



PAT McCrory
Governor

NICHOLAS J. TENNYSON
Secretary

February 22, 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.**

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 this 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



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.

Project 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.

COMMITMENTS FROM PERMITTING

USACE and NCDWR have granted an exception to the culvert burial requirements,

please see the attached emails.



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

January 28, 2016

Regulatory Division/1200A

Action ID: SAW-2012-00156

Mr. Richard W. Hancock, P.E.
North Carolina Department of Transportation.
Project Development and Environmental Analysis Unit
1548 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Hancock:

In accordance with the written request of September 9, 2015, and the ensuing administrative record, enclosed is a Department of the Army (DA) Permit to authorize the discharge of fill material into waters of the US associated with the I-77 High Occupancy Toll (HOT) lanes project (TIP #s I5405, I4750AA and I3311C). Specifically impacts involve the permanent impacts 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. The project is located along approximately 26 miles of I-77 starting north of NC 150 in Iredell County and continuing south along I-77, deviating from I77 at the I-277 interchange and following I-277 approximately 1.2 miles to terminate at North Brevard Street in Charlotte, Mecklenburg County, North Carolina.

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 notified 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 general conditions require that:

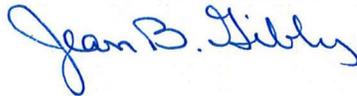
- a. You must complete construction before December 31, 2025.
- b. You must notify this office in advance as to when you intend to commence and complete work.

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.

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

Thank you in advance for completing our Customer Survey Form. This can be accomplished by visiting our web-site at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0 and completing the survey on-line. We value your comments and appreciate your taking the time to complete a survey each time you interact with our office.

Sincerely,



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

Enclosures

Copy Furnished (with enclosures):

Chief, Source Data Unit
NOAA/National Ocean Service
Attn: Sharon Tear N/CS261
1315 East-West Hwy., Rm 7316
Silver Spring, Maryland 20910-3282

Copies Furnished with special conditions and plans:

Mr. Pete Benjamin
U.S. Fish and Wildlife Service
Raleigh Ecological Service Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Mr. Fritz Rohde
Habitat Conservation Division – Atlantic Branch
101 Pivers Island Road
Beaufort, North Carolina 28516

Mr. Todd Bowers
Oceans, Wetlands and Streams Protection Branch
Wetlands and Streams Regulatory Section
U.S. Environmental Protection Agency – Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303-8931

Mr. Doug Huggett
Division Coastal Management
N.C. Department of Environment
And Natural Resources
400Commerce Avenue
Morehead City, North Carolina 28557

Dr. Pace Wilber
Habitat Conservation Division – Atlantic Branch
NOAA Fisheries Service
219 Fort Johnston Road
Charleston, South Carolina 29412

DEPARTMENT OF THE ARMY PERMIT

Permittee: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
ATTN: MR. RICHARD W. HANCOCK, P.E.

Permit No: SAW-2012-00156

Issuing Office: USAED, WILMINGTON

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 I-77 High Occupancy Toll (HOT) lanes project (TIP #s I5405, I4750AA and I3311C) involves the widening of I-77 and I-277 and includes the construction of HOT lanes. The project will result in the permanent impacts 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.

Project Location: The project is located along approximately 26 miles of I-77 starting north of NC 150 in Iredell County and continuing south along I-77, deviating from I77 at the I-277 interchange and following I-277 approximately 1.2 miles to terminate at North Brevard Street in Charlotte, Mecklenburg 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.



 (PERMITTEE) NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 ATTN: RICHARD W. HANCOCK, P.E.
 Br

01-28-2016

 (DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.



 (DISTRICT COMMANDER) KEVIN P. LANDERS, SR., COLONEL

28 Jan 2016

 (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.

 (TRANSFEE)

 (DATE)

SPECIAL CONDITIONS
ACTION ID. SAW-2012-00156
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
THE I-77 HIGH OCCUPANCY TOLL (HOT) LANES PROJECT (TIP#s I5405,
I4750AA AND I3311C)

1. Phased Permits:

This permit only authorizes work on the Central Section of STIP Project I-5405. Construction on the Northern and Southern Sections, STIP Project I-4750AA and STIP Project I-3311C respectively, shall not commence until final design has been completed for those sections, 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).

2. Plans:

A. The permittee will ensure that the construction design plans for this project do not deviate from the permit plans attached to this authorization. Written verification shall be provided that the final construction drawings comply with the attached permit drawings prior to any active construction in waters of the United States, including wetlands. Any deviation in the construction design plans will be brought to the attention of the Corps of Engineers, Asheville Regulatory Field Office prior to any active construction in waters or wetlands.

3. Pre-Construction Meetings:

A. The permittee shall schedule and attend a preconstruction meeting between its representatives, the contractors representatives, and the 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 Department of Army Permit. The permittee shall provide the USACE, 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 USACE, and NCDWR Project Managers can attend. The permittee shall invite the Corps, and NCDWR Project Managers a minimum of thirty (30) days in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedules and participate in the required meeting.

SPECIAL CONDITIONS
ACTION ID. SAW-2012-00156
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
THE I-77 HIGH OCCUPANCY TOLL (HOT) LANES PROJECT (TIP#s I5405,
I4750AA AND I3311C)

4. Threatened and Endangered Species:

All necessary precautions and measures will be implemented so that any activity will not kill, injure, capture, harass, or otherwise harm any protected federally listed species. While accomplishing the authorized work, if the permittee discovers or observes a damaged or hurt listed endangered or threatened species, the District Engineer will be immediately notified to initiate the required Federal coordination.

5. Culverts:

A. Unless otherwise requested in the applicant's application and depicted on the approved work plans, culverts greater than 48 inches in diameter will be buried at least one foot below the bed of the stream. 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. The bottom of the culvert must be placed at a depth below the natural stream bottom to provide for passage during drought or low flow conditions. Destabilizing the channel and head cutting upstream should be considered in the placement of the culvert.

B. Measures will 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 should 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 should 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.

6. Sediment Erosion Control:

A. During the clearing phase of the project, heavy equipment must 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.

SPECIAL CONDITIONS
ACTION ID. SAW-2012-00156
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
THE I-77 HIGH OCCUPANCY TOLL (HOT) LANES PROJECT (TIP#s I5405,
I4750AA AND I3311C)

B. 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.

C. The permittee shall remove all sediment and erosion control measures placed in wetlands or waters, and shall restore natural grades on those areas, prior to project completion.

D. 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 assure compliance with the appropriate turbidity water quality standard. 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 assure 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 must 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 must be implemented prior to any ground disturbing activities to minimize impacts to downstream aquatic resources. These measures must be inspected and maintained regularly, especially following rainfall events. All fill material must be adequately stabilized at the earliest practicable date to prevent sediment from entering into adjacent waters or wetlands.

7. Temporary Fills

Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

8. Borrow and Waste

To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent wetlands and streams, except as authorized by this permit, the permittee shall require its contractors and/or agents to identify all areas to be used to borrow material, or to dispose of dredged, fill, or waste material. The permittee shall

SPECIAL CONDITIONS
ACTION ID. SAW-2012-00156
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
THE I-77 HIGH OCCUPANCY TOLL (HOT) LANES PROJECT (TIP#s I5405,
I4750AA AND I3311C)

provide the USACE with appropriate maps indicating the locations of proposed borrow or waste sites as soon as the permittee has that information. The permittee will coordinate with the USACE before approving any borrow or waste sites that are within 400 feet of any streams or wetlands.

9. 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 authorization.

10. Cultural Resources

NCDOT shall comply with its commitments regarding the Oaklawn Park Historic District, specifically, NCDOT will provide the community with the opportunity to comment on the appearance of the proposed noise barriers that may be constructed adjacent to the historic resource.

11. Miscellaneous

- a. The permittee shall adhere to the NC Department of Transportation's Design Standards in Sensitive Watersheds during the implementation of erosion and sedimentation control BMP's around Lake Norman and Byers Creek.
- b. Violations of these conditions or violations of Section 404 of the Clean Water must be reported in writing to the Wilmington District U.S. Army Corps of Engineers within 24 hours of the permittee's discovery of the violation.
- c. **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-2012-00156
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
THE I-77 HIGH OCCUPANCY TOLL (HOT) LANES PROJECT (TIP#s I5405,
I4750AA AND I3311C)

- d. **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. 4036 Dated November 13, 2015 are hereby incorporated as special conditions of this permit
- e. All conditions of the NCDENR Sediment and Erosion plan are hereby incorporated as special conditions of this permit
- f. **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).
- g. **Notification of construction commencement and completion:** The permittee shall advise the Corps in writing prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.
- h. **Clean Fill:** Unless otherwise authorized by this permit, all fill material placed in waters or wetlands shall be generated from an upland source and will be clean and free of any pollutants except in trace quantities. Metal products, organic materials (including debris from land clearing activities), or unsightly debris will not be used. Soils used for fill shall not be contaminated with any toxic substance in concentrations governed by Section 307 of the Clean Water Act.
- i. **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, shall be available at the project site during construction and maintenance of this project.
- j. **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.

I-77 Special Condition Number 5A

Amschler, Crystal C SAW <Crystal.C.Amschler@usace.army.mil>

Wed, Jan 27, 2016 at 2:31 PM

To: Carla Dagnino <cdagnino@ncdot.gov>, Michael Turchy <maturchy@ncdot.gov>

Cc: "Matthews, Monte K SAW" <Monte.K.Matthews@usace.army.mil>

Carla,

This is a standard condition that we put in all of our permits. However we understand and acknowledge that its if often impracticable and ineffective to bury culverts when they are being constructed to extend existing culverts as is the case with the widening of I77 for this project. As such, DOT would only be required to bury any new culverts. Without having to revise the existing standard condition, this email should serve as documentation that culvert extensions will not need to be buried.

Crystal C. Amschler
Project Manager
Asheville Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, NC 28403
(828)-271-7980 Ext 231

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

---Original Message---

From: Dagnino, Carla S [mailto:cdagnino@ncdot.gov]

Sent: Wednesday, January 27, 2016 11:17 AM

To: Amschler, Crystal C SAW <Crystal.C.Amschler@usace.army.mil>

Cc: Turchy, Michael A <maturchy@ncdot.gov>; Matthews, Monte K SAW <Monte.K.Matthews@usace.army.mil>

Subject: [EXTERNAL] I-77 Special Condition Number 5A

Hi Crystal,

We have gone through the Special Conditions and met with Monte yesterday to get clarification for the Design Build Team. We were able to address all of the questions, although we will need an exception to 5A for existing culverts.

The Special Condition number 5A states that culverts greater than 48 inches in diameter will be buried at least one foot below the bed of the stream. Sites 5-C, 6-C and 7-C are culvert extensions and therefore may not be practicable to bury the extension a foot. Could this condition be clarified to apply only to new culverts?

Thanks.

Carla

Carla Dagnino

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) For Central Section

Action ID: 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
185						

*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
370						

Mitigation Site Debited: NCDMS

(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: NC DEQ DMS

Name of Sponsor's Authorized Representative: Beth Harmon

Beth Harmon _____ 01/29/2016 _____

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.

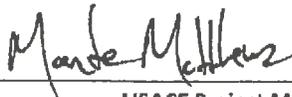
Comments/Additional Conditions:

This form is 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).* 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

January 28, 2016

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

Director

February 15, 2016

Mr. Colin Mellor
Project Development and Environmental Analysis
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

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

Dear Mr. Mellor:

Attached hereto is a modification of **Certification No. WQC004036** that was issued to The North Carolina Department of Transportation (NCDOT) dated November 13, 2015.

This Individual Certification now includes temporary impacts and bank stabilization to sites 5-C, 6-C, and 7-C and applies only to the I-5405 section of the I-77 HOT Lanes project.

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
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
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 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 0.07 acres of jurisdictional wetlands and 410 linear feet of jurisdictional streams in Mecklenburg County. The project shall be constructed pursuant to the application dated received September 9, 2015. The authorized impacts are as described below:

Stream Impacts in the Catawba River Basin

Site	Bank Stabilization (linear feet)	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 ft)	Stream Impacts Requiring Mitigation (linear ft)
2-C	40				60	60	0
3-C					150	150	0
4-C		33				33	33
5-C	65	35	17			52	35
6-C	21			26	42	68	26
7-C	99			91	40	131	91
1-GR					182	182	
TOTAL	225	68	17	117	474	494	185

Total Stream Impact for Project: 494 linear feet

Wetland Impacts in the Catawba River Basin

Site	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impact (ac)	Impacts Requiring Mitigation (ac)
1-C	0.01	0.06				0.07	0.01
						0.00	0.00
						0.00	0.00
						0.00	0.00
Total	0.01	0.06	0.00	0.00	0.00	0.07	0.01

Total Wetland Impact for Project: 0.07 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 application dated received September 9, 2015. 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:

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 15th day of February 2016

DIVISION OF WATER RESOURCES

A handwritten signature in blue ink, appearing to read "S. Jay Zimmerman".

S. Jay Zimmerman, Director

WQC No. 004036

RE: Clarification on the exemption for 1 foot burial of culvert pipes

Hood, Donna <donna.hood@ncdenr.gov>

Tue, Feb 2, 2016 at 4:00 PM

To: "Dagnino, Carla S" <cdagnino@ncdot.gov>

Cc: "Chapman, Amy" <amy.chapman@ncdenr.gov>, "Turchy, Michael A" <maturchy@ncdot.gov>

Sounds good! Thanks!

Donna Hood - Donna.Hood@ncdenr.gov

North Carolina Dept. of Environmental Quality

Division of Water Resources

Transportation Permitting Unit

610 E. Center Ave.

Mooresville, NC 28115

Ph: [704.663.1699](tel:704.663.1699) Fax: [704.663.6040](tel:704.663.6040)

From: Dagnino, Carla S

Sent: Tuesday, February 02, 2016 3:52 PM

To: Hood, Donna <donna.hood@ncdenr.gov>

Cc: Chapman, Amy <amy.chapman@ncdenr.gov>; Turchy, Michael A <maturchy@ncdot.gov>

Subject: RE: Clarification on the exemption for 1 foot burial of culvert pipes

Donna,

As we spoke - For number 5 –

After DWR review and communication with the permit holder, work with the DWR to determine practicable measures that can be implemented to restore aquatic passage at culverts that cannot meet burial requirements.

Is this OK for the 401 condition?

Thanks for your help.

Carla

From: Hood, Donna
Sent: Tuesday, February 02, 2016 1:04 PM
To: Dagnino, Carla S
Cc: Chapman, Amy
Subject: Clarification on the exemption for 1 foot burial of culvert pipes

Carla,

Per our conversation this morning, the concern was that the step pool sequences and rock ladders would have to be constructed on each and every culvert pipe. The comment included in the exemption email was this:

“Also, rock ladders or step pool sequences shall be installed to attempt to correct any currently perched pipes and restore aquatic passage to the maximum extent practicable. Measures installed to also be approved by the State.”

The expectation was to enact the following steps concerning culverts that could not be buried per permit requirements:

1. Pictures of the upstream and downstream culvert
2. Elevations, shot on site, of the upstream and downstream culvert
3. Determination of the grade/slope of the culvert
4. Email this information to DWR as a request for exemption of the 1 foot burial
5. As determined by DWR review, install some type of measure to restore aquatic passage—to the maximum extent practicable—meaning it may or may not be possible to add additional measures. There is no expectation that each and every pipe will receive such measures, only that each and every pipe that cannot meet the permit requirements of being buried 1 foot will be considered and those that can have some modicum of repair will receive it.

Thank You,

Donna

Donna Hood - Donna.Hood@ncdenr.gov

North Carolina Dept. of Environmental Quality

Division of Water Resources

Transportation Permitting Unit

610 E. Center Ave.

Mooresville, NC 28115

Ph: [704.663.1699](tel:704.663.1699) Fax: [704.663.6040](tel:704.663.6040)



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, 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.

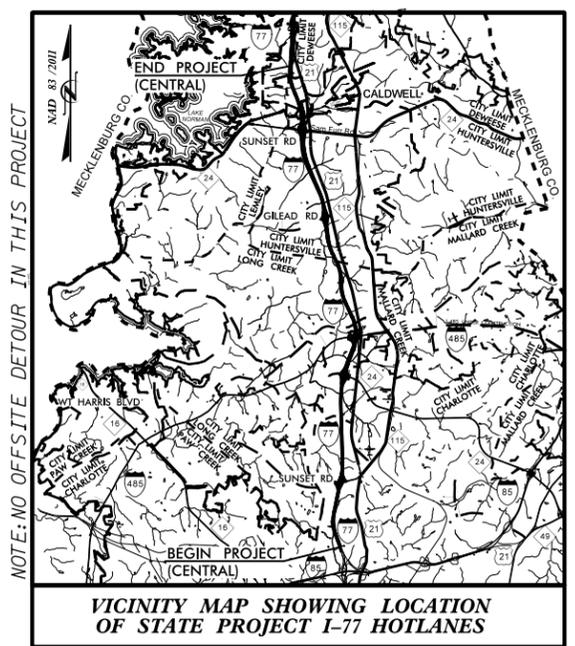
Signature _____ Registration No. _____ Date _____

09/05/14
 CONTRACT: C203406
 TIP PROJECT: I-5405/I-4750AA
 \$ DATE \$
 \$ FILEL \$
 \$ PENTBL \$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**PERMIT DRAWING
SHEET 01 OF 27**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5405/I-4750AA	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45454.3.P3S1		P.E.	

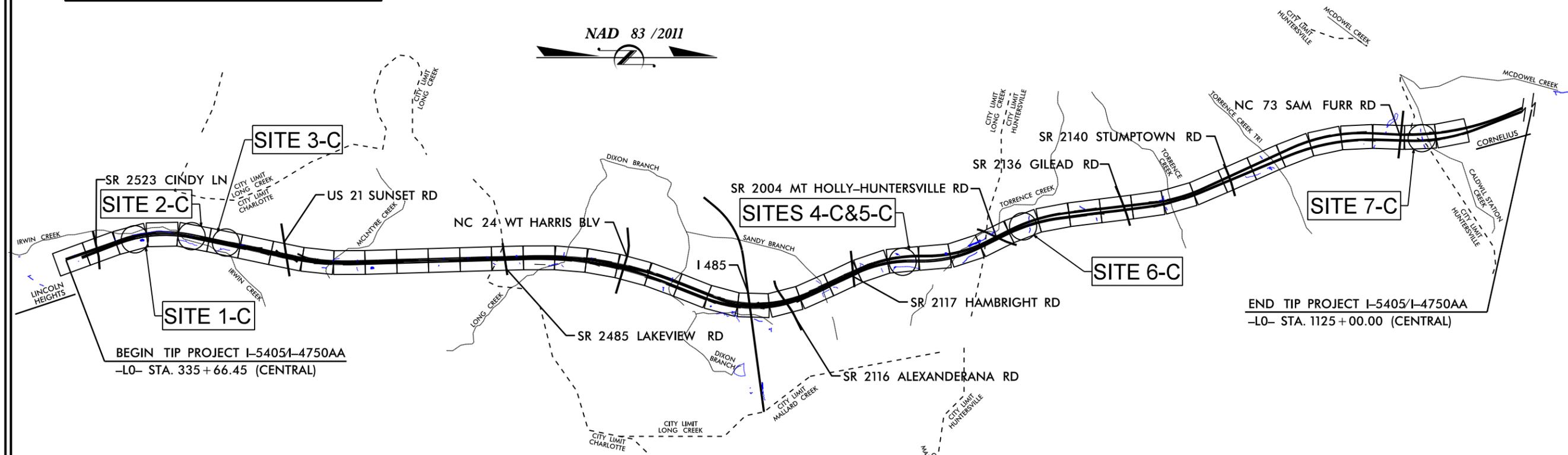


**MECKLENBURG
COUNTY**

LOCATION: I-77 FROM NORTH OF I-85
TO NORTH OF NC 73 (SAM FURR RD.)

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

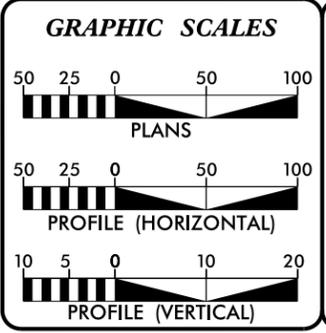
WETLAND AND STREAM IMPACTS (CENTRAL SECTION)



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

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

**NCDOT CONTACT: VIRGINIA MABRY
MANAGER PRIORITY PROJECTS UNIT**



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 "STATE WIDE TIER"	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-5405/I-4750AA	= 14.950 MI
LENGTH STRUCTURES TIP PROJECT I-5405/I-4750AA	= 0.023 MI
TOTAL LENGTH OF TIP PROJECT I-5405/I-4750AA	= 26.089 MI

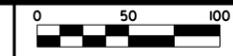
Prepared for NCDOT In the Office of:
LOUIS BERGER
8150 Brookriver Drive, Suite S-320
Dallas, Texas 75247
License No.: F-0840

2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	JOSE M. BARRAU, P.E. ROADWAY DESIGN ENGINEER
LETTING DATE:	JOE M. GARCIA, P.E. HYDRAULICS ENGINEER

HYDRAULICS ENGINEER	
SIGNATURE:	P.E.
ROADWAY DESIGN ENGINEER	
SIGNATURE:	P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

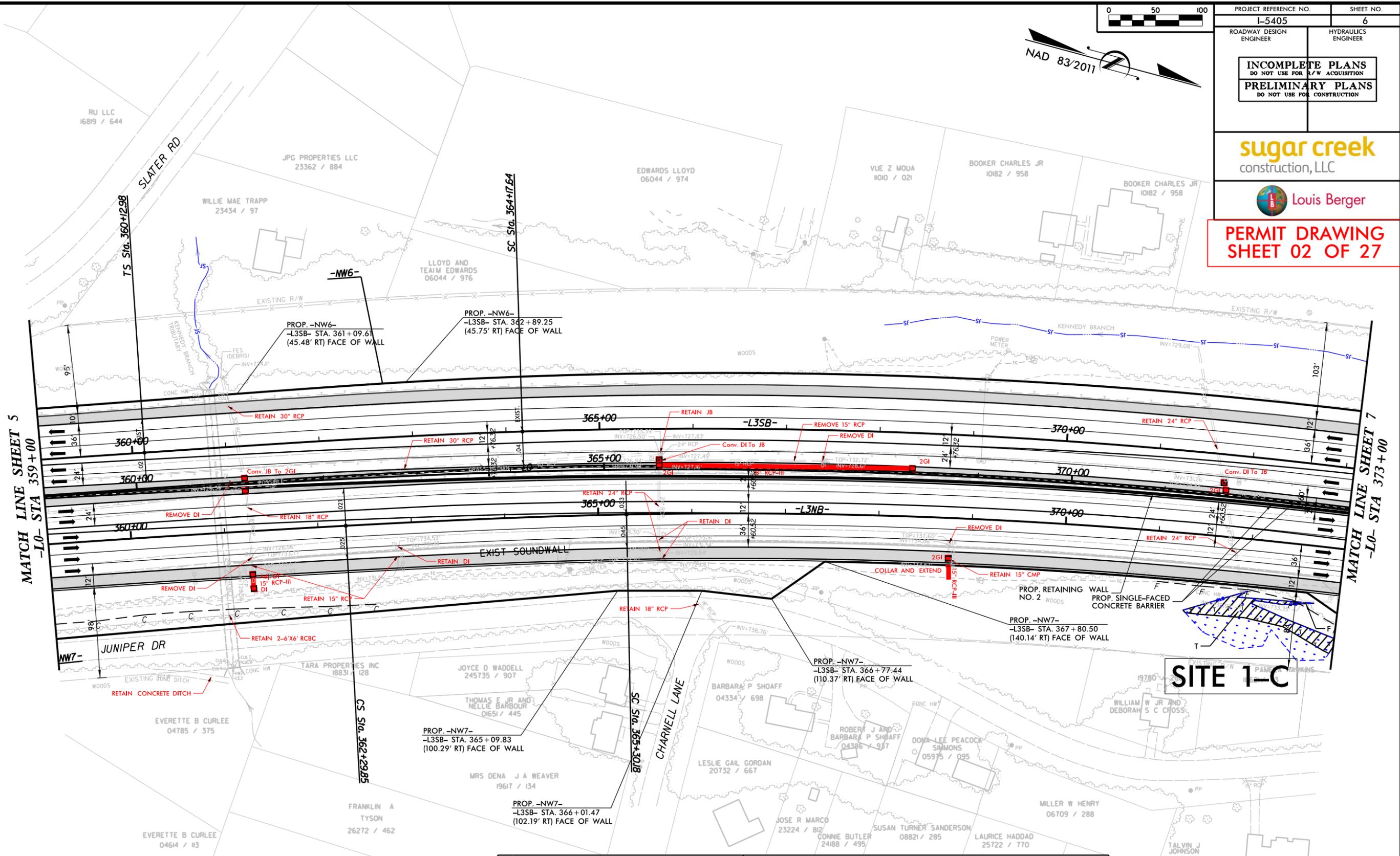


INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

sugar creek
construction, LLC



PERMIT DRAWING
SHEET 02 OF 27



MATCH LINE SHEET 5
-L0- STA 359+00

MATCH LINE SHEET 7
-L0- STA 373+00

SITE 1-C

-L3SB-		-L3NB-		
PI Sta 362+82.77	PI Sta 377+96.83	PI Sta 357+37.05	PI Sta 364+08.07	PI Sta 378+44.13
Δs = 1° 59' 55.4"	Δ = 26° 45' 07.1" (RT)	Δ = 2° 49' 26.6" (RT)	Δs = 0° 25' 48.7"	Δ = 26° 15' 04.0" (RT)
Ls = 404.66'	D = 0° 59' 16.3"	D = 0° 17' 11.3"	Δs = 1° 31' 36.7"	D = 1° 01' 00.4"
LT = 269.79'	L = 2,708.08'	L = 985.79'	Ls = 300.33'	L = 2,581.78'
ST = 134.90'	T = 1,379.19'	T = 492.99'	LT = 178.23'	T = 1,313.96'
	R = 5,800.00'	R = 20,000.00'	e = NC	R = 5,635.00'
	e = 3.60%	RO = 300'	RO = N/A	e = 3.30%
	RO = 300'	DS = 70 MPH	DS = 70 MPH	RO = 300'
	DS = 70 MPH			DS = 70 MPH

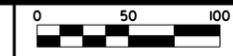
NOTES:
1.) FOR -L3NB- PROFILE SEE SHEET 52.
2.) FOR -L3SB- PROFILE SEE SHEET 52.

RBC REAL ESTATE FINANCE INC
24758 / 658

DENOTES FILL IN WETLAND
 DENOTES TEMPORARY FILL IN WETLAND

NOTE:
-BEST FIT HORIZONTAL GEOMETRY SHOWN.
EXISTING GEOMETRY TO BE RETAINED
UNLESS OTHERWISE INDICATED.
-SHOULDERS, SIDE SLOPES, DRAINAGE, ARE
TO BE RETAINED UNLESS OTHERWISE
INDICATED.

10-JUL-2015 08:24
IP: P:\P\495-HYD-PRM-WET_PSH-006-01.dgn
imgarc02b AT CAMARCO

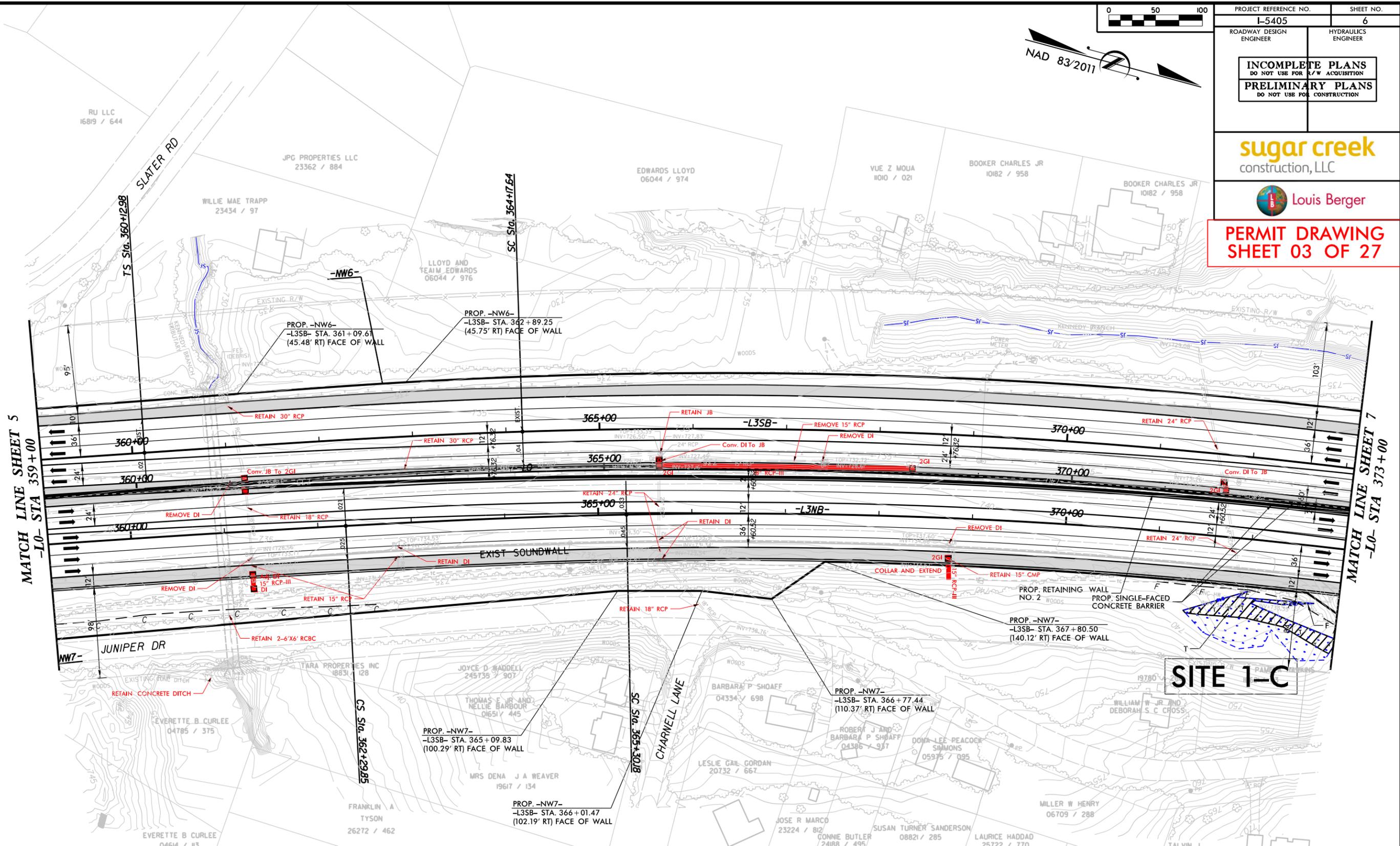


PROJECT REFERENCE NO. L-5405	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

sugar creek
construction, LLC



PERMIT DRAWING
SHEET 03 OF 27



MATCH LINE SHEET 5
-L0- STA 359+00

MATCH LINE SHEET 7
-L0- STA 373+00

SITE 1-C

-L3SB-		-L3NB-		
PI Sta 362+82.77	PI Sta 377+96.83	PI Sta 357+37.05	PI Sta 364+08.07	PI Sta 378+44.13
Δ = 1° 59' 55.4"	Δ = 26° 45' 07.1" (RT)	Δ = 2° 49' 26.6" (RT)	Δ = 0° 25' 48.7"	Δ = 26° 15' 04.0" (RT)
Ls = 404.66'	D = 0° 59' 16.3"	D = 0° 17' 11.3"	Δs = 1° 31' 36.7"	D = 1° 01' 00.4"
LT = 269.79'	L = 2,708.08'	L = 985.79'	Ls = 300.33'	L = 2,581.78'
ST = 134.90'	T = 1,379.19'	T = 492.99'	LT = 178.23'	T = 1,313.96'
	R = 5,800.00'	R = 20,000.00'	R = 5,635.00'	R = 5,635.00'
	e = 3.60%	e = NC	e = 3.30%	e = 3.30%
	RO = 300'	RO = N/A	RO = 300'	RO = 300'
	DS = 70 MPH	DS = 70 MPH	DS = 70 MPH	DS = 70 MPH

NOTES:
 1.) FOR -L3NB- PROFILE SEE SHEET 52.
 2.) FOR -L3SB- PROFILE SEE SHEET 52.

