STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

March 23, 2012

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

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

Subject: **Application for Clean Water Act (CWA) Section 404 Individual Permit, CWA Section 10 Permit, CAMA Major Development Permit, and CWA Section 401 Individual Water Quality Certification for the proposed widening of US 13/US 158 from US 158/NC 45 near Winton to the US 158 Bypass in Tarheel, Hertford and Gates Counties.** TIP No. R-2507A. Debit $570.00 from WBS No. 35488.3.1.

Dear Sirs:

The North Carolina Department of Transportation (NCDOT) proposes to widen US 13/US 158 in Hertford and Gates Counties between Winton and Tarheel. The proposed improvements will widen approximately 7.7 miles of US 13/US 158 to a four-lane divided facility with directional crossovers and median U-turn bulb-outs.

The purpose of this correspondence is to request approval for a Section 404 Individual Permit, Section 10 Permit (Rivers and Harbors Act), Section 401 Water Quality Certification, and CAMA Major Development Permit. In addition to the cover letter and ENG Form 4345, this application package includes the following attachments: CAMA Major Permit (Forms DCM MP-1 and MP-5), permit drawings, meeting minutes from Concurrence Points 4A, 4B, 4C, and January 26, 2012 field review, Stormwater Management Plan, and the North Carolina Ecosystem Enhancement Program (EEP) acceptance letter.

1.0 Purpose and Need

The purpose and need for this project is to reduce traffic congestion and improve travel time and safety along US 13/US 158 within the project area. Existing US 13/US 158 is a two-lane roadway within the project area. By increasing the number of lanes on US 13/US 158, the proposed project will have a positive impact on vehicular safety for large trucks and local traffic. The proposed dual lanes in each direction will allow faster traffic to pass slower moving vehicles without using the opposing traffic lane. A crash study of the project area conducted between October 1, 2002 and September 30, 2005 reported 134 crashes.

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

TELEPHONE: 919-707-6000
FAX: 919-707-6052

WEBSITE: WWW.NCDOT.ORG/DOH/PRECONSTRUCT/PE/

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

2.0 Project Description

The proposed 7.7 mile project involves widening a section of US 13/US 158 between US 158/ NC 45 near Winton in Hertford County and US 158 in Tarheel in Gates County from two to four lanes.

Approximately 200 ft of right-of-way will be required. The major exception is through the NCWRC Game Lands in the floodplain east of the Chowan River where existing right-of-way was acquired when the existing roadway was constructed and will be used to construct this project. Partial control of access (one access per parcel with no other access) will be implemented. All intersecting roadways will cross US 13/US 158 at-grade, except for the interchange at the US 13 and US 158/NC 45 north of Winton. A new bridge will be provided on the east side of the existing bridge over the Chowan River and a new east bound bridge over Buckhorn Creek.

3.0 NEPA Document Status

The NCDOT submitted the State Environmental Assessment for R-2507A in January 2010 in compliance with the SEPA guidelines. The EA was approved and circulated to federal, state, and local agencies. It was approved by NCDOT on January 22, 2010. A Finding of No Significant Impact (FONSI) was approved by NCDOT on April 27, 2011. Copies of the project documents have been provided to regulatory review agencies involved in the approval process. Additional copies will be provided upon request.

This project was developed through the NEPA / 404 Merger process. The meetings for Concurrence Points 1, 2, and 2A were held on July 19, 2007, February 2, 2008, and March 18, 2009 respectively. The meetings for Concurrence Points 3 and 4A were originally held on October 19, 2011. Due to the presence of a gas line that was not indicated on previous planning documents, Concurrence Points 3 and 4A were revisited by the agencies on September 14, 2011. This meeting resulted in the determination that east side widening for Section 1 (the beginning of the project to Powell Lane) would be less environmentally damaging than the originally agreed upon west side widening. The meetings for Concurrence Points 4B and 4C were held November 16, 2011 and January 18, 2012 respectively. A field meeting was held on-site with representatives of the agencies on January 26, 2012. Meeting minutes for Concurrence Point meetings and Field Review are attached.

4.0 Independent Utility

R-2507A is in compliance with 23 CFR Part 771.111(f) which lists the FHWA characteristics of the independent utility of a project. The project meets the criteria for independent utility as detailed below:

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

5.0 Project Schedule

Construction of this project is projected to commence on July 2, 2012 contingent on issuance of permits. The attached permit drawings detail proposed impacts based upon final design. Completion of the roadway is projected to be in December 2014.

6.0 Summary of Impacts to Waters of the U.S.

A summary of jurisdictional impacts are presented in Table 1. There are no impacts to open water ponds. The impacts are detailed in Attachment A.

Table 1. Summary of Jurisdictional Impacts

	Wetland Impacts				Surface Water Impacts			
	Permanent Fill in Wetlands (ac)	Temporary Fill in Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Permanent SW Impacts (ac)	Temporary SW Impacts (ac)	Existing Channel Impacts Permanent (lf)	Existing Channel Impacts Temporary (lf)
Totals:	17.98[a]	0.04	0.11	2.13[a]	0.02[a]	0.02[a]	175	103
a: Summary reflective of actual impacted area								

This project has been designed to avoid and minimize impacts to jurisdictional areas while meeting the purpose and need of the project in accordance with the National Environmental Policy Act (NEPA) and the NEPA/404 Merger Process. Construction in jurisdictional areas will be in strict compliance with all permits and Best Management Practices (BMPs) to minimize impacts. Specific strategies are detailed in Section 13.1.

7.0 Resource Status

The project area is located within the Upper Chowan River Basin (sub-basin 03-01-01, HUC03010203), in the Middle Atlantic Coastal Plain ecoregion of North Carolina. No water resources classified as High Quality Waters (HQW), Water Supplies (WS-I or WS-II), or Outstanding Resource Waters (ORW) are located within one mile of the project study area.

7.1 Delineations

NCDOT biologists conducted wetland and stream delineations for R-2507A between February and August 2007. Jurisdictional wetland determinations were performed utilizing delineation criteria prescribed in the "Corps of Engineers Wetlands Delineation Manual" (USACE 1987) and rated using the "Guidance for Rating the Values of Wetlands in North Carolina" (NCDEHNR-DEM 1995, fourth version). Jurisdictional areas were also characterized according to the classification scheme established by Cowardin et al. (1979). Jurisdictional surface water determinations were performed using guidance provided by the NC Division of Water Quality's (DWQ) Stream Identification Form (NCDENR-DWQ 2005, version 3.1). Copies of the data forms and characterization of the stream and wetland sites are included in the August 2007 NRTR. Mr. Bill Biddlecome of the USACE Washington Regulatory Field Office verified the delineations on February 20, 2008.

The final roadway design extends beyond NCDOT's previously surveyed right-of-way. These additional areas were investigated by The Catena Group on November 22, 2011 for jurisdictional

features and federally threatened and endangered (T&E) species. No additional jurisdictional features were found nor T&E species or suitable species habitat.

7.2 R-2507A: Characterization of Jurisdictional Sites

This section contains information concerning water resources that will potentially be impacted by the proposed project. Water resource assessments include the physical characteristics of the resource (determined by field survey), best usage classifications, and water quality aspects of the water resources. Probable impacts to surface waters are also discussed, as well as means to minimize impacts.

7.2.1 Streams

In addition to the Chowan River, three jurisdictional streams occur in the project area; Buckhorn Creek and two unnamed tributaries (

Table 2). Proposed permanent impacts to jurisdictional streams total 175 linear feet. Temporary impacts to streams (103 linear feet) will occur from rip-rap placement due to construction, erosion control, and staging for stream channel stabilization and 0.01 acre of temporary impacts from the temporary crossing of Buckhorn Creek.

Table 2. Streams Within the Project Area and Proposed Impacts

Stream	Permit Site	Intermittent/Perennial Status	DWQ Stream Classification	Permanent SW Impacts (ac)	Temp. SW Impacts (ac)	Existing Channel Impacts Perm. (ft)	Existing Channel Impacts Temp. (ft)
S-1	2	Perennial/Impacted	C, NSW	<0.01	<0.01	12	22
Chowan River	4	Perennial	B, NSW	<0.01[a]	-	-	-
Buckhorn Creek	23	Perennial	C, NSW	-	0.01	-	46
S-2	34	Perennial	C, NSW	0.02	<0.01	163	35
Totals				0.02[b]	0.02[b]	175	103

a: 7 bents for Chowan River bridge will result in <0.01 acre of fill in surface waters
b: Summary reflective of actual impacted area

The Chowan River is approximately 800 feet wide and tidally influenced at the US 13/US 158 crossing. Within the project area, the NC Natural Heritage Program considers the Chowan River to be an aquatic significant natural heritage area, mainly for its freshwater mussel and anadromous fish diversity. The proposed Chowan River Bridge was designed to eliminate any direct discharge into the river or wetland. The North Carolina Department of Environment and Natural Resources – Division of Water Quality (NCDENR-DWQ) has listed the Chowan River on its "Final 2010 303(d) list" as a Category 5 impaired water due to excessive levels of cadmium.

At Buckhorn Creek, a temporary crossing will be installed between the existing bridge and the new bridge to allow construction access to the median. Such access eliminates much of the need for hauling trucks to drive on existing US 13/US 158 from Buckhorn Creek to the east side of the Chowan River, where the majority of the cut/fill is required for this project, resulting in significantly safer conditions for the public and construction crews.

The crossing is proposed as 22 pipes covered by clean class II rip rap (permit drawing 53 of 78). These pipes have been sized to not only convey the typical flow from Buckhorn Creek, but also

to allow the floodwaters from the Chowan River to back through the crossing. The crossing will be in place for approximately ten months, from September 2012 through June 2013.

7.2.2 Wetlands

Proposed impacts to jurisdictional wetlands total 20.22 acres of permanent impacts. There will be 0.04 acre of temporary impacts due to a temporary crossing of Buckhorn Creek. According to the NRTR, the wetlands impacted by the proposed project are both riparian and non-riparian. Hydrology for non-riparian wetlands is provided by rainfall, surface water runoff, and groundwater discharge. Table 3 describes the 34 wetland sites impacted by the project and utility relocations. For impact areas less than 0.01 acre, totals were rounded and may not be the exact sum of each individual site. However, the Totals row fully accounts for all impact areas.

Table 3. Wetland Impact Sites

Permit Site	NRTR Reference ID	Riparian/Non-Riparian	Perm. Fill (ac)	Temp. Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)
1; 1- UTIL	WNE1a	Non-Riparian	0.56	-	-	0.18
3	WSE1b	Riparian	<0.01	-	-	<0.01
5	WSE1	Riparian	2.01	-	-	0.30
6	WSE1	Riparian	2.08	-	-	0.24
7	WNE1	Riparian	-	-	-	<0.01
8	WSE1c	Non-Riparian	0.02	-	-	0.02
9	WSE1d	Non-Riparian	0.16	-	-	0.02
10	WSE2	Riparian	1.16	-	-	0.07
11	WNE2	Riparian	0.25	-	-	0.09
12	WNE2	Riparian	3.11	-	-	0.19
13	WNE2	Riparian	0.24	-	-	0.13
14	WNE2	Riparian	0.02	-	-	0.01
15	WSE3a	Non-Riparian	0.02	-	-	-
16	WNE3a	Non-Riparian	0.11	-	-	0.05
17	WSE3c	Non-Riparian	0.69	-	-	0.04
18	WSE3d	Non-Riparian	0.13	-	-	0.01
19	WSE3e	Non-Riparian	1.18	-	-	0.08
20	WNE3b	Non-Riparian	0.09	-	-	0.04
21	WSE3f	Non-Riparian	0.46	-	-	0.03
22	WNE3d	Non-Riparian	0.04	-	-	0.01
23	WB	Riparian	0.69	0.04	-	0.11
24	WBb	Non-Riparian	0.11	-	-	-
25	WNE4	Riparian	0.41	-	-	0.03
26	WSE4	Riparian	0.06	-	-	0.02
27	WNE5	Riparian	1.00	-	0.11	0.08
28	WSE5a	Non-Riparian	0.01	-	-	0.02
29; 29-UTIL	WSE6	Non-Riparian	0.09	-	-	0.05
30; 30-UTIL	WNE6	Riparian	1.89	-	-	0.16
31; 31-UTIL	WSE6	Non-Riparian	0.05	-	-	0.03
32	WSE6b	Non-Riparian	1.08	-	-	0.06
33	WNE6	Riparian	<0.01	-	-	<0.01
34	WSE7	Non-Riparian	0.19	-	-	0.02
35	WNE8	Riparian	0.04	-	-	0.03
36	WNE1b	Non-Riparian	0.02	-	-	-
11 Utility Staging Areas	Locations Vary	N/A	-	-	-	-
Totals			**17.98**[d]	**0.04**	**0.11**	**2.13**

8.0 Utility Impacts

The utility companies are in the process of developing final relocation plans and have been consulted regarding the proposed alignments for their relocations.

Century Link, Time Warner Cable, and a water line will be relocated along the east side of the project using directional bore and will have no impacts to jurisdictional features.

Piedmont Natural Gas has a 12" transmission gas main along the west side of US 13 that will require relocating in certain areas, resulting in 0.06 acre of hand clearing in wetlands to create a staging area (Site No. 1-UTIL).

AT&T will be relocating the long-distance phone line conduit via directional bore along the east side of the roadway, keeping as close to the construction footprint as possible. Given the estimated length of each bore and the location of the wetlands, it is estimated that no more than eleven staging areas will be required within wetlands to tie the new utility line in with the existing line. Since the exact length of each bore is expected to slightly vary due to various blockages (trees, roots, etc.) and issues (boring geometry, etc.) that will inevitably be encountered, the exact location of each staging area is unknown.

Each staging area will be hand cleared to a maximum of 5,000 square feet, overlapping other permitted takes as much as possible. Approximate work time in each staging area is three weeks. One 3' by 4' vault will remain in each staging area for future utility maintenance while the remaining hand cleared area will be allowed to naturally revegetate. The area anticipated to be hand cleared totals 1.26 acres. The total permanent impact acreage due to the vaults is <0.01 acre. A typical staging area is shown on Permit Drawing Sheet 21 of 78 and a profile of the conduit relocation under the Chowan River and adjacent wetlands is shown on Permit Drawing Sheet 22 of 78. Upon completion, a set of as-built plans showing the location of the staging areas will be forwarded to the agencies.

Roanoke EMC will need to relocate overhead power lines along the project alignment. Wetland impacts will occur from Sta. 225+50 through Sta. 234+00. The utility right-of-way will be hand cleared and the vegetation will be maintained by herbicide applications. The area to be hand cleared totals 0.19 acre. These utility impact sites are shown on Permit Drawing Sheet 59 and 60 of 78. Two utility poles will be placed in wetland areas, the permanent impacts from which are negligible.

9.0 Borrow & Waste Sites

Several borrow and waste sites have been identified for this project. After discussion with USACE and NCDOT, it was decided to pursue borrow sites that will have no jurisdictional impacts. A report detailing each borrow site will be sent to the appropriate agencies under different cover.

10.0 Rare and Protected Species

Plants and animals with federal classification of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and

Section 9 of the Endangered Species Act of 1973, as amended. As of September 22, 2010, the US Fish and Wildlife Service (USFWS) lists two species under federal protection for Gates and Hertford Counties. These species are listed in Table 4.

Table 4. Federally-Protected Species Listed for Gates and Hertford Counties

Common Name	Scientific Name	Federal Status	County	Habitat	Biological Conclusion
American alligator	*Alligator mississippiensis*	T (S/A)	Gates	Yes	N/A
Red-cockaded woodpecker	*Picoides borealis*	E	Hertford, Gates	Yes	No Effect
Key: T = Threatened, E = Endangered, S/A = Similarity of Appearance					

The Biological Conclusion for the red-cockaded woodpecker is still valid as no new nesting cavities or starts were found during the most recent survey performed on January 19, 2011.

11.0 Cultural Resources

The proposed project is subject to North Carolina General Statute 121-12(a) and Section 106 of the National Historic Preservation Act of 1966. Although no federal funds will be used for the construction, the project will require a permit from USACE. Section 106 applies to federal permit areas along the project and requires federal agencies to take into account the effect of their undertakings (federally-funded, licensed, or permitted) on properties included in, or eligible for inclusion in, the National Register of Historic Places, and to afford the Advisory council a reasonable opportunity to comment on such undertakings.

In 2006, NCDOT architectural historians identified two historic properties eligible for the National Register. These two properties, the Story Family Farm and Cemetery, are proposed to be included in the Story's Crossroads Historic District. The State Historic Preservation Office (SHPO) agreed with these determinations.

On May 26, 2009, SHPO and NCDOT agreed the project would have an adverse effect on the historic district. In a Memorandum of Agreement prepared April 27, 2011, measures were proposed to minimize the adverse effects. The proposed right-of-way was reduced from 200 feet to 150 feet in the vicinity of the district's buildings. Also, NCDOT agreed to use temporary construction easements and expressway gutters to minimize project impacts.

New impact areas outside of NCDOT's preliminary right of way have been reviewed to identify any historic, archaeological, or cultural occurrences. No occurrences were noted.

12.0 Indirect and Cumulative Impacts

From the Community Impact Assessment (CIA) completed in November 2007 by HNTB and reviewed by personnel from DWQ, it was concluded that, "generally speaking, the TIP Project R-2507A will not alter existing land use patterns. The widened roadway may help to make the area near Winton or between NC 137/Sandbank Road and Tarheel more attractive for small scale commercial development or some residential development along feeder roadways. However, if this occurs, it will not be inconsistent with local plans." In reference to cumulative effects, the 2010 EA stated that this project, in addition to the other highway projects planned for US 13 and

US 158 in the area (TIP Project R-2583, R-2205, R-2507 B and C, R-2578) will improve traffic flow and travel time through the region. "It is expected that the cumulative environmental effect of these projects will be limited to the sum of each project's individual effects. It is not expected that the projects will have a synergistic effect which would increase the overall cumulative effect beyond each project's direct effects."

State, local and federal environmental regulations should help minimize any other potential negative indirect impacts this project could have upon other notable features. In addition to zoning and subdivision ordinances, Hertford and Gates County have several other regulations and programs in place that address water quality. Impacts to areas of environmental concern (AECs) and other notable features will more likely be the result of direct impacts related to the construction of TIP R-2507A and less the result of indirect impacts such as the potential future development of land. Additional copies of the November 2007 Community Impact Assessment are available upon request.

13.0 Compensatory Mitigation

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.

13.1 Avoidance and Minimization

Given the location of the streams and wetlands, total avoidance was not feasible; however, efforts were made to avoid wetlands and streams as preliminary designs for the project were developed. Wetland areas not affected by the project will be protected from unnecessary encroachment.

Minimization includes the examination of appropriate and practicable steps to reduce unavoidable adverse impacts. NCDOT employs many strategies to 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. Listed below are measures that are particularly pertinent to this project as well as individual avoidance items.

- Anadromous fish moratorium on in-stream activities in the Chowan River and adjacent floodplain (when flooded) between Feb. 15 and June 30.

- No staging of construction equipment or storage of construction supplies will be allowed in any jurisdictional areas.

- Retaining walls will be used at three locations to minimize wetland and stream impacts. These walls are shown on permit drawing sheets 6, 7, and 9.

- Crossings of jurisdictional areas were angled to cross as perpendicular as possible to minimize impacts.

- All fill slopes in jurisdictional areas will be 3:1.

- Installation of temporary sediment control fences, earth berms, and temporary ground cover during construction.

- The vertical alignment was adjusted along the entire 7.7-mile project to minimize wetland impacts, to shorten cross pipes, and minimize stream impacts.

- Median was kept to 23 ft. instead of 46 ft. in the area of the Chowan River crossing.

- Equalizer pipes have been placed in select areas where wetlands are located on both sides of the road.

13.2 Compensation

Compensatory wetland and stream mitigation will be provided by the EEP. In a March 14, 2012 correspondence, EEP agreed to provide mitigation for 20.14 acres of wetlands and 163 linear feet of perennial stream. The EEP Mitigation Acceptance letter is attached.

14.0 Regulatory Approvals

Application is hereby made for a Department of the Army Section CWA 404 Individual Permit, CWA Section 10 Permit, and a CAMA Major Development Permit as required for the above-described activities for the proposed TIP project R-2507A. We are also hereby requesting a Section 401 Individual Water Quality Certification from the Division of Water Quality. In compliance with Section 143-215.3D(e) of the NCAC, the NCDOT will provide $570.00 to act as payment for processing the Section 401 permit. Five copies of this application are being provided to the NCDENR DWQ for their review and approval.

A copy of this application and roadway plans will be posted online at http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html. Thank you for your assistance with this project. If you have any questions or need additional information, please contact Ms. Amy James, Environmental Specialist at aejames@ncdot.gov or (919) 707-6129.

Sincerely,

E. L. Lusk

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

cc: NCDOT Permit Application Standard Distribution List

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

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

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

PRIVACY ACT STATEMENT

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

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

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

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME:
First - Gregory Middle - J Last – Thorpe
Company – North Carolina Department of Transportation
E-mail Address – gthorpe@ncdot.gov

8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required)
First - Middle - Last –
Company –
E-mail Address –

6. APPLICANT'S ADDRESS.
Address - 1598 Mail Service Center
City – Raleigh State – NC Zip – 27699 Country – US

9. AGENT'S ADDRESS
Address -
City – State – Zip – Country –

7. APPLICANT'S PHONE NOs. W/AREA CODE.
a. Residence b. Business 919-707-6000 c. Fax

10. AGENT'S PHONE NOs. W/AREA CODE
a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

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

_____
APPLICANT'S SIGNATURE DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
R-2507A

13. NAME OF WATERBODY, IF KNOWN (if applicable)
Chowan River, Buckhorn Creek, and tributaries

14. PROJECT STREET ADDRESS (if applicable)
Address
City - State – Zip -

15. LOCATION OF PROJECT
Latitude: °N 36.40469
Longitude: °W -76.93126

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

17. DIRECTIONS TO THE SITE
See Vicinity Map

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

Proposed widening of US 13/US 158 to a four-lane divided facility. Includes construction of a new bridge on the east side of the existing bridge over the Chowan River. Will also include construction of a second bridge over Buckhorn Creek.

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

See Attached

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

20. Reason(s) for Discharge

See Attached

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

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
See Attached		

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

Acres 20.22

Or

Liner Feet 175

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

See Attached

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

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

Address – See Attached

City – State – Zip –

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

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

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

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

E. L. Lusk for Gregory J. Thorpe, PhD — Mar 23, 2012

SIGNATURE OF APPLICANT — DATE — SIGNATURE OF AGENT — DATE

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

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

DCM MP-1

APPLICATION for Major Development Permit

(last revised 12/27/06)

North Carolina DIVISION OF COASTAL MANAGEMENT

1. Primary Applicant/ Landowner Information

Business Name: North Carolina Department Of Transportation (Ncdot)			Project Name (if applicable): NCDOT TIP R-2507A (US 13/158 Bridge Over Chowan River)
Applicant 1: First Name: Gregory	MI: J		Last Name: Thorpe
Applicant 2: First Name:	MI:		Last Name:
If additional applicants, please attach an additional page(s) with names listed.			
Mailing Address: 1548 Mail Service Center		PO Box:	City: Raleigh / State: NC
ZIP: 27699 1548	Country: USA	Phone No.: 919 - 707 - 6000 ext.	FAX No.: 919 - 250 - 4224
Street Address *(if different from above)*: PDEA - Century Center Building A; 1000 Birch Ridge Dr		City: Raleigh / State: NC	ZIP: 27610- 4328
Email: gthorpe@ncdot.gov			

2. Agent/Contractor Information

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

<Form continues on back>

3. Project Location

County (can be multiple)	Street Address	State Rd. #
Hertford Gates	US 13-158	

Subdivision Name	City	State	Zip
N/A	Between Winton (Hertford County) and Tarheel (Gates County)	NC	-

Phone No.	Lot No.(s) *(if many, attach additional page with list)*
- - ext.	N/A, , , ,

a. In which NC river basin is the project located?	b. Name of body of water nearest to proposed project
Chowan (USGS HUC 03010203 NCDWQ sub basin 03-01-01)	Chowan River
c. Is the water body identified in (b) above, natural or manmade? ☒Natural ☐Manmade ☐Unknown	d. Name the closest major water body to the proposed project site. Chowan River
e. Is proposed work within city limits or planning jurisdiction? ☐Yes ☒No	f. If applicable, list the planning jurisdiction or city limit the proposed work falls within. N/A

4. Site Description

a. Total length of shoreline on the tract (ft.)	b. Size of entire tract (sq.ft.)
N/A	3,920,400
c. Size of individual lot(s) N/A, , , *(If many lot sizes, please attach additional page with a list)*	d. Approximate elevation of tract above NHW *(normal high water)* or NWL *(normal water level)* Range from 5.25" to 70.77" ☒NHW or ☐NWL

e. Vegetation on tract
Maintained powerline easement (various grasses, shrubs), mature bottomland forest.

f. Man-made features and uses now on tract
Wooden power poles and overhead powerline.

g. Identify and describe the existing land uses <u>adjacent</u> to the proposed project site.
Residential, agricultural, forested, Chowan Swamp Game Land

h. How does local government zone the tract?	i. Is the proposed project consistent with the applicable zoning? (Attach zoning compliance certificate, if applicable) ☒Yes ☐No ☐NA
R-1 Residential	

j. Is the proposed activity part of an urban waterfront redevelopment proposal? ☐Yes ☒No

k. Has a professional archaeological assessment been done for the tract? If yes, attach a copy. ☒Yes ☐No ☐NA

If yes, by whom? NCDOT Archaeology Group - See NEPA documentation

l. Is the proposed project located in a National Registered Historic District or does it involve a National Register listed or eligible property? ☐Yes ☒No ☐NA

<Form continues on next page>

m. (i) Are there wetlands on the site?	☐Yes ☒No
(ii) Are there coastal wetlands on the site?	☐Yes ☒No
(iii) If yes to either (i) or (ii) above, has a delineation been conducted? *(Attach documentation, if available)*	☐Yes ☐No
n. Describe existing wastewater treatment facilities. None	
o. Describe existing drinking water supply source. None	
p. Describe existing storm water management or treatment systems. None	

5. Activities and Impacts

a. Will the project be for commercial, public, or private use?	☐Commercial ☒Public/Government ☐Private/Community
b. Give a brief description of purpose, use, and daily operations of the project when complete. The purpose is to build a new structure over the Chowan River and realign existing utilities, creating a 4-lane roadway that will accommodate and impove traffic travel time and safety along US 13-158. The use of the site will remain the same.	
c. Describe the proposed construction methodology, types of construction equipment to be used during construction, the number of each type of equipment and where it is to be stored. Typical highway construction vehicles and equipment including dump truck, crane, bull dozers, motor graders, etc. Storage and staging areas will be on contained uplands. Barges will be used as staging area to construct the Chowan River bridge.	
d. List all development activities you propose. N/A	
e. Are the proposed activities maintenance of an existing project, new work, or both?	New work
f. What is the approximate total disturbed land area resulting from the proposed project?	90 ☐Sq.Ft or ☒Acres
g. Will the proposed project encroach on any public easement, public accessway or other area that the public has established use of?	☒Yes ☐No ☐NA
h. Describe location and type of existing and proposed discharges to waters of the state. See attached	
i. Will wastewater or stormwater be discharged into a wetland?	☒Yes ☐No ☐NA
If yes, will this discharged water be of the same salinity as the receiving water?	☒Yes ☐No ☐NA
j. Is there any mitigation proposed? If yes, attach a mitigation proposal.	☒Yes ☐No ☐NA

<Form continues on back>

6. Additional Information

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

a. A project narrative.

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

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

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

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

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

Name See attached property owner list	Phone No.
Address	
Name	Phone No.
Address	
Name	Phone No.
Address	

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

_____

_____

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

i. Wetland delineation, if necessary.

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

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

7. Certification and Permission to Enter on Land

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

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

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

Date Mar 23, 2012 Print Name Gregory J. Thorpe, PhD

Signature E. L. Luck for

Please indicate application attachments pertaining to your proposed project.

☐DCM MP-2 Excavation and Fill Information

☐DCM MP-3 Upland Development

☐DCM MP-4 Structures Information

☒DCM MP-5 Bridges and Culverts

Form DCM MP-5

BRIDGES and CULVERTS

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

1. BRIDGES

☐ *This section not applicable*

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

b. Water body to be crossed by bridge:
Chowan River

c. Type of bridge (construction material):
Concrete

d. Water depth at the proposed crossing at NLW or NWL:
Approximately 30 feet

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

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

g. Length of proposed bridge: 1,120 feet

h. Width of proposed bridge: 39 feet (out-to-out)

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

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

k. Navigation clearance underneath proposed bridge: Vertical clearance will be 66 feet. Horizontal clearance will be 64 feet.

l. Have you contacted the U.S. Coast Guard concerning their approval? ☒Yes ☐No
If yes, explain: The USCG Bridge Permit application will be submitted approximately three weeks after the 404 Individual Permit application

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

n. Height of proposed bridge above wetlands: n/a

2. CULVERTS

☒ *This section not applicable*

a. Number of culverts proposed: _____

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

< Form continues on back>

c. Type of culvert (construction material):

_____

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

If yes,

(ii) Length of existing bridge: _____

(iii) Width of existing bridge: _____

(iv) Navigation clearance underneath existing bridge: _____

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

_____

_____

_____

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

If yes,

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

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

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

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

_____

_____

_____

f. Length of proposed culvert: _____

g. Width of proposed culvert: _____

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

_____

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

_____

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

If yes, explain:

_____

_____

_____

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

If yes, explain:

_____

_____

_____

3. EXCAVATION and FILL

☒ *This section not applicable*

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

If yes,

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

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

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

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

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

☐CW _____ ☐SAV _____ ☐SB _____

☐WL _____ ☐None

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

_____

_____

_____

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

If yes,

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

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

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

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

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

(i) Location of the spoil disposal area: _____

(ii) Dimensions of the spoil disposal area: _____

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

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

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

☐CW ☐SAV ☐WL ☐SB ☐None

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

_____

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

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

_____

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

If yes,

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

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

(iv) Purpose of fill:

_____

_____

_____

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

☐CW _____ ☐SAV _____ ☐SB _____

☐WL _____ ☐None

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

_____

_____

_____

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

If yes,

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

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

(iv) Purpose of fill:

_____

_____

_____

4. GENERAL

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

If yes, explain: See attached permit drawings

_____

_____

_____

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

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

If yes, explain:

_____

_____

_____

< Form continues on back>

c. Will the proposed project require any work channels?

☐Yes ☒No

If yes, complete Form DCM-MP-2.

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

Use of Standard NCDOT Best Management Practices and Erosion Control Measures

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

Land based cranes and barges for the bridge, heavy construction equipment for road widening

f. Will wetlands be crossed in transporting equipment to project site?

☒Yes ☐No

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

Only wetlands to be crossed are those depicted in the roadway plans and permit drawings.

g. Will the placement of the proposed bridge or culvert require any shoreline stabilization?

☐Yes ☒No

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

Mar 23, 2012

Date

NCDOT TIP R-2507A (US 13/158 Bridge Over Chowan River)

Project Name

Gregory J. Thorpe, Ph.D., Manager PDEA, NCDOT

Applicant Name

E. L. Lusk for

Applicant Signature

SECTION 404/NEPA INTERAGENCY AGREEMENT

CONCURRENCE POINT 4A
LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE (LEDPA)/AVOIDANCE & MINIMIZATION

Project Title: US 13-158, From US 158 near Winton to US 158 in Tarheel, Hertford & Gates Counties, TIP Project R-2507A, WBS Element 35488.1.1

404 Avoidance and Minimization Measures

The preliminary design for the project will only affect 28 of the wetland sites and 4 of the streams for the alternative.

In an effort to avoid minimize impacts to jurisdictional wetlands and streams associated with the LEDPA (Alternative 1), NCDOT has proposed to implement the following measures:

- Steeper side slopes (3:1) will be used in jurisdictional areas.
- The median width in Section 1 was reduced from 46' to 30' at the Chowan River structure. The impact to the wetlands was not reduced on the south side and was reduced by 0.4 acre on the north side of narrowing the median width.

Additional Avoidance and Minimization Measures:

1. Based on the September 14, 2011 Concurrence Point No. 3 Agreement to use East Side widening through Section 1 (Beginning of Project to Powell Lane), NCDOT has agreed to implement the following measures:

   a) Provide retaining wall left of Station 41+00$^{\pm}$ to 44+50$^{\pm}$ to reduce stream impacts by 162 feet.

   b) Provide retaining wall right of Station 41+75$^{\pm}$ to 50+70$^{\pm}$ to reduce wetland and stream impacts by 0.45 acre and 183 feet respectively.

   c) Provide retaining wall right of Station 76+50$^{\pm}$ to 82+00$^{\pm}$ to reduce wetland impacts by 0.53 acre.

The Section 404/NEPA Merger Project Team concurred on the 14th day of September 2011 with the Avoidance /Minimization measures listed above for TIP Project R-2507A. This supersedes the Concurrence Point No. 4A Agreement dated October 19, 2010.

NAME		AGENCY
William J. Biddlecome	9/14/11	US Army Corps of Engineers
	9/14/11	US Environmental Protection Agency
Gary W. Jordan	9/14/2011	US Fish and Wildlife Service
	9/22/11	National Marine Fisheries Service
	9/14/11	NC Division of Coastal Management
Renee Gledhill-Earley	9.14.11	NC Department of Cultural Resources
	9/14/11	NCDENR, Division of Water Quality
	10/5/2011	NC Division of Marine Fisheries
	9-14-11	NC Wildlife Resources Commission
Olivia J. Farr	9-14-11	NC Department of Transportation

Memorandum of Meeting

Date: November 16, 2011

Place\Time: NCDOT, Structures Unit Conference Room, 3:00 P.M.

Participants:
Bill Biddlecome - USACE
Travis Wilson – NCWRC
David Wainwright – NCDWQ
Gary Jordan – USFWS
Chris Militscher – USEPA
Cathy Brittingham - DCM
Bill Zerman - NCDOT Hydraulics Unit
Andy Young - NCDOT Trans. Prog. Management
Trace Howell – NCDOT REU
Mark Laugisch – NCDOT REU
Mark Staley – NCDOT REU
Amy James – NCDOT NEU
Bob Capehart – NCDOT Div. 1
Clay Willis – NCDOT Div. 1
Mark Osenbaugh – E.V. Williams
Sam Blevins – McLean Contracting
Michael Wood – Catena Group
Ivy Kimbrough – Catena Group
Tommy Peacock - RK&K
Mike Merritt – RK&K
Matthew Cook - RK&K
Brad Boggs – RK&K

Subject: NEPA\404 Merger Team – Concurrence Point 4B Meeting
R-2507A – US 13 / US 158 Widening, Hertford and Gates Counties

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The 30% Hydraulic Review was held in order to reach agreement on concurrence point 4B for the US 13 / US 158 widening in Hertford and Gates Counties. The following items were discussed and conclusions reached:

Matthew Cook opened the meeting with a brief description of the project. He then proceeded to review the project on a sheet by sheet basis. The site numbers that will be used in the future 4C package were used to distinguish the sites since there is a large number of sites on the project.

Sheet 4: No jurisdictional features affected. Mr. Cook stated that the beginning of the project is being reworked due to a request by NCDOT to widen the median to 46' south of the Ramp B and C tie-ins on sheet 6. This would cause the project to lengthen in the southern direction beyond sheet 4. Tommy Peacock clarified this and showed the group the area in question on a roll plot hanging in the room. Mr. Cook stated that the D-B

Team will investigate the area to ensure no jurisdictional features are affected, however none are expected in the lengthened portion. Chris Militscher and Cathy Brittingham asked if the project to the south was in the TIP schedule. Andy Young stated that it is not.

Sheet 5: No jurisdictional features affected.

Sheet 6: Wetland affected –Y- 39+00-47+25 RT extending to sheet 35 (site 1). Mr. Cook asked if the wetland area inside the new quadrant B should be considered a total take. Initial response from Bill Biddlecome and Mr. Militscher was that general practice is to consider it a total take since it is inside an interchange. Mr. Militscher asked the general size of the area in question. Mr. Cook stated that impact areas have not been finalized, however the remaining area inside Ramp B should be approximately an acre. Mr. Militscher asked how the wetland is fed, and Mr. Cook stated that it was the team's assumption that it is fed by roadside ditches. The group decided to not consider this area a total take.

Wetland affected –Y- 42+00 LT (site 36). It will be a total take.
Stream affected –L- 41+50 LT and 45+00 LT (site 2). The existing 36" RCP will be filled and a new 48" welded steel will pipe be installed by bore and jack. The 48" WS will be buried 1.0'. Mr. Cook stated that given the nature of the existing topography, the existing pipe and the installation of the new pipe, a junction box would be required at the upstream end to offset the new pipe from the old one. Mr. Biddlecome verified that the existing pipe is being filled given the deep nature of its location. Mr. Militscher asked what was to be done with the concrete lined ditches leading to the site on the upstream side. Mr. Cook stated that the intention was to leave them. Mr. Cook also pointed out that retaining walls are being used on both sides of the road to minimize impacts. He said that blow-ups of this site will be included in the 4C package.

Sheet 7: Wetland affected –L- 50+00 RT (site 36). Mr. Cook said that a blow-up of this site will be included in the 4C package.

Sheet 8: Chowan River affected by piers of the proposed Chowan River bridge (site 4). Mr. Cook described the bridge and stated that the proposed piers would all line up with the existing piers on the existing bridge. The bridge length matches what was agreed upon in the 2A C.P. meeting (1121'). Ms. Brittingham asked if the construction would be top down. Sam Blevins stated that floating barges would be used for the construction.

Sheet 9: Chowan River affected by piers of the proposed Chowan River bridge.
Wetland affected –L- 78+50-105+70 RT (site 5). Mr. Cook pointed out that a retaining wall is being used on the right side of the road to minimize impacts.

Sheet 10: Wetland affected –L- 78+50-105+70 RT (site 5).

Sheet 11: Wetland affected –L- 78+50-105+70 RT (site 5).
Wetland affected –L- 106+70-130+10 RT (site 6).

Sheet 12: Wetland affected –L- 106+70-130+10 RT (site 6).

Wetland affected –L- 114+65 LT (site 7). This impact is to allow for construction of the proposed 60" RCP. It will only be mechanized clearing. Mr. Cook pointed out the new equalizer pipe being installed. He stated that throughout the project, all existing culverts were being replaced with culverts of equal or larger size. No pipes in wetlands will be buried.

Sheet 13: Wetland affected –L- 106+70-130+10 RT (site 6).
Wetland affected –L- 133+55-135+20 RT (site 8).
Wetland affected –L- 136+45-138+25 RT (site 9).
The equalizer was point out (-L- 128+00).

Sheet 14: Wetland affected –L- 136+45-138+25 RT (site 9).
Wetland affected –L- 140+75-146+50 RT (site 10).
Wetland affected –L- 141+05-148+25 LT (site 11).
Wetland affected –L- 148+65-164+75 RT (site 12).
Wetland affected –L- 150+30-161+70 LT (site 13).
The equalizer was pointed out (-L- 143+00).

Sheet 15: Wetland affected –L- 148+65-164+75 RT (site 12).
Wetland affected –L- 150+30-161+70 LT (site 13).
The equalizers were pointed out (-L- 151+90, -L- 157+00).

Mr. Militscher asked about the locations of the turnarounds. Mike Merritt stated that they were placed at distances of 800'.

Sheet 16: Wetland affected –L- 148+65-164+75 RT (site 12).
Wetland affected –L- 163+10-164+30 LT (site 14).
Wetland affected –L- 166+15 CL (site 15). This will be a total take.
Wetland affected –L- 170+35-174+45 LT (site 16).
Wetland affected –L- 170+45-174+20 RT (site 17).
The equalizer was pointed out (-L- 173+00).

Sheet 17: Wetland affected –L- 177+50-178+50 RT (site 18).
Wetland affected –L- 179+50-186+40 RT (site 19).
Wetland affected –L- 179+80-184+40 LT (site 20).
Wetland affected –L- 186+75-189+15 RT (site 21).
Wetland affected –L- 187+80-188+95 LT (site 22).
The equalizers were pointed out (-L- 180+00, -L- 183+00).

Sheet 18: Wetland affected –L- 186+75-189+15 RT (site 21).
Wetland affected –L- 193+85-200+00 LT & RT (site 23). This is the Buckhorn bridge(s) crossing. Mr. Cook described the bridges stating that the southbound bridge (190.87') is longer than the northbound bridge (109') due to the curved alignment. The bridge length matches what was agreed upon in the 2A C.P. meeting (110'). Ms. Brittingham asked if the construction would be top down. Mark Osenbaugh said it would be. Ms. Brittingham also asked if the channel is navigable. She stated that in a field visit in March 2009 it was determined navigable and considered AEC. Mr. Cook distributed pictures from August 2011 that showed a dry bed under the bridge and no defined channel. Amy James stated

that it is a jurisdictional stream. The group noted that the channel can be wet at times and dry at times but did not think it was navigable.

Michael Wood stated that a field review with DCM was planned near the time of the 4C Meeting, in accordance with the requirements of the RFP, and this would be one of the visited sites. All agency personnel would be welcome to come and make a final determination on the channel.

Mr. Cook stated that the bridge will be a single span. The fill slope under the bridge at one location is approximately 3' from the stream edge. The D-B Team stated that the bridge and abutment can be constructed without encroaching in to the stream at this location. All in attendance agreed that a temporary fill in surface water would not be needed and that the construction of the bridge will stay out of the stream. The wetlands will be affected, however the stream will not.

Wetland affected –L- 197+25-198+65 RT (site 24). This will be a total take.

Sheet 19: Wetland affected –L- 206+55-209+40 LT (site 25).
Wetland affected –L- 207+10-209+10 RT (site 26).
Wetland affected –L- 211+65-218+75 LT (site 27).
The equalizers were pointed out (-L- 208+00, -L- 212+50). Mr. Cook distributed pictures of the swale downstream of the equalizer at –L- 212+50 as it was photographed in August 2011. He then showed a picture taken November 2011. The swale has been dug out approximately 4.0' in the ground resulting in standing water.

