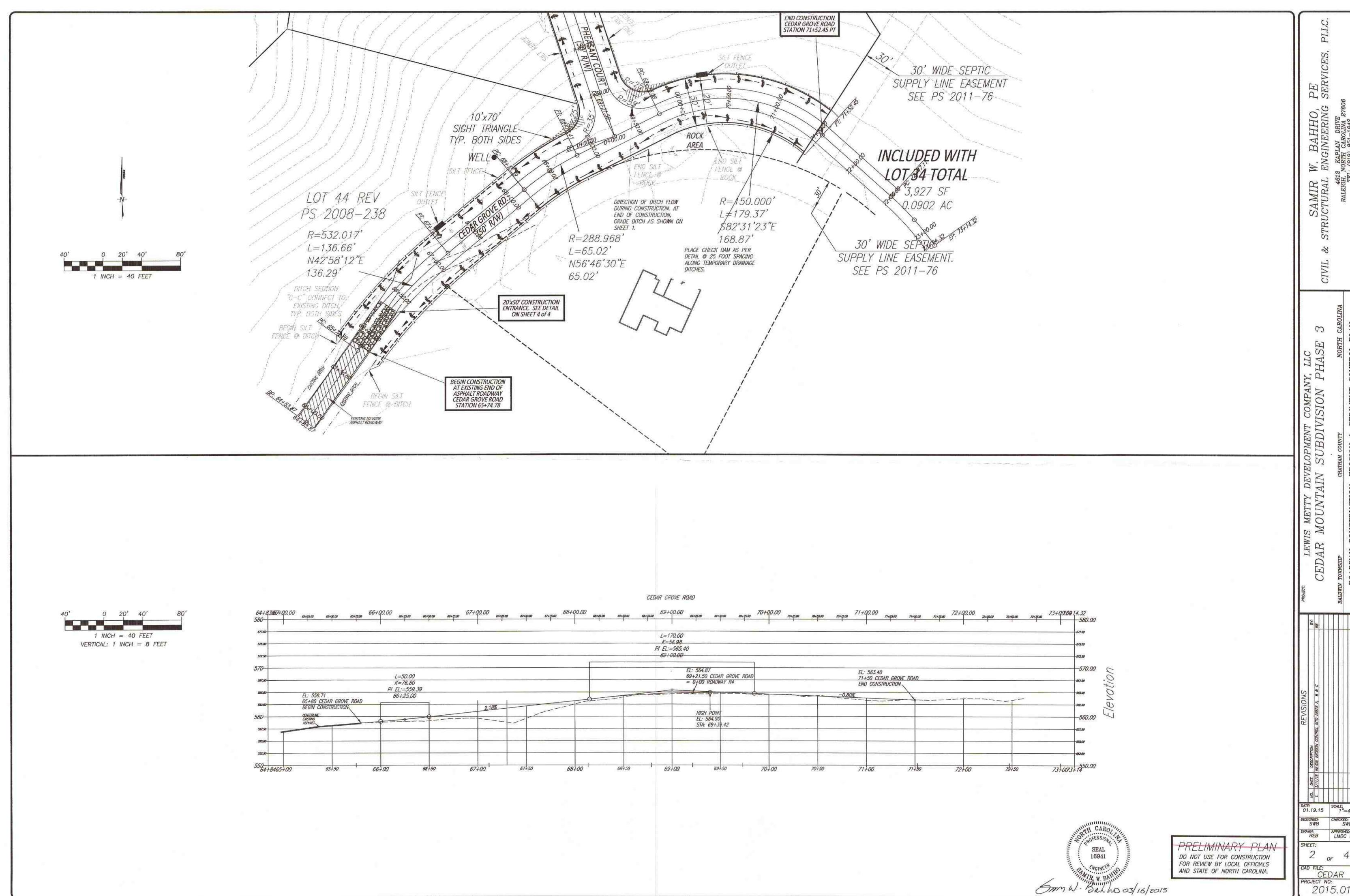
4000# - Limestone

Add 10# Kobe or Korean Lespedeza and 10# Millet to the above mixture from May 1 to August 31.

