STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

June 24, 2015

Wilmington Regulatory Field Office
US Army Corps of Engineers
69 Darlington Ave.
Wilmington, North Carolina 28403

ATTN: Ms. Liz Hair
NCDOT Coordinator

Dear Madam:

Subject:

Application for Section 404 Individual Permit and Section 401 Water Quality Certification for the proposed replacement of Bridge No. 116 on NC 24-210 (Rowan St.) over CSX, Norfolk Southern Railroads, and Hillsboro St., and existing Culvert (No. C258) with Intersection Improvements over Cross Creek in Cumberland County. Federal Aid Project No. BRNHS-0024(24), TIP No. B-4490. Debit $570.00 from WBS 33727.1.1.

The North Carolina Department of Transportation (NCDOT), Division of Highways, in consultation with the Federal Highway Administration (FHWA), proposes to replace Bridge Number 116, on NC 24-210 (Rowan Street) over the CSX Railroad, Norfolk Southern Railroad and Hillsboro Street in downtown Fayetteville.

The purpose of this letter is to request approval for a Section 404 Individual Permit and Section 401 Water Quality Certification. In addition to the cover letter, this application package includes the following for B-4490: ENG Form 4345, stormwater management plan, permit drawings, roadway plans, and DMS acceptance letter.

1.0 Purpose and Need

The purpose for this project, as identified in the Environmental Assessment (EA), is to replace Bridge Number 116 on NC 24-210 (Rowan Street) and to relocate existing Rowan Street in support of the Fayetteville Northwest Gateway Plan and the proposed North Carolina Veterans Park. The proposed project is intended to address the following needs:

- NCDOT Bridge Maintenance Unit records indicate Bridge Number 116 has a sufficiency rating of 7 out of a possible 100. The bridge is considered structurally deficient and therefore eligible

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:
CENTURY CENTER, BUILDING B
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610

for FHWA's Highway Bridge Replacement and Rehabilitation Program.

- Without reconfiguring the intersections of NC 24 (Rowan Street), Bragg Boulevard, NC 210 (Murchison Road) and West Rowan Street the level of service is expected to range from E to F in the design year (2030).

- In 2007, the City of Fayetteville approved the Northwest Gateway downtown redevelopment plan. Portions of existing NC 24-210 (Rowan Street) right of way is within the proposed limits of the North Carolina Veterans Park. Relocating the bridge to the north and reconfiguring the existing intersections would allow this right of way to be reused for the park.

2.0 Project Description

The project involves replacing existing Bridge Number 116 on NC 24-210 (Rowan Street) to the north of its current location and reconfiguring the intersections of SR 3147 (West Rowan Street) with NC 24/SR 3828 (Bragg Boulevard), and NC 210 (Murchison Road) with SR 3147 (West Rowan Street) at NC 24-210 (Rowan Street) into a single, signalized intersection.

3.0 Summary of Impacts

Waters of the U.S.: Proposed permanent impacts to jurisdictional areas total 857 feet (85 feet of the 857 is from bank stabilization) of permanent stream impacts.

4.0 Summary of Mitigation

The proposed construction of B-4490 will impact 772 feet of permanent stream impacts that will require mitigation from the USACE. See attached DMS acceptance letter for additional information.

5.0 Project Schedule

Currently, B-4490 has a review date of October 27, 2015 and is scheduled to let December 15, 2015; it will be available for construction shortly thereafter. The let date, however, may advance as additional funds become available.

6.0 NEPA Document Status

The FHWA and NCDOT completed the EA November 22, 2011 in compliance with the NEPA guidelines. The EA explains the purpose and need for the project, provides a description of the alternatives considered, and characterizes the social, economic, and environmental effects. Following the EA the Finding of No Significant Impact (FONSI) was completed by the FHWA and NCDOT on December 19, 2012. The EA and FONSI were approved and circulated to federal, state, and local agencies. This document is posted on the NCDOT website at https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx, under *Quick Links > Environmental Documents*.

6.1 Independent Utility

B-4490 is in compliance with 23 CFR Part 771.111(f) which lists the FHWA characteristics of the independent utility of a project. The project meets the criteria for independent utility as discussed below:

- The project has logical termini and independent utility and is of sufficient length to address environmental matters on a broad scope;
- The project is usable and a reasonable expenditure of funds, even if no additional transportation improvements are made in the area; and
- The project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

7.0 Resource Status

The project is located in the Cape Fear River basin and lies within Hydrologic Unit 03030004 (Subbasin 03-06-15). This project lies in the southeastern portion of North Carolina within the coastal plain physiographic province. The project crosses Cross Creek. Wetland and stream delineations were completed September 30, 2009. Jurisdictional areas within the project study area were field reviewed by the USACE (Ronnie Smith) on September 16, 2010, and a preliminary jurisdictional determination was given on September 20, 2010.

7.1 Wetland Delineations

A wetland identification and preliminary assessment analysis for the study area was performed and summarized in the 2009 Natural Resources Technical Report (NRTR). The wetland within the study area was delineated based on the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and a preliminary design was prepared to avoid and minimize wetlands to the maximum extent possible.

7.2 Stream Delineations

The stream channels within the project study area were identified, evaluated, and classified using the NCDWQ stream identification form and the Cowardin classification system. Water quality information for the streams within the project study area was derived from available sources provided through the NCDENR.

7.3 B-4490: Characterization of Jurisdictional Sites

7.3.1 Wetlands

There was one wetland type found within the project study area based on the NC Wetland Assessment Method (NC WAM): Small Basin Wetland. More detailed information about this wetland can be found in the EA and NRTR which includes figures showing the wetland within the project area.

7.3.2 Streams

The Best Usage Classification for the Cross Creek and the UT to Cross Creek on the project is "C". Details for the jurisdictional streams within the project area are provided in the EA and NRTR.

There are no waters within the project vicinity classified as High Quality Waters (HQW). Neither Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds), nor Outstanding Resource Waters (ORW) occur within 1.0 mile of the project area. Streams within the B-4490 project area are not designated as North Carolina Natural or Scenic Rivers, or as National Wild and Scenic Rivers. Additionally, these waters are not listed on the 2014 303(d) list of impaired waters due to sedimentation or turbidity.

7.4 Impacts to Jurisdictional Resources

No impacts to wetlands are proposed. Proposed impacts to jurisdictional surface waters for B-4490 are summarized below in Table 1.

Table 1. B-4490 Surface Water Impacts

Permit Drawing Site Number	Waterbody Labeled in CE	Permanent (ft)	Permanent (ac.)	Temporary (ft)	Temporary (ac.)	USACE Mitigation Required (2:1)
1	Cross Creek	709	0.40	63	0.08	Yes
1	Cross Creek	85				No
2	UT to Cross Creek	63	<0.01			Yes
	Total:	**857***	**0.40**	**63**	**0.08**	

* Includes 85 linear feet of impacts from bank stabilization at Site 1; mitigation required by the USACE exceeds the amount required by NCDWQ.

Permanent Impacts: Proposed permanent impacts to jurisdictional streams are 857 linear feet.

Temporary Impacts: There will be 63 linear feet of temporary impacts to jurisdictional streams due to culvert installations.

Utility Impacts: There are no jurisdictional impacts resulting from utility relocations on this project.

8.0 Protected Species

The United States Fish and Wildlife Service (USFWS) list seven federally protected species for Cumberland County as of the December 26, 2012 listing (Table 3). A No Effect call was made for all seven species due to lack of habitat.

Table 3. Federally Protected Species in Cumberland County

Common Name	Scientific Name	Federal Status	Habitat	Biological Conclusion
American alligator	*Alligator mississippiensis*	T(S/A)	No	No Effect
Red-cockaded woodpecker	*Picoides borealis*	E	No	No Effect
Saint Francis' satyr butterfly	*Neonympha mitchellii francisci*	E	No	No Effect
American chaffseed	*Schwalbea americana*	E	No	No Effect
Michaux's sumac	*Rhus michauxii*	E	No	No Effect
Pondberry	*Lindera melissifolia*	E	No	No Effect
Rough-leaved loosestrife	*Lysimachia asperulaefolia*	E	No	No Effect

E - Endangered; T(S/A) – Threatened due to similarity of appearance.

The US Fish and Wildlife Service has developed a programmatic biological opinion (PBO) in conjunction with the Federal Highway Administration (FHWA), the US Army Corps of Engineers (USACE), and NCDOT for the northern long-eared bat (NLEB) (*Myotis septentrionalis*) in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. The programmatic determination for NLEB for the NCDOT program is "May Affect, Likely to Adversely Affect". The PBO provides incidental take coverage for NLEB and will ensure compliance with Section 7 of the Endangered Species Act for five years for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Cumberland County, where TIP B-4490 is located.

8.1 Bald and Golden Eagle Protection Act (BGPA)

In the July 9, 2007 Federal Register (72:37346-37372), the bald eagle was declared recovered, and removed (de-listed) from the Federal List of Threatened and Endangered wildlife. This delisting took effect August 8, 2007. After delisting, the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d) became the primary law protecting bald eagles. There is no habitat for the bald eagle, In addition, the NCNHP database (updated January 2015) does not indicate any occurrences of bald eagle within 1.0 mile of the study area.

8.2 Moratoria

No in-water work moratoria have been requested for this project.

9.0 Cultural Resources

The State Historic Preservation Office has reviewed the project for archaeological resources. In a letter dated June 17, 2008, the State Historic Preservation Office stated that no known archaeological sites exist within the project study area and recommended no archaeological survey be conducted for the project. A copy of the State Historic Preservation Office's letter is included in Appendix A of the EA.

Four historic properties or districts within the study area are eligible for or listed on the National Register of Historic Places. The proposed project will require the use of land from one eligible district, the Orange, Chatham, and Moore Streets Historic District.

The State Historic Preservation Office concurred the proposed project will have "no adverse effect" on the historic district.

10.0 FEMA Compliance

The project has been coordinated with appropriate state and local officials and the Federal Emergency Management Agency (FEMA) to assure compliance with FEMA, state, and local floodway regulations.

11.0 Mitigation Options

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during the planning and NEPA compliance stages; minimization measures were incorporated as part of the project design.

11.1 Avoidance and Minimization

All jurisdictional features were delineated, field verified and surveyed within the corridor for B-4490. Using these surveyed features, preliminary designs were adjusted to avoid and/or minimize impacts to jurisdictional areas. NCDOT employs many strategies to avoid and minimize impacts to jurisdictional areas in all of its designs. Many of these strategies have been incorporated into BMP documents that have been reviewed and approved by the resource agencies and which will be followed throughout construction. All wetland areas not affected by the project will be protected from unnecessary encroachment. Individual avoidance and minimization items are as follows:

- Best Management Practices for Construction and Maintenance Activities will be adhered to.
- No staging of construction equipment or storage of construction supplies will be allowed in wetlands or near surface waters.
- NCDOT and its contractors will not excavate, fill, or perform land clearing activities within Waters of the U.S. or any areas under the jurisdiction of the USACE, except as authorized by the USACE. To ensure that all borrow and waste activities occur on high ground, except as authorized by permit, the NCDOT shall require its contractors to identify all areas to be used to borrow material, or to dispose of dredged, fill or waste material. Documentation of the location and characteristics of all borrow and disposal sites associated with the project will be available to the USACE on request.
- Proposed culverts will be buried 1 ft. to provide for fish passage.
- Special Sediment Control Fence will be used were applicable.
- Bank stabilization at outlets of culverts will not impact the stream bed.

- The backfill for the culverts will native material.
- The backfill in the culverts will be smoothed flat to allow for easier passage by wildlife.
- The existing culvert near the outlet of the proposed culvert will be removed resulting in 90 linear feet of stream being day-lighted.

11.2 Compensation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The unavoidable impacts to Waters of the U.S. will be offset by compensatory mitigation provided by NCDENR, Division of Mitigation Services.

12.0 Indirect and Cumulative Effects

Based upon the results of the analysis and the Indirect and Cumulative Effects Screening Matrix, there is a low to moderate concern for indirect and cumulative effects as a result of STIP Project B-4490. It seems possible that the proposed project could generate some minor indirect land use effects within the FLUSA, albeit somewhat dependent upon the state of the economy.

The completion of B-4490 is unlikely to create land use impacts that are inconsistent with planning goals within the FLUSA. The proposed STIP Project B-4490 is included in existing local planning documents including; the Draft 2030 Growth Vision Plan, Fayetteville Renaissance Plan, and the Northwest Gateway Plan. When considered with the policies established in these planning initiatives and local ordinances implemented through Fayetteville's UDO, this project is consistent with plans for future commercial development, parkland development, and medium and high-density residential development and will enhance a key entryway into downtown Fayetteville that connects the downtown core to surrounding developable areas as well as community focal points within the FLUSA, including Fort Bragg, FSU, local parks, greenways, and tourist attractions.

Analysis of the State and local development regulations suggests that the policies and regulations currently in place will mitigate the potential impacts of the minor project related development shifts.

Because few indirect impacts are anticipated, the cumulative effect of this project, when considered in the context of other past, present and future actions, and the resulting impact on the notable human and natural features, should be minimal. Therefore, contribution of the project to cumulative impacts resulting from current and planned development patterns is expected to be minimal.

Qualitative analyses of the probable development patterns in the Future Land Use Study Area suggests that STIP Project B-4490 will have little to no effect on future stormwater runoff or water quality in the watersheds encompassed by the project.

No additional indirect and cumulative effects studies are recommended.

13.0 Essential Fish Habitat

The project will not impact any essential fish habitat afforded protection under the Magnuson-Stevens Act of 1996 (16 U.S.C 1801 et seq.).

14.0 Regulatory Approvals

Section 404: Application is hereby made for a USACE Individual 404 Permit as required for the above-described activities.

Section 401: We are requesting a Section 401 Water Quality Certification from NCDWR. We are providing this application to the NCDWR, for their approval. Authorization to debit the $570 Permit Application Fee from WBS Element 33727.1.1 is hereby given.

A copy of this permit application will be posted on the NCDOT Website at https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx, under *Quick Links > Permit Applications*. A copy of the EA and FONSI are also available at the above website address under *Quick Links > Environmental Documents*. Thank you for your assistance with this project. If you have any questions or need additional information, please contact Chris Manley at cdmanley@ncdot.gov or (919) 707-6135.

Sincerely,

for Richard W. Hancock, P.E., Manager
Project Development and Environmental Analysis Unit

cc:

NCDOT Permit Application Standard Distribution List.

U.S. ARMY CORPS OF ENGINEERS

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

OMB APPROVAL NO. 0710-0003
EXPIRES: 28 FEBRUARY 2013

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Richard Middle - W. Last - Hancock, P.E.	First - Middle - Last -
Company - NCDOT-PDEA	Company -
E-mail Address -	E-mail Address -
6. APPLICANT'S ADDRESS:	9. AGENT'S ADDRESS:
Address- 1598 Mail Service Center	Address-
City - Raleigh State - NC Zip - 27699 Country - USA	City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. w/AREA CODE	10. AGENTS PHONE NOs. w/AREA CODE
a. Residence b. Business 919-707-6135 c. Fax	a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____ SIGNATURE OF APPLICANT _____ DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
B-4490

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Cross Creek and its UTs	Address NC 24
15. LOCATION OF PROJECT Latitude: °N 35.060270 Longitude: °W -78.887311	City - Fayetteville State- NC Zip- 28301

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)
State Tax Parcel ID Municipality
Section - Township - Range -

17. DIRECTIONS TO THE SITE

The North Carolina Department of Transportation (NCDOT), Division of Highways, in consultation with the Federal Highway Administration (FHWA), proposes to replace Bridge Number 116, on NC 24-210 (Rowan Street) over the CSX Railroad, Norfolk Southern Railroad and Hillsboro Street in downtown Fayetteville. For additional information please see attached vicinity map and cover letter.

18. Nature of Activity (Description of project, include all features)

The nature of activity for this project includes replacement of the structurally deficient bridge and reconfigure intersections. For additional information please see attached cover letter.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The purpose for this project is to replace the structurally deficient bridge and reconfigure intersections. For additional information please see attached cover letter.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

A portion of Cross Creek will be placed in a culvert. For additional information please see attached cover letter and permit drawings.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
See attached cover letter & permit drawings.		

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres

or

Linear Feet 857 linear feet of permanent stream impacts; 63 linear feet of temporary stream impacts

23. Description of Avoidance, Minimization, and Compensation (see instructions)

Best Management Practices for Construction and Maintenance Activities will be adhered to. Mitigation will be provided by NCDMS. For additional information please see attached cover letter and Mitigation acceptance letter.

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- Please see list provided via email.

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
N/A					

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE
For Richard W. Hancock, P.E.	6-24-2015		

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.0; Released April 2014)

WBS Element:	33727.1.1	**TIP No.:**	B-4490	**County(ies):**	Cumberland	**Page** 1	**of** 1

General Project Information

WBS Element:	33727.1.1	**TIP Number:**	B-4490	**Project Type:**	Bridge Replacement	**Date:**	
NCDOT Contact:	Paul Atkinson, P.E.			**Contractor / Designer:**	Craig Freeman, P.E.		
Address:	NCDOT Hydraulics Unit 1020 Birch Ridge Drive Raleigh, N.C. 27610			**Address:**	NCDOT Hydraulics Unit 1020 Birch Ridge Drive Raleigh, N.C. 27610		
Phone:	919-707-6707			**Phone:**	919-707-6721		
Email:	patkinson@ncdot.gov			**Email:**	cafreeman2@ncdot.gov		
City/Town:	Fayetteville			**County(ies):**	Cumberland		
River Basin(s):	Cape Fear			**CAMA County?**	No		
Wetlands within Project Limits?	No						

Project Description

Project Length (lin. miles or feet):	0.599 miles	**Surrounding Land Use:**	Urban Commercial/ Residential

	Proposed Project	**Existing Site**
Project Built-Upon Area (ac.)	ac.	ac.
Typical Cross Section Description:	2-12' and 1-14' travel lane with 10' shoulders and 5' sidewalk in each direction with variable width median. Total pavement 76'.	2-12' travel lanes in each direction for a total pavement width of 48'+/-.(typ.)
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 47,596 Year: 2035	Existing: 34,813 Year: 2015
General Project Narrative: (Description of Minimization of Water Quality Impacts)	Replace Bridge No. 116 over CSX RR, Norfolk Southern RR and Hillsboro St. on NC 24/210. Replace existing culvert C258(3@ 12' x 9' RCBC) under NC 24/210 and existing culvert(3 @ 12' x 9' RCBC) under SR 3147(West Rowan St.) with 3 @ 14' x 9' RCBC with 1'sill at the inlet and outlet of barrels 1 & 2 and a 2' sill at the inlet and outlet of barrel 3. Realign NC 24/210 (Bragg Blvd. and Murchison Rd.) and SR-3828. Existing site is fully developed/urbanized.	

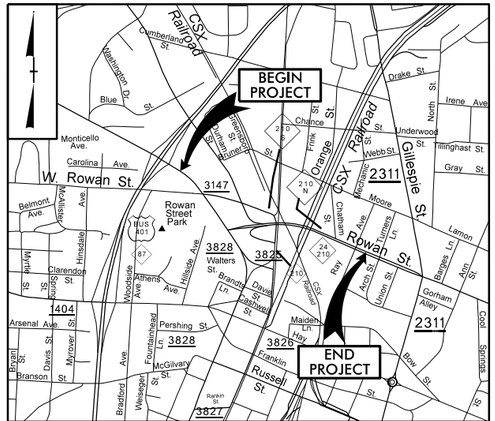
Waterbody Information

Surface Water Body (1):	Cross Creek		**NCDWR Stream Index No.:**	18-27(3)		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:				
Other Stream Classification:	None					
Impairments:	None					
Threatened/Endangered Species?	No	Comments:				
NRTR Stream ID:				**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?	No	**Deck Drains Discharge Over Buffer?**	N/A	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

09/08/99

TIP PROJECT: B-4490

See Sheet 1-A For Index of Sheets (Not Included In R/W Plans)



VICINITY MAP

NOT TO SCALE

ROW PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

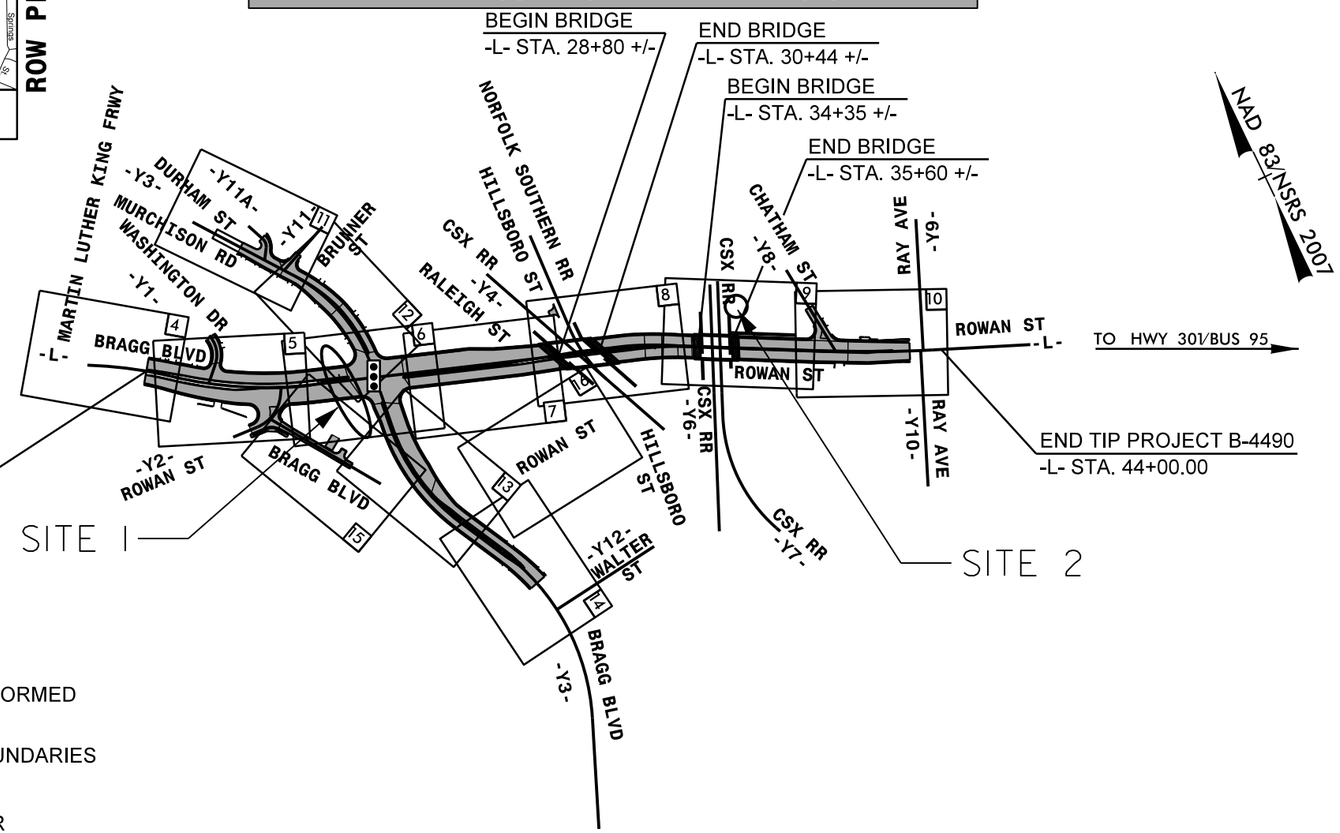
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4490	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
33727.1.1	BRNHS-0024(24)	P.E.
33727.2.FS1	BRNHS-0024(24)	RW
33727.2.FSU1	BRNHS-0024(24)	UTILITIES

LOCATION: BRIDGE NO. 116 OVER CSX RR, NORFOLK SOUTHERN RR, AND HILLSBORO STREET ON NC 24/210

TYPE OF WORK: GRADING, PAVING, DRAINAGE, RETAINING WALL, AND STRUCTURE

WETLAND AND SURFACE WATER IMPACTS PERMIT



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

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE.