Sheet 20: Wetland affected –L- 211+65-218+75 LT (site 27).
Wetland affected –L- 215+70-217+30 RT (site 28).
Wetland affected –L- 221+80-226+35 RT (site 29).
Wetland affected –L- 223+65-237+05 LT (site 30).
The equalizer was pointed out (-L- 226+00).

Mr. Cook pointed out the ditch at –L- 220+25 LT. It drains towards the roadway facility. In its existing state, it looks like it (according to the plans) should meet a cross pipe at –L- 216+45. No pipe was observed in the field. It was determined in the field that the ditch eventually transitions from a 4' depth to nothing as it disperses into the wetland at approximately –L- 215+75 LT. The proposal from the D-B Team is to ditch through the wetland from the location the ditch meets the fill slope to the wetland it currently feeds. Bill Zerman asked if the existing elevations could be met. Mr. Cook stated that the ditch would be less than 0.30% in slope, however the area had been surveyed extensively and the existing elevations would be held at the ditch tie points. The wetland would in no way be drained by the ditch. The current pattern would be maintained. This was agreed upon by all in attendance.

Sheet 21: Wetland affected –L- 223+65-237+05 LT (site 30).
Wetland affected –L- 231+20-233+85 RT (site 31).
Wetland affected –L- 240+05-244+30 RT (site 32).

Sheet 22: Wetland affected –L- 240+05-244+30 RT (site 32).
The equalizer was pointed out (-L- 242+00).

Sheet 23: Wetland affected –L- 255+30-255+40 LT (site 33).

Mr. Cook stated that the ditch at –L- 256+65 RT has been labeled different ways in different files. The original wetland file the D-B Team received and a file provided by Mr. Young on November 10, 2011 show it as a jurisdictional stream. A file provided by Ms. James on November 8, 2011 does not show it as a jurisdictional stream. Mr. Cook stated that he checked the NRTR and it is not labeled as a jurisdictional stream in it either. Ms. James stated that it is not jurisdictional.

Sheet 24: No jurisdictional features affected.

Sheet 25: Wetland affected –L- 286+80-288+90 RT (site 34).
The equalizers were pointed out (-L- 287+20).

Sheet 26-28: No jurisdictional features affected.

Sheet 29: Wetland affected –L- 342+15-344+90 LT (site 35).
Stream affected –L- 341+65 LT & RT (site 35). Mr. Cook stated that this stream has been labeled different ways in various files also. Ms. James verified that it is indeed a jurisdictional stream on both sides of the road. It is a tributary to Jady Branch. Mr. Cook said that it will be a 72" RCP buried 1.0'.

Sheet 30-34: No jurisdictional features affected.

Sheet 35: Wetland affected –Y- 39+00-47+25 RT extending to sheet 6 (site 1).

Sheet 36-37: No jurisdictional features affected.

Additional comments / questions:
Ms. Brittingham asked if we expected any early utility work in upland areas. Mr. Cook stated that at this time we don't expect any, however we do not have plans from the utility companies yet. If any early upland work is needed, all agencies would be contacted prior to any land disturbance. Any impacts from them will be included in the package.

Mr. Biddlecome stated that a Section 10 would be needed for the new AT&T line installed under the Chowan River.

Ms. Brittingham asked when we anticipated the 4C C.P. meeting. Mr. Cook stated January 2012.

Mr. Biddlecome asked about the Coast Guard permit. Mr. Wood stated that we planned on submitting all permits at the same time.

The meeting was adjourned.

Memorandum of Meeting

Date: January 18, 2012

Place\Time: NCDOT, Structures Unit Conference Room, 10:00 A.M.

Participants:
Bill Biddlecome - USACE
Travis Wilson – NCWRC
David Wainwright – NCDWQ
Chris Militscher – USEPA
Cathy Brittingham - DCM
Bill Zerman - NCDOT Hydraulics Unit
Karen Fussell - NCDOT Trans. Prog. Management
Andy Young - NCDOT Trans. Prog. Management
Mark Laugisch – NCDOT REU
Mark Staley – NCDOT REU
Chris Rivenbark – NCDOT NES
Amy James – NCDOT NES
Bob Capehart – NCDOT Div. 1
Mark Osenbaugh – E.V. Williams
Michael Wood – Catena Group
Ivy Kimbrough – Catena Group
Tommy Peacock - RK&K
Mike Merritt – RK&K
Tina Swiezy – RK&K
John Stewart – RK&K
Matthew Cook - RK&K

Subject: NEPA\404 Merger Team – Concurrence Point 4C Meeting
R-2507A – US 13 / US 158 Widening, Hertford and Gates Counties

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The Permit Review was held in order to reach agreement on concurrence point 4C for the US 13 / US 158 widening in Hertford and Gates Counties. The following items were discussed and conclusions reached:

Bill Biddlecome opened the meeting and everyone introduced themselves. Matthew Cook then gave a brief description of the project. He asked if there were general questions or comments before going over the job sheet by sheet. David Wainwright stated that the Stormwater Management Plan needed to be updated to reflect the Chowan River as a 303d impaired stream.

Mr. Cook stated that per NCDOT Hydraulics request, utility impacts in jurisdictional features would be shown separately from the impacts due to the roadway / drainage features of the facility. He distributed a set of permit drawings and summary sheet for the utility impacts. He said that although the utility design has not been finalized, the Design Build Team has a good idea where the relocated utilities will be installed. The D-

B Team will stay in constant contact with the utility companies and update the plans as needed.

He then proceeded to review the permit drawings.

Site 1: The fill slope along –Y- right should be 3:1 in the wetland areas (drawing 12 of 78).
Site 1-Util: No comments.
Site 36: No comments.
Sites 2-3: No comments.
Site 4: Mr. Wainwright asked how the drainage off the bridge was handled. Mr. Cook stated that a 2GI is at the end of the bridge with 11 6" deck drains at 12' centers on the last span. None of the drainage is directly discharged in to the Chowan River or a wetland. Mr. Wainwright asked that the deck drainage be included in the USCG application. He also asked that it state in the 401 and 404 application that no proposed drainage directly enters the Chowan River.

Mr. Cook asked everyone to turn to Sheet 20-Util of 78. On the drawing is a typical of a staging area for AT&T to relocate their line. A 4" steel conduit will be bored under the Chowan River with 3 1.25" bundled ducts bored on the east side of the river. This utility relocation is due to the new roadway facility. Mr. Cook stated that the D-B Team has been working closely with AT&T and believes that a maximum of 7 staging areas, 50' x 100' each, will be required for the relocation. Time spent in each area will be approximately 3 weeks. A 2' x 3' hand hole will be left in each area as a permanent impact. The areas will be placed in conjunction with the other permit takes. However, at this time it is unknown where each staging area will be needed. This could be dictated by the maximum boring length, encountering rock during the bore, the ability to come out of the ground in non-wetland areas, etc. Therefore it is believed at this time that the maximum number of staging areas required will be seven. Mark Osenbaugh stated that AT&T intended to be finished with the relocation by August 2012. John Stewart stated that he is meeting with AT&T again Friday, January 20 to confirm all information. Mr. Wainwright said that if more staging areas are needed, a permit mod would be required. Mr. Biddlecome asked that the agencies be notified if more areas are required. Ms. Brittingham stated that a special permit condition would probably be needed in the permit language since the exact locations of the staging areas are unknown. It was also agreed upon that the areas would eventually need to be shown in an as built set of plans.

Sites 5-6: No comments.
Site 7: No comments. Mr. Cook pointed out the 60" RCP at this location. He stated that all equalizer pipes in wetlands were not buried. All proposed equalizers would match or exceed the conveyance size of the existing pipes / RCBCs.
Sites 8-9: No comments.
Site 10: Mr. Cook pointed out the 2 – 30" RCPs at this location. He stated that in lower grade areas of the project, two equalizers were used instead of one to achieve conveyance. This prevented the D-B Team from having to raise the grade which would create more wetland impacts. Ms. Brittingham asked Travis Wilson if there would be issues for wildlife passage with two smaller pipes as opposed to one larger pipe. He said it would not be an issue in the case of this project.
Sites 11-22: No comments.

Site 23: No comments. Mr. Cook stated that per Stephen Lane (DENR) Buckhorn Creek is not considered AEC.
Sites 25-27: No comments.

Mr. Cook drew attention to sheets 56 and 57 of 78. The inlet and 18" pipe levels were inadvertently turned off when producing these sheets. They will be turned on for the final permit drawing submittal.

Site 28: No comments.
Sites 29-Util, 30-Util, 31-Util: These sites are in a location where Roanoke EMC is relocating an overhead powerline. Mr. Cook stated that in conversations with the utility company, they have said that they will clear and not grub the areas, and that they will be maintained by spraying. Mike Wood asked that since the area under the powerlines will be maintained, does that mean that the impact should be considered a fill in wetland instead of hand clearing. (It was also determined in the meeting that hand clearing involves clearing the area, possibly with equipment, and not grubbing the area. It does not mean that only chain saws can be used and not equipment.) Mr. Biddlecome said that when you cut down trees but allow for shrub growth, the wetland is changing types, not being removed. Amy James said that the area is shrub-like in nature now. Therefore it was agreed that hand clearing is OK.
Sites 29-34: No comments.
Site 35: No comments. Mr. Cook stated that per Stephen Lane (DENR) the tributary to Jady Branch is not considered AEC.

A field meeting will be held on January 26. At that time the borrow pits will be discussed.

Memorandum of Meeting

Date: January 26, 2012

Place/Time: US 13/ US 158/ NC 45 Interchange parking area, 10:00 A.M.

Participants: Bill Biddlecome – USACE
Travis Wilson – NCWRC
David Wainwright – NCDWQ
Stephen Lane - NCDCM
Amy James – NCDOT-NES
Clay Willis – NCDOT-Division 1 Environmental Officer
Mark Osenbaugh – E.V. Williams
Michael Wood – The Catena Group
John Roberts – The Catena Group
Ivy Kimbrough – The Catena Group

Subject: NEPA/404 Merger Team – Agency Field Review
R-2507A – US 13/ US 158 Widening, Hertford and Gates Counties

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The Agency Field Review was held in order to visit the impact sites that had been discussed during the previous Concurrence Point 4B and 4C meetings. The discussion for each site is summarized and outstanding questions and requests for additional information in included.

UTILITY SITE 1: Michael Wood noted that the wetland was considered a partial take and there would be temporary hand clearing impacts to allow for directional boring of utilities. Bill Biddlecome questioned the area noted for temporary impact included an area with no apparent utility line on the drawing.

Answer: The area in question was originally slated to be a staging area for the bore. However, per discussions with the utility companies, this impact area has been revised (sheet attached) and reduced as a different angle will be used to directionally bore and the staging area relocated.

SHOUPS LANDING ROAD. This road is located about 3000' from the north side of the Chowan River, in the stretch of wetland on the east side of the project where AT&T will be relocating their long-distance phone line conduit. Michael Wood explained that although directional bore method will be used, several staging areas (100' by 50'; hand cleared) will be required to tie the new utility line in with the existing line. Since the exact length of each bore is expected to slightly vary due to various blockages (trees, rocks, etc.) and issues (boring geometry, etc.) that will inevitably be encountered, the exact location of each staging area is unknown. Stephen Lane noted that the boring is shown at a depth of 5'-6' and questioned if boring deeper would allow for longer bores and less potential blockages, thereby reducing the number of staging areas. Also, what determines the length of each bore was questioned. Bill Biddlecome asked how many staging areas were anticipated between Shoups Landing Road and the Chowan River.

Answer: AT&T will use a larger boring machine to cross under the Chowan River and they will continue the bore up to Shoups Landing Road. This will eliminate the need for any staging areas in the wetlands located between the Chowan River and Shoups Landing Road. Once they come out of the ground on the north side, they will continue their directional boring using smaller equipment. Smaller equipment will be used as it will reduce the footprint of each staging area, is more maneuverable, and costs less. The smaller equipment is limited to approximately 5'-6' boring depth. However, this depth is sufficient such that the chance of blockages does not markedly change by going deeper. As-built plans will be distributed when work is completed.

PUBLIC BOAT ACCESS RAMP: The alignment of the proposed bridge over the Chowan River was discussed, and all clearances will be either the same or greater than the current bridge. It was asked if the bridge drainage will drain to both the north and south end of the bridge, or if drainage will be directed towards one end of the bridge.

Answer: There is a high point in the profile at -L- 64+28.33. No drainage comes off the south end of the bridge. It all goes to the north end.

SITE 27: Michael Wood explained the existing ditch that runs through a portion of a wetland before ending in it will be relocated away from the roadway. Since the ditch dimensions will be kept the same, no drainage impacts are anticipated. The group followed the ditch from where it entered the right of way to where it spread out into the wetland. The question was asked where the water was coming from and how far back the ditch goes.

Answer: This drainage is from overland flow in the area of the ditch. The drainage area extends up towards Sand Banks Road, over 2000' upstream.

SITE 29, 30, 31: These are wetland sites that will be hand cleared to relocate Roanoke EMC's overhead power lines. Michael Wood explained where the overhead line will be relocated and where the line will cross the road to tie back in with the existing pole. During the 4C meeting, mitigation for this area was discussed due to long-term maintenance via herbicide. During the field review, Bill Biddlecome determined that mitigation will not be necessary as there is not anticipated to be a marked change in the current wetland functions. It was also discussed at this site that the permit application drawings would not have to include areas that will be hand cleared to install ROW fencing.

S&M BORROW SITE: Maps including NWI delineations, the NCWRC Game Lands property, and in-progress wetland delineations were reviewed. Michael Wood and Mark Osenbaugh explained the plan of using the uplands not only as a borrow site, but also as a repository for the wetland muck in an effort to create wetlands. The upland borrow would be excavated up to the existing wetland boundary, then the muck from the roadway undercut would be filled in to match the adjacent wetland elevation. Once construction was complete, the favored option was to donate the 165 acre site to NCWRC to incorporate into the Game Lands.

It was discussed if this would result in potential wetland mitigation for the project. However, due to the multiple issues that would need to be resolved, it was agreed that the permit application would be submitted with mitigation being provided by EEP and the use of the site for mitigation re-visited once the site details were known. It was noted that this borrow/fill methodology would eliminate the need to

consider potential draw down effects of the borrow site on the adjacent wetlands. Travis Wilson stated he would investigate as to whether NCWRC would want the site since the Game Lands connect to the wetlands on the property. Because the exact acreage of wetlands on the borrow site is not known at this time, it was concluded that mitigation through EEP would be optimal for expediting the permit application submittal.

HARRELL BORROW SITE: There were no questions or concerns about this site.

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	6A
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

PERMIT DRAWING
SHEET 8–UTIL OF 78

HC HC DENOTES HAND CLEARING

ENGLISH

NAD 83

DETAIL C
MEDIAN V DITCH
(Not to Scale)

Shoulder Point — 4:1 or Flatter — 4:1 or Flatter — Shoulder Point

–L– STA. 31+50 TO STA. 33+00

Front Ditch Slope — = 1.25Ft. — 7+20 LT

Fill Slope

SITE 1–UTIL B

A

-RPB- CS Sta. 25+74.08

23+62.89

-RPB- ST Sta. 27+84.08

-RPA- ST Sta. 26+07.92

-RPA- CS Sta. 23+97.92

-RPA- SC Sta. 21+48.65

-Y- POT Sta.44+69.86=
-RPA- POT Sta. 26+43.70
-RPB- POT Sta.28+48.30

-L- POC STA.30+34.04
BEGIN BRIDGE

-L- POC STA.30+09.94
BEGIN APPROACH SLAB

-L- POC STA.31+18.84
END BRIDGE

-L- POC STA.31+34.88
END APPROACH SLAB

N 33° 36' 06.9" E

S 49° 06' 34.7" E

N 34° 47' 42.9" E

S 34° 47' 42.9" W

S 64° 12' 20.3" W

YA2- PC Sta. 13+51.03

YA2- PT Sta. 14+35.93

YA2- POT Sta. 14+85.88

ASP RIVERSEDGE,LLC

TOWN OF WINTON (SR 1125) (50 PR)

INDUSTRIAL PARK ROAD BST

RAY ADAMS (103)

READY MIXPRODUCTS,INC.

ISMTL BUS

CONC

WOODS

US 158/US 13 BST

NTURY LINK

AT&T (FO)

6" GAS

10" FSS

16" ENCASEMENT

18" RCP-IV

REMOVE

30" RCP-III

24" RCP-III

36" RCP-IV

INV = 40.3 CPES

15 TONS CL I RIPRAP W/30 SY FIL FAB

INV=39.0

GRADE OUT EXIST. DITCH

LATERAL V DITCH SEE DETAIL F

L CUT DITCH DETAIL G

SPECIAL CUT DITCH SEE DETAIL G

MEDIAN V DITCH SEE DETAIL C

GRADE TO DRAIN

OTCB

15" CAAP 2 ELBOWS ROD & LUG

15" RCP-III

2GI

24" RCP-III

12"

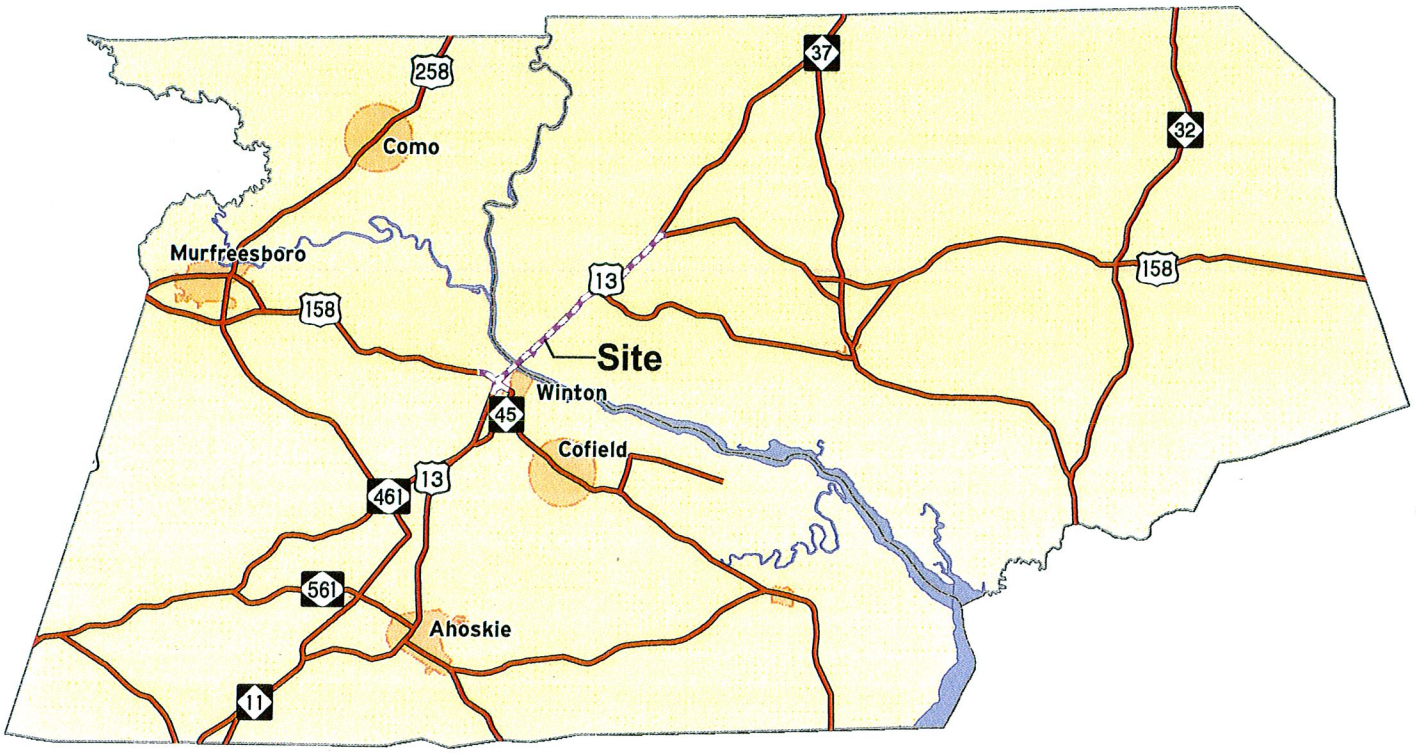
10' CROSSING EASEMENT

-RPA- TOE PROTEC SEE DETA -R

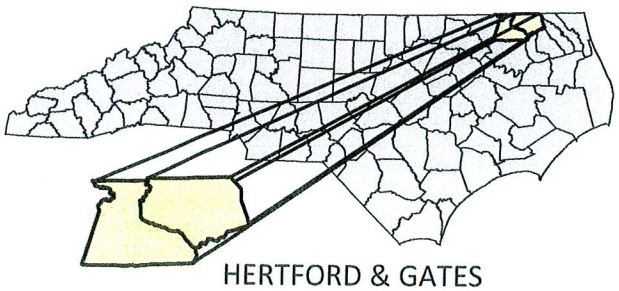
LATERA SEE

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

2/1/2012
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ELLIS



VICINITY MAP



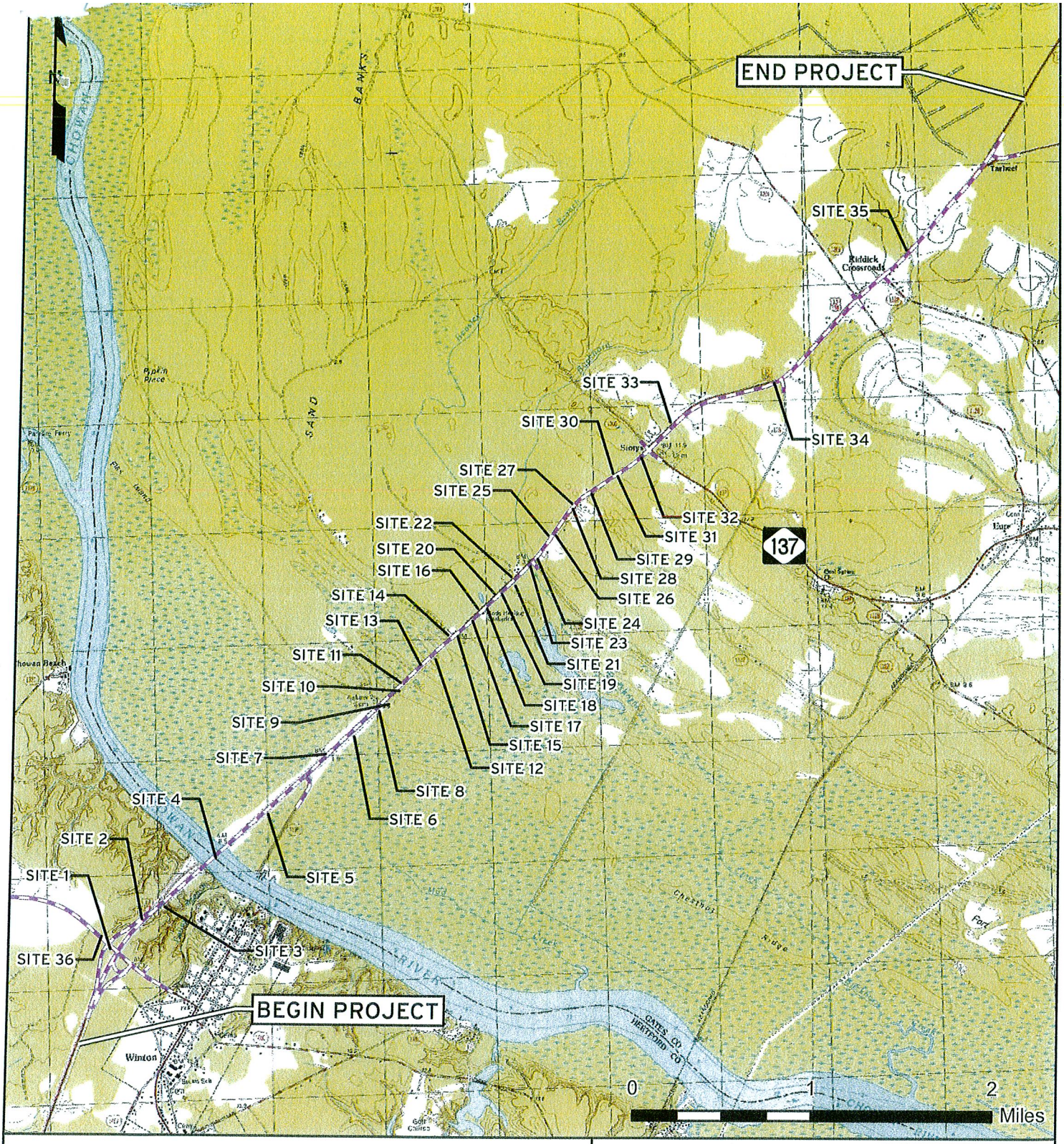
HERTFORD & GATES

NCDOT

DIVISION OF HIGHWAYS
HERTFORD AND GATES COUNTIES

PROJECT: C202616 (R-2507A)
US 13 / US 158 WIDENING
WETLAND/ STREAM PERMIT DRAWINGS

SHEET 1



LOCATION

NCDOT

DIVISION OF HIGHWAYS
HERTFORD AND GATES COUNTIES

PROJECT: C202616 (R-2507A)
US 13 / US 158 WIDENING
WETLAND/ STREAM PERMIT DRAWINGS
SHEET 2

Source: USGS 7.5 Minute Quadrangle. Winton & Gatesville. NC

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	Y 39+13/47+58 RT	NA	0.56			0.18						
2	L 42+53 LT/45+00 RT	48"						< 0.01	< 0.01	12	22	
3	L 50+07 RT	WS	< 0.01			< 0.01						
5	L 78+40/105+70 RT	NA	2.01			0.30						
6	L 106+75/130+10 RT	NA	2.08			0.24						
7	L 114+66 LT	60" RCP				< 0.01						
8	L 133+54/135+15 RT	NA	0.02			0.02						
9	L 136+42/138+20 RT	NA	0.16			0.02						
10	L 140+38/146+64 RT	NA	1.16			0.07						
11	L 140+85/148+32 LT	NA	0.25			0.09						
12	L 148+52/164+75 RT	NA	3.11			0.19						
13	L 150+29/161+68 LT	NA	0.24			0.13						
14	L 163+11/164+34 LT	NA	0.02			0.01						
15	L 166+16 RT	NA	0.02									
16	L 170+33/174+46 LT	24" RCP	0.11			0.05						
17	L 170+37/174+21 RT	24" RCP	0.69			0.04						
18	L 177+53/178+71 RT	NA	0.13			0.01						
19	L 179+46/186+38 RT	NA	1.18			0.08						
20	L 179+82/184+41 LT	NA	0.09			0.04						
21	L 186+73/189+24 RT	NA	0.46			0.03						
22	L 187+74/188+97 LT	NA	0.04			0.01						
23	L 193+72/200+00 LT	NA	0.69	0.04		0.11			0.01		46	
24	L 197+26/198+65 RT	NA	0.11									
25	L 206+37/209+41 LT	42" RCP	0.41			0.03						
26	L 207+11/209+10 RT	42" RCP	0.06			0.02						
27	L 211+55/218+79 RT	NA	1.00		0.11	0.08						
28	L 215+63/217+36 RT	NA	0.01			0.02						
29	L 221+70/226+54 RT	NA	0.09			0.05						
30	L 223+64/237+13 LT	NA	1.89			0.16						
31	L 231+19/233+95 RT	NA	0.05			0.03						
32	L 239+36/244+31 RT	36" RCP	1.08			0.06						
33	L 255+35 LT	NA	< 0.01			< 0.01						
34	L 286+82/288+95 RT	2 30" RCP	0.19			0.02						
35	L 342+13/344+99 LT	72" RCP	0.04			0.03		0.02	< 0.01	163	35	
36	Y 41+62/41+95 LT	NA	0.02									
TOTALS:			* 17.98	0.04	0.11	* 2.13		* 0.02	* 0.02	175	103	

***: SUMMARY REFLECTIVE OF ACTUAL IMPACTED AREA**
****: 7 BENTS FOR CHOWAN RIVER BRIDGE WILL RESULT IN <0.01 ACRE OF FILL IN SURFACE WATERS**

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

HERTFORD AND GATES COUNTIES
PROJECT: C202616 (R-2507A)
WETLAND / STREAM
PERMIT DRAWING SHEET 3 OF 78

ATN Revised 3/31/05
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PROP. NO.	PROPERTY OWNER NAME	PROPERTY OWNER ADDRESS
5	HERTFORD COUNTY	PO BOX 116, WINTON, NC 27986
23	STATE OF NORTH CAROLINA	1321 MAIL SERVICE CENTER, RALEIGH, NC 27699
27	SCARBOROUGH, WANDA & ASKEW, THURMAN E. JR	1202 AIRY GROVE CHURCH RD, KINSTON, NC 28501
28,29	ASKEW, WALTER L.	877 US 13 SOUTH, EURE, NC 27935
30	CARTER & SONS FURNITURE CO.,INC.	219 W. WASHINGTON ST, SUFFOLK,VA 23434
31	HALE, MERLE T.	839 HWY 13, EURE, NC 27935
32	COOKSEY, JEAN W. & COOKSEY, CHARLES W.	850 US 13 SOUTH, EURE, NC 27935
33	TILLETT, ELEAZER A. SR & TILLETT, PHYLLIS J.	4898 ROBIN HOOD RD, NORFOLK, VA 23513
34	STATE OF NORTH CAROLINA	116 W. JONES ST., RALEIGH, NC 27602
38	SPRUILL, DAVID A. & SPRUILL, JUANITA L.	76 LITTLE ISLAND RD, EURE, NC 27935
39	HEDGEPETH, JEANETTE A.	646 US 13 SOUTH, EURE, NC 27935
43	POPE, VERNON NATHAN & POPE, SANDRA H.	630 US 13 SOUTH, EURE, NC 27935
44	COXE, THOMAS C., IV & COXE, NAN L.	2901 KINGS FORK RD, SUFFOLK, VA 23434
45	HEDGEPETH, SADIE LIFE ESTATE	610 US 13 SOUTH, EURE, NC 27935
46	PARKER, CLAYTON P. & PARKER, JAMES B.	2393 CAPE ARBOR DR, VIRGINIA, VA 23451
47	HUDGINS, WAYNE A. & HUDGINS, ROSE LONG	208 W. THIRD ST, KILL DEVIL HILLS, NC 27948
48	ASKEW, JOHN W. TRUSTEE/REV LIV TR	203 BEDFORD CT, PORTSMOUTH, VA 23701
49	POPE, RICHARD A. & POPE, JACQUELINE C.	PO BOX 96, EURE, NC 27935
50	STORY, EDWARDS S.	471 US 13 S., EURE, NC 27935
51	SMOAK, MARY STORY	2560 62ND AVE N LOT 310, ST. PETERSBURG, FL 33702
56	JOHNSON, FRANKFORD MILAM IRREV TRUST	1728 QUAL RIDGE RD, RALEIGH, NC 27609
57	N.T. LEWIS, LLC.	PO BOX 147, GATESVILLE, NC 27938
103	ADAMS, RAY	1118 JAY TRL, MURFREESBORO, NC 27855

WETLAND AND STREAM IMPACTS

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

HERTFORD AND GATES COUNTIES
PROJECT: 35488.3.1 (R-2507A)

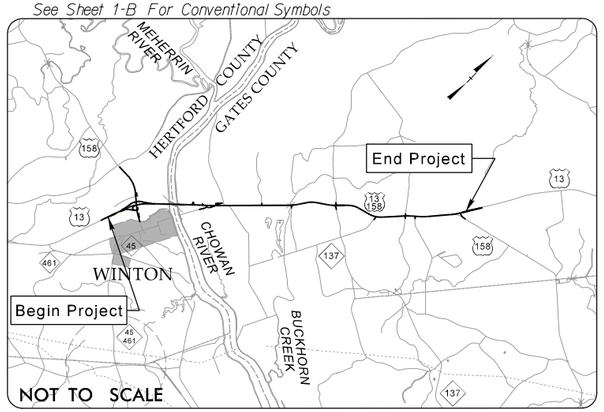
PERMIT DRAWING SHEET 4 OF 78

09/06/59

TIP PROJECT: R-2507A

CONTRACT: C202616

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2507A	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
35488.3.1		CONST.

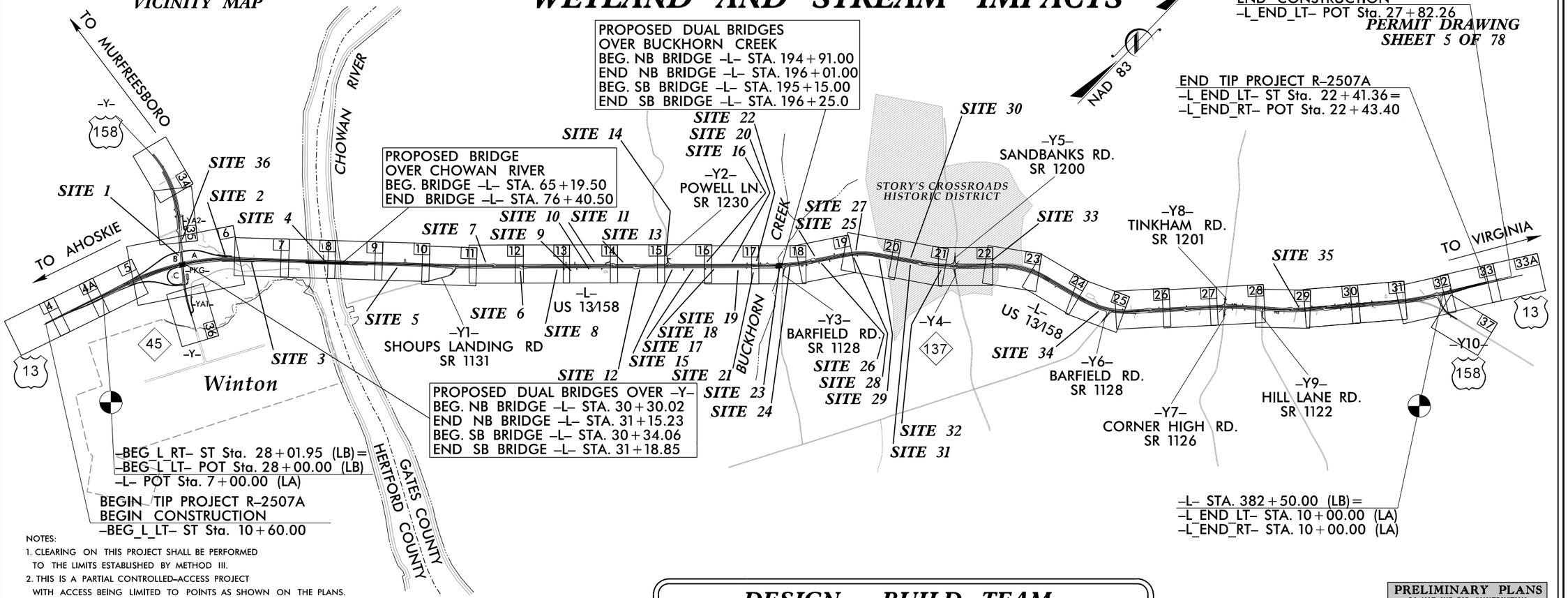
HERTFORD / GATES COUNTIES

LOCATION: US 13 /US 158 WIDENING FROM US 158 /NC 45 NEAR WINTON TO THE US 158 BYPASS IN TARHEEL

TYPE OF WORK: GRADING, DRAINAGE, PAVING, WIDENING, RESURFACING, GUARDRAIL, & STRUCTURES



WETLAND AND STREAM IMPACTS



END CONSTRUCTION
–L_END_LT– POT Sta. 27+82.26

PERMIT DRAWING SHEET 5 OF 78

END TIP PROJECT R-2507A
–L_END_LT– ST Sta. 22+41.36=
–L_END_RT– POT Sta. 22+43.40

–L– STA. 382+50.00 (LB)=
–L_END_LT– STA. 10+00.00 (LA)
–L_END_RT– STA. 10+00.00 (LA)

–BEG_L_RT– ST Sta. 28+01.95 (LB)=
–BEG_L_LT– POT Sta. 28+00.00 (LB)
–L– POT Sta. 7+00.00 (LA)

BEGIN TIP PROJECT R-2507A
BEGIN CONSTRUCTION
–BEG_L_LT– ST Sta. 10+60.00

NOTES:
1. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
2. THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.
3. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

DESIGN – BUILD TEAM

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 2015 = 11,200
ADT 2035 = 16,900
DHV = 11 %
D = 55 %
T = 20 % *
V = 60 MPH

* TTST 13% DUAL 7%

FUNC. CLASS =
RURAL PRINCIPAL ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2507A..... 7.539 mi
LENGTH STRUCTURE TIP PROJECT R-2507A..... 0.235 mi
TOTAL LENGTH TIP PROJECT R-2507A..... 7.772 mi

NOTE: LENGTHS BASED ON NORTHBOUND LANES.

