



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

February 23, 2018

MEMO TO: Jeff Allen, Dellon Baker, Chris Byers, Shannon Douglas, Randy Garris, Ron Hancock, Bruce Hazle, Brandon Hill, Ryan Ilg, Berry Jenkins, Steve Kite, Ben Lanier, Don Lee, Dan Lieberman, Clark Morrison, Brenda Moore, Dennis O'Connor, Michael O'Sheilds, Mark Perkins, Jeff Saunders, Ian Scott, Lamar Sylvester, Kevin Thomas, Dave Tolley, Brian Webb, Robert Williams

FROM: R.E. Davenport, Jr.
State Contract Officer

SUBJECT: DOT-AGC Roadway Subcommittee Meeting 3/1/18 Agenda

The next meeting will be held at the Riverwood Conference Room in the NCDOT Century Center Building B (1020 Birch Ridge Drive, Raleigh) at 10:00 a.m on Thursday, March 1st. Please enter at door B2. The following is a list of items scheduled for discussion:

- | | |
|---|-----------------|
| 1. Aggregate Subgrades | Scott Hidden |
| 2. Guidance on Structure for Self-Training (WZ) | Shannon Douglas |
| 3. Lane Closure (each) SP | Steve Kite |
| 4. Camera enforced speed citations | Steve Kite |
| 5. Resource Conservation Recycling Form | Alyson Tamer |
| 6. Spec on Payment for Road Repair | Shannon Douglas |



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
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JAMES H. TROGDON, III
SECRETARY

March 15, 2018

MEMO TO: Jeff Allen, Dellon Baker, Chris Byers, Shannon Douglas, Randy Garris, Ron Hancock, Bruce Hazle, Brandon Hill, Ryan Ilg, Berry Jenkins, Steve Kite, Ben Lanier, Don Lee, Dan Lieberman, Clark Morrison, Brenda Moore, Dennis O'Connor, Michael O'Sheilds, Mark Perkins, Jeff Saunders, Ian Scott, Lamar Sylvester, Kevin Thomas, Dave Tolley, Brian Webb, Robert Williams

FROM: R.E. Davenport, Jr.
State Contract Officer

SUBJECT: DOT-AGC Roadway Subcommittee Meeting Minutes

The subject committee met on March 1, 2018 at 10:00 a.m. in the Riverwood Conference Room at the NCDOT Century Center.

Agenda and Discussion Items:

Aggregate Subgrades (*attachments*)

Scott Hidden

Mr. Hidden stated that he has been receiving requests from the divisions to use aggregate subgrade across entire projects instead of chemical stabilization; therefore, eliminating the need for the "in lieu of" option that has been in recent contracts since they want it to be a requirement. Section 505 of the spec book is not intended to be an aggregate subgrade across the entire project, but more in line with small repair areas of the project. Mr. Hidden has therefore made revisions to Section 505 to define two types of aggregate subgrades. Type I reflects what is in the spec book currently for repair areas and Type II is for aggregate subgrade in lieu of chemical stabilization. The revision also addresses different thicknesses, proof rolling, compaction and undercut requirements for each aggregate subgrade type. Lastly, the Geotechnical Summary Tables in the plans will provide the quantity for Type 1 and Type 2 subgrades.

Guidance on Structure for Self-Training (WZ) (*attachment*)

Shannon Douglas

Notes from October 2017 meeting: Mr. Kite stated that NCDOT is allowing companies the ability to train their own staff for work zone certification. This will minimize the wait for individuals to get into classes. NCDOT will review the company's training materials and exam to ensure compliancy and consistency. Mr. Kite mentioned that they are currently working on an outline for companies to use for their program and assist in developing questions for the exam.

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WEBSITE: www.NCDOT.GOV

LOCATION:
CENTURY CENTER COMPLEX
ENTRANCE B-2
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610

Mr. Kite mentioned that NCDOT realized there was a gap with installer training. So beginning July 1, 2018 NCDOT will be requiring installer training for anyone working on freeways and interstates. These employees can also be internally certified with the work zone supervisors.

NCDOT will no longer issue certification cards. Companies will maintain their own list for their records.

Mr. Kite stated that he is doing a presentation at the AGC/NCDOT Winter Training Workshops in reference to what was presented at the October DOT-AGC Roadway Subcommittee Meeting (see above). Mr. Kite will resend the certification requirements for the contractor's information (see attachment). Contractors should be able to use these requirements to develop their outlines and exam questions. Mr. Kite will review the course material and exam for compliance, but won't write it.

Lane Closure (each) SP

Steve Kite

On interstate resurfacing projects, payment for lane closures will be on a lane closure 'per each' basis. Single lane closures will count as one (EA), dual lane as two (EA), etc., rather than individual items. He advised that he is trying to focus on just the labor and equipment required to close lanes. Industry asked about traffic shifts and Mr. Kite stated that they are not paying for shifts right now. Also, extra items such as digital speed limit signs and presence lighting are not paid in the 'per each' scenario, but will be paid separately. Law enforcement is also a separate pay item.

Industry questioned what exactly constitutes a lane closure at an intersection and Mr. Kite stated that he will look into the language for this situation.

Camera Enforced Speed Citations

Steve Kite

Industry raised the question on camera enforced speed citations. Mr. Kite stated that he would like to do some research on what other states are doing as legislation will need to be changed for automated speed enforcement. It will also need to be determined where the revenue will go.

Resource Conservation Recycling Form (handout)

Alyson Tamer

Ms. Tamer explained that GS 136 expanded NCDOT's use of recycled materials in its construction and maintenance programs and are looking for new and innovative ways to divert items from the landfills. As stated in the 2018 Standard Specifications book as well as the GS, information on recycled products and solid waste utilization is to be reported to NCDOT on a yearly basis. Mr. Tamer passed out information that contained a coated card for field use and a QR code that takes the contractor directly to the fillable form. She advised that with the new form in the Connect site, the data can be reported as frequently as on a daily basis and doesn't have to be a yearly submission.