DENOTES FILL IN WETLAND
 DENOTES TEMPORARY FILL IN WETLAND

NOTE:
 -BEST FIT HORIZONTAL GEOMETRY SHOWN.
 EXISTING GEOMETRY TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -SHOULDERS, SIDE SLOPES, DRAINAGE, ARE TO BE RETAINED UNLESS OTHERWISE INDICATED.

10-JUL-2015 08:56
 IP: P:\P\Projects\30384\1-5405-HYD-PRM-WET_PSH-006-02.dgn
 imarc02b AT CAMARCO

ENLARGEMENT SHEET



PROJECT REFERENCE NO. **L-5405** SHEET NO. **6A**

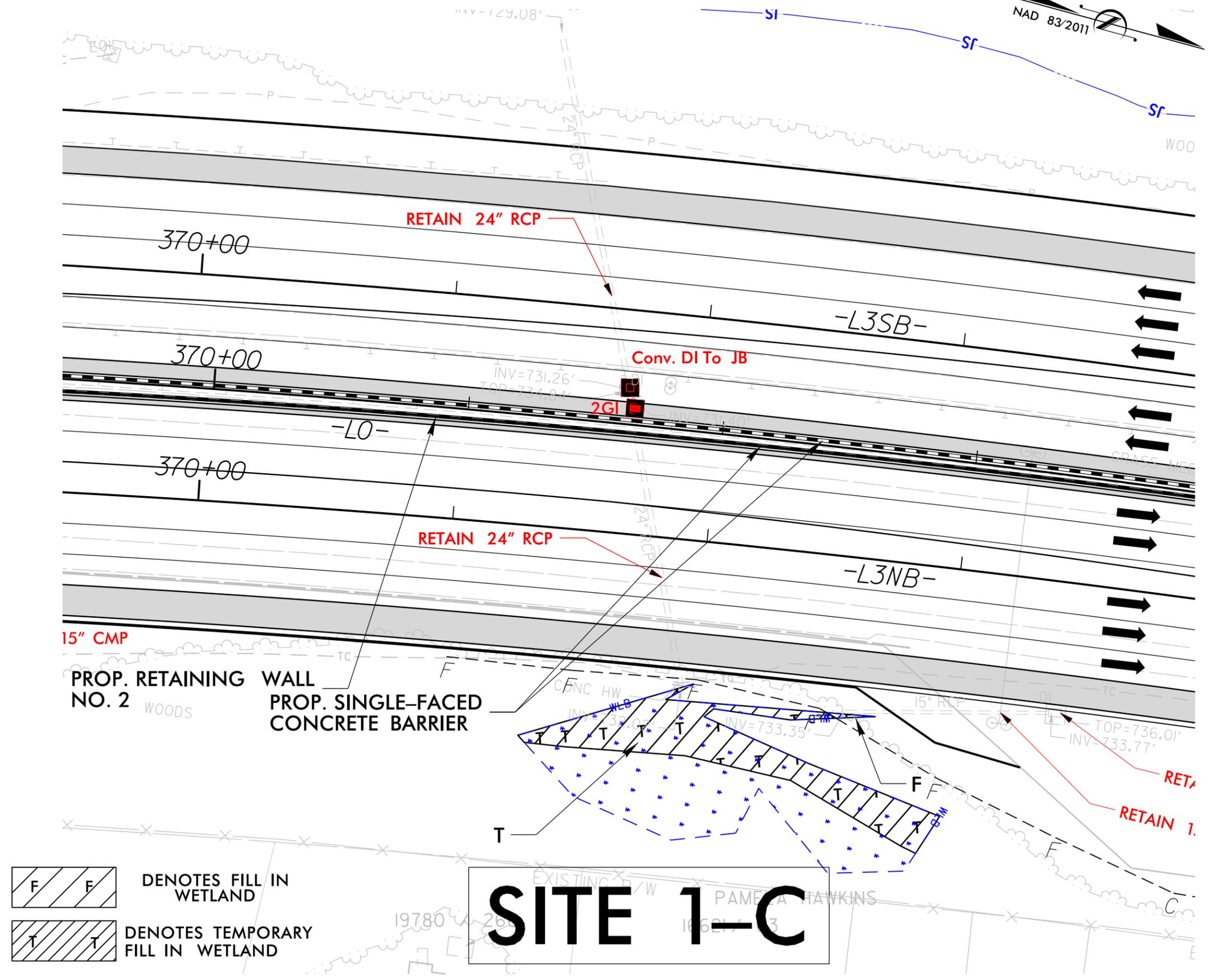
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

sugar creek
construction, LLC

Louis Berger

PERMIT DRAWING SHEET 04 OF 27



DENOTES FILL IN WETLAND
 DENOTES TEMPORARY FILL IN WETLAND

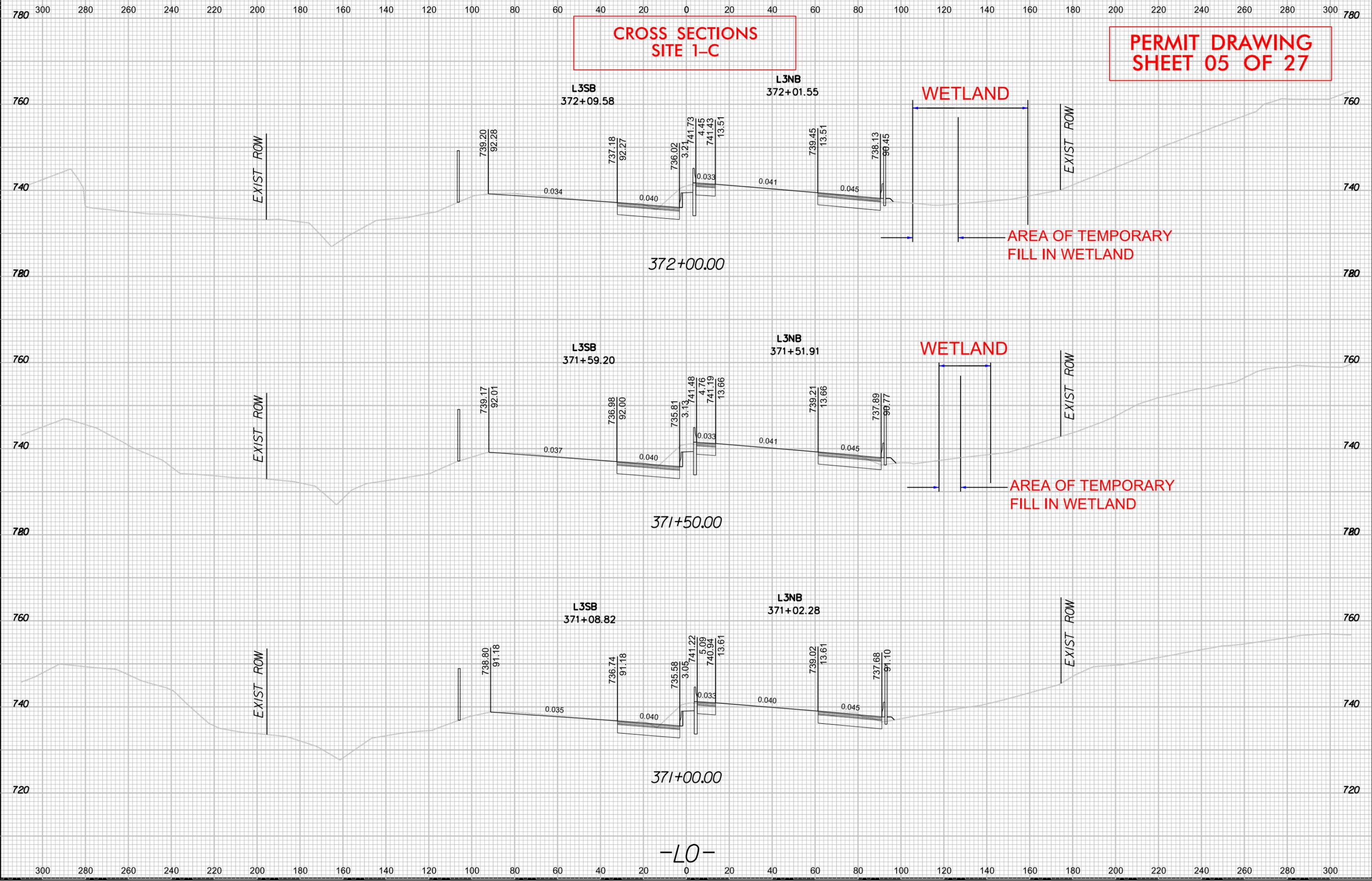
SITE 1-C

10-JUL-2015 01:28 IP: P:\Projects\38384\1-5405-HYD-PRM-WET_PSH_006-03.dgn

8/23/99
10-JUL-2015 00:35
P:\WP\dms30394\1-5405-ROY_XSC-25.dgn
mezar-cla #1 - CAMARCO

**CROSS SECTIONS
SITE 1-C**

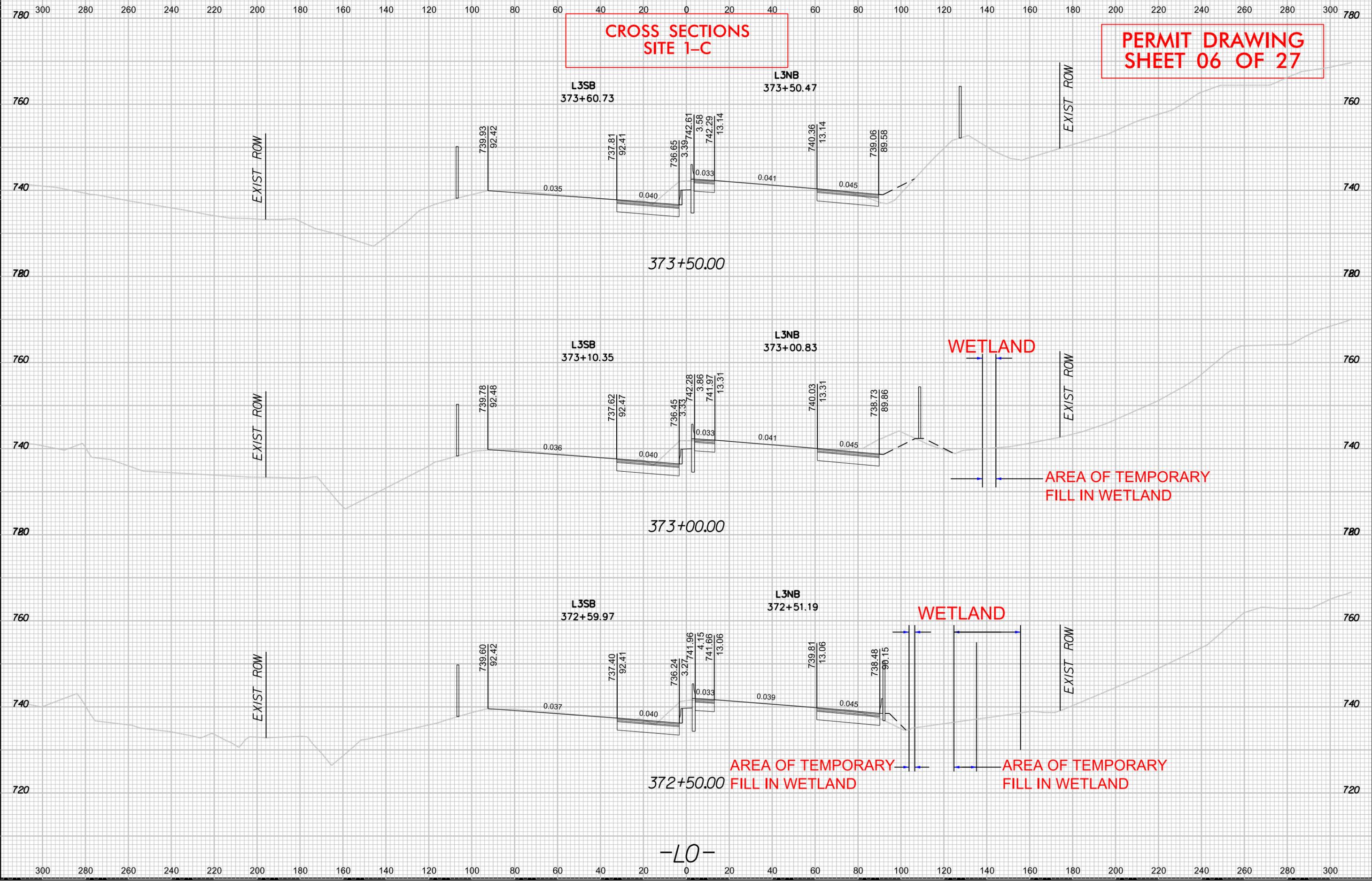
**PERMIT DRAWING
SHEET 05 OF 27**



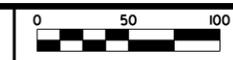
8/23/99
10-JUL-2015 08:35
P:\PWP\dms30394\15405_R0Y_XSC_26.dgn
mcarlos

**CROSS SECTIONS
SITE 1-C**

**PERMIT DRAWING
SHEET 06 OF 27**

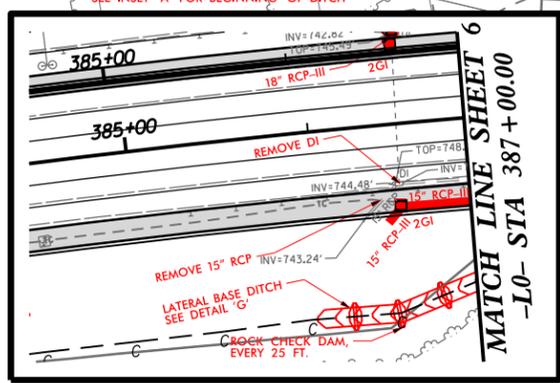
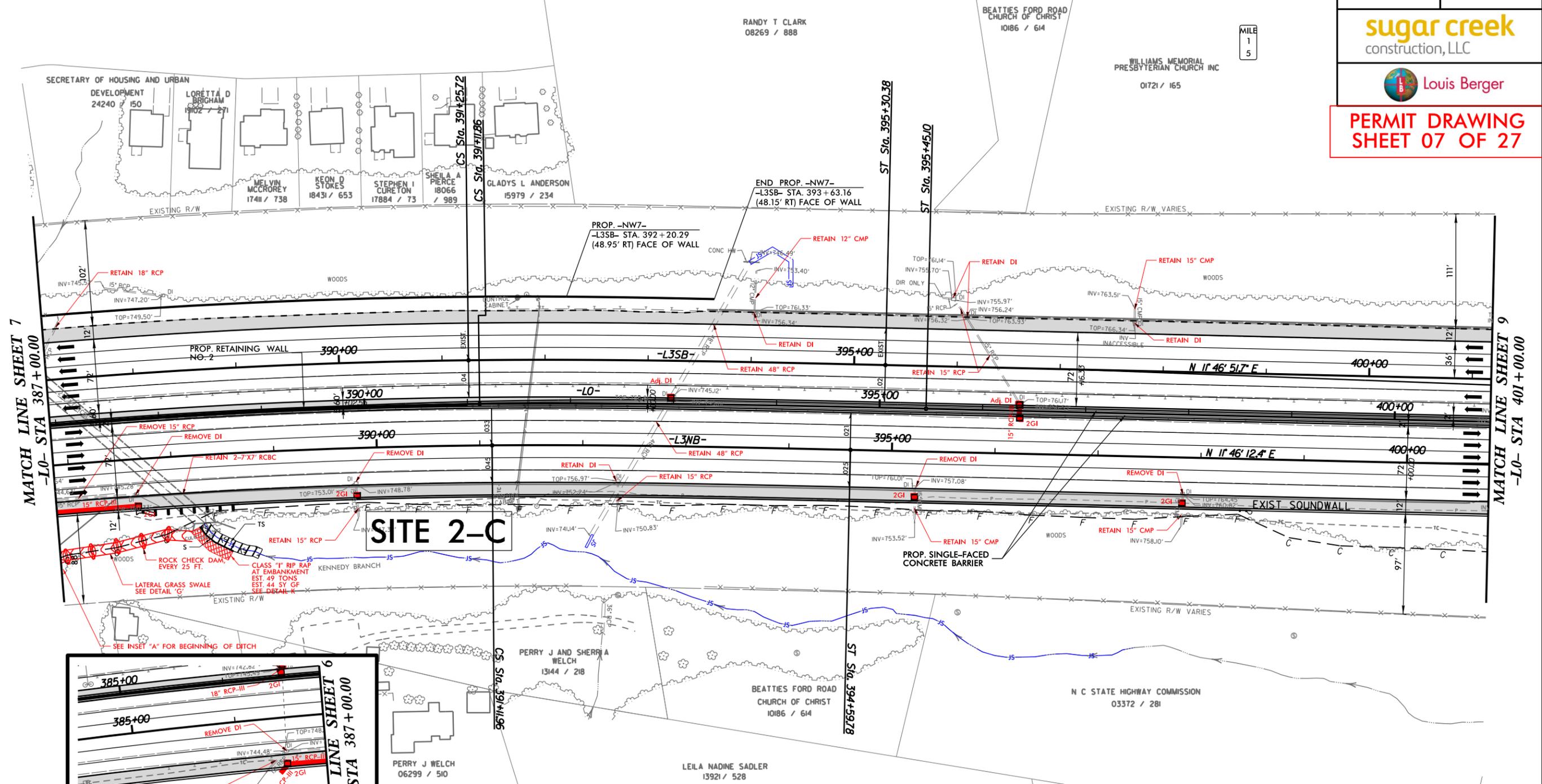


NOTE:
 -BEST FIT HORIZONTAL GEOMETRY SHOWN.
 -EXISTING GEOMETRY TO BE RETAINED
 UNLESS OTHERWISE INDICATED.
 -SHOULDERS, SIDE SLOPES, DRAINAGE, ARE
 TO BE RETAINED UNLESS OTHERWISE
 INDICATED.



MILE
1
5

PROJECT REFERENCE NO. I-5405	SHEET NO. 8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
PERMIT DRAWING SHEET 07 OF 27	



INSET A

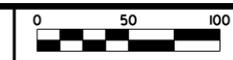
NOTES:
 1.) FOR -L3NB- PROFILE SEE SHEET 54.
 2.) FOR -L3SB- PROFILE SEE SHEET 54.

DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

-L0-		-L3SB-		-L3NB-	
PI Sta 377+98.80	PIs Sta 392+56.29	PI Sta 377+96.83	PIs Sta 392+60.62	PI Sta 378+44.13	PIs Sta 392+27.91
$\Delta = 26' 11'' 10.3''$ (RT)	$\Delta s = 2' 07'' 17.8''$	$\Delta = 26' 45' 07.1''$ (RT)	$\Delta s = 1' 59' 55.4''$	$\Delta = 26' 15' 04.0''$ (RT)	$\Delta s = 1' 46' 06.0''$
$D = 0' 58' 45.9''$	$Ls = 433.24'$	$D = 0' 59' 16.3''$	$Ls = 404.66'$	$D = 1' 01' 00.4''$	$Ls = 347.83'$
$L = 2,673.66'$	$LT = 288.85'$	$L = 2,708.08'$	$LT = 269.79'$	$L = 2,581.78'$	$LT = 231.90'$
$T = 1,360.59'$	$ST = 144.43'$	$T = 1,379.19'$	$ST = 134.90'$	$T = 1,313.96'$	$ST = 115.95'$
$R = 5,850.00'$		$R = 5,800.00'$		$R = 5,635.00'$	
		$e = 3.60\%$		$e = 3.30\%$	
		$RO = 300'$		$RO = 300'$	
		$DS = 70$ MPH		$DS = 70$ MPH	

02-SEP-2015 15:09
 J:\P\Projects\2015\I-5405-HYD-PRM-WET_PSH_008-01.dgn
 imagarico

NOTE:
 -BEST FIT HORIZONTAL GEOMETRY SHOWN.
 -EXISTING GEOMETRY TO BE RETAINED
 UNLESS OTHERWISE INDICATED.
 -SHOULDERS, SIDE SLOPES, DRAINAGE, ARE
 TO BE RETAINED UNLESS OTHERWISE
 INDICATED.

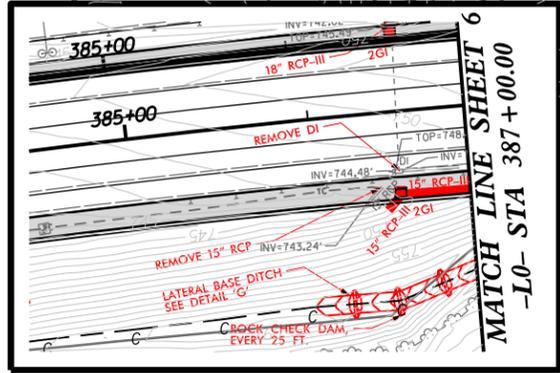
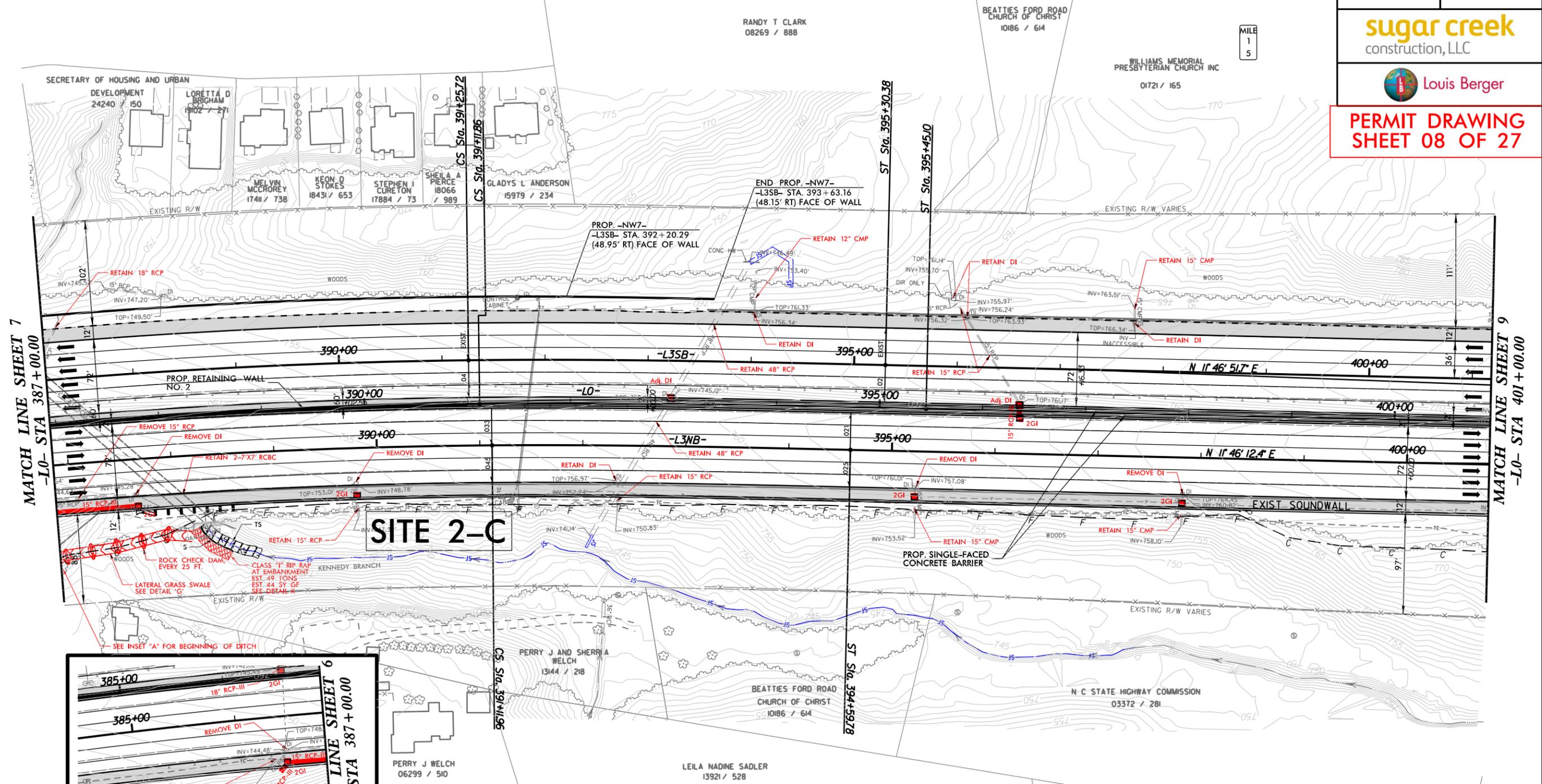


MILE
1
5

PROJECT REFERENCE NO. I-5405	SHEET NO. 8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



PERMIT DRAWING
 SHEET 08 OF 27



INSET A

NOTES:
 1.) FOR -L3NB- PROFILE SEE SHEET 54.
 2.) FOR -L3SB- PROFILE SEE SHEET 54.

DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

-L0-		-L3SB-		-L3NB-	
PI Sta 377+98.80	PIs Sta 392+56.29	PI Sta 377+96.83	PIs Sta 392+60.62	PI Sta 378+44.13	PIs Sta 392+27.91
$\Delta = 26' 11'' 10.3''$ (RT)	$\Theta s = 2' 07'' 17.8''$	$\Delta = 26' 45' 07.1''$ (RT)	$\Theta s = 1' 59' 55.4''$	$\Delta = 26' 15' 04.0''$ (RT)	$\Theta s = 1' 46' 06.0''$
$D = 0' 58' 45.9''$	$Ls = 433.24'$	$D = 0' 59' 16.3''$	$Ls = 404.66'$	$D = 1' 01' 00.4''$	$Ls = 347.83'$
$L = 2,673.66'$	$LT = 288.85'$	$L = 2,708.08'$	$LT = 269.79'$	$L = 2,581.78'$	$LT = 231.90'$
$T = 1,360.59'$	$ST = 144.43'$	$T = 1,379.19'$	$ST = 134.90'$	$T = 1,313.96'$	$ST = 115.95'$
$R = 5,850.00'$		$R = 5,800.00'$		$R = 5,635.00'$	
		$e = 3.30\%$		$e = 3.30\%$	
		$RO = 300'$		$RO = 300'$	
		$DS = 70$ MPH		$DS = 70$ MPH	

02-SEP-2015 15:14
 I:\P\Projects\2015\I-5405-HYD-PRM-WET_PSH-008-02.dgn
 imargarita

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

sugar creek
construction, LLC

Louis Berger

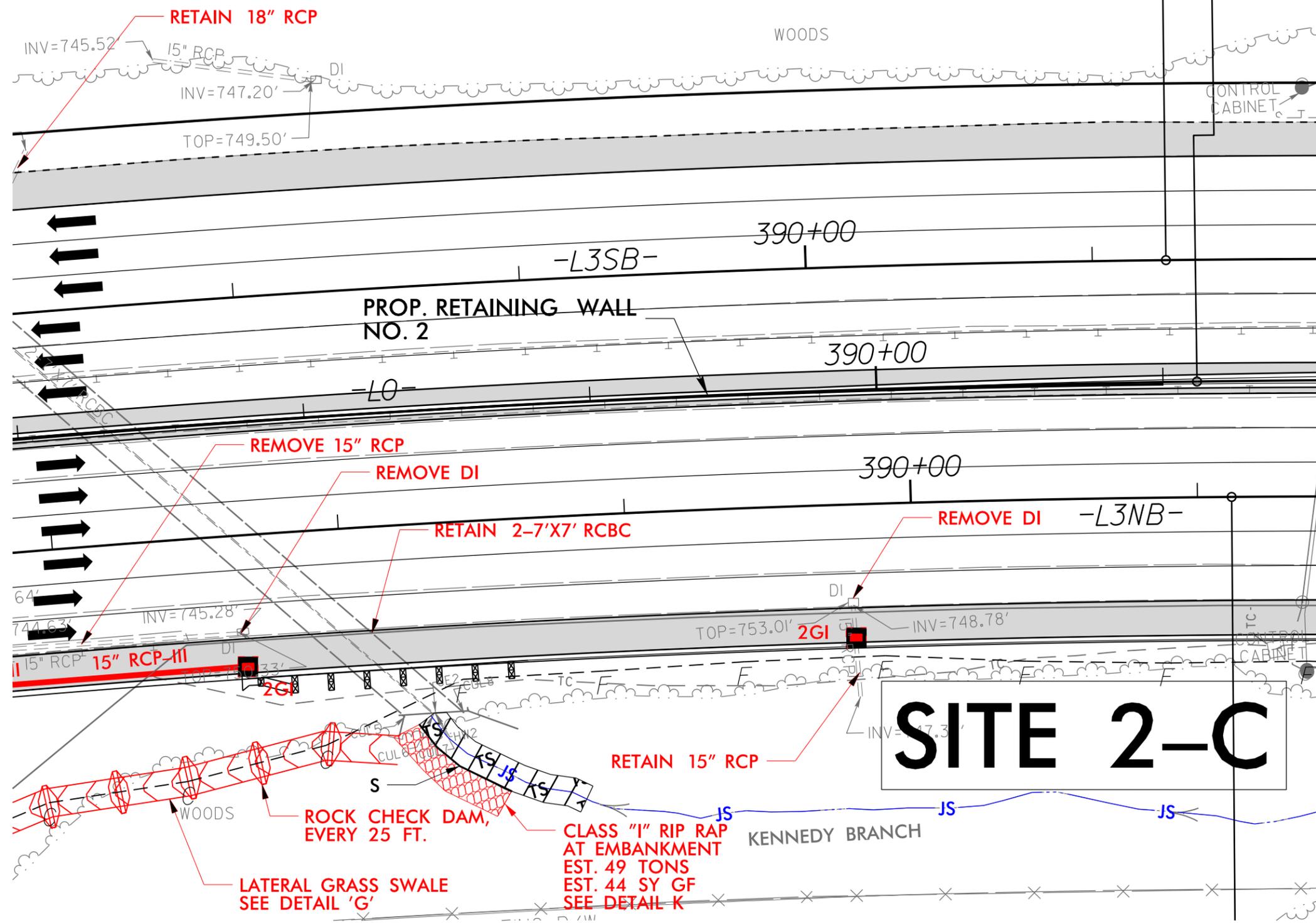
PERMIT DRAWING
SHEET 09 OF 27



DENOTES IMPACTS IN SURFACE WATER

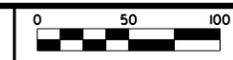


DENOTES TEMPORARY IMPACTS IN SURFACE WATER



SITE 2-C

02-SEP-2015 15:47
I:\P\Projects\2015\I-5405-HYD-PHM-WET_PSH-008-03.dgn
L. CAMARCO



PROJECT REFERENCE NO. I-5405	SHEET NO. 9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

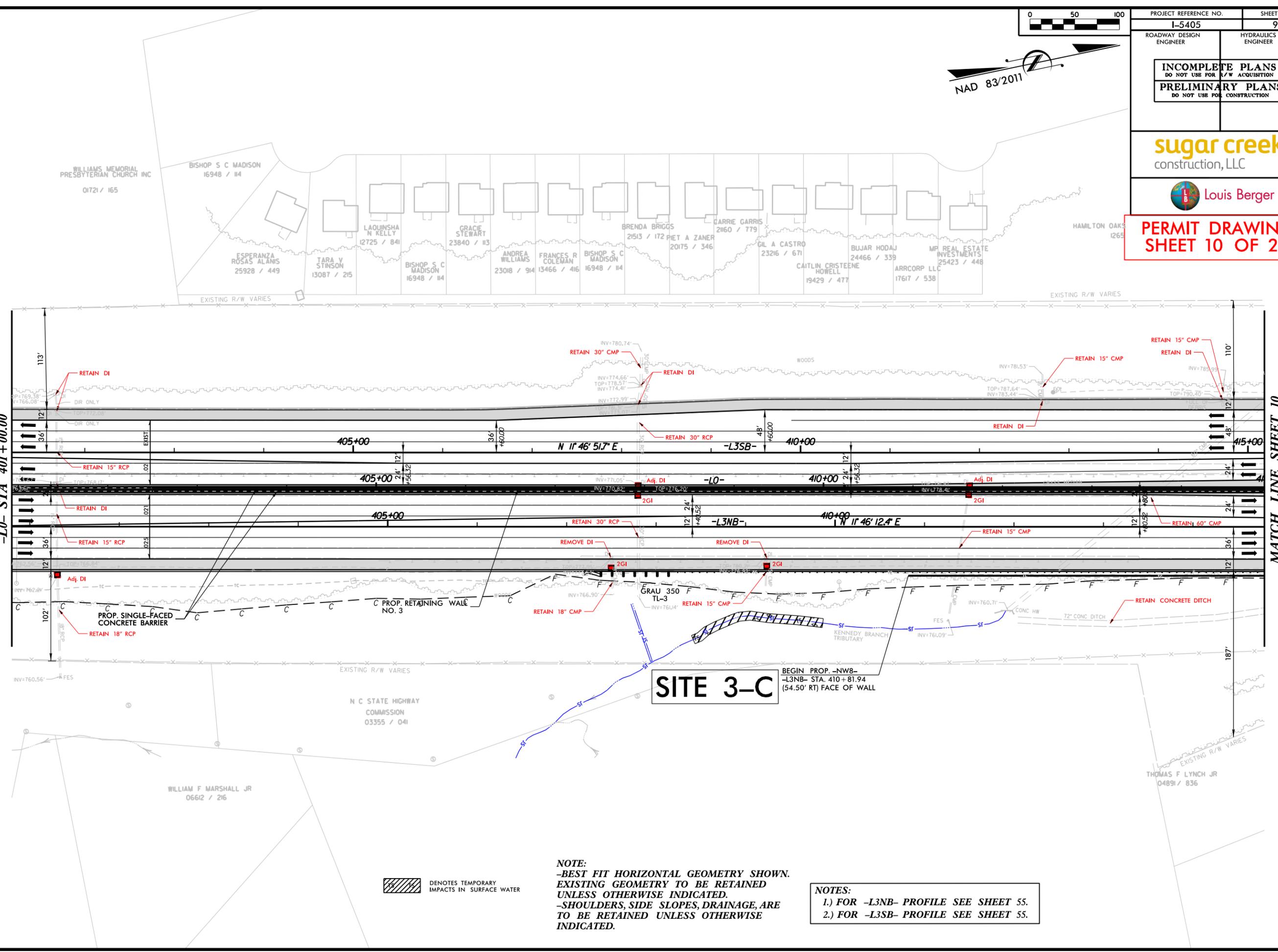
sugar creek
construction, LLC



PERMIT DRAWING
SHEET 10 OF 27

MATCH LINE SHEET 8
-L0- STA 401+00.00

MATCH LINE SHEET 10
-L0- STA 415+00.00



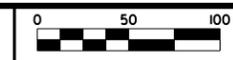
SITE 3-C
BEGIN PROP. -NW8-
-L3NB- STA. 410+81.94
(54.50' RT) FACE OF WALL

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NOTE:
-BEST FIT HORIZONTAL GEOMETRY SHOWN.
EXISTING GEOMETRY TO BE RETAINED
UNLESS OTHERWISE INDICATED.
-SHOULDERS, SIDE SLOPES, DRAINAGE, ARE
TO BE RETAINED UNLESS OTHERWISE
INDICATED.

