STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

February 4, 2009

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

Attention: Mr. William Wescott
NCDOT Coordinator

Subject: **Application for Section 404 Individual Permit, Section 401 Water Quality Certification, and Tar-Pamlico Buffer Authorization** for the extension of SR 1537 (Daniel Street) from SR 1518 (Baker Street) to US 258, Tarboro, Edgecombe County. State Project No. 8.2291201, Debit $570 from WBS 34983.1.1, TIP No. U-3826.

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to extend SR 1537 (Daniel Street) in Tarboro, North Carolina from its current terminus at SR 1518 (Baker Street) eastward to US 258 near NC 122. This application package consists of the cover letter, ENG Form 4345, half size plan sheets, permit & buffer drawings, FWS concurrence letter, mitigation plan, and Hydraulic Design Concurrence meeting (4B, 4C) minutes for U-3826.

1.0 Purpose and Need

The purpose of the project is to reduce traffic in downtown Tarboro and improve the route between Tarboro and regional highways in eastern Edgecombe County.

2.0 Summary of Impacts

Waters of the U.S.: Construction of the proposed project will necessitate impacts to jurisdictional waters. There will be a total of 1.48 acres of permanent riparian wetland impacts and 16 linear feet (0.01 acre) of permanent stream impacts. In addition, there will be 0.23 acre of temporary impacts to wetlands due to temporary fill. There will also be 10 ft. (0.01 acre) of temporary stream impact, and 0.73 and 0.36 acre of surface water impacts for a work bridge and a work pad, respectively.

Tar-Pamlico Riparian Buffers: There will be 14,465 ft^2 of impacts to riparian buffers for U-3826; of this, Zone 1 has 8,663 ft^2 and Zone 2 has 5,802 ft^2.

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

TELEPHONE: 919-715-1500
FAX: 919-715-1501

WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD
PLB SUITE 168
RALEIGH, NC 27604

3.0 Summary of Mitigation

The proposed construction of U-3826 will impact 1.48 acres of jurisdictional riparian wetlands that will require mitigation within the Tar-Pamlico River Basin. NCDOT will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the unavoidable impacts to 1.48 acres of impacts to wetland using on-site mitigation and assets within the same hydrologic unit.

The 14,465 ft^2 of riparian buffer impacts are allowable and do not require mitigation.

4.0 Project Schedule

Currently, U-3826 has a review date of June 2, 2009, is scheduled to let July 21, 2009 and will be available for construction shortly thereafter.

5.0 NEPA Document Status

An Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) were approved by the Federal Highway Administration (FHWA) on December 8, 2003 and August 10, 2006 respectively, for U-3826 and circulated to the appropriate agencies. A FHWA Right of Way Consultation was issued on September 19, 2007.

6.0 Independent Utility

The subject project complies with 23 CFR Part 771.111(f), which lists the Federal Highway Administration (FHWA) characteristics of independent utility of a project:

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

7.0 Resource Status

Wetlands and streams within the U-3826 Preferred Alternative corridor were delineated in February and September 2001 using the field delineation method outlined in the 1987 Corps of Engineers Wetland Delineation Manual. The North Carolina Division of Water Quality's (DWQ) Identification Methods for the Origins of Intermittent and Perennial Streams was used to make stream determinations. The original Jurisdictional Determination (JD) was issued on September 5, 2001. Jurisdictional features were re-verified with William Wescott of the US Army Corps of Engineers (USACE) on September 19, 2006. At the Corps' request, jurisdictional determination forms were not submitted due to the *Rapanos* Supreme Court case.

Two jurisdictional streams have been identified within the project area of U-3826, the Tar River and an unnamed tributary (UT) to the Tar River. Descriptions of these streams are in Table 1.

Table 1. Jurisdictional Streams

Permit Site	Stream Name	Sub-basin	Stream Index Number	Best Usage Classification
4	Tar River	03-03-03	28-(74)	WS IV; NSW
4	UT to Tar River	03-03-03	28-(74)	WS IV,NSW

8.0 Impacts to Jurisdictional Resources

Impacts to jurisdictional wetlands and surface waters for U-3826 are summarized below in Tables 2 & 3 respectively.

Table 2. Wetland Impacts

Permit Site	Station	Permanent (ac.)	Temporary (ac.)
1	34+50/36+50	0.75	0.00
2	40+15/41+00	0.04	0.00
3	44+00/46+00	0.22	0.00
4	57+10/59+65	0.69	0.23

Table 3. Surface Water Impacts

Permit Site	Name	Permanent (ft.)	Temporary (ft.)	Permanent (ac.)	Temporary (ac.)
4	Tar River	0	0	0	1.09
4	UT to Tar River	16	10	0.01	0.00

8.1 Impacts to Waters of the U.S.

Permanent Impacts: Proposed permanent impacts include fill, excavation, and mechanized clearing in wetlands. These impacts are to 1.48 acres of riparian wetlands. There are 16 linear feet (0.01) of stream impacts from the pipe installation at the UT to the Tar River.

Temporary Impacts: Proposed temporary impacts to riparian wetlands are 0.23 acre of temporary fill and temporary stream impacts of 10 ft. (0.01 acre). Proposed temporary impacts also include 0.73 acre (stream) for a work bridge over the Tar River and 0.36 acre (riparian wetlands) for a work pad.

Hand Clearing: There will be 0.85 acre of hand clearing in riparian wetlands.

Utility Impacts: There will be no impacts due to utilities for U-3826.

8.2 Impacts to Tar-Pamlico River Basin Riparian Buffers

This project is located in the Tar-Pamlico River Basin (HUC 03020103); therefore, the regulations pertaining to the Tar-Pamlico River Buffer Rules (15A NCAC 2B.0233) apply. There will be 14,465 ft^2 of impacts to riparian buffers. This includes 8,663 ft^2 in Zone 1 and 5,802 ft^2 due to the bridge crossing at Site 1. According to the buffer rules, bridges are *Allowable*. Uses designated as *Allowable* may proceed within the riparian buffer if there are no

practical alternatives to the requested use pursuant to Item (8) of this Rule. All practicable measures to minimize impacts within buffer zones were followed.

9.0 Protected Species

The United States Fish and Wildlife Service (USFWS) list two federally protected species for Edgecombe County as of the January 31, 2008 listing (Table 4).

Table 4. Federally Protected Species in Edgecombe County

Common Name	Scientific Name	Federal Status	Habitat Present	Biological Conclusion
Picoides borealis	Red-cockaded woodpecker	E	No	No Effect
Elliptio steinstansana	Tar River spinymussel	T	Yes	MANLTAA

NCDOT biologists determined that there was no suitable habitat for the red-cockaded woodpecker (RCW). Therefore, the biological conclusion is "No Effect".

Surveys were conducted at the project site in the Summer 2002 and in August 2006 for the Tar River spinymussel (TSM). Suitable habitat and other freshwater mussels were found, but no TSMs were collected. However, TSMs have been found upstream and downstream of the project site. Due to this fact and how difficult the TSMs are to find, NCDOT concludes that U-3826 may affect, but is not likely to adversely affect the TSM. NCDOT, in conjunction with the USFWS, will complete a biological evaluation (BE) for this project concerning the TSM. The BE will be finalized in March 2009 after the preconstruction survey for the TSM. Concurrence will be sought by NCDOT after the survey. Construction will not start until concurrence is reached.

10.0 Cultural Resources

10.1 Archaeology

An archaeological survey and evaluation were conducted along Alternative D (Preferred Alternative) and concluded on May 20, 2005 to identify any previously unrecorded archaeological resources in the project area and to determine if the resources retained the quality, quantity, and integrity of archeological remains that would qualify a site as eligible for the National Register of Historic Places (NRHP). Four archeological sites and two isolated finds were identified during the survey. NCDOT archeologists determined that these sites were not eligible for the NRHP. The State Historic Preservation Office (SHPO) has concurred with this finding. This letter is located in the FONSI.

10.2 Historic Architecture

The only structure that is eligible for the NRHP within the Preferred Alternative is the Atlantic Coast Rail Line Railroad Bridge. The SHPO has concurred with this finding. The SHPO also concurred that there was an effect on this property by the Proposed Alternative. The Alternative was shifted slightly south of the Bridge and the SHPO signed a concurrence

letter on July 16, 2002 stating that there was no effect on the Atlantic Coast Rail Line Railroad Bridge. This letter is located in the EA.

11.0 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.

12.0 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.

12.1 Avoidance and Minimization

All jurisdictional features were delineated, field verified and surveyed within the corridor for U-3826. 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:

- The project was designed to avoid or minimize disturbance to aquatic life movements.
- NCDOT will minimize long-term water quality impacts using the most recent Best Management Practices for Protection of Surface Waters, as identified in the Federal Aid Highway Program (FHPM) and North Carolina Administrative Code, Chapter 4.
- Crossings of jurisdictional areas were angled to cross as perpendicular as possible to minimize impacts.
- The use of a Hazardous Spill Basin.
- The use of 3:1 fill slopes in jurisdictional areas where practicable.
- The use of hand clearing in wetlands where practicable.
- Construction of a longer bridge over the Tar River (this lessened wetland impacts by 0.27 acre).
- To avoid and/or minimize impacts to anadromous fish, the "Stream Crossing Guidelines for Anadromous Fish Passage" will be followed including an in-stream construction moratorium from February 15 to September 30 for the Tar River and associated inundated wetlands.
- NCDOT proposes to use sheet piles on smaller wetlands to sever the connection to the Tar River in order to avoid impacts to anadromous fish.

12.2 Compensation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The unavoidable impacts to jurisdictional wetlands and streams will be offset by compensatory mitigation provided by on-site mitigation and with assets from the NCDOT Onsite Mitigation Debit Ledger. NCDOT will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the unavoidable impacts to 1.48 acres of wetlands and 16 linear feet of stream resulting from the construction of U-3826.

NCDOT proposes to restore 0.94 acre of riparian wetland for this project (see the wetland drawings for details). The remaining 0.54 acre of wetland will be offset with assets from the Mildred Wood Mitigation Site.

The Mildred Wood Mitigation Site was constructed as onsite mitigation for T.I.P. R-2111/R-2112A US 64 relocation in Edgecombe and Martin Counties. The 418-acre site is located in Edgecombe County southeast of Tarboro and may be accessed from US 64 on its southern boundary. The site has completed its monitoring period and met prescribed hydrologic and vegetative success criteria.

The Site was originally debited for R-2111, R-2112A, and R-509GB and has since been debited for R-2112B, U-2218, U-2720, B-2980, B-4021, and B-4020. To offset the 0.54 acre of unavoidable impacts to riparian wetlands associated with T.I.P. U-3826, the Mildred Wood Mitigation Site will be debited 0.54 acre of riparian wetland restoration. These debits are reflected in the debit ledger below.

Table 5. NCDOT Onsite Mitigation Debit Ledger (Acres)

Site name	Site TIP	HUC	River Basin	Division	County	Mitigation Type	As Built Amount
Mildred Woods	R-2111/ R-2112A	3020103	Tar-Pamlico	4	Edgecombe	Riparian Wetland Restoration	395

Available	Debit	Debit	Debit	Debit	Debit	Debit	Debit	Debit	Debit
	R-509GB, R-2111, & R-2112A	R-2112B	Alterations	U-2218	U-2720	B-2980	B-4021	B-4020	U-3826
99.75	217	23	23.5	21.5	6	3	0.25	0.46	0.54

13.0 Indirect and Cumulative Effects

An Indirect and Cumulative Effects Assessment (ICE) was completed in August 2005. The report concluded that near-zero growth rate, lack of adequate water and sewer services, and the floodplain would help deter project-induced growth. Any project related growth would be within the city limits of Tarboro. U-3826 will not likely induce any significant amount of growth in this area.

14.0 Regulatory Approvals

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

Section 401
Application is hereby made for a Section 401 Water Quality Certification from the N. C. Division of Water Quality.

Tar-Pamlico Riparian Buffer Authorization
NCDOT is requesting a Tar-Pamlico Riparian Buffer Authorization from the NCDWQ.

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

If you have any questions or need additional information, please contact Chris Underwood at csunderwood@ncdot.gov or (919) 431-6662.

Sincerely,

E. L. Lusk

for Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA Branch

cc:
W/attachment
Mr. Brian Wrenn, NCDWQ (5 Copies)
Ms. Kathy Matthews, USEPA

W/o attachment (see website for attachments)
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Mark Staley, Roadside Environmental
Mr. Richard E. Greene, PE, Div. 4 Engineer
Mr. Chad Coggins, Div. 4 Environmental Officer
Mr. Scott McLendon, USACE, Wilmington
Mr. Gary Jordan, USFWS
Mr. Travis Wilson, NCWRC
Mr. Ron Sechler, NMFS
Ms. Anne Deaton, NCDMF
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Bryan Yamamoto, PE, PDEA
Mr. Drew Joyner, PE, Human Environment Unit Head
Mr. Clarence W. Coleman, P.E., FHWA
Ms. LeiLani Paugh, NEU
Mr. Randy Griffin, NEU

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

OMB APPROVAL NO. 0710-003
Expires December 31, 2004

Public reporting burden for this collection of information is estimated to average 10 hours per response, although the majority of applications should require 5 hours or less. This includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. 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

Authority: Rivers and Harbors Act, Section 10, 33 USC 403: Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research and Sanctuaries Act, 33 USC 1413, Section 103. 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. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

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

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

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required)
North Carolina Department of Transportation Project Development & Environmental Analysis	
6. APPLICANT'S ADDRESS	**9. AGENT'S ADDRESS**
1548 Mail Service Center Raleigh, NC 27699-1548	
7. APPLICANT'S PHONE NOs. W/AREA CODE a. Residence b. Business 919-733-3141	**10. AGENT'S PHONE NOs. W/AREA CODE** a. Residence b. Business

11. STATEMENT OF AUTHORIZATION

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

APPLICANT'S SIGNATURE DATE

NAME, LOCATION, AND DESCRIPTION OR PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
U-3826

13. NAME OF WATERBODY, IF KNOWN (if applicable)
Tar River

14. PROJECT STREET ADDRESS (if applicable)

15. LOCATION OF PROJECT
Edgecombe NC
COUNTY STATE

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) **Section, Township, Range, Lat/Lon, and/or Accessors's Parcel Number, for example.**

17. DIRECTIONS TO THE SITE
Please see attached vicinity map and cover letter.

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

Extension of SR 1537 (Daniel Street) from SR 1518 (Baker Street) to US 258. This will be new location. There will be a 1450' bridge with two bents in the water. There will also be 0.94 acre of wetland restoration.

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

To reduce traffic in downtown Tarboro and improve the route between Tarboro and regional highways in eastern Edgecombe County.

USE BLOCKS 20-22 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

earthen fill

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

1.36 permanent acres of wetland, 0.23 temporary acre of wetland, 0.01 permanent acre of surface water, and 0.01 temporary acre of surface water.

23. Is Any Portion of the Work Already Complete? Yes ___ No _X___ IF YES, DESCRIBE THE COMPLETED WORK

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

Please see sheet 2 of 21 in the permit drawing package.

25. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application.

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

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

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

E.L. Fusk 2.3.09

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.

Daniel Street Extension Wetland Restoration Plan
TIP U-3826
Edgecombe County
Federal Aid Project No. STP- 1537(2)
WBS 34983.1.1
January 22, 2009

The North Carolina Department of Transportation (NCDOT) will perform on-site mitigation for riverine wetland impacts associated with Transportation Improvement Program (TIP) U-3826. NCDOT will restore approximately 0.864 acres of bottomland hardwood forest to be used as onsite riverine wetland mitigation for impacts associated with the roadway project.

EXISTING CONDITIONS

The proposed roadway project is located northeast of the Town of Tarboro in Edgecombe County. The project begins at the intersection of SR 1518 and Daniel Street west of the Tar River and continues to the intersection of Hwy 258 and NC 122 east of the Tar River.

The Environmental Assessment for TIP U-3826, dated December 2003, provides further details concerning existing roadway and project study area conditions.

The proposed project extends across the Tar River and its floodplain. The floodplain on the west side of the Tar River consists mainly of riverine swamp forest dominated by canopy species of bald cypress (*Taxodium distichum*), water tupelo (*Nyssa aquatica*), and swamp chestnut oak (*Quercus michauxii*). The floodplain on the east side of the Tar River consists mainly of bottomland hardwood forest with a mix of water oak (*Quercus nigra*), willow oak (*Quercus phellos*), river birch (*Betula nigra*), water tupelo, swamp chestnut oak, bald cypress and red maple (*Acer rubrum*). An abandoned railroad causeway extends across the Tar River along the length of the roadway project. On the east side of the Tar River, the railroad causeway runs parallel to the proposed roadway project along the north side.

PROPOSED CONDITIONS

The proposed riverine wetland mitigation will consist of restoring 0.864 acres of bottomland hardwood forest. A section of the abandoned railroad causeway and connecting road, from Station 52+35 to Station 57+50, will be graded to wetland elevation. Target elevations will be based on elevations taken in the wetland areas adjacent to the proposed restoration areas. All excavated areas shall be ripped and disked if necessary prior to planting of the site.

The restoration site will be planted following the successful completion of the site grading. The site will be planted at a density of 680 trees/acre on 8 foot centers with at least four of the following species as available: swamp chestnut oak, water oak, willow oak, river birch water tupelo and bald cypress.

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

MONITORING:

Upon successful completion of construction, the following monitoring strategy is proposed for the mitigation site. NCDOT will document monitoring activities on the site in an annual report distributed to the regulatory agencies.

No specific hydrological monitoring is proposed for this restoration site. The target elevation will be based on the adjacent wetland and verified during construction. Constructing the site at the adjacent wetland elevation will ensure the hydrology in the restored area is similar to the hydrology in the reference area.

Reforestation monitoring will be conducted by visual observation and photo points for survival and density of vegetation. Success criteria for reforestation is based on survival of 320 stems per acre after three years. NCDOT shall monitor the site for a minimum of three years or until the site is deemed successful. Monitoring will be initiated upon completion of the site planting.

STORMWATER MANAGEMENT PLAN

U-3826, WBS No. 34983.1.1
EDGECOMBE COUNTY
Hydraulics Project Manager: Andrew Nottingham, PE
Date 05/30/08

ROADWAY DESCRIPTION

The project involves the extension of SR 1537 (Daniel Street Extension) from SR 1518 to US 258/ NC 122. The roadway width is 36 feet with 2-12 foot travel lanes and 6 foot shoulders for bikes and pedestrians. The overall length of the project is 1.70 miles. The proposed improvements will include grading, paving, drainage, guardrail, and structures.

ENVIRONMENTAL DESCRIPTION

The project is located in the Tar-Pamlico River Basin. There is 1 major stream crossing on this project. It is located at the Tar River which is classified as WS IV, CA, NSW water. This area is endangered Tar Spinymussel habitat. The Tar River is in the vicinity of the project's identified as an anadromous fish spawning area.

Approximately 16 feet of existing stream will be impacted due to the project.
Approximately 1.48 acres of wetlands will be impacted.
Approximately 0.94 acre of wetlands will be restored.

BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES

Best Management Practices (BMPs) and measures used on the project are an attempt to reduce the stormwater impacts to the receiving streams due to erosion and runoff. Grassed swales and preformed scour holes were used where practicable to treat stormwater runoff prior to entering the streams. Bridge deck drainage will not be allowed to directly discharge into the water. Bridge deck drainage will be directed to hazardous spill basins on each end of the bridge. There is one major stream crossing consisting of a new bridge at the Tar River. There is also a 18" RCP replacing a 15" RCP at an Unnamed Tributary to the Tar River.

GRASSED SWALES

-L- STA 22+00 TO STA 34+00 (RT)
-L- STA 22+00 TO STA 26+00 (LT)
-L- STA 37+00 TO STA 40+00 (RT)
-L- STA 41+70 TO STA 43+50 (RT)
-L- STA 62+00 TO STA 63+00 (RT)
-L- STA 62+00 TO STA 63+50 (LT)
-L- STA 70+00 TO STA 70+50 (RT)

HAZARDOUS SPILL BASINS

-L- STA 40+00 TO STA 41+50 (RT)
-L- STA 58+50 TO STA 60+00 (RT)

BRIDGES

-L- from STA 41+95 to STA 57+35 (total length=1540', 14 spans @ 110') New bridge over the Tar River and wetlands. A temporary work bridge and a temporary work pad will be used in the construction of the bridge. .

FINAL MINUTES OF INTERAGENCY 4C MEETING
MEETING FOR PROJECT U-3826, EDGECOMBE COUNTY
HELD ON 6/18/2008

Team Members:	Andrew Nottingham	NCDOT-Hydraulics (Present)
	William Wescott	USACE (Present, teleconference)
	Gary Jordan	USFWS (present)
	Travis Wilson	NCWRC (present)
	Rob Ridings	NCDWQ (Present)
	Kathy Matthews	EPA (Present)
	Ron Lucas for Donnie Brew	FHWA (Present)
	Jimmy Goodnight	NCDOT-Roadway (Present)
	Chris Rivenbark	NCDOT-NEU (Present)
	Brian Yamamoto	NCDOT-PDEA (absent)
	Wendi Johnson	NCDOT-Division 4 (Present)
	Kevin Bowen	NCDOT-Construction (Present)
	Omar Azizi	NCDOT-Structures (Present)
	Mark Staley for David Harris	NCDOT-REU (Present)

Participants:

Tim Coggins	NCDOT-Structures
Melanie Nguyen	NCDOT-Hydraulics
Chris Underwood	NCDOT-NEU
LeiLani Paugh	NCDOT-NEU
Steve Kendall	NCDOT-Roadway
Jason Mays	NCDOT-NEU
Lance Fontaine	NCDOT-NEU

DOT began the meeting at 2:30 P.M. with an overview of the project.

Hydraulics reviewed the Stormwater Management Plan included with the permit package. There were no comments.

The team then proceeded to review the permit drawings.

Site 1 on plan sheet 5 was reviewed. There were no comments.

Site 2 and 3 on plan sheet 6 were then reviewed. It was noted that the drive right of station 38+50- L- was to provide access to parcel 4 as well as provide access to maintain the hazardous spill basin right of station 40+00 –L-.

Site 4 on plan sheet 6 and 7 was then reviewed. The existing gravel access road on parcel 5 will have to be maintained during and after construction. A portion of the unnamed

tributary to the Tar River will be impacted due to the access road having to be realigned to avoid a proposed bridge pier. Approximately 0.94 acres of wetland restoration is proposed at site 4 by removing a portion of the old railroad fill north of the project as shown on the drawings.

The next two permit drawing sheets showing the location of the temporary work bridge and work pad needed to construct the bridge were then reviewed. USFWS noted that they had originally planned on doing a formal section 7 consultation but now intend on doing an informal section 7 consultation.

The buffer permit drawings were reviewed and there were no additional comments.

The meeting was adjourned at approximately 3:00 p.m.

After the meeting was adjourned the USFWS and EPA noted that the gravel access road to parcel 5 appeared to be elevated above the wetland and wetland restoration area. They asked if it could be lowered to the wetland elevation. It was noted that NCDOT designed the grade of the access road to match the existing access road grade through the wetland area which is slightly above the existing wetland elevation. NCDOT will investigate if the access road can be lowered any but noted that it will have to be elevated slightly to maintain the stability of the road.

FINAL MINUTES OF INTERAGENCY 4B MEETING
PROJECT U-3826, EDGECOMBE COUNTY
Hydraulics Unit Conference Room
August 23, 2006
9:00 am to 11:00 am

Team Members:

Andrew Nottingham	NCDOT, Hydraulics (Present)
William Wescott	USACE (Present)
Gary Jordan	USFWS (Present)
Travis Wilson	WRC (Present)
Rob Ridings	DWQ (Present)
Chris Militscher	EPA (Present)
Kathy Matthews	EPA (Present)
Clarence Coleman	FHWA (Absent)
Jimmy Goodnight	NCDOT, Roadway (Present)
Omar Azizi	NCDOT, Structures (Present)
Brian Yamamoto	NCDOT, PDEA (Present)
Chris Underwood	NCDOT, NEU (Present)
Eddie Bunn for Wendi O. Johnson	Division 4 (Present)
Ron Hancock	NCDOT, Construction (Present)
Sarah McBride	SHPO (Absent)

Participants:

Brian Wrenn	DWQ
Dewayne Sykes	NCDOT, Roadway
Tim Coggins	NCDOT, Structures
Amy Billings	NCDOT, Hydraulics
Mark Staley	NCDOT, Roadside Enviro.
Elizabeth Lusk	NCDOT, NEU
Wade Kirby	NCDOT, PDEA
Logan Williams	NCDOT, NEU
Chris Rivenbark	NCDOT, NEU
Jason Mays	NCDOT, NEU
Worth Calfee	NCDOT, NEU
Veronica Barnes	NCDOT, NEU
Elizabeth Workman-Maurer	RK&K

Andrew started the meeting stating that the 4A meeting for this project was held on December 14. 2004. Since that time, there have been a lot of changes in personnel working on this project. Some of the issues that have been discussed in the past include the following:

- Tar spinymussel Section 7 Consultation
- In-water Moratorium on Anadromous Fish (Inland Primary Nursery Areas)
- Critical Watershed Area (use of Hazardous Spill Basins)
- High Quality Wetlands
- Historical Railroad Bridge
- Tar River Buffer Rules
- Abandoned Railroad bed
- Town of Tarboro's desire to put in a multi-use trail, picnic area, and canoe launch in the area (abandoned RR R/W)
- Tar River is in a detailed Flood Study

Considering all this information, Andrew then proceeded to go through the project sheet by sheet.

Sheet 4

Andrew described this area of the project as being relatively flat. There will be ditches running along both sides of the proposed roadway. The drainage area that these ditches will pick up is mostly from the new roadway. There were no comments.

Sheet 5

The ditches continue running alongside the north and south sides of the project. The northern ditch outlets into an existing wetland at approximately STA 26+00. The southern ditch outlets into an existing wetland at approximately STA 34+00. DWQ would prefer the ditches to widen before reaching the wetlands. Andrew responded that these ditches could be widened before entering the wetlands and that check dams could be used. These methods would help slow and disperse the flow before reaching the wetlands.

Andrew moved on to the bridge over wetland D3. EPA questioned if there were any pipes under the abandoned railroad right of way. There are no existing pipes under the railroad. There is no connectivity between the wetlands on either side of the railroad for the entire length of the project. Andrew questioned the benefit of the bridge at this location. The wetland being spanned is at the very edge of wetland D3 with the railroad embankment being on the other side. As it stands now, the bridge has a total length of 166 LF. Only the high quality portion of this wetland is being spanned. Currently the wetland impact is 0.350 Acres. Bridging this area versus filling this area is only saving 0.383 Ac. of wetland impact. Initially this area was shown using 2:1 side slopes in the draft FONSI. The final FONSI uses 3:1 side slopes.

Elizabeth Lusk (PDEA-NEU) wanted to know if the fill slopes of the proposed roadway were up against the fill slopes of the railroad. They are.

Gary Jordan (USFWS) asked if we could get wetland enhancement by putting cross pipes under the railroad embankment. Andrew replied that any size pipe would be relatively

small in relation to the flows going through this area. This would result in some large scour holes. Gary then asked how large a pipe would it take to make this idea beneficial. Andrew replied that any size pipe would not be advisable, and basically you would have to open up the whole area. If one looks at the map of the area, you can see how the river bends to the east and it would tend to migrate in that direction. Removing fill on the west side of the river would short cut the flow to the river. Gary (USFWS) commented that the wetland to the north of the railroad embankment is just a small remnant wetland. Andrew then showed some slides of wetland D3 to the group.

