



03	CONSTRUCTION DOCUMENTS 3RD SUBMITTAL	09/08/2020
02	CONSTRUCTION DOCUMENTS 2ND SUBMITTAL	08/14/2020
01	CONSTRUCTION DOCUMENTS 1ST SUBMITTAL	06/19/2020
REV	DESCRIPTION	DATE
	REVISIONS	

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SITE PERMITTING APPROVAL

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval Raleigh Water Review Officer

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- 1. CONTACT KARYN PAGEAU WITH WAKE COUNTY ENVIRONMENTAL SERVICES AT (919) 796-8769 BEFORE ANY LAND DISTURBING ACTIVITIES BEGIN.
- 2. INSPECT THE EROSION CONTROL MEASURES INSTALLED DURING CLEARING OPERATIONS FOR COMPLIANCE WITH THE APPROVED EROSION CONTROL PLAN. REPAIR ANY DEFICIENCIES IN THE MEASURES PRIOR TO BEGINNING GRADING
- 3. INSTALL NEW CONSTRUCTION ENTRANCE AT LOCATIONS DEPICTED FOR EACH LOT IN THE PLANS AND CLOSE THE FIRST CONSTRUCTION ENTRANCE.
- 4. INSTALL ALL OTHER ADDITIONAL PERIMETER EROSION CONTROL DEVICES INDICATED ON THE PLANS. INSTALL SILT FENCE AROUND WORK AREA PRIOR TO BEGINNING WIDENING WORK.
- 5. ERECT STRUCTURES AND OTHER SURFACE FEATURES SUCH AS DRIVEWAYS AND SIDEWALKS, WERE APPLICABLE. ESTABLISH FINAL GRADES. ONCE REACHED, AND FINISHED SLOPES ARE DRESSED, SEED AND MULCH ALL DISTURBED AREAS IN ACCORDANCE WITH THE FOLLOWING PROVISIONS FOR GROUND COVER, AND IN ACCORDANCE WITH THE SEEDING SPECIFICATIONS ON THIS SHEET.
- 6. PURSUANT TO G.S. 113A-57(2), THE ANGLE FOR GRADED SLOPES AND FILLS SHALL BE NO GREATER THAN THE ANGLE THAT CAN BE RETAINED BY VEGETATIVE COVER OR OTHER ADEQUATE EROSION-CONTROL DEVICES OR STRUCTURES.
- 7. PROVISIONS FOR PERMANENT GROUNDCOVER SUFFICIENT TO RESTRAIN EROSION ON A SITE WHERE LAND DISTURBING ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED MUST BE ACCOMPLISHED FOR ALL DISTURBED AREAS WITHIN 14 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY. 7.1. ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) SHALL BE PROVIDED TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS

PRACTICABLE BUT IN ANY EVENT WITHIN 7 CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.

8. OTHER SLOPE STABILIZATION REQUIREMENTS/EXEMPTIONS: 8.1. EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER

- SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE. 8.2. ALL SLOPES 50' IN LENGTH OR GREATER SHALL APPLY THE GROUND COVER WITHIN 7 DAYS EXCEPT WHEN THE SLOPE IS FLATTER THAN 4:1. SLOPES LESS THAN 50' SHALL APPLY GROUND COVER WITHIN 14 DAYS EXCEPT WHEN
- SLOPES ARE STEEPER THAN 3:1. WHEN THE 7-DAY REQUIREMENT APPLIES. 8.3. ANY SLOPED AREA FLATTER THAN 4:1 SHALL BE EXEMPT FROM THE 7-DAY GROUND COVER REQUIREMENT. 8.4. SLOPES 10' OR LESS IN LENGTH SHALL BE EXEMPT FROM THE 7-DAY GROUND COVER REQUIREMENT EXCEPT WHEN
- THE SLOPE IS STEEPER THAN 2:1. 8.5. ALL APPLICABLE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL STABLE PERMANENT VEGETATION HAS BEEN ESTABLISHED.

9. ONCE DENSE GROUND COVER HAS BEEN ESTABLISHED, TEMPORARY EROSION CONTROL DEVICES MAY BE REMOVED. BARE AREAS REMAINING IN DITCHES AFTER REMOVAL OF TEMPORARY MEASURES SHALL BE IMMEDIATELY SEEDED AND PROTECTED WITH APPROPRIATE ROLLED EROSION CONTROL PRODUCT. ALL OTHER REMAINING DISTURBED AREAS SHALL BE IMMEDIATELY SEEDED IN ACCORDANCE WITH THE SEEDING SPECIFICATION. ONCE LAYDOWN AREAS ARE NO LONGER OF USE, THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO PRE-CONSTRUCTION CONDITION AND SEED AND MULCH IN ACCORDANCE WITH THE SEEDING SPECIFICATIONS.

10. AS LOTS ARE STABILIZED, SILT FENCE SHALL BE INSTALLED BETWEEN LOTS TO PREVENT SEDIMENT LOSS FROM ACTIVELY DISTURBED LOTS ONTO THE LOWER PROPERTIES.

