STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI
SECRETARY

January 6, 2012

Mr. Ronnie Smith
U.S. Army Corps of Engineers
Wilmington Field Office
P.O. Box 1890
Wilmington, NC 28402-1890

Dear Mr. Smith:

Subject: **Application for Section 404 Nationwide Permit 23 and Section 401 Water Quality Certification,** for the proposed improvements to the interchange at I-95 and US 301 in Robeson County. TIP No. I-4413; Federal Aid Project No. IMF-095-1(64)22; Debit $240.00 from WBS 35901.1.1

Please find enclosed the PCN form, EEP acceptance letter, permit drawings, and half-size plan sheets for the above referenced project. A Categorical Exclusion (CE) was completed for this project in January 2008, and distributed shortly thereafter. Additional copies will be made available upon request. The North Carolina Department of Transportation (NCDOT) proposes to improve the interchange at I-95 and US 301 in Robeson County. The project involves replacement of the existing I-95 and US 301 interchange to a Diverging Diamond Interchange. There will be 0.14 acre of permanent impacts to riparian wetlands resulting from fill in wetlands on this project, as well as 67 linear feet of permanent impacts to jurisdictional streams, associated with improvements to service road, SR 1791 (Dawn Drive).

The let date for this project is July 17, 2012, with a review date of May 29, 2012; however, the let date may advance as additional funds become available.

Regulatory approvals

Section 404 Permit: All aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests that these activities be authorized by a Nationwide Permit 23 (72 CFR; 11092-11198, March 12, 2007).

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

TELEPHONE: 919-707-6100
FAX: 919-212-5785

WEBSITE: WWW.NCDOT.ORG

LOCATION:
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610-4328

Section 401 Water Quality Certification: We anticipate 401 General Certification number 3701 will apply to this project. All general conditions of the Water Quality Certification will be met. NCDOT is providing five copies of this application to the NCDWQ for their review and approval. Authorization to debit the $240 Permit Application Fee from WBS Element 35901.1.1 is hereby given.

A copy of this application will be posted on the NCDOT website at:
http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html

Thank you for your time and assistance with this project. Please contact Tyler Stanton at tstanton@ncdot.gov or (919) 707-6156 if you have any questions or need additional information.

Sincerely,

E. L. Luck

for Gregory J. Thorpe, Ph.D., Manager
Project Development and Environmental Analysis

Cc:

NCDOT Permit Application Standard Distribution List

Office Use Only:
Corps action ID no. _____
DWQ project no. _____
Form Version 1.3 Dec 10 2008

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	☒ Section 404 Permit ☐ Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 23	or General Permit (GP) number:
1c. Has the N WP or GP number been verified by the Corps?	☐ Yes ☒ No
1d. Type(s) of approval sought from the DWQ (check all that apply): ☒ 401 Water Quality Certification – Regular ☐ Non-404 Jurisdictional General Permit ☐ 401 Water Quality Certification – Express ☐ Riparian Buffer Authorization	
1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: ☐ Yes ☒ No For the record only for Corps Permit: ☐ Yes ☒ No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.	☒ Yes ☐ No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	☐ Yes ☒ No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	☐ Yes ☒ No

2. Project Information

2a. Name of project:	Proposed Improvements to the interchange at I-95 and US 301
2b. County:	Robeson
2c. Nearest municipality / town:	Lumberton
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P. or state project no:	I-4413

3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	*not applicable*
3c. Responsible Party (for LLC i f applicable):	*not applicable*
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 707-6100
3g. Fax no.:	(919) 212-5785
3h. Email address:	tstanton@ncdot.gov

4. Applicant Information (if different from owner)	
4a. Applicant is:	☐ Agent ☐ Other, specify:
4b. Name:	*not applicable*
4c. Business name (if applicable):	
4d. Street address:	
4e. City, state, zip:	
4f. Telephone no.:	
4g. Fax no.:	
4h. Email address:	
5. Agent/Consultant Information (if applicable)	
5a. Name:	*not applicable*
5b. Business name (if applicable):	
5c. Street address:	
5d. City, state, zip:	
5e. Telephone no.:	
5f. Fax no.:	
5g. Email address:	

B. Project Information and Prior Project History	
1. Property Identification	
1a. Property identification no. (tax PIN or parcel ID):	*not applicable*
1b. Site coordinates (in decimal degrees):	Latitude: 34.6701 (DD.DDDDDD) Longitude: - 79.596 (-DD.DDDDDD)
1c. Property size:	43 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Saddletree Swamp
2b. Water Quality Classification of nearest receiving water:	C; Sw
2c. River basin:	Lumber
3. Project Description	
3a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: Natural communities found on the site include maintained/disturbed and mesic mixed hardwood forest; the main land uses in the project vicinity include transportation, commercial development, and agriculture.	
3b. List the total estimated acreage of all existing wetlands on the property: 0.25 acre	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 650	
3d. Explain the purpose of the proposed project: Improve traffic conditions and safety at the I-95 and US 301 interchange.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacement of the existing I-95 and US 301 interchange to a Diverging Diamond Interchange. Standard road and bridge building equipment, such as, trucks, dozers, and cranes will be used.	
4. Jurisdictional Determinations	
4a. Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments:	☒ Yes ☐ No ☐ Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☒ Preliminary ☐ Final
4c. If yes, who delineated the jurisdictional areas? Name (if known):	Agency/Consultant Company: Stantec Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. March 2, 2010	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	☐ Yes ☒ No ☐ Unknown
5b. If yes, explain in detail according to "help file" instructions.	
6. Future Project Plans	
6a. Is this a phased project?	☐ Yes ☒ No
6b. If yes, explain.	

C. Proposed Impacts Inventory

1. Impacts Summary

1a. Which sections were completed below for your project (check all that apply):

☒ Wetlands ☒ Streams - tributaries ☐ Buffers

☒ Open Waters ☐ Pond Construction

2. Wetland Impacts

If there are wetland impacts proposed on the site, then complete this question for each wetland area impacted.

2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)
Site 1 ☒ P ☐ T	Fill	Bottomland Hardwood	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.06
Site 1 ☒ P ☐ T	Excavation	Bottomland Hardwood	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.08
Site 2 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 3 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 4 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
				2g. **Total wetland impacts**	0.14

2h. Comments: There will be 0.08 acre of hand clearing. Additionally, there will be <0.01 acre of temporary fill in wetlands for erosion control measures within the hand clearing area.

3. Stream Impacts

If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.

3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 ☒ P ☐ T	Fill	UT to Saddletree Swamp	☒ PER ☐ INT	☒ Corps ☐ DWQ	6	37
Site 1 ☒ P ☐ T	Excavation	UT to Saddletree Swamp	☒ PER ☐ INT	☒ Corps ☐ DWQ	3	30
Site 1 ☐ P ☒ T	Fill	UT to Saddletree Swamp	☒ PER ☐ INT	☒ Corps ☐ DWQ	3	10
Site 1 ☐ P ☒ T	Fill	UT to Saddletree Swamp	☒ PER ☐ INT	☒ Corps ☐ DWQ	3	10
Site 1 ☐ P ☒ T	Bank Stabilization	UT to Saddletree Swamp	☒ PER ☐ INT	☒ Corps ☐ DWQ	3	42
Site 2 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
					3h. **Total stream and tributary impacts**	67 Perm 62 Temp

3i. Comments:

4. Open Water Impacts

If there are proposed impacts to lakes, ponds, estuaries, tributaries, sounds, the Atlantic Ocean, or any other open water of the U.S. then individually list all open water impacts below.

4a. Open water impact number – Permanent (P) or Temporary (T)	4b. Name of waterbody (if applicable)	4c. Type of impact	4d. Waterbody type	4e. Area of impact (acres)
O1 ☒ P ☐ T	UT to Saddletree Swamp	Fill	Stream	0.01
O2 ☒ P ☐ T	UT to Saddletree Swamp	Excavation	Stream	0.01
O3 ☒ P ☐ T	UT3 to Saddletree Swamp	Fill	Tributary to Waters of the U.S.	0.05
O4 ☐ P ☒ T	UT to Saddletree Swamp	Fill	Stream	< 0.01
O5 ☐ P ☒ T	UT3 to Saddletree Swamp	Fill	Tributary to Waters of the U.S.	< 0.01
			4f. Total open water impacts	0.07 Permanent 0.01 Temporary

4g. Comments:

5. Pond or Lake Construction

If pond or lake construction proposed, then complete the chart below.

5a. Pond ID number	5b. Proposed use or purpose of pond	5c. Wetland Impacts (acres)			5d. Stream Impacts (feet)			5e. Upland (acres)
		Flooded	Filled	Excavated	Flooded	Filled	Excavated	Flooded
P1								
P2								
	5f. Total							

5g. Comments:

5h. Is a dam high hazard permit required?	☐ Yes ☐ No If yes, permit ID no:
5i. Expected pond surface area (acres):	
5j. Size of pond watershed (acres):	
5k. Method of construction:	

6. Buffer Impacts (for DWQ)

If project will impact a protected riparian buffer, then complete the chart below. If yes, then individually list all buffer impacts below. If any impacts require mitigation, then you **MUST** fill out Section D of this form.

6a. Project is in which protected basin?			☐ Neuse ☐ Catawba	☐ Tar-Pamlico ☐ Randleman	☐ Other:
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 ☐ P ☐ T			☐ Yes ☐ No		
B2 ☐ P ☐ T			☐ Yes ☐ No		
B3 ☐ P ☐ T			☐ Yes ☐ No		
			6h. **Total buffer impacts**		
6i. Comments:					

D. Impact Justification and Mitigation		
1. Avoidance and Minimization		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. 3:1 fill slopes where practicable; use of grass swales; construction will be within existing right-of-way		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. NCDOT Best Management Practices for Sedimentation and Erosion Control.		
2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State		
2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	☒ Yes ☐ No If no, explain:	
2b. If yes, mitigation is required by (check all that apply):	☐ DWQ ☒ Corps	
2c. If yes, which mitigat ion option will be used for this project?	☐ Mitigation bank ☒ Payment to in-lieu fee program ☐ Permittee Responsible Mitigation	
3. Complete if Using a Mitigation Bank		
3a. Name of Mitigation Bank: not applicable		
3b. Credits Purchased (attach receipt and letter)	Type	Quantity
3c. Comments:		
4. Complete if Making a Payment to In-lieu Fee Program		
4a. Approval letter from in-lieu fee program is attached.	☒ Yes	
4b. Stream mitigation requested:	134 linear feet	
4c. If using stream mitigation, stream temperature:	☒ warm ☐ cool ☐cold	
4d. Buffer mitigation requested (DWQ only):	square feet	
4e. Riparian wetland mitigation requested:	0.28 acres	
4f. Non-riparian wetland mitigation requested:	acres	
4g. Coastal (tidal) wetland mitigation requested:	acres	
4h. Comments:		
5. Complete if Using a Permittee Responsible Mitigation Plan		
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.		

6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ				
6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?				☐ Yes ☒ No
6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.				
Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1			3 (2 for Catawba)	
Zone 2			1.5	
			6f. **Total buffer mitigation required:**	
6g. If buffer mitigation is required, discuss what type of mitigation is proposed (e.g., payment to private mitigation bank, permittee responsible riparian buffer restoration, payment into an approved in-lieu fee fund).				
6h. Comments:				

E. Stormwater Management and Diffuse Flow Plan (required by DWQ)	
1. Diffuse Flow Plan	
1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?	☐ Yes ☒ No
1b. If yes, then is a diffuse flow plan included? If no, explain why. Comments:	☐ Yes ☐ No
2. Stormwater Management Plan	
2a. What is the overall percent imperviousness of this project?	N/A
2b. Does this project require a Stormwater Management Plan?	☒ Yes ☐ No
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:	
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan: See attached permit drawings.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	☐ Certified Local Government ☐ DWQ Stormwater Program ☒ DWQ 401 Unit
3. Certified Local Government Stormwater Review	
3a. In which local government's jurisdiction is this project?	not applicable
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	☐ Phase II ☐ NSW ☐ USMP ☐ Water Supply Watershed ☐ Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	☐ Coastal counties ☐ HQW ☐ ORW ☐ Session Law 2006-246 ☐ Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements? **N/A**	☐ Yes ☐ No
5b. Have all of the 401 Unit submittal requirements been met? **N/A**	☐ Yes ☐ No

F. Supplementary Information	
1. Environmental Documentation (DWQ Requirement)	
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	☒ Yes ☐ No
1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)?	☒ Yes ☐ No
1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) Comments:	☒ Yes ☐ No
2. Violations (DWQ Requirement)	
2a. Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	☐ Yes ☒ No
2b. Is this an after-the-fact permit application?	☐ Yes ☒ No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):	
3. Cumulative Impacts (DWQ Requirement)	
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	☐ Yes ☒ No
3b. If you answered "yes" to the above, submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent DWQ policy. If you answered "no," provide a short narrative description. Due to the minimal transportation impact resulting from this interchange improvement, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect or cumulative effects study will not be necessary.	
4. Sewage Disposal (DWQ Requirement)	
4a. Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility. not applicable	

5. Endangered Species and Designated Critical Habitat (Corps Requirement)	
5a. Will this project occur in or near an area with federally protected species or habitat?	☐ Yes ☒ No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	☐ Yes ☒ No
5c. If yes, ind icate the USFWS Field Office you have contacted.	☐ Raleigh ☐ Asheville
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? NHP, USFWS, NCDOT field surveys	
6. Essential Fish Habitat (Corps Requirement)	
6a. Will this project occur in or near an area designated as essential fish habitat?	☐ Yes ☒ No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index	
7. Historic or Prehistoric Cultural Resources (Corps Requirement)	
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	☐ Yes ☒ No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation	
8. Flood Zone Designation (Corps Requirement)	
8a. Will this project occur in a FEMA-designated 100-year floodplain?	☒ Yes ☐ No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics Unit coordination with FEMA	
8c. What source(s) did you use to make the floodplain determination? FEMA Maps	

Gregory J. Thorpe, Ph.D. Applicant/Agent's Printed Name	E. L. Luck Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	1·6·12 Date

Stanton
RECEIVED
MAR 5 2010
DIVISION OF HIGHWAYS
PDEA-OFFICE OF NATURAL ENVIRONMENT

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): March 2, 2010

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD: Tyler Stanton, NCDOT, 1598 Mail Service Center, Raleigh, NC 27699-1598

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: SAW-2005-01004 (NCDOT/I-4413/I-95-US301/interchange upgrade/ Div. 6)

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

TIP: I-4413 Description: proposed improvements to the interchange at I-95 and US 301 in Robeson County

(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: NC County/parish/borough: Robeson City: Lumberton
Center coordinates of site (lat/long in degree decimal format):
Lat. 34.6704 °**N**, Long. -79.0060° **W**
Universal Transverse Mercator:
Name of nearest waterbody: Saddletree Swamp

Identify (estimate) amount of waters in the review area: **see table below**
Non-wetland waters: 1348 linear feet: 5 width (ft) and 1.45 acres of ponds.
Cowardin Class:
Stream Flow:
Wetlands: acres. 6.64
Cowardin Class:

Name of any water bodies on the site that have been identified as Section 10 waters:
Tidal: N/A
Non-Tidal: N/A

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination Date: March 2, 2010
☒ Field Determination Date(s): by Richard Spencer

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this

preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant

- ☐ Office concurs with data sheets/delineation report.
- ☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps:

☐ Corps navigable waters' study:

☐ U.S. Geological Survey Hydrologic Atlas:

- ☐ USGS NHD data.
- ☐ USGS 8 and 12 digit HUC maps

☒ U.S. Geological Survey map(s). Cite scale & quad name: NW Lumberton

☒ USDA Natural Resources Conservation Service Soil Survey Citation: Robeson County

☐ National wetlands inventory map(s). Cite name:

☐ State/Local wetland inventory map(s):

☐ FEMA/FIRM maps:

☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)

☐ Photographs: ☐ Aerial (Name & Date): or ☐ Other (Name & Date):

☐ Previous determination(s). File no. and date of response letter:

☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

3/4/10

Signature and date of Regulatory Project Manager (REQUIRED)

3-3-10

Signature and date of person requesting preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

Site Name[1]	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
UT	34.6734	-79.0062	RUB	751 linear feet	non-section 10 – non-wetland
UT1	34.6743	-79.0041	RSB	148 linear feet	non-section 10 – non-wetland
UT2	34.6742	-79.0040	RSB	101 linear feet	non-section 10 – non-wetland
UT3	34.6716	-79.0089	RUB	348 linear feet	non-section 10 – non-wetland
Wetland A	34.6744	-79.0053	PEM	0.04 acre	non-section 10 – wetland
Wetland B[2]	34.6729	-79.0101	PFO	6.60 acres	non-section 10 – wetland
Pond	34.6730	-79.0072	PUB	0.28 acre	non-section 10 – non-wetland
Pond 1	34.6749	-79.0052	PUB	0.60 acre	non-section 10 – non-wetland
Pond 2	34.6747	-79.0036	PUB	0.57 acre	non-section 10 – non-wetland

[1] Corresponds to Categorical Exclusion (CE)
[2] Expanded after completion of CE

Ecosystem Enhancement PROGRAM

November 15, 2011

Mr. Gregory J. Thorpe, Ph.D.
Manager, Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

I-4413, Improvements to I-95 at US 301, Robeson County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream and riparian wetland mitigation for the subject project. Based on the information supplied by you on November 9, 2011, the impacts are located in CU 03040203 of the Lumber River basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Lumber 03040203 SICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	67	0.14	0	0	0	0

EEP commits to implementing sufficient compensatory stream and riparian wetland mitigation credits to offset the impacts associated with this project in accordance with the N.C. Department of Environment and Natural Resources' Ecosystem Enhancement Program In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

Sincerely,

Jane B. Stanfill for

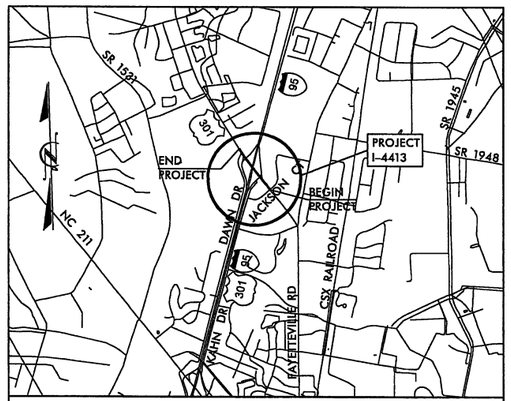
Michael Ellison
EEP Deputy Director

cc: Mr. Ronnie Smith, USACE – Wilmington Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: I-4413

09/08/99

TIP PROJECT: I-4413

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROBESON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-4413	1	

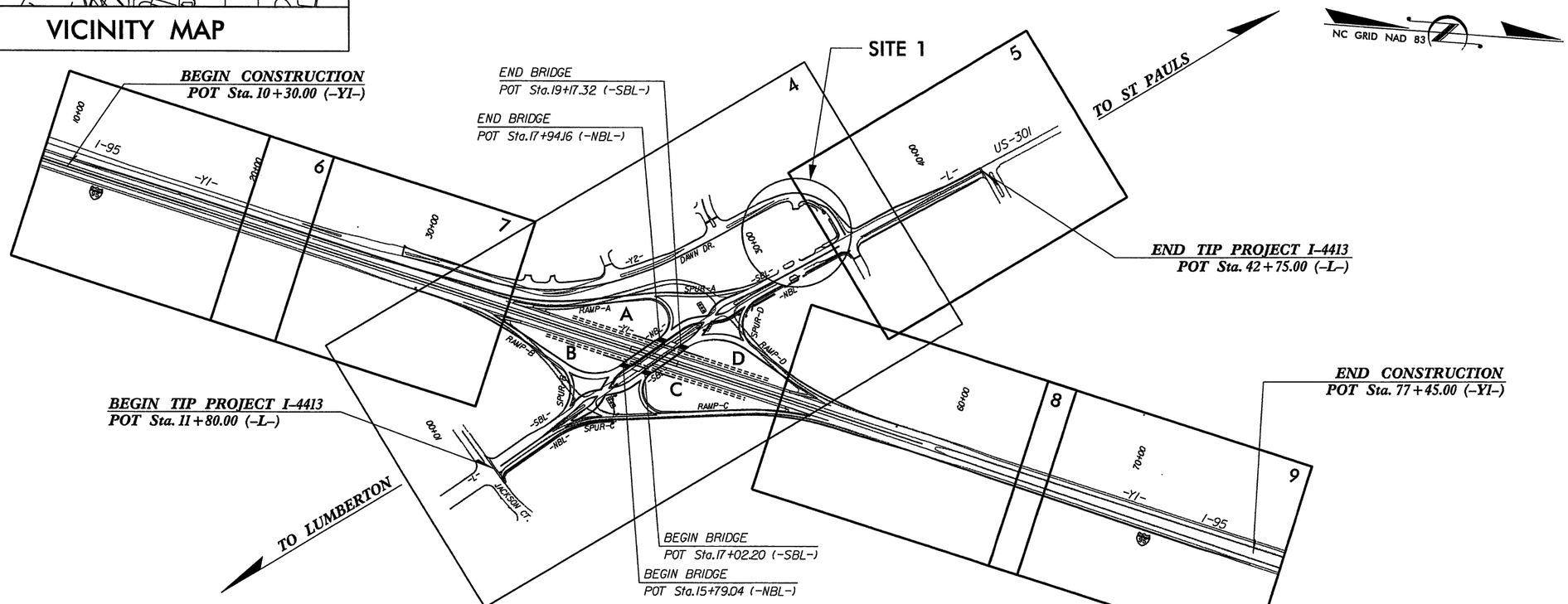
WBS NO.	F.A. PROJ. NO.	DESCRIPTION
35901.1.1	IMF-95-1(64)22	PE
35901.2.1	IMF-095-1(85)22	ROW/UTIL.