Sheet 6

Andrew discussed the ditches on either side of the proposed roadway. The ditch to the south will be directed toward a hazardous spill basin at approximately STA 42+00. The ditch to the north will be directed back to wetland D3 as shown on sheet 5. DWQ preferred this ditch (north of the railroad) to go to the right and be directed via a cross pipe to the same hazardous spill basin at STA 42+00 –L- (RT). Andrew said this would not be a problem. EPA questioned the hazardous spill basin being inside the floodway. Per DWQ, this is not a problem.

Andrew went on to discuss the 990' long bridge over the Tar River. This bridge would have a drainage system on it directing the flow to the ends of the bridge and into the hazardous spill basins. Due to the floodway being updated, this bridge is now approximately 250' longer than the original bridge proposed in the draft FONSI. Several photos of the area were shown in a slideshow. Various water levels were shown at various times of the year.

Gary Jordan (USFWS) discussed the endangered Tar spinymussel. He explained that the Tar spinymussel should not delay the project, and it is unrelated to the moratorium for the anadromous fish. A mussel survey was conducted in August 2006. No Tar spinymussels were found during this survey.

The Biological Assesment (BA) is being prepared by NEU. In the past, the Tar spinymussels have been located close to the project, but they are hard to find. They were originally discovered up and downstream of the project. In order to prepare the BA, a footprint of the bridge will be needed. The footprint should show both permanent and temporary impacts. It takes 135 days to complete the Biological Opinion (BO). (April 21, 2009 is the current Let Date for this project.)

Travis Wilson (NCWRC) then discussed the anadromous fish moratorium that covers areas of inundation connected to the Tar River. He stated that at a previous meeting with the DOT, the DOT asked about using sheet piling to isolate the wetlands in order to do construction. Due to the unique nature of this project with the railroad fill acting as a barrier on one side of the wetland, Travis was able to consider this option under 3 conditions:

1. It is installed when the conditions are dry, and it is not effected by a moratorium.
2. There are no additional clearing limits due to installing the sheet piling.

3. If there is inundation inside the sheet piling, then BMPs (Best Management Practices) are used for dewatering.

If these conditions are met, then sheet piling would be ok to use, and work may be done inside the sheet piling.

Gary Jordan (USFWS) needs information on the work bridges and causeways in the BA. Work bridges are preferred. Causeways would be difficult to maintain with the water level being unpredictable. Andrew commented that the work bridge would likely span the river and probably be higher than elevation 21+/- based on the water levels seen in March and July of 2006. The new bridge is approximately 40'-45' higher than the bed elevation of the Tar River.

Gary Jordan asked if the contractor could change the work bridge and causeway information shown on the permit drawings. Ron Hancock answered that the contractor can change the permit information to have less wetland impacts, but not more wetland impacts.

Andrew moved on to discuss Tributary A. Stream A as shown on sheet 6 and sheet 7 is jurisdictional, but is not considered for mitigation or buffer protection. During normal conditions, Stream A does not appear to adequately support herring movement. Therefore, Stream A, in its current state, is not a connectivity source. Elizabeth Lusk (PDEA-NEU) commented that the JD (jurisdictional determination) for this project was last done in September 2001 and it would have to be redone.

It was noted that wetland D3 does not appear to have connectivity with the Tar River during its normal or low water conditions. Under normal or low water conditions, the D3 wetland may be separated from the river and, therefore, may not be subject to the moratorium.

Sheet 7

Andrew moved on to discuss sheet 7. The drainage system on the bridge will drain to the east side to a proposed hazardous spill basin (HSB).

DWQ questioned where the outlet of the HSB on the east side of the bridge was located. Andrew noted that the HSB would outlet on the north side of the bridge to Tributary A and then outlet to the Tar River via the Tributary.

The other HSB on the west side of the bridge outlets into D8. DWQ would prefer a preformed scour hole (PSH) at that location. DWQ would also like to see some calculations for grassed swales on the next set of plans. DWQ would prefer to see 3:1 slopes for the ditches rather than 2:1. Eddie Bunn (Division 4) would also prefer 3:1 slopes. Andrew told DWQ that the bridge deck drainage would be piped to a HSB and dispersed to the wetland area.

The bridge over wetland D10 was then discussed. EPA questioned the benefit of using equalizer pipes at this location. Andrew commented that from a hydraulics point of view, if we did anything, we would remove all of the embankment.

Gary Jordan (USFWS) would like to see the embankment removed for enhancement. Gary also suggested that if the City of Tarboro continues the trail in this area, maybe a small footbridge would be adequate in this area of removed fill. Dewayne Sykes (NCDOT-Roadway) commented that the railroad right of way is believed to have been reverted back to the property owners in the area. Gary Jordan wanted to know how much credit we could get for enhancement, and he would like this investigated further. NCDOT will investigate this option. There was some discussion of mitigation and enhancement. FHWA may have some funding under the TEA 21 program.

USACE asked if wetland D10 and E7 could be connected. Andrew noted that this would not be a problem. There is approximately a one foot difference in elevation between the two wetlands.

Andrew proposed the removal of the western bridge and extending the eastern bridge to connect with the Tar River bridge. According to Chris Militscher (EPA), the first high quality wetland was bridged due to two issues. The first issue was the high quality wetland (bluff area) and the second issue was the difficulty in stabilization of the fill near the wetland. Dewayne Sykes believed the cost of the fill would be less than the cost of a bridge at this location. Chris reinforced that the quality of the system was also an important consideration in the decision to bridge this area. The agencies would need to visit these areas and weigh the benefit versus impact prior to making a decision or revisiting Concurrence Point No. 2A. There have been a lot of personnel changes during this project. Chris Militscher and Gary Jordan are the only two members of the team who have worked on this project since CP 2A. Several people in the meeting believed that shifting the first bridge to lengthen the bridge over the Tar River may be more beneficial to the project overall. It was agreed that if NCDOT wants to pursue this option then the group would look at the project again in the field before reaching any decision. NCDOT will evaluate the cost and mitigation benefits associated with this option including the option of removing the old railroad fill at this location.

Sheet 8

Andrew discussed sheet 8. There were no comments.

Sheet 9
Andrew discussed sheet 9. There were no comments.

Sheet 10

Andrew discussed sheet 10. There were no comments.

The meeting adjourned at 11:00 a.m.

MINUTES OF INTERAGENCY 4B FIELD REVIEW MEETING
PROJECT U-3826, EDGECOMBE COUNTY
October 16, 2006
9:30 AM to 1:00 PM

A field review of the project site was held on October 16, 2006 with the following people in attendance:

Andrew Nottingham	NCDOT, Hydraulics
William Wescott	USACE
Gary Jordan	USFWS
Travis Wilson	WRC
Rob Ridings	DWQ
Chris Militscher	EPA
Kathy Matthews	EPA
Leilani Paugh	NCDOT, NEU
Amy Billings	NCDOT, Hydraulics
Elizabeth Workman-Maurer	RK&K
Joanna Harrington	RK&K

Andrew stated that the purpose of this meeting was to review the wetlands and bridge locations and decide if the alternative discussed in the 4B meeting held on August 23, 2006 was acceptable. Specifically, looking at the alternative of eliminating the proposed bridge over wetland D3 (from STA 34+50 (+/-) to STA 36+45 (+/-) -L-) west of the Tar River and connecting the bridge over the Tar River with the bridge over wetland D10 (from STA 51+70 (+/-) to STA 58+00 (+/-) –L) east of the Tar River. This alternative would span more of wetland D10 reducing the overall wetland impacts for the project by approximately 0.27 acres. It was noted that the cost for this alternative was approximately the same as the presently proposed design.

Since the 4B Meeting was held on August 23, 2006, RK&K, USACE and DWQ have reverified the wetlands and streams on September 19, 2006. Liz Workman provided copies of a reverified wetlands map and a jurisdictional update sheet to the group. Liz discussed the changes that were made as a result of the reverification.

At this point, Gary Jordan (USFWS) asked if DOT had investigated mitigation involving the removal of the old railroad fill in the vicinity of wetland D10. After some discussion, DOT noted that they had not come to a final decision on this issue. It was noted that DOT would continue to investigate the possibility of wetland mitigation at this site.

The group proceeded to look at wetland D10 and E7 on the east side of the Tar River. Both sides of the railroad right of way were viewed so the group could get an idea of the wetland on the north side of the railroad. This is the area where possible mitigation might occur by removing the old railroad fill and connecting the wetlands on each side. It was noted that due to the reverification, wetlands D10 and E7 boundaries have changed

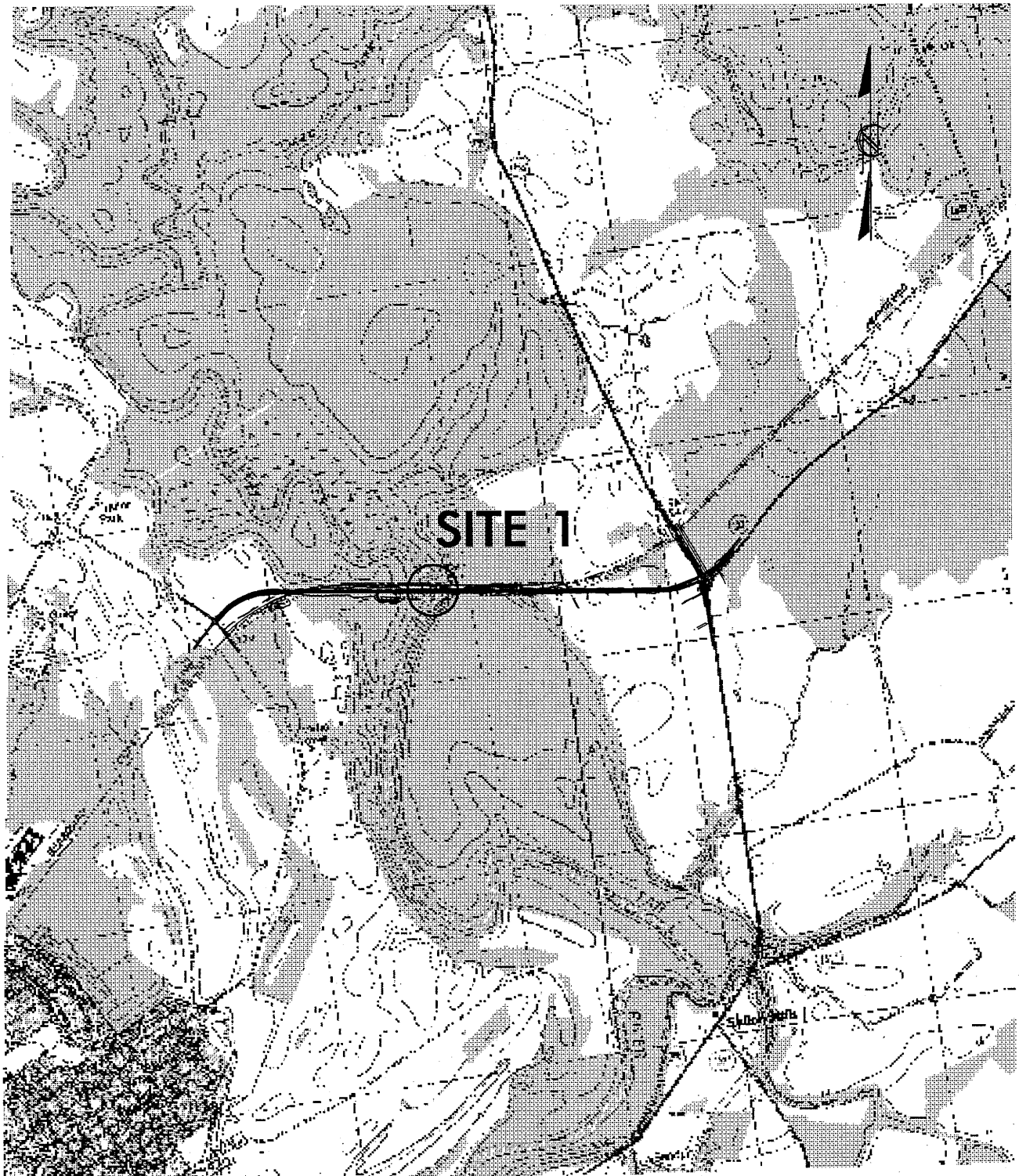
slightly since the final FONSI. This resulted in a slight reduction of the wetland impacts at these sites. Andrew noted that DOT would connect wetland sites D10 and E7 by grading out a small area next to the fill slope between the wetlands. There is approximately a one-foot difference in elevation between the two wetlands where they are separated by the roadway fill.

The group also looked at Stream 'A'. Several small wetlands have been added surrounding Stream 'A' (D11). Stream 'A' is intermittent and no mitigation is required. Some discussion occurred about whether or not the existing dirt road that crosses Stream 'A' would be left in place if this area were bridged. It was determined that the road could be taken out if this area were bridged.

The group then proceeded to the west side of the Tar River to review wetland D3.

The group looked at wetland D3, and after some discussion, the group agreed to lengthen the bridge over the Tar River to connect with the bridge over wetland D10, and eliminate the bridge over wetland D3. As noted above, this would save approximately 0.27 acre of wetlands. It was agreed that the existing road fill and the existing pipe at wetland D10 and Stream 'A' would be removed. It was also agreed that DOT would continue to investigate mitigation involving removing the old railroad fill in the vicinity of wetland D10.

The meeting adjourned at 1:00 p.m.



PLAN VIEW

SCALE:
1" = 2500'

NCDOT

DIVISION OF HIGHWAYS
EDGECOMBE COUNTY
PROJECT: 34983.1.1 (U-3826)
SR 1537 (DANIEL ST. EXT.)
FROM SR 1518 (LOOP RD.)
TO US258 / NC122
BUFFER PERMIT

SHEET OF 05 / 14 / 0

Buffer Drawing
Sheet 1 of 5

PROPERTY OWNERS

NAMES AND ADDRESSES

BUFFER PERMIT

PARCEL NO.	NAMES	ADDRESSES
4	GEORGE F. YORK	P. O. Box 459 Conetoe, NC 27819
6	GEORGE H. JOHNSON, JR.	P. O. Box 2946 Greeneville, NC 27836
5	ANNE BOONE SHELTON URQUHART	P. O. Box 366 Speed, NC 27881

NCDOT

DIVISION OF HIGHWAYS

EDGECOMBE COUNTY

PROJECT: 34983.1.1 (U-3826)

SR 1537 (DANIEL ST. EXT.)

FROM SR 1518 (LOOP RD.)

TO US 258 / NC 122

SHEET OF 05/14/(

BUFFER IMPACTS SUMMARY

			IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	72" MBT	41+95 TO		x		8663	5802	14465					
	BRIDGE	57+35											
TOTAL:						8663	5802	14465	0.0	0.0	0.0		

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

EDGECOMBE COUNTY
PROJECT: 3.4983.1.1 (U-3826)

5/14/2008
SHEET OF

Rev. May 2006

Buffer Drawing
Sheet 3 of 5

09/08/99

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

EDGECOMBE COUNTY

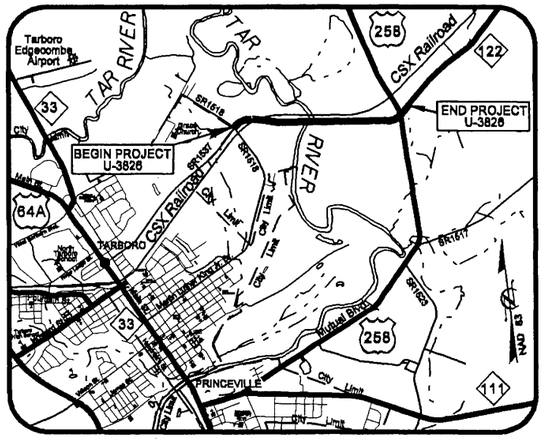
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3826	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34983.1.1	STP-1537(2)	PE
34983.2.2	STP-1537(2)	R/W /UTILITIES

Buffer Drawing Sheet 4 of 5

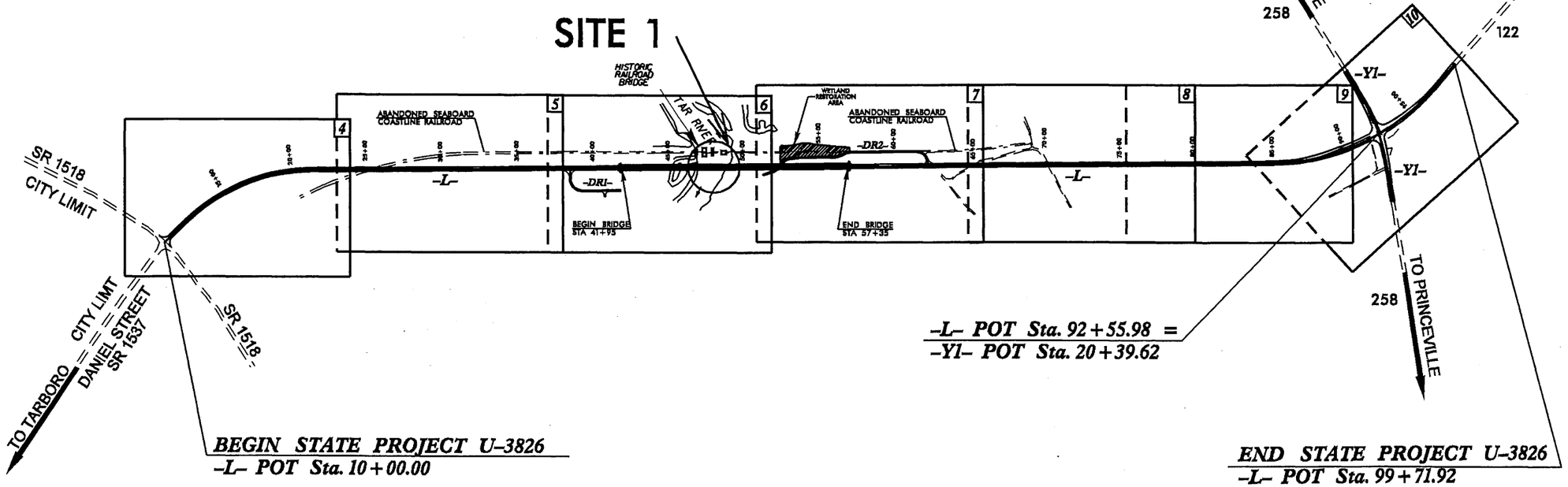
LOCATION: SR 1537 (DANIEL STREET EXTENSION) FROM SR 1518 TO US 258/NC 122

TYPE OF WORK: GRADING, PAVING, DRAINAGE, GUARDRAIL, AND STRUCTURES.



VICINITY MAP

BUFFER PERMIT



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-Y1- POT Sta. 20+39.62

END STATE PROJECT U-3826
-L- POT Sta. 99+71.92

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TIP PROJECT: U-3826

CONTRACT:

GRAPHIC SCALES

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PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2005 = 3,600
ADT 2025 = 5,600
DHV = 12 %
D = 60 %
T = 11 % *
V = 60 MPH

* TTST 8% DUAL 3%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3826 = 1.407 MILES
LENGTH STRUCTURE TIP PROJECT U-3826 = 0.292 MILES

TOTAL LENGTH TIP PROJECT No. U-3826 = 1.699 MILES

FUNC CLASS = RURAL MAJOR COLLECTOR

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: NOVEMBER 28, 2007

LETTING DATE: OCTOBER, 2009

JIMMY GOODNIGHT, PE
PROJECT ENGINEER

STEVE KENDALL, 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

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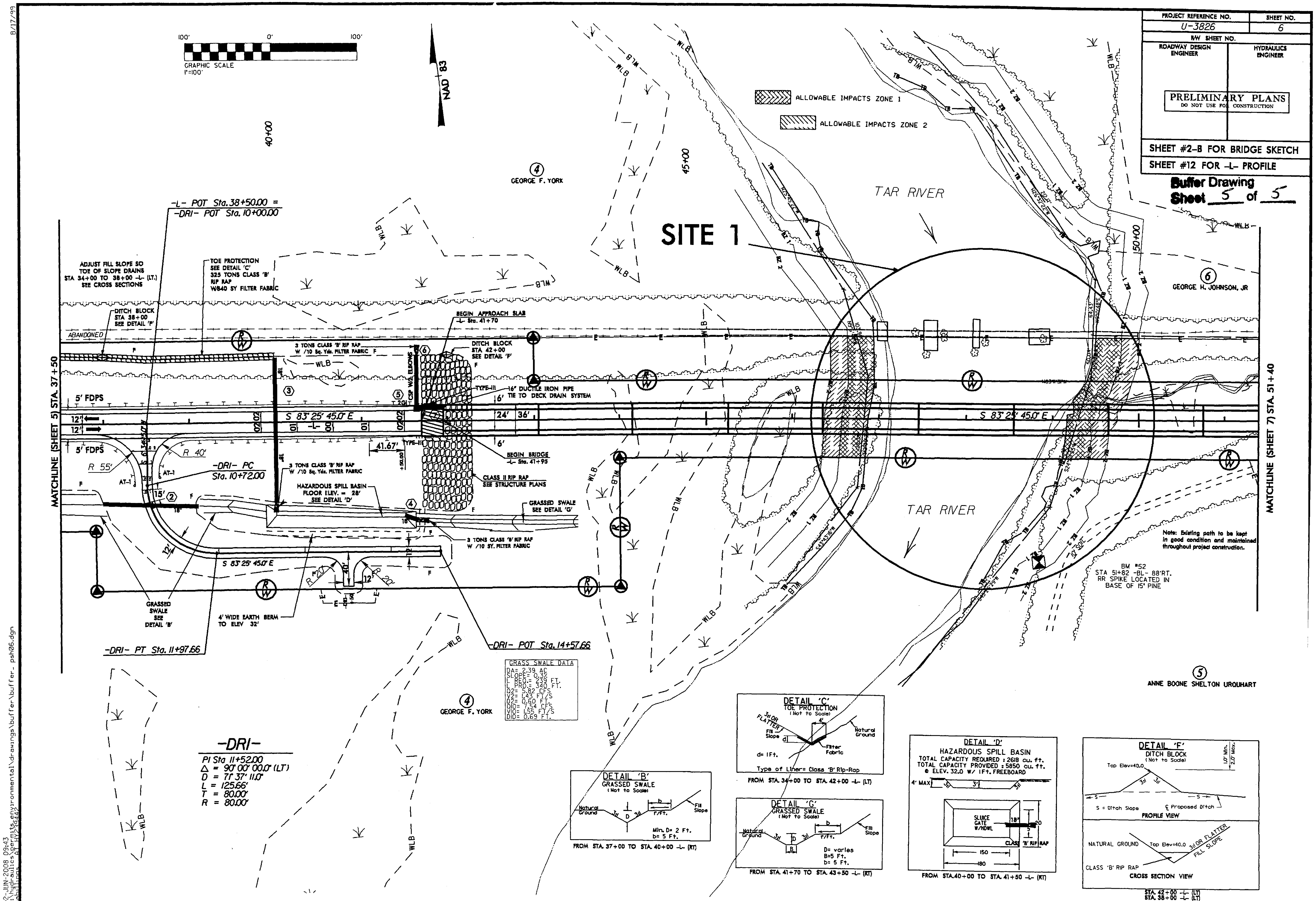
8/17/99



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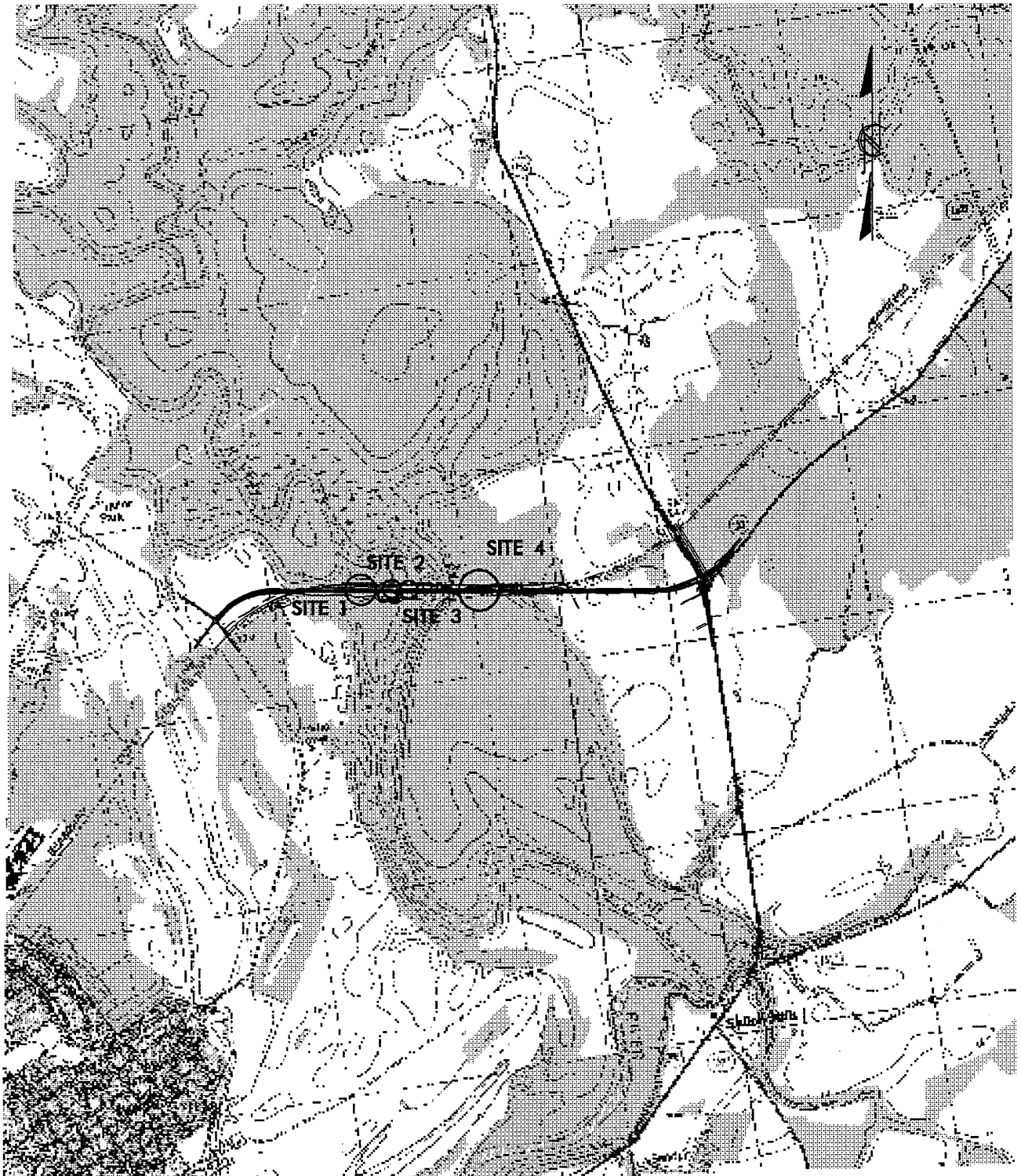


PLAN VIEW

SCALE:
1" = 2500'

NCDOT

DIVISION OF HIGHWAYS

EDGECOMBE COUNTY

PROJECT: 34983.1.1 (U-3826)

SR 1537 (DANIEL ST. EXT.)