EROSION CONTROL MEASURES SELF INSPECTION

- 1. THE FINANCIALLY RESPONSIBLE PARTY, LANDOWNER, OR THEIR AGENT SHALL CONDUCT INSPECTIONS OF ALL EROSION CONTROL DEVICES AND PRACTICES IN ACCORDANCE WITH NCDENR DIVISION OF LAND RESOURCES REQUIREMENTS FOR SELF INSPECTION.
- 2. A SELF INSPECTION SHALL BE PERFORMED AFTER EACH PHASE OF THE APPROVED SEDIMENT AND EROSION CONTROL PLAN IS COMPLETE. THIS SHALL INCLUDE BUT SHALL NOT BE LIMITED TO THE FOLLOWING:
- 2.1. INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROL MEASURES.
- 2.2. CLEARING AND GRUBBING OF EXISTING GROUND COVER.
- COMPLETION OF ANY PHASE OF GRADING OF SLOPES OR FILLS. 2.3. INSTALLATION OF STORM DRAINAGE FACILITIES. 2.4.
- 2.5. COMPLETION OF CONSTRUCTION OR DEVELOPMENT 2.6. ESTABLISHMENT OF PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION.
- PERSON PERFORMING INSPECTION MAY USE THE STANDARD FORM PROVIDED BY NCDENR DIVISION OF LAND RESOURCES OR MAY MARK UP A SINGLE COPY OF THE APPROVED SEDIMENT AND EROSION CONTROL PLAN. ANY DOCUMENTATION OF THE SELF INSPECTIONS SHALL BE MAINTAINED ON-SITE AND MADE AVAILABLE TO THE EROSION CONTROL INSPECTOR
- 4. THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2006 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. BULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TOOK EFFECT OCTOBER 1, 2010. AS OF AUGUST 1, 2013 THE SELF-INSPECTION PROGRAM WAS COMBINED WITH THE WEEKLY SELF-MONITORING PROGRAM OF THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES. THE FOCUS OF THE SELF-INSPECTION REPORT IS THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES ACCORDING TO THE APPROVED PLAN. THE INSPECTIONS MUST BE CONDUCTED AFTER EACH PHASE OF THE PROJECT. AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED IN ACCORDANCE WITH NCGS 113A-54.1 AND 15A NCAC 4B.0131. A COMBINED SELF-INSPECTION / SELF-MONITORING FORM IS AVAILABLE AT THE FOLLOWING WEB ADDRESS: http://portal.ncdenr.org/web/lr/erosion . IF YOU HAVE ANY QUESTIONS OR CANNOT ACCESS THE FORM, PLEASE CONTACT THE LAND QUALITY SECTION AT (910) 433-3300

STANDARD SEDIMENT AND EROSION CONTROL PLAN FOR SINGLE FAMILY LOTS APPLICABLE CONDITIONS

- THIS STANDARD PLAN IS FOR LOTS WITH A DISTURBED AREA OF LESS THAN 1 ACRE AND A TOTAL SITE DISTURBANCE LESS THAN 5 ACRES. IF THE DISTURBED AREA IS GREATER THAN 1 ACRE (ON A SINGLE LOT OR MULTIPLE LOTS THAT ARE MASS GRADED) A SUSTOM EROSION CONTROL PLAN MUST BE PREPARED AND SUBMITTED ONLINE FOR THE 30-DAY REVIEW CYCLE AND PAY THE EROSION CONTROL PLAN REVIEW AND GRADING PERMIT FEES.
- THIS STANDARD PLAN IS FOR LOTS THAT ARE "FINISHED, PAD READY", OR AT FINAL GRADE. MASS GRADING WITH FULL STABILIZATION HAS ALREADY OCCURRED OR MASS GRADING WILL NOT OCCUR.
- THE STANDARD PLAN IS NOT FOR SITES LOCATED IN A HIGH QUALITY WATER (HQW) ZONE AND PROPERTIES THAT CONTAIN JURISDICTIONAL WETLANDS OR STREAMS WITHIN 100 FEET OF THE LOTS THIS PLAN SHALL NOT BE USED WITH LOTS THAT HAVE OFF-SITE SEPTIC EASEMENTS OR IF ANY PART OF THE SEPTIC SYSTEM
- OR REPAIR AREA IS LOCATED WITHIN 10 FT. OF A PROPERTY LINE. 5. ADDITIONALLY, THIS PLAN SHALL NOT BE USED FOR LOTS WITH:
- a. BASEMENTS GREATER THAN 5 FT. OF ELEVATION BETWEEN THE TOE OF SLOPE FOR EACH LOT AND/OR LOTS WITH GREATER THAN 10 FT. ELEVATION DIFFERENCE OF THE DISTURBED AREA FROM FRONT TO BACK CONCENTRATED FLOW/SWALES BETWEEN THEM
- STORMWATER CONTROL MEASURES (SCMS) FOR THE INDIVIDUAL LOT RECEIVING OFFSITE CONCENTRATED STORMWATER.

