



E&S Construction Hot Topics

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LESSONS LEARNED

MARCH 9, 2021

From Design to Construction

- The new Delaware NPDES Construction General Permit (CGP) was signed by DNREC on March 1 and will be effective on **March 11, 2021**.
- This new CGP has **eliminated the post-rain event inspection requirement for E&S**.
- Weekly inspection and recording keeping are still required. For projects that are marked “Major”, a CCR (gold card holder) will be assigned, and he/she will complete the weekly report. For projects that are marked “Minor” but have **disturbance area for more than an acre (NOI is required)**, a **DelDOT weekly self E&S inspection is required to be completed by a minimum Responsible Personnel (blue card holder)**.

Self Inspection Form in Unifier For Projects that are Minor (without CCR) and have NOIs (>1 acre)

DELDOT E&S SITE INSPECTION FORM

REGULAR, TIMELY INSPECTIONS ARE CRITICAL – CONDUCT INSPECTIONS WEEKLY & WITHIN 24 HOURS OF A RAIN EVENT GREATER THAN OR EQUAL TO 0.50" IN A 24 HOUR PERIOD

CONTRACT NO: T209901206 PROJECT NAME: Billys December Test Project
 DATE: 02/23/2021 TIME IN: _____ TIME OUT: _____ NOI: _____
 INSPECTOR NAME: Craig Blowers BLUE/GOLD#: 1

Comments:

Sediment & Stormwater Management Plan (SSMP)

1. Is the Sediment & Stormwater Mgt Plan (SSMP) current?

Erosion & Sediment Controls

2. Are erosion control practices in place and function?

3. All sediment control devices installed as per SSMP?

4. Are sediment traps and basins functionality properly?

5. Are outfall discharge points free of any sediment?

Create New E&S Site Inspection

General Deficiency Backup

3.) All sediment control devices installed as per SSMP? (CISC, DISC, CFLs)

4.) Are sediment traps and basins functioning properly? (stabilized, capacity <= 50%, outlets installed)

5.) Are outfall discharge points free of any sediment?

6.) Is tracking of sediment, mud and debris observed?

7.) Is the site appropriately stabilized in accordance with the E&S Plan? (14 c.d. Temporary; 7 c.d. Permanent) ?

8.) Temporary stockpiles or construction materials in approved areas and protected from erosion? (Perimeter controls or under cover, locations must be red lined on the current SSMP by ESL)

▲ Pollution Prevention Practices













Select the appropriate response from the drop-down menu. "U" conditions will require deficiencies listed & corrective actions to be taken with photos per DNREC.

9.) Material handling and storage?

10.) Waste Management (waste collection & sanitary facilities)?

From Design to Construction

- Construction
- Cost Estimating & Project Timing
- Environmental
- Example Plans
- Highway Design
- Hydrology & Hydraulics
- Pavement & Materials
- Planning
- Project Management
- ProjectWise
- Right-of-Way
- Stormwater

-  Erosion and Sediment Control Field Guide
-  ES2M Inspection Rating Form
-  ES2M Inspection Rating Form Guidance
-  Final Inspection Process
-  FHWA Stewardship Agreement Addendum
-  Guardrail - FHWA Guidance on Proper Application and Installation of Roadside Hardware
-  Guardrail - FHWA Guidance on Strong Post W-Beam Guardrail
-  Liquidated Damages Chart
-  Erosion and Sediment Control Revision Form
-  SWESESL Plan Change Approvals and Responsibilities
-  ES2M Non-Rating form
-  2019 ES2M Inspection Guidance

Redline/Plan Revision for Field Change

De/IDOT Field Personnel or Contractor Identify need for change to the approved SW or Erosion & Sediment Control Plan



Do the proposed changes affect permanent proposed features?