LOCATION: BRIDGE NO. 36 ON US 301 (FAYETTEVILLE ROAD) OVER I-95 (EXIT 22)

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

WETLAND/STREAM IMPACTS

Permit Drawing
Sheet 1 of 10



– THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF LUMBERTON.
– THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGE.
– CLEARING SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:

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

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2012 = 26,000
ADT 2032 = 37,200
DHV = 9 %
D = 55 %
T = 6 % *
V = 50 MPH
FUNC. CLASS: URBAN COLLECTOR
* (TTST 2% + DUAL 4%)

PROJECT LENGTH

LENGTH OF ROADWAY T.I.P. PROJECT I-4413	=	0.545 MI.
LENGTH OF STRUCTURE T.I.P. PROJECT I-4413	=	0.041 MI
TOTAL LENGTH OF T.I.P. PROJECT I-4413	=	0.586 MI

PREPARED IN THE OFFICE OF:
Stantec
Stantec Consulting Inc.
801 Jones Franklin Road, Suite 300
Raleigh, NC U.S.A.
27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 16, 2010

LETTING DATE:
JULY 17, 2012

G. SCOTT BOYLES, PE
PROJECT ENGINEER

JASON T. GADDY
PROJECT DESIGN ENGINEER

NCDOT CONTACT: K. ZAK HAMIDI, PE
PROJECT ENGINEER

HYDRAULICS ENGINEER
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

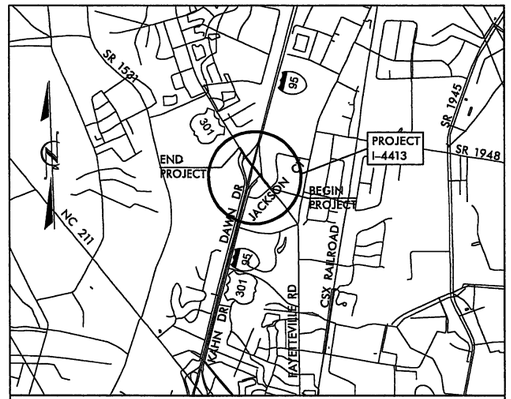
09/08/99

TIP PROJECT: I-4413

CONTRACT:

$$$$SYSTIME$$$$
$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

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



VICINITY MAP

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DIVISION OF HIGHWAYS

ROBESON COUNTY

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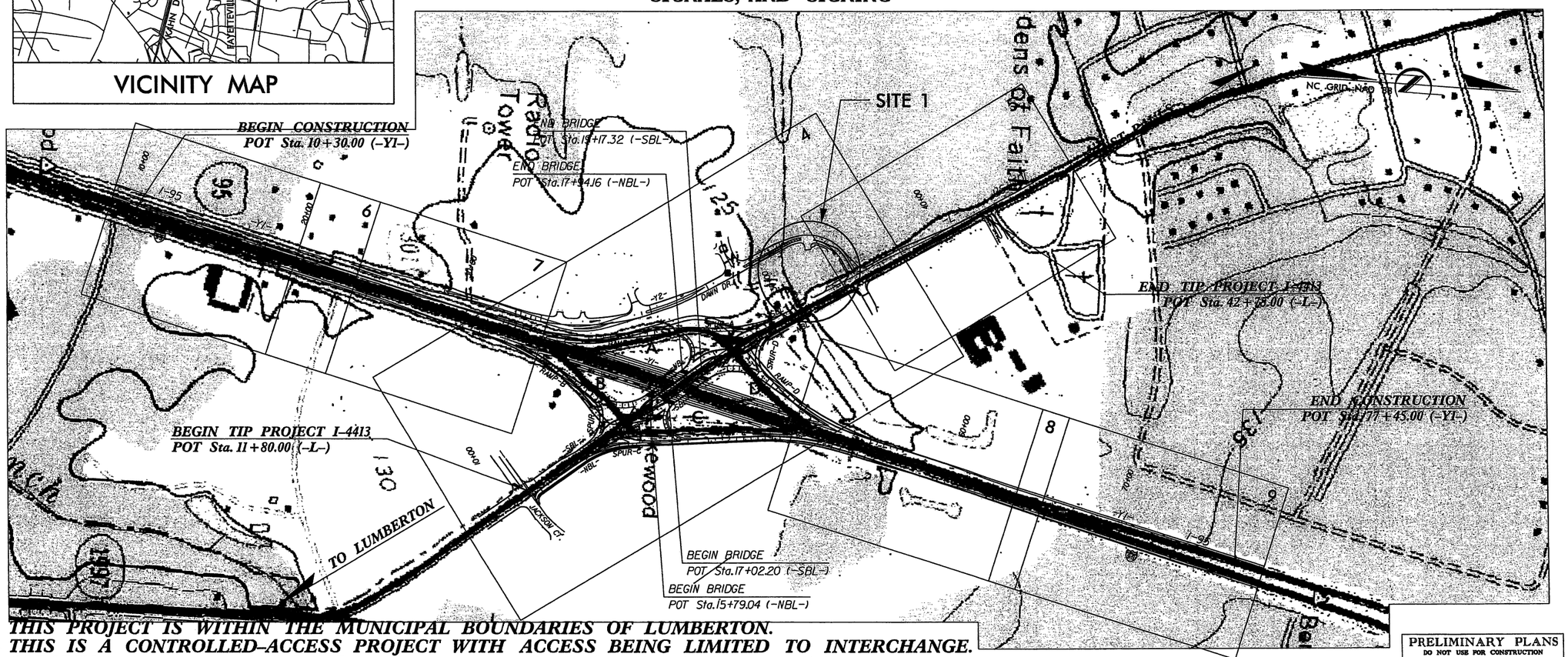
Sheet 2 of 10



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PLANS

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SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

Permit Drawing
Sheet 3 of 10

REVISIONS

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES HAND CLEARING

DENOTES EXCAVATION IN WETLAND

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 1983

TRAFFIC COUNTS

US 301

EST. ADT 2032

SITE 1

SITE 1

MATCHLINE SHEET 7 STA.32+00.00 -Y-

MATCHLINE SHEET 9 STA.36+00.00 -Y-

PDT Sta.22+37.56 -L-
PINC Sta.43+00.00 -Y-
(POINT ASSUMED,NOT ON GROUND)

REFERENCES:
FOR CURVE DAT.SEE SHEET 2E
FOR -L-,-MSL-,-SDL- ALIGNMENT INFORMATION.SEE SHEET 2E
FOR PROFILE -L-, SEE SHEETS 10-11
FOR PROFILE RAMP-A.SEE SHEET 12
FOR PROFILE SPUR-A.SEE SHEET 12
FOR PROFILE RAMP-B.SEE SHEET 13
FOR PROFILE SPUR-B.SEE SHEET 13
FOR PROFILE RAMP-C.SEE SHEET 14
FOR PROFILE SPUR-C.SEE SHEET 14
FOR PROFILE RAMP-D.SEE SHEET 15
FOR PROFILE SPUR-D.SEE SHEET 15
FOR PROFILE -Y1-.SEE SHEETS 6-18
FOR PROFILE -Y2-.SEE SHEET 19

GRAPHIC SCALE
50 25 0 50 100
PLANS

PROJECT REFERENCE NO. 1-4413
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULIC ENGINEER
PRELIMINARY PLANS
NO RIGHT OF WAY OR CONSTRUCTION

Stantec
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801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6000
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

LOCATION: US 301 (FAYETTEVILLE ROAD)
O*BB 1-93 (EXIT 32)
TIP NO.:I-4413
COUNTY: ROBESON
DESIGNED BY: JASON GADDY
CHECKED BY: SCOTT BOYLES, PE
DATE:

4

Permit Drawing
Sheet 4 of 10

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
I-4413	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES HAND CLEARING
DENOTES EXCAVATION IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD '83

TRAFFIC COUNTS
US 301 — CLARK AVENUE — US 301 — MARK DRIVE
EST. ADT 2012 / 2032

SITE 1

SITE

Stantec
Stantec Consulting Services Inc
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6600
Fax. (919) 851-7234
www.stantec.com
License No. F-0672

MATCHLINE SHEET 7 STA.39+50.00 -T1-

MATCHLINE SHEET 5 STA.36+00.00 -L-

MATCHLINE SHEET 8 STA.51+50.00 -T1-

TRAFFIC COUNTS
US 301 — JACKSON ST — US 301 — WHITEFORD RD
EST. ADT 2012 / 2032

TRAFFIC COUNTS
US 301 — US 301 — US 15
EST. ADT 2012 / 2032

POT Sta.22+37.56 -L-
PWC Sta. 43+50.00 -T1-
(POINT ASSUMED, NOT ON GROUND)

REFERENCES:
FOR CURVE DATA, SEE SHEET 2E
FOR -L-, -NBL-, -SBL- ALIGNMENT INFORMATION, SEE SHEET 2E
FOR PROFILE -L-, SEE SHEETS 10-11
FOR PROFILE RAMP-A, SEE SHEET 12
FOR PROFILE SPUR-A, SEE SHEET 12
FOR PROFILE RAMP-B, SEE SHEET 13
FOR PROFILE SPUR-B, SEE SHEET 13
FOR PROFILE RAMP-C, SEE SHEET 14
FOR PROFILE SPUR-C, SEE SHEET 14
FOR PROFILE RAMP-D, SEE SHEET 15
FOR PROFILE SPUR-D, SEE SHEET 15
FOR PROFILE -T1-, SEE SHEETS 16-18
FOR PROFILE -T2-, SEE SHEET 19

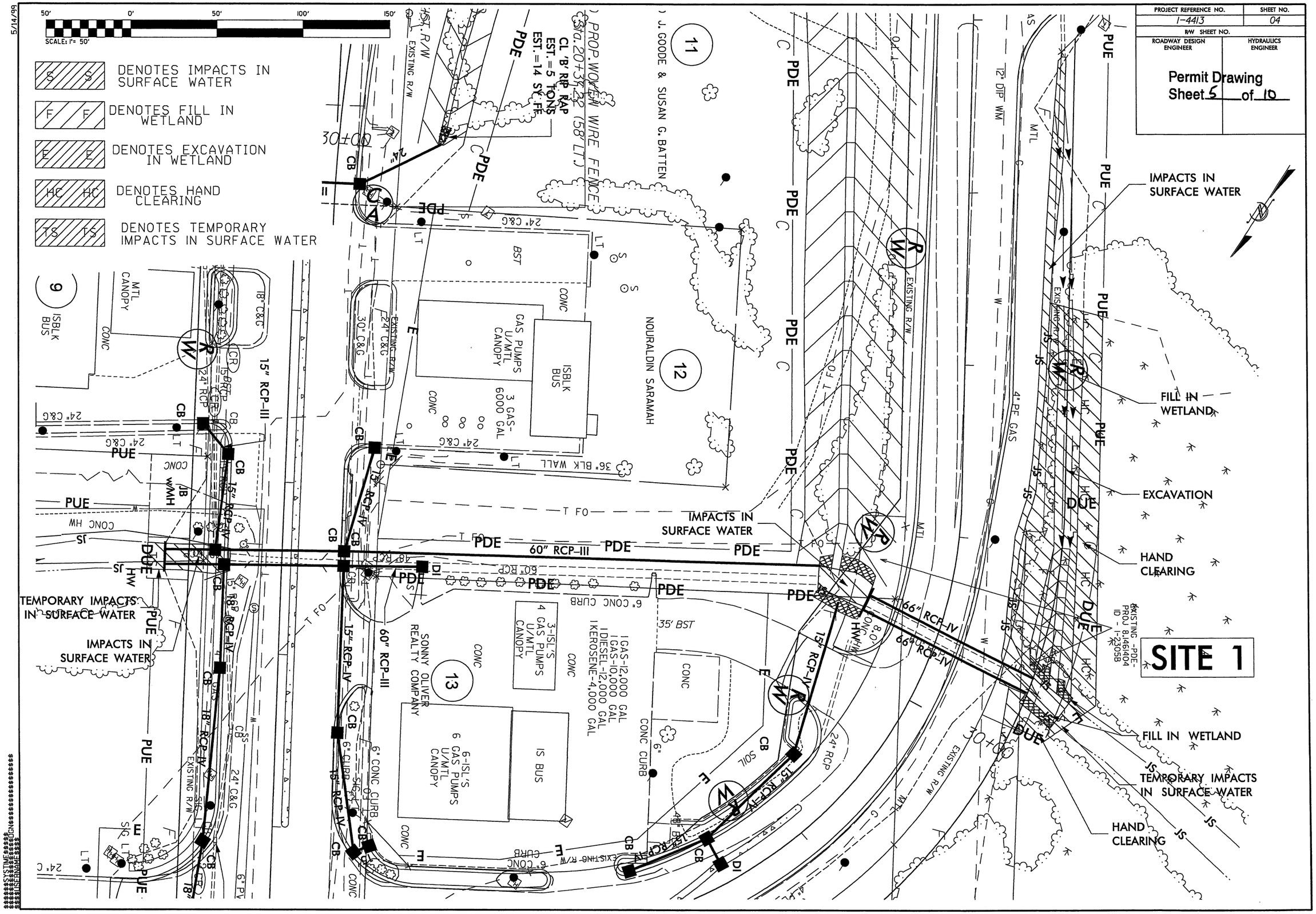
GRAPHIC SCALE
50 25 0 50 100
PLANS

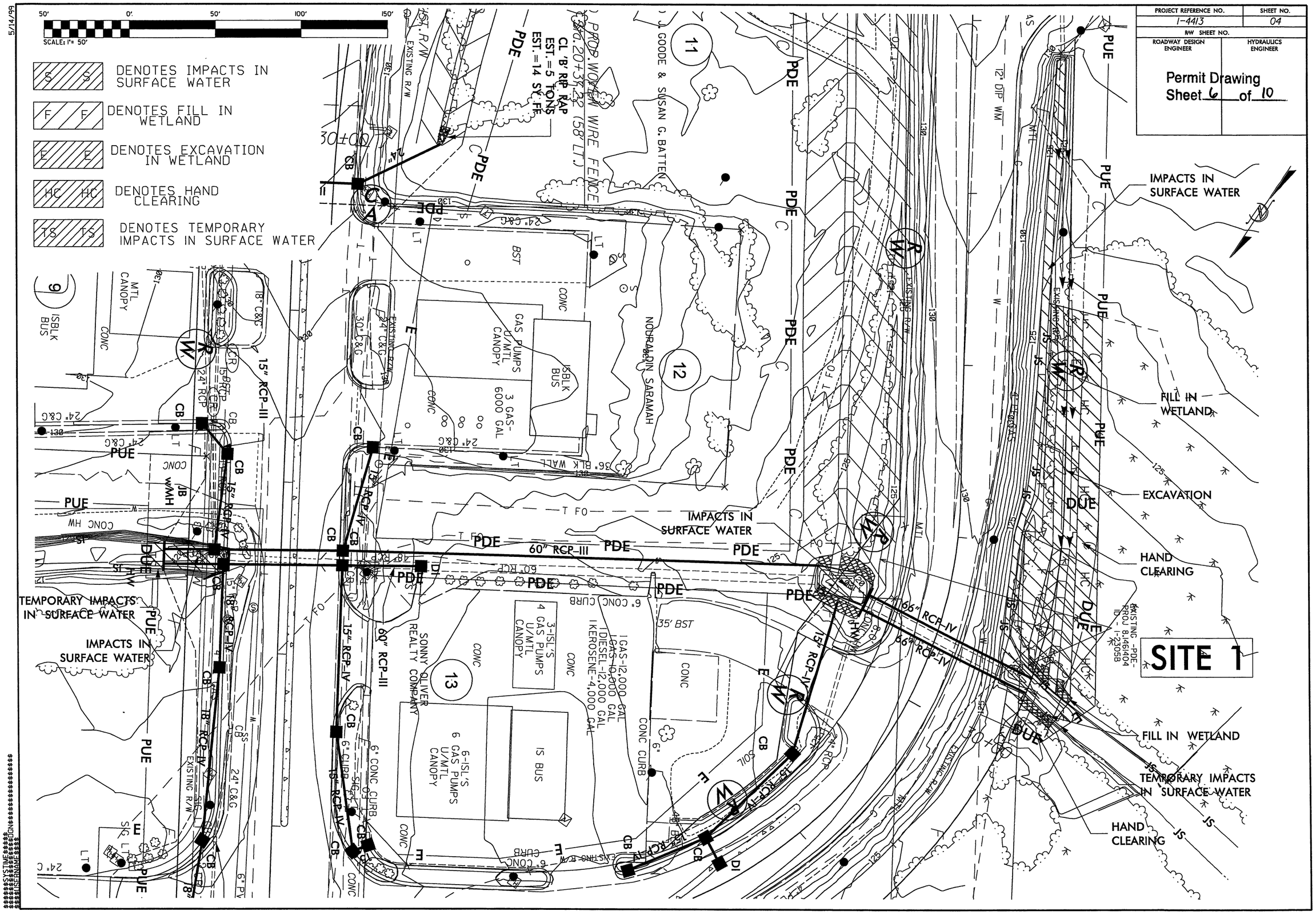
LOCATION: US 301 (FAYETTEVILLE ROAD)
OVER I-95 (EXIT 22)
TIP NO.: I-4413 COUNTY: ROBESON
DESIGNED BY: JASON GADDY
CHECKED BY: SCOTT BOYLES, PE DATE:

4

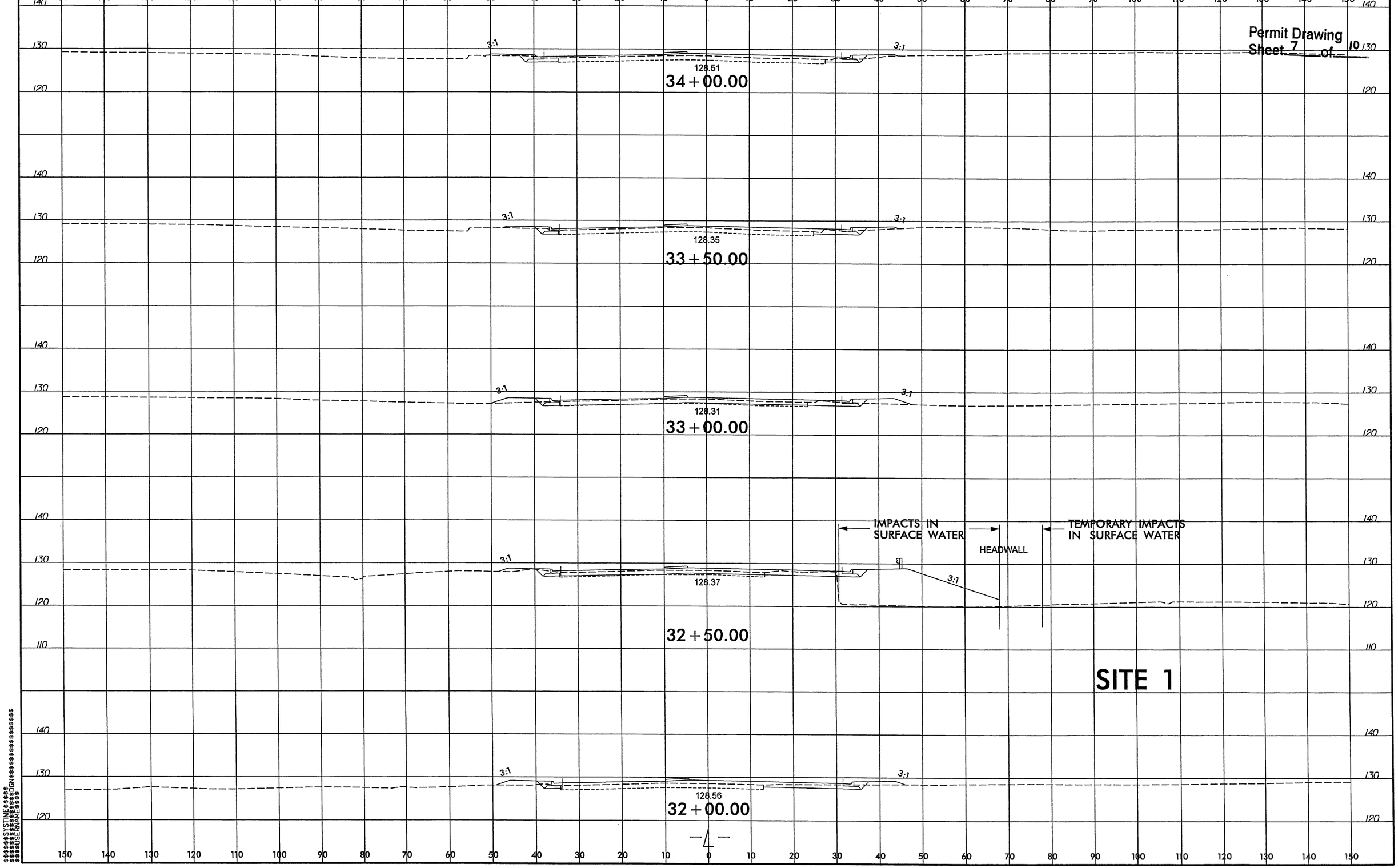
PROJECT REFERENCE NO.	SHEET NO.
I-4413	04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing
Sheet 5 of 10





PROJECT REFERENCE NO.
I-4413
SHEET NO.
04
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Permit Drawing
Sheet 6 of 10
SCALE: 1"= 50'
DENOTES IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES HAND CLEARING
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
SITE 1
IMPACTS IN SURFACE WATER
FILL IN WETLAND
EXCAVATION
HAND CLEARING
TEMPORARY IMPACTS IN SURFACE WATER
60" RCP-III
66" RCP-IV
15" RCP-IV
15" RCP-III
18" RCP-IV
PROP. WOVEN WIRE FENCE
CL 'B' RIP RAP
EST. = 5 TONS
EST. = 14 SY FF
J. GOODE & SUSAN G. BATTEN
NOURADIN SARAMAH
SONNY OLIVER REALTY COMPANY
3 GAS-6000 GAL
GAS PUMPS U/MTL CANOPY
6-ISL'S 6 GAS PUMPS U/MTL CANOPY
3-ISL'S 4 GAS PUMPS U/MTL CANOPY
IS BUS
ISBLK BUS
MTL CANOPY
EXISTING R/W
EXISTING -PDE- PROJ 8.1461404 ID - I-2305B



