NORTH CAROLINA
Department of Transportation

Erosion and Sedimentation Control: Getting Back to the Basics

2024 AGC/NCDOT Conference

Reid Whitehead, PE, REU Field Operations Engineer(Divisions 13 & 14)

Todd Hiatt, PE, REU Field Operations Engineer(Divisions 11 & 12)

Thomas A. Smith, REU Field Operations Engineer(Divisions 9 & 10)

Jeremy Goodwin, PE, State Roadside Erosion Control and Roadside Management Engineer

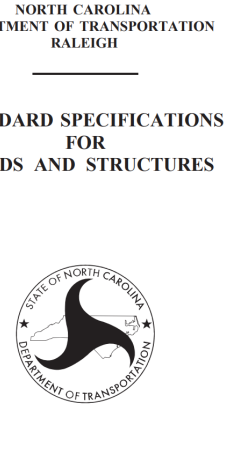
February 27th and 28th, 2024

Connecting people, products and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina

Getting Back to Basics
Empowering Our People

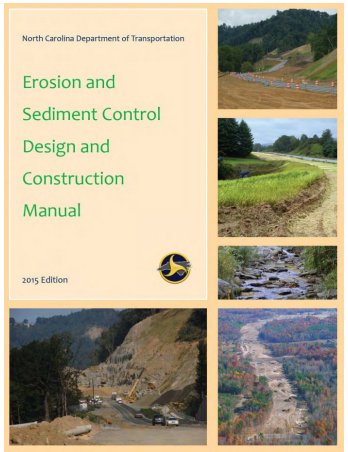
Empowering Our People

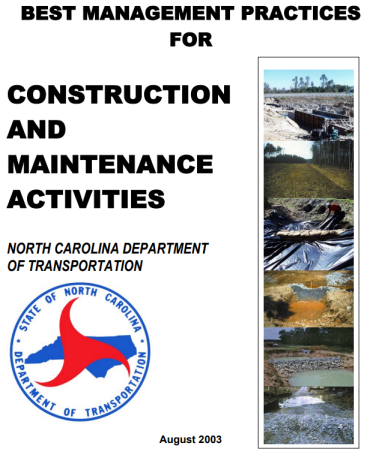
- Our People are our most valuable and impactful asset when it comes to E&SC Compliance.
- Be familiar with the resources that are available:
  - Standard Specifications
  - Standard Drawings
  - BMP Manual for Construction and Maintenance Activities
  - Erosion and Sediment Control Design and Construction Manual
  - EC Flip Guides
  - Project Specific Contract
  - Erosion Control Plans
    - Phased Plan Sheets
    - Details
    - Stabilization Summary Tables
  - Permit Drawings
    - Impact Limits
    - Type of Impact Permitted

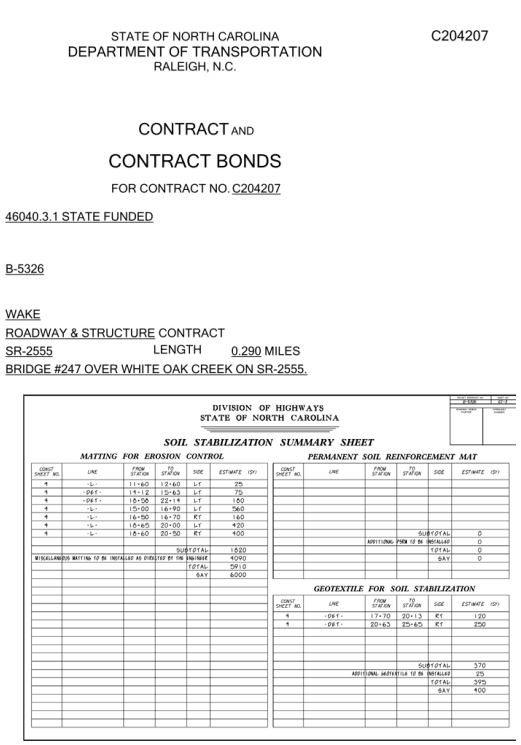

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD SPECIFICATIONS
FOR
ROADS AND STRUCTURES

JANUARY 2024






STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, N.C.

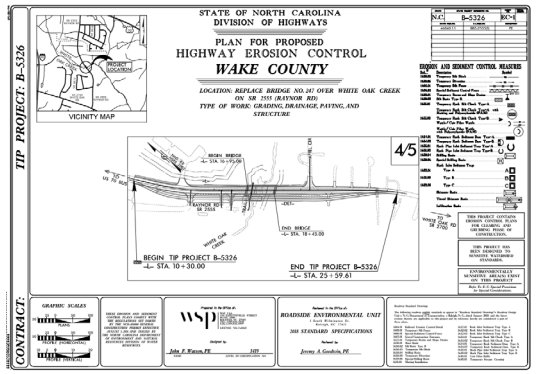
C204207

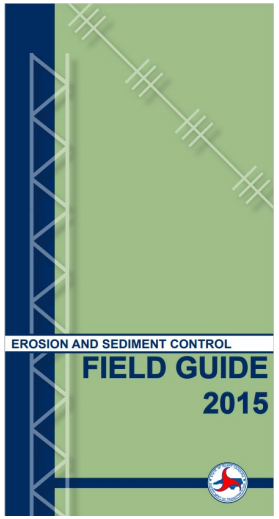
CONTRACT AND
CONTRACT BONDS
FOR CONTRACT NO. C204207

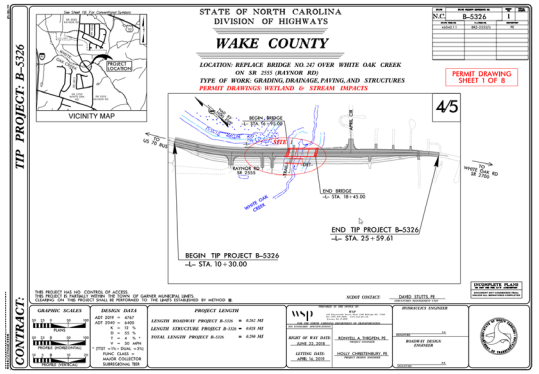
WBS 46040.3.1 STATE FUNDED

T.I.P NO. B-5326

COUNTY OF WAKE
THIS IS THE ROADWAY & STRUCTURE CONTRACT
ROUTE NUMBER SR-2555 LENGTH 0.290 MILES
LOCATION BRIDGE #247 OVER WHITE OAK CREEK ON SR-2555.