NOTES:
1.) FOR -L3NB- PROFILE SEE SHEET 55.
2.) FOR -L3SB- PROFILE SEE SHEET 55.

09-JUL-2015 18:56
IP: P:\Pfdms\296333\I-5405-HYD-PRM-WET_PSH-009-01.dgn
mfluenteville



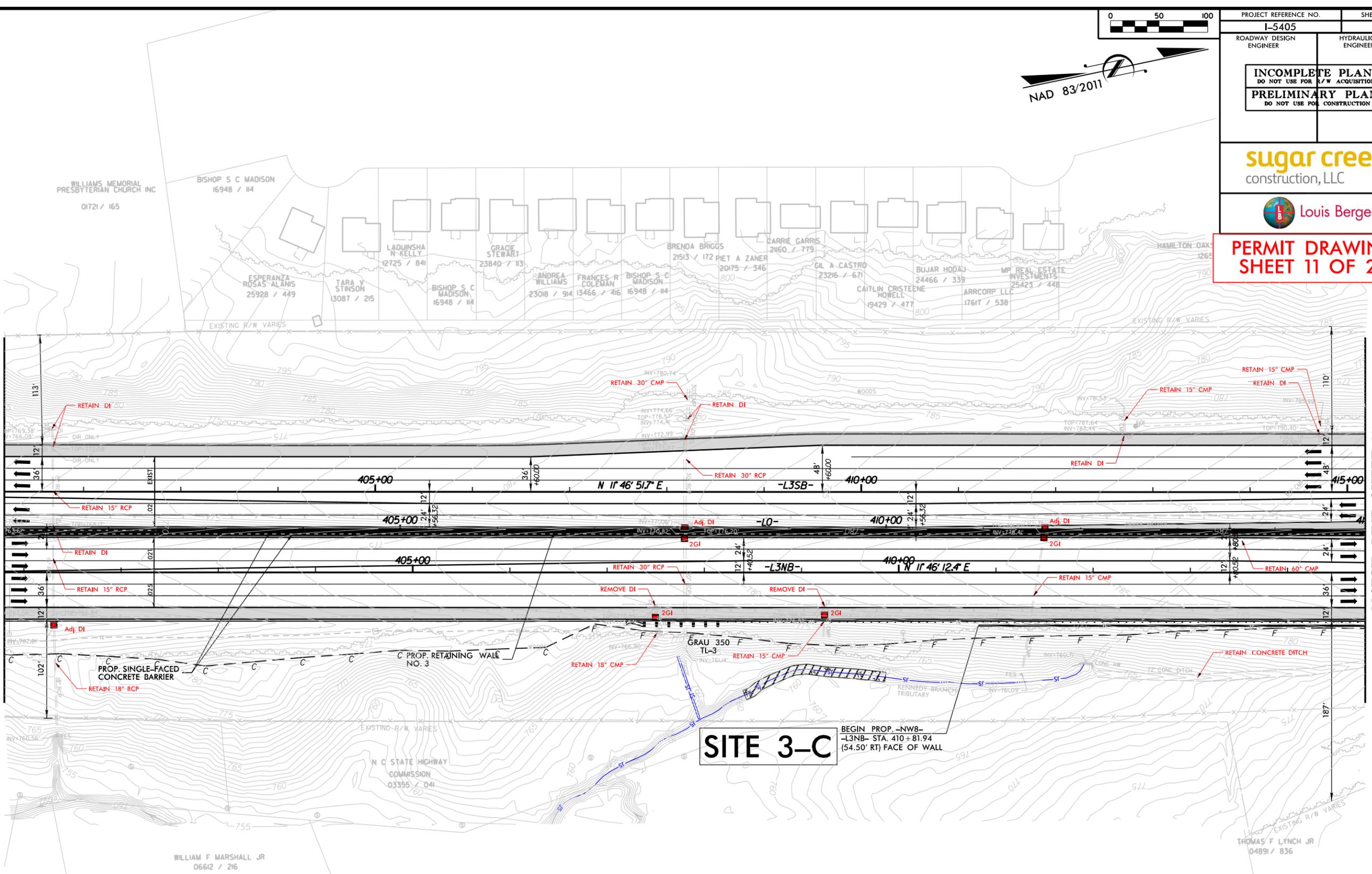
PROJECT REFERENCE NO. I-5405	SHEET NO. 9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	




PERMIT DRAWING
SHEET 11 OF 27

MATCH LINE SHEET 8
 -L0- STA 401+00.00

MATCH LINE SHEET 10
 -L0- STA 415+00.00



SITE 3-C
 BEGIN PROP. -NW8-
 -L3NB- STA. 410+81.94
 (54.50' RT) FACE OF WALL

 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NOTE:
 -BEST FIT HORIZONTAL GEOMETRY SHOWN.
 -EXISTING GEOMETRY TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -SHOULDERS, SIDE SLOPES, DRAINAGE, ARE TO BE RETAINED UNLESS OTHERWISE INDICATED.

NOTES:
 1.) FOR -L3NB- PROFILE SEE SHEET 55.
 2.) FOR -L3SB- PROFILE SEE SHEET 55.

09-JUL-2015 18:58
 IP: P:\P\dms2\96333\I-5405-HYD-PRM-WET_PSH-009-02.dgn
 mfluenteville

ENLARGEMENT SHEET

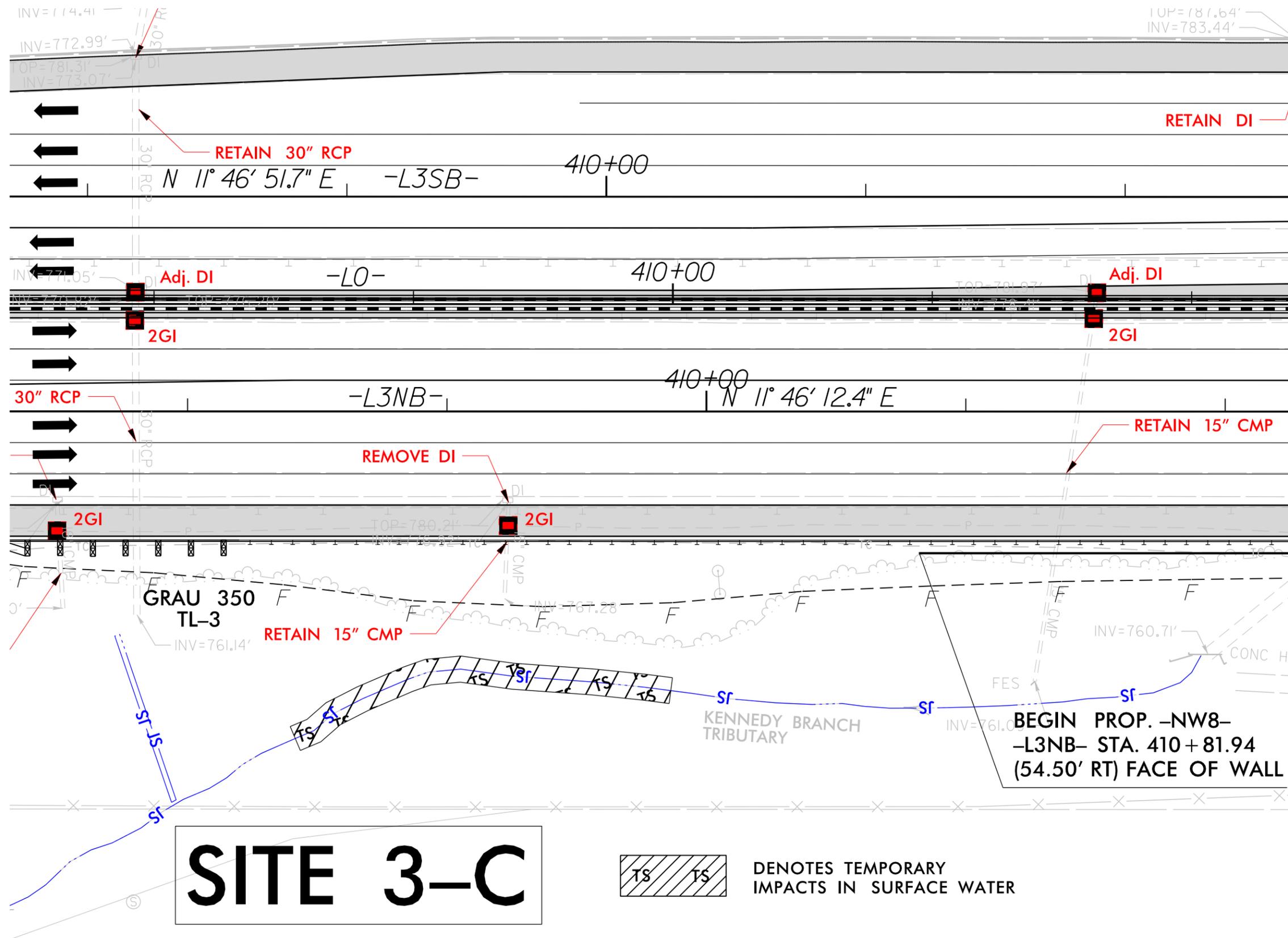


PROJECT REFERENCE NO. I-5405	SHEET NO. 9A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

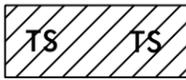
sugar creek
construction, LLC



PERMIT DRAWING SHEET 12 OF 27



SITE 3-C



DENOTES TEMPORARY IMPACTS IN SURFACE WATER

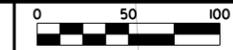
09-JUL-2015 19:00
 IP: P:\Pfdms\26333\I-5405-HYD-PRM-WET_PSH-009-03.dgn
 mluenteville

SB LAND LLC
25647 / 133

JOYCE MCKINNEY R/T KELLER
19764 / 312

JOHN W DELLINGER
12529 / 524

JOHN W DELLINGER
12529 / 524



PROJECT REFERENCE NO. I-5405 SHEET NO. 31

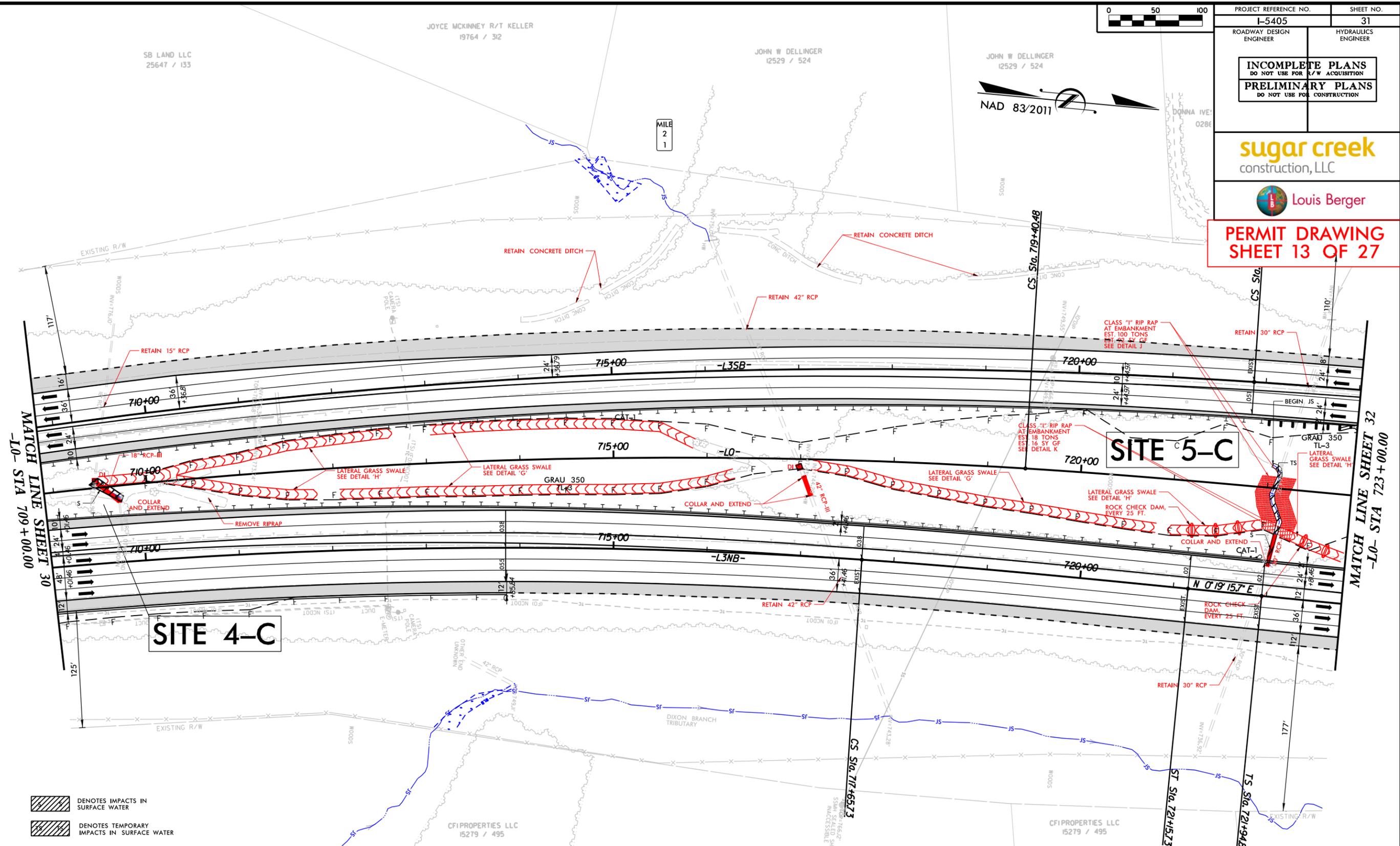
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

sugar creek
construction, LLC

Louis Berger

PERMIT DRAWING
SHEET 13 OF 27



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

NOTE:
-BEST FIT HORIZONTAL GEOMETRY SHOWN.
EXISTING GEOMETRY TO BE RETAINED
UNLESS OTHERWISE INDICATED.
-SHOULDERS, SIDE SLOPES, DRAINAGE, ARE
TO BE RETAINED UNLESS OTHERWISE
INDICATED.

- NOTES:**
- 1.) FOR -L3NB- PROFILE SEE SHEET 77.
 - 2.) FOR -L3SB- PROFILE SEE SHEET 77.

-L0-		-L3SB-		-L3NB-		
PI Sta 708+25.24	PIs Sta 720+65.49	PI Sta 709+94.59	PIs Sta 716.16, 722.29, 730.11	PI Sta 707+26.21	PIs Sta 718+82.41	PIs Sta 724+48.44
$\Delta = 21^{\circ} 33' 27.2''$ (RT)	$\Theta_s = 1^{\circ} 47' 25.8''$	$\Delta = 21^{\circ} 57' 54.1''$ (RT)	$\Theta_s = 262^{\circ} 42.7''$	$\Delta = 21^{\circ} 31' 42.4''$ (RT)	$\Theta_s = 1^{\circ} 47' 25.8''$	$\Theta_s = 1^{\circ} 54' 17.8''$
$D = 0^{\circ} 57' 17.7''$	$L_s = 375.00'$	$D = 0^{\circ} 54' 34.0''$	$L_s L_s = 317397.81'$	$D = 1^{\circ} 0' 23.3''$	$L_s = 350.00'$	$L_s = 380.35'$
$L = 2,257.50'$	$LT = 250.00'$	$L = 2,415.18'$	$LTLF = 2112888'$	$L = 2,104.16'$	$LT = 233.35'$	$LT = 253.58'$
$T = 1,142.26'$	$ST = 125.00'$	$T = 1,222.60'$	$STSF = 1030894'$	$T = 1,064.63'$	$ST = 116.68'$	$ST = 126.80'$
$R = 6,000.00'$		$R = 6,300.00'$		$R = 5,600.00'$		
		$e = 3.40\%$		$e = 3.80\%$		
		$RO = 300'$		$RO = 300'$		
		$DS = 70$ MPH		$DS = 70$ MPH		

30-AUG-2015 15:43
 TP_P:\P\fdms2\63331-5405-HYD_PRM_WET_PSH_031-01.dgn
 imargarite

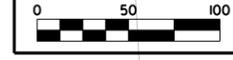
E & J OF
HUNTSVILLE LLC
22500 / 255

SB LAND LLC
25647 / 133

JOYCE MCKINNEY R/T KELLER
19764 / 312

JOHN W DELLINGER
12529 / 524

JOHN W DELLINGER
12529 / 524



PROJECT REFERENCE NO. I-5405 SHEET NO. 31

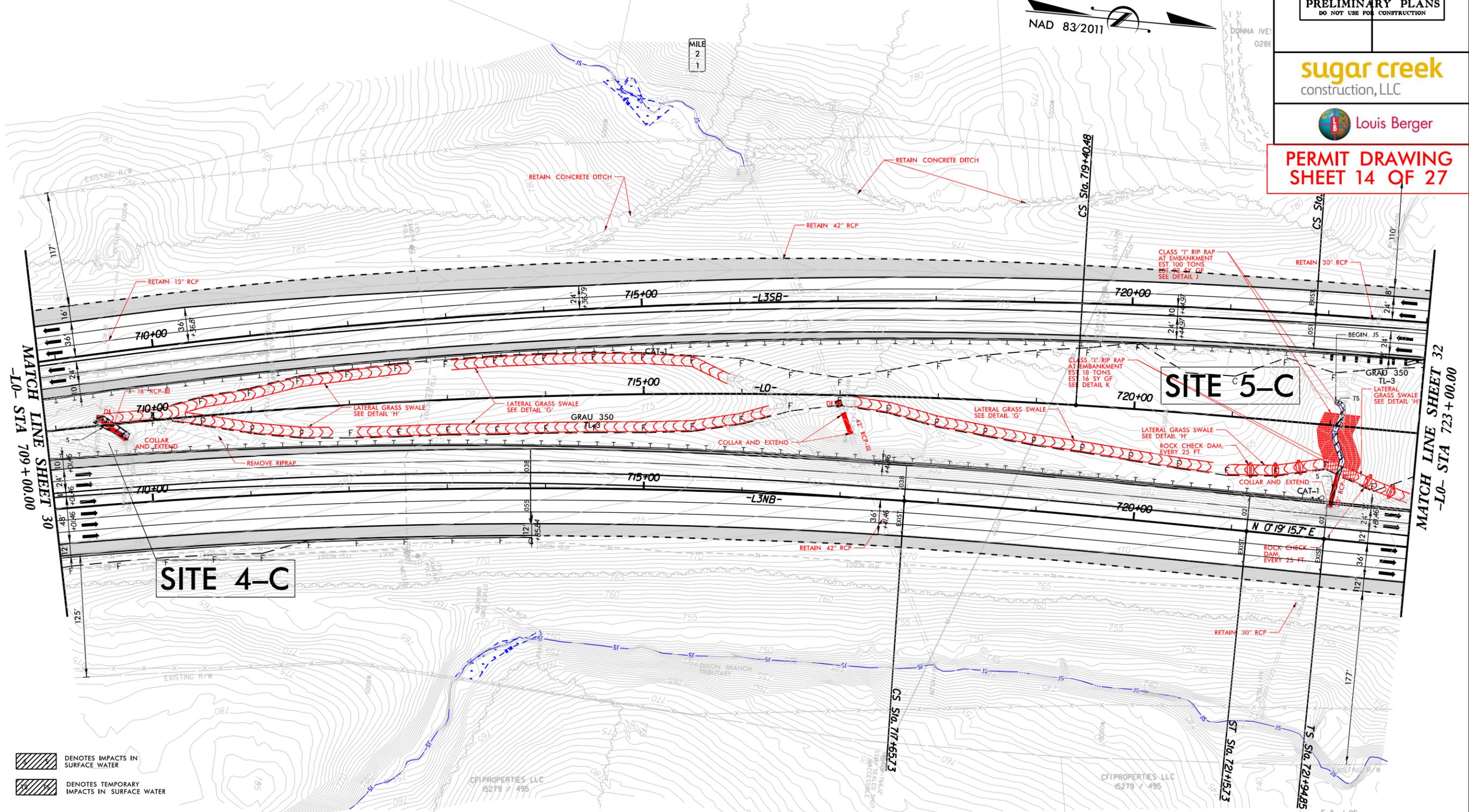
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

sugar creek
construction, LLC

Louis Berger

PERMIT DRAWING
SHEET 14 OF 27



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

NOTE:
-BEST FIT HORIZONTAL GEOMETRY SHOWN.
EXISTING GEOMETRY TO BE RETAINED
UNLESS OTHERWISE INDICATED.
-SHOULDERS, SIDE SLOPES, DRAINAGE, ARE
TO BE RETAINED UNLESS OTHERWISE
INDICATED.

NOTES:
1.) FOR -L3NB- PROFILE SEE SHEET 77.
2.) FOR -L3SB- PROFILE SEE SHEET 77.

-L0-		-L3SB-		-L3NB-		
PI Sta 708+25.24	PIs Sta 720+65.49	PI Sta 709+94.59	PIs Sta 716+22.39, 716.11	PI Sta 707+26.21	PIs Sta 718+82.41	PIs Sta 724+48.44
$\Delta = 21^{\circ} 33' 27.2''$ (RT)	$\Theta_s = 1^{\circ} 47' 25.8''$	$\Delta = 21^{\circ} 57' 54.1''$ (RT)	$\Theta_s = 1^{\circ} 26' 42.7''$	$\Delta = 21^{\circ} 31' 42.4''$ (RT)	$\Theta_s = 1^{\circ} 47' 25.8''$	$\Theta_s = 1^{\circ} 54' 17.8''$
$D = 0^{\circ} 57' 17.7''$	$L_s = 375.00'$	$D = 0^{\circ} 54' 34.0''$	$L_s L_s = 317.38781'$	$D = 1^{\circ} 01' 23.3''$	$L_s = 350.00'$	$L_s = 380.35'$
$L = 2,257.50'$	$LT = 250.00'$	$L = 2,415.18'$	$LTLF = 211,288.8'$	$L = 2,104.16'$	$LT = 233.35'$	$LT = 253.58'$
$T = 1,142.26'$	$ST = 125.0'$	$T = 1,222.60'$	$STSF = 103,089.4'$	$T = 1,064.63'$	$ST = 116.68'$	$ST = 126.80'$
$R = 6,000.00'$		$R = 6,300.00'$		$R = 5,600.00'$		
		$e = 3.40\%$		$e = 3.80\%$		
		$RO = 300'$		$RO = 300'$		
		$DS = 70$ MPH		$DS = 70$ MPH		

30-AUG-2015 15:45
 TP_P:\P\fdms2\6331\I-5405-HYD_PRM_WET_PSH_031-02.dgn
 imargarita

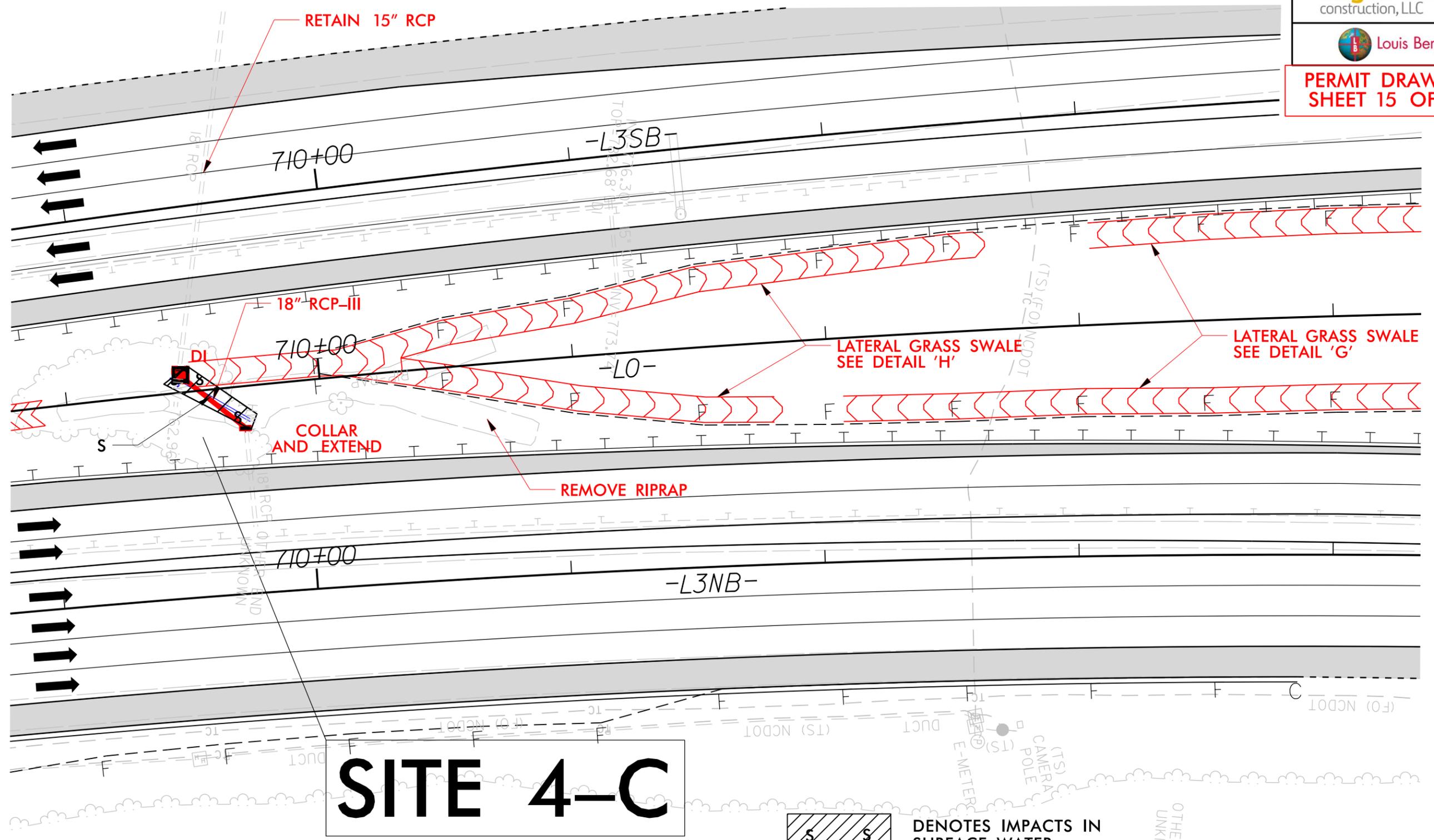
E & J OF
HUNTSVILLE LLC
22500 / 255

INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

sugar creek construction, LLC

Louis Berger

PERMIT DRAWING SHEET 15 OF 27



SITE 4-C

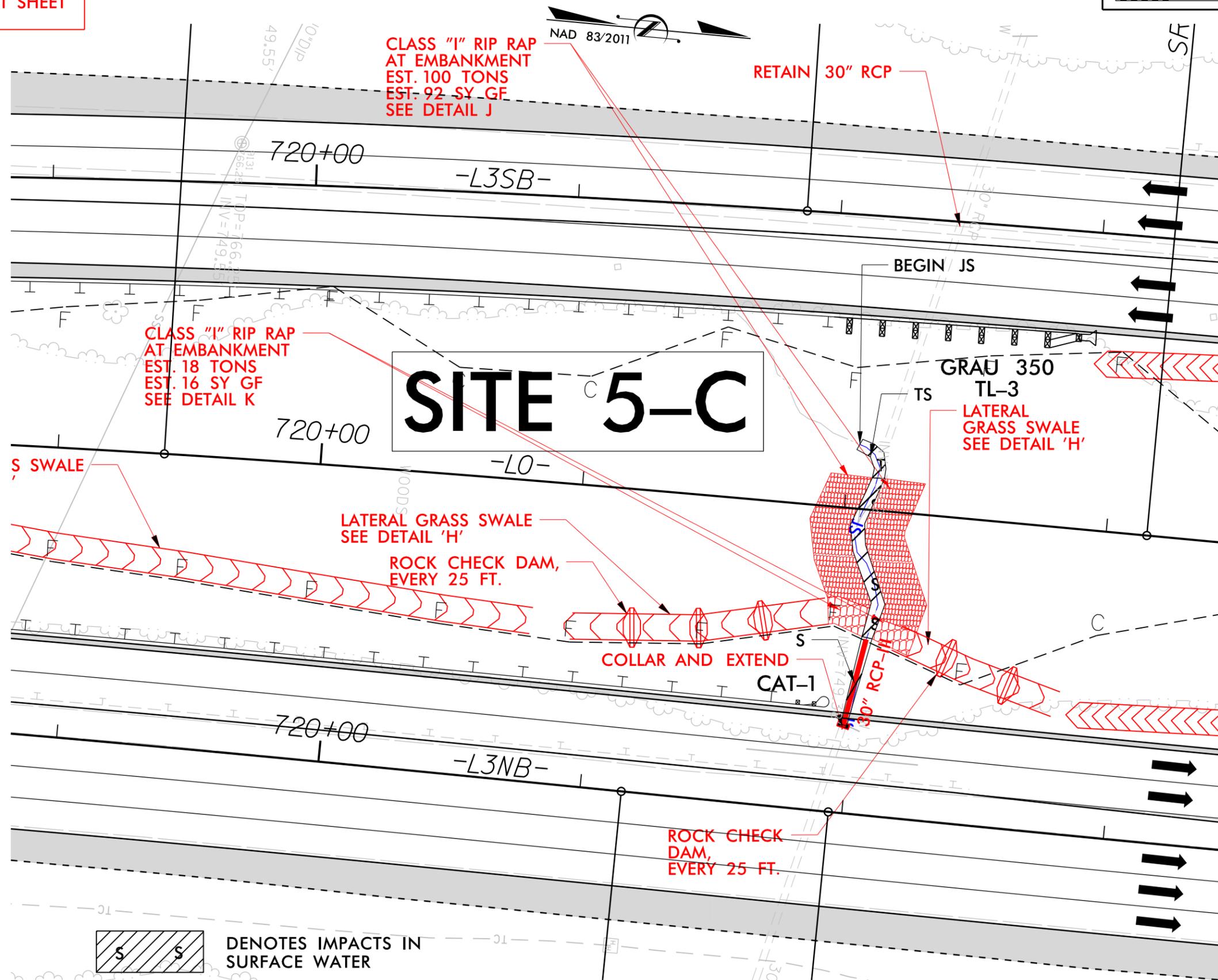
30-AUG-2015 15:16
IP: P:\Projects\2015\5405\HYD_PRM_WET_PSH_031-03.dgn
imager.ctb
AT CAMARCO

