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

REPLY TO
ATTENTION OF:

December 11, 2015

Regulatory Division

Action ID. SAW-1994-03552

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

Dear Mr. Hancock:

Reference the Department of the Army permit issued on January 13, 2011 and subsequent phased modification issued on July 9, 2013, to construct a fully controlled access freeway on new alignment from north of U 74/76 in Brunswick County to US 421 in New Hanover County (a distance of approximately 7.6 miles). There have also been modifications processed in August 23, 2013, August 28, 2014, February 12, 2015, and February 18, 2015. Reference is also made to your permit modification request dated November 12, 2015 and the associated plan sheets. The modification requests changes both temporary and permanent in nature at; Utility site #3 and Wetland and Stream Site # 19 (Mt. Misery Rd) and Utility Site #1 and Wetland and Stream Permit Site # 20 (Cedar Hill Rd.). The permanent wetland impact total will increase by 0.03 of an acre of riverine wetlands. The utility permit drawings covered by this modification include sheets 10, 14, and 15B of 15 dated 10/21/2015 and 11/23/2015. The wetland stream permit drawings utilized for this modification include sheets 64, 65, 68, 69, and 73 of 73 dated 11/2/2015.

The impact of your proposal on the environment has been reviewed and found to be not significant. The proposed project modifications described above are not contrary to the public interest and consistent with the 404 (B)(1) guidelines and therefore, the DA permit is hereby modified with one condition addressing mitigation needs. It is understood that all other conditions of the original permit and previous modifications remain applicable, including the permit expiration date of December 31, 2016.

Additional Special Conditions:

1. In order to compensate for impacts associated with this permit, mitigation shall be provided in accordance with the provisions outlined on the most recent version of the attached Compensatory Mitigation Responsibility Transfer Form. The requirements of this form, including any special conditions listed on this form, are hereby incorporated as special conditions of this permit modification authorization.

This modification approval and referenced plans will be utilized for future compliance of the project. If you have questions, please contact Brad Shaver of the Wilmington Regulatory Field Office, at telephone (910) 251-4611.

Sincerely,

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

Electronic Copies Furnished:

Mr. Stoney Mathis, NCDOT
Ms. Tyler Stanton, NCDOT
Mr. Chris Rivenbark, NCDOT
Mr. Mason Herndon, NCDEQ-DWR
Mr. Stephen Lane, NCDEQ-DCM
Mr. Cathy Brittingham, NCDEQ-DCM
Mr. Todd Tugwell, USACE
Ms. Beth Harmon, NC DMS

Coastal Management
ENVIRONMENTAL QUALITY

PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

BRAXTON DAVIS
Director

December 10, 2015

Mr. Richard Hancock, P.E.
Manager, PDEA
N.C. Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

RE: Refinement of CAMA Major Permit No. 76-13 (TIP No. R-2633B)
Wilmington Bypass (B-Section), Brunswick County and New Hanover County

Dear Mr. Hancock:

This letter is in response to the N.C. Department of Transportation (NCDOT) letter dated November 12, 2015 requesting approval of changes to the above referenced project due to road construction and utility work at Utility Site 3 and Wetland and Stream Permit Sites 19 and 20. These sites are in the area of Mount Misery Road and Cedar Hill Road. The request includes the following 6 workplan drawings that were submitted with the request on November 12, 2015: 2 dated October 21, 2015, 2 dated November 2, 2015, and 2 dated August 20, 2015. The request also includes 1 work plan drawing titled as "utility permit drawing sheet 14 of 15" dated November 23, 2015 that was submitted on November 24, 2015 to replace the previously submitted workplan drawing of the same title.

The November 12, 2015 letter states that the request for revised wetland and stream impacts will not occur in any Coastal Area Management Act (CAMA) Areas of Environmental Concern (AEC). The revisions would result in an increase of impacts to Section 404 Wetland impacts as follows: 0.07 acres due to temporary fill, 0.01 acres due to permanent fill, and 0.02 acres due to mechanized clearing. The revisions would result in a decrease of impacts to Section 404 Wetlands of 0.01 acres due to hand clearing. The Division of Mitigation Services (DMS) has acknowledged that it will provide mitigation for the additional 0.03 acres of permanent impacts to Section 404 Wetlands in its letter to the applicant dated November 9, 2015. The N.C. Division of Water Resources authorized the above referenced request on November 30, 2015 in a 401 Water Quality Certification modification (NCDWR Project No. 20100867 v. 10).

Please be advised that through this **Letter of Refinement**, the N.C. Division of Coastal Management (DCM) conveys its determination that the above reference request is consistent with existing State rules and regulations and is in keeping with the original purpose and intent of CAMA Permit No. 76-13.

This letter shall be attached to the original of CAMA Permit No. 76-13 and all documents shall be readily available on site when a DCM representative inspects the project for compliance. All conditions and stipulations of the active permit remain in force unless altered herein. This approval does not eliminate the need to obtain any additional permits, approvals or authorizations that may be required.

Please contact Stephen Lane at (252) 808-2808 or via e-mail at Stephen.Lane@ncdenr.gov or Cathy Brittingham at (919) 707-9149 or via e-mail at cathy.brittingham@ncdenr.gov if you have any questions or concerns.

Sincerely,

Doug Huggett

Doug Huggett
Manager, Major Permits Unit

cc: Stephen Lane, NCDCM
Brad Shaver, USACE
Mason Herndon, DWR
Stonewall Mathis, NCDOT
Tyler Stanton, NCDOT

Water Resources
ENVIRONMENTAL QUALITY

PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

S. JAY ZIMMERMAN
Director

November 30, 2015

Mr. Colin Mellor, Group Leader
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 and ISOLATED WETLANDS PERMIT Pursuant to IWGP100000 with ADDITIONAL CONDITIONS for proposed construction of the Wilmington Bypass from US 17 in Brunswick County, north of the NC 87 intersection, to US 421 in New Hanover County. Federal Aid Project Nos. NHF-0017(96) and STM-0017(97), State Project Nos. 34491.1.3.GV2 and 34497.3.ST1, Brunswick and New Hanover Counties, TIP R-2633AA/AB and R-2633B.

NCDWR Project No. 20100867 v.10

Dear Mr. Mellor:

Attached hereto is a modification of Certification No. 3842 issued to The North Carolina Department of Transportation (NCDOT) dated January 13, 2011and modifications dated May 9, 2011; April 5, 2012; May 31, 2013; August 19, 2013; March 26, 2014; August 15, 2014; February 9, 2015 and February 10, 2015.