Empowering Our People

- Current Labor Market poses a lot of challenges
  - Continuity and Competency
- The Level I, II, and III Certification Programs can help.
  - Level I Installers Required For:
    - Seeding and Mulching, Temporary Seeding, Temporary Mulching, Sodding, Silt fence or other perimeter erosion/sediment control device installations, Erosion control blanket installation, Hydraulic tackifier installation, Turbidity curtain installation, Rock ditch check/sediment dam installation, Ditch liner/matting installation, Inlet protection, Riprap placement, Stormwater BMP installations, Pipe installations within jurisdictional areas
  - Level II Foreman Required For:
    - Foreman in charge of grading activities
    - Foreman in charge of bridge or culvert construction over jurisdictional areas
    - Foreman in charge of utility activities
- Level II Supervisor Responsible For:
  - Manage Operations
  - Oversee Subcontractors
  - Prepare NPDES Records
  - Implement E&SC/SW Plans
  - Additional Requirements in the Contract
- Level III Designer
- Level I and Level II Certifications Available Online and In-Person
- Level III Certification Available In-Person Only

Getting Back to Basics Vegetation

Vegetation

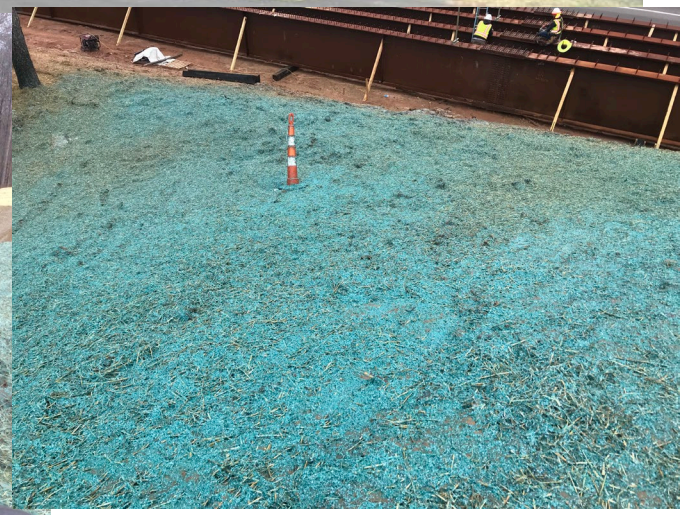
- Coordinate Vegetation into the Plan of Work
  - Mulch cover alone, reduces erosion by up to 90%
  - Less Erosion = Less Maintenance & Fewer Delays = Time and Money Saved
- Stage Seed as Cuts and Fills Progress
  - Early establishment of permanent vegetation leads to less maintenance, fewer repair needs, and reduced risk of offsite sedimentation
- Standard Specification 225-2:
  - “Unless Otherwise required by plans, conduct operations so that final slopes are completely graded in a continuous operation and permanently seeded and mulched in accordance with Article 107-12”
  - “When the contractor fails or neglects to coordinate grading with the permanent seeding and mulching operation, the Engineer may suspend the Contractor’s grading operation in accordance with Article 108-7 until the work is coordinated in a manner acceptable to the Engineer”

Vegetation

- Seeding and Mulching Operations
  - Section 1660 of the Standard Specifications
- 1660-3 Coordination With Grading Operations
  - Perform seeding and mulching operations on a section by section basis immediately upon completion of earthwork
- 1660-4 Seedbed Preparation
  - "Scarify or otherwise loosen the soil to a depth of not less than 5 inches"
  - "Remove all rock and debris 3 inches or larger on median, shoulder and ditch cut or fill slopes which are 3:1 or flatter"
- 1660-5 Applying and Covering Limestone, Fertilizer, and Seed
  - (B) "distribute limestone and fertilizer uniformly over the prepared seedbed at the specified rate of application and then harrow, rake or otherwise thoroughly work or mix into the seedbed"
  - (C) "Distribute seed uniformly over the seedbed at the required rate of application, and immediately harrow, drag, rake or otherwise work so as to cover the seed with a layer of soil."

Vegetation

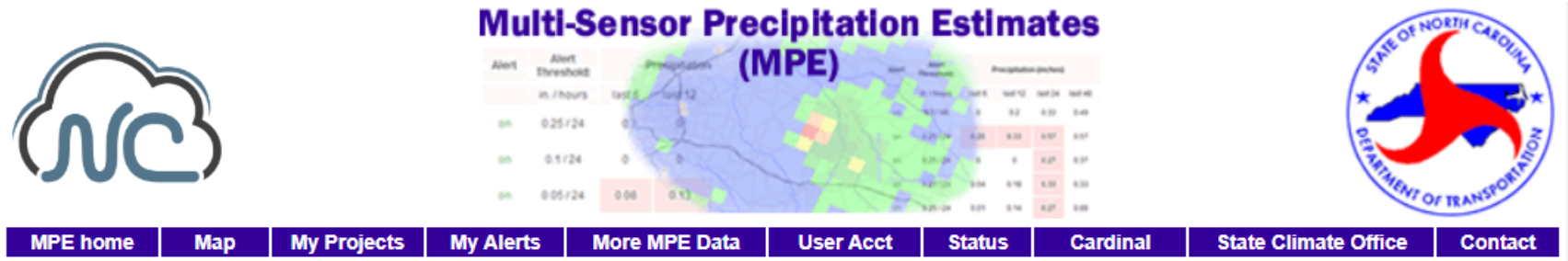
- Tack for Mulch for Erosion Control
  - (07-19-22)
  - 2024 Standard Specifications Section 1660-6(C)
- Emulsified Asphalt
  - Conform to the requirements of AASHTO M 140.
  - Apply emulsified asphalt tackifier at a rate of 0.10 gallons per square yard (approximately 484 gallons per acre).
- Cellulose Hydromulch
  - Cellulose hydromulch products shall be non-toxic, weed-free, prepackaged cellulose fiber (pulp) material containing no more than 3% ash or other inert materials.
  - Apply cellulose hydromulches at a rate of 1000 pounds (dry weight) per acre.
  - Wood fiber or wood fiber blend hydromulches may be substituted for cellulose hydromulch at the same application rate
- Other Tackifiers
  - Other approved materials, specifically designed and manufactured for application as a straw mulch tacking agent, may be used at the manufacturer's recommended rate



Getting Back to Basics
NPDES Compliance

NPDES Compliance

- Record Keeping
  - Inspect every 7 days or within 24 hours of a 1” or greater rainfall event **w/in 24 hours.**
  - Utilize a rain gauge or MPE website for rainfall data. If used, attach the MPE data to the forms.
  - Place rain gauges away from tree canopy.
  - Inspections required during “normal business hours”.
  - Records must be kept **on site.**
  - Report sediment loss beyond project limits (**>= 5 gallon bucket)** within 24 hours to the Agencies (DWR, USACE, DCM, LQ). Make a note of each incident on the form (include location, amount of loss, Agencies contacted, and clean up efforts).
  - List **ALL** SDOs individually for every inspection.



NPDES Compliance

- What is an SDO?
  - 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 Compliance

INSPECTION RECORD FOR ACTIVITIES UNDER STORMWATER GENERAL PERMIT NCG010000
SELF-INSPECTION RECORD FOR LAND DISTURBING ACTIVITIES PER § 113A-54.1
RESPONSE FOR EROSION CONTROL FORM 1675

PROJECT LOCATION _____ **TIP/WBS#** _____
LEVEL II SUPERVISOR _____ **COUNTY** _____
CONTRACTOR _____

All erosion and sedimentation control measures and stormwater discharge outfalls must be inspected once per seven calendar days AND within 24 hours of a rainfall of 1.0 inch or greater per 24-hour period. Permittee must keep a record of inspections. If using on site rain gage, complete daily rainfall measurement. If using Multi Precipitation Estimator (MPE), attach rainfall data for weekly period.