Spec on Payment for Road Repair

Shannon Douglas

Mr. Douglas mentioned that he's not seeing consistency on repairing roads when hauling borrow from borrow pits. On some projects that even with legal loads, the roads get beat up and need repair and it falls on the contractor. A request was made to have a line item or

increase the tonnage on the line items already in the contract to use to repair these roads and plan for it.

Other

Industry stated that there needs to be improvement in the division contracts as they seem to be missing key items and projects in the same division are also inconsistent. There are also problems with locally administered contracts where the towns are using lump sum instead of line item projects and considering everything incidental.

Ms. Canales stated that starting with the April 1, 2018 advertisements, a new MBE/WBE special provision will be utilized that will have a “combined goal” much like we do for the DBE Federal projects. The provision will also show an “anticipated participation” goal for MBE and WBE. These are not goals to meet but show what the department used to obtain the combined goal. Overall the combined goal can be met with all WBE or all MBE participation as long as the combined goal is met.

Industry asked if there was a report that outlined the major changes between the 2012 and 2018 spec book. Ms. Canales stated that there was one put out and she will send it to AGC along with the updates to the special provisions.

Mr. Jenkins stated that he has been receiving positive feedback from both NCDOT and the AGC on the workshops held thus far.

Mr. Davenport stated that a work around has been done for the divisions to obtain a bidders list. Contract Standards is moving towards having all the divisions use this process, but currently only 3 or 4 divisions utilize it now.

Next Meeting

The next meeting of this committee is scheduled for April 19, 2018 at 10:00 a.m. in the Riverwood Conference Room at NCDOT’s Century Center B.

GEOTEXTILE FOR PAVEMENT STABILIZATION:**(?1-?16-18)****Description**

Supply and install geotextile for pavement stabilization in accordance with the contract. Geotextile for pavement stabilization may be required above chemically stabilized subgrades or below Class IV sSubgrade sStabilization to prevent pavement cracking at locations shown in the plans and as directed. Define “subbase” as the portion of the roadbed below the Class IV sSubgrade sStabilization.

Materials

Refer to Division 10 of the *Standard Specifications*.

Item**Section**

Geotextiles

1056

Select Material, Class IV

1016

Use Class IV select material for Class IV sSubgrade sStabilization. Provide Type 5 geotextile for geotextile for pavement stabilization that meets the following tensile strength requirements in the machine direction (MD) and cross-machine direction (CD):

GEOTEXTILE FOR PAVEMENT STABILIZATION REQUIREMENTS		
Tensile Strength	Requirement (MARV^A)	Test Method
Tensile Strength @ 5% Strain (MD & CD ^A)	1,900 lb/ft	ASTM D4595
Ultimate Tensile Strength (MD & CD ^A)	4,800 lb/ft	ASTM D4595

A. MD, CD and MARV per Article 1056-3 of the *Standard Specifications*.

Construction Methods

Geotextile for pavement stabilization may be required at locations shown in the plans and other locations as directed. For locations with ABC on chemically stabilized subgrades, use of geotextile for pavement stabilization will be based on sampling and testing for chemical stabilization. For all other locations, notify the Engineer when the embankment is completed to within 2 ft of subgrade elevation and allow 3 days for the Engineer to determine if geotextile for pavement stabilization is required.

Before placing geotextile for pavement stabilization below Class IV subgrade stabilization, proof roll subbases in accordance with Section 260 of the *Standard Specifications*. Place geotextile for pavement stabilization above chemically stabilized subgrades or below Class IV sSubgrade sStabilization as shown in the plans. Pull geotextiles taut so they are in tension and free of kinks, folds, wrinkles or creases. Install geotextile for pavement stabilization perpendicular to the survey or lane line in the MD and adjacent to each other in the CD as shown in the plans. Continuous geotextiles are required in the MD, i.e., do not splice or overlap geotextiles so seams are parallel to the survey or lane line. Completely cover stabilized subgrades or subbases with geotextile for pavement stabilization. Overlapping geotextiles in the CD is permitted but not required. Overlap geotextiles in the direction that aggregate will be placed to prevent lifting the edge of the top geotextile. Hold geotextiles in place with wire staples or anchor pins as needed.

Do not damage geotextile for pavement stabilization when placing ABC or Class IV sSubgrade sStabilization. Place and compact ABC in accordance with the contract and *Standard*

TIP

GT-#.2

[County Name(s)] County(ies)

Specifications. Place, compact and maintain Class IV sSubgrade sStabilization in accordance with Article 505-3 of the *Standard Specifications* for a Type 2 aggregate subgrade. Do not operate heavy equipment on geotextiles any more than necessary to construct base courses or subgrades. Replace any damaged geotextiles to the satisfaction of the Engineer.

Measurement and Payment

Geotextile for Pavement Stabilization will be measured and paid in square yards. Geotextiles will be measured along subgrades or subbases as the square yards of exposed geotextiles installed before placing ABC or Class IV sSubgrade sStabilization. No measurement will be made for overlapping geotextiles. The contract unit price for *Geotextile for Pavement Stabilization* will be full compensation for providing, transporting and installing geotextiles, wire staples and anchor pins.

Class IV Subgrade Stabilization will be measured and paid in accordance with Article 505-4 of the *Standard Specifications*. No measurement will be made for any undercut excavation of fill materials from subbases.

Payment will be made under:

Pay Item

Geotextile for Pavement Stabilization

Pay Unit

Square Yard



AGGREGATE SUBGRADE:

(?-?-18)

505

SP05 R?

Revise the *2018 Standard Specifications* as follows:

Page 5-8, Article 505-1 DESCRIPTION, lines 4-6, replace the paragraph with the following:

Construct aggregate subgrades in accordance with the contract. Install geotextile for soil stabilization and place Class IV subgrade stabilization at locations shown in the plans and as directed.

Undercut natural soil materials if necessary to construct aggregate subgrades. Define “subbase” as the portion of the roadbed below the Class IV subgrade stabilization. For Type 2 aggregate subgrades, undercut subbases as needed. The types of aggregate subgrade with thickness and compaction requirements for each are as shown below.