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:
Brad Shaver, US Army Corps of Engineers, Wilmington Field Office
Stoney Mathis, Division 3 Environmental Officer
Chris Rivenbark, NC Department of Transportation
Dr. Cynthia Van Der Wiele, US Environmental Protection Agency
Travis Wilson, NC Wildlife Resources Commission
Cathy Brittingham, NC Division of Coastal Management
Jason Elliott, NCDOT, Natural Environment Section
Beth Harmon, Division of Mitigation Services
File Copy

Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act and ISOLATED WETLANDS PERMIT Pursuant to IWGP100000 with ADDITIONAL CONDITIONS

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500 and 15A NCAC 2B. This certification authorizes the NCDOT to impact an additional 0.1 acres of jurisdictional wetlands in Brunswick County. The project shall be constructed pursuant to the modification dated received November 9, 2015 and additional information provided on November 24, 2015. The authorized impacts are as described below:

Wetland Impacts in the Cape Fear River Basin (riparian)

Site	Fill (ac)	Fill (temporary) (ac)	Excavation (temporary) (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impact (ac)	New Impacts Requiring Mitigation (ac)
Original approved impacts at Site 19 (-Y7- DET 16+45)	0	0.06	0	0	0.03	0.09	N/A
Revised impacts with this approval at Site 19 (-Y7- DET 16+45)	0	0.09	0	0	0.03	0.12	0
Original approved impacts at Site 20 (-Y8- 47+74 to 49+95)	<0.01	0	0	0.04	0.31	0.35	N/A
Revised impacts with this approval at Site 20 (-Y8- 47+74 to 49+95)	0.02	0.04	0	0.06	0.30	0.42	0.03
Revised Total	0.02	0.13	0	0.06	0.33	0.54	0.03

Total Revised Wetland Impact for Site (19 &20): 0.54 acres.
*totals may not match sum of individual impacts due to rounding

The application provides adequate assurance that the discharge of fill material into the waters of the Cape Fear 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 November 9, 2015. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated January 13, 2011and modifications dated May 9, 2011; April 5, 2012; May 31, 2013; August 19, 2013; March 26, 2014; August 15, 2014; February 9, 2015 and February 10, 2015 still apply except where superceded 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). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Condition(s) of Certification:

1. This modification is applicable only to the additional proposed activities. All of the authorized activities and conditions of certification associated with the original Water Quality Certification dated January 13, 2011and modifications dated May 9, 2011; April 5, 2012; May 31, 2013; August 19, 2013; March 26, 2014, August 15, 2014; February 9, 2015 and February 10, 2015 still apply except where superseded by this certification.

2. Material temporarily excavated for utility installation within the authorized temporary detour fill at Site 19/ UT Site 3 (-Y7- 51+96 to 52+84) and at UT Site 1 shall be stockpiled in an upland area or on fabric and placed back into the excavated area in a manner that restores the original grade and soil profile with the organic/root layer on top. [15A NCAC 02H.0501 and .0502]

3. Compensatory mitigation for additional impacts to 0.03 acres of riparian wetlands is required. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands through the North Carolina Division of Mitigation Services (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. DMS has indicated in a letter dated November 9, 2015 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed July 28, 2010. [15A NCAC 2H.0506(h)]

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 30th day of November 2015

DIVISION OF WATER RESOURCES

S. Jay Zimmerman, Director

WQC No. 3842

Water Resources
ENVIRONMENTAL QUALITY

PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

S. JAY ZIMMERMAN
Director

NCDWR Project No.: _____ **County:** _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion
Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Resources, 1617 Mail Service Center, Raleigh, NC, 27699-1617. This form may be returned to NCDWR by the applicant, the applicant's authorized agent, **or** the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

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

Signature: _____ Date: _____

Agent's Certification

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

Signature: _____ Date:_____

Engineer's Certification

_____ Partial _____ Final

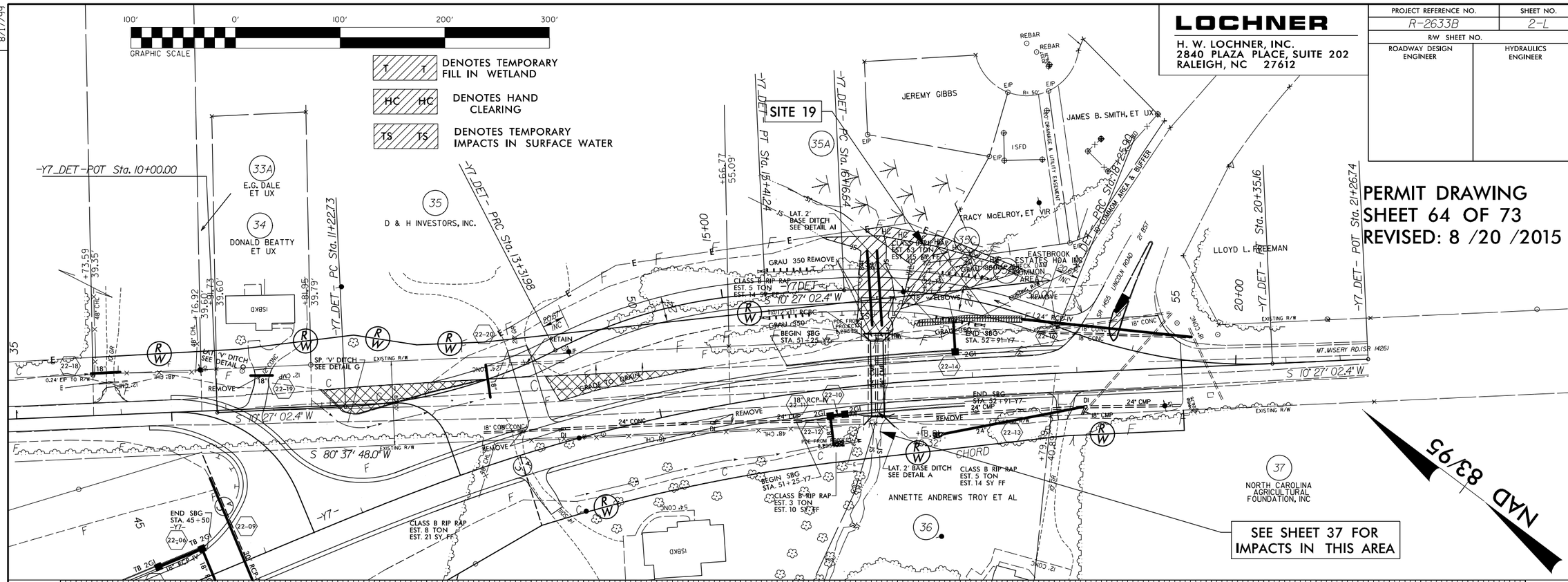
I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation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