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE, SUITE 350
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. F-0112
1-888-521-4455 OR 919-878-9560

FOR
DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 22, 2011

LETTING DATE:
JULY 22, 2011

J. T. Peacock, Jr., P.E.
PROJECT ENGINEER

Michael T. Merritt, P.E.
PROJECT DESIGN ENGINEER

CONTRACTOR :

E.V. WILLIAMS
SITE DEVELOPMENT & HIGHWAY CONSTRUCTION

E.V. WILLIAMS, INC.
925 S. MILITARY HIGHWAY
VIRGINIA BEACH, VA 23464

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

3/2/2012
R:\Hydraulics\PERMITS_Environmental\Drawings\R2507A_Hyd_tsh.dgn
F.Keys

REVISIONS

PROJECTED TRAFFIC VOLUMES

DETAIL FALSE SUMP (Not to Scale)

DETAIL A SPECIAL LATERAL BASE DITCH (Not to Scale)

DETAIL B SPECIAL CUT DITCH (Not to Scale)

DETAIL C MEDIAN "V" DITCH (Not to Scale)

DETAIL D LATERAL BASE DITCH (Not to Scale)

DETAIL E SPECIAL CUT BASE DITCH (Not to Scale)

DETAIL F LATERAL "V" DITCH (Not to Scale)

DETAIL G SPECIAL CUT DITCH (Not to Scale)

DETAIL J TOE PROTECTION (Not to Scale)

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

NAD 83

PROJECT REFERENCE NO. R-2507A | SHEET NO. 6 | RW SHEET NO. | ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS NOT FOR CONSTRUCTION

PERMIT DRAWING SHEET 6 OF 78

SITE 1 | SITE 36 | SITE 1 B | A | C | SITE 2

SHEET 6A | SHEET 6B

MATCHLINE –Y– STA. 41+00 SEE SHEET 35

MATCHLINE –L– STA. 17+00 SEE SHEET 5

MATCHLINE –L– STA. 45+50 SEE SHEET 7

MATCHLINE –Y– STA. 56+00 SEE SHEET 36

-RPB- CS Sta. 25+74.08
-RPB- SC Sta. 23+62.89
-RPB- TS Sta. 21+52.89
-RPB- PT Sta. 18+26.86
-RPB- ST Sta. 27+84.08
-RPA- ST Sta. 26+07.92
-RPA- CS Sta. 23+97.92
-RPA- SC Sta. 21+48.85
-RPA- TS Sta. 19+38.85
-RPA- ST Sta. 19+11.18
-RPA- CS Sta. 17+11.18
-RPA- SC Sta. 15+06.51
-RPA- TS Sta. 13+06.51
-RPA- S. 42+50.22
-Y- POT Sta. 44+69.86=
-RPA- POT Sta. 26+43.70
-RPB- POT Sta. 28+48.30
-Y- POC Sta. 31+18.24 END BRIDGE
-L- POC STA 31+34.88 END APPROACH SLAB
-L- POC STA 30+09.94 BEGIN APPROACH SLAB
-L- POC STA 31+18.85 END BRIDGE
-L- POC STA 31+43.01 END APPROACH SLAB
-L- POC STA 30+34.06 BEGIN BRIDGE
-L- POC STA 30+05.86 BEGIN APPROACH SLAB
-L- POC STA 30+30.02 BEGIN BRIDGE
-L- POC STA 31+39.38 END APPROACH SLAB
-L- POC STA 31+15.22 END BRIDGE
-L- POC Sta. 30+79.54= -Y- POT Sta. 48+15.47
-L- POC Sta. 29+18.67 (39 RT)= -LPC- ST Sta. 10+00.00
-L- POC STA 30+09.81 BEGIN APPROACH SLAB
-L- POC STA 30+30.02 BEGIN BRIDGE
-L- POC STA 31+15.23 END BRIDGE
-L- POC Sta. 30+79.54= -Y- POT Sta. 48+14.62
-L- POC Sta. 22+05.10
-LPC- SC Sta. 12+00.00
-LPC- CS Sta. 16+92.39
-LPC- ST Sta. 18+92.39
-RPC- CS Sta. 20+68.75
-RPC- SRS Sta. 22+68.75
-RPC- SC Sta. 24+68.75
-RPC- PT Sta. 27+12.16
-Y- POC Sta. 53+57.73= -LPC- POT Sta. 20+05.38
-Y- POC Sta. 53+73.73= -RPC- POT Sta. 28+61.40
-Y- TS Sta. 52+17.33
-Y- SC Sta. 53+17.33
-PKG- POT Sta. 13+62.54
-PKG- PT Sta. 11+46.41
-PKG- PC Sta. 10+30.11
-PKG- POT Sta. 10+00.00= -Y- PC Sta. 53+66.73

HERTFORD COUNTY
CAREER TRANSPORTING, INC.
COPPER STATION HOLDING, INC.
WILLIE C., JR. & JOANN W. GODWIN
FRED W. LIVERMAN, JR., et al
DAN F. & LOUISE M. SPIVEY
DAN F. SPIVEY, et ux
JUSTENE GREENE, et ux
JEFFREY W. ELLIS
WILLIAM E. O'BRIEN
THOMAS L., JR. & KIMBERLY H. BAZEMORE
RSP RIVERSEDGE, LLC

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAILS SEE SHEET 25

FOR <L- PROFILE SEE SHTS. 40 & 41
FOR <Y- PROFILE SEE SHT. 55
FOR <RPA- PROFILE SEE SHT. 57
FOR <RPB- PROFILE SEE SHTS. 58 & 58
FOR <RPC- PROFILE SEE SHTS. 58 & 59
FOR <PKG- PROFILE SEE SHT. 59
FOR <PLL- PROFILE SEE SHT. 60

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 ROSEMEAD PARKS SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0912 • (919) 878-9560

LOCATION:
TIP NO.: COUNTY:
DESIGNED BY:
CHECKED BY: DATE:

GRAPHIC SCALE
50 25 0 50 100
PLANS

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REVISIONS

PROJECT REFERENCE NO. R-2507A | SHEET NO. 6
R/W SHEET NO.
ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
NO RIGHT-OF-WAY OR CONSTRUCTION

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

ENGLISH

NAD 83

PERMIT DRAWING
SHEET 7 OF 78

PROJECTED TRAFFIC, VOLUMES
2015 ADT 2035 ADT
156 5,400 8,800
300 500 2,000 3,500
13 8,200 11,900 11,200 19,300 13 Year 156
700 900 2,000 2,900
45 5,800 8,900

DETAIL FALSE SUMP (Not to Scale)
DETAIL A SPECIAL LATERAL BASE DITCH (Not to Scale)
DETAIL B SPECIAL CUT DITCH (Not to Scale)
DETAIL C MEDIAN "V" DITCH (Not to Scale)
DETAIL D LATERAL BASE DITCH (Not to Scale)
DETAIL E SPECIAL CUT BASE DITCH (Not to Scale)
DETAIL F LATERAL "V" DITCH (Not to Scale)
DETAIL G SPECIAL CUT DITCH (Not to Scale)
DETAIL J TOE PROTECTION (Not to Scale)

S=Ditch Slope | % Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.5% to 2.5%	20	Over 4.0% to 8.0%	200
Over 2.5% to 4.0%	50	Over 8.0%	300

MATCHLINE –Y– STA. 41+00 SEE SHEET 35

SITE 1

SITE 36

SHEET 6A

SHEET 6B

SITE 1 B

A

C

SITE 2

-RPB- CS Sta. 25+74.08
-RPB- SC Sta. 23+62.89
-RPB- TS Sta. 21+52.89
-RPB- PT Sta. 18+26.86
-RPA- ST Sta. 26+07.92
-RPB- ST Sta. 27+84.06
-RPA- CS Sta. 23+97.92
-RPA- SC Sta. 21+48.85
-RPA- TS Sta. 19+38.85
-RPA- ST Sta. 19+11.18
-RPA- CS Sta. 17+11.18
-RPA- SC Sta. 15+06.51
-RPA- TS Sta. 13+06.51
-RPA- S. 142.52.22 E
-L- POC STA. 31+18.24 END BRIDGE
-L- POC STA. 31+34.88 END APPROACH SLAB
-L- POC STA. 30+09.89 BEGIN APPROACH SLAB
-L- POC STA. 30+34.06 BEGIN BRIDGE
-L- POC Sta. 29+18.67 (39 RT)=
-LPC- ST Sta. 10+00.00
-L- POC Sta. 22+05.10
-L- POC STA. 30+05.81 BEGIN APPROACH SLAB
-L- POC STA. 30+30.02 BEGIN BRIDGE
-LPC- SC Sta. 12+00.00
-L- POC STA. 31+39.46 END APPROACH SLAB
-L- POC STA. 31+15.23 END BRIDGE
-L- POC Sta. 30+79.54= -Y- POT Sta. 48+14.68
-PKG- POT Sta. 13+62.54
-Y- POC Sta. 53+57.73=
-LPC- CS Sta. 16+92.39
-LPC- POT Sta. 20+05.38
-LPC- ST Sta. 18+92.39
-Y- TS Sta. 52+17.33
-PKG- PT Sta. 11+46.41
-Y- SC Sta. 55+17.33
-PKG- PC Sta. 10+30.11
-PKG- POT Sta. 10+00.00= -Y- POC Sta. 53+67.73
-RPC- CS Sta. 20+68.75
-RPC- SRS Sta. 22+68.75
-RPC- SC Sta. 24+68.75
-RPC- PT Sta. 27+12.16
-Y- POC Sta. 53+73.73=
-RPC- POT Sta. 28+61.40
-L- POC STA. 30+34.06 BEGIN BRIDGE
-L- POC STA. 30+09.89 BEGIN APPROACH SLAB
-L- POC STA. 30+05.86 BEGIN APPROACH SLAB
-L- POC STA. 30+30.02 BEGIN BRIDGE
-L- POC STA. 31+18.85 END BRIDGE
-L- POC STA. 31+43.01 END APPROACH SLAB
-L- POC STA. 31+39.38 END APPROACH SLAB
-L- POC STA. 31+15.22 END BRIDGE
-L- POC Sta. 30+79.54= -Y- POT Sta. 48+15.47
S 49° 08' 34" E
Δ 91° 13' 42"
5' MONOLITHIC CONC. ISLAND
PROP. SBG
GRAU 35
M-350
B-77
GRADE TO DRAIN
OHCB
OHPP
CL FENCE TYP.
24'
30'
20'
40'
50'
55'
45'
HERTFORD COUNTY
CAREER TRANSPORTING, INC.
COPPER STATION HOLDING, INC.
WILLIE C., JR. & JOANN W. GODWIN
FRED O. LIVERMAN, JR., ET UX
JEFFREY B. ELLIS
WILLIAM L. O'BRIEN
THOMAS L., JR. & KIMBERLY H. BAZEMORE
L.P. GAIL B. MARTIN
MATCHLINE –L– STA. 17+00 SEE SHEET 5
MATCHLINE –L– STA. 45+50 SEE SHEET 7
MATCHLINE –Y– STA. 56+00 SEE SHEET 36
US 158/US 13 BUS
SEE SHEET 5
SEE SHEET 7
SEE SHEET 36

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAILS SEE SHEET 25

FOR <L- PROFILE SEE SHTS. 40 & 41
FOR <Y- PROFILE SEE SHT. 55
FOR <RPA- PROFILE SEE SHT. 57
FOR <RPB- PROFILE SEE SHTS. 58 & 58
FOR <RPC- PROFILE SEE SHTS. 58 & 59
FOR <PKG- PROFILE SEE SHT. 59
FOR <PKL- PROFILE SEE SHT. 60

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 ROSEDALE DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0912 • (919) 878-9560

LOCATION:
TIP NO.: COUNTY:
DESIGNED BY:
CHECKED BY: DATE:

GRAPHIC SCALE
50 25 0 50 100
PLANS

R2507A_SHEET6_Environmental\Drawings\R2507A_Hyd_pre_set_pw08.dgn

8/17/98

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	6A
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

PERMIT DRAWING SHEET 8 OF 78

ENGLISH

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

NAD 83

READY MIXPRODUCTS,INC.

TOWN OF WINTON — INDUSTRIAL PARK ROAD BST — TOWN OF WINTON

FSS (AATUR) (50 PRI) (25 PRI)

ASSOCIATED MINUTEMAN

RAY ADAMS (103)

ISMTL BUS

CONC

GR

WOODS

ASP RIVERSEDGE,LLC (8)

40

N 33° 36' 06.9" E

YA2- PC Sta. 13+50.03

YA2- PT Sta. 14+35.93

YA2- POT Sta. 14+85.88

SITE 1

SITE 1

SITE 36

SHEET 6B

SITE 1 B

A

30" RCP-III

18" RCP-IV

REMOVE

3 TONS CL B RIPRAP W/10 SY FIL FAB

INV = 40.3 (PES)

24" RCP-III

15 TONS CL I RIPRAP W/30 SY FIL FAB INV=39.0

GRADE OUT EXIST. DITCH

LATERAL V DITCH SEE DETAIL F

L CUT DITCH DETAIL G

S 49° 06' 34.7" E

DETAIL C
MEDIAN V DITCH
(Not to Scale)

Shoulder Point — 4:1 or Flatter — 4:1 or Flatter — Shoulder Point

Front Ditch Slope

Fill Slope

= 1.25Ft.

7+20 LT

-L- STA. 31+50 TO STA. 33+00

-RPB- CS Sta. 25+74.08

23+62.89

-RPB- ST Sta. 27+84.08

-RPA- ST Sta. 26+07.92

N 34° 47' 42.9" E

S 34° 47' 42.9" W

-RPA- CS Sta. 23+97.92

-Y- POT Sta. 44+69.86=
-RPA- POT Sta. 26+43.70
-RPB- POT Sta. 28+48.30

-RPA- SC Sta. 21+48.65

-RPA-

S 62° 12' 20.3" W

GRADE TO DRAIN

OTCB

18" RCP-III

24" RCP-III

SPECIAL CUT DITCH SEE DETAIL G

-L- POC STA. 30+34.04
BEGIN BRIDGE

-L- POC STA. 30+09.94
BEGIN APPROACH SLAB

-L- POC STA. 31+18.84
END BRIDGE

-L- POC STA. 31+34.88
END APPROACH SLAB

2GI

15" RCP-III

15" CAAP
2 ELBOWS
ROD & LUG

MEDIAN V DITCH SEE DETAIL C

US 158/US 13 BST

AT&T (FO)

CENTURY LINK

LATERA
SEE

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/2/2012
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	6A
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

PERMIT DRAWING SHEET 9 OF 78

ENGLISH

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

NAD 83

SITE 1

SITE 1 B

SITE 36

SITE 1 A

SHEET 6B

DETAIL C
MEDIAN V DITCH
(Not to Scale)

Shoulder Point — 4:1 or Flatter — 4:1 or Flatter — Shoulder Point

Front Ditch Slope

Fill Slope

= 1.25Ft.

7+20 LT

-L- STA. 31+50 TO STA. 33+00

S 49° 06' 34" E

N 33° 36' 06.9" E

N 34° 47' 42.9" E

S 34° 47' 42.9" W

S 62° 12' 20.3" W

-Y2- PC Sta. 13+51.03

-Y2- PT Sta. 14+35.93

-Y2- POT Sta. 14+85.88

-RPB- CS Sta. 25+74.08

-RPB- ST Sta. 27+84.08

-RPA- ST Sta. 26+07.92

-RPA- CS Sta. 23+97.92

-RPA- SC Sta. 21+48.65

-Y- POT Sta. 44+69.86=
-RPA- POT Sta. 26+43.70
-RPB- POT Sta. 28+48.30

23+62.89

-L- POC STA. 30+34.04
BEGIN BRIDGE

-L- POC STA. 30+09.94
BEGIN APPROACH SLAB

-L- POC STA. 31+18.84
END BRIDGE

-L- POC STA. 31+34.88
END APPROACH SLAB

18" RCP-III

24" RCP-III

30" RCP-III

REMOVE

GRADE TO DRAIN

GRADE OUT EXIST. DITCH

LATERAL V DITCH
SEE DETAIL F

MEDIAN V DITCH
SEE DETAIL C

SPECIAL CUT DITCH
SEE DETAIL G

15 TONS CL I RIPRAP
W/30 SY FIL FAB
INV=39.0

3 TONS CL I RIPRAP
W/10 SY FIL FAB

INV= 40.3
CPES

OTCB

15" CAAP
2-ELBOWS
ROD & LUG

2GI

15" RCP-III

TOWN OF WINTON

INDUSTRIAL PARK ROAD BST

ISMTL BUS

RAY ADAMS

ASP RIVERSEDGE LLC

READY MIXPRODUCTS,INC.

WOODS

US 158/US 13 BST

CENTURY LINK

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/2/2012
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8/17/99

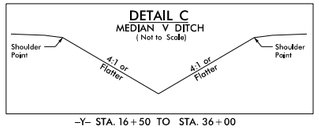
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	35
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

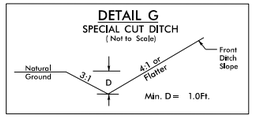
PERMIT DRAWING SHEET 10 OF 78

DETAIL C
MEDIAN V DITCH
(Not to Scale)



-Y- STA. 16+50 TO STA. 36+00

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



-Y- STA. 27+00 TO STA. 39+00 RT
-Y- STA. 35+00 TO STA. 41+00 LT

NAD 83

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

-YA2- POT Sta. 10+00.00=
-Y- POS Sta. 34+75.10 (122.58' LT)

-YA2- POT Sta. 13+51.03

YA2- POT Sta. 14+85.88

YA2- PT Sta. 14+35.93

N 33° 36' 06.9" E

S 49° 06' 34.7" E

-YA2-

MATCHLINE -Y- STA. 28+00 SEE SHEET 34

MATCHLINE -Y- STA. 41+00 SEE SHEET 6

SPECIAL CUT DITCH SEE DETAIL G

MEDIAN V DITCH SEE DETAIL C

24" RCP-III

30" RCP-III

15" RCP-IV

18" RCP-IV

2GI-A

DI

REMOVE

3 TONS CL B RIPRAP W/10 SY FIL FAB

INV=44.5 SPECIAL CUT DITCH SEE DETAIL G

INV=43.1

-Y- CS Sta. 33+83.00

-Y- ST Sta. 35+63.00

CPES

PPES

NOTE: AS PER MR. HENRY INGRAM OF THE 2M STRAND F.O. LINE OWNED BY T-PED "HAND HOLE ADJACENT TO T-PED" FENCE "THIS" HAND "HOLE WAS NOT

ASP RIVERSEDGE,LLC

COMMERICAL READY MIXPRODUCTS,INC.

HERTFORD COUNTY

RAY ADAMS

TOWN OF WINTON

US 158 BST

SITE 1

SHEET 6A

2015 ADT / 2035 ADT				
158	5,400 / 8,900		5,400 / 8,900	158
	200 / 250		200 / 250	
		300 / 500		

INDUSTRIAL PARK DR (SR 1218)

PROJECTED TRAFFIC VOLUMES

EXISTING R/W SHOWN PURCHASED UNDER THE R-2583 PROJECT

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR -Y- PROFILE SEE SHT. 55
FOR -YA2- PROFILE SEE SHT. 62

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/2/2012
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8/17/99

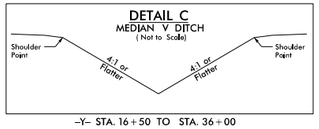
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	35
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 11 OF 78

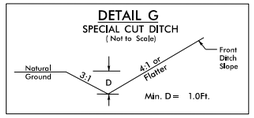
ENGLISH

DETAIL C
MEDIAN V DITCH
(Not to Scale)



–Y– STA. 16+50 TO STA. 36+00

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



–Y– STA. 27+00 TO STA. 39+00 RT
–Y– STA. 35+00 TO STA. 41+00 LT

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

NAD 83

–YA2– POT Sta. 10+00.00=
–Y– POS Sta. 34+75.10 (122.58' LT)

YA2– PC Sta. 13+51.03

N 33° 36' 06.9" E

YA2– POT Sta. 14+85.88

YA2– PT Sta. 14+35.93

S 49° 06' 34.7" E

–YA2–

SPECIAL CUT DITCH SEE DETAIL G

MATCHLINE –Y– STA. 28+00 SEE SHEET 34

MEDIAN V DITCH SEE DETAIL C

24" RCP–III

2GI–A

15" RCP–IV

CPES

INV=44.5

SPECIAL CUT DITCH SEE DETAIL G

30" RCP–III

INV=43.1

–Y– CS Sta. 33+83.00

–Y– ST Sta. 35+63.00

REMOVE 18" RCP–IV

PPES

3 TONS CL B RIPRAP
W/10 SY FIL FAB

MATCHLINE –Y– STA. 41+00 SEE SHEET 6

SITE 1

ASP RIVERSEDGE,LLC

COMMERICAL READY MIXPRODUCTS,INC.

HERTFORD COUNTY

RAY ADAMS

TOWN OF WINTON

US 158 BST

2015 ADT / 2035 ADT			
158	5,400 / 8,900	5,400 / 8,900	158
	200 / 250	200 / 250	
	300 / 500		

INDUSTRIAL PARK DR (SR 1218)

PROJECTED TRAFFIC VOLUMES

EXISTING R/W SHOWN PURCHASED UNDER THE R–2583 PROJECT

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR –Y– PROFILE SEE SHT. 55
FOR –YA2– PROFILE SEE SHT. 62

SHEET 6A

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609–3960
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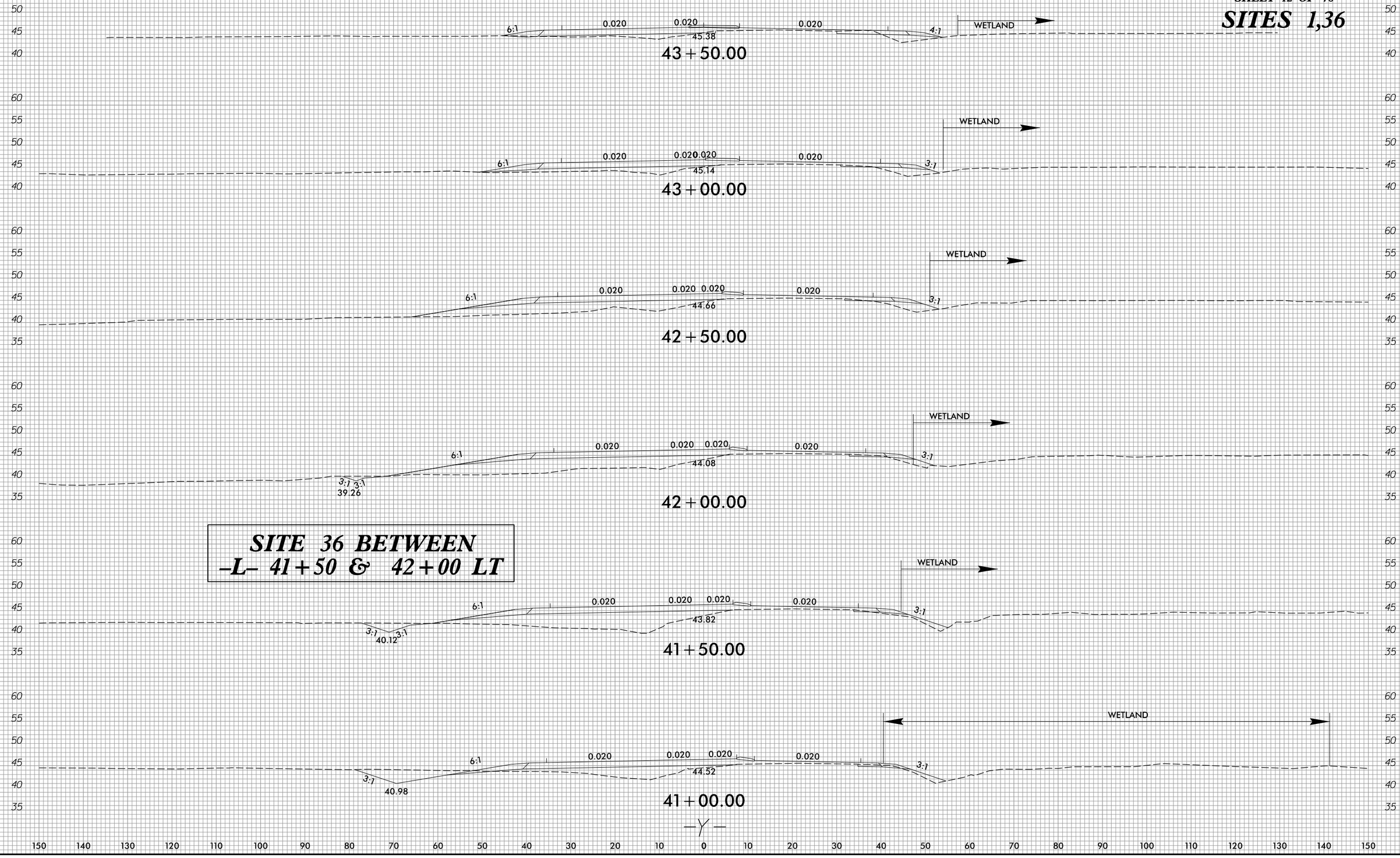
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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2507A	X-157

PERMIT DRAWING
SHEET 12 OF 78

SITES 1,36



SITE 36 BETWEEN
-L- 41+50 & 42+00 LT

3/2/2012
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	6B
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

PERMIT DRAWING SHEET 13 OF 78

SHEET 6A

SITE 2

SITE 3

-RPA- TS Sta. 19+38.65
TOE PROTECTION SEE DETAIL I
-RPA- ST Sta. 19+11.18
-RPA- CS Sta. 17+11.18
-RPA- SC Sta. 15+06.51
-RPA- TS Sta. 13+06.51
-RPA- POT Sta.10+00.00 (39' LT)
-L- POT Sta. 46+76.99=
-L- CS Sta. 45+73.53
-L- ST Sta. 46+73.53
-L- STA. 44+50 TO STA. 46+50 LT
Class I Rip-Rap

15" CAAP 2 ELBOWS ROD & LUG
7 TONS CL I RIPRAP W/15 SY FIL FAB INV=22.8
24" RCP-III
15" RCP-III
OTCB
LATERAL V DITCH SEE DETAIL F
48" WW FENCE
WARP GUTTER TO DRAIN
48" RCP-III JB w/MHC
HW INV=8.0
CONC DITCH
REMOVE 50' 36" RCP
TOE PROTECTION SEE DETAIL I
2 TONS CL B RIPRAP W/7 SY FIL FAB INV=31.5
FILL W/ FLOWABLE FILL
TRENCHLESS INSTALLATION 48" WELDED STEEL
BURIED 1.0'
BACKBERM
REMOVE 70' 36" RCP
15 TONS CL I RIPRAP W/30 SY FIL FAB INV=5.2
1 TONS CL B RIPRAP W/5 SY FIL FAB INV=43.2
18" RCP-III
INV=19.1
24" CAAP 2 ELBOWS FS ROD & LUG
8 TONS CL B RIPRAP W/21 SY FIL FAB INV=8.0
2GI-A
-L- STA. 44+50 TO STA. 46+50 LT
S=Ditch Slope
Ditch Grade 0.0% To 2.0% L 20' Over 2.0% To 4.0% L 30' Over 4.0% To 6.0%

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

NAD 83

ENGLISH

JEFFREY W. ELLIS
WILLIAM E. O'BERRY
THOMAS L., JR. & KIMBERLY H. BAZEMORE
ROY L. & EMMETT D. HARRELL
STANLEY E. DIXON, JR.
ASP RIVERSEDGE, LLC
RIVER TRAIL EST
WOODS
2SFD
WD DECK
POOL
GENERIC LINK
ATT FO
CONC DITCH

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	6B
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

PERMIT DRAWING
SHEET 14 OF 78

SHEET 6A

SITE 2

SITE 3

-RPA- TS Sta. 19+38.65
-RPA- ST Sta. 19+11.18
-RPA- CS Sta. 17+11.18
-RPA- SC Sta. 15+06.51
-RPA- TS Sta. 13+06.51
-L- POT Sta. 46+76.99
-RPA- POT Sta. 10+00.00 (39° LT)
-L- CS Sta. 45+73.53
-L- ST Sta. 46+73.53

TOE PROTECTION SEE DETAIL I
LATERAL V DITCH SEE DETAIL F
WARP GUTTER TO DRAIN
REMOVE 50' 36" RCP
REMOVE 70' 36" RCP
TRENCHLESS INSTALLATION 24" WELDED STEEL
FILL W/ FLOWABLE FILL
48" WW FENCE
ASP RIVERSEDGE, LLC
STANLEY E. DIXON, JR.
JEFFREY W. ELLIS
WILLIAM E. O'BERRY
THOMAS L., JR. & KIMBERLY H. BAZEMORE
ROY L. & EMMETT D. HARRELL
RIVER TRAIL EST
NAD 83

7 TONS CL I RIPRAP W/15 SY FIL FAB INV=22.8
2 TONS CL B RIPRAP W/7 SY FIL FAB INV=31.5
1 TONS CL B RIPRAP W/5 SY FIL FAB INV=43.2
15 TONS CL II RIPRAP W/30 SY FIL FAB INV=5.2
8 TONS CL B RIPRAP W/21 SY FIL FAB INV=8.0

15" CAAP 2 ELBOWS ROD & LUG
24" RCP-III
15" RCP-III
18" RCP-III
48" RCP-III JB w/MH
OTCB
2GI
FS
JS

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

ENGLISH

PLANS PREPARED BY :
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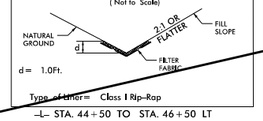
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

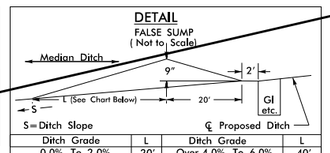
PERMIT DRAWING SHEET 15 OF 78

DETAIL I
TOE PROTECTION
(Not to Scale)



Type of Liner = Class I Rip-Rap
-L- STA. 44+50 TO STA. 46+50 LT

DETAIL
FALSE SUMP
(Not to Scale)



S = Ditch Slope
℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

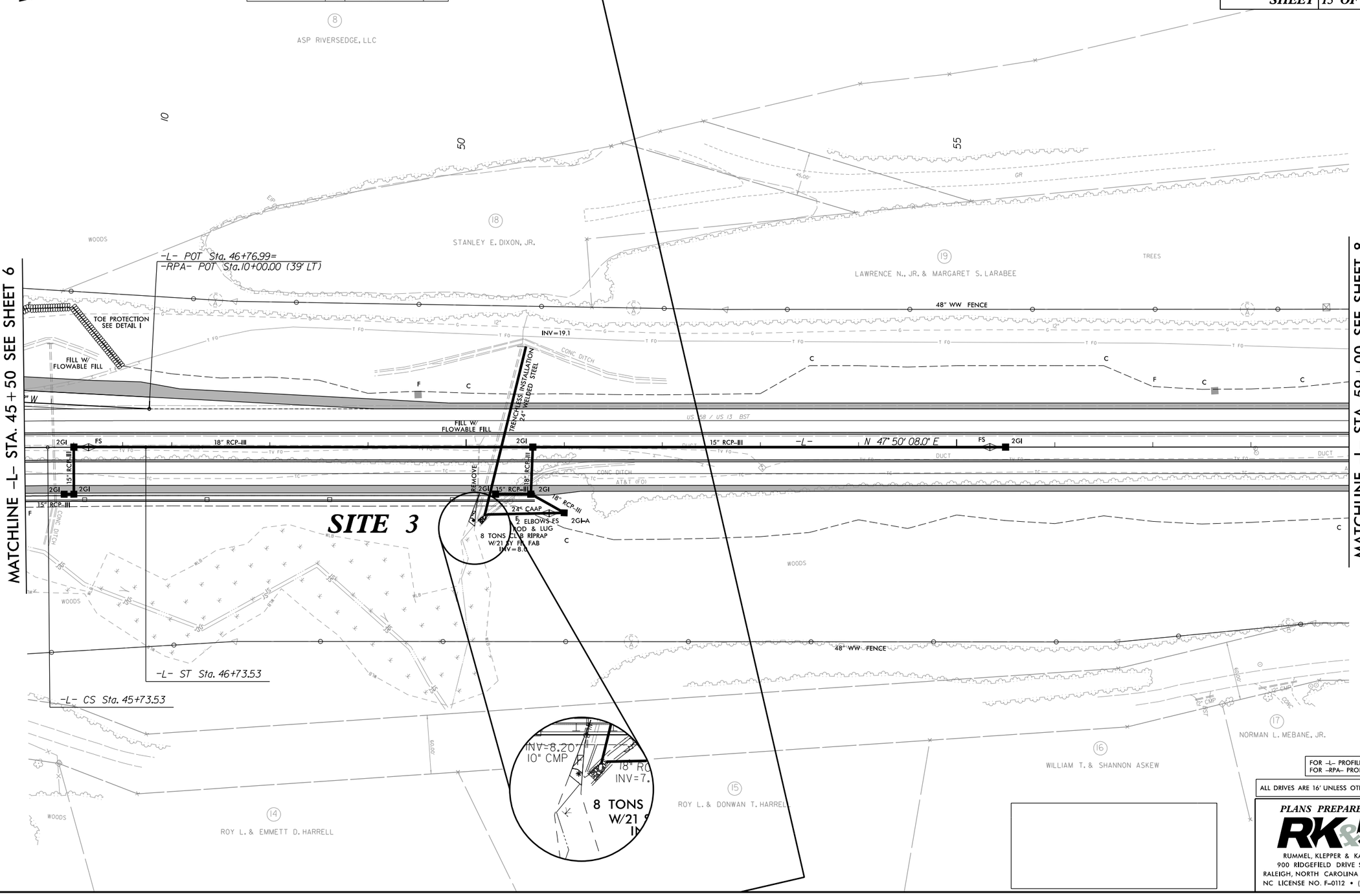
DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

NAD 83

SHEET 6B



FOR -L- PROFILE SEE SHT. 41
FOR -RPA- PROFILE SEE SHT. 57

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 16 OF 78

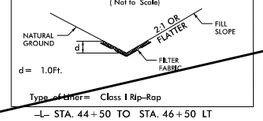
DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

NAD 83

DETAIL I
TOE PROTECTION
(Not to Scale)

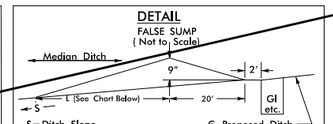


d = 1.0Ft.

Type of Liner = Class I Rip-Rap

-L- STA. 44+50 TO STA. 46+50 LT

DETAIL
FALSE SUMP
(Not to Scale)



S = Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

SHEET 6B

MATCHLINE -L- STA. 45+50 SEE SHEET 6

MATCHLINE -L- STA. 59+00 SEE SHEET 8

-L- POT Sta. 46+76.99=
-RPA- POT Sta.10+00.00 (39' LT)

TOE PROTECTION SEE DETAIL I

FILL W/ FLOWABLE FILL

INV=19.1

TRENCHLESS INSTALLATION 24" WELDED STEEL

REMOVE

2GI

FS

18" RCP-III

15" RCP-III

-L-

N 47° 50' 08.0" E

24" CAAP

2 ELBOWS-ES
MOD. & LUG
8 TONS CLASS RIPRAP
W/21 SY FF FAB
INV=8.0

18" RCP-III

2GI-A

48" WW FENCE

-L- ST Sta. 46+73.53

-L- CS Sta. 45+73.53

INV=8.20
10" CMP

INV=7.

8 TONS
W/21

SITE 3

STANLEY E. DIXON, JR.

LAWRENCE N., JR. & MARGARET S. LARABEE

ROY L. & EMMETT D. HARRELL

ROY L. & DONWAN T. HARRELL

WILLIAM T. & SHANNON ASKEW

NORMAN L. MEBANE, JR.

WOODS

TREES

FOR -L- PROFILE SEE SHT. 41
FOR -RPA- PROFILE SEE SHT. 57

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

PLANS PREPARED BY :
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RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
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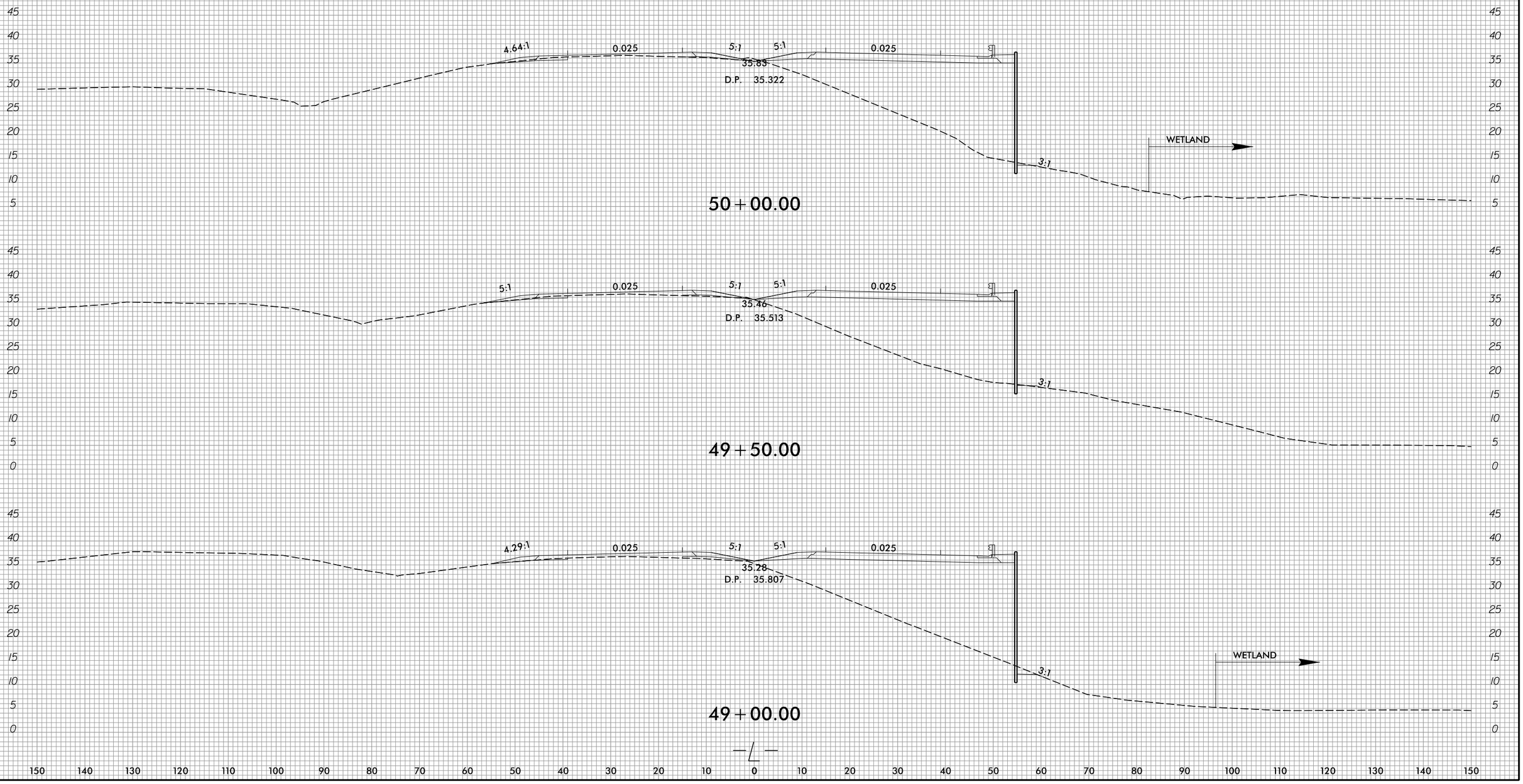
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	R-2507A	X-27

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PERMIT DRAWING
SHEET 17 OF 78

SITE 3



45 40 35 30 25 20 15 10 5 0

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 18 OF 78

DENOTES IMPACTS IN SURFACE WATER DUE TO BRIDGE PIERS

ENGLISH

NAD 83

GATES COUNTY
HERTFORD COUNTY

8 ASP RIVERSEDGE, LLC

DETAIL C
MEDIAN V DITCH
(Not to Scale)

Shoulder Point — 4:1 or Flatter — 4:1 or Flatter — Shoulder Point

–L– STA. 63+00 TO STA. 65+00

–L– POT STA.76+64.50
END APPROACH SLAB
–L– POT STA.76+40.50
END BRIDGE
N 47° 50' 08.0" E
TYPE III
B-77
24"
36"
80'
–L– POT STA.65+19.50
BEGIN BRIDGE
PROP. SBG
PROP. PILE/PANEL WALL
–L– POT STA.64+95.50
BEGIN APPROACH SLAB

BRIDGE SKETCH OVER CHOWAN RIVER

19 LAWRENCE N., JR. & MARGARET S. LARABEE

60 65 70

CHOWAN RIVER

MATCHLINE –L– STA. 59+00 SEE SHEET 7

MATCHLINE –L– STA. 72+00 SEE SHEET 9

48" WW FENCE
4' WW
12"
DUCT
TV FO
T FO
(FO)
TC
G
TREES
NOTE: CENTURY LINK (FO) CABLE IN 1¼" INNER-DUCT BORED UNDER RIVER WITH 12" GAS LINE.
WD PILINGS
MTL
US 158 / US 13 BST
MEDIAN V DITCH
SEE DETAIL C
–L–
N 47° 50' 08.0" E
AT&T (FO)
CLASS II RIPRAP
–L– POT STA.64+95.50
BEGIN APPROACH SLAB
–L– POT STA.65+19.50
BEGIN BRIDGE
WOODS
CHOWAN RIVER

SITE 4

RIVER TRAIL BST
CONC
PAVED
BST
2SFD
DK
S
21 JEWEL J. COPELAND
WOODS
20 LOUIS C. & BARBARA H. HARRISON

FOR –L– PROFILE SEE SHTS. 41 & 42

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 19 OF 78

8

ASP RIVERSEDGE, LLC

DETAIL C
MEDIAN V DITCH
(Not to Scale)

Shoulder Point — 4:1 or Flatter — 4:1 or Flatter — Shoulder Point

-L- STA. 63+00 TO STA. 65+00

-L- POT STA.76+64.50
END APPROACH SLAB
-L- POT STA.76+40.50
END BRIDGE
N 47° 50' 08.0" E
-L-
TYPE III
B-77
24"
36"
80'
-L- POT STA.65+19.50
BEGIN BRIDGE
-L- POT STA.64+95.50
BEGIN APPROACH SLAB
PROP. SBG
PROP. PILE/PANEL WALL

BRIDGE SKETCH OVER CHOWAN RIVER

NAD 83

GATES COUNTY
HERTFORD COUNTY

DENOTES IMPACTS IN SURFACE WATER DUE TO BRIDGE PIERS

ENGLISH

MATCHLINE -L- STA. 59+00 SEE SHEET 7

MATCHLINE -L- STA. 72+00 SEE SHEET 9

19
LAWRENCE N., JR. & MARGARET S. LARABEE

60
65
70

48" WW FENCE
DUCT
TV FO
(FO)
12"
CHOWAN RIVER
UNDERCENTURY LINK (FO) CABLE IN 2" INNER-DUCT BORED UNDER RIVER WITH 12" GAS LINE.
WOODLINGS
US 158 / US 13 BST
MEDIAN V DITCH
SEE DETAIL C
AT&T (FO)
CLASS II RIPRAP
-L- POT STA.64+95.50
BEGIN APPROACH SLAB
-L- POT STA.65+19.50
BEGIN BRIDGE
WOODS
RIVER TRAIL BST
BST
POWER POLE
HOPE COMC
OAK
PINE
20
WOODS
LOUIS C. & BARBARA H. HARRISON

SITE 4

FOR -L- PROFILE SEE SHTS. 41 & 42

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

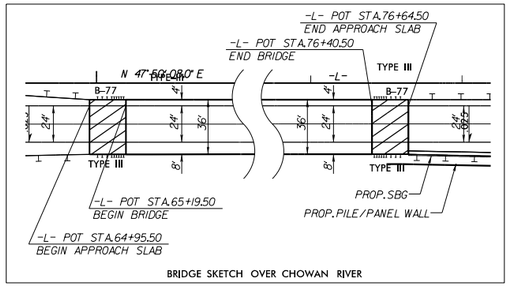
PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

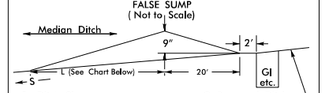
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8/17/99



BRIDGE SKETCH OVER CHOWAN RIVER

DETAIL
FALSE SUMP
(Not to Scale)



S = Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S DENOTES IMPACTS IN SURFACE WATER DUE TO BRIDGE PIERS

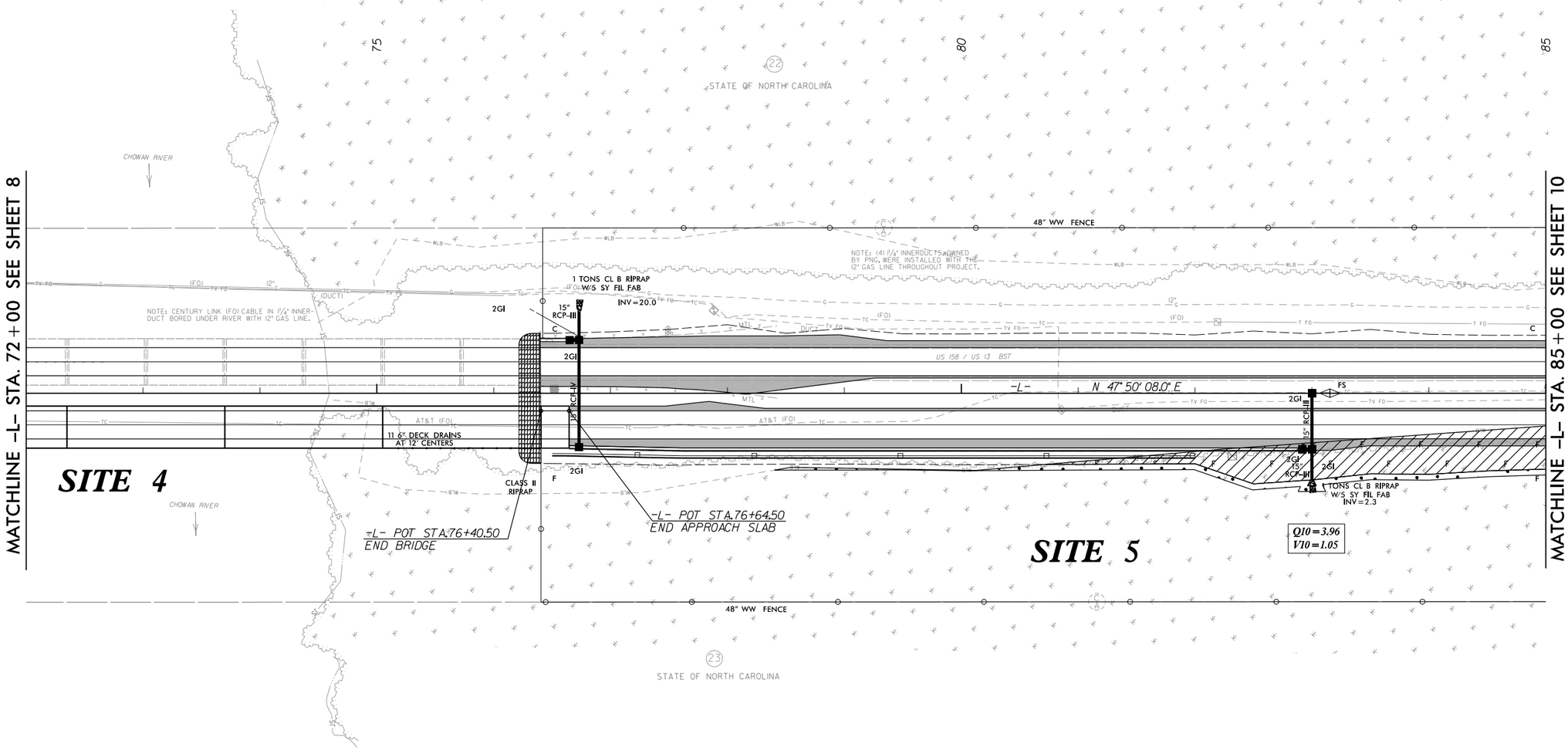
ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 20 OF 78

NAD 83



FOR -L- PROFILE SEE SHT. 42

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

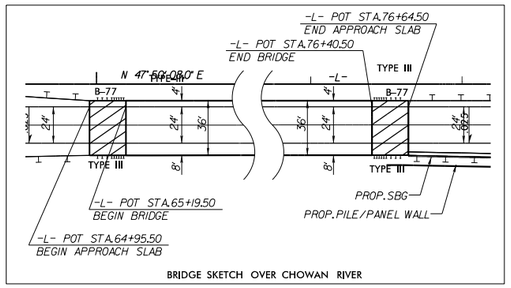
PLANS PREPARED BY :

RK&K

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900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

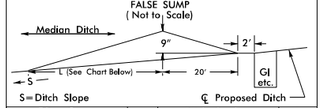
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Ekeys

8/17/99



BRIDGE SKETCH OVER CHOWAN RIVER

DETAIL
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S DENOTES IMPACTS IN SURFACE WATER *DUE TO BRIDGE PIERS*

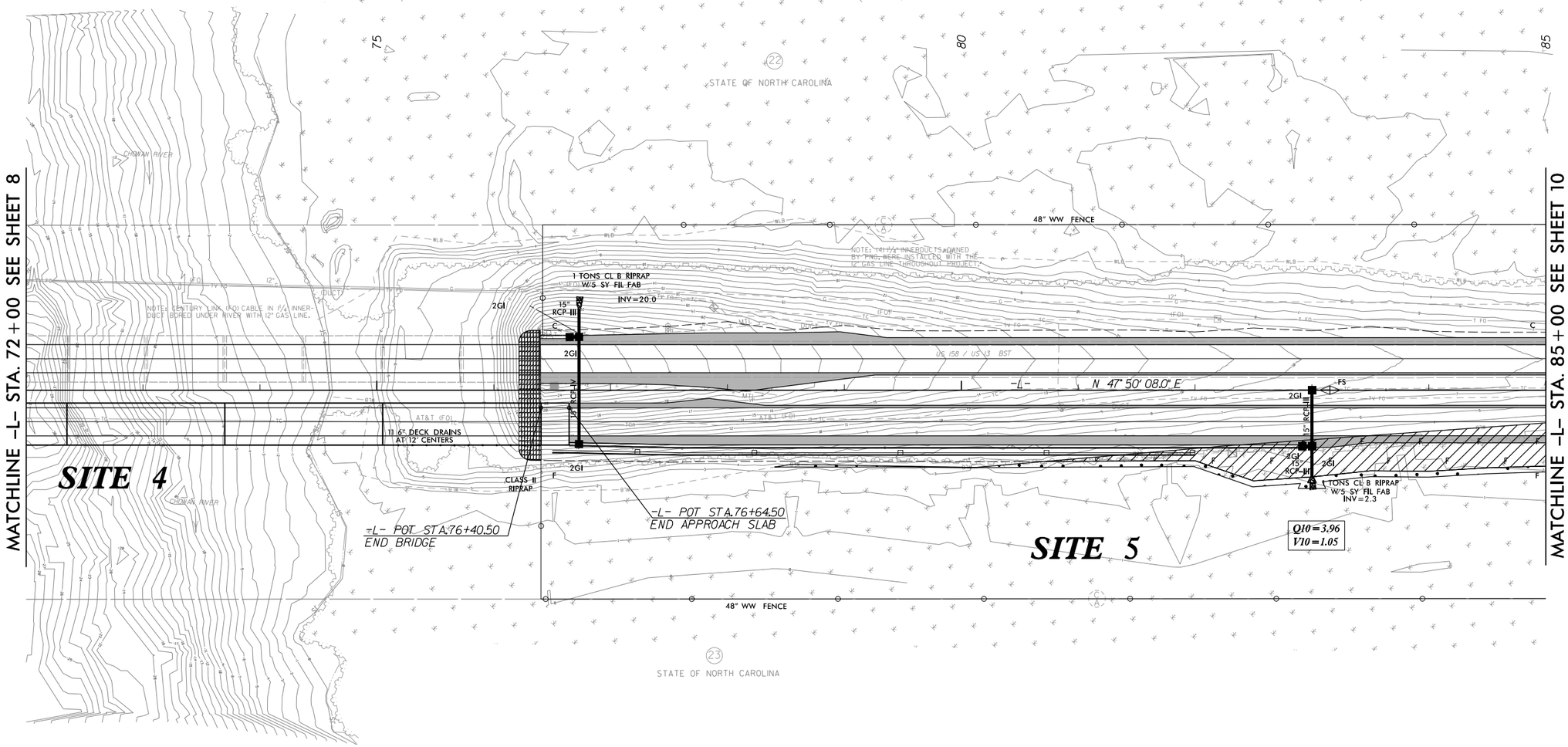
ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 21 OF 78

NAD 83



FOR -L- PROFILE SEE SHT. 42

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

PLANS PREPARED BY :

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RALEIGH, NORTH CAROLINA 27609-3960
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3/24/2012
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Ekang

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 22 OF 78

SITE 4

–L–

PI -L- STA. 63+50 CL
EL. 43.14

END MED. V DITCH
-L- STA. 65+00 CL
EL. 43.61

(+)0.6000%

(–)3.0000%

(+)0.30% CL

(+)0.30% CL

(+)2.30% CL

EXISTING BRIDGE

NAVIGABLE CHANNEL

PI = 69+35.00
EL = 47.88'
VC = 1,520'
K = 422
DS = >70

CL II RIPRAP
1.5:1 NORMAL
(TYP.)

