



PAT McCrory  
Governor

NICHOLAS J. TENNYSON  
Secretary

July 7, 2016

MEMORANDUM TO: Mr. Scott Cole, P.E.  
Deputy Division 10 Engineer

FROM: *for* Philip S. Harris, III, P.E., Manager   
Natural Environment Section  
Project Development and Environmental Analysis Unit

SUBJECT: Mecklenburg & Iredell Counties; I-77 HOT Lanes Project from I-277 to  
Exit 36; Federal Aid No. NHF-077-1(209)9;  
WBS 45454.1.1; **TIP I-5405, I-4750AA, & I-3311C; North Section**

Attached are the US Army Corps of Engineers Individual Permit and N.C. Division of Water Resources (NCDWR) Water Quality Certification. All environmental permits have been received for the construction of the north section of the project.

A copy of this permit package will be posted on the NCDOT website at:  
<https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx>  
**Quick Links>Permit Documents> Issued Permits.**

cc: w/o attachment (see website for attachments)

Mr. Randy Garris, P.E. State Contract Officer  
Mr. Larry Thompson, Division Environmental Officer  
Ms. Virginia Mabry, Priority Projects Office  
Mr. Clarence Coleman, P.E., FHWA  
Dr. Majed Al-Ghandour, P.E., Programming and TIP  
Mr. Khaled Al-Akhdar, Design Build  
Ms. Brenda Moore, P.E., Roadway Design  
Mr. Robert Memory, Utilities Unit  
Mr. Matt Lauffer, P.E., Hydraulics  
Mr. Tom Koch, P.E., Structure Design  
Mr. Mark Staley, Roadside Environmental  
Mr. Ron Hancock, P.E., State Roadway Construction Engineer  
Mr. Eric Midkiff, P.E., PDEA Western Section  
Mr. Philip Ayscue, Office of Inspector General  
Ms. Beth Harmon, Division of Mitigation Services  
Ms. LeiLani Paugh, Natural Environment Section

 Nothing Compares<sup>SM</sup>

# PROJECT COMMITMENTS

I-77 HOT Lanes Project  
From I-277 to Exit 36  
Mecklenburg & Iredell Counties

## COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

### **PDEA – CATS Coordination**

NCDOT will coordinate with the Charlotte Area Transit System (CATS) during final design and construction to minimize impacts to the operations of its park and ride lots in the project's study area.

*The coordination has occurred.*

### **Division Construction & Build Team – USTs**

If any UST or other potential source of contamination is discovered during construction activities, NCDOT Geotechnical Unit should be notified of its presence immediately upon discovery. An assessment will then be conducted to determine the extent of any contamination and identify the potential impacts and potential measures to address the issue.

### **Hydraulics – Floodplain Mapping**

The NCDOT Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP) to determine the status of the project with regard to the applicability of NCDOT'S Memorandum of Agreement with the NC Floodplain Mapping Program (April 22, 2013), or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

*NCDOT Hydraulics and the Build Team coordination is on-going.*

### **Division Construction & Build Team – FEMA Streams**

This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, NCDOT Divisions 10 and 12 shall submit sealed as-built construction plans to the NCDOT Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

### **Human Environment Unit – Noise Wall Aesthetics**

NCDOT will provide a visualization of what proposed walls could look like to assist local communities in making aesthetic decisions regarding noise walls adjacent to listed or eligible for listing properties.

*This process has been completed.*

### **Human Environment Unit – Archaeological Anomaly.**

This project involves construction activities adjacent to a property with a known archaeological anomaly. If the adjacent property cannot be avoided, additional archaeological investigations will be necessary.

*Additional archaeological investigations are not required.*

**Roadside Environmental, Division Construction, Build Team - DSSW**

Erosion and sediment control BMPs will be implemented in accordance with NCDOT's *Design Standards in Sensitive Watersheds* during the design and construction of this project in and around all watersheds draining to Lake Norman and Byers Creek.

**Transportation Planning**

NCDOT will participate in the development of a MUMPO led comprehensive, multi-modal strategy to address the complex mobility issues in the Charlotte to Statesville corridor.

*NCDOT will participate when an invitation is received from the CRTPO.*

**Traffic Noise**

A Design Noise Report (DNR) was prepared for Project I-5405 (Atkins, October 22, 2012). After the I-5405 DNR was finalized, it was discovered that a new development had occurred adjacent to I-77 before the Date of Public Knowledge (10/16/13) that was not originally accounted for in the I-5405 DNR or the FONSI. The Legacy Apartment Homes development is located west of I-77 and north of Westmoreland Road. It includes apartments and townhouses, all with identified outdoor use. Because the development had occurred before the Date of Public Knowledge for the project, in accordance with NCDOT policy, a noise analysis needed to be prepared to determine impacts and evaluate noise mitigation.

*An addendum to the DNR was prepared (Atkins, January 2016). The addendum determined that there would be noise impacts in the new development area, and a noise barrier (Barrier NW15A) along the shoulder of southbound I-77 north of Westmoreland Road was preliminarily reasonable and feasible. The final decision on feasibility and reasonableness and installation of the noise barrier will be made upon completion of the project final design and barrier feasibility review. If the barrier is determined feasible and reasonable, then a public balloting process for benefited receptors will be completed, in accordance with NCDOT policy.*

**COMMITMENTS FROM PERMITTING**

*No additional commitments have been developed from project permitting.*

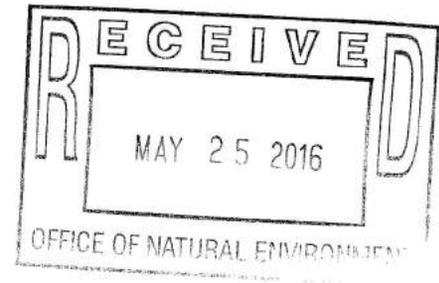


**DEPARTMENT OF THE ARMY**  
**WILMINGTON DISTRICT, CORPS OF ENGINEERS**  
**151 PATTON AVENUE**  
**ROOM 208**  
**ASHEVILLE, NORTH CAROLINA 28801-5006**

May 20, 2016

Regulatory Division

Action ID: SAW-2012-00156



Mr. Philip S. Harris III, P.E.  
 North Carolina Department of Transportation  
 Project Development and Environmental Analysis Unit  
 1548 Mail Service Center  
 Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

Please reference the Department of the Army permit issued on January 28, 2016 for the I-77 High Occupancy Toll (HOT) lanes project (TIP #s I5405, I4750AA and I3311C) which starts north of NC 150 in Iredell County and continues south along I-77, deviating from I77 at the I-277 interchange and following I-277 approximately to terminate at North Brevard Street in Charlotte, Mecklenburg County, North Carolina. The January 28, 2016, permit authorized the permanent impact to 4,162 linear feet of stream channel (of which 225 linear feet is bank stabilization), <0.01 acre of wetland, and <0.01 acre of open water. Temporary impacts include impacts to 491 linear feet of stream channel, 0.1 acre of wetland, and 0.06 acres of open water. Please additionally reference your March 28, 2016, letter requesting a permit modification for the North Section (STIP Project I-4750AA) of the project.

The January 28, 2016, permit authorized preliminary impacts for the North Section and the March 28, 2016, permit modification request includes the final impacts for the North Section based on the final design. The final design impacts for the North Section are as follows:

Stream Site	Stream Name/ NRTR ID	Perm. Fill (ac)	Temp. Fill (ac)	Permanent Channel impact (lf)	Bank Stabilization (lf)	Temporary Channel Impacts (lf)	Mitigation (lf)
1-N	UT to Gambles Creek / SB	-	0.01	-		263	-
2-N	UT to Work Creek / SF2	<0.01	<0.01	9	-	15	9
3-N	UT to Work Creek / SHI	<0.01	<0.01	18	23	20	18
4-N	Lake Norman/ SWI and SWJ <0.01	-	0.12	-	-	-	-
<b>TOTAL Stream Impacts</b>		<b>&lt;0.01</b>	<b>0.13</b>	<b>27</b>	<b>23</b>	<b>298</b>	<b>27</b>

The final design for the North Section has resulted in a decrease of overall permanent impacts to streams by 40 lf, an increase of overall temporary impacts to streams by 263 lf feet and increase of total temporary impacts to open waters by 0.06 acre. The total revised impacts for the entire project are as follows:

Section	Design Stage	Wetland Impact Type	Wetland Impact Area (ac)	Stream Impact Type	Stream Impact linear foot	Open Water Impact Type	Open Water Impact Area (ac)
Central	Final	Temp Impact	0.06	Permanent Impact	185	NA	NA
		Permanent Impact	<0.01	Bank Stabilization	225		
				Temporary Impact	491		
North	Final	NA	0	Permanent Impact	27	Permanent Impact	<0.01
				Bank Stabilization	23	Temporary Impact	0.12
				Temporary Impact	298		
South	Preliminary	Temp Impact	0.04	Permanent Impact	3,662	NA	NA
<b>Total Permanent Impacts</b>			<b>&lt;0.01</b>		<b>4,122</b>		<b>&lt;0.01</b>
<b>Total Temporary Impacts</b>			<b>0.10</b>		<b>789</b>		<b>0.12</b>

After review of the file and the modification request we have determined, per Special Condition 1 of the January 28, 2016, permit, that the proposed modified final plans for the North Section have been minimized to the maximum extent practicable and that the compensatory mitigation plan for the North Section adequately compensates for the proposed impacts for the North Section. Further, we have determined that the proposed changes to the permit are minor and a supplemental public notice is not necessary. Based on coordination with United States Fish and Wildlife Service (USFWS), consultation for the NLEB conducted prior to the issuance of the January 28, 2016, permit remains valid for the revised North Section and no further coordination with FWS is required. Accordingly your permit is hereby modified and a copy of the modified plans are enclosed.