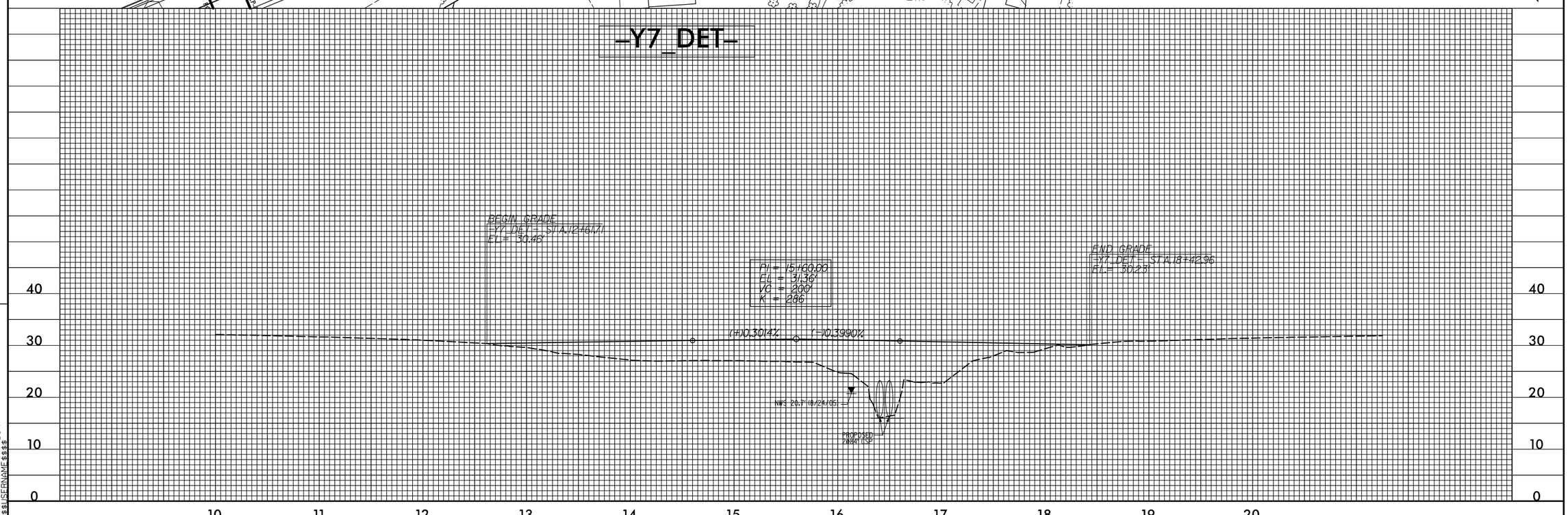
Signature _____ Registration No. _____ Date _____

PROJECT REFERENCE NO.	SHEET NO.
R-2633B	2-L
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PERMIT DRAWING
SHEET 64 OF 73
REVISED: 8 /20 /2015





