

# Shoreline Conveyance Permit Application

NC Project R-2307B

PREPARED FOR  
North Carolina Department of Transportation

Michael Turchy  
North Carolina Department of Transportation  
1536 Mail Service Center  
Raleigh, NC 27699-1536

PREPARED BY



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## **Attachments**

Attachment 1 – Parcel Ownership and Easement Needed  
Attachment 2 – Boater Safety Plan (20250826)  
Attachment 3 – Right of Way Acquisition  
Attachment 4 – Design Sheets with FERC Boundary  
Attachment 5 – 404 and 401 Permits  
Attachment 6 – Shoreline Classification Map  
Attachment 7 – Compliance and Exhibit G Reimbursement Letters  
Attachment 8 – Vicinity Map  
Attachment 9 – Detailed Written Description  
Attachment 9.1 – Vertical Clearance Comparison  
Attachment 10 – FERC Survey Map  
Attachment 11 – Existing Easement  
Attachment 12 – Photographs  
Attachment 13 – Environmental Review  
Attachment 13.1.1 – Alternative 1  
Attachment 13.1.2 – Alternative 1A  
Attachment 13.1.3 – Alternative 2  
Attachment 13.2 – USFWS Concurrence Letter  
Attachment 13.3 – Historic Architecture and Archaeology SHPO Concurrence Letter



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## Part I. Applicant Information

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The information for Part I should be on one page and in the format below.

Applicant Name: [Michael Turchy, North Carolina Department of Transportation](#)

Project Name: [R-2307B Bridge Facility Expansion on NC 150 over the Catawba River \(Lake Norman\)](#)

Telephone: [919-707-6157](#)

Location Address: [1598 Mail Service Center, Raleigh, NC 27699-1598](#)

Mailing Address (if different): [See above.](#)

Email address: [maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)

### Lake Information

Lake: [Norman](#)

County: [Catawba/Iredell County Line](#)

State: [North Carolina](#)

City: [1.8 miles east of Sherrills Ford, N.C.](#)

Applicant Signature\* 

Date 11/11/2025

\* Per my signature, the information provided in this application is correct to the best of my knowledge.

Application Preparation Contractor: [Sarah Conner, RK&K](#)

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## Part II. Description of Project

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Provide the information requested below as numbered and ordered below.

### A. Basic Information

1. Type of facility(s) proposed (list all that apply):

[The facility type is a public bridge. The bridge proposed for expansion \(widening\) is Catawba County Bridge No. 138.](#)

2. Type of proposed work (*identify one*): New construction, expansion, rebuild

The North Carolina Department of Transportation (NCDOT) is planning the widening of the Catawba County Bridge No. 138 facility carrying NC 150 over Lake Norman (Catawba River) on the Catawba/Iredell County line by constructing a new bridge north of the existing structure. The design limits are from Greenwood Road (approximately 0.8 miles west of the current Lake Norman Crossing) to US 21 (approximately 6.1 miles east of the current Lake Norman Crossing). The additional structure will be on new alignment to the north of the existing bridge. The new bridge will be 1,220 feet long and 51 feet wide. The bridge and approaches will include a 10 wide multi-use path (MUP) along the north side of NC 150. Two-lane, two-way traffic will be maintained on the existing alignment while the new bridge and roadway are being constructed. Once the new structure and roadway are complete, traffic will be shifted into its permanent pattern with west bound traffic on northern bridge and east bound traffic on the southern existing bridge.

3. Proposed lakebed use area(s) in acres (*total for the project*)

The total lakebed permanent use easement is 9.5541 acres. The total lakebed temporary use easement is 6.468 acres. These areas are detailed in attached **Attachment 1 – Parcel Ownership and Easement Needed**.

4. Indicate if the conveyance will be a lease, easement, or permit

The conveyance will include easement as noted in the previous question.

**Easement** is required for any Duke owned property within the FERC full pond elevation line. There are 6.468 acres of temporary easement required for the construction and maintenance in perpetuity for this project. There are 9.5541 acres of permanent easement required for the construction and maintenance in perpetuity for this project.

These areas are detailed in same map referenced above; **Attachment 1 – Parcel Ownership and Easement Needed**.

5. Describe all work needed to support the proposal within the FERC Project Boundary (*e.g., excavation for pipe lines, storm water outlets, shoreline stabilization, etc.*)

The phases and details of construction are illustrated in **Attachment 2 – Boater Safety Plan**. The project will include the following actions:

- Clear vegetation within project footprint and establish erosion control.
- Deployment of a boater safety zone as illustrated in the Boater Safety Plan (**Attachment 2 – Boater Safety Plan, pgs. 6 – 8**).
- Stage 1 of construction will begin on the west end by deploying the boater safety plan. Causeway will be installed on the west end of the new bridge approach and bents 1 through 5 will be constructed. For spans A through E, girders, girder bracing components, and lightweight concrete deck will be installed (**Attachment 2 – Boater Safety Plan, pg. 6**).
- Stage 2 of construction on the east end will begin with deploying the boater safety system. Causeway will be installed on the east end of the new bridge approach and bents 6 through 8 will be constructed. For spans F through I, girders, girder bracing components, and lightweight concrete deck will be installed (**Attachment 2 – Boater Safety Plan, pgs. 7-8**).
- Remove Boater Safety Zone and restore normal boating operations on the lake.
- The utility line crossings will be permitted separately from this application.

6. Identify the intended users of the facility (identify from the following list): General Public; Condominium / Subdivision Lot Owners; Long-term Campground Users; Transient Campground Users (<14 days); Other (specify)

The users of the new bridge will be the general public.

7. Lake user category (*identify one*): Water intake; Wastewater outfall; Bridge; Sand mine; Other (*specify*)

The lake user category is bridge.

8. Identify the legal entity claiming title to the tract(s) adjoining the proposed lakebed use area(s)  
NCDOT has obtained all necessary tracks of land as documented in **Attachment 3 – Right of Way Acquisition** with the exception of three Duke Energy parcels, two of which adjoin the lakebed (Catawba County Parcel ID 462817000538, Iredell County PIN 4628412480).

9. Excluding private piers, are there any other water-based recreational facilities (*e.g., public access areas, marinas, etc.*) within 0.5 miles straight-line distance of the proposal? If so, identify.

**Attachment 4 – Design Sheets with FERC Boundary** illustrates the presence of Pinnacle Access, McCrary Access, and the private marina adjacent to the existing bridge. Duke Energy also operates a skimmer located north of the proposed bridge expansion.

To the west side is a privately run marina. The facility rents boats and watersport equipment to the public.

To the north side is the skimmer, owned and operated by Duke Energy.

To the east are two access areas, Pinnacle Boat Access and McCrary Boat Access, both owned by Duke Energy and operated by the N.C. Wildlife Resources Commission as public boat ramps.

10. Start and finish dates (month/year) for the overall project from first equipment mobilization through completion of final mitigation measures and demobilization

The overall project began in October 2024 and is anticipated to be completed in October 2029. The portion affecting the lake is addressed in Question 11.

11. Start and finish dates (month/year) of all work within the lake including any ground disturbance or other work within the FERC Project Boundary

Within the lake/FERC Boundary, work is anticipated to begin January 2026 and anticipated to be complete February 2029.

12. Additional comments or information

The overall R-2307 project has been addressed in a Federal Environmental Assessment (EA) (3/8/2016), Finding of No Significant Impact (FONSI) (6/22/2017), the 404-NEPA Merger Process including substantial agency coordination and public involvement, an Environmental Review document by FERC (3/19/2025), and a NCDOT NEPA Consultation form (6/27/2024).

Upon completion of construction work in the lake and after establishing revegetation at the edges of the lake, the NCDOT Resident Engineer will schedule a site visit or consultation with Lake Services staff. Upon approval of Lake Services, NCDOT will notify its Location & Surveys group and will deliver the updated sonar survey and comparison data to Duke within 8 weeks.

## B. Protection / Avoidance Area Description

## B. Protection / Avoidance Area Description

Provide information regarding all protected resource areas within and immediately adjoining the FERC Project Boundary including any Duke Energy-owned peripheral strip affected by the proposed activity. Describe each protected resource area including its size in acres or linear feet and how effects to the resource will be avoided. If the area cannot be avoided, describe why and the mitigation measures that are being proposed. Include a drawing identifying the location of protected resource areas identified in this section

The following paragraph addresses minimization for all of the subsequent items in Section B. Minimizations are also asked to be addressed in Section J. and so the following paragraphs are repeated in Section J:

The purpose of project R-2307B is to address traffic congestion along NC 150. A traffic forecast was completed for the project in 2016 and re-evaluated in May 2021 with the original findings validated. 2015 NC 150 traffic volumes exceeded two-lane capacity between Sherrills Ford Road and the I-77 Interchange commercial district and west of Sherrills Ford Road. Existing traffic congestion within the NC 150 corridor results in excessive travel times for commuters and travelers. Projected growth in the corridor, particularly around the I-77 interchange, will continue to increase these delays and travel times.

The best means of limiting impact to the lake is by use of construction barges to provide access to build the new structure.

The drainage features are designed so as not to affect the full pond boundary although the easement to maintain them does run to water's edge. The shoreline will have rip rap stabilization of banks on the causeway, under the bridge and around the end bents. All other areas of the bank will be revegetated as soon as construction is complete in that area. NCDOT has developed erosion control plans which detail how cleared areas are to be addressed. Any areas cleared early in construction must re-establish temporary vegetation if the area is not immediately used for construction.

1. Marshland, swamp, ponds, beneficial aquatic vegetation or other potential wetlands  
Permanent and mechanized clearing impacts to wetlands were calculated but no wetland impacts were associated with or adjacent to the lake crossing.
2. Buffer Zones (specify width & source of requirement)  
Based on the NC Department of Environmental Quality, Division of Water Resources identifies this area as subject to Catawba River Riparian Buffer Rules. Based on these rules the Zone 1 buffer begins at Full Pond elevation.  
Zone 1 Impacts – 20,142 ft<sup>2</sup>  
Zone 2 Impacts – 14,930 ft<sup>2</sup>  
These impacts are illustrated in **Attachment 5 – 404 and 401 Permits**.
3. Areas classified as “**Environmental**” as identified by Duke Energy  
There are no areas within the FERC Boundary affected by the proposed bridge that are classified as “Environmental” as identified by Duke Energy.
4. Areas classified as “**Natural Areas**” as identified by Duke Energy  
There are no areas within the FERC Boundary affected by the proposed bridge that are classified as “Natural Area” as identified by Duke Energy.

5. Areas classified as “Impact Minimization Zone” as identified by Duke Energy  
There is one area located at McCrary Access classified as “Impact Minimization Zone” as identified by Duke Energy. This area can be seen in **Attachment 6**  
– **Shoreline Classification Map.**

6. Areas classified as “Bottomland Hardwood” as identified by Duke Energy  
There are no areas within the FERC boundary affected by the proposed bridge that are classified as “Bottomland Hardwood” as identified by Duke Energy.

7. Rare, Threatened or Endangered species (list all species)  
As of July 7, 2025, USFWS Endangered Species Information for Planning and Consultation (IPaC) lists the following federally protected species within the R-2307B study area, under the Endangered Species Act (ESA).

**Table 1.** Federally protected species within the R-2307B study area.

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion	Last Survey
<i>Clemmys muhlenbergii</i>	bog turtle	T (S/A)	No	Not Required	--
<i>Hexastylis naniflora</i>	dwarf-flowered heartleaf	T	Yes	No Effect	3/25/2024
<i>Helianthus schweinitzii</i>	Schweinitz’s sunflower	E	Yes	No Effect	10/18/2023
<i>Perimyotis subflavus</i>	tricolored bat	PE	Yes	Not Required	--

T(S/A) - Threatened due to similarity of appearance

T – Threatened

E - Endangered

PE – Proposed Endangered

On September 14, 2022, the USFWS announced a proposal to list the tricolored bat (*Perimyotis subflavus*) as endangered under the Endangered Species Act. NCDOT submitted an Informal Section 7 Concurrence request to the USFWS on March 7, 2024. The Monarch Butterfly was proposed for federal listing in December 2024. However, no restrictions will take effect until the proposal is finalized, which is expected in late 2025 or early 2026. Until then, proposed species do not receive protection under the Endangered Species Act (ESA), except that federal action agencies must ensure their actions do not jeopardize the species' existence. These agencies may also consult with the U.S. Fish and Wildlife Service (USFWS) to obtain a conference opinion, which will automatically convert to a biological opinion upon the final listing decision. In the meantime, if IPaC lists the monarch butterfly in a project area, NCDOT Construction or Division Environmental Offices may develop conservation measures related to monarch butterflies to be implemented when final listing has occurred.

The bald eagle is protected under the Bald and Golden Eagle Protection Act and enforced by USFWS. Habitat for the bald eagle primarily consists of mature forests in proximity to large bodies of open water for foraging. Large dominant trees are utilized for nesting sites, typically within 1.0 mile of open water. The lakeshore of Lake Norman does support bald eagle habitat and a known active nest is within a proximity to the proposed project that coordination with USFWS to obtain a General Eagle Disturbance Permit was required. Upon review of the project, USFWS issued a General Eagle Disturbance Permit effective February

24, 2025, with an expiration date of August 31, 2025. The permit outlined the authorized activity for the construction of the bridge conditional on the general permit requirements and conditions included in the permit.

Pursuant to the conditions of the general permit, monitoring occurred on April 28, 2025 with no eagles observed at the nest. Due to no eagle activity at the nest, a site visit was made on May 9, 2025 for a closer inspection of the nest. Large holes were observed in the nest, likely resulting from Helene. No signs of usage on the ground immediately below the nest (feathers, bones, etc.) were present. With no eagle activity at the nest this visit as well as the previous visit, nest condition, and lack of other indications, the nest appears to be inactive. Several alternate nests are in the area and to determine if the eagles had potentially used one of those for this nesting season, assessments were conducted with Duke Energy staff on June 9-10, 2025. Neither of the previously identified nests were determined to be active. The annual report will be submitted to USFWS by August 31, 2025 as required by the permit.

Additional surveys for active nests are planned for late fall/early winter of 2025 to ensure no active nests are within the project area and 660 feet beyond. This effort will focus on areas not assessed during the June 9-10, 2025 visit.

8. Gas, water, sewer, communications or electric lines

There is an existing telecommunications cable on the north side of the existing bridge. There is also a waterline on the existing bridge. Both will remain in service during and after construction with no effect from the proposed project.

9. Historic Properties / cultural resources (specify)

Within the FERC Boundary, there are no historic resources.

10. Other areas requiring specific avoidance, protection or mitigation measures (specify)

Pinnacle Access, McCrary Access, and the Skimmer located north of the bridge will have uninterrupted service during construction. **Attachment 2 – Boater Safety Plan** describes the scope of construction activities and staging plan for construction of the proposed bridge.

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### Part III. Additional Information

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This section should be organized as follows.

**A. Compliance Letter (See Attachment 7 – Compliance and Exhibit G Reimbursement Letters)**

**B. Project Summary Statement**

A statement summarizing the amount of Project property involved, the name and address of the party or parties to whom the rights are to be conveyed (i.e., the organization or person owning, leasing or holding a substantial equity interest in the property adjacent to the FERC Project Boundary), and the name, address, and email address of the person Lake Services should contact regarding the application.

The NCDOT bridge expansion will require the following to construct and maintain the proposed bridge:

- 9.5541 acres Permanent Easement Area
- 6.468 acres Temporary Easement Area

The project is located at 8693 NC-150, Terrell, NC 28682.



The easements are to be conveyed to the North Carolina Department of Transportation.

The Department's contact for this project is:

Michael Turchy  
1598 Mail Service Center  
Raleigh, NC 27699-1598  
919-707-6157

### **C. Maps**

1. A general vicinity map (1 in. = 1 mile or similar scale) with the locations of facilities shown and directions by road providing directions to the development or project area location. This map should be sufficiently labeled with road names, landmarks, county lines, towns, etc., so the proposed project site is easy to locate ([See Attachment 8 – Vicinity Map](#)).
2. A map depicting the applicable Shoreline Management Plan (SMP) shoreline classifications for the shoreline adjoining the proposed project site ([See Attachment 6 – Shoreline Classification Map](#)).

### **D. Detailed Project Description**

A detailed written description of the proposed facilities ([See Attachment 9 – Detailed Written Description](#))

### **E. Survey of Proposed Conveyance ([See Attachment 10– FERC Survey Map](#))**

1. A survey, suitable for recording, prepared by a licensed Professional Land Surveyor of the entire shoreline adjoining the FERC Project Boundary within the proposed project. The survey must include, at a minimum:
2. A North arrow to indicate map orientation
3. The FERC Project Boundary based on the vertical reference datum National Geodetic Vertical Datum of 1929 (NVGD29)
4. Location point data representative of the site, positionally accurate to comply with National Map Accuracy Standards. The location point must include latitude/longitude in decimal degrees, based on the horizontal reference datum of the North American Datum of 1983 (NAD 83). The location point should be indicated at the intersection of the proposed facility and the FERC Project Boundary for each separate conveyance area or the mid-point of the proposed conveyance area if there are multiple facilities (e.g., multiple docks with slips) within one conveyance area.
5. The boundaries and acreage of the proposed conveyance area
6. The facilities to be included in the conveyance area including all existing or proposed facilities to be located within the FERC Project Boundary including, but not limited to, marina facilities, boat slips, courtesy docks, boat ramps, bulkheads, shoreline stabilization at amenity areas, excavation areas, staging areas, utility line crossings, water intakes or discharges, etc. (Do not include any existing private piers or associated existing private shoreline stabilization.) Label proposed and existing facilities within the proposed conveyance area and provide dimensions.
7. Labels indicating the lake name and other notable features
8. Side property line intersection points with the FERC Project Boundary
9. An indication of the applicant's ownership, leasing, or other substantial equity interest in the property adjoining the FERC Project Boundary

### **F. Technical Drawing**

An accurate technical drawing of all proposed facilities within the FERC Project Boundary including all dimensions, total length from the full pond contour and FERC Project

Boundary, any anchoring or floatation systems, roof structures, water intakes or outfalls, fueling facilities, utility line crossings, shoreline stabilization, and any other relevant information. (See Attachment 4 – Design Sheets with FERC Boundary)

#### **G. Deed and Survey**

A copy of the deed and registered survey plat or other instrument under which the applicant claims title to, lease of, or significant equity interest in the affected property (e.g., the shoreline adjoining the conveyance area or the lakebed if the applicant owns the property within the lake). Attachment 11 – Existing Easement is a copy of the existing easement across the lake. NCDOT is currently either purchasing or using its power of condemnation to obtain all needed property to construct the proposed bridge. Based on the Department's coordination with Duke Energy, it is understood that Duke will issue a permit while the Department is still obtaining property but that the permit will not be valid until the property is obtained.

#### **H. Adjoining Property Owners**

A list of names and addresses of property owners adjoining the development or Project area location.

As noted in Item G., NCDOT has acquired all non-Duke Energy, needed properties. Once complete, NCDOT will own all adjoining property affected by the project except for the conveyances needed from Duke Energy associated with the lake.

Lake front property owners whose properties will adjoin the NCDOT acquired property described above are:

- NE Quadrant  
Duke Power Co  
1556 River Hwy, Terrell, NC 28117
- NW Quadrant  
Duke Energy Carolinas, LLC  
Terrell, NC 28682
- SE Quadrant  
Maxey J Andress, Barbara Andress  
128 Mariner Pointe Ln, Mooresville, NC 28117
- SW Quadrant  
Annie B Stutts, Clay B Stutts  
8695 E NC 150 Hwy, Terrell, NC 28682

#### **I. Photographs (See Attachment 12 - Photographs)**

Sufficient color photographs of the conveyance area to illustrate the shoreline and upland areas adjoining the proposed facilities. These photographs should show aquatic habitat, vegetative cover, land cover, and shoreline buffer conditions present at the project site and within 100 feet landward of the FERC Project Boundary. Also, indicate the date each photograph was taken. Include a map indicating the location/orientation of each set of photographs.

#### **J. Proposed Construction Procedures**



Describe the procedures proposed to construct the facilities and stabilize any shoreline disturbance that may occur as a result of the proposal (e.g., shoreline stabilization, boat ramps, pipeline trenches, etc.), especially land disturbances within 100 feet of the FERC Project Boundary and removal of trees within the Project Boundary. Include a discussion of how the proposed construction will be designed to avoid or minimize conflict with the natural, historic, scenic and public recreational values and resources of the Project.

NCDOT has developed and rigorously follows a guideline called Best Management Practices for Construction and Maintenance Activities which includes addresses methodologies for erosion and sediment control, buffer areas, ground stabilization, and other related activities.

The water depth of Lake Norman is largely sufficient to support the use of barges which will minimize the impact to the lake during construction.

Vegetation removal will be limited to those areas where the footprint of the permanent additional bridge and construction barge. All other areas of the bank will be revegetated as soon as construction is complete in the area. Any areas cleared early in construction must re-establish temporary vegetation if the area is not immediately used for construction..

The shoreline will have rip rap stabilization of banks on the causeway, under the bridge and around the end bents.

#### **K. Effects on Boating**

Describe the magnitude and pattern of existing boat traffic in the area, including any existing recreational uses (public or private) at and near the proposed facilities and any areas of attraction, such as marine gas facilities, restaurants, and mooring areas. Describe any effect the proposed facilities may have on existing boat traffic in the area. Describe what measures will be used to ensure boating safety in the vicinity of the proposal during and after construction activity. *(Include any required Navigational Safety Plans with a plan and schedule for installation, maintenance and inspection of the warning/safety devices, with responsibilities listed and verified by confirmation letters from the responsible entities.)*

Dozens of private boat docks and several private marinas generate hundreds of boat trips on Lake Norman. A substantial number of boating, fishing, and recreational activities on the lake that require navigation under the bridge will be impacted by navigational changes during construction. These impacts are anticipated to be greater during warmer seasons when increased boat traffic is to be expected. **Attachment 2 – Boater Safety Plan** addresses how boater traffic will be maintained during construction of the new bridge and demolition of the existing bridge. Pinnacle Access is located on the northeast corner of the bridge crossing Lake Norman serving hundreds of boat launches per day. Maintaining operation for navigation is critical.

The proposed bridge places fill nearer to the Pinnacle Boat Access but does not impede the pathway from ramps to the open water either long term or during construction. During construction, temporary modifications will be made to the navigational passage under the bridge to safely guide boat traffic through the construction zone.

#### **L. Effects on Hydroelectric Project Operations**

Include a statement indicating there will be no proposed or requested changes (e.g., modified reservoir level operating ranges, modified flow releases from hydro Project dams, etc.) in hydro Project operation as a result of construction and utilization of the proposed facilities.

This project will not have proposed or requested changes in the hydro Project operation as a result of construction and utilization of the proposed facilities.

**M. Water Withdrawal Information** – This project will not include water withdrawal.

For proposals that include water withdrawals of **less than 1 million gallons per day (MGD)**, the information listed below must be provided. For water withdrawals greater than 1 MGD, this section III.M should be omitted, but the applicant must provide Part IV of the application.

1. A complete description of the design and construction of the water pipeline and intake structure (including elevation data)
2. Specifications of the intake screen size, openings and intake velocities
3. Proposed average annual and average monthly water withdrawal rates
4. Maximum instantaneous pumping capacity
5. The critical lake elevation for the intake (i.e., the lake elevation below which the intake will no longer pump at its maximum instantaneous pumping capacity for a sustained period of time)
6. A description of any measures proposed to mitigate the potential entrainment of fish or aquatic organisms

**N. Agency Consultation**

Begin this section with a summary table of all agencies consulted, comments received, and applicant response to agency comments (see example table below). Agencies should be listed in the order shown in the Agency/Organization List. Consultation letters must be dated within the two years preceding Lake Services' receipt of the draft application.

NCDOT sent a project written description, a survey showing needed easements and the navigational/boater safety plan on April 28, 2025, to the agencies on Duke Energy's Lake Use Permitting – Federal, State and Local Agencies/Organizations Consultation List. See the table on the following page for agency responses.

**Table III-N-1 Agency Comment and Response Table**

Agency Comment	Applicant Response
<b>US Army Corps of Engineers (May 16, 2025)</b>  The Corp's Crystal Amschler responded on behalf of Jennifer Lawrence by e-mail (May 16, 2025) and stated the following:  I've reviewed the information provided and don't have any specific comments regarding the bridge conveyance. I would like to note that the original permit for this project has already been issued, but the final authorization for the Phase II portion of the project, which includes the bridge replacement, has not been issued. Of the information you sent, the Draft Boater Safety plan was of particular interest as the final plan is to be submitted with the final authorization request for Phase II and the implementation of the plan will be incorporated into the permit as a special condition. Regarding this plan, everything looked good to me but, in accordance with comments from WRC, we ask that DOT include the below language in the plan to ensure that the applicant adheres to this recommendation:	  In accordance with Section 404 of the Clean Water Act, USACE issued an Individual Permit on September 3, 2020, in compliance with Section 404. The permit was modified on August 20, 2024 to extend the expiration date of the permit to December 31, 2034. The Section 404 Individual Permit is included in this application within <b>Attachment 5 – 404 and 401 Permits</b> .  Thank you for providing feedback and information regarding the permit and Phase II portion.  We have updated the draft boater safety plan to include the language you provided below, and I will follow up with any questions if we run into any.

<p>“The NCWRC’s Land and Water Conservation Division 919-707-0150 or the NCWRC’s Land and Water Conservation Division Mt. Holly Depot (704) 263-0975 should be contacted before construction to coordinate the review of the buoy relocations and best practices the contractor will use.” If you need anything else from me regarding this matter, please don’t hesitate to reach out.</p>	
<p><b>US Army Corps of Engineers (October 22, 2025)</b></p>	
<p>NCDOT responded to Crystal by e-mail (October 19, 2025) requesting a technical correction to her response in May 2025.</p> <p>Crystal responded by email (October 22, 2025) and stated: I apologize for this error in wording on my part. I agree with your description below as to the appropriate break out of the phases and how they appear in the 404 permit and that the finalized B section does include the bridge over Lake Norman. If you need anything else from me, or any further clarification do not hesitate to reach out.</p>	<p>No response required.</p>
<p><b>US Fish and Wildlife Service (USFWS)</b></p>	
<p>USFWS’s Holland Youngman on behalf of Bryan Tompkins responded by e-mail (April 30, 2025) and stated: As noted and attached in the "Attachment 3 - Environmental Review" document you provided, I sent an informal concurrence letter to NCDOT for this project on 5/28/24. USFWS Log# 24-212. In the 4/28/25 letter NCDOT provided to Bryan Tompkins - attached in your request email, I am unclear about the sentence stating that I'm currently coordinating on this project. Please let me know what, if any, additional section 7 coordination or reinitiation may be needed at this time.</p> <p>I am curious about the noted February 24, 2025 General Eagle Disturbance permit. In correspondence with NCDOT during May of 2024, I inquired about any potential impacts on the adjacent bald eagle nest areas and was told that, due to distance from the project area (&gt;660 feet), the project was expected to have no effect. Please share the updated information on eagle impacts so that we can add that to the project file(s).</p>	<p>Follow-Up Response on 7/11/25: I wanted to provide an update on the bald eagle for this project.</p> <p>As previously described below, a known active nest is within the established thresholds that required a General Eagle Disturbance Permit from the USFWS. Upon review of the project, USFWS issued a General Eagle Disturbance Permit effective February 24, 2025, with an expiration date of August 31, 2025. The permit outlined the authorized activity for the construction of the bridge conditional on the general permit requirements and conditions included in the permit. Pursuant to the conditions of the general permit, monitoring occurred on April 28, 2025 with no eagles observed at the nest. Due to no eagle activity at the nest, an additional site visit was made on May 9, 2025 for a closer inspection of the nest. Large holes were observed in the nest, likely resulting from Helene. No signs of usage on the ground immediately below the nest (feathers, bones, etc.) were present. With no eagle activity at the nest this visit as well as the previous visit, nest condition, and lack of</p>

	<p>other indications, the nest appears to be inactive. Due to several alternative nests in the area (outside of the project), additional assessments were conducted along with Duke Energy staff on June 9 and 10, 2025 to determine if the eagles had potentially used one of those for this nesting season. Neither of the previously identified nests were determined to be active. The annual report will be submitted to the USFWS by August 31, 2025, as required by the permit. Due to the above findings, NCDOT intends to allow this permit to expire. However, additional surveys for active nests are planned for late fall/early winter of 2025 (after leaf-drop) to ensure no active nests are within the project area and 660 feet beyond. This effort will focus on areas not assessed during the June 9-10, 2025 visit. Please let me know if you have any questions.</p> <p>Original Response on 4/30/25: When we apply for a Convenience Permit crossing a FERC boundary, as part of the Duke Energy permitting protocol, we send this letter to their designated agency representatives. However, NCDOT is a bit different because we have our own agency representatives that work on our projects. Duke requests that we send the correspondence to their designated representative, but we can copy our representative who can reply as appropriate (as you have done below). Our comment that you are currently coordinating on the project was only meant to indicate that we had previous coordination with the Service, and you are NCDOT's primary contact.</p> <p>Regarding the bald eagle, we did believe that we were &gt;330 feet from the nest. However, after receiving a new set of coordinates, and looking at our impacts, we believe the installation of a drainage pipe would be within the 330'. Therefore, we applied for a General Eagle Disturbance Permit. Attached is a graphic to display the area/ activity. Pursuant to the conditions of the general permit, biologists surveyed the area last week. The nest could not be located. Additional surveys have been coordinated with Duke, as this land is within the secure area of the Marshall Steam Station. If there are any changes to the status of this nest, or the General Permit, I'll let you know.</p>
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<b>Catawba Indian Nation</b>	
<p>A letter was sent via mail addressed to Caitlin Rogers delivered April 30, 2025. A follow up letter was sent June 17, 2025 and a response from the Catawba Indian Nation was received on July 22, 2025 as follows:</p> <p>The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.</p>	<p>No response required. NCDOT agrees to provide notification if artifacts or remains are found.</p>
<b>NC Department of Natural and Cultural Resources State Historic Preservation Office</b>	
<p>NC SHPO's Renee Gledhill-Earley responded with a letter dated June 4, 2025, as follows:</p> <p>Thank you for your letter of May 16, 2025, regarding the above-referenced undertaking. We have reviewed the submission and offer the following comments.</p> <p>As proposed, the R-2307B design will have No Effect on the Marshall Steam Plant (CT1303) or Johnson Neel House (ID0004).</p> <p>Based on our knowledge of the area, it is unlikely that any archaeological resources that may be eligible for inclusion in the National Register of Historic Places will be affected by the project. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.</p> <p>The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.</p> <p>Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or <a href="mailto:environmental.review@dncr.nc.gov">environmental.review@dncr.nc.gov</a>. In all future communication concerning this project,</p>	<p>No response required.</p>

please cite the above referenced tracking number.	
<b>NC Department of Natural and Cultural Resources Division of Parks and Recreation</b>	
NC Parks and Recreation's Brian Strong responded by e-mail (June 3, 2025) indicating no comments on the project.	No response required.
<b>NC Department of Environmental Quality (NC DEQ) Division of Water Resources (DWR)</b>	
<p>In an e-mail dated May 27, 2025, NC DWR's Mary Beth Plummer responded on behalf of Andrew Pitner, and stated the following:</p> <p>This email documents DWR's concurrence with the R-2307B Boater Safety Plan and other documentation that was sent and received on 4/28/25. As a reminder, all work in or adjacent to surface waters shall be conducted in a dry work area. A dry work area shall be maintained to prevent direct contact between curing concrete and surface water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. All bridge construction shall be performed from an existing bridge, temporary work bridge, temporary causeway, or floating or sunken barges. If work conditions require barges, they shall be floated into position and then sunk.</p> <p>The barges shall not be sunk and then dragged into position. Under no circumstances should barges be dragged along the bottom of surface waters. Construction activities shall not result in the violation of applicable water quality standards. Any violations shall be reported to DWR within 24 hours of discovery.</p>	NCDOT will comply with these conditions. In accordance with Section 401 of the Clean Water Act, NC DEQ issued a 401 Water Quality Certification (WQC) on September 3, 2020, in compliance with Section 404. The permit was modified on August 20, 2024 to extend the expiration date of the permit to December 31, 2034. The Section 401 WQC is included in this application within <b>Attachment 5 – 404 and 401 Permits</b> .
<b>NC DEQ DWR – Public Water Supply Section</b>	
<p>NC DEQ DWR Public Water Supply Section's Jeff Westmoreland on behalf of Clinton Cook responded by e-mail (April 30, 2025) and stated:</p> <p>1. Plans and specifications for the construction, expansion, or alteration of a public water system must be approved by the Division of Water Resources/Public Water Supply Section prior to the award of a contract or the initiation of construction as per 15A NCAC 18C .0300 et. seq. Plans and</p>	NCDOT will comply with these conditions.



<p>specifications should be submitted to 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. All public water supply systems must comply with state and federal drinking water monitoring requirements. For more information, contact the Public Water Supply Section, (919) 707-9100.</p> <p>2. If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Water Resources/Public Water Supply Section at 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. For more information, contact the Public Water Supply Section, (919) 707-9100.</p> <p>3. Plans and specifications for the construction, expansion, or alteration of the Mooresville water system must be approved through the Mooresville delegated plan approval authority. Please contact them at 704-799-4066 for further information.</p> <p>4. During any construction activities where a spill of fuels occurs into Lake Norman, it is imperative to contact the North Carolina Department of Environmental Quality, Mooresville Regional Office at 704-235-2100. The Mooresville Regional Office must be informed of the nature of the spill, the amount of the release, the time of the release so that the appropriate response can take place by our office to inform down stream drinking water providers.</p>	
<p><b>NC Wildlife Resources Commission (NCWRC)</b></p>	
<p>NCWRC's Dave McHenry responded by e-mail (May 16, 2025) for Chris Wood. Mr. McHenry stated the following:</p> <p>1. The NCWRC does not object to the proposed conveyance permit from Duke Energy. The NCWRC has no concerns with the boater safety plan.</p> <p>2. The project will impact Lake Norman for temporary causeways to construct a proposed parallel bridge to the north of the existing NC 150 bridge. The bridge design has minor permanent impacts to the Pinnacle and McCrary access areas. The NCWRC</p>	<p>NCDOT met with NCWRC representatives Betsy Haywood, William Casola, Carrie Ruhlman, and Major Chad Arnold on August 12, 2025 in accordance with Comment 3 from the NCWRC. During the discussion, it was determined that the rule making process is not applicable to the proposed project. The boater safety plan was updated to included contact information to NCWRC for notification 6 to 8 weeks in advance of boater traffic closure. The meeting summary is included in the NCWRC agency response attachment.</p>

<p>appreciates NCDOT maintaining the public use of those access areas during construction.</p> <p>3. In accordance with the prepared boater safety plan there will be temporary closures to portions of the lake during construction. The partial lake closure will likely require enactment and approval of a temporary rule by the NCWRC. The NCWRC's Water Safety Rulemaking Coordinator Ms. Betsy Haywood (betsy.haywood@ncwildlife.gov, 919/707-0013) should be contacted at least 6 months in advance of the closure need to facilitate the approval process.</p> <p>4. The NCWRC's Land and Water Conservation Division 919-707-0150 or the NCWRC's Land and Water Conservation Division Mt. Holly Depot (704) 263-0975 should be contacted before construction to coordinate the review of the buoy relocations and best practices the contractor will use.</p>	
<b>Lake Norman Marine Commission</b>	
<p>Lake Norman Marine Commission was notified of the proposed project on April 28, 2025. The Commission did not provide a response for the proposed project.</p>	<p>Coordination with Chad Broadway (Duke Energy Lake Services) on May 13, 2025, indicated that the proposed project was reviewed during the Commission's May 13, 2025 meeting and received a "no objection" comment from the group. This coordination is included in the agency comments attachment for Lake Norman Marine Commission. The Lake Norman Marine Commission has since dissolved as of June 30, 2025 and is currently being reestablished.</p>
<b>Catawba County Code Enforcement</b>	
<p>Catawba County Code Enforcement's Pat Queen responded by e-mail (April 29, 2025) and stated: Catawba County Building Services may only be involved if construction trailers for workers are being put on site and need power connections checked.</p>	<p>This condition is not applicable within the area of the FERC conveyance.</p>
<b>Catawba County Environmental Health</b>	
<p>Catawba County Environmental Health Department's Megen McBride on behalf of Scott Carpenter responded by e-mail (April 29, 2025) and stated: If any wells (drinking water wells, monitoring wells, etc) are found and are not use, they must be properly</p>	<p>This condition is not applicable within the area of the FERC conveyance.</p>



abandoned. A well abandonment permit is required. Contact CCEH if any old wells are found. If any wells are found and are still in use, all construction material and activity must be at least 100ft away from the well. If any septic systems are encountered, do not drive, grade, cut or fill within 25ft of all septic system components.	
<b>Iredell County Building Standards</b>	
Iredell County Building Standard's Lorrie Moore responded by e-mail (April 28, 2025) and stated: Bldg Standards has nothing to comment on.	No response required.
<b>Iredell County Health Department</b>	
Iredell County Health Department's Kimberly Mecimore responded by (April 29, 2025) and stated: I forwarded this email to Clinton Cook with NCDEQ. <i>(Note: See response from NC DEQ DWR Public Water Supply above).</i>	No response required.
<b>Duke Energy</b>	
Jeff Flanagan responded by email (9/19/2024) regarding the Marshall Steam Station and stated: He has no major objections to the impacts of the project as it relates to the Marshall Steam Station property or its operations.	No response required.

Following the table of agency comments and applicant responses, include a table of permits and certifications issued by the reviewing agencies. As with the table of agency comments and applicant responses, agencies should be listed in the same order as they are listed in the Agency/Organization List. All permits must be valid at time of application and have a term longer than the projected schedule for completing the project.

**Table III-N-2 Table of Permits and Certifications**

<b>Permit or Certification</b>	<b>Expiration Date</b>
Regional General Permit 50 approval (ID # SAW-2018-02343) issued September 3, 2020, modified August 20, 2024. ( <b>Attachment 5 – 404 and 401 Permits</b> )	Expires December 31, 2034.
401 Water Quality Certification issued April 17, 2029, modified August 20, 2024. ( <b>Attachment 5 – 404 and 401 Permits</b> )	Expires December 31, 2034.
Catawba Riparian Buffer Approval 12-16-22 ( <b>Attachment 5 – 404 and 401 Permits</b> )	Expires December 31, 2034.

### **Copies of Agency Correspondence**

Following the two summary tables, include a copy of all correspondence to and from any local, regional, state and federal agencies or other organizations with which you are required to consult,

including any required permits (e.g., Section 401 water quality certifications, Section 404 dredge/fill permits, building permits, etc.) or other approvals or comments which have been obtained from these organizations regarding this activity. Include a copy of any local, regional, state or federal regulations or guidelines that will be followed. (Note: All permitting issues must be resolved and clearly documented.) Correspondence should be organized in the order the agencies are listed on the Agency/Organization list with the applicant's request for comments followed by additional correspondence in chronological order. Note: Duke Energy reserves the right to require consultation with additional organizations beyond those included in the Agency / Organization List.

**US Army Corps of Engineers Response  
May 16, 2025**

**From:** [Amschler, Crystal C CIV USARMY CESAW \(USA\)](#)  
**To:** [Sarah Conner](#)  
**Subject:** RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments  
**Date:** Friday, May 16, 2025 4:06:38 PM

**EXTERNAL EMAIL:** Do not click links or open attachments unless you trust the 'Sender' and know the content is safe.

Hi Sarah,

I've reviewed the information provided and don't have any specific comments regarding the bridge conveyance. I would like to note that the original permit for this project has already been issued, but the final authorization for the Phase II portion of the project, which includes the bridge replacement, has not been issued. Of the information you sent, the Draft Boater Safety plan was of particular interest as the final plan is to be submitted with the final authorization request for Phase II and the implementation of the plan will be incorporated into the permit as a special condition. Regarding this plan, everything looked good to me but, in accordance with comments from WRC, we ask that DOT include the below language in the plan to ensure that the applicant adheres to this recommendation:

"The NCWRC's Land and Water Conservation Division 919-707-0150 or the NCWRC's Land and Water Conservation Division Mt. Holly Depot (704) 263-0975 should be contacted before construction to coordinate the review of the buoy relocations and best practices the contractor will use."

If you need anything else from me regarding this matter, please don't hesitate to reach out.

Sincerely,

Crystal Amschler

Project Manager

WRDA-Transportation Permitting Branch

828-526-6013

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we

continue to do so, please complete the Customer Satisfaction Survey located at:

[http://corpsmapu.usace.army.mil/cm\\_apex/f?p=136:4:0](http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0)

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**From:** Sarah Conner <sconner@rkk.com>

**Sent:** Tuesday, April 29, 2025 11:12 AM

**To:** Amschler, Crystal C CIV USARMY CESAW (USA) <Crystal.C.Amschler@usace.army.mil>

**Cc:** Lawrence, Jennifer L CIV USARMY CESAW (USA) <Jennifer.L.Lawrence@usace.army.mil>

**Subject:** [Non-DoD Source] RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments

Good morning Crystal,

Jennifer let me know that you may be leading the coordination on this project. I sent an older version of the boater safety plan in error in the previous email, I've attached an updated version for your review. This is similar to the version sent in the previous email, but is the most up to date.

Please let me know if you run into any questions during your review.

Thank you,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



8601 Six Forks Road  
Forum 1, Suite 700  
Raleigh, NC 27615

919-653-7363 Phone | 919-410-2889 Cell  
**Responsive People | Creative Solutions**

---

**From:** Sarah Conner  
**Sent:** Monday, April 28, 2025 2:58 PM  
**To:** [Jennifer.L.Lawrence@usace.army.mil](mailto:Jennifer.L.Lawrence@usace.army.mil); [Crystal.C.Amschler@usace.army.mil](mailto:Crystal.C.Amschler@usace.army.mil)  
**Cc:** Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Turchy, Michael A <[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Sowell, Bryan K <[bksowell@ncdot.gov](mailto:bksowell@ncdot.gov)>; John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>  
**Subject:** R-2307B Bridge Expansion over Lake Norman - Request for Comments

Good afternoon Ms. Lawrence,

Please see the attached letter requesting comments related to an NCDOT bridge expansion project (**R-2307B**) over Lake Norman, a facility managed by Duke Energy with a FERC license. Referenced in the letter is a series of attachments also included in this email. We are seeking your comments by May 28, 2025.

If you could, please reply to this email confirming receipt, and please let me know if you have any questions.

Thank you,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



8601 Six Forks Road  
Forum 1, Suite 700  
Raleigh, NC 27615

919-653-7363 Phone | 919-410-2889 Cell

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**US Army Corps of Engineers Response  
October 22, 2025**

**From:** [Amschler, Crystal C CIV USARMY CESAW \(USA\)](#)  
**To:** [Turchy, Michael A](#)  
**Cc:** [Sarah Conner](#)  
**Subject:** RE: R-2307 B - Request for Revision of Comments submitted to Duke Energy  
**Date:** Wednesday, October 22, 2025 11:06:01 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)

**EXTERNAL EMAIL:** Do not click links or open attachments unless you trust the 'Sender' and know the content is safe.

Michael,

I apologize for this error in wording on my part. I agree with your description below as to the appropriate break out of the phases and how they appear in the 404 permit and that the finalized B section does include the bridge over Lake Norman. If you need anything else from me, or any further clarification do not hesitate to reach out.

Sincerely,  
Crystal Amschler  
Project Manager

WRDA-Transportation Permitting Branch  
828-526-6013

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continue to do so, please complete the Customer Satisfaction Survey located at:

[http://corpsmapu.usace.army.mil/cm\\_apex/f?p=136:4:0](http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0)

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**From:** Turchy, Michael A <maturchy@ncdot.gov>  
**Sent:** Sunday, October 19, 2025 10:01 PM  
**To:** Amschler, Crystal C CIV USARMY CESAW (USA) <Crystal.C.Amschler@usace.army.mil>  
**Cc:** Sarah Conner <sconner@rkk.com>  
**Subject:** [Non-DoD Source] R-2307 B - Request for Revision of Comments submitted to Duke Energy

Hi Crystal,

Per our conversation on Friday, I just need to request a technical correction from your response to Duke Energy from back in May.

Probably the most confusing element of this project is that there is an A and a B section, and we're starting on the B section first.

Here's your email from May:

From: Amschler, Crystal C CIV USARMY CESAW (USA)  
To: Sarah Conner  
Subject: RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments  
Date: Friday, May 16, 2025 4:06:38 PM

EXTERNAL EMAIL: Do not click links or open attachments unless you trust the 'Sender' and know the content is safe.

Hi Sarah, I've reviewed the information provided and don't have any specific comments regarding the bridge conveyance. I would like to note that the original permit for this project has already been issued, **but the**



final authorization for the Phase II portion of the project, which includes the bridge replacement, has not been issued. Of the information you sent, the Draft Boater Safety plan was of particular interest as the final plan is to be submitted with the final authorization request for Phase II and the implementation of the plan will be incorporated into the permit as a special condition. Regarding this plan, everything looked good to me but, in accordance with comments from WRC, we ask that DOT include the below language in the plan to ensure that the applicant adheres to this recommendation:

"The NCWRC's Land and Water Conservation Division 919-707-0150 or the NCWRC's Land and Water Conservation Division Mt. Holly Depot (704) 263-0975 should be contacted before construction to coordinate the review of the buoy relocations and best practices the contractor will use."

If you need anything else from me regarding this matter, please don't hesitate to reach out.

Sincerely,

Crystal Amschler

Project Manager

WRDA-Transportation Permitting Branch

828-526-6013

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[http://corpsmapu.usace.army.mil/cm\\_apex/f?p=136:4:0](http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0)

Here's the direct link to the "Permit Package" for this project for reference:

<https://xfer.services.ncdot.gov/pdea/PermlIssued/R-2307%20Catawba%20Iredell%20August%2025%202024.pdf>

The permit correctly identifies the project phases:

"The project has been divided into two phases: Section A extends from NC 16 Bypass to SR 1902 (Harvel Road).

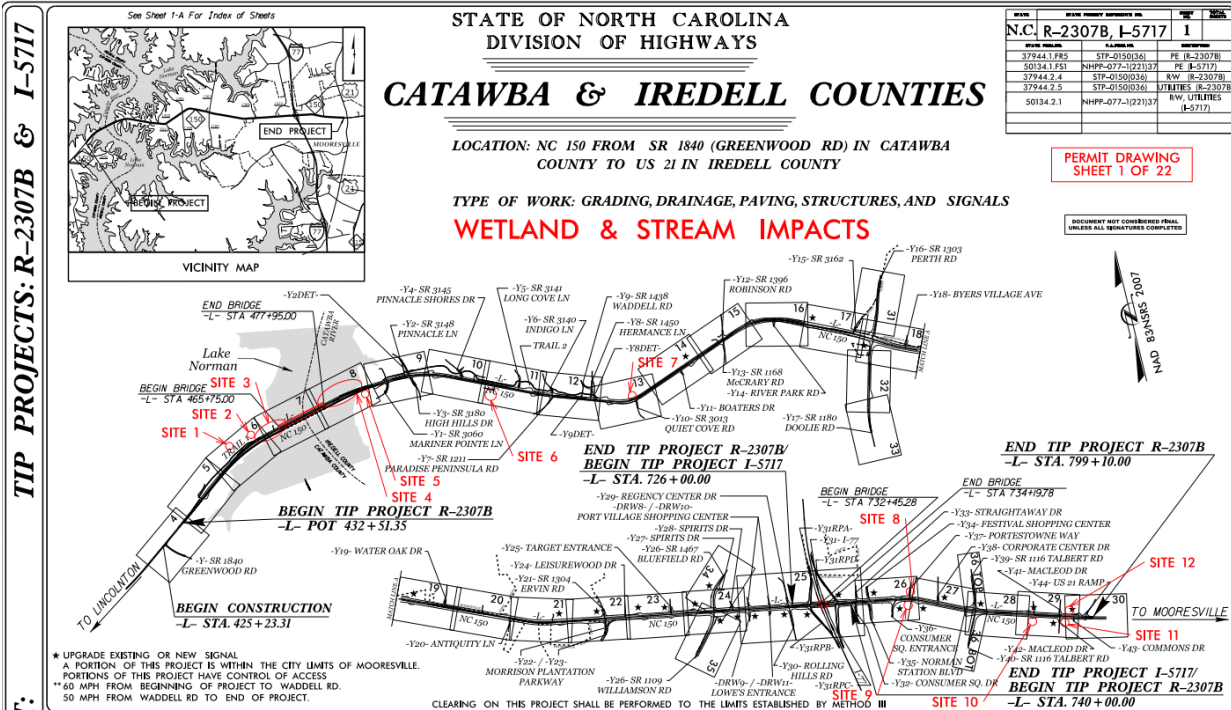
Section B extends from Harvel Road to just west of the US 21/NC 150 Interchange and includes the I-5717 component, the I-77 interchange.

This permit authorization includes final design and final impact numbers for Section B and preliminary designs and impacts for Section A."

The B section, which has final/permitted design, does include the bridge over Lake Norman.

Additionally, here's the breakdown of the B section from the permit drawings, if that helps.

(email continues below)



If you would like to reply back to this message that you are in agreement with the sections described in the issued 404 Permit, which includes the bridge over Lake Norman, that should suffice for Duke's FERC Conveyance Application's needs.

Thanks,  
Michael

**Michael Turchy**  
Environmental Coordination and Permitting [ECAP] Group Leader  
Environmental Analysis Unit  
North Carolina Department of Transportation

919 707 6157 office  
919 818 7427 mobile  
[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)

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1000 Birch Ridge Drive (Delivery)  
Raleigh, NC 27610



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## **US Fish and Wildlife Service Response**

**From:** [Turchy, Michael A](#)  
**To:** [Youngman, Holland J](#)  
**Cc:** [John Williams](#); [Sarah Conner](#); [Chris Rivenbark](#); [Tompkins, Bryan](#)  
**Subject:** RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments  
**Date:** Friday, July 11, 2025 12:04:05 PM  
**Attachments:** [image001.png](#)

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**EXTERNAL EMAIL:** Do not click links or open attachments unless you trust the 'Sender' and know the content is safe.

Hi Holland,

I wanted to provide an update on the bald eagle for this project.

As previously described below, a known active nest is within the established thresholds that required a General Eagle Disturbance Permit from the USFWS. Upon review of the project, USFWS issued a General Eagle Disturbance Permit effective February 24, 2025, with an expiration date of August 31, 2025. The permit outlined the authorized activity for the construction of the bridge conditional on the general permit requirements and conditions included in the permit.

Pursuant to the conditions of the general permit, monitoring occurred on April 28, 2025 with no eagles observed at the nest. Due to no eagle activity at the nest, an additional site visit was made on May 9, 2025 for a closer inspection of the nest. Large holes were observed in the nest, likely resulting from Helene. No signs of usage on the ground immediately below the nest (feathers, bones, etc.) were present.

With no eagle activity at the nest this visit as well as the previous visit, nest condition, and lack of other indications, the nest appears to be inactive.

Due to several alternative nests in the area (outside of the project), additional assessments were conducted along with Duke Energy staff on June 9 and 10, 2025 to determine if the eagles had potentially used one of those for this nesting season

Neither of the previously identified nests were determined to be active.

The annual report will be submitted to the USFWS by August 31, 2025, as required by the permit. Due to the above findings, NCDOT intends to allow this permit to expire. However, additional surveys for active nests are planned for late fall/early winter of 2025 (after leaf-drop) to ensure no active nests are within the project area and 660 feet beyond. This effort will focus on areas not assessed during the June 9-10, 2025 visit.

Please let me know if you have any questions.

Thanks,

Michael

**Michael Turchy**

Environmental Coordination and Permitting [ECAP] Group Leader  
Environmental Analysis Unit  
North Carolina Department of Transportation

919 707 6157 office  
919 818 7427 mobile

[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)

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Raleigh, NC 27699-1598

1000 Birch Ridge Drive (Delivery)  
Raleigh, NC 27610



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---

**From:** Youngman, Holland J <[holland\\_youngman@fws.gov](mailto:holland_youngman@fws.gov)>

**Sent:** Thursday, May 1, 2025 9:37 AM

**To:** Turchy, Michael A <[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)>; Tompkins, Bryan <[bryan\\_tompkins@fws.gov](mailto:bryan_tompkins@fws.gov)>

**Cc:** Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Sowell, Bryan K <[bksowell@ncdot.gov](mailto:bksowell@ncdot.gov)>; John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>; Sarah Conner <[sconner@rkk.com](mailto:sconner@rkk.com)>; Chris Rivenbark <[crivenbark@rkk.com](mailto:crivenbark@rkk.com)>

**Subject:** Re: [EXTERNAL] RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments

**CAUTION:** External email. Do not click links or open attachments unless verified. Report suspicious emails with the Report Message button located on your Outlook menu bar on the Home tab.

Thanks Michael - I appreciate the clarification and additional eagle info.

Holland Youngman  
(she/her)  
Wildlife Biologist  
U.S. Fish and Wildlife Service  
Asheville Ecological Services Field Office  
160 Zillicoa Street, Asheville, North Carolina, 28801  
Cell: 828-575-3920

---

**From:** Turchy, Michael A <[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)>

**Sent:** Wednesday, April 30, 2025 10:25 PM

**To:** Youngman, Holland J <[holland\\_youngman@fws.gov](mailto:holland_youngman@fws.gov)>; Tompkins, Bryan <[bryan\\_tompkins@fws.gov](mailto:bryan_tompkins@fws.gov)>

**Cc:** Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Sowell, Bryan K <[bksowell@ncdot.gov](mailto:bksowell@ncdot.gov)>; John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>; Sarah Conner <[sconner@rkk.com](mailto:sconner@rkk.com)>; Chris Rivenbark <[crivenbark@rkk.com](mailto:crivenbark@rkk.com)>

**Subject:** [EXTERNAL] RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments

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Hi Holland,

I can fill in some of the gaps in the information.

When we apply for a Convenience Permit crossing a FERC boundary, as part of the Duke Energy permitting protocol, we send this letter to their designated agency representatives. However, NCDOT is a bit different because we have our own agency representatives that work on our projects. Duke requests that we send the correspondence to their designated representative, but we can copy our representative who can reply as appropriate (as you have done below). Our comment that you are currently coordinating on the project was only meant to indicate that we had previous coordination with the Service, and you are NCDOT's primary contact.

Regarding the bald eagle, we did believe that we were >330 feet from the nest. However, after receiving a new set of coordinates, and looking at our impacts, we believe the installation of a drainage pipe would be within the 330'. Therefore, we applied for a General Eagle Disturbance Permit.

Attached is a graphic to display the area/ activity.

Pursuant to the conditions of the general permit, biologists surveyed the area last week. The nest could not be located. Additional surveys have been coordinated with Duke, as this land is within the secure area of the Marshall Steam Station.

If there are any changes to the status of this nest, or the General Permit, I'll let you know.

Thanks,

Michael

**Michael Turchy**

Environmental Coordination and Permitting [ECAP] Group Leader  
Environmental Analysis Unit  
North Carolina Department of Transportation

919 707 6157 office

919 818 7427 mobile

[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)

1598 Mail Service Center (Mail)

Raleigh, NC 27699-1598

1000 Birch Ridge Drive (Delivery)

Raleigh, NC 27610



*Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.*

---

**From:** Youngman, Holland J <[holland\\_youngman@fws.gov](mailto:holland_youngman@fws.gov)>

**Sent:** Wednesday, April 30, 2025 4:55 PM

**To:** Sarah Conner <[sconner@rkk.com](mailto:sconner@rkk.com)>; Tompkins, Bryan <[bryan\\_tompkins@fws.gov](mailto:bryan_tompkins@fws.gov)>

**Cc:** Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Turchy, Michael A <[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Sowell, Bryan K <[bksowell@ncdot.gov](mailto:bksowell@ncdot.gov)>; John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>

**Subject:** Re: [EXTERNAL] R-2307B Bridge Expansion over Lake Norman - Request for Comments

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Good afternoon, Sarah -

As noted and attached in the "Attachment 3 - Environmental Review" document you provided, I sent an informal concurrence letter to NCDOT for this project on 5/28/24. USFWS Log# 24-212. In the 4/28/25 letter NCDOT provided to Bryan Tompkins - attached in your request email, I am unclear about the sentence stating that I'm currently coordinating on this project. Please let me know what, if any, additional section 7 coordination or reinitiation may be needed at this time.

I am curious about the noted February 24, 2025 General Eagle Disturbance permit. In correspondence with NCDOT during May of 2024, I inquired about any potential impacts on the adjacent bald eagle nest areas and was told that, due to distance from the project area (>660 feet), the project was expected to have no effect. Please share the updated information on eagle impacts so that we can add that to the project file(s).

Thank you,

Holland Youngman  
(she/her)  
Wildlife Biologist  
U.S. Fish and Wildlife Service  
Asheville Ecological Services Field Office  
160 Zillicoa Street, Asheville, North Carolina, 28801  
Cell: 828-575-3920

---

**From:** Sarah Conner <[sconner@rkk.com](mailto:sconner@rkk.com)>

**Sent:** Monday, April 28, 2025 2:58 PM

**To:** Tompkins, Bryan <[bryan\\_tompkins@fws.gov](mailto:bryan_tompkins@fws.gov)>; Youngman, Holland J <[holland\\_youngman@fws.gov](mailto:holland_youngman@fws.gov)>

**Cc:** Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Turchy, Michael A <[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Sowell, Bryan K <[bksowell@ncdot.gov](mailto:bksowell@ncdot.gov)>; John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>

**Subject:** [EXTERNAL] R-2307B Bridge Expansion over Lake Norman - Request for Comments

**This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.**

Good afternoon Mr. Tompkins,

Please see the attached letter requesting comments related to an NCDOT bridge expansion project (**R-2307B**) over Lake Norman, a facility managed by Duke Energy with a FERC license. Referenced in the letter is a series of attachments also included in this email. We are seeking your comments by May 28, 2025.

If you could, please reply to this email confirming receipt, and please let me know if you have any questions.

Thank you,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



8601 Six Forks Road  
Forum 1, Suite 700  
Raleigh, NC 27615

919-653-7363 Phone | 919-410-2889 Cell  
**Responsive People | Creative Solutions**

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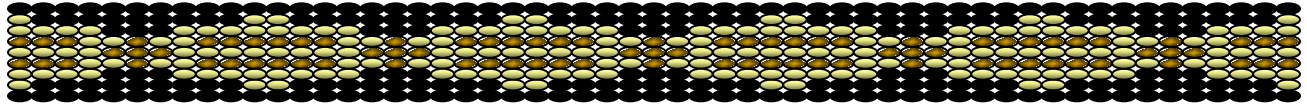
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## **Catawba Indian Nation Response**

Catawba Indian Nation  
Tribal Historic Preservation Office  
1536 Tom Steven Road  
Rock Hill, South Carolina 29730

Office 803-328-2427



July 22, 2025

Attention: Michael Turchy  
NC Department of Transportation  
1598 Mail Service Center  
Raleigh, NC 27699

Re. THPO #	TCNS #	Project Description
2025-193-255		Bridge Conveyance for Construction of R-2307 and Exhibit G. Revision for Impacts to Full Pond Contour

Dear Mr. Turchy,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions, please contact Caitlin Rogers at 803-328-2427 ext. 226, or e-mail [Caitlin.Rogers@catawba.com](mailto:Caitlin.Rogers@catawba.com).

Sincerely,

Wenonah G. Haire  
Tribal Historic Preservation Officer



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

JOSH STEIN  
GOVERNOR

J.R. "JOEY" HOPKINS  
SECRETARY

June 16, 2025

Caitlin Rogers  
1536 Tom Steven Road  
Rock Hill, SC 29730

Dear Ms. Rogers,

Duke Energy is planning the following actions related to their Lake Norman FERC boundary.

1. Bridge Conveyance for Construction of R-2307
2. Exhibit G. Revision for Impacts to Full Pond Contour

These actions result from NCDOT planning the addition of a two-lane bridge adjacent to the existing Bridge No. 138 facility over the Catawba River (Lake Norman), located on the border of Catawba and Iredell Counties, N.C. (R-2307B).

The lake is operated by Duke Energy under a Federal Energy Resource Commission (FERC) License. As part of their conveyance process, they require NCDOT to request your agency's comments on this proposal. This is a follow up request to our first letter delivered April 30, 2025.

Attached you will find:

- Attachment 1 - description of the impacts to the lake
- Attachment 2 - draft boater safety plan
- Attachment 3 - environmental review of alternatives considered
- Attachment 4 - Section 106 documentation.

Attachment 4 correspondence between NCDOT and HPO documenting Section 106 culminated in a letter dated December 14, 2012, indicating the R-2307B project is in compliance with Section 106.

Please review and return any comments on the proposed actions by June 20, 2025.

Sincerely,

A handwritten signature in cursive script, appearing to read "Michael Turchy".

Michael Turchy  
Environmental Coordination and Permitting [ECAP] Group Leader  
NCDOT Environmental Analysis Unit



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

JOSH STEIN  
GOVERNOR

J.R. "JOEY" HOPKINS  
SECRETARY

April 28, 2025

Caitlin Rogers  
1536 Tom Steven Road  
Rock Hill, SC 29730

Dear Ms. Rogers,

Duke Energy is planning the following actions related to their Lake Norman FERC boundary.

1. Bridge Conveyance for Construction of R-2307
2. Exhibit G. Revision for Impacts to Full Pond Contour

These actions result from NCDOT planning the addition of a two-lane bridge adjacent to the existing Bridge No. 138 facility over the Catawba River (Lake Norman), located on the border of Catawba and Iredell Counties, N.C. (R-2307B).

The lake is operated by Duke Energy under a Federal Energy Resource Commission (FERC) License. As part of their conveyance process, they require NCDOT to request your agency's comments on this proposal.

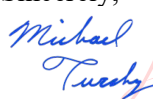
Attached you will find:

- Attachment 1 - description of the impacts to the lake
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- Attachment 3 - environmental review of alternatives considered
- Attachment 4 - Section 106 documentation.

Attachment 4 correspondence between NCDOT and HPO documenting Section 106 culminated in a letter dated December 14, 2012, indicating the R-2307B project is in compliance with Section 106.

Please review and return any comments on the proposed actions by May 28, 2025.

Sincerely,

 Digitally signed by  
Michael Turchy  
Date: 2025.04.21  
21:19:00 -04'00'

Michael Turchy  
Environmental Coordination and Permitting [ECAP] Group Leader  
NCDOT Environmental Analysis Unit

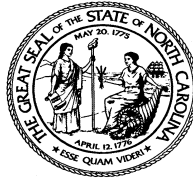
*Mailing Address:*  
NC DEPARTMENT OF TRANSPORTATION  
ENVIRONMENTAL ANALYSIS UNIT  
1598 MAIL SERVICE CENTER  
RALEIGH, NC 27699-1598

*Telephone:* 919-707-6000  
*Fax:* 919-250-4224  
*Customer Service:* 1-877-368-4968

*Website:* [ncdot.gov](http://ncdot.gov)

*Location:*  
1000 BIRCH RIDGE DRIVE  
RALEIGH, NC 27610

**NC Department of Natural and Cultural  
Resources State Historic Preservation Office  
Response**



**North Carolina Department of Natural and Cultural Resources  
State Historic Preservation Office**

Ramona M. Bartos, Administrator

Governor Josh Stein  
Secretary Pamela B. Cashwell

Office of Archives and History  
Deputy Secretary Darin J. Waters, Ph.D.

June 4, 2025

Sarah Conner  
RK&K  
8601 Six Forks Road, Forum 1, Suite 700  
Raleigh, NC 27615

[sconner@rkk.com](mailto:sconner@rkk.com)

Re: Widen NC 150 from East of the NC 16 Bypass to West of I-77, Mooresville, R-2307,  
Catawba County, ER 12-2211

Dear Ms. Connor:

Thank you for your letter of May 16, 2025, regarding the above-referenced undertaking. We have reviewed the submission and offer the following comments.


As proposed, the R-2307B design will have No Effect on the Marshall Steam Plant (CT1303) or Johnson Neel House (ID0004).

Based on our knowledge of the area, it is unlikely that any archaeological resources that may be eligible for inclusion in the National Register of Historic Places will be affected by the project. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or [environmental.review@dnCR.nc.gov](mailto:environmental.review@dnCR.nc.gov). In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

  
for Ramona Bartos, Deputy  
State Historic Preservation Officer

cc: Michael Turchy, NCDOT

[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)

***Disclaimer: This project has been reviewed by NC SHPO under SHPO tracking number ER 12-2211. As part of the required Duke Energy Conveyance required to construct the bridge expansion as part of the R-2307B project within the FERC boundary of Lake Norman, they require agency comment requests, including the NC SHPO, to review the project as it relates to the lake crossing.***

## **Project Name**

- NCDOT STIP Project No. R-2307B
- SHPO Tracking Number ER 12-2211

## **Project Location**

- Catawba County Bridge No. 138 carrying NC 150 over Lake Norman
- Coordinates: 35.605008, -80.943021
- Catawba/Iredell County Line

## **Project Contact Information (both Applicant & Consultant are required)**

<b>Applicant</b>	<b>Consultant</b>
Michael Turchy NCDOT 1598 Mail Service Center Raleigh, NC 27699-1598 maturchy@ncdot.gov 919-707-6157	Sarah Conner RK&K 8601 Six Forks Road, Forum 1, Suite 700 Raleigh, NC 27615 sconner@rkk.com 919-653-7363

## **Project Description**

*Provide a detailed description of the proposed project, including the acreage of the project area.*

The North Carolina Department of Transportation (NCDOT) is planning the expansion of the Catawba County Bridge No. 138 facility carrying NC 150 over Lake Norman (Catawba River) on the Catawba/Iredell County line by constructing a new bridge north of the existing structure as part of **STIP Project R-2307B**. The design limits for the entire R-2307B project are from Greenwood Road (approximately 0.8 miles west of the current Lake Norman Crossing) to US 21 (approximately 6.1 miles east of the current Lake Norman Crossing). The acreage of the total R-2307B project is 96.38 acres and the length of the project runs 6.94 miles. The additional bridge structure will be on new alignment to the north of the existing bridge. The new bridge will be 1,220 feet long and 51 feet wide. The bridge and approaches will include a 10 wide multi use path (MUP) along the

north side of NC 150. Two-lane two-way traffic will be maintained on the existing alignment while the new bridge and roadway are being constructed. Once the new structure and roadway are complete, traffic will be shifted into its permanent pattern with west bound traffic on northern bridge and east bound traffic on the southern existing bridge. Lake Norman is operated by Duke Energy under a Federal Energy Resource Commission (FERC) license. As part of their conveyance process, they ask NCDOT to request SHPO's agency comments on the proposal as it relates to the lake crossing.

*List all licenses, permits, approvals, grants, or funding sought from federal and/or state agencies.*

<b>Agency</b>	<b>Approval Type</b>	<b>No. (if applicable)</b>	<b>Date</b>
Duke Energy Lake Services	FERC Conveyance	N/A	Pending
US Army Corps of Engineers	Section 404 Individual Permit	SAW-2018-02343	09/03/2020 (Renewal Request 06/04/2024)
NC Department of Environmental Quality	Section 401 Water Quality Certificate	N/A	04/17/2019
US Fish and Wildlife Services	Bald Eagle Permit		02/24/2025
NC Wildlife Resources Commission	Boater Safety Plan Concurrence	N/A	Pending
Lake Norman Marine Commission	Boater Safety Plan Concurrence	N/A	Pending
State Historic Preservation Office	Section 106 Concurrence	ER 12-2211	08/25/2015

*Describe all historic properties (buildings, structures, districts, archaeological sites, or designed landscape features that are listed in, or eligible for listing in, the National Register of Historic Places, **or that are 50 or more years old**) and located within or immediately adjacent to the project area. Include photographs of all historic properties. For more information on the location of historic properties, see the SHPO's new online GIS Mapping Application at [gis.ncdcr.gov/hpoweb/](https://gis.ncdcr.gov/hpoweb/). Be sure to check each of the HPOGIS Layers (National Register, Study List, etc.) within your project area. Example of preliminary reconnaissance of extant structures.*

The historic resources within the R-2307B project limits are the Marshall Steam Station (CT1303) and the Johnson-Neel House (ID0004). The Marshall Steam Station is the only historic resource within the R-2307B project limits near to the lake crossing. There is 0.00 acre of impact to the Marshall Steam Station (see **Attachment 1 – Impact to Marshall Steam Station**) and 0.00 acre of impact to the Johnson-Neel House (see **Attachment 2 – Impact to Johnson-Neel House**). The attached Section 106



documentation applies to the overall R-2307 project and the additional historic resources addressed are outside the limits of R-2307B (see **Attachment 3 – Section 106 Documentation**).

*If the project proposes to rehabilitate, alter, remove, or demolish any historic property within the project area, provide a description of the historic property's current condition and the proposed renovations.*

Not applicable.

*Describe any proposed sale, transfer, or lease of historic properties within the project area.*

Not applicable.

*If known, describe past usage of the project area, including any ground disturbance that has taken place.*

Not applicable.

Describe all proposed ground-disturbing activity within the project area, including the nature, dimensions (length, width, and depth), and exact location. **Must include Acreage of disturbance/APE or Mileage of Linear work.**

The acreage of the total R-2307B project is 96.38 acres and the length of the project runs 6.94 miles. The proposed bridge and approaches to expand the bridge facility as part of the greater R-2307B project will include ground-disturbing activity. The new bridge will be 1,220 feet long and 51 feet wide. Ground disturbing activity will occur within the R-2307B corridor.

## **Project Area Map**

*Submit a map showing the proposed project area. Road names must be legible. Where available, provide state road numbers (SR 1234, NC 24, etc.) For projects in urban areas, please use a city map or tax parcel map.*

See **Attachment 4 – Project Area Map**

*All projects that propose ground-disturbing activity must also include a site plan or location map with clearly labelled boundaries for all ground-disturbing activities. Shapefiles/KML, while helpful, are not required for small or simple projects such as individual structure rehabilitation or dock repair (CAMA). **Shapefiles/KML are required for large, complex projects, including but not limited to, those that are multi-parcel (developments, solar farms, quarries) or linear (trails, broadband/fiber, pipelines) in nature.***

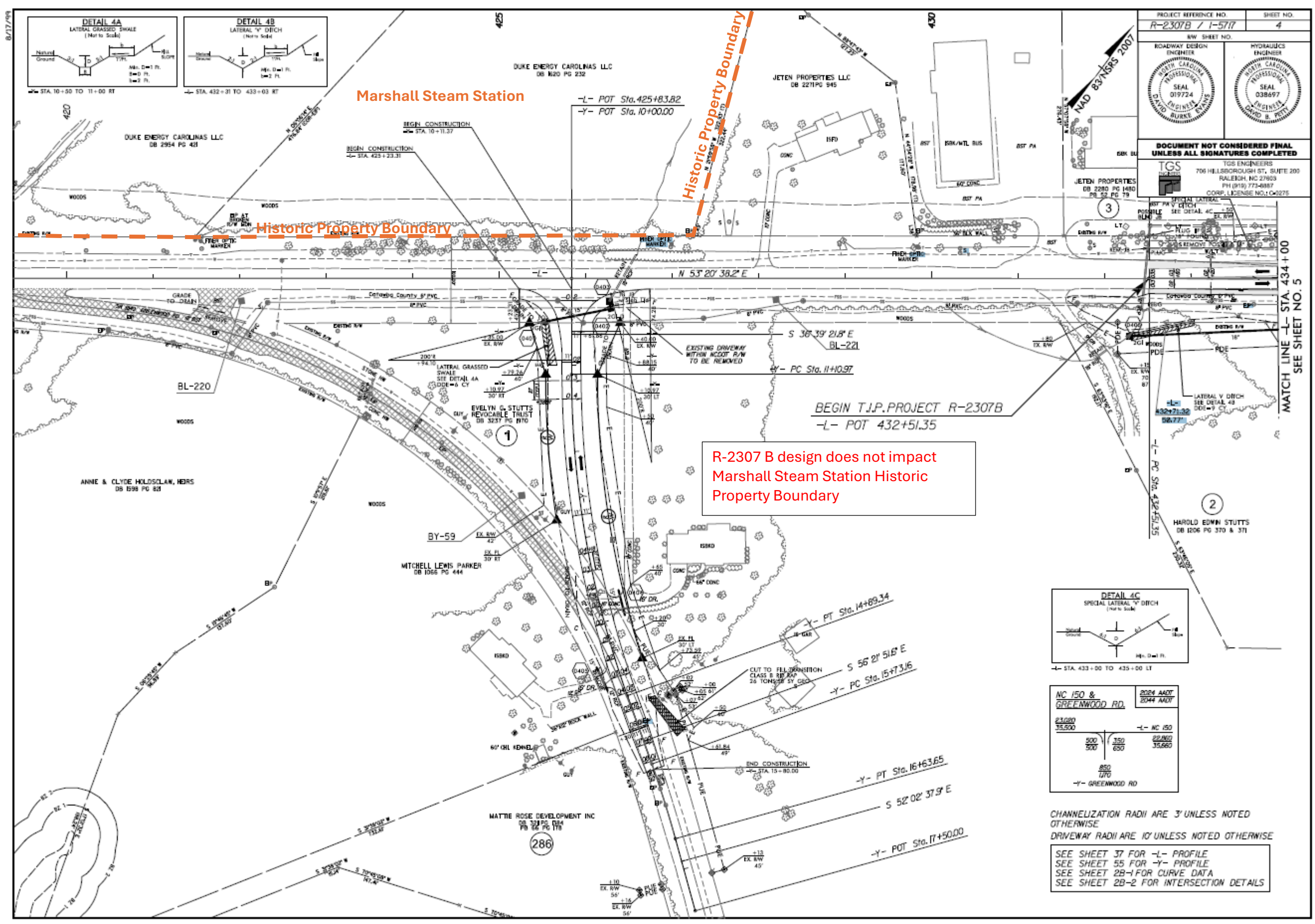
Based on a similar conversation between Renee Gledhill-Earley and John Williams on STIP Project No. B-6051, and due to the nature of this request not of an original review of the entire R-2307B project but only a validation of previous findings where the entire project was reviewed by SHPO, we have included only the two relevant plan sheets with the relevant historic property boundaries illustrated (see **Attachment 1, Attachment 2**).

## **Site Photographs**

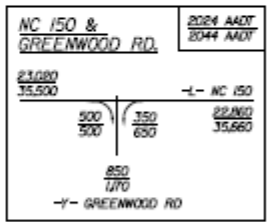
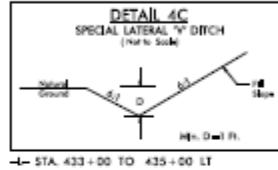
*Photographs of the site are mandatory. Include photographs of all structures within the project area that appear to be 50 or more years old. All printed digital photographs should be a minimum size of 4" x 4" (a maximum of 2 images per 8½" x 11" page). For legibility purposes, images taken from the internet (Google Street View, county tax appraiser websites, etc.) cannot be substituted for digital photographs. If submitting photographs of multiple structures clearly label the subject of each photograph and ensure that the location of any detail photographs or interior photographs can be identified.*

Please refer to documentation related to **SHPO Tracking Number ER 12-2211**.

# Attachment 1



PROJECT REFERENCE NO. <b>R-2307B / 1-5717</b>		SHEET NO. <b>4</b>	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
NORTH CAROLINA PROFESSIONAL SEAL 019724		NORTH CAROLINA PROFESSIONAL SEAL 038697	
DAVID B. BURKE		DAVID B. BURKE	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO. C-00275			



CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE  
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 37 FOR -L- PROFILE  
SEE SHEET 55 FOR -Y- PROFILE  
SEE SHEET 2B-1 FOR CURVE DATA  
SEE SHEET 2B-2 FOR INTERSECTION DETAILS





# Attachment 3

Federal Aid # **STP-150(19)** TIP # **R-2307** County: **Catawba, Iredell, and Lincoln**

## CONCURRENCE FORM FOR PROPERTIES NOT ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES

Project Description: **Widen NC 150 to multi-lanes from east of the NC 16 Bypass  
to just west of the I-77 interchange in Mooresville**

On **October 1, 2013** representatives of the

- ☒ North Carolina Department of Transportation (NCDOT)  
☒ North Carolina State Historic Preservation Office (NC-HPO)  
☐ Federal Agency  
☐ Other

Reviewed the subject project at historic architectural resources photograph review session/consultation and

All parties present agreed

- ☐ There are no properties over fifty years old within the project's Area of Potential Effects (APE).
- ☐ There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's APE.
- ☒ There are properties over fifty years old within the project's APE, but based on the historical information available and the photographs of each property, the properties identified as 1-62, 65-69; are considered not eligible for the National Register and no further evaluation of them is necessary. Photographs of these properties are attached.  
73-87; 95-97; 100-110; 112-122; 124-130.
- ☐ There are no National Register-listed or Study Listed properties within the project's APE.
- ☐ All properties greater than 50 years of age located in the APE have been considered at this consultation, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- ☒ More information is requested on properties 99, 111, 123; 63, 64, 70, 71, 72, 88, 89, 90,  
91, 92, 93, 94, 98

Signed:

Vanessa E. Patrick

Representative, NCDOT

1 October 2013

Date

Renee Hedrick-Early

Representative, NC-HPO

Oct 1, 2013

Date

\_\_\_\_\_  
Representative, Federal Agency

\_\_\_\_\_  
Date

If a survey report is prepared, a final copy of this form and the attached list will be included.

Federal Aid #: **STP-150(19)**

TIP#: **R-2307**

County: **Lincoln, Catawba,  
and Iredell**

**CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS**


Project Description: **Widen NC 150 from NC 16 Bypass to I-77**

On **August 25, 2015** representatives of the

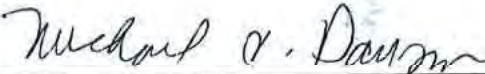
- ☒ North Carolina Department of Transportation (NCDOT)
- ☒ Federal Highway Administration (FHWA)
- ☒ North Carolina State Historic Preservation Office (HPO)
- ☐ Other

Reviewed the subject project and agreed on the effects findings listed within the table on the reverse of this signature page.

Signed:

  
Representative, NCDOT

25 August 2015  
Date



FHWA, for the Division Administrator, or other Federal Agency

8/25/15  
Date

  
Representative, HPO

8-25-15  
Date



Federal Aid #: **STP-150(19)**

TIP#: **R-2307**

County: **Lincoln, Catawba, and Iredell**

Property and Status	Alternative	Effect Finding	Reasons
Johnson-Neel House (ID0004) NR	1	No Adverse for all alternatives	No direct impacts to component resources of property. Access preserved, though rendered more distant (about 500 feet) by superstreet requirements.
	2		
	4		
Marshall Steam Station (CT1303) DE	1	No Adverse for all alternatives	No access alterations, no impacts to buildings or other property components, no permanent utility easements anticipated. Small amount of ROW to be acquired (does not compromise resource) – see "de minimis" statement below.
	2		
	4		
Terrell Historic District (CT0378) NR	1	<b>Adverse</b>	Direct effects to contributing resources (minimization already in place – elimination of superstreet in historic district).
	2	No Effect	Outside historic district.
	4	<b>Adverse</b>	Reasonably foreseeable development in Hobbs Road area will necessitate changes in roadway design and hence impose impacts to district resources.

Initialed: NCDOT VEL FHWA MD HPO BSR

FHWA Intends to use the HPO's concurrence as a basis for a "de minimis" finding for the following properties, pursuant to Section 4(f):  
**Marshall Steam Station (CT1303 – DE)**



**North Carolina Department of Cultural Resources  
State Historic Preservation Office**

Ramona M. Bartos, Administrator

Beverly Eaves Perdue, Governor  
Linda A. Carlisle, Secretary  
Kevin Cherry, Deputy Secretary

Office of Archives and History  
Division of Historical Resources  
David Brook, Director

December 14, 2012

**MEMORANDUM**

**TO:** Greg Thorpe, Ph.D., Director  
Project Development and Environmental Analysis Branch  
NCDOT Division of Highways

**FROM:** Ramona M. Bartos *RM Bartos for Ramona M. Bartos*

**SUBJECT:** NC 150 Widening, R-2307, Catawba and Iredell Counties, ER 12-2211

Thank you for your memorandum of November 27, 2012, transmitting the Project Data Sheet for the above project.

There are no known archaeological sites within the proposed project area. Based on our knowledge of the area, it is unlikely that any archaeological resources that may be eligible for inclusion in the National Register of Historic Places will be affected by the project. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.

We have conducted a search of our maps and files and located the following structures of historical or architectural importance within the general area of this project:

- Terrell Historic District (CT 0378), National Register;
- Johnson-Neel House (ID 0004), National Register;
- M. M. Bagriel House (CT 0659), surveyed in 1977 but now believed to be gone; and
- Springdale School (ID 0847), surveyed in 1976-77 but now believed to be gone.

The locations of these properties are available on our GIS website: <http://gis.ncdcr.gov/hpoweb/>.

We recommend that a Department of Transportation architectural historian identify and evaluate any structures over fifty (50) years of age within the project area, and report the findings to us. The most recent surveys in Catawba and Iredell Counties were in 1977 and 1976-77 respectively.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.



Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579. In all future communication concerning this project, please cite the above-referenced tracking number.

cc: Mary Pope Furr, NC DOT, [mfurr@ncdot.gov](mailto:mfurr@ncdot.gov)  
Matt Wilkerson, NCDOT  
State Clearinghouse



North Carolina Department of Cultural Resources  
State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Pat McCrory  
Secretary Susan Kluttz

Office of Archives and History  
Deputy Secretary Kevin Cherry

May 12, 2014

MEMORANDUM

TO: Vanessa Patrick  
Human Environment Unit  
NC Department of Transportation

FROM: Ramona M. Bartos *RMB for Ramona M. Bartos*

SUBJECT: Historic Structures Survey Report for the Widening of NC 150 from NC 16 Bypass to I-77,  
R-2307, Multi County, ER 12-2211

Thank you for your April 4, 2014, memorandum transmitting the above-referenced report. We have reviewed the report and offer the following comments.