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

sugar creek
construction, LLC

Louis Berger

PERMIT DRAWING
SHEET 16 OF 27



DENOTES IMPACTS IN SURFACE WATER



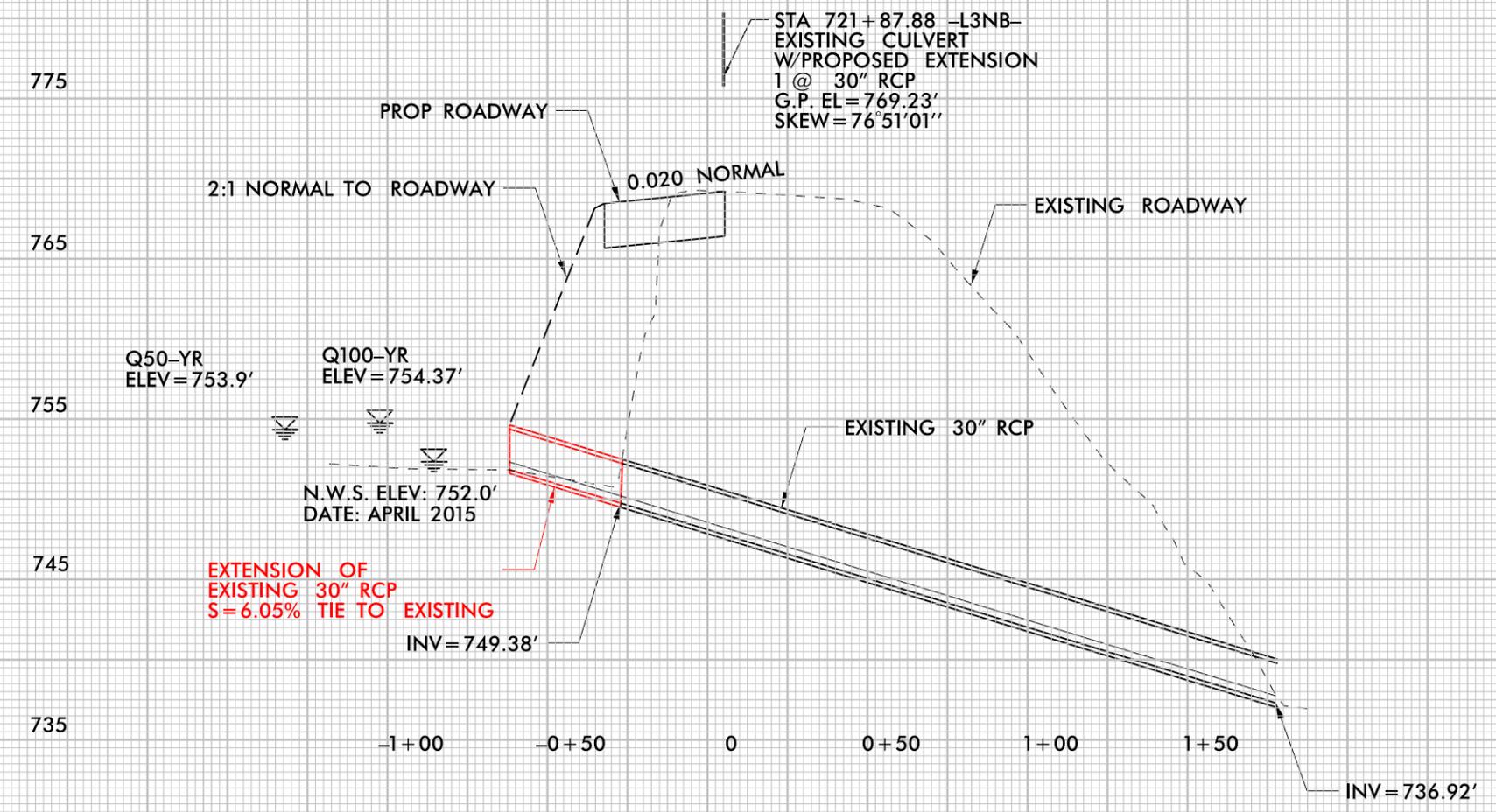
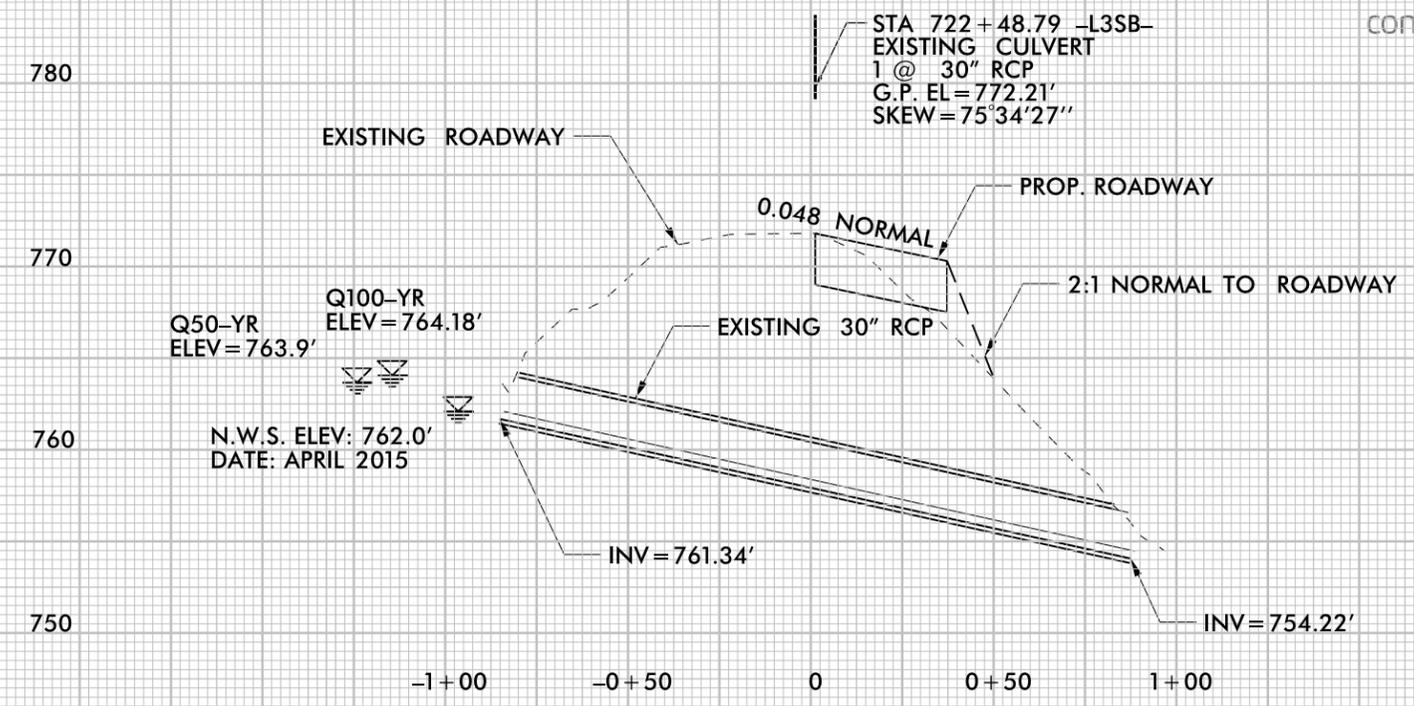
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

5/14/99

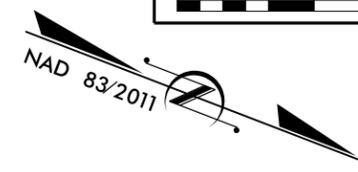
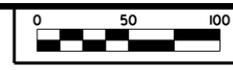
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

SITE 5-C

PERMIT DRAWING SHEET 17 OF 27



P:\15-2015\18338-1-5405-HYD-PRM-WET_PFL_01.dgn
11/11/2015 10:33 AM
HYDRAULIC

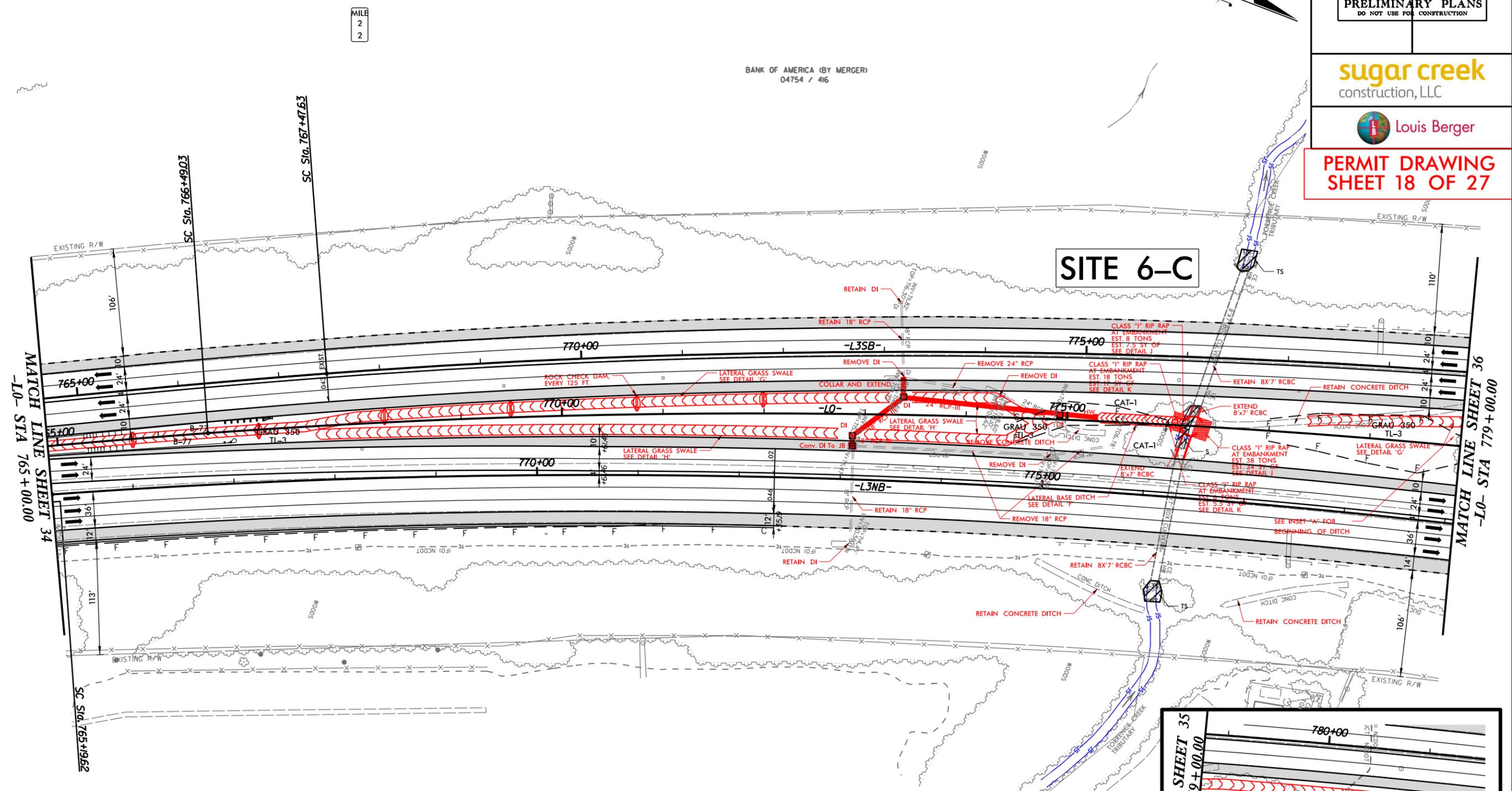


PROJECT REFERENCE NO. I-5405	SHEET NO. 35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

sugar creek
construction, LLC



PERMIT DRAWING
SHEET 18 OF 27



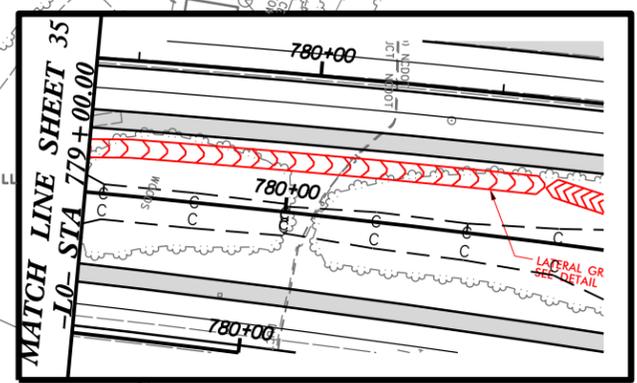
MATCH LINE SHEET 34
-10- STA 765+00.00

MATCH LINE SHEET 36
-10- STA 779+00.00

NOTE:
-BEST FIT HORIZONTAL GEOMETRY SHOWN.
EXISTING GEOMETRY TO BE RETAINED
UNLESS OTHERWISE INDICATED.
-SHOULDERS, SIDE SLOPES, DRAINAGE, ARE
TO BE RETAINED UNLESS OTHERWISE
INDICATED.

NOTES:
1.) FOR -L3NB- PROFILE SEE SHEET 81.
2.) FOR -L3SB- PROFILE SEE SHEET 81.

-L0-		-L3SB-		-L3NB-	
Pis Sta 765+29.04	PI Sta 777+61.08	Pis Sta 766+30.49	PI Sta 779+21.60	Pis Sta 775+90.68	PI Sta 775+90.68
$\Theta_s = 1' 21' 57.5''$	$\Delta = 16' 45' 28.1''$ (RT)	$\Theta_s = 1' 18' 27.0''$	$\Delta = 17' 20' 15.4''$ (RT)	$\Delta = 16' 15' 17.3''$ (RT)	
Ls = 360.00'	D = 0' 45' 32.0"	Ls = 351.43'	D = 0' 44' 38.8"	D = 0' 45' 50.2"	
LT = 240.0'	L = 2,208.21'	LT = 234.29'	L = 2,330.01'	L = 2,127.75'	
ST = 120.0'	T = 1,112.05'	ST = 117.5'	T = 1,173.98'	T = 1,071.07'	
	R = 7,550.00'		R = 7,700.00'	R = 7,500.00'	
			e = 2.80%	e = 2.10%	
			RO = 300'	RO = 300'	
			DS = 70 MPH	DS = 70 MPH	



INSET A

DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

KEFFER PROPERTIES LP
09973 / 922

01-SEP-2015 19:05
IP: P:\P\pdm\296333\1-5405-HYD-PRM-WET_PSH_035-01.dgn
imgarc@b

INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

sugar creek construction, LLC

Louis Berger

PERMIT DRAWING SHEET 20 OF 27

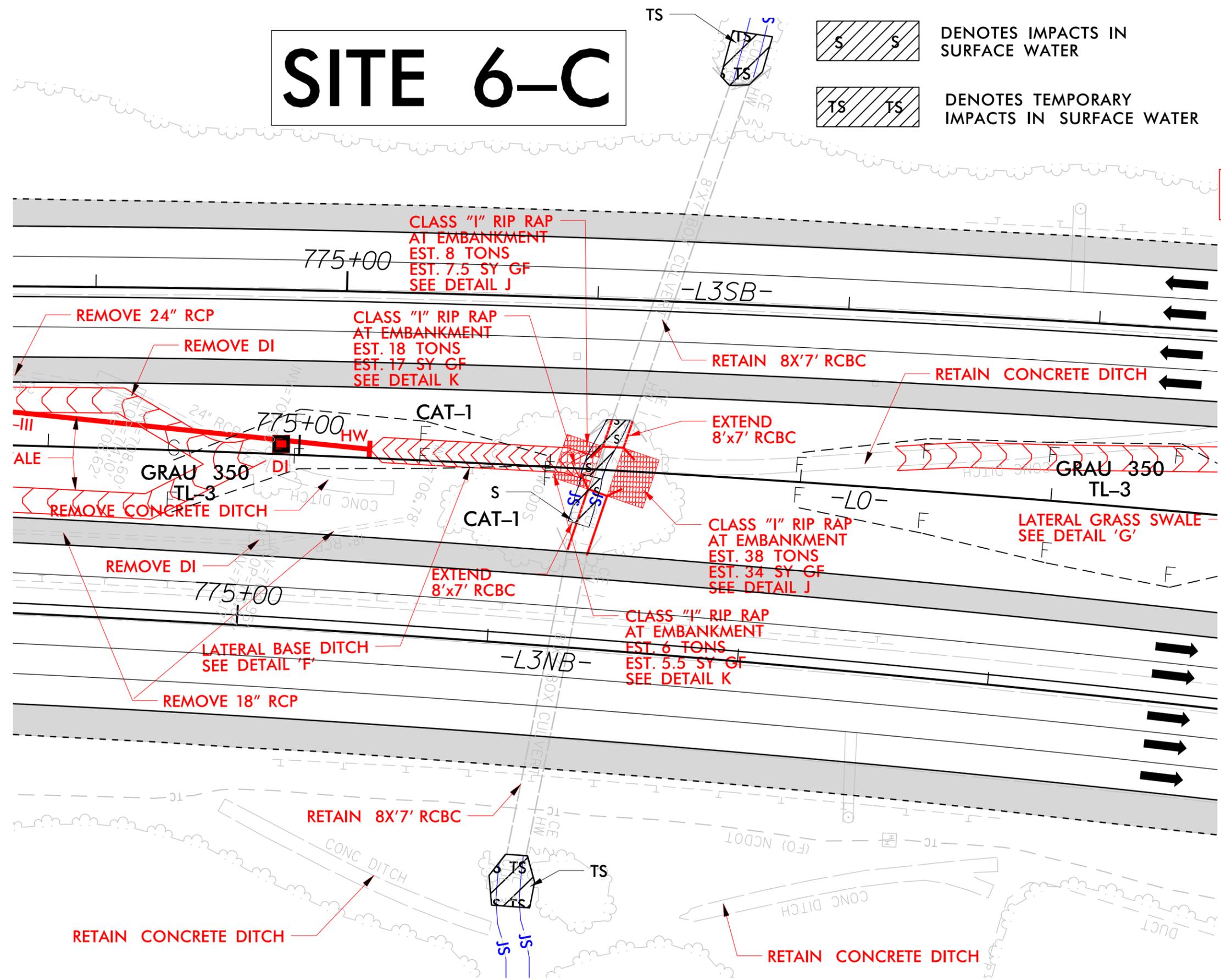
SITE 6-C



DENOTES IMPACTS IN SURFACE WATER



DENOTES TEMPORARY IMPACTS IN SURFACE WATER



30-AUG-2015 15:24 IP: P:\P\fdms2\633\1-5405-HYD-PRM-WET_PSH-035-03.dgn imager.ctb AT CAMARCO

NOTES:
 1.) FOR -L3NB- PROFILE SEE SHEET 94.
 2.) FOR -L3SB- PROFILE SEE SHEET 94.

NOTE:
 -BEST FIT HORIZONTAL GEOMETRY SHOWN.
 EXISTING GEOMETRY TO BE RETAINED
 UNLESS OTHERWISE INDICATED.
 -SHOULDERS, SIDE SLOPES, DRAINAGE, ARE
 TO BE RETAINED UNLESS OTHERWISE
 INDICATED.

DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

0 50 100

PROJECT REFERENCE NO. SHEET NO.
 I-5405 48

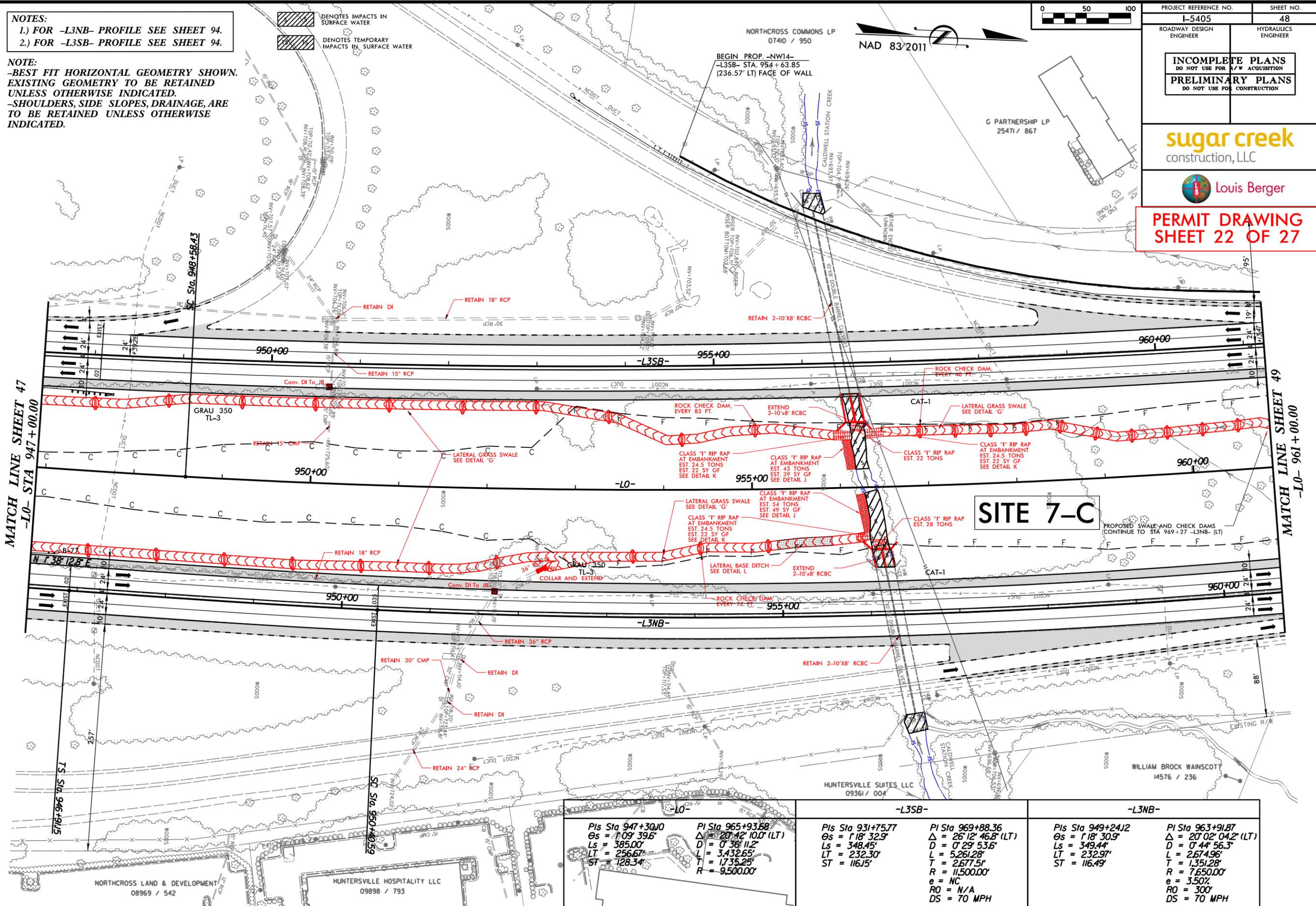
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

INCOMPLETE PLANS
 DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

sugar creek
 construction, LLC

Louis Berger

PERMIT DRAWING
SHEET 22 OF 27



MATCH LINE SHEET 47
 -L0- STA 947+00.00

MATCH LINE SHEET 49
 -L0- 961+00.00

SITE 7-C

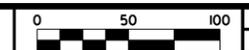
-L0-		-L3SB-		-L3NB-	
Pls Sta 947+30.10	PI Sta 965+93.68	Pls Sta 931+75.77	PI Sta 969+88.36	Pls Sta 949+24.12	PI Sta 963+91.87
Os = 1'09' 39.6"	Δ = 20' 42' 10.0" (LT)	Os = 1'18' 32.9"	Δ = 26' 12' 46.8" (LT)	Os = 1'18' 30.9"	Δ = 20' 02' 04.2" (LT)
Ls = 385.00'	D = 0' 38' 11.2"	Ls = 348.45'	D = 0' 29' 53.5"	Ls = 349.44'	D = 0' 44' 56.3"
LT = 256.67'	L = 3,432.65'	LT = 232.30'	L = 5,261.28'	LT = 232.97'	L = 2,674.96'
ST = 128.34'	T = 1,735.25'	ST = 116.15'	T = 2,677.51'	T = 1,351.28'	T = 1,351.28'
	R = 9,500.00'		R = 11,500.00'	R = 7,650.00'	R = 7,650.00'
			e = NC	e = 3.50%	e = 3.50%
			RO = N/A	RO = 300'	RO = 300'
			DS = 70 MPH	DS = 70 MPH	DS = 70 MPH

02-SEP-2015 15:49
 P:\P\F\dm2\26333\I-5405_HYD_PRM_WET_PSH_048-01.dgn
 imager.ctb

NOTES:
 1.) FOR -L3NB- PROFILE SEE SHEET 94.
 2.) FOR -L3SB- PROFILE SEE SHEET 94.

NOTE:
 -BEST FIT HORIZONTAL GEOMETRY SHOWN.
 EXISTING GEOMETRY TO BE RETAINED
 UNLESS OTHERWISE INDICATED.
 -SHOULDERS, SIDE SLOPES, DRAINAGE, ARE
 TO BE RETAINED UNLESS OTHERWISE
 INDICATED.