FROM SR 1518 (LOOP RD.)

TO US258 / NC122

WETLAND/SURFACE WATER PERMIT

SHEET OF 05 / 14 / 0

Permit Drawing
Sheet 1 of 21

PROPERTY OWNERS

NAMES AND ADDRESSES

WETLAND/SURFACE WATER PERMIT

PARCEL NO.	NAMES	ADDRESSES
4	GEORGE F. YORK	P. O. Box 459 Conetoe, NC 27819
6	GEORGE H. JOHNSON, JR.	P. O. Box 2946 Greeneville, NC 27836
5	ANNE BOONE SHELTON URQUHART	P. O. Box 366 Speed, NC 27881

NCDOT

DIVISION OF HIGHWAYS

EDGECOMBE COUNTY

PROJECT: 34983.1.1 (U-3826)

SR 1537 (DANIEL ST. EXT.)

FROM SR 1518 (LOOP RD.)

TO US 258 / NC 122

SHEET OF 05 / 14 / 0

Permit Drawing

Sheet 2 of 21

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	34+50/36+50	ROADWAY FILL	0.71			0.04						
2	40+15/41+00	ROADWAY FILL	0.04									
3	44+00/46+00	BRIDGE CONSTRUCTION					0.23					
4	57+10/59+65	ROADWAY FILL	0.61	0.23		0.08	0.62	0.01	0.01	16	10	
TOTALS:			1.36	0.23		0.12	0.85	0.01	0.01	16	10	

NOTE: SITE 3 RESTORATION OF WETLAND=0.94 ACRES

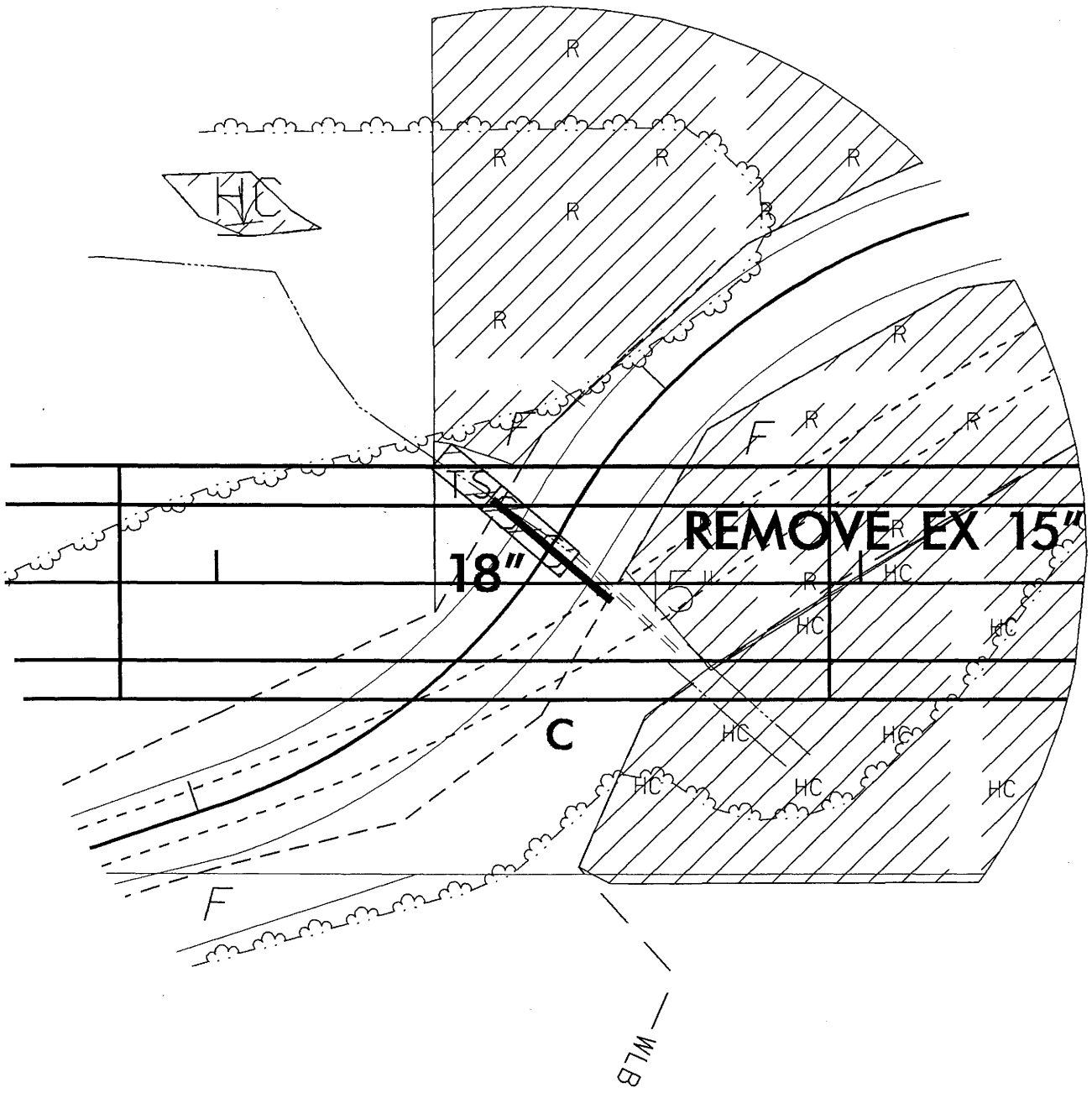
NOTE: TEMPORARY WORK BRIDGE=31969 SF=0.73 AC
NOTE: TEMPORARY WORK PAD=15799 SF=0.36 AC

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EDGECOMBE COUNTY
WBS - 34983.1.1 (U-3826)

Permit Drawing
SHEET Sheet 3 of 21 5/19/2008

ATN Revised 3/31/05



PLAN VIEW

SITE 4

NCDOT

DIVISION OF HIGHWAYS

EDGECOMBE COUNTY

PROJECT: 34983.1.1 (U-3826)

SR 1537 (DANIEL ST. EXT.)

FROM SR 1518 (LOOP RD.)

TO US 258 / NC 122

SHEET OF 5/15/0

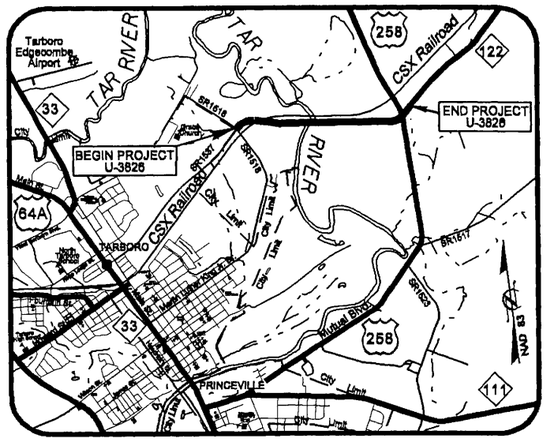
Permit Drawing Sheet 4 of 21

09/08/09

TIP PROJECT: U-3826

CONTRACT:

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

EDGECOMBE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3826	1	

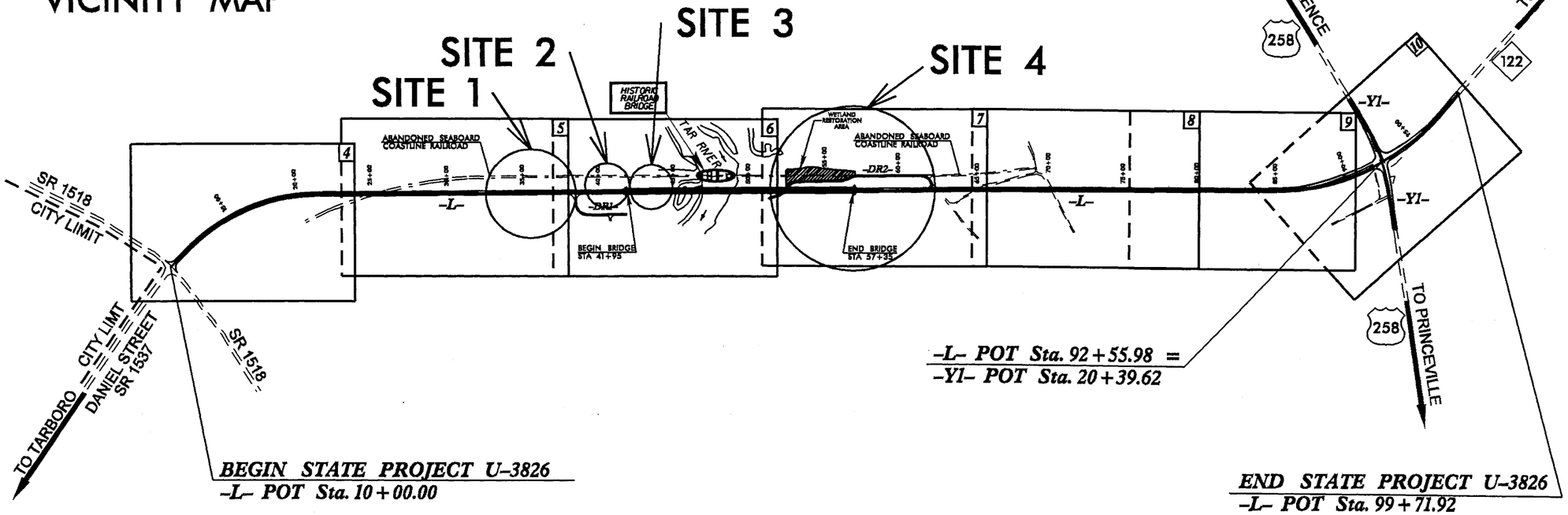
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34983.1.1	STP-1537(2)	PE
34983.2.2	STP-1537(2)	R/W /UTILITIES

Permit Drawing
Sheet 5 of 21

LOCATION: *SR 1537 (DANIEL STREET EXTENSION) FROM SR 1518 TO US 258/NC 122*

TYPE OF WORK: *GRADING, PAVING, DRAINAGE, GUARDRAIL, AND STRUCTURES.*

WETLAND /SURFACE WATER PERMIT



-L- POT Sta. 92+55.98 =
-YI- POT Sta. 20+39.62

BEGIN STATE PROJECT U-3826
-L- POT Sta. 10+00.00

END STATE PROJECT U-3826
-L- POT Sta. 99+71.92

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

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

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 2005 = 3,600
ADT 2025 = 5,600
DHV = 12 %
D = 60 %
T = 11 % *
V = 60 MPH

* TTST 8% DUAL 3%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3826 = 1.407 MILES
LENGTH STRUCTURE TIP PROJECT U-3826 = 0.292 MILES

TOTAL LENGTH TIP PROJECT No. U-3826 = 1.699 MILES

FUNC CLASS = RURAL MAJOR COLLECTOR

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: NOVEMBER 28, 2007

LETTING DATE: OCTOBER, 2009

JIMMY GOODNIGHT, PE
PROJECT ENGINEER

STEVE KENDALL, 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

19-MAY-2008 15:24
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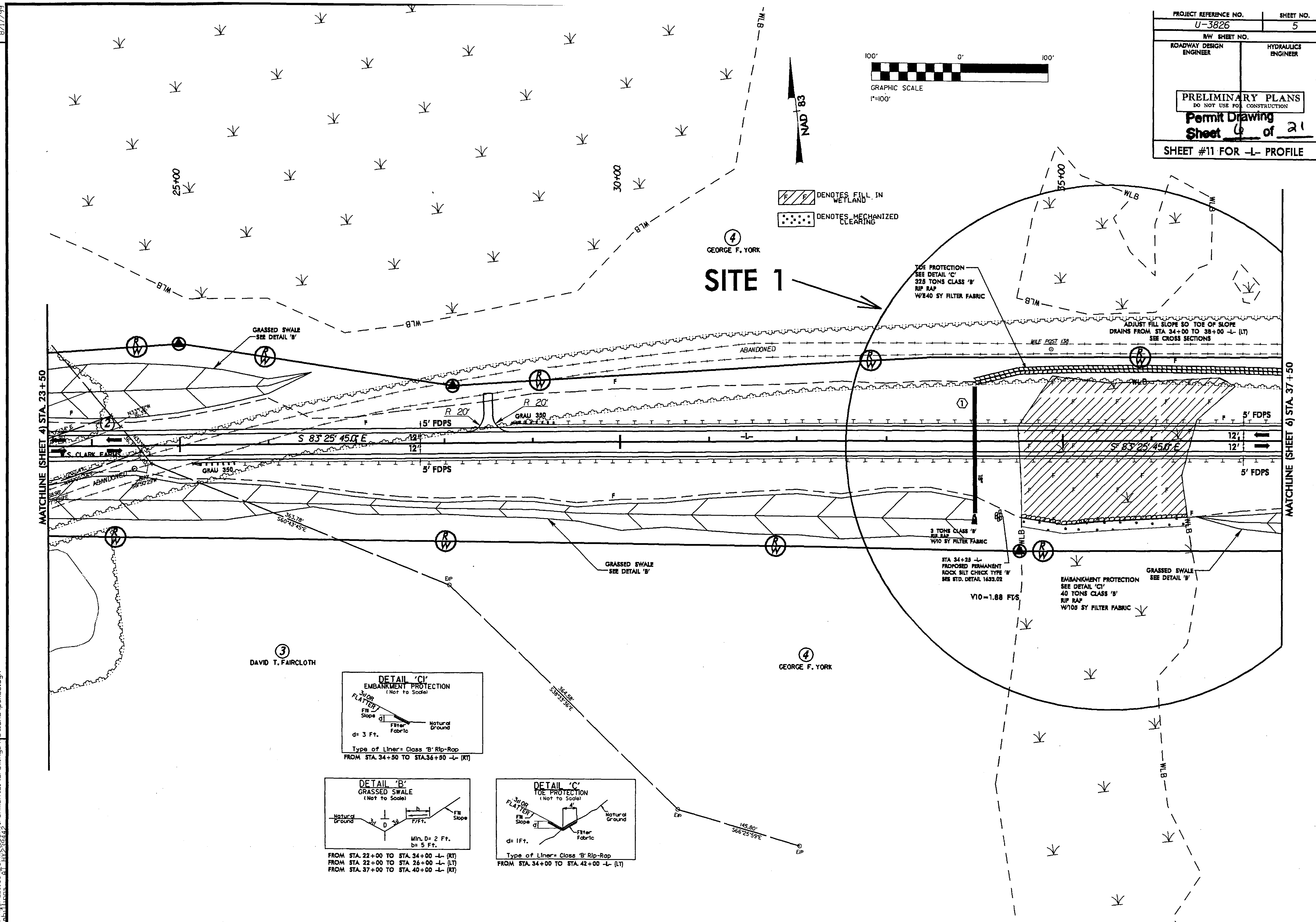

PROJECT REFERENCE NO.
U-3826
SHEET NO.
5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 6 of 21
SHEET #11 FOR -L- PROFILE
GRAPHIC SCALE
1"=100'
NAD 83
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
SITE 1
GEORGE F. YORK
DAVID T. FAIRCLOTH
TOE PROTECTION SEE DETAIL 'C' 325 TONS CLASS 'B' RIP RAP W/840 SY FILTER FABRIC
ADJUST FILL SLOPE SO TOE OF SLOPE DRAINS FROM STA 34+00 TO 38+00 -L- (LT) SEE CROSS SECTIONS
GRASSED SWALE SEE DETAIL 'B'
ABANDONED
S 83° 25' 45.0" E
5' FDPS
MATCHLINE (SHEET 4) STA. 23+50
MATCHLINE (SHEET 6) STA. 37+50
3 TONS CLASS 'B' RIP RAP W/10 SY FILTER FABRIC
STA 34+25 -L- PROPOSED PERMANENT ROCK SILT CHECK TYPE 'B' SEE STD. DETAIL 1633.02
V10=1.88 FT/S
EMBANKMENT PROTECTION SEE DETAIL 'C1' 40 TONS CLASS 'B' RIP RAP W/105 SY FILTER FABRIC
DETAIL 'C1' EMBANKMENT PROTECTION (Not to Scale)
d= 3 Ft.
Type of Liner= Class 'B' Rip-Rap
FROM STA. 34+50 TO STA.36+50 -L- (RT)
DETAIL 'B' GRASSED SWALE (Not to Scale)
Min. D= 2 Ft.
b= 5 Ft.
FROM STA. 22+00 TO STA. 34+00 -L- (RT)
FROM STA. 22+00 TO STA. 26+00 -L- (LT)
FROM STA. 37+00 TO STA. 40+00 -L- (RT)
DETAIL 'C' TOE PROTECTION (Not to Scale)
d= 1Ft.
Type of Liner= Class 'B' Rip-Rap
FROM STA. 34+00 TO STA. 42+00 -L- (LT)
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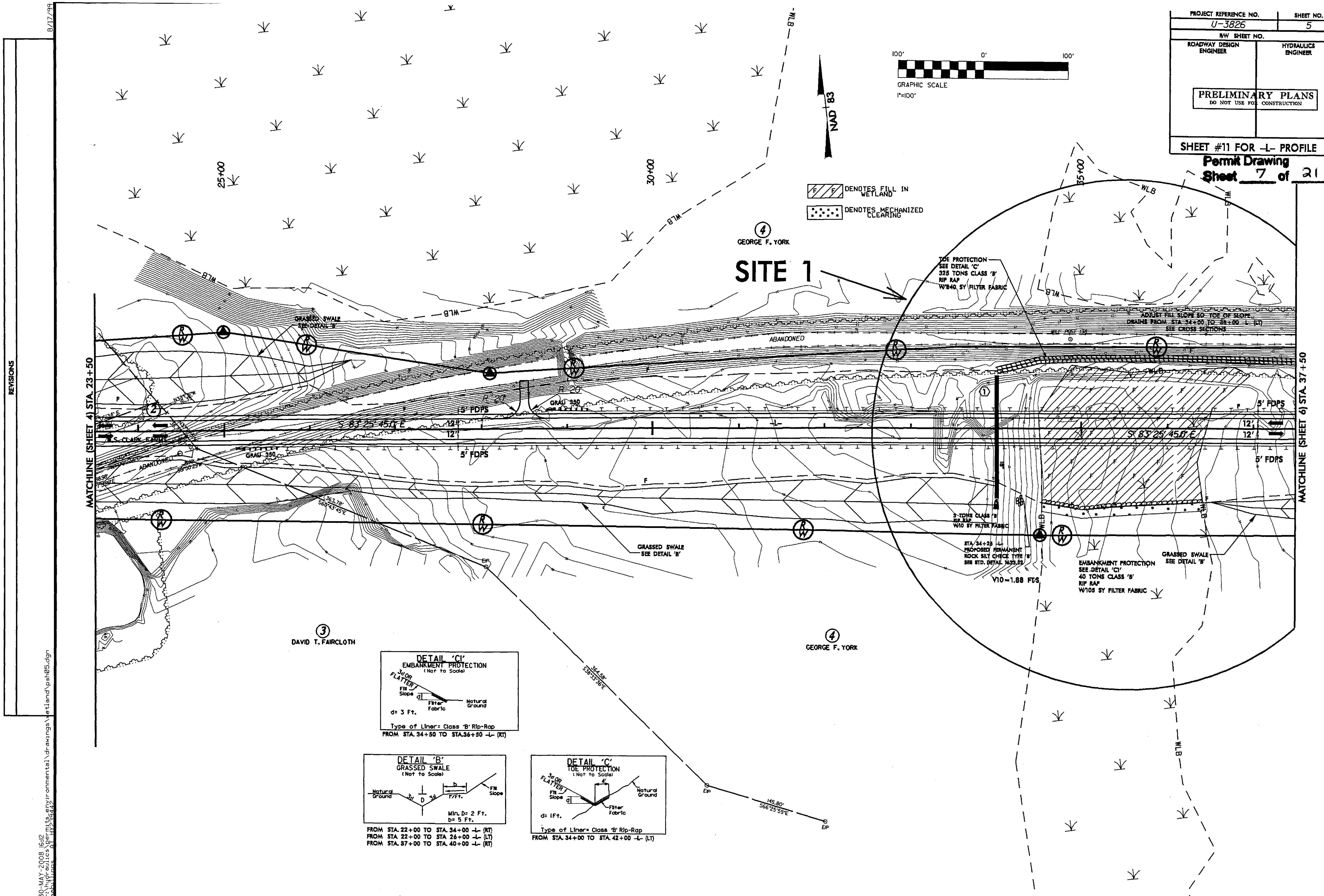

PROJECT REFERENCE NO.
U-3826
SHEET NO.
5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
SHEET #11 FOR -L- PROFILE
Permit Drawing
Sheet 7 of 21
GRAPHIC SCALE
1"=100'
100'
0'
100'
NAD 83
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
SITE 1
GEORGE F. YORK
DAVID T. FAIRCLOTH
MATCHLINE (SHEET 4) STA. 23+50
MATCHLINE (SHEET 6) STA. 37+50
25+00
30+00
35+00
WLB
ABANDONED
GRASSED SWALE
SEE DETAIL 'B'
15' FDPS
5' FDPS
12'
S 83°25'45.0"E
GRAU 350
TOE PROTECTION
SEE DETAIL 'C'
325 TONS CLASS 'B' RIP RAP
W/840 SY FILTER FABRIC
ADJUST FILL SLOPE SO TOE OF SLOPE DRAINS FROM STA 34+00 TO 38+00 -L- (LT)
SEE CROSS SECTIONS
3 TONS CLASS 'B' RIP RAP
W/10 SY FILTER FABRIC
STA 34+25 -L-
PROPOSED PERMANENT ROCK SILT CHECK TYPE 'B'
SEE STD. DETAIL 1633.02
V10=1.88 FT/S
EMBANKMENT PROTECTION
SEE DETAIL 'C1'
40 TONS CLASS 'B' RIP RAP
W/105 SY FILTER FABRIC
EIP
DETAIL 'C1'
EMBANKMENT PROTECTION
(Not to Scale)
3:1 OR FLATTER
Fill Slope
Filter Fabric
Natural Ground
d= 3 Ft.
Type of Liner= Class 'B' Rip-Rap
FROM STA. 34+50 TO STA. 36+50 -L- (RT)
DETAIL 'B'
GRASSED SWALE
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 2 Ft.
b= 5 Ft.
FROM STA. 22+00 TO STA. 34+00 -L- (RT)
FROM STA. 22+00 TO STA. 26+00 -L- (LT)
FROM STA. 37+00 TO STA. 40+00 -L- (RT)
DETAIL 'C'
TOE PROTECTION
(Not to Scale)
3:1 OR FLATTER
Fill Slope
Filter Fabric
Natural Ground
d= 1 Ft.
Type of Liner= Class 'B' Rip-Rap
FROM STA. 34+00 TO STA. 42+00 -L- (LT)
REVISIONS
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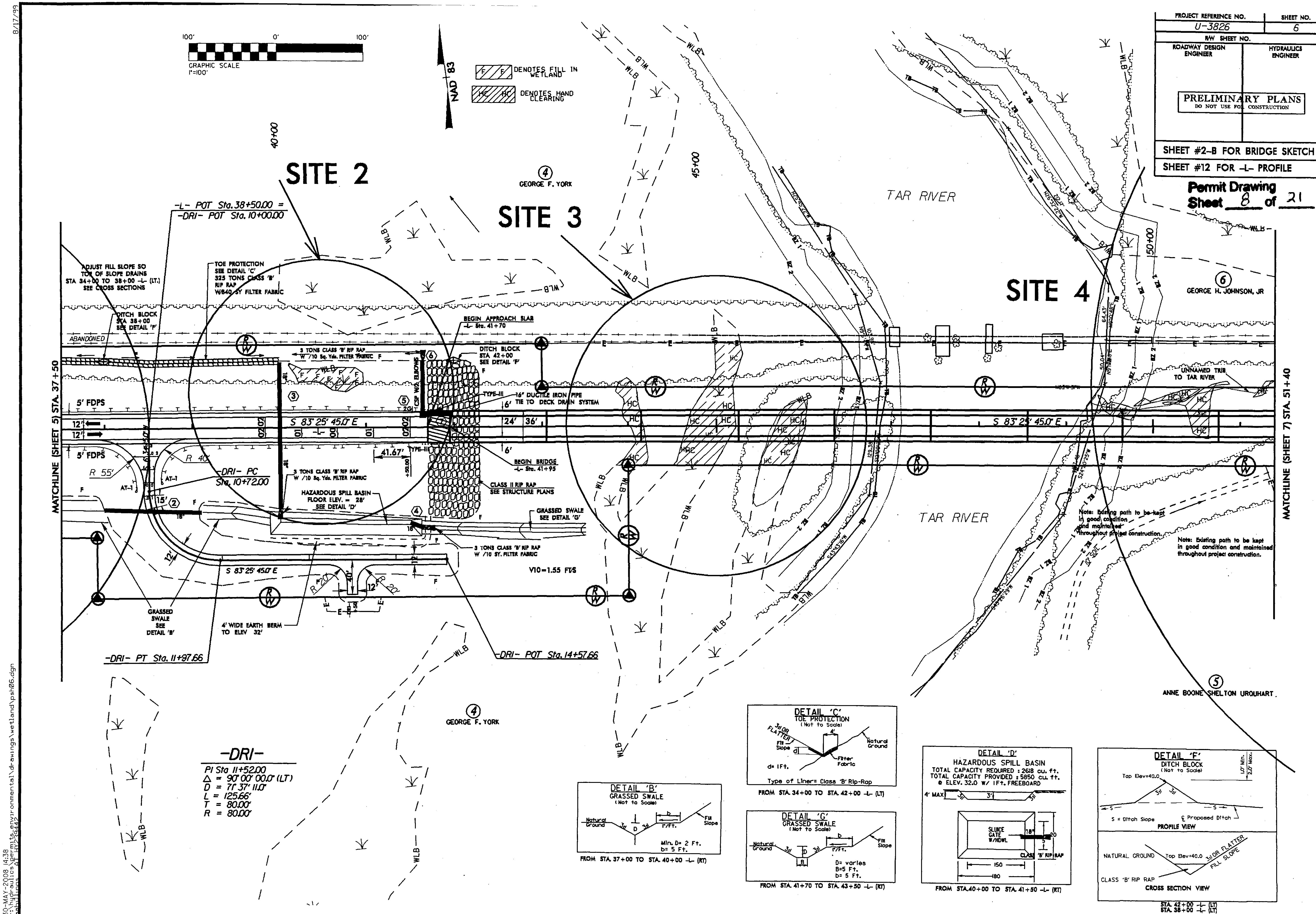