CONCRETE GIRDER BRIDGE
1@135'-6", 1@135', 2@87'-6", 4@135', 1@135'-6"
-L- STA.70+80

DESIGN DISCHARGE	= 46,500	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 3.5	FT
BASE DISCHARGE	= 53,200	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 7.7	FT
OVERTOPPING DISCHARGE	= 49,000	CFS
OVERTOPPING FREQUENCY	= 100–	YRS
OVERTOPPING ELEVATION	= 5.3	FT
DATE OF SURVEY	= 08/2011	
W.S. ELEVATION AT DATE OF SURVEY	= 0.7	FT

63+00 64+00 65+00 66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00 74+00 75+00 76+00 77+00

50 40 30 20 10 0 –10 –20 –30 –40

BM1 ELEV=22.80
N 972529 E 2608885
BL STA. 67+41.00 (58' RT)
–L– STA. 82+31.89 (53' RT)
R/R SPIKE IN 16" GUM

PI = 83+05.00
EL = 6.78'
VC = 885'
K = 268
DS = >70

PROPOSED GRADE

EXISTING GROUND

(–)3.0000%

(+)0.3000%

PI -L- STA. 91+00 CL
EL. 7.27

BEG. MED. V DITCH
-L- STA. 89+50 CL
EL. 6.82

PROPOSED GRADE

(+)0.3000%

(+)0.30% CL

EXISTING GROUND

UNDERCUT EXCAVATION

FOR –L– PLAN SEE SHTS. 8 THRU 10

77+00 78+00 79+00 80+00 81+00 82+00 83+00 84+00 85+00 86+00 87+00 88+00 89+00 90+00 91+00

50 40 30 20 10 0 –10 –20 –30 –40

PLANS PREPARED BY :

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R:\Hydraulics\PERMITS_Environmental\Drawings\R2507A_Hyd_prm_wet_pf142.dgn
rkeus

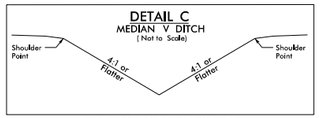
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 23 OF 78

DETAIL C
MEDIAN V DITCH
(Not to Scale)



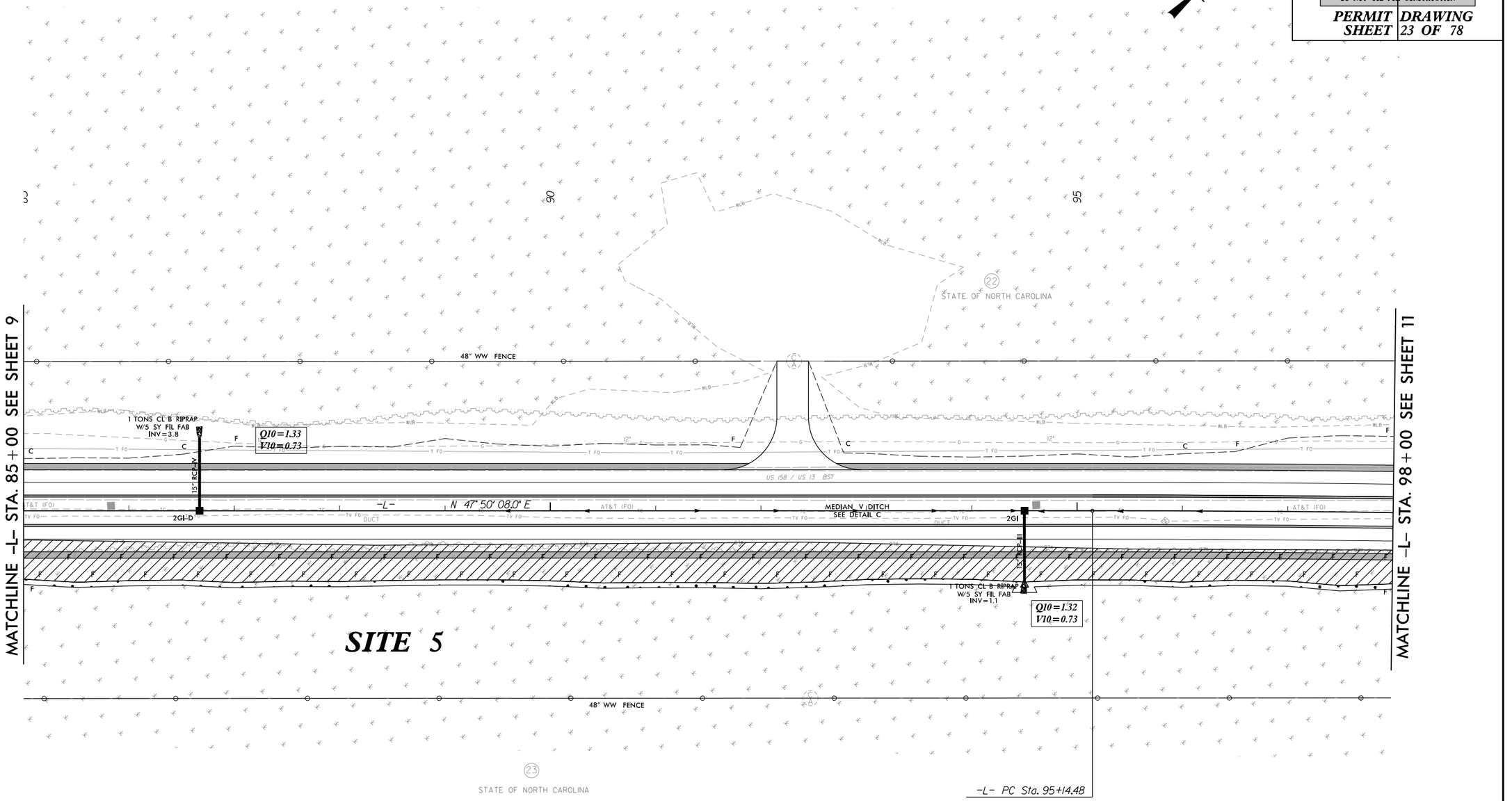
–L– STA. 89+50 TO STA. 96+50

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

NAD 83



FOR –L– PROFILE SEE SHTS. 42 & 43

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

PLANS PREPARED BY :

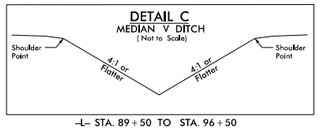
RK&K

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Ekins

8/17/99

DETAIL C
MEDIAN V DITCH
(Not to Scale)



-L- STA. 89+50 TO STA. 96+50

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

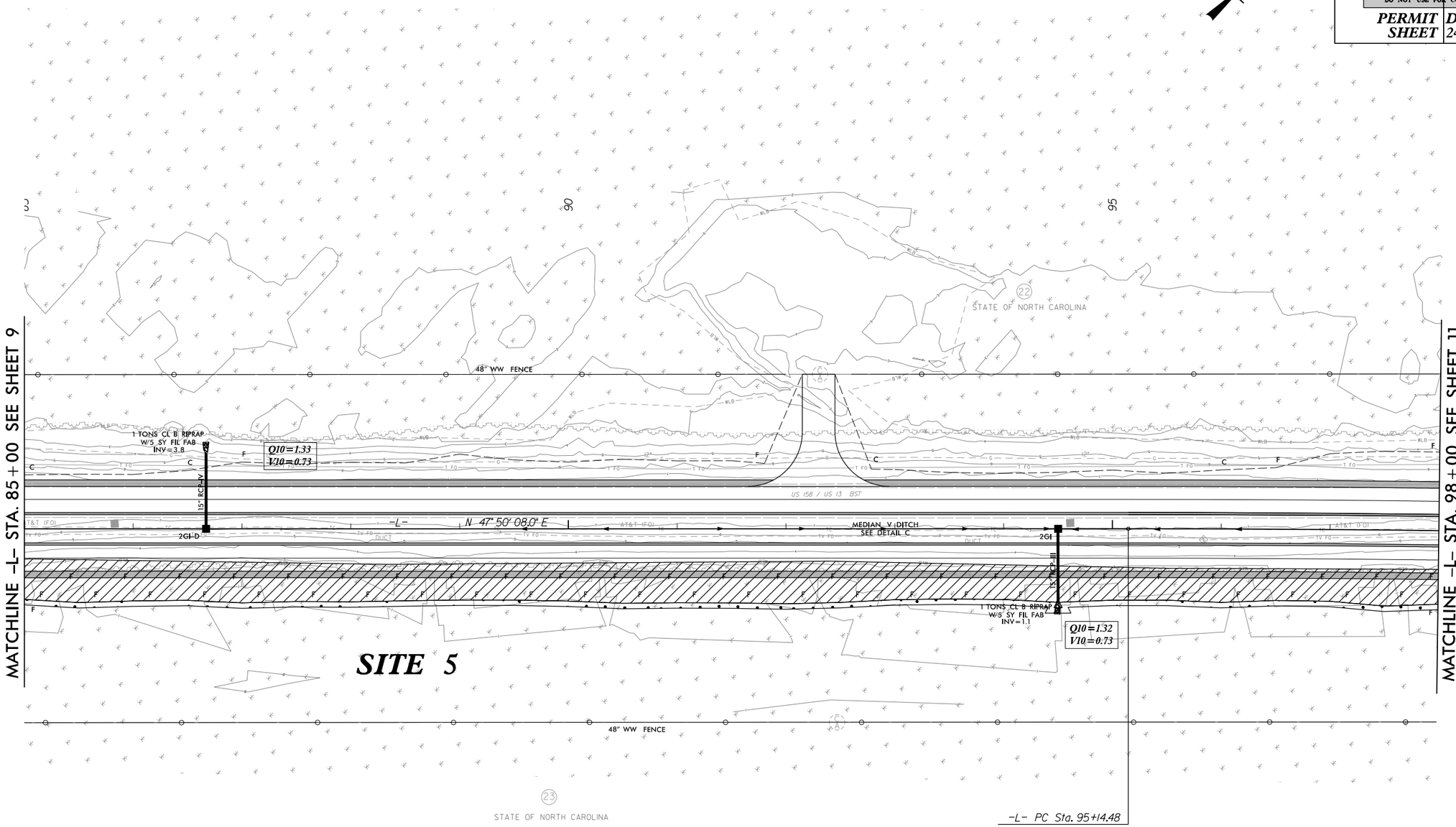
ENGLISH

NAD 83

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 24 OF 78



FOR -L- PROFILE SEE SHTS. 42 & 43

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

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Ekeng

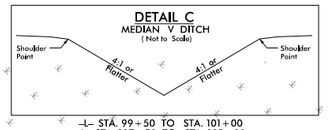
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 25 OF 78

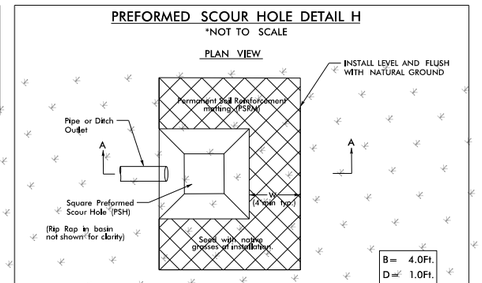
DETAIL C
MEDIAN V DITCH
(Not to Scale)



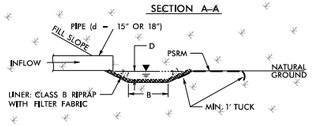
-L- STA. 99+50 TO STA. 101+00
-L- STA. 107+50 TO STA. 109+00

PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE

PLAN VIEW



SECTION A–A



308

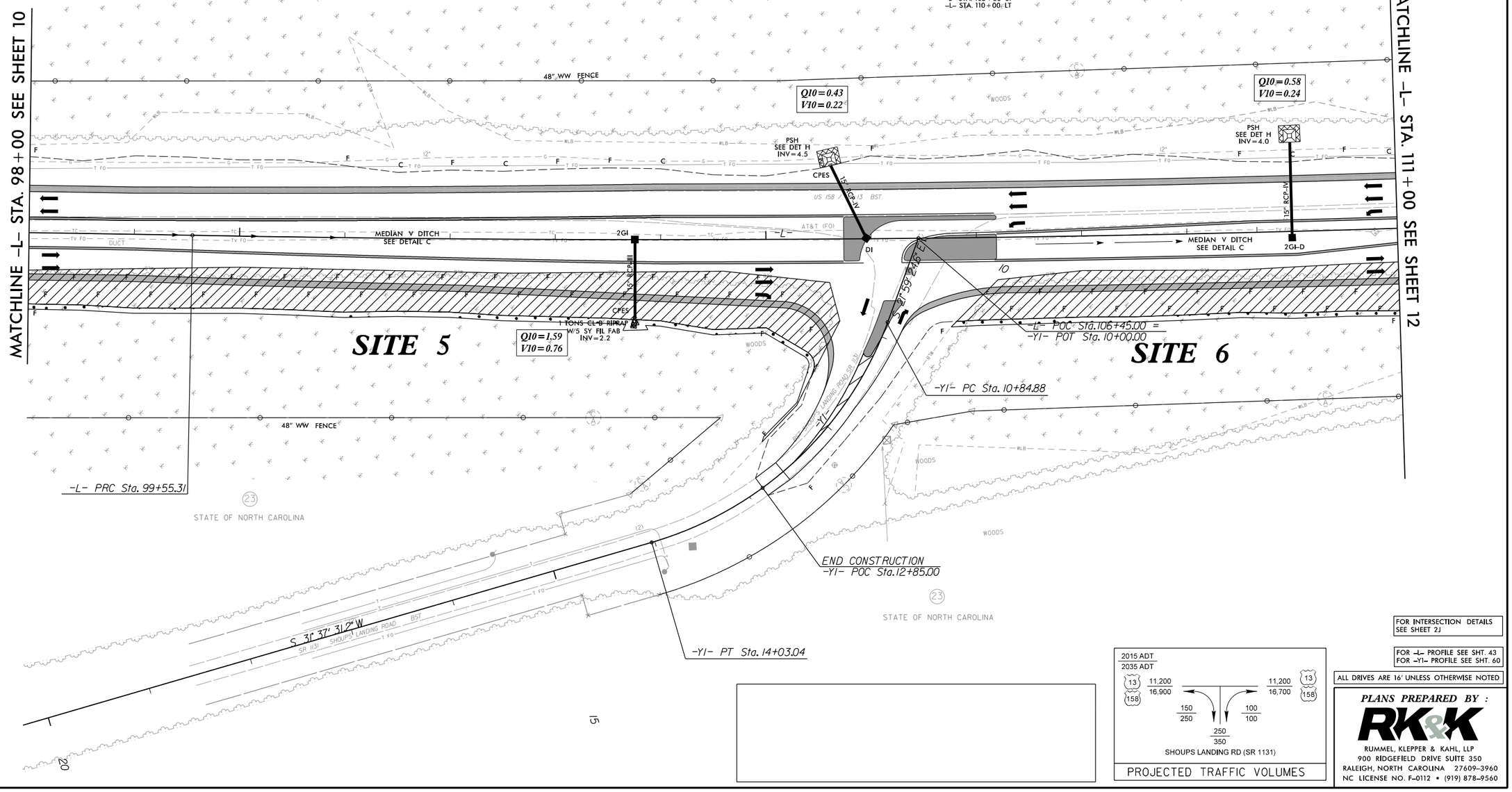
-L- STA. 105+66 LT
-L- STA. 110+00 LT

NAD 83

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH



FOR INTERSECTION DETAILS SEE SHEET 2J

FOR -L- PROFILE SEE SHT. 43
FOR -Y1- PROFILE SEE SHT. 60

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

2015 ADT
2035 ADT

PROJECTED TRAFFIC VOLUMES

PLANS PREPARED BY :

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Ekang

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

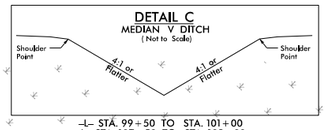
PERMIT DRAWING
SHEET 26 OF 78

ENGLISH

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

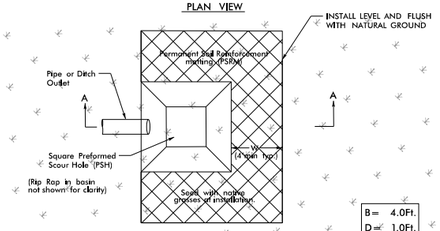
DETAIL C
MEDIAN V DITCH
(Not to Scale)



-L- STA. 99+50 TO STA. 101+00
-L- STA. 107+50 TO STA. 109+00

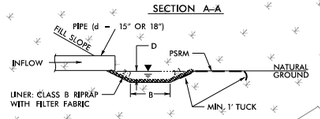
PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE

PLAN VIEW



B= 4.0Ft.
D= 1.0Ft.
W= 4.0Ft.

SECTION A-A



308

-L- STA. 105+66 LT
-L- STA. 110+00 LT

NAD 83

MATCHLINE -L- STA. 98+00 SEE SHEET 10

MATCHLINE -L- STA. 111+00 SEE SHEET 12

STATE OF NORTH CAROLINA

48" WW FENCE

Q10=0.43
V10=0.22

PSH
SEE DET H
INV=4.5

CPES

12" RCP

US 158 / NC 13 BST

MEDIAN V DITCH
SEE DETAIL C

2GI

AT&T (FO)

DI

15" RCP

Q10=1.59
V10=0.76

1 TONS CL B RIPRAP
W/5 SY FIL FAB
INV=2.2

SITE 5

-L- PRC Sta. 99+55.31

S 31° 37' 31.2" W

SR 1131 SHOUPS LANDING ROAD BST

-Y1- PT Sta. 14+03.04

Q10=0.58
V10=0.24

PSH
SEE DET H
INV=4.0

15" RCP-IN

MEDIAN V DITCH
SEE DETAIL C

2GI-D

N 21° 59' 24.6" E

-L- POC Sta.106+45.00 =
-Y1- POT Sta. 10+00.00

SITE 6

-Y1- PC Sta. 10+84.88

END CONSTRUCTION
-Y1- POC Sta.12+85.00

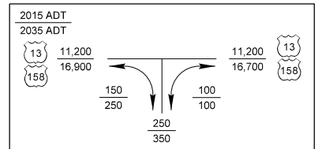
WOODS

FOR INTERSECTION DETAILS SEE SHEET 2J

FOR -L- PROFILE SEE SHT. 43
FOR -Y1- PROFILE SEE SHT. 60

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

2015 ADT
2035 ADT



PROJECTED TRAFFIC VOLUMES

PLANS PREPARED BY :

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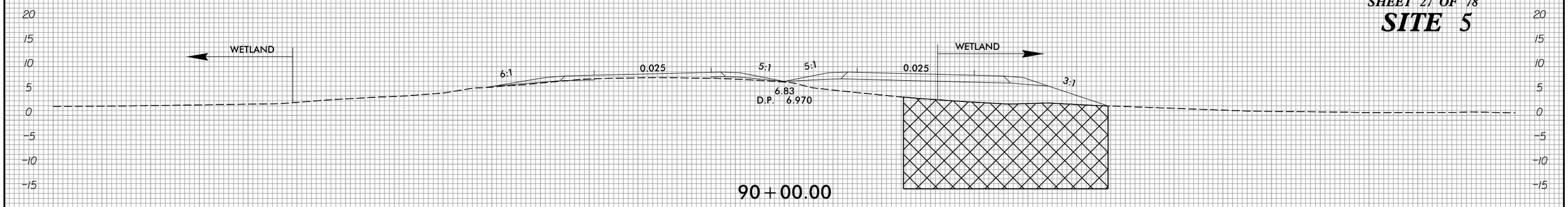
3/24/2012
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Ekang

8/23/99

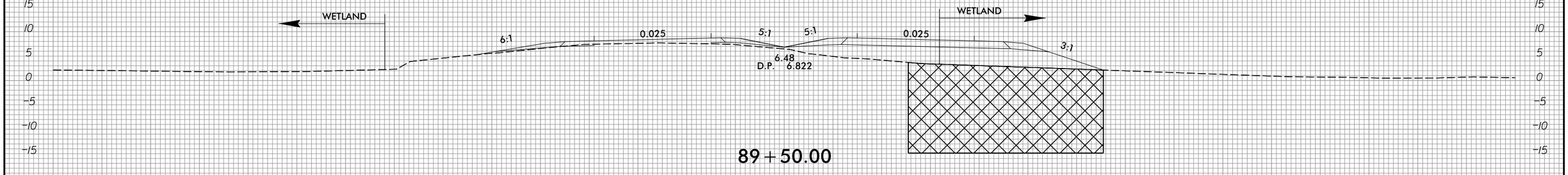
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2507A	X-48

PERMIT DRAWING
SHEET 27 OF 78

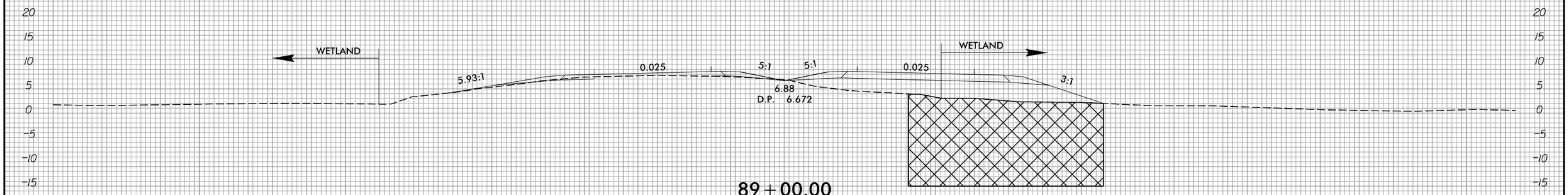
SITE 5



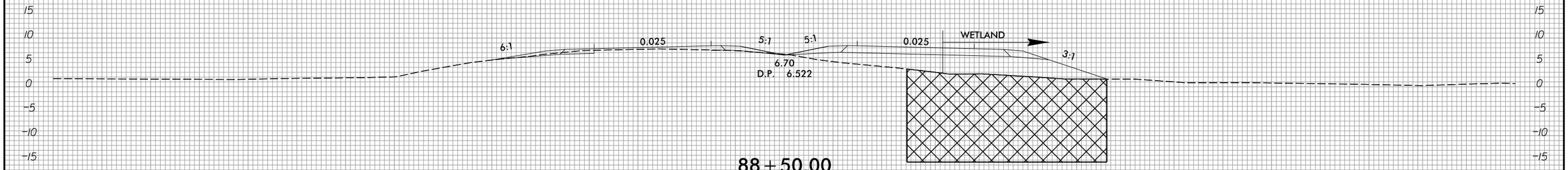
90+00.00



89+50.00



89+00.00



88+50.00

—℄—

3/2/2012
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Pkeys

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

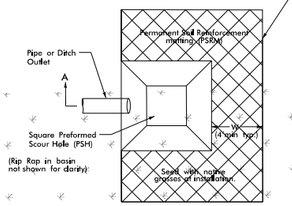
PERMIT DRAWING SHEET 28 OF 78

ENGLISH

PREFORMED SCOUR HOLE DETAIL H

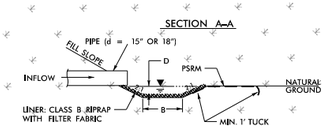
*NOT TO SCALE

PLAN VIEW



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D= 1.0Ft.
W= 4.0Ft.

SECTION A–A

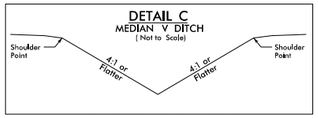


3:08

–L– STA. 113+25 RT

DETAIL C

MEDIAN V DITCH
(Not to Scale)



–L– STA. 117+50 TO STA. 123+50

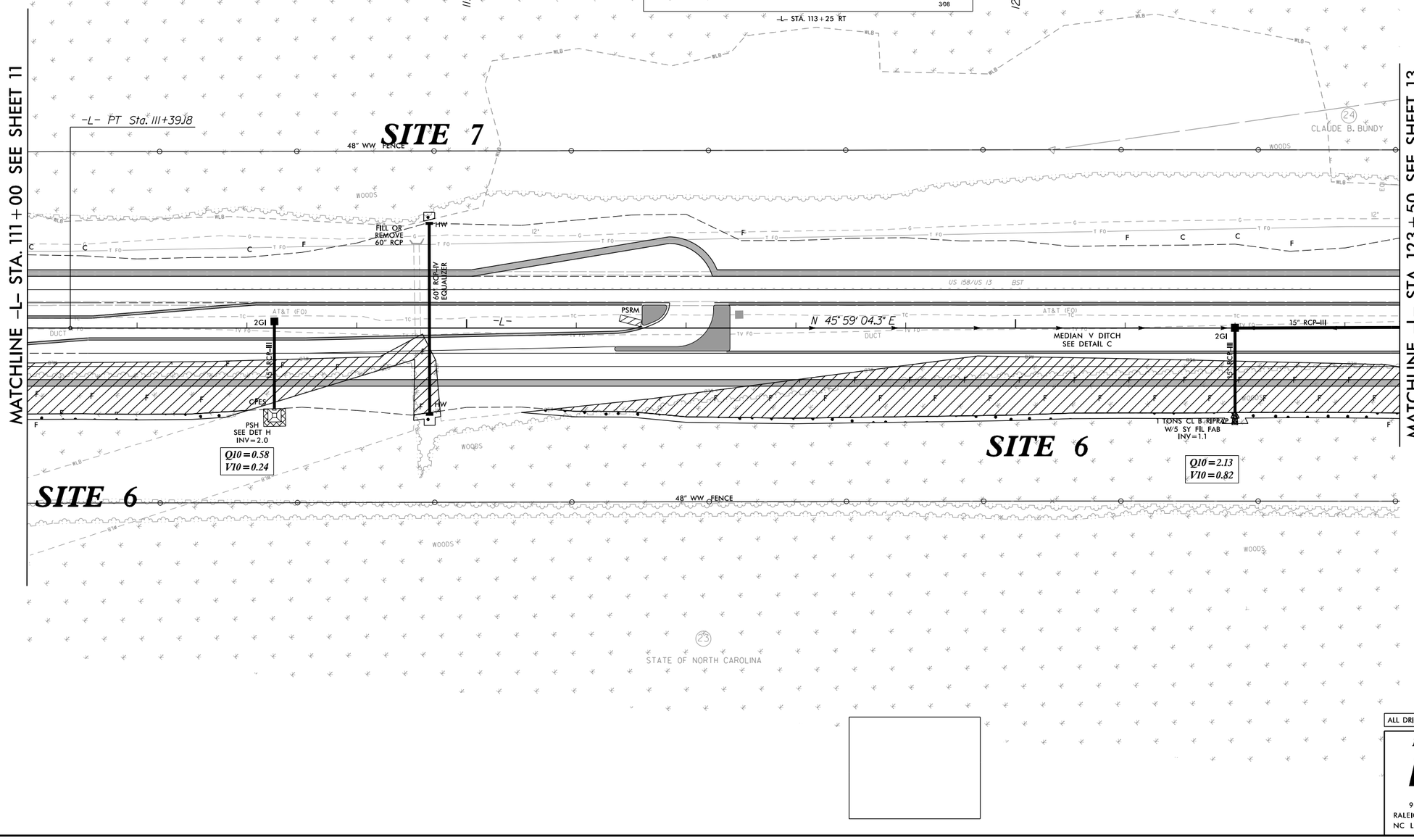
NAD 83

F / F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

MATCHLINE –L– STA. 111+00 SEE SHEET 11

MATCHLINE –L– STA. 123+50 SEE SHEET 13



FOR BULB DETAIL SEE SHEET 2H

FOR –L– PROFILE SEE SHTS. 43 & 44

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

PLANS PREPARED BY :

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Ekeen

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

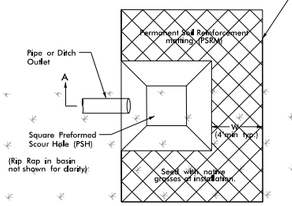
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT SHEET 29 OF 78

PREFORMED SCOUR HOLE DETAIL H

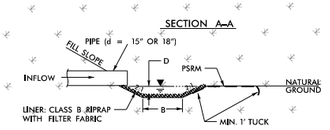
*NOT TO SCALE

PLAN VIEW



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D = 1.0Ft.
W = 4.0Ft

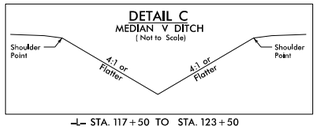
SECTION A–A



3:08

DETAIL C

MEDIAN V DITCH
(Not to Scale)



–L– STA. 117+50 TO STA. 123+50

NAD 83

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

MATCHLINE –L– STA. 111+00 SEE SHEET 11

MATCHLINE –L– STA. 123+50 SEE SHEET 13

STATE OF NORTH CAROLINA

–L– PT Sta. 111+39.18

SITE 7

48" WW FENCE

WOODS

CLAUDE B. BUNDY

FILL OR REMOVE 60" RCP

HW

60' RCP IV EQUALIZER

–L–

N 45° 59' 04.3" E

US 158/US 13 BST

PSRM

2GI

15" RCP-III

CPES

PSH
SEE DET. H
INV=2.0

Q10=0.58
V10=0.24

MEDIAN V DITCH
SEE DETAIL C

2GI

15" RCP-III

11 TONS CL B RIPRAP
W/5 SY FIL FAB
INV=1.1

SITE 6

Q10=2.13
V10=0.82

SITE 6

48" WW FENCE

WOODS

STATE OF NORTH CAROLINA

FOR BULB DETAIL SEE SHEET 2H

FOR –L– PROFILE SEE SHTS. 43 & 44

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PLANS PREPARED BY :

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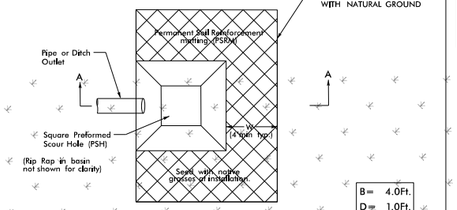
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Ekeng

8/17/99

PREFORMED SCOUR HOLE DETAIL H

*NOT TO SCALE

PLAN VIEW



SECTION A–A

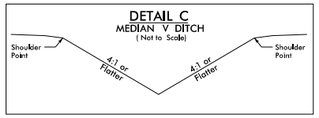
308

–L– STA. 132+00 RT

DETAIL C

MEDIAN V DITCH

(Not to Scale)

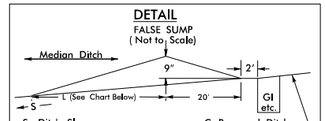


–L– STA. 125+00 TO STA. 131+50

DETAIL

FALSE SUMP

(Not to Scale)



S = Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

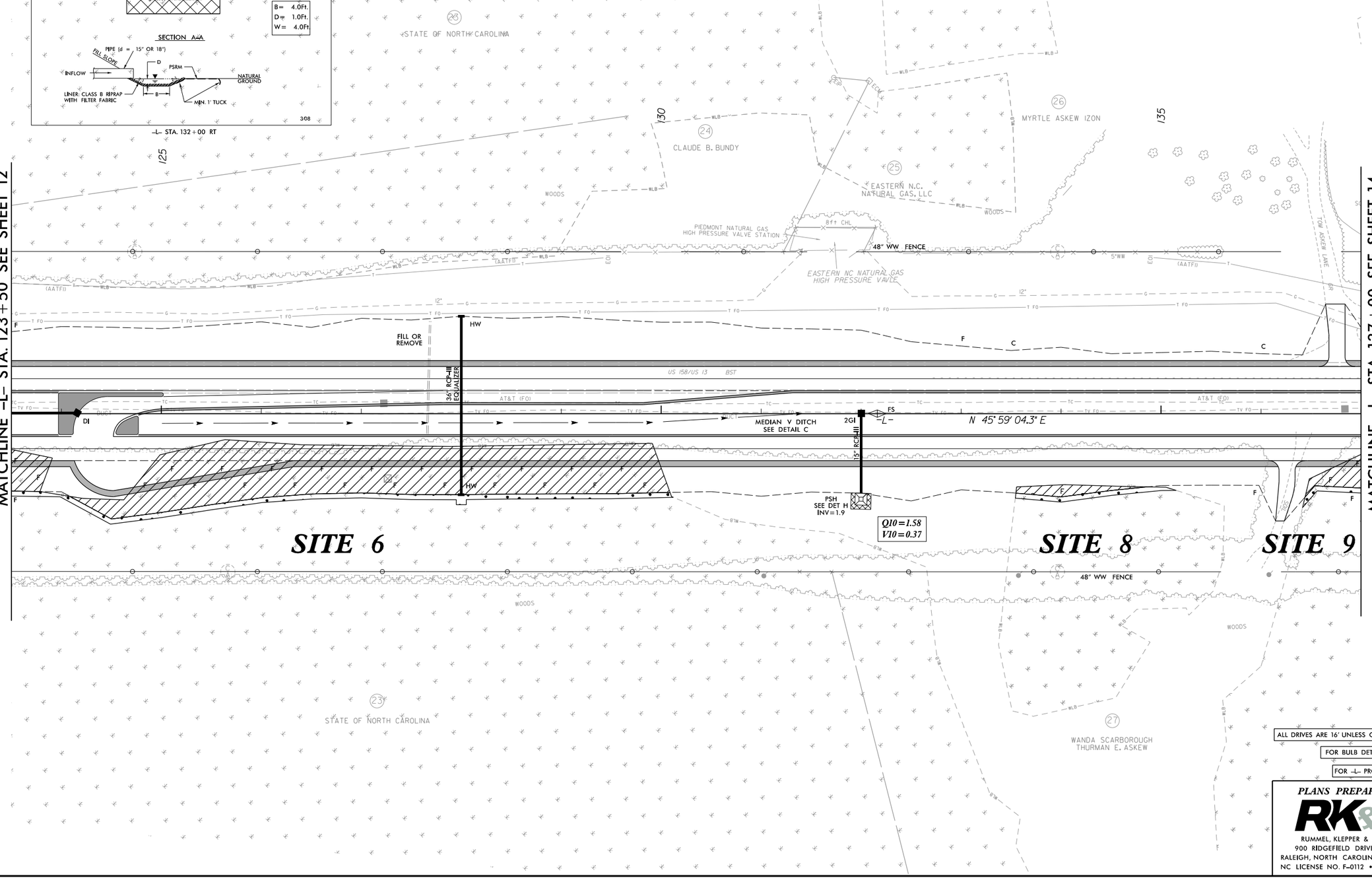
ENGLISH

NAD 83

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 30 OF 78



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAIL SEE SHEET 2H

FOR –L– PROFILE SEE SHT. 44

PLANS PREPARED BY :

RK&K

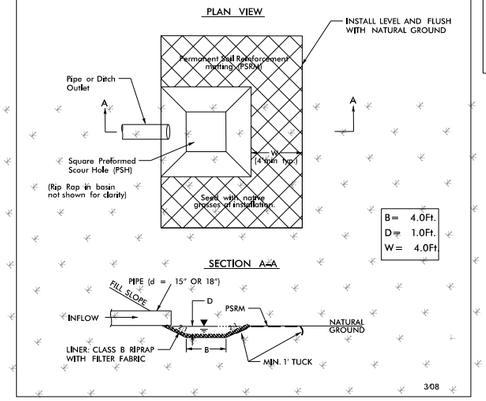
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/2/2012
R:\Highways\PERMITS_Environmental\Drawings\R2507A_Hyd_prm_wet_psh13.dgn
Ekeus

8/17/99

PREFORMED SCOUR HOLE DETAIL H

*NOT TO SCALE

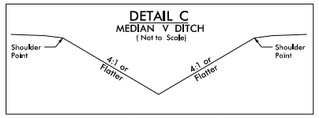


-L- STA. 132+00 RT

DETAIL C

MEDIAN V DITCH

(Not to Scale)

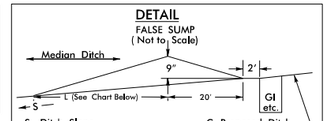


-L- STA. 125+00 TO STA. 131+50

DETAIL

FALSE SUMP

(Not to Scale)



S = Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

NAD 83

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 31 OF 78

MATCHLINE -L- STA. 123+50 SEE SHEET 12

MATCHLINE -L- STA. 137+00 SEE SHEET 14

STATE OF NORTH CAROLINA (28)

