STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

November 9, 2011

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

Mr. Stephen Lane
N.C. Dept. of Environment and Natural Resources
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

Dear Sirs:

Subject: **Application for Individual Section 404, Section 401 Water Quality Certification, Section 10 Permit, Isolated Waters Permit and CAMA Major Development Permit** for the proposed improvements to US 70 from existing four lanes at Radio Island to north of Olga Road (SR 1426), Carteret County, State Project No. 8.1162501, Federal Aid Project STPNHF-70(43), TIP R-3307. Debit $475.00 from WBS 34528.1.1.

The North Carolina Department of Transportation (NCDOT), Division of Highways, in consultation with the Federal Highway Administration (FHWA), proposes to replace the existing drawbridge over Gallants Channel and related approaches, with a longer high-rise fixed bridge and improve US 70 to a multilane facility.

The purpose of this letter is to request approval for a Section 404 Individual Permit, a Section 401 Water Quality Certification, and a CAMA Major Development Permit. In addition to the cover letter ENG Form 4345, and CAMA MP Forms, this application package includes the following for R-3307: permit drawings, half size roadway plans, Turner Street Marsh Restoration Plan, and EEP Acceptance Letter.

1.0 Purpose and Need

The purpose for this project, as identified in the Final Environmental Assessment (EA), is to eliminate travel delays occurring at the drawbridge and to increase the traffic carrying capacity of US 70 through the town of Beaufort.

2.0 Project Description

The improvements involve replacement of the existing drawbridge over Gallants Channel and related approaches, with a longer high-rise fixed bridge and improve US 70 to a multilane facility. The proposed 3,395-foot bridge will carry a 4-lane divided roadway with 12-foot travel lanes, 8-foot bridge offsets, a 4-foot raised island, and a 1-foot offset on each side. In addition,

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

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

WEBSITE: WWW.NCDOT.ORG

LOCATION:
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610-4328

improvements to Turner Street include a 40-foot, three-lane curb and gutter section with two 12-foot travel lanes, and a 12-foot center turn lane. A 585-foot bridge with 8-foot offsets is proposed to replace the 61-foot box culvert on Turner Street. Total project length is 3.6 miles.

3.0 Summary of Impacts

Waters of the U.S.: Proposed impacts to jurisdictional areas total 6.97 acres of permanent wetland impacts, 0.04 acre of temporary wetland impacts, 851 feet of permanent stream impacts, and 41 feet of temporary stream impacts.

4.0 Summary of Mitigation

The proposed construction of R-3307 will impact 6.97 acres of jurisdictional wetlands that will require mitigation. The unavoidable impacts to the 0.5 acre of CAMA jurisdictional wetlands will be offset by on-site mitigation (see attached Turner Street Marsh Restoration Plan). The remaining unavoidable impacts to 1.78 acres of jurisdictional riparian wetlands, 4.51 acres of non-riparian wetlands, and 0.18 acre of isolated wetland will be offset by compensatory mitigation provided by the NC Ecosystem Enhancement Program (EEP). In addition, the unavoidable impacts to 843 linear feet of jurisdictional stream will also be offset by compensatory mitigation provided by the NC Ecosystem Enhancement Program (EEP).

5.0 Project Schedule

Currently, R-3307 has a review date of May 29, 2012 and is scheduled to let July 17, 2012; it will be available for construction shortly thereafter. The let date, however, may advance as additional funds become available.

6.0 NEPA Document Status

The FHWA and NCDOT completed the EA in October 2004 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) Statement was completed September 2006 and a FHWA Right-of-Way Consultation was completed June 2008. 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-3307 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 White Oak River Basin and lies within Hydrologic Unit 03020106 (Subbasin 03-05-03). This is within the Southern Outer Coastal Plain eco-region. The project crosses Gallants Channel and Town Creek.

7.1 Wetland Delineations

A wetland identification and preliminary assessment analysis 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 wetlands to the maximum extent possible. Wetland delineations were completed between February 1999 and November 1999. Subsequently, wetland delineations were updated in June 2007. This delineation was later field verified by Mr. William Wescott of the USACE, Wilmington District, and Mr. Stephen Lane with the N.C. Division of Coastal Management (NCDCM) on June 27, 2007.

7.2 Stream Delineations

Data collected for streams were derived from USGS topographic maps, the Carteret County Soil Survey (USDA, 1987), and site reconnaissance. The data included stream classification, which was presented in the NRTR. The USACE concurred on stream classifications on June 27, 2007, when Mr. William Wescott with the USACE visited the site.

7.3 R-3307: Characterization of Jurisdictional Sites

7.3.1 Wetlands

There are three wetland communities found within the project study area: Salt Marsh, Scrub Shrub, and Pine Flat. 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.

7.3.2 Streams

Best Usage Classifications for jurisdictional streams are provided in the EA. There are waters within the project vicinity classified as High Quality Waters (HQW), including the Newport River (Beaufort, Gallants, and Morehead Channels), Bogue Sound, Taylors Creek, Town Creek,

and Turner Creek. As such, NCDOT's Design Standards in Sensitive Watersheds will be implemented for this project.

Neither Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds), nor Outstanding Resource Waters (ORW) occur within 1.0 mile of the project study area. Gallants Channel and Town Creek are not designated as North Carolina Natural or Scenic Rivers, or as National Wild and Scenic Rivers. Additionally, these waters are not listed on the Final 2010 303(d) list of impaired waters due to sedimentation or turbidity for the White Oak River Basin, nor do they drain into any Section 303(d) waters within 1.0 mile of the project study area.

7.4 Impacts to Jurisdictional Resources

Impacts to jurisdictional wetlands and surface waters for R-3307 are summarized below in Tables 1 & 2 respectively.

Table 1. R-3307 Wetlands Impacts

Permit Drawing Site Number (2011)	Map Label in FONSI (2001)	Type	Permanent Impacts (ac.)	Temporary Impacts* (ac.)	Mitigation Required**
1	A, D	Coastal	0.18	0.07	Yes
2	G, H	Riparian/Coastal	1.83	0	Yes
4	L	Isolated	0.18	0	Yes
5	O	Non-Riparian	4.51	0	Yes
6	J	Coastal	0.07	< 0.01	Yes
7	K	Coastal	0.20	0	Yes
		Total:	**6.97**	**0.07**	**Yes**

* There will be 0.04 acres of Temporary Fill in wetlands for erosion control measures
**For permanent impacts

Table 2. R-3307 Surface Water Impacts

Permit Drawing Site Number	Waterbody	Permanent (ft)	Temporary (ft)	Permanent (ac.)	Temporary (ac.)	Mitigation Required***
1	Gallants Channel	0	0	0.03	0.06	No
2	UT to Gallants Channel	155*	9	0.02	0.01	Yes
3	UT to Town Creek	189**	22	0.04	0.01	Yes
4	UT to Gallants Channel	499	10	0.16	< 0.01	Yes
6	Town Creek	0	0	< 0.01	< 0.01	No
7	Town Creek	8	0	0	0	No
	Total:	**851**	**41**	**0.25**	**0.09**	

* Includes 16 linear feet of impacts from bank stabilization; mitigation required by the USACE exceeds the amount required by NCDWQ
** Includes 24 linear feet of impacts from bank stabilization; mitigation required by the USACE exceeds the amount required by NCDWQ
*** For permanent impacts

Permanent Impacts: Proposed permanent impacts for R-3307 include fill, excavation, and mechanized clearing in wetlands. This includes impacts to 0.5 acre of CAMA jurisdictional coastal wetlands, 1.78 acres of riparian wetlands, 4.51 acres of non-riparian wetlands, and 0.18 acre of a NCDWQ jurisdictional isolated wetland. Proposed permanent impacts to surface waters are 851 linear feet (0.25 acre), which includes two pipes proposed to be extended and replaced at unnamed tributaries (UT) to Gallants Channel and a UT to Town Creek (sites 2 & 3), bridge construction over Gallants Channel and Town Creek, and the resulting fill and bank stabilization. Stream impacts were not addressed in the EA or FONSI, but were shown on the draft permit drawings provided at the 4C Permit Drawing Review meeting held October 20, 2010.

Temporary Impacts: There will be 41 linear feet of temporary impacts to surface water due to bridge construction and pipe installations. In addition, there will be 0.04 acre of temporary fill in CAMA wetlands for erosion control measures.

Hand-Clearing: There will be 0.20 acre of hand-clearing in jurisdictional wetlands due to project construction.

Utility Impacts: There will be < 0.01 acre of impacts due to fill associated with utilities. In addition, there will be 0.41 acre of hand-clearing due to utility relocations. As written approval is not required we will proceed with these activities under a Nationwide 12. A CAMA General Permit application has been submitted under separate cover.

8.0 Protected Species

The United States Fish and Wildlife Service (USFWS) list 13 federally protected species for Carteret County as of the March 21, 2011 listing (Table 3).

Table 3. Federally Protected Species in Carteret County

Scientific Name	Common Name	Federal Status	Habitat	Biological Conclusion
Alligator mississippiensis	American alligator	T(S/A)	Yes	N/A
Chelonia mydas	Green sea turtle	T	No	No Effect
Lepidochelys kempii	Kemp's ridley sea turtle	E	No	No Effect
Eretmochelys imbricata	Hawksbill sea turtle	E	No	No Effect
Dermochelys coriacea	Leatherback sea turtle	E	No	No Effect
Caretta caretta	Loggerhead sea turtle	T	No	No Effect
Charadrius melodus	Piping plover	T	No	No Effect
Picoides borealis	Red-cockaded woodpecker	E	No	No Effect
Sterna dougallii dougallii	Roseate tern	E	No	No Effect
Acipenser brevirostrum	Shortnose sturgeon	E	No	No Effect
Trichechus manatus	West Indian manatee	E	Yes	MANLAA
Lysimachia asperulaefolia	Rough-leaved loosestrife	E	No	No Effect
Amaranthus pumilus	Seabeach amaranth	T	No	No Effect

Key: E= Endangered, T= Threatened, T(S/A)= Threatened(Similarity of Appearance), MANLAA= May Affect, Not Likely to Adversely Affect

A Concurrence Request providing Biological Conclusions for each species was submitted to the USFWS in November 30, 2007. The USFWS responded with concurrence on December 26, 2007. A copy of the USFWS concurrence letter is included with this application.

A review of the North Carolina Natural Heritage Program (NCNHP) database, updated August 2011, indicated two occurrences of protected species within one mile of the project study area: West Indian manatee (last observed 2007) and seabeach amaranth (last observed 1991). As a result, the NCDOT will utilize *The Guidelines for Avoiding Impacts to the West Indian Manatee: Precautionary Measures for Construction Activities in North Carolina Waters* to the maximum extent practicable.

8.1 Bald and Golden Eagle Protection Act (BGPA)

In the July 9, 2007 Federal Register (72:37346-37372), the bald eagle was declared recovered, and removed (de-listed) from the Federal List of Threatened and Endangered wildlife. This delisting took effect August 8, 2007. After delisting, the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d) became the primary law protecting bald eagles. A survey was conducted on November 21, 2007 found no nests within 660 feet of the project limits; however, nesting and foraging habitat was present.

8.2 Moratoria

No moratoria have been recommended for R-3307.

9.0 Cultural Resources

NCDOT coordinated with the NC Department of Cultural Resources to develop a Memorandum of Agreement (MOA) between NCDOT, FHWA, SHPO and the Town of Beaufort. The MOA addresses the concerns and incorporates the recommendations made by NC Department of Cultural Resources (see FONSI Appendix D).

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 December 2, 1999, which 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 R-3307. 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 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.
- As part of the proposed design, part of the existing roadway along Turner Street and the metal pipe culverts at Town Creek shall be removed and replaced with a 585-foot long bridge.
- Preformed Scour Holes will be used where practicable.
- Storm water will be treated using grass swales and an infiltration basin.
- The use of 1.5:1 fill slopes between Sta. 28+00 to Sta. 29+50 and 3:1 fill slopes in jurisdictional areas when practicable elsewhere.
- NCDOT will implement Best Management Practices for Bridge Demolition and Removal.
- 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 were applicable
- Deck drains for the proposed bridge carrying US 70 over Gallants Channel will be designed so that runoff is not discharged directly into Gallants Channel.
- NCDOT will implement the "Guidelines for Avoiding Impacts to the West Indian Manatee: Precautionary Measures for North Carolina Waters."
- The use of hand clearing rather than mechanized clearing where possible.

11.3 Compensation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The unavoidable impacts to CAMA jurisdictional wetlands will be offset by on-site mitigation resulting 1.56 acres of restoration from causeway removal on Turner

Street (see permit drawings and Turner Street Marsh Restoration Plan). The unavoidable impacts to jurisdictional riparian and non-riparian wetlands, the NCDWQ jurisdictional isolated wetland, and surface waters will be offset by compensatory mitigation provided by the EEP.

Of the 851 linear feet of stream impacts, 48 linear feet are impacts from bank stabilization. The NCDWQ requires that any bank stabilization impact be mitigated for a 1:1 ratio if the total permanent impact to the stream is over 150 linear feet. However, the 2:1 mitigation ratio will exceed the amount of 1:1 mitigation NCDWQ requires for this impact. Therefore, 2:1 mitigation will be calculated based on 803 linear feet of impacts. A copy of the revised EEP acceptance letter, dated October 27, 2011, is attached.

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, R-3307 should not incrementally result in substantial cumulative effects.

The Indirect Screening Report & Land Use Scenario Assessment, dated May 20, 2011, suggests that given the minimal indirect effects of R-3307, the contribution of the project to cumulative effects resulting from current and planned development patterns should be minimal. For these reasons, potential indirect and cumulative effects to downstream water quality should also be minimal. No additional ICE study is recommended.

13.0 Regulatory Approvals

Section 404: Application is hereby made for a USACE Individual 404 Permit as required for the above-described activities. As previously mentioned, utility relocation activities are to proceed under the general conditions of the Nationwide 12.

Section 401: We are also requesting a Section 401 Water Quality Certification from the NCDWQ. We are providing five (5) copies of this application to the NCDWQ, for their approval. Utility relocation activities are to proceed under the conditions of General Certification # 3699.

Isolated Waters: Application is hereby made for a NCDWQ Isolated Waters Permit as required for the above-described activities.

Section 10: Application is hereby made for a USACE Section 10 Permit as required for the above-described activities.

CAMA: NCDOT requests that the proposed work be authorized under a Coastal Area Management Act Major Development Permit. The landowner receipts are provided with this

permit application. The return receipts will be forwarded once they have been received. A CAMA General Permit application has been submitted under separate cover for utility relocations. Authorization to debit the $475 Permit Application Fee from WBS Element 34528.1.1 is hereby given.

USCG: Under separate cover, NCDOT submitted a request for a United States Coast Guard (USCG) permit for R-3307 on August 17, 2010.

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 Tyler Stanton at 919-707-6156 or tstanton@ncdot.gov.

Sincerely,

E. L. Lusk

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

cc:

NCDOT Permit Application Standard Distribution List.

U.S. ARMY CORPS OF ENGINEERS

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

(33 CFR 325)

OMB APPROVAL NO. 0710-0003
EXPIRES: 31 AUGUST 2012

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

PRIVACY ACT STATEMENT

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

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

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

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Middle - Last -	First - Middle - Last -
Company - North Carolina Department of Transportation	Company -
E-mail Address - tstanton@ncdot.gov	E-mail Address -
6. APPLICANT'S ADDRESS:	9. AGENT'S ADDRESS:
Address- 1548 Mail Service Center	Address-
City - Raleigh State - NC Zip - 27699 Country - USA	City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. w/AREA CODE	10. AGENTS PHONE NOs. w/AREA CODE
a. Residence b. Business 919.707.6000 c. Fax 919.250.4224	a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

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

_____ _____
SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
R-3307

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Gallants Channel	Address
15. LOCATION OF PROJECT Latitude: °N 34.725125 Longitude: °W -76.667236	City - State- Zip-

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

17. DIRECTIONS TO THE SITE

Please see attached vicinity map and cover letter

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

Proposed replacement of the existing US 70 drawbridge over Gallants Channel and related approaches, with a longer high-rise fixed bridge and improve US 70 to a multilane facility. This involves proposed improvements to Turner Street, which include replacing the 61-foot box culvert with a 585-foot bridge.

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

Eliminate travel delays occurring at the drawbridge and to increase the traffic carrying capacity of US 70 through the town of Beaufort.

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

20. Reason(s) for Discharge

Construction of roadway and bridge.

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

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards

Please see attached permit drawings

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

Acres 6.97 acres (permanent) and 0.11 acre (temporary)

or

Linear Feet 851 (permanent) and 41 (temporary)

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).

a. Address- Please see sheet attached list in the permit drawing package.

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

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

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

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

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

E. L. Lupk for Gregory J. Thorpe, PhD — Nov 9, 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.

DCM MP-1

APPLICATION for Major Development Permit

(last revised 12/27/06)

North Carolina DIVISION OF COASTAL MANAGEMENT

1. Primary Applicant/ Landowner Information

Business Name North Carolina Department of Transportation		Project Name (if applicable) R-3307, Carteret County	
Applicant 1: First Name Gregory	MI	Last Name Thorpe	
Applicant 2: First Name	MI	Last Name	
If additional applicants, please attach an additional page(s) with names listed.			
Mailing Address 1598 Mail Service Center	PO Box	City Raleigh	State NC
ZIP 27699 1598	Country USA	Phone No. 919 - 707 - 6000 ext.	FAX No. 919 - 250 - 4224
Street Address *(if different from above)* 1000 Birch Ridge Drve	City Raelgih	State NC	ZIP 27610-
Email tstanton@ncdot.gov			

2. Agent/Contractor Information

Business Name			
Agent/ Contractor 1: First Name	MI	Last Name	
Agent/ Contractor 2: First Name	MI	Last Name	
Mailing Address	PO Box	City	State
ZIP		Phone No. 1 - - ext.	Phone No. 2 - - ext.
FAX No.	Contractor #		
Street Address *(if different from above)*	City	State	ZIP -
Email			

<Form continues on back>

3. Project Location

County (can be multiple)	Street Address	State Rd. #
Carteret	US 70 from four lanes at Radio Island to near Olga Road (SR 1426)	US 70

Subdivision Name	City	State	Zip
N/A	Beaufort	NC	28516 -

Phone No.	Lot No.(s) *(if many, attach additional page with list)*
- - ext.	, , , ,
a. In which NC river basin is the project located? White Oak	b. Name of body of water nearest to proposed project Gallants Channel & Town Creek
c. Is the water body identified in (b) above, natural or manmade? ☒Natural ☐Manmade ☐Unknown	d. Name the closest major water body to the proposed project site. Newport River
e. Is proposed work within city limits or planning jurisdiction? ☒Yes ☐No	f. If applicable, list the planning jurisdiction or city limit the proposed work falls within. Beaufort

4. Site Description

a. Total length of shoreline on the tract (ft.)	b. Size of entire tract (sq.ft.)
800 ft. (approximately 400 ft. on each shore)	Approximate Project Area = 3802000 sq. ft
c. Size of individual lot(s) N/A, , , *(If many lot sizes, please attach additional page with a list)*	d. Approximate elevation of tract above NHW *(normal high water)* or NWL *(normal water level)* 5.3' to 65' ☒NHW or ☐NWL

e. Vegetation on tract
maintained/disturbed vegetation, salt marsh, loblolly pine forest

f. Man-made features and uses now on tract
roadway, sidewalks, buildings, bridges, and culverts

g. Identify and describe the existing land uses adjacent to the proposed project site.
commercial, residential, forested

h. How does local government zone the tract?	i. Is the proposed project consistent with the applicable zoning? (Attach zoning compliance certificate, if applicable)
Port-Industrial, General Business, Commercial, Residential	☒Yes ☐No ☐NA

j. Is the proposed activity part of an urban waterfront redevelopment proposal?	☐Yes ☒No
k. Has a professional archaeological assessment been done for the tract? If yes, attach a copy.	☒Yes ☐No ☐NA
If yes, by whom?	NCDOT Archaeology Group
l. Is the proposed project located in a National Registered Historic District or does it involve a National Register listed or eligible property?	☒Yes ☐No ☐NA

<Form continues on next page>

m. (i) Are there wetlands on the site?	☒Yes ☐No
(ii) Are there coastal wetlands on the site?	☒Yes ☐No
(iii) If yes to either (i) or (ii) above, has a delineation been conducted? *(Attach documentation, if available)*	☒Yes ☐No

n. Describe existing wastewater treatment facilities.

A sanitary sewer pumping station is located near the intersection of West Beaufort Rd and Turner St. This station will be relocated.

o. Describe existing drinking water supply source.

N/A

p. Describe existing storm water management or treatment systems.

N/A

5. Activities and Impacts

a. Will the project be for commercial, public, or private use? ☐Commercial ☒Public/Government ☐Private/Community

b. Give a brief description of purpose, use, and daily operations of the project when complete.

Roadway and bridge for transportation use

c. Describe the proposed construction methodology, types of construction equipment to be used during construction, the number of each type of equipment and where it is to be stored.

Proposed construction utilizing temporary work bridges and potentially barges; however, no temporary causeway(s) will be used. Typical construction equipment includes crane, bulldozer, dump trucks, motor grader, etc.

d. List all development activities you propose.

Replace a movable span bridge with a high-rise fixed span bridge on new location and improve US 70 from four lanes at Radio Island to near Olga Road (SR 1426)

e. Are the proposed activities maintenance of an existing project, new work, or both? Both

f. What is the approximate total disturbed land area resulting from the proposed project? 64 ☐Sq.Ft or ☒Acres

g. Will the proposed project encroach on any public easement, public accessway or other area that the public has established use of? ☒Yes ☐No ☐NA

h. Describe location and type of existing and proposed discharges to waters of the state.

Existing Grayden Paul bridge has open steel deck that allows deck water to discharge directly to channel. New bridge will have closed drainage system. Treatment provided by infiltration basin for western end of bridge and by grass swale for eastern end of bridge. Existing causeway for Turner Street over Town Creek will be excavated and replaced with a bridge. Deck water will be routed to a grass swale for treatment.

i. Will wastewater or stormwater be discharged into a wetland?	☐Yes ☒No ☐NA
If yes, will this discharged water be of the same salinity as the receiving water?	☐Yes ☐No ☐NA
j. Is there any mitigation proposed? If yes, attach a mitigation proposal.	☒Yes ☐No ☐NA

<Form continues on back>

6. Additional Information

In addition to this completed application form, (MP-1) the following items below, if applicable, must be submitted in order for the application package to be complete. Items (a) – (f) are always applicable to any major development application. Please consult the application instruction booklet on how to properly prepare the required items below.

a. A project narrative.

b. An accurate, dated work plat (including plan view and cross-sectional drawings) drawn to scale. Please give the present status of the proposed project. Is any portion already complete? If previously authorized work, clearly indicate on maps, plats, drawings to distinguish between work completed and proposed.

c. A site or location map that is sufficiently detailed to guide agency personnel unfamiliar with the area to the site.

d. A copy of the deed (with state application only) or other instrument under which the applicant claims title to the affected properties.

e. The appropriate application fee. Check or money order made payable to DENR.

f. A list of the names and complete addresses of the adjacent waterfront (riparian) landowners and signed return receipts as proof that such owners have received a copy of the application and plats by certified mail. Such landowners must be advised that they have 30 days in which to submit comments on the proposed project to the Division of Coastal Management.

Name _____ Phone No. _____

Address _____

Name _____ Phone No. _____

Address _____

Name _____ Phone No. _____

Address _____

g. A list of previous state or federal permits issued for work on the project tract. Include permit numbers, permittee, and issuing dates.

_____

_____

h. Signed consultant or agent authorization form, if applicable.

i. Wetland delineation, if necessary.

j. A signed AEC hazard notice for projects in oceanfront and inlet areas. *(Must be signed by property owner)*

k. A statement of compliance with the N.C. Environmental Policy Act (N.C.G.S. 113A 1-10), if necessary. If the project involves expenditure of public funds or use of public lands, attach a statement documenting compliance with the North Carolina Environmental Policy Act.

7. Certification and Permission to Enter on Land

I understand that any permit issued in response to this application will allow only the development described in the application. The project will be subject to the conditions and restrictions contained in the permit.

I certify that I am authorized to grant, and do in fact grant permission to representatives of state and federal review agencies to enter on the aforementioned lands in connection with evaluating information related to this permit application and follow-up monitoring of the project.

I further certify that the information provided in this application is truthful to the best of my knowledge.

Date Nov 9, 2011 Print Name Gregory J. Thorpe, PhD

Signature E. L. Lusk for

Please indicate application attachments pertaining to your proposed project.

☒DCM MP-2 Excavation and Fill Information ☒DCM MP-5 Bridges and Culverts

☐DCM MP-3 Upland Development

☐DCM MP-4 Structures Information

Form DCM MP-2

EXCAVATION and FILL

(Except for bridges and culverts)

Attach this form to Joint Application for CAMA Major Permit, Form DCM MP-1. Be sure to complete all other sections of the Joint Application that relate to this proposed project. Please include all supplemental information.

Describe below the purpose of proposed excavation and/or fill activities. **All values should be given in feet.**

	Access Channel (NLW or NWL)	Canal	Boat Basin	Boat Ramp	Rock Groin	Rock Breakwater	Other (excluding shoreline stabilization)
Length							
Width							
Avg. Existing Depth					NA	NA	
Final Project Depth					NA	NA	

1. *EXCAVATION*

☐ *This section not applicable*

a. Amount of material to be excavated from below NHW or NWL in cubic yards.
50

b. Type of material to be excavated.
soil

c. (i) Does the area to be excavated include coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.
☐CW ____ ☐SAV ____ ☐SB ____
☐WL ____ ☒None

(ii) Describe the purpose of the excavation in these areas:
Bridge construction and to allow access for future maintenance and inspection

d. High-ground excavation in cubic yards.
675

2. *DISPOSAL OF EXCAVATED MATERIAL*

☐ *This section not applicable*

a. Location of disposal area.
To be determined by the contractor

b. Dimensions of disposal area.
To be determined by the contractor

c. (i) Do you claim title to disposal area?
☐Yes ☒No ☐NA

(ii) If no, attach a letter granting permission from the owner.

d. (i) Will a disposal area be available for future maintenance?
☐Yes ☐No ☐NA

(ii) If yes, where?
To be determined by the contractor

e. (i) Does the disposal area include any coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.
☐CW ____ ☐SAV ____ ☐SB ____
☐WL ____ ☒None

(ii) Describe the purpose of disposal in these areas:

f. (i) Does the disposal include any area in the water?
☐Yes ☐No ☐NA

(ii) If yes, how much water area is affected?
To be determined by the contractor

3. SHORELINE STABILIZATION

☒ *This section not applicable*

(If development is a wood groin, use MP-4 – Structures)

a. Type of shoreline stabilization:
☐Bulkhead ☐Riprap ☐Breakwater/Sill ☐Other: _____

b. Length: _____
Width: _____

c. Average distance waterward of NHW or NWL:

d. Maximum distance waterward of NHW or NWL:

e. Type of stabilization material:

f. (i) Has there been shoreline erosion during preceding 12 months?
☐Yes ☒No ☐NA
(ii) If yes, state amount of erosion and source of erosion amount information.

g. Number of square feet of fill to be placed below water level.
Bulkhead backfill _____ Riprap _____
Breakwater/Sill _____ Other _____

h. Type of fill material.

i. Source of fill material.

4. OTHER FILL ACTIVITIES

☐ *This section not applicable*

(Excluding Shoreline Stabilization)

a. (i) Will fill material be brought to the site? ☒Yes ☐No ☐NA
If yes,
(ii) Amount of material to be placed in the water _____
(iii) Dimensions of fill area _____
(iv) Purpose of fill
Fill (not for bridge) will be brought to the site, but not placed in the water. Purpose will be to support the roadway.

b. (i) Will fill material be placed in coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.
☐CW _____ ☐SAV _____ ☐SB _____
☒WL 173,460 ☐None
(ii) Describe the purpose of the fill in these areas:
To support the roadway

5. GENERAL

a. How will excavated or fill material be kept on site and erosion controlled?
Use of standard NCDOT Best Management Practices and erosion control measures.

b. What type of construction equipment will be used (e.g., dragline, backhoe, or hydraulic dredge)?
Heavy highway construction equipment

c. (i) Will navigational aids be required as a result of the project?
☐Yes ☒No ☐NA
(ii) If yes, explain what type and how they will be implemented.

d. (i) Will wetlands be crossed in transporting equipment to project site? ☒Yes ☐No ☐NA
(ii) If yes, explain steps that will be taken to avoid or minimize environmental impacts.
Use of standard NCDOT Best Management Practices and erosion control measures.

Nov 9, 2011

Date

R-3307

Project Name

Gregory J. Thapp, PhD

Applicant Name

E. L. Lusk for

Applicant Signature

R-3307 GALLANTS CHANNEL BRIDGE

Form DCM MP-5

BRIDGES and CULVERTS

Attach this form to Joint Application for CAMA Major Permit, Form DCM MP-1. Be sure to complete all other sections of the Joint Application that relate to this proposed project. Please include all supplemental information.

1. BRIDGES

☐ *This section not applicable*

a. Is the proposed bridge:
☐Commercial ☒Public/Government ☐Private/Community

b. Water body to be crossed by bridge:
Gallants Channel

c. Type of bridge (construction material):
Concrete

d. Water depth at the proposed crossing at NLW or NWL:
37.7 feet

e. (i) Will proposed bridge replace an existing bridge? ☒Yes ☐No
If yes,
(ii) Length of existing bridge: 673 feet
(iii) Width of existing bridge: 36.3 feet
(iv) Navigation clearance underneath existing bridge:
unlimited when open
(v) Will all, or a part of, the existing bridge be removed?
(Explain) all

f. (i) Will proposed bridge replace an existing culvert? ☐Yes ☒No
If yes,
(ii) Length of existing culvert: _____
(iii) Width of existing culvert: _____
(iv) Height of the top of the existing culvert above the NHW or NWL: _____
(v) Will all, or a part of, the existing culvert be removed?
(Explain)

g. Length of proposed bridge: 3,395 feet

h. Width of proposed bridge: 80 feet

i. Will the proposed bridge affect existing water flow? ☐Yes ☒No
If yes, explain:

j. Will the proposed bridge affect navigation by reducing or increasing the existing navigable opening? ☒Yes ☐No
If yes, explain: Increases the width of the opening, but restricts the height to 65 feet from bridge low chord to Mean High Water.

k. Navigation clearance underneath proposed bridge: 65 feet from low chord to Mean High Water

l. Have you contacted the U.S. Coast Guard concerning their approval? ☒Yes ☐No
If yes, explain: NCDOT submitted the application to USCG on 6/17/2010

m. Will the proposed bridge cross wetlands containing no navigable waters? ☒Yes ☐No
If yes, explain: See plans

n. Height of proposed bridge above wetlands: Varies from 4 feet to 69 feet

2. CULVERTS

☒ *This section not applicable*

a. Number of culverts proposed: _____

b. Water body in which the culvert is to be placed:

R-3307 GALLANTS CHANNEL BRIDGE

< Form continues on back>

c. Type of culvert (construction material):

d. (i) Will proposed culvert replace an existing bridge? ☐Yes ☐No

If yes,

(ii) Length of existing bridge: _____

(iii) Width of existing bridge: _____

(iv) Navigation clearance underneath existing bridge: _____

(v) Will all, or a part of, the existing bridge be removed? (Explain)

e. (i) Will proposed culvert replace an existing culvert? ☐Yes ☐No

If yes,

(ii) Length of existing culvert(s): _____

(iii) Width of existing culvert(s): _____

(iv) Height of the top of the existing culvert above the NHW or NWL: _____

(v) Will all, or a part of, the existing culvert be removed? (Explain)

f. Length of proposed culvert: _____

g. Width of proposed culvert: _____

h. Height of the top of the proposed culvert above the NHW or NWL.

_____

i. Depth of culvert to be buried below existing bottom contour.

_____

j. Will the proposed culvert affect navigation by reducing or increasing the existing navigable opening? ☐Yes ☐No

If yes, explain:

k. Will the proposed culvert affect existing water flow? ☐Yes ☐No

If yes, explain:

3. EXCAVATION and FILL

☐*This section not applicable*

a. (i) Will the placement of the proposed bridge or culvert require any excavation below the NHW or NWL? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be excavated: 100 ft

(iii) Avg. width of area to be excavated: 50 ft

(iv) Avg. depth of area to be excavated: 3.5 ft

(v) Amount of material to be excavated in cubic yards: 880

b. (i) Will the placement of the proposed bridge or culvert require any excavation within coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

☒CW 7116 ☐SAV _____ ☐SB _____

☐WL _____ ☐None

(ii) Describe the purpose of the excavation in these areas:

To provide clearance to construct and inspect the Gallants Channel Bridge.

c. (i) Will the placement of the proposed bridge or culvert require any high-ground excavation? ☒Yes ☐No

If yes, SEE PERMIT DRAWINGS

(ii) Avg. length of area to be excavated: Varies with location

(iii) Avg. width of area to be excavated: Varies with location

(iv) Avg. depth of area to be excavated: Varies with location

(v) Amount of material to be excavated in cubic yards: Varies

R-3307 GALLANTS CHANNEL BRIDGE

d. If the placement of the bridge or culvert involves any excavation, please complete the following:

(i) Location of the spoil disposal area: To be determined by the contractor

(ii) Dimensions of the spoil disposal area: Unknown

(iii) Do you claim title to the disposal area? ☐Yes ☒No *(If no, attach a letter granting permission from the owner.)*

(iv) Will the disposal area be available for future maintenance? ☐Yes ☒No

(v) Does the disposal area include any coastal wetlands/marsh (CW), submerged aquatic vegetation (SAVs), other wetlands (WL), or shell bottom (SB)?

☐CW ☐SAV ☐WL ☐SB ☒None

If any boxes are checked, give dimensions if different from (ii) above.

(vi) Does the disposal area include any area below the NHW or NWL? ? ☐Yes ☒No

If yes, give dimensions if different from (ii) above.

e. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed below NHW or NWL? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be filled: Varies

(iii) Avg. width of area to be filled: Varies

(iv) Purpose of fill: To support the bridge (SEE PERMIT DRAWINGS)

f. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed within coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

☒CW 1,226 sq.ft. ☐SAV ____ ☐SB ____

☒WL 26,246 sq.ft. ☐None

(ii) Describe the purpose of the excavation in these areas:

Earth Fill: 106 sq. ft. at Begin Bridge, CW
Earth Fill: 26,224 sq. ft. at End Bridge, WL
Piles and Drilled Piers: 1,120 sq.ft. in CW 22 sq.ft. in WL

g. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed on high-ground? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be filled: Varies

(iii) Avg. width of area to be filled: Varies

(iv) Purpose of fill: To support the bridge (SEE PERMIT DRAWINGS)

4. GENERAL

a. Will the proposed project require the relocation of any existing utility lines? ☒Yes ☐No

If yes, explain: A CAMA General Permit for utility relocations was applied for under separate cover.

If this portion of the proposed project has already received approval from local authorities, please attach a copy of the approval or certification.

b. Will the proposed project require the construction of any temporary detour structures? ☐Yes ☒No

If yes, explain:

R-3307 GALLANTS CHANNEL BRIDGE

< Form continues on back>

c. Will the proposed project require any work channels? ☐Yes ☒No

If yes, complete Form DCM-MP-2.

d. How will excavated or fill material be kept on site and erosion controlled?

Use of Standard NCDOT Best Management Practices and Erosion Control Measures

e. What type of construction equipment will be used (for example, dragline, backhoe, or hydraulic dredge)?

Heavy highway construction equipment

f. Will wetlands be crossed in transporting equipment to project site? ☒Yes ☐No

If yes, explain steps that will be taken to avoid or minimize environmental impacts.

Only wetlands to be crossed are those depicted in the Roadway plans and permits.

g. Will the placement of the proposed bridge or culvert require any shoreline stabilization? ☒Yes ☐No

If yes, complete form MP-2, Section 3 for Shoreline Stabilization only.

NOV 9, 2011
Date

R-3307
Project Name

Gregory J. Thorpe, PhD
Applicant Name

E.L. Lusk for
Applicant Signature

R-3307 CARTERET Co.
MP-5 FOR TURNER ST. BRIDGE

Form DCM MP-5

BRIDGES and CULVERTS

Attach this form to Joint Application for CAMA Major Permit, Form DCM MP-1. Be sure to complete all other sections of the Joint Application that relate to this proposed project. Please include all supplemental information.

1. BRIDGES

☐ *This section not applicable*

a. Is the proposed bridge:
☐Commercial ☒Public/Government ☐Private/Community

b. Water body to be crossed by bridge:
Town Creek

c. Type of bridge (construction material):
Concrete

d. Water depth at the proposed crossing at NLW or NWL:
5.2 feet

e. (i) Will proposed bridge replace an existing bridge? ☐Yes ☒No
If yes,
(ii) Length of existing bridge: _____
(iii) Width of existing bridge: _____
(iv) Navigation clearance underneath existing bridge: _____
(v) Will all, or a part of, the existing bridge be removed? (Explain)

f. (i) Will proposed bridge replace an existing culvert? ☒Yes ☐No
If yes,
(ii) Length of existing culvert: 61 ft.
(iii) Width of existing culvert: 4 @ 95" x 67" CMPA
(iv) Height of the top of the existing culvert above the NHW or NWL: 0.8 ft.
(v) Will all, or a part of, the existing culvert be removed? (Explain) All

g. Length of proposed bridge: 585 ft

h. Width of proposed bridge: 75 feet

i. Will the proposed bridge affect existing water flow? ☒Yes ☐No
If yes, explain: The causeway that currently carries Turner Street over Town Creek will be removed. Average flows will increase slightly per hydraulic report by Moffatt & Nichol. They found the following average increase in flows:
Spring Tide: 0.9%
Neap Tide: 2.0%
Mid Tide: 1.6%

j. Will the proposed bridge affect navigation by reducing or increasing the existing navigable opening? ☐Yes ☒No
If yes, explain:

k. Navigation clearance underneath proposed bridge: N/A

l. Have you contacted the U.S. Coast Guard concerning their approval? ☐Yes ☒No
If yes, explain:

m. Will the proposed bridge cross wetlands containing no navigable waters? ☒Yes ☐No
If yes, explain: See plans

n. Height of proposed bridge above wetlands: Varies from 7.2 feet to 8.9 feet

2. CULVERTS

☒ *This section not applicable*

R-3307 CARTERET Co.
MP-5 FOR TURNER ST. BRIDGE

a. Number of culverts proposed: _____

b. Water body in which the culvert is to be placed:

_____

< Form continues on back>

c. Type of culvert (construction material):

_____

d. (i) Will proposed culvert replace an existing bridge? ☐Yes ☐No

If yes,

(ii) Length of existing bridge: _____

(iii) Width of existing bridge: _____

(iv) Navigation clearance underneath existing bridge: _____

(v) Will all, or a part of, the existing bridge be removed? (Explain)

_____

_____

_____

e. (i) Will proposed culvert replace an existing culvert? ☐Yes ☐No

If yes,

(ii) Length of existing culvert(s): _____

(iii) Width of existing culvert(s): _____

(iv) Height of the top of the existing culvert above the NHW or NWL: _____

(v) Will all, or a part of, the existing culvert be removed? (Explain)

_____

_____

_____

f. Length of proposed culvert: _____

g. Width of proposed culvert: _____

h. Height of the top of the proposed culvert above the NHW or NWL.