DESIGN EXCEPTIONS WILL BE REQUIRED FOR EXCEEDING MAXIMUM GRADE ON -L- AND THE SUPERELEVATION ALONG -L- THROUGH THE INTERSECTION WITH -Y3-

PERMIT DRAWING
SHEET 1 OF 14

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:

GRAPHIC SCALES

20 10 0 20 40
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

4 2 0 4 8
PROFILE (VERTICAL)

DESIGN DATA

ADT 2015 = 34,813
ADT 2035 = 47,596
DHV = 10 %
D = 55 %
T = 3 % *
V = 40 MPH
(* TTST 1% + DUAL 2%)
FUNC CLASS = URBAN PRINCIPAL ARTERIAL REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4490	=	0.544 MILES
LENGTH STRUCTURE TIP PROJECT B-4490	=	0.055 MILES
TOTAL LENGTH TIP PROJECT B-4490	=	0.599 MILES

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0165

PLANS PREPARED FOR:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr.
Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DECEMBER 31, 2013

LETTING DATE:
DECEMBER 15, 2015

TIM HAYES, PE
PROJECT ENGINEER

DAVIN WALLACE, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT: BRENDA MOORE, PE, CPM

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

11/19/2014
sjsykes
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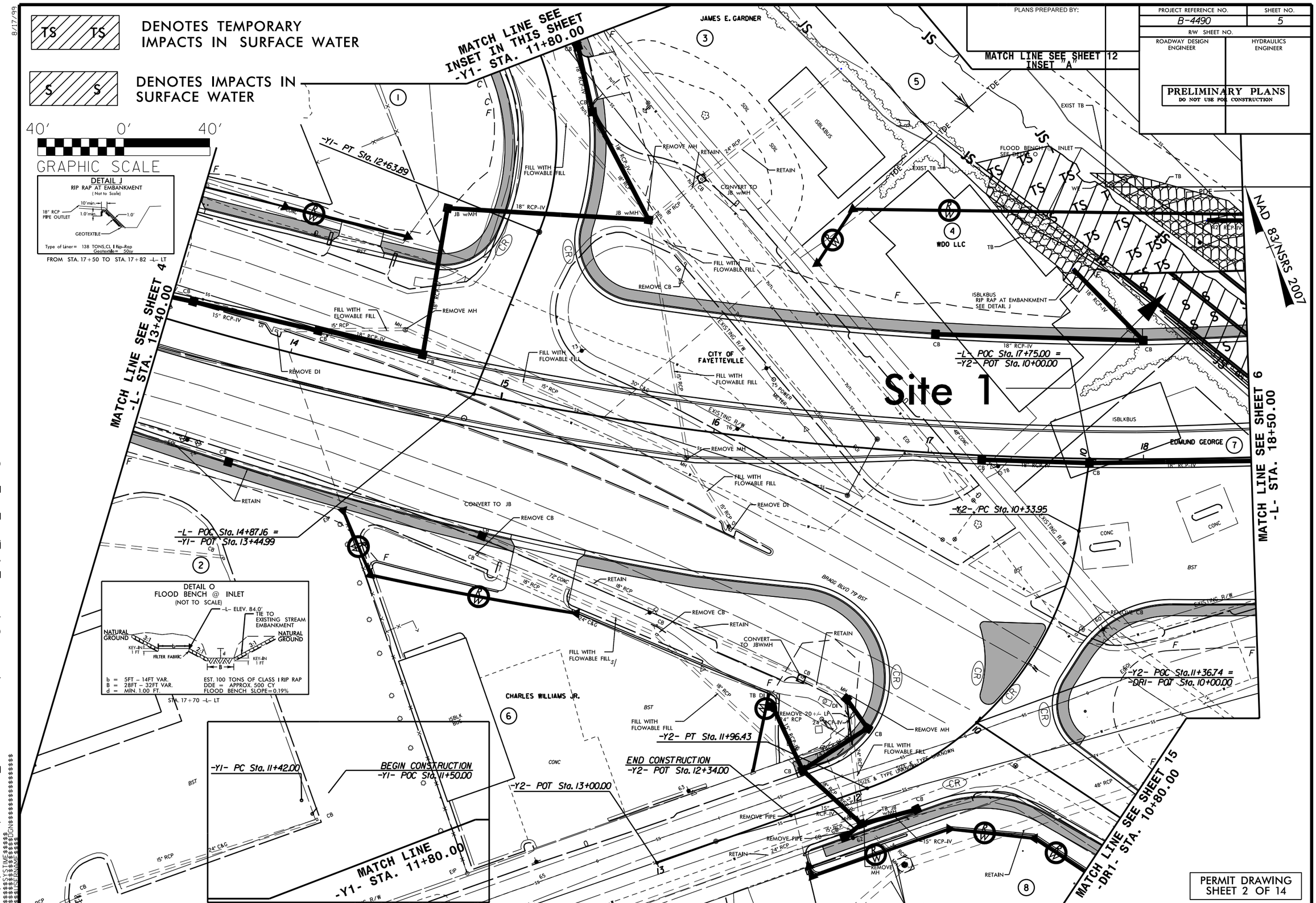

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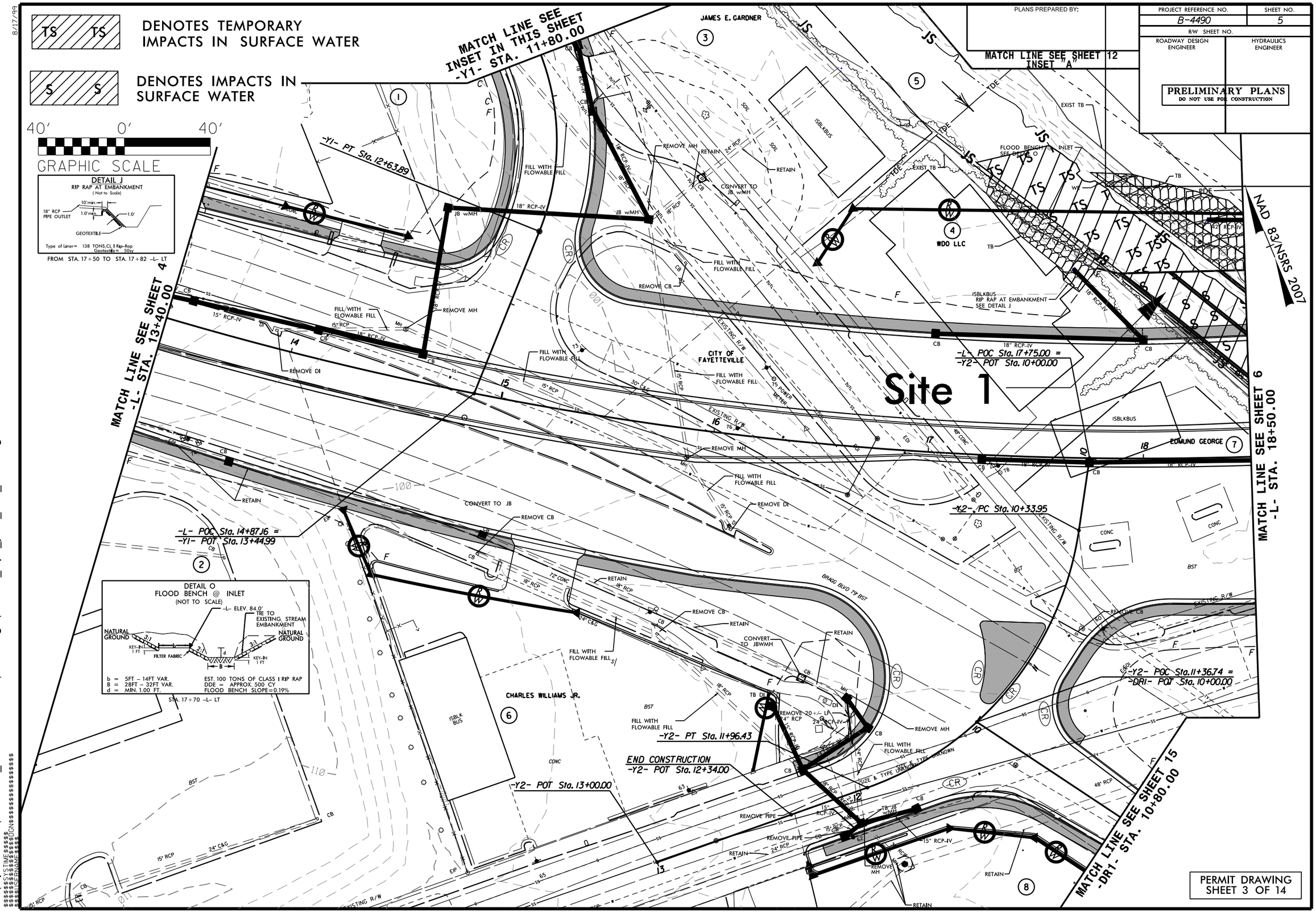

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cafreeman2
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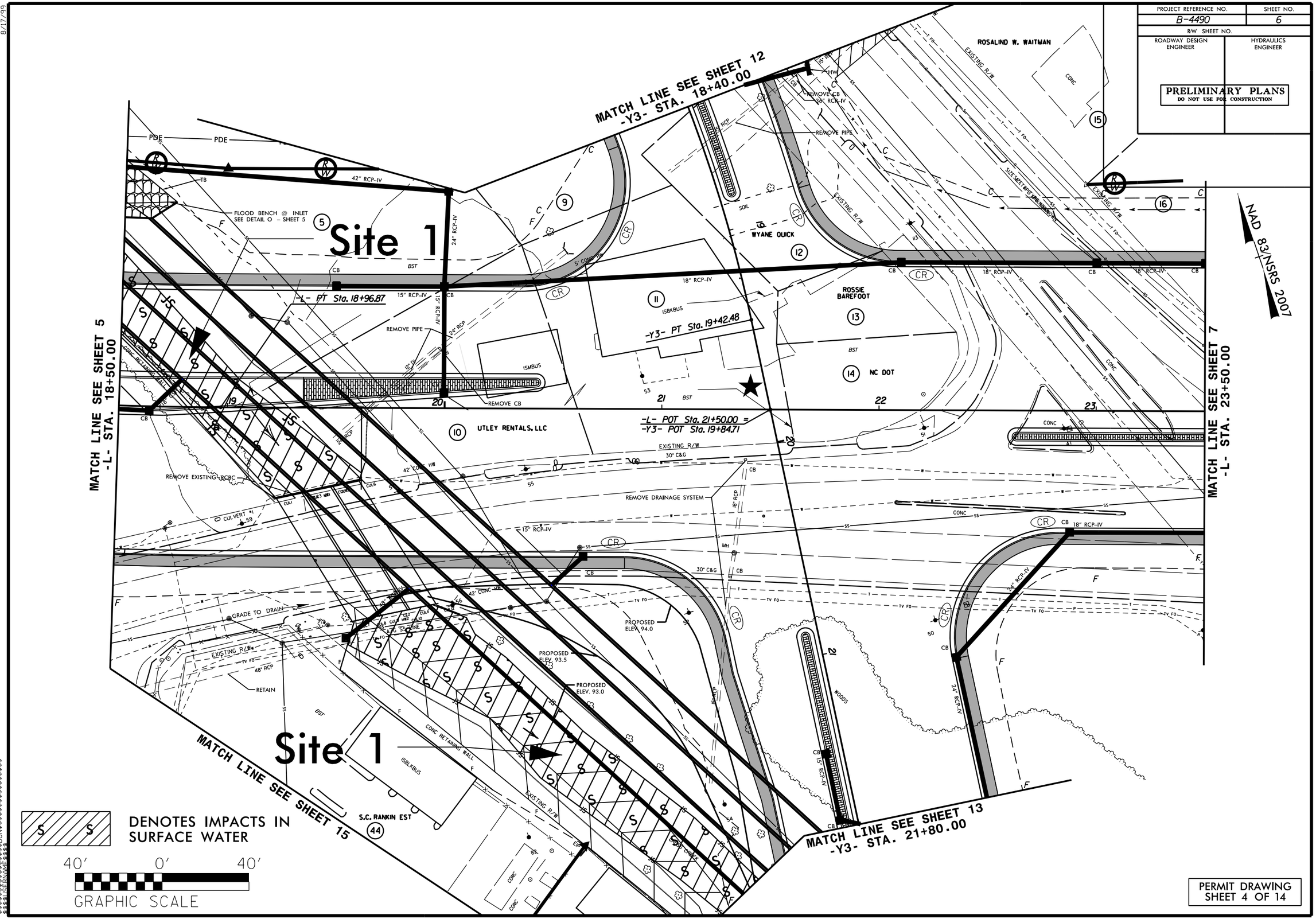
PROJECT REFERENCE NO.	SHEET NO.
B-4490	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PERMIT DRAWING
SHEET 4 OF 14

8/17/99

11/19/2014
sjsykes
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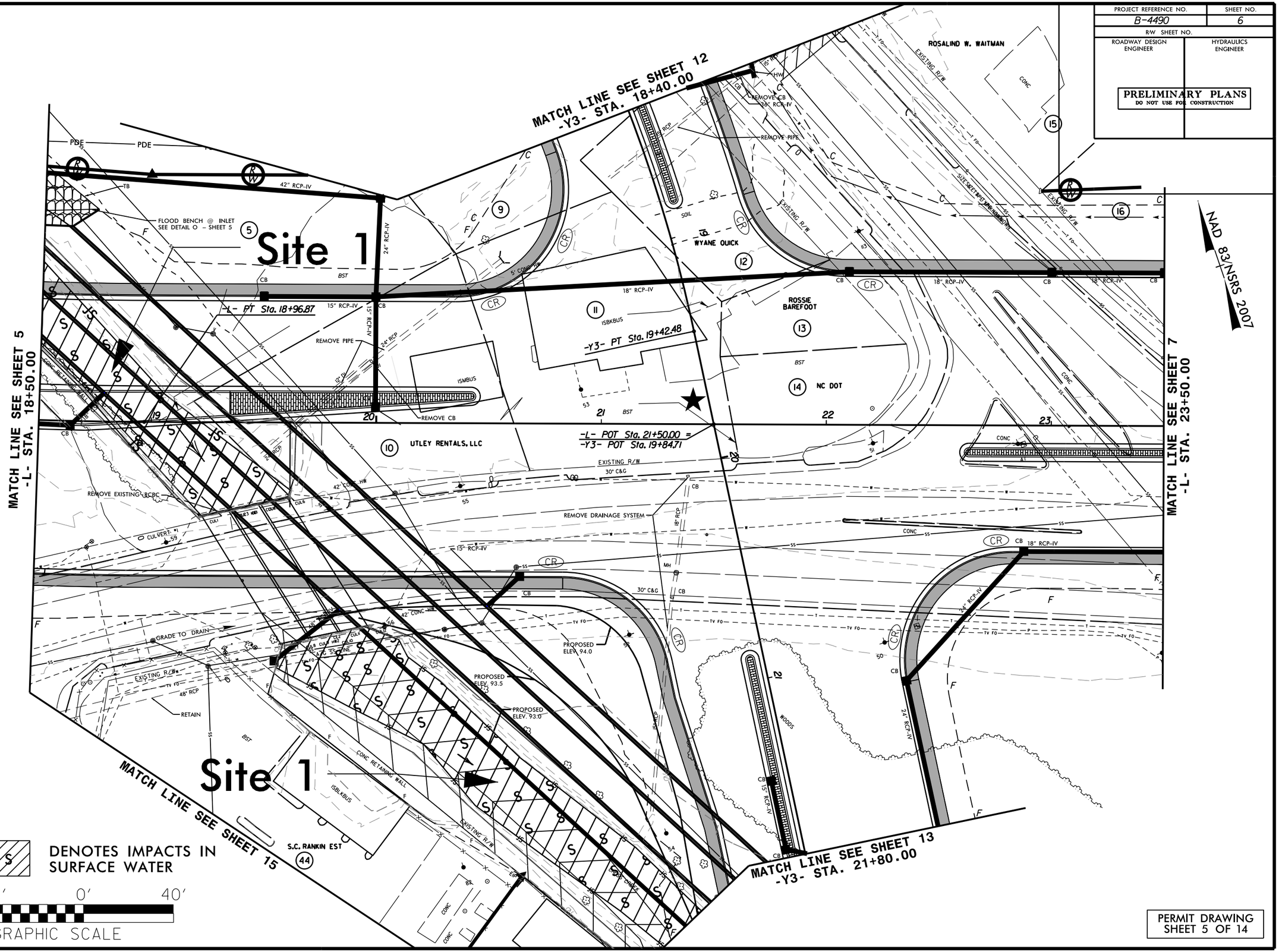
$$$$$$$$USERNAME$$$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-4490	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PERMIT DRAWING
SHEET 5 OF 14

11/19/2014
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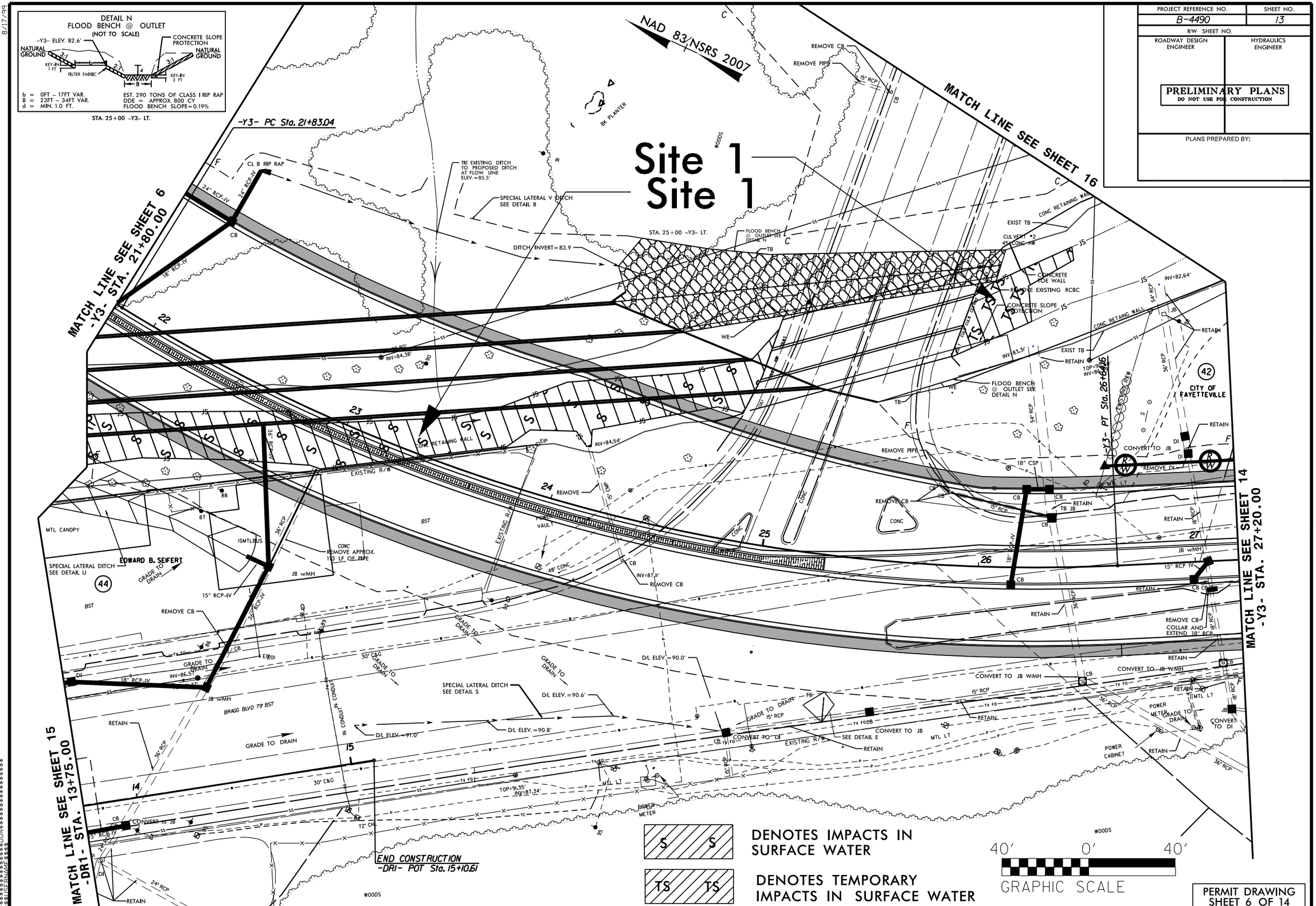
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4490	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED BY:



PERMIT DRAWING
SHEET 6 OF 14

11/19/2014
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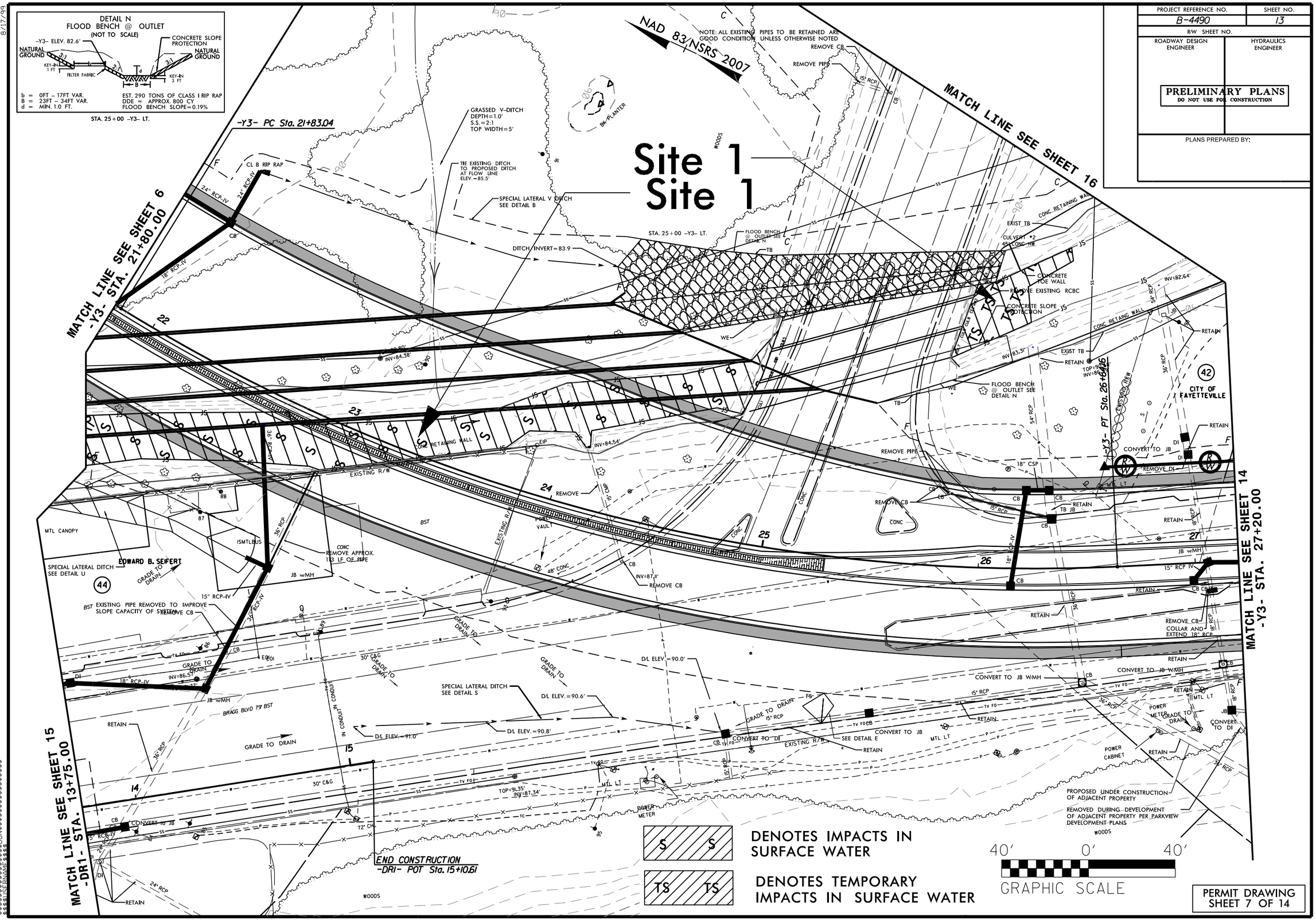
8/17/99



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11/19/2014
sjsykes
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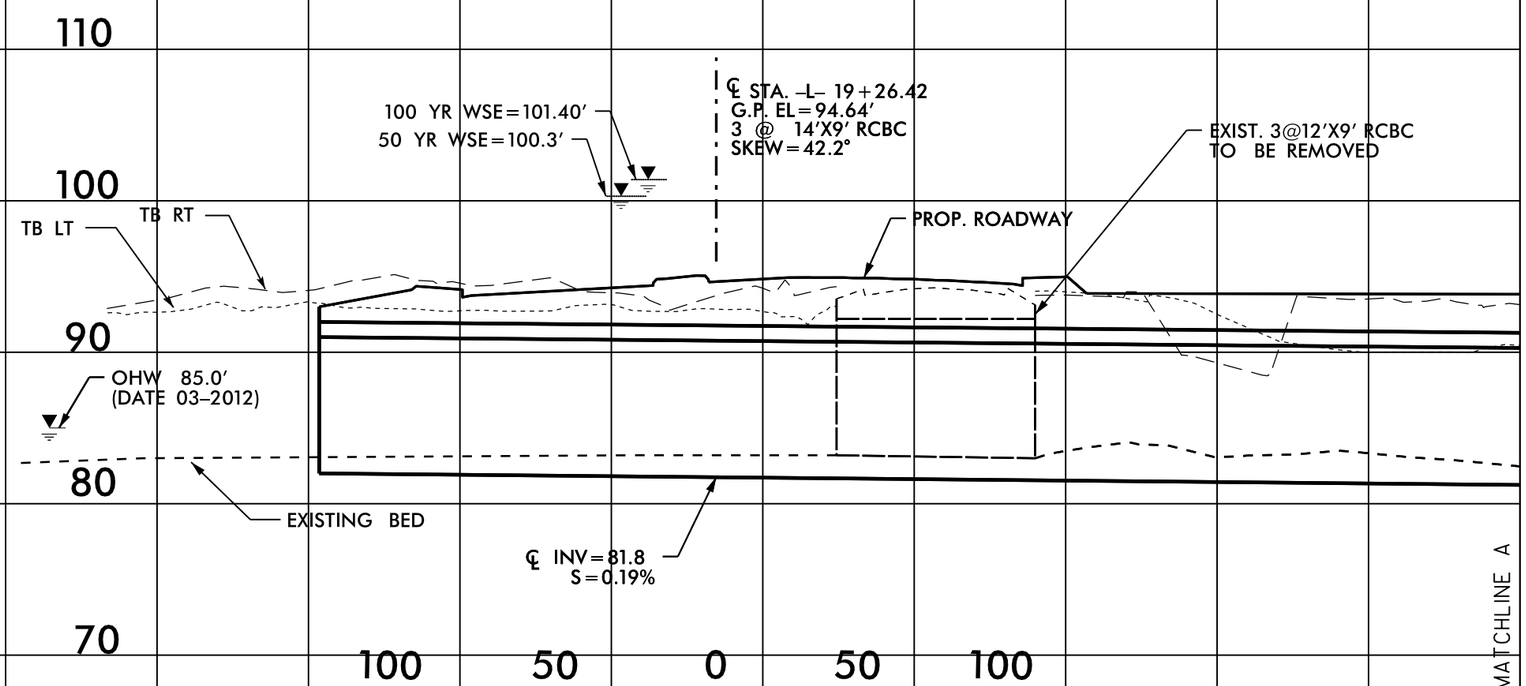
10′ 0′ 10′
VERTICAL SCALE

50′ 0′ 50′
HORIZONTAL SCALE

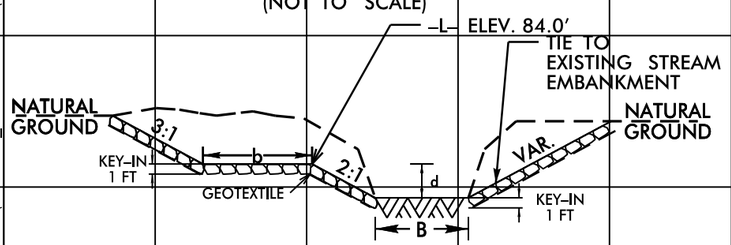
Backfill Proposed Culvert with Native Material. Native Material consists of material that is excavated from the stream bed or floodplain at the project site during culvert construction. Only material that is excavated from the stream bed may be used to line the low flow culvert barrel. Rip rap may be used to supplement the Native Material in the high flow culvert barrel(s). If rip rap is used to line the high flow culvert barrel(s), Native Material should be placed on top to fill voids and provide a flat surface for animal passage. Native Material is subject to approval by the engineer and may be subject to permit conditions.

PROFILE



MATCHLINE A

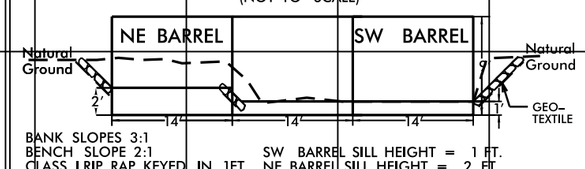
FLOOD BENCH @ INLET
(NOT TO SCALE)



b = 5FT – 14FT VAR.
B = 28FT – 32FT VAR.
d = MIN. 1.00 FT.

EST. 100 TONS OF CLASS I RIP RAP
DDE = APPROX. 500 CY
FLOOD BENCH SLOPE=0.86%

CULVERT SILL INLET/OUTLET
(NOT TO SCALE)



BANK SLOPES 3:1
BENCH SLOPE 2:1
CLASS I RIP RAP KEYED IN 1FT

SW BARREL SILL HEIGHT = 1 FT.
NE BARREL SILL HEIGHT = 2 FT.

NCDOT
DIVISION OF HIGHWAYS
CUMBERLAND COUNTY
PROJECT: 33727.1.1 (B-4490)
BRIDGE NO. 116 OVER CSX RR,
NORFOLK SOUTHERN RR AND
HILLSBORO STREET ON NC 24/210

SHEET 8 OF 14 6/15/15

6/15/2015
cafreeman2
R:\Hydraulics\PERMITS_Environmental\Drawings\B-4490_Hyd_csr_profile_8and9.dgn

10' 0' 10'
VERTICAL SCALE

50' 0' 50'
HORIZONTAL SCALE

PROFILE

MATCHLINE A

EXIST. 3@12'X9' RCBC
TO BE REMOVED

110

℄ STA. –Y3– 22+47.30
G.P. EL=93.80'
3 @ 14'X9' RCBC
SKEW=30.7°

TB RT

TB LT

100

PROP. ROADWAY

90

80

℄ INV=81.0
S=0.19%

EXISTING BED

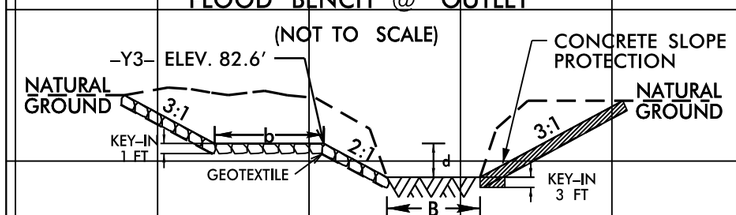
70

MATCHLINE A

100 50 0 50 100

FLOOD BENCH @ OUTLET

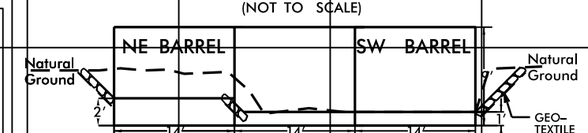
(NOT TO SCALE)



b = 0FT – 17FT VAR.
B = 23FT – 34FT VAR.
d = MIN. 1.0 FT.

EST. 290 TONS OF CLASS I RIP RAP
DDE = APPROX. 800 CY
FLOOD BENCH SLOPE=0.19%

CULVERT SILL INLET/OUTLET
(NOT TO SCALE)



BANK SLOPES 3:1
BENCH SLOPE 2:1
CLASS I RIP RAP KEYED IN 1FT

SW BARREL SILL HEIGHT = 1 FT.
NE BARREL SILL HEIGHT = 2 FT.

NCDOT

DIVISION OF HIGHWAYS
CUMBERLAND COUNTY
PROJECT: 33727.1.1 (B-4490)
BRIDGE NO. 116 OVER CSX RR,
NORFOLK SOUTHERN RR AND
HILLSBORO STREET ON NC 24/210

SHEET 9 OF 14

11/20/14

11/19/2014
sjsykes
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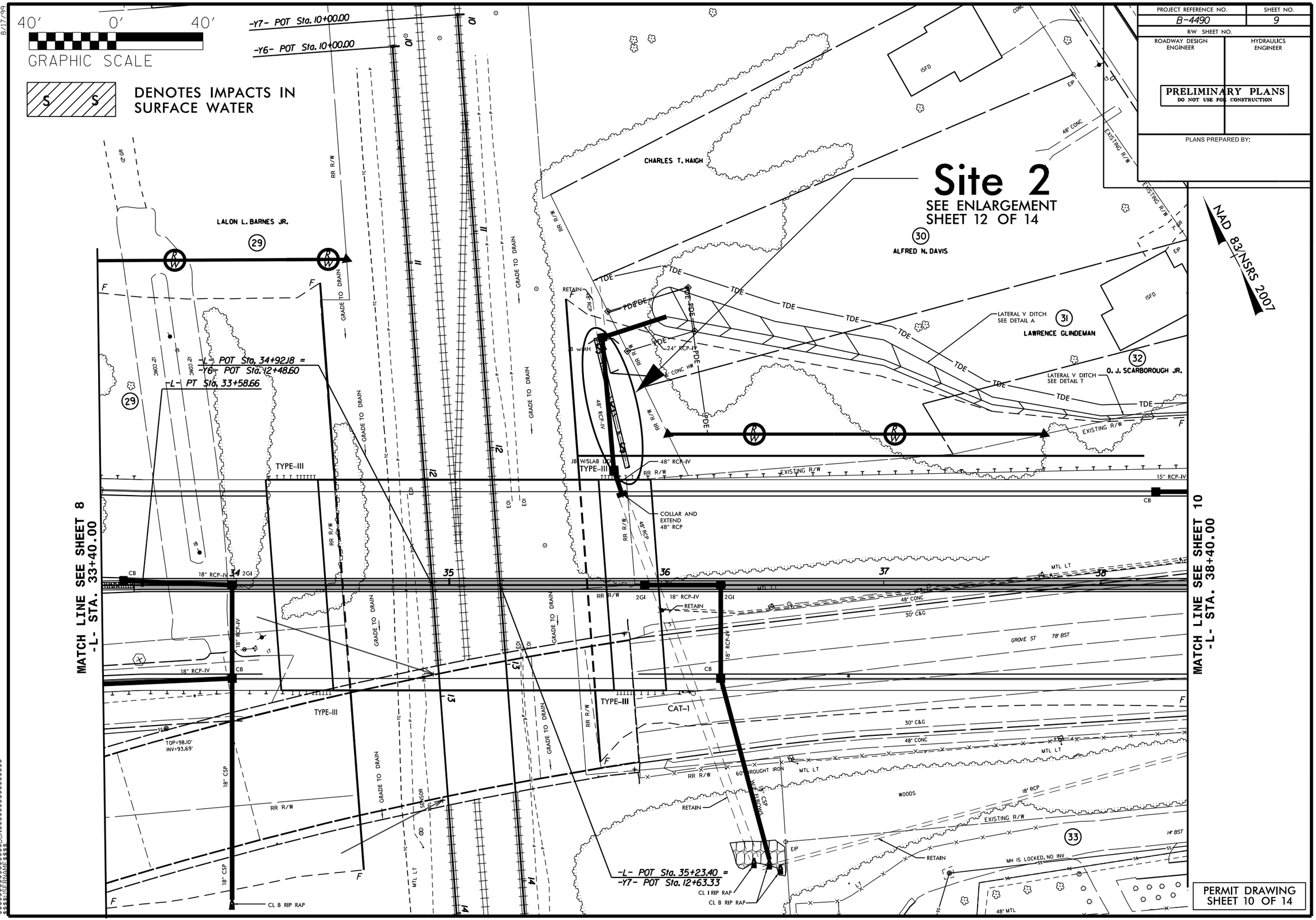

PROJECT REFERENCE NO.	SHEET NO.
B-4490	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED BY:

PERMIT DRAWING
SHEET 10 OF 14

8/17/99

11/19/2014
sjsykes
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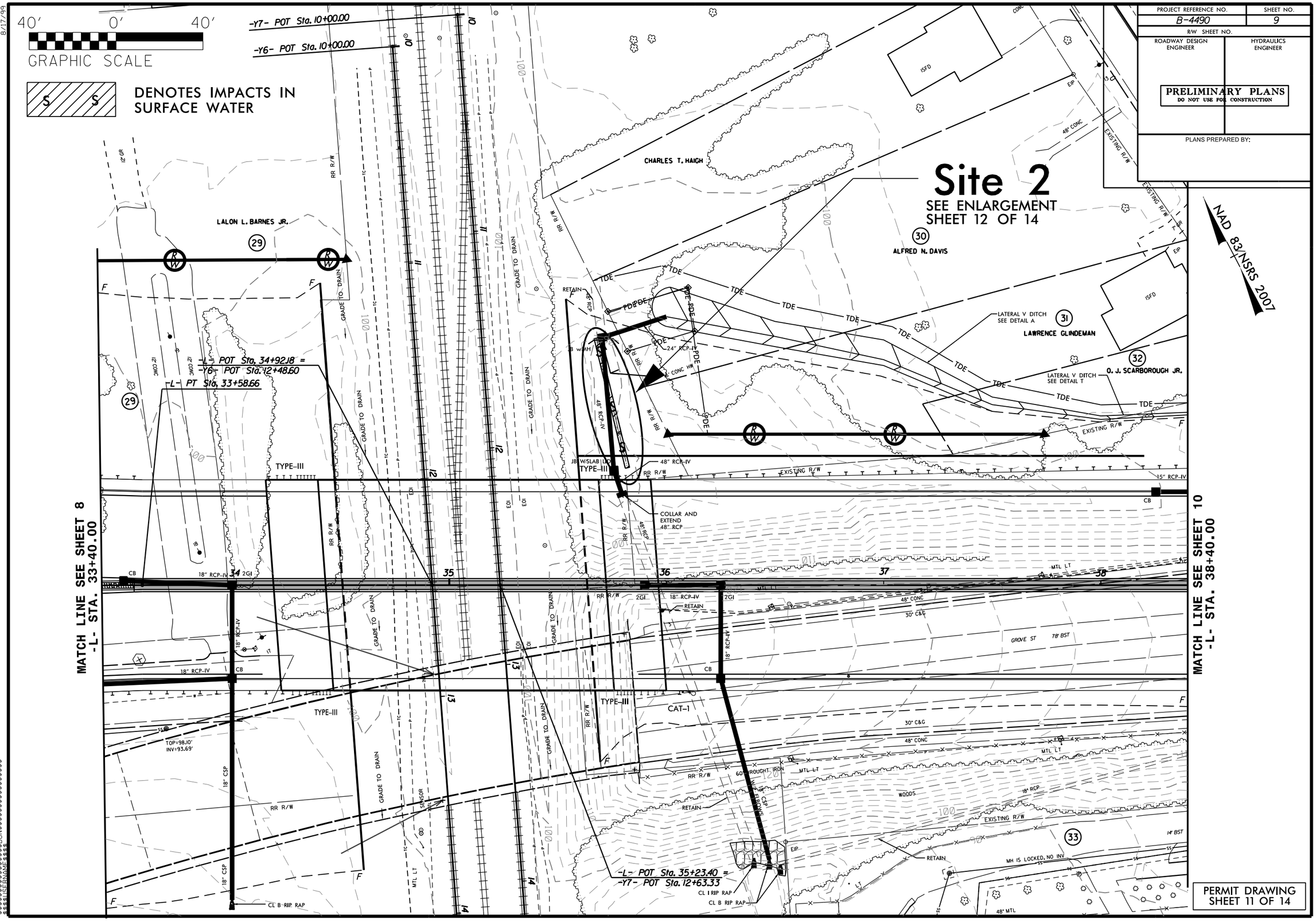
PROJECT REFERENCE NO.	SHEET NO.
B-4490	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED BY:



11/19/2014
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NCDOT
DIVISION OF HIGHWAYS
CUMBERLAND COUNTY
PROJECT:33727.1.1 (B-4490)
BRIDGE #116 OVER CSX RR, NORFOLK
RR AND HILLSBORO STREET ON
NC 24/210

SHEET 12 OF 14 10/16/01

11/19/2014
sjsykes
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NCDOT
DIVISION OF HIGHWAYS
CUMBERLAND COUNTY
PROJECT:33727.1.1 (B-4490)
BRIDGE #116 OVER CSX RR, NORFOLK
RR AND HILLSBORO STREET ON
NC 24/210

SHEET 13 OF 14 10/16/01

11/19/2014
sjsykes
R:\Hydraulics\PERMITS Environmental\Drawings\B4490 Hyd prm wet 13 Enlargement con.c

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	L Sta 17+54 to 19+62	3 @ 14' x 9' RCBC						0.11	0.05	190		
1	Y3 Sta 20+40 to 24+90	3 @ 14' x 9' RCBC						0.29		519		
1	Y3 Sta 25+82 to 26+47	3 @ 14' x 9' RCBC							0.02		63	
1	L Sta 18+00 Lt.	BANK STABILIZATION								75		
1	Y3 Sta 26+00 Lt.	BANK STABILIZATION								10		
2	L Sta 35+75 Lt.	48" RCP						< 0.01		63		
TOTALS*:								0.40	0.08	857	63	0

*Rounded totals are sum of actual impacts

NOTES:
The existing culvert at Y3 Sta 25+00 LT. will be removed resulting in 90 LF of the stream being day-lighted.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
Revised June 15, 2015
Cumberland County
TIP # B-4490
WBS # 33727.1.1

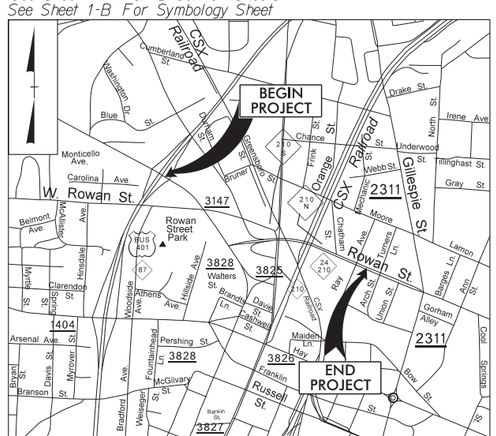
Revised 2015 6 15

09/08/99

TIP PROJECT: B-4490

CONTRACT: C203659

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Symbology Sheet



VICINITY MAP

NOT TO SCALE

PRE-LET FIELD INSPECTION PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

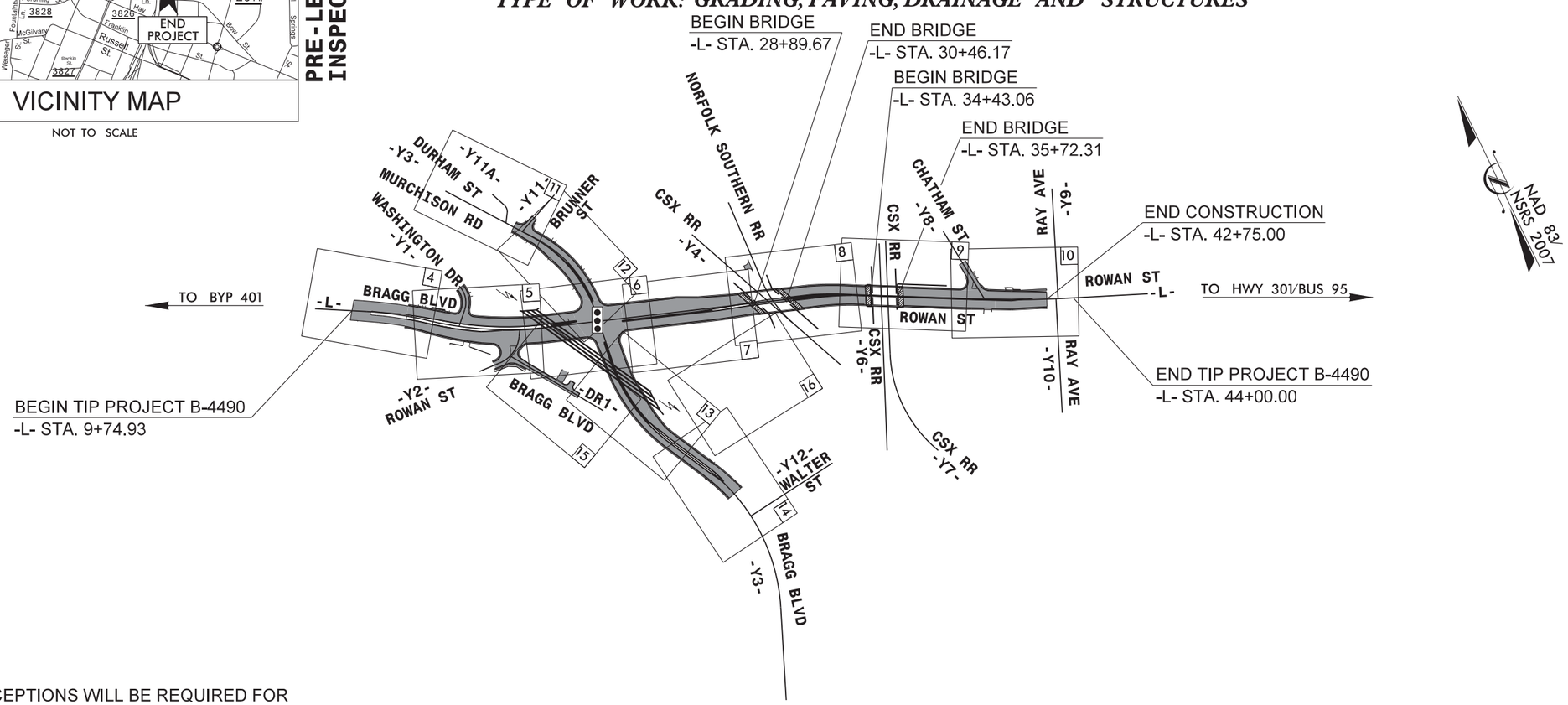
CUMBERLAND COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4490	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33727.1.1	BRNHS-0024(24)	P.E.
33727.2.FS1	BRNHS-0024(24)	RW
33727.2.FSU1	BRNHS-0024(24)	UTILITIES

LOCATION: BRIDGE NO. 116 OVER CSX RR, NORFOLK SOUTHERN RR, AND HILLSBORO STREET ON NC/24-210

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURES



DESIGN EXCEPTIONS WILL BE REQUIRED FOR EXCEEDING MAXIMUM GRADE ON -L- AND THE SUPERELEVATION ALONG -L- THROUGH THE INTERSECTION WITH -Y3-

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

20 10 0 20 40
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

4 2 0 4 8
PROFILE (VERTICAL)

DESIGN DATA

ADT 2015 = 34,813
ADT 2035 = 47,596
DHV = 10 %
D = 55 %
T = 3 % *
V = 40 MPH
(* TTST 1% + DUAL 2%)
FUNC CLASS = URBAN PRINCIPAL ARTERIAL REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4490 = 0.595 MILES
LENGTH STRUCTURE TIP PROJECT B-4490 = 0.054 MILES
TOTAL LENGTH TIP PROJECT B-4490 = 0.649 MILES

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0165

PLANS PREPARED FOR:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr.
Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DECEMBER 31, 2013

LETTING DATE:
DECEMBER 15, 2015

TIM HAYES, PE
PROJECT ENGINEER

ERIC MISAK
PROJECT DESIGN ENGINEER

NCDOT CONTACT: BRENDA MOORE, PE, CPM

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION

2:57:03 PM
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6/3/2015

02/03/15

PROJECT REFERENCE NO.	SHEET NO.
B-4490	1-B

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
- Existing Historic Property Boundary — HPB
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area 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 R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- 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
- 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.

PROJECT REFERENCE NO.	SHEET NO.
B-4490	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0163

11/21/2014 PARCEL 1– ADDED A RETAINING WALL AND REVISED THE TCE TO AVOID IMPACTING THE BLOCK BUSINESS BUILDING.
REVISED THE DRAINAGE DESIGN TO ELIMINATE THE PDE.

8/17/99

NAD 83/NSRS 2007

-L- CURVE DATA

PI Sta 11+89.76	PI Sta 16+18.86
△ = 10° 25' 53.3" (RT)	△ = 20° 07' 11.6" (LT)
D = 3° 34' 51.6"	D = 3° 34' 51.6"
L = 291.30'	L = 561.85'
T = 146.05'	T = 283.85'
R = 1,600.00'	R = 1,600.00'
DS = 40 MPH	DS = 40 MPH
SE = exist.	SE = 2.0% *
RO = exist.	RO = 100'

* REQUIRES DESIGN EXCEPTION

MARTIN LUTHER KING FRWY

BEGIN TIP PROJECT B-4490
-L- STA. 9+74.93

-L- POT Sta. 8+00.00

S 61° 18' 41.7" E

-L- PC Sta. 10+43.71

BRAGG BLVD

-L-

LJ&T of FAYETTEVILLE,LLC
DB 6541 PG 681

VAIL FAMILY LIMITED PARTNERSHIP
DB 4594 PG 225

VALUE PLACE FAYETTEVILLE BRAGG LLC
DB 7317 PG 18
PB 7 PG 8

-L- PRC Sta. 13+35.01

MATCH LINE SEE SHEET 5
-L- STA. 13+40.00

SEE SHEET No. 17 FOR -L- PROFILE

2:40:00 PM
B4490_rdy_psh_04.dgn
6/3/2015

PROJECT REFERENCE NO.	SHEET NO.
B-4490	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0165

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

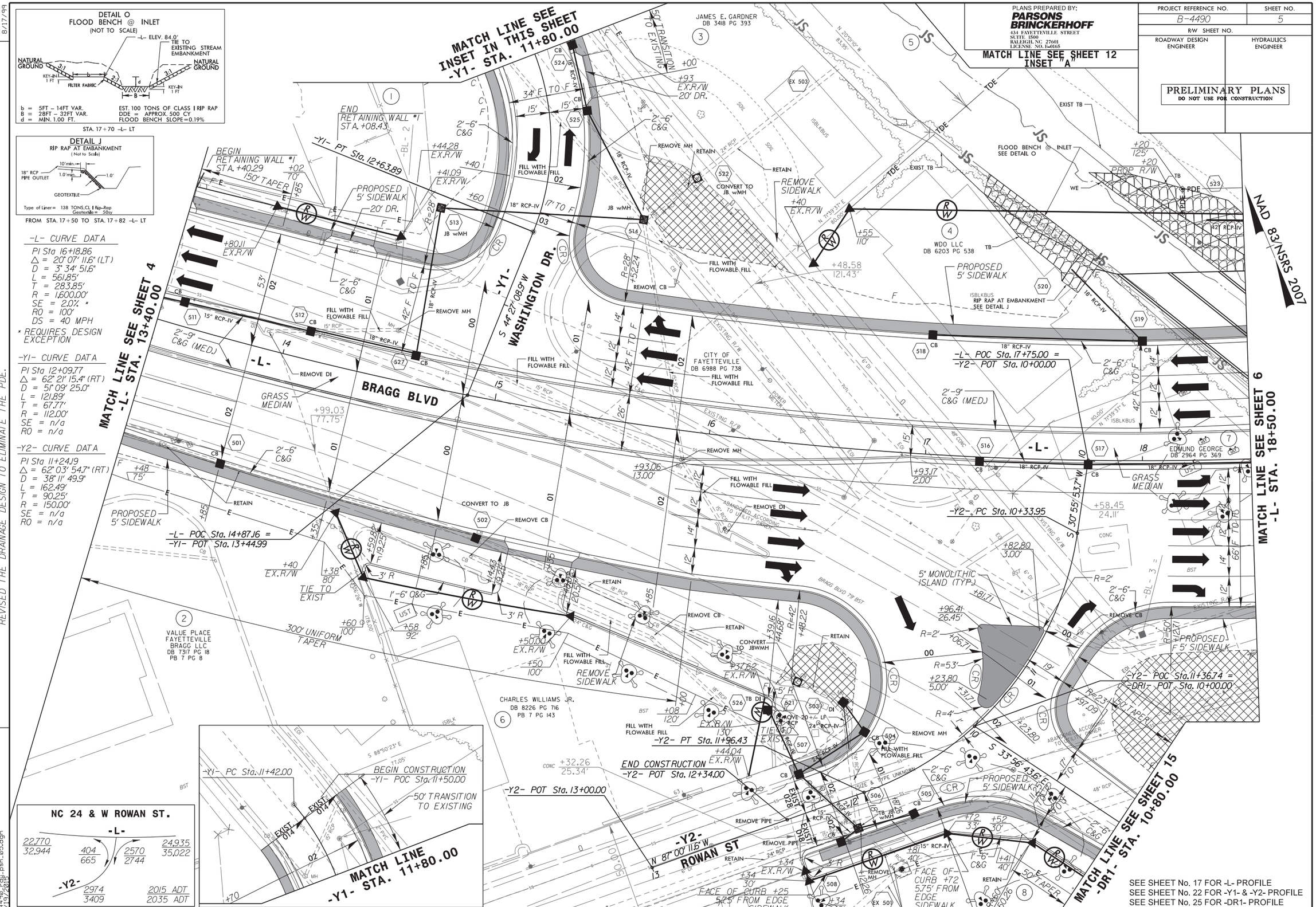
REVISIONS

8/17/99

02/23/2015 PARCEL 05- COMBINED PARCELS 5 AND 39 INTO PARCEL 5

02/11/2015 PARCEL 39- ADDED MARKERS ON THE PERMANENT DRAINAGE EASEMENT COMBINED PARCELS 5 AND 39 INTO PARCEL 39.

11/21/2014 PARCEL 1- ADDED A RETAINING WALL AND REVISED THE TCE TO AVOID IMPACTING THE BLOCK BUSINESS BUILDING. REVISED THE DRAINAGE DESIGN TO ELIMINATE THE PDE.



PROJECT REFERENCE NO.	SHEET NO.
B-4490	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0168

REVISIONS

02-23-2015 PARCEL 5 - COMBINED PARCELS 5 AND 39 INTO PARCEL 5
12-30-2014 PARCELS 9 AND 41 - COMBINED PARCELS 9 AND 41 DUE TO TYPOGRAPHICAL ERROR ON PLANS AT THE MATCH-LINE OF SHEETS 6 AND 12.
8/17/99

-L- CURVE DATA
PI Sta 16+18.86
Δ = 20° 07' 11.6" (LT)
D = 3° 34' 51.6"
L = 561.85'
T = 283.85'
R = 1,600.00'
DS = 40 MPH
SE = 2.0 % *
RO = 100'

-Y3- CURVE DATA
PI Sta 17+09.63
Δ = 43° 13' 24.1" (RT)
D = 8° 48' 53.1"
L = 490.35'
T = 257.51'
R = 650.00'
DS = 40mph
SE = 4.0%
RO = 124'

* REQUIRES DESIGN EXCEPTION

NC 24 & ROWAN ST.
9548 / 12,152 -Y3-
2813 / 3596
4217 / 5261
24,934 / 85,021 -L-
34,173 / 46,956 -L-
3683 / 4639
12,157 / 15,548
-Y3-
2015 ADT / 2035 ADT
18,352 / 23,481

DETAIL B
SPECIAL LATERAL V DITCH
(Not to Scale)
Natural Ground, 3:1, D, 4:1 or Flatter, Fill Slope
Min. D=1.5 Ft.
FROM STA. 22+00 TO STA. 25+00 -L- LT

DETAIL R
SPECIAL LATERAL V DITCH
(Not to Scale)
HPB, VAR., VAR., 0.02, Natural Ground, 3:1 or Flatter, D, 3:1 or Flatter, Front Slope, 1.0' MIN., 93.0', EXIST. RET. WALL, Min. D=VAR., PROPOSED CULVERT
FROM STA. 19+50 TO STA. 21+00 -L- RT

MATCH LINE SEE SHEET 12
-Y3- STA. 18+40.00

MATCH LINE SEE SHEET 5
-L- STA. 18+50.00

MATCH LINE SEE SHEET 7
-L- STA. 23+50.00

MATCH LINE SEE SHEET 15

MATCH LINE SEE SHEET 13
-Y3- STA. 21+80.00

NAD 83/NSRS 2007

MURCHISON RD
WEST ROWAN ST
BEGIN CROWN POINT SHIFT
-L- STA. 18+63.87 16' RT
FLOOD BENCH @ INLET SEE DETAIL O - SHEET 5
PROPOSED 5' SIDEWALK
DORIS B. UTLEY DB 5323 PG 462
ROSALIND W. WAITMAN DB 5554 PG 248 TRACT 2
ROSALIND W. WAITMAN DB 5554 PG 248
WYANE QUICK DB 5096 PG 809
ROSSIE BAREFOOT DB 5143 PG 37
NC DOT DB 540 PG 155
UTLEY RENTALS, LLC DB 7905 PG 58 TRACT 1
DB 7905 PG 58 TRACT 2
S.C. RANKIN EST DB 468 PG 18
-L- PT Sta. 18+96.87
-Y3- PT Sta. 19+42.48
-L- POT Sta. 21+50.00 = -Y3- POT Sta. 19+84.71
REMOVE EXISTING SIDEWALK
REMOVE CB
REMOVE PIPE
REMOVE EXISTING RCBC
REMOVE DRAINAGE SYSTEM
SPECIAL LATERAL V DITCH SEE DETAIL B
SPECIAL LATERAL DITCH SEE DETAIL R
DO NOT DISTURB EXIST. RETAINING WALL AND FENCE
500' LEFT TURN STORAGE
GRASS MEDIAN
GRADE TO DRAIN
ABANDONED ACCORDING TO UTILITY OWNER
PROPOSED ELEV. 94.0
PROPOSED ELEV. 93.5
PROPOSED ELEV. 93.0
UNIFORM TAPER
EXISTING R/W
EX.R/W 103'
EX.R/W
PROP.R/W 130'
PROPOSED SIGNAL
STAMPED CONCRETE MEDIAN

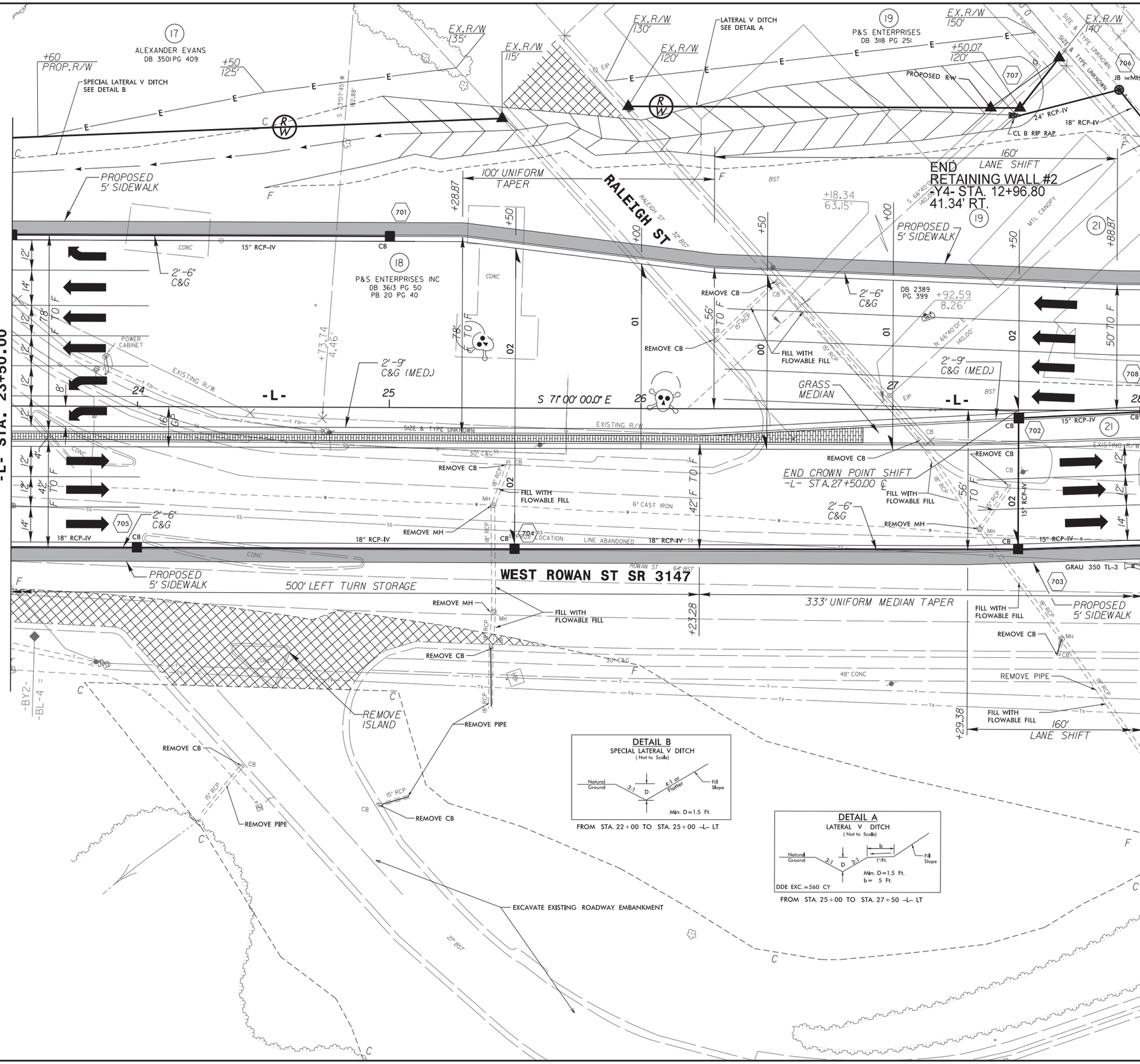
SEE SHEETS No. 17 & 18 FOR -L- PROFILE
SEE SHEET No. 23 FOR -Y3- PROFILE

2:08:09 PM
B4490_rdy_psh_06.dgn
6/3/2015

PROJECT REFERENCE NO.	SHEET NO.
B-4490	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0163



SEE SHEET No. 18 & 19 FOR -L- PROFILE

REVISIONS

05-04-2015	- PARCEL 21 - REVISED EXISTING R/W LINE
02-11-2015	- PARCELS 19 AND 20 - COMBINED PARCELS 19 AND 20 INTO PARCEL 19 - PARCELS 21 AND 22 - COMBINED PARCELS 21 AND 22 INTO PARCEL 21
03-27-2014	- REVISED OFFSET LABEL FROM 150' TO 140' AT ROW MONUMENT -L- STA.27+65.53. - REVISED ROW MONUMENT LABEL FROM -L- STA.27+50.00 TO 27+50.07.