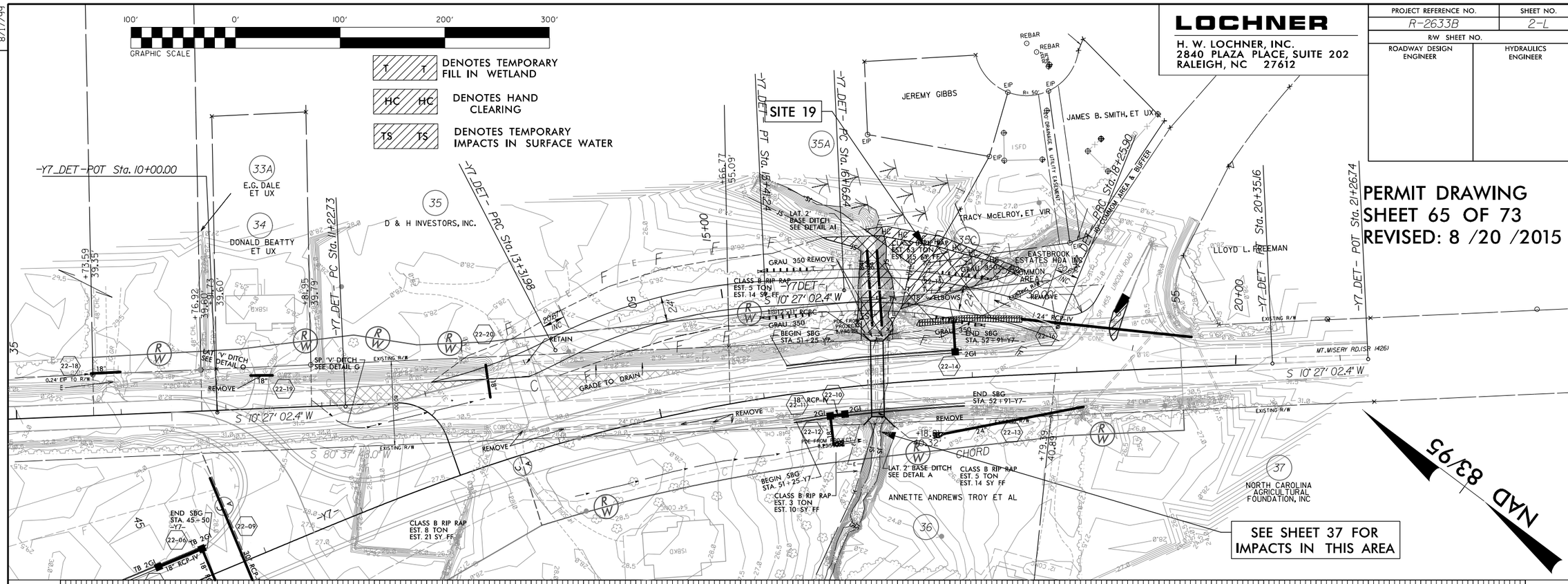
REVISIONS

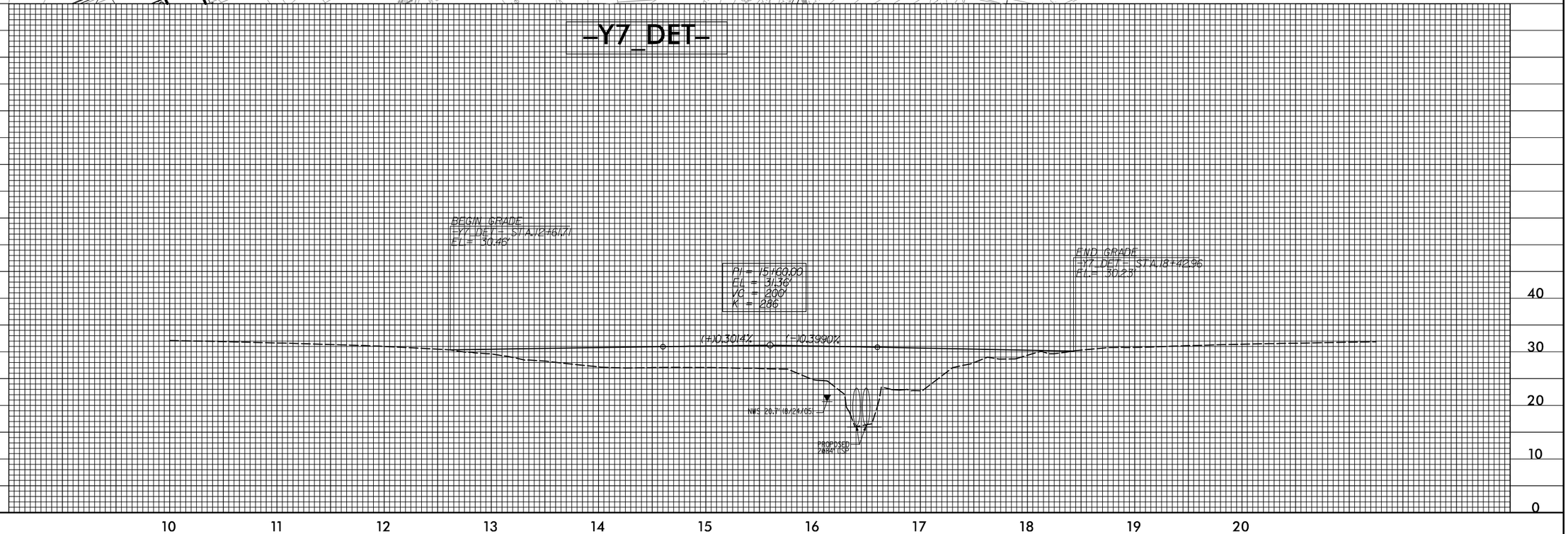
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2633B	2-L
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PERMIT DRAWING
SHEET 65 OF 73
REVISED: 8 /20 /2015





REVISIONS

8/17/99

$$$$$$$SYSTIME$$$$
$$$$$$$

8/17/99

REVISIONS

CONSTRUCTION REVISION: 8202014, ADDED SERVICE ROAD -Y8E-

$$$$$$$SYSTIME$$$$$$ $$$$$$$DGN$$$$$$$

8/17/99

REVISIONS

CONSTRUCTION REVISION: 8/20/2014, ADDED SERVICE ROAD -Y8E-.

