

2013

Roadway Technician Training

Erosion Control
&
Environmental Training

Objectives

- Review the Vegetation Establishment SP
- Ensure the waste/borrow sites are maintained and completed according to the Reclamation Plans and Specifications.
- Review the NPDES and seeding requirements.
- What to look for to avoid ICA's and NOV's.

Permanent Vegetation Establishment



Permanent Vegetation Establishment



PERMANENT VEGETATION ESTABLISHMENT:

- *Establish a permanent stand of the vegetation mixture shown in the contract. During the period between initial vegetation planting and final project acceptance, perform all work necessary to establish 80% coverage of permanent vegetation within the project limits, as well as, in borrow and waste pits. This work shall include erosion control device maintenance and installation, repair seeding and mulching, supplemental seeding and mulching, mowing, and fertilizer topdressing, as directed. All work shall be performed in accordance with the applicable section of the 2012 Standard Specifications. Once the Engineer has determined that 80% coverage of permanent vegetation has been established, the Contractor will be notified to remove the remaining erosion control devices that are no longer needed. The Contractor will be responsible for, and shall correct any areas disturbed by operations performed in permanent vegetation establishment and the removal of temporary erosion control measures, whether occurring prior to or after placing traffic on the project. Payment for Response for Erosion Control, Seeding and Mulching, Repair Seeding, Supplemental Seeding, Mowing, Fertilizer Topdressing, Silt Excavation, and Stone for Erosion Control will be made at contract unit prices for the affected items. Work required that is not represented by contract line items will be paid in accordance with Articles 104-7 or 104-3 of the 2012 Standard Specifications. No additional compensation will be made for maintenance and removal of temporary erosion control items.*

Permanent Vegetation Establishment

- Implemented on contracts let after 2-16-12
- The project, including borrow and waste sites will not be accepted until it has 80% permanent vegetation.
- **Area Roadway and Bridge Construction Engineers** in conjunction with the Area Roadside Environmental Engineer will make the 80% vegetation determination.

Permanent Vegetation Establishment

- Once 80% is achieved, the Resident Engineer will notify the contractor to remove erosion control items.
- The contractor is responsible for and shall correct areas disturbed in performing permanent vegetation and the removal of erosion control items.

Permanent Vegetation Establishment Example

C203077 (W-5307)

1

Surry County

PROJECT SPECIAL PROVISIONS

GENERAL

CONTRACT TIME AND LIQUIDATED DAMAGES:

(7-1-95) (Rev. 12-18-07)

108

SP1 G10 A

The date of availability for this contract is **October 1, 2012**.

The completion date for this contract is **November 28, 2014**.

Except where otherwise provided by the contract, observation periods required by the contract will not be a part of the work to be completed by the completion date and/or intermediate contract times stated in the contract. The acceptable completion of the observation periods that extend beyond the final completion date shall be a part of the work covered by the performance and payment bonds.

The liquidated damages for this contract are **Two Hundred Dollars (\$200.00)** per calendar day.

Permanent Vegetation Establishment Example

INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES:

(7-1-95) (Rev. 2-21-12)

108

SPI G13 A

Except for that work required under the Project Special Provisions entitled *Planting, Reforestation* and/or *Permanent Vegetation Establishment*, included elsewhere in this proposal, the Contractor will be required to complete all work included in this contract and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is **October 1, 2012**.

The completion date for this intermediate contract time is **June 1, 2014**.

The liquidated damages for this intermediate contract time are **Five Hundred Dollars (\$500.00)** per calendar day.

Upon apparent completion of all the work required to be completed by this intermediate date, a final inspection will be held in accordance with Article 105-17 and upon acceptance, the Department will assume responsibility for the maintenance of all work except *Planting, Reforestation* and/or *Permanent Vegetation Establishment*. The Contractor will be responsible for and shall make corrections of all damages to the completed roadway caused by his planting operations, whether occurring prior to or after placing traffic through the project.

Permanent Vegetation Establishment Example

- Contract Completion Date is November 28, 2014
- ICT #1 is June 1, 2014 (this includes all work except reforestation and permanent vegetation establishment)
- The contractor completes all work including initial seeding and mulching on May 31, 2014
- RCE/BCE will send a Partial Acceptance of the project for all items except permanent vegetation
- Contractor remains responsible for NPDES documentation

Permanent Vegetation Establishment Example

- The contract remains open until 80% permanent vegetation is established. This allows the contractor to perform maintenance of erosion control devices, repair seeding & mulching, supplemental seeding & mulching, mowing & fertilizer topdressing as directed
- Project is monitored periodically by inspection staff, RCE & REUFOE
- RCE reviewed project and accepted on November 1, 2014

Permanent Vegetation Establishment

- Response for Erosion Control is paid for each subcontractor who responds from off of the project
- Seeding and Mulching, Repair Seeding, Supplemental Seeding, Mowing, Fertilizer Topdressing, Silt Excavation, and Stone for Erosion Control pay at contract unit prices
- No additional compensation will be made for maintenance and removal of erosion control items

Permanent Vegetation Establishment

- What are some ways the Contractor can achieve the 80% goal prior to the Completion Date?
 1. Maintain open and positive lines of communication
 2. Staged Seeding
 3. Emphasize Permanent Ground Cover early in the life of the contract.
 4. Manage Seeding Subcontractor's prompt response to the needs of the project.

