



US Army Corps
Of Engineers
Wilmington District

PUBLIC NOTICE

Issue Date: January 10, 2019
Comment Deadline: February 11, 2019
Corps Action ID Number: SAW-2018-02343

The Wilmington District, Corps of Engineers (Corps) received an application from the North Carolina Department of Transportation (NC DOT), seeking Department of the Army authorization to fill various waters of the U.S., including wetlands, for the widening of approximately 15 miles of NC 150 from the NC 16 Bypass in Catawba County, to just west of the US 21/NC 150 Interchange, in Iredell County. The project also includes improvements to the I-77/NC 150 interchange in Mooresville.

This is a Phased Individual Permit application. The project is divided into two sections.

Section A (R-2307A) extends from the NC 16 Bypass to SR 1902 (Harvel Road). For R-2307A, the following impacts are preliminary: permanently fill 0.43 acre of forested wetland, permanently fill 0.30 acre of emergent wetland, pipe/fill 1,117 linear feet of stream channel and fill 6.03 acres of open water.

Section B (R-2307B) extends from SR 1902 (Harvel Road) to the US 21/NC150 interchange and includes the I-5717 component, the I-77 interchange. For R-2307B, the following impacts are final: permanently fill 0.05 acre of emergent wetland, mechanically clear 0.01 acre of emergent wetland, pipe/fill 447 linear feet of stream channel, fill 7.05 acres of open water and temporarily fill 0.1 acre of open water.

Specific plans and location information are described below and shown on the attached plans (Sheets 1 – 22, dated July 11, 2018). This Public Notice and all attached plans are also available on the Wilmington District Web Site at

<http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram.aspx>

Applicant: Mr. Michael Turchy, North Carolina Department of Transportation, 1598 Mail Service Center, Raleigh, North Carolina, 27699-1598. Phone: (919) 707-6157. Email: maturchy@ncdot.gov

Authority

The Corps evaluates this application and decides whether to issue, conditionally issue, or deny the proposed work pursuant to applicable procedures of the following Statutory Authorities:

☒ Section 404 of the Clean Water Act (33 U.S.C. 1344)

☐ Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)

☐ Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972
(33 U.S.C. 1413)

Location

Location Description:

Project Area (acres): 910 acres Nearest Town: Mooresville
Nearest Waterway: Lake Norman River Basin: Catawba River
Latitude and Longitude: 35.60489 N, - 80.94094 W

Existing Site Conditions

Along the 15 miles of NC 150 corridor/project area, the primary land uses are residential, commercial and industrial with few green spaces. Within the project area, NC 150 crosses Lake Norman. Currently, NC 150 is a 2 to 3 lane undivided highway throughout the length of the proposed project.

Applicant's Stated Purpose

The purpose of the project is to improve capacity and reduce congestion along NC 150 from the NC 16 Bypass to just west of the US 21/NC 150 interchange. The need for the project stems from NC 150 being the major east-west route between Shelby, Lincolnton, and Mooresville, North Carolina. The existing NC 150 is a 2 or 3 lane undivided highway. The traffic demands and travel patterns for commuters and commercial traffic result in heavy traffic during peak periods, and frequent congestion and delays. The existing configuration will not support projected traffic volumes. With the projected growth in the corridor, particularly near the I-77 interchange with NC 150, NC DOT predicts more frequent delays and extended travel times. Projected traffic volumes along the entire length of NC 150 will exceed two-lane capacity by 2040. Additionally, five-lane capacity will be exceeded from the Mooresville Crossing shopping center entrance to US 21 by 2040.

Project Description

The proposed action includes widening, replacing several bridges, and access management measures. The proposed roadway cross-section will be a four-lane, divided facility including curb and gutter. In the rural areas, the median would be 46 foot wide with 8 foot shoulders. In the more urban/suburban areas, the median would be a 23 foot raised median with 10 foot shoulders. The project also includes reconfiguring the I-77/NC 150 interchange.

Avoidance and Minimization

The applicant provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment:

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, at all stages of a project, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts.

Overall avoidance and minimization measures include:

Grass swales were added anywhere there is room to allow for stormwater treatment and velocity reduction.

Specific avoidance and minimization measures include:

Roadway Plan sheet 5 (No 404 Site Number, Site 1 and 3 on Buffer Drawings):

Roadway slopes were reduced to avoid 404 impacts. (However, Catawba Buffer impacts remain). (Avoidance)

Sites 3 and 4: The multi-use path on the bridge will be used to collect stormwater so it will not directly discharge into Lake Norman. Stormwater will be collected into hazardous spill basins on either side of the bridge. (Minimization)

Site 5: Fill slopes and drainage related impacts were shifted to avoid impacts to the wetland. (Avoidance and Minimization)

Sheet 9 (No 404 Site Number, Site 8 on Buffer Drawings): Fill slopes and drainage related impacts were shifted to avoid impacts to Lake Norman. (However, Catawba Buffer Impacts to remain). (Avoidance)

Site 7: There will be no roadway drainage directly to this stream. All roadway water is being carried for treatment in a basin. (Minimization)

Sheets 16, 17, 18, 19, 20, 21, 22 (No Jurisdictional Impacts). All stormwater on these pages are routed to a basin for treatment and velocity reduction. (Minimization)

Compensatory Mitigation

The applicant offered the following compensatory mitigation plan to offset unavoidable functional loss to the aquatic environment: NC DOT contacted the NC Division of Mitigation Services for 0.6 acres of riparian wetland, 447 linear feet of streams, and 20,406 square feet of Zone 1 and 14,992 square feet of Zone 2 Catawba Buffer. On December 19, 2018, the NC Division of Mitigation Services accepted the NC DOT request and will provide the required compensatory mitigation. This mitigation is generally assessed at a 2:1 ratio. Compensatory mitigation for R-2307A impacts have not been requested, as the projected construction start date for Section A is greater than 5 years.

Essential Fish Habitat

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, this Public Notice initiates the Essential Fish Habitat (EFH) consultation requirements. The Corps' initial determination is that the proposed project will have no effect EFH or associated fisheries managed by the South Atlantic or Mid Atlantic Fishery Management Councils or the National Marine Fisheries Service.

Cultural Resources

Pursuant to Section 106 of the National Historic Preservation Act of 1966, Appendix C of 33 CFR Part 325, and the 2005 Revised Interim Guidance for Implementing Appendix C, the District Engineer consulted district files and records and the latest published version of the National Register of Historic Places and initially determines that:

- ☐ Should historic properties, or properties eligible for inclusion in the National Register, be present within the Corps' permit area; the proposed activity requiring the DA permit (the undertaking) is a type of activity that will have no potential to cause an effect to an historic properties.
- ☐ No historic properties, nor properties eligible for inclusion in the National Register, are present within the Corps' permit area; therefore, there will be no historic properties affected. The Corps subsequently requests concurrence from the SHPO (or THPO).
- ☐ Properties ineligible for inclusion in the National Register are present within the Corps' permit area; there will be no historic properties affected by the proposed work. The Corps subsequently requests concurrence from the SHPO (or THPO).
- ☒ Historic properties, or properties eligible for inclusion in the National Register, are present within the Corps' permit area; however, the undertaking will have no adverse effect on these historic properties. The Corps subsequently requests concurrence from the SHPO (or THPO).
- ☐ Historic properties, or properties eligible for inclusion in the National Register, are present within the Corps' permit area; moreover, the undertaking may have an adverse effect on these historic properties. The Corps subsequently initiates consultation with the SHPO (or THPO).
- ☐ The proposed work takes place in an area known to have the potential for the presence of prehistoric and historic cultural resources; however, the area has not been formally surveyed for the presence of cultural resources. No sites eligible for inclusion in the National Register of Historic Places are known to be present in the vicinity of the proposed work. Additional work may be necessary to identify and assess any historic or prehistoric resources that may be present.

The District Engineer's final eligibility and effect determination will be based upon coordination with the SHPO and/or THPO, as appropriate and required, and with full consideration given to the proposed undertaking's potential direct and indirect effects on historic properties within the Corps-identified permit area.

Endangered Species

Pursuant to the Endangered Species Act of 1973, the Corps reviewed the project area, examined all information provided by the applicant and consulted the latest North Carolina Natural Heritage Database. Based on available information:

- ☐ The Corps determines that the proposed project would not affect federally listed endangered or threatened species or their formally designated critical habitat.
- ☒ The Corps determines that the proposed project may affect federally listed endangered or threatened species or their formally designated critical habitat.
 - ☐ The Corps initiates consultation under Section 7 of the ESA and will not make a permit decision until the consultation process is complete.
 - ☒ The Corps will consult under Section 7 of the ESA and will not make a permit decision until the consultation process is complete.
 - ☐ The Corps has initiated consultation under Section 7 of the ESA and will not make a permit decision until the consultation process is complete.
- ☐ The Corps determines that the proposed project may affect federally listed endangered or threatened species or their formally designated critical habitat. Consultation has been completed for this type of activity and the effects of the proposed activity have been evaluated and/or authorized by the National Marine Fisheries Service (NMFS) in the South Atlantic Regional Biological Opinion or its associated documents, including 7(a)(2) & 7(d) analyses and Critical Habitat assessments. A copy of this public notice will be sent to the NMFS.
- ☐ The Corps is not aware of the presence of species listed as threatened or endangered or their critical habitat formally designated pursuant to the Endangered Species Act of 1973 (ESA) within the project area. The Corps will make a final determination on the effects of the proposed project upon additional review of the project and completion of any necessary biological assessment and/or consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service.

Other Required Authorizations

The Corps forwards this notice and all applicable application materials to the appropriate State agencies for review.

North Carolina Division of Water Resources (NCDWR): The Corps will generally not make a final permit decision until the NCDWR issues, denies, or waives the state Certification as required by Section 401 of the Clean Water Act (PL 92-500). The receipt of the application and this public notice, combined with the appropriate application fee, at the NCDWR Central Office in Raleigh constitutes initial receipt of an application for a 401 Certification. A waiver will be deemed to occur if the NCDWR fails to act on this request for certification within sixty days of receipt of a complete application. Additional information regarding the 401 Certification may be reviewed at the NCDWR Central Office, 401 and Buffer Permitting Unit, 512 North Salisbury Street, Raleigh, North Carolina 27604-2260. All persons desiring to make comments regarding the application for a 401 Certification should do so, in writing, by February 1, 2019 to:

NCDWR Central Office
Attention: Ms. Amy Chapman, 401 and Buffer Permitting Unit
(USPS mailing address): 1617 Mail Service Center, Raleigh, NC 27699-1617
Or, (physical address): 512 North Salisbury Street, Raleigh, North Carolina 27604

North Carolina Division of Coastal Management (NCDCM):

- ☐ The application did not include a certification that the proposed work complies with and would be conducted in a manner that is consistent with the approved North Carolina Coastal Zone Management Program. Pursuant to 33 CFR 325.2 (b)(2) the Corps cannot issue a Department of Army (DA) permit for the proposed work until the applicant submits such a certification to the Corps and the NCDCM, and the NCDCM notifies the Corps that it concurs with the applicant's consistency certification. As the application did not include the consistency certification, the Corps will request, upon receipt, concurrence or objection from the NCDCM.
- ☒ Based upon all available information, the Corps determines that this application for a Department of Army (DA) permit does not involve an activity which would affect the coastal zone, which is defined by the Coastal Zone Management (CZM) Act (16 U.S.C. § 1453).

