

Monitoring Data Record

Project Title: R-2719A Crescent Road COE Action ID: 200802460

WQC Number: 003763

Stream Name: UT to Falling Creek

City, County and other Location Information: UT to Falling Creek is located at the intersection of the future Crescent Road and US 70 in Kinston, Lenoir Co.

Date Construction Completed: 3/3/11 Monitoring Year: (3) of 5

Ecoregion: _____ 8 digit HUC unit 03020202

USGS Quad Name and Coordinates: 35.261881, -77.683669

Rosgen Classification:

Length of Project: 2,393' Urban or Rural: Rural Watershed Size: _____

Monitoring DATA collected by: M. Green, J. Young, B. Mills

Date: 6/26/14

Applicant Information:

Name: NCDOT Roadside Environmental Unit

Address: 1425 Rock Quarry Road Raleigh, NC 27610

Telephone Number: (919) 861-3772 Email address: mlgreen@ncdot.gov

Consultant Information:

Name: _____

Address: _____

Telephone Number: _____ Email address: _____

Project Status: Complete

Monitoring Level required by COE and DWQ (404 permit/ 401 Cert.): Level **(1)** ~~2~~ ~~3~~

Monitoring Level 1 requires completion of *Section 1, Section 2 and Section 3*

Permit States: Monitoring of the stream restoration areas shall consist of Level 1 monitoring requirements. Monitoring shall be performed twice annually (summer and winter) for each year of a five year period following completion of the work. Monitoring activities shall consist of reference photos, plant survival determinations, and visual inspection of stream stability. The sites shall be monitored for five years, provided at least two bankfull events have occurred during this monitoring period. If two bankfull events have not occurred by the end of the five year monitoring period, the NCDOT may, at the DWQ's discretion, cease further monitoring of the site. The two bankfull events should occur within different monitoring years.

The permittee shall monitor the onsite buffer mitigation site. Monitoring shall consist of visual review and photo evidence. An annual report shall be submitted to the DWQ for a period of five years showing monitoring results, survival rate/success of tree and vegetation establishment, and that diffuse flow through the riparian buffer has been maintained. The first annual report shall be submitted within one year of final planting. Failure to achieve a buffer density of 320 trees per acre after five years will require the annual report to provide appropriate remedial actions to be implemented and a schedule for implementation. Approval of the final annual report and a formal "close out" of the mitigation site by the DWQ is required.

Section 1. PHOTO REFERENCE SITES

(Monitoring at all levels must complete this section)

Total number of reference photo locations at this site:

12 photos were taken from 6 photo point locations along the channel and 2 overview photos were taken of the site

Dates reference photos have been taken at this site: 1/31/12, 7/20/12, 1/29/13, 7/11/13, 1/14/14, 6/26/14

Individual from whom additional photos can be obtained (name, address, phone): _____

Other Information relative to site photo reference: A site map with vegetation plot and photo point locations is included with this report.

Section 2. PLANT SURVIVAL

Attach plan sheet indicating reference photos.

Identify specific problem areas (missing, stressed, damaged or dead plantings):

Estimated causes, and proposed/required remedial action: _____

ADDITIONAL COMMENTS: Planting was completed at this stream restoration project in March 2011. Planted vegetation along the streambank and within the buffer area consisted of: Type I – Elderberry and Silky Dogwood. Type II – River Birch, Green Ash, Overcup Oak, and Swamp Chestnut Oak. There were four 50 x 50 foot vegetation plots set throughout the buffer area to determine how many trees per acre were surviving. Year 3 plant survival shows that 498 tree per acre are surviving. There were very few planted live stakes of elderberry or silky dogwood noted surviving. The thick soft rush along the streambank probably choked out majority of these live stakes. Black willows were noted coming in naturally along the streambanks. Other vegetation noted onsite included soft rush, cattail, woolgrass, baccharis, lespedeza, sedge, tear-thumb, vines, briars, sycamore, red maple, cut grass, fennel, and various grasses. NCDOT will continue to monitor plant survival at the UT to Falling Creek stream mitigation site.

If required to complete Level 1 and Level 2 monitoring only stop here; otherwise, complete section 3.

Plot #	River Birch	Green Ash	Overcup Oak	Swamp Chestnut Oak	Total (Year 3)	Total (at planting)	Density (Tree/Acre)
1	21	4	3		28	35	544
2	13	7	4	1	25	39	436
3	3	20	5	1	29	38	519
4	15	9	10		34	47	492
Year 3 Average Density							498
Year 2 Average Density							537
Year 1 Average Density							625

Section 3. CHANNEL STABILITY

Visual Inspection: The entire stream project as well as each in-stream structure and bank stabilization/revetment structure must be evaluated and problems addressed.