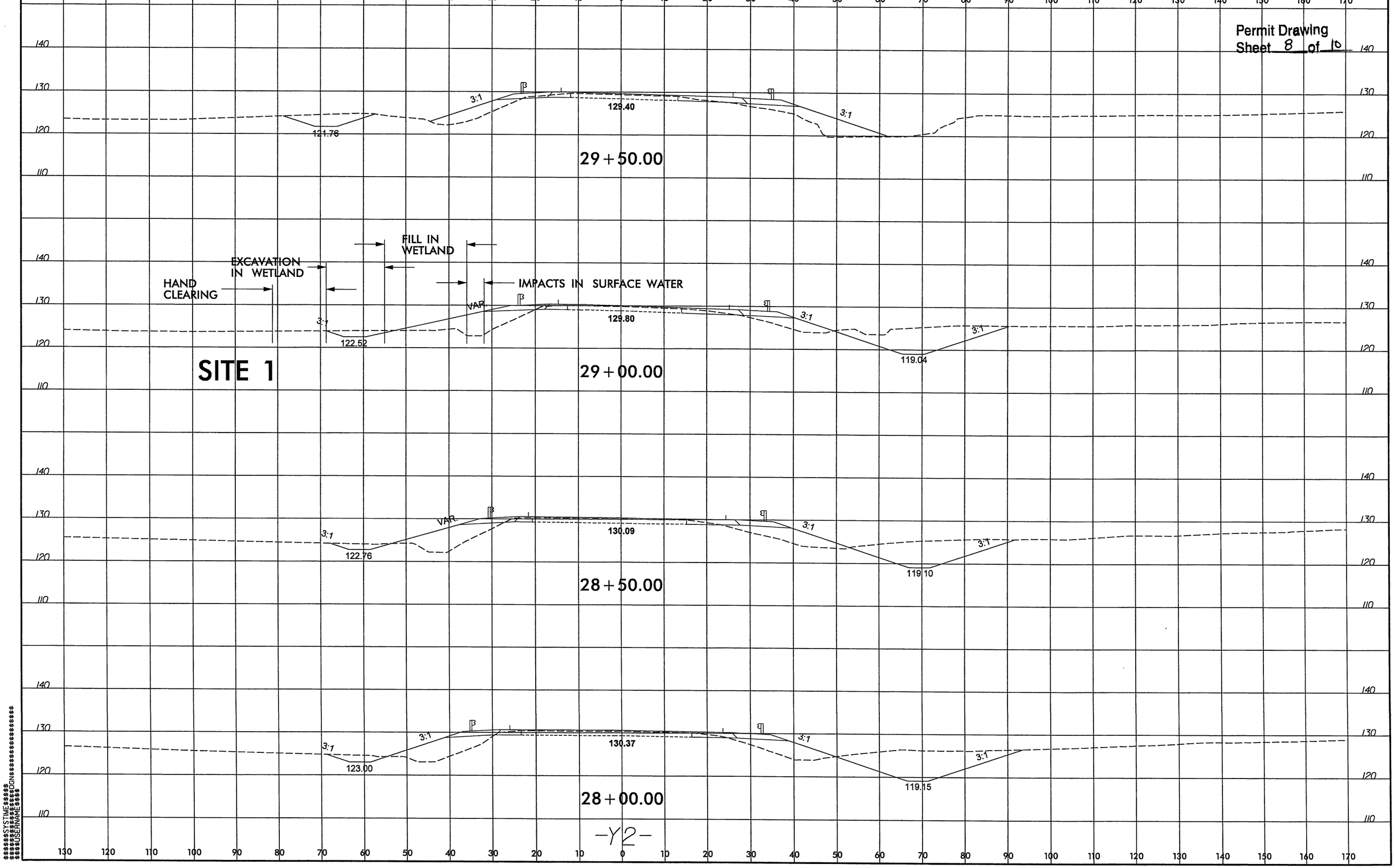
PROJ. REFERENCE NO.
I-4413
SHEET NO.
X-15
Permit Drawing
Sheet 7 of 10
3:1
128.51
34+00.00
128.35
33+50.00
128.31
33+00.00
IMPACTS IN SURFACE WATER
TEMPORARY IMPACTS IN SURFACE WATER
HEADWALL
128.37
32+50.00
SITE 1
128.56
32+00.00

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
I-4413	X-99

0 5 10

Permit Drawing
Sheet 8 of 10



-Y2-

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

WETLAND PERMIT IMPACT 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	32+38-32+55 -L- RT	Fill						0.01	<0.01	37	10	
1	26+20-30+05 -Y2-LT	Fill	0.05		0.08		0.08	0.05	<0.01		10	
1	29+35-29+55 -Y2- RT	Ditch						0.01		30		
1	29+55-29+80 -Y2- LT	Fill	0.01								42*	
TOTALS:			0.06		0.08		0.08	0.07	0.01	67	62	

* from end of Rip Rap to existing pipe outlet

There will be 0.01 acres of Temporary Fill in Wetlands in the Hand Clearing areas for erosion control measures

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

ROBESON COUNTY
WBS - 35901.1.1 (I-4413)

SHEET 08/17/11

ATN Revised 3/31/05

Permit Drawing
Sheet 9 of 10

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
15	DAVID J. GOODE & SUSAN G. BATTEN	P.O. BOX 509 CHARLESTON, SC 29401
14	LAWRENCE H. OLIVER	P.O. BOX 1266 LUMBERTON, NC 28358
11	DAVID J. GOODE & SUSAN G. BATTEN	P.O. BOX 509 CHARLESTON, SC 29401
13	LAWRENCE H. OLIVER	P.O. BOX 1266 LUMBERTON, NC 28358
10	ROBESON TECH INSTITUTE	FAYETTEVILLE ROAD LUMBERTON, NC 28358
7	NORTHBRIDGE PROPERTIES, LLC	201 JACKSON CT LUMBERTON, NC 28358

Permit Drawing
Sheet 10 of 10

NCDOT

DIVISION OF HIGHWAYS
ROBESON COUNTY
PROJECT: 35901.1.1 (I-4413)
BRIDGE NO. 36 ON US 301
(FAYETTEVILLE ROAD)
OVER I-95 (EXIT 22)

SHEET 1 OF 1 8/8/11

09/08/99

TIP PROJECT: I-4413

See Sheet 1-A For Index of Sheets
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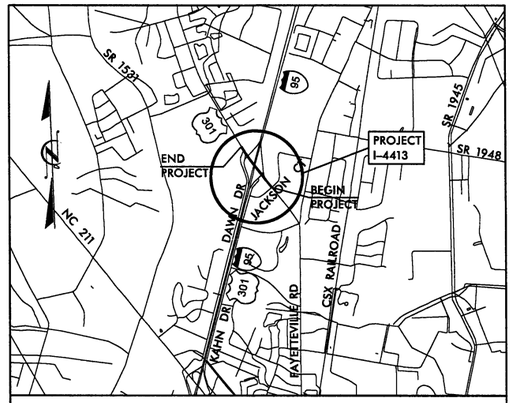

VICINITY MAP

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DIVISION OF HIGHWAYS

ROBESON COUNTY

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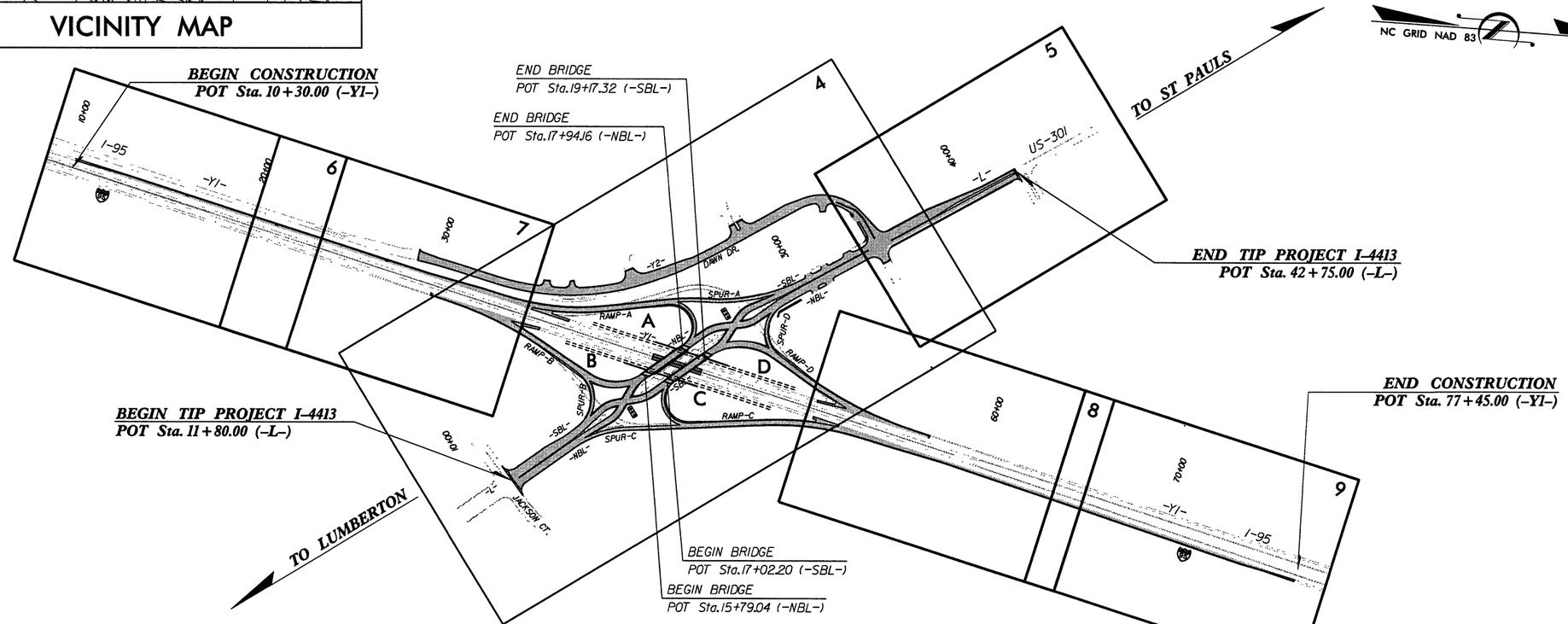
NC GRID NAD 83



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PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:

GRAPHIC SCALES

50 25 0 50 100
PLANS

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2012 STANDARD SPECIFICATIONS

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HYDRAULICS ENGINEER
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
P.E.
STATE HIGHWAY DESIGN ENGINEER

9/21/2011
U:\Roadway\Proj\I4413_rdy_tsh.dgn
jocole

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
I-4413	1B

Note: Not to Scale

S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Boundary or Site
- Potential Soil Contamination: Boundary or Site

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite Marker — RW
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Curb Cut Future Ramp — CCFR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

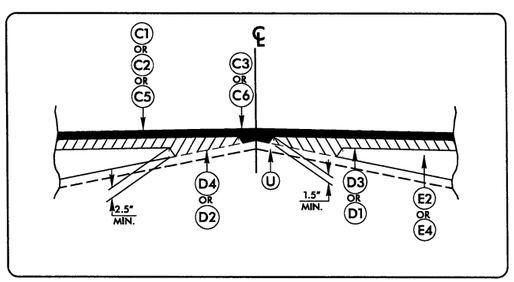
MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

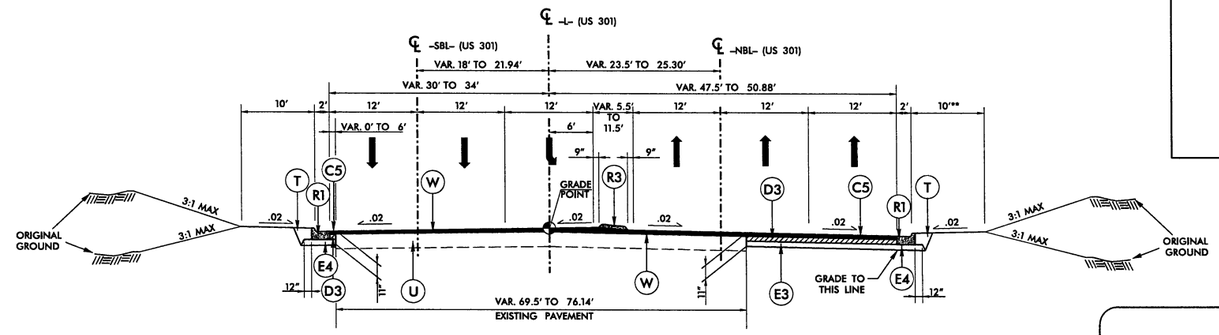
PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE. TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER. SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2.0"
C4	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C5	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C6	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE. TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER. SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2.0"
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE. TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER. SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4.0"
D3	PROP. APPROX 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE. TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER. SQ. YD.
D4	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER. SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4.0"
E1	PROP. 4" DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THANK 5.5" IN DEPTH.
E3	PROP. 4" DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E4	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THANK 5.5" IN DEPTH.
J1	PROP. 8" AGGREGATE BASE COURSE
J2	PROP. VAR. DEPTH AGGREGATE BASE COURSE
R1	2'-6" CONCRETE CURB AND GUTTER
R2	1'-6" CONCRETE CURB AND GUTTER
R3	PROP. 5" MONOLITHIC CONC. ISLAND (KEYED IN)
R4	2'-0" CONCRETE CURB AND GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	RETAINING WALL
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL THIS SHEET)

NOTES:
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
2. FOR RAISED MEDIAN AND LANE LOCATIONS, SEE PLANS.



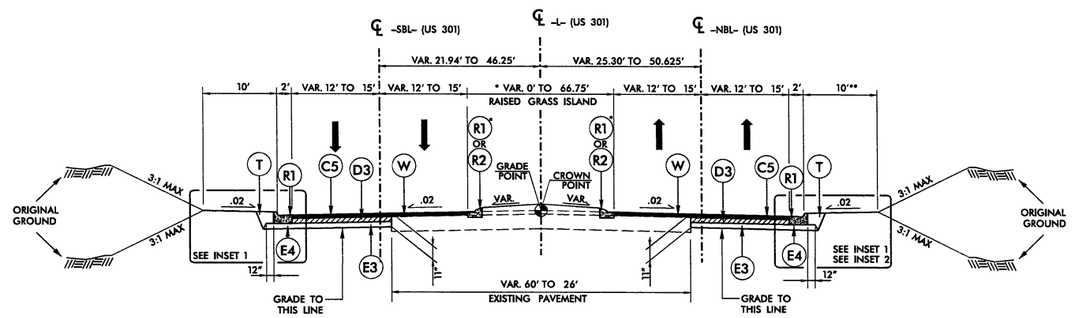
WEDGING DETAIL



TYPICAL SECTION NO. 1

-L- STA. 11+80.00 TO STA. 16+36.78

** SIDEWALK NOT REFLECTED IN TYPICAL SECTION. SEE PLANS FOR ADDITIONAL INFORMATION.



TYPICAL SECTION NO. 2

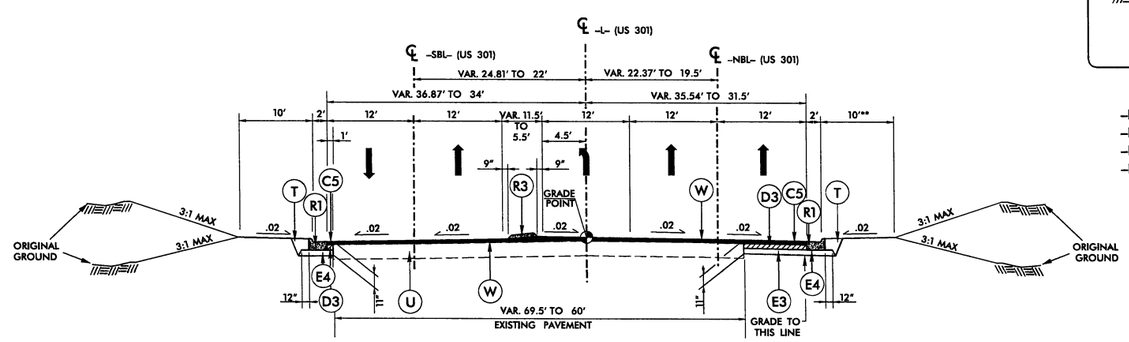
-L- STA. 16+36.78 TO STA. 21+29.60 (BRIDGE)

-L- STA. 23+44.72 (BRIDGE) TO STA. 28+55.10

NOTE: THRU LANES CROSS AND EXCHANGE SIDES OF THE CENTERLINE -L- STA. 19+00 TO STA. 26+00. SEE PLANS FOR ADDITIONAL INFORMATION.

* 2'-6" CURB AND GUTTER STA. 19+00 TO STA. 21+29.60 (BRIDGE), AND STA. 23+44.72 (BRIDGE) TO STA. 26+00. SEE PLANS FOR ADDITIONAL INFORMATION.

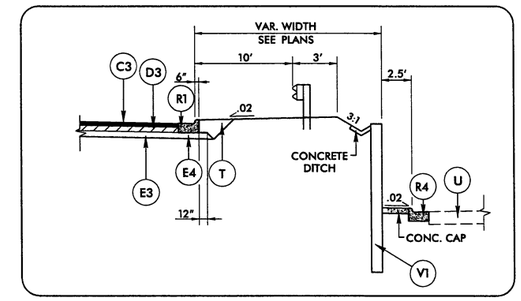
** SIDEWALK NOT REFLECTED IN TYPICAL SECTION. SEE PLANS FOR ADDITIONAL INFORMATION.



TYPICAL SECTION NO. 3

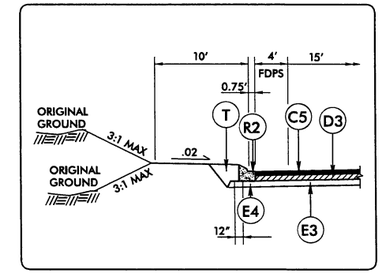
-L- STA. 28+55.10 TO STA. 33+98.00

** SIDEWALK NOT REFLECTED IN TYPICAL SECTION. SEE PLANS FOR ADDITIONAL INFORMATION.



INSET 2

-L- STA. 28+38.00 TO STA. 29+70.00



INSET 1

-L- STA. 17+35.33 TO STA. 19+57.93 LT. SIDE
-L- STA. 16+91.83 TO STA. 20+87.32 RT. SIDE
-L- STA. 24+10.66 TO STA. 27+90.57 LT. SIDE
-L- STA. 25+29.22 TO STA. 27+73.52 RT. SIDE

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License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
I-4413	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

9/21/2011
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jacole

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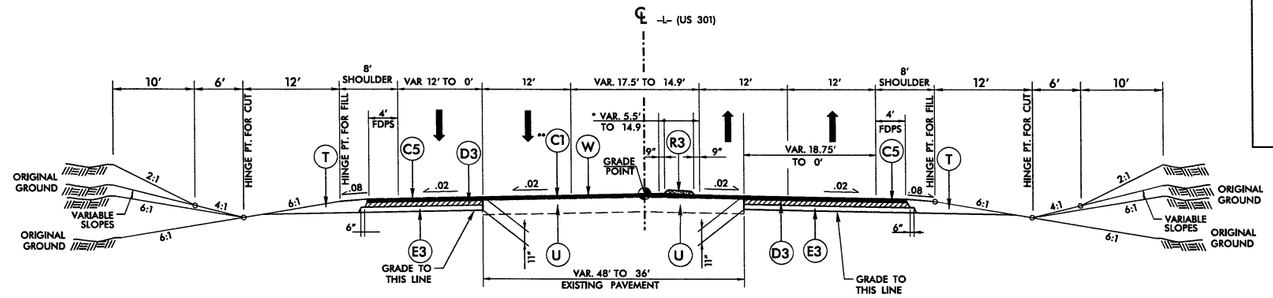
PAVEMENT SCHEDULE	
C1	1.5" TYPE S9.5B
C2	3.0" TYPE S9.5B
C3	VAR. DEPTH TYPE S9.5B
C4	1.5" TYPE S9.5C
C5	3.0" TYPE S9.5C
C6	VAR. DEPTH TYPE S9.5C
D1	4" TYPE I19.0B
D2	VAR. DEPTH TYPE I19.0B
D3	4.0" TYPE I19.0C
D4	VAR. DEPTH TYPE I19.0C
E1	4" TYPE B25.0B
E2	VAR. DEPTH TYPE B25.0B
E3	4" TYPE B25.0C
E4	VAR. DEPTH TYPE B25.0C
J1	PROP. 8" ABC
J2	PROP. VAR. DEPTH ABC
R1	2'-6" CONCRETE CURB AND GUTTER
R2	1'-6" CONCRETE CURB AND GUTTER
R3	PROP. 5" MONOLITHIC CONC. ISLAND (KEYED IN)
R4	2'-0" CONCRETE CURB AND GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	RETAINING WALL
W	VAR. DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAILS)

NOTES:

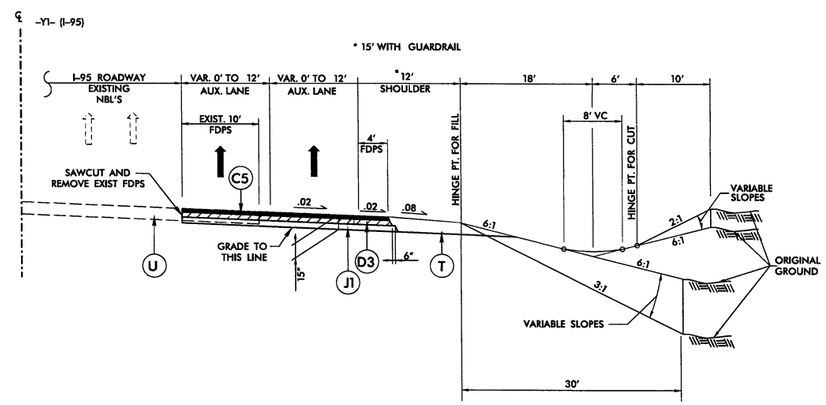
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
2. FOR RAISED MEDIAN AND LANE LOCATIONS, SEE PLANS.
3. FOR WEDGING DETAIL, SEE SHEET 2



TYPICAL SECTION NO. 4

-L- STA. 33+98.00 TO STA. 40+86.36

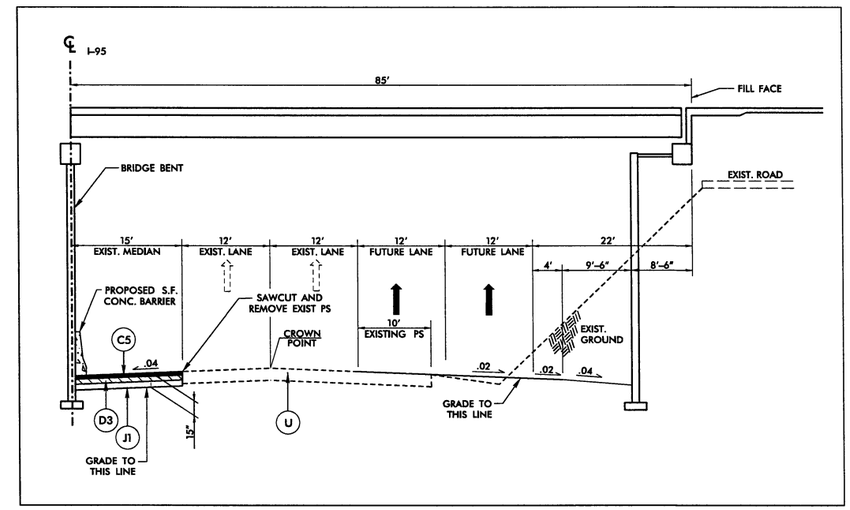
** -L- STA. 40+86.36 TO STA. 42+75.00



TYPICAL SECTION NO. 5

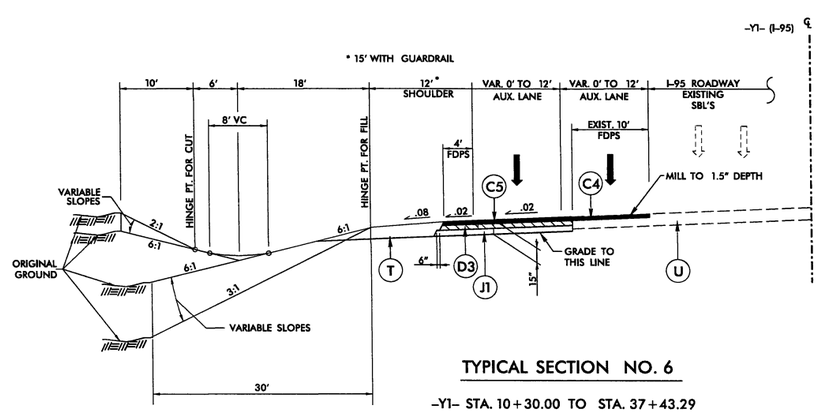
-Y1- STA. 30+15.00 TO STA. 36+09.86

-Y1- STA. 51+05.00 TO STA. 77+45.00



DETAIL OF -Y1- UNDER BRIDGE

-Y1- STA. 42+15.00 TO STA. 44+80.00



TYPICAL SECTION NO. 6

-Y1- STA. 10+30.00 TO STA. 37+43.29

-Y1- STA. 50+99.04 TO STA. 57+10.00

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License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
I-4413	2A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

9/21/2011
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jocole

PROJECT REFERENCE NO.	SHEET NO.
I-4413	2B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

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Fax. (919) 851-7024
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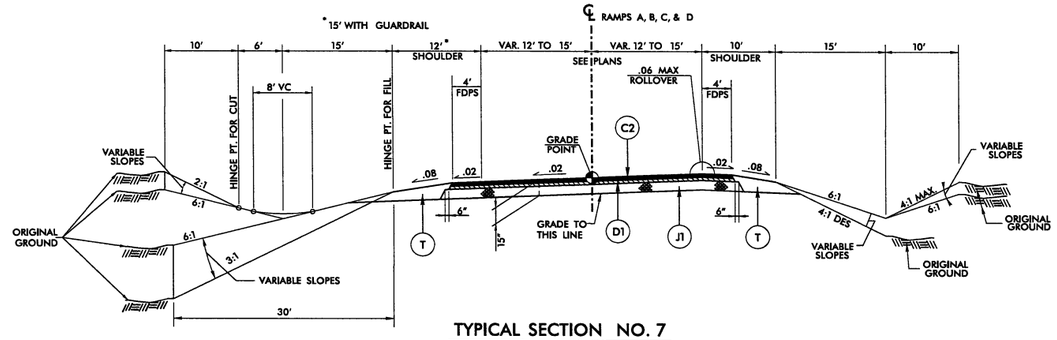
License No. F-0672

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

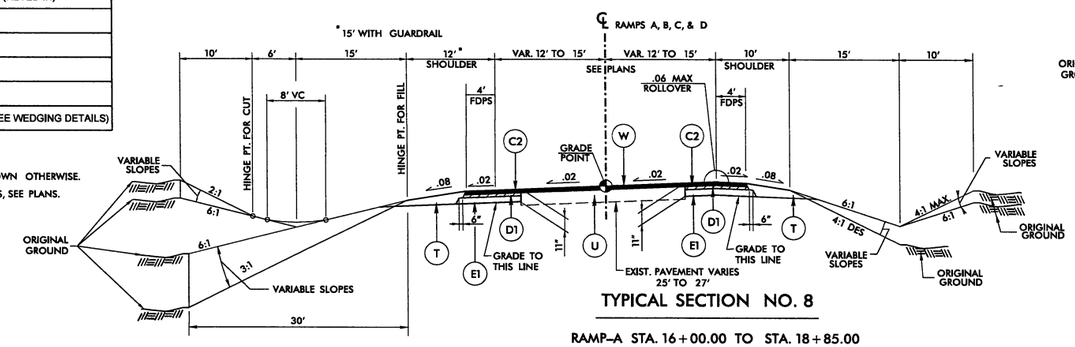
C1	1.5" TYPE S9.5B
C2	3.0" TYPE S9.5B
C3	VAR. DEPTH TYPE S9.5B
C4	1.5" TYPE S9.5C
C5	3.0" TYPE S9.5C
C6	VAR. DEPTH TYPE S9.5C
D1	4" TYPE I19.0B
D2	VAR. DEPTH TYPE I19.0B
D3	4.0" TYPE I19.0C
D4	VAR. DEPTH TYPE I19.0C
E1	4" TYPE B25.0B
E2	VAR. DEPTH TYPE B25.0B
E3	4" TYPE B25.0C
E4	VAR. DEPTH TYPE B25.0C
J1	PROP. 8" ABC
J2	PROP. VAR. DEPTH ABC
R1	2'-6" CONCRETE CURB AND GUTTER
R2	1'-6" CONCRETE CURB AND GUTTER
R3	PROP. 5" MONOLITHIC CONC. ISLAND (KEYED IN)
R4	2'-0" CONCRETE CURB AND GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	RETAINING WALL
W	VAR. DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAILS)

NOTES:
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
2. FOR RAISED MEDIAN AND LANE LOCATIONS, SEE PLANS.
3. FOR WEDGING DETAIL, SEE SHEET 2



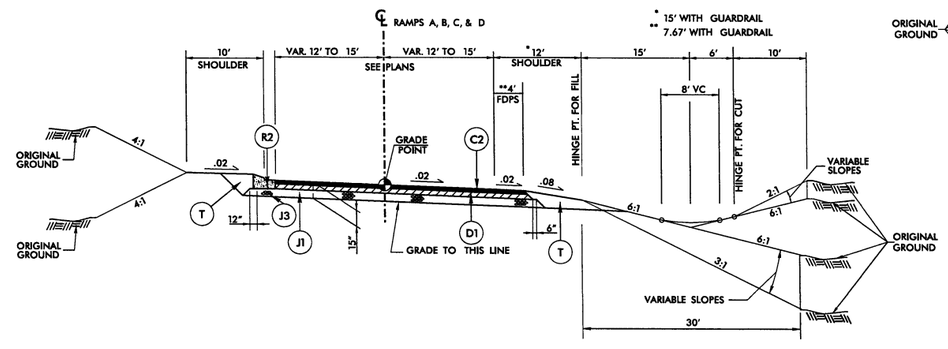
TYPICAL SECTION NO. 7

RAMP–A STA. 13+70.35 TO STA. 16+00.00
RAMP–A STA. 18+85.00 TO STA. 20+43.00
RAMP–B STA. 17+80.00 TO STA. 19+70.00
RAMP–D STA. 18+70.00 TO STA. 19+77.00



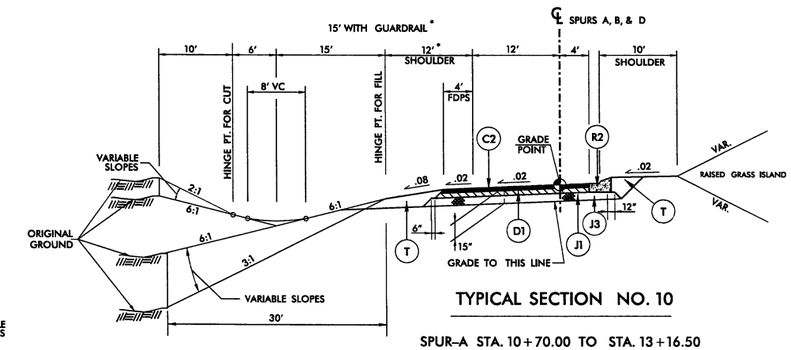
TYPICAL SECTION NO. 8

RAMP–A STA. 16+00.00 TO STA. 18+85.00
RAMP–B STA. 15+11.58 TO STA. 17+80.00 (MIRROR IMAGE)
RAMP–C STA. 13+80.07 TO STA. 21+00.00
RAMP–D STA. 15+16.31 TO STA. 18+70.00 (MIRROR IMAGE)



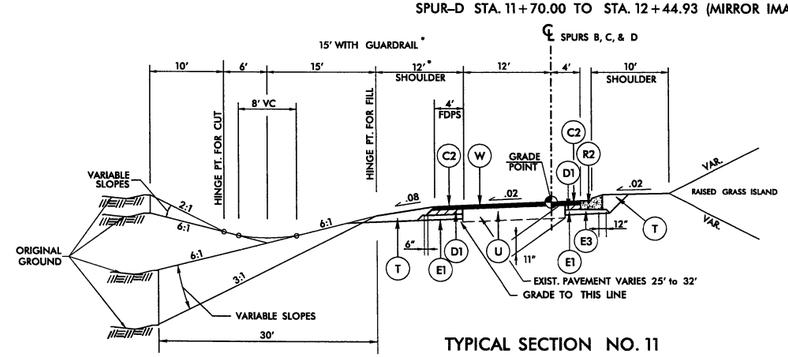
TYPICAL SECTION NO. 9

RAMP–A STA. 20+43.00 TO STA. 22+30.51
RAMP–B STA. 19+70.00 TO STA. 21+46.42 (MIRROR IMAGE)
RAMP–C STA. 21+00.00 TO STA. 22+96.59
RAMP–D STA. 19+77.00 TO STA. 21+63.66 (MIRROR IMAGE)



TYPICAL SECTION NO. 10

SPUR–A STA. 10+70.00 TO STA. 13+16.50
SPUR–A STA. 13+81.00 TO STA. 14+88.38
SPUR–B STA. 11+03.00 TO STA. 11+50.00 (MIRROR IMAGE)
SPUR–B STA. 12+15.00 TO STA. 12+51.49 (MIRROR IMAGE)
SPUR–D STA. 11+70.00 TO STA. 12+44.93 (MIRROR IMAGE)



TYPICAL SECTION NO. 11

SPUR–A STA. 13+16.50 TO STA. 13+81.00
SPUR–B STA. 11+50.00 TO STA. 12+15.00 (MIRROR IMAGE)
SPUR–C STA. 10+60.00 TO STA. 14+83.63
SPUR–D STA. 10+92.00 TO STA. 11+70.00 (MIRROR IMAGE)

9/21/2011
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PAVEMENT SCHEDULE	
C1	1.5" TYPE S9.5B
C2	3.0" TYPE S9.5B
C3	VAR. DEPTH TYPE S9.5B
C4	1.5" TYPE S9.5C
C5	3.0" TYPE S9.5C
C6	VAR. DEPTH TYPE S9.5C
D1	4" TYPE I19.0B
D2	VAR. DEPTH TYPE I19.0B
D3	4.0" TYPE I19.0C
D4	VAR. DEPTH TYPE I19.0C
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E2	VAR. DEPTH TYPE B25.0B
E3	4" TYPE B25.0C
E4	VAR. DEPTH TYPE B25.0C
J1	PROP. 8" ABC
J2	PROP. VAR. DEPTH ABC
R1	2'-6" CONCRETE CURB AND GUTTER
R2	1'-6" CONCRETE CURB AND GUTTER
R3	PROP. 5" MONOLITHIC CONC. ISLAND (KEYED IN)
R4	2'-0" CONCRETE CURB AND GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	RETAINING WALL
W	VAR. DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAILS)

NOTES:

1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
2. FOR RAISED MEDIAN AND LANE LOCATIONS, SEE PLANS.

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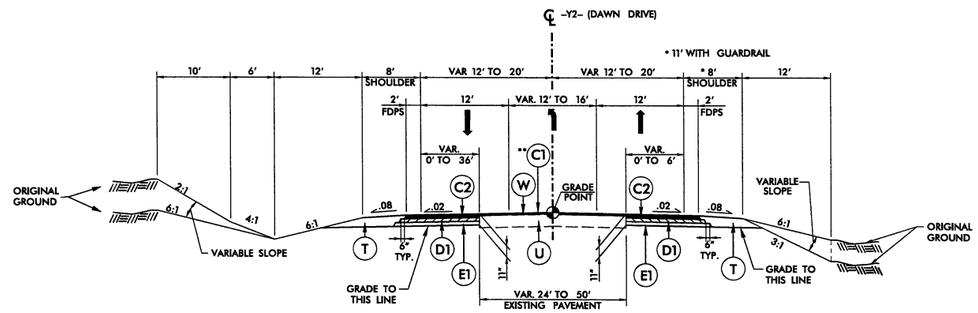
PROJECT REFERENCE NO.	SHEET NO.
I-4413	2C
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

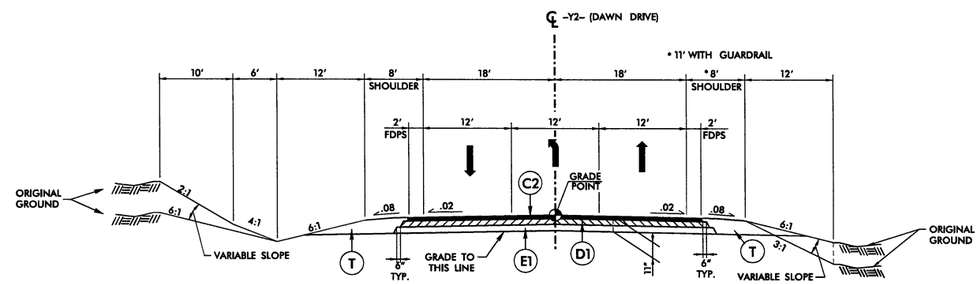
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 12

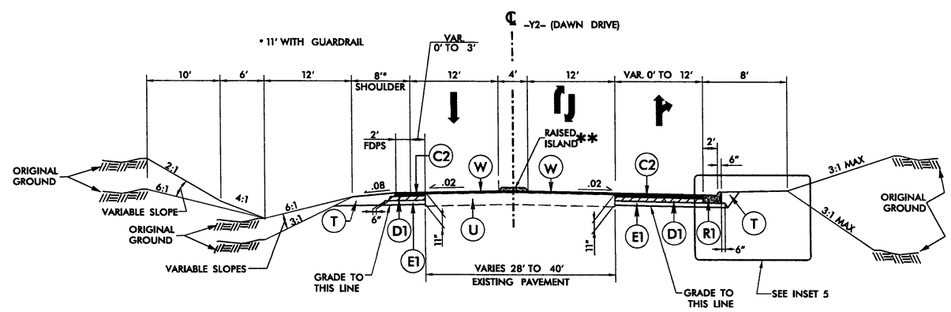
** -Y2- STA. 7+75.00 TO STA. 12+00.00
-Y2- STA. 12+00.00 TO STA. 14+75.00
-Y2- STA. 17+25.00 TO STA. 20+00.00
** -Y2- STA. 20+00.00 TO STA. 30+40.00

SEE PLANS FOR ADDITIONAL INFORMATION
USE IN CONJUNCTION WITH WEDGING DETAIL (-Y2-)



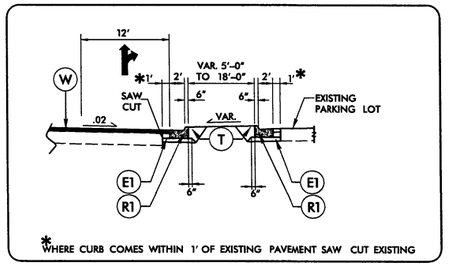
TYPICAL SECTION NO. 13

-Y2- STA. 14+75.00 TO 17+25.00



TYPICAL SECTION NO. 15

-Y2- STA. 30+40.00 TO STA. 33+76.41
** -Y2- STA. 30+90.00 TO STA. 33+30.00



INSET 5

-Y2- STA. 31+90.40 TO STA. 33+88.57

9/21/2011
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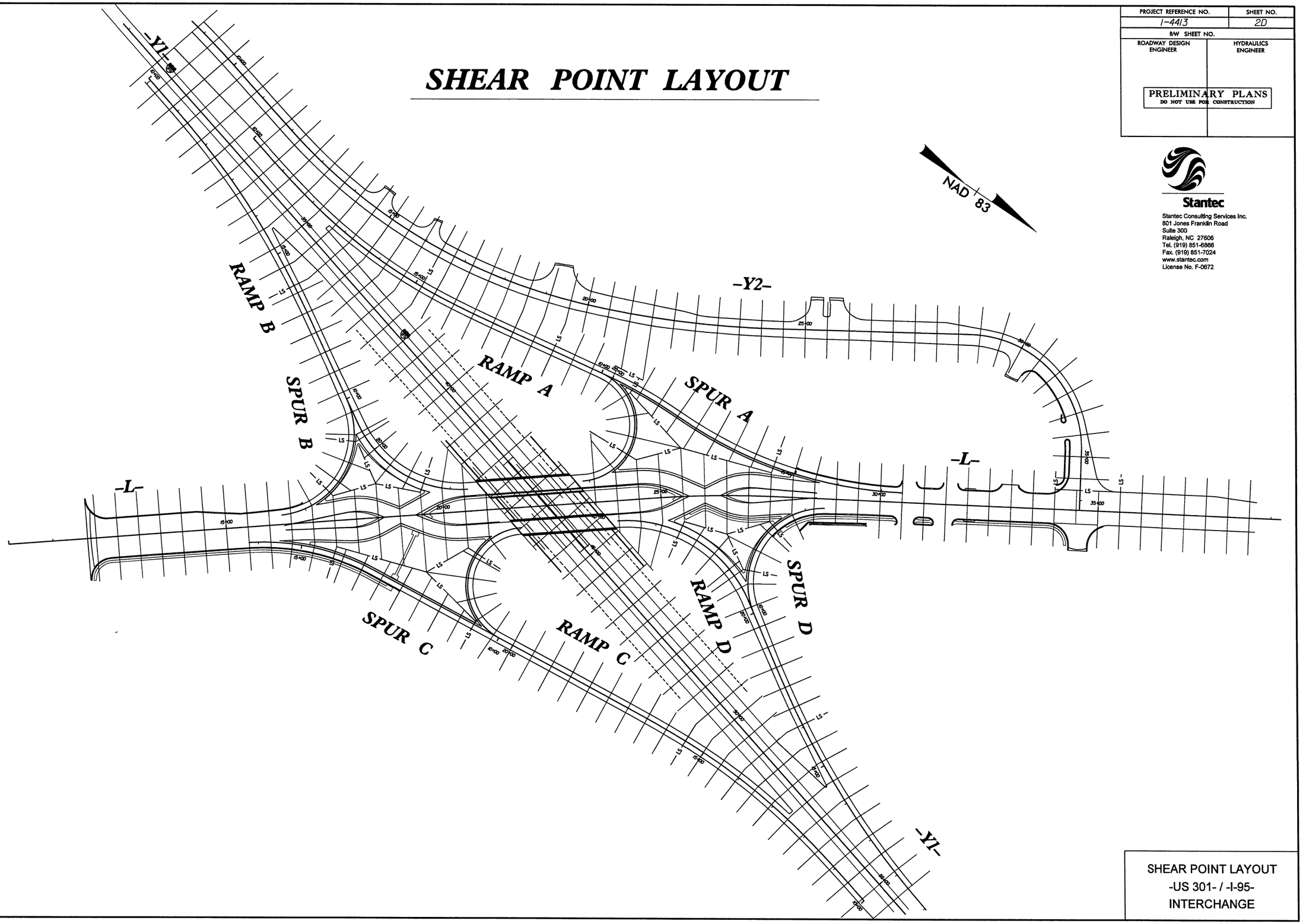
PROJECT REFERENCE NO.	SHEET NO.
I-4413	2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SHEAR POINT LAYOUT