Evaluation

The decision whether to issue a permit will be based on an evaluation of the probable impacts including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of

important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values (in accordance with Executive Order 11988), land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving the discharge of dredged or fill materials in waters of the United States, the evaluation of the impact of the activity on the public interest will include application of the Environmental Protection Agency's 404(b)(1) guidelines.

Due to the current lapse in funding for other Federal agencies that may have an interest in commenting on the proposed action, the District Engineer may extend the comment period to allow such agencies to comment so that the he can complete his required Public Interest Review.

Commenting Information

The Corps of Engineers is soliciting comments from the public; Federal, State and local agencies and officials, including any consolidated State Viewpoint or written position of the Governor; Indian Tribes and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment (EA) and/or an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA). Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

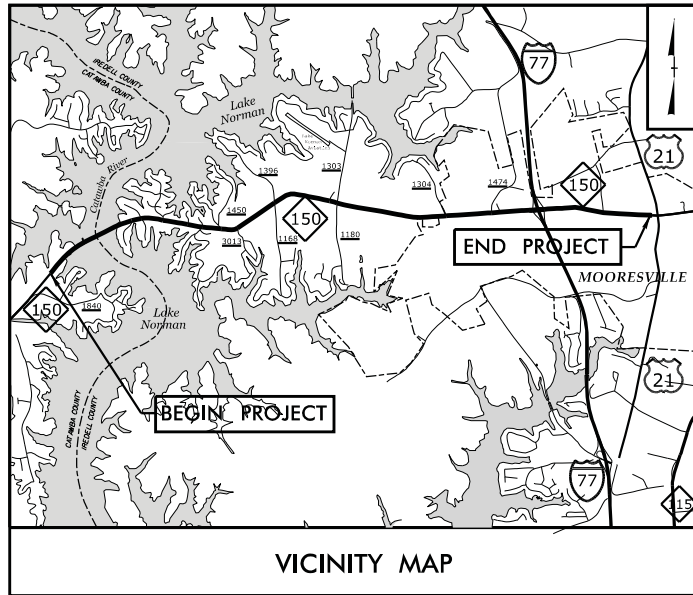
Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Requests for a public hearing will be granted, unless the District Engineer determines that the issues raised are insubstantial or there is otherwise no valid interest to be served by a hearing.

The Corps of Engineers, Wilmington District will receive written comments pertinent to the proposed work, as outlined above, until 5pm, February 11, 2019. Comments should be submitted to Ms. Nicholle Braspennickx, Charlotte Regulatory Office, c/o Asheville Regulatory Office, 151 Patton Avenue, Room 208, Asheville, North Carolina, 28801-5006, at 704-510-0162, or at Nicholle.M.Braspennickx@usace.army.mil.

TIP PROJECTS: R-2307B & I-5717

CONTRACT:

See Sheet 1-A For Index of Sheets



RW PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CATAWBA & IREDELL COUNTIES

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

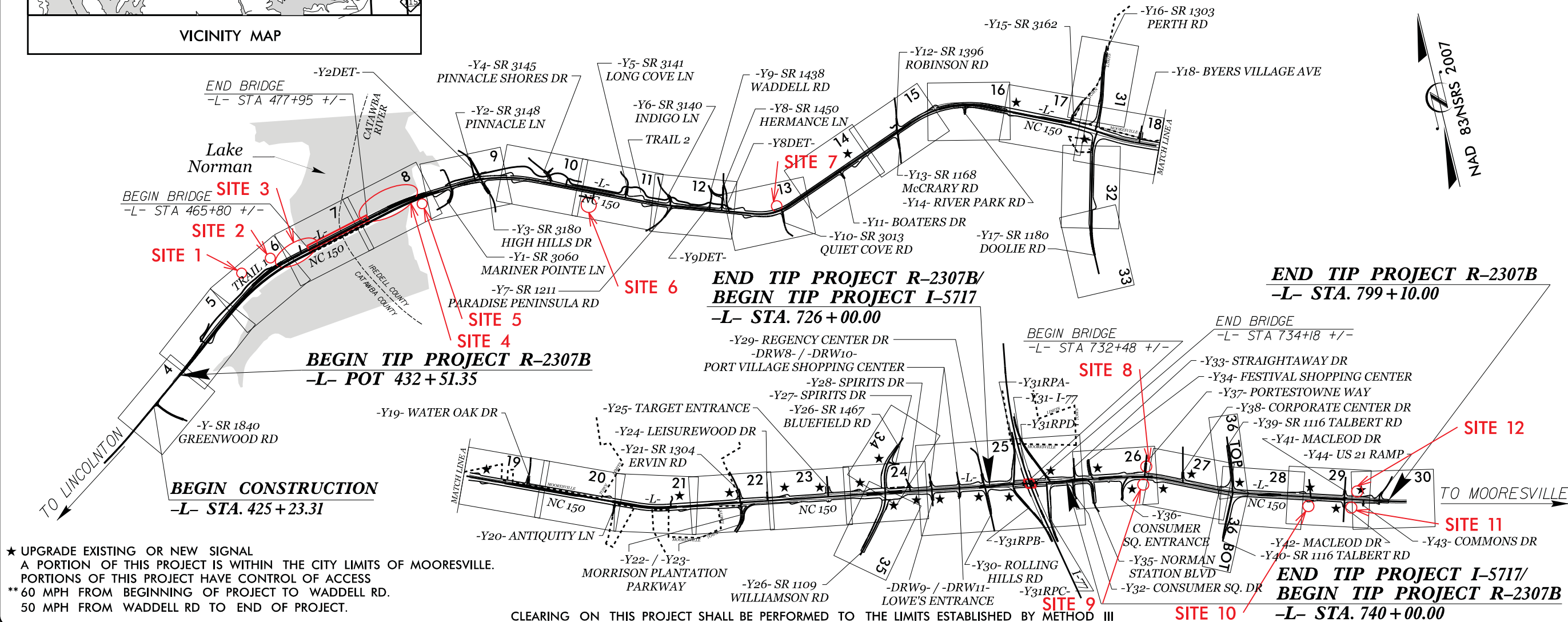
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES, AND SIGNALS

WETLAND & STREAM IMPACTS

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

PERMIT DRAWING
SHEET 1 OF 22

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



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

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

GRAPHIC SCALES



DESIGN DATA

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

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2307B = 6.448 mile
LENGTH STRUCTURES TIP PROJECT R-2307B = 0.230 mile
TOTAL LENGTH TIP PROJECT R-2307B = 6.678 mile
LENGTH ROADWAY TIP PROJECT I-5717 = 0.233 mile
LENGTH STRUCTURES TIP PROJECT I-5717 = 0.032 mile
TOTAL LENGTH TIP PROJECT I-5717 = 0.265 mile
TOTAL LENGTH TIP PROJECT R-2307B / I-5717 = 6.943 mile

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



TGS ENGINEERS
706 HILLSBOROUGH ST
SUITE 200
RALEIGH, NC 27603

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

2012 STANDARD SPECIFICATIONS
RIGHT OF WAY DATE:
AUGUST 31, 2017

LETTING DATE:
JULY 16, 2019

BURKE EVANS, PE
PROJECT ENGINEER

TRAVIS COOK, EI
PROJECT DESIGN ENGINEER

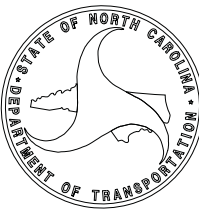
BRYAN KEY, PE
PROJECT ENGINEER
NCDOT ROADWAY DESIGN

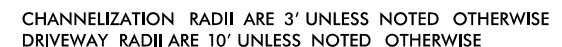
HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN
ENGINEER

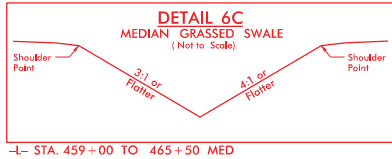
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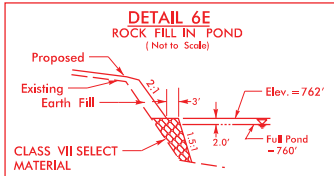


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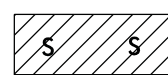


-L- STA. 459+00 TO 465+50 MED



-L- STA. 458+72 TO 467+11
-L- STA. 476+34 TO 488+38

PERMIT DRAWING
SHEET 4 OF 22




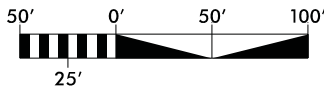
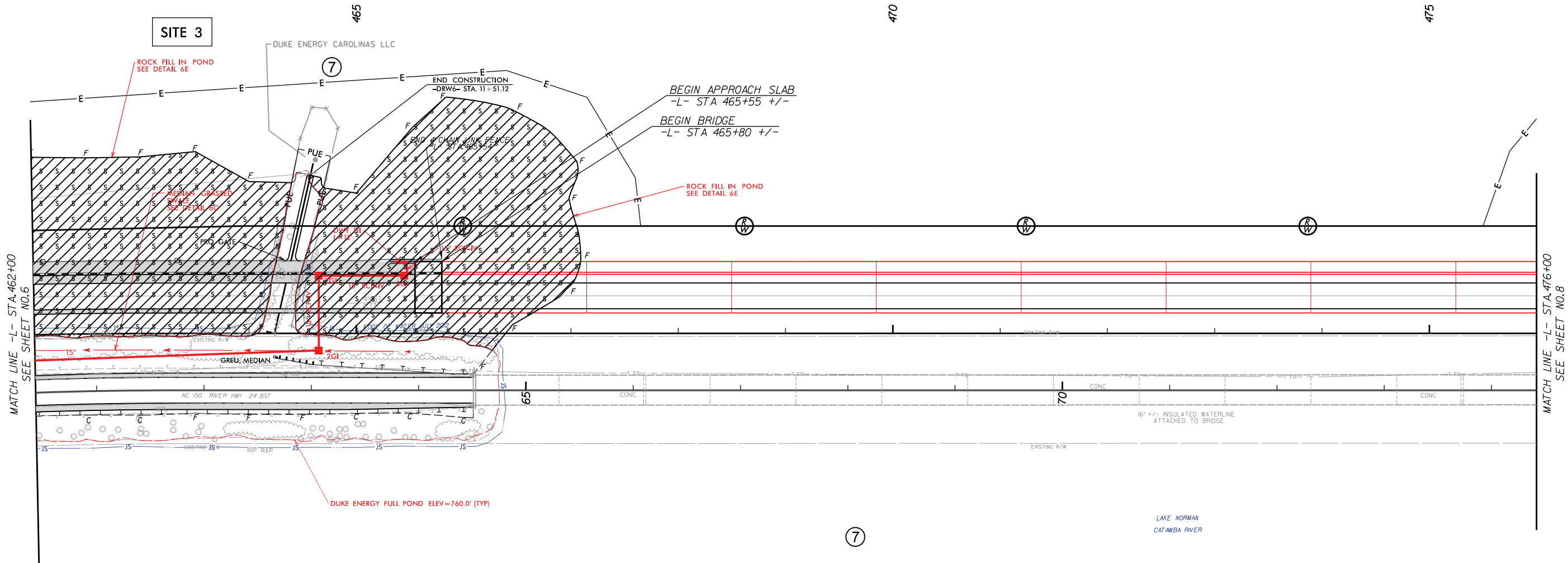
DENOTES IMPACTS IN
SURFACE WATER