On cut and fill slopes 2:1 or steeper, add 30# Sericea Lespedeza from January 1 to December 31.

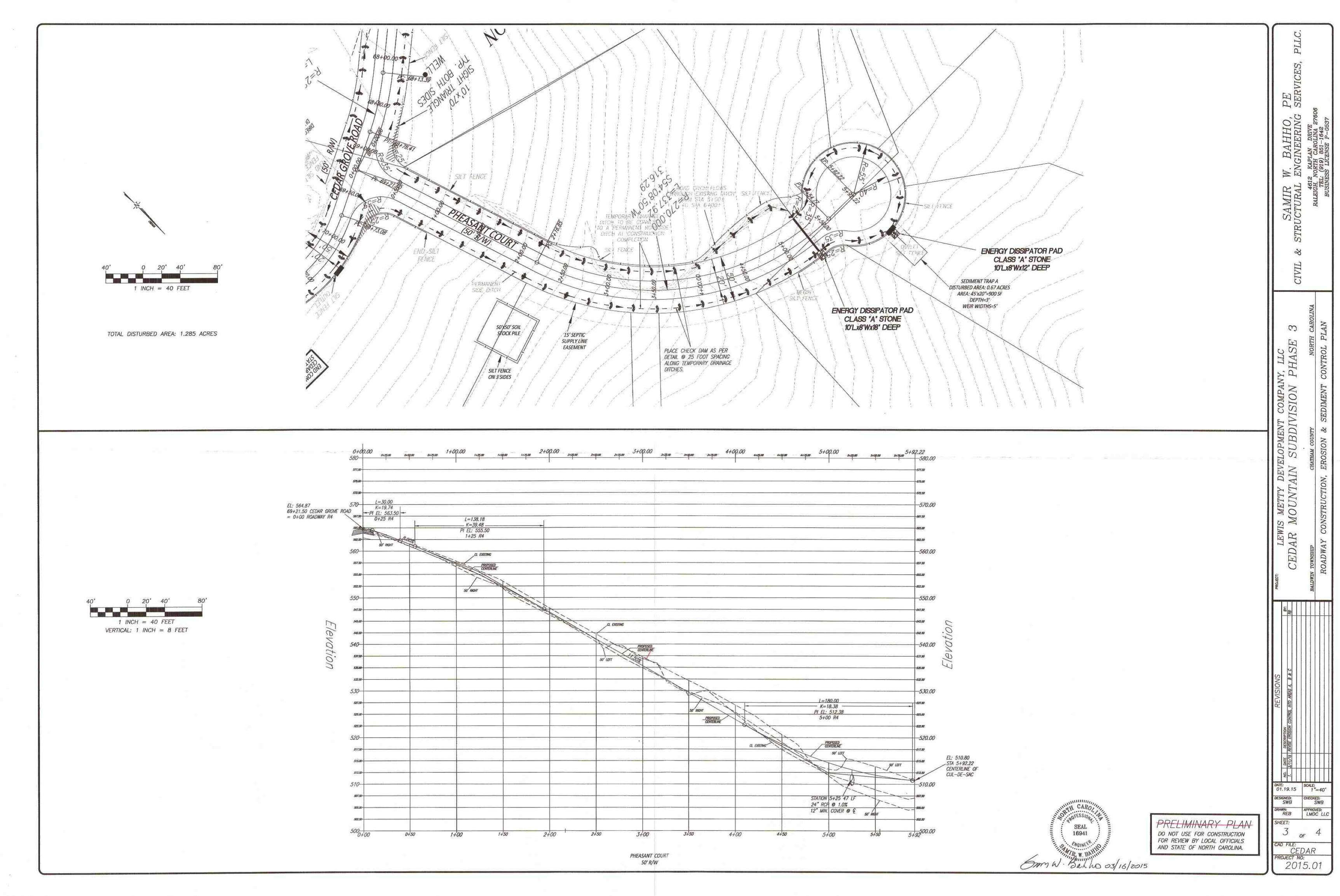
Fertilizer shall be 10-20-20 analysis. Upon written approval of the Engineer, a different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis.

