



PAT McCRORY
Governor

NICHOLAS J. TENNYSON
Secretary

November 23, 2016

MEMORANDUM TO: Mr. Louis Mitchell, P.E.
Division 10 Engineer

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

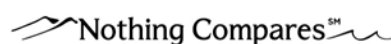
SUBJECT: Mecklenburg & Iredell Counties; I-77 HOT Lanes Project from I-277 to
Exit 36; Federal Aid No. NHF-077-1(209)9;
WBS 45454.1.1; **TIP I-5405, I-4750AA, & I-3311C; South Section**

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

Transportation Planning

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

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

Traffic Noise

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

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

COMMITMENTS FROM PERMITTING

No additional commitments have been developed from project permitting.



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

November 24, 2016

Regulatory Division

Action ID No. SAW-2012-00156

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

Dear Mr. Harris:

Please reference the Department of the Army permit issued on January 28, 2016 and the permit modification issued May 20, 2016 for the I-77 High Occupancy Toll (HOT) lanes project (TIP #s I5405, I4750AA and I3311C) which starts north of NC 150 in Iredell County and continues south along I-77, deviating from I77 at the I-277 interchange and following I-277 to terminate at North Brevard Street in Charlotte, Mecklenburg County, North Carolina. The January 28, 2016 permit authorized final impacts for the Central Section of the project and preliminary impacts for the South and North Sections. The May 20, 2016 permit modification authorized the final impacts for the North Section. Total impacts authorized include the permanent impact to 4,162 linear feet of stream channel (of which 225 linear feet is bank stabilization), <0.01 acre of wetland, and <0.01 acre of open water. Temporary impacts include impacts to 491 linear feet of stream channel, 0.1 acre of wetland, and 0.06 acres of open water. Please additionally reference your September 27, 2016, letter requesting a permit modification authorizing the final impacts for the South Section (STIP Project I-3311C) of the project.

The final design impacts for the South Section are as follows:

Wetland Impacts

Wetland Site	NRTR Wetland Number	Perm. Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)	Temp. Fill (ac)
4A-S	WA	0.00	-	--	0.17
TOTAL IMPACTS		0.00	-	-	0.17

Stream Impacts

Stream Site	Stream Name/ NRTR ID	Perm. Fill (ac)	Temp. Fill (ac)	Permanent Channel impact (lf)	Bank Stabilization (lf)	Temporary Channel Impacts (lf)	Mitigation (lf)
I-S	UT to Irwin Creek / SI (Perennial)	0.05	0.01	225	-	50	225
1A-S	UT to Irwin Creek / SG (Intermittent)	-	<0.01	-	-	19	-

2-S	Irwin Creek (Perennial)	-	0.15	-	-	270	-
3A-S	Irwin Creek (Perennial)	-	0.15	-	-	217	-
3B-S	Irwin Creek (Perennial)	0.50	0.60	954	-	1,180	954
3C-S	UT to Irwin Creek / SE (Perennial)	0.01	<0.01	45	-	45	45
4B-S	Dillons Twin Lakes and Lake Jo (Perennial)	-	0.02	-	-	57	-
5-S	Dillons Twin Lakes and Lake Jo (Perennial)	-	0.08	-	-	350	-
6-S	UT to Dillons Twin Lakes and Lake Jo / SC (Intermittent)	0.01	<0.01	166	10	40	166
7-S	UT to Dillons Twin Lakes and Lake Jo / SB (Intermittent)	-	<0.01	-	-	100	-
TOTAL Stream Impacts		0.57	1.02	1,390	10	2,328	1,390

The final design for the South Section has resulted in a decrease of overall permanent impacts to streams by 2,262 lf, an increase of overall temporary impacts to streams by 2,328 lf feet and increase of total temporary impacts to wetlands by 0.13 acre. The total revised impacts for the entire project are as follows:

Section	Design Stage	Wetland Impact Type	Wetland Impact Area (ac)	Stream Impact Type	Stream Impact linear foot	Open Water Impact Type	Open Water Impact Area (ac)
Central	Final	Temp Impact	0.06	Permanent Impact	185	NA	NA
		Permanent Impact	<0.01	Bank Stabilization	225		
				Temporary Impact	491		
North	Final	NA	0	Permanent Impact	27	Permanent Impact	<0.01
				Bank Stabilization	23	Temporary Impact	0.12
				Temporary Impact	298		
South	Final	Temp Impact	0.17	Permanent Impact	1,390	NA	NA
				Bank Stabilization	10		
				Temporary Impact	2,328		

Total Permanent Impacts	<0.01		1,860		<0.01
Total Temporary Impacts	0.23		3,117		0.12

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


The total impacts authorized by the January 28, 2016 permit, the May 20, 2016 permit modification, and this modification include the permanent impacts to 1,860 linear feet of stream channel (of which 258 linear feet is bank stabilization), <0.01 acre of wetland, and <0.01 acre of open water. Temporary impacts include 3,117 linear feet of stream channel, 0.23 acre of wetland, and 0.12 acres of open water.

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

Mitigation for the Central Section and North Section has already been completed. Mitigation for the South Section shall be provided in accordance with the provisions outlined on the most recent version of the attached Compensatory Mitigation Responsibility Transfer Form. The requirements of this form, including any special conditions listed on this form, are hereby incorporated as special conditions of this permit authorization.

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

Sincerely,


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

Enclosures

Copy Furnished (without enclosures):

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

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

Mr. Kenneth Riley
National Marine Fisheries Service
101 Pivers Island Road
Beaufort, NC 28516

Ms. Amy S. Chapman
Transportation Permitting Unit
NC Division of Water Quality
1617 Mail Service Center
Raleigh, NC 27699-1617

Ms. Marla Chambers
Western Region Highway Project Coordinator
NCWRC
12275 Swift Road
Oakboro, NC 28129

US Fish and Wildlife Service
Asheville Ecological Services Field Office
Attn: Marella Buncick
160 Zillicoa Street
Asheville, NC 28801-1082

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

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

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

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

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

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

U.S. ARMY CORPS OF ENGINEERS

Wilmington District

Compensatory Mitigation Responsibility Transfer Form

Permittee: North Carolina Department of Transportation

Action ID: SAW-SAW-2012-00156

Project Name: The I-77 High Occupancy Toll (HOT) lanes project (TIP #s I5405, I4750AA and I3311C)

County: Mecklenburg

South Section STIP Project I-3311C

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: 03050103, Catawba River Basin			
Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
1390						

*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: 03050103, Catawba River Basin			
Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
3202						

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: _____

Name of Sponsor's Authorized Representative: _____

Signature of Sponsor's Authorized Representative

Date of Signature

**USACE Wilmington District
Compensatory Mitigation Responsibility Transfer Form, Page 2**

Conditions for Transfer of Compensatory Mitigation Credit:

- Once this document has been signed by the Mitigation Sponsor and the USACE is in receipt of the signed form, the Permittee is no longer responsible for providing the mitigation identified in this form, though the Permittee remains responsible for any other mitigation requirements stated in the permit conditions.
- Construction within jurisdictional areas authorized by the permit identified on page one of this form can begin only after the USACE is in receipt of a copy of this document signed by the Sponsor, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein. For authorized impacts conducted by the North Carolina Department of Transportation (NCDOT), construction within jurisdictional areas may proceed upon permit issuance; however, a copy of this form signed by the Sponsor must be provided to the USACE within 30 days of permit issuance. NCDOT remains fully responsible for the mitigation until the USACE has received this form, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein.
- Signed copies of this document must be retained by the Permittee, Mitigation Sponsor, and in the USACE administrative records for both the permit and the Bank/ILF Instrument. It is the Permittee's responsibility to ensure that the USACE Project Manager (address below) is provided with a signed copy of this form.
- If changes are proposed to the type, amount, or location of mitigation after this form has been signed and returned to the USACE, the Sponsor must obtain case-by-case approval from the USACE Project Manager and/or North Carolina Interagency Review Team (NCIRT). If approved, higher mitigation ratios may be applied, as per current District guidance and a new version of this form must be completed and included in the USACE administrative records for both the permit and the Bank/ILF Instrument.


Comments/Additional Conditions:

This form is for the South Section only. Separate forms for the Northern and Central Sections have been prepared under previous permits and/or modifications.

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



Click here to enter a date.

Date of Signature

Current Wilmington District mitigation guidance, including information on mitigation ratios, functional assessments, and mitigation bank location and availability, and credit classifications (including stream temperature and wetland groupings) is available at <http://ribits.usace.army.mil>.



PAT MCCRORY

Governor

DONALD R. VAN DER VAART

Secretary

S. JAY ZIMMERMAN

Director

November 22, 2016

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

Subject: Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for Proposed improvements to I-77 in Mecklenburg and Iredell Counties, Federal Aid Project NHF-077-1(209)9; WBS No. 45454.1.1, TIP I-5405, I-4750AA, and I-3311C.
NCDWR Project No. 20150931v.3

Dear Mr. Harris:

Attached hereto is a modification of Certification No. WQC004036 issued to The North Carolina Department of Transportation (NCDOT) dated November 13, 2015-version 1 and February 15, 2016 version 2.

This Individual Certification now includes impacts to the I-5405, I-4750AA and I-3311C sections of the I-77 HOT Lanes project and all sections are now permitted.

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

Sincerely,

S. Jay Zimmerman, Director
Division of Water Resources

Attachments

Electronic copy only distribution:

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

**Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act
with ADDITIONAL CONDITIONS**

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact an additional 3,728 linear feet of jurisdictional streams in Mecklenburg and Iredell Counties. The project shall be constructed pursuant to the modification dated received September 27, 2016. The authorized impacts are as described below:

Stream Impacts in the Catawba River Basin

Site	Stream Bank Stabilization	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear feet)	Stream Impact Requiring Mitigation (linear ft)
1-S				225	50	275	225
1A-S			19			19	0
2-S					270	270	0
3A-S					217	217	0
3B-S				954	1,180	2,134	954
3C-S				45	45	90	0
4B-S					57	57	0
5-S					350	350	0
6-S	10	166	40			216	10
7-S			100			100	0
TOTAL:	10	166	159	1,224	2,169	3,728	1,189

Total Stream Impact for Modification: 3,728 linear feet

DWR Mitigation totals: 1,189 linear feet

USACE mitigation totals are: 1,390 linear feet

Wetland Impacts in the Catawba River Basin

Site	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Area under Bridge (ac)	Total Wetland Impact (ac)
4A-S		0.17					0.17
TOTAL:		0.17					0.17

Total Wetland Impact for Modification: 0.17 acres

Impacts are temporary, no mitigation required.

The application provides adequate assurance that the discharge of fill material into the waters of the Catawba River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your modified application dated received September 27, 2016. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated November 13, 2015-version 1 and February 12, 2016-version 2 still apply except where superseded by this certification. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). Additional buffer impacts may require compensatory mitigation as described in 15A NCAC 2B .0243. For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification

shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Special Condition(s) of Certification:

1. **Site 1-S** has rock stabilization in the bed of the relocated channel. Any rock stabilization shall be embedded so as to provide for stream stabilization but not impede aquatic passage. [15A NCAC 02H.0506(b)(2)]
2. **Site 3B-S** only will be allowed minimal usage of equipment in the stream. Heavy equipment may be operated within the stream channels however, its usage shall be minimized. [15A NCAC 02H.0506(b)(3)]
3. Any new accumulation of sediment discharged to the stormdrain system that is being retained, will be removed as soon as possible to prevent additional/on-going surface water impacts. [15A NCAC 02H .0506(b)(3)]
4. As a condition of this 401 Water Quality Certification, the bridge demolition and construction must be accomplished in strict compliance with the most recent version of NCDOT's Best Management Practices for Construction and Maintenance Activities. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]
5. No drill slurry or water that has been in contact with uncured concrete shall be allowed to enter surface waters. This water shall be captured, treated, and disposed of properly. [15A NCAC 02H .0506(b)(3)]
6. Channel relocations shall be completed and stabilized, and approved on site by NCDWR staff, prior to diverting water into the new channel. Vegetation used for bank stabilization shall be limited to native riparian vegetation, and should include establishment of a vegetated buffer on both sides of the relocated channel to the maximum extent practical. Also, rip-rap may be allowed if it is necessary to maintain the physical integrity of the stream, but the applicant must provide written justification and any calculations used to determine the extent of rip-rap coverage requested. Once the stream has been turned into the new channel, it may be necessary to relocate stranded fish to the new channel to prevent fish kills. [15A NCAC 02H .0506(b)(3)]
7. Due to the possibility that compaction and/or other site alterations might prevent the temporary wetland impact area from re-attaining jurisdictional wetland status; the permittee shall provide an update on the wetland areas temporarily impacted at Site 4A-S. This update shall be conducted two growing seasons after completion of the work at Site 4A-S and shall consist of photographs and a brief report on the progress of the areas in re-attaining wetland jurisdictional status. Upon submission of this update to the NCDWR, the permittee shall schedule an agency field meeting with the NCDWR to determine if the wetland areas temporarily impacted by this project have re-attained jurisdictional wetland status. If the wetland areas temporarily impacted by this project have not re-attained jurisdictional wetland status, the NCDWR shall determine if compensatory wetland mitigation is be required. [15A NCAC 02H.0506(b)(3)]

General Conditions

1. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. [15A NCAC 02H.0506(b)(2)]

2. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. [15A NCAC 02B.0200]
3. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers. [15A NCAC 02H.0506(b)(2)]
4. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions. [15A NCAC 02H.0506(b)(2)]
5. The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage. [15A NCAC 02H.0506(b)(2)]
6. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
7. All post construction stormwater must be in compliance with NCDOT's NPDES permit NCS000250. [15A NCAC 02B.0506(b)(5)]
8. 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)]
9. 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)]
10. 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)]
11. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification. [15A NCAC 02H.0506(b)(3)]
12. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]
13. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If the NCDWR determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the NCDWR may reevaluate and modify this certification. [15A NCAC 02B.0200]
14. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification. [15A NCAC 02H.0506(b)(2)]
15. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
16. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502]

17. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.
18. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery. [15A NCAC 02B.0506(b)(2)]
19. Upon completion of the project (including any impacts at associated borrow or waste sites), 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)]
20. 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)]
21. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities. [15A NCAC 02H.0506(b)(3) and (c)(3)]
22. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface 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.
23. 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:

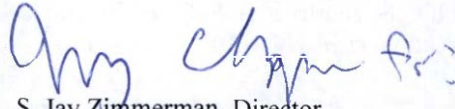
Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714
Telephone: (919) 431-3000, Facsimile: (919) 431-3100

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 22nd day of November 2016

DIVISION OF WATER RESOURCES

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

S. Jay Zimmerman, Director

WQC No. 004036



PAT MCCRORY

Governor

DONALD R. VAN DER VAART

Secretary

S. JAY ZIMMERMAN

Director

NCDWR Project No.: _____ County: _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Resources, 1650 Mail Service Center, Raleigh, NC, 27699-1650. This form may be returned to NCDWR by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Engineer's Certification

_____ Partial _____ Final

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

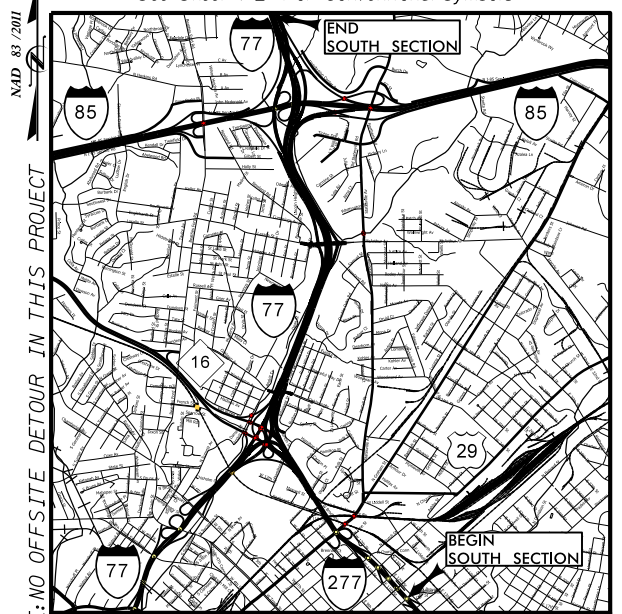
Signature _____ Registration No. _____

Date _____

TIP PROJECT: I-3311C

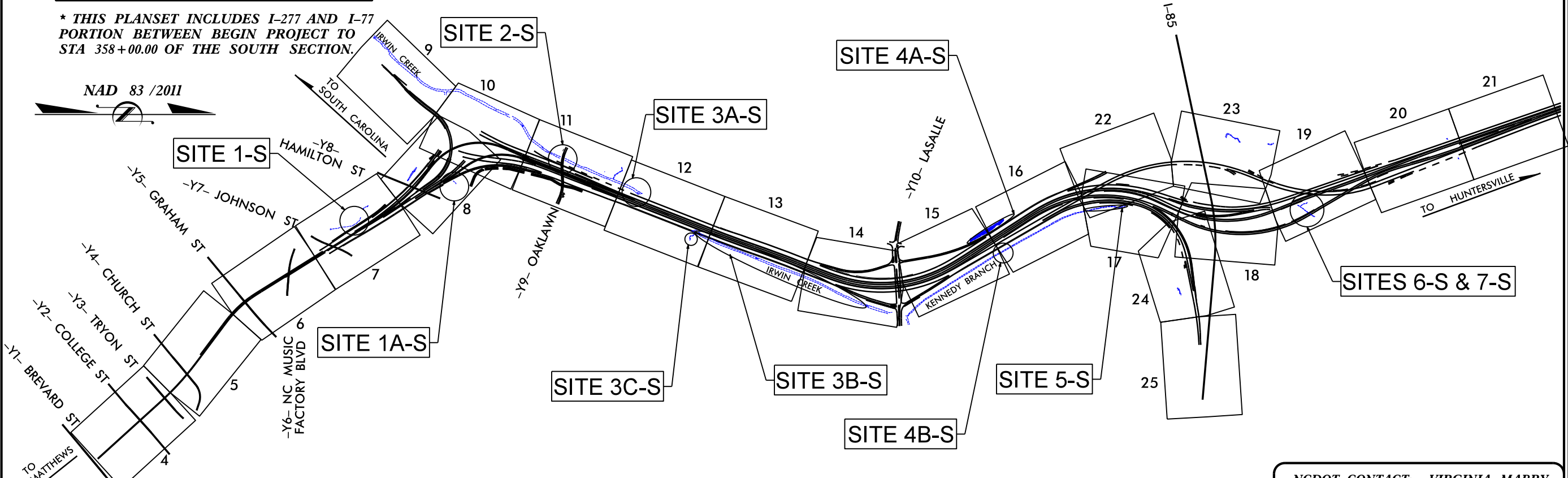
CONTRACT: C203406

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP SHOWING LOCATION OF STATE PROJECT I-77 HOTLANES

* THIS PLANSET INCLUDES I-277 AND I-77 PORTION BETWEEN BEGIN PROJECT TO STA 358+00.00 OF THE SOUTH SECTION.