Day	Date	Rain Amt (in)	Notes
M			
T			
W			
Th			
F			
Sat			
Sun			

Phase of Grading (Place a check in the box of the current project phase)	
Initial installation of erosion and sediment control measures	
Clearing and grubbing of existing ground cover	
Completion of any grading that requires groundcover	
Installation of storm drainage facilities	
Completion of all land disturbing activity	
Establishment of permanent ground cover sufficient to restrain erosion	

Has all land disturbing activity been completed? (Y/N) _____
Has the final permanent ground cover been completed and established? (Y/N) _____

Exceptions to standard monitoring requirements

Idle projects: Idle projects must be inspected once every 14 calendar days and after 1.0" of rain in a 24-hour period. Idle projects are projects that have not been completed but where no construction activity occurs for 21 calendar days or more AND the entire project has been adequately stabilized with temporary vegetation pursuant to DEMLR guidelines.

Completed projects: Completed projects are those projects where work has been completed and you're waiting for the permanent vegetation to establish (i.e. waiting for the grass to grow). Completed projects must be inspected once every 30 calendar days AND within 24 hours of a rain event 1.0 inch or greater in 24 hours. The reduced monitoring can begin once construction has been completed, and erodible slopes have been sufficiently stabilized to restrain erosion by application of permanent ground cover varieties and installation of temporary ground cover to include appropriate erosion control matting and/or other approved mulch materials.

By this signature, I certify (in accordance with Part IV, Section B, 6(d) of the NCG010000 permit) that this report is accurate and complete to the best of my knowledge:

Cert. Level II Supervisor	Cert. #
NCDOT Cert. Level II Representative	Cert. #

Form should not be signed until the week is complete and ALL corrective actions have been completed in the 24 hour and/or 5 day time periods.

Rainfall data:

- Daily recording.
- No detectable rainfall in gauge should be recorded as "0".
- Water discovered in gauge upon morning arrival is NOT that days rainfall. It is for previous day unless you know it fell since midnight.
- Notes sections is for "Snow", "Hurricane", etc…

Phase of Grading:

- Selected activities will change as project progresses.
- Do not leave blank

Project Status:

- Answer questions each week.
- Do not leave blank.

Signature Box:

- Required of contractor's/DOT's Level II each week.
- Do NOT leave blank.

NPDES Compliance

Stormwater Discharge Outfalls (SDO)
(Required to list during each inspection)

Sheet __ of __

Inspection Date	Station Number	Corrective Actions Taken	Priority *	Date Corrected	**Other Pollutants	Visible Sedimentation and Stream Turbidity: ***Sediment Deposited	****Stream Clarity

* R=Routine, needs attention within 5 days; U=Urgent, needs attention within 24 hrs.	**Is there evidence of other pollutants discharging from site such as oil sheen, discoloration, cement wastes, sanitary waste, fertilizers, or fuel or chemical storage leakage? (Y/N) **If Other Pollutants is marked Yes, describe extent of discharge and list the corrective actions taken. Report potential illicit discharges to NCDOT for [illegible]tion/reporting.	***Is there any visible sediment deposited in a stream, wetland, buffer or adjacent property? (Y/N)*** Contact DWR within 24 hours if visible sediment greater than a 5 gallon bucket is deposited in surface waters or wetlands, and DEMLR if greater than 5 gallon bucket lost off site.	****Is there any visible decrease in stream clarity (increase turbidity-cloudy) because of a discharge? (Y/N)

NOTE: Any erosion control device that is damaged that has the potential to lose sediment and or pollutants offsite and/or into surface waters should be treated as "URGENT".

SDO:

- EC devices that discharge stormwater off project and into a Jurisdictional Area
- Devices must be reviewed and listed every 7 days or within 24 hours of a 1.0" or greater rainfall that occurs in a 24 hour period.
- Include installation, maintenance, and removal.
- All associated columns must be filled in.
- Corrective Action Taken section is for description of actions taken & not description of device.
- Read and follow guidance at bottom of page.

NPDES Compliance

Erosion & Sedimentation Control Devices
(Required to list all devices that need maintenance)

Sheet ____ of ____

Inspection Date	Station Number	[illegible]ken	Priority *	Date Corrected

*R=Routine, needs attention within 5 days; U=Urgent, needs attention within 24 hours.

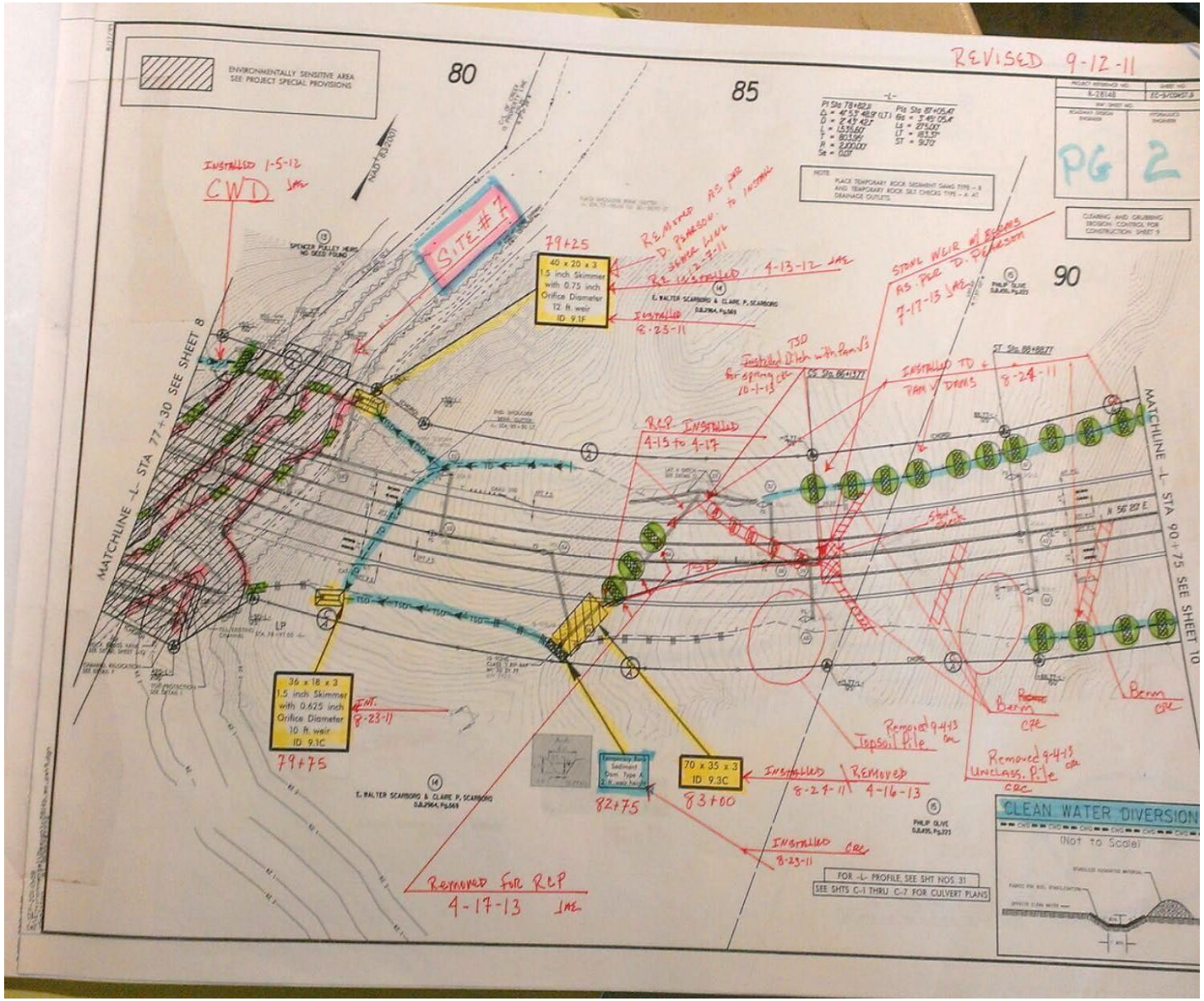
Erosion and Sedimentation Control Devices

- All Non SDO Erosion/Sediment control devices (discharge to non Jurisdictional Areas).
- Must be listed for installation, maintenance, and removal.
- Corrective Actions Taken section is for activity conducted and not description of device.
- Only document devices when action is taken.
- No Blank columns.