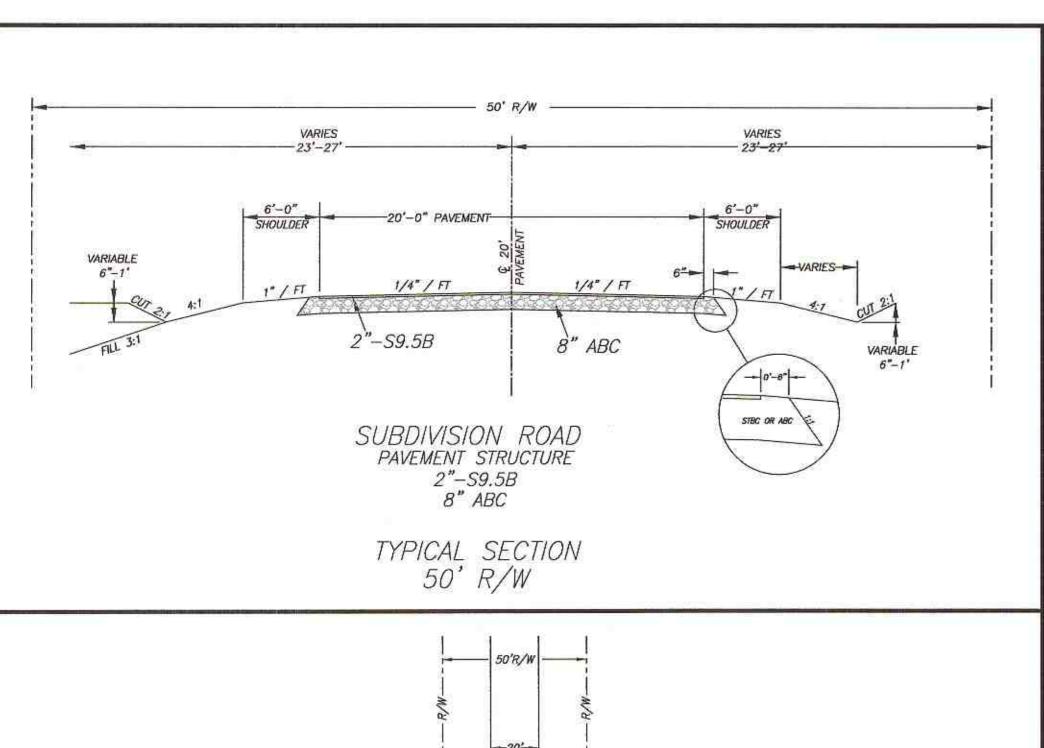


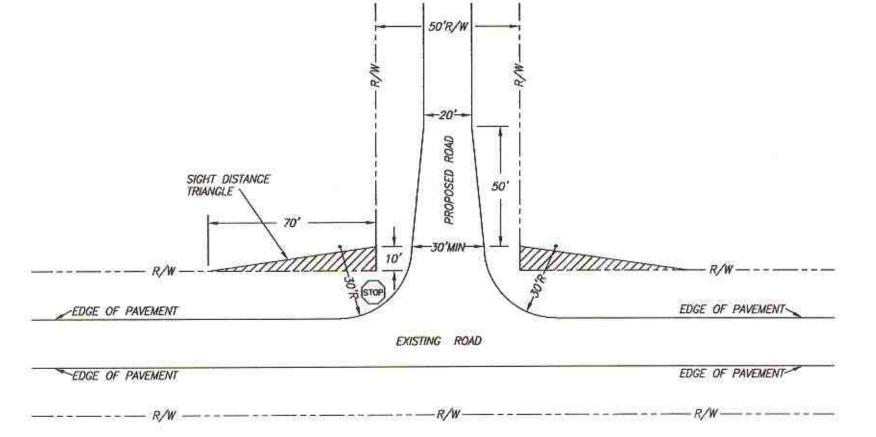


APPROVED: LMDC LLC

2015.01

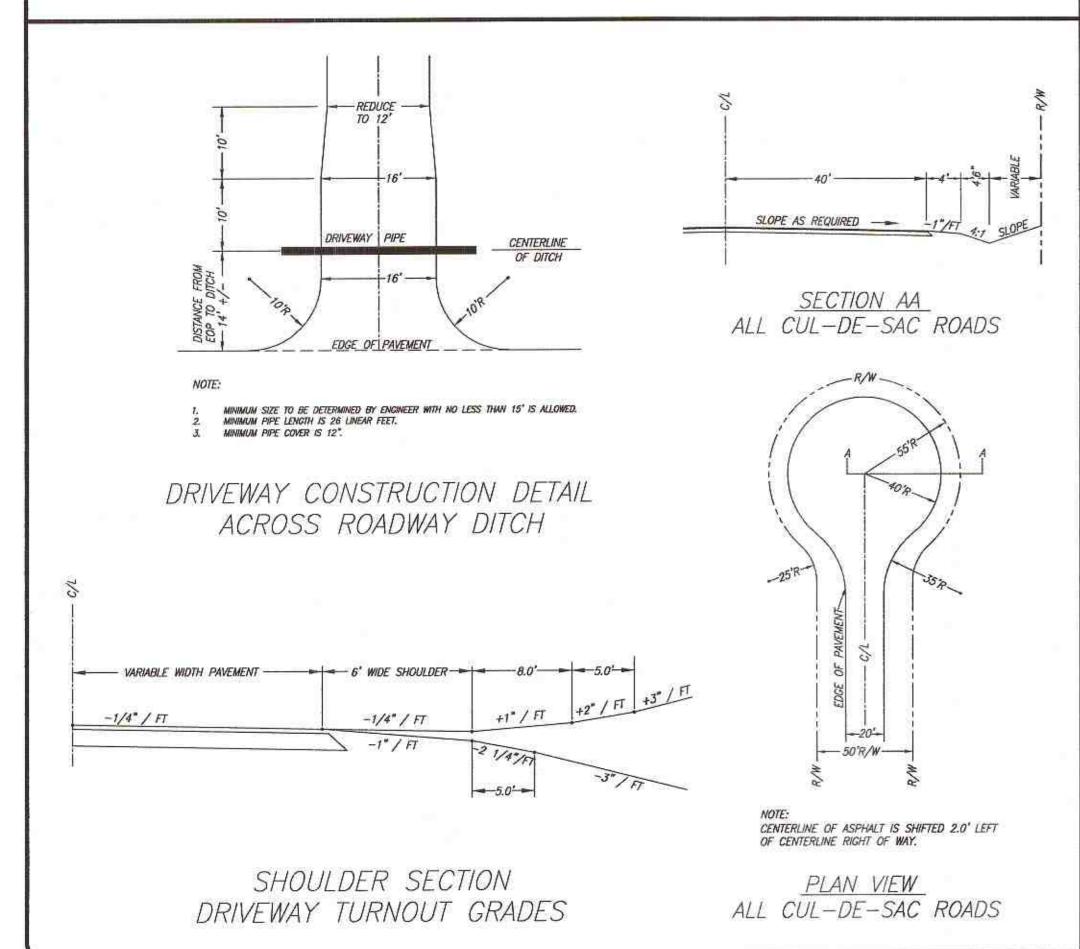


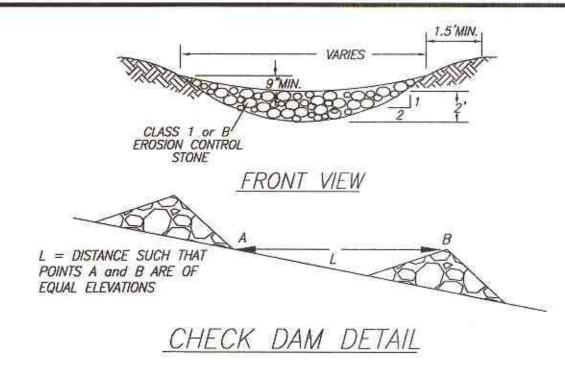




NEW LOCAL RESIDENTIAL ROAD OR COLLECTOR ROAD AND EXISTING STATE MAINTAINED ROAD WITHOUT CURB AND GUTTER

STOP CONDITION





1. PLACE STONE TO THE LINES AND DIMENSIONS SHOWN ON THE PLAN ON A FILTER FABRIC FOUNDATION.

2. KEEP THE CENTER STONE SECTION AT LEAST 9 INCHES BELOW NATURAL GROUND WHERE THE DAM ABUTS THE CHANNEL BANKS.

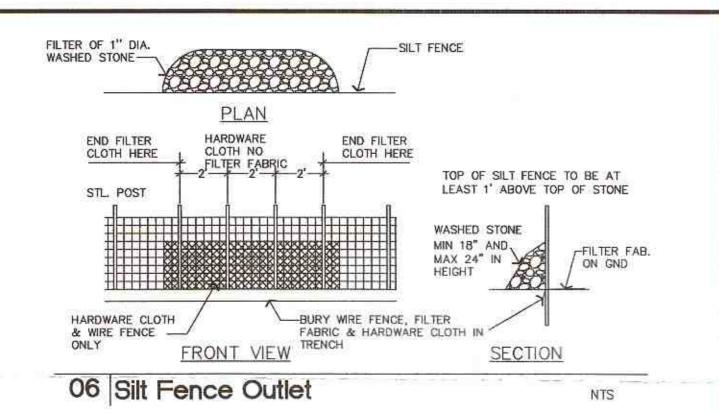
3. EXTEND STONE AT LEAST 1.5 FEET BEYOND THE DITCH BANK TO KEEP WATER FROM CUTTING AROUND THE ENDS OF THE CHECK DAM.