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SHEAR POINT LAYOUT
-US 301- / -I-95-
INTERCHANGE

8/17/99

9/21/2011
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lgcole

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
I-4413	2E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CURVE DATA FOR SHEET 4

-L-
PI Sta 26+21.71
Δ = 6° 39' 32.2" (RT)
D = 2° 29' 28.0"
L = 267.31'
T = 133.80'
R = 2,300.00'
e = N/A
DS = 30 MPH

-Y1-
PINC Sta. 43+50.00
Δ = 0° 01' 11.4" (LT)
NO CURVE

-Y2-
PI Sta 16+03.23
Δ = 35° 25' 35.2" (LT)
D = 4° 29' 37.6"
L = 788.34'
T = 407.23'
R = 1,275.00'
e = .04
DS = 50 MPH

-Y2-
PI Sta 22+09.68
Δ = 11° 41' 46.2" (LT)
D = 2° 36' 15.7"
L = 449.10'
T = 225.33'
R = 2,200.00'
e = .04
DS = 50 MPH

-Y2-
PI Sta 31+41.95
Δ = 90° 47' 12.2" (RT)
D = 22° 02' 12.6"
L = 411.98'
T = 263.59'
R = 260.00'
e = .04
DS = 30 MPH

-SBL-
PI Sta 11+52.44
Δ = 5° 25' 15.0" (LT)
D = 1° 46' 45.7"
L = 304.65'
T = 152.44'
R = 3,220.00'
e = N/A
DS = 30 MPH

-SBL-
PI Sta 13+45.43
Δ = 30° 25' 15.0" (RT)
D = 38° 11' 49.9"
L = 79.64'
T = 40.78'
R = 150.00'
e = N/A
DS = 30 MPH

-SBL-
PI Sta 15+38.43
Δ = 25° 00' 00.0" (LT)
D = 28° 38' 52.4"
L = 87.27'
T = 44.34'
R = 200.00'
e = N/A
DS = 30 MPH

-SBL-
PI Sta 20+31.77
Δ = 22° 12' 27.6" (LT)
D = 28° 38' 52.4"
L = 77.52'
T = 39.25'
R = 200.00'
e = N/A
DS = 30 MPH

-SBL-
PI Sta 22+32.93
Δ = 33° 38' 17.2" (RT)
D = 38° 11' 49.9"
L = 88.06'
T = 45.34'
R = 150.00'
e = N/A
DS = 30 MPH

-SBL-
PI Sta 24+09.81
Δ = 4° 46' 17.3" (LT)
D = 1° 46' 45.7"
L = 268.16'
T = 134.16'
R = 3,220.00'
e = N/A
DS = 30 MPH

-NBL-
PI Sta 11+26.69
Δ = 4° 30' 22.1" (RT)
D = 1° 46' 45.7"
L = 253.24'
T = 126.69'
R = 3,220.00'
e = N/A
DS = 30 MPH

-NBL-
PI Sta 12+92.74
Δ = 29° 30' 22.1" (LT)
D = 38° 11' 49.9"
L = 77.25'
T = 39.50'
R = 150.00'
e = N/A
DS = 30 MPH

-NBL-
PI Sta 14+97.28
Δ = 25° 00' 00.0" (RT)
D = 28° 38' 52.4"
L = 87.27'
T = 44.34'
R = 200.00'
e = N/A
DS = 30 MPH

-NBL-
PI Sta 19+86.03
Δ = 27° 47' 32.4" (RT)
D = 28° 38' 52.4"
L = 97.01'
T = 49.48'
R = 200.00'
e = N/A
DS = 30 MPH

-NBL-
PI Sta 21+80.31
Δ = 26° 07' 21.8" (LT)
D = 38° 11' 49.9"
L = 68.39'
T = 34.80'
R = 150.00'
e = N/A
DS = 30 MPH

-NBL-
PI Sta 23+54.19
Δ = 4° 59' 21.6" (RT)
D = 1° 46' 45.7"
L = 280.40'
T = 140.29'
R = 3,220.00'
e = N/A
DS = 30 MPH

RAMP-A
PIs Sta 11+66.76
Θs = 5° 58' 05.9"
Ls = 250.00'
LT = 166.76'
ST = 83.42'

RAMP-A
PI Sta 13+78.94
Δ = 12° 15' 56.6" (LT)
D = 4° 46' 28.7"
L = 256.89'
T = 128.94'
R = 1,200.00'
e = .08
DS = 60 MPH

RAMP-A
PIs Sta 15+90.31
Θs = 5° 58' 05.9"
Ls = 250.00'
LT = 166.76'
ST = 83.42'

RAMP-A
PI Sta 24+78.10
Δ = 151° 09' 12.8" (RT)
D = 44° 04' 25.2"
L = 342.96'
T = 505.47'
R = 130.00'
e = .04
DS = 20 MPH

SPUR-A
PI Sta 11+02.70
Δ = 10° 12' 24.4" (RT)
D = 4° 58' 56.1"
L = 204.86'
T = 102.70'
R = 1,150.00'
e = .03
DS = 30 MPH

SPUR-A
PI Sta 14+83.72
Δ = 32° 23' 39.4" (LT)
D = 5° 58' 05.9"
L = 542.77'
T = 278.85'
R = 960.00'
e = .03
DS = 25 MPH

RAMP-B
PIs Sta 11+33.35
Θs = 3° 08' 53.2"
Ls = 200.00'
LT = 133.35'
ST = 66.69'

RAMP-B
PI Sta 13+67.85
Δ = 10° 32' 19.2" (RT)
D = 3° 08' 53.2"
L = 334.76'
T = 167.85'
R = 1,820.00'
e = .07
DS = 60 MPH

RAMP-B
PIs Sta 16+01.45
Θs = 3° 08' 53.2"
Ls = 200.00'
LT = 133.35'
ST = 66.69'

RAMP-B
PI Sta 21+08.18
Δ = 69° 53' 01.3" (LT)
D = 22° 28' 08.2"
L = 311.02'
T = 178.17'
R = 255.00'
e = .03
DS = 25 MPH

SPUR-B
PI Sta 12+58.73
Δ = 107° 24' 55.5" (RT)
D = 30° 09' 20.4"
L = 356.20'
T = 258.73'
R = 190.00'
e = .035
DS = 20 MPH

RAMP-C
PIs Sta 11+66.74
Θs = 5° 06' 56.5"
Ls = 250.00'
LT = 166.74'
ST = 83.40'

RAMP-C
PI Sta 13+75.87
Δ = 10° 16' 31.4" (LT)
D = 4° 05' 33.2"
L = 251.07'
T = 125.87'
R = 1,400.00'
e = .08
DS = 60 MPH

RAMP-C
PIs Sta 15+84.47
Θs = 5° 06' 56.5"
Ls = 250.00'
LT = 166.74'
ST = 83.40'

RAMP-C
PI Sta 24+96.50
Δ = 147° 17' 58.9" (RT)
D = 42° 26' 28.7"
L = 347.07'
T = 460.17'
R = 135.00'
e = .04
DS = 20 MPH

SPUR-C
PI Sta 14+78.01
Δ = 32° 21' 06.4" (LT)
D = 10° 54' 48.5"
L = 296.44'
T = 152.29'
R = 525.00'
e = .03
DS = 25 MPH

RAMP-D
PIs Sta 11+33.35
Θs = 3° 00' 56.0"
Ls = 200.00'
LT = 133.35'
ST = 66.68'

RAMP-D
PI Sta 14+11.38
Δ = 12° 41' 46.5" (RT)
D = 3° 00' 56.0"
L = 421.02'
T = 211.38'
R = 1,900.00'
e = .07
DS = 60 MPH

RAMP-D
PIs Sta 16+87.71
Θs = 3° 00' 56.0"
Ls = 200.00'
LT = 133.35'
ST = 66.68'

RAMP-D
PI Sta 21+29.92
Δ = 71° 56' 04.0" (LT)
D = 19° 05' 54.9"
L = 376.65'
T = 217.70'
R = 300.00'
e = .03
DS = 25 MPH

SPUR-D
PI Sta 12+62.64
Δ = 112° 38' 56.4" (RT)
D = 32° 44' 25.6"
L = 344.07'
T = 262.64'
R = 175.00'
e = .035
DS = 30 MPH

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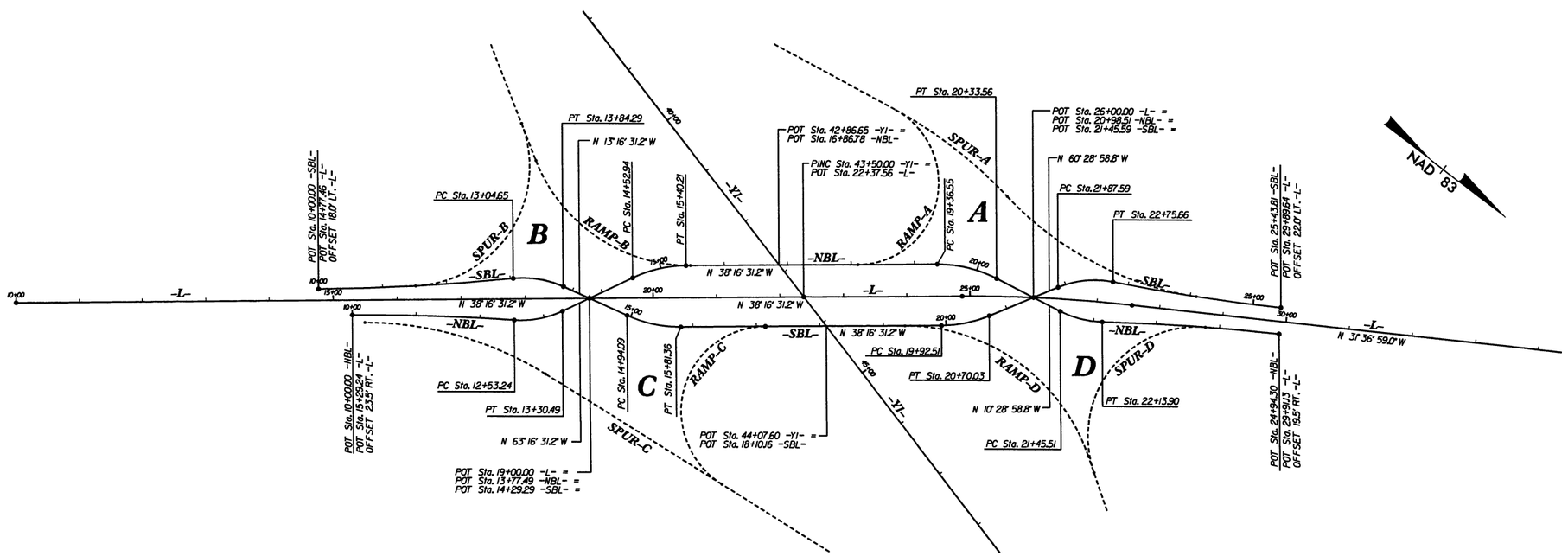

DIVERGING DIAMOND ALIGNMENT DETAIL

9/21/2011
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PROPOSED CONTOURS

PROJECT REFERENCE NO.	SHEET NO.
I-4413	2F
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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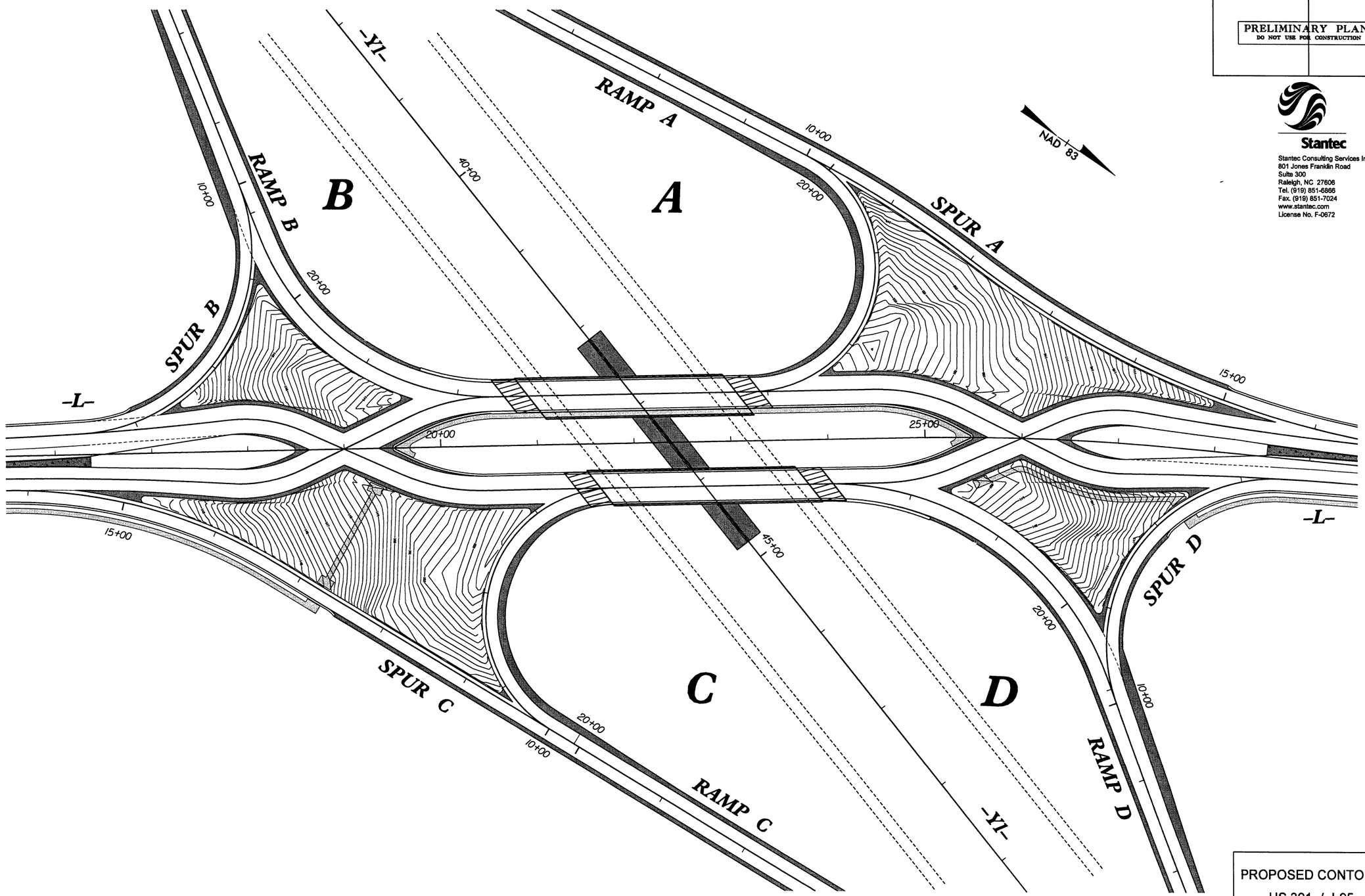
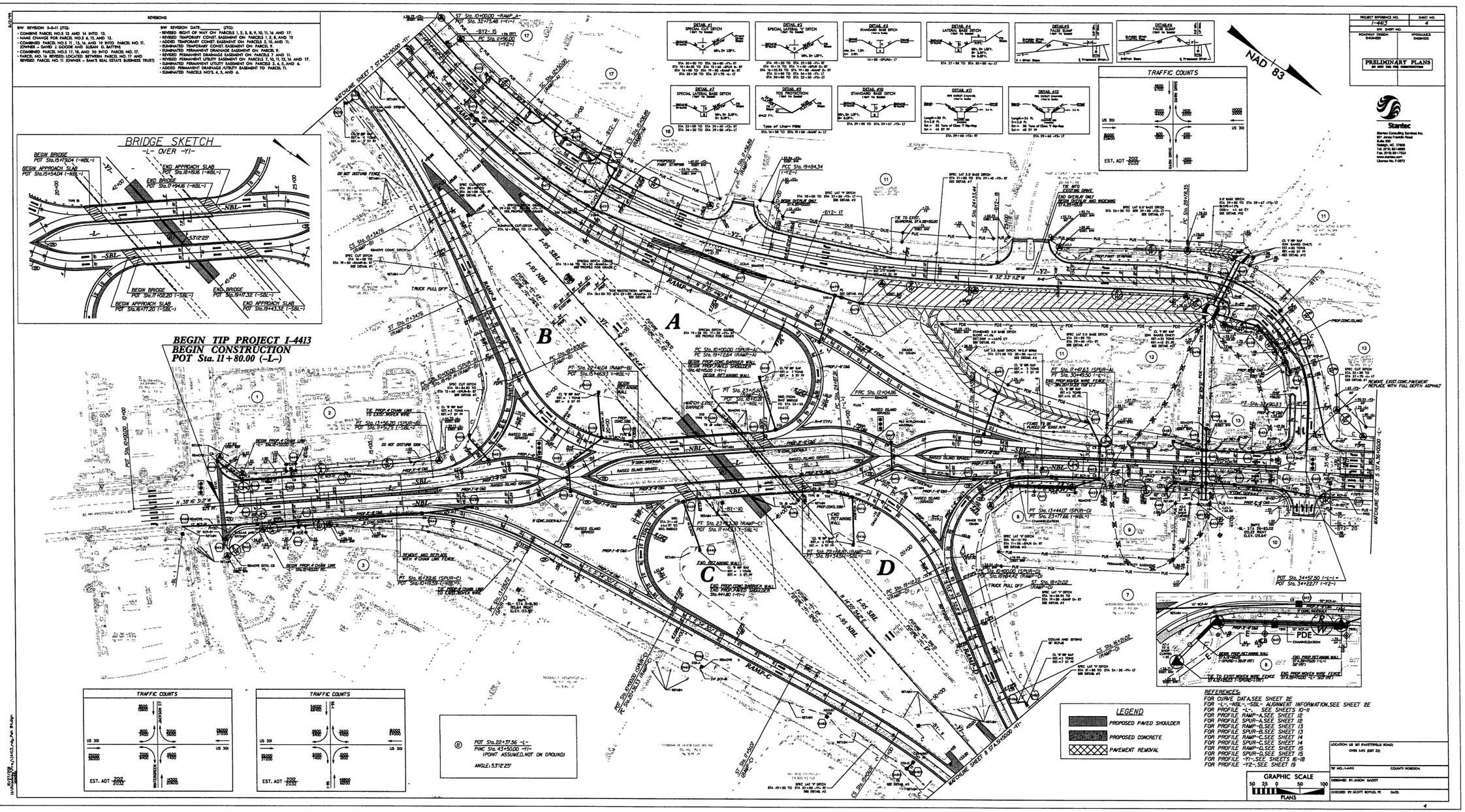


PROPOSED CONTOURS
-US 301- / -I-95-
INTERCHANGE



REFERENCES:
FOR CURVE DATA, SEE SHEET 2E
FOR -L-, -NBL-, -SBL- ALIGNMENT INFORMATION, SEE SHEET 2E
FOR PROFILE -L-, SEE SHEETS 10-11
FOR PROFILE RAMP-A, SEE SHEET 12
FOR PROFILE SPUR-A, SEE SHEET 12
FOR PROFILE RAMP-B, SEE SHEET 13
FOR PROFILE SPUR-B, SEE SHEET 13
FOR PROFILE RAMP-C, SEE SHEET 14
FOR PROFILE SPUR-C, SEE SHEET 14
FOR PROFILE RAMP-D, SEE SHEET 15
FOR PROFILE SPUR-D, SEE SHEET 15
FOR PROFILE -Y1-, SEE SHEETS 16-18
FOR PROFILE -Y2-, SEE SHEET 19

LOCATION: US 301 (FAYETTEVILLE ROAD)
OVER I-95 (EXIT 22)
TIP NO.: I-4413 COUNTY: ROBESON
DESIGNED BY: JASON GADDY
CHECKED BY: SCOTT BOYLES, PE DATE:

PROJECT REFERENCE NO.	SHEET NO.
I-4413	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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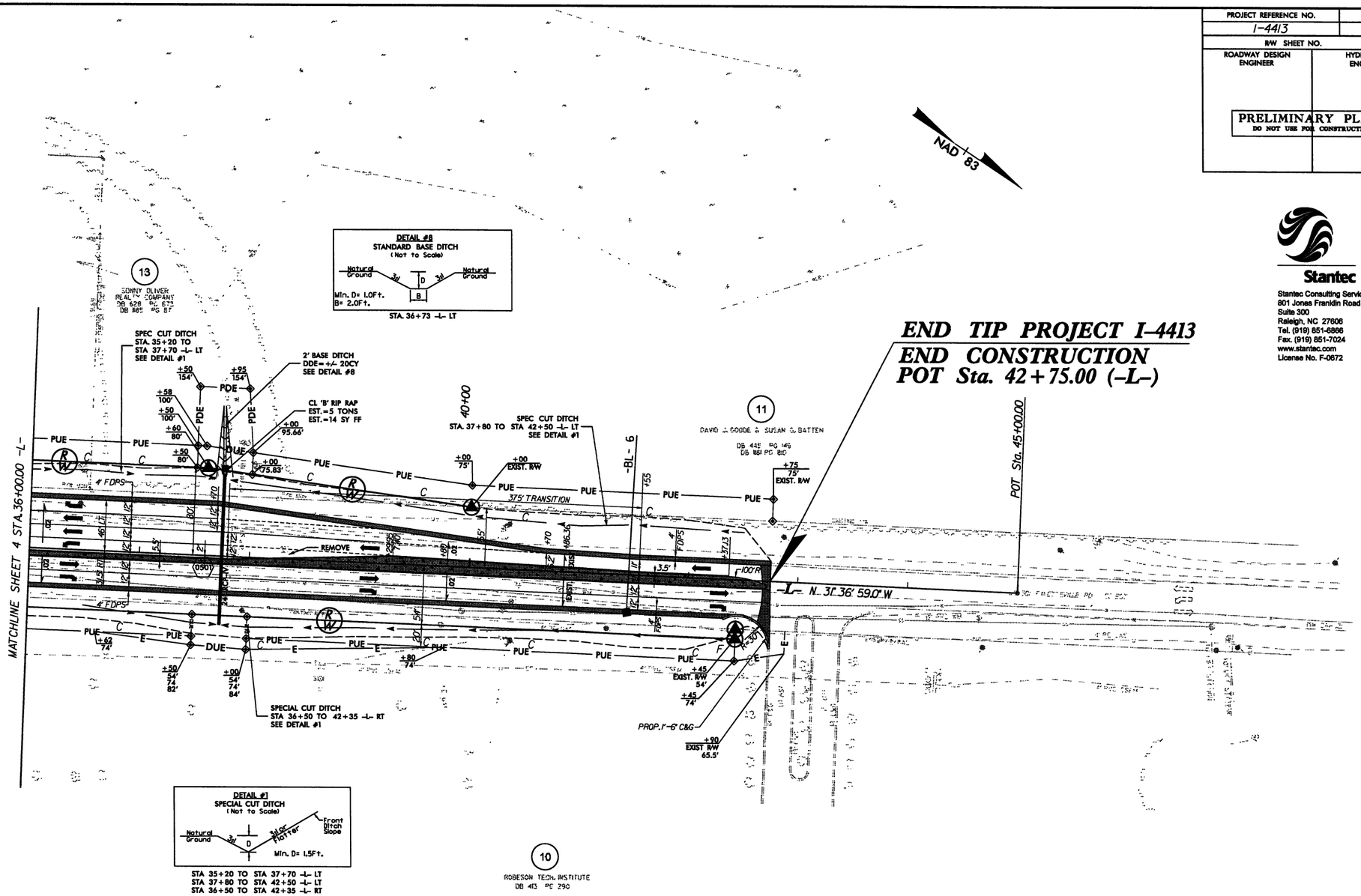

LEGEND

PROPOSED PAVED SHOULDER

PROPOSED CONCRETE

REFERENCES:
FOR PROFILE -L-, SEE SHEET 11

REVISIONS

R/W REVISION 5-5-11 (JTG):
- COMBINE PARCEL NO.S 13 AND 14 INTO 13.
- CHANGE NAME FOR PARCEL NO 13.
- COMBINED PARCEL NO.S 11, 15, 16, AND 19 INTO PARCEL NO. 11. (OWNER - DAVID J. GOODE AND SUSAN G. BATTEN)
- MODIFIED PDE ON PARCEL 13 TO AVOID REVISED PROPERTY LINE.