CLAUDE B. BUNDY (24)

MYRTLE ASKEW IZON (26)

EASTERN N.C. NATURAL GAS, LLC (25)

PIEDMONT NATURAL GAS HIGH PRESSURE VALVE STATION

EASTERN NC NATURAL GAS HIGH PRESSURE VAVLE

TOM ASKEW LANE SR

125 130 135

WOODS

8Ft CHL

48" WW FENCE

5'WW

(AATFI)

EOI

WLB

12"

T FO

G

F

C

DI

FILL OR REMOVE

HW

36" RCP+III EQUALIZER

US 158/US 13 BST

AT&T (FO)

TV FO

TC

MEDIAN V DITCH SEE DETAIL C

2GI

FS

-L-

N 45° 59' 04.3" E

15" RCP+III

PSH SEE DET H INV=1.9

Q10=1.58
V10=0.37

SITE 6

SITE 8

SITE 9

48" WW FENCE

STATE OF NORTH CAROLINA (23)

WANDA SCARBOROUGH THURMAN E. ASKEW (27)

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAIL SEE SHEET 2H

FOR -L- PROFILE SEE SHT. 44

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
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RALEIGH, NORTH CAROLINA 27609-3960
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3/2/2012
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Ekeus

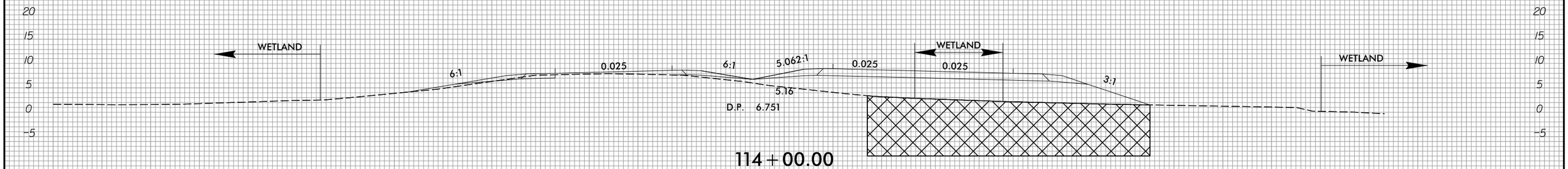
8/23/99

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	R-2507A	X-58

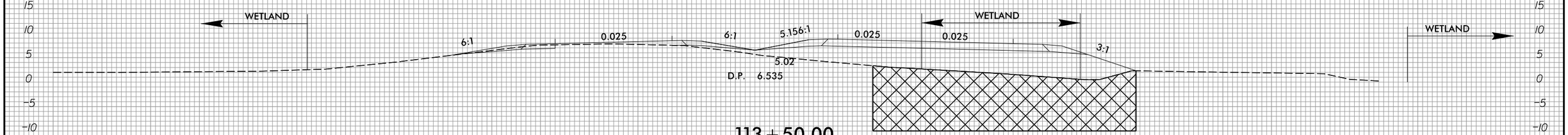
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PERMIT DRAWING
SHEET 32 OF 78

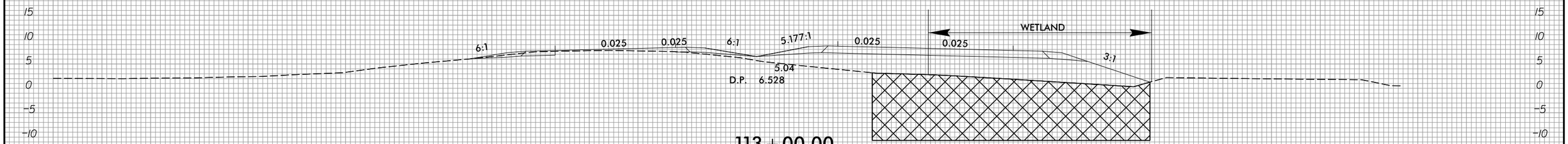
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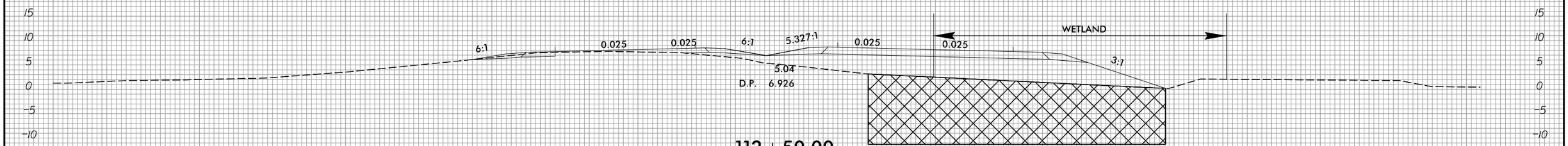
114 + 00.00



113 + 50.00



113 + 00.00



112 + 50.00

3/2/2012
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Fkeys

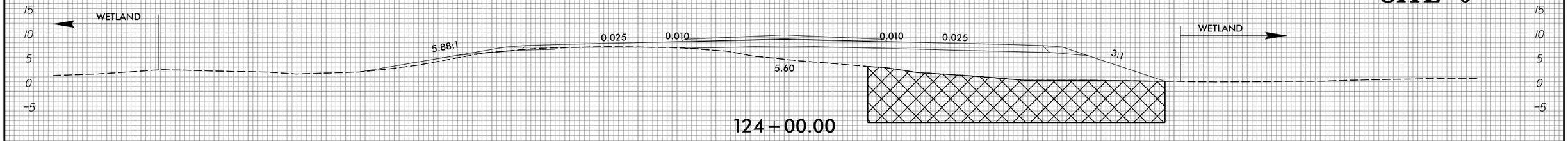
8/23/99

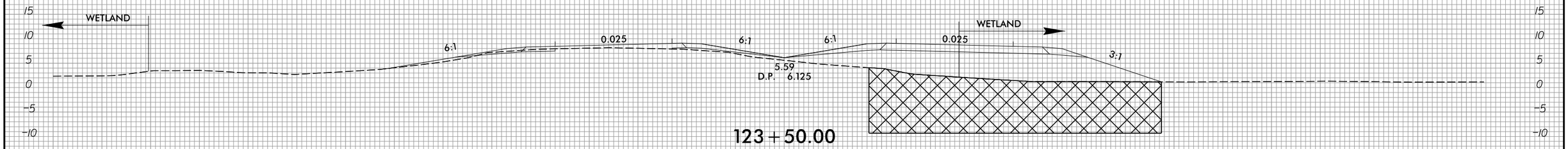
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	R-2507A	X-62

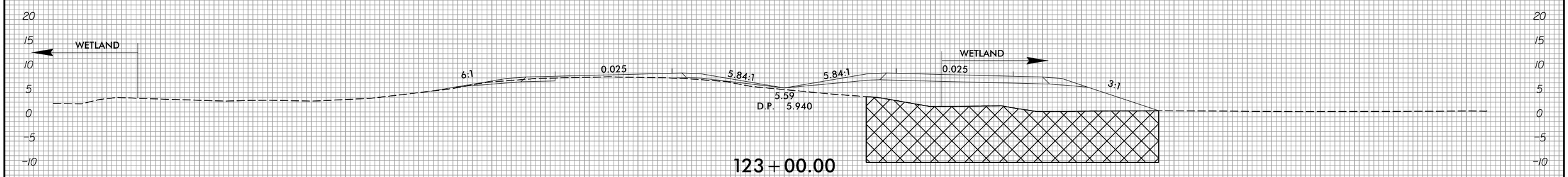
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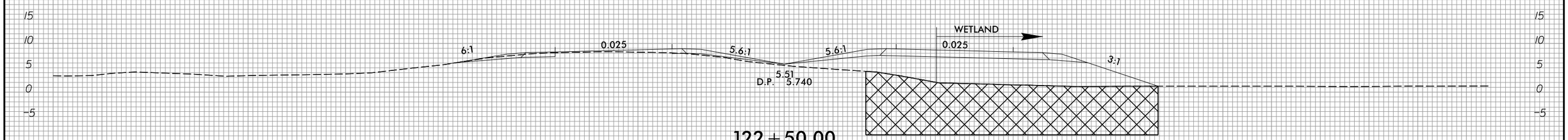
PERMIT DRAWING
SHEET 33 OF 78

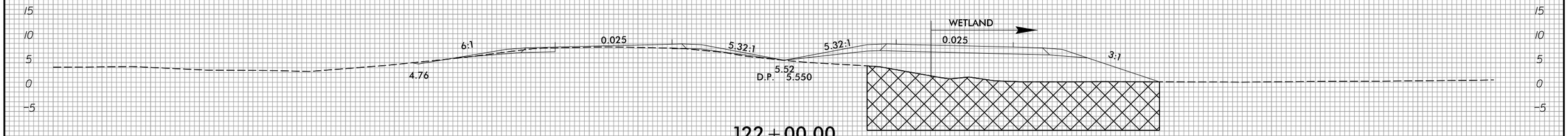
SITE 6











3/2/2012
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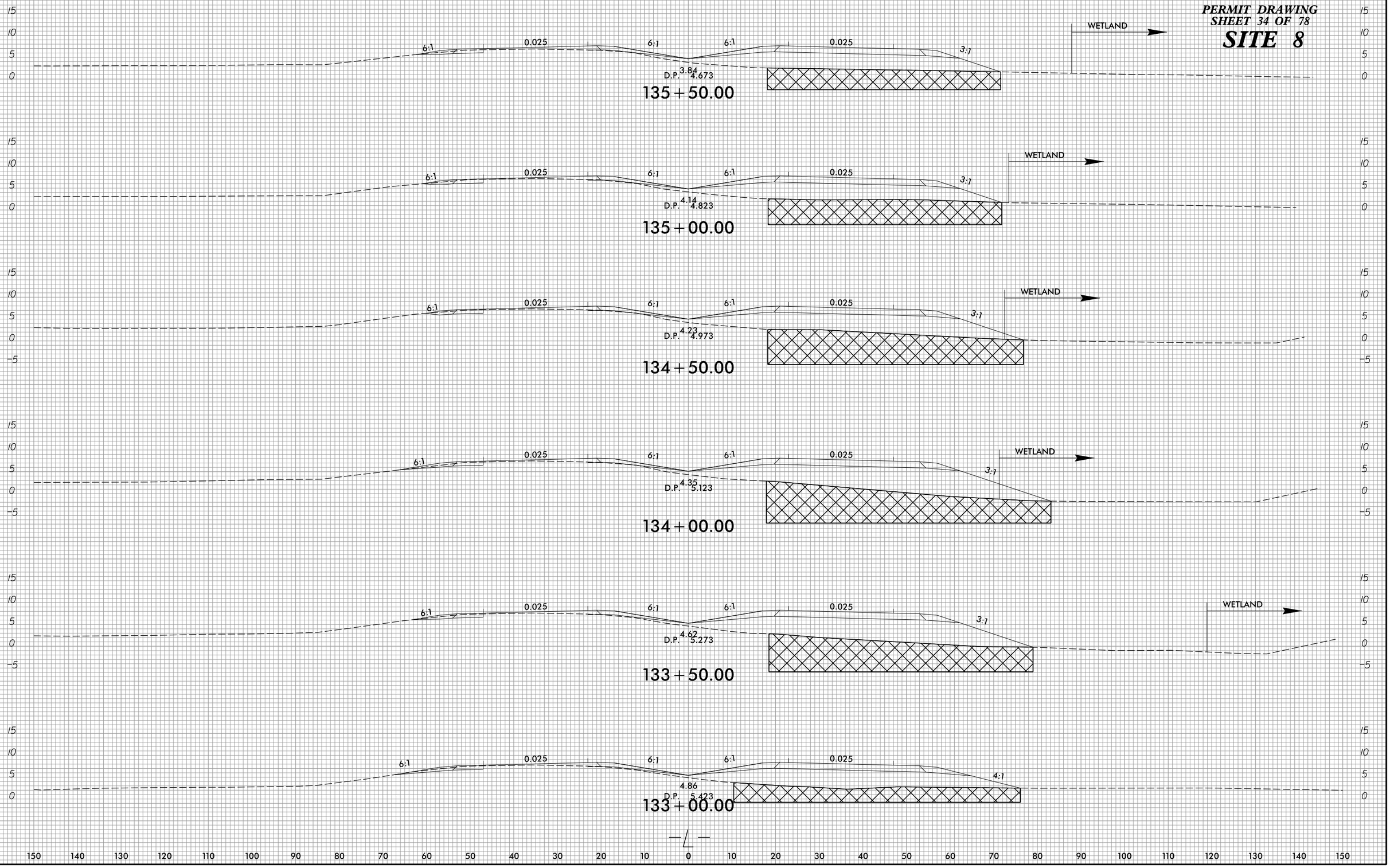
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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2507A	X-66

PERMIT DRAWING
SHEET 34 OF 78

SITE 8



3/2/2012
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Fkeys

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 35 OF 78

ENGLISH

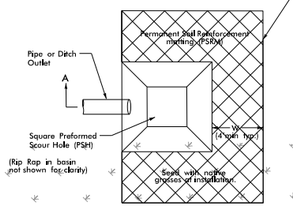
F/F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PREFORMED SCOUR HOLE DETAIL H

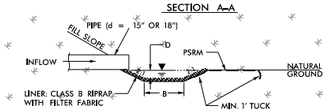
*NOT TO SCALE

PLAN VIEW



B = 4.0Ft.
D = 1.0Ft.
W = 4.0Ft.

SECTION A–A

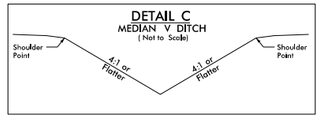


308

–L– STA. 138+50 RT

DETAIL C

MEDIAN V DITCH
(Not to Scale)



–L– STA. 137+00 TO STA. 149+50

NAD 83

MATCHLINE –L– STA. 137+00 SEE SHEET 13

MATCHLINE –L– STA. 150+50 SEE SHEET 15

MYRTLE ASKEW-IZON (26)

WALTER L. ASKEW (28)

MERLE T. HALE (31)

ELEAZER A. & PHYLLIS J. TILLETT (33)

CARTER & SONS FURNITURE COMPANY, INC. (30)

WANDA SCARBOROUGH THURMAN E. ASKEW (27)

WALTER L. ASKEW (28)

WALTER L. ASKEW (29)

CHARLES W. & JEAN W. COOKSEY (32)

SITE 9

SITE 10

SITE 11

SITE 12

SITE 13

48" WW FENCE

FILL OR REMOVE BURIED EXISTING 4'X2' RCBC

MEDIAN V DITCH N 45°59'04.3" E SEE DETAIL C

2GI-D

15" RCP-III

CPES

PSH SEE DET H INV=1.0

QI0=2.80
V10=0.44

TOWN CK B RIPRAP W/S SY FIL FAB INV=0.6

QI0=1.75
V10=0.78

PSRM

2GI

15" RCP-III

CPES

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAIL SEE SHEET 2H

FOR –L– PROFILE SEE SHTS. 44 & 45

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

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Ekeys

8/17/99

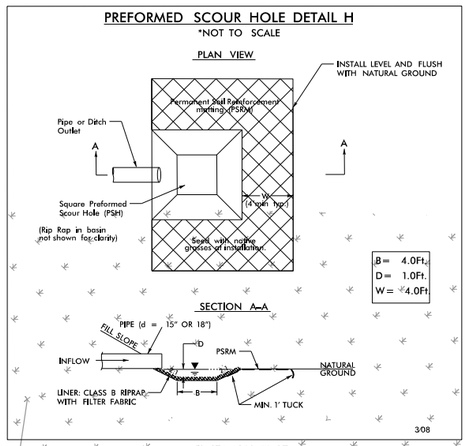
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 36 OF 78

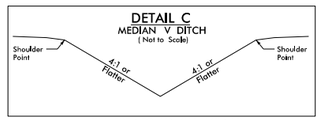
PREFORMED SCOUR HOLE DETAIL H

*NOT TO SCALE



–L– STA. 138+50 RT

DETAIL C
MEDIAN V DITCH
(Not to Scale)



–L– STA. 137+00 TO STA. 149+50

NAD 83

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

MATCHLINE –L– STA. 137+00 SEE SHEET 13

MATCHLINE –L– STA. 150+50 SEE SHEET 15

MYRTLE ASKEW HIZON (26)

WALTER L. ASKEW (28)

MERLE T. HALE (31)

ELEAZER A. & PHYLLIS J. TILLETT (33)

CARTER & SONS FURNITURE COMPANY, INC. (30)

WANDA SCARBOROUGH THURMAN E. ASKEW (27)

WALTER L. ASKEW (28)

WALTER L. ASKEW (29)

CHARLES W. & JEAN W. COOKSEY (32)

SITE 9

SITE 10

SITE 11

SITE 12

SITE 13

48" WW FENCE

FILL OR REMOVE BURIED EXISTING 4'X2' RCBC

MEDIAN V DITCH N 45°59'04.3" E SEE DETAIL C

2GI-D

15' RC-III

CPES

PSH SEE DET. H INV=1.0

Q10 = 2.80
V10 = 0.44

2GI

15' RC-III

CPES

TOWN CK. D RIPRAP W/5 SY. FIL FAB INV=0.6

Q10 = 1.75
V10 = 0.78

PSRM

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAIL SEE SHEET 2H

FOR –L– PROFILE SEE SHTS. 44 & 45

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/2/2012
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Ekeris

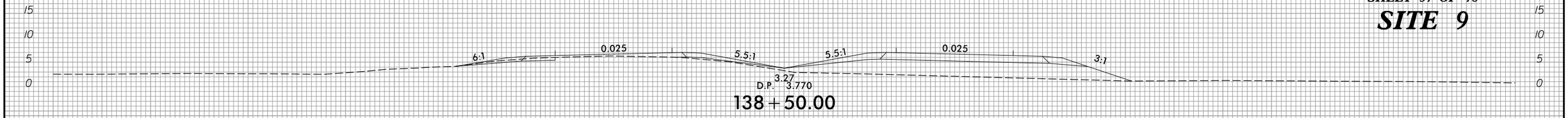
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	R-2507A	X-67

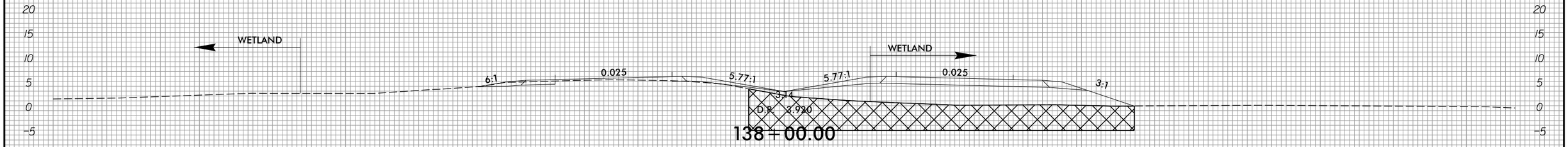
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PERMIT DRAWING
SHEET 37 OF 78

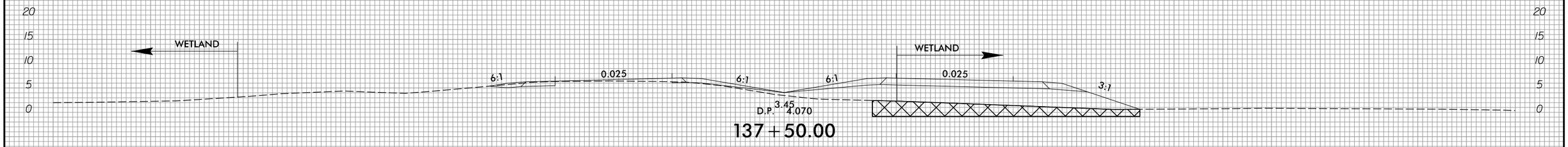
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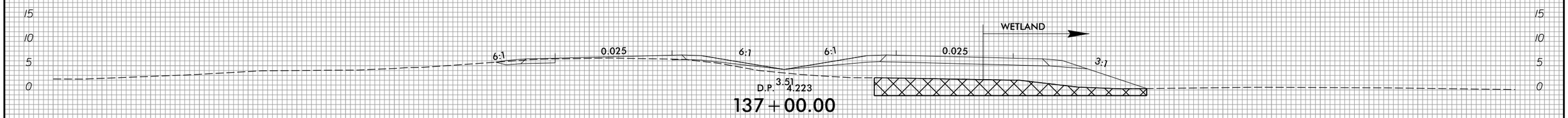
138 + 50.00



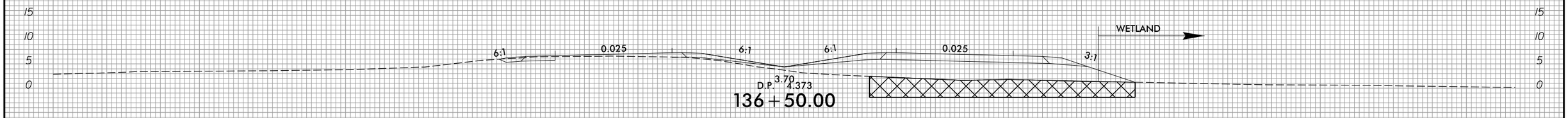
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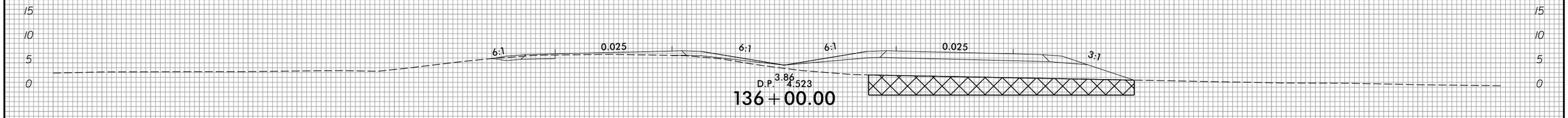
137 + 50.00



137 + 00.00



136 + 50.00



136 + 00.00

—℄—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

3/2/2012
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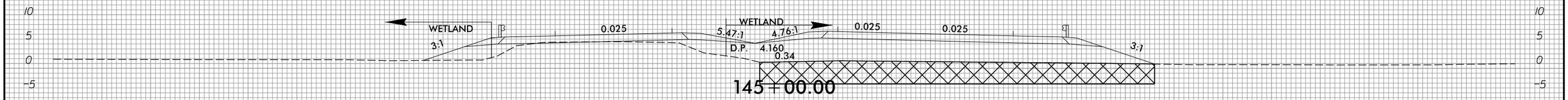
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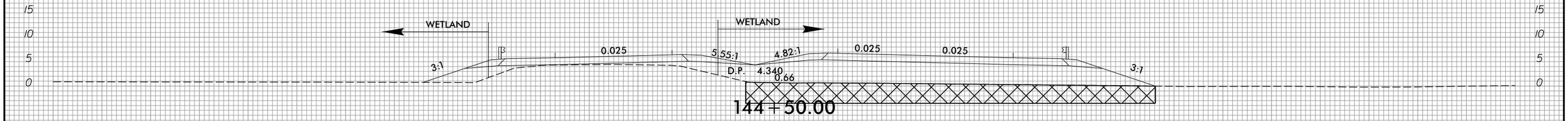
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	R-2507A	X-69

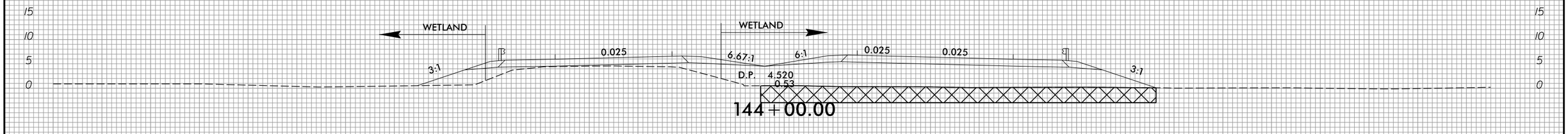
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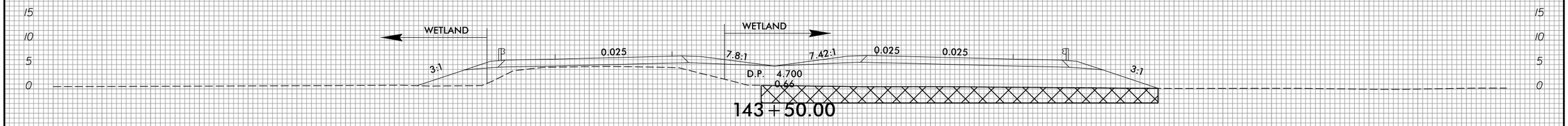
PERMIT DRAWING
SHEET 38 OF 78

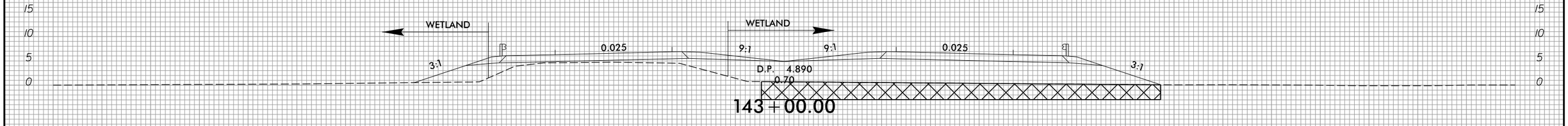
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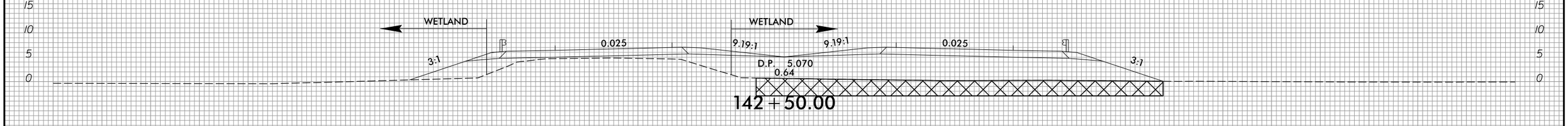












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150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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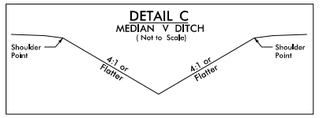
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 39 OF 78

DETAIL C
MEDIAN V DITCH
(Not to Scale)



STA. 150+50 TO STA. 155+00
STA. 156+50 TO STA. 163+50

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

NAD 83

MATCHLINE –L– STA. 150+50 SEE SHEET 14

MATCHLINE –L– STA. 163+00 SEE SHEET 16

33
ELEAZER A. & PHYLLIS J. TILLETT

34
STATE OF NORTH CAROLINA

155

160

SITE 13

WOODS

NOTE: (8) 1¼" INNERDUCTS, OWNED BY PNG, WERE INSTALLED WITH THE 12" GAS LINE THROUGHOUT PROJECT.

FILL OR REMOVE 4'X2' RCBC

FILL OR REMOVE 3'X3' RCBC

HW

SCRUB

FILL OR REMOVE

48" WW FENCE

FILL OR REMOVE 4'X2' RCBC

US 158/US 13 BST

L 20.00 N 48°59'04.3" E

3'-2" RCP EQUALIZERS

15" RCP

2GI

MEDIAN V DITCH SEE DETAIL C

PSRM

30" RCP EQUALIZERS

CFES

1 TONS CL B RIPRAP W/5 SY FIL FAB

INV=0.1

INV=1.5

32
CHARLES W. & JEAN W. COOKSEY

SITE 12

Q10=1.32
V10=0.73

Q10=1.25
V10=0.71

Q10=1.42
V10=0.74

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAIL SEE SHEET 2H

FOR –L– PROFILE SEE SHT. 45

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/2/2012
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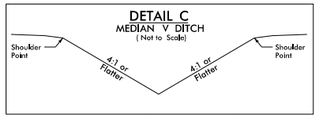
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 40 OF 78

DETAIL C
MEDIAN V DITCH
(Not to Scale)



STA. 150+50 TO STA. 155+00
STA. 156+50 TO STA. 163+50

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

NAD 83

MATCHLINE –L– STA. 150+50 SEE SHEET 14

MATCHLINE –L– STA. 163+00 SEE SHEET 16

33
ELEAZER A. & PHYLLIS J. TILLETT

34
STATE OF NORTH CAROLINA

32
CHARLES W. & JEAN W. COOKSEY

155

160

SITE 13

SITE 13

SITE 12

SITE 12

Q10=1.32
V10=0.73

Q10=1.25
V10=0.71

Q10=1.42
V10=0.74

WOODS

SCRUB

48" WW FENCE

FILL OR REMOVE 4'X2' RCBC

FILL OR REMOVE 3'X3' RCBC

FILL OR REMOVE

NOTE: (8) 1'-6" INNERDUCTS, OWNED BY ENG, WERE INSTALLED WITH THE 12" DRS LINE THROUGHOUT PROJECT.

L
N 48° 59' 04.3" E

MEDIAN V DITCH SEE DETAIL C

2-30" RCP EQUALIZERS

2-42" RCP EQUALIZERS

15" RCP

PSRM

CPES

1 TONS CL B RIPRAP W/5 SY FIL FAB
INV=0.1

INV=1.5

2GI

SCRL

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
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ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAIL SEE SHEET 2H

FOR –L– PROFILE SEE SHT. 45

3/2/2012
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Ekaur

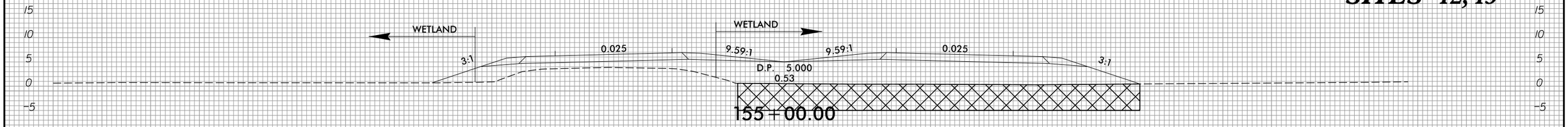
8/23/99

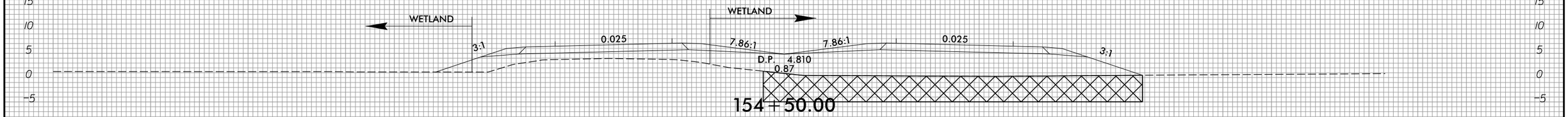
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	R-2507A	X-72

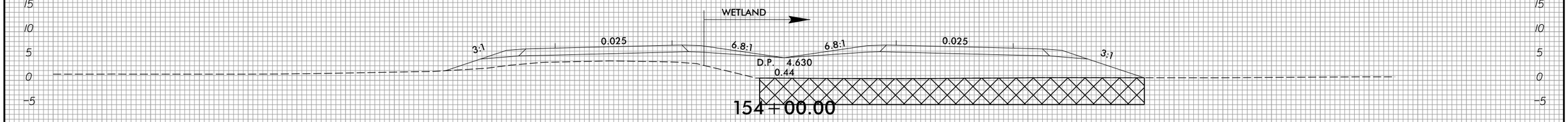
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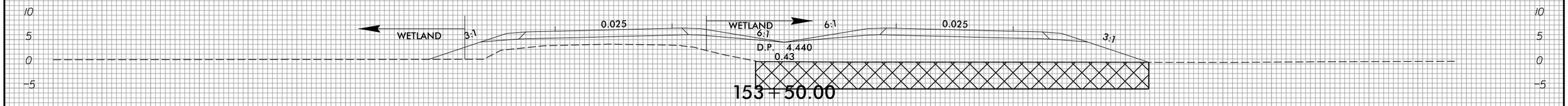
PERMIT DRAWING
SHEET 41 OF 78

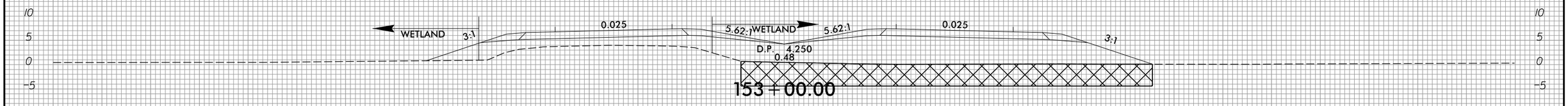
SITES 12, 13

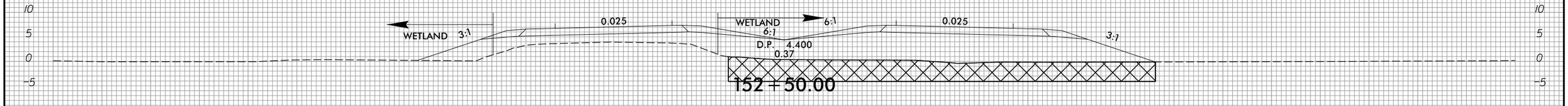












150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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Fkeys

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 42 OF 78

NAD 83

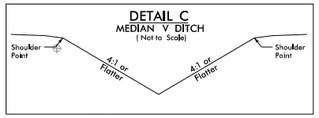
F F DENOTES FILL IN WETLAND

34 DENOTES MECHANIZED CLEARING

STATE OF NORTH CAROLINA

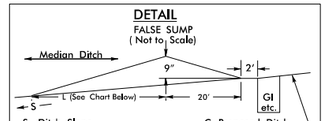
ENGLISH

DETAIL C
MEDIAN V DITCH
(Not to Scale)



–L– STA. 156+50 TO STA. 163+50

DETAIL
FALSE SUMP
(Not to Scale)

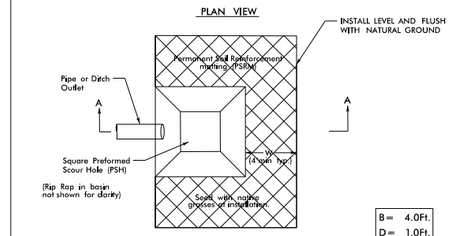


S = Ditch Slope ℄ Proposed Ditch

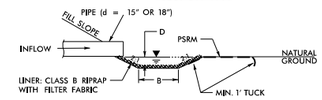
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE

PLAN VIEW



SECTION A–A



308

–L– STA. 165+21 RT

SITE 14

–Y2– POT Sta. 12+75.00

END CONSTRUCTION
–Y2– POT Sta. 12+25.00

GEOENVIRONMENTAL AREA–
THREE KNOWN USTS

PATRICK J. & KAY J. CARROLL (36)

CLIFFORD E. & MARGARET E. ADAMS (35)

STATE OF NORTH CAROLINA (34)

WOODS, SCRUB, SOIL, CONC, DECK, ISFD, ISBLK, BST, CANOPY, PUE, WM NO ASSOCIATED PIPING FOUND, NOTE: BURIED IRF NOT FOUND IN FIELD, DUCT, CRSD POLES, N 50° 43' 06.0" W

MATCHLINE –L– STA. 163+00 SEE SHEET 15

MEDIAN 'V' DITCH SEE DETAIL C

DI 10 — 15" RCP III — FS — 2GI — 15" RCP III

Q10 = 1.19
V10 = 0.34

PSH
SEE DET H
INV=2.1

–L– POT Sta.165+00.00 =
–Y2– POT Sta. 10+00.00

SITE 12

SITE 15

48" WW FENCE

SITE 16

–L– N 48° 59' 43" E

US 158/US 13 BST

24' RCP III EQUALIZER

FILL OR REMOVE

SITE 17

PCE

GEOENVIRONMENTAL AREA–
AREA OF KNOWN CONTAMINATION
& ONE KNOWN UST

CONC

JEAN W. COOKSEY (36A)

MATCHLINE –L– STA. 176+00 SEE SHEET 17

2015 ADT / 2035 ADT	POWELL LN (SR 1230)		
	250 / 350		
13 / 158	11,200 / 16,700	150 / 250	100 / 100
13 / 158	11,100 / 16,600		

PROJECTED TRAFFIC VOLUMES

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAIL SEE SHEET 2K

FOR –L– PROFILE SEE SHT. 45 & 46
FOR –Y2– PROFILE SEE SHT. 60

PLANS PREPARED BY :

RK&K

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 43 OF 78

NAD 83

F F DENOTES FILL IN WETLAND

34 DENOTES MECHANIZED CLEARING

STATE OF NORTH CAROLINA

ENGLISH

DETAIL C
MEDIAN V DITCH
(Not to Scale)

–L– STA. 156+50 TO STA. 163+50

DETAIL
FALSE SUMP
(Not to Scale)

S = Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE

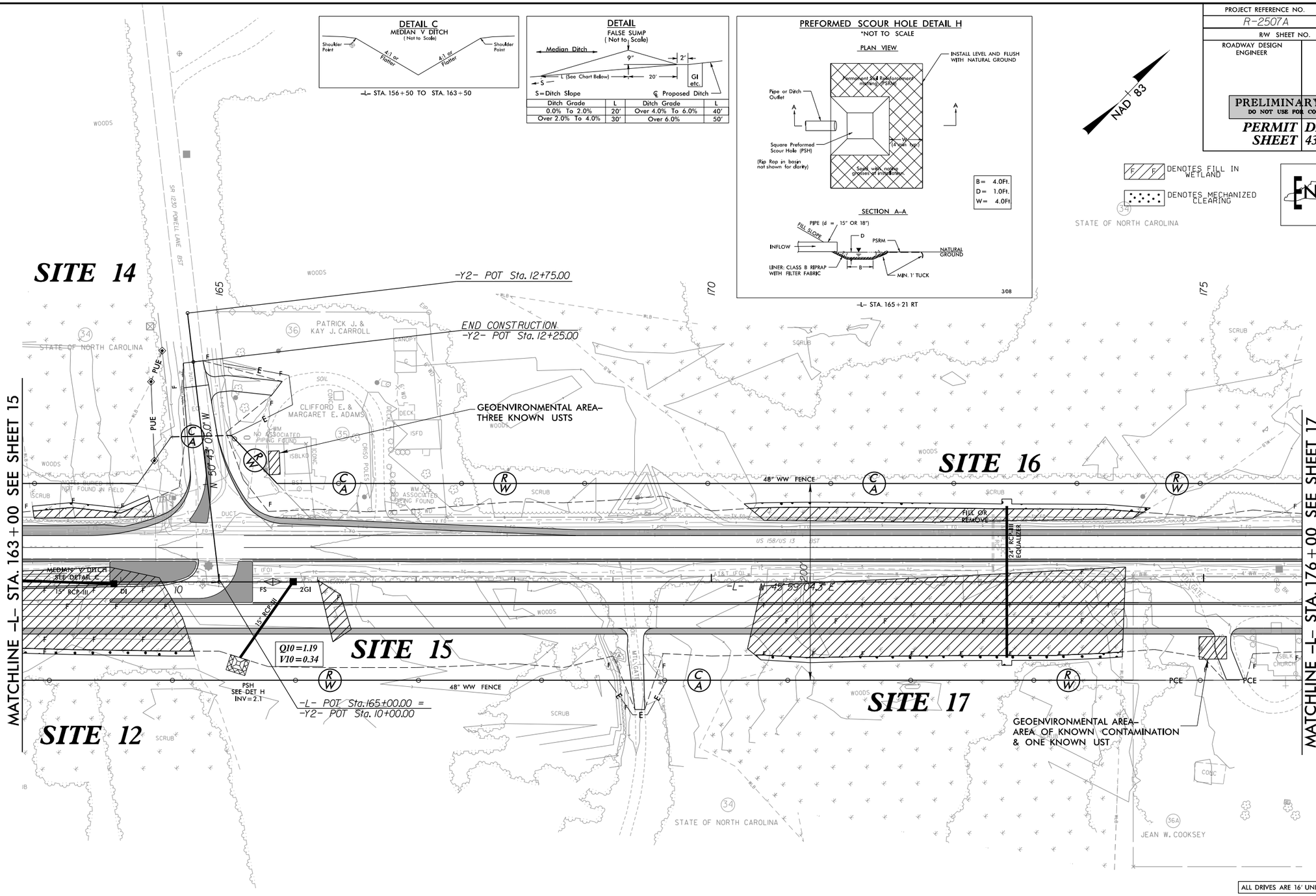
PLAN VIEW

SECTION A–A

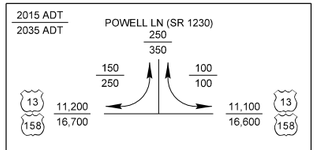
308

–L– STA. 165+21 RT

SITE 14



2015 ADT / 2035 ADT



PROJECTED TRAFFIC VOLUMES

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAIL SEE SHEET 2K

FOR –L– PROFILE SEE SHT. 45 & 46
FOR –Y2– PROFILE SEE SHT. 60

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
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3/2/2012
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FFerris

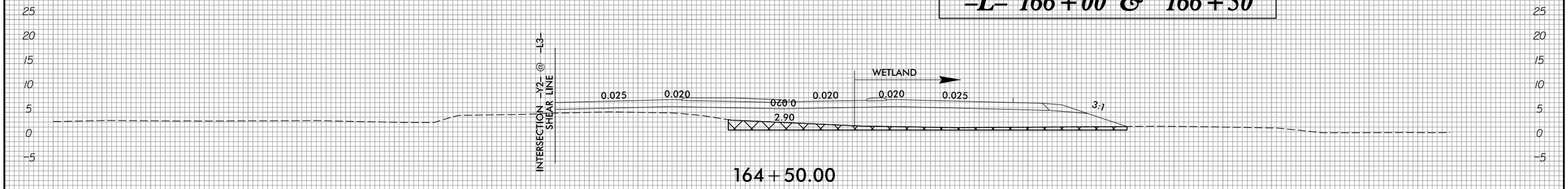
8/23/99

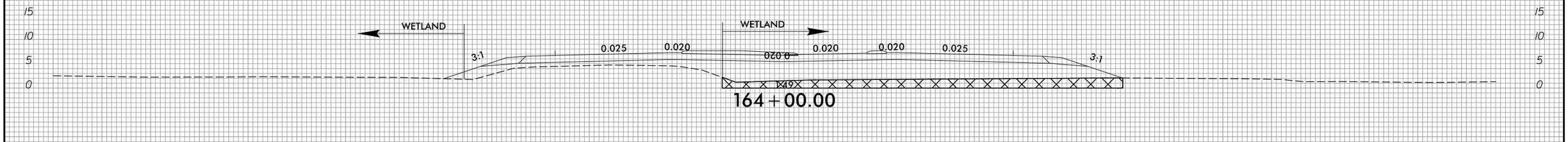
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	R-2507A	X-75