LAKE NORMAN
DUKE ENERGY CAROLINAS LLC

⑦

NAD 83/NSRS 2007

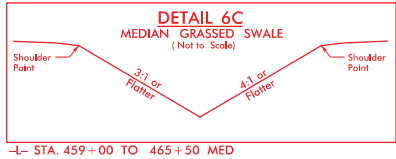
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RW SHEET NO.		
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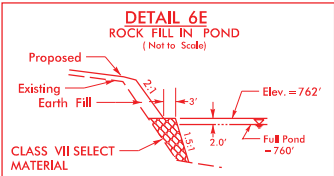
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SEE SHEETS 53 THRU 54 FOR -LEB- PROFILE
SEE SHEET 2B-1 FOR CURVE DATA

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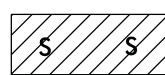


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PERMIT DRAWING
SHEET 5 OF 22



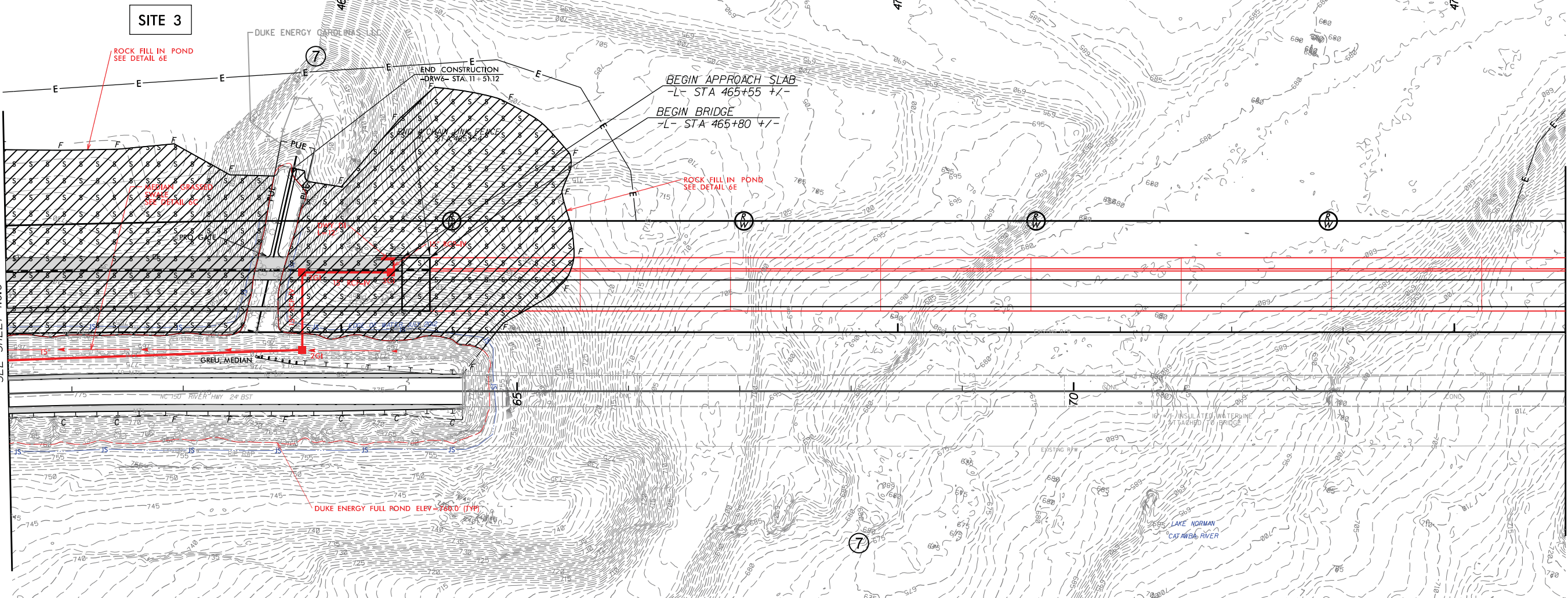
DENOTES IMPACTS IN
SURFACE WATER

LAKE NORMAN
DUKE ENERGY CAROLINAS LLC

7

PROJECT REFERENCE NO. R-2307B / 1-5717		SHEET NO. 7
R/W SHEET NO.		
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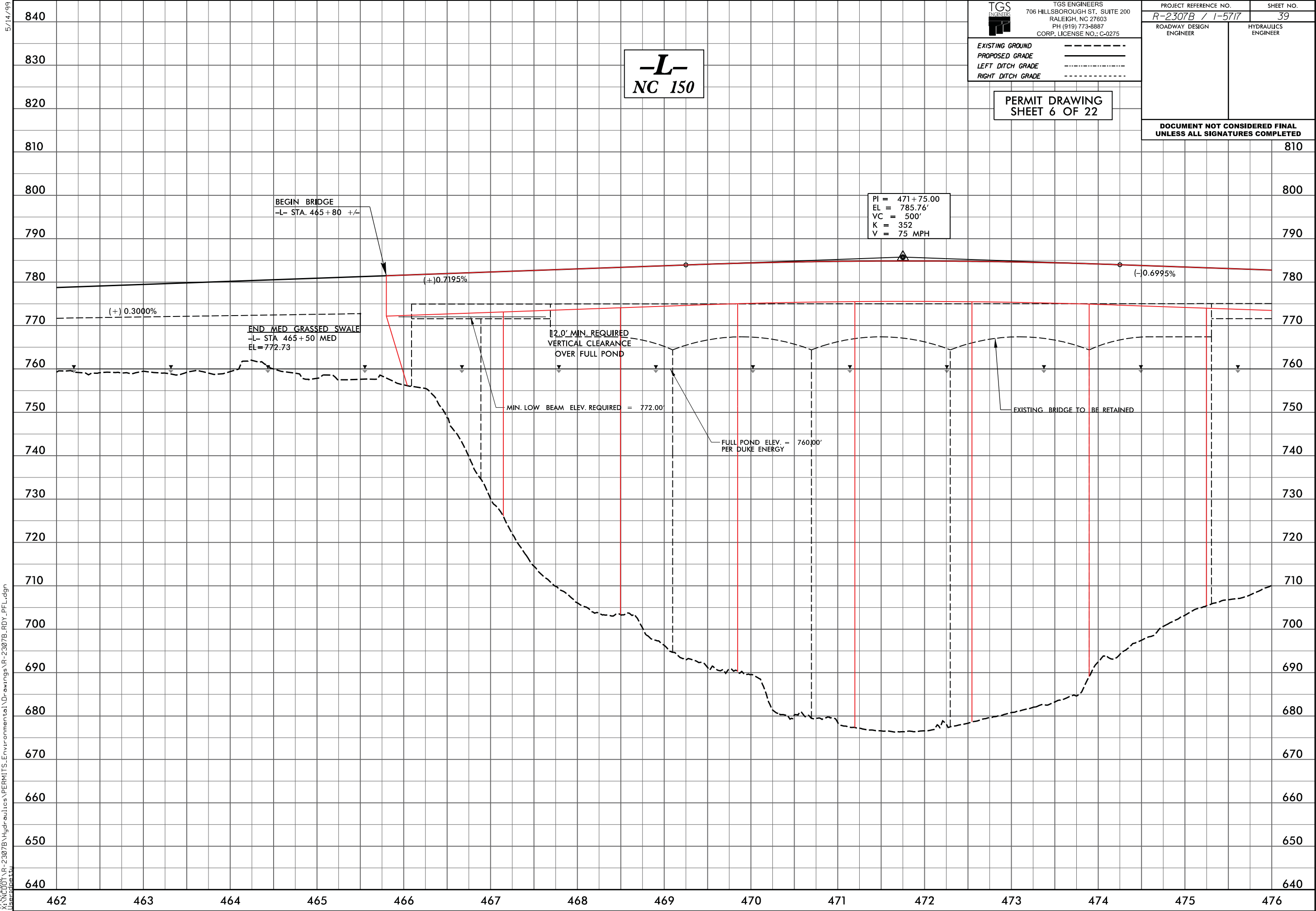
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SEE SHEET NO. 8

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

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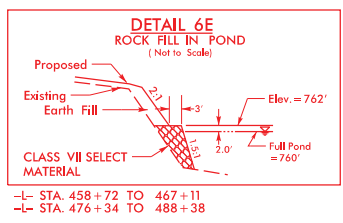
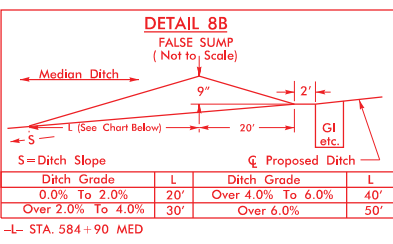
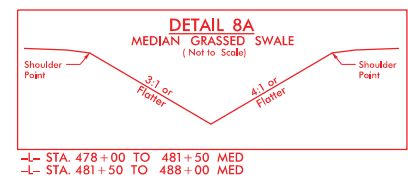
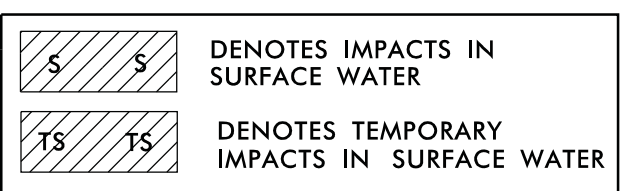


TGS ENGINEERS
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RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