R/W REVISION DATE: (JTG):
- REVISED RIGHT OF WAY, PERMANENT UTILITY EASEMENT, AND ADDED TEMPORARY CONSTRUCTION EASEMENT.

8/17/99

10/27/2011
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landdu

PROJECT REFERENCE NO.	SHEET NO.
I-4413	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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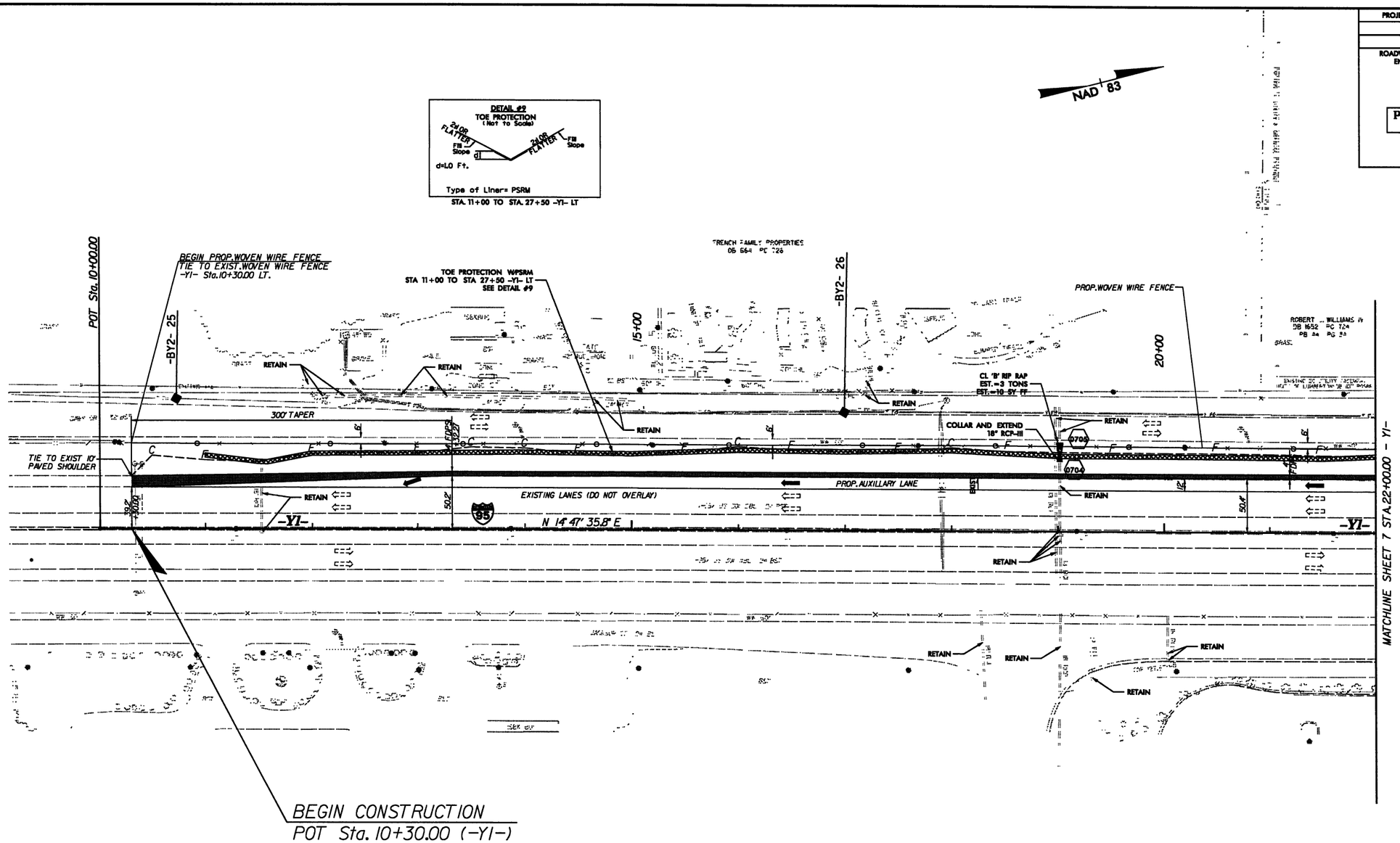

LEGEND

PROPOSED PAVED SHOULDER

REFERENCES:
FOR PROFILE -Y1-, SEE SHEET 16

REVISIONS

8/17/99

10/27/2011
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jgaddy

PROJECT REFERENCE NO.	SHEET NO.
I-4413	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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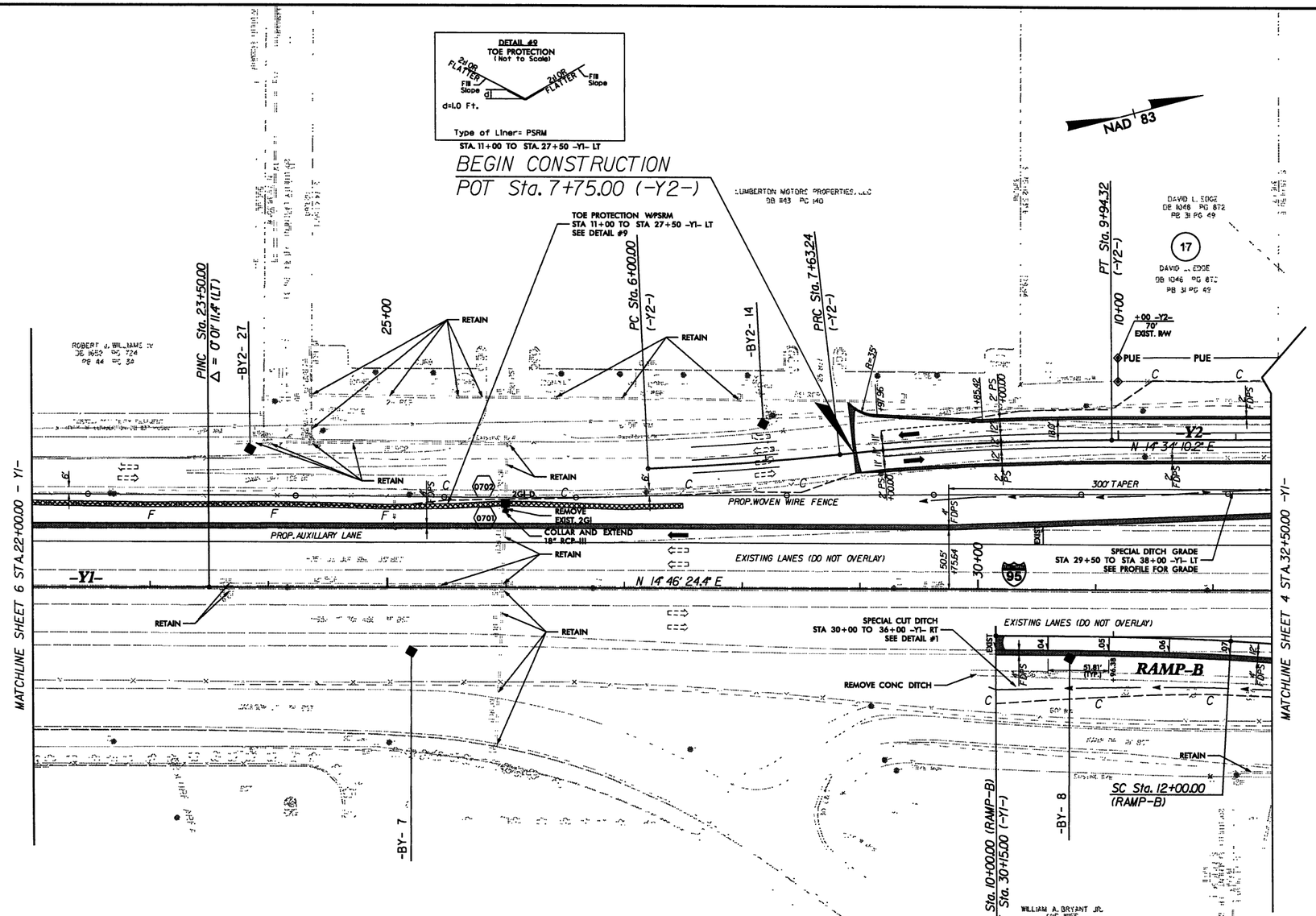
REVISIONS

R/W REVISION DATE: _____ (JTG):
• REVISED PERMANENT UTILITY EASEMENT ON PARCEL 17.

R/W REVISION 5-5-11 (JTG):
• COMBINED PARCEL NO.S 17, 18, AND 20 INTO PARCEL NO. 17.
• REVISED -PUE- TO AVOID BILLBOARD ON REVISED PARCEL NO. 17



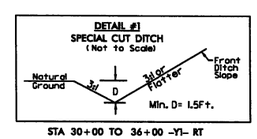
-Y2-
PI Sta 6+81.65
Δ = 3° 56' 17.3" (LT)
D = 2° 24' 44.8"
L = 163.24'
T = 81.65'
R = 2,375.00'
e = EXIST.

-Y2-
PI Sta 8+78.89
Δ = 6° 13' 49.5" (RT)
D = 2° 41' 46.6"
L = 231.08'
T = 115.65'
R = 2,125.00'
e = EXIST.

-Y1-
PINC Sta. 23+50.00
Δ = 0° 01' 11.4" (LT)
NO CURVE

RAMP-B
PIs Sta 11+33.35
Θs = 3° 08' 53.2"
Ls = 200.00'
LT = 133.35'
ST = 66.69'

RAMP-B
PI Sta 13+67.85
Δ = 10° 32' 19.2" (RT)
D = 3° 08' 53.2"
L = 334.76'
T = 167.85'
R = 1,820.00'
e = .07
DS = 60 MPH



STA 30+00 TO 36+00 -Y1- RT

LEGEND

PROPOSED PAVED SHOULDER

REFERENCES:
FOR PROFILE -Y1-, SEE SHEET 16
FOR PROFILE -Y2-, SEE SHEET 19
FOR PROFILE RAMP-B, SEE SHEET 13

10/27/2011
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PROJECT REFERENCE NO.	SHEET NO.
I-4413	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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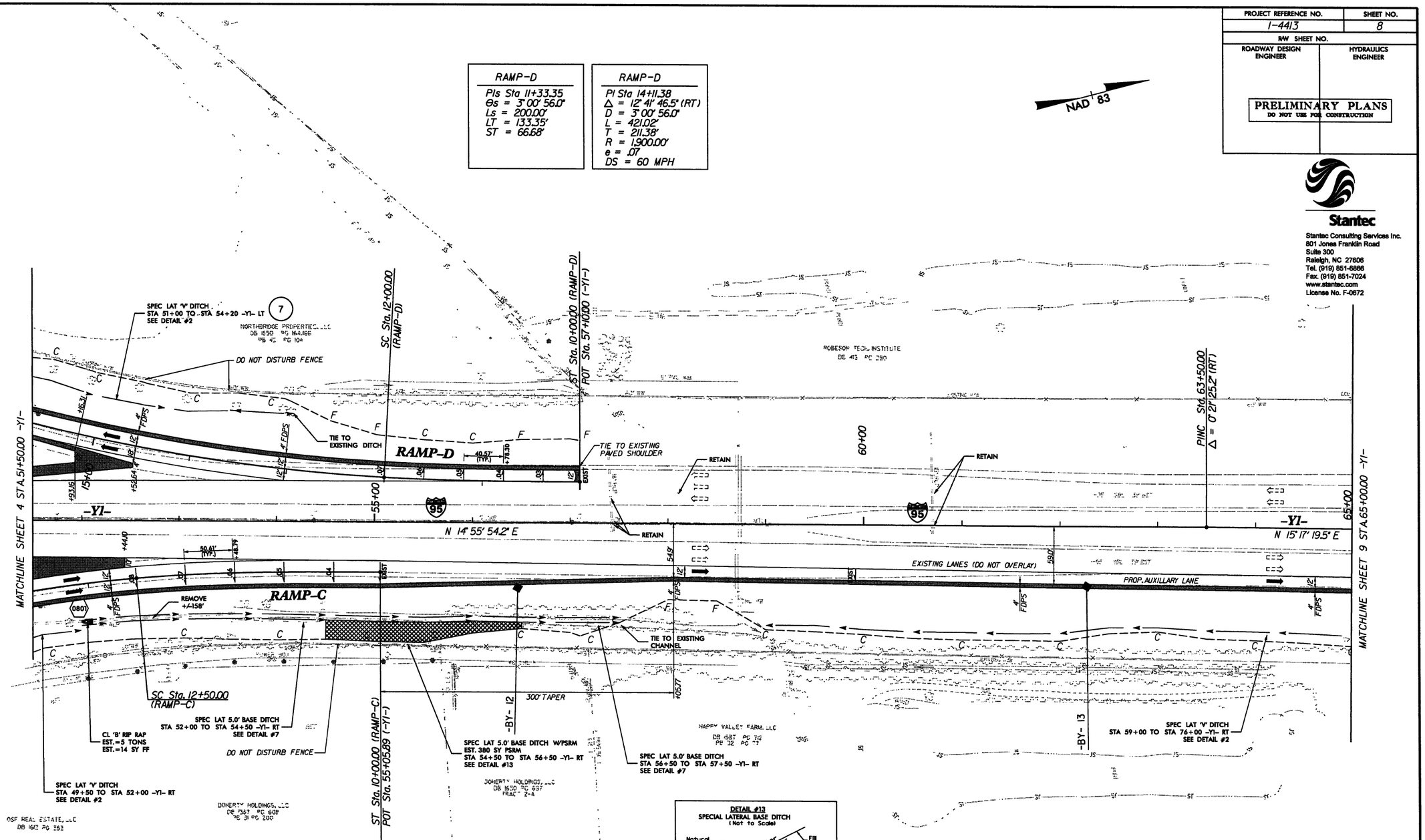
NAD 83

RAMP-D
PIs Sta 11+33.35
θs = 3° 00' 56.0"
Ls = 200.00'
LT = 133.35'
ST = 66.68'

RAMP-D
PI Sta 14+11.38
Δ = 12° 41' 46.5" (RT)
D = 3° 00' 56.0"
L = 421.02'
T = 211.38'
R = 1,900.00'
e = .07
DS = 60 MPH



RAMP-C
PIs Sta 11+66.74
θs = 5° 06' 56.5"
Ls = 250.00'
LT = 166.74'
ST = 83.40'

RAMP-C
PI Sta 13+75.87
Δ = 10° 16' 31.4" (LT)
D = 4° 05' 33.2"
L = 251.07'
T = 125.87'
R = 1,400.00'
e = .08
DS = 60 MPH

-Y1-
PINC Sta. 63+50.00
Δ = 0° 21' 25.2" (RT)
NO CURVE

LEGEND

PROPOSED PAVED SHOULDER

REFERENCES:
FOR PROFILE RAMP-C, SEE SHEET 14
FOR PROFILE RAMP-D, SEE SHEET 15
FOR PROFILE -Y1-, SEE SHEETS 17 AND 18

REVISIONS

R/W REVISION 5-5-11 (JTG):
• NAME CHANGE FOR PARCEL NO. 6.

R/W REVISION DATE: (JTG):
• ELIMIANTED PARCELS NO'S 6, AND 22.
• ELIMIANTED PERMANENT UTILITY EASEMENT FROM PARCEL 7.

8/17/99

10/21/2011
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PROJECT REFERENCE NO.	SHEET NO.
I-4413	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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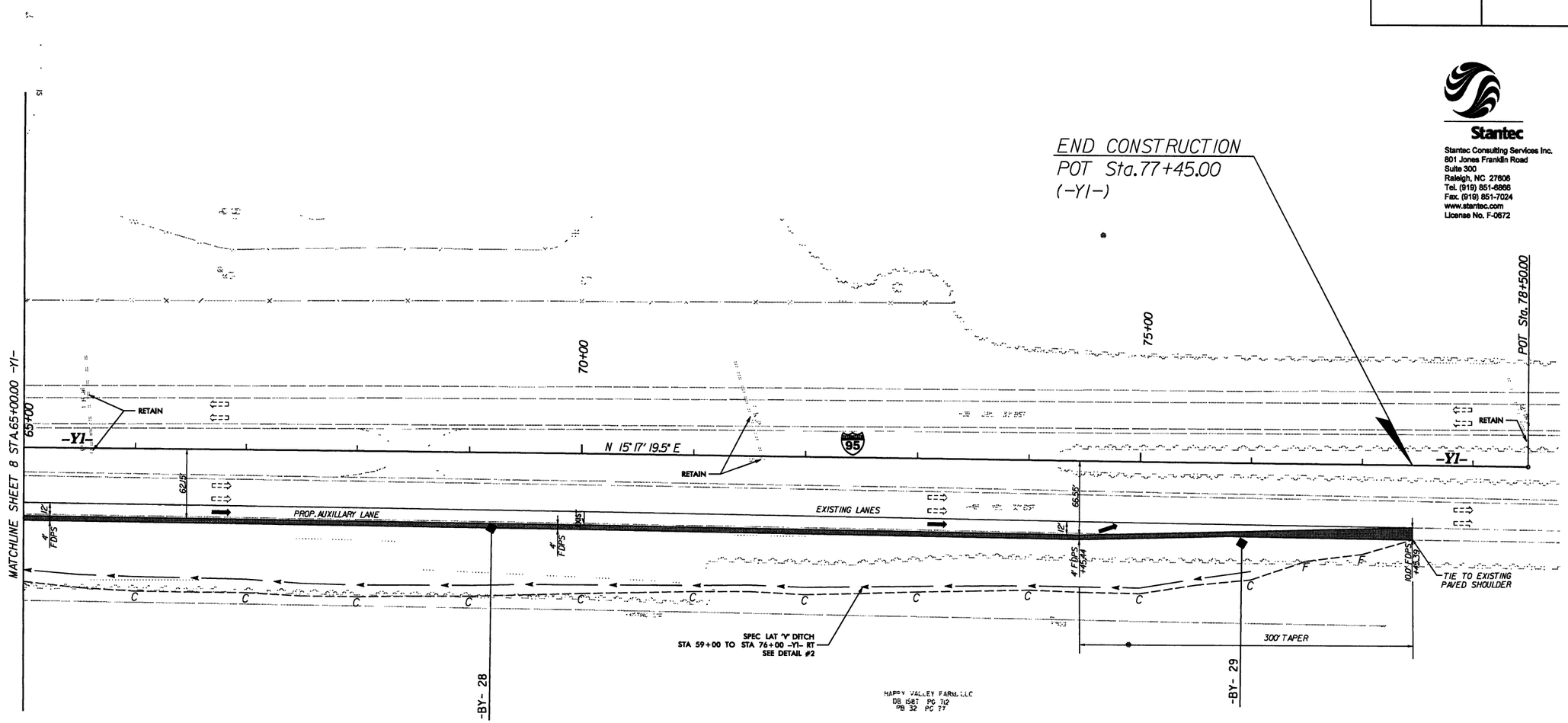