**The total impacts authorized by the January 28, 2016, permit and this modification include the permanent impacts to 4,122 linear feet of stream channel (of which 248 linear feet is bank stabilization), <0.01 acre of wetland, and <0.01 acre of open water. Temporary impacts include impacts to 798 linear feet of stream channel, 0.1 acre of wetland, and 0.12 acres of open water.**

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

**In accordance with Special Condition 1, construction on the Southern Section, STIP Project I-3311C, shall not commence until final design has been completed for this section, the permittee has minimized impacts to waters and wetlands to the maximum extent practicable, any modifications to the plans, and a compensatory mitigation plan have been approved by the US Army Corps of Engineers (the Corps).**

**Mitigation for the Central Section has already been completed. Mitigation for the North Section 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 authorization.**

You should address all questions regarding this authorization to Ms. Crystal Amschler at the Asheville Regulatory Field Office, telephone (828) 271-7980 extension 231.

Sincerely,

A handwritten signature in black ink, appearing to read "Kevin P. Landers, Sr.", with a stylized flourish at the end.

Kevin P. Landers, Sr.  
Colonel, U.S. Army  
District Commander

Enclosures

cc (with enclosures):

Mr. John Sullivan, III, PE  
Division Administrator  
FHWA – NC Division  
310 New Bern Avenue, Suite 410  
Raleigh, North Carolina 27601

NOAA/National Ocean Service  
1315 East-west Hwy., Rm 7316  
Silver Spring, Maryland 20910-3282

Mr. Fritz Rohde  
National Marine Fisheries Service  
101 Pivers Island Road  
Beaufort, North Carolina 28516

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  
NC Wildlife Resources Commission  
12275 Swift Road  
Oakboro, North Carolina 28129

Ms. Marella Buncick  
US Fish and Wildlife Service  
Asheville Ecological Services Field Office  
160 Zillicoa Street  
Asheville, North Carolina 28801-1082

Mr. Todd Bowers  
Wetlands Protection Section – Region IV  
Water Management Division  
U.S. Environmental Protection Agency  
61 Forsyth Street, SW  
Atlanta, Georgia 30303

Mr. Doug Huggett  
NC Department of Environmental Quality  
Division of Coastal Management  
400 Commerce Avenue  
Morehead City, North Carolina 28557

Dr. Pace Wilber  
National Marine Fisheries Service  
219 Fort Johnson Road  
Charleston, South Carolina 29412-9110

North Carolina Dept. of Environmental Quality  
Division of Water Quality  
Transportation Permitting Unit  
Ms. Donna Hood  
610 E. Center Ave, Ste 301.  
 Mooresville, North Carolina 28115

Ms. Carla Dagnino  
Western Region Environmental Program Supervisor II  
NC Department of Transportation  
Natural Environment Section  
Project Development and Environmental Analysis  
1598 Mail Service Center  
Raleigh, North Carolina 27699 -1598

cc (without enclosures)

Mr. Roger Rochell, P.E.,  
NC Department of Transportation  
Technical Services Administrator,  
1516 Mail Service Center,  
Raleigh, North Carolina 27699-1516

**U.S. ARMY CORPS OF ENGINEERS**  
**Wilmington District**  
**Compensatory Mitigation Responsibility Transfer Form**

**Permittee:** North Carolina Department of Transportation  
**Project Name:** The I-77 High Occupancy Toll (HOT) lanes project (TIP #s I5405, I4750AA and I3311C)  
**North Section STIP Project I-4750AA**

**Action ID:** SAW-SAW-2012-00156  
**County:** Mecklenburg

**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
27						

\*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
54						

**Mitigation Site Debited:** \_\_\_\_\_

(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: NCDMS  
 Name of Sponsor's Authorized Representative: Ben Harmon  
 Signature of Sponsor's Authorized Representative: \_\_\_\_\_ Date of Signature: 06/30/2016

**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 for the Central Section only. Separate forms for the Northern and Southern Sections will be prepared subsequent of the finalization of these plans and the modification of the permit.**

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, 11405 Falls of Neuse Road, 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, North Carolina 28801-5006

**Email:**



**USACE Project Manager Signature**

5/19/2016

Click here to enter a date.

**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>.



PAT MCCRORY

*Governor*

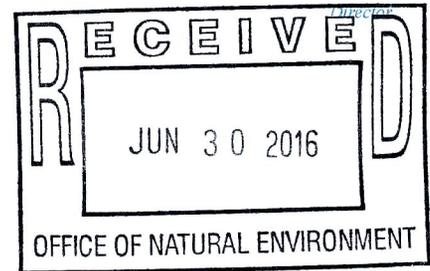
DONALD R. VAN DER VAART

*Secretary*

S. JAY ZIMMERMAN

June 28, 2016

Mr. Philip S. Harris, III, P.E., CPM  
Natural Environment Section Head  
Project Development and Environmental Analysis  
North Carolina Department of Transportation  
1598 Mail Service Center  
Raleigh, North Carolina, 27699-1598



Subject: Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for Proposed improvements to I-77 in Mecklenburg and Iredell Counties, Federal Aid Project NHF-077-1(209)9; WBS No. 45454.1.1, TIP I-5405 and I-4750AA. NCDWR Project No. 20150931v.2

Dear Mr. Harris:

Attached hereto is a modification of Certification No. WQC004036 issued to The North Carolina Department of Transportation (NCDOT) dated November 13, 2015-version 1, February 12, 2016-version 1, May 16, 2016 version 2.

This Individual Certification now includes impacts to the I-5405 and I-4750AA sections of the I-77 HOT Lanes project. Permitting of the southern section, I-3311C, is not included and must have final design prior to submittal for another permit modification. After on site review on April 14, 2016, exemption from the 1 foot burial of the culvert extensions was granted; however, minor channel stabilization to prevent additional 'blow holes' from forming at the end of the new culvert extension is expected.

As discussed on May 31, 2016 as a request for specific guidance to the on-site personnel, please be advised of the following:

1. Due to the difficulty described in diversion of the direct discharge of the bridge deck drains and because the bridge has a lane addition, but nothing is being replaced, deck drains in the newly constructed lane will be allowed.
2. At impact site I-N, due to the current very poor condition of the entire area, restoration of temporary impacts to previous site conditions will be acceptable. Grubbing will be minimized to help ensure vegetation recovery and soil retention in the already highly eroded area.
3. In addition to traditional measures for inlet protection, the causeways and bridge area should include additional measures such as silt sacks. The type of additional measures can be site specific and consultation with the inspector as well as Roadside Environmental could be necessary.
4. As pertains to special permit condition 5 in Version 2, it is understood to be new sediment deposition from the current construction activity.



Water Resources  
ENVIRONMENTAL QUALITY

PAT MCCRORY

*Governor*

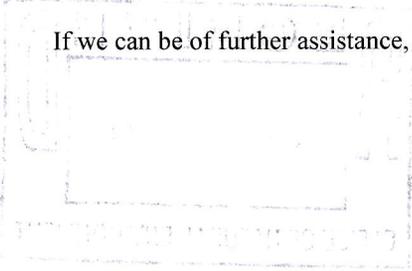
DONALD R. VAN DER VAART

*Secretary*

S. JAY ZIMMERMAN

*Director*

If we can be of further assistance, do not hesitate to contact us.



Sincerely,

S. Jay Zimmerman, Director  
Division of Water Resources

Attachments

Electronic copy only distribution:

Crystal Amschler, US Army Corps of Engineers, Asheville Field Office  
Larry Thompson, Division 10 Environmental Officer  
Rodger Rochelle, NC Department of Transportation  
Colin Mellor, NC Department of Transportation  
Carla Dagnino, NC Department of Transportation  
Dr. Cynthia Van Der Wiele, US Environmental Protection Agency  
Marella Buncick, US Fish and Wildlife Service  
Marla Chambers, NC Wildlife Resources Commission  
File Copy

**Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act  
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. This certification authorizes the NCDOT to impact an additional 325 linear feet of jurisdictional streams in Mecklenburg and Iredell Counties. The project shall be constructed pursuant to the modification dated received March 20, 2016. The authorized impacts are as described below:

**Stream Impacts in the Catawba River Basin**

Site	Stream Bank Stabilization	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear feet)	Stream Impact Requiring Mitigation (linear ft)
1-N			263			263	0
2-N		9	15			24	0
3-N	23			18	20	38	18
<b>TOTAL:</b>	23	9	278	18	20	325	18

**Total Stream Impact for Modification: 325 linear feet**

**Open Water Impacts in the Catawba River Basin**

Site	Permanent Fill in Open Waters (ac)	Temporary Fill in Open Waters (ac)	Total Fill in Open Waters (ac)
4-N	< 0.01	0.13	0.13
<b>TOTAL</b>	<b>0.00</b>	<b>0.13</b>	<b>0.13</b>

**Total Open Water Impact for Modification: 0.013 acres.**

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 modified application dated received March 28, 2016. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated November 13, 2015-version 1 and February 12, 2016-version 2 still apply except where superseded by this certification. 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.