Type 1 – A 6 to 24 inch thick aggregate subgrade with Class IV subgrade stabilization compacted to 92% of AASHTO T 180 as modified by the Department or to the highest density that can be reasonably obtained.

Type 2 – An 8 inch thick aggregate subgrade on a proof rolled subbase with Class IV subgrade stabilization compacted to 97% of AASHTO T 180 as modified by the Department.

Page 5-8, Article 505-3 CONSTRUCTION METHODS, line 12, insert the following after the first sentence of the first paragraph:

For Type 2 aggregate subgrades, proof roll subbases in accordance with Section 260 before installing geotextile for soil stabilization.

Page 5-8, Article 505-3 CONSTRUCTION METHODS, lines 16-17, replace the last sentence of the first paragraph with the following:

Compact ABC as required for the type of aggregate subgrade constructed.

Page 5-8, Article 505-4 MEASUREMENT AND PAYMENT, line 26, insert the following after the last sentence of the first paragraph:

Undercut Excavation of natural soil materials from subbases for Type 2 aggregate subgrades will be measured and paid in accordance with Article 225-7 or 226-3. No measurement will be made for any undercut excavation of fill materials from subbases.

CLASS IV SUBGRADE STABILIZATION IN LIEU OF CHEMICAL STABILIZATION:

(6-16-15) (Rev. ~~24-246-18~~)

501, 542

SP05 R017

Description

In lieu of chemical stabilization, provide Class IV sSubgrade sStabilization by replacing 8 inches of subgrade soils with geotextile and Class IV select material. This substitution is allowed in full typical section width and cannot result in chemically stabilized sections less than 1,000 feet in length, unless otherwise approved by the Engineer. This substitution is not allowed for chemically stabilized sections with geotextile for pavement stabilization. Notify the Engineer at least 30 days in advance of starting Class IV sSubgrade sStabilization in lieu of cChemical sStabilization. Define “subbase” as the portion of the roadbed below the Class IV subgrade stabilization.

Materials

Refer to the *2018 Standard Specifications*.

Item	Section
Geotextile for Soil Stabilization, Type 4	1056
Select Material, Class IV	1016

Use Class IV select material for Class IV sSubgrade sStabilization.

Construction Methods

Before placing geotextile for soil stabilization below Class IV subgrade stabilization, proof roll subbases in accordance with Section 260 of the Standard Specifications. Install geotextile for soil stabilization in accordance with Article 270-3 in the *2018 Standard Specifications*. Place, compact and maintain Class IV sSubgrade sStabilization in accordance with Article 505-3 of the *2018 Standard Specifications* for a Type 2 aggregate subgrade.

Measurement and Payment

Class IV Subgrade Stabilization in Lieu of Chemical Stabilization will be paid at the prices established in the contract that relate to the chemical stabilization type that is being replaced (lime or cement). No direct payment will be made for additional excavation required to accommodate this alternate.

The total amount paid for this subgrade stabilization alternative will be limited to the contract amounts per square yard for replacement for Portland cement or lime, theoretical tons of Portland cement or lime replaced, mixing of cement or lime, and theoretical gallons of asphalt curing seal replaced at the rate of 0.15 gallons per square yard.

A sSupplement aAgreement will be executed prior to starting the work to create a square yard price for the *Class IV Subgrade Stabilization in Lieu of Chemical Stabilization* and deleting the quantities associated with the work being replaced.

COMPUTED BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____

(?-?-18)

PROJECT NO. _____ SHEET NO. 3G-?

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY					
TOTAL LF:					0

*UD = Underdrain
 *BD = Blind Drain
 *SD = Subsurface Drain

**SUMMARY OF GEOTEXTILE
 FOR PAVEMENT STABILIZATION**

LINE	Station	Station	Geotextile for Pavement Stabilization SY	Class IV Subgrade Stabilization TONS
CONTINGENCY				
TOTAL SY/TONS:			0	0*

*Total tons of "Class IV Subgrade Stabilization" is only the estimated quantity for pavement stabilization and may only represent a portion of the subgrade stabilization quantity shown in the Item Sheets of the Proposal.

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY									
TOTAL CY/TONS/SY:					0	0**	0**	0	0

*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)
 *AST = Aggregate Stabilization
 **Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

SUMMARY OF ROCK PLATING

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
TOTAL SY:								0

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

SUMMARY OF REINFORCED SOIL SLOPES AND SLOPE EROSION CONTROL

LINE	Beginning Slope/ RSS (H:V)	Approx. Station	Ending Slope/ RSS (H:V)	Approx. Station	Location LT/RT	Reinforced Soil Slope (RSS) SY	Geocells SY	Coir Fiber Mat SY	Matting for Erosion Control SY
TOTAL SY:						0	0	0*	0**

*Total square yards of "Coir Fiber Mat" is only the estimated quantity for slopes steeper than 2:1 (H:V) and may only represent a portion of the coir fiber mat quantity shown in the Item Sheets of the Proposal.
 **Total square yards of "Matting for Erosion Control" is only the estimated quantity for RSS and may only represent a portion of the matting quantity shown in the Item Sheets of the Proposal.

SUMMARY OF PRE-SPLITTING OF ROCK

LINE	Beginning Rock Cut Slope (H:V)	Approx. Station	Ending Rock Cut Slope (H:V)	Approx. Station	Location LT/RT	Pre-splitting of Rock SY
TOTAL SY:						0