We do not agree with the recommendation to reduce the boundaries of the National Register-listed **Terrell Historic District (CT0378)** due to new construction within the district. Our reasoning is:

- The Walter Gabriel House and the James Gillin House have not lost sufficient integrity to be re-evaluated as non-contributing. The houses essentially look the way they did when the district was listed. The loss of outbuildings does not have a direct impact on the contributing status of the house.
- There is no reason to remove any part of a district that has buildings and other resources standing on it when the district was listed, whether they were contributing, non-contributing, or not recorded in the nomination form unless a building has been subsequently significantly altered. If this has happened, they do warrant re-study. If, however, they essentially look the way they did when the district was listed, they warrant continued designation in the district -- as we stand by the decision made in 1985 to include them in the boundaries of the district. This includes the buildings along NC 150 -- the cotton warehouse and the Kermit Lee Howard House, in addition to the Rehobeth Church, Cemetery and Parsonage.
- It is not clear in the report which buildings now identified by a red square were standing in the district in 1985 or if they were constructed later. Please provide a photograph and construction date for all these resources. In addition, please provide further information about and photographs showing how the post-1985 buildings have impacted the rural character and streetscapes of the district. New construction does not necessarily mean that the area no longer has enough integrity of setting, feeling, or association to warrant removal from the Register. If the new buildings are relatively small and if they are well set-back from the road, then their impact on the district may be fairly minimal. They appear to be stand alone, single houses (and the library) and spaced well apart.

- The large rear addition and the small side addition on the Connor House have significantly lessened the integrity of the house, and it is appropriate to re-evaluate it as a non-contributing resource.
- The loss of the grist mill, cotton gin and cotton storage building on NC 150 is acknowledged, however, we do not recommend carving that individual piece of property out of the district. The property has not been re-developed, and the farm streetscape along NC 150 still conveys the rural historic character of the district.

We do not concur that the **Marshall Steam Station (CT1303)** is not eligible for listing in the National Register of Historic Place, because it does not meet Criterion Consideration G. It is acknowledged that the 1965-1970 resources still have excellent integrity. The fact that there is a similar, and slightly older, steam plant in Gaston County does not mean that this steam plant is ineligible for the Register. More than one steam plant, especially if it is one of the older ones in the state, can qualify for the Register. To make an informed assessment, one needs to know what/where the other steam plants from 1940 to 1974 are, when they were constructed, their design, and their general level of historic integrity. If the Marshall Steam Station is one of the oldest, then it would be of exceptional significance as a source of power needed for the growing state in the early 1960s.

We concur that the **Berea Baptist Church and Cemetery (ID1090)** is not eligible for listing in the National Register of Historic Places for the reasons outlined in the report.

We concur that the National Register-listed **Johnson-Neel House (ID0004)** remains eligible for listing.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or [renee.gledhill-earley@ncdcr.gov](mailto:renee.gledhill-earley@ncdcr.gov). In all future communication concerning this project, please cite the above referenced tracking number.

cc: Mary Pope Furr, NCDOT





STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY  
GOVERNOR

ANTHONY J. TATA  
SECRETARY

MEMORANDUM

To: Renee Gledhill-Earley

From: Vanessa E. Patrick

Date: August 15, 2014

Subject: Historic Architectural Resources Survey Report Review, T.I.P No. R-2307, Lincoln, Catawba, and Iredell Counties. ER 12-2211.

Thank you for your recent review of the R-2307 historic architectural resources survey report conveyed in your memorandum of May 12, 2014. We are pleased that you concur with our recommendations that the **Johnson Neel House** (ID0004) remains eligible for listing in the National Register of Historic Places and the **Berea Baptist Church and Cemetery** (ID1090) does not meet the criteria for eligibility. We have considered your comments about a proposed boundary reduction for the National Register-listed **Terrell Historic District** (CT0378) and the eligibility of the **Marshall Steam Station** (CT1303) and offer the following observations.

We accept that the case for reducing the National Register boundary of the **Historic Terrell District** is, as yet, not sufficiently proven. We feel compelled to emphasize that our argument for reducing the boundary is grounded in the undermining of visual, spatial, and functional connectivity through demolition of contributing resources and addition of intrusive elements, rather than the diminishing of individual building integrity. It seems precisely the loss of the outbuildings associated with the Walter Gabriel House and the James Gillin House, as well as other resources like the grist mill and cotton gin, coupled with the imposition of more recent construction that has compromised the settings of the properties and created discontinuities within the historic district. Please note that the construction dates for the "red-square" buildings are provided in the final paragraph of page 55 of the report. In future, we shall insure that any resources proposed for removal from or addition to an established historic district are fully represented photographically. Since the completion of the report, we have become acquainted with the range of design alternatives now under



consideration and can state that, with or without a boundary reduction, the Terrell Historic District likely will be affected by the R-2307 project. As is customary, we shall schedule a consultation with you if the selected alternative presents an effects situation.

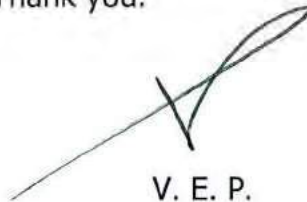
The eligibility assessment of the **Marshall Steam Station** presented in the report is based not only on chronology, but also rarity. Several other steam plants are identified on page 67, and the Allen Steam Station is specifically cited because it is the most similar to the Marshall structure in design and age. The recent decommissioning of coal-fired power facilities by Duke Energy is also noted and, admittedly, should have been more carefully considered when formulating the eligibility recommendation. We agree that a stronger context is needed and, to that end, we have revisited some of the relevant sources and assembled a brief, preliminary framework for evaluation.

The attached table presents fourteen coal-fired power plants owned by Duke Energy in North Carolina. Since 2011, eight have ceased operation and five of the eight have been demolished. The Marshall Steam Station is now one of the six remaining Duke Energy facilities and one of four built prior to 1966. The Global Energy Observatory databases (<http://globalenergyobservatory.org>) currently list a total of twenty-eight coal-fired power plants in North Carolina, including the Duke Energy fourteen. Ten of the "non-Duke" structures date to the 1970s-1990s, suggesting that the significance of the Marshall Steam Station is greater than initially calculated. The retrofitting, closure, and demolition of coal-fired power plants is intensifying both in North Carolina and nationally, thus insuring diminishing numbers of this particular industrial building type. Only a handful of steam plants and other power generating structures are represented in the state survey (Cape Fear (CH0676), Cliffside (CL0015), and Allen (GS1452) are minimally recorded) and elsewhere, including the Historic American Engineering Record, and they are virtually absent from the scholarly literature. Indeed, the industrial archaeology of the twentieth century is an increasingly urgent subject for historical investigation.

Given the imminent transformation, if not total disappearance of a building type of which the Marshall Steam Station is one of only a few standing examples, we wish to revise our recommendation and consider the resource eligible for the National Register. In the absence of a fully developed context for the building type, we nevertheless believe that the current decommissioning program adopted by Duke Energy provides adequate justification for recognizing a facility that also remains essentially intact, continues to fulfill its original function, and is one of the earliest such structures built in North Carolina. We agree with the

statement in your memorandum that "if the Marshall Steam Station is one of the oldest, then it would be of exceptional significance as a source of power needed for the growing state in the early 1960s." We suggest that the National Register boundary contain that part of the current tax parcel delineated on the survey map section in Figure 3 (page 4) of the report and follow the existing right-of-way along NC 150. Several of the proposed alternatives for the R-2307 project are located near the Marshall Steam Station. While it appears that the resource can be avoided, we shall, of course, discuss any possible effects with you when an alternative is selected.

Should you have any questions, please do not hesitate to contact me at 919-707-6082 or [vepatrick@ncdot.gov](mailto:vepatrick@ncdot.gov). Thank you.



V. E. P.

Copy to: Zahid M. Baloch  
John G. Conforti  
Jennifer Harris



## Duke Energy Coal-Fired Power Plants in North Carolina

ONLINE	NAME	COUNTY	RETIRED	DEMOLISHED
1923	Cape Fear Plant*	Chatham	2012	Pending
1926	Buck Steam Station*	Rowan	2011-2013	Pending
1929	Riverbend Steam Station	Gaston	2013	2013
1940	Cliffside Steam Station*	Cleveland	2011	2013
1949	Dan River Steam Station*	Rockingham	2012	2013
1949	W. H. Weatherspoon Plant	Robeson	2011	2013
1951	H. F. Lee Steam Station*	Wayne	2012	2013-2014
1954	Sutton Steam Station*	New Hanover	2013	
1957	Allen Steam Station	Gaston		
1964	Asheville Plant	Buncombe		
1965	Marshall Steam Station	Catawba		
1966	Roxboro Steam Plant	Person		
1974	Belews Creek Steam Station	Stokes		
1983	Mayo Plant	Person		

\*replaced on-site by later, oil- or gas-fueled facilities retaining original name

Source: [www.duke-energy.com/power-plants/frachised.asp](http://www.duke-energy.com/power-plants/frachised.asp) and [www.duke-energy.com/about-us/decommissioningprogram.asp](http://www.duke-energy.com/about-us/decommissioningprogram.asp), viewed August 2014



North Carolina Department of Cultural Resources  
State Historic Preservation Office

Ramona M. Barros, Administrator

Governor Pat McCrory  
Secretary Susan Kluttz

Office of Archives and History  
Deputy Secretary Kevin Cherry

August 28, 2014

MEMORANDUM

TO: Vanessa Patrick  
Human Environment Unit  
NC Department of Transportation

FROM: Renee Gledhill-Earley *Renee Gledhill-Earley*  
Environmental Review Coordinator

SUBJECT: Historic Structures Survey Report, Improve NC 150 from NC 16 Bypass to I-77, R-2307,  
Multi County, ER 12-2211

Thank you for your August 15, 2014, memorandum concerning the above-referenced undertaking and Historic Structures Survey Report. We are pleased that our agencies concur on the historical and architectural significance of the Marshall Steam Plant and its eligibility for listing in the National Register of Historic Places. We will add this information to our files and update the GIS to indicate the property's being determined eligible for listing.

We appreciate your comments about the Terrell Historic District and will note them in our records. As with the review of all such reports, our staff is charged with not considering the potential effects of an undertaking on properties when evaluating their eligibility. Rather, their charge is to consider the information provided about specific properties, in accordance with the applicable regulations and guidance provided by the National Park Service in reaching a conclusion. Thus, as noted, we continue in our belief that the Terrell Historic District retains its integrity and adjusting the boundaries at this time is unwarranted.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

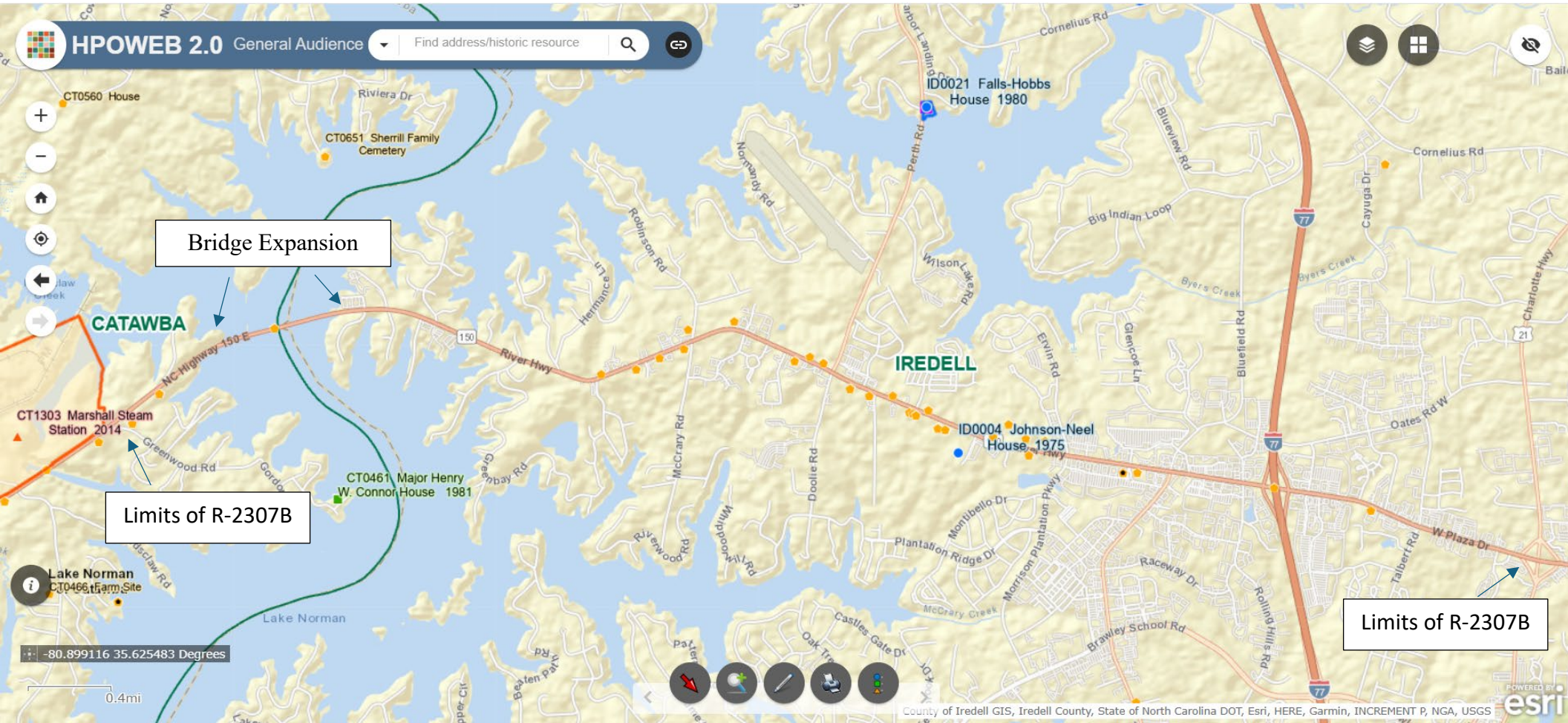
Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or [renee.gledhill-earley@ncdcr.gov](mailto:renee.gledhill-earley@ncdcr.gov). In all future communication concerning this project, please cite the above referenced tracking number.

cc: Mary Pope Furr, NCDOT

[mfurr@ncdot.gov](mailto:mfurr@ncdot.gov)



## Attachment 4



**NC Department of Natural and Cultural  
Resources Division of Parks and Recreation  
Response**

**From:** [Strong, Brian](#)  
**To:** [Sarah Conner](#)  
**Subject:** RE: [External] RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments  
**Date:** Tuesday, June 3, 2025 2:11:18 PM

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The Division of Parks and Recreation has no comments on the project.

Thanks

---

**From:** Sarah Conner <sconner@rkk.com>  
**Sent:** Tuesday, June 3, 2025 9:52 AM  
**To:** Strong, Brian <brian.strong@ncparks.gov>  
**Subject:** [External] RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments

You don't often get email from [sconner@rkk.com](mailto:sconner@rkk.com). [Learn why this is important](#)

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Good morning Brian,

I wanted to check in and see if you had feedback or comments regarding STIP Project R-2307B below. Please let me know if I can answer any questions.

Thank you,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



8601 Six Forks Road  
Forum 1, Suite 700  
Raleigh, NC 27615

919-653-7363 Phone | 919-410-2889 Cell

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---

**From:** Sarah Conner  
**Sent:** Monday, April 28, 2025 4:38 PM  
**To:** [Brian.Strong@ncparks.gov](mailto:Brian.Strong@ncparks.gov)  
**Subject:** RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments

Good afternoon Mr. Strong,

As a follow up, it looks like I sent you a boater safety plan that's a little bit older in error. The attached one largely has the same content as the previous one but is the most current version and is reflected in both Attachment 1 and Attachment 3.

Thank you,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



8601 Six Forks Road  
Forum 1, Suite 700  
Raleigh, NC 27615

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---

**From:** Sarah Conner  
**Sent:** Monday, April 28, 2025 2:59 PM  
**To:** 'Brian.Strong@ncparks.gov' <[Brian.Strong@ncparks.gov](mailto:Brian.Strong@ncparks.gov)>  
**Cc:** Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Turchy, Michael A <[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Sowell, Bryan K <[bksowell@ncdot.gov](mailto:bksowell@ncdot.gov)>; John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>  
**Subject:** R-2307B Bridge Expansion over Lake Norman - Request for Comments

Good afternoon Mr. Strong,

Please see the attached letter requesting comments related to an NCDOT bridge expansion project (**R-2307B**) over Lake Norman, a facility managed by Duke Energy with a FERC license. Referenced in the letter is a series of attachments also included in this email. We are seeking your comments by May 28, 2025.

If you could, please reply to this email confirming receipt, and please let me know if you have any questions.

Thank you,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



8601 Six Forks Road  
Forum 1, Suite 700  
Raleigh, NC 27615

**NC Department of Environmental Quality (NC  
DEQ) Division of Water Resources (DWR)  
Response**

**From:** [Plummer, Mary B](#)  
**To:** [Sarah Conner](#)  
**Subject:** RE: [External] RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments  
**Date:** Tuesday, May 27, 2025 12:59:58 PM  
**Attachments:** [image001.png](#)  
[image003.png](#)

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This email documents DWR's concurrence with the R-2307B Boater Safety Plan and other documentation that was sent and received on 4/28/25. As a reminder, all work in or adjacent to surface waters shall be conducted in a dry work area. A dry work area shall be maintained to prevent direct contact between curing concrete and surface water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. All bridge construction shall be performed from an existing bridge, temporary work bridge, temporary causeway, or floating or sunken barges. If work conditions require barges, they shall be floated into position and then sunk. The barges shall not be sunk and then dragged into position. Under no circumstances should barges be dragged along the bottom of surface waters. Construction activities shall not result in the violation of applicable water quality standards. Any violations shall be reported to DWR within 24 hours of discovery.

Thanks.

**Mary "Beth" Plummer**  
Environmental Specialist  
401 and Buffer Transportation Permitting Branch  
Department of Environmental Quality  
610 E. Center Ave., Suite 301  
Mooresville, NC 28115  
704-235-2193 office  
704-682-2839 cell  
[Mary.Plummer@deq.nc.gov](mailto:Mary.Plummer@deq.nc.gov)



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---

**From:** Sarah Conner <[sconner@rkk.com](mailto:sconner@rkk.com)>  
**Sent:** Tuesday, May 6, 2025 1:15 PM  
**To:** Plummer, Mary B <[mary.plummer@deq.nc.gov](mailto:mary.plummer@deq.nc.gov)>; Pitner, Andrew <[andrew.pitner@deq.nc.gov](mailto:andrew.pitner@deq.nc.gov)>

**Subject:** RE: [External] RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments

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Good afternoon Beth,

Please see the attachments for your review.

Thank you,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



8601 Six Forks Road  
Forum 1, Suite 700  
Raleigh, NC 27615

919-653-7363 Phone | 919-410-2889 Cell

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---

**From:** Plummer, Mary B <[mary.plummer@deq.nc.gov](mailto:mary.plummer@deq.nc.gov)>

**Sent:** Tuesday, May 6, 2025 12:56 PM

**To:** Pitner, Andrew <[andrew.pitner@deq.nc.gov](mailto:andrew.pitner@deq.nc.gov)>; Sarah Conner <[sconner@rkk.com](mailto:sconner@rkk.com)>

**Subject:** RE: [External] RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments

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I don't see any attachments; can someone send those to me. Thanks.

**Mary "Beth" Plummer**  
Environmental Specialist  
401 and Buffer Transportation Permitting Branch  
Department of Environmental Quality  
610 E. Center Ave., Suite 301  
Mooresville, NC 28115  
704-235-2193 office  
704-682-2839 cell  
[Mary.Plummer@deq.nc.gov](mailto:Mary.Plummer@deq.nc.gov)





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---

**From:** Pitner, Andrew <[andrew.pitner@deq.nc.gov](mailto:andrew.pitner@deq.nc.gov)>  
**Sent:** Tuesday, April 29, 2025 9:48 AM  
**To:** Sarah Conner <[sconner@rkk.com](mailto:sconner@rkk.com)>; Plummer, Mary B <[mary.plummer@deq.nc.gov](mailto:mary.plummer@deq.nc.gov)>  
**Subject:** RE: [External] RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments

Hi Sarah,  
Beth Plummer, who you included on this, and who's part of DWR's 401 & Buffer Transportation Permitting Branch, will be the lead on any comments for DWR.  
Andrew

Andrew H. Pitner, P.G.  
Regional Supervisor  
Water Quality Regional Operations Section  
Mooresville Regional Office  
Division of Water Resources  
Department of Environmental Quality

704 235 2180 direct office  
704 235 2100 MRO main line  
704 235 2101 fax  
DWR website: <http://www.ncwater.org>

610 East Center Avenue, Suite 301, Mooresville, NC 28115



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---

**From:** Sarah Conner <[sconner@rkk.com](mailto:sconner@rkk.com)>



**Sent:** Monday, April 28, 2025 4:35 PM

**To:** Pitner, Andrew <[andrew.pitner@deq.nc.gov](mailto:andrew.pitner@deq.nc.gov)>; Plummer, Mary B <[mary.plummer@deq.nc.gov](mailto:mary.plummer@deq.nc.gov)>

**Subject:** [External] RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments

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Good afternoon Mr. Pitner,

As a follow up, it looks like I sent you a boater safety plan that's a little bit older in error. The attached one largely has the same content as the previous one but is the most current version and is reflected in both Attachment 1 and Attachment 3.

Thank you,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



8601 Six Forks Road  
Forum 1, Suite 700  
Raleigh, NC 27615

919-653-7363 Phone | 919-410-2889 Cell

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---

**From:** Sarah Conner

**Sent:** Monday, April 28, 2025 2:58 PM

**To:** [andrew.pitner@deq.nc.gov](mailto:andrew.pitner@deq.nc.gov); [mary.plummer@deq.nc.gov](mailto:mary.plummer@deq.nc.gov)

**Cc:** Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Turchy, Michael A <[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Sowell, Bryan K <[bksowell@ncdot.gov](mailto:bksowell@ncdot.gov)>; John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>

**Subject:** R-2307B Bridge Expansion over Lake Norman - Request for Comments

Good afternoon Mr. Pitner,

Please see the attached letter requesting comments related to an NCDOT bridge expansion project (**R-2307B**) over Lake Norman, a facility managed by Duke Energy with a FERC license. Referenced in the letter is a series of attachments also included in this email. We are seeking your comments by May 28, 2025.

If you could, please reply to this email confirming receipt, and please let me know if you have any questions.

Thank you,

Sarah

---

**SARAH CONNER**

Environmental Planner II



8601 Six Forks Road

Forum 1, Suite 700

Raleigh, NC 27615

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# **NC DEQ DWR – Public Water Supply Section Response**

**From:** [Westmoreland, Jeff](#)  
**To:** [Sarah Conner](#)  
**Cc:** [Cook, Clinton](#)  
**Subject:** RE: [External] R-2307B Bridge Expansion over Lake Norman - Request for Comments  
**Date:** Wednesday, April 30, 2025 8:55:45 AM

---

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Sarah,

I have reviewed the proposed R-2307B Bridge Expansion Over Lake Norman that was provided. Here are comments that our office has regarding this project:

1. Plans and specifications for the construction, expansion, or alteration of a public water system must be approved by the Division of Water Resources/Public Water Supply Section prior to the award of a contract or the initiation of construction as per 15A NCAC 18C .0300 et. seq. Plans and specifications should be submitted to 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. All public water supply systems must comply with state and federal drinking water monitoring requirements. For more information, contact the Public Water Supply Section, (919) 707-9100.
2. If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Water Resources/Public Water Supply Section at 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. For more information, contact the Public Water Supply Section, (919) 707-9100.
3. Plans and specifications for the construction, expansion, or alteration of the Mooresville water system must be approved through the Mooresville delegated plan approval authority. Please contact them at 704-799-4066 for further information.
4. During any construction activities where a spill of fuels occurs into Lake Norman, it is imperative to contact the North Carolina Department of Environmental Quality, Mooresville Regional Office at 704-235-2100. The Mooresville Regional Office must be informed of the nature of the spill, the amount of the release, the time of the release so that the appropriate response can take place by our office to inform down stream drinking water providers.

If you have any questions, please feel free to give me a call.

Thanks

**Jeff Westmoreland, PE**  
Environmental Engineer  
Division of Water Resources – Public Water Supply Section  
North Carolina Department of Environmental Quality

704-235-2124 Office  
[jeff.westmoreland@deq.nc.gov](mailto:jeff.westmoreland@deq.nc.gov)

Mooreville Regional Office  
610 East Center Avenue  
Suite 301  
Mooreville, NC 28115

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---

**From:** Cook, Clinton <clinton.cook@deq.nc.gov>  
**Sent:** Tuesday, April 29, 2025 4:17 PM  
**To:** Westmoreland, Jeff <jeff.westmoreland@deq.nc.gov>  
**Subject:** FW: [External] R-2307B Bridge Expansion over Lake Norman - Request for Comments

Jeff,

Do you have time to review this request?

Thanks,  
Clint

**Clinton O. Cook, PE**  
Regional Engineer  
Division of Water Resources – Public Water Supply Section  
North Carolina Department of Environmental Quality

704 235 2100 office  
704 235 2101 fax  
[clinton.cook@deq.nc.gov](mailto:clinton.cook@deq.nc.gov)

Mooreville Regional Office  
610 East Center Avenue, Suite 301  
Mooreville, NC 28115

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---

**From:** Sarah Conner <[sconner@rkk.com](mailto:sconner@rkk.com)>  
**Sent:** Tuesday, April 29, 2025 4:13 PM  
**To:** Cook, Clinton <[clinton.cook@deq.nc.gov](mailto:clinton.cook@deq.nc.gov)>  
**Cc:** Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>;  
Turchy, Michael A <[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Sowell, Bryan K  
<[bksowell@ncdot.gov](mailto:bksowell@ncdot.gov)>; John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>  
**Subject:** [External] R-2307B Bridge Expansion over Lake Norman - Request for Comments

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Good afternoon Mr. Cook,

Kim Mecimore notified me that she forwarded information to you regarding the R-2307B project. I've attached a letter requesting comments for the NCDOT bridge expansion project (**R-2307B**) over Lake Norman, a facility managed by Duke Energy with a FERC license. Also included are the attachments referenced in the letter.

We are seeking your comments by May 30, 2025, please let me know if you have any questions about the project.

Thank you,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



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Forum 1, Suite 700  
Raleigh, NC 27615

919-653-7363 Phone | 919-410-2889 Cell  
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---

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## **NC Wildlife Resources Commission Response**

## R-2307B NCWRC Boater Safety Plan Discussion

### August 12, 2025

#### Attendees

Nathan Adima	NCDOT – PMU – Project Manager
Cole Gurley	NCDOT – Division 12 – Div. Project Development Engr
Rodney Gantt	NCDOT – Division 12 – Div. Construction Engr
Christian Listoe	NCDOT – Division 12 – Assistant Div. Construction Engr
Carrie Ruhlman	NCWRC – Policy Manager
William Casola	NCWRC – Policy Development Analyst
Betsy Haywood	NCWRC – Water Safety Rulemaking Coordinator
Chad Arnold	NCWRC – Major of Admin. Law Enforcement Division
Sarah Conner	RK&K – Planning
John Williams	RK&K – Planning

The purpose of this meeting is to discuss the boater safety plan for **NCDOT STIP Project No. R-2307B** carrying NC-150 over Lake Norman.

#### FERC Coordination

A boater safety plan was developed as part of the coordination required for Duke Energy to issue conveyance over Lake Norman. Duke Energy operates Lake Norman as part of the Catawba-Wateree Hydroelectric Project under the Federal Energy Regulatory Commission (**FERC Project No. 2232**).

The boater safety plan has received concurrence from the following agencies:

- NC Wildlife Resources Commission (NCWRC)
- the disbanded Lake Norman Marine Commission (off the record), and
- US Army Corps of Engineers (USACE)

The boater safety plan was also sent to several agencies listed by Duke Energy as part of their agency coordination process.

#### NCWRC Coordination

There is no additional rulemaking required for this project, and the existing bridge and “no-wake” buoys near to the bridge are not currently in rule. Additionally, the existing “no-wake” buoys were put in place by the Lake Norman Marine Commission. The Lake Norman Marine Commission is now disbanded and anticipated to return, however the timeline for their reestablishment is unknown. Upon their reestablishment, Lake Norman Marine Commission will be notified of the relocated buoys and of the status of the proposed project.





Chad Arnold of NCWRC will be contacted at least 6 to 8 weeks of lead time ahead of construction with notification of the date of construction. This information as well as Chad's contact details are included in the boater safety plan. Additionally, when the phases of the boater safety plan shift, or if they need to change, NCDOT will notify Chad of those changes. Chad's contact information can be found below:

Major Chad Arnold  
Major of Administration Law Enforcement Division  
Mailing Address: 1717 Mail Service Center  
Raleigh, North Carolina 27699-1720  
Office: 919-707-0033 Mobile: 704-506-8198

#### Action Items

- The Boater Safety Plan will be distributed to USACE to include in the permit following finalization from Duke Energy.
- NCWRC will be contacted 6-8 weeks in advance of closure as noted in first paragraph on second page.

**From:** [McHenry, David G](#)  
**To:** [Sarah Conner](#)  
**Cc:** [Broadway, Chad](#); [Adima, Nathan N](#); [Turchy, Michael A](#); [Gurley, Cole G](#); [Sowell, Bryan K](#); [John Williams](#); [Stancil, Vann F](#); [Arnold, Chad R](#)  
**Subject:** RE: [External] R-2307B Bridge Expansion over Lake Norman - Request for Comments  
**Date:** Friday, May 16, 2025 11:33:32 AM  
**Attachments:** [image002.png](#)

---

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Thank you for the inquiry and information provided in your April 28, 2025 email. The NCWRC participated in the merger development process for the project and has reviewed the boater safety plan and other information. A conveyance permit is required by Duke Energy because the bridge is located within the FERC boundary for the Catawba-Wateree project. The NCWRC offers the following comments:

1. The NCWRC does not object to the proposed conveyance permit from Duke Energy. The NCWRC has no concerns with the boater safety plan.
2. The project will impact Lake Norman for temporary causeways to construct a proposed parallel bridge to the north of the existing NC 150 bridge. The bridge design has minor permanent impacts to the Pinnacle and McCrary access areas. The NCWRC appreciates NCDOT maintaining the public use of those access areas during construction.
3. In accordance with the prepared boater safety plan there will be temporary closures to portions of the lake during construction. The partial lake closure will likely require enactment and approval of a temporary rule by the NCWRC. The NCWRC's Water Safety Rulemaking Coordinator Ms. Betsy Haywood ([betsy.haywood@ncwildlife.gov](mailto:betsy.haywood@ncwildlife.gov), 919/707-0013) should be contacted at least 6 months in advance of the closure need to facilitate the approval process.
4. The NCWRC's Land and Water Conservation Division 919-707-0150 or the NCWRC's Land and Water Conservation Division Mt. Holly Depot (704) 263-0975 should be contacted before construction to coordinate the review of the buoy relocations and best practices the contractor will use.

Please let me know if you have any questions or need additional assistance.

Thanks

Please NOTE my email address has recently changed from [david.mchenry@ncwildlife.org](mailto:david.mchenry@ncwildlife.org) to [david.mchenry@ncwildlife.gov](mailto:david.mchenry@ncwildlife.gov)

Dave McHenry  
NCWRC Western DOT Coordinator  
828-476-1966



---

**From:** Sarah Conner <sconner@rkk.com>

**Sent:** Monday, April 28, 2025 2:59 PM

**To:** Stancil, Vann F <vann.stancil@ncwildlife.gov>; McHenry, David G <david.mchenry@ncwildlife.gov>; Meyer, Ben J <ben.meyer@ncwildlife.gov>

**Cc:** Broadway, Chad <Chad.Broadway@duke-energy.com>; Adima, Nathan N <nadima@ncdot.gov>; Turchy, Michael A <maturchy@ncdot.gov>; Gurley, Cole G <cgurley@ncdot.gov>; Sowell, Bryan K <bksowell@ncdot.gov>; John Williams <jwilliams@rkk.com>

**Subject:** [External] R-2307B Bridge Expansion over Lake Norman - Request for Comments

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Good afternoon Mr. Stancil,

Please see the attached letter requesting comments related to an NCDOT bridge expansion project (**R-2307B**) over Lake Norman, a facility managed by Duke Energy with a FERC license. Referenced in the letter is a series of attachments also included in this email. We are seeking your comments on the project and concurrence on the attached boater safety plan by May 28, 2025.

If you could, please reply to this email confirming receipt, and please let me know if you have any questions.

Thank you,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



8601 Six Forks Road  
Forum 1, Suite 700  
Raleigh, NC 27615

919-653-7363 Phone | 919-410-2889 Cell  
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## **Lake Norman Marine Commission Response**

**From:** [Broadway, Chad](#)  
**To:** [Sarah Conner](#)  
**Cc:** [Gurley, Cole G](#); [Stutts, David S](#); [Sowell, Bryan K](#); [John Williams](#); [Whitaker, Dennis J](#); [Kluttz III, Joseph R](#); [Brennan, Cayce](#)  
**Subject:** RE: [EXTERNAL] FERC Projects - Lake Norman Marine Commission  
**Date:** Tuesday, May 13, 2025 4:13:56 PM  
**Attachments:** [image002.png](#)

---

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Sarah – I don't think the dissolution of the LNMC will affect any of the current NCDOT projects. Our expectation would be for the projects to honor any open commitments that have been made to LNMC, as their comments would generally involve safe public recreation and navigation, but I'm not sure if any commitments have been made. The NC-150 project was reviewed during the commission's May meeting last night and received a "no objection" comment from the group. If the Williamson Road project is prepared to go to the agencies prior to the dissolution date (June 30<sup>th</sup>), then we would expect the project to make an effort to contact LNMC but it is likely there will be no input received.

Chad Broadway | Lake Services Representative  
[Duke Energy Lake Services](#)  
525 S. Tryon Street | Charlotte, NC 28202 | DEP-35B  
(704) 574-4065 | [Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)



---

**From:** Sarah Conner <sconner@rkk.com>  
**Sent:** Tuesday, May 13, 2025 12:43 PM  
**To:** Broadway, Chad <Chad.Broadway@duke-energy.com>  
**Cc:** Gurley, Cole G <cgurley@ncdot.gov>; Stutts, David S <dstutts@ncdot.gov>; Sowell, Bryan K <bksowell@ncdot.gov>; John Williams <jwilliams@rkk.com>  
**Subject:** [EXTERNAL] FERC Projects - Lake Norman Marine Commission

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Good afternoon Chad,

We heard of the ongoing changes with the Lake Norman Marine Commission and its dissolution in June due to the Lincoln County Board of Commissioners vote to leave the Commission. At this point, do you know how this may impact Duke Energy's procedures as it relates to our ongoing FERC projects?

Thanks,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



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Raleigh, NC 27615

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**From:** [Sarah Conner](#)  
**To:** [lnmc@lnmc.org](mailto:lnmc@lnmc.org)  
**Subject:** RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments  
**Date:** Monday, April 28, 2025 4:39:00 PM  
**Attachments:** [Attachment 2 - Draft Boater Safety Plan \(20241209\).pdf](#)

---

Good afternoon Mr. Scott,

As a follow up, it looks like I sent you a boater safety plan that's a little bit older in error. The attached one largely has the same content as the previous one but is the most current version and is reflected in both Attachment 1 and Attachment 3.

Thank you,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



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Raleigh, NC 27615

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---

**From:** Sarah Conner  
**Sent:** Monday, April 28, 2025 2:59 PM  
**To:** [lnmc@lnmc.org](mailto:lnmc@lnmc.org)  
**Cc:** Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Turchy, Michael A <[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Sowell, Bryan K <[bksowell@ncdot.gov](mailto:bksowell@ncdot.gov)>; John Williams <[jjwilliams@rkk.com](mailto:jjwilliams@rkk.com)>  
**Subject:** R-2307B Bridge Expansion over Lake Norman - Request for Comments

Good afternoon Mr. Scott,

Please see the attached letter requesting comments related to an NCDOT bridge expansion project (**R-2307B**) over Lake Norman, a facility managed by Duke Energy with a FERC license. Referenced in the letter is a series of attachments also included in this email. We are seeking your comments on the project and concurrence on the attached draft boater safety plan by May 28, 2025.

If you could, please reply to this email confirming receipt, and please let me know if you have any questions.

Thank you,

Sarah

---

**SARAH CONNER**

Environmental Planner II



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Raleigh, NC 27615

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# **Catawba County Code Enforcement Response**

**From:** [Pat Queen](#)  
**To:** [Sarah Conner](#)  
**Subject:** RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments  
**Date:** Tuesday, April 29, 2025 12:25:36 PM

---

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Catawba County Building Services may only be involved if construction trailers for workers are being put on site and need power connections checked.

Thanks for your help,

*Pat Queen* | Permit Center Supervisor | Utilities and Engineering

Phone # 828-465-8399 or 828-465-7964

[patqueen@catawbacountync.gov](mailto:patqueen@catawbacountync.gov)

Mailing Address: PO Box 389, Newton NC 28658

Physical Address: 25 Government Dr, Newton NC 28658



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**From:** Sarah Conner <[sconner@rkk.com](mailto:sconner@rkk.com)>  
**Sent:** Monday, April 28, 2025 2:58 PM  
**To:** Pat Queen <[PatQueen@catawbacountync.gov](mailto:PatQueen@catawbacountync.gov)>  
**Cc:** Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Turchy, Michael A <[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Sowell, Bryan K <[bksowell@ncdot.gov](mailto:bksowell@ncdot.gov)>; John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>  
**Subject:** R-2307B Bridge Expansion over Lake Norman - Request for Comments

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Good afternoon Ms. Queen,

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If you could, please reply to this email confirming receipt, and please let me know if you have any questions.

Thank you,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



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# **Catawba County Environmental Health Response**

**From:** [Megen McBride](#)  
**To:** [Sarah Conner](#); [Scott Carpenter](#)  
**Subject:** RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments  
**Date:** Tuesday, April 29, 2025 3:51:41 PM  
**Attachments:** [image003.png](#)  
[image004.png](#)  
[image005.png](#)

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Sarah,

Catawba County Environmental Health's (CCEH) comments are:

If any wells (drinking water wells, monitoring wells, etc) are found and are not use, they must be properly abandoned. A well abandonment permit is required. Contact CCEH if any old wells are found.

If any wells are found and are still in use, all construction material and activity must be at least 100ft away from the well.

If any septic systems are encountered, do not drive, grade, cut or fill within 25ft of all septic system components.

Thank you,  
Megen

**Megen McBride, REHS**

Environmental Health Director

Catawba County Public Health

25 Government Drive, Newton, NC 28658

**(828) 465-8268 office | (828) 465-8276 fax | [mmcbride@catawbacountync.gov](mailto:mmcbride@catawbacountync.gov)**

<https://www.catawbacountync.gov/county-services/environmental-health/>



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**From:** Sarah Conner <sconner@rkk.com>  
**Sent:** Monday, April 28, 2025 4:33 PM  
**To:** Scott Carpenter <SCarpenter@catawbacountync.gov>; Megen McBride <MMcBride@CatawbaCountyNC.gov>  
**Subject:** RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments

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Hi Scott and Megen,

Great, thank you for providing additional contacts, I'll be sure to include you both moving forward. It looks like I sent you a boater safety plan that's a little bit older in error. The attached one largely has the same content as the previous one but is the most current version and is reflected in both Attachment 1 and Attachment 3.

Thank you,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



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Raleigh, NC 27615

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**From:** Scott Carpenter <SCarpenter@catawbacountync.gov>  
**Sent:** Monday, April 28, 2025 3:32 PM  
**To:** Sarah Conner <sconner@rkk.com>  
**Subject:** Re: R-2307B Bridge Expansion over Lake Norman - Request for Comments

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Thank you for sending this info. Please included Megen McBride, [mmcbride@catawbacountync.gov](mailto:mmcbride@catawbacountync.gov) also for any future correspondences you may send. I did forward her this email.

Thanks -Scott

## Scott Carpenter. REHS

Environmental Health Supervisor, FLI Division

25 Government Drive, Newton, NC 28658

Catawba County Public Health

(828) 465-8258 Office

(828) 465-8276 Fax

<https://www.catawbacountync.gov/county-services/environmental-health/>

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Queremos escuchar de usted. Tómese un minuto para realizar nuestra encuesta de servicio al cliente. [Español](#)



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**From:** Sarah Conner <[sconner@rkk.com](mailto:sconner@rkk.com)>

**Sent:** Monday, April 28, 2025 2:57 PM

**To:** Scott Carpenter <[SCarpenter@catawbacountync.gov](mailto:SCarpenter@catawbacountync.gov)>

**Cc:** Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Turchy, Michael A <[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Sowell, Bryan K <[bksowell@ncdot.gov](mailto:bksowell@ncdot.gov)>; John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>

**Subject:** R-2307B Bridge Expansion over Lake Norman - Request for Comments

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Good afternoon Mr. Carpenter,

Please see the attached letter requesting comments related to an NCDOT bridge expansion project (**R-2307B**) over Lake Norman, a facility managed by Duke Energy with a FERC license. Referenced in the letter is a series of attachments also included in this email. We are seeking your comments by May 28, 2025.

If you could, please reply to this email confirming receipt, and please let me know if you have any questions.

Thank you,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



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Forum 1, Suite 700  
Raleigh, NC 27615

919-653-7363 Phone | 919-410-2889 Cell

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# **Iredell County Building Standards Response**

**From:** [Lorrie Moore](#)  
**To:** [Sarah Conner](#)  
**Subject:** RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments  
**Date:** Monday, April 28, 2025 3:02:23 PM  
**Attachments:** [image002.png](#)

---

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Ms Conner

Bldg Standards has nothing to comment on

Thank you

*Lorrie A Moore*  
*Building Standards Administrator*  
*Iredell County Building Standards*  
[lmoore@iredellcountync.gov](mailto:lmoore@iredellcountync.gov)



---

**From:** Sarah Conner <sconner@rkk.com>  
**Sent:** Monday, April 28, 2025 2:55 PM  
**To:** Lorrie Moore <lmoore@iredellcountync.gov>  
**Cc:** Broadway, Chad <Chad.Broadway@duke-energy.com>; Adima, Nathan N <nadima@ncdot.gov>; Turchy, Michael A <maturchy@ncdot.gov>; Gurley, Cole G <cgurley@ncdot.gov>; Sowell, Bryan K <bksowell@ncdot.gov>; John Williams <jwilliams@rkk.com>  
**Subject:** R-2307B Bridge Expansion over Lake Norman - Request for Comments

Good afternoon Ms. Moore,

Please see the attached letter requesting comments related to an NCDOT bridge expansion project (**R-2307B**) over Lake Norman, a facility managed by Duke Energy with a FERC license. Referenced in the letter is a series of attachments also included in this email. We are seeking your comments by May 28, 2025.

If you could, please reply to this email confirming receipt, and please let me know if you have any questions.

Thank you,  
Sarah

---

**SARAH CONNER**  
Environmental Planner II



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## **Iredell County Health Department Response**

**From:** [Kim Mecimore](#)  
**To:** [Sarah Conner](#)  
**Subject:** FW: [External] Fw: R-2307B Bridge Expansion over Lake Norman - Request for Comments  
**Date:** Tuesday, April 29, 2025 3:59:33 PM  
**Attachments:** [image002.png](#)

---

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Sarah,

I forwarded this email to Clinton Cook with NCDEQ. See his acknowledgment and contact info below. Thanks,

*Kim Mecimore. REHS*

Environmental Health Supervisor II  
Food Protection & Facilities Program  
704.902.4485  
Office hours: Monday – Friday 7:30 – 4:00



---

**From:** Cook, Clinton <clinton.cook@deq.nc.gov>  
**Sent:** Tuesday, April 29, 2025 09:04  
**To:** Kim Mecimore <mecimore@iredellcountync.gov>  
**Subject:** RE: [External] Fw: R-2307B Bridge Expansion over Lake Norman - Request for Comments

Thank you. I'll share with our group.

Thanks again,  
Clint

**Clinton O. Cook, PE**  
Regional Engineer  
Division of Water Resources – Public Water Supply Section  
North Carolina Department of Environmental Quality

704 235 2100 office  
704 235 2101 fax  
[clinton.cook@deq.nc.gov](mailto:clinton.cook@deq.nc.gov)

**Mooreville Regional Office**  
**610 East Center Avenue, Suite 301**  
**Mooreville, NC 28115**

*Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.*

---

**From:** Kim Mecimore <[mecimore@iredellcountync.gov](mailto:mecimore@iredellcountync.gov)>  
**Sent:** Tuesday, April 29, 2025 8:09 AM  
**To:** Cook, Clinton <[clinton.cook@deq.nc.gov](mailto:clinton.cook@deq.nc.gov)>  
**Subject:** [External] Fw: R-2307B Bridge Expansion over Lake Norman - Request for Comments

You don't often get email from [mecimore@iredellcountync.gov](mailto:mecimore@iredellcountync.gov). [Learn why this is important](#)

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Clinton,  
I think this was meant for your department.

Thanks,

Kim Mecimore, REHS  
Environmental Health Supervisor  
704-902-4485

---

**From:** Sarah Conner <[sconner@rkk.com](mailto:sconner@rkk.com)>  
**Sent:** Monday, April 28, 2025 4:36:00 PM  
**To:** Kim Mecimore <[mecimore@iredellcountync.gov](mailto:mecimore@iredellcountync.gov)>  
**Subject:** RE: R-2307B Bridge Expansion over Lake Norman - Request for Comments

Good afternoon Ms. Mecimore,

As a follow up, it looks like I sent you a boater safety plan that's a little bit older in error. The attached one largely has the same content as the previous one but is the most current version and is reflected in both Attachment 1 and Attachment 3.

Thank you,  
Sarah

---

**SARAH CONNER**

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Raleigh, NC 27615

919-653-7363 Phone | 919-410-2889 Cell

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---

**From:** Sarah Conner

**Sent:** Monday, April 28, 2025 2:58 PM

**To:** [kmecimore@iredellcountync.gov](mailto:kmecimore@iredellcountync.gov)

**Cc:** Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Turchy, Michael A <[maturchy@ncdot.gov](mailto:maturchy@ncdot.gov)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Sowell, Bryan K <[bksowell@ncdot.gov](mailto:bksowell@ncdot.gov)>; John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>

**Subject:** R-2307B Bridge Expansion over Lake Norman - Request for Comments

Good afternoon Ms. Mecimore,

Please see the attached letter requesting comments related to an NCDOT bridge expansion project (**R-2307B**) over Lake Norman, a facility managed by Duke Energy with a FERC license. Referenced in the letter is a series of attachments also included in this email. We are seeking your comments by May 28, 2025.

If you could, please reply to this email confirming receipt, and please let me know if you have any questions.

Thank you,  
Sarah

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## **Duke Energy Response**



**Sent:** Friday, September 20, 2024 11:52 AM

**To:** John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>; Flanagan, Jeffrey <[Jeffrey.Flanagan@duke-energy.com](mailto:Jeffrey.Flanagan@duke-energy.com)>

**Cc:** Raber, Maverick James <[Maverick.Raber@duke-energy.com](mailto:Maverick.Raber@duke-energy.com)>; Whitaker, Dennis J <[Dennis.Whitaker@duke-energy.com](mailto:Dennis.Whitaker@duke-energy.com)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Stahl, Julie E. <[Julie.Stahl@duke-energy.com](mailto:Julie.Stahl@duke-energy.com)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Burke Evans <[bevans@tgsengineers.com](mailto:bevans@tgsengineers.com)>; La Sala, Joseph Scott <[Joseph.LaSala@duke-energy.com](mailto:Joseph.LaSala@duke-energy.com)>

**Subject:** RE: [EXTERNAL] RE: NCDOT Hwy NC-150 Bridge Project (Lake Norman) - Impacts related to Marshall Steam Station Property and Marshall Operations

**EXTERNAL EMAIL:** Do not click links or open attachments unless you trust the 'Sender' and know the content is safe.

John – As part of the Lake Services review for impacts within the FERC Project Boundary, we wanted to ensure that staff at Marshall Steam Station had an opportunity to evaluate the proposed plan and provide comments to NCDOT staff and/or object to any design items that may impact operations and maintenance at the property. Based on the correspondence I've seen, it appears that several individuals from Marshall operations and Environmental staff have had the opportunity to review the project. If any commitments have been made based on comments/input during this process, the project will need to ensure those commitments are adhered to.

Unless there are any concerns voiced from the folks copied on this email, we would consider this component of the review to be complete and NCDOT is able to continue moving forward with the general Lake Services conveyance application process.

If anyone on this email has any questions or concerns that you'd like to discuss regarding this project, please reach out to me. Have a good weekend,

Chad Broadway | Lake Services Representative

[Duke Energy Lake Services](#)

525 S. Tryon Street | Charlotte, NC 28202 | DEP-35B

(704) 574-4065 | [Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)



---

**From:** John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>

**Sent:** Friday, September 20, 2024 11:41 AM

**To:** Flanagan, Jeffrey <[Jeffrey.Flanagan@duke-energy.com](mailto:Jeffrey.Flanagan@duke-energy.com)>; Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>

**Cc:** Raber, Maverick James <[Maverick.Raber@duke-energy.com](mailto:Maverick.Raber@duke-energy.com)>; Whitaker, Dennis J <[Dennis.Whitaker@duke-energy.com](mailto:Dennis.Whitaker@duke-energy.com)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Stahl, Julie E. <[Julie.Stahl@duke-energy.com](mailto:Julie.Stahl@duke-energy.com)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Burke Evans <[bevans@tgsengineers.com](mailto:bevans@tgsengineers.com)>; La Sala, Joseph Scott <[Joseph.LaSala@duke-energy.com](mailto:Joseph.LaSala@duke-energy.com)>

**Subject:** RE: [EXTERNAL] RE: NCDOT Hwy NC-150 Bridge Project (Lake Norman) - Impacts related to Marshall Steam Station Property and Marshall Operations

Thank you Mr. Flanagan.

**Chad**, is this sufficient to move forward?

-John

---

**From:** Flanagan, Jeffrey <[Jeffrey.Flanagan@duke-energy.com](mailto:Jeffrey.Flanagan@duke-energy.com)>  
**Sent:** Thursday, September 19, 2024 4:24 PM  
**To:** John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>  
**Cc:** Raber, Maverick James <[Maverick.Raber@duke-energy.com](mailto:Maverick.Raber@duke-energy.com)>; Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>; Whitaker, Dennis J <[Dennis.Whitaker@duke-energy.com](mailto:Dennis.Whitaker@duke-energy.com)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Stahl, Julie E. <[Julie.Stahl@duke-energy.com](mailto:Julie.Stahl@duke-energy.com)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Burke Evans <[bevans@tgsengineers.com](mailto:bevans@tgsengineers.com)>; La Sala, Joseph Scott <[Joseph.LaSala@duke-energy.com](mailto:Joseph.LaSala@duke-energy.com)>  
**Subject:** Re: [EXTERNAL] RE: NCDOT Hwy NC-150 Bridge Project (Lake Norman) - Impacts related to Marshall Steam Station Property and Marshall Operations

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I have no major objections. Thank you for working through this.

**Jeff Flanagan, PE**  
GM – Carolinas Dispatchable Generation  
Allen / Asheville / Marshall / WS Lee  
Duke Energy Corporation  
O: 828.478.7600 | C: 919.757.1202

---

**From:** John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>  
**Sent:** Thursday, September 19, 2024 4:01:58 PM  
**To:** Flanagan, Jeffrey <[Jeffrey.Flanagan@duke-energy.com](mailto:Jeffrey.Flanagan@duke-energy.com)>  
**Cc:** Raber, Maverick James <[Maverick.Raber@duke-energy.com](mailto:Maverick.Raber@duke-energy.com)>; Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>; Whitaker, Dennis J <[Dennis.Whitaker@duke-energy.com](mailto:Dennis.Whitaker@duke-energy.com)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Stahl, Julie E. <[Julie.Stahl@duke-energy.com](mailto:Julie.Stahl@duke-energy.com)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Burke Evans <[bevans@tgsengineers.com](mailto:bevans@tgsengineers.com)>; La Sala, Joseph Scott <[Joseph.LaSala@duke-energy.com](mailto:Joseph.LaSala@duke-energy.com)>  
**Subject:** [EXTERNAL] RE: NCDOT Hwy NC-150 Bridge Project (Lake Norman) - Impacts related to Marshall Steam Station Property and Marshall Operations

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Hi Mr. Flanagan,

I spoke with Chad Broadway yesterday about the status of your inquiries regarding the R-2307B (NC 150 Bridges over Lake Norman) project adjoining the Marshall Steam Station property. He has the impression that while you guys aren't thrilled with the impacts from

the project, you also haven't identified any major objections.

Is that the case?

- If not, let me know and perhaps I could set up a meeting where we could work through your concerns?
- If it is the case, then an e-mail reply stating no major objections would probably be sufficient.

Thanks

-John Williams

---

**From:** John Williams

**Sent:** Thursday, July 18, 2024 3:40 PM

**To:** Flanagan, Jeffrey <[Jeffrey.Flanagan@duke-energy.com](mailto:Jeffrey.Flanagan@duke-energy.com)>; Stahl, Julie E. <[Julie.Stahl@duke-energy.com](mailto:Julie.Stahl@duke-energy.com)>; Safrit, Don <[Don.Safrit@duke-energy.com](mailto:Don.Safrit@duke-energy.com)>; La Sala, Joseph Scott <[Joseph.LaSala@duke-energy.com](mailto:Joseph.LaSala@duke-energy.com)>

**Cc:** Raber, Maverick James <[Maverick.Raber@duke-energy.com](mailto:Maverick.Raber@duke-energy.com)>; Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>; Whitaker, Dennis J <[Dennis.Whitaker@duke-energy.com](mailto:Dennis.Whitaker@duke-energy.com)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Burke Evans <[bevans@tgsengineers.com](mailto:bevans@tgsengineers.com)>

**Subject:** RE: NCDOT Hwy NC-150 Bridge Project (Lake Norman) - Impacts related to Marshall Steam Station Property and Marshall Operations

Hi everyone,

Any comments/ concerns about the proposed project? If desired, I could schedule a meeting to discuss.

-John

---

**From:** John Williams

**Sent:** Saturday, June 15, 2024 11:19 AM

**To:** Flanagan, Jeffrey <[Jeffrey.Flanagan@duke-energy.com](mailto:Jeffrey.Flanagan@duke-energy.com)>; Stahl, Julie E. <[Julie.Stahl@duke-energy.com](mailto:Julie.Stahl@duke-energy.com)>; Safrit, Don <[Don.Safrit@duke-energy.com](mailto:Don.Safrit@duke-energy.com)>; La Sala, Joseph Scott <[Joseph.LaSala@duke-energy.com](mailto:Joseph.LaSala@duke-energy.com)>

**Cc:** Raber, Maverick James <[Maverick.Raber@duke-energy.com](mailto:Maverick.Raber@duke-energy.com)>; Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>; Whitaker, Dennis J <[Dennis.Whitaker@duke-energy.com](mailto:Dennis.Whitaker@duke-energy.com)>; Gurley, Cole G <[cgurley@ncdot.gov](mailto:cgurley@ncdot.gov)>; Adima, Nathan N <[nadima@ncdot.gov](mailto:nadima@ncdot.gov)>; Burke Evans <[bevans@tgsengineers.com](mailto:bevans@tgsengineers.com)>

**Subject:** RE: NCDOT Hwy NC-150 Bridge Project (Lake Norman) - Impacts related to Marshall Steam

Jeff, Julie, Don and Scott,

There was a meeting in March 2015 (meeting summary attached) where we got initial feedback regarding the Marshall Steam Station concerns from Rick Roper. At that time we were discussing the full R-2307 project. For design and construction purposes, the project has been split into a parts A and part B. We are currently finalizing plans and working on conveyance for the B portion which is currently scheduled to let to construction in late 2025. Below are the comments and responses from the meeting summarized. The images and red text are our updated responses based on final design information. Also attached are the current design plans for the R-2307B section showing the project from where R-2307B begins, near the entrance to Marshall Steam Station up to the skimmer.

Please let us know if we have adequately addressed your concerns or if you have any additional questions or feedback.

#### Impacts to skimmer

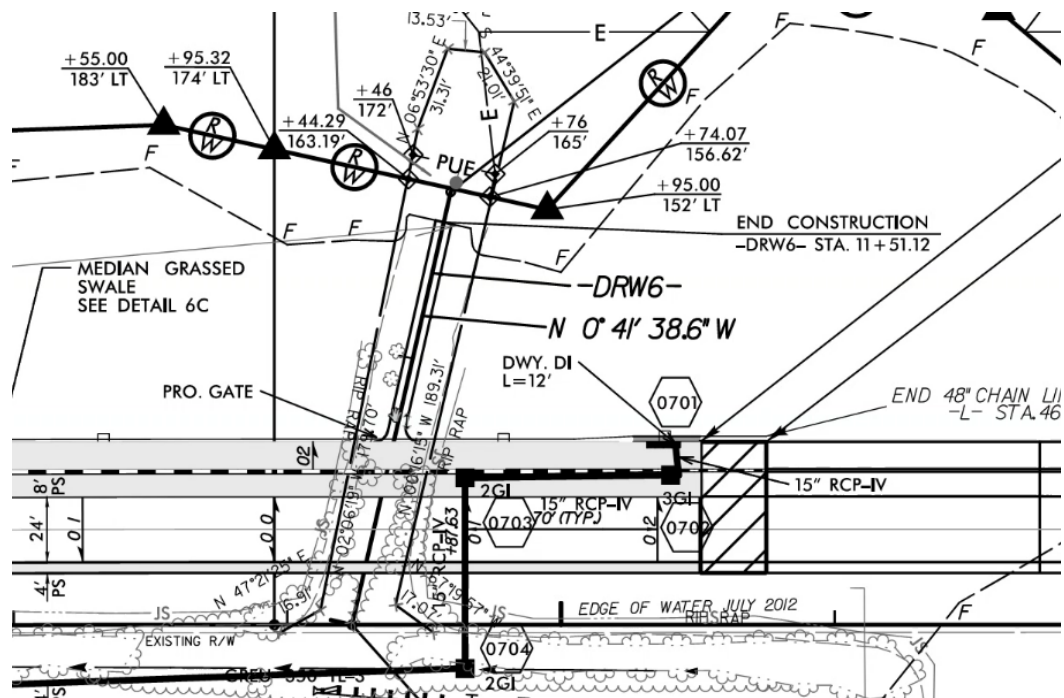
**Q:** Will the widened causeways filling would affect the skimmer wall?

**A:** Based on final design, the causeways would not affect the skimmer wall.

Duke Energy requested that if approval was given to fill in Marshall Steam Station's impoundment area that a small road is built into the fill to allow access to the peninsula that contains a power pole that supplies power to the lights on the skimmer wall. NCDOT agreed. NCDOT has fulfilled this with the design (see below).

Duke Energy requested that if approval was given to fill in Marshall Steam Station's impoundment area that a small road is built into the fill to allow access to the peninsula that contains a power pole that supplies power to the lights on the skimmer wall. NCDOT agreed. The existing peninsula is covered with trees. The proposed access has been addressed as shown below. A gate is included to prevent unauthorized personnel from accessing the peninsula. It will be left to Duke to provide a lock to the gate.





**Q:** Concerns were expressed about routing the proposed multiuse path across the industrial entrance to Marshall Steam Station.

**A:** The existing fence and gate to the industrial entrance are being relocated shown below to prevent access from unauthorized personnel.

#### Impacts to Marshall Steam Plant Property

**Q:** Will construction encroach beyond the security fence for Marshall Steam Station?

**A:** This application will address the B section of R-2307. The Marshall Steam Station is not within this section and therefore there are no impacts to the Steam Station within Section B. The description provided in the March 2015 Meeting Summary below affected the R-2307A section of the project. We will revisit this issue when planning begins for the A section.

*NCDOT showed where it would slightly encroach at one location near a U-Turn bulb. NCDOT also showed Duke Energy the need to relocate their Haul Road if Alternative 2, Terrell North Bypass is selected. NCDOT communicated that they would be responsible for the costs of constructing the road and asked Rick Roper to look at the preliminary design for the relocation of the haul road to see if there are any potential hazards that the alignment needs to avoid.*

#### Alternatives Selection

**Q:** Duke Energy asked NCDOT why they chose to widen to the north for the long bridge.

**A:** Duke Energy asked NCDOT why they chose to widen to the north for the long bridge.

NCDOT replied that they chose to widen north to avoid the marina in the southwest quadrant and the homes in the southeast quadrant. A northern alignment also provided for

hazardous detention basins in the northwest and southeast quadrants. NCDOT communicated that they realized there would be impacts to the boat launch ramp

but those impacts could be minimized by building a retaining wall and paving additional parking spaces which were about equal to the impacts to the marina in the southwest quadrant where a retaining wall needs to be built to maintain access to boat docks. **This reasoning applies.**

#### **Avoidance/Minimization**

Duke requested we avoid to the maximum extent possible any impacts on Steam Station or Lake. **In the design of Section B of R-2307, NCDOT has avoided the skimmer and minimized impacts to Duke property and to the lake to the extent practical.**

---

**From:** Broadway, Chad <[Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)>

**Sent:** Wednesday, April 10, 2024 12:01 PM

**To:** John Williams <[jwilliams@rkk.com](mailto:jwilliams@rkk.com)>

**Cc:** Flanagan, Jeffrey <[Jeffrey.Flanagan@duke-energy.com](mailto:Jeffrey.Flanagan@duke-energy.com)>; Stahl, Julie E. <[Julie.Stahl@duke-energy.com](mailto:Julie.Stahl@duke-energy.com)>; Safrit, Don <[Don.Safrit@duke-energy.com](mailto:Don.Safrit@duke-energy.com)>; La Sala, Joseph Scott <[Joseph.LaSala@duke-energy.com](mailto:Joseph.LaSala@duke-energy.com)>; Raber, Maverick James <[Maverick.Raber@duke-energy.com](mailto:Maverick.Raber@duke-energy.com)>; Whitaker, Dennis J <[Dennis.Whitaker@duke-energy.com](mailto:Dennis.Whitaker@duke-energy.com)>

**Subject:** NCDOT Hwy NC-150 Bridge Project (Lake Norman) - Impacts related to Marshall Steam Station Property and Marshall Operations

**EXTERNAL EMAIL:** Do not click links or open attachments unless you trust the 'Sender' and know the content is safe.

John,

I'm starting a new email chain here with Jeff Flanagan, Julie Stahl, Don Safrit, Scott La Sala, and Maverick Raber, all of whom are Duke Energy employees. These individuals have varying responsibilities that are directly related to plant operations at Marshall Steam Station, environmental matters at/around the plant property, or water quality in this vicinity on the lake. We provided NCDOT the contact for plant personnel several years ago and I think initial conversations occurred around that time, but we need to ensure the current proposed design and related impacts have been reviewed and commented on by personnel involved with Marshall.

I anticipate the group having questions and comments regarding this project, but one initial item requested is the timeline for the smaller NC-150 bridges across Lake Norman to the west of the main channel crossing. We discussed this during our last meeting and I understand that these smaller crossings are future projects on a different contract and timeline, but I couldn't recall the estimated dates that were provided.

Let me know if I can be of any assistance for discussions of the aspects of this project that involve/impact Marshall Steam Station.

Chad Broadway | Lake Services Representative

[Duke Energy Lake Services](#)

525 S. Tryon Street | Charlotte, NC 28202 | DEP-35B

(704) 574-4065 | [Chad.Broadway@duke-energy.com](mailto:Chad.Broadway@duke-energy.com)



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**Part IV. Engineering Report - Not Required**

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Part IV is required only for proposed water withdrawal facilities with a capacity greater than or equal to 1 MGD, all proposed wastewater effluent discharge facilities regardless of capacity, and changes to such facilities.

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**Part V. Environmental Assessment**

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If required, an Environmental Assessment (EA) should be prepared for FERC. Lake Services will notify applicants whether an EA is required during Step 1.

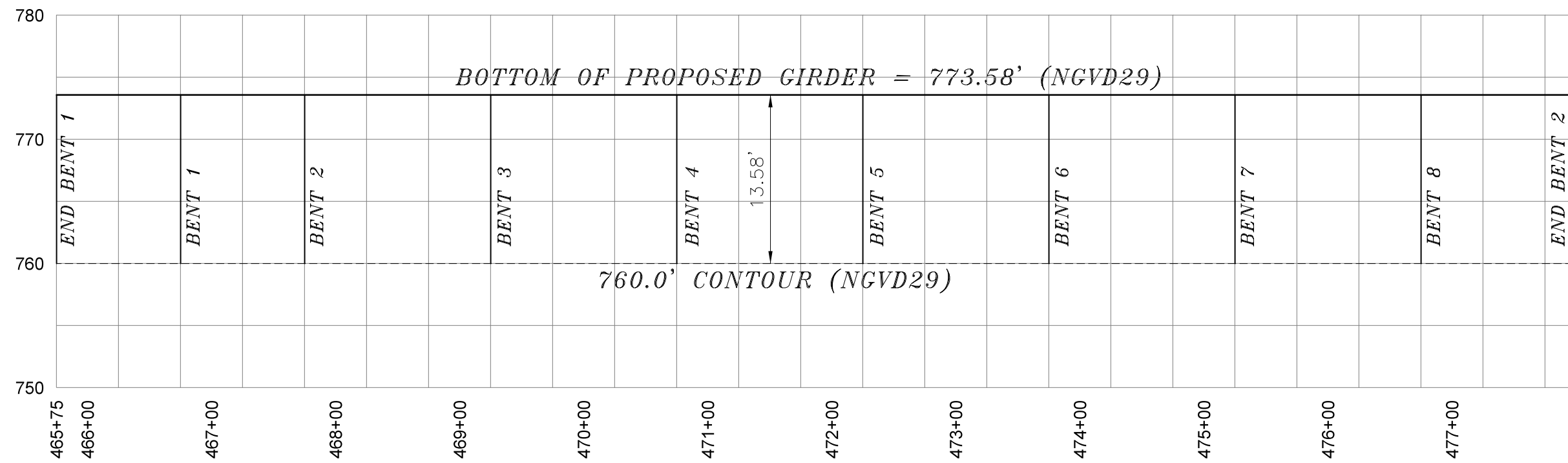
An Environmental Review was required for this project and the document prepared for FERC. The document was reviewed and approved by Duke Energy Lake Services on 3/19/2025 and included as **Attachment 13 – Environmental Review**.

## **Attachment 1 – Parcel Ownership and Easement Needed**

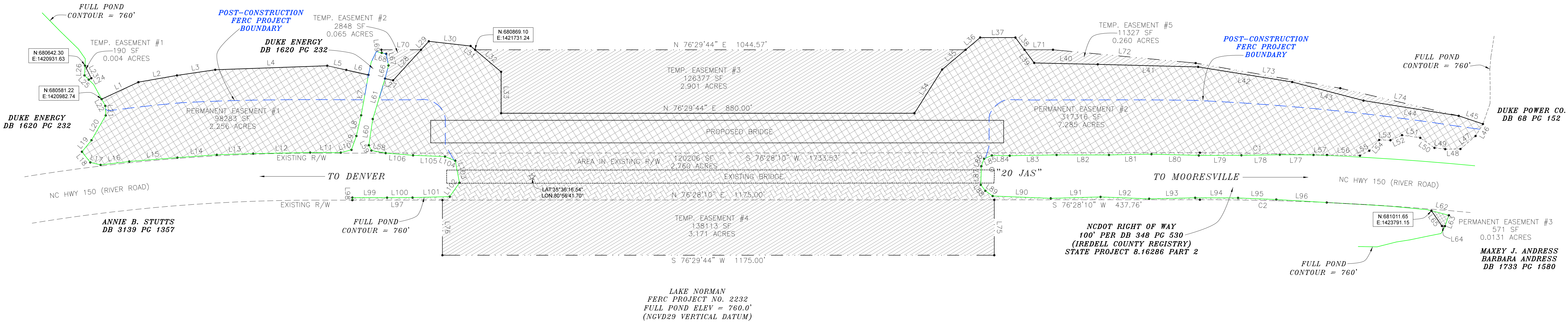
Notes:

- All distances are horizontal ground feet unless otherwise noted.
- Areas were determined by coordinate computations.
- All coordinates and distances are in US Survey Feet.
- This survey does not certify to title or ownership.
- No title search was provided for this survey.
- The survey that resulted in the preparation of this plat used only the information of record as noted hereon.
- Property is subject to any and all easements, rights of way, and restrictive covenants of record.
- Lake Norman Project Boundary is Elevation 760.0' (NGVD29) as measured from the full pond elevation. Reference is made to survey by William J. Dixon for Catawba-Wateree Project FERC No. 2232 Exhibit G Sheet G-5-E&F.
- Elevations shown hereon based on Lake Norman Project Datum. Water elevation as time of survey as measured was 99.00' at 10:15 AM on January 15, 2024. Elevations were verified by benchmark check on "20 JAS" at the northeast corner of the existing bridge with a published NGVD29 elevation of 776.51'. The 99.00' elevation (which is based on 100' full pond) equates to 759.00' (NGVD29 Datum).
- Elevations for the proposed bridge were taken from project plans. Since project plans are based on NAVD88 datum, the low chord elevations were converted using that factor specified (+0.59) on Exhibit G Sheet G-5-E&F.

SEE SHEET 2 FOR LINE & CURVE TABLES



LAKE NORMAN  
FERC PROJECT NO. 2232  
FULL POND ELEV = 760.0'  
(NGVD29 VERTICAL DATUM)



LAKE NORMAN  
FERC PROJECT NO. 2232  
FULL POND ELEV = 760.0'  
(NGVD29 VERTICAL DATUM)

LEGEND

- ⊙ NCGS CONTROL MONUMENT
- UNMARKED POINT
- PROPOSED PERM. EASEMENT LINE (SURVEYED)
- - - PROPOSED TEMP. EASEMENT LINE (SURVEYED)
- - - EXISTING R/W LINE (SURVEYED)
- - - 760.0' (NGVD29) CONTOUR (SURVEYED)
- WATER SURFACE (SURVEYED)
- PROPOSED BRIDGE OUTLINE
- - - EXISTING BRIDGE LOCATION (SURVEYED)
- FERC PROJECT BOUNDARY
- - - POST-CONSTRUCTION FERC PROJECT BOUNDARY
- ▨ PROPOSED PERMANENT EASEMENT AREA
- ▨ PROPOSED TEMPORARY EASEMENT AREA
- ▨ AREA IN EXISTING R/W WITHIN FULL POND

SURVEYOR'S CERTIFICATION

I, Matthew T. Cornwell certify that this plat was drawn under my supervision from an actual survey performed under my supervision (deed description recorded in Book 348, Page 530, Iredell County Registry); that the boundaries not surveyed are clearly indicated as dashed lines drawn from information found as shown hereon; that the ratio of precision as calculated exceeds 1:10,000; and that this plat was prepared in accordance with G.S. 47-30 as amended. This plat meets the requirements of G.S. 47-30 Section f-11-c-2: That the survey is of an existing feature, such as a building or other structure, or natural feature such as a watercourse.

Witness my original signature and seal this the 5th day of March, A.D., 2025.



3/5/2025

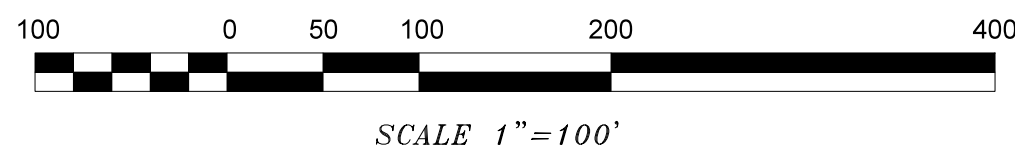
Signed by:  
Matthew Cornwell  
EBD006F11473E475  
SURVEYOR  
L-4775  
N.C. P.L.S. LICENSE NUMBER



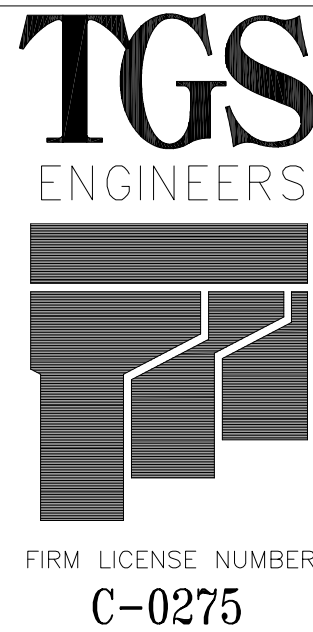
STATE OF NORTH CAROLINA, COUNTY OF CATAWBA/IREDELL

I, \_\_\_\_\_, Review officer of Catawba/Iredell County, certify that the map or plat to which this certification is affixed meets all statutory requirements for recording.

Review Officer \_\_\_\_\_ Date \_\_\_\_\_



SHEET 1 OF 2



SURVEY OF PROPOSED FERC EASEMENT LIMITS FOR:

*The NCDOT over Duke Energy Lake Norman Project Boundary*  
Location: River Highway over Lake Norman

Deed References: DB 348 PG 530

PID NO: None

Map/Blk/Lot: None

Mountain Creek Twp., Catawba Co. & Davidson Twp., Iredell Co.

TGS Engineers  
201 WEST MARION STREET - SUITE 200  
SHELBY, NC 28150  
PH. (704) 476-0003

DRAWN BY: M. T. Cornwell, PLS, PE

Date of Survey: January 2024

SURVEYED BY: MTC & MTM

Map Date: March 5, 2025

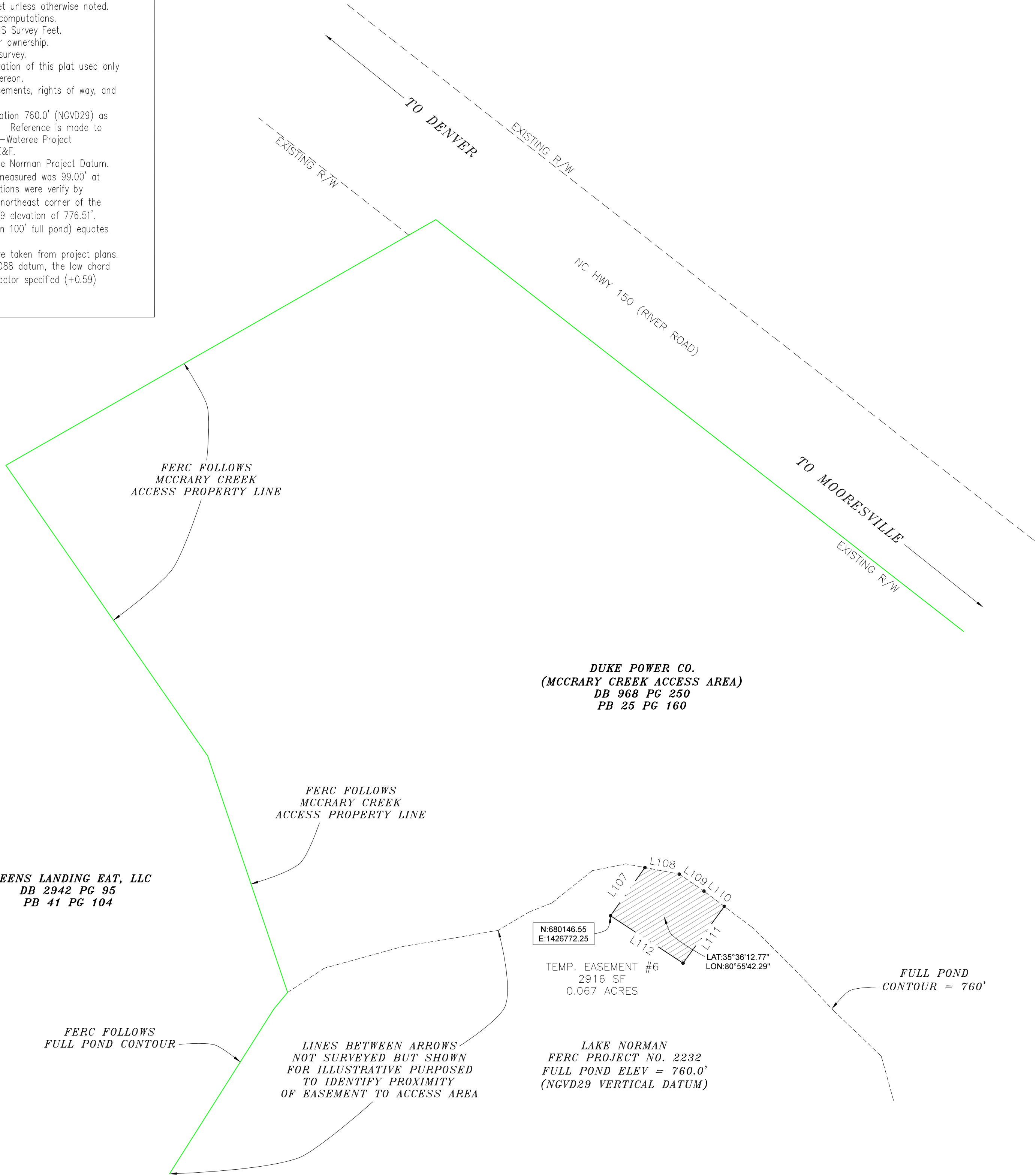
CHECKED BY: M. T. Cornwell, PLS, PE

REVISED 3/5/2024 TO SHOW "POST-CONSTRUCTION FERC PROJECT BOUNDARY"

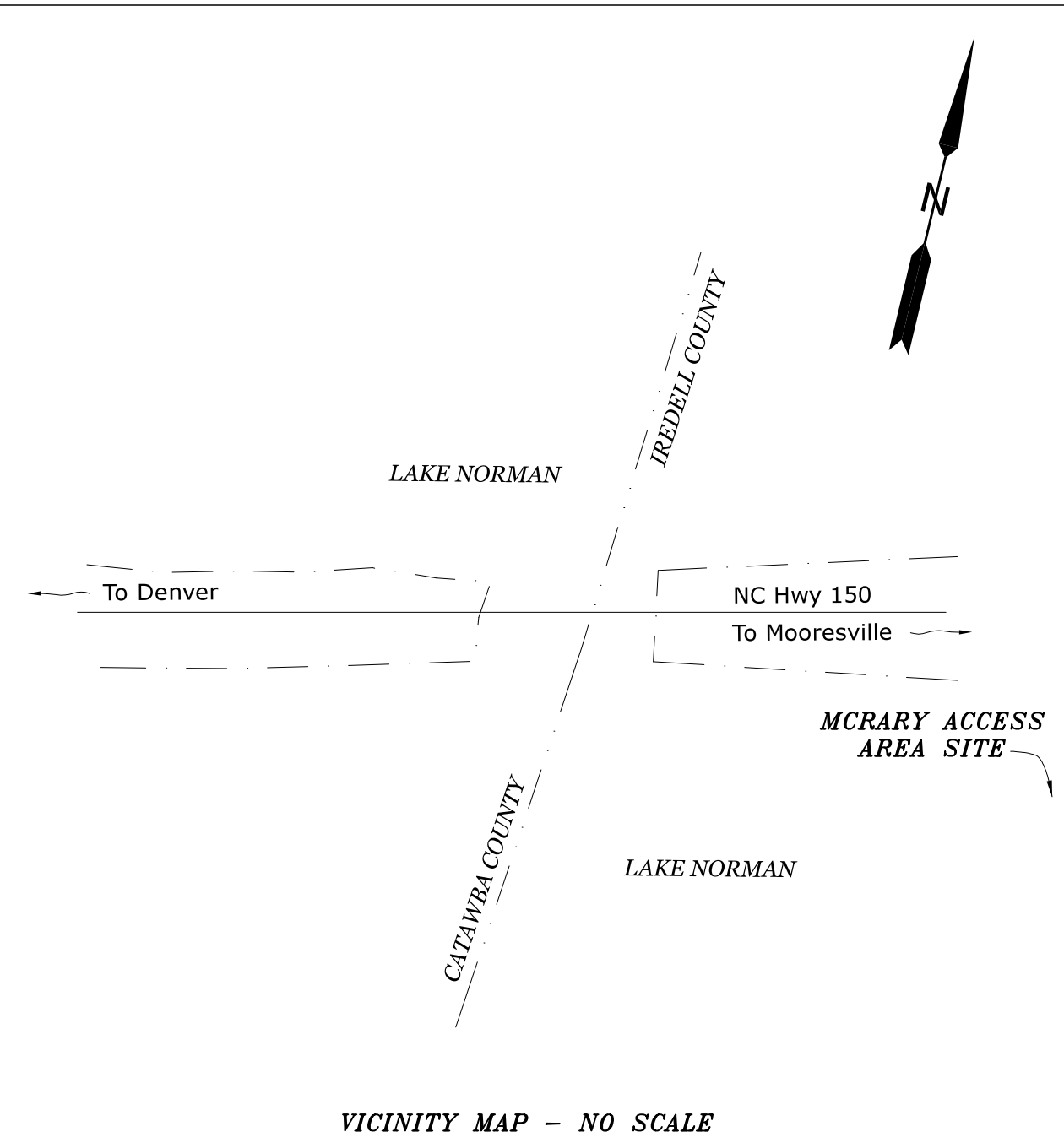
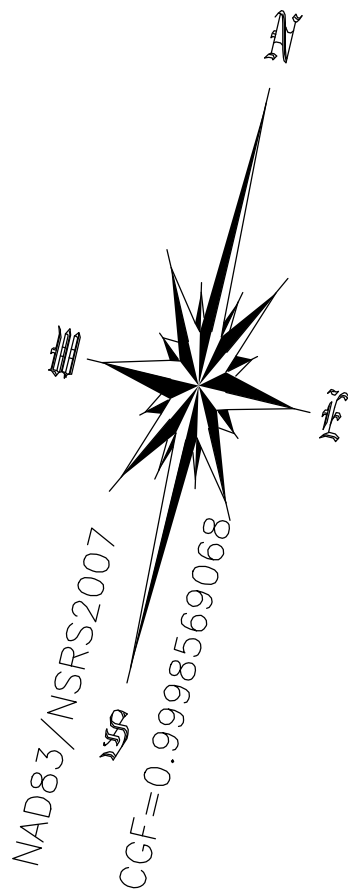


Notes:

- All distances are horizontal ground feet unless otherwise noted.
- Areas were determined by coordinate computations.
- All coordinates and distances are in US Survey Feet.
- This survey does not certify to title or ownership.
- No title search was provided for this survey.
- The survey that resulted in the preparation of this plat used only the information of record as noted hereon.
- Property is subject to any and all easements, rights of way, and restrictive covenants of record.
- Lake Norman Project Boundary is Elevation 760.0' (NGVD29) as measured from the full pond elevation. Reference is made to survey by William J. Dixon for Catawba-Wateree Project FERC No. 2232 Exhibit G Sheet G-5-E&F.
- Elevations shown hereon based on Lake Norman Project Datum. Water elevation as time of survey as measured was 99.00' at 10:15 AM on January 15, 2024. Elevations were verified by benchmark check on "20 JAS" at the northeast corner of the existing bridge with a published NGVD29 elevation of 776.51'. The 99.00' elevation (which is based on 100' full pond) equates to 759.00' (NGVD29 Datum).
- Elevations for the proposed bridge were taken from project plans. Since project plans are based on NAVD88 datum, the low chord elevations were converted using that factor specified (+0.59) on Exhibit G Sheet G-5-E&F.



LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 51°41'30" E	86.27'
L2	N 66°36'21" E	83.35'
L3	N 68°04'29" E	82.35'
L4	N 74°26'34" E	238.70'
L5	N 89°01'04" E	41.46'
L6	N 88°56'30" E	48.29'
L7	S 03°19'53" E	87.34'
L8	S 00°27'50" E	45.20'
L9	S 06°04'26" W	31.30'
L10	S 61°54'23" W	23.56'
L11	S 76°35'06" W	65.04'
L12	S 75°29'15" W	121.39'
L13	S 74°55'51" W	77.52'
L14	S 72°26'47" W	84.14'
L15	S 71°51'42" W	102.87'
L16	S 69°44'50" W	61.49'
L17	N 89°49'11" W	22.49'
L18	N 51°41'51" W	28.78'
L19	N 25°57'50" E	31.89'
L20	N 16°29'48" E	60.86'
L21	N 16°37'30" W	20.49'
L22	N 42°06'18" W	16.02'
L23	S 40°32'52" E	30.05'
L24	S 49°07'33" W	6.36'
L25	N 58°33'36" W	12.70'
L26	N 10°37'11" W	20.77'
L27	N 88°56'30" E	17.59'
L28	N 28°58'29" E	88.13'
L29	N 28°58'29" E	24.41'
L30	N 82°54'23" E	89.56'
L31	S 63°16'05" E	12.39'
L32	S 63°16'05" E	72.76'
L33	S 13°30'16" E	88.00'
L34	N 18°53'13" E	110.14'
L35	N 36°28'55" E	65.32'
L36	N 36°28'55" E	40.44'
L37	N 76°29'44" E	75.00'
L38	S 50°02'00" E	32.36'
L39	S 50°02'00" E	34.85'
L40	N 77°45'56" E	135.35'
L41	N 77°58'18" E	213.88'
L42	N 85°36'45" E	202.71'
L43	S 88°55'40" E	156.83'
L44	N 85°35'12" E	205.23'
L45	S 84°54'04" E	54.53'
L46	S 18°00'11" W	29.90'
L47	S 35°53'31" W	42.49'
L48	S 75°53'44" W	32.31'
L49	S 83°07'10" W	23.05'
L50	N 68°19'17" W	37.18'
L51	S 84°53'09" W	39.18'
L52	S 52°41'06" W	27.01'
L53	S 78°09'33" W	24.01'
L54	S 28°53'44" W	31.08'
L55	S 48°41'20" W	22.50'
L56	S 77°42'39" W	70.22'
L57	S 76°45'21" W	28.85'
L58	S 86°34'56" W	30.83'
L59	N 39°16'22" W	12.62'
L60	N 04°56'30" W	56.32'
L61	N 03°21'34" E	89.98'
L62	S 88°54'49" E	38.56'
L63	S 06°42'37" W	24.44'
L64	S 77°58'02" W	6.41'
L65	N 48°10'23" W	39.49'
L66	N 01°21'34" E	28.58'
L67	N 24°25'00" W	25.24'
L68	S 89°32'49" W	8.62'
L69	N 20°05'11" W	6.61'
L70	N 76°29'44" E	84.52'
L71	N 76°29'44" E	60.74'
L72	N 81°50'11" E	305.11'
L73	N 86°20'15" E	312.53'
L74	N 89°36'34" E	258.76'
L75	S 13°30'16" E	117.81'
L76	N 13°30'16" W	117.27'
L77	S 76°45'21" W	71.62'
L78	S 75°40'00" W	81.76'
L79	S 76°18'27" W	90.73'
L80	S 78°00'33" W	100.84'
L81	S 75°30'23" W	90.44'
L82	S 76°29'32" W	111.49'
L83	S 75°31'43" W	99.86'
L84	S 77°23'35" W	37.92'
L85	S 53°09'21" W	18.13'
L86	S 07°23'26" W	16.67'
L87	S 11°55'02" E	39.69'
L88	S 50°54'50" E	15.95'
L89	S 67°48'19" E	19.11'
L90	N 78°47'43" E	123.77'
L91	N 74°52'34" E	106.11'
L92	N 78°42'16" E	103.55'
L93	N 75°15'04" E	97.99'
L94	N 76°41'06" E	91.35'
L95	N 78°53'42" E	81.23'
L96	N 79°51'45" E	107.62'
L97	S 76°28'10" W	191.75'
L98	N 13°31'50" W	5.34'
L99	N 76°37'51" E	73.94'
L100	N 76°14'22" E	54.08'
L101	N 75°01'12" E	79.23'
L102	N 21°45'02" E	36.05'
L103	N 24°23'33" W	47.75'
L104	N 81°26'38" W	23.49'
L105	S 78°46'17" W	68.04'
L106	S 81°07'47" W	70.30'
L107	N 22°02'30" E	41.17'
L108	N 87°17'26" E	24.28'
L109	S 68°55'21" E	19.56'
L110	S 66°41'20" E	18.90'
L111	S 22°27'17" W	48.77'
L112	N 70°18'39" W	60.21'



CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	6144.68'	241.89'	241.87'	S 77°35'50" W	2°15'20"
C2	6044.68'	270.15'	270.13'	S 77°44'59" W	2°33'38"

STATE OF NORTH CAROLINA, COUNTY OF CATAWBA/IREDELL

I, \_\_\_\_\_, Review officer of Catawba/Iredell County, certify that the map or plat to which this certification is affixed meets all statutory requirements for recording.

Review Officer

Date



SCALE 1"=50'

SHEET 2 OF 2

LEGEND

- ⊙ NCGS CONTROL MONUMENT
- UNMARKED POINT
- PROPOSED PERM. EASEMENT LINE (SURVEYED)
- PROPOSED TEMP. EASEMENT LINE (SURVEYED)
- EXISTING R/W LINE (SURVEYED)
- 760.0' (NGVD29) CONTOUR (SURVEYED)
- WATER SURFACE (SURVEYED)
- PROPOSED BRIDGE OUTLINE
- EXISTING BRIDGE LOCATION (SURVEYED)
- FERC PROJECT BOUNDARY
- POST-CONSTRUCTION FERC PROJECT BOUNDARY
- PROPOSED PERMANENT EASEMENT AREA
- PROPOSED TEMPORARY EASEMENT AREA
- AREA IN EXISTING R/W WITHIN FULL POND

SURVEYOR'S CERTIFICATION

I, Matthew T. Cornwell certify that this plat was drawn under my supervision from an actual survey performed under my supervision (deed description recorded in Book 348, Page 530, Iredell County Registry); that the boundaries not surveyed are clearly indicated as dashed lines drawn from information found as shown hereon; that the ratio of precision as calculated exceeds 1:10,000; and that this plat was prepared in accordance with G.S. 47-30 as amended. This plat meets the requirements of G.S. 47-30 Section f-11-c-2: That the survey is of an existing feature, such as a building or other structure, or natural feature such as a watercourse.

Witness my original signature and seal this the 5th day of March, A.D., 2025.



3/5/2025

Signed by:  
Matthew Cornwell  
SURVEYOR  
L-4775  
N.C. P.L.S. LICENSE NUMBER



## **Attachment 2 – Boater Safety Plan (20250826)**

# Lake Facility Safety Plan: NC 150 Parallel Bridge Construction, Lake Norman

## Introduction

There is an existing steel bridge built in 1961 located on NC 150 over Lake Norman on the Catawba County / Iredell County line near Mooresville. The bridge has an overall length of about 1,100 feet and consists of 10 spans. A new bridge having an overall length of 1,220 feet and consisting of 9 spans will be built parallel to the existing bridge creating dual bridges with one-way traffic on each.

No Wake Zone – there are at least three ‘No Wake’ buoys located no less than 150 feet from the existing bridge. There is one buoy south of the bridge and two buoys to the north of the bridge. All are located between 150 feet and 250 feet of the edges of the existing bridge. For this reason, the engagement of law enforcement officials during the deployment of the boater safety system or the performance of the work is not anticipated. These buoys were placed by the Lake Norman Marine Commission, who have since disbanded in Summer 2025. The buoys will be relocated to accommodate for the boater safety system. Upon their reestablishment, Lake Norman Marine Commission will be notified of the relocated buoys and of the status of the proposed project.

All work will be performed under this plan in accordance with the standard specifications<sup>1</sup> and all other governing federal, state or local regulations. The NC Wildlife Resources Commissions’ (NCWRC) Land and Water Conservation Division (919-707-0150) or the NCWRC’s Land and Water Conservation Division Mt. Holly Depot (704-263-0975) will be contacted prior construction to coordinate the review of the buoy relocations and best practices the contractor will use. In accordance with this boater safety plan, NCDOT will contact NCWRC’s Major Chad Arnold with 6 to 8 weeks of lead time of the anticipated construction date:

Major Chad Arnold  
Major of Administration Law Enforcement Division  
Mailing Address: 1717 Mail Service Center  
Raleigh, North Carolina 27699-1720  
chad.arnold@ncwildlife.gov  
Office: 919-707-0033 Mobile: 704-506-8198

## Scope of Construction Activities

The scope of Construction Activities on the new bridge that are related to boater safety include:

### Stage 1 – West End

- Install floating barrier and lighted buoys on western half of bridge crossing to isolate work area
- Install causeway on west end of the new bridge approach
- Construct bents 1 through 5.
- Install girders for spans A through E.
- Install girder bracing components (diaphragms) for spans A through E.
- Install lightweight concrete deck for spans A through E.

## **Stage 2 – East End**

- Move floating barrier and lighted buoys to eastern half of bridge crossing to isolate work area
- Install causeway on east end of the new bridge approach
- Construct bents 6 through 8.
- Install girders for spans F through I.
- Install girder bracing components (diaphragms) for spans F through I.
- Install lightweight concrete deck for spans F through I.

## **Access**

Access to the bridge for construction workers and equipment will be by barges situated on Lake Norman or from the new bridge. All barge activity will be reviewed by NCDOT and must be approved prior to beginning construction. Access to Lake Norman by construction crews and equipment will be onto a barge within the proposed easements via the causeways. The barge will be approximately 40 feet by 40 feet in size. Work skiffs will shuttle construction workers as needed via public or private boat launch.

No impact to shorelines is expected. Additionally, there will be no impacts or access restrictions to the existing skimmer facility on the west side of the lake in the proximity of proposed bridge.

## **Bridge Construction Items**

- All debris generated by construction will be contained and at no time will it be dropped into the lake water. Construction areas will be closed off from boating access for duration of construction activities.
- The Contractor will protect all utility lines or mains which may be supported on, under or adjacent to bridge work sites from damage. There is a water main attached to the north side of the existing NC 150 bridge.

## **Operational Safety Methods**

- All parts of the existing bridge, and the traveling public including boaters, will be protected from new bridge construction activities.
- Work Plan – No work will begin until the Contractor furnishes the NCDOT Resident Engineer with a work plan for construction and the Engineer has accepted the plan.
- All activities will follow OSHA requirements<sup>2</sup>.

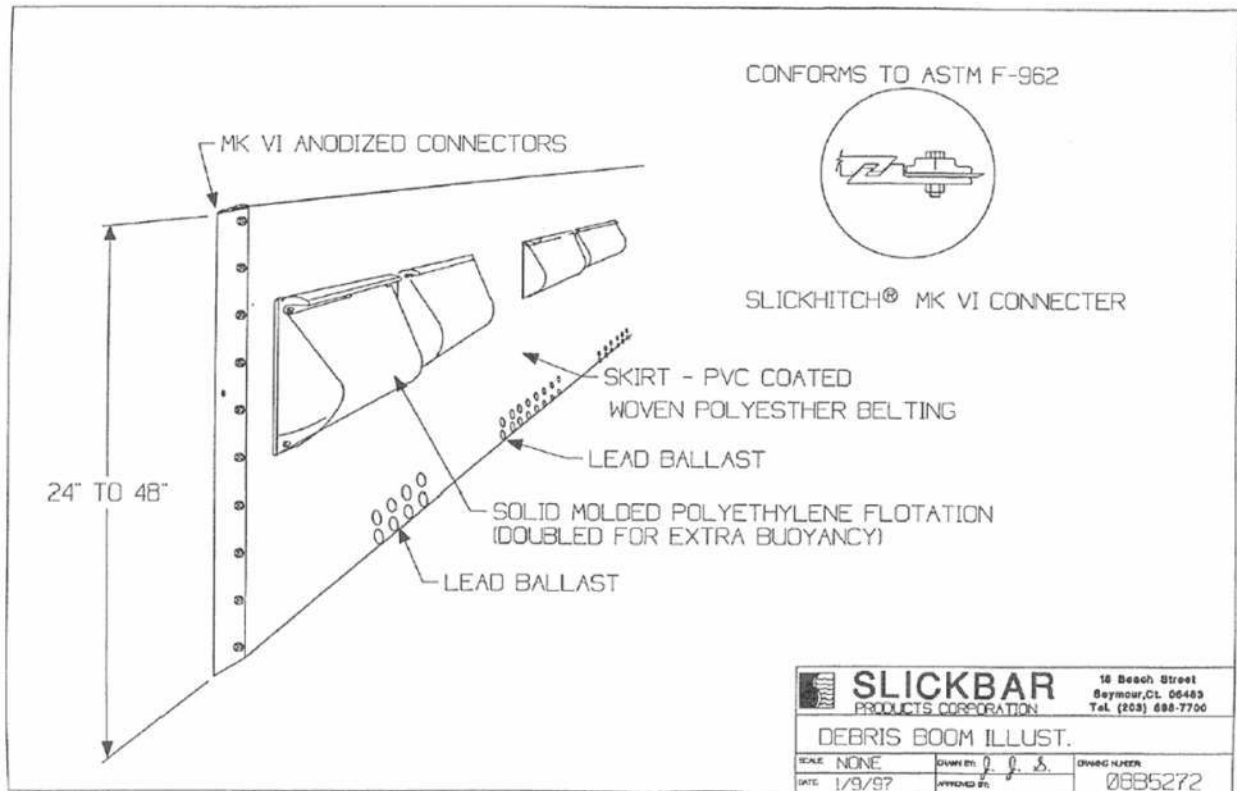
## **Boater Safety System**

Each boat launch will have placards displayed at the loading areas informing boaters of the restrictions to the waterway access under the bridge. The placards will be displayed a minimum of two weeks prior to the installation of the floating barricade system and the associated work to be performed on the structure. The information and placards will provide contact numbers for various entities – the contractor, NCDOT and the US Fish and Wildlife Service so that the public can make inquiries or report damage, vandalism or operational problems with the system.



All work areas proposed for the project will be protected by a floating barrier marked with flashing warning lights as described below.

- Debris Shield Curtain – a bright orange-colored debris shield will be deployed to protect the work areas. The proposed work areas and plans depicting the sequencing are attached. Below is a section of the product to be utilized for the barricade.



- Lighting – solar powered LED marine safety lights will be placed atop the barricade buoys (see image to the right) and will be spaced no more than 50 feet apart along the top of the barricade which will enclose the proposed maintenance activity. The lights will be placed a minimum of 2 feet above the water line to provide a visual barrier both day and night. These solar marine lights help protect boaters during the early morning and late afternoon/early evening hours or when cloud cover reduces visibility for boaters. The marine safety lights provide visibility in flashing mode up to one nautical mile, according to the distributor. They can be set for 'steady on' or 'in flash' mode at a rate of one flash per second. They can be seen no matter the boaters position or if not mounted perfectly level or if the buoy is bobbing or swaying. All routine maintenance activity for the barricade system is restricted to occur only between 6:00 am and 7:00 pm. Emergency repairs to the boater safety system will be made as needed, anytime 24 hours per



day / any day of the week.

- Mooring requirements - When utilizing barges, tugboats or other vessels, the Contractor will take all necessary precautions to ensure that such vessels are securely anchored or moored when not in active operation and to contain the vessels within the encapsulated work area. The contractor will also take all necessary measures to ensure that the vessels are operated in a manner that avoids damage to or unnecessary contact with bridges, boaters and other highway structures and attachments within the containment area. If severe weather conditions are anticipated, or should be anticipated through reasonable monitoring of weather forecasts, the contractor shall take additional measures to adequately moor the vessel within the containment area during the extreme conditions. Vessel will be secured per Section 107 of the NCDOT Standard Specifications<sup>1</sup>. The contractor shall burn mooring lights for any vessels moored overnight within the project boundary.

**Deployment of the Boater Safety System** – the debris shield and lighted buoys will be put into place prior to the commencement of any work on the structure and moved periodically, as needed, to protect boaters from the construction activities. Deployment and redeployment will occur during daylight hours. The operation will occur from a barge and or a work skiff.

All deployment will be staged to prevent boater entrapment. The staging will progress such that work will start on the deployment and will continue each successive day until such time as the work area is protected. All construction activities on the staged work will be halted until such time as the containment barricade is in place and all work activities are adequately contained. All barricade lights will be operational as soon as the barricade is deployed in the water. The lights will be inspected daily and repaired immediately.

### **Post-Construction Bathymetry**

Upon completion of construction work in the lake and after establishing revegetation at the edges of the lake, the NCDOT Division Construction Engineer will schedule a site visit or consultation with Lake Services staff. Upon approval of Lake Services, NCDOT will notify its Location & Surveys group and will deliver the updated sonar survey and comparison data to Duke within 8 weeks.

### **Staging Plan**

Figure 1 shows the first stage of activity. Stage 1 will occur on the west end of the bridge, entirely within Catawba County. The red line on Figure 1, which is entirely in the water, shows an outline of the debris shield. Boaters will pass under the east end of the existing bridge.

Figure 2 shows the new bridge area of the second stage of activity. Stage 2 will occur on the east end of the bridge in Catawba and Iredell Counties. The red line on Figure 2, which is entirely in the water, shows an outline of the debris shield. Boaters will pass under the west end of the bridge. De-mobilization to remove all equipment and material will occur at the end of this period.

Figure 3 shows the road construction area of the second stage of activity. A new roadway section will be built in Iredell County that leads to the new bridge. The red line on Figure 3, which is entirely in the water, shows an outline of the debris shield. De-mobilization to remove all equipment and material will occur at the end of this period.

### Schedule - (tentative)

A phased-approach is described below, dates to be determined\*\*:

Stage	Likely Start Date	Anticipated End Date	Activity
0	Sep 2025	Oct 2025	Procure materials
1	Oct 2025	Apr 2026	Stage 1(See Figure 1)
2	Apr 2026	Oct 2028	Stage 2 (See Figure 2 and 3)
<b>Notes:</b> <ul style="list-style-type: none"><li>Time restrictions (boaters or construction):<ul style="list-style-type: none"><li>Under the bridge deck: none (operations can occur 24 hours per day / 7 days per week)</li><li>Boater Safety System – operational throughout the project</li><li>Repairs – as needed, anytime 24 hours per day / 7 days per week</li><li>All routine maintenance of boater safety system to occur between 6:00 AM and 7:00 PM</li></ul></li></ul>			

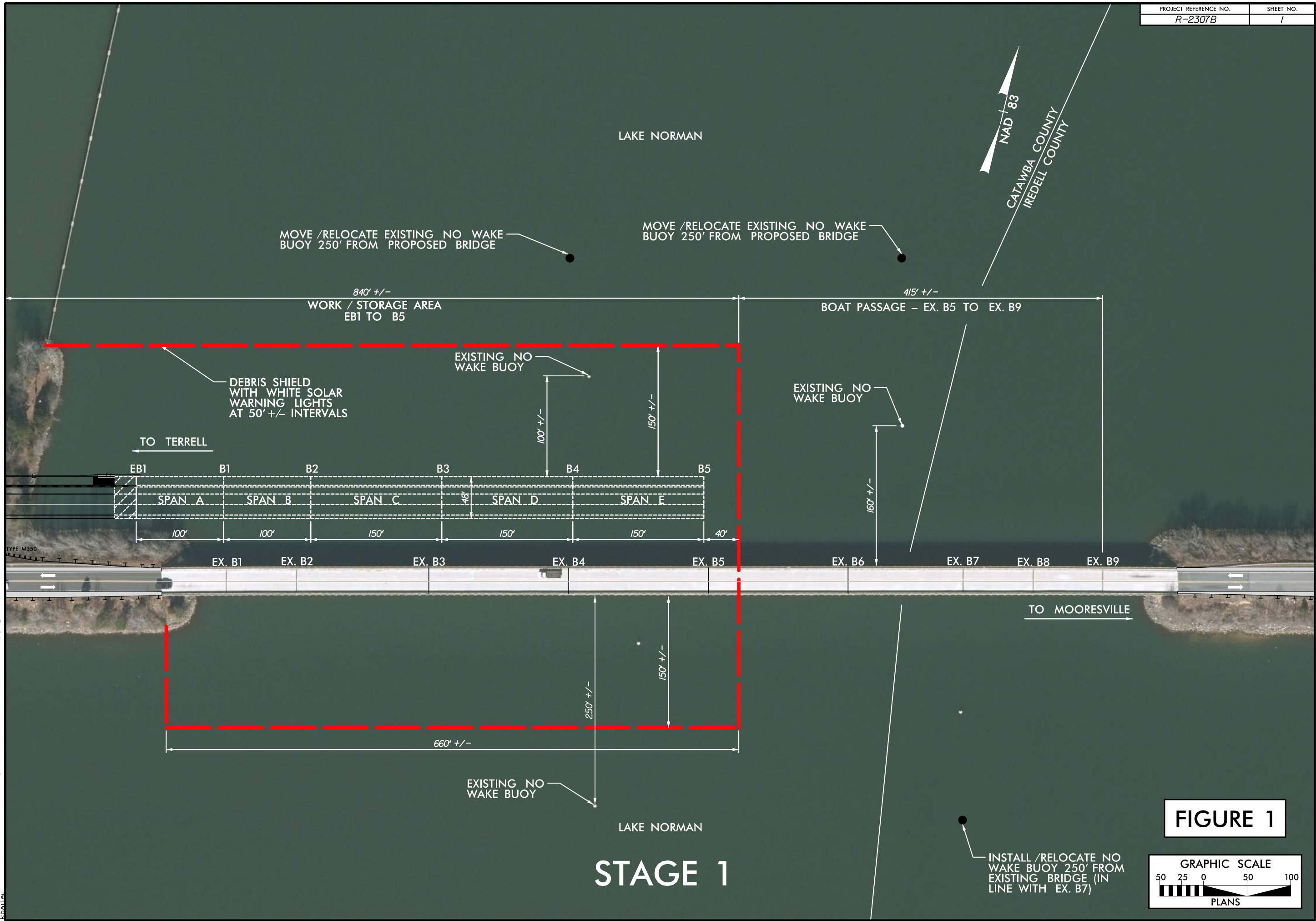
\*\* At the request of NCWRC, Major Chad Arnold shall be contacted upon start of each phase listed above. As the phases may be subject to change, Major Chad Arnold shall also be contacted and notified of any alterations to the above schedule:

Major Chad Arnold  
Major of Administration Law Enforcement Division  
Mailing Address: 1717 Mail Service Center  
Raleigh, North Carolina 27699-1720  
office: 919-707-0033 mobile: 704-506-8198

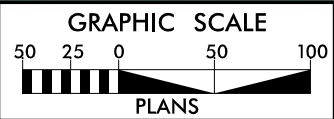
### Standards

<sup>1</sup> NCDOT Standard Specifications for Roads and Structures, January 2024.

<sup>2</sup> Occupational Safety and Health Act (OSHA 29-CFR 1910-1926)



**FIGURE 1**







MATCHLINE -L- STA 478+50  
SEE SHEET 2



## **Attachment 3 – Right of Way Acquisition**



FILED Feb 22, 2023  
AT 11:40:00 AM  
BOOK 03795  
START PAGE 0202  
END PAGE 0204  
INSTRUMENT # 03011  
EXCISE TAX \$643.00

Revenue Stamps \$ 643.00

DEED FOR HIGHWAY RIGHT OF WAY

THIS INSTRUMENT DRAWN BY Anthony C. Smith CHECKED BY Brad Marsh

The hereinafter described property ☐ Does ☒ Does not include the primary residence of the Grantor

RETURN TO: Professional Property Services, Inc.  
18335 Old Statesville Road, Unit A  
Cornelius, NC 28031

NORTH CAROLINA TIP/PARCEL NUMBER: R-2307B 006  
COUNTY OF Catawba WBS ELEMENT: 37944.2.4  
TAX PARCEL 461708998493 ROUTE: NC 150 From SR 1840 in Catawba  
County to US 21 in Iredell County

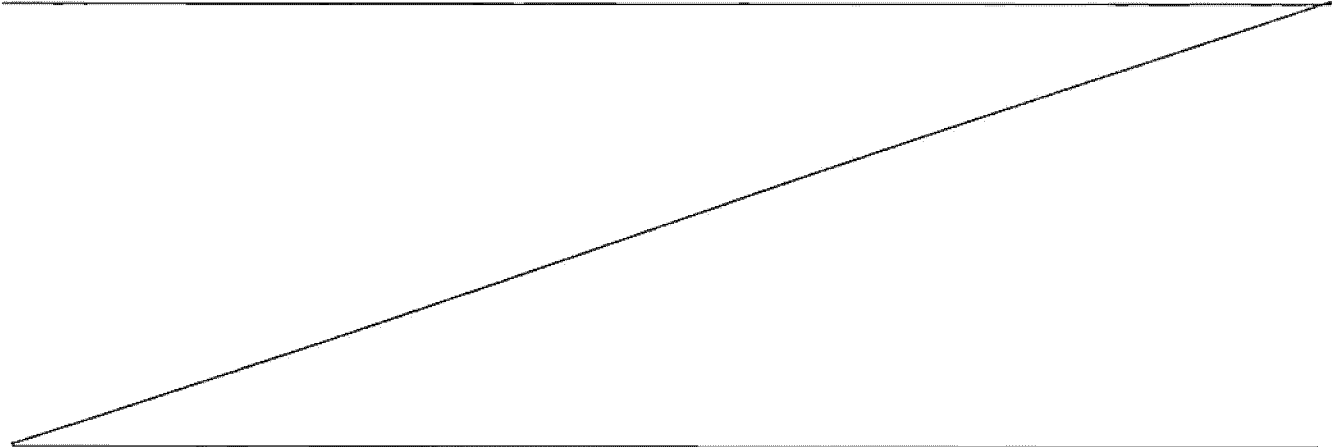
THIS FEE SIMPLE DEED, made and entered into this the 19<sup>th</sup> day of January 20 23  
by and between Harold E. Stutts and Clay B. Stutts, Co-Trustees of the Annie B. Stutts Irrevocable Trust  
dated July 27, 2012  
8629 E NC Highway 150  
Terrell NC, 28682

hereinafter referred to as GRANTORS, and the Department of Transportation, an agency of the State of North Carolina, 1546 Mail Service Center, Raleigh, NC 27611, hereinafter referred to as the Department;

WITNESSETH

That the GRANTORS, for themselves, their heirs, successors, and assigns, for and in consideration of the sum of \$ 321,500.00 agreed to be paid by the DEPARTMENT to the GRANTORS, do hereby give, grant and convey unto the DEPARTMENT, its successors and assigns, in FEE SIMPLE (together with any provisions relating to abutter's rights of access which may be hereinafter stated), that certain property located in Mountain Creek Township, Catawba County, North Carolina, which is particularly described as follows:

Point of beginning being S 44°12'14.7" W, 756.149 feet from -L- Sta. 445+00 thence along a curve 217.396 feet and having a radius of 16100.000 feet. The chord of said curve being on a bearing of N 51°10'17.3" E, a distance of 217.394 feet thence to a point on a bearing of N 81°49'39.6" E 136.870 feet thence to a point on a bearing of N 31°58'10.3" E 162.734 feet thence to a point on a bearing of N 43°54'53.2" E 135.304 feet thence to a point on a bearing of N 53°3'34.3" E 133.931 feet thence to a point on a bearing of N 44°44'29.2" E 115.571 feet thence to a point on a bearing of S 53°18'9.6" W 1030.094 feet thence to a point on a bearing of S 53°53'9.1" E 12.595 feet thence to a point on a bearing of N 64°7'20.6" E 158.401 feet returning to the point and place of beginning. Having an area of approximately 38134.682 Sqr feet being 0.875 acres.



COUNTY: Catawba WBS ELEMENT: 37944.2.4 TIP/PARCEL NO.: R-2307B 006

IN ADDITION, and for the aforesated consideration, the GRANTORS further hereby convey to the DEPARTMENT, its successors and assigns the following described areas and interests:

Permanent Utility Easement described as follows: Point of beginning being S 59°30'38.2" E, 222.793 feet from - L- Sta. 445+00 thence to a point on a bearing of N 44°14'0.9" E 41.884 feet thence to a point on a bearing of N 44°5'11.1" W 120.170 feet thence to a point on a bearing of S 44°44'29.2" W 44.616 feet thence to a point on a bearing of S 45°23'22.8" E 120.516 feet returning to the point and place of beginning. Having an area of approximately 5203.978 Sqr feet being 0.119 acres.

Said Permanent Utility easement in perpetuity is for the installation and maintenance of utilities, and for all purposes for which the DEPARTMENT is authorized by law to subject same. The Department and its agents or assigns shall have the right to construct and maintain in a proper manner in, upon and through said premises a utility line or lines with all necessary pipes, poles and appurtenances, together with the right at all times to enter said premises for the purpose of inspecting said utility lines and making all necessary repairs and alterations thereon; together with the right to cut away and keep clear of said utility lines, all trees and other obstructions that may in any way endanger or interfere with the proper maintenance and operation of the same with the right at all times of ingress, egress and regress. It is understood and agreed that the Department shall have the right to construct and maintain the cut and/or fill slopes in the above-described Permanent Utility Easement area(s). It is further understood and agreed that Permanent Utility Easement shall be used by the Department for additional working area during the above described project. The underlying fee owner shall have the right to continue to use the Permanent Utility Easement area(s) in any manner and for any purpose, including but not limited to the use of said area for access, ingress, egress, and parking, that does not, in the determination of the Department, obstruct or materially impair the actual use of the easement area(s) by the Department of Transportation, its agents, assigns, and contractors.

SPECIAL PROVISIONS. This deed is subject to the following provisions only:

It is understood and agreed that the total consideration set forth above shall be made payable to Williams and Hartsell, P.A. and after satisfaction of all taxes, liens, encumbrances on this parcel, the remaining balance shall be disbursed in accordance with the Grantors' directions, and the Grantors shall have no claim against the Department as a result thereof.

The property hereinabove described was acquired by the GRANTORS by instrument(s) recorded in the Catawba County Registry in Deed Book 3139 Page 1357.

The final right of way plans showing the above described right of way are to be certified and recorded in the Office of the Register of Deeds for said County pursuant to N.C.G.S. 136-19.4, reference to which plans is hereby made for purposes of further description and for greater certainty.

The Grantors acknowledge that the project plans for Project # 37944.2.4 have been made available to them. The Grantors further acknowledge that the consideration stated herein is full and just compensation pursuant to Article 9, Chapter 136 of the North Carolina General Statutes for the acquisition of the said interests and areas by the Department of Transportation and for any and all damages to the value of their remaining property; for any and all claims for interest and costs; for any and all damages caused by the acquisition for the construction of Department of Transportation Project # 37944.2.4, Catawba County, and for the past and future use of said areas by the Department of Transportation, its successors and assigns for all purposes for which the said Department is authorized by law to subject the same.

IT IS UNDERSTOOD AND AGREED between the parties hereto that this conveyance is made for the purpose of constructing and establishing upon the right of way hereby conveyed a road or highway designated as State Highway Project 37944.2.4, Catawba County, which road or highway is a controlled access facility as defined by law and the GRANTORS shall have no right of access to said road or highway, except such access as may be provided by way of local service or frontage roads and streets or specific access points as shown and designated as such on the right of way plans for said State Highway Project on file in the office of the DEPARTMENT in Raleigh, North Carolina and to be recorded in the Register of Deeds Office of Catawba County pursuant to NCGS 136-19.4.

The access as provided is more particularly described as follows:

**ACCESS BY SERVICE ROAD OR FRONTAGE ROAD:**

By means of a service or frontage road which is designated -L- on said plans, said access point being located Right of Survey Line -L- and between the Western property line of the grantors common with Harold Edwin Stutts, now or formerly and Survey Station 439+66.05 on Survey Line -L- and between Survey Station 443+75.00 and the Eastern property line of the grantors common with Duke Energy Carolinas, LLC, now or formerly on Survey Line -L-

As to such local service or frontage roads and streets or specific points of access, the GRANTORS reserve unto themselves, their heirs, successors, executors and assigns for the benefit of their remaining property

COUNTY: Catawba WBS ELEMENT: 37944.2.4 TIP/PARCEL NO.: R-2307B 006

abutters' rights of access thereto as at common law; subject, however, to the right of the DEPARTMENT to reasonably regulate said abutters' rights of access in order to protect and safeguard the traveling public.

TO HAVE AND TO HOLD the aforesaid premises and all privileges and appurtenances thereunto belonging to the DEPARTMENT, its successors and assigns in FEE SIMPLE, or by easement as indicated, for the past, present and future use thereof and for all purposes which the said Department is authorized by law to subject the same.

And the GRANTORS covenant with the DEPARTMENT, that the GRANTORS are seized of the premises in fee simple, have the right to convey the same in fee simple, or by easement as indicated, that the title thereto is marketable and free and clear of all encumbrances, and that the GRANTORS will warrant and defend the title against the lawful claims of all persons whomsoever except for the exceptions hereinafter stated. Title to the property hereinabove described is hereby conveyed subject to the following exceptions: **Restrictive covenants and easements of record, government regulations, and the lien of property taxes for the current year.**

IN WITNESS WHEREOF, the GRANTORS have hereunto set their hands and seals (or if corporate, has caused the instrument to be signed in its corporate name by its duly authorized officers and its seal to be hereunto affixed by authority of its Board of Directors) the day and year first above written.

This instrument does not transfer the herein described interests unless and until this document is accepted by an authorized agent of the Department of Transportation.

Harold E. Stutts

(SEAL)

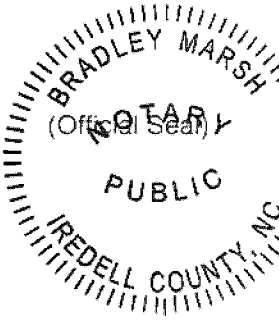
Harold E. Stutts, co-trustee of the Annie B. Stutts Irrevocable Trust dated July 27, 2012

Clay B. Stutts

(SEAL)

Clay B. Stutts, co-trustee of the Annie B. Stutts Irrevocable Trust dated July 27, 2012

ACCEPTED FOR THE DEPARTMENT OF TRANSPORTATION BY: [Signature]

	North Carolina, <u>Catawba</u> County I, <u>Bradley Marsh</u> , a Notary Public for Iredell County, North Carolina, do hereby certify that Harold E. Stutts, co-trustee of the Annie B. Stutts Irrevocable Trust dated July 27 <sup>th</sup> , 2012 personally appeared before me this day and acknowledged the due execution of the foregoing instrument. Witness my hand and official seal this the <u>19<sup>th</sup></u> day of January, 20 <u>23</u> . <u>Bradley Marsh</u> Notary Public My commission expires: <u>8/24/27</u>
	North Carolina, <u>Catawba</u> County I, <u>Bradley Marsh</u> , a Notary Public for Iredell County, North Carolina, do hereby certify that Clay B. Stutts, co-trustee of the Annie B. Stutts Irrevocable Trust dated July 27 <sup>th</sup> , 2012 personally appeared before me this day and acknowledged the due execution of the foregoing instrument. Witness my hand and official seal this the <u>19<sup>th</sup></u> day of January, 20 <u>23</u> . <u>Bradley Marsh</u> Notary Public My commission expires: <u>8/24/27</u>

Revenue Stamps \$ 141.00

## DEED FOR HIGHWAY RIGHT OF WAY

THIS INSTRUMENT DRAWN BY David Angel CHECKED BY Chris Davis

The hereinafter described property ☒ Does ☐ Does not include the primary residence of the Grantor

RETURN TO: Professional Property Services Inc.  
18335 Old Statesville Road Unit A  
Cornelius, NC 28031

NORTH CAROLINA  
COUNTY OF Iredell  
TAX PARCEL 4628-30-9960

TIP/PARCEL NUMBER: R-2307B 009  
WBS ELEMENT: 37944.2.4  
ROUTE: NC 150 From SR 1840  
(Greenwood Rd) in Catawba  
County to US 21 in Iredell  
County

THIS FEE SIMPLE DEED, made and entered into this the 12<sup>th</sup> day of March 20 19  
by and between Maxey J. Address and wife, Barbara Address  
128 Mariner Pointe Lane  
 Mooresville, NC 28117

hereinafter referred to as GRANTORS, and the Department of Transportation, an agency of the State of North Carolina, 1546 Mail Service Center, Raleigh, NC 27611, hereinafter referred to as the Department;

### WITNESSETH

That the GRANTORS, for themselves, their heirs, successors, and assigns, for and in consideration of the sum of \$ 70,150.00 agreed to be paid by the DEPARTMENT to the GRANTORS, do hereby give, grant and convey unto the DEPARTMENT, its successors and assigns, in FEE SIMPLE that certain property located in Davidson Township, Iredell County, North Carolina, which is particularly described as follows:

Point of beginning being S 24°34'43.8" E, 142.788 feet from -L- Sta 489+00 thence to a point on a bearing of N 26°47'59.2" W 63.207 feet thence to a point on a bearing of S 82°49'39.0" W 54.980 feet thence to a point on a bearing of S 81°19'53.0" W 59.022 feet thence to a point on a bearing of S 5°22'19.6" E 73.067 feet thence to a point on a bearing of N 76°35'12.0" E 138.329 feet returning to the point and place of beginning.

COUNTY: Iredell WBS ELEMENT: 37944.2.4 TIP/PARCEL NO.: R-2307B 009

IN ADDITION, and for the aforesaid consideration, the GRANTORS further hereby convey to the DEPARTMENT, its successors and assigns the following described areas and interests:

Temporary Construction Easement described as follows:

Point of beginning being S 25°0'22.6" E, 176.805 feet from -L- Sta 489+00 thence to a point on a bearing of N 26°47'59.2" W 34.038 feet thence to a point on a bearing of S 76°35'12.0" W 40.176 feet thence to a point on a bearing of S 68°50'42.0" E 58.360 feet returning to the point and place of beginning.

The above described Temporary Construction/Drainage/Utility Easement(s) will terminate upon completion and acceptance of the project. The underlying fee owner shall have the right to continue to use the Temporary Easement area(s) in any manner and for any purpose, including but not limited to the use of said area for access, ingress, egress, and parking, that does not, in the determination of the Department, obstruct or materially impair the actual use of the easement area(s) by the Department of Transportation, its agents, assigns, and contractors.

Permanent Drainage Easement described as follows:

Point of beginning being S 42°35'45.8" W, 121.161 feet from -L- Sta 489+00 thence to a point on a bearing of S 81°19'53.0" W 14.221 feet thence to a point on a bearing of S 65°14'42.0" W 65.069 feet thence to a point on a bearing of S 48°10'23.4" E 17.810 feet thence to a point on a bearing of N 77°58'2.2" E 63.909 feet thence to a point on a bearing of N 5°22'19.6" W 28.067 feet returning to the point and place of beginning.

Said Permanent Drainage Easement in perpetuity is for the installation and maintenance of drainage facilities, and for all purposes for which the DEPARTMENT is authorized by law to subject same. The Department and its agents or assigns shall have the right to construct and maintain in a proper manner in, upon and through said premises a drainage facility with all necessary pipes, poles and appurtenances, together with the right at all times to enter said premises for the purpose of inspecting said drainage facility and making all necessary repairs and alterations thereon; together with the right to cut away and keep clear of said drainage facility, all trees and other obstructions that may in any way endanger or interfere with the proper maintenance and operation of the same with the right at all times of ingress, egress and regress.

It is understood and agreed that the Department shall have the right to construct and maintain the cut and/or fill slopes in the above-described Permanent Drainage Easement area(s). It is further understood and agreed that Permanent Drainage Easement shall be used by the Department for additional working area during the above described project. The underlying fee owner shall have the right to continue to use the Permanent Drainage Easement area(s) in any manner and for any purpose, including but not limited to the use of said area for access, ingress, egress, and parking, that does not, in the determination of the Department, obstruct or materially impair the actual use of the easement area(s) by the Department of Transportation, its agents, assigns, and contractors.

SPECIAL PROVISIONS. This deed is subject to the following provisions only:

The undersigned property owners request that the Department enter upon our lands outside the right of way to the extent necessary for the reconnection of our driveway and we will have no further claim as a result of said reconnection.

It is understood and agreed that the total consideration set forth above shall be made payable to Davis Schweizer, PLLC and after satisfaction of all taxes, liens, encumbrances on this parcel, the remaining balance shall be disbursed in accordance with the Grantors' directions, and the Grantors shall have no claim against the Department as a result thereof.

The property hereinabove described was acquired by the GRANTORS by instrument(s) recorded in the Iredell County Registry in Deed Book 1733 Page 1580.

The final right of way plans showing the above described right of way are to be certified and recorded in the Office of the Register of Deeds for said County pursuant to N.C.G.S. 136-19.4, reference to which plans is hereby made for purposes of further description and for greater certainty.

The Grantors acknowledge that the project plans for Project # 37944.2.4 have been made available to them. The Grantors further acknowledge that the consideration stated herein is full and just compensation pursuant to Article 9, Chapter 136 of the North Carolina General Statutes for the acquisition of the said interests and areas by the Department of Transportation and for any and all damages to the value of their remaining property; for any and all claims for interest and costs; for any and all damages caused by the acquisition for the construction of Department of Transportation Project # 37944.2.4, Iredell County, and for the past and future use of said areas by the Department of Transportation, its successors and assigns for all purposes for which the said Department is authorized by law to subject the same.

TO HAVE AND TO HOLD the aforesaid premises and all privileges and appurtenances thereunto belonging to the DEPARTMENT, its successors and assigns in FEE SIMPLE, or by easement as indicated, for

COUNTY: Iredell WBS ELEMENT: 37944.2.4 TIP/PARCEL NO.: R-2307B 009

the past, present and future use thereof and for all purposes which the said Department is authorized by law to subject the same.

And the GRANTORS covenant with the DEPARTMENT, that the GRANTORS are seized of the premises in fee simple, have the right to convey the same in fee simple, or by easement as indicated, that the title thereto is marketable and free and clear of all encumbrances, and that the GRANTORS will warrant and defend the title against the lawful claims of all persons whomsoever except for the exceptions hereinafter stated. Title to the property hereinabove described is hereby conveyed subject to the following exceptions:  
None

IN WITNESS WHEREOF, the GRANTORS have hereunto set their hands and seals (or if corporate, has caused the instrument to be signed in its corporate name by its duly authorized officers and its seal to be hereunto affixed by authority of its Board of Directors) the day and year first above written.

This instrument does not transfer the herein described interests unless and until this document is accepted by an authorized agent of the Department of Transportation.

Maxey J. Andres (SEAL) Barbara Andres (SEAL)  
Maxey J. Andres Barbara Andres

ACCEPTED FOR THE DEPARTMENT OF TRANSPORTATION BY: K.M. Hall

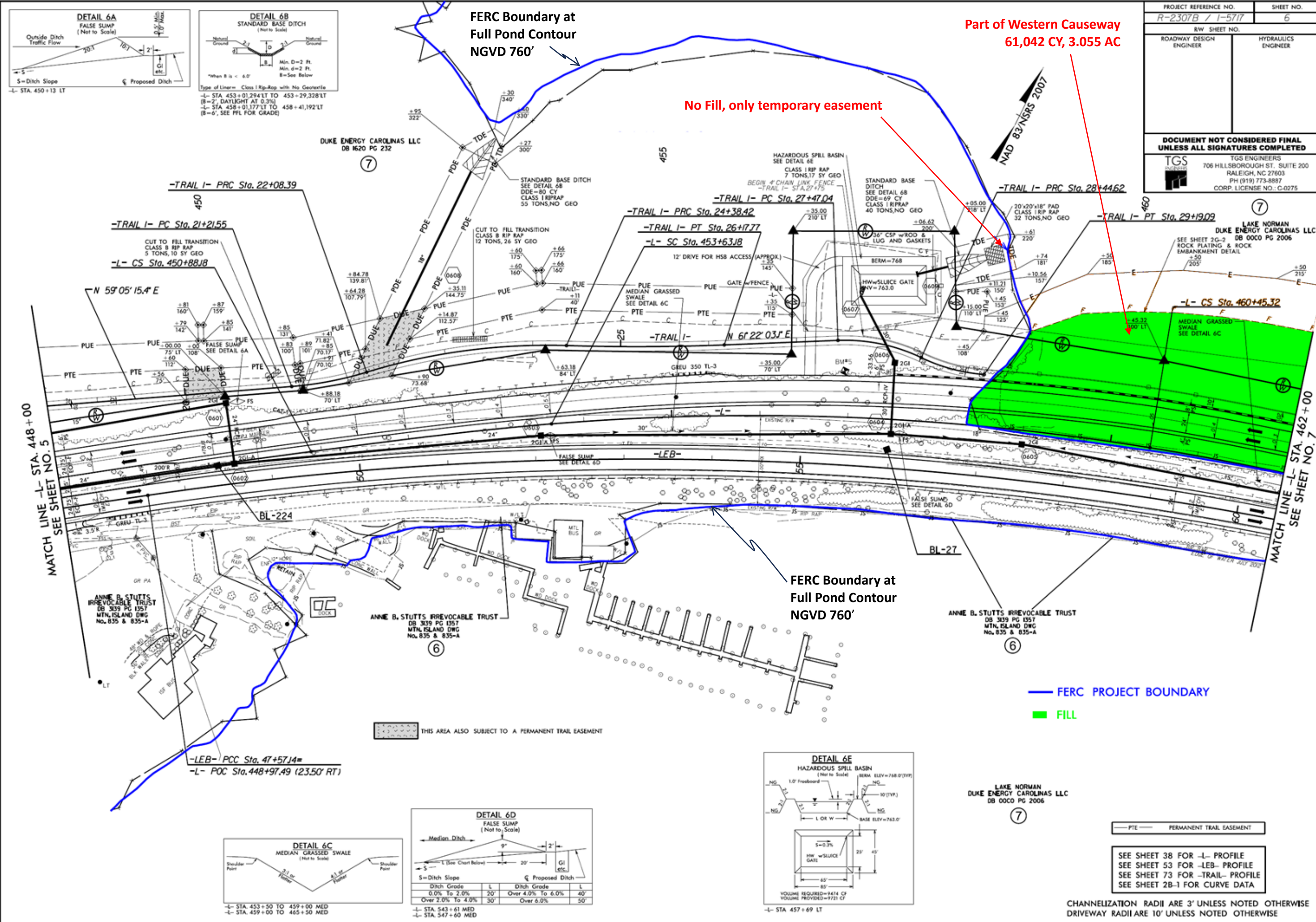
<b>Christopher K Davis</b> <b>NOTARY PUBLIC</b> Lincoln County, NC My Commission Expires October 25, 2022	North Carolina, <u>Iredell</u> County
	I, <u>Christopher K. Davis</u> , a Notary Public for <u>Lincoln</u> County, North Carolina, do hereby certify that <u>Maxey J. Andres</u> personally appeared before me this day and acknowledged the due execution of the foregoing instrument. Witness my hand and official seal this the <u>12th</u> day of <u>March</u> , 20 <u>19</u> .
(Official Seal)	<u>Christopher K. Davis</u> Notary Public My commission expires: <u>10-25-2022</u>

<b>Christopher K Davis</b> <b>NOTARY PUBLIC</b> Lincoln County, NC My Commission Expires October 25, 2022	North Carolina, <u>Iredell</u> County
	I, <u>Christopher K. Davis</u> , a Notary Public for <u>Lincoln</u> County, North Carolina, do hereby certify that <u>Barbara Andres</u> personally appeared before me this day and acknowledged the due execution of the foregoing instrument. Witness my hand and official seal this the <u>12th</u> day of <u>March</u> , 20 <u>19</u> .
(Official Seal)	<u>Christopher K. Davis</u> Notary Public My commission expires: <u>10-25-2022</u>

## **Attachment 4 – Design Sheets with FERC Boundary**





FERC Boundary at Full Pond Contour NGVD 760'

No Fill, only temporary easement

Part of Western Causeway  
61,042 CY, 3.055 AC

FERC Boundary at Full Pond Contour NGVD 760'

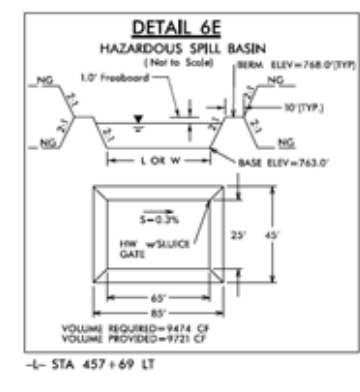
— FERC PROJECT BOUNDARY  
■ FILL

**DETAIL 6D**  
FALSE SUMP  
(Not to Scale)

S=Ditch Slope

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

— STA. 543+61 MED  
— STA. 547+60 MED

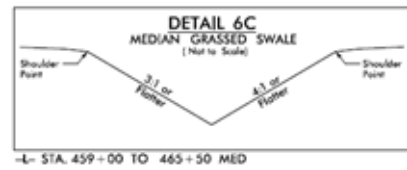


LAKE NORMAN  
DUKE ENERGY CAROLINAS LLC  
DB 0000 PG 2006

— PTE — PERMANENT TRAIL EASEMENT

SEE SHEET 38 FOR -L- PROFILE  
SEE SHEET 53 FOR -LEB- PROFILE  
SEE SHEET 73 FOR -TRAIL- PROFILE  
SEE SHEET 28-1 FOR CURVE DATA

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE  
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE



Part of Western Causeway  
61,042 CY, 3.055 AC

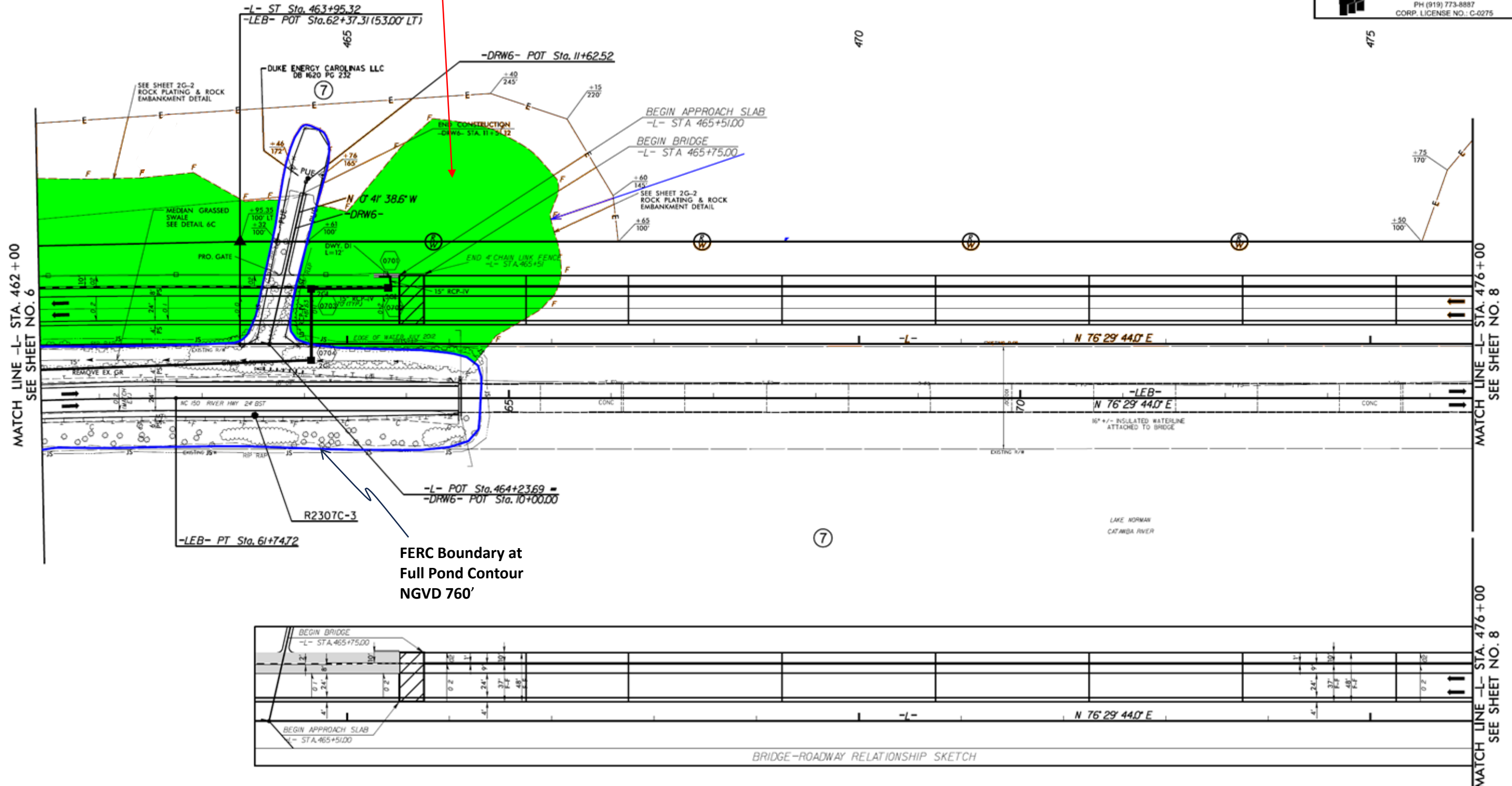
LAKE NORMAN  
DUKE ENERGY CAROLINAS LLC  
DB 0000 PG 2006

— FERC PROJECT BOUNDARY

■ FILL

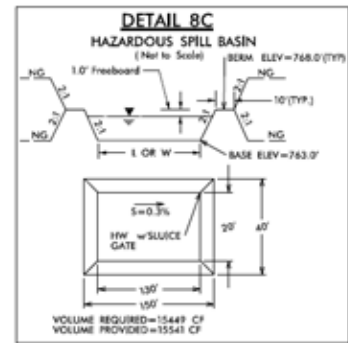
NAD 83/NSRS 2007

PROJECT REFERENCE NO. <i>R-2307B / I-5717</i>		SHEET NO. <i>7</i>
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>		
<div><div>TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275</div></div>		

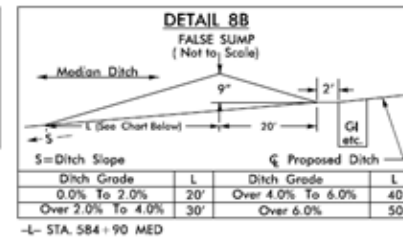
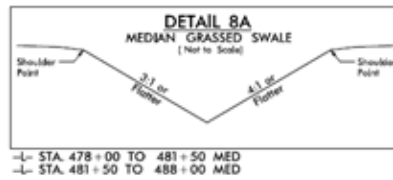


SEE SHEET 39 FOR -L- PROFILE  
SEE SHEETS 53 THRU 54 FOR -LEB- PROFILE  
SEE SHEET 2B-1 FOR CURVE DATA



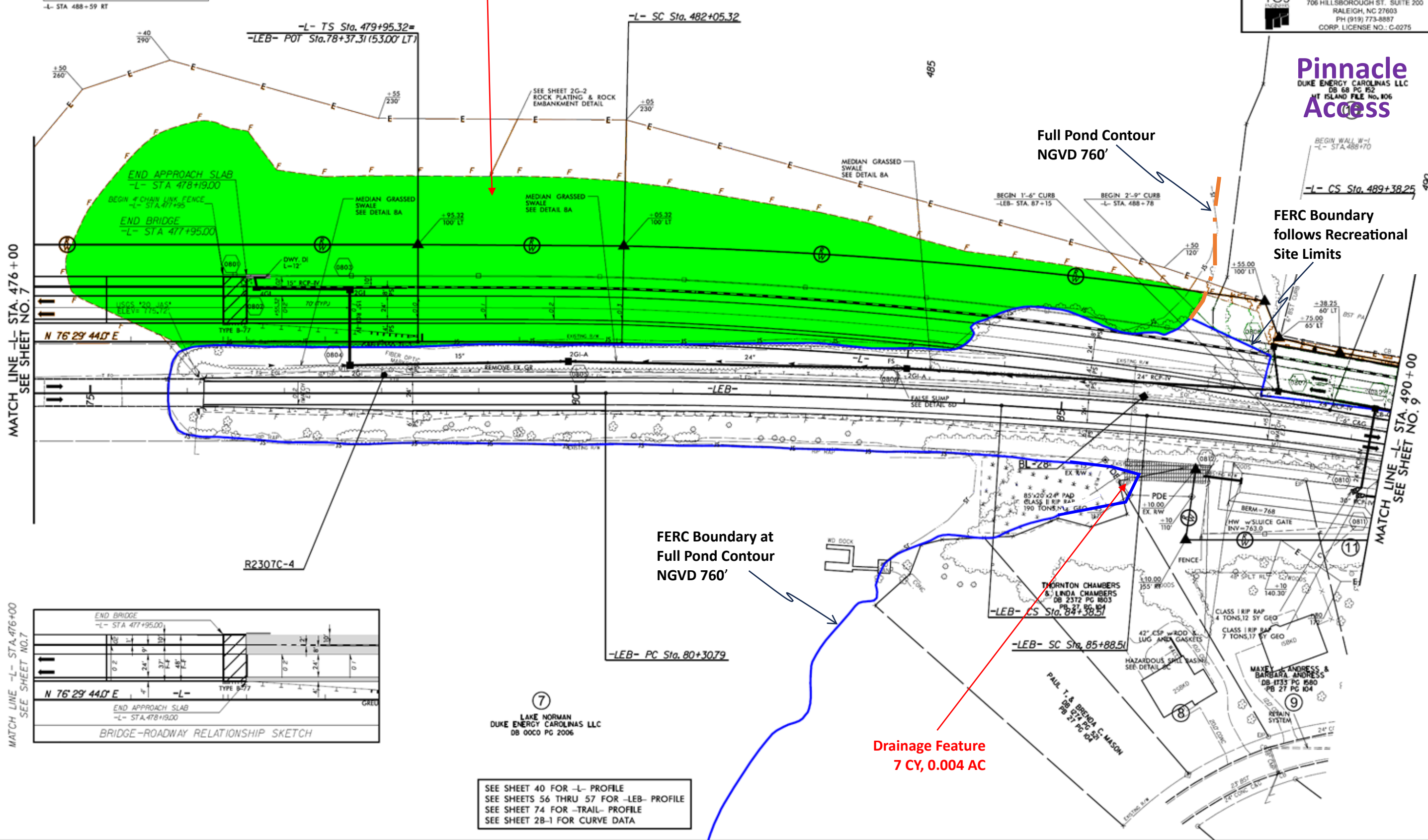


— FERC PROJECT BOUNDARY  
 ■ FILL



PROJECT REFERENCE NO. R-2307B / 1-5/17  
 SHEET NO. 8  
 ROADWAY DESIGN ENGINEER  
 HYDRAULICS ENGINEER  
 DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED  
 TGS ENGINEERS  
 706 HILLSBOROUGH ST., SUITE 200  
 RALEIGH, NC 27603  
 PH (919) 773-8887  
 CORP. LICENSE NO.: C-0275

**Pinnacle Access**  
 DUKE ENERGY CAROLINAS LLC  
 DB 68 PG 152  
 MT ISLAND FILE NO. 106



MATCH LINE -L- STA. 476+00  
 SEE SHEET NO. 7

MATCH LINE -L- STA. 476+00  
 SEE SHEET NO. 7

MATCH LINE -L- STA. 490+00  
 SEE SHEET NO. 9

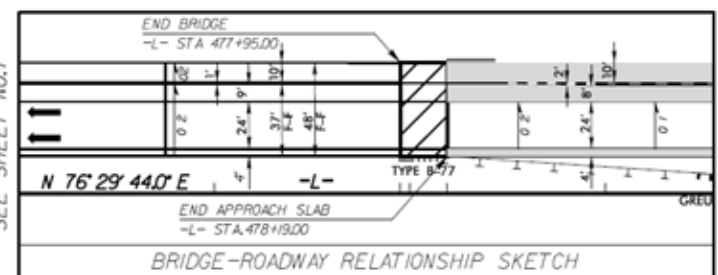
**Eastern Causeway**  
 83,653 CY, 3.818 AC

**Full Pond Contour**  
 NGVD 760'

**FERC Boundary**  
 follows Recreational  
 Site Limits

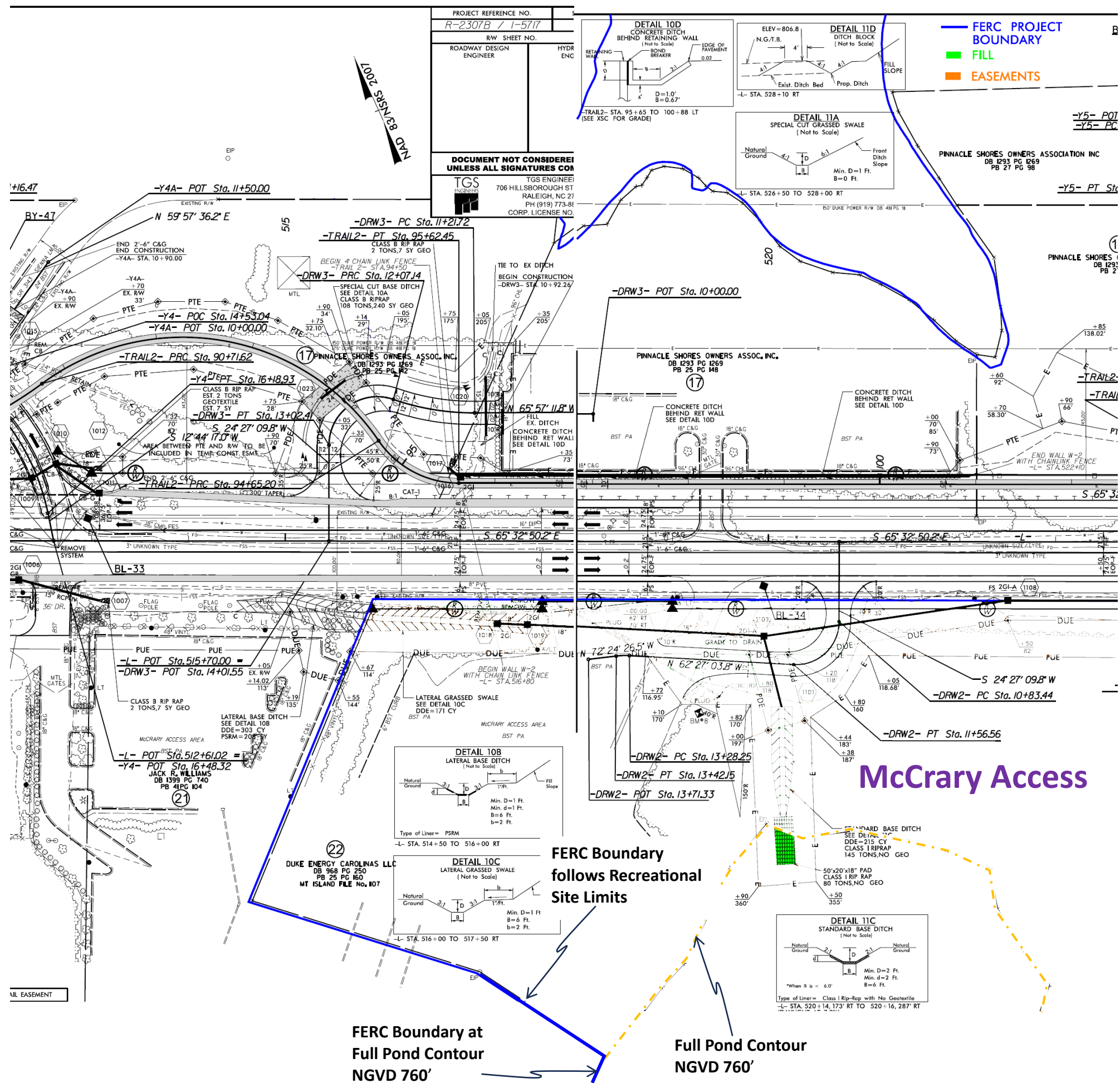
**FERC Boundary at**  
**Full Pond Contour**  
 NGVD 760'

**Drainage Feature**  
 7 CY, 0.004 AC



⑦  
 LAKE NORMAN  
 DUKE ENERGY CAROLINAS LLC  
 DB 0000 PG 2006

SEE SHEET 40 FOR -L- PROFILE  
 SEE SHEETS 56 THRU 57 FOR -LEB- PROFILE  
 SEE SHEET 74 FOR -TRAIL- PROFILE  
 SEE SHEET 28-1 FOR CURVE DATA



## **Attachment 5 – 404 and 401 Permits**





**DEPARTMENT OF THE ARMY**  
**U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT**  
**WILMINGTON REGULATORY OFFICE**  
**69 DARLINGTON AVENUE**  
**WILMINGTON NORTH CAROLINA 28403**

August 20, 2024

Regulatory Program

Sent Via Email: [jlwyatt@ncdot.gov](mailto:jlwyatt@ncdot.gov)

NC Department of Transportation  
Natural Environment Section  
Mr. Jeffrey Wyatt  
Division Environmental Officer  
P.O. Box 47  
Shelby, NC 28151

Dear Mr. Wyatt:

Please reference the Department of the Army (DA) permit issued on September 3, 2020, for the NC 150 (R-2307 and I-5717) Improvement Project located along NC 150 between the intersection of NC 150 with the NC 16 Bypass in Catawba County and the NC 150 intersection with US 21 in Mooresville, Iredell County, North Carolina. Please additionally reference your June 4, 2024, letter requesting the extension of the expiration date of the project to December 31, 2034, the re-evaluation of the project with consideration of the project's effects on the proposed endangered species, the Tricolor Bat and minor changes to impacts to waters of the US. After review of the file and the modification request, we have determined that the proposed project revisions are minor, and a supplemental public notice is not necessary to authorize the modification. Accordingly, your permit is hereby modified to extend the expiration date of the permit to December 31, 2034, and to include the additional conditions and changes to project impacts as listed below.

**Revised Wetland & Stream Impacts:**

1. Site 3: Permanent Surface Water Impacts decreased from 3.11 acres to 3.079 acres due to minor slope stake changes at Lake Norman.
2. Site 3: Three temporary Surface Water Impacts were added down to elevation 750 ft on Permit Drawing Sheets 2-5. Temporary Surface Water Impacts increased from 0 to 0.070 acre.
3. Due to concerns from Duke Energy regarding boater safety and the alignment of bridge piers with the existing structure, the proposed bridge span arrangement was modified to better match the existing bridge. Permit Drawing Sheets 4-6 and associated footnote on the Impact Summary Sheet were updated.
4. Site 4: Permanent Surface Water Impacts decreased from 3.91 acres to 3.859 acres due to minor slope changes at Lake Norman.

5. Site 4: Two temporary Surface Water Impacts were added down to elevation 750 ft on Permit Drawing Sheets 7-8. Temporary Surface Water Impacts increased from 0 to 0.162 acre.
6. Site 10: The previous design proposed a 9' diameter precast manhole connecting an existing RCBC to a proposed 78" RCP at the downstream culvert extension at 784+50 RT (Permit Site 10). NCDOT determined that attaching a precast manhole to the existing RCBC is not feasible and would require a cast in place connection. To avoid this situation, the existing 5'W x 6'H RCBC will be extended. This will result in the outlet of the RCBC shifting 3' west of the previous 78" RCP outlet. However, the inverts, lengths, and channel layout will remain the same. There are no changes to stream impacts.
7. Site 12: Permanent impact decreased from 28 to 27 linear feet due to a corrected measurement (The change is only reflected on the Impact Summary Sheet, no change to the plan view).
8. Impact Summary Sheet: Impacts on the previous version were shown to nearest 0.01 acre and now show the nearest 0.001 acre.

#### 2024 Modification SC.1

Endangered Species: In order to avoid and minimize effects to the tricolor bat, NCDOT will comply with the following measures:

1. Tree clearing will take place from October 16 to March 31, outside of the bat active season.
2. Tree clearing from December 15 – February 15 (the winter torpor season for tricolored bat in the year-round active zone 1) will be avoided and minimized to the maximum extent practical.
3. The existing bridge and culverts  $\geq 3$  feet in manufactured diameter within the action area will be surveyed during the summer of 2024. Additionally, structures will be surveyed within 30 days of letting. The U.S. Fish and Wildlife Service (Service) Asheville Field Office will be contacted immediately if bats are observed.
4. Temporary lighting for night work will be aimed at the direction of work to minimize lighting the surrounding landscape and will be turned off when not needed for project work.
5. The replacement of permanent lighting will be downcast and will not be in excess of what currently exists within the action area.
6. Should blasting occur, it will take place after tree clearing within the action area has been completed.


It is understood that all other conditions of the original permit remain applicable.

If you have any questions concerning this correspondence, please contact Crystal Amschler, WRDA Project Manager of the WRDA Transportation Branch at 828-526-6013, by mail at the above address, or by email at [crystal.c.amschler@usace.army.mil](mailto:crystal.c.amschler@usace.army.mil).





Please take a moment to complete our customer satisfaction survey located at <https://regulatory.ops.usace.army.mil/customer-service-survey/>.

Sincerely,

	2024.08.21 07:31:28 -04'00'
--	--------------------------------

Monte Matthews  
Chief, Transportation Branch  
Wilmington District, Regulatory

Enclosures

<div style="display: flex; justify-content: space-between; align-items: center;">  <div style="text-align: center;"> <b>North Carolina Department of Transportation</b>  <b>Highway Stormwater Program</b>  <b>STORMWATER MANAGEMENT PLAN</b>  <b>FOR NCDOT PROJECTS</b> </div>  </div>									
(Version 2.07; Released October 2016)									
WBS Element:		TIP No.:		County(ies):		Page 1 of 6			
<b>General Project Information</b>									
WBS Element:		37944.1.FR5/50134.1.FS1		TIP Number:		R-2307B/I-5717		Project Type: Roadway Relocation	
NCDOT Contact:		Craig A. Freeman, PE		Contractor / Designer:		TGS Engineers (David B. Petty, PE)			
		Address:				Address:			
		1590 Mail Service Center Raleigh, NC 27699-1590				706 Hillsborough Street Suite 200 Raleigh NC, 27603			
		Phone: 919-707-6721				Phone: 919-773-8887 ext. 104			
		Email: <a href="mailto:cafreeman2@ncdot.gov">cafreeman2@ncdot.gov</a>				Email: <a href="mailto:dpetty@tgsengineers.com">dpetty@tgsengineers.com</a>			
City/Town:		Mooresville, NC		County(ies):		Catawba		Iredell	
River Basin(s):		Catawba		CAMA County?		No		No	
Wetlands within Project Limits?		Yes							
<b>Project Description</b>									
Project Length (lin. miles or feet):		6.94 miles		Surrounding Land Use:		Commercial, Medium Density Residential			
		<b>Proposed Project</b>		<b>Existing Site</b>					
Project Built-Up Area (ac.)		121.0 ac.		69.0 ac.					
Typical Cross Section Description:		four lane shoulder section with 23'+ grassed median and four to six lane curb and gutter section with 0' to 23' raised grassed median - all 12' lanes				two lane undivided shoulder section and four lane undivided curb and gutter section - all 12' lanes			
Annual Avg Daily Traffic (veh/hr/day):		Design/Future: 58860		Year: 2039		Existing: 47900		Year: 2019	
General Project Narrative: (Description of Minimization of Water Quality Impacts)		<p>The proposed project involves widening NC 150, an existing two &amp; four-lane undivided arterial, to a four &amp; six-lane median divided superstreet to improve vehicular mobility and safety from Greenwood Rd (SR 1840) in Catawba County to US 21 in Iredell County. The existing 10-span, approximately 1170-ft long by 34-ft wide bridge over Lake Norman will remain in place and transition from one lane in each direction to two eastbound lanes. A proposed 9-span, approx. 1210-ft by 52-ft wide bridge will carry two westbound lanes and a 10-ft multiuse path just upstream of the existing bridge. Bridge to be constructed from anchored barges. Existing causeways will be widened on the upstream side using rock fill up to 2 ft above Duke Energy Full Pond elevation and then grassed sideslopes from there up. There are five proposed culvert extensions over UT's toward end of project – riprap is proposed in base of channels to reduce discharge velocities.</p> <p>Roadway runoff in the vicinity of the Lake Norman crossing is routed to two hazardous spill basins. Dry detention/filtration basins are proposed on sheets 14, 17(dry detention only) 19, 20 &amp; 22 for both peak attenuation and treatment. Otherwise, stormwater diversion has been minimized. Grassed swales are used for treatment throughout the project, where practical. Outlet pipe slopes are minimized. All BMP's have been incorporated throughout the project to the maximum extent practicable.</p>							
<b>Waterbody Information</b>									
Surface Water Body (1):		Catawba River (Lake Norman below elevation 760)		NCDWR Stream Index No.:		11-(75)			
NCDWR Surface Water Classification for Water Body		Primary Classification:		Water Supply IV (WS-IV)		Class B		Critical Area (CA)	
		Supplemental Classification:		None					
Other Stream Classification:		None							
Impairments:		None							
Aquatic T&E Species?		Yes		Comments: per EA: no effect on Dwarf-flowered heartleaf&Schweinitz's sunflower; unresolved on Northern long-eared bat					
NRTR Stream ID:						Buffer Rules in Effect:		Catawba	
Project Includes Bridge Spanning Water Body?		Yes		Deck Drains Discharge Over Buffer?		No		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		No		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)			
(If yes, provide justification in the General Project Narrative)									



North Carolina Department of Transportation  
Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN  
FOR NCDOT PROJECTS



(Version 2.07; Released October 2016)

<b>WBS Element:</b>	37944.1.FR5/50134.	<b>TIP No.:</b>	R-2307B/I-5717	<b>County(ies):</b>	Catawba Iredell	<b>Page</b>	2	<b>of</b>	6
<b>Additional Waterbody Information</b>									
<b>Surface Water Body (2):</b>	McCary Creek			<b>NCDWR Stream Index No.:</b>	11-91				
<b>NCDWR Surface Water Classification for Water Body</b>	<b>Primary Classification:</b>	Water Supply IV (WS-IV)		Class B	Critical Area (CA)				
	<b>Supplemental Classification:</b>	None							
<b>Other Stream Classification:</b>	None								
<b>Impairments:</b>	None								
<b>Aquatic T&amp;E Species?</b>	Yes	Comments: per EA: no effect on Dwarf-flowered heartleaf&Schweinitz's sunflower; unresolved on Northern long-eared bat							
<b>NRTR Stream ID:</b>				<b>Buffer Rules in Effect:</b>	N/A				
<b>Project Includes Bridge Spanning Water Body?</b>	No	<b>Deck Drains Discharge Over Buffer?</b>	N/A	<b>Dissipator Pads Provided in Buffer?</b>	N/A				
<b>Deck Drains Discharge Over Water Body?</b>	N/A	(If yes, provide justification in the General Project Narrative)			(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)				
(If yes, provide justification in the General Project Narrative)									



## North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN  
FOR NCDOT PROJECTS

(Version 2.07; Released October 2016)

WBS Element: 37944.1.FR5 TIP No.: R-2307B/I-5717 County(ies): Catawba Iredell Page 3 of 6

Swales															
Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	Base Width (ft)	Front Slope (H:1)	Back Slope (H:1)	Drainage Area (ac)	Recommended Treatm't Length (ft)	Actual Length (ft)	Longitudinal Slope (%)	Q2 (cfs)	V2 (fps)	Q10 (cfs)	V10 (fps)	Rock Checks Used	BMP Associated w/ Buffer Rules?
4	-Y- 10+50 RT	(1)Catawba River (Lake)	0.0	3.0	3.0	0.3	33	50	2.30%	0.6	1.4	0.7	1.5	No	Yes
4	-Y- 11+00 RT	(1)Catawba River (Lake)	0.0	6.0	6.0	1.0	100	100	2.40%	3.0	1.9	3.9	2.0	No	Yes
5	-L- 433+00 LT	(1)Catawba River (Lake)	0.0	6.0	4.0	1.0	103	350	2.60%	2.6	1.9	3.3	2.0	No	Yes
5	-L- 440+00 RT	(1)Catawba River (Lake)	0.0	6.0	4.0	0.5	50	245	2.60%	1.3	1.6	1.7	1.7	No	Yes
5	-L- 443+20 RT	(1)Catawba River (Lake)	0.0	6.0	4.0	0.7	72	230	2.60%	2.1	1.8	2.7	1.9	No	Yes
5	-L- 445+65 RT	(1)Catawba River (Lake)	0.0	6.0	4.0	0.9	85	300	2.60%	2.3	1.9	3.0	2.3	No	Yes
5	-L- 440+20 LT	(1)Catawba River (Lake)	0.0	6.0	4.0	1.0	97	450	0.3 to 2.2%	2.6	1.9	3.4	2.0	No	Yes
5	-L- 442+50 LT	(1)Catawba River (Lake)	0.0	6.0	4.0	1.1	114	650	0.30%	2.9	1.1	3.8	1.2	No	Yes
5	-L- 445+50 LT	(1)Catawba River (Lake)	0.0	6.0	4.0	1.1	114	650	0.30%	2.9	1.1	3.8	1.2	No	Yes
5/6	-L- 445+50 LT	(1)Catawba River (Lake)	0.0	6.0	4.0	1.1	114	650	0.30%	2.9	1.1	3.8	1.2	No	Yes
6	-L- 450+00 LT	(1)Catawba River (Lake)	0.0	6.0	4.0	1.1	114	650	0.30%	2.9	1.1	3.8	1.2	No	Yes
6	-L- 449+00 MED	(1)Catawba River (Lake)	0.0	3.0	4.0	0.4	41	50	1.0 to 0.7%	1.2	1.2	1.5	1.3	No	Yes
6	-L- 453+50 MED	(1)Catawba River (Lake)	0.0	3.0	4.0	0.7	72	400	0.50%	1.9	1.2	2.5	1.3	No	Yes
6	-L- 457+50 MED	(1)Catawba River (Lake)	0.0	3.0	4.0	0.7	72	400	0.50%	1.9	1.2	2.5	1.3	No	Yes
6	-L- 457+50 MED	(1)Catawba River (Lake)	0.0	4.0	4.6	0.3	31	150	0.50%	0.8	0.8	1.0	0.9	No	Yes
6	-L- 459+00 MED	(1)Catawba River (Lake)	0.0	4.0	4.6	1.1	114	650	0.30%	2.9	1.1	3.8	1.2	No	Yes
6/7	-L- 459+00 MED	(1)Catawba River (Lake)	0.0	4.0	4.6	1.1	114	650	0.30%	2.9	1.1	3.8	1.2	No	Yes
6/7	-L- 465+50 MED	(1)Catawba River (Lake)	0.0	4.0	4.6	1.1	114	650	0.30%	2.9	1.1	3.8	1.2	No	Yes
8	-L- 478+00 MED	(1)Catawba River (Lake)	0.0	5.0	4.0	0.3	26	125	0.40%	0.6	0.7	0.8	0.7	No	Yes
8	-L- 479+25 MED	(1)Catawba River (Lake)	0.0	5.0	4.0	0.6	63	225	0.40%	1.5	1.0	1.9	1.1	No	Yes
8	-L- 479+25 MED	(1)Catawba River (Lake)	0.0	5.0	4.0	0.6	63	225	0.40%	1.5	1.0	1.9	1.1	No	Yes
8	-L- 481+50 MED	(1)Catawba River (Lake)	0.0	5.0	4.0	0.6	63	225	0.40%	1.5	1.0	1.9	1.1	No	Yes
8	-L- 481+50 MED	(1)Catawba River (Lake)	0.0	4.4	4.0	0.7	71	350	0.30%	1.9	1.0	2.5	1.0	No	Yes
8	-L- 485+00 MED	(1)Catawba River (Lake)	0.0	4.4	4.0	0.6	60	350	0.30%	1.7	1.0	2.3	1.0	No	Yes
8	-L- 488+50 MED	(1)Catawba River (Lake)	0.0	4.4	4.0	0.6	60	350	0.30%	1.7	1.0	2.3	1.0	No	Yes
9	-L- 497+50 RT	(1)Catawba River (Lake)	0.0	6.0	4.0	0.4	42	200	3.00%	1.1	1.7	1.5	1.8	No	Yes
9	-L- 499+50 RT	(1)Catawba River (Lake)	0.0	6.0	4.0	0.4	42	200	3.00%	1.1	1.7	1.5	1.8	No	Yes
9	-L- 501+00 RT	(1)Catawba River (Lake)	0.0	3.0	3.0	1.9	193	500	0.40%	5.3	1.6	6.9	1.8	No	Yes
9	-L- 506+00 RT	(1)Catawba River (Lake)	0.0	3.0	3.0	1.9	193	500	0.40%	5.3	1.6	6.9	1.8	No	Yes
9	-L- 503+50 LT	(1)Catawba River (Lake)	0.0	4.0	6.0	0.4	44	150	0.60%	0.8	0.8	1.0	0.9	No	Yes
9	-L- 505+00 LT	(1)Catawba River (Lake)	0.0	4.0	6.0	0.4	44	150	0.60%	0.8	0.8	1.0	0.9	No	Yes
9*	-Y2- 13+00 LT	(1)Catawba River (Lake)	2.0	4.0	4.0	1.5	152	95	1.90%	3.5	1.9	4.5	2.0	No	Yes
9*	-Y2- 14+40 LT	(1)Catawba River (Lake)	2.0	4.0	4.0	1.5	152	95	1.90%	3.5	1.9	4.5	2.0	No	Yes

## Additional Comments

Swales have been added to attenuate runoff and promote sedimentation and infiltration before discharging through the riparian buffer.

