



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE  
GOVERNOR

EUGENE A. CONTI, JR.  
SECRETARY

August 12, 2011

U.S. Army Corps of Engineers  
Regulatory Field Office  
Post Office Box 1000  
Washington, NC 27889-1000

Attn: Mr. Tom Steffens  
NCDOT Coordinator

Dear Sir:

Subject: **Application for Individual Section 404 and 401 permits and Neuse Riparian Buffer Authorization** for construction of the widening of NC 42 from US 70 (Clayton) to SR 1003 (Buffaloe Rd) in Johnston County. Federal Aid Project No. STP-42(4). State Project No. 8.1312301. TIP No. R-3825A & B. Debit \$570.00 from WBS 34552.1.1.

The North Carolina Department of Transportation (NCDOT), Division of Highways, in consultation with the Federal Highway Administration (FHWA), proposes to construct the widening of NC 42 from US 70 (Clayton) to SR 1003 (Buffaloe Rd). The project is approximately 6 miles in length and has been divided into two sections, A and B. The A section begins at US 70 in Clayton and ends approximately 0.31 mile east of SR 1902 (Glen Laurel Rd). The B section begins east of SR 1902 (Glen Laurel Rd.) and ends at SR 1003 (Buffaloe Rd). Final design is complete for the A section; however, the B section is in preliminary design.

The purpose of this letter is to request approval for a Section 404 Individual Permit, a Section 401 Water Quality Certification, and a Neuse Riparian Buffer Authorization. In addition to the cover letter and ENG Form 4345, this application package includes the following for R-3825: permit drawings, riparian buffer drawings, utility permit drawings, a set of half size roadway plans, FHWA Right-of-Way Consultation, USFWS concurrence request letter, and USFWS concurrence letters.

### 1.0 Purpose and Need

The purpose for this project, as identified in the Final Environmental Assessment (EA), is to improve safety and traffic carrying capacity of NC 42 within the project limits.

**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](http://WWW.NCDOT.ORG)

**LOCATION:**  
1020 BIRCH RIDGE DRIVE  
RALEIGH, NC 27610-4328

## 2.0 Project Description

The improvements involve the widening of NC 42 to a four-lane shoulder facility with two 12-foot lanes in each direction separated by a 17.5-foot grassed median from US 70 to SR 1003 (Buffaloe Rd). Outside shoulders will be 8 feet wide, with 4 feet being paved. No control of access is proposed. This project also includes a new 380-foot long by 73.5-foot wide bridge spanning the Neuse River, replacing the existing 350-foot long bridge. There are also two box culverts that will be extended for Mill Creek and an unnamed tributary (UT) to the Neuse River.

## 3.0 Summary of Impacts

Waters of the U.S.: Proposed impacts to jurisdictional areas total 1.28 acres of permanent wetland impacts, 1,419 feet of permanent stream impacts, and 13 feet of temporary stream impacts. See Table 1 for the impact summary for both sections.

**Table 1. Summary of Wetland and Stream Impacts for R-3825**

Section	Permanent Wetland (ac.) (Riparian)	Temporary Wetland (ac.)	Permanent Stream (ft.)	Temporary Stream (ft.)
A	0.56	0	174	13
B	0.72	0	1,245	0
Total	1.28	0	1,419	13

Neuse Riparian Buffers: Proposed impacts to riparian buffers total 106,293 sq.ft. See Table 2 for the impact summary for both sections.

**Table 2. Summary of Buffer Impacts for R-3825**

Section	Zone 1 Buffer Impacts (sq.ft.)	Zone 2 Buffer Impacts (sq.ft.)
A	10,059	5,450
B	54,958	35,826
Total	65,017	41,276

## 4.0 Summary of Mitigation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible. NCDOT proposes to use existing credits from NCDOT's own debit ledger to mitigate for wetland and stream impacts. The mitigation credits will come from Jeffrey's Warehouse Stream Restoration and Marks Creek Mitigation Site. Jeffrey's Warehouse Stream Restoration credits will cover the 174 feet of stream impacts, while the Marks Creek Mitigation Site will cover the 0.56 acre of wetland impacts from R-3825A. At this time, we are not proposing mitigation for the preliminary impacts for the post year R-3825B.

## 5.0 Project Schedule

Construction of this project is divided into two sections (See Table 3 below). Permit drawings are attached for both sections. However, R-3825B is in preliminary design; therefore, permit

drawings are not final for this section. The impacts associated with this section may change once the final design is completed. Final permit drawings for R-3825B will be provided under separate cover in the form of a permit modification request. NCDOT understands that no construction will occur on R-3825B until the final design and resulting impacts have been approved by the regulatory agencies.

**Table 3. Project Sections and Scheduling**

<b>Section</b>	<b>Project Limits</b>	<b>Scheduled Let Date</b>	<b>Review Date</b>
R-3825A	US 70 (Clayton) to east of SR 1902 (Rocky Branch Rd).	3/20/2012	1/31/2012
R-3825B	NC 42 from east of SR 1902 (Rocky Branch Rd) to SR 1003 (Buffaloe Rd)	Post Year	N/A

## **6.0 NEPA Document Status**

The FHWA and NCDOT completed the Environmental Assessment (EA) on August 11, 2003 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. The EA was approved and circulated to federal, state, and local agencies. Then following the EA, a Finding of No Significant Impact (FONSI) was completed on July 11, 2006. On July 17, 2008 a FHWA Right of Way Consultation was completed. Copies of the project documents have been provided to regulatory review agencies involved in the approval process. Additional copies will be provided upon request.

### **6.1 Independent Utility**

R-3825 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 Neuse River Basin and lies within Hydrologic Unit 03020201 (Subbasin 03-04-02). This is within the Northern Inner Coastal Plain ecoregion. R-3825B crosses Mill Creek and the Neuse River.

## **7.1 Wetland Delineations**

A wetland delineation for the study area was performed and summarized in the 2001 Natural Resources Technical Report (NRTR). The wetlands within the study area were 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 impacts to wetlands to the maximum extent possible. Wetland delineations were completed between October 2000 and February 2001. This delineation was later field verified by Mr. William Wescott of the USACE, Wilmington District, and Mrs. Nicole Thomson with the N.C. Division of Water Quality (NCDWQ) on December 2, 2005.

## **7.2 Stream Delineations**

Data collected for streams were derived from USGS topographic maps, the Johnston County Soil Survey (USDA, 1990), and site reconnaissance. The data included stream classifications, which were presented in the NRTR. The NCDWQ concurred on stream classifications on December 2, 2005, when Mrs. Nicole Thomson with the NCDWQ visited the site.

## **7.3 Riparian Buffer Determinations**

The project study area is located within the Neuse River Basin. Streams and jurisdictional surface waters depicted on either the most recent U.S. Geological Survey 7.5-minute topographic quadrangle or the county soil survey map are subject to the Neuse River Riparian Buffer Rules. On December 2, 2005 a field review was conducted with Mrs. Nicole Thomson of the NCDWQ to confirm which stream and open water features are subject to the Neuse River Riparian Buffer Rules.

## **7.4 R-3825: Characterization of Jurisdictional Sites**

### **7.4.1 Wetlands**

There are three wetland communities found within the project study area: Riparian Fringe, Mixed Hardwood Forest, and Piedmont Alluvial Forest. More detailed information about these wetlands can be found in the EA and the NRTR which includes figures showing the wetlands within the project area.

### **7.4.2 Streams**

Best Usage Classifications for jurisdictional streams are provided in the EA. Neither High Quality Waters (HQW), 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 study area. None of the streams are designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River. Mill Creek is not listed on the Final 2010 Section 303(d) list of impaired waters for the Neuse River Basin; but it does drain into a section of the Neuse that is listed on the Final 2010 Section 303(d) list of impaired waters

due to turbidity. NCDOT will adhere to Design Standards for Sensitive Watersheds for both the Neuse River and Mill Creek.

### 7.5 Impacts to Jurisdictional Resources

Impacts to jurisdictional wetlands and streams for R-3825A are summarized below in Tables 4 and 5. Proposed impacts for R-3825A are slightly higher than those provided in the EA, FONSI, and ROW Consultation. The discrepancy was due to the method used to calculate impacts originally.

Currently, permit drawings for R-3825B detailing the jurisdictional impacts are preliminary. Estimated impacts to jurisdictional areas within R-3825B (as shown in Table 1 and 2) are the most accurate impact amounts available at this time. NCDOT will apply all prudent avoidance and minimization measures during the design process for R-3825B, which will be coordinated with the relevant review agencies. Any changes with R-3825B will be addressed in the permit modification request once final design is complete.

**Table 4. Impacts to Wetlands for R-3825A**

Permit Drawing Site Number	Wetland Type	Name assigned during original delineation (EA)	Estimated impacts based on EA and ROW Consultation	Permanent Impacts (ac.)	Temporary Impacts (ac.)
2	Riparian	WK	0.40	0.47	0
3	Riparian	WJ	0.09	0.09	0
<b>Total</b>	<b>N/A</b>	<b>N/A</b>	<b>0.49</b>	<b>0.56</b>	<b>0</b>

**Table 5. Impacts to Streams for R-3825A**

Permit Drawing Site Number	Stream Type*	Name assigned during original Delineation (EA)	Estimated impacts based on FONSI and ROW Consultation	DWQ Stream Class.	Permanent Impacts (ft.)	Temporary Impacts (ft.)
1	I	N1	28	WS-IV NSW	80	13
2	I	N2	122	WS-IV NSW	94	0
<b>Total</b>	<b>N/A</b>	<b>N/A</b>	<b>150</b>	<b>N/A</b>	<b>174</b>	<b>13</b>

\*I-Intermittent

Permanent Impacts: Proposed permanent impacts for R-3825A include fill, excavation, and mechanized clearing in wetlands. Proposed permanent impacts to surface waters for R-3825A

are 174 ft. (<0.01 acre), which includes two culverts that will be extended and replaced at UTs to the Neuse River (sites 1 & 2).

Temporary Impacts: There will be 13 linear feet of temporary impacts to surface water due to culvert installations.

Utility Impacts: There will be 2 sq.ft. of impacts to jurisdictional wetlands as a result of the installation of 2 utility poles. There will also, be 0.18 acre of hand clearing on this project for the aerial power lines.

Neuse River Basin Riparian Buffer Impacts: This project is located in the Neuse River Basin; therefore, the regulations pertaining to the buffer rules apply. There will be a total of 15,509 sq.ft. of impacts to riparian buffers (see Table 6) for R-3825A. These impacts are considered road crossing activities and are allowable because the impacts are less than the 150-foot or one-third acre threshold per crossing. Uses designated as allowable may proceed within the riparian buffer provided that there are no practical alternatives to the requested use pursuant to Item (8) of this rule.

**Table 6. Summary of Buffer Impacts for R-3825A**

Buffer Drawing Site #	Type	Total Buffers(sq.ft.)		
		Zone 1	Zone 2	Total
1	Road Crossing	4,833	2,565	7,398
2	Road Crossing	4,510	2,510	7,020
3	Road Crossing	716	375	1,091
<b>Total</b>		<b>10,059</b>	<b>5,450</b>	<b>15,509</b>

## 8.0 Protected Species

Plants and animals with federal classification of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The United States Fish and Wildlife Service (USFWS, 2010) lists four (4) federally protected species for Johnston County as of the September 22, 2010 listing (Table 7).

**Table 7. Federally Protected Species in Johnston County**

Common Name	Scientific Name	Federal Status	Habitat Present	Biological Conclusion
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	No	No Effect
Dwarf wedgemussel (DWM)	<i>Alasmidonta heterodon</i>	E	Yes	May Affect, Not Likely to Adversely Affect
Tar River spinymussel (TSM)	<i>Elliptio steinstansana</i>	E	No	No Effect
Michaux's sumac	<i>Rhus michauxii</i>	E	Yes	No Effect

The red-cockaded woodpecker was surveyed for on March 8, 2001 and again on December 22, 2004; after which a biological conclusion of No Effect was determined based on lack of suitable nesting habitat and the fact that no evidence of their presence was found. The Michaux's sumac was last surveyed for on July 1, 2003; after which a biological conclusion of No Effect was determined based on no Michaux's sumac being found. A survey will be completed prior to construction to update the biological conclusion of the Michaux's sumac. Both the Neuse River and Mill Creek were surveyed for the presence and habitat for the dwarf wedgemussel and the Tar River spinymussel on November 4, 2005. After this last survey for the mussels, concurrence was given by the USFWS. See the attached concurrence request and final concurrence letters from the USFWS for more information

The NC Natural Heritage Program (NCNHP) database (updated May 2011) was also reviewed by NCDOT for recorded occurrences of protected species. No occurrences of federally protected species were recorded for the project study area.

### **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) becomes the primary law protecting bald eagles. Per this law, a survey was undertaken for bald eagle on August 7, 2007. Habitat on this section of the Neuse River is marginal and no eagles or their nests were found within a 660-foot radius of the project area. Therefore, this project will not affect the bald eagle.

### **8.2 *Moratorium***

At this time there is no in-water work moratorium for R-3825A. According to the NC Wildlife Resources Commission (NCWRC), anadromous fish species are found in portions of the Neuse River and Mill Creek within R-3825B. An in-water work moratorium between February 15 and June 15 will apply to Mill Creek and the Neuse River. A letter from the NCWRC dated October 6, 2003 requested the standard anadromous fish moratorium for both streams. Additionally, the Neuse River is also designated as an Inland Primary Nursery Area (IPNA). However, NCWRC stated in an email dated July 14, 2011 that NCDOT is not required to adhere to the IPNA in-water work moratorium.

## **9.0 Cultural Resources**

The potential effect of the proposed project on cultural resources in the project area was evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended. The State Historic Preservation Office (SHPO) letter, dated June 17, 1999, states that "no structures of historical or architectural importance located within the planning area". A copy of this letter can be found in the EA. Therefore, no historic architectural investigation was conducted in connection with this project.

An archaeological survey of the project's area of potential effect was conducted by NCDOT archaeologists to determine the project's impact on significant archaeological or historical

resources. No archaeological sites were found within the project's area of potential effects. Therefore, no additional archaeological investigation is recommended for this project. The SHPO concurred with these findings in a letter dated March 22, 2001. A copy of this letter can be found in the EA.

## **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 the NC 42 widening. 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:

- No staging of construction equipment or storage of construction supplies will be allowed in wetlands or near surface waters.
- The project was designed to avoid or minimize disturbance to aquatic life movements.
- NCDOT will minimize long-term water quality impacts through the use of the most recent Best Management Practices for Protection of Surface Waters, as identified in the Federal Aid Highway Program (FHPM) and North Carolina Administrative Code, Chapter 4.
- 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.
- Design Standards in Sensitive Watersheds will be implemented to minimize erosion/sediment loss during the construction phase.
- The construction of a 380-foot bridge that will span the Neuse River and associated wetlands.
- The use of existing bridge during bridge construction over the Neuse River.

- The use of Preformed Scour Holes and Hazardous Spill Catch Basins.
- The use of 3:1 fill slopes in jurisdictional areas where practicable.
- NCDOT's Stream Crossing Guidelines for Anadromous Fish Passage will apply to the Neuse River and Mill Creek.
- No in-water work will be performed in the Neuse River and Mill Creek between February 15th and June 15th, due to the likely presence of anadromous fish.
- NCDOT will implement Best Management Practices for Bridge Demolition and Removal. The asphalt-wearing surface of Bridge Number 75 and bridge rails will be removed without dropping them into the water prior to bridge demolition.
- During construction of the project, the driveway to Clayton Fire Station will be kept open at all times. No equipment or materials will be parked or placed in the fire station driveway at any time.
- If practical, turbidity curtains will be used during in-stream work in the Neuse River.
- See attached Section 7 request letter for additional avoidance and minimization efforts.
- Perpendicular crossings of streams where practical.

### ***11.3 Compensation***

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible. NCDOT proposes to use existing credits from NCDOT's own debit ledger to mitigate for wetland impacts. The mitigation credits will come from Jeffrey's Warehouse Mitigation Site and Marks Creek Mitigation Site within the Neuse River basin.

The Jeffrey's Warehouse Mitigation Site was originally constructed as on-site mitigation for R-1030, US 117 from south of NC 581 in Goldsboro to the US 264 Bypass in Wilson. There are two parcels associated with this mitigation site. The west parcel (approximately 50.2 acres) is bounded on the northwest by the Little River and on the southeast by the US 117 right-of-way. The east parcel (approximately 37.5 acres) is bounded on the northwest by the US 117 right-of-way, on the northeast by a Wayne County Board of Education school bus maintenance shop, and on the east and southeast by private property. The site was constructed in 2006 and has undergone five years of hydrologic and vegetative monitoring.

The Marks Creek Mitigation Site is located approximately two miles southeast of Knightdale off of Knightdale-Eagle Rock Road in Wake County. The site was originally constructed as on-site mitigation for R-2547 the Knightdale Bypass. The site consists of stream restoration, wetland restoration, wetland enhancement, and wetland preservation. It was constructed in 2002, planted in 2003, and has undergone five years of hydrologic and vegetative monitoring.

To offset unavoidable stream impacts of 174 ft. associated with T.I.P. R-3825A, the Jeffrey's Warehouse Mitigation Site will be debited 174 ft. of stream restoration. To offset unavoidable riverine wetland impacts of 0.56 acre associated with T.I.P. R-3825A, the Marks Creek Mitigation Site will be debited 0.56 acre of riverine wetland restoration. These debits are reflected in the debit ledger below.

**Table 8. Jeffrey’s Warehouse Stream Restoration Debits**

<b>Mitigation Type</b>	<b>Debit Amount (ft)</b>	<b>Site TIP</b>
Stream Restoration	452	B-3529 262ft@2:1
Stream Restoration	61	U-4011
Stream Restoration	222	U-4703
Stream Restoration	25	U-3344A
Stream Restoration	279	EB-4993
Stream Restoration	174	R-3825A

**Table 9. Marks Creek Mitigation Site**

<b>Mitigation Type</b>	<b>Debit Amount (ac)</b>	<b>Site TIP</b>
Riparian Wetland Enhancement	10.9	R-2000F&G
Riparian Wetland Enhancement	0.56	R-3825A

## **12.0 Indirect and Cumulative Effects**

The proposed project is expected to impart minimal indirect and cumulative effects. The project is only one of many factors affecting growth potential or potential for land use change in the Future Land Use Study Area (other factors include infrastructure, population growth and job growth, proximity to employment centers, etc.). This project is not the determining factor in how much, how fast, or how intense development is occurring or will occur in the study area. Taken in the context of other past, present and future actions, TIP R-3825 should not incrementally result in substantial cumulative effects.

Qualitative analyses of the probable development patterns in the Future Land Use Study Area suggest that R-3825 will have little effect on water quality or future stormwater runoff in the watersheds encompassed by the project. Water quality concerns should be greatly mitigated by regulations covering watershed protection, floodplain protection, stream and river buffers and stormwater management.

No additional indirect and cumulative effects studies are recommended.

## **13.0 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 also requesting a Section 401 Water Quality Certification from the NCDWQ. In compliance with Section 143-215.3D(e) of the NCAC, we will provide \$570.00 to act as payment for processing the Section 401 permit application previously noted in this application (see Subject line). We are providing five (5) copies of this application to the NCDWQ, for their approval.

Neuse Riparian Buffer Authorization: NCDOT requests that the NCDWQ review this application and issue a written approval for a Neuse Riparian Buffer Authorization.

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

If you have any questions or need additional information, please contact Chris Manley at 919-707-6135 or [cdmanley@ncdot.gov](mailto:cdmanley@ncdot.gov).

Sincerely,



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

**cc list:**

NCDOT Permit Application Standard Distribution List.

**APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT**  
(33 CFR 325)

**OMB APPROVAL NO. 0710-0003**  
**EXPIRES: 31 August 2012**

Public reporting burden 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 this 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 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
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**(ITEMS BELOW TO BE FILLED BY APPLICANT)**

5. APPLICANT'S NAME: First - Middle - Last - Company - North Carolina Department of Transportation E-mail Address - cdmanley@ncdot.gov			8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required) First - Middle - Last - Company - E-mail Address -		
6. APPLICANT'S ADDRESS: Address - City - Raleigh State - NC Zip - 27699 Country - USA			9. AGENT'S ADDRESS Address - City - State - Zip - Country -		
7. APPLICANT'S PHONE NOS. W/AREA CODE. a. Residence b. Business c. Fax 919-707-6135			10. AGENT'S PHONE NOS. W/AREA CODE 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.

\_\_\_\_\_  
APPLICANT'S SIGNATURE

\_\_\_\_\_  
DATE

**NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY**

12. PROJECT NAME OR TITLE (see instructions) R-3825 A & B	
13. NAME OF WATERBODY, IF KNOWN (if applicable) Neuse River and Mill Creek	14. PROJECT STREET ADDRESS (if applicable) Address NC 42 City - Clayton State - NC Zip -
15. LOCATION OF PROJECT Latitude: °N 35.6475 Longitude: °W -78.4057	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID Municipality Section - Township - Range -	

17. DIRECTIONS TO THE SITE  
NC 42 from US 70 (Clayton) to SR 1003 (Buffaloe Rd.) in Johnston County; see attached vicinity map.

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

See attached cover letter.

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

See attached cover letter.

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

20. Reason(s) for Discharge

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

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

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

Acres See attached cover letter and permit drawings.  
Or  
Liner Feet

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

See attached cover 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).

Address – See attached permit drawings.  
City – State – Zip –

26. List of Other Certifications 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
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\* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the 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.

E. J. Lutz for Gregory J. Thorpe, PhD      Aug 11, 2011

SIGNATURE OF APPLICANT      DATE      SIGNATURE OF AGENT      DATE

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.



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Raleigh Field Office  
Post Office Box 33726  
Raleigh, North Carolina 27636-3726

September 29, 2003



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

Dear Dr. Thorpe:

This letter is in response to your September 3, 2003 letter requesting comments from the U.S. Fish and Wildlife Service (Service) on the Environmental Assessment (EA) for the proposed widening of NC 42 from US 70 to SR 1003 in Johnston County, North Carolina (TIP No. R-3825). These comments are provided in accordance with provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661-667d) and section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to the EA, the North Carolina Department of Transportation (NCDOT) proposes to widen a 5.7 mile portion of NC 42 from two lanes to four lanes with a 17.5 foot raised median. The existing bridge over the Neuse River will be replaced and two box culverts on smaller streams will be retained and extended. There are two build alternatives, with the preferred alternative (Alternative 2) having the least impacts to wetlands and streams.

The EA states that 1096 linear feet of streams and 0.71 acres of wetlands will be impacted by the preferred alternative. In addition, up to 26.4 acres of forest habitat of various types will be impacted. This is a significant amount of forest habitat impact, but the impacts will be occurring along the edges of already fragmented habitat. It is understood that the ability to avoid impacts to forest wildlife habitat is limited when widening an existing road.

There are four federally-protected species listed for Johnston County. The EA renders a biological conclusion of "no effect" for the red-cockaded woodpecker (*Picoides borealis*), dwarf wedgemussel (*Alasmidonta heterodon*), Tar spiny mussel (*Elliptio steinstansana*) and Michaux's sumac (*Rhus michauxii*). **The Service does not concur with any of the "no effect" conclusions for the following reasons:**

The EA states on page 21 that "potential habitat for the RCW is located within the project study area." A "no effect" conclusion should not be rendered if potential habitat exists. The EA does not give an adequate description of the potential habitat, nor does it differentiate between nesting

and foraging habitat. There is insufficient information on the March 8, 2001 survey. If foraging habitat exists within the project area, a survey for cavity trees should extend out for a 0.5 mile radius from the project site, within suitable habitat.

Since the dwarf wedgemussel is known to occur within the Neuse River Basin and potential habitat exists in the Neuse River and possibly in Mill Creek, the "no effect" conclusion is inappropriate. The EA lacks any details on the mussel survey methodologies. Mussel surveys should extend a minimum of 100 meters upstream and 400 meters downstream of road crossings.

Based on a tentative identification, the Tar spiny mussel was recently collected within the Neuse River Basin in White Oak Creek. Therefore, its presence near the project area cannot be ruled out, and thus the "no effect" conclusion is inappropriate.

The EA states on page 22 that "habitat for Michaux's sumac is present within the project study area." Therefore, the "no effect" conclusion is inappropriate. No details of the survey methodology are provided in the EA.

The Service does not believe that this EA adequately addresses the federally protected species within the project area. Future documentation should reassess the biological conclusions and provide additional details, especially regarding survey methodologies. The Service may be able to concur with a "may affect, not likely to adversely affect" conclusion on some or all of the four listed species in Johnston County, provided that adequate justification and documentation is provided.

The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520, ext. 32.

Sincerely,



*for* Garland B. Pardue, Ph.D.  
Ecological Services Supervisor

cc: Mike Bell, USACE, Washington, NC  
David Franklin, Wilmington, NC  
Chris Militscher, USEPA, Raleigh, NC  
Travis Wilson, NCWRC, Creedmore, NC  
John Hennessy, NCDWQ, Raleigh, NC

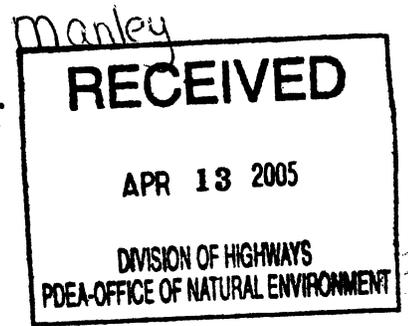


# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Raleigh Field Office  
Post Office Box 33726  
Raleigh, North Carolina 27636-3726

April 6, 2005



Gregory J. Thorpe, Ph.D.  
North Carolina Department of Transportation  
Project Development and Environmental Analysis  
1598 Mail Service Center  
Raleigh, North Carolina 27699-1598

Dear Dr. Thorpe:

This letter is in response to your letter of March 23, 2005 which provided the U.S. Fish and Wildlife Service (Service) with the biological determination of the North Carolina Department of Transportation (NCDOT) that the proposed widening of NC 42 in Johnston County (TIP No. R-3825) may affect, but is not likely to adversely affect the federally endangered dwarf wedgemussel (*Alasmidonta heterodon*) and red-cockaded woodpecker (*Picoides borealis*). In addition, NCDOT has determined that the project will have no effect on the federally endangered Tar spiny mussel (*Elliptio steinstansana*) and Michaux's sumac (*Rhus michauxii*). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to the information provided, mussel surveys were conducted at the project site on the Neuse River in 2001 and 2002. Although neither of the federally endangered mussel species were found, the surveys are now more than two years old. In addition, your submitted information does not indicate that Mill Creek was surveyed. As a perennial tributary to the Neuse River, the presence of dwarf wedgemussel should not be ruled out if potential habitat exists in the stream. The Service cannot concur with your determination that the project may affect, but is not likely to adversely affect the dwarf wedgemussel. The Service recommends that new surveys be conducted at the Neuse River and Mill Creek crossings. All surveys must extend 100 meters upstream and 400 meters downstream of the project limits where suitable habitat is present. Upon receiving new survey results, the Service will reconsider concurrence for the dwarf wedgemussel.

The Service concurs that the project will have no effect on the Tar spiny mussel and Michaux's sumac. Also, due to the lack of cavity trees within ½ mile of the project limits, the Service would also concur with a "no effect" determination for the red-cockaded woodpecker (as per revised 2003 Recovery Plan).

The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,

Pete Benjamin  
Ecological Services Supervisor

cc: Eric Alsmeyer, USACE, Raleigh, NC  
Nicole Thomson, NCDWQ, Raleigh, NC  
Travis Wilson, NCWRC, Creedmoor, NC  
Chris Militscher, USEPA, Raleigh, NC



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

June 19, 2006

Pete Benjamin  
US Fish and Wildlife Service  
PO Box 33726  
Raleigh, NC 27636-3726

Dear Mr. Benjamin:

Subject: **Request for Section 7 Concurrence** for the Proposed widening of NC 42 from US 70 to SR 1003 (Buffalo road); Johnston County: Federal Aid Project No. STP-42(4); TIP Project No. R-3825. WBS Element 34552.1.1

This letter is in reference to NCDOT's proposed widening of NC 42 from US 70 to SR 1003 (Buffalo Rd), in Johnston County, TIP R-3825. The purpose of this letter is to provide additional information and request concurrence from the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act, as amended (16 U.S.C. 1531 et seq.) (ESA).

Please see the attached documents concerning the latest survey reports and the latest concurrence letter from USFWS for R-3825. Based on the information in the attached survey reports, NCDOT concludes that the proposed project's Biological Conclusion for the federally protected bald eagle (*Haliaeetus leucocephalus*) and the dwarf wedgemussel (*Alasmidonta heterodon*) is "**May Affect - Not Likely to Adversely Affect**".

We are not requesting concurrence for Michaux's sumac (*Rhus michauxii*), Tar River spiny mussel (*Elliptio steinstansana*), or red-cockaded woodpecker (*Picoides borealis*), due to biological conclusions of "No Effect" and recent concurrence from the USFWS.

The following are commitments that have been discussed and agreed upon by both NCDOT and USFWS for TIP R-3825.

**Division Four Construction**

- Notification will be sent to the NCDOT Natural Environment Unit one month prior to the start of construction, in order that mussels at the Neuse River and Mill Creek crossings can be relocated. The notification should be sent to the following address:  
Natural Environment Biological Surveys Group Supervisor  
NCDOT Natural Environment Unit  
1598 Mail Service Center  
Raleigh, NC 27699-1598
- Use Best Management Practices for Construction and Maintenance Activities.

MAILING ADDRESS:  
DEPARTMENT OF TRANSPORTATION  
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS  
MAIL SERVICE CENTER  
1598 MAIL SERVICE CENTER  
RALEIGH, NC 27699-1548

TELEPHONE: 919-733-3141  
FAX: 919-733-9794

WEBSITE: [WWW.DOH.DOT.STATE.NC.US](http://WWW.DOH.DOT.STATE.NC.US)

LOCATION:  
TRANSPORTATION BUILDING  
1 SOUTH WILMINGTON STREET  
RALEIGH, NC

- Timber workpads will be used for heavy equipment within fifty feet of streams or in other areas where sediment could enter the stream.
- NCDOT's Stream Crossing Guidelines for Anadromous Fish Passage will apply to the Neuse River and all stream crossings within the project area.
- No in-water work will be performed in the Neuse River between February 15th and June 15th, due to the likely presence of anadromous fish.
- NCDOT will implement Best Management Practices for Bridge Demolition and Removal. The asphalt-wearing surface of Bridge Number 75 and bridge rails will be removed without dropping into the water prior to bridge demolition.
- During construction of the project, the driveway to Clayton Fire Station will be kept open at all times. No equipment or materials will be parked or placed in the fire station driveway at any time.

#### **Roadside Environmental Unit/Division Four Construction**

Due to the existence of habitat for federally protected mussels in the Neuse River and Mill Creek, the following project commitments will be implemented:

- If practical, turbidity curtains will be used during in-stream work in the Neuse River.
- Sediment and erosion control measures shall adhere to the Design Standards in Sensitive Watersheds during construction of the project.
- Special Sediment Control Fence will be used at the toe of slope parallel to the Neuse River and Mill Creek.
- During active grading, all unstabilized areas of the project within fifty feet of streams will be temporarily stabilized prior to any rain event. This will be done utilizing erosion control blankets, fabric, plastic or other material(s) approved by the Roadside Environmental Unit and as directed by the engineer on site. The temporary stabilization should be adequately anchored and utilized to prevent the loss of sediment into the water course unless runoff from these areas can be diverted to an adequately designed sediment basin or until the area is stabilized with vegetation.

#### **Structure Design Unit/Hydraulic Unit**

- Deck drains for the proposed bridge carrying NC 42 over the Neuse River will be designed so that runoff is not discharged directly into the Neuse River.
- Where possible, proposed bridge bents will be no closer than 10 feet from the edge of the stream bank.

#### **Roadway Design Unit/Geotechnical Unit/Right-of-Way Branch**

- The proposed widening will require property from four sites potentially containing hazardous materials. A preliminary site assessment will be performed for all of the properties prior to right of way acquisition in order to determine the extent of any contamination. Right of way acquisition from the former Jimmy Flowers Store and the Percy Flowers Store will be by permanent easement rather than fee simple right of way due to the possibility of contamination on the properties. Permanent easements will be obtained from the former Peele Pesticide site and the Caterpillar site, as well, if the preliminary site assessment determines there is a possibility of contamination in areas needed for right of way.

All protected species for Johnston County and their Biological Conclusions are listed in Table 1 on the following page. We believe that the requirements of Section 7(a)(2) of the ESA have been satisfied and hereby request your concurrence.

**Table 1. Federally protected species of Johnston County.**

Scientific Name	Common Name	Federal Status	Habitat	Biological Conclusion
<i>Haliaeetus leucocephalus</i>	Bald eagle	T(PFD)	Yes	MANLTAA
<i>Picoides borealis</i>	Red-cockaded woodpecker	E	No	No Effect
<i>Alasmidonta heterodon</i>	Dwarf wedgemussel	E	Yes	MANLTAA
<i>Elliptio steinstansana</i>	Tar River spiny mussel	E	No	No Effect
<i>Rhus michauxii</i>	Michaux's sumac	E	Yes	No Effect

Note:

Endangered (E) – is defined as a taxon that is threatened with extinction throughout all or a significant portion of its range.

Threatened (T) – A taxon “likely to become endangered within the foreseeable future throughout all or a significant portion of its range.”

T(PFD) – A taxon “Proposed for Delisting”.

MANLTAA – “May Affect – Not Likely to Adversely Affect”

Thank you for your assistance with this project. If you have any questions or need additional information please contact Chris Manley at (919) 715-1487 or via e-mail at [cdmanley@dot.state.nc.us](mailto:cdmanley@dot.state.nc.us).

Sincerely,



Phil S. Harris, III, P.E., Unit Head  
PDEA - Natural Environment Unit

Cc w/o attachment:

William Wescott, USACE  
Jay McInnis, P.E., PDEA  
Logan Williams, NCDOT Natural Environment Unit  
File: R-3825

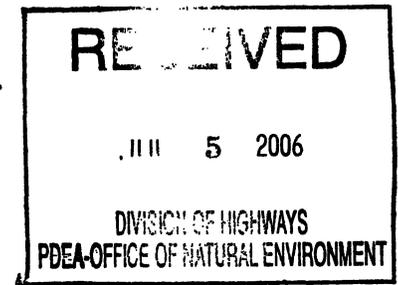
Attachments (3)



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Raleigh Field Office  
Post Office Box 33726  
Raleigh, North Carolina 27636-3726

June 29, 2006



Phil S. Harris, III, P.E.  
North Carolina Department of Transportation  
Project Development and Environmental Analysis  
1598 Mail Service Center  
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

This letter is in response to your letter of June 19, 2006 which provided the U.S. Fish and Wildlife Service (Service) with the biological determination of the North Carolina Department of Transportation (NCDOT) that the proposed widening of NC 42 from US 70 to SR 1003 (Buffalo Road), the replacement of Bridge No. 75 over the Neuse River and the extension of the existing NC 42 culvert on Mill Creek in Johnston County (TIP No. R-3825) may affect, but is not likely to adversely affect the federally threatened bald eagle (*Haliaeetus leucocephalus*) and federally endangered dwarf wedgemussel (*Alasmidonta heterodon*). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to information provided, an eagle survey was conducted within one mile of the project area on April 14, 2006. No eagles or eagle nests were observed. Based on the survey results, the Service concurs with your determination that the proposed project may affect, but is not likely to adversely affect the bald eagle.

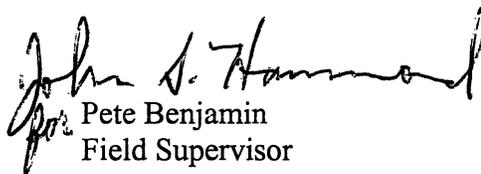
According to information provided, mussel surveys were conducted at the project site on November 19 and 30, 2001; December 7, 2001; August 14, 2002; and November 4, 2005. The 2005 survey extended 100 meters upstream and 400 meters downstream of the Neuse River and Mill Creek crossings. No dwarf wedgemussels were observed in any of the surveys, although several specimens of six other species were observed. Through informal section 7 consultation, NCDOT and the Service have agreed to several conservation measures. These measures are listed in your June 19, 2006 letter. Based on the survey results and NCDOT's commitment to implement these conservation measures, the Service concurs with your determination that the project may affect, but is not likely to adversely affect the dwarf wedgemussel.

As stated in your letter, the Service has previously concurred with your determination that the proposed project will have no effect on the federally endangered Tar River spiny mussel (*Elliptio steinstansana*), red-cockaded woodpecker (*Picoides borealis*) and Michaux's sumac (*Rhus michauxii*). We believe that the requirements of section 7(a)(2) of the ESA have been satisfied.

We remind you that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered in this review; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by this identified action.

The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,

  
for Pete Benjamin  
Field Supervisor

cc: William Wescott, USACE, Washington, NC  
Rob Riding, NCDWQ, Raleigh, NC  
Travis Wilson, NCWRC, Creedmoor, NC  
Chris Militscher, USEPA, Raleigh, NC  
John Sullivan, FHWA, Raleigh, NC

North Carolina Department of Transportation  
PROJECT ENVIRONMENTAL CONSULTATION FORM  
I.D. No. R-3825A

I. GENERAL INFORMATION

- a. Consultation Phase: Right of Way
- b. Project Description: NC 42 From US 70 To SR 1902 (Glen Laurel Road)
- c. State Project: 34552.1.1  
Federal Project: STP-42(4)
- d. Document Type: FONSI                      June 29, 2006  
Date

II. CONCLUSIONS

The above environmental document has been reevaluated as required by 23 CFR 771. It was determined that the current proposed action is essentially the same as the original proposed action. Proposed changes, if any, are noted below in Section III. It has been determined that anticipated social, economic, and environmental impacts were accurately described in the above referenced document(s) unless noted otherwise herein. Therefore, the original Administration Action remains valid.

III. CHANGES IN PROPOSED ACTION AND ENVIRONMENTAL CONSEQUENCES

As of January 31, 2008, no additional threatened or endangered species have been added to the list of federally-protected species for Nash County since completion of the FONSI. The bald eagle was listed as Threatened at the time of the completion of the FONSI for the project. However, on August 8, 2007, the bald eagle was delisted. The Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d) is now the primary law protecting bald eagles. Bald eagle occurrences and nesting habitat were surveyed using the NHP database and aerial photography. Surveys found no individuals or nesting sites within 660 feet of the project limits. This project will, therefore, have no effect on the bald eagle.

As of January 31, 2008, no changes have occurred in the list of federal species of concern since completion of the FONSI.

An irrigation pond is located on the north side of NC 42, just east of Old NC 42. The original design for the project would have resulted in a portion of the dam for the pond being inside the proposed right of way, requiring the removal of the dam. Relocating the pond would cost at least approximately \$470,000, not including the cost to purchase the right of way.

In order to avoid the pond, the alignment has been shifted to the south at this location. This alignment shift will impact an additional 0.36 acre of wetlands and 90 feet of streams. The NEPA/404 merger team concurred on Concurrence Point 4A (Avoidance and Minimization), including this change, on April 22, 2008.

IV. LIST OF ENVIRONMENTAL COMMITMENTS

See attached list of environmental commitments.

V. COORDINATION

Project Development and Environmental Analysis Branch personnel have discussed current project proposals with others as follows:

Design Engineer: Susan Lancaster, PE July 2, 2008  
Date

FHWA Engineer: Ron Lucas, PE July 2, 2008  
Date

Permits Section: Chris Manley June 27, 2008  
Date

VI. NCDOT CONCURRENCE

*Olivia J. Fan* 7-17-08  
Project Planning Engineer Date

*Rob P. Ham* 7/17/08  
Project Development and Environmental Analysis Branch Date  
Manager

VII. FHWA CONCURRENCE

*for* *Ronald G. ...* 7-17-08  
Federal Highway Administration Date  
Division Administrator

## PROJECT COMMITMENTS

NC 42  
From US 70 to SR 1003 (Buffalo Road)  
Johnston County  
Federal Aid Project STP-42(4)  
State Project 34552.1.1  
TIP Project R-3825A

Current status, changes or additions to the project commitments as shown in the environmental document for the project are printed in *italics*.

### **Division Four Construction**

NCDOT's Stream Crossing Guidelines for Anadromous Fish Passage will apply to the Neuse River and all stream crossings within the project area.

No in-water work will be performed in the Neuse River between February 15<sup>th</sup> and June 15<sup>th</sup>, due to the likely presence of anadromous fish.

NCDOT will implement Best Management Practices for Bridge Demolition and removal. The asphalt wearing surface of Bridge Number 75 and bridge rails will be removed without dropping into the water prior to bridge demolition.

*The proposed bridge over the Neuse River is on an adjacent project, R-3825B. These project commitments will be implemented during construction of that project.*

During construction of the project, the driveway to Clayton Fire Station will be kept open at all times. No equipment or materials will be parked or placed in the fire station driveway at any time.

*These project commitments will be implemented during construction of this project.*

Timber workpads will be used for heavy equipment within fifty feet of streams or in other areas where sediment could enter the stream.

Notification will be sent to the NCDOT Natural Environment Unit one month prior to the start of construction, in order that mussels at the Neuse River and Mill Creek crossings can be relocated. The notification should be sent to the following address:

Natural Environment Biological Surveys Group Supervisor  
NCDOT Natural Environment Unit  
1598 Mail Service Unit  
Raleigh, NC 27699-1598

*The proposed crossings of the Neuse River and Mill Creek are on an adjacent project, R-3825B. These project commitments will be implemented during construction of that project.*

### **Roadside Environmental Unit/Division Four Construction**

If practical, turbidity curtains will be used during in-stream work in the Neuse River.

Sediment and erosion control measures shall adhere to the Design Standards in Sensitive Watersheds during construction of the project.

Special Sediment Control Fence will be used at the toe of slope parallel to the Neuse River and Mill Creek

During active grading, all unstabilized areas of the project within fifty feet of streams will be temporarily stabilized prior to any rain event. This will be done utilizing erosion control blankets, fabric, plastic or other material(s) approved by the Roadside Environmental Unit and as directed by the engineer on site. The Temporary stabilization should be adequately anchored and utilized to prevent the loss of sediment into the water course unless runoff from these areas can be diverted to an adequately designed sediment basin or until the area is stabilized with vegetation.

*The proposed crossings of the Neuse River and Mill Creek are on an adjacent project, R-3825B. These project commitments will be implemented during construction of that project.*

### **Structure Design Unit/Hydraulic Unit**

Deck drains for the proposed bridge carrying NC 42 over the Neuse River will be designed so that runoff is not directly discharged into the Neuse River.

Where possible, proposed bridge bents will be no closer than 10 feet from the edge of the stream bank.

*The proposed bridge over the Neuse River is on an adjacent project, R-3825B. These project commitments will be implemented during project design for that project.*

### **Roadway Design Unit/Geotechnical Unit/Right of Way Branch**

The proposed widening will require property from four sites potentially containing hazardous materials. A preliminary site assessment will be performed for all of the properties prior to right of way acquisition in order to determine the extent of any contamination. Right of way acquisition from the former Jimmy Flowers Store and the Percy Flowers Store will be by permanent easement rather than fee simple right of way due to the possibility of contamination on the properties. Permanent easements will be obtained from the former Peele Pesticide site and the Caterpillar site, as well, if the preliminary site assessment determines there is a possibility of contamination in areas needed for right of way.

*This project commitment will be implemented during right of way acquisition for this project.*

## STORMWATER MANAGEMENT PLAN

Project: R-3825A (34552.1.1) February 6, 2008  
Location: Widening of NC 42 from US 70 in Clayton  
to 0.26 miles East of SR 1902 (Glen Laurel Rd.)  
Hydraulics Project Manager: Jay Twisdale, PE

### ***ROADWAY DESCRIPTION***

The project involves the widening of NC 42 from US 70 in Clayton to 0.26 miles East of SR 1902 (Glen Laurel Rd.). The overall length of the project is 1.552 mi., and the existing 2-lane, 2-way road is being widened to a 4-lane divided section with raised grassed median. The proposed roadway utilizes shoulder section throughout. There are no major crossings.

### ***ENVIRONMENTAL DESCRIPTION***

The project is located in the Neuse River Basin. There are a total of three streams that are affected by the project. All streams are unnamed tributaries of the Neuse River. Two of the streams (Sheet 6, UT #N1 at approx. -L- Sta. 36+00(Rt) & UT #N2 approx. -L- Sta. 40+00(Rt)) are classified as intermittent. The third stream (UT #N3), classified as changing from intermittent to perennial within the R/W limits, is located on Sheet 10, at approx. -L- Sta. 92+13. The third stream was originally beyond the project limits of R-3825A. The best usage classification of the aforementioned UTs is WS-IV NSW (highly developed, nutrient sensitive waters) and require riparian buffers.

There are also two wetland pockets that will be impacted. The wetlands are located at the following station ranges along the -L- alignment: approx. Sta. 36+58(Rt) to 41+37(Rt) and Sta. 90+78(Rt) to 93+15(Rt).

### ***BEST MANAGEMENT PRACTICES***

Best Management Practices (BMPs) and measures used on the project to reduce stormwater impacts are listed below. All stormwater being discharged through the buffers is either diffuse flow or has been treated prior to entering the buffers.

#### **GRASSED SWALES**

##### ***DRAINAGE TO UT #N1***

-L- Sta. 32+70(Rt) to Sta. 35+30(Rt)

##### ***DRAINAGE TO UT #N3***

-L- Sta. 76+30(Lt) to Sta. 85+50(Lt)

## *MISCELLANEOUS*

In efforts to disperse the flow prior to reaching wetlands boundary at Sta. 41+37(Rt), an improvised ditch end section was used to terminate the ditch prior to entering the wetlands. The ditch end section is designed to impede ditch flow and cause waters to head up and disperse uniformly.

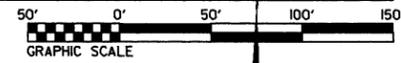
From field reconnaissance of the project, erosion of an existing ditch within the wetland region at the end of the project was noted. In an effort to facilitate good stewardship of the environment and to negate an existing eroded ditch, a stabilized ditch grade was designed to replace the existing ditch from Sta. 89+00(RT) to Sta. 92+20(RT).







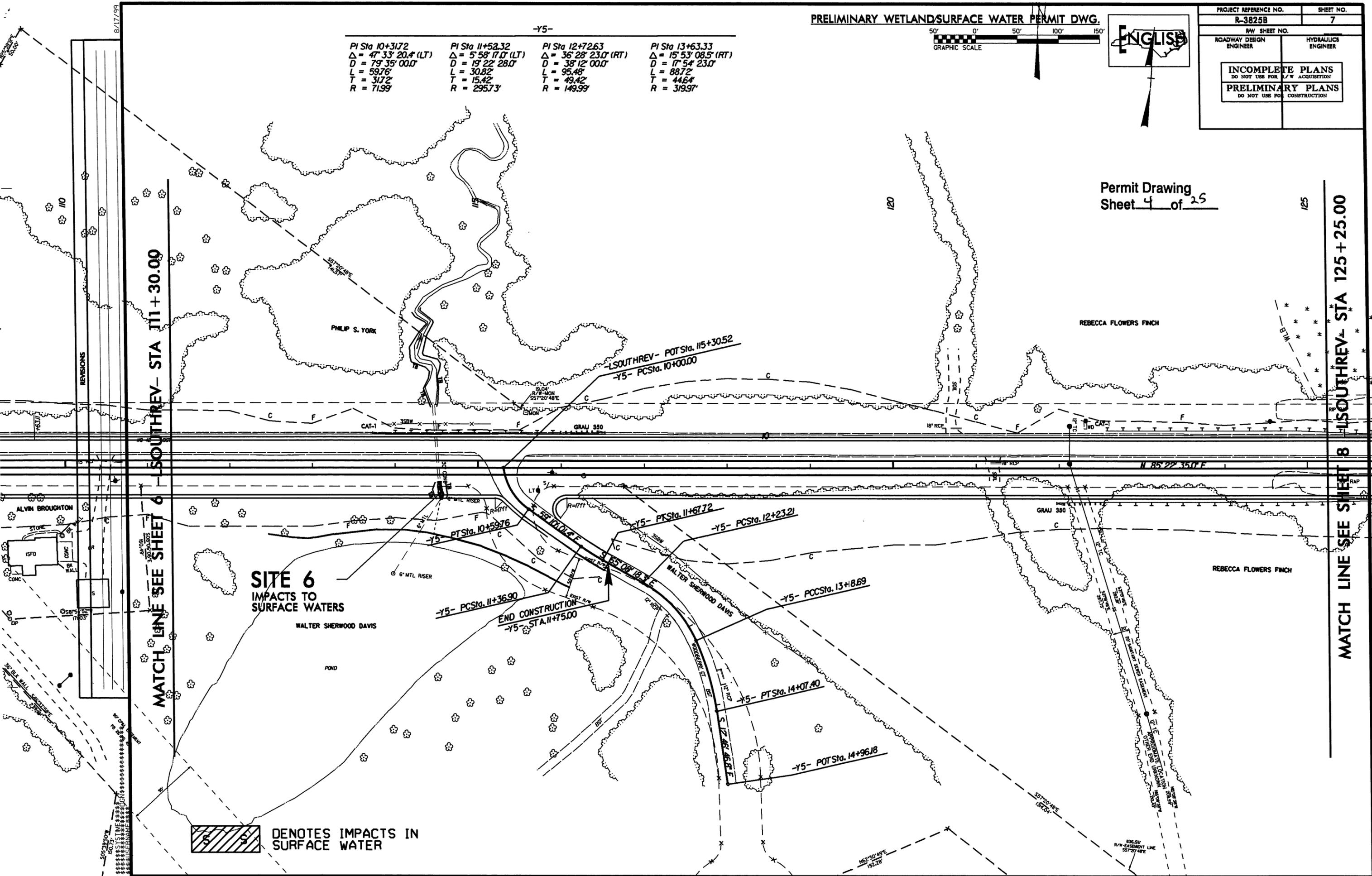
PRELIMINARY WETLAND/SURFACE WATER PERMIT DWG.



PROJECT REFERENCE NO. R-3825B	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-Y5-			
PI Sta 10+31.72 Δ = 47° 33' 20.4" (LT) D = 79' 35" 00.0" L = 59.76' T = 31.72' R = 71.99'	PI Sta 11+52.32 Δ = 5° 58' 17.0" (LT) D = 19' 22" 28.0" L = 30.82' T = 15.42' R = 295.73'	PI Sta 12+72.63 Δ = 36° 28' 23.0" (RT) D = 38' 12" 00.0" L = 95.48' T = 49.42' R = 149.99'	PI Sta 13+63.33 Δ = 15° 53' 08.5" (RT) D = 17' 54" 23.0" L = 88.72' T = 44.64' R = 319.97'

8/17/99



MATCH LINE SEE SHEET 6 - SOUTHREV- STA 111+30.00

MATCH LINE SEE SHEET 8 - SOUTHREV- STA 125+25.00

Permit Drawing  
Sheet 4 of 25

DENOTES IMPACTS IN SURFACE WATER

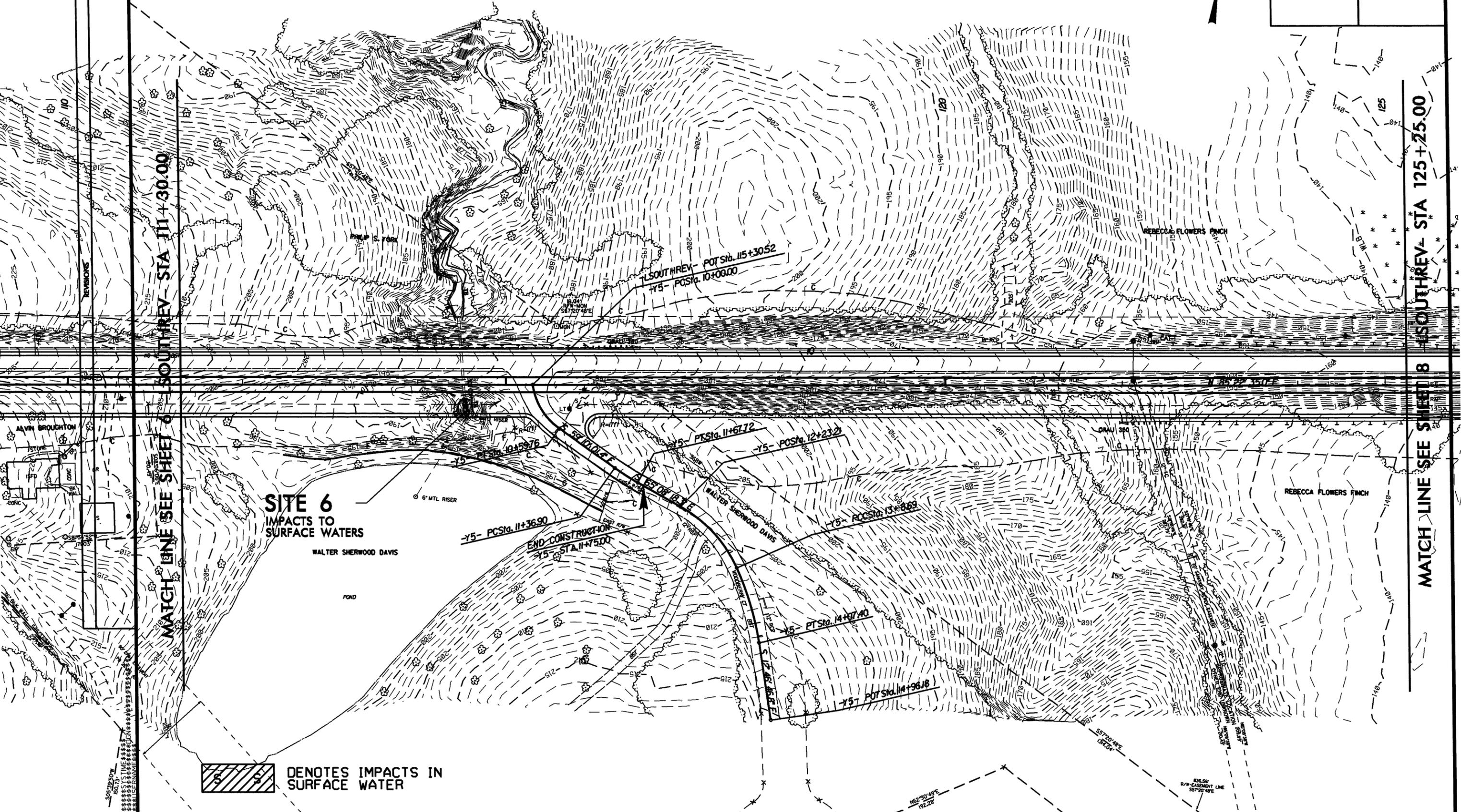
PRELIMINARY WETLAND/SURFACE WATER PERMIT DWG.