### Special Condition(s) of Certification:

1. Restoration for Site 1-N will be to previous site conditions. See General Condition 4. [15A NCAC 02H.0506(b)(2)]
2. Based on the information submitted and site reviews of each culvert on April 14, 2016, I-5405 and I-4750AA are exempt from the 1 foot burial requirement at the culvert extension sites. This does not provide for burial exemption of I-3311C culvert extensions or any NEW culvert installation. [15A NCAC 02H.0506(b)(2)]
3. Additional sediment and erosion control measures shall be taken at each stormwater drop inlet in the median of I-77 on the causeway between Lake Norman and Lake Cornelius, Lake Norman and Lake Davidson, and the causeway leading to the bridge that will be expanded. Additional measures will be evaluated on effectiveness and situational applicability. [15A NCAC 02B.0200]
4. At the pump out stations listed in the FERC conveyance application:
  - a. Pump out from the lake must be hard piped over any sediment and erosion control measures so that no piping affects the inlet protection. Draping a run flat hose over hardware cloth is unacceptable.
  - b. Pump out must not negatively affect downstream fauna, flora, or water quality.
  - c. Pump out from creeks cannot pump the creek dry. In the event of a drought, an alternative source of water for dust control will need to be found. The City of Charlotte (provide water in Huntersville, Davidson) and the Town of Mooresville are local major water distributors.
5. Any new accumulation of sediment discharged to the stormdrain system that is being retained, will be removed as soon as possible to prevent additional/on-going surface water impacts. [15A NCAC 02H .0506(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 NCS0000250. [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. 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)]

### 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. 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]
13. 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)]

14. 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)]
15. 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]
16. 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.
17. 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)]
18. 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)]
19. 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)]
20. 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)]
21. 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.
22. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification. [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:

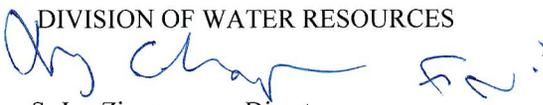
Office of Administrative Hearings  
6714 Mail Service Center  
Raleigh, NC 27699-6714  
Telephone: (919) 431-3000, Facsimile: (919) 431-3100

A copy of the petition must also be served on DEQ as follows:

Mr. Sam M. Hayes, General Counsel  
Department of Environmental Quality  
1601 Mail Service Center

This the 28th day of June 2016

DIVISION OF WATER RESOURCES



S. Jay Zimmerman, Director

WQC No. 004036



PAT MCCRORY

Governor

DONALD R. VAN DER VAART

Secretary

S. JAY ZIMMERMAN

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, 1650 Mail Service Center, Raleigh, NC, 27699-1650. 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 \_\_\_\_\_

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-4750AA	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45454.3.P3S1		P.E.	

**sugar creek**  
construction, LLC

PERMIT DRAWING  
SHEET 1 OF 12

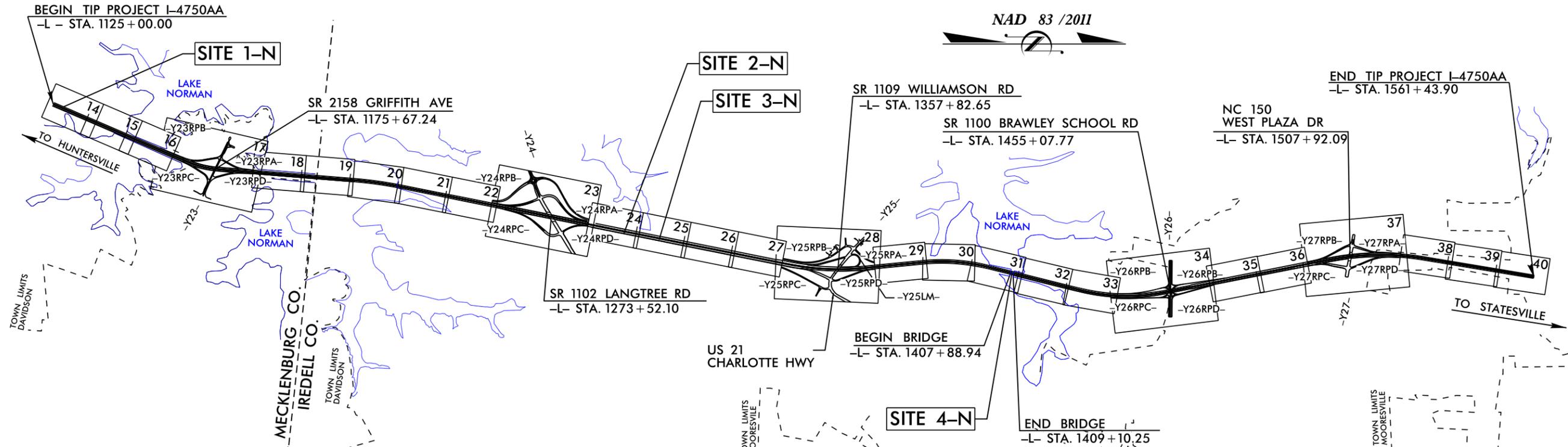
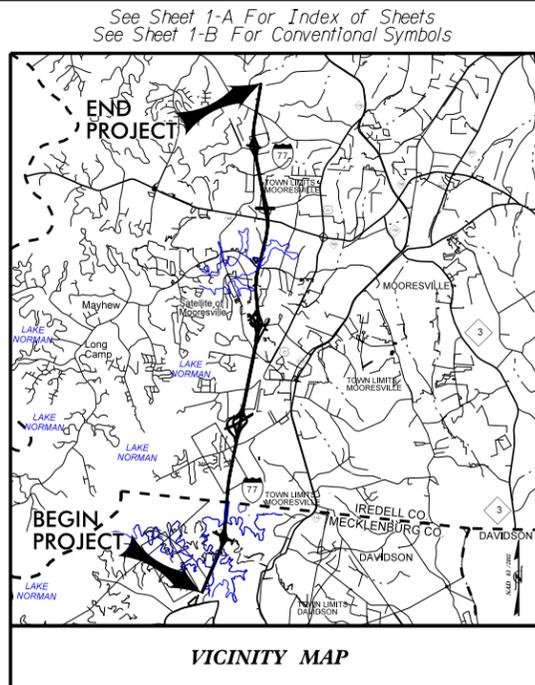
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**MECKLENBURG &  
IREDELL COUNTIES**

LOCATION: I-77 FROM NORTH OF SR 5544 (CATAWBA AVE.)  
TO NORTH OF NC 150 (WEST PLAZA DR.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNING, ITS,  
GUARDRAIL, PAVEMENT MARKINGS,  
TOLLING STRUCTURES /EQUIPMENT AND STRUCTURES

**WETLAND AND STREAM IMPACTS (NORTH SECTION)**

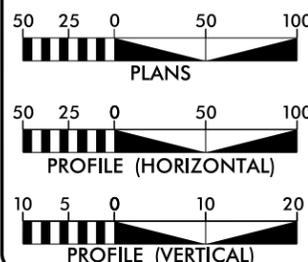


CLEARING ON THIS PROJECT  
SHALL BE PERFORMED TO THE  
LIMITS ESTABLISHED BY METHOD II

THIS IS A CONTROLLED-ACCESS PROJECT WITH  
ACCESS BEING LIMITED TO INTERCHANGES

NCDOT CONTACT: VIRGINIA MABRY  
MANAGER PRIORITY PROJECTS UNIT

GRAPHIC SCALES



DESIGN DATA

ADT 2012 = 185,400  
ADT 2035 = 231,400  
DHV = 10 %  
D = 60 %  
T = 8 % \*  
V = 70 MPH  
\* (TTST 4% + DUAL 4%)  
FUNC. CLASS = INTERSTATE  
"STATEWIDE TIER"

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-4750AA = 8.245 MI  
LENGTH STRUCTURES TIP PROJECT I-4750AA = 0.023 MI  
TOTAL LENGTH OF TIP PROJECT I-4750AA = 8.268 MI

Prepared for NCDOT in the Office of:  
LOUIS BERGER GROUP, Inc.  
1001 Wade Avenue, Suite 400  
Raleigh, North Carolina 27605  
License No.: F-0840

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
N/A

LETTING DATE:  
TBD

DEAN HATFIELD, P.E.  
PROJECT ENGINEER

R. D. ODELL, P. E.  
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN  
ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

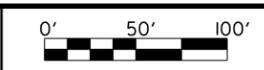
DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA



STATE HIGHWAY DESIGN ENGINEER P.E.

TIP PROJECT: I-4750AA

CONTRACT: C203406



PROJECT REFERENCE NO. 1-5405	SHEET NO. 14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
3/16/2016	3/16/2016

PERMIT DRAWING  
SHEET 2 OF 12

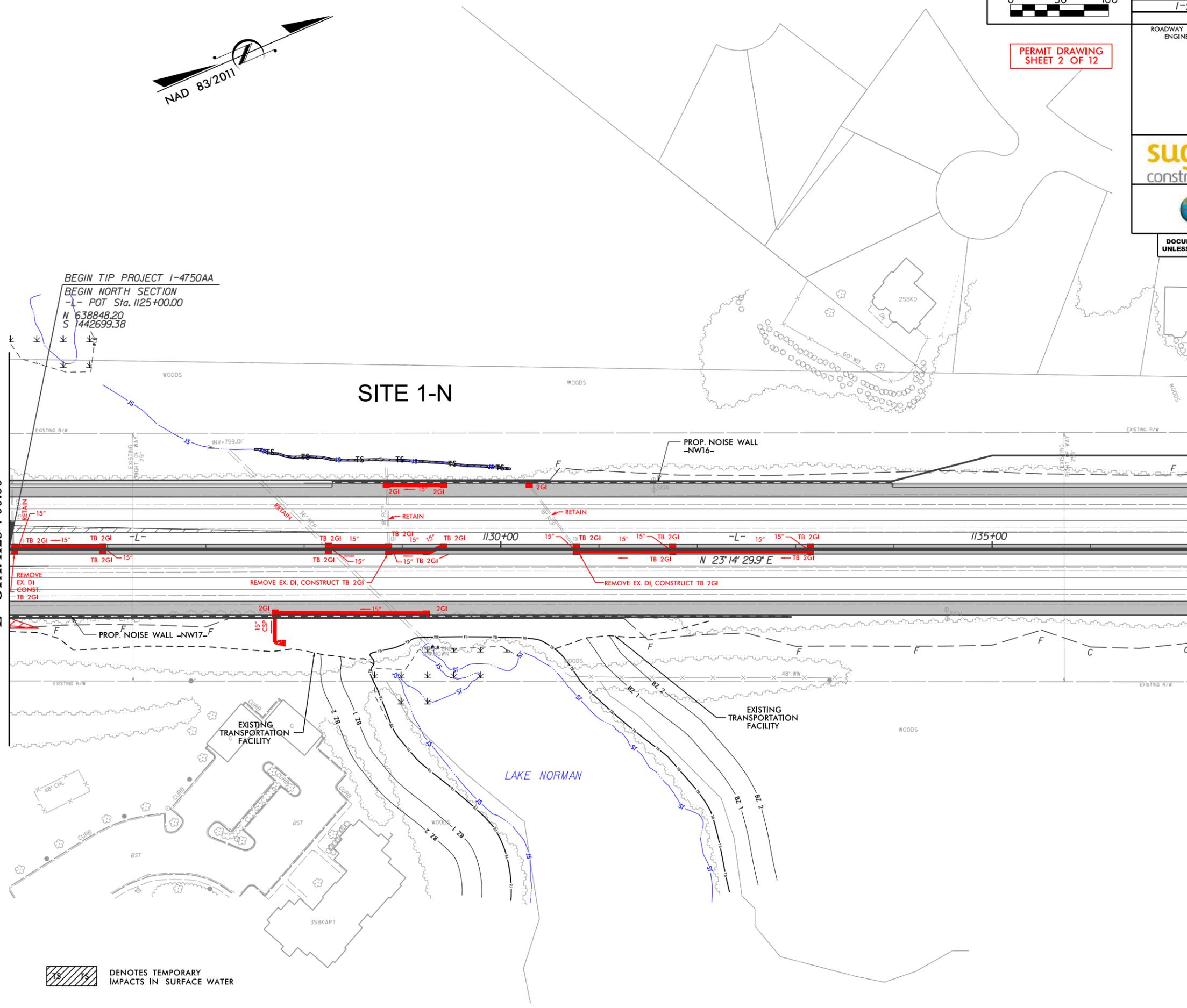
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