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



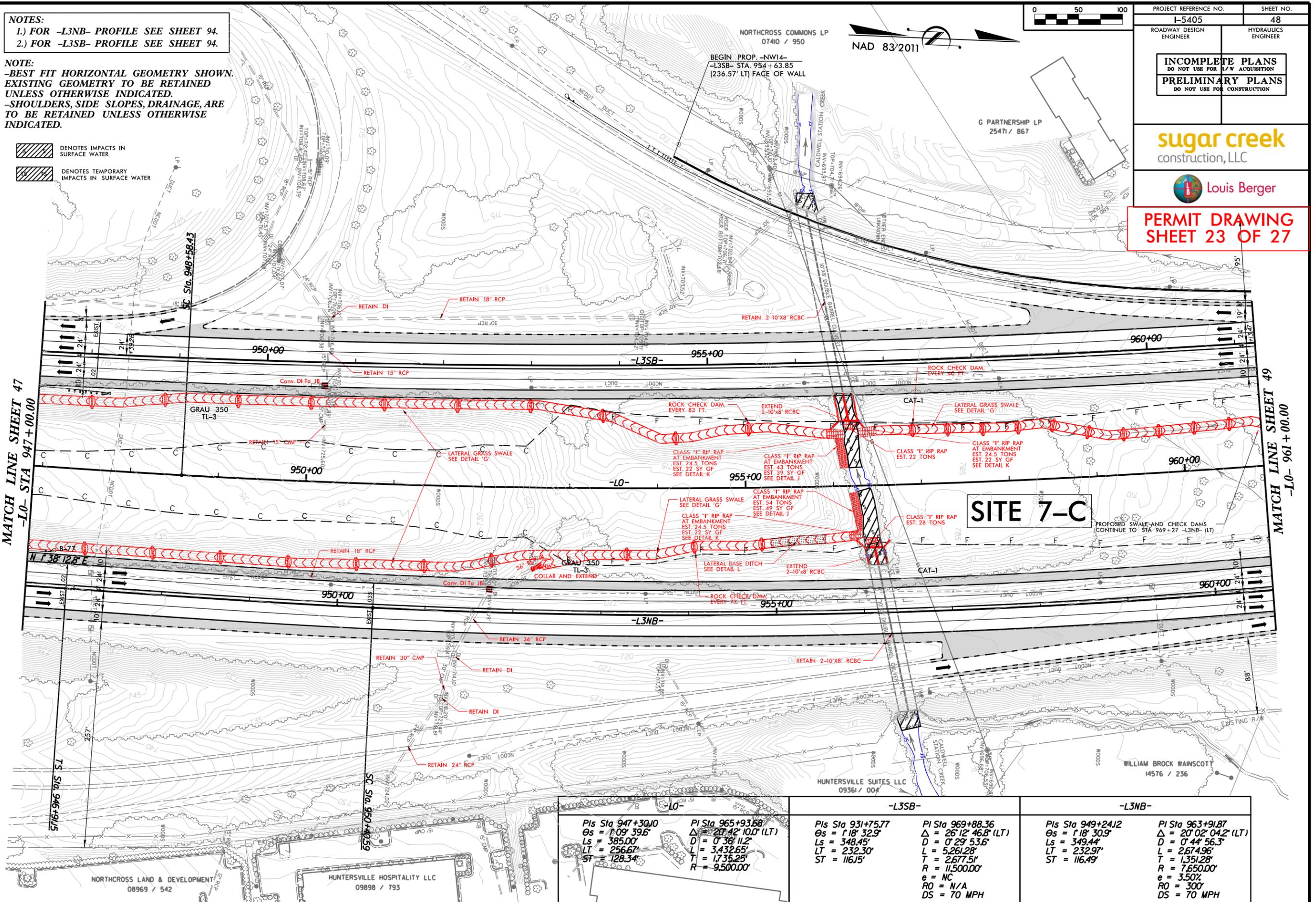
NAD 83/2011

PROJECT REFERENCE NO. I-5405	SHEET NO. 48
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

sugar creek
 construction, LLC

 Louis Berger

PERMIT DRAWING
SHEET 23 OF 27



MATCH LINE SHEET 47
-L0- STA 947+00.00

MATCH LINE SHEET 49
-L0- 961+00.00

$Pis\ Sta\ 947+30.10$ $\theta_s = 1'09''\ 39.6''$ $L_s = 385.00'$ $LT = 256.67'$ $ST = 128.34'$	$PI\ Sta\ 965+93.68$ $\Delta = 20'42''\ 10.0''\ (LT)$ $D = 0'38''\ 11.2''$ $L = 3,432.65'$ $T = 1,735.25'$ $R = 9,500.00'$	$Pis\ Sta\ 931+75.77$ $\theta_s = 1'18''\ 32.9''$ $L_s = 348.45'$ $LT = 232.30'$ $ST = 116.15'$	$PI\ Sta\ 969+88.36$ $\Delta = 26'12''\ 46.8''\ (LT)$ $D = 0'29''\ 53.5''$ $L = 5,261.28'$ $T = 2,677.51'$ $R = 11,500.00'$ $e = NC$ $RO = N/A$ $DS = 70\ MPH$	$Pis\ Sta\ 949+24.12$ $\theta_s = 1'18''\ 30.9''$ $L_s = 349.44'$ $LT = 232.97'$ $ST = 116.49'$	$PI\ Sta\ 963+91.87$ $\Delta = 20'02''\ 04.2''\ (LT)$ $D = 0'44''\ 56.3''$ $L = 2,674.96'$ $T = 1,351.28'$ $R = 7,650.00'$ $e = 3.50\%$ $RO = 300'$ $DS = 70\ MPH$
---	---	---	--	---	--

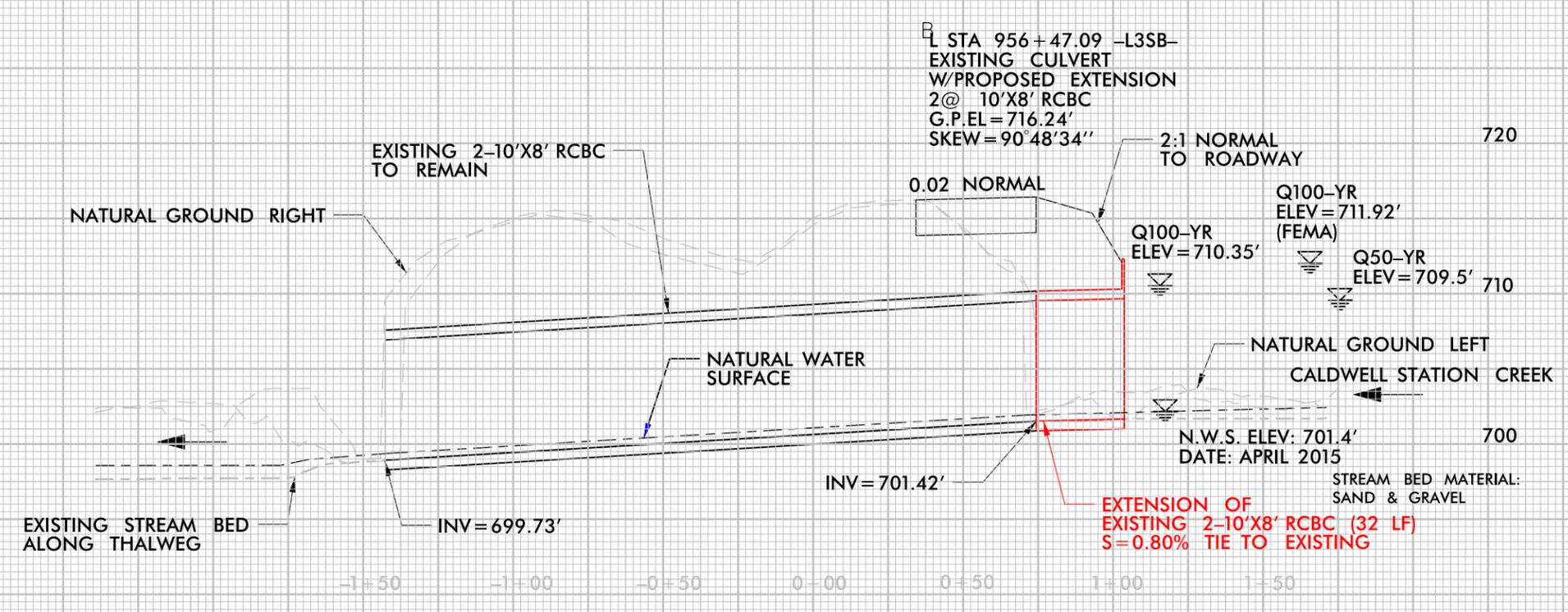
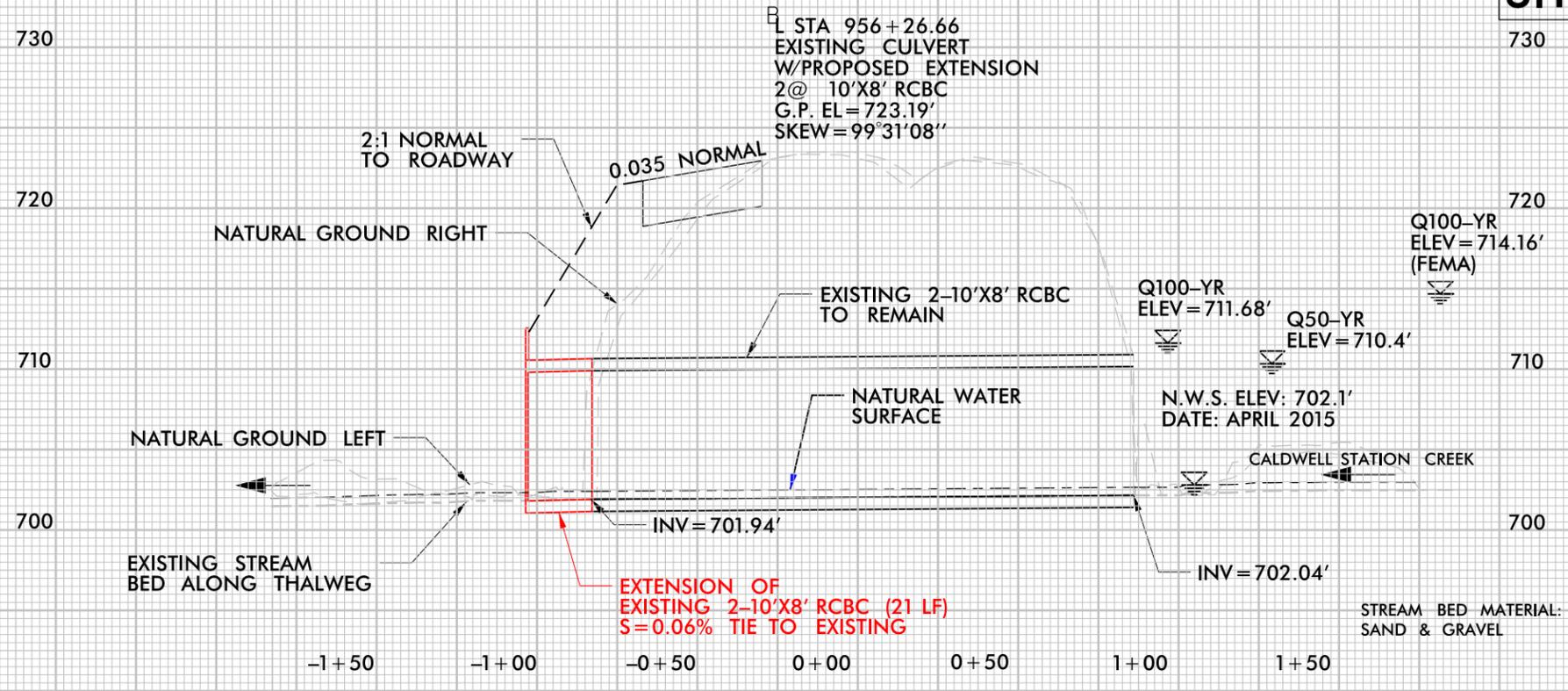
02-SEP-2015 15:21
 P:\P\4\dm2\633\I-5405-HYD-PRM-WET_PSH_048-02.dgn
 imargarita

5/14/99

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

SITE 7-C

PERMIT DRAWING SHEET 25 OF 27



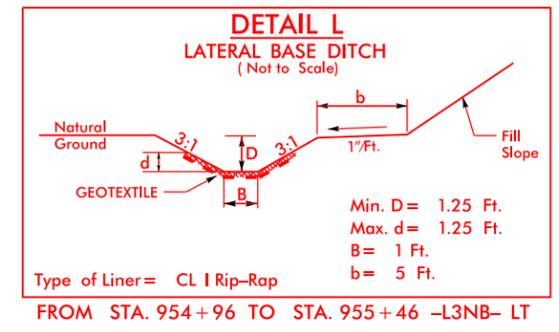
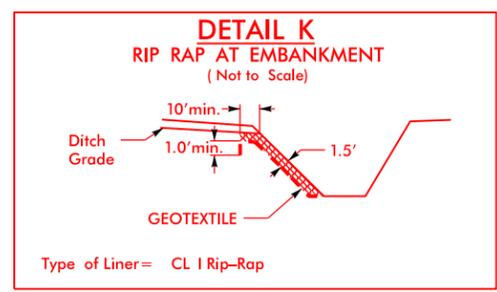
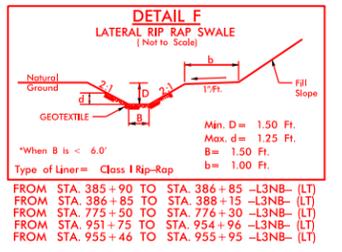
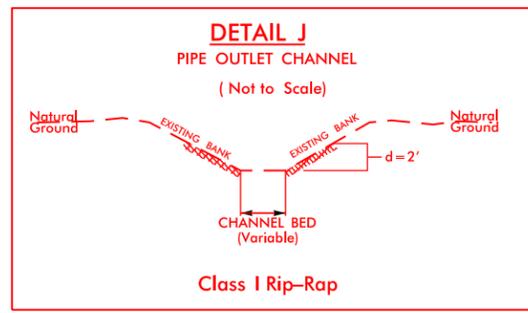
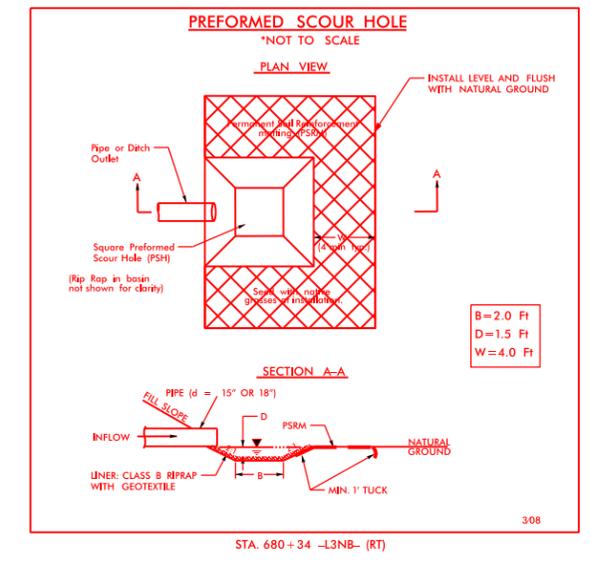
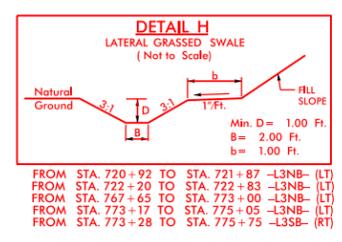
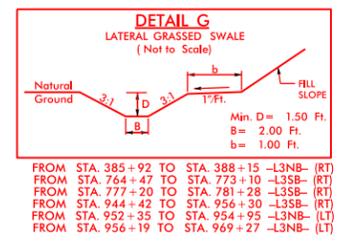
7 AUG 2015 15:46 L:\5495-HYD-PRM-WET_PFL_03.dgn

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

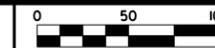


PERMIT DRAWING
SHEET 26 OF 27



02-SEP-2015 15:24
 I:\P\Projects\2015\5405-HYD-PRM-WET-002C.dgn
 AT CAMARCO
 imar.cio

SITE 1-GR



PROJECT REFERENCE NO. L-5405 SHEET NO. 8

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

sugar creek
construction, LLC

Louis Berger

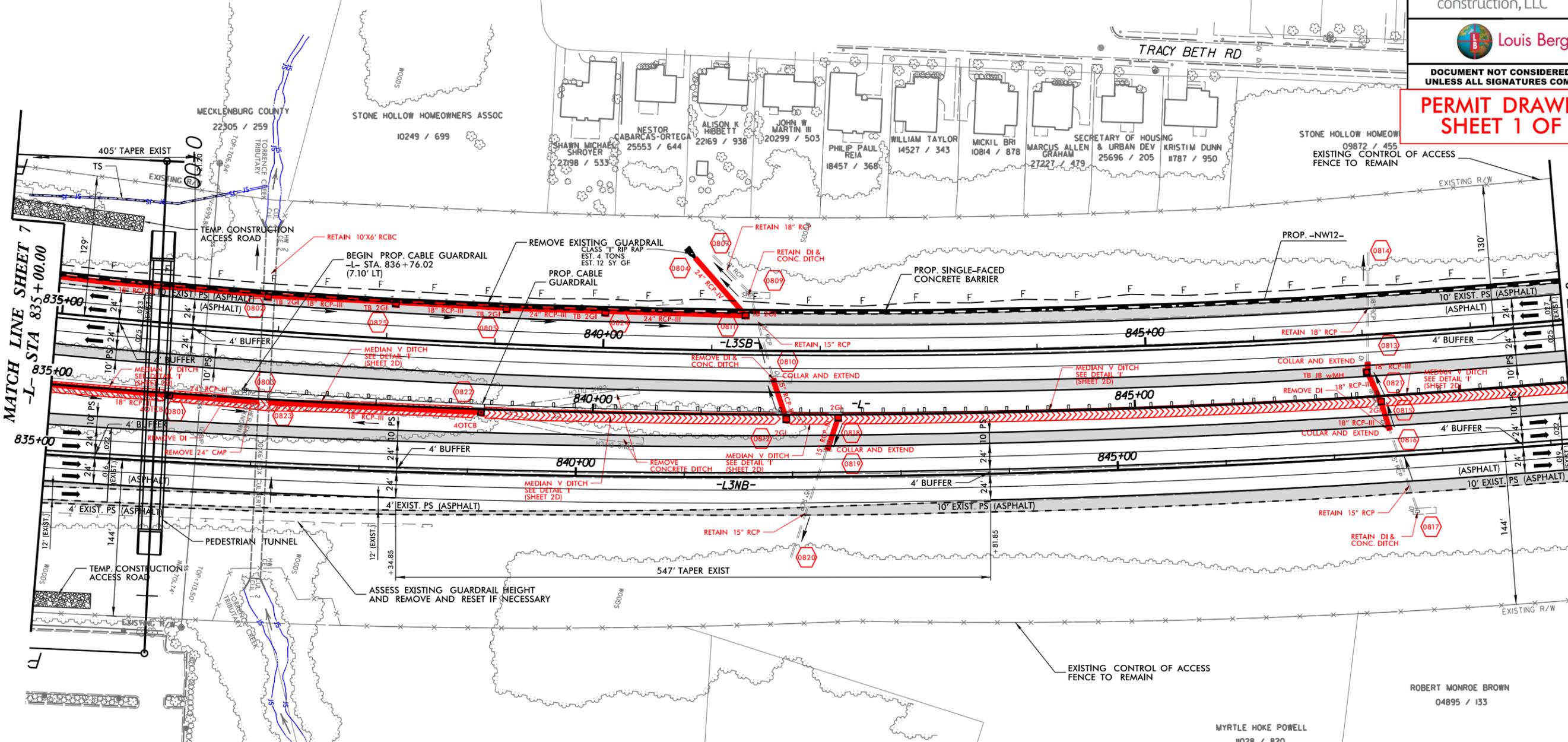
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 1 OF 3

JASON M HARMON
10991 / 375

ROBERT BAJEK
25744 / 307

TRACY BETH RD



NOTES:
1.) FOR -L3NB- PROFILE SEE SHEET 22.
2.) FOR -L3SB- PROFILE SEE SHEET 22.

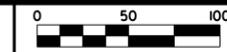
NOTE:
-EXISTING GEOMETRY TO BE RETAINED
UNLESS OTHERWISE INDICATED.
-SHOULDERS, SIDE SLOPES, DRAINAGE, ARE
TO BE RETAINED UNLESS OTHERWISE
INDICATED.

DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

-L-	-L3SB-	-L3NB-
PI Sta 829+18.26	PI Sta 841+85.68	PI Sta 839+90.32
$\Delta = 1' 14' 49.3"$	$\Delta = 15' 2' 51.3" (LT)$	$\Delta = 12' 49' 01.3" (LT)$
$L_s = 370.00'$	$D = 0' 45' 14.0"$	$D = 0' 35' 35.2"$
$LT = 246.67'$	$L = 2,037.99'$	$L = 2,160.93'$
$ST = 123.34'$	$T = 1,025.15'$	$T = 1,085.00'$
	$R = 7,600.00'$	$R = 9,660.00'$
	$e = 3.50\%$	$e = 2.50\%$
	$RO = 300'$	$RO = 300'$
	$DS = 70 MPH$	$DS = 70 MPH$

16-DEC-2015 17:49
IP: P:\P\rdms\30383\1-5405-AP01-EC.PSH.008.dgn
IMAG: c16

SITE 1-GR



PROJECT REFERENCE NO. L-5405 SHEET NO. 8

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

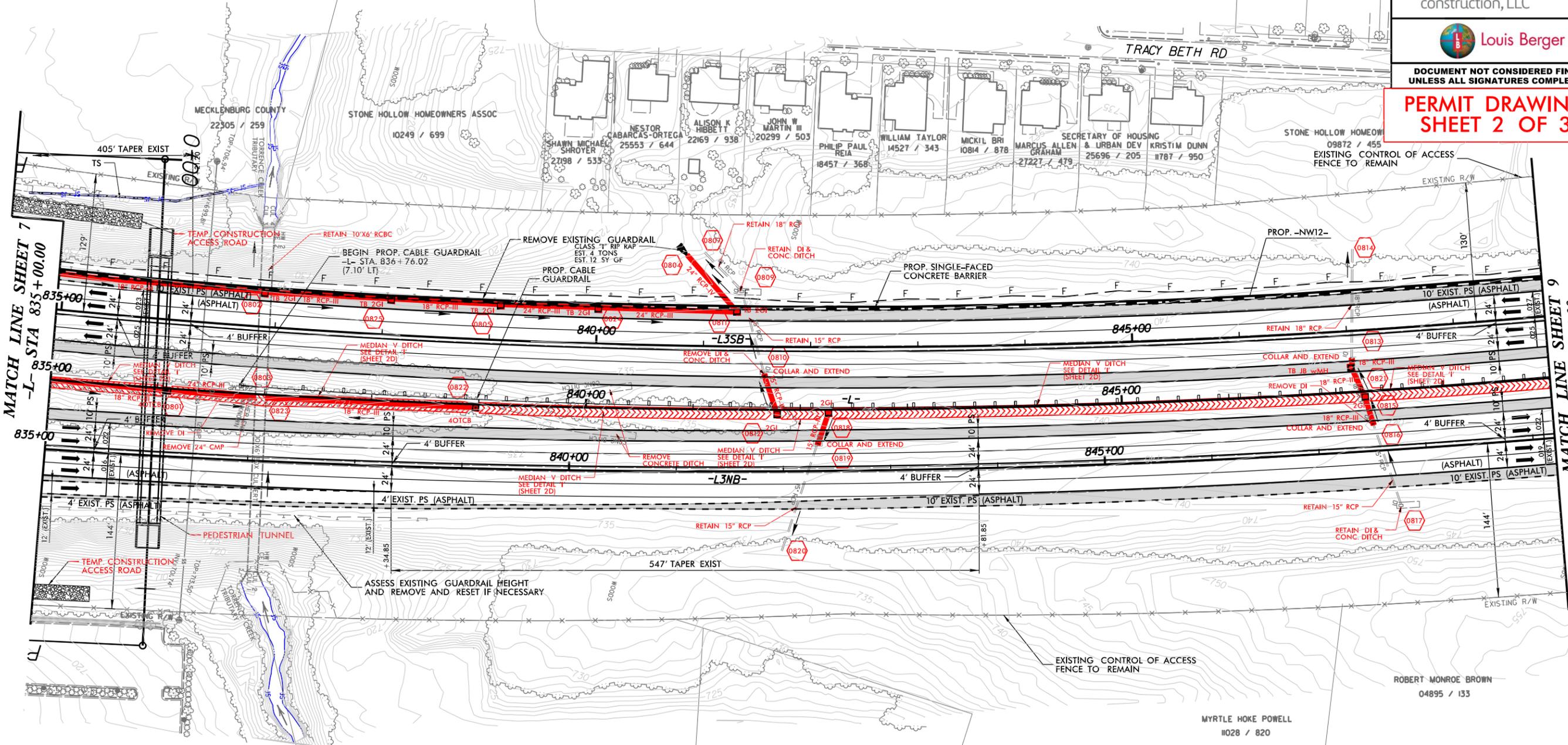
JASON M HARMON 10991 / 375
ROBERT BAJEK 25744 / 307

sugar creek
construction, LLC

Louis Berger

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 2 OF 3



MATCH LINE SHEET 7
-L- STA 835+00.00

MATCH LINE SHEET 9
-L- STA 849+00.00

16-DEC-2015 17:53
IP: P:\P\rdms\30383\1-5405-AP01-EC.PSH_008a.dgn
imgarc1a

NOTES:
1.) FOR -L3NB- PROFILE SEE SHEET 22.
2.) FOR -L3SB- PROFILE SEE SHEET 22.

NOTE:
-EXISTING GEOMETRY TO BE RETAINED
UNLESS OTHERWISE INDICATED.
-SHOULDERS, SIDE SLOPES, DRAINAGE, ARE
TO BE RETAINED UNLESS OTHERWISE
INDICATED.

DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

-L-	-L3SB-	-L3NB-
PI Sta 829+18.26	PI Sta 841+85.68	PI Sta 839+90.32
$\Delta = 1' 14" 49.3"$	$\Delta = 12' 49" 01.3" (LT)$	$\Delta = 12' 49" 01.3" (LT)$
$L_s = 370.00'$	$D = 0' 45" 14.0"$	$D = 0' 35" 35.2"$
$LT = 246.67'$	$L = 2,037.99'$	$L = 2,160.93'$
$ST = 123.34'$	$T = 1,025.15'$	$T = 1,085.00'$
	$R = 7,600.00'$	$R = 9,660.00'$
	$e = 3.50\%$	$e = 2.50\%$
	$RO = 300'$	$RO = 300'$
	$DS = 70 MPH$	$DS = 70 MPH$

This sheet was replaced by the table on the next page to include additional temporary impacts for the construction of a pedestrian culvert.

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-C	371+40 - 372+80 RT	TEMP. FILL / ACCESS	< 0.01	0.06									
2-C	388+12 - 388+58 RT	TEMP. FILL / ACCESS BANK STABILIZATION							0.01		40	60	
3-C	407+60 - 411+90 RT	TEMP. FILL							0.03			150	
4-C	709+50 MID	FILL						< 0.01			33		
5-C	721+97 - 722+03 MED	30" RCP BANK STABILIZATION						< 0.01	< 0.01		35 65	17	
6-C	776+15 - 776+25 MED	8' x 7' RCBC BANK STABILIZATION						< 0.01			26 21		
	776+15 - 776+25 LT/RT	8' x 7' RCBC / DEWATERING							< 0.01			42	
7-C	955+50-956+05 MED	2@10'x8' RCBC/CHAN. PROT. BANK STABILIZATION						0.05			91 99		
	955+50-956+05 LT/RT	2@10'x8' RCBC / DEWATERING							0.02			40	
TOTALS*:			< 0.01	0.06				0.07	0.08		410	309	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 08-03-2015
 MECKLENBURG
 I-5405 / I-4750AA
 Central Section
 SHEET 27 OF 27

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-C	371+40 - 372+80 RT	TEMP. FILL / ACCESS	< 0.01	0.06								
2-C	388+12 - 388+58 RT	TEMP. FILL / ACCESS BANK STABILIZATION							0.01		40	60
3-C	407+60 - 411+90 RT	TEMP. FILL							0.03			150
4-C	709+50 MID	FILL						< 0.01		33		
5-C	721+97 - 722+03 MED	30" RCP BANK STABILIZATION						< 0.01	< 0.01	35 65	17	
6-C	776+15 - 776+25 MED	8' x 7' RCBC BANK STABILIZATION						< 0.01		26 21		
	776+15 - 776+25 LT/RT	8' x 7' RCBC / DEWATERING							< 0.01		42	
7-C	955+50-956+05 MED	2@10'x8' RCBC/CHAN. PROT. BANK STABILIZATION						0.05		91 99		
	955+50-956+05 LT/RT	2@10'x8' RCBC /DEWATERING							0.02		40	
1-GR	835+47 LT	TEMP. FILL / ACCESS							< 0.01			182
TOTALS*:			< 0.01	0.06				0.07	0.09	410	491	0

*Rounded totals are sum of actual impacts

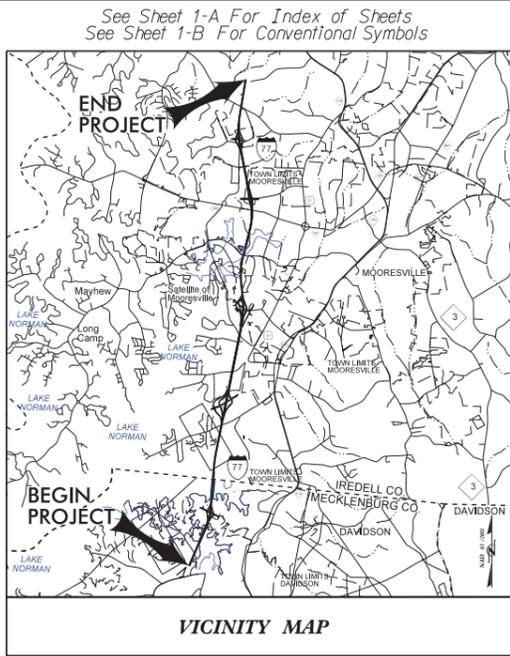
NOTES:

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 12-16-2015
 MECKLENBURG
 I-5405 / I-4750AA
 Central Section
 SHEET 3 OF 3

8/12/2015 12:58:42 PM p:\1\bg-pw\int-01.us.lbgcorp.com\p\lbg2014\Documents\1-77 HOT Lanes\Technical\1-77B Plan Sheet Files\Hydraulics\PERMITS_Environmental\Drawings\North\I-4750AA 08/08/14

TIP PROJECT: I-4750AA

CONTRACT: C203406



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG & IREDELL COUNTIES

LOCATION: I-77 FROM NORTH OF SR 554 (CATAWBA AVE.)
TO NORTH OF NC 150 (WEST PLAZA DR.)

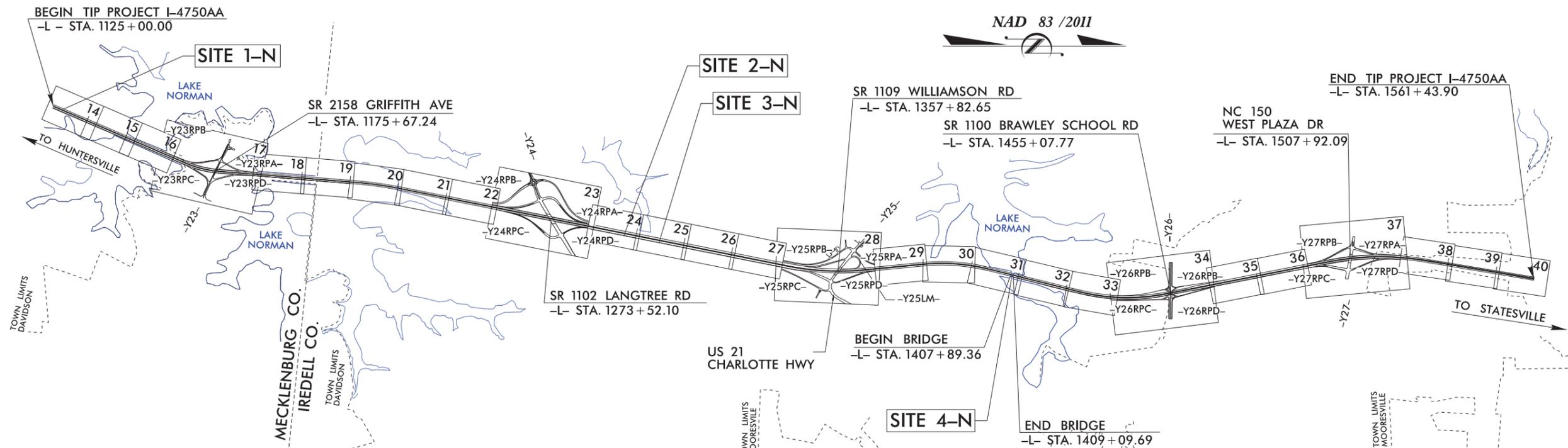
TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNING, ITS,
GUARDRAIL, PAVEMENT MARKINGS,
TOLLING STRUCTURES /EQUIPMENT AND STRUCTURES

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 11

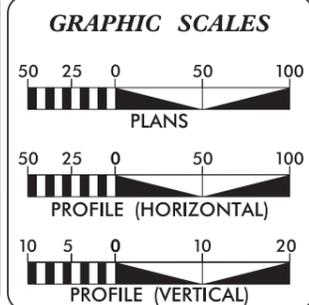
WETLAND AND STREAM IMPACTS (NORTH SECTION)



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



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.



