

**North Carolina Department of Transportation
Roadside Environmental Unit
Erosion & Sedimentation / Stormwater Report**

ICA / ECPAR

Immediate Corrective Action / Erosion Control Plan Audit Request

This project does not comply with the North Carolina Erosion and Sedimentation Control laws. Immediate Corrective Action is needed to resolve the situation to full compliance with the Law: (T15A: 04B.0000). Deficiencies exist between the current phase of grading and the erosion control plan for this project. An erosion control plan review involving project personnel, the erosion control plan designer, REU erosion control design staff and the REU Field Operation Engineer is requested to resolve the situation.

Project Information

Inspection Date: 10/01/2019 **Evaluator:** Phil Suggs
Project #: 34839.3.GV7 **TIP #:** U-2579 D,E,F **Contract #:** C204088
Division #: 9 **County:** Forsyth
Project Type: Contract **Engineer:** Winston-Salem District (2)
Project Length: 7.00 **Disturbed Acres:** 100
River Basin: Yadkin **HQW Zone:** NO **Trout Zone:** NO
Location Description: Winston Salem Northern Beltway University to New Walkertown Rd, Forsyth co

Project Evaluation

Report Type: Routine ICA ICA Ex 1st ICA Ex 2nd CICA - SWO
 PCN ECPAR

Length	Section	Installation of BMPs	Maintenance of BMPs	Effectiveness of BMPs	Plan Implementation	Overall Project Evaluation
0.2	The Entire Project	6	6	6	6	6

Grading Scale: 0 - 6 = Immediate Corrective Action Required, 7 = Fair, 8 = Good, 9 = Very Good, 10 = Excellent

ICA / ECPAR Comments:

Drainage areas and hydro need to be reviewed for the Sites 5,6 and 8. Additional EC devices should be added or upgraded as needed.

Remarks and Recommendations:

This Immediate Corrective Action report (ICA) is being issued due to large sediment losses into jurisdictional streams.

Reviewed project with DOT personnel - Scott Wyrick, Thomas Smith and Zack McLaughlin, Josh Reeves, Tyler Hasspacher;
Flatiron - David Flowers; Smith-Rowe - Patrick Lucas

- Recent heavy rains impacted project. Site conditions prior to rains were extremely dry and powdery. Sediment loss noted at Sites 5, 6 and 8. Approx sta's 78, 130 and 135 left. Sediment is deposited in and around the stream channel for long distances off site.
 - Contractor needs to focus all work on erosion control repairs to prevent additional offsite impacts and and clean up of off site sediment down stream of the project.
 - The EC and Hydraulics design engineers need to review the drainage areas, contractors phasing of work and drainage/ erosion control measures to help prevent future failures and off site impacts.
- As work progresses, attention to managing site storm water drainage by limiting drainage areas and diverting storm water into EC measures is critical.

-Site 5: Heavy sedimentation in down-stream channel. At this site, berm failures contributed to the sediment lost offsite thru the stream channel at the culvert outlet. Clean up main channel, lateral tributary, flood plains and banks for approx 100 yds.

Culvert wing walls need to be completed, slopes built out and stabilized with rip rap around wing walls. Install and maintain a compacted berm across the top of the culvert on both ends. Maintain the large berm as fill height increases. Direct storm water runoff into skimmer basins once height is up - if it cannot be brought up to sufficient elevation, the berm must be maintained and the areas stabilized with ground cover for the winter. Maintain berms across upland areas to divert runoff into skimmer basins. Berms need to be sufficient height and well compacted.

Temp seed all open erodible areas that are not at final grade and will not be brought to final grade within the next 30-60 days.

-Site 6: Heavy sedimentation downstream in channel and on banks. Basin 10.3 C&G failed and skimmer was broken. Replace this basin with 10.9 F per plans and add an additional tier behind it.

Clean up deposits over .5" depth in channel and accessible places on the banks down stream as far as the old pipes installed in the stream channel. Try to minimize damage to stream banks. Clean out at culvert outlet, build out slopes and add rip rap around wing walls, install silt fence behind rip rap and stabilize the slopes. This needs to be done on both ends of the culvert. Maintain berm across top of slope and slope drains into the skimmer basins.