$$$$SYSTIME$$$$
$$$$DGN$$$$
$$$$USERNAME$$$$

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
NC License Number F-0159

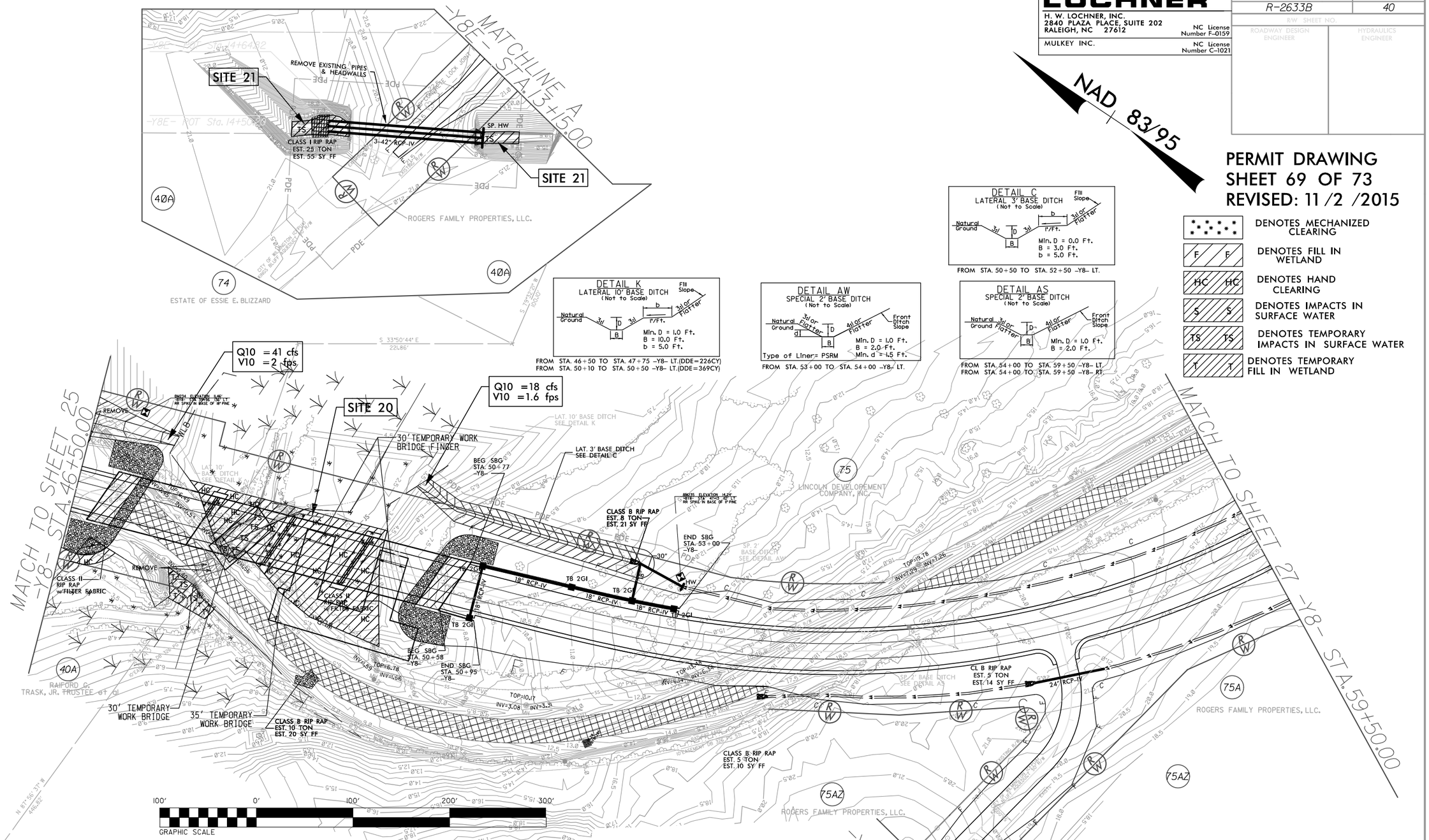
MULKEY INC.
NC License Number C-1021

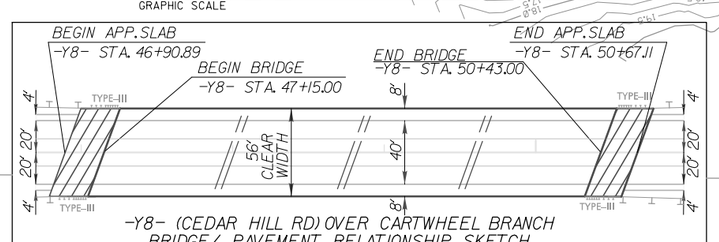
PROJECT REFERENCE NO.	SHEET NO.
R-2633B	40
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/95

PERMIT DRAWING
SHEET 69 OF 73
REVISED: 11/2/2015

- DENOTES MECHANIZED CLEARING
- F F — DENOTES FILL IN WETLAND
- HC HC — DENOTES HAND CLEARING
- S S — DENOTES IMPACTS IN SURFACE WATER
- TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- T T — DENOTES TEMPORARY FILL IN WETLAND





-Y8- (CEDAR HILL RD) OVER CARTWHEEL BRANCH
BRIDGE/ PAVEMENT RELATIONSHIP SKETCH

SEE SHEETS S-314 TO S-348 FOR STRUCTURE PLANS

SEE SHEET 56 FOR -Y8E- PROFILE

SEE SHEETS 47 & 48 FOR -Y8- PROFILE

WETLAND PERMIT IMPACT SUMMARY\

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: 404 Permanent Fill In Wetlands (ac)	CAMA Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	404 Hand Clearing in Wetlands (ac)	CAMA Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1***	~~-L- 24+75 Lt.~~	~~Roadway Fill~~												
2***	~~-L- 37+96 Rt.~~	~~Bridge~~												
3****	-LREV- 339+73 to 358+92	Roadway Fill	7.51			0.03	0.29	0.29						
4	-RP_D1- 22+60	Deleted due to new JS delineation												
5*	-LREV- 372+74 to -L-85+08	Roadway Fill	1.04				0.05	0.05						
6*	-L- 109+28 to 134+54	Roadway Fill	9.72				0.57	0.57						
6A**	-L- 138+11 to 140+70	Roadway Fill	0.68											
6B**	-L- 141+20 to 144+29	Roadway Fill	0.41				0.02							
7*	-L- 146+78 to 165+66	Roadway Fill	10.61		0.92		0.48	0.28						
8	-L 166+60	Deleted due to new JS delineation												
9*	-L- 186+97 to 191+88	Roadway Fill	1.04				0.05	0.05						
10	-RP_D2- 19+20 Lt.	Deleted due to new JS delineation												
11*	-L- 194+75 to 216+13	Roadway Fill; 3@42"	8.71				0.48	0.47		0.08	<0.01	242	20	
12	-L- 230+39 to 242+11	Deleted due to new JS delineation												
13	-L- 256+36 to 265+87	Deleted due to new JS delineation												
14*	-L- 264+32 to 266+94	Bridge					0.03	0.20		<0.01				
		Temp. Work Bridge						0.10						
15*	319+46 to 387+92	Bridge	0.05			*****0.93		10.48	7.79	0.13	0.03			
		Temp. Work Bridge						6.43	4.70					
16*	-L- 399+43 to 400+51	Roadway Fill	0.22											
17***	~~-Y5-16+25 Rt~~	~~48" RCP~~												
18***	~~-Y5-16+25 Lt~~	~~18" RCP~~												
19*	-Y7- 52+09	Culvert								<0.01	<0.01	5	39	
	-Y7 DET- 16+45	Detour Culvert			0.09			0.03			0.61		90	
20*	-Y8- 47+74 to 49+88	Bridge	0.02				0.04	0.18			0.02		34	
	-Y8- 48+78 to 49+95	Temp. Work Bridge						0.12			0.03		58	
	-Y8- 47+74 to 49+88	2 @ 36" CMP Removal			0.04		0.02				0.01		20	
21	-Y8E-	3@42" RCP-IV								0.02	0.02	27	59	
TOTALS:			40.01	0.00	1.05	0.96	2.03	19.25	12.49	0.23	0.71	274	320	0.00

Site 14 See Structures sheet for Bridge Impacts on Cartwheel Branch
Site 15 Impacts for Permanent Dual Bridges CAMA=0.11 Ac, 404=0.05 Ac, Surface Water=0.13 Ac; Total=0.29 Ac.
Site 15 Impacts for Temporary Work Bridge CAMA=0.16 Ac, 404=0.21 Ac, Surface Water=0.01 Ac; Total=0.38 Ac.
* Revised due to new JS Delineation
** New Site due to new JS Delineation
*** Sites 1, 2, 17, and 18 are now permitted with R-2633AA & AB and the impacts are included with that project.
**** A portion of Site 3 is now permitted with R-2633AA & AB and the impacts are included with that project.
***** Temporary Excavation. CAMA=0.41Ac, 404 =0.52 Ac.; Total=0.93 Ac.
0.75 acres of Temp. Fill in 404 Wetlnads in the Hand Clearing areas for Erosion Control Measures