_____

i. Depth of culvert to be buried below existing bottom contour.

_____

j. Will the proposed culvert affect navigation by reducing or increasing the existing navigable opening? ☐Yes ☐No

If yes, explain:

_____

_____

_____

k. Will the proposed culvert affect existing water flow? ☐Yes ☐No

If yes, explain:

_____

_____

_____

3. EXCAVATION and FILL

☐*This section not applicable*

a. (i) Will the placement of the proposed bridge or culvert require any excavation below the NHW or NWL? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be excavated: 540 ft

(iii) Avg. width of area to be excavated: 120 ft

(iv) Avg. depth of area to be excavated: 1.4 ft

(v) Amount of material to be excavated in cubic yards: 3360

b. (i) Will the placement of the proposed bridge or culvert require any excavation within coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

☒CW 67,760 ☐SAV _____ ☐SB _____

☐WL _____ ☐None

(ii) Describe the purpose of the excavation in these areas:

The Turner Street causeway will be removed and excavated down to an elevation of -0.2 ft.

_____

_____

_____

R-3307 CARTERET CO.
MP-5 FOR TURNER ST. BRIDGE

c. (i) Will the placement of the proposed bridge or culvert require any high-ground excavation? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be excavated: 540 ft.

(iii) Avg. width of area to be excavated: 120 ft.

(iv) Avg. depth of area to be excavated: 1.3 ft.

(v) Amount of material to be excavated in cubic yards: 3,100

d. If the placement of the bridge or culvert involves any excavation, please complete the following:

(i) Location of the spoil disposal area: To be determined by the contractor

(ii) Dimensions of the spoil disposal area: Unknown

(iii) Do you claim title to the disposal area? ☐Yes ☒No *(If no, attach a letter granting permission from the owner.)*

(iv) Will the disposal area be available for future maintenance? ☐Yes ☒No

(v) Does the disposal area include any coastal wetlands/marsh (CW), submerged aquatic vegetation (SAVs), other wetlands (WL), or shell bottom (SB)?

☐CW ☐SAV ☐WL ☐SB ☒None

If any boxes are checked, give dimensions if different from (ii) above.

(vi) Does the disposal area include any area below the NHW or NWL? ? ☐Yes ☒No

If yes, give dimensions if different from (ii) above.

e. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed below NHW or NWL? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be filled: Varies

(iii) Avg. width of area to be filled: Varies

(iv) Purpose of fill: To support the bridge and roadway approach.

f. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed within coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

☒CW ____ ☐SAV ____ ☐SB ____

☒WL ____ ☐None

(ii) Describe the purpose of the excavation in these areas:

Earth Fill: 1,570 sq. ft. at Begin Bridge, CW
Earth Fill: 8,710 sq. ft. at End Bridge, CW
Piles:
178 sq.ft. in CW

g. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed on high-ground? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be filled: Varies

(iii) Avg. width of area to be filled: Varies

(iv) Purpose of fill: To support the bridge and roadway approach

4. GENERAL

a. Will the proposed project require the relocation of any existing utility lines? ☒Yes ☐No

If yes, explain: Sewer line along Turner Street will require

b. Will the proposed project require the construction of any temporary detour structures? ☐Yes ☒No

If yes, explain:

R-3307 CARTERET Co.
MP-5 FOR TURNER ST. BRIDGE

relocation.

If this portion of the proposed project has already received approval from local authorities, please attach a copy of the approval or certification.

< Form continues on back>

c. Will the proposed project require any work channels? ☐Yes ☒No

If yes, complete Form DCM-MP-2.

d. How will excavated or fill material be kept on site and erosion controlled?

Use of Standard NCDOT Best Management Practices and Erosion Control Measures

e. What type of construction equipment will be used (for example, dragline, backhoe, or hydraulic dredge)?

Heavy highway construction equipment

f. Will wetlands be crossed in transporting equipment to project site? ☒Yes ☐No

If yes, explain steps that will be taken to avoid or minimize environmental impacts.

Only wetlands to be crossed are those depicted in the Roadway plans and permits.

g. Will the placement of the proposed bridge or culvert require any shoreline stabilization? ☒Yes ☐No

If yes, complete form MP-2, Section 3 for Shoreline Stabilization only.

Nov 9, 2011
Date

R-3307
Project Name

Gregory J. Thorpe, PhD
Applicant Name

E.L. Lusk for
Applicant Signature

Ecosystem Enhancement PROGRAM

October 27, 2011

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

R-3307, US 70 from Existing 4 Lanes at Radio Island to US 70 North of Beaufort near SR 1429 (Olga Road), Carteret County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream and wetland mitigation for the subject project. Based on the information supplied by you on July 26 and October 27, 2011, the impacts are located in CU 03020106 of the White Oak River Basin in the Southern Outer Coastal Plain (SOCP) Eco-Region, and are as follows:

White Oak 03020106 SOCP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	803	1.78	4.69	0	0	0

This mitigation acceptance letter replaces the mitigation acceptance letter issued on July 27, 2011. EEP commits to implementing sufficient compensatory stream, riparian and non-riparian wetland mitigation credits to offset the impacts associated with this project in accordance with the N.C. Department of Environment and Natural Resources' Ecosystem Enhancement Program In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

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

Sincerely,

James B Stanfill for

Michael Ellison
EEP Deputy Director

cc: Mr. Tom Steffens, USACE – Washington Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: R-3307

Turner Street Marsh Restoration Plan
R-3307, Highway 70 Improvements
Beaufort, Carteret County
Federal Aid Project No. STPNHF-70(43)
State Project No. 8.1162501
WBS No. 34528.1.1

October 13, 2010

The North Carolina Department of Transportation (NCDOT) will perform on-site mitigation for impacts associated with R-3307, Improvements to US 70 from existing four lanes at Radio Island to US 70 North of SR 1429 (Olga Road).

The mitigation site is located just north of the town of Beaufort along Turner Street adjacent to Town Creek. The mitigation is proposed to restore 1.4 acres of salt marsh by causeway removal along Turner Street. This mitigation will be used to offset the 1.1 acres of impacts to salt marsh, at a 1:1 ratio, associated with TIP R-3307. The residual 0.3 acres of restoration will be retained by the NCDOT as on-site assets for future projects in the area.

Existing Conditions

Turner Street is currently a two lane secondary road that crosses Town Creek approximately 300 feet south of West Beaufort Road. Town Creek flows to the west under Turner Street through four 60 ft. long, 95"x 67" corrugated aluminum pipes. To the south of the crossing, a salt marsh wetland dominated by smooth cordgrass (*Spartina alterniflora*) runs along the both sides of the causeway and extends outward along Town Creek.

The Environmental Assessment (EA) dated October 2004 and the Finding of No Significant Impact (FONSI) dated August, 2006, for TIP R-3307, provide further details concerning natural resource and roadway conditions.

Proposed Conditions

The mitigation site will consist of 1.4 acres of salt marsh restoration at the proposed Turner Street Bridge. The NCDOT will remove the existing culverts and approximately 560 ft. of causeway. The causeway and any higher knolls within the right-of-way will be graded to a target elevation of -0.2 ft msl. This elevation is slightly higher than the mean tide level and is within the range of elevations taken in the adjacent marsh. The restoration area will be planted on three foot centers with smooth cordgrass.

The Natural Environment Unit shall be contacted to provide construction oversight to ensure that the wetland mitigation area is constructed appropriately.

Monitoring

Target elevations will be verified during construction to ensure the restoration area achieves the same hydrologic regime as the adjacent salt marsh wetland.

The quantitative marsh vegetation monitoring will be accomplished in accordance with the draft guidelines for "Site Monitoring Surveys for Emergent Marsh Mitigation", established by the National Marine Fisheries Service, through the evaluation of randomly distributed 1 square meter plots located by GPS within the site.

The vegetation component of the wetland site will be deemed successful if the following criteria are met:
1. At year five, the average of all plots should have a scale value of 5 (>75% vegetative cover) consisting of wetland herbaceous species, not including any invasive species;
2. A minimum of 70% of the plots shall contain the target (planted) species.

NCDOT will perform the monitoring described above for 5 years or until the site is deemed successful. The site will be protected in perpetuity and placed on the Natural Environment Unit's Mitigation GeoDatabase.

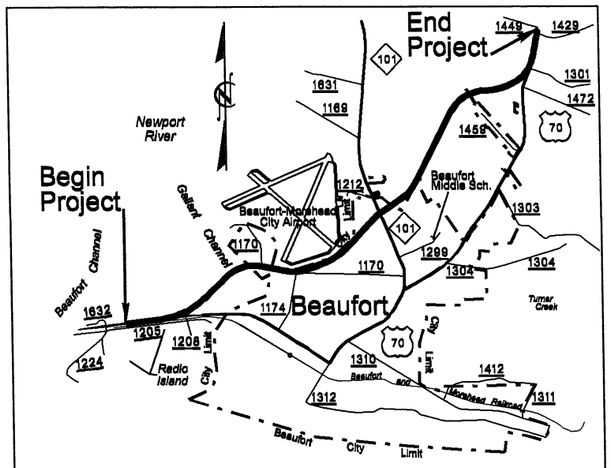
09/08/99

TIP PROJECT: R-3307

CONTRACT:

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

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CARTERET COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3307	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34528.1.1	STPNHF-70(43)	PE
34528.2.2	STPNHF-70(105)	R/W, UTIL.

Permit Drawing
Sheet 1 of 34

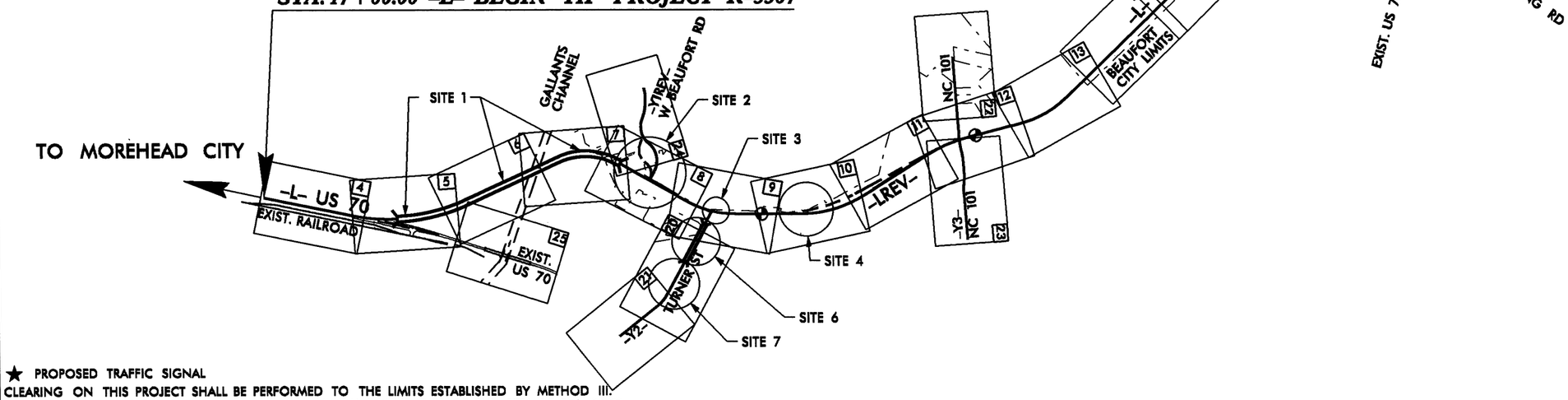
LOCATION: US 70 FROM EXISTING FOUR LANES AT RADIO ISLAND TO US 70 NORTH OF SR 1429 (OLGA ROAD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, CURB & GUTTER SIGNALS, CULVERT AND STRUCTURES

WETLAND & STREAM IMPACTS

STA. 207+95.09 -L- END TIP PROJECT R-3307

STA. 17+00.00 -L- BEGIN TIP PROJECT R-3307



★ PROPOSED TRAFFIC SIGNAL

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

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF BEAUFORT.

THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2011 = 27620
ADT 2031 = 39389
DHV = 11 %
D = 60 %
T = 5 % *
V (SHOULDER) = 60 MPH**
V (CURB & GUTTER) = 50 MPH
* (TTST 1 % + DUAL 4) %
FUNC. CLASS = ARTERIAL
STATEWIDE TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT R-3307	=	2.980 MI
LENGTH OF STRUCTURE PROJECT R-3307	=	0.643 MI
TOTAL LENGTH OF F.A. PROJECT STPNHF-70(43)	=	3.623 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 18, 2008

LETTING DATE: JULY 17, 2012

BRENDA MOORE, PE
PROJECT ENGINEER

REKHA PATEL, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

PROJECT REFERENCE NO.	SHEET NO.
R-3307	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

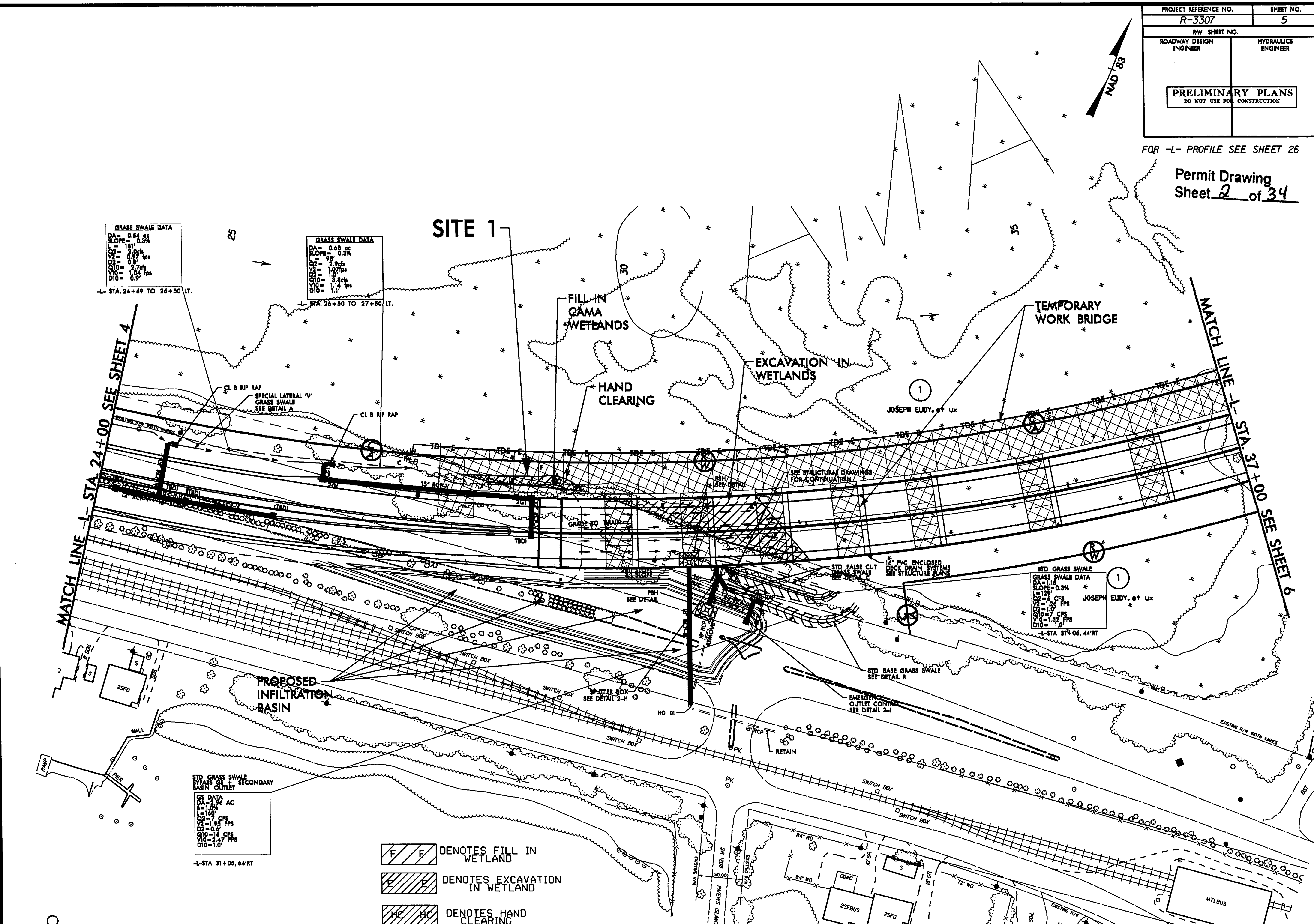
FOR -L- PROFILE SEE SHEET 26

Permit Drawing
Sheet 2 of 34

REVISIONS

R/W REV. 07/29/10 (KWH): REVISED EXIST. R/W TO NUMERICAL OFFSET.
R/W REV. 10/18/10 (RVP): ADDED PROPOSED TEMPORARY CONSTRUCTION EASEMENT ON PARCEL I.

8/17/99



NAD 83
SITE 1
GRASS SWALE DATA
DA= 0.54 ac
SLOPE= 0.3%
L = 181'
Q2= 2.0cfs
V2= 0.97 fps
D2= 0.8'
Q10= 2.7cfs
V10= 1.04 fps
D10= 0.9'
-L- STA. 24+69 TO 26+50 LT.
GRASS SWALE DATA
DA= 0.68 ac
SLOPE= 0.3%
L = 98'
Q2= 2.9cfs
V2= 1.07fps
D2= 1.0'
Q10= 3.8cfs
V10= 1.14 fps
D10= 1.1'
-L- STA. 26+50 TO 27+50 LT.
FILL IN CAMA WETLANDS
HAND CLEARING
EXCAVATION IN WETLANDS
TEMPORARY WORK BRIDGE
MATCH LINE -L- STA 24+00 SEE SHEET 4
MATCH LINE -L- STA 37+00 SEE SHEET 6
JOSEPH EUDY, et ux
CL B RIP RAP
SPECIAL LATERAL 'V' GRASS SWALE SEE DETAIL A
SEE STRUCTURAL DRAWINGS FOR CONTINUATION
GRADE TO DRAIN
PSH SEE DETAIL
STD FALSE CUT GRASS SWALE SEE DETAIL C
6" PVC ENCLOSED DECK DRAIN SYSTEMS SEE STRUCTURE PLANS
STD GRASS SWALE
GRASS SWALE DATA
DA=1.15
SLOPE=0.3%
L=129'
Q2=6 CFS
V2=1.26 FPS
D2=1.0'
Q10=7 CFS
V10=1.32 FPS
D10= 1.0'
-L-STA 31+06, 44'RT
STD BASE GRASS SWALE SEE DETAIL R
EMERGENCY OUTLET CONTROL SEE DETAIL 2-I
PROPOSED INFILTRATION BASIN
SPLITTER BOX SEE DETAIL 2-H
NO DI
SWITCH BOX
RETAIN
PK
EXISTING R/W WIDTH VARIES
STD GRASS SWALE BYPASS GS + SECONDARY BASIN OUTLET
GS DATA
DA=2.96 AC
S=1.0%
L=160'
Q2=7 CFS
V2=1.95 FPS
D2=0.6'
Q10=16 CFS
V10=2.47 FPS
D10=1.0'
-L-STA 31+05, 64'RT
2SFD
2SFBUS
MTLBUS
WALL
RAMP
PIER
84" WD
72" WD
PIVER'S ISLAND RD
SR 1208

F / F DENOTES FILL IN WETLAND

E / E DENOTES EXCAVATION IN WETLAND

HC / HC DENOTES HAND CLEARING

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-3307	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 27

Permit Drawing
Sheet 3 of 34

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

PROJECT REFERENCE NO.	SHEET NO.
R-3307	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 4 of 34

FOR -L- PROFILE SEE SHEET 28

NAD 83

FRIENDS OF THE MUSEUM,
N. C. MARITIME MUSEUM, INC.

2

#14 RED DAY CHANNEL MARKER

GALLANT'S CHANNEL

BULKHEAD CONTINUES

NEW CONCORD PIER DOCK UNDER CONSTRUCTION

PIER & WALL U/C

TEMPORARY WORK BRIDGE

404 WETLANDS

CAMA WETLANDS

BEAUFORT CITY LIMITS

PROP. WM FENCE

907

N 46°34'58"E

MATCH LINE -L- STA. 50+50 SEE SHEET 6

SITE 1

CAMA WETLANDS

GAZEBO

CONC

MATCH LINE -L- STA. 62+00 SEE SHEET 8

#1 GREEN DAY CHANNEL MARKER

HARBOR OF REFUGE CHANNEL

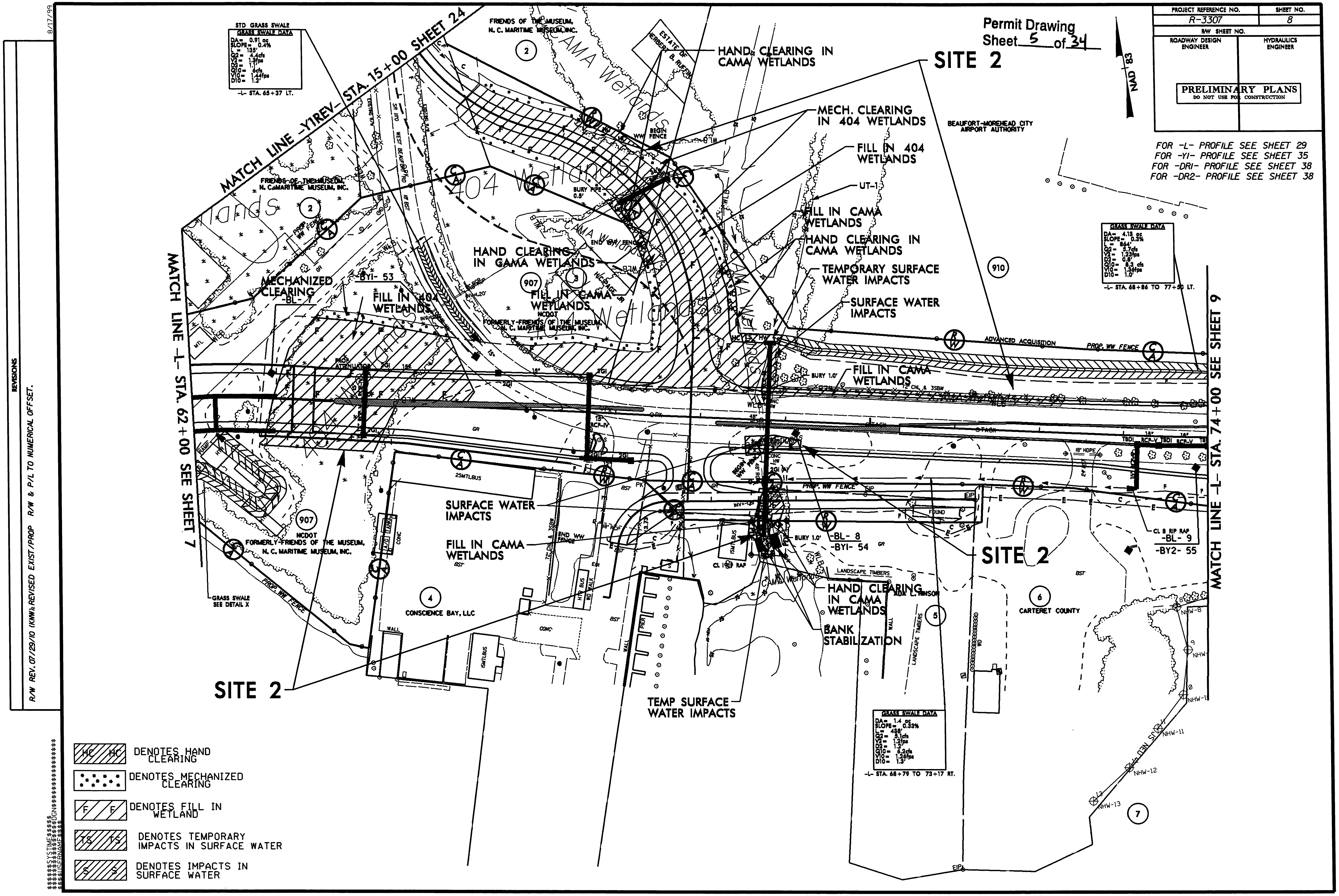
** DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVE RADIUS (50 MPH) AND FOR HORIZONTAL STOPPING SIGHT DISTANCE (38 MPH).

REVISIONS

R/W REV. 07/29/10 (KMW): REVISED EXIST. P/L TO NUMERICAL OFFSET.

8/17/99

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


PROJECT REFERENCE NO. R-3307
SHEET NO. 8
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing Sheet 5 of 34
NAD 83
SITE 2
FOR -L- PROFILE SEE SHEET 29
FOR -YI- PROFILE SEE SHEET 35
FOR -DRI- PROFILE SEE SHEET 38
FOR -DR2- PROFILE SEE SHEET 38
MATCH LINE -Y1REV- STA. 15+00 SHEET 24
MATCH LINE -L- STA. 62+00 SEE SHEET 7
MATCH LINE -L- STA. 74+00 SEE SHEET 9
STD GRASS SWALE
GRASS SWALE DATA
-L- STA. 65+37 LT.
-L- STA. 68+86 TO 77+50 LT.
-L- STA. 68+79 TO 73+17 RT.
FRIENDS OF THE MUSEUM, N. C. MARITIME MUSEUM, INC.
ESTATE OF HERBERT B. RUFFIN
BEAUFORT-MOREHEAD CITY AIRPORT AUTHORITY
FORMERLY-FRIENDS OF THE MUSEUM, N. C. MARITIME MUSEUM, INC.
NCDOT
CONSCIENCE BAY, LLC
CARTERET COUNTY
CAMA Wetlands
404 Wetlands
HAND CLEARING IN CAMA WETLANDS
MECH. CLEARING IN 404 WETLANDS
FILL IN 404 WETLANDS
UT-1
FILL IN CAMA WETLANDS
TEMPORARY SURFACE WATER IMPACTS
SURFACE WATER IMPACTS
MECHANIZED CLEARING
BANK STABILIZATION
TEMP SURFACE WATER IMPACTS
ADVANCED ACQUISITION
PROP. WW FENCE
GRASS SWALE SEE DETAIL X
-BL- 7
-BL- 8
-BL- 9
-BYI- 53
-BYI- 54
-BY2- 55
LANDSCAPE TIMBERS
R/W REV. 07/29/10 (KMW): REVISED EXIST/PROP R/W & P/L TO NUMERICAL OFFSET.
REVISIONS
8/17/99
DENOTES HAND CLEARING
DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
R-3307	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 6 of 34

NAD 83

★ PROPOSED SIGNAL

910 BEAUFORT-MOREHEAD CITY AIRPORT AUTHORITY

FOR -L- PROFILE SEE SHEET 29
FOR -LREV- PROFILE SEE SHEET 29
FOR -Y2- PROFILE SEE SHEET 35
FOR -Y5- PROFILE SEE SHEET 37

REVISIONS

R/W REV. 07/29/10 (KNW): REVISED EXIST./PROP. R/W TO NUMERICAL OFFSET.
R/W REV. 04/18/11 (KNW): ADDED PUE ON PARCEL 6.
R/W REV. 06/01/11 (KNW): REMOVED TOE AND ADDED PDE ON PARCEL 9.

8/17/99

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

SITE 3

SITE 6

TEMPORARY SURFACE WATER IMPACTS

SURFACE WATER IMPACTS

BANK STABILIZATION

HAND CLEARING IN CAMA WETLANDS

FILL IN CAMA WETLANDS

CAUSEWAY REMOVAL

BEAUFORT MOREHEAD CITY AIRPORT BST RUNWAY

MATCH LINE -L- STA. 74+00 SEE SHEET 8

MATCH LINE -L- STA. 86+00 SEE SHEET 10

MATCH LINE -Y2- STA. 13+50 SEE SHEET 20

-L- STA. 77+50 - 78+80 LT

GS DATA
DA= 1.06 ac
SLOPE= 0.3%
L = 130'
Q25 = 3.5 cfs
V25 = 1.1 fps
D25 = 0.8'
Q10 = 4.7 cfs
V10 = 1.20 fps
D10 = 0.9'

GRASS SWALE DATA
DA= 0.38 ac
SLOPE= 0.5% to 1.75%
L = 108'
Q25 = 1.1 cfs
V25 = 1.46 fps
D25 = 0.41'
Q10 = 1.4 cfs
V10 = 1.78 fps
D10 = 0.53'

-Y2- STA. 11+29 TO 12+37 RT.

-Y5- S 89° 38' 30" E

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES CAUSEWAY REMOVAL

DENOTES IMPACTS IN SURFACE WATER

DENOTES HAND CLEARING

DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
R-3307	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -LREV- PROFILE SEE SHEET 30

Permit Drawing
Sheet 7 of 34

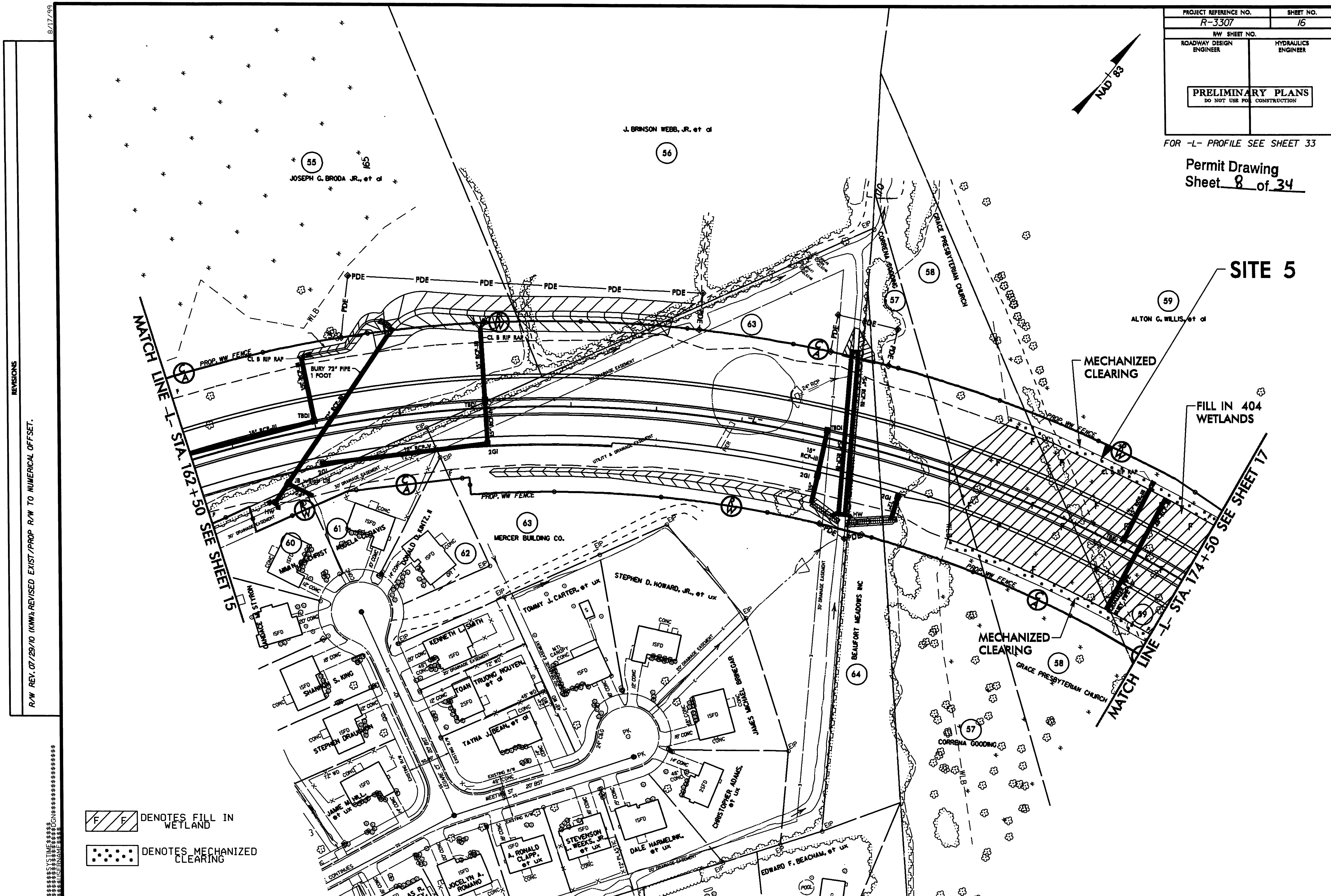
8/17/99

REVISIONS

R/W REV. 07/29/10 (KWW): REVISED EXIST/PROP R/W TO NUMERICAL OFFSET.
R/W REV. 04/18/11 (KWW): DELETED PDE, REVISED TDE, AND ADDED DUE ON PARCEL 910.

TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S	DENOTES IMPACTS IN SURFACE WATER
F	DENOTES FILL IN WETLAND

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



PROJECT REFERENCE NO.
SHEET NO.
R-3307
16
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
NAD 83
FOR -L- PROFILE SEE SHEET 33
Permit Drawing
Sheet 8 of 34
SITE 5
MECHANIZED CLEARING
FILL IN 404 WETLANDS
MATCH LINE -L- STA. 162+50 SEE SHEET 15
MATCH LINE -L- STA. 174+50 SEE SHEET 17
J. BRINSON WEBB, JR. et al
JOSEPH G. BRODA JR., et al
ALTON G. WILLIS, et al
GRACE PRESBYTERIAN CHURCH
CORRENA GOODING
MERCER BUILDING CO.
BEAUFORT MEADOWS INC
STEPHEN D. HOWARD, JR., et ux
TOMMY J. CARTER, et ux
KENNETH L. SMITH
TRUONG NGUYEN, et al
TAYNA J. BEAN, et al
JAMES MICHAEL BRINEGAR
CHRISTOPHER ADAMS, et ux
DALE HARMELINK, et ux
EDWARD F. BEACHAM, et ux
A. RONALD CLAPP, et ux
STEVENSON WEEKS, JR. et ux
JOCELYN A. ROMANO
STEPHEN DRAUGHON
PROP. WW FENCE
CL B RIP RAP
BURY 72" PIPE 1 FOOT
30' DRAINAGE EASEMENT
UTILITY & DRAINAGE EASEMENT
R/W REV. 07/29/10 (KMW): REVISED EXIST/PROP R/W TO NUMERICAL OFFSET.
REVISIONS
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING

8/17/99

REVISIONS

R/W REV. 07/29/10 (KNW): REVISED PROP R/W TO NUMERICAL OFFSET.

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

PROJECT REFERENCE NO.	SHEET NO.
R-3307	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 33

Permit Drawing
Sheet 9 of 34

▨ F F DENOTES FILL IN WETLAND

⁚⁚ DENOTES MECHANIZED CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-3307	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -Y2- PROFILE SEE SHEETS 35 & 36

Permit Drawing
Sheet 10 of 34

REVISIONS
R/W REV. 07/29/10 (KNW): REVISED EXIST R/W TO NUMERICAL OFFSET.
R/W REV. 04/18/11 (KNW): DELETED PROP. R/W, ADDED PDE AND TCE ON PARCELS 106 & 107; ADDED PARCEL 120 AND ADDED TCE ON PARCEL 120.

8/17/99

▨ WB DENOTES TEMPORARY WORKBRIDGE
▨ CR DENOTES CAUSEWAY REMOVAL
▨ F DENOTES FILL IN WETLAND
▨ HC DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-3307	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 26

Permit Drawing
Sheet 11 of 34

8/17/99

REVISIONS

R/W REV. 07/29/10 (KNW) REVISED EXIST. R/W TO NUMERICAL OFFSET.
R/W REV. 10/18/10 (RVP) ADDED PROPOSED TEMPORARY CONSTRUCTION EASEMENT ON PARCEL I.

GRASS SWALE DATA
DA= 0.54 ac
SLOPE= 0.3%
L = 181'
Q2= 2.0cfs
V2= 0.97 fps
D2= 0.8'
Q10= 2.7cfs
V10= 1.04 fps
D10= 0.9'
-L- STA. 24+69 TO 26+50 LT.

GRASS SWALE DATA
DA= 0.68 ac
SLOPE= 0.3%
L = 98'
Q2= 2.9cfs
V2= 1.07fps
D2= 1.0'
Q10= 3.8cfs
V10= 1.14 fps
D10= 1.1'
-L- STA. 26+50 TO 27+50 LT.