NPDES Compliance

Erosion and Sedimentation Control Plans

- Must be on site during life of project.
- Can be amended. Notations, date, & initials of Level II making change are needed. (Consultation between contractor & project inspector needed).
- Consult Field Operations Engineer before changing basins, outlet measures, & culvert/pipe phasing.
- Waste and borrow sites should be inspected weekly and within 24 hours of a 1.0 inch or greater rainfall event.



Updates to 2024 Standard Specifications & Revised Special Provisions

2024 Standard Specifications

- Almost all E&SC changes were incorporation of special provisions.

Special Provisions incorporated into the 2024 Spec Book:

- Tack for Mulch for Erosion Control (1060 & 1615)
- Clean Water Diversion (1609)
- Coir Fiber Mat (1629)
- Stockpile Areas/Access and Haul Roads (1630)
- Temporary Rock Silt Check Type A with Matting and Flocculant (added to 1633)
- Wattle Devices (1642)*
  - Wattles
  - Wattles with Flocculant
  - Coir Fiber Wattles
  - Coir Fiber Wattles with Flocculant
  - Silt Fence Wattle Break
  - Silt Fence Coir Fiber Wattle Break
  - Wattle Barrier
  - Coir Fiber Wattle Barrier
- Skimmer Basins (1644)**
  - Skimmer Basins
  - Tiered Skimmer Basins
- Compost Blanket (1657)
- Response for Erosion Control (1675)

* There were a few errors in the Wattle Devices section (1642) so we have a new Special Provision ("Wattle Devices") to include on any project using any of the Wattle Devices listed in Section 1642.

** All Skimmer Basins now use Low Permeability Geotextile on the weirs (no need for "East" versions now).

- New SPs for 2024 are currently in a folder named 2024 Special Provisions.

Details incorporated into the 2024 Standard Drawing Book:

- Skimmer Basin (1630.07)
- Tiered Skimmer Basin (1630.08)
- Earthen Dam with Skimmer (1630.09)
- Temporary Rock Silt Check Type A with Matting and Flocculant (1633.03)
- Wattles (1636.01)*
- Wattles with Flocculant (1636.01)
- Coir Fiber Wattles (1636.01)
- Coir Fiber Wattles with Flocculant (1636.01)
- **(Excelsior)** Silt Fence Wattle Break (1636.02)**
- Wattle Barrier (1636.03)
- Coir Fiber Wattle Barrier (1636.03)

* Wattles in ditches are now "Wattle Checks" to differentiate the device from the material.

** Standard Drawing 1636.02 (Silt Fence Wattle Break) only references excelsior wattle material. We will still need to use a detail if **Coir Fiber** Silt Fence Wattle Breaks are used.

New Special Provisions for 2024:

- Wattle Devices

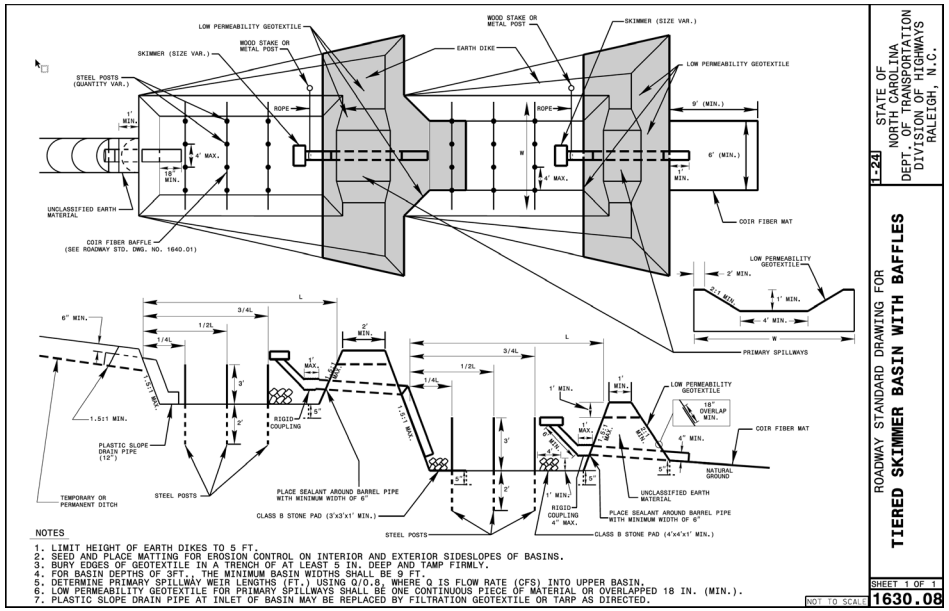
Current Special Provisions with new versions for 2024:

- Earthen Dam with Skimmer
- Fabric Insert Inlet Protection*
- Infiltration Basin with Baffles
- Stormwater Basin Erosion Control
- Culvert Diversion Channel

*FIIP is still a generic EC pay item for now but will now require a supplemental description ("Type 1" for High Flow or "Type 2" for Low Flow).

Current Details with new versions for 2024:

- Infiltration Basin with Baffles
- Silt Fence Coir Fiber Wattle Break
- Borrow Pit Dewatering Basin



2024 E&SC Provisions

- Floating Turbidity Curtain

FLOATING TURBIDITY CURTAIN:
(Rev. 2/01/24)

Description

A *Floating Turbidity Curtain* consists of geotextile material (curtain) with floats on the top, weights on the bottom, and an anchorage system that helps to contain suspended silt and limit the movement of silt particles in water bodies during construction. The work consists of furnishing, installing and maintain *Floating Turbidity Curtain* at locations as shown on the plan and as directed.