TYPICAL CONSTRUCTION SEQUENCE FOR SINGLE FAMILY LOTS SEDIMENT AND EROSION CONTROL

- WAKE COUNTY RESERVES THE RIGHT TO REQUIRE A SITE SPECIFIC EROSION CONTROL PLAN TO BE PREPARED AND SUBMITTED OR THE 30-DAY REVIEW CYCLE.
- 2. AS OF APRIL 1, 2019 APPLICANTS MUST APPLY ONLINE FOR NCG-01 PERMIT COVERAGE FROM NCDEQ. THIS REQUIREMENT IS IN ADDITION TO THE WAKE COUNTY LAND DISTURBANCE PERMI OBTAIN ALL NECESSARY PERMITS AND CERTIFICATES. DOWNLOAD STANDARD SEDIMENT AND EROSION CONTROL PLAN FOR
- SINGLE FAMILY LOTS FROM <u>WWW.WAKEGOV.COM</u>. INSTALL TREE PROTECTION FENCE IF REQUIRED. INSTALL GRAVEL CONSTRUCTION ENTRANCE, SILT FENCE, SILT FENCE OUTLETS
- AND ADDITIONAL MEASURES AS NEEDED. CLEAR ONLY AS NECESSARY TO INSTALL DEVICES. PROVIDE GROUNDCOVER FOR ALL DISTURBED AREAS 5. CALL ENVIRONMENTAL CONSULTANT FOR AN ONSITE INSPECTION BY THE ENVIRONMENTAL CONSULTANT TO OBTAIN A
- CERTIFICATE OF COMPLIANCE. BEGIN CONSTRUCTION, BUILDING, CLEARING AND GRUBBING. MAINTAIN EROSION CONTROL DEVICES AS NEEDED. STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISH GRADE WITH VEGETATION, PAVING, DITCH LININGS, ETC. PROVIDE GROUNDCOVER FOR DENUDED AREAS PER NPDES GROUND STABILIZATION TIMEFRAMES

WHEN CONSTRUCTION IS COMPLETE, AND ALL AREAS ARE PERMANENTLY STABILIZED AND EROSION CONTROL MEASURES ARE REMOVED, CALL ENVIRONMENTAL CONSULTANT FOR AN INSPECTION. 9. OBTAIN A CERTIFICATE OF COMPLETION. Soodbod Droparation:

Se	
1.	Chisel compacted areas and spread topsoil three inches deep over
	adverse soil conditions, if available.
2	Rin the entire area to six inches deen

- Rip the entire area to six inches deep Remove all loose rock, roots and other obstructions, leaving surface reasonable smooth and uniform.
- Apply agricultural lime, fertilizer and superphosphate uniformly and mix with soil (see mixture below).
- Continue tillage until a well-pulverized, firm, reasonably uniform sedbed is prepared four to six inches deep.
- Seed on a freshly prepared seedbed and cover seed lightly with seeding equipment or cultipack after seeding. Mulch immediately after seeding and anchor mulch.
- Inspect all seeded areas and make necessary repairs or reseedings within the planting season, if possible. If stand should be more than 60% damaged, re- establish following the original lime, fertilizer and seeding

Mixture: Agricultural Limestone - 2 tons/acre (3 tons/acre in clay soils) Fertilizer - 1,000 lbs/acre - 10-10-10 Superphosphate - 500 lbs/acre - 20% analysis

low. When ad rsonnel to be i nich it is safe to eater than 1.0 rformed upon ere delayed sho	verse weather or n jeopardy, the ir o perform the insp inch occurs outsid the commencem all be noted in the	site cond spection pection. de of nor ent of th e Inspect
nspect	Frequency (during normal business hours)	Inspection
1) Rain gauge naintained in good working order	Daily	Daily rain If no daily holiday p available, attended needed). "zero." approved
2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	 Identif Date a Date a Name Indicat proper Descrip Descrip
3) Stormwater discharge butfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	 Identif Date a Date a Name Eviden sheen, Indicat Description
4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	If visible s of the foll 1. Action the site 2. Descrij 3. An exp release
5) Streams or wetlands onsite or offsite where accessible)	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	If the stre stream ha activity, th 1. Descrij 2. Record Region
6) Ground	After each phase	1. The ph

SECTION A: SELF-INSPECTION

	3001143
NOTE: The rain inspection re	sets the requ

of grading

stabilization

Sediment basins and traps that receive r	unc
for maintenance or close out unless this	is iı
Non-surface withdrawals from sediment	ba