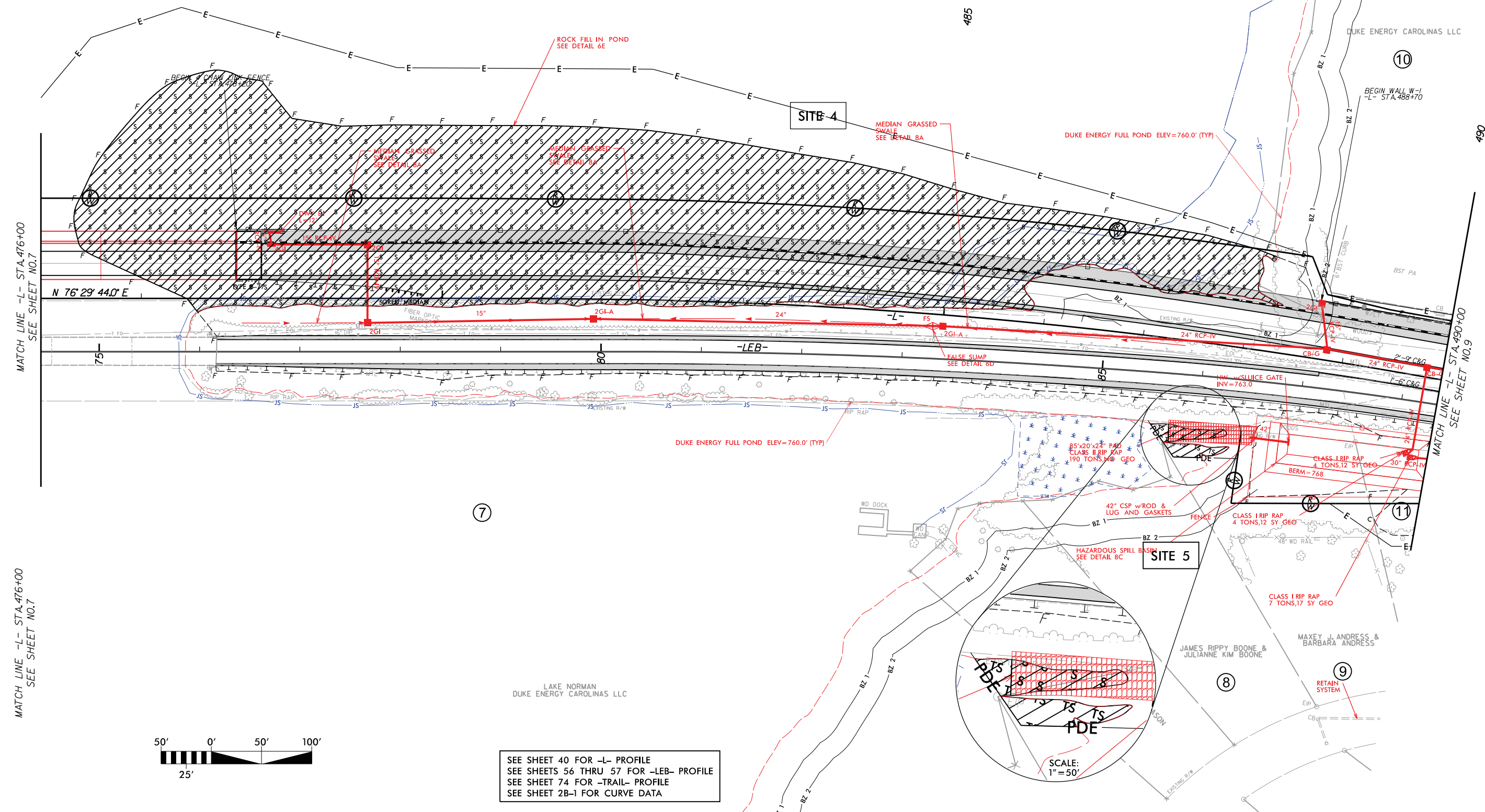
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PROPOSED GRADE
LEFT DITCH GRADE
RIGHT DITCH GRADE

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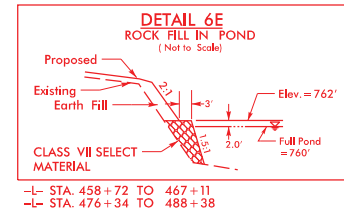
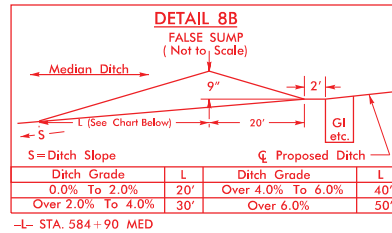
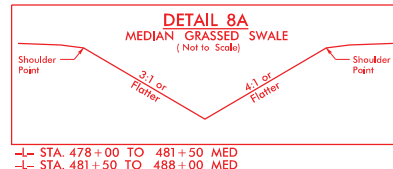
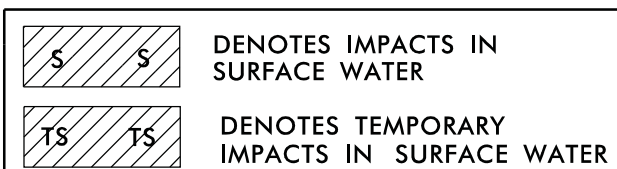
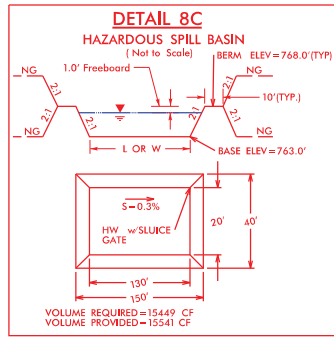
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PERMIT DRAWING
SHEET 7 OF 22




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



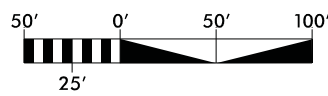
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SHEET 8 OF 22

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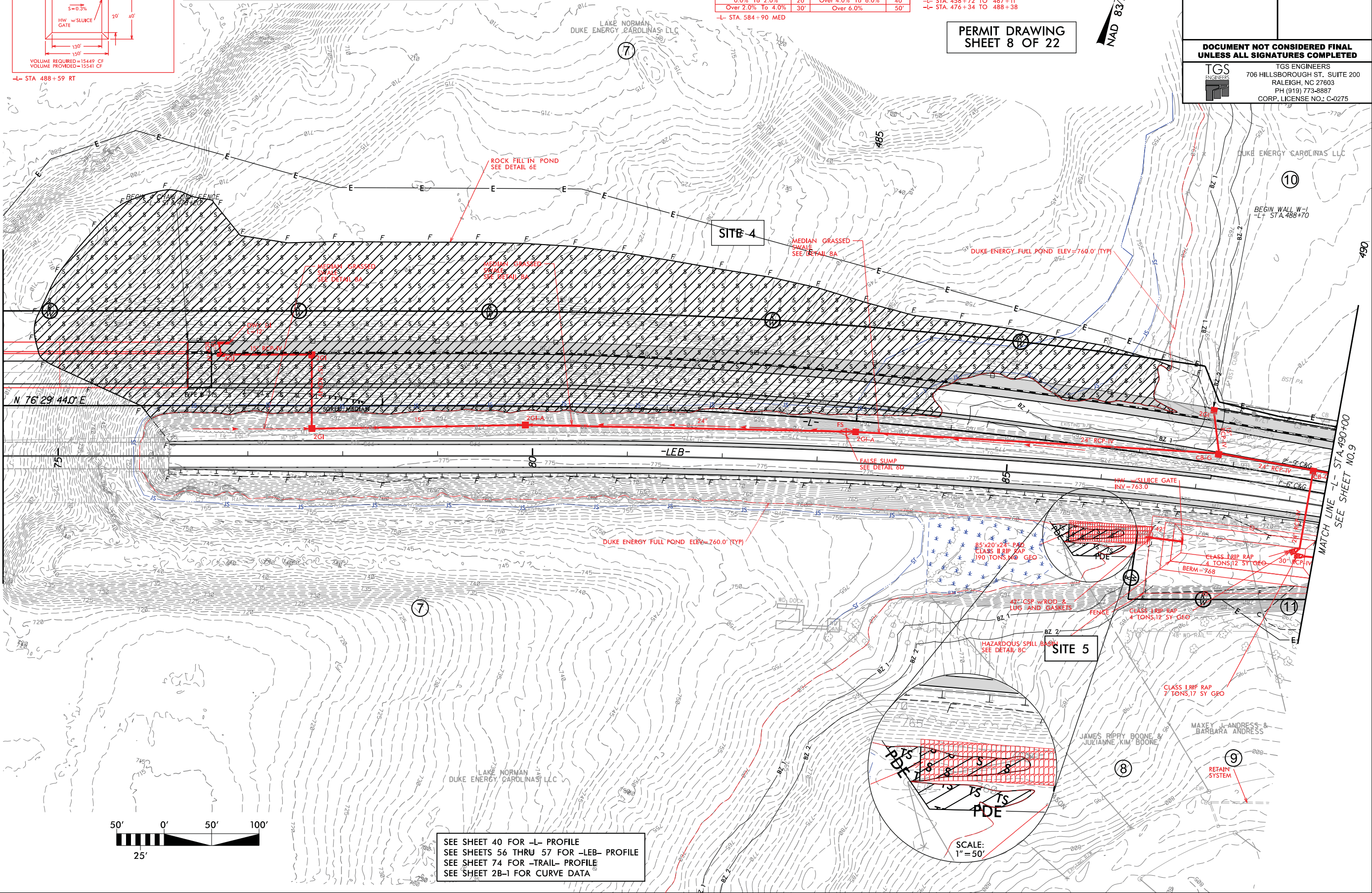
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SEE SHEET NO.7