STD GRASS SWALE
GRASS SWALE DATA
DA=1.15
SLOPE=0.3%
L=129'
Q2=6 CFS
V2=1.26 FPS
D2=1.0'
Q10=7 CFS
V10=1.32 FPS
D10= 1.0'
-L-STA 31+06, 44'RT

STD GRASS SWALE
BYPASS GS + SECONDARY
BASIN OUTLET
GS DATA
DA=2.96 AC
S=1.0%
L=160'
Q2=7 CFS
V2=1.95 FPS
D2=0.6'
Q10=16 CFS
V10=2.47 FPS
D10=1.0'
-L-STA 31+05, 64'RT

F F	DENOTES FILL IN WETLAND
E E	DENOTES EXCAVATION IN WETLAND
HC HC	DENOTES HAND CLEARING

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

PROJECT REFERENCE NO.	SHEET NO.
R-3307	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 12 of 34

NAD 83

FOR -L- PROFILE SEE SHEET 27

SITE 1

TEMPORARY WORK BRIDGE

JOSEPH EUDY, et ux

MATCH LINE -L- STA. 37+00 SEE SHEET 5

MATCH LINE -L- STA. 50+50 SEE SHEET 7

GALLANTS CHANNEL

SMITLBUS

CONC

THOMAS AND BLAHA, L.L.C.

TEMPORARY WORK BRIDGE

#15 GREEN DAY CHANNEL MARKER

REVISIONS

8/17/99

$$$$$$$$SYSTIME$$$$$$
$$$$$$$$ICON$$$$$$$$$$$$$$$$$$$$
$$$$$$$$ICENAME$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-3307	7

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 13 of 34

FOR -L- PROFILE SEE SHEET 28

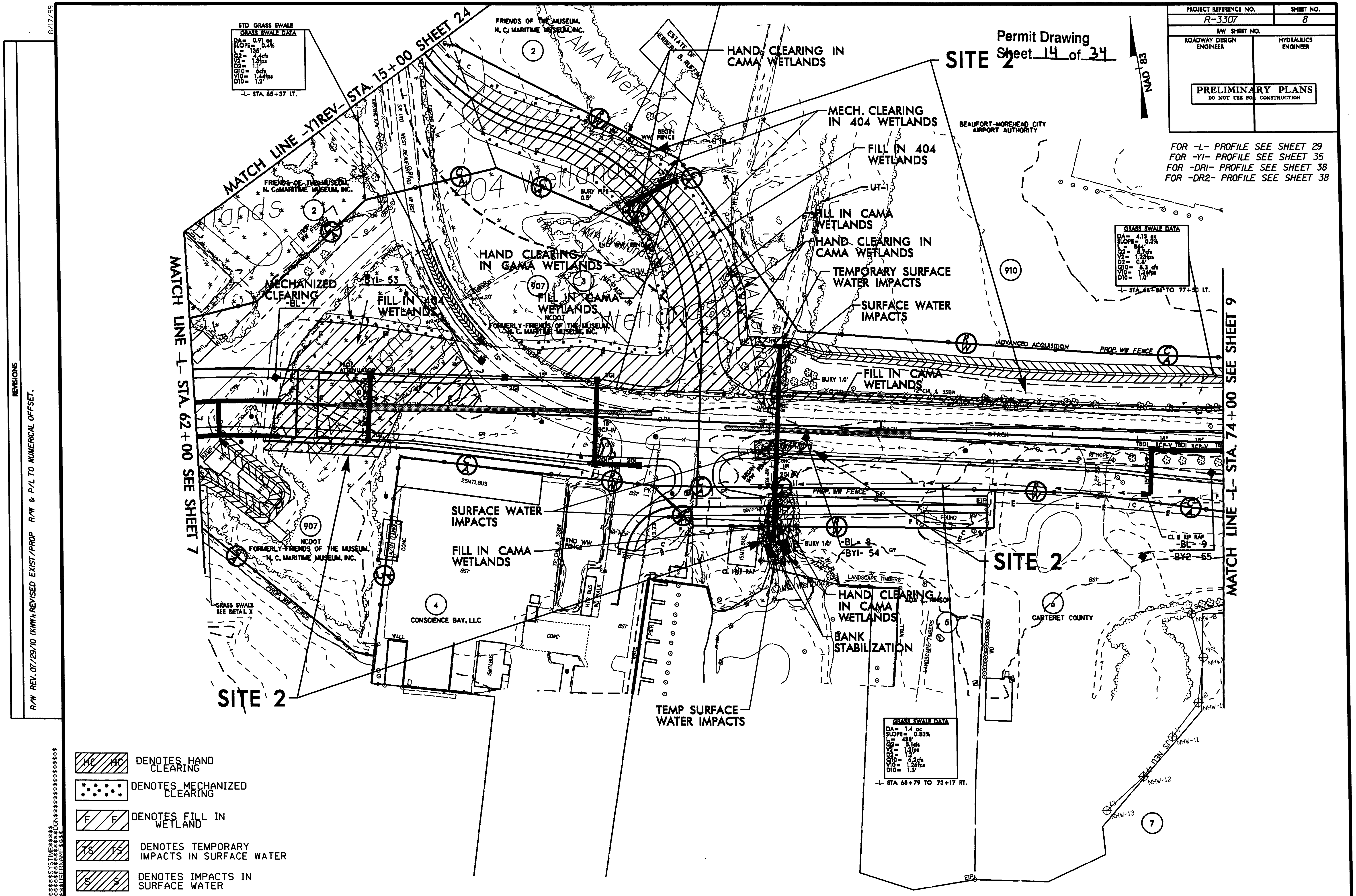
8/17/99

REVISIONS

R/W REV. 07/29/10 (KWW); REVISED EXIST. P/L TO NUMERICAL OFFSET.

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

** DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVE RADIUS (50 MPH) AND FOR HORIZONTAL STOPPING SIGHT DISTANCE (38 MPH).


PROJECT REFERENCE NO. R-3307
SHEET NO. 8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing Sheet 14 of 34
NAD 83
FOR -L- PROFILE SEE SHEET 29
FOR -YI- PROFILE SEE SHEET 35
FOR -DRI- PROFILE SEE SHEET 38
FOR -DR2- PROFILE SEE SHEET 38
MATCH LINE -Y1REV- STA. 15+00 SHEET 24
MATCH LINE -L- STA. 62+00 SEE SHEET 7
MATCH LINE -L- STA. 74+00 SEE SHEET 9
SITE 2
HAND CLEARING IN CAMA WETLANDS
MECH. CLEARING IN 404 WETLANDS
FILL IN 404 WETLANDS
FILL IN CAMA WETLANDS
TEMPORARY SURFACE WATER IMPACTS
SURFACE WATER IMPACTS
MECHANIZED CLEARING
TEMP SURFACE WATER IMPACTS
BANK STABILIZATION
BEAUFORT-MOREHEAD CITY AIRPORT AUTHORITY
FRIENDS OF THE MUSEUM, N. C. MARITIME MUSEUM, INC.
FORMERLY-FRIENDS OF THE MUSEUM, N. C. MARITIME MUSEUM, INC.
NCDOT
CONSCIENCE BAY, LLC
CARTERET COUNTY
ESTATE OF HERBERT B. RUFFIN
CAMA Wetlands
404 Wetlands
ADVANCED ACQUISITION
PROP. WW FENCE
STD GRASS SWALE
GRASS SWALE DATA
DA= 0.91 ac
SLOPE= 0.4%
-L- STA. 65+37 LT.
GRASS SWALE DATA
DA= 4.13 ac
SLOPE= 0.3%
-L- STA. 68+86 TO 77+50 LT.
GRASS SWALE DATA
DA= 1.4 ac
SLOPE= 0.33%
-L- STA. 68+79 TO 73+17 RT.
GRASS SWALE SEE DETAIL X
DENOTES HAND CLEARING
DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
REVISIONS
R/W REV. 07/29/10 (KNW) REVISED EXIST/PROP R/W & P/L TO NUMERICAL OFFSET.
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3307	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

★ PROPOSED SIGNAL

Permit Drawing
Sheet 15 of 34

NAD 83

910
BEAUFORT-MOREHEAD CITY AIRPORT AUTHORITY

FOR -L- PROFILE SEE SHEET 29
FOR -LREV- PROFILE SEE SHEET 29
FOR -Y2- PROFILE SEE SHEET 35
FOR -Y5- PROFILE SEE SHEET 37

REVISIONS

R/W REV. 07/29/10 (KWH): REVISED EXIST./PROP R/W TO NUMERICAL OFFSET.
R/W REV. 04/18/11 (KWH): ADDED PUE ON PARCEL 6.
R/W REV. 06/01/11 (KWH): REMOVED TOE AND ADDED PDE ON PARCEL 9.

8/17/99

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

SITE 3

TEMPORARY SURFACE WATER IMPACTS

SURFACE WATER IMPACTS

SURFACE WATER IMPACTS

TEMPORARY SURFACE WATER IMPACTS

BANK STABILIZATION

SITE 6

SITE 3

SITE 6

HAND CLEARING IN CAMA WETLANDS

FILL IN CAMA WETLANDS

CAUSEWAY REMOVAL

-L- STA. 74+00 SEE SHEET 8

MATCH LINE -L- STA. 86+00 SEE SHEET 10

MATCH LINE -Y2- STA. 13+50 SEE SHEET 20

-L- STA. 77+50 - 78+80 LT

-Y2- STA. 11+29 TO 12+37 RT.

-Y5- S 89°38'30"E

BEAUFORT-MOREHEAD CITY AIRPORT
BST RUNWAY

ADVANCED ACQUISITION

PROP. WW FENCE

LATERAL BASE GRASS SWALE SEE DETAIL F

FALSE SUMP SEE DETAIL H

CL B RIP RAP

RETAIN

SR 1170 WEST BEAUFORT RD

CARTERET COUNTY

PUE

SEC. LATERAL 'A' DITCH SEE DETAIL A

BANK STABILIZATION SEE DETAIL V

MAINSAIL OF BEAUFORT, LLC TOWNHOME DEVELOPMENT U/C

APPARENT PROPERTY OVERLAP

PROPERTY LINE ACCORDING TO AIRPORT SURVEY

C. M. VELLINES, ET UX

JOHN J MCCANN, SR.

OLENN ADAIR

CHARLES RAY ELLIOTT, ET UX

THOMAS W. FLOYD, ET UX

SPYGLASS PROPERTIES, INC.

DOROTHY M. LEWIS

KATHY B. MCCALL

ATLANTIC VENEER CORP.

LARRY W. FULP, ET UX

RUTH A. MCLAIN, ET UX

JAMES T. BOWLING, ET UX

AWNI M. HAMAD, ET UX

30' B&M RAILROAD R/W

BEGIN WW FENCE

END WW FENCE

REMOVE

GRADE TO DRAIN

RIP RAP

SS MH SET NO MG LINES YET

GRASS SWALE DATA
DA= 0.38 ac
SLOPE= 0.5% to 1.75%
L = 108'
Q2= 1.3 cfs
V2= 1.64 fps
Q25= 0.47
V25= 1.9 cfs
V10= 1.78 fps
D10= 0.53'

-L- STA. 77+50 - 78+80 LT DATA
DA= 1.06 ac
SLOPE= 0.3%
L = 130'
Q2= 3.5 cfs
V2= 1.7 fps
Q25= 0.8
V25= 4.7 cfs
V10= 1.20 fps
D10= 0.9'

TS / TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

CR / CR DENOTES CAUSEWAY REMOVAL

S / S DENOTES IMPACTS IN SURFACE WATER

HC / HC DENOTES HAND CLEARING

F / F DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
R-3307	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -LREV- PROFILE SEE SHEET 30

Permit Drawing
Sheet 16 of 34

8/17/99

REVISIONS

R/W REV. 07/29/10 (KNW): REVISED EXIST/PROP R/W TO NUMERICAL OFFSET.
R/W REV. 04/18/11 (KNW): DELETED PDE, REVISED TDE, AND ADDED DUE ON PARCEL 910.

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

▨ TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

▨ S S DENOTES IMPACTS IN SURFACE WATER

▨ F F DENOTES FILL IN WETLAND

PROJECT REFERENCE NO.	SHEET NO.
R-3307	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 33

Permit Drawing
Sheet 17 of 34

8/17/99

REVISIONS

R/W REV. 07/29/10 (KNW): REVISED EXIST./PROP R/W TO NUMERICAL OFFSET.

NAD 83

SITE 5

MECHANIZED CLEARING

FILL IN 404 WETLANDS

MECHANIZED CLEARING

MATCH LINE -L- STA. 162+50 SEE SHEET 15

MATCH LINE -L- STA. 174+50 SEE SHEET 17

J. BRINSON WEBB, JR. et al (56)

JOSEPH G. BRODA JR., et al (55)

ALTON G. WILLIS, et al (59)

GRACE PRESBYTERIAN CHURCH (58)

MERCER BUILDING CO. (63)

BEAUFORT MEADOWS INC (64)

CORRENA GOODING (57)

F/F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

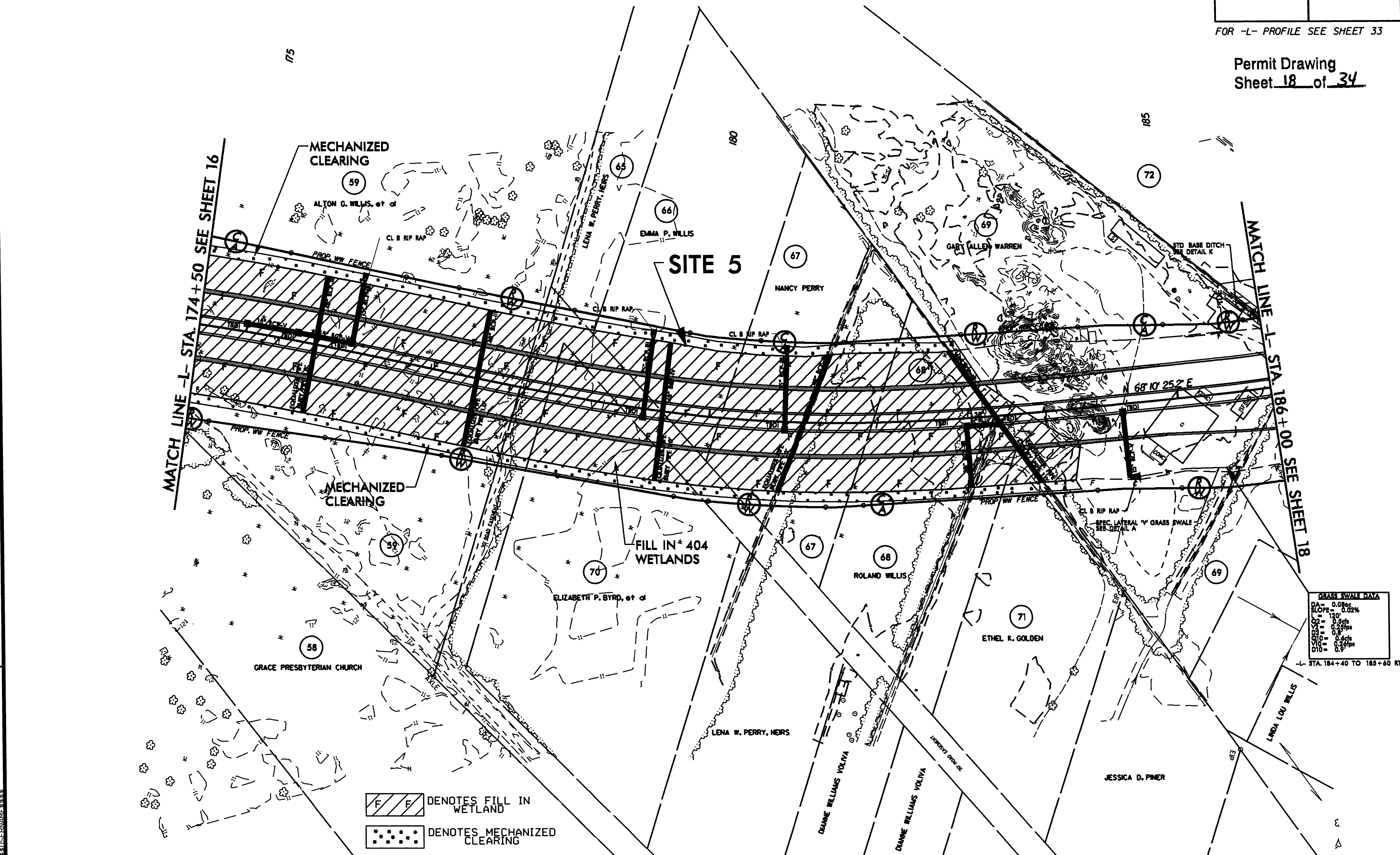
\$\$\$\$\$\$SYSTIME\$\$\$\$\$\$
\$\$\$\$\$\$USERNAME\$\$\$\$\$\$

PROJECT REFERENCE NO.	SHEET NO.
R-3307	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 33

Permit Drawing
Sheet 18 of 34



NAD 83
MATCH LINE -L- STA. 174+50 SEE SHEET 16
MATCH LINE -L- STA. 186+00 SEE SHEET 18
MECHANIZED CLEARING
MECHANIZED CLEARING
SITE 5
FILL IN 404 WETLANDS
ALTON G. WILLIS, et al
LENA W. PERRY, HEIRS
EMMA P. WILLIS
NANCY PERRY
GARY ALLEN WARREN
STD BASE DITCH SEE DETAIL K
N 68°10' 25.2" E
CL B RIP RAP
PROP. WW FENCE
SPEC. LATERAL "V" GRASS SWALE SEE DETAIL A
ROLAND WILLIS
ETHEL K. GOLDEN
ELIZABETH P. BYRD, et al
GRACE PRESBYTERIAN CHURCH
DIANNE WILLIAMS VOLIVA
JESSICA D. PINER
LINDA LOU WILLIS
GRASS SWALE DATA
-L- STA. 184+40 TO 185+60 RT.
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING

REVISIONS

R/W REV. 07/29/10 (KWW) REVISED PROP R/W TO NUMERICAL OFFSET.

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3307	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -Y2- PROFILE SEE SHEETS 35 & 36

Permit Drawing
Sheet 19 of 34

8/17/99

REVISIONS

R/W REV. 07/29/10 (KWH): REVISED EXIST R/W TO NUMERICAL OFFSET.
R/W REV. 04/18/11 (KWH): DELETED PROP. R/W. ADDED PDE AND TCE ON PARCELS 106 & 107; ADDED PARCEL 120 AND ADDED TCE ON PARCEL 120.

APPROX. LOCATION OF BEAUFORT HISTORIC DISTRICT PER NATIONAL REGISTER OF HISTORIC PLACES DESCRIPTION

BEAUFORT CITY LIMITS

NAD 83

GRASS SWALE DATA
-Y2- STA. 24+16 TO 24+84 RT.

SITE 7

SITE 6

HAND CLEARING
BANK STABILIZATION
FILL IN CAMA WETLAND

HAND CLEARING IN CAMA WETLANDS

FILL IN CAMA WETLANDS

WORK BRIDGE (Approx. 30' x 30', TYP.) (Temp. Impacts due to Pipe Piles)

CAUSEWAY REMOVAL

WALLACE W. GARNER, ET UX

TOWN OF BEAUFORT

HARBOR OF REFUGE SIGN

MATCH LINE -Y2- STA. 25+50 SEE SHEET 21

MATCH LINE -Y2- STA. 13+50 SEE SHEET 9

FILL IN CAMA WETLANDS

HAND CLEARING IN CAMA WETLANDS

FILL IN CAMA WETLANDS

CAUSEWAY REMOVAL

CAUSEWAY REMOVAL

UNKNOWN OWNER

THE HOUSING AUTHORITY OF THE TOWN OF BEAUFORT

SITE 7

SITE 6

WB DENOTES TEMPORARY WORKBRIDGE

CR CR DENOTES CAUSEWAY REMOVAL

F F DENOTES FILL IN WETLAND

HC HC DENOTES HAND CLEARING

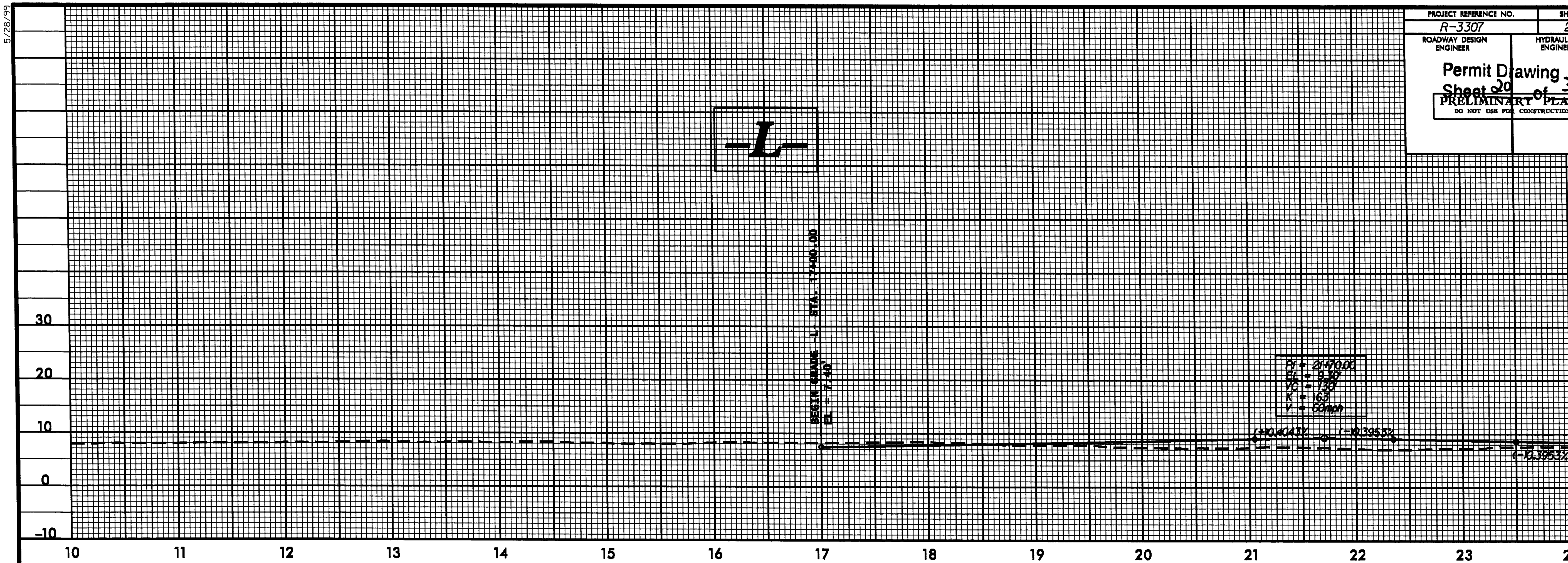
PROJECT REFERENCE NO.	SHEET NO.
R-3307	26

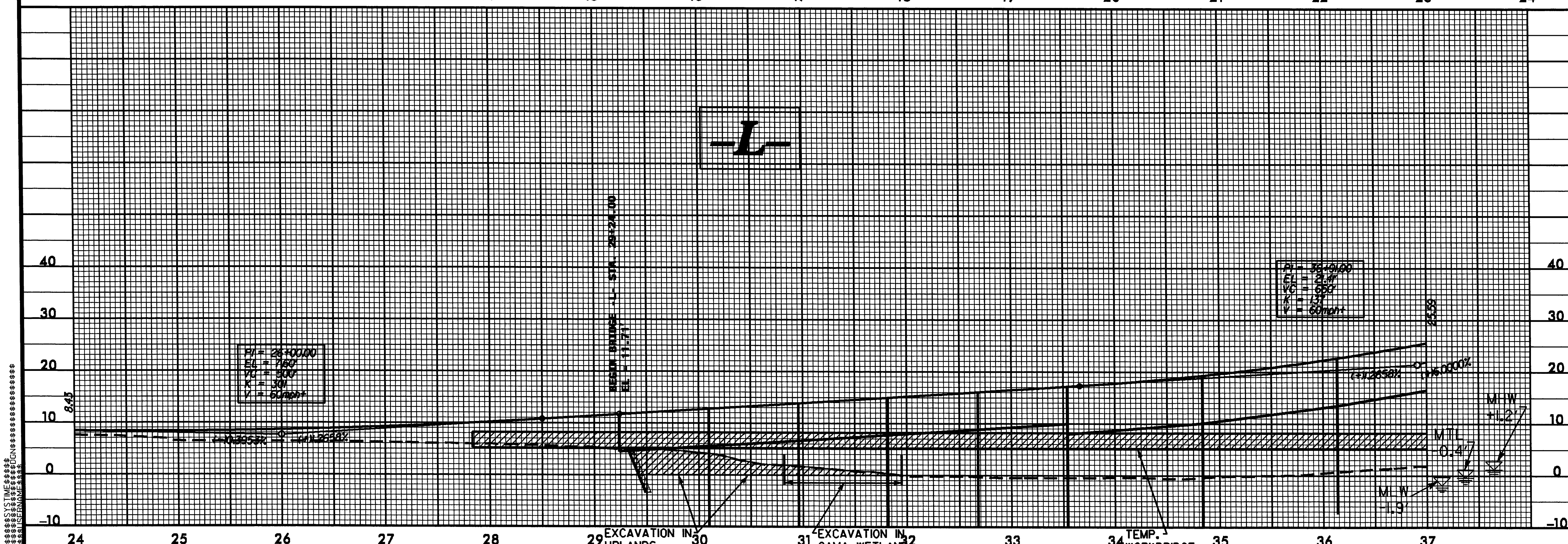
ROADWAY DESIGN ENGINEER

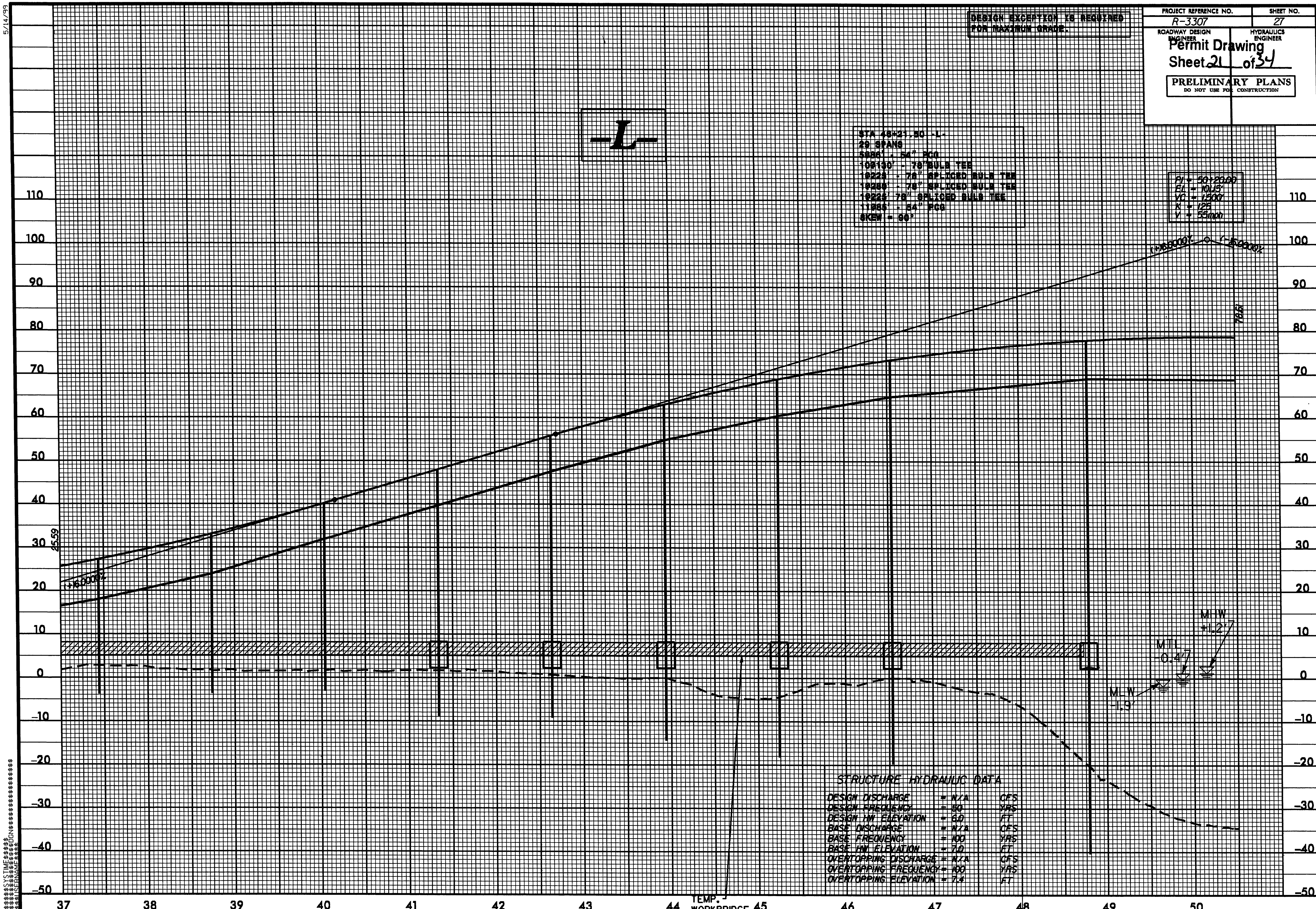
HYDRAULICS ENGINEER

Permit Drawing
Sheet 20 of 34

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION







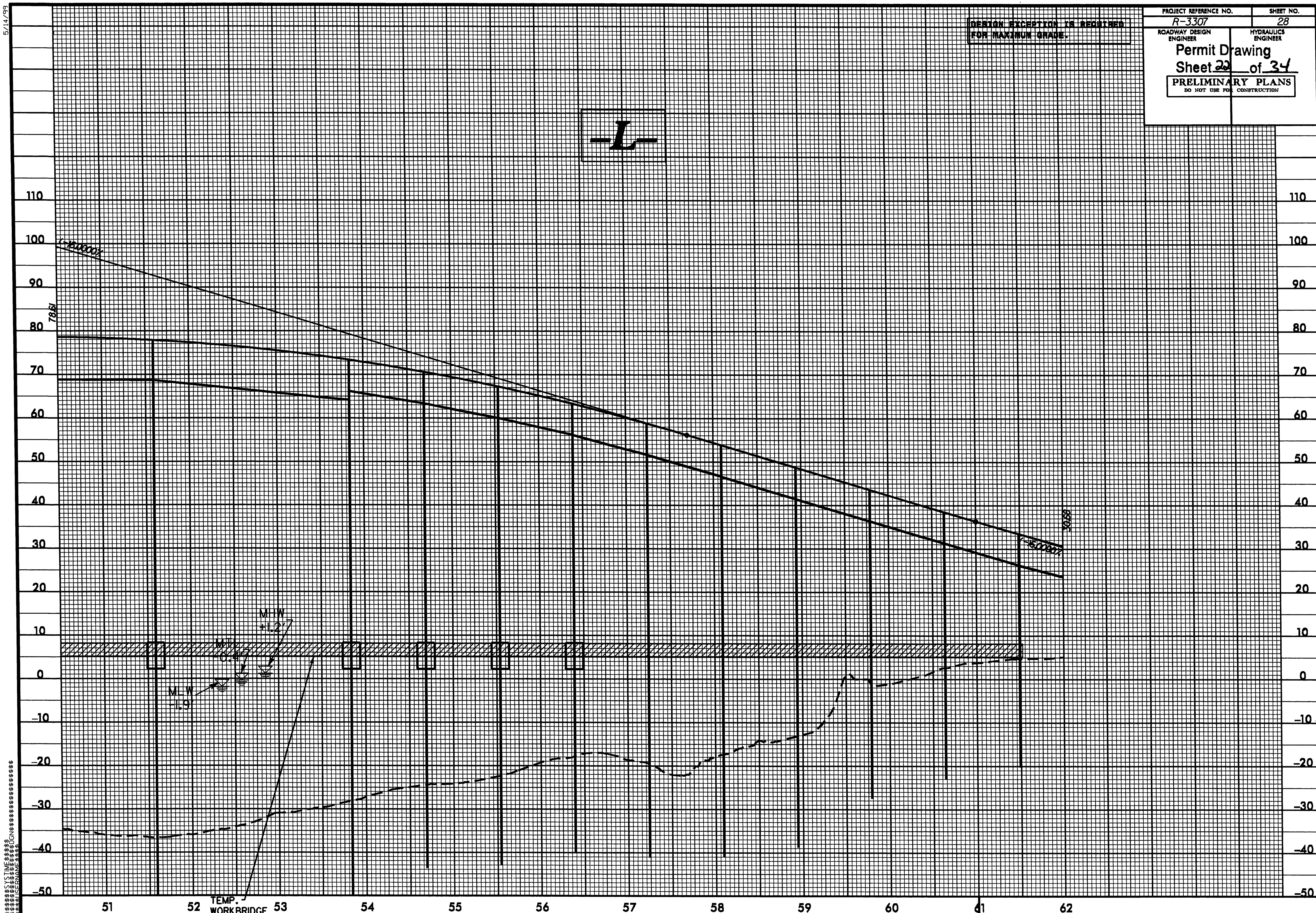
5/14/99
DESIGN EXCEPTION IS REQUIRED FOR MAXIMUM GRADE.
PROJECT REFERENCE NO.
R-3307
SHEET NO.
27
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Permit Drawing
Sheet 21 of 34
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
-L-
STA 46+21.50 -L-
29 SPANS
5@86' - 54" PCG
10@130' - 78" BULB TEE
1@225' - 78" SPLICED BULB TEE
1@280' - 78" SPLICED BULB TEE
1@225' 78" SPLICED BULB TEE
11@85' - 54" PCG
SKEW = 90°
PI = 50+20.00
EL = 101.5'
VC = 1,500'
K = 125
V = 55mph
(+)6.0000%
(-)6.0000%
(+)6.0000%
25.59
78.65
M.H.W. +1.2'
M.T.L. -0.4'
M.L.W. -1.9'
TEMP. WORKBRIDGE
STRUCTURE HYDRAULIC DATA
DESIGN DISCHARGE = N/A CFS
DESIGN FREQUENCY = 50 YRS
DESIGN HW ELEVATION = 6.0 FT
BASE DISCHARGE = N/A CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 7.0 FT
OVERTOPPING DISCHARGE = N/A CFS
OVERTOPPING FREQUENCY = 100 YRS
OVERTOPPING ELEVATION = 7.4 FT
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
37
38
39
40
41
42
43
44
45
46
47
48
49
50

PROJECT REFERENCE NO.	SHEET NO.
R-3307	28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing
Sheet 22 of 34

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DESIGN EXCEPTION IS REQUIRED FOR MAXIMUM GRADE.



5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-3307	29

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

Permit Drawing
Sheet 23 of 24

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DESIGN EXCEPTION IS REQUIRED FOR MAXIMUM GRADE.