**SUMMARY OF SURCHARGES
 AND SURCHARGE WAITING PERIODS**

LINE	Station	Station	Surcharge Height FT	MONTHS

**SUMMARY OF EMBANKMENT
 WAITING PERIODS**

LINE	Station	Station	MONTHS

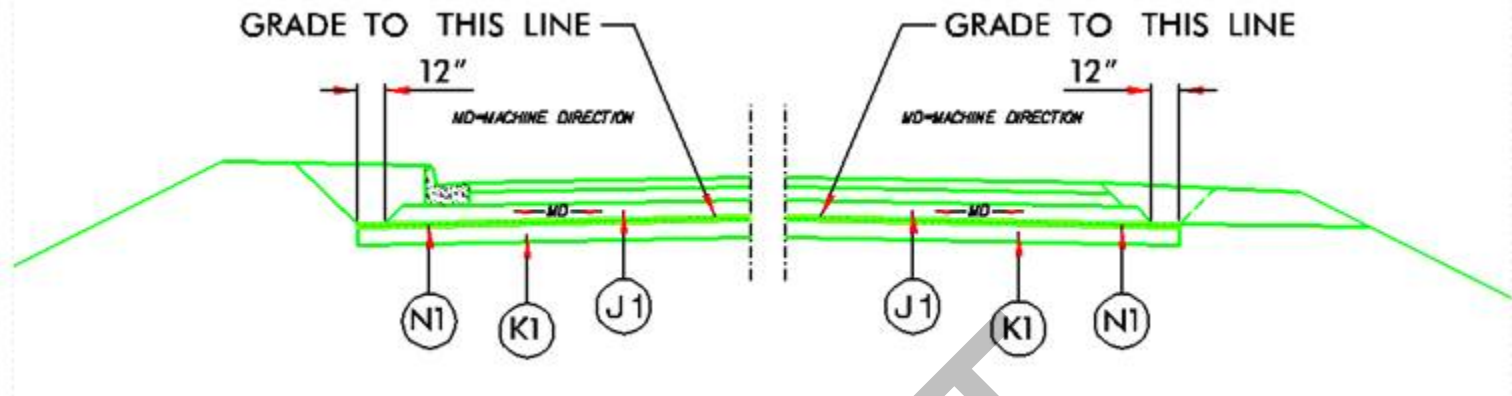
**SUMMARY OF
 SETTLEMENT GAUGES**

Gauge No.	LINE and Station	Offset		
		Distance FT	Direction LT/RT	
TOTAL GAUGES (EACH):				

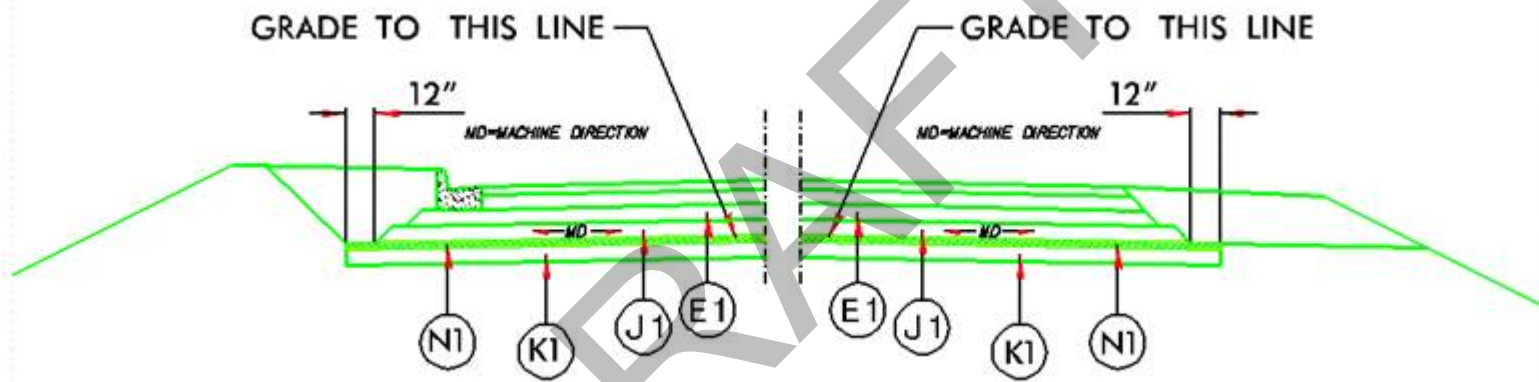
SUMMARY OF BRIDGE WAITING PERIODS

Bridge Description	End Bent/ Bent No.	MONTHS

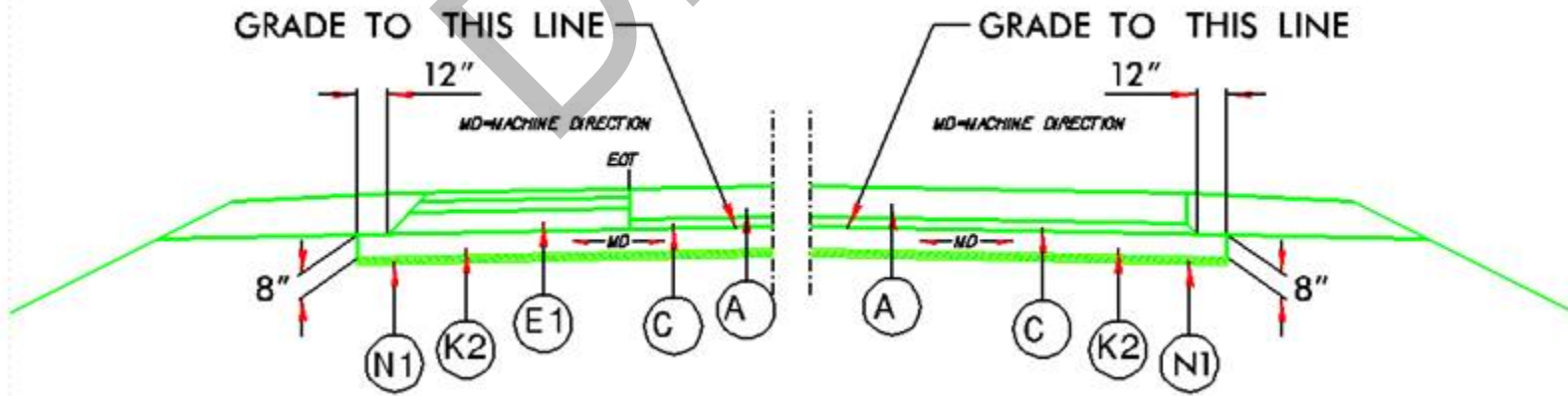
Chemical Stabilization-Geotextile for Pavement Stabilization with ABC Base