PROJECT REFERENCE NO. C203406		SHEET NO. 14	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
INCOMPLETE PLANS DO NOT USE FOR P/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
REGISTERED ENGINEER	REGISTERED ENGINEER		

PERMIT DRAWING
SHEET 2 OF 11

1975 LLC
21052 / 804

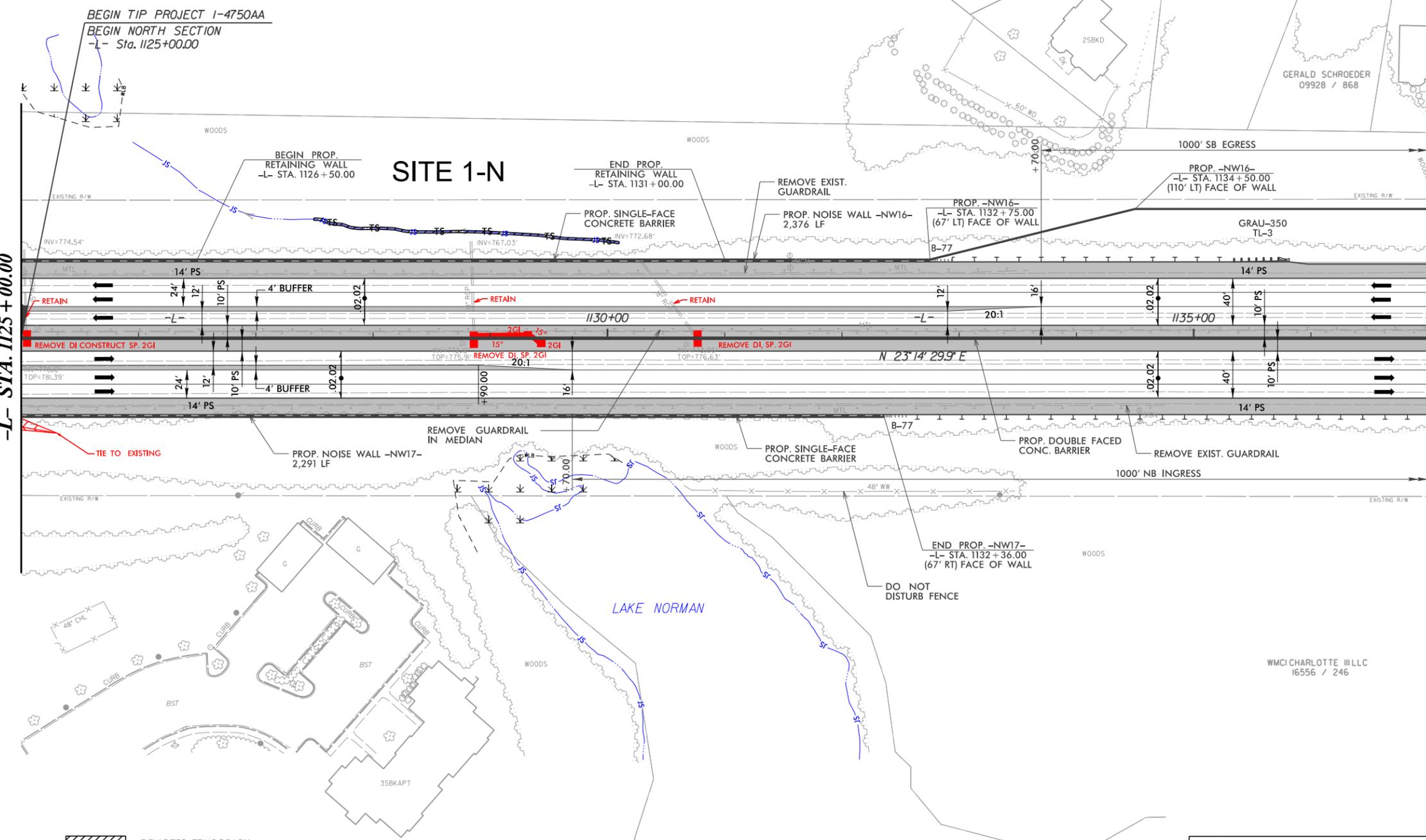
BRANDON L RIDGE
21529 / 549

ELIZABETH KENTON, LLC
21586 / 224

GERALD SCHROEDER
09928 / 868

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

NOTES:
1.) FOR -L- PROFILE SEE SHEET 52.

REVISIONS

8/12/2015 12:59:45 PM
9 FILES
I-77-permit.tbl



PROJECT REFERENCE NO. C203406		SHEET NO. 14	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
REGISTERED ENGINEER	REGISTERED ENGINEER		

PERMIT DRAWING
SHEET 3 OF 11

1975 LLC
21052 / 804

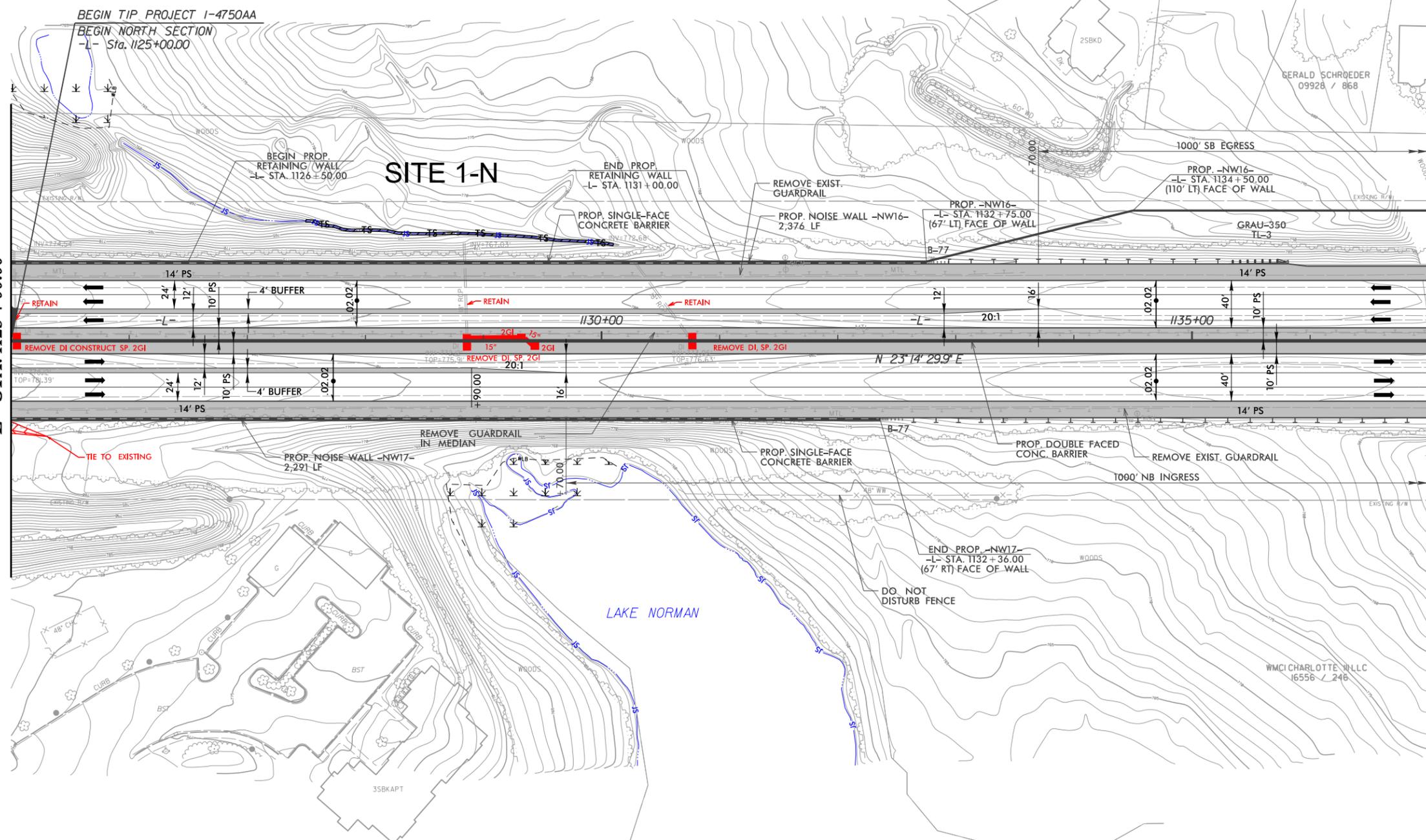
BRANDON L RIDGE
21529 / 549

ELIZABETH KENTON, LLC
21586 / 224

GERALD SCHROEDER
09928 / 868

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

NOTES:
1.) FOR -L- PROFILE SEE SHEET 52.

REVISIONS

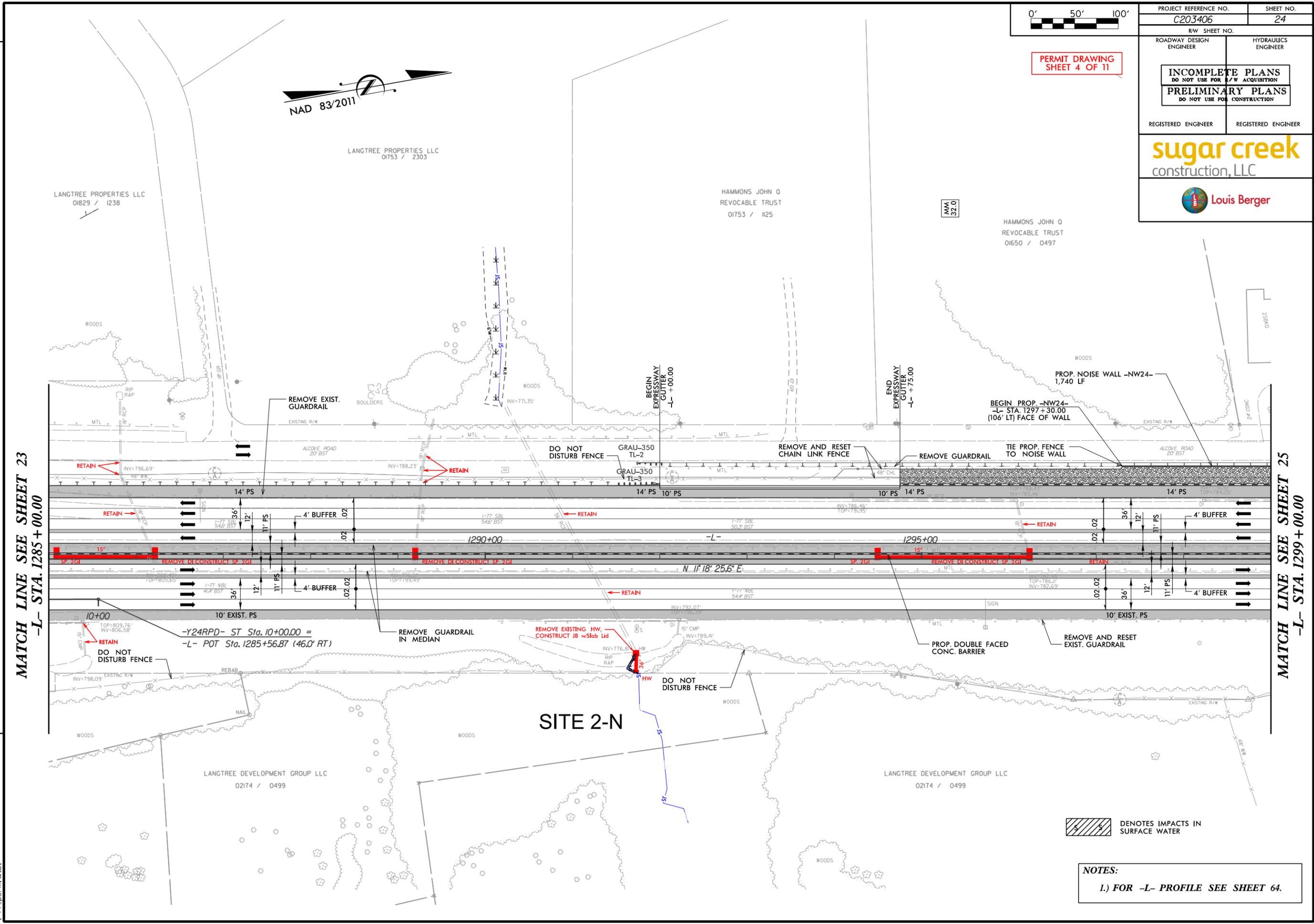
8/12/2015 12:59:20 PM
9 FILES
I-77-permit.tbl



PROJECT REFERENCE NO. C203406	SHEET NO. 24
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER

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

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

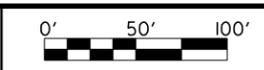


REVISIONS

8/12/2015 12:59:24 PM
 \$FILES\$
 I-77-permit.tbl

DENOTES IMPACTS IN SURFACE WATER

NOTES:
 1.) FOR -L- PROFILE SEE SHEET 64.

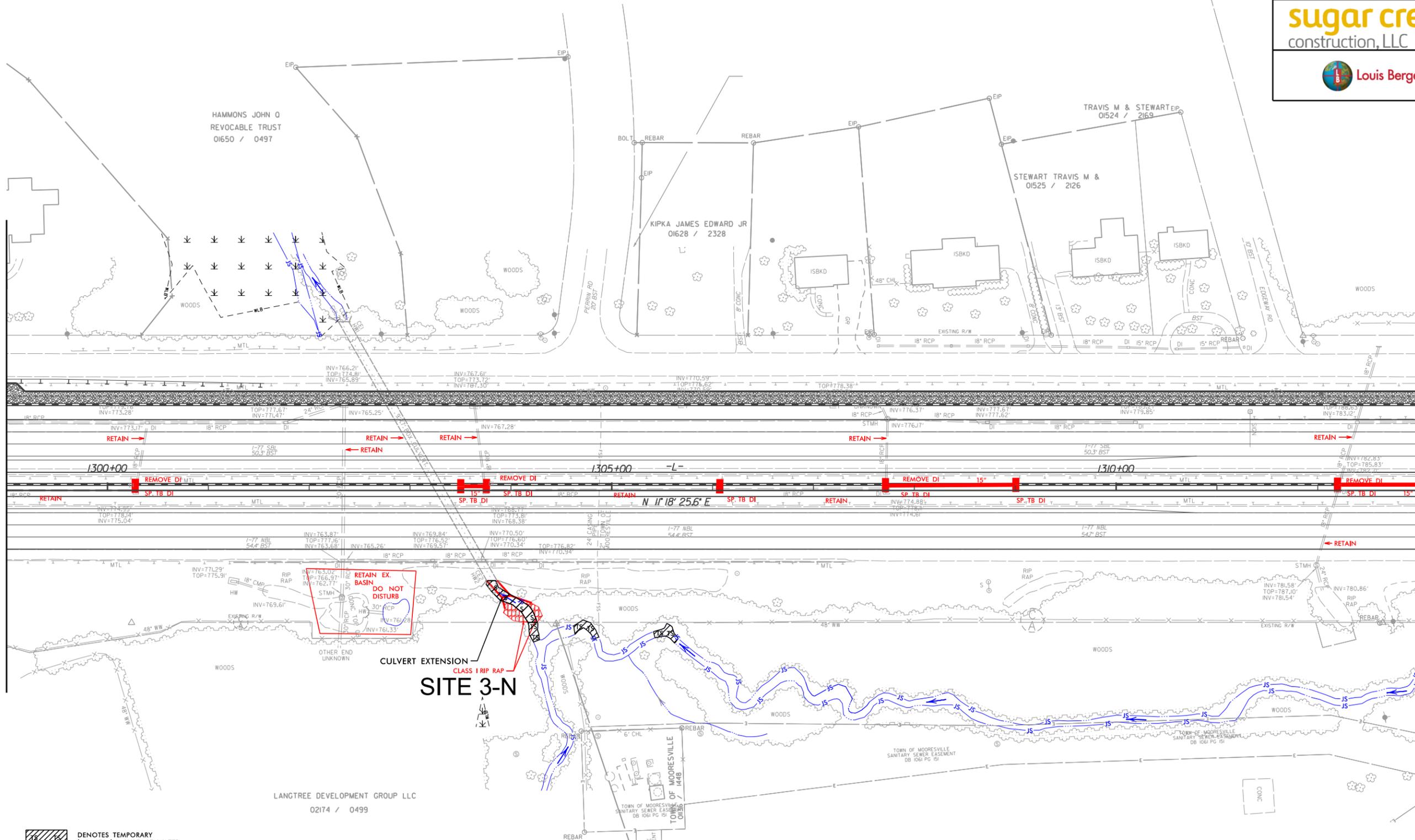


PERMIT DRAWING
SHEET 6 OF 11

PROJECT REFERENCE NO. C203406	SHEET NO. 25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER

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

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



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

NOTES:
1.) FOR -L- PROFILE SEE SHEET 65.

REVISIONS

8/12/2015 12:59:33 PM
9 FILES
I-77-perm.t.tbl



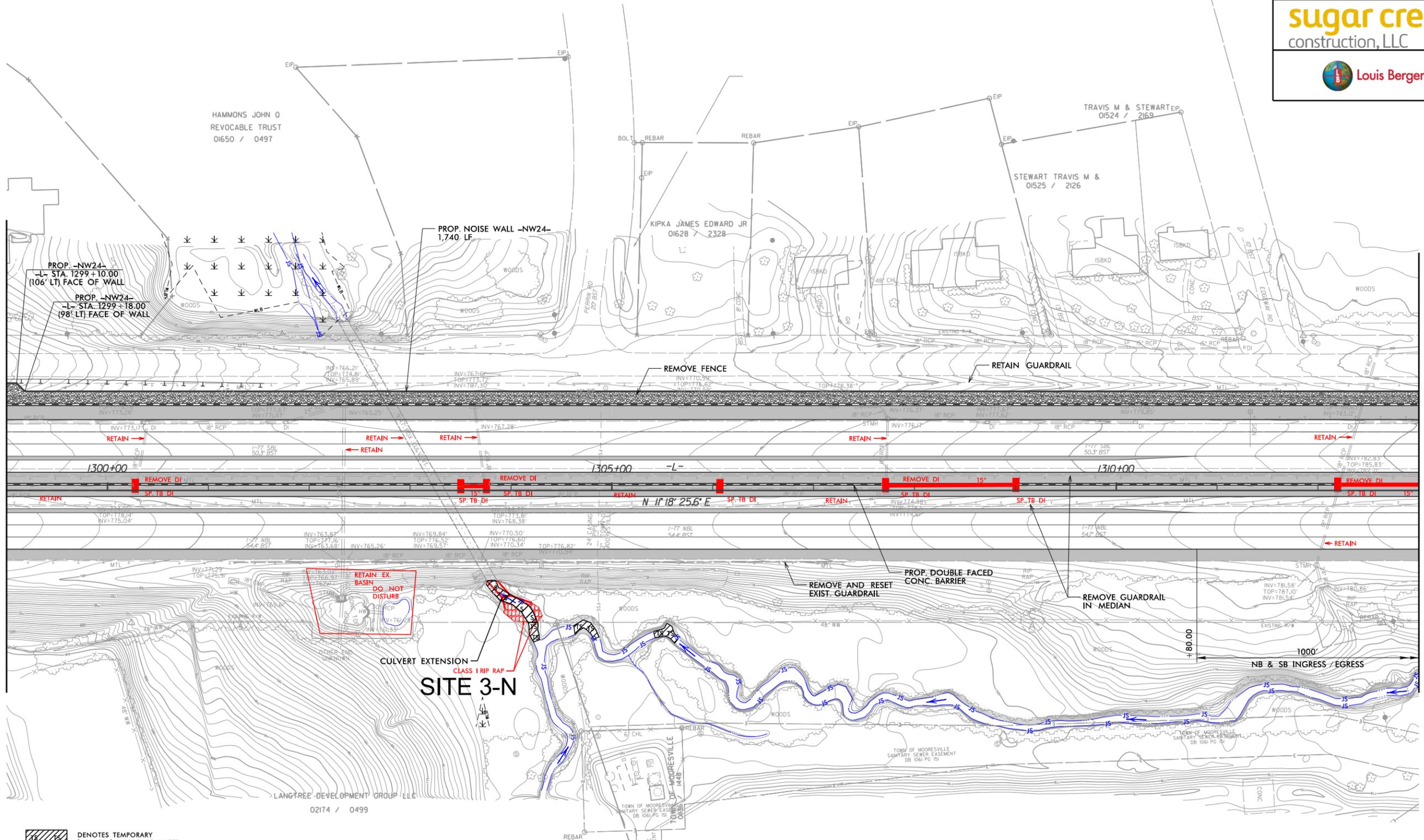
PERMIT DRAWING
SHEET 7 OF 11

PROJECT REFERENCE NO. C203406	SHEET NO. 25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER

REVISIONS

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

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



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

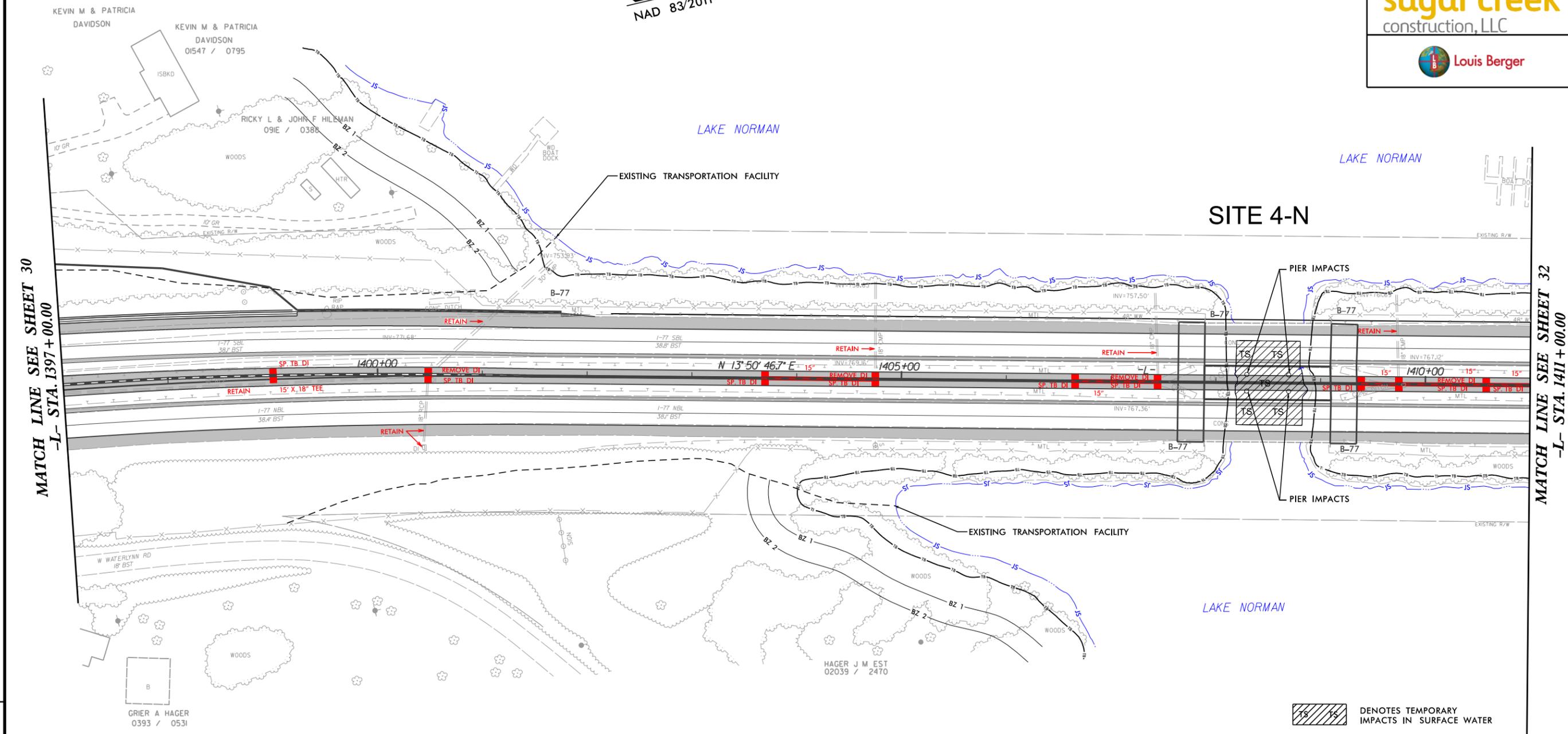
NOTES:
1.) FOR -L- PROFILE SEE SHEET 65.

8/12/2015 10:00:05 PM
9 FILES
I-77-permit.tbl



PROJECT REFERENCE NO. C203406	SHEET NO. 31
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER

PERMIT DRAWING
SHEET 8 OF 11



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

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

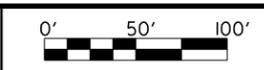
REVISIONS

- 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.

NOTES:
1.) FOR -L- PROFILE SEE SHEET 72.

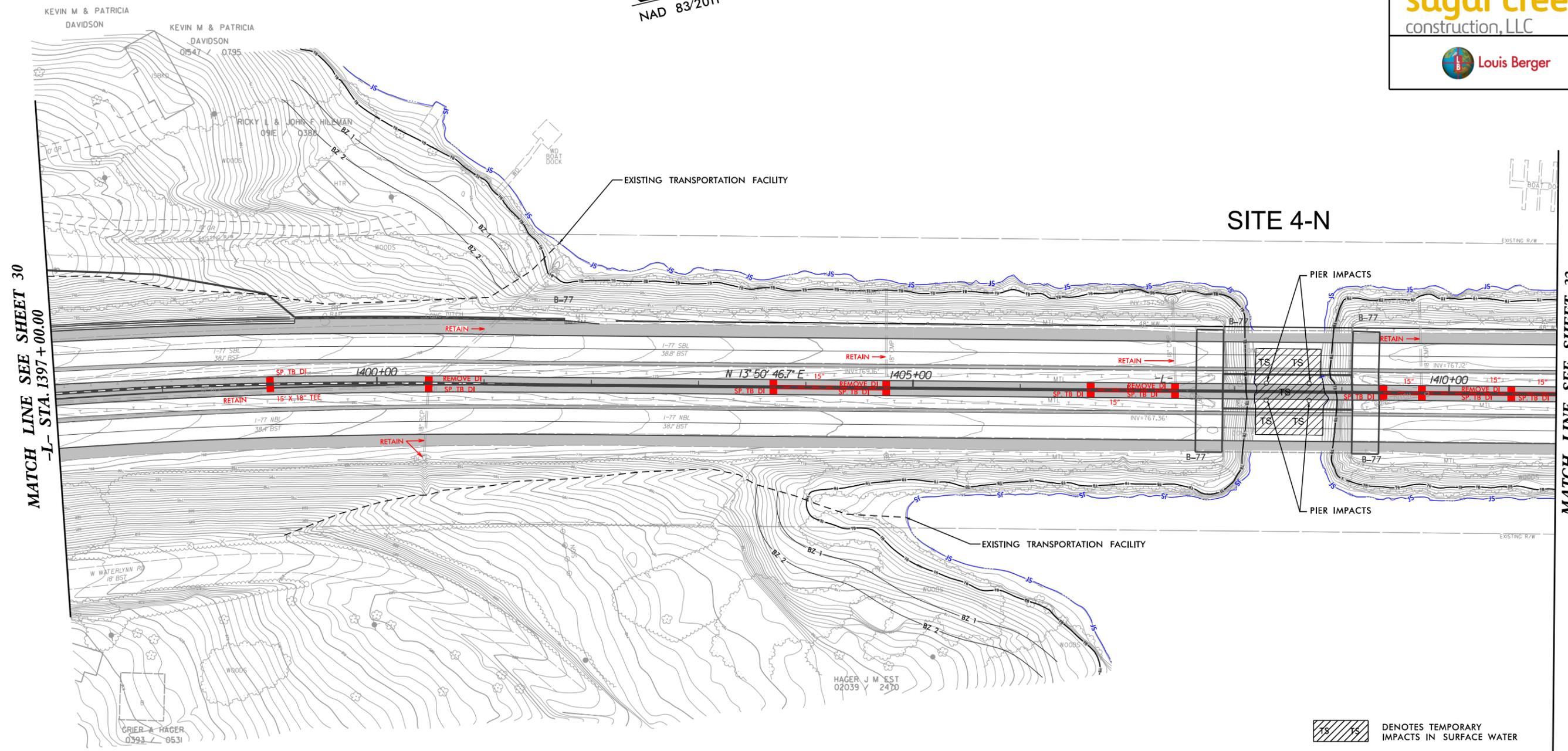
M & J LAND INC
0783 / 0837

8/12/2015 1:00:09 PM
9FILES\$
I-77-permt.tbl



PERMIT DRAWING
SHEET 9 OF 11

PROJECT REFERENCE NO. C203406	SHEET NO. 31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER



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.

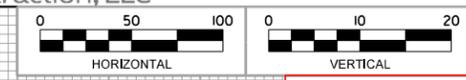
NOTES:
1.) FOR -L- PROFILE SEE SHEET 72.

M & J LAND INC
0783 / 0837

REVISIONS

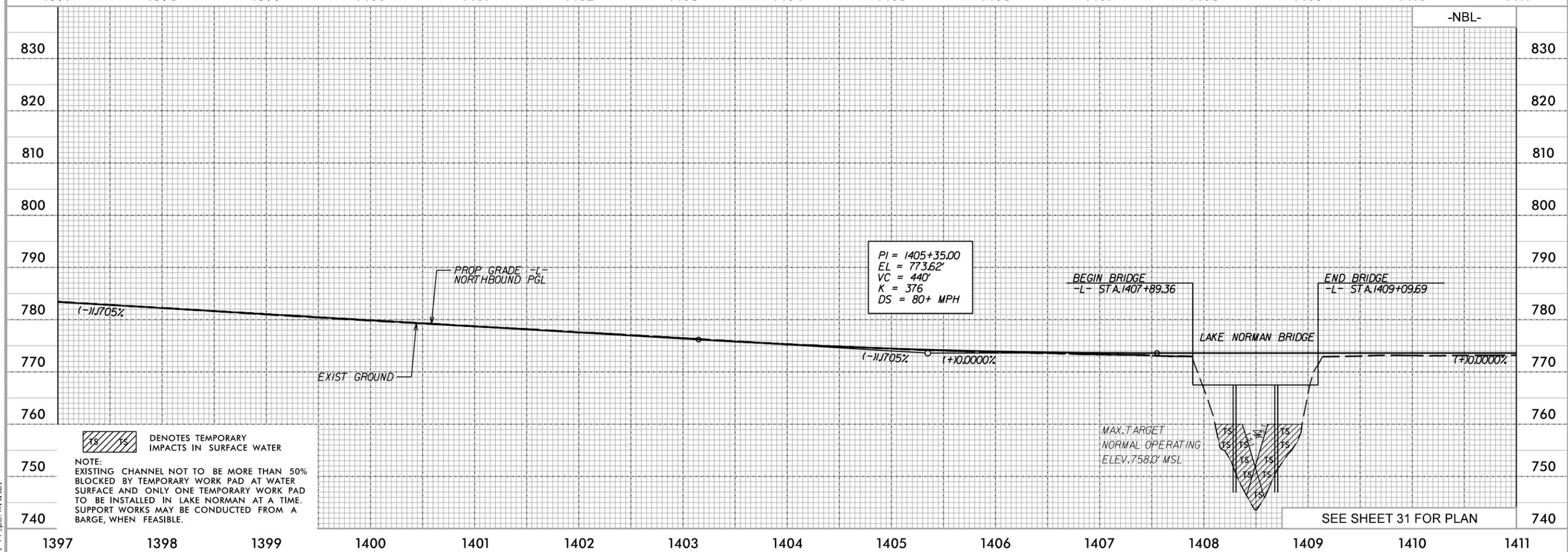
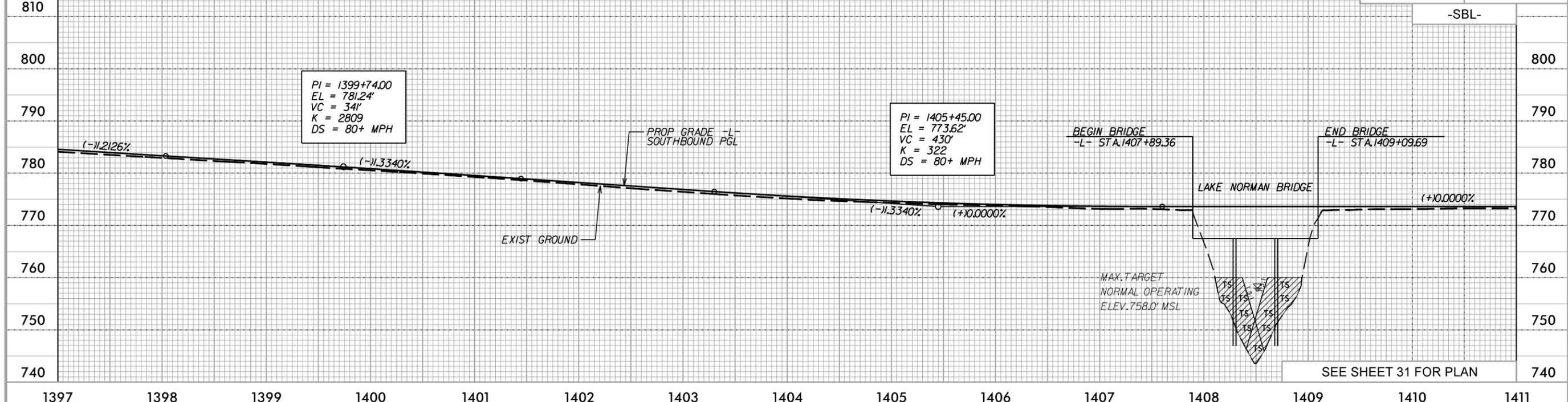
8/12/2015 4:00:13 PM
9FILES\$
I-77-permit.tbl

5/28/99



PERMIT DRAWING
SHEET 10 OF 11

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



 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.