Offsite properties impacted. Per the meeting yesterday, develop a plan of action for addressing the impacted stream reach outside project limits, access to private property and repair/reclamation of any impacted drives and fields. This should be done quickly so offsite impacts can be minimized.

-Site 8: Sediment loss was smaller - most trapped in checks at pipe outlet. Contractor cleaning out channel in project limits - this is an impacted area under our 401/404 permits, but it is still a jurisdictional stream channel. Rebuild and stabilize the channel in a continuous manner. Clean out pipes and drop inlets connected to the system and repair all inlet protection.

Repair eroded ditches and install silt checks and inlet protection per plans. Stabilize the existing stream channels upstream from the pipe inlet with rip rap per permit drawings. All erodible areas feeding this pipe system need to be stabilized with rip rap or ground cover. Repair eroded/damaged slopes at pipe inlet and outlet. Maintain diversions to direct storm water into skimmer basins. Maintain compacted berm across top of fill on pipe outlet end.

Down stream, remove all accumulated sediment deposits larger than .5' deep from banks and channel for approx 100 yds.

In general, culvert wing walls and all slopes around culvert inlets and outlets need to be finished and stabilized. In addition, if the fill in the area of Site 5 cannot be raised to sufficient height to divert storm water to the EC basins, the area will need to be winterized with ground cover - intermediate EC plan will be needed as well.

Overall Comments

-Rock checks in ditchlines throughout the project need to be repaired/installed properly with a weir to prevent runoff from running around the rock check and eroding the ditch line. Please refer back to standard details 1633.01 and 1633.02.

-Maintain all erosion control measures throughout the entire project due to recent rainfall event.

All clean up efforts will be reviewed prior to any release of this project from the ICA status.

A final follow up inspection will be conducted by Tuesday, Oct 8 to assess clean up and EC repairs.

North Carolina Department of Transportation
 Roadside Environmental Unit
 Erosion & Sedimentation / Stormwater Report



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 Division #: 9 County: Forsyth
 Project Type: Contract Engineer: Winston-Salem District (2)
 Project Length: 7.00 Disturbed Acres: 100
 River Basin: Yadkin HQW Zone: NO Trout Zone: NO
 Location Description: Winston Salem Northern Beltway University to New Walkertown Rd, Forsyth co

Project Evaluation

Report Type: Routine ICA ICA Ex 1st ICA Ex 2nd CICA - SWO
 PCN ECPAR

Length	Section	Installation of BMPs	Maintenance of BMPs	Effectiveness of BMPs	Plan Implementation	Overall Project Evaluation
7.0	The Entire Project	8	8	8	8	8

Grading Scale: 0 - 6 = Immediate Corrective Action Required, 7 = Fair, 8 = Good, 9 = Very Good, 10 = Excellent

Remarks and Recommendations:

This report is to lift the ICA status on the project.
 Project has been reviewed with DEMLR and DWR as part of the follow up after the sediment loss and ICA report.

Contractor has had crews cleaning up accumulated sediment in down stream areas of Sites 5, 6 and 8. Minor additional sediment removal directed by DWR accomplished today.

Work has started raising the fill height at Site 5. Additional temp silt ditches installed as well. Per onsite discussions, maintain large, well compacted berms on both ends of the fill slopes over top of the culvert. These should be red-lined on the EC plans. Maintain well compacted temp silt ditch berms directing storm water runoff to the skimmer basins and stabilize fill slopes with permanent ground cover asap. Utilize temp ground cover on upland areas and large slopes to help reduce scour and sediment load in the bottom.

At Site 6, skimmer basin 10.9 F has been enlarged and constructed as a two tier basin. Close off the sides of the basin berms to prevent storm water from running around it at the perimeter of the site. Slope drains were extended into the basins. Maintain a well compacted berm along the top of fill and direct storm water into the skimmer basins.