4. SET SPACING BETWEEN DAMS TO ASSURE THAT THE ELEVATION AT THE TOP OF THE LOWER DAM IS THE SAME AS THE ELEVATION OF THE TOE OF THE UPPER DAM.

5. PROTECT THE CHANNEL AFTER THE LOWEST CHECK DAM FROM HEAVY FLOW THAT COULD CAUSE EROSION.

6. MAKE SURE THAT THE CHANNEL REACH ABOVE THE MOST UPSTREAM DAM IS

7. ENSURE THAT OTHER AREAS OF THE CHANNEL, SUCH AS CULVERT ENTRANCES BELOW THE CHECKS DAMS, ARE NOT SUBJECT TO BLOCKAGE FROM DISPLACED



SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULUTURAL LIMESTONE. MULCH

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

** REPAIR AND RE-FERTILIZE DAMAGED AREAS IMMEDIATELY. TOP-DRESS WITH 50 LB/ACRE OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVER SEED WITH 50 LB/ACRE OF KOBE IN LATE FEBRUARY OF EARLY MARCH.

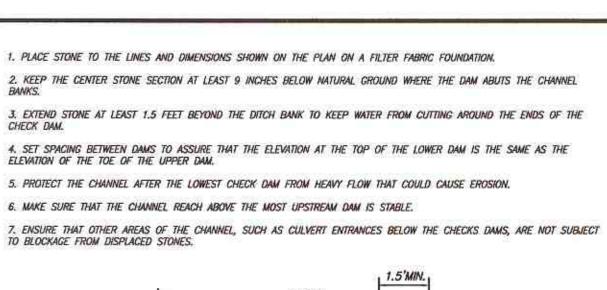
	ILIZATION TIMEFR	
SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
Permeter dikes, swales, ditones, slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Stopes stoeper than 3;1	7 days	If alopes are 10° or less in length and are not steeper than 211, 14 days are allowed.
Slopes 3.1 or flatter	14 days	7 days for slopes greater than 50° in length.
All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