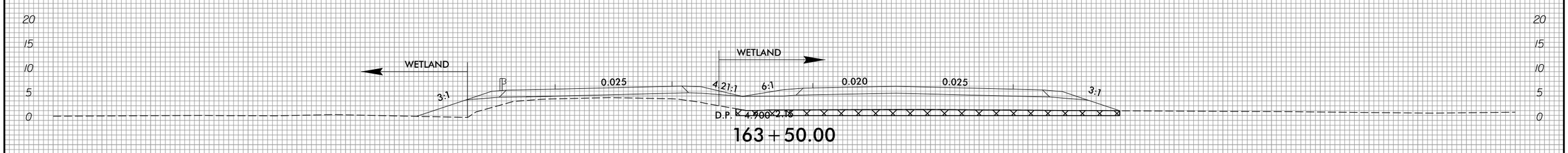
PERMIT DRAWING
SHEET 44 OF 78

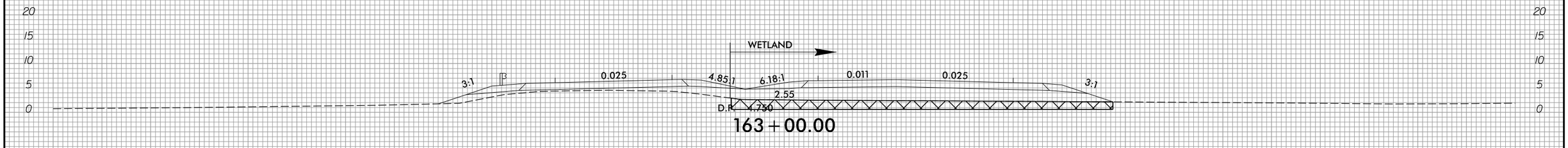
SITES 12, 14, 15

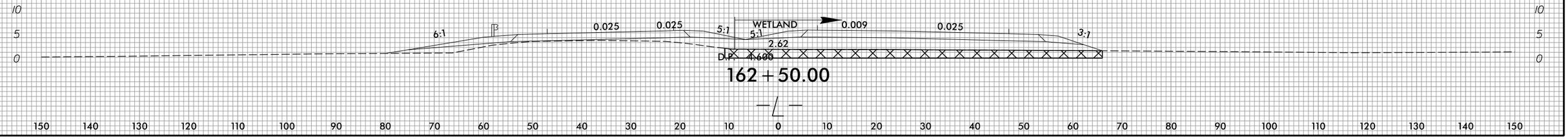
SITE 15 BETWEEN –L– 166+00 & 166+50











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Pkeys

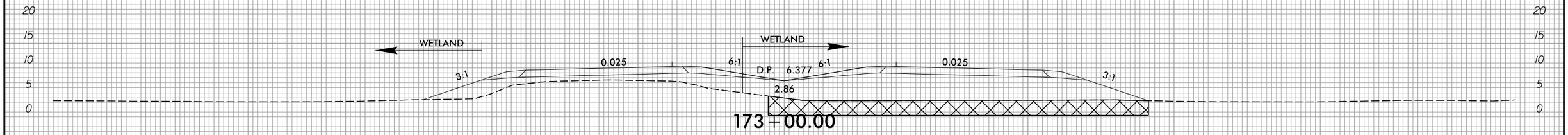
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	R-2507A	X-78

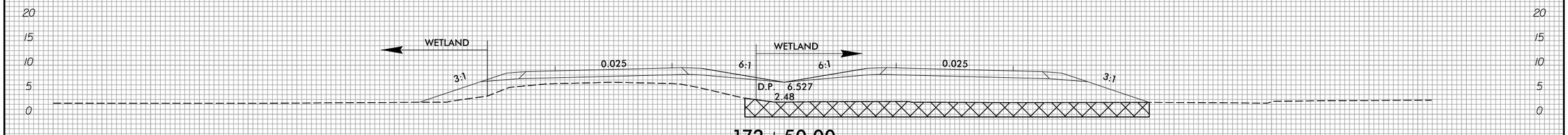
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PERMIT DRAWING
SHEET 45 OF 78

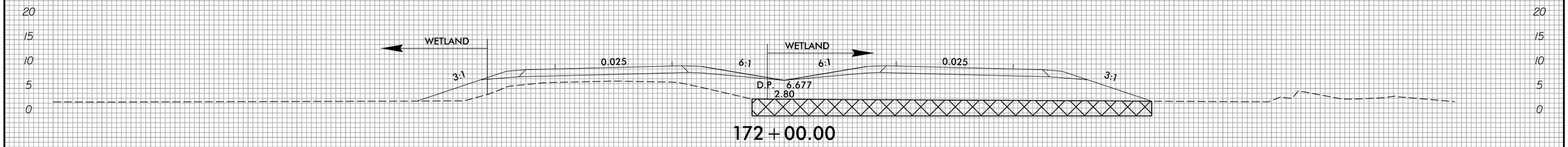
SITES 16, 17



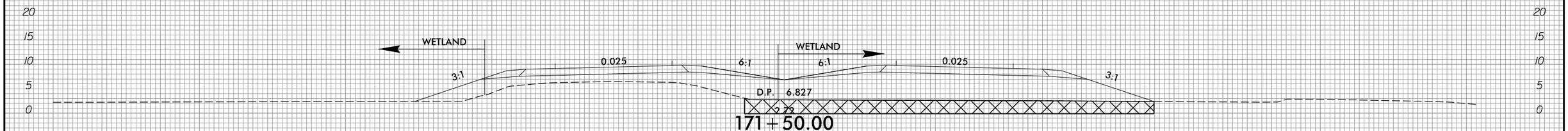
173 + 00.00



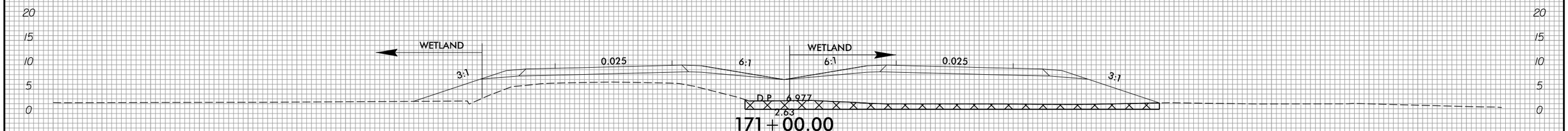
172 + 50.00



172 + 00.00



171 + 50.00



171 + 00.00

—L—

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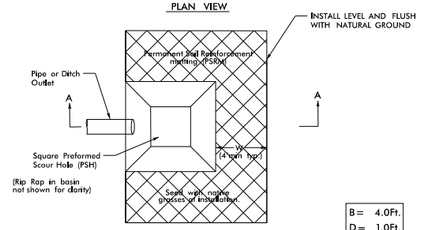
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8/17/99

PREFORMED SCOUR HOLE DETAIL H

*NOT TO SCALE

PLAN VIEW



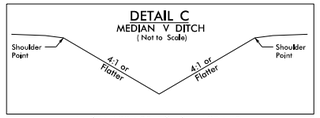
B = 4.0Ft.
D = 1.0Ft.
W = 4.0Ft.

SECTION A–A

3-08

–L– STA. 177+31 RT

DETAIL C
MEDIAN V DITCH
(Not to Scale)



–L– STA. 183+00 TO STA. 187+50

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

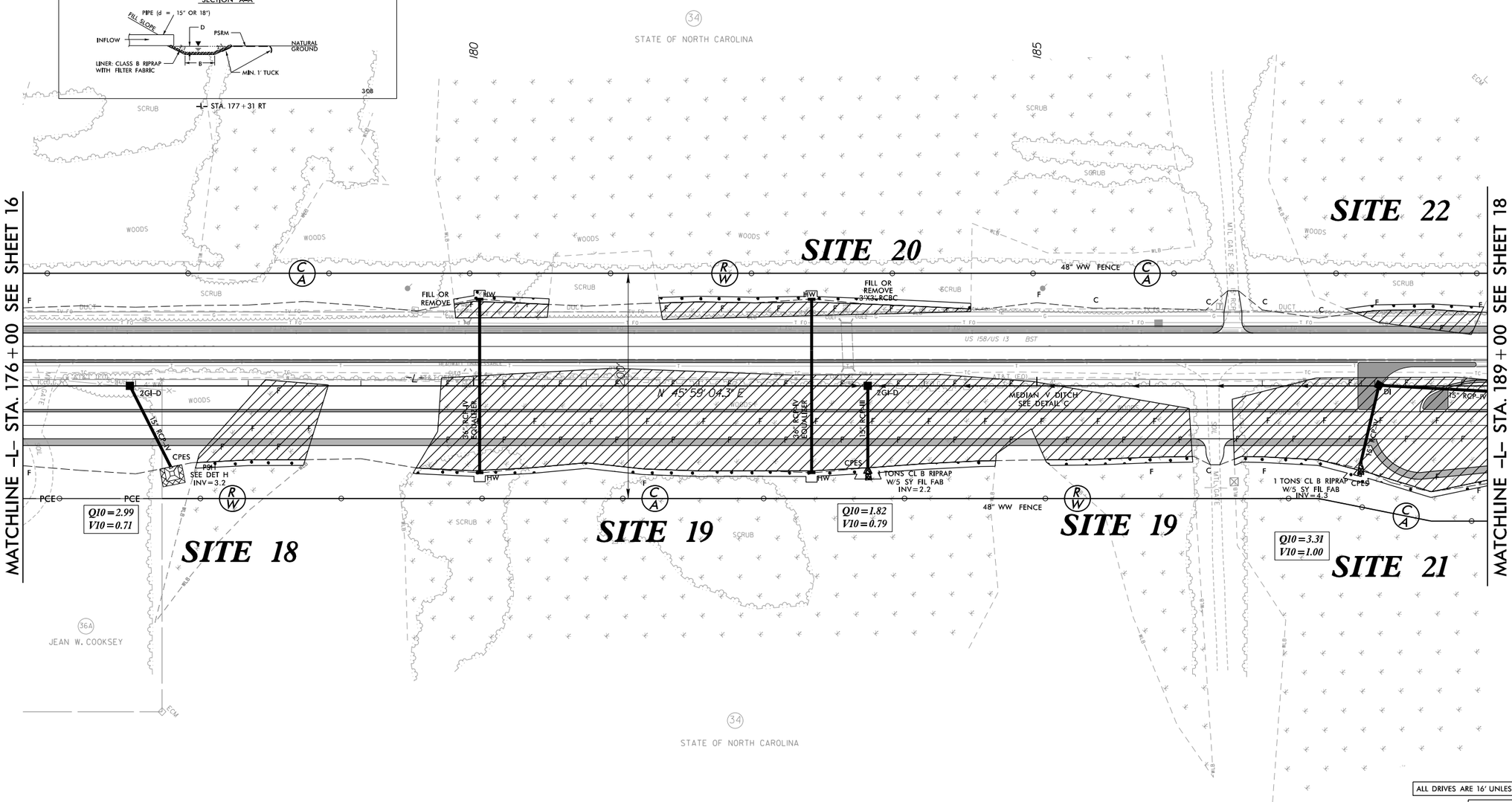
ENGLISH

NAD 83

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT SHEET* *DRAWING 46 OF 78



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAIL SEE SHEET 2H

FOR –L– PROFILE SEE SHT. 46

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

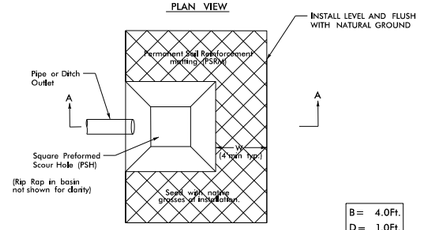
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8/17/99

PREFORMED SCOUR HOLE DETAIL H

*NOT TO SCALE

PLAN VIEW



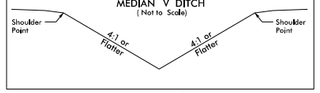
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D= 1.0Ft.
W= 4.0Ft.

SECTION A–A

3:08

–L– STA. 177+31 RT

DETAIL C
MEDIAN V DITCH
(Not to Scale)



–L– STA. 183+00 TO STA. 187+50

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

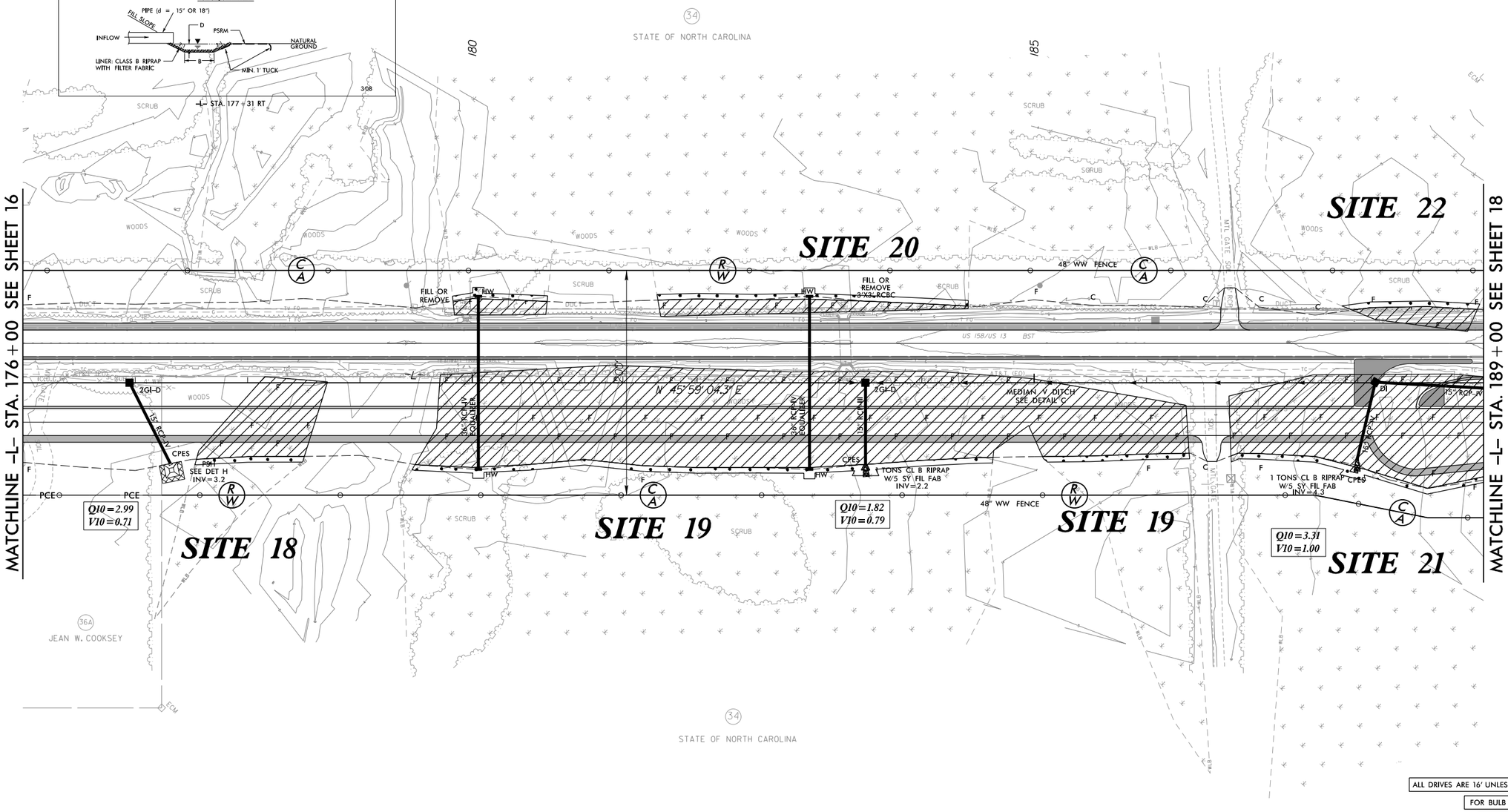
ENGLISH

NAD 83

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT SHEET 47 OF 78



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAIL SEE SHEET 2H

FOR –L– PROFILE SEE SHT. 46

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609–3960
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Ekeus

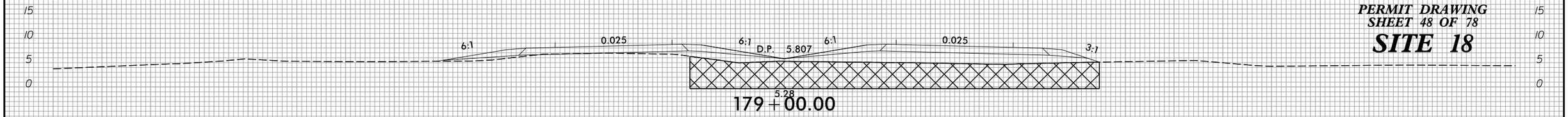
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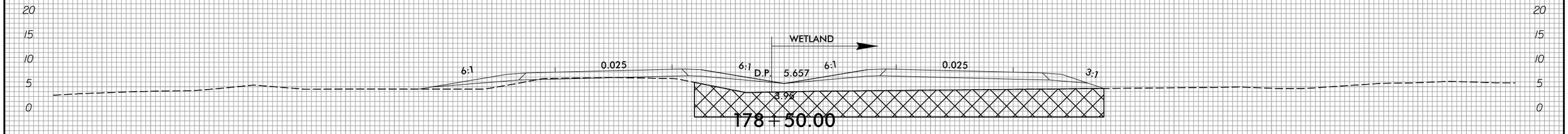
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	R-2507A	X-80

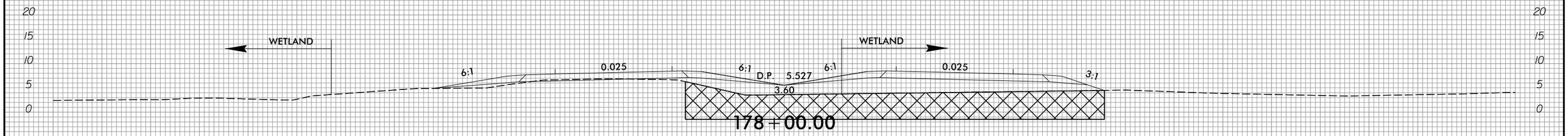
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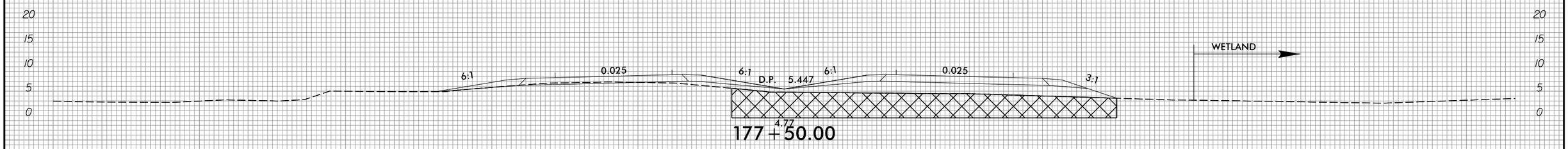
PERMIT DRAWING
SHEET 48 OF 78

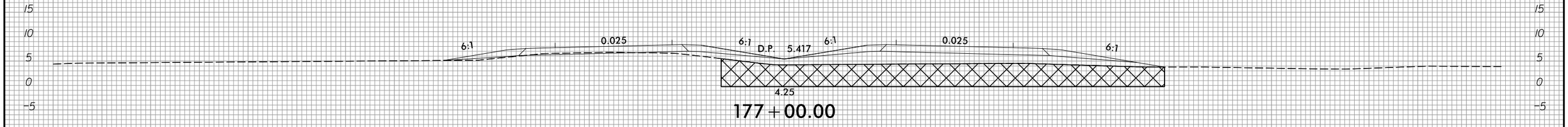
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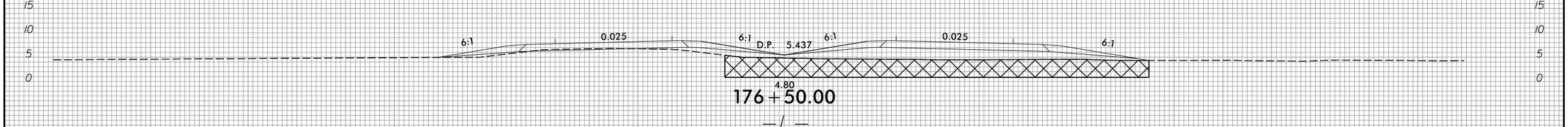












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3/2/2012
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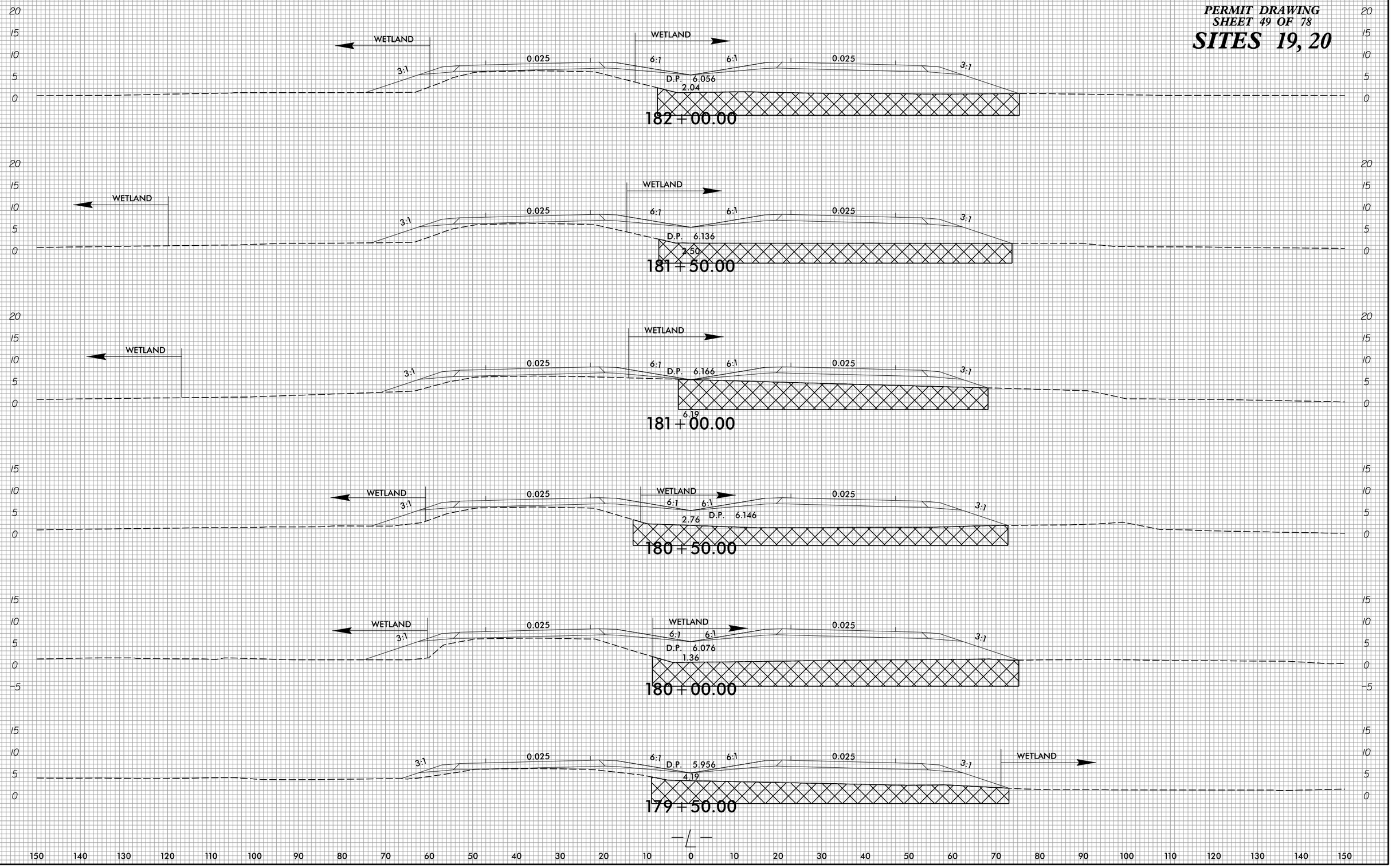
8/23/99

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	R-2507A	X-81

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PERMIT DRAWING
SHEET 49 OF 78

SITES 19, 20



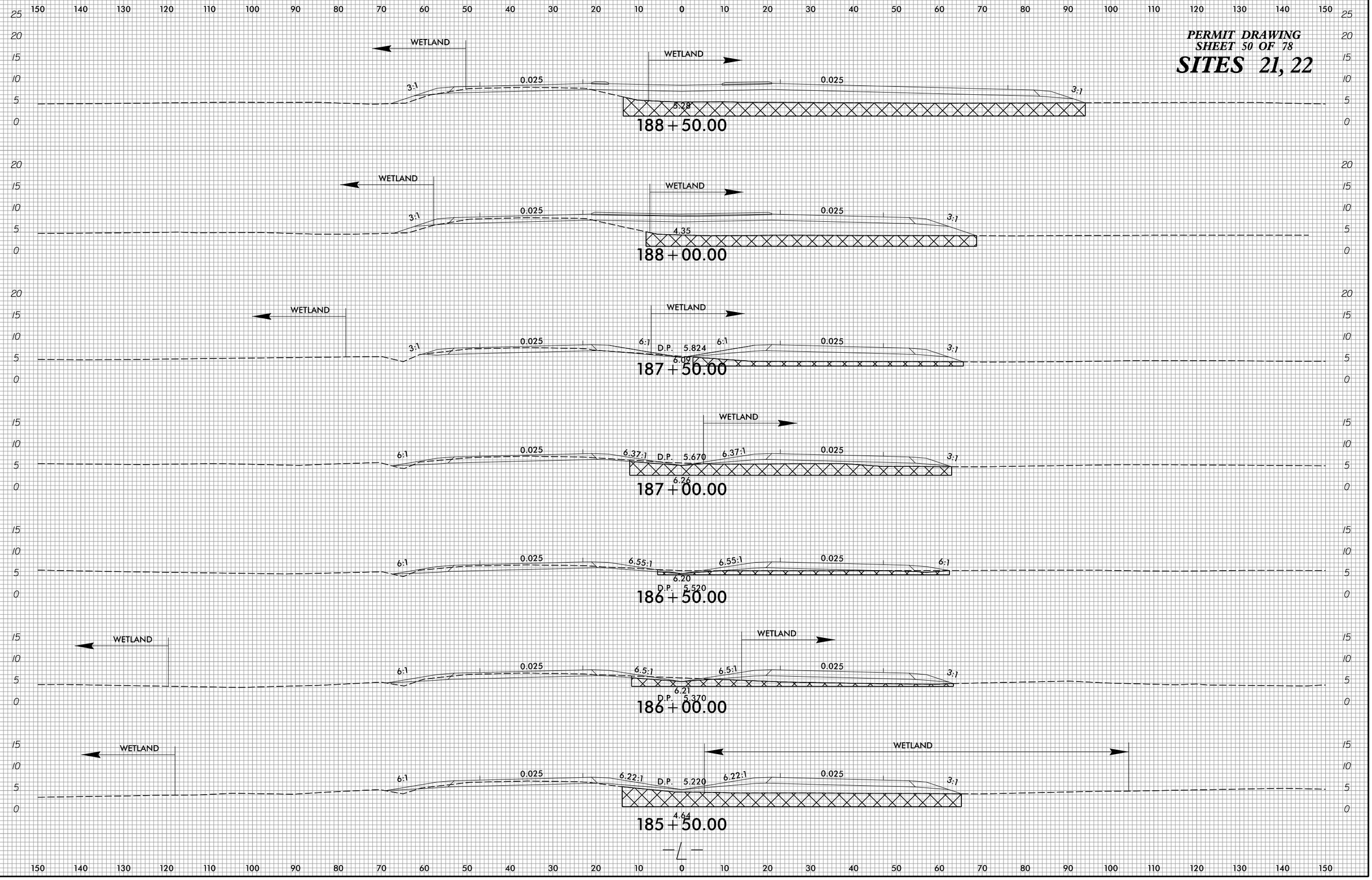
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8/23/99

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	R-2507A	X-83

PERMIT DRAWING
SHEET 50 OF 78

SITES 21, 22



3/2/2012
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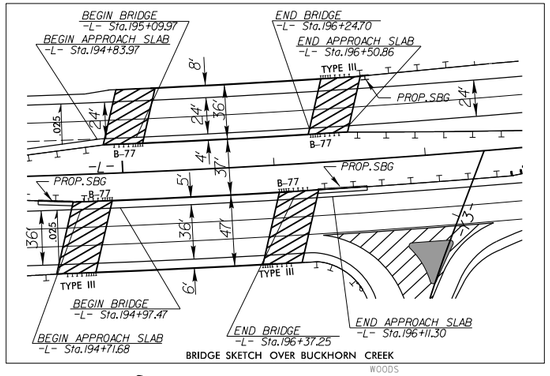
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

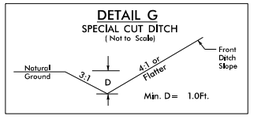
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 51 OF 78



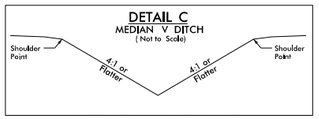
BRIDGE SKETCH OVER BUCKHORN CREEK

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



-L- STA. 200+20 TO STA. 204+00 LT

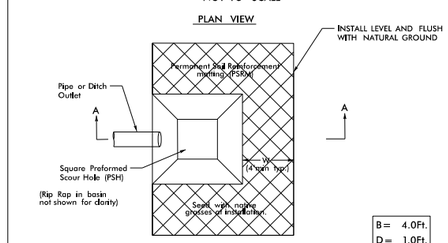
DETAIL C
MEDIAN V DITCH
(Not to Scale)



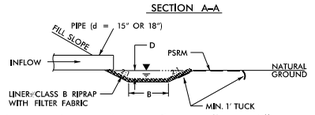
-L- STA. 192+50 TO STA. 194+50

PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE

PLAN VIEW



SECTION A-A



308

-L- STA. 200+20 LT

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

NAD 83

200

-L- TS Sta. 191+87.77

190

195

CHRISTOPHER S. FUTRELL (37)

BRENDA P. DEPRETIS (37A)

DAVID A. & JUANITA L. SPRUILL (38)

THOMAS C., IV & NAN L. COXE (44)

GEOENVIRONMENTAL AREA– THREE KNOWN USTS
-L- SC Sta. 192+87.77

-L- POC STA.195+15.00
BEGIN BRIDGE

-L- POC STA.194+89.00
BEGIN APPROACH SLAB

SITE 23

Q10=1.00
V10=0.67

15" CAAP
2 ELBOWS
ROD & LUG
1 TONS CL B RIPRAP
W/5 SY FIL FAB
INV=3.4

-L- POC STA.196+25.00
END BRIDGE

-L- POC STA.196+51.16
END APPROACH SLAB

Q10=5.36
V10=0.85

-L- POC Sta.197+39.00=
-Y3- POT Sta.13+46.39

48" WW FENCE

PSH
SEE DET H

SPECIAL CUT DITCH
SEE DETAIL G

INV=6.0

15" RCP-III

FS

2GI

CLASS I RIPRAP

GRADE TO DRAIN

MEDIAN V DITCH
SEE DETAIL C

15" RCP-IV

2GI

220'

1 TONS CL B RIPRAP
W/5 SY FIL FAB
INV=6.0

15" RCP-III

PPES

(2) WM'S NO ASSOCIATED PIPING FOUND

MATCHLINE -L- STA. 189+00 SEE SHEET 17

MATCHLINE -L- STA. 202+50 SEE SHEET 19

SITE 21

SITE 24

-Y3- PT Sta.12+85.22

SEPTIC SYSTEM

-L- POC STA.194+65.22
BEGIN APPROACH SLAB

-L- POC STA.194+91.00
BEGIN BRIDGE

STATE OF NORTH CAROLINA (34)

-L- POC STA.196+01.00
END BRIDGE

-L- POC STA.196+26.94
END APPROACH SLAB

-Y3- PC Sta.10+87.50

BEGIN CONSTRUCTION
-Y3- POT Sta.10+25.00

JEANETTE A. HEDGEPETH (39)

RICHARD F., JR. & KATHLEEN M. POWERS (40)

N 37° 25' 31.1" W

SR 1128 BARFIELD ROAD

US 158/US 13

2015 ADT
2035 ADT

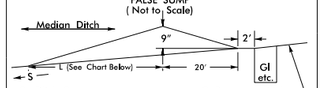
13 / 158	11,100 / 16,600	200 / 200	150 / 250	11,100 / 16,600	13 / 158

350 / 450

BARFIELD RD (SR 1128)

PROJECTED TRAFFIC VOLUMES

DETAIL
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

FOR -L- PROFILE SEE SHT. 45
FOR -Y3- PROFILE SEE SHT. 58

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/2/2012
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ekeen

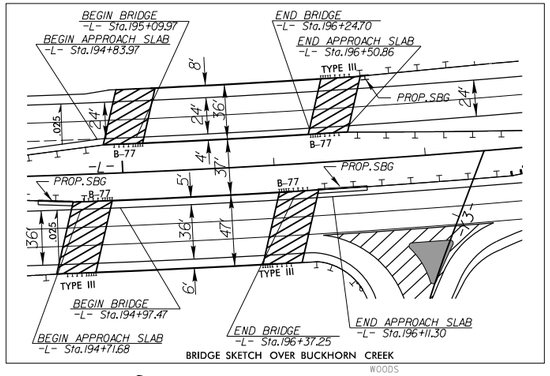
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

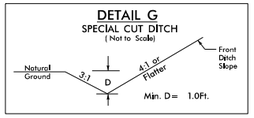
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 52 OF 78



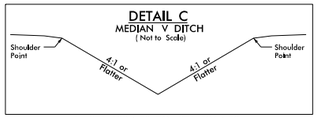
BRIDGE SKETCH OVER BUCKHORN CREEK

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



-L- STA. 200+20 TO STA. 204+00 LT

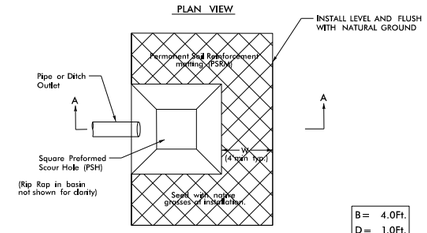
DETAIL C
MEDIAN V DITCH
(Not to Scale)



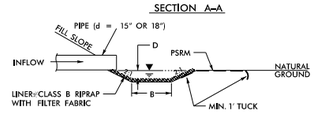
-L- STA. 192+50 TO STA. 194+50

PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE

PLAN VIEW



SECTION A-A



308

-L- STA. 200+20 LT

NAD 83

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

190 195 200

-L- TS Sta. 191+87.77

CHRISTOPHER S. FUTRELL (37) ISFD

BRENDA P. DEPRETIS (37A) 2SBKD ISBK BUS

DAVID A. & JUANITA L. SPRUILL (38) RUINS

THOMAS C., IV & NAN L. COXE (44)

GEOENVIRONMENTAL AREA– THREE KNOWN USTS
-L- SC Sta. 192+87.77

-L- POC STA.195+15.00
BEGIN BRIDGE

-L- POC STA.194+89.00
BEGIN APPROACH SLAB

SITE 23

Q10=1.00
V10=0.67

15" CAAP
2 ELBOWS
ROD & LUG
1 TONS CL B RIPRAP
W/5 SY FIL FAB
INV=3.4

-L- POC STA.196+25.00
END BRIDGE

-L- POC STA.196+51.16
END APPROACH SLAB

Q10=5.36
V10=0.85

-L- POC Sta.197+39.00=
-Y3- POT Sta.13+46.39

48" WW FENCE

SPECIAL CUT DITCH SEE DETAIL G

PSH SEE DET H

INV=6.0

15" RCP-IV

2GI

FS

CLASS II RIPRAP

GRADE TO DRAIN

MEDIAN V DITCH SEE DETAIL C

220'

15" RCP-III

PPES

(2) WM'S NO ASSOCIATED PIPING FOUND

SITE 24

-Y3- PT Sta. 12+85.22

SEPTIC SYSTEM

-Y3- PC Sta. 10+87.50

BEGIN CONSTRUCTION
-Y3- POT Sta. 10+25.00

N 37° 25' 31.1" W

MATCHLINE -L- STA. 189+00 SEE SHEET 17

MATCHLINE -L- STA. 202+50 SEE SHEET 19

SITE 21

-L- POC STA.194+65.22
BEGIN APPROACH SLAB

-L- POC STA.194+91.00
BEGIN BRIDGE

STATE OF NORTH CAROLINA (34)

-L- POC STA.196+01.00
END BRIDGE

-L- POC STA.196+26.94
END APPROACH SLAB

JEANETTE A. HEDGEPETH (39)

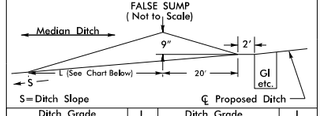
RICHARD F., JR. & KATHLEEN M. POWERS (40)

2015 ADT / 2035 ADT				
13 / 158	11,100 / 16,600	200 / 200	150 / 250	11,100 / 16,600 — 13 / 158
		350 / 450		

BARFIELD RD (SR 1128)

PROJECTED TRAFFIC VOLUMES

DETAIL
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

FOR -L- PROFILE SEE SHT. 45
FOR -Y3- PROFILE SEE SHT. 58

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
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Ekeus

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	46
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

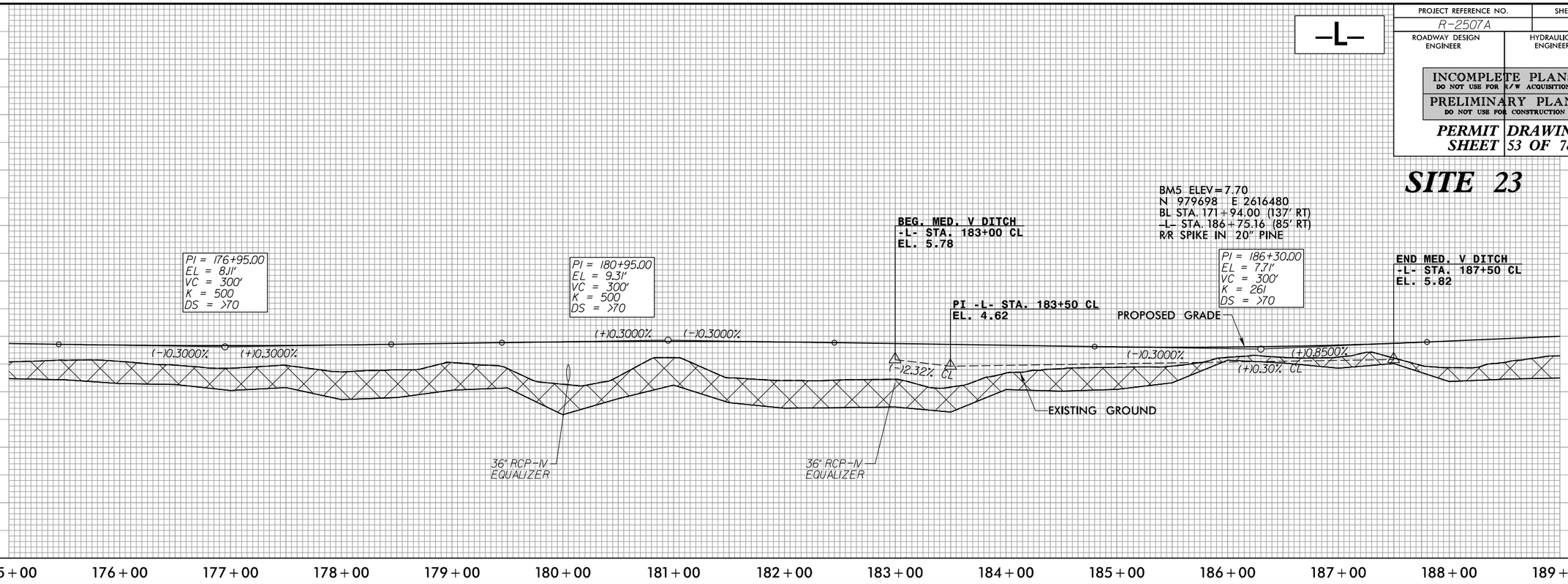
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