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

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

NCDOT CONTACT: VIRGINIA MABRY
MANAGER PRIORITY PROJECTS UNIT

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

I-277 FROM WEST OF BREVARD STREET
TO I-77 NORTH OF I-85 INTERCHANGE

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

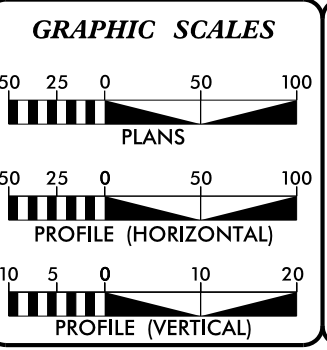
WETLAND AND STREAM IMPACTS (SOUTH SECTION)

**PERMIT DRAWING
SHEET 01 OF 35**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-3311C	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45454.3.P3S1	NHFP-077-1(216)	P.E.	
45454.3.P3S1	NHFP-077-1(216)	CONSTRUCTION	
45454.3.P3S1	NHFP-077-1(216)	UTILITIES	

sugar creek
construction, LLC

IMPACT SHEETS
SUBMITTAL NO. DSG-0094R3
SEPTEMBER 22, 2016



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-3311C	= 3.41 MI
LENGTH STRUCTURES TIP PROJECT I-3311C	= 0.79 MI
TOTAL LENGTH OF TIP PROJECT I-3311C	= 4.20 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: TBD

LETTING DATE: TBD

DEAN HATFIELD, PE
PROJECT ENGINEER

RAYMOND ODELL, PE
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

\$ DATE \$
\$ FEELS \$
\$ PENTBL \$

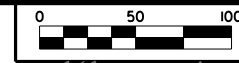
 DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DUKE POWER CO
 ATTN: TAX DEPT - PB05B
 0381 / 126
 58

MECKLENBURG COUNTY
 03926 / 219
 57

MUSIC FACTORY LLC
 DB 22235 PG 127
 MB 48 PG 03

NAD 83/2011

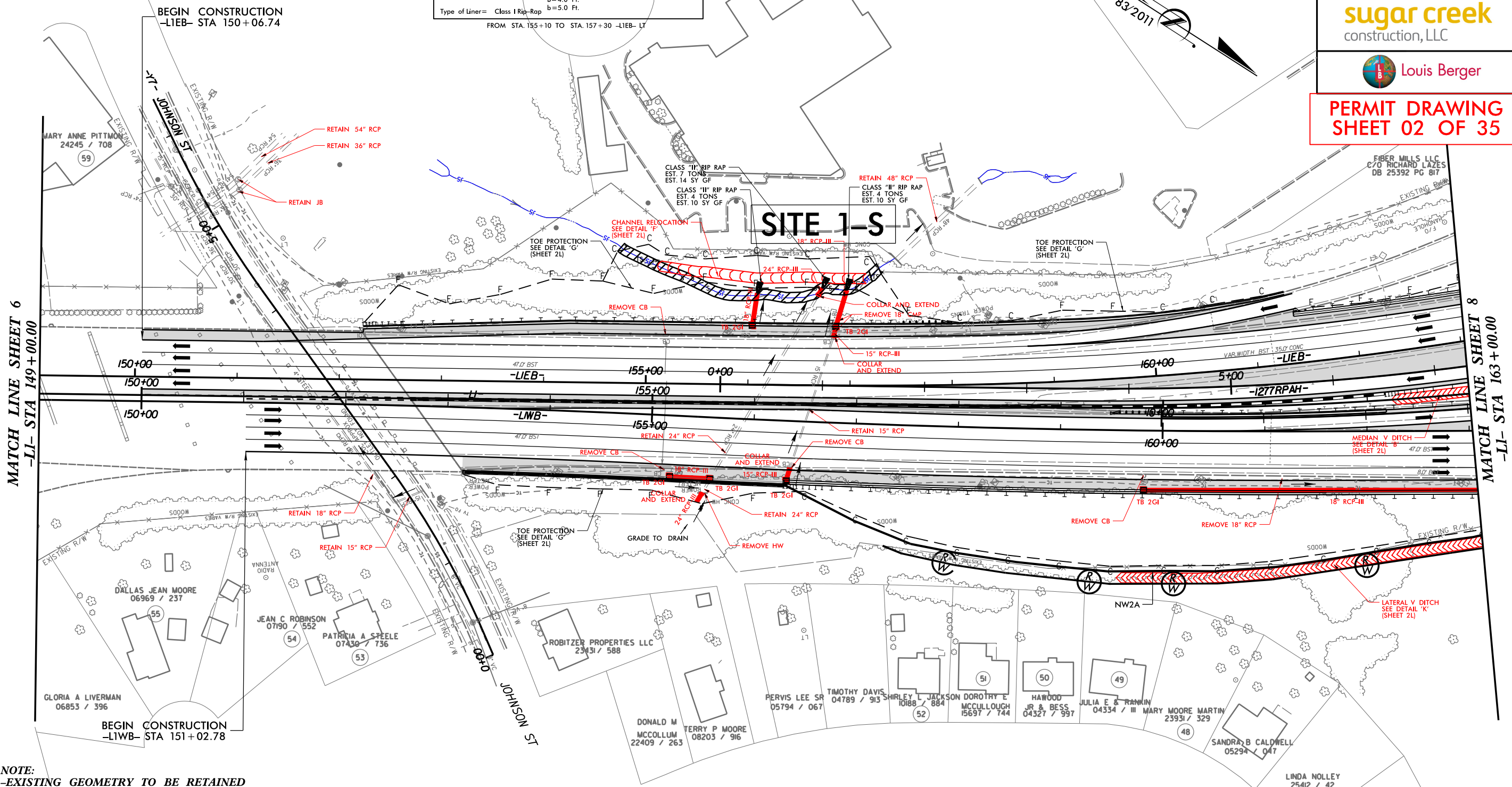
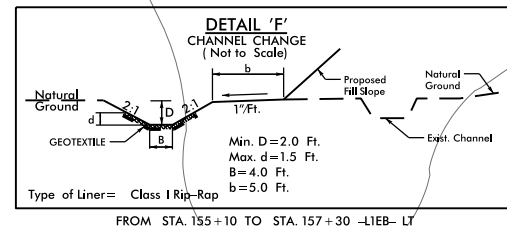


PROJECT REFERENCE NO. L-3311C	SHEET NO. 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



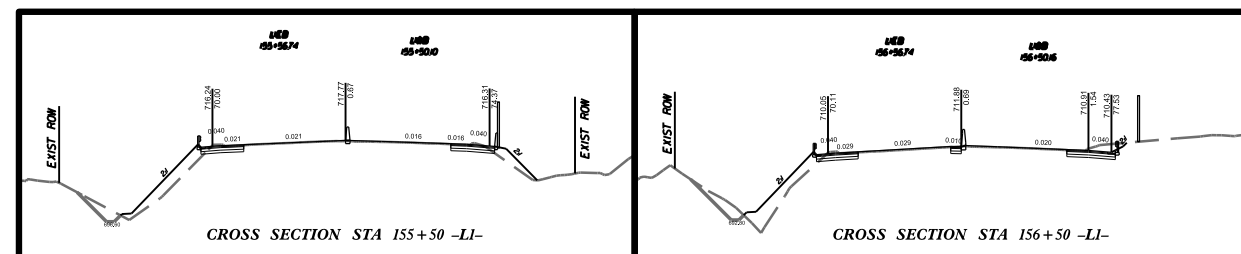


**PERMIT DRAWING
 SHEET 02 OF 35**



NOTE:
 -EXISTING GEOMETRY TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -SHOULDERS, SIDE SLOPES, DRAINAGE, ARE TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -DESIGN EXCEPTION FOR GORE 4'
 -LIEB- STA. 161+40.00

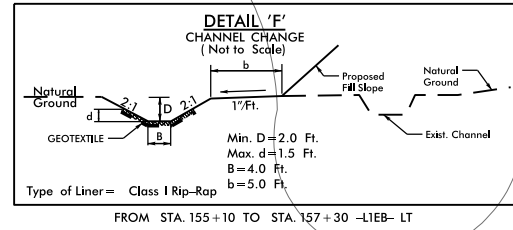
NOTES:
 1.) FOR -LIEB- PROFILE SEE SHEET 13.
 2.) FOR -LIWB- PROFILE SEE SHEET 13.
 3.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 2P



\$ TIME \$
 \$ DATE \$
 \$ FILE \$
 \$ PENTBL \$

DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DUKE POWER CO
 ATTN: TAX DEPT - PB05B
 0381 / 126
 58



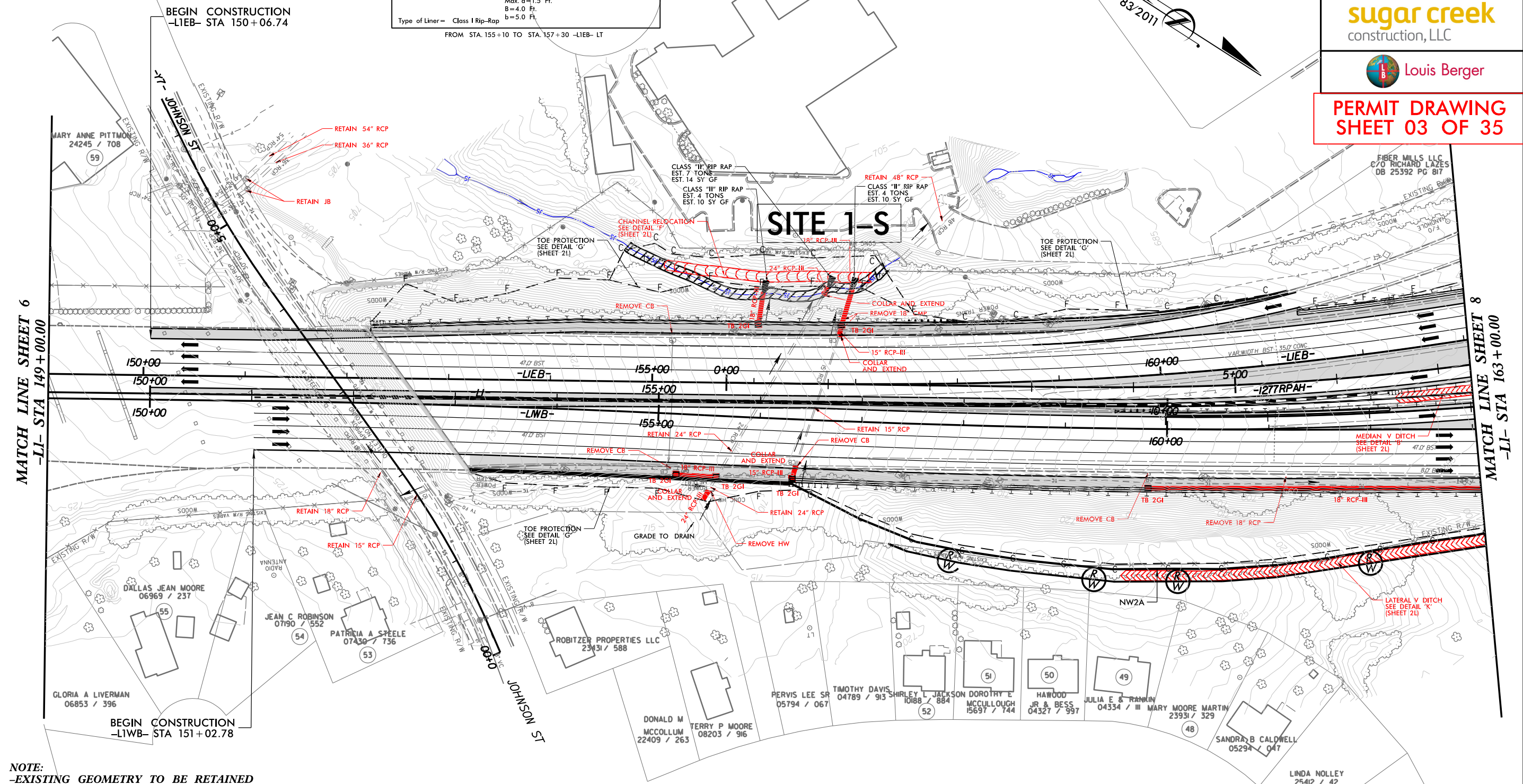
MECKLENBURG COUNTY
 03926 / 219
 57

MUSIC FACTORY LLC
 DB 22235 PG 127
 MB 48 PG 03



PROJECT REFERENCE NO. L-3311C	SHEET NO. 7A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
 SHEET 03 OF 35

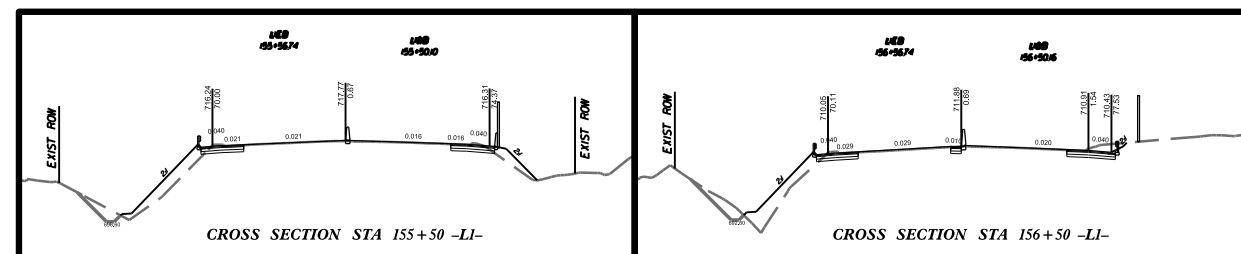


MATCH LINE SHEET 6
 -LI- STA 149+00.00

MATCH LINE SHEET 8
 -LI- STA 163+00.00

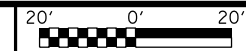
NOTE:
 -EXISTING GEOMETRY TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -SHOULDERS, SIDE SLOPES, DRAINAGE, ARE TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -DESIGN EXCEPTION FOR GORE 4'
 -LIEB- STA. 161+40.00

NOTES:
 1.) FOR -LIEB- PROFILE SEE SHEET 13.
 2.) FOR -LIWB- PROFILE SEE SHEET 13.
 3.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 2P



\$ TIME \$
 \$ DATE \$
 \$ FILE \$
 \$ PENTBL \$

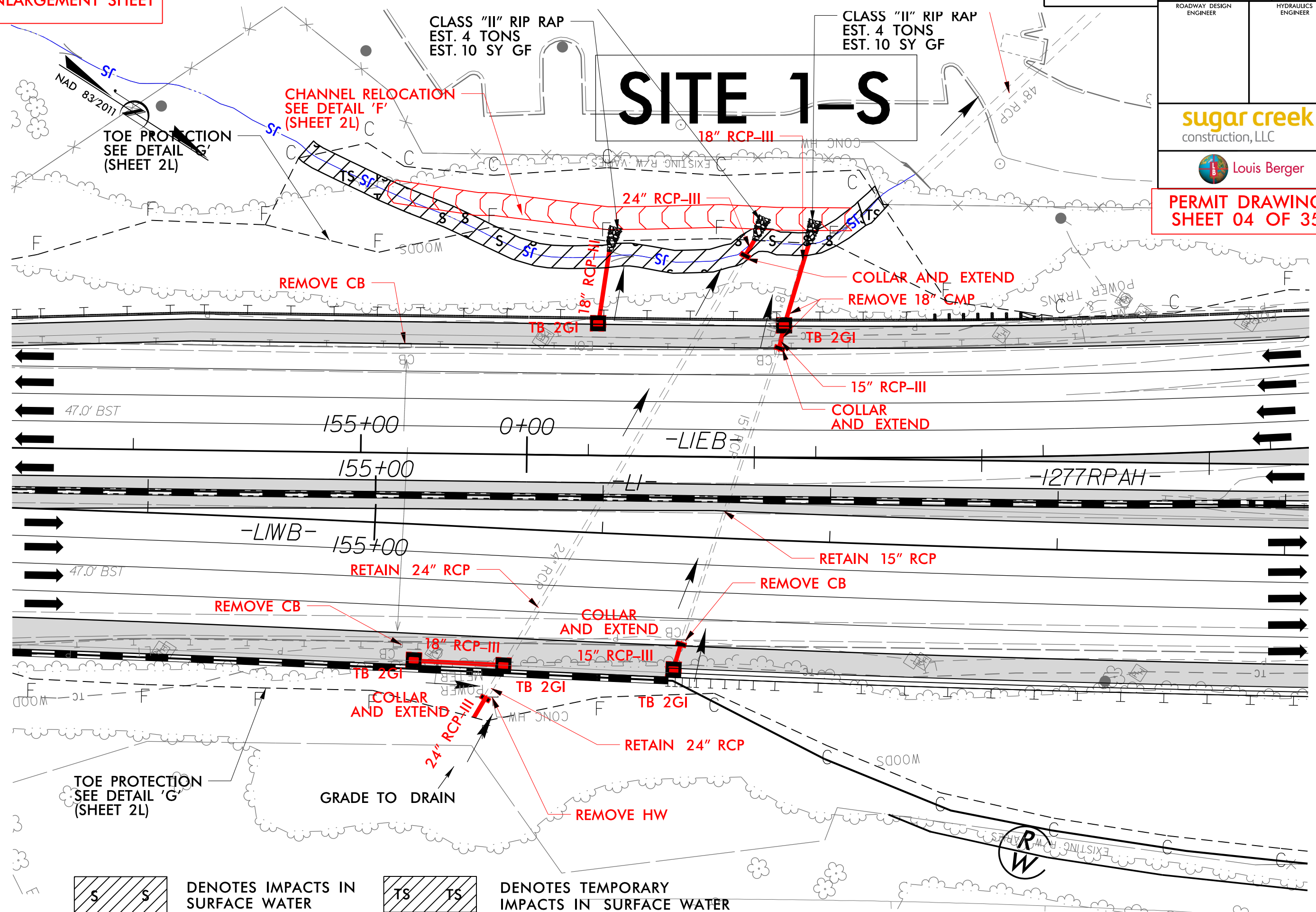
ENLARGEMENT SHEET



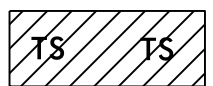
PROJECT REFERENCE NO. I-3311C	SHEET NO. 7B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
sugar creek construction, LLC	
Louis Berger	

PERMIT DRAWING SHEET 04 OF 35

SITE 1-S



DENOTES IMPACTS IN SURFACE WATER



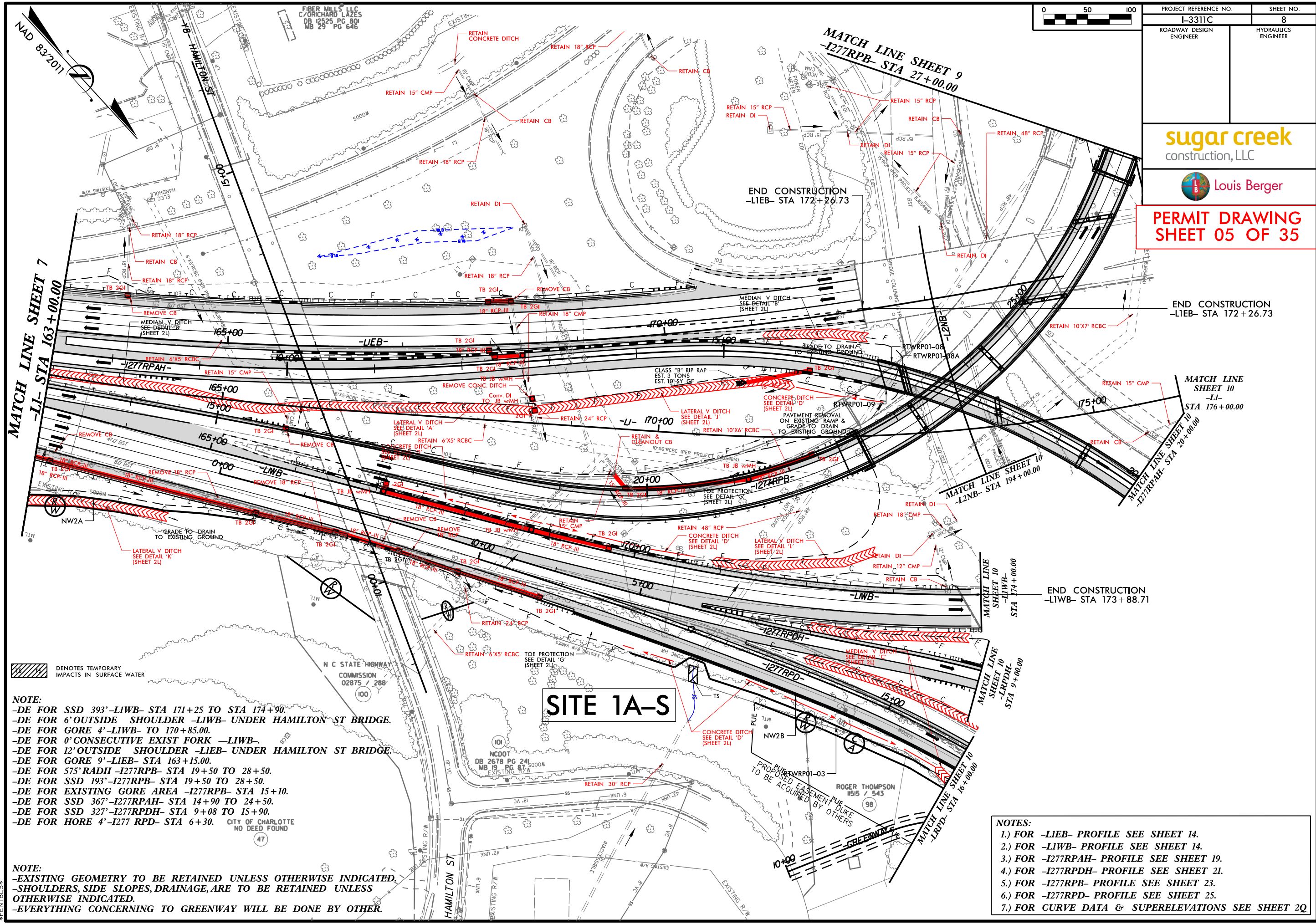
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

\$DATE\$ \$FILE\$ \$PENLBS\$

sugar creek
construction, LLC

Louis Berger

**PERMIT DRAWING
SHEET 05 OF 35**



MATCH LINE SHEET 7
-L1- STA 163+00.00

MATCH LINE SHEET 9
-I277RPB- STA 27+00.00

END CONSTRUCTION
-LIEB- STA 172+26.73

MATCH LINE SHEET 10
-L1- STA 176+00.00

MATCH LINE SHEET 10
-L2NB- STA 194+00.00

MATCH LINE SHEET 10
-LIWB- STA 174+00.00

MATCH LINE SHEET 10
-LRPDH- STA 9+00.00

MATCH LINE SHEET 10
-LRPD- STA 16+00.00

SITE 1A-S

- NOTE:**
- DE FOR SSD 393'-LIWB- STA 171+25 TO STA 174+90.
 - DE FOR 6' OUTSIDE SHOULDER -LIWB- UNDER HAMILTON ST BRIDGE.
 - DE FOR GORE 4'-LIWB- TO 170+85.00.
 - DE FOR 0' CONSECUTIVE EXIST FORK -LIWB-.
 - DE FOR 12' OUTSIDE SHOULDER -LIEB- UNDER HAMILTON ST BRIDGE.
 - DE FOR GORE 9'-LIEB- STA 163+15.00.
 - DE FOR 575' RADII -I277RPB- STA 19+50 TO 28+50.
 - DE FOR SSD 193'-I277RPB- STA 19+50 TO 28+50.
 - DE FOR EXISTING GORE AREA -I277RPB- STA 15+10.
 - DE FOR SSD 367'-I277RPAH- STA 14+90 TO 24+50.
 - DE FOR SSD 327'-I277RPDH- STA 9+08 TO 15+90.
 - DE FOR HORE 4'-I277 RPD- STA 6+30.