PROJECT REFERENCE NO. R-3825B	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

-Y5-			
PI Sta 10+31.72 Δ = 47° 33' 20.4" (LT) D = 79' 35" 00.0" L = 59.76' T = 31.72' R = 71.99'	PI Sta 11+52.32 Δ = 5° 58' 17.0" (LT) D = 19' 22' 28.0" L = 30.82' T = 15.42' R = 295.73'	PI Sta 12+72.63 Δ = 36° 28' 23.0" (RT) D = 38' 12" 00.0" L = 95.48' T = 49.42' R = 149.99'	PI Sta 13+63.33 Δ = 15° 53' 08.5" (RT) D = 17' 54' 23.0" L = 88.72' T = 44.64' R = 319.97'

Permit Drawing  
Sheet 5 of 25



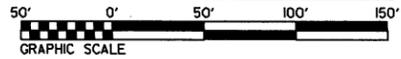
DENOTES IMPACTS IN SURFACE WATER

MATCH LINE SEE SHEET 6 SOUTHREV- STA 111+30.00

MATCH LINE SEE SHEET 8 SOUTHREV- STA 125+25.00

8/17/99

PRELIMINARY WETLAND/SURFACE WATER PERMIT DWG.



PROJECT REFERENCE NO. R-3825B	SHEET NO. 8
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

Permit Drawing Sheet 6 of 25

BEGIN CONSTRUCTION  
 -Y6- POCSta. 10+15.00  
 -Y6- POTSta. 10+00.00  
 -Y6- PCSta. 10+12.68

-Y6-  
 PI Sta 11+09.15  
 $\Delta = 128' 49.3" (LT)$   
 $D = 0' 45' 00.0"$   
 $L = 192.94'$   
 $T = 96.47'$   
 $R = 7,639.44'$   
 $SE = NC$   
 $INC = 25'$

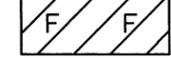
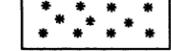
-Y6- PTSta. 12+05.62

-LSOUTHREV- POTSta. 133+15.10  
 -Y6- POTSta. 15+36.50

-LSOUTHREV- PCSta. 139+11.11

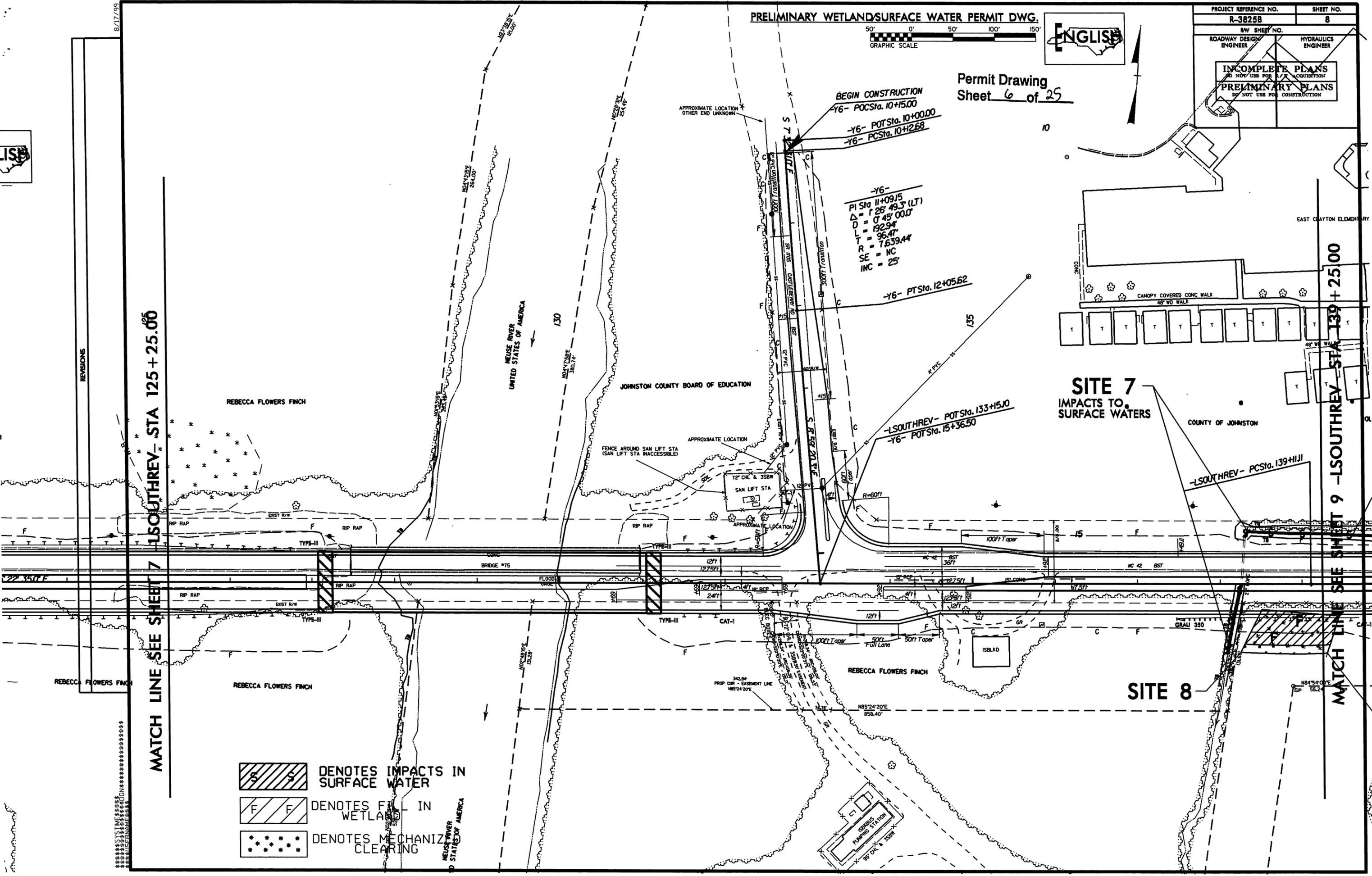
MATCH LINE SEE SHEET 7 -LSOUTHREV- STA 125 + 25.00

MATCH LINE SEE SHEET 9 -LSOUTHREV- STA 139 + 25.00

-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES FILL IN WETLAND
-  DENOTES MECHANICAL CLEARING

SITE 7 IMPACTS TO SURFACE WATERS

SITE 8



8/17/99



REVISIONS

SYSTEMS ENGINEERING

MEUSE RIVER OF AMERICA

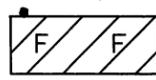
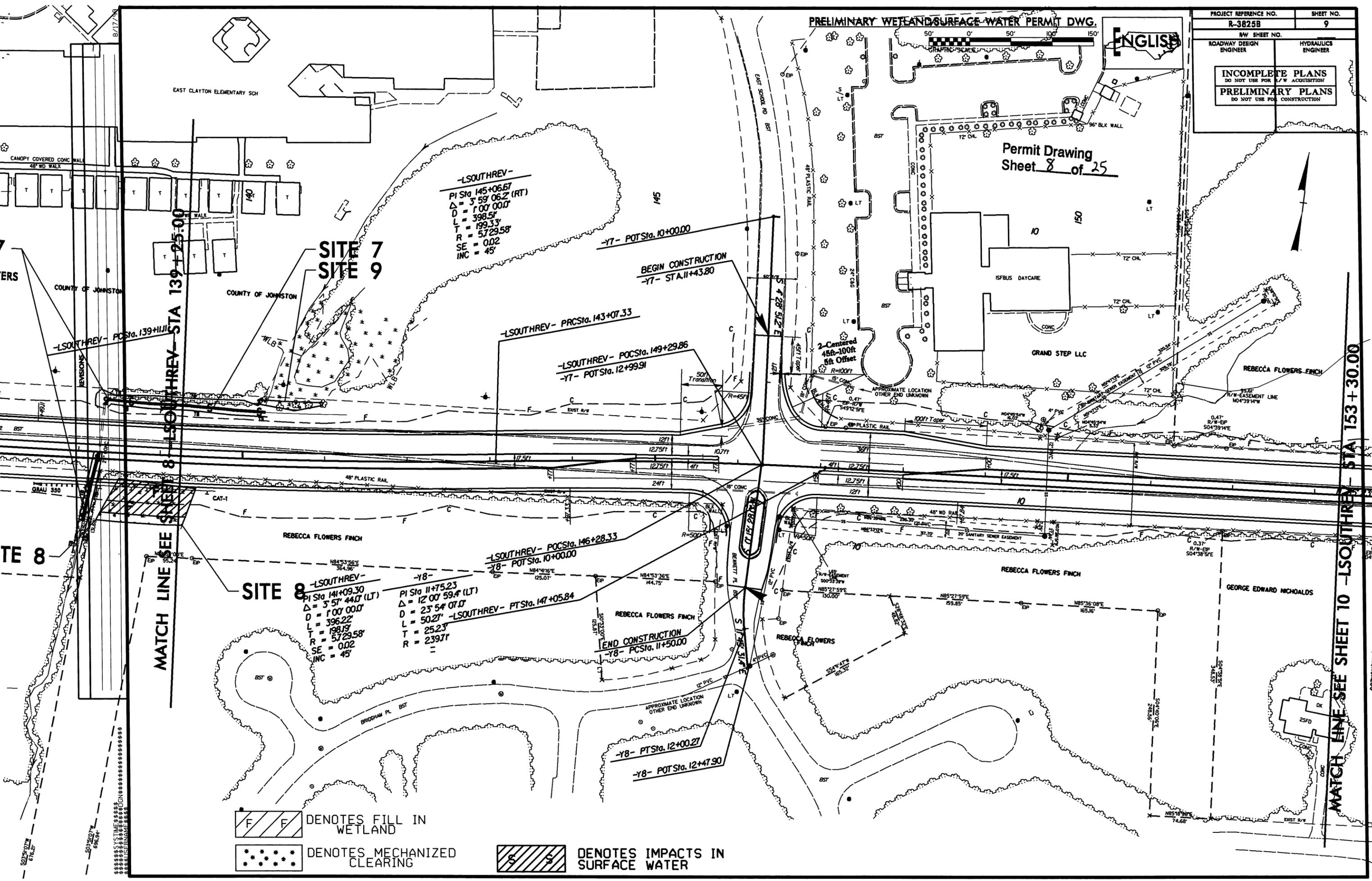


PRELIMINARY WETLAND/SURFACE WATER PERMIT DWG.

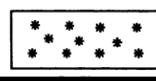
PROJECT REFERENCE NO. R-3825B	SHEET NO. 9
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION  
**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

Permit Drawing  
Sheet 8 of 25



DENOTES FILL IN WETLAND



DENOTES MECHANIZED CLEARING



DENOTES IMPACTS IN SURFACE WATER

TERS

TE 8

MATCH LINE SEE SHEET 7

MATCH LINE SEE SHEET 10

8 - SOUTHREV - STA 139+25.00

PCSta. 139+11.11

SITE 7  
SITE 9

-LSOUTHREV-  
PI Sta 145+06.67  
Δ = 3° 59' 06.2" (RT)  
D = 1' 00' 00.0"  
L = 398.53'  
T = 199.33'  
R = 5729.58'  
SE = 0.02  
INC = 45'

-Y7 - POTSta. 10+00.00

BEGIN CONSTRUCTION  
-Y7 - STA. 11+43.80

-LSOUTHREV - PCSta. 143+07.33

-LSOUTHREV - PCSta. 149+29.86  
-Y7 - POTSta. 12+99.91

SITE 8

-LSOUTHREV-  
PI Sta 141+09.30  
Δ = 3° 57' 44.0" (LT)  
D = 1' 00' 00.0"  
L = 396.22'  
T = 198.19'  
R = 5729.58'  
SE = 0.02  
INC = 45'

-Y8 -  
PI Sta 11+75.23  
Δ = 12° 00' 59.4" (LT)  
D = 23° 54' 07.0"  
L = 50.27'  
T = 25.23'  
R = 239.71'

-LSOUTHREV - PCSta. 146+28.33  
-Y8 - POTSta. 10+00.00

END CONSTRUCTION  
-Y8 - PCSta. 11+50.00

-Y8 - PTSta. 12+00.27

-Y8 - POTSta. 12+47.90

ENGLISH

EAST CLAYTON ELEMENTARY SCH

COUNTY OF JOHNSTON

REBECCA FLOWERS FINCH

GRAND STEP LLC

GEORGE EDWARD NICHOLDS

ISFBUS DAYCARE

REBECCA FLOWERS FINCH

CANOPY COVERED CONC WALK  
48" WD WALK

WALK

COUNTY OF JOHNSTON

-LSOUTHREV - PCSta. 139+11.11

2' BST

GRAU 350

CAT-1

BST

BRIGHAM PL BST

APPROXIMATE LOCATION OTHER END UNKNOWN

EXIST R/W

EXIST R/W

8/17/20

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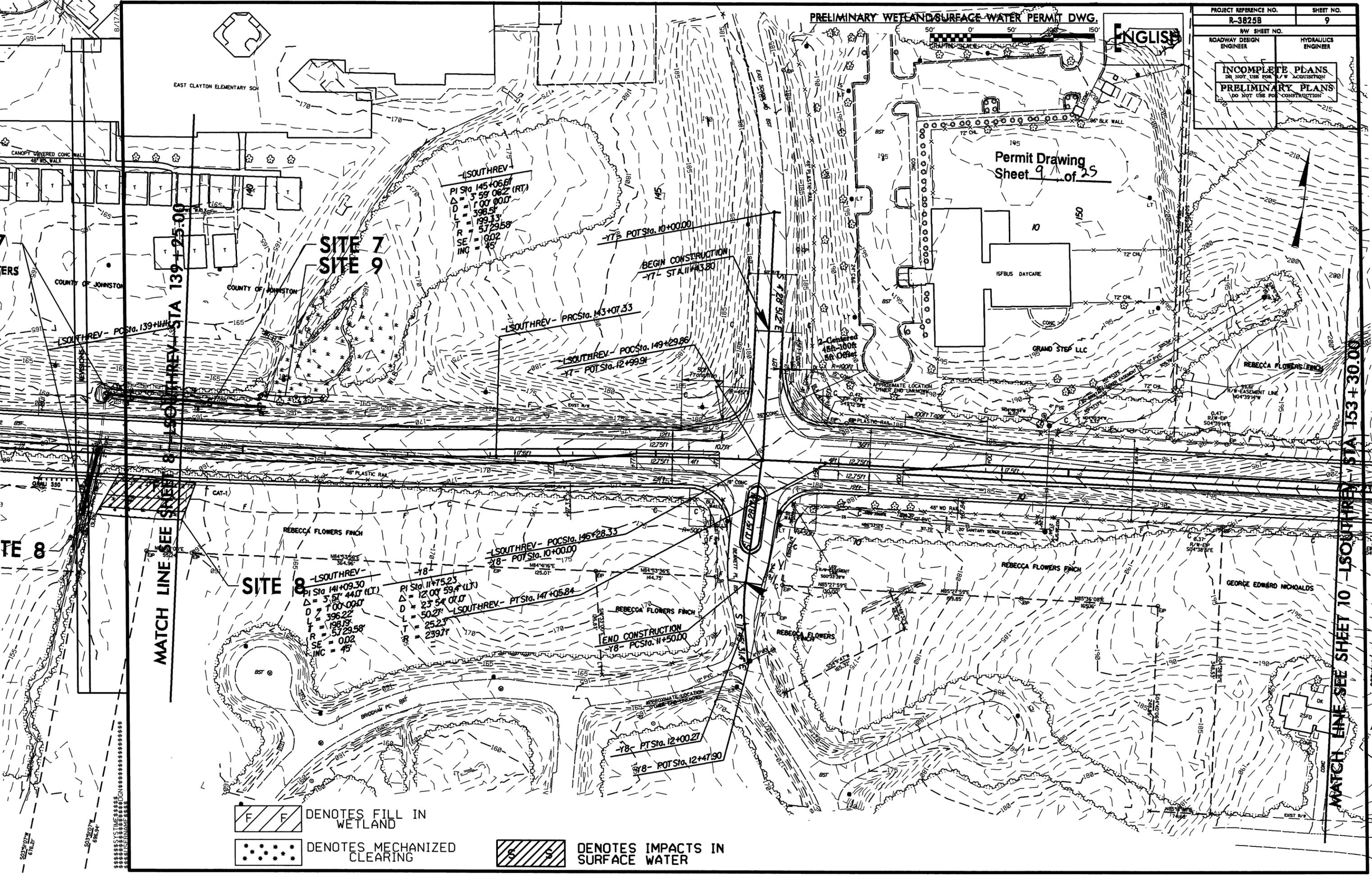
140

PRELIMINARY WETLANDS SURFACE WATER PERMIT DWG.

ENGLISH

PROJECT REFERENCE NO. R-3825B	SHEET NO. 9
R/W SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing  
Sheet 9 of 25

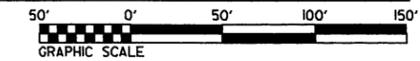


MATCH LINE SEE SHEET 8 - SOUTHREV STA 139+25.00

MATCH LINE SEE SHEET 10 - SOUTHREV STA 153+30.00

- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES IMPACTS IN SURFACE WATER





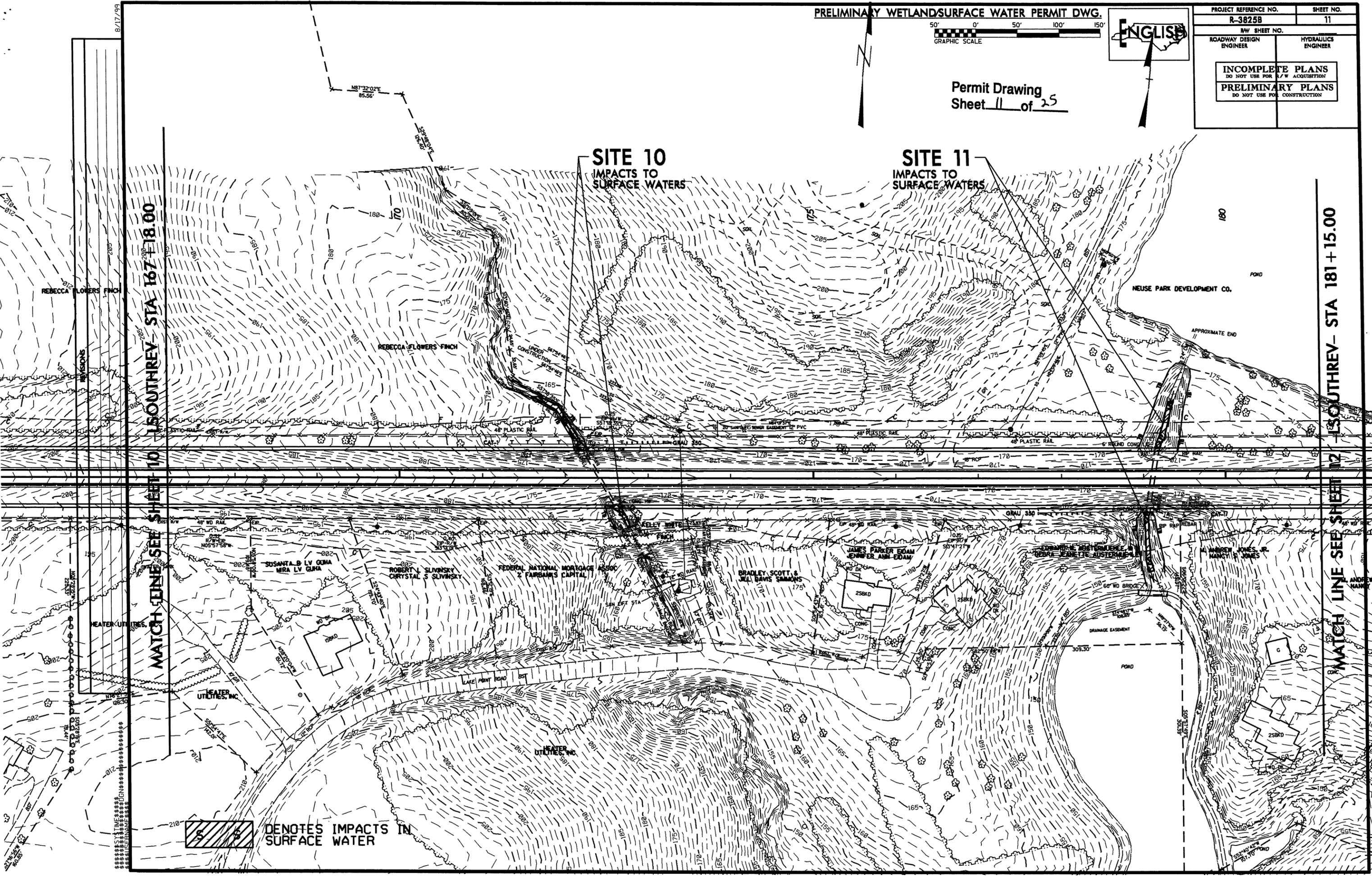
ENGLISH

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>11</b>
RDW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

Permit Drawing Sheet 11 of 25

**SITE 10**  
IMPACTS TO SURFACE WATERS

**SITE 11**  
IMPACTS TO SURFACE WATERS



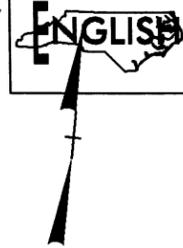
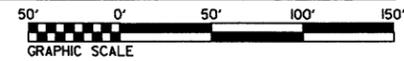
MATCH LINE SEE SHEET 10 SOUTHREY STA 167+18.00

MATCH LINE SEE SHEET 12 SOUTHREY STA 181+15.00

 DENOTES IMPACTS IN SURFACE WATER

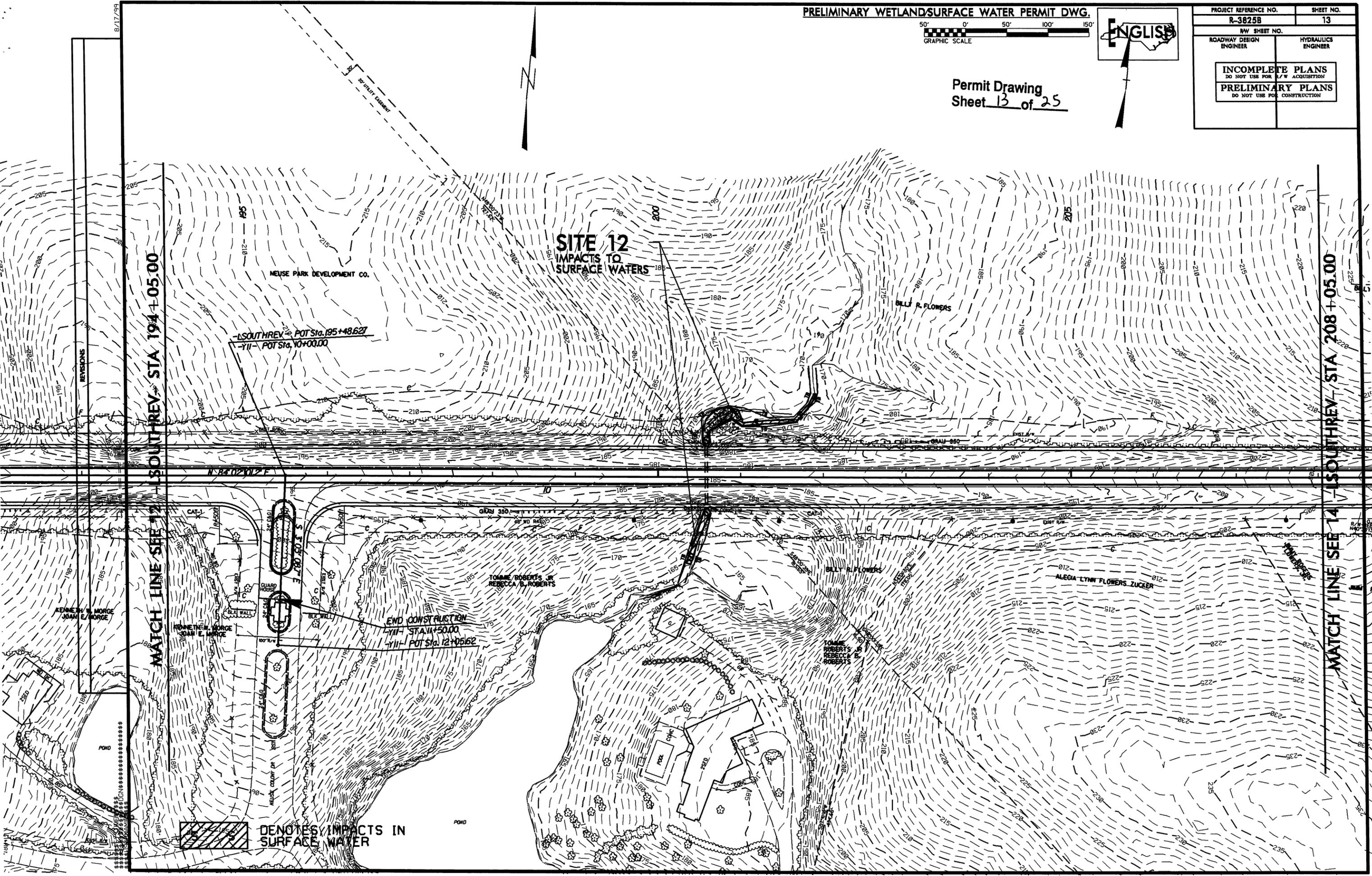
8/17/99





PROJECT REFERENCE NO. R-3825B	SHEET NO. 13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

Permit Drawing  
Sheet 13 of 25

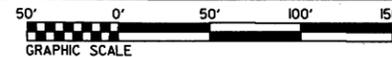


DENOTES IMPACTS IN SURFACE WATER



8/17/98

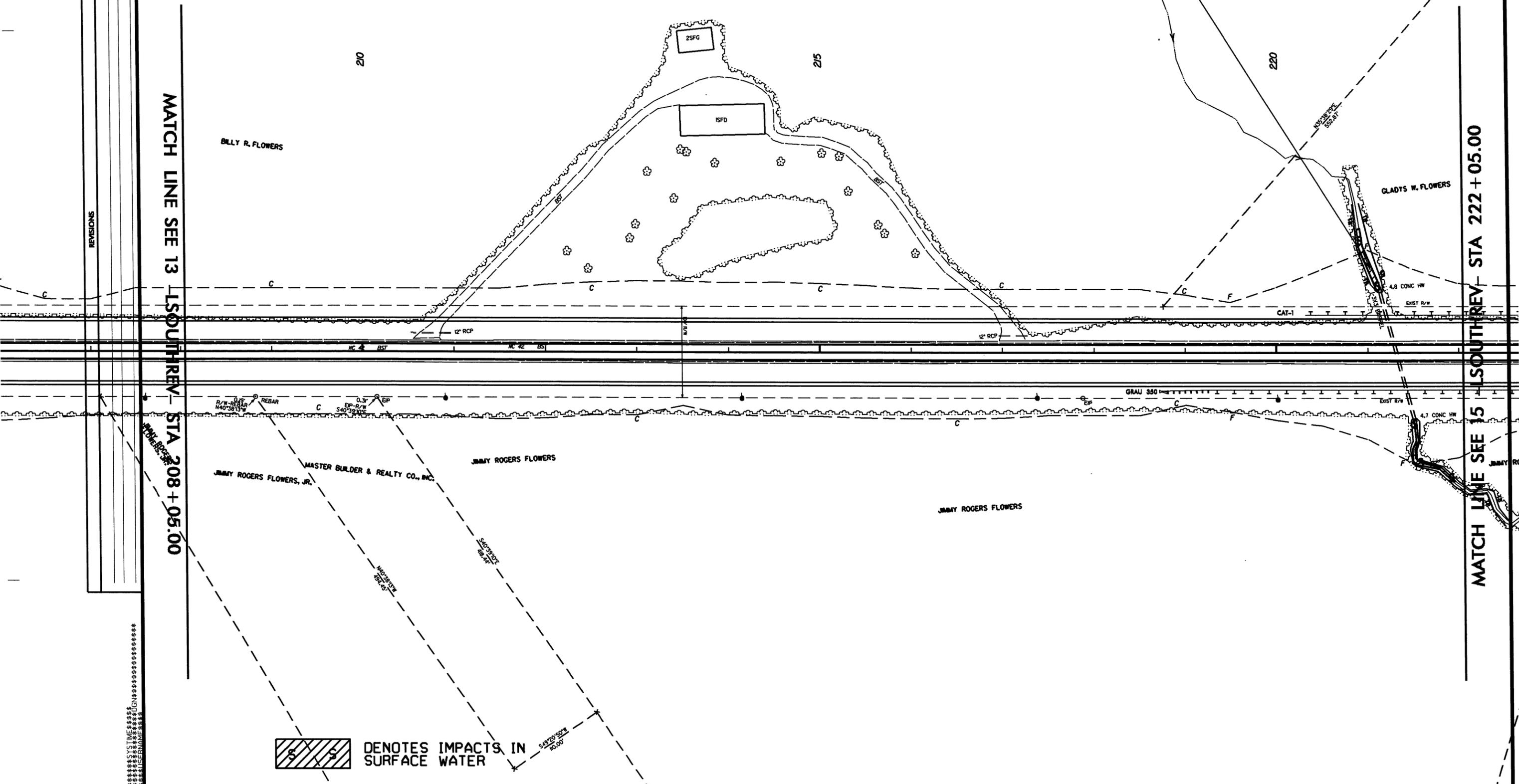
PRELIMINARY WETLAND/SURFACE WATER PERMIT DWG.



PROJECT REFERENCE NO. R-3825B	SHEET NO. 14
R/W SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

Permit Drawing  
Sheet 14 of 25

**SITE 13**  
IMPACTS TO  
SURFACE WATERS



MATCH LINE SEE 13 - SOUTHERN - STA 208 + 05.00

MATCH LINE SEE 15 - SOUTHERN - STA 222 + 05.00

REVISIONS

DENOTES IMPACTS IN SURFACE WATER

\*\*\*\*\*  
SYSTEMTIME: 8/17/98 10:00:00 AM  
USER: JAMES  
\*\*\*\*\*



8/17/99

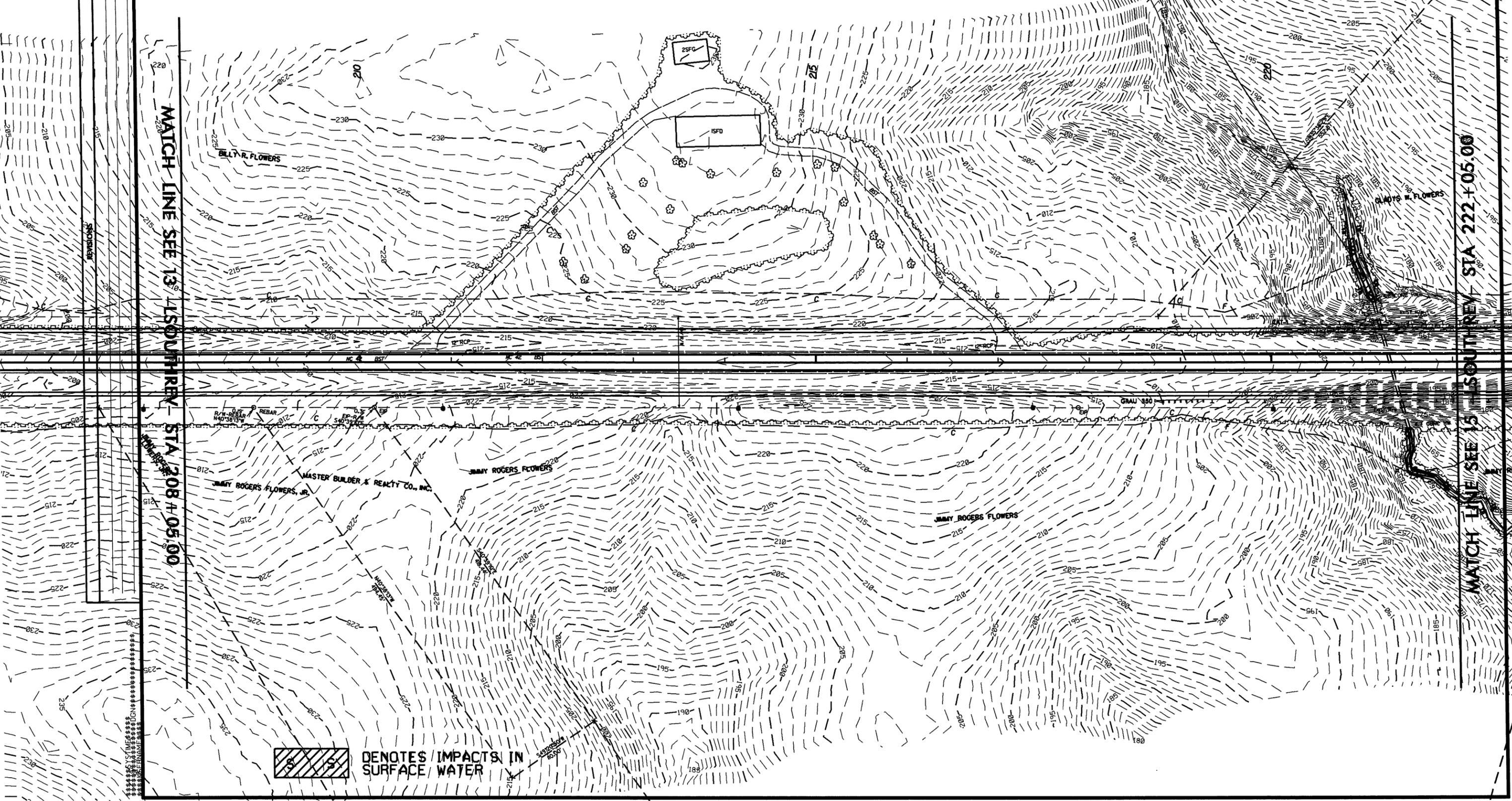
PRELIMINARY WETLAND/SURFACE WATER PERMIT DWG.



PROJECT REFERENCE NO. R-3825B	SHEET NO. 14
MW SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

Permit Drawing  
Sheet 15 of 25

**SITE 13**  
IMPACTS TO  
SURFACE WATERS

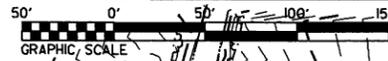


DENOTES IMPACTS IN SURFACE WATER

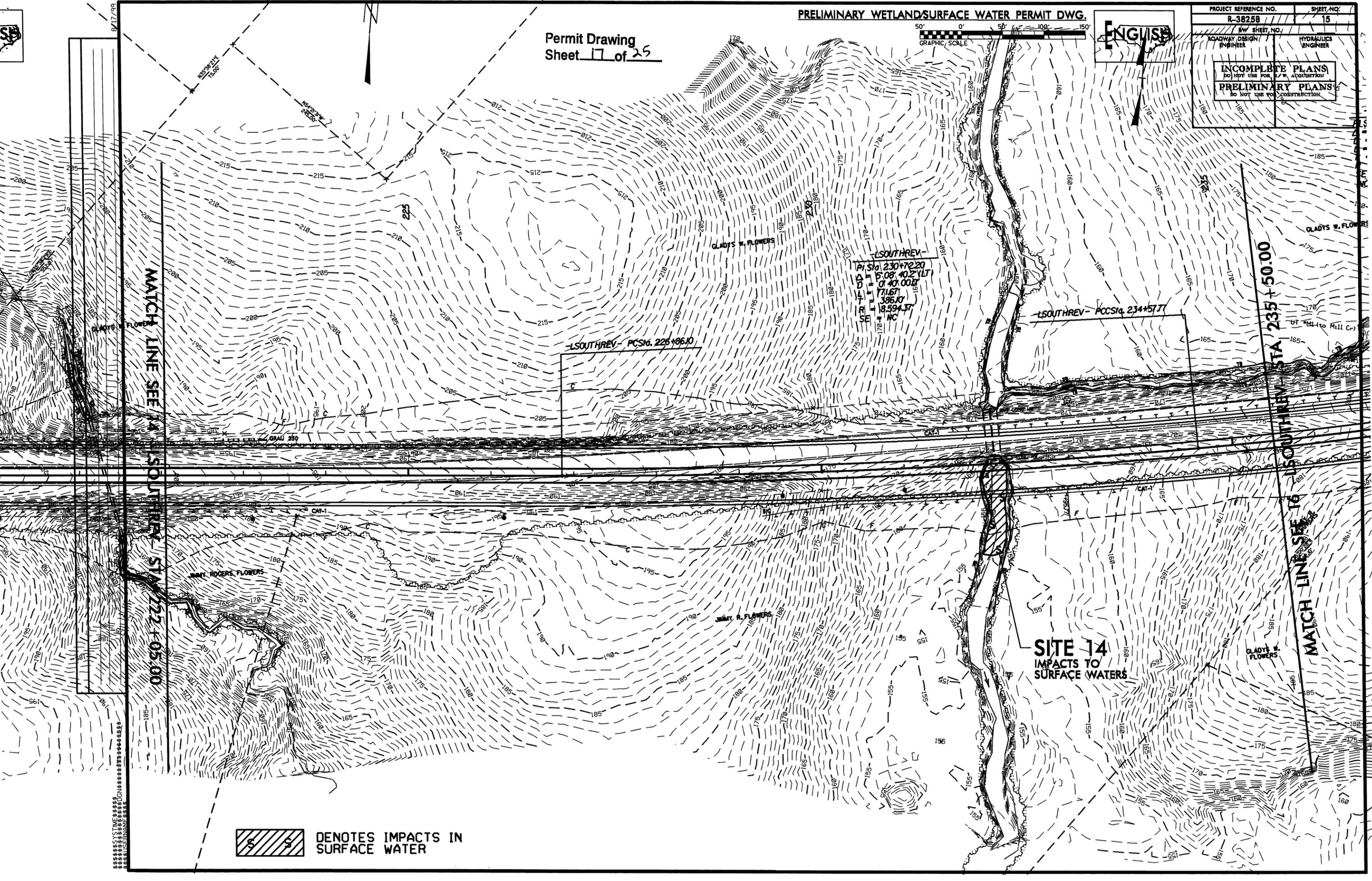


PROJECT REFERENCE NO. R-3825B	SHEET NO. 15
HW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

Permit Drawing  
Sheet 17 of 25



ENGLISH



LSOUTHREY-  
 PI STA 230+72.20  
 5.08' 40.2' (LT)  
 OF 40.00'  
 71.67'  
 386.10'  
 8.594.37'  
 17.1' NC

LSOUTHREY- PCS16. 225+86.10

LSOUTHREY- PCS14. 234+57.77

MATCH LINE SEE PLAN SOUTHREY STA 222+05.00

MATCH LINE SEE TO SOUTHREY STA 235+50.00

 DENOTES IMPACTS IN SURFACE WATER

8/17/99



\*\*\*\*\*  
 SYSTEMS  
 \*\*\*\*\*



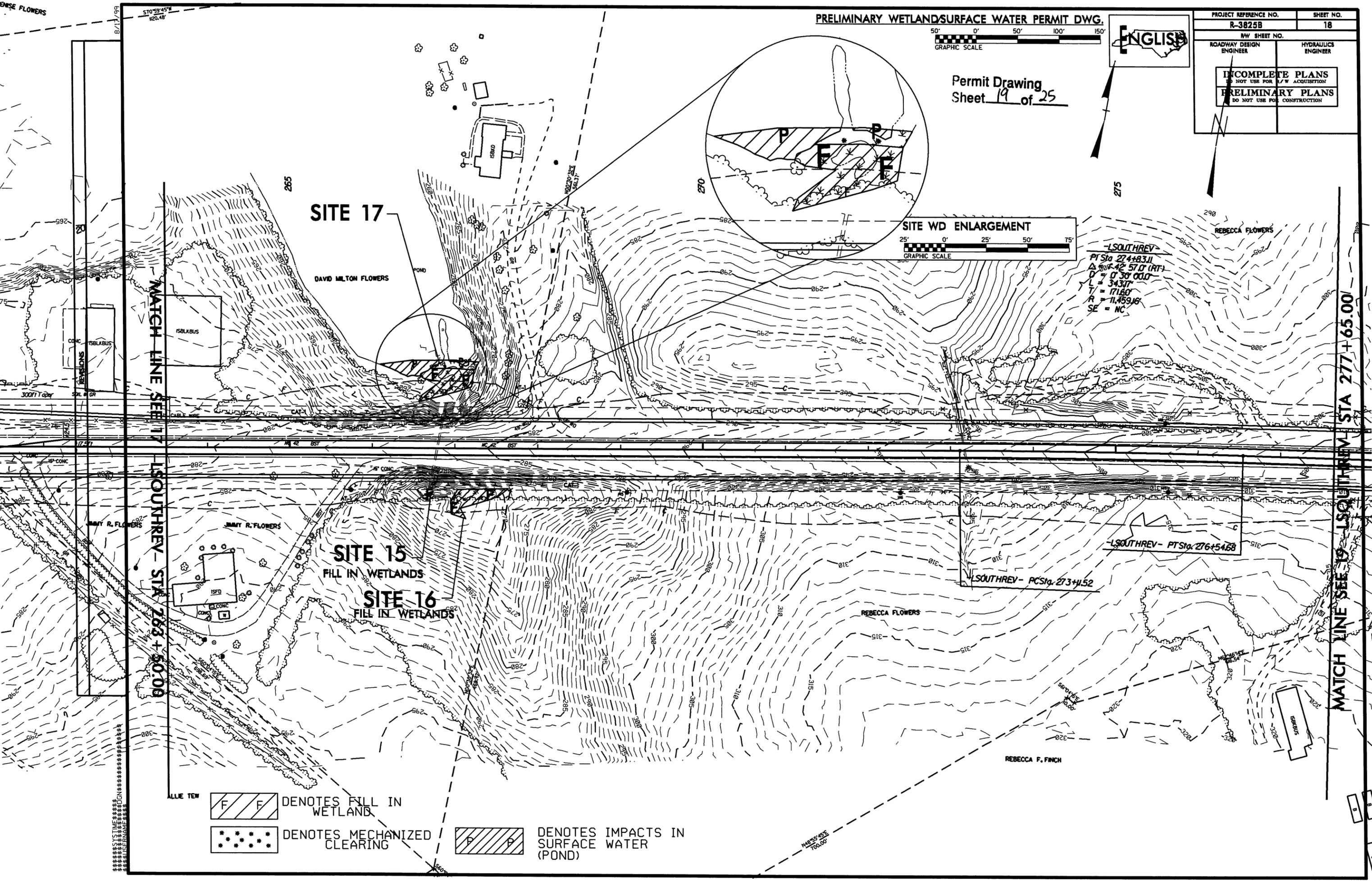
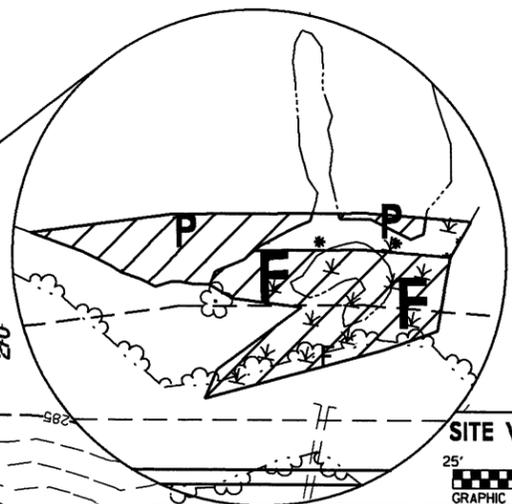
PRELIMINARY WETLANDS SURFACE WATER PERMIT DWG.



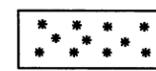
ENGLISH

PROJECT REFERENCE NO. R-3825B	SHEET NO. 18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

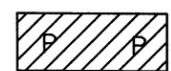
Permit Drawing  
Sheet 19 of 25



DENOTES FILL IN WETLAND



DENOTES MECHANIZED CLEARING

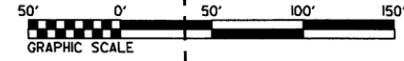


DENOTES IMPACTS IN SURFACE WATER (POND)

MATCH LINE SEE 17  
 LSOUTHREV - STA 263 + 50.00  
 MISSISSIPPI RIVER  
 SYSTEMS  
 ENGINEERING  
 P.C.

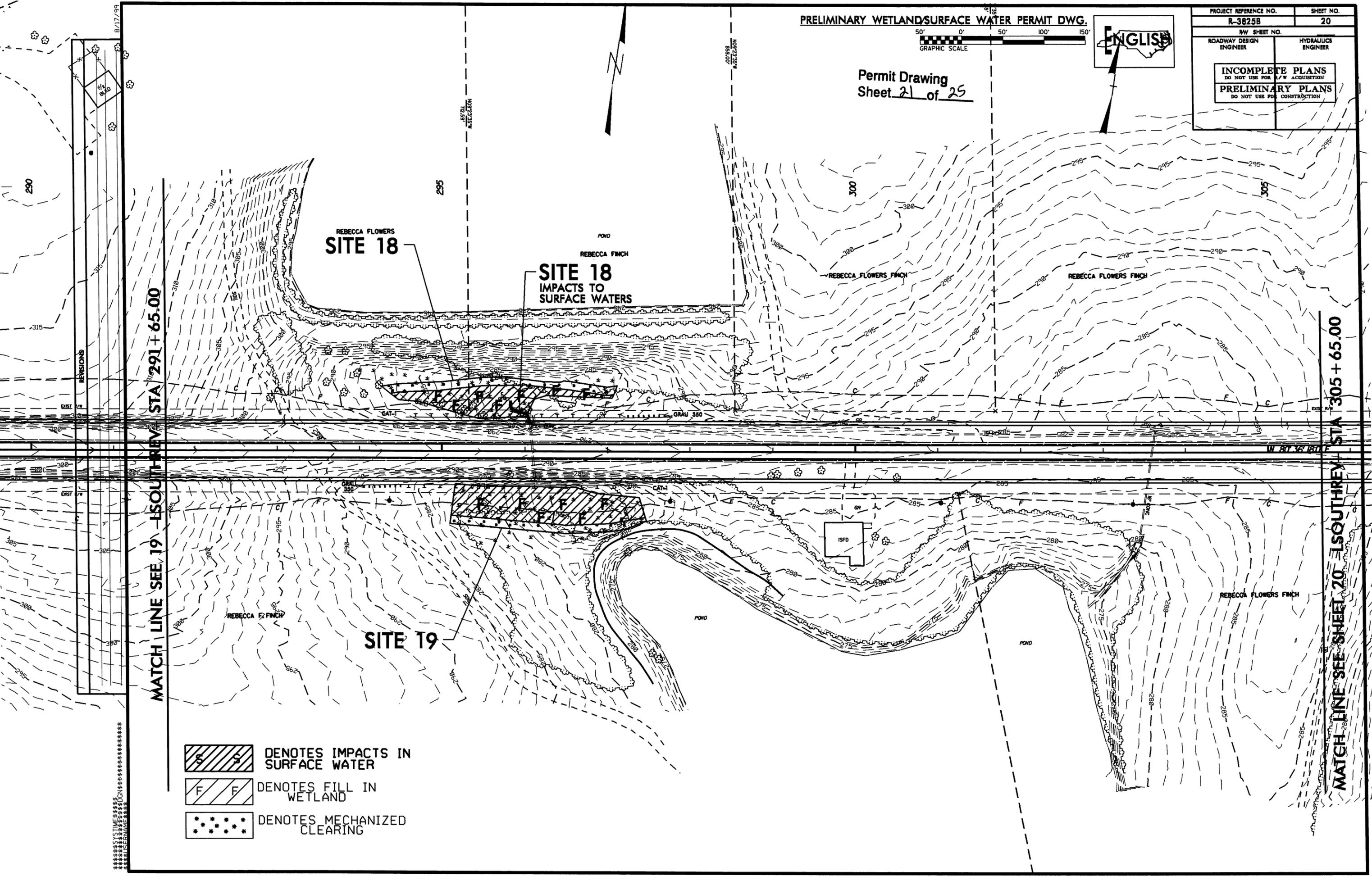
MATCH LINE SEE 19  
 LSOUTHREV - STA 277 + 65.00

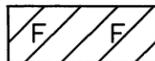
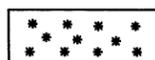




Permit Drawing  
Sheet 21 of 25

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>20</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING

MATCH LINE SEE 19 - SOUTHWEST STA 291 + 65.00

MATCH LINE SEE SHEET 20 - SOUTHWEST STA 305 + 65.00

REBECCA FLOWERS  
SITE 18

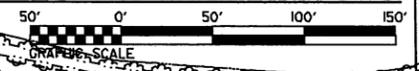
SITE 18  
IMPACTS TO  
SURFACE WATERS

SITE 19

8/17/99  
REVISIONS  
EXIST  
CAT-1  
ORAU 350  
W 87 36 180 F

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	21
RWY SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

PRELIMINARY WETLANDS/SURFACE WATER PERMIT DWG.



MATCH LINE SEE SHEET 22 -Y13- STA 16+85.00

MATCH LINE SEE SHEET 20 -LSOUTHREV- STA 305+65.00

Permit Drawing Sheet 22 of 25

-LSOUTHREV- POTSta. 310+68.98  
-Y13- POCSta. 19+54.39

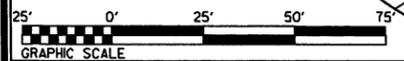
**SITE 20**  
2-Centered  
60ft-160ft  
6ft Offset

-Y13-  
PI Sta 20+46.96  
 $\Delta = 6' 11" 19'$  (RT)  
D = 0' 47" 45.0"  
L = 778.33'  
T = 389.54'  
R = 7,199.47'  
SE = NC  
INC = 25'

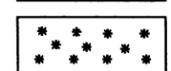
**END TIP PROJECT R-3825B**  
**-LSOUTHREV- STA. 312+00.00**

END CONSTRUCTION  
-Y13- POTSta. 26+94.95

**SITE WANTO ENLARGEMENT**



DENOTES FILL IN WETLAND



DENOTES MECHANIZED CLEARING

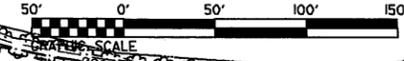


DENOTES IMPACTS IN SURFACE WATER  
-Y13- POTSta. 26+95.75

8/17/99  
 REVISIONS  
 REBECCA FLOWERS FINCH  
 SYSTEMS  
 DGN  
 USER

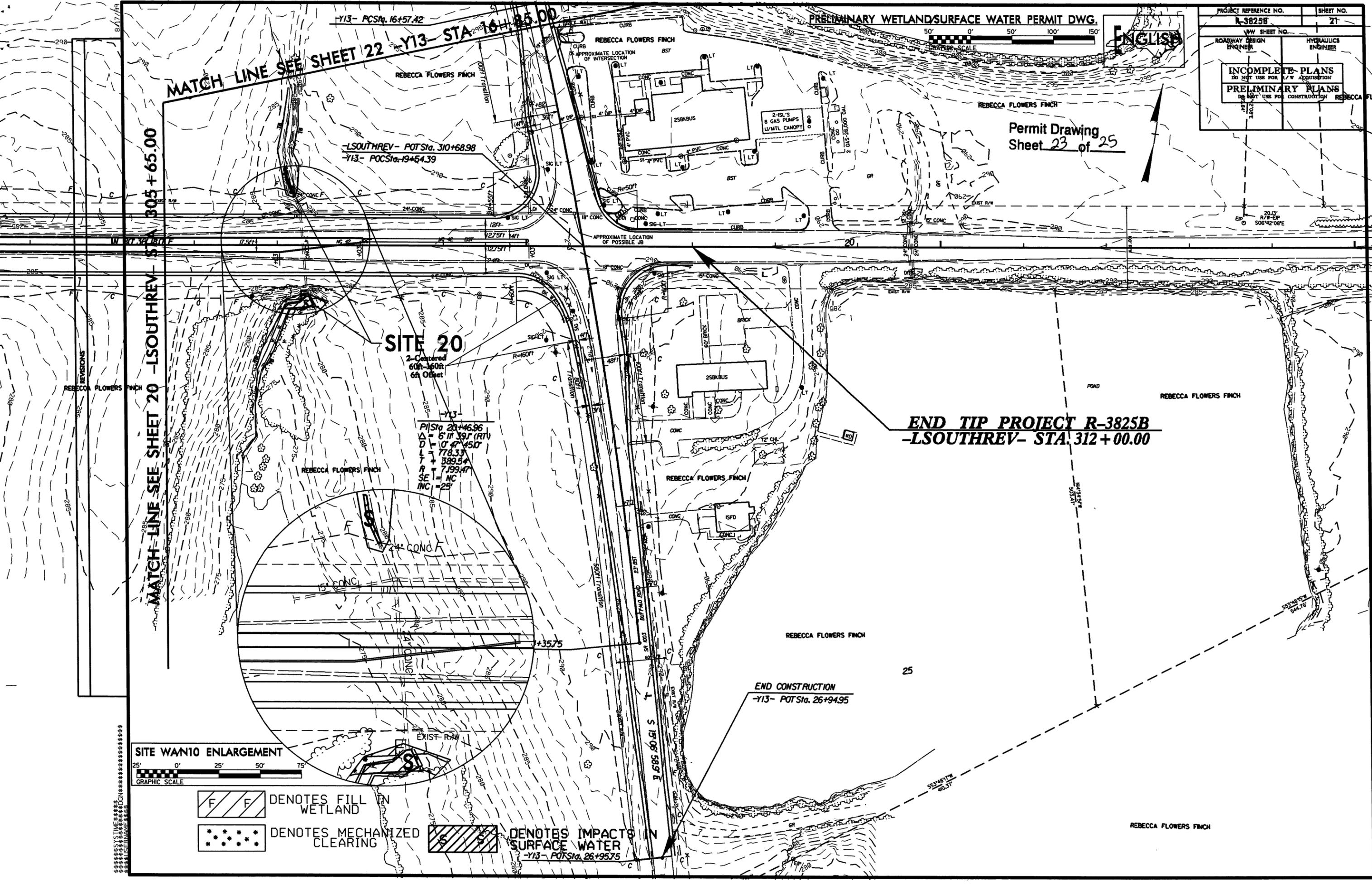
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	21
VW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/V ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

PRELIMINARY WETLANDS SURFACE WATER PERMIT DWG.