(a)	The E&SC plan authority has been pro
	shall not commence until the E&SC pl

- properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH EQUIPMENT AND VEHICLE MAINTENANCE ONSITE CONCRETE WASHOUT THE NCG01 CONSTRUCTION GENERAL PERMI Maintain vehicles and equipment to prevent discharge of fluids plementing the details and specifications on this plan sheet will result in the construction Provide drip pans under any stored equipment. activity being considered compliant with the Ground Stabilization and Materials Handling Identify leaks and repair as soon as feasible, or remove leaking equipment from the sections of the NCG01 Construction General Permit (Sections E and F, respectively). The ittee shall comply with the Erosion and Sediment Control plan approved by the Collect all spent fluids, store in separate containers and properly dispose as lelegated authority having jurisdiction. All details and specifications shown on this sheet hazardous waste (recycle when possible). may not apply depending on site conditions and the delegated authority having jurisdiction. Remove leaking vehicles and construction equipment from service until the problem CONCRETE CLEARLY MARKED SIGNAGE NOTING DEVICE (18"X24" MIN ACTUAL LOCATION DETERMINED IN FIELD has been corrected. SECTION E: GROUND STABILIZATION 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products Stabilization Timeframes 3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE. to a recycling or disposal center that handles these materials. LCONORETE WASHOUT STRUCTU IEEDS TO BE CLEARY MARKED IGNAGE NOTING DEVICE. ABOVE GRADE WASHOUT STRUCTURE BELOW GRADE WASHOUT STRUCTURE **Timeframe variations** LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE Never bury or burn waste. Place litter and debris in approved waste containers Provide a sufficient number and size of waste containers (e.g dumpster, trash CONCRETE WASHOUTS None receptacle) on site to contain construction and domestic wastes. Do not discharge concrete or cement slurry from the site. Locate waste containers at least 50 feet away from storm drain inlets and surface Dispose of, or recycle settled, hardened concrete residue in accordance with local waters unless no other alternatives are reasonably available. and state solid waste regulations and at an approved facility. None Locate waste containers on areas that do not receive substantial amounts of runoff Manage washout from mortar mixers in accordance with the above item and in from upland areas and does not drain directly to a storm drain, stream or wetland. addition place the mixer and associated materials on impervious barrier and within slopes are 10' or less in length and are Cover waste containers at the end of each workday and before storm events or lot perimeter silt fence. not steeper than 2:1, 14 days are provide secondary containment. Repair or replace damaged waste containers. Install temporary concrete washouts per local requirements, where applicable. If an Anchor all lightweight items in waste containers during times of high winds. alternate method or product is to be used, contact your approval authority for 7 days for slopes greater than 50' in Empty waste containers as needed to prevent overflow. Clean up immediately if review and approval. If local standard details are not available, use one of the two ength and with slopes steeper than 4:1 containers overflow. types of temporary concrete washouts provided on this detail -7 days for perimeter dikes, swales, Do not use concrete washouts for dewatering or storing defective curb or sidewalk Dispose waste off-site at an approved disposal facility. ditches, perimeter slopes and HQW sections. Stormwater accumulated within the washout may not be pumped into or 9. On business days, clean up and dispose of waste in designated waste containers. discharged to the storm drain system or receiving surface waters. Liquid waste must -10 days for Falls Lake Watershed be pumped out and removed from project. PAINT AND OTHER LIQUID WAST days for perimeter dikes, swales, Locate washouts at least 50 feet from storm drain inlets and surface waters unless it litches, perimeter slopes and HQW Zone Do not dump paint and other liquid waste into storm drains, streams or wetlands. can be shown that no other alternatives are reasonably available. At a minimum. 10 days for Falls Lake Watershed unless Locate paint washouts at least 50 feet away from storm drain inlets and surface flatter than 4:1 install protection of storm drain inlet(s) closest to the washout which could receive there is zero slope waters unless no other alternatives are reasonably available. spills or overflow. Contain liquid wastes in a controlled area. construction activities, any areas with temporary Locate washouts in an easily accessible area, on level ground and install a stone Containment must be labeled, sized and placed appropriately for the needs of site. o permanent ground stabilization as soon as entrance pad in front of the washout. Additional controls may be required by the Prevent the discharge of soaps, solvents, detergents and other liquid wastes from calendar days after the last land disturbing approving authority.) shall be maintained in a manner to render the construction sites. Install at least one sign directing concrete trucks to the washout within the project n until permanent ground stabilization is achieved. limits. Post signage on the washout itself to identify this location. PORTABLE TOILETS Remove leavings from the washout when at approximately 75% capacity to limit Install portable toilets on level ground, at least 50 feet away from storm drains, overflow events. Replace the tarp, sand bags or other temporary structural ain will not dislodge the soil. Use one of the streams or wetlands unless there is no alternative reasonably available. If 50 foot components when no longer functional. When utilizing alternative or proprietary offset is not attainable, provide relocation of portable toilet behind silt fence or place products, follow manufacturer's instructions. Permanent Stabilization on a gravel pad and surround with sand bags. • Permanent grass seed covered with straw or Provide staking or anchoring of portable toilets during periods of high winds or in high other mulches and tackifiers foot traffic areas. caused by removal of washout Geotextile fabrics such as permanent soi Monitor portable toilets for leaking and properly dispose of any leaked material. reinforcement matting Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace Hydroseeding with properly operating unit Shrubs or other permanent plantings covered HERBICIDES, PESTICIDES AND RODENTICIDES with mulch EARTHEN STOCKPILE MANAGEMEN Uniform and evenly distributed ground cover Show stockpile locations on plans. Locate earthen-material stockpile areas at least sufficient to restrain erosion Store herbicides, pesticides and rodenticides in their original containers with the Structural methods such as concrete, asphalt or 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls retaining walls and surface waters unless it can be shown no other alternatives are reasonably accidental poisoning • Rolled erosion control products with grass seed available Do not store herbicides, pesticides and rodenticides in areas where flooding is Protect stockpile with silt fence installed along toe of slope with a minimum offset of ULANT five feet from the toe of stockpile or surface water. If a spill occurs, clean area immediately. Select flocculants that are appropriate for the soils being exposed during Provide stable stone access point when feasible. 4. Do not stockpile these materials onsite. construction, selecting from the NC DWR List of Approved PAMS/Flocculants. Stabilize stockpile within the timeframes provided on this sheet and in accordance Apply flocculants at or before the inlets to Erosion and Sediment Control Measures. with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated Apply flocculants at the concentrations specified in the NC DWR List of Approved IAZARDOUS AND TOXIC WASTE erosion on disturbed soils for temporary or permanent control needs. *PAMS/Flocculants* and in accordance with the manufacturer's instructions. Create designated hazardous waste collection areas on-site. Provide ponding area for containment of treated Stormwater before discharging Place hazardous waste containers under cover or in secondary containment Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