- NOTE:**
- EXISTING GEOMETRY TO BE RETAINED UNLESS OTHERWISE INDICATED.
 - SHOULDERS, SIDE SLOPES, DRAINAGE, ARE TO BE RETAINED UNLESS OTHERWISE INDICATED.
 - EVERYTHING CONCERNING TO GREENWAY WILL BE DONE BY OTHER.

- NOTES:**
- 1.) FOR -LIEB- PROFILE SEE SHEET 14.
 - 2.) FOR -LIWB- PROFILE SEE SHEET 14.
 - 3.) FOR -I277RPAH- PROFILE SEE SHEET 19.
 - 4.) FOR -I277RPDH- PROFILE SEE SHEET 21.
 - 5.) FOR -I277RPB- PROFILE SEE SHEET 23.
 - 6.) FOR -I277RPD- PROFILE SEE SHEET 25.
 - 7.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 20.

\$DATE\$
\$FILE\$
\$PENTBL\$



PROJECT REFERENCE NO. I-3311C	SHEET NO. 8A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

sugar creek
construction, LLC

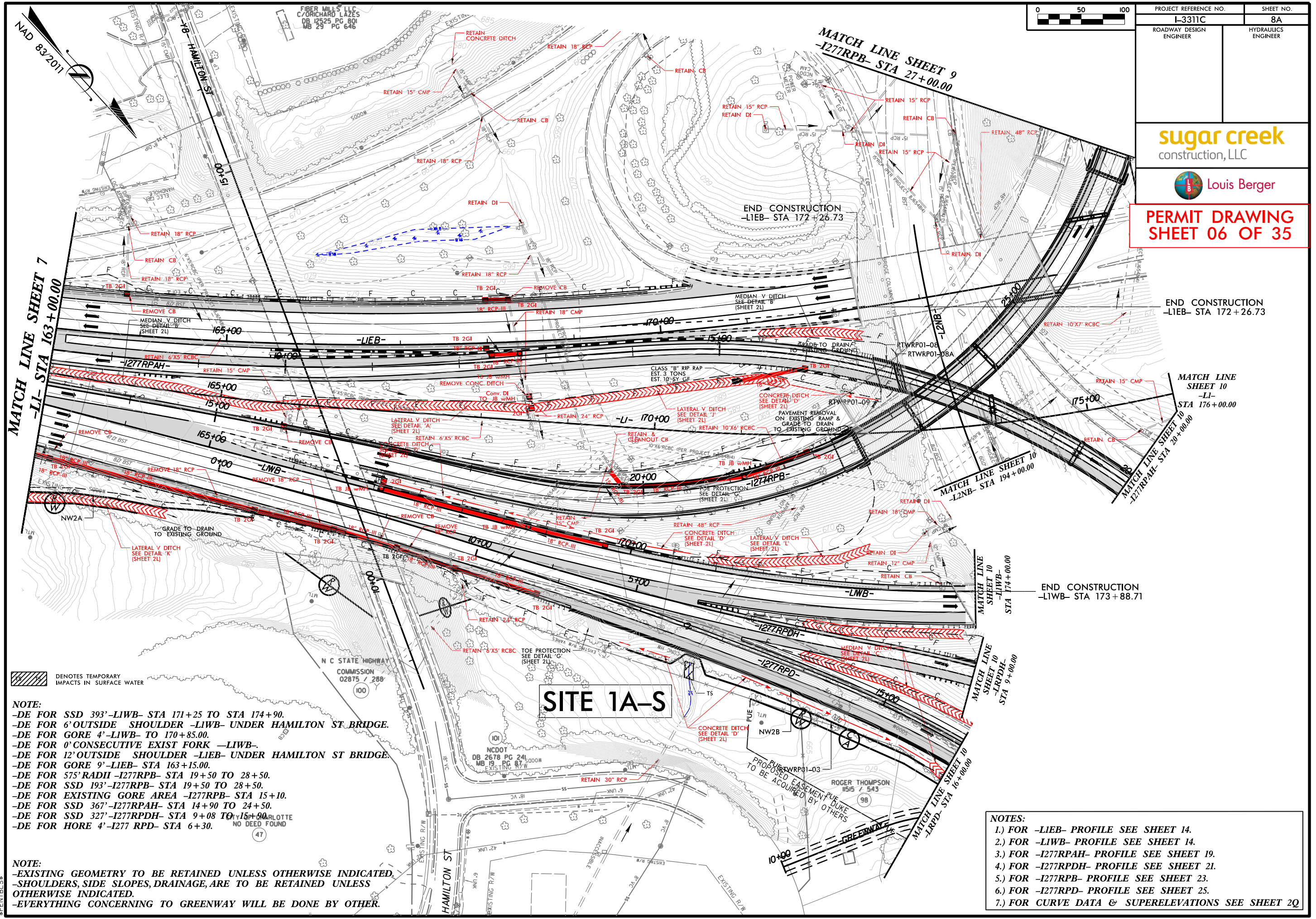


PERMIT DRAWING
SHEET 06 OF 35

END CONSTRUCTION
-LIEB- STA 172+26.73

END CONSTRUCTION
-LI- STA 176+00.00

END CONSTRUCTION
-LIWB- STA 173+88.71



SITE 1A-S

- NOTE:**
- DE FOR SSD 393'-LIWB- STA 171+25 TO STA 174+90.
 - DE FOR 6' OUTSIDE SHOULDER -LIWB- UNDER HAMILTON ST BRIDGE.
 - DE FOR GORE 4'-LIWB- TO 170+85.00.
 - DE FOR 0' CONSECUTIVE EXIST FORK -LIWB-.
 - DE FOR 12' OUTSIDE SHOULDER -LIEB- UNDER HAMILTON ST BRIDGE.
 - DE FOR GORE 9'-LIEB- STA 163+15.00.
 - DE FOR 575' RADII -I277RPB- STA 19+50 TO 28+50.
 - DE FOR SSD 193'-I277RPB- STA 19+50 TO 28+50.
 - DE FOR EXISTING GORE AREA -I277RPB- STA 15+10.
 - DE FOR SSD 367'-I277RPAH- STA 14+90 TO 24+50.
 - DE FOR SSD 327'-I277RPDH- STA 9+08 TO 15+90.
 - DE FOR HORE 4'-I277 RPD- STA 6+30.

- NOTE:**
- EXISTING GEOMETRY TO BE RETAINED UNLESS OTHERWISE INDICATED.
 - SHOULDERS, SIDE SLOPES, DRAINAGE, ARE TO BE RETAINED UNLESS OTHERWISE INDICATED.
 - EVERYTHING CONCERNING TO GREENWAY WILL BE DONE BY OTHER.

- NOTES:**
- 1.) FOR -LIEB- PROFILE SEE SHEET 14.
 - 2.) FOR -LIWB- PROFILE SEE SHEET 14.
 - 3.) FOR -I277RPAH- PROFILE SEE SHEET 19.
 - 4.) FOR -I277RPDH- PROFILE SEE SHEET 21.
 - 5.) FOR -I277RPB- PROFILE SEE SHEET 23.
 - 6.) FOR -I277RPD- PROFILE SEE SHEET 25.
 - 7.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 20

\$TIME\$
 \$DATE\$
 \$FILE\$
 \$PLOT\$

NOTE:
 -EXISTING GEOMETRY TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -SHOULDERS, SIDE SLOPES, DRAINAGE, ARE TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -EVERYTHING CONCERNING TO GREENWAY WILL BE DONE BY OTHER.
 -DESIGN EXCEPTION FOR 9" INSIDE SHOULDER UNDER OAKLAWN BRIDGE.
 -DESIGN EXCEPTION FOR GORE 4' L2SBI STA. 211+35.00.
 -DESIGN EXCEPTION FOR GORE 4' L2SBI STA. 211+30.00.
 -DESIGN EXCEPTION FOR GORE 4' L2NB2 STA. 209+80.00.



PROJECT REFERENCE NO.	SHEET NO.
L-3311C	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

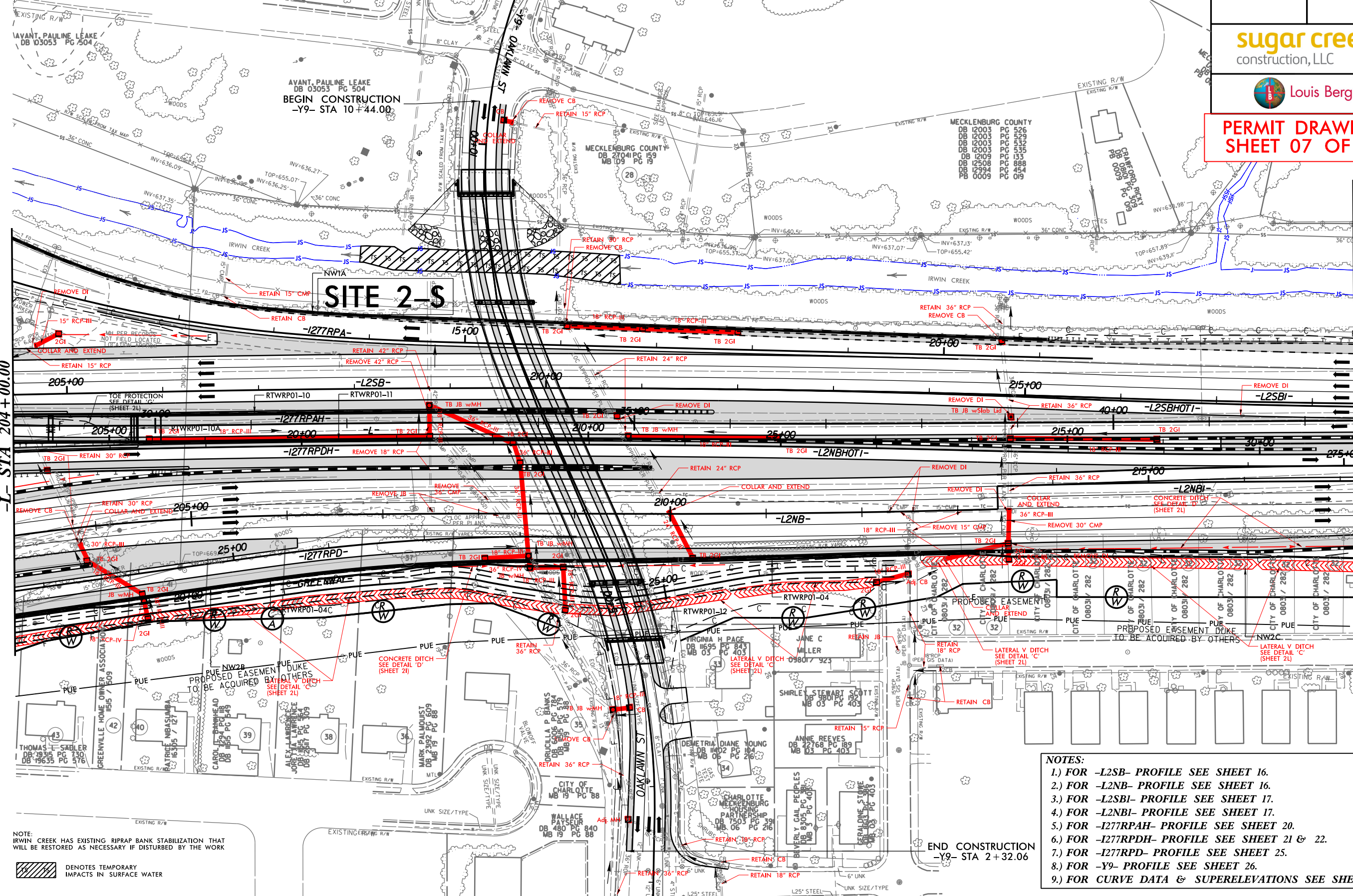
sugar creek
 construction, LLC



PERMIT DRAWING
SHEET 07 OF 35

MATCH LINE SHEET 10
 -I- STA 204+00.00

MATCH LINE SHEET 12
 -I- STA 218+00.00



NOTE:
 IRWIN CREEK HAS EXISTING RIPRAP BANK STABILIZATION THAT WILL BE RESTORED AS NECESSARY IF DISTURBED BY THE WORK

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

- NOTES:**
- 1.) FOR -L2SB- PROFILE SEE SHEET 16.
 - 2.) FOR -L2NB- PROFILE SEE SHEET 16.
 - 3.) FOR -L2SBI- PROFILE SEE SHEET 17.
 - 4.) FOR -L2NBI- PROFILE SEE SHEET 17.
 - 5.) FOR -I277RPAH- PROFILE SEE SHEET 20.
 - 6.) FOR -I277RPDH- PROFILE SEE SHEET 21 & 22.
 - 7.) FOR -I277RPD- PROFILE SEE SHEET 25.
 - 8.) FOR -Y9- PROFILE SEE SHEET 26.
 - 9.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 27

END CONSTRUCTION
 -Y9- STA 2+32.06

\$ DATE: \$ FILE: \$ \$ PENTBL: \$

NOTE:
 -EXISTING GEOMETRY TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -SHOULDERS, SIDE SLOPES, DRAINAGE, ARE TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -EVERYTHING CONCERNING TO GREENWAY WILL BE DONE BY OTHER.
 -DESIGN EXCEPTION FOR 9" INSIDE SHOULDER UNDER OAKLAWN BRIDGE.
 -DESIGN EXCEPTION FOR GORE 4' L2SBI STA. 211+35.00.
 -DESIGN EXCEPTION FOR GORE 4' L2SBI STA. 211+30.00.
 -DESIGN EXCEPTION FOR GORE 4' L2NB2 STA. 209+80.00.



PROJECT REFERENCE NO. L-3311C	SHEET NO. 11A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

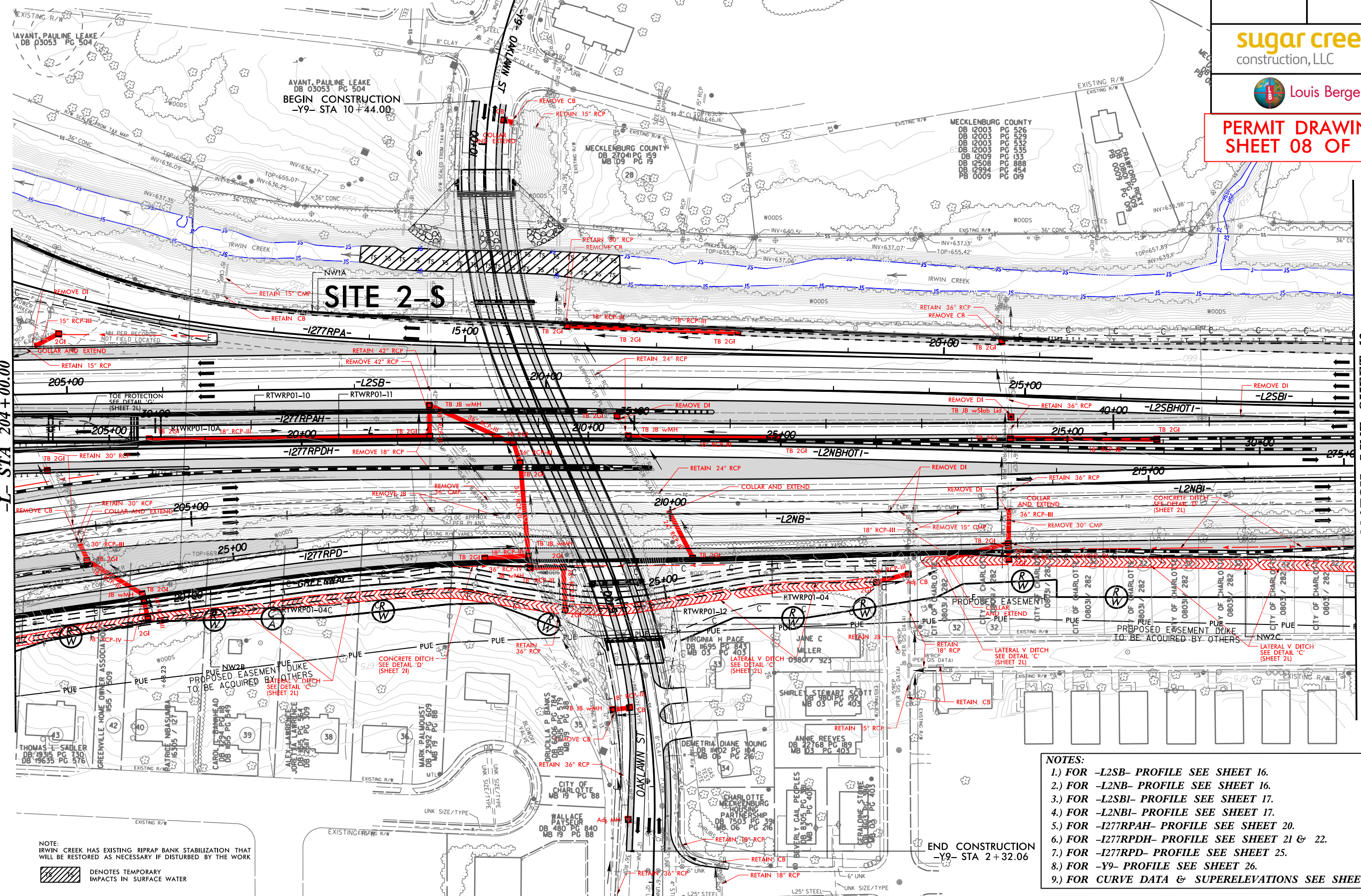
sugar creek
 construction, LLC



PERMIT DRAWING
SHEET 08 OF 35

MATCH LINE SHEET 10
 -I- STA 204+00.00

MATCH LINE SHEET 12
 -I- STA 218+00.00



NOTE: IRWIN CREEK HAS EXISTING RIPRAP BANK STABILIZATION THAT WILL BE RESTORED AS NECESSARY IF DISTURBED BY THE WORK

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

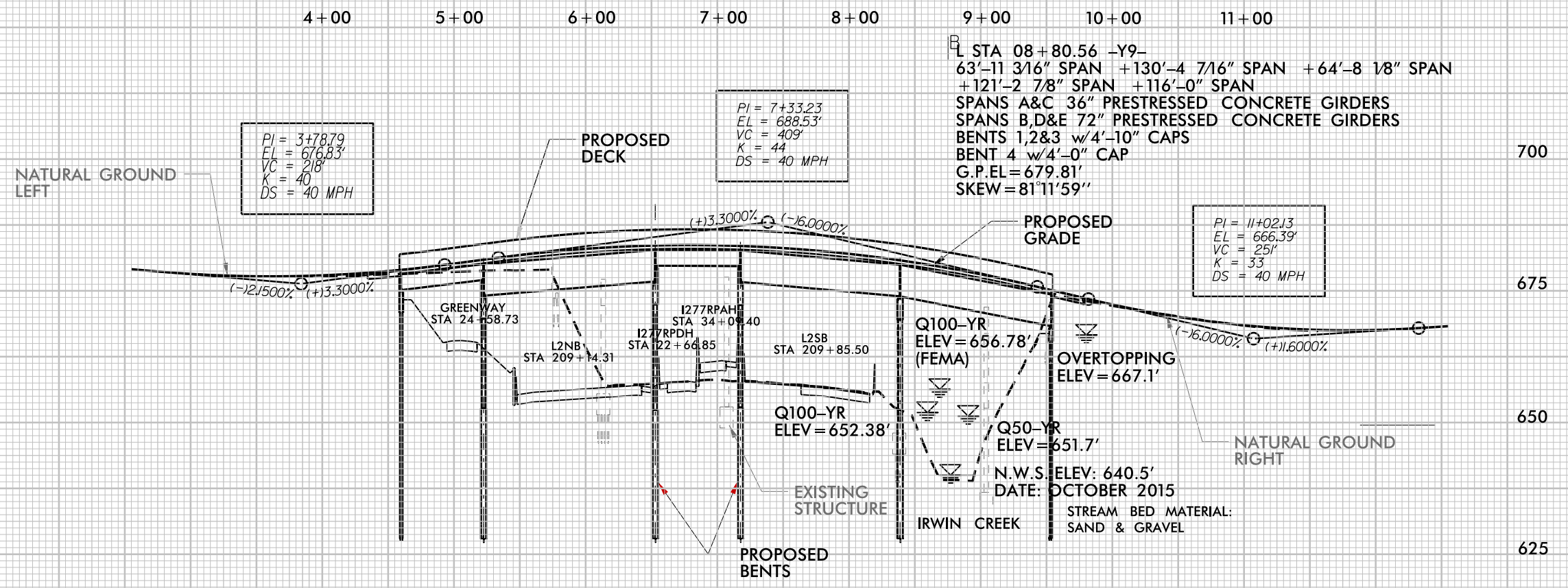
- NOTES:**
- 1.) FOR -L2SB- PROFILE SEE SHEET 16.
 - 2.) FOR -L2NB- PROFILE SEE SHEET 16.
 - 3.) FOR -L2SBI- PROFILE SEE SHEET 17.
 - 4.) FOR -L2NBI- PROFILE SEE SHEET 17.
 - 5.) FOR -I277RPAH- PROFILE SEE SHEET 20.
 - 6.) FOR -I277RPDH- PROFILE SEE SHEET 21 & 22.
 - 7.) FOR -I277RPD- PROFILE SEE SHEET 25.
 - 8.) FOR -Y9- PROFILE SEE SHEET 26.
 - 9.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 27