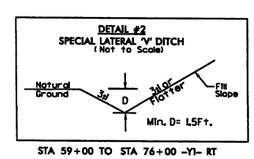

STA 59+00 TO STA 76+00 -Y1- RT

LEGEND

PROPOSED PAVED SHOULDER

REFERENCES:
FOR PROFILE -Y1-, SEE SHEET 18

8/17/99

10/27/2011
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lgaddy

5/28/9

PROJECT REFERENCE NO.	SHEET NO.
I-4413	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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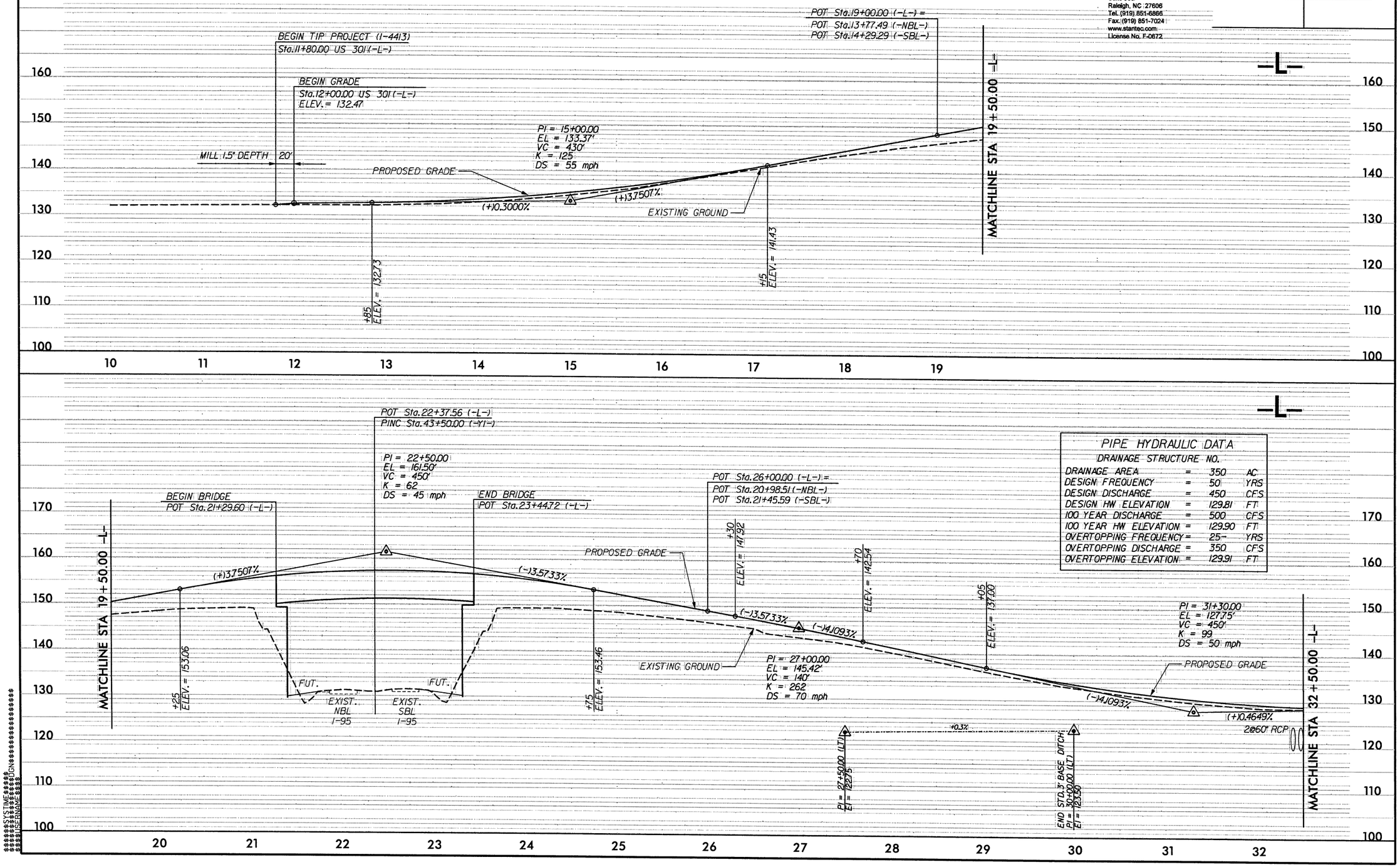
BM #1
RR SPIKE IN BASE OF 15" OAK
227.0' RT. OF -L- STA. 17+87.00
ELEV. = 133.92'



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	=	350	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	450	CFS
DESIGN HW ELEVATION	=	129.81	FT
100 YEAR DISCHARGE	=	500	CFS
100 YEAR HW ELEVATION	=	129.90	FT
OVERTOPPING FREQUENCY	=	25+	YRS
OVERTOPPING DISCHARGE	=	350	CFS
OVERTOPPING ELEVATION	=	129.91	FT

$SYSTIME$$$

5/28/9

PROJECT REFERENCE NO.	SHEET NO.
I-4413	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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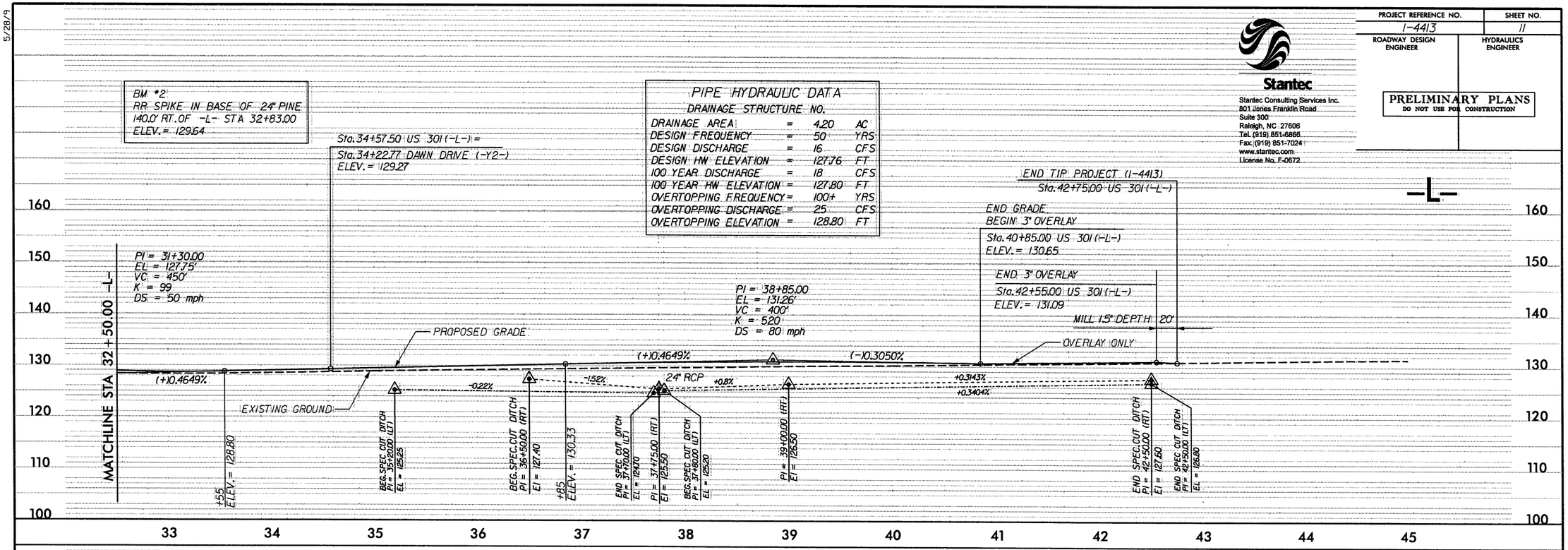
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



$$$$$SYSTIME$$$$$
$$$$$FILENAME$$$$$DGN$$$$$

5/28/9

PROJECT REFERENCE NO.	SHEET NO.
I-4413	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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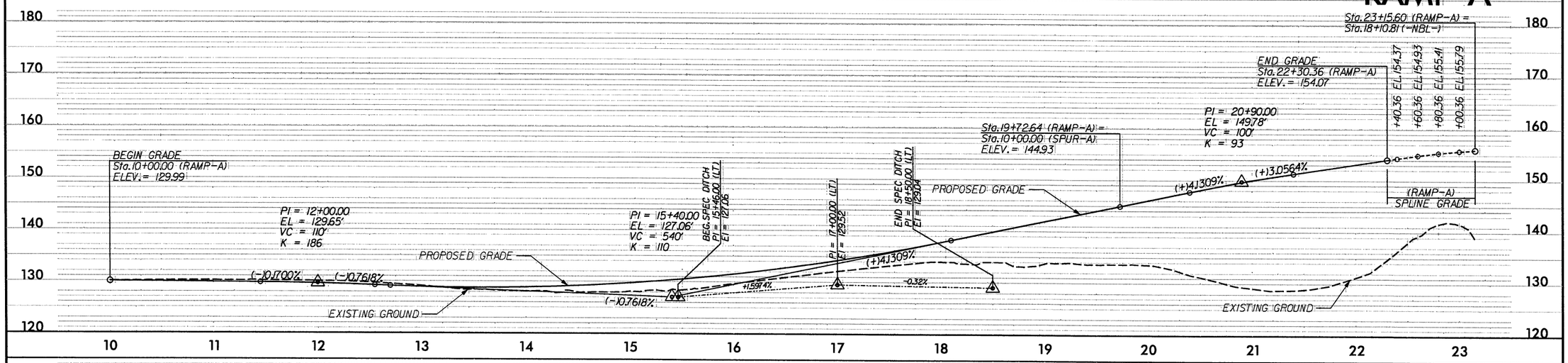
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

RAMP-A



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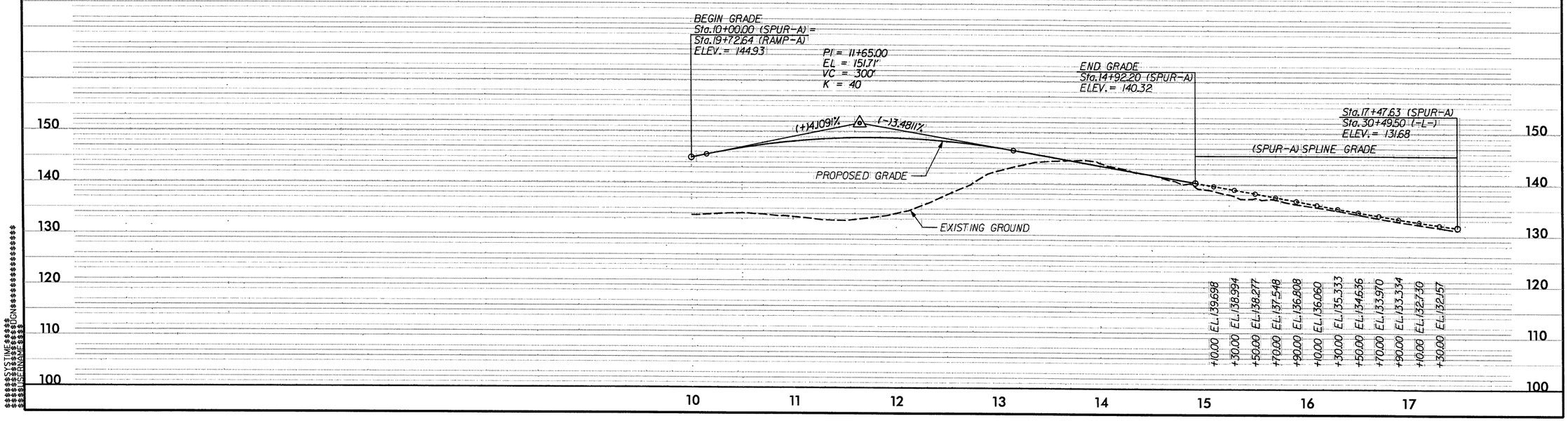

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$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
$$$$$$FILENAME$$$$$$

5/28/9

PROJECT REFERENCE NO.	SHEET NO.
I-4413	13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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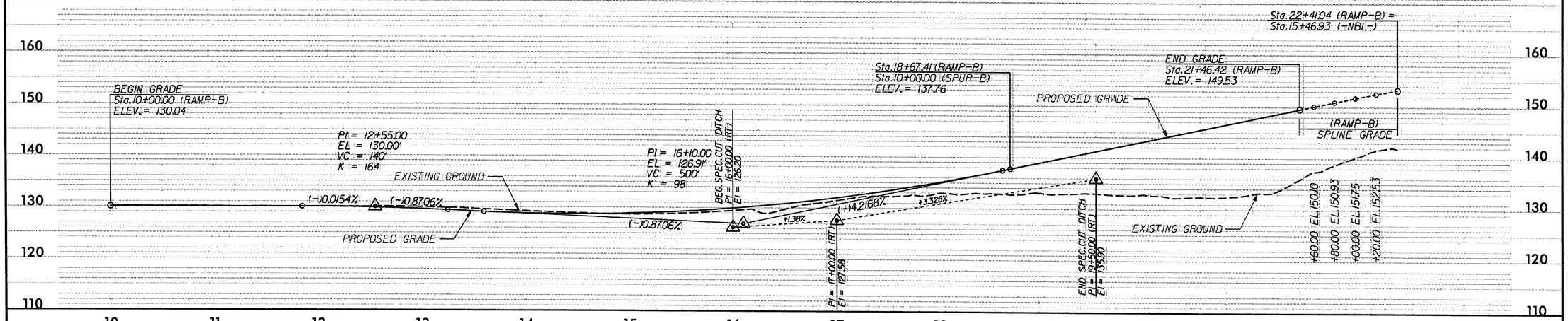
RAMP–B



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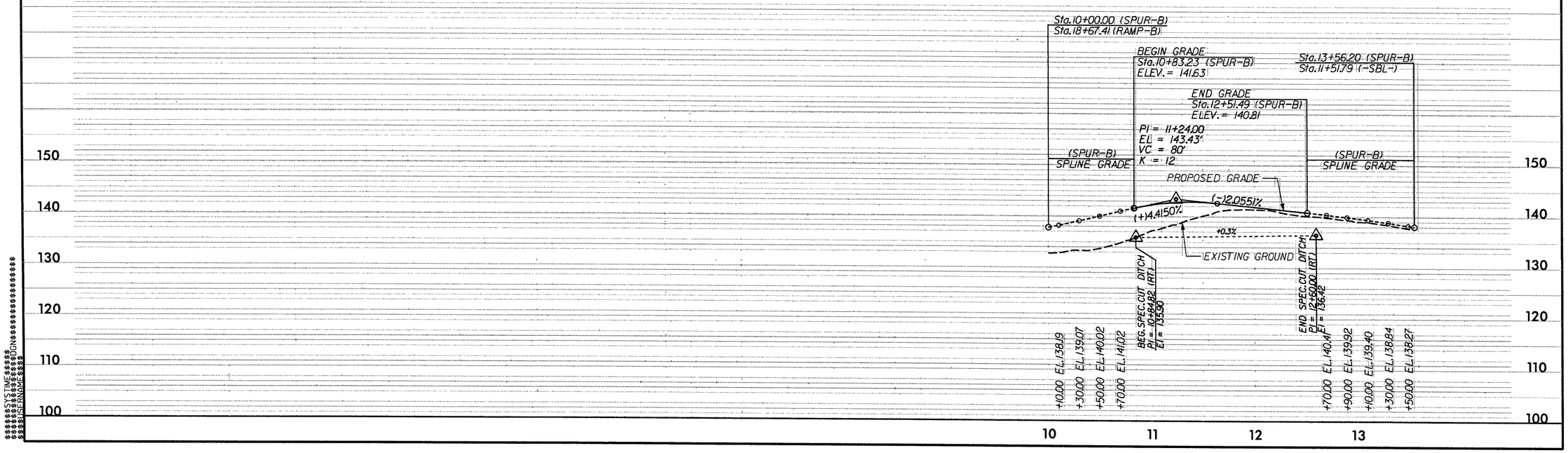

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PROJECT REFERENCE NO.	SHEET NO.
I-4413	14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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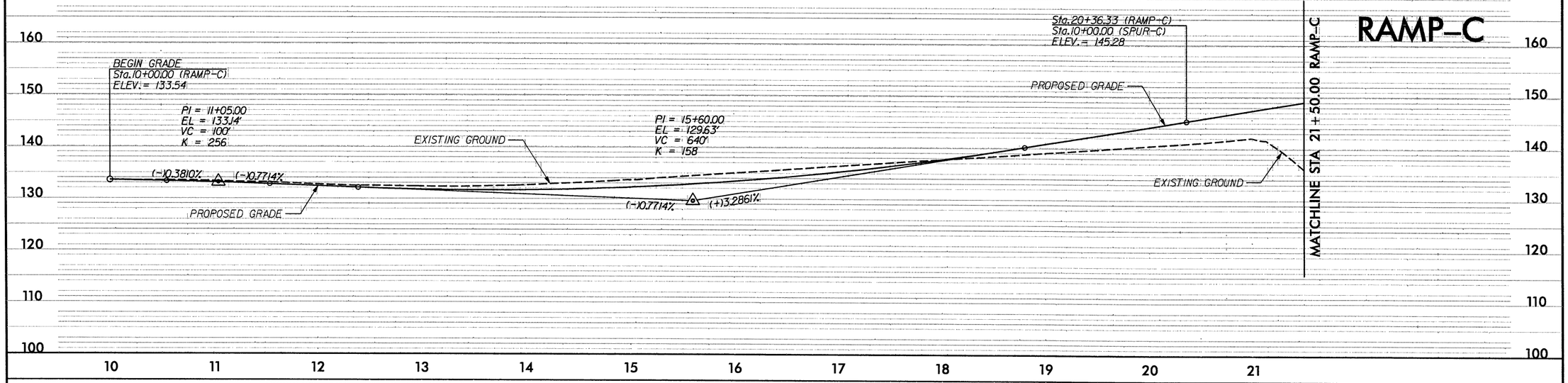
RAMP-C



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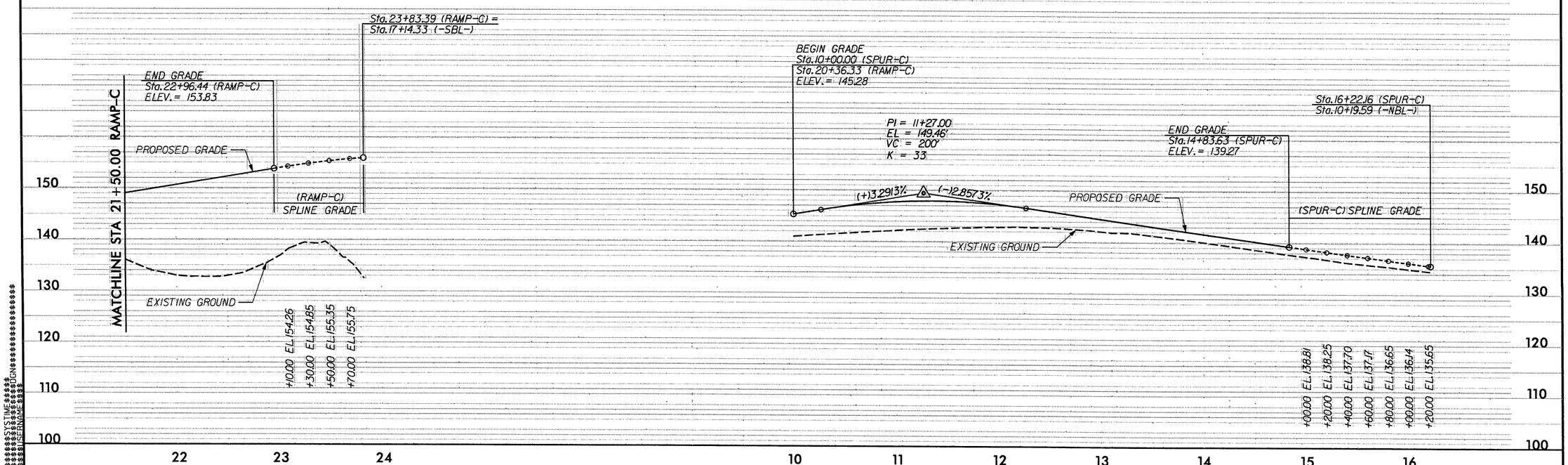

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PROJECT REFERENCE NO.	SHEET NO.
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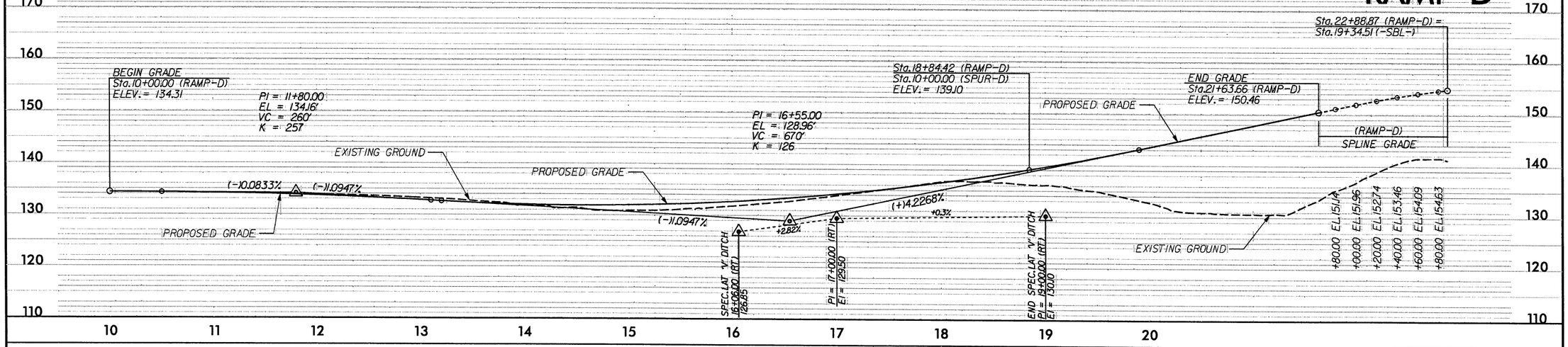
RAMP-D