- If not, coordinate with ESL or E&S Engineer based on type of change in the *Designated Approval Authority by Field Change Type* table and prepare redline or plan revision for approval
- Obtain signature approval on the redline approval form

Yes

Notify Designer of record to issue Plan Revision

- Coordinate with Stormwater Engineer if change affects drainage areas, structures, or proposed SW Facilities for approval

E&S Revision Form

Approval Authority Individuals

Updated: September 1, 2020

Title/Position	Name
Stormwater Engineer	Stephen Wright
E&S Engineer	Ting Guo
ESL – Group 1 Construction	Jay Hayes
ESL – Group 2 Construction	Frank Miller
ESL – Group 3 Construction	Adam Marvin
Environmental Stewardship	Trevor McColley



Erosion and Sediment Control Revision Form

Contract Name: _____ Contract No.: _____

Date: _____ Revision No.: _____ Requested by: Department Contractor

Revised Plan Sheet Number(s): _____

Revision Category:		
<input type="checkbox"/> BMP/E&S Device Modification	<input type="checkbox"/> Sequencing/Phasing (Minor)	<input type="checkbox"/> LOC (Minor)
<input type="checkbox"/> Alternate BMP/E&S Device	<input type="checkbox"/> Sequencing/Phasing (Major)	<input type="checkbox"/> LOC (Major)
<input type="checkbox"/> Wetland/Environmental Impacts	<input type="checkbox"/> Permanent Modification	

Revision Reason And Description :

Review Comments/Conditions/Notes:

<input type="checkbox"/> Approved	<input type="checkbox"/> Revisions Required
<input type="checkbox"/> Approved with Conditions (see above)	<input type="checkbox"/> Rejected

Signatures Required*: (ESL/Department use only)			
<input type="checkbox"/> E&S Liaison		<input type="checkbox"/> E&S Engineer	
Approved by: (E&S Liaison)	Date:	Approved by: (E&S Engineer)	Date:
<input type="checkbox"/> DeIDOT Representative/RE/AE		<input type="checkbox"/> Stormwater Eng.	
Approved by: (DeIDOT Representative/RE/AE)	Date:	Approved by: (Stormwater Engineer)	Date:
<input type="checkbox"/> Environmental Studies		<input type="checkbox"/> Designer	
Approved by: (Environmental Studies)	Date:	Approved by: (Designer of Record)	Date:
<input type="checkbox"/> Contractor			
Proposed by: (Contractor)	Date:		

* Signature blocks of unchecked designees will be considered Non Applicable for revision approval

This document is to be completed in request of an E&S field revision. Should this revision create a situation in which Erosion and Sediment control

Designated Approval Authority by Field Change Type

Field Change Type	Device/Facility/Feature Examples	Plan Change Type	ESL	E&S Engineer	Stormwater Engineer
Permanent BMP Modification	Infiltration Trench, Bioretention, Infiltration Basin, Extended Detention, (changes to location, size, outlet structure type, sediment forebay, contributing drainage areas)	Plan Revision			X
Sediment Trapping Location, Size, and Type Change	Sediment Traps, Sediment Basin (changes to location, size, contributing drainage areas)	Plan Revision/ Redline	X Minor modifications to regular sediment traps	X New and E&S designed sediment traps/basins	X Sediment basins that are based on permanent facilities
Permanent Drainage Structure Modification	Inlets, Pipes, Culverts, Underdrain	Plan Revision			X
Sheet Flow Condition Change	Silt Fence, Reinforced Silt Fence, Super Silt Fence, Environmental Silt Fence (ASF)	Redline	X		

Designated Approval Authority by Field Change Type

Field Change Type	Device/Facility/Feature Examples	Plan Change Type	ESL	E&S Engineer	Stormwater Engineer
Concentrated Flow Condition Change	Check Dams (Compost Filter Logs or Stone), Inlet Sediment Controls, Temporary Swales or Berms, Pump Inflow and Outflow Location, Stabilized Construction Entrance	Redline	X		
Minor LOC Modification	Perimeter controls, stabilized construction entrances	Redline	X		
Major LOC Modification	Perimeter controls, stabilized construction entrances, stormwater facilities	Plan Revision			X
Stockpile Location Change	Perimeter controls	Redline	X		
Substitution of a Standard E&S item for another Standard Device	Silt Fence, CFLs, Check Dams, Inlet Sediment Control	Redline	X		
Substitution of a standard E&S item for an Alternative E&S Device	DelDOT E&S Specified Devices for Alternative devices not in accordance with specification sand details	Plan Revision/ Redline		X	