ENGLISH

Permit Drawing  
Sheet 23 of 25



MATCH LINE SEE SHEET 20 - SOUTHREV - STA 305 + 65.00

MATCH LINE SEE SHEET 22 - Y13 - STA 16 + 85.00

**SITE 20**

2-Centered  
60ft-160ft  
6ft Offset

Y13  
 P/Sta 20+46.96  
 $\Delta = 611.391$  (RT)  
 $D = 0^{\circ} 47' 45.0''$   
 $L = 778.33$   
 $T = 389.54$   
 $R = 719.47$   
 SE = NC  
 INC = 25'

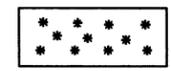
**END TIP PROJECT R-3825B**  
**-LSOUTHREV- STA. 312 + 00.00**

**END CONSTRUCTION**  
 -Y13- POTS Sta. 26+94.95

**SITE WANIO ENLARGEMENT**



DENOTES FILL IN WETLAND



DENOTES MECHANIZED CLEARING



DENOTES IMPACTS IN SURFACE WATER  
 -Y13- POTS Sta. 26+95.75

SYSTEMS  
 DCD  
 USER NAME

Parcel #	Last Name	First Name	Address	City/Town	State	Zip Code
	Hunt	James B.	1441 NC 42 East	Clayton	NC	27527
	Hunt	Robert B.	1441 NC 42 East	Clayton	NC	27527
	Davis	Walter S.	Hwy 42	Clayton	NC	27527
	York	Philip S.	Hwy 42	Clayton	NC	27527
	County of Johnston		Hwy 42	Clayton	NC	27527
	Finch	Rebecca F.	Hwy 42	Clayton	NC	27527
	Federal National Mortgage Assoc.		Hwy 42	Clayton	NC	27527
	Austermuehle, III	Edward W.	Hwy 42	Clayton	NC	27527
	Jones, Jr.	M. Andrew	Hwy 42	Clayton	NC	27527
	Roberts, Jr.	Tommie	Hwy 42	Clayton	NC	27527
	Flowers	Billy R.	Hwy 42	Clayton	NC	27527
	Flowers	Gladys W.	Hwy 42	Clayton	NC	27527
	Flowers	Jimmy R.	Hwy 42	Clayton	NC	27527
	Flowers	David M.	Hwy 42	Clayton	NC	27527
	Flowers	Rebecca	Hwy 42	Clayton	NC	27527

**(PRELIMINARY) WETLAND PERMIT IMPACT SUMMARY**

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS						SURFACE WATER IMPACTS								
			Permanent Fill in Wetlands (ac)	Temp. Fill in Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)					
4	-L- 91+90 to 93+21 (RT)	Exist 30" RCP	0.08			0.01											
5	-L- 92+15 to 92+48 (LT)	Exist 30" RCP									<0.01			67			
6	-L- 114+53 (RT)	Exist 30" RCP									<0.01			19			
7	-L- 138+07 to 140+25	Exist 24" RCP				0.02					0.01			282			
8	-L- 138+25 to 139+45 (RT)	Exist 24" RCP	0.09														
9	-L- 140+17 to 140+97 (LT)	----	<0.01			0.01											
10	-L- 171+61 to 172+78	Exist 1-3'X4' Culvert									0.01			120			
11	-L- 179+01 to 179+38	Exist 1-5'X4' Culvert									0.02			112			
12	-L- 200+33 to 201+92	Exist 1-3'X4' Culvert									0.04			249			
13	-L- 220+88 to 221+96	Exist 1-3'X3' Culvert									0.01			170			
14	-L- 232+10 (RT)	Exist 2-8'X12' Culvert									0.06			119			
15	-L- 266+63 to 266+74 (RT)	Exist 24" RCP	<0.01														
16	-L- 266+95 to 267+64 (RT)	Exist 24" RCP	0.03														
17	-L- 266+10 to 267+30 (LT)	Exist 24" RCP	0.04			<0.01					0.02*						
18	-L- 294+27 to 297+13 (LT)	Exist 24" RCP	0.12			0.06					<0.01			42			
19	-L- 295+09 to 297+46 (RT)	Exist 24" RCP	0.21			0.05											
20	-L- 307+00 to 307+61(RT)	Exist 24" RCP	<0.01			<0.01								65			
<b>TOTALS:</b>			0.57	0.00	0.00	0.15	0.00	0.00	0.00	0.17	0	0	1245	0	0		

**Permit Drawing  
Sheet 25 of 25**

**NOTES:**  
\* Impacts in surface water (pond)

NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

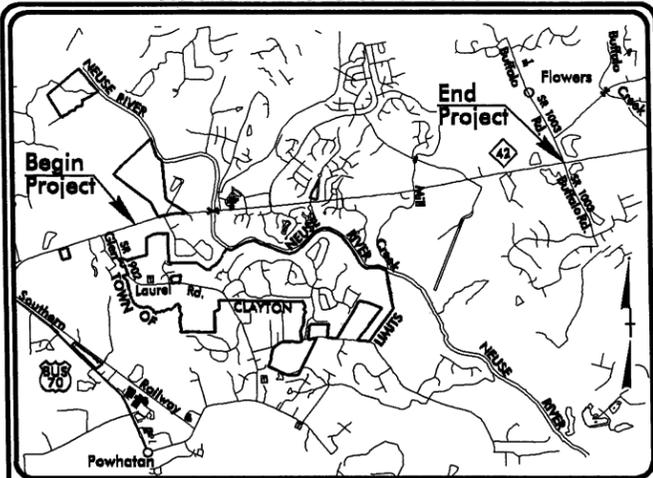
JOHNSTON COUNTY  
WBS - 34552.2.3 (R-3825B)

SHEET 1 OF

7/12/2011

09/28/99

See Sheet 1-A For Index of Sheets



**VICINITY MAP**  
NOT TO SCALE

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**JOHNSTON COUNTY**

LOCATION: NC 42 FROM EAST OF SR 1902 (GLEN LAUREL ROAD)  
TO SR 1003 (BUFFALO ROAD)

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

**PRELIMINARY BUFFER PERMIT DWG.**

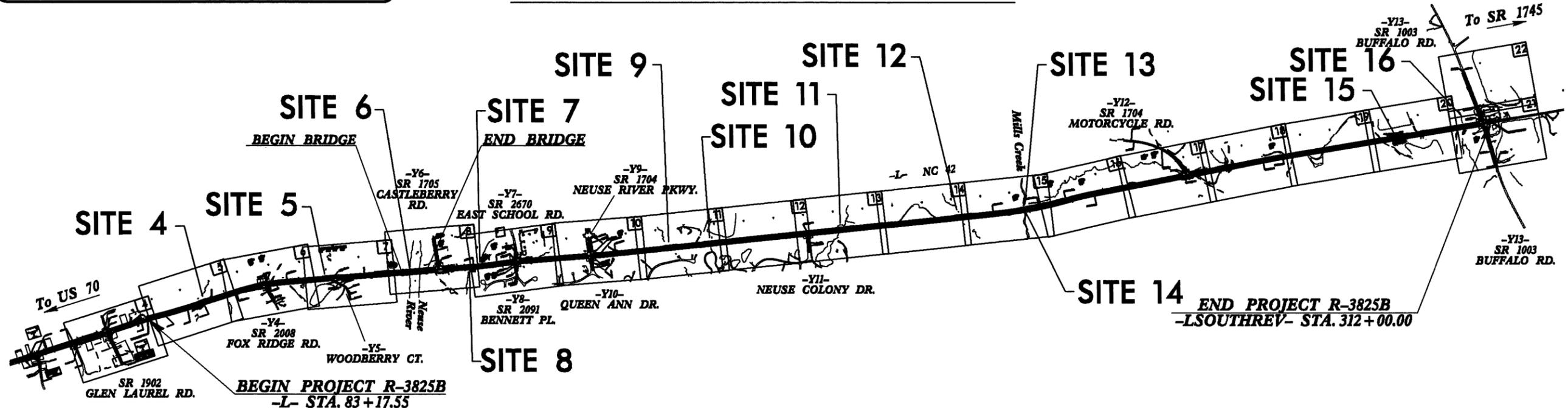


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3825B	1	-
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



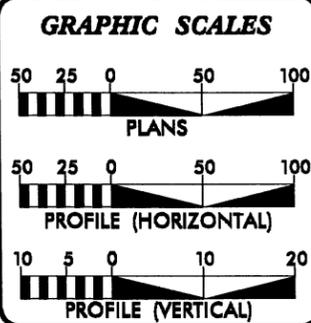
Buffer Drawing  
Sheet 1 of 24

**TIP PROJECT: R-3825B**



**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION  
**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

**CONTRACT:**



**DESIGN DATA**

ADT	=	
ADT	=	
DHV	=	%
D	=	%
T	=	%
V	=	MPH
* TTST	=	DUAL
FUNC CLASS	=	
RURAL MAJOR COLLECTOR REGIONAL TIER		

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT R-3825B = 4.255 Miles  
 LENGTH STRUCTURE TIP PROJECT R-3825B = 0.078 Miles  
 TOTAL LENGTH TIP PROJECT R-3825B = 4.333 Miles

Prepared in the Office of:  
**DIVISION OF HIGHWAYS**  
 1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: RON McCOLLUM, PE  
PROJECT ENGINEER

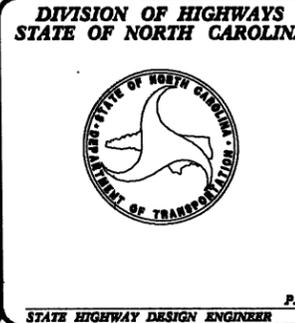
LETTING DATE: SUSAN C. LANCASTER, P.E.  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.



\$\$\$\$\$SYTIME\$\$\$\$\$DGN\$\$\$\$\$USERNAME\$\$\$\$\$

8/17/99

PRELIMINARY BUFFER PERMIT DWG.



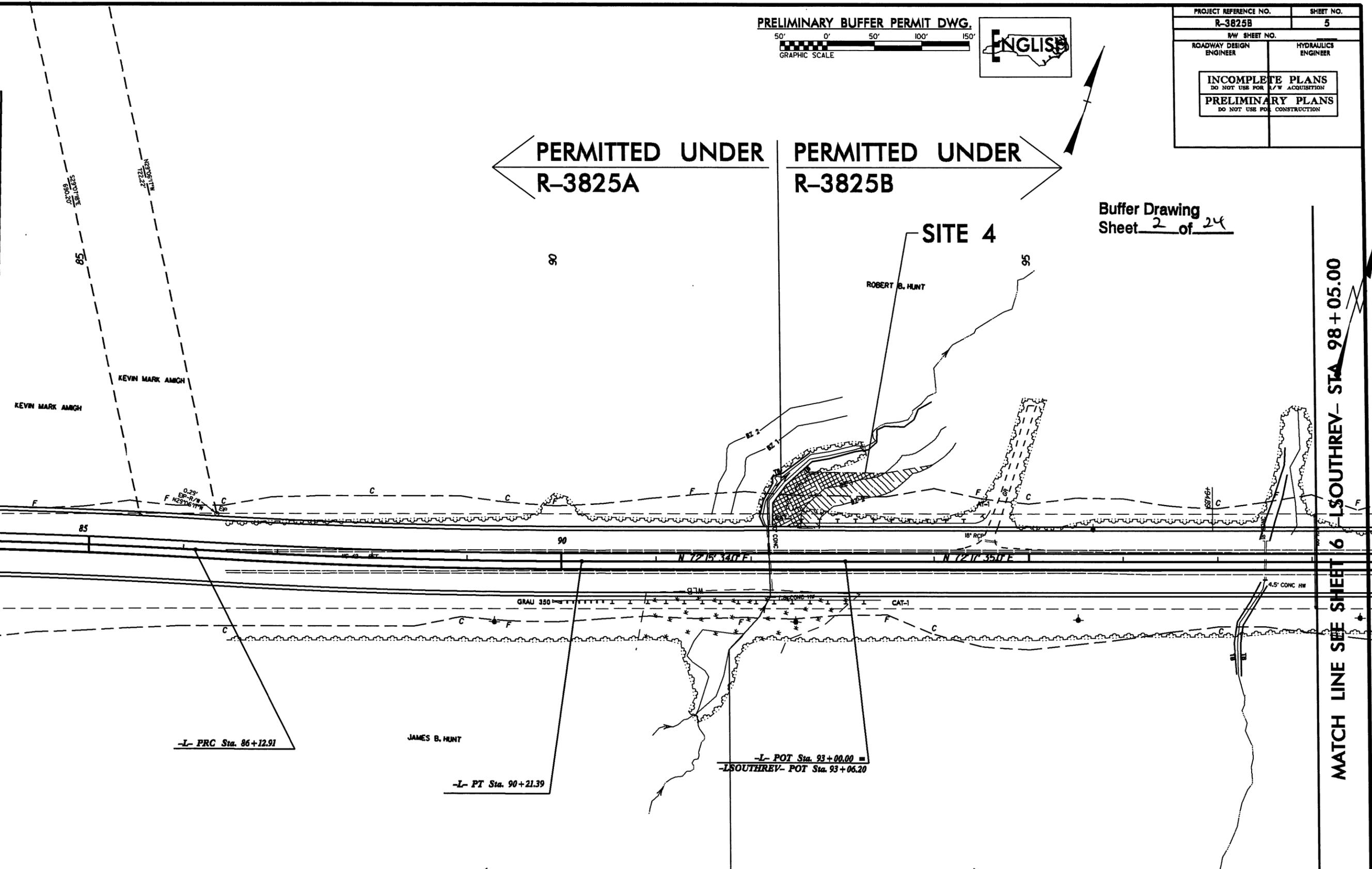
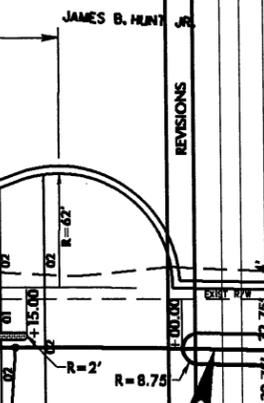
PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>5</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

← **PERMITTED UNDER R-3825A** | **PERMITTED UNDER R-3825B** →

Buffer Drawing Sheet 2 of 24

MATCH LINE SEE SHEET 4 L- STA 84+00.00

MATCH LINE SEE SHEET 6 SOUTHREV- STA 98+05.00



← **PERMITTED UNDER R-3825A** | **PERMITTED UNDER R-3825B** →

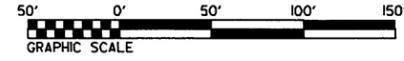
- ALLOWABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2

-3825B

\*\*\*\*\*  
 SYSTEM TIME: 8/17/99 10:00:00  
 USER: JBM  
 \*\*\*\*\*

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>5</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

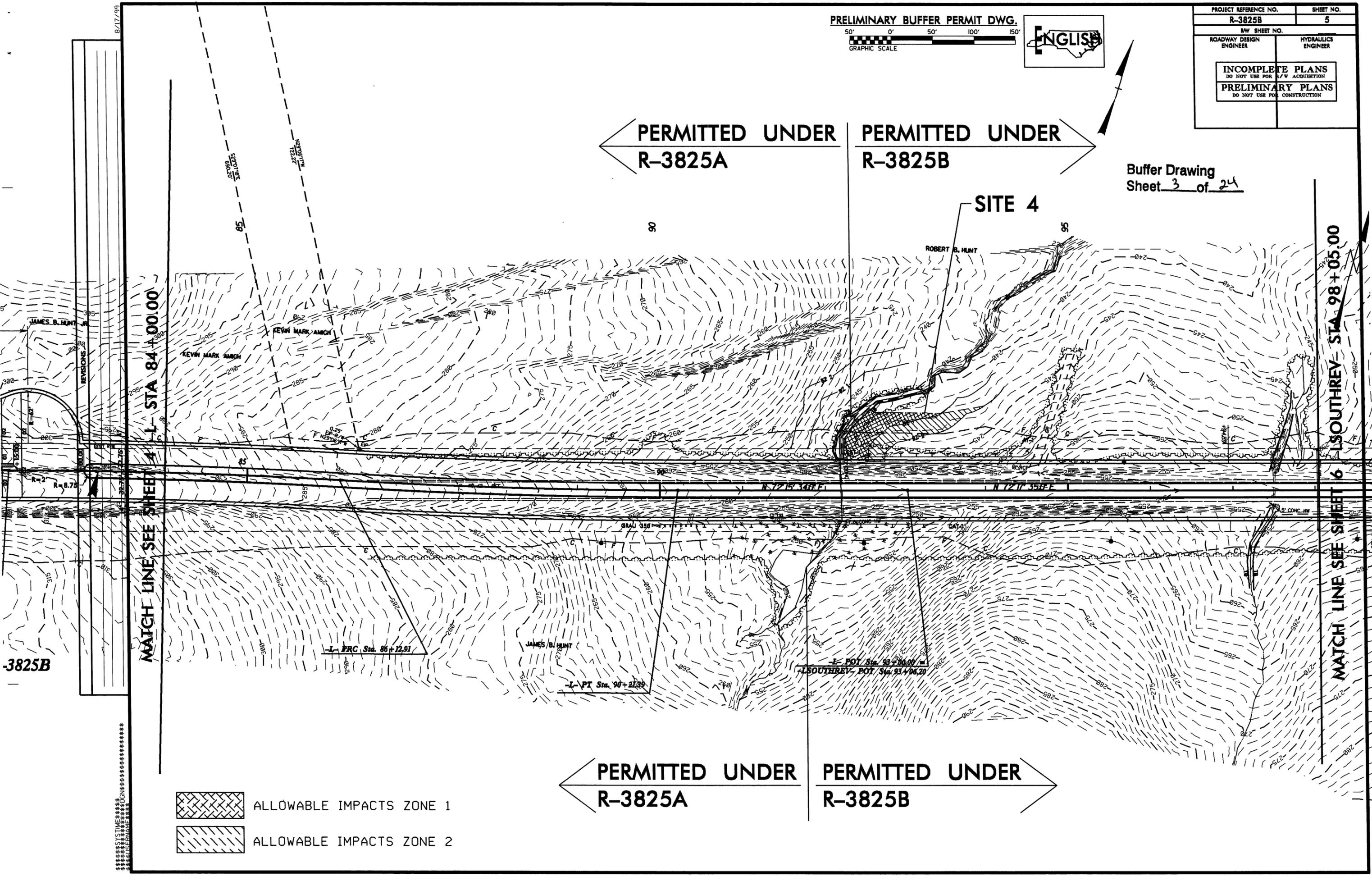
PRELIMINARY BUFFER PERMIT DWG.



PERMITTED UNDER  
**R-3825A**

PERMITTED UNDER  
**R-3825B**

Buffer Drawing  
Sheet 3 of 24



-3825B

MATCH LINE SEE SHEET 4 L STA 84+00.00

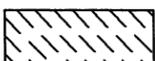
MATCH LINE SEE SHEET 6 SOUTHREY STA 98+05.00

PERMITTED UNDER  
**R-3825A**

PERMITTED UNDER  
**R-3825B**



ALLOWABLE IMPACTS ZONE 1



ALLOWABLE IMPACTS ZONE 2

8/17/99

PRELIMINARY BUFFER PERMIT DWG.



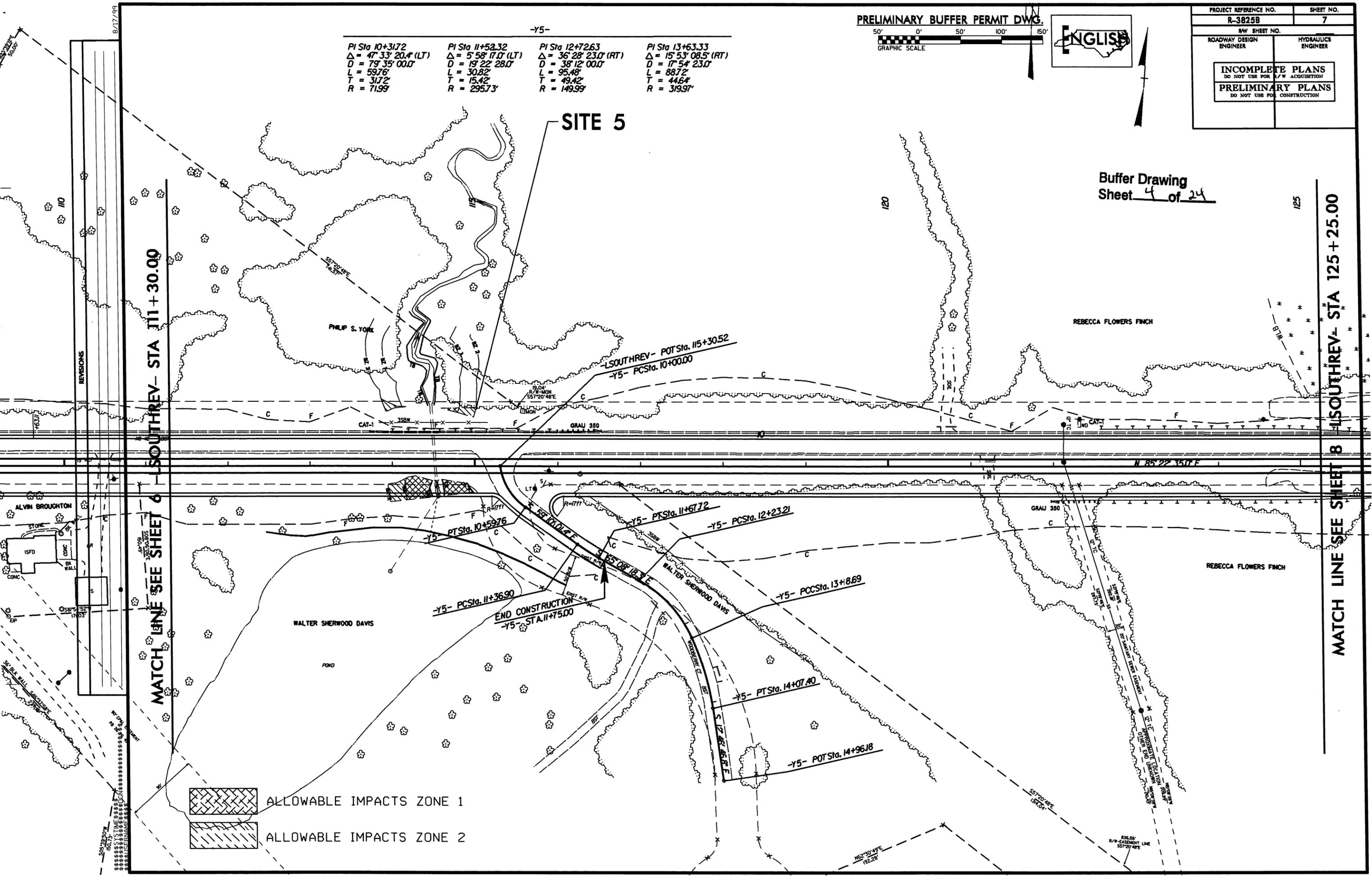
PROJECT REFERENCE NO. R-3825B	SHEET NO. 7
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

-Y5-

PI Sta 10+31.72 Δ = 47° 33' 20.4" (LT) D = 79° 35' 00.0" L = 59.76' T = 31.72' R = 71.99'	PI Sta 11+52.32 Δ = 5° 58' 17.0" (LT) D = 19° 22' 28.0" L = 30.82' T = 15.42' R = 295.73'	PI Sta 12+72.63 Δ = 36° 28' 23.0" (RT) D = 38° 12' 00.0" L = 95.48' T = 49.42' R = 149.99'	PI Sta 13+63.33 Δ = 15° 53' 08.5" (RT) D = 17° 54' 23.0" L = 88.72' T = 44.64' R = 319.97'
--	--	---	---

SITE 5

Buffer Drawing Sheet 4 of 24



- ALLOWABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2

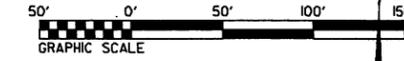
8/17/99

MATCH LINE SEE SHEET 8 SOUTHREV- STA 125+25.00

MATCH LINE SEE SHEET 6 SOUTHREV- STA 111+30.00

PROJECT REFERENCE NO. R-3825B	SHEET NO. 7
HW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/E/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

PRELIMINARY BUFFER PERMIT DWG.

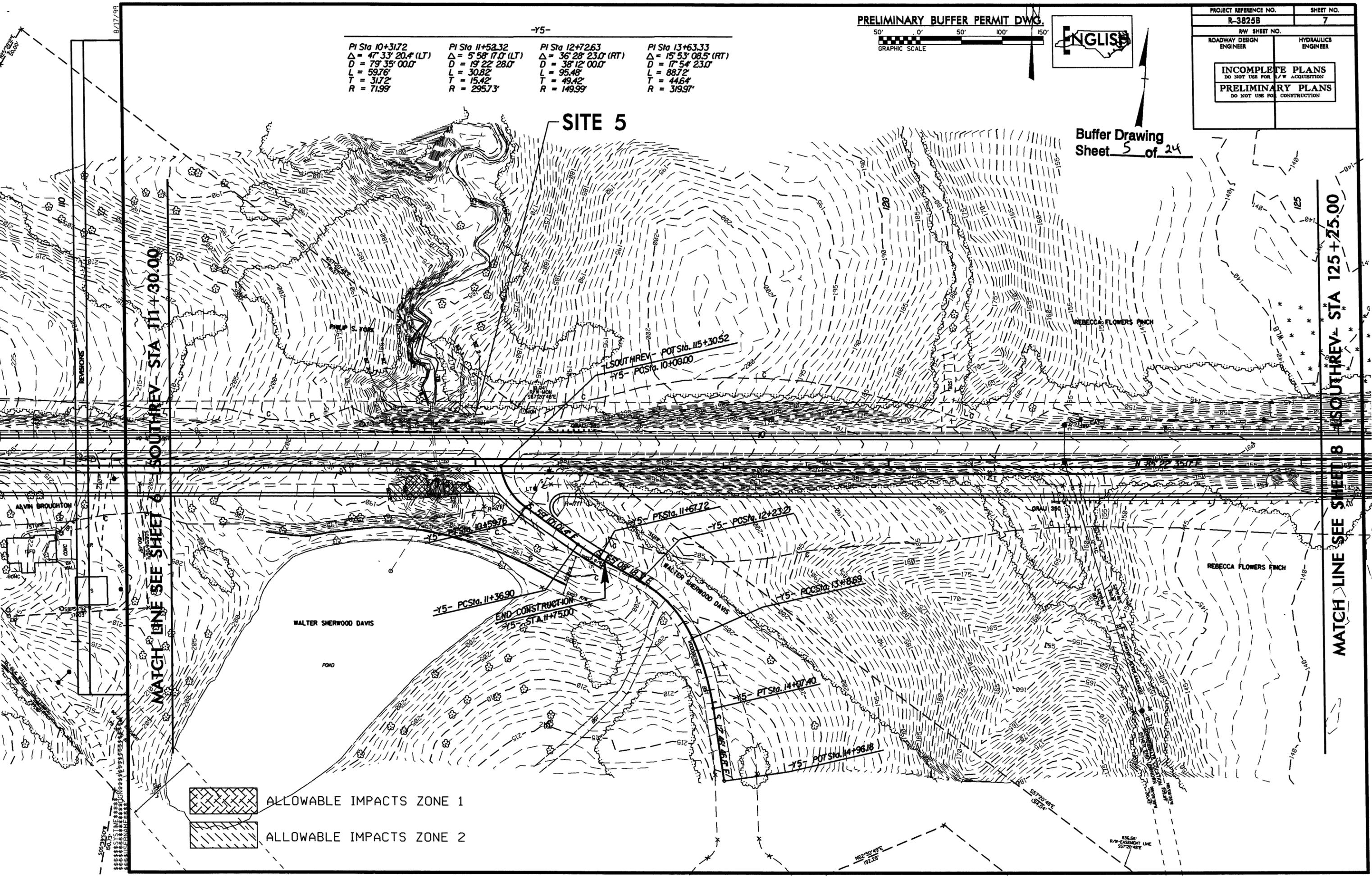


-Y5-

PI Sta 10+31.72 Δ = 47° 33' 20.4" (LT) D = 79' 35" 00.0" L = 59.76' T = 31.72' R = 71.99'	PI Sta 11+52.32 Δ = 5° 58' 17.0" (LT) D = 19' 22" 28.0" L = 30.82' T = 15.42' R = 295.73'	PI Sta 12+72.63 Δ = 36° 28' 23.0" (RT) D = 38' 12" 00.0" L = 95.48' T = 49.42' R = 149.99'	PI Sta 13+63.33 Δ = 15° 53' 08.5" (RT) D = 17' 54" 23.0" L = 88.72' T = 44.64' R = 319.97'
--	--	---	---

SITE 5

Buffer Drawing Sheet 5 of 24



 ALLOWABLE IMPACTS ZONE 1  
 ALLOWABLE IMPACTS ZONE 2

8/17/99

1/2" = 50'

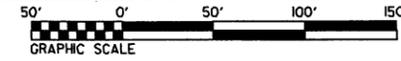
N62°30'49"E  
192.28'

E36.80'  
R/W EASEMENT LINE  
S57°20'48"E



8/17/99

PRELIMINARY BUFFER PERMIT DWG.



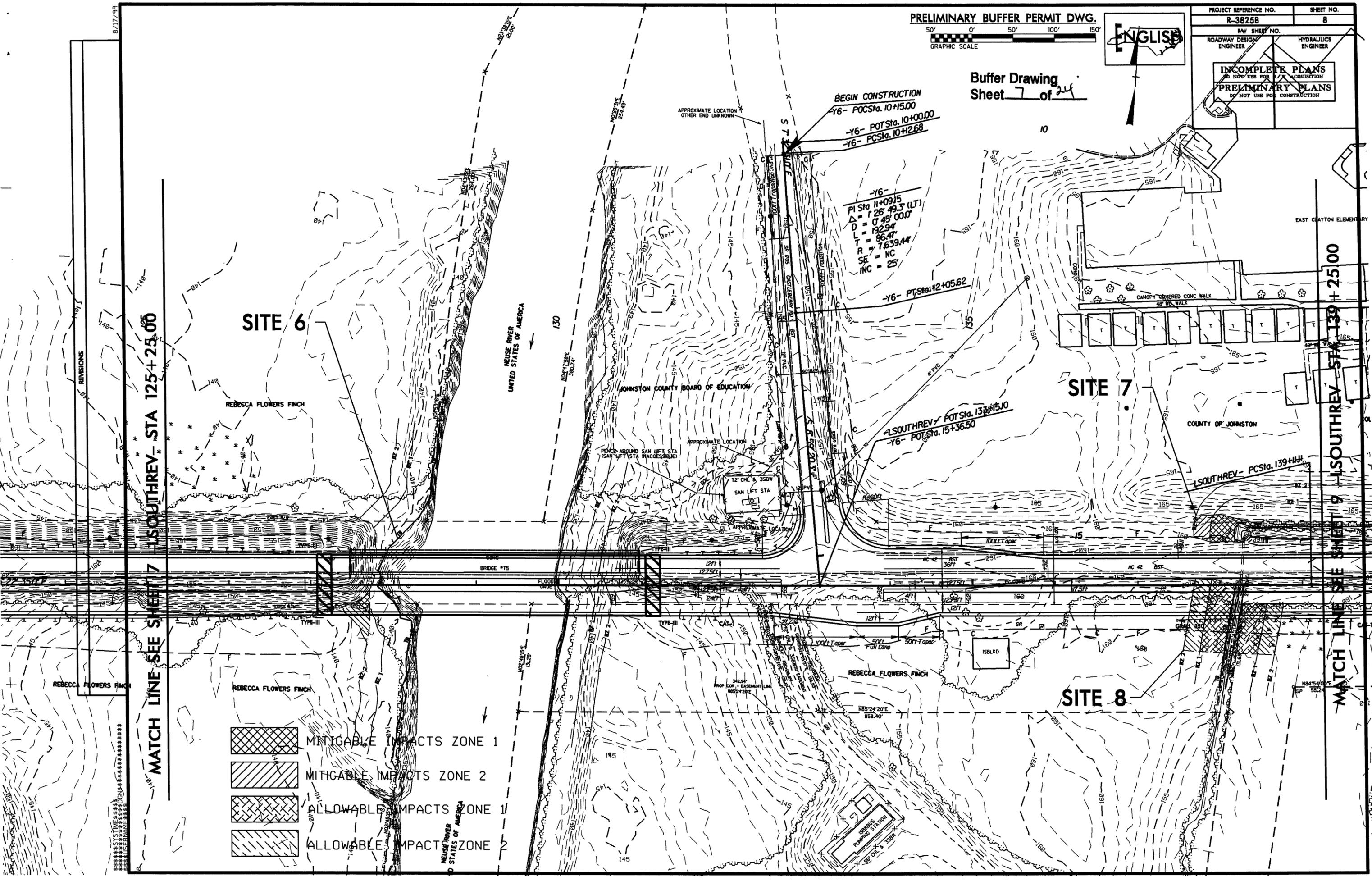
PROJECT REFERENCE NO. R-3825B	SHEET NO. 8
RDW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
<p><b>INCOMPLETE PLANS</b> DO NOT USE FOR ACQUISITION</p> <p><b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION</p>	

Buffer Drawing Sheet 7 of 24

MATCH LINE SEE SHEET 7 SOUTHREY STA 125+25.00

MATCH LINE SEE SHEET 9 SOUTHREY STA 139+25.00

-  MITIGABLE IMPACTS ZONE 1
-  MITIGABLE IMPACTS ZONE 2
-  ALLOWABLE IMPACTS ZONE 1
-  ALLOWABLE IMPACT ZONE 2

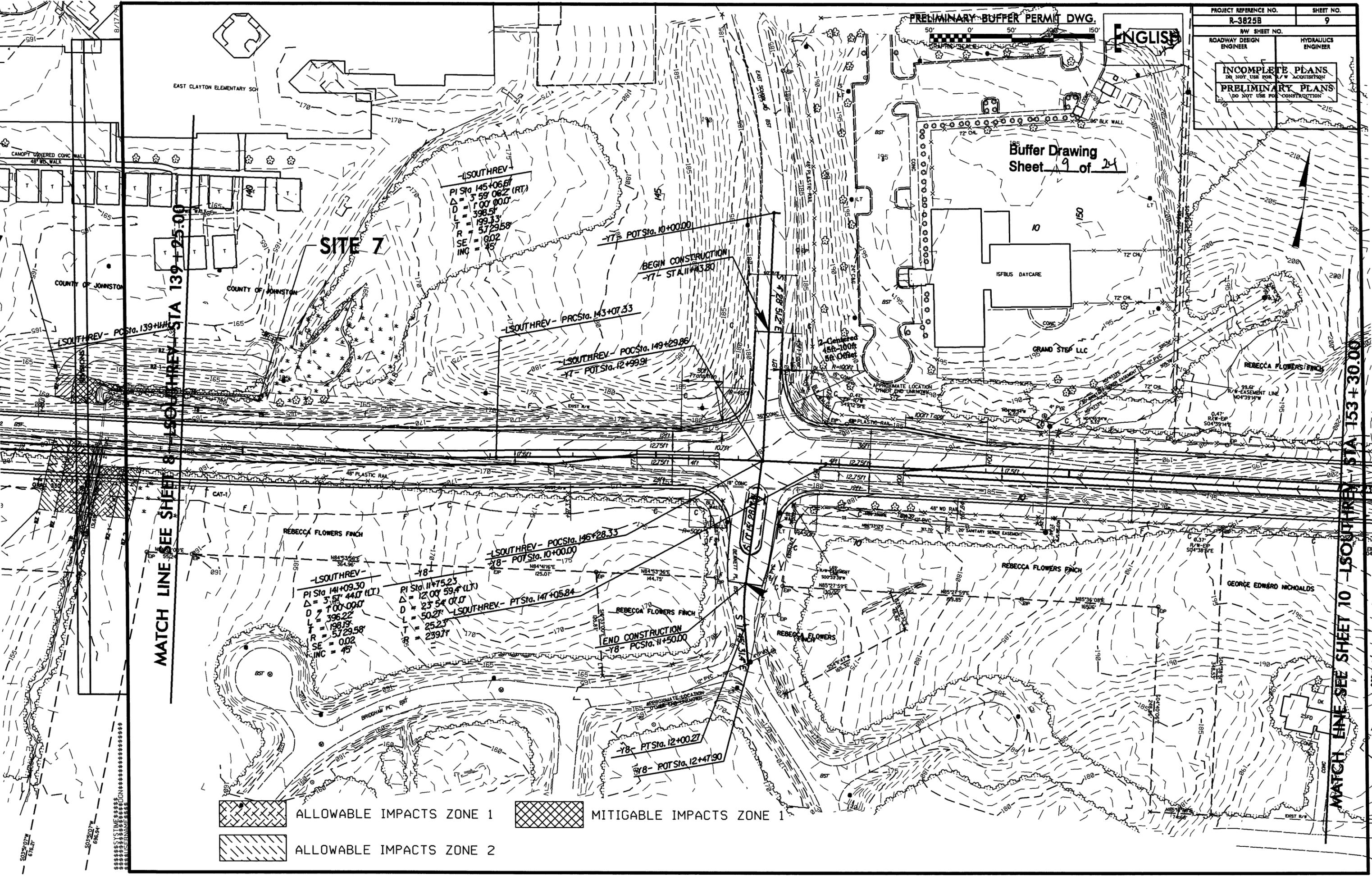




PROJECT REFERENCE NO. R-3825B	SHEET NO. 9
R/W SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

PRELIMINARY BUFFER PERMIT DWG.  
 GRAPHIC SCALE: 0' 50' 100' 150'  
**ENGLISH**

Buffer Drawing  
 Sheet 9 of 24



MATCH LINE SEE SHEET 8 - SOUTHREV STA 139+25.00

MATCH LINE SEE SHEET 10 - SOUTHREV STA 153+30.00

- ALLOWABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2
- MITIGABLE IMPACTS ZONE 1

**-4 SOUTHREV -**  
 PI Sta 145+06.61  
 $\Delta = 3^{\circ} 59' 06.22''$  (RT)  
 D = 100' 00.0'  
 L = 398.5'  
 T = 199.33'  
 R = 5729.58'  
 SE = 0.02  
 INC = 45'

**-5 SOUTHREV -**  
 PI Sta 141+09.30  
 $\Delta = 3^{\circ} 57' 44.0''$  (LT)  
 D = 100' 00.0'  
 L = 396.22'  
 T = 198.13'  
 R = 5729.58'  
 SE = 0.02  
 INC = 45'

**-8 SOUTHREV -**  
 PI Sta 114+75.23  
 $\Delta = 12^{\circ} 00' 59.4''$  (LT)  
 D = 23' 54' 07.0"  
 L = 50.27'  
 T = 25.23'  
 R = 239.71'

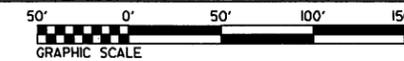
**-Y8 -**  
 POT Sta. 12+00.27  
 POT Sta. 12+47.90

**BEGIN CONSTRUCTION**  
 -Y7- STA 11+33.80

**END CONSTRUCTION**  
 -Y8- PCSig. 11+50.00

SYSTEM: \*\*\*\*\*  
 DATE: 02/25/2017  
 TIME: 6:16:21  
 USER: \*\*\*\*\*





PROJECT REFERENCE NO. R-3825B		SHEET NO. 11	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION			

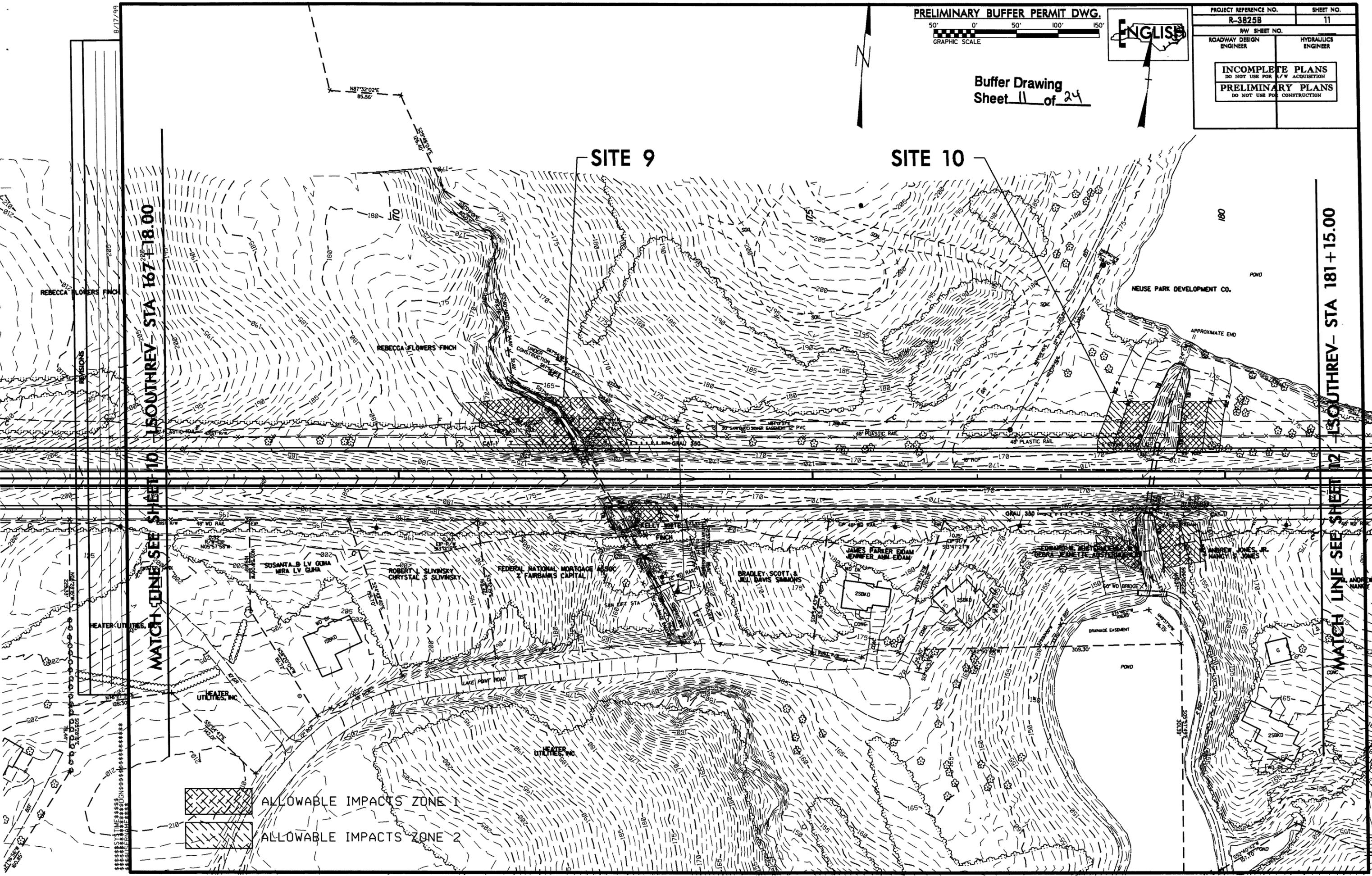
Buffer Drawing  
Sheet 11 of 24

SITE 9

SITE 10

MATCH LINE SEE SHEET 10 SOUTHREY - STA 167+18.00

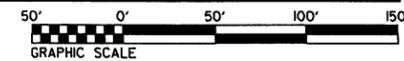
MATCH LINE SEE SHEET 12 SOUTHREY - STA 181+15.00



 ALLOWABLE IMPACTS ZONE 1

 ALLOWABLE IMPACTS ZONE 2

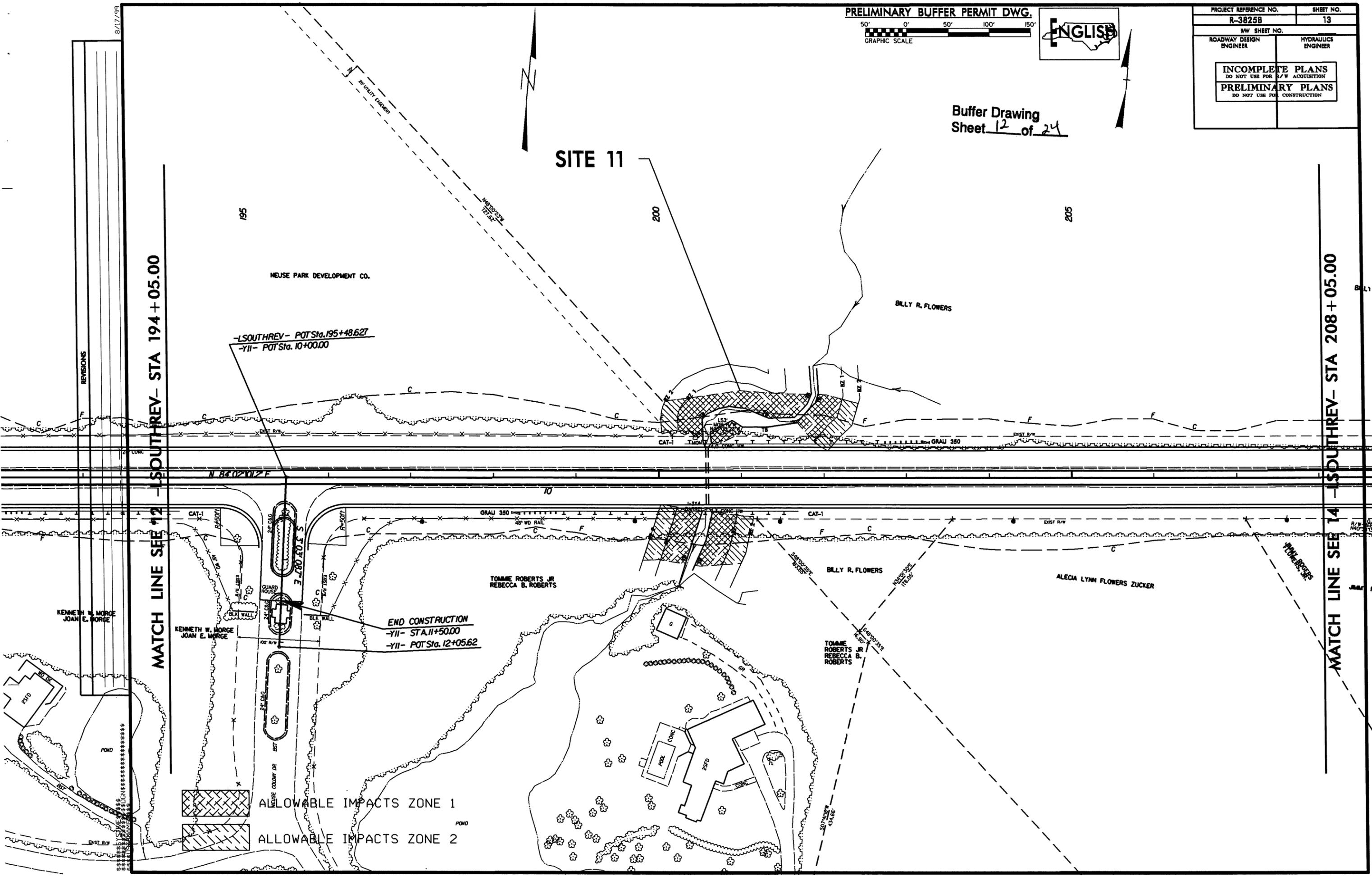
8/17/99



PROJECT REFERENCE NO. R-3825B	SHEET NO. 13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

Buffer Drawing Sheet 12 of 24

# SITE 11



MATCH LINE SEE #12 - SOUTHREY - STA 194 + 05.00

MATCH LINE SEE #14 - SOUTHREY - STA 208 + 05.00

REVISIONS

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

END CONSTRUCTION

-YII- STA. 11+50.00

-YII- POT Sta. 12+05.62

-LSOUTHREY - POT Sta. 195+48.627

-YII - POT Sta. 10+00.00

KENNETH W. MORGE

JOAN E. MORGE

KENNETH W. MORGE

JOAN E. MORGE

TOMME ROBERTS JR

REBECCA B. ROBERTS

TOMME ROBERTS JR

REBECCA B. ROBERTS

ALECIA LYNN FLOWERS ZUCKER

BILLY R. FLOWERS

BILLY R. FLOWERS

NEUSE PARK DEVELOPMENT CO.

N 84° 02' 00" E

10

GRAU 350

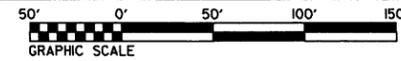
GRAU 350

GRAU 350

48' WD RAL

8/17/99

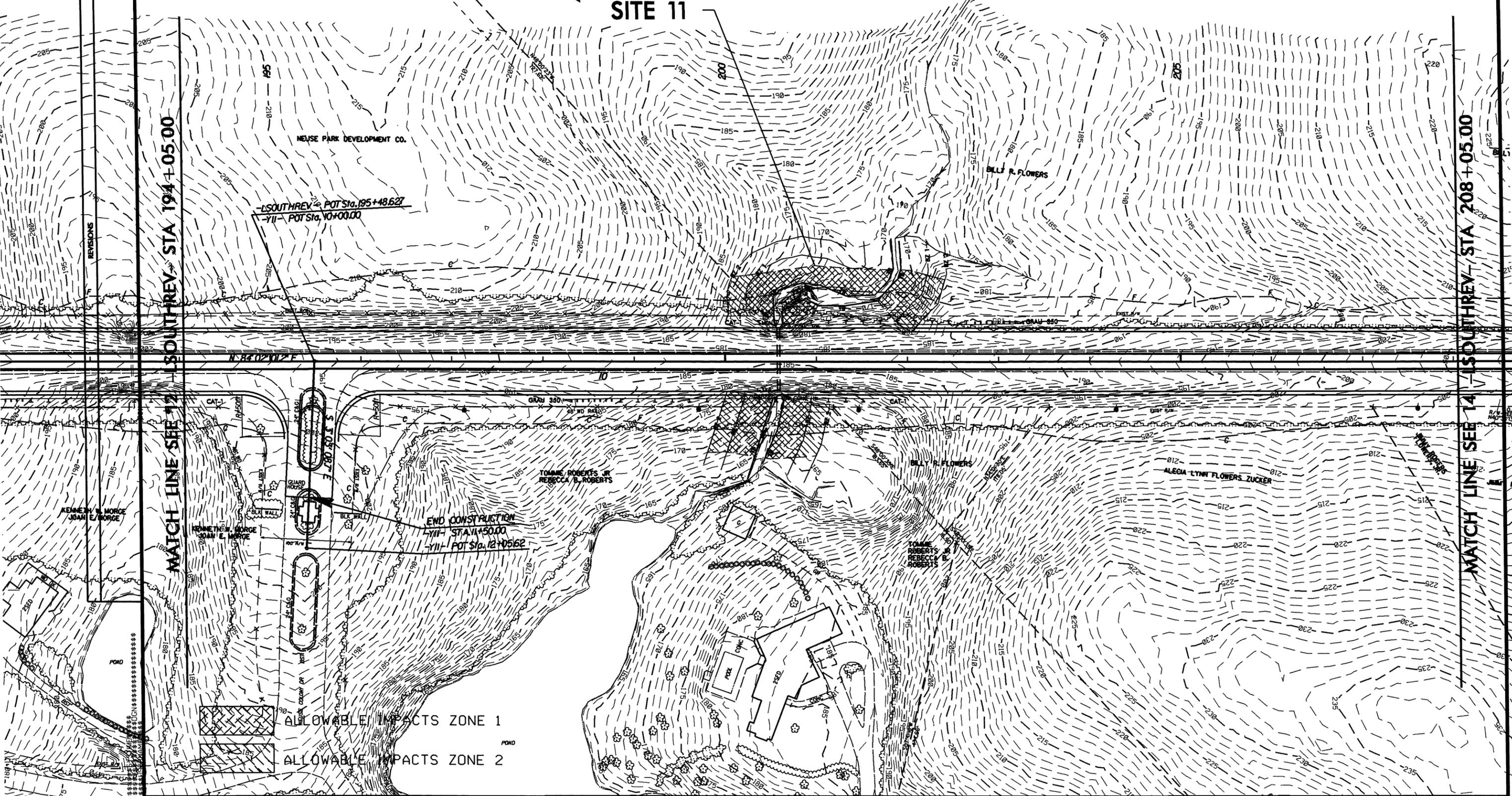
PRELIMINARY BUFFER PERMIT DWG.



PROJECT REFERENCE NO. R-3825B	SHEET NO. 13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Buffer Drawing  
Sheet 13 of 24

SITE 11



MATCH LINE SEE 12 - SOUTHREY STA 194+05.00

MATCH LINE SEE 14 - SOUTHREY STA 208+05.00

-SOUTHREY POT Sta. 195+48.627  
-VII POT Sta. 10+00.00

END CONSTRUCTION  
LYNN STAVIA 50.00  
-VIII POT Sta. 12+05.62

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2



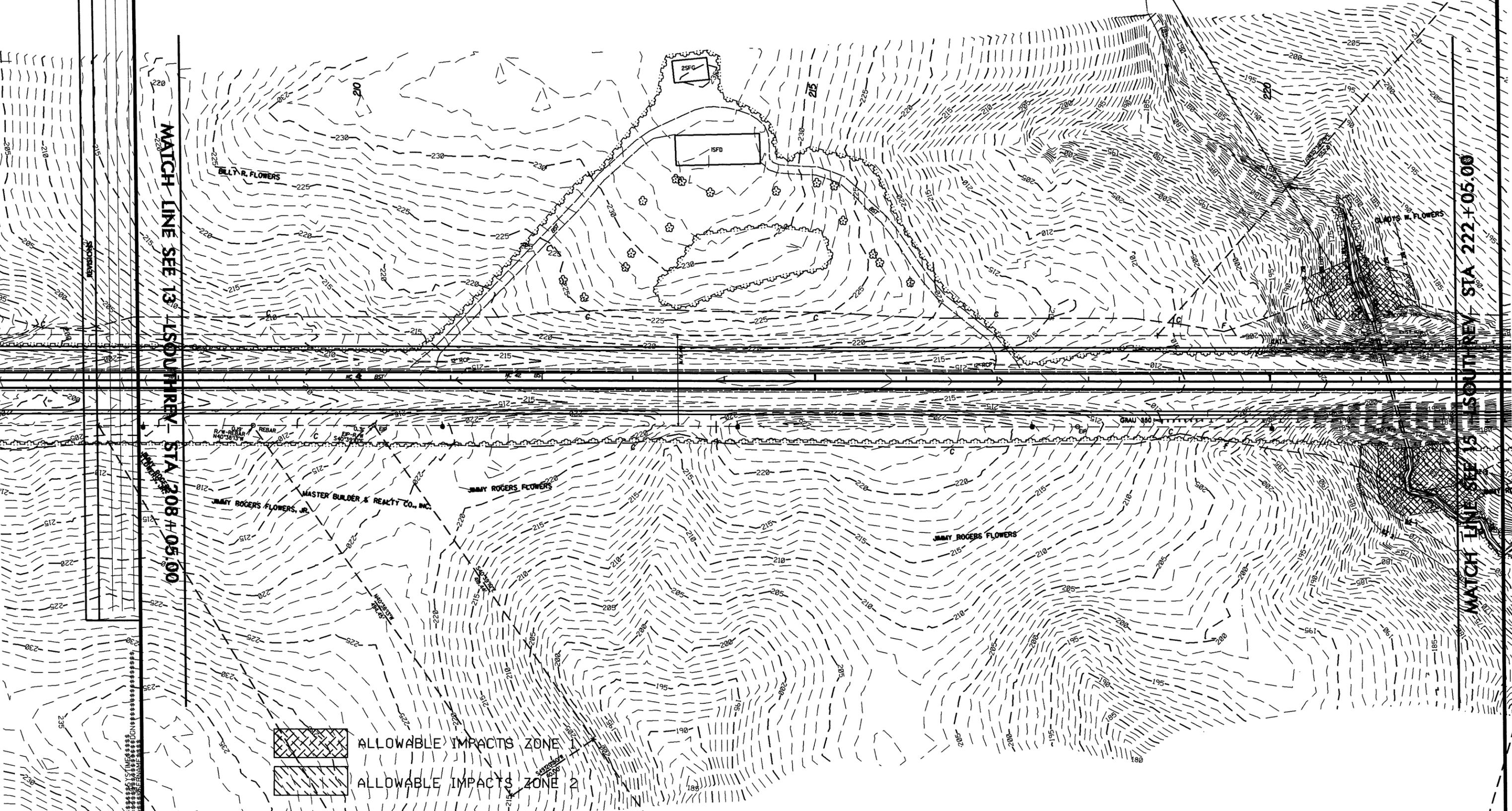
8/17/99

PRELIMINARY BUFFER PERMIT DWG.