At both Sites 5 and 6, culvert inlets and outlets have been stabilized.

Site 8, use geotextile and rip rap to stabilize the remaining erodible slopes around the headwall - there should be no erodible areas left around the headwall. Remove slope drain from the pipe inlet area and redirect it to behind silt checks. Per onsite discussions, this slope drain may be rerouted or removed.

Overall offsite clean up is satisfactory and work can resume on all other areas - contractor needs to keep focus on raising fill height on site 5 area.

North Carolina Department of Transportation
 Roadside Environmental Unit
 Erosion & Sedimentation / Stormwater Report

ICA

Immediate Corrective Action

This project does not comply with the North Carolina Erosion and Sedimentation Control laws. Immediate Corrective Action is needed to resolve the situation to full compliance with the Law: (T15A: 04B.0000).

Project Information

Inspection Date: 10/16/2019	Evaluator: Donald Pearson	
Project #: C203751	TIP #: B-5121/B-5317	Contract #:
Division #: 5	County: Wake	
Project Type: Contract	Engineer: East Raleigh Resident	
Project Length: 0.80	Disturbed Acres: 0	
River Basin: Neuse	HQW Zone: NO	Trout Zone: NO
Location Description: DP - Bridge 227 on US-70/US-401/NC-50 over Peace St and Bridge 213 on US-70/NC-50 over US-401		

Project Evaluation

Report Type: Routine ICA ICA Ex 1st ICA Ex 2nd CICA - SWO
 PCN ECPAR

Length	Section	Installation of BMPs	Maintenance of BMPs	Effectiveness of BMPs	Plan Implementation	Overall Project Evaluation
0.8	The Entire Project	8	7	6	7	6

Grading Scale: 0 - 6 = Immediate Corrective Action Required, 7 = Fair, 8 = Good, 9 = Very Good, 10 = Excellent

Remarks and Recommendations:

Spoke to Jim, Derrick, Nick (contractor), Ray (contractor), and Boyd (via phone)
 Raining today upon arrival.
 Project is receiving an ICA for sediment loss. See details below.
 Prior to ICA being issued, the Resident Engineer's Office informed Contractor on site that project activities were suspended except for Erosion and Sediment Control.

Project received around .5 inches of rain Monday resulting in some sediment breaching silt fence along Y1 Lt:16+/- and collecting in parking area for City of Raleigh. Land Quality was notified by the City and contractor responded Tuesday morning to repair silt fence and clean up sediment.
 The same area noted above failed during today's rain with heavy sediment/gravel/turbidity washing onto same parking lot and ultimately entering storm drain system feeding Pigeon House Creek. Contractor should repair failed EC measures along Y1 and recover sediment/debris. EC plans call for Type C rock inlet protection at inlet in City parking lot, but that is not practical considering surrounding area is paved. Recommend using Type B rock inlet protection and barrel area off for safety.
 Discussed options for repair and enhancement to silt fence and special sediment control fence outlet along Y1 Lt:16+/- with contractor crews on site.
 Further investigation discovered contractor filled a nearby pipe in with flowable fill too soon which created an inability for stormwater to remain in system and reach culvert. A pump was in place during rain today but was

not performing well at time which allowed stormwater to erupt from system and flow across raw section of project overwhelming perimeter silt fence and stone outlet. Contractor should pursue repair of damaged silt fence and use berms or similar to manage and treat upgrade runoff. Upgrade runoff from Y1 about Lt:23+/- has washed around storm drain inlet Lt:19+/- adding to the stormwater rising up out of the system around Lt:17+/- . Contractor should remove sandbags and install proper inlet protection to get runoff from immediate area in storm drain system.