ATN Revised 3/31/05

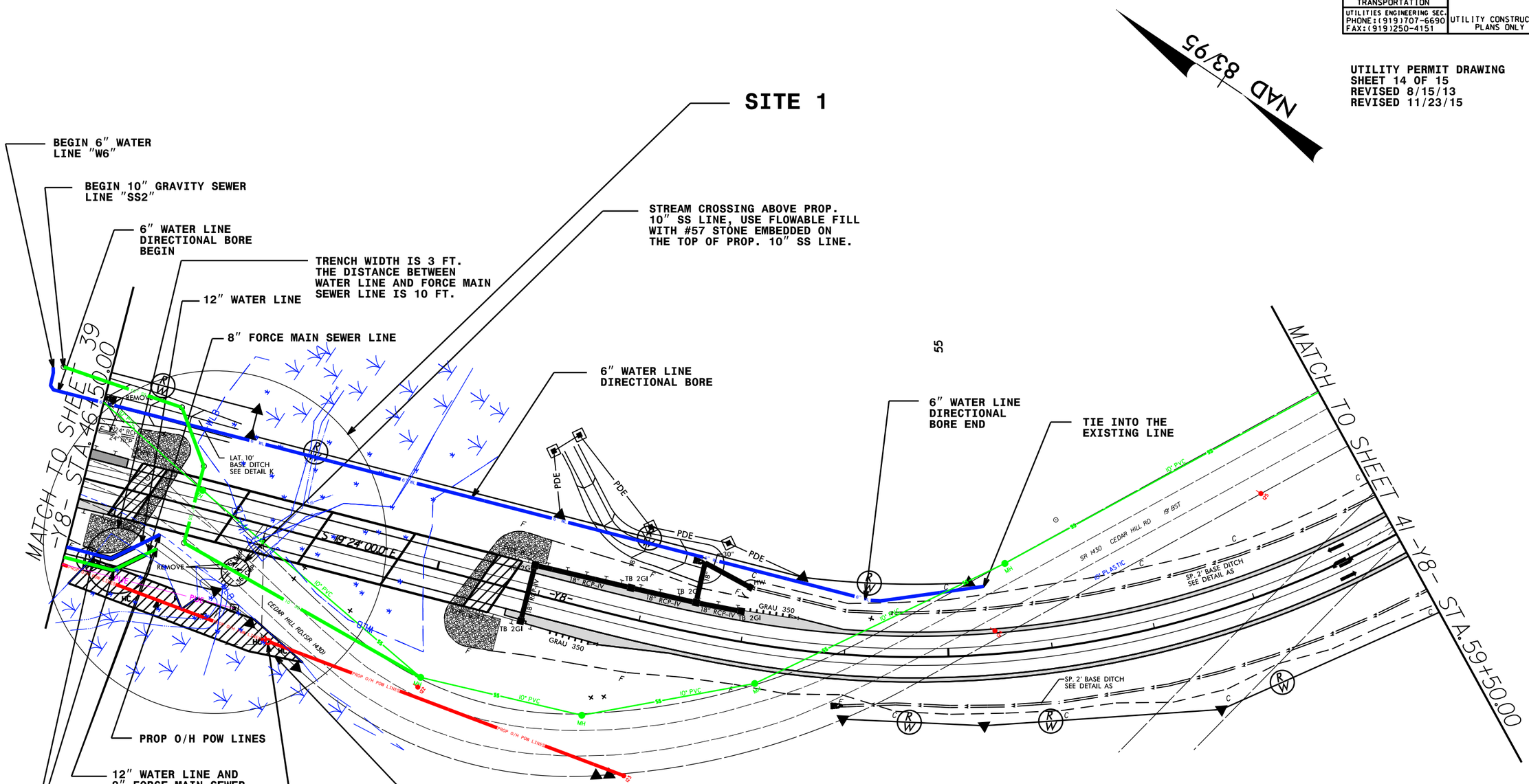
NC DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

BRUNSWICK AND NEW HANOVER COUNTIES
WBS - 34491.1.2 (R-2633B)

PROJECT REFERENCE NO.	SHEET NO.
R-2633B	40
DESIGNED BY: JTY	
DRAWN BY: JTY	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

UTILITY PERMIT DRAWING
SHEET 14 OF 15
REVISED 8/15/13
REVISED 11/23/15



- CONTRACTOR AND/OR SUBCONTRACTOR INSTALLING ABOVE UTILITIES (6" WL, 12"WL, 8" FSS, 10" SS) MUST PUT THESE UTILITIES IN THE DRY.
- ABANDONED UTILITIES PIPE SHALL BE EMPTED AND PLUGGED.

R/W REVISION:030/09 - ADDED PARCEL 75 LINCOLN DEVELOPMENT.
R/W REVISION:02/11/10 - REVISED R/W ON PARCELS 74 AND 75 TO ACCOMIDATE WORK BRIDGE ALONG PROPOSED STRUCTURE.
R/W REVISION:01/11/11 - CHANGED MONUMENT ON PARCEL 40 TO PC.ADDED R/W MONUMENTS ON EXISTING R/W.CHANGED PARCEL 75A TO RODGERS FAMILY PROPERTIES,LLC DB 2722 PG 0782.

5/14/99

23-NOV-2015 15:59
...ering\UC\Proj\wetland_permit\R-2633B_WP_UT_40_Site1.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2633BA	UC-9D
DESIGNED BY: EWH	
DRAWN BY: EWH	
CHECKED BY: JSM	
APPROVED BY: JSM	
REVISED: 07-25-15	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