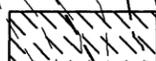
PROJECT REFERENCE NO. R-3825B		SHEET NO. 14	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/C ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION			

Buffer Drawing  
Sheet 15 of 24 SITE 12



MATCH LINE SEE 13 SOUTHREY STA 208+05.00

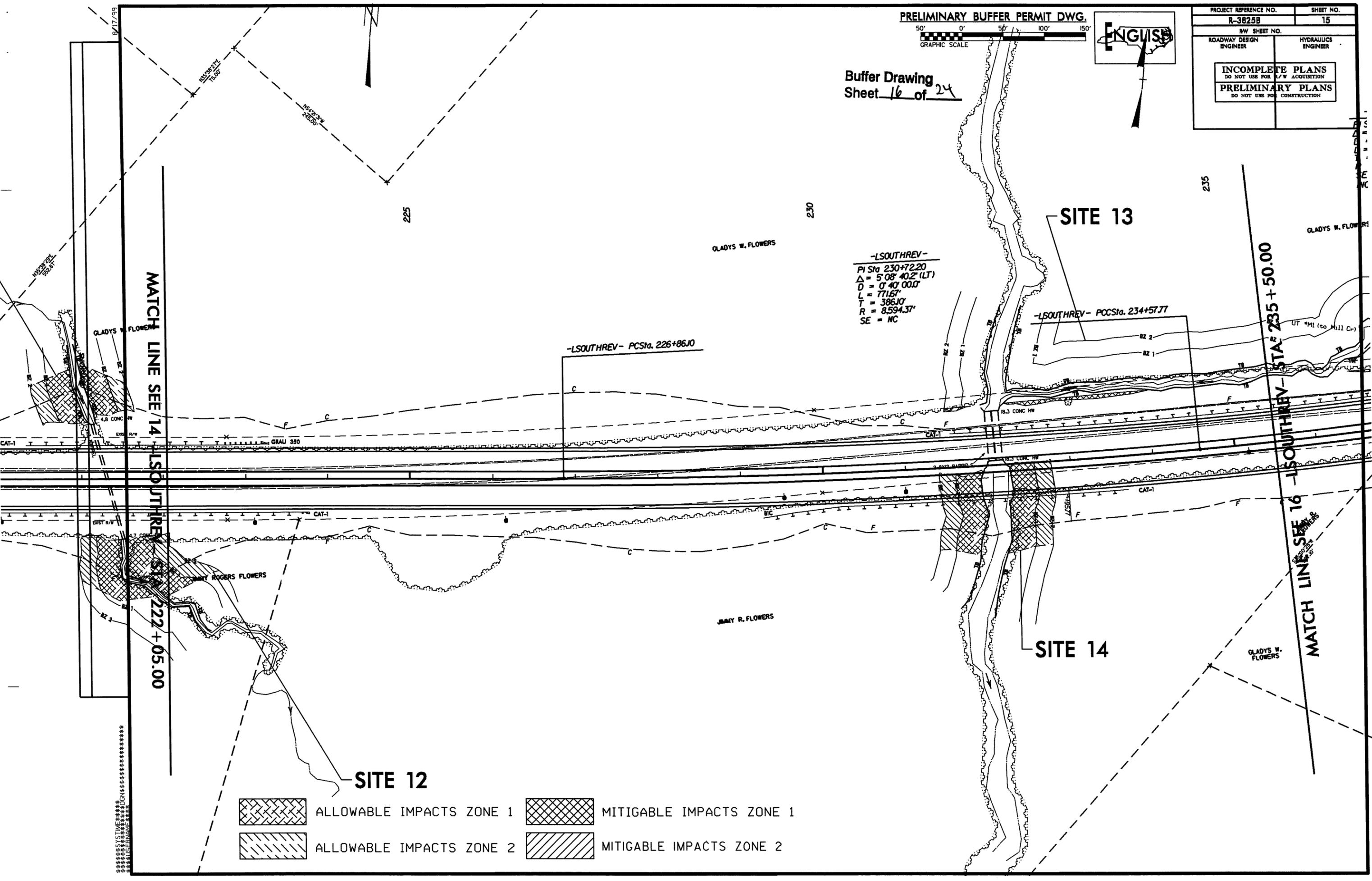
MATCH LINE SEE 15 SOUTHREY STA 222+05.00

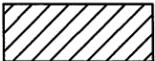
 ALLOWABLE IMPACTS ZONE 1  
 ALLOWABLE IMPACTS ZONE 2



PROJECT REFERENCE NO. R-3825B	SHEET NO. 15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

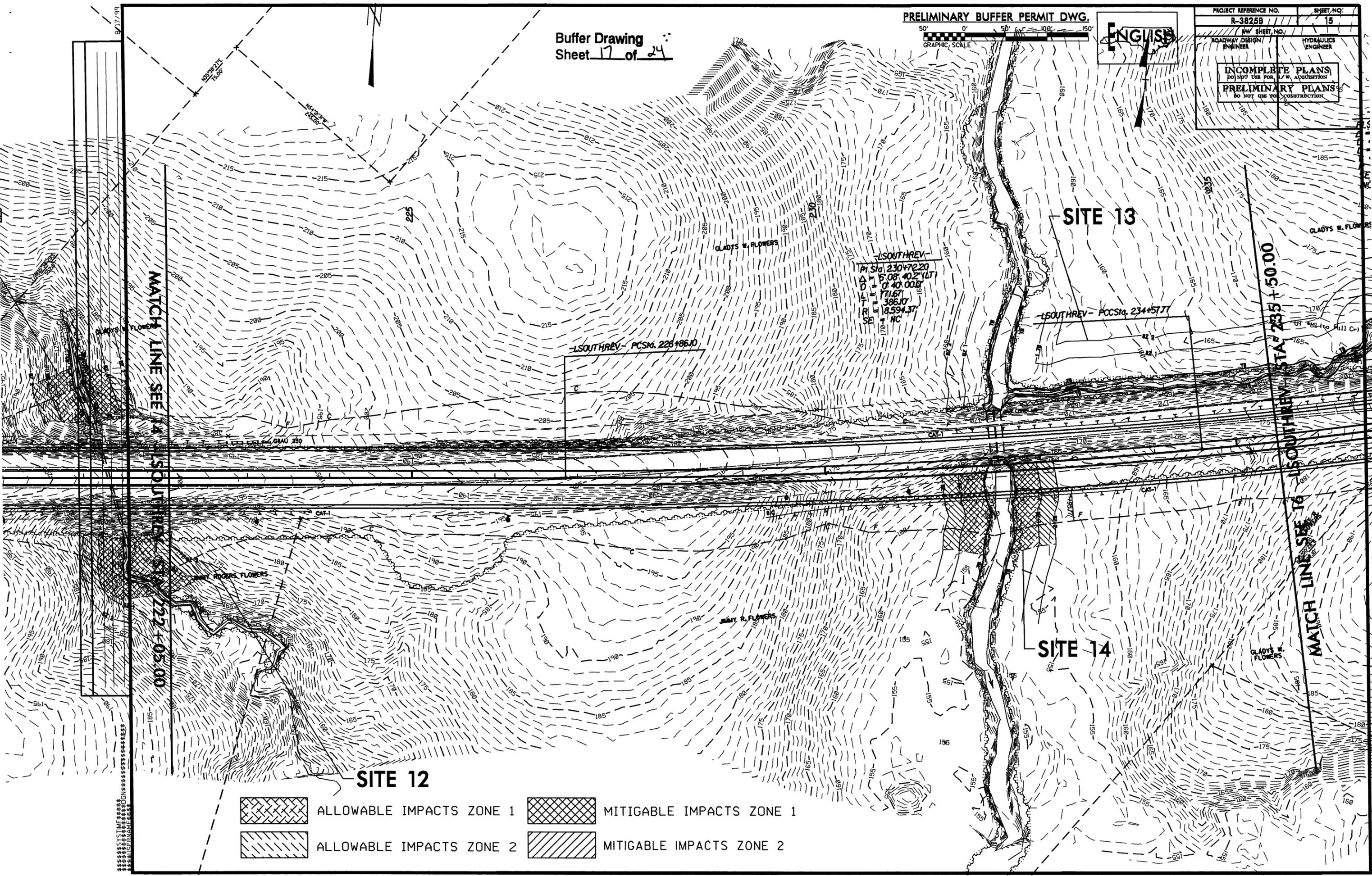
Buffer Drawing Sheet 16 of 24



-  ALLOWABLE IMPACTS ZONE 1
-  MITIGABLE IMPACTS ZONE 1
-  ALLOWABLE IMPACTS ZONE 2
-  MITIGABLE IMPACTS ZONE 2

PROJECT REFERENCE NO. R-3825B	SHEET NO. 15
HW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

Buffer Drawing  
Sheet 17 of 24



MATCH LINE SEE PLAN SOUTHREV STA 222+05.00

MATCH LINE SEE PLAN SOUTHREV STA 235+50.00

- ALLOWABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2
- MITIGABLE IMPACTS ZONE 2

SOUTHREV  
 PI Sta 230+72.20  
 ADI 5.08% (4.02% VAD)  
 OF 40.00ft  
 771.67  
 386.10  
 18594.37  
 NC

SOUTHREV - PCSIg. 226+86.10

SOUTHREV - PCSIg. 234+57.77

SITE 12

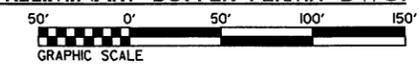
SITE 13

SITE 14

DATE: 08/17/95

ENGLISH

PRELIMINARY BUFFER PERMIT DWG.



ENGLISH

PROJECT REFERENCE NO. R-3825B	SHEET NO. 16
RDW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

Buffer Drawing Sheet 18 of 24

SITE 13

SITE 13

-LSOUTHREV-  
 PI Sta. 236+96.19  
 $\Delta = 4' 45' 55.7''$  (LT)  
 D = 1'00' 00.0"  
 L = 476.55'  
 T = 238.4'  
 R = 5,729.58'  
 SE = 0.02  
 INC = 45'

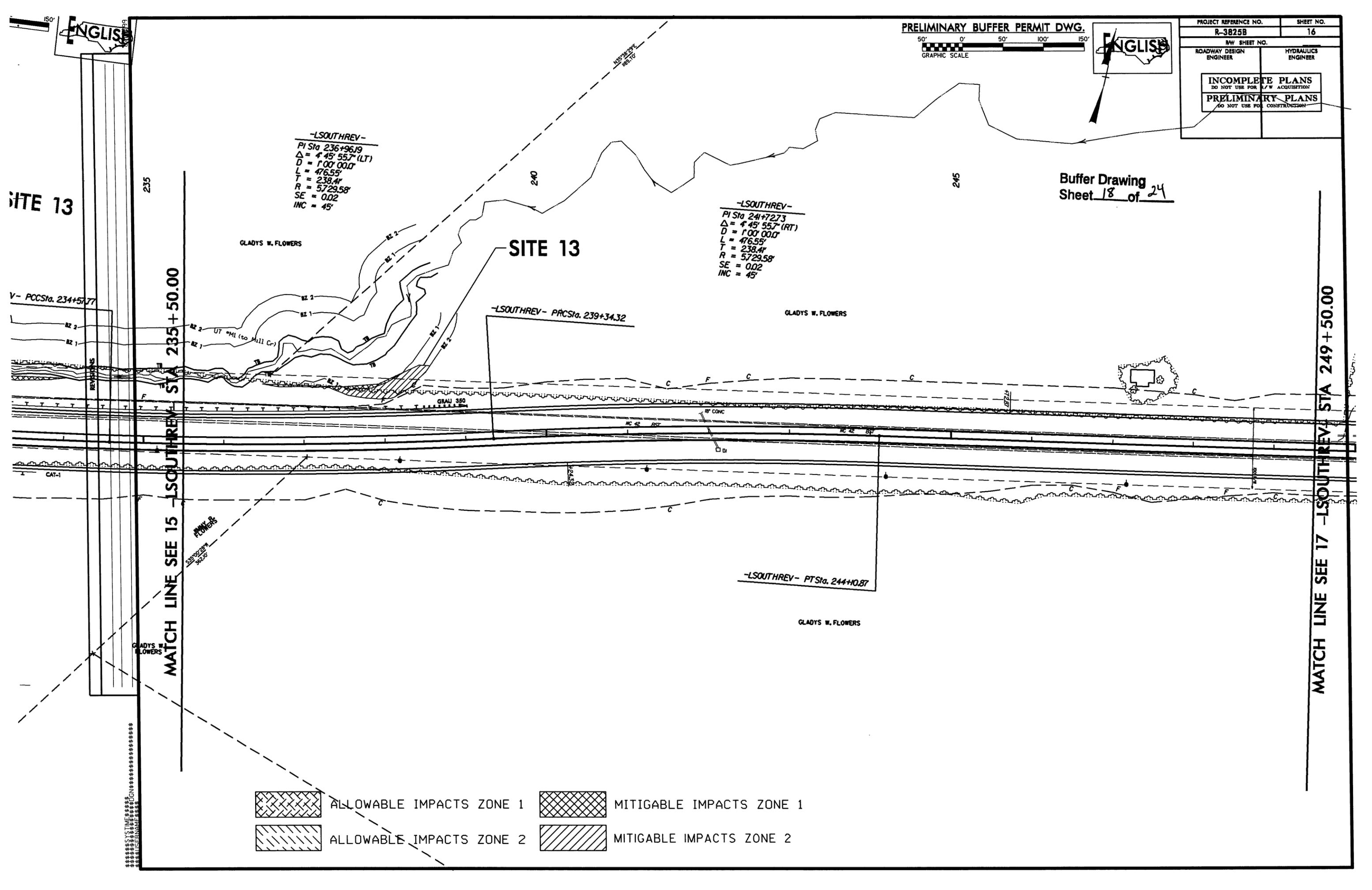
-LSOUTHREV-  
 PI Sta. 241+72.73  
 $\Delta = 4' 45' 55.7''$  (RT)  
 D = 1'00' 00.0"  
 L = 476.55'  
 T = 238.4'  
 R = 5,729.58'  
 SE = 0.02  
 INC = 45'

V- PCCSta. 234+57.77

MATCH LINE SEE 15 -LSOUTHREV- STA 235+50.00

MATCH LINE SEE 17 -LSOUTHREV- STA 249+50.00

-  ALLOWABLE IMPACTS ZONE 1
-  MITIGABLE IMPACTS ZONE 1
-  ALLOWABLE IMPACTS ZONE 2
-  MITIGABLE IMPACTS ZONE 2



ENGLISH

PRELIMINARY BUFFER PERMIT DWG.

ENGLISH

PROJECT REFERENCE NO. R-38258	SHEET NO. 16
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR CONSTRUCTION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SITE 13

SITE 13

Buffer Drawing  
Sheet 19 of 21

V- PCCSta. 234+57.77

MATCH LINE SEE 15 - SOUTHREY STA 235+50.00

MATCH LINE SEE 17 - SOUTHREY STA 249+50.00

-LSOUTHREY-  
 PLSia 236+96.19  
 Δ = 45° 55.7' (LT)  
 D = 1.00' 00.0"  
 L = 476.55'  
 T = 238.4'  
 R = 5729.58'<sup>85</sup>  
 SE = 0.02  
 INC = 45'

-LSOUTHREY-  
 PLSia 241+72.73  
 Δ = 45° 55.7' (RT)  
 D = 1.00' 00.0"  
 L = 476.55'  
 T = 238.4'  
 R = 5729.58'<sup>85</sup>  
 SE = 0.02  
 INC = 45'

-LSOUTHREY- PCCSta. 239+34.32

-LSOUTHREY- PTSia. 244+10.57



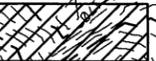
ALLOWABLE IMPACTS ZONE 1



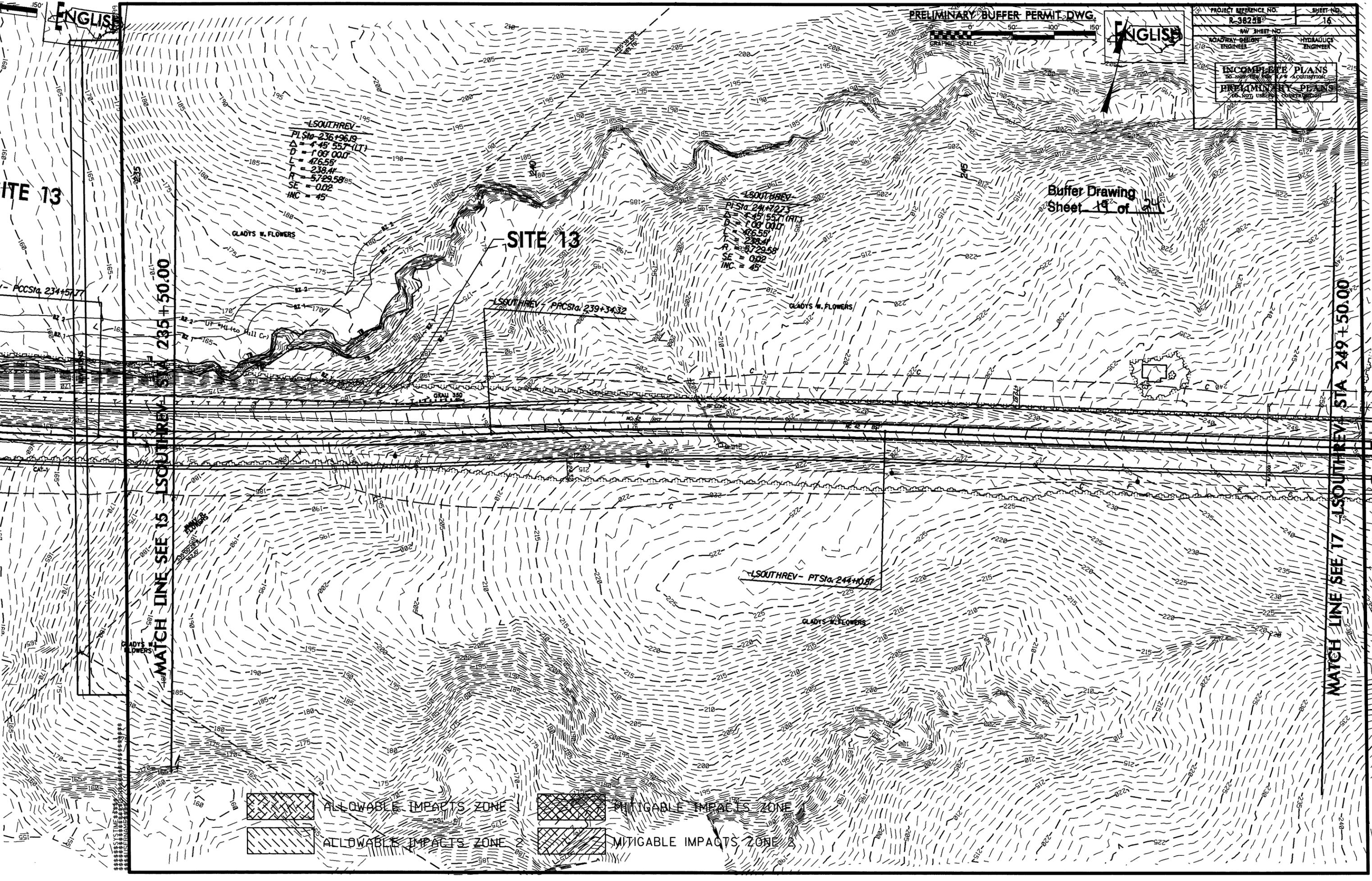
MITIGABLE IMPACTS ZONE 1



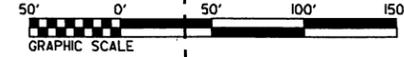
ALLOWABLE IMPACTS ZONE 2



MITIGABLE IMPACTS ZONE 2

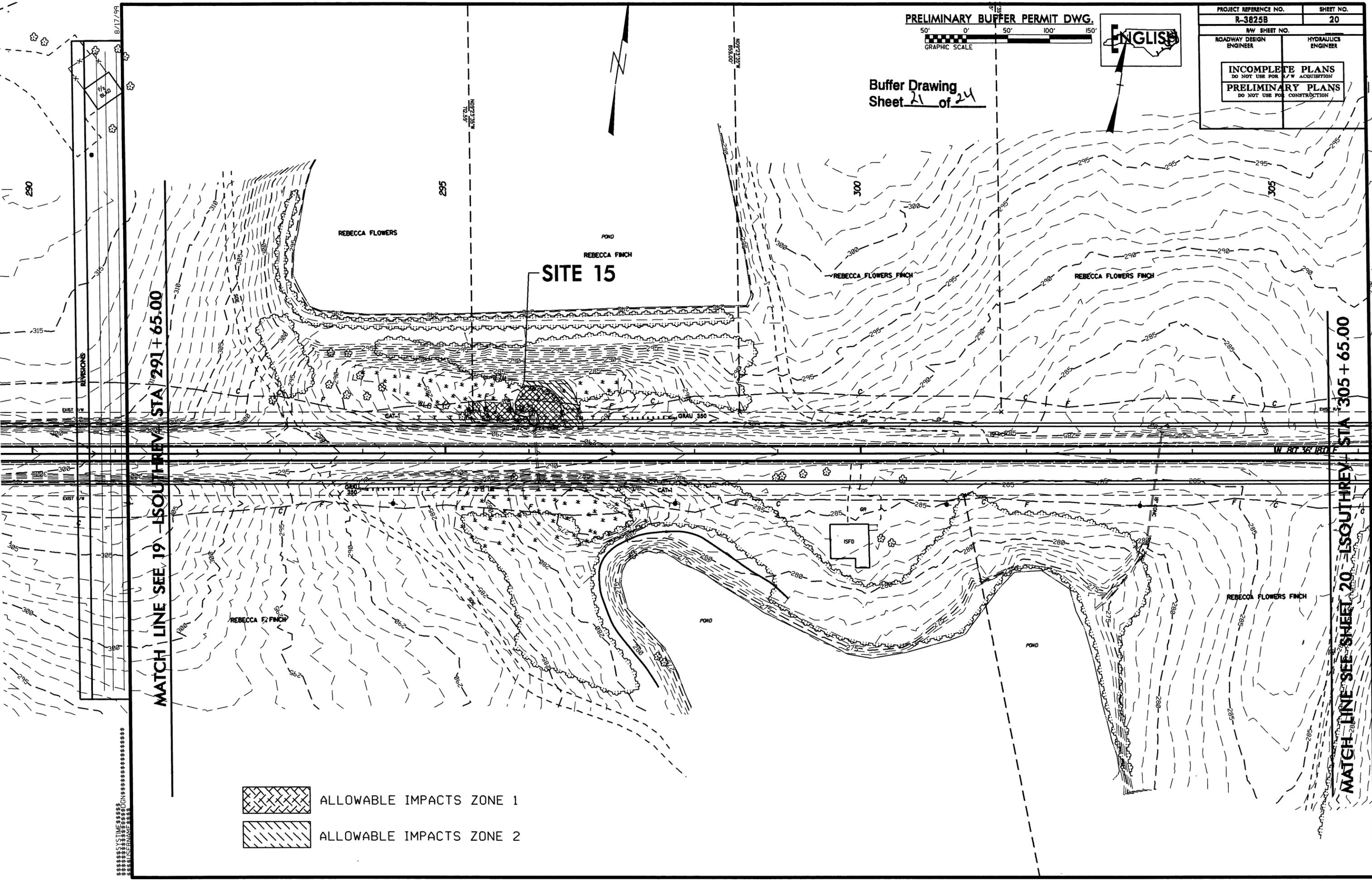






PROJECT REFERENCE NO. R-3825B	SHEET NO. 20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

Buffer Drawing Sheet 21 of 24



MATCH LINE SEE 19 - SOUTHWEST STA 291 + 65.00

MATCH LINE SEE SHEET 20 - SOUTHWEST STA 305 + 65.00

-  ALLOWABLE IMPACTS ZONE 1
-  ALLOWABLE IMPACTS ZONE 2

REVISIONS  
DATE  
BY  
DESCRIPTION





**(PRELIMINARY) BUFFER IMPACTS SUMMARY**

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	IMPACT						MITIGABLE			BUFFER REPLACEMENT			
			TYPE		ALLOWABLE		TOTAL (ft <sup>2</sup> )	ZONE 1 (ft <sup>2</sup> )	ZONE 2 (ft <sup>2</sup> )	TOTAL (ft <sup>2</sup> )	ZONE 1 (ft <sup>2</sup> )	ZONE 2 (ft <sup>2</sup> )			
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft <sup>2</sup> )							ZONE 2 (ft <sup>2</sup> )		
4	Exist 30" RCP	-L- 92+23 to 93+39	X			2618	2583	5201							
5	Exist 30" RCP	-L- 113+87 to 115+02	X			1295	797	2092							
6	PROP. BRIDGE	-L- 127+39 to 127+71		X		178	685	863							
7	Exist 24" RCP	-L- 137+69 to 140+19			X				1553	586	2139				
8	Exist 24" RCP	-L- 137+54 to 138+77	X			4431	3019	7450							
9	Exist 1-3'x4' Culvert	-L- 170+73 to 173+36	X			5949	4027	9976							
10	Exist 1-5'x4' Culvert	-L- 178+41 to 180+03	X			6428	3926	10354							
11	Exist 1-3'x4' Culvert	-L- 199+80 to 202+42	X			10490	4765	15255							
12	Exist 1-3'x3' Culvert	-L- 220+38 to 222+66	X			9112	4790	13902							
13	Exist 2-8'x12' Culvert	-L- 231+50 to 238+60			X				929	1887	2816				
14	Exist 2-8'x12' Culvert	-L- 231+40 to 232+80	X			6184	3943	10127							
15	Exist 24" RCP	-L- 295+28 to 296+66	X			2654	1939	4593							
16	Exist 24" RCP	-L- 306+43 to 307+94	X			3137	2879	6016							
<b>TOTAL:</b>						52476	33353	85829	2482	2473	4955	0	0		

**Buffer Drawing**  
Sheet 24 of 24

Impacts computed to 25 ft. beyond the proposed slope stakes.

Site N9 contains 2679 ft<sup>2</sup> of wetland impacts that fall within the reflected allowable buffer impacts  
(1648 ft<sup>2</sup> of wetland impacts fall within the reflected allowable Buffer Zone 1 impacts)  
(1031 ft<sup>2</sup> of wetland impacts fall within the reflected allowable Buffer Zone 2 impacts)

Site N10 contains 218 ft<sup>2</sup> of wetland impacts that fall within the reflected allowable Buffer Zone 1 impacts

N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
JOHNSTON COUNTY  
PROJECT: 34552.2.3 (R-3825B)

REV. 7/12/2011  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

05/08/99

See Sheet 1-A For Index of Sheets

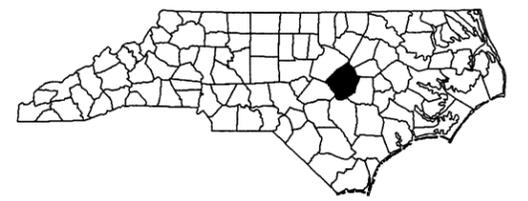
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3825B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

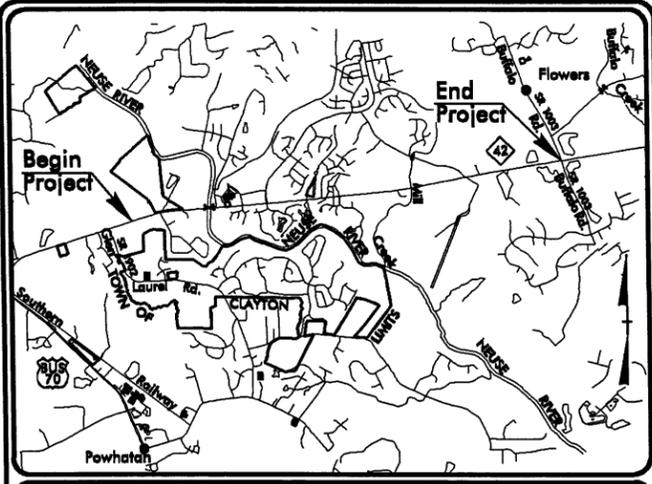
# JOHNSTON COUNTY

LOCATION: NC 42 FROM EAST OF SR 1902 (GLEN LAUREL ROAD)  
TO SR 1003 (BUFFALO ROAD)

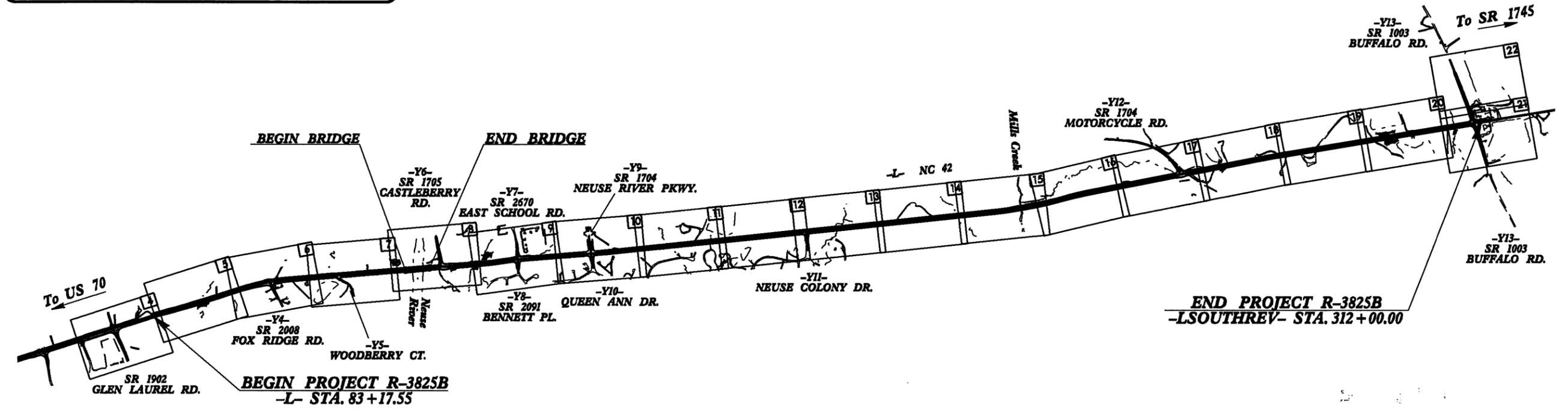
TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURES,  
SIGNALS, AND SIGNING



**TIP PROJECT: R-3825B**

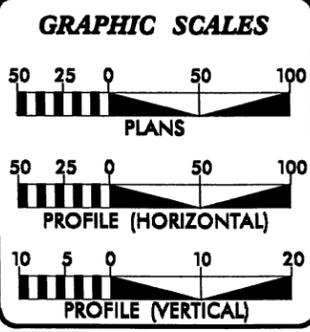


**VICINITY MAP**  
NOT TO SCALE



INCOMPLETE PLANS  
DO NOT USE FOR A/P. ACQUISITION  
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

**CONTRACT:**



**DESIGN DATA**

ADT =	
ADT =	
DHV =	%
D =	%
T =	% *
V =	MPH
* TTST =	DUAL
FUNC CLASS =	
RURAL MAJOR COLLECTOR REGIONAL TIER	

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT R-3825B =	4.255 Miles
LENGTH STRUCTURE TIP PROJECT R-3825B =	0.078 Miles
TOTAL LENGTH TIP PROJECT R-3825B =	4.333 Miles

Prepared in the Office of:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	RON McCOLLUM, PE PROJECT ENGINEER
LETTING DATE:	SUSAN C. LANCASTER, P.E. PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER:**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER:**

SIGNATURE: \_\_\_\_\_ P.E.

**DIVISION OF HIGHWAYS**  
STATE OF NORTH CAROLINA

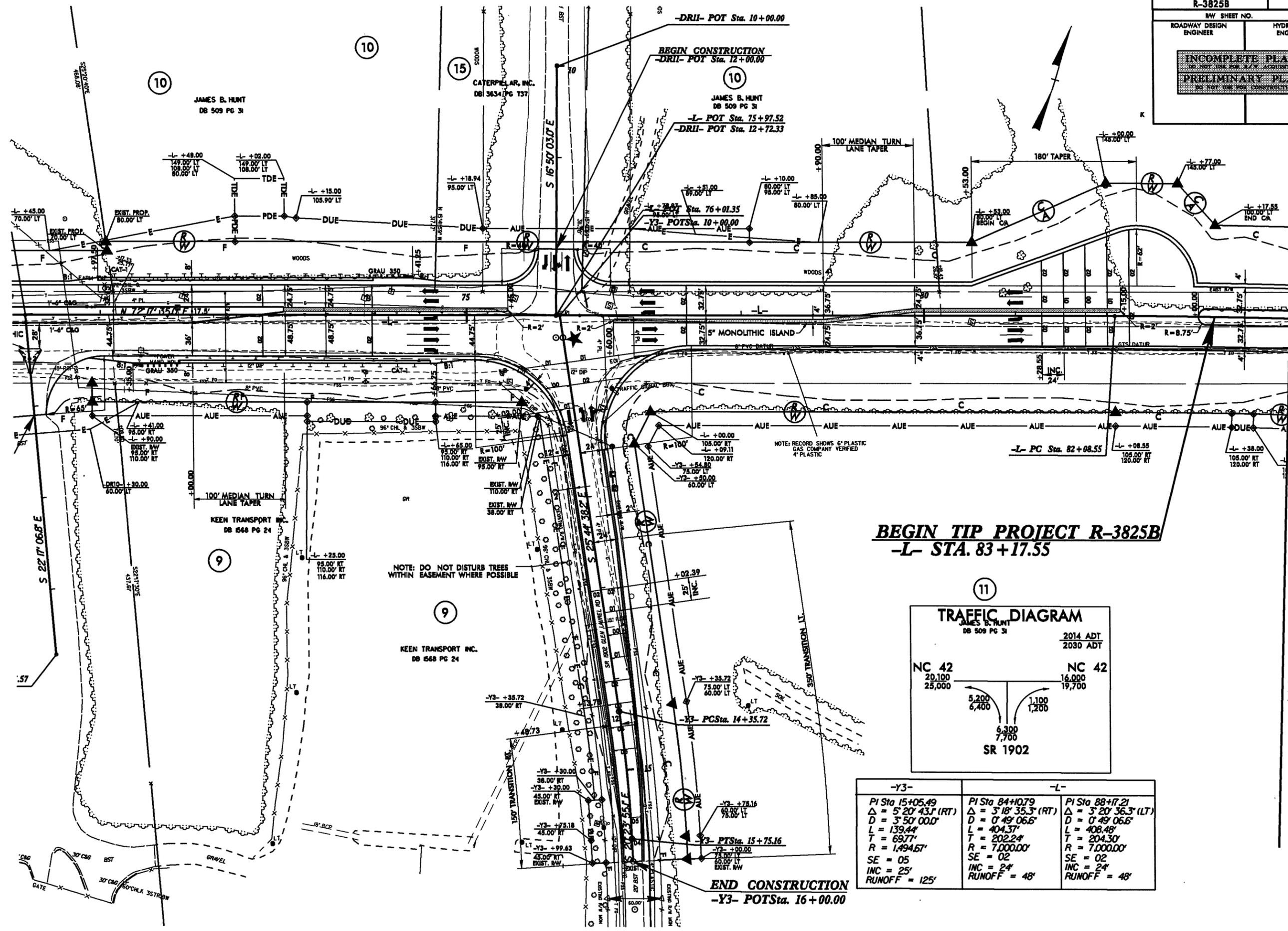
STATE HIGHWAY DESIGN ENGINEER P.E.

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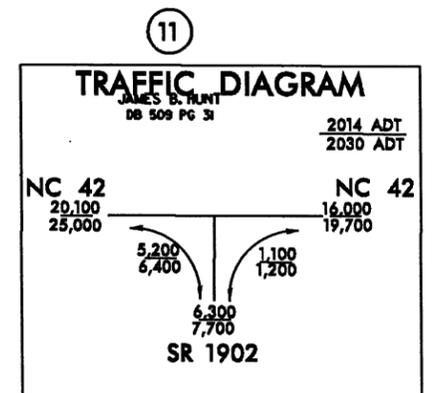
8/17/99

\\FR-2011\K25\Permit Drawings\R3825B\_Rdy.plt\4.dgn

PROJECT REFERENCE NO. <b>R-3825B</b>		SHEET NO. <b>4</b>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small> <b>PRELIMINARY PLANS</b> <small>NO STATE OR FEDERAL PROTECTION</small>			



**BEGIN TIP PROJECT R-3825B**  
**-L- STA. 83+17.55**



-Y3-	-L-	PI Sta 88+17.21
PI Sta 15+05.49	PI Sta 84+10.79	$\Delta = 3' 20' 36.3" (LT)$
$\Delta = 5' 20' 43.1" (RT)$	$\Delta = 3' 18' 35.3" (RT)$	$D = 0' 49' 06.6"$
$D = 3' 50' 00.0"$	$L = 404.37'$	$L = 408.48'$
$L = 139.44'$	$T = 202.24'$	$T = 204.30'$
$T = 69.77'$	$R = 7,000.00'$	$R = 7,000.00'$
$R = 1,494.67'$	$SE = 02$	$SE = 02$
$SE = 05$	$INC = 24'$	$INC = 24'$
$INC = 25'$	$RUNOFF = 48'$	$RUNOFF = 48'$
$RUNOFF = 125'$		

MATCH LINE SEE SHEET 5 -L- STA 84+00.00

NOTE: DO NOT DISTURB TREES WITHIN BASEMENT WHERE POSSIBLE

NOTE: RECORD SHOWS 6" PLASTIC GAS COMPANY VERIFIED 4" PLASTIC

**END CONSTRUCTION**  
**-Y3- POT Sta. 16+00.00**

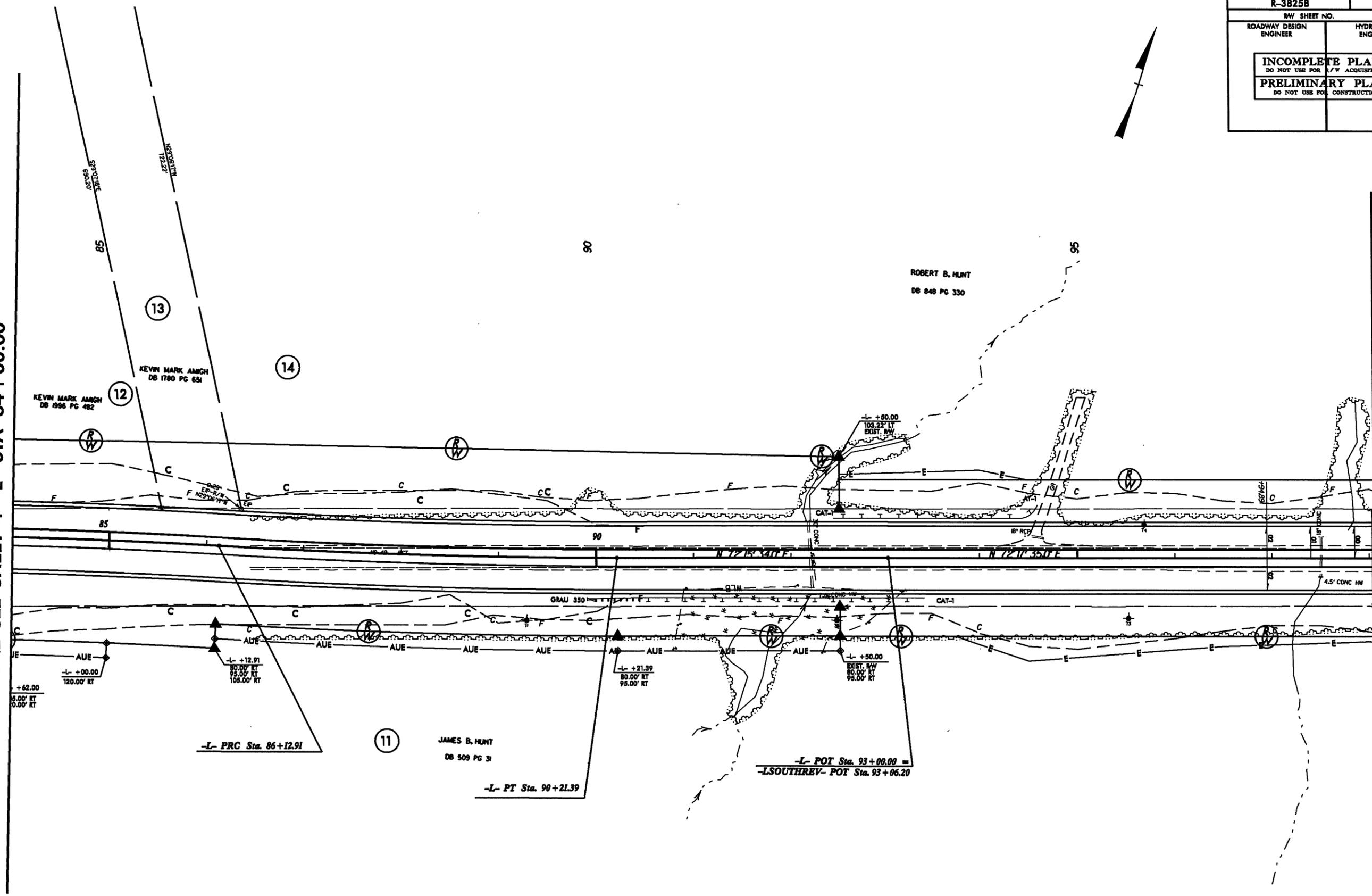
8/17/99

R:\FR-2011\125\Permt\Drawings\R3825B\_Rdy\_psh5.dgn

PROJECT REFERENCE NO. R-3825B		SHEET NO. 5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

MATCH LINE SEE SHEET 4 -L- STA 84+00.00

MATCH LINE SEE SHEET 6 -LSOUTHREV- STA 98+05.00



KEVIN MARK AMICH  
DB 1996 PG 482

KEVIN MARK AMICH  
DB 1780 PG 651

ROBERT B. HUNT  
DB 848 PG 330

JAMES B. HUNT  
DB 509 PG 31

+62.00  
120.00' RT

-L- PRC Sta. 86+12.91

-L- PT Sta. 90+21.39

-L- +21.39  
80.00' RT  
95.00' RT

-L- POT Sta. 93+00.00 =  
-LSOUTHREV- POT Sta. 93+06.20

-L- +50.00  
EXIST. RW  
80.00' RT  
95.00' RT





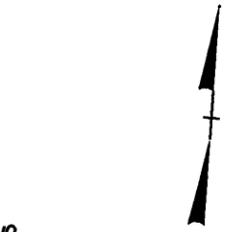
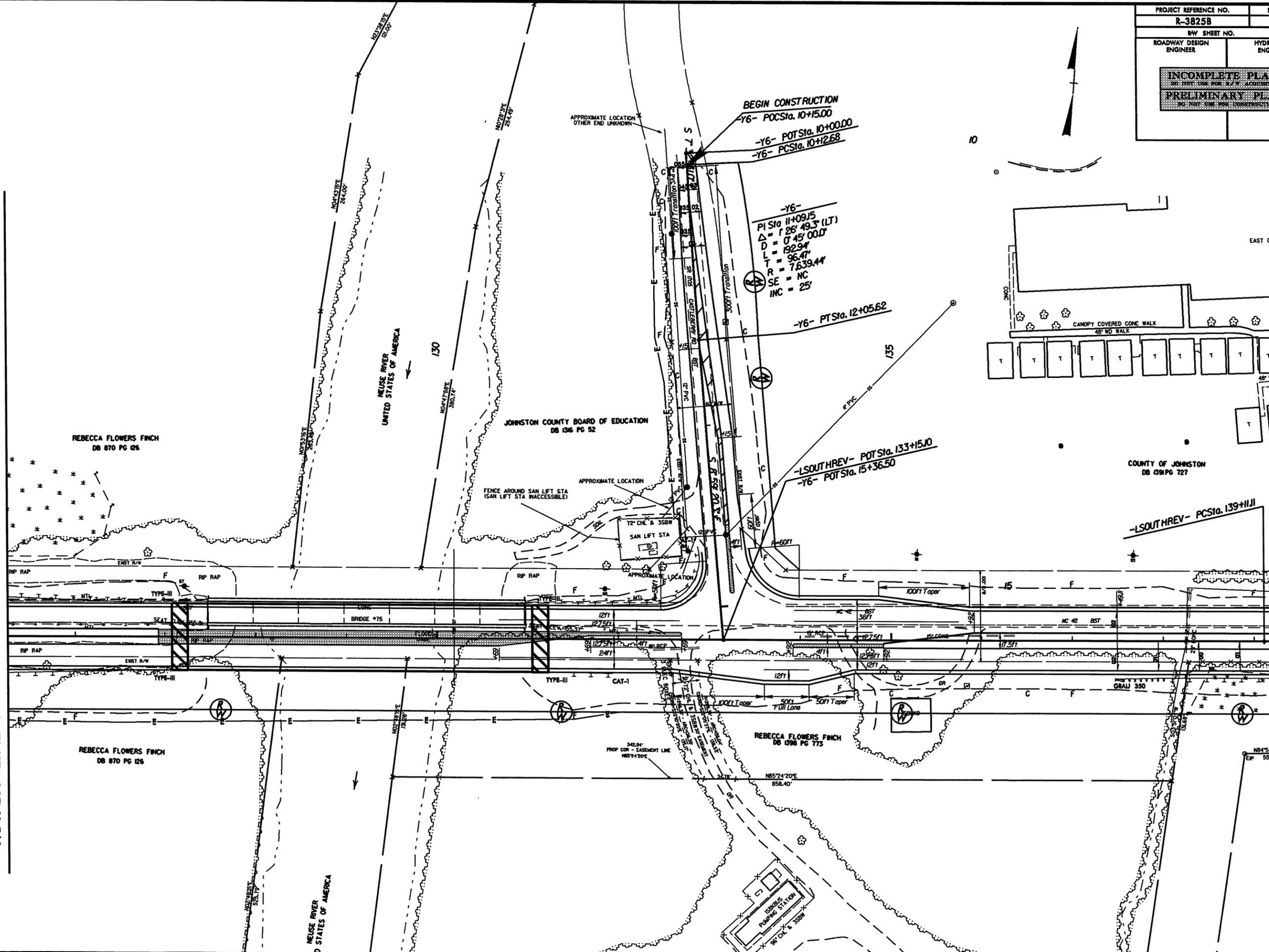
B/17/99

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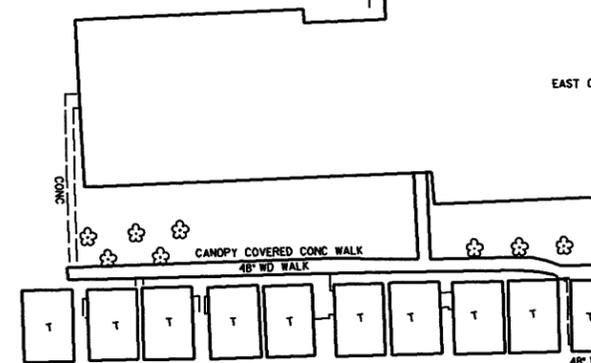
PROJECT REFERENCE NO. <b>R-3825B</b>		SHEET NO. <b>8</b>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR R.F.T. ACQUISITION</small> <b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>			

MATCH LINE SEE SHEET 7 -LSOUTHREV- STA 125+25.00

MATCH LINE SEE SHEET 9 -LSOUTHREV- STA 139+25.00



REVISIONS



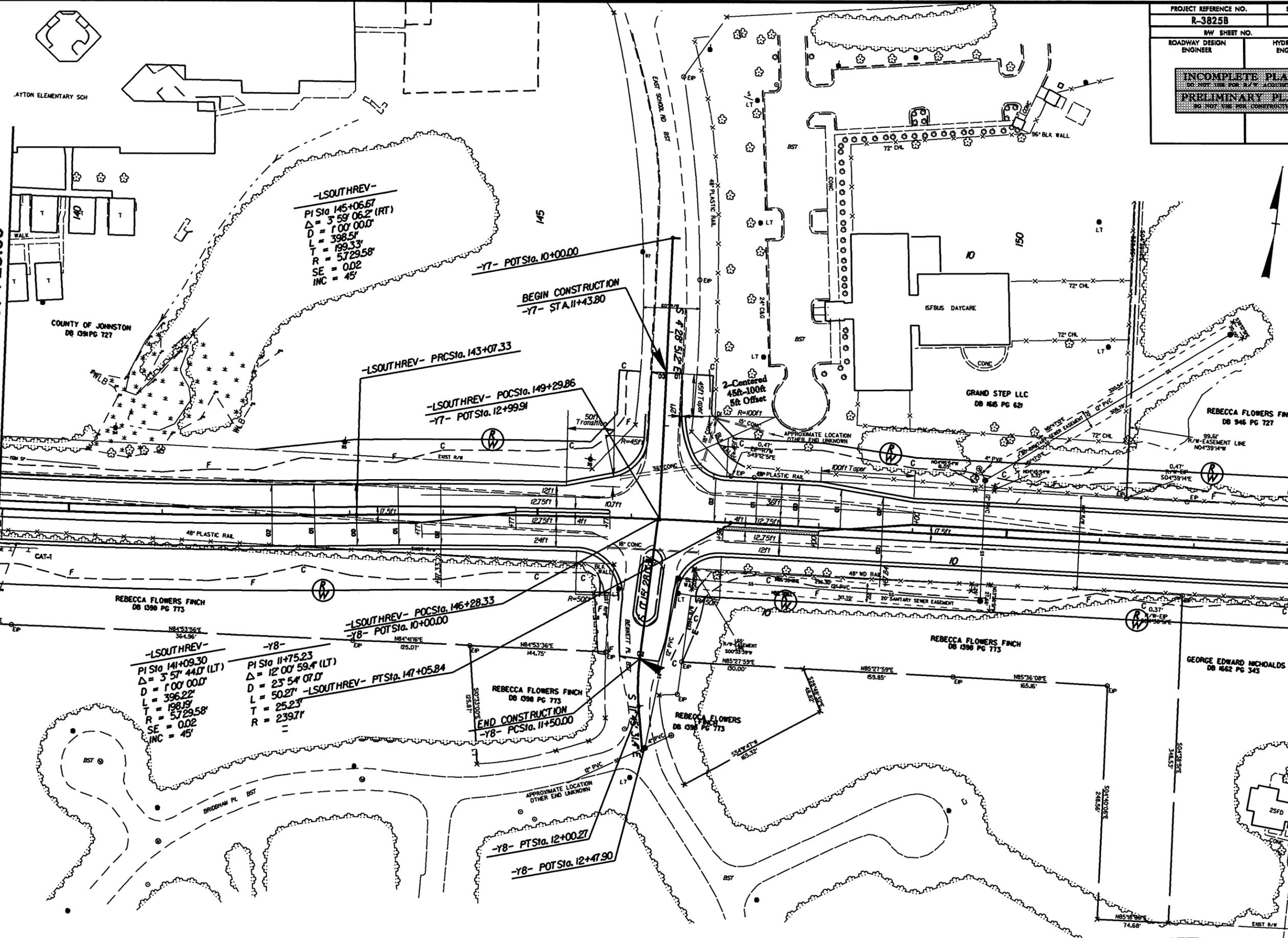
8/17/99

\\pr-coll\138\Permt\Drawings\VR3825B\_Rdy.plt\9.dgn

PROJECT REFERENCE NO. R-3825B	SHEET NO. 9
BY SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR A.C. ASSURANCE</small> <b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	

MATCH LINE SEE SHEET 8 -LSOUTHREV- STA 139+25.00

MATCH LINE SEE SHEET 10 -LSOUTHREV- STA 153+30.00



**-LSOUTHREV-**  
 PI Sta 145+06.67  
 $\Delta = 3^{\circ} 59' 06.2''$  (RT)  
 $D = 1^{\circ} 00' 00.0''$   
 $L = 398.51'$   
 $T = 199.33'$   
 $R = 5729.58'$   
 $SE = 0.02$   
 $INC = 45'$

**-Y7-** POT Sta. 10+00.00  
**BEGIN CONSTRUCTION**  
**-Y7-** STA. 11+43.80

**-LSOUTHREV-** POC Sta. 143+07.33  
**-LSOUTHREV-** POC Sta. 149+29.86  
**-Y7-** POT Sta. 12+99.91

**-LSOUTHREV-**  
 PI Sta 141+09.30  
 $\Delta = 3^{\circ} 57' 44.0''$  (LT)  
 $D = 1^{\circ} 00' 00.0''$   
 $L = 396.22'$   
 $T = 198.19'$   
 $R = 5729.58'$   
 $SE = 0.02$   
 $INC = 45'$

**-Y8-**  
 PI Sta 11+75.23  
 $\Delta = 12^{\circ} 00' 59.4''$  (LT)  
 $D = 23^{\circ} 54' 07.0''$   
 $L = 50.27'$  -LSOUTHREV- PT Sta. 147+05.84  
 $T = 25.23'$   
 $R = 239.71'$

**REBECCA FLOWERS FINCH**  
 DB 1396 PG 773  
**END CONSTRUCTION**  
**-Y8-** PCS Sta. 11+50.00  
**-Y8-** PTS Sta. 12+00.27  
**-Y8-** POT Sta. 12+47.50

REVISIONS

B/17/99

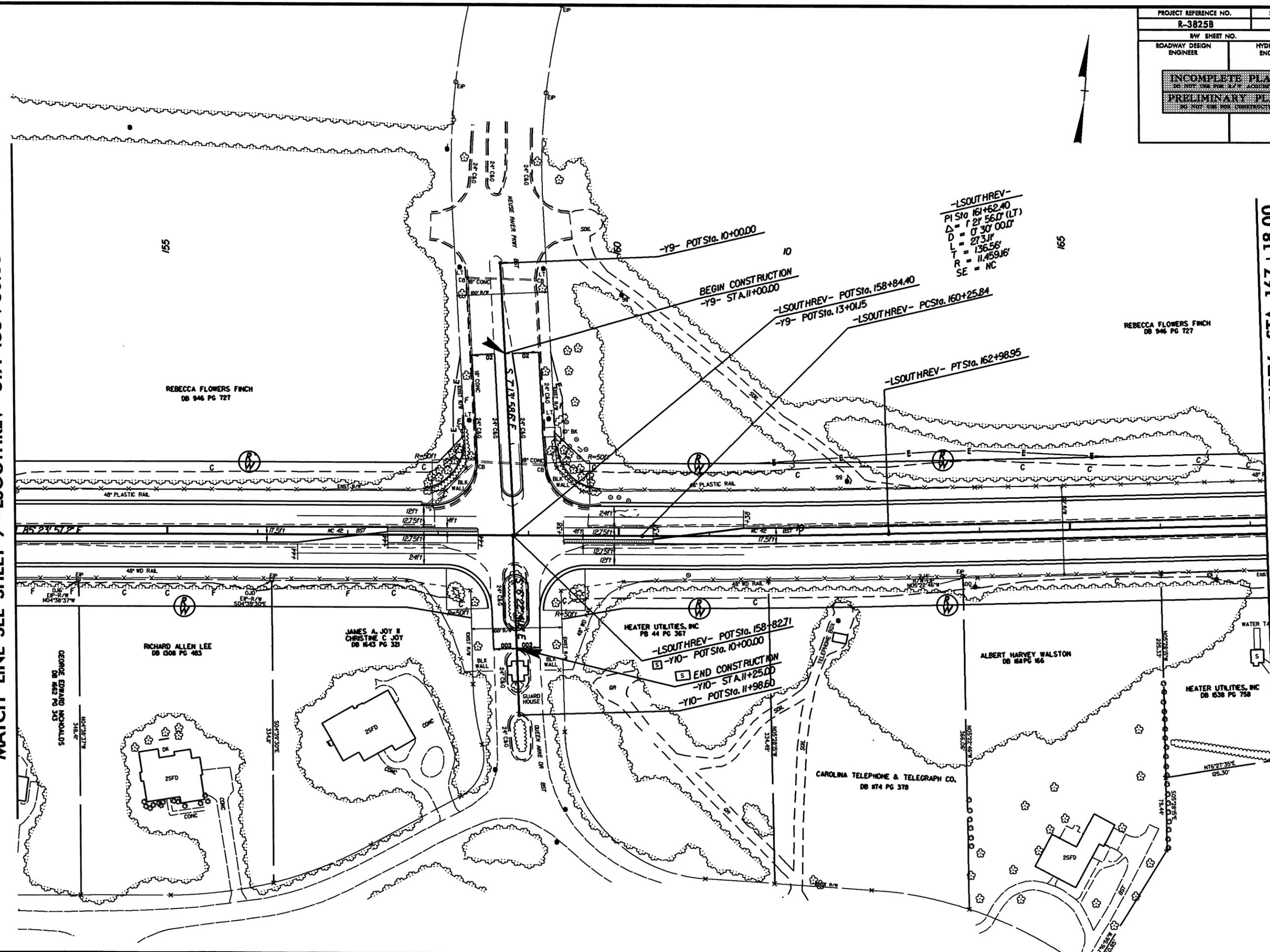
R:\APR-2011\1738\1738.dwg [Permit Drawings] R3825B\_Rdy.plt 10.dgn