END CONSTRUCTION
 -Y9- STA 2+32.06

\$ DATE: \$
 \$ FILE: \$
 \$ PENTBL: \$

PROJECT REFERENCE NO. I-331C	SHEET NO. 11B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 09 OF 35



5/14/99

22 SEP 2016 10:20 AM I-331C-HYD-FRM-SOUTH-WET-PFL-01.dgn



PROJECT REFERENCE NO.	SHEET NO.
L-3311C	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

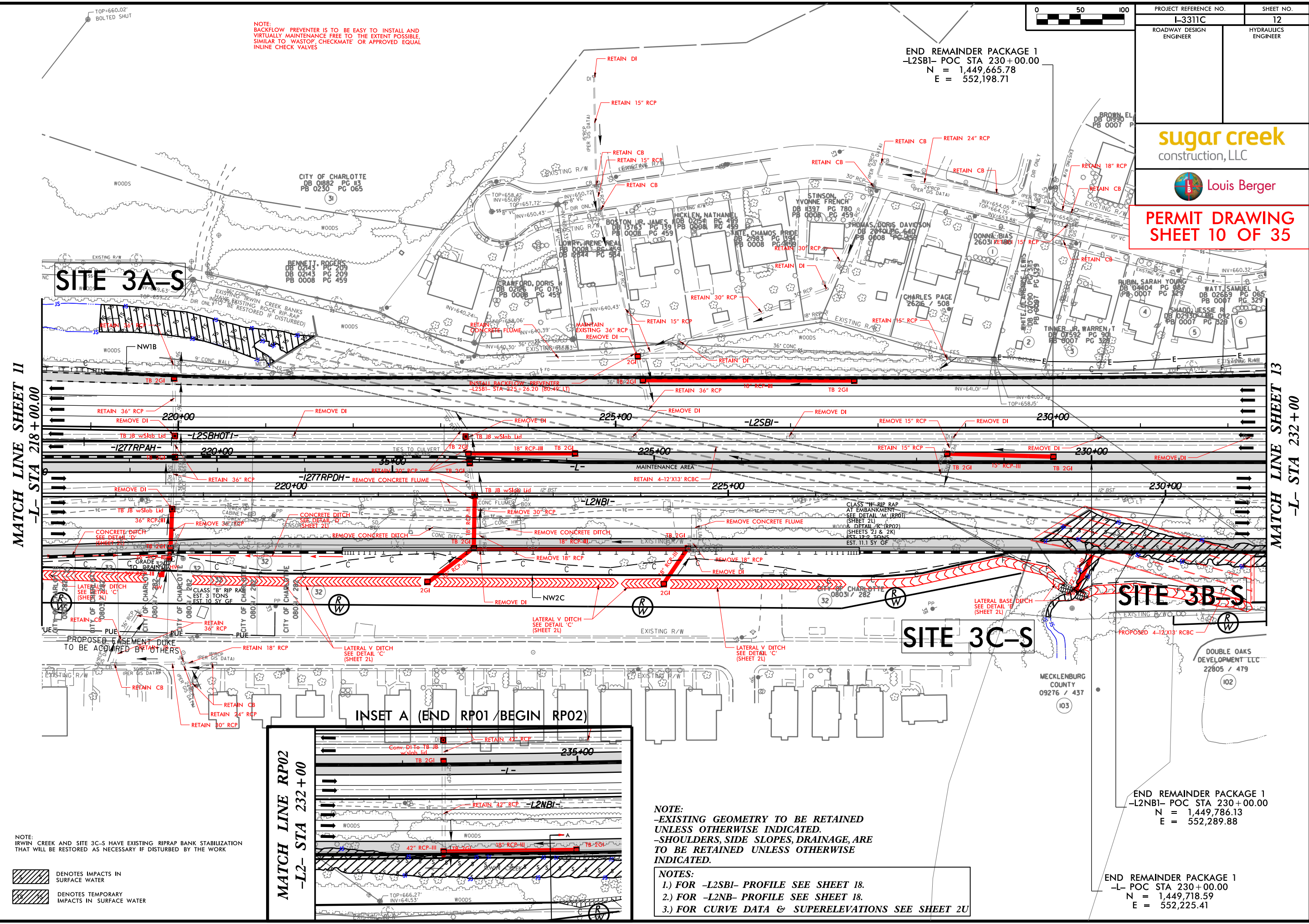
sugar creek
construction, LLC



PERMIT DRAWING
SHEET 10 OF 35

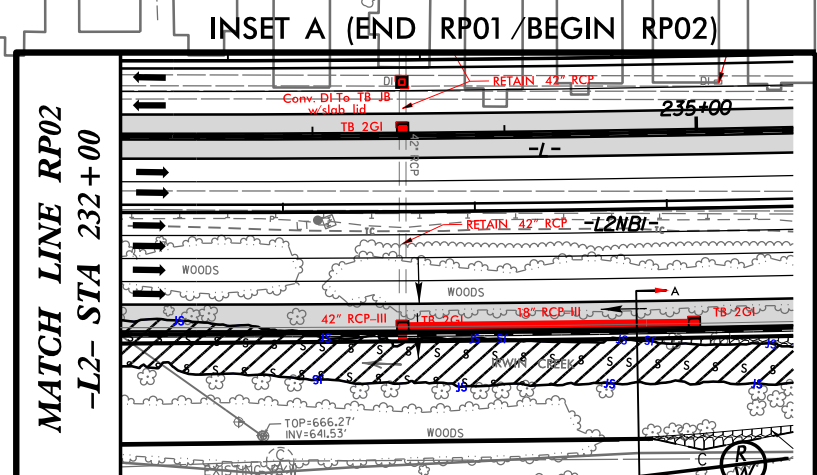
END REMAINDER PACKAGE 1
-L2SB1- POC STA 230+00.00
N = 1,449,665.78
E = 552,198.71

NOTE:
BACKFLOW PREVENTER IS TO BE EASY TO INSTALL AND VIRTUALLY MAINTENANCE FREE TO THE EXTENT POSSIBLE. SIMILAR TO WASTOP CHECKMATE OR APPROVED EQUAL INLINE CHECK VALVES



MATCH LINE SHEET II
-L- STA 218+00.00

MATCH LINE SHEET 13
-L- STA 232+00



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

NOTES:
1.) FOR -L2SB1- PROFILE SEE SHEET 18.
2.) FOR -L2NB1- PROFILE SEE SHEET 18.
3.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 2U

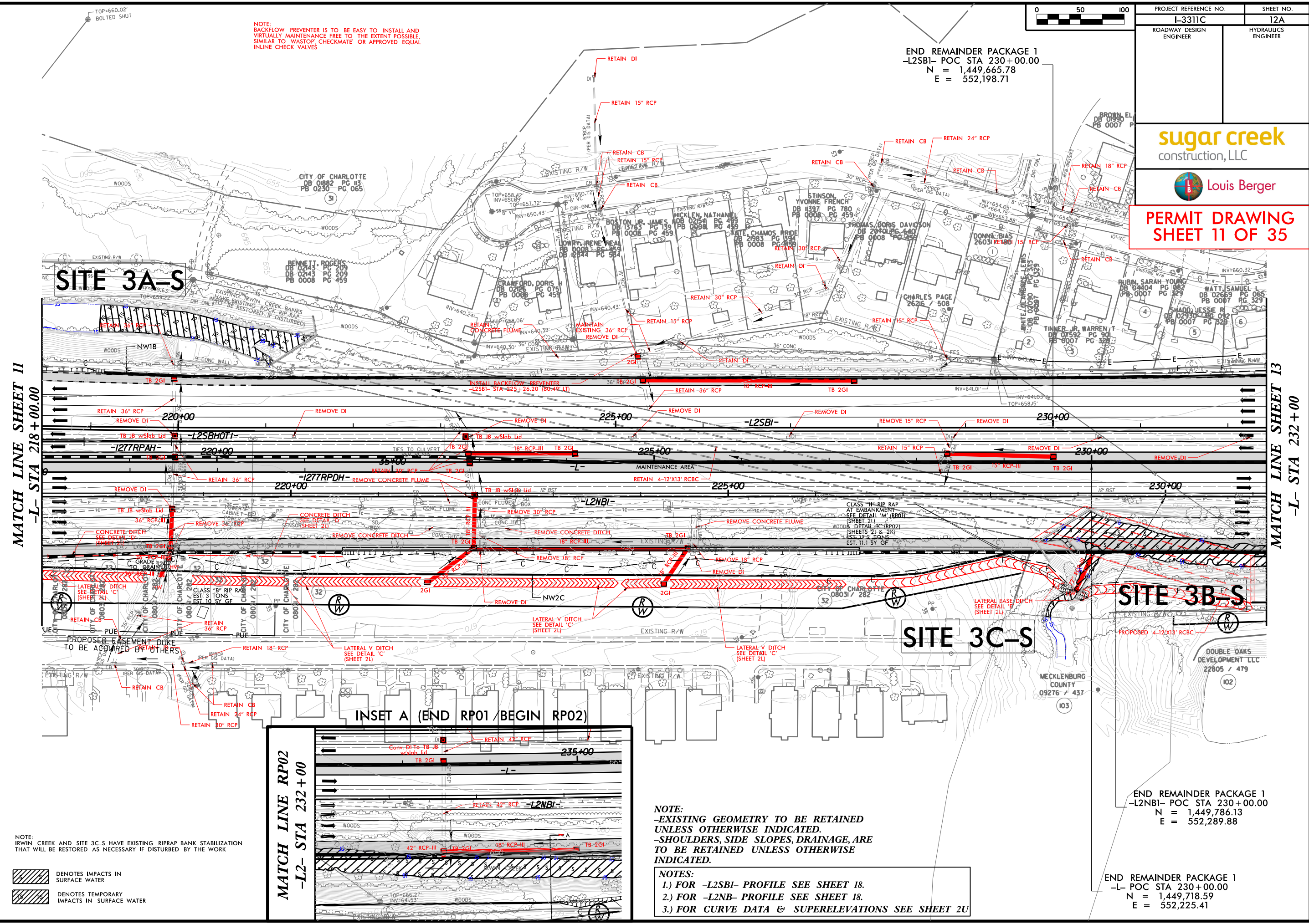
END REMAINDER PACKAGE 1
-L2NB1- POC STA 230+00.00
N = 1,449,786.13
E = 552,289.88

END REMAINDER PACKAGE 1
-L- POC STA 230+00.00
N = 1,449,718.59
E = 552,225.41

NOTE:
IRWIN CREEK AND SITE 3C-S HAVE EXISTING RIPRAP BANK STABILIZATION THAT WILL BE RESTORED AS NECESSARY IF DISTURBED BY THE WORK

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

\$ DATE \$
\$ FILE \$
\$ PEN \$



END REMAINDER PACKAGE 1
 -L2SB1- POC STA 230+00.00
 N = 1,449,665.78
 E = 552,198.71

PROJECT REFERENCE NO. L-3311C	SHEET NO. 12A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
sugar creek construction, LLC	
Louis Berger	
PERMIT DRAWING SHEET 11 OF 35	

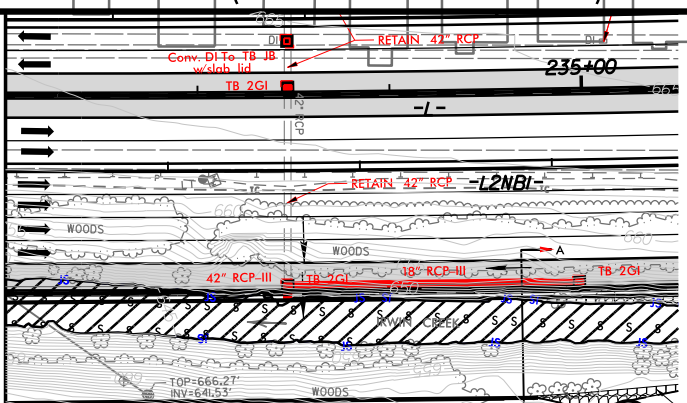
MATCH LINE SHEET II
 -L- STA 218+00.00

MATCH LINE SHEET 13
 -L- STA 232+00

NOTE:
 IRWIN CREEK AND SITE 3C-S HAVE EXISTING RIPRAP BANK STABILIZATION THAT WILL BE RESTORED AS NECESSARY IF DISTURBED BY THE WORK

DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

MATCH LINE RP02
 -L2- STA 232+00



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

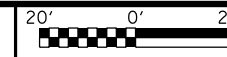
NOTES:
 1.) FOR -L2SB1- PROFILE SEE SHEET 18.
 2.) FOR -L2NB1- PROFILE SEE SHEET 18.
 3.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 2U

END REMAINDER PACKAGE 1
 -L2NB1- POC STA 230+00.00
 N = 1,449,786.13
 E = 552,289.88

END REMAINDER PACKAGE 1
 -L- POC STA 230+00.00
 N = 1,449,718.59
 E = 552,225.41

\$DATE\$
 \$FILE\$
 \$PENTL\$

ENLARGEMENT SHEET

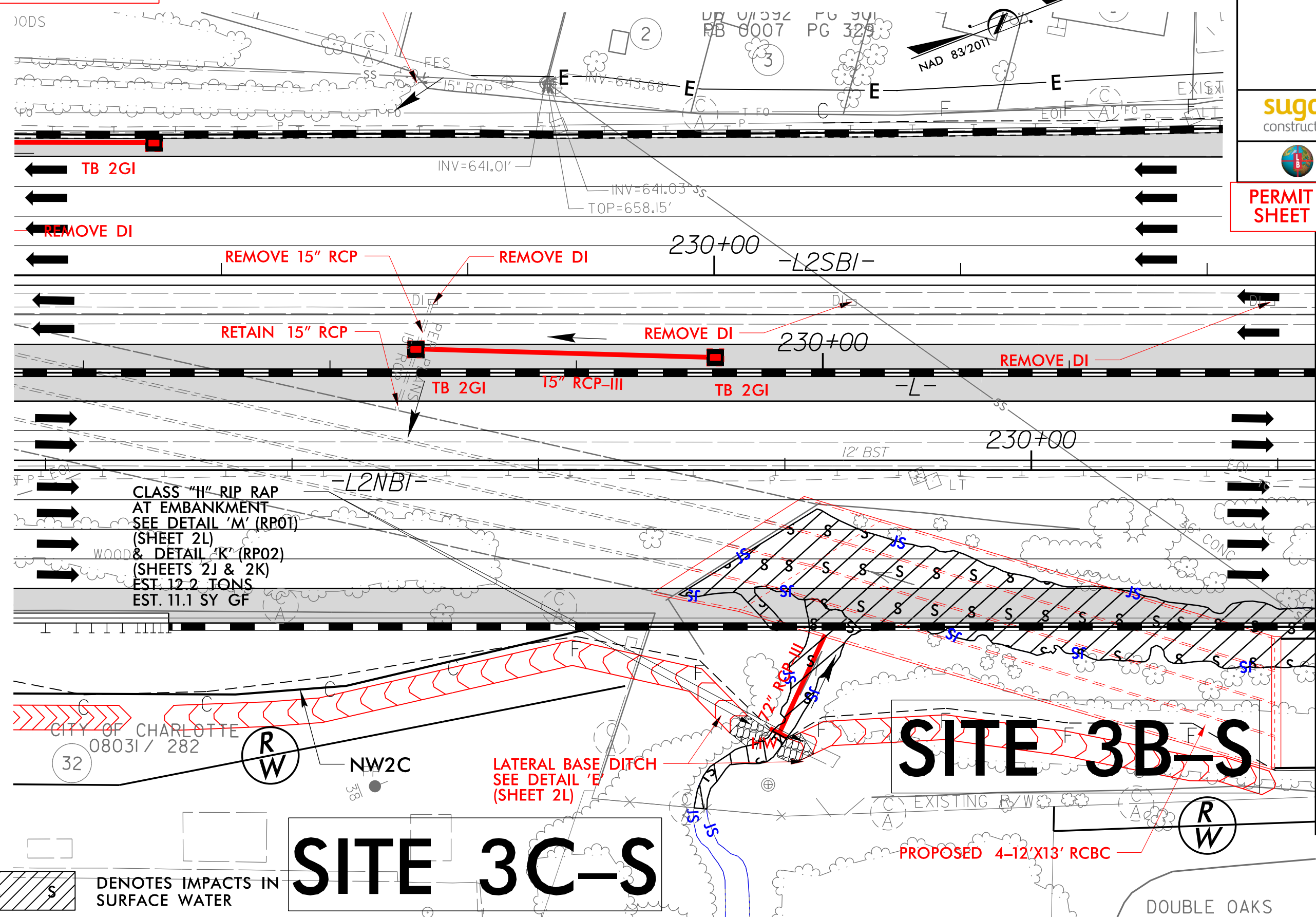


PROJECT REFERENCE NO. L-3311C	SHEET NO. 12B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

sugar creek
construction, LLC

Louis Berger

PERMIT DRAWING SHEET 12 OF 35



CLASS "H" RIP RAP
AT EMBANKMENT
SEE DETAIL 'M' (RP01)
(SHEET 2L)
& DETAIL 'K' (RP02)
(SHEETS 2J & 2K)
EST. 12.2 TONS
EST. 11.1 SY GF

SITE 3C-S

SITE 3B-S

DENOTES IMPACTS IN SURFACE WATER

NOTE:
IRWIN CREEK AND SITE 3C-S HAVE EXISTING RIPRAP BANK STABILIZATION THAT WILL BE RESTORED AS NECESSARY IF DISTURBED BY THE WORK

MATCH LINE RP02
-L- STA 232+00

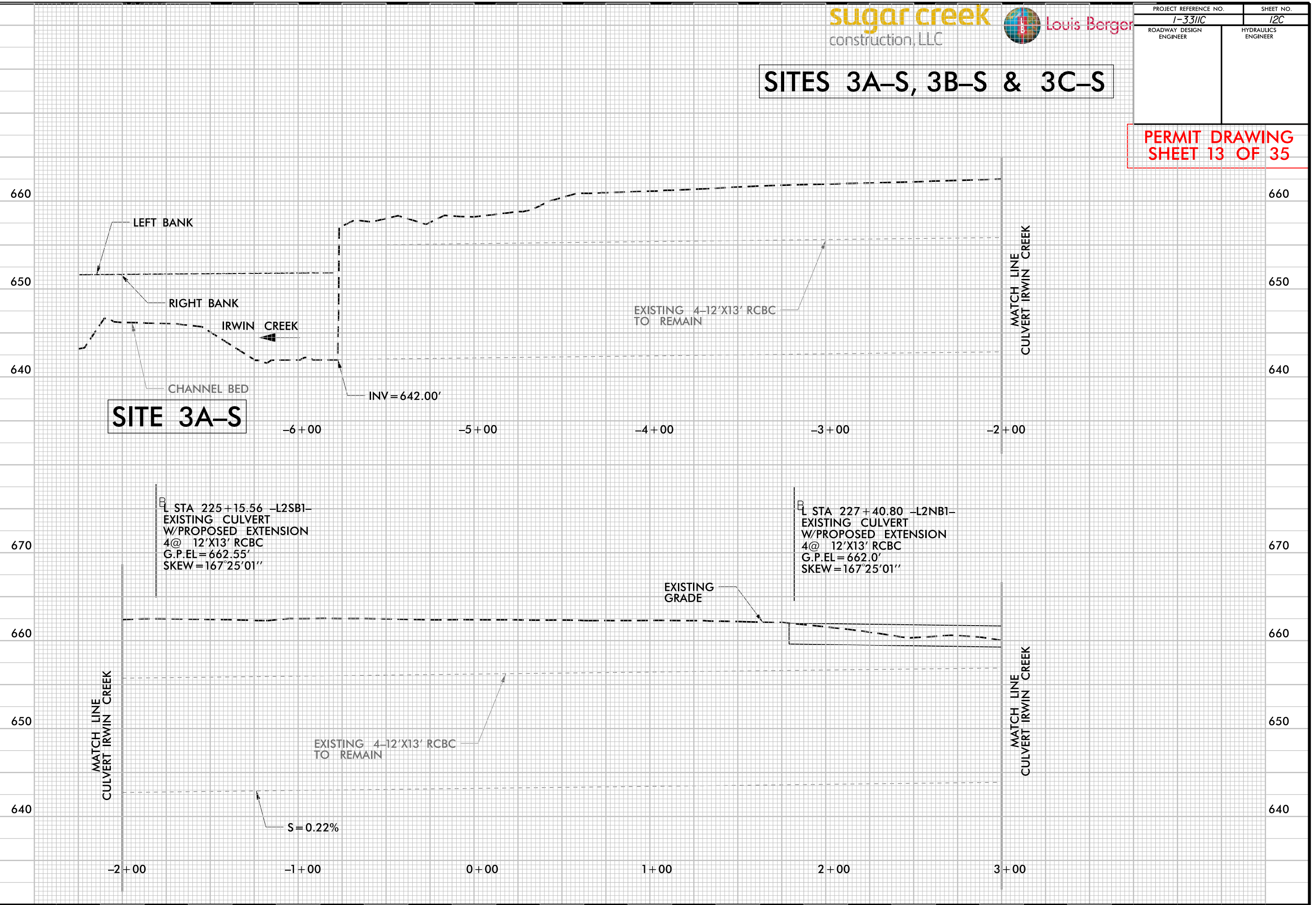
\$DATE\$
 \$FILE\$
 \$PENTBL\$

5/14/99

PROJECT REFERENCE NO. 1-3311C	SHEET NO. 12C
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITES 3A-S, 3B-S & 3C-S

PERMIT DRAWING
SHEET 13 OF 35



SITE 3A-S

MATCH LINE
CULVERT IRWIN CREEK

MATCH LINE
CULVERT IRWIN CREEK

MATCH LINE
CULVERT IRWIN CREEK

B
 STA 225+15.56 -L2SB1-
 EXISTING CULVERT
 W/PROPOSED EXTENSION
 4@ 12'X13' RCBC
 G.P. EL = 662.55'
 SKEW = 167°25'01"