PROJECT REFERENCE NO. R-3307

SHEET NO. 35

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

Permit Drawing
Sheet 24 of 34

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

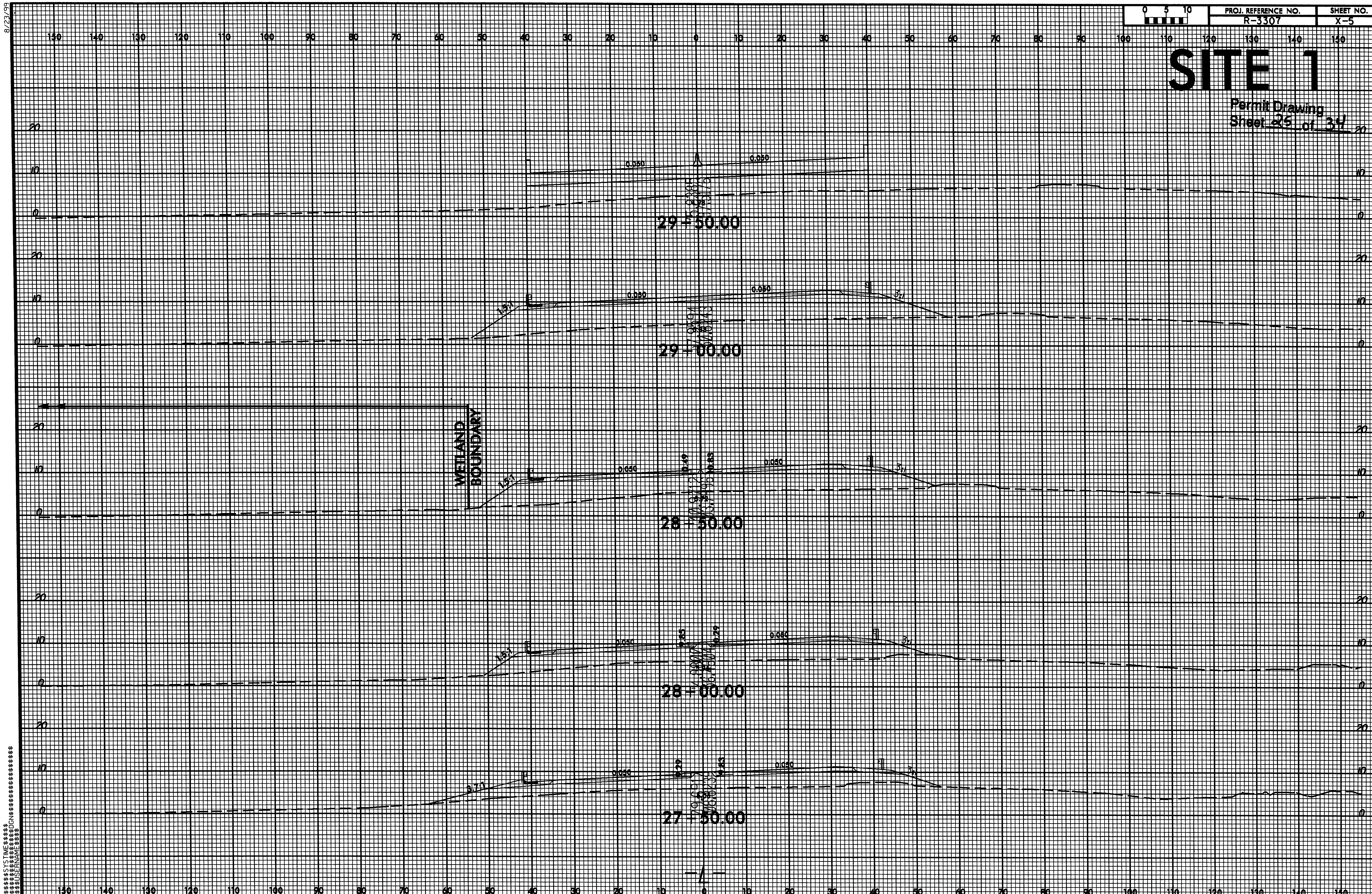
STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE = N/A CFS
DESIGN FREQUENCY = 25 YRS
DESIGN HW ELEVATION = 4.8 FT
BASE DISCHARGE = N/A CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 7.0 FT
OVERTOPPING DISCHARGE = N/A CFS
OVERTOPPING FREQUENCY = 25 YRS
OVERTOPPING ELEVATION = 4.8 FT

PROJ. REFERENCE NO.	SHEET NO.
R-3307	X-5

SITE 1

Permit Drawing
Sheet 25 of 34

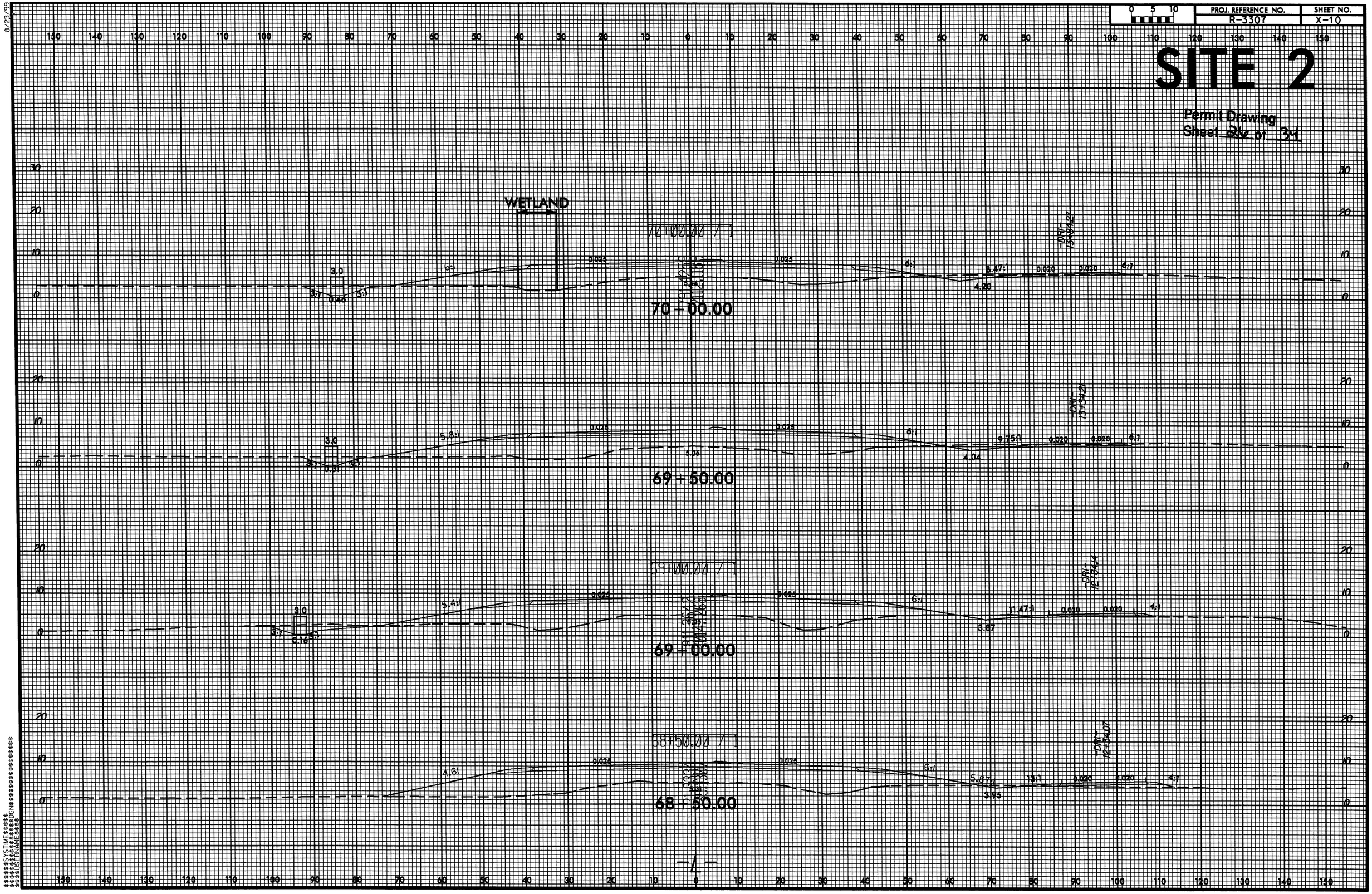


8/23/99

PROJ. REFERENCE NO.	SHEET NO.
R-3307	X-10

SITE 2

Permit Drawing
Sheet 26 of 34



PROJ. REFERENCE NO.	SHEET NO.
R-3307	X-78

SITE 2

Permit Drawing
Sheet 27 of 34

8/23/99

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

5/14/99

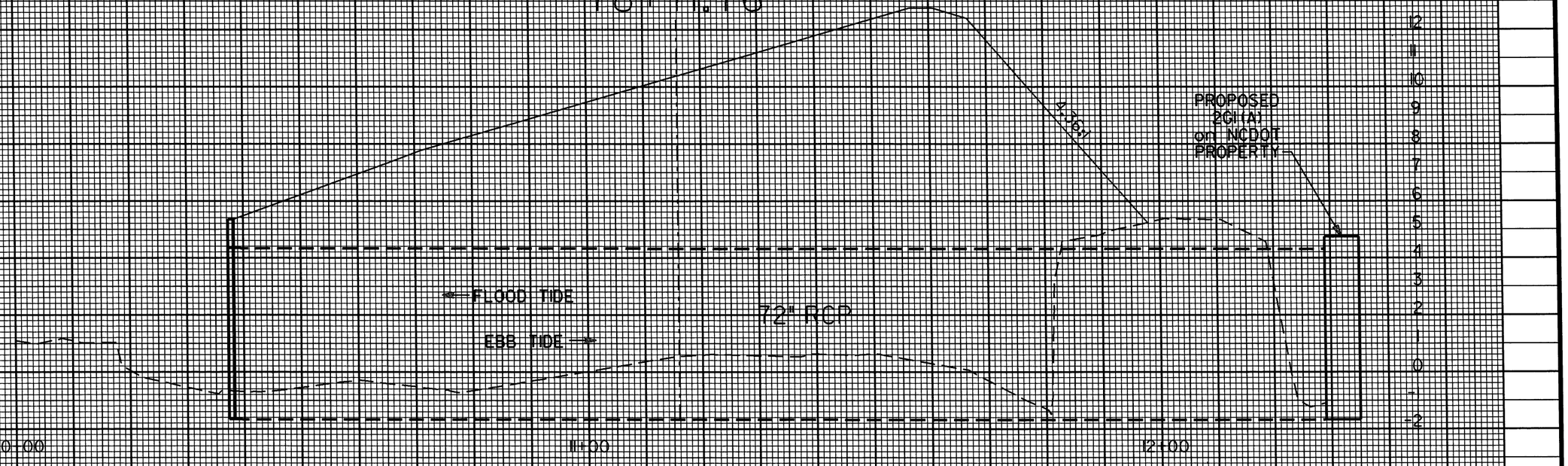
SITE 3

PROJECT REFERENCE NO.	SHEET NO.
R-3307	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 29 of 34



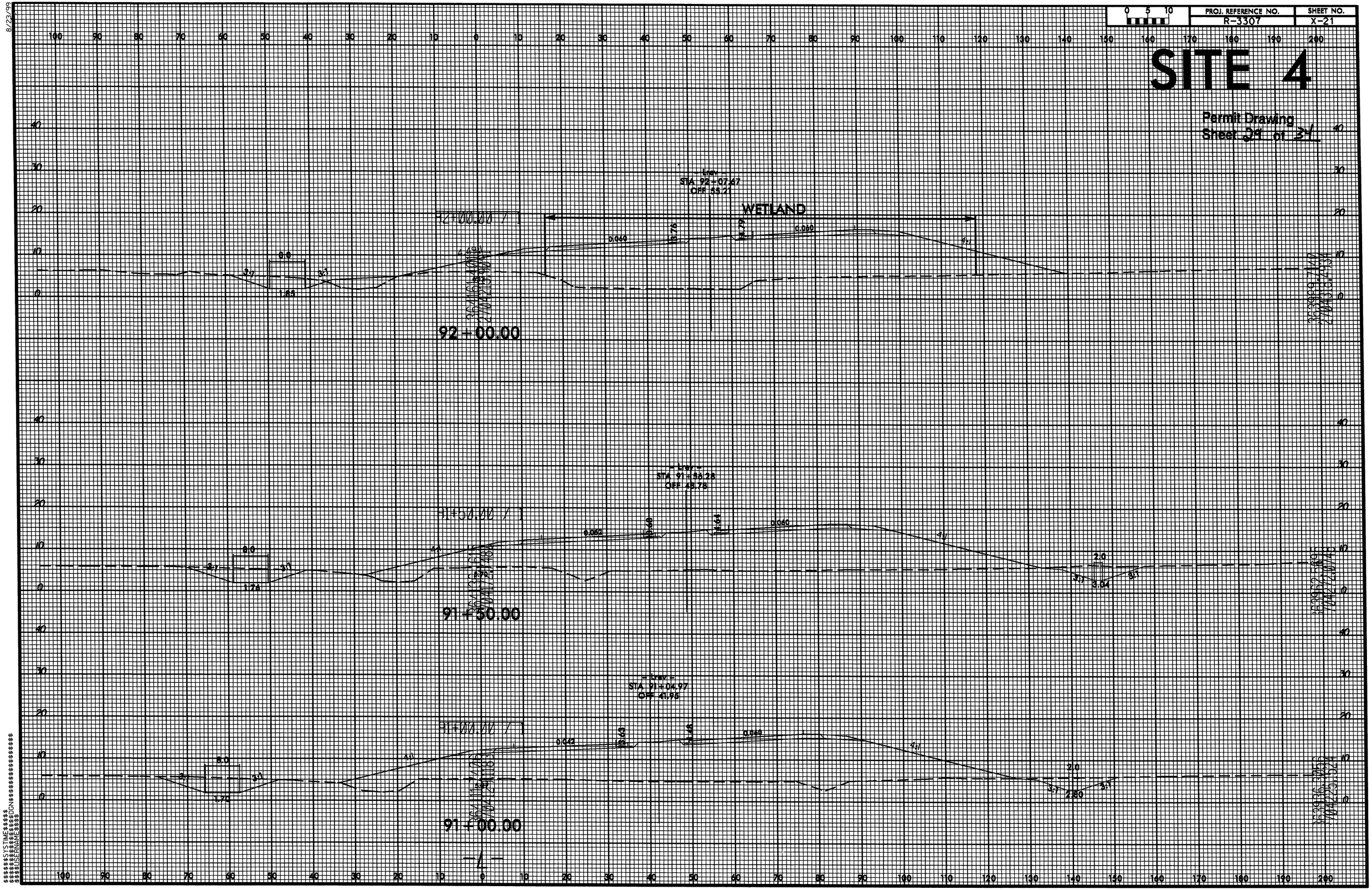
PROFILE
FOR
72" PIPE AT -L- STA 78+72 (+/-)

$$$$SYSTIME$$$$
$$$$ICFNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
R-3307	X-21

SITE 4

Permit Drawing
Sheet 29 of 34



8/23/99

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

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
R-3307	X-64

SITE 5

Permit Drawing
Sheet 20 of 34

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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3307	X-81

SITE 6

Permit Drawing
Sheet 31 of 34

14+00.00

13+50.00

13+00.00

12+50.00

WETLAND

WETLAND BOUNDARY

-Y2-

8/23/99

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

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3307	X-83

SITE 7

Permit Drawing
Sheet 32 of 34

WETLAND BOUNDARY

19+00.00

18+50.00

18+00.00

17+50.00

17+00.00

-Y2-

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

PROJECT REFERENCE NO.	SHEET NO.
R-3307	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing
Sheet 33 of 34

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	Eudy, Joseph	519 E. Front St. New Bern, NC 28560
4	Conscience Bay LLC	232 W. Beaufort Rd. Beaufort, NC 28516
5	Hinson, Ada L.	P.O. Box 367 Beaufort, NC 28516
9	MAINSAIL OF BEAUFORT, LLC	901-F Paverstone Dr. Raleigh, NC 27615
	Beaufort – Morehead	Beaufort, NC 28516
	City Airport	
8	Capalbo, Judith	101 Campen Rd. Beaufort, NC 28516
10	McCann, John J.	224 Lands End Rd. Morehead City, 28557
57	Gooding, Correna	P.O. Box 8 Beaufort, NC 28516
58	Grace Presbyterian Church	P.O. Box 889 Beaufort, NC 28516
59	Willis, Edward C.	1670 Wimbledon Dr. Greenville, NC 27858
65	Perry, Lena W. heirs	P.O. Box 60 Davis, NC 28524
70	Byrd, Elizabeth	1909 Indianwood Ct. Raleigh, NC 27604
66	Willis, Emma Perry	5201 Bentgrass Dr. Raleigh, NC 27610
67	Piner, Nancy Perry	P.O. Box 60, Beaufort, NC 28516

PARCEL NO.	NAMES	ADDRESSES
68	Willis, Roland D.	579 Cape Lookout Dr. Harkers Island, NC 28531
69	Warren, Gary Allen	158 Pigott Rd. Gloucester, NC 28528
71	Golden, Ethel K.	151 Tanners Creek Rd. Beaufort, NC 28516
106	Garner, Wallace W.	134 Pivers Rd. Beaufort, NC 28516
104	The Housing Authority	716 Mulberry St. Beaufort, NC 28516
	of the Town of Beaufort	

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	Wetland Restoration (ac)	WETLAND IMPACTS: CAMA Permanent Fill In Wetlands (ac)	404 Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- STA. 28+10 TO 29+47 LT	Roadway Fill		<0.01					0.02					
	-L- STA 28+99 TO 63+44	Bridge		0.02	<0.01	0.07	0.16			0.03	0.06			
2	-L- STA. 62+82 TO 72+30 &	48" RCP &		0.24	1.38			0.21	0.06	0.02	0.01	139	9	
	-Y1REV- STA. 15+74 TO 20+64	Roadway Fill												
		Bank Stabilization										16		
3	-L- STA. 78+58 TO 79+06 &	72" RCP								0.04	0.01	165	22	
	-Y2- STA. 10+78 TO 11+18 LT	Roadway Fill												
		Bank Stabilization										24		
4	-L- STA. 87+50 TO 92+56	Roadway Fill			*					0.16	<0.01	499	10	**
5	-L- STA. 171+47 TO 183+92	Roadway Fill			3.98			0.53						
6	-Y2- STA. 13+13 TO 18+77 ***	Bridge	1.56	<0.01		<0.01				<0.01	<0.01			
	-Y2- STA. 12+33 TO 13+48 RT	Roadway Fill		0.04				0.03						
7	-Y2- STA. 18+66 TO 24+34	Roadway Fill		0.20					0.12					
		Bank Stabilzation										8		
TOTALS:			1.56	0.50	5.36	0.07	0.16	0.77	0.20	0.25	0.09	851	41	0.00

* 0.18 ACRES of ISOLATED WETLANDS

** NEW BASE DITCH TO BE EXCAVATED PARALLEL TO EXISTING BASE DITCH. PROVIDES DRAINAGE FOR AIRPORT PROPERTY. MITIGATION NOT REQUIRED PER 4C MEETING ON 20 OCT 2010.

*** CAUSEWAY REMOVAL: SITE 6

BRIDGE IMPACTS: Impacts for permanent and temporary bents are included in table above. Break-out for impacts are as follows:

Gallants Channel Bridge
Perm. Fill in CAMA wetlands: 0.02 Ac
Perm. Fill in 404 wetlands: <0.01 Ac
Perm. Fill in Surface Waters: 0.03 Ac

Temp. Fill in wetlands: 0.07 Ac
Temp. Fill in Surface Waters: 0.06 Ac.

Turner Street Bridge
Perm. Fill in CAMA wetlands: <0.01 Ac
Perm. Fill in 404 wetlands: 0 Ac
Perm. Fill in Surface Waters: <0.01 Ac

Temp. Fill in wetlands: <0.01 Ac
Temp. Fill in Surface Waters: <0.01 Ac.

ATN Revised 3/31/05

N.C.D.O.T.
DIVISION OF HIGHWAYS
CARTERET COUNTY
PROJECT: 34528.1.1 (R-3307)
US 70 FROM EXISTING FOUR LANES
AT RADIO ISLAND TO US 70 NORTH
OF SR 1429 (OLGA ROAD)
SHEET (7/27/2011)

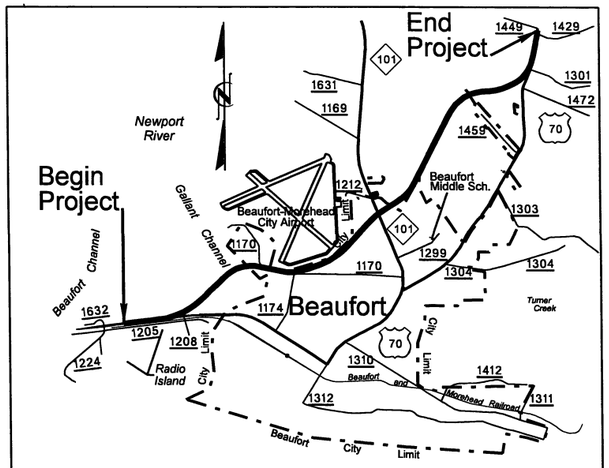
Permit Drawing
Sheet 34 of 34

09/08/99

TIP PROJECT: R-3307

CONTRACT:

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CARTERET COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3307	1	

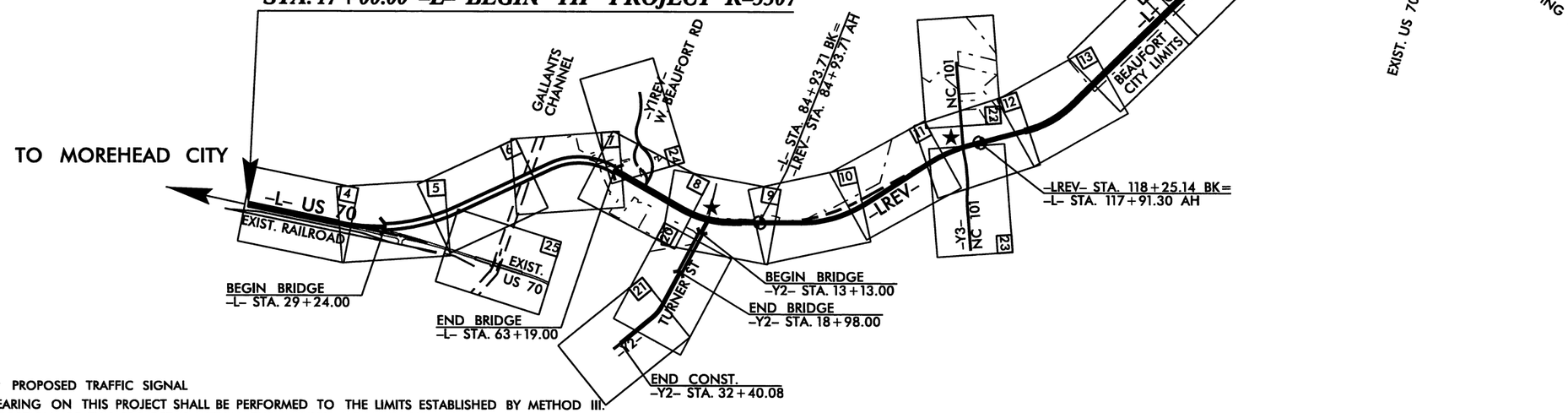
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34528.1.1	STPNHF-70(43)	PE
34528.2.2	STPNHF-70(105)	R/W, UTIL.

LOCATION: *US 70 FROM EXISTING FOUR LANES AT RADIO ISLAND TO US 70 NORTH OF SR 1429 (OLGA ROAD)*

TYPE OF WORK: *GRADING, PAVING, DRAINAGE, CURB & GUTTER SIGNALS, CULVERT AND STRUCTURES*

STA. 207+95.09 –L– END TIP PROJECT R-3307

STA. 17+00.00 –L– BEGIN TIP PROJECT R-3307



★ PROPOSED TRAFFIC SIGNAL

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF BEAUFORT.
THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

** DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVE RADIUS (50 MPH), HORIZONTAL STOPPING SIGHT DISTANCE (38 MPH), AND MAXIMUM VERTICAL GRADE (6%).

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2011 = 27620
ADT 2031 = 39389
DHV = 11 %
D ≐ 60 %
T = 5 % *
V (SHOULDER) = 60 MPH**
V (CURB & GUTTER) = 50 MPH
* (TTST 1 % + DUAL 4) %
FUNC. CLASS = ARTERIAL
STATEWIDE TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT R-3307	=	2.973 MI
LENGTH OF STRUCTURE PROJECT R-3307	=	0.643 MI
TOTAL LENGTH OF F.A. PROJECT STPNHF-70(43)	=	3.616 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 18, 2008

LETTING DATE:
JULY 17, 2012

BRENDA MOORE, PE
PROJECT ENGINEER

KATRINA N.WASHINGTON, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

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$$$$USERNAME$$$$

09/08/89

PROJECT REFERENCE NO.	SHEET NO.
R-3307	1-B

Note: Not to Scale

***S.U.E. = Subsurface Utility Engineering**

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — EWB
- Proposed Wetland Boundary — PWB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Wheel Chair Ramp — WCR
- 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 — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

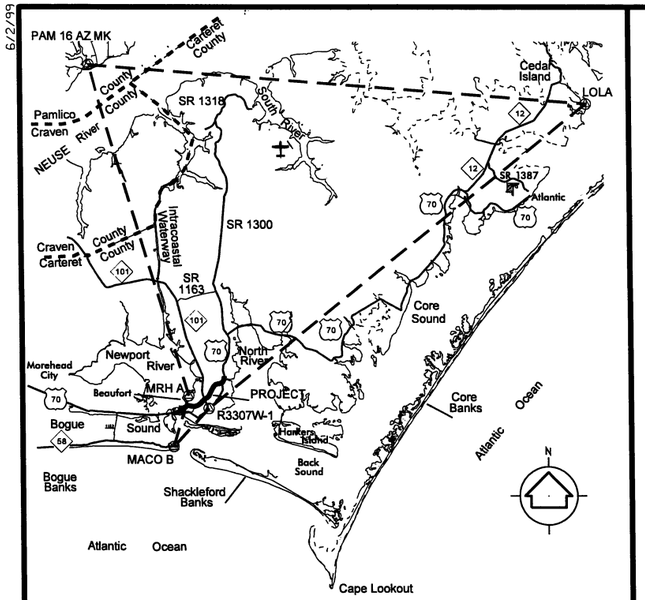
MISCELLANEOUS:

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

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-3307	1-C
Location and Surveys	

SURVEY CONTROL SHEET R-3307



GPS CONTROL NETWORK VICINITY MAP

NC GRID
NAD 83/2001

NCGS MONUMENT "MRH A"
LOCALIZED PROJECT COORDINATES
N=366777.3730 E=2701358.8690

BEGIN TIP PROJECT R-3307
-L- STA 17+00.00
LOCALIZED PROJECT COORDINATE
N=361941.4242 E=2697474.0431

US 70

NCDOT GPS STATION "R3307-2"
LOCALIZED PROJECT COORDINATES
N=363841.9870 E=2701293.5850

-Y1-

-DR1-

GALLANT CHANNEL

TOWN CREEK

NCDOT GPS STATION "R3307-1"
LOCALIZED PROJECT COORDINATES
N=362194.2750 E=2700702.8000

-Y2-
SR 1174
TURNER ST.

-Y5-
SR 1170
WEST BEAUFORT RD.

NCDOT GPS STATION "R3307-3"
LOCALIZED PROJECT COORDINATES
N=366414.4900 E=2705608.7700

-Y3-
NC 101

NCDOT GPS STATION "R3307-4"
LOCALIZED PROJECT COORDINATES
N=365124.1910 E=2706202.7010

NCDOT GPS STATION "R3307W-1"
LOCALIZED PROJECT COORDINATES
N=363137.7010 E=2707147.6420

NCDOT GPS STATION "R3307-5"
LOCALIZED PROJECT COORDINATES
N=370089.7370 E=2706964.0650

NCDOT GPS STATION "R3307-6"
LOCALIZED PROJECT COORDINATES
N=369191.7850 E=2708486.3870

NCDOT GPS STATION "R3307-7"
LOCALIZED PROJECT COORDINATES
N=372791.7290 E=2710437.1090

NCDOT GPS STATION "R3307W-2"
LOCALIZED PROJECT COORDINATES
N=376303.8170 E=2711887.0880

END TIP PROJECT R-3307
-L- STA 207+95.09
LOCALIZED PROJECT COORDINATE
N=372246.5486 E=2711622.8372

US 70

-Y7-
SR 1429

NCDOT GPS STATION "R3307-8"
LOCALIZED PROJECT COORDINATES
N=372384.7550 E=2711676.9880

-Y6-
SR 1301
SHELL LANDING RD.

-Y4-
US 70

-DR3-
US 70

NCDOT GPS STATION "R3307W-3"
LOCALIZED PROJECT COORDINATES
N=371996.2930 E=2713857.7500

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "MRH A"
WITH NAD 1983/01 STATE PLANE GRID COORDINATES OF
NORTHING: 366777.373(ft) EASTING: 2701358.869(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999918650
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "MRH A" TO -L- STATION 17+00.00 IS
S 38°46'32.5" W 6203.086 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:

1. *THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/95 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORKWITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.*

2. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/R3307

THE FILES TO BE FOUND ARE AS FOLLOWS:
R3307_LS_GPSCALIB_070501.HTML
R3307_LS_WGS84_070501.TXT
R3307_LS_LOCAL_070501.TXT
R3307_LS_CONTROL_070501.TXT

THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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
SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

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PROJECT REFERENCE NO.	SHEET NO.
R-3307	1-D
Location and Surveys	

SURVEY CONTROL SHEET R-3307

GPS CALIBRATION REPORT

PROJECT : R3307 CALIBRATION

TIP NUMBER	R-3307		
USER NAME	BREIGNER	DATE & TIME	8:02:11 AM 5/1/2007
COORDINATE SYSTEM	US STATE PLANE 1983(AT GROUND)	ZONE	NORTH CAROLINA 3200
HORIZONTAL DATUM	NAD 1983 (CONUS)		
VERTICAL DATUM	NAVD88	GEOID MODEL	GEOID03 (CONUS) NC SUB GRID
COORDINATE UNITS	US SURVEY FEET		
DISTANCE UNITS	US SURVEY FEET		
HEIGHT UNITS	US SURVEY FEET		

LOCAL SITE INFORMATION

LOCALIZED AROUND	MRH A
LATITUDE	34°44'06.42000"N
LONGITUDE	76°39'55.16263"W
SITE SCALE FACTOR	1.0000813570
HEIGHT	-118.952SFT

THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION USES A LOCALIZED COORDINATE SYSTEM WHICH IS VERY SIMILAR TO NORTH CAROLINA ZONE 3200 FROM WHICH IT IS DERIVED. PLEASE TAKE CARE IN UTILIZING THESE COORDINATES TO ELIMINATE CONFUSION OF THE TWO SYSTEMS. THIS FILE IS TO AID IN THE USE OF REAL TIME KINEMATIC (RTK) GPS DURING CONSTRUCTION LAYOUT.

DATUM TRANSFORMATION PARAMETERS

DATUM TRANSFORMATION COMPUTATION NOT REQUESTED

UPDATED DEFAULT PROJECTION (TRANSVERSE MERCATOR) DEFINITION

UPDATED DEFAULT PROJECTION NOT REQUESTED

HORIZONTAL ADJUSTMENT PARAMETERS

NORTHING COORDINATE OF ROTATION CENTER	367113.468SFT
EASTING COORDINATE OF ROTATION CENTER	2706349.095SFT
ROTATION ABOUT THE CENTER POINT	0°00'00"
TRANSLATION NORTH	-0.020SFT
TRANSLATION EAST	0.005SFT
SCALE FACTOR	1.00000000

VERTICAL ADJUSTMENT PARAMETERS

NORTHING COORDINATE OF ORIGIN POINT	352226.701SFT
EASTING COORDINATE OF ORIGIN POINT	2696914.564SFT
VERTICAL SEPARATION AT ORIGIN	-0.052SFT
SLOPE NORTH	3.182PPM
SLOPE EAST	-0.249PPM

GEOID MODEL DEFINITION

GEOID03 (CONUS) NC SUB GRID

RESIDUAL DIFFERENCES BETWEEN GPS (WGS84) AND LOCAL COORDINATES

SUMMARY

	MAXIMUM ERROR	ROOT MEAN SQUARE ERROR	POINT
HORIZONTAL	0.028SFT	0.004	R3307W-1_GPS
VERTICAL	0.034SFT	0.005	MACO B_GPS
THREE-DIMENSIONAL	0.041SFT	0.006	MACO B_GPS

POINT RESIDUALS

WGS84 COORDINATES		CALCULATED POINT FOR DISPLAY ONLY		LOCAL COORDINATES	
POINT	MACO B_GPS	NORTHING	352226.701SFT	POINT	MACO B
LATITUDE	34°41'43.56620"N	EASTING	2696914.564SFT	NORTHING	352226.685SFT
LONGITUDE	76°40'52.46971"W	ELEVATION	4.227SFT	EASTING	2696914.550SFT
HEIGHT	-118.653SFT	HORZ ERROR	0.022SFT	ELEVATION	4.193SFT
		VERT ERROR	0.034SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.041SFT	QUALITY	CONTROL QUALITY
POINT	R3307-1_GPS	NORTHING	362194.290SFT	POINT	R3307-1
LATITUDE	34°43'21.25298"N	EASTING	2700702.803SFT	NORTHING	362194.275SFT
LONGITUDE	76°40'04.31112"W	ELEVATION	8.897SFT	EASTING	2700702.800SFT
HEIGHT	-114.040SFT	HORZ ERROR	0.015SFT	ELEVATION	8.899SFT
		VERT ERROR	0.002SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.015SFT	QUALITY	ADJUSTED QUALITY
POINT	R3307W-1_GPS	NORTHING	363137.729SFT	POINT	R3307W-1
LATITUDE	34°43'29.07780"N	EASTING	2707147.635SFT	NORTHING	363137.701SFT
LONGITUDE	76°38'46.85751"W	ELEVATION	7.195SFT	EASTING	2707147.642SFT
HEIGHT	-115.786SFT	HORZ ERROR	0.028SFT	ELEVATION	7.221SFT
		VERT ERROR	0.026SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.038SFT	QUALITY	CONTROL QUALITY
POINT	R3307-4_GPS	NORTHING	365124.195SFT	POINT	R3307-4
LATITUDE	34°43'48.94226"N	EASTING	2706202.700SFT	NORTHING	365124.191SFT
LONGITUDE	76°38'57.61125"W	ELEVATION	9.744SFT	EASTING	2706202.701SFT
HEIGHT	-113.239SFT	HORZ ERROR	0.004SFT	ELEVATION	9.762SFT
		VERT ERROR	0.018SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.019SFT	QUALITY	ADJUSTED QUALITY

POINT	MRH A_GPS	NORTHING	366777.354SFT	POINT	MRH A
LATITUDE	34°44'06.41999"N	EASTING	2701358.874SFT	NORTHING	366777.373SFT
LONGITUDE	76°39'55.16263"W	ELEVATION	4.010SFT	EASTING	2701358.869SFT
HEIGHT	-118.952SFT	HORZ ERROR	0.019SFT	ELEVATION	4.016SFT
		VERT ERROR	0.006SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.020SFT	QUALITY	CONTROL QUALITY
POINT	R3307-5_GPS	NORTHING	370089.732SFT	POINT	R3307-5
LATITUDE	34°44'37.86523"N	EASTING	2706964.064SFT	NORTHING	370089.737SFT
LONGITUDE	76°38'47.08170"W	ELEVATION	9.204SFT	EASTING	2706964.065SFT
HEIGHT	-113.807SFT	HORZ ERROR	0.004SFT	ELEVATION	9.206SFT
		VERT ERROR	0.002SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.005SFT	QUALITY	ADJUSTED QUALITY
POINT	R3307-6_GPS	NORTHING	369191.783SFT	POINT	R3307-6
LATITUDE	34°44'28.62859"N	EASTING	2708486.385SFT	NORTHING	369191.785SFT
LONGITUDE	76°38'29.10073"W	ELEVATION	10.701SFT	EASTING	2708486.387SFT
HEIGHT	-112.316SFT	HORZ ERROR	0.003SFT	ELEVATION	10.707SFT
		VERT ERROR	0.006SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.006SFT	QUALITY	ADJUSTED QUALITY
POINT	R3307-8_GPS	NORTHING	372384.751SFT	POINT	R3307-8
LATITUDE	34°44'59.45047"N	EASTING	2711676.985SFT	NORTHING	372384.755SFT
LONGITUDE	76°37'49.96724"W	ELEVATION	6.185SFT	EASTING	2711676.988SFT
HEIGHT	-116.870SFT	HORZ ERROR	0.006SFT	ELEVATION	6.178SFT
		VERT ERROR	0.007SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.009SFT	QUALITY	ADJUSTED QUALITY
POINT	R3307-7_GPS	NORTHING	372791.721SFT	POINT	R3307-7
LATITUDE	34°45'03.76719"N	EASTING	2710437.106SFT	NORTHING	372791.729SFT
LONGITUDE	76°38'04.70519"W	ELEVATION	9.951SFT	EASTING	2710437.109SFT
HEIGHT	-113.098SFT	HORZ ERROR	0.009SFT	ELEVATION	9.942SFT
		VERT ERROR	0.008SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.012SFT	QUALITY	ADJUSTED QUALITY

POINT	R3307-3_GPS	NORTHING	366414.486SFT	POINT	R3307-3
LATITUDE	34°44'01.84027"N	EASTING	2705608.770SFT	NORTHING	366414.490SFT
LONGITUDE	76°39'04.35932"W	ELEVATION	6.588SFT	EASTING	2705608.770SFT
HEIGHT	-116.398SFT	HORZ ERROR	0.004SFT	ELEVATION	6.602SFT
		VERT ERROR	0.014SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.015SFT	QUALITY	ADJUSTED QUALITY
POINT	R3307W-2_GPS	NORTHING	376303.796SFT	POINT	R3307W-2
LATITUDE	34°45'38.15390"N	EASTING	2711887.085SFT	NORTHING	376303.817SFT
LONGITUDE	76°37'46.32884"W	ELEVATION	3.933SFT	EASTING	2711887.088SFT
HEIGHT	-119.148SFT	HORZ ERROR	0.021SFT	ELEVATION	3.909SFT
		VERT ERROR	0.024SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.032SFT	QUALITY	ADJUSTED QUALITY
POINT	R3307W-3_GPS	NORTHING	371996.294SFT	POINT	R3307W-3
LATITUDE	34°44'55.09368"N	EASTING	2713857.745SFT	NORTHING	371996.293SFT
LONGITUDE	76°37'23.95254"W	ELEVATION	2.028SFT	EASTING	2713857.750SFT
HEIGHT	-121.043SFT	HORZ ERROR	0.005SFT	ELEVATION	2.020SFT
		VERT ERROR	0.008SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.009SFT	QUALITY	ADJUSTED QUALITY
POINT	R3307-2_GPS	NORTHING	363841.987SFT	POINT	R3307-2
LATITUDE	34°43'37.40887"N	EASTING	2701293.588SFT	NORTHING	363841.987SFT
LONGITUDE	76°39'56.77155"W	ELEVATION	3.558SFT	EASTING	2701293.585SFT
HEIGHT	-119.390SFT	HORZ ERROR	0.003SFT	ELEVATION	3.565SFT
		VERT ERROR	0.007SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.007SFT	QUALITY	ADJUSTED QUALITY

NOTES:

1. *THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 8395 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORKWITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.*

2. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
   HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/R3307

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   R3307_LS_GPSCALIB_070501.HTML
   R3307_LS_WGS84_070501.TXT
   R3307_LS_LOCAL_070501.TXT
   R3307_LS_CONTROL_070501.TXT

   THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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

SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "MRH A"
WITH NAD 1983/01 STATE PLANE GRID COORDINATES OF
NORTHING: 366777.373(ft) EASTING: 2701358.869(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999918650
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "MRH A" TO -L- STATION 17+00.00 IS
S 38°46'32.5" W 6203.086 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

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$$$$USERNAME$$$$

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-3307	1-E
Location and Surveys	