Materials

Floating Turbidity Curtain skirt material shall be a synthetic fabric coated with suitable elastomeric or polymeric compound. The coating shall have a high resistance to weathering, hydrocarbons, fresh and salt water, and temperature extremes of either an 18 oz or 22 oz weight meeting the following specifications:

Property	Test Method	18 ounce	22 ounce
Material		Woven geotextile with a polymer coating	Woven geotextile with a polymer coating
Weight	ASTM D-751-95 (sec 16)	18 oz/sy	22 oz/sy
Adhesion	ASTM D-751-95 (sec 43.1.2)	15 lb/in	14 lb/in
Tensile Strength	ASTM D-751-95 (sec 12)	397 x 373 lb/in	500 x 400 lb/in
Tear Strength	ASTM D-751-95 (sec 34.2)	96 x 86 lb/in	132 x 143 lb/in
Hydrostatic	ASTM D-751-95 (sec 12)	385 lb/sq in	881 lb/sq in

The floating turbidity curtain shall have a UV inhibitor applied. Floating turbidity curtain panels shall be a minimum 50 feet in length with all seams either welded or sewn by type. The curtain material shall be supported by an encased flotation material of sufficient buoyancy to support the weight of the curtain and maintain a freeboard of at least 4 inches above the water surface level. Floating Turbidity Curtain shall have a galvanized chain incorporated into the hem of the curtain of sufficient weight to serve as ballast to hold the curtain in the vertical position. A top load line shall consist of woven webbing or vinyl-sheathed steel cable, with a minimum break strength of 9,800 pounds. Minimum properties of each by type are as follows:

Type	Skirt	Load Line	Ballast Chain	Panel Connectors
DOT Type 1	18 ounce	Woven webbing	¼" steel chain	Lacing grommets (ASTM 962)
DOT Type 2	22 ounce	5/16" cable	5/16" steel chain	Lacing grommets (ASTM 962)
DOT Type 3	22 ounce	Dual 5/16" cable	3/8" steel chain	Lacing grommets (ASTM 962)

Construction Methods

Install *Floating Turbidity Curtain* at locations shown on the plans and as directed. Securely anchor the curtain according to manufacturer's recommendations. *Floating Turbidity Curtain* designs over 200 feet in length shall also have intermediate anchors spaced every 100 feet along the length of the curtain or per manufacture's recommendations. The curtain skirt shall extend to the bottom of the jurisdictional resource except at locations subject to tidal influence or significant wave action. At these locations, the curtain skirt shall extend to within one foot of the bottom at mean low water. Floating turbidity curtains designs requiring multiple panels shall be connected per manufacturer's recommendations.

Turbidity curtains should be located parallel to the direction of flow of a moving body of water. Turbidity curtains should not be placed across the main flow of a significant body of moving water. Maintain the *Floating Turbidity Curtain* in a satisfactory condition until its removal is directed by the Engineer.

Install marking buoys with automatic lights that conform to US Coast Guard regulations for Type 3 installations. Install buoys at intermediate anchor points in navigable channels as directed and in accordance with the manufacturer's recommendations. Maintain the marking buoys in a satisfactory condition until removal is requested by the Engineer. Install additional anchors per manufacturer's recommendations to secure both the floating turbidity curtain and buoys.

Measurement and Payment

Floating Turbidity Curtain will be measured and paid for as the actual number of square yards of curtain type furnished as specified and accepted. Such price and payment will be full compensation for the work as described in this section including but not limited to furnishing all materials, tools, equipment, and all incidentals necessary to install, secure and maintain the *Floating Turbidity Curtain*. Marking buoys shall be paid for as *Navigational Aids for Floating Turbidity Curtain* and will be measured and paid for by the actual number installed and accepted. Such price and payment will be full compensation for the work as described in this section including but not limited to furnishing all materials, tools, equipment, anchoring, and all incidentals necessary to install, secure and maintain the *Navigational Aids for Floating Turbidity Curtain*.

Payment will be made under:

Pay Item	Pay Unit
Floating Turbidity Curtain, Type 'x'	Square Yard
Navigational Aid for Floating Turbidity Curtain	Each

2024 E&SC Provisions

• Concrete Washout

CONCRETE WASHOUT:
(10-22-15)(rev.

Description

Concrete washouts are impermeable enclosures, above or below grade, to contain concrete wastewater and associated concrete mix from cleaning of ready-mix trucks, drums, pumps, tools or other equipment. Concrete washouts must collect and retain all the concrete washout water and solids, so that this material does not migrate to surface waters or into the ground water. These enclosures are not intended for concrete waste not associated with washout operations.

Acceptable concrete washouts may include constructed earthen structures, above or below ground, or commercially available devices designed specifically to capture concrete wash water.

Materials

Item	Section
Temporary Silt Fence	1605

Safety Fence shall meet the specifications as provided elsewhere in this contract.

Geomembrane basin liner shall consist of a minimum 10 mil thick polypropylene or polyethylene geomembrane.

Construction Methods

Build an enclosed earthen berm or excavate to form an enclosure in accordance with the details and as directed by the Engineer near the project entrance(s) or at location(s) of concrete operations. Structures should be constructed a minimum of 50 feet from drainage conveyances or jurisdictional streams or wetlands. Alternate structure designs or plans for management of concrete washout may be submitted for review and approval. The alternate plan shall include the method used to retain, treat and dispose of the concrete washout wastewater generated within the project limits and in accordance with the minimum setback requirements.

Install temporary silt fence around the perimeter of the structure enclosure in accordance with the details and as directed if structure is not located in an area where existing erosion and sedimentation control devices are capable of containing stormwater runoff.

Post a sign with the words "Concrete Washout" in close proximity of the concrete washout area, so it is clearly visible to site personnel. Install safety fence as directed for visibility to construction traffic.

Install prefabricated concrete washouts, designed specifically to capture concrete wash water, at locations of additional concrete pouring operations. Acceptable systems may include geotextile lined containers, vinyl or plastic containers or roll-off containers, with or without filter bags with a minimum functional holding capacity of 36 cubic feet (1.33 cubic yards). Submit prefabricated concrete washout system for approval prior to installation. Site prefabricated concrete washout devices adhering to minimum 50 foot setback from drainage conveyances and jurisdictional streams and wetlands. If the minimum setback cannot be achieved, provide secondary containment to prevent accidental release of wastewater from reaching drainage conveyances or streams.

Prefabricated concrete washouts must be clearly and visibly labeled as such, either by the manufacturer on the product itself, or by a sign with the words "Concrete Washout" in close proximity of the concrete washout area so it is clearly visible to site personnel.

Maintenance and Removal

Maintain the concrete washout structure(s) to provide adequate holding capacity plus a minimum freeboard of 12 inches. Remove and dispose of hardened concrete and return the structure to a functional condition after reaching 75% capacity. Inspect concrete washout structures for damage to liner or structure to maintain functionality.

Maintain prefabricated concrete washout systems per manufacturers recommendations. Inspect concrete washout structures for damage to linings or structure and repair or replace as necessary.

Remove the concrete washout structures and sign upon project completion. Grade the area to match the existing topography and permanently seed and mulch area. Dispose of prefabricated concrete washout structures according to state or local waste regulations.

Measurement and Payment

Concrete Washout Structure will be paid for per each enclosure installed in accordance with the details. If alternate plans or details are approved, those structures will also be paid for per each approved and installed structure. Such price and payment will be full compensation for all work including, but not limited to, furnishing all materials, labor, equipment, signage and incidentals necessary to construct, maintain and remove *Concrete Washout Structure* and dispose of residual concrete washout wastewater and concrete solids.

Prefabricated Concrete Washout will be paid for per each system installed in accordance with the manufacturers recommendations. Such price and payment will be full compensation for all work including, but not limited to, furnishing all materials, labor, equipment, signage, slurry solidification and incidentals necessary to install, maintain and remove *Prefabricated Concrete Washout*, and dispose of residual concrete washout wastewater and concrete solids.