8/17/99

6/19/2015 1:28:48 PM
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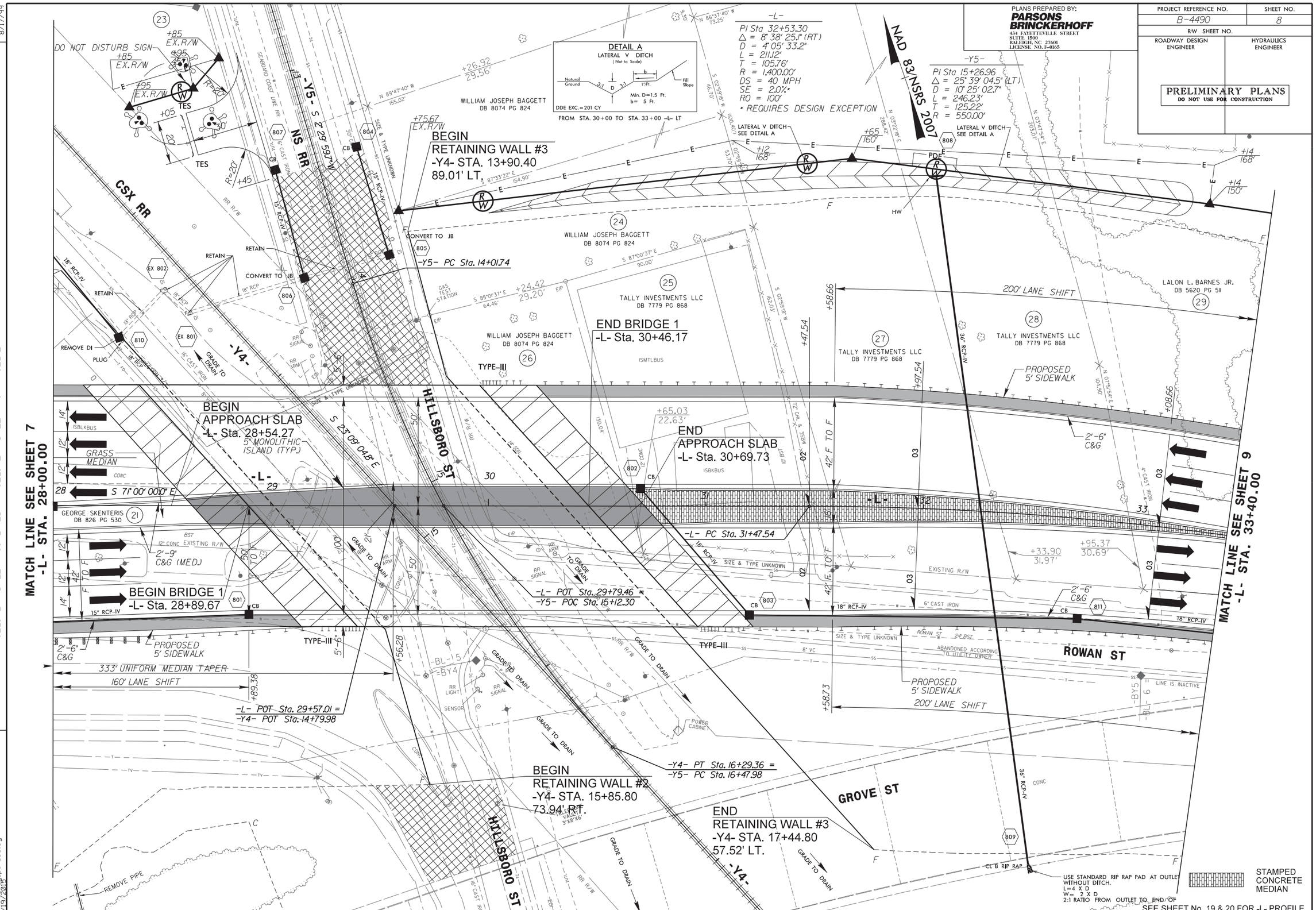

REVISIONS

05-04-2015 - PARCEL 21 - REVISED EXISTING R/W LINE
- PARCEL 23 - ADDED TCE, SHIFTED R/W AND ADDED NOTE TO AVOID SIGN
02-11-2015 - PARCELS 21 AND 22 - COMBINED PARCELS 21 AND 22 INTO PARCEL 21

8/17/99

1:32:38 PM
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6/19/2015

PROJECT REFERENCE NO.	SHEET NO.
B-4490	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

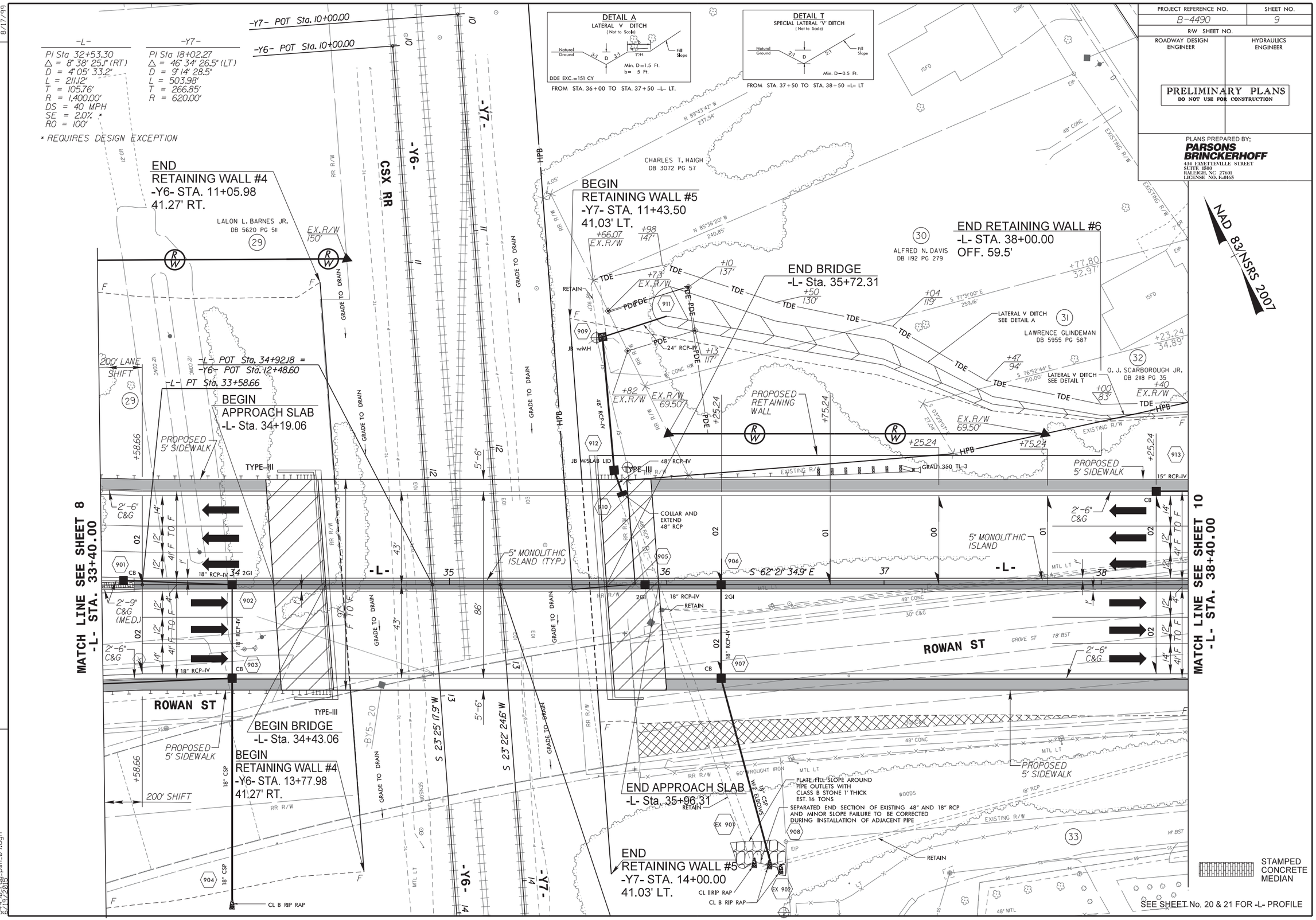
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0163

REVISIONS

8/17/99

02-26-2014 - RIGHT-OF-WAY REVISION PARCEL NOS. 30, 31 AND 32: REMOVED "DO NOT ACQUIRE RIGHT-OF-WAY" NOTE.
- ADDED PDE AROUND PIPE NO. 911 ON PARCEL 30.



SEE SHEET No. 20 & 21 FOR -L- PROFILE

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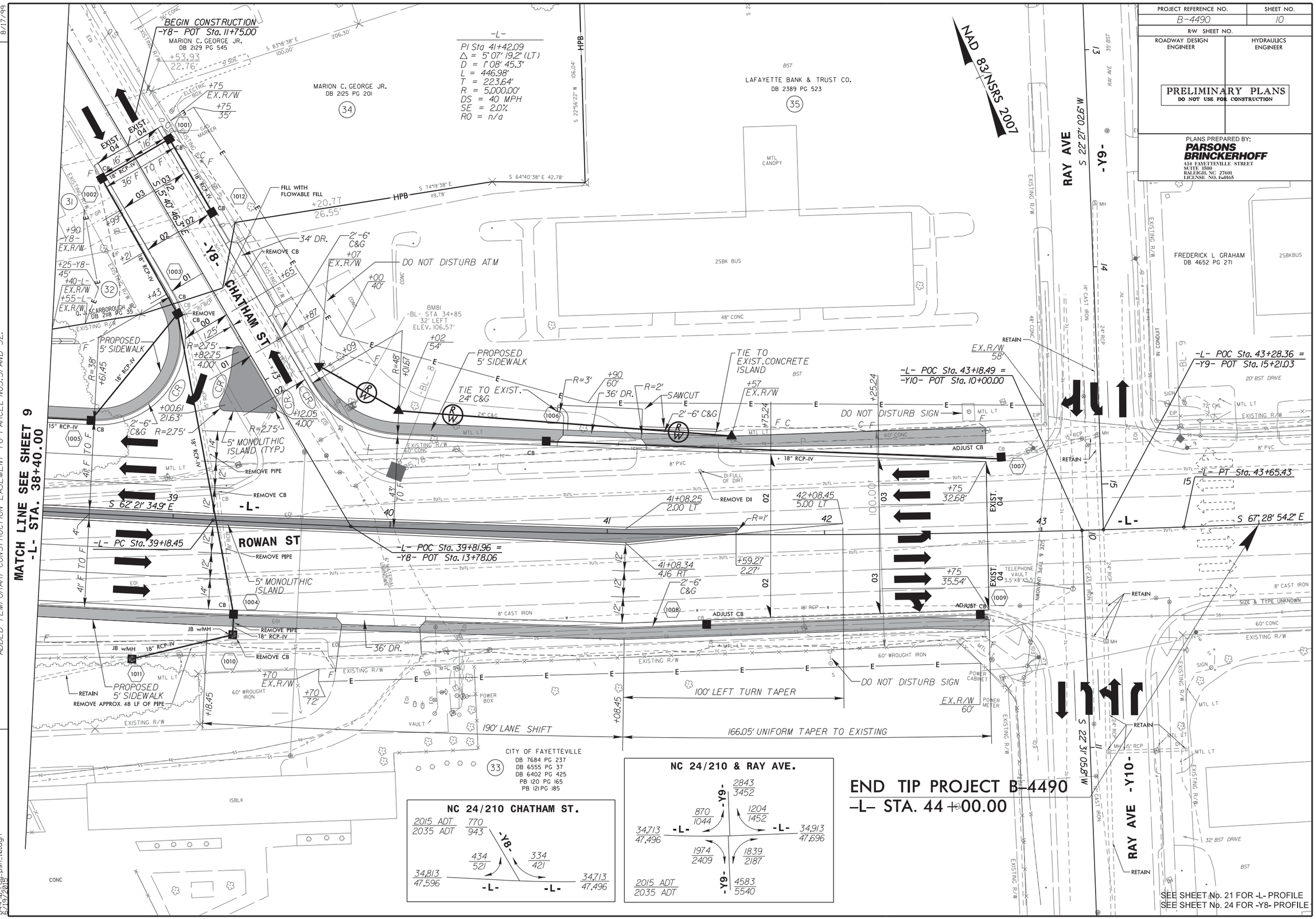
8/19/2015

PROJECT REFERENCE NO.	SHEET NO.
B-4490	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0165



REVISIONS

05-04-2015 - "DO NOT DISTURB SIGN" AND "DO NOT DISTURB ATM" NOTES ADDED TO PARCEL NOS. 33 AND 35.
02-26-2014 - RIGHT-OF-WAY REVISION PARCEL NOS. 30, 31 AND 32; REMOVED "DO NOT ACQUIRE RIGHT-OF-WAY" NOTE.
- ADDED TEMPORARY CONSTRUCTION EASEMENT TO PARCEL NOS. 31 AND 32.

8/17/99

11:51:46 AM
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6/19/2015

PROJECT REFERENCE NO.	SHEET NO.
B-4490	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0168

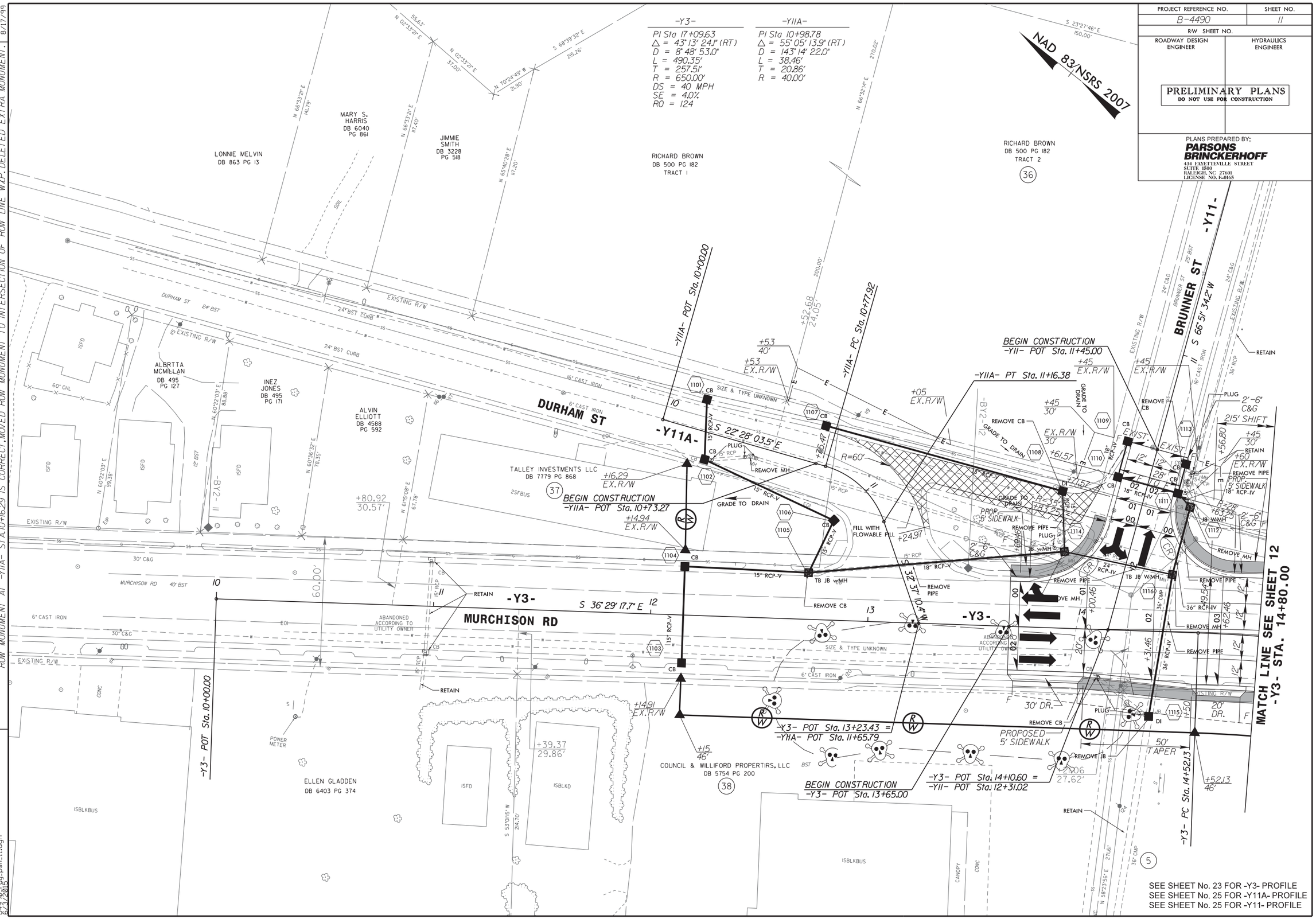
REVISIONS

02-23-2015 PARCEL 5 - COMBINED PARCELS 5 AND 39 INTO PARCEL 5
03-27-2014 REVISED ROW MONUMENT FROM -Y3- STA.12+15.00 TO 12+14.91.
ROW MONUMENT AT -Y3- STA.12+14.94 IS CORRECT, MOVED ROW MONUMENT TO THE INTERSECTION POINT AT -Y3- STA.14+52.13.
ROW MONUMENT AT -Y3- STA.14+52.13 IS CORRECT, MOVED ROW MONUMENT TO INTERSECTION OF ROW LINE W/P. DELETED EXTRA MONUMENT.
ROW MONUMENT AT -Y11A- STA.10+16.29 IS CORRECT, MOVED ROW MONUMENT TO INTERSECTION OF ROW LINE W/P. DELETED EXTRA MONUMENT.
8/17/99

-Y3-
PI Sta 17+09.63
Δ = 43° 13' 24.1" (RT)
D = 8° 48' 53.0"
L = 490.35'
T = 257.51'
R = 650.00'
DS = 40 MPH
SE = 4.0%
RO = 124

-Y11A-
PI Sta 10+98.78
Δ = 55° 05' 13.9" (RT)
D = 143° 14' 22.0"
L = 38.46'
T = 20.86'
R = 40.00'

NAD 83/NSRS 2007



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8/3/2015

PROJECT REFERENCE NO.	SHEET NO.
B-4490	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

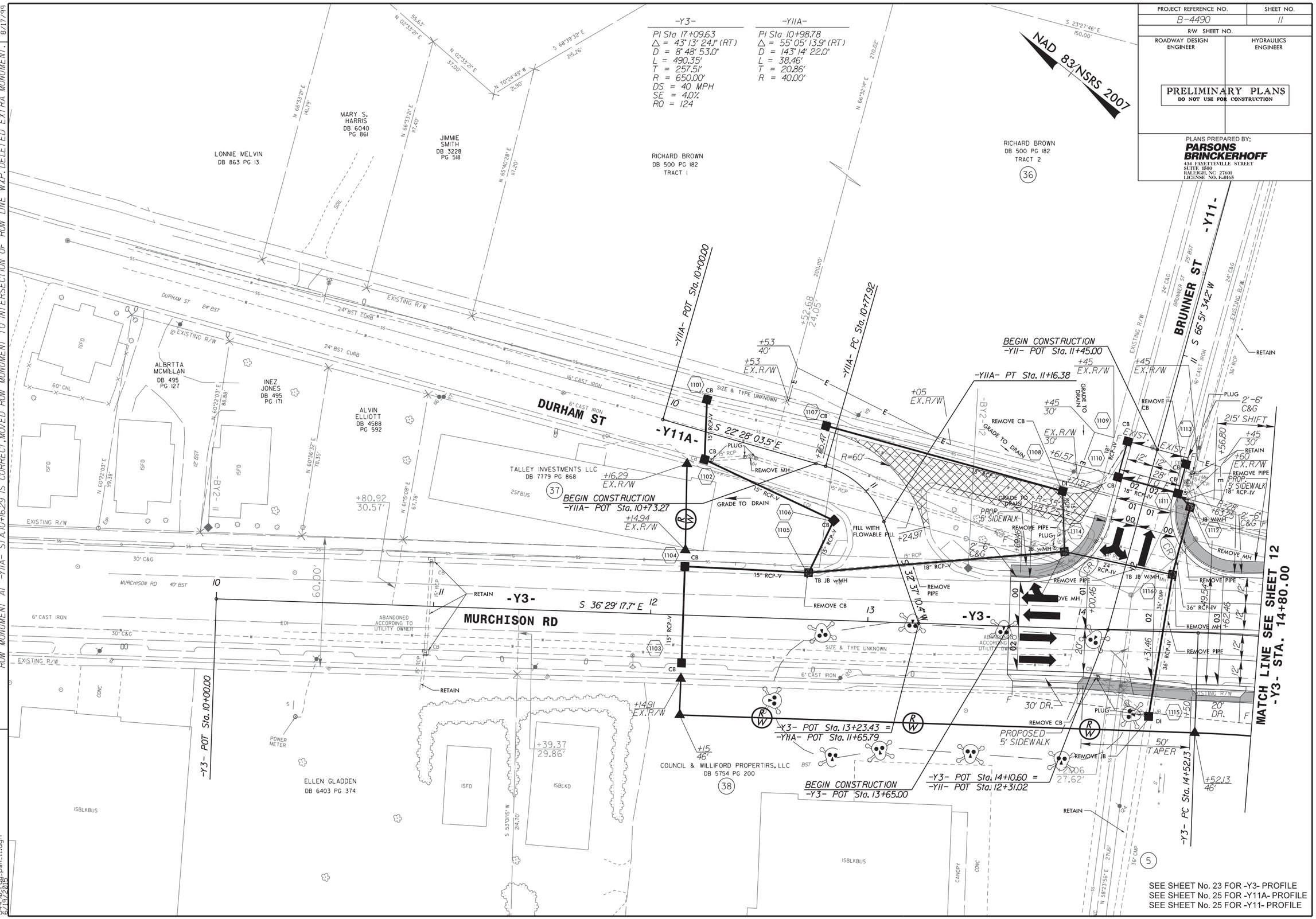
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0165

REVISIONS

02-23-2015 PARCEL 5 - COMBINED PARCELS 5 AND 39 INTO PARCEL 5
03-27-2014 REVISED ROW MONUMENT FROM -Y3- STA.12+15.00 TO 12+14.91.
ROW MONUMENT AT -Y3- STA.12+14.94 IS CORRECT, MOVED ROW MONUMENT TO INTERSECTION OF ROW LINE W/P. DELETED EXTRA MONUMENT.
ROW MONUMENT AT -Y3- STA.14+52.13 IS CORRECT, MOVED ROW MONUMENT TO THE INTERSECTION POINT AT -Y3- STA.14+52.13.
ROW MONUMENT AT -Y11A- STA.10+16.29 IS CORRECT, MOVED ROW MONUMENT TO INTERSECTION OF ROW LINE W/P. DELETED EXTRA MONUMENT.