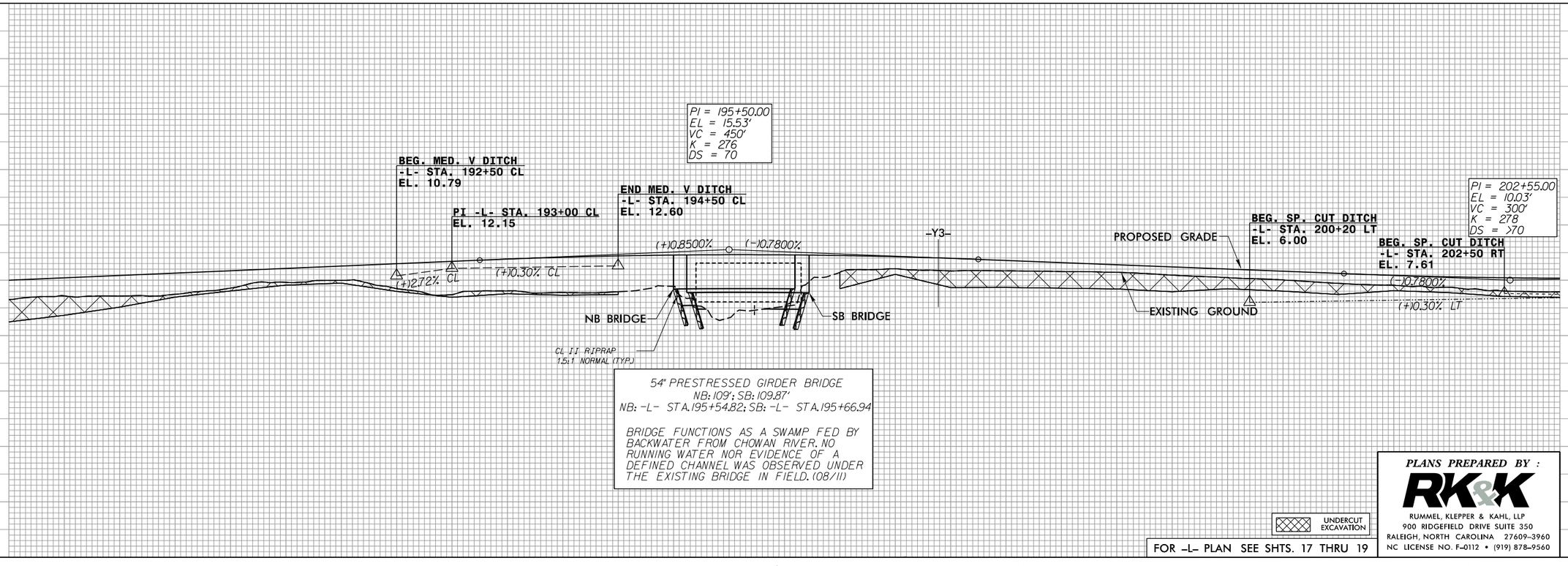
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 53 OF 78

SITE 23

–L–





54" PRESTRESSED GIRDER BRIDGE
NB: 109'; SB: 109.87'
NB: -L- STA.195+54.82; SB: -L- STA.195+66.94

BRIDGE FUNCTIONS AS A SWAMP FED BY BACKWATER FROM CHOWAN RIVER. NO RUNNING WATER NOR EVIDENCE OF A DEFINED CHANNEL WAS OBSERVED UNDER THE EXISTING BRIDGE IN FIELD. (08/11)

UNDERCUT EXCAVATION

FOR –L– PLAN SEE SHTS. 17 THRU 19

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/2/2012
8:31:40 AM
Eric Haus
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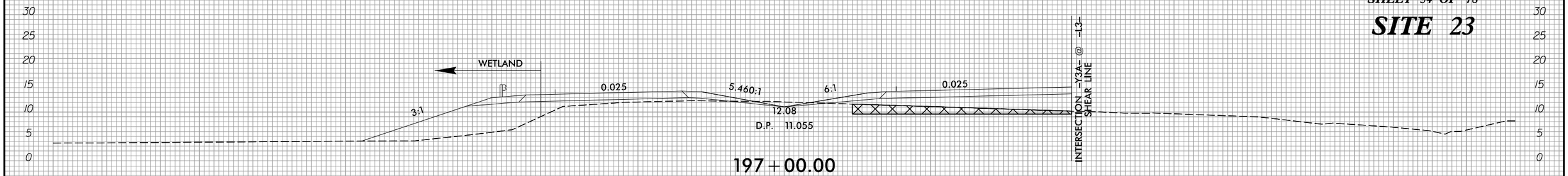
8/23/99

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	R-2507A	X-86

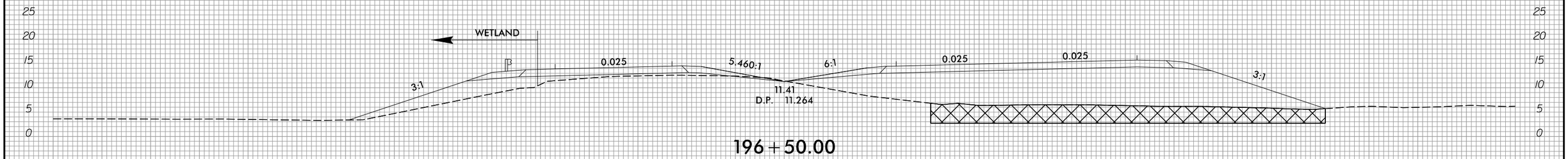
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PERMIT DRAWING
SHEET 54 OF 78

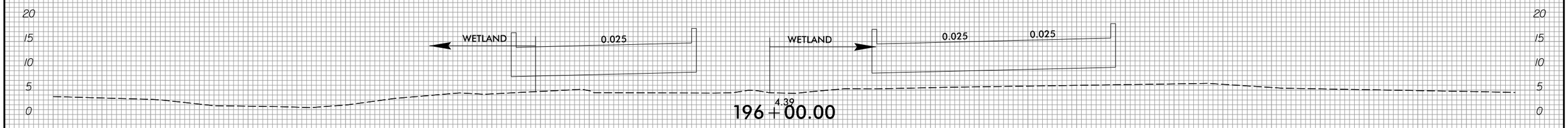
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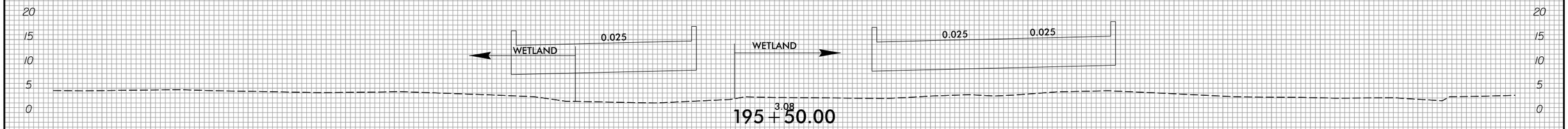
197 + 00.00



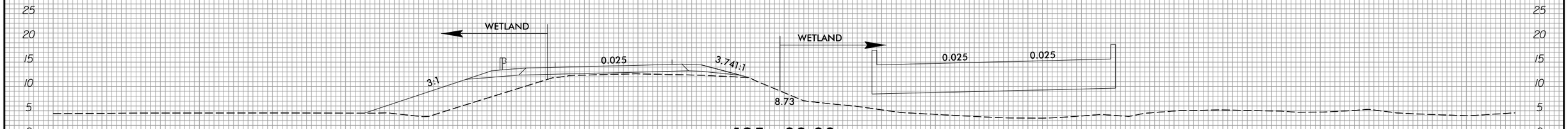
196 + 50.00



196 + 00.00



195 + 50.00



195 + 00.00

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3/2/2012
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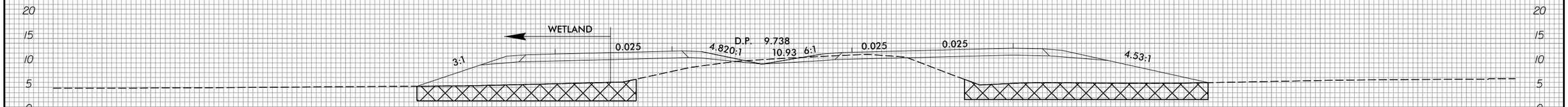
8/23/99

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	R-2507A	X-87

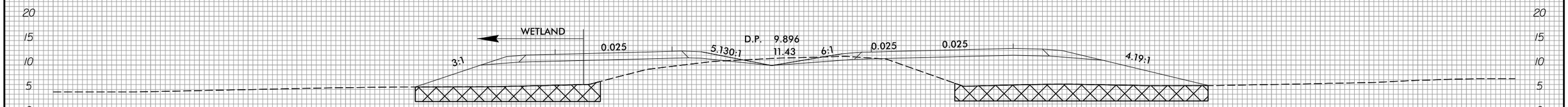
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PERMIT DRAWING
SHEET 55 OF 78

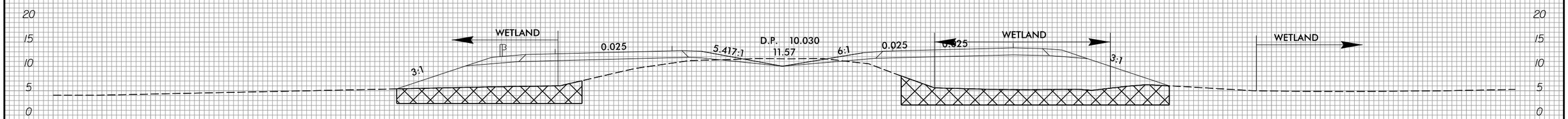
SITE 23, 24



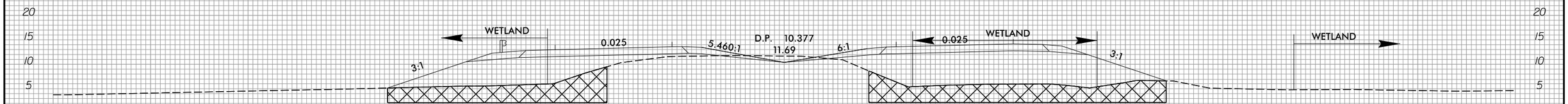
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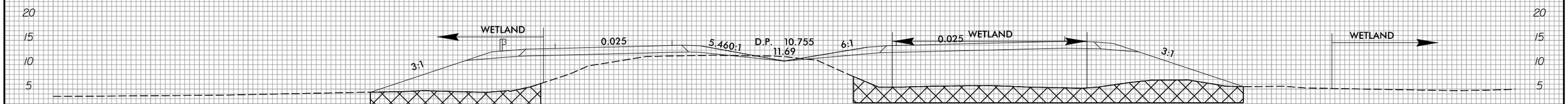
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198 + 00.00



197 + 50.00

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 56 OF 78

NAD 83

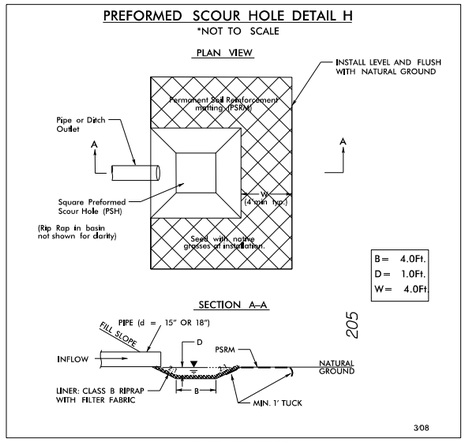
F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

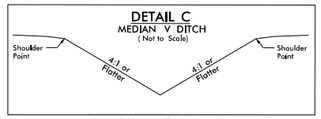
PREFORMED SCOUR HOLE DETAIL H

*NOT TO SCALE



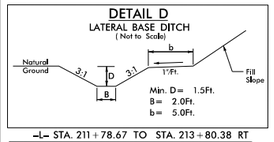
-L- STA. 206+92 RT

DETAIL C
MEDIAN V DITCH
(Not to Scale)



-L- STA. 206+00 TO STA. 207+50
-L- STA. 211+00 TO STA. 213+00

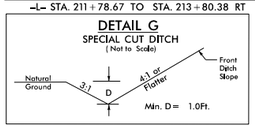
DETAIL D
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.5Ft.
B= 2.0Ft.
b= 5.0Ft.

-L- STA. 211+78.67 TO STA. 213+80.38 RT

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



Min. D= 1.0Ft.

-L- STA. 200+20 TO STA. 204+00 LT
-L- STA. 202+50 TO STA. 206+90 RT

(44) THOMAS C., IV & NAN L. COXE

-L- CS Sta. 204+01.76

-L- ST Sta. 205+01.76

-L- TS Sta. 212+57.50

-L- SC Sta. 214+57.50

SITE 25

SITE 26

SITE 27

MATCHLINE -L- STA. 202+50 SEE SHEET 18

MATCHLINE -L- STA. 215+00 SEE SHEET 20

SPECIAL CUT DITCH SEE DETAIL G

2GI-D

15" RCP-III

PSRM

42" RCP-III EQUIVALENT

2GI-D MEDIAN V DITCH SEE DETAIL G

FILL OR REMOVE 4'X2' RCBC

18" RCP-III

200'

US 158/US 13 BST

N 34° 50' 47.7" E

MEDIAN V DITCH SEE DETAIL G

FILL OR REMOVE 3'X2' RCBC

15" RCP-III

2GI

8" RCP-III

48" WW FENCE

PPES 15" RCP-III

SOIL

INV= 4.7

PSH SEE DET H

Q10=2.05
V10=0.25

REMOVE

WM NO ASSOCIATED PIPING FOUND

F 20 TONS CL I RIPRAP W/39 SY FIL FAB

HW

3 TONS CL B RIPRAP W/10 SY FIL FAB

LATERAL BASE DITCH SEE DETAIL D

INV= 4.2

SEPTIC SYSTEM

2SBKD

ISFD

ABANDON HTR

6ft WD

TREES

WOODS

SCRUB

GR

WLB

(40) RICHARD F., JR. & KATHLEEN M. POWERS

(41) POWERS TIRE & AUTO SERVICES

(42) VERNON N. & SANDRA H. POPE

(43) VERNON N. & SANDRA H. POPE

(45) SADIE HEDGEPETH LIFE ESTATE

(46) CLAYTON P. & JAMES B. PARKER

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR -L- PROFILE SEE SHTS. 46 & 47

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/2/2012
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 57 OF 78

NAD 83

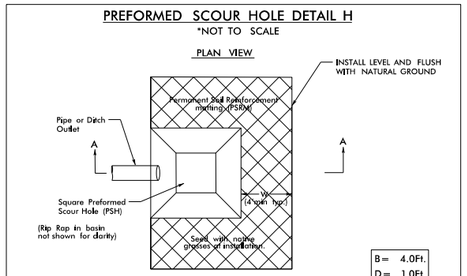
F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

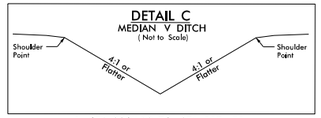
PREFORMED SCOUR HOLE DETAIL H

*NOT TO SCALE



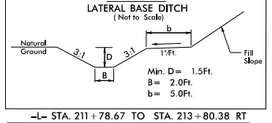
-L- STA. 206+92 RT

DETAIL C
MEDIAN V DITCH
(Not to Scale)



-L- STA. 206+00 TO STA. 207+50
-L- STA. 211+00 TO STA. 213+00

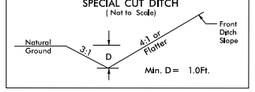
DETAIL D
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.5Ft.
B= 2.0Ft.
b= 5.0Ft.

-L- STA. 211+78.67 TO STA. 213+80.38 RT

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



Min. D= 1.0Ft.

-L- STA. 200+20 TO STA. 204+00 LT
-L- STA. 202+50 TO STA. 206+90 RT

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-L- CS Sta. 204+01.76
-L- ST Sta. 205+01.76
-L- TS Sta. 212+57.50
-L- SC Sta. 214+57.50

MATCHLINE -L- STA. 202+50 SEE SHEET 18

MATCHLINE -L- STA. 215+00 SEE SHEET 20

SITE 25

SITE 26

SITE 27

SPECIAL CUT DITCH SEE DETAIL G

2GI-D

15" RCP-III

PSRM

2GI-D MEDIAN V DITCH SEE DETAIL G

FILL OR REMOVE 4'X2' RCBC

18" RCP-III

42" RCP-III EQUIVALENT

48" WW FENCE

-L-

N 34° 50' 47.7" E

MEDIAN V DITCH SEE DETAIL G

FILL OR REMOVE 5'X2' RCBC

15" RCP-III

2GI

18" RCP-III

PPES 15" RCP-III

SPECIAL CUT DITCH SEE DETAIL G

15" RCP-III

INV= 4.7

PSH SEE DET H

REMOVE

F 20 TONS CL I RIPRAP W/39 SY FIL FAB

HW

3 TONS CL B RIPRAP W/10 SY FIL FAB

LATERAL BASE DITCH SEE DETAIL D

INV= 4.2

48" WW FENCE

Q10=2.05
V10=0.25

SEPTIC SYSTEM

(40) RICHARD F., JR. & KATHLEEN M. POWERS

(41) POWERS TIRE & AUTO SERVICES

(42) VERNON N. & SANDRA H. POPE

(43) VERNON N. & SANDRA H. POPE

(45) SADIE HEDGEPETH LIFE ESTATE

(46) CLAYTON P. & JAMES B. PARKER

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR -L- PROFILE SEE SHTS. 46 & 47

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

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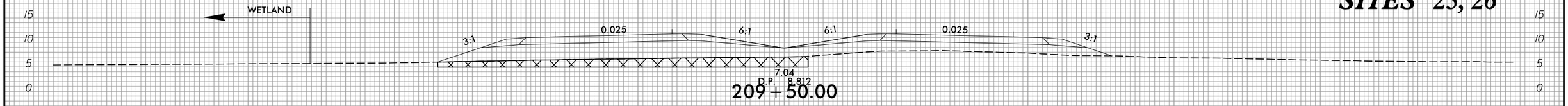
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	R-2507A	X-90

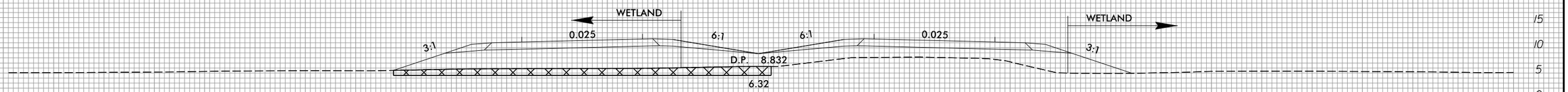
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PERMIT DRAWING
SHEET 58 OF 78

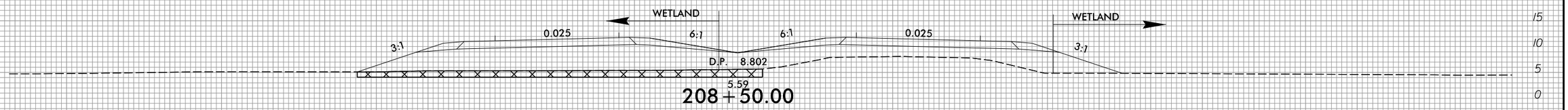
SITES 25, 26



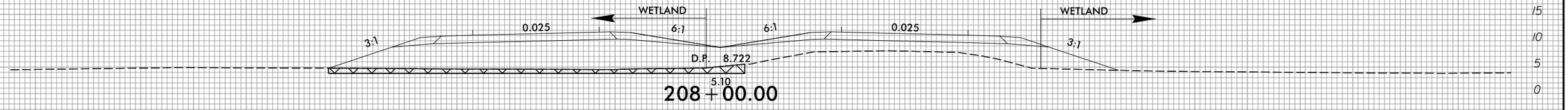
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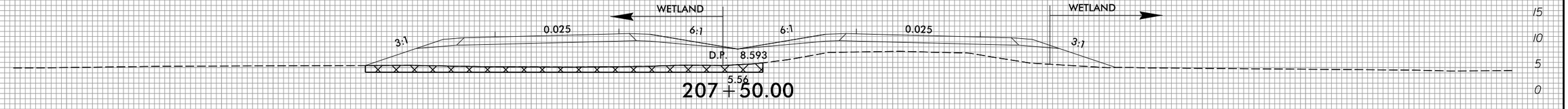
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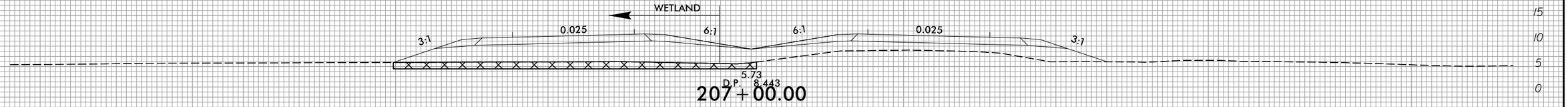
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208 + 00.00



207 + 50.00



207 + 00.00

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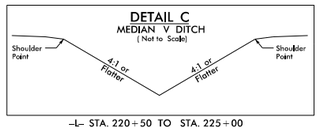
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

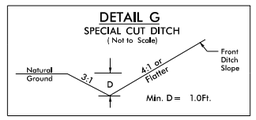
PERMIT DRAWING SHEET 59 OF 78

DETAIL C
MEDIAN V DITCH
(Not to Scale)



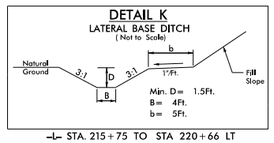
-L- STA. 220+50 TO STA. 225+00

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



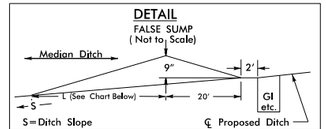
-L- STA. 217+30 TO STA. 221+25 RT

DETAIL K
LATERAL BASE DITCH
(Not to Scale)



-L- STA. 215+75 TO STA 220+66 LT

DETAIL
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

NAD 83

ENGLISH

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

THOMAS C., IV & NAN L. COXE (44)

JOHN W. ASKEW REVOCABLE LIVING TRUST (48)

MARY S. SMOAK (51)

220

225

215

SITE 27

SITE 28

SITE 29

SITE 30

MATCHLINE -L- STA. 215+00 SEE SHEET 19

MATCHLINE -L- STA. 228+00 SEE SHEET 21

LATERAL BASE DITCH SEE DETAIL K

48" WW FENCE

MEDIAN V DITCH SEE DETAIL C

SPECIAL CUT DITCH SEE DETAIL G

2GI-D

25FD

15" RCP-III

18" RCP-IV

36" RCP-IV EQUALIZER

36" RCP-III EQUALIZER

REMOVE BURIED EXISTING PIPE

INV=9.5

N 56° 29' 03.7" E

200'

Q10=2.79
V10=0.88

-L- CS Sta. 222+01.62

-L- ST Sta. 224+01.62

WAYNE & ROSE HUDGINS (47)

CLAYTON P. & JAMES B. PARKER (46)

EDWARD S. STORY (50)

RICHARD A. & JACQUELINE C. POPE (49)

SCRUB

WOODS

ISFD

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR -L- PROFILE SEE SHT. 47

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/2/2012
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Kevin

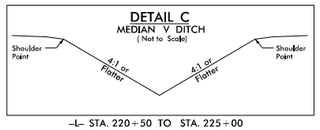
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

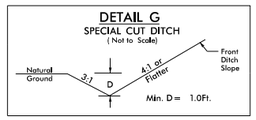
PERMIT DRAWING SHEET 60 OF 78

DETAIL C
MEDIAN V DITCH
(Not to Scale)



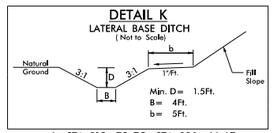
–L– STA. 220+50 TO STA. 225+00

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



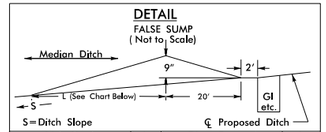
–L– STA. 217+30 TO STA. 221+25 RT

DETAIL K
LATERAL BASE DITCH
(Not to Scale)



–L– STA. 215+75 TO STA 220+66 LT

DETAIL
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

NAD 83

ENGLISH

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

THOMAS C., IV & NAN L. COXE (44)

JOHN W. ASKEW REVOCABLE LIVING TRUST (48)

MARY S. SMOAK (51)

220

225

215

SITE 27

SITE 28

SITE 29

SITE 30

MATCHLINE –L– STA. 215+00 SEE SHEET 19

MATCHLINE –L– STA. 228+00 SEE SHEET 21

LATERAL BASE DITCH SEE DETAIL K

MEDIAN V DITCH SEE DETAIL C

SPECIAL CUT DITCH SEE DETAIL G

48" WW FENCE

36" RCP-IV EQUALIZER

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REMOVE BURIED EXISTING PIPE

15" RCP-III

18" RCP-IV

N 56° 29' 03.7" E

INV = 9.5

Q10 = 2.79
V10 = 0.88

–L– CS Sta. 222+01.62

–L– ST Sta. 224+01.62

RAYNER ROSE HUGGINS (47)

EDWARD S. STORY (50)

RICHARD A. & JACQUELINE C. POPE (49)

CLAYTON P. & JAMES B. PARKER (46)

SCRUB

WOODS

ISFD

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR –L– PROFILE SEE SHT. 47

PLANS PREPARED BY :

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RALEIGH, NORTH CAROLINA 27609-3960
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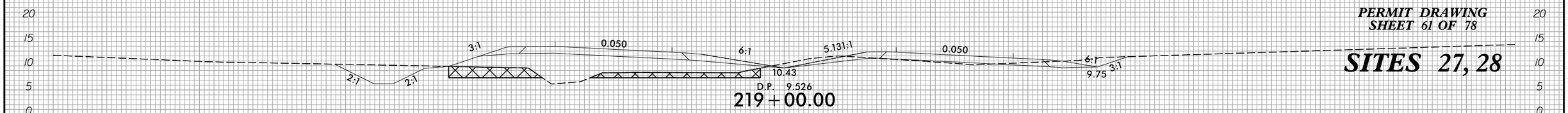
8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2507A	X-93

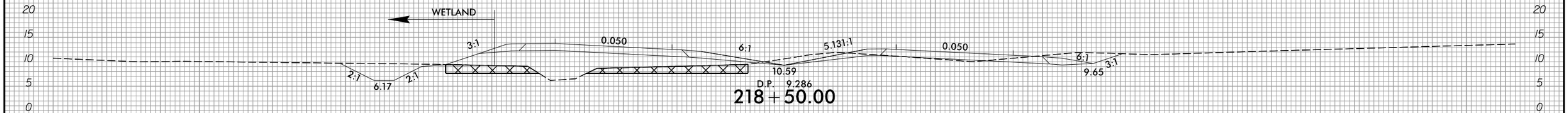
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PERMIT DRAWING
SHEET 61 OF 78

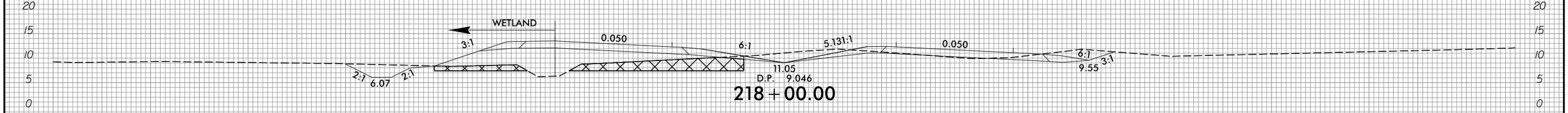
SITES 27, 28



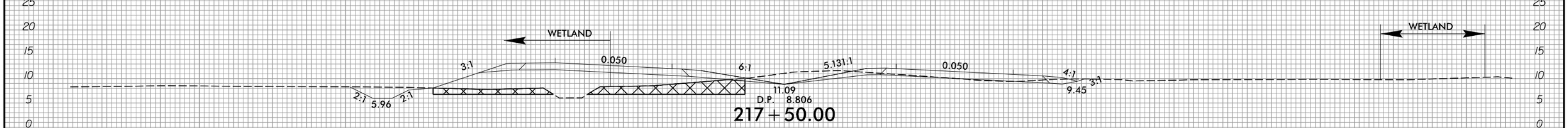
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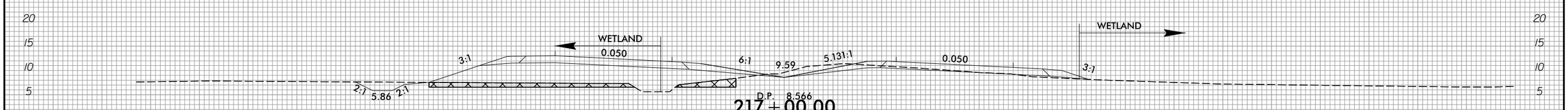
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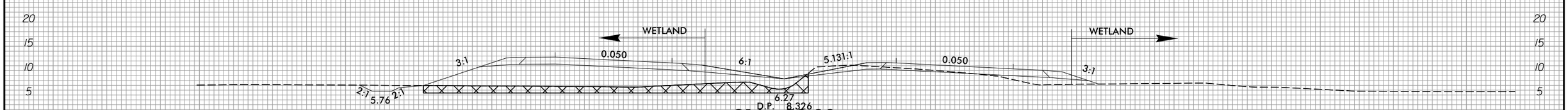
218 + 00.00



217 + 50.00



217 + 00.00



216 + 50.00

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3/2/2012
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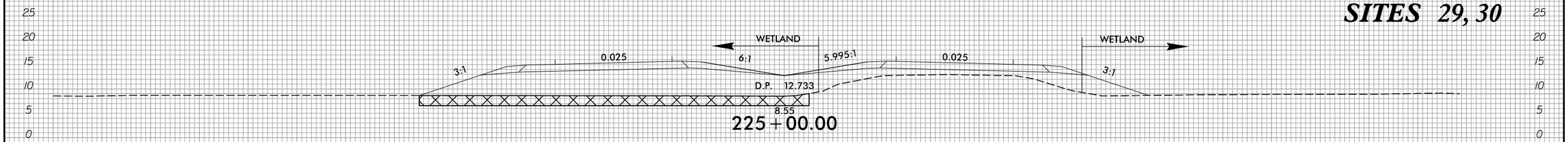
8/23/99

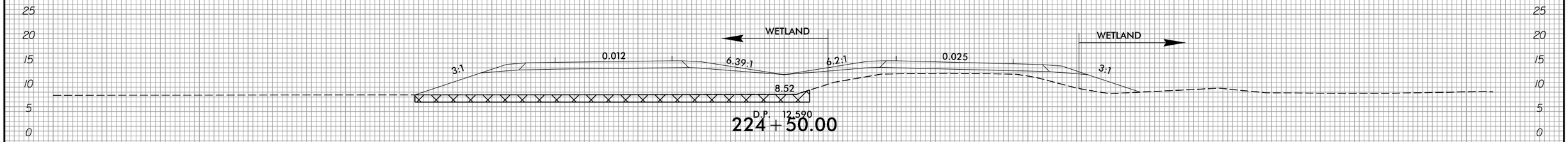
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	R-2507A	X-95

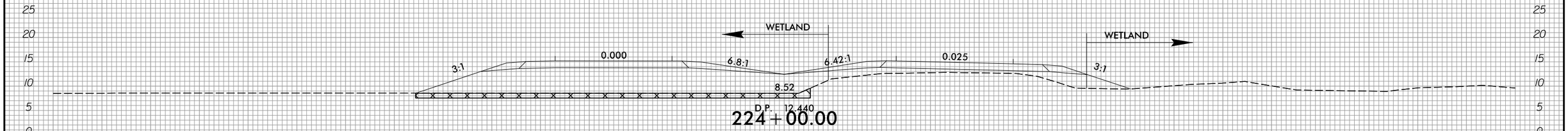
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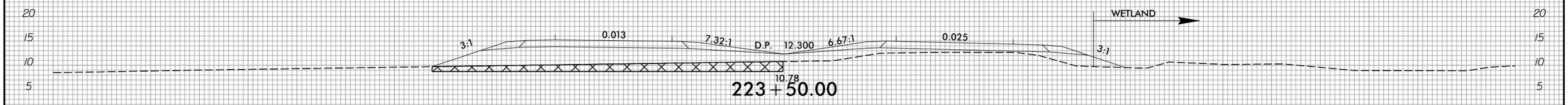
PERMIT DRAWING
SHEET 62 OF 78

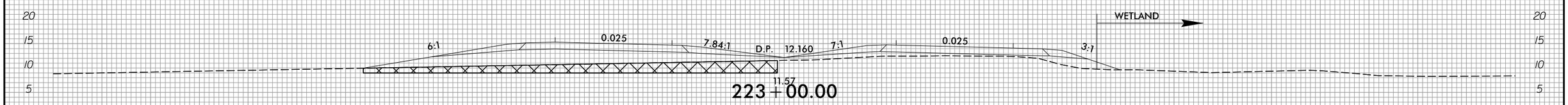
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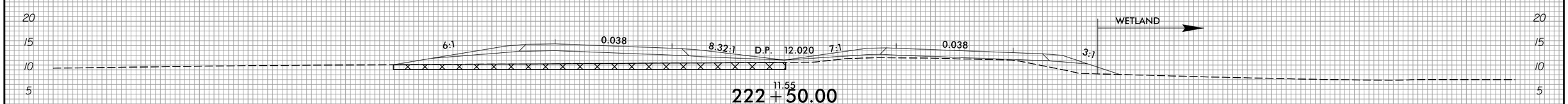












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Fkeys

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 63 OF 78

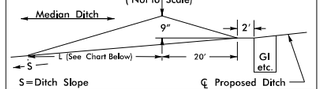
F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

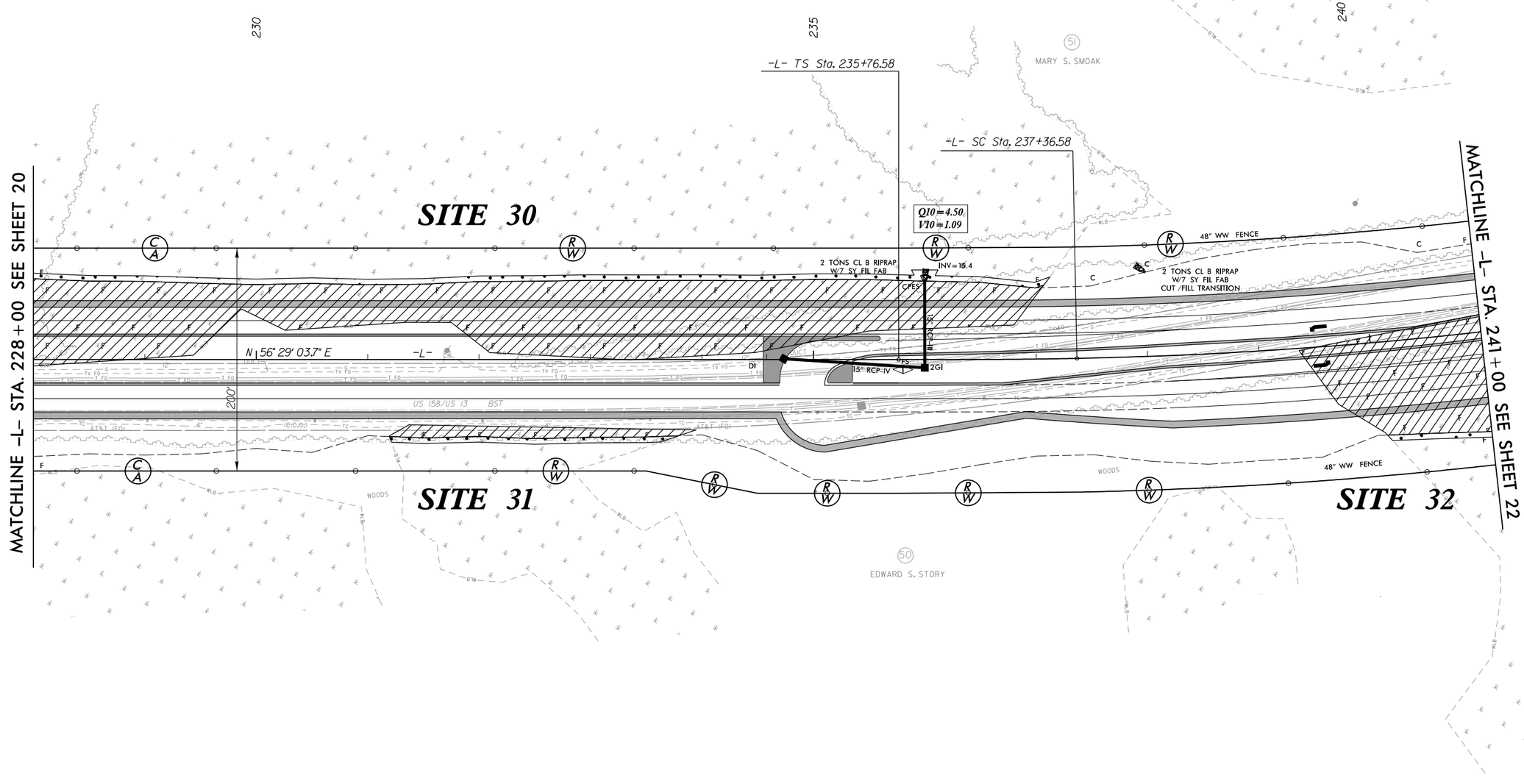
NAD 83

DETAIL
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR -L- PROFILE SEE SHTS. 47 & 48

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 64 OF 78

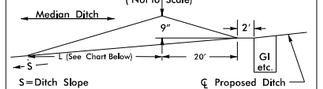
F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

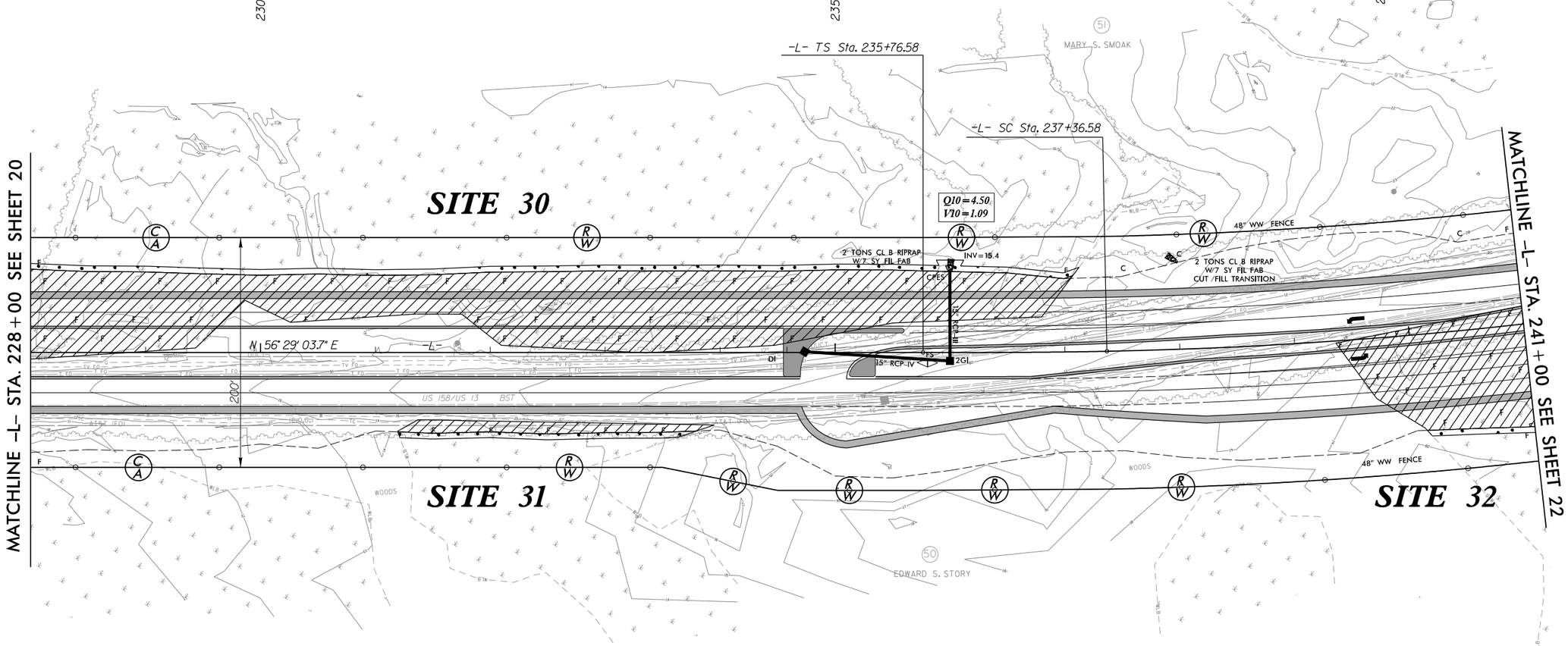
NAD 83

DETAIL
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR -L- PROFILE SEE SHTS. 47 & 48

PLANS PREPARED BY :

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RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

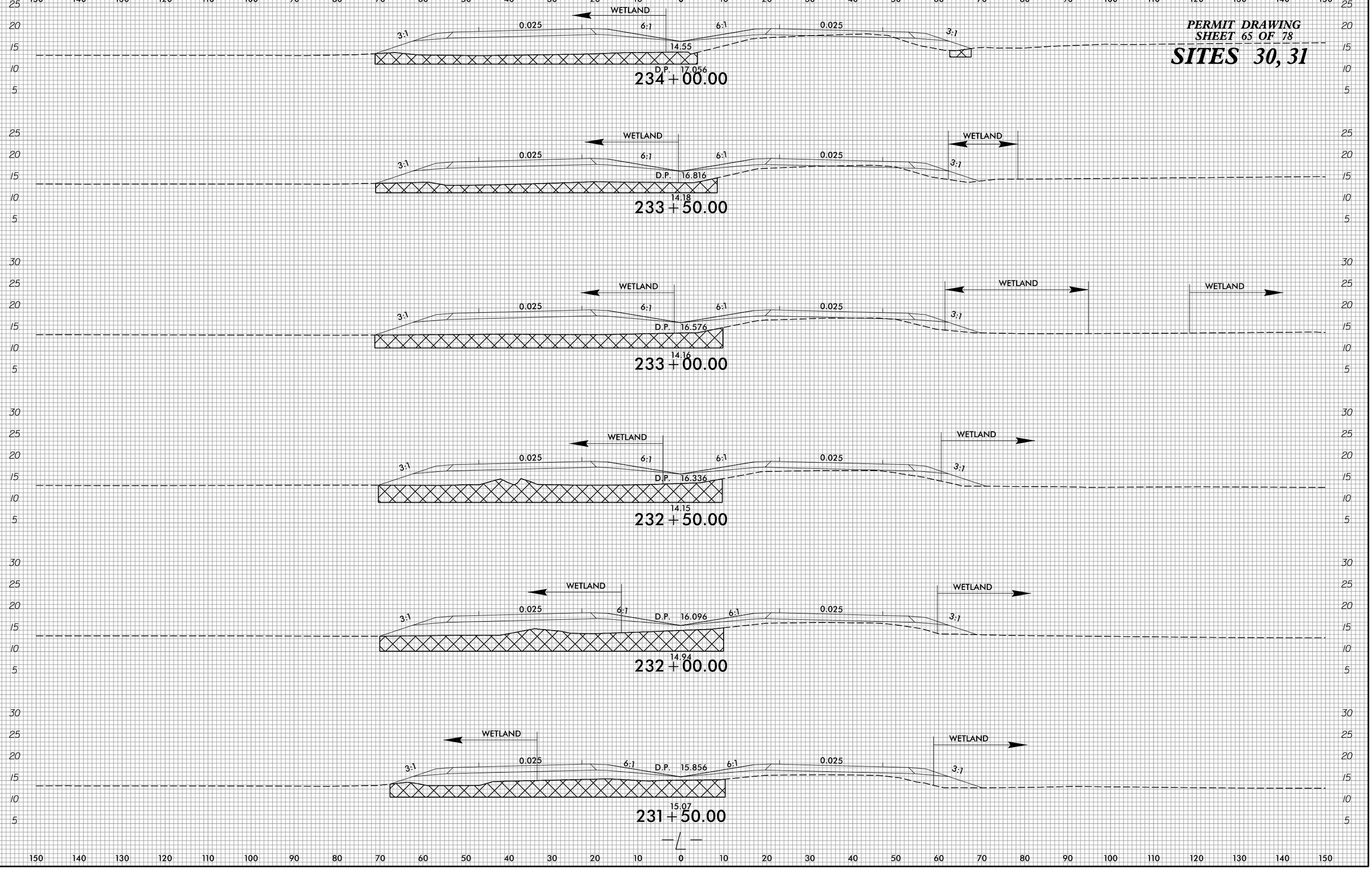
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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2507A	X-98