Report on the visual inspection of channel stability. Physical measurements of channel stability/morphology will not be required. Include a discussion of any deviations from as-built and an evaluation of the significance of these deviations and whether they are indicative of a stabilizing or destabilizing situation.

UT to Falling Creek is stabilized for the Year 3 Summer evaluation. Bankfull determinations are being recorded by a surface gauge located along the streambank. See the weblink for UT to Falling Creek gauges to see a graph of bankfull events. NCDOT will continue to monitor channel stability at the UT to Falling Creek stream mitigation site.

Date	Station Number				
Structure Type					
Is water piping through or around structure?					
Head cut or down cut present?					
Bank or scour erosion present?					
Other problems noted?					

Section 4. DEBIT LEDGER

The entire UT to Falling Creek stream mitigation site was used for the R-2719A project to compensate for unavoidable stream impacts.

UT to Falling Creek



Photo Point #1 (Upstream)



Photo Point #1 (Downstream)



Photo Point #2 (Upstream)



Photo Point #2 (Downstream)



Photo Point #3 (Upstream)



Photo Point #3 (Downstream)

UT to Falling Creek



Photo Point #4 (Upstream)



Photo Point #4 (Downstream)



Photo Point #5 (Upstream)



Photo Point #5 (Downstream)



Photo Point #6 (Upstream)



Photo Point #6 (Downstream)

UT to Falling Creek



Photo of Plot #1



Photo of Plot #2



Photo of Plot #3



Photo of Plot #4



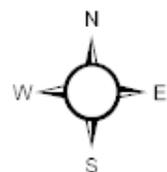
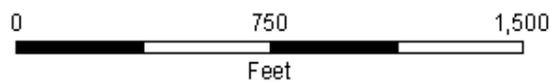
Overview photo looking upstream from US 70