SURVEY CONTROL SHEET R-3307

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	361863.0495	2696484.3109	6.19	OUTSIDE PROJECT LIMITS	
2	BL-2	361954.0513	2697180.2423	5.86	14+09.91	48.25 LT
3	BL-3	362029.8265	2697862.2331	5.62	20+96.06	40.55 LT
4	BL-4	362116.3820	2698537.0110	5.78	27+78.88	2.07 RT
5	BL-5	362563.9416	2699358.9363	2.92	37+20.61	6.93 LT
6	BL-6	362855.5786	2699921.1478	5.64	43+30.36	157.12 RT
7	BL-7	363961.1444	2701425.2059	5.19	62+93.04	29.35 LT
8	BL-8	363794.7142	2702023.6539	4.01	69+12.66	14.42 RT
9	BL-9	363680.0011	2702484.3129	4.49	73+86.02	36.22 RT
10	BL-10	363880.9676	2703057.6900	5.00	79+95.65	155.87 LT
11	BL-11	364081.0845	2703843.5002	4.66	88+24.23	96.44 LT
12	BL-12	364343.1685	2704459.5603	7.42	95+04.63	13.66 LT
13	BL-13	364936.9035	2705081.3962	8.35	103+67.27	0.30 RT
14	BL-14	365398.2607	2705616.9559	8.18	110+69.80	80.11 RT
15	BL-15	365728.3975	2705946.3657	9.15	115+49.94	58.12 RT
16	BL-16	365889.0663	2705885.1770	9.39	115+92.32	108.42 LT
17	BL-17	366109.5957	2706227.8857	8.56	119+96.43	104.81 LT
R18	BL-18 RESET	366503.0255	2706948.7410	10.22	128+18.12	3.13 RT
19	BL-19	367124.7498	2707336.9038	10.21	135+52.45	9.40 RT
20	BL-20	367809.2900	2707689.3023	10.87	143+22.37	9.27 RT
21	BL-21	368706.4883	2708149.3226	11.45	153+30.63	7.46 RT
22	BL-22	369246.9494	2708415.4192	10.65	159+32.95	3.43 LT
23	BL-23	369720.4606	2708727.0379	11.57	165+00.12	9.78 LT
24	BL-24	370000.1768	2709143.2507	10.62	170+03.08	4.69 RT
25	BL-25	370135.9812	2709666.8429	10.86	175+48.92	6.08 RT
26	BL-26	370215.2906	2710253.1586	10.19	181+41.02	3.78 RT
27	BL-27	370287.3577	2710698.8314	9.30	185+78.90	93.48 RT
28	BL-28	370630.6459	2711033.3270	8.92	190+35.13	11.98 LT
29	BL-29	370855.0444	2711357.9833	9.06	194+02.93	99.98 RT
30	BL-30	371559.4948	2711499.4717	7.45	200+97.07	4.99 RT
31	GPS R3307-8	372384.7550	2711676.9880	6.18	OUTSIDE PROJECT LIMITS	

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
52	BY1-52	364312.4317	2701615.5679	4.62	10+49.90	13.19 RT
53	BY1-53	363943.0203	2701666.0554	5.37	13+29.84	151.24 RT
54	BL-8	363794.7142	2702023.6539	4.01	OUTSIDE PROJECT LIMITS	

BY2

POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
55	BL-9	363680.0011	2702484.3129	4.49	10+82.68	389.16 RT
56	BY2-56	363617.6217	2702832.5641	4.97	10+83.71	35.37 RT
57	BY2-57	363227.6047	2702816.9222	3.93	14+70.53	16.88 LT
58	BY2-58	362655.2826	2702717.0256	2.97	20+51.50	17.77 LT
59	BY2-59	362299.9822	2702667.2422	3.08	24+06.38	34.09 LT
60	BY2-60	362023.5829	2702456.5858	3.85	27+45.23	18.90 RT
61	BY-50	361529.2312	2702217.2851	7.34	OUTSIDE PROJECT LIMITS	

BY3

POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
63	BY3-63	367216.7508	2705308.4840	11.23	OUTSIDE PROJECT LIMITS	
64	GPS R3307-3	366414.4900	2705608.7700	6.60	14+76.52	31.10 RT
65	BL-16	365889.0663	2705885.1770	9.39	20+67.91	21.13 LT
66	BL-15	365728.3975	2705946.3657	9.15	22+40.68	11.81 LT
67	GPS R3307-4	365124.1910	2706202.7010	9.76	28+97.52	17.66 LT
68	BY3-68	364606.3683	2706375.6393	9.31	34+43.49	17.69 RT
69	BY3-69	364226.6074	2706585.8557	8.34	OUTSIDE PROJECT LIMITS	

BY4

POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
70	BL-28	370630.6459	2711033.3270	8.92	OUTSIDE PROJECT LIMITS	
71	BY4-71	370423.0128	2711121.1922	9.69	12+13.07	1.93 RT
72	BY4-72	369819.6088	2711106.4846	9.02	OUTSIDE PROJECT LIMITS	
73	BY4-73	369184.8212	2711077.6404	8.96	OUTSIDE PROJECT LIMITS	

NOTE:
THERE WERE NO SUPPLEMENTAL BENCHMARKS SET ON THIS PROJECT.
THE BASELINES WERE LEVELED.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "MRH A"
WITH NAD 1983/01 STATE PLANE GRID COORDINATES OF
NORTHING: 366777.373(ft) EASTING: 2701358.869(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999918650
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "MRH A" TO -L- STATION 17+00.00 IS
S 38°46'32.5" W 6203.086 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:

1. *THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/95 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORKWITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.*

2. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/R3307

THE FILES TO BE FOUND ARE AS FOLLOWS:
R3307_LS_GPSCALIB_070501.HTML
R3307_LS_WGS84_070501.TXT
R3307_LS_LOCAL_070501.TXT
R3307_LS_CONTROL_070501.TXT

THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. 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
SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

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6/2/99

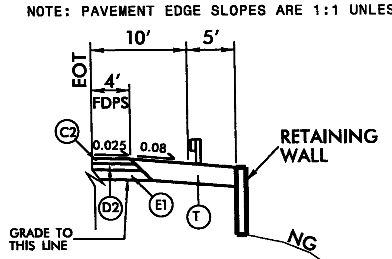
PROJECT REFERENCE NO.	SHEET NO.
R-3307	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE
(PRELIMINARY PAVEMENT DESIGN)

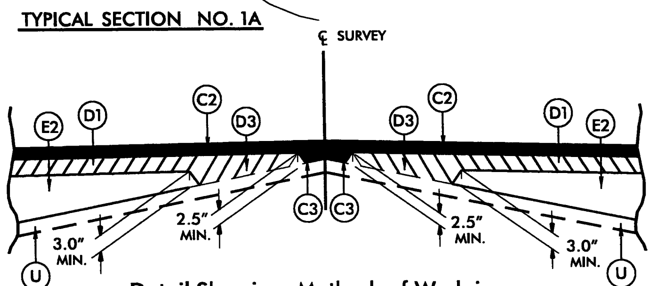
C1	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C2	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2.0" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. APPROX. 4.0" 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 2.5" IN DEPTH OR GREATER THAN 4.0" IN DEPTH.
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
J1	PROP. 6.0" AGGREGATE BASE COURSE.
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	2'-9" CONCRETE CURB AND GUTTER.
R3	5" MONOLITHIC CONCRETE ISLAND (SURFACE MOUNTED).
R4	SINGLE FACED CONCRETE BARRIER.
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).

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

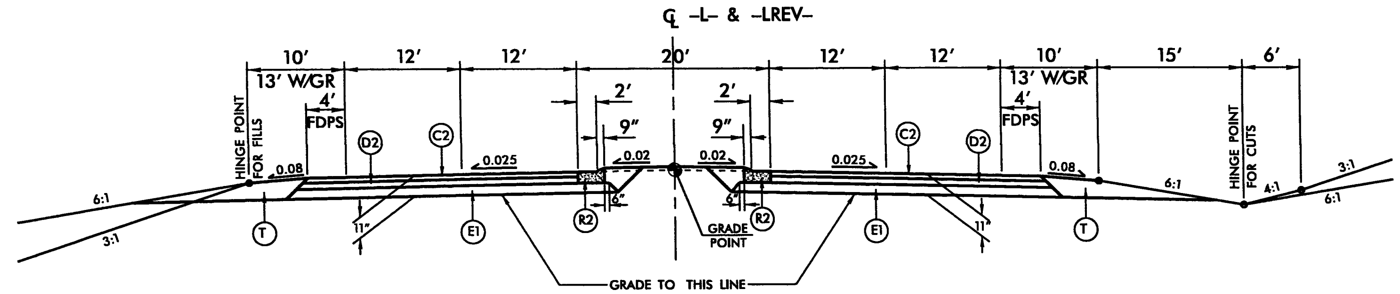


TYPICAL SECTION NO. 1A

USE TYPICAL SECTION NO. 1A IN CONJUNCTION WITH TYPICAL SECTION NO. 1
-L- STA. 63+19.00 TO -L- STA. 66+50.00 RT.

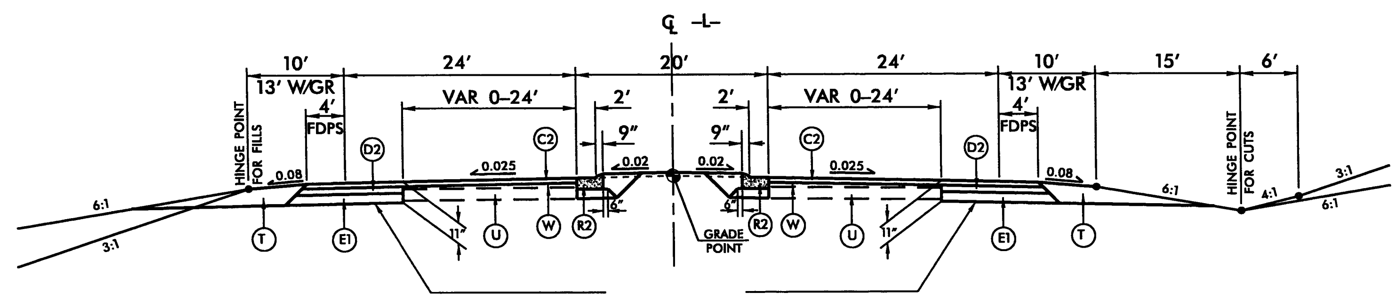


Detail Showing Method of Wedging



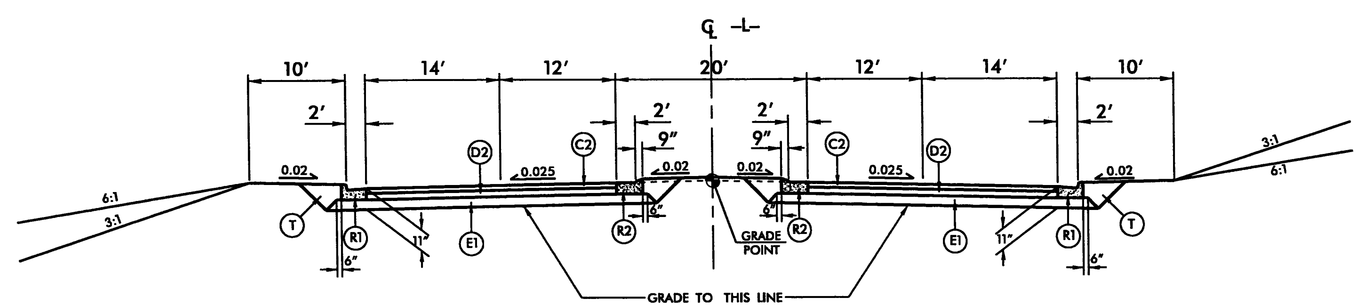
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
-L- STA. 19+50.00 TO -L- STA. 23+00.00 LT.
-L- STA. 25+50.00 TO -L- STA. 29+24.00 (BEGIN BRIDGE) LT.
-L- STA. 19+50.00 TO -L- STA. 29+24.00 (BEGIN BRIDGE) RT.
-L- STA. 63+19.00 (END BRIDGE) TO -L- STA. 84+93.71
-LREV- STA. 84+93.71 TO -LREV- STA. 118+25.14
-L- STA. 117+91.30 TO -L- STA. 184+82.50



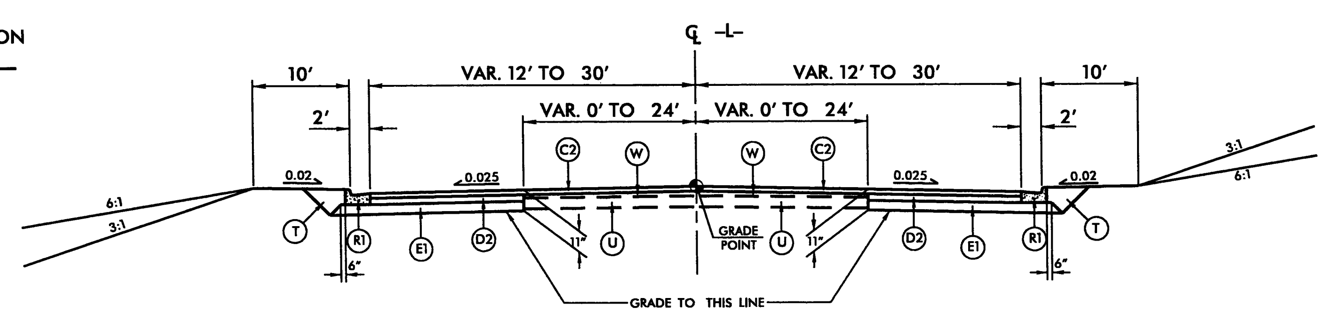
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-L- STA. 17+00.00 TO -L- STA. 19+50.00
-L- STA. 23+00.00 TO -L- STA. 25+50.00 LT.



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
-L- STA. 184+82.50 TO -L- STA. 202+00.00



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
-L- STA. 202+00.00 TO -L- STA. 207+00.00

TRANSITION TO EXISTING FROM -L- STA. 207+00.00 TO -L- STA. 207+95.09

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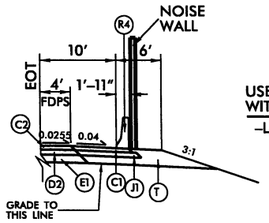
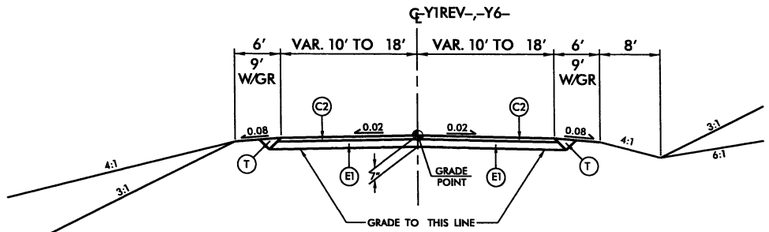
PROJECT REFERENCE NO.	SHEET NO.
R-3307	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



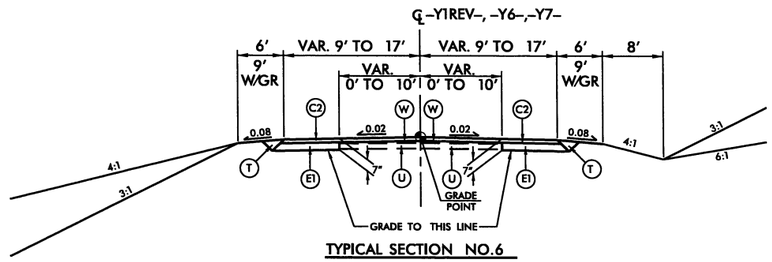
TYPICAL SECTION NO. 1B

USE TYPICAL SECTION NO. 1B IN CONJUNCTION WITH TYPICAL SECTION NO. 1
–L– STA. 147+00.00 TO –L– STA. 167+50.00 RT.



TYPICAL SECTION NO. 5

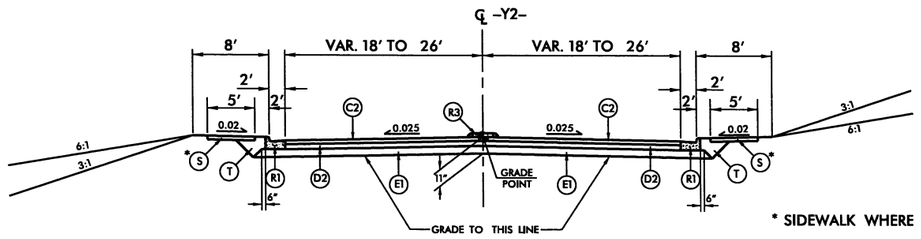
USE TYPICAL SECTION NO. 5
–Y1REV– STA. 14+50.00 TO –Y1REV– STA. 20+59.54
–Y6– STA. 10+36.59 TO –Y6– STA. 12+00.00



TYPICAL SECTION NO.6

USE TYPICAL SECTION NO. 6
–Y1REV– STA. 13+27.88 TO –Y1REV– 14+50.00
–Y6– STA. 12+00.00 TO –Y6– STA. 12+35.00
–Y7– STA. 10+12.05 TO –Y7– STA. 11+60.29

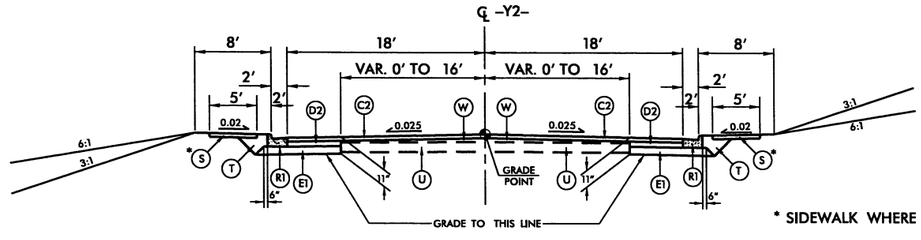
PRELIM. PAVEMENT SCHEDULE	
C1	2" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	2.5" I19.0B
D2	4" I19.0B
D3	VAR. I19.0B
E1	4" B25.0B
E2	VAR. B25.0B
J1	6" ABC
R1	2'x6" C & G
R2	2'x9" C & G
R3	ISLAND
R4	CONCRETE BARRIER
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING



TYPICAL SECTION NO.7

* SIDEWALK WHERE REQUIRED

USE TYPICAL SECTION NO. 7
–Y2– STA. 10+53.74 TO –Y2– STA. 13+13.00 (BEGIN BRIDGE)
–Y2– STA. 18+98.00 (END BRIDGE) TO –Y2– STA. 25+50.00



TYPICAL SECTION NO.8

* SIDEWALK WHERE REQUIRED

USE TYPICAL SECTION NO. 8
–Y2– STA. 25+50.00 TO –Y2– STA. 32+40.08

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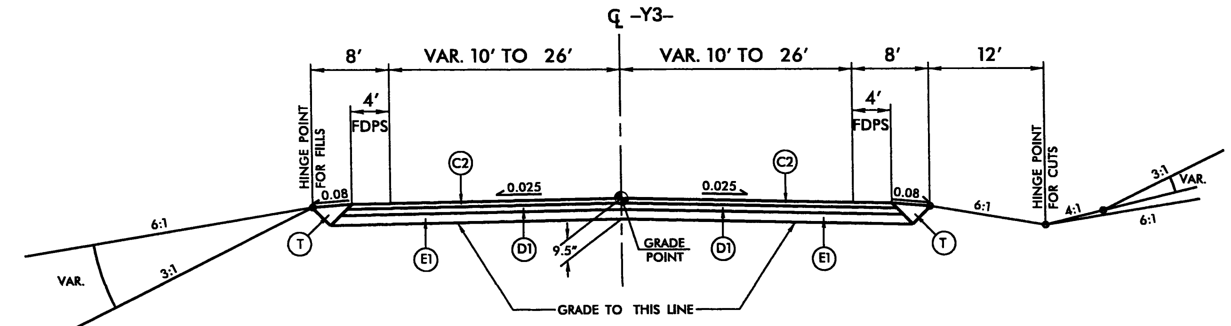
PROJECT REFERENCE NO.	SHEET NO.
R-3307	2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

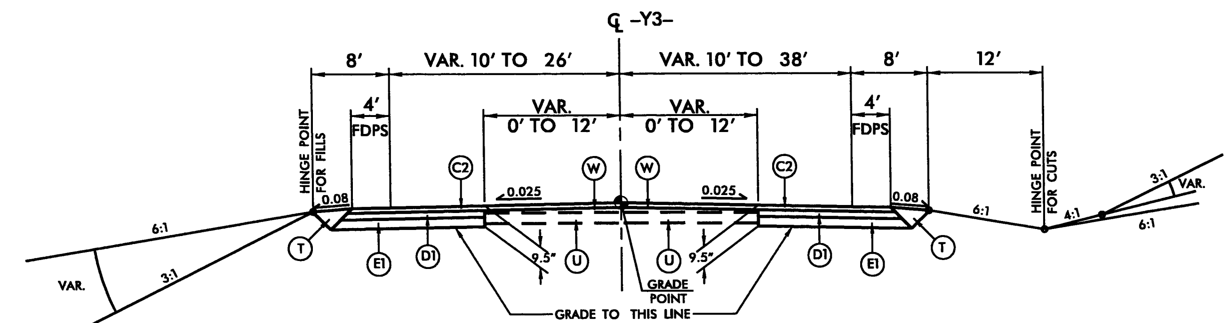
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

6/2/99



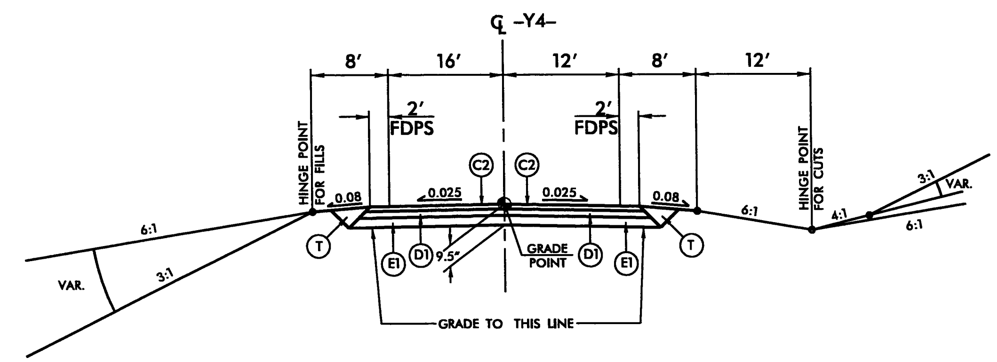
TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9
-Y3- STA. 15+50.00 TO -Y3- STA. 21+30.88
-Y3- STA. 22+24.82 TO -Y3- STA. 23+50.00
-Y3- STA. 24+50.00 TO -Y3- STA. 27+50.00



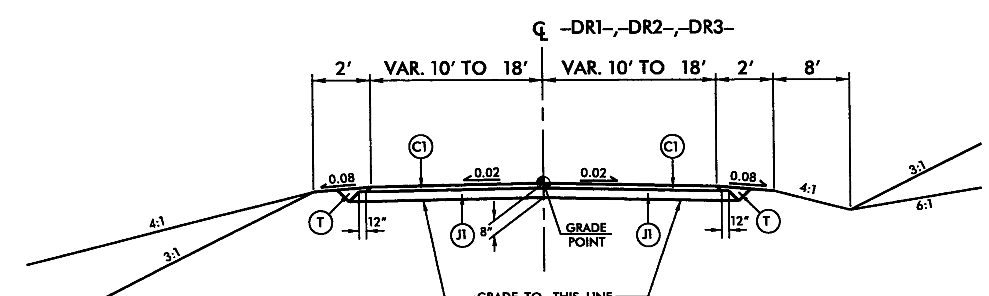
TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10
-Y3- STA. 10+66.00 TO -Y3- STA. 15+50.00
-Y3- STA. 23+50.00 TO -Y3- STA. 24+50.00
-Y3- STA. 27+50.00 TO -Y3- STA. 30+50.00



TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11
-Y4- STA. 10+48.00 TO -Y4- STA. 13+40.00



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12
-DR1- STA. 10+65.26 TO -DR1- STA. 15+11.47
-DR2- STA. 10+46.00 TO -DR2- STA. 10+89.89
-DR3- STA. 13+50.00 TO -DR3- STA. 14+54.73

PRELIM. PAVEMENT SCHEDULE	
C1	2" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	2.5" I19.0B
D2	4" I19.0B
D3	VAR. I19.0B
E1	4" B25.0B
E2	VAR. B25.0B
J1	6" ABC
R1	2'x6" C & G
R2	2'x9" C & G
R3	ISLAND
R4	CONCRETE BARRIER
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

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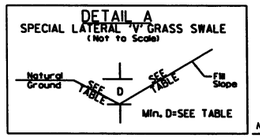
DRAINAGE DITCH and SWALE DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-3307	2-E

HYDRAULICS ENGINEER

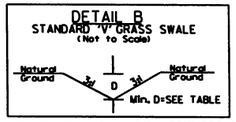
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL A
SPECIAL LATERAL 'V' GRASS SWALE
(Not to Scale)



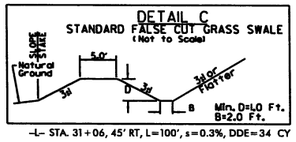
	MIN. D	FRONT SLOPE	BACK SLOPE
–L– STA. 17+00 TO STA. 19+00 Lt.	1.0'	6:1	6:1
–L– STA. 22+50 TO STA. 24+69 Lt.	1.0'	6:1	6:1
–L– STA. 24+69 TO STA. 27+50 Lt.	1.1'	3:1	3:1
–L– STA. 184+40 TO STA 185+60 Rt.	1.0'	3:1	3:1
–L– STA. 188+50 TO STA. 190+67 Lt.	1.0'	3:1	3:1
–L– STA. 194+69 TO STA. 197+44 Lt.	1.3'	3:1	3:1
–L– STA. 200+50 TO STA. 201+07 Lt.	1.0'	3:1	3:1
–L– STA. 201+07 TO STA. 202+50 Rt.	1.0'	3:1	3:1
–L– STA. 204+00 TO STA. 207+18 Lt.	1.0'	3:1	3:1
–L– STA. 204+98 TO STA. 205+44 Rt.	1.0'	3:1	3:1
–Y2– STA. 11+29 TO STA. 12+13 Rt.	1.2'	3:1	3:1
–Y3– STA. 10+00 TO STA. 14+50 Lt.	1.0'	3:1	3:1
–Y3– STA. 17+00 TO STA. 21+25 Rt.	1.0'	3:1	3:1
–Y3– STA. 17+00 TO STA. 20+00 Lt.	1.0'	3:1	3:1
–Y4– STA. 11+29 TO STA. 13+13 Rt.	1.0'	MATCH XSECT.	3:1

DETAIL B
STANDARD 'V' GRASS SWALE
(Not to Scale)



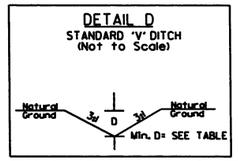
	MIN. D
–L– STA. 191+42, 117' Rt., L=184', s=1.10%, DDE=116CY	1.0'
–Y2– STA. 27+42, 39' Rt., L=230', s=0.11%, DDE=110CY	1.9'

DETAIL C
STANDARD FALSE CUT GRASS SWALE
(Not to Scale)



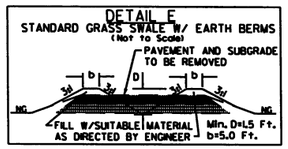
–L– STA. 31+06, 45' RT, L=100', s=0.3%, DDE=34 CY

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



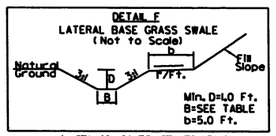
	MIN. D
–L– STA. 61+74, 16' RT, L=77', s=0.3%, DDE=9 CY	1.0
–L– STA. 62+09, 49' RT, L=84', s=1.17%, DDE=10 CY	1.0
–L– STA. 194+69, 69' Lt, L=50', s=2.98%, DDE=36 CY	2.0
–L– STA. 201+07, 65' LT., L=50', s=1.82%, DDE=16 CY	1.5
–L– STA. 201+08 TO STA. 203+05, 90' LT., L=195', s=0.70%, DDE=100 CY	1.5
–L– STA. 205+02, 56' LT., L=50', s=2.7%, DDE=14 CY	1.5
–Y4– STA. 12+00, 62.5' Lt, L=50', s=0.20%, DDE=4 CY	1.0

DETAIL E
STANDARD GRASS SWALE W/ EARTH BERMS
(Not to Scale)



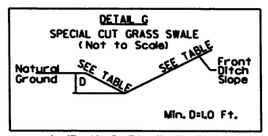
–L– STA. 65+36 78' LT., L=135', s=0.4%, DDE=0 CY

DETAIL F
LATERAL BASE GRASS SWALE
(Not to Scale)



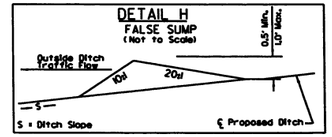
	BASE
–L– STA. 68+80 TO STA. 73+50 Lt.	3.0'
–L– STA. 73+50 TO STA. 78+82 Lt.	2.0'
–LREV– STA. 90+73 TO 91+50 Rt.	2.0'
–L– STA. 128+34 TO STA. 133+00 Lt.	0' (V Base)

DETAIL G
SPECIAL CUT GRASS SWALE
(Not to Scale)



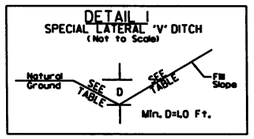
	FRONT SLOPE	BACK SLOPE
–L– STA. 68+50 TO STA. 72+50 Rt.	6:1	Varies 13:1 to 6:1
–L– STA. 73+00 TO STA. 73+17 Rt.	3:1	3:1

DETAIL H
FALSE SUMP
(Not to Scale)



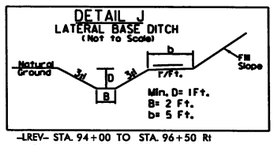
–L– STA. 77+50 Lt.

DETAIL I
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



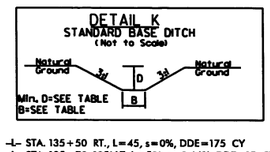
	MIN. D	FRONT SLOPE	BACK SLOPE
–L– STA. 79+44 TO STA. 82+55 Rt.	1.0'	3:1	3:1
–L– STA. 159+44 TO STA. 160+00 Lt.	1.0'	4:1	3:1
–L– STA. 197+44 TO STA. 200+50 Lt.	1.3'	3:1	3:1
–L– STA. 198+61 TO STA. 201+08 Rt.	1.0'	3:1	3:1
–L– STA. 203+65 TO STA. 204+98 Rt.	1.0'	3:1	3:1
–L– STA. 206+00 TO –Y7– STA. 10+85 Rt.	1.0'	3:1	3:1
–Y1REV– STA. 13+27.88 TO STA. 15+70 Lt.	1.0'	3:1	3:1
–Y3– STA. 22+88 TO –Y3– STA. 24+50 Lt.	1.0'	6:1	6:1
–Y3– STA. 22+65 TO –Y3– STA. 24+00 Rt.	1.0'	6:1	6:1
–Y6– STA. 12+00 Lt. TO –L– STA. 198+61 Rt.	1.0'	3:1	3:1

DETAIL J
LATERAL BASE DITCH
(Not to Scale)



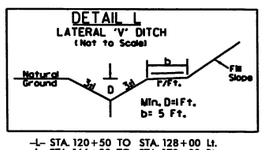
–LREV– STA. 94+00 TO STA. 96+50 Rt
–LREV– STA. 97+00 TO STA. 99+00 Rt
–LREV– STA. 99+50 TO STA. 101+00 Rt
–LREV– STA. 101+50 TO STA. 104+60 Rt
–LREV– STA. 105+50 TO STA. 111+16 Rt
–L– STA. 164+00 Lt TO STA. 164+90 Lt

DETAIL K
STANDARD BASE DITCH
(Not to Scale)



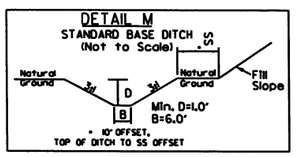
	MIN. D	B
–L– STA. 135+50 RT., L=45, s=0%, DDE=175 CY	1.0'	6.0'
–L– STA. 185+70, 105' LT, L=50', s=0.66%, DDE=15 CY	1.5'	3.0'
–L– STA. 185+95, 80' LT, L=45', s=1.19%, DDE=13 CY	1.2'	3.0'
–L– STA. 201+07, 63' RT., L=105', s=0.30%, DDE=40 CY	1.5'	2.0'
–L– STA. 204+98, 56' RT., L=373', s=0.20%, DDE=133 CY	1.5'	2.0'
–DR3– STA. 11+02, 26' RT, L=560', s=0.42%, DDE=720 CY	2.0'	4.0'
–Y3– STA. 15+45, 53' Lt, L=70', s=5%, DDE=170 CY	1.0'	2.0'
–Y3– STA. 16+45, 60' Lt, L=60', s=2.83%, DDE=25 CY	1.0'	6.0'
–Y4– STA. 12+50, 33.5' LT, L=65', s=0.2%, L=158', s=0.96%, DDE=150 CY	1.0'	4.0'

DETAIL L
LATERAL 'V' DITCH
(Not to Scale)



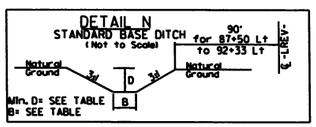
–L– STA. 120+50 TO STA. 128+00 Lt.
–L– STA. 166+00 TO STA. 170+00 Rt.

DETAIL M
STANDARD BASE DITCH
(Not to Scale)



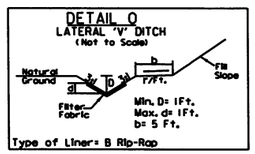
–L– STA. 165+00 TO STA. 168+20 Lt.

DETAIL N
STANDARD BASE DITCH
(Not to Scale)



	B	MIN. D
–LREV– STA. 87+50 TO –LREV– STA. 92+33 Lt.	8'	1'
–LREV– STA. 90+73 Lt. L= 14', s=0%, DDE= 7 CY	2'	1'
–LREV– STA. 93+30 Lt. L= 35', s=1.7%, DDE= 85 CY	2'	1'
–LREV– STA. 94+60 Lt. L= 38', s=0%, DDE= 125 CY	5'	1'
–LREV– STA. 96+50 Lt. L= 36', s=0.3%, DDE= 90 CY	5'	1'
–LREV– STA. 99+00 Lt. L= 75', s=1.20%, DDE= 165 CY	2'	1'
–LREV– STA. 110+45 Lt. L= 60', s=0.1%, DDE= 25 CY	VARIES, 5' MAX	1'
–LREV– STA. 111+25 Rt. L= 50', s=0.1%, DDE= 20 CY	VARIES, 5' MAX	1'
–L– STA. 143+50 TO –L– STA. 153+25 Lt	3'	1'
–L– STA 146+00 Lt L= 35', s=1.2%, DDE= 30 CY	2'	1'
–L– STA 147+94 Lt L= 35', s=0.9%, DDE= 35 CY	2'	1'
–L– STA 150+50 Lt L= 20', s=1.59%, DDE= 25 CY	2'	1'
–L– STA 166+00 Lt L= 24', s=0%, DDE= 6 CY	2'	1'
–L– STA 170+10 Lt L= 35', s=0%, DDE= 90 CY	6'	1'

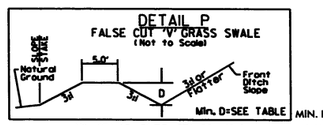
DETAIL O
LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= B Rip-Rap

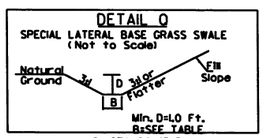
–L– STA. 120+20 TO STA. 120+50 LT
–L– STA. 170+00 TO STA. 170+37 RT
–L– STA. 170+47 TO STA. 171+00 RT

DETAIL P
FALSE CUT 'V' GRASS SWALE
(Not to Scale)



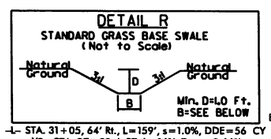
	MIN. D
–Y2– STA. 19+31 TO STA. 20+40 Lt.	1.8'

DETAIL Q
SPECIAL LATERAL BASE GRASS SWALE
(Not to Scale)



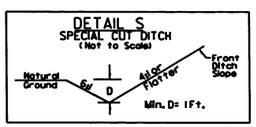
	BASE
–Y2– STA. 24+45 Rt.	2'
–Y3– STA. 12+00 TO STA. 15+20 Rt.	2'

DETAIL R
STANDARD GRASS BASE SWALE
(Not to Scale)



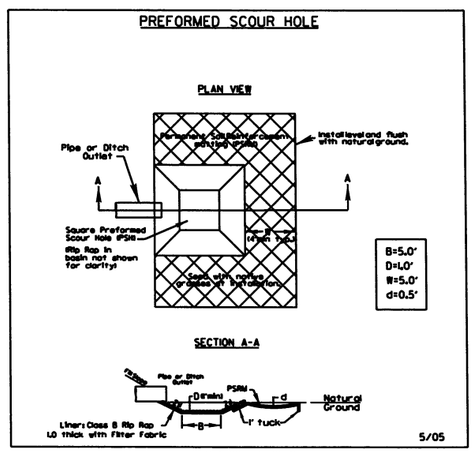
	BASE
–L– STA. 31+05, 64' Rt., L=159', s=1.0%, DDE=56 CY	4'
–Y2– STA. 27+82.4 RT, L=161' @ s=0.66%, L=106' @ s=0.25% DDE=106 CY	2'

DETAIL S
SPECIAL CUT DITCH
(Not to Scale)



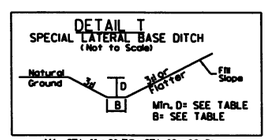
–Y3– STA. 24+00 Rt TO STA. 27+00 Rt

PREFORMED SCOUR HOLE



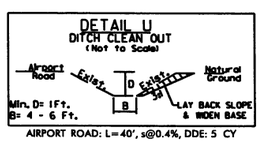
–L– STA. 30+66, 40' Rt.
–L– STA. 30+85, 85' Rt.
–Y2– STA. 11+00, 74.5' Lt.