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	Re	equired Ground
Si	te Area Description	Stabilize withi many calenda days after cea land disturbar
(a)	Perimeter dikes, swales, ditches, and perimeter slopes	7
(b)	High Quality Water (HQW) Zones	7
(c)	Slopes steeper than 3:1	7
(d)	Slopes 3:1 to 4:1	14
(e)	Areas with slopes	14

Note: After the permanent	cessation of c
ground stabilization shall b	e converted to
practicable but in no case l	onger than 90
activity. Temporary groun	d stabilization
surface stable against acce	lerated erosio

6	GROUND STABILIZATION SPECIFICATION				
S t	Stabilize the ground sufficiently so that rai techniques in the table below:				
	Temporary Stabilization				
	 Temporary grass seed covered with straw or other mulches and tackifiers 				
	Hydroseeding				

•	Rolled erosion control products with or
	without temporary grass seed
•	Appropriately applied straw or other mulcl

 Plastic sheeting 		

P	OL	¥,	40	R\	4	٩M	IID	ES	(P/	١M	S)	AND	FLO	C
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DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

off from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down nfeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). asins shall be allowed only when all of the following criteria have been met:

ovided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal plan authority has approved these items,

(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit, (c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include

(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above, (e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

(a) Visible sediment deposition in a stream or wetland. (b) Oil spills if: They are 25 gallons or more, • They are less than 25 gallons but cannot be cleaned up within 24 hours, • They cause sheen on surface waters (regardless of volume), or • They are within 100 feet of surface waters (regardless of volume). c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85. (d) Anticipated bypasses and unanticipated bypasses (e) Noncompliance with the conditions of this permit that may endanger health or the environment. 2. Reporting Timeframes and Other Requirements After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368 Reporting Timeframes (After Discovery) and Other Requirements Occurrence (a) Visible sedimen Within 24 hours, an oral or electronic notification deposition in a • Within 7 calendar days, a report that contains a description of the stream or wetland sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis If the stream is named on the NC 303(d) list as impaired for sedimentrelated causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions. Within 24 hours, an oral or electronic notification. The notification (b) Oil spills and release of shall include information about the date, time, nature, volume and hazardous location of the spill or release. substances per 1(b)-(c) above (c) Anticipated • A report at least ten days before the date of the bypass, if possible. bypasses [40 CFF The report shall include an evaluation of the anticipated quality and 122.41(m)(3)] effect of the bypass (d) Unanticipated Within 24 hours, an oral or electronic notification bypasses [40 CFR • Within 7 calendar days, a report that includes an evaluation of the 122.41(m)(3)] quality and effect of the bypass (e) Noncompliance Within 24 hours, an oral or electronic notification with the conditions | • Within 7 calendar days, a report that contains a description of the of this permit that noncompliance, and its causes; the period of noncompliance, may endanger including exact dates and times, and if the noncompliance has not health or the been corrected, the anticipated time noncompliance is expected to environment[40 continue; and steps taken or planned to reduce, eliminate, and CFR 122.41(I)(7)] prevent reoccurrence of the noncompliance. [40 CFR 122.41(I)(6).

Division staff may waive the requirement for a written report on a

EFFECTIVE: 04/01

case-by-case basis.