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SEE SHEET NO.7

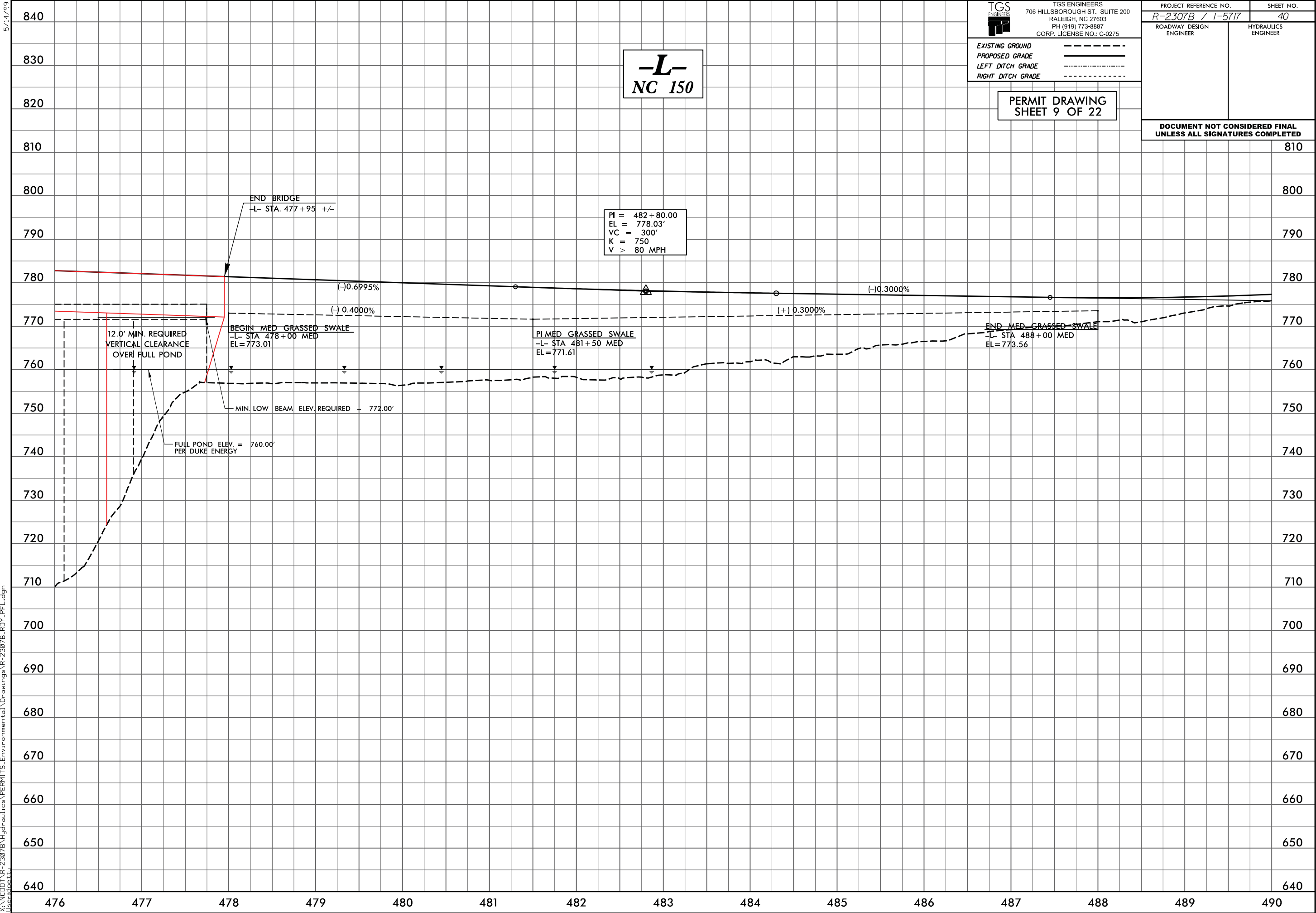


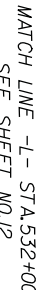
SEE SHEET 40 FOR -L- PROFILE
SEE SHEETS 56 THRU 57 FOR -LEB- PROFILE
SEE SHEET 74 FOR -TRAIL- PROFILE
SEE SHEET 2B-1 FOR CURVE DATA





5/14/99

7/2/2008
X:\NC001\R-2307B\Hydraulics\PERMITS\Environmental\Drawings\R-2307B_RDY_PFL.dgn
User:cdm






— PTE — PERMANENT TRAIL EASEMENT


 DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

7/2/2018
User:doctu
R-2307B\Hydraulics\PERMITS.Environmental\Drawings\R-2307B.RDY_PSH_11.dgn



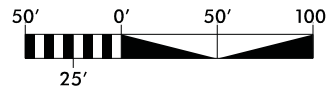
SEE SHEET 42 FOR -L- PROFILE 780
SEE SHEET 57 FOR -Y5- PROFILE
SEE SHEET 71 FOR -DRW2- PROFILE 75
SEE SHEETS 74 & 75 -TRAIL2- PROFILE
SEE SHEET 2B-1 FOR CURVE DATA 770
SEE SHEET 2B-4 FOR INTERSECTION DETAILS 75

 DENOTES IMPACTS IN SURFACE WATER

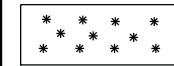
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

7/2/2008
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 User:doettu
 8/17/99

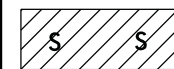
8/17/99



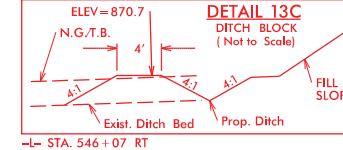
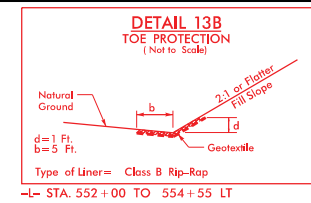
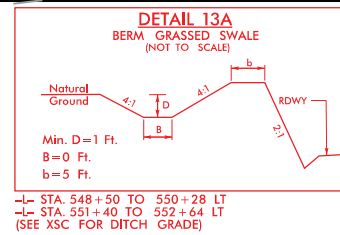
DENOTES FILL IN
WETLAND



DENOTES MECHANIZED
CLEARING

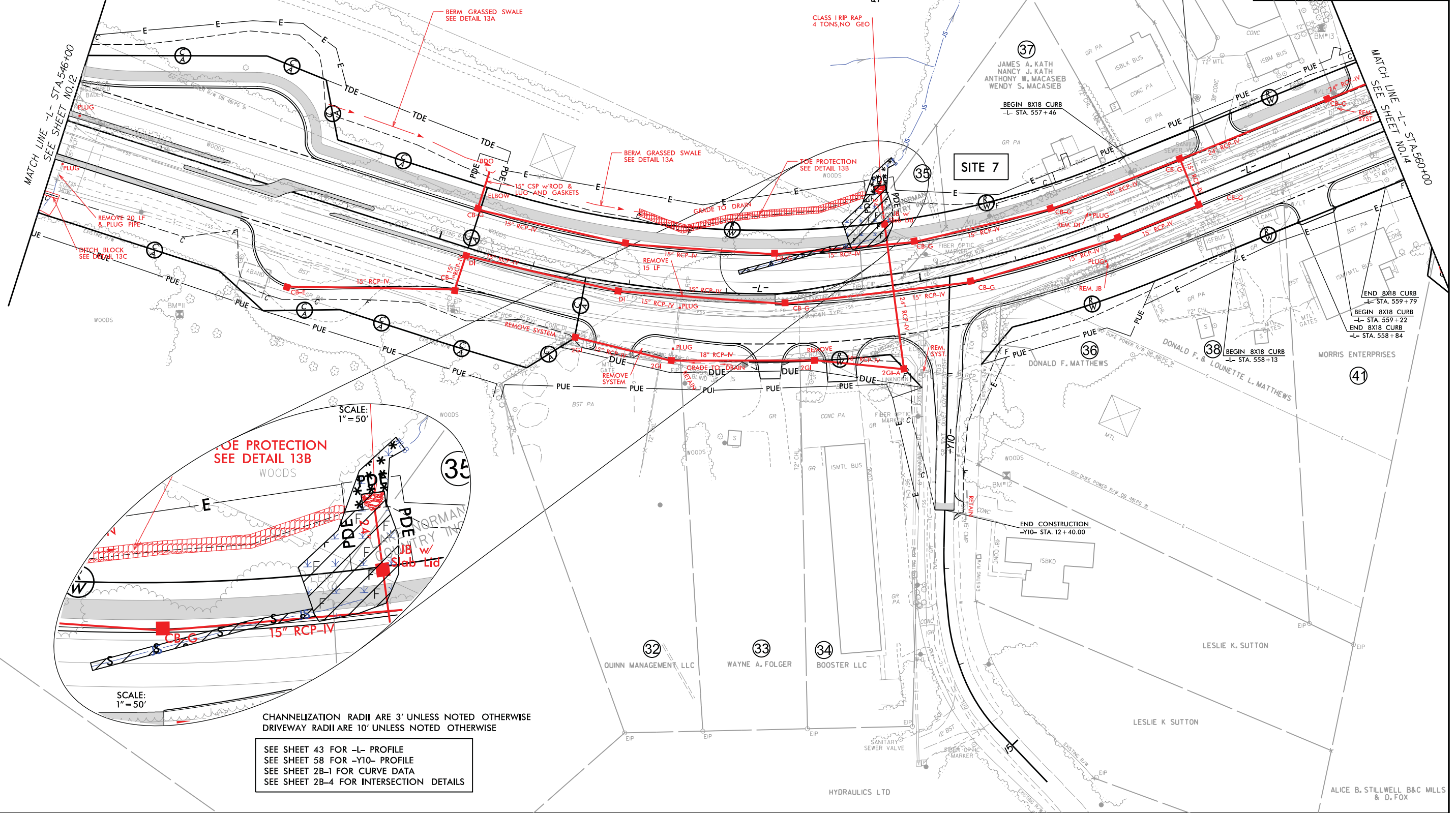


DENOTES IMPACTS IN
SURFACE WATER



PERMIT DRAWING
SHEET 12 OF 22

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

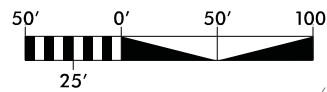


CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

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

7/2/2008
X:\NCDDOT\R-2307B\Hydraulics\PERMITS\Drawings\R-2307B_RDY_PSH.L13.dgn
User: dcooper

8/17/99

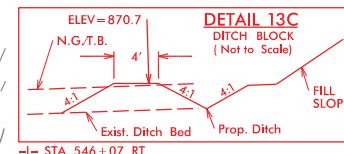
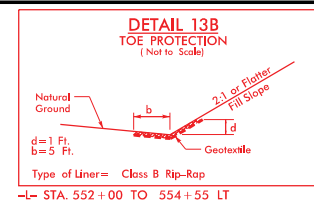
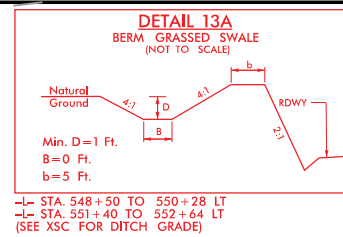


LEGEND

F F DENOTES FILL IN WETLAND

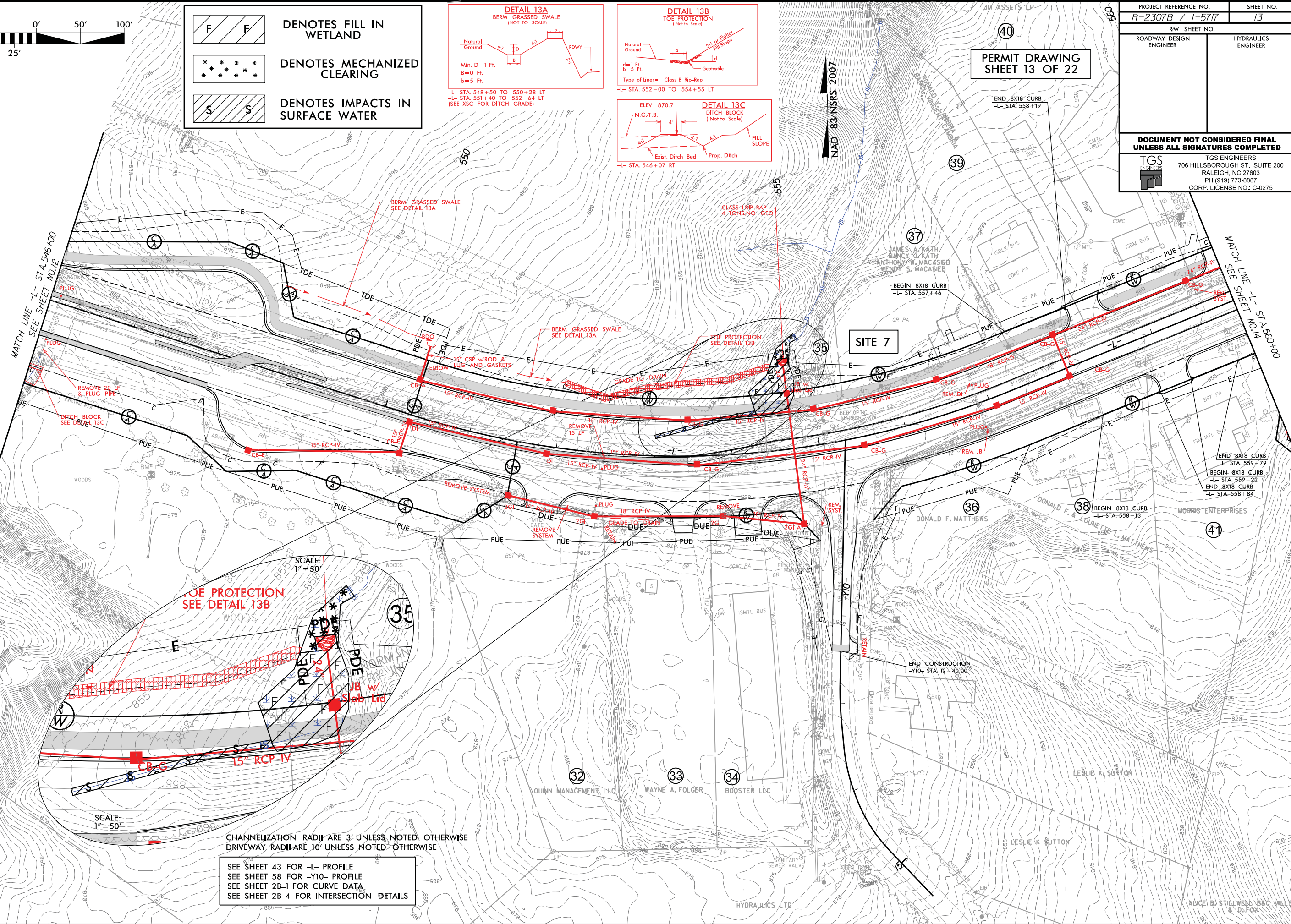
*** * * * *** DENOTES MECHANIZED CLEARING