BEGIN TIP PROJECT 1-4750AA  
BEGIN NORTH SECTION  
-L- POT Sta. 1125+00.00  
N 638848.20  
S 1442699.38

MATCH LINE SEE SHEET 13  
-L- STA. 1125 + 00.00

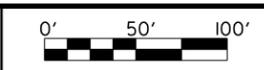
MATCH LINE SEE SHEET 15  
-L- STA. 1137 + 00.00



DENOTES TEMPORARY IMPACTS IN SURFACE WATER

REVISIONS

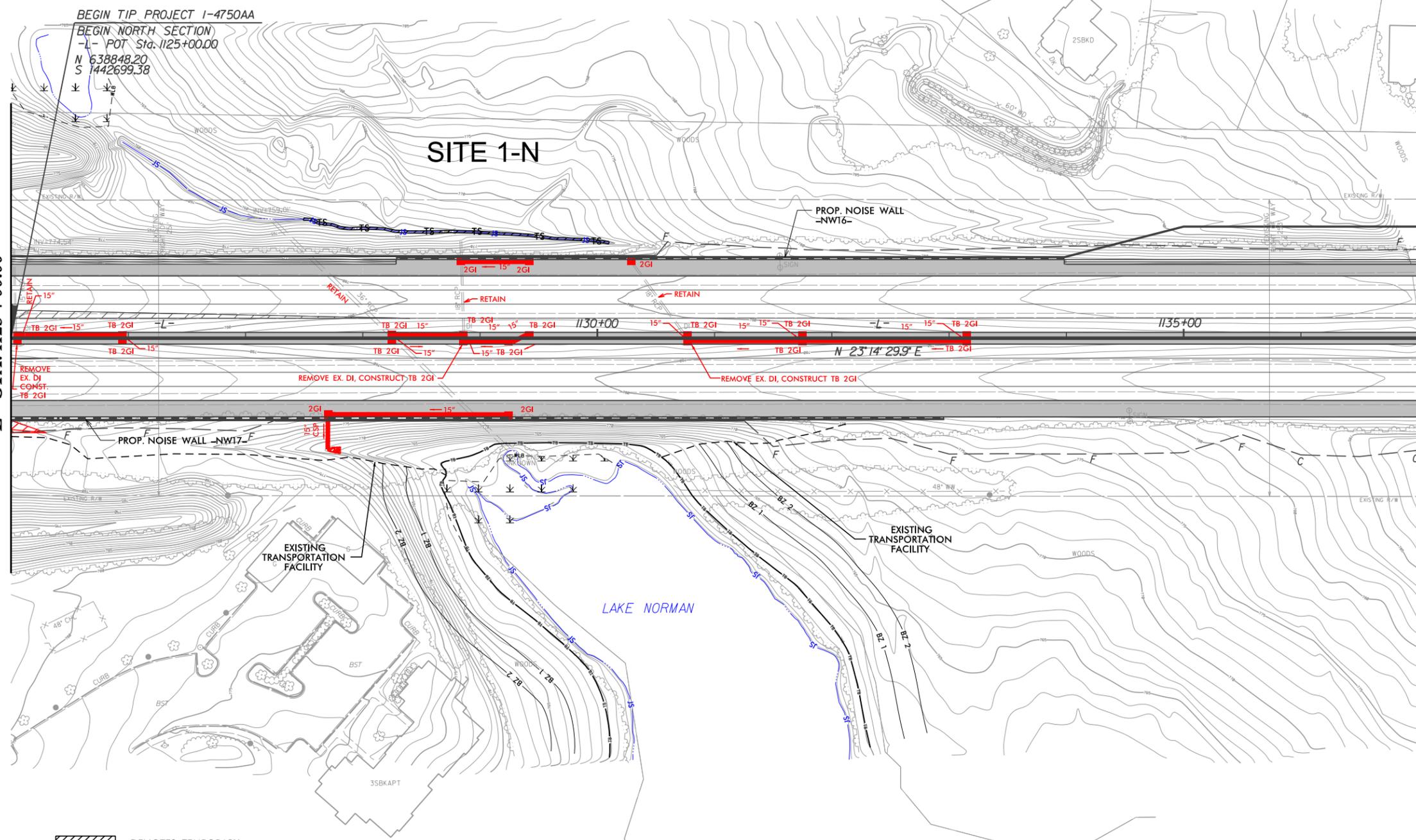
3/16/2016 3:08:22 PM  
9FILES\$  
1-77-permit.tbl



PROJECT REFERENCE NO. 1-5405	SHEET NO. 14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
3/16/2016	3/16/2016

PERMIT DRAWING  
SHEET 3 OF 12

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



MATCH LINE SEE SHEET 13  
-L- STA. 1125 + 00.00

MATCH LINE SEE SHEET 15  
-L- STA. 1137 + 00.00

REVISIONS

3/16/2016 3:08:26 PM  
9FILES  
I-77-permit.tbl

DENOTES TEMPORARY IMPACTS IN SURFACE WATER



PROJECT REFERENCE NO. 1-5405	SHEET NO. 24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
3/16/2016	3/16/2016

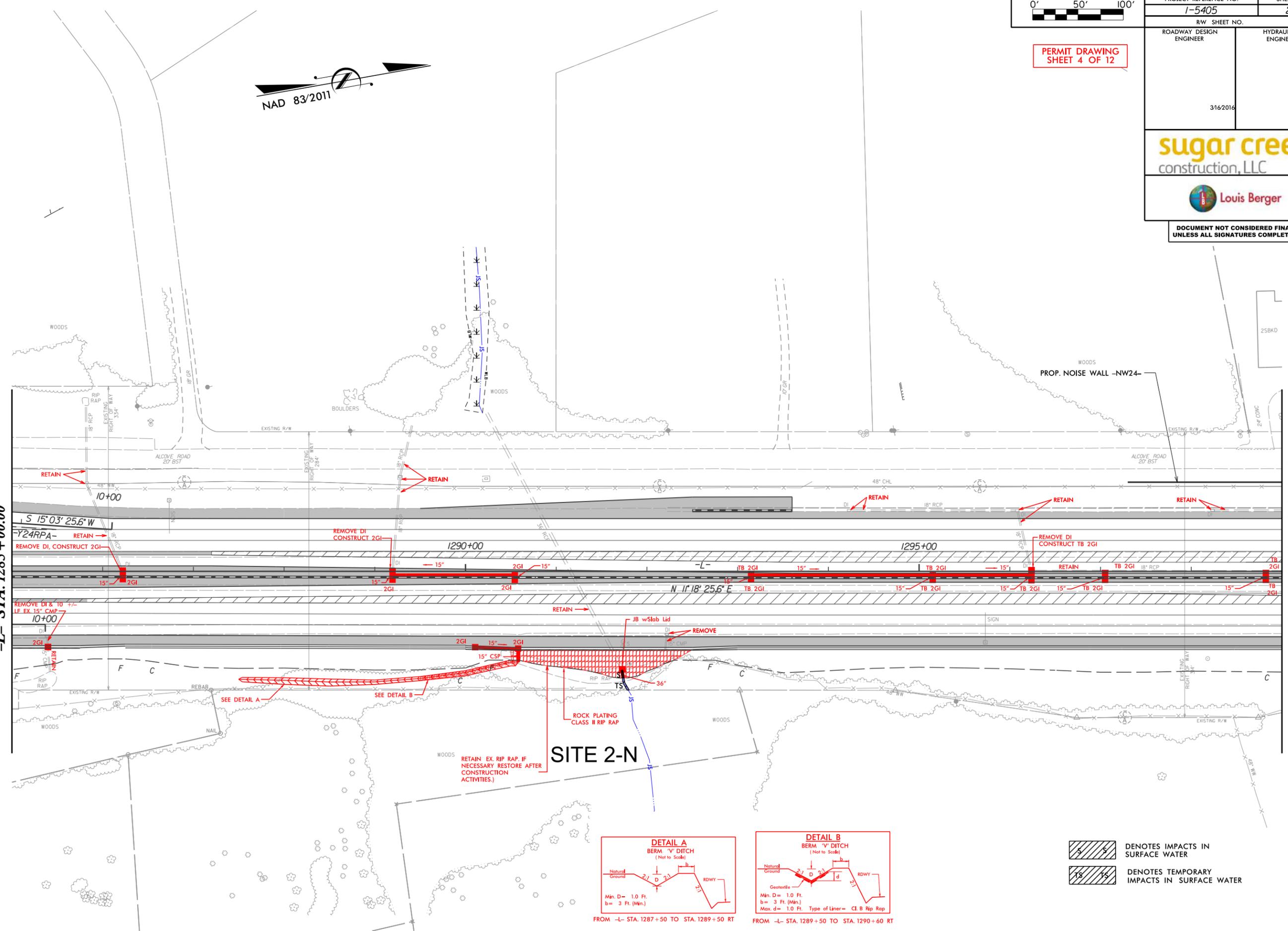
PERMIT DRAWING  
SHEET 4 OF 12

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



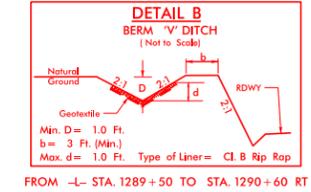
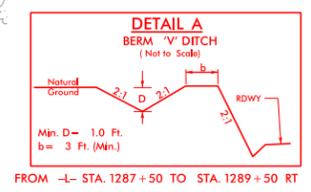
MATCH LINE SEE SHEET 23  
-L- STA. 1285 + 00.00