PART III

SELF-INSPECTION, RECORDKEEPING AND REPORTING

). At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance

- Store and apply herbicides, pesticides and rodenticides in accordance with label
- label, which lists directions for use, ingredients and first aid steps in case of
- possible or where they may spill or leak into wells, stormwater drains, ground water
- 3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01

	PERMANENT SEEDING S	CHEDULE		and the second sec
	FOR SHOULDERS, SIDE DITHCES,	SLOPES (3:1 MAX)		CARO
	Date Time	Distant Data		SEAL
	Aug 15- Nov 1 Tall Fescue	300 lbs/acre		\$/10/20 8
	Nov 1–Mar 1 Tall Fescue & Abruzzi Rye	300 lbs/acre		MASS. SPELOWIN
	Mar 1–Apr Tall Fescue 15	300 lbs/acre		
	Apr 15– Hulled Common Jun 30 Bermudagrass	25 lbs/acre	R.	an) rs
	Jul Tall Fescue AND Browntop 1–Aug Millet or Sorghum-Sudan 15 Hybrids***	125 lbs/acre (Tall Fescue); 35 lbs/acre (Browntop Millet); 30 lbs/acre (Sorghum-Sudan Hybrids)		np:
				Cor Plar Ilina 27 .1081
	Date Type	Planting Pate		24 5 1 Caro 19.577 2378
	Mar 1 Jun 1 Sericea Lespedeza (scarified) and use the following	50 lbs/acre (Sericea Lespedeza);		rve vors North ax: 91
	Mar 1 Apr 15 Add Tall Fescue	120 lbs/acre		Su rve , Apex 080 F
	Mar 1–Jun Or add Weeping Love grass	10 lbs/acre		ivil Su Avenue SELS I
	30 Mar 1 Jun Or add Hulled Common	25 lbs/care	M.	rs → nc: 915 NCI
	30 Bermudagrass Tall Fescue AND Browntop	120 lbs/acre (Tall Fescue); 35	2	Jar Jee Phor
	Jun 1-Sept 1 Mullet or Sorghum-Sudan Hybrids***	lbs/acre (Browntop Mullet); 30 lbs/acre (Sorghum-Sudan Hybrids)	<i>,</i>	ten ngir ²⁵
	Sept 1–Mar 1 Sericea Lespedeza (unhulled – unscarified) AND Tall Fescue	70 lbs/acre (Sericea Lespedeza); 120 lbs/acre (Tall Fescue)		Bat
	Nov 1–Mar 1 AND Abruzzi Rye	25 lbs/acre		
	*** TEMPORARY : Reseed according to o Do not allow temporary cover to grow mor fescue may be shaded out.	ptimum season for desired permanent ve re than 12" in height before mowing; othe	getation. rwise,	
	MIXTURE:			
	Agricultural Limestone 2 tons/act	re (3 tons/acre in clay soils)		
	Fertilizer 1,000 lbs/ Superphosphate 500 lbs/ac	/acre – 10-10-10 cre – 20% analysis		
	Mulch 2 tons/act Anchor Asphalt e	re – small grain straw mulsion at 400 gals/acre		
				SZ
				ы SIC SIC
	REFERTILIZE THE FOLLOWING APRIL OFTEN AS NEEDED.	WITH 50 LB/ACRE NITROGEN. REPEA	T AS GROWTH REQUIRES. MAY BE MOWED AS	
9	NOTE: SEE NCDOT'S LATEST STANDARDS	FOR STABILIZATION FOR MORE INFOR	MATION.	SUS SUS SUS SUS SUS
	PERMANENT SEEDBED F	PREPARATION		
	 CHISEL COMPACTED AREAS AND SPRI AVAILABLE. RIP THE ENTIRE AREA TO SIX INCHES 	EAD TOPSOIL THREE INCHES DEEP OV DEEP.	ER ADVERSE SOIL CONDITIONS, IF	DLE DTI(ATI(0 W.
	 REMOVE ALL LOOSE ROCK, ROOTS AN UNIFORM. APPLY AGRICULTURAL LIME, FERTILIZ 	ID OTHER OBSTRUCTIONS, LEAVING SU	JRFACE REASONABLY SMOOTH AND Y AND MIX WITH SOIL (SEE MIXTURE	