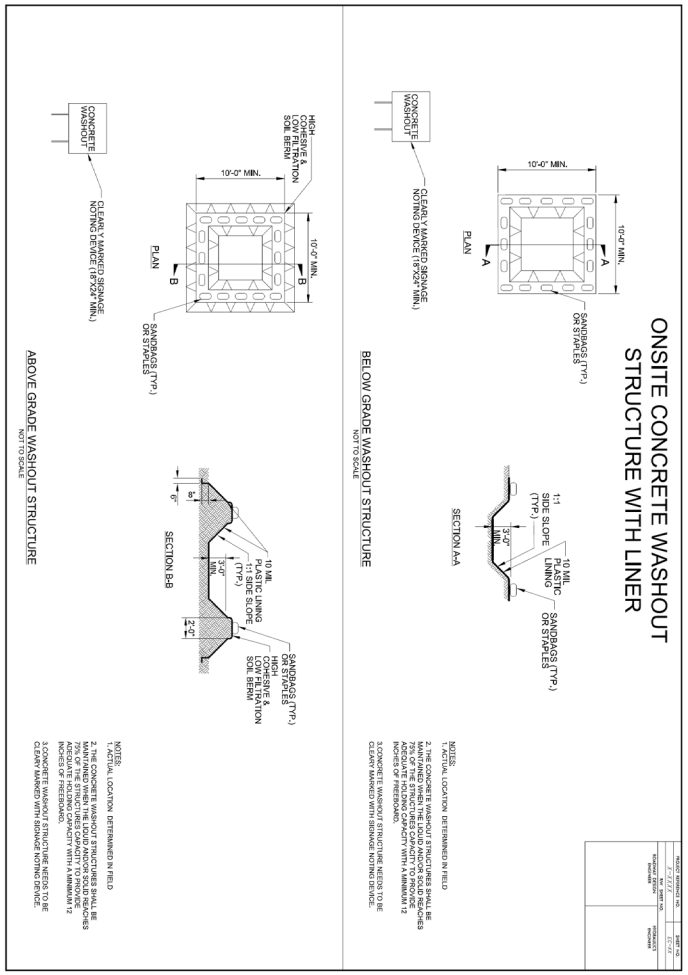
Temporary Silt Fence will be measured and paid for in accordance with Article 1605-5 of the *Standard Specifications*.

Safety Fence shall be measured and paid for as provided elsewhere in this contract.

No measurement will be made for other items or for over excavation or stockpiling.

Payment will be made under:

Pay Item	Pay Unit
Concrete Washout Structure	Each
Prefabricated Concrete Washout	Each



2024 E&SC Provisions

- Prefabricated Concrete Washouts
  - Provide options for commercial products to fit situational needs
  - 36 cubic ft minimum volume (269 gal)

2024 E&SC Provisions

- Prefabricated Concrete Washouts
  - Need to be specifically manufactured for containment

- Kiddie pools are for swimming

- Containment cannot be porous

Construction Related Permit Updates

Construction Related Permit Updates

- NCG 010000 – 'Construction Stormwater Permit'
  - 2022 EPA General Construction Permit
    - Qualified Inspector
    - Turbidity Monitoring Requirements
  - NCDEQ NCG 010000 permit expires March 31, 2024
    - No changes expected to the permit during renewal
- WQ 0035749 – 'DGS/HOS Residuals Disposal'
  - Current Permit expires May 31, 2024
  - No anticipated changes to requirements

DGS/HOS Management

- Permit No. WQ0035749
  - Treats DGS as industrial/commercial wastewater
  - Limits storage and management and options
- Disposal Options
  - Disposal through a permitted facility
  - Land Application
  - Mechanical Dewatering Operations

North Carolina Department of Transportation
Concrete Grinding Residual
Management and Disposal
Permit WQ0035749 for Land Application of DGS/HOS

DGS/HOS Quick Details
12-01-21

Develop HOS/DGS Management and Disposal Plan: **45** Day Review

- **HOS/DGS Management and Disposal Plan** – What overall strategy will be used to manage the DGS waste?
- **Collection and Containment** – How will the material be collected and contained for disposal?
- **Sampling and pH Control Plan** – pH must be below 12.5 and monitored for compliance
- **Spill Control Plan** – How will an accidental spill be handled?
- **Temporary Storage of DGS/HOS** – How will DGS be temporarily stored?
- **Solid Waste Disposal Plan** – What is the final disposal plan of any remaining waste material?
- **Documentation** – Retain all records for documentation for the annual report to DEQ.

Disposal Options:

- **Commercial Treatment and Disposal** *(Recommended)* **–** Permitted operation can process slurry and dispose of the waste products.
- **Commercial Land Application** *(Recommended)* – Permitted operation can apply slurry on private lands and operate under our Land Application permit with DEQ.
- **Land Application on NCDOT RoW** – Land apply material in compliance with the NCDEQ-DWR Permit No. WQ0035749. Adequate rights-of-way must be available, and the material must be applied at agronomic rates. Soil test will determine quantity of material applied.
  - **Discharge directly from the grinding machine is considered Land Application but is subject to all the requirements of testing pH and agronomic application rate.** Failure to do so will result in permit violation.
  - **Recommended** – Use a Certified Land Application Operator (Attachment D)
  - **Land Application must remain compliant with the entire permit. Attachment A**
- **Mechanical Separation** of DGS into a wastewater and solid waste products. Return water to grinding operation. Dispose of remaining wastewater at a municipal wastewater treatment facility and dispose of the concrete residual at a C&D Landfill or used as beneficial fill on a DOT project. **Means of separation not covered under existing permits and details will require coordination with regional NCDEQ office.**

Temporary DGS/HOS Storage: Up To 90 Day Review

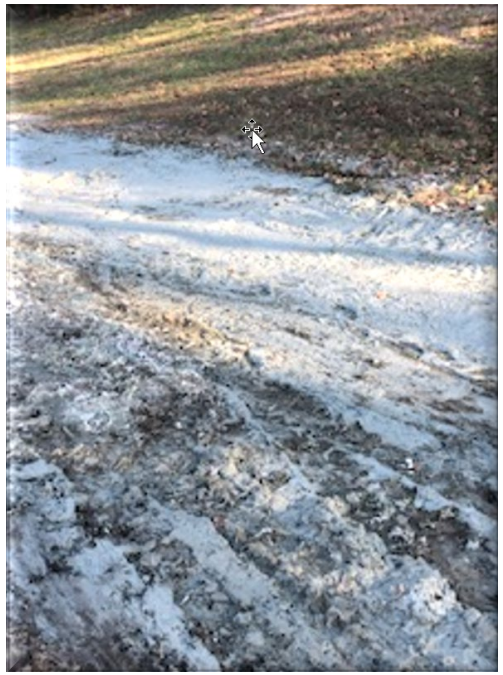
- **Above Ground Storage** *(Recommended)* tanks do not require any additional permits
- **In Ground Storage** – requires an additional permit if an earthen storage structure is used on-site or off-site of the DOT property. See **Attachment E** for the application form (DCAR 06-16) **Allow NCDEQ for review time: 90 Days**
- **In Ground Storage plans will require the signature and seal of a licensed NC Professional Engineer.**

Documentation: Required at the end of the completion of the project or at the end of each year.