PROJECT REFERENCE NO. R-3825B	SHEET NO. 10
BY SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small> <b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	



MATCH LINE SEE SHEET 9 -LSOUTHREV- STA 153+30.00

MATCH LINE SEE SHEET 11 -LSOUTHREV- STA 167+18.00



-LSOUTHREV-  
 PI Sta 161+62.40  
 $\Delta = 1' 21'' 56.0''$  (LT)  
 $D = 0' 30'' 00.0''$   
 $L = 273.11'$   
 $T = 136.56'$   
 $R = 11,459.16'$   
 SE = NC

BEGIN CONSTRUCTION  
 -Y9- STA. 11+00.00

-Y9- POT Sta. 10+00.00

-LSOUTHREV- POT Sta. 158+84.40  
 -Y9- POT Sta. 13+01.15

-LSOUTHREV- PC Sta. 160+25.84

-LSOUTHREV- PT Sta. 162+98.95

HEATER UTILITIES, INC  
 PB 44 PG 367

-LSOUTHREV- POT Sta. 158+82.71  
 -Y10- POT Sta. 10+00.00

END CONSTRUCTION  
 -Y10- STA. 11+25.00  
 -Y10- POT Sta. 11+98.60

ALBERT HARVEY WALSTON  
 DB 164 PG 166

HEATER UTILITIES, INC  
 DB 638 PG 758

CAROLINA TELEPHONE & TELEGRAPH CO.  
 DB 174 PG 378

REBECCA FLOWERS FINCH  
 DB 946 PG 727

RICHARD ALLEN LEE  
 DB 038 PG 483

JAMES A. JOY II  
 CHRISTINE C. JOY  
 DB 1643 PG 321

GEORGE EDWARD GUNDS  
 DB 298 PG 666

REVISIONS

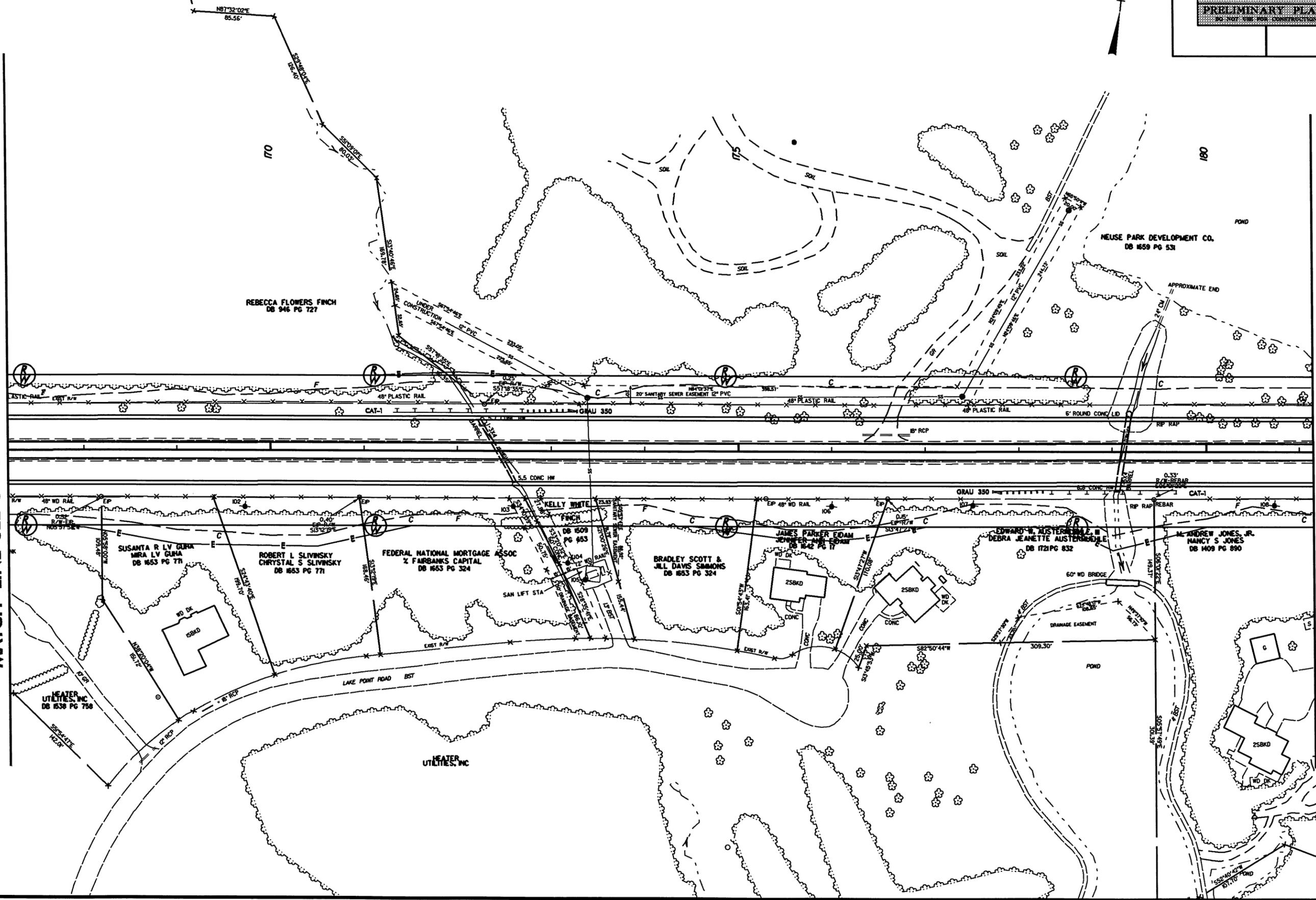
8/17/99

\\pr-2011\138\Permt Drawings\R3825B.Rdy.plt\1.dgn

PROJECT REFERENCE NO. <b>R-3825B</b>		SHEET NO. <b>11</b>			
RW SHEET NO.					
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER			
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INCOMPLETE PLANS <small>DO NOT USE FOR A/E ACCURATION</small>					
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>					

MATCH LINE SEE SHEET 10 -LSOUTHREV- STA 167+18.00

MATCH LINE SEE SHEET 12 -LSOUTHREV- STA 181+15.00



REVISIONS



B/17/99

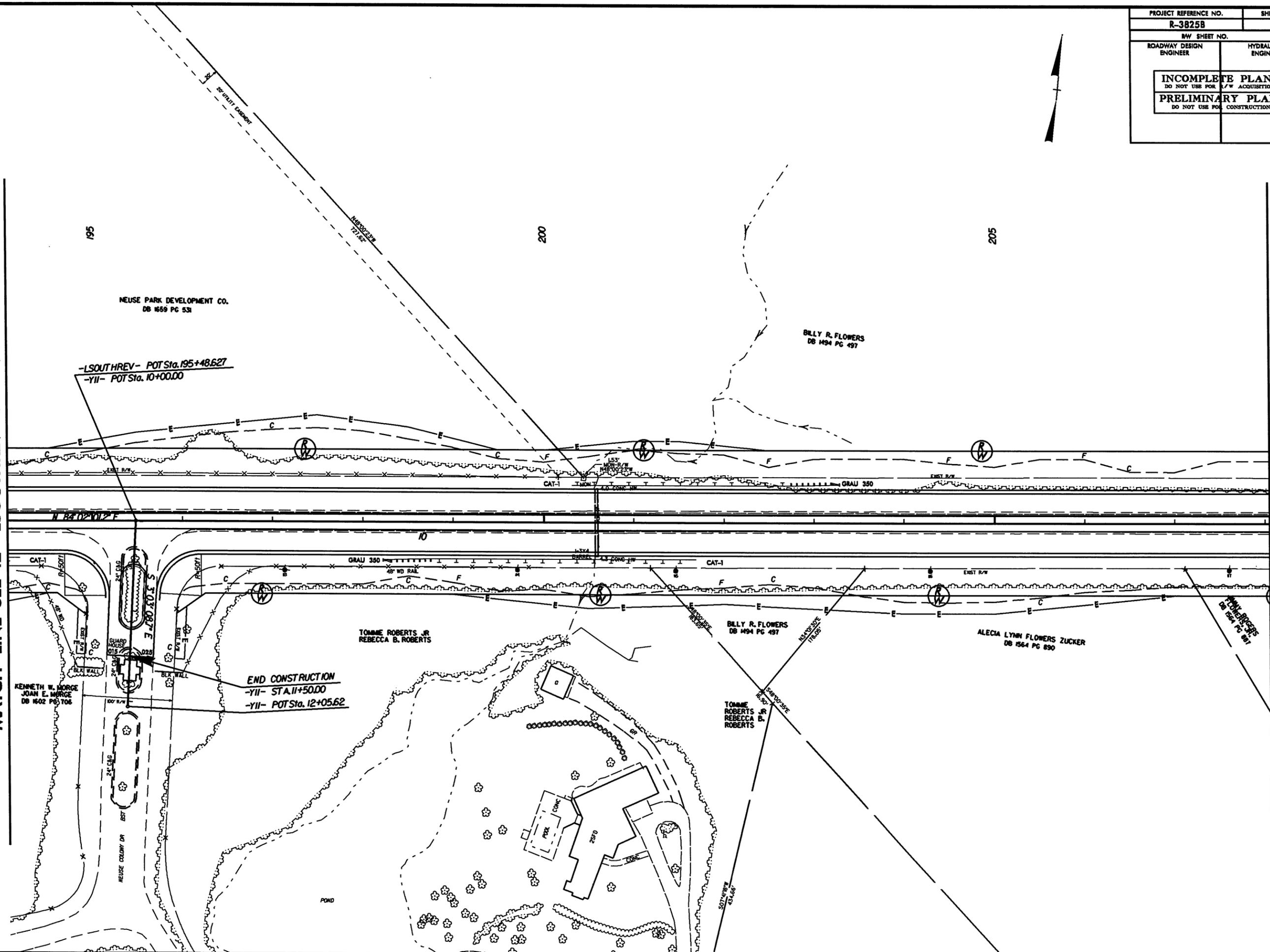
R:\PR-2011\139\Permt Drawings\R3825B\_Rdy.ph13.dgn

PROJECT REFERENCE NO. R-3825B		SHEET NO. 13	
HWY SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



MATCH LINE SEE 12 -LSOUTHREV- STA 194 + 05.00

MATCH LINE SEE 14 -LSOUTHREV- STA 208 + 05.00



REVISIONS

8/17/99

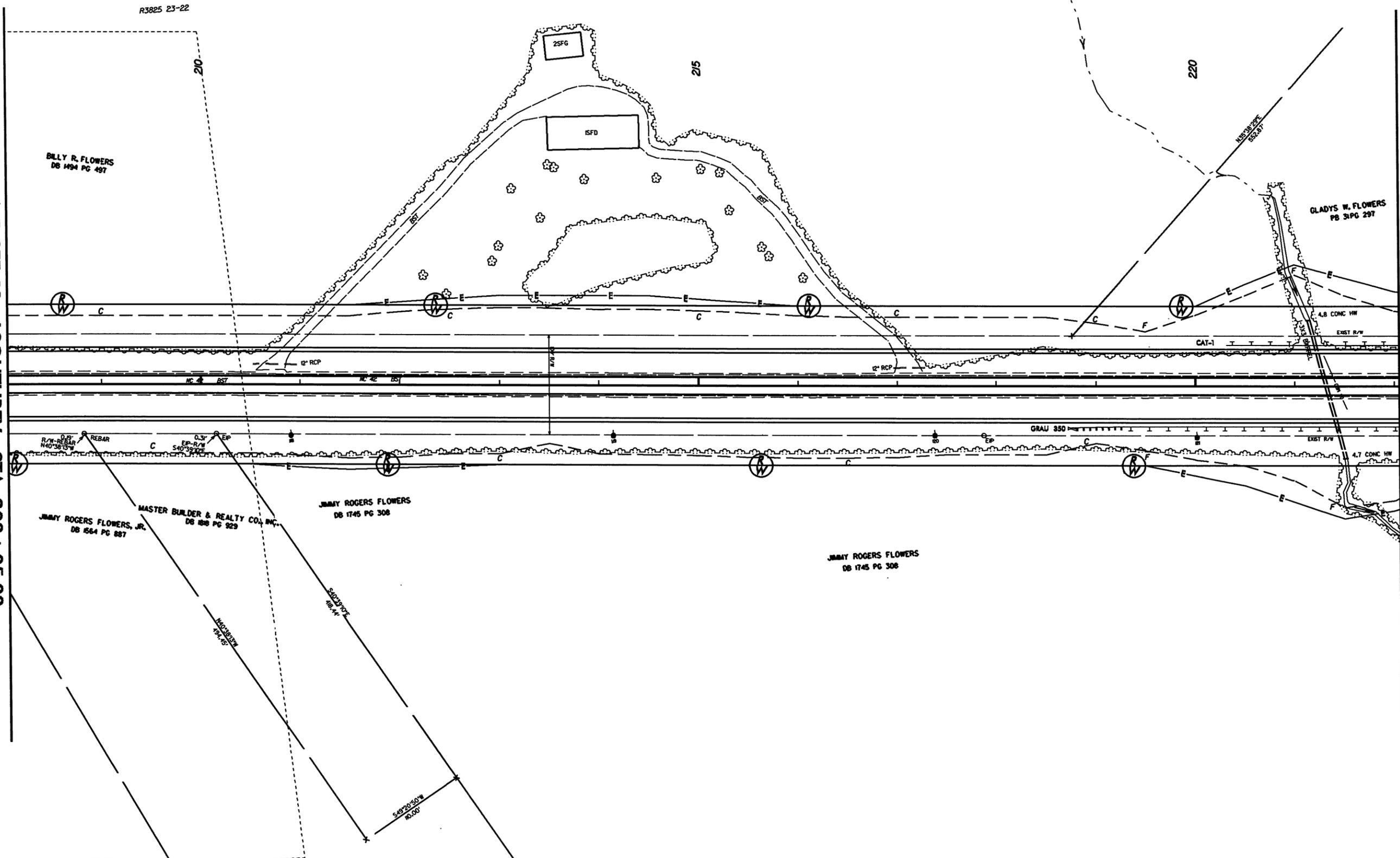
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PROJECT REFERENCE NO. <b>R-3825B</b>		SHEET NO. <b>14</b>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR ACQUISITION		<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



MATCH LINE SEE 13 - SOUTHREV - STA 208 + 05.00

MATCH LINE SEE 15 - SOUTHREV - STA 222 + 05.00



REVISIONS

8/17/99

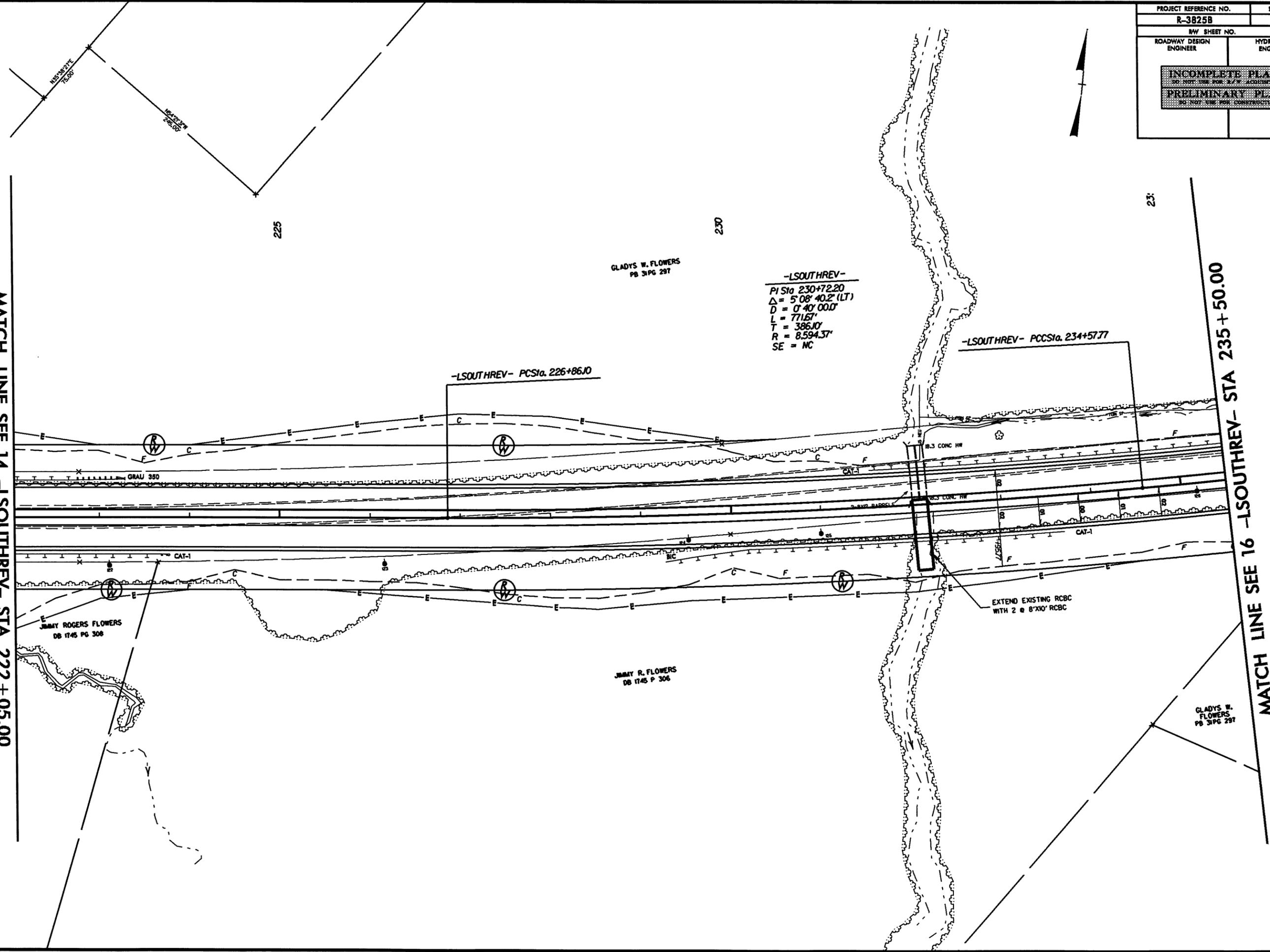
APR 20 11 39  
C:\Permt Drawings\VR3825B\_Rdy-ph15.dgn  
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PROJECT REFERENCE NO. R-3825B		SHEET NO. 15	
BY SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR A/C ACQUISITION</small> <b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONTRACT ADMINISTRATION</small>			



MATCH LINE SEE 14 -LSOUTHREV- STA 222 + 05.00

MATCH LINE SEE 16 -LSOUTHREV- STA 235 + 50.00



REVISIONS

8/17/99

C:\APR-2011\1139... \Permit Drawings\R3825B\_Rdy\_p116.dgn

PROJECT REFERENCE NO. R-3825B	SHEET NO. 16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

MATCH LINE SEE 15 -LSOUTHREV- STA 235+50.00

MATCH LINE SEE 17 -LSOUTHREV- STA 249+50.00

-LSOUTHREV-  
 PI Sta 236+96.19  
 $\Delta = 4' 45'' 55.7''$  (LT)  
 $D = 1' 00'' 00.0''$   
 $L = 476.55'$   
 $T = 238.41'$   
 $R = 5729.58'$   
 $SE = 0.02$   
 $INC = 45'$

-LSOUTHREV-  
 PI Sta 241+72.73  
 $\Delta = 4' 45'' 55.7''$  (RT)  
 $D = 1' 00'' 00.0''$   
 $L = 476.55'$   
 $T = 238.41'$   
 $R = 5729.58'$   
 $SE = 0.02$   
 $INC = 45'$

-LSOUTHREV- PRCSig. 239+34.32

-LSOUTHREV- PTSig. 244+10.87

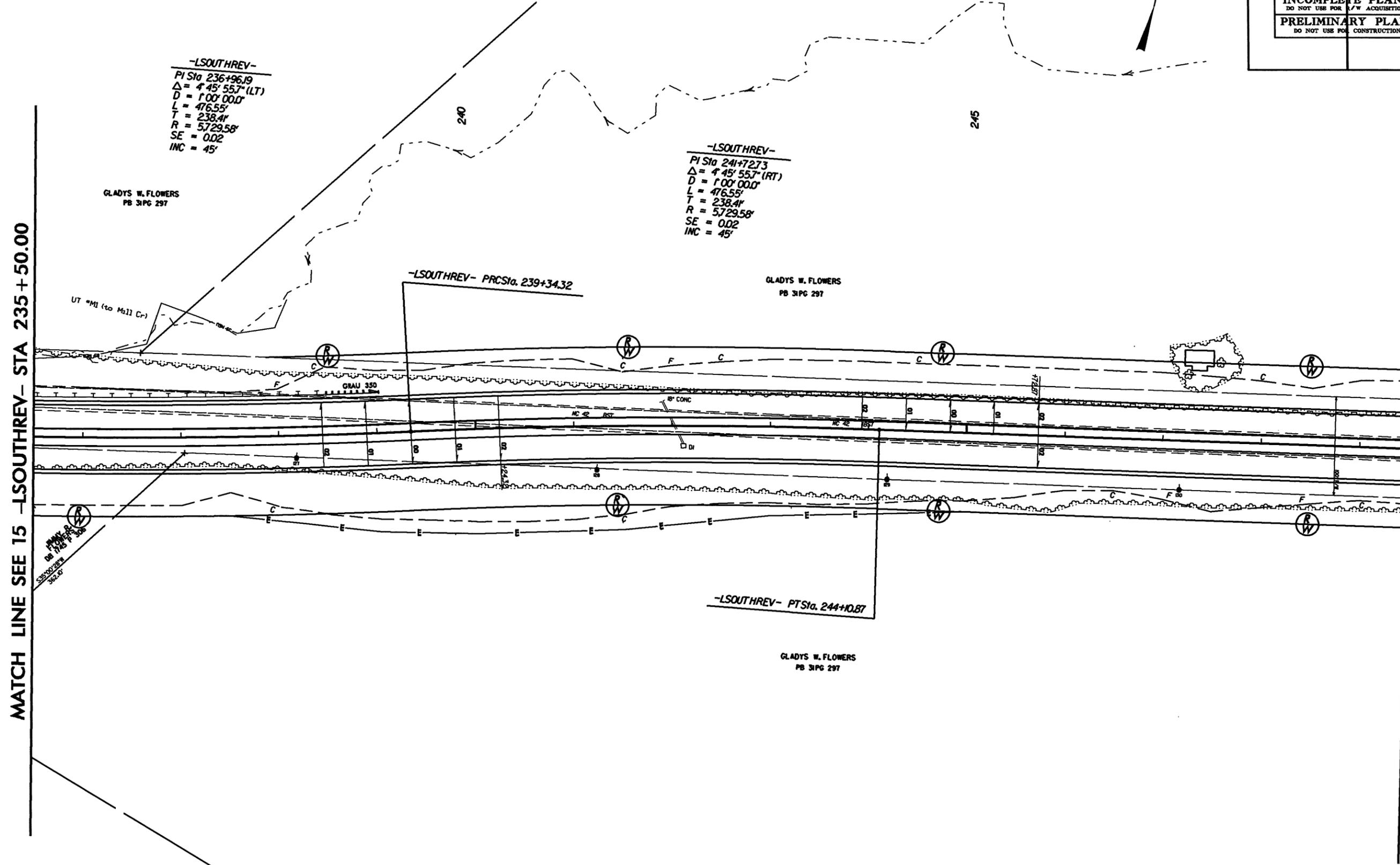
GLADYS W. FLOWERS  
PB 31PG 297

GLADYS W. FLOWERS  
PB 31PG 297

GLADYS W. FLOWERS  
PB 31PG 297

UT #M1 (to M11 Cr-)

1"=100'  
 1"=100'  
 1"=100'



REVISIONS

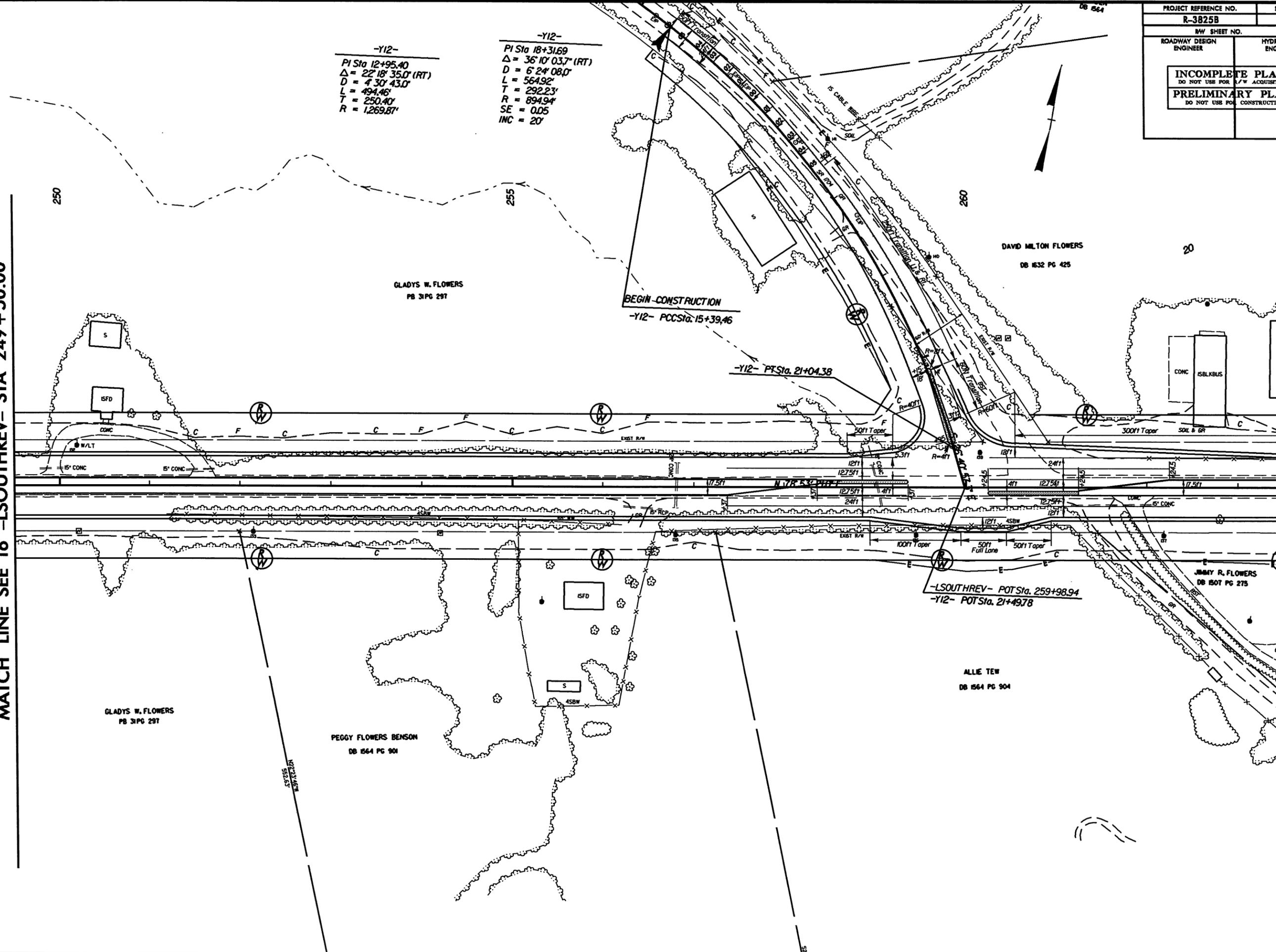
8/17/99

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PROJECT REFERENCE NO. R-3825B	SHEET NO. 17
HWY SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR ACQUISITION	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

MATCH LINE SEE 16 -LSOUTHREV- STA 249 + 50.00

MATCH LINE SEE 18 -LSOUTHREV- STA 263 + 50.00



-Y12-  
 PI Sta 12+95.40  
 $\Delta = 22' 18' 35.0''$  (RT)  
 $D = 4' 30' 43.0''$   
 $L = 494.46'$   
 $T = 250.40'$   
 $R = 1,269.87'$

-Y12-  
 PI Sta 18+31.69  
 $\Delta = 36' 10' 03.7''$  (RT)  
 $D = 6' 24' 08.0''$   
 $L = 564.92'$   
 $T = 292.23'$   
 $R = 894.94'$   
 $SE = 0.05$   
 $INC = 20'$

BEGIN CONSTRUCTION  
-Y12- PCCSta. 15+39.46

-Y12- PFSSta. 21+04.38

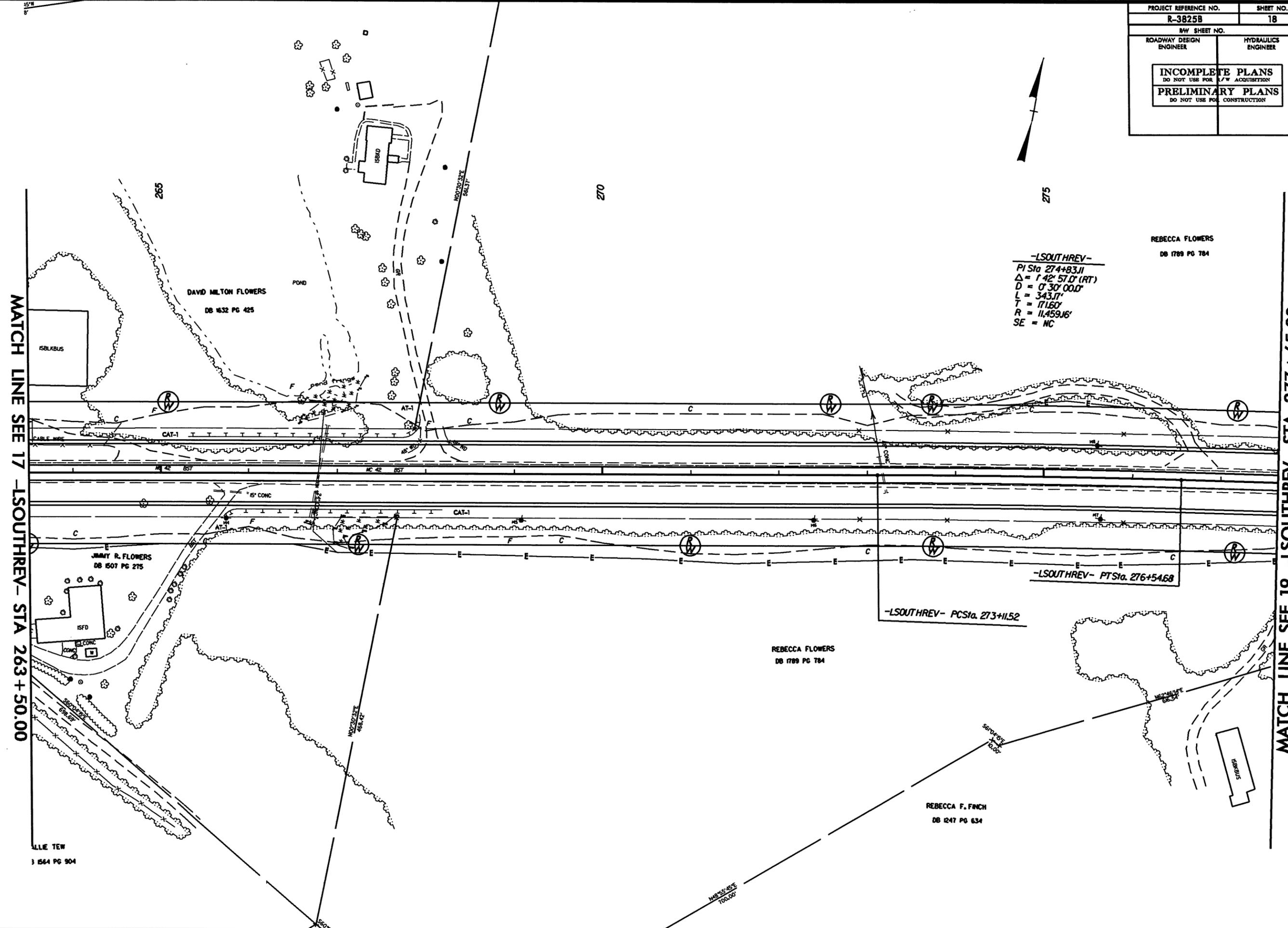
-LSOUTHREV- POTSta. 259+98.94  
-Y12- POTSta. 21+49.78

REVISIONS

8/17/99

R:\PR-2011\139...Permt.Dwg\VR3825B\_Rdy.plt18.dgn

PROJECT REFERENCE NO. R-3825B	SHEET NO. 18
HWY SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR ACQUISITION	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



-LSOUTHREV-  
 PI Sta 274+83.11  
 $\Delta = 1' 42'' 57.0'' (RT)$   
 $D = 0' 30'' 00.0''$   
 $L = 343.17'$   
 $T = 171.60'$   
 $R = 11,459.16'$   
 SE = NC

REBECCA FLOWERS  
 DB 1789 PG 784

-LSOUTHREV- PCSta. 273+11.52

-LSOUTHREV- PTSta. 276+54.68

REBECCA FLOWERS  
 DB 1789 PG 784

REBECCA F. FINCH  
 DB 1247 PG 634

ALLE TEW  
 1564 PG 904

MATCH LINE SEE 17 -LSOUTHREV- STA 263 + 50.00

MATCH LINE SEE 19 -LSOUTHREV- STA 277 + 65.00

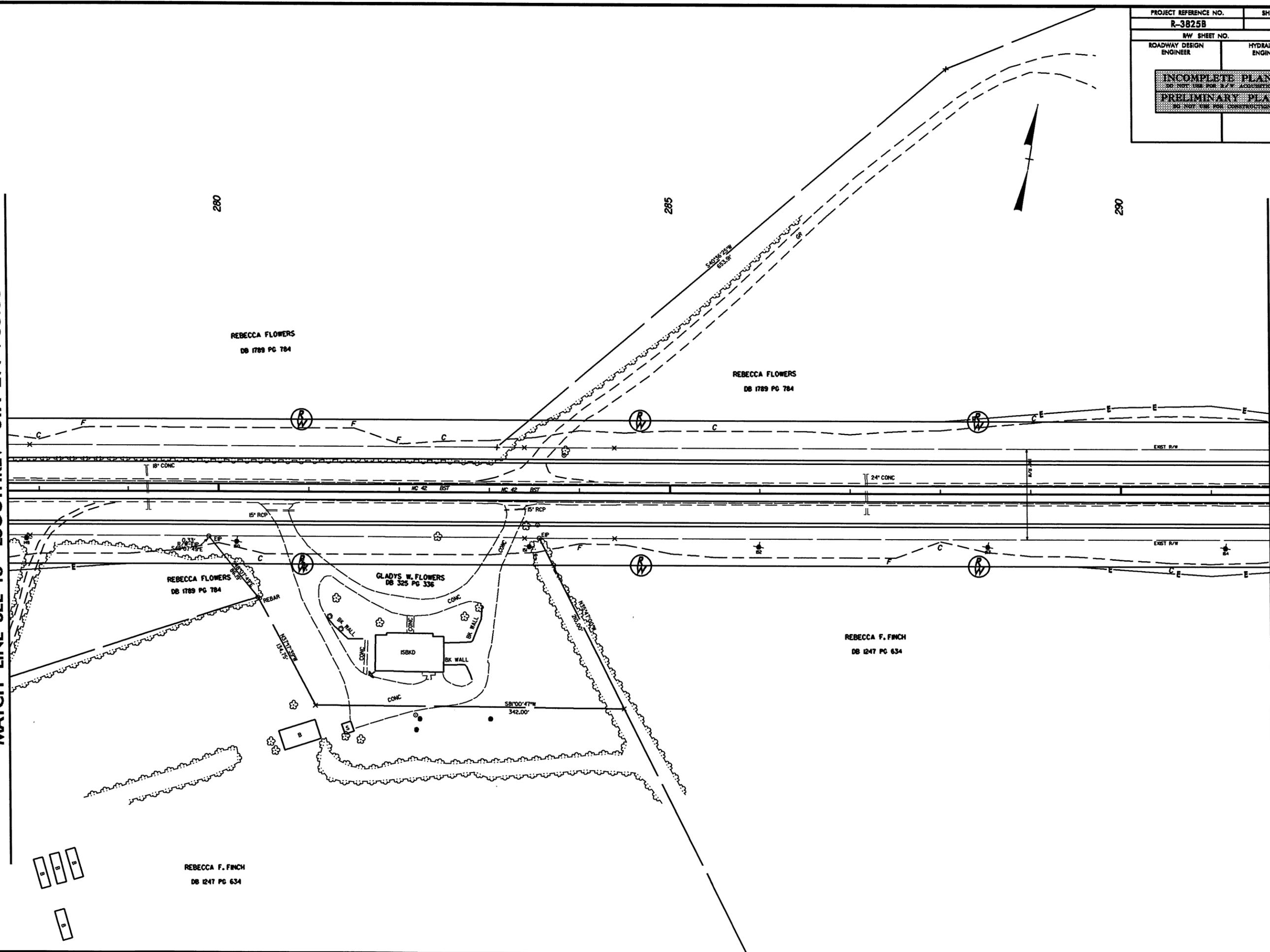
REVISIONS

8/17/99  
R:\APR-2011\1139\Permt Drawings\R3825B.Rdy\_p.h19.dgn  
3825B.DWG

PROJECT REFERENCE NO. R-3825B	SHEET NO. 19
BY SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR P.P. ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

MATCH LINE SEE 18 -LSOUTHREV- STA 277 + 65.00

MATCH LINE SEE 20 -LSOUTHREV- STA 291 + 65.00



REVISIONS



8/17/99

12-APR-2011 11:39  
R:\Roadway\Permit Drawings\NR3825B\_Rdy-ph21.dgn  
USER:RDM

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>21</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

MATCH LINE SEE SHEET 20 -LSOUTHREV- STA 305 + 65.00

MATCH LINE SEE SHEET 22 -Y13- STA 16+85.00

-LSOUTHREV- POTSta. 310+68.98  
-Y13- POCSta. 19+54.39

2-Centered  
60ft-160ft  
6ft Offset

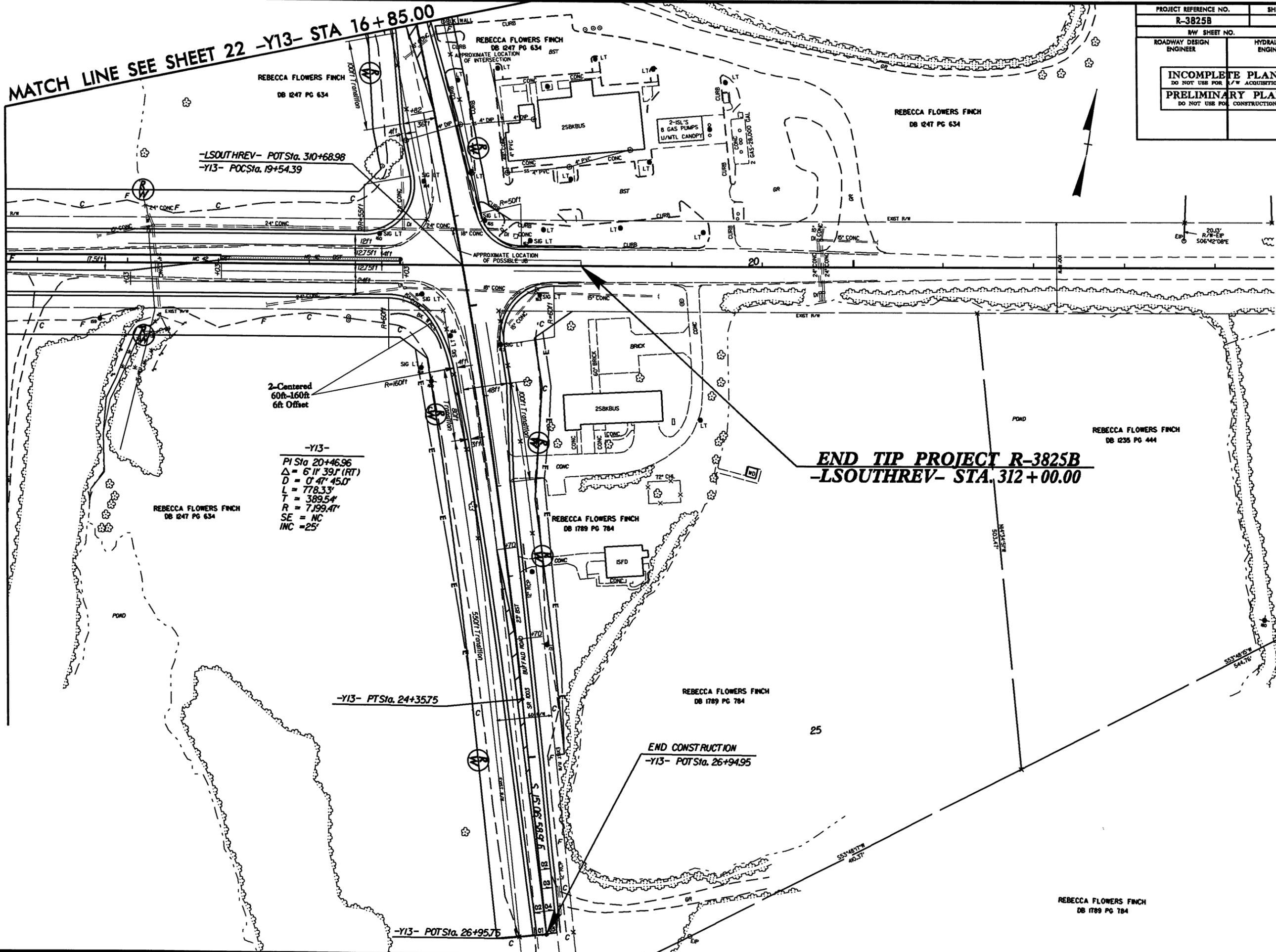
-Y13-  
 PI Sta 20+46.96  
 $\Delta = 61^{\circ} 39' (RT)$   
 $D = 0' 47' 45.0"$   
 $L = 778.33'$   
 $T = 389.54'$   
 $R = 7,199.47'$   
 SE = NC  
 INC = 25'

**END TIP PROJECT R-3825B**  
**-LSOUTHREV- STA. 312 + 00.00**

**END CONSTRUCTION**  
-Y13- POTSta. 26+94.95

-Y13- PTSa. 24+35.75

-Y13- POTSta. 26+95.75



REVISIONS

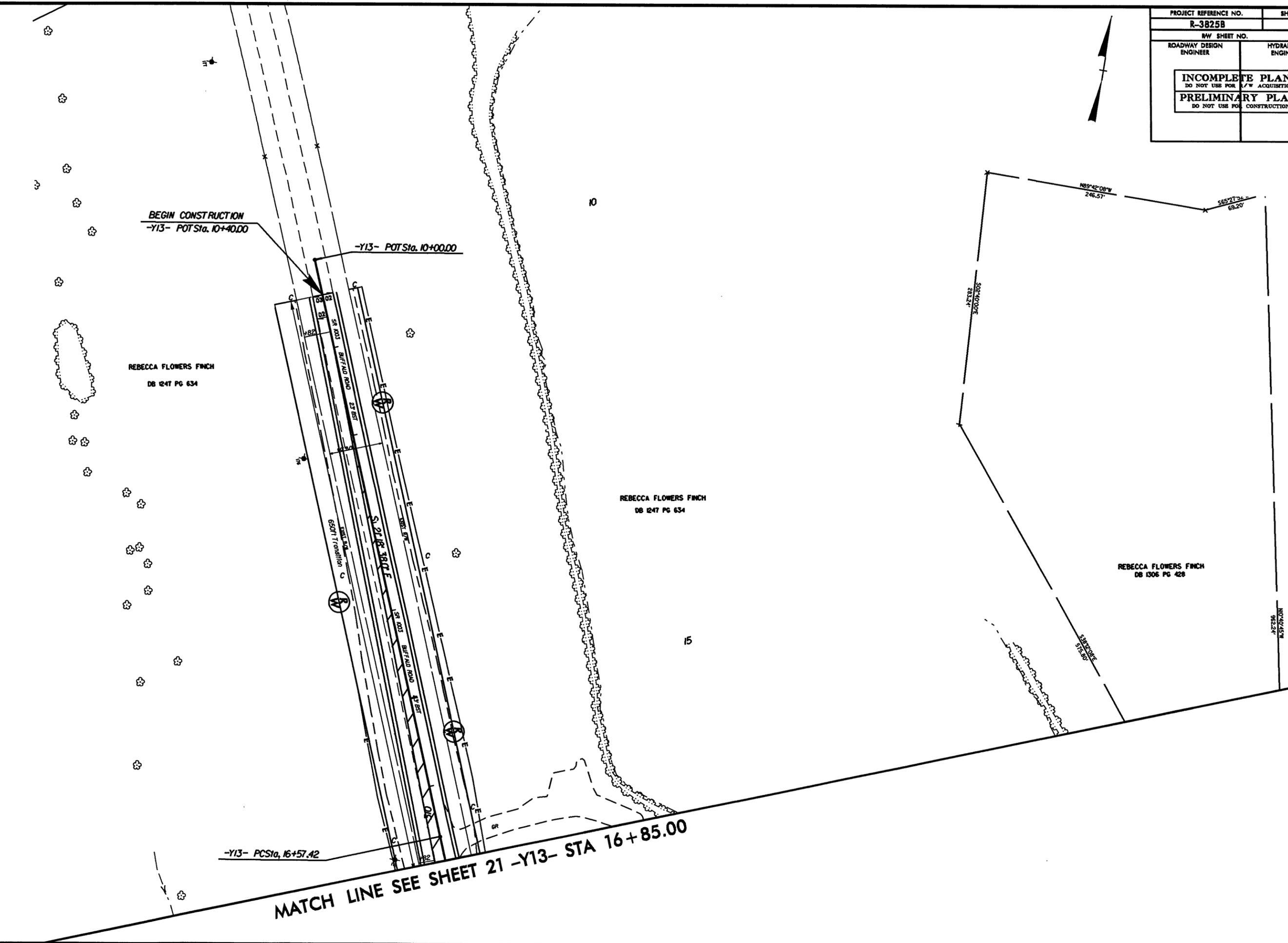
8/17/99

R:\APR-2011\159\Permit Drawings\R3825B\_Rdy.p\_h22.dgn

APR 2011 159

REVISIONS

PROJECT REFERENCE NO. <b>R-3825B</b>	SHEET NO. <b>22</b>
HWY SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR ACQUISITION	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



BEGIN CONSTRUCTION  
-Y13- POT Sta. 10+40.00

-Y13- POT Sta. 10+00.00

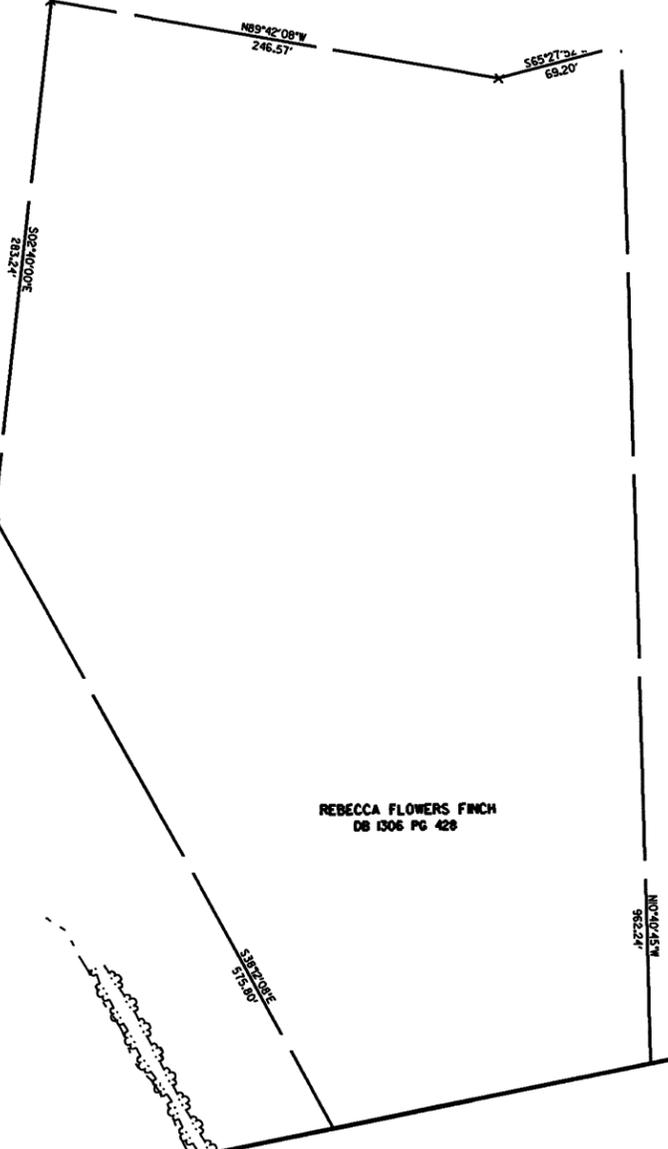
REBECCA FLOWERS FINCH  
DB 1247 PG 634

REBECCA FLOWERS FINCH  
DB 1247 PG 634

REBECCA FLOWERS FINCH  
DB 1306 PG 428

-Y13- PCS Sta. 16+57.42

MATCH LINE SEE SHEET 21 -Y13- STA 16+85.00



9/20/08

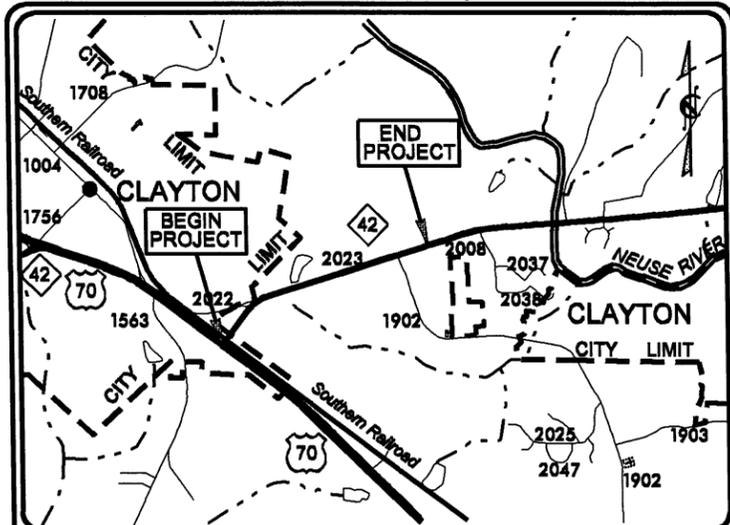
See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbols

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3825A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34552.1.1	STP-42(4)	P.E.	
34552.2.2	STP-42(4)	RAW & UTILITIES	

**TIP PROJECT: R-3825A**

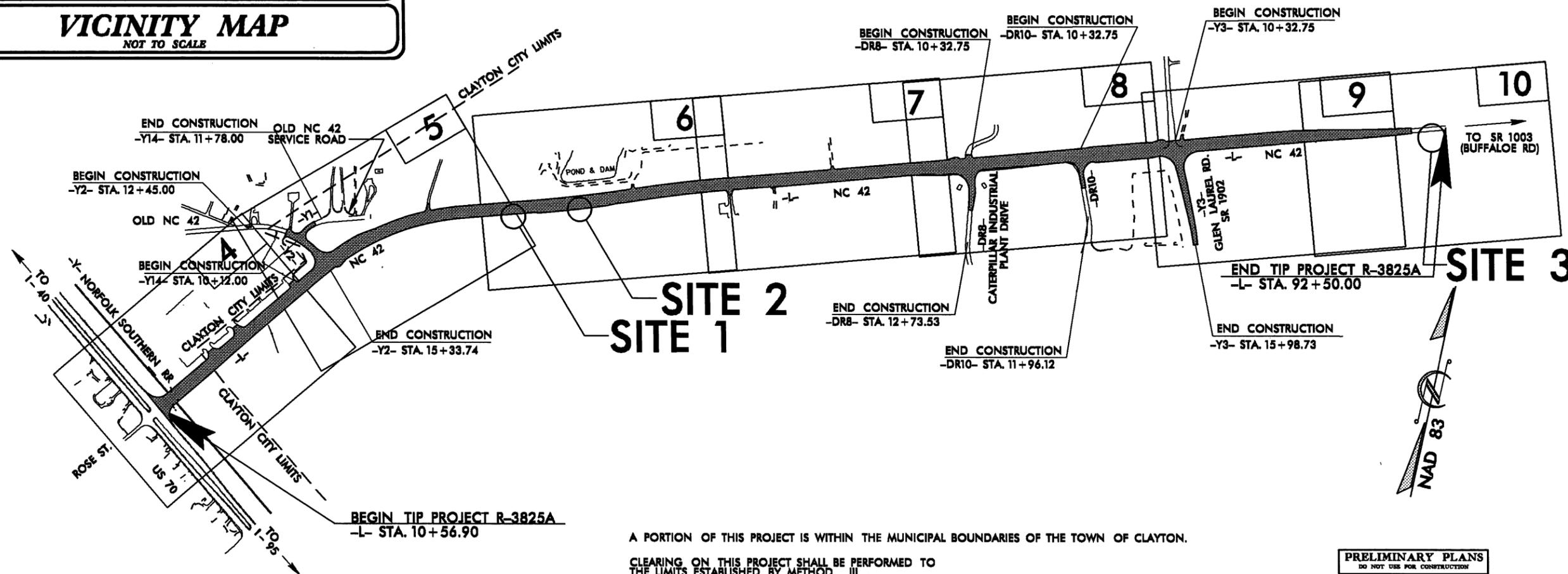


**VICINITY MAP**  
NOT TO SCALE

**LOCATION: NC 42 FROM US 70 IN CLAYTON TO  
0.31 MI EAST OF SR 1902 (GLEN LAUREL RD)**

Permit Drawing  
Sheet 1 of 13

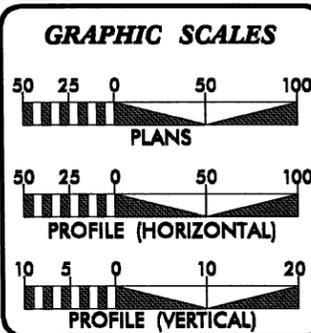
**TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNALS,  
AND SIGNING  
WETLAND/SURFACE WATER PERMIT DWG.**