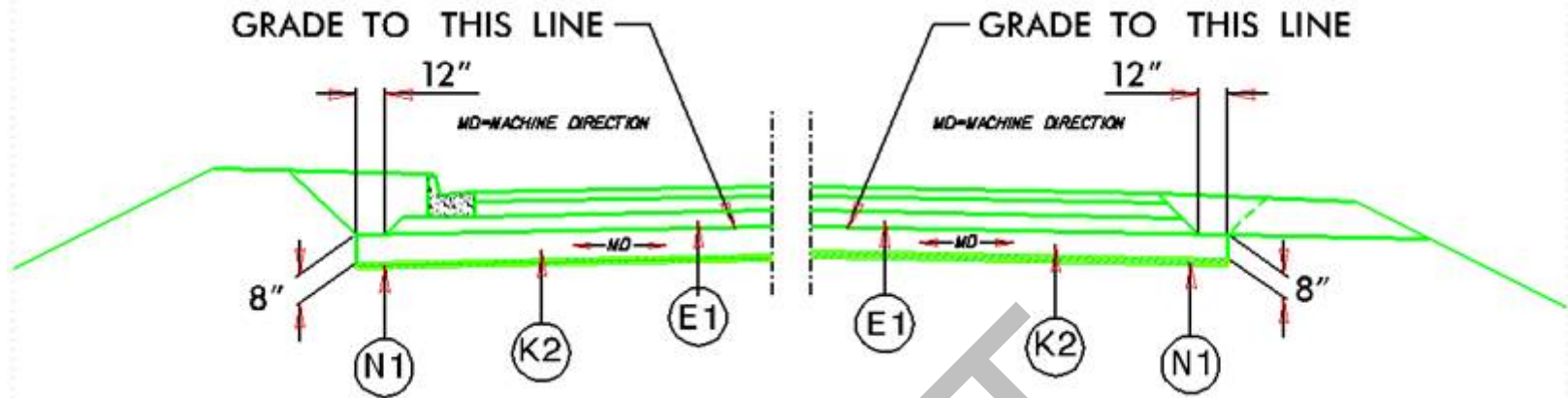
Chemical Stabilization-Geotextile for Pavement Stabilization with Asphalt and ABC Base



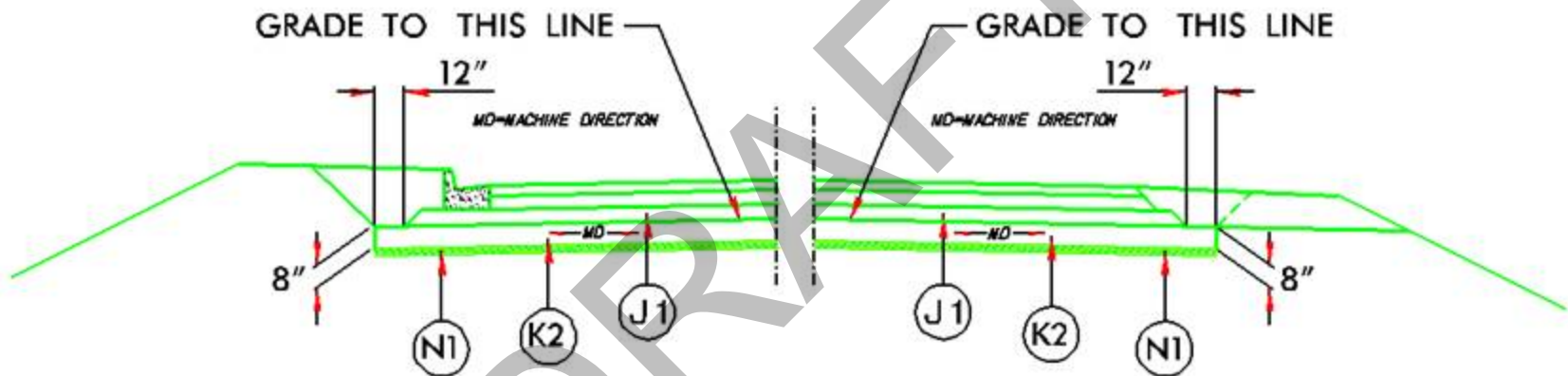
Class IV Subgrade Stabilization-Geotextile for Pavement Stabilization with Cement Concrete Pavement



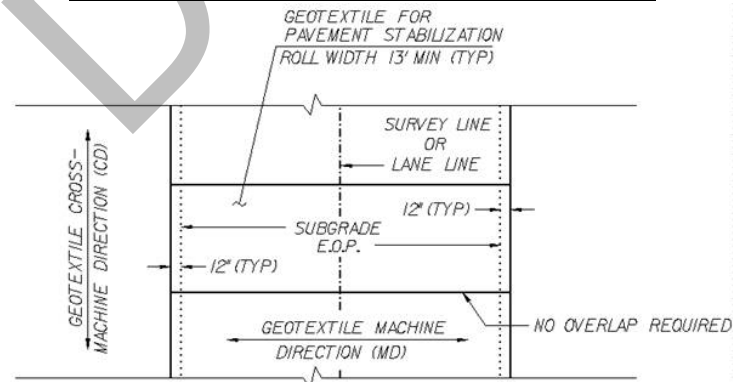
Class IV Subgrade Stabilization-Geotextile for Pavement Stabilization with Asphalt Base



Class IV Subgrade Stabilization-Geotextile for Pavement Stabilization with ABC Base (New)