	BELOW). 5. CONTINUE TILLAGE UNTIL A WELL-PUL SIX INCHES DEEP.	VERIZED, FIRM, REASONABLY UNIFOR	M SEEDBED IS PREPARED FOUR TO	AH SEF SEF
	 SEED ON A FRESHLY PREPARED SEED AFTER SEEDING. MULCH IMMEDIATELY AFTER SEEDING 	DBED AND COVER SEED LIGHTLY WITH	SEEDING EQUIPMENT OR CULTIPACK	SSSC
	 INSPECT ALL SEEDED AREAS AND MAR POSSIBLE. IF STAND SHOULD BE MORI FERTILIZER AND SEEDING RATES. 	KE NECESSARY REPAIRS OR RESEEDIN E THAN 60% DAMAGED, RE-ESTABLISH	NGS WITHIN THE PLANTING SEASON, IF FOLLOWING THE ORIGINAL LIME,	88 88
]]	9. CONSULT S&EC ENVIRONMENTAL ENG PERMANENT COVER IS ESTABLISHED.	GINEERS ON MAINTENANCE TREATMEN	T AND FERTILIZATION AFTER	
	Temporary seeding recommendations for la	te Winter/Early Spring		
	Species Rate (Lb/ac Rye Grain (green) 120	cre)		
	Annual lespedeza (Kobe in Piedmont and Costal Plain) 50			OL
	Omit annual lespedeza when duration of ter Seeding dates:	mporary cover is not to extend beyond June	2.	Å.
	Soil Amendments:	ay 1	and 1 000 lb/acre 10-10-10 fertilizer	Γs
	Mulch: Apply 4,000/lb/acre straw. Anchor straw by	asphalt tack, netting or a mulch anchoring t	ool. A disk with blades set nearly straight can be	
	used as a mulching anchoring tool. Maintenance:			N N N
	Re-fertilize if growth is not fully adequate. R Temporary seeding recommendations for S	eseed, re-fertilize and mulch immediately fo ummer	ollowing erosion and other damage.	0 U U
	Seeding Mixture Species Rate (Lb/ac	cre)		SC
	German millet 40 Seeding dates: Piedmont May 1-Aug 15			RC
	Coastal Plain- April 15- Aug 31			ш
J	Soil Amendments: Follow recommendations of soil tests or app	bly 2 tons/acre ground agricultural limestone	e and 1,000 lb/acre 10-10-10 fertilizer.	
]	Mulch: Apply 4,000/lb/acre straw. Anchor straw by used as a mulching anchoring tool.	asphalt tack, netting or a mulch anchoring t	ool. A disk with blades set nearly straight can be	Project Engineer: TSS
	Maintenance: Re-fertilize if growth is not fully adequate. Re	eseed, re-fertilize and mulch immediately for	blowing erosion and other damage.	Designed By: TEP
	Temporary seeding recommendations for Fa	all		Drawn By: TEP
	SpeciesRate (Lb/acRye Grain120	cre)		Scale:
-	Seeding dates: Piedmont- Aug 15 - Dec 31 Coastal Plain- Aug 31 - Dec 31			
	Soil Amendments: Follow recommendations of soil tests or app	ly 2 tons/acre ground agricultural limestone	and 1,000 lb/acre 10-10-10 fertilizer.	Date: 09/08/2020
J	Mulch: Apply 4,000/lb/acre straw. Anchor straw by	asphalt tack, netting or a mulch anchoring t	ool. A disk with blades set nearly straight can be	Project Number: P170347
9	Maintenance: Repair and maintain damaged areas immed	liately. Topdress with 50 lb/acre of nitrogen	in March. If it is necessary to extend temporary	SHEET
	cover beyond June 15, overseed with 50 lb/	acre Kobe (Piedmont and Costal Plain) in la	ate February or early March.	C922