S S DENOTES IMPACTS IN SURFACE WATER



**PERMIT DRAWING
SHEET 13 OF 22**

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



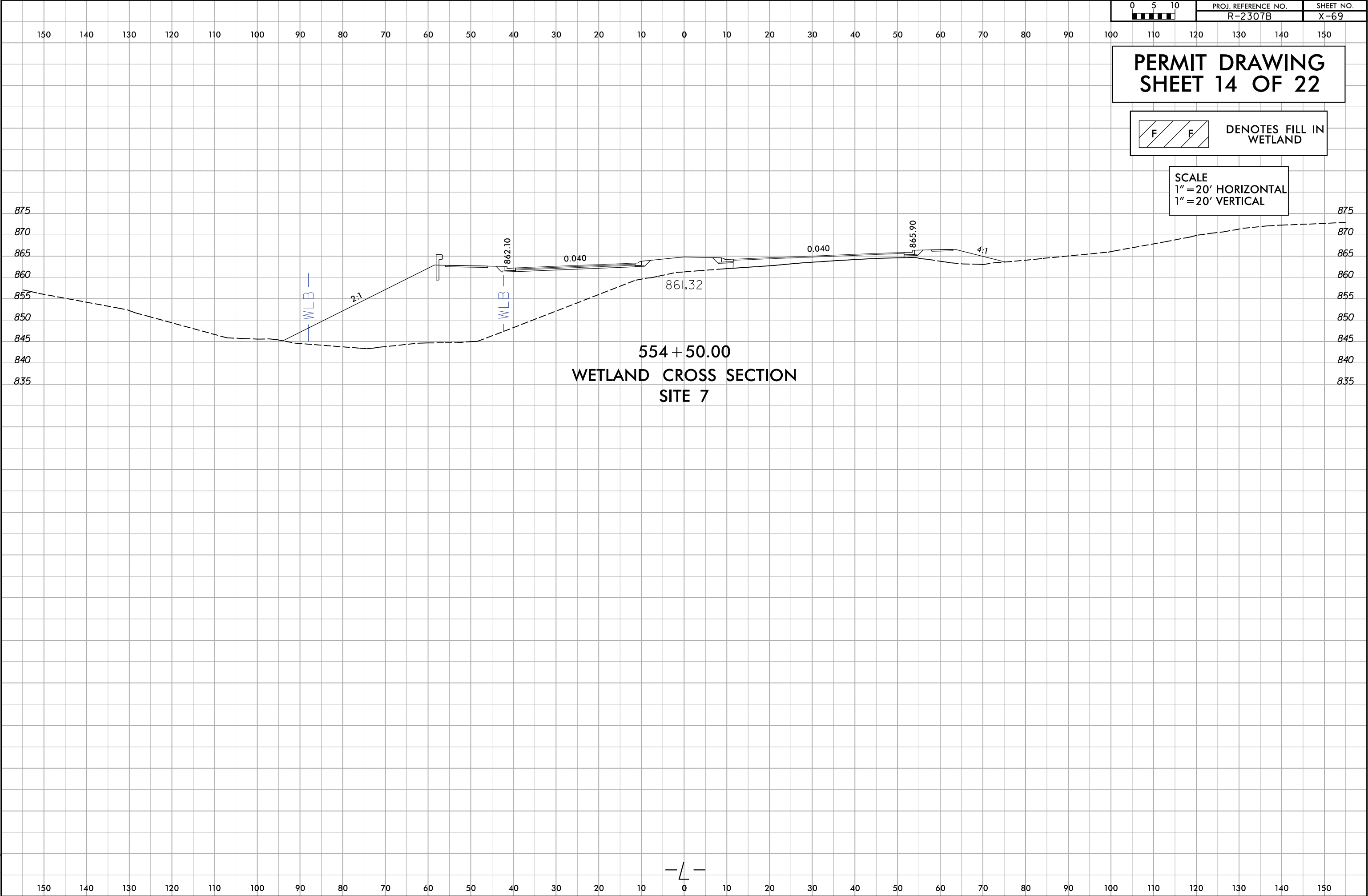
CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

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

7/2/2008
X:\NCDOT\R-2307B\Hydraulics\PERMITS\Drawings\R-2307B.RDY.PSH.13.dgn
User: dcooper

6/23/16

7/2/2016
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User:dpctty



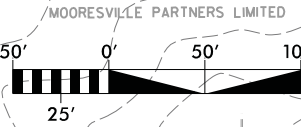
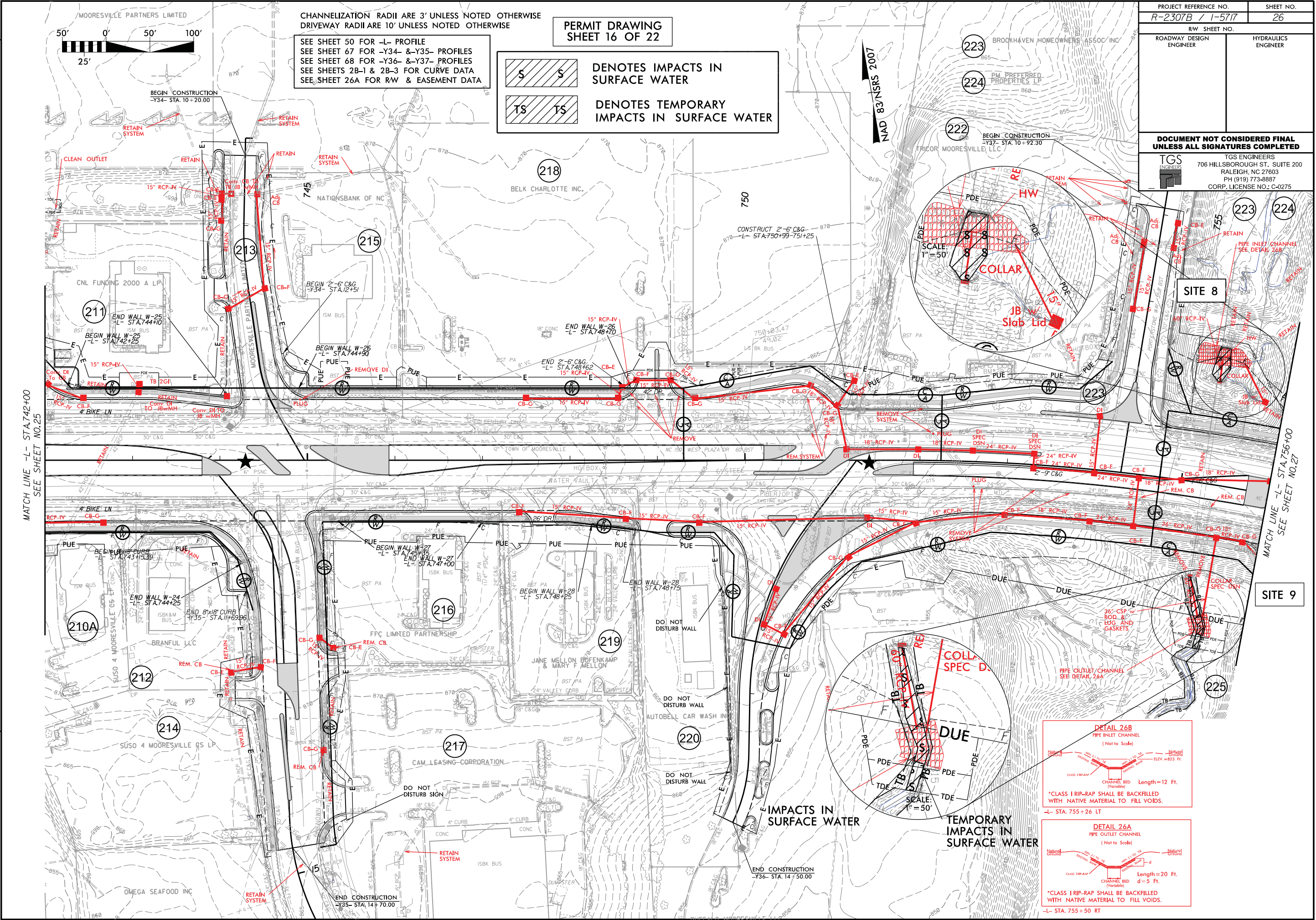
8/17/99

REVISIONS

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

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


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




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

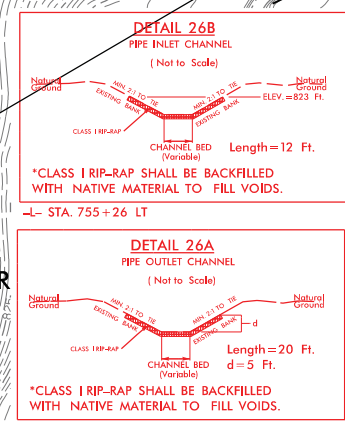
SEE SHEET 50 FOR -L- PROFILE
SEE SHEET 67 FOR -Y34- & -Y35- PROFILES
SEE SHEET 68 FOR -Y36- & -Y37- PROFILES
SEE SHEETS 2B-1 & 2B-3 FOR CURVE DATA
SEE SHEET 26A FOR RW & EASEMENT DATA

PERMIT DRAWING
SHEET 16 OF 22

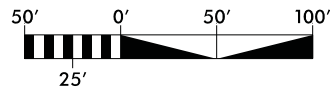
 DENOTES IMPACTS IN SURFACE WATER

 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO. R-2307B / I-5717		SHEET NO. 26
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
 TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275		