DETAIL T
SPECIAL LATERAL BASE DITCH
(Not to Scale)



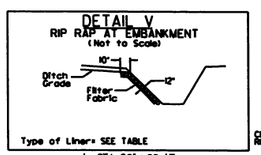
	MIN. D	B
–Y6– STA. 11+21 TO STA. 12+00 Rt.	2.0'	2.0'
–Y4– STA. 12+50 TO STA.13+13 Lt.	1.7'	4.0'

DETAIL U
DITCH CLEAN OUT
(Not to Scale)



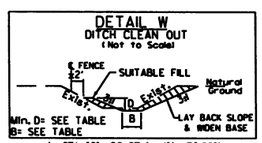
AIRPORT ROAD: L=40', s@0.4%, DDE: 5 CY

DETAIL V
RIP RAP AT EMBANKMENT
(Not to Scale)



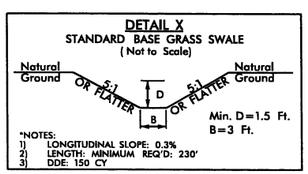
	TYPE OF LINER CLASS RIP RAP	TONS	FILTER FABRIC (SY)
–L– STA. 201+00 LT.	CL B	6	18
–L– STA. 164+91 LT.	CL B	6	18
–Y2– STA 10+94 LT.	CL B	11	27
–Y2– STA 11+08 LT.	CL B	5	12
–Y2– STA 24+05 RT.	CL B	5	16
–Y2– STA 24+19 RT.	CL B	5	16

DETAIL W
DITCH CLEAN OUT
(Not to Scale)



	MIN. D	B
–L– STA 191+28 RT: L=41', s@1.00% DDE: 53 CY, SUITABLE FILL=11 CY	1.4'	6.0'
–DR3– STA 11+11 RT: L=418', s@0.53%, L=140', s@0.3%, DDE: 1500 CY, SUITABLE FILL=45 CY	1.3'	4.0'

DETAIL X
STANDARD BASE GRASS SWALE
(Not to Scale)



*NOTES:
1) LONGITUDINAL SLOPE: 0.3%
2) LENGTH: MINIMUM REQ'D: 230'
3) DDE: 150 CY

AT –L– STA 62+50 RT

30-JUN-2011 14:34
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-3307	2-F

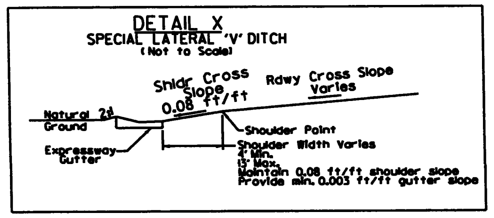
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

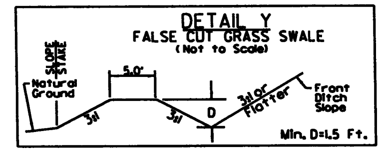
8/17/99

REVISIONS

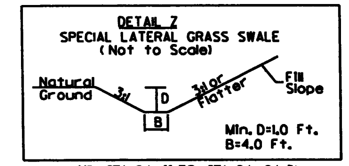
DRAINAGE DITCH DETAILS



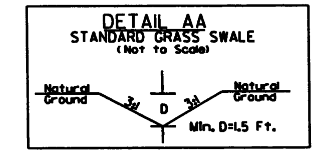
-Y1REV- STA. 14+50 Lt TO STA. 15+50 Lt



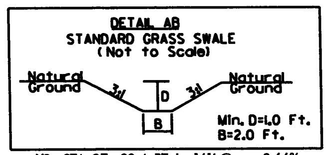
-Y2- STA. 19+00 TO STA. 20+41 Lt.
-Y2- STA. 22+02 TO STA. 22+50 Lt.



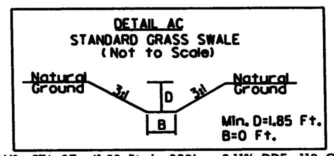
-Y2- STA. 24+11 TO STA. 24+84 Rt.



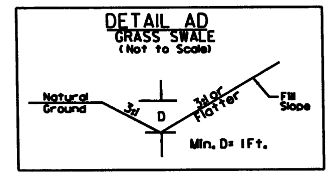
-Y2- STA. 18+81 TO STA. 19+00 Lt., L=19', s=0.5%, DDE=6 CY



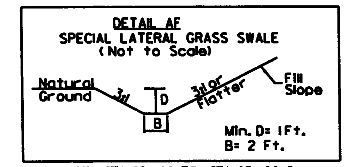
-Y2- STA. 27+82.4 RT, L=161' @ s=0.66%,
L=106' @ s=0.25% DDE=106 CY



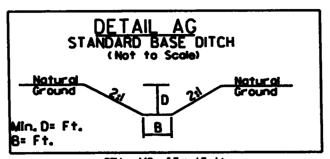
-Y2- STA. 27+41.50 Rt., L=230', s=0.11%, DDE=110 CY



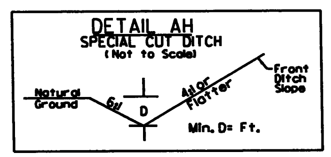
-Y3- STA.10+00 Lt TO STA. 14+50 Lt



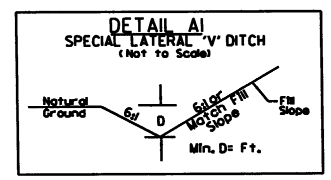
-Y3- STA. 12+00 TO STA. 15+20 Rt.



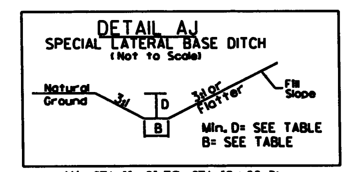
STA. -Y3- 15+45 Lt.
LENGTH: 70'
SLOPE: 5%
DDE: 170 CY



-Y3- STA. 17+00 Lt TO STA. 20+00 Lt
-Y3- STA. 24+00 Rt TO STA. 27+00 Rt

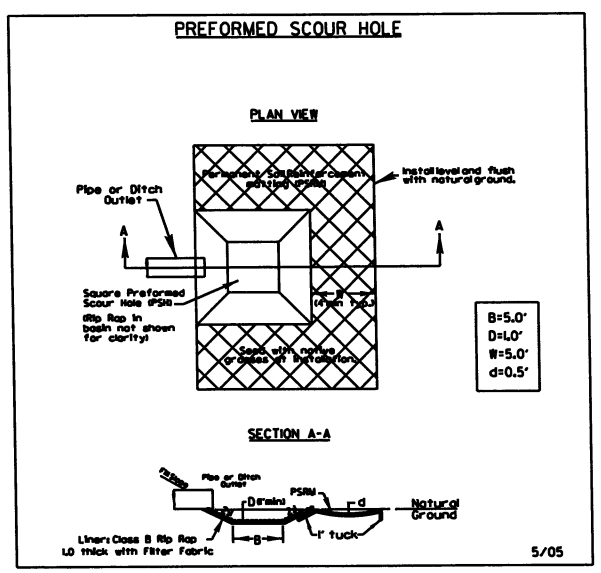


-Y3- STA. 22+88 Lt TO STA. 24+50 Lt
-Y3- STA. 22+65 Rt TO STA. 24+00 Rt



-Y6- STA. 11+21 TO STA. 12+00 Rt.
-Y4- STA. 12+50 TO STA.13+13 Lt.

MIN. D	B
2.0'	2.0'
1.7'	4.0'



-L- STA. 30+66, 40' Rt.
-L- STA. 30+85, 85' Rt.

30-JUN-2011 14:34
r:\drainage\r3307_rdy_dtl.dgn
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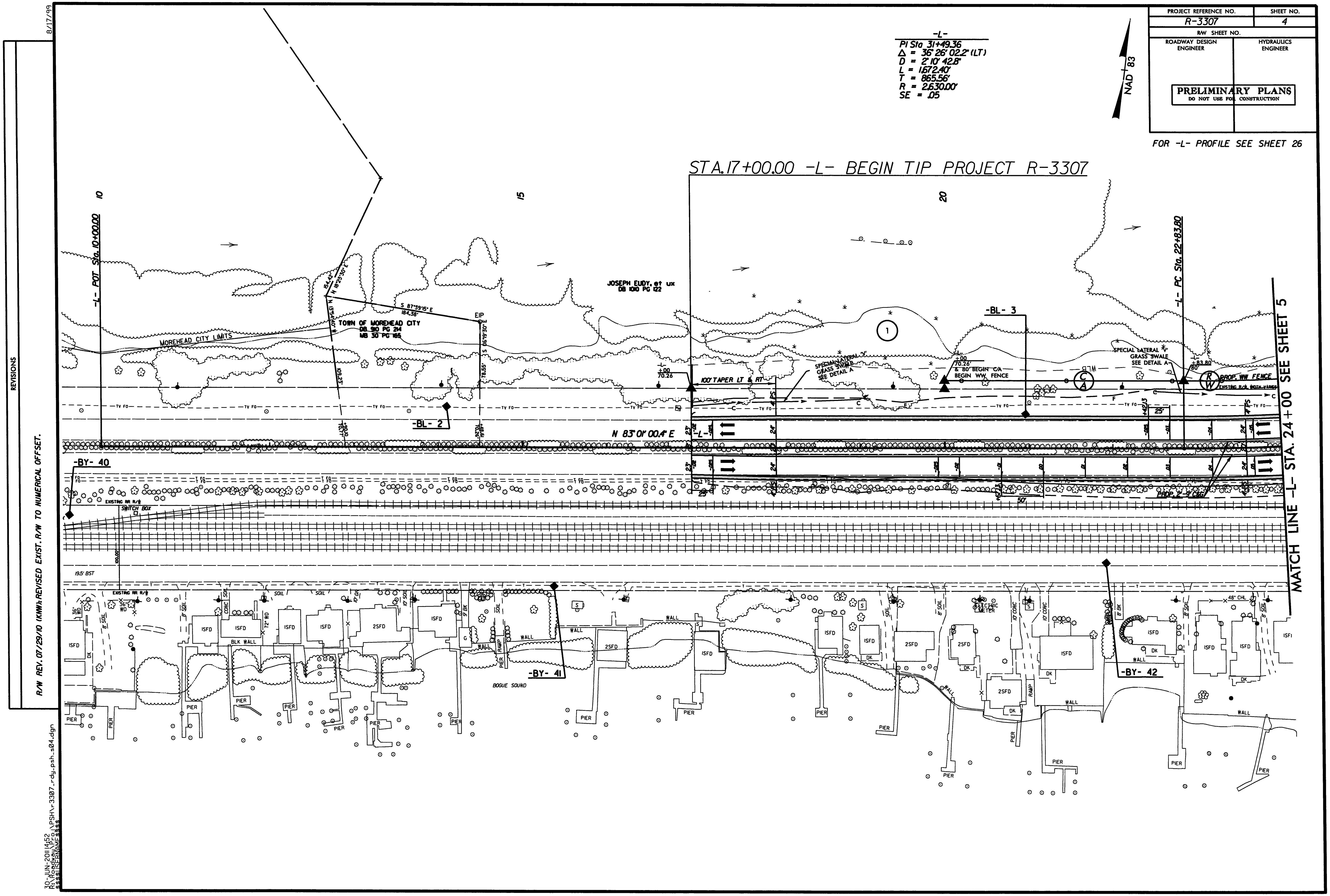

PROJECT REFERENCE NO.
SHEET NO.
R-3307
4
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
FOR -L- PROFILE SEE SHEET 26
NAD 83
-L-
PI Sta 31+49.36
Δ = 36° 26' 02.2" (LT)
D = 2° 10' 42.8"
L = 1,672.40'
T = 865.56'
R = 2,630.00'
SE = .05
STA.17+00.00 -L- BEGIN TIP PROJECT R-3307
MATCH LINE -L- STA. 24+00 SEE SHEET 5
-L- POT Sta. 10+00.00
-L- PC Sta. 22+83.80
JOSEPH EUDY, et ux
DB 1010 PG 122
TOWN OF MOREHEAD CITY
DB 910 PG 214
MB 30 PG 165
MOREHEAD CITY LIMITS
S 87°39'15" E
184.38'
EIP
N 83° 01' 00.4" E
-BL- 2
-BL- 3
-BY- 40
-BY- 41
-BY- 42
100' TAPER LT & RT
SPECIAL LATERAL V GRASS SWALE SEE DETAIL A
& 80' BEGIN C/A
BEGIN WW FENCE
PROP. WW FENCE
EXISTING RR R/W
SWITCH BOX
19.5' BST
BOGUE SOUND
BLK WALL
WALL
PIER
ELECTRIC METER
48" CHL
REVISIONS
R/W REV. 07/29/10 (KMW): REVISED EXIST. R/W TO NUMERICAL OFFSET.
8/17/99
30-JUN-2011 14:52
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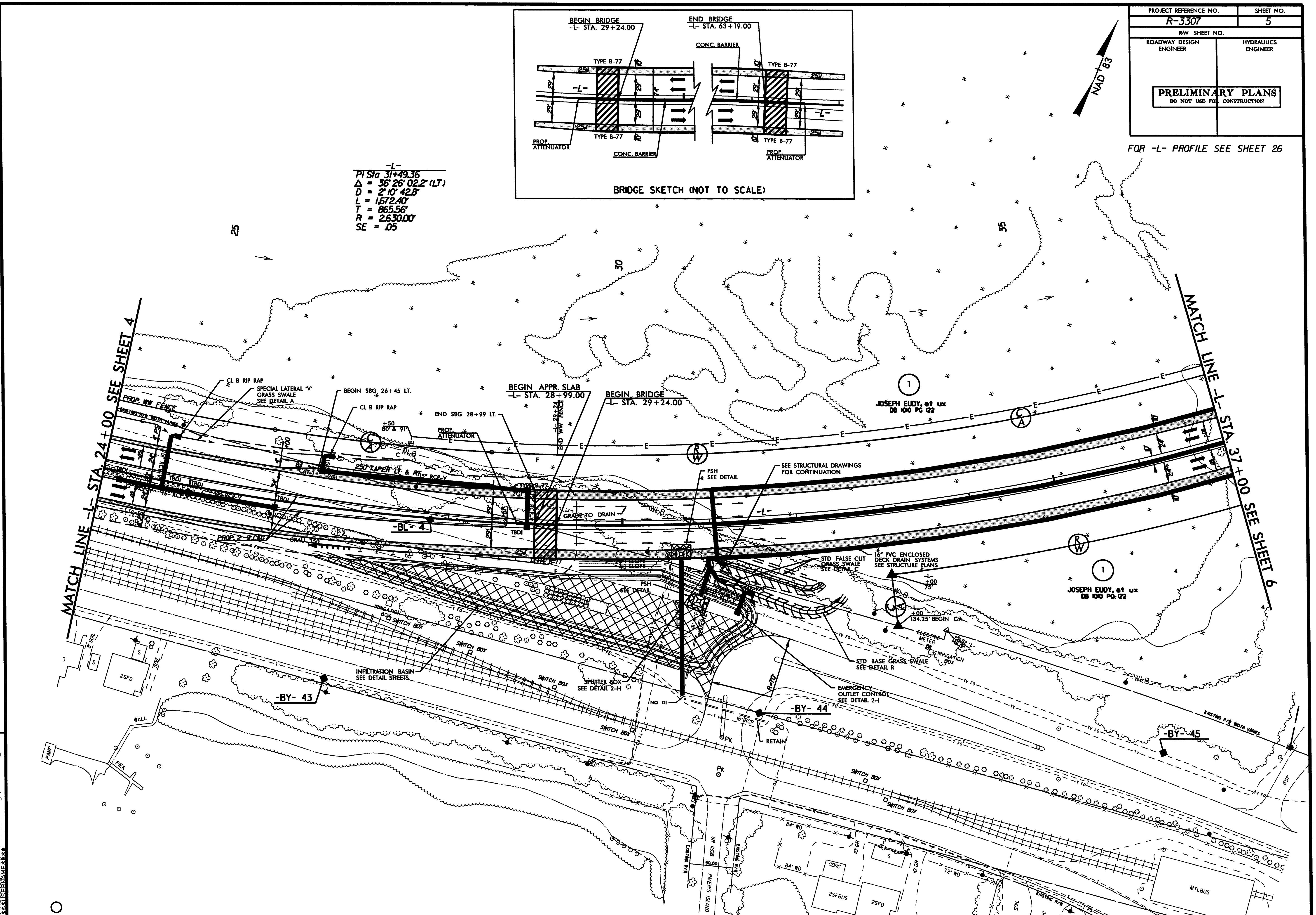
PROJECT REFERENCE NO.	SHEET NO.
R-3307	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

R/W REV. 07/29/10 (KNW): REVISED EXIST. R/W TO NUMERICAL OFFSET.
R/W REV. 10/18/10 (RVP): ADDED PROPOSED TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 1.

8/17/99



BEGIN BRIDGE
-L- STA. 29+24.00
END BRIDGE
-L- STA. 63+19.00
CONC. BARRIER
TYPE B-77
PROP. ATTENUATOR
BRIDGE SKETCH (NOT TO SCALE)
NAD 83
FOR -L- PROFILE SEE SHEET 26
-L-
PI Sta 31+49.36
Δ = 36° 26' 02.2" (LT)
D = 2° 10' 42.8"
L = 1,672.40'
T = 865.56'
R = 2,630.00'
SE = .05
MATCH LINE -L- STA. 24+00 SEE SHEET 4
MATCH LINE -L- STA. 37+00 SEE SHEET 6
CL B RIP RAP
SPECIAL LATERAL 'V' GRASS SWALE SEE DETAIL A
BEGIN SBG 26+45 LT.
END SBG 28+99 LT.
PROP. ATTENUATOR
BEGIN APPR. SLAB
-L- STA. 28+99.00
BEGIN BRIDGE
-L- STA. 29+24.00
PROP. WW FENCE
GRADE TO DRAIN
PSH SEE DETAIL
SEE STRUCTURAL DRAWINGS FOR CONTINUATION
JOSEPH EUDY, et ux
DB 1010 PG 122
STD FALSE CUT GRASS SWALE SEE DETAIL C
16" PVC ENCLOSED DECK DRAIN SYSTEMS SEE STRUCTURE PLANS
134.25' BEGIN C/A
INFILTRATION BASIN SEE DETAIL SHEETS
SPLITTER BOX SEE DETAIL 2-H
STD BASE GRASS SWALE SEE DETAIL R
EMERGENCY OUTLET CONTROL SEE DETAIL 2-I
IRRIGATION BOX
SWITCH BOX
ELECTRIC METER
-BL- 4
-BY- 43
-BY- 44
-BY- 45
RETAIN
NO DI
2SFD
2SFBUS
MTLBUS
SR 1028
PIVERS ISLAND RD
EXISTING R/W BOTH VARIES
WALL
PIER
RAMP
25
30
35

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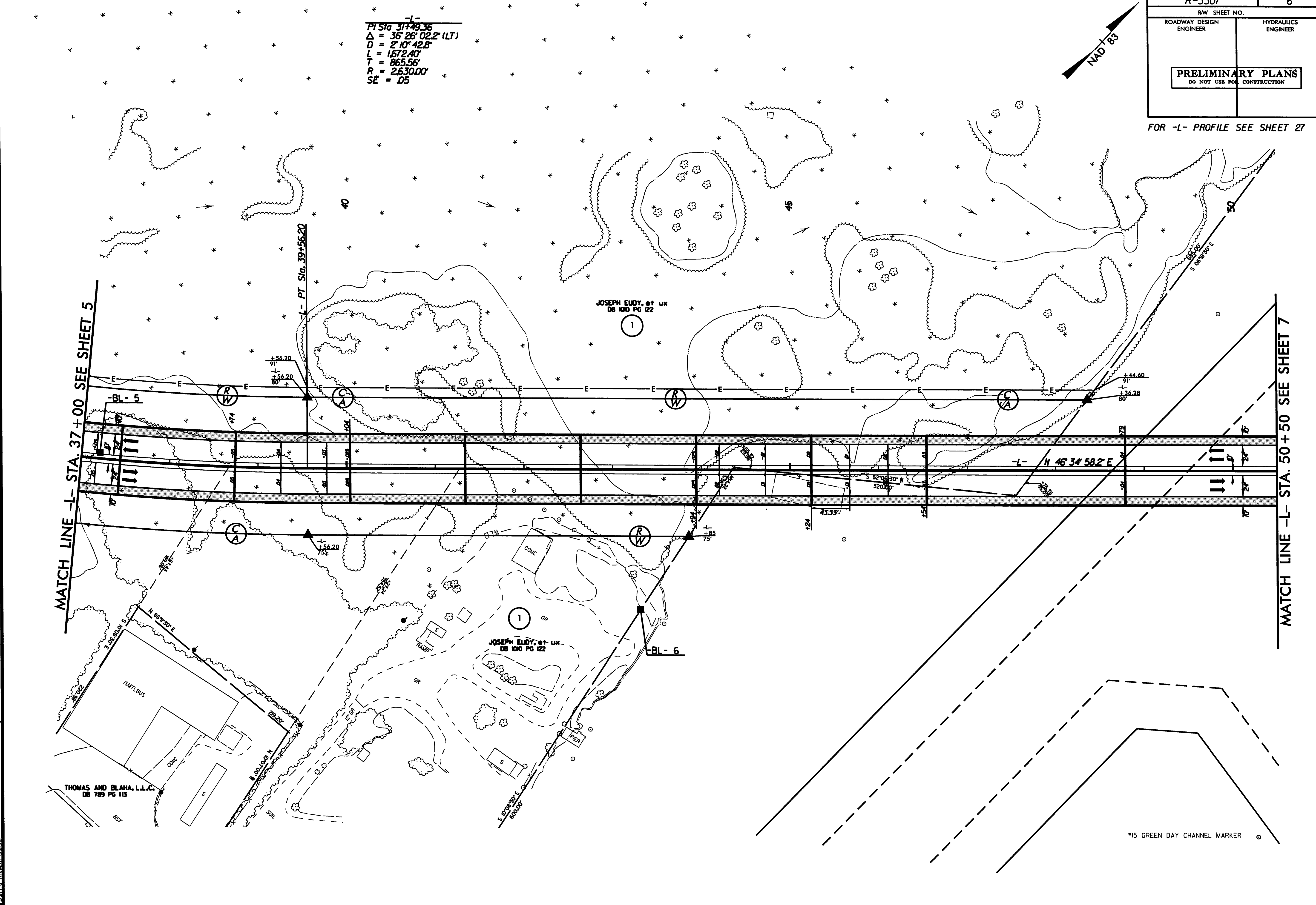
PROJECT REFERENCE NO.	SHEET NO.
R-3307	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 27



REVISIONS

R/W REV. 10/18/10 (RVP): ADDED PROPOSED TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 1.

8/17/99

30-JUN-2011 14:52
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PROJECT REFERENCE NO.	SHEET NO.
R-3307	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 28

NAD 83

8/17/99

REVISIONS

R/W REV. 07/29/10 (KMW) REVISED EXIST. P/L TO NUMERICAL OFFSET.

"14 RED DAY CHANNEL MARKER

GALLANT'S CHANNEL

-L- PC STA. 53+85.99

N 46° 34' 58.2" E

MATCH LINE -L- STA. 50+50 SEE SHEET 6

"1 GREEN DAY CHANNEL MARKER

HARBOR OF REFUGE CHANNEL

-L-
PI Sta 58+74.47
Δ = 54° 55' 04.9" (RT)
D = 6° 05' 43.1"
L = 900.99'
T = 488.48'
R = 940.00'
SE = .06
** V = 38 MPH

FRIENDS OF THE MUSEUM,
N. C. MARITIME MUSEUM, INC.
DB 802 PG 480

N 30°29'37" W
199.17'

BULKHEAD CONTINUES

NEW CONCORD PIER DOCK UNDER CONSTRUCTION

N 78°40'05" W
155.16'

PIER & WALL U/C

S 54°41'32" W

BEAUFORT CITY LIMITS

135.91'

±86.18
82.89'

PROP. WW FENCE

N 35°18'28" W
15.42'

N 54°41'41" E
89.90'

PROP. WW FENCE

907

S STA 61+91
44' X 68' FILTRATION BASIN

N 85°40'40" E 234.60'

REMOVE FOUNDATION, PAVEMENT AND SUBGRADE

PIER

RAMP

PIER

PROP. WW FENCE

EMERGENCY OUTLET CONTROL SEE DETAIL 2-A

CONC

GAZEBO

WALL

N 46°09'07" W

STD "V" DITCH SEE DETAIL D

-L- STA. 62+09 STD DITCH; @4'@1.17% RT
FROM UNDISTURBED SYSTEM
DA=2.18ac, C=0.9, i=11.17in/hr, S=.3:1, 3:1, base=0', n=0.045
Q=dumbac, i=10.38in/hr, Tc=0.24min, 110=0.39in/hr
Qd=0.56cfs, d=0.28', V=1.12, Tc=0.24min
Q10=0.62cfs, d=0.40', V=1.25fps, Td=0.04

MATCH LINE -L- STA. 62+00 SEE SHEET 8

** DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVE RADIUS (50 MPH) AND FOR HORIZONTAL STOPPING SIGHT DISTANCE (38 MPH).

30-JUN-2011 14:52
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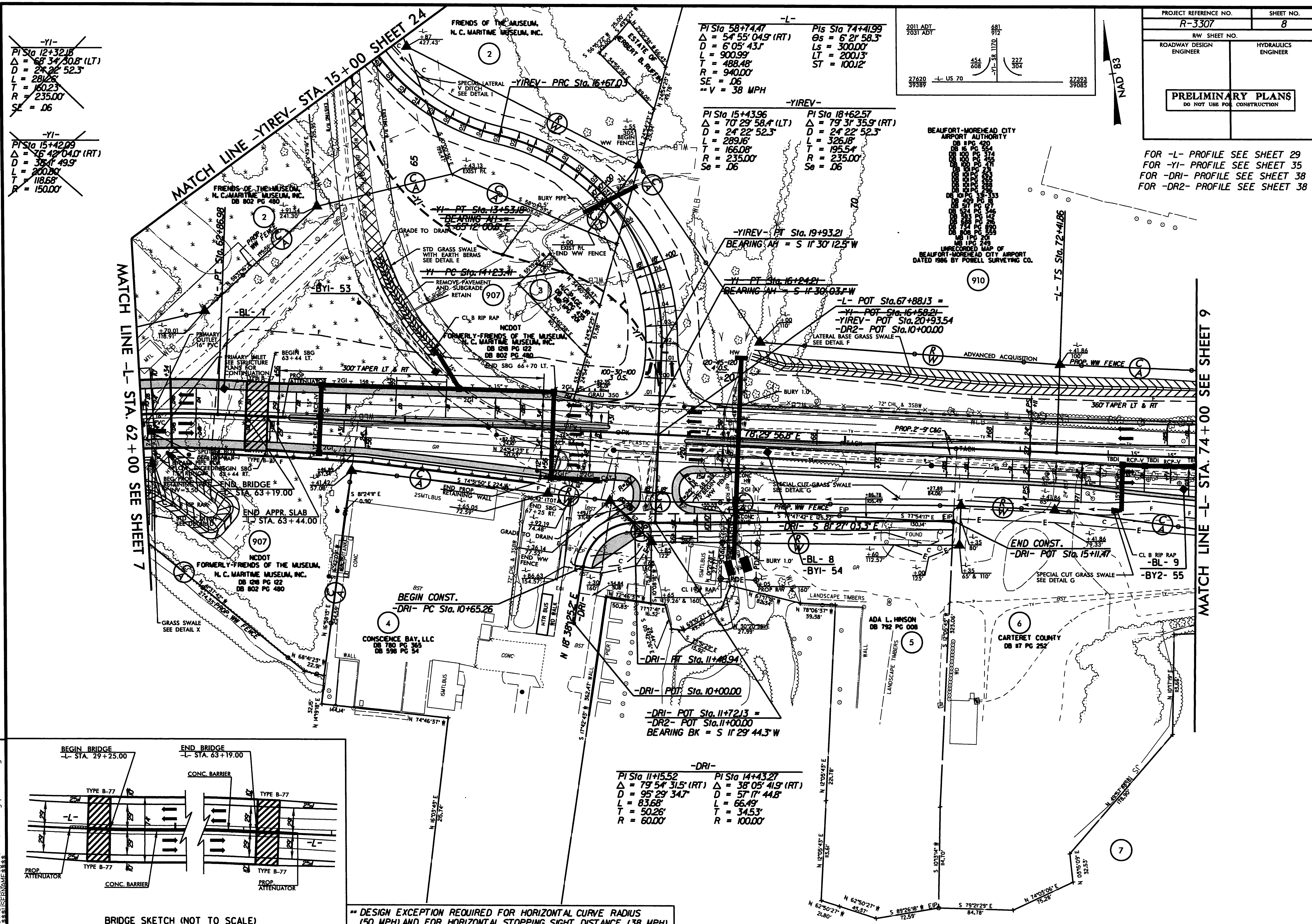
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-3307	8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



-YI- (struck through)

PI Sta 12+32.18
Δ = 68° 34' 30.8" (LT)
D = 24° 22' 52.3"
L = 281.26'
T = 160.23'
R = 235.00'
SE = .06

-YI- (struck through)

PI Sta 15+42.09
Δ = 76° 42' 04.0" (RT)
D = 38° 11' 49.9"
L = 200.80'
T = 118.68'
R = 150.00'

-L-

PI Sta 58+74.47	PIs Sta 74+41.99
Δ = 54° 55' 04.9" (RT)	θs = 6° 21' 58.3"
D = 6° 05' 43.1"	Ls = 300.00'
L = 900.99'	LT = 200.13'
T = 488.48'	ST = 100.12'
R = 940.00'	
SE = .06	
** V = 38 MPH	

-YIREV-

PI Sta 15+43.96	PI Sta 18+62.57
Δ = 70° 29' 58.4" (LT)	Δ = 79° 31' 35.9" (RT)
D = 24° 22' 52.3"	D = 24° 22' 52.3"
L = 289.16'	L = 326.18'
T = 166.08'	T = 195.54'
R = 235.00'	R = 235.00'
Se = .06	Se = .06

-DR1-

PI Sta 11+15.52	PI Sta 14+43.27
Δ = 79° 54' 31.5" (RT)	Δ = 38° 05' 41.9" (RT)
D = 95° 29' 34.7"	D = 57° 17' 44.8"
L = 83.68'	L = 66.49'
T = 50.26'	T = 34.53'
R = 60.00'	R = 100.00'

FOR -L- PROFILE SEE SHEET 29
FOR -YI- PROFILE SEE SHEET 35
FOR -DR1- PROFILE SEE SHEET 38
FOR -DR2- PROFILE SEE SHEET 38

** DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVE RADIUS (50 MPH) AND FOR HORIZONTAL STOPPING SIGHT DISTANCE (38 MPH).

REVISIONS

R/W REV. 07/29/10 (KWW):REVISED EXIST/PROP R/W & P/L TO NUMERICAL OFFSET.

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-3307	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

★ PROPOSED SIGNAL

NAD 83

-L-

Pls Sta 74+41.99	PI Sta 77+44.33	Pls Sta 80+43.92	~~Pls Sta 86+60.40~~
Θs = 6° 21' 58.3"	Δ = 17° 03' 32.8" (LT)	Θs = 6° 21' 58.3"	~~Θs = 2° 42' 09.5"~~
Ls = 300.00'	D = 4° 14' 38.9"	Ls = 300.00'	~~Ls = 250.00'~~
LT = 200.13'	L = 401.95'	LT = 200.13'	~~LT = 166.69'~~
ST = 100.12'	T = 202.47'	ST = 100.12'	~~ST = 83.35'~~
	R = 1,350.00'		
	SE = .06		

910
BEAUFORT-MOREHEAD CITY
AIRPORT AUTHORITY
DB 1 PG 420
DB 16 PG 554
DB 100 PG 374
DB 100 PG 455
DB 100 PG 471
DB 101 PG 231
DB 101 PG 263
DB 101 PG 265
DB 101 PG 288
DB 101 PG 296
DB 101 PG 331-333
DB 409 PG 18
DB 517 PG 127
DB 524 PG 346
DB 583 PG 142
DB 688 PG 216
DB 734 PG 890
DB 808 PG 559
MB 1 PG 201
MB 1 PG 249
UNRECORDED MAP OF
BEAUFORT-MOREHEAD CITY AIRPORT
DATED 1986 BY POWELL SURVEYING CO.

FOR -L- PROFILE SEE SHEET 29
FOR -LREV- PROFILE SEE SHEET 29
FOR -Y2- PROFILE SEE SHEET 35
FOR -Y5- PROFILE SEE SHEET 37

REVISIONS

R/W REV. 07/29/10 (KNW): REVISED EXIST/PROP R/W TO NUMERICAL OFFSET.
R/W REV. 04/18/11 (KNW): ADDED PUE ON PARCEL 6.
R/W REV. 06/01/11 (KNW): REMOVED TDE AND ADDED PDE ON PARCEL 9.

8/17/99

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8/17/99

REVISIONS

R/W REV. 07/29/10 (KMW): REVISED PROP R/W TO NUMERICAL OFFSET.

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-3307	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -LREV- PROFILE SEE SHEET 30

-L-
PIs Sta 99+15.81
θs = 2°42'09.5"
Ls = 250.00'
LT = 166.69'
ST = 83.35'

-LREV-
PIs Sta 99+63.95
θs = 5°03'19.8"
Ls = 300.00'
LT = 200.08'
ST = 100.07'

-L-
PIs Sta 112+19.96
θs = 4°38'44.2"
Ls = 300.00'
LT = 200.07'
ST = 100.06'

-LREV-
PIs Sta 111+38.35
θs = 4°38'44.2"
Ls = 300.00'
LT = 200.07'
ST = 100.06'

NAD 83

BEAUFORT CITY LIMITS

MATCH LINE -L- STA. 98+50 SEE SHEET 10

MATCH LINE -L- STA. 111+50 SEE SHEET 12

-LREV- ST Sta. 100+62.16

-LREV- ST Sta. 101+63.87

-LREV- TS Sta. 109+38.28

-BL- 13

-BL- 14

910

MTL HANGER

CONC

18" CONC

35' BST

75' BST

100

105

N 02°59'36" W 685.64'

S 45°15'16" W 1149.95'

S 09°42'49" E 1284.45'

S 53°51'52" W 303.65'

S 67°56'48" E 1256.52' (TOTAL)

GRAU 350

-L- L N 12°16'14.8" E

-LREV- N 38°50'34.2" E

PROP. WW FENCE

PROP. 2-3 CMG

ADVANCED ACQUISITION

BEAUFORT-MOREHEAD CITY AIRPORT AUTHORITY
DB 688 PG 216
CNT-1

24
GEORGE ROBERTS LAUGHTON, ET UX
MAME ESTELLE LAUGHTON
DB 81PG 570

23
DANIEL L. HEAVNER, JR., ET AL
DB 926 PG 772

25
OWNER UNKNOWN

26
MELTON LAWRENCE JR, ET UX
DB 427 PG 265
DB 444 PG 351
DB 464 PG 069
DB 396 PG 174

43

RETAIN
TDE
PDE
TBDI
CL B RIP RAP
STANDARD BASE DITCH
SEE DETAIL N
LATERAL BASE DITCH
SEE DETAIL J
GRADE TO DRAIN
FIELD DITCH INTO
LATERAL BASE DITCH
REMOVE
REMOVE 15" RCP
2 @ 30"
42" RCP
36" RCP
24" RCP
18" RCP
15" RCP
6' PLASTIC
EXISTING R/W
HTR
POOL
WLB
EIP
F
S
W
T
OHW
GAS
-LREV- +30 88.68' & 190'
-LREV- +65 105' & 90.86'
-LREV- +85 115'
-LREV- +30 105' & 150'
-LREV- +20 88.26' & 105'
-LREV- +30 90.81' & 105'
-LREV- +10 93.39' & 118'
-LREV- +63.87 90'
-LREV- +63.87 110'
-LREV- +00 100'
-LREV- +05 150'
-LREV- +38.28 100'LT
-LREV- +38.28 110'RT
-LREV- +00 110.88'
-LREV- +15 150'RT
-LREV- +50 110'
-LREV- +78.85 97.03'
-LREV- +23 97.85'
-LREV- +45 145'

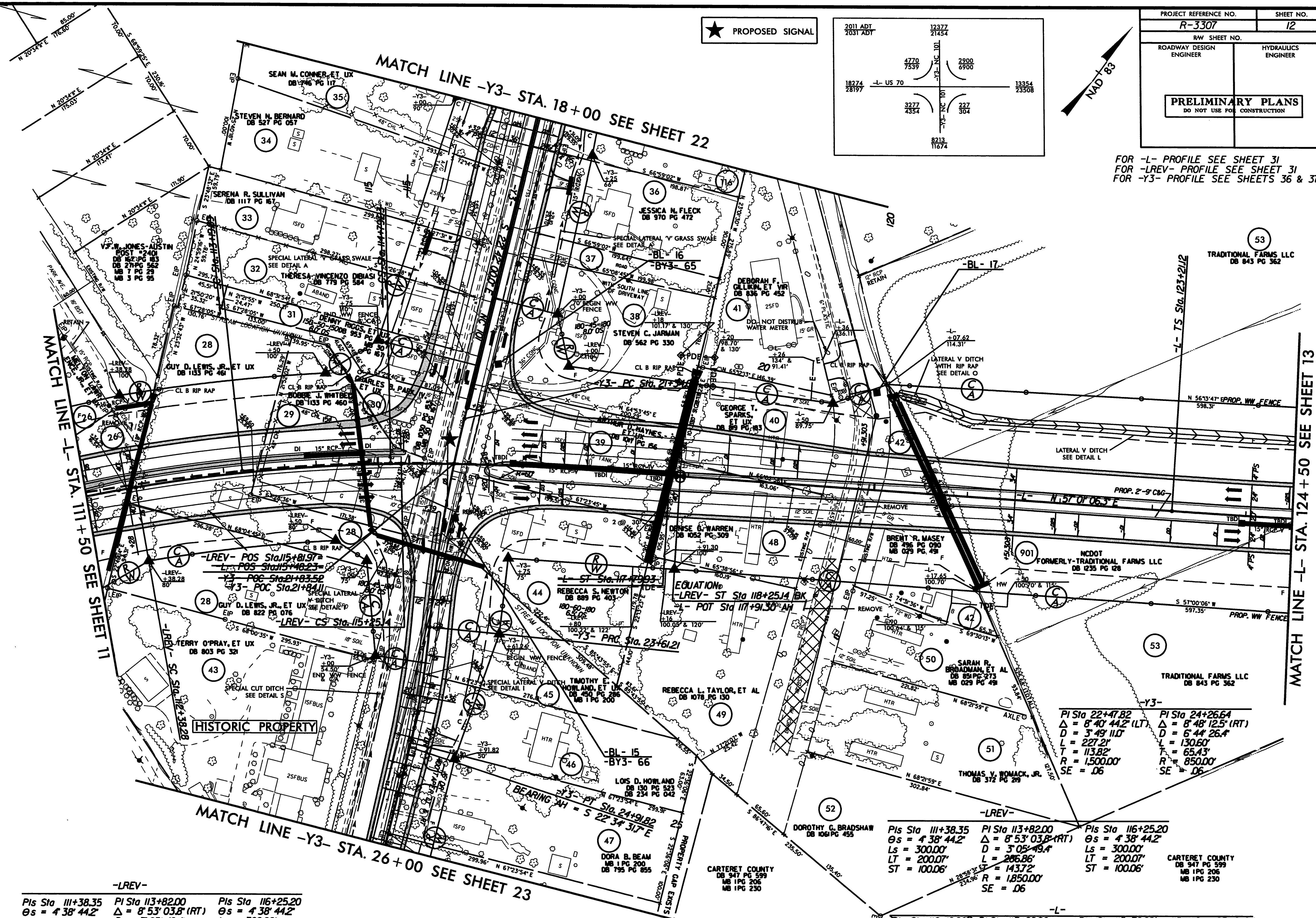
PROJECT REFERENCE NO.	SHEET NO.
R-3307	12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