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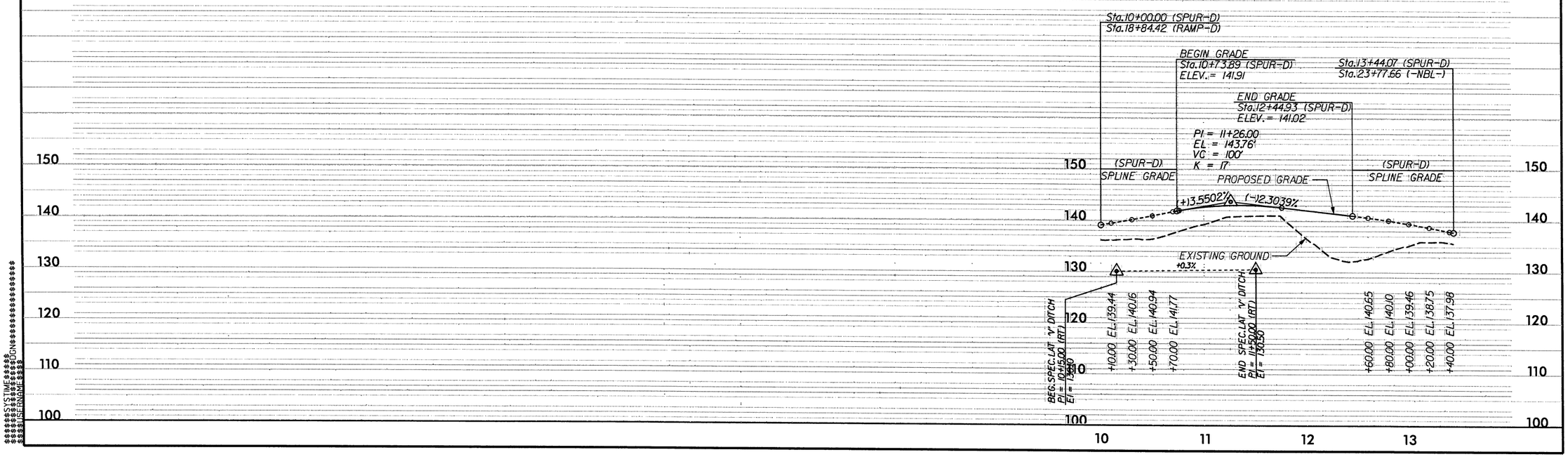

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PROJECT REFERENCE NO.	SHEET NO.
I-4413	16
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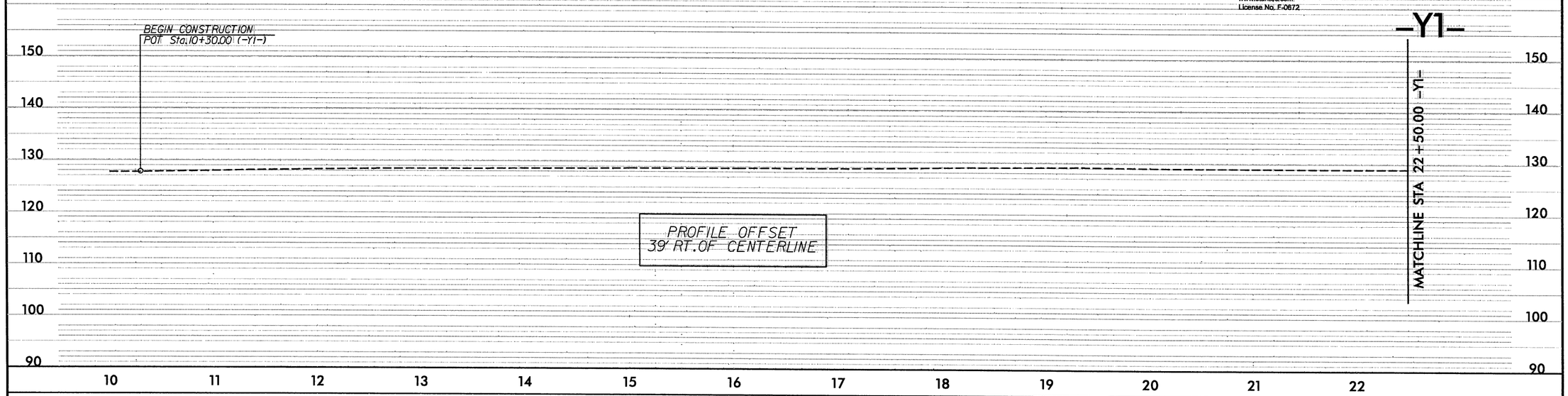

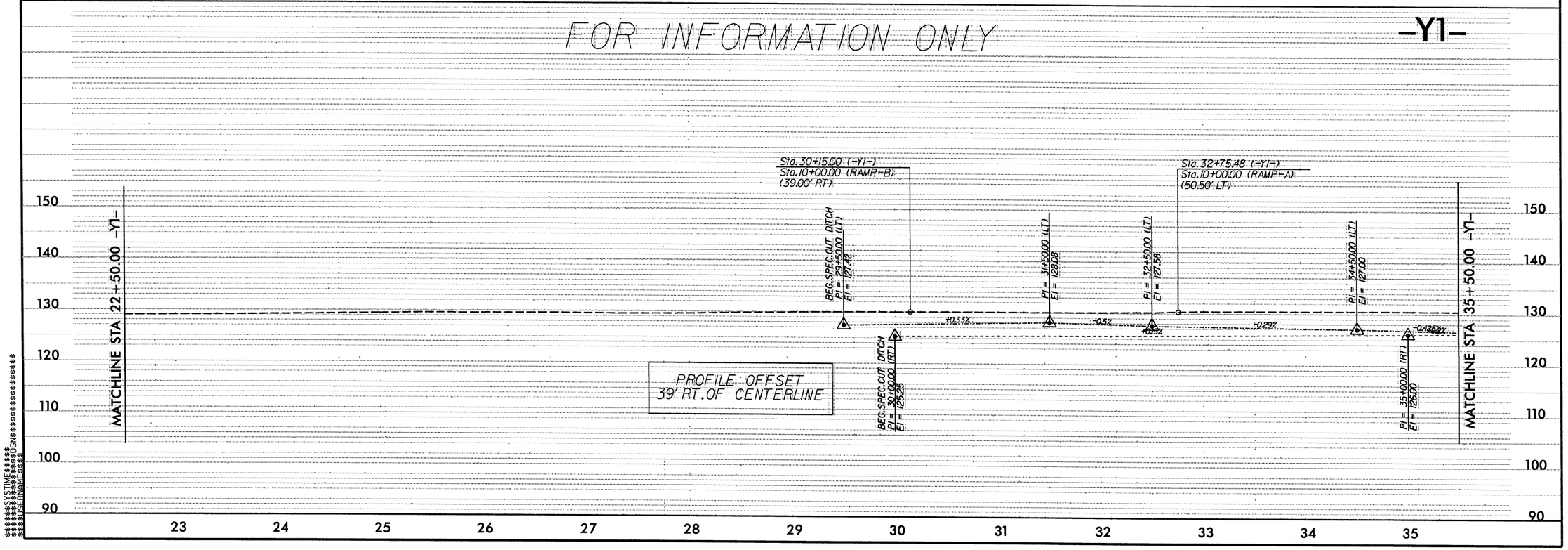

$$$$$SYSTIME$$$$$
$$$$$USERNAME$$$$$DGN$$$$$

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PROJECT REFERENCE NO.	SHEET NO.
I-4413	17
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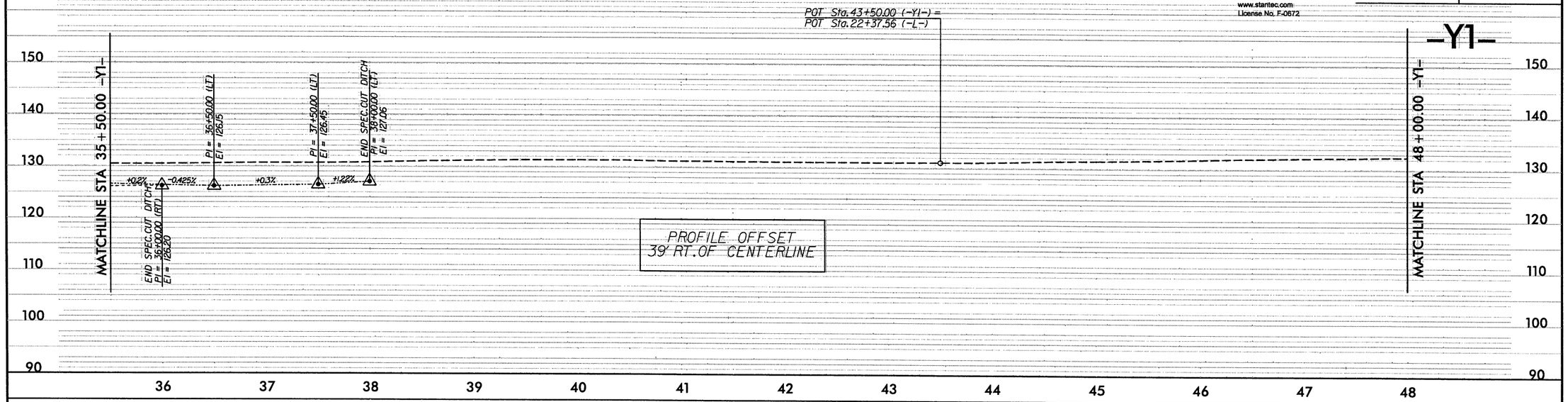

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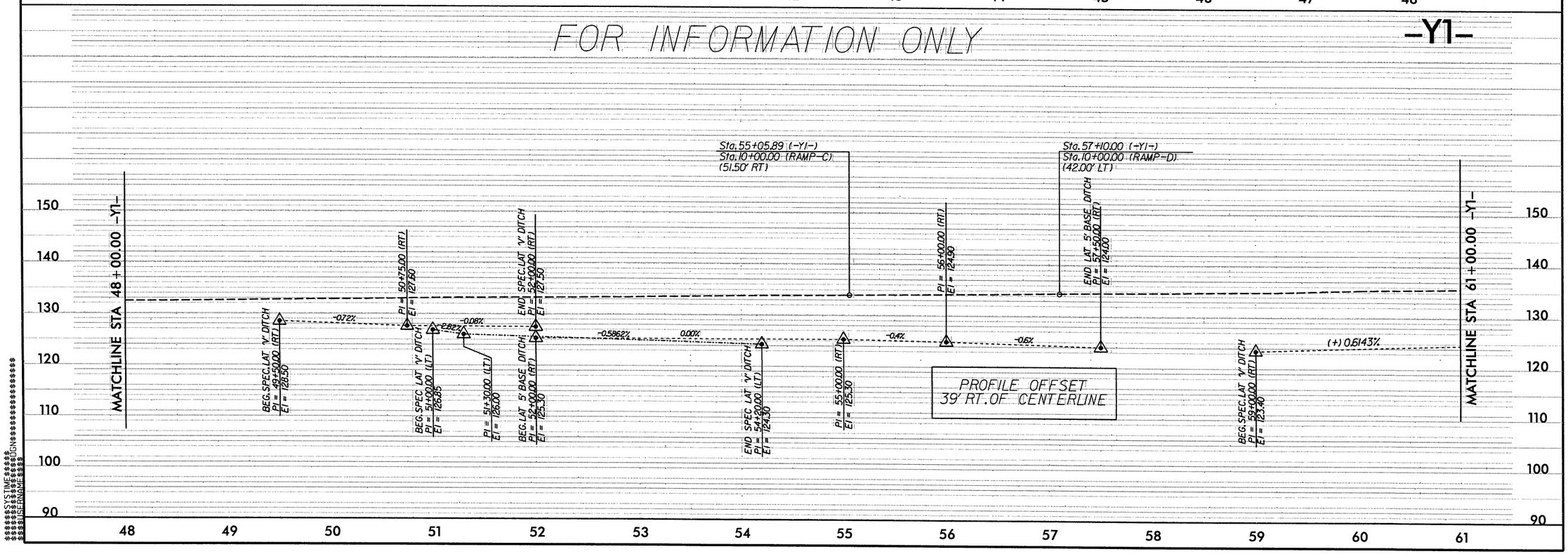

$$$$$$$SYSTIME$$$$$$$
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PROJECT REFERENCE NO.	SHEET NO.
I-4413	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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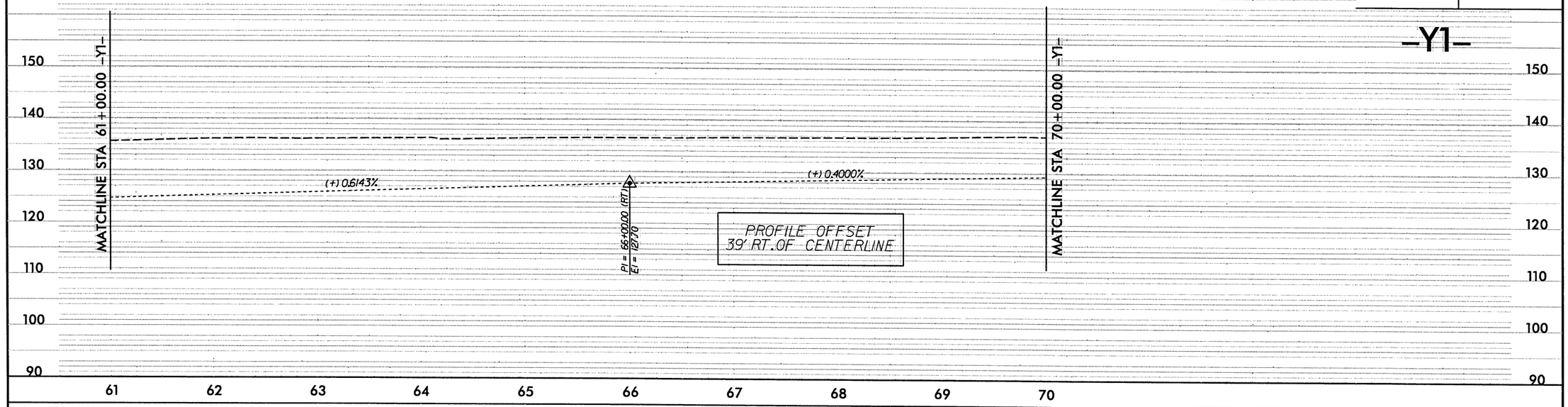
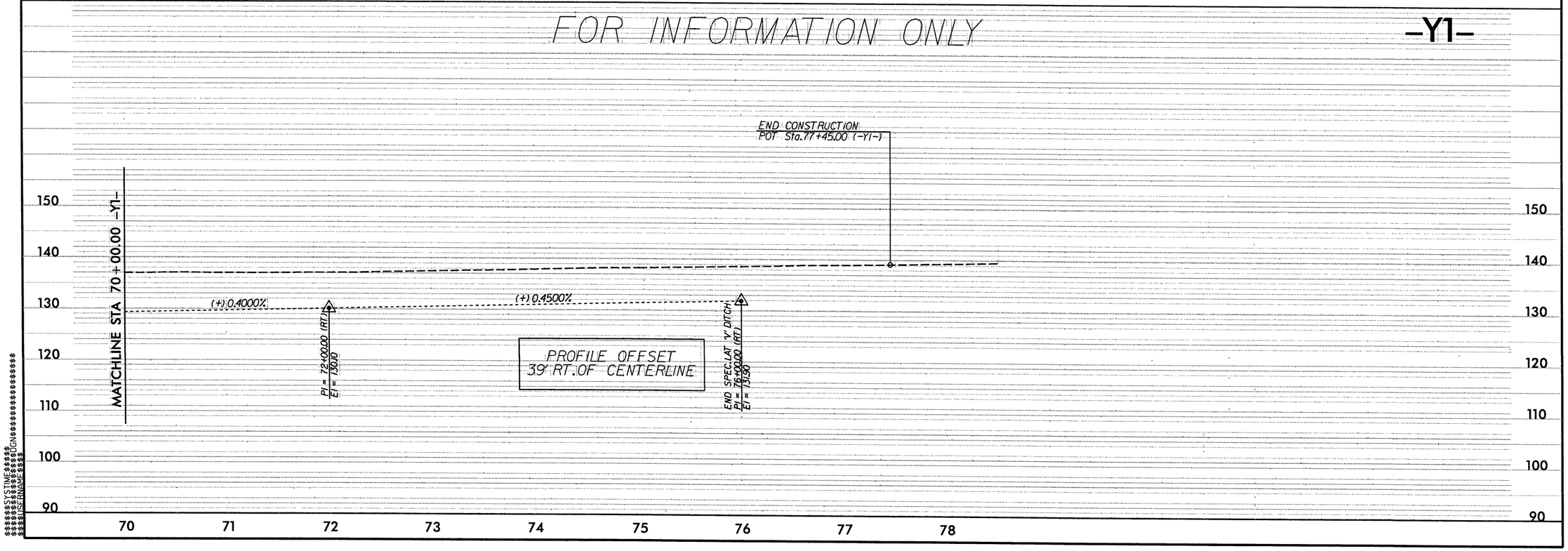


FOR INFORMATION ONLY



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

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PROJECT REFERENCE NO.	SHEET NO.
I-4413	19
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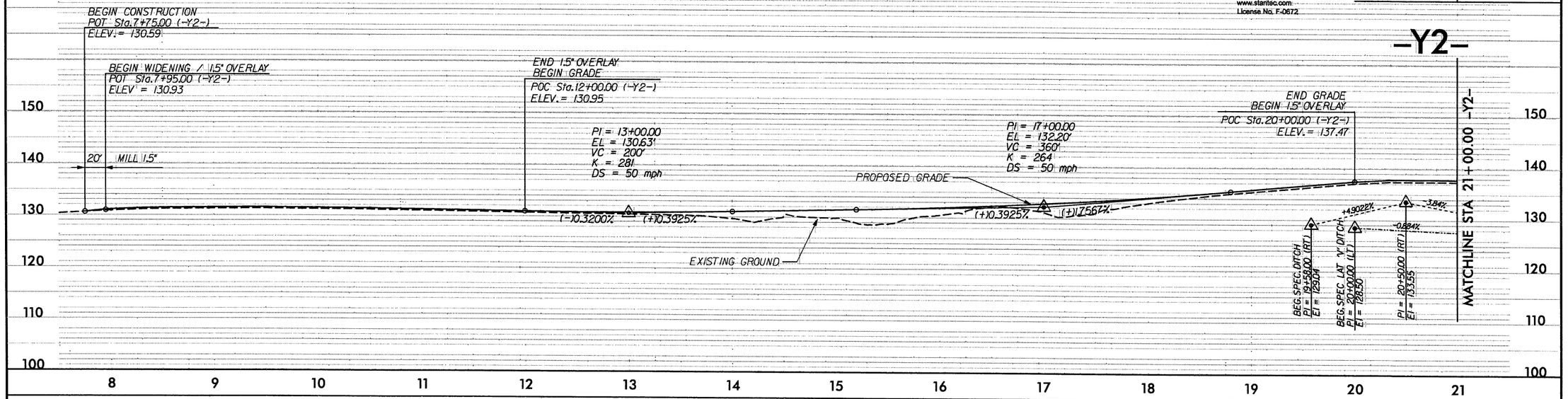
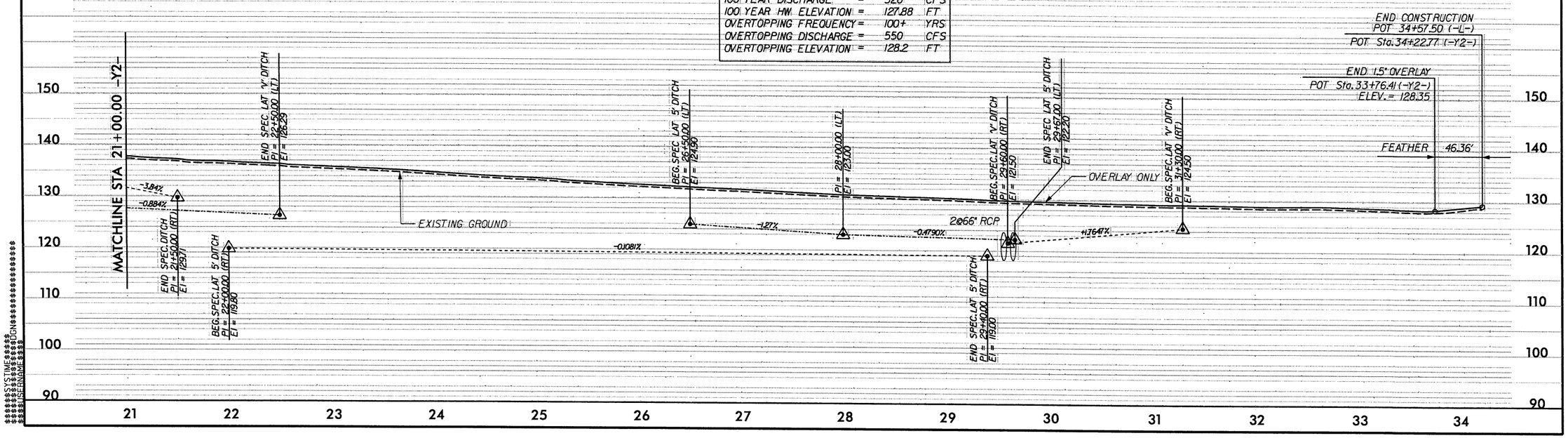


PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	=	370	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	400	CFS
DESIGN HW ELEVATION	=	126.57	FT
100 YEAR DISCHARGE	=	520	CFS
100 YEAR HW ELEVATION	=	127.88	FT
OVERTOPPING FREQUENCY	=	100+	YRS
OVERTOPPING DISCHARGE	=	550	CFS
OVERTOPPING ELEVATION	=	128.2	FT