B
 STA 227+40.80 -L2NB1-
 EXISTING CULVERT
 W/PROPOSED EXTENSION
 4@ 12'X13' RCBC
 G.P. EL = 662.0'
 SKEW = 167°25'01"

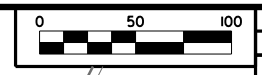
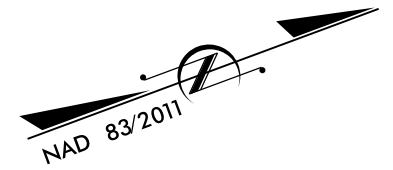
EXISTING 4-12'X13' RCBC
TO REMAIN

EXISTING 4-12'X13' RCBC
TO REMAIN

EXISTING
GRADE

S = 0.22%

22 SEP 2016 10:23 AM
C:\PROJECTS\13311C-HYD-FRM-SOUTH-WET_PFL_02.dgn
mfranklin



PROJECT REFERENCE NO. L-3311C	SHEET NO. 13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

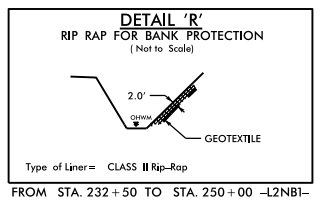
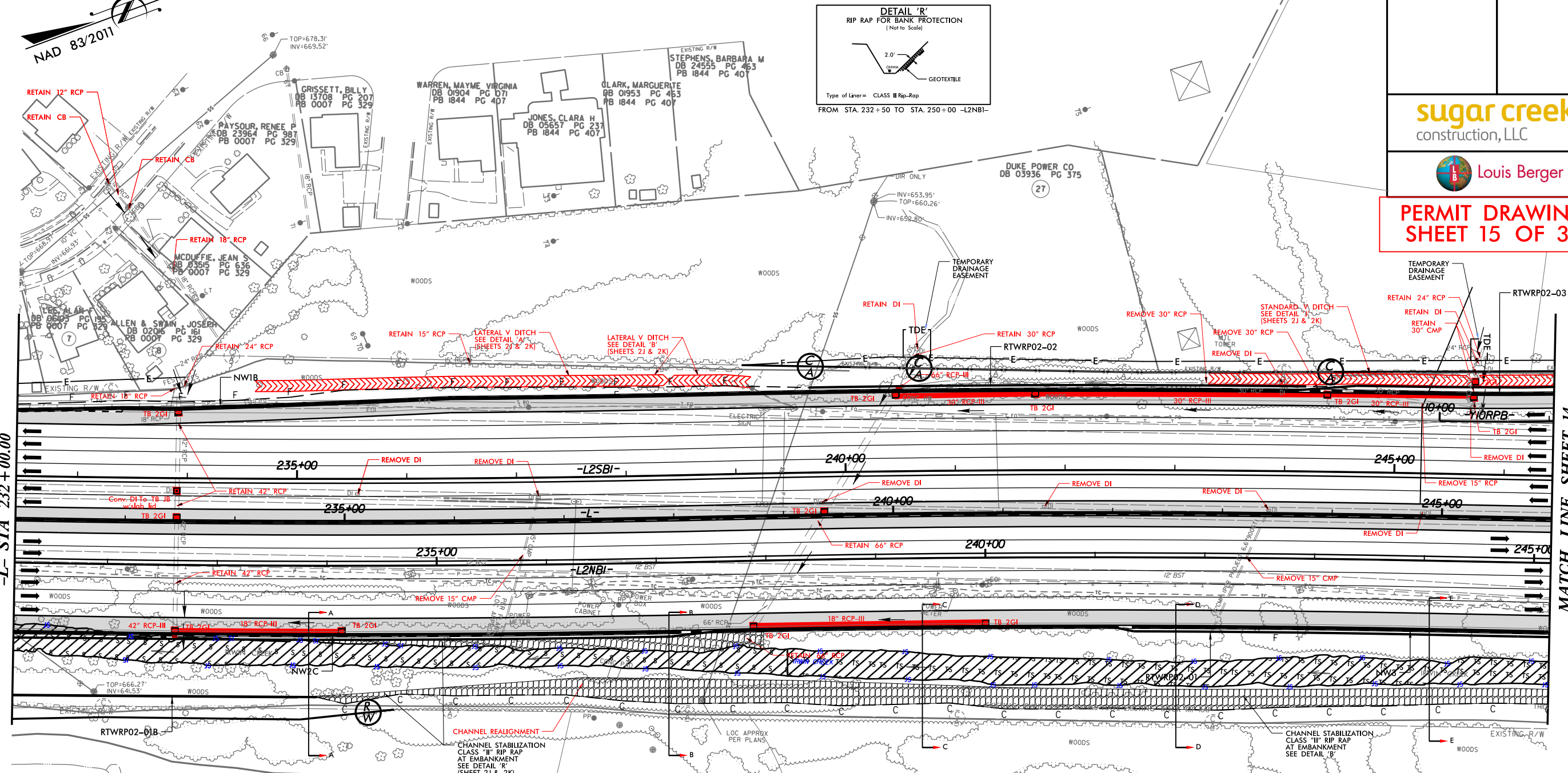
sugar creek
construction, LLC



PERMIT DRAWING
SHEET 15 OF 35

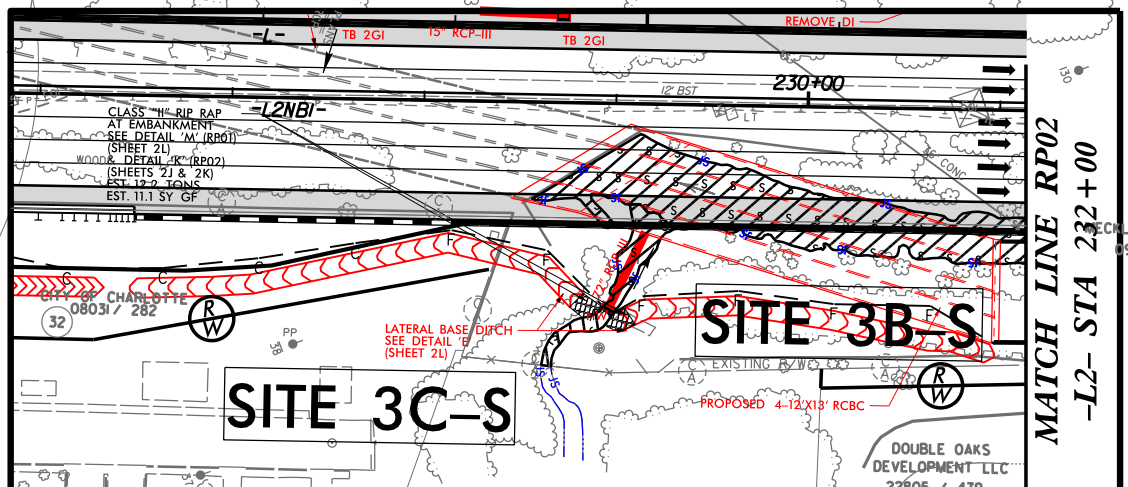
MATCH LINE SHEET 12
-L- STA 232+00.00

MATCH LINE SHEET 14
-L- STA 246+00.00

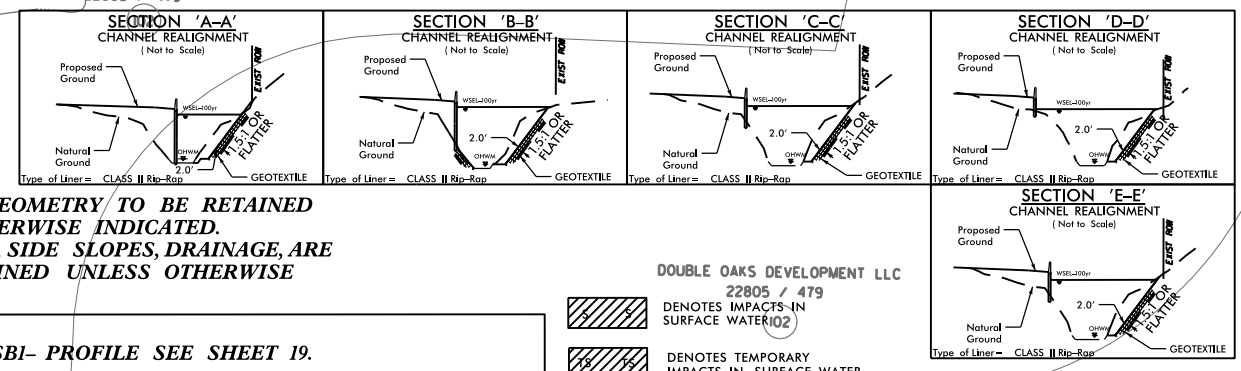


SITE 3B-S

INSET A (END RP01/BEGIN RP02)



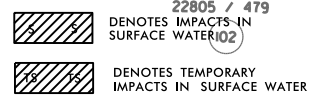
DOUBLE OAKS DEVELOPMENT LLC
22805 / 479



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

NOTES:
1.) FOR -L2SBI- PROFILE SEE SHEET 19.
2.) FOR -L2NBI- PROFILE SEE SHEET 19.
3.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 2M

DOUBLE OAKS DEVELOPMENT LLC
22805 / 479



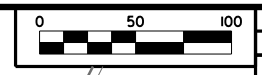
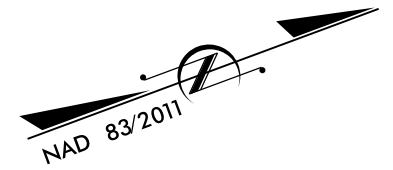
NOTE:
IRWIN CREEK HAS EXISTING RIPRAP BANK STABILIZATION THAT WILL BE RESTORED AS NECESSARY IF DISTURBED BY THE WORK

\$ TIME \$
\$ FILE \$
\$ PENTBL \$

IRWIN COUNTY
9276 / 437

MATCH LINE RP02
-L2- STA 232+00

DOUBLE OAKS DEVELOPMENT LLC
22805 / 479



PROJECT REFERENCE NO. L-3311C	SHEET NO. 13A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

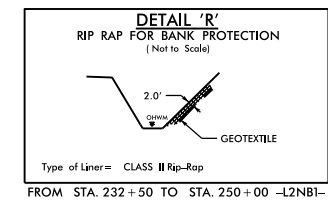
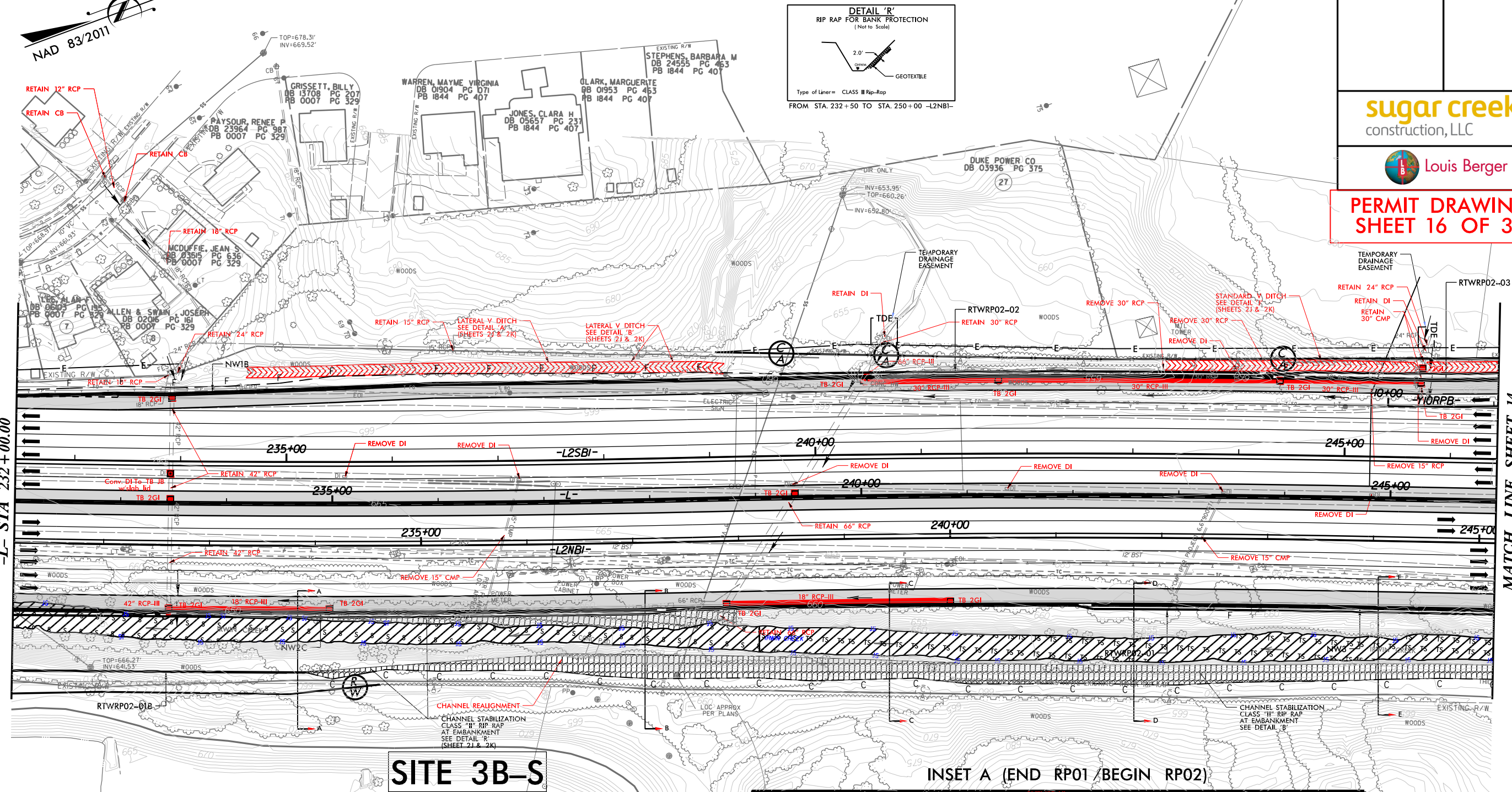
sugar creek
construction, LLC



PERMIT DRAWING
SHEET 16 OF 35

MATCH LINE SHEET 12
-L- STA 232+00.00

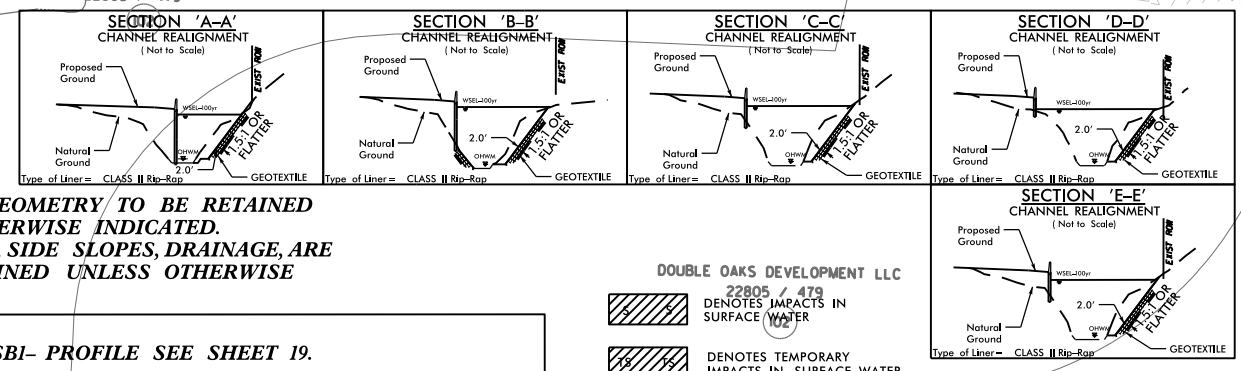
MATCH LINE SHEET 14
-L- STA 246+00.00



SITE 3B-S

INSET A (END RP01/BEGIN RP02)

DOUBLE OAKS DEVELOPMENT LLC
22805 / 479



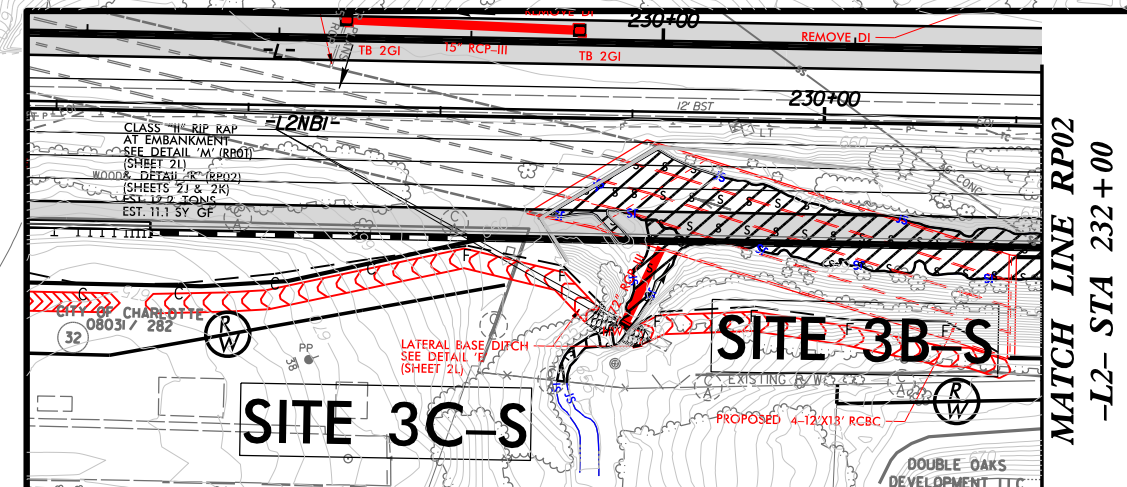
NOTE:
-EXISTING GEOMETRY TO BE RETAINED UNLESS OTHERWISE INDICATED.
-SHOULDERS, SIDE SLOPES, DRAINAGE, ARE TO BE RETAINED UNLESS OTHERWISE INDICATED.

- NOTES:**
- 1.) FOR -L2SBI- PROFILE SEE SHEET 19.
 - 2.) FOR -L2NBI- PROFILE SEE SHEET 19.
 - 3.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 2M.

DOUBLE OAKS DEVELOPMENT LLC
22805 / 479

DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NOTE:
IRWIN CREEK HAS EXISTING RIPRAP BANK STABILIZATION THAT WILL BE RESTORED AS NECESSARY IF DISTURBED BY THE WORK



MATCH LINE RP02
-L2- STA 232+00

IRWING COUNTY
9276 / 437

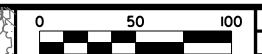
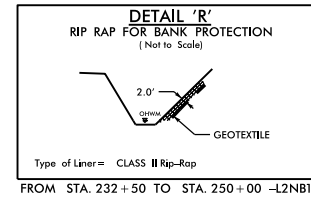
\$ TIME \$
\$ FILE \$
\$ PENTBL \$

 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NOTE: IRWIN CREEK HAS EXISTING RIPRAP BANK STABILIZATION THAT WILL BE RESTORED AS NECESSARY IF DISTURBED BY THE WORK

CHARLOTTE MECKLENBURG BOARD OF EDUCATION
 DB 01767 PG 030
 DB 12098 PG 568
 PB 0003 PG 491

NAD 83/2011



PROJECT REFERENCE NO. L-3311C	SHEET NO. 14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER





PERMIT DRAWING
SHEET 17 OF 35

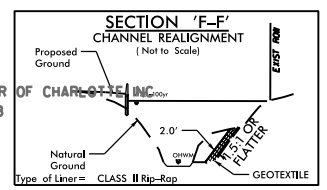
MATCH LINE SHEET 13
 -L- STA 246+00.00

MATCH LINE SHEET 15
 -L- STA 260+00.00

SITE 3B-S

NOTE:
 -EXISTING GEOMETRY TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -SHOULDERS, SIDE SLOPES, DRAINAGE, ARE TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -DESIGN EXCEPTION FOR SSD 498'
 -L2NBI- STA 251+40 TO STA 264+30


- NOTES:
- 1.) FOR -L2SBI- PROFILE SEE SHEET 20.
 - 2.) FOR -L2NBI- PROFILE SEE SHEET 20.
 - 3.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 2N.