Where slope (and drainage area/discharge) vary, max. applicable velocity is entered.

\*200+ ft of existing swale upstream of Sheet 9 - Y2- swale.



## North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN  
FOR NCDOT PROJECTS

(Version 2.07; Released October 2016)

WBS Element: 37944.1.FR5 TIP No.: R-2307B/I-5717

County(ies): Catawba Iredell

Page 4 of 6

Swales															
Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	Base Width (ft)	Front Slope (H:1)	Back Slope (H:1)	Drainage Area (ac)	Recommended Treatm't Length (ft)	Actual Length (ft)	Longitudinal Slope (%)	Q2 (cfs)	V2 (fps)	Q10 (cfs)	V10 (fps)	Rock Checks Used	BMP Associated w/ Buffer Rules?
9	-Y2- 13+70 RT	(1)Catawba River (Lake	0.0	4.0	4.0	0.4	44	70	1.30%	1.2	1.6	1.6	1.7	No	Yes
	-Y2- 14+40 RT														
10	-L- 505+50 LT	(1)Catawba River (Lake	0.0	6.0	4.0	1.1	110	300	0.3 to 2.0%	2.4	2.0	3.1	2.2	No	Yes
	-L- 508+50 LT														
10	-L- 516+00 RT	(1)Catawba River (Lake	6.0	3.0	3.0	1.7	170	150	2.00%	5.4	2.0	7.0	2.2	No	Yes
	-L- 517+50 RT														
11	-L- 523+50 RT	(1)Catawba River (Lake	0.0	6.0	4.0	0.5	46	225	3.10%	1.3	1.8	1.7	1.9	No	Yes
	-L- 525+75 RT														
11	-L- 526+50 RT	(1)Catawba River (Lake	0.0	6.0	4.0	0.8	82	300	2.4 to 0.8%	2.4	1.9	3.1	2.4	No	Yes
	-L- 529+50 RT														
11	-L- 527+50 LT	(1)Catawba River (Lake	0.0	6.0	4.0	0.5	46	200	2.30%	1.3	1.8	1.7	2.0	No	Yes
	-L- 529+50 LT														
12*	-L- 532+50 RT	(1)Catawba River (Lake	2.0	4.0	4.0	2.7	273	150	0.80%	6.4	1.9	8.3	2.0	No	Yes
	-L- 534+00 RT														
12*	-L- 539+50 RT	(1)Catawba River (Lake	2.0	3.0	3.0	1.7	167	150	1.40%	4.7	1.8	6.1	2.3	No	Yes
	-L- 541+00 RT														
12*	-L- 546+00 RT	(1)Catawba River (Lake	0.0	6.0	4.0	0.3	34	150	2.90%	1.0	1.9	1.3	2.0	No	Yes
	-L- 547+50 RT														
25	-Y31- 29+85 LT	(1)Catawba River (Lake	0.0	6.0	4.0	1.1	110	165	1.70%	1.9	1.5	2.5	1.9	No	Yes
	-Y31- 31+50 LT														
25	-Y31- 34+60 LT	(1)Catawba River (Lake	0.0	6.0	6.0	0.4	40	90	1.50%	0.9	1.2	1.2	1.2	No	Yes
	-Y31- 35+50 LT														
25	-Y31- 29+63 RT	(1)Catawba River (Lake	0.0	6.0	4.0	0.7	70	187	1.00%	1.2	1.1	1.5	1.2	No	Yes
	-Y31- 31+50 RT														
25	-Y31- 34+10 RT	(1)Catawba River (Lake	0.0	6.0	4.0	1.6	160	260	1.80%	3.6	1.8	4.7	1.9	No	Yes
	-Y31- 36+70 RT														
33	-Y17- 27+00 RT	(1)Catawba River (Lake	0.0	4.0	4.0	1.1	112	750	1.9 to 0.3%	1.8 to 3.1	1.9	2.4 to 4.0	2.1	No	Yes
	-Y17- 34+50 RT														
35**	-Y26A- 19+20 RT	(2)McCrary Creek	4.0	3.0	3.0	2.6	260	65	0.30%	9.2	1.5	11.9	1.6	No	Yes
	-Y26A- 20+15 RT														
36***	-Y39- 13+50 RT	(1)Catawba River (Lake	6.0	4.0	3.0	2.3	230	75	2.10%	5.9	2.0	7.7	2.2	No	Yes
	-Y39- 14+25 RT														
6	-L- 455+50 LT	(1)Catawba River (Lake	0.0	3.0	4.0	0.2	21	200	0.40%	0.4	0.7	0.6	0.7	No	Yes
	-L- 457+50 LT														

## Additional Comments

Swales have been added to attenuate runoff and promote sedimentation and infiltration before discharging through the riparian buffer.

Where slope (and drainage area/discharge) vary, max. applicable velocity is entered.

\*Sheet 12 has three separate swales inline for total DA of 2.73 ac (recommend treatment=273 ft) with 450 ft provided.

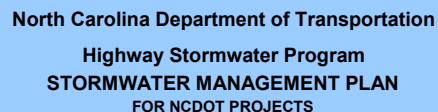
\*\*Sheet 35 swale ties into an existing 115 ft swale.

\*\*\* 400+ ft of existing swale upstream of Sheet 36 swale.



Two hazardous spill basins have been provided at the Lake Norman crossing to protect against the accidental spill of hazardous materials due to NC 150 being classified as an arterial and the crossing being within 1/2 mile of the critical area of a water supply source classified as WS-IV. Roadway and adjacent ditch runoff on the bridge, causeways and each adjacent sag is routed to these basins. Forebays used to provide pretreatment by diffusing flow and removing debris for the basins shown on SMP sheet 6.





**WBS Element:** 37944.1.FR5/50134.1.FS1

**TIP No.:** R-2307B/I-5717

County(ies): Catawba Iredell

Page 6 of 6

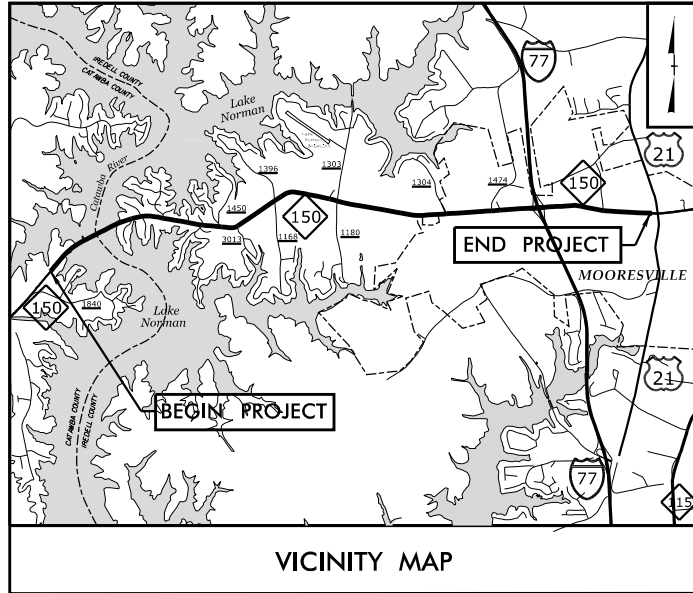
[illegible]

Dry detention basins have been incorporated to account for the increase in impervious area and the extension of curb & gutter section by attenuating the 10-yr peak basin outflow to at or below the existing peak discharge, and thereby minimizing downgrade erosion. Filtration basins have been used to filter stormwater and reduce pollutants and solids. Forebays have also been used to provide pretreatment by diffusing flow and removing debris.

TIP PROJECTS: R-2307B & I-5717

CONTRACT:

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

CATAWBA & IREDELL COUNTIES

LOCATION: NC 150 FROM SR 1840 (GREENWOOD RD) IN CATAWBA  
COUNTY TO US 21 IN IREDELL COUNTY

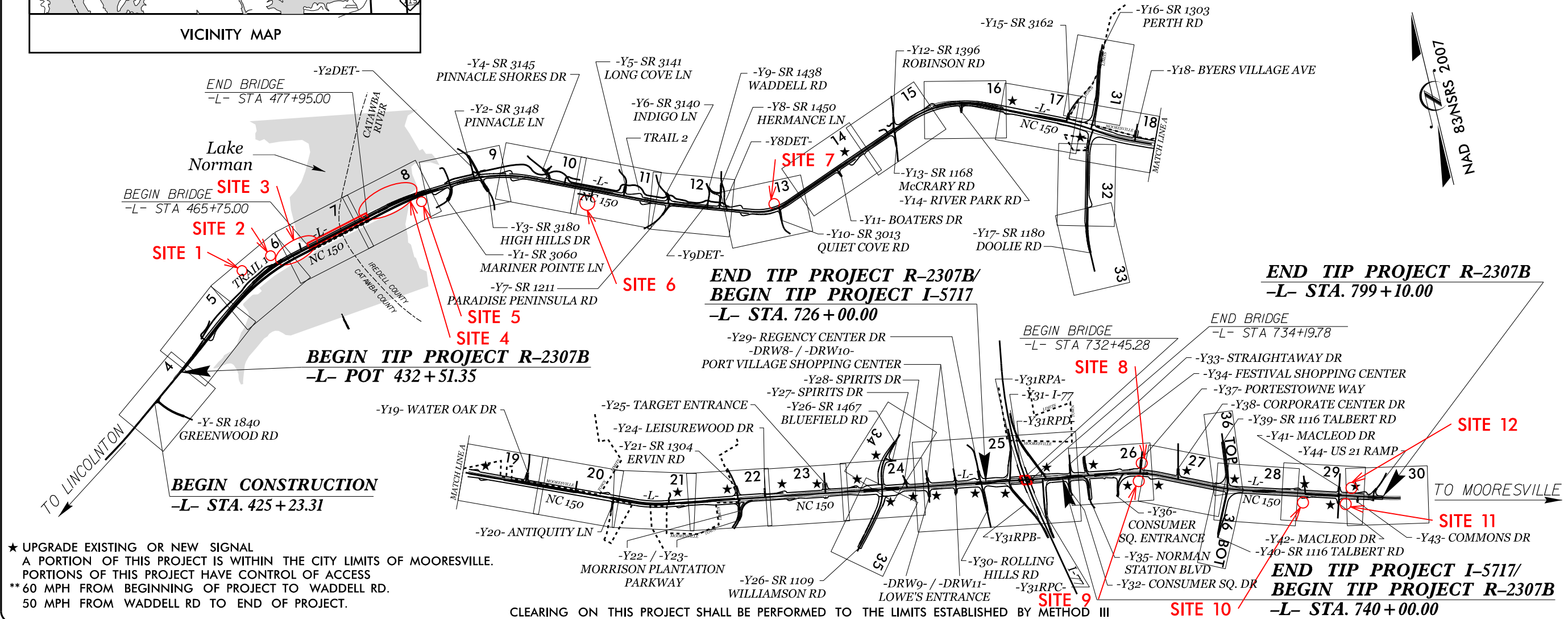
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES, AND SIGNALS

WETLAND & STREAM IMPACTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2307B, I-5717	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
37944.1.FR5	STP-0150(36)	PE (R-2307B)	
50134.1.FS1	NHPP-077-1(221)37	PE (I-5717)	
37944.2.4	STP-0150(036)	RW (R-2307B)	
37944.2.5	STP-0150(036)	UTILITIES (R-2307B)	
50134.2.1	NHPP-077-1(221)37	RW, UTILITIES (I-5717)	

PERMIT DRAWING  
SHEET 1 OF 22

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



★ UPGRADE EXISTING OR NEW SIGNAL  
A PORTION OF THIS PROJECT IS WITHIN THE CITY LIMITS OF MOORESVILLE.  
PORTIONS OF THIS PROJECT HAVE CONTROL OF ACCESS  
\*\* 60 MPH FROM BEGINNING OF PROJECT TO WADDELL RD.  
50 MPH FROM WADDELL RD TO END OF PROJECT.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III

GRAPHIC SCALES



DESIGN DATA

ADT 2019 = 47,900  
ADT 2039 = 58,860  
K = 8%  
D = 55%  
T = 6%\*  
V = \*\*  
\* TTST 2%+ DUAL 4%  
FUNC CLASS =  
PRINCIPAL ARTERIAL  
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2307B = 6.447 mile  
LENGTH STRUCTURES TIP PROJECT R-2307B = 0.231 mile  
TOTAL LENGTH TIP PROJECT R-2307B = 6.678 mile  
LENGTH ROADWAY TIP PROJECT I-5717 = 0.232 mile  
LENGTH STRUCTURES TIP PROJECT I-5717 = 0.033 mile  
TOTAL LENGTH TIP PROJECT I-5717 = 0.265 mile  
TOTAL LENGTH TIP PROJECT R-2307B / I-5717 = 6.943 mile

Prepared For:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh NC, 27610



TGS ENGINEERS  
706 HILLSBOROUGH ST  
SUITE 200  
RALEIGH, NC 27603

By:  
PH (919) 773-8887  
CORP. LICENSE NO.:  
C-0275

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
AUGUST 31, 2017

LETTING DATE:  
JUNE 17, 2025

BURKE EVANS, PE  
PROJECT ENGINEER

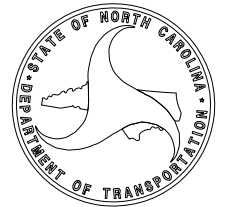
NATHAN ADIMA, PE  
NCDOT CONTACT

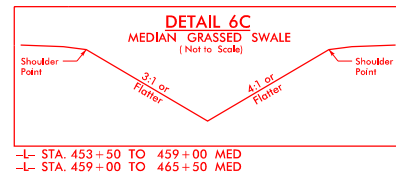
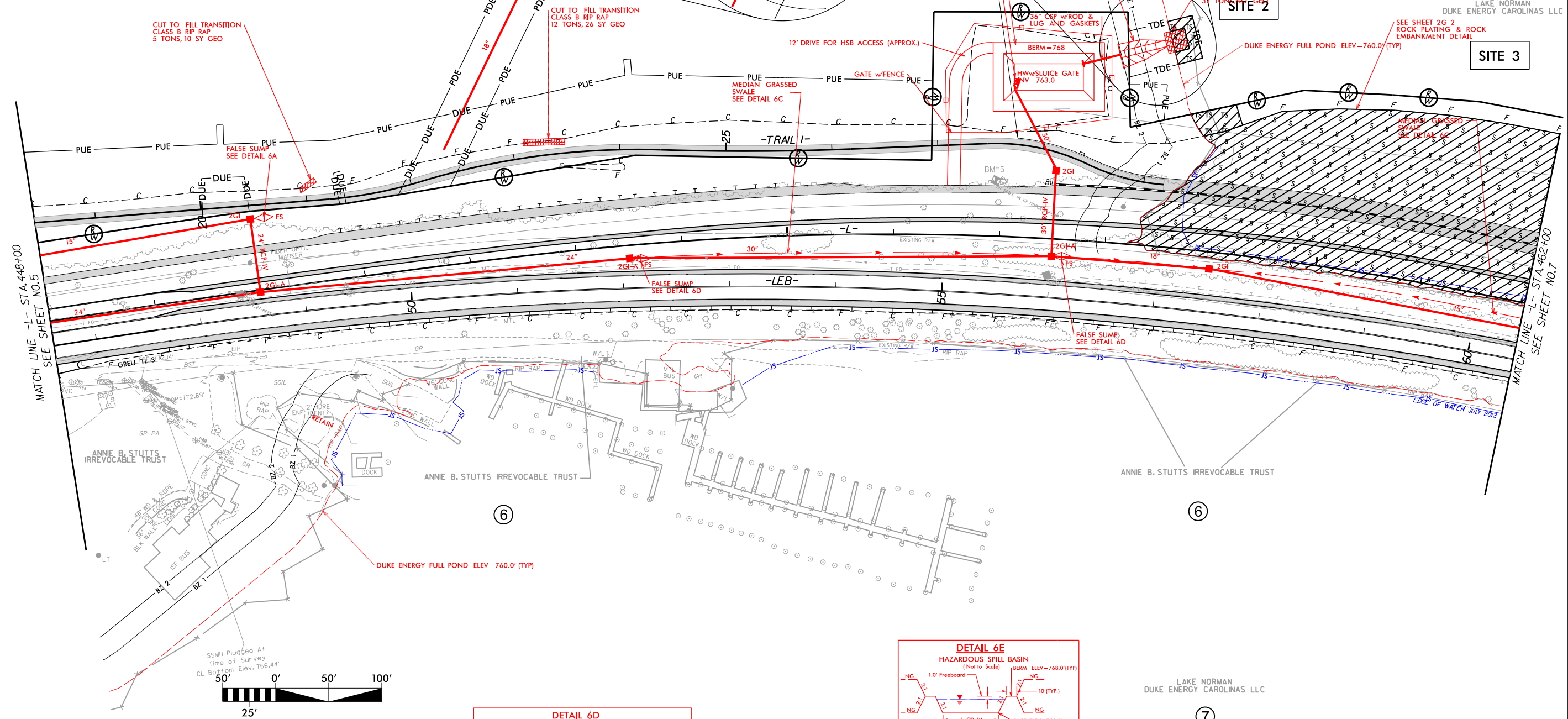
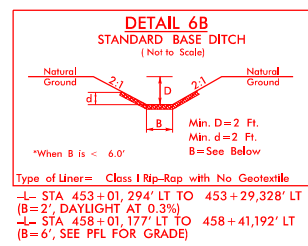
HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN  
ENGINEER

SIGNATURE: P.E.



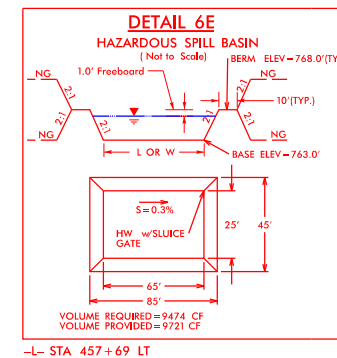



**DETAIL 6D**  
FALSE SUMP  
(Not To Scale)

$S = \text{Ditch Slope}$        $\nabla = \text{Proposed Ditch}$

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

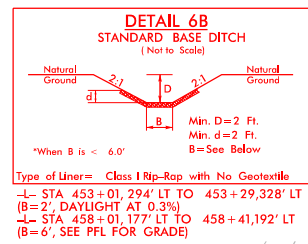
— STA. 543 +61 MED  
— STA. 547 +60 MED





PROJECT REFERENCE NO.	SHEET NO.
R-2307B / 1-5717	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p>	
	<p>TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275</p>

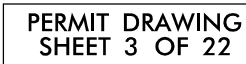
CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE  
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE




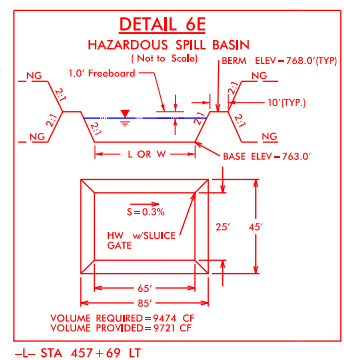
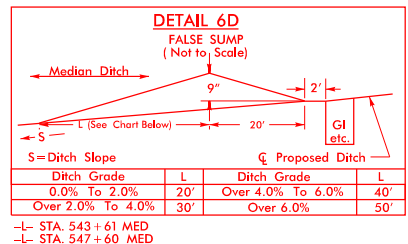
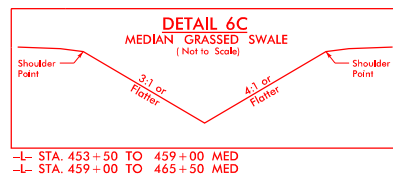
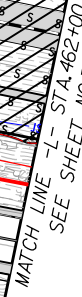
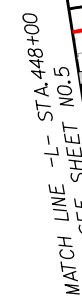
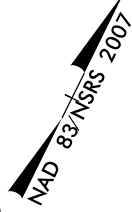


 DENOTES IMPACTS IN SURFACE WATER

 DENOTES TEMPORARY IMPACTS IN SURFACE WATER



PROJECT REFERENCE NO.	SHEET NO.
R-2307B / 1-5717	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p>	
	<p>TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275</p>



☐ PTE ☒ PERMANENT TRAIL EASEMENT

SEE SHEET 38 FOR -L- PROFILE  
SEE SHEET 53 FOR -LEB- PROFILE  
SEE SHEET 73 FOR -TRAIL- PROFILE  
SEE SHEET 2B-1 FOR CURVE DATA

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE  
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

PERMIT DRAWING  
SHEET 4 OF 22

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

**DETAIL 6C**  
**MEDIAN GRASSED SWALE**  
 (Not to Scale)

Shoulder Point

3:1 or Flatter

4:1 or Flatter

Shoulder Point

1 - STA. 459+00 TO 465+50 MED

LAKE NORMAN  
DUKE ENERGY CAROLINAS LLC

VAD 83/NSRS 2007

SITE 3

SEE SHEET 2G-2  
ROCK PLATING & ROCK  
EMBANKMENT DETAIL

BEGIN APPROACH SLAB  
-L- STA 465+51.00

BEGIN BRIDGE  
-L- STA 465+75.00

SEE SHEET 2G-2  
ROCK PLATING & ROCK  
EMBANKMENT DETAIL

MATCH LINE -L- STA. 462+00  
SEE SHEET NO. 6

MATCH LINE -L- STA. 476+00  
SEE SHEET NO. 8

Figure 10-1 shows a cross-section of a road. The top width is 100 feet, divided into two 50-foot shoulders. The left shoulder has a 25-foot wide striped area. The road tapers to 0 feet at the bottom.

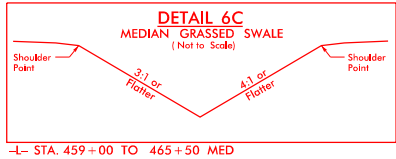
SEE SHEET 39 FOR -L- PROFILE  
SEE SHEETS 53 THRU 54 FOR -LEB- PROFILE  
SEE SHEET 2B-1 FOR CURVE DATA

8/17/99

/26/2024  
User:ZTCRDR  
C:\Users\ZTCRDR\Documents\PERMITS-Environmental\Drawings\R-2307B-RDY\_PSH\_07.dgn

MATCH LINE -L- STA. 476+00  
SEE SHEET NO. 8




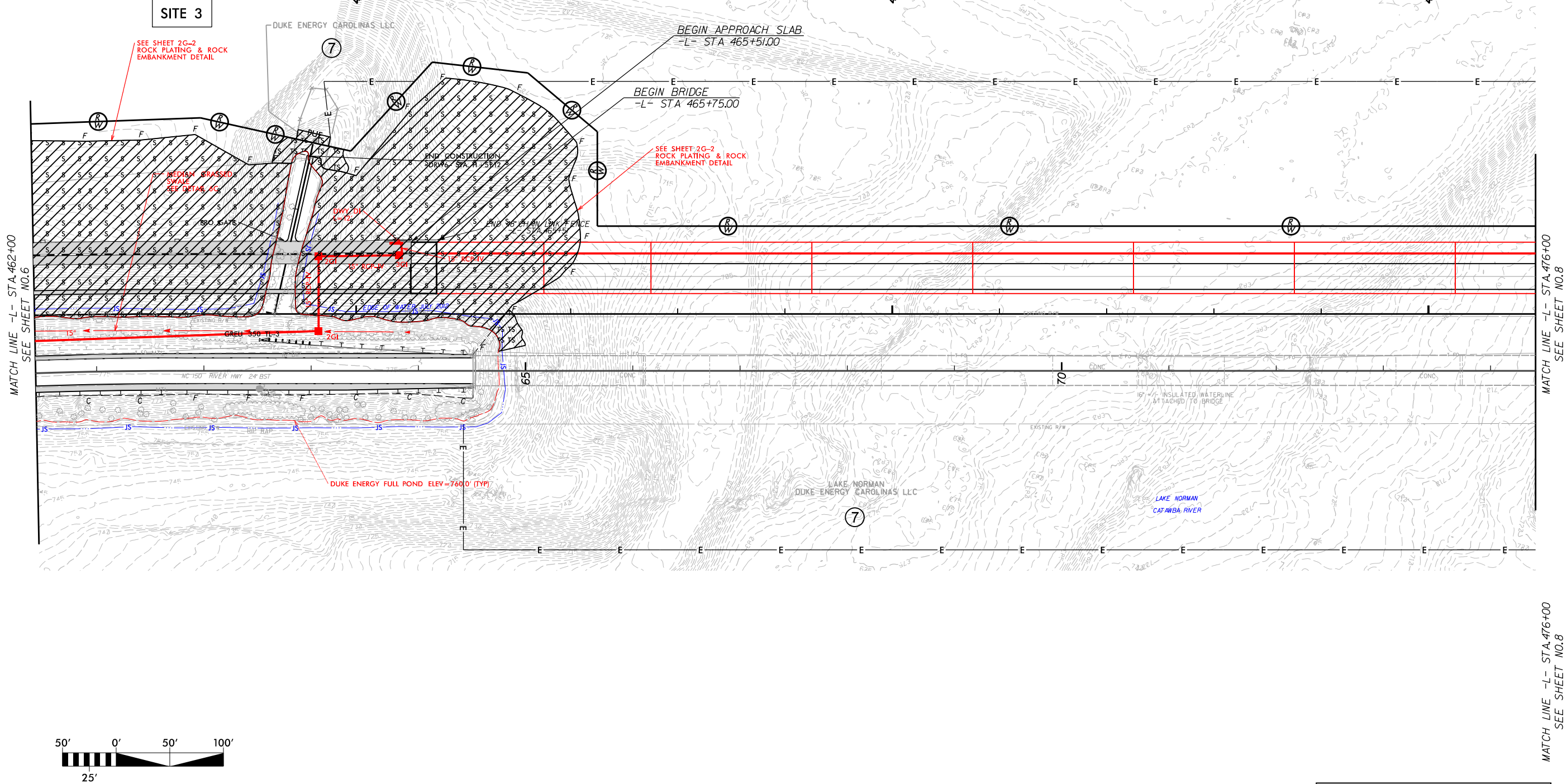


-L- STA. 459+00 TO 465+50 MED

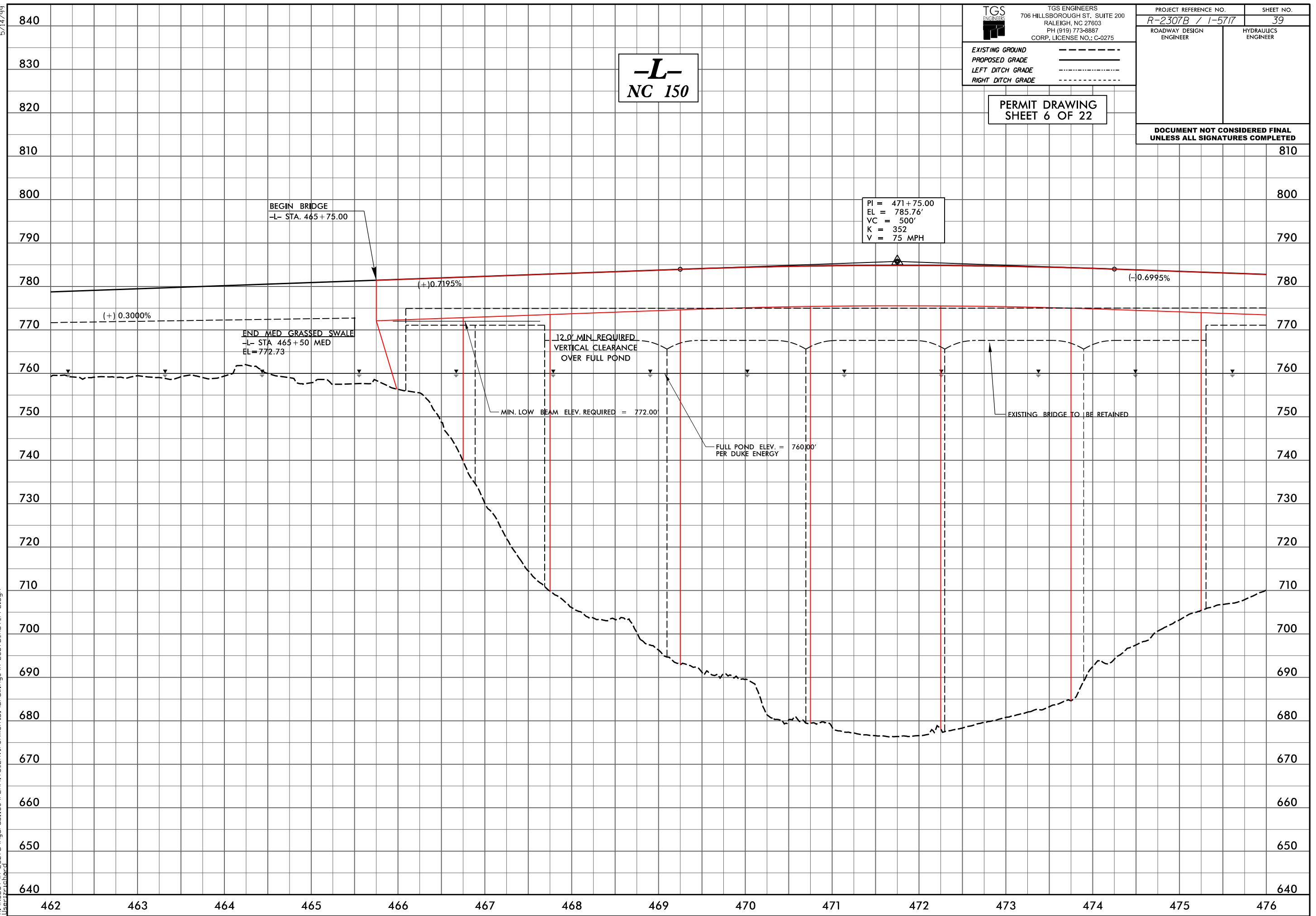
PERMIT DRAWING  
SHEET 5 OF 22

	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

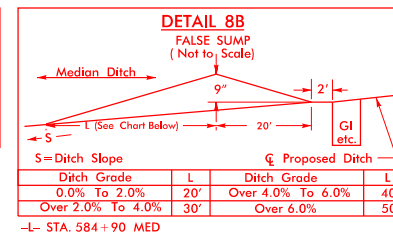
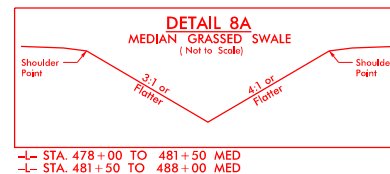
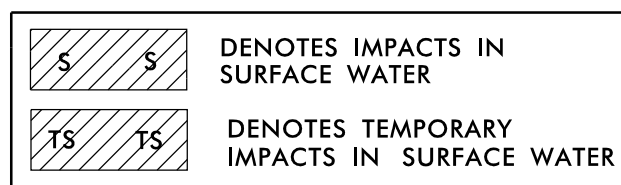
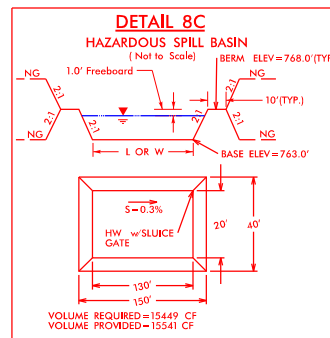
PROJECT REFERENCE NO. R-2307B / 1-5717		SHEET NO. 7
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>		
		TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275



SEE SHEET 39 FOR -L- PROFILE  
SEE SHEETS 53 THRU 54 FOR -LEB- PROFILE  
SEE SHEET 2B-1 FOR CURVE DATA

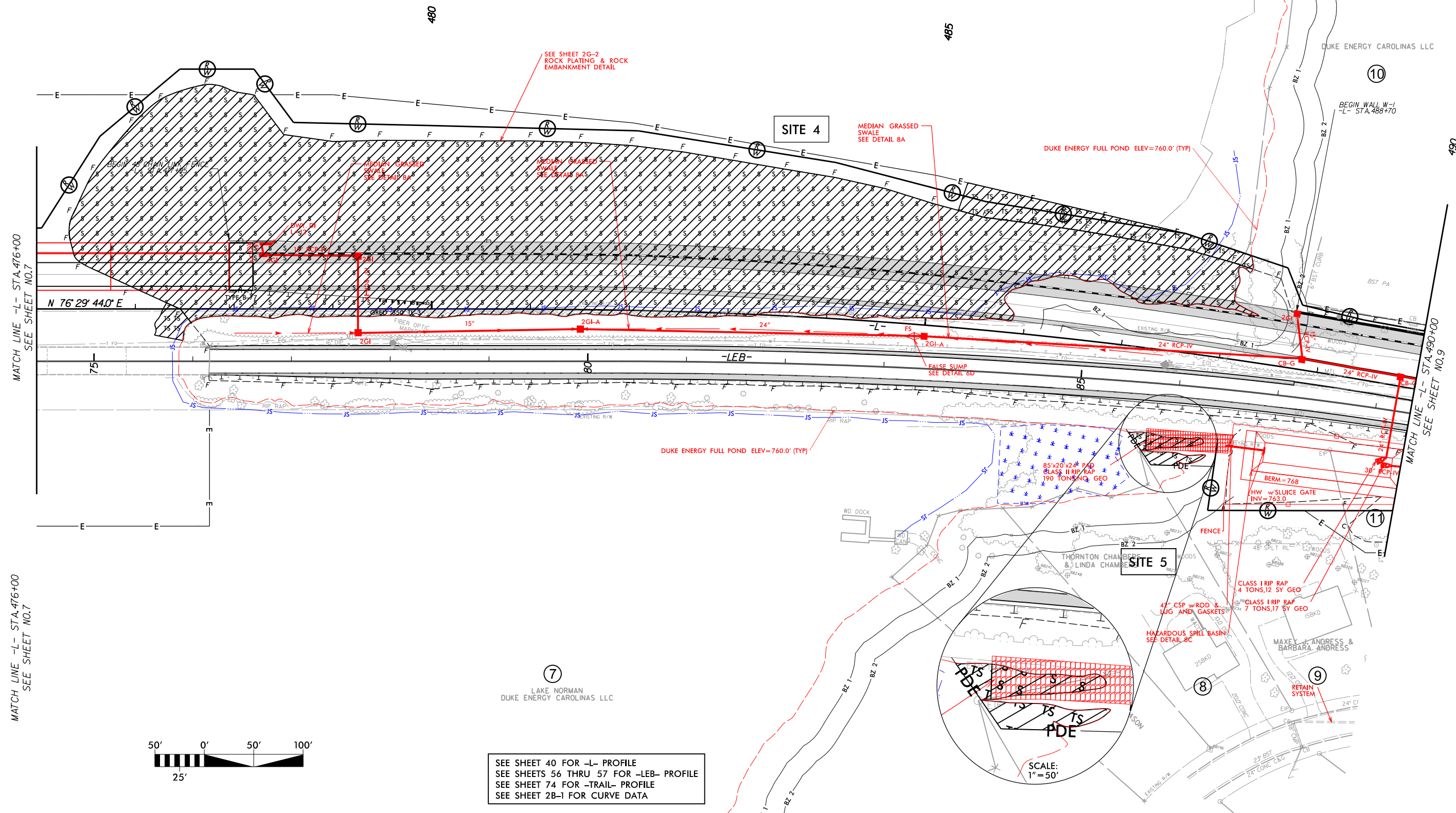






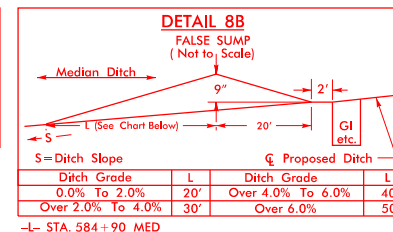
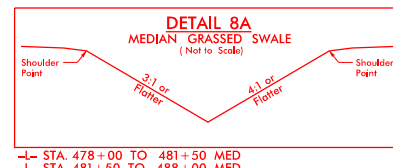
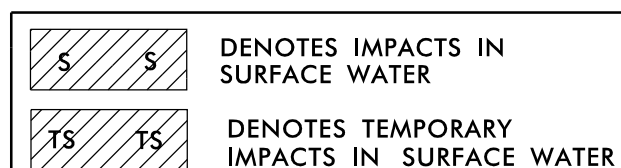
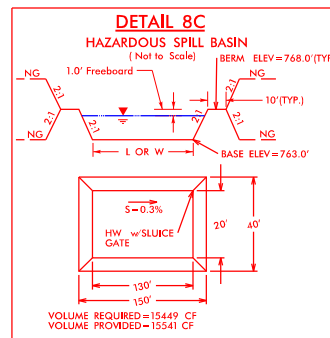
PERMIT DRAWING  
SHEET 7 OF 22

NAD 83/NSRS 2007



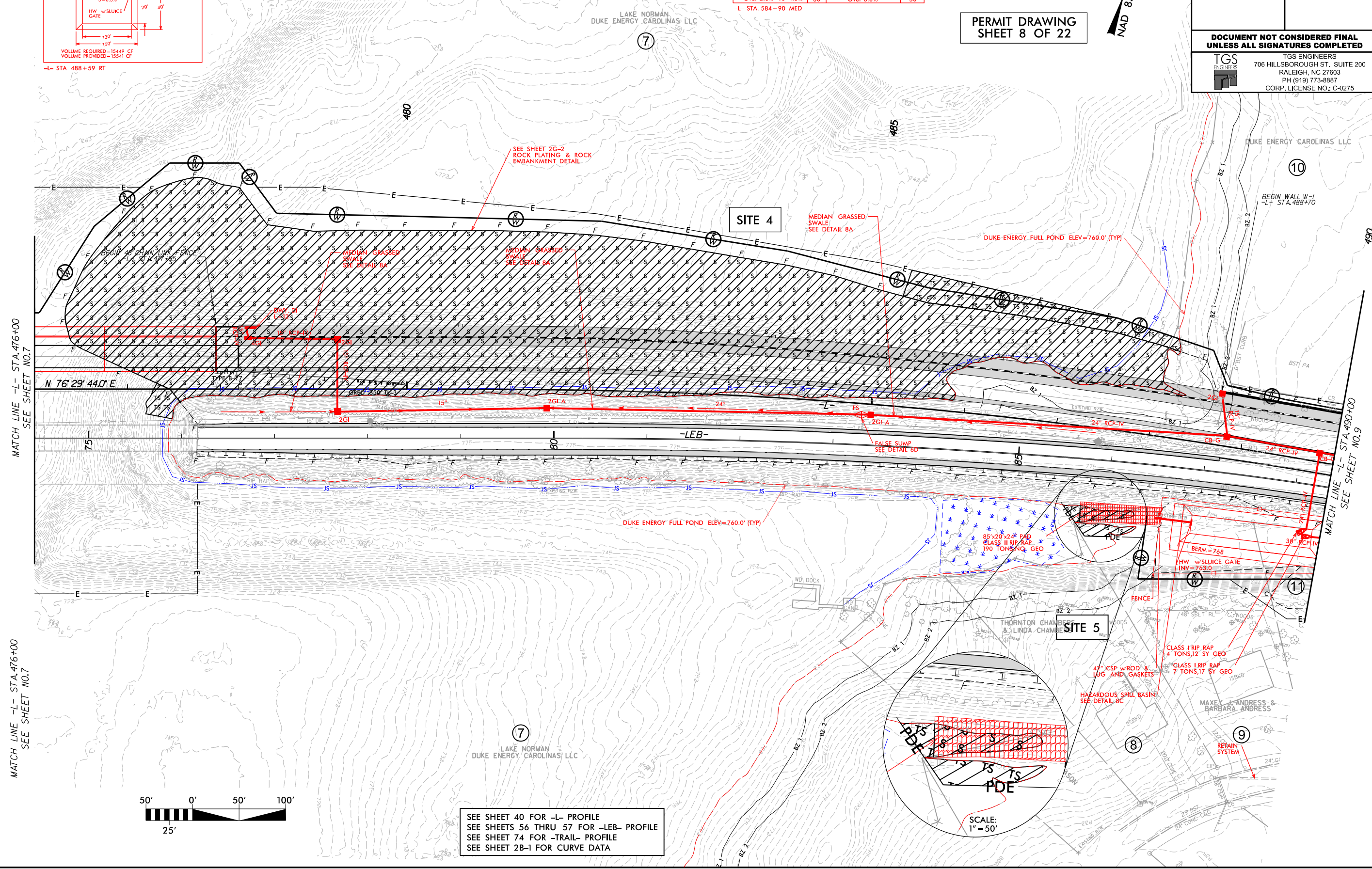
SEE SHEET 40 FOR -L- PROFILE  
SEE SHEETS 56 THRU 57 FOR -LEB- PROFILE  
SEE SHEET 74 FOR -TRAIL- PROFILE  
SEE SHEET 2B-1 FOR CURVE DATA





PERMIT DRAWING  
SHEET 8 OF 22

NAD 83/NSRS 2007

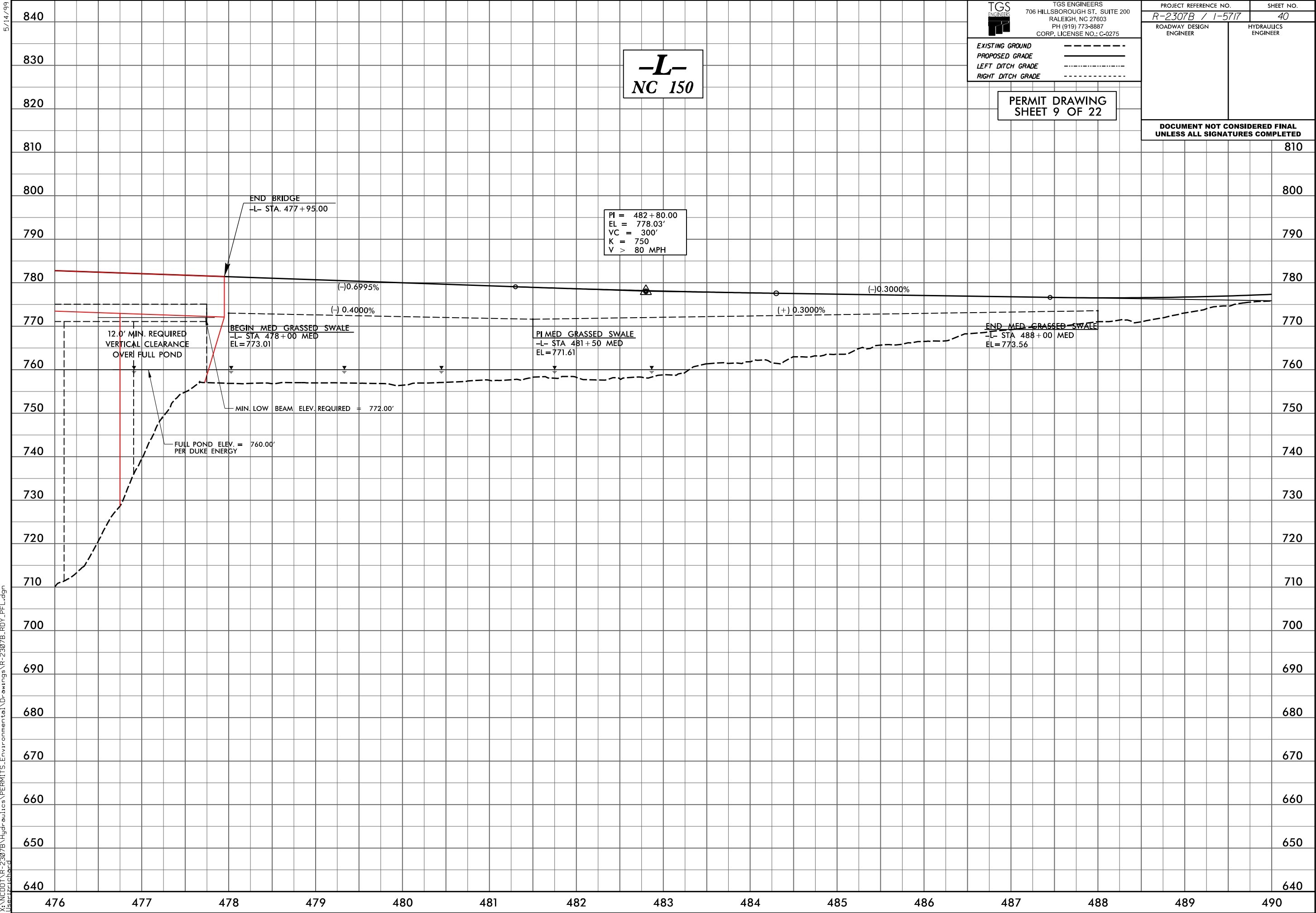


8/17/99

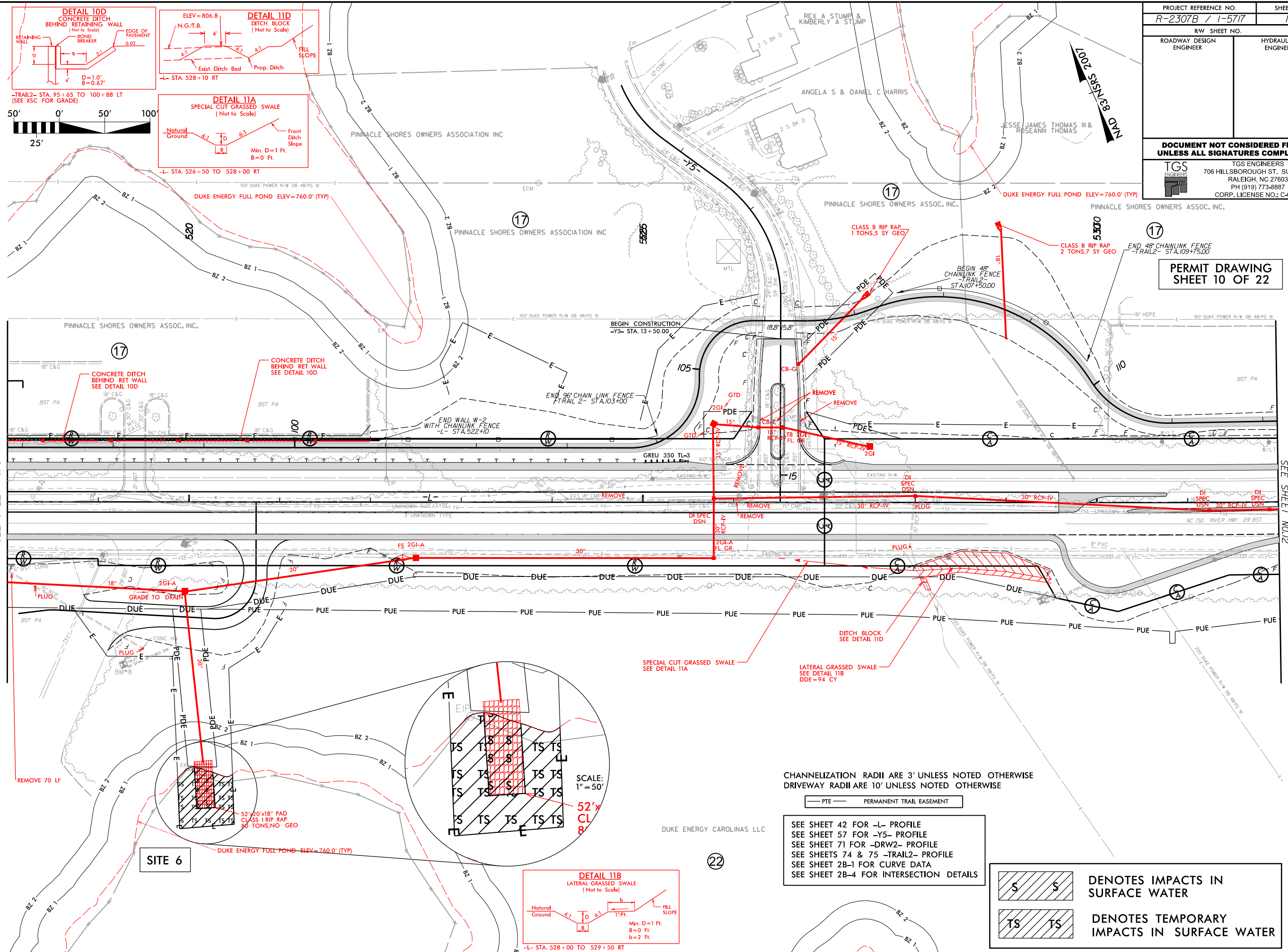
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User:zrichard

5/14/99

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User: jclaud







26/2024  
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 User:richard

/26/2024  
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serizrichard



PERMIT DRAWING  
SHEET 11 OF 22

MATCH LINE -L- STA. 518+00  
SEE SHEET NO. 10

MATCH LINE - L- STA. 532+00  
SEE SHEET NO. 12

1/26/2024  
X:\NCDOT\R-2307B\Hydraulics\PERMITS.Environmental\Drawings\R-2307B\_RDY\_PSH\_11.dgn  
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CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE  
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

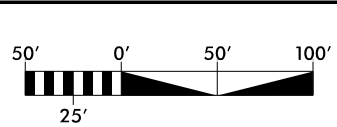
SEE SHEET 42 FOR -L- PROFILE  
SEE SHEET 57 FOR -Y5- PROFILE  
SEE SHEET 71 FOR -DRW2- PROFILE  
SEE SHEETS 74 & 75 -TRAIL2- PROFILE  
SEE SHEET 2B-1 FOR CURVE DATA  
SEE SHEET 2B-4 FOR INTERSECTION DETAILS

DENOTES IMPACTS IN  
SURFACE WATER

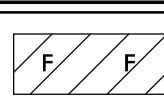
DENOTES TEMPORARY  
IMPACTS IN SURFACE WATER



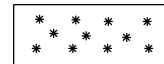
8/17/99



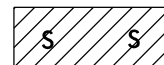
30 RON LEI



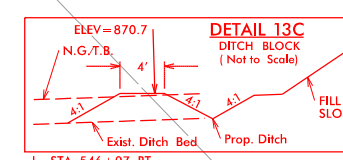
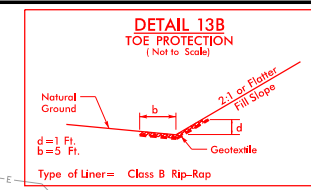
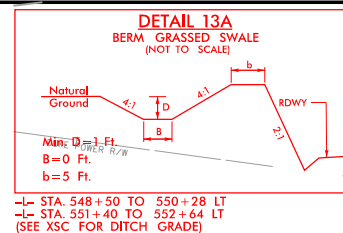
DENOTES FILL IN WETLAND



DENOTES MECHANIZED CLEARING

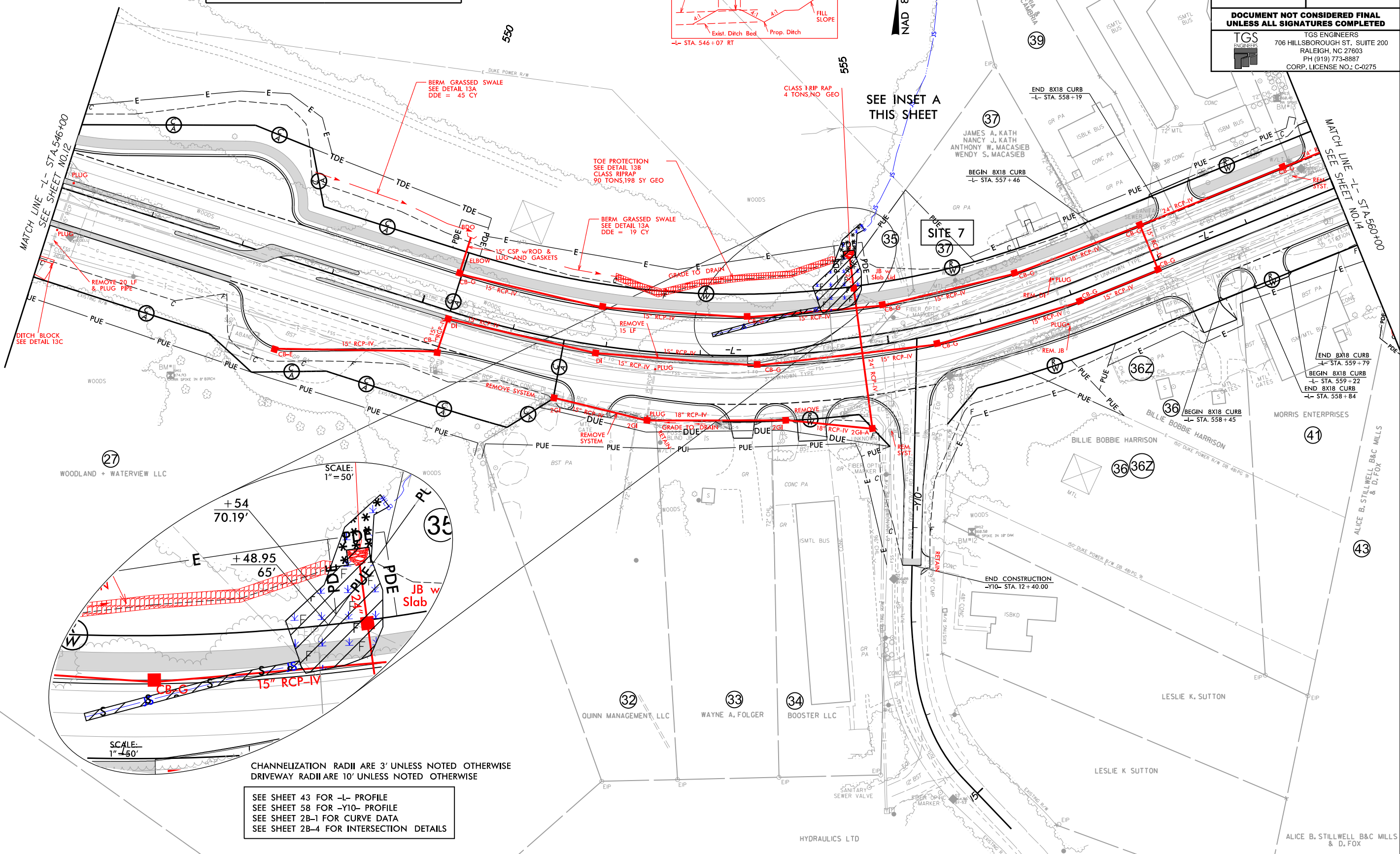


DENOTES IMPACTS IN SURFACE WATER

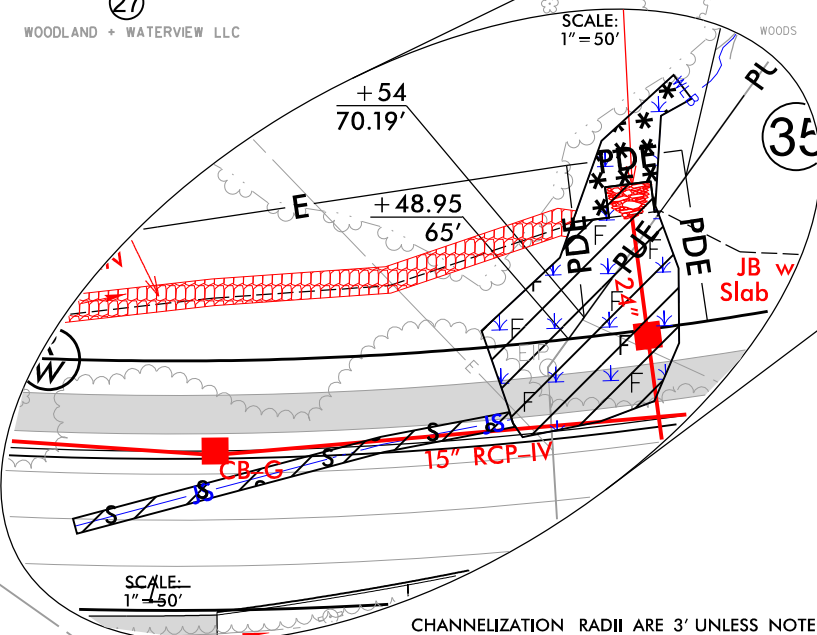


PERMIT DRAWING  
SHEET 12 OF 22

PROJECT REFERENCE NO. R-2307B / 1-5717	SHEET NO. 13
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	
<b>TGS ENGINEERS</b> 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	



WOODLAND + WATERVIEW LLC



CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE  
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 43 FOR -L- PROFILE  
SEE SHEET 58 FOR -Y10- PROFILE  
SEE SHEET 2B-1 FOR CURVE DATA  
SEE SHEET 2B-4 FOR INTERSECTION DETAILS

HYDRAULICS LTD

LESLIE K. SUTTON

ALICE B. STILLWELL B&C MILLS & D. FOX

BILLIE BOBBIE HARRISON

MORRIS ENTERPRISES

SITE 7

JAMES A. KATH  
NANCY J. KATH  
ANTHONY W. MACASIEB  
WENDY S. MACASIEB

BEGIN 8X18 CURB  
-L- STA. 557+46

END 8X18 CURB  
-L- STA. 558+19

BEGIN 8X18 CURB  
-L- STA. 559+22

END 8X18 CURB  
-L- STA. 558+84

BEGIN 8X18 CURB  
-L- STA. 558+45

END 8X18 CURB  
-L- STA. 559+79

BEGIN 8X18 CURB  
-L- STA. 559+22

END 8X18 CURB  
-L- STA. 558+84

BEGIN 8X18 CURB  
-L- STA. 558+45

END 8X18 CURB  
-L- STA. 559+79

BEGIN 8X18 CURB  
-L- STA. 559+22

END 8X18 CURB  
-L- STA. 558+84

BEGIN 8X18 CURB  
-L- STA. 558+45

END 8X18 CURB  
-L- STA. 559+79

BEGIN 8X18 CURB  
-L- STA. 559+22

END 8X18 CURB  
-L- STA. 558+84

BEGIN 8X18 CURB  
-L- STA. 558+45

END 8X18 CURB  
-L- STA. 559+79

BEGIN 8X18 CURB  
-L- STA. 559+22

END 8X18 CURB  
-L- STA. 558+84

BEGIN 8X18 CURB  
-L- STA. 558+45

END 8X18 CURB  
-L- STA. 559+79

BEGIN 8X18 CURB  
-L- STA. 559+22

END 8X18 CURB  
-L- STA. 558+84

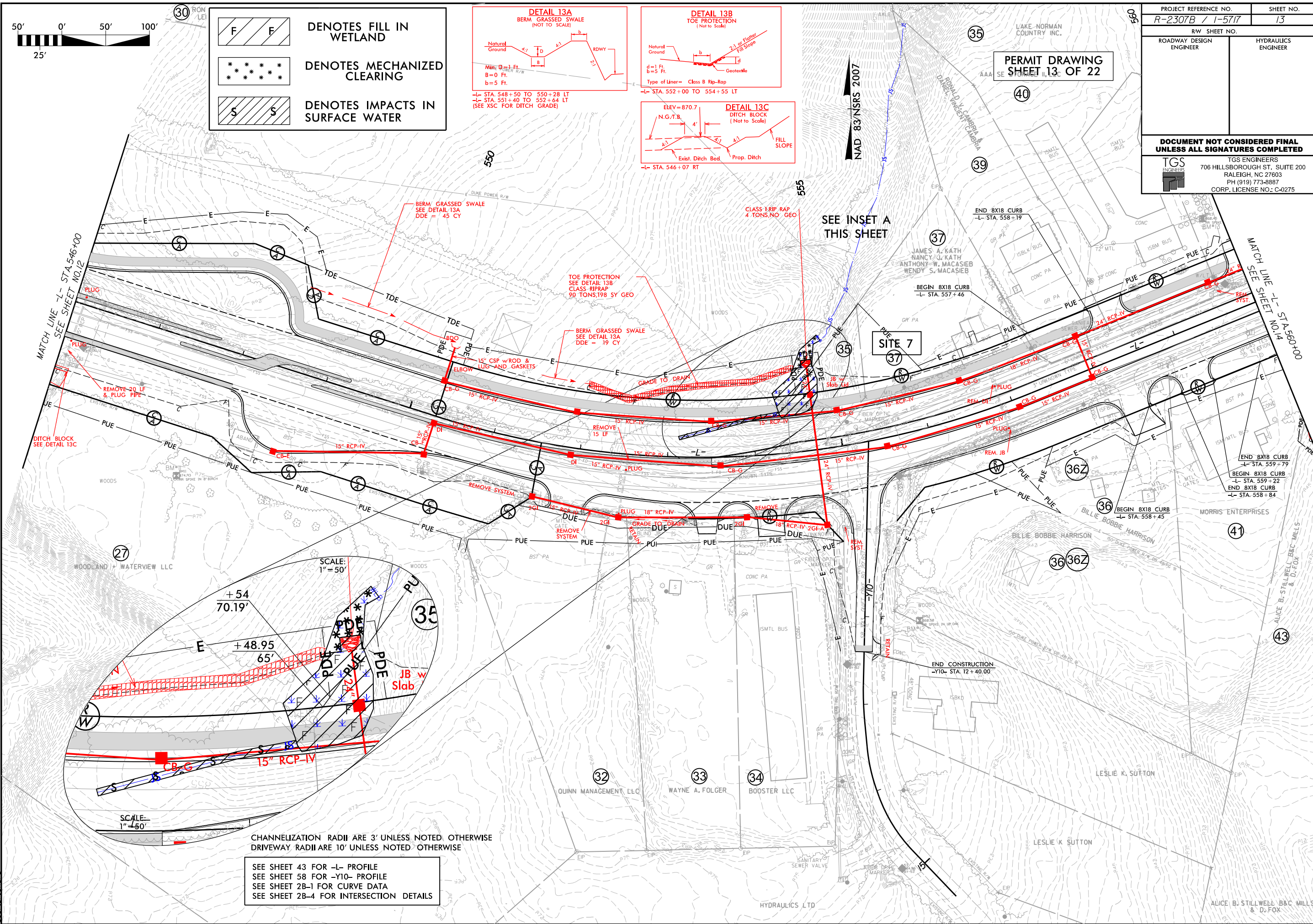
BEGIN 8X18 CURB  
-L- STA. 558+45

END 8X18 CURB  
-L- STA. 559+79

BEGIN 8X18 CURB  
-L- STA. 559+22

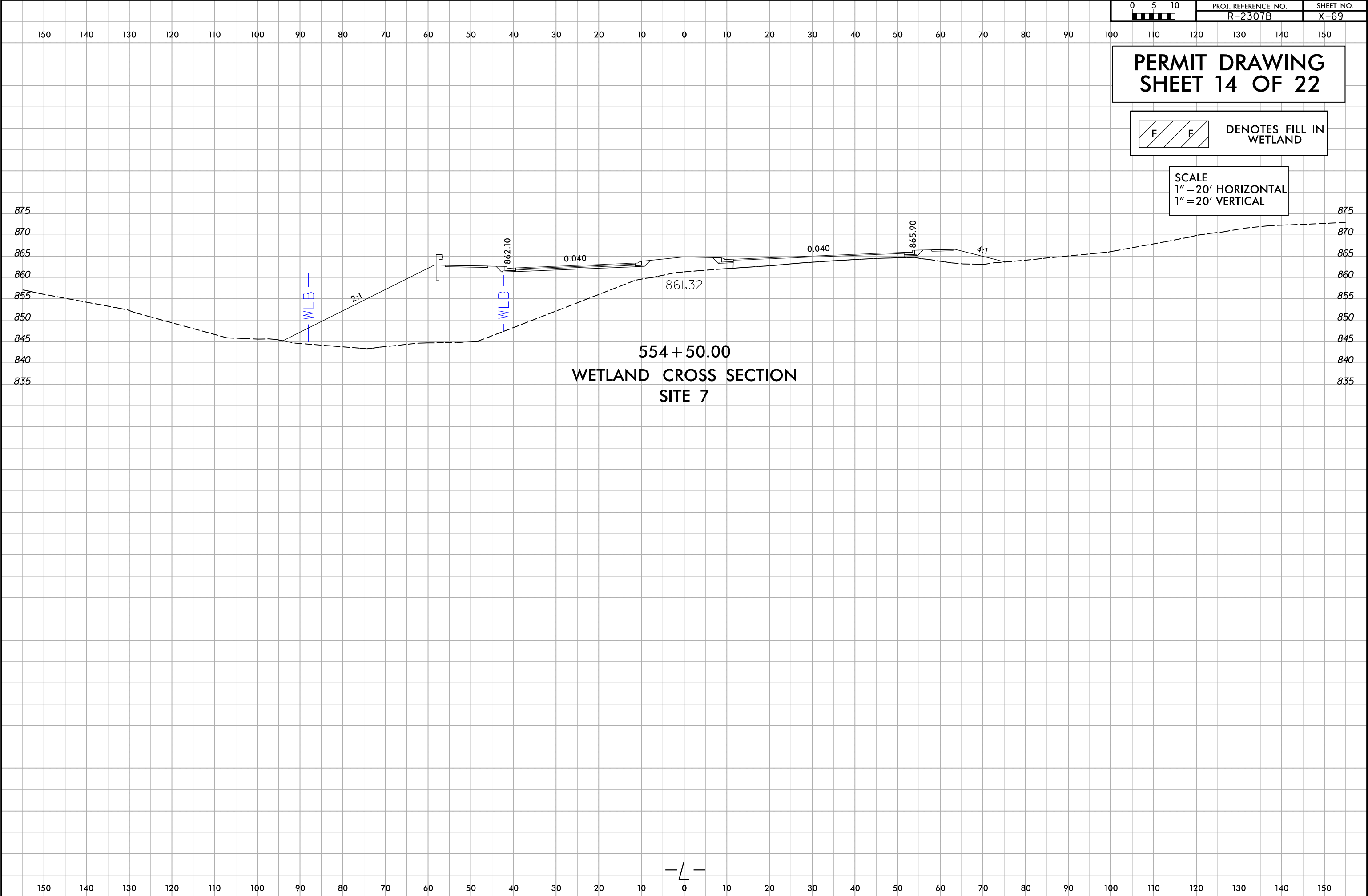
END 8X18 CURB  
-L- STA. 558+84



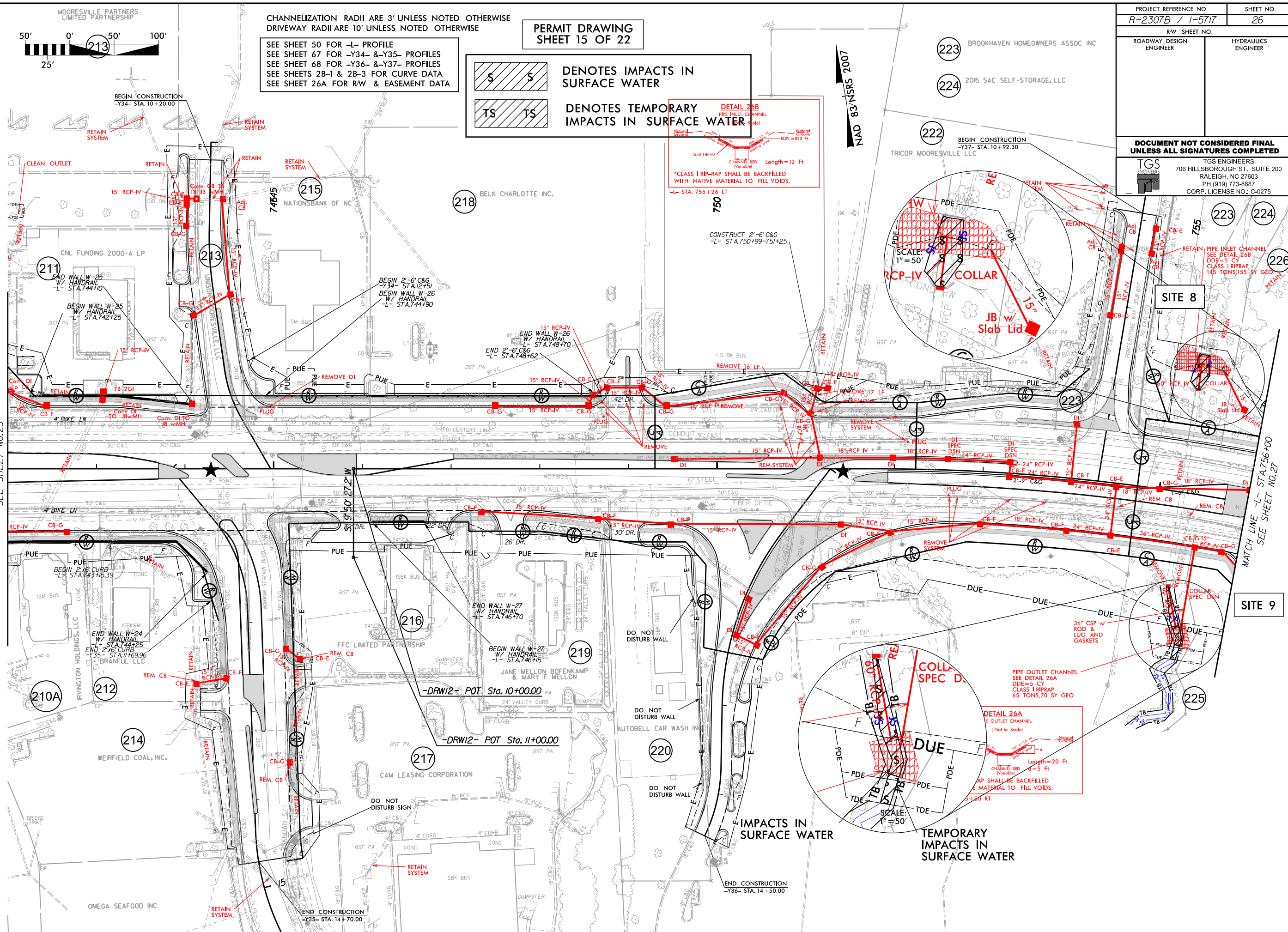


6/23/16

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User:zrichard







## REVISIONS

10-5-2017 REVISED EASEMENTS ON PARCELS 218.219 &amp; 222

8/17/99



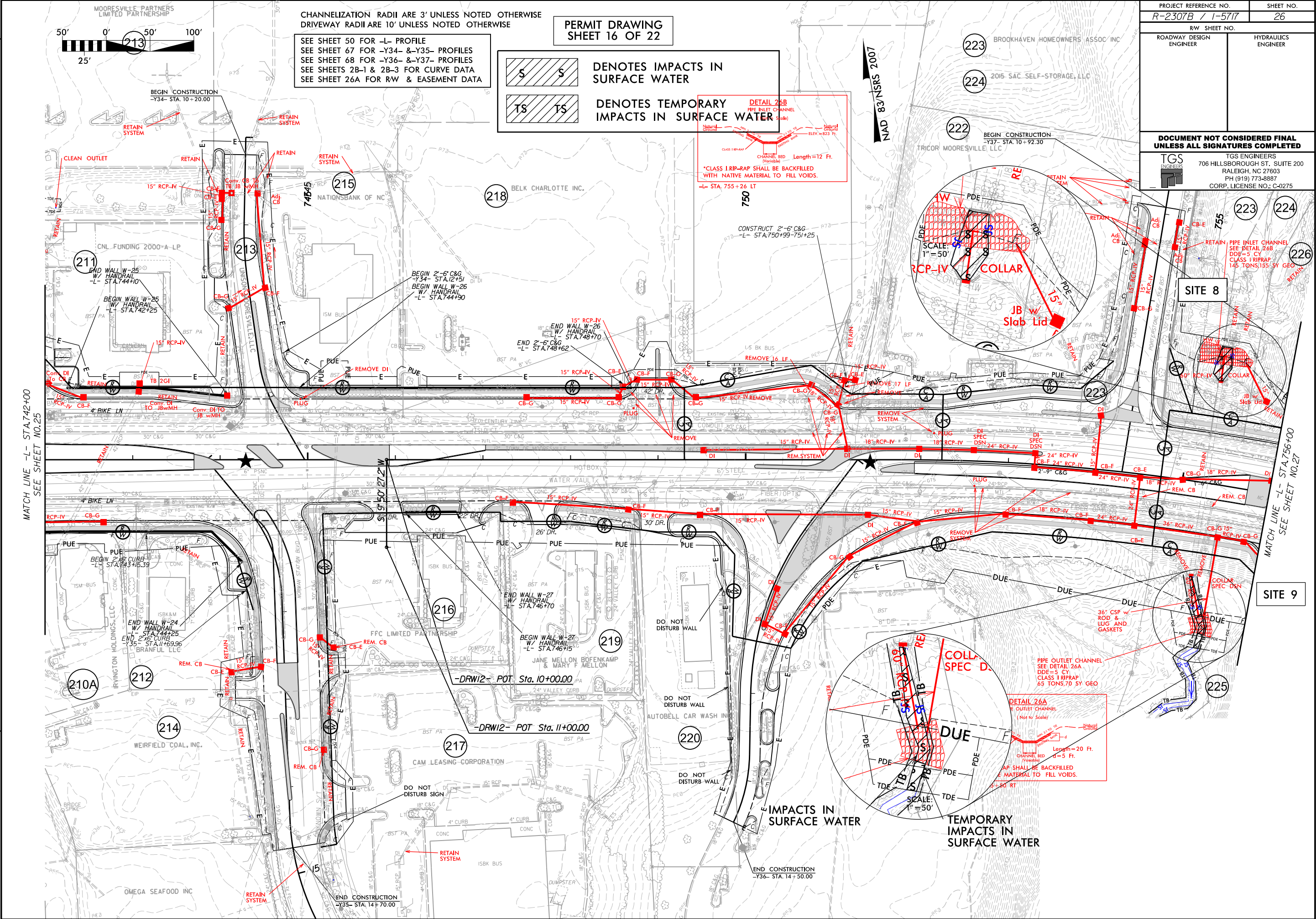
8/17/99

REVISIONS

10-5-2017 REVISED EASEMENTS ON PARCELS 218,219 & 222

MATCH LINE -L- STA.742+00  
SEE SHEET NO.25

MATCH LINE -L- STA.756+00  
SEE SHEET NO.27

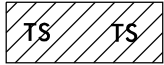


CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE  
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

PERMIT DRAWING  
SHEET 16 OF 22




DENOTES IMPACTS IN  
SURFACE WATER



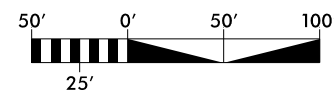
DENOTES TEMPORARY  
IMPACTS IN SURFACE WATER


**DETAIL 26B**  
PIPE INLET CHANNEL  
(Not to Scale)  
Channel Bed Length=12 Ft.  
\*CLASS 1 RIP-RAP SHALL BE BACKFILLED  
WITH NATIVE MATERIAL TO FILL VOIDS.  
-L- STA. 755+26 LT

**DETAIL 26A**  
PIPE OUTLET CHANNEL  
(Not to Scale)  
Channel Bed Length=20 Ft.  
\*CLASS 1 RIP-RAP SHALL BE BACKFILLED  
WITH NATIVE MATERIAL TO FILL VOIDS.  
-L- STA. 750+99 RT

PROJECT REFERENCE NO. <i>R-2307B / 1-5717</i>		SHEET NO. <i>26</i>
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>		
<div><div>TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275</div></div>		





 DENOTES IMPACTS IN SURFACE WATER  
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING  
SHEET 17 OF 22

268 BEK PROPERTIES LLC

**DETAIL 29A**

**PIPE OUTLET CHANNEL**

(Not to Scale)

Natural Ground

EXISTING GRADE

MIN. 2% TO TIE

MIN. 2% TO TIE

d

CLASS I RIP-RAP

CHANNEL BED  
(Variable)

Length = 29 Ft.

d = 6.5 Ft.

\*CLASS I RIP-RAP SHALL BE BACKFILLED WITH NATIVE MATERIAL TO FILL VOIDS.

= STA. 784 + 61 RT

**DETAIL 29B**  
**PIPE OUTLET CHANNEL**  
 (Not to Scale)

NATURAL GROUND

NAT. 2 to 10% EXISTING SLOPE

NAT. 2 to 10% EXISTING SLOPE

CLASS I RIP-RAP

CHANNEL BED (Variable)

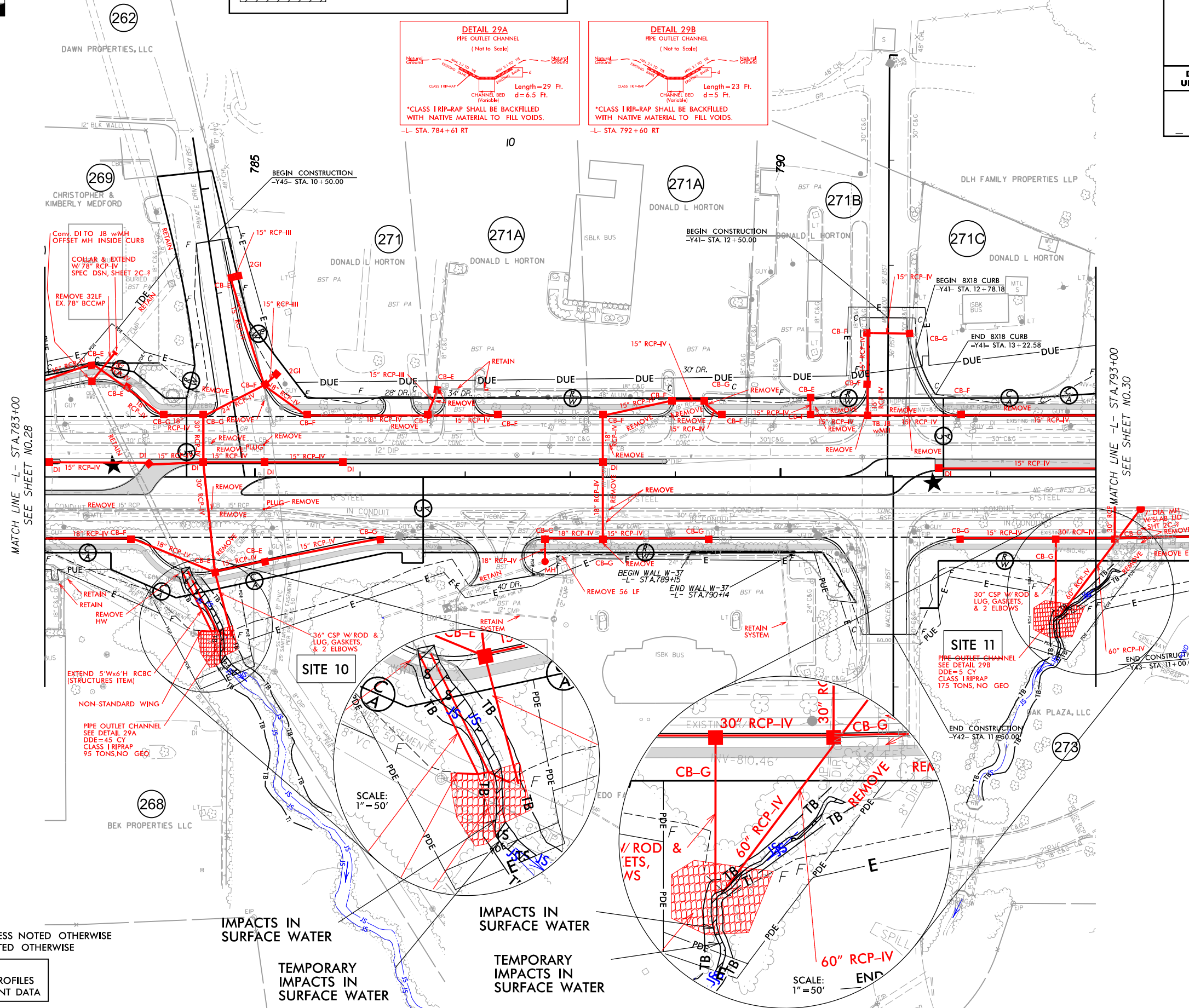
$d$

Length = 23 Ft.

$d = 5$  Ft.

\*CLASS I RIP-RAP SHALL BE BACKFILLED WITH NATIVE MATERIAL TO FILL VOIDS.