8/12/2015 1:00:17 PM
FILES8
1-77_permt.tbl

TIP PROJECT: I-3311C

CONTRACT: C203406

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

**LOCATION: I-277 FROM N. BREVARD ST. TO I-77
2.6 MILES OF INTERSTATE 77
FROM MM 11.2 TO MM 13.8**

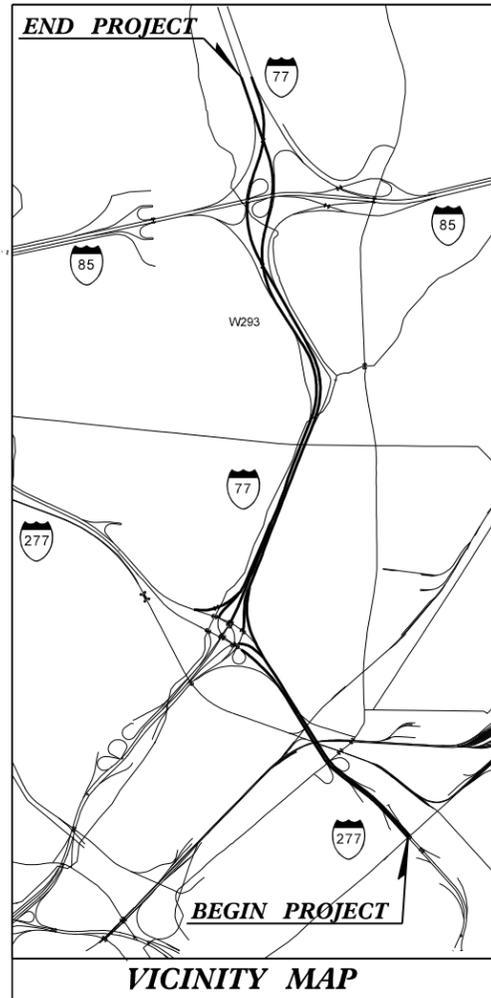
**TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNING, ITS,
GUARDRAIL, PAVEMENT MARKINGS,
TOLLING STRUCTURES/EQUIPMENT AND STRUCTURE**

WETLAND AND STREAM IMPACTS (SOUTH SECTION)

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.		1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

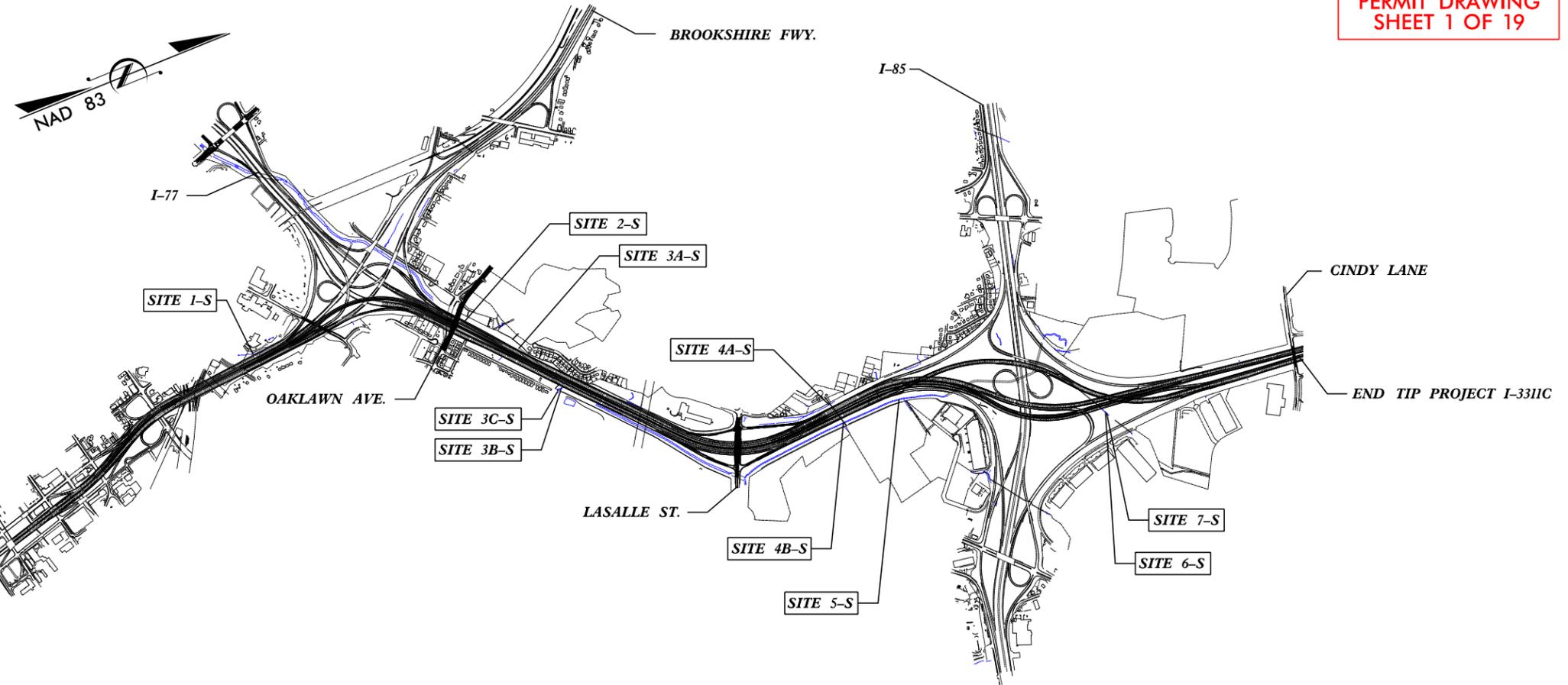


**PERMIT DRAWING
SHEET 1 OF 19**

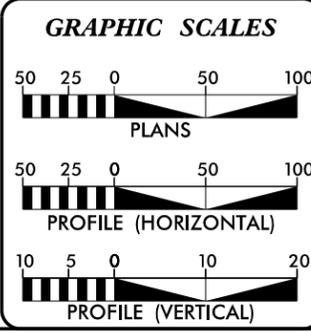


BEGIN TIP PROJECT I-3311C

I-277 (BROOKSHIRE FWY.)



**PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION**



DESIGN DATA
ADT
ADT

FUNC CLASS =
PRINCIPAL ARTERIAL

PROJECT LENGTH

Prepared In the Office of:
LOUIS BERGER
1000 Wade Ave, Suite 400, Raleigh NC, 27605
2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: _____
PROJECT ENGINEER

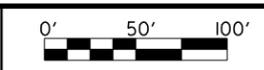
LETTING DATE: _____
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER P.E.



PROJECT REFERENCE NO. C203406	SHEET NO. 7
RW SHEET NO.	

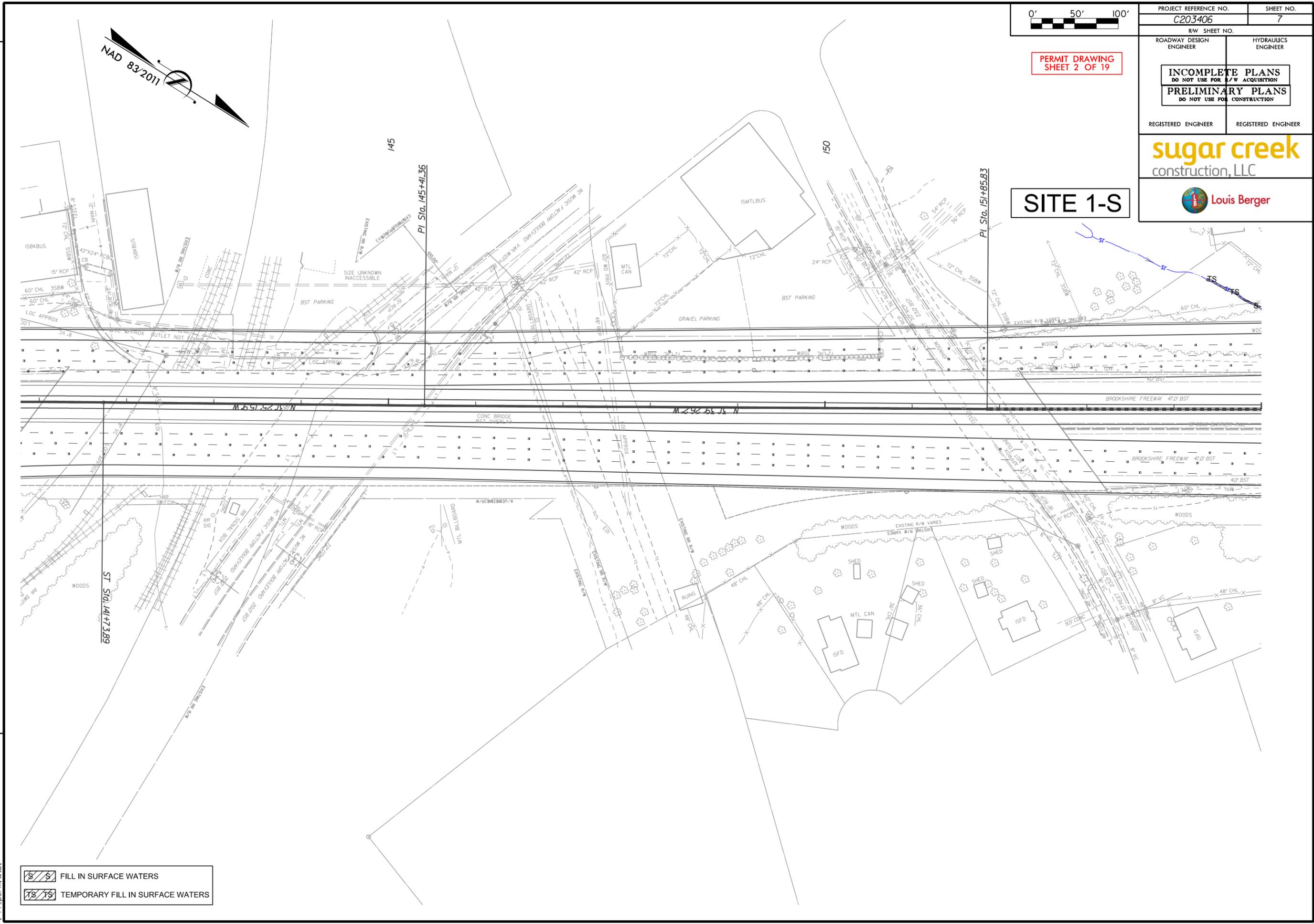
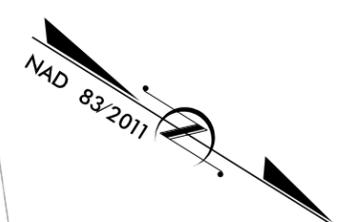
PERMIT DRAWING
SHEET 2 OF 19

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR P/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER

sugar creek
construction, LLC

Louis Berger

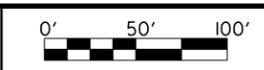
SITE 1-S



REVISIONS

	FILL IN SURFACE WATERS
	TEMPORARY FILL IN SURFACE WATERS

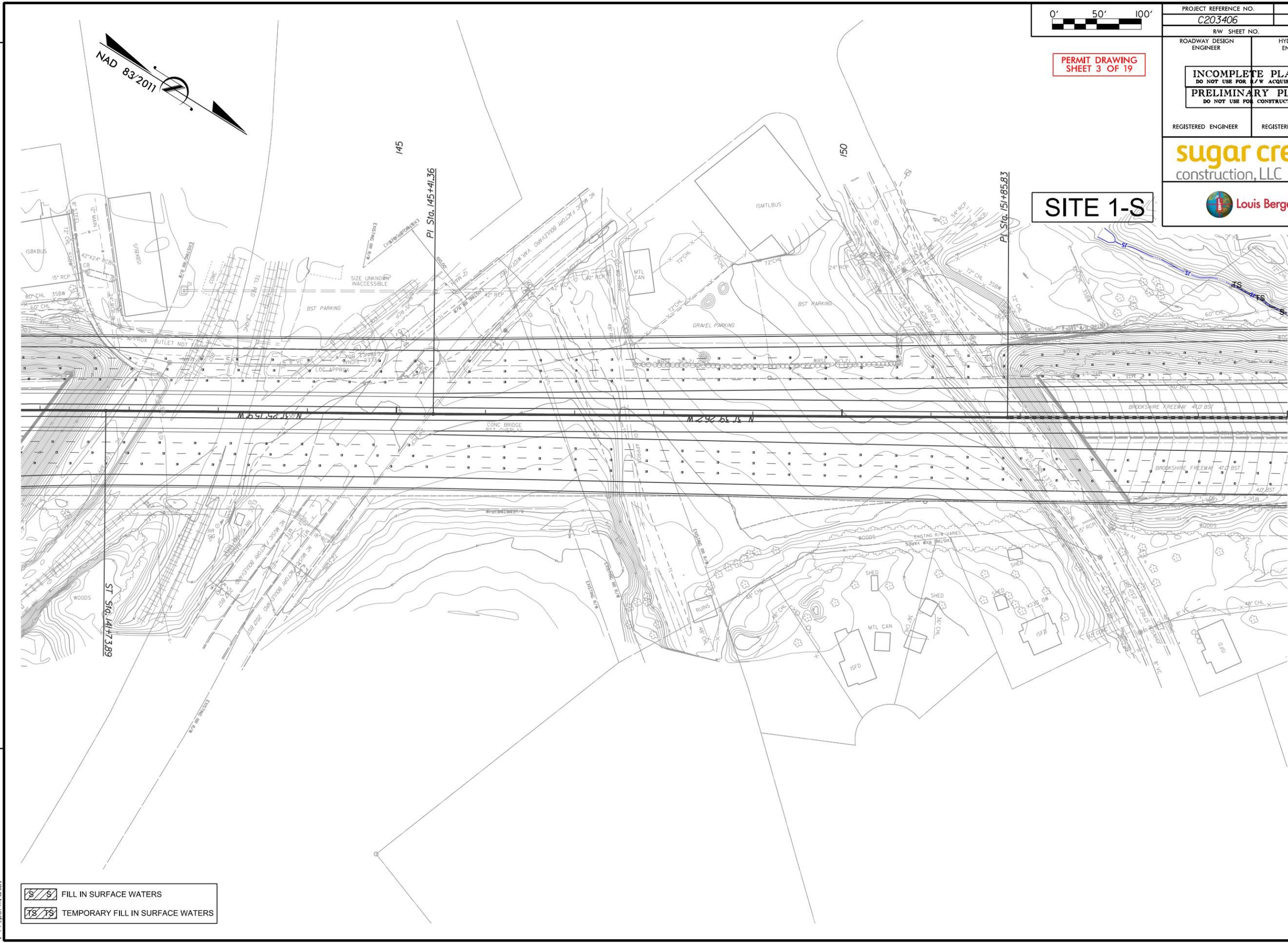
8/12/2015 4:20:04 PM
 \$FILES\$
 I-77-permt.tbl



PERMIT DRAWING
SHEET 3 OF 19

PROJECT REFERENCE NO. C203406	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR P/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER

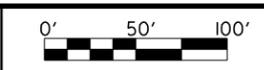
SITE 1-S



- FILL IN SURFACE WATERS
- TEMPORARY FILL IN SURFACE WATERS

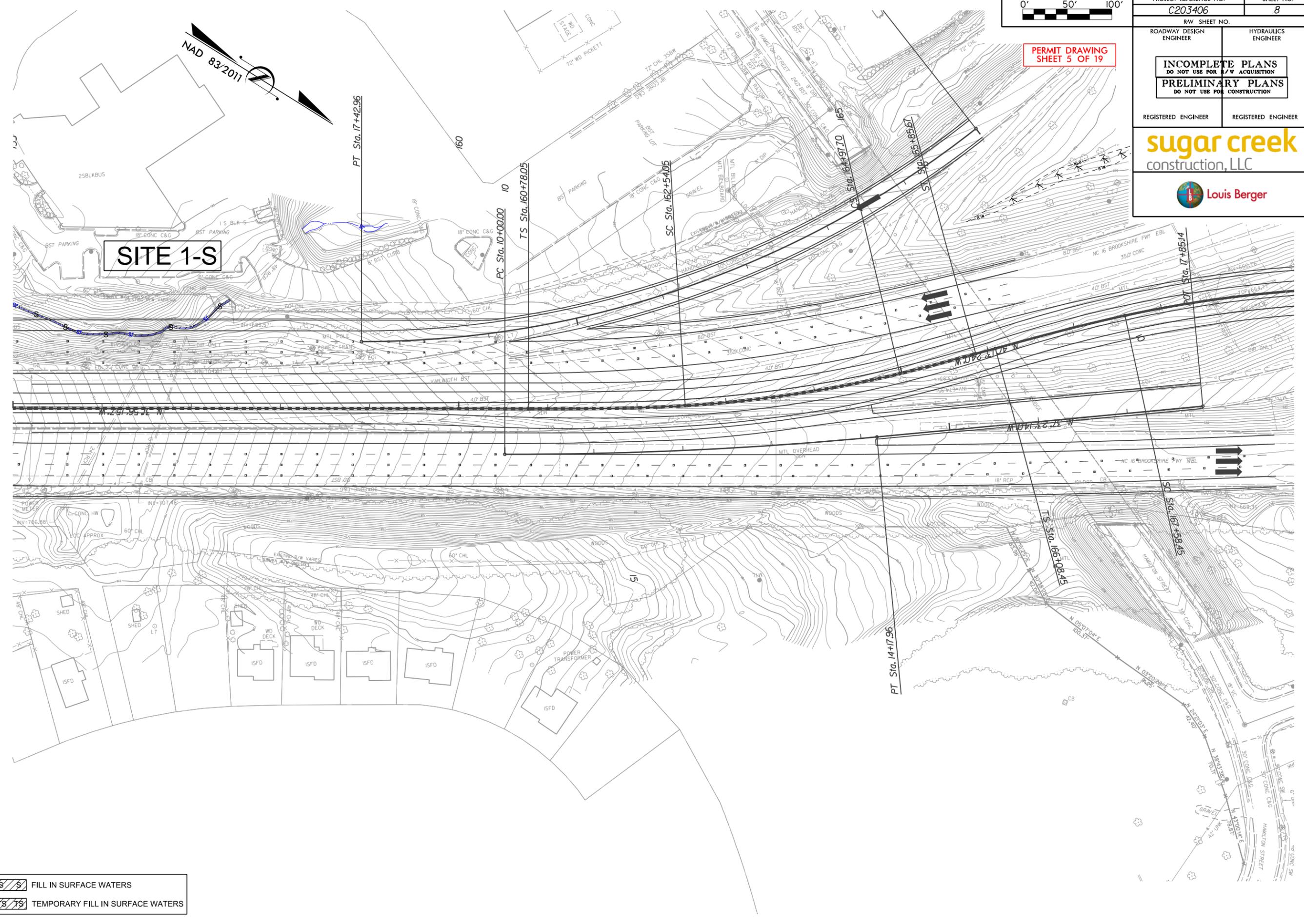
REVISIONS

8/12/2015 4:20:10 PM
9 FILES
I-77-permit.tbl



PROJECT REFERENCE NO. C203406		SHEET NO. 8	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
REGISTERED ENGINEER		REGISTERED ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

PERMIT DRAWING
SHEET 5 OF 19

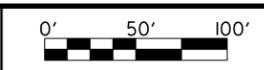


SITE 1-S

REVISIONS

	FILL IN SURFACE WATERS
	TEMPORARY FILL IN SURFACE WATERS

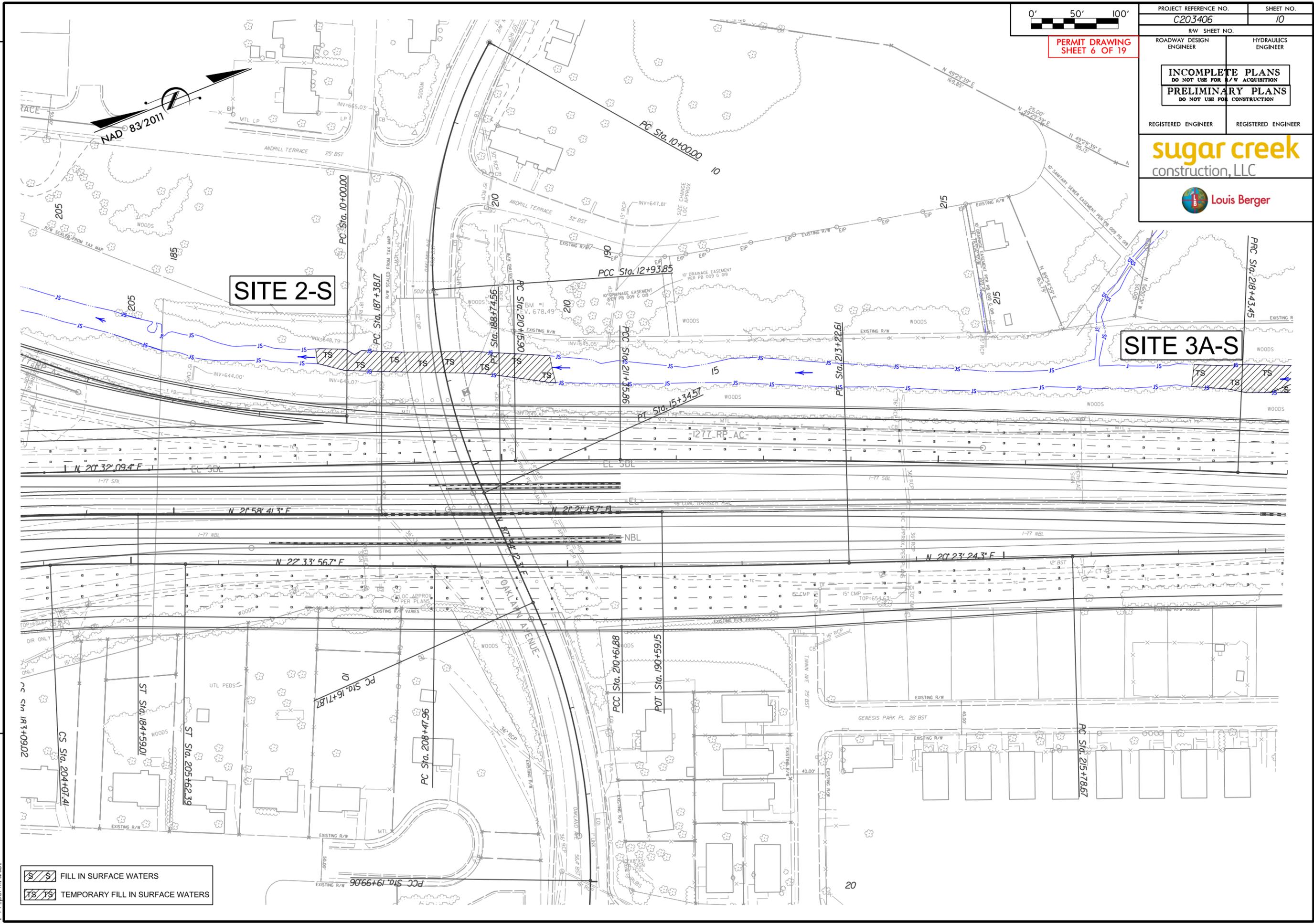
8/12/2015 4:20:19 PM
 \$FILES\$
 I-77-perm.t.tbl



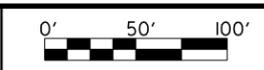
PERMIT DRAWING
SHEET 6 OF 19

PROJECT REFERENCE NO. C203406	SHEET NO. 10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER

REVISIONS
 8/12/2015 4:20:24 PM
 9 FILES
 I-77-permit.tbl

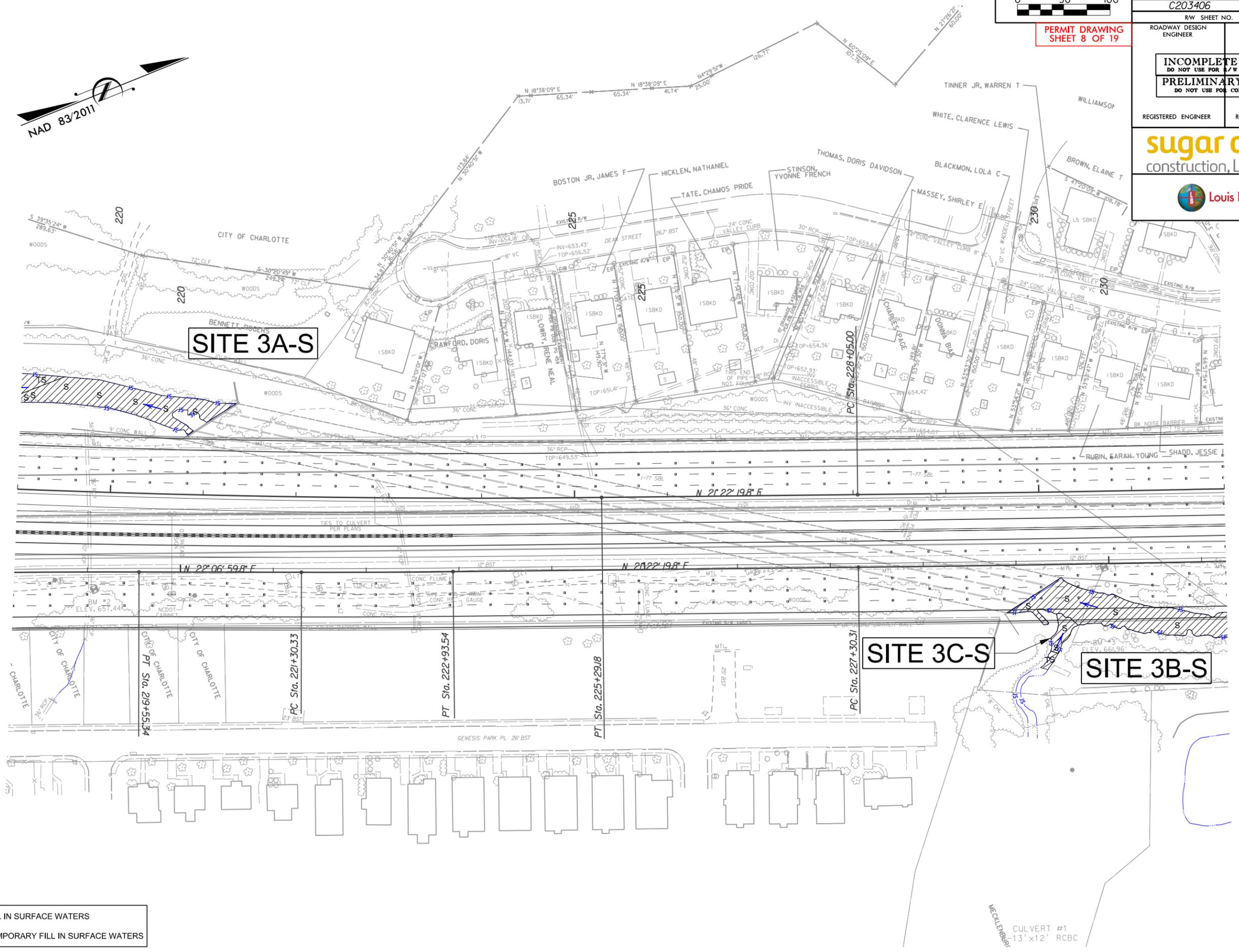


	FILL IN SURFACE WATERS
	TEMPORARY FILL IN SURFACE WATERS



PERMIT DRAWING
SHEET 8 OF 19

PROJECT REFERENCE NO. C203406	SHEET NO. 11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER

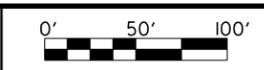


REVISIONS

	FILL IN SURFACE WATERS
	TEMPORARY FILL IN SURFACE WATERS

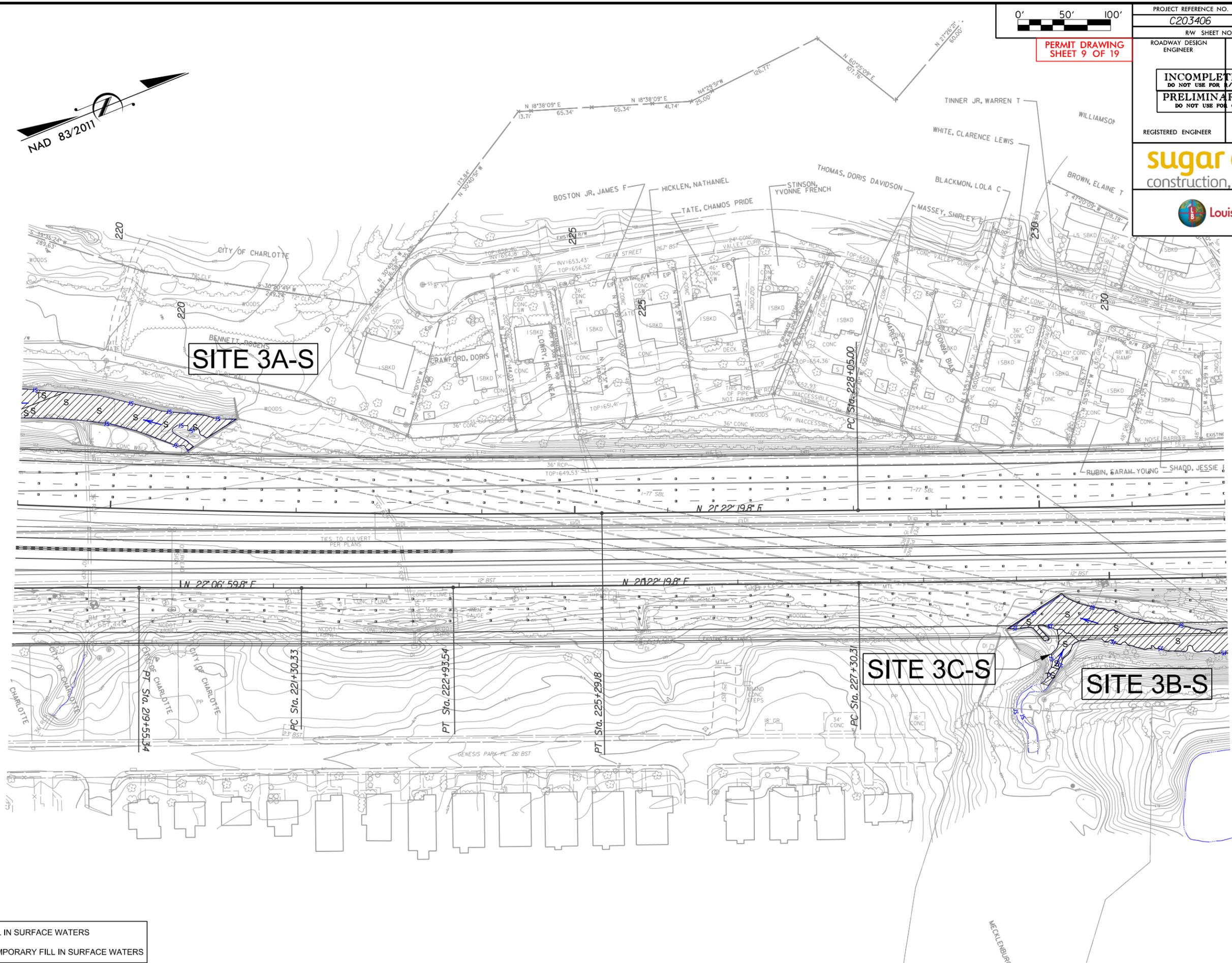
8/12/2015 4:20:34 PM
 \$FILES\$
 I-77-permit.tbl