Erodible material is being stockpiled Lt:34+/- has been pushed over perimeter silt fence allowing runoff to reach unprotected storm drain inlet. Contractor should remove all erodible material from this staging area. Erodible material Lt:40+/- has sediment trail flowing from stockpile in staging area Lt:40+/- across paved area to Type A rock silt check and ultimately to City Stormwater retention pond which releases water to Pigeon House Creek. Heavy turbidity was being released into creek from this system during rain event until contractor responded to try and collect sediment. Prior to my leaving site, contractor had installed ABC/Screenings berm covered in geotextile around a portion of the eroding soil pile. This was working well. Previous conversations with Contractor have indicated this staging area is not intended to allow for erodible material stockpile. All erodible material should be removed from this staging area. Contractor should clean up all sediment/silt deposited in staging area. Some silt has accumulated in City's stormwater retention pond. This will need removed but communication with City should occur first. Please let me know outcome of conversation with them.

Repair undermine at slope drain Y1 Lt:19+/- and reattach section removed prior to rain event.
Get runoff into storm drain inlets Y1 17-19+/- to reduce stress on perimeter device Lt:16+/-
Y1 RampD needs exposed slopes properly stabilized.
Sandbags would help push runoff into curb line and ultimately into storm drain L-line Rt:28-29+/-
Repair washes in fill slope L-line Lt:32+/- and address source of this scour.

All items noted above plus any outstanding items on NPDES inspection list as well as those noted by project inspector will need to be addressed prior to lifting ICA.

I will reinspect the project on afternoon of October 18 (1:00 pm +/-).

North Carolina Department of Transportation
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 Erosion & Sedimentation / Stormwater Report

ICA EX 1st

Immediate Corrective Action Extension (First Issuance)

This project does not comply with the North Carolina Erosion and Sedimentation Control laws. Immediate Corrective Action is needed to resolve the situation to full compliance with the Law: (T15A: 04B.0000).

Project Information

Inspection Date: 10/18/2019 Evaluator: Donald Pearson
 Project #: C203751 TIP #: B-5121/B-5317 Contract #:
 Division #: 5 County: Wake
 Project Type: Contract Engineer: East Raleigh Resident
 Project Length: 0.80 Disturbed Acres: 0
 River Basin: Neuse HQW Zone: NO Trout Zone: NO
 Location Description: DP - Bridge 227 on US-70/US-401/NC-50 over Peace St and Bridge 213 on US-70/NC-50 over US-401

Project Evaluation

Report Type: Routine ICA ICA Ex 1st ICA Ex 2nd CICA - SWO
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Remarks and Recommendations:

Met with Jeremy, Derrick, Jim, Ray, and Corey on site.

Contractor has completed majority of items noted on ICA issued 10/16/19, but has not provided groundcover on exposed slopes for Ramp D. Therefore ICA is extended until 10/21/ or 10/22 of next week.

Exposed slopes along Y1 Ramp D still need groundcover. Please send me confirmation when this work has been accomplished. Upon completion of that effort, I am fine with Resident Engineer's office allowing non erosion control work to resume. I will return 10/21 or 10/22 to determine if ICA can officially be lifted.

Screenings are going to be left within easement of staging area on City of Raleigh property. Contractor should update As Built EC plans to reflect this stockpile of screenings and containment.

Please repair washes in fill slope L-line Lt:32+/- and address source of this scour as well. Discussion on site identified possible improvements to managing runoff along Y1 and contractor was going to consider implementing them.

Thanks for efforts.

North Carolina Department of Transportation
 Roadside Environmental Unit
 Erosion & Sedimentation / Stormwater Report



Project Information

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Remarks and Recommendations:

Met with Jim and Corey (Contractor) on site. Spoke with Derrick via text and email over weekend regarding ground cover on Y1 Ramp D.
 Project received 1.8 inches of rain over weekend.
 Maintenance of EC devices is needed but overall the project appears to have held up well. Specifically the repairs made at Y1 around City of Raleigh office area.

All items except for repair of two minor rills on fill slope Lt:32+/- have been addressed. I am fine with those areas being addressed as Routine maintenance this week.

ICA is lifted for the project. Thanks for efforts to move project back into compliance. Please continue maintenance efforts today as rain is forecasted for this week and similar challenges exist for this same area until permanent storm drain can be completed and runoff managed properly. If temporary pump is planned for this area as a help to manage runoff, then consider upsizing it to keep up with load.