- If the **Land Application Permit** disposal process was used by the contractor on NCDOT rights-of-way, then the contractor will furnish the information in Attachment F to NCDEQ and NCDOT with 30 days of the completion of the DGS/HOS work or by the end of each calendar year.

DGS/HOS Management

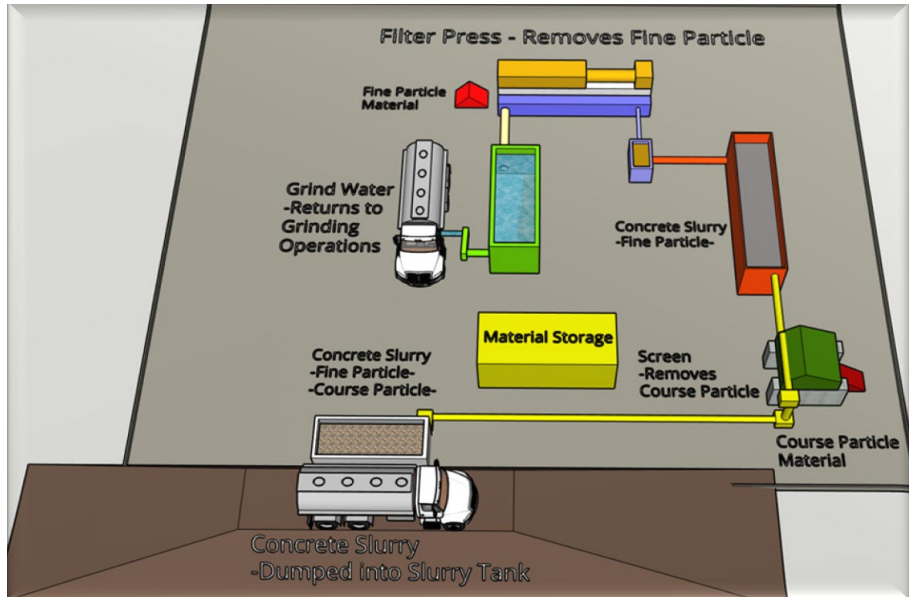
- Land Application
  - May be performed on NCDOT ROW and on 3rd party properties
    - Must be done at agronomic rates under restrictions of the permit
  - Land Application is very challenging on ROW



- Permitted Facility
  - Any facility permitted to accept Class A residuals
    - Municipal WWTP
    - Commercial wastewater treatment companies

DGS/HOS Management

- Mechanical Dewatering Operations
  - Performed as part of the grinding operation
  - Remaining residuals must be disposed of under permit requirements



- Excavated Storage
  - Requires permit modification from NCDEQ

Spill Prevention, Control, & Countermeasure Plans for Construction

- SPCC is Federal Requirement
  - SPCC Plans (Spill Plans) intended to “prevent” oil spills, but do include reporting requirements
  - SPCC Plan determination - oil thresholds and discharge to navigable waters/ adjoining shorelines [Note: often challenging for construction projects or facilities experiencing constant changes]
  - SPCC Plans must contain certain elements, but also must have site-specific content (i.e., oil container inventory, site map, containment measures, oil handling/ transfer procedures)
  - SPCC Plans are “living” – must be on-site, and they have inspection and documentation requirements (i.e., routine oil container inspections) – which should be checked by Construction Inspectors
  - SPCC Plans have change requirements (i.e., when new oil containers added to site)
  - SPCC Plans have certification requirements (i.e., licensed NC PE)

EPA United States Environmental Protection Agency

Search EPA.gov

Environmental Topics | Laws & Regulations | Report a Violation | About EPA

Oil Spills Prevention and Preparedness Regulations

CONTACT US

- Oil Spills Prevention and Preparedness Regulations Home
- About SPCC
  - SPCC Applicability
  - Qualified Facility Determination
  - SPCC for Agriculture
  - SPCC for the Upstream Sector
- About FRP
- Guidance and References
- Training Resources
- Frequent Questions

Overview of the Spill Prevention, Control, and Countermeasure (SPCC) Regulation

- Rule Summary
- Rule History
- Additional Information

Rule Summary

Originally published in 1973 under the authority of §311 of the Clean Water Act, the Oil Pollution Prevention regulation sets forth requirements for:

- the prevention of,
- preparedness for, and
- response to oil discharges at specific non-transportation-related facilities.

The goal of this regulation is to prevent oil from reaching navigable waters and adjoining shorelines, and to contain discharges of oil. The regulation requires these facilities to develop and implement Spill Prevention, Control, and Countermeasure (SPCC) Plans and establishes procedures, methods, and equipment requirements (Subparts A, B, and C).