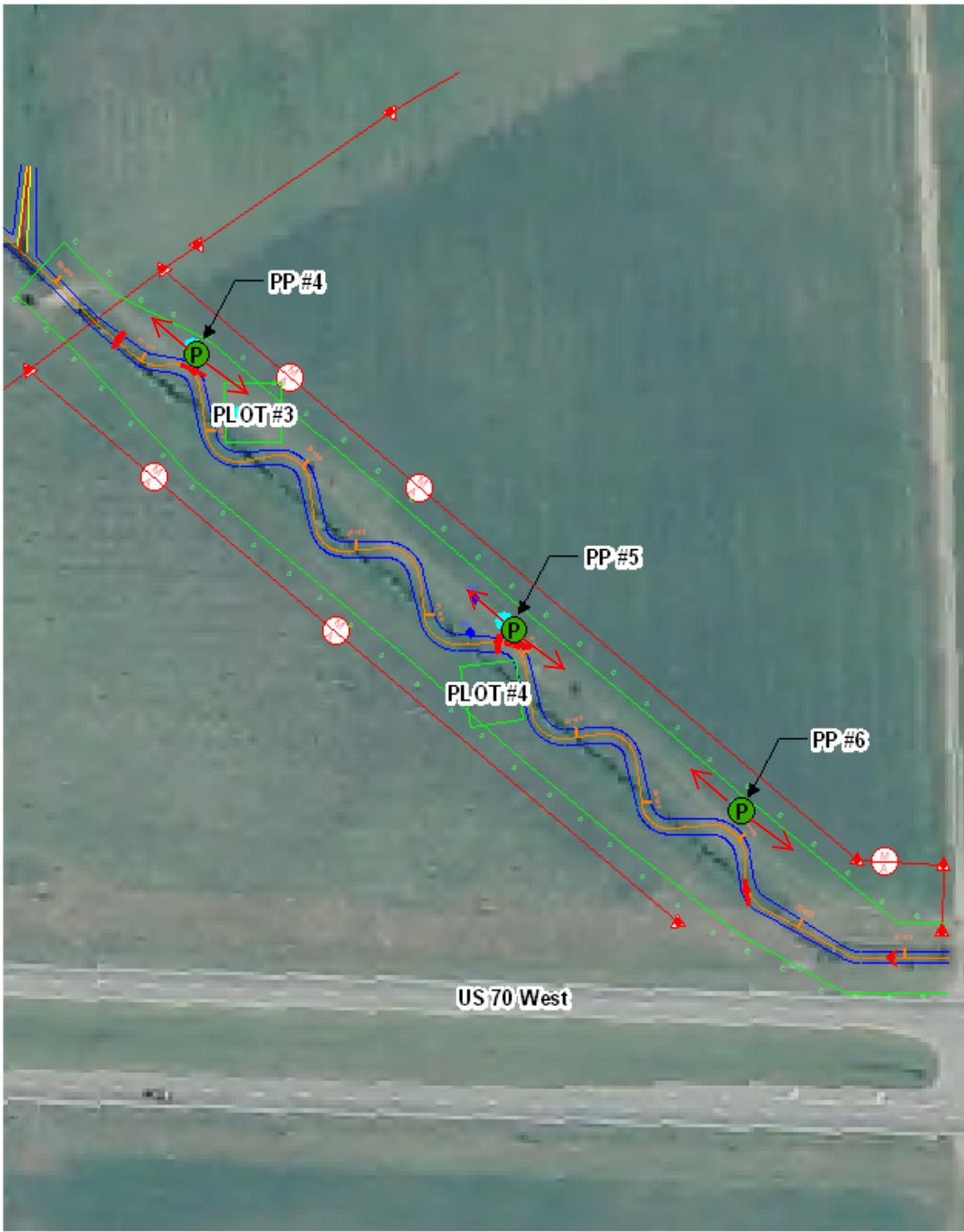


Overview photo looking downstream from US 70



R-2719A UT to Falling Creek Stream Restoration Site
 Vegetation Plot & Photo Point Locations
 Lenoir County, North Carolina

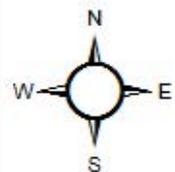
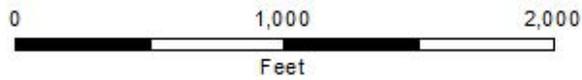




	<p style="text-align: center;">R-2719A UT to Falling Creek Stream Restoration Site Vegetation Plot & Photo Point Locations Lenoir County, North Carolina</p> <div style="text-align: center;"> <p>0 750 1,500</p> <p>Feet</p> </div>	
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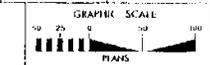


PROJECT VICINITY - R-2719A
 UT to Falling Creek Mitigation Site
 Lenoir County, North Carolina