CULVERT #1
13' x 12' RCBC



PERMIT DRAWING
SHEET 9 OF 19

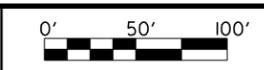
PROJECT REFERENCE NO. C203406	SHEET NO. 11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER



REVISIONS

	FILL IN SURFACE WATERS
	TEMPORARY FILL IN SURFACE WATERS

8/12/2015 4:20:39 PM
 9 FILES
 I-77-permit.tbl



PERMIT DRAWING
SHEET 10 OF 19

PROJECT REFERENCE NO. C203406	SHEET NO. 12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER



SITE 3B-S

FILL IN SURFACE WATERS

REVISIONS

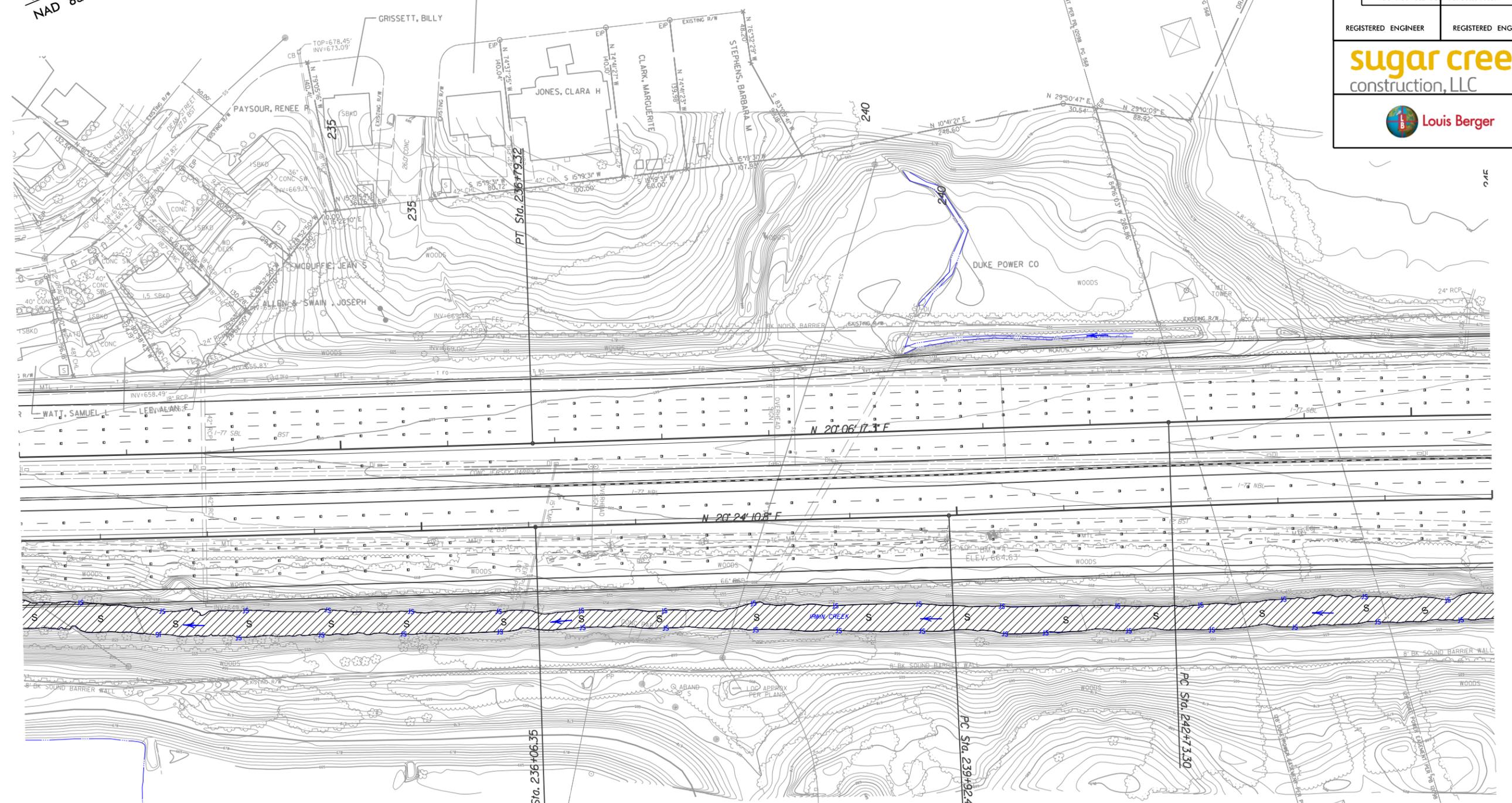
8/12/2015 4:20:44 PM
9FILES\$
I-77-permit.tbl



PERMIT DRAWING
SHEET 11 OF 19

PROJECT REFERENCE NO. C203406	SHEET NO. 12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER

REVISIONS



SITE 3B-S

FILL IN SURFACE WATERS

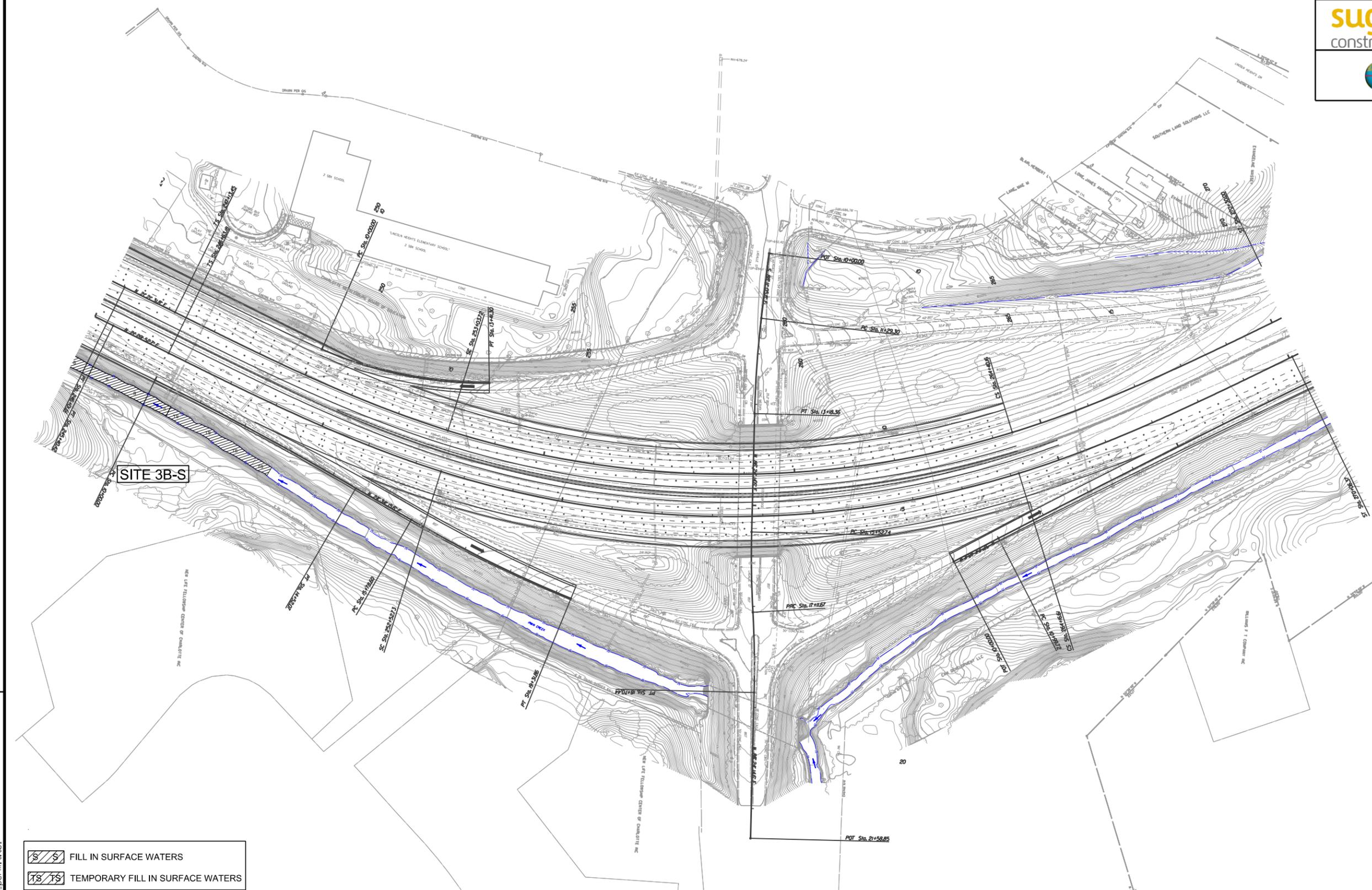
8/12/2015 4:20:49 PM
9FILES\$
I-77-permit.tbl



PERMIT DRAWING
SHEET 13 OF 19

PROJECT REFERENCE NO. C203406	SHEET NO. 13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR E/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER

REVISIONS



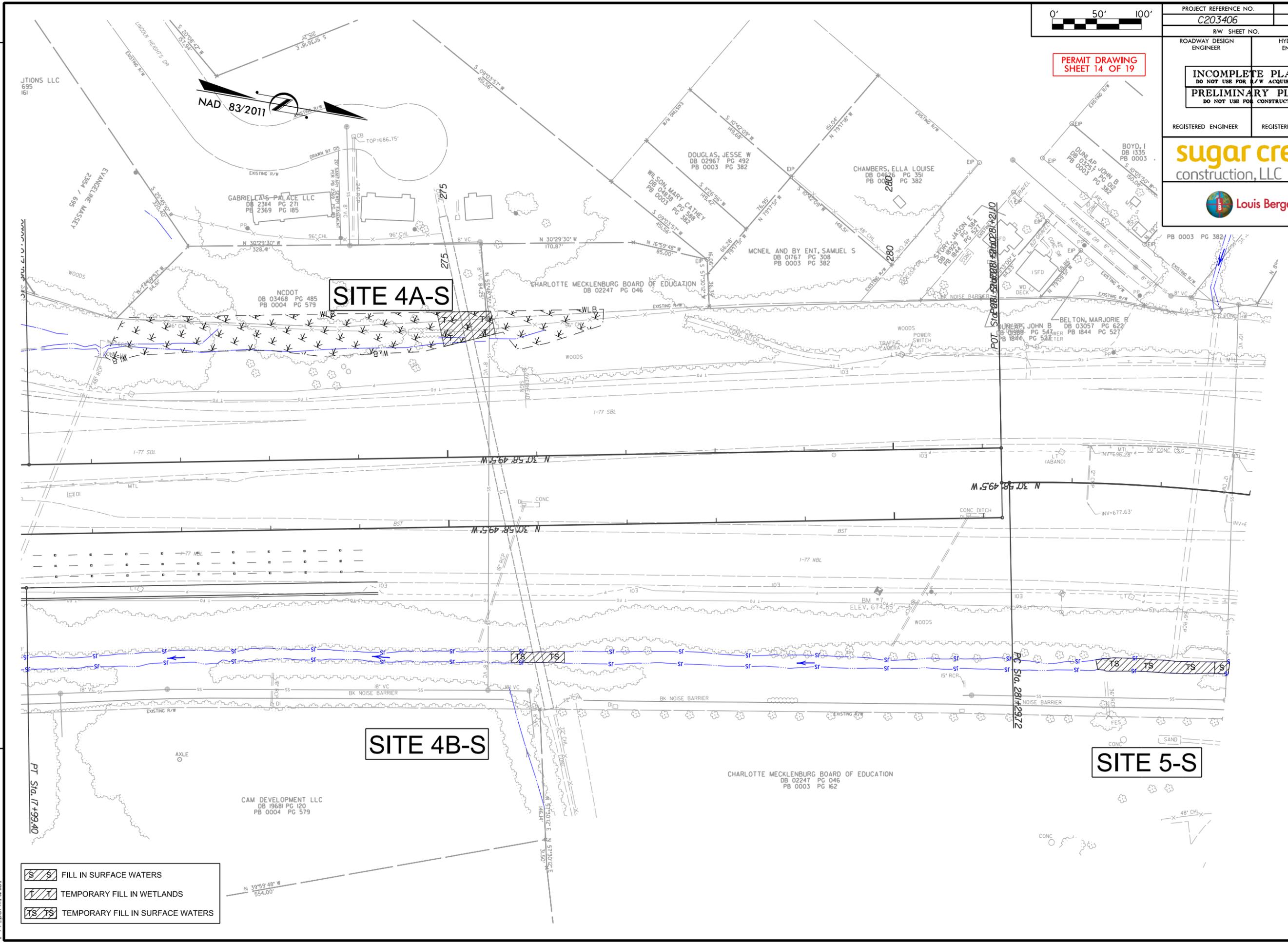
	FILL IN SURFACE WATERS
	TEMPORARY FILL IN SURFACE WATERS

8/12/2015 4:20:59 PM
9 FILES
I-77-permit.tbl



PROJECT REFERENCE NO. C203406		SHEET NO. 14	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
REGISTERED ENGINEER		REGISTERED ENGINEER	

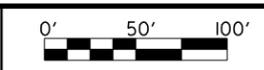
PERMIT DRAWING
SHEET 14 OF 19



	FILL IN SURFACE WATERS
	TEMPORARY FILL IN WETLANDS
	TEMPORARY FILL IN SURFACE WATERS

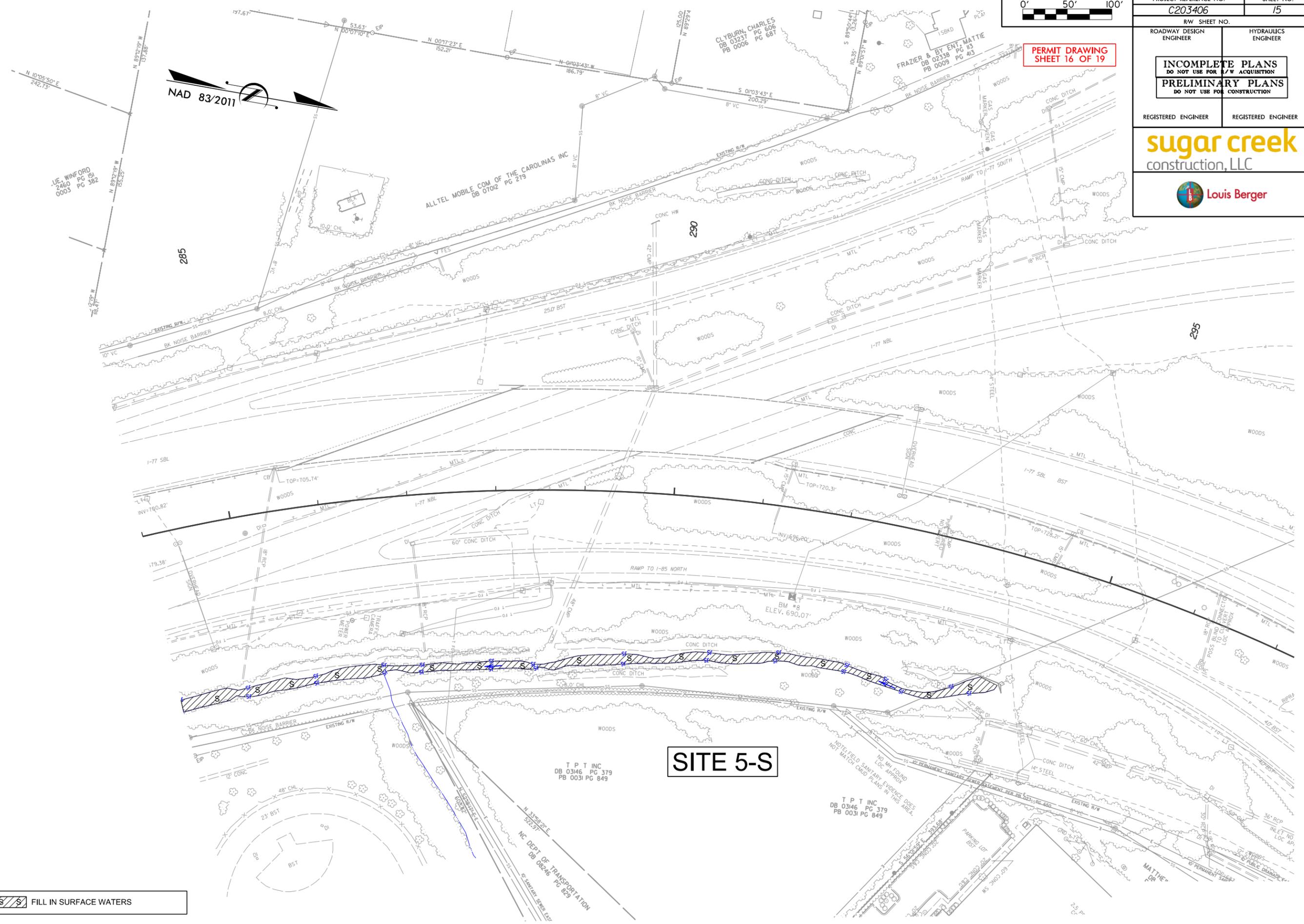
REVISIONS

8/12/2015 4:21:04 PM
9 FILES
I-77-permit.tbl



PROJECT REFERENCE NO. C203406		SHEET NO. 15	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		REGISTERED ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		REGISTERED ENGINEER	

PERMIT DRAWING
SHEET 16 OF 19



FILL IN SURFACE WATERS

SITE 5-S

REVISIONS

8/12/2015 4:21:14 PM
9 FILES
I-77-permit.tbl

J.C. WINFORD
2460 PG 15
0003

ALTEL MOBILE COM OF THE CAROLINAS INC
DB 07012 PG 219

CLYBURN, CHARLES
DB 03237 PG 606
PB 0006

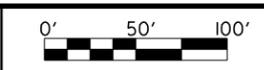
FRAZIER & BY ENT. MATTIE
DB 02356 PG 413
PB 0009

T P T INC
DB 03146 PG 379
PB 0031 PG 849

T P T INC
DB 03146 PG 379
PB 0031 PG 849

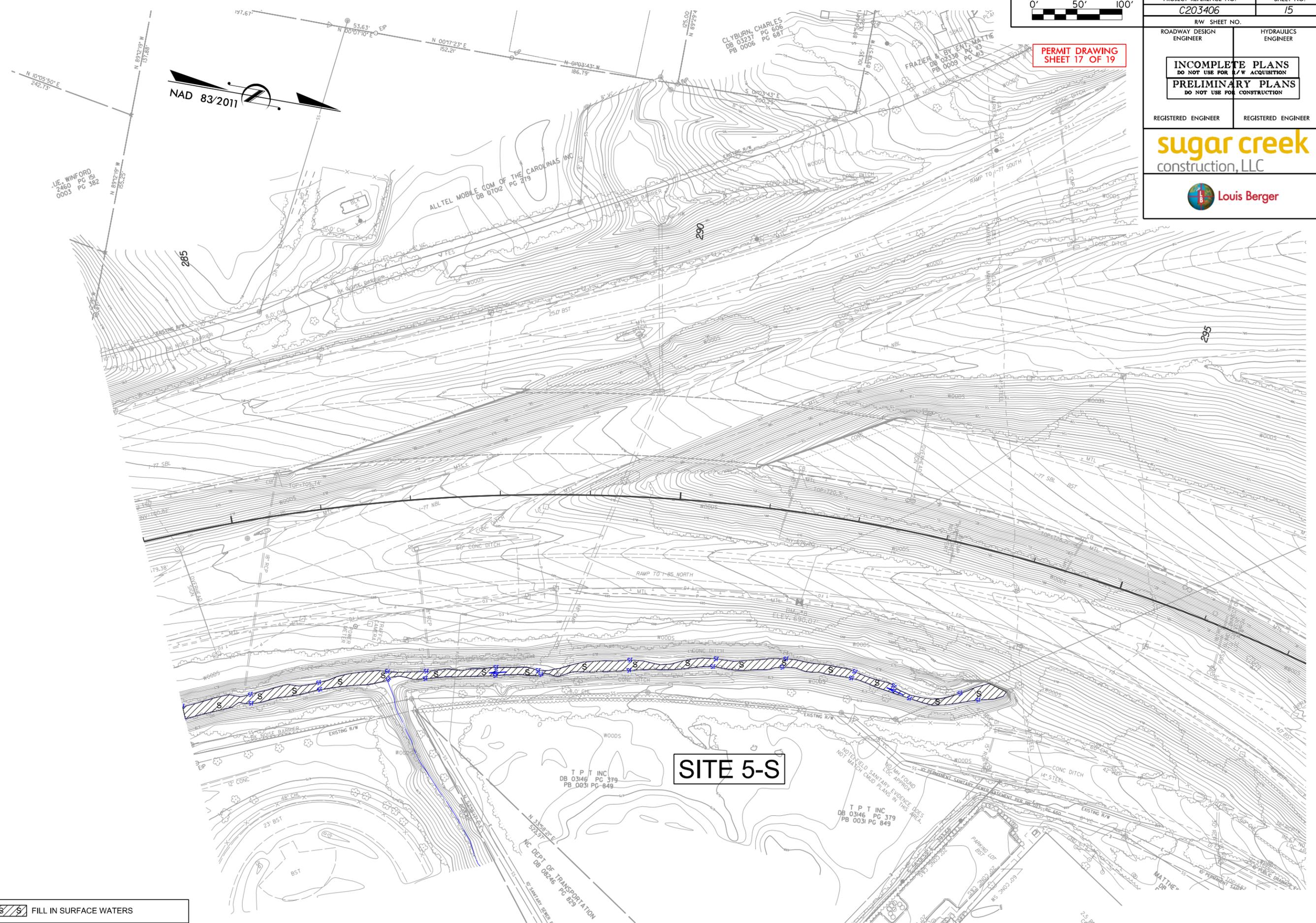
NC DEPT OF TRANSPORTATION
SANITARY SEWER EAST

NOTE: FIELD SANITARY EVIDENCE DOES
NO MATCH CUILD PLANS IN THIS AREA.



PROJECT REFERENCE NO. C203406	SHEET NO. 15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER

PERMIT DRAWING
SHEET 17 OF 19



FILL IN SURFACE WATERS

REVISIONS

8/12/2015 4:21:49 PM
9 FILES
I-77-permit.tbl

SITE 5-S

T P T INC
DB 03146 PG 379
PB 0031 PG 849

T P T INC
DB 03146 PG 379
PB 0031 PG 849

N 335921E
522.97
NC DEPT OF TRANSPORTATION
SANTARI CENTER
6 SANITARI CENTER

NO INV FOUND
LOC APPROX
NO PERMANENT SANITARY SEWER BASEMENT SEE PG 823
NO INV FOUND
LOC APPROX
NO PERMANENT SANITARY SEWER BASEMENT SEE PG 823

J.E. WINFORD
2460 PG 151
0003 PG 382

CLYBURN, CHARLES
DB 03237 PG 606
PB 0006 PG 687

FRAZIER DR BY ENT W/ THE
DB 02338 PG 415
PB 0009 PG 413

ALL TEL MOBILE COM OF THE CAROLINAS INC
DB 07012 PG 219

N 10°05'50" E
242.73

N 89°27'00" W
155.23

N 89°27'00" W
137.88

NAD 83/2011

N 00°17'23" E
152.27

N 01°03'43" W
186.79

N 85°00'
N 89°28'4"

285

290

295

I-77 SBL

INV 140.82

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

179.38

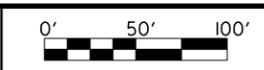
179.38

179.38

179.38

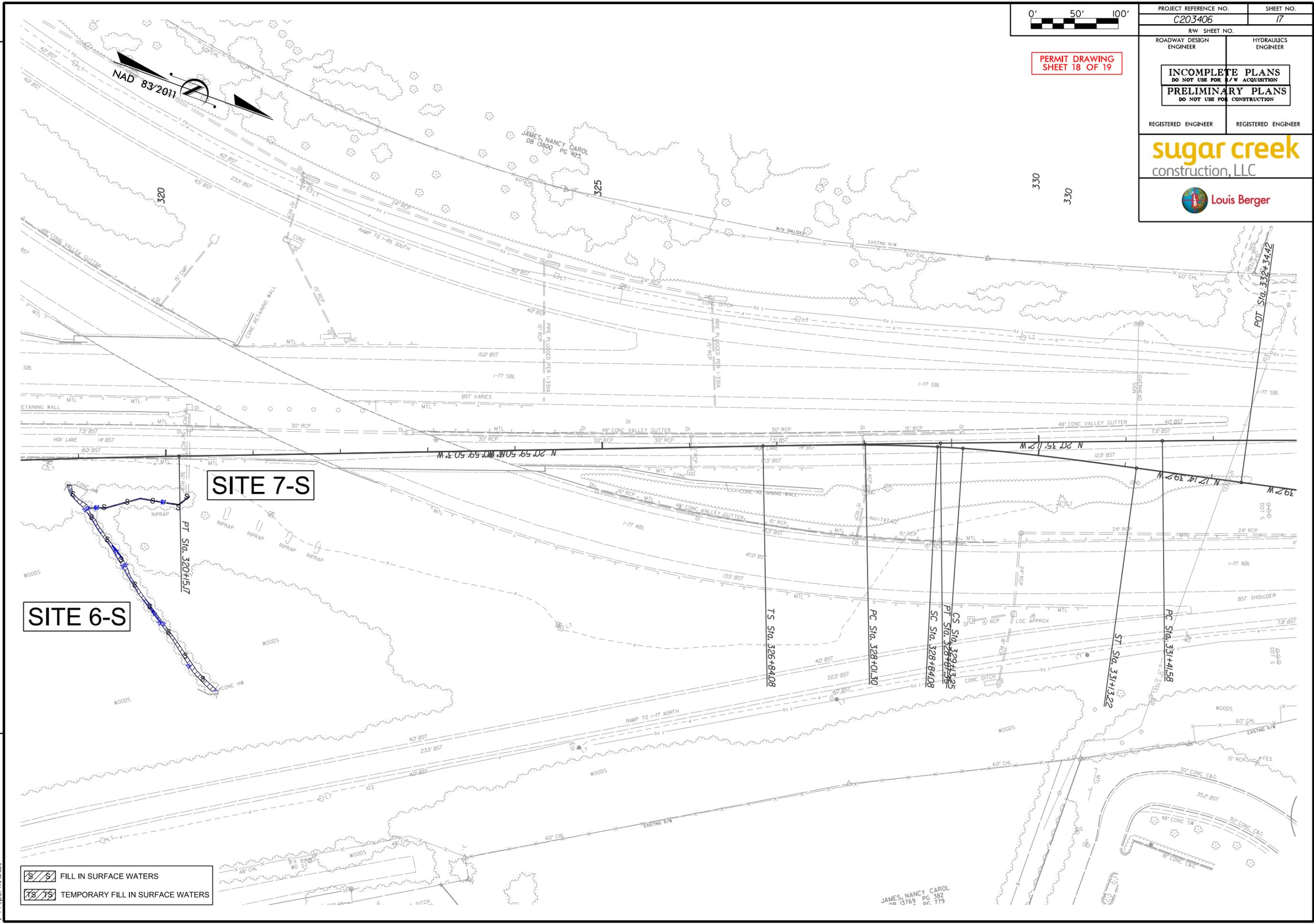
179.38

179.38



PROJECT REFERENCE NO. C203406	SHEET NO. 17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER

PERMIT DRAWING
SHEET 18 OF 19



SITE 7-S

SITE 6-S

	FILL IN SURFACE WATERS
	TEMPORARY FILL IN SURFACE WATERS

REVISIONS

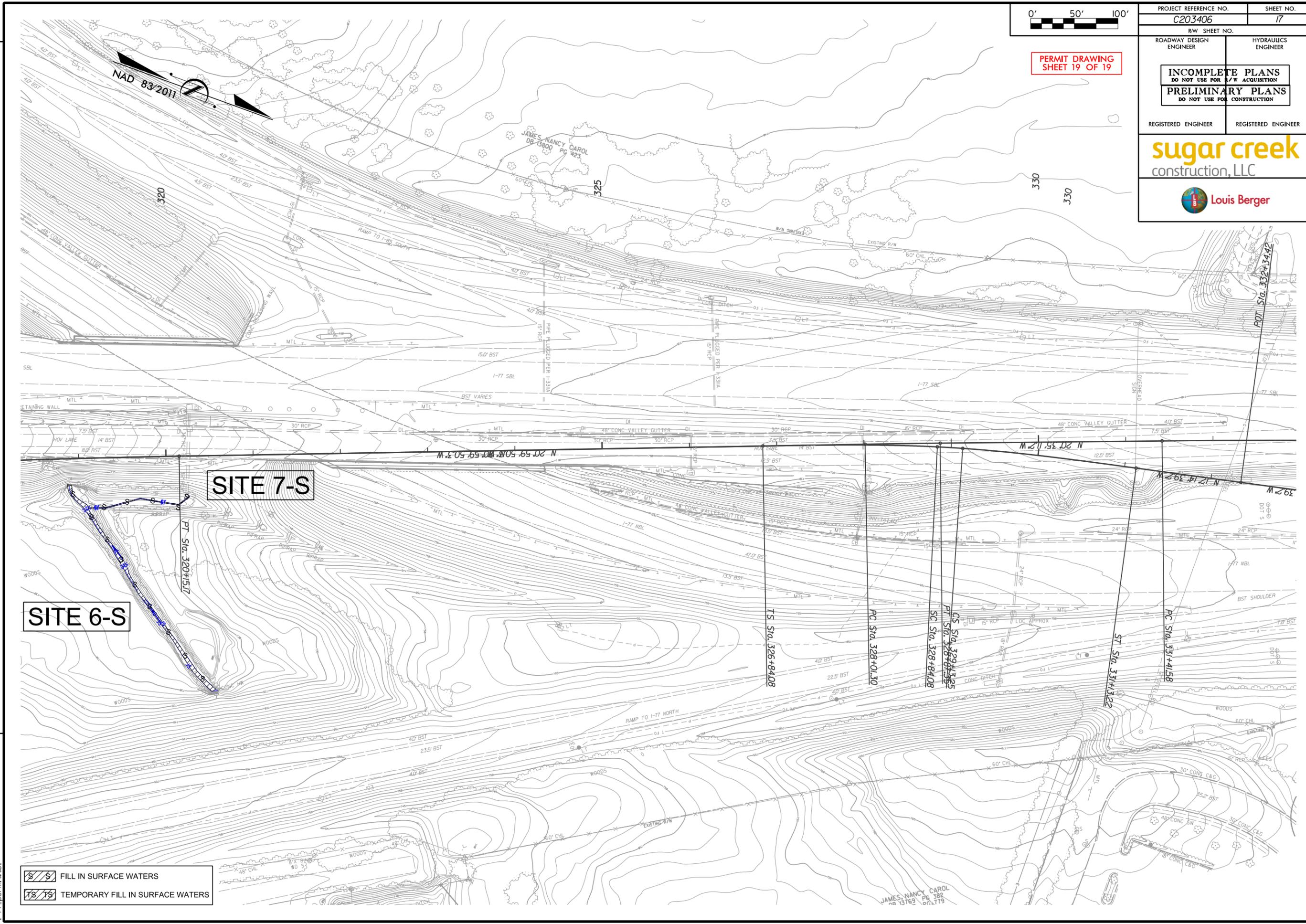
8/12/2015 4:21:24 PM
9 FILES
I-77-perm.t.tbl

JAMES, NANCY CAROL
DB 13769 PG 382
PC 779



PERMIT DRAWING
SHEET 19 OF 19

PROJECT REFERENCE NO. C203406	SHEET NO. 17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
REGISTERED ENGINEER	REGISTERED ENGINEER



REVISIONS

8/12/2015 4:21:29 PM
9FILES\$
I-77-permit.tbl

FILL IN SURFACE WATERS
 TEMPORARY FILL IN SURFACE WATERS