MATCH LINE SEE SHEET 25  
-L- STA. 1299 + 00.00



REVISIONS

3/16/2016 3:08:30 PM  
9FILES  
I-77-permt.tbl



- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



PROJECT REFERENCE NO. 1-5405		SHEET NO. 24	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
3/16/2016		3/16/2016	

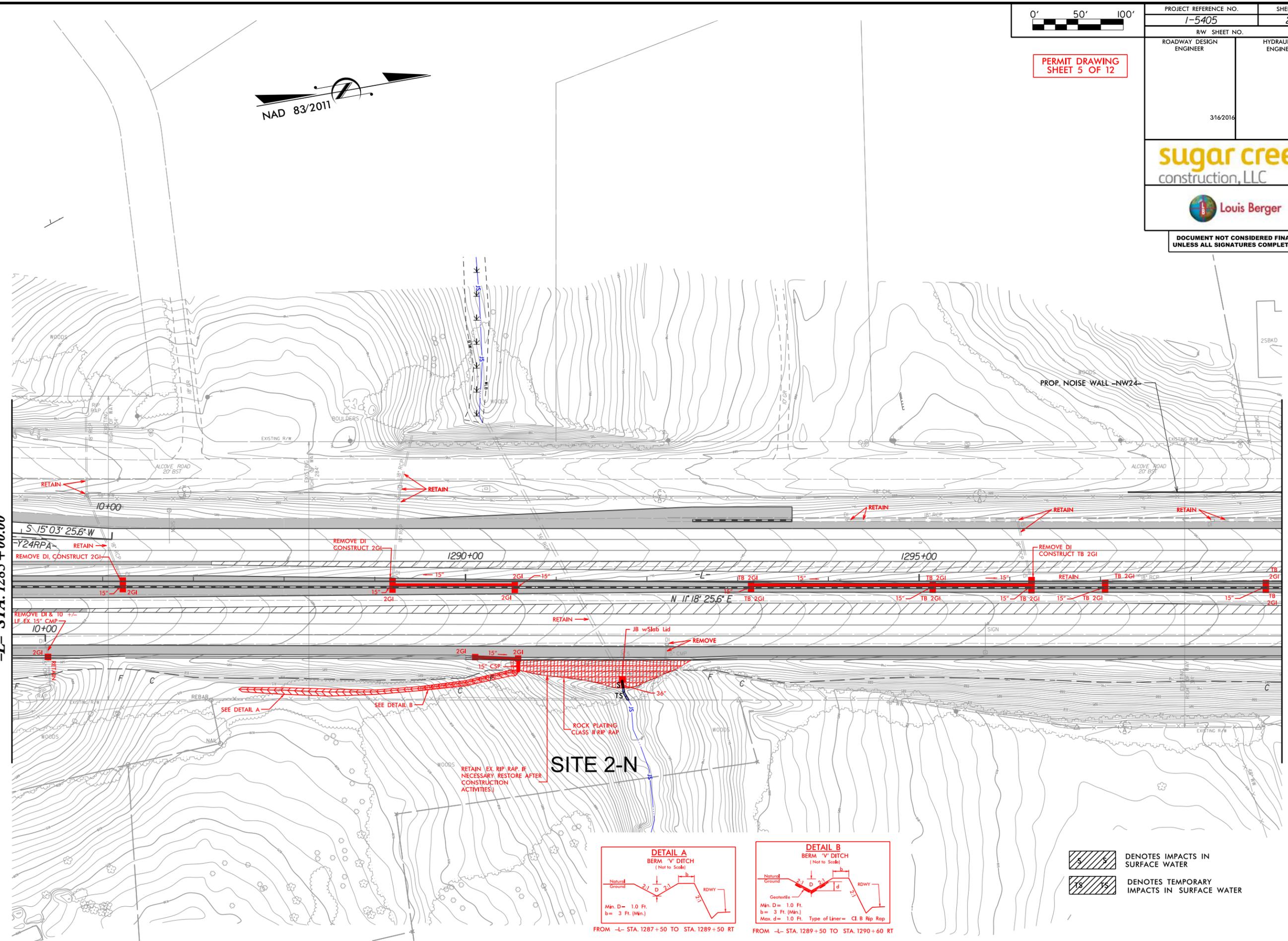
PERMIT DRAWING  
SHEET 5 OF 12

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

REVISIONS

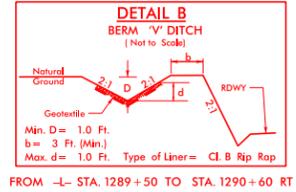
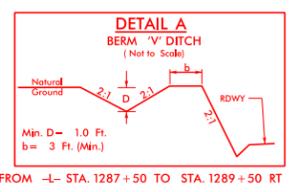
MATCH LINE SEE SHEET 23  
-L- STA. 1285 + 00.00

MATCH LINE SEE SHEET 25  
-L- STA. 1299 + 00.00



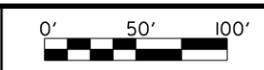
**SITE 2-N**

RETAIN EX. RIP RAP. IF NECESSARY RESTORE AFTER CONSTRUCTION ACTIVITIES



- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

3/16/2016 3:08:35 PM  
9FILES\$  
I-77-permt.tbl



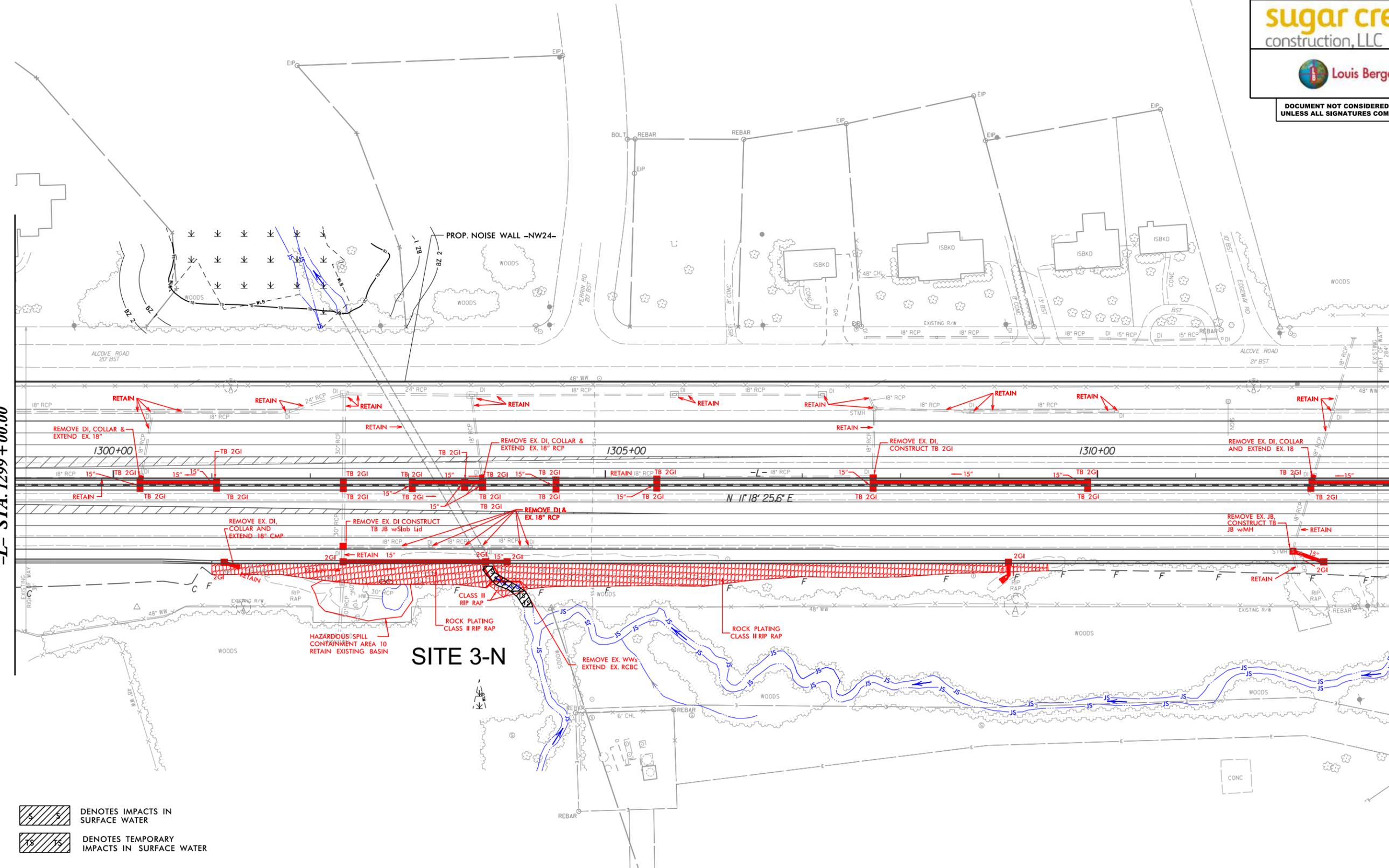
PROJECT REFERENCE NO. 1-5405	SHEET NO. 25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
3/16/2016	3/16/2016
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