8/17/99



SEE SHEET No. 23 FOR -Y3- PROFILE
SEE SHEET No. 25 FOR -Y11A- PROFILE
SEE SHEET No. 25 FOR -Y11- PROFILE

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6/19/2015

PROJECT REFERENCE NO.	SHEET NO.
B-4490	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

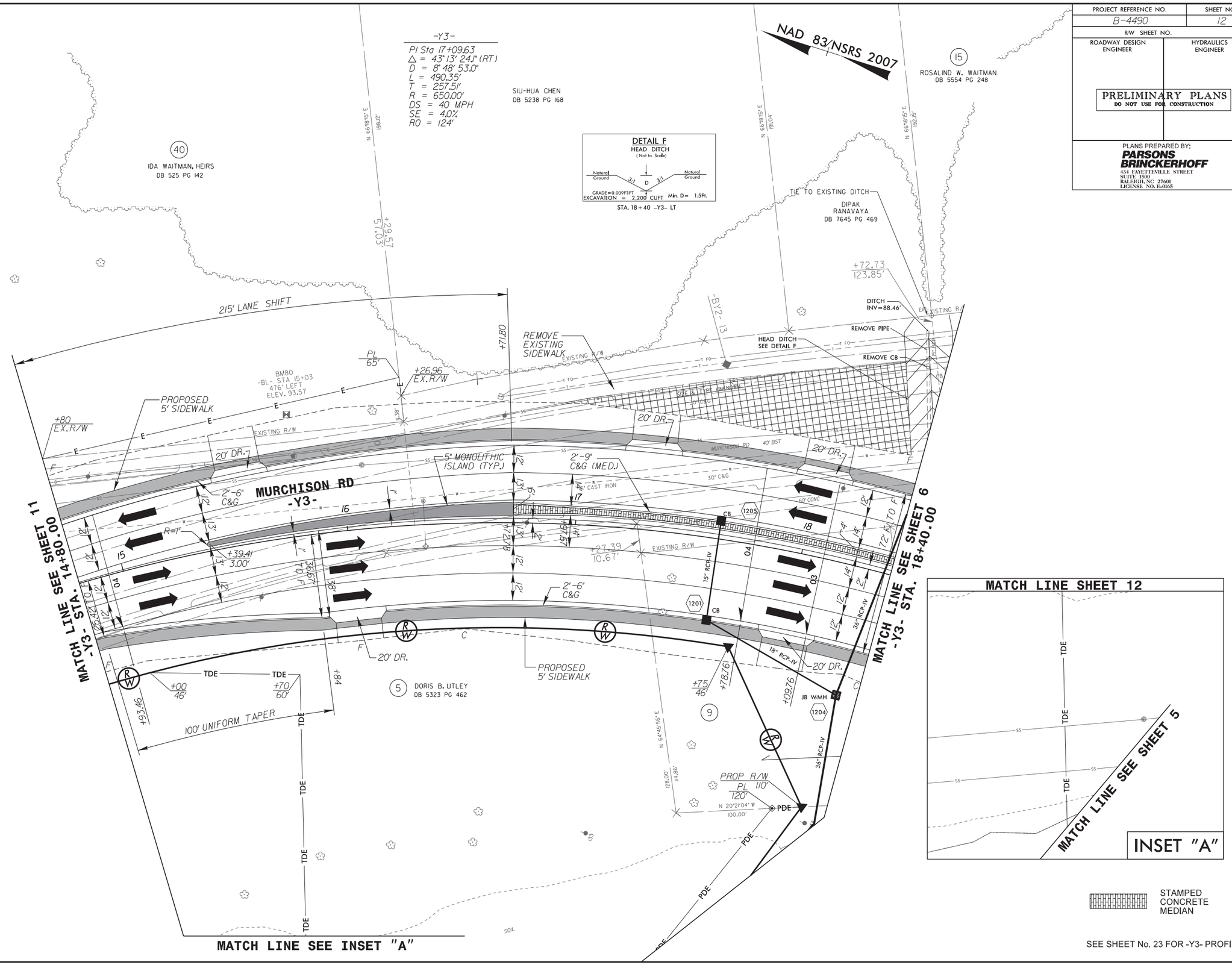
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0163

REVISIONS

02-23-2015 PARCEL 5 - COMBINED PARCELS 5 AND 39 INTO PARCEL 5
02-11-2015 PARCEL 9 - REMOVED PDE FROM PARCEL 9
12-30-2014 PARCELS 9 AND 41 - COMBINED PARCELS 9 AND 41 DUE TO TYPOGRAPHICAL ERROR ON PLANS AT THE MATCH-LINE OF SHEETS 6 AND 12.

8/17/99



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6/19/2015

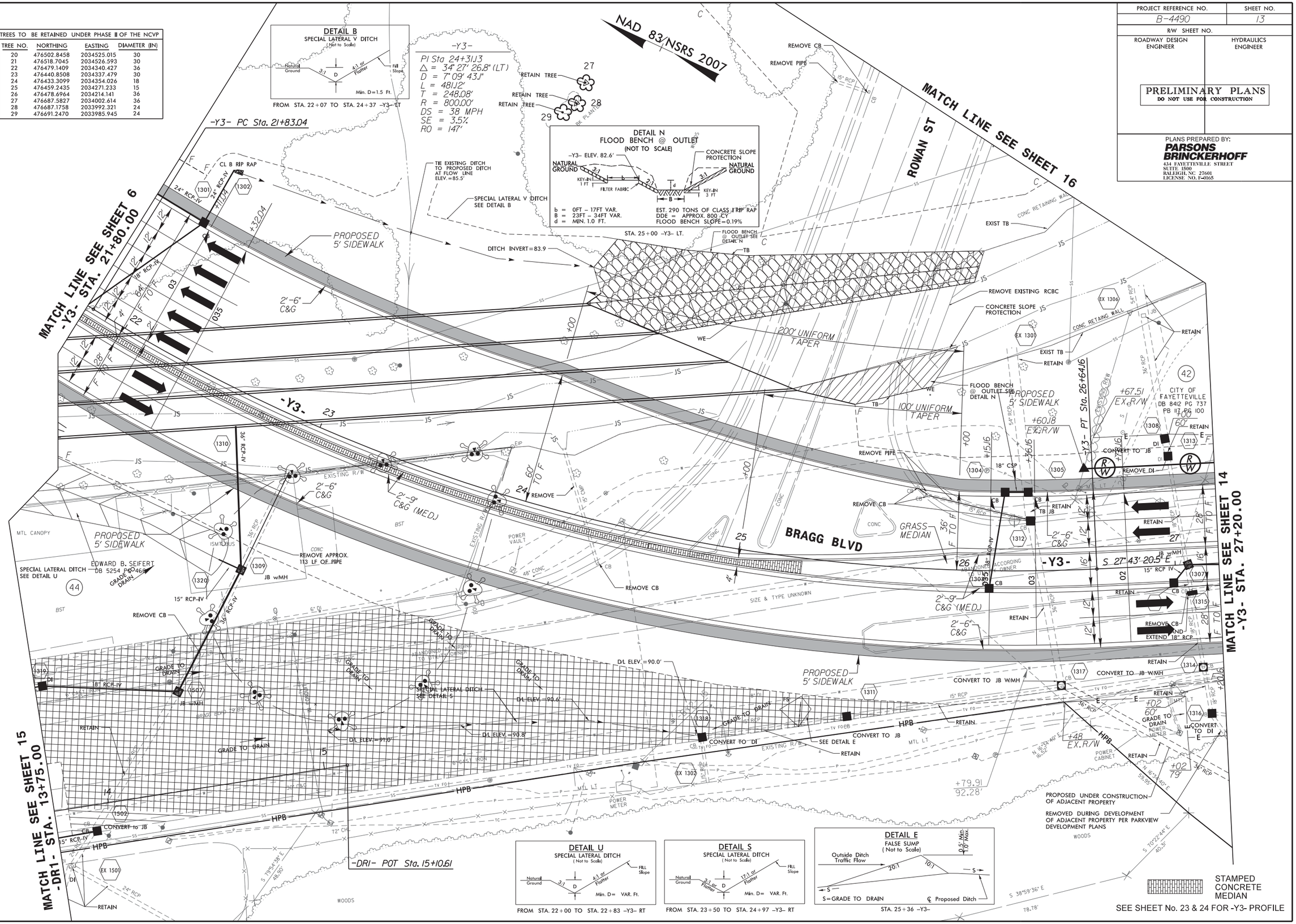
PROJECT REFERENCE NO.	SHEET NO.
B-4490	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0165

8/17/99

TREES TO BE RETAINED UNDER PHASE II OF THE NCVP			
TREE NO.	NORTHING	EASTING	DIAMETER (IN)
20	476502.8458	2034525.015	30
21	476518.7045	2034526.593	30
22	476479.1409	2034340.427	36
23	476440.8508	2034337.479	30
24	476433.3099	2034354.026	18
25	476459.2435	2034271.233	15
26	476478.6964	2034214.141	36
27	476687.5827	2034002.614	36
28	476687.1758	2033992.321	24
29	476691.2470	2033985.945	24



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6/19/2015

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4490	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0163

NAD 83/NSRS 2007

MATCH LINE SEE SHEET 16

-Y3-

PI Sta 24+31.13
Δ = 34° 27' 26.8" (LT)
D = 7° 09' 43.1"
L = 481.12'
T = 248.08'
R = 800.00'
DS = 38 MPH
SE = 3.5%
RO = 147'

PI Sta 32+77.61
Δ = 49° 59' 42.4" (RT)
D = 6° 26' 15.8"
L = 776.60'
T = 414.97'
R = 890.00'
SE = exist.
RO = exist.

-Y3- PC Sta. 31+80.99 =
-Y12- POT Sta. 14+59.67
END CONSTRUCTION
-Y3- POT Sta. 30+50.00

-Y3- PC Sta. 28+62.64

160' LANE SHIFT

160' UNITORM TAPER

WALTER ST -Y12-

CITY OF FAYETTEVILLE
DB 7329 PG 300
PB 117 PG 100

CITY OF FAYETTEVILLE
DB 7369 PG 841
PB 117 PG 100

CITY OF FAYETTEVILLE
DB 5029 PG 454

CITY OF FAYETTEVILLE
DB 7501 PG 84
PB 39 PG 77

PROPOSED 5' SIDEWALK

MATCH LINE SEE SHEET 13
-Y3- STA. 27+20.00

REMOVED DURING DEVELOPMENT OF ADJACENT PROPERTY PER PARKVIEW DEVELOPMENT PLANS

PROPOSED UNDER CONSTRUCTION OF ADJACENT PROPERTY PER PARKVIEW DEVELOPMENT PLANS

REMOVED DURING DEVELOPMENT OF ADJACENT PROPERTY PER PARKVIEW DEVELOPMENT PLANS

STAMPED CONCRETE MEDIAN

SEE SHEET No. 24 FOR -Y3- PROFILE

12:01:19 PM
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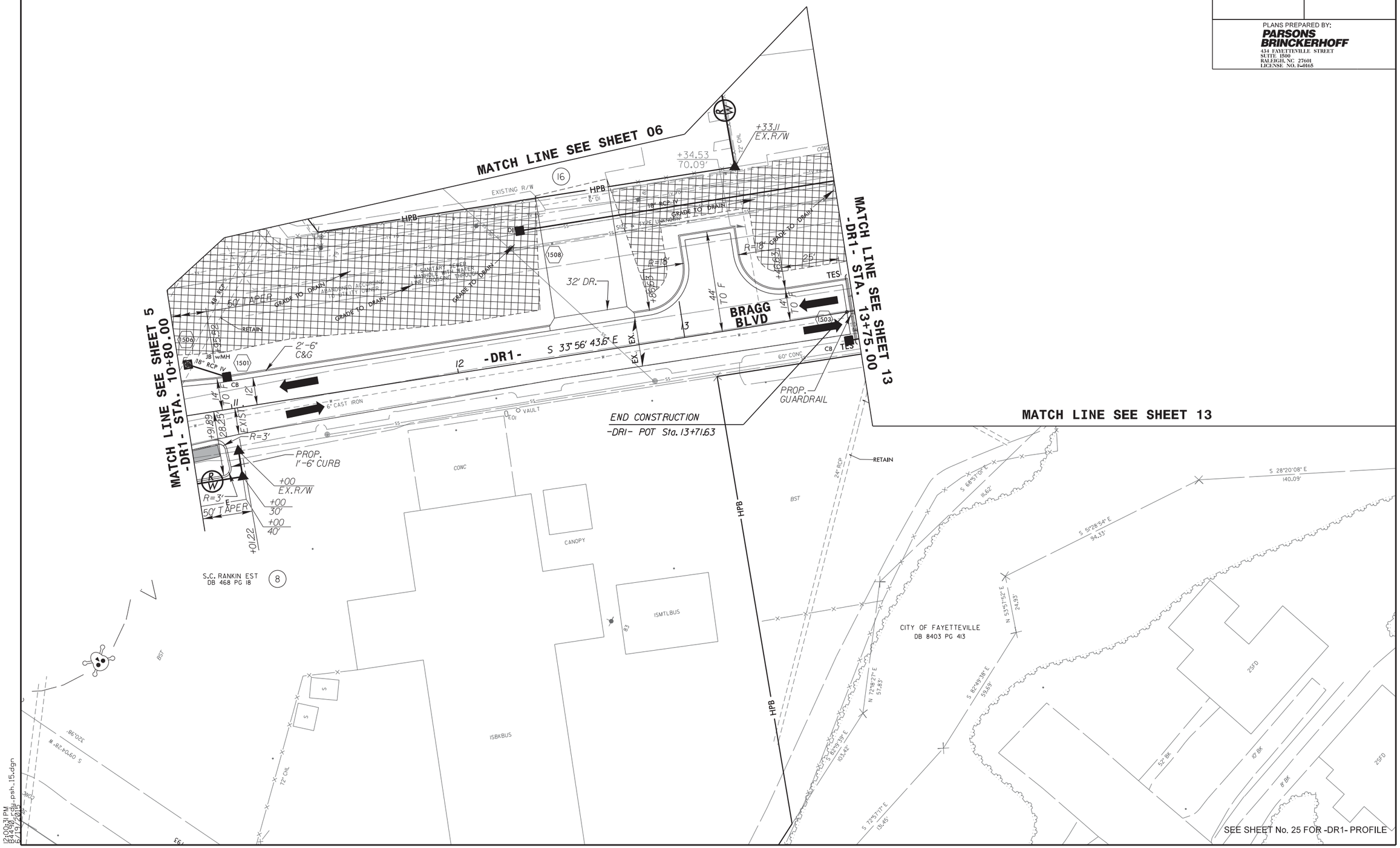
6/19/2015

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4490	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0163



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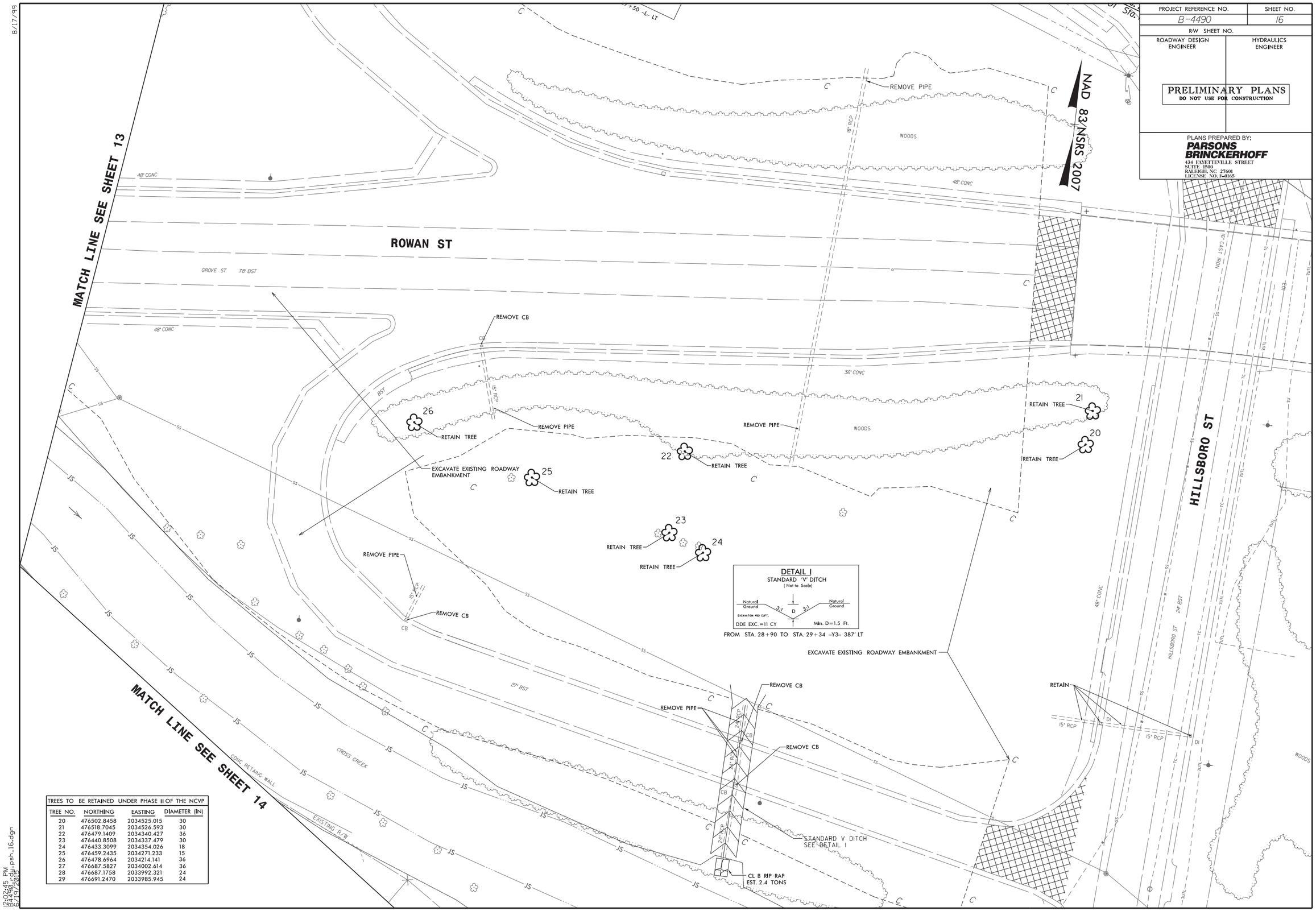
8/13/2015

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4490	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PLANS PREPARED BY:
PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0165



DETAIL I
STANDARD 'V' DITCH
(Not to Scale)

Natural Ground — 3:1 — D — 3:1 — Natural Ground
EXCAVATION 450 CUFT.
DDE EXC.=11 CY
Min. D=1.5 Ft.