A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF CLAYTON.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

**CONTRACT:**



**DESIGN DATA**

ADT 2010 =	20,500
ADT 2035 =	34,100
DHV =	10 %
D =	60 %
T =	3 % *
V =	50 MPH
* (TTST 1 % + DUAL 2 %)	
FUNC. CLASS =	RURAL MAJOR COLLECTOR REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT R-3825A =	1.552 MILES
TOTAL LENGTH OF TIP PROJECT R-3825A =	1.552 MILES

Prepared in the Office of:

**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh, NC 27610

2006 STANDARD SPECIFICATIONS

<b>RIGHT OF WAY DATE:</b> AUGUST 29, 2008	<b>GLENN W. MUMFORD, PE</b> PROJECT ENGINEER
<b>LETTING DATE:</b> MARCH 20, 2012	<b>SUSAN C. LANCASTER, PE</b> PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

\_\_\_\_\_  
SIGNATURE: P.E.  
ROADWAY DESIGN ENGINEER

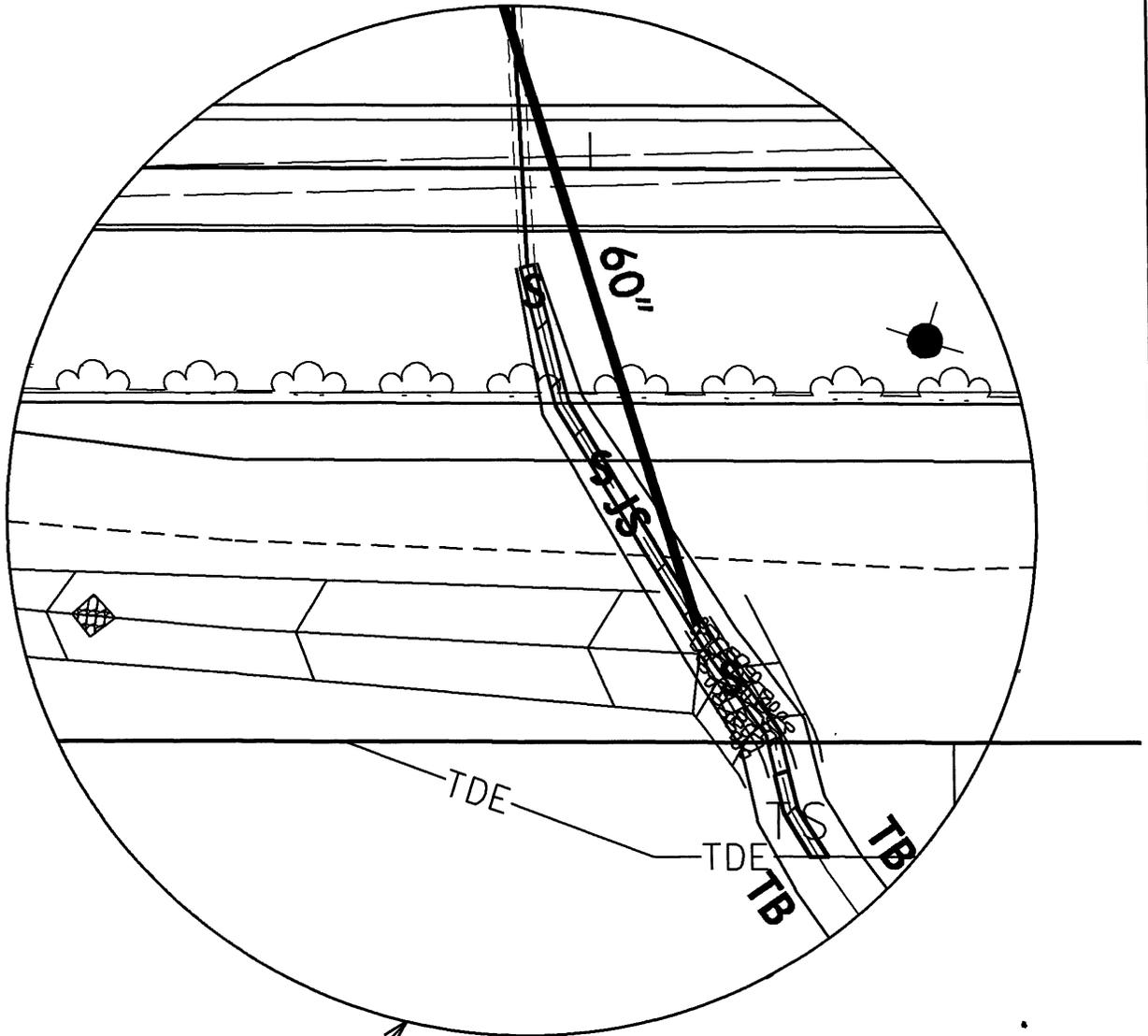
\_\_\_\_\_  
SIGNATURE: P.E.  
STATE HIGHWAY DESIGN ENGINEER

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

\_\_\_\_\_  
SIGNATURE: P.E.  
STATE HIGHWAY DESIGN ENGINEER



ENLARGEMENT SHOWS  
SURFACE WATERS IMPACTS



ENLARGEMENT  
SITE 1

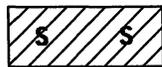


GRAPHIC SCALE

PLAN VIEW



DENOTES TEMPORARY  
IMPACTS IN SURFACE WATER



DENOTES IMPACTS IN  
SURFACE WATER

Permit Drawing  
Sheet 3 of 13



**NCDOT**

**DIVISION OF HIGHWAYS**

**JOHNSTON COUNTY**

**PROJECT: 34552.1.1 (R-3825A)**

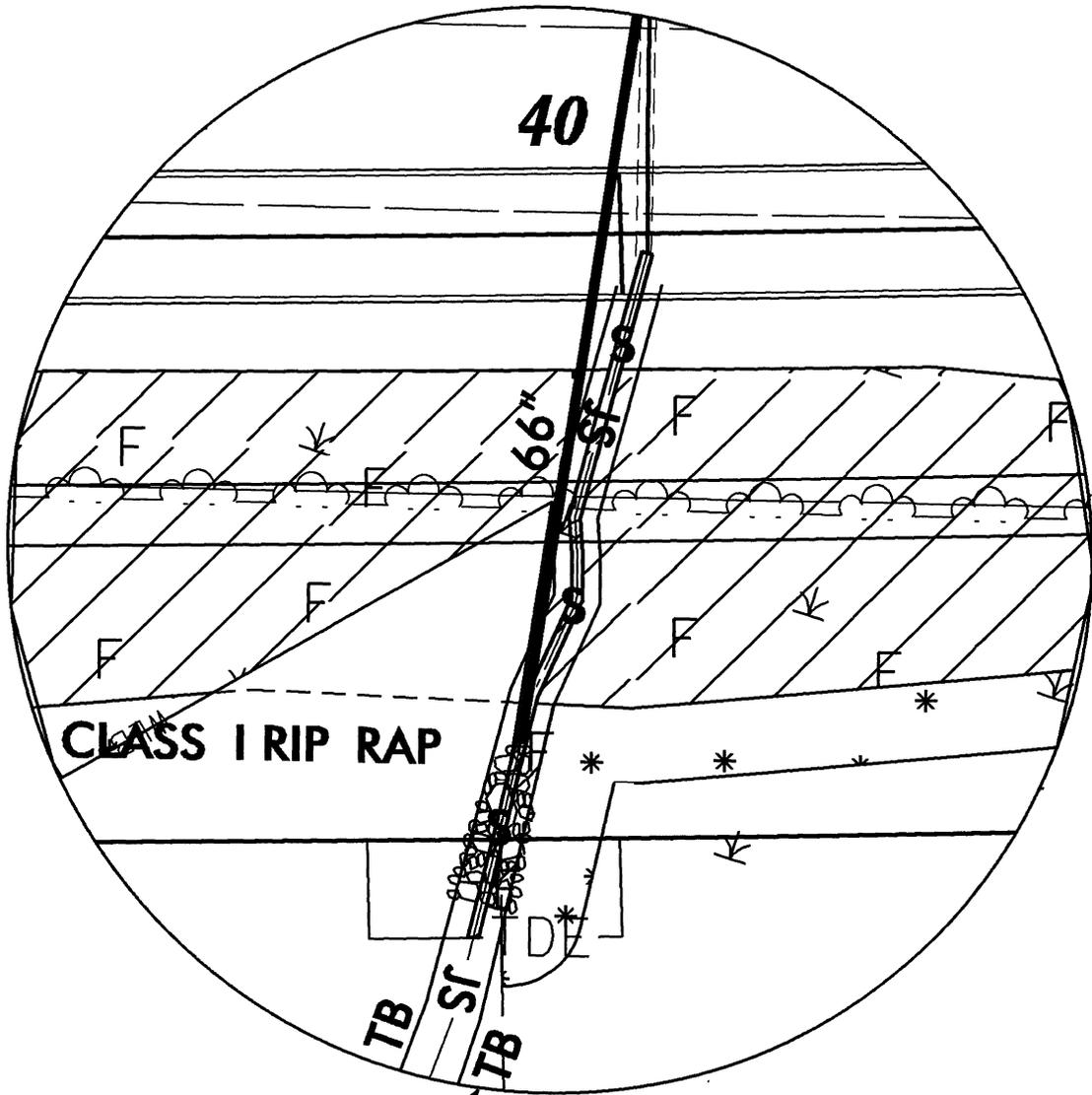
**NC 42 FROM US 70 AT  
CLAYTON TO  
EAST OF SR 1902**

SHEET

OF

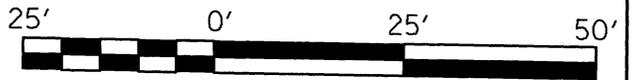
02/18/11

ENLARGEMENT SHOWS  
SURFACE WATERS IMPACTS



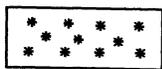
Permit Drawing  
Sheet 4 of 13

ENLARGEMENT  
SITE 2

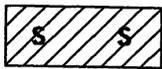


GRAPHIC SCALE

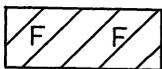
PLAN VIEW



DENOTES MECHANIZED  
CLEARING



DENOTES IMPACTS IN  
SURFACE WATER



DENOTES FILL IN  
WETLAND



**NCDOT**

**DIVISION OF HIGHWAYS**

**JOHNSTON COUNTY**

**PROJECT: 34552.11 (R-3825A)**

**NC 42 FROM US 70 AT  
CLAYTON TO  
EAST OF SR 1902**

SHEET

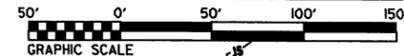
OF

02 / 18 / 11



7/2/96

# WETLANDS SURFACE WATER PERMIT DWG.

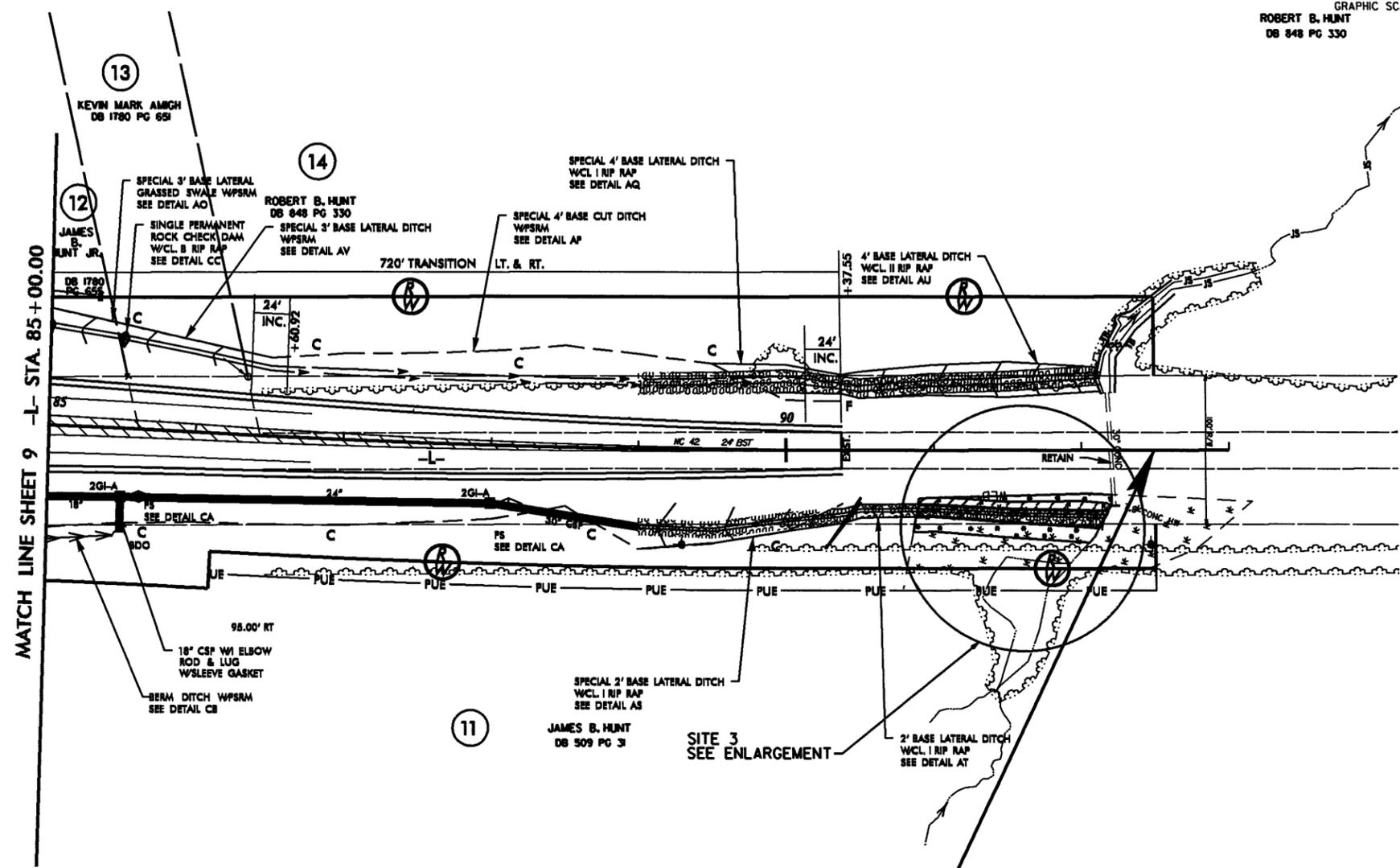


ROBERT B. HUNT  
DB 848 PG 330



PROJECT REFERENCE NO. <b>R-3825A</b>	SHEET NO. <b>10</b>
RDW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

Permit Drawing  
Sheet 6 of 13

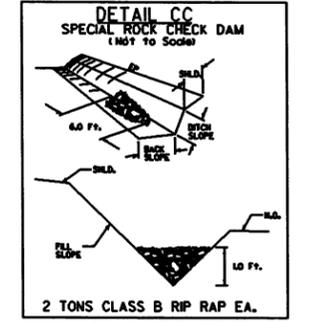


**END TIP PROJECT R-3825A**  
**-L- POT STA. 92+50.00**

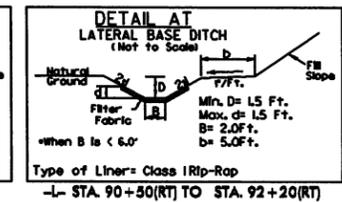
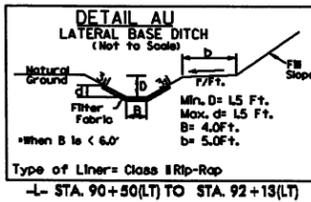
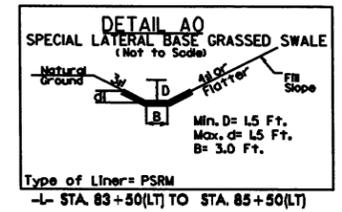
REVISIONS

06/01/00\_R/W\_REVISIONS: ADDED: PUE TO: PARCEL NO. J1.DDK

- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING

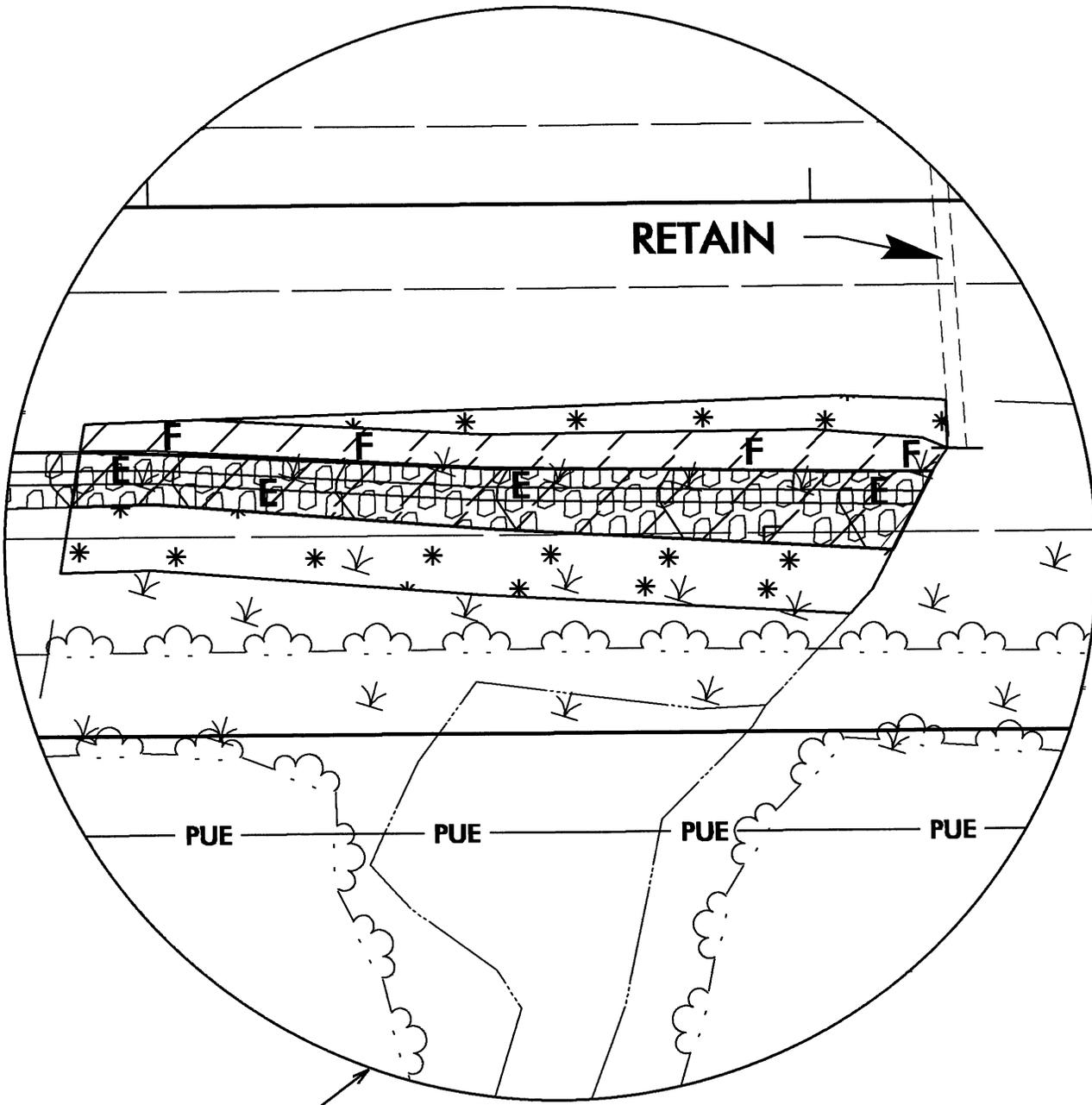


- 2 TONS CLASS B RIP RAP EA.
- L- STA. 33+35(RT)
  - L- STA. 34+00(RT)
  - L- STA. 34+65(RT)
  - L- STA. 35+30(RT)
  - L- STA. 81+00(LT)
  - L- STA. 82+00(LT)
  - L- STA. 83+25(LT) TO STA. 85+00(LT)
  - L- STA. 85+50(LT)



SYSTEMS: \*\*\*\*\*  
DCON: \*\*\*\*\*  
USER: \*\*\*\*\*

ENLARGEMENT SHOWS EXCAVATION  
AND MECHANIZED CLEARING IN WETLANDS

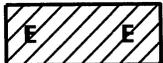
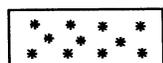


Permit Drawing  
Sheet 7 of 13



ENLARGEMENT  
SITE 3

PLAN VIEW

-  DENOTES EXCAVATION  
IN WETLAND
-  DENOTES FILL IN  
WETLAND
-  DENOTES MECHANIZED  
CLEARING



**NCDOT**  
**DIVISION OF HIGHWAYS**  
**JOHNSTON COUNTY**  
**PROJECT: 34552.1.1 (R-3825A)**  
**NC 42 FROM US 70 AT**  
**CLAYTON TO**  
**EAST OF SR 1902**

SHEET OF 02/18/11



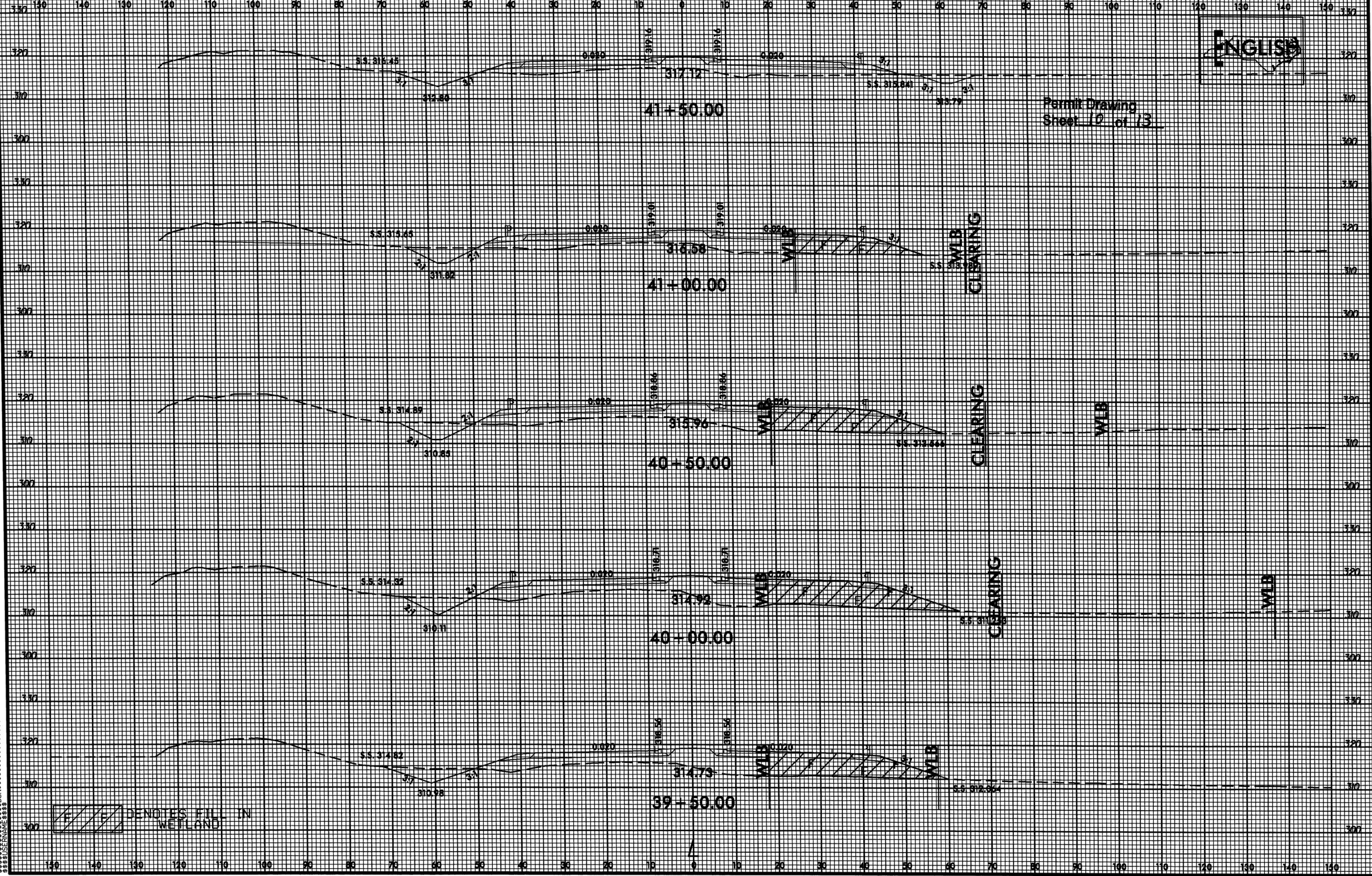


8/23/99

# WETLANDS SURFACE WATER PERMIT DWG.



PROJ. REFERENCE NO.	SHEET NO.
R-3825A	X-14



ENGLISH

Permit Drawing  
Sheet 10 of 13

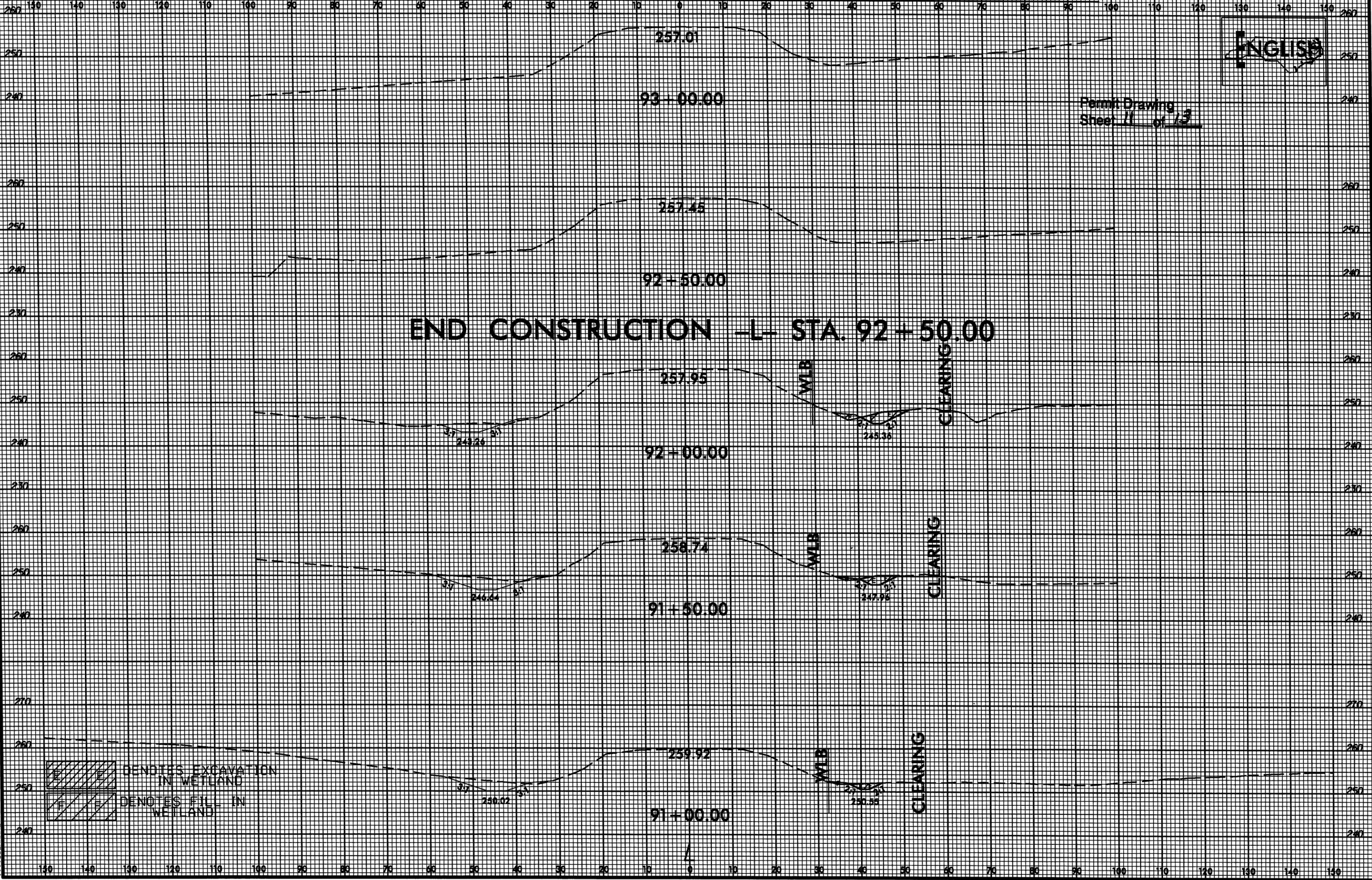
SYSTEMS  
DONES  
US  
NAME

8/23/99  
SYSTEMS  
D:\CONSTRUCTION  
USERS  
NAME

# WETLANDS SURFACE WATER PERMIT DWG.



PROJ. REFERENCE NO.	SHEET NO.
R-3825A	X-35



ENGLISH

Permit Drawing  
Sheet 11 of 13

 DENOTES EXCAVATION  
IN WETLAND  
 DENOTES FIL- IN  
WETLAND

Parcel #	Last Name	First Name	Address	City/Town	State	Zip Code
1	NC RR Company		3200 Atlantic Ave. Ste 110	Raleigh	NC	27604
11	Hunt	James B.	1441 NC 42 East	Clayton	NC	27527
12	Amigh	Kevin Mark	1423 NC 42 East	Clayton	NC	27527
13	Amigh	Kevin Mark	1424 NC 42 East	Clayton	NC	27527
14	Hunt	Robert B.	1441 NC 42 East	Clayton	NC	27527



9/29/09

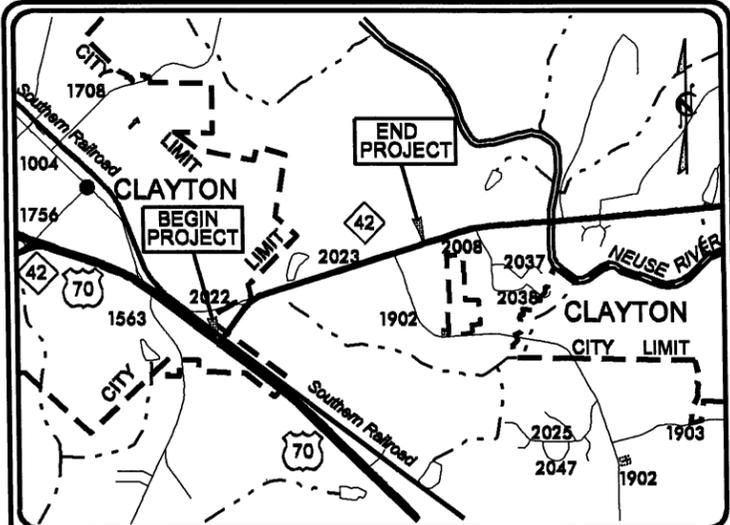
See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbols

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3825A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34552.1.1	STP-42(4)	P.E.	
34552.2.2	STP-42(4)	RW & UTILITIES	

**TIP PROJECT: R-3825A**

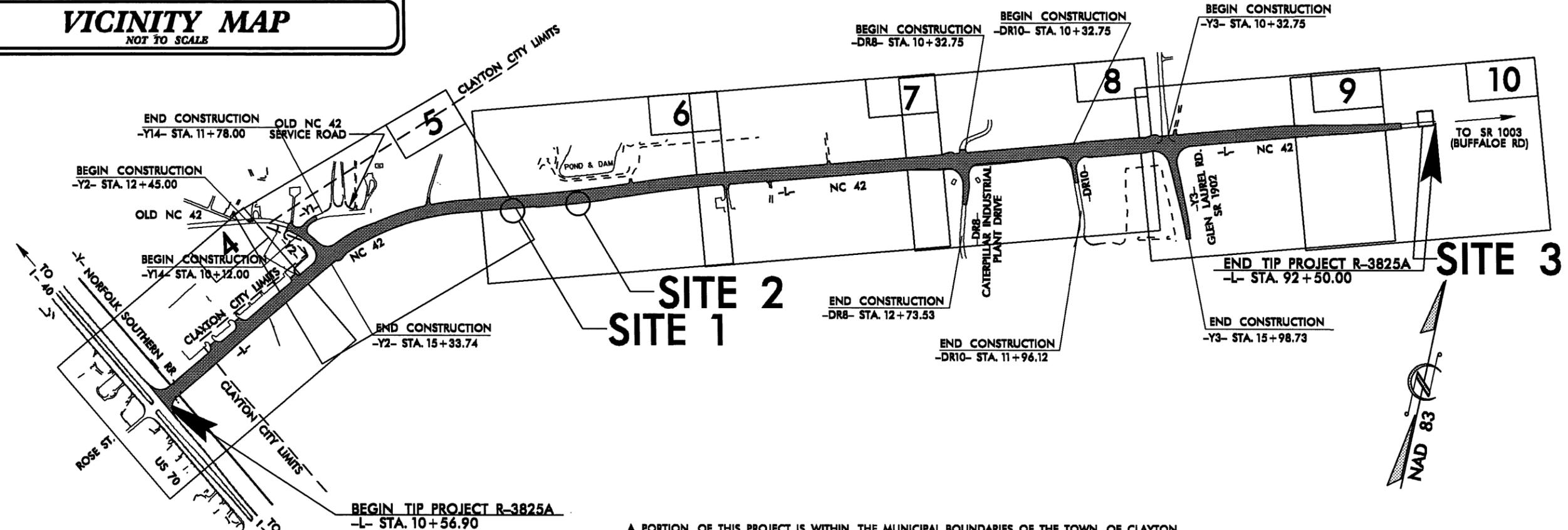


**VICINITY MAP**  
NOT TO SCALE

**LOCATION: NC 42 FROM US 70 IN CLAYTON TO  
0.31 MI EAST OF SR 1902 (GLEN LAUREL RD)**

Buffer Drawing  
Sheet 1 of 7

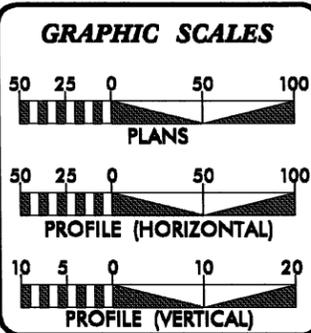
**TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNALS,  
AND SIGNING  
BUFFER PERMIT DWG.**



A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF CLAYTON.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

**CONTRACT:**



**DESIGN DATA**

ADT 2010 =	20,500
ADT 2035 =	34,100
DHV =	10 %
D =	60 %
T =	3 % *
V =	50 MPH
* (TTST 1 % + DUAL 2 %)	
FUNC. CLASS =	RURAL
MAJOR COLLECTOR	
REGIONAL TIER	

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT R-3825A =	1.552 MILES
TOTAL LENGTH OF TIP PROJECT R-3825A =	1.552 MILES

Prepared in the Office of:

**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh, NC 27610

2006 STANDARD SPECIFICATIONS

<b>RIGHT OF WAY DATE:</b> AUGUST 29, 2008	<b>GLENN W. MUMFORD, PE</b> PROJECT ENGINEER
<b>LETTING DATE:</b> MARCH 20, 2012	<b>SUSAN C. LANCASTER, PE</b> PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

\_\_\_\_\_  
P.E.

**ROADWAY DESIGN ENGINEER**

\_\_\_\_\_  
P.E.

**STATE HIGHWAY DESIGN ENGINEER**

\_\_\_\_\_  
P.E.

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

\_\_\_\_\_  
P.E.

\_\_\_\_\_  
P.E.

7/2/99

**GRASS SWALE DATA**

DA = 2.3 Ac  
 SLOPE = 0.011ft/ft  
 L REQ. = 230 Ft. (100 Ft. per 1 Acre of DA)  
 L PRO. = 260 Ft. (-L- 32+70 TO 35+30(RT))  
 Q2 = 5.7 CFS  
 V2 = 1.9 FPS  
 D2 = 1.0 Ft.  
 Q10 = 7.4 CFS  
 V10 = 2.0 FPS  
 D10 = 1.1 Ft.

**BUFFER PERMIT DWG.**

50' 0' 50' 100' 150'  
 GRAPHIC SCALE

PROJECT REFERENCE NO. R-3825A	SHEET NO. 6
R/W SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

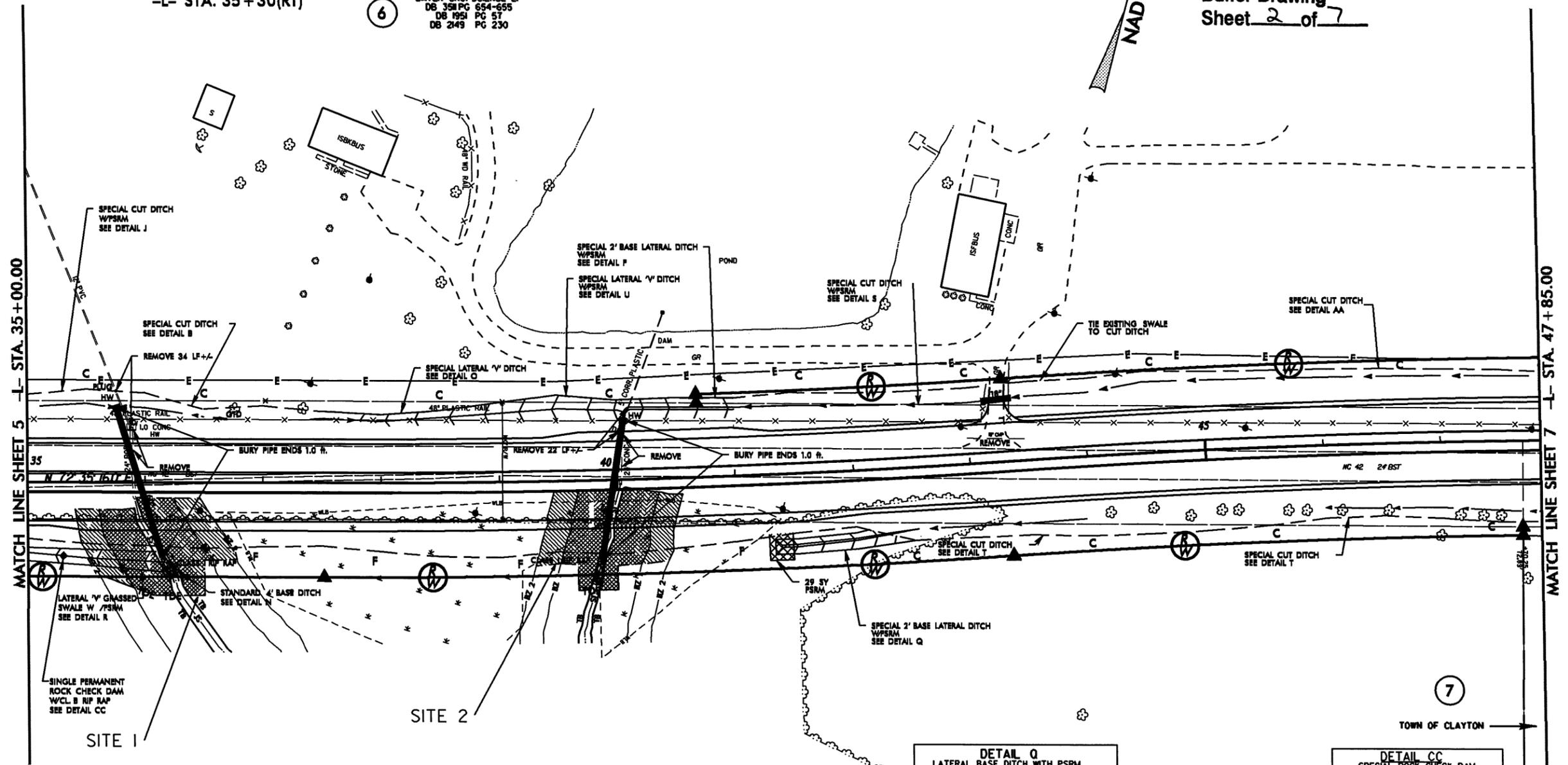
-L- STA. 35+30(RT)

6

BAYER CROSCIENCE LP  
 DB 358 PG 654-655  
 DB 1951 PG 57  
 DB 2149 PG 230

NAD 83

Buffer Drawing Sheet 2 of 7



MATCH LINE SHEET 5 -L- STA. 35+00.00

MATCH LINE SHEET 7 -L- STA. 47+85.00

SITE 1  
 LATERAL 1/4\"/>

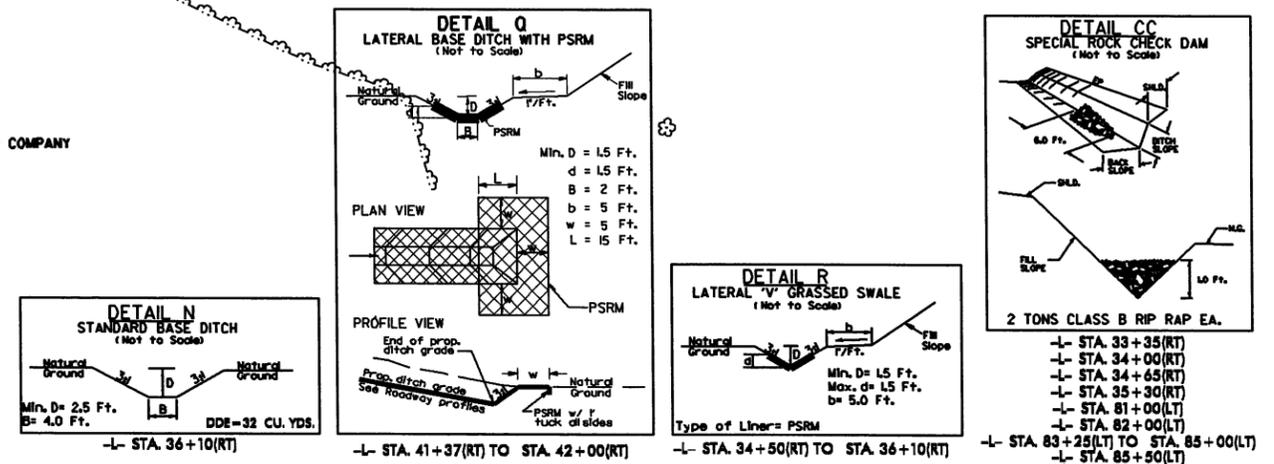
SITE 2

7

TOWN OF CLAYTON

NORTH CAROLINA RAILROAD COMPANY  
 DB 867 PG 482

ALLOWABLE IMPACTS ZONE 1  
 ALLOWABLE IMPACTS ZONE 2



\*\*\*\*\*  
 SYSTEMS \*\*\*\*\*  
 DGN \*\*\*\*\*  
 \*\*\*\*\*  
 USER \*\*\*\*\*  
 \*\*\*\*\*





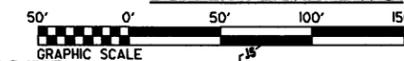


7/2/95

BUFFER PERMIT DWG.

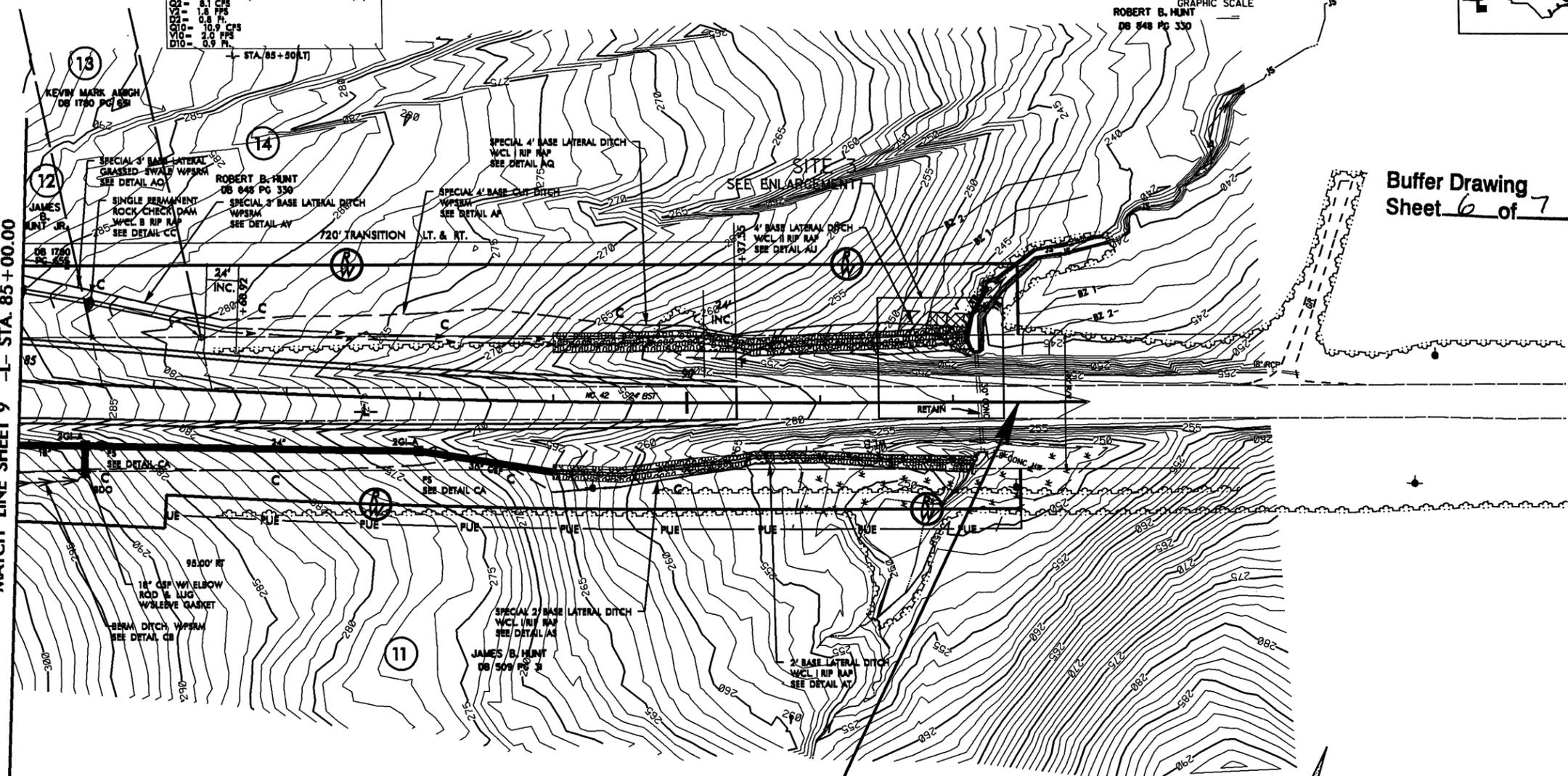


PROJECT REFERENCE NO. <b>R-3825A</b>	SHEET NO. <b>10</b>
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



**GRASS SWALE DATA**  
 DA = 7.3 Ac (at least check dam) 9.1 Ac (total DA)  
 SLOPE = 0.0179%  
 I REQ. = 910 Ft. (100 Ft. per 1 Acre of DA)  
 I. NO. = 1,330  
 H. I. = 76+30 TO 85+50(LT)  
 CFS = 8.1  
 CFS = 1.8  
 CFS = 10.9  
 CFS = 2.0  
 CFS = 0.9

MATCH LINE SHEET 9 -L- STA. 85+00.00



Buffer Drawing Sheet 6 of 7

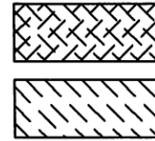
**END TIP PROJECT R-3825A**  
**-L- POT STA. 92+50.00**



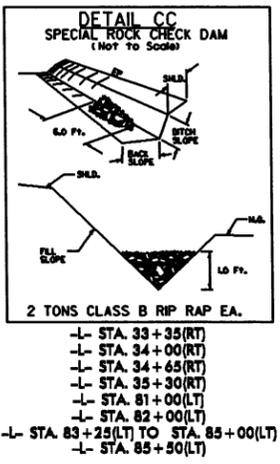
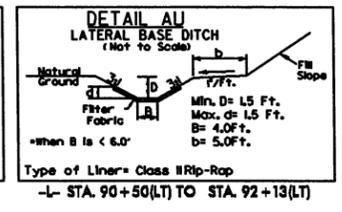
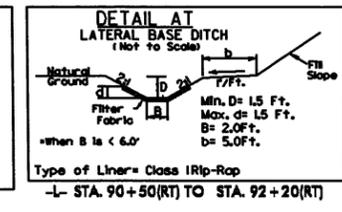
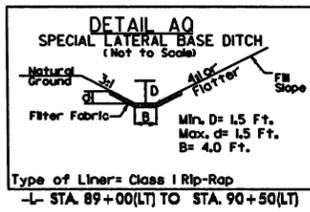
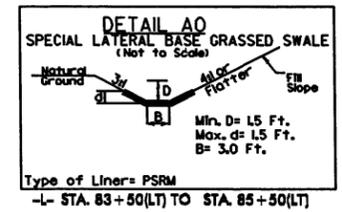
REVISIONS

06/04/00 R/W REVISION: ADDED PUE TO PARCEL NO. 11, DPK

\*\*\*\*\*  
SYSTEMTIME: 06/04/00 10:00:00  
\*\*\*\*\*



ALLOWABLE IMPACTS ZONE 1  
ALLOWABLE IMPACTS ZONE 2

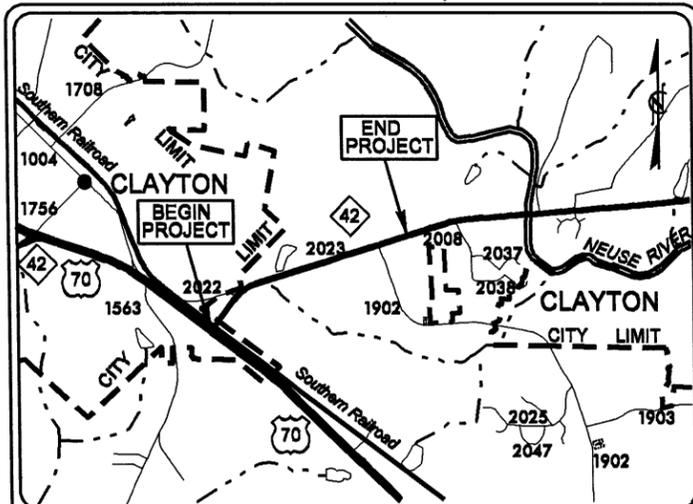




9/18/09

**TIP PROJECT: R-3825A**

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



**VICINITY MAP**  
NOT TO SCALE

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

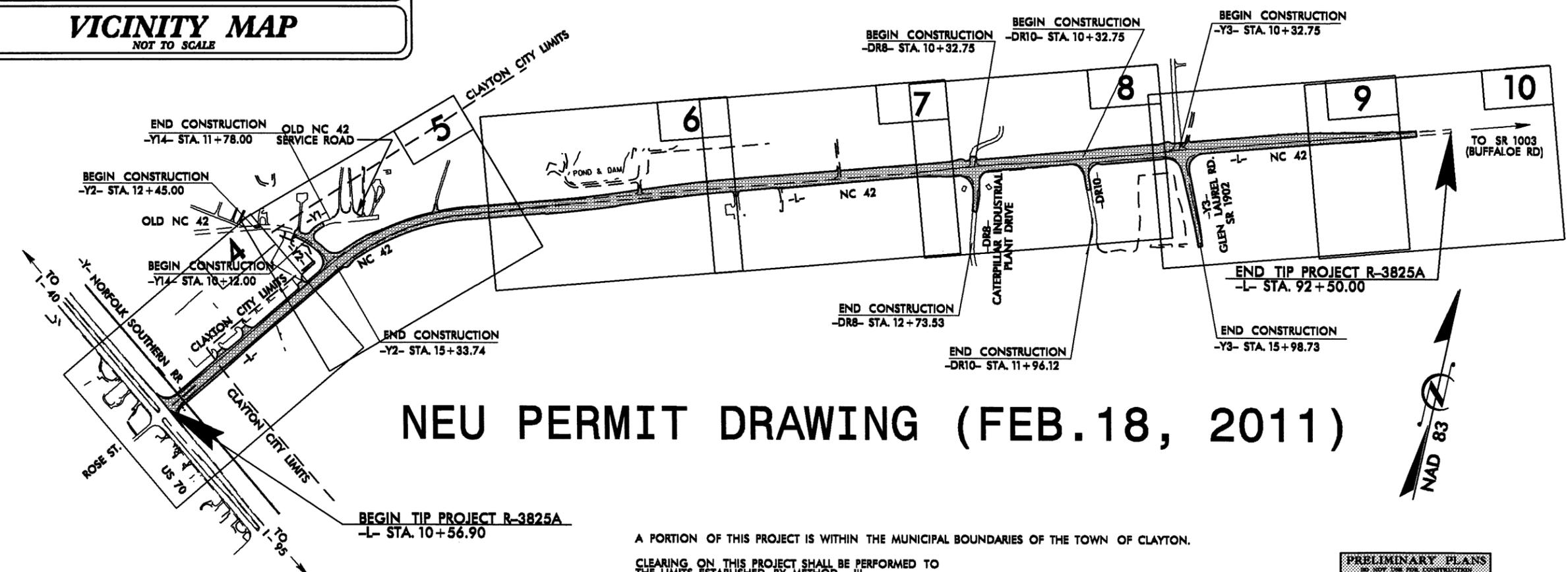
**JOHNSTON COUNTY**

**LOCATION: NC 42 FROM US 70 IN CLAYTON TO  
0.31 MI EAST OF SR 1902 (GLEN LAUREL RD)**

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

Utility Permit Drawing  
Sheet 1 of 5

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3825A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34552.1.1	STP-42(4)	P.E.	
34552.2.2	STP-42(4)	RW & UTILITIES	



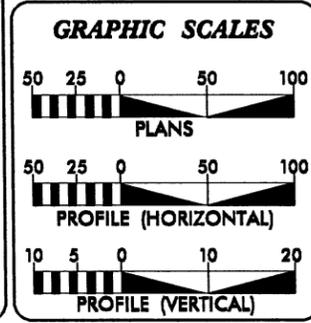
**NEU PERMIT DRAWING (FEB. 18, 2011)**



A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF CLAYTON.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

**CONTRACT:**



**DESIGN DATA**

ADT 2010 =	20,500
ADT 2035 =	34,100
DHV =	10 %
D =	60 %
T =	3 % *
V =	50 MPH
* (TTST 1% + DUAL 2%)	
FUNC. CLASS = RURAL MAJOR COLLECTOR REGIONAL TIER	

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT R-3825A =	1.552 MILES
TOTAL LENGTH OF TIP PROJECT R-3825A =	1.552 MILES

Prepared in the Office of:

**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh, NC 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: AUGUST 29, 2008	<b>GLENN W. MUMFORD, PE</b> PROJECT ENGINEER
LETTING DATE: MARCH 20, 2012	<b>SUSAN C. LANCASTER, PE</b> PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.  
ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.  
STATE HIGHWAY DESIGN ENGINEER

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

P.E.