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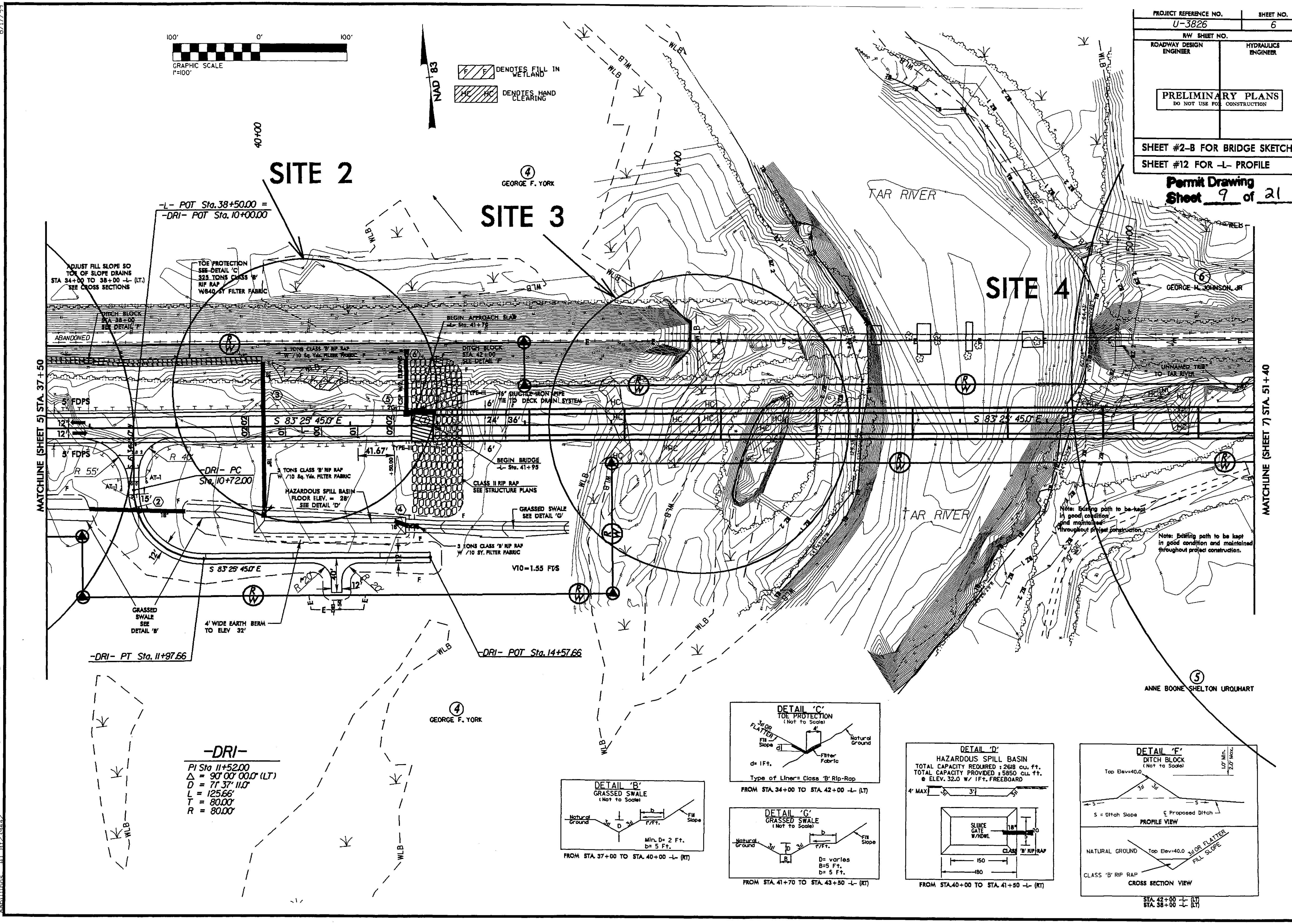
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SHEET NO. 6
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
SHEET #2-B FOR BRIDGE SKETCH
SHEET #12 FOR -L- PROFILE
Permit Drawing Sheet 9 of 21
GRAPHIC SCALE 1"=100'
100' 0' 100'
NAD 83
DENOTES FILL IN WETLAND
DENOTES HAND CLEARING
SITE 2
SITE 3
SITE 4
GEORGE F. YORK
GEORGE H. JOHNSON, JR
ANNE BOONE SHELTON URQUHART
TAR RIVER
-L- POT Sta. 38+50.00 = -DRI- POT Sta. 10+00.00
-DRI- PC Sta. 10+72.00
-DRI- PT Sta. 11+87.66
-DRI- POT Sta. 14+57.66
S 83°25' 45.0" E
MATCHLINE (SHEET 5) STA. 37+50
MATCHLINE (SHEET 7) STA. 51+40
ADJUST FILL SLOPE SO TOE OF SLOPE DRAINS STA 34+00 TO 38+00 -L- (LT.) SEE CROSS SECTIONS
TOE PROTECTION SEE DETAIL 'C' 325 TONS CLASS 'B' RIP RAP W/840 SY FILTER FABRIC
HAZARDOUS SPILL BASIN FLOOR ELEV. = 28' SEE DETAIL 'D'
3 TONS CLASS 'B' RIP RAP W/10 Sq. Yds. FILTER FABRIC
BEGIN APPROACH SLAB
DITCH BLOCK STA. 42+00 SEE DETAIL 'F'
BEGIN BRIDGE -L- Sta. 41+95
CLASS II RIP RAP SEE STRUCTURE PLANS
GRASSED SWALE SEE DETAIL 'G'
GRASSED SWALE SEE DETAIL 'B'
4' WIDE EARTH BERM TO ELEV 32'
V10=1.55 FT/S
UNNAMED TRIB TO TAR RIVER
Note: Existing path to be kept in good condition and maintained throughout project construction.
-DRI-
PI Sta 11+52.00
Δ = 90° 00' 00.0" (LT)
D = 71° 37' 11.0"
L = 125.66'
T = 80.00'
R = 80.00'
DETAIL 'B' GRASSED SWALE (Not to Scale)
Min. D= 2 Ft. b= 5 Ft.
FROM STA. 37+00 TO STA. 40+00 -L- (RT)
DETAIL 'C' TOE PROTECTION (Not to Scale)
d= 1 Ft.
Type of Liner= Class 'B' Rip-Rap
FROM STA. 34+00 TO STA. 42+00 -L- (LT)
DETAIL 'G' GRASSED SWALE (Not to Scale)
D= varies B=5 Ft. b= 5 Ft.
FROM STA. 41+70 TO STA. 43+50 -L- (RT)
DETAIL 'D' HAZARDOUS SPILL BASIN
TOTAL CAPACITY REQUIRED = 2618 cu. ft.
TOTAL CAPACITY PROVIDED = 5850 cu. ft.
@ ELEV. 32.0 W/ 1 Ft. FREEBOARD
SLUICE GATE W/HDWL
FROM STA. 40+00 TO STA. 41+50 -L- (RT)
DETAIL 'F' DITCH BLOCK (Not to Scale)
Top Elev=40.0
S = Ditch Slope
PROFILE VIEW
NATURAL GROUND
3:1 OR FLATTER FILL SLOPE
CLASS 'B' RIP RAP
CROSS SECTION VIEW
STA. 42+00 -L- (LT)
STA. 38+00 -L- (LT)
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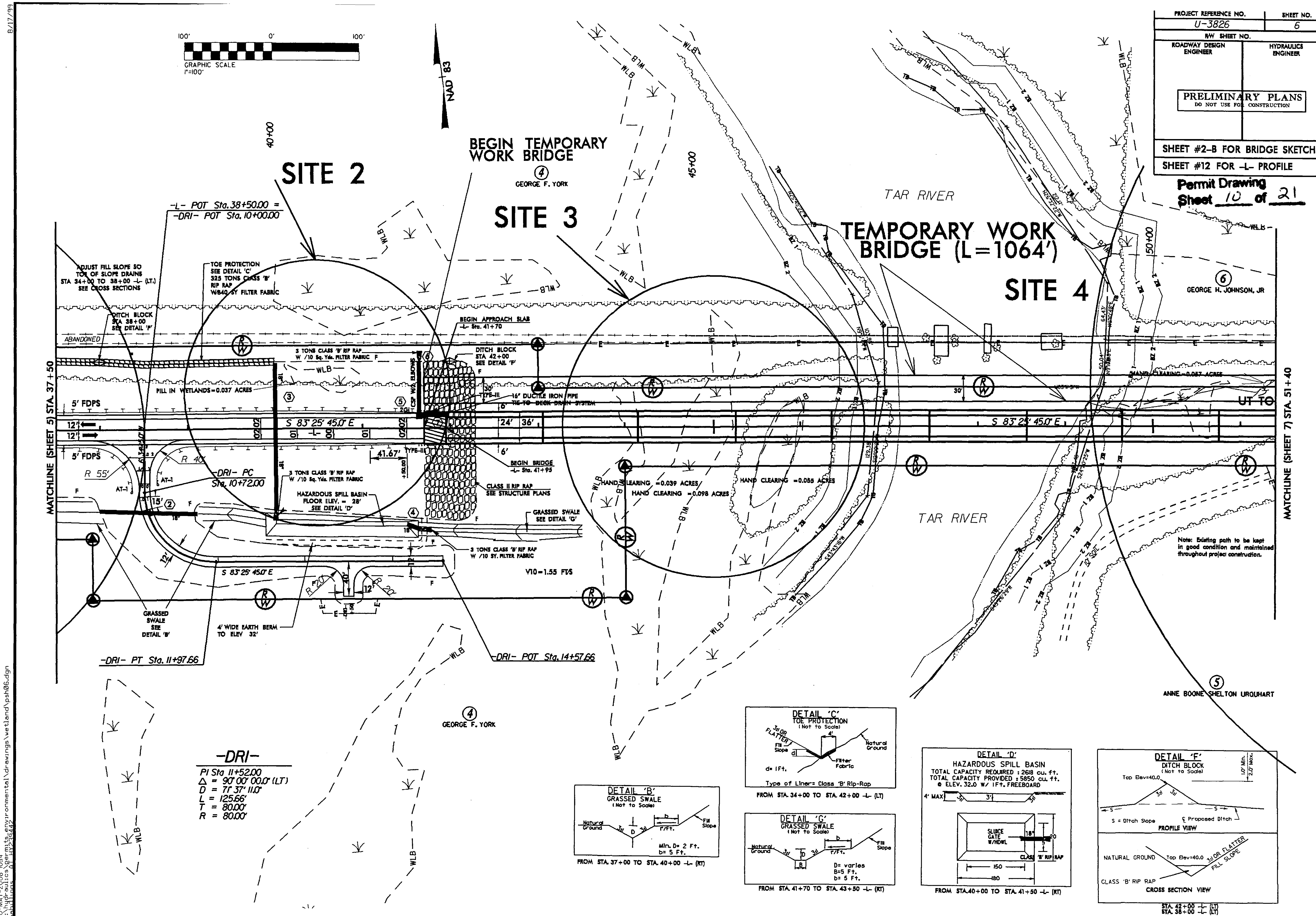

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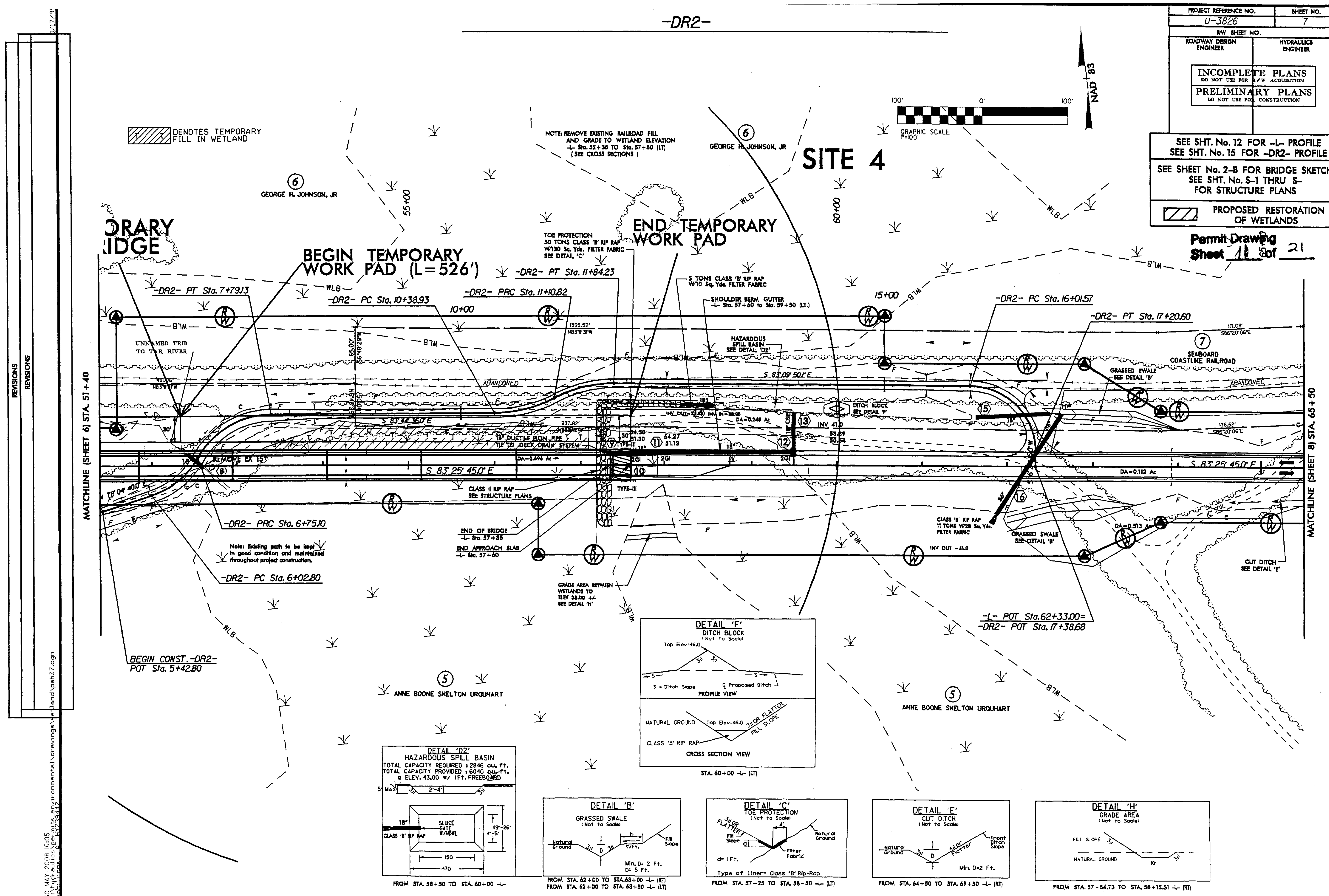
-DR2-
PROJECT REFERENCE NO.
U-3826
SHEET NO.
7
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
NAD 83
GRAPHIC SCALE
1"=100'
SEE SHT. No. 12 FOR -L- PROFILE
SEE SHT. No. 15 FOR -DR2- PROFILE
SEE SHEET No. 2-B FOR BRIDGE SKETCH
SEE SHT. No. S-1 THRU S-
FOR STRUCTURE PLANS
PROPOSED RESTORATION OF WETLANDS
Permit Drawing
Sheet 11 of 21
DENOTES TEMPORARY FILL IN WETLAND
NOTE: REMOVE EXISTING RAILROAD FILL AND GRADE TO WETLAND ELEVATION -L- Sta. 52+35 TO Sta. 57+50 (LT) (SEE CROSS SECTIONS)
SITE 4
GEORGE H. JOHNSON, JR
BEGIN TEMPORARY WORK PAD (L=526')
END TEMPORARY WORK PAD
TOE PROTECTION 50 TONS CLASS 'B' RIP RAP W/130 Sq. Yds. FILTER FABRIC SEE DETAIL 'C'
3 TONS CLASS 'B' RIP RAP W/10 Sq. Yds. FILTER FABRIC
SHOULDER BERM GUTTER -L- Sta. 57+60 to Sta. 59+50 (LT.)
HAZARDOUS SPILL BASIN SEE DETAIL 'D2'
-DR2- PT Sta. 7+79.13
-DR2- PC Sta. 10+38.93
-DR2- PRC Sta. 11+10.82
-DR2- PT Sta. 11+84.23
-DR2- PC Sta. 16+01.57
-DR2- PT Sta. 17+20.60
-DR2- PRC Sta. 6+75.10
-DR2- PC Sta. 6+02.80
BEGIN CONST. -DR2- POT Sta. 5+42.80
-L- POT Sta. 62+33.00= -DR2- POT Sta. 17+38.68
UNNAMED TRIB TO TAR RIVER
SEABOARD COASTLINE RAILROAD
GRASSED SWALE SEE DETAIL 'B'
DITCH BLOCK SEE DETAIL 'F'
CLASS II RIP RAP SEE STRUCTURE PLANS
END OF BRIDGE -L- Sta. 57+35
END APPROACH SLAB -L- Sta. 57+60
CLASS 'B' RIP RAP 11 TONS W/28 Sq. Yds. FILTER FABRIC
CUT DITCH SEE DETAIL 'E'
GRADE AREA BETWEEN WETLANDS TO ELEV 38.00 +/- SEE DETAIL 'H'
Note: Existing path to be kept in good condition and maintained throughout project construction.
S 83°25' 45.0" E
S 83°09' 50" E
MATCHLINE (SHEET 6) STA. 51+40
MATCHLINE (SHEET 8) STA. 65+50
ANNE BOONE SHELTON URQUHART
DETAIL 'F' DITCH BLOCK (Not to Scale)
PROFILE VIEW
CROSS SECTION VIEW
STA. 60+00 -L- (LT)
DETAIL 'D2' HAZARDOUS SPILL BASIN
TOTAL CAPACITY REQUIRED : 2846 cu. ft.
TOTAL CAPACITY PROVIDED : 6040 cu. ft.
@ ELEV. 43.00 W/ 1 Ft. FREEBOARD
FROM STA. 58+50 TO STA. 60+00 -L-
DETAIL 'B' GRASSED SWALE (Not to Scale)
Min. D= 2 Ft. b= 5 Ft.
FROM STA. 62+00 TO STA. 63+00 -L- (RT)
FROM STA. 62+00 TO STA. 63+50 -L- (LT)
DETAIL 'C' TOE PROTECTION (Not to Scale)
Type of Liner= Class 'B' Rip-Rap
FROM STA. 57+25 TO STA. 58+50 -L- (LT)
DETAIL 'E' CUT DITCH (Not to Scale)
Min. D=2 Ft.
FROM STA. 64+50 TO STA. 69+50 -L- (RT)
DETAIL 'H' GRADE AREA (Not to Scale)
FROM STA. 57+54.73 TO STA. 58+15.31 -L- (RT)
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PROJECT REFERENCE NO.	SHEET NO.
U-3826	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHT. No. 12 FOR -L- PROFILE
SEE SHT. No. 15 FOR -DR2- PROFILE

SEE SHEET No. 2-B FOR BRIDGE SKETCH
SEE SHT. No. S-1 THRU S- FOR STRUCTURE PLANS

PROPOSED RESTORATION OF WETLANDS

Permit Drawing Sheet 12 of 21

-DR2-

PI Sta 6+40.61	PI Sta 7+32.38	PI Sta 10+75.58	PI Sta 11+48.28	PI Sta 16+77.22
Δ = 41° 25' 36.5" (LT)	Δ = 59° 36' 20.5" (RT)	Δ = 27° 27' 40.4" (LT)	Δ = 28° 02' 26.3" (RT)	Δ = 89° 44' 05.5" (RT)
D = 57° 17' 44.8"	D = 57° 17' 44.8"	D = 38° 11' 49.9"	D = 38° 11' 49.9"	D = 75° 23' 21.5"
L = 72.30'	L = 104.03'	L = 71.89'	L = 73.41'	L = 119.03'
T = 37.81'	T = 57.28'	T = 36.65'	T = 37.46'	T = 75.65'
R = 100.00'	R = 100.00'	R = 150.00'	R = 150.00'	R = 76.00'

NAD 83

100' 0' 100'
GRAPHIC SCALE 1"=100'

DENOTES TEMPORARY FILL IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES HAND CLEARING
DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES RESTORED WETLANDS

(6) GEORGE H. JOHNSON, JR

NOTE: REMOVE EXISTING RAILROAD FILL AND GRADE TO WETLAND ELEVATION -L- Sta. 52+35 TO Sta. 57+50 (LT) (SEE CROSS SECTIONS)

SITE 4

55+00 60+00 10+00 15+00

WLB 87M

-DR2- PT Sta. 7+79.13
-DR2- PC Sta. 10+38.93
-DR2- PRC Sta. 11+10.82
-DR2- PC Sta. 16+01.57
-DR2- PT Sta. 17+20.60

TOE PROTECTION
50 TONS CLASS 'B' RIP RAP W/130 Sq. Yds. FILTER FABRIC SEE DETAIL 'C'

3 TONS CLASS 'B' RIP RAP W/10 Sq. Yds. FILTER FABRIC

SHOULDER BERM GUTTER -L- Sta. 57+60 to Sta. 59+50 (LT.)

HAZARDOUS SPILL BASIN SEE DETAIL 'D2'

UNNAMED TRIB TO TAR RIVER

ABANDONED

1399.52' N83°41'31"W
491.06' N83°41'31"W
937.82' N83°41'31"W
171.08' S86°20'06"E
176.52' S86°20'06"E

S 83°44'36.0" E
S 83°25'45.0" E
S 83°09'50" E

(7) SEABOARD COASTLINE RAILROAD

GRASSED SWALE SEE DETAIL 'B'

DITCH BLOCK SEE DETAIL 'F'

18" DUCTILE IRON PIPE TIE TO DECK DRAIN SYSTEM

REMOVE EX. 15" RCP

CLASS II RIP RAP SEE STRUCTURE PLANS

TYPE III

GRAU 350

CLASS 'B' RIP RAP 11 TONS W/28 Sq. Yds. FILTER FABRIC

GRASSED SWALE SEE DETAIL 'B'

CUT DITCH SEE DETAIL 'E'

END OF BRIDGE -L- Sta. 57+35
END APPROACH SLAB -L- Sta. 57+60

GRADE AREA BETWEEN WETLANDS TO ELEV 38.00 +/- SEE DETAIL 'H'

-DR2- PRC Sta. 6+75.10
-DR2- PC Sta. 6+02.80

BEGIN CONST. -DR2- POT Sta. 5+42.80

-L- POT Sta. 62+33.00 = -DR2- POT Sta. 17+38.68

(5) ANNE BOONE SHELTON URQUHART

MATCHLINE (SHEET 6) STA. 51+40

MATCHLINE (SHEET 8) STA. 65+50

DETAIL 'F'
DITCH BLOCK
(Not to Scale)

Top Elev=46.0
3:1 3:1
S = Ditch Slope
℄ Proposed Ditch
PROFILE VIEW

NATURAL GROUND
Top Elev=46.0
3:1 OR FLATTER FILL SLOPE
CLASS 'B' RIP RAP
CROSS SECTION VIEW

STA. 60+00 -L- (LT)

DETAIL 'D2'
HAZARDOUS SPILL BASIN
TOTAL CAPACITY REQUIRED = 2846 cu. ft.
TOTAL CAPACITY PROVIDED = 6040 cu. ft.
@ ELEV. 43.00 W/ 1Ft. FREEBOARD

5' MAX 3:1 2'-4" 3:1
18" SLUICE GATE W/HDWL
CLASS 'B' RIP RAP
19'-26'
4'-5'
150
170

FROM STA. 58+50 TO STA. 60+00 -L-

DETAIL 'B'
GRASSED SWALE
(Not to Scale)

Natural Ground 3:1 D 3:1 Fill Slope
b
F/Ft.
Min. D= 2 Ft.
b= 5 Ft.

FROM STA. 62+00 TO STA. 63+00 -L- (RT)
FROM STA. 62+00 TO STA. 63+50 -L- (LT)

DETAIL 'C'
TOE PROTECTION
(Not to Scale)

3:1 OR FLATTER
Fill Slope
d
d'
Natural Ground
Filter Fabric
d= 1Ft.
Type of Liner= Class 'B' Rip-Rap

FROM STA. 57+25 TO STA. 58-50 -L- (LT)

DETAIL 'E'
CUT DITCH
(Not to Scale)

Natural Ground 3:1 D 4:1 OR Flatter Front Ditch Slope
Min. D=2 Ft.