★ PROPOSED SIGNAL

2011 ADT / 2031 ADT	
-Y3- NC 101 (north)	12377 / 21454
-L- US 70 (west)	18274 / 28197
(east)	13354 / 23508
-Y3- NC 101 (south)	8213 / 11674
NW turn	4770 / 7539
NE turn	2900 / 6900
SW turn	3277 / 4354
SE turn	227 / 304

FOR -L- PROFILE SEE SHEET 31
FOR -LREV- PROFILE SEE SHEET 31
FOR -Y3- PROFILE SEE SHEETS 36 & 37



NAD 83
MATCH LINE -Y3- STA. 18+00 SEE SHEET 22
MATCH LINE -L- STA. 111+50 SEE SHEET 11
MATCH LINE -L- STA. 124+50 SEE SHEET 13
MATCH LINE -Y3- STA. 26+00 SEE SHEET 23
SEAN M. CONNER, ET UX
STEVEN N. BERNARD DB 527 PG 057
SERENA R. SULLIVAN DB 1117 PG 167
JESSICA N. FLECK DB 970 PG 472
THERESA VINCENZO DEBIASI DB 779 PG 584
DEBORAH F. GILLIKIN, ET VIR DB 836 PG 452
STEVEN C. JARMAN DB 562 PG 330
GUY D. LEWIS, JR., ET UX DB 1133 PG 461
BOBBIE J. WHITED DB 1133 PG 460
GEORGE T. SPARKS, ET UX DB 89 PG 183
TRADITIONAL FARMS LLC DB 843 PG 362
BRENT R. MASEY DB 496 PG 090 MB 029 PG 491
NCDOT FORMERLY-TRADITIONAL FARMS LLC DB 1235 PG 128
DENISE G. WARREN DB 1052 PG 309
REBECCA S. NEWTON DB 889 PG 403
GUY D. LEWIS, JR., ET UX DB 822 PG 076
TERRY O'PRAY, ET UX DB 803 PG 321
HISTORIC PROPERTY
TIMOTHY E. HOWLAND, ET UX DB 450 PG 286 MB 1 PG 200
REBECCA L. TAYLOR, ET AL DB 1078 PG 130
SARAH R. BROADMAN, ET AL DB 851 PG 273 MB 029 PG 491
THOMAS V. WOMACK, JR. DB 372 PG 219
LOIS D. HOWLAND DB 130 PG 523 DB 234 PG 042
DOROTHY G. BRADSHAW DB 1061 PG 455
DORA B. BEAM MB 1 PG 200 DB 795 PG 855
CARTERET COUNTY DB 947 PG 599 MB 1 PG 206 MB 1 PG 230
-LREV- POS Sta 115+81.97=
-L- POS Sta 115+48.23=
-Y3- POC Sta 21+83.52
-Y3- POC Sta 21+84.11
-LREV- CS Sta 115+25.4
-L- ST Sta 117+79.93
EQUATION:
-LREV- ST Sta 118+25.14 BK
-L- POT Sta 117+91.30 AH
-Y3- PC Sta 21+54.
-Y3- PRC Sta 23+61.21
-Y3- PT Sta 24+91.82
BEARING AH = S 22°34' 31.7" E
-L- N 57°01' 06.3" E
-L- TS Sta 123+21.12
-LREV- SC Sta 112+38.28
-BL- 15 -BY3- 66
-BL- 16 -BY3- 65
-BL- 17
PROPERTY GAP EXISTS

-LREV-

PIs Sta 111+38.35	PI Sta 113+82.00	PIs Sta 116+25.20
Θs = 4° 38' 44.2"	Δ = 8° 53' 03.8" (RT)	Θs = 4° 38' 44.2"
Ls = 300.00'	D = 3° 05' 49.4"	Ls = 300.00'
LT = 200.07'	L = 286.86'	LT = 200.07'
ST = 100.06'	T = 143.72'	ST = 100.06'
	R = 1,850.00'	
	SE = .06	

-Y3-

PI Sta 22+47.82	PI Sta 24+26.64
Δ = 8° 40' 44.2" (LT)	Δ = 8° 48' 12.5" (RT)
D = 3° 49' 11.0"	D = 6° 44' 26.4"
L = 227.21'	L = 130.60'
T = 113.82'	T = 65.43'
R = 1,500.00'	R = 850.00'
SE = .06	SE = .06

-LREV-

PIs Sta 111+38.35	PI Sta 113+82.00	PIs Sta 116+25.20
Θs = 4° 38' 44.2"	Δ = 8° 53' 03.8" (RT)	Θs = 4° 38' 44.2"
Ls = 300.00'	D = 3° 05' 49.4"	Ls = 300.00'
LT = 200.07'	L = 286.86'	LT = 200.07'
ST = 100.06'	T = 143.72'	ST = 100.06'
	R = 1,850.00'	
	SE = .06	

-L-

~~PIs Sta 112+19.96~~	~~PI Sta 113+99.96~~	~~PIs Sta 115+79.99~~	PIs Sta 125+21.24
~~Θs = 4° 38' 44.2"~~	~~Δ = 4° 57' 23.2" (RT)~~	~~Θs = 4° 38' 44.2"~~	Θs = 6° 08' 19.8"
~~Ls = 300.00'~~	~~D = 3° 05' 49.4"~~	~~Ls = 300.00'~~	Ls = 300.00'
~~LT = 200.07'~~	~~L = 160.04'~~	~~LT = 200.07'~~	LT = 200.12'
~~ST = 100.06'~~	~~T = 80.07'~~	~~ST = 100.06'~~	ST = 100.11'
	~~R = 1,850.00'~~		
	~~SE = .06~~		

REVISIONS

R/W REV. 07/29/10 (KWH): REVISED EXIST/PROP R/W TO NUMERICAL OFFSET.
R/W REV. 08/01/11 (KWH): DELETED TDE ON PARCEL 53.

8/17/99

01-AUG-2011 09:48
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PROJECT REFERENCE NO.	SHEET NO.
R-3307	10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-

~~PIs Sta 86+60.40~~	~~PI Sta 92+95.72~~	~~PIs Sta 99+15.51~~
~~θs = 2°42'09.5"~~	~~Δ = 23°32'00.0" (LT)~~	~~θs = 2°42'09.5"~~
~~Ls = 250.00'~~	~~D = 2°09'43.6"~~	~~Ls = 250.00'~~
~~LT = 166.69'~~	~~L = 1,088.45'~~	~~LT = 166.69'~~
~~ST = 83.35'~~	~~T = 552.01'~~	~~ST = 83.35'~~
	~~R = 2,650.00'~~	
	~~SE = .05~~	

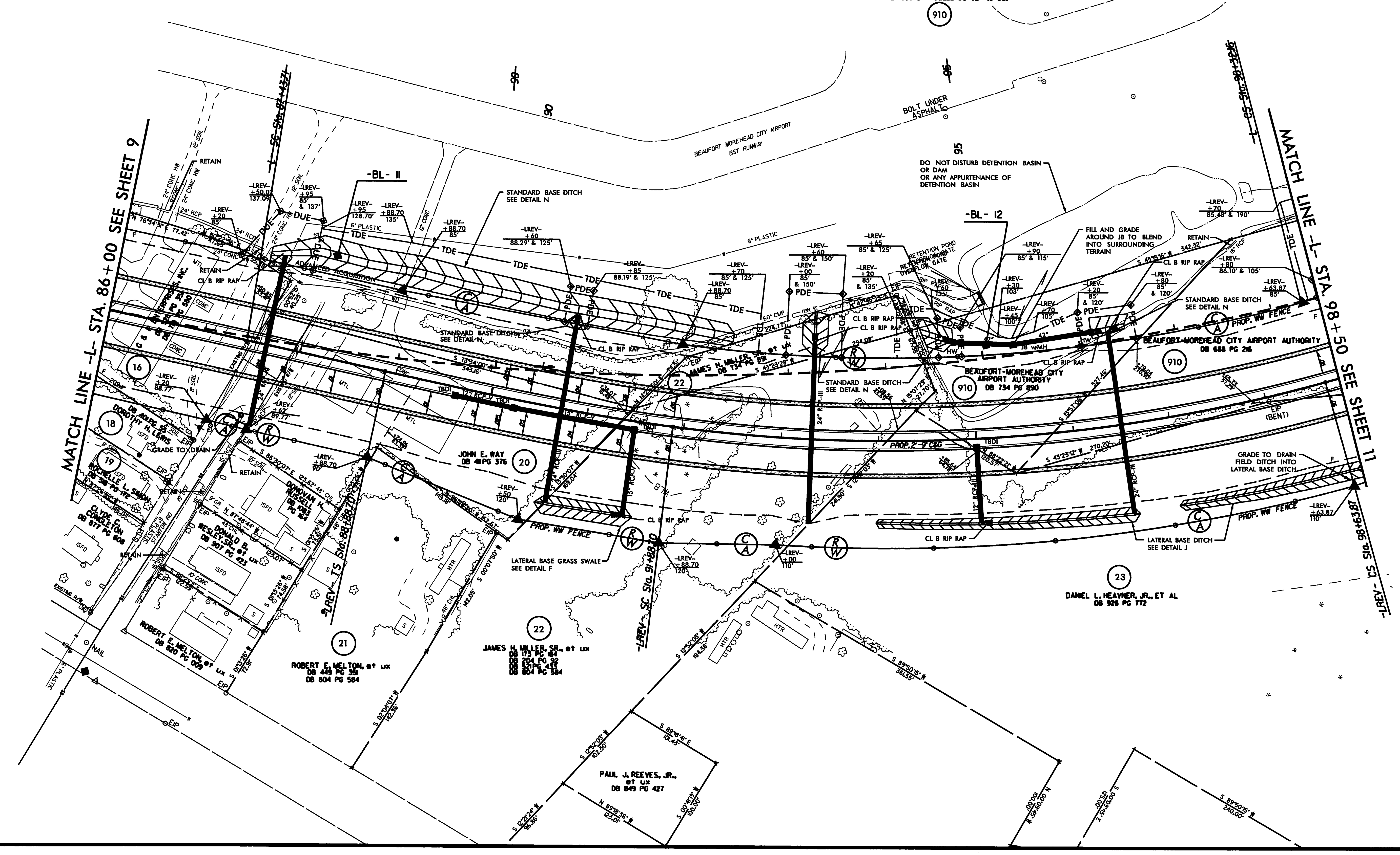
-LREV-

PIs Sta 90+88.79	PI Sta 95+30.80	PIs Sta 99+63.95
θs = 5°03'19.8"	Δ = 22°45'19.9" (LT)	θs = 5°03'19.8"
Ls = 300.00'	D = 3°22'13.2"	Ls = 300.00'
LT = 200.08'	L = 675.17'	LT = 200.08'
ST = 100.07'	T = 342.09'	ST = 100.07'
	R = 1,700.00'	
	SE = .06	

BEAUFORT-MOREHEAD CITY AIRPORT AUTHORITY
DB I PG 420
DB 16 PG 554
DB 100 PG 374
DB 100 PG 455
DB 100 PG 471
DB 101 PG 231
DB 101 PG 263
DB 101 PG 265
DB 101 PG 288
DB 101 PG 296
DB 101 PG 331-333
DB 409 PG 18
DB 517 PG 127
DB 524 PG 346
DB 583 PG 142
DB 688 PG 216
DB 734 PG 890
DB 808 PG 559
MB 1 PG 201
MB 1 PG 249
UNRECORDED MAP OF
BEAUFORT-MOREHEAD CITY AIRPORT
DATED 1986 BY POWELL SURVEYING CO.
(910)

NAD 83

FOR -LREV- PROFILE SEE SHEET 30



MATCH LINE -L- STA. 86+00 SEE SHEET 9
MATCH LINE -L- STA. 98+50 SEE SHEET 11
BEAUFORT MOREHEAD CITY AIRPORT BST RUNWAY
BOLT UNDER ASPHALT
DO NOT DISTURB DETENTION BASIN OR DAM OR ANY APPURTENANCE OF DETENTION BASIN
FILL AND GRADE AROUND JB TO BLEND INTO SURROUNDING TERRAIN
STANDARD BASE DITCH SEE DETAIL N
LATERAL BASE GRASS SWALE SEE DETAIL F
LATERAL BASE DITCH SEE DETAIL J
GRADE TO DRAIN FIELD DITCH INTO LATERAL BASE DITCH
PROP. WW FENCE
CL B RIP RAP
-BL- 11
-BL- 12
BEAUFORT-MOREHEAD CITY AIRPORT AUTHORITY DB 688 PG 216
BEAUFORT-MOREHEAD CITY AIRPORT AUTHORITY DB 734 PG 890
JOHN E. WAY DB 41 PG 376
JAMES H. MILLER, SR., et ux DB 173 PG 164 DB 204 PG 32 DB 521 PG 435 DB 804 PG 584
ROBERT E. MELTON, et ux DB 449 PG 351 DB 804 PG 584
ROBERT E. MELTON, et ux DB 820 PG 009
DANIEL L. HEAVNER, JR., ET AL DB 926 PG 772
PAUL J. REEVES, JR., et ux DB 849 PG 427
DOROTHY H. LEWIS
ROCHELLE L. SNOW
CLYDE C. CONGLETON DB 877 PG 608
DONALD B. WESLEY, SR., et ux DB 907 PG 423
DONOVAN H. RUSSELL
-LREV- CS Sta. 99+63.87
-LREV- TS Sta. 88+88.70
-LREV- SC Sta. 91+88.70

REVISIONS

R/W REV. 07/29/10 (KNW): REVISED EXIST./PROP R/W TO NUMERICAL OFFSET.
R/W REV. 04/18/11 (KNW): DELETED PDE, REVISED TDE, AND ADDED DUE ON PARCEL 910.

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-3307	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 31

NAD 83

-L-

Pis Sta 125+21.24	PI Sta 128+36.50	Pis Sta 131+48.65
Θs = 6°08' 19.8"	Δ = 17° 29' 31.6" (LT)	Θs = 6°08' 19.8"
Ls = 300.00'	D = 4°05' 33.2"	Ls = 300.00'
LT = 200.12'	L = 427.41'	LT = 200.12'
ST = 100.11'	T = 215.38'	ST = 100.11'
	R = 1,400.00'	
	SE = .06	

REVISIONS

R/W REV. 07/29/10 (KNW): REVISED EXIST./PROP. R/W TO NUMERICAL OFFSET.
R/W REV. 06/01/11 (KNW): REMOVED TDE AND ADDED PDE ON PARCELS 53A & 54.
R/W REV. 08/01/11 (KNW): DELETED TDE ON PARCEL 53.

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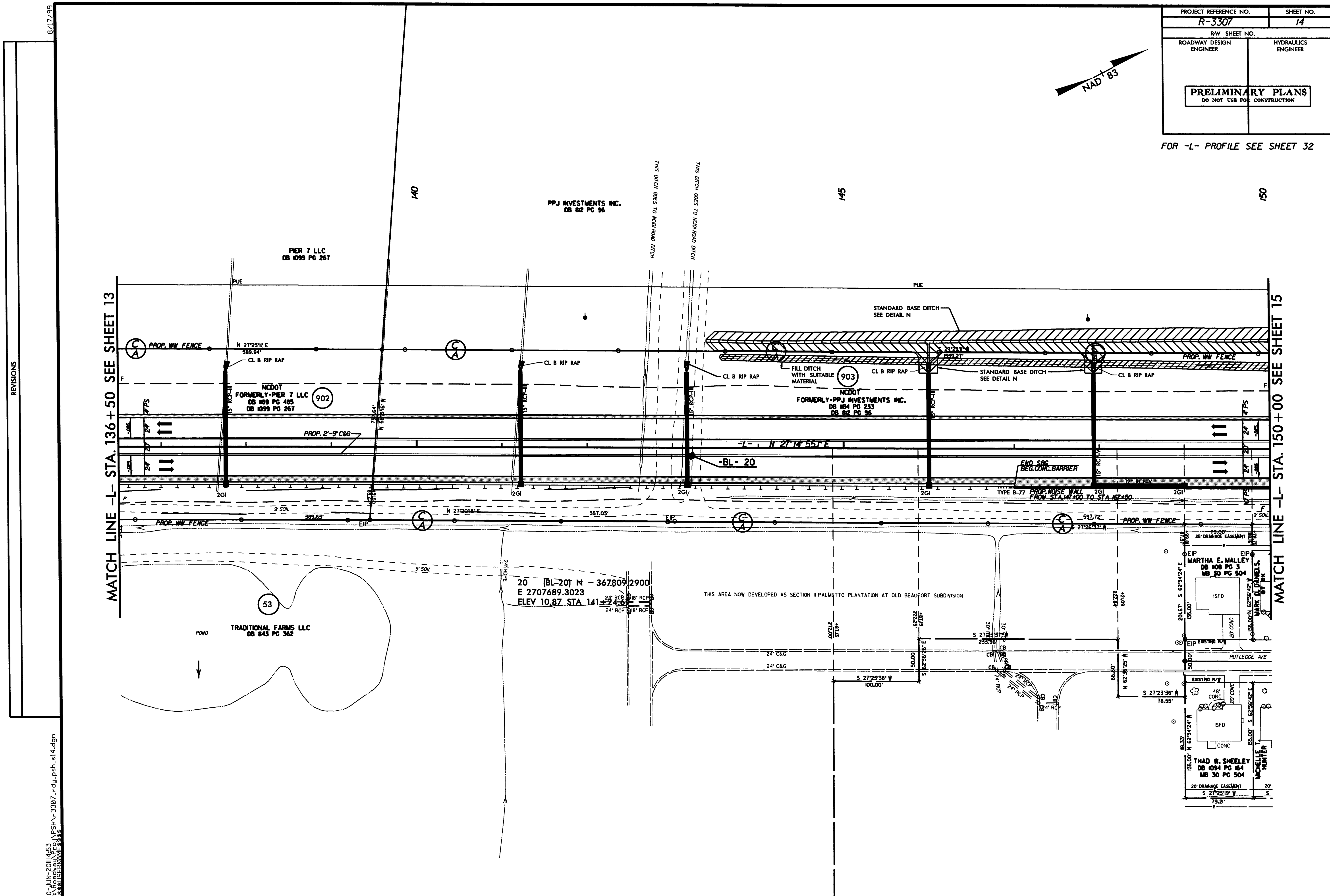
R:\Roadway\Pro...\PSH\v-3307_rdy_psh_s13.dgn
$$$$$USERNAME$$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-3307	14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 32



NAD 83
MATCH LINE -L- STA. 136+50 SEE SHEET 13
MATCH LINE -L- STA. 150+00 SEE SHEET 15
PIER 7 LLC
DB 1099 PG 267
PPJ INVESTMENTS INC.
DB 812 PG 96
THIS DITCH GOES TO NCDOT ROAD DITCH
THIS DITCH GOES TO NCDOT ROAD DITCH
PUE
STANDARD BASE DITCH
SEE DETAIL N
PROP. WW FENCE
N 27°23'11" E
389.94'
CL B RIP RAP
NCDOT
FORMERLY-PIER 7 LLC
DB 1189 PG 485
DB 1099 PG 267
902
FILL DITCH
WITH SUITABLE
MATERIAL
903
NCDOT
FORMERLY-PPJ INVESTMENTS INC.
DB 1184 PG 233
DB 812 PG 96
PROP. 2'-9" C&G
-L- N 27°14'55.1" E
-BL- 20
END SBG
BEG.CONC.BARRIER
12" RCP-V
TYPE B-77
PROP. NOISE WALL
FROM STA.147+00 TO STA.157+50
2GI
9' SOIL
N 27°20'38" E
389.63'
357.03'
EIP
597.72'
S 27°26'37" W
25' DRAINAGE EASEMENT
20 (BL-20) N 367809.2900
E 2707689.3023
ELEV 10.87 STA 141+24.61
24" HDPE
24" RCP
18" RCP
53
TRADITIONAL FARMS LLC
DB 843 PG 362
POND
THIS AREA NOW DEVELOPED AS SECTION II PALMETTO PLANTATION AT OLD BEAUFORT SUBDIVISION
24" C&G
S 27°23'38" W
100.00'
S 27°23'37" W
233.56'
S 27°23'36" W
78.55'
RUTLEDGE AVE
EXISTING R/W
MARTHA E. MALLEY
DB 1108 PG 3
MB 30 PG 504
MARK D. DANIELS
ISFD
20' CONC
48" CONC
THAD W. SHEELEY
DB 1094 PG 164
MB 30 PG 504
MICHELLE L. HUNTER
20' DRAINAGE EASEMENT
S 27°23'19" W
79.21'
140
145
150
REVISIONS
8/17/99
30-JUN-2011 14:53
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PROJECT REFERENCE NO.	SHEET NO.
R-3307	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 32

NAD 83

-L-
Pis Sta 161+22.35
Θs = 6°00' 36.2"
Ls = 300.00'
LT = 200.12'
ST = 100.10'

PI Sta 168+39.75
Δ = 46°42' 44.3" (RT)
D = 4°00' 24.1"
L = 1,165.86'
T = 617.52'
R = 1,430.00'
SE = .06

Pis Sta 174+88.19
Θs = 6°00' 36.2"
Ls = 300.00'
LT = 200.12'
ST = 100.10'

8/17/99

REVISIONS

R/W REV. 07/29/10 (KMW): REVISED EXIST R/W TO NUMERICAL OFFSET.

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MATCH LINE -L- STA. 150+00 SEE SHEET 14

MATCH LINE -L- STA. 162+50 SEE SHEET 16

-L- TS Sta. 159+22.23

-L- SC Sta. 162+22.23

-BL- 22

-BL- 21

-L- 1 N 27°14'55.7" E

PROP. NOISE WALL FROM STA 147+00 TO STA 167+50

PPJ INVESTMENTS INC. DB 882 PG 96

LUCILLE WRIGHT BOWEN DB 258 PG 188

NCDOT FORMERLY-PPJ INVESTMENTS INC. DB 884 PG 233

NCDOT FORMERLY-LUCILLE WRIGHT BOWEN DB 1240 PG 123 DB 258 PG 188

JOSEPH G. BRODA JR., ET AL DB 648 PG 278

21 (BL-21)
N 368706.4883
E 2708149.3226
ELEV 11.45
STA 151+32.93

21 (BL-21)
N 368706.4883
E 2708149.3226
ELEV 11.45
STA 151+32.93

STANDARD BASE DITCH SEE DETAIL N

PROP. WW FENCE

CL B RIP RAP

FILL DITCH WITH SUITABLE MATERIAL

SPECIAL LATERAL V DITCH SEE DETAIL I

PUE

N 27°23'11" E 646.26'

EXIST R/W

PROP. 2'-9" C&G

RUTLEDGE AVE

WEETING ST

KIRKLAND LN

CHARLES GOODWIN, JR., ET UX DB 1088 PG 498 MB 30 PG 504

BRUNELLA L. DAVIS DB 1103 PG 226 MB 30 PG 504

CLYDE A. TWEED, JR. DB 1088 PG 386 MB 30 PG 504

ALEXANDER JOHNSON, ET UX DB 1093 PG 156 MB 30 PG 504

MAURICE RENAUD, ET UX DB 1088 PG 267 MB 30 PG 504

BRIAN DEANER DB 1083 PG 152 MB 30 PG 504

STEVEN J. MURRAY, ET UX DB 1082 PG 426 MB 30 PG 504

PAMELA J. VAUGHEN DB 1082 PG 100 MB 30 PG 504

IAN PATRICK HOGAN DB 1073 PG 266 MB 30 PG 504

CHRISTOPHER C. ELLIOTT, ET UX DB 841 PG 192 MB 30 PG 504

AMANDA M. VERRICK DB 1076 PG 16 MB 30 PG 504

TRACY C. ROGERS DB 1077 PG 105 MB 30 PG 504

ROGER D. PITTMAN, JR. DB 1071 PG 101 MB 30 PG 504

ROALD N. EIDE DB 1076 PG 325 MB 30 PG 504

CANDACE M. STYRON

SANDRA L. YORK

WALLACE L. HOBBS, ET UX DB 1104 PG 156 MB 30 PG 504

RONALD W. ROLISON, ET UX DB 1088 PG 279 MB 30 PG 504

B. KYLE MAREK, ET UX DB 1102 PG 23 MB 30 PG 504

WILLIAM C. LAMM, ET UX DB 1088 PG 350 MB 30 PG 504

CLIFFORD J. GUTHRIE, ET UX DB 1085 PG 481 MB 30 PG 504

SANDRA B. TREADWAY DB 1103 PG 245 MB 30 PG 504

SUSAN MANTIPLY DB 109 PG 158 MB 30 PG 504

WILLIAM VAN PELT, ET UX DB 1085 PG 137 MB 30 PG 504

JONATHAN P. ROOP DB 1072 PG 213 MB 30 PG 504

ELISE BEAUCHAMP DB 824 PG 236 MB 30 PG 504

H. F. LITTLE, JR. DB 1084 PG 190 MB 30 PG 504

ELTON L. MASON, JR. DB 1091 PG 230 MB 30 PG 504

MICHAEL C. MERRILL, ET UX DB 1081 PG 166 MB 30 PG 504

EUGENE P. SANCHEZ, ET UX DB 1100 PG 500 MB 30 PG 504

PAMELA RENEA KELLY, ET AL DB 955 PG 387 MB 29 PG 850

INGRID ESCHMAN DB 1103 PG 397 MB 30 PG 136

CORAN L. TAYLOR DB 1039 PG 325 MB 30 PG 136

MARVIN L. GUTHRIE, ET UX DB 180 PG 484 MB 30 PG 136

HEATHER ANCILLOTTI DB 1067 PG 246 MB 30 PG 136

JAMES K. VINCENT DB 964 PG 64 MB 30 PG 136

MARIA L. WISE, ET AL DB 1006 PG 170 MB 30 PG 136

903 904 55

15" RCP-IV 15" RCP-V 15" RCP-III 24" 4 PS

2GI

TBDI

PROJECT REFERENCE NO.	SHEET NO.
R-3307	16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 33

REVISIONS

R/W REV. 07/29/10 (KNW): REVISED EXIST/PROP R/W TO NUMERICAL OFFSET.

8/17/99

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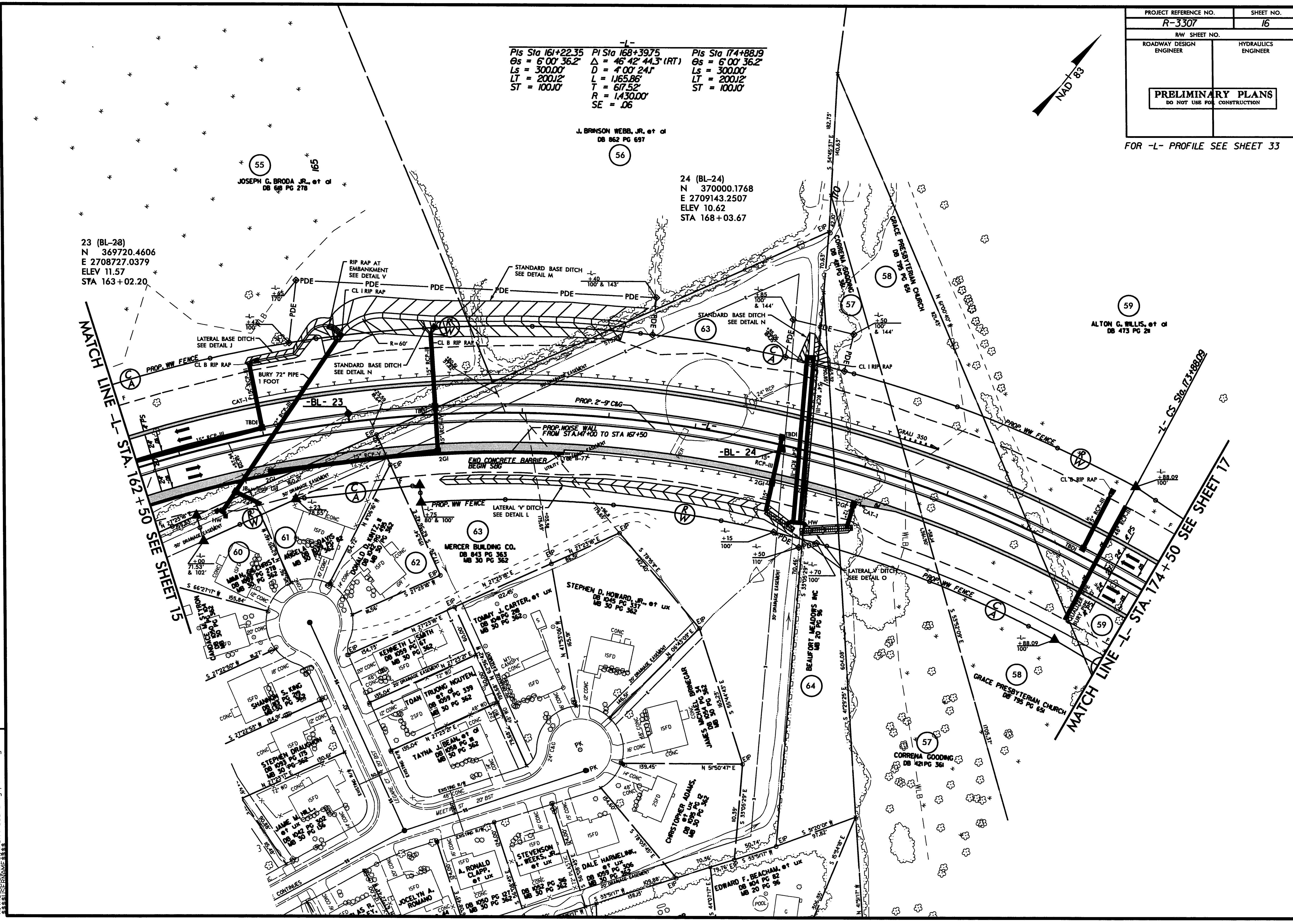


-L-
PIs Sta 161+22.35
Θs = 6° 00' 36.2"
Ls = 300.00'
LT = 200.12'
ST = 100.10'
PI Sta 168+39.75
Δ = 46° 42' 44.3" (RT)
D = 4° 00' 24.1"
L = 1,165.86'
T = 617.52'
R = 1,430.00'
SE = .06
PIs Sta 174+88.19
Θs = 6° 00' 36.2"
Ls = 300.00'
LT = 200.12'
ST = 100.10'
NAD 83
J. BRINSON WEBB, JR., et al
DB 862 PG 697
JOSEPH G. BRODA JR., et al
DB 618 PG 278
23 (BL-23)
N 369720.4606
E 2708727.0379
ELEV 11.57
STA 163+02.20
24 (BL-24)
N 370000.1768
E 2709143.2507
ELEV 10.62
STA 168+03.67
GRACE PRESBYTERIAN CHURCH
DB 795 PG 651
ALTON G. WILLIS, et al
DB 473 PG 211
MATCH LINE -L- STA. 162+50 SEE SHEET 15
MATCH LINE -L- STA. 174+50 SEE SHEET 17
-L- CS Sta. 173+88.09
-BL- 23
-BL- 24
PROP. NOISE WALL FROM STA. 147+00 TO STA 167+50
END CONCRETE BARRIER BEGIN SBG
STANDARD BASE DITCH SEE DETAIL M
STANDARD BASE DITCH SEE DETAIL N
LATERAL BASE DITCH SEE DETAIL J
LATERAL 'V' DITCH SEE DETAIL L
LATERAL 'V' DITCH SEE DETAIL O
RIP RAP AT EMBANKMENT SEE DETAIL V
BURY 72" PIPE 1 FOOT
PROP. WW FENCE
PROP. 2'-9" C&G
MERCER BUILDING CO.
DB 843 PG 363
MB 30 PG 362
STEPHEN D. HOWARD, JR., et ux
DB 1045 PG 337
MB 30 PG 362
BEAUFORT MEADOWS INC
MB 20 PG 96
CORRENA GOODING
DB 421 PG 361
TOMMY J. CARTER, et ux
TRUONG NGUYEN
TAYNA J. BEAN, et al
JAMES MICHAEL BRINEGAR
CHRISTOPHER ADAMS, et ux
DALE HARMELINK, et ux
STEVENSON L. WEEKS, JR., et ux
A. RONALD CLAPP, et ux
JOCELYN A. ROMANO
EDWARD F. BEACHAM, et ux
DB 104 PG 82
MB 20 PG 96
STEPHEN DRAUGHON
SHANNON V. KING
JAMIE M. HILL, et ux
CANDICE M. STYRON

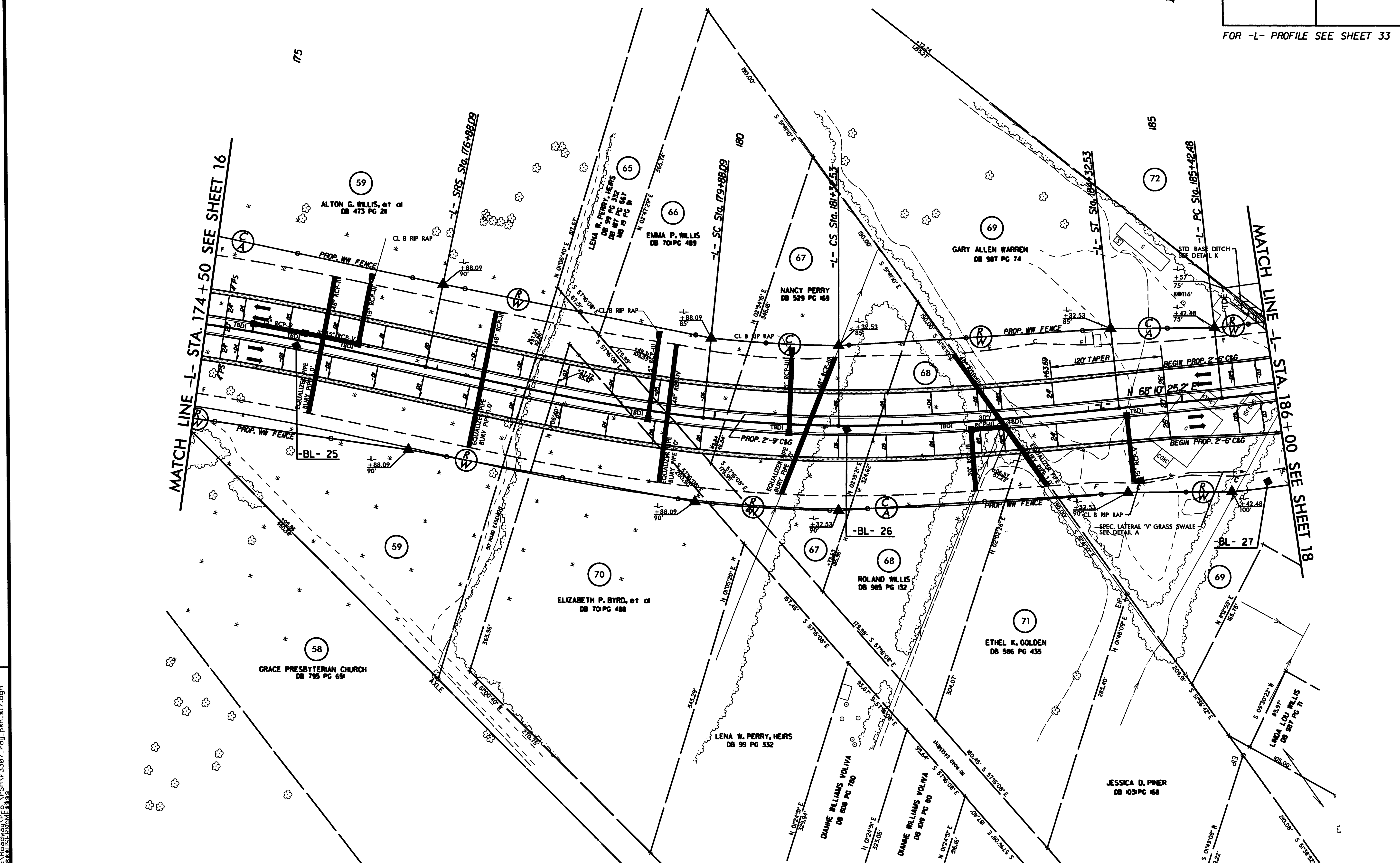
PROJECT REFERENCE NO.	SHEET NO.
R-3307	17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 33

-L-

PIs Sta 174+88.19	PIs Sta 178+88.20	PI Sta 180+60.37	PIs Sta 182+32.63	PI Sta 192+23.85
Θs = 6°00' 36.2"	Θs = 6°00' 36.2"	Δ = 5°47' 14.2" (LT)	Θs = 6°00' 36.2"	Δ = 54°15' 09.2" (LT)
Ls = 300.00'	Ls = 300.00'	D = 4°00' 24.1"	Ls = 300.00'	D = 4°18' 28.6"
LT = 200.12'	LT = 200.12'	L = 144.44'	LT = 200.12'	L = 1,259.36'
ST = 100.10'	ST = 100.10'	T = 72.28'	ST = 100.10'	T = 681.37'
		R = 1,430.00'		R = 1,330.00'
		SE = .06		SE = .05



NAD 83
MATCH LINE -L- STA. 174+50 SEE SHEET 16
MATCH LINE -L- STA. 186+00 SEE SHEET 18
-L- SRS Sta. 176+88.09
-L- SC Sta. 179+88.09
-L- CS Sta. 181+32.53
-L- ST Sta. 184+32.53
-L- PC Sta. 185+42.48
175
180
185
ALTON G. WILLIS, et al
DB 473 PG 21
LENA W. PERRY, HEIRS
EMMA P. WILLIS
DB 701 PG 489
NANCY PERRY
DB 529 PG 169
GARY ALLEN WARREN
DB 987 PG 74
ELIZABETH P. BYRD, et al
DB 701 PG 488
GRACE PRESBYTERIAN CHURCH
DB 795 PG 651
ROLAND WILLIS
DB 985 PG 132
ETHEL K. GOLDEN
DB 586 PG 435
LENA W. PERRY, HEIRS
DB 99 PG 332
DIANNE WILLIAMS VOLIVA
DB 808 PG 780
DIANNE WILLIAMS VOLIVA
DB 109 PG 80
JESSICA D. PINER
DB 1031 PG 168
LINDA LOU WILLIS
DB 387 PG 71
PROP. WW FENCE
CL B RIP RAP
EQUALIZER PIPE BURY PIPE 1.0'
PROP. 2'-9" C&G
BEGIN PROP. 2'-6" C&G
120' TAPER
N 68° 10' 25.2" E
STD BASE DITCH SEE DETAIL K
SPEC. LATERAL 'V' GRASS SWALE SEE DETAIL A
-BL- 25
-BL- 26
-BL- 27

REVISIONS

R/W REV. 07/29/10 (KMW): REVISED PROP R/W TO NUMERICAL OFFSET.