STA. 792 = 60 RT



-Y40- MACLEOD

			2019 ADT
			2039 ADT

500  
980

39,470  
51,310

250  
490

1,440  
1,600

250  
490

2,600  
3,080

4,030  
4,670

-L- NC 150

40,640  
52,800

-Y40- MACLEOD

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE  
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 51 FOR -L- PROFILE  
SEE SHEET 70 FOR -Y41- & -Y42- PROFILES  
SEE SHEET 29A FOR RW & EASEMENT DATA

## IMPACTS IN SURFACE WATER

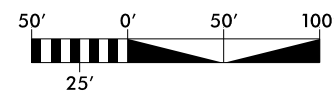
## TEMPORARY IMPACTS IN SURFACE WATER


## IMPACTS IN SURFACE WATER

## TEMPORARY IMPACTS IN SURFACE WATER

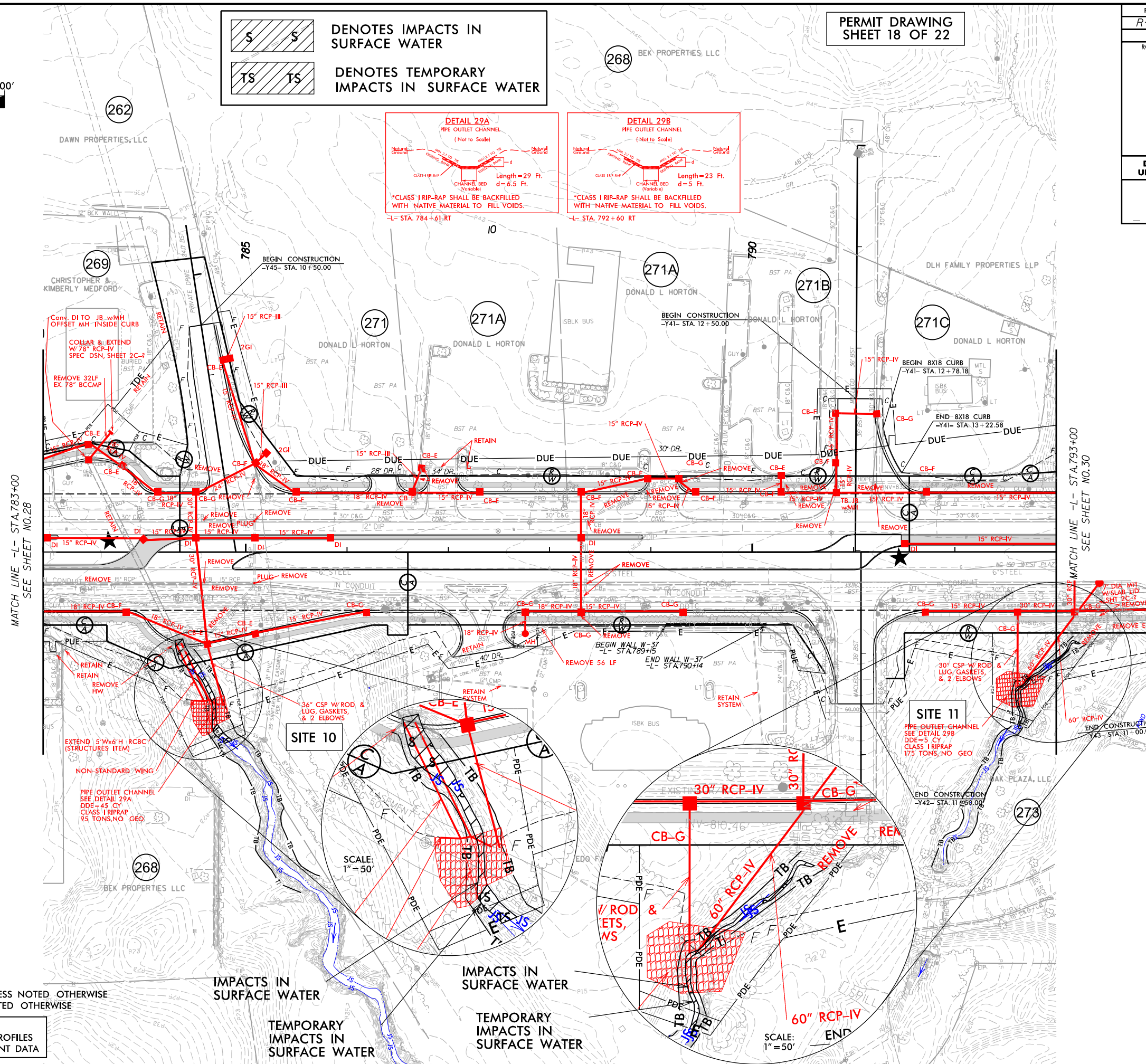
SCALE  
1" = 50'





 DENOTES IMPACTS IN SURFACE WATER  
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING  
SHEET 18 OF 22



-Y40- MACLEOD

	2019 ADT	2039 ADT
500 980		
39,470 51,310	250 490	250 490
1,440 1,600		
	2,600 3,080	40,640 52,800
	4,030 4,670	

-L- NC 150

-Y40- MACLEOD


CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE  
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE


SEE SHEET 51 FOR -L- PROFILE  
SEE SHEET 70 FOR -Y41- & -Y42- PROFILES  
SEE SHEET 29A FOR R/W & EASEMENT DATA





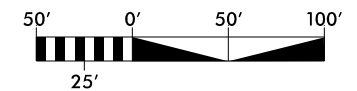
PERMIT DRAWING  
SHEET 20 OF 22

 DENOTES IMPACTS IN SURFACE WATER

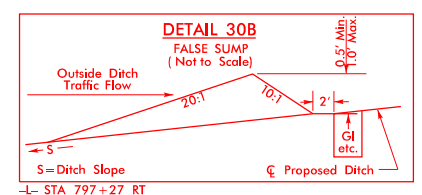
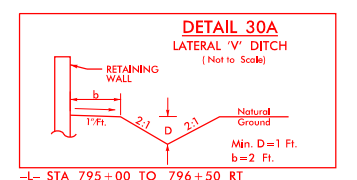
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

**TGS ENGINEERS**  
706 HILLSBOROUGH ST. SUITE 200  
RALEIGH, NC 27603  
PH (919) 773-8887  
CORP. LICENSE NO.: C-0275



NAD 83/NSRS 2007



CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE  
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 52 FOR -L- PROFILE  
SEE SHEET 70 FOR -Y43- & -Y44- PROFILES  
SEE SHEETS 2B-1 & 2B-3 FOR CURVE DATA  
SEE SHEET 30A FOR R/W & EASEMENT DATA


10-5-2017 REVISED DUES ON PARCELS 271 &amp; 274.


\\26/2024  
\\NCDDT\R-2307B\Hydraulics\PERMITS\_Environmental\Drawings\R-2307B\_RDY\_PSH\_30.dgn  
\\se:re:richard

8/17/99



PERMIT DRAWING  
SHEET 21 OF 22

 DENOTES IMPACTS IN SURFACE WATER

 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/NSRS 2007

BM34  
157.99  
NAIL SET IN BASE OF 42" ORK  
BM#34

**DETAIL 30A**  
**LATERAL 1/4 DITCH**  
 (Not to Scale)

RETAINING WALL

$b$

1' Ft.

2:1

$D$

2:1

Natural Ground

Min.  $D=1$  Ft.  
 $b=2$  Ft.

STA 795+00 TO 796+50 RT

**DETAIL 30B**  
**FALSE SUMP**  
 (Not to Scale)

Outside Ditch  
 Traffic Flow

2:1

10:1

2'

S = Ditch Slope

GI  
 etc.

Proposed Ditch

0.5' Min.  
 1.0' Max.

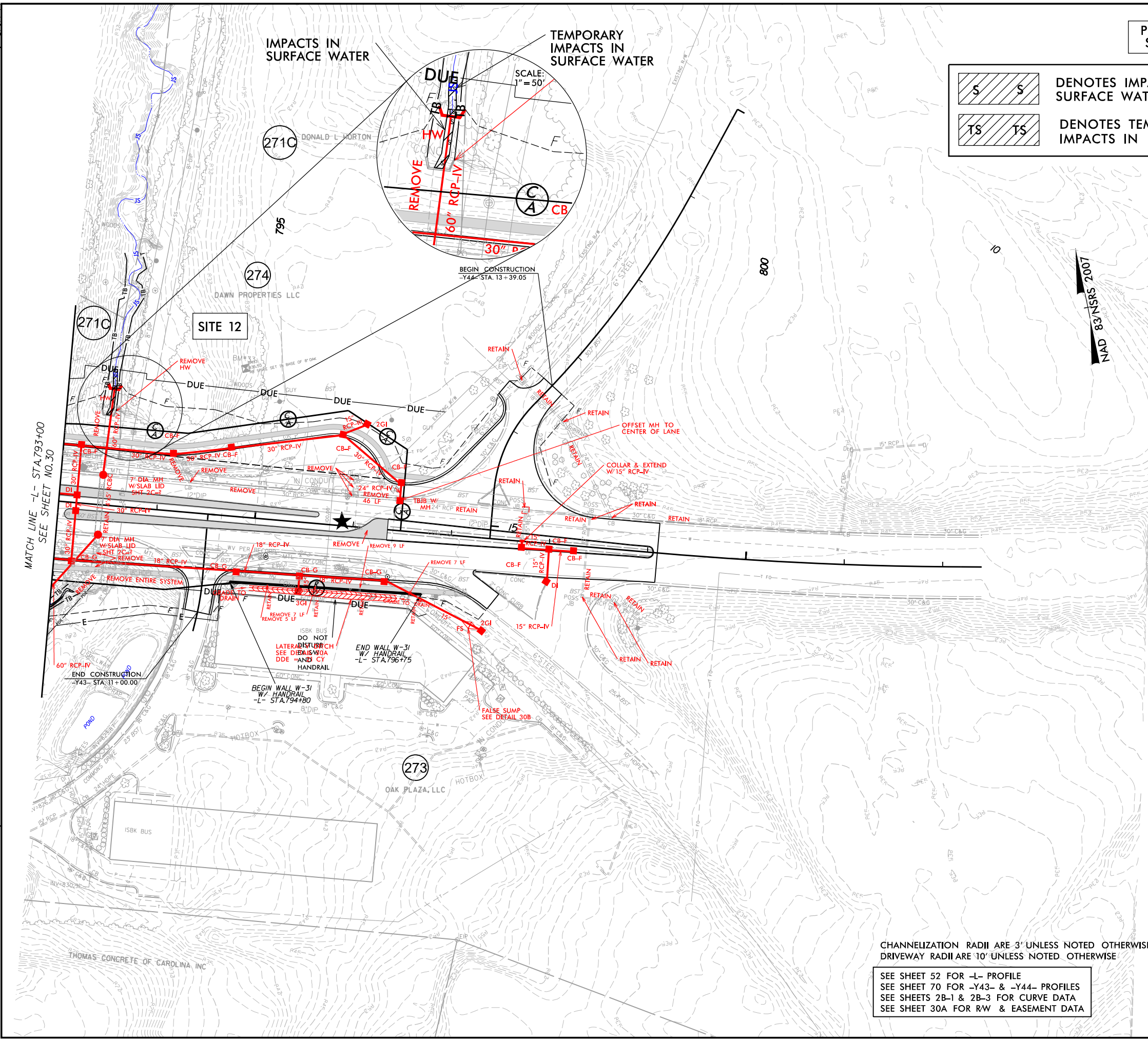
STA 707+27.87

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE  
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 52 FOR -L- PROFILE  
SEE SHEET 70 FOR -Y43- & -Y44- PROFILES  
SEE SHEETS 2B-1 & 2B-3 FOR CURVE DATA  
SEE SHEET 30A FOR RW & EASEMENT DATA

10-5-2017 REVISED DUES ON PARCELS 271 & 274.

1/26/2024  
X:\NCDOT\R-2307B\Hydraulics\PERMITS.Environmental\Drawings\R-2307B.RDY\_PSH\_30.dgn  
10-3-2011 REVISED DOES UN FANGCELL



WETLAND AND SURACE WATER IMPACTS SUMMARY												
			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 453+21/453+40 LT	18" PIPE						0.001	0.006			
2	-L- 458+40/458+74 LT	36" CSP						0.006	0.016			
3	-L- 458+21/467+07 LT	ROCK CAUSEWAY						3.079	0.070			
4	-L- 476+33/488+33 LT	ROCK CAUSEWAY						3.859	0.162			
5	-L- 487+17/488+00 LT	42" PIPE						0.014	0.019			
6	-L- 519+88/520+50 RT	30" PIPE						0.020	0.064			
7**	-L- 554+25/554+82 LT	24" PIPE	0.051			0.010		0.011		117		
8	-L- 755+17/755+36 LT	60" RCP						0.013		39		
9	-L- 755+24/755+53 RT	60" RCP						0.010	0.002	68	17	
10	-L- 784+30/784+87 RT	5'x'6 RCBC EXTENSION						0.013	0.003	97	20	
11	-L- 792+60/793+23 RT	60" RCP						0.004	0.001	98	19	
12	-L- 793+40/793+49 LT	60" RCP						0.003	0.002	27	20	
TOTALS*:			0.051			0.010		7.033	0.345	446	76	

\*Rounded totals are sum of actual impacts

NOTES:  
0.02 acres of Permanent SW impacts for bridge interior bents at 466+75, 467+75, 469+25, 470+75, 472+25, 473+75, 475+25 and 476+75.  
\*\* - Site 7 wetland is accounted for as a total take per 4C meeting minutes.

NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
1/29/2024  
CATAWBA/IREDELL COUNTIES  
R-2307B / I-5717  
37944.1.FR5 / 50134.1.FS1  
SHEET 22 OF 22



ROY COOPER  
Governor

ELIZABETH S. BISER  
Secretary

RICHARD E. ROGERS, JR.  
Director



August 1, 2024  
Catawba and Iredell Counties  
NCDWR Project No 20181732 V 2  
TIP# R-2307AB and I-5717  
WBS# 37944.1.FR5  
STP# 150(19)

**APPROVAL of 401 WATER QUALITY CERTIFICATION and CATAWBA BUFFER APPROVAL with  
ADDITIONAL CONDITIONS**

Mr. Michael Turchy  
NCDOT, Environmental Analysis Unit  
1598 Mail Service Center  
Raleigh, NC 27699-1598  
MATurchy@NCDOT.gov

**Subject:** Modification/Revision to 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act and Catawba Riparian Buffer Impacts with ADDITIONAL CONDITIONS for Proposed improvement to Highway 150 from the intersection with the Highway 16 bypass in Lincoln County to intersection with Highway 21 in Iredell County, including the I-77/Highway 150 interchange, improvements for the whole project are in Lincoln, Catawba, and Iredell Counties, Federal Aid Project No. STP-150(19), State Project No. R-2307AB, I-5717, NCDWR Project No. 20181732 V 2

Dear Mr. Turchy:

Attached hereto is a copy of Water Quality Certification No. 004181 issued to the NCDOT dated August 1, 2024.

This approval is for the purpose and design described in your application dated December 21, 2018, and modification application dated June 3, 2024. This modification/revision approval replaces the one issued April 17, 2019. Please be advised that this project is being constructed under a phased permit. As of the date of its issuance, only impacts for R-2307B and I-5717 are permitted. Before construction can begin on R-2307A, an individual permit must be issued with final design impact numbers on streams, wetlands, and Catawba buffers, as applicable, as well as an updated letter from Division of Mitigation Services.

Additionally, this project has known, and unknown areas of coal ash fill along the entirety of the project. Those areas, whether known or discovered during construction, are subject to the Coal Ash Management Act, North Carolina General Statute 130A-309. Ground disturbance of those properties is subject to the Act.

This letter completes the review of the Division under section 401 of the Clean Water Act, 15A NCAC 02H .0500, and the Catawba Riparian Buffer Rules as described in 15A NCAC 02B.0614. Please contact Mary Plummer at 704-235-2193 or [Mary.Plummer@deq.nc.gov](mailto:Mary.Plummer@deq.nc.gov) if you have any questions or concerns.

Sincerely,

*Susan Locklear*

04351E033762414  
Richard E. Rogers Jr., Director  
Division of Water Resources



North Carolina Department of Environmental Quality | Division of Water Resources  
512 North Salisbury Street | 1617 Mail Service Center | Raleigh, North Carolina 27699-1617  
919.707.9000



Electronic copy only distribution:

Crystal Amschler, US Army Corps of Engineers, Asheville Field Office  
 Rebekah Reid, US Fish and Wildlife Service  
 David McHenry, NC Wildlife Resources Commission  
 Jeff Wyatt, NC Department of Transportation, Division 12  
 Amanetta Somerville, US Environmental Protection Agency  
 Beth Harmon, Division of Mitigation Services  
 File Copy

#### 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act and CATAWBA BUFFER RULES with ADDITIONAL CONDITIONS

**THIS CERTIFICATION** is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500. and 15A NCAC 2B .0243. This certification authorizes the NCDOT to impact 522 linear feet of streams, .061 acres of jurisdictional wetlands, 7.946 acres of open water, and 35,072 square feet in the Catawba River Buffer in Catawba and Iredell Counties. The project shall be constructed pursuant to your application dated and received December 21, 2018, and the modification/revision dated June 3, 2024. The authorized impacts are as described below:

##### Stream Impacts (Linear Feet) in the Catawba River Basin.

Site	Permanent Fill in Perennial Stream	Permanent Fill in Intermittent Stream	Temporary Fill in Perennial Stream	Total Stream Impacts	Stream Impacts Requiring Mitigation
	Culvert				
7 L 554+25/554+82 LT	-	117	-	117	117
8 L 755+17/755+36 LT	39	-	-	39	39
9 L 755+24/755+53 RT	68	-	17	85	68
10 L 784+30/784+87 RT	97	-	20	117	97
11 L 792+60/793+23 RT	98	-	19	117	98
12 L 793+40/793+49 LT	27	-	20	47	27
Totals	329	117	76	522	446
	446				

**Total Stream Impacts for Project: 522 Linear Feet.**

##### Catawba Riparian Buffer Impacts (Square Feet).

Site	Zone 1	Minus Wetlands in Zone 1	=Zone 1 Buffer (Not Wetlands)	Zone 1 Buffer Mitigation Required (1:1 Ratio)	Zone 2	Minus Wetlands in Zone 2	=Zone 2 Buffers (Not Wetlands)	Zone 2 Buffer Mitigation Required (1:1Ratio)	Total Buffer Mitigation
Lake Norman	20,142	-	20,142	20,142	14,930	-	14,930	14,930	35,072
<b>Totals</b>	<b>20,142</b>	<b>-</b>	<b>20,142</b>	<b>20,142</b>	<b>14,930</b>	<b>-</b>	<b>14,930</b>	<b>14,930</b>	<b>35,072</b>

**Total Riparian Buffer Impacts for Project: 35,072 Square Feet.**



**Wetland Impacts (Acres) in the Catawba River Basin (Riverine).**

Site	Permanent Fill		Total Wetland Impacts	Wetland Impacts Requiring Mitigation
	Pipe & Roadway	Mechanized Clearing		
7 L 554+25/554+82 LT	.051	.01	.061	.061
Totals	.051	.01		
	.061			

**Total Wetland Impacts for Project: 0.061 Acres.**

**Open Water (Lake/River) Impacts in the Catawba River Basin.**

Site	Permanent Fill		Temporary Fill		Totals
	Pipe w/Rip Rap	Causeway	Pipe w/Rip Rap	Causeway	
1 L 453+21/453+40 LT	.001	-	.006	-	.007
2 L 458+40/458+74 LT	.006	-	.016	-	.022
3 L 458+21/467+07 LT	-	3.079	-	.70	3.779
4 L 476+33/488+33 LT	-	3.859	-	.162	4.021
5 L 487+17/488+00 LT	.014	-	.019	-	.033
6 L 519+88/520+50 RT	.02	-	.064	-	.084
Totals	.041	6.938	.105	.862	7.946
	6.979		.967		

**Total Open Water Impacts for Project: 7.946 Acres.**

This application provides adequate assurance that the discharge of fill material into waters of the Catawba River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Section 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is valid solely for the purpose and design described in your application dated and received December 21, 2018, and modification/revision dated June 3, 2024. Should your project change, you must notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts for this project (now or in the future) exceed one acre or 300 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h)(6) and (7). Additional buffer impacts may require compensatory mitigation as described in 15A NCAC 2B .0243. For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state, or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This certification shall expire on the same date as the expiration date of the corresponding Corps

If you are unable to comply with any of the conditions below, you must notify the DWR Transportation Permitting Branch within 24 hours (or the next business day if a weekend or holiday) from the time the permittee becomes aware of the circumstances. The permittee shall report to the NC Division of Water Resources any noncompliance with the conditions of this Authorization Certificate and/or any violation of state regulated Catawba riparian buffer rules .0614. Information shall be provided orally within 24 hours (or the next business day if a weekend or holiday) from the time the applicant became aware of the circumstances.





**Condition(s) of Approval and Certification:**

1. All riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated. Maintained buffers shall be permanently revegetated with non-woody species by the end of the growing season following completion of construction. For the purpose of this condition, maintained buffer areas are defined as areas within the transportation corridor that will be subject to regular NCDOT maintenance activities including mowing. The area with non-maintained buffers shall be permanently revegetated with native woody species before the next growing season following completion of construction. [15A NCAC 02B.0614]
2. Pursuant to 15A NCAC 2B.0614, sediment and erosion control devices shall not be placed in Zone 1 of any Catawba Buffer without prior approval by the NCDWR. At this time, the NCDWR has approved no sediment and erosion control devices in Zone 1, outside of the approved project impacts, anywhere on this project. Moreover, sediment and erosion control devices shall be allowed in Zone 2 of the buffers provided that Zone 1 is not compromised, and that discharge is released as diffuse flow.
3. All stormwater runoffs shall be directed as sheetflow through stream buffers at non-erosive velocities, unless otherwise approved by this certification. Sheetflow requirements are waived per request with low velocities achieved per submitted plans and email. [15A NCAC 02B.0614]
4. Native riparian vegetation (i.e., trees and shrubs native to your geographic region) must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction. [15A NCAC 02B.0614] & [15A NCAC 02B.0506(b)(2)]

**Project Specific Conditions**

1. This project has known, and potentially unknown, coal ash fill areas. Additional requirements will be needed to ensure compliance with the Coal Ash Management Act of North Carolina. Please see the sited NCGS for additional requirements. NCGS 130A-309
2. The NCDOT Division Environmental Officer or Environmental Assistant will conduct a pre-construction meeting with all appropriate staff to ensure that the project supervisor and essential staff understand the potential issues with stream and pipe alignment at the permitted sites. NCDWR staff shall be invited to the pre-construction meeting. [15A NCAC 02H.0506 (b)(2) and (b)(3)]
3. The NCDOT shall be in compliance with the NCS00250 issued to the NCDOT, including the applicable requirements of the NCG01000. Please note the extra protections for the sensitive watersheds.
4. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be revegetated with appropriate native species. [15A NCAC 02H .0506(b)(2)]
5. All portions of the proposed project draining to 303(d) listed watersheds that are impaired due to turbidity shall be designed, constructed, and operated with sediment and erosion control measures that meet Design Standards in Sensitive Watersheds (15A NCAC 4B .0124). However, due to the size of the project, NCDOT shall not be required to meet 15A NCAC 4B .0124(a) regarding the maximum amount of uncovered acres.
6. All portions of the proposed project draining to 303(d) listed watersheds that are impaired due to biological criteria exceedances shall not discharge stormwater directly to surface waters. Storm water shall be treated using appropriate best management practices (e.g., vegetated conveyances, constructed wetlands, detention ponds, etc.) prior to discharging to surface waters.
7. The NCDOT shall design, construct, and operate and maintain hazardous spill catch basins (HSCBs) at lake crossings within the WS CA watershed. The HSCBs shall be located at Station numbers L Sta 456+00 and 487+00. [15A NCAC 02B.0200]





8. As a condition of this 401 Water Quality Certification, the bridge demolition and construction must be accomplished in strict compliance with the most recent version of NCDOT's Best Management Practices for Construction and Maintenance Activities. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]
9. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. To meet the requirements of NCDOT's NPDES permit, please refer to the most recent version of the *North Carolina Department of Transportation Stormwater Best Management Practices Toolbox* for approved measures. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]
10. Bridge piles and bents shall be constructed using driven piles (hammer or vibratory) or drilled shaft construction methods. More specifically, jetting or other methods of pile driving are prohibited without prior written approval from the NCDWR first. [15A NCAC 02H.0506(b)(2)]
11. No drill slurry or water that has been in contact with uncured concrete shall be allowed to enter surface waters. This water shall be captured, treated, and disposed of properly. [15A NCAC 02H .0506(b)(3)]
12. A turbidity curtain will be installed in the stream if driving or drilling activities occur within the stream channel, on the stream bank, or within 5 feet of the top of bank, or during the removal of bents from an old bridge. This condition can be waived with prior approval from the NCDWR. [15A NCAC 02H .0506(b)(3)]
13. All bridge construction shall be performed from the existing bridge, temporary work bridges, temporary causeways, or floating or sunken barges. If work conditions require barges, they shall be floated into position and then sunk. The barges shall not be sunk and then dragged into position. Under no circumstances should barges be dragged along the bottom of the surface water. [15A NCAC 02H .0506(b)(3)]
14. Existing stream dimensions (including pattern and profile) are to be maintained above and below locations of each culvert. The structures shall be designed and installed to allow for fish and other wildlife movement as well as prevent headcutting of the stream. The applicant may be required to provide evidence that the equilibrium has been maintained if requested in writing by the NCDWR. [15A NCAC 02H.0506(b)(2)]
15. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams, shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in disequilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by the NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. [15A NCAC 02H.0506(b)(2)]
16. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross sections as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage. [15A NCAC 02H.0506(b)(2)]
17. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed. [15A NCAC 02H.0506(b)(2)]
18. The stream channel shall be excavated no deeper than the natural bed material of the stream, to the maximum extent practicable. Efforts must be made to minimize impacts to the stream banks, as well as to vegetation





responsible for maintaining the stream bank stability. Any applicable riparian buffer impact for access to stream channel shall be temporary and be revegetated with native riparian species. [15A NCAC 02H.0506(b)(2)]

19. Pipes and culverts used exclusively to maintain equilibrium in wetlands, where aquatic life passage is not a concern, shall not be buried. These pipes shall be installed at natural ground elevation.
20. Wetland areas impacted by temporary clearing shall be stabilized and reseeded with native wetland seed. [15A NCAC 02H.0506(b)]
21. Due to the possibility that compaction and/or other site alterations might prevent the temporary wetland impact area from re-attaining jurisdictional wetland status; the permittee shall provide an update on the wetland areas temporarily impacted. This update shall be conducted two growing seasons after completion of the work and shall consist of photographs and a brief report on the progress of the areas in re-attaining wetland jurisdictional status. Upon submission of this update to the NCDWR, the permittee shall schedule an agency field meeting with the NCDWR to determine if the wetland areas temporarily impacted by this project have re-attained jurisdictional wetland status. If the wetland areas temporarily impacted by this project have not re-attained jurisdictional wetland status, the NCDWR shall determine if additional compensatory wetland mitigation is to be required.
22. Compensatory mitigation for 446 linear feet of impacts to streams is required. We understand that you have chosen to perform compensatory mitigation for impacts to streams through the North Carolina Division of Mitigation Service (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. The DMS has indicated in a letter dated December 19, 2018, that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the DMS Mitigation Banking Instrument signed July 28, 2010.
23. Compensatory mitigation for impacts to 20,142 square feet of protected riparian buffers in Zone 1 and 14,930 square feet of protected riparian buffers in Zone 2 shall be required. We understand that you have chosen to perform compensatory mitigation for impacts to protected buffers through use of the North Carolina Division of Mitigation Services (DMS) (formerly NCEEP). Mitigation for unavoidable impacts to Catawba Riparian Buffers shall be provided in the Catawba River Basin and done in accordance with 15A NCAC .02B .0295. The DMS has indicated in a letter dated December 19, 2018, that they will assume responsibility for satisfying the compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed June 14, 2016.
24. Compensatory mitigation for impacts to .061 acres of riverine wetlands is required. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands through the North Carolina Division of Mitigation Services (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. DMS has indicated in a letter dated December 19, 2018, that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed July 28, 2010.

#### General Conditions

1. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water. [15A NCAC 02H.0506(b)(3) and (c)(3)]
2. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream. [15A NCAC 02H.0506(b)(3)]





3. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials. [15A NCAC 02H.0506(b)(3)]
4. All work in or adjacent to stream waters shall be conducted per approved BMP measures from the most current version of NCDOT's Construction and Maintenance Activities manual. [15A NCAC 02H.0506(b)(3) and (c)(3)]
5. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. [15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
6. Stormwater shall be directed to vegetated buffer areas, grass-lined ditches or other means appropriate to the site for the purpose of pre-treating storm water runoff prior to discharging directly into streams. (15A NCAC 02B.0224 and .0225)
7. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. [15A NCAC 02B.0200]
8. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S. or protected riparian buffers. [15A NCAC 02H.0506(b)(2)]
9. The dimensions, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions. [15A NCAC 02H.0506(b)(2)]
10. The use of rip-rap above the Normal High-Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage. [15A NCAC 02H.0506(b)(2)]
11. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification. [15A NCAC 02H.0506(b)(3)]
12. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]
13. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If the NCDWR determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the NCDWR may reevaluate and modify this certification. [15A NCAC 02B.0200]
14. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification. [15A NCAC 02H.0506(b)(2)]
15. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification, and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
16. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502]





17. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.
18. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery. [15A NCAC 02B.0506(b)(2)]
19. Upon completion of the project (including any impacts at associated borrow or waste sites), an appointee shall complete and return the enclosed "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0502(f)]
20. Native riparian vegetation must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction. [15A NCAC 02H.0506(b)(3) and (c)(3)]
21. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities. [15A NCAC 02H.0506(b)(3) and (c)(3)]
22. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface water standards [15A NCAC 02H.0506(b)(3) and (c)(3)]
  - a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
  - b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
  - c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
  - d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.
23. Where placement of sediment and erosion control devices in wetlands and/or waters is unavoidable, they shall be removed, and the natural grade restored upon completion of the project. [15A NCAC 02H.0506(b)(3) and (c)(3)]
24. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur. [15A NCAC 02H.0506(b)(3) and (c)(3) and 15A NCAC 02B.0200]
25. Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *NCDOT Sediment and Erosion Control Manual*.
26. All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.





27. For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.
28. If sediment or other pollutants are found to be discharged from the stormwater outfalls, DWR may take enforcement action. NCDOT and DWR shall assess the damage to water quality standards and implement an appropriate action plan to address the impacts. The action plan shall provide an appropriate timeline for implementation as agreed upon by both DWR and NCDOT. This may require NCDOT to obtain a modification to its current 401 and 404 permits.
29. If the project occurs in water or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-1, WS-II, High Quality Waters (HQW), or Outstanding Resource Waters (ORW), then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watersheds* [15A NCAC 02H.0506(b)(3) and (c)(3); GC 4135]
30. Sediment and erosion control measures shall not be placed in wetlands or surface waters, or within 5 feet of the top of the bank, without prior approval from DWR. [15A NCAC 02H.0506(b)(3) and (c)(3)]

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

This approval and its conditions are final and binding unless contested [G.S. 143-215.5]. Please be aware that impacting waters without first applying for and securing the issuance of a 401 Water Quality Certification violates Title 15A of the North Carolina Administrative Code (NCAC) 2H .0500. Title 15A NCAC 2H .0500 requires certifications pursuant to Section 401 of the Clean Water Act whenever construction or operation of facilities will result in a discharge into navigable waters, including wetlands, as described in 33 Code of Federal Regulations (CFR) Part 323. It also states any person desiring issuance of the State certification or coverage under a general certification required by Section 401 of the Federal Water Pollution Control Act shall file with the Director of the North Carolina Division of Water Quality. Pursuant to G.S. 143-215.6A, these violations and any future violations are subject to a civil penalty assessment of up to a maximum of \$25,000.00 per day for each violation.

This Certification can be contested as provided in Chapter 150B of the North Carolina General Statutes by filing a Petition for a Contested Case Hearing (Petition) with the North Carolina Office of Administrative Hearings (OAH) within sixty (60) calendar days. Requirements for filing a Petition are set forth in Chapter 150B of the North Carolina General Statutes and Title 26 of the North Carolina Administrative Code. Additional information regarding requirements for filing a Petition and Petition forms may be accessed at <http://www.ncoah.com/> or by calling the OAH Clerk's Office at (919) 431-3000.

A party filing a Petition must serve a copy of the Petition on:

William F. Lane, General Counsel  
Department of Environmental Quality  
1601 Mail Service Center  
Raleigh, NC 27699-1601

If the party filing the Petition is not the permittee, then the party must also serve the recipient of the Certification in accordance with N.C.G.S 150B-23(a).

**This Authorization shall expire five (5) years from the date of this letter.**

This letter completes the review of the Division under the Catawba Riparian Buffer Rules as described in 15A NCAC 02B.0614. Please contact Mary Plummer at [Mary.Plummer@deq.nc.gov](mailto:Mary.Plummer@deq.nc.gov) or 704-235-2193 if you have any questions or concerns.



This the 1<sup>st</sup> of August 2024

DIVISION OF WATER RESOURCES

DocuSigned by:

*Susan Locklear*  
04351F033762414...

Richard E. Rogers Jr., Director

WQC No. 004181



North Carolina Department of Environmental Quality | Division of Water Resources  
512 North Salisbury Street | 1617 Mail Service Center | Raleigh, North Carolina 27699-1617  
919.707.9000





NORTH CAROLINA  
Environmental Quality

ROY COOPER

Governor

ELIZABETH S. BISER

Secretary

RICHARD E. ROGERS, JR.

Director

NCDWR Project No.: \_\_\_\_\_

County: \_\_\_\_\_

Applicant: \_\_\_\_\_

Project Name: \_\_\_\_\_

Date of Issuance of 401 Water Quality Certification: \_\_\_\_\_

### Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Resources, 1617 Mail Service Center, Raleigh, NC, 27699-1617. This form may be returned to NCDWR by the applicant, the applicant's authorized agent, **or** the project engineer. It is not necessary to send certificates from all of these.

### *Applicant's Certification*

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

### *Agent's Certification*

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

### *Engineer's Certification*

\_\_\_\_\_ Partial \_\_\_\_\_ Final

I, \_\_\_\_\_, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature \_\_\_\_\_ Registration No. \_\_\_\_\_

Date \_\_\_\_\_

Completed hard copies can be emailed to [kristilynn.carpenter@deq.nc.gov](mailto:kristilynn.carpenter@deq.nc.gov) or mailed to:  
NCDEQ Transportation Permitting  
1617 Mail Service Center  
Raleigh NC 27699-1617



North Carolina Department of Environmental Quality | Division of Water Resources  
512 North Salisbury Street | 1617 Mail Service Center | Raleigh, North Carolina 27699-1617  
919.707.9000





**DEPARTMENT OF THE ARMY**  
**WILMINGTON DISTRICT, CORPS OF ENGINEERS**  
**69 DARLINGTON AVENUE**  
**WILMINGTON, NORTH CAROLINA 28403-1343**

September 3, 2020

Regulatory Division

Action ID: SAW-2018-02343

Project Development and Environmental Analysis Unit,  
Attn: Mr. Philip Harris, P.E.,  
1548 Mail Service Center  
Raleigh, NC 27699-1598

Dear Mr. Harris:

Enclosed is a Department of the Army permit for the NC 150 (R-2307 and I-5717) Improvement Project which involves the improvement of approximately 15 miles of existing NC 150 to a median-divided 'superstreet' facility which includes road widening (widened to a four or six-lane divided facility including curb and gutter and a multi-use path), replacing several bridges, and access management measures. Specifically, impacts will involve 1,634 linear feet of stream channel, 0.84 acres of wetlands and 13.18 acres of open water (based on final design for Section B and preliminary design for Section A and not including temporary impacts for Section A). The project is located along existing NC 150 and begins at the intersection of NC 150 with the NC 16 Bypass in Catawba County and extends approximately 15 miles northeast along NC 150 through Catawba County into Iredell County to terminate just west of the NC 150 intersection with US 21 in Mooresville, Iredell County, North Carolina. The project has been divided into two phases: Section A extends from NC 16 Bypass to SR 1902 (Harvel Road). Section B extends from Harvel Road to just west of the US 21/NC 150 Interchange and includes the I-5717 component, the I-77 interchange. This permit authorization includes final design and final impact numbers for Section B and preliminary designs and impacts for Section A. Approval for final design plans and impacts for Segment A will be completed through a permit modification. The Corps is issuing this permit in response to your written request of December 21, 2018 and the ensuing administrative record.


Any deviation in the authorized work will likely require modification of this permit. If a change in the authorized work is necessary, you should promptly submit revised plans to the Corps showing the proposed changes. You may not undertake the proposed changes until the Corps notifies you that your permit has been modified.

Carefully read your permit. The general and special conditions are important. Your failure to comply with these conditions could result in a violation of Federal law. Certain significant conditions require that:

- a. You must complete construction before December 31, 2025
- b. You must notify this office in advance as to when you intend to commence and complete work.
- c. You must allow representatives from this office to make periodic visits to your worksite as deemed necessary to assure compliance with permit plans and conditions.
- d. In order to compensate for impacts associated with this permit, mitigation shall be provided in accordance with the provisions outlined in the U.S. Army Corps of Engineers, Wilmington District, Compensatory Mitigation Responsibility Transfer Form. The requirements of this form, including any special conditions listed on this form, are hereby incorporated as special conditions of this permit authorization.

You should address all questions regarding this authorization to Crystal Amschler at the Asheville Regulatory Field Office, telephone (828) 271-7980 extension 4231.

FOR THE DISTRICT ENGINEER

 Date: 2020.09.03  
08:00:29 -04'00'

Monte Matthews  
Lead Project Manager

Enclosures

Project Development and Environmental Analysis Unit,  
Attn: Mr. Michael Turchy.,  
1548 Mail Service Center  
Raleigh, NC 27699-1598

Mr. Todd Bowers  
Wetlands Protection Section – Region IV  
Water Management Division  
U.S. Environmental Protection Agency  
61 Forsyth Street, SW  
Atlanta, Georgia 30303

Ms. Amy S. Chapman  
Transportation Permitting Unit  
NC Division of Water Quality  
1617 Mail Service Center  
Raleigh, NC 27699-1617

Ms. Marla Chambers  
Western Region Highway Project Coordinator  
NCWRC  
12275 Swift Road  
Oakboro, NC 28129

US Fish and Wildlife Service  
Asheville Ecological Services Field Office  
Attn: Byron Hamstead  
160 Zillicoa Street  
Asheville, NC 28801-1082

Ms. Renee Gledhill-Early  
Environmental Review Coordinator  
NC State Historic Preservation Office  
4617 Mail Service Center  
Raleigh, NC 27699-4617

BCC (without enclosures) (via Email):

CESAW-RG-A/Crystal Amschler  
CESAW-RG-R/Matthews  
CESAW-RG/McLendon  
CESAW-OC/Pruitt

## DEPARTMENT OF THE ARMY PERMIT

Permittee **NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**  
**ATTN: MR. PHILIP S. HARRIS III, P.E., C.P.M.**

Permit No. **SAW-2018-02343**

Issuing Office **CESAW-RG-A**

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

**Project Description: The NC 150 (R-2307 and I-5717) Improvement Project involves the improvement of approximately 15 miles of existing NC 150 to a median-divided 'superstreet' facility which includes road widening (widened to a four or six-lane divided facility including curb and gutter and a multi-use path), replacing several bridges, and access management measures. Specifically, impacts will involve 1,634 linear feet of stream channel, 0.84 acres of wetlands and 13.18 acres of open water (based on final design for Section B and preliminary design for Section A and not including temporary impacts for Section A). The project is located along existing NC 150 and begins at the intersection of NC 150 with the NC 16 Bypass in Catawba County and extends approximately 15 miles northeast along NC 150 through Catawba County into Iredell County to terminate just west of the NC 150 intersection with US 21 in Mooresville, Iredell County, North Carolina. The project has been divided into two phases: Section A extends from NC 16 Bypass to SR 1902 (Harvel Road). Section B extends from Harvel Road to just west of the US 21/NC 150 Interchange and includes the I-5717 component, the I-77 interchange. This permit authorization includes final design and final impact numbers for Section B and preliminary designs and impacts for Section A. Approval for final design plans and impacts for Segment A will be completed through a permit modification.**

**Project Location: The project is located along existing NC 150 and begins at the intersection of NC 150 with the NC 16 Bypass in Catawba County and extends approximately 15 miles northeast along NC 150 through Catawba County into Iredell County to terminate just west of the NC 150 intersection with US 21 in Mooresville, Iredell County, North Carolina.**

Permit Conditions:

General Conditions:



1. The time limit for completing the work authorized ends on **December 31, 2025.** If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit,

Special Conditions:

**SEE ATTACHED SPECIAL CONDITIONS**

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
  - ( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
  - ( X ) Section 404 of the Clean Water Act (33 U.S.C. 1344).
  - ( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.
  - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
  - b. This permit does not grant any property rights or exclusive privileges.
  - c. This permit does not authorize any injury to the property or rights of others.
  - d. This permit does not authorize interference with any existing or proposed Federal project.
3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
  - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
  - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
  - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
  - d. Design or construction deficiencies associated with the permitted work.
  - e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
  - a. You fail to comply with the terms and conditions of this permit.
  - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
  - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures

provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit, Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Carla Dagnino September 2, 2020 For/  
(PERMITTEE) NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (DATE)  
for MR. PHILIP S. HARRIS III, P.E., C.P.M.

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

FOR THE DISTRICT ENGINEER

FOR - Monte Matthews Date: 2020.09.03  
08:03:54 -04'00'  
(DISTRICT COMMANDER) BENJAMIN A. BENNETT, COLONEL (DATE)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
(TRANSFeree) (DATE)

**SPECIAL CONDITIONS**  
**Action ID: SAW-2018-02343**  
**R-2307 and I-5717**

1. **Phased Permit:** This permit only authorizes work on Segment B of the NC 150 R2307 Improvement Project. Construction on Segment A shall not commence until: (a) final design has been completed for those sections and submitted to the U.S. Army Corps of Engineers (Corps); (b) the Permittee has minimized impacts to waters and wetlands to the maximum extent practicable and the Corps concurs with this assessment through standard Merger 4B and 4C meetings; (c) any modification to the plans have been approved by the Corps in writing; and (d) a final compensatory mitigation plan has been submitted by the Permittee and approved by the Corps.

2. **Work Limits:** All work authorized by this permit shall be performed in strict compliance with the attached permit plans dated 7/11/2018, which are a part of this permit. The Permittee shall ensure that the construction design plans for this project do not deviate from the permit plans attached to this authorization. Any modification to the attached permit plans must be approved by the US Army Corps of Engineers prior to any active construction in waters or wetlands.

3. **Unauthorized Dredge or Fill:** Except as authorized by this permit or any U.S. Army Corps of Engineers approved modification to this permit, no excavation, fill, or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands, or shall any activities take place that cause the degradation of waters or wetlands. There shall be no excavation from, waste disposal into, or degradation of, jurisdictional wetlands or waters associated with this permit without appropriate modification of this permit, including appropriate compensatory mitigation. This prohibition applies to all borrow and waste activities connected with this project. In addition, except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within, into, or out of waters or wetlands or to reduce the reach of waters or wetlands

4. **Permit Distribution:** The Permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit. A copy of this permit, including all conditions, drawings and attachments shall be available at the project site during the construction and maintenance of this project.

5. **Pre-Construction Meeting:** The Permittee shall schedule and attend a preconstruction meeting between its representatives, the contractors representatives, and the U.S. Army Corps of Engineers, Asheville Field Office, NCDOT Regulatory Project Manager, prior to any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all the terms and conditions contained with this

**SPECIAL CONDITIONS**  
**Action ID: SAW-2018-02343**  
**R-2307 and I-5717**

Department of Army Permit. The Permittee shall provide the Corps, Asheville Field Office, NCDOT Project Manager, with a copy of the final permit plans at least two weeks prior to the preconstruction meeting along with a description of any changes that have been made to the project's design, construction methodology or construction timeframe. The Permittee shall schedule the preconstruction meeting for a time frame when the Corps, NCDCM, and NCDWQ Project Managers can attend. The Permittee shall invite the Corps, NCDCM, and NCDWQ Project Managers a minimum of thirty (30) days in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedule and participate in the required meeting. The thirty (30) day requirement can be waived with the concurrence of the Corps.

**6. Notification of Construction Commencement and Completion:** The Permittee shall notify the U.S. Army Corps of Engineers in writing prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.

**7. Reporting Address:** All reports, documentation, and correspondence required by the conditions of this permit shall be submitted to the following: U.S. Army Corps of Engineers, Wilmington District Asheville Regulatory Field Office, Attn: Crystal Amschler 151 Patton Avenue, Room 208 or Crystal.C.Amschler@usace.army.mil. The Permittee shall reference the following permit number, SAW-2018-02343, on all submittals.

**8. Permit Revocation:** The Permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the water or wetland to its pre-project condition.

**9. Reporting Violations:** Violation of these permit conditions or violation of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act shall be reported to the Corps in writing and by telephone at: 828-271-7980 within 24 hours of the Permittee's discovery of the violation.

**10. Clean Fill:** The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, construction debris, metal and plastic products, and concrete block with exposed reinforcement bars. Soils used for fill shall not be contaminated with any toxic substance in concentrations governed by Section 307 of the Clean Water Act. Unless otherwise authorized by this permit, all fill material placed in waters or wetlands shall be generated from an upland source.

**11. Endangered Species Act:** The Permittee shall implement all necessary measures to ensure the authorized activity does not kill, injure, capture, harass, or otherwise harm any federally-listed threatened or endangered species. While accomplishing the authorized work, if the Permittee discovers or observes an injured or dead threatened or endangered species, the U.S. Army Corps of Engineers, Wilmington District Asheville



**SPECIAL CONDITIONS**  
**Action ID: SAW-2018-02343**  
**R-2307 and I-5717**

Regulatory Field Office, Attn: Crystal Amschler, 151 Patton Avenue, Room 208 or Crystal.C.Amschler@usace.army.mil will be immediately notified to initiate the required Federal coordination.

- A. Habitat is present within the project corridor for the Dwarf-flowered heartleaf (*Hexastylis naniflora*) (Iredell and Catawba) and the Schweinitz's sunflower (*Helianthus schweinitzii*) (Catawba). Surveys were conducted for these species on October 24, 2018 and no species were found. The survey for the Dwarf-flowered heartleaf is good for 5 years and the survey for the Schweinitz's sunflower is good for 2 years. As such, new surveys will need to be conducted for these species within permit areas for Segment A and will also need to be conducted for Segment B if construction is not complete prior to survey expiration.
- B. Habitat is present within the project corridor for the Northern long-eared bat (NLEB) (*Myotis septentrionalis*). In order to avoid impacts to potential roosting NLEB, NCDOT will do the following:
  - a. Inspect existing bridges prior to demolition or other work that may affect the NLEB, for the presence of federally listed bats and contact the Corps and FWS if any bats are observed

**12. Culverts:**

1) Unless otherwise requested in the application and depicted on the approved permit plans, culverts greater than 48 inches in diameter shall be buried at least one foot below the bed of the stream or, if prior approval given, set at the current stream bed elevation. Culverts 48 inches in diameter and less shall be buried or placed on the stream bed as practicable and appropriate to maintain aquatic passage, and every effort shall be made to maintain existing channel slope. Culverts shall be designed and constructed in a manner that minimizes destabilization and head cutting.

2) Measures shall be included in the construction/installation that will promote the safe passage of fish and other aquatic organisms. The dimension, pattern, and profile of the stream above and below a pipe or culvert shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed opening shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. Spring flow should be determined from gauge data, if available. In the absence of such data, bankfull flow can be used as a comparable level.

3) The Permittee shall implement all reasonable and practicable measures to ensure that equipment, structures, fill pads, work, and operations associated with this project do not adversely affect upstream and/or downstream reaches. Adverse effects include, but are not limited to, channel instability, flooding, and/or stream bank erosion. The Permittee shall routinely monitor for these effects, cease all work when detected, take initial corrective measures to correct actively eroding areas, and notify this office immediately. Permanent corrective measures may require additional authorization by the U.S. Army Corps of Engineers.

**SPECIAL CONDITIONS**  
**Action ID: SAW-2018-02343**  
**R-2307 and I-5717**

4) Culverts placed within wetlands must be installed in a manner that does not restrict the flows and circulation patterns of waters of the United States. Culverts placed across wetland fills purely for the purposes of equalizing surface water shall not be buried, but the culverts must be of adequate size and/or number to ensure unrestricted transmission of water.

**13. Sediment and Erosion Control:**

1) During the clearing phase of the project, heavy equipment shall not be operated in surface waters or stream channels. Temporary stream crossings will be used to access the opposite sides of stream channels. All temporary diversion channels and stream crossings will be constructed of non-erodible materials. Grubbing of riparian vegetation will not occur until immediately before construction begins on a given segment of stream channel.

2) No fill or excavation impacts for the purposes of sedimentation and erosion control shall occur within jurisdictional waters, including wetlands, unless the impacts are included on the plan drawings and specifically authorized by this permit. This includes, but is not limited to, sediment control fences and other barriers intended to catch sediment losses.

3) The Permittee shall remove all sediment and erosion control measures placed in waters and/or wetlands, and shall restore natural grades on those areas, prior to project completion.

4) The Permittee shall use appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" to ensure compliance with the appropriate turbidity water quality standard. Erosion and sediment control practices shall be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to ensure compliance with the appropriate turbidity water quality standards. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project shall remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A, Article 4). Adequate sedimentation and erosion control measures shall be implemented prior to any ground disturbing activities to minimize impacts to downstream aquatic resources. These measures shall be inspected and maintained regularly, especially following rainfall events. All fill material shall be adequately stabilized at the earliest practicable date to prevent sediment from entering into adjacent waters or wetlands.

**14. Temporary Fills:** Within thirty (30) days of the date of completing the authorized work, the Permittee shall remove all temporary fills in waters of the United States and

**SPECIAL CONDITIONS**  
**Action ID: SAW-2018-02343**  
**R-2307 and I-5717**

restore the affected areas to pre-construction contours and elevations. The affected areas shall be re-vegetated with native, non-invasive vegetation as necessary to minimize erosion and ensure site stability.

**15. Borrow and Waste:** To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent waters and wetlands, except as authorized by this permit, the Permittee shall require its contractors and/or agents to identify all areas to be used as borrow and/or waste sites associated with this project. The Permittee shall provide the U.S. Army Corps of Engineers with appropriate maps indicating the locations of proposed borrow and/or waste sites as soon as such information is available. The Permittee shall submit to the Corps site-specific information needed to ensure that borrow and/or waste sites comply with all applicable Federal requirements, to include compliance with the Endangered Species Act and the National Historic Preservation Act, such as surveys or correspondence with agencies (e.g., the USFWS, the NC-HPO, etc.). The required information shall also include the location of all aquatic features, if any, out to a distance of 400 feet beyond the nearest boundary of the site. The Permittee shall not approve any borrow and/or waste sites before receiving written confirmation from the Corps that the proposed site meets all Federal requirements, whether or not waters of the U.S. , including wetlands, are located in the proposed borrow and/or waste site. All delineations of aquatic sites on borrow and/or waste sites shall be verified by the U.S. Army Corps of Engineers and shown on the approved reclamation plans. The Permittee shall ensure that all borrow and/or waste sites comply with Special Condition 3 of this permit. Additionally, the Permittee shall produce and maintain documentation of all borrow and waste sites associated with this project. This documentation will include data regarding soils, vegetation, hydrology, any delineation(s) of aquatic sites, and any jurisdictional determinations made by the Corps to clearly demonstrate compliance with Special Condition 3. All information will be available to the U.S. Army Corps of Engineers upon request. The Permittee shall require its contractors to complete and execute reclamation plans for each borrow and/or waste site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the U.S. Army Corps of Engineers within 30 days of the completion of the reclamation work.

**16. Compensatory Mitigation:** In order to compensate for impacts associated with this permit, mitigation shall be provided in accordance with the provisions outlined on the most recent version of the attached Compensatory Mitigation Responsibility Transfer Form. The requirements of this form, including any special conditions listed on this form, are hereby incorporated as special conditions of this permit.

**17. Compliance Inspection:** A representative of the Corps of Engineers will periodically and randomly inspect the work for compliance with these conditions. Deviations from these procedures may result in an administrative financial penalty and/or directive to cease work until the problem is resolved to the satisfaction of the Corps.

**SPECIAL CONDITIONS**  
**Action ID: SAW-2018-02343**  
**R-2307 and I-5717**

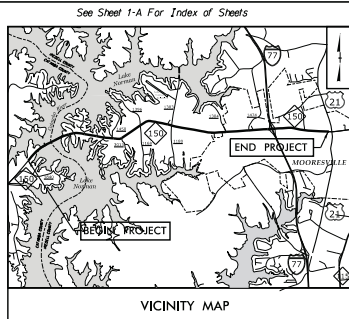
**18. NCDWR 401 Cert:** In accordance with 33 U.S.C. 1341(d), all conditions of the North Carolina Division of Water Resources 401 Water Quality Certification No. 3845 dated April 17, 2019 are hereby incorporated as special conditions of this permit

**19. Prohibitions on Concrete:** The permittee shall take measures to prevent live or fresh concrete, including bags of uncured concrete, from coming into contact with any water in or entering into waters of the United States. Water inside coffer dams or casings that has been in contact with concrete shall only be returned to waters of the United States when it no longer poses a threat to aquatic organisms (concrete is set and cured).

**20. Discovery of Previously Unknown Remains and Artifacts:** If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

**21. Segment A, Affects to Navigation Evaluation:** Once final plans are completed for Segment A, information regarding potential effects to navigation for the two bridge replacements over Lake Norman on NC 150 in Segment A should be included with the permit modification request. Information should include temporary and permanent impacts to lake users, the boater's safety plan and verification that the bridge replacements will be designed in accordance with the Lake Norman Management Plan.

TIP PROJECTS: R-2307B & I-5717



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# CATAWBA & IREDELL COUNTIES

LOCATION: NC 150 FROM SR 1840 (GREENWOOD RD) IN CATAWBA  
COUNTY TO US 21 IN IREDELL COUNTY

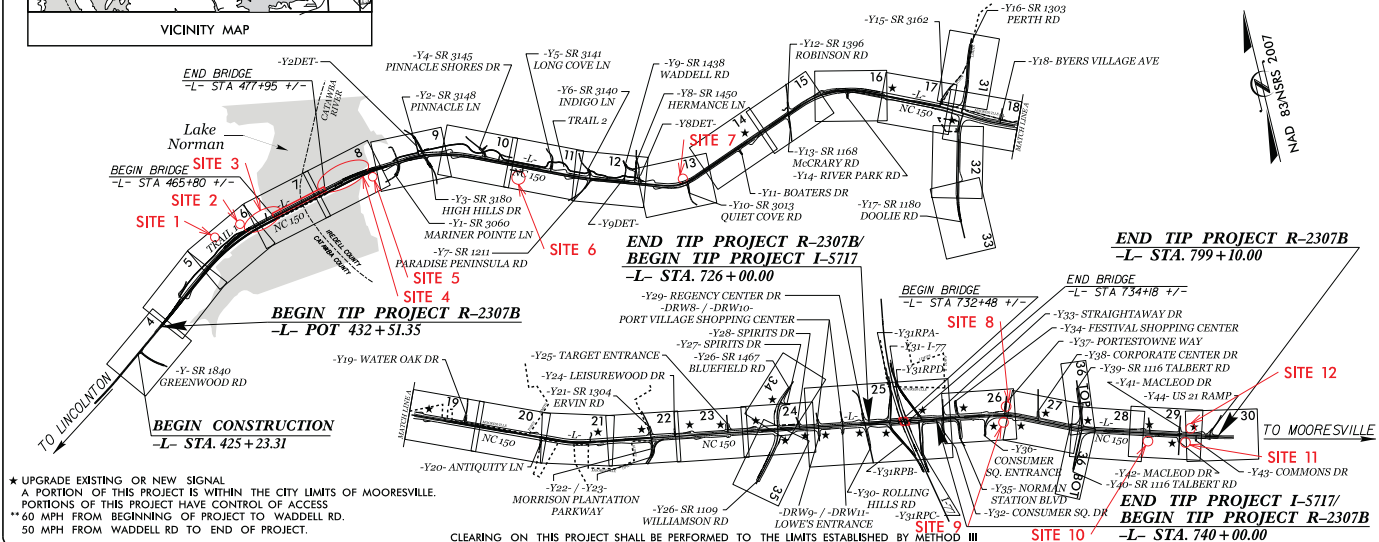
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES, AND SIGNALS

## WETLAND & STREAM IMPACTS

STATE	STATE PROJECT NUMBER	PROJECT	REVISION
NC	R-2307B, I-5717	1	
DATE	PROJECT	DESIGNER	REVISION
3/7/2018	SR 1840	STP-0150(36)	PE (R-2307B)
5/13/18	SR 1840	NHPP-077-(1221)37	PE (I-5717)
3/7/2018	SR 1840	STP-0150(36)	R/W (R-2307B)
3/7/2018	SR 1840	STP-0150(36)	UTILITIES (R-2307B)
5/13/18	SR 1840	NHPP-077-(1221)37	R/W, UTILITIES (I-5717)

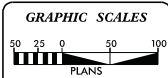
PERMIT DRAWING  
SHEET 1 OF 22

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



★ UPGRADE EXISTING OR NEW SIGNAL.  
A PORTION OF THIS PROJECT IS WITHIN THE CITY LIMITS OF MOORESVILLE.  
PORTIONS OF THIS PROJECT HAVE CONTROL OF ACCESS  
\*\* 60 MPH FROM BEGINNING OF PROJECT TO WADDELL RD.  
50 MPH FROM WADDELL RD TO END OF PROJECT.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III



DESIGN DATA

ADT 2019 = 47,900  
ADT 2039 = 58,860

K = 8%  
D = 55%  
T = 6%  
V = \*\*

\* TTST 2%+ DUAL 4%  
FUNC CLASS =  
PRINCIPAL ARTERIAL  
STATEWIDE TIER

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT R-2307B	= 6.448 mile
LENGTH STRUCTURES TIP PROJECT R-2307B	= 0.230 mile
TOTAL LENGTH TIP PROJECT R-2307B	= 6.678 mile
LENGTH ROADWAY TIP PROJECT I-5717	= 0.233 mile
LENGTH STRUCTURES TIP PROJECT I-5717	= 0.032 mile
TOTAL LENGTH TIP PROJECT I-5717	= 0.265 mile
TOTAL LENGTH TIP PROJECT R-2307B / I-5717	= 6.943 mile

Prepared For:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh, NC 27610

TGS ENGINEERS  
700 H. H. HARRISON ST.  
SUITE 200  
RALEIGH, NC 27603

PH: (919) 773-8887  
CORP. LICENSE NO.:  
LC0078

RIGHT OF WAY DATE:  
AUGUST 31, 2017

LETTING DATE:  
JULY 16, 2019

BURKE EVANS, PE  
PROJECT ENGINEER

TRAVIS COOK, EI  
PROJECT DESIGN ENGINEER

BRYAN KEY, PE  
PROJECT ENGINEER  
NEIGHBORHOOD DESIGN

HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

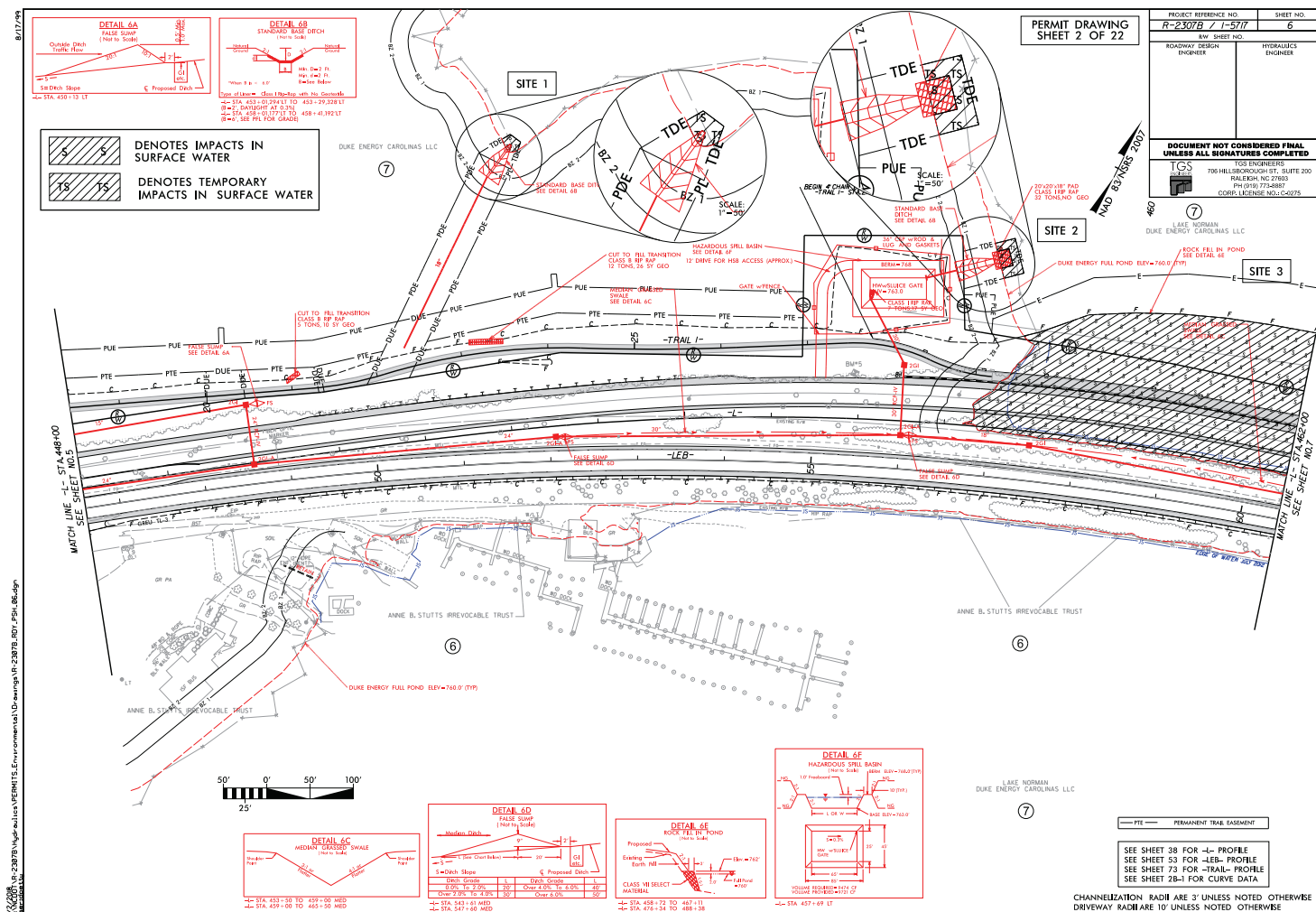
ROADWAY DESIGN  
ENGINEER

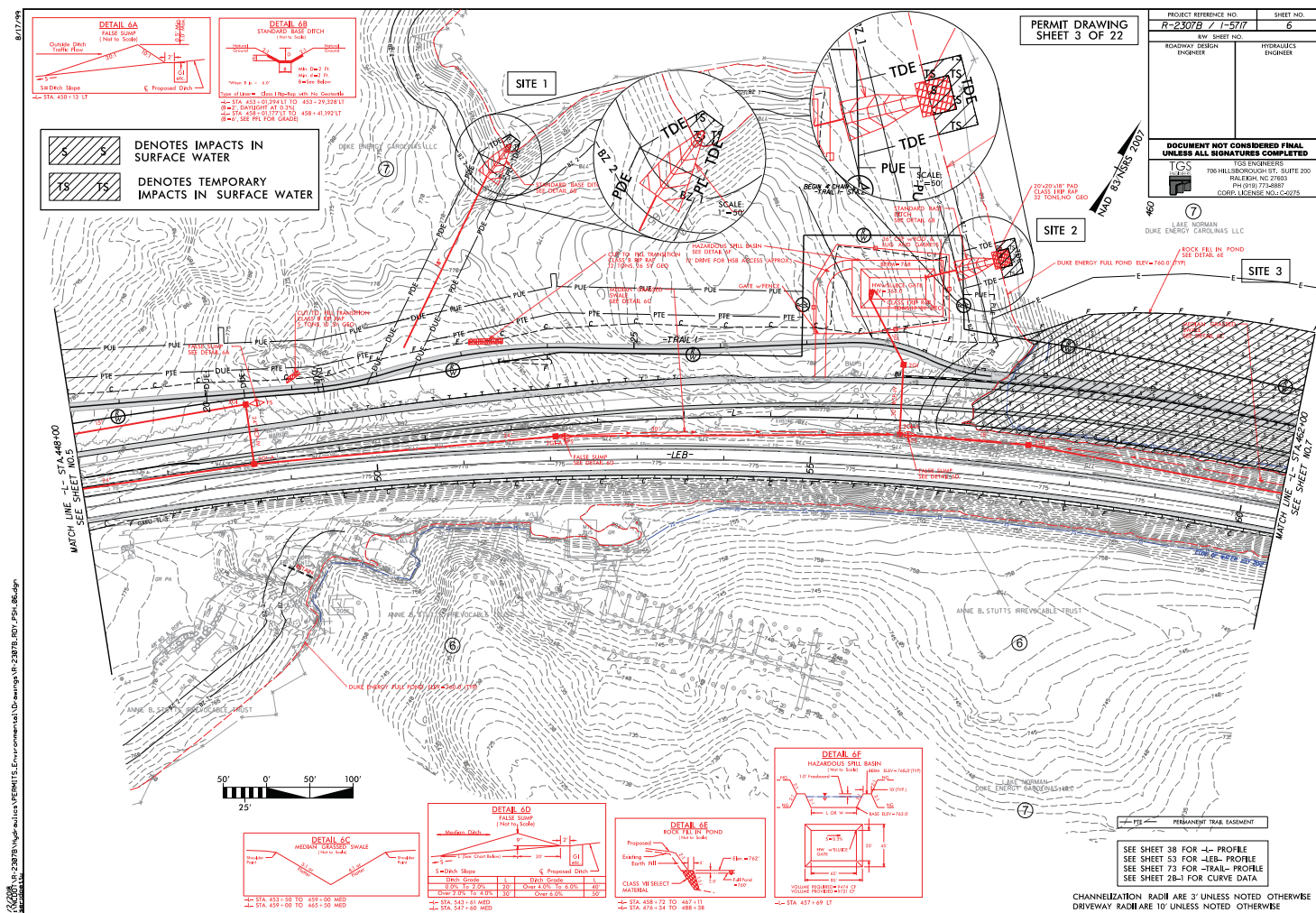
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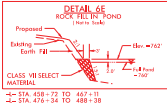
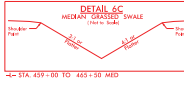
7/17/2018  
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8/17/09




PERMIT DRAWING  
SHEET 4 OF 22

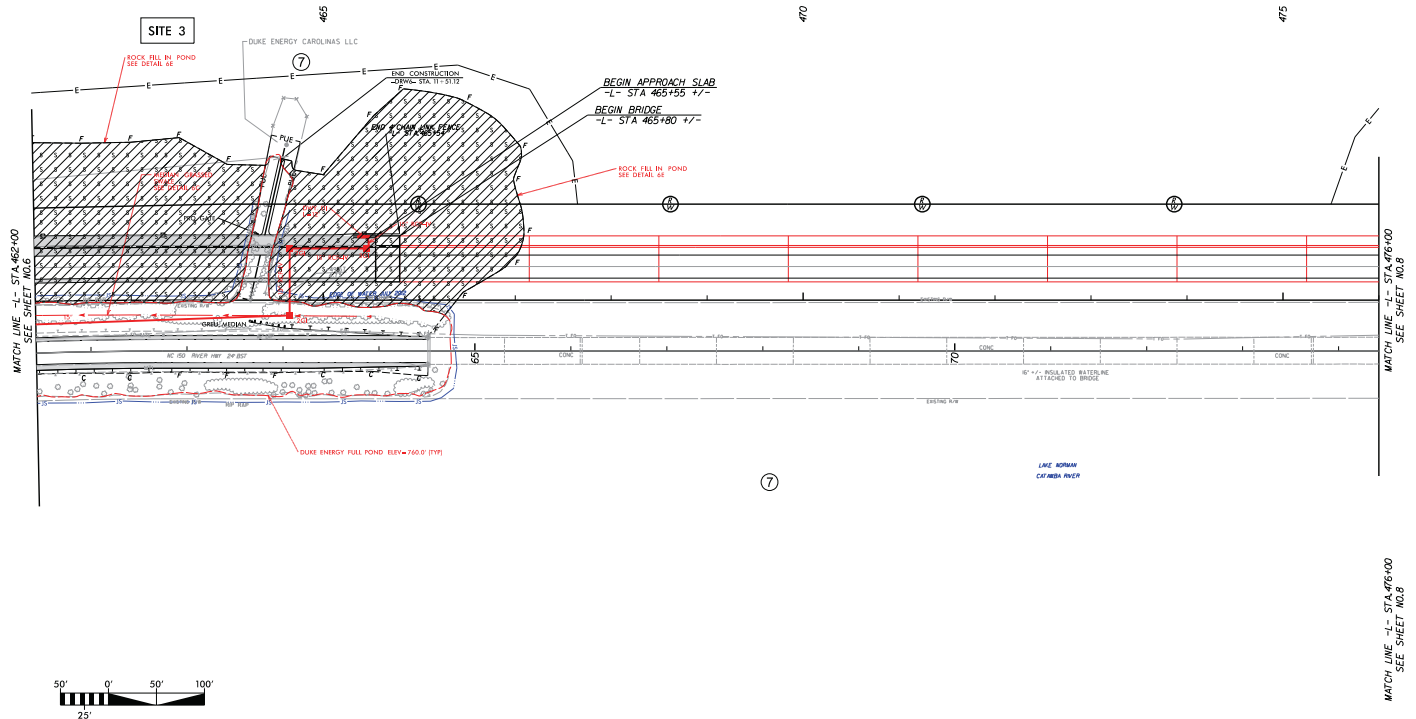
 DENOTES IMPACTS IN  
SURFACE WATER

LAKE NORMAN  
DUKE ENERGY CAROLINAS LLC

⑦

NAD 83 N 85° 20' 07"


PROJECT REFERENCE NO. <b>R-2307B / 1-577</b>	SHEET NO. <b>7</b>
ROW SHEET NO. <b>ENGINEER</b>	HYDRAULICS <b>ENGINEER</b>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 TGS ENGINEERS 708 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH: (919) 774-8887 CORP. LICENSE NO.: C-60775	

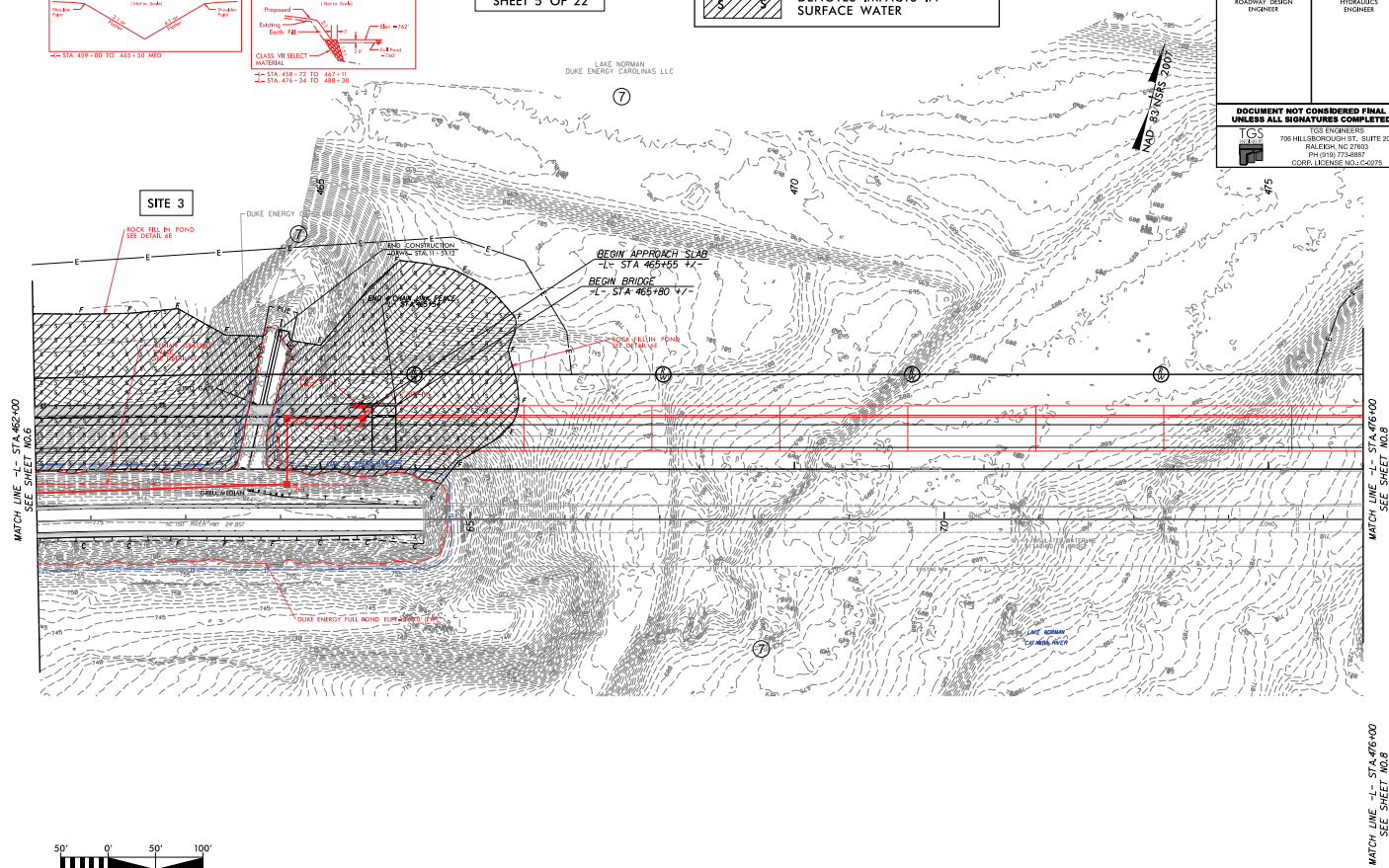


SEE SHEET 39 FOR -L- PROFILE  
SEE SHEETS 53 THRU 54 FOR -LEB- PROFILE  
SEE SHEET 28-1 FOR CURVE DATA

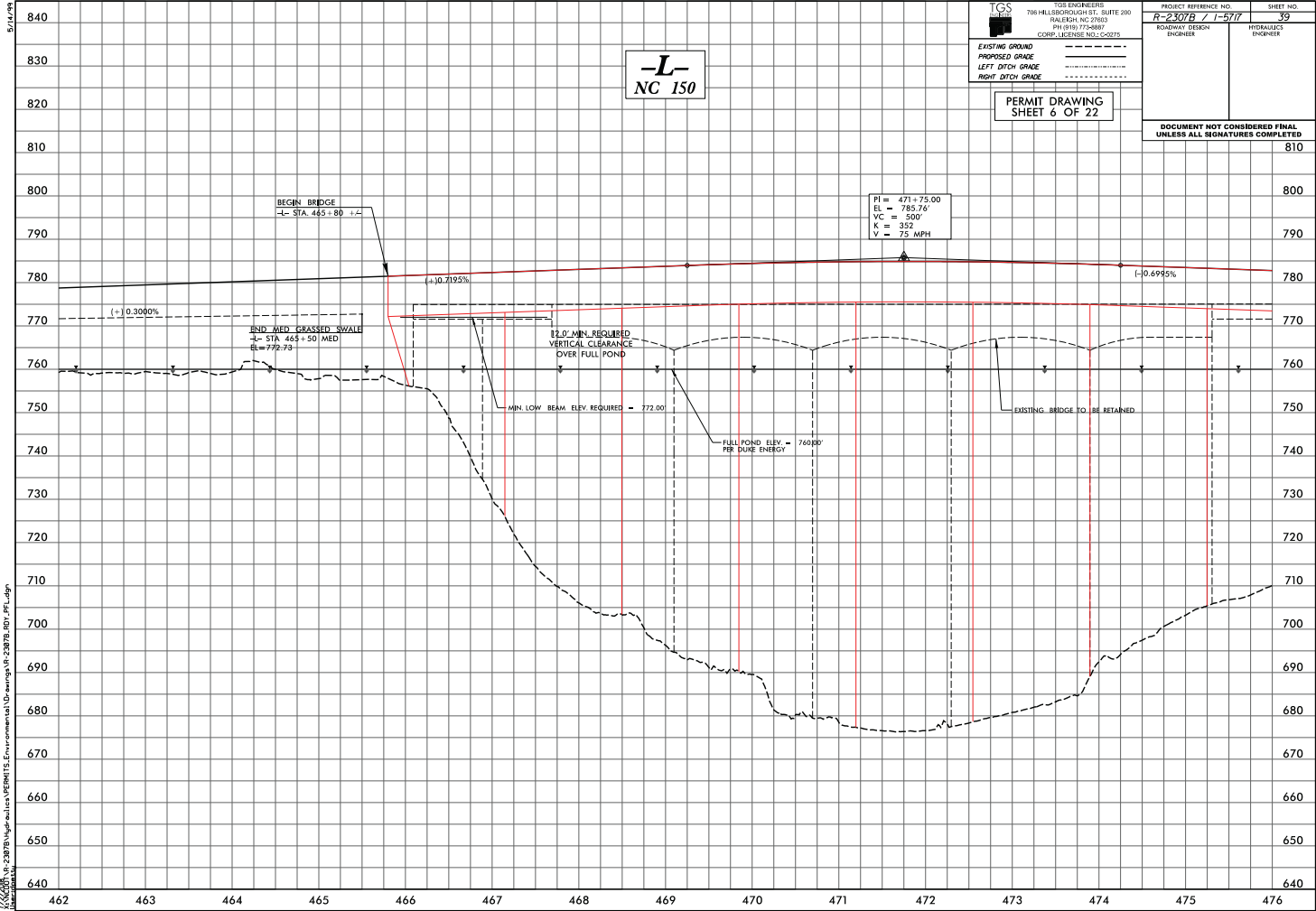
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8/17/09



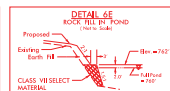
PROJECT REFERENCE NO.		SHEET NO.	
R-2307B / 1-517		7	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p> <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">  <p><b>TGS</b> ENGINEERS</p> </div> <div style="text-align: center;"> <p><b>TGS ENGINEERS</b> 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO. 002075</p> </div> </div>			




SEE SHEET 39 FOR -L- PROFILE  
SEE SHEETS 53 THRU 54 FOR -LEB- PROFILE  
SEE SHEET 2B-1 FOR CURVE DATA

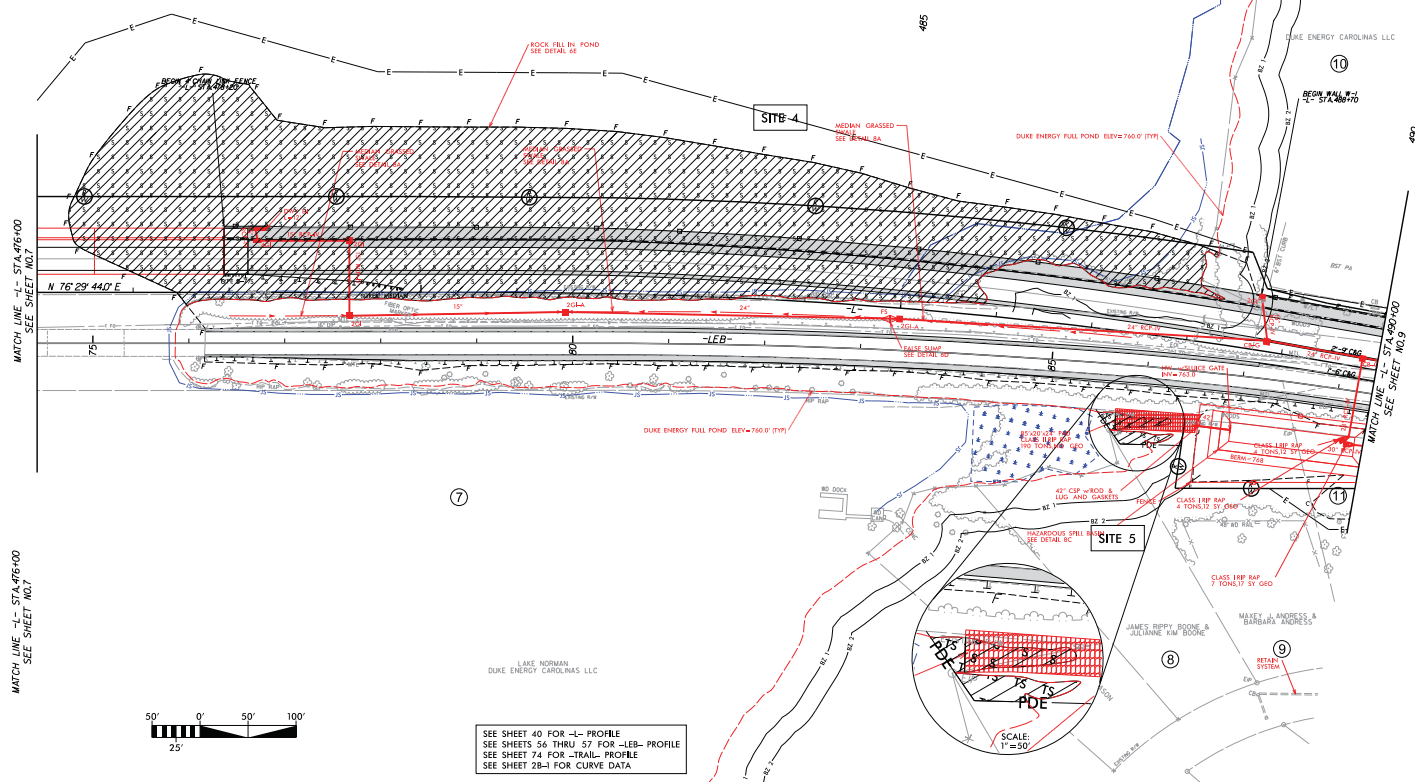


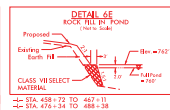





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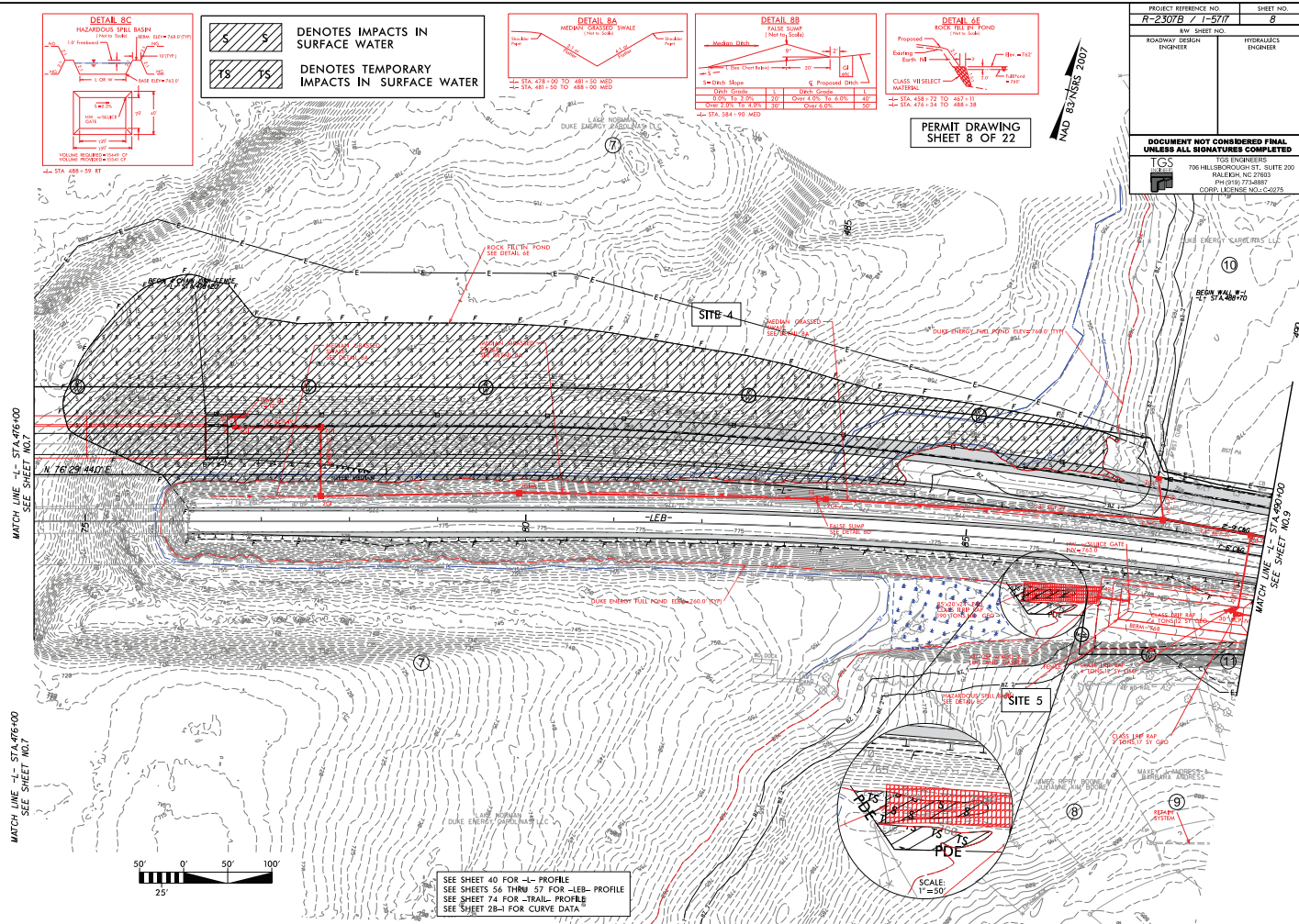
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R-2307B / I-517		8	
REV. SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p> <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">  <p><b>TGS</b> TRANSPORTATION GROUP, INC.</p> </div> <div style="text-align: center;"> <p><b>TGS ENGINEERS</b> 705 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27601 PH (919) 773-8887 WWW.TGSENGR.COM</p> </div> </div>			