FROM STA. 64+50 TO STA. 69+50 -L- (RT)

DETAIL 'H'
GRADE AREA
(Not to Scale)

FILL SLOPE 3:1
NATURAL GROUND
10'
3:1

FROM STA. 57+54.73 TO STA. 58+15.31 -L- (RT)

REVISIONS REVISIONS 8/17/98

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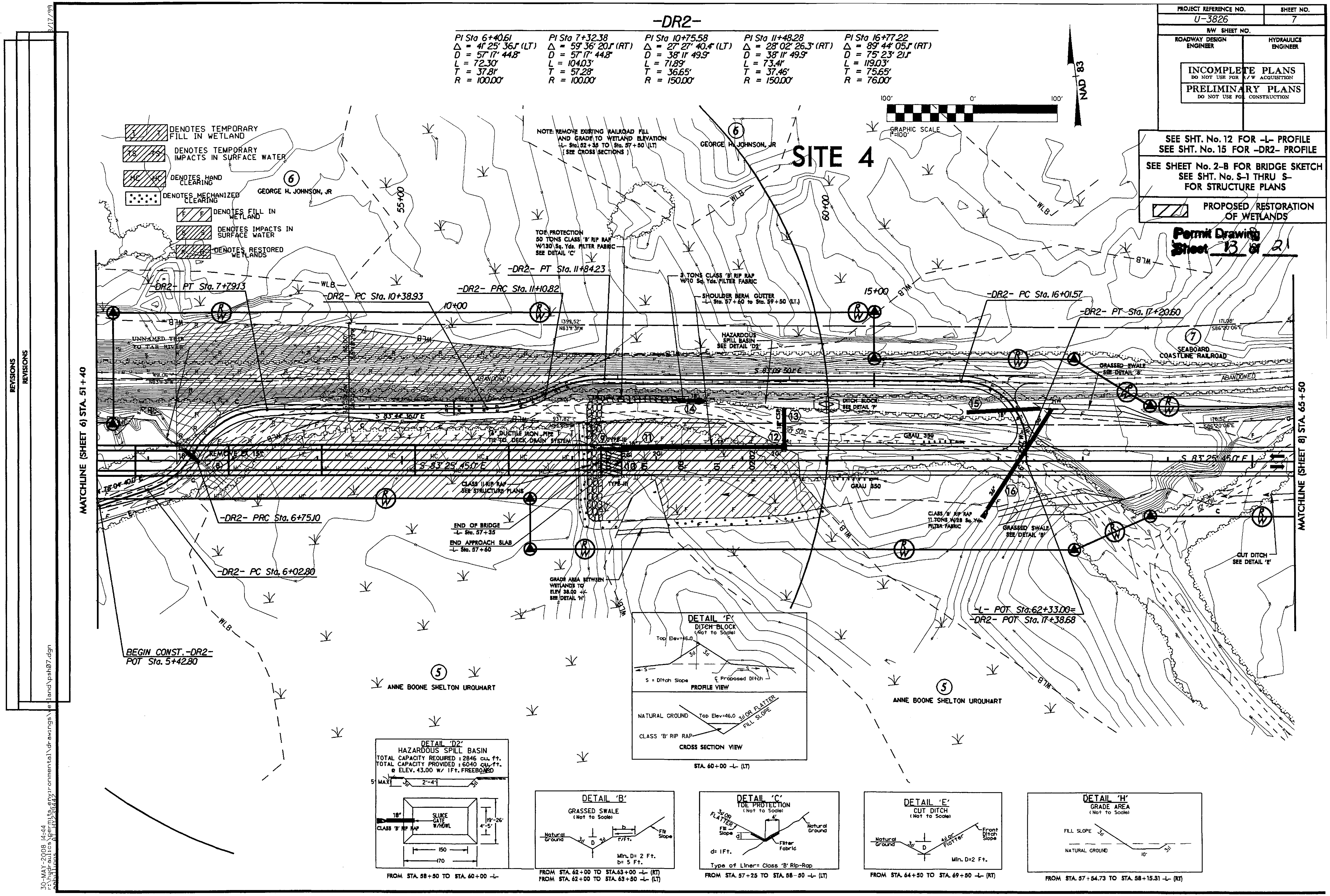

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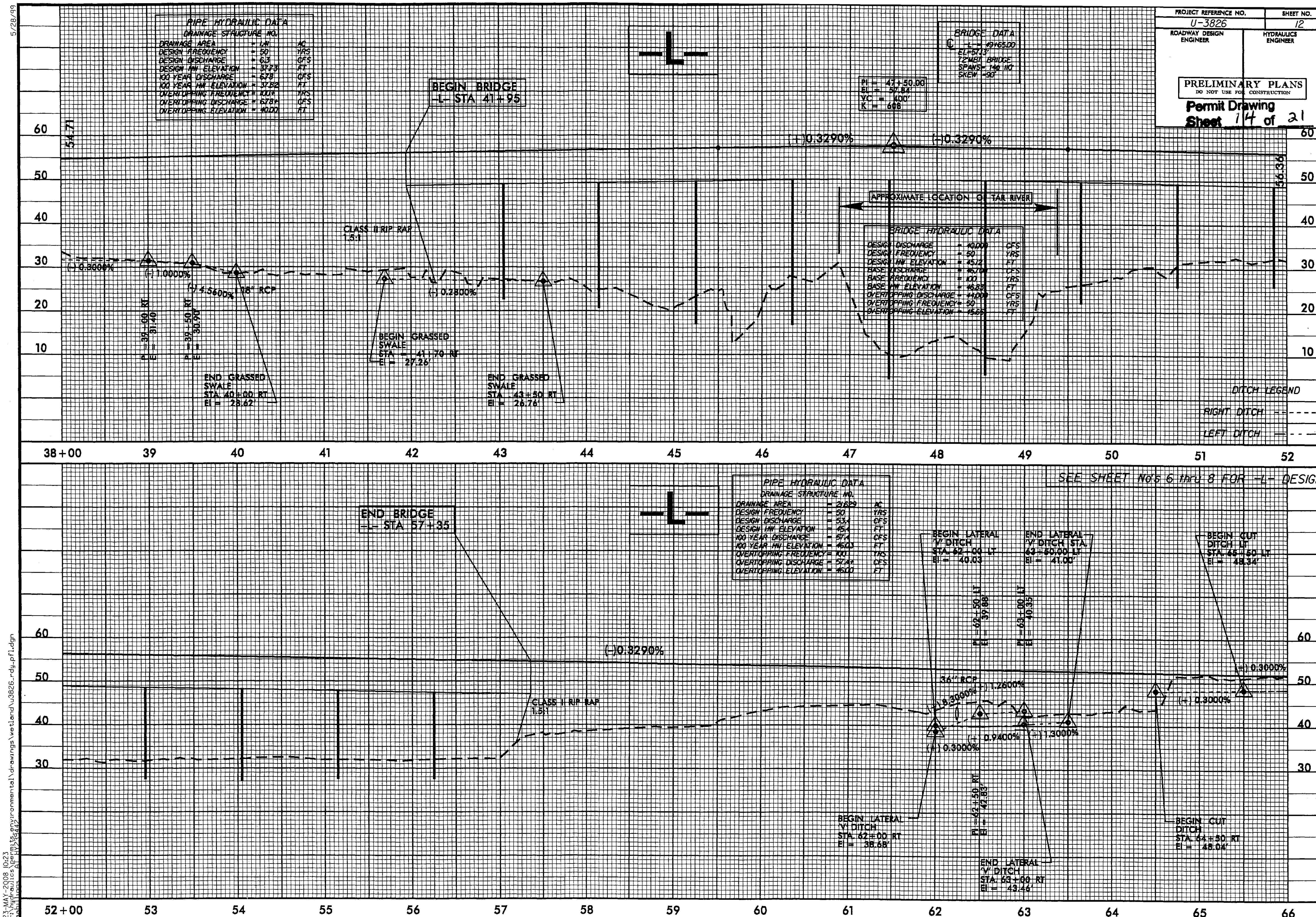
PROJECT REFERENCE NO.	SHEET NO.
U-3826	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 14 of 21



PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	=	1.14	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	6.3	CFS
DESIGN HW ELEVATION	=	37.73	FT
100 YEAR DISCHARGE	=	6.78	CFS
100 YEAR HW ELEVATION	=	37.82	FT
OVERTOPPING FREQUENCY	=	100+	YRS
OVERTOPPING DISCHARGE	=	6.78+	CFS
OVERTOPPING ELEVATION	=	40.00	FT

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	40,000	CFS
DESIGN FREQUENCY	=	50	YRS
DESIGN HW ELEVATION	=	45.12	FT
BASE DISCHARGE	=	46,700	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	46.85	FT
OVERTOPPING DISCHARGE	=	44,000	CFS
OVERTOPPING FREQUENCY	=	50	YRS
OVERTOPPING ELEVATION	=	45.65	FT

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	=	21.629	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	53.4	CFS
DESIGN HW ELEVATION	=	45.4	FT
100 YEAR DISCHARGE	=	57.4	CFS
100 YEAR HW ELEVATION	=	46.03	FT
OVERTOPPING FREQUENCY	=	100	YRS
OVERTOPPING DISCHARGE	=	57.4+	CFS
OVERTOPPING ELEVATION	=	46.00	FT

5/28/99

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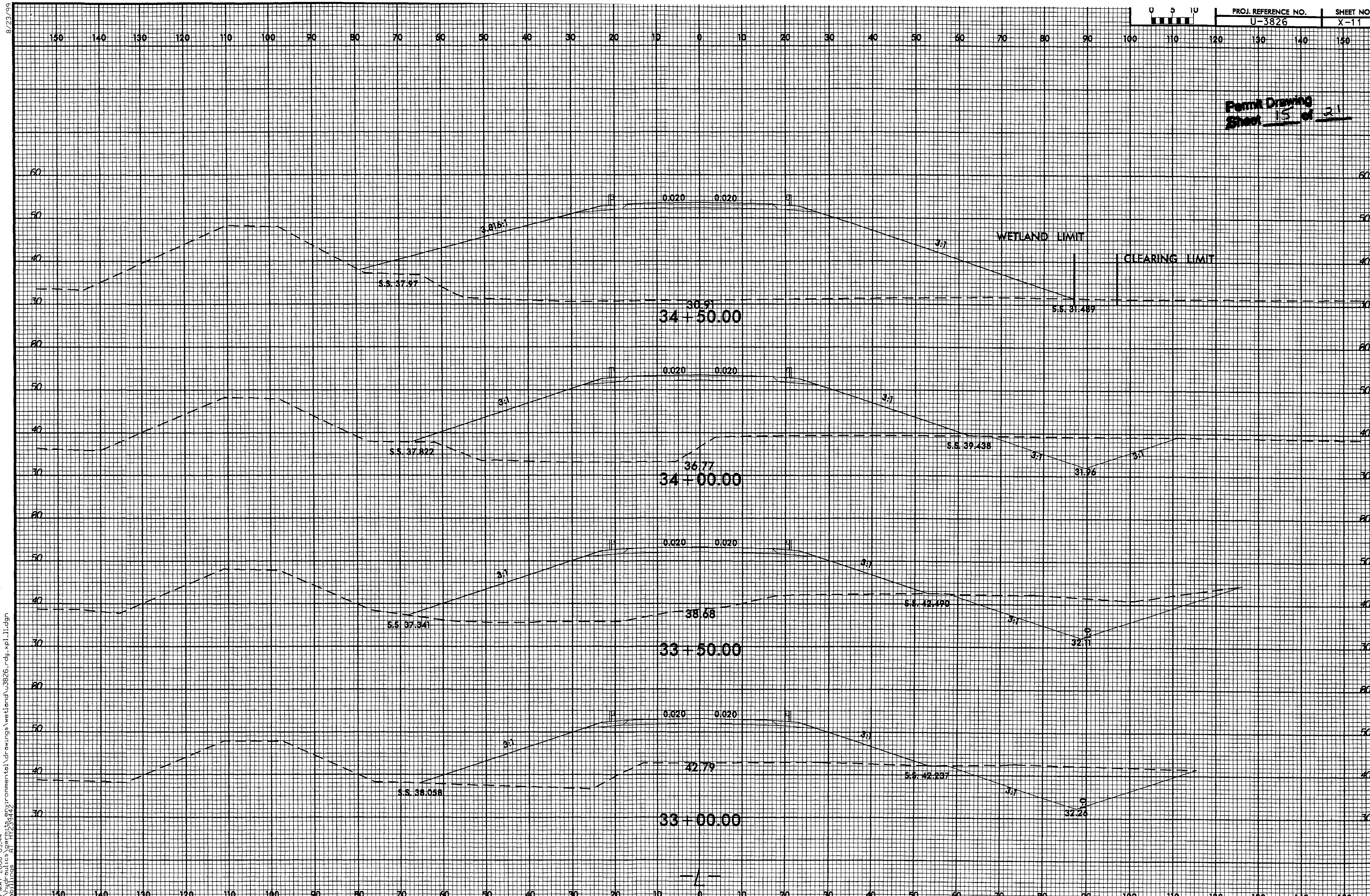
PROJ. REFERENCE NO.	SHEET NO.
U-3826	X-11

Permit Drawing
Sheet 15 of 21



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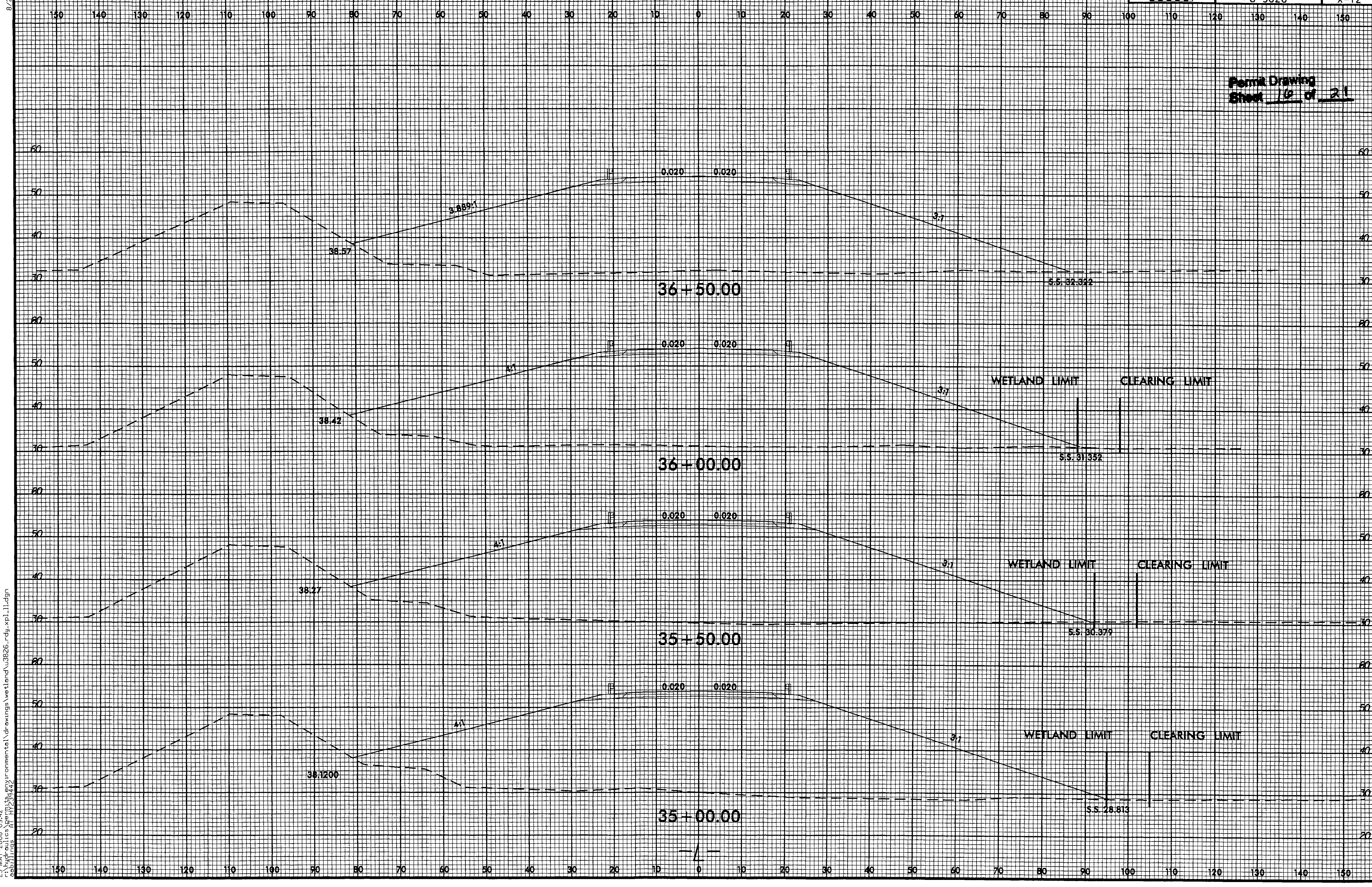
Permit Drawing
Sheet 16 of 21



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3826	X-22

Permit Drawing
Sheet 17 of 21

PROPOSED RESTORATION OF WETLAND AREA

32.00'

3:1

0.020

4:1

WETLAND LIMIT
CLEARING LIMIT

DR2- Sta. 7+88.58
EL = 34.07'

0.020 0.020

CLEARING LIMIT

53+50.00

PROPOSED RESTORATION OF WETLAND AREA

32.00'

DR2- Sta. 7+37.33
EL = 33.76'

0.020 0.020

WETLAND LIMIT
CLEARING LIMIT

WETLAND LIMIT
CLEARING LIMIT

53+00.00

0.020 0.020

WETLAND LIMIT

DR2- Sta. 6+66.60
EL = 32.07'

52+50.00

0.020 0.020

DR2- Sta. 6+03.08
EL = 32.23'

VAR 0.020 3:1

52+00.00

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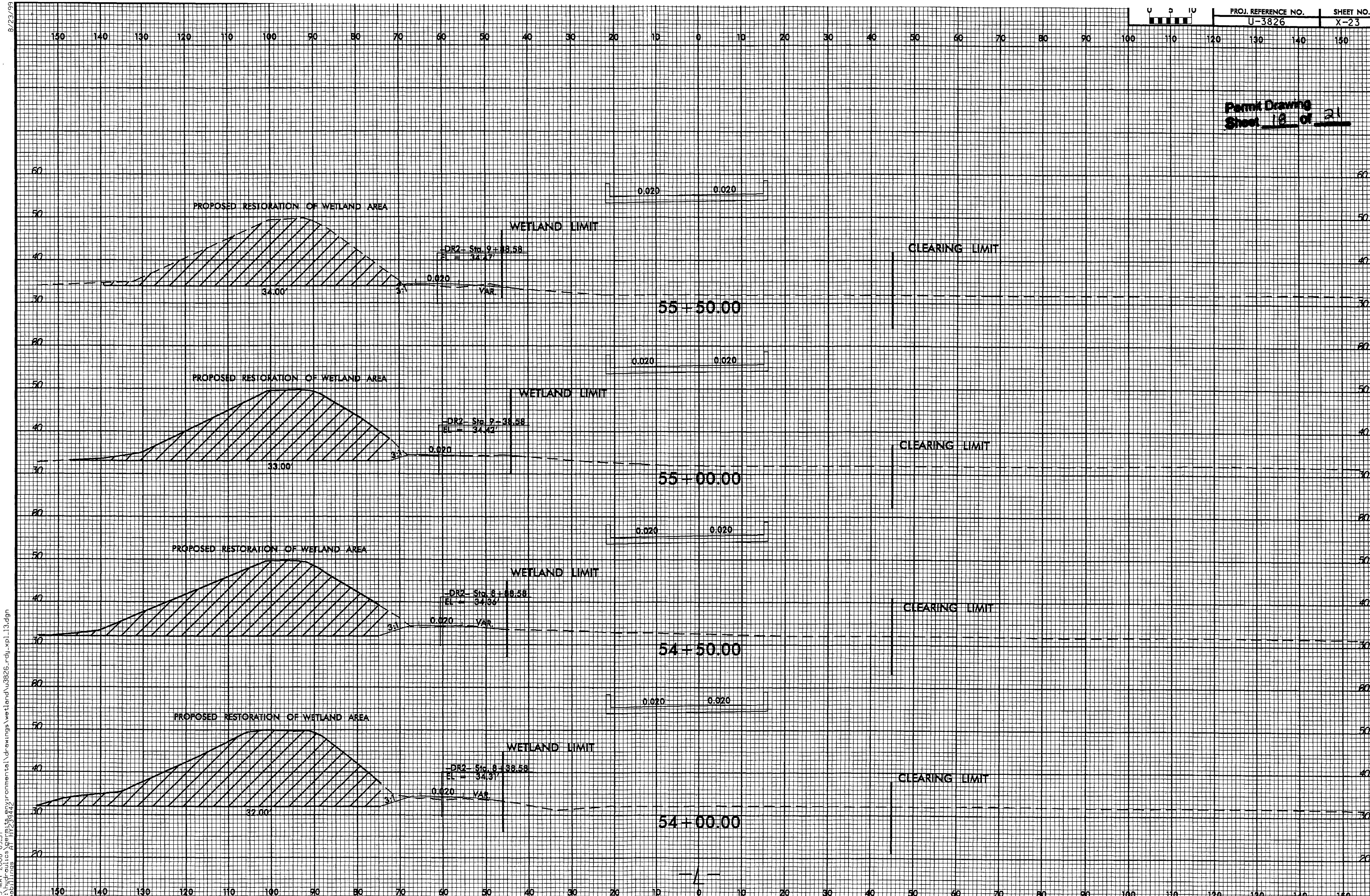

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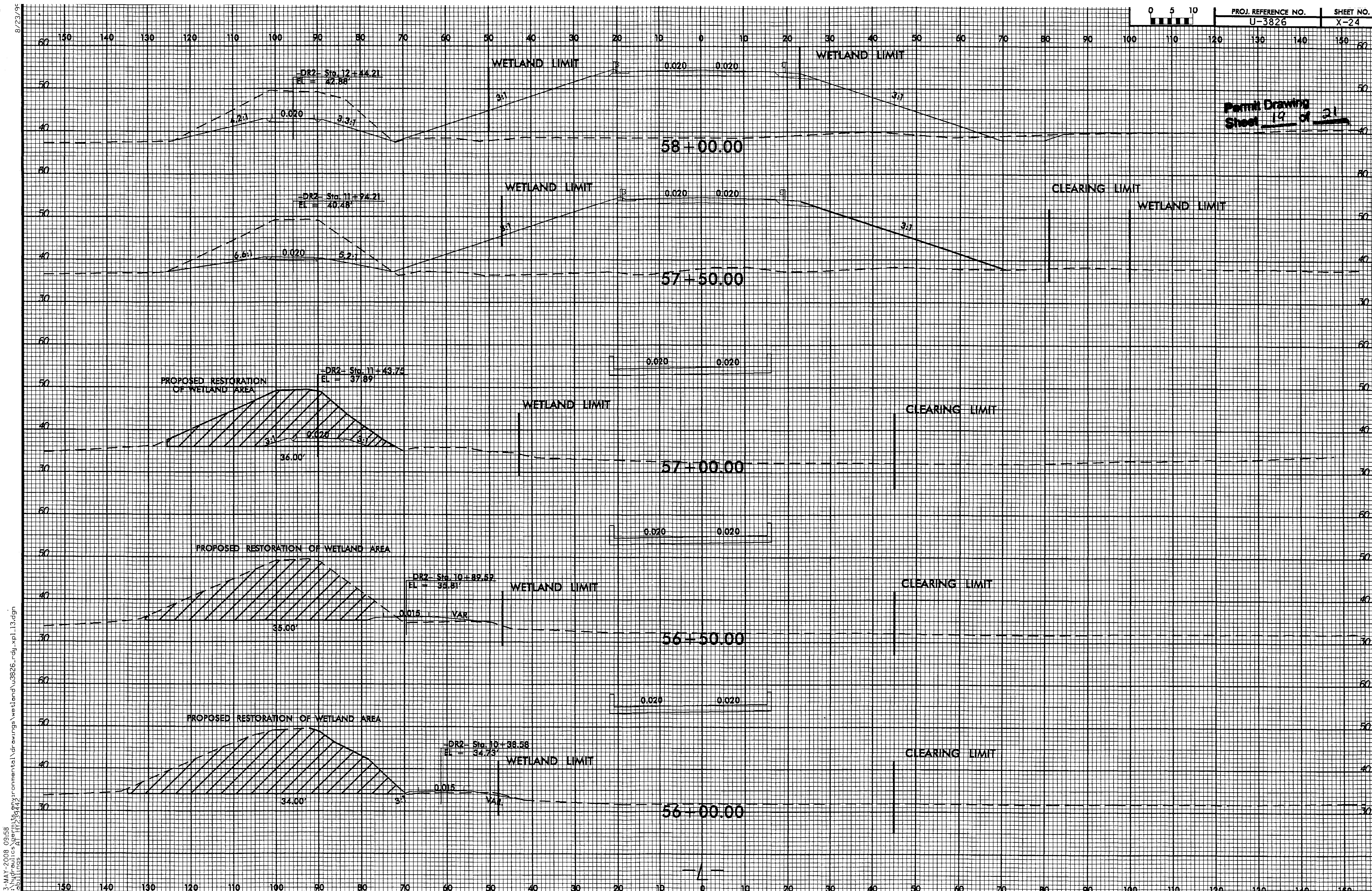
PROJ. REFERENCE NO.
U-3826
SHEET NO.
X-24
Permit Drawing
Sheet 19 of 21
WETLAND LIMIT
-DR2- Sta. 12+44.21
EL = 42.88'
58+00.00
-DR2- Sta. 11+94.21
EL = 40.48'
CLEARING LIMIT
57+50.00
PROPOSED RESTORATION OF WETLAND AREA
-DR2- Sta. 11+43.75
EL = 37.89'
36.00'
57+00.00
-DR2- Sta. 10+89.52
EL = 35.81'
35.00'
56+50.00
-DR2- Sta. 10+38.58
EL = 34.73'
34.00'
56+00.00
-4-
23-MAY-2008 09:58
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8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-3826	X-25

Permit Drawing
Sheet 20 of 31

DR2- Sta. 14+94.22
EL = 48.95'

DR2- Sta. 14+44.22
EL = 48.52'

DR2- Sta. 13+94.22
EL = 47.70'

DR2- Sta. 13+44.22
EL = 46.49'

DR2- Sta. 12+94.22
EL = 44.88'

0.020

3:1

60+50.00

60+00.00

59+50.00

59+00.00

58+50.00

WETLAND LIMIT

CLEARING LIMIT

S.S. 39.194

23-MAY-2008 10:00
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pebillings AT HP39442

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3826	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 21 of 21

BEGIN GRADE
-L- STA. 10+10.82
EL. = 45.54'

BEGIN SPECIAL LATERAL 'V' DITCH
STA. 11+50 LT
EL. = 41.71'

PI = 12+00 LT
EL. = 41.32'

PI = 12+50 LT
EL. = 40.84'

(+)0.3290%

(-) 0.7600%

(-) 0.9600%

(-) 0.3000%

BEGIN SPECIAL LATERAL 'V' DITCH
STA. 12+00 RT
EL. = 40.90'

(+)0.3290%

(-) 0.3000%

END SPECIAL LATERAL 'V' DITCH
STA. 22+00 LT
EL. = 37.99'

BEGIN LATERAL 'V' DITCH
STA. 22+00 LT
EL. = 37.99'

(-) 0.3000%

END SPECIAL LATERAL 'V' DITCH
STA. 22+00 RT
EL. = 37.90'

BEGIN LATERAL 'V' DITCH
STA. 22+00 RT
EL. = 37.90'

10+00 11 12 13 14 15 16 17 18 19 20 21 22 23 24

60 50 40 30

SEE SHEET NO'S 4 thru 6 FOR -L- DESIGN

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 2.519	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 8.22	CFS
DESIGN HW ELEVATION	= 39.78	FT
100 YEAR DISCHARGE	= 8.84	CFS
100 YEAR HW ELEVATION	= 39.78	FT
OVERTOPPING FREQUENCY	= 100 +	YRS
OVERTOPPING DISCHARGE	= 32.44	CFS
OVERTOPPING ELEVATION	= 40.00	FT

DITCH LEGEND
LEFT DITCH
RIGHT DITCH

END LATERAL 'V' DITCH
STA. 26+00 LT
EL. = 36.79'

(+)0.3290%

(-) 0.3000%

(-) 0.3000%

(-) 1.7000%

(-) 1.2000%

(-) 0.3000%

(-) 2.6800%

PI = 27+00 RT
EL. = 36.40'

PI = 27+50 RT
EL. = 35.35'

PI = 28+00 RT
EL. = 34.95'

PI = 29+00 RT
EL. = 34.65'

PI = 29+50 RT
EL. = 33.31'

(-) 0.3000%

18" RCP

END LATERAL 'V' DITCH
STA. 34+00 RT
EL. = 31.96'

(-) 0.3000%

BEGIN GRASSED SWALE
STA. 37+00 RT
EL. = 32.00'

24+00 25 26 27 28 29 30 31 32 33 34 35 36 37 38

60 50 40 30

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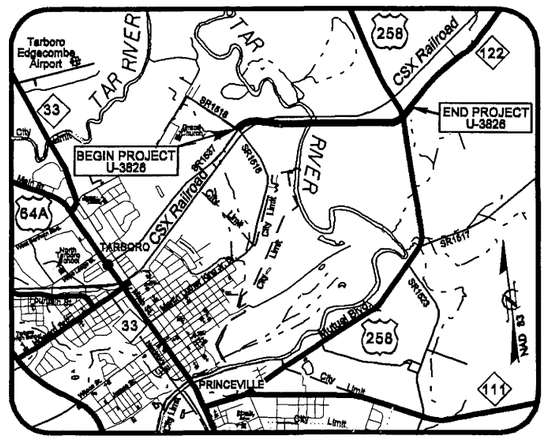
09/08/99

TIP PROJECT: U-3826

CONTRACT:

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

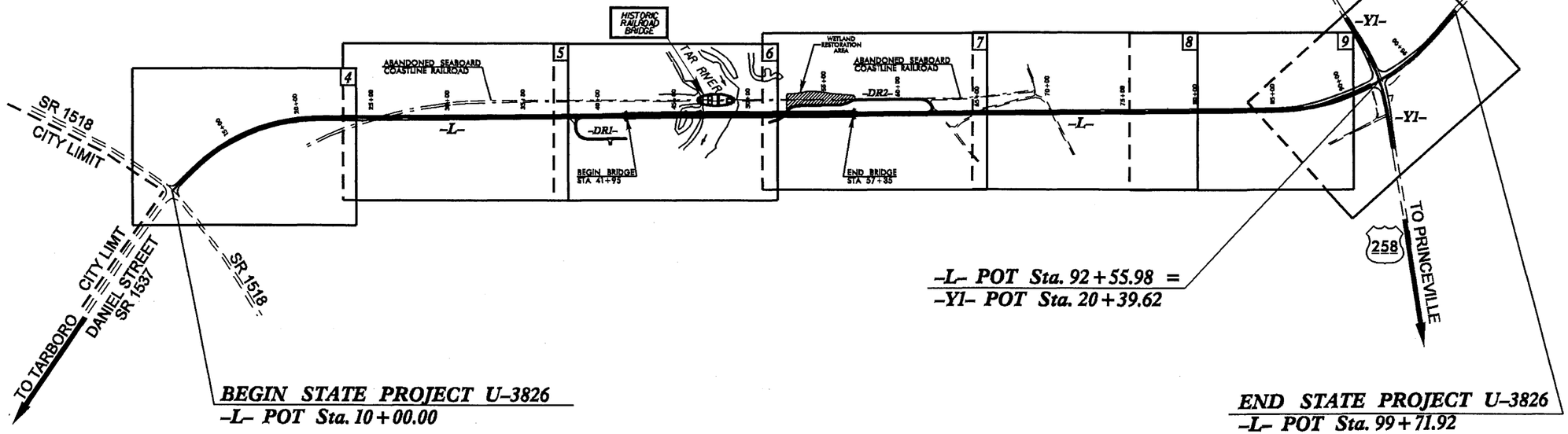
EDGECOMBE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3826	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34983.1.1	STP-1537(2)	PE
34983.2.2	STP-1537(2)	R/W /UTILITIES

LOCATION: ***SR 1537 (DANIEL STREET EXTENSION) FROM SR 1518 TO US 258/NC 122***

TYPE OF WORK: ***GRADING, PAVING, DRAINAGE, GUARDRAIL, AND STRUCTURES.***



BEGIN STATE PROJECT U-3826
-L- POT Sta. 10+00.00

-L- POT Sta. 92+55.98 =
-Y1- POT Sta. 20+39.62

END STATE PROJECT U-3826
-L- POT Sta. 99+71.92

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

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

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 2005 = 3,600
ADT 2025 = 5,600
DHV = 12 %
D = 60 %
T = 11 % *
V = 60 MPH

* TTST 8% DUAL 3%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3826 = 1.407 MILES
LENGTH STRUCTURE TIP PROJECT U-3826 = 0.292 MILES

TOTAL LENGTH TIP PROJECT No. U-3826 = 1.699 MILES

FUNC CLASS = RURAL MAJOR COLLECTOR

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: NOVEMBER 28, 2007

LETTING DATE: OCTOBER, 2009

JIMMY GOODNIGHT, PE
PROJECT ENGINEER

STEVE KENDALL, 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

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$$$$USERNAME$$$$

3/15/06

PROJECT REFERENCE NO.	SHEET NO.
U-3826	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 — EPM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

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
- Proposed Wheel Chair Ramp Curb Cut — WCC
- Curb Cut for Future Wheel Chair Ramp — CCFR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — 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.
U-3826	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

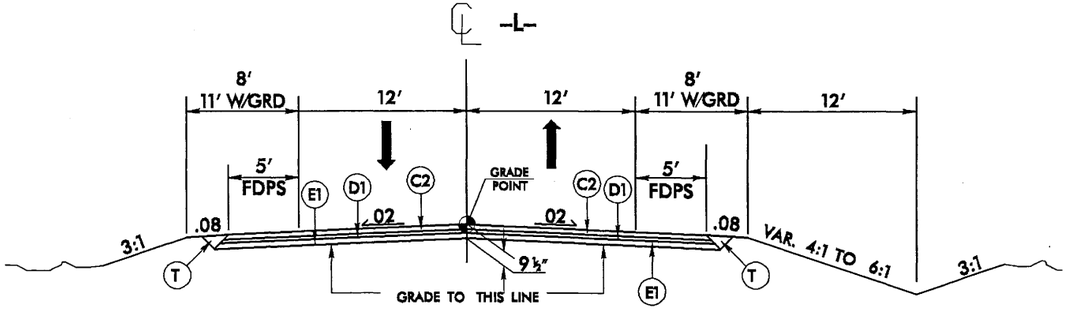
PAVEMENT SCHEDULE

FINAL PAVEMENT DESIGN

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 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 5½" IN DEPTH.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	J1	PROP. 8" AGGREGATE BASE COURSE.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1½" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	R	5" MONOLITHIC CONCRETE ISLAND.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	T	EARTH MATERIAL.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.	U	EXISTING PAVEMENT.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHT. 2-A)

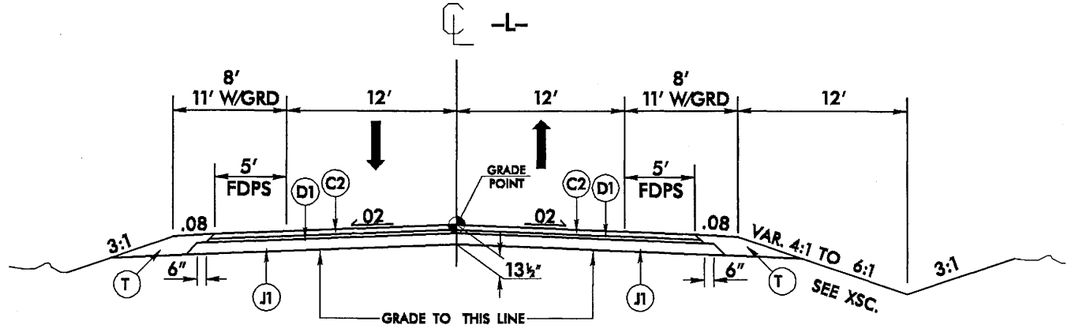
NOTE: RESURFACE SR 1518 AND SR 1537 AS SHOWN ON SHEET No. 4 USING C1

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

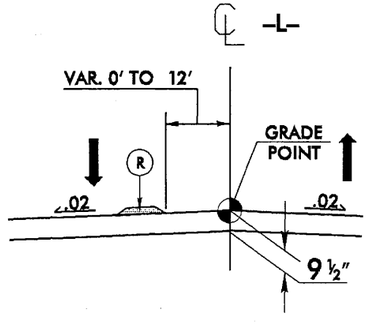


TYPICAL SECTION No. 1 ALTERNATE 1

USE TYPICAL SECTION NO. 1
–L– Sta. 10+10.82 to Sta. 41+95 (BEGIN BRIDGE)
–L– Sta. 57+35 (END BRIDGE) to Sta. 95+00



TYPICAL SECTION No. 1 ALTERNATE 2



USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1

–L– Sta. 88+23 to Sta. 91+93
–L– Sta. 93+18 to Sta. 95+18

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PROJECT REFERENCE NO.	SHEET NO.
U-3826	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TRANSITION FROM TYPICAL SECTION No. 1 TO TYPICAL SECTION 2 USING ALTERNATE 1 PAVEMENT DESIGN

-L- Sta. 95+00 to Sta. 96+52

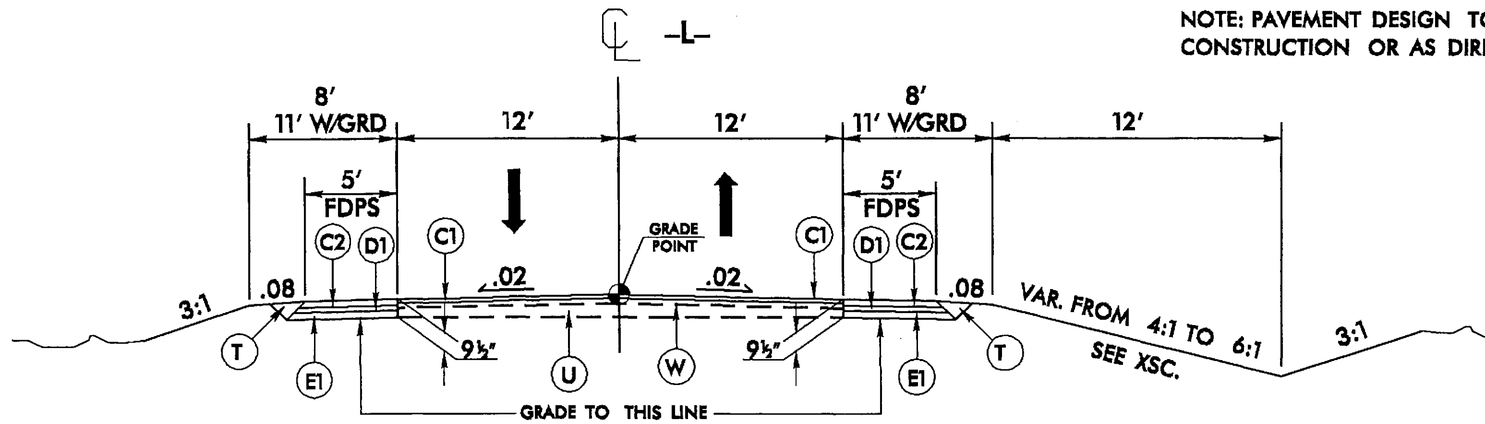
OR

TRANSITION FROM TYPICAL SECTION No. 1 TO TYPICAL SECTION 2 USING ALTERNATE 2 PAVEMENT DESIGN

-L- Sta. 95+00 to Sta. 96+52

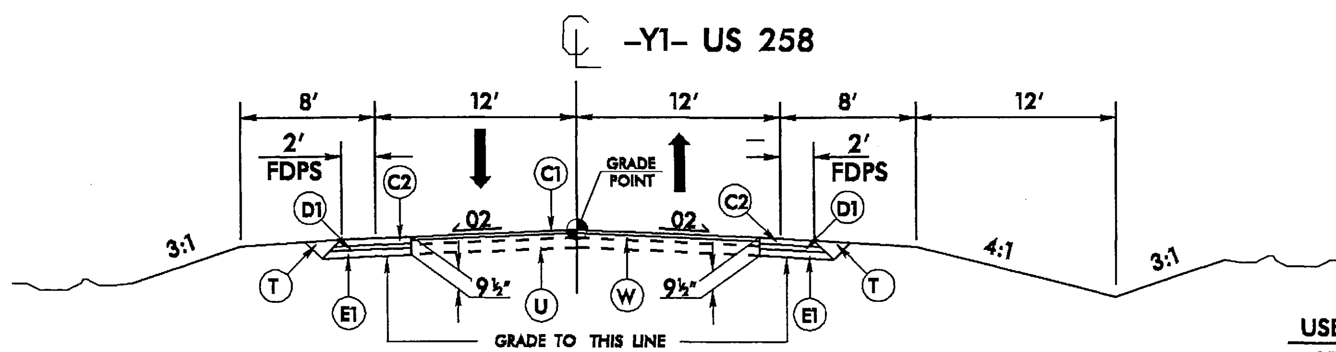
PAVEMENT SCHEDULE	
C1	1½" S9.5B
C2	3" S9.5B
D1	2½" I19.0B
D2	VAR. I19.0B
E1	4" B25.0B
E2	VAR. B25.0B
J1	8" ABC
T	EARTH MATERIAL.
U	EXISTING PAVEMENT
W	WEDGING

NOTE: PAVEMENT DESIGN TO BE USED FOR TIE-IN CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.



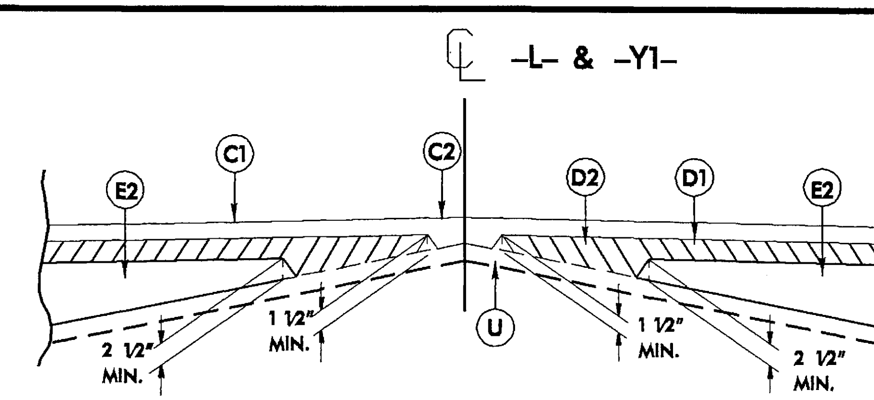
USE TYPICAL SECTION NO. 2
-L- Sta. 96+52 to Sta. 99+71.92

TYPICAL SECTION No. 2 ALTERNATE 2

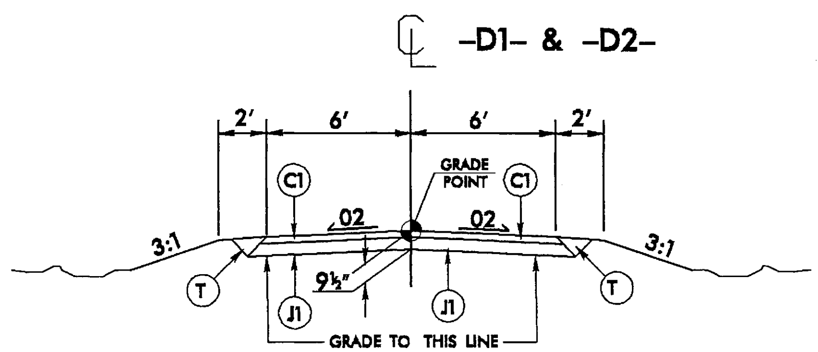


USE TYPICAL SECTION NO. 3
-Y1- Sta. 15+65 to Sta. 25+00

TYPICAL SECTION No. 3

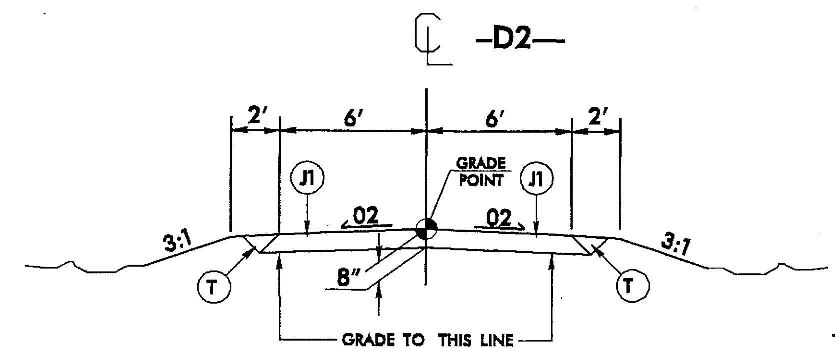


Detail Showing Method of Wedging



USE TYPICAL SECTION NO. 4
-DR1- Sta. 10+12 to Sta. 14+57.66
-DR2- Sta. 12+75 to Sta. 17+20.60

TYPICAL SECTION No. 4



USE TYPICAL SECTION NO. 5
-DR2- Sta. 5+42.80 to Sta. 12+75

TYPICAL SECTION No. 5

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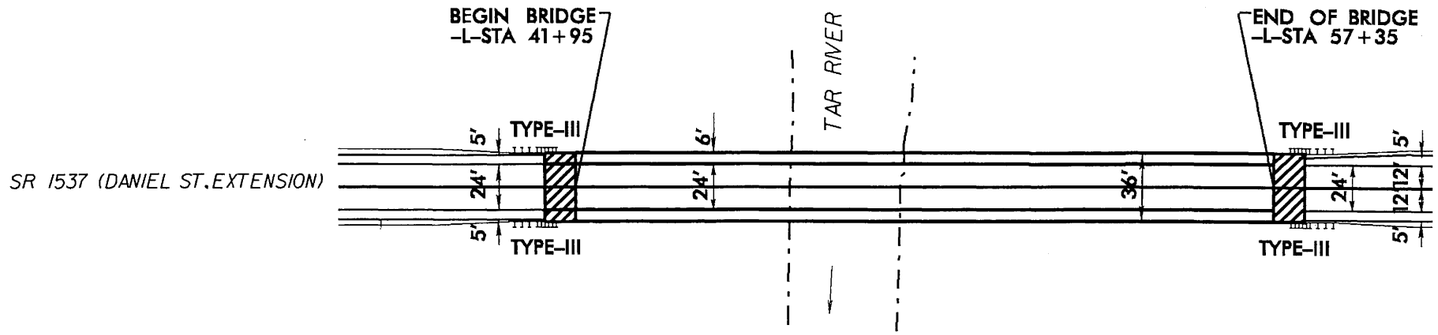
$$$$USERNAME$$$$

6/2/99

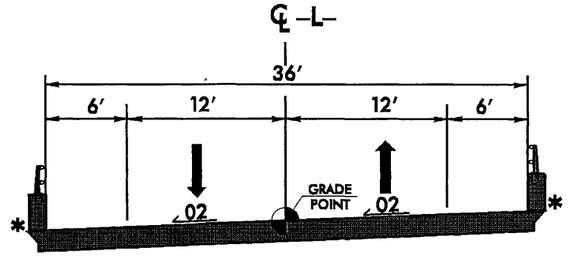
PROJECT REFERENCE NO.	SHEET NO.
U-3826	2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP



STRUCTURE TYPICAL SECTIONS



-L- STA 41+95 TO 57+35

DESIGN DATA -L-

ADT 2005	=	3,600
ADT 2025	=	5,600
D	=	60%
DHV	=	12%
TTST	=	8%
DUAL	=	3%
V	=	60 mph

FUNC CLASS–RURAL MAJOR COLLECTOR

* BRIDGE RAIL TO BE DETERMINED BY STRUCTURE DESIGN UNIT

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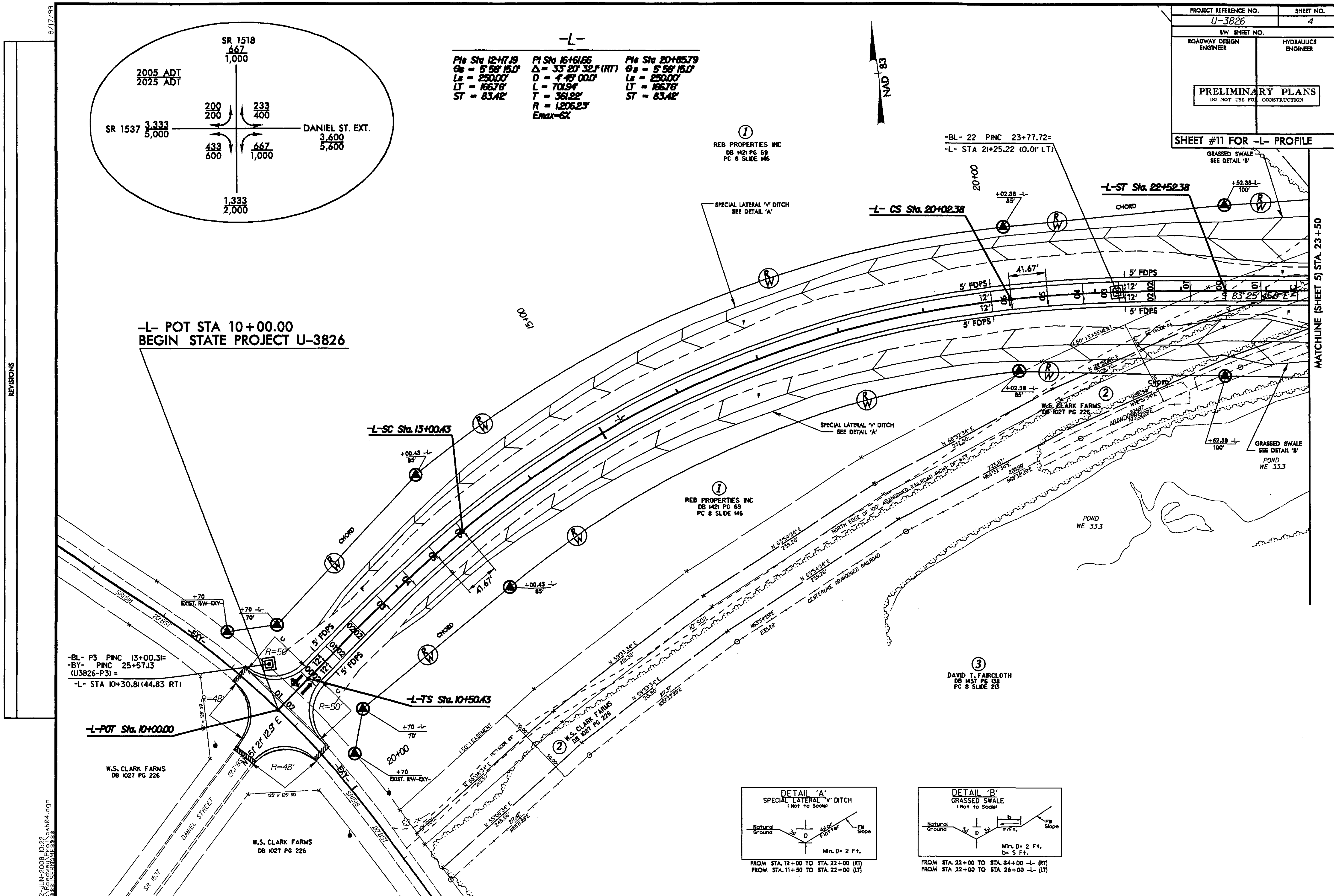

PROJECT REFERENCE NO. U-3826
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
SHEET #11 FOR -L- PROFILE
8/17/99
REVISIONS
SR 1518
667
1,000
2005 ADT
2025 ADT
SR 1537 3,333 / 5,000
200 / 200
233 / 400
433 / 600
667 / 1,000
DANIEL ST. EXT. 3,600 / 5,600
1,333 / 2,000
-L-
PI= Sta 12+17.19
θs = 5° 56' 15.0"
Ls = 250.00'
LT = 166.76'
ST = 83.42'
PI Sta 16+61.66
Δ = 33° 20' 32.1" (RT)
D = 4° 45' 00.0"
L = 701.94'
T = 361.22'
R = 1,206.23'
Emax=6%
PI= Sta 20+85.79
θs = 5° 56' 15.0"
Ls = 250.00'
LT = 166.76'
ST = 83.42'
NAD 83
REB PROPERTIES INC
DB 1421 PG 69
PC 8 SLIDE 146
SPECIAL LATERAL 'V' DITCH
SEE DETAIL 'A'
-BL- 22 PINC 23+77.72=
-L- STA 21+25.22 (0.01' LT)
GRASSED SWALE
SEE DETAIL 'B'
-L-ST Sta. 22+52.38
-L- CS Sta. 20+02.38
+02.38 -L- 85'
+52.38 -L- 100'
CHORD
41.67'
5' FDPS
12'
S 83° 25' 45.8" E
MATCHLINE (SHEET 5) STA. 23+50
-L- POT STA 10+00.00
BEGIN STATE PROJECT U-3826
-L-SC Sta. 13+00.43
+00.43 -L- 85'
50' EASEMENT
W.S. CLARK FARMS
DB 1027 PG 226
ABANDONED RAILROAD
+62.38 -L- 100'
POND
WE 33.3
NORTH EDGE OF 100' ABANDONED RAILROAD RIGHT OF WAY
CENTERLINE ABANDONED RAILROAD
10' SOIL
+70
EXIST. R/W-EXY-
+70 -L- 70'
-BL- P3 PINC 13+00.31=
-BY- PINC 25+57.13
(U3826-P3) =
-L- STA 10+30.81 (44.83 RT)
R=50'
R=48'
-L-TS Sta. 10+50.43
-L-POT Sta. 10+00.00
N 51° 21' 12.9" E
-EXY-
SR 1518
DANIEL STREET
SR 1537
DAVID T. FAIRCLOTH
DB 1437 PG 138
PC 8 SLIDE 213
DETAIL 'A'
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 2 Ft.
FROM STA. 12+00 TO STA. 22+00 (RT)
FROM STA. 11+50 TO STA. 22+00 (LT)
DETAIL 'B'
GRASSED SWALE
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 2 Ft.
b= 5 Ft.
FROM STA. 22+00 TO STA. 34+00 -L- (RT)
FROM STA. 22+00 TO STA. 26+00 -L- (LT)
02-JUN-2008 10:22

PROJECT REFERENCE NO.	SHEET NO.
U-3826	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SHEET #11 FOR -L- PROFILE

8/17/99

REVISIONS

NAD 83

25+00

30+00

35+00

WLB

MATCHLINE (SHEET 4) STA. 23+50

MATCHLINE (SHEET 6) STA. 37+50

(4) GEORGE F. YORK
DB 1486 PG 404

TOE PROTECTION
SEE DETAIL 'C'
325 TONS CLASS 'B'
RIP RAP
W/840 SY FILTER FABRIC

ADJUST FILL SLOPE SO TOE OF SLOPE DRAINS FROM STA 34+00 TO 38+00 -L- (LT)
SEE CROSS SECTIONS

+00 -L-
115'

GRASSED SWALE
SEE DETAIL 'B'

+10-L-
65'

ABANDONED

MILE POST 138

R 20'

R 20'

GRAU 350

5' FDPS

S 83° 25' 45.0" E

12'

12'

5' FDPS

S. CLARK FABRIC
DB 1021 PG 225

ABANDONED

GRAU 350

5' FDPS

S 83° 25' 45.0" E

12'

12'

5' FDPS

363.78'
S 60° 43' 45" E

BM #51
STA 28+30 -BL- 131'RT.
RR SPIKE LOCATED IN
BASE OF 16" SWEET GUM

-BL- 23 PINC 28+08.80=
-L- STA 25+56.30 (1.63' LT)

GRASSED SWALE
SEE DETAIL 'B'

-BL- 24 PINC 32+96.43=
-L- STA 30+43.93 (0.63' LT)

STA 34+25 -L-
PROPOSED PERMANENT
ROCK SILT CHECK TYPE 'B'
SEE STD. DETAIL 1633.02

-BL- 25 PINC 36+17.37=
-L- STA 33+64.87 (0.06' LT)

+50 -L-
125'

EMBANKMENT PROTECTION
SEE DETAIL 'C1'
40 TONS CLASS 'B'
RIP RAP
W/105 SY FILTER FABRIC

GRASSED SWALE
SEE DETAIL 'B'

3 TONS CLASS 'B'
RIP RAP
W/10 SY FILTER FABRIC

(3) DAVID T. FAIRCLOTH
DB 1437 PG 138
PC 8 SLIDE 213

(4) GEORGE F. YORK
DB 1486 PG 404

304.59'
S 38° 25' 30" E

145.80'
S 66° 25' 55" E

EIP

DETAIL 'C1'
EMBANKMENT PROTECTION
(Not to Scale)

3H OR FLATTER Fill Slope d Filter Fabric Natural Ground

d= 3 Ft.

Type of Liner= Class 'B' Rip-Rap
FROM STA. 34+50 TO STA. 36+50 -L- (RT)

DETAIL 'B'
GRASSED SWALE
(Not to Scale)

Natural Ground 3:1 D 3:1 b F/Ft. Fill Slope

Min. D= 2 Ft.
b= 5 Ft.

FROM STA. 22+00 TO STA. 34+00 -L- (RT)
FROM STA. 22+00 TO STA 26+00 -L- (LT)
FROM STA. 37+00 TO STA. 40+00 -L- (RT)

DETAIL 'C'
TOE PROTECTION
(Not to Scale)

3H OR FLATTER Fill Slope d 4' Filter Fabric Natural Ground

d= 1Ft.