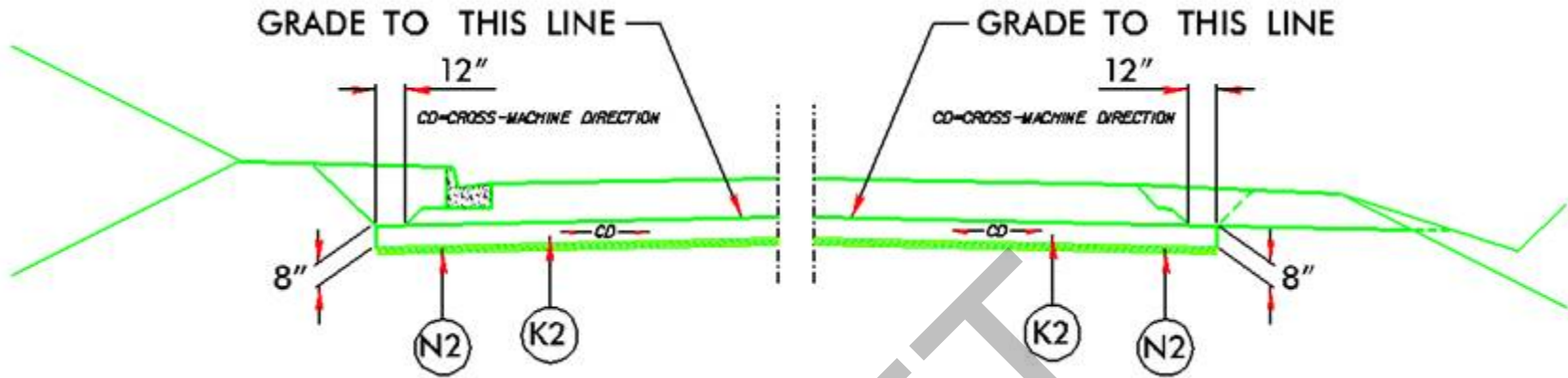
Geotextile for Pavement Stabilization-Plan View



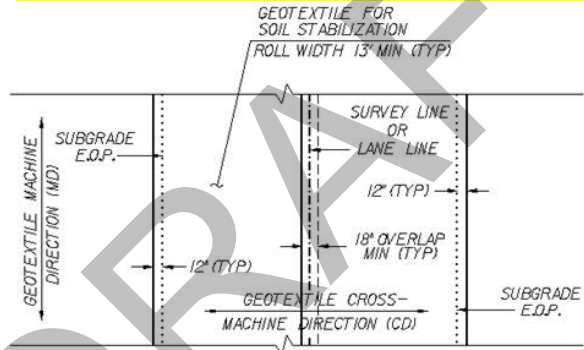
GEOTEXTILE FOR PAVEMENT STABILIZATION PLACEMENT (PLAN VIEW)

(100% COVERAGE REQUIRED)

Class IV Subgrade Stabilization-Geotextile for Soil Stabilization with Asphalt or Cement Concrete Pavement (New)



Geotextile for Soil Stabilization-Plan View (New)



GEOTEXTILE FOR SOIL STABILIZATION PLACEMENT (PLAN VIEW)

(100% COVERAGE REQUIRED)

- F Asphalt Surface Treatment
- G Cement Treated Base Course
- J Aggregate Base Course
- K Stabilized Subgrade**
- L Stabilizer Aggregate
- M Soil Type Base Course
- N Geotextile**
- P Prime Coat
- R Combination Concrete Curb and Gutter
Concrete Curb

PAVEMENT SCHEDULE (continued) 6-1D

- F-1
- E3 Prop. Var. Depth Asphalt Concrete Base Course, Type B _____, at an Average Rate of 114lbs. per sq. yd. per 1" depth, to be placed in layers not greater than _____" in depth or less than _____" in depth.
- F1 Asphalt Surface Treatment, Mat and Seal.
- F2 Asphalt Surface Treatment, _____
- G Prop. Approx. 8" Cement Treated Base Course (Plant Mixed)
or
Prop. 8" ABC with the top 7" to be Cement Treated (Road Mixed).
- J1 Prop. 8" Aggregate Base Course
- J2 Prop. 10" Aggregate Base Course
- J3 Prop. Var. Depth Aggregate Base Course
- K1 Prop. 8" Chemical Stabilization (Soil-Cement Base/Lime-Treated Soil). Base treated with Cement at a Rate of 55 lbs. per sq. yard or Soil treated with Lime at a Rate of 20 lbs. per sq. yard.
- K2 Prop. 8" Class IV Subgrade Stabilization
- L Base to be stabilized with 200 to 400 lbs. per sq. yard of Stabilizer Aggregate mixed with the top 3" of subgrade soil at locations directed by the Engineer.
- M1 Prop. 8" Soil Type Base Course, Type A
- M2 Prop. 10" Soil Type Base Course, Type _____
- N1 Geotextile for Pavement Stabilization
- N2 Geotextile for Soil Stabilization**
- P1 Prime Coat at the rate of .35 gal. per sq. yard.
- P2 Prime Coat at the rate of .50 gal. per sq. yard.



STATE OF NORTH CAROLINA
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ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

DATE: October 19, 2017

TO: NCDOT, AGC, CAPA, ATSSA and
NCDOT approved Trainers

FROM: Steve Kite, PE, State Work Zone Engineer

SUBJECT: Revised Work Zone Certification Requirements

DocuSigned by:
Steve Kite
E27CE30E1DFC442...

The Work Zone Traffic Control Section has re-evaluated its certification programs after several years of implementation and has made a few significant changes to the program. We believe these changes will make it simpler and easier to get the required training as well as provide a less confusing method for keeping up with the employees' certification records. Below are the new requirements for the Work Zone Supervisor, Work Zone Installer (new), and Flagger certifications.

Work Zone Supervisor Certification

All personnel in charge of overseeing work zone temporary traffic control operations and installations inside the highway right of way will be trained in an NCDOT approved Work Zone Supervisor Course. Each person will be required to have 2 years of traffic control experience in flagging and lane closure installation. It is the responsibility of each employer to ensure accurate records are maintained. NCDOT will no longer issue cards or keep records on the Certification/Recertification of employees outside of our agency. Each Division will maintain training records for their employees. Upon award of contract and before work begins, the Contractor shall provide the Engineer the Work Zone Supervisor certifications with expiration dates for employees. A card issued by the certifying firm that shows the dates of certification/expiration or the employer certification will suffice. The Work Zone Supervisor shall ensure all employees who perform traffic control duties on the project have the proper training and certifications to safely and accurately perform the work they are required to do.

Recertification Requirements - Work Zone Supervisors shall be recertified every 4 years. The date is based on when they were issued their certification (card or certificate) from the approved training agency or company.