FROM STA. 28+90 TO STA. 29+34 -Y3- 387' LT

TREES TO BE RETAINED UNDER PHASE II OF THE NCVP			
TREE NO.	NORTHING	EASTING	DIAMETER (IN)
20	476502.8458	2034525.015	30
21	476518.7045	2034526.593	30
22	476479.1409	2034340.427	36
23	476440.8508	2034337.479	30
24	476433.3099	2034354.026	18
25	476459.2435	2034271.233	15
26	476478.6964	2034214.141	36
27	476687.5827	2034002.614	36
28	476687.1758	2033992.321	24
29	476691.2470	2033985.945	24

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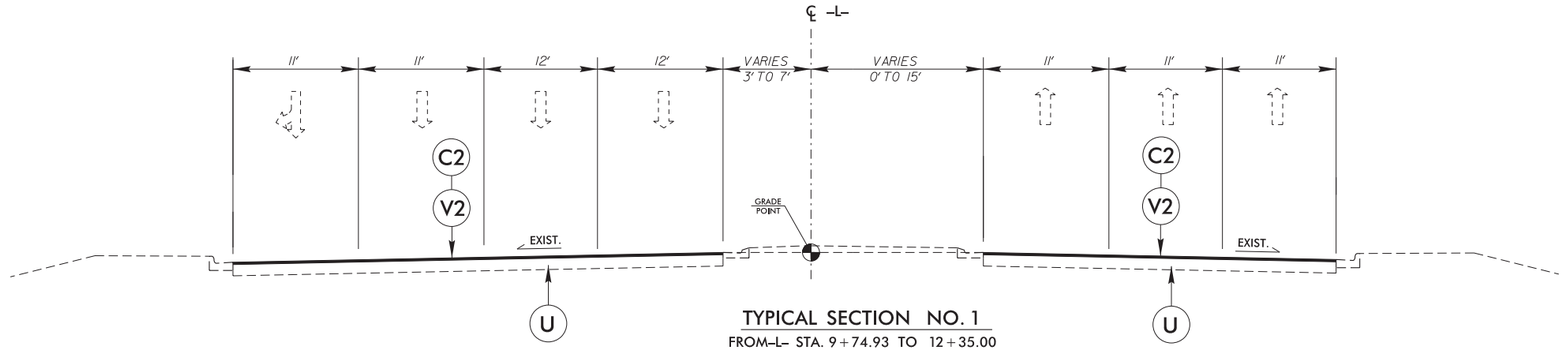
B4490_rdy_psh_16.dgn
6/19/2015

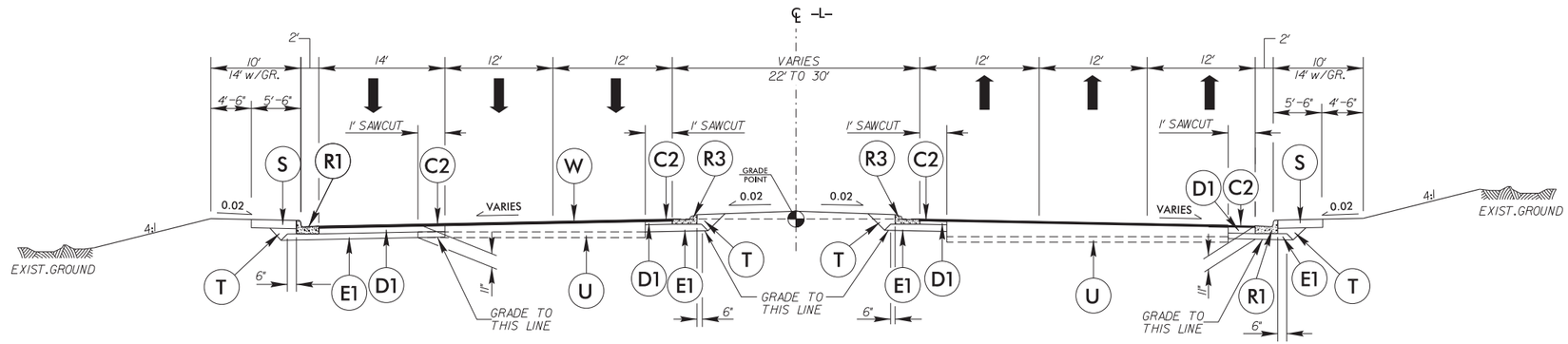
PROJECT REFERENCE NO.	SHEET NO.
B-4490	2A-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

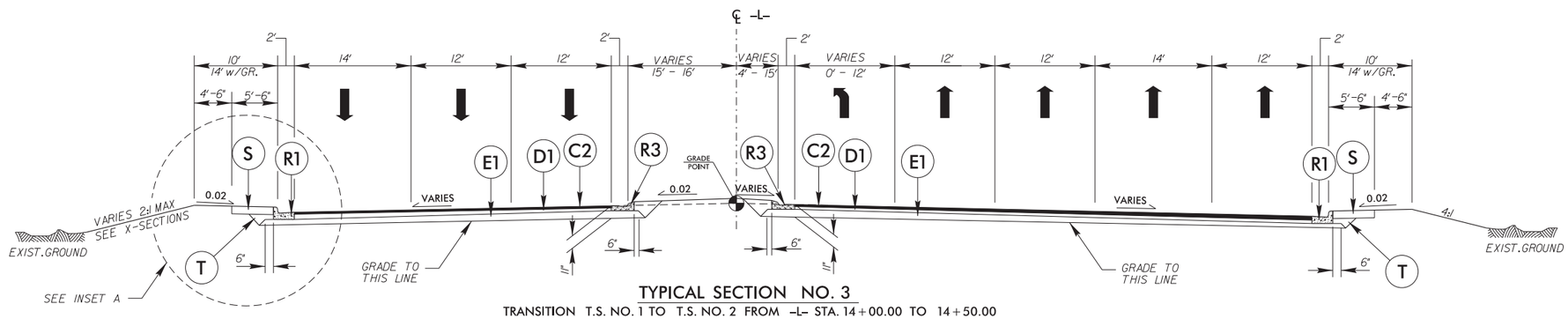
PAVEMENT SCHEDULE	
C1	1.5" TYPE S9.5B
C2	3" TYPE S9.5B
C3	VAR. DEPTH TYPE S9.5B
D1	4" I19.0B
D2	VAR. DEPTH I19.0B
E1	4" TYPE B25.0B
E2	VAR. DEPTH TYPE B25.0B
R1	2'-6" CONCRETE C&G
R2	1'-6" CONCRETE C&G
R3	2'-9" CONCRETE C&G
R4	5" MONO. CONC. ISLAND
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	1.5" MILLING ASPHALT PAVEMENT
V2	3" MILLING ASPHALT PAVEMENT
W	WEDGING DETAIL



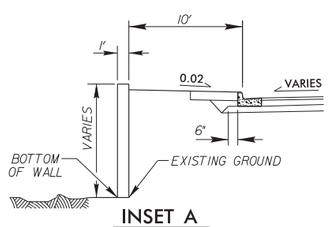
TYPICAL SECTION NO. 1
FROM -L- STA. 9+74.93 TO 12+35.00



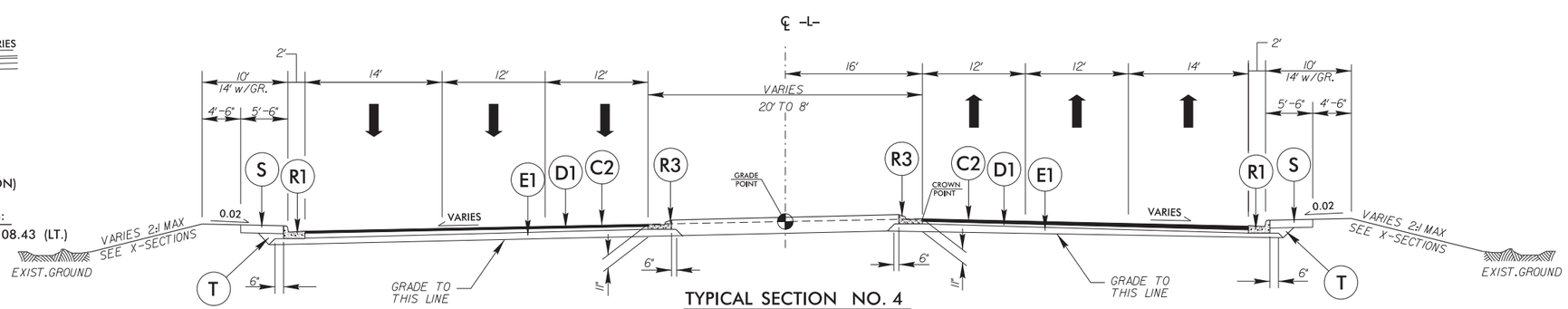
TYPICAL SECTION NO. 2
FROM -L- STA. 12+35.00 TO 14+00.00



TYPICAL SECTION NO. 3
TRANSITION T.S. NO. 1 TO T.S. NO. 2 FROM -L- STA. 14+00.00 TO 14+50.00
-L- STA. 14+50.00 TO 18+63.87



INSET A
(SEE PLANS FOR RETAINING WALL LOCATION)
USE INSET A IN CONJUCTION
w/TYPICAL SECTION No. 3 AS FOLLOWS:
FROM -L- STA. 13+40.29 (LT.) TO -L- STA. 14+08.43 (LT.)



TYPICAL SECTION NO. 4
-L- STA. 18+63.87 TO 27+50.00

6/2/99

jj9:35 PM
B4490_rdy_typ.dgn
6/3/2015

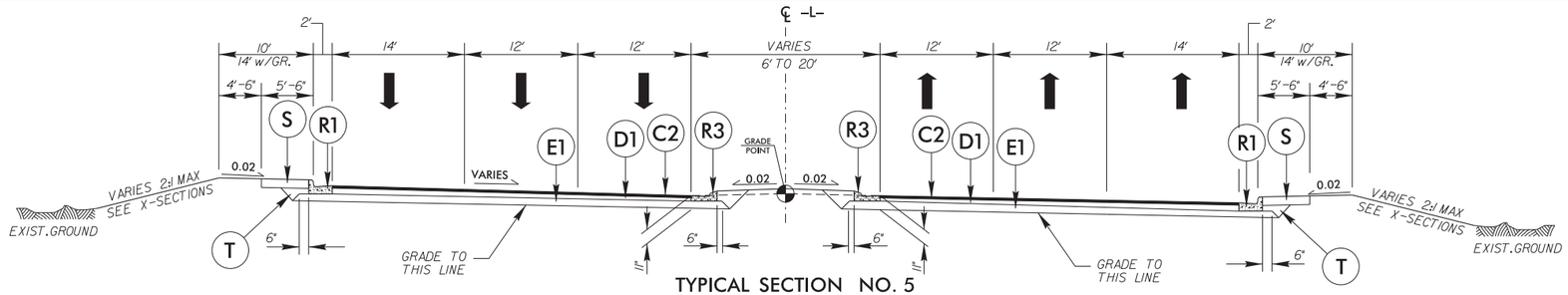
6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4490	2A-3
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

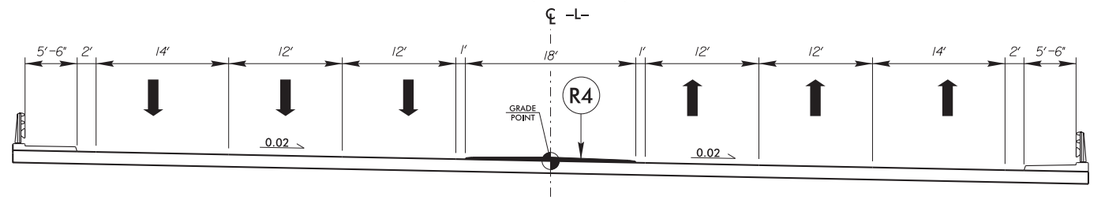
PAVEMENT SCHEDULE

C1	1.5" TYPE S9.5B
C2	3" TYPE S9.5B
C3	VAR. DEPTH TYPE S9.5B
D1	4" I19.0B
D2	VAR. DEPTH I19.0B
E1	4" TYPE B25.0B
E2	VAR. DEPTH TYPE B25.0B
R1	2'-6" CONCRETE C&G
R2	1'-6" CONCRETE C&G
R3	2'-9" CONCRETE C&G
R4	5" MONO. CONC. ISLAND
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	1.5" MILLING ASPHALT PAVEMENT
V2	3" MILLING ASPHALT PAVEMENT
W	WEDGING DETAIL



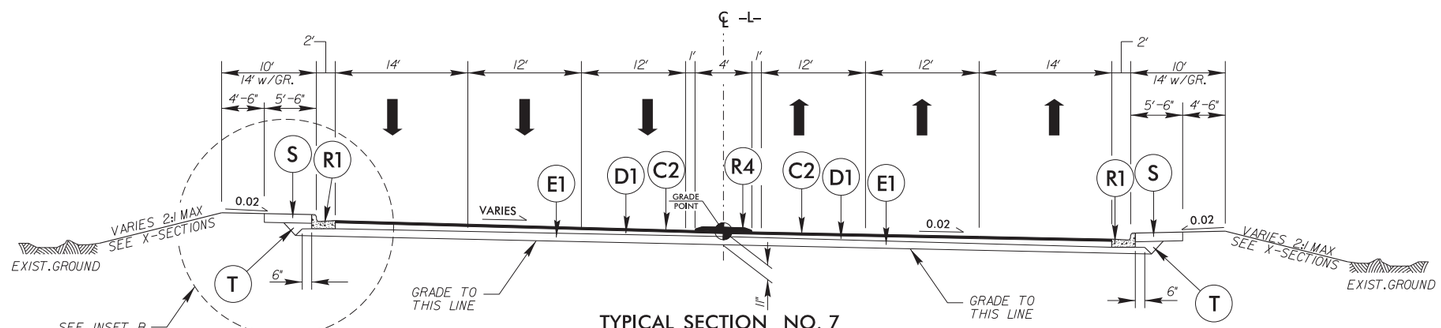
TYPICAL SECTION NO. 5

-L- STA. 27+50 TO 28+89.67 (BEGIN BRIDGE)
-L- STA. 30+46.17 (END BRIDGE) TO 33+54.89



TYPICAL SECTION NO. 6

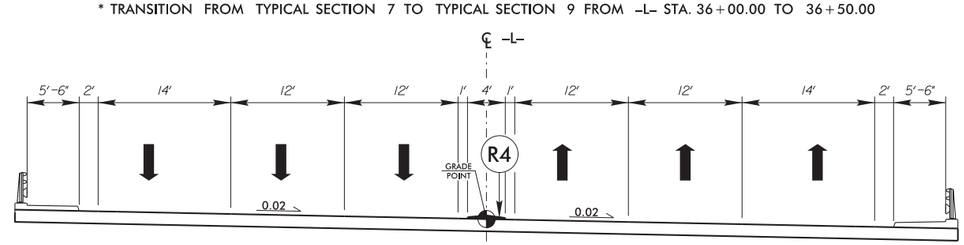
-L- STA. 28+89.67 (BEGIN BRIDGE) TO -L- STA. 30+46.17 (END BRIDGE)



TYPICAL SECTION NO. 7

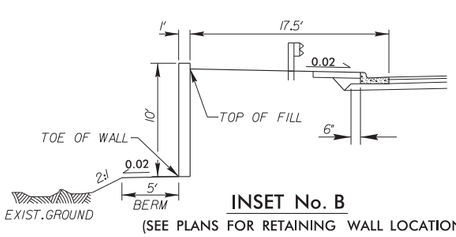
-L- STA. 33+54.89 TO 34+43.06 (BEGIN BRIDGE)
-L- STA. 35+72.31 (END BRIDGE) TO 36+00.00

* TRANSITION FROM TYPICAL SECTION 7 TO TYPICAL SECTION 9 FROM -L- STA. 36+00.00 TO 36+50.00



TYPICAL SECTION NO. 8

-L- STA. 34+43.06 (BEGIN BRIDGE) TO -L- STA. 35+72.31 (END BRIDGE)

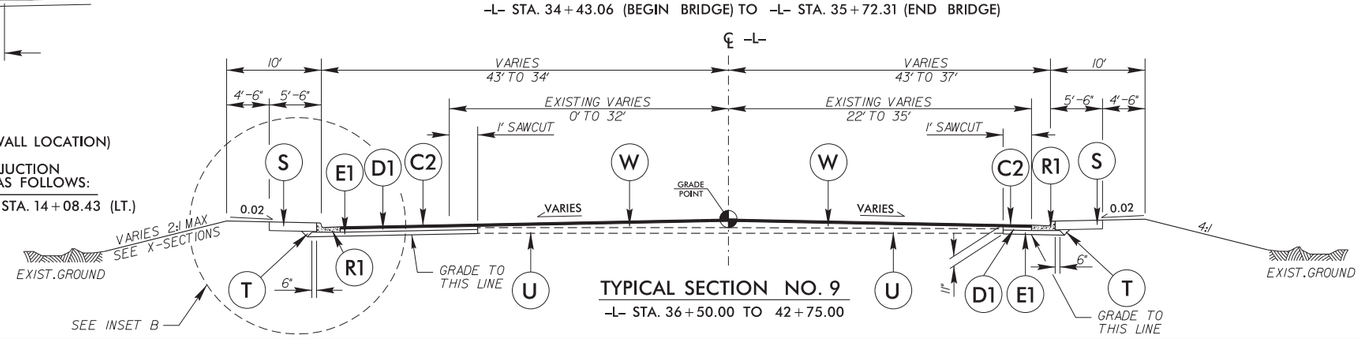


INSET No. B

(SEE PLANS FOR RETAINING WALL LOCATION)

USE INSET No. B IN CONJUCTION w/TYPICAL SECTION No. 7 & 9 AS FOLLOWS:

FROM -L- STA. 13+40.29 (LT.) TO -L- STA. 14+08.43 (LT.)



TYPICAL SECTION NO. 9

-L- STA. 36+50.00 TO 42+75.00

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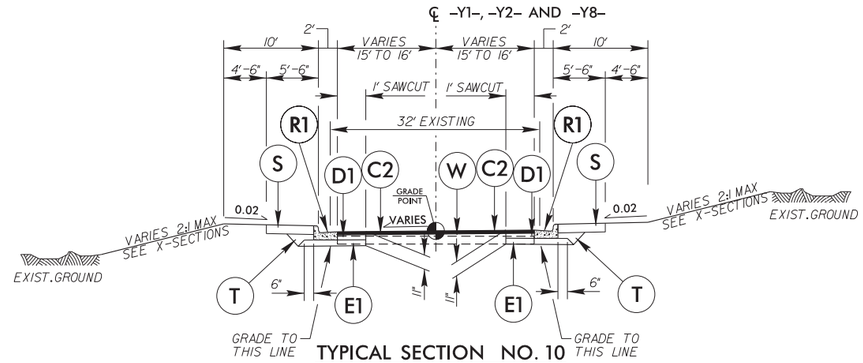
PROJECT REFERENCE NO.	SHEET NO.
B-4490	2A-4
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

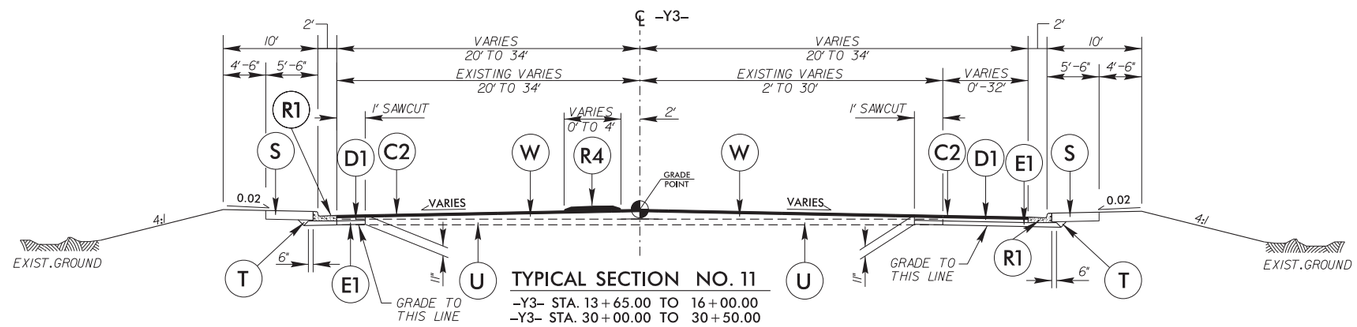
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE	
C1	1.5" TYPE S9.5B
C2	3" TYPE S9.5B
C3	VAR. DEPTH TYPE S9.5B
D1	4" I19.0B
D2	VAR. DEPTH I19.0B
E1	4" TYPE B25.0B
E2	VAR. DEPTH TYPE B25.0B
R1	2'-6" CONCRETE C&G
R2	1'-6" CONCRETE C&G
R3	2'-9" CONCRETE C&G
R4	5" MONO. CONC. ISLAND
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	1.5" MILLING ASPHALT PAVEMENT
V2	3" MILLING ASPHALT PAVEMENT
W	WEDGING DETAIL