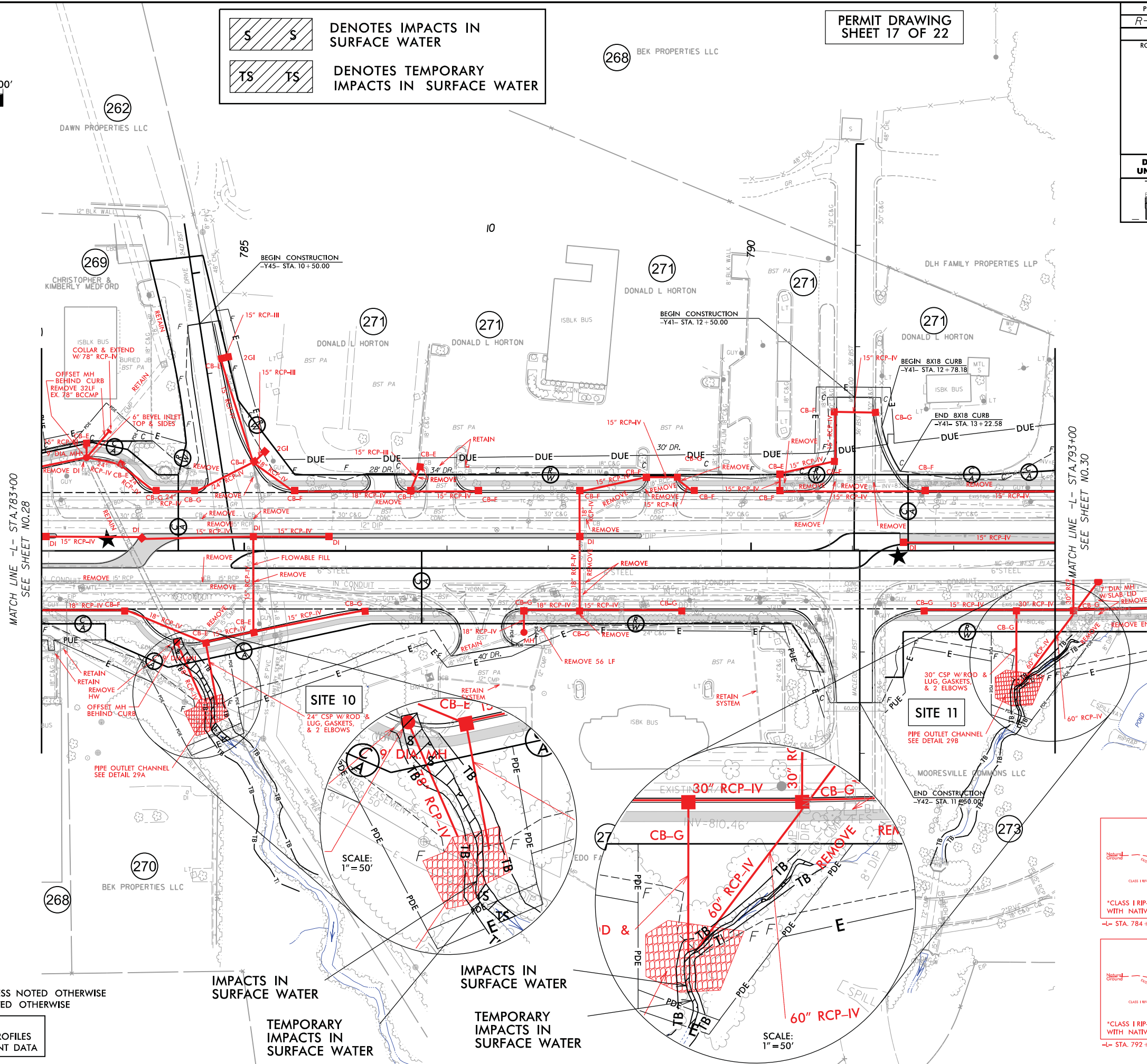
8/17/99



DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 17 OF 22

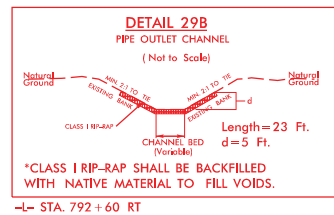
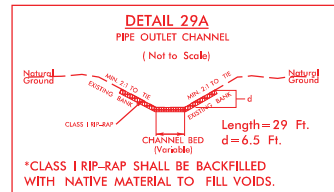
PROJECT REFERENCE NO. <i>R-2307B / 1-5717</i>		SHEET NO. <i>29</i>
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
<div><div>TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275</div></div>		



-Y40- MACLEOD		2019 ADT 2039 ADT	
500	980		
39,470	250	250	
51,310	490	490	
			-L- NC 150
	1,440	2,600	40,640
	1,600	3,080	52,800
			4,030
			4,670
		-Y40- MACLEOD	

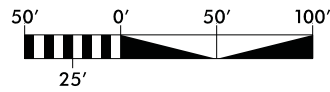
CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 51 FOR -L- PROFILE
SEE SHEET 70 FOR -Y41- & -Y42- PROFILES
SEE SHEET 29A FOR RW & EASEMENT DATA



7/2/2008
X:\NCDOT\R-2307B\Hydraulics\PERMITS\Environmental\Drawings\R-2307B_RDY_PSH_29.dgn
User: jacob.tyler

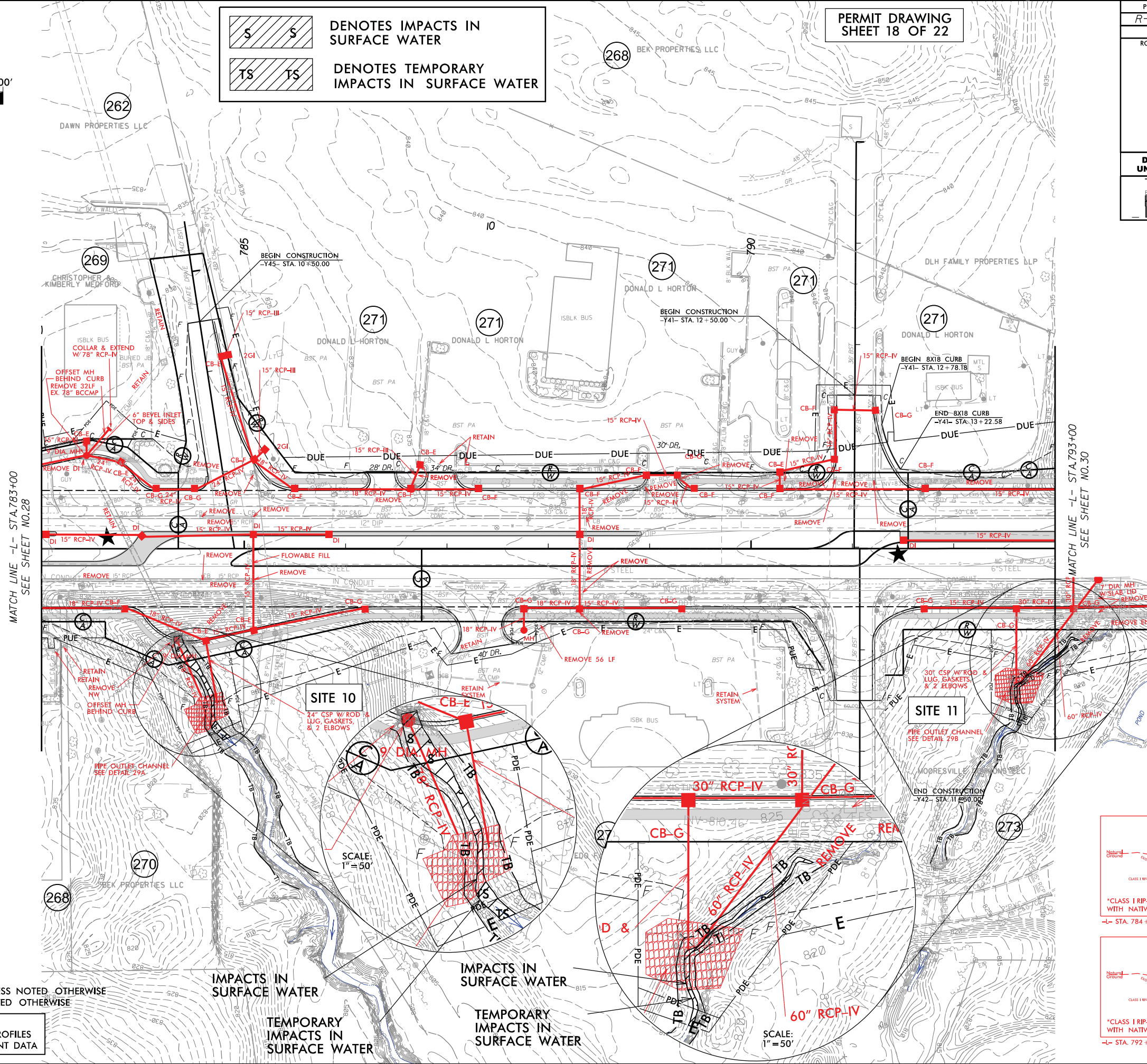
8/17/99



DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 18 OF 22

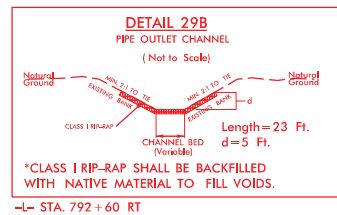
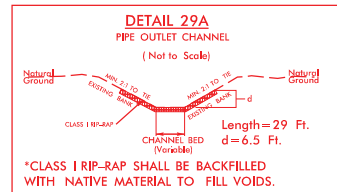
PROJECT REFERENCE NO. <i>R-2307B / 1-5717</i>		SHEET NO. <i>29</i>
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
TGS ENGINEERS 706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275		



-Y40- MACLEOD		2019 ADT 2039 ADT	
500	980		
39,470	250	250	
51,310	490	490	
	1,440	2,600	40,640
	1,600	3,080	52,800
		4,030	
		4,670	
-Y40- MACLEOD			