Type of Liner= Class 'B' Rip-Rap
FROM STA. 34+00 TO STA. 42+00 -L- (LT)

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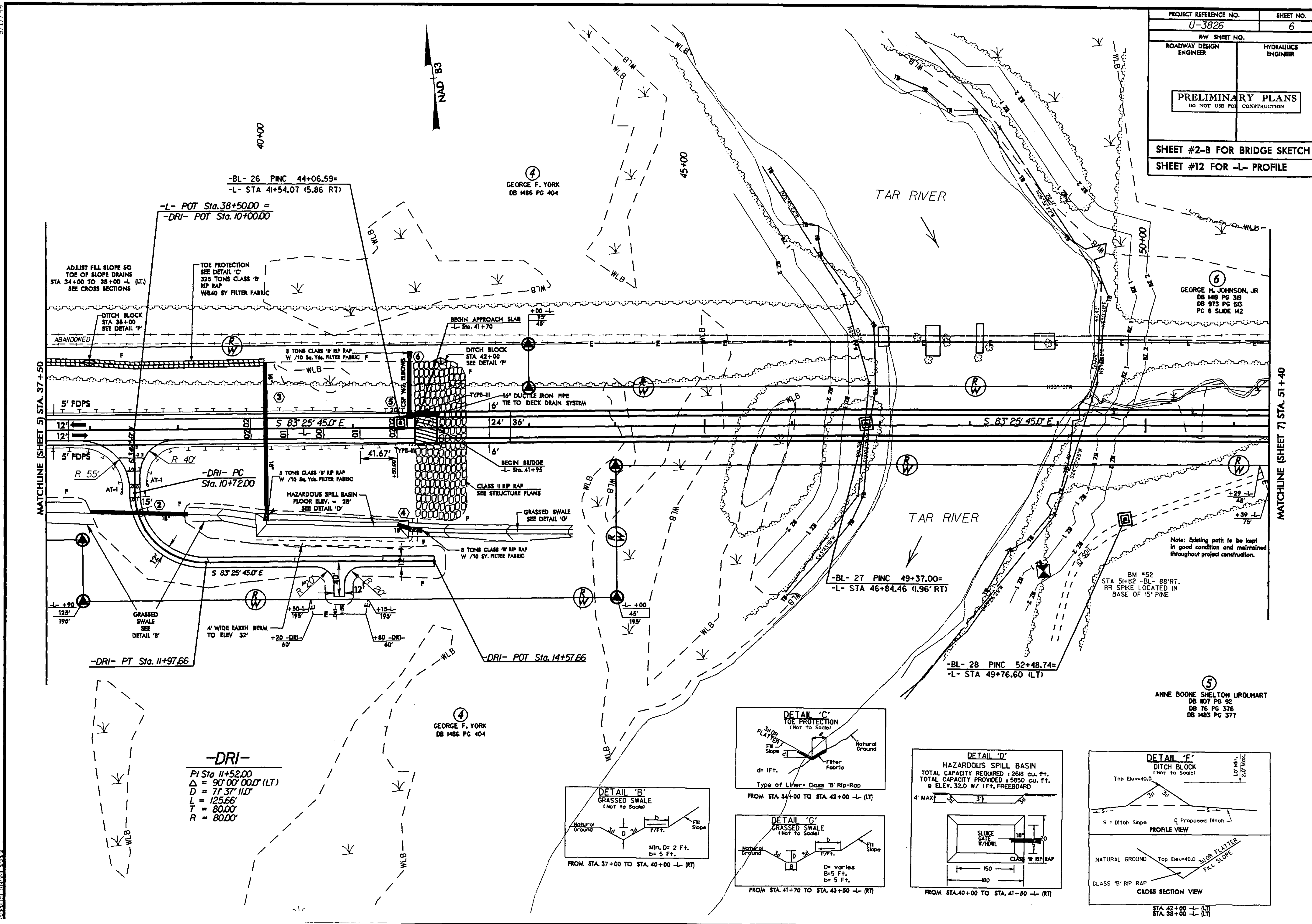

PROJECT REFERENCE NO. U-3826
SHEET NO. 6
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
SHEET #2-B FOR BRIDGE SKETCH
SHEET #12 FOR -L- PROFILE
NAD 83
TAR RIVER
GEORGE F. YORK
DB 1486 PG 404
GEORGE H. JOHNSON, JR
DB 1419 PG 319
DB 973 PG 513
PC 8 SLIDE 142
ANNE BOONE SHELTON URQUHART
DB 807 PG 92
DB 76 PG 376
DB 1483 PG 377
-BL- 26 PINC 44+06.59=
-L- STA 41+54.07 (5.86 RT)
-L- POT Sta. 38+50.00 =
-DRI- POT Sta. 10+00.00
ADJUST FILL SLOPE SO TOE OF SLOPE DRAINS STA 34+00 TO 38+00 -L- (LT.) SEE CROSS SECTIONS
TOE PROTECTION SEE DETAIL 'C' 325 TONS CLASS 'B' RIP RAP W/840 SY FILTER FABRIC
DITCH BLOCK STA 38+00 SEE DETAIL 'F'
ABANDONED
BEGIN APPROACH SLAB -L- Sta. 41+70
DITCH BLOCK STA 42+00 SEE DETAIL 'F'
3 TONS CLASS 'B' RIP RAP W /10 Sq. Yds. FILTER FABRIC
16" DUCTILE IRON PIPE TIE TO DECK DRAIN SYSTEM
S 83°25' 45.0" E
MATCHLINE (SHEET 5) STA. 37+50
MATCHLINE (SHEET 7) STA. 51+40
5' FDPS
-DRI- PC Sta. 10+72.00
BEGIN BRIDGE -L- Sta. 41+95
CLASS II RIP RAP SEE STRUCTURE PLANS
HAZARDOUS SPILL BASIN FLOOR ELEV. = 28' SEE DETAIL 'D'
GRASSED SWALE SEE DETAIL 'G'
3 TONS CLASS 'B' RIP RAP W /10 SY. FILTER FABRIC
GRASSED SWALE SEE DETAIL 'B'
4' WIDE EARTH BERM TO ELEV 32'
-DRI- PT Sta. 11+97.66
-DRI- POT Sta. 14+57.66
-BL- 27 PINC 49+37.00=
-L- STA 46+84.46 (1.96' RT)
-BL- 28 PINC 52+48.74=
-L- STA 49+76.60 (LT)
Note: Existing path to be kept in good condition and maintained throughout project construction.
BM #52 STA 51+82 -BL- 88'RT. RR SPIKE LOCATED IN BASE OF 15' PINE
-DRI-
PI Sta 11+52.00
Δ = 90° 00' 00.0" (LT)
D = 71° 37' 11.0"
L = 125.66'
T = 80.00'
R = 80.00'
DETAIL 'B' GRASSED SWALE (Not to Scale)
Min. D= 2 Ft. b= 5 Ft.
FROM STA. 37+00 TO STA. 40+00 -L- (RT)
DETAIL 'C' TOE PROTECTION (Not to Scale)
Type of Liner= Class 'B' Rip-Rap
FROM STA. 34+00 TO STA. 42+00 -L- (LT)
DETAIL 'G' GRASSED SWALE (Not to Scale)
D= varies B=5 Ft. b= 5 Ft.
FROM STA. 41+70 TO STA. 43+50 -L- (RT)
DETAIL 'D' HAZARDOUS SPILL BASIN
TOTAL CAPACITY REQUIRED : 2618 cu. ft.
TOTAL CAPACITY PROVIDED : 5850 cu. ft.
@ ELEV. 32.0 W/ 1Ft. FREEBOARD
SLUICE GATE W/HDWL
CLASS 'B' RIP RAP
FROM STA. 40+00 TO STA. 41+50 -L- (RT)
DETAIL 'F' DITCH BLOCK (Not to Scale)
Top Elev=40.0
S = Ditch Slope
Proposed Ditch
PROFILE VIEW
NATURAL GROUND
3:1 OR FLATTER FILL SLOPE
CLASS 'B' RIP RAP
CROSS SECTION VIEW
STA. 42+00 -L- (LT)
STA. 38+00 -L- (LT)
8/17/99

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-3826	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHT. No. 12 FOR -L- PROFILE
SEE SHT. No. 15 FOR -DR2- PROFILE

SEE SHEET No. 2-B FOR BRIDGE SKETCH
SEE SHT. No. S-1 THRU S- FOR STRUCTURE PLANS

PROPOSED RESTORATION OF WETLANDS

-DR2-

PI Sta 6+40.61	PI Sta 7+32.38	PI Sta 10+75.58	PI Sta 11+48.28	PI Sta 16+77.22
Δ = 41° 25' 36.5" (LT)	Δ = 59° 36' 20.5" (RT)	Δ = 27° 27' 40.4" (LT)	Δ = 28° 02' 26.3" (RT)	Δ = 89° 44' 05.5" (RT)
D = 57° 17' 44.8"	D = 57° 17' 44.8"	D = 38° 11' 49.9"	D = 38° 11' 49.9"	D = 75° 23' 21.1"
L = 72.30'	L = 104.03'	L = 71.89'	L = 73.41'	L = 119.03'
T = 37.81'	T = 57.28'	T = 36.65'	T = 37.46'	T = 75.65'
R = 100.00'	R = 100.00'	R = 150.00'	R = 150.00'	R = 76.00'

NAD 83

FLOODWAY BOUNDARY

NOTE: REMOVE EXISTING RAILROAD FILL AND GRADE TO WETLAND ELEVATION -L- Sta. 52+35 TO Sta. 57+80 (LT) (SEE CROSS SECTIONS)

(6) GEORGE H. JOHNSON, JR
DB 1419 PG 319
DB 973 PG 543
PC 8 SLIDE 142

-BL- 29 PINC 57+15.49=
-L- STA 54+12.95 (58.86' RT)

-DR2- PT Sta. 7+79.13

-DR2- PC Sta. 10+38.93

-DR2- PRC Sta. 11+10.82

-DR2- PT Sta. 11+84.23

TOE PROTECTION
50 TONS CLASS 'B' RIP RAP W/130 Sq. Yds. FILTER FABRIC SEE DETAIL 'C'

3 TONS CLASS 'B' RIP RAP W/10 Sq. Yds. FILTER FABRIC

SHOULDER BERM GUTTER -L- Sta. 57+60 to Sta. 59+50 (LT.)

-BL- 30 PINC 64+36.76=
-L- STA 61+33.73 (32.48' RT)

-DR2- PC Sta. 16+01.57

-DR2- PT Sta. 17+20.60

50' TAPER LT./RT.

HAZARDOUS SPILL BASIN SEE DETAIL 'D2'

DITCH BLOCK SEE DETAIL 'F'

(7) SEABOARD COASTLINE RAILROAD

GRASSED SWALE SEE DETAIL 'B'

ABANDONED

WLB

S 83° 44' 36.0" E

S 83° 09' 50" E

S 83° 25' 45.0" E

REMOVE EX 12" CMP

18" DUCTILE IRON PIPE TIE TO DECK DRAIN SYSTEM

TYPE-III

GRAU 350

R 25'

R 55'

5' FDPS

CLASS II RIP RAP SEE STRUCTURE PLANS

END OF BRIDGE -L- Sta. 57+35

END APPROACH SLAB -L- Sta. 57+60

GRADE AREA BETWEEN WETLANDS TO ELEV 38.00 +/- SEE DETAIL 'H'

CLASS 'B' RIP RAP 11 TONS W/28 Sq. Yds. FILTER FABRIC

GRASSED SWALE SEE DETAIL 'B'

CUT DITCH SEE DETAIL 'E'

-DR2- PRC Sta. 6+75.10

-DR2- PC Sta. 6+02.80

BEGIN CONST. -DR2- POT Sta. 5+42.80

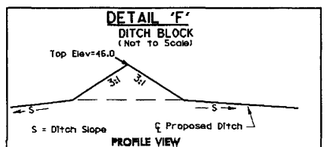
-L- POT Sta. 62+33.00=
-DR2- POT Sta. 17+38.68

(5) ANNE BOONE SHELTON UROUHART
DB 76 PG 376
DB 807 PG 92
DB 1483 PG 377

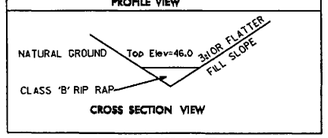
MATCHLINE (SHEET 6) STA. 51+40

MATCHLINE (SHEET 8) STA. 65+50

DETAIL 'F'
DITCH BLOCK
(Not To Scale)



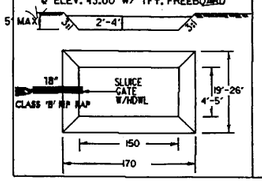
PROFILE VIEW



CROSS SECTION VIEW

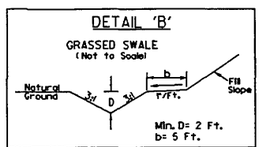
STA. 60+00 -L- (LT)

DETAIL 'D2'
HAZARDOUS SPILL BASIN
TOTAL CAPACITY REQUIRED : 2846 cu. ft.
TOTAL CAPACITY PROVIDED : 6040 cu. ft.
@ ELEV. 43.00 W/ 1Ft. FREEBOARD



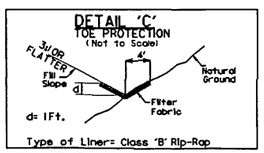
FROM STA. 58+50 TO STA. 60+00 -L-

DETAIL 'B'
GRASSED SWALE
(Not To Scale)



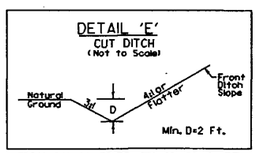
FROM STA. 62+00 TO STA. 63+00 -L- (RT)
FROM STA. 62+00 TO STA. 63+50 -L- (LT)

DETAIL 'C'
TOE PROTECTION
(Not To Scale)



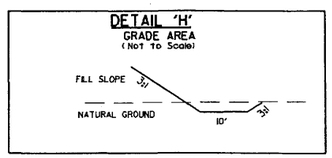
FROM STA. 57+25 TO STA. 58+50 -L- (LT)

DETAIL 'E'
CUT DITCH
(Not To Scale)



FROM STA. 64+50 TO STA. 69+50 -L- (RT)

DETAIL 'H'
GRADE AREA
(Not To Scale)



FROM STA. 57+54.73 TO STA. 58+15.31 -L- (RT)

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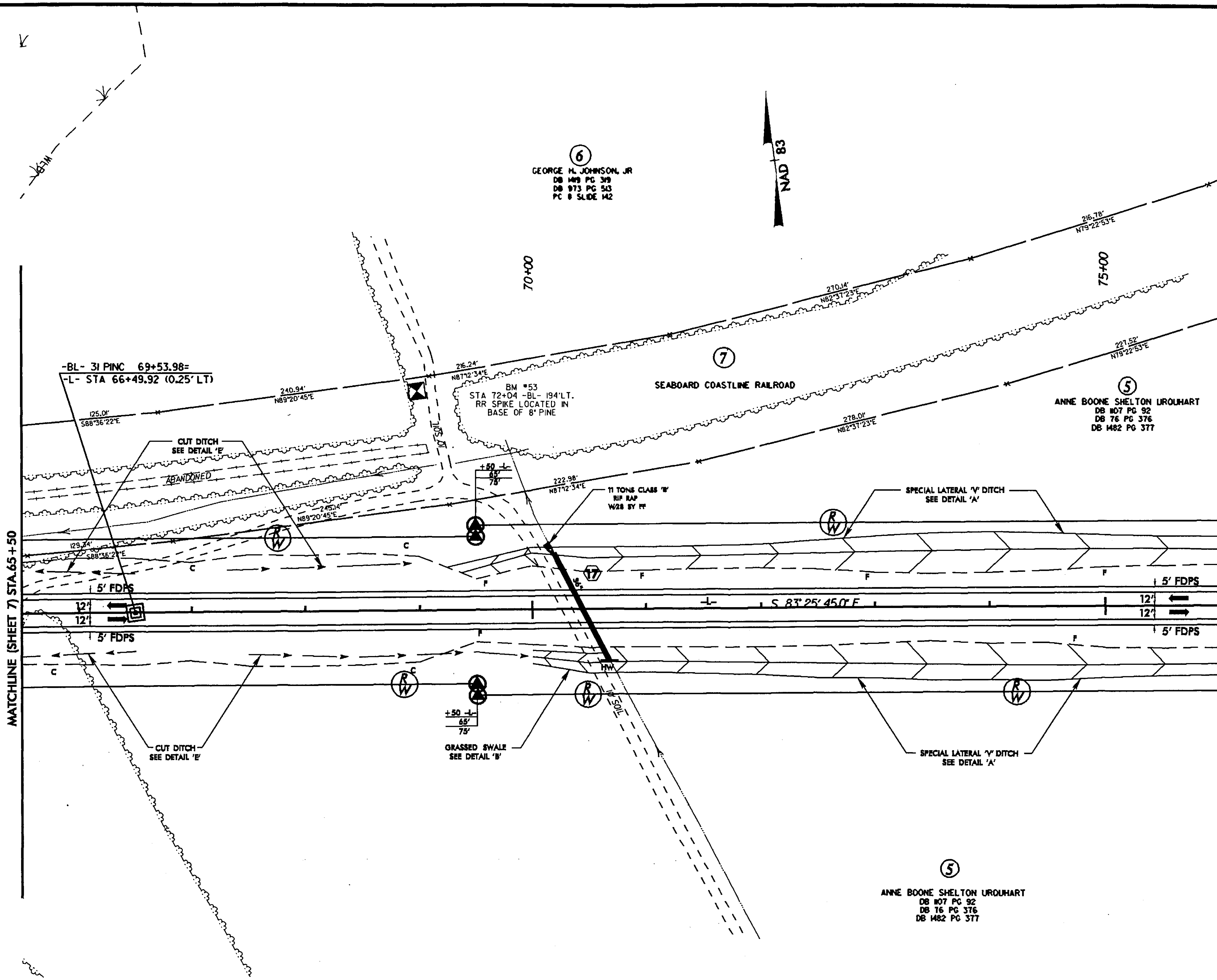
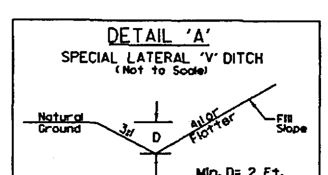
PROJECT REFERENCE NO.	SHEET NO.
U-3826	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

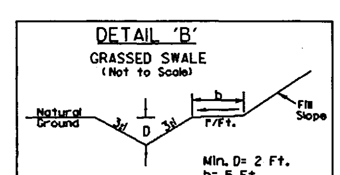
SHEET #12 FOR -L- PROFILE

SHEET #13 FOR -L- PROFILE

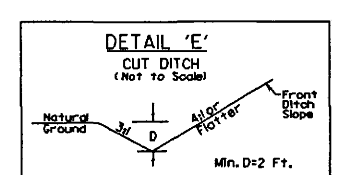




FROM STA. 70+50 TO STA. 80+50 -L- (RT)
FROM STA. 69+50 TO STA. 80+50 -L- (LT)



FROM STA. 70+00 TO STA. 70+50 -L- (RT)



FROM STA. 64+50 TO STA. 69+50 -L- (RT)
FROM STA. 65+50 TO STA. 69+50 -L- (LT)

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3826	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SHEET #13 FOR -L- PROFILE

8/17/99

REVISIONS

NAD 83

300.72'
N71°55'58"E

304.85'
N68°02'56"E

310.11'
N71°55'58"E

(5)
ANNE BOONE SHELTON UROUHART
DB 807 PG 92
DB 76 PG 376
DB 1482 PG 377

80+00

85+00

MATCHLINE (SHEET 8) STA. 76+00

MATCHLINE (SHEET 10) STA. 88+00

SPECIAL LATERAL 'V' DITCH
SEE DETAIL 'A'

+70-L-
75'
60'

-BL- 32 PINC 84+35.87=
-L- STA 81+31.81 (2.46' RT)

-L-TS Sta. 83+90.60

+90.60-L-
60'

-L-SC Sta. 86+40.60

+40.60 -L-
60'

CUT DITCH
SEE DETAIL 'E'

CHORD

5' FDPS

12'

12'

S 83°25'45.0" E

-L-

41.67'

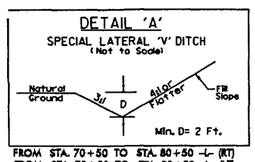
+70 -L-
60'
75'

+90.60 -L-
60'

+40.60 -L-
60'

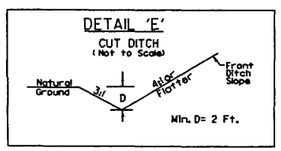
(5)
ANNE BOONE SHELTON UROUHART
DB 76 PG 376
DB 807 PG 92
DB 1482 PG 377

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



FROM STA. 70+50 TO STA. 80+50 -L- (RT)
FROM STA. 70+50 TO STA. 80+50 -L- (LT)

DETAIL 'E'
CUT DITCH
(Not to Scale)



FROM STA. 83+50 TO STA. 84+50 -L- (RT)
FROM STA. 86+00 TO STA. 92+00 -L- (LT)

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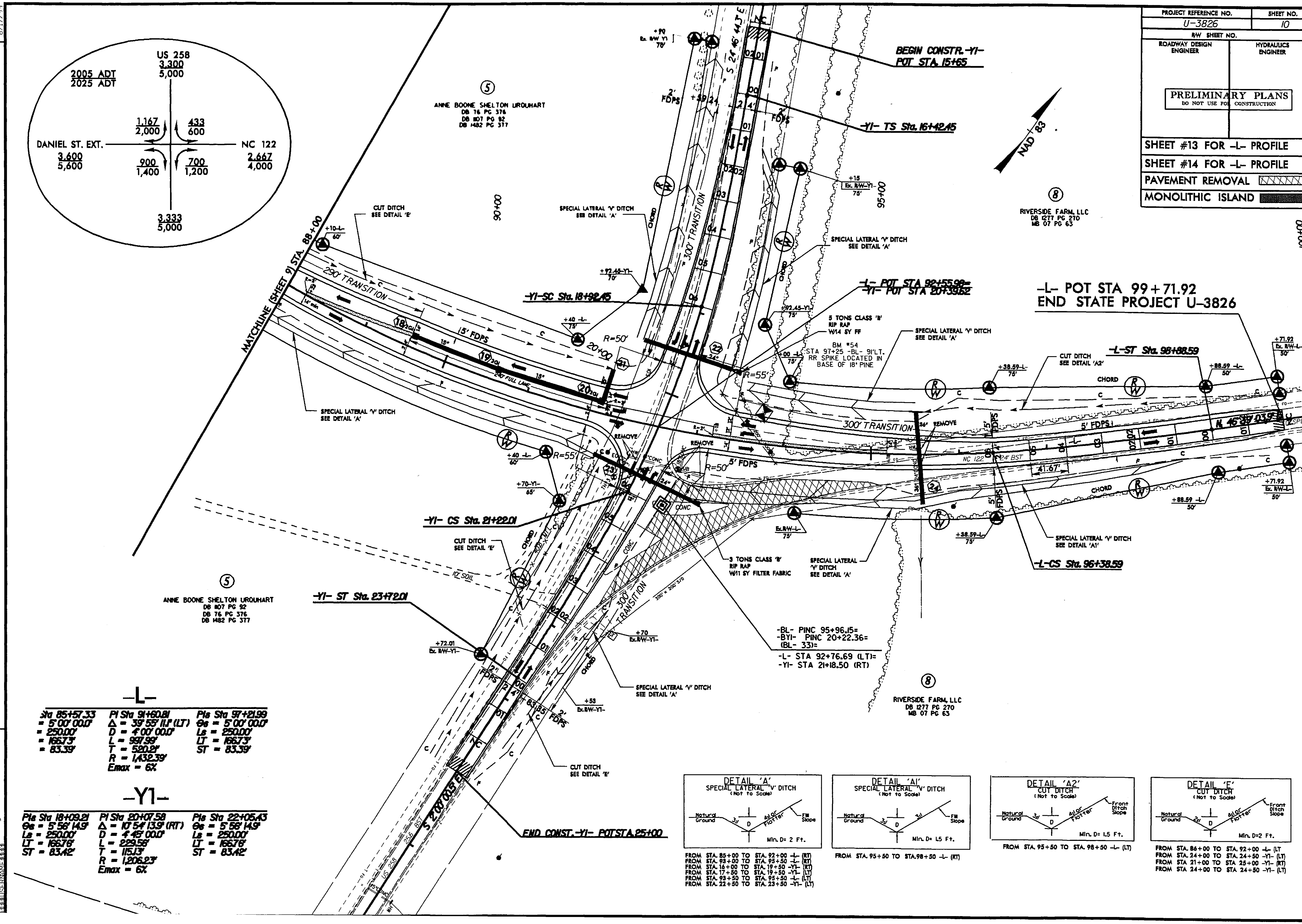
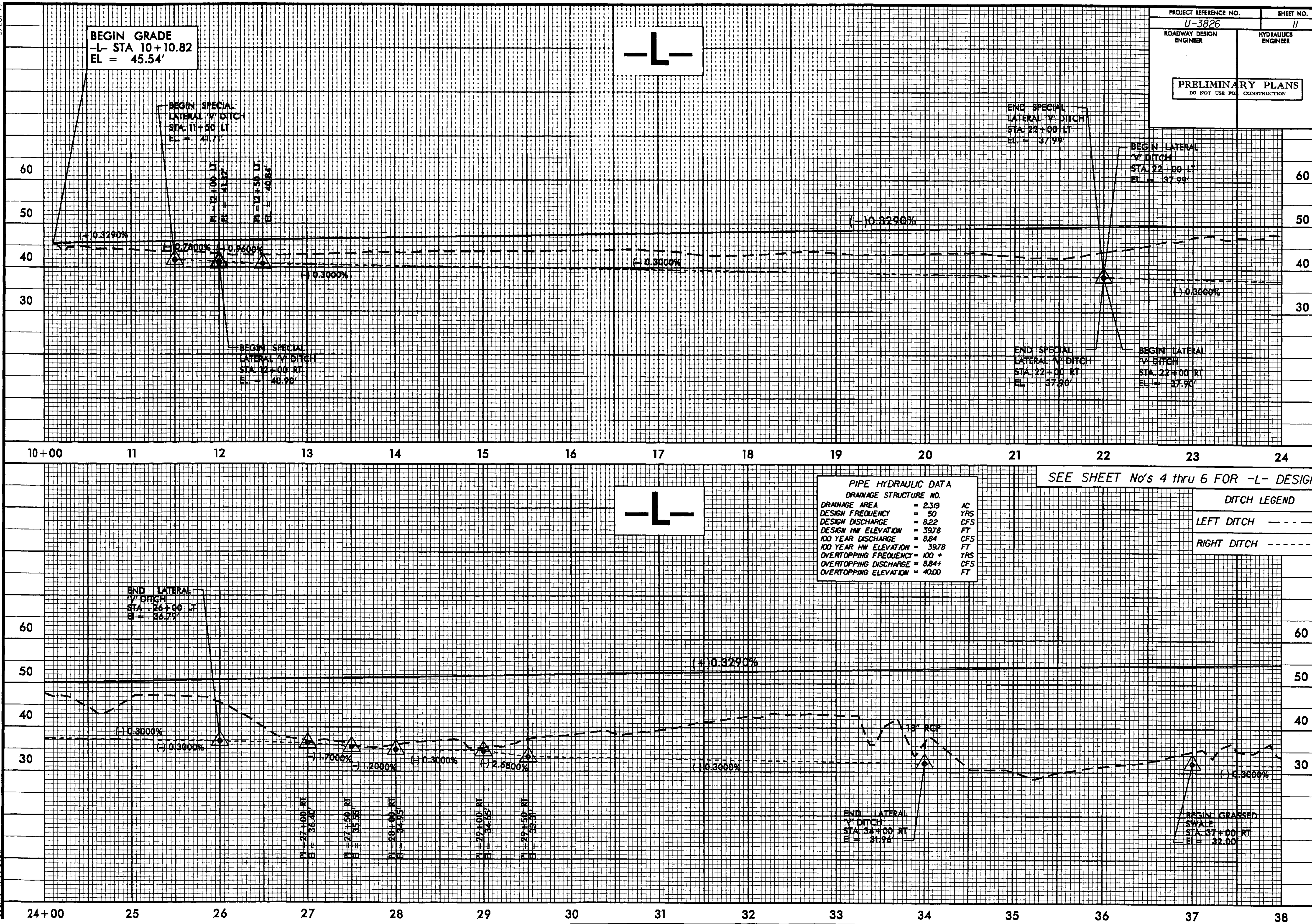