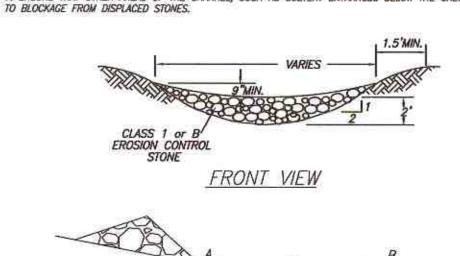
PERMANENT SEEDING SCHEDULE

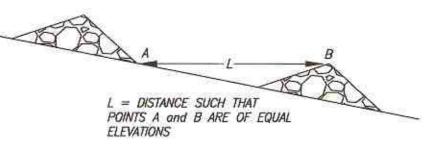
SHOULDERS, SIDE	DITCHES, SLOPES (MAX. 3:1)	
SEEDING DATES	SPECIES	RATE
AUGUST 15-NOV 1 NOV 1-MARCH 1 NOV 1-MARCH 1 MARCH 1-APRIL 15 APRIL 15-JUNE 30 JULY 1-AUGUST 15 JULY 1-AUGUST 15	TALL FESCUE TALL FESCUE AND ABRUZZIE RYE TALL FESCUE HULLED COMMON BERMUDAGRASS TALL FESCUE BROWN TOP BILLET	300 LB/ACRE 50 LB/ACRE 50 LB/ACRE 300 LB/ACRE 25 LB/ACRE 120 LB/ACRE 35 LB/ACRE
SHOULDERS, SIDE	DITCHES, SLOPES (3:1 TO 2:1	1)
SEEDING DATES	SPECIES	RATE
MARCH 1-JUNE 1 MARCH 1-APRIL 15 MARCH 1-JUNE 30	SERICEA LESPEDEZA AND SCARIFY AND ADD TALL FESCUE OR ADD WEEPING LOVE GRASS	50 LB/ACRE 120 LB/ACRE 10 LB/ACRE
JUNE 1-SEPT 1 JUNE 1-SEPT 1	TALL FESCUE AND BROWN TOP MILLET	120 LB/ACRE 35 LB/ACRE
SEPT 1-MARCH 1 SEPT 1-MARCH 1 NOV 1-MARCH 1	SERICEA LESPEDEZA AND TALL FESCUE ADD ABRUZZIE RYE	70 LB/ACRE 120 LB/ACRE 25 LB/ACRE

TEMPORARY SEEDING SCHEDULE

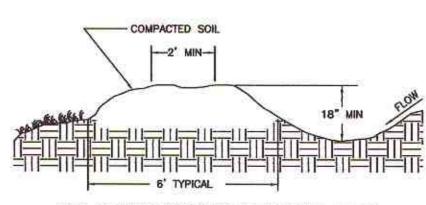
SEEDING DATES	SPECIES	RATE	FERTILZER
JAN 1-MAY 1	RYE * ANNUAL LESPEDEZA (KOBE) *	120 LB/ACRE 50 LB/ACRE	750 LB/ACRE 10-10-10
MAY 1-AUGUST 15	GERMAN MILLET *	40 LB/ACRE	750 LB/ACRE 10-10-10 750 LB/ACRE 10-10-10
AUGUST 15-DEC 31	RYE (GRAIN) ##	120 LB/ACRE	1,000 LB/ACRE 10-10-10