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

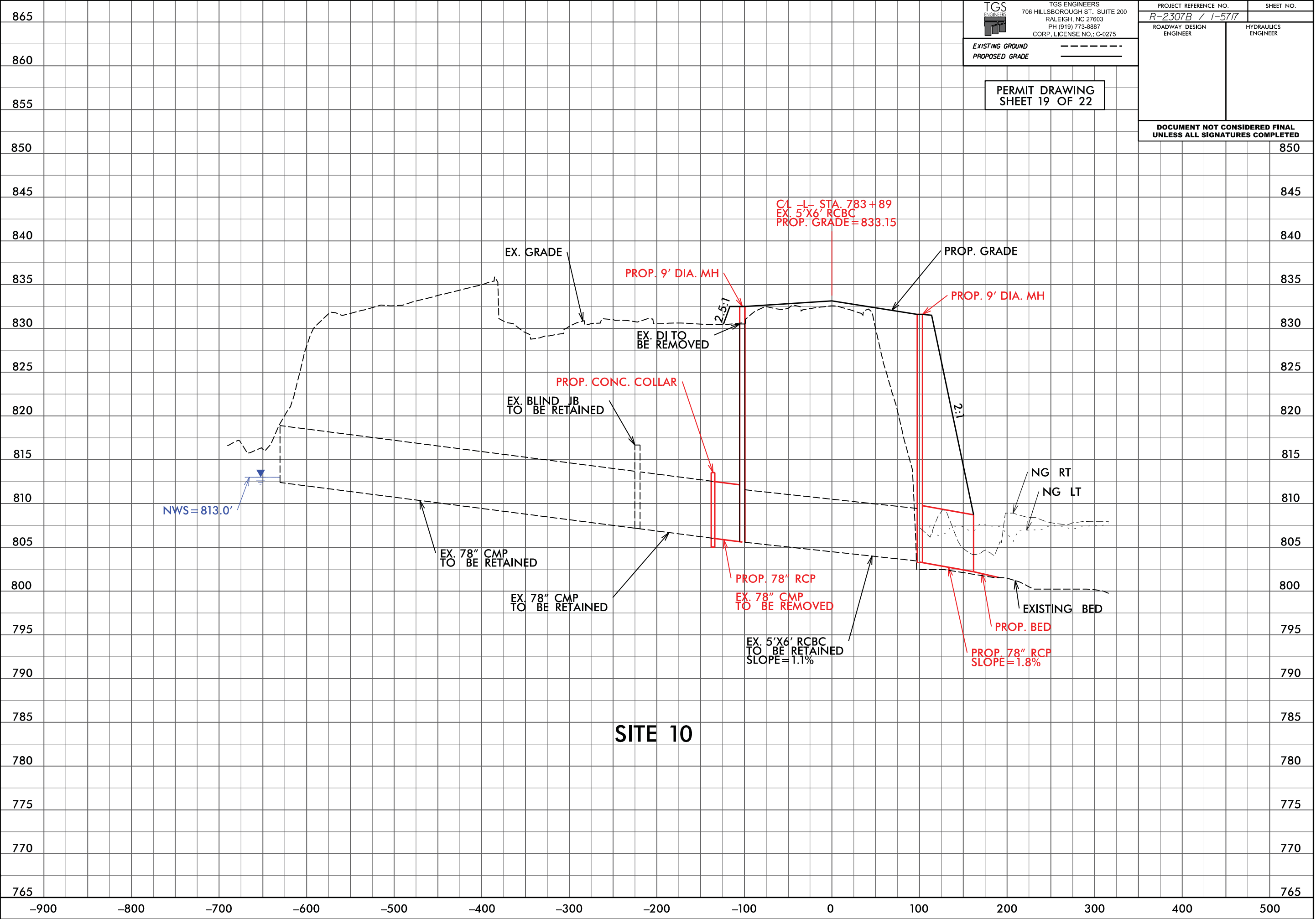
SEE SHEET 51 FOR -L- PROFILE
SEE SHEET 70 FOR -Y41- & -Y42- PROFILES
SEE SHEET 29A FOR RW & EASEMENT DATA



7/2/2008
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5/14/99

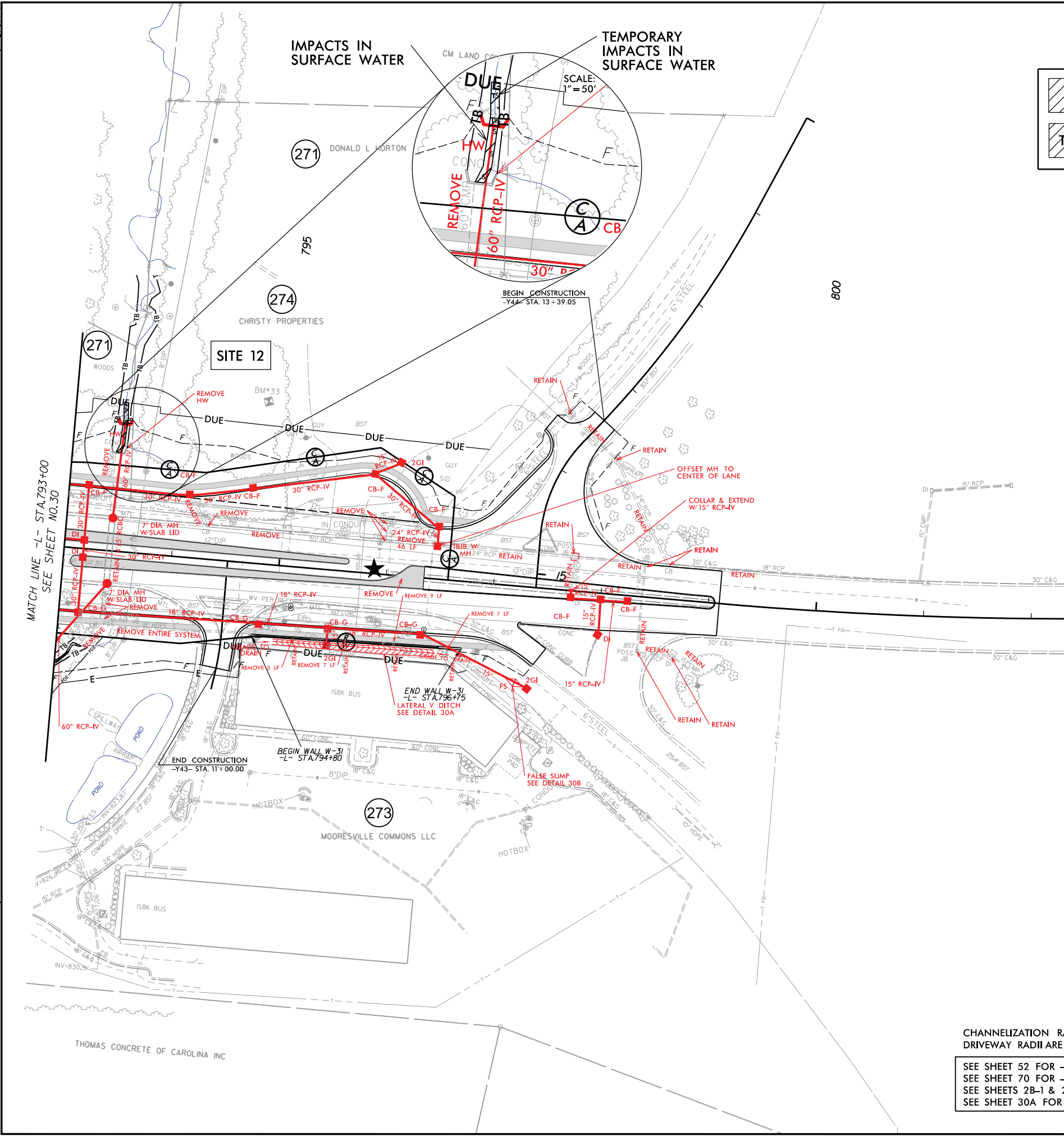
7/2/2018
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User:dstu



8/17/99

10-5-2017 REVISED DUES ON PARCELS 271 & 274.

7/2/2018 X:\CADD\2307B\Hydraulics\PERMITS\Environmental\Drawings\2307B_PSH_30.dgn User:dpetty

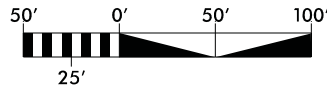


DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 20 OF 22

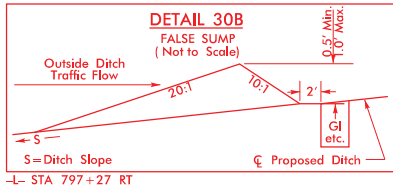
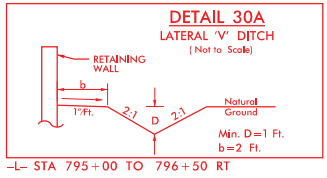
PROJECT REFERENCE NO. R-2307B / 1-5717	SHEET NO. 30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
<div><div>TGS ENGINEERS</div><div>706 HILLSBOROUGH ST. SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275</div></div>	




NAD 83/NSRS 2007


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

SEE SHEET 52 FOR -L- PROFILE
SEE SHEET 70 FOR -Y43- & -Y44- PROFILES
SEE SHEETS 2B-1 & 2B-3 FOR CURVE DATA
SEE SHEET 30A FOR RW & EASEMENT DATA



PERMIT DRAWING
SHEET 21 OF 22

 DENOTES IMPACTS IN SURFACE WATER

 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

 BM#34[illegible]

DETAIL 30B
(FALSE SUMP
(Not to Scale))

Outside Ditch
Traffic Flow

0.5' Min.
1.0' Max.

20:1

10:1

2'

GI
etc.

Proposed Ditch

S = Ditch Slope

STA 797+27 RT

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

SEE SHEET 52 FOR -L- PROFILE
SEE SHEET 70 FOR -Y43- & -Y44- PROFILES
SEE SHEETS 2B-1 & 2B-3 FOR CURVE DATA
SEE SHEET 30A FOR R/W & EASEMENT DATA

MATCH LINE -L- STA. 793+00
SEE SHEET NO. 30

10-5-2017 REVISED DUES ON PARCELS 271 & 274.

7/2/2018
X:\NCDOOT\
User:dpet

WETLAND AND SURACE WATER IMPACTS SUMMARY												
			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 453+21/453+40 LT	18" PIPE						< 0.01	< 0.01			
2	-L- 458+40/458+74 LT	36" CSP						< 0.01	0.02			
3	-L- 458+21/467+07 LT	ROCK CAUSEWAY						3.11				
4	-L- 476+33/488+33 LT	ROCK CAUSEWAY						3.91				
5	-L- 487+17/488+00 LT	42" PIPE						0.01	0.02			
6	-L- 519+88/520+50 RT	30" PIPE						0.02	0.06			
7**	-L- 554+25/554+82 LT	24" PIPE	0.05			< 0.01		0.01		117		
8	-L- 755+17/755+36 LT	60" RCP						0.01		39		
9	-L- 755+24/755+53 RT	60" RCP						< 0.01	< 0.01	68	17	
10	-L- 784+30/784+87 RT	78" RCP						0.01	< 0.01	97	20	
11	-L- 792+60/793+23 RT	60" RCP						< 0.01	< 0.01	98	19	
12	-L- 793+40/793+49 LT	60" RCP						< 0.01	< 0.01	28	20	
TOTALS*:			0.05			< 0.01		7.11	0.11	447	76	0

*Rounded totals are sum of actual impacts

NOTES:
0.02 acres of Permanent SW impacts for bridge interior bents at 467+15, 468+50, 469+85, 471+20, 472+55, 473+90, 475+25 and 476+60.
** - Site 7 wetland is accounted for as a total take per 4C meeting minutes.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
7/2/2018
CATAWBA/IREDELL COUNTIES
R-2307B / I-5717
37944.1.FR5 / 50134.1.FS1
SHEET 22 OF 22