Designated Approval Authority by Field Change Type

Field Change Type	Device/Facility/Feature Examples	Plan Change Type	ESL	E&S Engineer	Stormwater Engineer
Addition of a Standard E&S Item	Silt Fence, Inlet Sediment Control, CFL, SCE	Redline	X		
Minor Sequence/Phase Changes	N/A	Redline	X		
Major Sequence/Phase Changes	N/A	Plan Revision		X	X
Removal of E&S Devices	Perimeter Controls, CFL, Check Dam, Inlet Sediment Control, SCE	Redline	X		

E & S Control Measures Used for In-Stream Work

- ▶ Have existing stream go around or through the work area.

CLEAN WATER BYPASS / DIVERSION (Stilling Well and Stabilized outfall are crucial)

- ▶ 2. Dewatering of work area.

SUMP PITS (Flow Meters needed)

- ▶ 3. Removal of sediment.

PORTABLE SEDIMENT TANK, DEWATERING BAG, DEWATERING BASIN, TURBIDITY CURTAIN

Final Stabilization

- ▶ Need to collect seed tags and report on the application of 6" of topsoil
- ▶ Ensuring reseeding is performed during the spring and fall growing periods
- ▶ Projects extending several growing seasons without final stabilization approval

SWPPPTrack DOT and Regulatory Inspections

- ▶ Coming soon to a project near you
- ▶ Training available for Inspectors and report recipients
- ▶ For SWPPPTrack support email DEsupport@SWPPPTrack.com or call 888-401-1993

5101 Sediment and Stormwater Regulations- Stormwater Management BMP Review During construction **CCR Inspection**

- ▶ 6.5.5 All stormwater management systems shall be reviewed during construction with enough frequency to document that the system has been constructed in accordance with the approved Sediment and Stormwater Management Plan, the design specifications, and the appropriate stormwater management system construction checklist. **The Owner shall provide adequate notice to the Department or Delegated Agency and Certified Construction Reviewer**, if applicable, before initiating construction of stormwater management systems. **The Department, Delegated Agency, or Certified Construction Reviewer shall be responsible for conducting and documenting these reviews, as required. Photographic documentation of construction of the stormwater management system is required.**

CCR Responsibilities on DeIDOT Projects

- ▶ For Major Projects, this position will be assigned by the E&S Engineer with the following responsibilities.
- ▶ Schedule and attend an ES2M Pre-Construction Meeting on site, which is a separate meeting from the Project Construction Pre-Construction meeting, a minimum of 7 days prior to the Notice to Proceed. Review approved ES2M plan with the contractor and the DeIDOT Project Resident. Discuss any proposed plan changes at this time. Document the meeting within 3 days of occurrence and distribute to attendees and other designated DeIDOT personnel.
- ▶ Perform weekly ES2M Inspections and submit reports to the E&S Section.
- ▶ Perform SWM construction checklist and submit checklist to the E&S Section.

CCR Responsibilities on DeIDOT Projects

- ▶ Provide required inspection of critical components of SWM (Stormwater Management) Facility construction in accordance with DSSR §6.5.5 and complete the SWM Construction Checklist as per DSSR §6.1.5 and §6.3.1.3.
- ▶ **Contractor Responsibility**-Provide the ES2M CCR 48 hour prior notification, in advance of breaking ground on any SWM Facility construction.
- ▶ **3rd party inspection only benefits the contractor and provides a blanket of protection in the case of BMP Failure and is a critical part of Infiltration practices as well as BMP's with any hidden(subgrade) infrastructure.**

The CCR can document proper construction practices

Properly excavated bioretention cell with stabilized contributing drainage area





CCR can document the BMP Sequence of Construction was followed

- ▶ Properly excavated infiltration basin
- ▶ Bottom elevation left high while functioning as a sediment basin



Infiltration practice functionality is no longer subjective and post construction infiltration testing is required on all facilities.