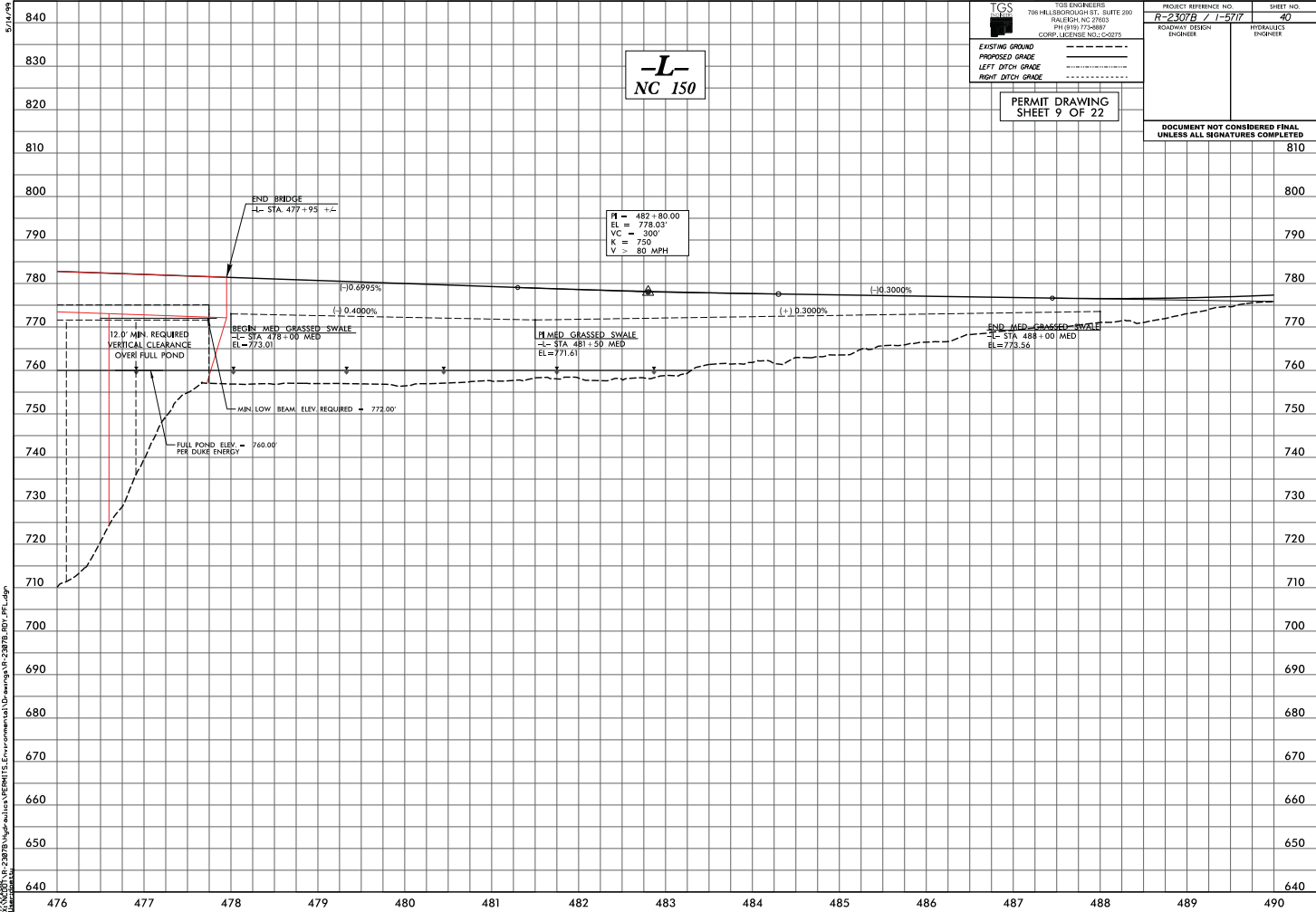


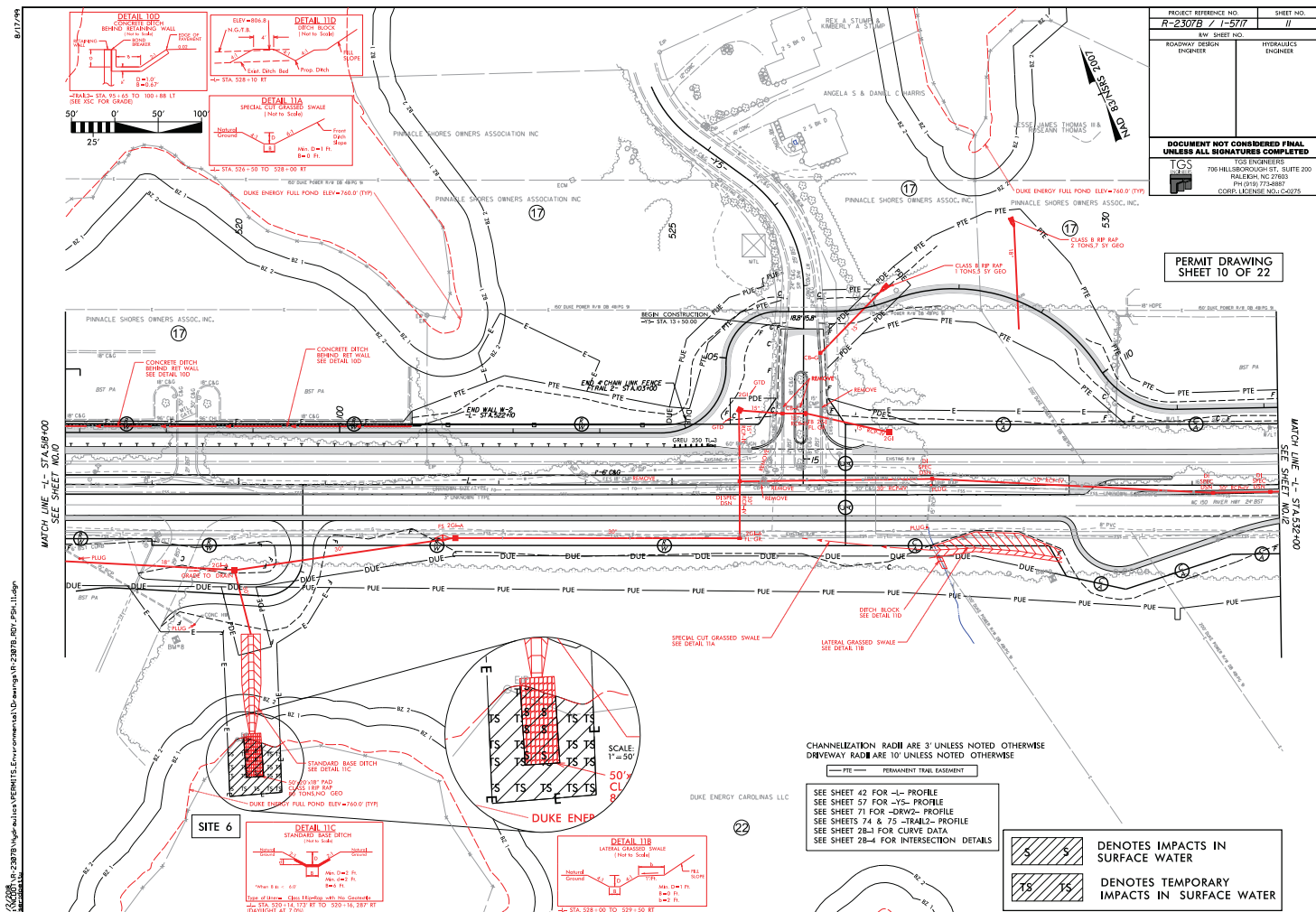


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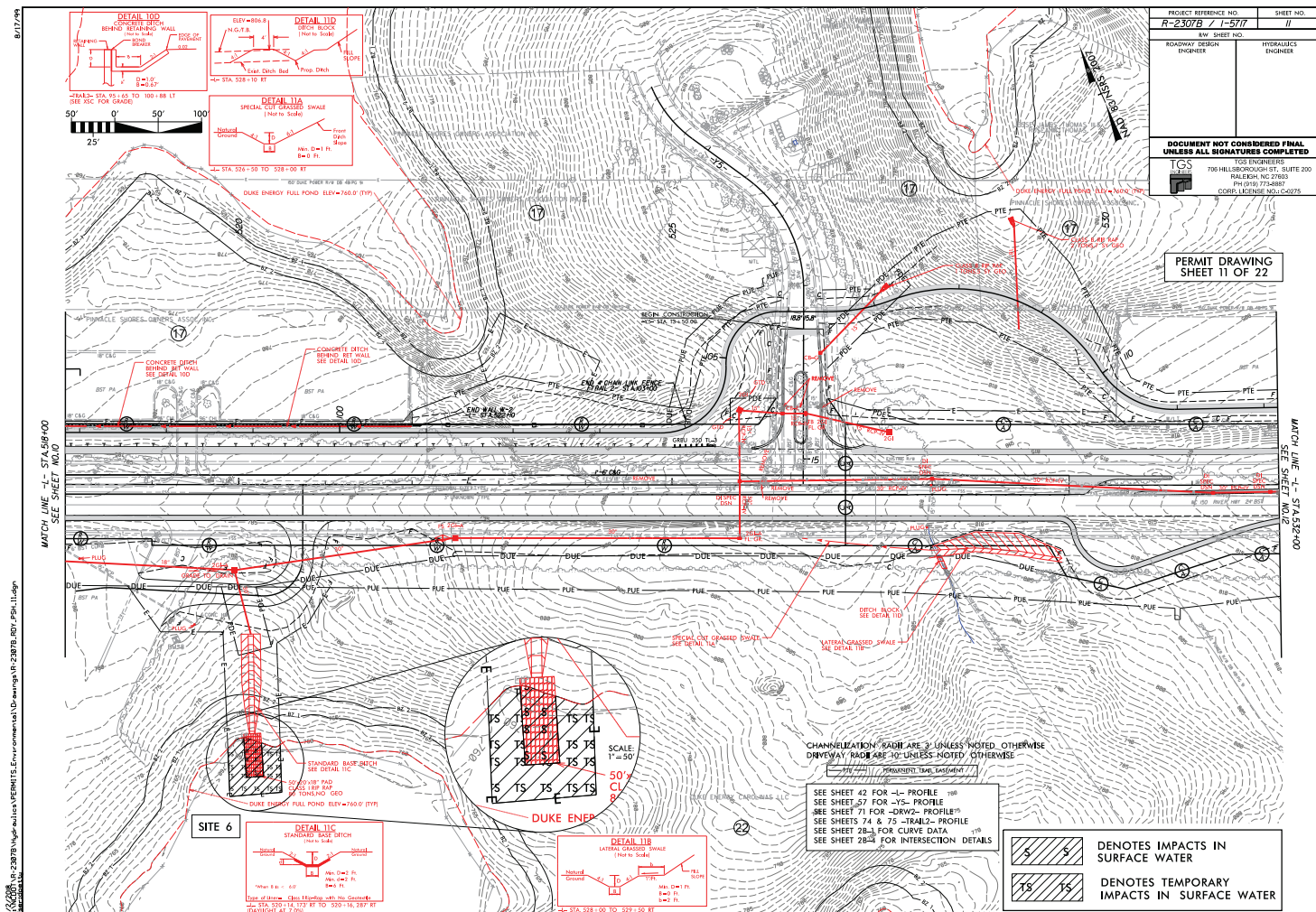
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BY SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
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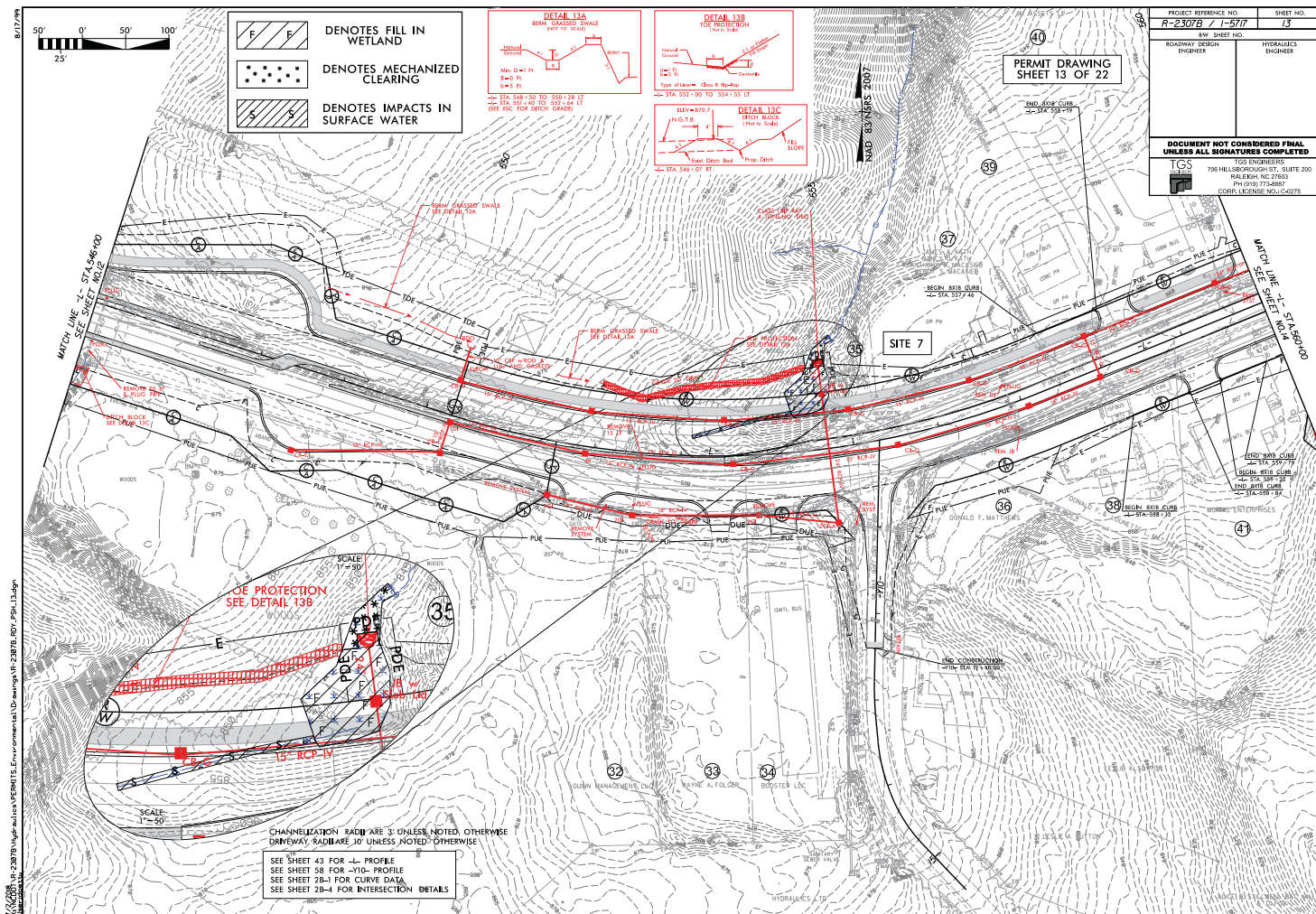




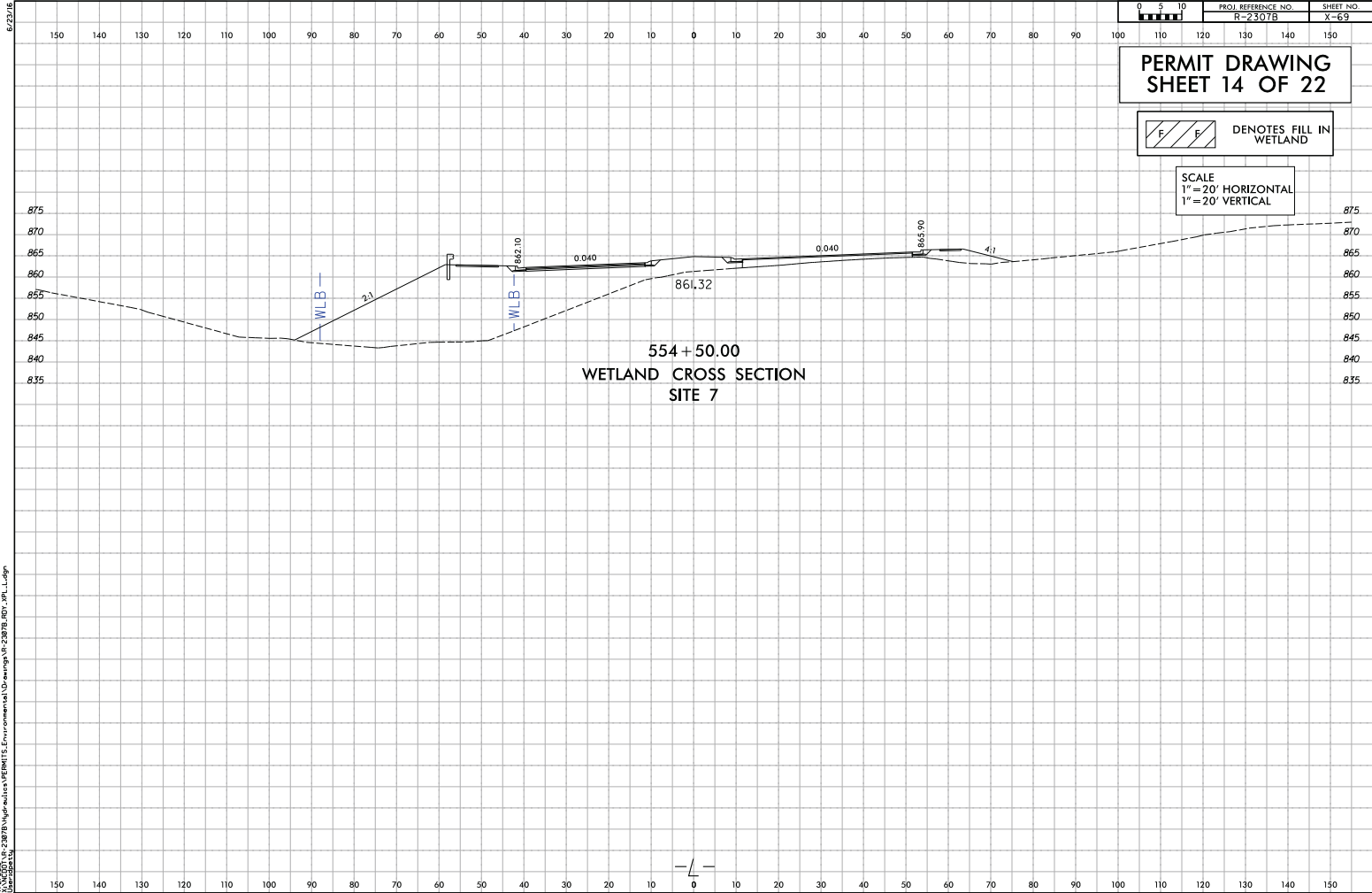




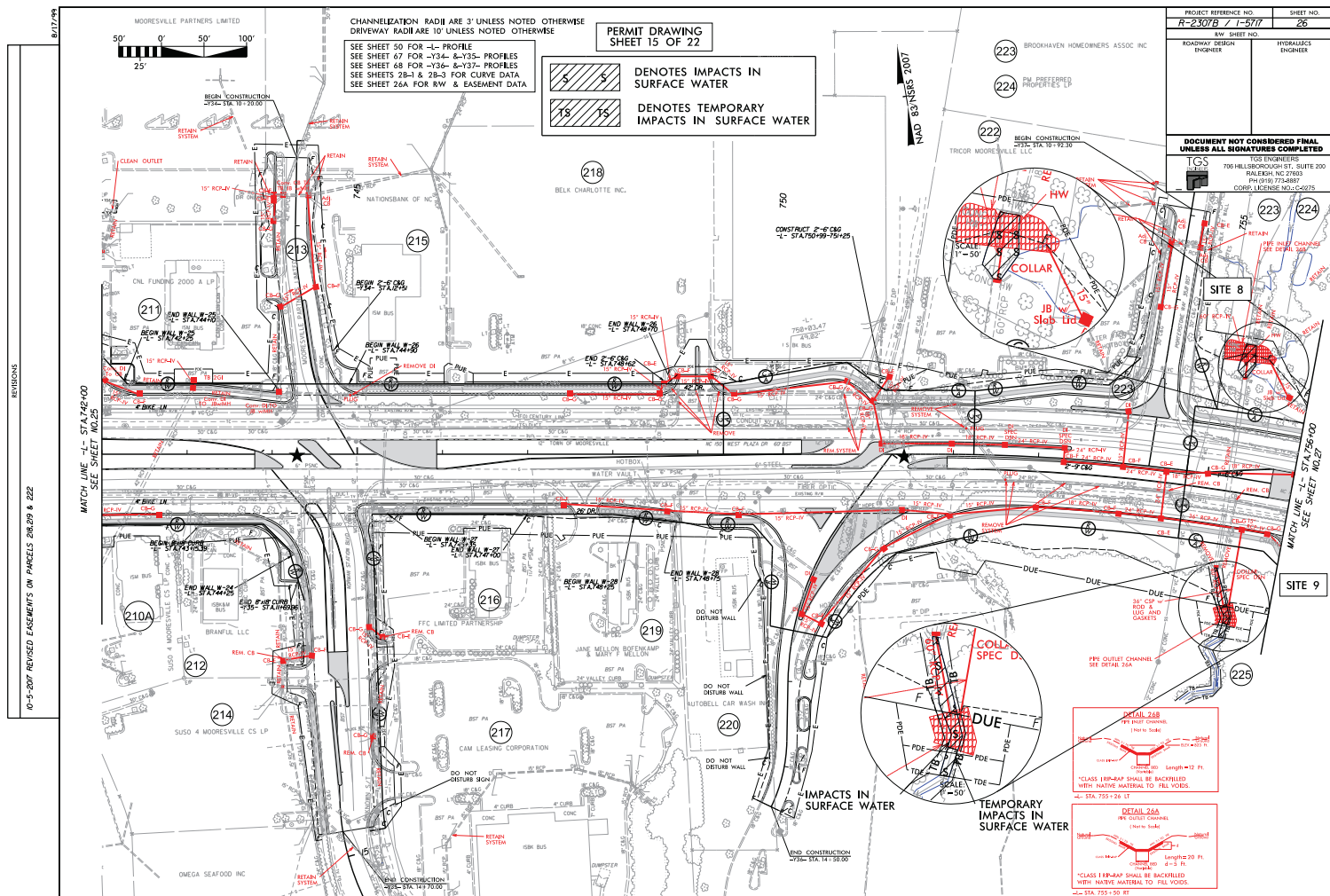




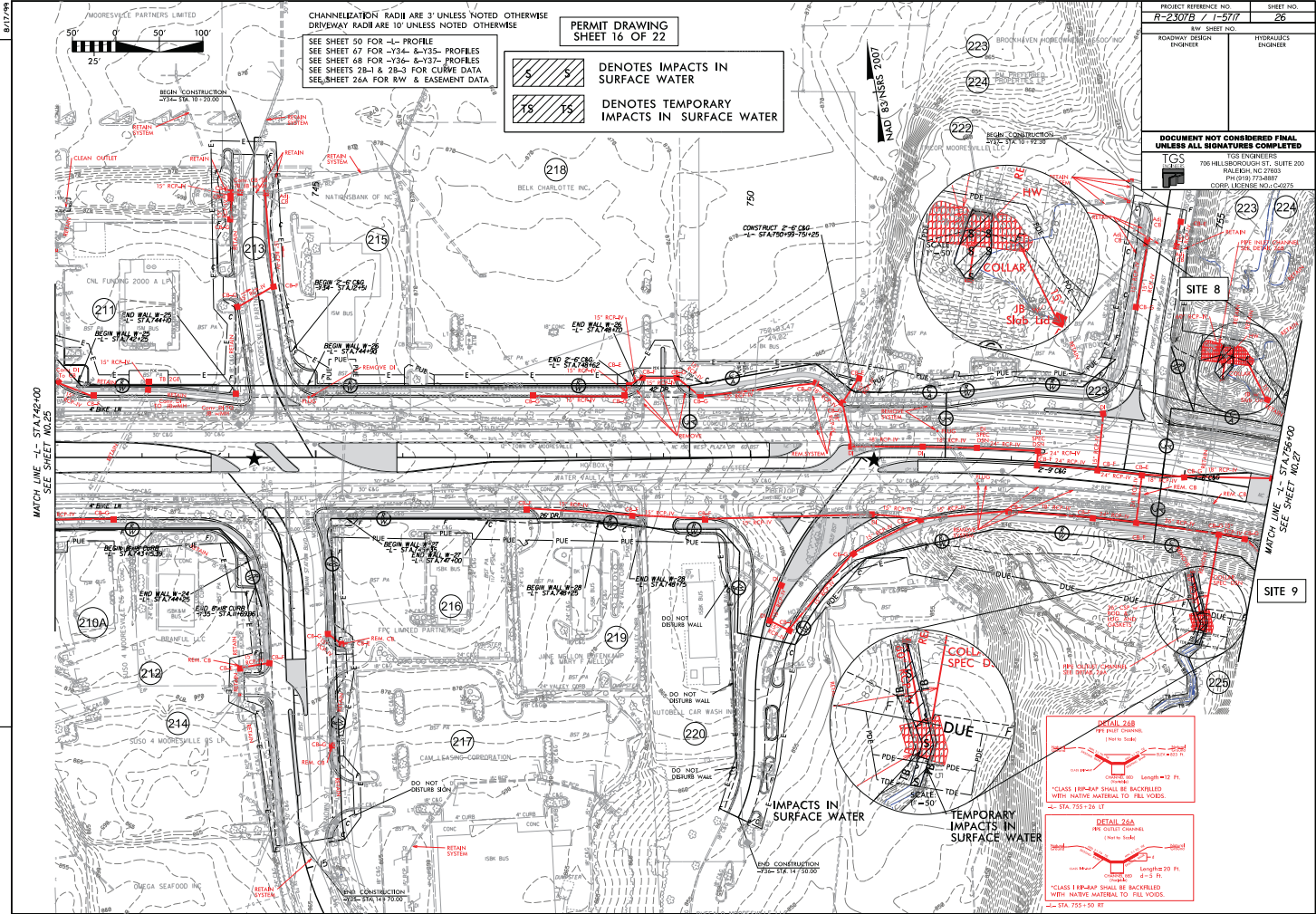
6/23/16



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User: jsmith

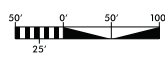








8/17/19

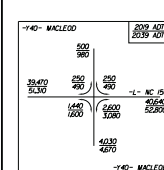
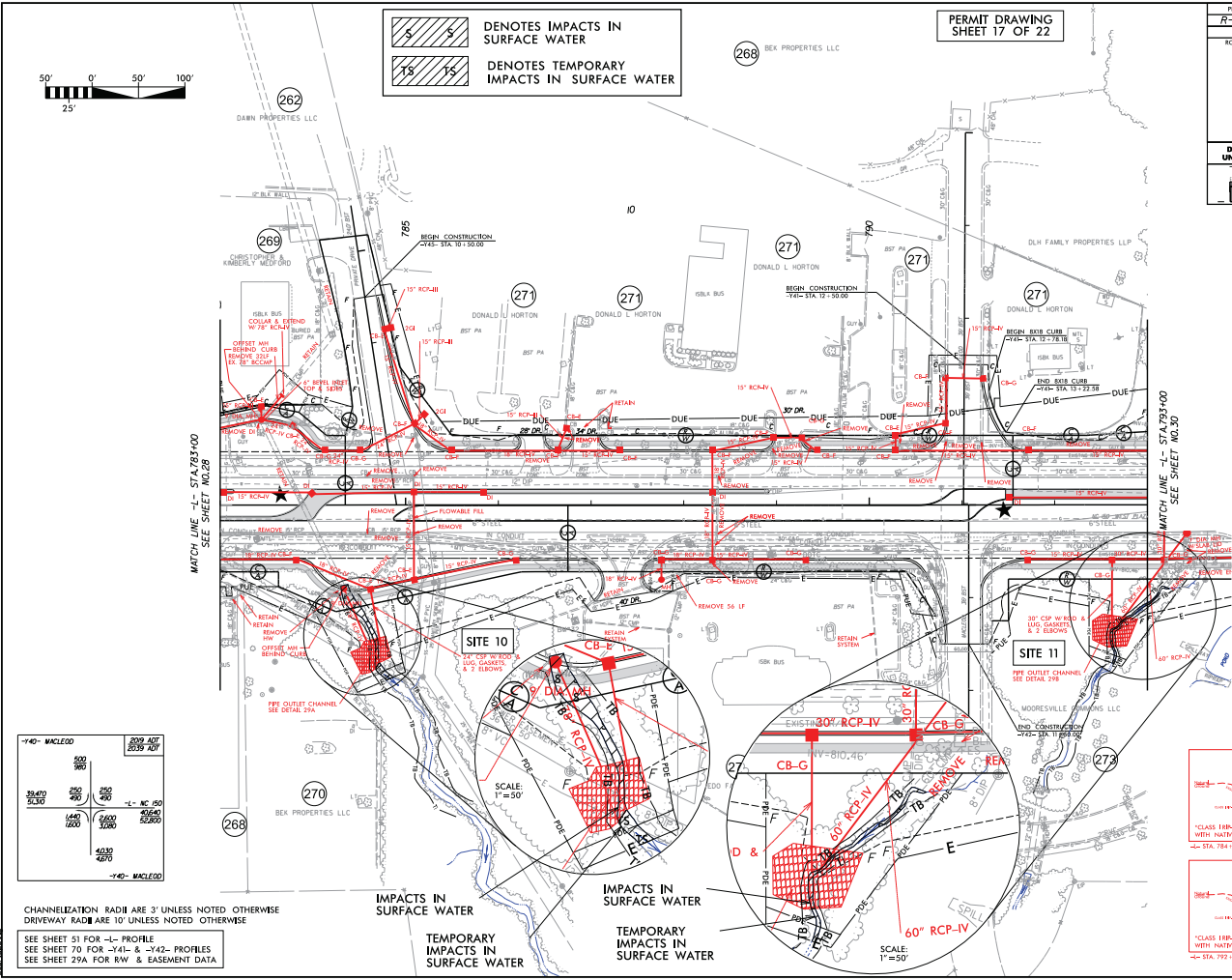


DENOTES IMPACTS IN SURFACE WATER  
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING  
SHEET 17 OF 22

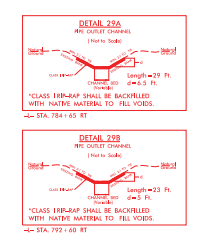
PROJECT REFERENCE NO.	SHEET NO.
R-2307B / 1-577	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TGS ENGINEERS 708 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 (919) 775-8887 CORP. LICENSE NO. C40275	

NO  
3/15/2007

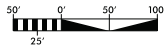


CHANNELIZATION: RADII ARE 3' UNLESS NOTED OTHERWISE  
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 51 FOR -L- PROFILE  
SEE SHEET 70 FOR -Y41- & -Y42- PROFILES  
SEE SHEET 29A FOR R/W & EASEMENT DATA



8/17/19

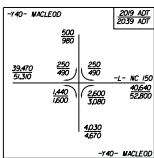


DENOTES IMPACTS IN SURFACE WATER  
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING  
SHEET 18 OF 22

PROJECT REFERENCE NO.	R-2307B / 1-577
SHEET NO.	29
RDW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TGS ENGINEERS 708 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH: (919) 775-8887 CORP. LICENSE NO.: C4075	

NOV 13 2019



CHANNELIZATION: RADII ARE 3' UNLESS NOTED OTHERWISE  
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 51 FOR -L- PROFILE  
SEE SHEET 70 FOR -Y41- & -Y42- PROFILES  
SEE SHEET 29A FOR RW & EASEMENT DATA

MATCH LINE -L- STA 783+00  
SEE SHEET NO.28

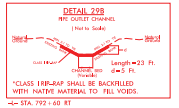
MATCH LINE -L- STA 791+00  
SEE SHEET NO.30

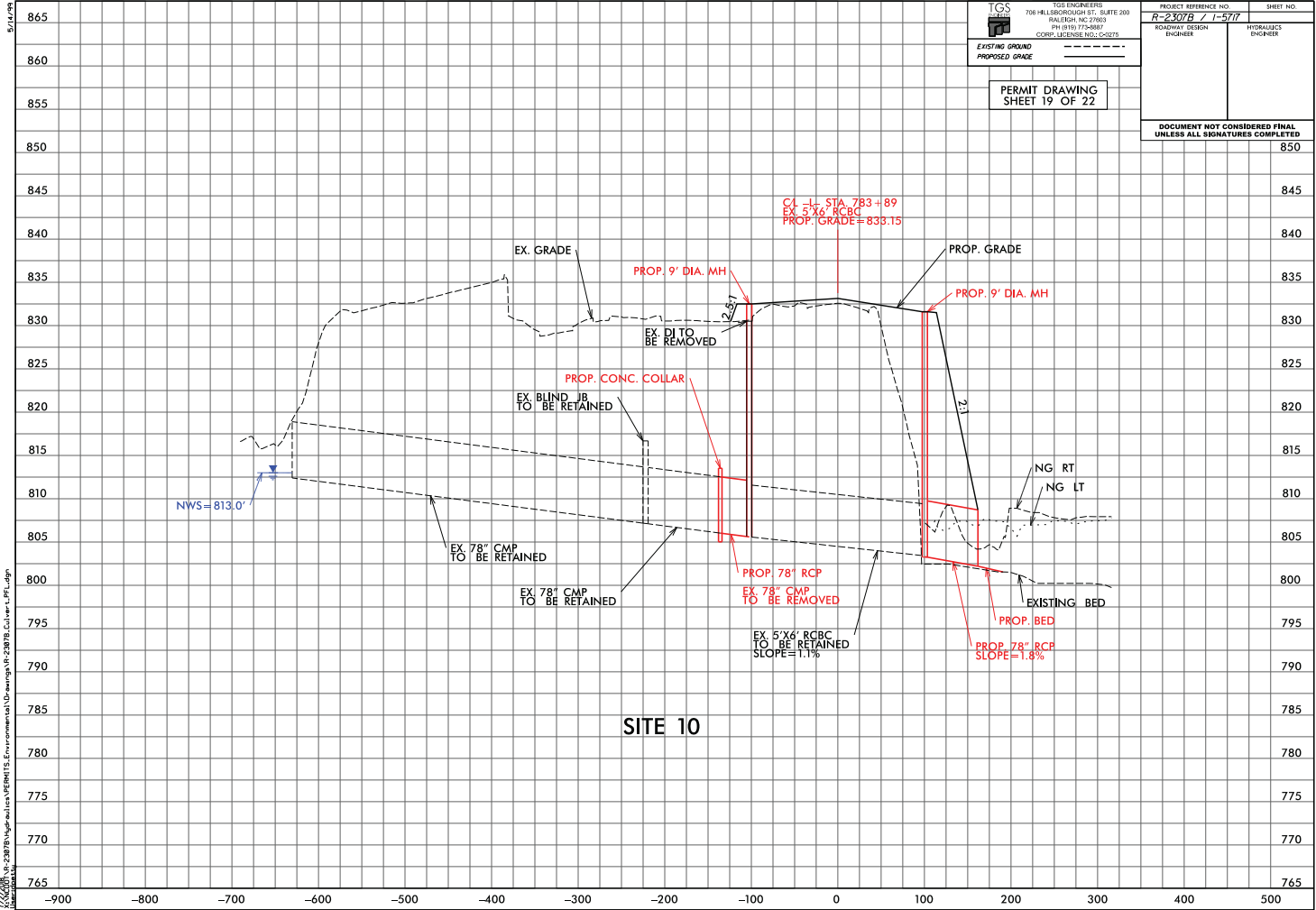
IMPACTS IN SURFACE WATER

TEMPORARY IMPACTS IN SURFACE WATER



IMPACTS IN SURFACE WATER


TEMPORARY IMPACTS IN SURFACE WATER

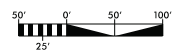




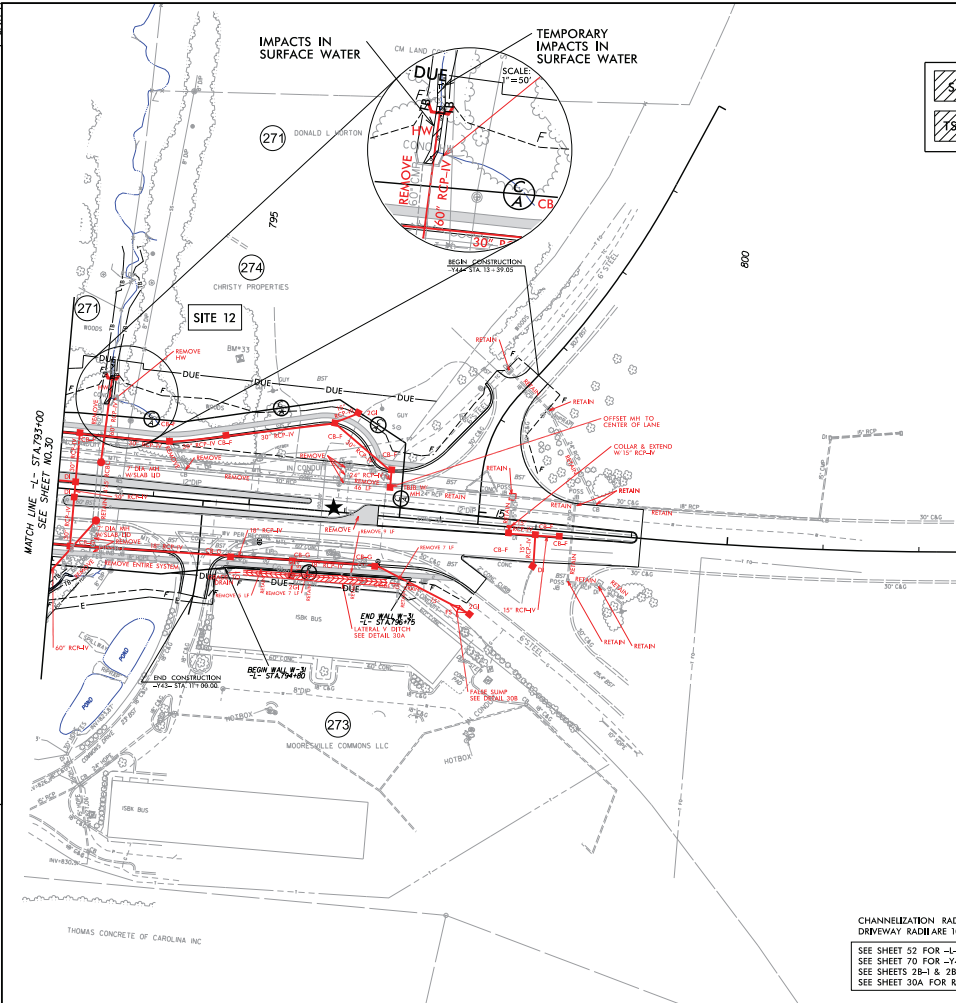
PERMIT DRAWING  
SHEET 20 OF 22

 DENOTES IMPACTS IN SURFACE WATER  
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

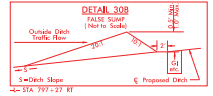
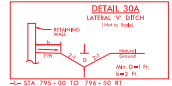
PROJECT REFERENCE NO.	SHEET NO.
R-2307B / 1-577	30
RDW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 TGS ENGINEERS 708 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH: (919) 774-8887 CORP. LICENSE NO.: C-40775	



NAD 83 N 88° 2' 00" E

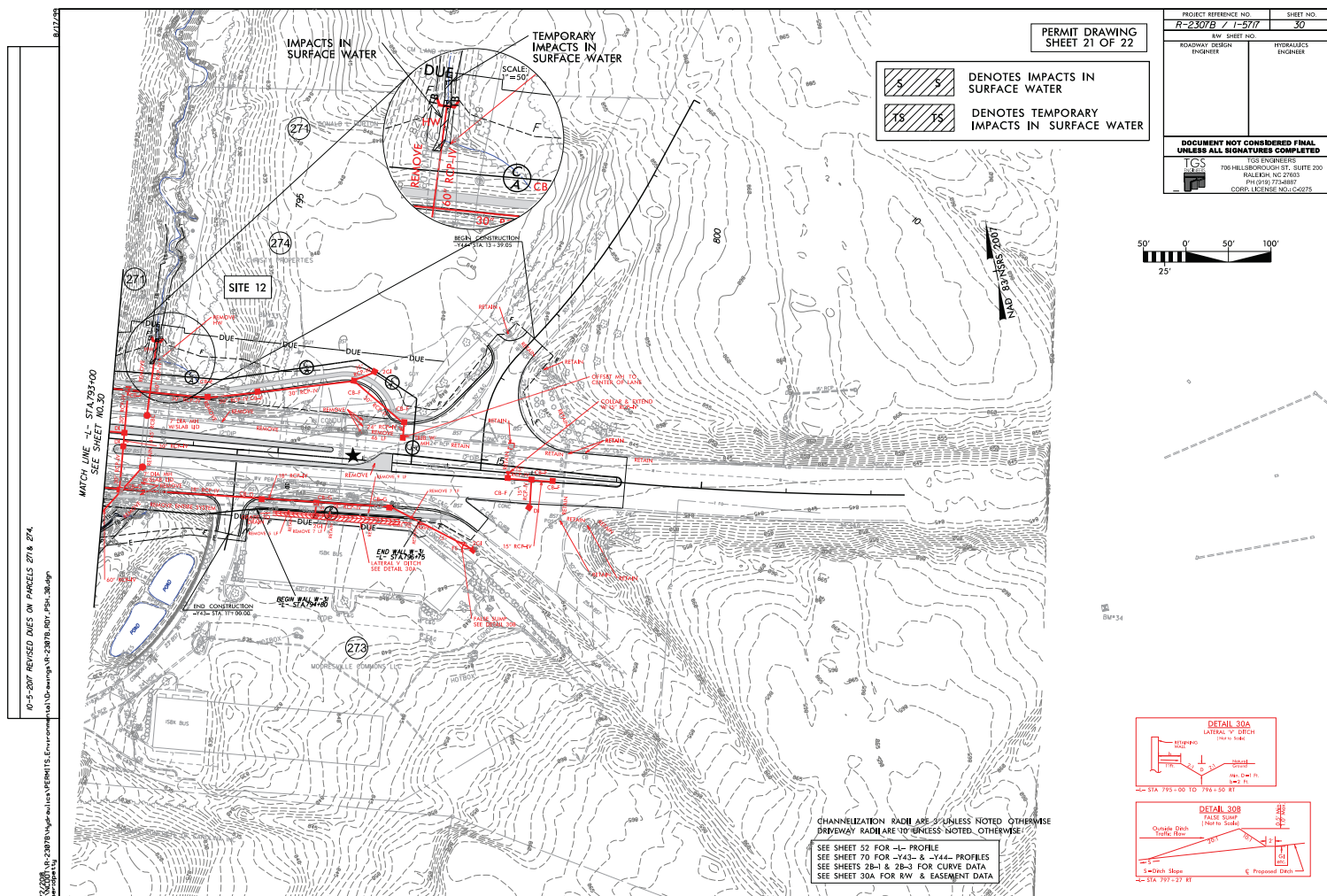


CHANNELIZATION: RADII ARE 3' UNLESS NOTED OTHERWISE  
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE  
SEE SHEET 52 FOR -L- PROFILE  
SEE SHEET 70 FOR -Y43- & -Y44- PROFILES  
SEE SHEETS 28-1 & 28-3 FOR CURVE DATA  
SEE SHEET 30A FOR RW & EASEMENT DATA



0-5'-200' REVISED DUES ON PARCELS 271 & 274.  
TGS 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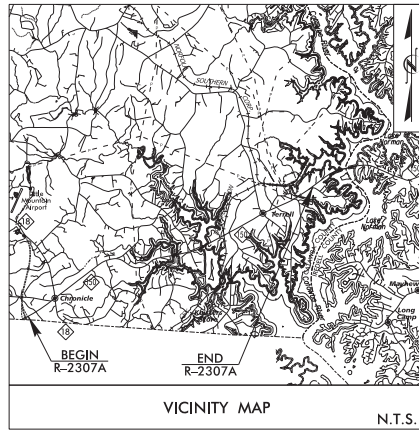


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8/16/2018

**CONTRACT:**

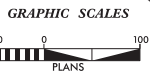
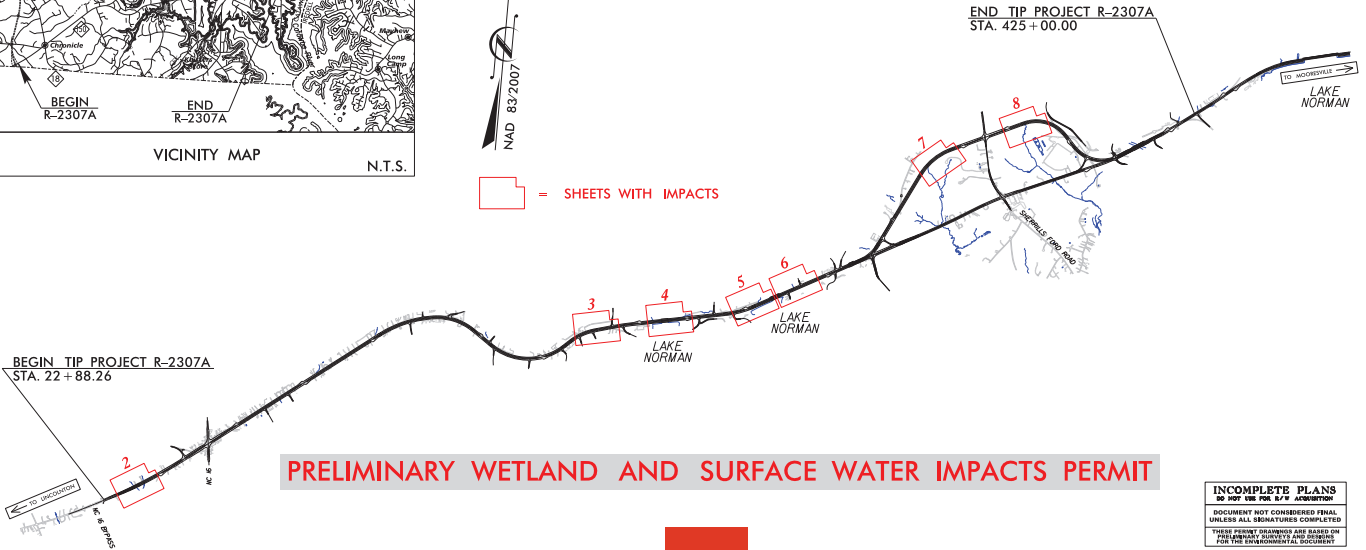
**TIP PROJECT: R-2307A**



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**CATAWBA & IREDELL**

LOCATION: PROPOSED NC 150 WIDENING FROM NC 16 BYPASS  
TO GREENWOOD ROAD

STATE	STATE PROJECT REFERENCE NO.	SHEET	TOTAL
N.C.	R-2307A	1	
STATE FUND NO.	F.A.M.B.U.S.	DESCRIPTION	
37944.1.1	STP-150(19)		



**PROJECT LENGTH**  
LENGTH OF ROADWAY TIP PROJECT R-2307A = 7.616 MILES

Prepared In the Office of:  
Stantec Consulting Services Inc. Tel: (919) 851-8868  
801 James Franklin Road Fax: (919) 851-1024  
Suite 200 www.stantec.com  
Raleigh, NC 27605 License No. F-2672

**Stantec**

300 STANDARD SPECIFICATIONS

PERMIT DRAWING DATE:  
**NOVEMBER 15, 2018**

**DEAN SARVIS P.E.**  
PROJECT ENGINEER

PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE \_\_\_\_\_ P.E.

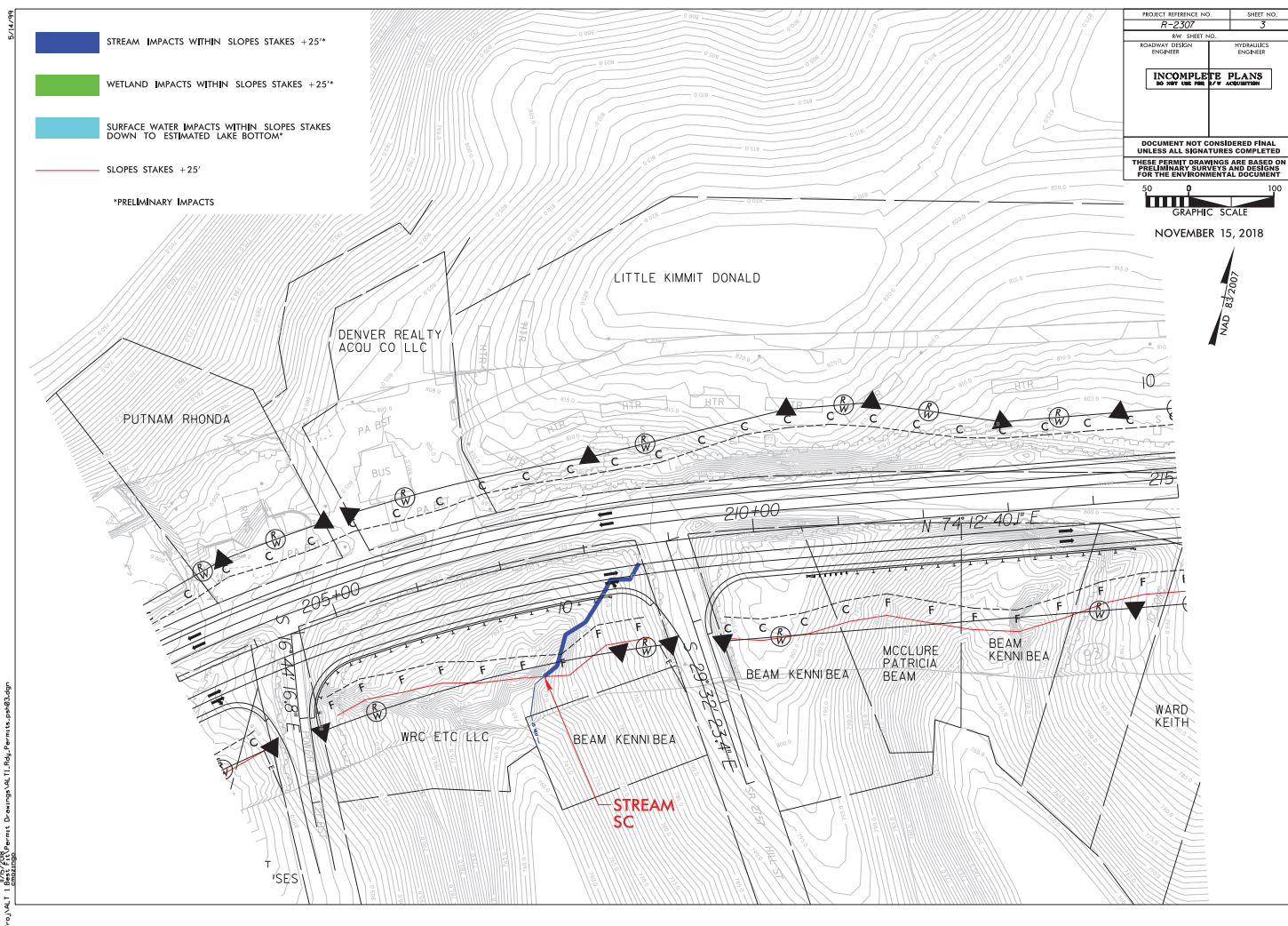
**ROADWAY DESIGN ENGINEER**

SIGNATURE \_\_\_\_\_ P.E.

**INCOMPLETE PLANS**  
DO NOT USE FOR A/F/W APPROVAL  
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED  
THREE PERMIT DRAWINGS ARE BASED ON  
PRELIMINARY DATA AND DRAWINGS  
FOR THE ENVIRONMENTAL DOCUMENT









5/14/2018

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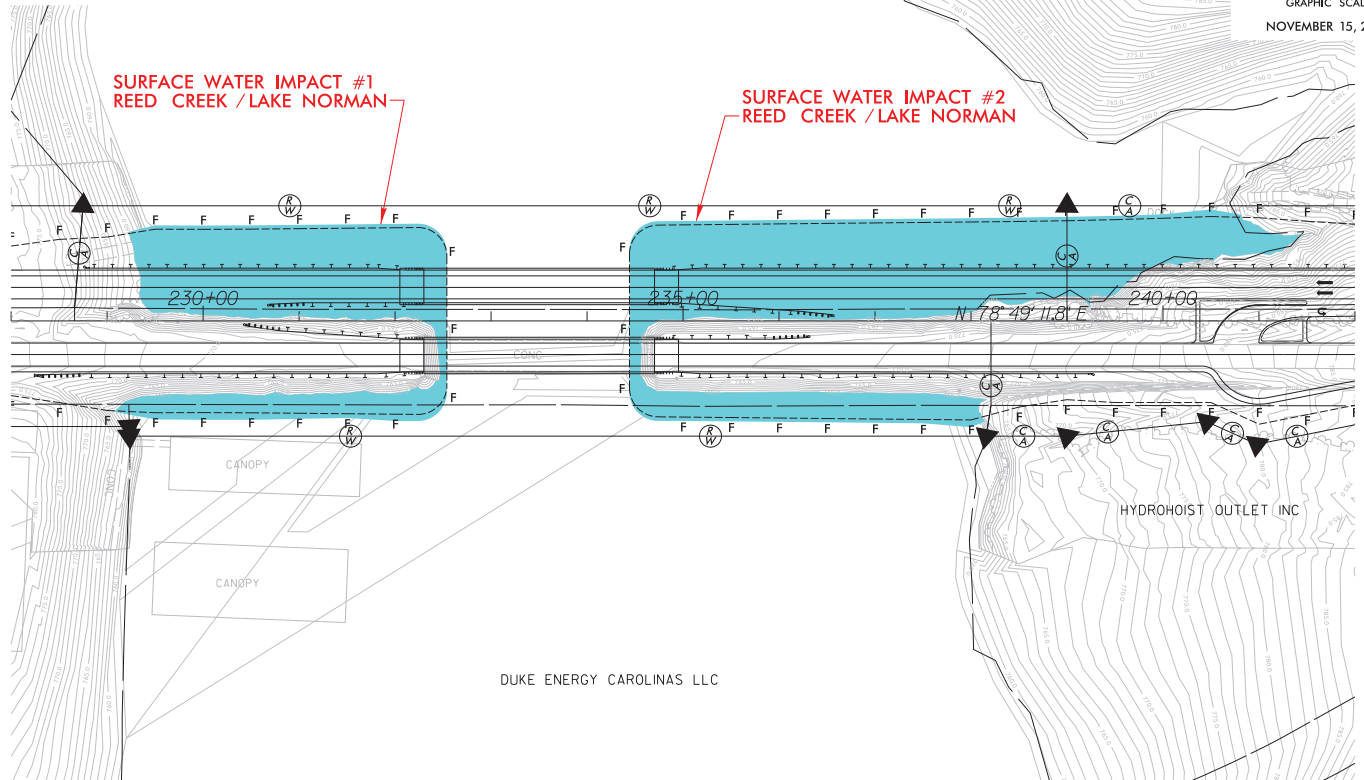
- STREAM IMPACTS WITHIN SLOPES STAKES +25'
- WETLAND IMPACTS WITHIN SLOPES STAKES +25'
- SURFACE WATER IMPACTS WITHIN SLOPES STAKES DOWN TO ESTIMATED LAKE BOTTOM\*
- SLOPES STAKES +25'

\*PRELIMINARY IMPACTS

DUKE ENERGY CAROLINAS LLC

NAD 83/2007

PROJECT REFERENCE NO.	SHEET NO.
R-2307	4
ROW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR PERMITS	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
THESE PERMIT DRAWINGS ARE BASED ON PRELIMINARY SURVEYS AND DESIGNS FOR THE ENVIRONMENTAL DOCUMENT	
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NOVEMBER 15, 2018	

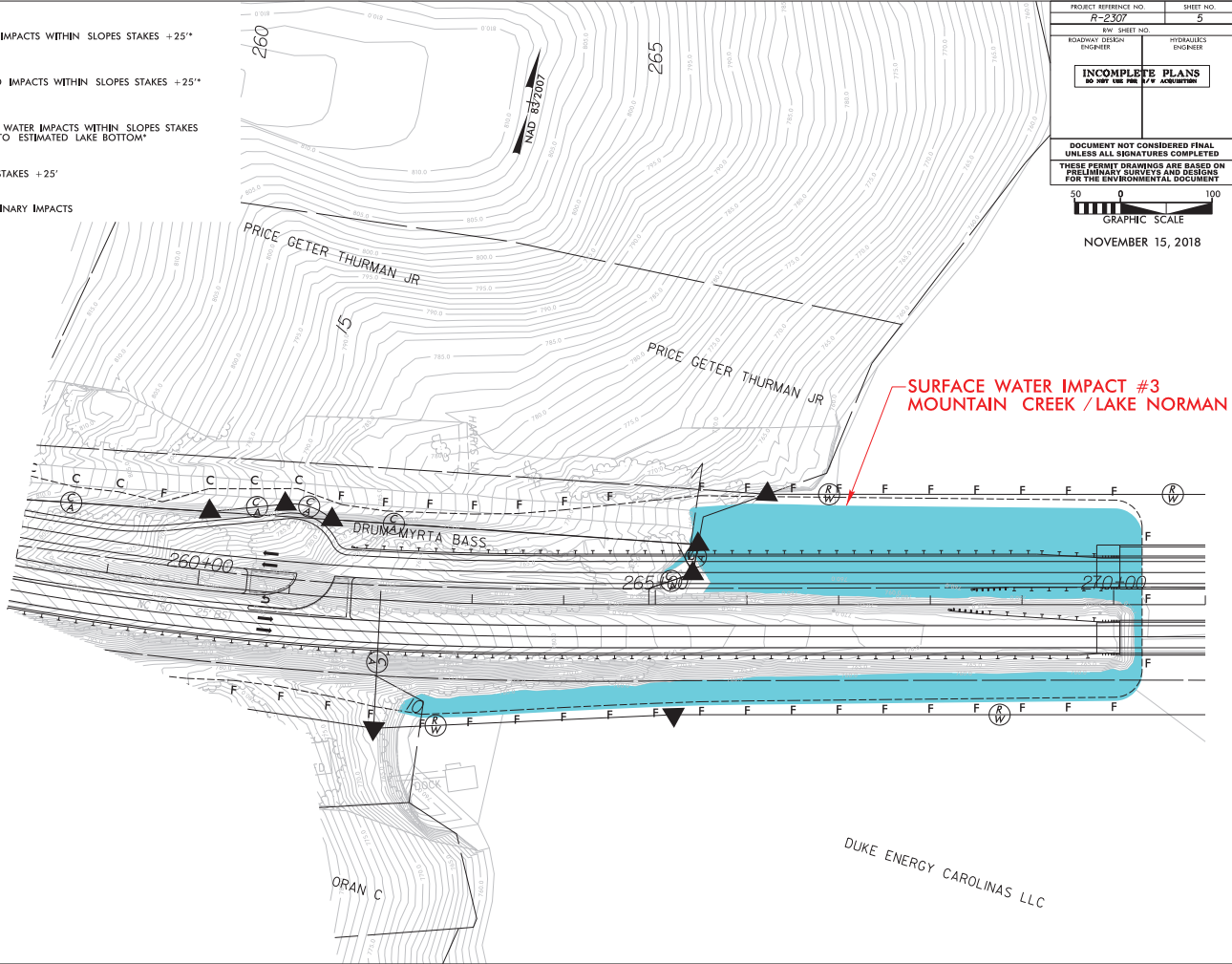




5/14/2018

- STREAM IMPACTS WITHIN SLOPES STAKES +25'
- WETLAND IMPACTS WITHIN SLOPES STAKES +25'
- SURFACE WATER IMPACTS WITHIN SLOPES STAKES DOWN TO ESTIMATED LAKE BOTTOM\*
- SLOPES STAKES +25'
- \*PRELIMINARY IMPACTS

PROJECT REFERENCE NO.	SHEET NO.
R-2307	5
RDW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR PERMITS	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
THESE PERMIT DRAWINGS ARE BASED ON PRELIMINARY SURVEYS AND DESIGNS FOR THE ENVIRONMENTAL DOCUMENT	
50 0 100 GRAPHIC SCALE	
NOVEMBER 15, 2018	



NOV 15 2018 Permit Drawings A. II. Rdw, Permits, and Design

DUKE ENERGY CAROLINAS LLC

5/14/2018

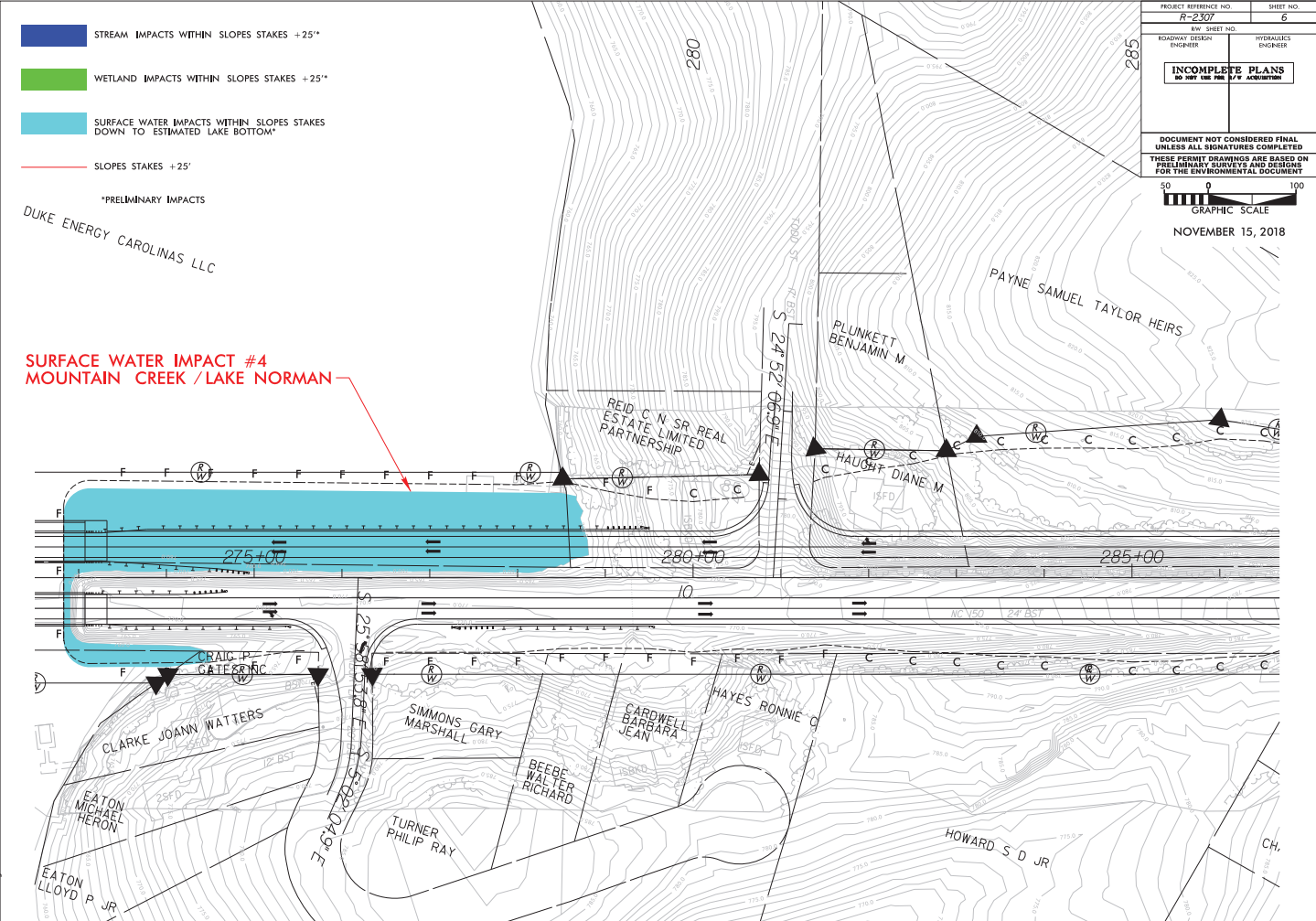
- STREAM IMPACTS WITHIN SLOPES STAKES +25'
- WETLAND IMPACTS WITHIN SLOPES STAKES +25'
- SURFACE WATER IMPACTS WITHIN SLOPES STAKES DOWN TO ESTIMATED LAKE BOTTOM\*
- SLOPES STAKES +25'
- \*PRELIMINARY IMPACTS

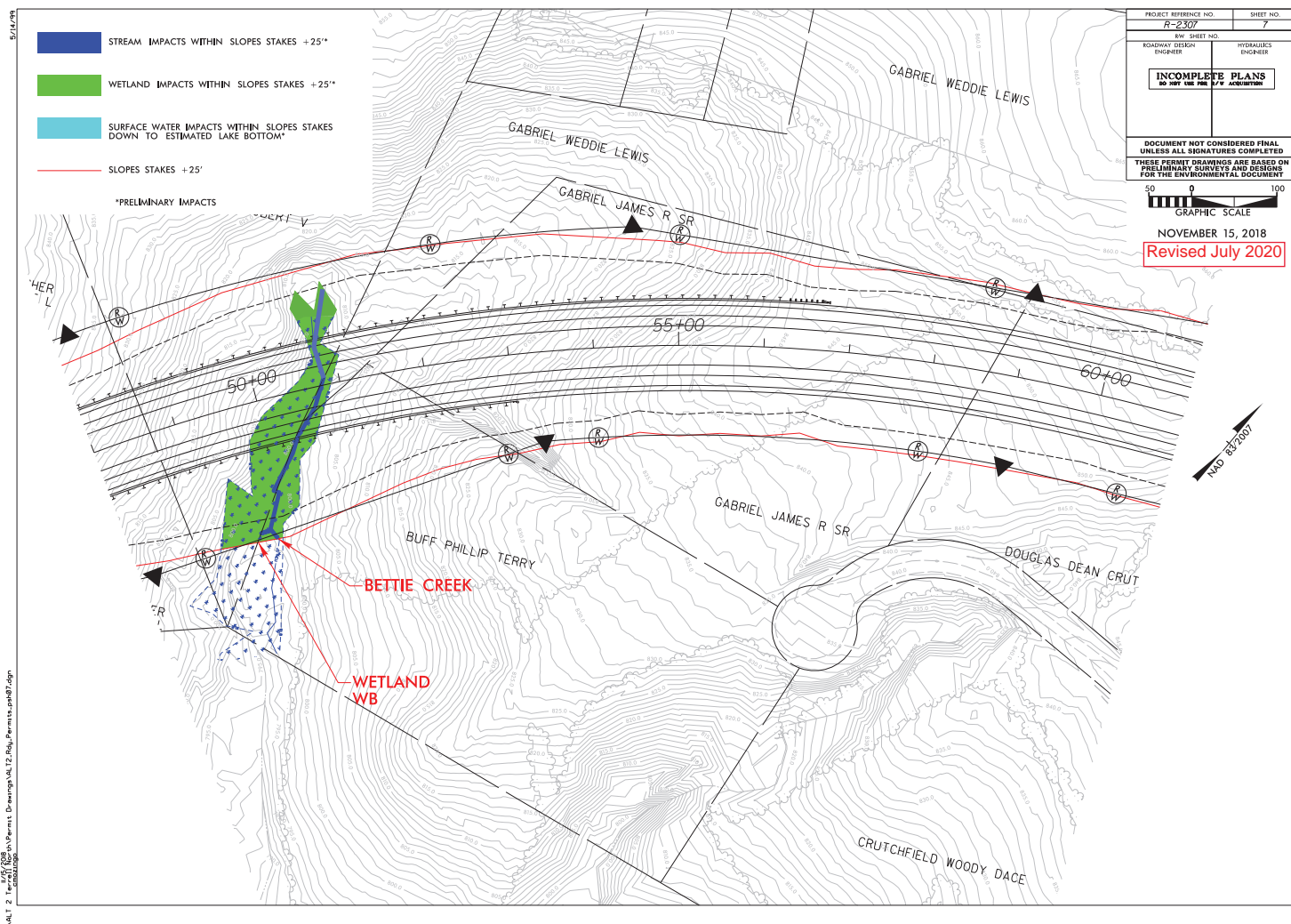
DUKE ENERGY CAROLINAS LLC

SURFACE WATER IMPACT #4  
MOUNTAIN CREEK / LAKE NORMAN

PROJECT REFERENCE NO.	SHEET NO.
R-2307	6
ROW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR PERMITS OR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
THESE PERMIT DRAWINGS ARE BASED ON PRELIMINARY SURVEYS AND DESIGNS FOR THE ENVIRONMENTAL DOCUMENT	
50 0 100 GRAPHIC SCALE	
NOVEMBER 15, 2018	

NOV 15 2018 Permit Drawings & II. Hwy. Permitting & Design

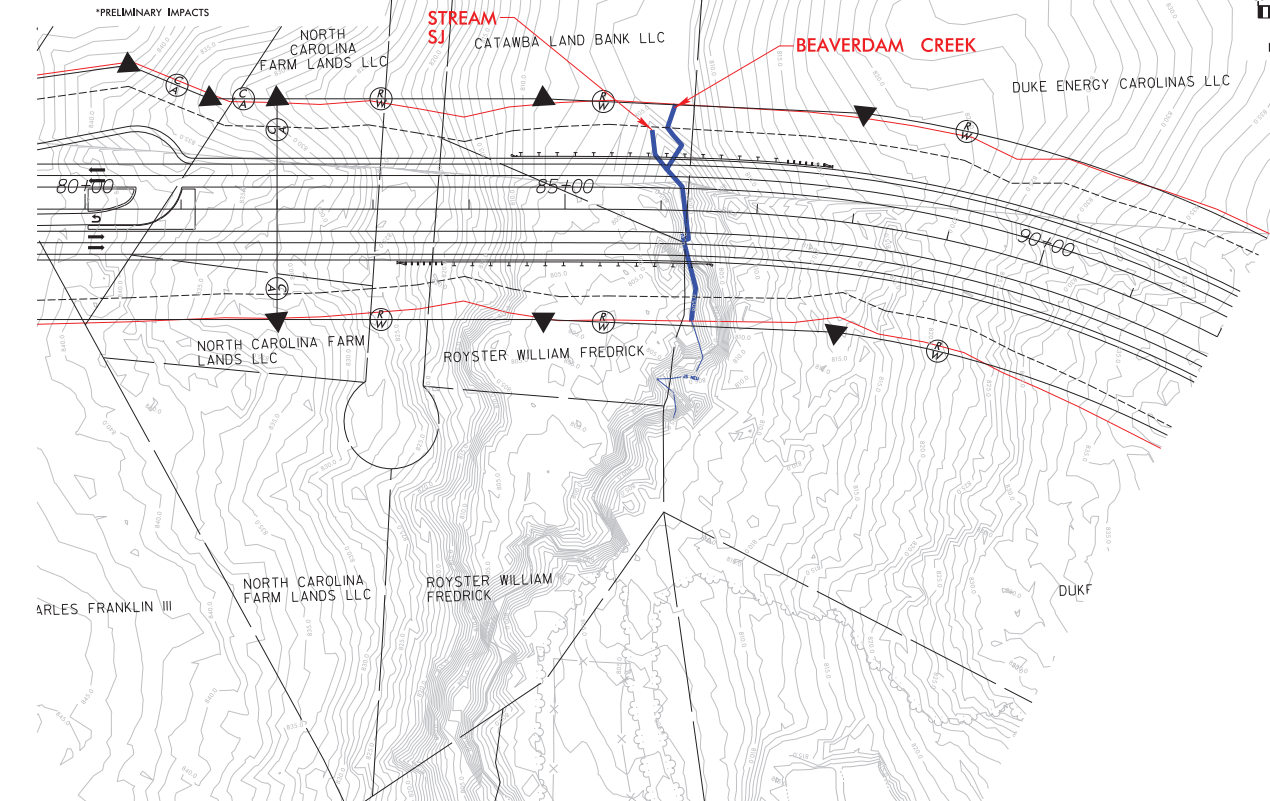




5/14/2017

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- STREAM IMPACTS WITHIN SLOPES STAKES +25'
- WETLAND IMPACTS WITHIN SLOPES STAKES +25'
- SURFACE WATER IMPACTS WITHIN SLOPES STAKES DOWN TO ESTIMATED LAKE BOTTOM\*
- SLOPES STAKES +25'



PROJECT REFERENCE NO.	SHEET NO.
R-2307	8
RDW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR PERMITS OR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
THESE PERMIT DRAWINGS ARE BASED ON PRELIMINARY SURVEYS AND DESIGNS FOR THE ENVIRONMENTAL DOCUMENT	
50 0 100	GRAPHIC SCALE
NOVEMBER 15, 2018	

NAD 83 2007



R-2307A Preliminary Permit Impact Summary Table					November 15, 2018
Plan Sheet Number	Station (From/To)	Identifier	Wetland Impacts Within Slope Stakes +25' (Acres)	Stream Impacts Within Slope Stakes +25' (Linear Feet)	Surface Water Impacts Within Slope Stakes +25' (Acres)
2	32+57/33+88 -LALT1- LT	WE	0.08		
2	32+93/34+61 -LALT1- RT	WK	0.30		
2	33+23/33+80 -LALT1- LT	SA		81	
2	34+15/34+68 -LALT1- RT	SA		123	
2	36+88/37+55 -LALT1- RT	SB		138	
2	37+51/37+55 -LALT1- LT	SB		55	
3	207+24/208+62 -LALT1- RT	SC		188	
4	229+07/232+54 -LALT1- LT & RT	SURFACE WATER IMPACT #1 REED CREEK/LAKE NORMAN			0.93
4	234+44/241+49 -LALT1- LT & RT	SURFACE WATER IMPACT #2 REED CREEK/LAKE NORMAN			1.61
5	262+24/270+31 -LALT1- LT & RT	SURFACE WATER IMPACT #3 MOUNTAIN CREEK/LAKE NORMAN			2.15
6	272+83/278+81 -LALT1- LT & RT	SURFACE WATER IMPACT #4 MOUNTAIN CREEK/LAKE NORMAN			1.34
7	49+09/51+09 -LALT2- LT & RT	WB	0.35		
7	49+63/50+83 -LALT2- LT & RT	BETTIE CREEK		236	
8	85+89/86+06 -LALT2- LT	SJ		46	
8	86+05/86+39 -LALT2- LT & RT	BEAVERDAM CREEK		250	
TOTAL			0.73	1117.00	6.03





ROY COOPER  
Governor  
MICHAEL S. REGAN  
Secretary  
LINDA CULPEPPER  
Director

April 17, 2019

Mr. Philip S. Harris, III, P.E., CPM  
Environmental Analysis Unit Head  
North Carolina Department of Transportation  
1598 Mail Service Center  
Raleigh, North Carolina, 27699-1598

Subject: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act CATAWBA BUFFER RULES with ADDITIONAL CONDITIONS for Proposed improvements to Highway 150 from the intersection with the Highway 16 bypass in Lincoln County to intersection with Highway 21 in Iredell County, including the I-77/Highway 150 interchange improvements in Lincoln, Catawba and Iredell Counties, Federal Aid Project No. STP-150(19), State Project No. R-2307AB, I-5717.  
NCDWR Project No. 20181732

Dear Mr. Harris:

Attached hereto is a copy of Certification No. WQC004181 issued to The North Carolina Department of Transportation (NCDOT) dated April 17, 2019. Please be advised that this project is being constructed under a phased permit. As of the date of its issuance, only impacts for R-2307B and I-5717 are permitted. Before construction can begin on R-2307A, this individual permit must be modified with final design impact numbers on streams, wetlands, and Catawba buffers, as applicable, as well as an updated letter from Division of Mitigation Services.

Additionally, this project has a known and unknown areas of coal ash fill along the entirety of the project. Those areas, whether known or discovered during construction, are subject to the Coal Ash Management Act, North Carolina General Statute 130A-309. Ground disturbance of those properties is subject to the Act.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

DocuSigned by:  
*Amy Chapman*  
Linda Culpepper, 9C9886312DCD474...  
Division of Water Resources

Attachments

Electronic copy only distribution:

Nicholle Braspennickx, US Army Corps of Engineers, Charlotte Field Office  
Trish Beam, Division 12 Environmental Officer  
Carla Dagnino, NC Department of Transportation  
Amanetta Somerville, US Environmental Protection Agency



North Carolina Department of Environmental Quality | Division of Water Resources  
512 North Salisbury Street | 1617 Mail Service Center | Raleigh, North Carolina 27699-1617  
919.707.9000

Claire Ellwanger, US Fish and Wildlife Service  
Marla Chambers, NC Wildlife Resources Commission  
Beth Harmon, Division of Mitigation Services  
Donna Hood, NC Division of Water Resources Mooresville Regional Office  
File Copy

**401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act CATAWBA BUFFER RULES with ADDITIONAL CONDITIONS**

**THIS CERTIFICATION** is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500 and 15A NCAC 2B .0243. This certification authorizes the NCDOT to impact 0.06 acres of jurisdictional wetlands, 447 linear feet of jurisdictional streams and 35,328 square feet of protected riparian buffers in Catawba and Iredell Counties. The project shall be constructed pursuant to the application dated received December 21, 2019. The authorized impacts are as described below:

**Stream Impacts in the Catawba River Basin**

Site	Permanent Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impact per Site (DWR mitigation determination)	Stream Impacts Requiring Mitigation (linear ft)
7 (L W 555+00)	117			117		0
8 (L W 755+00)		39		39	107	0
9 (L E 755+00)		68	17	85		0
10 (L E 784+00)		97	20	117	97	0
11 (L E 792+00)		98	19	117	126	0
12 (L W 793+00)		28	20	48		0
<b>Total</b>	117	330	76	519	330	0

**Total Stream Impact for Project: 519 linear feet**  
**DWR Stream Mitigation Required: 0 linear feet**  
**ACOE Stream Mitigation Required: 447 linear feet**

**Wetland Impacts in the Catawba River Basin**

Site	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Area under Bridge (ac)	Total Wetland Impact (ac)
7 (L Sta 555+00)	0.05			0.01			0.06
<b>Total</b>							0.06

**Total Wetland Impact for Project: 0.06 acres.**

**Open Water Impacts in the Catawba River Basin**

Site	Permanent Fill in Open Waters (ac)	Temporary Fill in Open Waters (ac)
1 (L W 451+00)	<0.01	<0.01
2 (L W 457+00)	<0.01	0.02
3 (L W 457+00 to 467+00)	3.11	
4 (L W 474+00 to 487+00)	3.91	
5 (L E 486+00)	0.01	0.02
6 (L E 520+00)	0.02	0.06
<b>Total</b>	7.05	0.10

**Total Open Water Impact for Project: 7.05 acres.**

**Catawba Riparian Buffer Impacts**

Buffer Site	Zone 1 Impact (sq ft)	<i>minus</i> Wetlands in Zone 1 (sq ft)	= Zone 1 Buffers (not wetlands) (sq ft)	Zone 1 Buffer Mitigation Required (using 1:1 ratio, in HUC)		Zone 2 Impact (sq ft)	<i>minus</i> Wetlands in Zone 2 (sq ft)	= Zone 2 Buffers (not wetlands) (sq ft)	Zone 2 Buffer Mitigation Required (using 1:1 ratio, in HUC)
Lake Norman	20,406	0	20,406	20,406		14922	0	14922	14,922
<b>Totals</b>									

**Total Buffer Impact for Project: 35,328 square feet.**

\* n/a = Total for Site is less than 1/3 acre and 150 linear feet of impact, no mitigation required

The application provides adequate assurance that the discharge of fill material into the waters of the Catawba River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your application dated received December 21, 2018. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). Additional buffer impacts may require compensatory mitigation as described in 15A NCAC 2B .0243. For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.