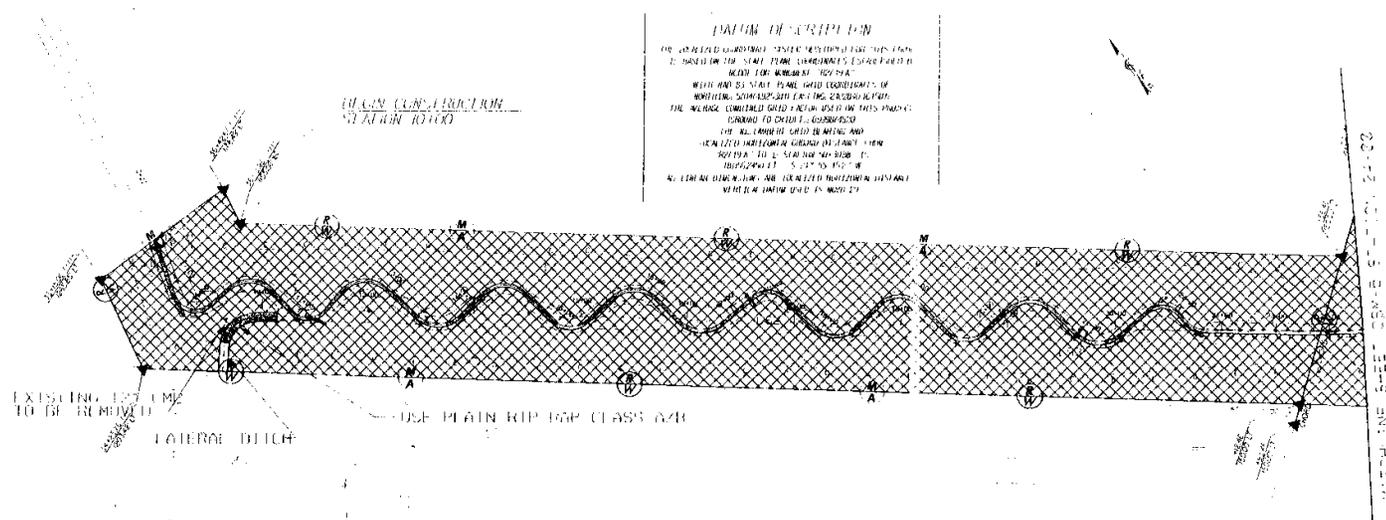


3.5 ACRES STREAMBANK REFORESTATION

PROJECT NUMBER: 104
 DRAWING NO.: 104-104-104-104
 SHEET NO.: 104-104-104-104
 DRAWING TITLE: 104-104-104-104



NOTATION OF CONSTRUCTION
 THE ABOVE DESCRIBED REFORESTATION SHALL BE CONDUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE ARIZONA DEPARTMENT OF WATER RESOURCES AND THE ARIZONA DEPARTMENT OF AGRICULTURE AND FORESTRY. THE REFORESTATION SHALL BE CONDUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE ARIZONA DEPARTMENT OF WATER RESOURCES AND THE ARIZONA DEPARTMENT OF AGRICULTURE AND FORESTRY. THE REFORESTATION SHALL BE CONDUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE ARIZONA DEPARTMENT OF WATER RESOURCES AND THE ARIZONA DEPARTMENT OF AGRICULTURE AND FORESTRY.



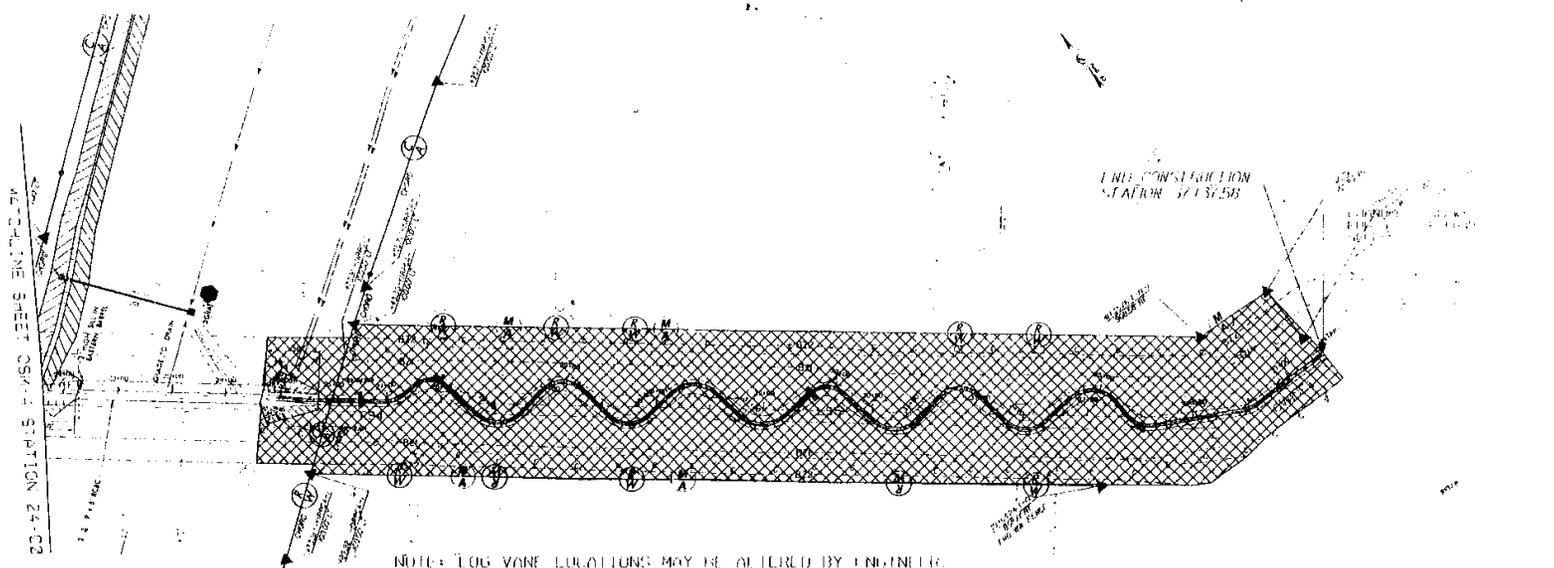
NOTE: LOG VOLE LOCATIONS MAY BE DETERMINED BY ENGINEER

STREAMBANK REFORESTATION

SEE OSM-9, OSM-10 AND PROJECT SPECIAL PROVISIONS

2 ACRES STREAMBANK REFORESTATION

PROJECT RECORDING NO. 11 2770A
SHEET NO. 11 2770A 01
ROW SHEET NO.
ROADWAY DESIGN ENGINEER
CIVIL ENGINEER



SEE OSM-9, OSM-10 AND PROJECT SPECIAL PROVISIONS