NEW LIFE FELLOWSHIP CENTER
 08732 / 128

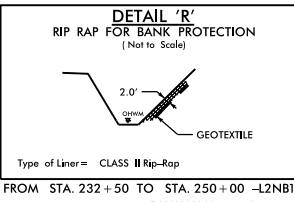
NEW LIFE FELLOWSHIP CENTER OF CHARLOTTE INC
 1023 / 044

\$ TIME \$
 \$ FILE \$
 \$ PENTBL \$

 DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 NOTE: IRWIN CREEK HAS EXISTING RIPRAP BANK STABILIZATION THAT WILL BE RESTORED AS NECESSARY IF DISTURBED BY THE WORK



CHARLOTTE MECKLENBURG BOARD OF EDUCATION
 DB 01767 PG 030
 DB 12098 PG 568
 PB 0003 PG 491



PROJECT REFERENCE NO. L-3311C	SHEET NO. 14A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

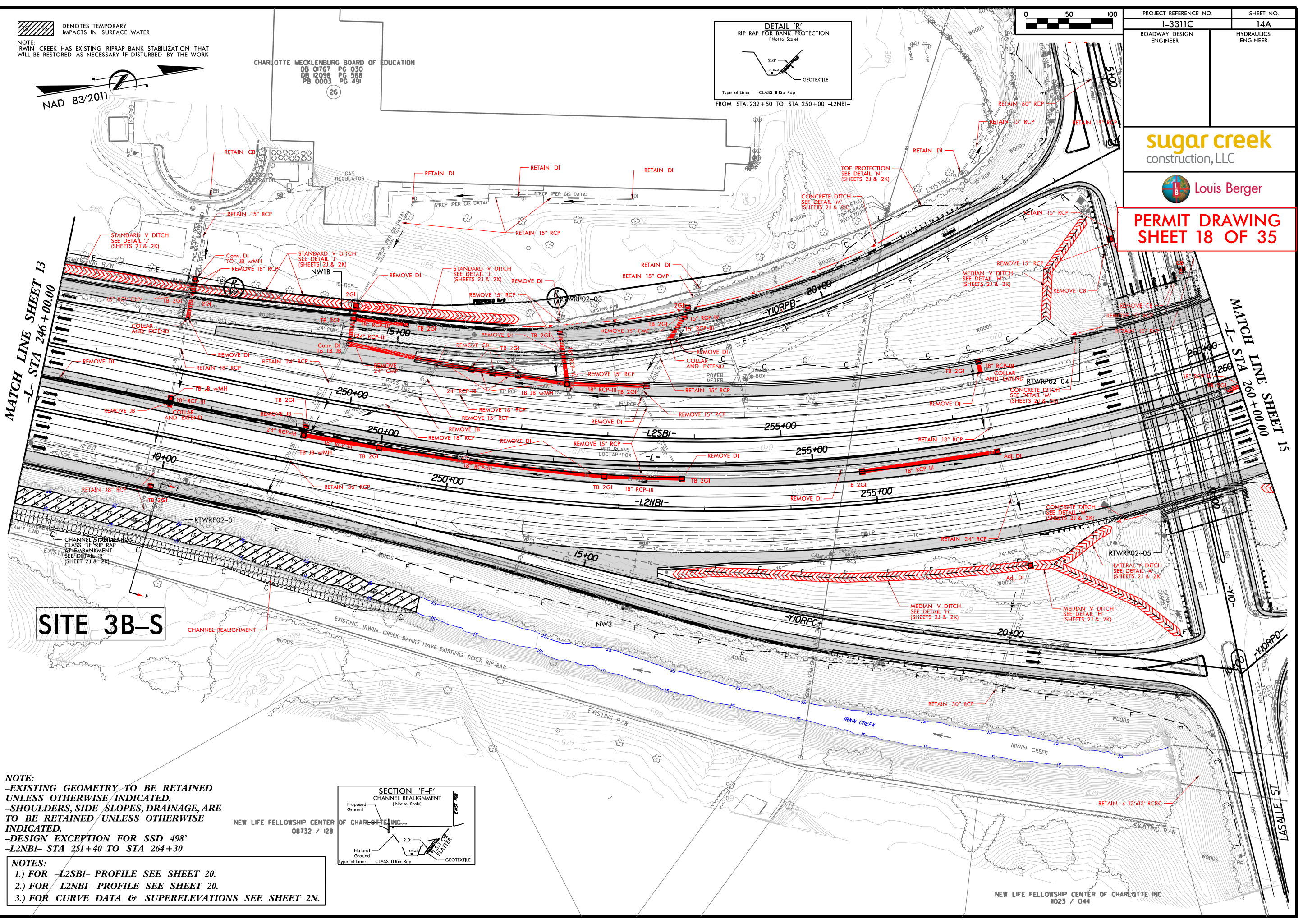




**PERMIT DRAWING
SHEET 18 OF 35**

MATCH LINE SHEET 13
 -L- STA 246+00.00

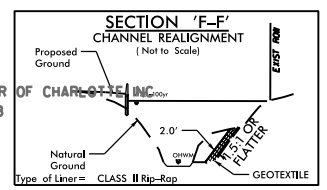
MATCH LINE SHEET 15
 -L- STA 260+00.00



SITE 3B-S

NOTE:
 -EXISTING GEOMETRY TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -SHOULDERS, SIDE SLOPES, DRAINAGE, ARE TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -DESIGN EXCEPTION FOR SSD 498'
 -L2NBI- STA 251+40 TO STA 264+30

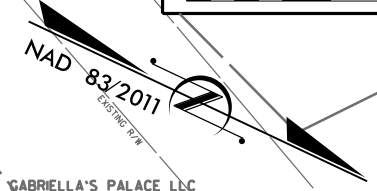
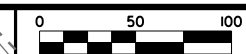
- NOTES:**
- 1.) FOR -L2SBI- PROFILE SEE SHEET 20.
 - 2.) FOR -L2NBI- PROFILE SEE SHEET 20.
 - 3.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 2N.



NEW LIFE FELLOWSHIP CENTER
 08732 / 128

NEW LIFE FELLOWSHIP CENTER OF CHARLOTTE INC
 1023 / 044

\$ TIME \$
 \$ FILE \$
 \$ PENTBL \$



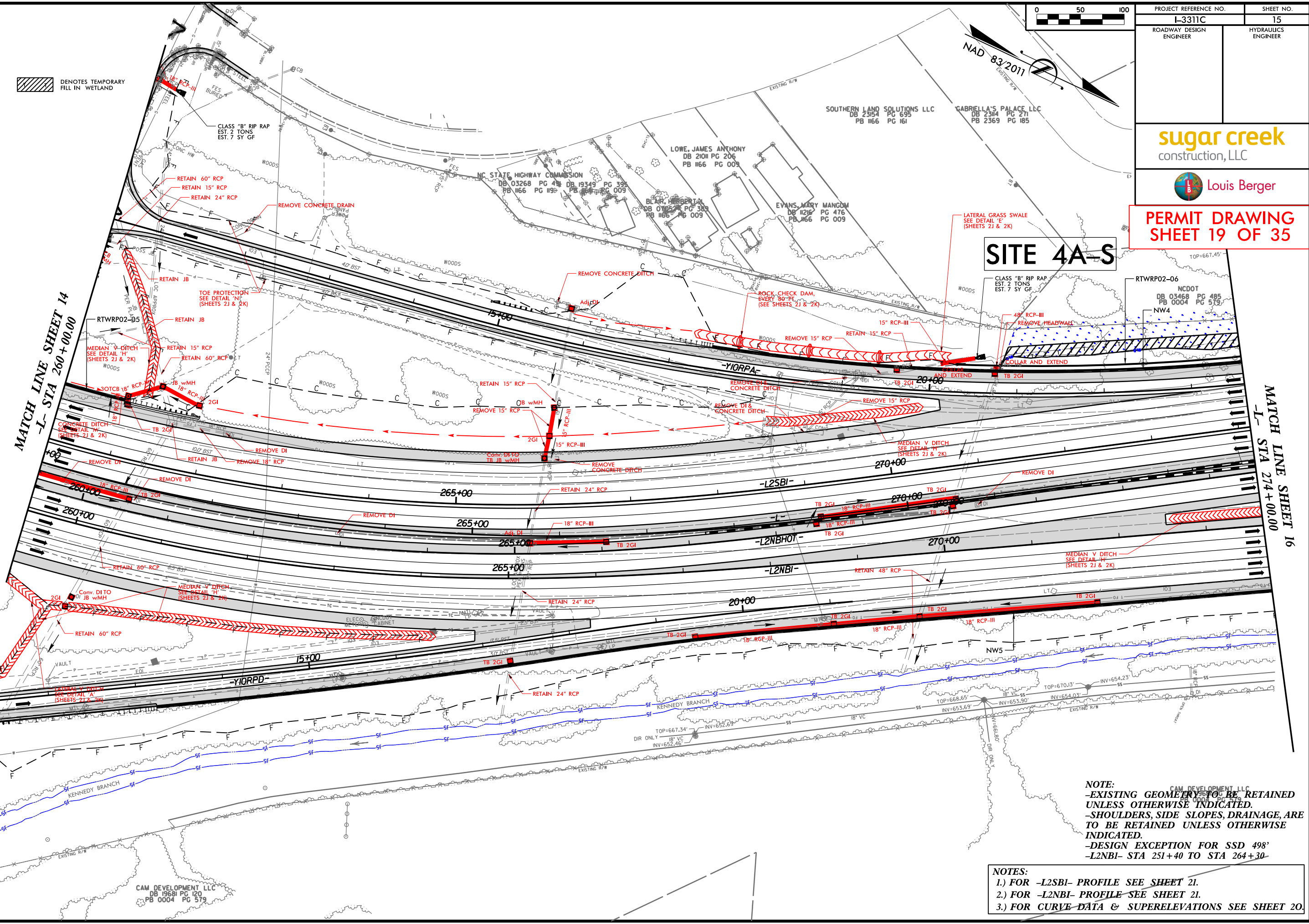
PROJECT REFERENCE NO. L-3311C	SHEET NO. 15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

sugar creek
construction, LLC



PERMIT DRAWING
SHEET 19 OF 35

▨ DENOTES TEMPORARY FILL IN WETLAND



SITE 4A-S

MATCH LINE SHEET 14
-L- STA 260+00.00

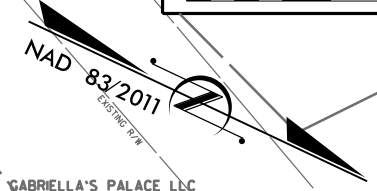
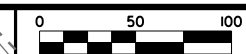
MATCH LINE SHEET 16
-L- STA 274+00.00

NOTE:
-EXISTING GEOMETRY TO BE RETAINED UNLESS OTHERWISE INDICATED.
-SHOULDERS, SIDE SLOPES, DRAINAGE, ARE TO BE RETAINED UNLESS OTHERWISE INDICATED.
-DESIGN EXCEPTION FOR SSD 498'
-L2NBI- STA 251+40 TO STA 264+30

NOTES:
1.) FOR -L2SBI- PROFILE SEE SHEET 21.
2.) FOR -L2NBI- PROFILE SEE SHEET 21.
3.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 20.

DATE: \$
SCALE: \$
SHEET NO.: \$

CAM DEVELOPMENT LLC
DB 19681 PG 120
PB 0004 PG 579



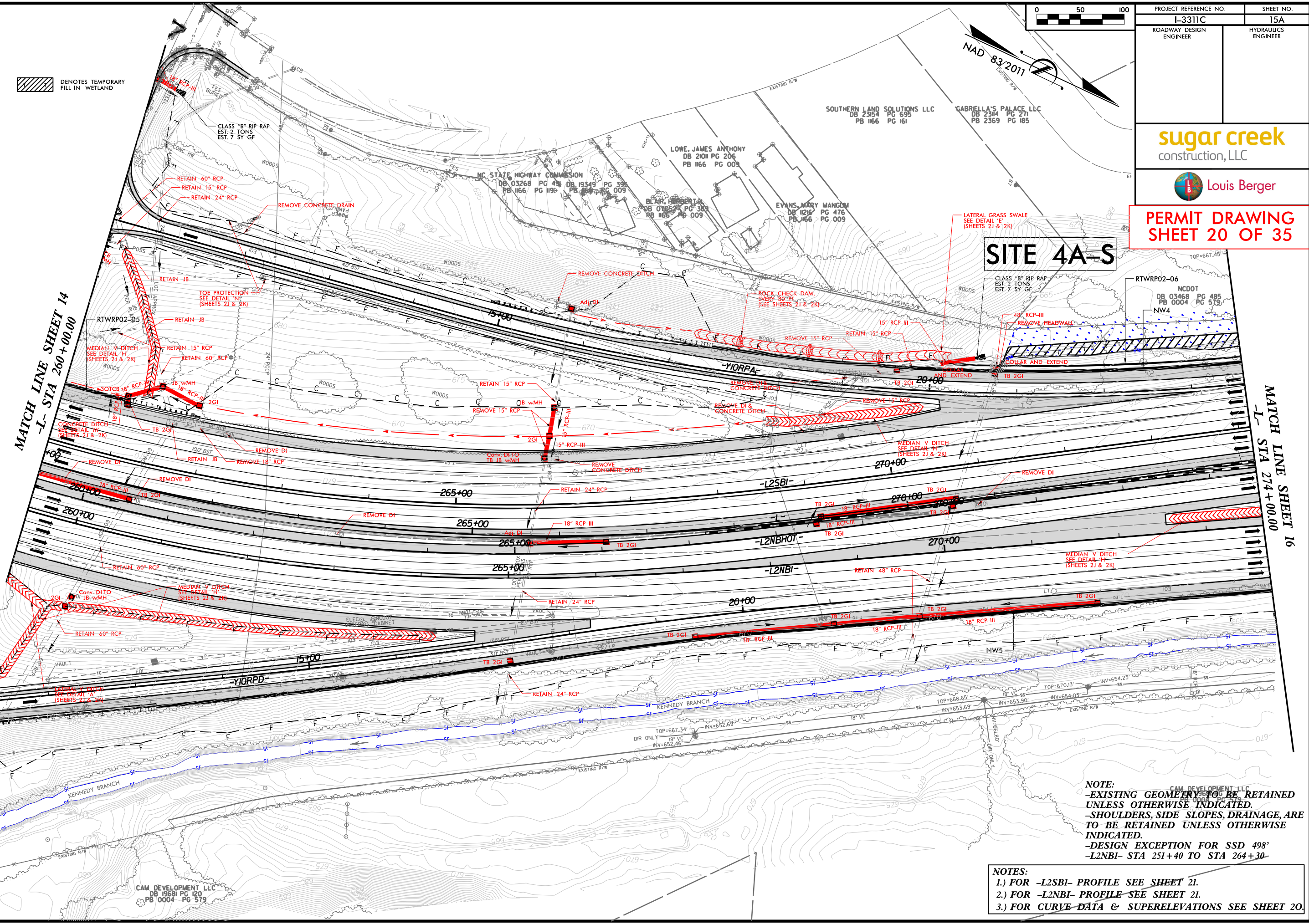
PROJECT REFERENCE NO. L-3311C	SHEET NO. 15A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

sugar creek
construction, LLC



PERMIT DRAWING
SHEET 20 OF 35

▨ DENOTES TEMPORARY FILL IN WETLAND



MATCH LINE SHEET 14
-L- STA 260+00.00

MATCH LINE SHEET 16
-L- STA 274+00.00

NOTE:
 -EXISTING GEOMETRY TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -SHOULDERS, SIDE SLOPES, DRAINAGE, ARE TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -DESIGN EXCEPTION FOR SSD 498'
 -L2NBI- STA 251+40 TO STA 264+30

NOTES:
 1.) FOR -L2SBI- PROFILE SEE SHEET 21.
 2.) FOR -L2NBI- PROFILE SEE SHEET 21.
 3.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 20.