**Condition(s) of Certification:**

**Project Specific Conditions**

1. This project has known, and potentially unknown, coal ash fill areas. Additional requirements will be needed to ensure compliance with the Coal Ash Management Act of North Carolina. Please see the enclosed attachment for additional requirements. NCGS §130A-309
2. All stormwater runoff shall be directed as sheetflow through stream buffers at non-erosive velocities, unless otherwise approved by this certification. Sheetflow requirements are waived per request with low velocities achieved per submitted plans and email. 15A NCAC 2B .0243
3. All riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated. Maintained buffers shall be permanently revegetated with non-woody species by the end of the growing season following completion of construction. For the purpose of this condition, maintained buffer areas are defined as areas within the transportation corridor that will be subject to regular NCDOT maintenance activities including mowing. The area with non-maintained buffers shall be permanently revegetated with native woody species before the next growing season following completion of construction. 15A NCAC 2B .0243
4. Pursuant to 15A NCAC 2B .0245(6), sediment and erosion control devices shall not be placed in Zone 1 of any Catawba Buffer without prior approval by the NCDWR. At this time, the NCDWR has approved no sediment and erosion control devices in Zone 1, outside of the approved project impacts, anywhere on this project. Moreover, sediment and erosion control devices shall be allowed in Zone 2 of the buffers provided that Zone 1 is not compromised and that discharge is released as diffuse flow.
5. The NCDOT Division Environmental Officer or Environmental Assistant will conduct a pre-construction meeting with all appropriate staff to ensure that the project supervisor and essential staff understand the potential issues with stream and pipe alignment at the permitted site. NCDWR staff shall be invited to the pre-construction meeting. [15A NCAC 02H.0506(b)(2) and (b)(3)]
6. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be revegetated with appropriate native species. [15A NCAC 02H .0506(b)(2)]
7. As a condition of this 401 Water Quality Certification, the bridge demolition and construction must be accomplished in strict compliance with the most recent version of NCDOT's Best Management Practices for Construction and Maintenance Activities. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]
8. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. To meet the requirements of NCDOT's NPDES permit NCS000250, please refer to the most recent version of the *North Carolina Department of Transportation Stormwater Best Management Practices Toolbox* manual for approved measures. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]
9. Bridge piles and bents shall be constructed using driven piles (hammer or vibratory) or drilled shaft construction methods. More specifically, jetting or other methods of pile driving are prohibited without prior written approval from the NCDWR first. [15A NCAC 02H.0506(b)(2)]
10. No drill slurry or water that has been in contact with uncured concrete shall be allowed to enter surface waters. This water shall be captured, treated, and disposed of properly. [15A NCAC 02H .0506(b)(3)]

11. A turbidity curtain will be installed in the stream if driving or drilling activities occur within the stream channel, on the stream bank, or within 5 feet of the top of bank, or during the removal of bents from an old bridge. This condition can be waived with prior approval from the NCDWR. [15A NCAC 02H .0506(b)(3)]
12. All bridge construction shall be performed from the existing bridge, temporary work bridges, temporary causeways, or floating or sunken barges. If work conditions require barges, they shall be floated into position and then sunk. The barges shall not be sunk and then dragged into position. Under no circumstances should barges be dragged along the bottom of the surface water. [15A NCAC 02H .0506(b)(3)]
13. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage. [15A NCAC 02H.0506(b)(2)]
14. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed. [15A NCAC 02H.0506(b)(2)]
15. For the \_\_\_\_ linear feet of streams being impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and revegetated with appropriate native species. [15A NCAC 02H.0506(b)(2)]
16. The stream channel shall be excavated no deeper than the natural bed material of the stream, to the maximum extent practicable. Efforts must be made to minimize impacts to the stream banks, as well as to vegetation responsible for maintaining the stream bank stability. Any applicable riparian buffer impact for access to stream channel shall be temporary and be revegetated with native riparian species. [15A NCAC 02H.0506(b)(2)]
17. NCDOT shall be in compliance with the NCS00250 issued to the NCDOT, including the applicable requirements of the NCG01000. Please note the extra protections for the sensitive watersheds.
18. All portions of the proposed project draining to 303(d) listed watersheds that are impaired due to turbidity shall be designed, constructed, and operated with sediment and erosion control measures that meet Design Standards in Sensitive Watersheds (15A NCAC 4B .0124). However, due to the size of the project, NC DOT shall not be required to meet 15A NCAC 4B .0124(a) regarding the maximum amount of uncovered acres.
19. All portions of the proposed project draining to 303(d) listed watersheds that are impaired due to biological criteria exceedances shall not discharge stormwater directly to surface waters. Stormwater shall be treated using appropriate best management practices (e.g., vegetated conveyances, constructed wetlands, detention ponds, etc.) prior to discharging to surface waters.
20. The NCDOT shall design, construct, and operate and maintain hazardous spill catch basins (HSCBs) at lake crossing within the WS CA watershed. The HSCBs shall be located at Station numbers L Sta 456+00 and 487+00.[15A NCAC 02B.0200]
21. Compensatory mitigation for impacts to 20,406 square feet of protected riparian buffers in Zone 1 and 14,922 square feet of protected riparian buffers in Zone 2 shall be required. We understand that you have chosen to perform compensatory mitigation for impacts to protected buffers through use of the North Carolina Division of Mitigation Services (DMS) (formerly NCEEP). Mitigation for unavoidable impacts to **Catawba** Riparian Buffers shall be provided in the Catawba River Basin and done in accordance with 15A NCAC .02B .0295. The DMS has indicated in a letter dated December 19, 2018 that they will assume responsibility for satisfying the compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed June 14, 2016. 15A NCAC .02B .0243
22. Compensatory mitigation for impacts to **0.06 riverine** wetlands is required. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands through the North Carolina Division of

Mitigation Services (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. DMS has indicated in a letter dated December 19, 2018 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed July 28, 2010. [15A NCAC 2H.0506(h)]

23. Compensatory mitigation for **447 linear feet** of impact to streams is required. We understand that you have chosen to perform compensatory mitigation for impacts to streams through the North Carolina Division of Mitigation Service (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. The DMS has indicated in a letter dated December 19, 2018 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the DMS Mitigation Banking Instrument signed July 28, 2010. [15A NCAC 2H.0506(h)]
24. When final design plans are completed for R-2307 Section A, a modification to the 401 Water Quality Certification and the **Catawba River Riparian Buffer Certification** shall be submitted with five copies and fees to the NC Division of Water Resources. Final designs shall reflect all appropriate avoidance, minimization, and mitigation for impacts to wetlands, streams, and other surface waters, and buffers. No construction activities that impact any wetlands, streams, surface waters, or buffers located in R-2307 Section A shall begin until after the permittee applies for, and receives a written modification of the 401 Water Quality Certification and the **Catawba River Riparian Buffer Authorization** from the NC Division of Water Resources. [15A NCAC 02H. 0506(b)]
- 25.

**General Conditions:**

1. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. [15A NCAC 02H.0506(b)(2)]
2. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. [15A NCAC 02B.0200]
3. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers. [15A NCAC 02H.0506(b)(2)]
4. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions. [15A NCAC 02H.0506(b)(2)]
5. The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage. [15A NCAC 02H.0506(b)(2)]
6. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. [15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
7. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as

sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water. [15A NCAC 02H.0506(b)(3) and (c)(3)]

8. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream. [15A NCAC 02H.0506(b)(3)]
9. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials. [15A NCAC 02H.0506(b)(3)]
10. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification. [15A NCAC 02H.0506(b)(3)]
11. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]
12. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur. [15A NCAC 02H.0506(b)(3) and (c)(3) and 15A NCAC 02B.0200]
13. Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*, or for linear transportation projects, the *NCDOT Sediment and Erosion Control Manual*.
14. All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.
15. For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.
16. If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-1, WS-11, High Quality Waters (HQW), or Outstanding Resource Waters (ORW), then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B.0124, *Design Standards in Sensitive Watershed*. [15A NCAC 02H.0506(b)(3) and (c)(3); GC 4135]
17. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If the NCDWR determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the NCDWR may reevaluate and modify this certification. [15A NCAC 02B.0200]
18. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification. [15A NCAC 02H.0506(b)(2)]
19. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division

- Engineer and the on-site project manager. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
20. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization, including all non-commercial borrow and waste sites associated with the project, shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502]
  21. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.
  22. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery. [15A NCAC 02B.0506(b)(2)]
  23. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0502(f)]
  24. Native riparian vegetation (**ex. Salix nigra, Juncus (spp), Carex (spp), et al.**) must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction. [15A NCAC 02B.0231(b)(6)]
  25. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities. [15A NCAC 02H.0506(b)(3) and (c)(3)]
  26. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards [15A NCAC 02H.0506(b)(3) and (c)(3):
    - a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
    - b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
    - c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
    - d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.
  27. Sediment and erosion control measures shall not be placed in wetlands or surface waters, or within 5 feet of the top of bank, without prior approval from DWR. [15A NCAC 02H.0506(b)(3) and (c)(3)]

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative



hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission. The mailing address for the Office of Administrative Hearings is:


Office of Administrative Hearings  
6714 Mail Service Center  
Raleigh, NC 27699-6714  
Telephone: (919) 431-3000, Facsimile: (919) 431-3100

A copy of the petition must also be served on DEQ as follows:

Mr. Bill F. Lane, General Counsel  
Department of Environmental Quality  
1601 Mail Service Center

This the 17th day of April 2019

DIVISION OF WATER RESOURCES

DocuSigned by:  
  
9C9886312DCD474...

Linda Culpepper, Director

WQC No. 004181



ROY COOPER  
Governor  
MICHAEL S. REGAN  
Secretary  
LINDA CULPEPPER  
Director

NCDWR Project No.: \_\_\_\_\_ County: \_\_\_\_\_

Applicant: \_\_\_\_\_

Project Name: \_\_\_\_\_

Date of Issuance of 401 Water Quality Certification: \_\_\_\_\_

### Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Resources, 1617 Mail Service Center, Raleigh, NC, 27699-1617. This form may be returned to NCDWR by the applicant, the applicant's authorized agent, **or** the project engineer. It is not necessary to send certificates from all of these.

### Applicant's Certification

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

### Agent's Certification

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

### Engineer's Certification

\_\_\_\_\_ Partial \_\_\_\_\_ Final

I, \_\_\_\_\_, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature \_\_\_\_\_ Registration No. \_\_\_\_\_  
Date \_\_\_\_\_



North Carolina Department of Environmental Quality | Division of Water Resources  
512 North Salisbury Street | 1617 Mail Service Center | Raleigh, North Carolina 27699-1617  
919.707.9000

**U.S. ARMY CORPS OF ENGINEERS**  
**Wilmington District**  
**Compensatory Mitigation Responsibility Transfer Form**

**Permittee:** NCDOT, Project Development and Environmental Analysis Unit  
**Project Name:** NC 150 (R-2307 and I-5717) Improvement Project

**Action ID:** SAW-2018-02343  
**County:** Catawba and Iredell Counties

**Instructions to Permittee:** The Permittee must provide a copy of this form to the Mitigation Sponsor, either an approved Mitigation Bank or the North Carolina Division of Mitigation Services (NCDMS), who will then sign the form to verify the transfer of the mitigation responsibility. Once the Sponsor has signed this form, it is the Permittee's responsibility to ensure that to the U.S. Army Corps of Engineers (USACE) Project Manager identified on page two is in receipt of a signed copy of this form before conducting authorized impacts, unless otherwise specified below. If more than one mitigation Sponsor will be used to provide the mitigation associated with the permit, or if the impacts and/or the mitigation will occur in more than one 8-digit Hydrologic Unit Code (HUC), multiple forms will be attached to the permit, and the separate forms for each Sponsor and/or HUC must be provided to the appropriate mitigation Sponsors.

**Instructions to Sponsor:** The Sponsor must verify that the mitigation requirements (credits) shown below are available at the identified site. By signing below, the Sponsor is accepting full responsibility for the identified mitigation, regardless of whether or not they have received payment from the Permittee. Once the form is signed, the Sponsor must update the bank ledger and provide a copy of the signed form and the updated bank ledger to the Permittee, the USACE Project Manager, and the Wilmington District Mitigation Office (see contact information on page 2). The Sponsor must also comply with all reporting requirements established in their authorizing instrument.

**Permitted Impacts and Compensatory Mitigation Requirements**

**Permitted Impacts Requiring Mitigation\*:**

**8-digit HUC and Basin:** 03050101, Catawba River Basin

Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
447				0.06		

\*If more than one mitigation sponsor will be used for the permit, only include impacts to be mitigated by this sponsor.

**Compensatory Mitigation Requirements:**

**8-digit HUC and Basin:** 03050101, Catawba River Basin

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
894				0.12		

**Mitigation Site Debited:** NC DMS

(List the name of the bank to be debited. For umbrella banks, also list the specific site. For NCDMS, list NCDMS. If the NCDMS acceptance letter identifies a specific site, also list the specific site to be debited).

***Section to be completed by the Mitigation Sponsor***

**Statement of Mitigation Liability Acceptance:** I, the undersigned, verify that I am authorized to approve mitigation transactions for the Mitigation Sponsor shown below, and I certify that the Sponsor agrees to accept full responsibility for providing the mitigation identified in this document (see the table above), associated with the USACE Permittee and Action ID number shown. I also verify that released credits (and/or advance credits for NCDMS), as approved by the USACE, are currently available at the mitigation site identified above. Further, I understand that if the Sponsor fails to provide the required compensatory mitigation, the USACE Wilmington District Engineer may pursue measures against the Sponsor to ensure compliance associated with the mitigation requirements.

**Mitigation Sponsor Name:** \_\_\_\_\_

**Name of Sponsor's Authorized Representative:** \_\_\_\_\_

\_\_\_\_\_  
**Signature of Sponsor's Authorized Representative**

\_\_\_\_\_  
**Date of Signature**

**USACE Wilmington District  
Compensatory Mitigation Responsibility Transfer Form, Page 2**

**Conditions for Transfer of Compensatory Mitigation Credit:**

- Once this document has been signed by the Mitigation Sponsor and the USACE is in receipt of the signed form, the Permittee is no longer responsible for providing the mitigation identified in this form, though the Permittee remains responsible for any other mitigation requirements stated in the permit conditions.
- Construction within jurisdictional areas authorized by the permit identified on page one of this form can begin only after the USACE is in receipt of a copy of this document signed by the Sponsor, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein. For authorized impacts conducted by the North Carolina Department of Transportation (NCDOT), construction within jurisdictional areas may proceed upon permit issuance; however, a copy of this form signed by the Sponsor must be provided to the USACE within 30 days of permit issuance. NCDOT remains fully responsible for the mitigation until the USACE has received this form, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein.
- Signed copies of this document must be retained by the Permittee, Mitigation Sponsor, and in the USACE administrative records for both the permit and the Bank/ILF Instrument. It is the Permittee's responsibility to ensure that the USACE Project Manager (address below) is provided with a signed copy of this form.
- If changes are proposed to the type, amount, or location of mitigation after this form has been signed and returned to the USACE, the Sponsor must obtain case-by-case approval from the USACE Project Manager and/or North Carolina Interagency Review Team (NCIRT). If approved, higher mitigation ratios may be applied, as per current District guidance and a new version of this form must be completed and included in the USACE administrative records for both the permit and the Bank/ILF Instrument.

**Comments/Additional Conditions:**

This form is not valid unless signed below by the USACE Project Manager and by the Mitigation Sponsor on Page 1. ***Once signed, the Sponsor should provide copies of this form along with an updated bank ledger to: 1) the Permittee, 2) the USACE Project Manager at the address below, and 3) the Wilmington District Mitigation Office, Attn: Todd Tugwell, 3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587 (email: [todd.tugwell@usace.army.mil](mailto:todd.tugwell@usace.army.mil)).*** Questions regarding this form or any of the permit conditions may be directed to the USACE Project Manager below.

**USACE Project Manager:** Crystal Amschler  
**USACE Field Office:** Asheville Regulatory Field Office  
US Army Corps of Engineers  
151 Patton Avenue, Room 208  
Asheville, NC 28801-5006

**Email:**

**AMSCHLER.CRYSTAL.CAMILLE.1238614178**

Digitally signed by  
AMSCHLER.CRYSTAL.CAMILLE.1238614178  
Date: 2020.08.31 11:23:43 -04'00'

[Click here to enter a date.](#)

**USACE Project Manager Signature**

**Date of Signature**

Current Wilmington District mitigation guidance, including information on mitigation ratios, functional assessments, and mitigation bank location and availability, and credit classifications (including stream temperature and wetland groupings) is available at <http://ribits.usace.army.mil>.

## **Attachment 6 – Shoreline Classification Map**





Skimmer

Future Public  
Recreation

Public  
Recreation

Pinnacle  
Access

Future  
Residential

Residential  
Marina

Public  
Infrastructure

Bridge No. 138

Residential

Commercial  
Marina

McCrory  
Access

Public  
Infrastructure

Public  
Recreation

Impact  
Minimization  
Zone

**Attachment 7 – Compliance and Exhibit G  
Reimbursement Letters**



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

JOSH STEIN  
GOVERNOR

J.R. "JOEY" HOPKINS  
SECRETARY

July X, 2025

Chad Broadway  
Duke Energy Lake Services  
525 S Tryon St  
Charlotte, NC 28202

SUBJECT: R-2307B Step 3 – Draft Application

Dear Mr. Broadway,

NCDOT hereby agrees to comply with all recommendations, requirements, and/or conditions contained in the attached letters and permits from the various federal, state, and local agencies pertaining to our application to construct a bridge on Lake Norman.

Sincerely,

Michael Turchy  
Group Leader  
NCDOT Environmental Permitting and Coordination



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

JOSH STEIN  
GOVERNOR

J.R. "JOEY" HOPKINS  
SECRETARY

July X, 2025

Chad Broadway  
Duke Energy Lake Services  
525 S Tryon St  
Charlotte, NC 28202

SUBJECT: R-2307B Commitment to Reimburse Duke for Exhibit G Expenses

Dear Mr. Broadway,

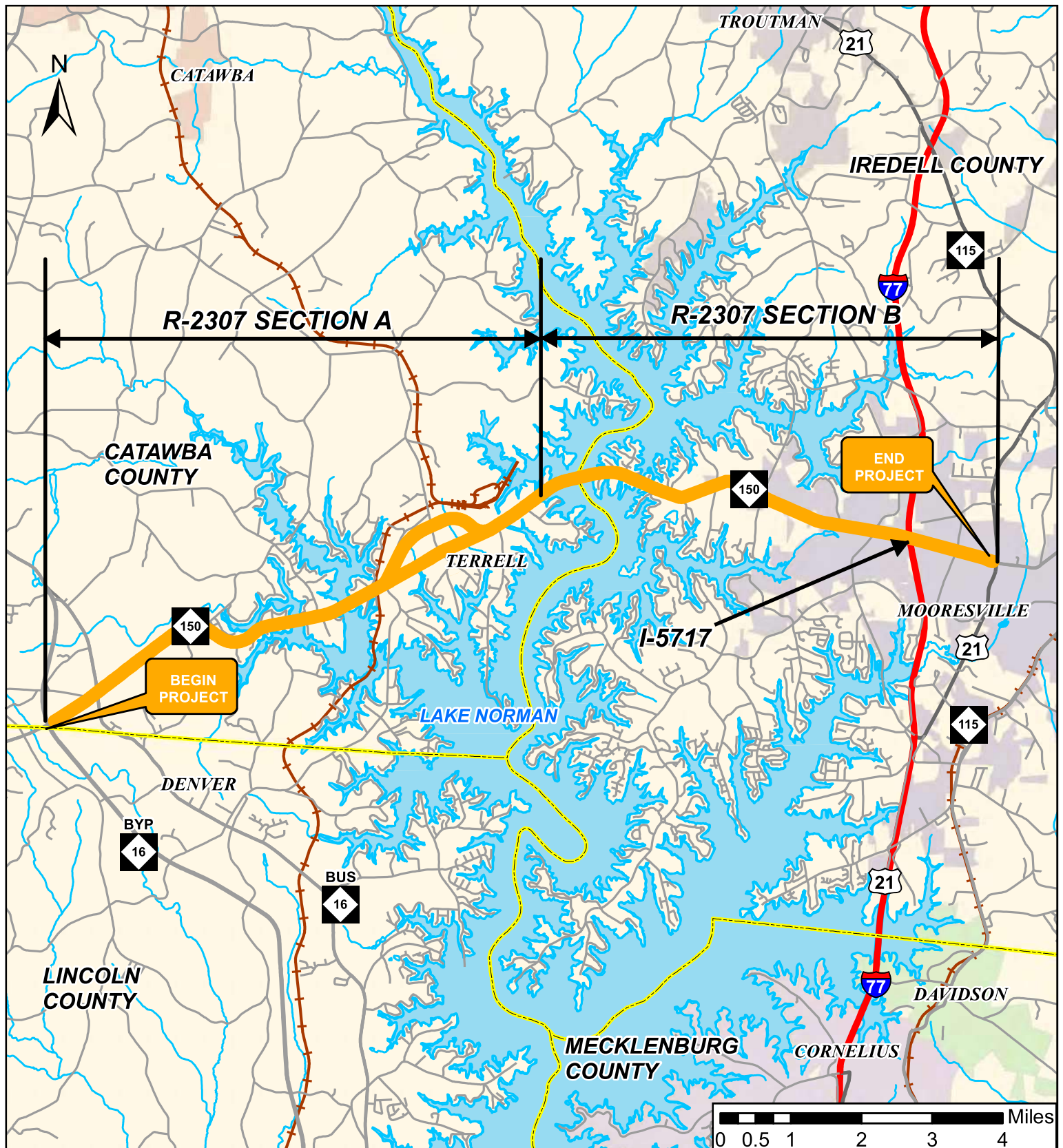
NCDOT hereby agrees, following the completion of construction, to reimburse Duke Energy for expenses associated with preparation of Exhibit G required by FERC.

Sincerely,

Michael Turchy  
Group Leader  
NCDOT Environmental Permitting and Coordination

## **Attachment 8 – Vicinity Map**





## Project Location Map NC 150 Improvements TIP R-2307 and I-5717 Catawba & Iredell Counties



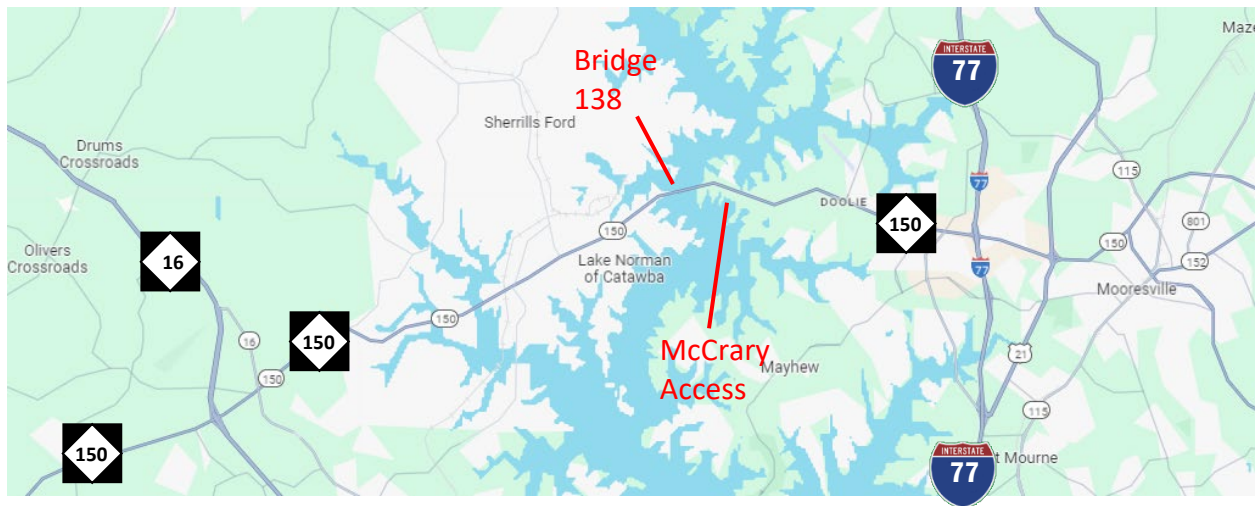
North Carolina Department  
of Transportation  
Division of Highways  
Project Development &  
Environmental Analysis Unit

## **Attachment 9 – Detailed Written Description**

## **R-2307B Initial Lake Service Review**

### **Written Description of the Proposed Activity**

**General Overview** - NCDOT is planning the widening of NC 150. The purpose of the project is to improve traffic capacity and reduce congestion along NC 150 from Greenwood Road (approximately 0.8 miles west of the current Lake Norman Crossing) to US 21 (approximately 6.1 miles east of the current Lake Norman Crossing). The existing two lane facility is no longer adequate and is proposed for widening to four lanes. The project will have impacts to the **Lake Norman** full pond elevation at and near the Bridge 138 crossing and also at McCrary Access.



The project went through the 404-NEPA Merger Process where agencies participate the development of purpose and need, alternatives, bridging decisions, least environmentally damaging practicable alternative and minimization. The agencies participating in this process are listed in the next section of this written description.

### **Agency Coordination and Public Involvement**

R-2307B has been addressed in a Federal EA and FONSI, and the NEPA-404 Merger Process. This included substantial Agency Coordination and Public Involvement.

R-2307B has been part of the NEPA-404 Merger process where regulatory agencies weigh in Merger Concurrence Points (MCP) and environmental Assessment including:

- 12-12-12 CP 1 – Purpose and Need
- 08-13-14 CP 2 – Alternatives
- 03-23-15 Meeting with Duke Lake Services
- 10-08-15 CP 2 – Revised Alternatives
- 10-13-15 106 Coordination – No Effects
- 06-10-15 CP 2A – Bridging Decisions and Alignment Review
- 09-12-13 Public Meeting (PM)
- 03-08-16 Federal Environmental Assessment (EA)
- 08-27-16 Design Public Hearing
- 02-08-17 CP 3 – Least Environmentally Damaging Practicable Alternative (LEDPA)
- 03-22-17 CP 4A Avoidance and Minimization
- 06-22-17 Federal - Finding of No Significant Impact (FONSI)

- 04-17-19 401 Water Quality Certification
- 09-03-20 404 Army Corps Issued Individual Permit\*

\*The 404 permit is valid through 12-31-25. It is currently being updated to extend to 12-31-32.

The following agencies have participated in reviewing the items above as noted:

	MCP	EA	106	PM	FONSI	401	404
Federal Highway Administration	1 - 4A	✓	✓		✓		
US Fish & Wildlife Service	1 - 4A						
US Army Corps of Engineers	1 - 4A	✓					✓
NC Wildlife Resources Commission	1 - 4A	✓					
US Environmental Protection Agency	1 - 4A	✓					
NC Division of Water Resources	1 - 4A	✓				✓	
NC Dept of Cultural Resources - SHPO	1 - 4A	✓	✓				
Greater Hickory MPO	2, 2A						
Charlotte Regional Trans Planning Org	2, 2A						
Duke Energy Lake Services	2A						
Catawba County Board of Commissioners							
State Environmental Clearinghouse							
NC Env. Quality – Solid Waste		✓					
NC Env. Quality – Waste Management		✓					
Dept of Env. And Natural Resources		✓					
NCDWR - Public Water Supply		✓					
NC Department of Public Safety		✓					
NC Department of Administration		✓					
NC Division of Parks and Recreation		✓					
Iredell County Board of Commissioners				✓			
Catawba County Board of Commissioners				✓			
Sherrills Ford – Terrell Fire & Rescue				✓			
Town of Mooresville				✓			
Iredell County Solid Waste				✓			

A Public Meeting and a Chamber of Commerce/Business Owners Meeting were held prior to the Environmental Assessment and a Public Hearing following the Environmental Assessment. Many of the comments were on larger aspects of the project not affecting the lake or bridge. Comments relative to the NC 150 Crossing at Pinnacle Access are summarized below:

The **Public Meeting** was held on November 21, 2013, at the Berea Baptist Church. Representatives from The Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO), The Greater Hickory MPO, Lincoln County Planning, The Town of Mooresville, and Catawba County were in attendance. There were questions regarding the project schedule, the

project terminus, the large bridge over Lake Norman near the Marshall Steam Station and the sequence of construction for the project.

One hundred and eighty (180) citizens attended the first public meeting. Forty five written comments were received either at the workshop or at a later date by mail and email. Two comments were received regarding the bridge crossings.

Catawba County and also Lake Norman Bicycle Route Task Force both requested to include a multi-use path on the bridge over Lake Norman to allow both pedestrians and bicyclists to cross the bridge. Follow Up – NCDOT incorporated a multiuse path throughout the entire project along the northern side of NC 150.

The Mooresville South Iredell Developers Council submitted a petition (5 petitioners) requesting that “no commitment of resources be made to the NC Highway 150 bridge design before an entity, such as UNC branch, has analyzed the economic development impact of blocking passage of fireboats, sailboats, marine construction vessels, tourist boats and other relative tall river craft.” Follow Up – The proposed bridge has both a minimum 12’ feet of clearance and matches or betters the existing navigational clearance (vertical and horizontal) at either end of the bridge. An even higher bridge would require increasing approach and lake impacts with additional fill, much higher cost for the fill and the structure. It would also be of no benefit for decades with the existing bridge to remain in place serving in tandem with the proposed new structure.

The **Chamber of Commerce/Business Owners Meeting** was held on February 25, 2014, at the Living Waters Baptist Church in Mooresville. There was no discussion regarding the bridge.

A Design Public Hearing was held August 22, 2016, at the Peninsula Baptist Church in Mooresville. following the Environmental Assessment. There were 542 citizens who signed the attendee logs and 161 written comments were received. There were sixteen comments supporting pedestrian Two of the written comments were about bridging.

Comment 1 - “Concerns about Accidents on the bridge causing delays to get home.”

Response- The response was “ Sufficient shoulders will be provided on the new bridge to allow traffic to pass around most accidents.

Comment 2 – Are noise studies going to be done for bridges across the lakes? Can sound barriers be placed on bridges?

Response - A preliminary noise evaluation was performed that identified four (4) noise barriers that meet preliminary feasible and reasonable criteria found in the NCDOT Traffic Noise Abatement Policy. A more detailed analysis will be completed during project final design. Noise barriers found to be feasible and reasonable during the preliminary noise analysis may not be found to be feasible and reasonable during the final design noise analysis due to changes in proposed project alignment and other design considerations, surrounding land use development, or utility conflicts, among other factors. Conversely, noise barriers that were not considered feasible and reasonable may meet the established



criteria and be recommended for construction. This evaluation completes the highway traffic noise requirements of Title 23 CFR Part 772.

### **Alternatives Considerations**

The R-2307B Environmental Review, distributed separate but along with this written description, includes alternatives evaluated across the lake for Duke Energy.

### **Preferred Alternative**

The alternative pursued is Widening Existing Causeways with a second bridge parallel to the north of the existing bridge. Space has been allotted between the existing and proposed such that when the existing bridge reaches the need for replacement, no additional causeway would be required. As part of the larger project, this alternative has been reviewed and approved by the regulatory agencies listed above. The Least Environmentally Damaging Practicable Alternative (LEDPA) has been issued a 401 Water Quality Certification by NC Division of Water Resources and a 404 Individual Permit by the Army Corps of Engineers. NCDOT has carried this preferred alternative forward for detailed design. The preferred alternative and proposed fill are illustrated in Attachment 2 of the Step 3 application.

Duke Energy in the Environmental Review determined that Alternative 1 was the preferred alternative, which agrees with the NEPA-404 Merger LEDPA.

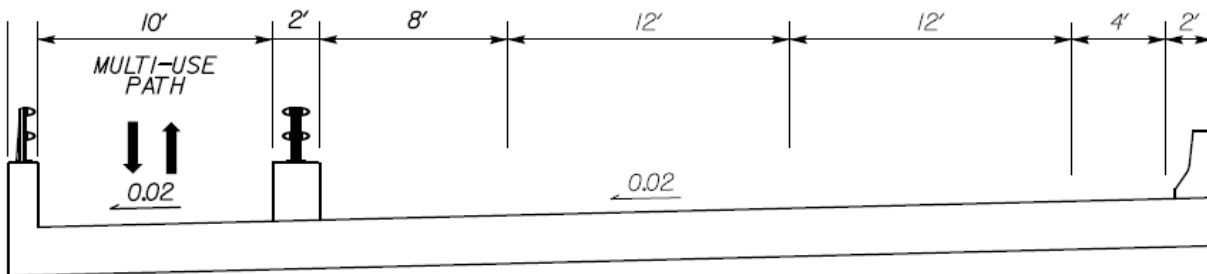
### **Description of Proposed Design**

The bridge over Lake Norman will be approximately 1,220 feet long and 51 feet wide. The bridge and it's approaches will include a 10 wide multi use path (MUP) along the north side of NC 150. Two-lane two-way traffic will be maintained on the existing alignment while the new bridge and roadway is being constructed. Once the new structure and roadway are complete, traffic will be shifted into its permanent pattern with west bound traffic on northern bridge and east bound traffic on the southern bridge.

The entrances of Pinnacle and McCrary Accesses will be affected by the design. McCrary will also be impacted by utility and drainage easements and Pinnacle will be impacted by drainage easements. The impacts to these access areas within their respective FERC boundaries are being addressed separately with Duke Public Recreation group. Where the drainage easement on McCrary Access terminates below the lake



The proposed new bridge would accommodate the following typical section: 48-foot total bridge width consisting of two 12-foot lanes, a 4-foot inside offset and 9-foot outside offset, a 10 foot MUP to the outside of the bridge.



**Navigational Clearance** – The existing NC 150 bridge will remain in service once the new bridge is complete with the new bridge carrying west bound traffic and the old bridge carrying eastbound traffic.

The existing bridge, which will remain in place, has outside spans with 11 feet of vertical clearance and 70 to 77 feet of horizontal clearance. For the middle third of the spans, the vertical clearance is 8 feet and the horizontal clearance is 161 feet. Consequently, the vast majority of navigational traffic currently uses the exterior bents for passage (see photo below).



The Catawba-Wateree Project Shoreline Management Plan (SMP) requires 12 feet of clearance height above the full pond elevation for the middle third of the bridge for a new bridge which was reinforced at previous meetings with Duke Energy Lake Services.

**Proposed Bridge Clearance** – Based on roadway design requirements, the proposed bridge is being raised and will provide a minimum 14 feet of navigational clearance between full pond elevation (760' NGVD 29) and lowest steel in the middle third of the bridge and a minimum of 12 feet of clearance for the remainder for the bridge. **All portions of the new bridge will meet or exceed the clearance height of the existing bridge.** The span arrangement of the new bridge has been designed to complement the existing navigational channel with guidance from Duke Energy Lake Service's Chad Broadway (January 6, 2020). The proposed horizontal opening between each bent of the new bridge will be at minimum 139.8 feet, and arranged to align closely with the existing bents, providing ample clearance for navigational traffic passing under the two bridges.

Attachment 1 illustrates the profile of the existing shown in black vs. the proposed shown in red compares the openings of the two bridges. The following table provides a comparison of clearances.

	Outside Spans		Middle Third	
	Horizontal	Vertical	Horizontal	Vertical
Existing Bridge	70' – 77'	11'	161'	8'
Proposed Bridge	139.8'	12'	139.8'	14'

**Navigational Safety Plan** – The Boater/Navigational Safety Plan is included as Attachment 2 to the Step 3 application.

### Existing Easement

There is an existing 100' wide easement granted to NCDOT June 8, 1962, recorded in Iredell County deed book #348, page 530. The deed is included as Attachment 10 in the Step 3 application.

### Easements Needed

The proposed easements illustrated on a survey map in Attachment 1 in the Step 3 application.

#### Permanent Easements (9.554 acres total)

- **Easement 1** - (2.256 acres) is for the widened causeway west of the peninsula providing access to the skimmer.
- **Easement 2** – (7.285 acres) is for the widened causeway and bridge west of the skimmer.
- **Easement 3** – (0.0131 acres) for permanent drainage easement.

#### Temporary Easements (6.468 acres total)

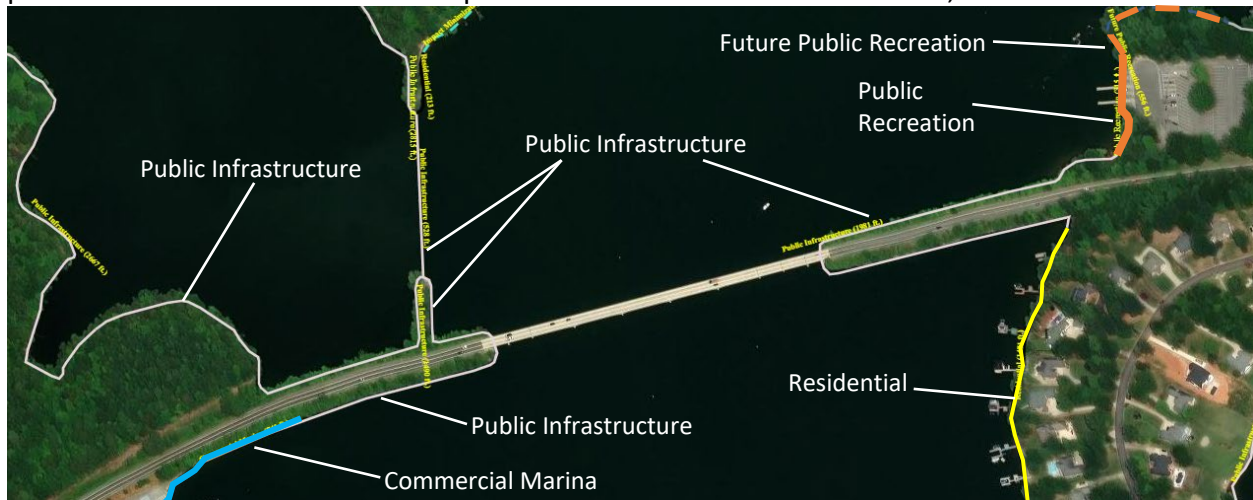
- **Temp Easement 1** – (0.004 acres) – for temporary drainage easement.
- **Temp Easement 2 -5** - (6.4 acres total) – is for a boater safety zone where barges will operate.
- **Temp Easement 6** – (0.067 acres) – for temporary construction easement.

**Construction Access** – The initial phases of the causeway will be placed such that it also provides staging areas and access road to the river to allow materials to be delivered to the barges for construction. Barges and construction access to the work area will be through causeways to ensure that ingress and egress of Pinnacle Access Area is not impeded.

**Construction Duration** – Construction duration is anticipated to be 36 months for the overall project and within the limits of the FERC Project Boundary.

### Shoreline Classification

A snapshot of the Shoreline Classifications for this area is shown below. Based on design proposed above, it is anticipated that the project's primary impact will be to shoreline classified public infrastructure with minor impacts to sections of Public Recreation, and Residential.



**Shoreline Stabilization** – Where construction occurs, the disturbed areas of the shoreline near the bridge will be stabilized with Class II rip rap placed on the proposed bridge spill-through abutment slopes. Disturbed areas under the proposed bridge not lined with Class II riprap will be matted with coir fiber. Disturbed shoreline areas away from the bridge will be revegetated with appropriate native vegetation.

**Environmental Impacts on the Lake** – The wider facility will result in a wider approach causeway in the lake. Fill impacts were calculated based on full pond elevation (NGVD29, 760') and are listed in the table below and illustrated in Attachment 2 of the Step 3 application.

Environmental Impact	Fill Volume (CY)	Full Pond Surface Area Affected (ac)
Proposed Fill	146,427 cy	6.907 ac

There is no excavation within the FERC project boundary anticipated with this project except the removal of material for the drilled piers which will subsequently be filled with concrete and steel.

There are no other wetland or stream impacts associated with the work near the lake but there are impacts to open waters as illustrated with the fill information presented earlier. The US Fish and Wildlife Service lists two federally protected species including Dwarf flowered heartleaf, Schweinitz's sunflower. Surveys for both resulted in an outcome of "No Effect". The tri-colored bat is proposed for listing and NCDOT will continue coordination with USFWS to address the concerns for all NCDOT projects.

There are no historic architecture or archaeological resources associated with the lake crossing.

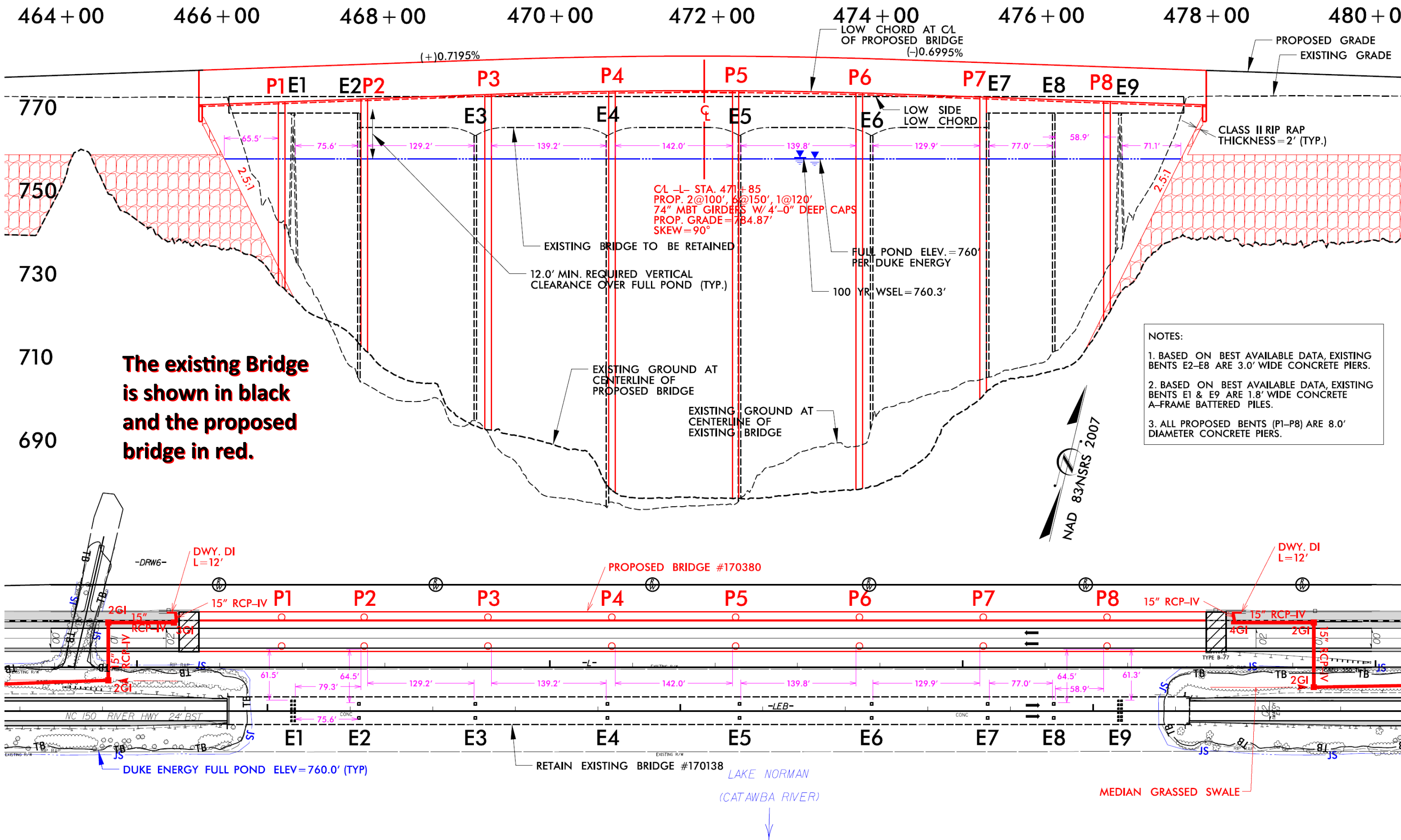
**Utilities**

There is an existing telecommunications cable on the north side of the existing bridge. There is also a waterline on the existing bridge. Both will remain in service during and after construction with no effect from the project.



## **Attachment 9.1 – Vertical Clearance Comparison**

Profile and Plan Views of Navigational Clearance



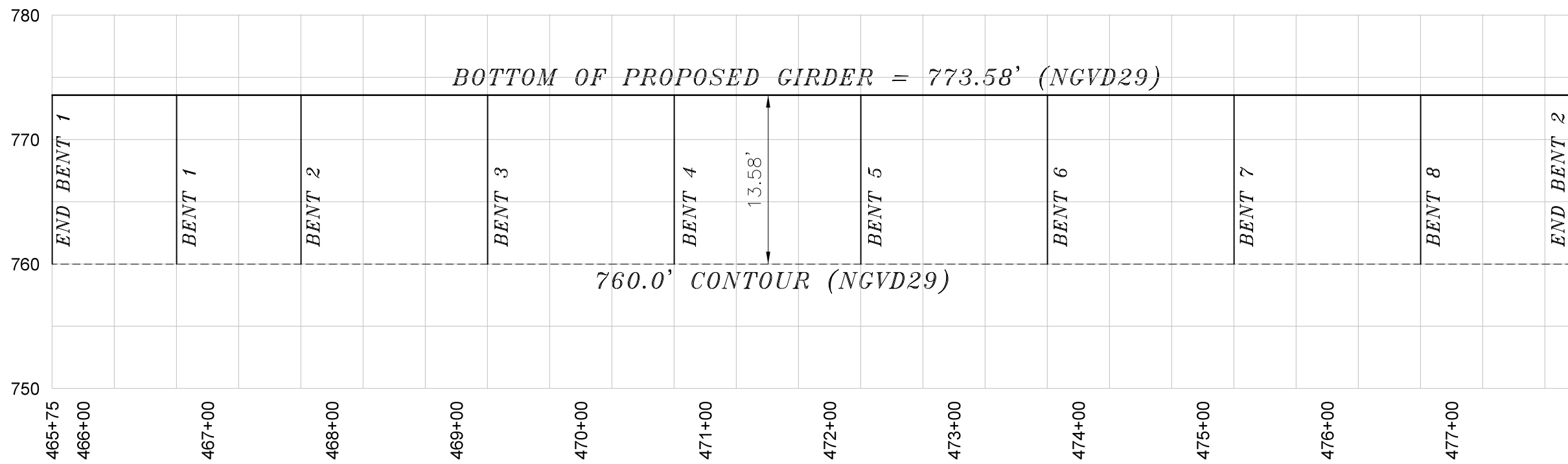
## **Attachment 10 – FERC Survey Map**



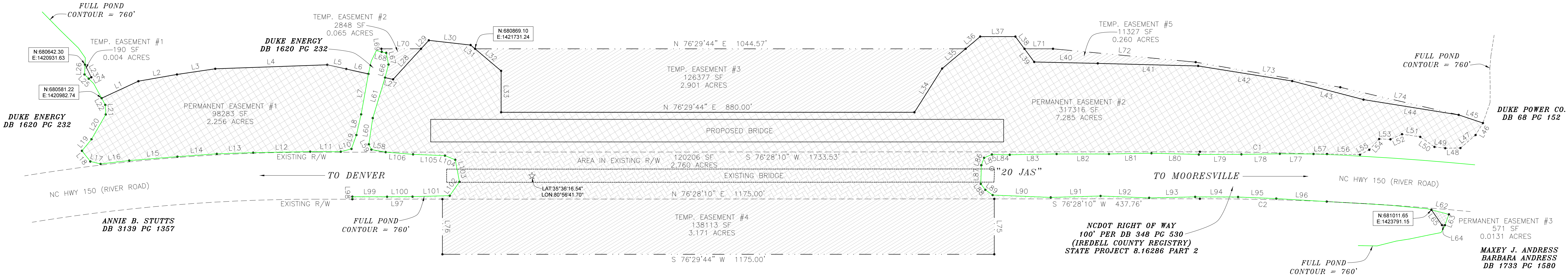
Notes:

- All distances are horizontal ground feet unless otherwise noted.
- Areas were determined by coordinate computations.
- All coordinates and distances are in US Survey Feet.
- This survey does not certify to title or ownership.
- No title search was provided for this survey.
- The survey that resulted in the preparation of this plat used only the information of record as noted hereon.
- Property is subject to any and all easements, rights of way, and restrictive covenants of record.
- Lake Norman Project Boundary is Elevation 760.0' (NGVD29) as measured from the full pond elevation. Reference is made to survey by William J. Dixon for Catawba-Wateree Project FERC No. 2232 Exhibit G Sheet G-5-E&F.
- Elevations shown hereon based on Lake Norman Project Datum. Water elevation as time of survey as measured was 99.00' at 10:15 AM on January 15, 2024. Elevations were verify by benchmark check on "20 JAS" at the northeast corner of the existing bridge with a published NGVD29 elevation of 776.51'. The 99.00' elevation (which is based on 100' full pond) equates to 759.00' (NGVD29 Datum).
- Elevations for the proposed bridge were taken from project plans. Since project plans are based on NAVD88 datum, the low chord elevations were converted using that factor specified (+0.59) on Exhibit G Sheet G-5-E&F.

SEE SHEET 2 FOR LINE & CURVE TABLES



LAKE NORMAN  
FERC PROJECT NO. 2232  
FULL POND ELEV = 760.0'  
(NGVD29 VERTICAL DATUM)



LAKE NORMAN  
FERC PROJECT NO. 2232  
FULL POND ELEV = 760.0'  
(NGVD29 VERTICAL DATUM)

LEGEND

- ⊙ NCGS CONTROL MONUMENT
- UNMARKED POINT

- PROPOSED PERM. EASEMENT LINE (SURVEYED)
- - - PROPOSED TEMP. EASEMENT LINE (SURVEYED)
- - - EXISTING R/W LINE (SURVEYED)
- - - 760.0' (NGVD29) CONTOUR (SURVEYED)
- - - WATER SURFACE (SURVEYED)
- - - PROPOSED BRIDGE OUTLINE
- - - EXISTING BRIDGE LOCATION (SURVEYED)
- - - FERC PROJECT BOUNDARY
- - - PROPOSED PERMANENT EASEMENT AREA
- - - PROPOSED TEMPORARY EASEMENT AREA
- - - AREA IN EXISTING R/W WITHIN FULL POND

SURVEYOR'S CERTIFICATION

I, Matthew T. Cornwell certify that this plat was drawn under my supervision from an actual survey performed under my supervision (deed description recorded in Book 348, Page 530, Iredell County Registry); that the boundaries not surveyed are clearly indicated as dashed lines drawn from information found as shown hereon; that the ratio of precision as calculated exceeds 1:10,000; and that this plat was prepared in accordance with G.S. 47-30 as amended. This plat meets the requirements of G.S. 47-30 Section f-11-c-2: That the survey is of an existing feature, such as a building or other structure, or natural feature such as a watercourse.

Witness my original signature and seal this the 14th day of February, A.D., 2024.



2/14/2024

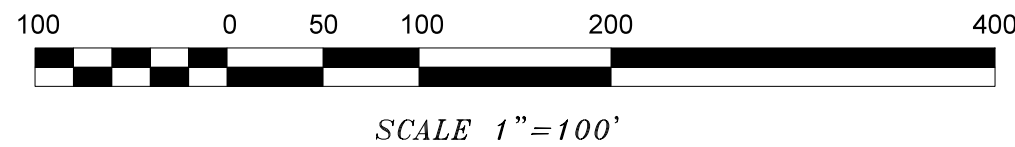
Designed by:  
Matthew Cornwell  
EBD38F11473E475...  
SURVEYOR  
L-4775  
N.C. P.L.S. LICENSE NUMBER



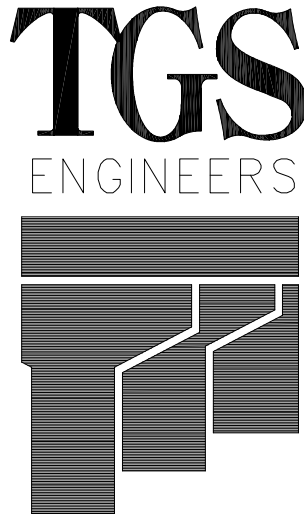
STATE OF NORTH CAROLINA, COUNTY OF CATAWBA/IREDELL

I, \_\_\_\_\_, Review officer of Catawba/Iredell County, certify that the map or plat to which this certification is affixed meets all statutory requirements for recording.

Review Officer \_\_\_\_\_ Date \_\_\_\_\_



SHEET 1 OF 2



FIRM LICENSE NUMBER  
C-0275

SURVEY OF PROPOSED FERC EASEMENT LIMITS FOR:  
**The NCDOT over Duke Energy Lake Norman Project Boundary**  
Location: River Highway over Lake Norman  
Deed References: DB 348 PG 530  
PID NO: None  
Map/Blk/Lot: None  
Mountain Creek Twp., Catawba Co. & Davidson Twp., Iredell Co.

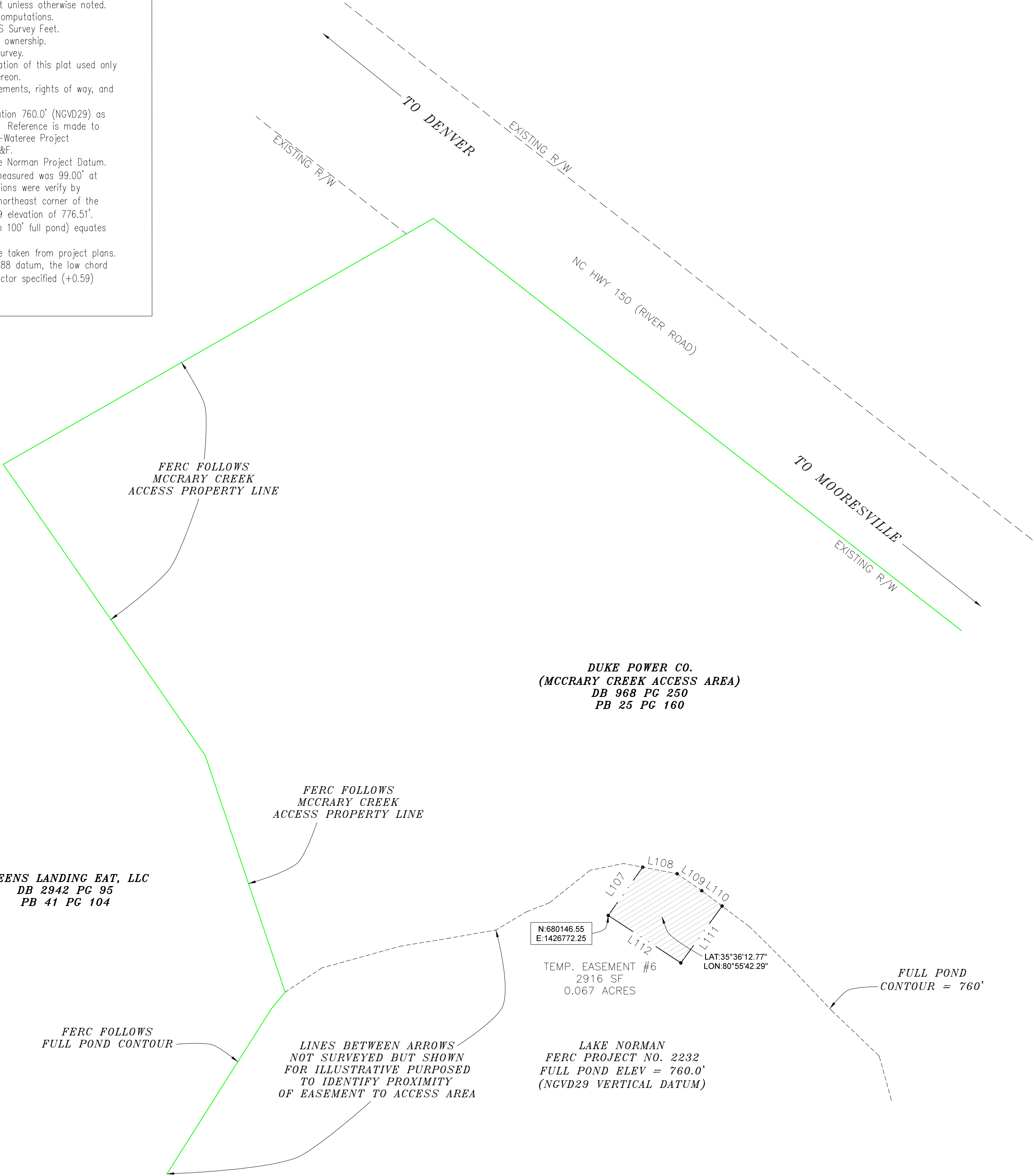
TGS Engineers  
201 WEST MARION STREET - SUITE 200  
SHELBY, NC 28150  
PH. (704) 476-0003

DRAWN BY: M. T. Cornwell, PLS, PE	SURVEYED BY: MTC & MTM
Date of Survey: January 2024	Map Date: February 14, 2024
CHECKED BY: M. T. Cornwell, PLS, PE	

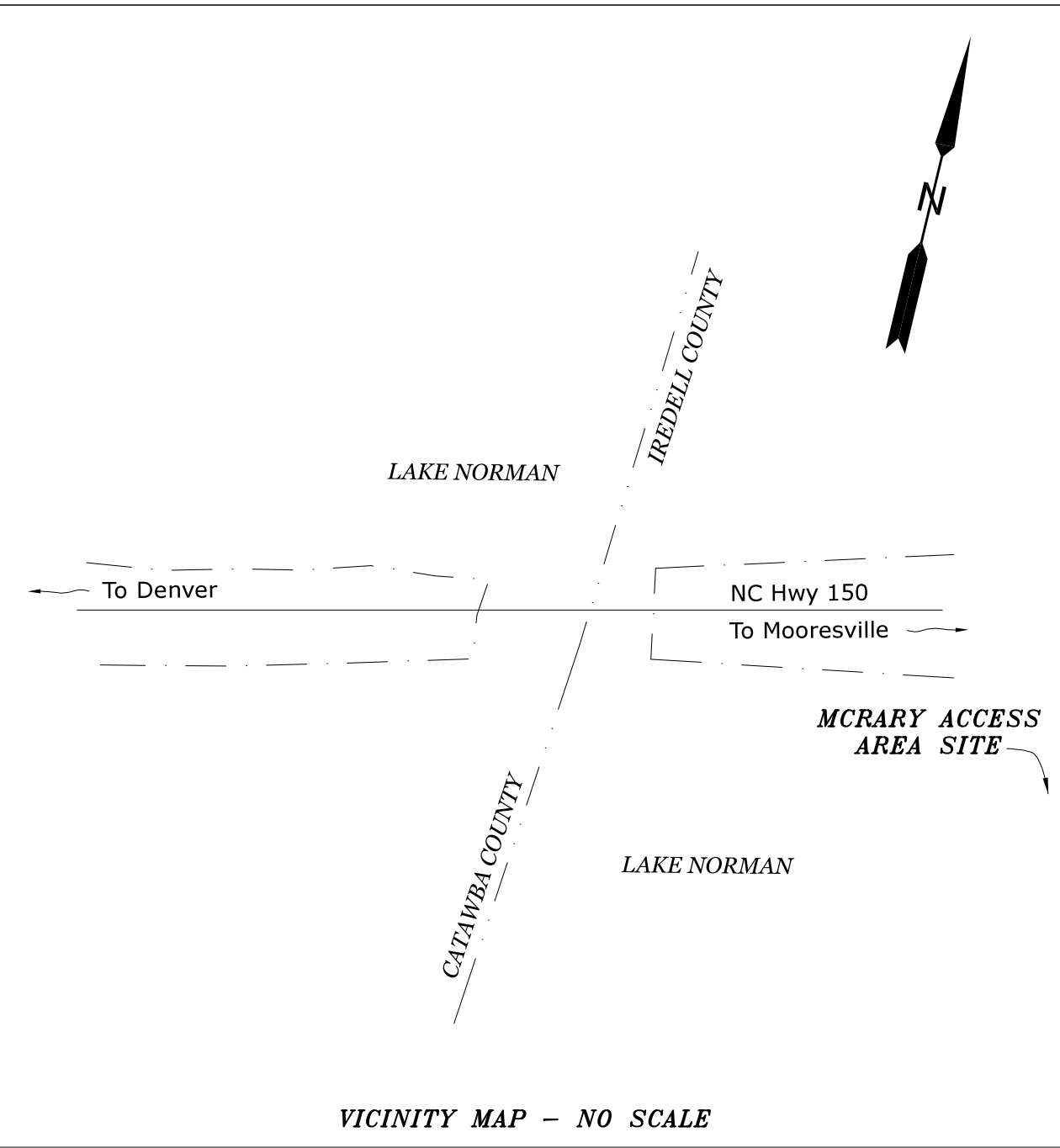
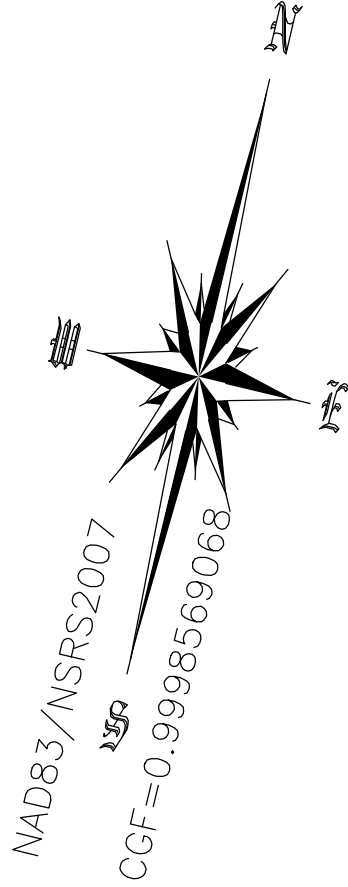


Notes:

- All distances are horizontal ground feet unless otherwise noted.
- Areas were determined by coordinate computations.
- All coordinates and distances are in US Survey Feet.
- This survey does not certify to title or ownership.
- No title search was provided for this survey.
- The survey that resulted in the preparation of this plat used only the information of record as noted hereon.
- Property is subject to any and all easements, rights of way, and restrictive covenants of record.
- Lake Norman Project Boundary is Elevation 760.0' (NGVD29) as measured from the full pond elevation. Reference is made to survey by William J. Dixon for Catawba-Wateree Project FERC No. 2232 Exhibit G Sheet G-5-E&F.
- Elevations shown hereon based on Lake Norman Project Datum. Water elevation as time of survey as measured was 99.00' at 10:15 AM on January 15, 2024. Elevations were verify by benchmark check on "20 JAS" at the northeast corner of the existing bridge with a published NGVD29 elevation of 776.51'. The 99.00' elevation (which is based on 100' full pond) equates to 759.00' (NGVD29 Datum).
- Elevations for the proposed bridge were taken from project plans. Since project plans are based on NAVD88 datum, the low chord elevations were converted using that factor specified (+0.59) on Exhibit G Sheet G-5-E&F.



LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 51°41'30" E	86.27'
L2	N 66°36'21" E	83.35'
L3	N 68°04'29" E	82.35'
L4	N 74°26'34" E	238.70'
L5	N 89°01'04" E	41.46'
L6	N 88°56'30" E	48.29'
L7	S 03°19'53" E	87.34'
L8	S 00°27'50" E	45.20'
L9	S 06°04'26" W	31.30'
L10	S 61°54'23" W	23.56'
L11	S 76°35'06" W	65.04'
L12	S 75°29'15" W	121.39'
L13	S 74°55'51" W	77.52'
L14	S 72°26'47" W	84.14'
L15	S 71°51'42" W	102.87'
L16	S 69°44'50" W	61.49'
L17	N 89°49'11" W	22.49'
L18	N 51°41'51" W	28.78'
L19	N 25°57'50" E	31.89'
L20	N 16°29'48" E	60.86'
L21	N 16°37'30" W	20.49'
L22	N 42°06'18" W	16.02'
L23	S 40°22'52" E	30.05'
L24	S 49°07'33" W	6.36'
L25	N 58°33'36" W	12.70'
L26	N 10°37'11" W	20.77'
L27	N 88°56'30" E	17.59'
L28	N 28°58'29" E	88.13'
L29	N 28°58'29" E	24.41'
L30	N 82°54'23" E	89.56'
L31	S 63°16'05" E	12.39'
L32	S 63°16'05" E	72.76'
L33	S 13°30'16" E	88.00'
L34	N 18°53'13" E	110.14'
L35	N 36°28'55" E	65.32'
L36	N 36°28'55" E	40.44'
L37	N 76°29'44" E	75.00'
L38	S 50°02'00" E	32.36'
L39	S 50°02'00" E	34.85'
L40	N 77°45'56" E	135.35'
L41	N 77°58'18" E	213.88'
L42	N 85°36'45" E	202.71'
L43	S 88°55'40" E	156.83'
L44	N 85°35'12" E	205.23'
L45	S 84°54'04" E	54.53'
L46	S 18°00'11" W	29.90'
L47	S 35°53'31" W	42.49'
L48	S 75°53'44" W	32.31'
L49	S 83°07'10" W	23.05'
L50	N 68°19'17" W	37.18'
L51	S 84°53'09" W	39.18'
L52	S 52°41'06" W	27.01'
L53	S 78°09'33" W	24.01'
L54	S 28°53'44" W	31.08'
L55	S 48°41'20" W	22.50'
L56	S 77°42'39" W	70.22'
L57	S 76°45'21" W	28.85'
L58	S 86°34'56" W	30.83'
L59	N 39°16'22" W	12.62'
L60	N 04°56'30" W	56.32'
L61	N 03°21'34" E	89.98'
L62	S 88°54'49" E	38.56'
L63	S 06°42'37" W	24.44'
L64	S 77°58'02" W	6.41'
L65	N 48°10'23" W	39.49'
L66	N 01°21'34" E	28.58'
L67	N 24°25'00" W	25.24'
L68	S 89°32'49" W	8.62'
L69	N 20°05'11" W	6.61'
L70	N 76°29'44" E	84.52'
L71	N 76°29'44" E	60.74'
L72	N 81°50'11" E	305.11'
L73	N 86°20'15" E	312.53'
L74	N 89°36'34" E	258.76'
L75	S 13°30'16" E	117.81'
L76	N 13°30'16" W	117.27'
L77	S 76°45'21" W	71.62'
L78	S 75°40'00" W	81.76'
L79	S 76°18'27" W	90.73'
L80	S 78°00'33" W	100.84'
L81	S 75°30'23" W	90.44'
L82	S 76°29'32" W	111.49'
L83	S 75°31'43" W	99.86'
L84	S 77°23'35" W	37.92'
L85	S 53°09'21" W	18.13'
L86	S 07°23'26" W	16.67'
L87	S 11°55'02" E	39.69'
L88	S 50°54'50" E	15.95'
L89	S 67°48'19" E	19.11'
L90	N 78°47'43" E	123.77'
L91	N 74°52'34" E	106.11'
L92	N 78°42'16" E	103.55'
L93	N 75°15'04" E	97.99'
L94	N 76°41'06" E	91.35'
L95	N 78°53'42" E	81.23'
L96	N 79°51'45" E	107.62'
L97	S 76°28'10" W	191.75'
L98	N 13°31'50" W	5.34'
L99	N 76°37'51" E	73.94'
L100	N 76°14'22" E	54.08'
L101	N 75°01'12" E	79.23'
L102	N 21°45'02" E	36.05'
L103	N 24°23'33" W	47.75'
L104	N 81°26'38" W	23.49'
L105	S 78°46'17" W	68.04'
L106	S 81°07'47" W	70.30'
L107	N 22°02'30" E	41.17'
L108	N 87°17'26" E	24.28'
L109	S 68°55'21" E	19.56'
L110	S 66°41'20" E	18.90'
L111	S 22°27'17" W	48.77'
L112	N 70°18'39" W	60.21'



CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	6144.68'	241.89'	241.87'	S 77°35'50" W	2°15'20"
C2	6044.68'	270.15'	270.13'	S 77°44'59" W	2°33'38"

STATE OF NORTH CAROLINA, COUNTY OF CATAWBA/IREDELL

I, \_\_\_\_\_, Review officer of Catawba/Iredell County, certify that the map or plat to which this certification is affixed meets all statutory requirements for recording.

Review Officer

Date



SCALE 1"=50'

SHEET 2 OF 2

LEGEND

- ⊙ NCGS CONTROL MONUMENT
- UNMARKED POINT

- PROPOSED PERM. EASEMENT LINE (SURVEYED)
- PROPOSED TEMP. EASEMENT LINE (SURVEYED)
- EXISTING R/W LINE (SURVEYED)
- 760.0' (NGVD29) CONTOUR (SURVEYED)
- WATER SURFACE (SURVEYED)
- PROPOSED BRIDGE OUTLINE
- EXISTING BRIDGE LOCATION (SURVEYED)
- FERC PROJECT BOUNDARY
- PROPOSED PERMANENT EASEMENT AREA
- PROPOSED TEMPORARY EASEMENT AREA
- AREA IN EXISTING R/W WITHIN FULL POND

SURVEYOR'S CERTIFICATION

I, Matthew T. Cornwell certify that this plat was drawn under my supervision from an actual survey performed under my supervision (deed description recorded in Book 348, Page 530, Iredell County Registry); that the boundaries not surveyed are clearly indicated as dashed lines drawn from information found as shown hereon; that the ratio of precision as calculated exceeds 1:10,000; and that this plat was prepared in accordance with G.S. 47-30 as amended. This plat meets the requirements of G.S. 47-30 Section f-11-c-2: That the survey is of an existing feature, such as a building or other structure, or natural feature such as a watercourse.

Witness my original signature and seal this the 14th day of February, A.D., 2024.



2/14/2024

Designed by  
Matthew Cornwell  
EBO08F11473E475...  
SURVEYOR  
L-4775  
N.C. P.L.S. LICENSE NUMBER





## **Attachment 11 – Existing Easement**

STATE OF NORTH CAROLINA

COUNTY OF IredellBOOK 348 PAGE 530

RIGHT OF WAY AGREEMENT

THIS AGREEMENT entered into this the 8<sup>th</sup> day of June, 1962, by and between the STATE HIGHWAY COMMISSION, an agency of the State of North Carolina, and Duke Power Company, Inc.

the undersigned, owners of that certain property located on State Highway Project S.16286, Pt.2, recognizing the benefits to said property by reason of the construction of the proposed highway along a survey line established upon their lands, and in consideration of the use of a portion of their lands for highway purposes and the sum of NO Dollars to be paid to the property owners by the Highway Commission, do hereby grant to the State Highway Commission the right of way for said highway, as delineated upon the plans for said project and as hereinafter described, and releases the Commission from all claims for damages by reason of said right of way across the lands of the undersigned, and of the past and future use thereof by the Commission, its successors and assigns, for all purposes for which the Commission is authorized by law to subject such right of way, said property being in Iredell County, and located adjacent to the Catawba River on N.C. Highway 150

on the west by \_\_\_\_\_, and said right of way being the width indicated and between the approximate survey stations as follows:

LEFT OF SURVEY LINE				RIGHT OF SURVEY LINE			
Width	Station	Station	Survey Line	Width	Station	Station	Survey Line
50 ft. wide	910/00	and 963/26	L	50 ft. wide	910/00	and 963/26	L
ft. wide		and		ft. wide		and	
ft. wide		and		ft. wide		and	
ft. wide		and		ft. wide		and	

said right of way being delineated upon a set of plans for said project in the office of the State Highway Commission in Raleigh, North Carolina. This agreement is subject to the following provisions only:

This agreement grants the Commission permission to construct and maintain cut and fill slopes, and berm and drainage ditches which exceed the above-described right of way.

The property of Duke Power Company above referred to is described in deed from F. C. Sherrill, et al, to Catawba Manufacturing and Electric Power Company dated August 10, 1921, recorded in the Public Registry of Iredell County in Book 68, page 152.

There are no conditions to this agreement not expressed herein. The undersigned hereby covenant and warrant that they are the sole owners of said property, that they solely have the right to grant this right of way, and that they will defend the title to the same against the lawful claims of all persons whatsoever.

IN WITNESS WHEREOF, we have hereunto set our hands and affixed our seals this the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

Attest:  
Secretary  
Secretary

By: Duke Power Company, Inc.  
Vice President  
(SEAL)

(SEAL)  
(SEAL)  
(SEAL)  
(SEAL)  
(SEAL)

NORTH CAROLINA  
COUNTY

The foregoing certificate of \_\_\_\_\_  
a Notary Public of \_\_\_\_\_ County,  
North Carolina, is adjudged to be correct, and it appears  
that the execution of the foregoing instrument has been  
duly proved. Let the instrument and the certificate be  
registered.  
Witness my hand this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

Clerk of the Superior Court  
ACCEPTED for STATE HIGHWAY COMMISSION

By: \_\_\_\_\_

I, George G. Hall, a Notary Public for the above State  
and County, hereby certify that Wm. S. Sease personally came  
before me this day and acknowledged that he is Asst. Secretary of  
DUKE POWER COMPANY a corporation, and that by authority  
duly given and as the act of said corporation, the foregoing and annexed instrument was  
signed in its name by O. J. Miller, its Vice President, sealed  
with its corporate seal and attested by himself as its Asst. Secretary.

WITNESS my hand and official seal, this the 8<sup>th</sup> day of June  
1961.

George G. Hall  
Notary Public  
My commission expires Nov. 25, 1962  
My Commission Expires Nov. 25, 1962

STATE OF NORTH CAROLINA—IREDELL COUNTY.

The foregoing certificate of George G. Hall, a Notary Public  
of Gaston County N.C. is adjudged to be in due form  
and according to law. Therefore let the instrument and certificates with this certificate be registered.

Witness my hand this 20<sup>th</sup> day of July 1961.

J. F. Tomlin  
Deputy Ass't Clerk Superior Court

Filed for registration July 20 1961 at 4 P. M.

Fee \$1.50

Marcus Stanley  
Register of Deeds

By: \_\_\_\_\_  
Deputy

## **Attachment 12 – Photographs**





**Photographs of the Conveyance Area**  
**All photographs were taken onsite 8/30/23.**

1. Bridge Facing NW Quadrant & Skimmer



2. From Pinnacle Looking to N Face of Bridge



### 3. McCrary Access Boat Ramps



### 4. McCrary Access Ramps and Western Shoreline





## 5. McCrary Access Spot for New Parking Spaces



## 6. Ramps and Western Shoreline





7. NE Quadrant Looking West



8. NE Shoreline





## 9. NW Quadrant Shoreline



## 10. Pinnacle Access Ramp





## 11. Pinnacle Parking



## 12. SE Shoreline





### 13. SW Boat Rental



## **Attachment 13 – Environmental Review**

**ENVIRONMENTAL REVIEW**  
**in support of a**  
**CONVEYANCE REQUEST FOR THE R-2307B COWANS FORD (LAKE**  
**NORMAN) BRIDGE FACILITY EXPANSION**

(as derived by NCDOT from their FHWA-approved Environmental Assessment  
and FONSI)

**CATAWBA-WATEREE HYDROELECTRIC PROJECT**

NC Department of Transportation  
1501 Mail Service Center  
Raleigh, NC 27699-1501  
3/19/2025



TABLE OF CONTENTS

TABLE OF CONTENTS..... i

LIST OF ATTACHMENTS ..... iii

LIST OF TABLES ..... iii

LIST OF ABBREVIATIONS ..... iv

1.0 INTRODUCTION ..... 1

    1.1 Background..... 1

    1.2 Project Description..... 1

2.0 PURPOSE AND NEED FOR ACTION..... 1

    2.1 Purpose..... 1

    2.2 Need ..... 2

3.0 STATUTORY COMPLIANCE AND COMMENTS ..... 3

    3.1 Statutory and Regulatory Compliance ..... 3

        3.1.1 Clean Water Act..... 3

        3.1.2 Endangered Species Act..... 3

        3.1.3 National Historic Preservation Act ..... 3

        3.1.4 Executive Orders 12898, 13985, 14008, and 13166 and Civil Rights Act of 1964 ..... 4

    3.2 Agency Coordination and Public Comment ..... 5

        3.2.1 Agency Coordination ..... 5

        3.2.2 Public Involvement ..... 7

        3.2.3 Public Notice..... 8

    3.3 Tribal Consultation ..... 8

4.0 ALTERNATIVES CONSIDERED ..... 9

    4.1 No-Action Alternative ..... 9

    4.2 Original Alternatives Considerations– FHWA R-2307 Environmental Assessment..... 9

    4.3 Additional Development of Alternatives ..... 10

5.0 ENVIRONMENTAL RESOURCES AND IMPACTS ANALYSIS ..... 13

    5.1 Cumulative Effects..... 13

    5.2 Geologic and Soil Resources ..... 14

    5.3 Water Quality..... 15

    5.4 Fisheries and Aquatic Resources ..... 16

    5.5 Wildlife and Botanical Resources..... 17

    5.6 Wetlands and Riparian Habitat ..... 19

5.7 Threatened and Endangered Species.....	20
5.8 Recreational Resources .....	21
5.9 Cultural and Historic Resources .....	22
5.10 Environmental Justice and Limited English Proficiency (LEP) .....	22
5.11 Residences and Businesses .....	23
5.12 Impact to Lake Volume, Surface Waters, and Full Pond Elevation .....	23
5.13 Noise Analysis .....	24
5.14 Alternatives Impacts Comparison Summary .....	25
6.0 CONCLUSIONS AND STAFF RECOMMENDATIONS .....	26
7.0 FINDING OF NO SIGNIFICANT IMPACT .....	27
REFERENCES .....	28

## LIST OF ATTACHMENTS

Attachment 1.1 – Alternative 1  
Attachment 1.2 – Alternative 1A  
Attachment 1.3 – Alternative 2  
Attachment 2 – USFWS Concurrence Letter  
Attachment 3 – Historic Architecture and Archaeology SHPO Concurrence Letter

## LIST OF TABLES

Table 1. Agency participation for R-2307 Merger Process and EA-FONSI coordination. ....	6
Table 2. Riparian buffer impacts based on Lake Norman full pond elevation. ....	19
Table 3. Federally protected species within the R-2307B study area. ....	20
Table 4. Cost and impact comparison of all R-2307B bridge replacement alternatives. ....	25

## LIST OF ABBREVIATIONS

ACS	American Community Survey
BMP	Best Management Practices
CMSWS	Charlotte-Mecklenburg Storm Water Services
CIA	Community Impact Assessment
CP	Concurrence Point
DSA	Demographic Study Area
DCIA	Direct Community Impact Area
DO	Dissolved Oxygen
ESA	Endangered Species Act
EA	Environmental Assessment
EJ	Environmental Justice
E&SC Plan	Erosion and Sediment Control Plan
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FLUSA	Future Land Use Study Area
GCLMPO	Gaston-Cleveland-Lincoln Metropolitan Planning Organization
GIS	Geographic Information System
HQWs	High Quality Waters
ICE	Indirect and Cumulative Effects
IP	Individual Permit
IPaC	Information for Planning and Construction
LUSA	Land Use Scenario Assessment
LEP	Limited English Proficiency
MUP	Multi-Use Path
NHEO	Natural Heritage Element Occurrences
NMFS	National Marine Fisheries Service
NRTR	Natural Resources Technical Report
NCDWR	NC Division of Water Resources
NEPA	National Environmental Policy Act
NC DEQ	North Carolina Department of Environmental Quality
NCDOT	North Carolina Department of Transportation
NCNHP	North Carolina Natural Heritage Program
NSA	Noise Sensitive Area
PM	Public Meeting
SHPO	State Historic Preservation Office
ORW	Outstanding Resource Waters
STIP	State Transportation Improvement Program
USACE	US Army Corps of Engineers
USFWS	US Fish and Wildlife Service



vpd

WQC

WS-IV

WSWS

vehicles per day

Water Quality Certificate

Water Supply IV

Water Supply Watershed

## **1.0 INTRODUCTION**

### **1.1 Background**

The North Carolina Department of Transportation (NCDOT) proposes to widen existing NC 150 to improve traffic capacity and reduce congestion along NC 150 from Greenwood Road (approximately 0.8 miles west of the current Lake Norman crossing) to US 21 (approximately 6.1 miles east of the current Lake Norman crossing). The existing two-lane facility is no longer adequate and is proposed for widening to four lanes. The proposed project is included in the 2024-2033 State Transportation Improvement Program (STIP) as R-2307B, as part of the larger R-2307 project.

The proposed project area crosses the full pond project boundary of the Cowans Ford (Lake Norman) Development in the Catawba-Wateree Hydroelectric Project No. 2232 as defined by the Federal Energy Regulatory Commission (FERC). The current licensee to operate and maintain the Catawba-Wateree project is Duke Energy Carolinas, LLC. This environmental document is prepared in accordance with the current license issued to the licensee by FERC.