Virginia/South Carolina Certifications - For Work Zone Supervisors that are currently certified in Virginia or South Carolina, we will accept that certification for a period of 1 year. After the year, the Work Zone Supervisor is required to be recertified in North

Carolina by an approved trainer or self-certified trainer provided the below conditions are met.

Self-Certification Trainer - Companies that perform internal training for their employees and do not train outside their company are allowed to self-certify their employees provided the following requirements are met:

The Self Certification trainer shall be a Certified Work Zone Supervisor with a minimum of 8 years of highway/traffic control experience with 4 years as a Certified Work Zone Supervisor. The trainer will also be required to recertify with an outside training agency every 4 years.

Any company desiring to train and certify work zone supervisors shall submit their trainer as well as their training materials and certification exam to the Work Zone Traffic Control Section for approval. The Work Zone Traffic Control Section reserves the right to keep a copy of these training materials for comparison purposes.

The exam must have a minimum of 25 questions on Division 11 of the Specifications and Roadway Standard Drawings, 25 Questions on Rural Resurfacing and Interstate Resurfacing requirements as well as proper methods/best practices of installation/removal of lane closures and road closures, 30 questions on the use of Changeable Message Signs, Work Zone Presence Lighting, Digital Speed Limit Signs, Sequential Flashing Lights, High Visibility Devices, portable traffic signals/AFADS. In addition, a minimum of 20 questions covering information contained in a Transportation Management Plan is required. The exam format will be approved by NCDOT. An exam score of 80 or above is required to be certified. Retesting is permissible until the employee scores 80 or above.

Work Zone Installer Certification (New): Implementation Date - July 1, 2018

All personnel involved with installation of lane closures or road closures on interstates and high speed freeways will be trained in an NCDOT approved installer course. Each member of a traffic control crew that installs lane closures or road closures in highly developed urban work zones will also be required to be trained. It is the responsibility of each employer to ensure accurate records are maintained. NCDOT will not keep records or issue cards on the Certification/Recertification of employees. Upon award of contract and before work begins, the Contractor shall provide the Engineer the work zone installer certifications with expiration dates for employees. A card issued by the certifying firm that shows the dates of certification/expiration or the employer certification will suffice.

Recertification Requirements - Work Zone Installers shall be recertified every 4 years. The date is based on when they were issued their certification (card or certificate) from the approved training agency or employer.

Virginia/South Carolina Certifications - For Work Zone Installers that are currently certified in Virginia or South Carolina, we will accept that certification for a period of 1 year. After the year, the Work Zone Installer is required to be recertified in North Carolina.

Self-Certification - Companies that perform internal training for their employees and do not train outside their company are allowed to self-certify their employees provided the

following requirements are met. The company must have an NCDOT approved Certified Work Zone Supervisor Trainer perform the Installer training.

They must submit their training materials and certification exam to the Work Zone Traffic Control Section for approval. The Work Zone Traffic Control Section reserves the right to keep a copy of these training materials and certification exam for comparison purposes.

The exam must have a minimum of 25 questions on Division 11 of the Specifications and Roadway Standard Drawings, a minimum of 15 questions on proper methods/best practices of installation/removal of lane closures and road closures, and a minimum of 10 questions on the use of Changeable Message Signs, Work Zone Presence Lighting, Digital Speed Limit Signs, Sequential Flashing Lights, High Visibility Devices, portable traffic signals/AFADS. The exam format will be approved by NCDOT. Each installer must score 70 or above to be certified. Retesting is permissible until the employee scores 70 or above.

Work Zone Flagger Certification

All personnel involved with flagging operations whether lanes are closed or not will be trained in an NCDOT approved flagging course. Each member of a traffic control crew that controls traffic with a "STOP/SLOW" paddle will be required to be trained. It is the responsibility of each employer to ensure accurate records are maintained. NCDOT will not keep records or issue cards on the Certification/Recertification of employees. Upon award of contract and before work begins, the Contractor shall provide the Engineer all work zone certifications with expiration dates for employees. A card issued by the certifying firm that shows the dates of certification/expiration or the employer certification will suffice.

Recertification Requirements - Work Zone Flaggers shall be recertified every 4 years. The date is based on when they were issued their certification card or certification certificate from the approved training agency or employer.

Virginia/South Carolina - For Work Zone Flaggers currently certified in Virginia or South Carolina, we will accept that certification for a period of 1 year. After the year, the Flagger is required to be recertified in North Carolina.

Self-Certification - Companies that perform internal training for their employees and do not train outside their company are allowed to self-certify their employees provided the following requirements are met. The company must have an NCDOT approved Certified Work Zone Supervisor Trainer perform the training. They must submit their training materials and certification exam to the Work Zone Traffic Control Section for approval. The Work Zone Traffic Control Section reserves the right to keep a copy of these training materials and certification exam for comparison purposes.

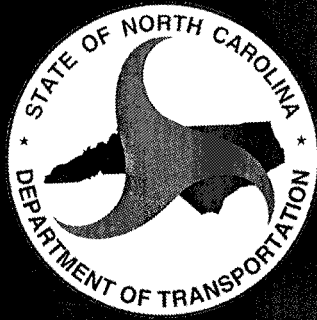
The exam must have a minimum of 20 questions on Roadway Standard Drawing 1101.02, sheets 1 and 2. 15 questions on proper methods/best practices of flagging traffic for standard lane closures on 2-lane roadways, flagging traffic at haul road crossing, and controlling traffic for shoulder operations where the lanes are open, and 15 questions on the use of proper personal protective equipment, communication with the public, proper

positioning, hand signaling, escape, night flagging, portable signals/AFADs. The exam format will be approved by NCDOT Each installer must score 70 or above to be certified. Retesting is permissible until the employee scores 70 or above.

The above requirements will become effective immediately and if anyone has any questions, feel free to contact me or Roger Garrett at skite@ncdot.gov or rmgarrett@ncdot.gov.