UTILITY CONSTRUCTION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

R-2633BA AT MOUNT MISERY RD (Y7)
SEWER LINE "FSS4" PROFILE

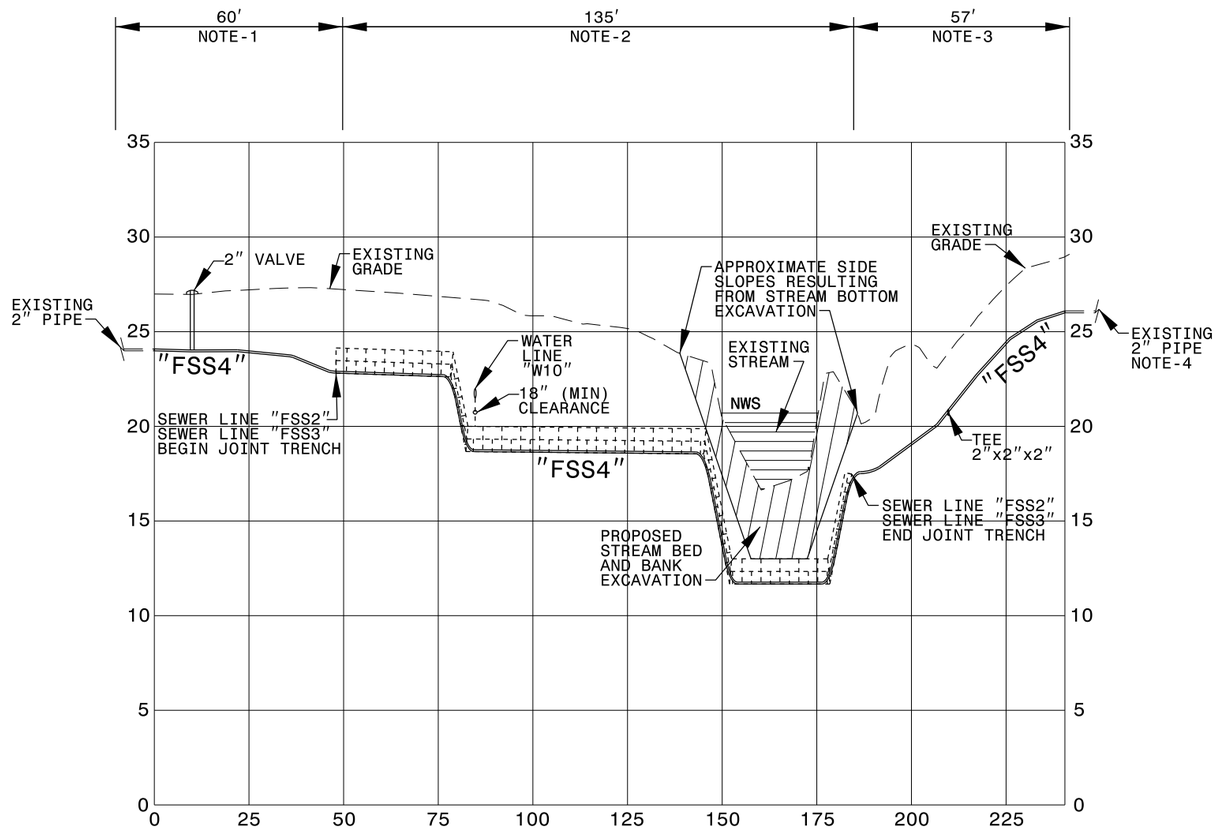
(SEE SHEET UC-9A FOR "FSS4" PLAN LAYOUT)

PROFILE SCALE:

HORIZONTAL:
1" = 20' (FULL-SIZE)
1" = 40' (HALF-SIZE)

VERTICAL:
1" = 4' (FULL-SIZE)
1" = 8' (HALF-SIZE)

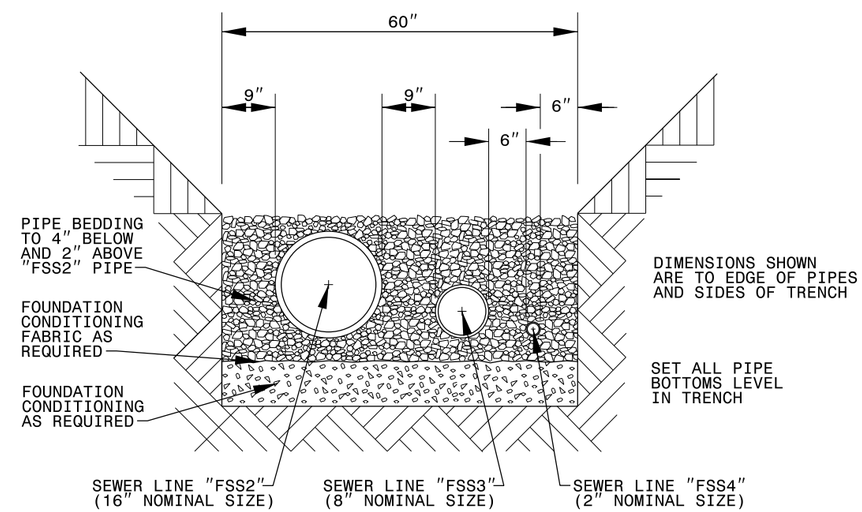
SEWER LINE "FSS4" PROFILE



SEWER LINE "FSS4" PROFILE NOTES:

(1) BEND PIPE TO RADIUS NOT EXCEEDING MANUFACTURER'S MINIMUM COLD-BEND RADIUS SPECIFICATIONS TO MAINTAIN MINIMUM 3' COVER.
(2) INSTALL PIPE IN SAME TRENCH AS SEWER LINE "FSS2" AS SHOWN IN CROSS-SECTION A-A (THIS SHEET).
(3) PROFILE SHOWN IS APPROXIMATE...ACTUAL PROFILE TO BE DETERMINED BY ELEVATIONS OF PROPOSED DITCH (I.E. MAINTAIN MINIMUM 2' BELOW DITCH BOTTOM) AND WATER LINE "W10" (I.E. MAINTAIN MINIMUM 18" CLEARANCE BELOW WATER LINE "W10").
(4) DEPTH OF EXISTING LINE SHOWN IS APPROXIMATE...VERIFY ELEVATION.

CROSS SECTION A-A SHOWING SEWER LINES "FSS2", "FSS3", "FSS4" JOINT-USE TRENCH



PLACE FOUNDATION CONDITIONING MATERIAL BELOW BEDDING IF REQUIRED, AS DIRECTED BY ENGINEER. PIPE BEDDED IN SELECT MATERIAL, CLASS II (TYPE 1) OR CLASS III. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION TO APPROXIMATELY 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

NEW PLAN SHEET (07-25-15) - REFERENCE PLAN SHEET UC-16:

THIS PROFILE SHEET REVISES THE VERTICAL ALIGNMENT OF PROPOSED SEWER LINE DESIGNATED AS "FSS2" TO ACCOMMODATE INSTALLATION OF A 12'x11' BOX CULVERT. THE ORIGINAL PROFILE TO RELOCATE THE SEWER LINE WAS NOT CONSTRUCTABLE SINCE TRAFFIC COULD NOT BE MAINTAINED ON MOUNT MISERY ROAD. THE SEWER LINE "FSS3" PROFILE HAS BEEN ADDED AND WAS NOT INCLUDED IN THE ORIGINAL PLANS.