CHECK DAM DETAIL

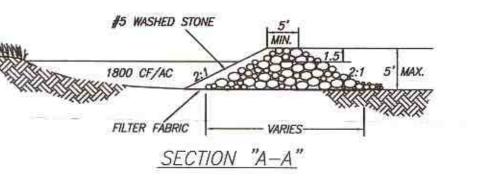


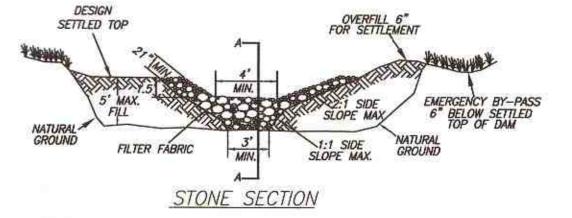
NOTE: MAXIMUM SIDESLOPE OF TDD SHALL BE 2:1 TEMPORARY DIVERSION DITCH

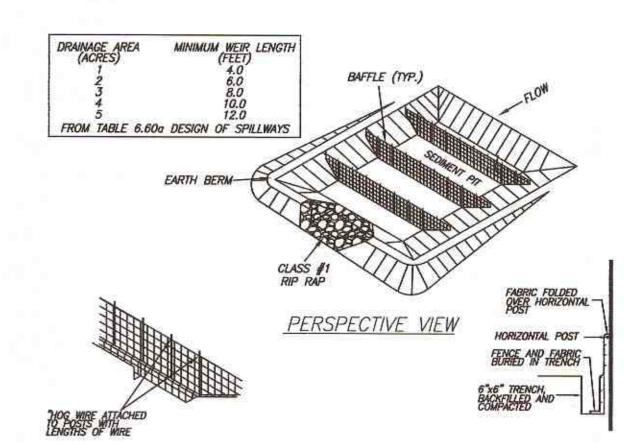
BUT SUFFICIENT TO KEEP SEDIMENT ON SITE 2"-3" STONE TO BE USED" (SURGE STONE OR RAILROAD) ROADWAY BALLAST) " PLAN 20' OR WIDTH OF PROPOSED CONSTRUCTION ACCESS ROUTE WHICHEVER EXISTING ROADWAY--FABRIC UNDER STONE CROSS SECTION -50'-0" MINIMUM LENGTH SEE NOTE B. PROFIL.

> MINIMUM WIDTH OF CONSTRUCTION ENTRANCE PAD SHALL BE 20 FT. SEE PLANS FOR LOCATION, ACTUAL WIDTH AND CONFIGURATION. STONE SHALL BE CRUSHED AGGREGATE BASE. C) THE ENTRANCE SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOW-ING OF SEDIMENT ONTO ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

TYPICAL CONSTRUCTION ENTRANCE PAD







BAFFLE INSTALLATION - STEP 1

TOP OF BAFFLE SHOULD BE 6" HIGHER THAN THE BOTTOM OF THE SPILLWAY

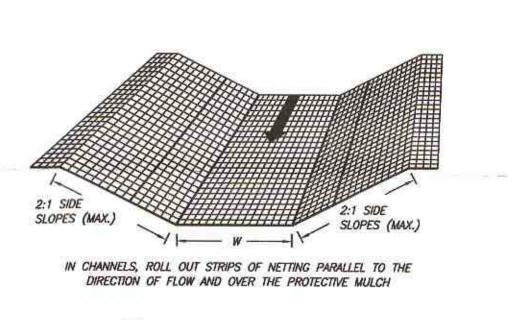
1. DRIVE STEEL FENCE POST AT LEAST 18" INTO SOLID GROUND 2. WOOD POSTS ARE NOT ACCEPTABLE J. USE STAPLES 1' APART TO ATTACH FABRIC TO "HOG WIRE"

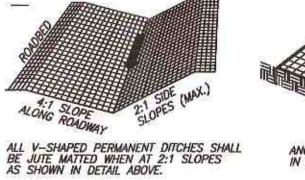
4. BAFFLE SPACED AS PER APPROVED PLAN.

SECTION AT OPENING

BAFFLE INSTALLATION - STEP 2

GRAVEL AND RIP-RAP SEDIMENT TRAP

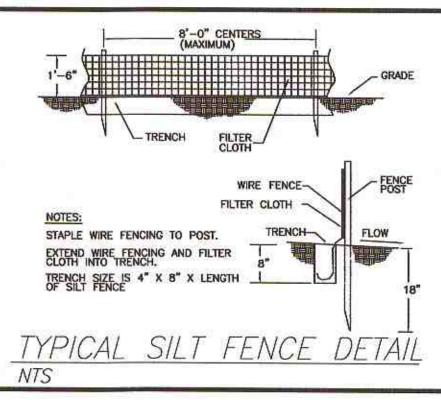


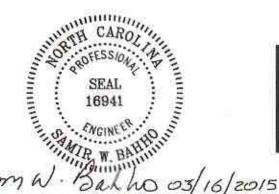






TYPICAL JUTE MESH LINED DITCH





DO NOT USE FOR CONSTRUCTION FOR REVIEW BY LOCAL OFFICIALS AND STATE OF NORTH CAROLINA.

 CED_{D}

BAHHO,

3

IY, LLC PHASE

APPROVED: LMDC LLC

OF

CEDAR PROJECT NO: 2015.01