Cc:

Joe Hummer, PE, Traffic Management Engineer
Berry Jenkins, PE, Carolina's AGC President
Artie Livingston, President Carolina's ATSSA Chapter
Ellis Powell, PE, CAPA President
Lamar Sylvester, PE State Construction Engineer
Division Engineers
NCDOT Approved Training Companies



N.C. DEPARTMENT OF TRANSPORTATION

Value Management Office

Resource Conservation Program

North Carolina General Statute 136-28.8 states that the NCDOT is to expand its use of recycled materials in its construction and maintenance programs. NCDOT is to find alternative ways to use certain recycled materials that are currently part of the solid waste stream and contribute to problems of declining space in landfills. The NCDOT is not limited to but shall with economic feasibility and applicable engineering and environmental quality standards use:

- 1- Rubber from tires in road pavements, subbase materials, or other appropriate applications.
- 2- Recycled materials for guard rail posts, right-of-way fence posts, and sign supports.
- 3- Recycling technology, including, but not limited to, hot in-place recycling, in road and highway maintenance.
- 4- Recycled asphalt, provided that minimum content standards are met and the material meets minimum specifications for the project.

The General Statute goes on to say additional research is to be ongoing as is review of bid procedures and specifications. By October 1 each year, NCDOT is to submit a report to the Department of Environmental Quality as to the amounts and types of recycled materials that are specified or used.

The recycled information for this report is collected from NCDOT employees, Contractors, and HiCams. Information can be reported on the form at this link:

<https://connect.ncdot.gov/resources/Products/Pages/Recycle.aspx>

What the Contractor Needs to Know

- Per Article 104-13 in the Standard Specification book, January 2018 edition, the quantities of reused or recycled materials either incorporated in the project or diverted from the landfills and any practice that minimized environmental impacts on the project are to be reported by July 1 each year.
- We are always looking for new products or innovative ways to reuse, repurpose or recycle materials.

This QR code can be scanned using a free QR reader app on a smart phone or tablet to access the form.



What the DOT Needs to Know

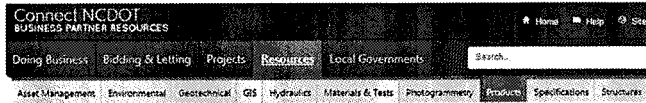
- We are utilizing HiCams in an effort to fully capture all of the recycling information.
- We are always looking for innovative ways to incorporate recycled materials onto our projects.
- Information does not have to be entered once a year. The form allows you the opportunity to input data throughout the year for the same project.

How can we help?

Contact the Value Management Office at (919)707-4806 or valuemanagementunit@ncdot.gov

Recycled Products & Solid Waste Utilization in Construction & Maintenance Projects Form

<https://connect.ncdot.gov/resources/Products/Pages/Recycle.aspx>



Recycled Products & Solid Waste Utilization in Construction & Maintenance Projects Form

Submit your annual recycling report

Home > Resources > Products > Recycled Products & Solid Waste Utilization in Construction & Maintenance Projects Form

Each year, in accordance with General Statute 136-28.6, the Department publishes an Annual Recycled Products and Solid Waste Utilization Report and provides it to the Secretary of Transportation. This report summarizes the types and quantities of recycled and solid waste materials that were used during each state fiscal year ending June 30th.

The purpose of this form is to gather data to report the recycled, solid waste, and reused material utilized in each Division and compiled to be submitted as the Department's efforts to recycle construction and maintenance materials as a whole. All District Engineers, Resident Engineers, Roadside Environmental Engineers, and any other working sections within your Division that may have utilized recycled, solid waste, or reused materials in construction and maintenance projects should complete this form.

Thank you for reporting this data.

Contact Form
For questions & feedback about this area of Connect NCDOT, contact Transportation Value Management.

Employee Directory
Staff contacts for Transportation Value Management.

Recycle Form

Division #

Reporting Location

Fiscal Year

Mulch (for Wood)
cubic yards

Mulch (for Hydromulch)
tons

Compost Material
cubic yards

Recycled Concrete
tons

Crushed Glass
linear feet

Plastic Offset Blocks
each

Plastic Pipe (All Types and Sizes)
linear feet

Plastic Flexible Delineators
each

Type III Barricades
each

Crushed Glass
linear feet

Plastic Offset Blocks
each

Plastic Pipe (All Types and Sizes)
linear feet

Plastic Flexible Delineators
each

Type III Barricades
each

Crumb Rubber
pounds

Rubber Mulch
cubic yards

Tire Sidewalls
each

Guardrail
linear feet

Portable Concrete Barrier
linear feet

Sign Posts
each

Signs
square feet

Steel Beams
each

Signal Heads

Silt Fence Posts
each

Sheet Pile
square feet

Cable Guidrail
linear feet

Other
Other items not described



Reporting location can be NCDOT office or project TIP number.

This form is continually evolving as we work to enhance this program and website.

The Resource Conservation Program is 1 of 7 programs that contribute to the Value Management Office's overall goals. Please contact the Value Management Office for more information about these programs. You may also find more information at:

<https://connect.ncdot.gov/resources/Products/Documents/VMO%20Guidelines%208.0.pdf>

Resource Conservation Program

Submit data on recycled, solid waste, and reused material utilized during construction and maintenance projects.

This is a contract requirement, see Article 104-13 in the 2018 Standards and Specifications included in your contract.

Contact us with questions:
valuemanagementunit@ncdot.gov
919-707-4806.

Use the QR code on this card or go to <https://connect.ncdot.gov/resources/Products/Pages/Recycle.aspx> to reach fillable form.

When reporting Include:



- Division #,
- Reporting
- Location/
- Project number,
- Fiscal Year, and
- Quantities of recycled material.

Product Evaluation Program

Look up information on the Approved Products List (APL) by using the QR code on this card. Through the APL you can get the following information:

- NCDOT Product ID
- Manufacturer Name
- Product Name
- Model Number
- Product Description
- Project Category
- Product Status
- Specific comments on use

For questions and other resources, contact the program at:

- 919-707-4808
- productevaluation@ncdot.gov
- <https://connect.ncdot.gov/resources/Products/Pages/>