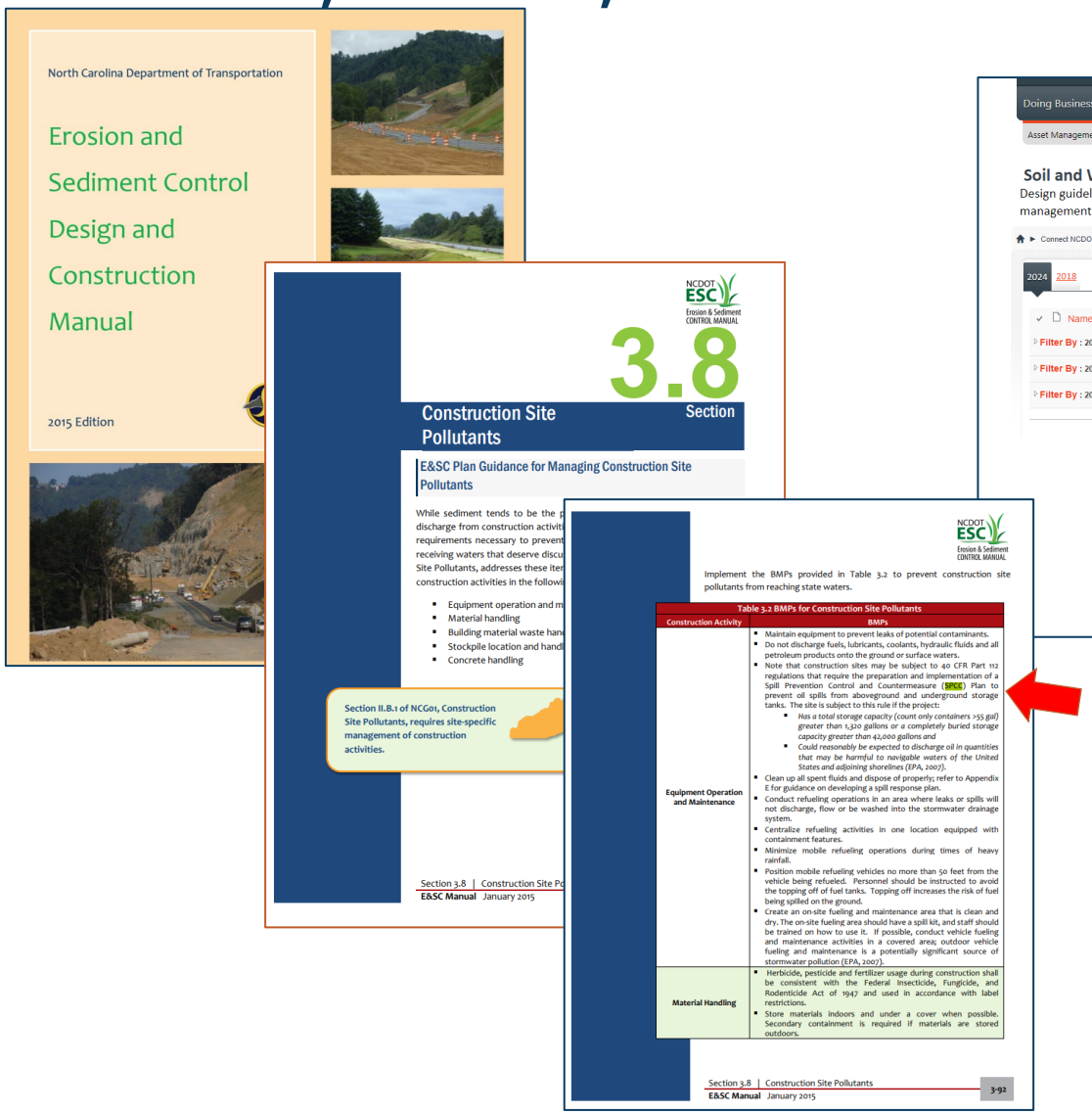
Basic Information

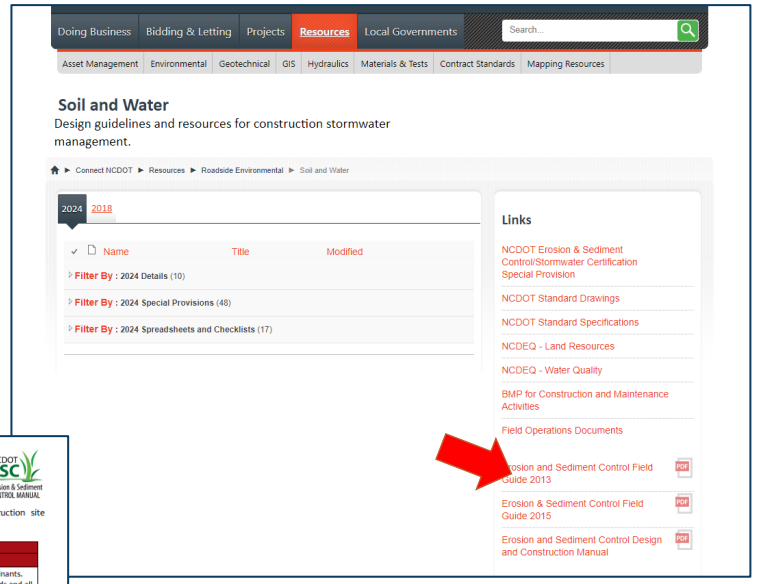
Legal Authority: Section 311(j)(1)(C) of the Clean Water Act as amended by the Oil Pollution Act of 1990

Federal Register: Related Federal Register Notices

Code of Federal Regulations: 40 CFR 112

Spill Prevention, Control, & Countermeasure Plans for Construction





https://connect.ncdot.gov/resources/roadside/Pages/Soil-Water.aspx

Spill Prevention, Control, & Countermeasure Plans for Construction

NCDOT Erosion and Sediment Control Design and Construction Manual
Section 3.8, Page 3-92, Table 3.2 BMPs for Construction Site Pollutants

- Note that construction sites may be subject to 40 CFR Part 112 regulations that require the preparation and implementation of a Spill Prevention Control and Countermeasure (SPCC) Plan to prevent oil spills from aboveground and underground storage tanks. The site is subject to this rule if the project:
  - *Has a total storage capacity (count only containers >55 gal) greater than 1,320 gallons or a completely buried storage capacity greater than 42,000 gallons and*
  - *Could reasonably be expected to discharge oil in quantities that may be harmful to navigable waters of the United States and adjoining shorelines.*

Spill Prevention, Control, & Countermeasure Plans for Construction

- Tier Plan Requirements
  - Tier II qualified facility is one that has an aggregate aboveground oil storage capacity of 10,000 U.S. gallons or less and meets the oil discharge history criteria in §112.3(g)(2)
  - Tier I qualified facility, in addition to meeting the eligibility criteria for a Tier II qualified facility, a facility must have no individual aboveground oil storage containers with a capacity greater than 5,000 U.S. gallons
    - Tier I and Tier II facilities may self-certify

  - Tier III qualified facility is one that has an aggregate oil storage capacity exceeding 10,000 U.S. gallons <u>or</u> an individual aboveground oil storage container with a capacity greater than 5,000 U.S. gallons
    - Tier III facilities require plan to be sealed by and licensed engineer

Spill Prevention, Control, & Countermeasure Plans for Construction

SPCC Elements*

- Management Approval
- Plan Certification
- Site Plan/Diagram, Description, Drainage, Security
- Oil Container Inventory
- Secondary Containment or Diversionary Structures
- Bulk Container Info (inspections, overfill, integrity testing)
- Oil Transfer Procedures
- Oil Discharge Predictions
- Facility Inspections
- Employee Training (oil discharge prevention briefings)
- Plan Reviews (5-Yr or as changes occur)
- Recordkeeping

* Green Highlights indicate site-specific language or approval needed

Spill Prevention, Control, & Countermeasure Plans for Construction

Frequently Asked Questions

- “Oil” is defined as any substance that can cause a sheen or form a sludge if spilled in water. This includes petroleum-based fuels such as diesel fuel and gasoline, most lubricants and engine oils, petroleum-based solvents, mineral oils, synthetic oils, vegetable oils, oil refuse, fats, greases, and asphalt compounds, or oil mixed with wastes other than dredged spoil (such as oily washwater).
- How is asphalt considered? Since asphalt exhibits liquid-like behavior at certain temperature ranges, it is regulated under SPCC. This includes cutbacks and emulsions while hot asphalt mix (HMA) and HMA containers are exempt from regulation since they are unlikely to flow based on the aggregate mixture.

Spill Prevention, Control, & Countermeasure Plans for Construction

Frequently Asked Questions

- "Facility Capacity" includes the shell capacity of all containers
- Containers to include in inventory:
  - Containers >= 55 gallons
  - 55-gallon drums
  - Tanks, portable oil containers, generators
  - Empty containers (>=55-gal capacity) that may be used to store oil and are not permanently taken out of service
  - Oil-filled equipment (>=55 gal)
- Do Not Include:
  - Containers < 55 gallons
  - Tanker trucks (road worthy and tagged) – [unless permanently staged on-site for project]
  - Underground storage tanks (USTs)

Spill Prevention, Control, & Countermeasure Plans for Construction

If you have questions, such as:

- How to calculate oil storage capacity?
- How to determine if my construction project could reasonably discharge oil to navigable waters or adjoining shorelines?
- Can I self-certify SPCC Plan or do I need a NC PE to certify?
- How do I ask for an extension of time to prepare and implement SPCC Plan for my construction project?
- What employee training is required?
- What records to I need to keep on-site?

Contact NCDOT Roadside Environmental Unit

Thank you!