PERMIT DRAWING  
SHEET 6 OF 12

MATCH LINE SEE SHEET 24  
-L- STA. 1299 + 00.00

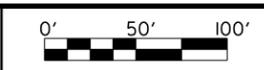
MATCH LINE SEE SHEET 26  
-L- STA. 1313 + 00.00



- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

REVISIONS

3/16/2016 3:08:39 PM  
9FILES  
I-77-permit.tbl



PROJECT REFERENCE NO. 1-5405	SHEET NO. 25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
3/16/2016	3/16/2016
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

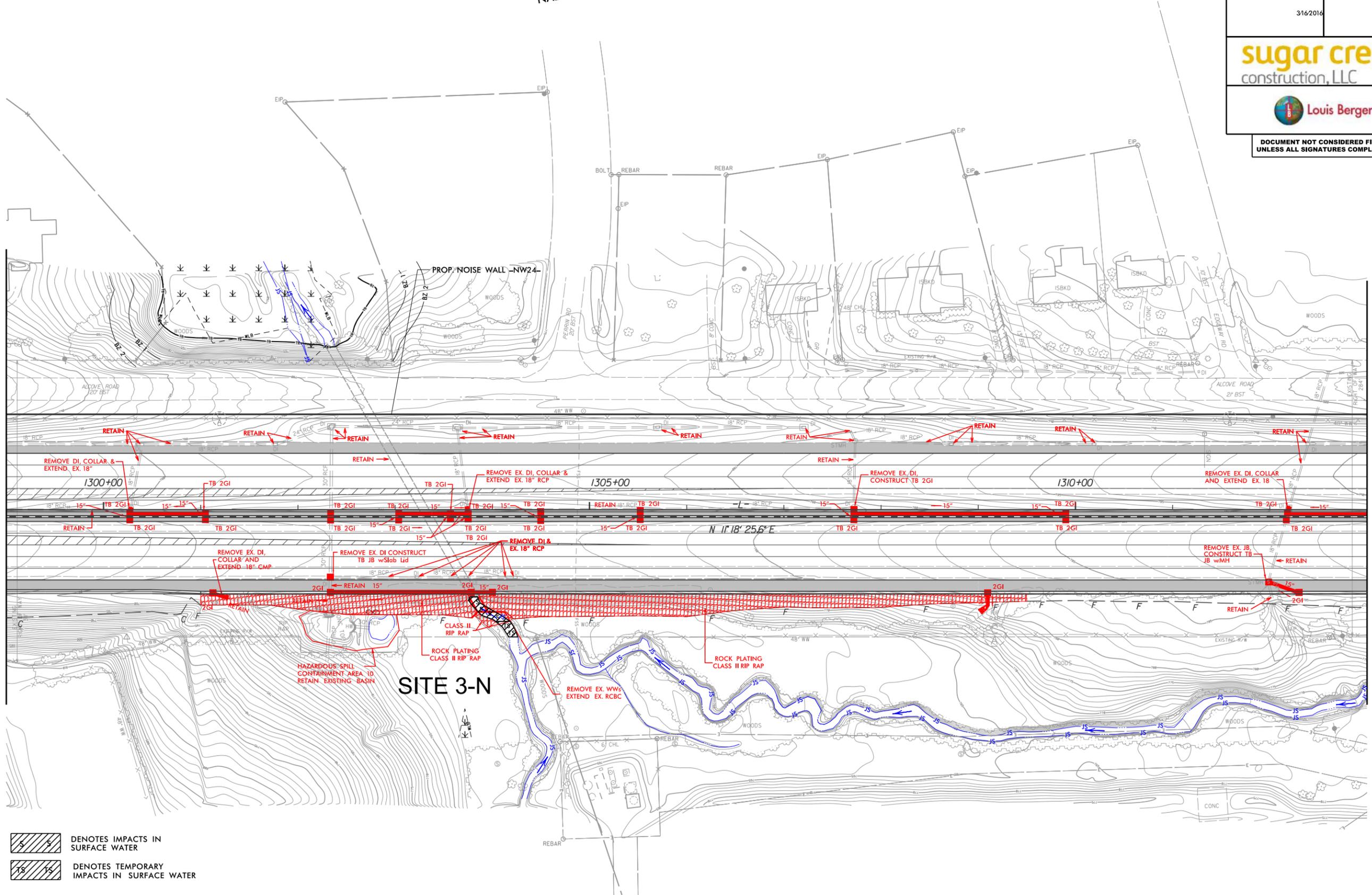


PERMIT DRAWING  
SHEET 7 OF 12

REVISIONS

MATCH LINE SEE SHEET 24  
-L- STA. 1299 + 00.00

MATCH LINE SEE SHEET 26  
-L- STA. 1313 + 00.00



- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

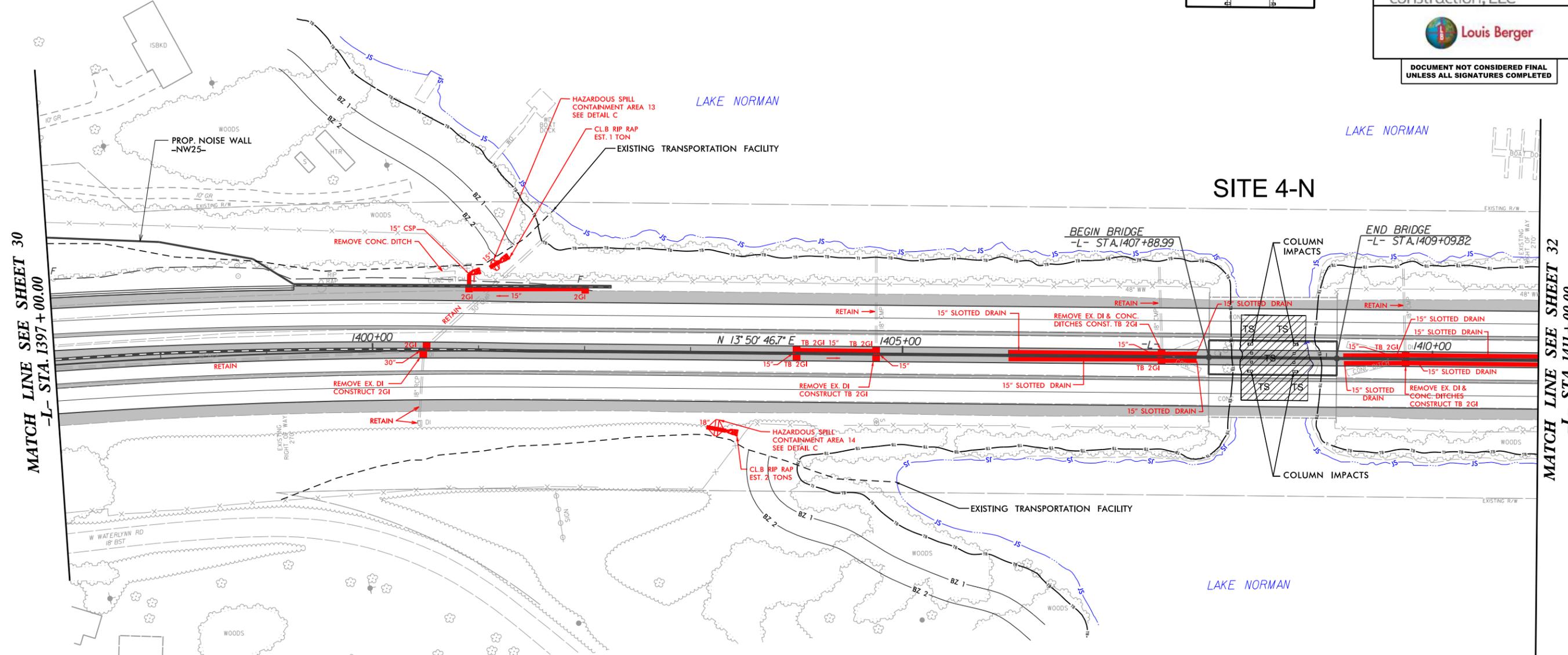
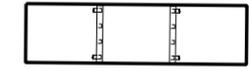
3/16/2016 3:08:55 PM  
9 FILES  
I-77-permit.tbl



PERMIT DRAWING  
SHEET 8 OF 12

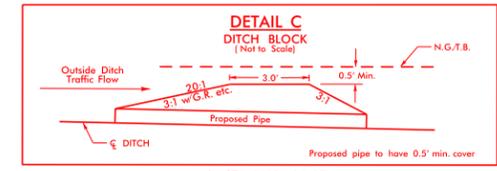
PROJECT REFERENCE NO. 1-5405	SHEET NO. 31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
3/16/2016	3/16/2016

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



MATCH LINE SEE SHEET 30  
-L- STA. 1397 + 00.00

MATCH LINE SEE SHEET 32  
-L- STA. 1411 + 00.00



DENOTES TEMPORARY IMPACTS IN SURFACE WATER

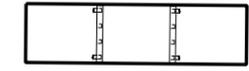
- NOTES:
- TOP OF BANK (TB) REPRESENTS 760 CONTOUR.
  - EXISTING RIPRAP TO BE RESTORED UNDERNEATH THE BRIDGE, NO ADDITIONAL RIPRAP PROPOSED.
  - EXISTING CHANNEL NOT TO BE MORE THAN 50% BLOCKED BY TEMPORARY WORK PAD AT WATER SURFACE AND ONLY ONE TEMPORARY WORK PAD TO BE INSTALLED IN LAKE NORMAN AT A TIME. SUPPORT WORKS MAY BE CONDUCTED FROM A BARGE, WHEN FEASIBLE.