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03	CONSTRUCTION DOCUMENTS 3RD SUBMITTAL	09/08/2020
02	CONSTRUCTION DOCUMENTS 2ND SUBMITTAL	08/14/2020
01	CONSTRUCTION DOCUMENTS 1ST SUBMITTAL	06/19/2020
REV	DESCRIPTION	DATE
	REVISIONS	

03	CONSTRUCTION DOCUMENTS 3RD SUBMITTAL	09/08/2020
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REV	DESCRIPTION	DATE
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03	CONSTRUCTION DOCUMENTS 3RD SUBMITTAL	09/08/2020
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03	CONSTRUCTION DOCUMENTS 3RD SUBMITTAL	09/08/2020		
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rojec	L NO		
Site Loc Culvert	ation (City/Town Id.)	
Estima	tion of Stone S	Size an	d Dim
Step 1)	Compute flow velo	city V _o a	t culver
Step 2)	For pipe culverts D For pipe arch, arch	o is dian	neter. culvert
	$D_0 = A_0$ where A. = For multiple culves	rts, use I	$D_0 = 1.25$
/elocitr/	(ft/e)		
7elocity Onening	(IVS)		
	Lypo		
Sinale o	r multiple openings	?	
Single o Dutlet pi	r multiple openings pe diameter, D _o (fl	s?)	
Single of Outlet pi NOTE 1 Cross-se	r multiple openings pe diameter, D _o (fi : If opening type is an ctional area of flow at	;) ything oth outlet).	ner than '
Single of Outlet pi NOTE 1 Cross-see NOTE 2 Step 3)	r multiple openings pe diameter, D _o (fi : If opening type is an ctional area of flow at : If multiple openings, For apron grades	s? ything oth outlet). $D_0=1.25$ of 10% of	ner than ' x D _o of si
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Single of Dutlet pi NOTE 1 Cross-se NOTE 2 Step 3) Zone Will apro NOTE: F letermine Apron le	r multiple openings pe diameter, D _o (fi : If opening type is an ctional area of flow at : If multiple openings, For apron grades of For next higher zo on have >/=10% gr for apron slopes equa apron length. ngth (ft)	(a) (b) (c) (c) (c) (c) (c) (c) (c) (c	her than ' $x D_0$ of single fraction of single fraction of the second s
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Single of Dutlet pi NOTE 1 Cross-see NOTE 2 Step 3) Zone Will apro NOTE: F letermine Apron le Determ Revetm Step 1.	r multiple openings pe diameter, D _o (fi : If opening type is an ctional area of flow at : If multiple openings, For apron grades of For next higher zo on have >/=10% gr or apron length. ngth (ft) hination of Stom hents Use figure 8.06. Fps = 20" or 550 lb	s? ything ott outlet). D ₀ =1.25 of 10% o me. (Zon ade? I to or green to determine.	ner than ' x D _o of si ar, steepen nes 1 thr eater than eater than eater than mine ma
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Single of Dutlet pi NOTE 1 Cross-see NOTE 2 Step 3) Zone Will apro NOTE: F letermine Apron le Determ Revetn Step 1. Max. sto Step 2 NOTE	r multiple openings pe diameter, D _o (fi : If opening type is an ctional area of flow at : If multiple openings, For apron grades of For next higher zo on have >/=10% gr or apron slopes equa apron length. ngth (ft) <u>hination of Stoo</u> nents Use figure 8.06.[p] Fps = 20" or 550 lt ne size (in.) 2. Use figure 8.06.[(for 12 FPS it is and minimum ra E: In determining c	$f_{12}^{(2)}$ (c)	ner than ' x D _o of si r, steeper nes 1 thr eater than eater than eater than eater than the mine ma termine :
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03	CONSTRUCTION DOCUMENTS 3RD SUBMITTAL	09/08/2020
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(Source: "Ban		r Metho	od Fo <u>r Use i</u>	n Defined Chann	els
	k and channel lining p	rocedures"	New York Depa	rtment of	
Transportation,	, Division of Design a	nd Constru	ction, 1971.)		
Guide to Co	lor Key:	User	Input Data	Calculated Value	Reference Data
Designed By	y:	TEP		Date:	01.08.20
Checked By	:	TSS		Date:	
Project Nam	le:	CHAN	DI FR'S RIDGE		
Project No.:		01 # 4	170347	7	
ite Location	(City/Town)		Rolesville	1	
ulvert Id.			C2		
ctimation of	of Stone Size and	Dimon	sions For Cul	wort Anrong	
sumation c	or stone size and	Dimen	SIONS FOR CUI	vent Aprons	
Step 1) Comp	ute flow velocity V_0 at	culvert or	paved channel out	let.	
Step 2) For pip	pe culverts D _o is diame	eter.	d naved channel	nutlets	
$D_0 = A$	where A_{\circ} = cross-sec	ctional area	of flow at outlet.	Junets,	
Form	ultiple culverts, use D	= 1.25 x I	of single culver	t.	
elocity (ft/s)			14.95		
Opening type		F	Pipe Culvert		
single or multip	ble openings?		Multiple		
Dutlet pipe diar	meter, D _o (ft)		5		
Step 3) For a For ne	pron grades of 10% or ext higher zone. (Zon	steeper, us es 1 throug	e recommendation h 6).	ns	
Step 3) For a For no	pron grades of 10% or, ext hígher zone. (Zon	steeper, us es 1 throug	e recommendation h 6).	ns	_
Step 3) For an For no Cone	pron grades of 10% or, ext higher zone. (Zon >>=10% grade?	steeper, us es 1 throug	e recommendation h 6). 5 No	ns Figure 8.06c	
Step 3) For a For no Cone Vill apron have NOTE: For apror	pron grades of 10% or, ext higher zone. (Zon e >/=10% grade? n slopes equal to or grea	steeper, us es 1 throug	e recommendation h 6). 5 No %, use next higher 2	ns Figure 8.06c Cone in Figure 8.06d to	
Step 3) For an For no Cone Vill apron have NOTE: For apror etermine apron ho	pron grades of 10% or, ext higher zone. (Zon e >/=10% grade? n slopes equal to or grea ength.	steeper, us es 1 throug ter than 109	e recommendation h 6). 5 No 6, use next higher 2	Figure 8.06c Ione in Figure 8.06d to	
Step 3) For an For no Cone Vill apron have NOTE: For apror elemine apron le Apron length (fi	pron grades of 10% or, ext higher zone. (Zone e >/=10% grade? n slopes equal to or grea ength. t)	steeper, us es 1 throug ter than 109	e recommendation h 6). 5 No 6, use next higher 2 25	ns Figure 8.06c Cone in Figure 8.06d to Figure 8.06d	
Step 3) For an For no Cone Vill apron have NOTE: For apror tetermine apron la portermination Coetermination Coetermination	pron grades of 10% or, ext higher zone. (Zon > >/=10% grade? n slopes equal to or great ength. t) on of Stone Sizes	steeper, us es 1 throug ter than 109 s For Du	e recommendation h 6). 5 No 6, use next higher 2 25 mped Stone	ns Figure 8.06c Cone in Figure 8.06d to Figure 8.06d Channel Linings an	d
Step 3) For an For ne Vill apron have NOTE: For apror etermine apron le pron length (fi Determinatio Revetments	pron grades of 10% or, ext higher zone. (Zon e >/=10% grade? n slopes equal to or grea ength. t) on of Stone Size:	steeper, us es 1 throug ter than 109 s For Du	e recommendation h 6). 5 No 6, use next higher 2 25 mped Stone	Figure 8.06c Cone in Figure 8.06d to Figure 8.06d Channel Linings an	<u>d</u>
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