\$ TIMES \$
\$ FILE \$
\$ SPENTBL \$

CAM DEVELOPMENT LLC
DB 19681 PG 120
PB 0004 PG 579

SITE 4A-S

DENOTES TEMPORARY FILL IN WETLAND

CLASS "B" RIP RAP
EST. 2 TONS
EST. 7 SY GF

RTWRP02-06
NCDOT
DB 03468 PG 485
PB 0004 PG 579
NW4

48" RCP-III
REMOVE HEADWALL

COLLAR AND EXTEND

TB 2GI

REMOVE DI

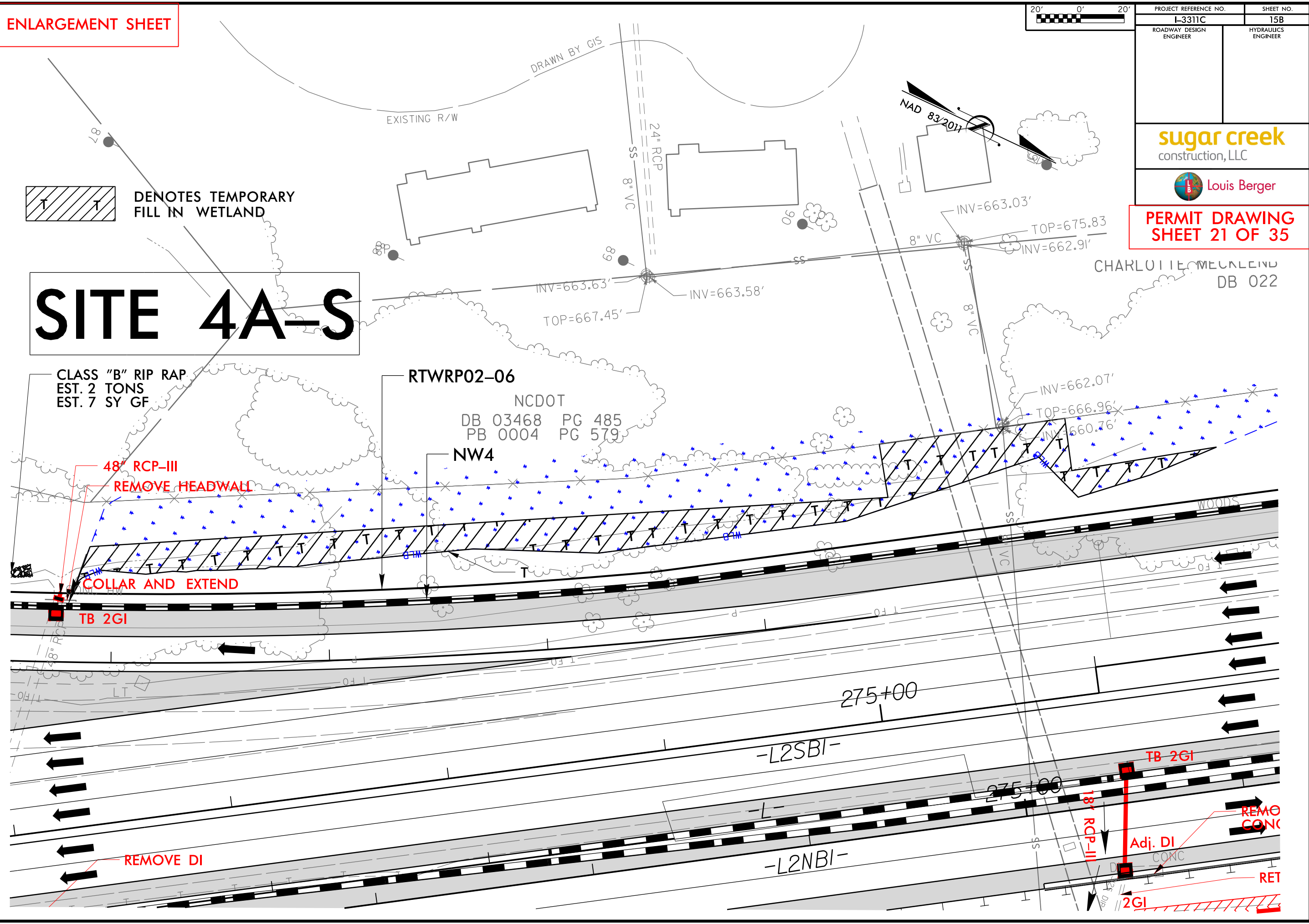
TB 2GI

Adj. DI

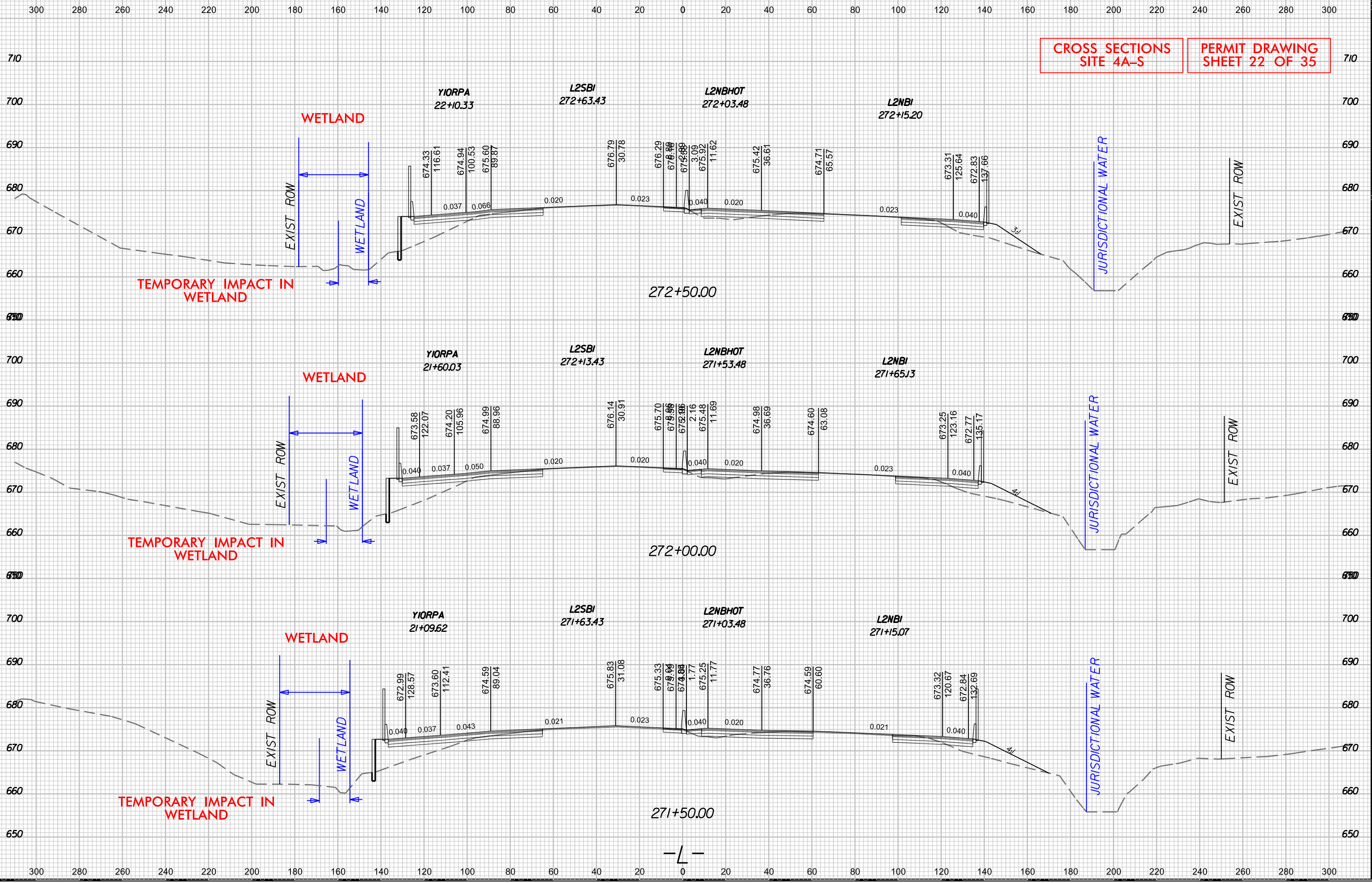
REMO CONC

RET

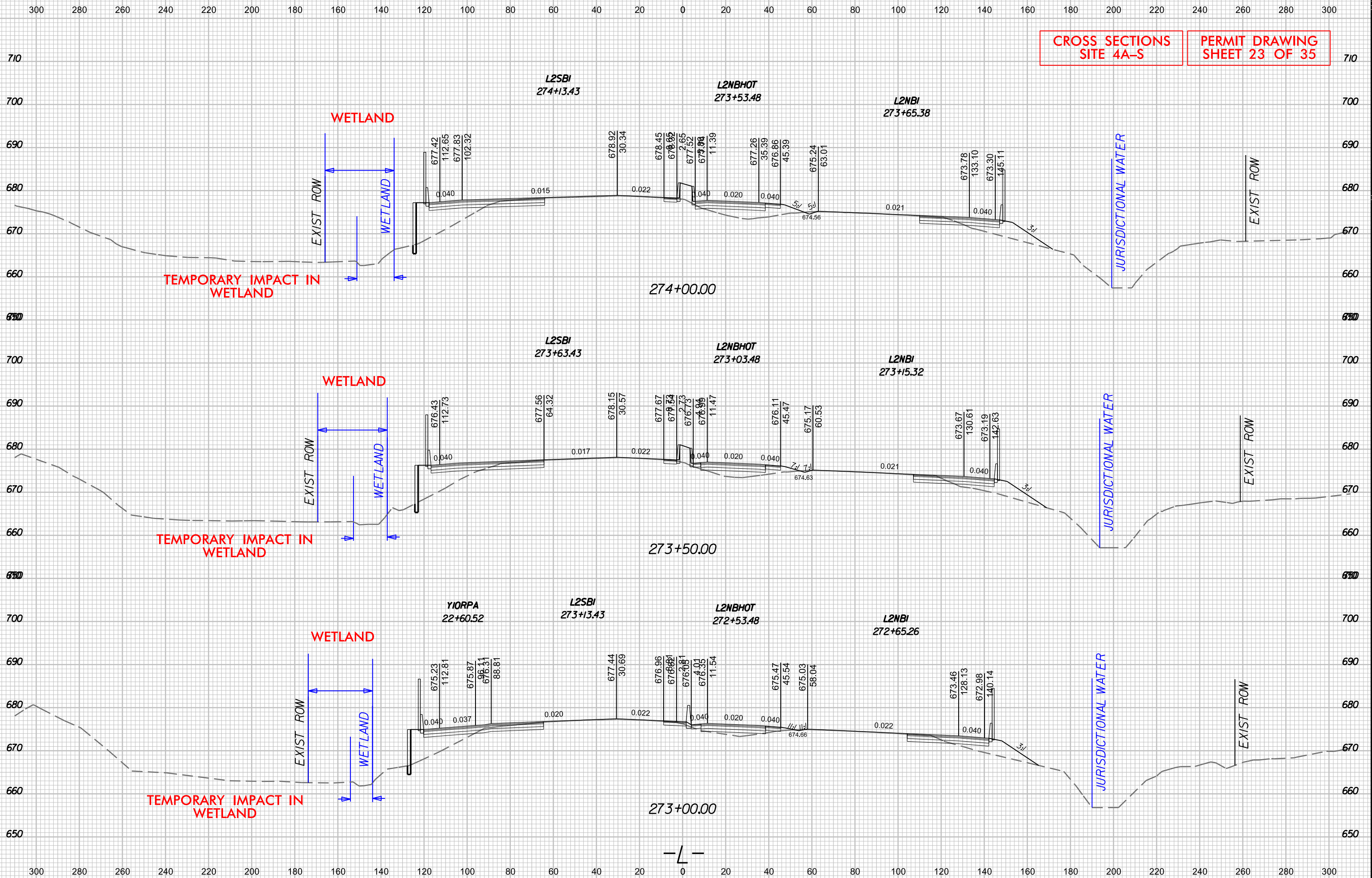
DATE\$
FILE\$
SPENTBL\$



8/23/99
22-SEP-2016 10:33
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muenrev116 AT NIJDEL

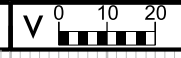


8/23/99



22-SEP-2016 10:34 IP:\PWP\dms48421\1-331IC_PP02.RDY.XSC-L2-03.dgn m:\user\ev1118 AT NIJUEL

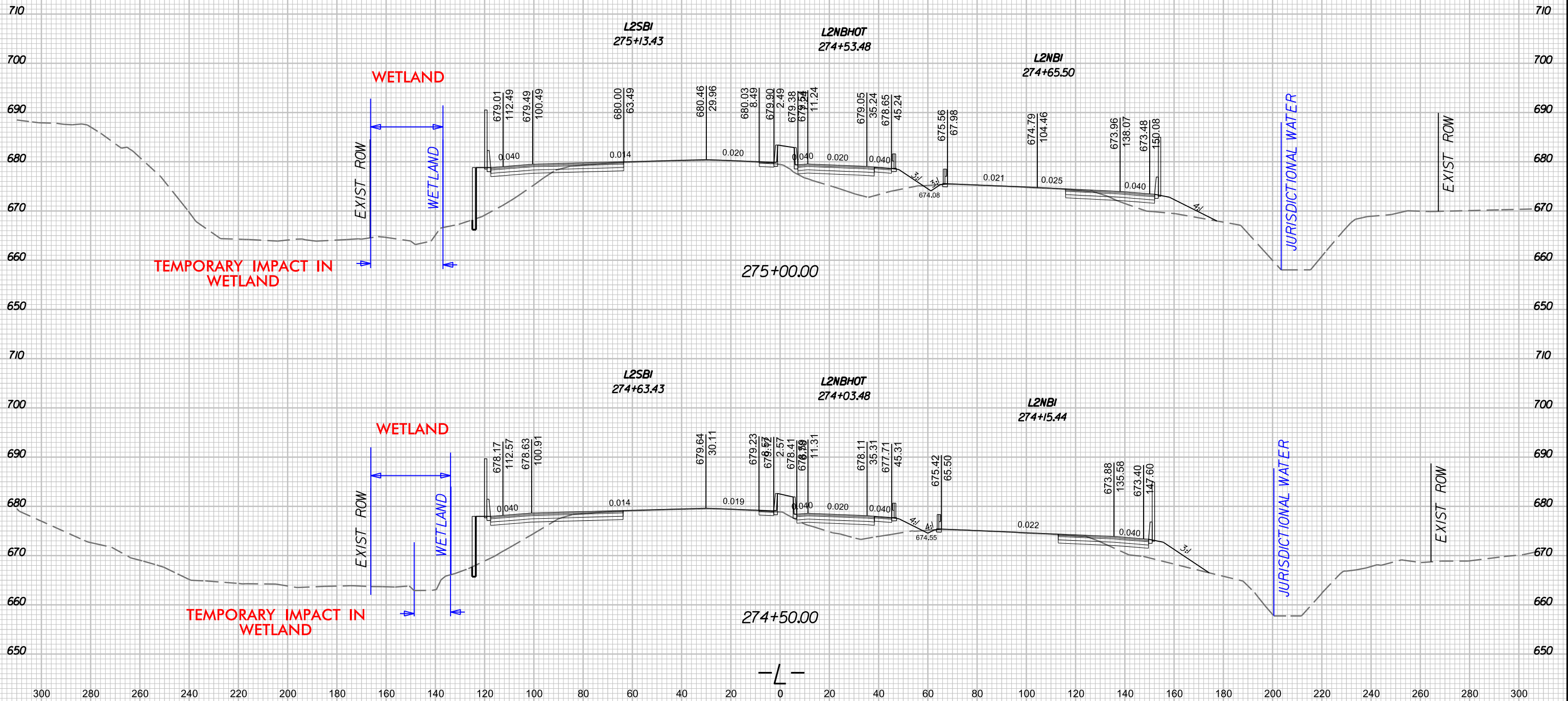
8/23/99



300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

CROSS SECTIONS
SITE 4A-S

PERMIT DRAWING
SHEET 24 OF 35



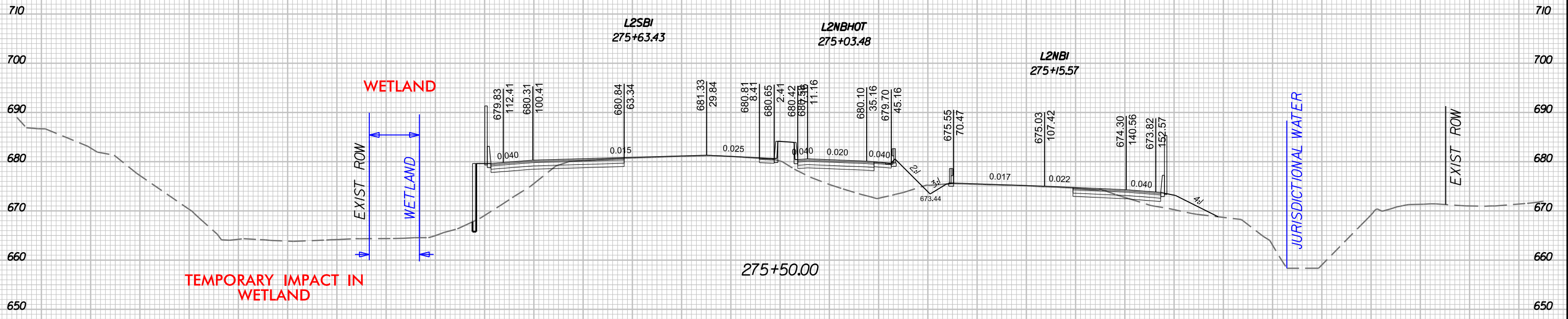
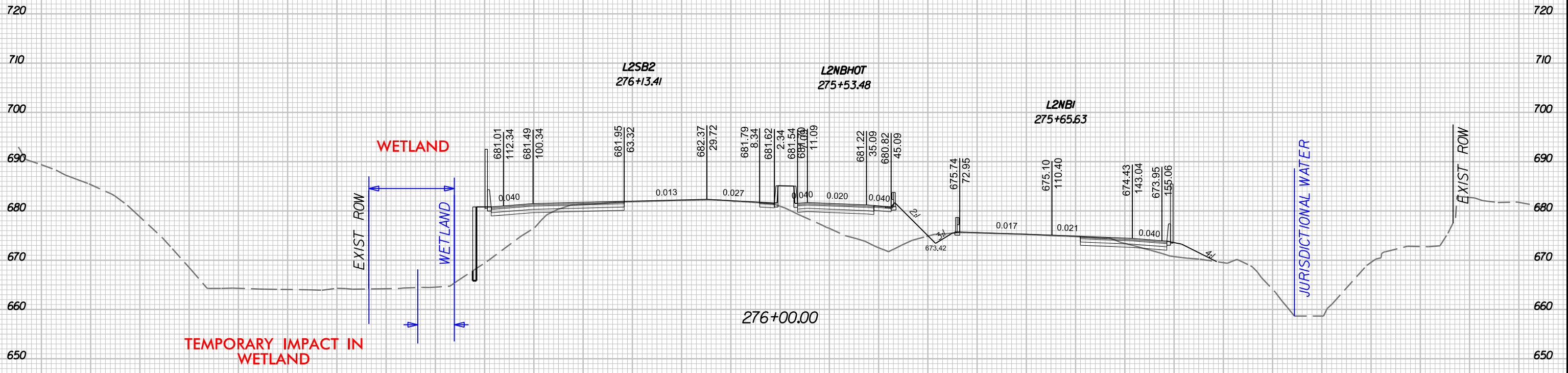
22-SEP-2016 10:48
IP:\PWF\dms48421\1-331IC_RP02.RDY.XSC-L2-04.dgn
muenrev118 AT NIJUEL

8/23/09

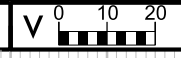


300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

**CROSS SECTIONS
SITE 4A-S** **PERMIT DRAWING
SHEET 25 OF 35**

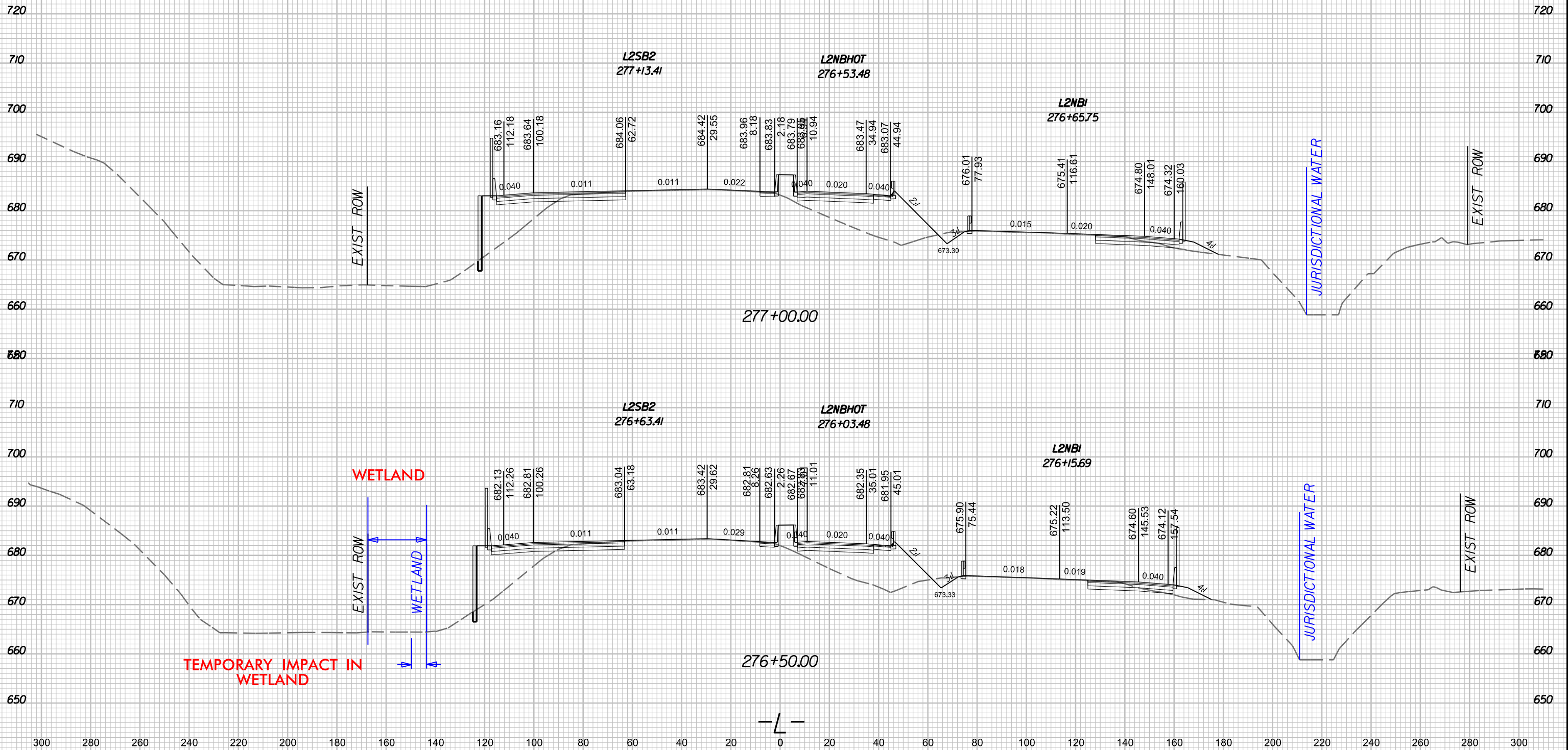


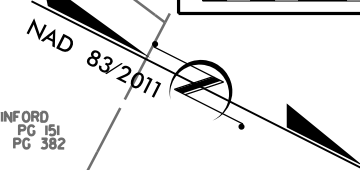
22-SEP-2016 10:34
IP:\P\WF\dms48421\1-I-3311C-PP02-RDY-XSC-L2-05.dgn
m\uev\ev118



300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

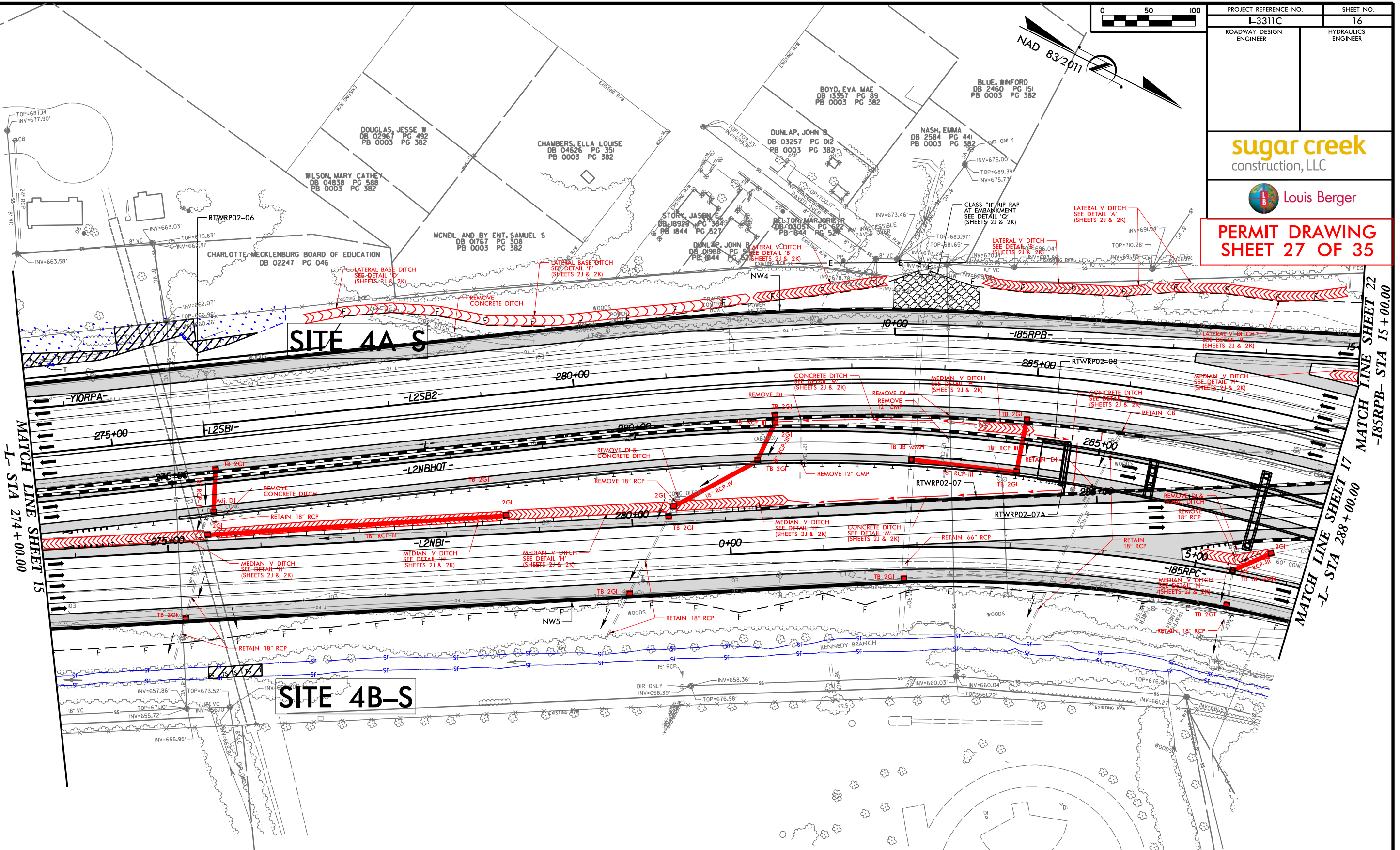
CROSS SECTIONS SITE 4A-S PERMIT DRAWING SHEET 26 OF 35





PROJECT REFERENCE NO. L-3311C	SHEET NO. 16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
sugar creek construction, LLC	
Louis Berger	

PERMIT DRAWING
SHEET 27 OF 35



SITE 4A S

SITE 4B-S

MATCH LINE SHEET 15
-L- STA 274 + 00.00

MATCH LINE SHEET 22
-I85RPA- STA 15 + 00.00
MATCH LINE SHEET 17
-L- STA 288 + 00.00

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



- NOTES:**
- 1.) FOR -L2SB2- PROFILE SEE SHEET 22.
 - 2.) FOR -L2NBI- PROFILE SEE SHEET 22.
 - 3.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 2P.