NOTE: THIS DRAWING IS NOT CONSIDERED A CERTIFIED DOCUMENT AS TO THE ORIGINAL DESIGN BUT ONLY AS THE REVISIONS SHOWN ON THIS PROFILE SHEET.
NOTE: ORIGINAL DRAWINGS WERE ISSUED AND SEALED BY JEFFREY J. WING, NC LICENSE NO. 030056 ON 11/06/2013.

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21-OCT-2015 14:40
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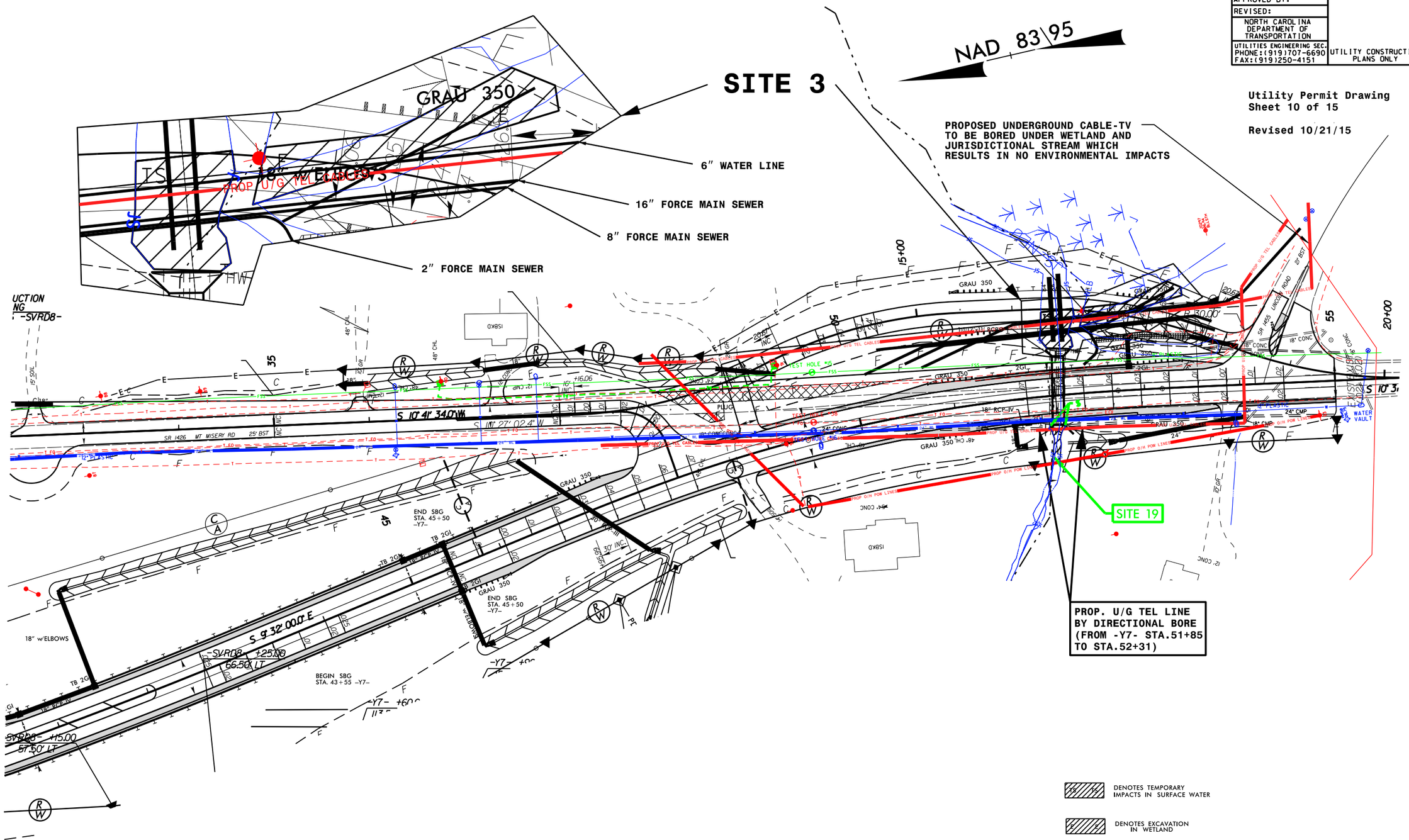
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2633B	37
DESIGNED BY: JTY	
DRAWN BY: JTY	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

Utility Permit Drawing
Sheet 10 of 15

Revised 10/21/15



TS : 0.0289 AC, E : 0.0351 AC
- CONTRACTOR AND/ OR SUBCONTRACTOR INSTALLING ABOVE UTILITIES(6" WL, 16" FSS, 8" FSS, 2" FSS) MUST PUT THESE UTILITIES IN THE DRY.
- ABANDONED WATER AND SEWER SHALL BE EMPTIED AND PLUGGED.

5/14/99

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WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS							SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	404 Permanent Fill In Wetlands (ac)	CAMA Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	404 Hand Clearing in Wetlands (ac)	CAMA 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	-Y8- 46+60	Prop. O/H Power line						0.15						
	-Y8- 48+58	Prop. Power Pole	<0.01											
	-Y8_ 46+77 ~ 47+14	Prop. 12" Water Line				<0.01*								
	-Y8- 46+72 ~ 47+26	Prop. 8" Force Main Sewer				<0.01*								
2	-L- 140+00~141+23	Rig set up of bores 4" gas line						0.22						
	-L- 140+36~140+74	Bell holes for tie-ins 4" gas line				0.02*								
	-L- 142+78~147+63	Equipment Movement						0.77						
	-L- 147+50~147+89	Bell holes for tie-ins 4" gas line				0.02*								
	-L- 147+75~148+80	Weld pipe for bore						0.05						
3	-Y7- 51+96.05~52+84	Prop. 6" Water Line				0.01*					0.01*		10	
	-Y7- 51+96.62~52+25	Prop. 16" Force Main Sewer									0.01*		11	
	-Y7- 51+96.22~52+25	Prop. 8" Force Main Sewer									< 0.01*		3	
	-Y7- 51+96~52+25	Prop. 2" Force Main Sewer				0.02*					0.01*		16	
TOTALS:			<0.01		0.00	0.08	0.00	1.19	0.00	0.00	0.03	0	40	0.00

* Temporary Excavation
* Excavation will be set to the side and then place back into the hole.

NC DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

BRUNSWICK AND NEW HANOVER COUNTIES
WBS - 34491.1.2 (R-2633B)

ATN Revised 10/21/05