REVISIONS



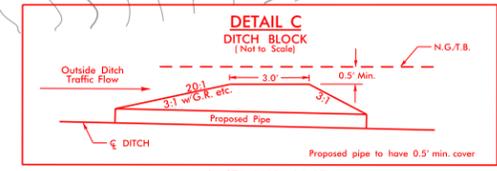
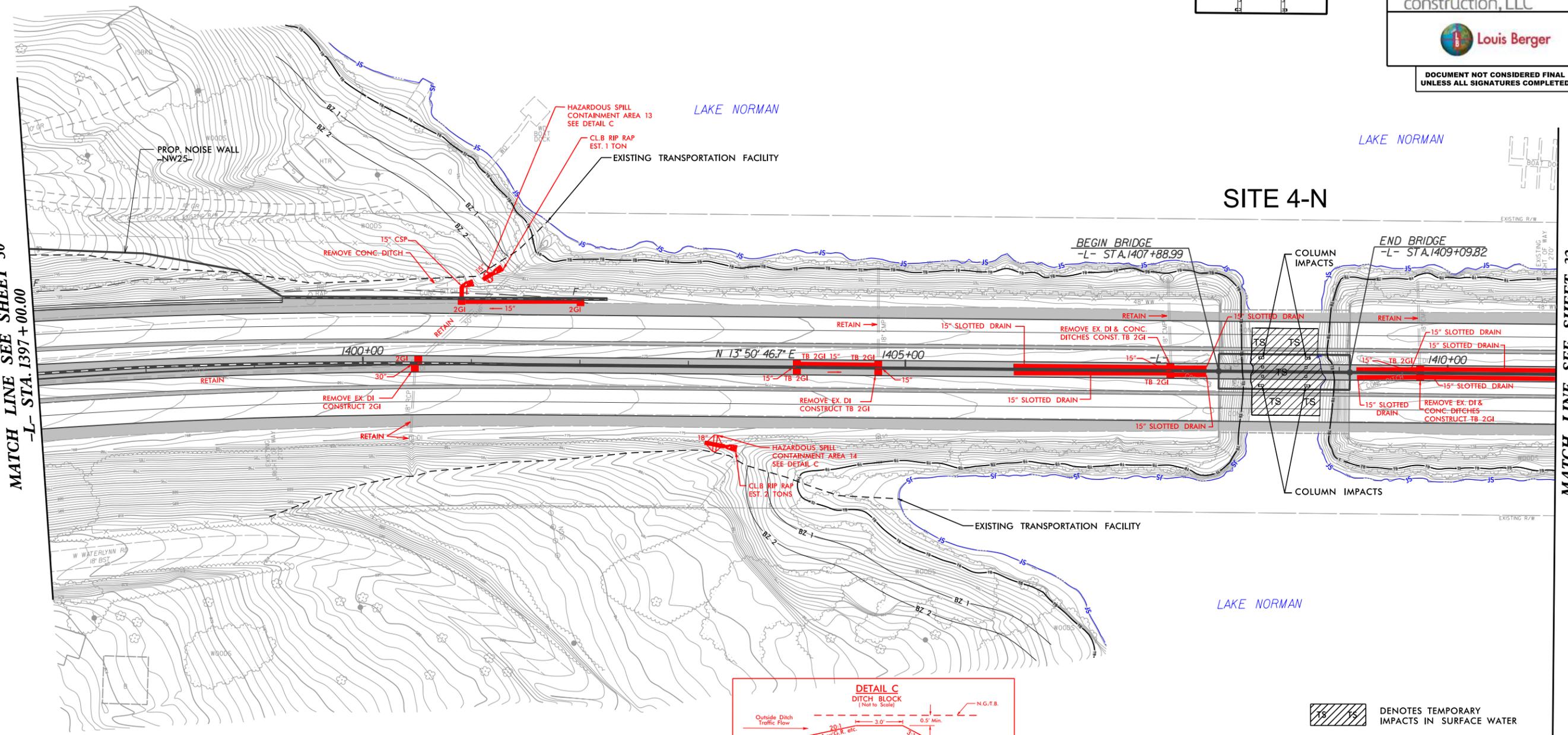
PERMIT DRAWING  
SHEET 9 OF 12

PROJECT REFERENCE NO. 1-5405	SHEET NO. 31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
3/16/2016	3/16/2016
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	



MATCH LINE SEE SHEET 30  
-L- STA. 1397 + 00.00

MATCH LINE SEE SHEET 32  
-L- STA. 1411 + 00.00



DENOTES TEMPORARY IMPACTS IN SURFACE WATER

- NOTES:
- TOP OF BANK (TB) REPRESENTS 760 CONTOUR.
  - EXISTING RIPRAP TO BE RESTORED UNDERNEATH THE BRIDGE, NO ADDITIONAL RIPRAP PROPOSED.
  - EXISTING CHANNEL NOT TO BE MORE THAN 50% BLOCKED BY TEMPORARY WORK PAD AT WATER SURFACE AND ONLY ONE TEMPORARY WORK PAD TO BE INSTALLED IN LAKE NORMAN AT A TIME. SUPPORT WORKS MAY BE CONDUCTED FROM A BARGE, WHEN FEASIBLE.

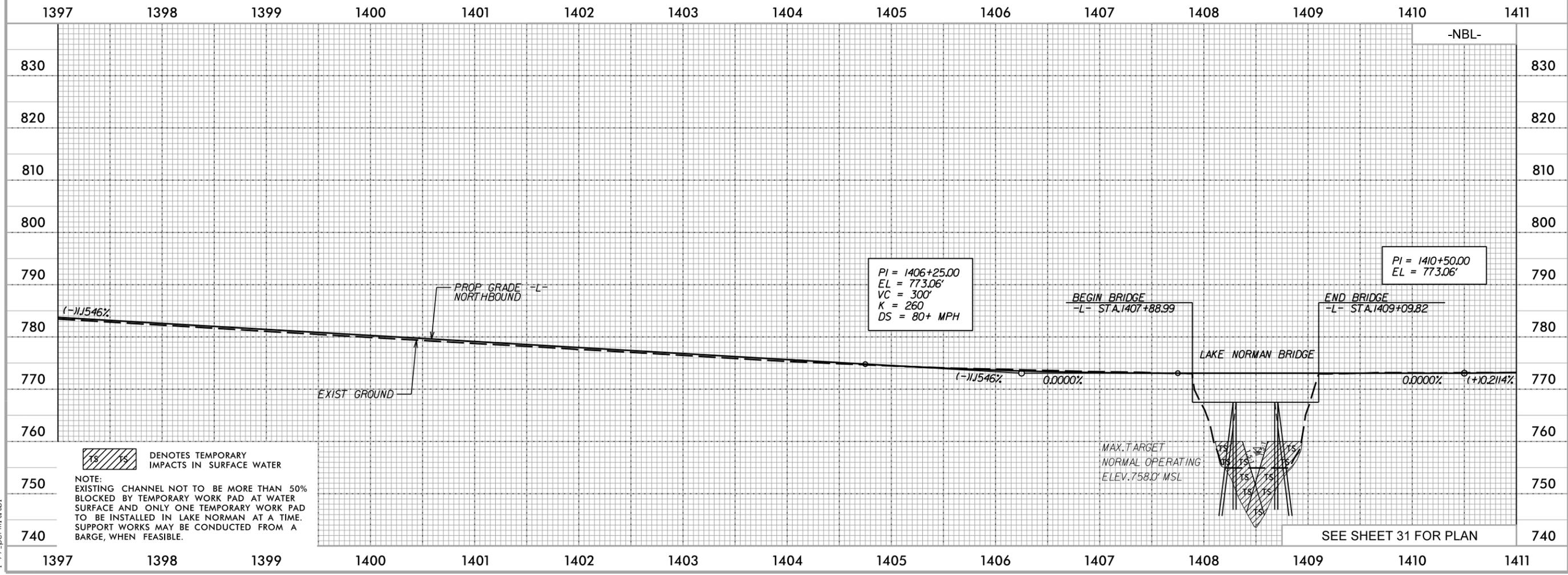
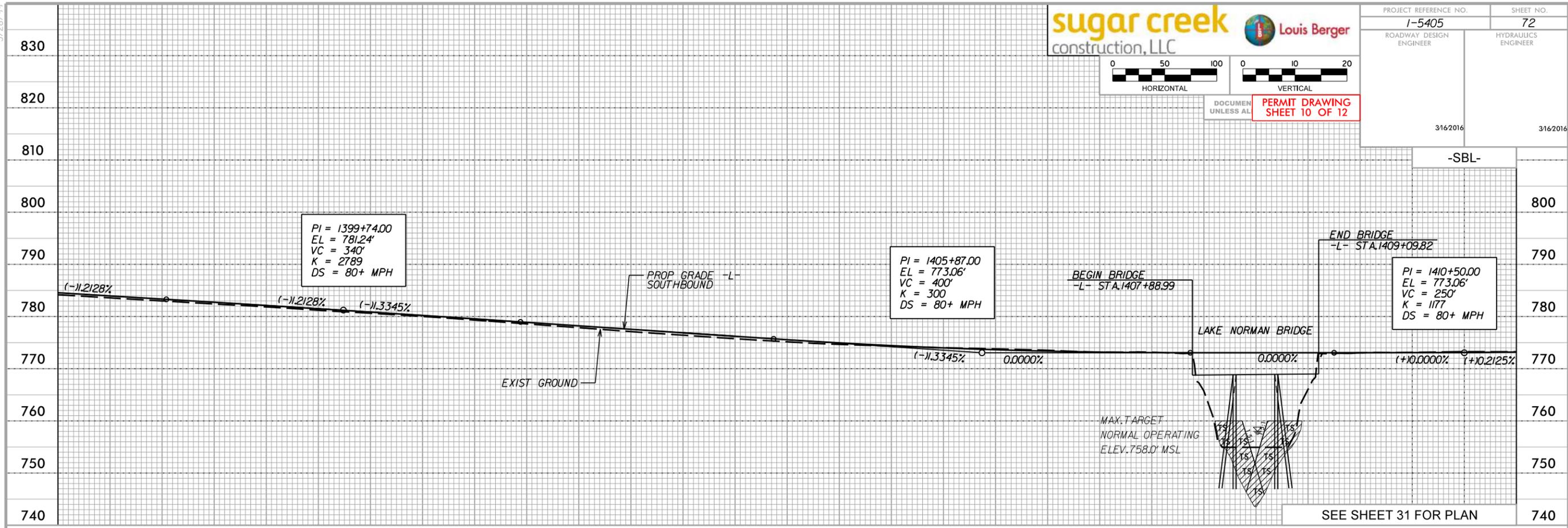
REVISIONS

5/28/99

PROJECT REFERENCE NO. <b>I-5405</b>	SHEET NO. <b>72</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
3162016	3162016



DOCUMENT UNLESS AL  
**PERMIT DRAWING SHEET 10 OF 12**



DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NOTE:  
EXISTING CHANNEL NOT TO BE MORE THAN 50% BLOCKED BY TEMPORARY WORK PAD AT WATER SURFACE AND ONLY ONE TEMPORARY WORK PAD TO BE INSTALLED IN LAKE NORMAN AT A TIME. SUPPORT WORKS MAY BE CONDUCTED FROM A BARGE, WHEN FEASIBLE.