8/17/99

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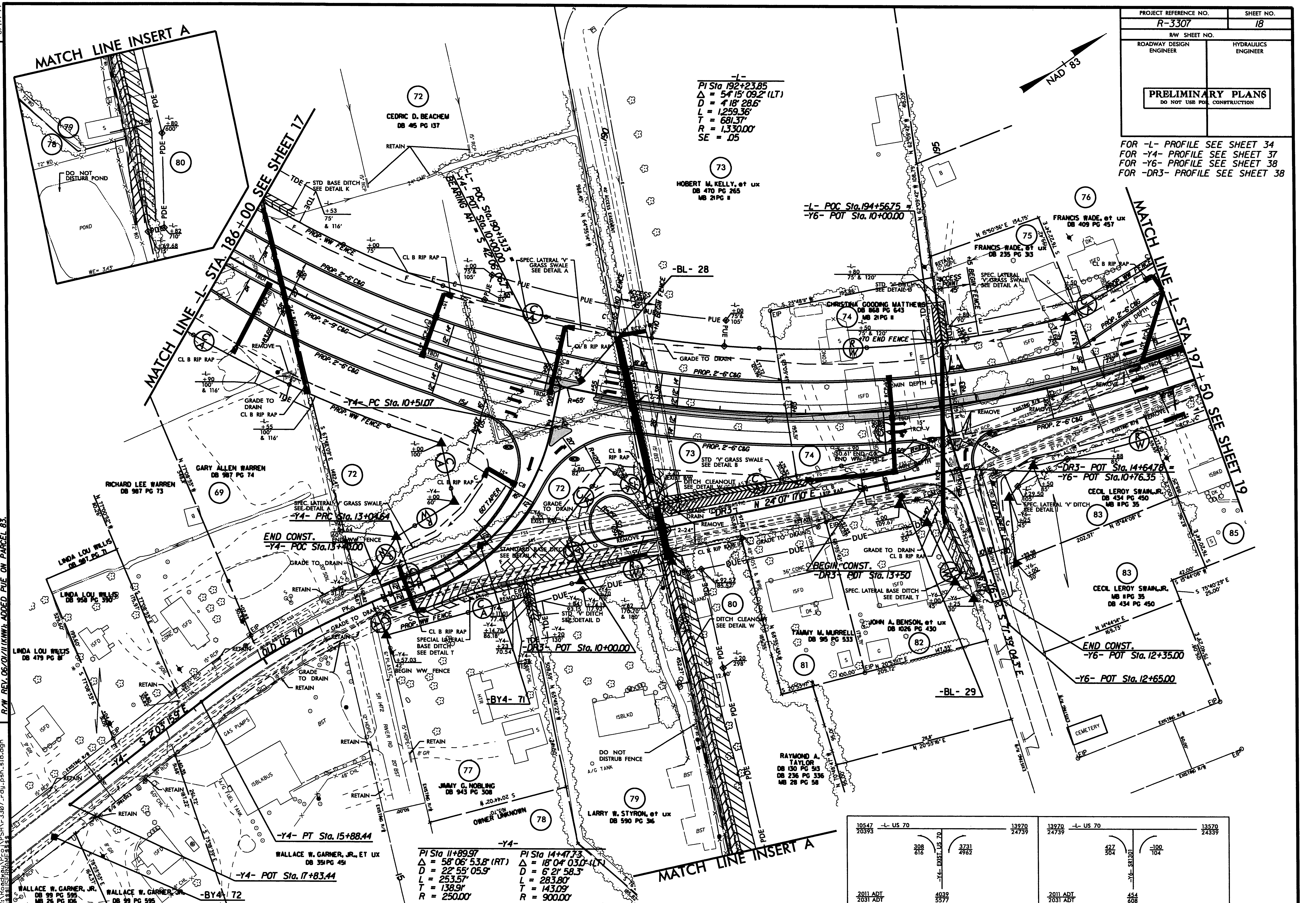
PROJECT REFERENCE NO.	SHEET NO.
R-3307	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 34
FOR -Y4- PROFILE SEE SHEET 37
FOR -Y6- PROFILE SEE SHEET 38
FOR -DR3- PROFILE SEE SHEET 38



MATCH LINE INSERT A
MATCH LINE -L- STA. 186+00 SEE SHEET 17
MATCH LINE -L- STA. 197+50 SEE SHEET 19
NAD 83
-L-
PI Sta 192+23.85
Δ = 54°15' 09.2" (LT)
D = 4°18' 28.6"
L = 1,259.36'
T = 681.37'
R = 1,330.00'
SE = .05
-L- POC Sta.194+56.75 = -Y6- POT Sta.10+00.00
-Y4- PC Sta.10+51.07
-Y4- PRC Sta.13+04.64
END CONST. -Y4- POC Sta.13+40.00
-Y4- PT Sta.15+88.44
-Y4- POT Sta.17+83.44
-DR3- POT Sta.10+00.00
BEGIN CONST. -DR3- POT Sta.13+50
-DR3- POT Sta.14+64.78 = -Y6- POT Sta.10+76.35
END CONST. -Y6- POT Sta.12+35.00
-Y6- POT Sta.12+65.00
-BL- 28
-BL- 29
CEDRIC D. BEACHEM DB 45 PG 137
HOBERT M. KELLY, et ux DB 470 PG 265 MB 21PG 8
FRANCIS WADE, et ux DB 409 PG 457
FRANCIS WADE, et ux DB 235 PG 313
CHRISTINA GOODING MATTHEWS DB 868 PG 643 MB 21PG 8
GARY ALLEN WARREN DB 987 PG 74
RICHARD LEE WARREN DB 987 PG 73
LINDA LOU WILLIS DB 479 PG 81
CECIL LEROY SWAIN, JR. DB 434 PG 450 MB 8PG 35
JOHN A. BENSON, et ux DB 1026 PG 430
TAMMY M. MURRELL DB 95 PG 533
RAYMOND A. TAYLOR DB 130 PG 513 DB 236 PG 336 MB 28 PG 58
JIMMY G. NOBLING DB 943 PG 308
OWNER UNKNOWN
LARRY W. STYRON, et ux DB 590 PG 316
WALLACE W. GARNER, JR., ET UX DB 351PG 451
WALLACE W. GARNER, JR. DB 99 PG 595 MB 26 PG 106
OLD US 70
-BY4- 71
-BY4- 72
CEMETERY

-Y4-

PI Sta 11+89.97	PI Sta 14+47.73
Δ = 58°06' 53.8" (RT)	Δ = 18°04' 03.0" (LT)
D = 22°55' 05.9"	D = 6°21' 58.3"
L = 253.57'	L = 283.80'
T = 138.91'	T = 143.09'
R = 250.00'	R = 900.00'

-L- US 70	10547 / 20393	13970 / 24739
-Y4- EXIST. US 70	308 / 616	3731 / 4962
2011 ADT / 2031 ADT	4039 / 5577	

-L- US 70	13970 / 24739	13570 / 24339
-Y6- SR1301	427 / 504	-100 / 104
2011 ADT / 2031 ADT	454 / 608	

REVISIONS

R/W REV. 07/29/10 (KNW): REVISED EXIST/PROP R/W TO NUMERICAL OFFSET.
R/W REV. 01/05/11 (KNW): REMOVED PROP TDE ON PARCELS 78 & 79 AND ADDED PROP PDE ON PARCEL 80.
R/W REV. 04/18/11 (KNW): ADDED PUE AND REVISED TCE ON PARCELS 72 & 73; REVISED TDE ON PARCEL 79, REMOVED TDE ON PARCELS 80-82, REVISED PDE ON PARCEL 80. AND ADDED DUE ON PARCELS 79-82.
R/W REV. 06/01/11 (KNW): ADDED PUE ON PARCEL 83.

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-3307	19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

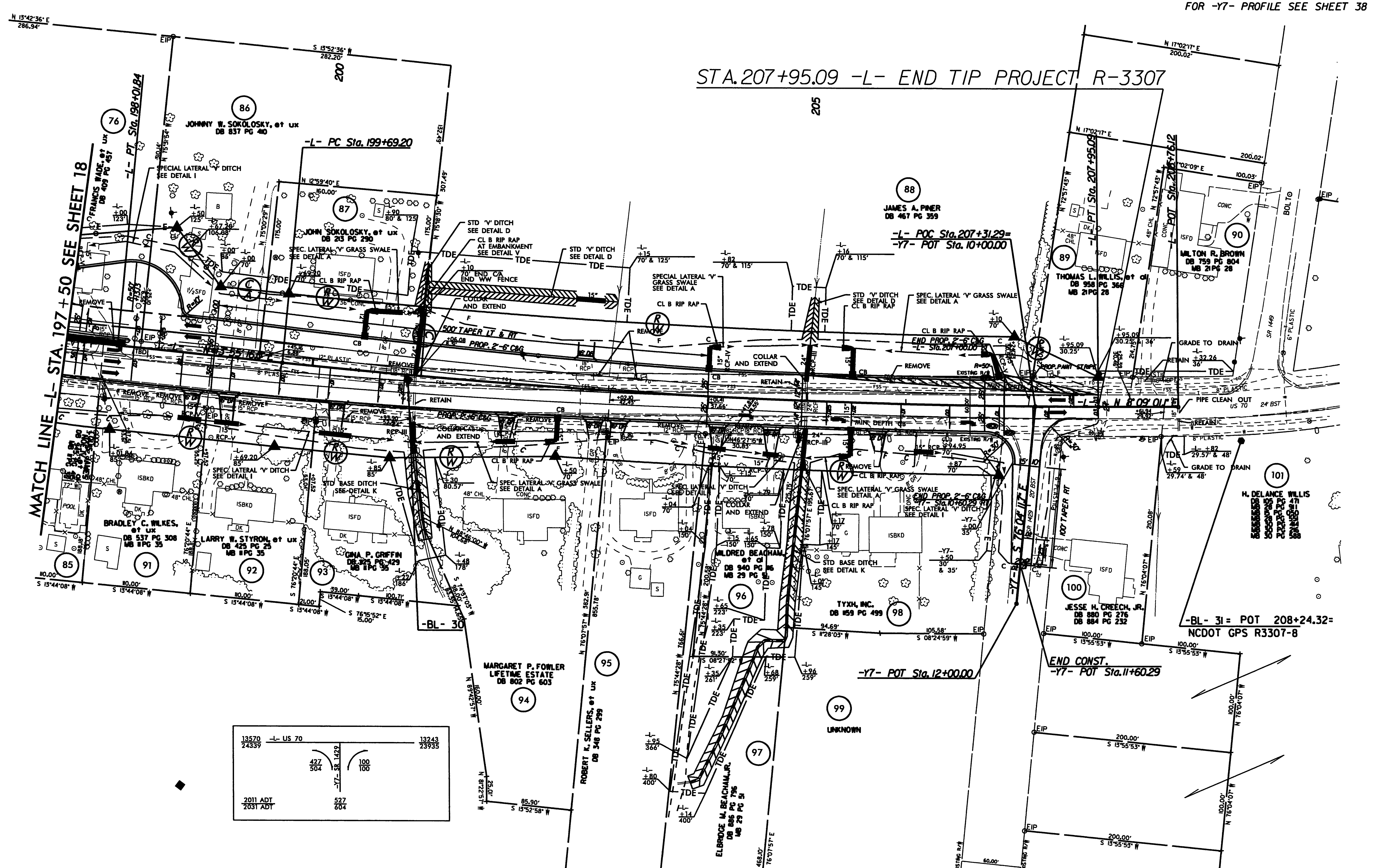
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 34
FOR -Y7- PROFILE SEE SHEET 38

-L-

PI Sta 192+23.85	PI Sta 203+82.50
Δ = 54° 15' 09.2" (LT)	Δ = 5° 46' 14.8" (LT)
D = 4° 18' 28.6"	D = 0° 41' 55.4"
L = 1,259.36'	L = 825.90'
T = 681.37'	T = 413.30'
R = 1,330.00'	R = 8,200.00'
SE = .05	SE = NC

NAD 83



STA. 207+95.09 -L- END TIP PROJECT R-3307
MATCH LINE -L- STA. 197+50 SEE SHEET 18
-L- PC Sta. 199+69.20
-L- PT Sta. 198+01.84
-L- POC Sta. 207+31.29= -Y7- POT Sta. 10+00.00
-L- PT Sta. 207+95.09
-L- POT Sta. 208+76.12
END CONST. -Y7- POT Sta. 11+60.29
-Y7- POT Sta. 12+00.00
-BL- 31 = POT 208+24.32= NCDOT GPS R3307-8
-BL- 30
JOHNNY W. SOKOLOSKY, et ux DB 837 PG 410
JOHN SOKOLOSKY, et ux DB 213 PG 290
FRANCIS WADE, et ux DB 409 PG 457
JAMES A. PINER DB 467 PG 359
THOMAS L. WILLIS, et al DB 958 PG 366 MB 21 PG 28
MILTON R. BROWN DB 759 PG 804 MB 21 PG 28
H. DELANCE WILLIS
BRADLEY C. WILKES, et ux DB 537 PG 308 MB 11 PG 35
LARRY W. STYRON, et ux DB 425 PG 25 MB 11 PG 35
GINA P. GRIFFIN DB 825 PG 429 MB 11 PG 35
MARGARET P. FOWLER LIFETIME ESTATE DB 802 PG 603
ROBERT K. SELLERS, et ux DB 348 PG 299
MILDRED BEACHAM, et al DB 940 PG 86 MB 29 PG 51
ELBRIDGE W. BEACHAM, JR. DB 886 PG 796 MB 29 PG 51
TYXH, INC. DB 1159 PG 499
JESSE H. CREECH, JR. DB 880 PG 276 DB 884 PG 232
UNKNOWN
500' TAPER LT & RT
100' TAPER RT
PROP. 2'-6" C&G
END PROP. 2'-6" C&G
SPECIAL LATERAL 'V' DITCH SEE DETAIL I
SPEC. LATERAL 'V' GRASS SWALE SEE DETAIL A
STD 'V' DITCH SEE DETAIL D
CL B RIP RAP AT EMBANKMENT SEE DETAIL V
STD BASE DITCH SEE DETAIL K
COLLAR AND EXTEND
70' END C/A END WW FENCE
GRADE TO DRAIN
PIPE CLEAN OUT
RETAIN
REMOVE
13570 -L- US 70 13243
24339 23935
427 504 -Y7- SR 1429 100 100
2011 ADT 527
2031 ADT 604

REVISIONS

R/W REV. 07/29/10 (KNW): REVISED EXIST/PROP R/W TO NUMERICAL OFFSET; OMITTED DRIVEWAYS AND REVISED PROP C/A ON PARCELS 86 & 87.

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-3307	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -Y2- PROFILE SEE SHEETS 35 & 36

NAD 83

APPROX. LOCATION OF BEAUFORT HISTORIC PLACES DISTRICT DESIGNATION

BEAUFORT CITY LIMITS

MATCH LINE -Y2- STA. 25+50 SEE SHEET 21

MATCH LINE -Y2- STA. 13+50 SEE SHEET 9

-Y2- PC Sta 23+43.67

WALLACE W. GARNER, ET UX
DB 267 PG 260
DB 267 PG 131
DB 766 PG 576

TOWN OF BEAUFORT
DB 1052 PG 425

THE HOUSING AUTHORITY OF THE TOWN OF BEAUFORT
DB 297 PG 480
DB 301 PG 276

UNKNOWN OWNER

END APPR. SLAB
-Y2- STA. 19+23.00

END BRIDGE
-Y2- STA. 18+98.00

BEGIN BRIDGE
-Y2- STA. 13+13.00

HARBOR OF REFUGE SIGN

HARBOR OF REFUGE SIGN

-BY2- 59

-BY2- 58

-BY2- 57

-Y2-
PI Sta 24+54.25
Δ = 22° 20' 26.6" (RT)
D = 10° 13' 53.0"
L = 218.35'
T = 110.58'
R = 560.00'
SE = .04
RUNOFF = 88'

-Y2- S 9°59'19" W

SR 1174 (TURNER ST)

BRIDGE SKETCH (NOT TO SCALE)

REVISIONS

R/W REV. 07/29/10 (KNW): REVISED EXIST. R/W TO NUMERICAL OFFSET.
R/W REV. 04/18/11 (KNW): DELETED PROP. R/W. ADDED PDE AND TCE ON PARCEL 120.

8/17/99

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8/17/99

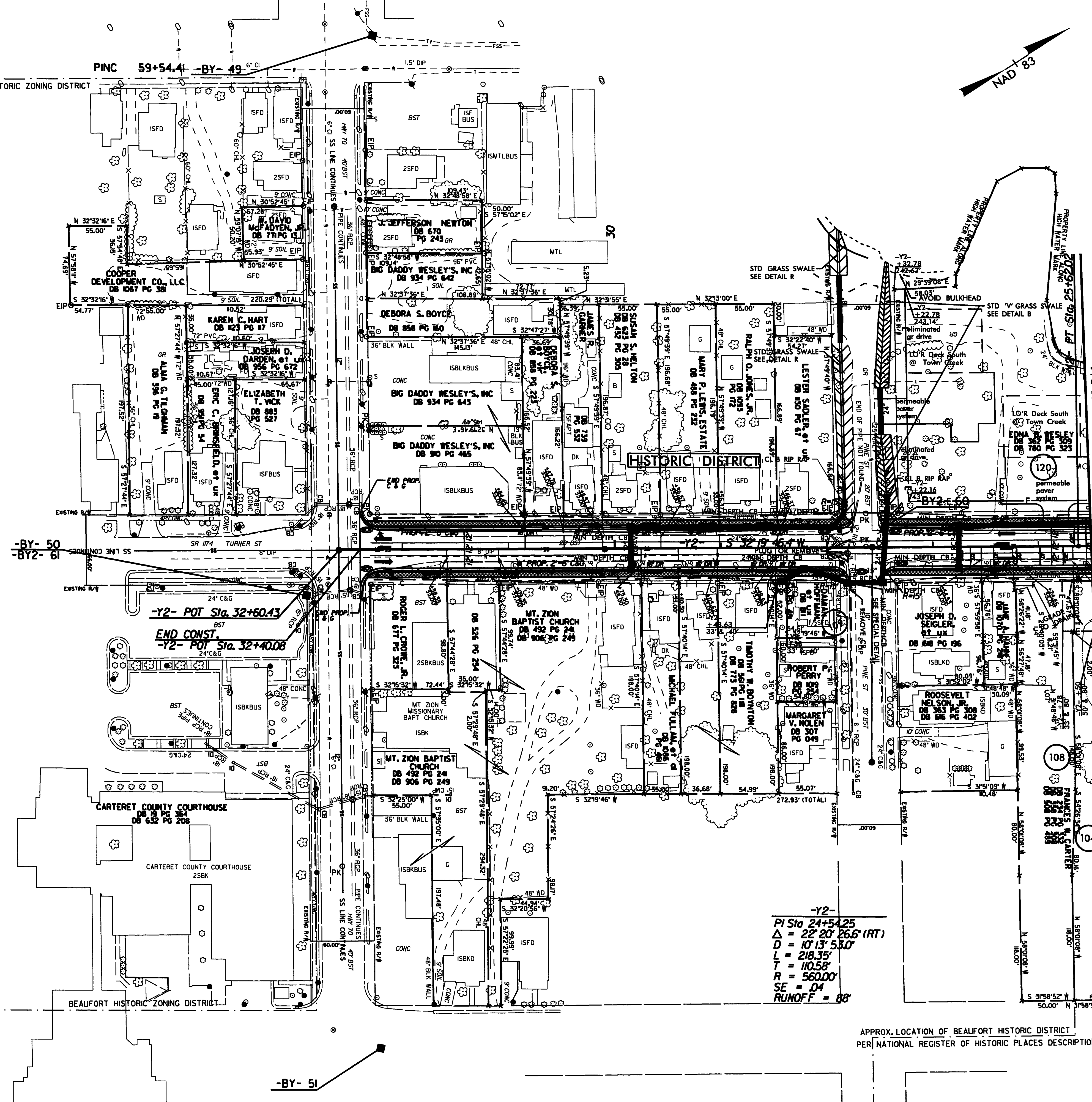
PROJECT REFERENCE NO.	SHEET NO.
R-3307	21
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -Y2- PROFILE SEE SHEET 36

REVISIONS

R/W REV. 07/29/10 (KNW): REVISED EXIST R/W TO NUMERICAL OFFSET.
R/W REV. 04/18/11 (KNW): ADDED PARCEL 120 AND ADDED TCE ON PARCEL 120.



NAD 83
PINC 59+54.41 -BY- 49
BEAUFORT HISTORIC ZONING DISTRICT
COOPER DEVELOPMENT CO., LLC DB 1067 PG 381
W. DAVID McFADYEN, JR. DB 771 PG 13
J. JEFFERSON NEWTON DB 670 PG 243
BIG DADDY WESLEY'S, INC DB 934 PG 642
KAREN C. HART DB 1123 PG 117
DEBORA S. BOYCE DB 858 PG 160
JOSEPH D. DARDEN, et ux DB 956 PG 672
ELIZABETH T. VICK DB 883 PG 527
BIG DADDY WESLEY'S, INC DB 934 PG 643
BIG DADDY WESLEY'S, INC DB 910 PG 465
HISTORIC DISTRICT
STD GRASS SWALE SEE DETAIL R
STD 'V' GRASS SWALE SEE DETAIL B
AVOID BULKHEAD
EDNA W. WESLEY DB 362 PG 395 DB 780 PG 323
120
MATCH LINE -Y2- STA. 25+50 SEE SHEET 20
-BY- 50
-BY2- 61
SR 1174 TURNER ST
-Y2- POT Sta. 32+60.43
END CONST. -Y2- POT Sta. 32+40.08
ROGER L. CROWE, JR. DB 617 PG 323
MT. ZION BAPTIST CHURCH DB 492 PG 241 DB 906 PG 249
MT ZION MISSIONARY BAPT CHURCH
MT. ZION BAPTIST CHURCH DB 492 PG 241 DB 906 PG 249
CARTERET COUNTY COURTHOUSE DB 19 PG 364 DB 632 PG 208
CARTERET COUNTY COURTHOUSE 2SBK
TIMOTHY W. BOYNTON DB 773 PG 828
ROBERT P. PERRY
MARGARET V. NOLEN DB 307 PG 049
JOSEPH D. SEIGLER, et ux DB 1148 PG 196
ROOSEVELT NELSON, JR. DB 363 PG 308 DB 616 PG 402
FRANCES W. CARTER
108
104
-Y2-
PI Sta 24+54.25
Δ = 22°20' 26.6" (RT)
D = 10°13' 53.0"
L = 218.35'
T = 110.58'
R = 560.00'
SE = .04
RUNOFF = 88'
APPROX. LOCATION OF BEAUFORT HISTORIC DISTRICT PER NATIONAL REGISTER OF HISTORIC PLACES DESCRIPTION
-BY- 51

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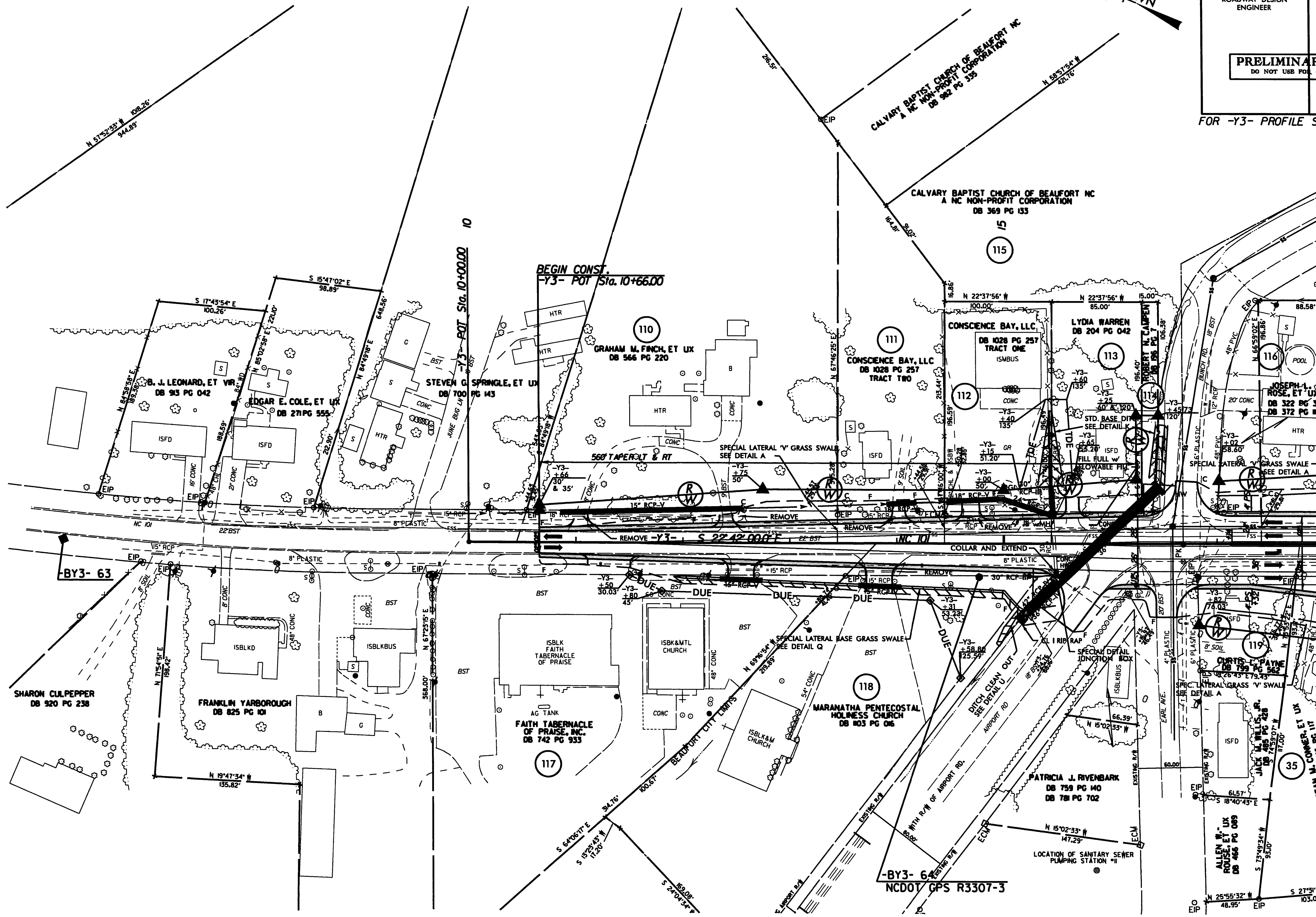
PROJECT REFERENCE NO.	SHEET NO.
R-3307	22
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -Y3- PROFILE SEE SHEET 36



REVISIONS

R/W REV. 07/29/10 (KWW): REVISED EXIST./PROP. R/W TO NUMERICAL OFFSET.
R/W REV. 04/18/11 (KWW): REPLACED PDE WITH DUE ON PARCELS 117 & 118.

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-3307	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

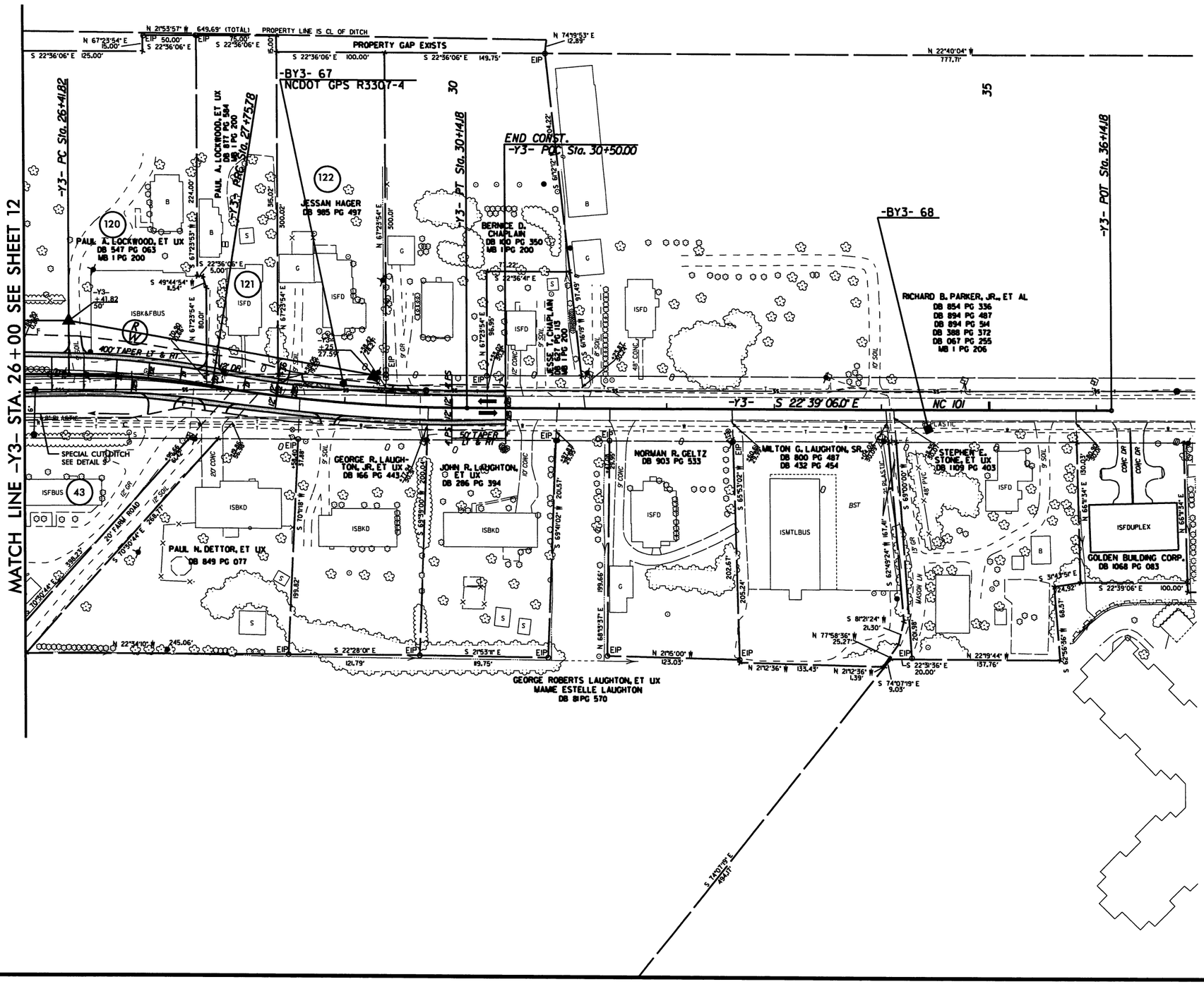
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -Y3- PROFILE SEE SHEET 37

NAD 83

-Y3-

PI Sta 27+08.94	PI Sta 28+95.23
Δ = 9°01' 47.9" (RT)	Δ = 9°06' 22.2" (LT)
D = 6°44' 26.4"	D = 3°49' 11.0"
L = 133.96'	L = 238.40'
T = 67.12'	T = 119.45'
R = 850.00'	R = 1,500.00'
SE = .06	SE = .06



REVISIONS

R/W REV. 07/29/10 (KNW): REVISED EXIST R/W TO NUMERICAL OFFSET.

8/17/99

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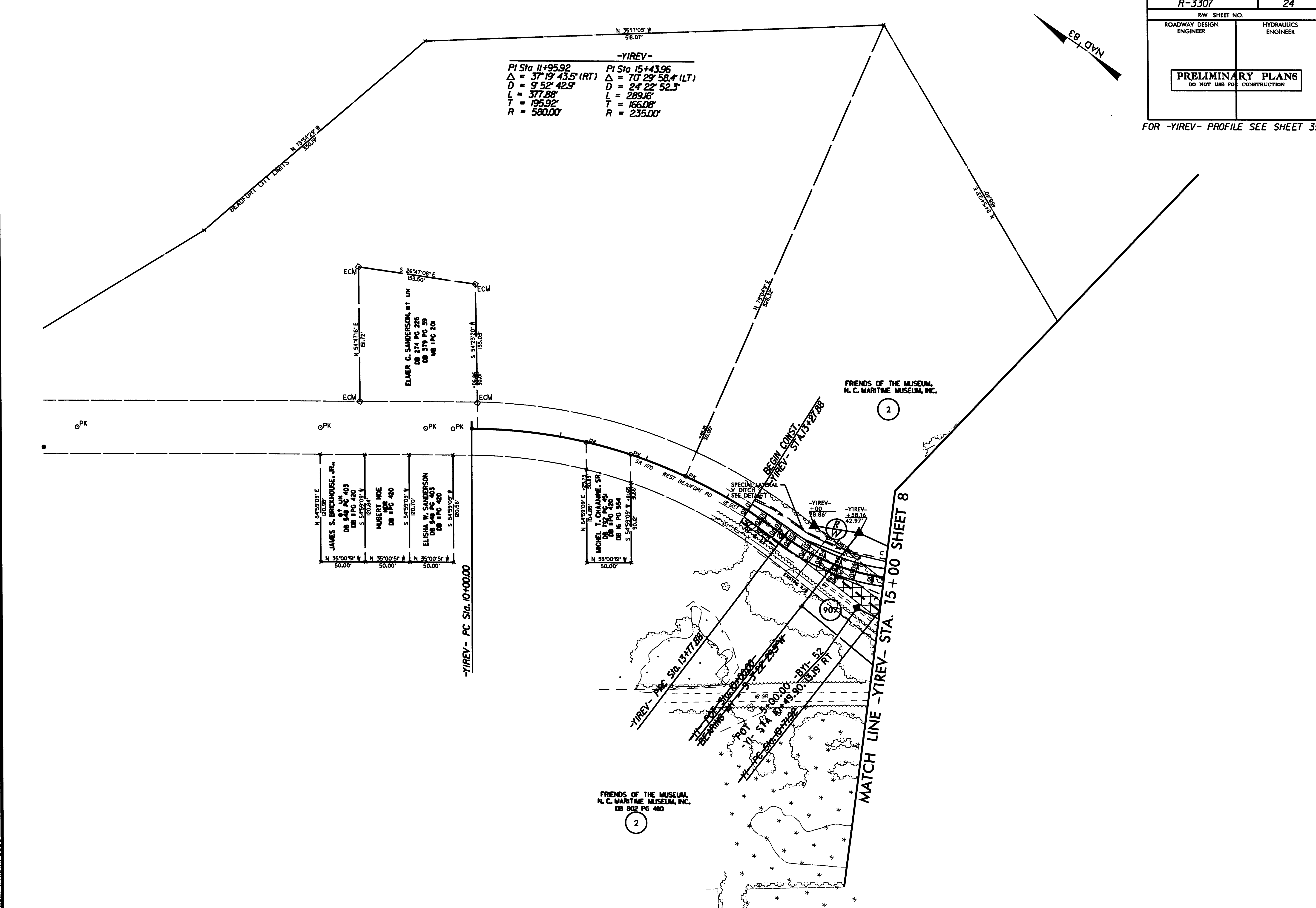
PROJECT REFERENCE NO.	SHEET NO.
R-3307	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -YIREV- PROFILE SEE SHEET 35



NAD 83
-YIREV-
PI Sta 11+95.92
Δ = 37° 19' 43.5" (RT)
D = 9° 52' 42.9"
L = 377.88'
T = 195.92'
R = 580.00'
PI Sta 15+43.96
Δ = 70° 29' 58.4" (LT)
D = 24° 22' 52.3"
L = 289.16'
T = 166.08'
R = 235.00'
N 35°17'09" W
518.07'
BEAUFORT CITY LIMITS
S 26°47'08" E
133.50'
ECM
ELMER G. SANDERSON, et ux
DB 274 PG 226
DB 379 PG 39
MB 1 PG 201
FRIENDS OF THE MUSEUM,
N. C. MARITIME MUSEUM, INC.
2
SR 1170 WEST BEAUFORT RD
BEGIN CONST.
-YIREV- STA. 13+27.88
SPECIAL LATERAL
V DITCH
SEE DETAIL
JAMES S. BRICKHOUSE, JR., et ux
DB 548 PG 403
DB 11 PG 420
HUBERT NOE
NDR
DB 11 PG 420
ELISHA W. SANDERSON
DB 548 PG 403
DB 11 PG 420
MICHEL T. CHAANINE, SR.
-YIREV- PC Sta. 10+00.00
-YIREV- PRC Sta. 13+77.88
907
MATCH LINE -YIREV- STA. 15+00 SHEET 8
FRIENDS OF THE MUSEUM,
N. C. MARITIME MUSEUM, INC.
DB 802 PG 480
2

REVISIONS

R/W REV. 07/29/10 (KWH): REVISED EXIST R/W TO NUMERICAL OFFSET.

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-3307	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

8/17/99

REVISIONS

EXISTING BRIDGE LOCATION