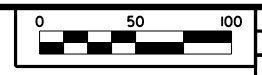
CHARLOTTE MECKLENBURG BOARD OF EDUCATION
 DB 02247 PG 046
 PB 0003 PG 162

- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY FILL IN WETLAND

\$ DATE\$
\$ FILE\$
\$ PENTBL\$

NOTE:
 -EXISTING GEOMETRY TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -SHOULDERS, SIDE SLOPES, DRAINAGE, ARE TO BE RETAINED UNLESS OTHERWISE INDICATED.
 -DESIGN EXCEPTION FOR SSD 525'
 -L2NBI- STA 315+75 TO STA 325+60
 -DESIGN EXCEPTION FOR SSD 465'
 -L2NBI- STA 325+60 TO STA 328+75

 DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER



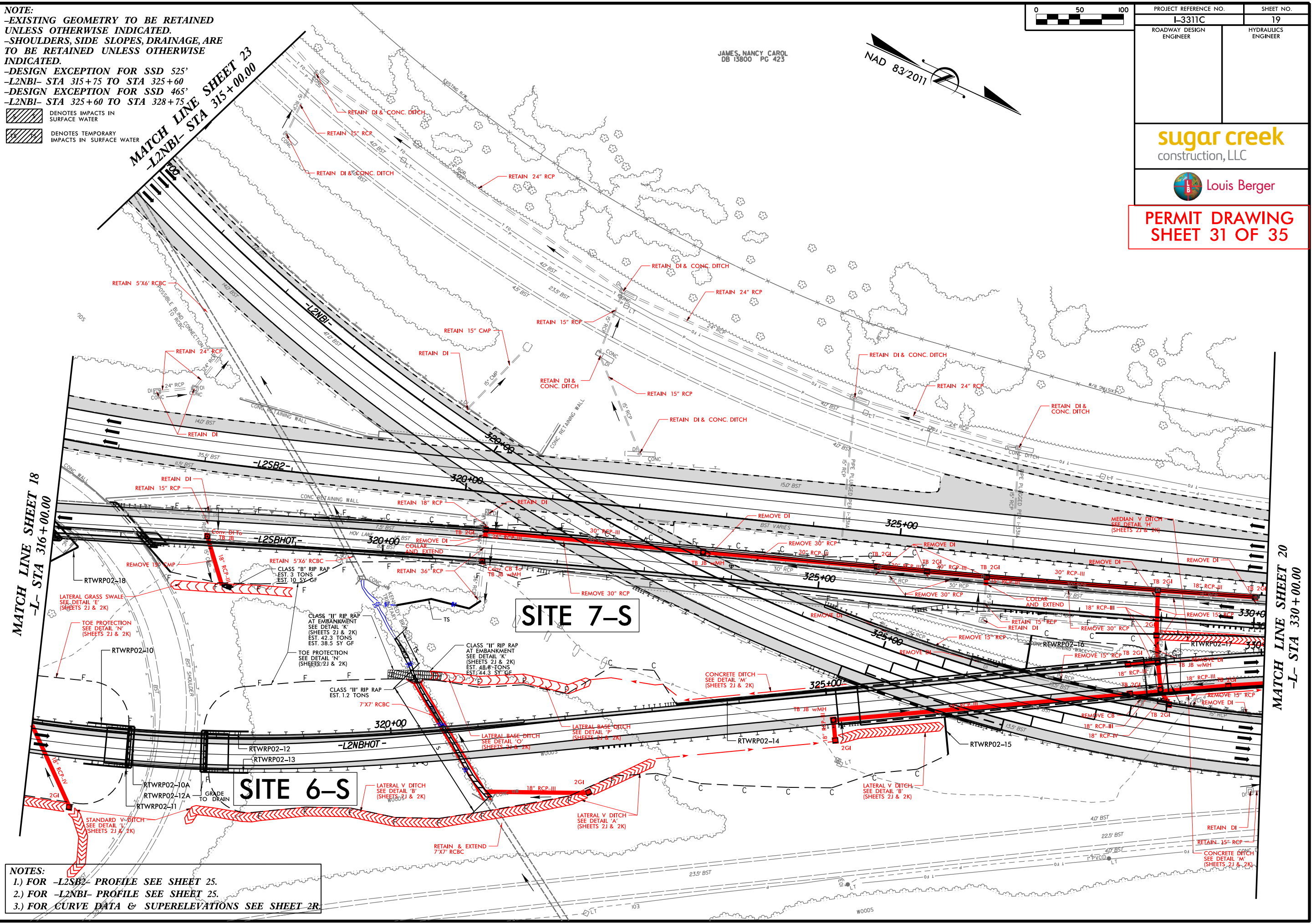
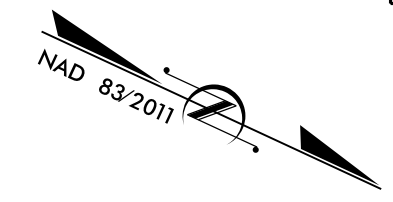
PROJECT REFERENCE NO.	SHEET NO.
L-3311C	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

sugar creek
 construction, LLC



PERMIT DRAWING
SHEET 31 OF 35

JAMES, NANCY CAROL
 DB 15800 PG 423



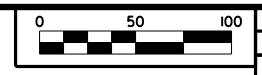
SITE 7-S

SITE 6-S

NOTES:
 1.) FOR -L2SB2- PROFILE SEE SHEET 25.
 2.) FOR -L2NBI- PROFILE SEE SHEET 25.
 3.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 2R

\$ TIME \$
 \$ FILE \$
 \$ PENTBL \$

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



PROJECT REFERENCE NO. L-3311C	SHEET NO. 19A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

sugar creek
 construction, LLC

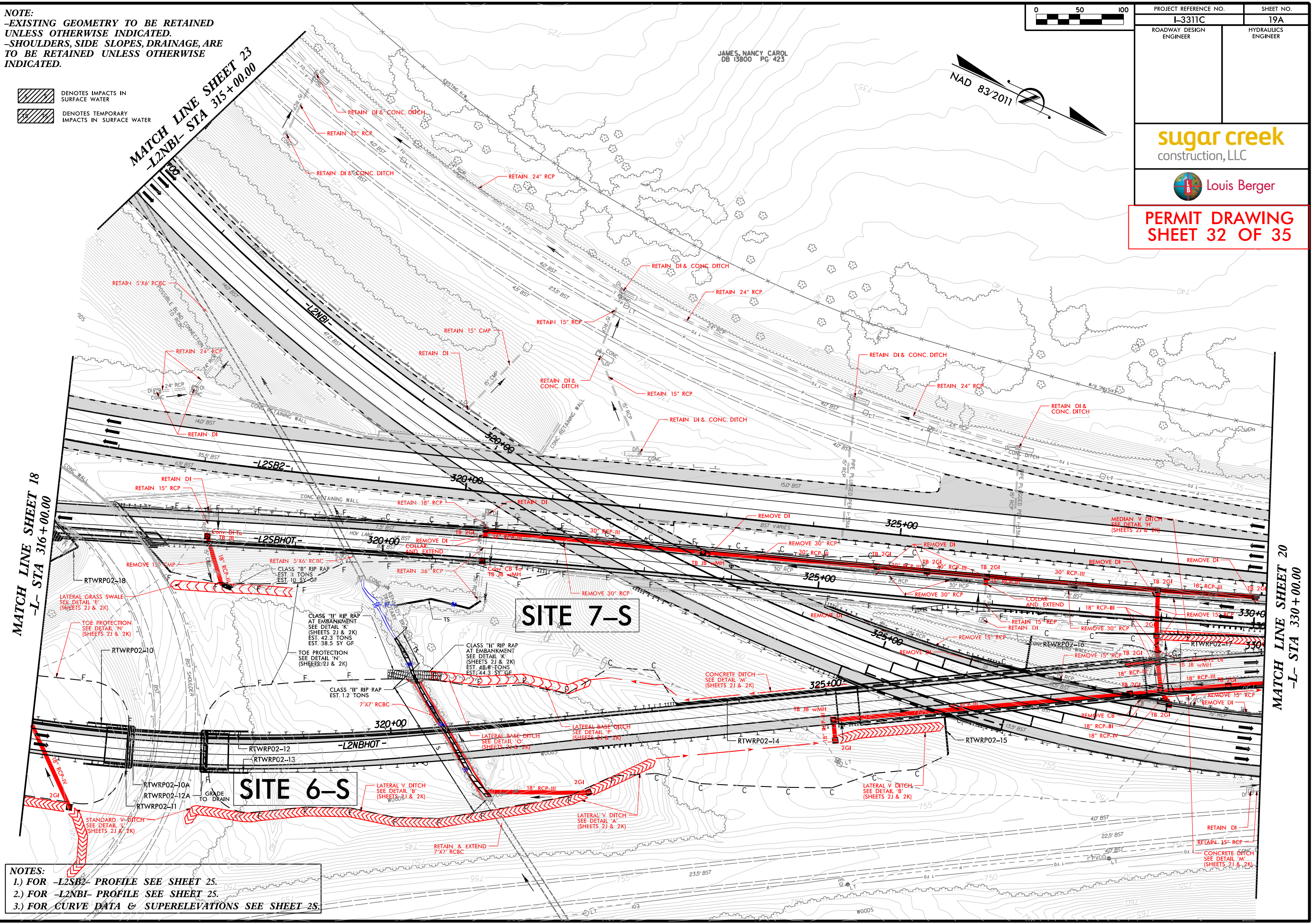


PERMIT DRAWING
SHEET 32 OF 35

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

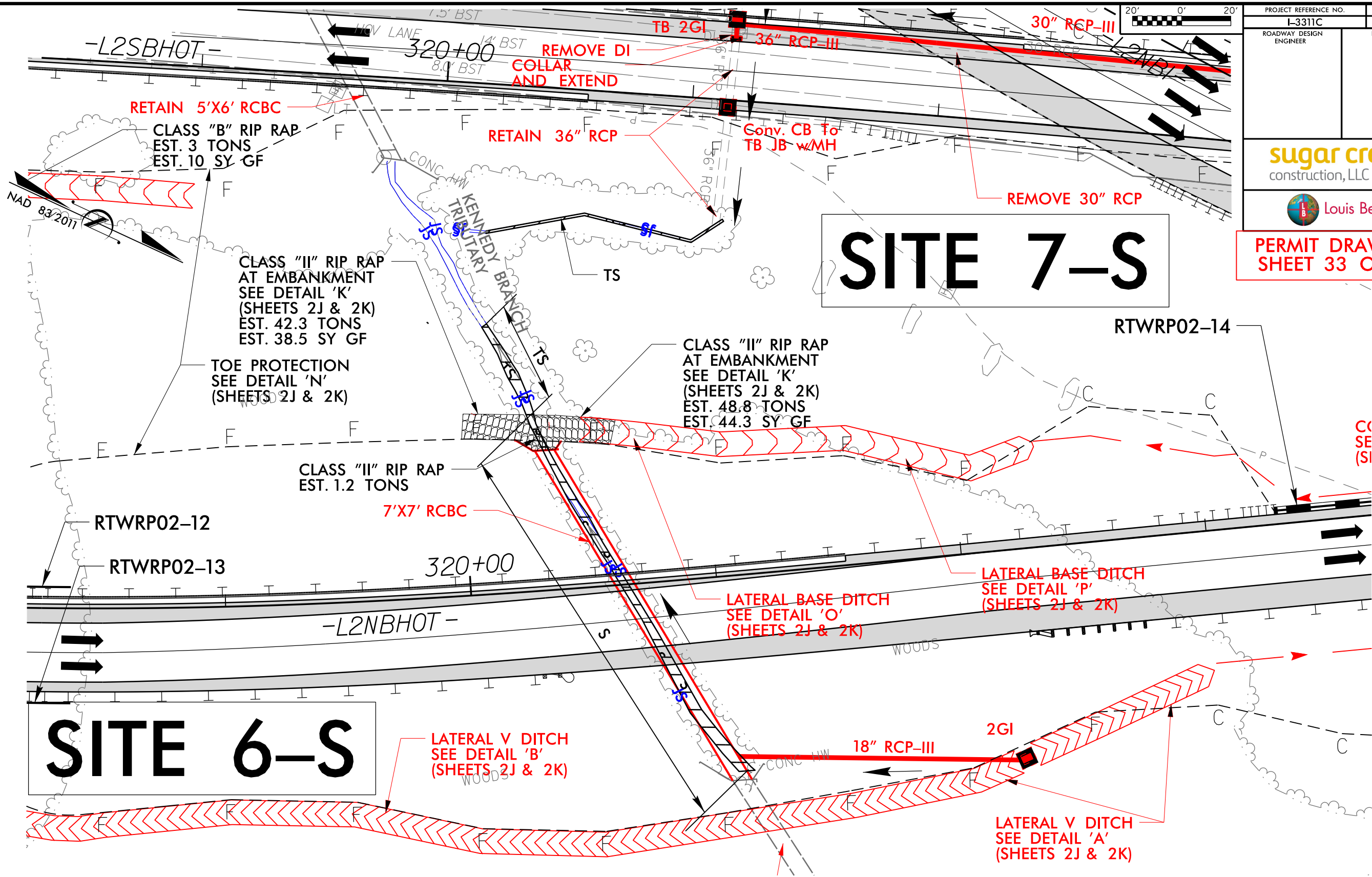
MATCH LINE SHEET 18
 -L- STA 316+00.00

MATCH LINE SHEET 20
 -L- STA 330+00.00





- NOTES:**
- 1.) FOR -L2SB2- PROFILE SEE SHEET 25.
 - 2.) FOR -L2NBI- PROFILE SEE SHEET 25.
 - 3.) FOR CURVE DATA & SUPERELEVATIONS SEE SHEET 25.

\$ DATE \$
 \$ FILE \$
 \$ PENTBL \$



SITE 7-S

SITE 6-S

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

\$DATE\$
 \$FILE\$
 \$PENTBL\$

5/14/99

sugar creek
construction, LLC

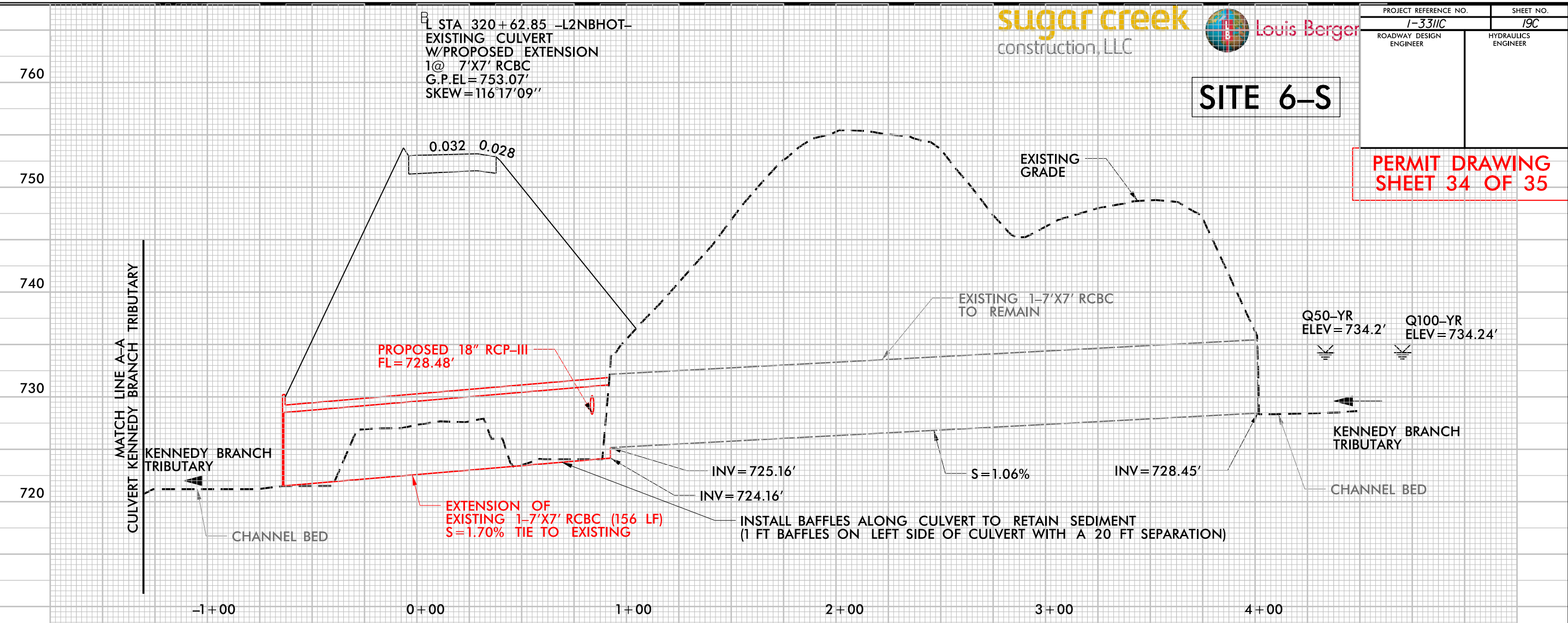


PROJECT REFERENCE NO. 1-3311C	SHEET NO. 19C
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 6-S

PERMIT DRAWING
SHEET 34 OF 35

B STA 320+62.85 -L2NBHOT-
 EXISTING CULVERT
 W/PROPOSED EXTENSION
 1@ 7'X7' RCBC
 G.P.E.L=753.07'
 SKEW=116°17'09''



EXTENSION OF
 EXISTING 1-7'X7' RCBC (156 LF)
 S=1.70% TIE TO EXISTING

INSTALL BAFFLES ALONG CULVERT TO RETAIN SEDIMENT
 (1 FT BAFFLES ON LEFT SIDE OF CULVERT WITH A 20 FT SEPARATION)

B STA 319+60.41 -L2SBHOT-
 EXISTING CULVERT
 1@ 5'X6' RCBC
 G.P.E.L=745.14'
 SKEW=120°50'44''



EXISTING 1-5'X6' RCBC
 TO REMAIN

22 SEP 2016 2:29:02 PM 3311C-HYD-FRM-SOUTH-WET_PFL_04.dgn

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-S	155+10 - 157+30 LT	FILL / CHANNEL RELOCATION						0.05		225		
		TEMP. FILL / ACCESS							0.01		50	
1A-S	171+00 RT	TEMP. FILL / ACCESS							< 0.01		19	
2-S	207+50 - 210+60 LT	TEMP. FILL / ACCESS							0.15		270	
3A-S	219+00 - 221+00 LT	TEMP. FILL / ACCESS							0.15		217	
3B-S	228+50 - 231+00 RT	4-12'x13' RCBC						0.15		234		
	231+00 - 238+20 RT	CHANNEL REALIGN. / STABILIZ						0.35		720		
	238+20 - 250+00 RT	CHANNEL STABILIZATION							0.60		1180	
3C-S	229+10 - 229+50 RT	72" RCP						0.01	< 0.01	45	45	
4A-S	271+20 - 276+70 LT	TEMP. FILL / ACCESS		0.17								
4B-S	275+50 - 276+10 RT	TEMP. FILL / ACCESS							0.02		57	
5-S	290+00 - 293+80 RT	TEMP. FILL / ACCESS							0.08		350	
6-S	320+40 - 321+30 RT	7' X 7' RCBC						0.01	< 0.01	166	40	
		BANK STABILIZATION								10		
7-S	320+20 - 321+15 LT	TEMP. FILL / ACCESS							< 0.01		100	
TOTALS*:				0.17				0.57	1.02	1400	2328	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 09-22-2016
 MECKLENBURG
 I-3311C
 South Section
 SHEET 35 OF 35