TYPICAL SECTION NO. 10

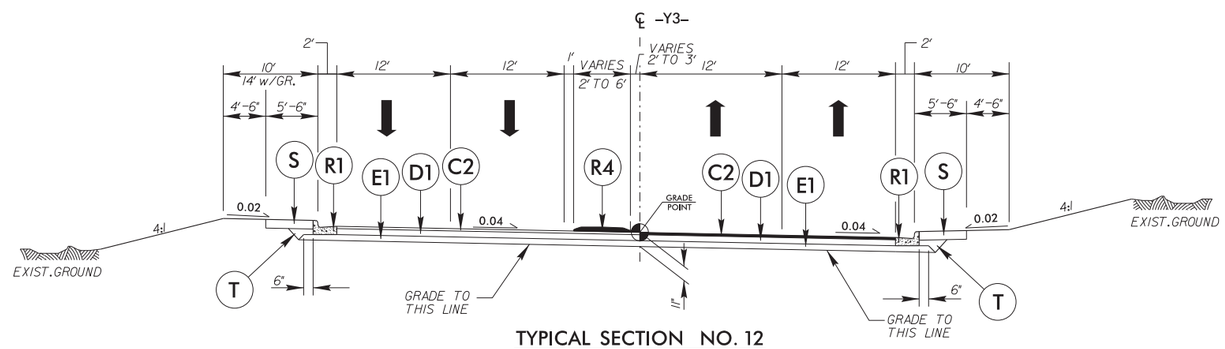
-Y1- STA. 11+50.00 TO 12+91.01
-Y2- STA. 10+66.24 TO 12+25.00
-Y8- STA. 11+75.00 TO 13+29.31



TYPICAL SECTION NO. 11

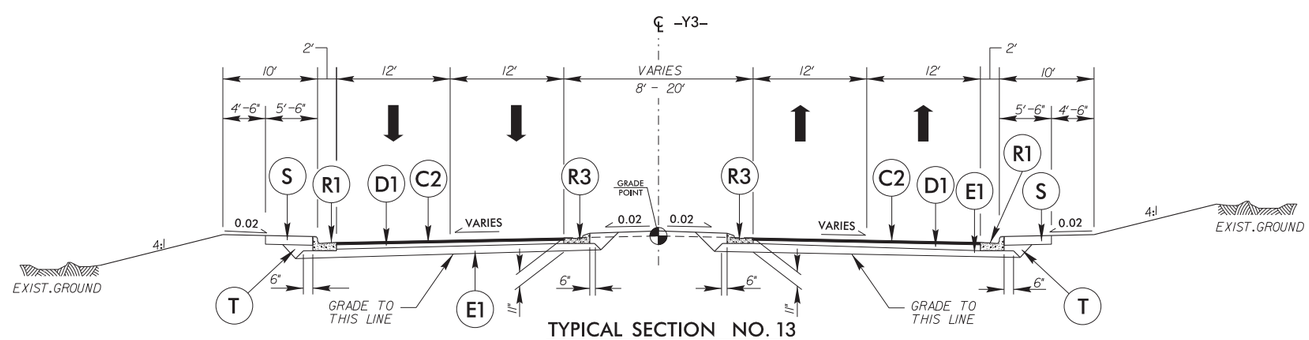
-Y3- STA. 13+65.00 TO 16+00.00
-Y3- STA. 30+00.00 TO 30+50.00

* TRANSITION FROM TYPICAL SECTION NO. 11 TO TYPICAL SECTION 12 FROM -Y3- STA. -L- 16+00.00 TO STA. 16+50.00



TYPICAL SECTION NO. 12

-Y3- STA. 16+50.00 TO 16+72.67



TYPICAL SECTION NO. 13

-Y3- STA. 16+72.67 TO 19+29.42
-Y3- STA. 20+39.97 TO 28+00.00

* TRANSITION FROM TYPICAL SECTION NO. 13 TO TYPICAL SECTION 14 FROM -Y3- STA. 28+00.00 TO -Y3- STA. 28+50.00

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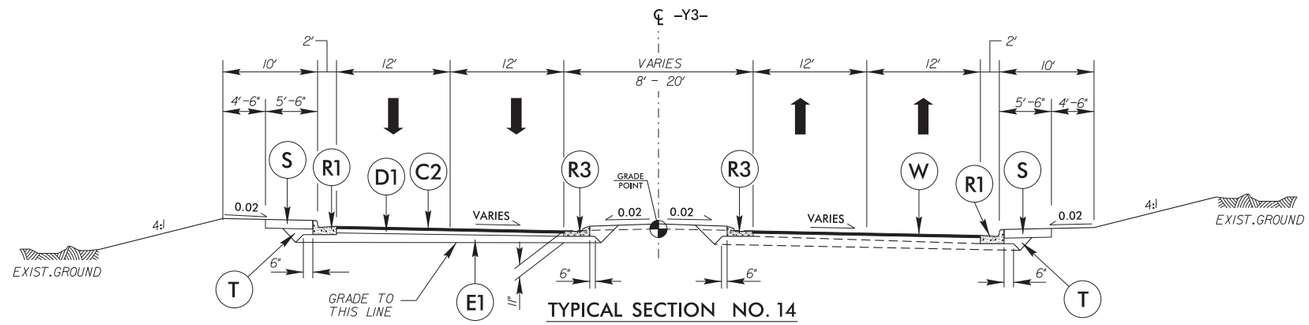
PROJECT REFERENCE NO.	SHEET NO.
B-4490	2A-5
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

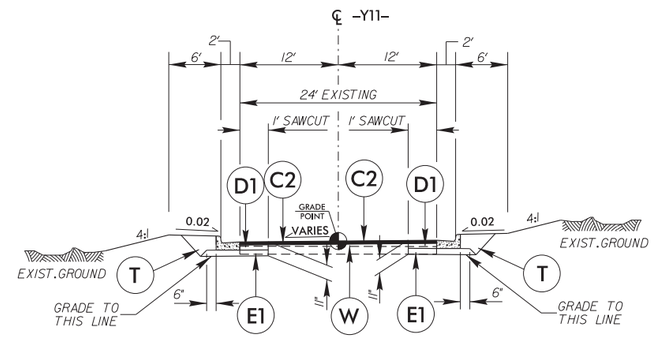
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE	
C1	1.5" TYPE S9.5B
C2	3" TYPE S9.5B
C3	VAR. DEPTH TYPE S9.5B
D1	4" I19.0B
D2	VAR. DEPTH I19.0B
E1	4" TYPE B25.0B
E2	VAR. DEPTH TYPE B25.0B
R1	2'-6" CONCRETE C&G
R2	1'-6" CONCRETE C&G
R3	2'-9" CONCRETE C&G
R4	5" MONO. CONC. ISLAND
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	1.5" MILLING ASPHALT PAVEMENT
V2	3" MILLING ASPHALT PAVEMENT
W	WEDGING DETAIL

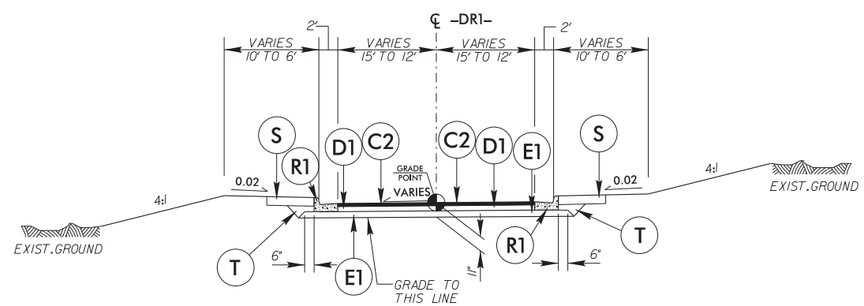


TYPICAL SECTION NO. 14
-Y3- STA. 28+50.00 TO 29+50.00

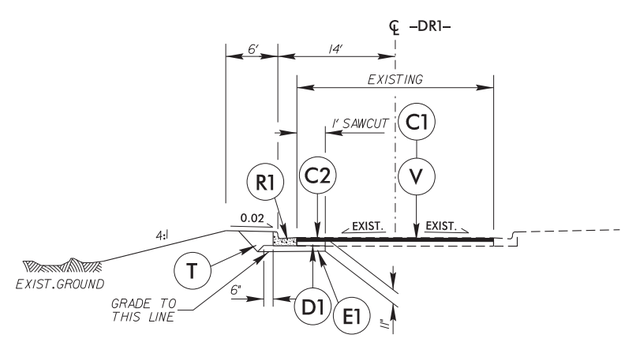
* TRANSITION FROM TYPICAL SECTION NO. 14 TO TYPICAL SECTION 11 FROM -Y3- STA. 29+50.00 TO -Y3- STA. 30+00.00



TYPICAL SECTION NO. 15
-Y11- STA. 11+45.00 TO 12+06.97



TYPICAL SECTION NO. 16
-DR1- STA. 10+16.45 TO 11+80.00



TYPICAL SECTION NO. 17
-DR1- STA. 11+80.00 TO 13+71.63

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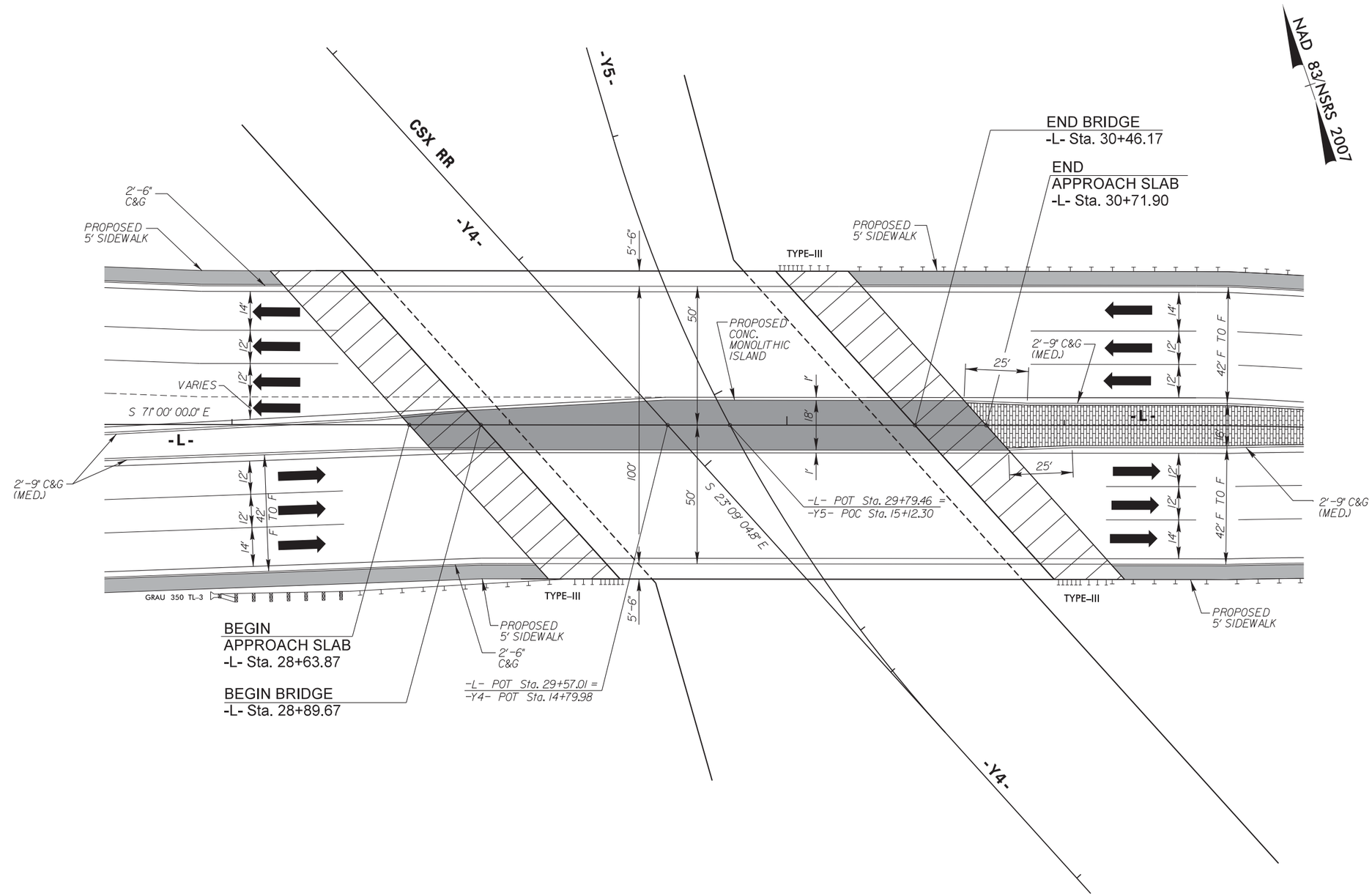
PROJECT REFERENCE NO.	SHEET NO.
B-4490	2B-1

ROADWAY DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL SHOWING BRIDGE IN RELATION TO PAVEMENT



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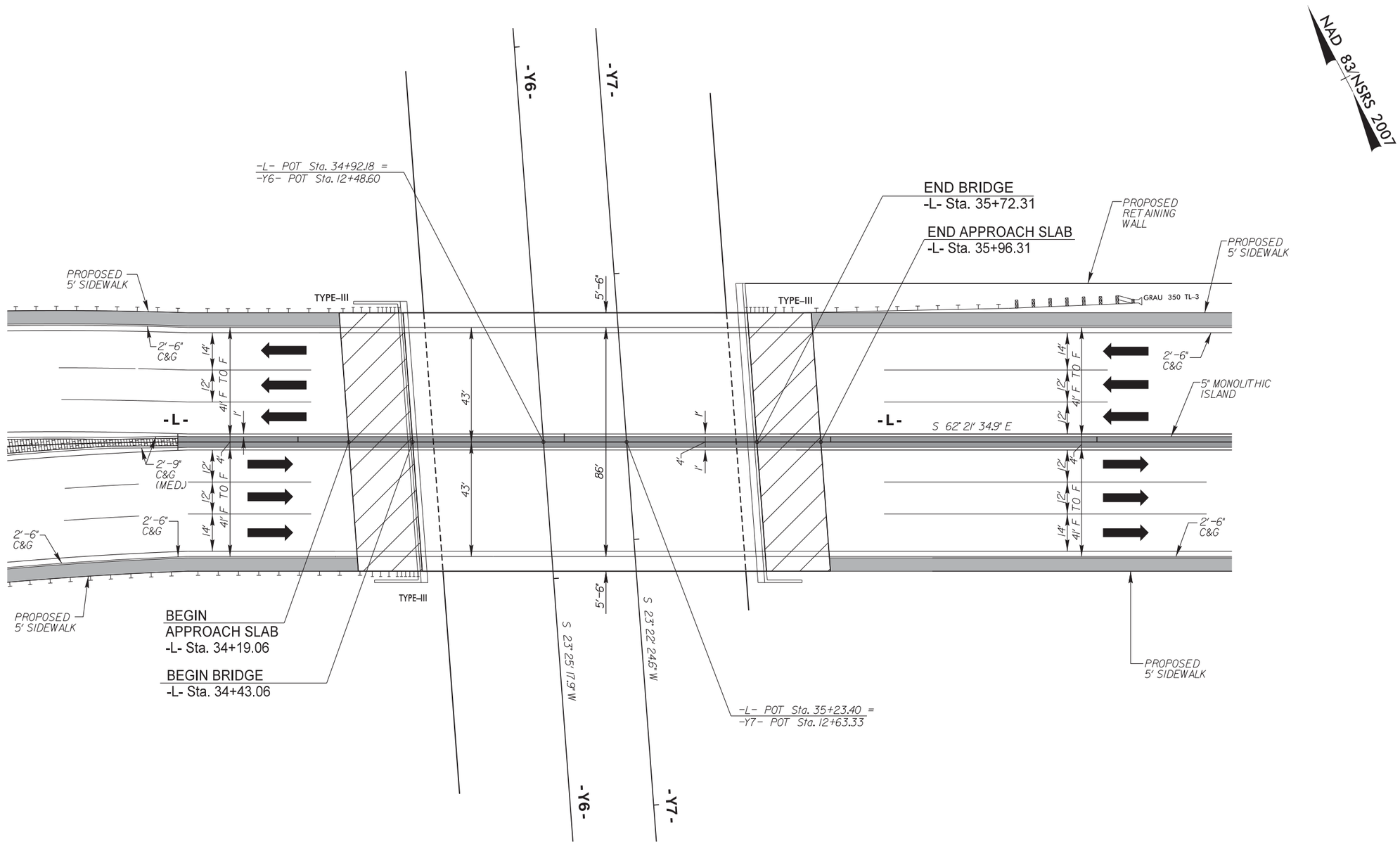
PROJECT REFERENCE NO.	SHEET NO.
B-4490	2B-2

ROADWAY DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL SHOWING BRIDGE IN RELATION TO PAVEMENT



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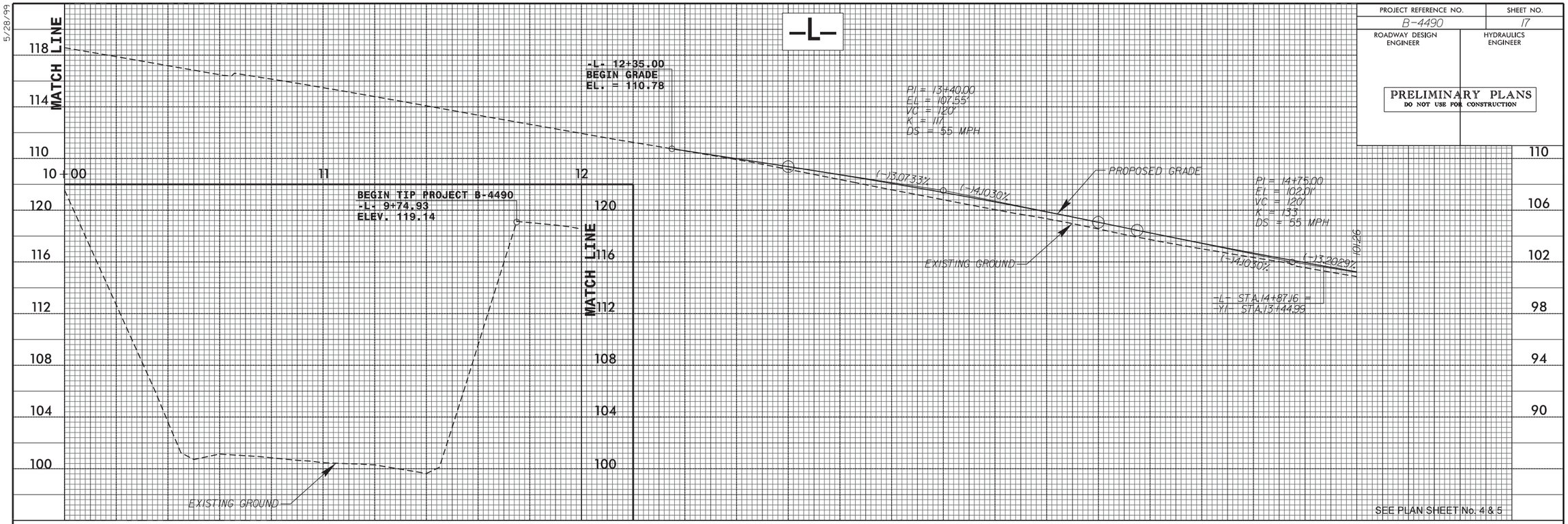
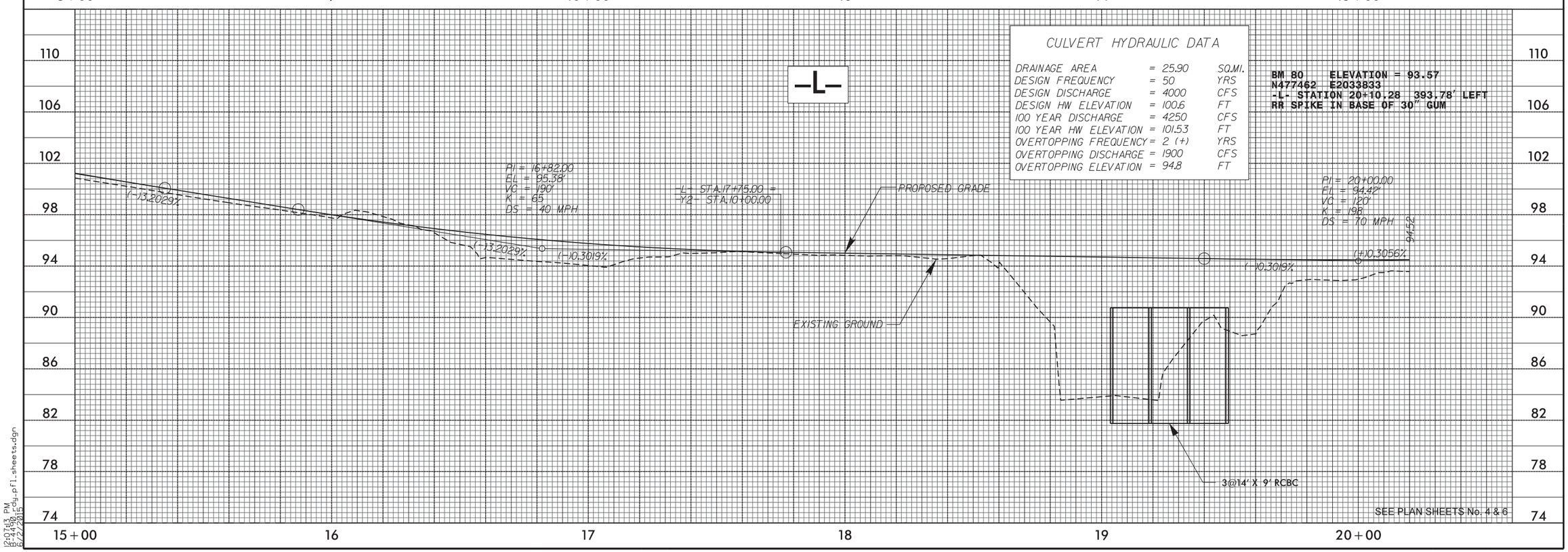
PROJECT REFERENCE NO.	SHEET NO.
B-4490	17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





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6/22/2015