PROJECT REFERENCE NO. U-3826
SHEET NO. 10
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
SHEET #13 FOR -L- PROFILE
SHEET #14 FOR -L- PROFILE
PAVEMENT REMOVAL
MONOLITHIC ISLAND
NAD 83
2005 ADT
2025 ADT
US 258
3,300
5,000
DANIEL ST. EXT.
3,600
5,600
NC 122
2,667
4,000
1,167
2,000
433
600
900
1,400
700
1,200
3,333
5,000
5
ANNE BOONE SHELTON URQUHART
DB 76 PG 376
DB 107 PG 92
DB 1482 PG 377
8
RIVERSIDE FARM, LLC
DB 1277 PG 270
MB 07 PG 63
BEGIN CONSTR. -Y1- POT STA. 15+65
-Y1- TS Sta. 16+42.45
-Y1-SC Sta. 18+92.45
-L- POT STA 92+55.98=
-Y1- POT STA 20+39.52
-L- POT STA 99+71.92
END STATE PROJECT U-3826
-L-ST Sta. 98+88.59
-L-CS Sta. 96+38.59
-Y1- CS Sta. 21+22.01
-Y1- ST Sta. 23+72.01
END CONST. -Y1- POT STA. 25+00
MATCHLINE (SHEET 9) STA. 88+00
290' TRANSITION
300' TRANSITION
15' FDPS
5' FDPS
R=50'
R=55'
CUT DITCH SEE DETAIL 'E'
CUT DITCH SEE DETAIL 'A2'
SPECIAL LATERAL 'V' DITCH SEE DETAIL 'A'
SPECIAL LATERAL 'V' DITCH SEE DETAIL 'A1'
5 TONS CLASS 'B' RIP RAP W/14 SY FF
3 TONS CLASS 'B' RIP RAP W/11 SY FILTER FABRIC
BM #54 STA 97+25 -BL- 91' LT. RR SPIKE LOCATED IN BASE OF 18" PINE
-BL- PINC 95+96.15=
-BY1- PINC 20+22.36=
(BL- 33)=
-L- STA 92+76.69 (LT)=
-Y1- STA 21+18.50 (RT)
90+00
95+00
100+00
-L-
Sta 85+57.33
= 5°00'00.0"
= 250.00'
= 166.73'
= 83.39'
PI Sta 91+60.81
Δ = 39°55'11.1" (LT)
D = 4°00'00.0"
L = 997.99'
T = 520.21'
R = 1,432.39'
Emax = 6%
PIs Sta 97+21.99
Θs = 5°00'00.0"
Ls = 250.00'
LT = 166.73'
ST = 83.39'
-Y1-
PIs Sta 18+09.21
Θs = 5°56'14.9"
Ls = 250.00'
LT = 166.76'
ST = 83.42'
PI Sta 20+07.58
Δ = 10°54'13.9" (RT)
D = 4°45'00.0"
L = 229.56'
T = 115.13'
R = 1,206.23'
Emax = 6%
PIs Sta 22+05.43
Θs = 5°56'14.9"
Ls = 250.00'
LT = 166.76'
ST = 83.42'
DETAIL 'A' SPECIAL LATERAL 'V' DITCH (Not to Scale)
Min. D= 2 Ft.
FROM STA. 85+00 TO STA. 92+00 -L- (RT)
FROM STA. 93+00 TO STA. 95+50 -L- (RT)
FROM STA. 16+00 TO STA. 19+50 -Y1- (RT)
FROM STA. 17+50 TO STA. 19+50 -Y1- (LT)
FROM STA. 93+50 TO STA. 95+50 -L- (LT)
FROM STA. 22+50 TO STA. 23+50 -Y1- (LT)
DETAIL 'A1' SPECIAL LATERAL 'V' DITCH (Not to Scale)
Min. D= 1.5 Ft.
FROM STA. 95+50 TO STA. 98+50 -L- (RT)
DETAIL 'A2' CUT DITCH (Not to Scale)
Min. D= 1.5 Ft.
FROM STA. 95+50 TO STA. 98+50 -L- (LT)
DETAIL 'E' CUT DITCH (Not to Scale)
Min. D=2 Ft.
FROM STA. 86+00 TO STA. 92+00 -L- (LT)
FROM STA. 24+00 TO STA. 24+50 -Y1- (LT)
FROM STA. 21+00 TO STA. 25+00 -Y1- (RT)
FROM STA. 24+00 TO STA. 24+50 -Y1- (LT)
REVISIONS
8/17/99
02-JUN-2008 10:22



PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 2.319	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 8.22	CFS
DESIGN HW ELEVATION	= 39.78	FT
100 YEAR DISCHARGE	= 8.84	CFS
100 YEAR HW ELEVATION	= 39.78	FT
OVERTOPPING FREQUENCY	= 100 +	YRS
OVERTOPPING DISCHARGE	= 8.84+	CFS
OVERTOPPING ELEVATION	= 40.00	FT

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3826	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 1.41	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 6.3	CFS
DESIGN HW ELEVATION	= 37.73	FT
100 YEAR DISCHARGE	= 6.78	CFS
100 YEAR HW ELEVATION	= 37.82	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 6.78+	CFS
OVERTOPPING ELEVATION	= 40.00	FT

BRIDGE DATA
℄ -L- = 49+65.00
EL=57.13'
72'WBT BRIDGE
SPANS= 14@ 110'
SKEW =90°

PI = 47+50.00
EL = 57.84'
VC = 400'
K = 608

BEGIN BRIDGE
-L- STA 41+95

54.71

(+)0.3290%

(-)0.3290%

54.36

APPROXIMATE LOCATION OF TAR RIVER

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 40,000	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 45.12	FT
BASE DISCHARGE	= 46,700	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 46.83	FT
OVERTOPPING DISCHARGE	= 44,000	CFS
OVERTOPPING FREQUENCY	= 50	YRS
OVERTOPPING ELEVATION	= 45.65	FT

CLASS II RIP RAP
1.5:1

(-) 0.5000%

(-) 1.0000%

(-) 4.5600%

118" RCP

(-) 0.2900%

30.00 RT
EL = 31.40'

30.50 RT
EL = 30.50'

BEGIN GRASSED SWALE
STA = 41+70 RT
EL = 27.26'

END GRASSED SWALE
STA 40+00 RT
EL = 28.62'

END GRASSED SWALE
STA 43+50 RT
EL = 26.76'

DITCH LEGEND
RIGHT DITCH - - - - - - -
LEFT DITCH — - - — -

38+00 39 40 41 42 43 44 45 46 47 48 49 50 51 52

60 50 40 30 20 10

SEE SHEET No's 6 thru 8 FOR -L- DESIGN

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 21.629	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 53.4	CFS
DESIGN HW ELEVATION	= 45.4	FT
100 YEAR DISCHARGE	= 57.4	CFS
100 YEAR HW ELEVATION	= 46.03	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 57.4+	CFS
OVERTOPPING ELEVATION	= 46.00	FT

END BRIDGE
-L- STA 57+35

(-)0.3290%

CLASS II RIP RAP
1.5:1

BEGIN LATERAL 'V' DITCH
STA. 62+00 LT
EL = 40.03'

END LATERAL 'V' DITCH STA.
62+50.00 LT
EL = 41.00'

BEGIN CUT DITCH LT
STA. 65+60 LT
EL = 48.34'

62+50 LT
EL = 39.68'

63+00 LT
EL = 40.35'

(+) 0.3000%

36" RCP

(+) 1.2600%

(-) 0.3000%

(+) 0.3000%

(+) 0.9400%

(+) 1.3000%

(-) 0.3000%

BEGIN LATERAL 'V' DITCH
STA. 62+00 RT
EL = 38.68'

62+50 RT
EL = 42.82'

BEGIN CUT DITCH
STA. 64+50 RT
EL = 48.04'

END LATERAL 'V' DITCH
STA. 63+00 RT
EL = 43.46'

52+00 53 54 55 56 57 58 59 60 61 62 63 64 65 66

60 50 40 30

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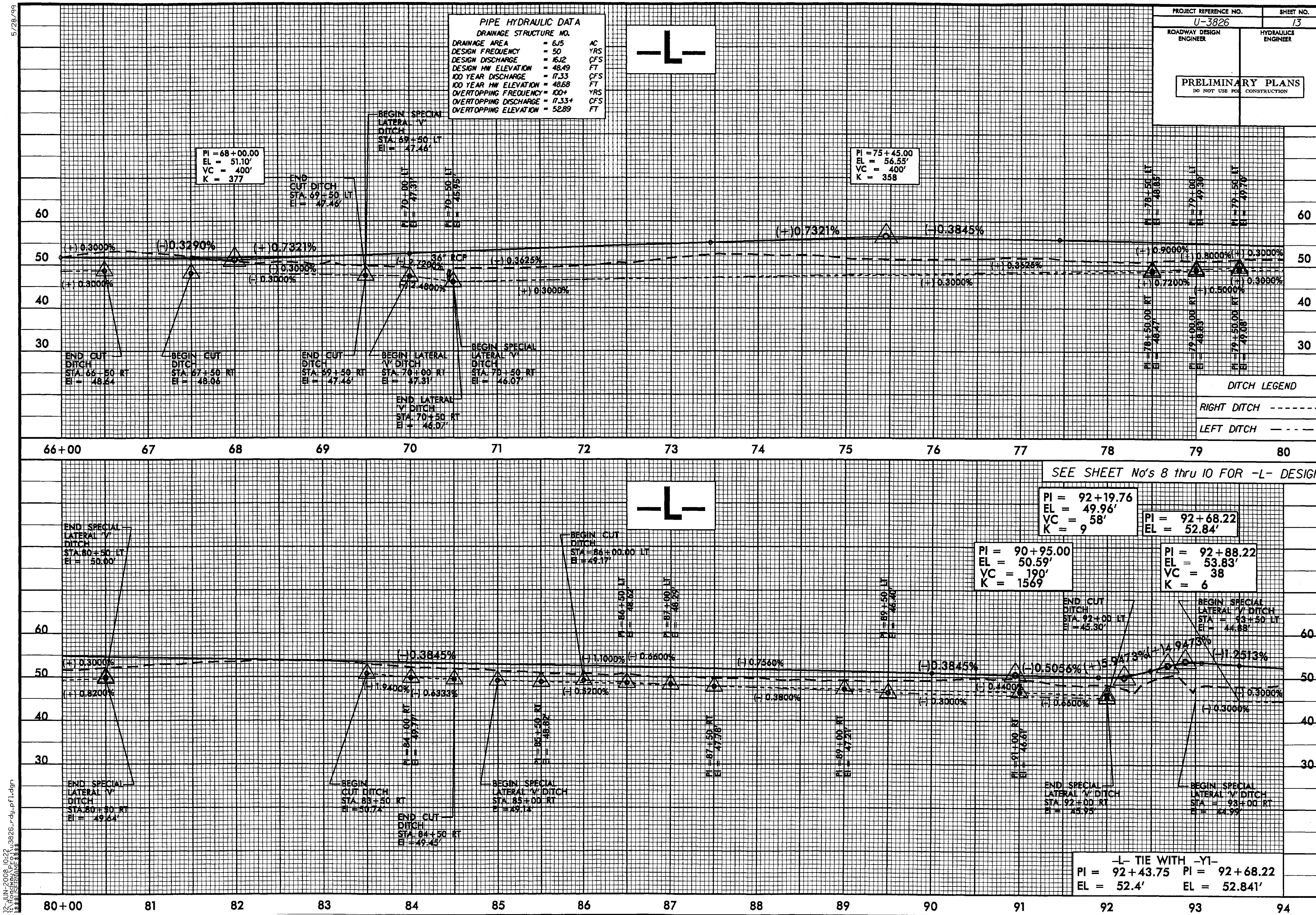
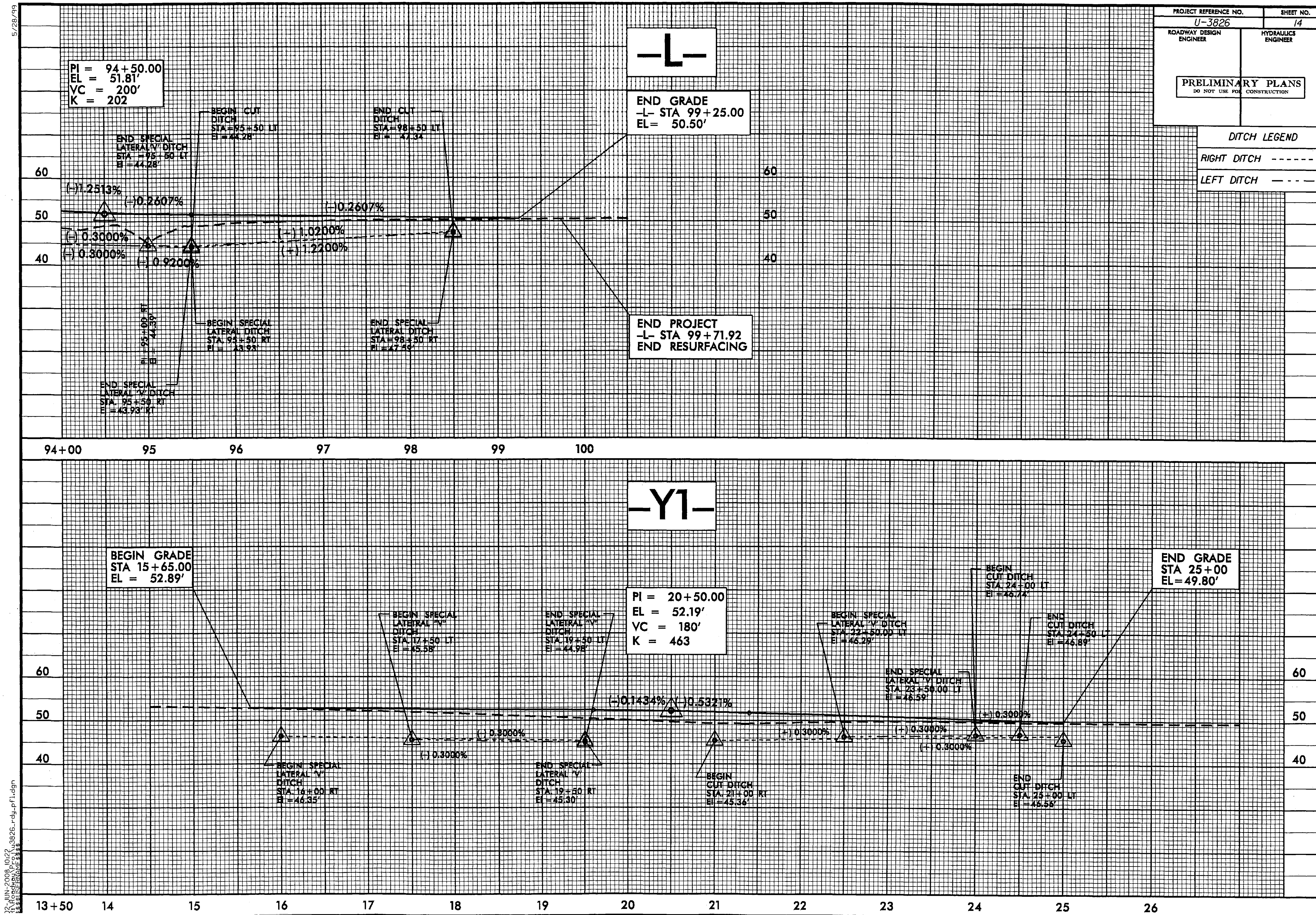
$$$$USERNAME$$$$


PROJECT REFERENCE NO. U-3826
SHEET NO. 13
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
5/28/99
-L-
PI = 68+00.00 EL = 51.10' VC = 400' K = 377
PI = 75+45.00 EL = 56.55' VC = 400' K = 358
BEGIN SPECIAL LATERAL 'V' DITCH STA. 69+50 LT El = 47.46'
END CUT DITCH STA. 69+50 LT El = 47.46'
END CUT DITCH STA. 66+50 RT El = 48.64
BEGIN CUT DITCH STA. 67+50 RT El = 48.06
END CUT DITCH STA. 69+50 RT El = 47.46'
BEGIN LATERAL 'V' DITCH STA. 70+00 RT El = 47.31'
END LATERAL 'V' DITCH STA. 70+50 RT El = 46.07'
BEGIN SPECIAL LATERAL 'V' DITCH STA. 70+50 RT El = 46.07'
36" RCP
(+)0.3000% (-)0.3290% (+)0.7321% (-)0.3845% (+)0.3625% (-)0.3000% (-)2.4800%
DITCH LEGEND
RIGHT DITCH
LEFT DITCH
66+00 67 68 69 70 71 72 73 74 75 76 77 78 79 80
SEE SHEET No's 8 thru 10 FOR -L- DESIGN
PI = 92+19.76 EL = 49.96' VC = 58' K = 9
PI = 92+68.22 EL = 52.84'
PI = 90+95.00 EL = 50.59' VC = 190' K = 1569
PI = 92+88.22 EL = 53.83' VC = 38 K = 6
END SPECIAL LATERAL 'V' DITCH STA. 80+50 LT El = 50.00'
BEGIN CUT DITCH STA = 86+00.00 LT El = 49.17'
END CUT DITCH STA. 92+00 LT El = 45.30'
BEGIN SPECIAL LATERAL 'V' DITCH STA = 93+50 LT El = 44.88'
END SPECIAL LATERAL 'V' DITCH STA. 80+50 RT El = 49.64'
BEGIN CUT DITCH STA. 83+50 RT El = 50.74'
END CUT DITCH STA. 84+50 RT El = 49.45'
BEGIN SPECIAL LATERAL 'V' DITCH STA. 85+00 RT El = 49.14'
END SPECIAL LATERAL 'V' DITCH STA. 92+00 RT El = 45.95'
BEGIN SPECIAL LATERAL 'V' DITCH STA = 93+00 RT El = 44.99'
(-)0.3845% (+)5.9473% (+)4.9473% (-)1.2513% (-)0.5056%
-L- TIE WITH -Y1-
PI = 92+43.75 EL = 52.4'
PI = 92+68.22 EL = 52.841'
80+00 81 82 83 84 85 86 87 88 89 90 91 92 93 94

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 6.15	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 16.12	CFS
DESIGN HW ELEVATION	= 48.49	FT
100 YEAR DISCHARGE	= 17.33	CFS
100 YEAR HW ELEVATION	= 48.68	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 17.33+	CFS
OVERTOPPING ELEVATION	= 52.89	FT


PROJECT REFERENCE NO. U-3826
SHEET NO. 14
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
DITCH LEGEND
RIGHT DITCH
LEFT DITCH
-L-
PI = 94+50.00
EL = 51.81'
VC = 200'
K = 202
END GRADE
-L- STA 99+25.00
EL= 50.50'
END PROJECT
-L- STA 99+71.92
END RESURFACING
BEGIN CUT DITCH
STA=95+50 LT
El =44.28'
END CUT DITCH
STA=98+50 LT
El = 47.34
END SPECIAL LATERAL 'V' DITCH
STA =95+50 LT
El =44.28'
BEGIN SPECIAL LATERAL DITCH
STA 95+50 RT
El = 43.93'
END SPECIAL LATERAL DITCH
STA =98+50 RT
El =47.59'
END SPECIAL LATERAL 'V' DITCH
STA 95+50 RT
El =43.93' RT
PI =95+00 RT
El = 44.39'
(-)1.2513%
(-)0.2607%
(-)0.2607%
(-) 0.3000%
(-) 0.3000%
(-) 0.9200%
(+) 1.0200%
(+) 1.2200%
60
50
40
94+00
95
96
97
98
99
100
-Y1-
BEGIN GRADE
STA 15+65.00
EL = 52.89'
PI = 20+50.00
EL = 52.19'
VC = 180'
K = 463
END GRADE
STA 25+00
EL=49.80'
BEGIN SPECIAL LATERAL 'V' DITCH
STA 17+50 LT
El =45.58'
END SPECIAL LATERAL 'V' DITCH
STA 19+50 LT
El =44.98'
BEGIN SPECIAL LATERAL 'V' DITCH
STA 22+50.00 LT
El =46.29'
BEGIN CUT DITCH
STA 24+00 LT
El =46.74'
END CUT DITCH
STA 24+50 LT
El =46.89'
END SPECIAL LATERAL 'V' DITCH
STA 23+50.00 LT
El =46.59'
BEGIN SPECIAL LATERAL 'V' DITCH
STA 16+00 RT
El =46.35'
END SPECIAL LATERAL 'V' DITCH
STA 19+50 RT
El =45.30'
BEGIN CUT DITCH
STA 21+00 RT
El =45.36'
END CUT DITCH
STA 25+00 LT
El =46.56'
(-)0.1434%
(-)0.5321%
(-) 0.3000%
(-) 0.3000%
(+) 0.3000%
(+) 0.3000%
(+) 0.3000%
(+) 0.3000%
60
50
40
13+50
14
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16
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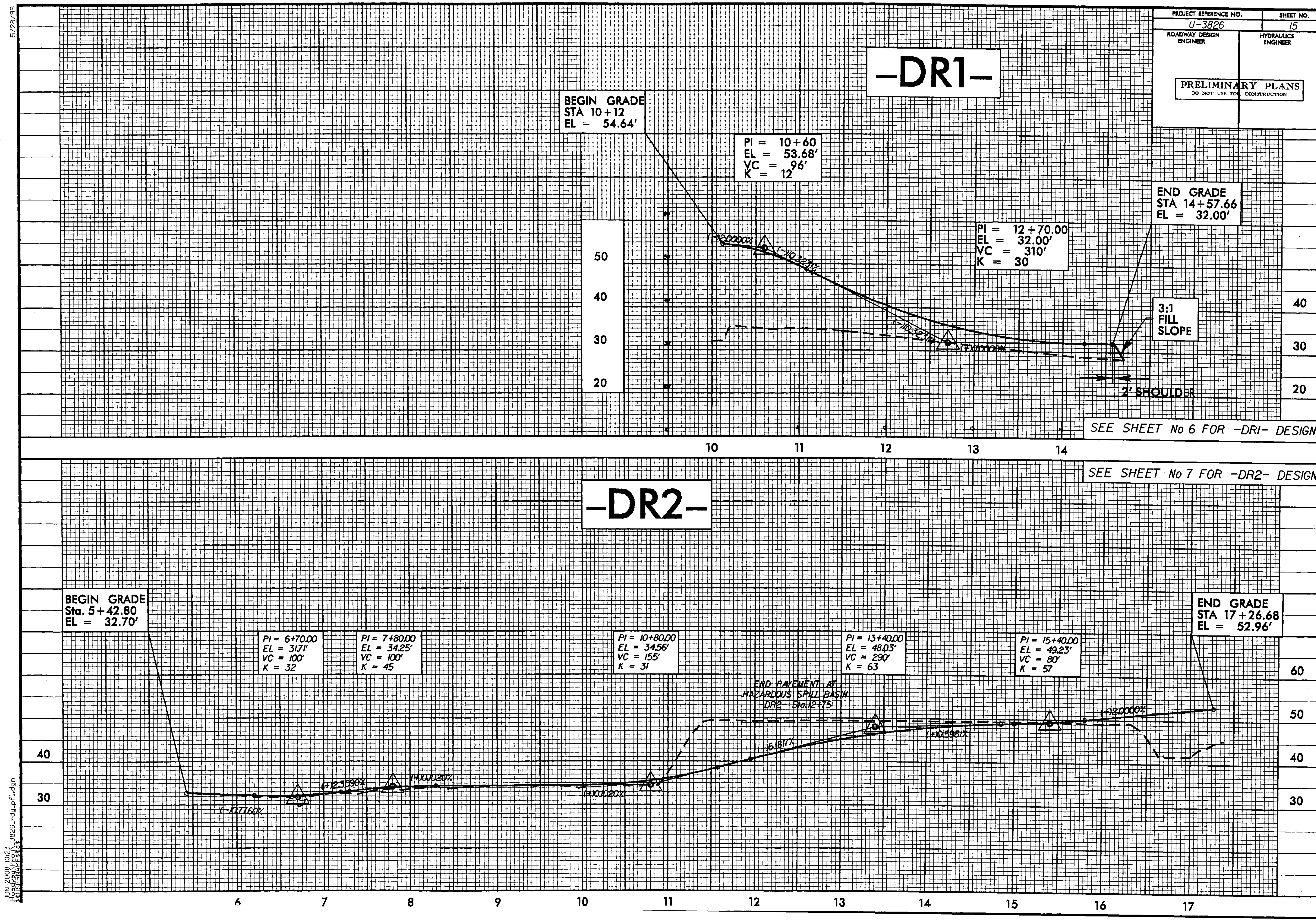
PROJECT REFERENCE NO.
U-3826
SHEET NO.
15
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
-DR1-
BEGIN GRADE
STA 10+12
EL = 54.64'
PI = 10+60
EL = 53.68'
VC = 96'
K = 12
PI = 12+70.00
EL = 32.00'
VC = 310'
K = 30
END GRADE
STA 14+57.66
EL = 32.00'
3:1
FILL
SLOPE
2' SHOULDER
SEE SHEET No 6 FOR -DR1- DESIGN
50
40
30
20
10
11
12
13
14
-DR2-
SEE SHEET No 7 FOR -DR2- DESIGN
BEGIN GRADE
Sta. 5+42.80
EL = 32.70'
PI = 6+70.00
EL = 31.71'
VC = 100'
K = 32
PI = 7+80.00
EL = 34.25'
VC = 100'
K = 45
PI = 10+80.00
EL = 34.56'
VC = 155'
K = 31
PI = 13+40.00
EL = 48.03'
VC = 290'
K = 63
PI = 15+40.00
EL = 49.23'
VC = 80'
K = 57
END GRADE
STA 17+26.68
EL = 52.96'
END PAVEMENT AT
HAZARDOUS SPILL BASIN
(+)2.0000%
(+)0.5981%
(+)5.1817%
(-)0.7760%
60
50
40
30
6
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5/28/99