18-FEB-2011 15:00:14 \\fs1\proj\18-3825a\_rdy\_tsh.dgn





**PROPERTY OWNERS**  
NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES	SITE NO.
1	NC RAILROAD CO.	DB 867 PG 482	2
11	JAMES B. HUNT	DB 509 PG 31	3

**NORTH CAROLINA**  
 DIVISION OF HIGHWAYS  
 CHOWAN COUNTY  
 TIP PROJECT: (R-3625A)  
 NC 42 FROM US 70 IN CLAYTON TO  
 0.31 MI EAST OF SR 1902  
 (GLEN LAUREL RD)  
 2/18/11

Utility Permit Drawing  
 Sheet 4 of 5



9/28/99

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

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**JOHNSTON COUNTY**

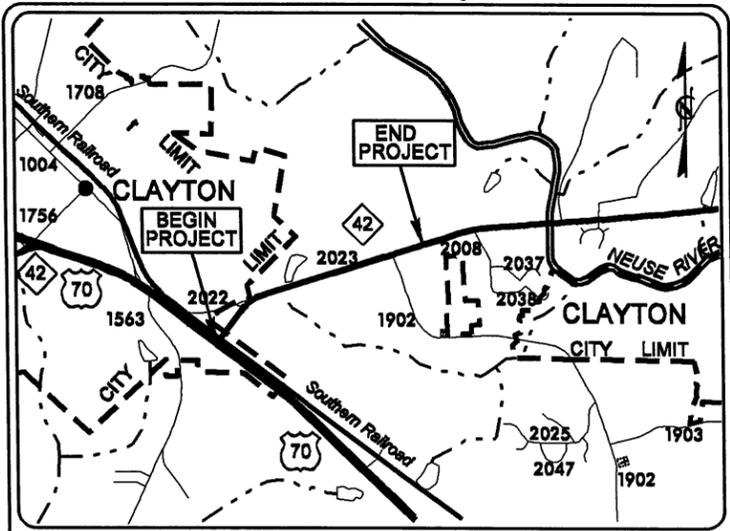
LOCATION: NC 42 FROM US 70 IN CLAYTON TO  
0.31 MI EAST OF SR 1902 (GLEN LAUREL RD)

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

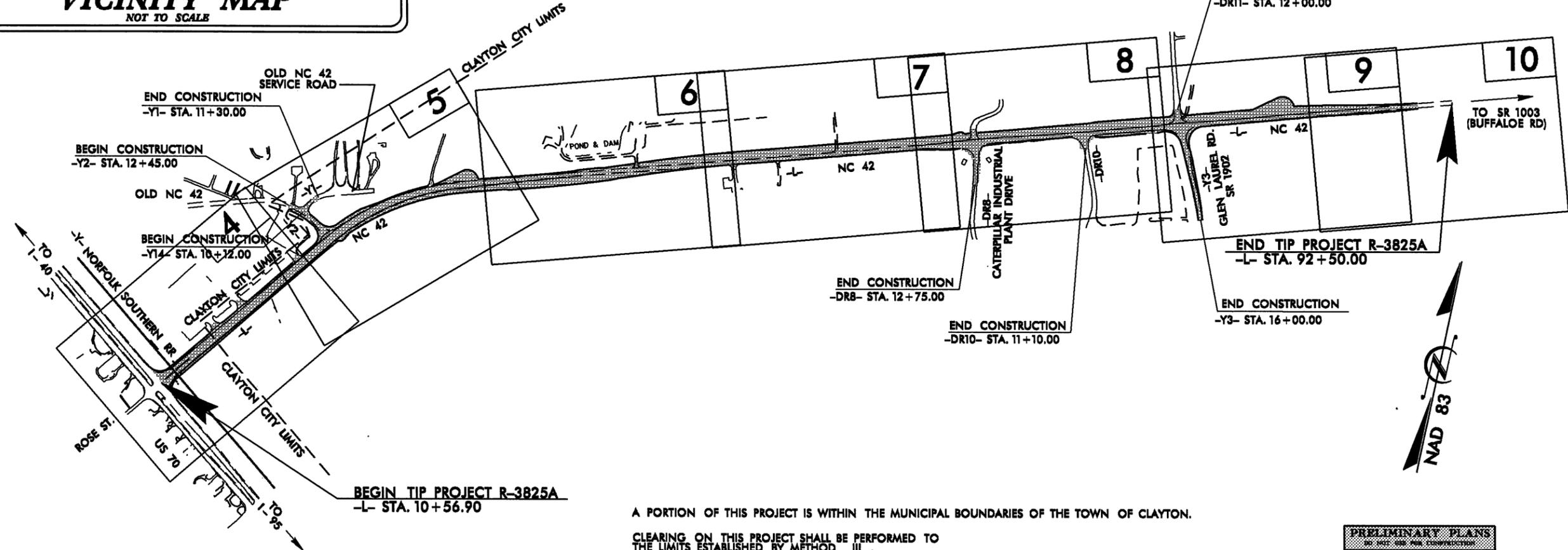
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3825A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34552.1.1	STP-42(4)	P.E.	
34552.2.2	STP-42(4)	RAW & UTILITIES	



**TIP PROJECT: R-3825A**



**VICINITY MAP**  
NOT TO SCALE



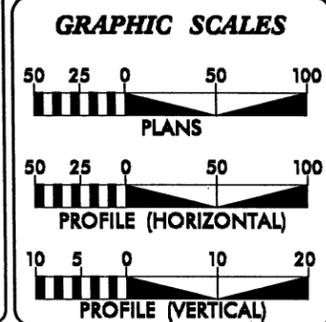
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF CLAYTON.

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

PRELIMINARY PLANS

24 MAR 2011 10:41 AM \\s3825a\_rdy\_tsh.dgn

**CONTRACT:**



**DESIGN DATA**

ADT 2010 =	20,500
ADT 2035 =	34,100
DHV =	10 %
D =	60 %
T =	3 % *
V =	50 MPH
* (TTST 1 % + DUAL 2 %)	
FUNC. CLASS = RURAL MAJOR COLLECTOR REGIONAL TIER	

**PROJECT LENGTH**

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TOTAL LENGTH OF TIP PROJECT R-3825A =	1.552 MILES

Prepared in the Office of:

**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh, NC 27610

2006 STANDARD SPECIFICATIONS

<b>RIGHT OF WAY DATE:</b> AUGUST 29, 2008	<b>GLENN W. MUMFORD, PE</b> PROJECT ENGINEER
<b>LETTING DATE:</b> MARCH 20, 2012	<b>SUSAN C. LANCASTER, PE</b> PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.  
ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.  
STATE HIGHWAY DESIGN ENGINEER

**DIVISION OF HIGHWAYS**  
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

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	○
Property Corner	⊕
Property Monument	⊞
Parcel/Sequence Number	②③
Existing Fence Line	× × ×
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---WA---
Proposed Wetland Boundary	---WA---
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---

### BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or UG Tank Cap	○
Sign	⊙
Well	⊕
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	⊙
Swamp Marsh	⊕
Proposed Lateral, Tail, Head Ditch	▭
False Sump	▭

### RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
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	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	⊕
Proposed Right of Way Line with Concrete or Granite Marker	⊕
Existing Control of Access	⊕
Proposed Control of Access	⊕
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Permanent Aerial Utility Easement	-----
Proposed Permanent Drainage Utility Easement	-----

### ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Wheel Chair Ramp	⊕
Proposed Wheel Chair Ramp Curb Cut	⊕
Curb Cut for Future Wheel Chair Ramp	⊕
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	⊕

### EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	⊕
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊕
Storm Sewer	-----

### UTILITIES:

POWER:	
Existing Power Pole	⊕
Proposed Power Pole	⊕
Existing Joint Use Pole	⊕
Proposed Joint Use Pole	⊕
Power Manhole	⊕
Power Line Tower	⊕
Power Transformer	⊕
UG Power Cable Hand Hole	⊕
H-Frame Pole	⊕
Recorded UG Power Line	-----
Designated UG Power Line (S.U.E.*)	-----

### TELEPHONE:

Existing Telephone Pole	⊕
Proposed Telephone Pole	⊕
Telephone Manhole	⊕
Telephone Booth	⊕
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
UG Telephone Cable Hand Hole	⊕
Recorded UG Telephone Cable	-----
Designated UG Telephone Cable (S.U.E.*)	-----
Recorded UG Telephone Conduit	-----
Designated UG Telephone Conduit (S.U.E.*)	-----
Recorded UG Fiber Optics Cable	-----
Designated UG Fiber Optics Cable (S.U.E.*)	-----

### WATER:

Water Manhole	⊕
Water Meter	⊕
Water Valve	⊕
Water Hydrant	⊕
Recorded UG Water Line	-----
Designated UG Water Line (S.U.E.*)	-----
Above Ground Water Line	-----

### TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊕
UG TV Cable Hand Hole	⊕
Recorded UG TV Cable	-----
Designated UG TV Cable (S.U.E.*)	-----
Recorded UG Fiber Optic Cable	-----
Designated UG Fiber Optic Cable (S.U.E.*)	-----

### GAS:

Gas Valve	⊕
Gas Meter	⊕
Recorded UG Gas Line	-----
Designated UG Gas Line (S.U.E.*)	-----
Above Ground Gas Line	-----

### SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
UG Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

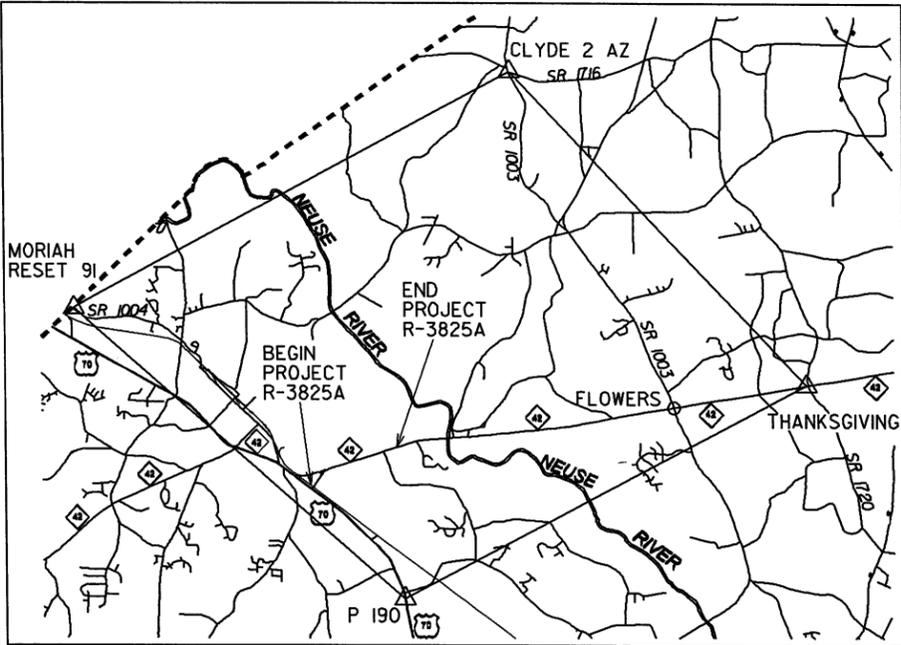
### MISCELLANEOUS:

Utility Pole	⊕
Utility Pole with Base	⊕
Utility Located Object	⊕
Utility Traffic Signal Box	⊕
Utility Unknown UG Line	-----
UG Tank; Water, Gas, Oil	⊕
AG Tank; Water, Gas, Oil	⊕
UG Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

8/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-3825-A	1 C
Location and Surveys	

# SURVEY CONTROL SHEET R-3825-A



OUTER CONTROL NETWORK VICINITY MAP

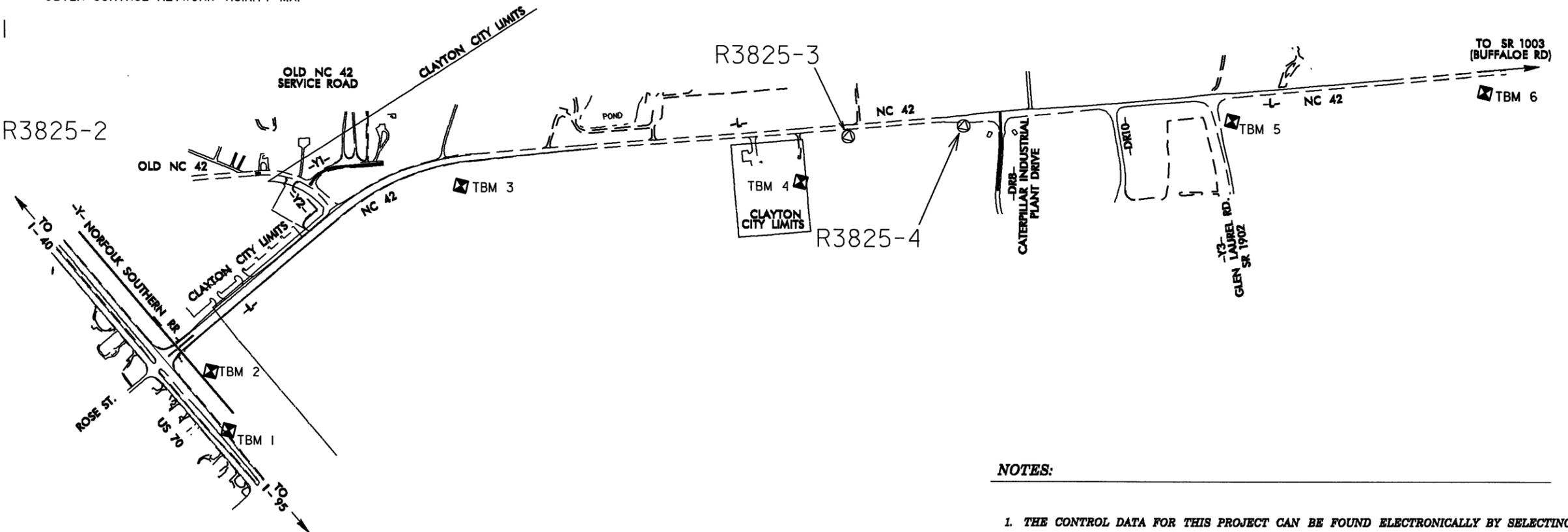


⊙ R3825-1

⊙ R3825-2

R3825-3

R3825-4



### NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstruct/highway/location/project/)  
THE FILES TO BE FOUND ARE AS FOLLOWS:  
R3825A\_LS\_CONTROL\_070917.TXT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

- ⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
- PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
- NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION

### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "R3825-12"  
WITH NAD 83 STATE PLANE GRID COORDINATES OF  
NORTHING: 694313.7327(ft) EASTING: 2196583.8253(ft)  
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT  
(GROUND TO GRID) IS: 0.999889488  
THE N.C. LAMBERT GRID BEARING AND  
LOCALIZED HORIZONTAL GROUND DISTANCE FROM  
"R3825-12" TO -L- STATION 10+00.00 IS  
S 76°44'37.6" W 31,714.93'  
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
VERTICAL DATUM USED IS NGVD 29

NOTE: DRAWING NOT TO SCALE

23-MAR-2011 10:16  
C:\loc\gis\surveys\3825a\_1a\_1c\_080722.dgn  
\$\$\$\$\$USERNAME\$\$\$\$\$

6/2/99

23-MAR-2011 15:16  
\\location\surveys\3825a\_1s\_1d\_070917.dgn  
\$\$\$\$\$IGERNM\$\$\$\$\$

# SURVEY CONTROL SHEET R-3825-A

PROJECT REFERENCE NO.	SHEET NO.
R-3825-A	1 D
Location and Surveys	

## CONTROL DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1		RBL-1	687064.4492	2165805.6781	331.81	10+73.71	59.28 RT
2		RBL-2	687869.9163	2166275.3464	326.31	19+99.59	50.82 LT
3		RBL-3	688484.7758	2166821.8244	335.24	28+09.11	58.54 LT
39		RBL-39	688812.9651	2167658.9857	316.55	36+95.77	45.05 LT
6		BL-6	688944.0345	2168245.9429	318.43	42+93.85	23.94 RT
7		BL-7	689163.9336	2168957.1193	331.78	50+40.46	50.52 RT
53		R3825-3	689263.9068	2169370.0541	328.94	54+64.39	78.70 RT
38		RBL-38	689476.6203	2170017.0439	326.46	61+45.30	69.36 RT
8		RBL-8	689719.6206	2170736.6739	321.42	69+04.48	56.56 RT
9		RBL-9	690002.1505	2171427.7976	315.20	76+48.79	2.38 LT
10		BL-10	690149.3169	2172028.7702	299.52	82+66.38	39.98 RT
11		BL-11	690354.9803	2172680.7784	264.77	89+50.36	19.57 RT
12		BL-12	690602.5536	2173450.2472	253.10	OUTSIDE PROJECT LIMITS	

BY	POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
15015		BY-1	687713.7205	2164963.2472	320.26	OUTSIDE PROJECT LIMITS	
15016		BL-1	687079.9134	2165803.8421	331.50	12+76.06	76.53 RT
15017		BY-2	686481.1639	2166547.0856	325.32	OUTSIDE PROJECT LIMITS	

BY2	POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
68		BY2-1	688267.7900	2165946.2030	330.88	OUTSIDE PROJECT LIMITS	
67		BY2-2	688298.4060	2166396.4350	335.15	13+61.19	31.98 LT
A103		BL-3	688484.7758	2166821.8244	335.24	OUTSIDE PROJECT LIMITS	

BY5	POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
209		RBL-9	690002.1500	2171427.7970	315.20	10+04.28	47.31 LT
201		BY5-1	689693.4250	2171541.7530	312.90	13+31.86	15.86 LT
202		BY5-2	689345.5100	2171651.0240	299.00	OUTSIDE PROJECT LIMITS	
203		BY5-3	688816.1270	2171822.1240	270.52	OUTSIDE PROJECT LIMITS	
204		BY5-4	688164.7730	2172049.8280	258.26	OUTSIDE PROJECT LIMITS	

## BENCHMARK DATA

\*\*\*\*\*  
TBM1 ELEVATION = 335.24  
N 686770 E 2166202  
BY STATION 20+57 8 LEFT  
CHISELED 'X' ON TOP CORNER OF HEAD-  
WALL OF 54' RCP.  
TBM-1  
\*\*\*\*\*  
TBM2 ELEVATION = 331.65  
N 687084 E 2166028  
BL STATION 6+29 182 RIGHT  
RR SPIKE IN BASE OF 24' PINE  
TBM-2  
\*\*\*\*\*  
TBM3 ELEVATION = 328.04  
N 688472 E 2167220  
BL STATION 26+21 157 RIGHT  
RR SPIKE IN BASE OF 12' PINE  
TBM-3  
\*\*\*\*\*  
TBM4 ELEVATION = 339.39  
N 688945 E 2169154  
BL STATION 46+40 259 RIGHT  
RR SPIKE IN BASE OF 26' OAK  
TBM-4  
\*\*\*\*\*  
TBM5 ELEVATION = 320.77  
N 689857 E 2171546  
BL STATION 71+92 169 RIGHT  
RR SPIKE IN BASE OF 20' PINE  
TBM-5  
\*\*\*\*\*  
TBM6 ELEVATION = 252.90  
N 690348 E 2172953  
BL STATION 86+14 90 RIGHT  
RR SPIKE IN BASE OF 26' MAPLE  
TBM-6  
\*\*\*\*\*

### NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/)  
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NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION

### DATUM DESCRIPTION

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NORTHING: 694313.7327(ft) EASTING: 2196583.8253(ft)  
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THE N.C. LAMBERT GRID BEARING AND  
LOCALIZED HORIZONTAL GROUND DISTANCE FROM  
"R3825-12" TO -L- STATION 10+56.90 IS  
S 76°48'34.4" W 31.671.18'  
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
VERTICAL DATUM USED IS NGVD 29

6/2/99

24-MAR-2011 09:54  
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 \$\$\$USERNAME\$\$\$

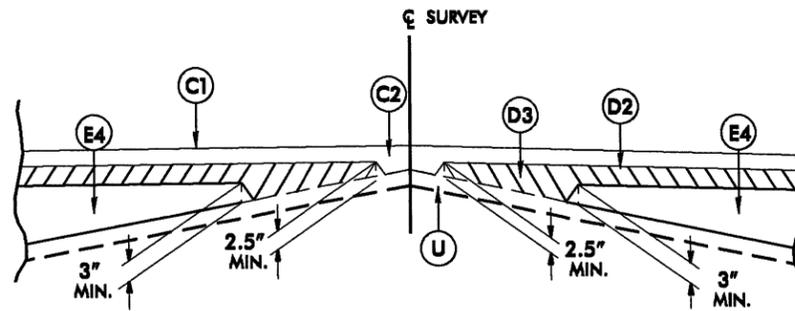
**PAVEMENT SCHEDULE**

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	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 TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	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 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 4 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E3	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E4	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 THAN 5 1/2" IN DEPTH.
J	PROP. 8" AGGREGATE BASE COURSE.
R1	1'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED)
U	EXISTING PAVEMENT.
T	EARTH MATERIAL.
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 1)
W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2)
W3	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 3)

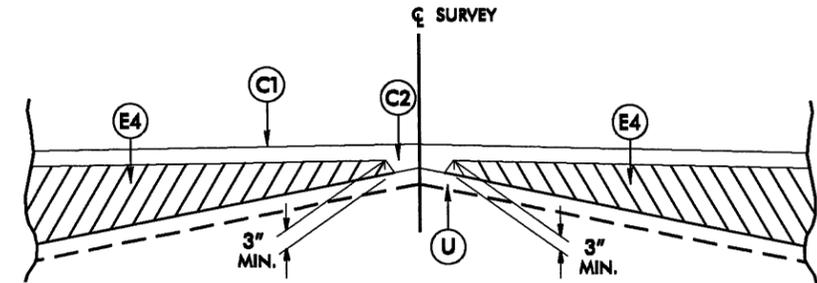
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

NOTES:  
 1) USE 2:1 SLOPES AT THE GUARDRAIL LOCATIONS AS SHOWN ON PLANS.  
 2) PAVE TO FACE OF GUARDRAIL AS SHOWN ON PLANS.

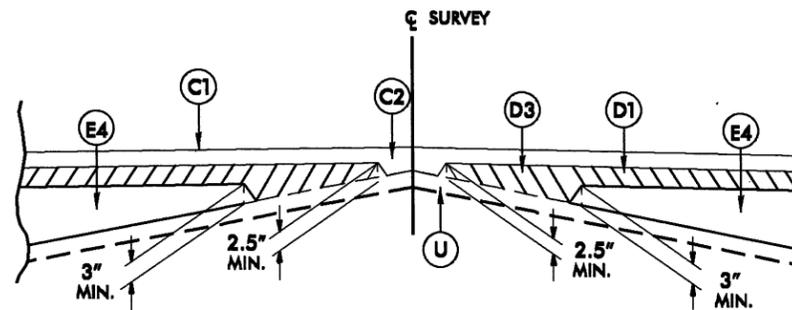
PROJECT REFERENCE NO. R-3825A	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



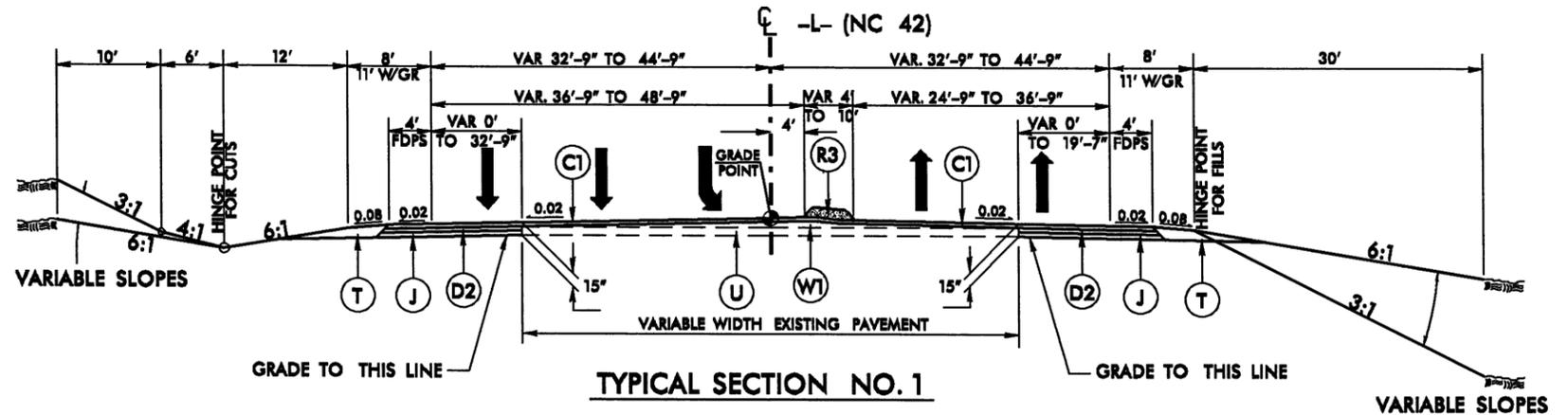
Detail Showing Method of Wedging No. 1



Detail Showing Method of Wedging No. 2



Detail Showing Method of Wedging No. 3



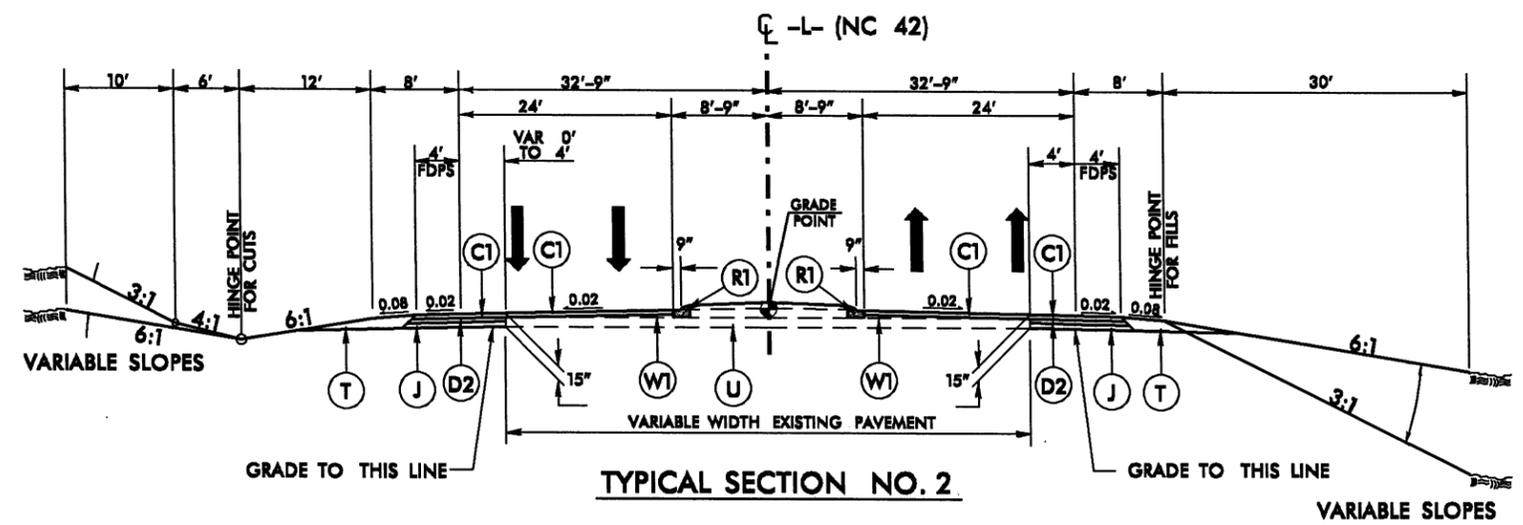
USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:  
 -L- STA. 10+56.90 TO STA. 15+18.00\*  
 -L- STA. 21+02.00 TO STA. 23+52.00 (REVERSED)  
 -L- STA. 23+52.00 TO STA. 26+50.00\*  
 -L- STA. 29+72.00 TO STA. 32+82.00 (REVERSED)  
 -L- STA. 61+35.00 TO STA. 62+85.00 (REVERSED)  
 -L- STA. 62+85.00 TO STA. 66+65.00\*  
 -L- STA. 73+00.00 TO STA. 75+45.00 (REVERSED)  
 -L- STA. 75+45.00 TO STA. 78+90.00\*  
 -L- STA. 78+90.00 TO STA. 82+15.00 (REVERSED)  
 \* NO ISLANDS AT THE FOLLOWING LOCATIONS:  
 -L- STA. 10+56.90 TO STA. 11+18.00  
 -L- STA. 11+48.45 TO STA. 11+74.45  
 -L- STA. 23+52.00 TO STA. 24+52.00  
 -L- STA. 62+85.00 TO STA. 64+15.00  
 -L- STA. 75+45.00 TO STA. 76+60.00

TRANSITION FROM TYPICAL SECTION NO.1 AT -L- STA. 14+18.00 TO TYPICAL SECTION NO. 2 AT -L- STA. 15+18.00  
 TRANSITION FROM TYPICAL SECTION NO.1 AT -L- STA. 25+50.00 TO TYPICAL SECTION NO. 3A AT -L- STA. 26+50.00  
 TRANSITION FROM TYPICAL SECTION NO.1 AT -L- STA. 65+65.00 TO TYPICAL SECTION NO. 3 AT -L- STA. 66+65.00  
 TRANSITION FROM TYPICAL SECTION NO.1 AT -L- STA. 78+90.00 TO REVERSE OF TYPICAL SECTION NO. 1 AT -L- STA. 79+90.00

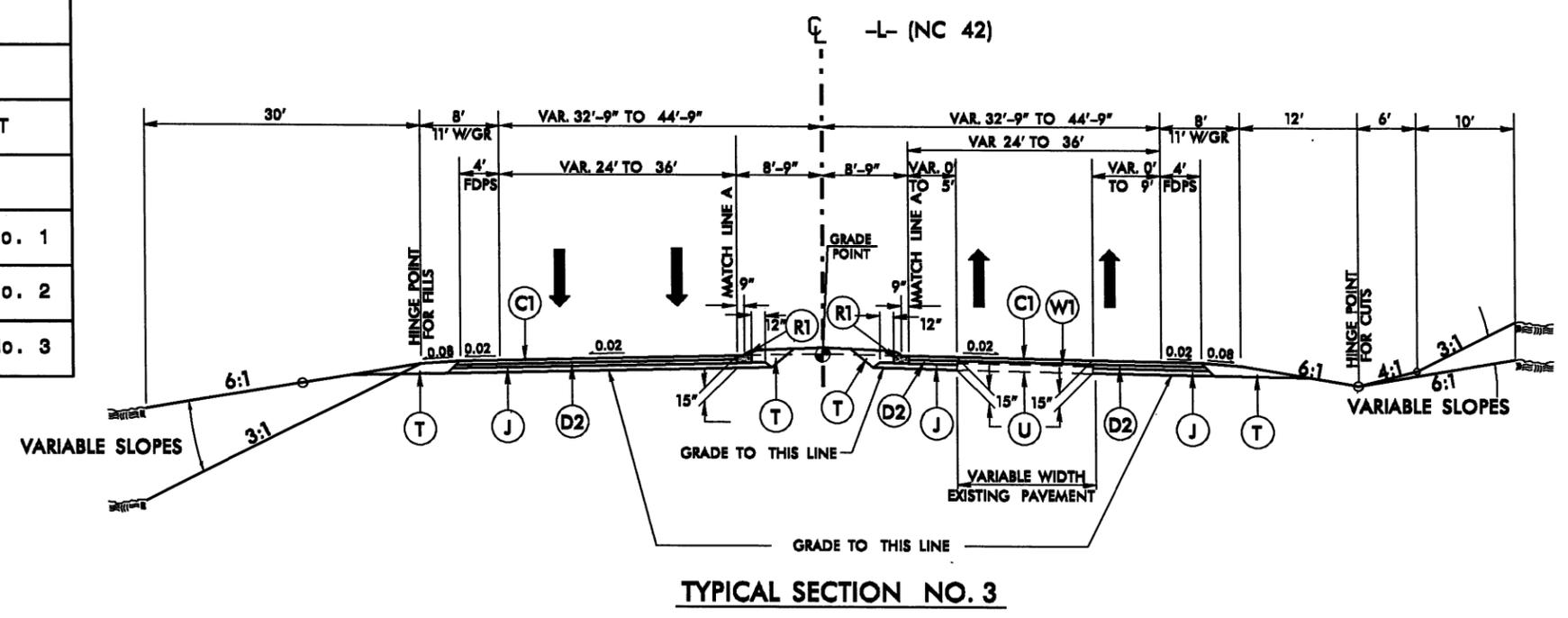
C1	3" S9.5B
C2	VAR. S9.5B
D1	2 1/2" I19.0B
D2	4" I19.0B
D3	VAR. I19.0B
E1	4" B25.0B
E2	4 1/2" B25.0B
E3	5" B25.0B
E4	VAR. B25.0B
J	8" ABC
R1	1'-6" C & G
R2	2'-9" C & G
R3	5" CONC. ISLAND
U	EXISTING PAVEMENT
T	EARTH MATERIAL
W1	WEDGING DETAIL No. 1
W2	WEDGING DETAIL No. 2
W3	WEDGING DETAIL No. 3

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 \$\$\$USERNAME\$\$\$

PROJECT REFERENCE NO.		SHEET NO.	
R-3825A		2-A	
ROADWAY DESIGN ENGINEER		PAVEMENT DESIGN ENGINEER	
PRELIMINARY PLANS			



USE TYPICAL SECTION NO.2  
 AT THE FOLLOWING LOCATION:  
 -L- STA. 15+18.00 TO STA. 21+02.00  
 TRANSITION FROM TYPICAL SECTION NO. 2  
 AT -L- STA. 20+02.00 TO TYPICAL SECTION  
 NO. 1 AT -L- STA. 21+02.00



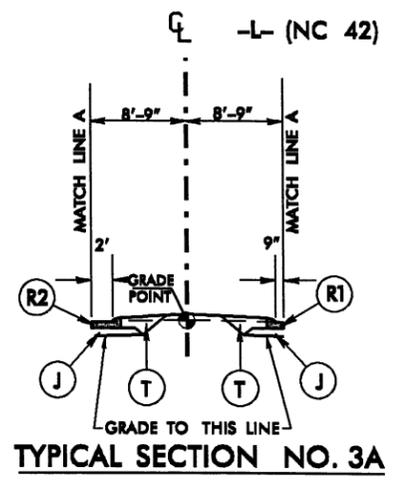
USE TYPICAL SECTION NO.3  
 AT THE FOLLOWING LOCATIONS:  
 -L- STA. 26+50.00 TO STA. 29+72.00 (REVERSED)  
 -L- STA. 32+82.00 TO STA. 38+50.00\* (REVERSED)  
 -L- STA. 43+00.00 TO STA. 61+35.00\*  
 -L- STA. 66+65.00 TO STA. 73+00.00

\* NO ISLANDS AT THE FOLLOWING LOCATION:  
 -L- STA. 32+82.00 TO STA. 33+61.00  
 -L- STA. 48+70.00 TO STA. 49+40.00

TRANSITION FROM TYPICAL SECTION NO.3  
 AT -L- STA. 28+72.00 TO TYPICAL SECTION  
 NO. 1 AT -L- STA. 29+72.00

TRANSITION FROM TYPICAL SECTION NO.3  
 AT -L- STA. 60+35.00 TO TYPICAL SECTION  
 NO. 1 AT -L- STA. 61+35.00

TRANSITION FROM TYPICAL SECTION NO.3  
 AT -L- STA. 72+00.00 TO TYPICAL SECTION  
 NO. 1 AT -L- STA. 73+00.00



USE TYPICAL SECTION NO.3A IN  
 CONJUNCTION WITH TYPICAL SECTION  
 NO. 3 AT THE FOLLOWING LOCATION:  
 -L- STA. 25+50.00\* TO STA. 29+72.00\*

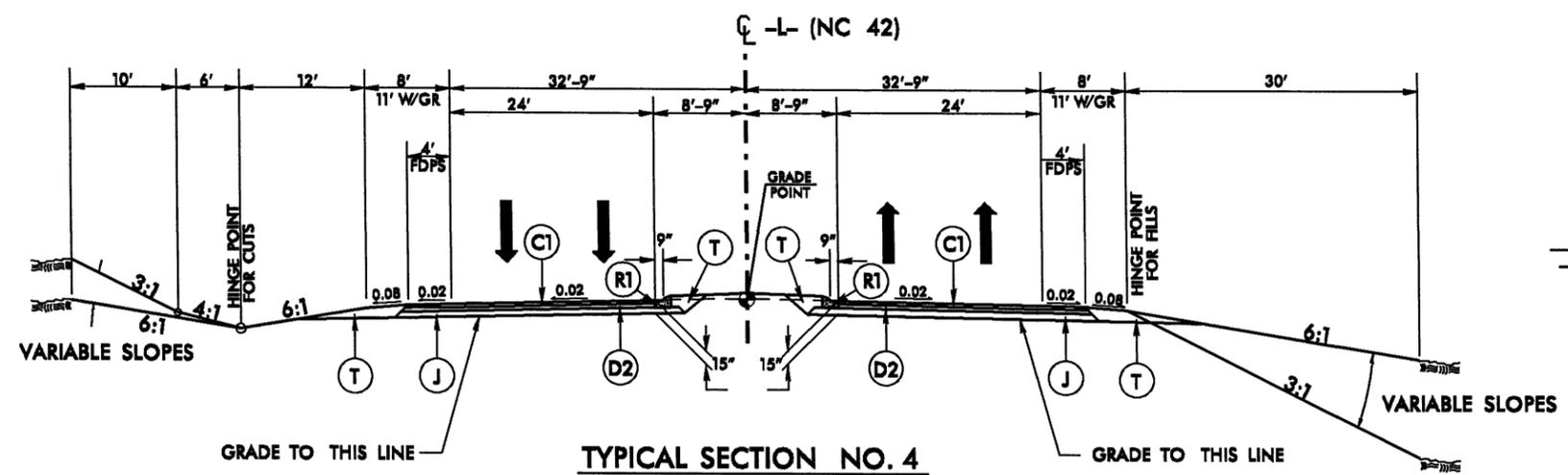
\*50' TRANSITION BETWEEN 1'-6" CURB AND 2'-9" CURB

- NOTES:**
- 1) USE 2:1 SLOPES AT THE GUARDRAIL LOCATIONS AS SHOWN ON PLANS.
  - 2) PAVE TO FACE OF GUARDRAIL AS SHOWN ON PLANS.
  - 3) FOR NARROW WIDENING OF THE L-LINE, 4.0" B25.0B MAY BE USED IN LIEU OF 8.0" ABC.

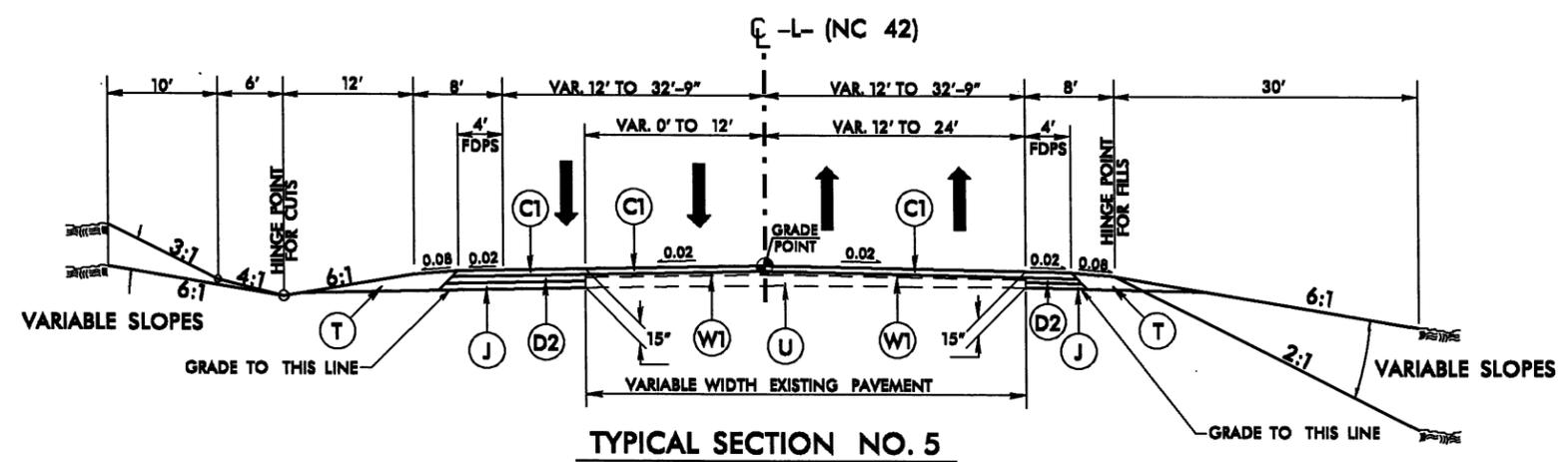
C1	3" S9.5B
C2	VAR. S9.5B
D1	2 1/2" I19.0B
D2	4" I19.0B
D3	VAR. I19.0B
E1	4" B25.0B
E2	4 1/2" B25.0B
E3	5" B25.0B
E4	VAR. B25.0B
J	8" ABC
R1	1'-6" C & G
R2	2'-9" C & G
R3	5" CONC. ISLAND
U	EXISTING PAVEMENT
T	EARTH MATERIAL
W1	WEDGING DETAIL No. 1
W2	WEDGING DETAIL No. 2
W3	WEDGING DETAIL No. 3

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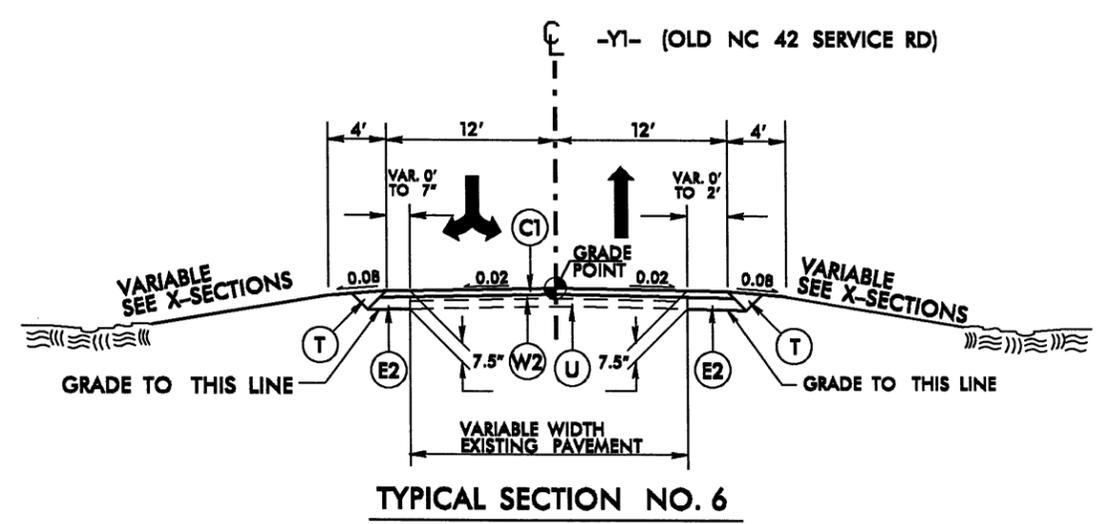
PROJECT REFERENCE NO. R-3825A		SHEET NO. 2-B	
ROADWAY DESIGN ENGINEER		PAVEMENT DESIGN ENGINEER	
PRELIMINARY PLANS			



USE TYPICAL SECTION NO.4  
AT THE FOLLOWING LOCATION:  
-L- STA. 38+50.00 TO STA. 43+00.00



USE TYPICAL SECTION NO.5  
AT THE FOLLOWING LOCATION:  
-L- STA. 82+15.00 TO STA. 90+37.55

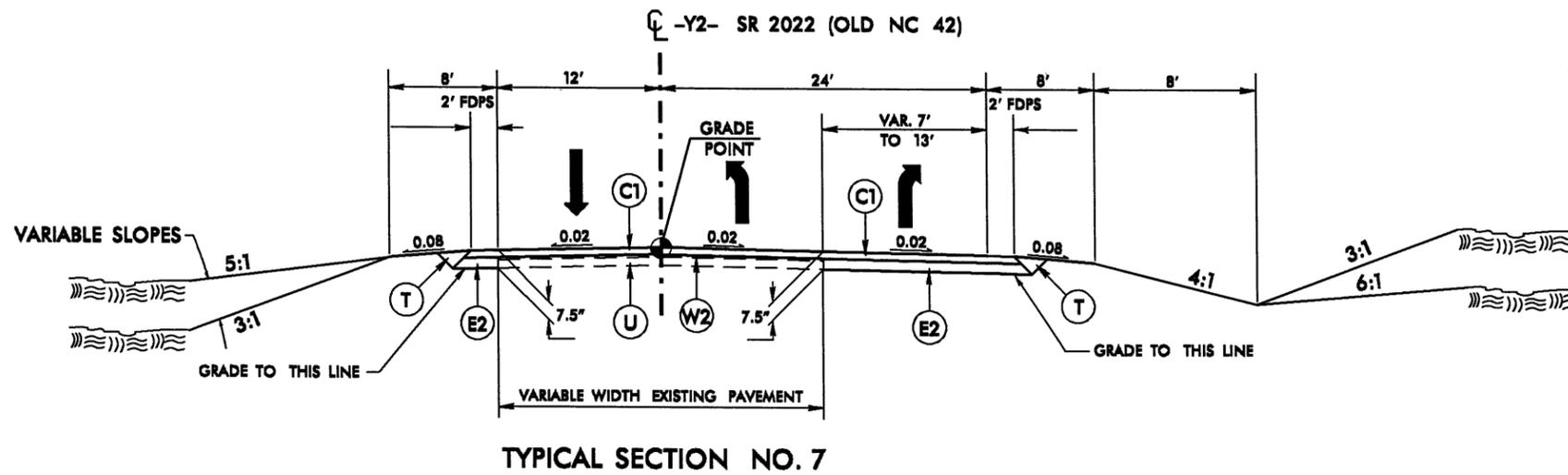


USE TYPICAL SECTION NO.6  
AT THE FOLLOWING LOCATION:  
-Y1- STA. 10+12.00 TO STA. 11+30.00

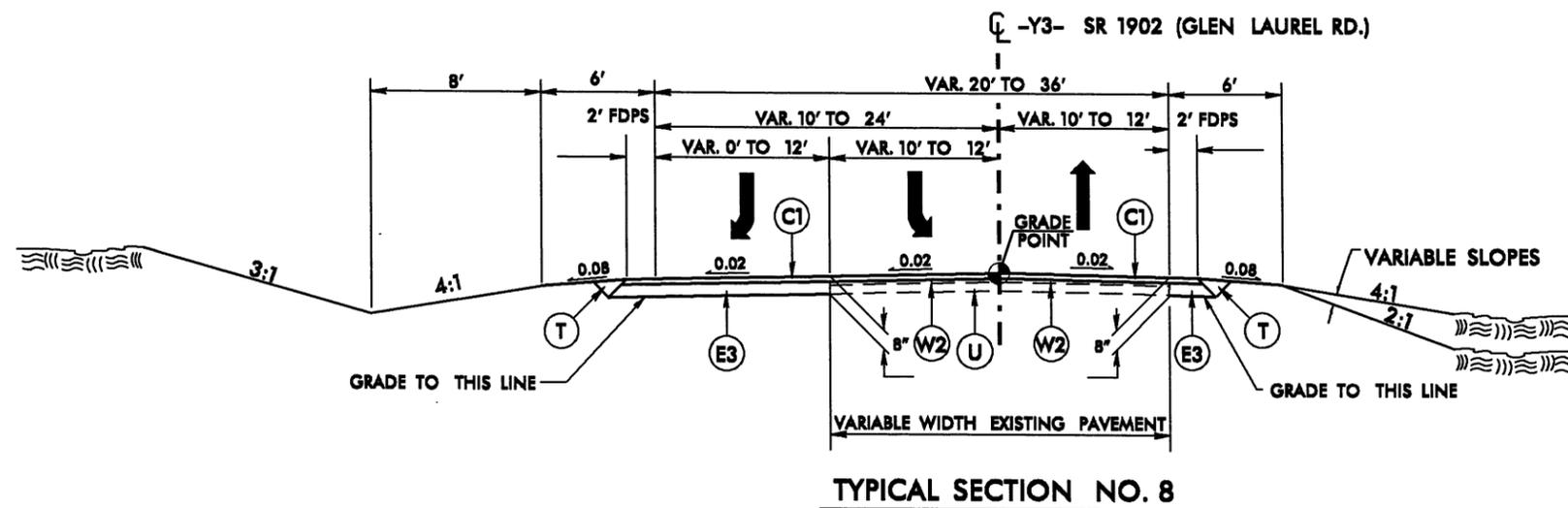
- NOTES:**
- 1) USE 2:1 SLOPES AT THE GUARDRAIL LOCATIONS AS SHOWN ON PLANS.
  - 2) PAVE TO FACE OF GUARDRAIL AS SHOWN ON PLANS.
  - 3) FOR NARROW WIDENING OF THE L-LINE, 4.0" B25.0B MAY BE USED IN LIEU OF 8.0" ABC.