The overall project led by the Federal Highway Administration (FHWA) went through the 404-NEPA (National Environmental Policy Act) Merger Process where agencies participate in the development of purpose and need, alternatives analysis, bridging decisions, least environmentally damaging practicable alternative selection, and minimization. The Merger Process was established by a Memorandum of Understanding between NCDOT, FHWA, US Army Corps of Engineers (USACE), and North Carolina Department of Environmental Quality (NC DEQ). Duke Energy participated in the development of the alternatives. Other agencies participating in this process are listed in Section 3.2.1 Agency Coordination.

### **1.2 Project Description**

The project proposes adding two lanes of traffic via a bridge over Lake Norman. The lake crossing at this location is approximately 1,210 feet long and 52 feet wide. The bridge and its approaches will include a 10-foot wide multi-use path (MUP) along the north side of NC 150.

## **2.0 PURPOSE AND NEED FOR ACTION**

### **2.1 Purpose**

The purpose of the NCDOT R-2307B project, and by extension the lake crossing, is to improve traffic capacity and reduce congestion along NC 150 from the NC 16 Bypass to the US 21/NC 150 Interchange by widening the existing facility from two to four lanes.

## 2.2 Need

The need for the R-2307 project, widening of NC 150, is due to traffic congestion. A Traffic Forecast Report was completed for the project in 2016. The Forecast was re-evaluated in May 2021 and the original findings were validated with a conclusion:

The January 2016 traffic forecast produced volumes that would not be substantially different than those that would be developed based on current data for a 2045 Build. The assumptions and related planning elements from the January 2016 forecast are still reasonable and valid. There are no design elements that appear to be on the verge of failing or are sensitive to minor changes in volume. Therefore, it is concluded that the January 2016 forecast can still be relied upon for project specific decisions and a new forecast is not necessary at this time. If any of the assumptions included in the original January 2016 forecast change and are determined to be inconsistent with the project and surrounding area activity, please request updated projections at this location.

The 2016 report developed projections based on a 2.3% year-over-year growth rate, consistent with historic trends and related forecasts. Traffic volumes along NC 150 range from approximately 13,200 vehicles per day (vpd) at NC 16 Bypass to 45,700 vpd at I-77. East of I-77, current traffic volumes range from approximately 41,400 to 36,900 vpd at US 21.

The findings of the report indicated that 2015 NC 150 traffic volumes exceed two-lane capacity (14,300 vpd) between Sherrills Ford Road and the I-77 Interchange commercial district and west of Sherrills Ford Road. Existing traffic volumes within the I-77 commercial district already exceed the capacity of a five-lane facility (39,800 vpd). Design year (2040) traffic volumes along NC 150 within the project corridor range from approximately 18,000 vpd at NC 16 Bypass to 58,700 vpd at I-77. East of I-77, projected design year traffic volumes range from 53,100 to 45,300 vpd at US 21. Projected traffic volumes along the entire length of NC 150 will exceed two-lane capacity by 2040. Additionally, five-lane capacity will be exceeded from the Mooresville Crossing shopping center entrance to US 21 by 2040. NC 150 serves traffic demands and travel patterns for commuters and other travelers within and outside of the project study area and is a major east-west route between Shelby, Lincolnton, and Mooresville. Currently, heavy traffic occurs during peak periods within the project limits, resulting in frequent congestion and delays. Existing traffic congestion within the NC 150 corridor results in excessive travel times for commuters and travelers. Projected growth in the corridor, particularly around the I-77 interchange, will continue to increase these delays and travel times.

## **3.0 STATUTORY COMPLIANCE AND COMMENTS**

### **3.1 Statutory and Regulatory Compliance**

This application request is subject to numerous requirements under applicable statutes. The major regulatory and statutory requirements are described below. Each regulatory and statutory requirement is addressed under Section 5 Environmental Resources and Impacts Analysis.

#### **3.1.1 Clean Water Act**

Section 401(a)(1) of the Clean Water Act requires that an applicant for a federal license or permit to conduct activities that may result in a discharge into the navigable waters of the United States, must provide the licensing or permitting agency a Water Quality Certificate (WQC). If the state “fails or refuses to act on a request for certification, within a reasonable period of time (which shall not exceed 1 year) after receipt of such request,” (EPA, 2023) then certification is waived. The NC DEQ issued a 401 WQC on April 17, 2019 in compliance with Section 401(a)(1). A 401 renewal request was submitted along with the 404 renewal request on June 4, 2024. The existing 401 and 404 permit is valid through December 31, 2025. It is currently being updated to extend to December 31, 2032.

Section 404 of the Clean Water Act requires that an applicant for a federal license or permit to conduct activities that may result in a discharge into the navigable waters of the United, must provide the licensing or permitting agency a permit prior to discharge from any activities involving dredged or fill materials. The USACE issued an Individual Permit on September 3, 2020 in compliance with Section 404 and a permit renewal request was submitted June 4, 2024 as noted above.

#### **3.1.2 Endangered Species Act**

Section 7 of the Endangered Species Act (ESA) requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened or endangered species, or result in the destruction or adverse modification of the critical habitat of such species. Required biological surveys for endangered species and coordination with the US Fish and Wildlife Service (USFWS) are addressed in Section 5.7 Threatened and Endangered Species.

#### **3.1.3 National Historic Preservation Act**

Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations require that federal agencies consider how each of their undertakings could affect historic properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking.



Historic properties are districts, sites, buildings, structures, traditional cultural properties, and objects significant in American history, architecture, engineering, and culture that are eligible for inclusion in the National Register of Historic Places. Cultural resources represent items, structures, places, or archaeological sites that can be either prehistoric or historic in origin. Section 106 also requires that the NC Department of Transportation seek concurrence with the State Historic Preservation Office (SHPO) on any finding involving effects or no effects on historic properties and consult with interested Indian Tribes that attach religious or cultural significance to historic properties that may be affected by an undertaking. Historic architecture and archaeology screenings were conducted, and conclusions of the screenings are discussed in Section 5.9 Cultural and Historic Resources.

### **3.1.4 Executive Orders 12898, 13985, 14008, and 13166 and Civil Rights Act of 1964**

The NC Department of Transportation complies with Executive Orders 12898, 13985, 14008 and 13166 addressing Environmental Justice and Limited English Proficiency. Environmental Justice is “the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment” (EPA, 2024a).

Executive Order 12898 directs federal agencies to identify and address “disproportionately high and adverse human health or environmental effects” of their actions on minority and low-income populations (i.e., Environmental Justice communities) (EPA, 2024b). Executive Order 14008 also directs agencies to develop “programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related, and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts” (EPA, 2024c).

Executive Order 13985 (Advancing Racial Equity and Support for Underserved Communities Through the Federal Government) tasks federal agencies with “advancing equity for all, including communities that have long been underserved, and addressing systemic racism in our Nation’s policies and programs” (The White House, 2023). Traditionally underserved populations typically include low-income, minority, elderly, children, people with limited English proficiency (LEP), or persons with disabilities.

Executive Order 13166 requires Federal agencies to examine the services they provide, identify any need for services or assistance to those with LEP, and develop and implement a system to provide those services or assistance so LEP persons can have meaningful access to them.

The NC Department of Transportation complies with federal statute Title VI enacted as part of the Civil Rights Act of 1964, landmark legislation that is the basis for Environmental Justice and equity principles. Title VI requires federal agencies to address and ensure no practices, programs or activities discriminate on the basis of race, color, or national origin in all programs or activities receiving federal financial assistance. The law applies to recipients of federal financial assistance.

A Community Impact Assessment (CIA) was completed for the larger R-2307 project and a demographic analysis was completed for R-2307B. The findings from the CIA and analysis are described in Section 5.10 Environmental Justice and Limited English Proficiency (LEP).

### 3.2 Agency Coordination and Public Comment

The Commission's regulations (18 C.F.R. sections 4.201 and 4.38) require licensees to consult with appropriate resource agencies, interested Tribes, and other entities before filing an application for an amendment of license. Pre-filing consultation must be complete and documented according to the Commission's regulations. The section below describes the public outreach and resource agency consultation conducted by the licensee and/or NCDOT prior to filing its applications with the Commission.

R-2307 has been addressed in a Federal Environmental Assessment (EA) (3/08/16) and Finding of No Significant Impact (FONSI) (6/22/17), and the 404-NEPA Merger Process. This included substantial agency coordination and public involvement.

#### 3.2.1 Agency Coordination

A summary of the R-2307 Merger Process and EA-FONSI coordination is noted as follows (Duke Energy Lake Services involvement in bold):

- 12-12-12 Concurrence Point 1 (CP 1) – Purpose and Need
- 08-13-14 Concurrence Point 2 (CP 2)– Alternatives
- **03-23-15 Meeting with Duke Lake Services**
- 10-08-15 CP 2 – Revised Alternatives
- 10-13-15 106 Coordination – No Effects
- 06-10-15 Concurrence Point 2A (CP 2A) – Bridging Decisions and Alignment Review
- 09-12-13 Public Meeting (PM)
- 03-08-16 Federal Environmental Assessment (EA)
- 08-27-16 Design Public Hearing
- 02-08-17 Concurrence Point 3 (CP 3) – Least Environmentally Damaging Practicable Alternative (LEDPA)
- 03-22-17 Concurrence Point 4A (CP 4A) Avoidance and Minimization
- 06-22-17 Federal - Finding of No Significant Impact (FONSI)
- 04-17-19 401 Water Quality Certification

- 09-03-20 404 Army Corps Issued Individual Permit

The following agencies have participated in reviewing the items above as noted:

**Table 1.** Agency participation for R-2307 Merger Process and EA-FONSI coordination.

	CP	EA	106	PM	FONSI	401	404
Federal Highway Administration	1 - 4A	✓	✓		✓		
US Fish & Wildlife Service	1 - 4A						
US Army Corps of Engineers	1 - 4A	✓					✓
NC Wildlife Resources Commission	1 - 4A	✓			✓		
US Environmental Protection Agency	1 - 4A	✓					
NC Division of Water Resources	1 - 4A	✓			✓	✓	
NC Dept of Natural and Cultural Resources - SHPO	1 - 4A	✓	✓		✓		
Greater Hickory MPO	2, 2A				✓		
Charlotte Regional Transportation Planning Organization	2, 2A				✓		
Duke Energy Lake Services	2A						
Catawba County Board of Commissioners							
State Environmental Clearinghouse		✓			✓		
NC Env. Quality – Solid Waste		✓					
NC Env. Quality – Waste Management		✓					
Dept of Env. Quality		✓					
NCDWR - Public Water Supply		✓					
NC Department of Public Safety		✓					
NC Department of Administration		✓					
NC Division of Parks and Recreation		✓					
Iredell County Board of Commissioners				✓			
Catawba County Board of Commissioners				✓			
Sherrills Ford – Terrell Fire & Rescue				✓			
Town of Mooresville				✓			
Iredell County Solid Waste				✓			

The project team met with representatives from Duke Energy on March 23, 2015, to review the proposed design options and discuss the FERC permit process in relation to the project. Duke noted that NCDOT would need to mitigate any impacts within the “Project Boundary” which includes the Marshall Steam Station skimmer. Navigational concerns related to Pinnacle and McCrary Access within the full pond elevation are addressed within this document but impacts above full pond elevation on the access

entrances and periphery are being addressed separately by Duke Energy, Water Strategy & Hydro Licensing, Recreation Planning, and Historic Properties to minimize impacts to those resources.

Later Add Tribal Coordination Efforts from  
Step 2 - which are yet to be completed.

### **3.2.2 Public Involvement**

Public involvement as part of the FHWA led EA for the overall R-2307 widening project took place in 2013. A public meeting was held on November 21, 2013, at the Berea Baptist Church. Representatives from the Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO), the Greater Hickory MPO, Lincoln County Planning, the Town of Mooresville, and Catawba County were in attendance. There were questions regarding the project schedule, the project terminus, the large bridge over Lake Norman near the Marshall Steam Station and the sequence of construction for the project.

One hundred and eighty (180) citizens attended the first public meeting. Forty-five written comments were received either at the workshop or later by mail and email. Two comments were received regarding the bridge crossings.

Catawba County and the Lake Norman Bicycle Route Task Force both requested to include a multi-use path on the bridge over Lake Norman to allow both pedestrians and bicyclists to cross the bridge. As a result, NCDOT incorporated a multi-use path throughout the entire project along the northern side of NC 150.

The Mooresville South Iredell Developers Council submitted a petition (5 petitioners) requesting that “no commitment of resources be made to the NC Highway 150 bridge design before an entity, such as a UNC branch, has analyzed the economic development impact of blocking passage of fireboats, sailboats, marine construction vessels, tourist boats and other relative tall river craft.” The proposed bridge has both a minimum of 12 feet of clearance and matches or improves the existing navigational clearance (vertical and horizontal) at either end of the bridge. A higher bridge would require increasing approach and lake impacts due to additional fill material needs, resulting in a higher cost for the structure. The higher bridge would also be of no benefit to navigation for decades since the existing bridge would remain in place serving in tandem with the proposed new structure.

A Design Public Hearing was held August 22, 2016, at the Peninsula Baptist Church in Mooresville following completion of the EA. There were 542 citizens who signed the attendee logs, and 161 written

comments were received. There were sixteen comments supporting pedestrian accommodations on the project. There were two written comments about bridging.

**Comment 1** – Concerns about accidents on the bridge causing delays to get home.

Response – Sufficient shoulders will be provided on the new bridge to allow traffic to pass around most accidents.

**Comment 2** – Are noise studies going to be done for bridges across the lakes? Can sound barriers be placed on bridges?

Response - A preliminary noise evaluation was performed that identified four (4) noise barriers that meet preliminary feasible and reasonable criteria found in the NCDOT Traffic Noise Abatement Policy. A more detailed analysis will be completed during project final design. Noise barriers found to be feasible and reasonable during the preliminary noise analysis may not be found to be feasible and reasonable during the final design noise analysis due to changes in proposed project alignment and other design considerations, surrounding land use development, or utility conflicts, among other factors. Conversely, noise barriers that were not considered feasible and reasonable may meet the established criteria and be recommended for construction. This evaluation completes the highway traffic noise requirements of Title 23 CFR Part 772.

This Section will be completed by FERC in evaluating this environmental review.

### 3.2.3 Public Notice

On **Xxxx, X, 2024**, the Commission issued a notice that the license's application to amend the license was accepted for filing, soliciting comments, motions to intervene and protests (88 Fed. Reg. 14361 (March 8, 2023) The notice established a 30-day deadline, or **Xxxx, X, 2024** for filing responses to the notice. **No filings were made in response to the Commissions' notice.**

This Section will be completed by FERC in evaluating this environmental review.

### 3.3 Tribal Consultation

Consistent with the Commission's Policy Statement on Consultation with Indian Tribes in Commission Proceedings (Order 635,104 FERC paragraph 61,108 (2003), the policy statement is codified at 18 C.F.R. 2.1c.) the Commission has a trust responsibility to the Tribes and endeavors to work with Tribes on a government-to-government basis to address the effects of proposed projects on Tribal rights and resources, through consultation pursuant to the statues it administers and its environmental and decisional documents.



On **Xxxx X, 2024**, the NC Department of Transportation issued letters to the Catawba Indian Nation, the Cherokee Nation, and the Eastern Band of Cherokee Indians notifying the Tribes of the licensee's proposal and provided pertinent information on historic and prehistoric resources.

## **4.0 ALTERNATIVES CONSIDERED**

### **4.1 No-Action Alternative**

The No-Build Alternative only includes maintenance activities within the current right-of-way to ensure the safety and continued operation of the existing highway. The No-Build Alternative would avoid any adverse environmental impacts or residential relocations; however adverse social and economic impacts could occur. Future traffic volumes may result in an increased number of collisions and longer delays that would degrade the safety of the transportation system. The No-Build Alternative was eliminated because it does not meet the purpose and need of the project. The No-Build Alternative does, however, provide a basis for comparing the benefits and adverse impacts of the Build Alternatives.

### **4.2 Original Alternatives Considerations– FHWA R-2307 Environmental Assessment**

R-2307 is needed to address heavy congestion. The EA approved March 8, 2016, by FHWA evaluated and ruled out non-widening alternatives such as Transportation Demand Management, Transportation System Management, and Mass Transit/Multimodal Options. Widening was the only remaining option to explore. The FHWA-EA recommended going forward with two “Best Fit Widening” alternatives, both of which focused on Tyrell Historic District to the west of this bridge location. As part of that assessment, the bridge alignment and design were directed by factors identified during scoping, the March 23, 2015, meeting with Duke Energy Lake Services, and the 404-NEPA Merger Concurrence Point 2A. Those factors included the following:

**Condition of the existing bridge and causeway** – The existing bridge crossing at Pinnacle Access is in excellent condition with no posted weight limits and a long-life expectancy.

**Skimmer Operations** – The Duke Skimmer is accessed by the existing causeway. Removal of the causeway would eliminate Duke's access and is not an acceptable alternative.

**Pinnacle Access** – Pinnacle Access is located in the NE quadrant of the project study area. Avoiding impact to the public access site and or minimizing impacts to operations at Pinnacle Access is a goal of all alternatives.

**Navigational Vertical Clearance** – 12 feet above full pond elevation for the middle third of the bridge is the minimum allowed by the Shoreline Management Plan.

The **piles** for the new structure cannot be driven through the stone riprap of the existing causeway.

**Navigational Horizontal Clearance** – the span arrangement must be considered to optimize navigational concerns, particularly in the middle third of the lake but for this bridge, also on the ends where there is more navigational traffic.

**Midway Marina and Lake Effects Boat Rentals** – businesses operating in the southwest quadrant of the bridge.

**Homes along Marine Pointe Lane** near the southeast approach to the bridge would be impacted by any alternative to the south.

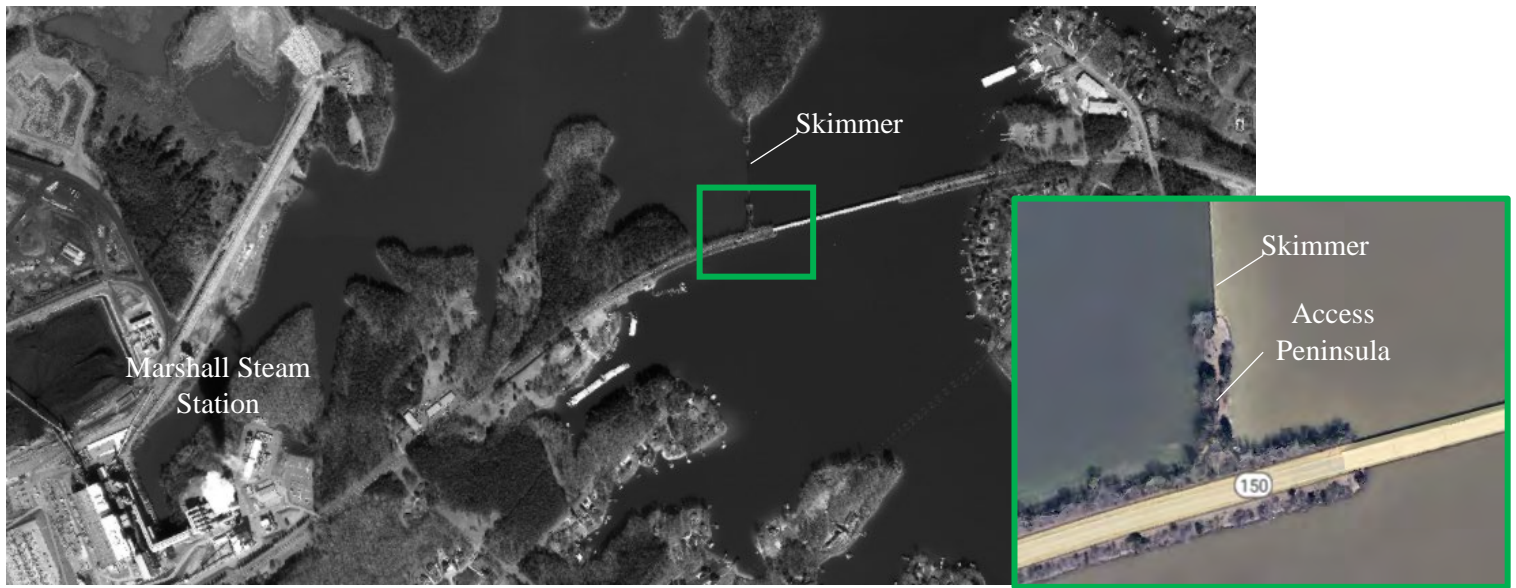
#### **4.3 Additional Development of Alternatives**

The licensee recommended additional documentation on alternatives over the lake as part of the conveyance application process which are addressed in this environmental review. The following were considered but was discounted from further consideration for the reasons noted.

#### **ALTERNATIVES ELIMINATED FROM FURTHER STUDY**

Marshall Steam Station is located a mile east of the bridge crossing but has the Duke skimmer located near the existing bridge which is accessed from a peninsula that extends north from the causeway on the western side of the lake. Marshall Steam Station staff have indicated this access is critical to the maintenance of the skimmer. The following three alternatives which propose long bridges on the existing location or to the north would remove the existing causeway and eliminate the access and are therefore eliminated from further consideration:

- Close NC 150, remove existing causeway, add longer 4 lane wide bridge on existing location. This is further unacceptable because closing NC 150 is not feasible given the service of 27,000 vehicles per day and lack of acceptable alternate routes.
- Add a second longer two-lane bridge to the north of existing bridge and causeway.
- Add a longer four lane bridge to the north of the existing bridge and causeway. Remove the existing bridge and causeway at the end of construction.

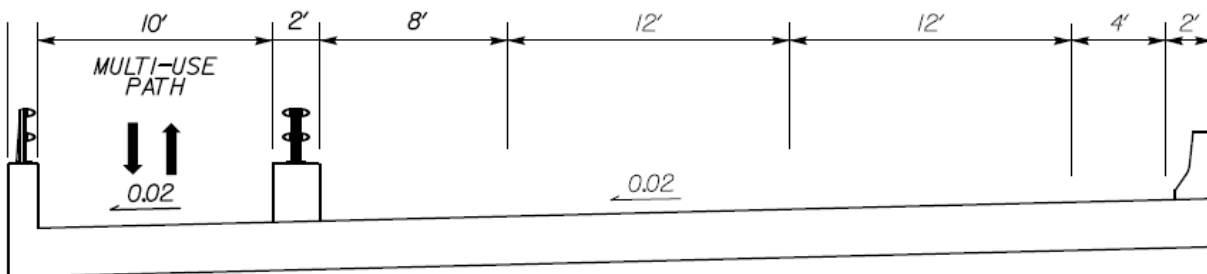


### BUILD ALTERNATIVES STUDIED IN DETAIL

Three alternatives meeting the purpose and need were studied in greater detail. All three will maintain traffic on the existing bridge during construction. All actions address capacity by adding a second bridge parallel to the existing bridge and roadway.

Two-lane two-way traffic will be maintained on the existing alignment while the new bridge and roadway is being constructed. Once the new structure and roadway are complete, traffic will be shifted into its permanent four-lane two-way pattern.

The proposed new bridge would accommodate the following typical section including a 48-foot total bridge width consisting of two 12-foot lanes, a 4-foot inside offset, a 9-foot outside offset, and a 10-foot MUP to the outside of the bridge. Construction duration is anticipated to be 36 - 48 months within the limits of the FERC Project Boundary.



### **Alternate 1 – Widen Existing Causeway, Add Second Two Lane Bridge to the North**



Alternative 1 would widen the existing causeway and connect the causeways with a new 1220-foot-long bridge to the north of the existing alignment while maintaining traffic on the existing bridge. Sufficient space is allotted to allow eventual replacement of the existing bridge between the new structure and the old one. The costs for Alternate 1 are estimated to be \$65,043,000 for construction and \$1,081,000 for right of way, totaling \$66,124,000. See this alternative in more detail in Attachment 1.1 – Alternative 1.

### **Alternate 1A – Widen with Retaining Wall, Add Second Bridge to the North**



Alternative 1A is identical to Alternate 1 except that the amount of fill is reduced by the inclusion of a large retaining wall. The costs for Alternate 1A are estimated to be \$229,100,000 for construction

and \$1,081,000 for right of way, totaling \$230,181,000. See this alternative in more detail in Attachment 1.2 – Alternative 1A.

**Alternate 2 – New Two-Lane Bridge to the south of existing bridge and existing causeway.**



Alternative 2 would add a new 3470 foot long, two-lane bridge to the south completely spanning the lake. The approaches would require re-alignment 1800 feet to the west and 3200 feet to the east. The costs for Alternate 2 are estimated to be \$126,828,000 for construction and \$6,185,000 for right of way, totaling \$133,163,000. See this design in more detail in Attachment 1.3 – Alternative 2.

## 5.0 ENVIRONMENTAL RESOURCES AND IMPACTS ANALYSIS

### 5.1 Cumulative Effects

According to the CEQ's regulations for implementing NEPA (40 C.F.R. § 1508.1), a cumulative effect is the effect on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time, including hydropower and other land and water development activities.

In June 2014, a combined Indirect and Cumulative Effects (ICE) Screening Report & Land Use Scenario Assessment (LUSA) was completed for the larger R-2307 project and verified in this current assessment. In terms of potential indirect effects, local planner input indicates that the proposed R-2307 project is likely to result in a minor increase in the pace and/or intensity of development. Since there are so few roads crossing Lake Norman, widening the road is not expected to change travel patterns, but will improve the level of service and minimally reduce travel time for drivers currently using the road and



those who will begin using the road in the future because of residential and commercial growth within the Future Land Use Study Area (FLUSA). A four-lane road may attract new businesses or light industries who desire increased accessibility to an interstate, although this effect is expected to be minor since most anticipated major commercial nodes on the corridor are already at the interchanges of NC 150 with an interstate (I-77) or major highway (NC 16 Bypass).

**Impacts** - For these reasons, construction of the larger R-2307 project, and by extension, all three alternatives over Lake Norman, is expected to have a minor indirect effect on land use decisions in the FLUSA. For cumulative effects analysis, several commercial developments have been constructed or are planned for construction. Other infrastructure and development projects are anticipated at a slow but steady pace. This project is expected to result in a minor decrease in travel time for most drivers but may increase access and exposure to properties along a potential new alignment section.

## 5.2 Geologic and Soil Resources

R-2307 is located within the Cowans Ford (Lake Norman) Development along NC 150. Geotechnical reevaluations and investigations of the pavement and subgrade for the project were completed on October 30, 2020. The soils encountered beneath the existing roadway consist of roadway embankment and residual soils. The predominant soil types are sandy and clayey silts (A-4, A-5) and sandy and silty clays (A-6, A-7), with lesser amounts of silty sand encountered. Soil classifications are based on field classifications. Anticipated borrow will likely consist of residual soils that consist of sandy silt, clayey silt, and silty clay. The design soil type is Silty Clay (A-7).

NCDOT has developed an Erosion and Sediment Control Plan (E&SC Plan) for approval by the NC DEQ. Through the E&SC Plan, the NCDOT would implement best management practices (BMPs) such as making use of erosion control devices and methods during construction and ensuring such BMPs are functioning as intended. After construction is complete, the licensee plans to grade and revegetate the disturbed areas. As part of its E&SC Plan, NCDOT on behalf the licensee would monitor the area post construction to identify and contain erosion until vegetation is established.

**Impacts** – all three alternatives would result in a minor, temporary impacts to geology and soils resulting from implementing its E&SC Plan, the NCDOT would install measures to limit and control erosion during and following construction activities. Similarly, by including the borrow and spoils area on site, the NCDOT would largely prevent the transport of soils off the construction site, avoiding associated adverse effects such as tracking material onto local roads and dust emissions from vehicles.

### 5.3 Water Quality

Water resources in the study area are part of Catawba River basin U.S. Geological Survey Hydrologic Unit 03050101. There are no High Quality Waters (HQWs), Outstanding Resource Waters (ORWs), trout waters, or primary nursery areas present within the project study area. Additionally, there are no HQWs or ORW streams within one mile downstream of the project study area. Lake Norman is a water supply lake and it, and its tributaries, are designated as Water Supply IV (WS-IV - Highly Developed), Class B (Primary Recreation) waters. From Lake Norman to east of Doolie Road/Perth Road, Lake Norman is a WS-IV Critical Area. From Doolie Road/Perth Road to east of I-77 is a WS-IV Protected Area. The project is within the Catawba River Basin, which is managed by NC Division of Water Resources (NCDWR) Catawba River Basinwide Water Quality Plan (September 2007). The waterbody that makes up Lake Norman, the Catawba River, is listed within the 2014 303(d) Impaired Waters List for a PCB Fish Tissue Advisory based on sampling completed in 2012.

Under the current license, Cowans Ford (Lake Norman) development is subject to compliance to monitoring dissolved oxygen (DO) and temperatures from April 1 – November 30 to file with FERC the following year. The most recent data filed for 2022 indicates that Lake Norman maintained hourly lake elevations between the normal minimum and normal maximum. Daily average flow measurements were maintained above the minimum average daily flow requirement and did not deviate from requirements. For 2022, Cowans Ford (Lake Norman) tailrace had seven instantaneous dissolved oxygen deviations from state standards (did not meet the standard  $DO \geq 4.0$  mg/L). These deviations corresponded with startups of unit generations, similar to readings in previous years. One daily dissolved oxygen deviations from state standards (did not meet the standard  $DO \geq 5.0$  mg/L). All other dissolved oxygen readings met the state standard. All measurements met the state standards for instantaneous temperature water quality in 2022 (temperatures must exceed 2.8 degrees C (5.04 degrees F) above the natural water temperature, and in no case to exceed 32 degrees C (89.6 degrees F) for lower Piedmont and Coastal Plain waters).

To implement the bridge replacement, the land clearing and excavation activities would disturb soils, leading to potential sediment transport to surface waters during storm events. The NCDOT intends to implement its E&SC Plan that would consist of BMPs such as installation of silt fencing, preventing wet concrete from contacting surface water, and preventing and controlling spills of fuels and oils from heavy equipment. The NCDOT would also conduct regular inspections of its BMPs and would monitor and revegetate disturbed areas with a seed mix that is suited for the soil type and land use of the particular area following completion of construction activities.

**Impacts** - all three alternatives would result in minor, and short-term minor effects to water quality. The primary concern during construction activities would be the potential for sediment transport into the lake crossing which crosses the construction site. Such sediment transport could be the result of overland runoff of stormwater or erosion caused by the streams themselves. The risk of sedimentation would occur throughout the construction period but would be higher during major storm events such as hurricanes, and in winters when runoff is generally higher. However, the NCDOT's proposal to install BMPs as part of its E&SC Plan will help to reduce potential adverse effects of sedimentation through runoff and erosion. Additionally, by revegetating disturbed areas, and monitoring the locations until vegetation becomes established, the NCDOT would ensure effective control of erosion in the long-term. The NCDOT will maintain the BMPs of its E&SC Plan until revegetation is complete, further reducing short and long-term effects following the end of construction activities.

#### **5.4 Fisheries and Aquatic Resources**

Fisheries and aquatic resources impacts were calculated in accordance with the Section 401 WQC and Section 404 permitting application process. There are no streams intersecting the lake at this crossing. Fisheries and aquatic communities were evaluated for the larger R-2307 project in September 2014. Lake Norman supports a variety of species including striped bass, largemouth bass, spotted bass, blue catfish, flathead catfish, channel catfish, crappie, white perch, snapping turtle, various waterfowl, and wading birds.

As Iredell and Catawba Counties are not WRC designated trout counties, no construction moratoria apply to waters within the study area. No waters within the project study area have been designated by the USACE as a Navigable Water under Section 10 of the Rivers and Harbors Act. The National Marine Fisheries Service (NMFS) has not designated any waterways in the project area as Essential Fish Habitat.

In accordance with Section 401 and Section 404 of the Clean Water Act, NC DEQ issued a 401 WQC and USACE issued an Individual Permit on September 3, 2020, in compliance with Section 404 (with permit renewal requests submitted June 4, 2024).

**Impacts** - all three alternatives would result in a negligible effect on fisheries and aquatic resources. The NCDOT's proposed E&SC plan and compliance with the conditions of the WQC would limit turbidity and disturbance.

## 5.5 Wildlife and Botanical Resources

In 2014, field work for the Natural Resources Technical Report (NRTR) was prepared for the overall R-2307 project study area. Terrestrial communities in the study area are comprised of both natural and disturbed habitats that may support a diversity of wildlife species (those species observed are indicated with \*). Mammal species that commonly occupy forest and stream corridors as found within the study area include eastern cottontail, raccoon, Virginia opossum, red fox, eastern gray squirrel\*, and white-tailed deer\*. Birds that commonly use forest and forest edge habitats include the American crow\*, red shouldered hawk\*, northern cardinal\*, song sparrow, blue jay\*, Carolina chickadee, and tufted titmouse. Birds that may use the open habitat or water bodies within the study area include American kestrel, belted kingfisher, eastern bluebird, eastern meadowlark, and turkey vulture\*. Reptile and amphibian species that may use terrestrial communities located in the study area include the corn snake, black rat snake, Southern copperhead, American toad, spring peeper, garter snake, eastern box turtle\*, eastern fence lizard, and five-lined skink.

Seven terrestrial communities were identified in the study area: maintained/disturbed, beech forest, oak hickory forest, managed pine, bottomland hardwood forest, headwater forest, and non-tidal freshwater swamp.

Maintained/Disturbed includes roads, road shoulders, maintained yards, agricultural activity, and commercial properties. The commercial development is largely concentrated in the eastern portion of the study corridor surrounding the NC 150 intersection with I-77 in Catawba County. The corridor is increasingly residential and rural heading westbound into Iredell County. One industrialized area is the Marshall Steam Plant, a four-unit, coalfired generating facility located on Lake Norman in Catawba County. Vegetation within these maintained and disturbed areas ranges from maintained ornamental landscapes to rural roadside communities. Invasive species such as kudzu and mimosa were common throughout these areas.

The beech forest community is dominated by American beech, northern red oak, scarlet oak, and mockernut hickory. The lower slopes grading down become more dominated with white oak and understory and herbaceous layers were largely absent due to canopy closure. Vines and herbaceous ground cover included heartleaf, St. John's wort, spotted wintergreen, muscadine grape, Japanese honeysuckle, ebony spleenwort, and hayscented fern.

The oak hickory community occurs primarily on upper and mid-slopes and is dominated by northern red oak, scarlet oak, white oak, mockernut hickory, pignut hickory, shagbark hickory, southern sugar maple, and red maple. Species in the understory included green ash, southern sugar maple, blueberry, and box elder. Vines and herbaceous ground cover included heartleaf, St. John's wort, spotted wintergreen, muscadine grape, Japanese honeysuckle, and ebony spleenwort.

The upland managed pine communities are dominated by monocultures of loblolly pine, Virginia pine, shortleaf pine, and white pine. Other species present in the overstory include blackjack oak, red maple, and winged elm. Shrub and herbaceous cover were mostly absent due to canopy closure and the intensive silvicultural activities associated with logging activities. Vines and herbaceous ground cover included muscadine grape, Japanese honeysuckle, ebony spleenwort, and poison ivy.

The bottomland hardwood forest community occurs in wetland areas along the floodplain of higher order streams in the project study area where period overbank flooding occurs. Dominant species include red maple, river birch, tulip poplar, water oak, sycamore, ironwood, wax myrtle, Chinese privet, sparkleberry, and silky dogwood. Herbaceous and vine species include giant cane, netted chain fern, and common greenbrier.

The headwater forest community occurs in wetland areas along the floodplains of lower order streams in the project study area. Dominant species include red maple, sweet gum, ironwood, river birch, tulip poplar, and silky dogwood. Common herbaceous species include netted chainfern, southern lady fern, Japanese honeysuckle, and common greenbrier.

The non-tidal freshwater marsh community is primarily made up of herbaceous species and occurs in wet areas where disturbance limits the growth of woody shrubs and trees, particularly relic farm ponds and areas with utility rights of way. Dominant species in this community include red maple, river birch, tag alder, and water oak. Dominant herbaceous species include common rush, cattail, common greenbrier, netted chainfern, and sedge.

Where construction occurs, the disturbed areas of the shoreline near the bridge will be stabilized with Class II rip rap placed on the proposed bridge spill-through abutment slopes. Disturbed areas under the proposed bridge not lined with Class II riprap will be matted with coir fiber. Disturbed shoreline areas away from the bridge (such as temporary causeways) will be revegetated with appropriate native vegetation.



**Impacts** - all three alternatives would result in a minor, short-term effect on vegetation and wildlife. Terrestrial communities in the study area may be impacted by the project construction by grading and paving portions of the study area. Following construction, with the NCDOT's proposal to revegetate disturbed land, the modified embankment and land adjacent to recreation areas would become vegetated over a short period of time.

## 5.6 Wetlands and Riparian Habitat

Permanent and mechanized clearing impacts to wetlands were calculated but no wetland impacts were associated with or adjacent to the lake crossing.

Permanent riparian buffer protection rules were enacted by the State for the main stem of the Catawba River and its main stem lakes below Lake James south to the North Carolina/South Carolina border (15 NCAC 02B.0243- 0244). All shorelines of Lake Norman within the study area are protected under provisions of the Catawba River Buffer Rules administered by NCDWR. The buffer protection rules apply within 50 feet of all riparian shorelines along the Catawba River main stem and the seven main stem lakes. The buffer is 50 feet wide, measured from the water's edge or at full pond in lakes. There are two zones, Zone 1 is the 30 feet nearest the water and Zone 2 is 20 feet landward of Zone 1. Grading and clearing of vegetation in Zone 1 is not allowed except for certain uses. Zone 2 can be cleared and graded but when required, must be revegetated to maintain diffuse flow to Zone 1. Certain activities (including road crossings) may be allowable with mitigation but must be approved by the NCDWR. If it can be shown that there are "no practical alternatives" to the proposed activity, a variance may be allowed with mitigation.

**Impacts** – Due to the absence of streams or wetlands within the lake crossing, there are no subsequent impacts. Proposed buffer impacts are tabulated for Zone 1 and Zone 2 in Table 2 below.

**Table 2.** Riparian buffer impacts based on Lake Norman full pond elevation.

<b>Impact</b>	<b>Zone 1</b> (ft <sup>2</sup> )	<b>Zone 2</b> (ft <sup>2</sup> )	<b>Total</b> (ft <sup>2</sup> )
Alternate 1	16,778	8,104	24,882
Alternate 1A	15,554	7,014	22,568
Alternate 2	10,890	6,534	17,424

With NCDOT's proposal to install BMPs as part of its E&SC Plan, all three alternatives would result in minor impacts on riparian buffers and all cleared areas will be restored with native vegetation upon completion of construction.

### 5.7 Threatened and Endangered Species

As of June 4, 2024, USFWS Endangered Species Information for Planning and Consultation (IPaC) lists the following federally protected species within the R-2307B study area, under the Endangered Species Act (ESA).

**Table 3.** Federally protected species within the R-2307B study area.

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion	Last Survey
<i>Clemmys muhlenbergii</i>	bog turtle	T (S/A)	No	Not Required	--
<i>Hexastylis naniflora</i>	dwarf-flowered heartleaf	T	Yes	No Effect	3/25/2024
<i>Helianthus schweinitzii</i>	Schweinitz's sunflower	E	Yes	No Effect	10/18/2023
<i>Perimyotis subflavus</i>	tricolored bat	PE	Yes	Not Required	--

E - Endangered

T – Threatened

PE – Proposed Endangered

T(S/A) - Threatened due to similarity of appearance

On September 14, 2022, the USFWS announced a proposal to list the tricolored bat (*Perimyotis subflavus*) as endangered under the Endangered Species Act.

NCDOT submitted an Informal Section 7 Concurrence request to the USFWS on March 7, 2024, and received informal concurrence from the USFWS on May 28, 2024 (see Attachment 2 – USFWS Concurrence Letter).

The bald eagle is protected under the Bald and Golden Eagle Protection Act and enforced by the USFWS. Habitat for the bald eagle primarily consists of mature forests in proximity to large bodies of open water for foraging. Large dominant trees are utilized for nesting sites, typically within 1.0 mile of open water. The lakeshore of Lake Norman does support bald eagle habitat and a known active nest is within a proximity to the proposed project that coordination with USFWS to obtain a General Eagle Disturbance Permit was required. Upon review of the project, USFWS issued a General Eagle Disturbance Permit effective February 24, 2025, with an expiration date of August 31, 2025. The permit outlines the

authorized activity for the construction of the bridge conditional on the general permit requirements and conditions included in the permit.

**Impacts** – all three alternatives would result in no effect on federally protected species under the Endangered Species Act. All three alternatives would result in coordination with USFWS to obtain a General Eagle Disturbance Permit and conditions therein to authorize NCDOT to disturb the bald eagles at this nest location with the approved authorized activity outlined in the permit.

## 5.8 Recreational Resources

An illustration of the Shoreline Classifications for this area is shown below. Based on the proposed design, it is anticipated that the project's primary impact will be to shoreline classified Public Infrastructure with minor impacts to sections classified Public Recreation and Residential.



Dozens of private boat docks and several private marinas generate hundreds of boat trips on Lake Norman. A substantial number of boating, fishing, and recreational activities on the lake that require navigation under the bridge will be impacted by navigational changes during construction. These impacts are anticipated to be greater during warmer seasons when increased boat traffic is to be expected. The navigational safety plan addresses how boater traffic will be maintained during construction of the new bridge and demolition of the existing bridge.

Pinnacle Access is located on the northeast corner of the bridge crossing Lake Norman serving hundreds of boat launches per day. Maintaining operation for navigation is critical.

**Impacts** – Alternative 1 places fill nearer to the Pinnacle Boat Access but does not impede the pathway from ramps to the open water either long term or during construction. All three alternatives include temporary modification to the navigational passage under the bridge to safely guide boat traffic through the construction zone. The impacts from all three alternatives on the recreational activities on the lake including boating and fishing are minor.

There are impacts to Pinnacle and McCrary Accesses above full pond elevation but within the Cowans Ford FERC Project Boundary. All impacts above full pond elevation are identical for the three alternatives. These impacts have been communicated to and mitigated with Duke Energy - Water Strategy & Hydro Licensing, Recreation Planning and Historic Properties – Public Recreation who is addressing the impacts and modification of Exhibit G separate from this environmental review and separate from the Conveyance Application process.

## **5.9 Cultural and Historic Resources**

In accordance with Section 106 of the National Historic Preservation Act, no historic architectural resources or archaeological resources were identified to be associated with the lake crossing (see Attachment 3 – Historic Architecture and Archaeology SHPO Concurrence Letter).

**Impacts** - there are no impacts associated with any of the three lake crossing alternatives considered in this document.

## **5.10 Environmental Justice and Limited English Proficiency (LEP)**

In June 2014, a Community Impact Assessment (CIA) was completed for the larger R-2307 project. Census data indicated a notable presence of minority and low-income populations meeting the criteria for Environmental Justice (EJ) within the Demographic Study Area (DSA), but no minority or low-income communities were observed within the Direct Community Impact Area (DCIA) during the site visit. While Environmental Justice populations were identified in the project area, it was determined that the project is not likely to have a disproportionately high and adverse impact on the identified populations. The Demographic Snapshot tool was developed by NCDOT Community Studies for demographic analysis using American Community Survey (ACS) data. A Census Block Group is a geographical unit used by the United States Census Bureau, designated between the Census Tract and the Census Block. Based on 2017-2021 ACS data, there are four Block Groups with Environmental Justice presence based on minority population within the R-2307B DSA. These Block Groups were determined to have an Environmental Justice presence based on the threshold that a Block Group with a minority population at least ten percentage points higher than the county average has notable Environmental Justice presence. One of the four Block Groups also had Environmental Justice presence based on the criteria that a Block

group where 50 percent or more of the population is minority, or “majority minority,” is considered to have a notable Environmental Justice presence.

Based on the 2017-2021 ACS data, one Block Group in the R-2307B DSA meets the threshold for poverty status. This is based on the criteria that a Block Group where the percentage of the population in any of the poverty categories – Below Poverty Level, Very Poor, or Near Poor exceeds the county average by five percentage points or more meets the poverty status threshold.

Based on 2017-2021 ACS data, there are no LEP populations present in the DSA.

Based on this data and the criteria for Environmental Justice presence, there is notable Environmental Justice presence in the eastern portion of the R-2307B DSA but the four block groups adjacent to the lake crossing do not have Environmental Justice presence.

**Impacts** – none of the three alternatives across the lake have disproportionately high and adverse impacts to minority or low-income populations are anticipated. Benefits and burdens resulting from the proposed project are anticipated to be equitably distributed throughout the community. No disparate impacts are anticipated under Title VI and related statutes. With no presence of LEP populations, there are no resulting LEP impacts.

### **5.11 Residences and Businesses**

Within the area affected by the lake crossings alternatives, there are five residences and two businesses present (visible on aerial for Attachments 1.1, 1.2 and 1.3).

**Impacts** - Alternates 1 and 1A would result in no relocatees. Alternate 2 results in five residential relocatees in the southeast quadrant of the existing bridge and one business relocatee, a private marina on southwest quadrant.

### **5.12 Impact to Lake Volume, Surface Waters, and Full Pond Elevation**

Lake Norman at full pond stores approximately 1,093,600 acre-ft of water (1,764,341,333 cubic yards) of water. Lake Norman at full pond is approximately 32,973 acres.

#### **Impacts**

**Alternate 1:** Current design estimates 146,427 cubic yards (yd<sup>3</sup>) of permanent fill or 0.008% of total lake volume (1.7 billion yd<sup>3</sup>). This fill would result in 4.1 acres of surface water impacts at full pond elevation



or 0.013% of the lake's surface area (32,510 acres). The fill would also result in modifying 2,462 linear feet of full pond elevation perimeter including the shoreline and along the existing causeway. These impacts are illustrated in Attachment 1.1.

**Alternate 1A:** Construction of a retaining wall reduces the fill in the lake to 79,441 yd<sup>3</sup> of permanent fill or 0.004% of total lake volume. This fill would result in 2.7 acres of surface waters impacts at full pond elevation or 0.008 % of the lake's surface area. The fill would also result in modifying 1,041 linear feet of full pond elevation perimeter. These impacts are illustrated in Attachment 1.2.

**Alternate 2:** Construction of the longer bridge to the south results in 6,000 yd<sup>3</sup> of permanent fill based on impacts from drilled piers in the water or 0.0003% of total lake volume. The fill would result in 0.1 acres of surface water at full pond elevation or 0.0003% of the lake's surface area. There would be no modification in full pond elevation perimeter. These impacts are illustrated in Attachment 1.3.

### 5.13 Noise Analysis

In the overall R-2307 study, in accordance with NCDOT Traffic Noise Abatement Policy, there were eleven Noise Sensitive Areas (NSA) identified, one of which, NSA 7, is located in the southeast quadrant of the bridge. As evaluated under Alternates 1 and 1A, it was determined that due to sight distance criteria and the Catawba River Buffer rules, NSA 7 does not meet preliminary feasible and reasonable criteria for a noise wall. Alternate 2 would result in removing the houses that were under evaluation in Alternates 1 and 1A and therefore would also not require a noise wall.



**Impacts** - there are no impacts associated with any of the three lake crossing alternatives considered in this document.

#### 5.14 Alternatives Impacts Comparison Summary

The three build alternatives are compared in **Table 4**. All three alternatives meet the purpose and need of the project by addressing capacity, maintain access to the skimmer during and after construction, maintain operation to the adjoining Pinnacle Boat Access, maintain navigation during construction, maintain vertical navigational clearances, improve horizontal navigational clearance with the new structure, and utilize the remaining life (30 years) in existing structure.

References to the details of environmental impacts are noted beside in the first column where applicable in Table 4.

**Table 4.** Cost and impact comparison of all R-2307B bridge replacement alternatives.

	Alt 1	Alt 1A	Alt 2
Cost			
Construction Cost	65,043,000	229,100,000	126,878,000
Right of Way	1,081,000	1,081,000	\$6,185,000
Total	\$66,124,000	\$230,181,000	\$133,163,000
Cumulative Effects	Minimal	Minimal	Minimal
Construction Duration	36 months	48 months	48 months
Surface Waters Impact			
Surface Water Impacts	4.1 ac	2.7 ac	0.1 ac
Percentage of Lake Area	0.013%	0.008%	0.0003%
Impact to Full Pond Lake Volume			
Volume of Fill	146,427 cy	79,441 cy	6,000 cy
Percentage of Lake Norman Lake Volume	0.008%	0.004%	0.0003%
Impact to Full Pond FERC Boundary Perimeter	2,462 lf	1,041 lf	0.0 lf
Geologic and Soils	Minimal	Minimal	Minimal
Streams	0.0 lf	0.0 lf	0.0 lf
Wetlands	0.0 ac	0.0 ac	0.0 ac
Fisheries & Aquatic Resources	Negligible	Negligible	Negligible
Wildlife & Botanical Resources	Minimal	Minimal	Minimal

	<b>Alt 1</b>	<b>Alt 1A</b>	<b>Alt 2</b>
Riparian Buffer Impacts	24,882 sf	22,568 sf	17,424 sf
Endangered Species	No Impacts	No Impacts	No Impacts
Recreation Resources	Minimal	Minimal	Minimal
Historic Architectural Resources	None	None	None
Archaeological Resources	None	None	None
Environmental Justice – Disproportionate Impacts	No	No	No
Noise Wall Recommended	No	No	No
Residential Relocations	0	0	5
Business Relocations	0	0	1

## 6.0 CONCLUSIONS AND STAFF RECOMMENDATIONS

Under the proposed project, the widening of the bridge over Lake Norman (from the Bridge 138 crossing and McCrary Access) from a two-lane facility to a four-lane facility would improve traffic capacity and reduce congestion along NC 150 from Greenwood Road to US 21.

All three build alternatives considered meet the purpose and need of the project by addressing capacity, maintain access to the skimmer during and after construction, maintain operation to the adjoining Pinnacle Boat Access, maintain navigation during construction, maintain vertical navigational clearances, improve horizontal navigational clearance with the new structure, and utilize the remaining life (30 years) in existing structure.

Based on analysis in Section 5, the three alternatives generate minimal to no impacts to soils, streams, wetlands, fisheries, wildlife, riparian buffers, endangered species, recreational resources, historic architectural and archaeological resources, and environmental justice populations. The riparian buffers are similar between the three alternatives and with the proposed BMP's and re-vegetation efforts, are a minimal concern.

The comparative features include cost, construction duration, impacts in surface water, lake volume, full pond FERC boundary, residential and business relocations. While the area, volume and perimeter impacts of Alternative 1 are two to three times greater than the volume in Alternates 1A and 2 respectively, the overall percentage of impact for any of the alternatives is less than one hundredth a percent of Lake Norman. While an overall goal is to preserve as much of the lake's volume, area, and perimeter as

reasonable, the loss of storage associated with any of the three alternatives would not affect the overall operation of the lake. With moderate to minor impacts associated with the bridge construction, given the need for the public works bridge project, it is not reasonable to expend an additional \$67 million to \$164 million to preserve a very small fraction of the total lake resources associated with Alternates 1A and 2. Furthermore, Alternative 2 results in five residential relocations and one business relocation. The NC Department of Transportation therefore concludes that Alternative 1 is the preferred alternative.

## **7.0 FINDING OF NO SIGNIFICANT IMPACT**

The proposed amendment of license for the Cowans Ford (Lake Norman) with an additional bridge and widened causeway, along NC 150 over Lake Norman Crossing will improve traffic capacity, by widening a two-lane facility to a four-lane facility. Based on our independent analysis, we find that the proposed license amendment as described in Alternative 1 would not constitute a major federal action significantly affecting the quality of the human environment.

## REFERENCES

- EPA, 2023. CWA Section 401 Certification. Available at:  
<https://www.epa.gov/cwa-401/clean-water-act-section-401-state-certification-water-quality>
- EPA 2024a. Learn about Environmental Justice. Available at:  
<https://www.epa.gov/environmentaljustice/learn-about-environmental-justice#definitions>
- EPA, 2024b. Summary of Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Available at:  
<https://www.epa.gov/laws-regulations/summary-executive-order-12898-federal-actions-address-environmental-justice#:~:text=for%20all%20communities.-,E.O.,strategy%20for%20implementing%20environmental%20justice.>
- EPA, 2024c. EJ Scorecard and EPA. Available at:  
<https://www.epa.gov/environmentaljustice/ej-scorecard-and-epa>
- The White House, 2023. Executive Order on Further Advancing Racial Equity and Support for Underserved Communities Through The Federal Government. Available at:  
<https://www.whitehouse.gov/briefing-room/presidential-actions/2023/02/16/executive-order-on-further-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/>



## **Attachment 13.1.1 – Alternative 1**



LEGEND

FERC Full Pond Perimeter

FERC Upland Recreational Perimeter

Alternative Outline

Surface Water Impact/Fill

Riparian Buffer Zone 1

Riparian Buffer Zone 2



skimmer

Pinnacle Boat Access

Lake Norman

0 200 400





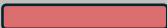
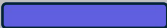

Attachment 1.1  
Alternate 1 -Widen Causeway,  
Add Parallel Bridge to the North



## **Attachment 13.1.2 – Alternative 1A**



**LEGEND**

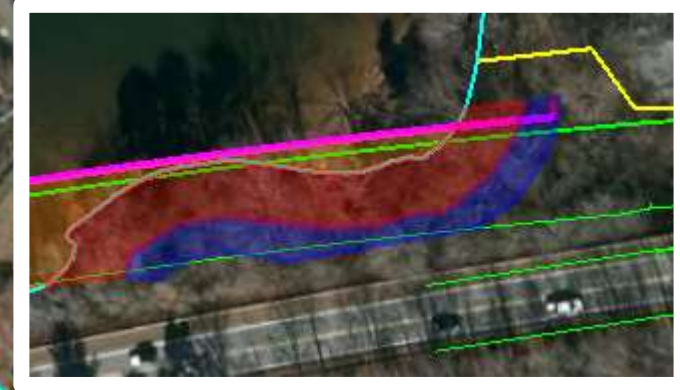
FERC Full Pond Perimeter	
FERC Upland Recreational Perimeter	
Alternative Outline	
Surface Water Impact/Fill	
Riparian Buffer Zone 1	
Riparian Buffer Zone 2	
Retaining Wall	



skimmer

Pinnacle  
Boat Access

Lake Norman



0 200 400







**Attachment 1.2**  
**Alternate 1A -Reduce Fill with**  
**Retaining Wall, Add Parallel**  
**Bridge to the North**



## **Attachment 13.1.3 – Alternative 2**



**LEGEND**

FERC Full Pond Perimeter	
FERC Upland Recreational Perimeter	
Alternative Outline	
Surface Water Impact/Fill	
Riparian Buffer Zone 1	
Riparian Buffer Zone 2	



skimmer

Pinnacle Boat Access

This area already without vegetation so no buffer impacts

Lake Norman



**Attachment 1.3  
Alternate 2 – 2 Lane Bridge  
Spanning Lake to South of  
Existing Bridge**



## **Attachment 13.2 – USFWS Concurrence Letter**



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Asheville Field Office  
160 Zillicoa Street Suite B  
Asheville, North Carolina 28801



May 28, 2024

Michael Turchy  
ECAP Group Leader, Environmental Analysis Unit  
North Carolina Department of Transportation  
1598 Mail Service Center  
Raleigh, North Carolina 27699

Subject: Informal Conference for Widening of NC 150 from the NC 16 Bypass in Catawba County to West of the US 21/NC 150 Interchange in Iredell County, Including the I-77 Interchange (TIP Nos. R-2307 and I-5717; Service Log #24-212)

Dear Michael Turchy:

On March 7, 2024, we received your request to initiate informal conference procedures for effects the subject project may have on federally proposed species. We have reviewed the information you submitted along with additional information received on May 15, 2024, and the following is provided in accordance with the provisions of the National Environmental Policy Act (42 U.S.C. § 4321 et seq.); the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661 - 667e); Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d)(BGEPA); and section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 - 1543) (Act).

### **Project Description**

According to the information provided, the North Carolina Department of Transportation (NCDOT) proposes to widen NC 150 from the NC 16 Bypass in Catawba County to west of the US 21/NC 150 Interchange in Iredell County, including the interchange with I-77. The work will involve the replacement of Bridge 138, approximately 7 acres of tree clearing, percussive activities such as pile driving and guardrail installation during any time of year, temporary lighting for night work, and the replacement of permanent lighting. Blasting is not expected but may occur. The Federal Highway Administration (FHWA) is the federal lead for this project for section 7 purposes, with authority delegated to NCDOT.

NCDOT has agreed to implement the following conservation measures for the project:

1. Tree clearing will take place from October 16 to March 31, outside of the bat active season.
2. Tree clearing from December 15 – February 15 (the winter torpor season for tricolored bat in the year-round active zone 1) will be avoided and minimized to the maximum extent practical.
3. The existing bridge and culverts  $\geq 3$  feet in manufactured diameter within the action area will be surveyed during the summer of 2024. Additionally, structures will be surveyed within 30 days of letting. The U.S. Fish and Wildlife Service (Service) Asheville Field Office will be contacted immediately if bats are observed.
4. Temporary lighting for night work will be aimed at the direction of work to minimize lighting the surrounding landscape, and will be turned off when not needed for project work.
5. The replacement of permanent lighting will be downcast and will not be in excess of what currently exists within the action area.

6. Should blasting occur, it will take place after tree clearing within the action area has been completed.

### **Federally Listed Species**

The information provided indicates that “No Effect” (NE) determinations have been made for dwarf-flowered heartleaf (*Hexastylis naniflora*) and Schweinitz’s sunflower (*Helianthus schweinitzii*). In instances of suitable habitat being absent from the action area, we would agree that NE determinations are appropriate. In instances where suitable habitat is present and botanical surveys conducted during the optimal survey window and within the past 1 or 2 years (depending on the species) have negative results, we would concur with a biological determination of “may affect, not likely to adversely affect” (NLAA). This information is provided for the sake of the administrative record.

The correspondence received from NCDOT requests conference for tricolored bat (*Perimyotis subflavus*).

According to the information provided, a suitable bridge roost and suitable roosting, commuting, and foraging habitat for tricolored bat occur within the action area. Several suitable culverts occur within the action area. The bridge and culverts have not been surveyed. NCDOT has committed to surveying suitable structures during the summer of 2024 and will also conduct surveys prior to the project’s let date. There is element occurrence data for the tricolored bat approximately 16 miles west of the project area.

The proposed conservation measures minimize effects to bats potentially occurring within the action area. Effects from construction noise to unknown tree roosts within the action area but outside the construction limits, while minimized, are not avoided. Bats that are present in proximity to transportation corridors are expected to be tolerant of baseline noise and vibration levels (or have already modified their behaviors to avoid them). How temporary increases in noise and vibration from construction activities effect bats within existing transportation corridors has not been well studied, though one study found that bats habituated rapidly to traffic noise (Luo et al. 2014). Given the information available and conservation measures above, we do not believe any response to project noise and vibration by bats that are already tree-roosting in the area is expected to rise to the level of harm (as defined at 50 CFR 17.3).

On September 14, 2022, the Service published a proposal in the Federal Register to list the tricolored bat as endangered under the Act. As a result, NCDOT has requested a conference for the tricolored bat as the project may be on-going after the effective date of any final listing rule, if one is published. Based on the information provided, the analysis above, and the commitments to minimize project impacts, we have determined that the proposed project will not jeopardize the continued existence of the tricolored bat. Additionally, we would concur with the NCDOT’s determination that the project is NLAA the tricolored bat should it become listed.

### **Bald Eagle**

The bald eagle (*Haliaeetus leucocephalus*) has been removed from the federal list of endangered and threatened species due to its recovery. However, this species continues to be afforded protection by the BGEPA. The BGEPA, enacted in 1940, and amended several times, prohibits anyone without a permit issued by the Secretary of the Interior from “taking” bald eagles, including their parts, nests, or eggs. “Take” is defined as to “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” “Disturb” means “to agitate or bother a bald or golden eagle to the degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, causing injury, death, or nest abandonment.”

The project is located adjacent to current element occurrence (EO) # 31,301 records for nesting bald eagle. The closest point associated with this record is within approximately 380 feet of the project action area. However, according to 2023 survey data obtained by the Service, the point located approximately

860 feet from the action area is the active nest. Given the distance of this nest from the action area, it is unlikely that project actions would result in disturbance to breeding or nesting eagles, should they continue to utilize that more distant nest location.

### **Conservation Recommendations**

Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. General recommendations for the benefit of fish and wildlife resources are provided here:

- **Bald Eagle:** Prior to project construction, conduct surveys of the bald eagle nest site EOs adjacent to the action area. Eagles can be expected to be present and active on the site from October through June. If eagles are observed nesting at the location closer to the action area (which is closer than 660 feet), coordinate with the Service to ensure that project actions will not result in unlawful take.
- **Pre-construction Surveys for Bats:** While the commitment to survey structures within 30 days of the let date is a helpful measure, it may not ensure absence of bats prior to construction and demolition, considering that the let date and construction dates are not synonymous. Therefore, we recommend conducting structure surveys in accordance with the Service's Range-wide Indiana Bat and Northern Long-eared Bat Survey Guidelines (which includes tricolored bat), ideally within 14 days of construction, or, alternatively, within 30 days of construction.
- **Noise Considerations for Bats:** If suitable roost trees are present near high-decibel activity (81 – 162 dBA) and would experience noise above background levels (41 – 70 dBA), avoid conducting those high-decibel activities during the bat summer occupancy season (April 1 – September 30). Alternatively, activity could avoid the pup season (May 15 - July 31). To minimize noise levels, incorporate sound-dampening devices such as noise shrouds for pile driving.
- **Lighting:**
  - Lighting should only be on when needed, only lighting the needed area, be no brighter than necessary, minimize blue light emissions, and be fully shielded (pointing downward).
  - Avoid lighting landscape features such as trees, shrubs, building facades, adjacent wooded areas, and the surface waters of rivers and streams that provide suitable habitat for bats, pollinators, and other wildlife species.
  - When installing new or replacing existing permanent lights, use downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting); or for those transportation agencies using the Backlight-Uplight-Glare (BUG) system developed by the Illuminating Engineering Society, the goal is to be as close to 0 for all three ratings with a priority of "uplight" of 0 and "backlight" as low as practicable.
  - Use light fixtures with a lower lumen output, reducing overall brightness.
  - Use the shortest light poles that meet highway and safety requirements.
  - If using LEDs, use lights with Type I or II distribution patterns that create rectangular lighting patterns that limit light spill into adjacent habitats.
  - For bridge projects, consider design features that block automobile headlights from reaching surface waters and surrounding riparian habitats.
  - Prioritize use of low-pressure sodium (LPS), high-pressure sodium (HPS), or LED light sources that emit "warm" light. "Warm" light sources are those that contain low amounts of blue light in their spectrum. Choosing light sources with a color temperature of no more than 3,000 Kelvins will minimize the effects of blue light exposure.
- **Provide Terrestrial Wildlife Passage:** Where riparian corridors suitable for wildlife movement occur adjacent to a project, a spanning structure that also spans a portion of the floodplain and provides or maintains a riprap-free level path underneath for wildlife passage would provide a



safer roadway and facilitate wildlife passage. A 10-foot strip may be ideal, though smaller widths can also be beneficial. Alternatively, a “wildlife path” can be constructed with a top-dressing of finer stone (such as smaller aggregate or on-site alluvial material) to fill riprap voids if full bank plating is required. If a multi-barrel culvert is used, the low flow barrel(s) should accommodate the entire stream width and the other barrel should have sills to the floodplain level and be back-filled to provide dry, riprap-free wildlife passage and well as periodic floodwater passage.

- **Riparian Replanting:** Because the removal of forested riparian habitat can affect the quality and suitability of foraging and commuting habitat for bats and the water quality for aquatic organisms, we recommend replanting the riparian zone with native, fast-growing trees and shrubs that would serve to stabilize the stream bank, filter runoff and reduce erosion and sedimentation, block light pollution, and generally improve the quality of the habitat for bats and aquatic species. Examples of potential native tree species to plant include: Sycamore, tulip poplar, black cherry and river birch. Planting with established (e.g. containerized) young trees can increase the survival rate of plantings and contribute to faster improvement of riparian habitat.

### **Reinitiation Notice**

We believe the requirements under section 7 of the Act are fulfilled for the federally listed species discussed above. However, obligations under section 7 must be reconsidered if: (1) new information reveals impacts of this proposed action may affect listed species or critical habitat in a manner not previously considered, (2) this proposed action is subsequently modified in a manner that was not considered in this review, or (3) a new species is listed, or critical habitat is determined that may be affected by the proposed action.

We appreciate the opportunity to provide these comments. Please contact Ms. Holland Youngman of our staff at [holland\\_youngman@fws.gov](mailto:holland_youngman@fws.gov) if you have any questions. In any future correspondence concerning this project, please reference our Service Log #24-212.

Sincerely,

*- - original signed - -*

Janet Mizzi  
Field Supervisor

**Attachment 13.3 – Historic Architecture and  
Archaeology SHPO Concurrence Letter**

**CONCURRENCE FORM FOR PROPERTIES NOT ELIGIBLE FOR  
THE NATIONAL REGISTER OF HISTORIC PLACES**

*Project Description:* **Widen NC 150 to multi-lanes from east of the NC 16 Bypass  
to just west of the I-77 interchange in Mooresville**

On **October 1, 2013** representatives of the

- ☒ North Carolina Department of Transportation (NCDOT)  
☒ North Carolina State Historic Preservation Office (NC-HPO)  
☐ Federal Agency  
☐ Other

Reviewed the subject project at historic architectural resources photograph review session/consultation and

All parties present agreed

- ☐ There are no properties over fifty years old within the project's Area of Potential Effects (APE).
- ☐ There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's APE.
- ☒ There are properties over fifty years old within the project's APE, but based on the historical information available and the photographs of each property, the properties identified as 1-62; 65-69; are considered not eligible for the National Register and no further evaluation of them is necessary. Photographs of these properties are attached.  
73-87; 95-97; 100-110; 112-122; 124-130.
- ☐ There are no National Register-listed or Study Listed properties within the project's APE.
- ☐ All properties greater than 50 years of age located in the APE have been considered at this consultation, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- ☒ More information is requested on properties 99, 111, 123; 63, 64, 70, 71, 72, 88, 89, 90,  
91, 92, 93, 94, 98

Signed:

Vanessa E. Patrick

Representative, NCDOT

1 October 2013

Date

Renee Hedrick-Early

Representative, NC-HPO

Oct 1, 2013

Date

\_\_\_\_\_  
Representative, Federal Agency

\_\_\_\_\_  
Date

Federal Aid #: **STP-150(19)**

TIP#: **R-2307**

County: **Lincoln, Catawba,  
and Iredell**

**CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS**

Project Description: **Widen NC 150 from NC 16 Bypass to I-77**

On **August 25, 2015** representatives of the

- ☒ North Carolina Department of Transportation (NCDOT)
- ☒ Federal Highway Administration (FHWA)
- ☒ North Carolina State Historic Preservation Office (HPO)
- ☐ Other

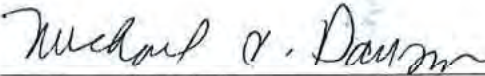
Reviewed the subject project and agreed on the effects findings listed within the table on the reverse of this signature page.

Signed:



Representative, NCDOT

25 August 2015  
Date



FHWA, for the Division Administrator, or other Federal Agency

8/25/15  
Date



Representative, HPO

8-25-15  
Date



Federal Aid #: **STP-150(19)**

TIP#: **R-2307**

County: **Lincoln, Catawba, and Iredell**

Property and Status	Alternative	Effect Finding	Reasons
Johnson-Neel House (ID0004) NR	1	No Adverse for all alternatives	No direct impacts to component resources of property. Access preserved, though rendered more distant (about 500 feet) by superstreet requirements.
	2		
	4		
Marshall Steam Station (CT1303) DE	1	No Adverse for all alternatives	No access alterations, no impacts to buildings or other property components, no permanent utility easements anticipated. Small amount of ROW to be acquired (does not compromise resource) – see "de minimis" statement below.
	2		
	4		
Terrell Historic District (CT0378) NR	1	<b>Adverse</b>	Direct effects to contributing resources (minimization already in place – elimination of superstreet in historic district).
	2	No Effect	Outside historic district.
	4	<b>Adverse</b>	Reasonably foreseeable development in Hobbs Road area will necessitate changes in roadway design and hence impose impacts to district resources.

Initialed: NCDOT VEL FHWA MD HPO BSR

FHWA Intends to use the HPO's concurrence as a basis for a "de minimis" finding for the following properties, pursuant to Section 4(f):  
**Marshall Steam Station (CT1303 – DE)**





**North Carolina Department of Cultural Resources  
State Historic Preservation Office**

Ramona M. Bartos, Administrator

Beverly Eaves Perdue, Governor  
Linda A. Carlisle, Secretary  
Kevin Cherry, Deputy Secretary

Office of Archives and History  
Division of Historical Resources  
David Brook, Director

December 14, 2012

**MEMORANDUM**

**TO:** Greg Thorpe, Ph.D., Director  
Project Development and Environmental Analysis Branch  
NCDOT Division of Highways

**FROM:** Ramona M. Bartos *RM Bartos for Ramona M. Bartos*

**SUBJECT:** NC 150 Widening, R-2307, Catawba and Iredell Counties, ER 12-2211

Thank you for your memorandum of November 27, 2012, transmitting the Project Data Sheet for the above project.

There are no known archaeological sites within the proposed project area. Based on our knowledge of the area, it is unlikely that any archaeological resources that may be eligible for inclusion in the National Register of Historic Places will be affected by the project. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.

We have conducted a search of our maps and files and located the following structures of historical or architectural importance within the general area of this project:

- Terrell Historic District (CT 0378), National Register;
- Johnson-Neel House (ID 0004), National Register;
- M. M. Bagriel House (CT 0659), surveyed in 1977 but now believed to be gone; and
- Springdale School (ID 0847), surveyed in 1976-77 but now believed to be gone.

The locations of these properties are available on our GIS website: <http://gis.ncdcr.gov/hpoweb/>.

We recommend that a Department of Transportation architectural historian identify and evaluate any structures over fifty (50) years of age within the project area, and report the findings to us. The most recent surveys in Catawba and Iredell Counties were in 1977 and 1976-77 respectively.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579. In all future communication concerning this project, please cite the above-referenced tracking number.

cc: Mary Pope Furr, NC DOT, [mfurr@ncdot.gov](mailto:mfurr@ncdot.gov)  
Matt Wilkerson, NCDOT  
State Clearinghouse



North Carolina Department of Cultural Resources  
State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Pat McCrory  
Secretary Susan Kluttz

Office of Archives and History  
Deputy Secretary Kevin Cherry

May 12, 2014

MEMORANDUM

TO: Vanessa Patrick  
Human Environment Unit  
NC Department of Transportation

FROM: Ramona M. Bartos *For Ramona M. Bartos*

SUBJECT: Historic Structures Survey Report for the Widening of NC 150 from NC 16 Bypass to I-77,  
R-2307, Multi County, ER 12-2211

Thank you for your April 4, 2014, memorandum transmitting the above-referenced report. We have reviewed the report and offer the following comments.

We do not agree with the recommendation to reduce the boundaries of the National Register-listed **Terrell Historic District (CT0378)** due to new construction within the district. Our reasoning is:

- The Walter Gabriel House and the James Gillin House have not lost sufficient integrity to be re-evaluated as non-contributing. The houses essentially look the way they did when the district was listed. The loss of outbuildings does not have a direct impact on the contributing status of the house.
- There is no reason to remove any part of a district that has buildings and other resources standing on it when the district was listed, whether they were contributing, non-contributing, or not recorded in the nomination form unless a building has been subsequently significantly altered. If this has happened, they do warrant re-study. If, however, they essentially look the way they did when the district was listed, they warrant continued designation in the district -- as we stand by the decision made in 1985 to include them in the boundaries of the district. This includes the buildings along NC 150 -- the cotton warehouse and the Kermit Lee Howard House, in addition to the Rehobeth Church, Cemetery and Parsonage.
- It is not clear in the report which buildings now identified by a red square were standing in the district in 1985 or if they were constructed later. Please provide a photograph and construction date for all these resources. In addition, please provide further information about and photographs showing how the post-1985 buildings have impacted the rural character and streetscapes of the district. New construction does not necessarily mean that the area no longer has enough integrity of setting, feeling, or association to warrant removal from the Register. If the new buildings are relatively small and if they are well set-back from the road, then their impact on the district may be fairly minimal. They appear to be stand alone, single houses (and the library) and spaced well apart.

- The large rear addition and the small side addition on the Connor House have significantly lessened the integrity of the house, and it is appropriate to re-evaluate it as a non-contributing resource.
- The loss of the grist mill, cotton gin and cotton storage building on NC 150 is acknowledged, however, we do not recommend carving that individual piece of property out of the district. The property has not been re-developed, and the farm streetscape along NC 150 still conveys the rural historic character of the district.

We do not concur that the **Marshall Steam Station (CT1303)** is not eligible for listing in the National Register of Historic Place, because it does not meet Criterion Consideration G. It is acknowledged that the 1965-1970 resources still have excellent integrity. The fact that there is a similar, and slightly older, steam plant in Gaston County does not mean that this steam plant is ineligible for the Register. More than one steam plant, especially if it is one of the older ones in the state, can qualify for the Register. To make an informed assessment, one needs to know what/where the other steam plants from 1940 to 1974 are, when they were constructed, their design, and their general level of historic integrity. If the Marshall Steam Station is one of the oldest, then it would be of exceptional significance as a source of power needed for the growing state in the early 1960s.

We concur that the **Berea Baptist Church and Cemetery (ID1090)** is not eligible for listing in the National Register of Historic Places for the reasons outlined in the report.

We concur that the National Register-listed **Johnson-Neel House (ID0004)** remains eligible for listing.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or [renee.gledhill-earley@ncdcr.gov](mailto:renee.gledhill-earley@ncdcr.gov). In all future communication concerning this project, please cite the above referenced tracking number.

cc: Mary Pope Furr, NCDOT





STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY  
GOVERNOR

ANTHONY J. TATA  
SECRETARY

MEMORANDUM

To: Renee Gledhill-Earley

From: Vanessa E. Patrick

Date: August 15, 2014

Subject: Historic Architectural Resources Survey Report Review, T.I.P No. R-2307, Lincoln, Catawba, and Iredell Counties. ER 12-2211.

Thank you for your recent review of the R-2307 historic architectural resources survey report conveyed in your memorandum of May 12, 2014. We are pleased that you concur with our recommendations that the **Johnson Neel House** (ID0004) remains eligible for listing in the National Register of Historic Places and the **Berea Baptist Church and Cemetery** (ID1090) does not meet the criteria for eligibility. We have considered your comments about a proposed boundary reduction for the National Register-listed **Terrell Historic District** (CT0378) and the eligibility of the **Marshall Steam Station** (CT1303) and offer the following observations.

We accept that the case for reducing the National Register boundary of the **Historic Terrell District** is, as yet, not sufficiently proven. We feel compelled to emphasize that our argument for reducing the boundary is grounded in the undermining of visual, spatial, and functional connectivity through demolition of contributing resources and addition of intrusive elements, rather than the diminishing of individual building integrity. It seems precisely the loss of the outbuildings associated with the Walter Gabriel House and the James Gillin House, as well as other resources like the grist mill and cotton gin, coupled with the imposition of more recent construction that has compromised the settings of the properties and created discontinuities within the historic district. Please note that the construction dates for the "red-square" buildings are provided in the final paragraph of page 55 of the report. In future, we shall insure that any resources proposed for removal from or addition to an established historic district are fully represented photographically. Since the completion of the report, we have become acquainted with the range of design alternatives now under



consideration and can state that, with or without a boundary reduction, the Terrell Historic District likely will be affected by the R-2307 project. As is customary, we shall schedule a consultation with you if the selected alternative presents an effects situation.

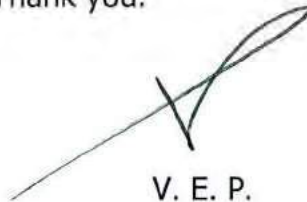
The eligibility assessment of the **Marshall Steam Station** presented in the report is based not only on chronology, but also rarity. Several other steam plants are identified on page 67, and the Allen Steam Station is specifically cited because it is the most similar to the Marshall structure in design and age. The recent decommissioning of coal-fired power facilities by Duke Energy is also noted and, admittedly, should have been more carefully considered when formulating the eligibility recommendation. We agree that a stronger context is needed and, to that end, we have revisited some of the relevant sources and assembled a brief, preliminary framework for evaluation.

The attached table presents fourteen coal-fired power plants owned by Duke Energy in North Carolina. Since 2011, eight have ceased operation and five of the eight have been demolished. The Marshall Steam Station is now one of the six remaining Duke Energy facilities and one of four built prior to 1966. The Global Energy Observatory databases (<http://globalenergyobservatory.org>) currently list a total of twenty-eight coal-fired power plants in North Carolina, including the Duke Energy fourteen. Ten of the "non-Duke" structures date to the 1970s-1990s, suggesting that the significance of the Marshall Steam Station is greater than initially calculated. The retrofitting, closure, and demolition of coal-fired power plants is intensifying both in North Carolina and nationally, thus insuring diminishing numbers of this particular industrial building type. Only a handful of steam plants and other power generating structures are represented in the state survey (Cape Fear (CH0676), Cliffside (CL0015), and Allen (GS1452) are minimally recorded) and elsewhere, including the Historic American Engineering Record, and they are virtually absent from the scholarly literature. Indeed, the industrial archaeology of the twentieth century is an increasingly urgent subject for historical investigation.

Given the imminent transformation, if not total disappearance of a building type of which the Marshall Steam Station is one of only a few standing examples, we wish to revise our recommendation and consider the resource eligible for the National Register. In the absence of a fully developed context for the building type, we nevertheless believe that the current decommissioning program adopted by Duke Energy provides adequate justification for recognizing a facility that also remains essentially intact, continues to fulfill its original function, and is one of the earliest such structures built in North Carolina. We agree with the

statement in your memorandum that "if the Marshall Steam Station is one of the oldest, then it would be of exceptional significance as a source of power needed for the growing state in the early 1960s." We suggest that the National Register boundary contain that part of the current tax parcel delineated on the survey map section in Figure 3 (page 4) of the report and follow the existing right-of-way along NC 150. Several of the proposed alternatives for the R-2307 project are located near the Marshall Steam Station. While it appears that the resource can be avoided, we shall, of course, discuss any possible effects with you when an alternative is selected.

Should you have any questions, please do not hesitate to contact me at 919-707-6082 or [vepatrick@ncdot.gov](mailto:vepatrick@ncdot.gov). Thank you.



V. E. P.

Copy to: Zahid M. Baloch  
John G. Conforti  
Jennifer Harris



## Duke Energy Coal-Fired Power Plants in North Carolina

ONLINE	NAME	COUNTY	RETIRED	DEMOLISHED
1923	Cape Fear Plant*	Chatham	2012	Pending
1926	Buck Steam Station*	Rowan	2011-2013	Pending
1929	Riverbend Steam Station	Gaston	2013	2013
1940	Cliffside Steam Station*	Cleveland	2011	2013
1949	Dan River Steam Station*	Rockingham	2012	2013
1949	W. H. Weatherspoon Plant	Robeson	2011	2013
1951	H. F. Lee Steam Station*	Wayne	2012	2013-2014
1954	Sutton Steam Station*	New Hanover	2013	
1957	Allen Steam Station	Gaston		
1964	Asheville Plant	Buncombe		
1965	Marshall Steam Station	Catawba		
1966	Roxboro Steam Plant	Person		
1974	Belews Creek Steam Station	Stokes		
1983	Mayo Plant	Person		

\*replaced on-site by later, oil- or gas-fueled facilities retaining original name

Source: [www.duke-energy.com/power-plants/frachised.asp](http://www.duke-energy.com/power-plants/frachised.asp) and [www.duke-energy.com/about-us/decommissioningprogram.asp](http://www.duke-energy.com/about-us/decommissioningprogram.asp), viewed August 2014



North Carolina Department of Cultural Resources  
State Historic Preservation Office

Ramona M. Barros, Administrator

Governor Pat McCrory  
Secretary Susan Kluttz

Office of Archives and History  
Deputy Secretary Kevin Cherry

August 28, 2014

MEMORANDUM

TO: Vanessa Patrick  
Human Environment Unit  
NC Department of Transportation

FROM: Renee Gledhill-Earley *Renee Gledhill-Earley*  
Environmental Review Coordinator

SUBJECT: Historic Structures Survey Report, Improve NC 150 from NC 16 Bypass to I-77, R-2307,  
Multi County, ER 12-2211

Thank you for your August 15, 2014, memorandum concerning the above-referenced undertaking and Historic Structures Survey Report. We are pleased that our agencies concur on the historical and architectural significance of the Marshall Steam Plant and its eligibility for listing in the National Register of Historic Places. We will add this information to our files and update the GIS to indicate the property's being determined eligible for listing.

We appreciate your comments about the Terrell Historic District and will note them in our records. As with the review of all such reports, our staff is charged with not considering the potential effects of an undertaking on properties when evaluating their eligibility. Rather, their charge is to consider the information provided about specific properties, in accordance with the applicable regulations and guidance provided by the National Park Service in reaching a conclusion. Thus, as noted, we continue in our belief that the Terrell Historic District retains its integrity and adjusting the boundaries at this time is unwarranted.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or [renee.gledhill-earley@ncdcr.gov](mailto:renee.gledhill-earley@ncdcr.gov). In all future communication concerning this project, please cite the above referenced tracking number.

cc: Mary Pope Furr, NCDOT

[mfurr@ncdot.gov](mailto:mfurr@ncdot.gov)



Correspondence specifically regarding archaeological resources.

**Ramona M. Bartos**  
*Administrator*

October 13, 2015

MEMORANDUM

TO: Zahid Baloch  
Project Development and Environmental Analysis Unit  
NCDOT Department of Transportation

FROM: Ramona M. Bartos *Re: for Ramona M. Bartos*

SUBJECT: Re-Evaluation of NC 150 Improvements, R-2307/I-5717, Iredell and Catawba Counties,  
ER 12-2211

Thank you for your email of September 14, 2015, concerning the above project.

We have conducted a review of the project and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the project as proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579. In all future communication concerning this project, please cite the above-referenced tracking number.

cc: Matt Wilkerson, NCDOT