Reclamation Plans

- DOT requires reclamation plans for all waste/borrow sites.
- These plans address temporary EC devices, staged seeding and mulching, topdressing, and permanent stabilization.
- Reclamation Plan shall accompany any land disturbing activity associated with the project that exceeds the project limits. This includes staging/stockpile areas
- Ensure if buffer zones are required, they are physically delineated

Reclamation Plans

- Ensure that approved sediment controls are adequately installed and that the Borrow/Waste sites conform to the approved plan
- Require the stockpiling of topsoil for replacement on borrow or waste site slopes.
- Seed and mulch the stockpile and provide temporary sediment control if needed.
- If property owners elect to resume/commence agricultural land disturbing activities they take responsibility for the site.

Reclamation Plans

- Inspect each Borrow/Waste site at least weekly as a part of the required NPDES Erosion Control inspection
- If water is being pumped, ensure that BMP's have been designed, installed, operated, and maintained to minimize turbidity to the extent to avoid habitat degradation or removal of a use designation
- Limit the erodible slope area to no more than 1 acre prior to beginning seeding
- Waste/Borrow sites must have ground cover in accordance with the new seeding requirements

Permit Sites

- Identify these sites on the ground with assistance from the Division Environmental Officer (DEO)
- Flag the areas and ensure the contractor installs the safety fence accordingly



NPDES

- National Pollutant Discharge Elimination System
- EPA's NPDES program controls the discharges of pollutants from point sources including storm water from construction sites.
- NC's Division of Water Quality (DWQ) administers our state's NPDES program.

NPDES

■ Effective Date: August 3, 2011

- All projects with erosion and sedimentation control plans designed prior to August 3, 2011 will adhere to the previous NCG01 permit.
- Any project disturbing 1 acre or more with an E&SC plan designed after Aug 3, 2011 must meet the new permit requirements.

Definitions



Stormwater Discharge Outfall (SDO)

Defined as a point of stormwater discharge to waters of the State (streams, wetlands, open water). An outfall is not restricted to pipes and includes any type of outlet or any discharge from a BMP that discharges to waters of the State.

NPDES

■ Field Requirements of NPDES

- Indicate EC devices that have been installed - Date and Initial
- Track changes to the plan – Date and Initial
- Track seeding and mulching – 7 and 14 days
- Note SDO's on EC plans and document with NPDES reports.

NPDES

■ When?

- All SDO's shall be inspected once every seven calendar days by the Contractor's Certified Level II Supervisor and twice every seven calendar days for 303(d) listed streams and within 24 hrs. after a 0.5" rainfall per 24 hr. period

NPDES

Stabilization Requirements

Site Area Description	Stabilization Time Frame	Stabilization Time Frame Exceptions
•Perimeter dikes, swales, ditches and slopes	7 days	None
•High Quality Water (HQW) Zones	7 days	None
•Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
•Slopes 3:1 or flatter	14 days	7-days for slopes greater than 50 feet in length
•All other areas with slopes flatter than 4:1	14 days	None (except for perimeters and HQW Zones)

Slope Lengths Greater than 10 feet in length



Slope Lengths less than 10 feet in length



3:1 Slope Lengths Less than 50 feet in length



3:1 Slope Lengths Greater than 50 feet in length



Things to Remember about the Revised NCG01 Permit

- Shortened time frames for ground stabilization
- Same weekly inspection requirements
- Same rain gauge & inspections after 0.5” rain event
- Inspections are only required during “normal business hours”

Things to Remember about the Revised NCG01 Permit

- Inspection reports must be available on site during business hours unless a site specific exemption is approved
- Records must be kept for 3 years and available upon request

What is an ICA

- An ICA is a notification issued by the Roadside Environmental Unit of Immediate Corrective Action required due to non compliance or potential non compliance with environmental regulations
- There are now three types of ICA's – **ICA**, **ICAEX**, and an **CICA**

3 Types of ICA's

- ICA – an ICA is issued when an EC inspection reveals that a project is in violation of the SPCA and/or NPDES permit and is given an overall grade of 6 or below
 - Once issued, an ICA remains in effect until corrective actions have been satisfactorily implemented
 - A follow up inspection will be conducted within 5 working days

3 Types of ICA's

- **ICAEX – Immediate Corrective Action Extension – this is issued when conditions warrant that an ICA remain in effect for an extended period of time**
 - This may occur after the 5 day follow up visit if corrective actions are progressing but are not sufficient to justify lifting the ICA
 - Projects are limited to only 2 ICAEX's at which time a CICA will be issued

3 Types of ICA's

- CICA – Continuing Immediate Corrective Action – this is issued when the follow up inspection for a second ICAEX reveals little or no progress has been initiated or additional corrective actions are needed

Avoiding ICA & NOV's

What are we required to do

- Keep Sediment on site.
- Maintain a set of as-built erosion control plans.
- Ensure the NPDES inspections are performed by the Contractor's Level II Erosion Control Supervisor, that they are filled out correctly, and signed.

Avoiding ICA & NOV's

- **Ensure all SDO's and all EC devices** are inspected once every seven calendar days.
- Twice every seven calendar days for 303(d) turbidity listed streams
- Within 24 hrs. after a 0.5" rainfall **per 24 hr. period** Ensure that the NPDES forms are filled out correctly and signed. (The worst will be assumed if there are blank spaces.)

Avoiding ICA & NOV's

- What Helps?
 - Put in what was designed in the plans
 - Monthly Environmental Reviews with Agencies
 - Establish good communications with your REU FOE, DEO, DWQ and DLQ Reps

Questions?