PROJECT REFERENCE NO. R-3825A	SHEET NO. 2-C
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

C1	3" S9.5B
C2	VAR. S9.5B
D1	2 1/2" I19.0B
D2	4" I19.0B
D3	VAR. I19.0B
E1	4" B25.0B
E2	4 1/2" B25.0B
E3	5" B25.0B
E4	VAR. B25.0B
J	8" ABC
R1	1'-6" C & G
R2	2'-9" C & G
R3	5" CONC. ISLAND
U	EXISTING PAVEMENT
T	EARTH MATERIAL
W1	WEDGING DETAIL No. 1
W2	WEDGING DETAIL No. 2
W3	WEDGING DETAIL No. 3



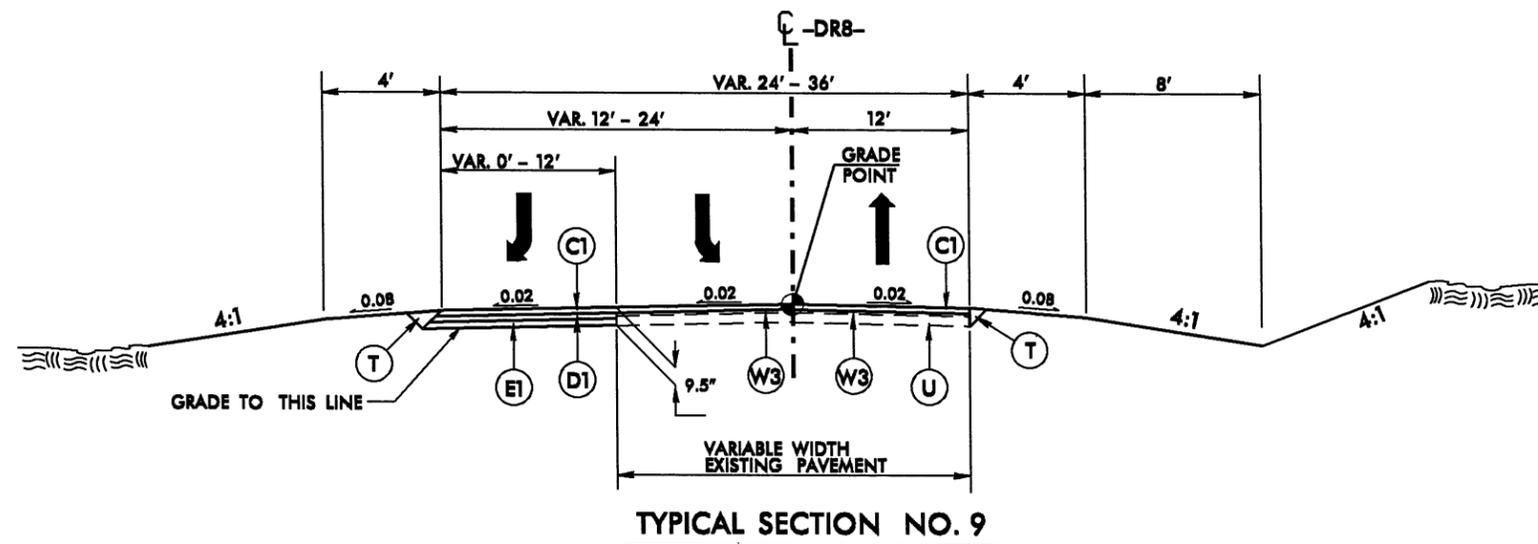
USE TYPICAL SECTION NO.7  
AT THE FOLLOWING LOCATION:  
-Y2- STA. 12+45.00 TO STA. 15+30.62



USE TYPICAL SECTION NO.8  
AT THE FOLLOWING LOCATION:  
-Y3- STA. 10+33.07 TO STA. 16+00.00

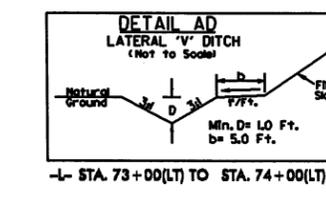
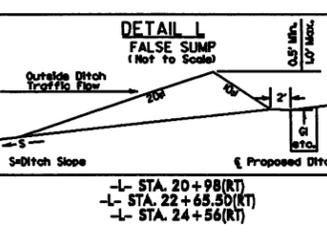
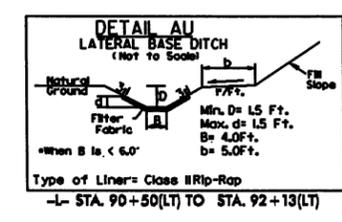
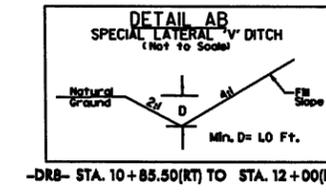
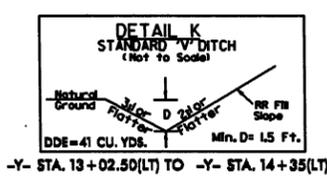
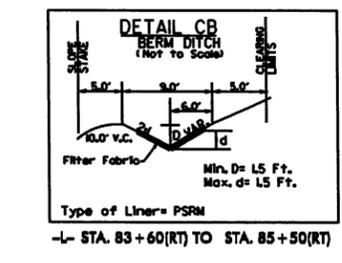
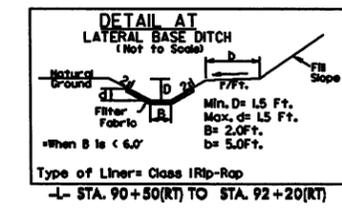
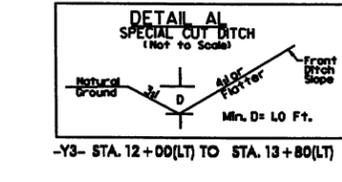
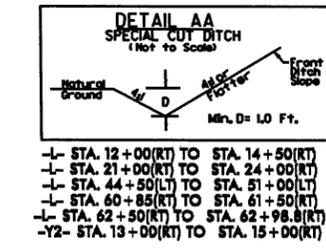
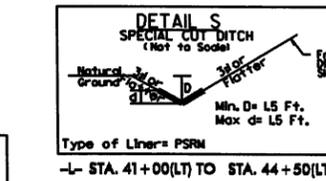
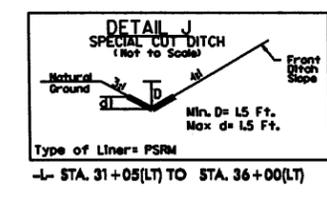
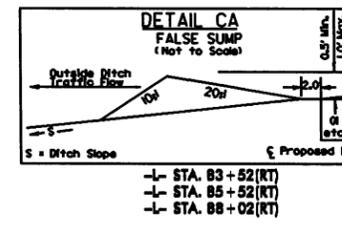
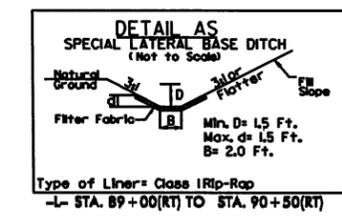
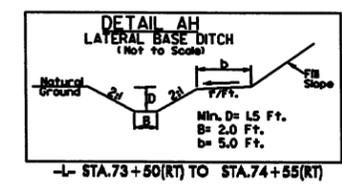
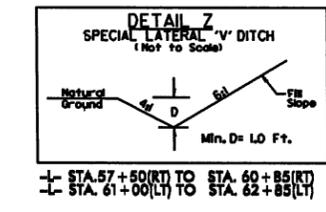
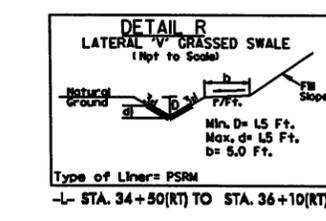
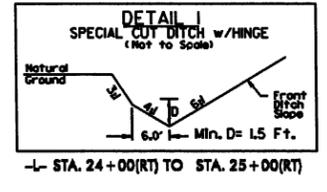
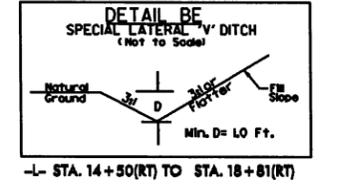
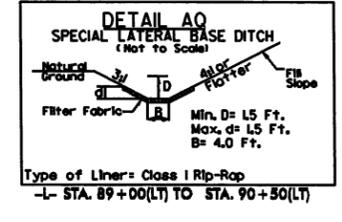
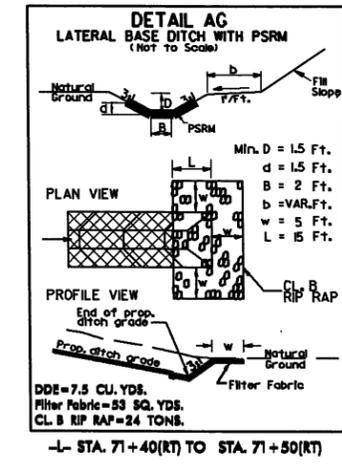
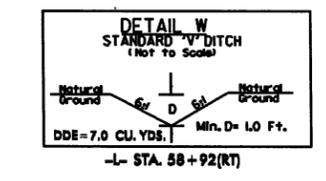
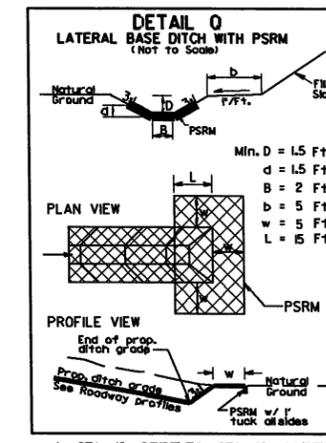
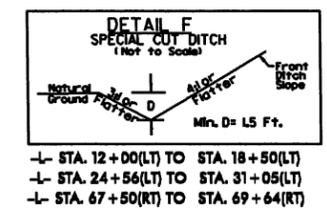
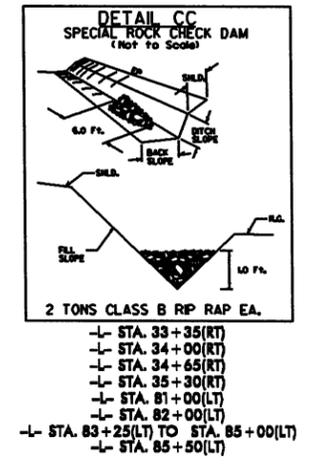
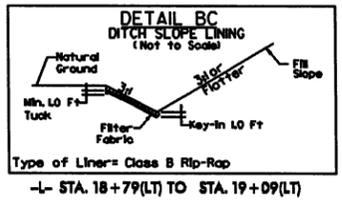
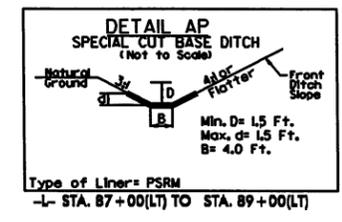
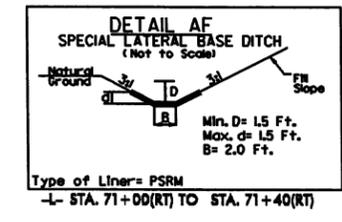
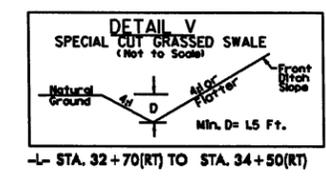
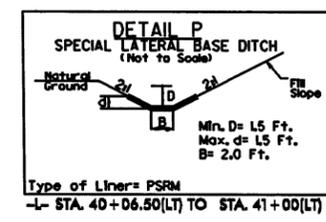
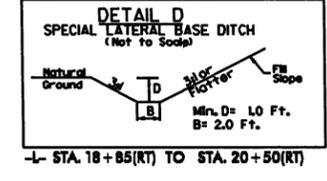
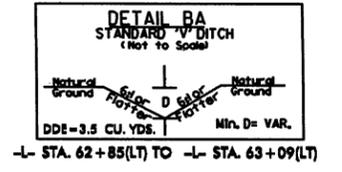
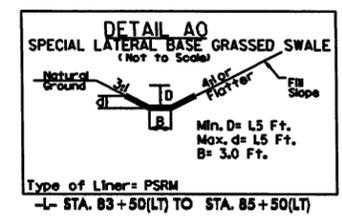
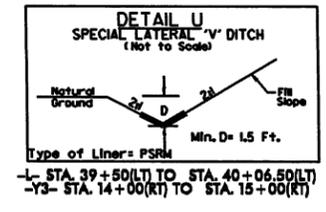
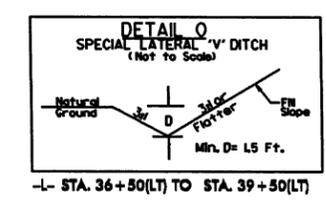
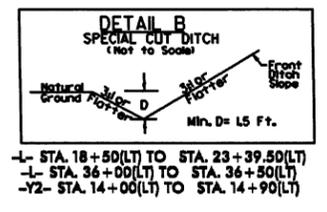
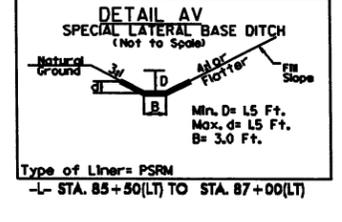
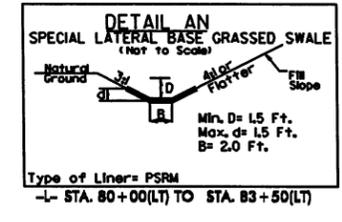
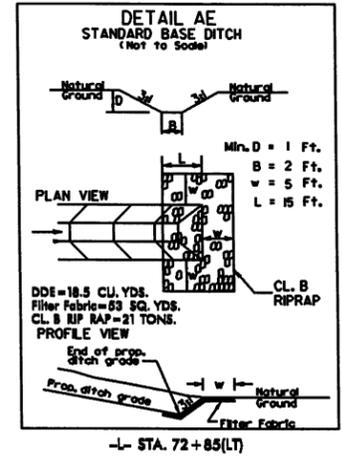
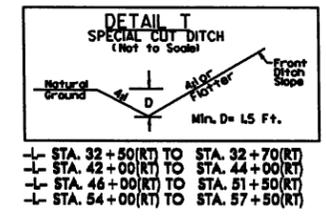
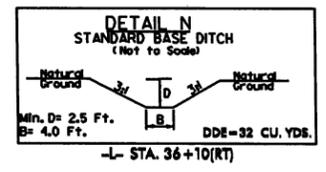
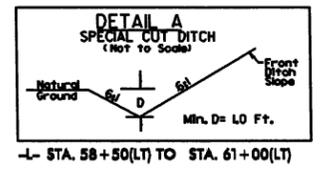
PROJECT REFERENCE NO. R-3825A	SHEET NO. 2-D
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	

C1	3" S9.5B
C2	VAR. S9.5B
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. I19.0B
E1	4" B25.0B
E2	4½" B25.0B
E3	5" B25.0B
E4	VAR. B25.0B
J	8" ABC
R1	1'-6" C & G
R2	2'-9" C & G
R3	5" CONC. ISLAND
U	EXISTING PAVEMENT
T	EARTH MATERIAL
W1	WEDGING DETAIL No. 1
W2	WEDGING DETAIL No. 2
W3	WEDGING DETAIL No. 3



**USE TYPICAL SECTION NO.9**  
**AT THE FOLLOWING LOCATION:**  
**-DR8- STA. 10+32.79 TO STA. 12+75.00**

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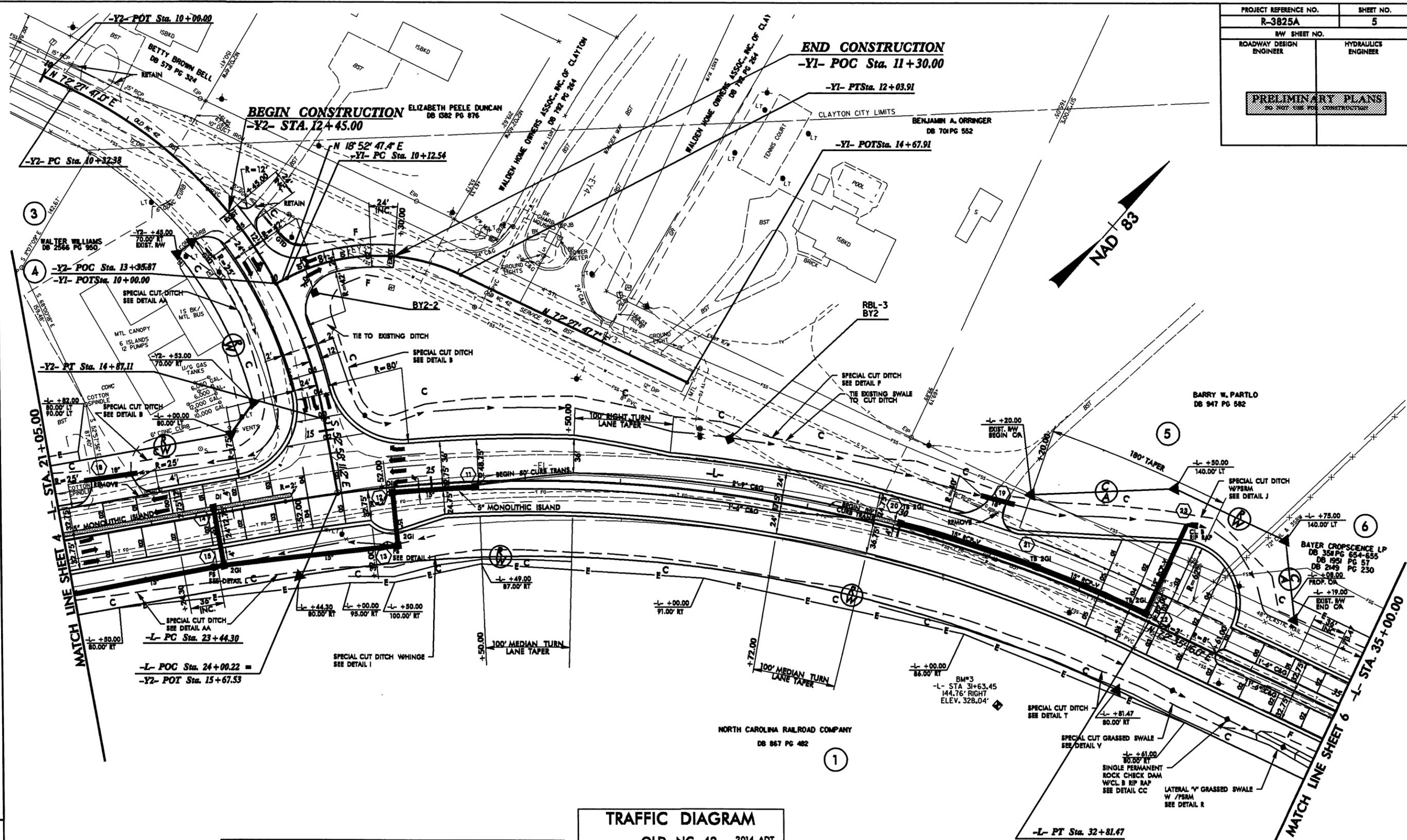


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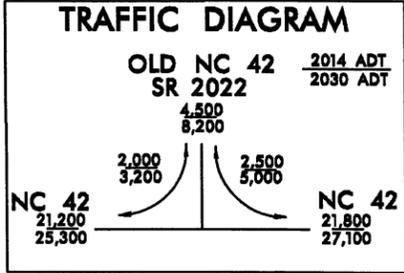
PROJECT REFERENCE NO. <b>R-3825A</b>	SHEET NO. <b>5</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b>	

03/23/11 RW REVISIONS: ADDED A U-TURN BULB, CA AND RW AND REMOVED THE TCE ON PARCELS NO. 5 AND 6. SCL

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USER:RDM



-L-	-Y2-	-Y1-
PI Sta 28+28.53	PI Sta 12+78.64	PI Sta 11+15.87
$\Delta = 35^{\circ} 33' 36.0''$ (RT)	$\Delta = 54^{\circ} 34' 01.8''$ (RT)	$\Delta = 53^{\circ} 35' 00.3''$ (RT)
D = 3' 47' 39.9"	D = 12' 00' 00.0"	D = 28' 00' 00.0"
L = 937.17'	L = 4547.3'	L = 191.37'
T = 484.23'	T = 246.26'	T = 103.33'
R = 1510.00'	R = 477.46'	R = 204.63'
SE = 0.05	SE = 0.05	SE = SEE PLANS
INC = 36'	INC = 24'	INC = 24'
RUNOFF = 180'	RUNOFF = SEE PLANS	RUNOFF = SEE PLANS



**DRIVEWAY RADII ARE 20' UNLESS OTHERWISE NOTED**

FOR -L- PROFILE SEE SHEET 11

FOR -Y1- PROFILE SEE SHEET 14

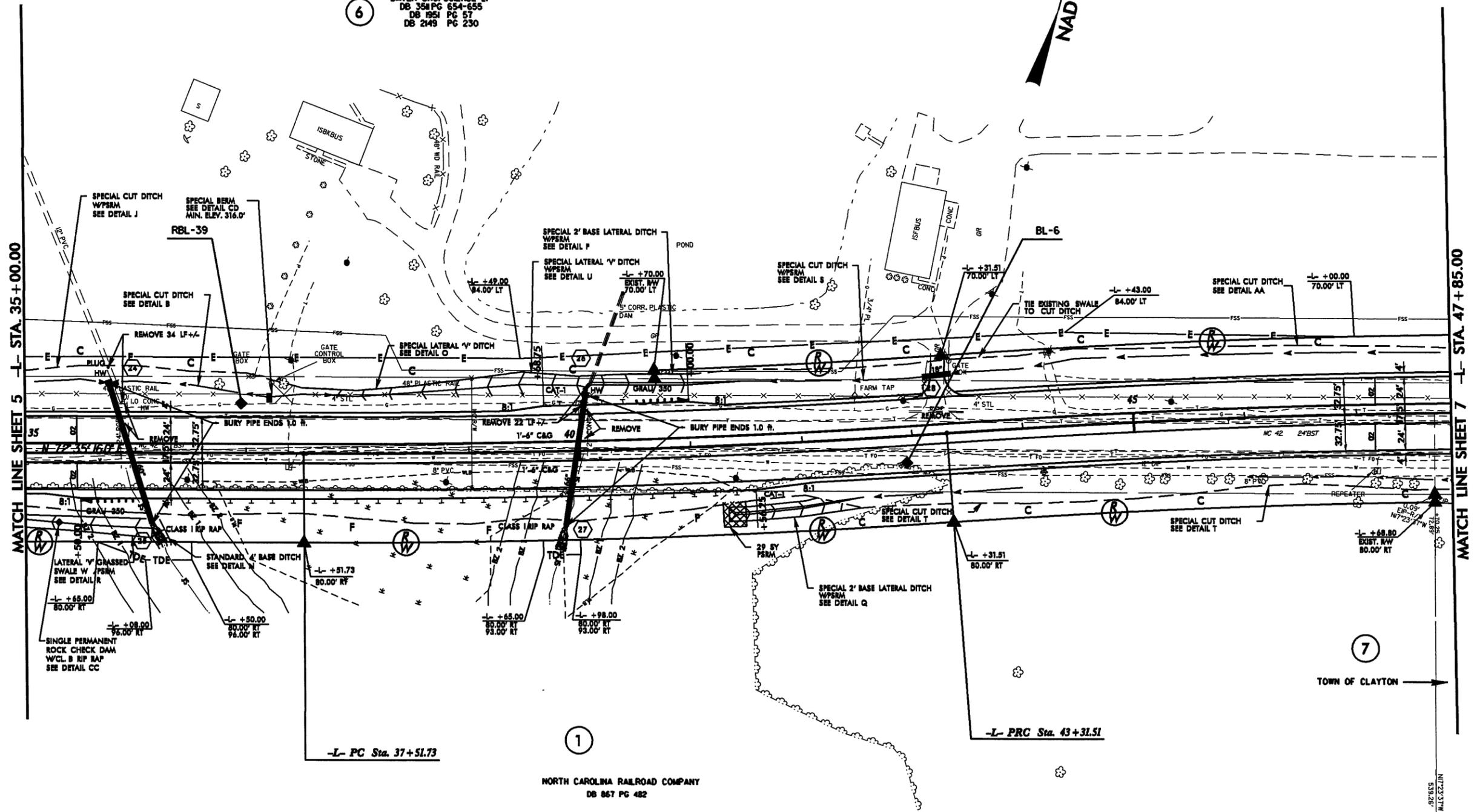
FOR -Y2- PROFILE SEE SHEET 14

7/2/99

23-MAR-2011 12:00  
R:\Roadwork\N\3825a\_rdy\_pah06.dgn  
\*\*\*USERNAME\*\*\*

PROJECT REFERENCE NO. <b>R-3825A</b>	SHEET NO. <b>6</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b>	

**6**  
BAYER CROSCIENCE LP  
DB 358 PG 654-655  
DB 1951 PG 57  
DB 2149 PG 230



MATCH LINE SHEET 5 -L- STA. 35+00.00

MATCH LINE SHEET 7 -L- STA. 47+85.00

-L- PC Sta. 37+51.73

**1**  
NORTH CAROLINA RAILROAD COMPANY  
DB 867 PG 482

-L- PRC Sta. 43+31.51

**7**  
TOWN OF CLAYTON

-L-	
PI Sta 40+41.74	PI Sta 46+21.53
$\Delta = 4^{\circ} 09' 08.6\" (LT)$	$\Delta = 4^{\circ} 09' 08.6\" (RT)$
$D = 0^{\circ} 42' 58.3\"$	$D = 0^{\circ} 42' 58.3\"$
$L = 579.78'$	$L = 579.78'$
$T = 290.02'$	$T = 290.02'$
$R = 8,000.00'$	$R = 8,000.00'$
SE = NC	SE = NC

**DRIVEWAY RADII ARE 20' UNLESS OTHERWISE NOTED**  
**FOR -L- PROFILE SEE SHEETS 11 & 12**

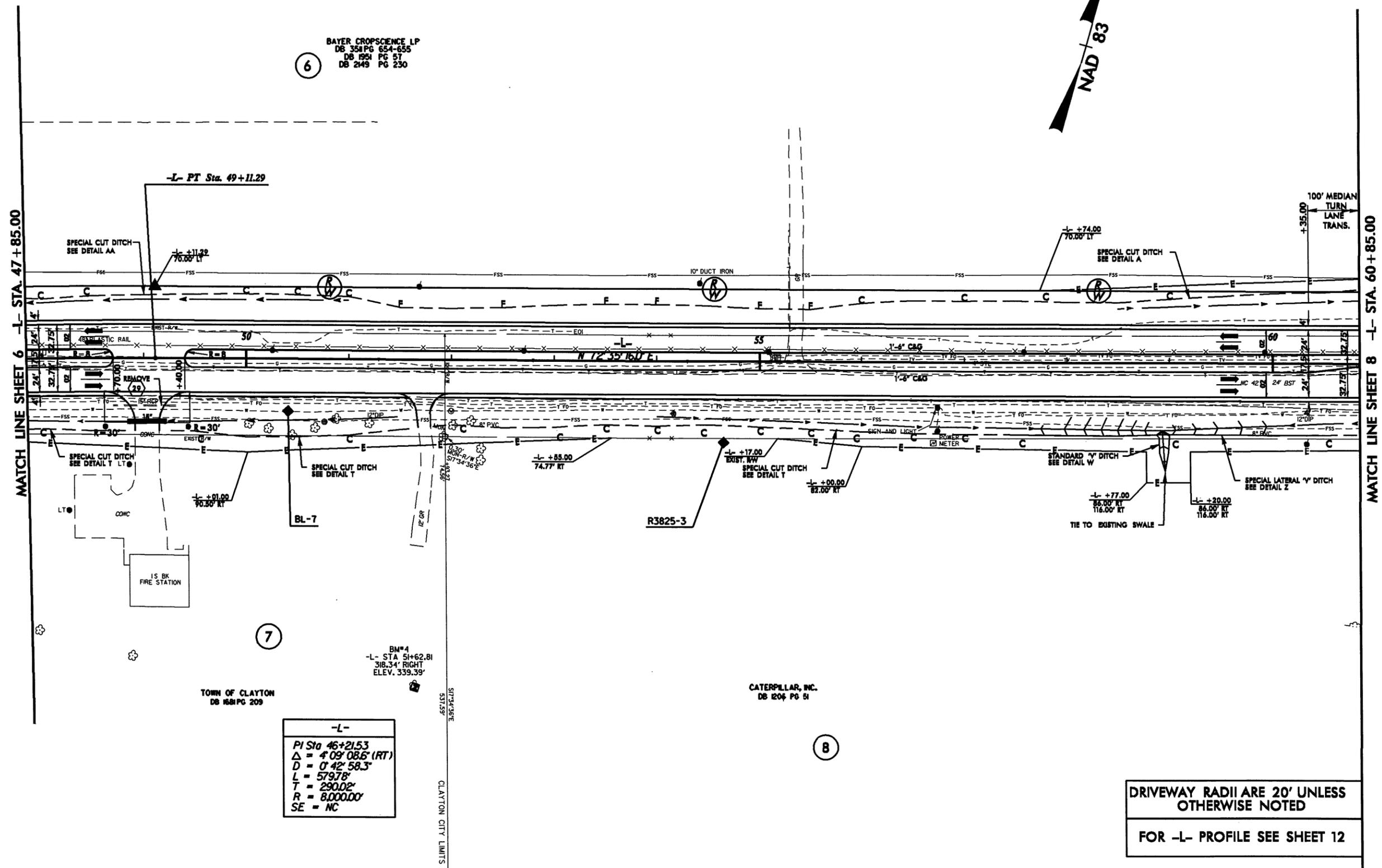
REVISIONS

CLAYTON CITY LIMITS

7/2/99

23-MAR-2011 12:00  
R:\Roadwork\N\3825a.rdj\_psh07.dgn  
USER:RVALE

PROJECT REFERENCE NO. <b>R-3825A</b>	SHEET NO. <b>7</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



6  
BAYER CROPSCIENCE LP  
DB 358 PG 654-655  
DB 1951 PG 57  
DB 2149 PG 230



-L- PT Sta. 49+11.29

MATCH LINE SHEET 6 -L- STA. 47+85.00

MATCH LINE SHEET 8 -L- STA. 60+85.00

7  
TOWN OF CLAYTON  
DB 1681 PG 209

BM#4  
-L- STA 51+62.81  
318.34' RIGHT  
ELEV. 339.39'

8  
CATERPILLAR, INC.  
DB 1204 PG 51

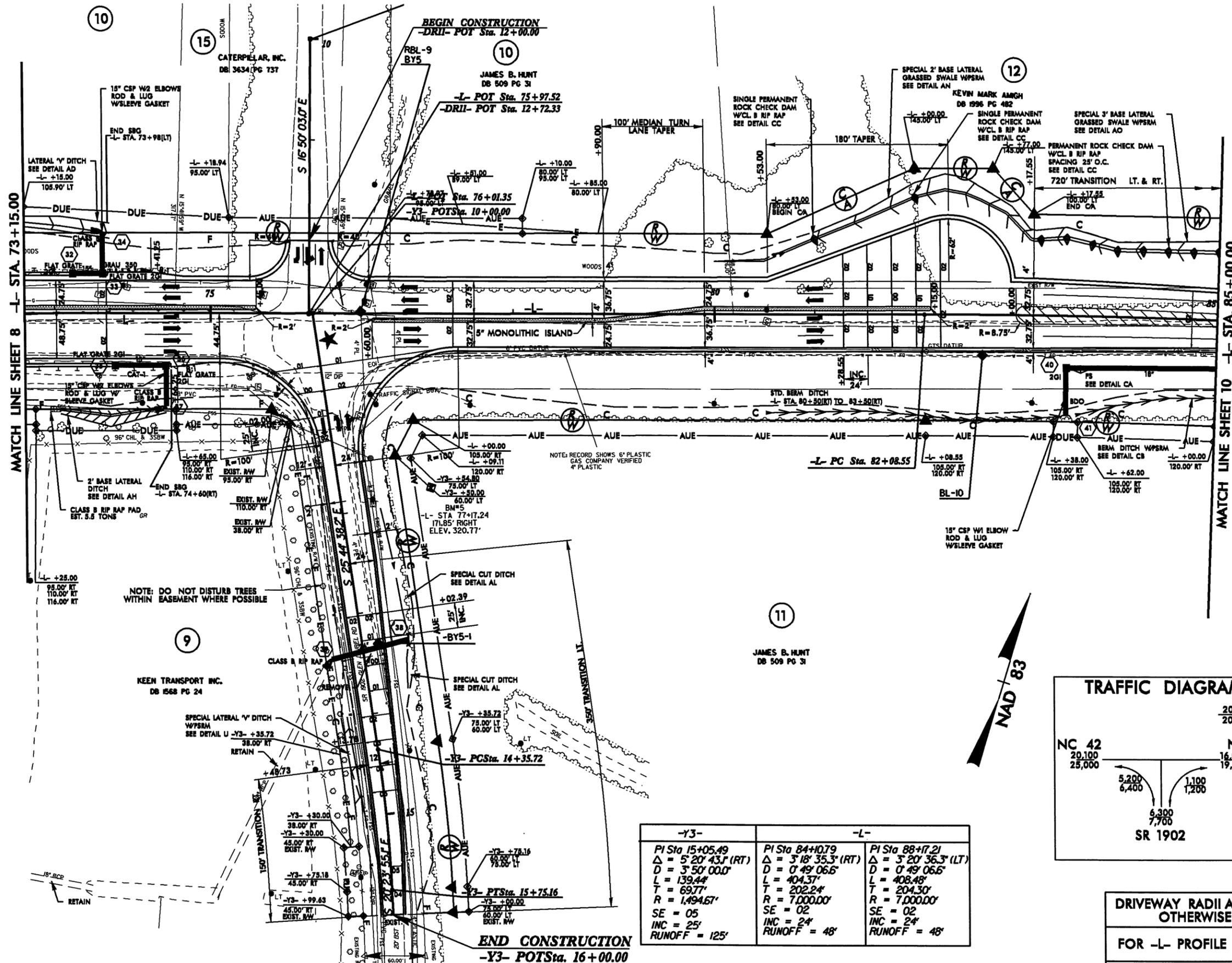
-L-	
PI Sta	46+21.53
Δ	4° 09' 08.6" (RT)
D	0' 42' 58.3"
L	579.78'
T	290.02'
R	8,000.00'
SE	NC

DRIVEWAY RADII ARE 20' UNLESS OTHERWISE NOTED  
FOR -L- PROFILE SEE SHEET 12

CLAYTON CITY LIMITS

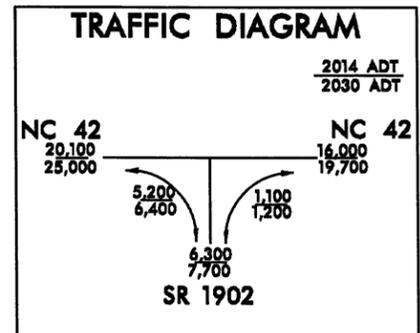


REVISIONS  
 06/07/10 RW REVISIONS: ADDED DUE AND PUE TO PARCELS NO. 9 AND 11; REMOVED PUE ON PARCELS NO. 9 AND 11; ADDED DUE ON PARCELS NO. 10 AND 11; ADDED DUE ON PARCEL NO. 10 AND REVISED TCE.  
 DPK  
 03/23/11 RW REVISIONS: ADDED AUE ON PARCELS NO. 10 AND 15; REVISED PUE TO AUE ON PARCELS NO. 9 AND 11; ADDED CA AND RW AND REMOVED TCE ON PARCEL NO. 12. SCL



NOTE: RECORD SHOWS 6" PLASTIC GAS COMPANY VERIFIED 4" PLASTIC

NOTE: DO NOT DISTURB TREES WITHIN EASEMENT WHERE POSSIBLE



-Y3-	-L-	-L-
PI Sta 15+05.49	PI Sta 84+10.79	PI Sta 88+17.21
$\Delta = 5' 20'' 43.1''$ (RT)	$\Delta = 3' 18'' 35.3''$ (RT)	$\Delta = 3' 20'' 36.3''$ (LT)
D = 3' 50' 00.0"	D = 0' 49' 06.6"	D = 0' 49' 06.6"
L = 139.44'	L = 404.37'	L = 408.48'
T = 69.77'	T = 202.24'	T = 204.30'
R = 1,494.61'	R = 7,000.00'	R = 7,000.00'
SE = 05	SE = 02	SE = 02
INC = 25'	INC = 24'	INC = 24'
RUNOFF = 125'	RUNOFF = 48'	RUNOFF = 48'

DRIVEWAY RADII ARE 20' UNLESS OTHERWISE NOTED

FOR -L- PROFILE SEE SHEET 13

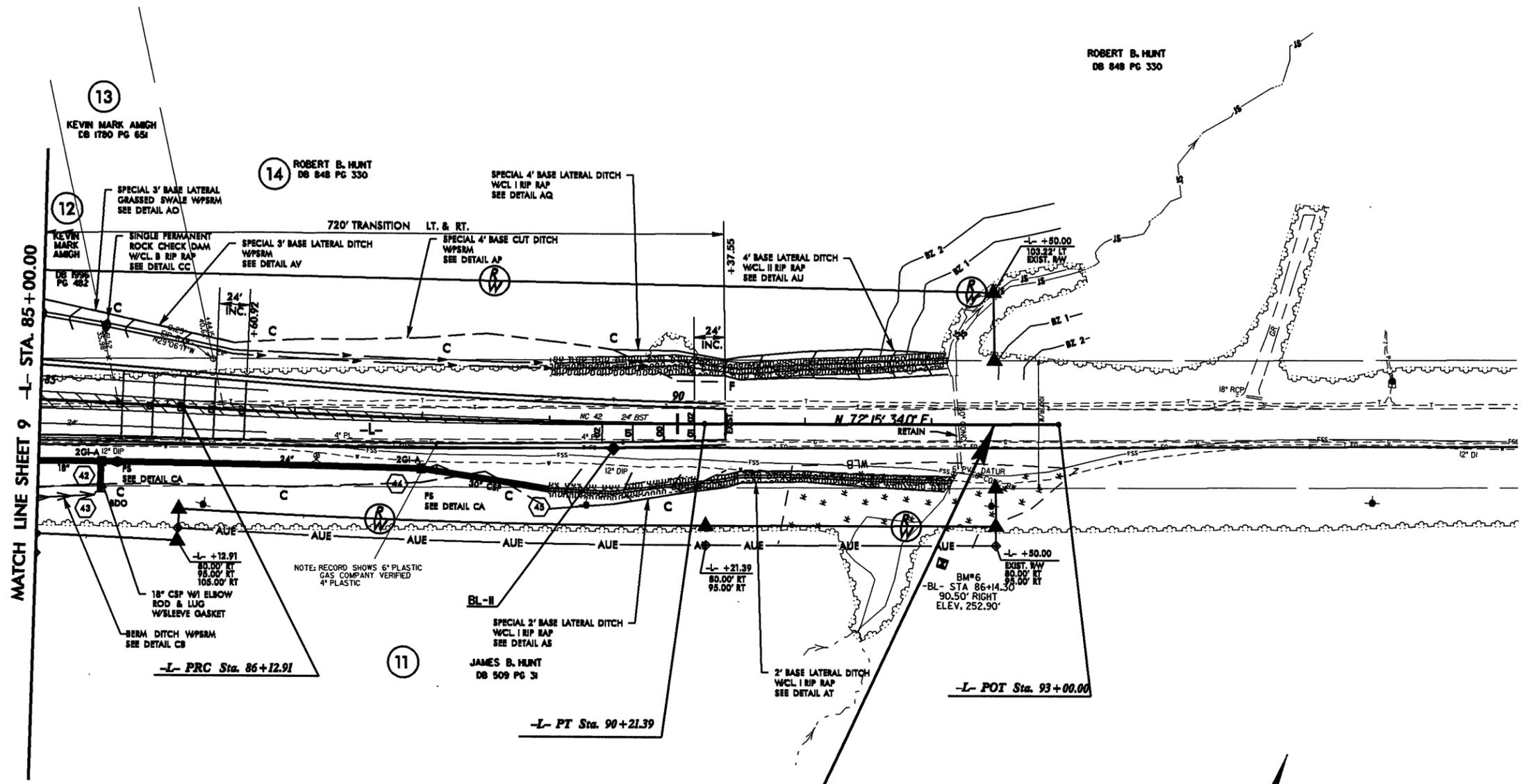
FOR -Y3- PROFILE SEE SHEET 14

★ PROPOSED SIGNAL

7/2/96

REVISIONS  
06/07/90 RW REVISION: ADDED PUE TO PARCEL NO. 11, DDK  
03/23/91 RW REVISION: REVISED PUE TO AUE ON PARCEL NO. 11; UPDATED PROPERTY OWNER NAME AND DEED REFERENCE ON PARCEL NO. 12; SC1  
23-MAR-2011 12:06  
R:\ROBERT\PROJECTS\3825A\rdy\_psh10.dgn  
\*\*\*USER:RMB\*\*\*

PROJECT REFERENCE NO. <b>R-3825A</b>	SHEET NO. <b>10</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



**END TIP PROJECT R-3825A**  
**-L- POT STA. 92+50.00**



DRIVEWAY RADII ARE 20' UNLESS OTHERWISE NOTED  
 FOR -L- PROFILE SEE SHEET 13

5/28/99

PROJECT REFERENCE NO. <b>R-3825A</b>	SHEET NO. <b>11</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b>	

BM #2 EL = 331.65'  
R. R. SPIKE SET IN A 24" PINE  
225' RT -L- 12+23.20

BEGIN GRADE  
L- STA. 10+56.96  
EL = 333.99'

PI = 14+00.00  
EL = 332.96'  
VC = 200'  
K = 439

PI = 16+00.00  
EL = 331.45'  
VC = 200'  
K = 755

PI = 18+00.00  
EL = 329.41'  
VC = 100'  
K = 141

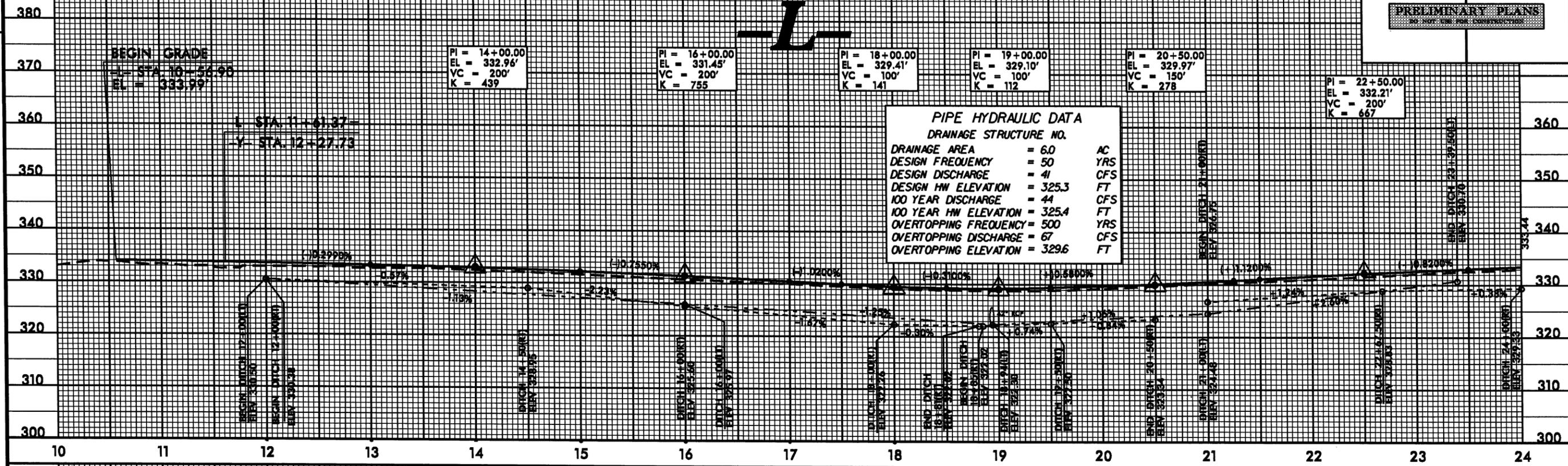
PI = 19+00.00  
EL = 329.10'  
VC = 100'  
K = 112

PI = 20+50.00  
EL = 329.97'  
VC = 150'  
K = 278

PI = 22+50.00  
EL = 332.21'  
VC = 200'  
K = 667

**PIPE HYDRAULIC DATA**  
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 6.0	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 41	CFS
DESIGN HW ELEVATION	= 325.3	FT
100 YEAR DISCHARGE	= 44	CFS
100 YEAR HW ELEVATION	= 325.4	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 67	CFS
OVERTOPPING ELEVATION	= 329.6	FT



FOR -L- ALIGNMENT SEE SHEETS 4 THROUGH 6

BM #3 EL = 328.04'  
R. R. SPIKE SET IN A 12" PINE  
144.76' RT -L- 31+63.45

PI = 25+00.00  
EL = 334.26'  
VC = 150'  
K = 127

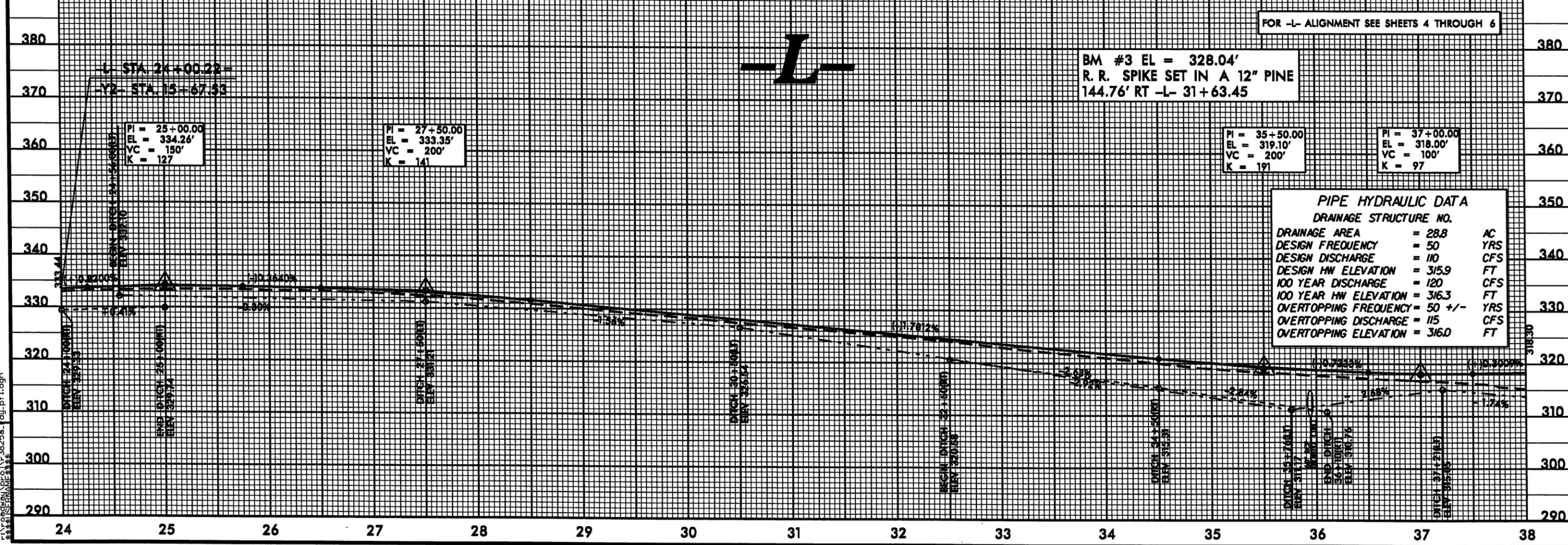
PI = 27+50.00  
EL = 333.35'  
VC = 200'  
K = 141

PI = 35+50.00  
EL = 319.10'  
VC = 200'  
K = 191

PI = 37+00.00  
EL = 318.00'  
VC = 100'  
K = 97

**PIPE HYDRAULIC DATA**  
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 28.8	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 110	CFS
DESIGN HW ELEVATION	= 315.9	FT
100 YEAR DISCHARGE	= 120	CFS
100 YEAR HW ELEVATION	= 316.3	FT
OVERTOPPING FREQUENCY	= 50 +/-	YRS
OVERTOPPING DISCHARGE	= 115	CFS
OVERTOPPING ELEVATION	= 316.0	FT



REVISIONS

23-MAR-2011 15:45  
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3825a.dwg

5/28/99

PROJECT REFERENCE NO. <b>R-3825A</b>	SHEET NO. <b>12</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b>	

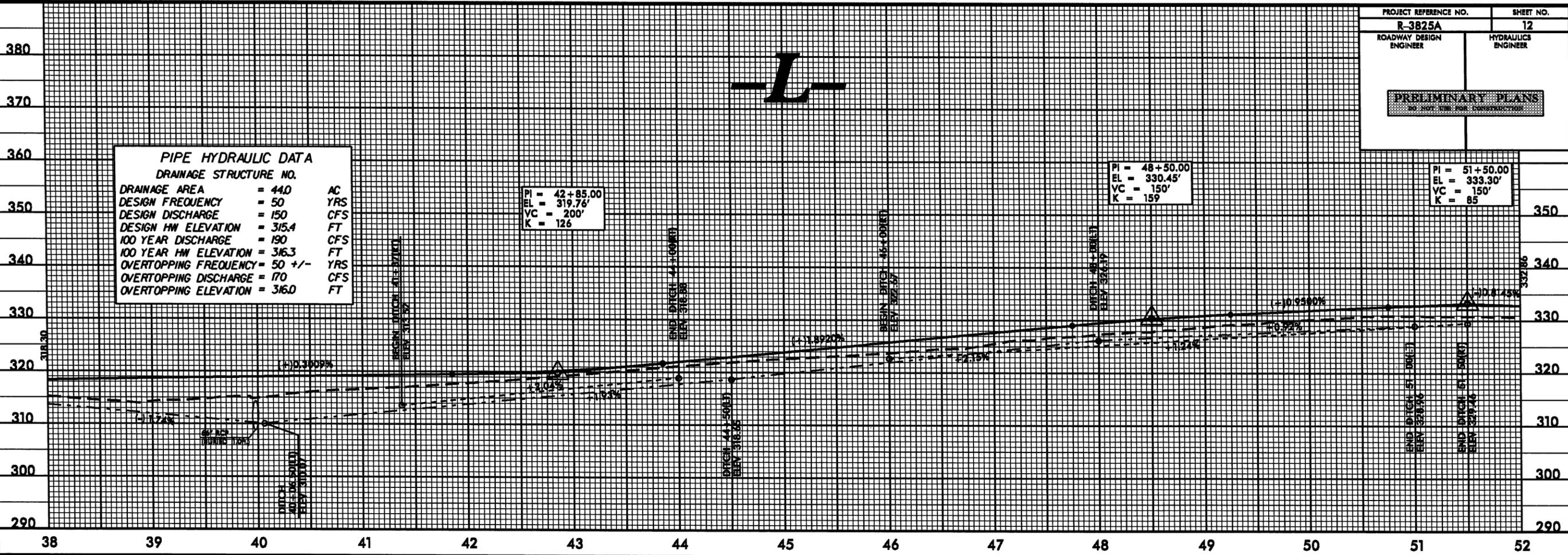
PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.	
DRAINAGE AREA	= 44.0 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 150 CFS
DESIGN HW ELEVATION	= 315.4 FT
100 YEAR DISCHARGE	= 190 CFS
100 YEAR HW ELEVATION	= 316.3 FT
OVERTOPPING FREQUENCY	= 50 +/- YRS
OVERTOPPING DISCHARGE	= 170 CFS
OVERTOPPING ELEVATION	= 316.0 FT

PI = 42+85.00  
EL = 319.76'  
VC = 200'  
K = 126

PI = 48+50.00  
EL = 330.45'  
VC = 150'  
K = 159

PI = 51+50.00  
EL = 333.30'  
VC = 150'  
K = 85

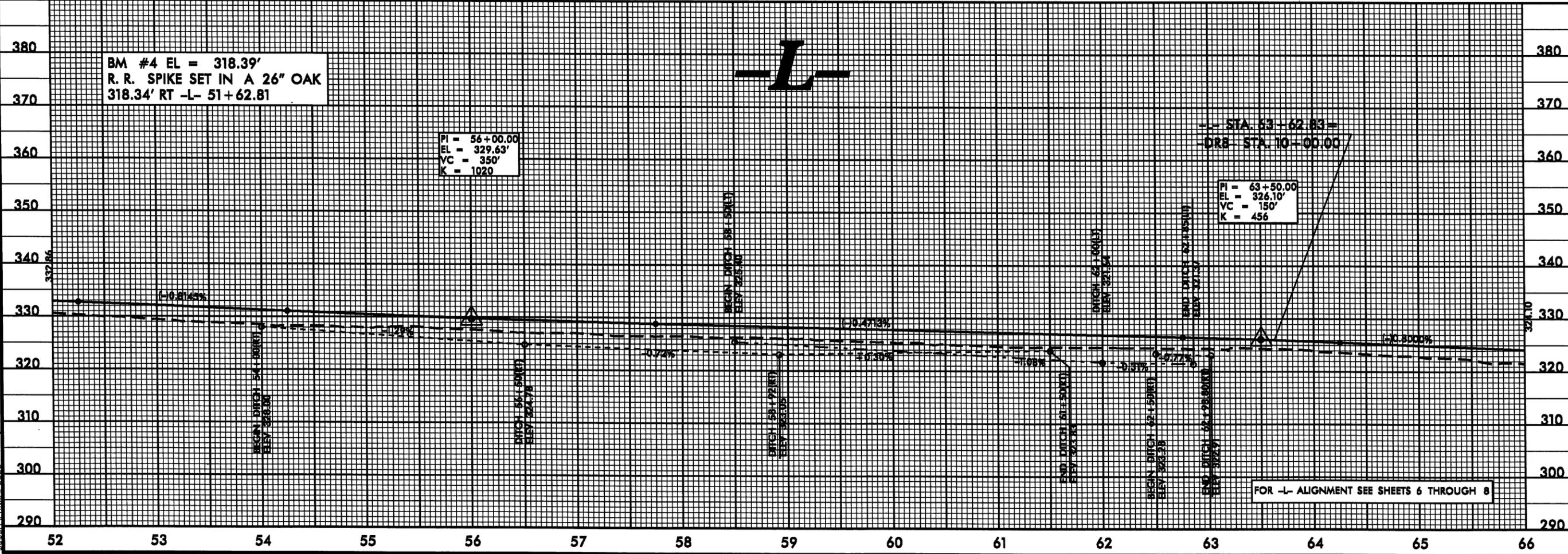
REVISIONS



BM #4 EL = 318.39'  
R. R. SPIKE SET IN A 26" OAK  
318.34' RT -L- 51+62.81

PI = 56+00.00  
EL = 329.63'  
VC = 350'  
K = 1020

PI = 63+50.00  
EL = 326.10'  
VC = 150'  
K = 456

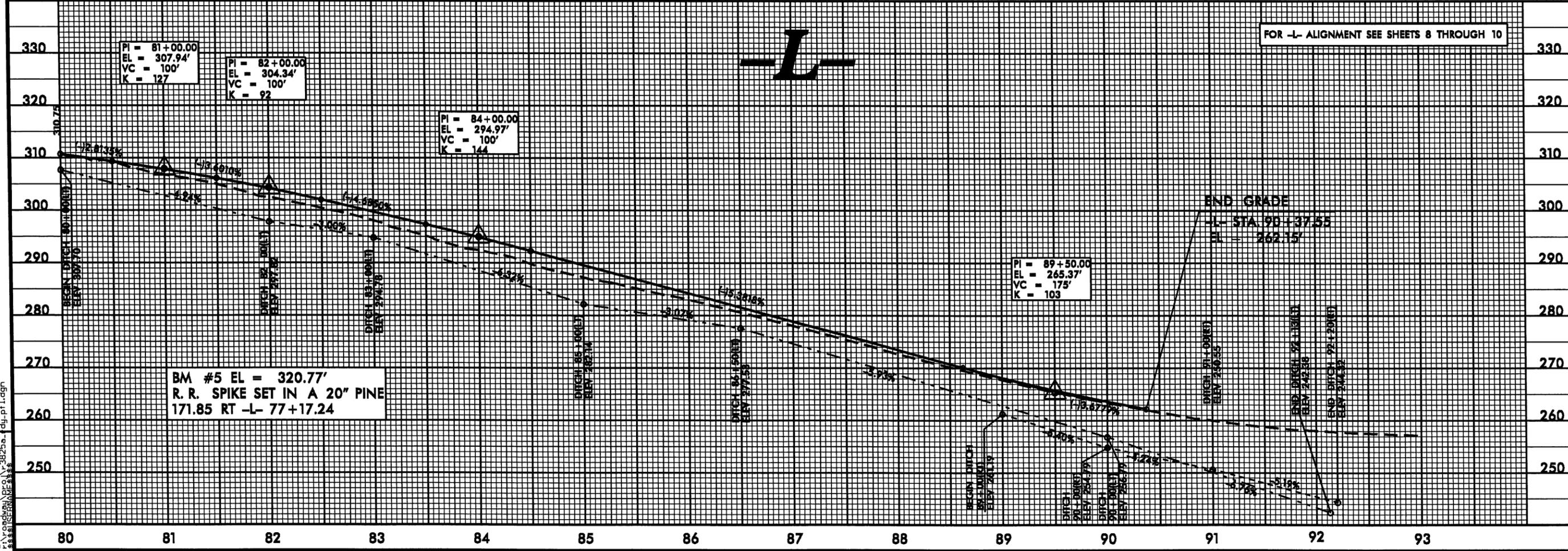
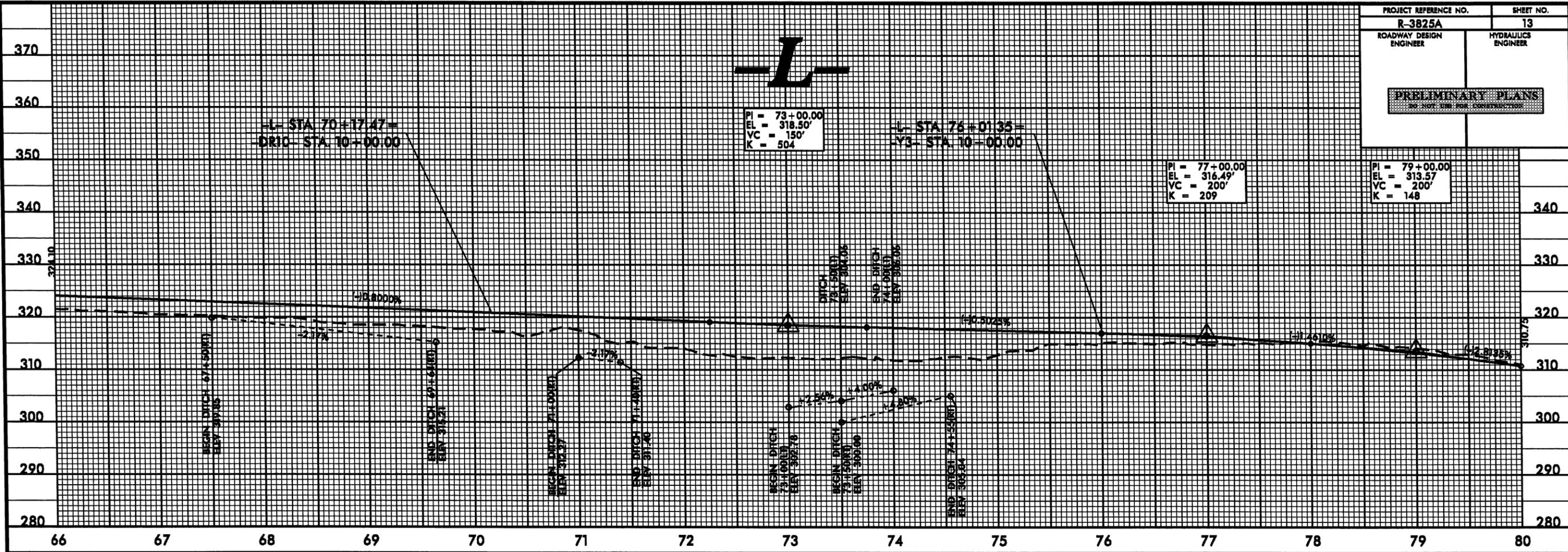


FOR -L- ALIGNMENT SEE SHEETS 6 THROUGH 8

23-MAR-2011 15:15  
C:\pwork\3825a.dgn  
3825a.dwg

5/28/99

PROJECT REFERENCE NO. <b>R-3825A</b>	SHEET NO. <b>13</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b>	



REVISIONS

24-MAR-2011 11:27  
 21:\work\proj\3825a\1.dwg, pt1.dgn  
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