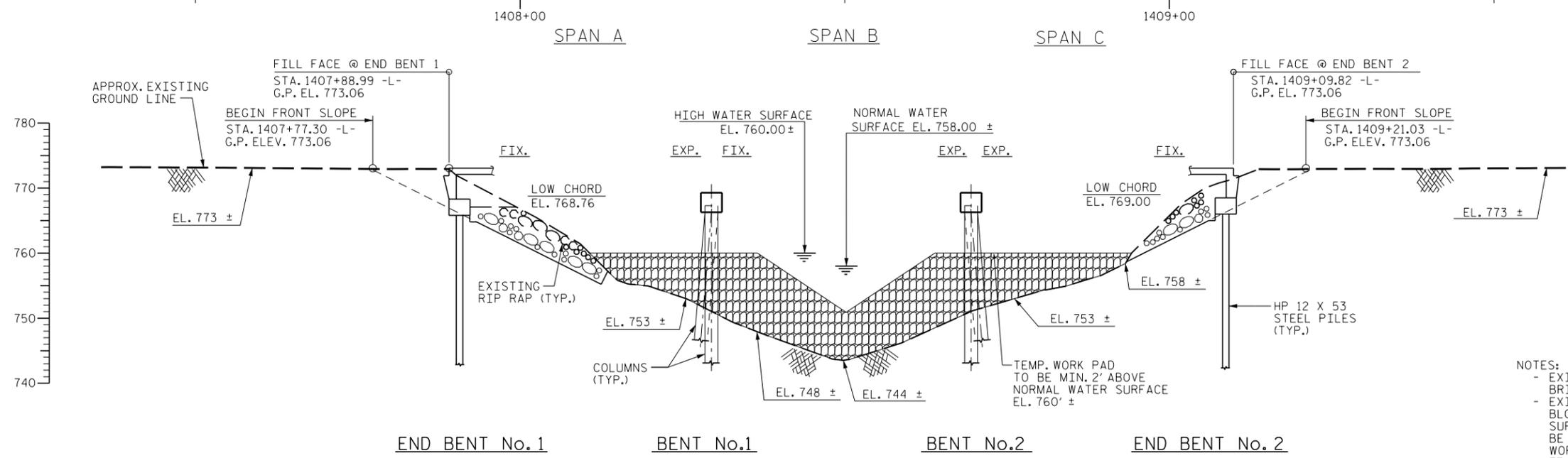
3/16/2016 3:09:07 PM  
FILES# I-77\_permt.tbl

SEE SHEET 31 FOR PLAN

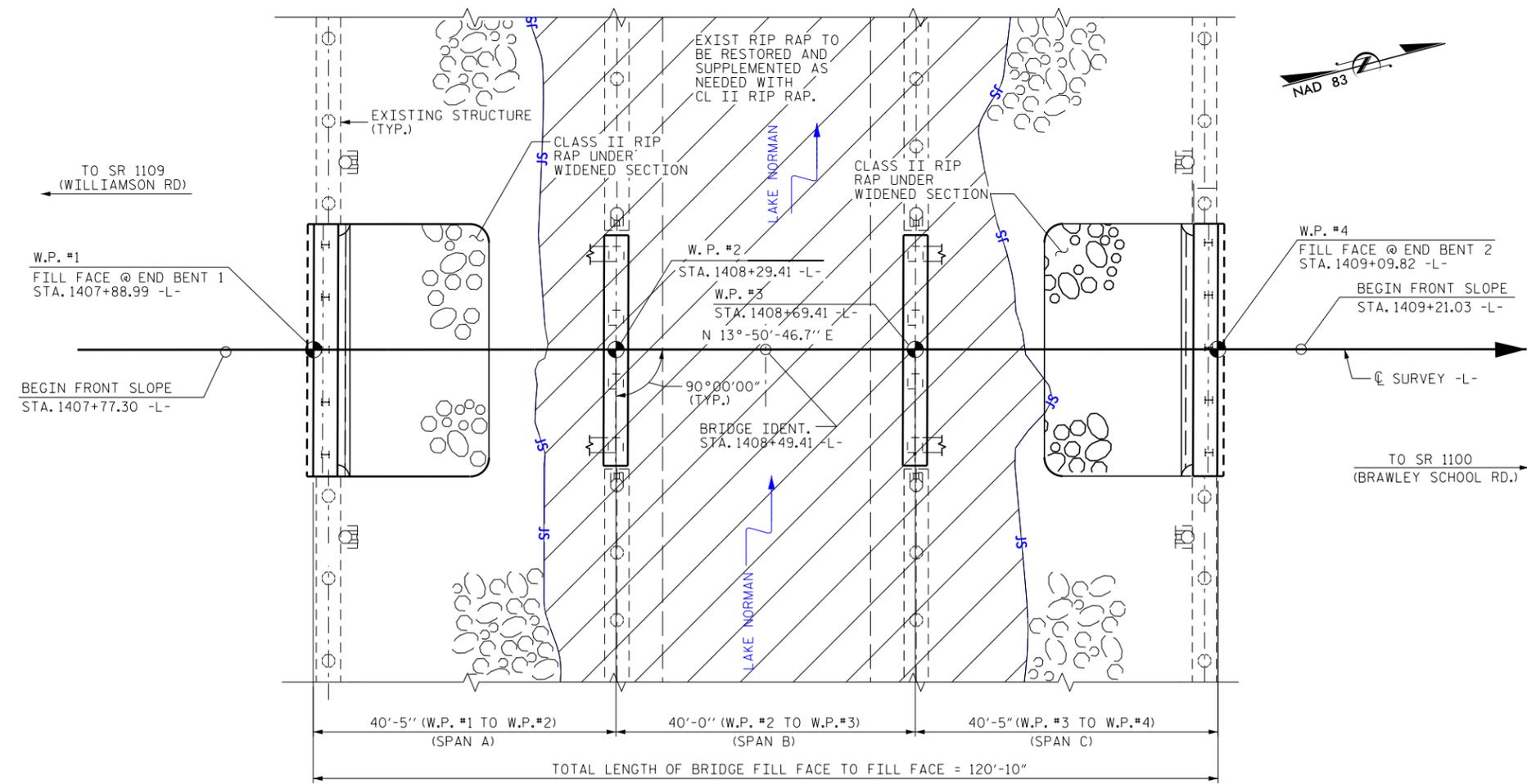
SEE SHEET 31 FOR PLAN

pw:\ibg-pwin+01.us\ibgcorp.com\pmlb2014\Documents\I-77B Plan Sheet Files\Hydraulics\PERMITS\_Environmental\Drawings\North\I-47  
 3/16/2016 3:09:17 PM NCDOT\_PDF\_full.plt.cfb I-77\_permit.tbl

PERMIT DRAWING SHEET 11 OF 12



- NOTES:
- EXISTING RIPRAP TO BE RESTORED UNDERNEATH THE BRIDGE, NO ADDITIONAL RIPRAP PROPOSED.
  - EXISTING CHANNEL NOT TO BE MORE THAN 50% BLOCKED BY TEMPORARY WORK PAD AT WATER SURFACE AND ONLY ONE TEMPORARY WORK PAD TO BE INSTALLED IN LAKE NORMAN AT A TIME, SUPPORT WORKS MAY BE CONDUCTED FROM A BARGE, WHEN FEASIBLE.



PROJECT NO. I-4750AA  
IREDELL COUNTY  
 STATION: 1408+49.53 -L-  
 WIDENING AND REHABILITATION OF BRIDGE No. 480052 & 480053  
 SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PRELIMINARY  
 GENERAL DRAWING FOR BRIDGE  
 WIDENING ON I-77NB & I-77SB  
 LANES OVER LAKE NORMAN  
 BETWEEN SR-1245 AND SR-1100

DRAWN BY : J. MYA DATE : 8-2015  
 CHECKED BY : R. DECOLA DATE : 11-2015  
 DESIGN ENGINEER OF RECORD : DATE :



Prepared by:  
 LOUIS BERGER  
 1001 Wade Avenue, Suite 400  
 Raleigh, NC 27605-3322  
 NC COA No. F-0840

REVISIONS						SHEET NO. S16-1
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 2
2			4			

**WETLAND PERMIT IMPACT SUMMARY**

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			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-N	1127+50 - 1130+10 LT	TEMP. CONST. ACCESS						0.01			263	
2-N	1291+62 - 1291+75 RT	36" PIPE EXTENSION						< 0.01	< 0.01	9	15	
3-N	1303+76 - 1304+20 RT	9'x7' RCBC EXTENSION						< 0.01	< 0.01	18	20	
		BANK STABILIZATION						< 0.01		23		
4-N	1408+20 - 1408+85 CL	TEMP WORK PADS						0.12				
TOTALS*:								< 0.01	0.13	50	298	0

\*Rounded totals are sum of actual impacts

NOTES:

Permanent non-mitigable SW impacts due to bridge piers at Site 4-N < 0.01 acres.

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 03/03/16  
 MECKLENBURG, IREDELL  
 North Section (I-4750AA)