Ensuring proper permit coverage for all disturbances

Over 5000 sq ft and under One Acre.

- ▶ Requires an approved plan from DeIDOT's stormwater engineer
- ▶ Standard plans fit many construction activities
- ▶ Example: Linear, stockpiling

One Acre and up

- ▶ Requires an approved plan from DeIDOT's stormwater engineer
- ▶ Requires a Notice of Intent (NOI)
- ▶ Requires weekly inspection and reporting
- ▶ Requires Approved Plan, NOI and weekly inspections to be kept on site and available for regulators

Disturbance is measured by the sum of the total area disturbed, even if the disturbed areas are not contiguous.

Off site stockpiles



Rolling stabilization



DNREC IS WATCHING



When in doubt, always inquire if a plan is required.

Limit of Construction Violations

- ▶ Never work, stage materials or stockpile outside of the approved LOC....even vegetation killed by traffic can be considered disturbed area.
- ▶ The LOC ensures all areas are protected by control measures and ensures the project has the proper plan or permit coverage.
- ▶ ESL's are in place to make quick LOC revisions as needed so construction can continue.
- ▶ Look ahead.....to anticipate LOC changes before they are needed...every LOC violation opens DeIDOT to regulatory action by DNREC.





E&S Perimeter Control Removal

- ▶ Approval is required before the removal of perimeter controls or any E&S BMP's
- ▶ The ESL can redline the removal of controls when they are no longer needed.
- ▶ Be proactive and request removal for controls which are no longer needed but are still required by the plan.

Dewatering

- ▶ Always filter on intake and discharge ends.
- ▶ Cause of many violations
- ▶ Can result in an instant NOV from DNREC if performed improperly
- ▶ If unsure...ask your CCR, ESL or me for guidance and pre-inspection of your dewatering set up.



A construction friendly approach to Sediment and Stormwater compliance

- ▶ We are always held within the framework of the Federal and State sediment and stormwater regulations (minimum standards)
- ▶ Since June, as issues with CCR reporting guidance are discussed adjustments have been made to the guidance documents which seek fairness while adhering to regulatory requirements.

Guidance Tweaks –BMP's installed which are not shown on the plan.

- ▶ If the contractor has added additional E&S controls that do not impact the LOC or Environmental Compliance Plan a red line plan is required but a 7 day grace period will be given. CCR is to document what was installed on their current report and state approved plan revision is required within 7 days. The E&S controls themselves will be inspected at the time of inspection and listed as deficient if not installed correctly.
- ▶ Former Guidance was to report additional E&S controls as Non-Compliant for failure to follow the approved plan, the first time observed.

Guidance Tweaks –BMP Removal

- ▶ For BMPs which have been redlined for removal, regardless of the BMP condition, do not mark as unsatisfactory until 14 days following date of the redline. After 14 days, the BMP (SF,CFL,IP...Etc.) is considered construction debris and must be removed. This will give the contractor 10 working days to perform the removal.
- ▶ Former guidance was to find BMPs which have been redlined for removal as unsatisfactory for not following the approved plan during the first time observed.

Guidance Tweaks – DNREC specification allowance

- ▶ DNREC dewatering specification and allowing smaller CFLs have been pre-approved for use on DeIDOT projects.
- ▶ If the need arises to use more/other DNREC ESC Handbook specifications that differ from DeIDOT specifications, this can be accomplished by gaining ESL and Stormwater Section approval.
- ▶ The DeIDOT specification should always be the first choice and no substitutions can be made without approval.

Communication is Key-

Actual utility pole in Wilmington

- ▶ Commonsense will not always prevail but we can try
- ▶ nathan.zimmerman@delaware.gov
- ▶ Cell: 302-382-1406



Questions?