PERMIT DRAWING
SHEET 65 OF 78

SITES 30, 31



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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 66 OF 78

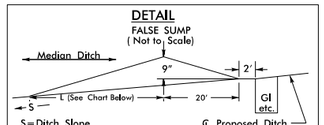
NAD 83

ENGLISH

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

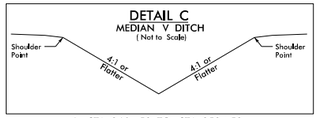
DETAIL
FALSE SUMP
(Not to Scale)



S = Ditch Slope ℄ Proposed Ditch

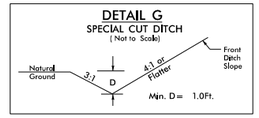
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL C
MEDIAN V DITCH
(Not to Scale)

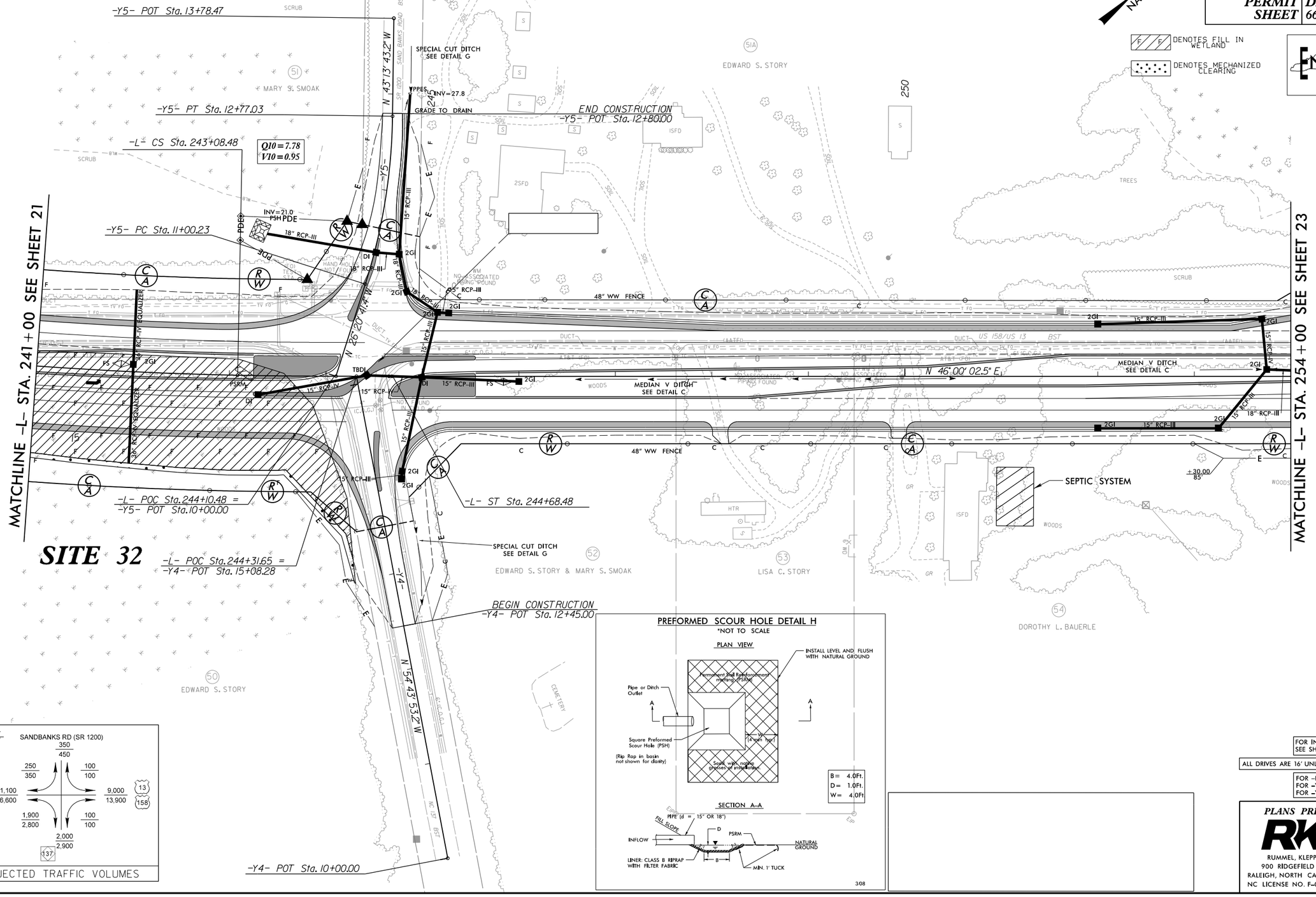


–L– STA. 246+50 TO STA. 250+50
–L– STA. 253+00 TO STA. 254+80

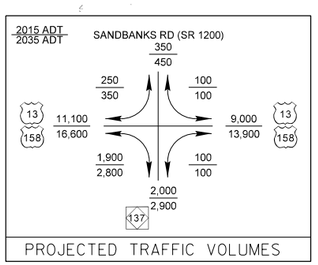
DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



–Y4– STA. 12+50 TO STA. 13+50 RT
–Y5– STA. 13+00 TO STA. 13+50 RT



PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE



PROJECTED TRAFFIC VOLUMES

FOR INTERSECTION DETAILS SEE SHEET 2M

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR –L– PROFILE SEE SHT. 48
FOR –Y4– PROFILE SEE SHT. 60
FOR –Y5– PROFILE SEE SHT. 61

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
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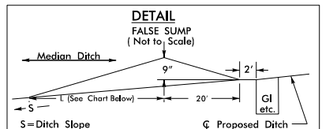
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT SHEET | **DRAWING 67 OF 78**

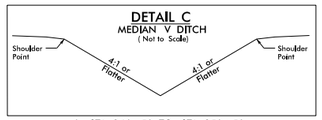
DETAIL
FALSE SUMP
(Not to Scale)



S = Ditch Slope
℄ Proposed Ditch

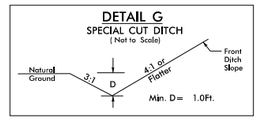
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL C
MEDIAN V DITCH
(Not to Scale)



-L- STA. 246+50 TO STA. 250+50
-L- STA. 253+00 TO STA. 254+80

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



-Y4- STA. 12+50 TO STA. 13+50 RT
-Y5- STA. 13+00 TO STA. 13+50 RT

NAD 83

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

-Y5- POT Sta. 13+78.47

SPECIAL CUT DITCH SEE DETAIL G

N 43°13'43.2"W 245.24'

TYPE S INV=27.8 GRADE TO DRAIN

-Y5- PT Sta. 12+77.03

-L- CS Sta. 243+08.48

Q10=7.78
V10=0.95

END CONSTRUCTION
-Y5- POT Sta. 12+80.00

EDWARD S. STORY

MARY S. SMOAK

250

INV=21.0 PSH PDE

-Y5- PC Sta. 11+00.23

18" RCP-III

15" RCP-III

2GI

DI

48" WW FENCE

N 26°20'47.4"W

36" RCP-IV EQUALIZER

PSRM

15" RCP-IV

TBDI

MEDIAN V DITCH SEE DETAIL C

N 46°00'02.5"E

US 158/US 13 BST

MATCHLINE -L- STA. 241+00 SEE SHEET 21

MATCHLINE -L- STA. 254+00 SEE SHEET 23

-L- POC Sta.244+10.48 =
-Y5- POT Sta.10+00.00

-L- ST Sta. 244+68.48

SEPTIC SYSTEM

+30.00
85

SITE 32

-L- POC Sta.244+31.65 =
-Y4- POT Sta. 15+08.28

SPECIAL CUT DITCH SEE DETAIL G

EDWARD S. STORY & MARY S. SMOAK

LISA C. STORY

DOROTHY L. BAUERLE

EDWARD S. STORY

BEGIN CONSTRUCTION
-Y4- POT Sta. 12+45.00

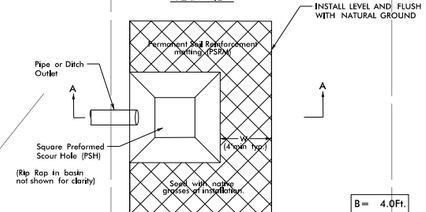
N 54°43'53.2"W

-Y4-

-Y4- POT Sta. 10+00.00

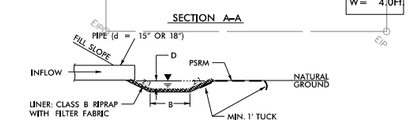
PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE

PLAN VIEW



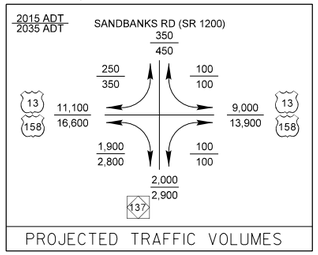
B= 4.0Ft.
D= 1.0Ft.
W= 4.0Ft

SECTION A-A



308

PROJECTED TRAFFIC VOLUMES



FOR INTERSECTION DETAILS SEE SHEET 2M

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR -L- PROFILE SEE SHT. 48
FOR -Y4- PROFILE SEE SHT. 60
FOR -Y5- PROFILE SEE SHT. 61

PLANS PREPARED BY :
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900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
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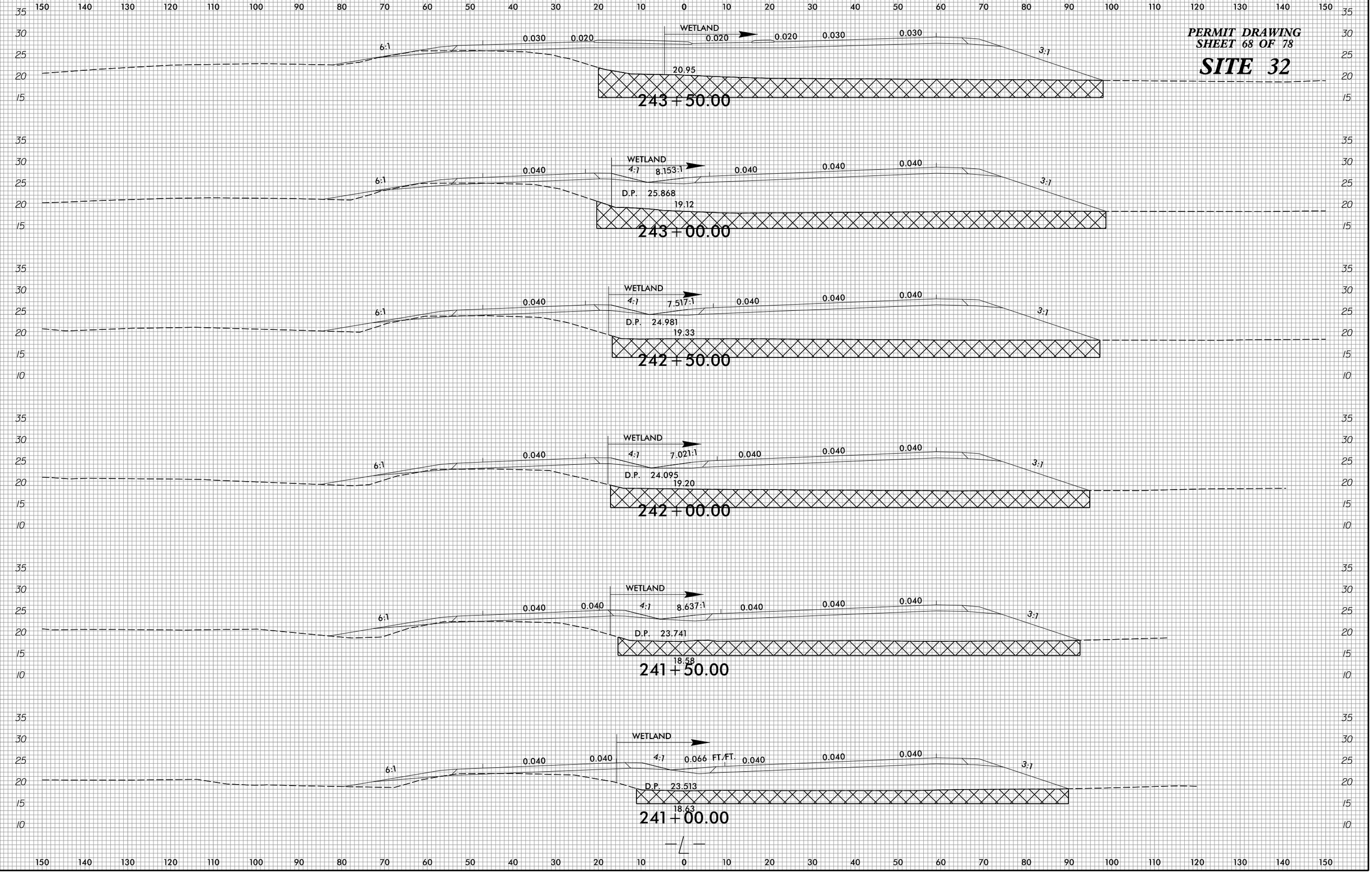
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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2507A	X-101

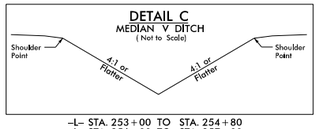
PERMIT DRAWING
SHEET 68 OF 78

SITE 32

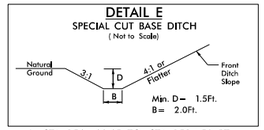


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Fkeys

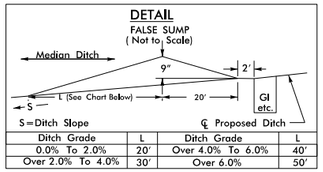
8/17/99



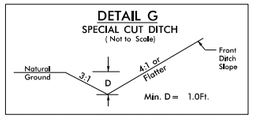
–L– STA. 253+00 TO STA. 254+80
–L– STA. 256+00 TO STA. 257+00



–L– STA. 256+66.65 TO STA. 258+50 RT



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



–L– STA. 256+00 TO STA. 256+66 RT

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 69 OF 78

ENGLISH

NAD 83

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

SITE 33

MATCHLINE –L– STA. 254+00 SEE SHEET 22

MATCHLINE –L– STA. 267+00 SEE SHEET 24

FILL OR REMOVE 3'X2' RCBC (2305)

CPES INV=22.9

REMOVE

15" RCP RETAIN

48" WW FENCE

US 158/US 13 BST

MEDIAN V DITCH SEE DETAIL C

36" RCP-IV

24" RCP-III (2303) 2GI-D

18" RCP-III

JB w/MH

DI (2307)

24" RCP-III

18" RCP-III (2302) FS 2GI-D

18" RCP-III (2301) FS 2GI-D

15" RCP-III (2304)

20 TONS CL I RIPRAP W/39 SY FIL FAB (2306)

CPES INV=21.3

15" RCP-III (2309)

48" WW FENCE

PUE

SPECIAL CUT BASE DITCH SEE DETAIL E

SPECIAL CUT DITCH SEE DETAIL G

+13.94 85'

–L– SC Sta. 258+26.58

–L– TS Sta. 256+26.58

51A EDWARD S. STORY

54 DOROTHY L. BAUERLE

55 ALEXANDER M., WILLIE M., & MURIEL E. WOODIS

56 FRANKFORD MILAM JOHNSON FAMILY IRREVOCABLE TRUST

TREES, SCRUB, WOODS, ABANDON, BLUE BERRYS, CULT, 260, 265, 255, 200

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR –L– PROFILE SEE SHTS. 48 & 49

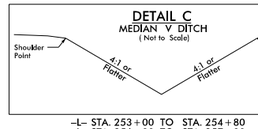
PLANS PREPARED BY :

RK&K

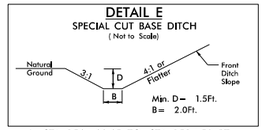
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/2/2012
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FLeis

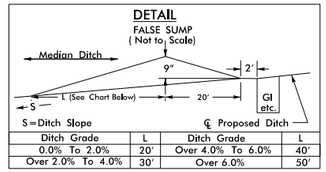
8/17/99



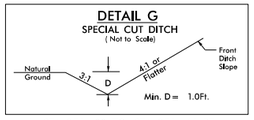
–L– STA. 253+00 TO STA. 254+80
–L– STA. 256+00 TO STA. 257+00



–L– STA. 256+66.65 TO STA. 258+50 RT



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



–L– STA. 256+00 TO STA. 256+66 RT

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT SHEET 70 OF 78

ENGLISH

NAD 83

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

SITE 33

MATCHLINE –L– STA. 254+00 SEE SHEET 22

MATCHLINE –L– STA. 267+00 SEE SHEET 24

–L– SC Sta. 258+26.58

–L– TS Sta. 256+26.58

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR –L– PROFILE SEE SHTS. 48 & 49

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/2/2012
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FLeis

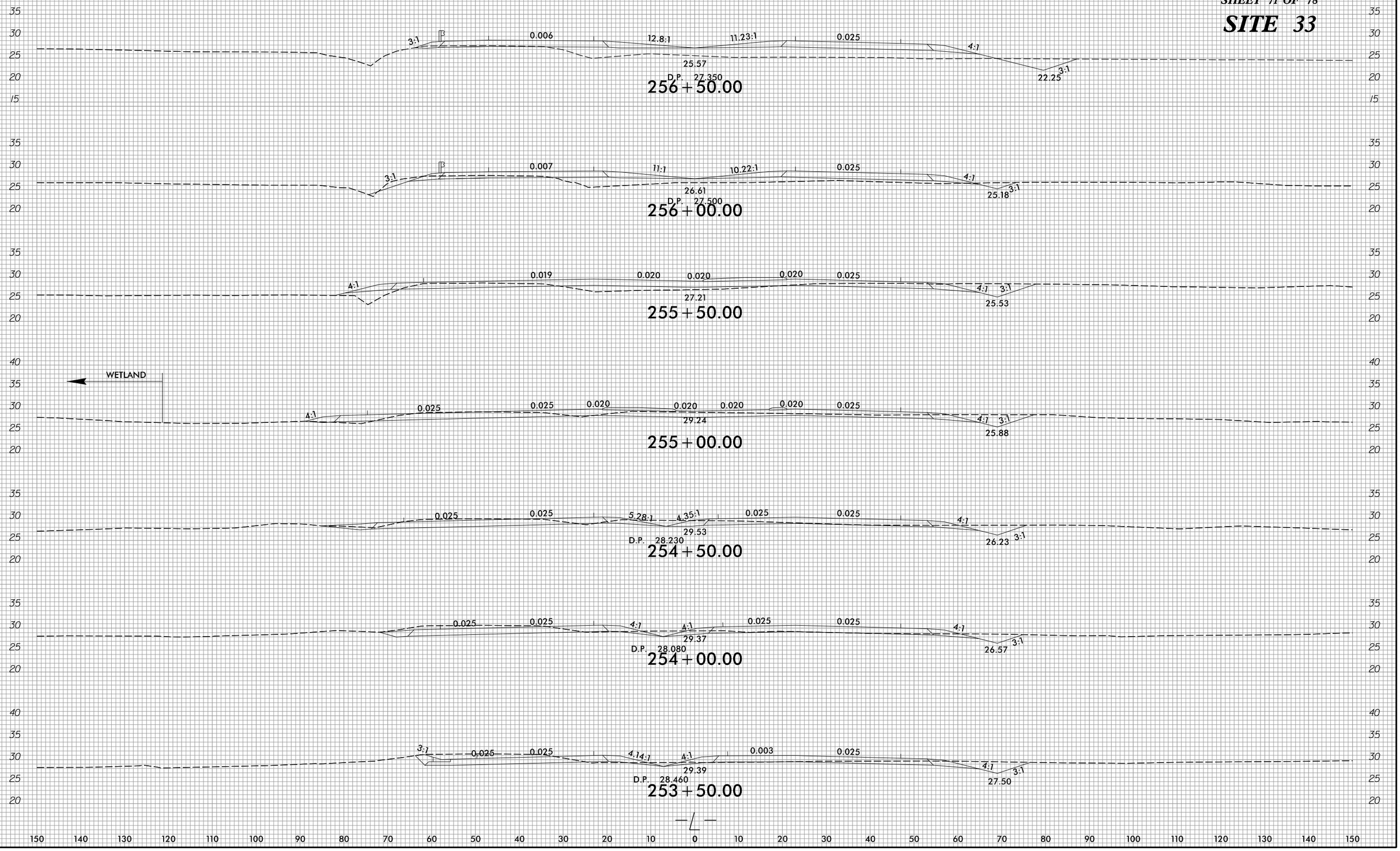
8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2507A	X-105

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PERMIT DRAWING
SHEET 71 OF 78

SITE 33



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

3/2/2012
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Fkeys

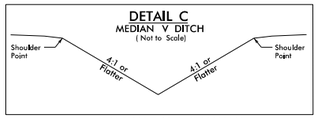
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

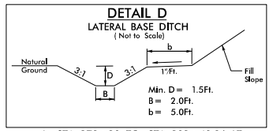
PERMIT DRAWING SHEET 72 OF 78

DETAIL C
MEDIAN V DITCH
(Not to Scale)



-L- STA. 274+05 TO STA. 289+50

DETAIL D
LATERAL BASE DITCH
(Not to Scale)

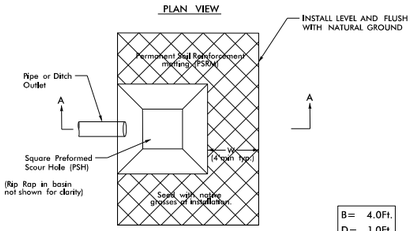


Min. D= 1.5Ft.
B= 2.0Ft.
b= 5.0Ft.

-L- STA. 279+20 TO STA. 282+40.26 LT
-L- STA. 290+50 TO STA. 296+78.95 RT
-Y6- STA. 11+50 TO STA. 13+24.64 RT

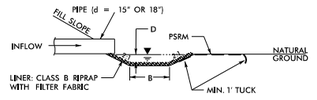
PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE

PLAN VIEW



B= 4.0Ft.
D= 1.0Ft.
W= 4.0Ft.

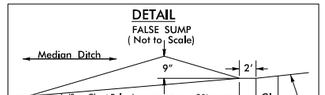
SECTION A-A



308

-L- STA. 284+00 LT

DETAIL
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



Min. D= 1.0Ft.

-Y6- STA. 10+20 TO STA. 11+50 RT
-Y6- STA. 10+61.68 TO STA. 11+00 LT

NAD 83

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

ENGLISH

280

WOODS

SCRUB

-L- TS Sta. 280+99.49

-L- SC Sta. 282+99.49

285

290

56
FRANKFORD MILAM JOHNSON FAMILY IRREVOCABLE TRUST

58
L. Z. FELTON

ECM

2 TONS CL B RIPRAP W/7 SY FIL FAB

LATERAL BASE DITCH SEE DETAIL D

Q10=5.26
V10=1.13

PDE

PDE

PDE

WOODS

PSH SEE DET H

Q10=3.96
V10=0.77

48" WW FENCE

-L- POC Sta.290+18.27=
-Y6- POT Sta. 14+27.20

INV=28.1

15' RCBC

11 TONS CL B RIPRAP W/5 SY FIL FAB

DI

MATCHLINE -L- STA. 280+00 SEE SHEET 24

FILL W/ FLOWABLE FILL

INV=27.5

15' RCBC

HW

FS

2GI-D

-L-

WOODS

US 158 US 13 BST

FILL OR REMOVE 4'X2' RCBC

2-30" RCP w/ FLUMEFERS

MEDIAN V DITCH SEE DETAIL C

REMOVE

REMOVE

LATERAL BASE DITCH SEE DETAIL D

N 17° 45' 31.3" W

200'

48" WW FENCE

WOODS

NOT FOUND IN FIELD

80" RCP-III EQUALIZER

-Y6- PT Sta. 13+74.12

57
N. T. LEWIS, LLC

SITE 34

-Y6- PC Sta. 11+70.97

56
FRANKFORD MILAM JOHNSON FAMILY IRREVOCABLE TRUST

SPECIAL CUT DITCH SEE DETAIL G

BEGIN CONSTRUCTION
-Y6- POT Sta. 10+75.00

-Y6-

SPECIAL CUT DITCH SEE DETAIL G

-Y6- POT Sta. 10+00.00

N 3° 54' 07.9" W

SR 1228 BARFIELD ROAD

57
N. T. LEWIS, LLC

10

MATCHLINE -L- STA. 293+00 SEE SHEET 26

2015 ADT / 2035 ADT				
13 / 158	9,000 / 13,900		9,000 / 13,700	13 / 158
	150 / 250	250 / 350	100 / 100	

BARFIELD RD (SR 1128)

PROJECTED TRAFFIC VOLUMES

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAILS SEE SHEET 2N

FOR -L- PROFILE SEE SHTS. 49 & 50
FOR -Y6- PROFILE SEE SHT. 61

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
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FLEIS

8/17/99

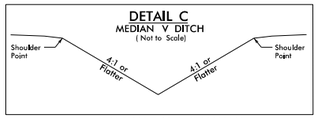
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT SHEET | **DRAWING 73 OF 78**

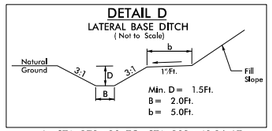
ENGLISH

DETAIL C
MEDIAN V DITCH
(Not to Scale)



-L- STA. 274+05 TO STA. 289+50

DETAIL D
LATERAL BASE DITCH
(Not to Scale)

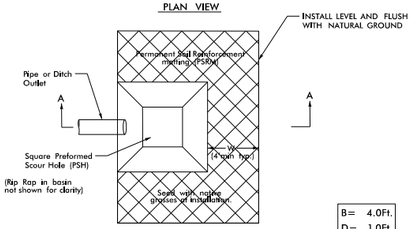


Min. D= 1.5Ft.
B= 2.0Ft.
b= 5.0Ft.

-L- STA. 279+20 TO STA. 282+40.26 LT
-L- STA. 290+50 TO STA. 296+78.95 RT
-Y6- STA. 11+50 TO STA. 13+24.64 RT

PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE

PLAN VIEW



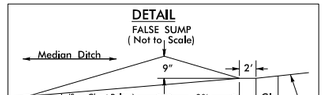
B= 4.0Ft.
D= 1.0Ft.
W= 4.0Ft.

SECTION A-A

308

-L- STA. 284+00 LT

DETAIL
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

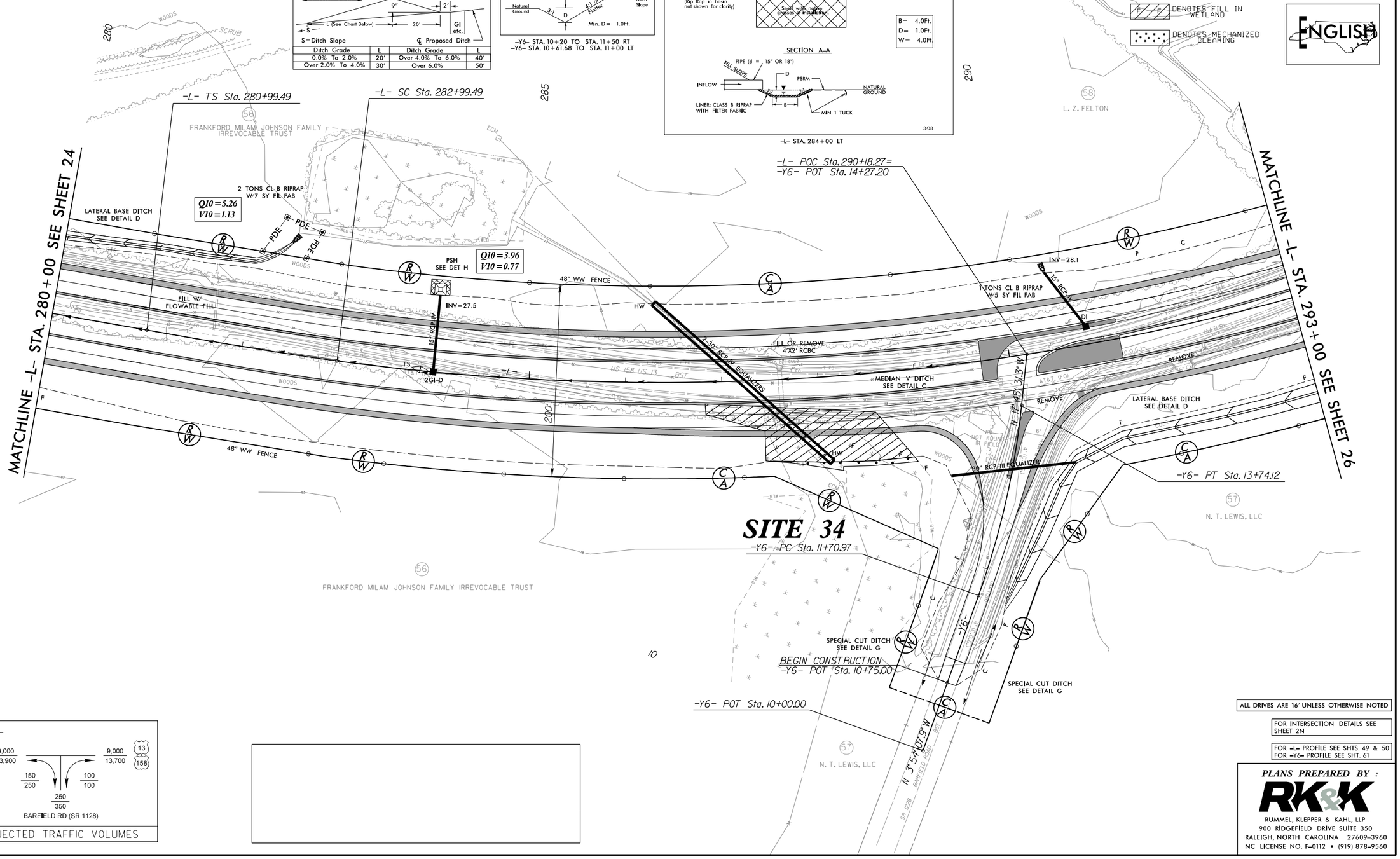
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

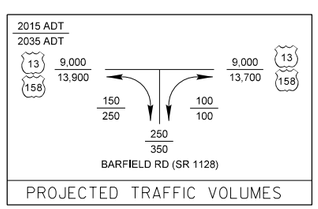
DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



Min. D= 1.0Ft.

-Y6- STA. 10+20 TO STA. 11+50 RT
-Y6- STA. 10+61.68 TO STA. 11+00 LT





PROJECTED TRAFFIC VOLUMES

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAILS SEE SHEET 2N

FOR -L- PROFILE SEE SHTS. 49 & 50
FOR -Y6- PROFILE SEE SHT. 61

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

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ESHU

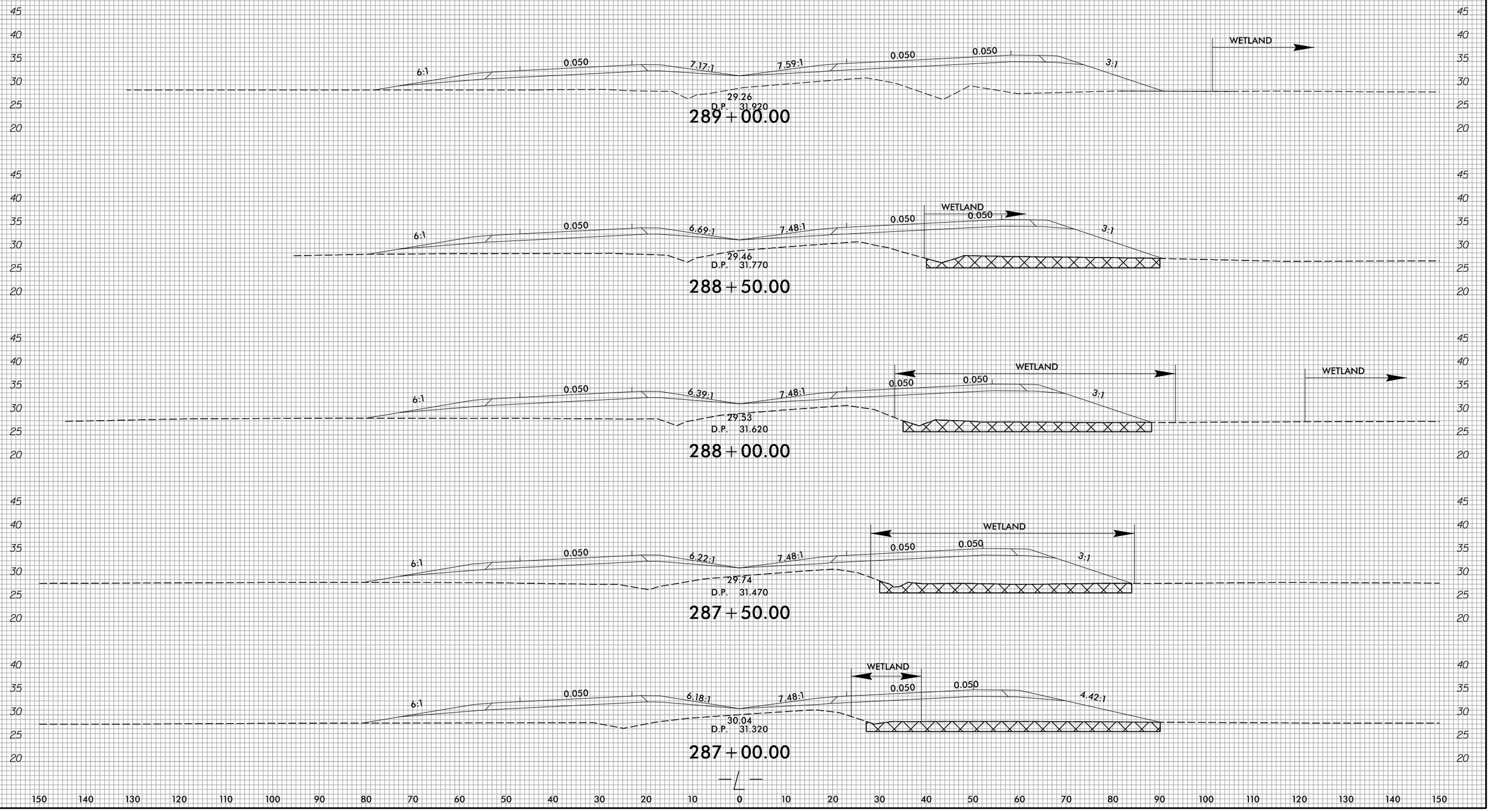
8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2507A	X-115

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PERMIT DRAWING
SHEET 74 OF 78

SITE 34



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

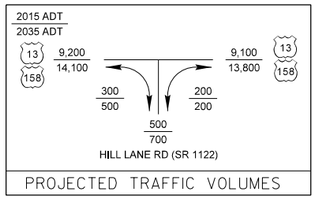
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8/17/99

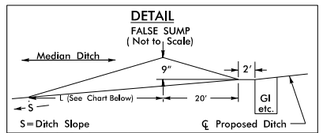
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

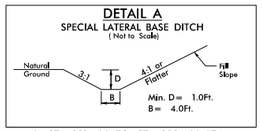
PERMIT DRAWING SHEET 75 OF 78



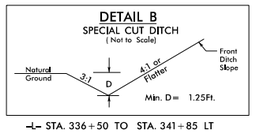
PROJECTED TRAFFIC VOLUMES



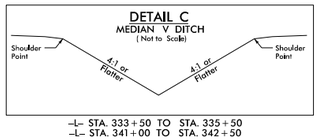
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



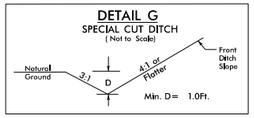
–L– STA. 331+00 TO STA. 333+00 LT



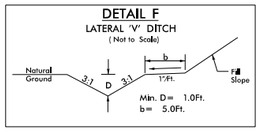
–L– STA. 336+50 TO STA. 341+85 LT



–L– STA. 333+50 TO STA. 335+50
–L– STA. 341+00 TO STA. 342+50



–Y9– STA. 10+18 TO STA. 11+50 LT
–Y9– STA. 10+16 TO STA. 12+00 RT

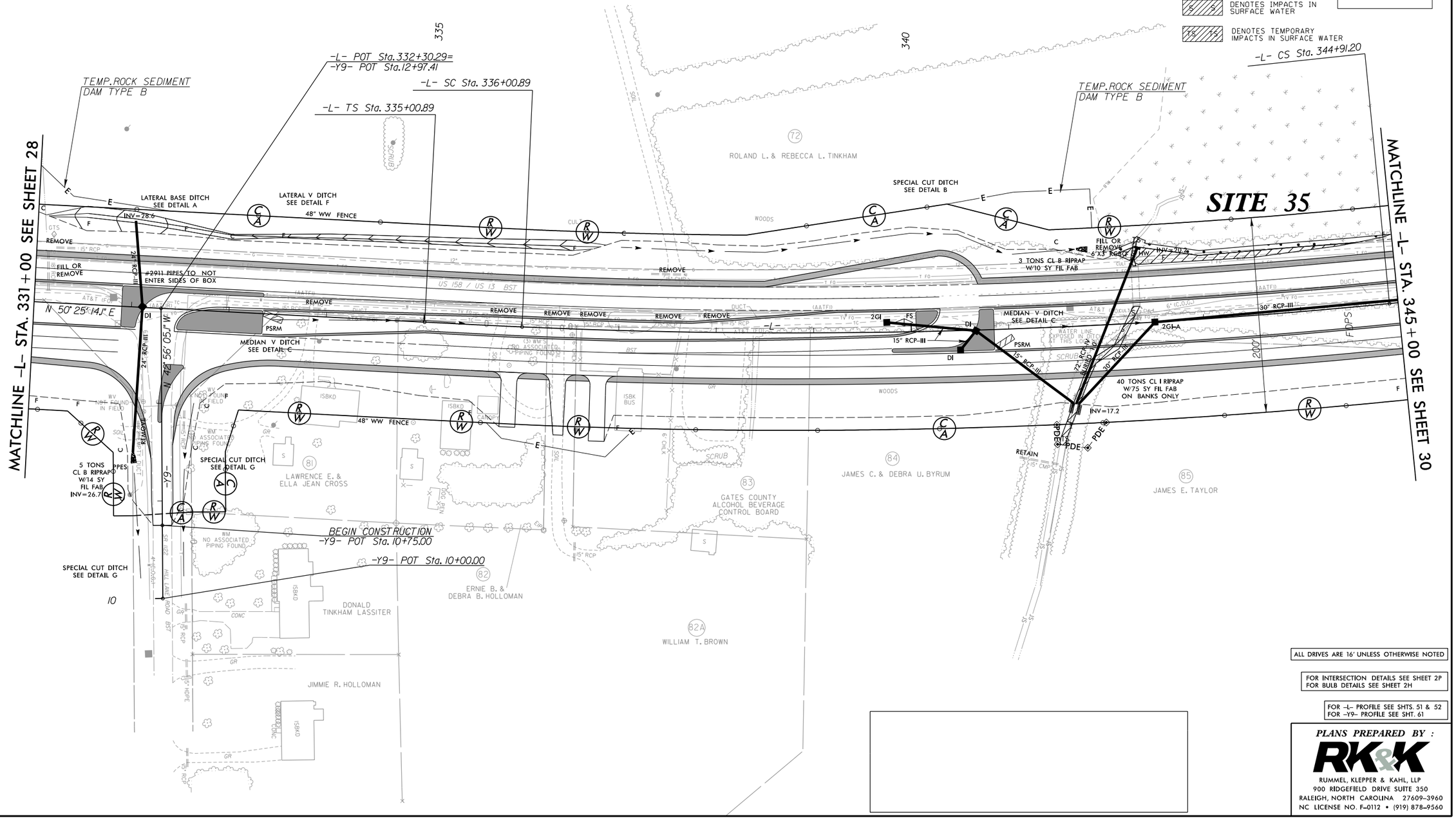


–L– STA. 333+00 TO STA. 336+50 LT

NAD 83

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

ENGLISH



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAILS SEE SHEET 2P
FOR BULB DETAILS SEE SHEET 2H

FOR –L– PROFILE SEE SHTS. 51 & 52
FOR –Y9– PROFILE SEE SHT. 61

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/2/2012
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FLEPS

8/17/99

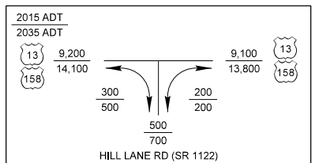
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 76 OF 78

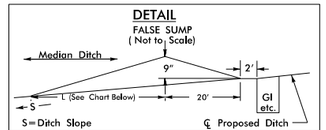
NAD 83

2015 ADT
2035 ADT



PROJECTED TRAFFIC VOLUMES

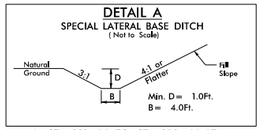
DETAIL
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

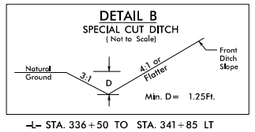
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



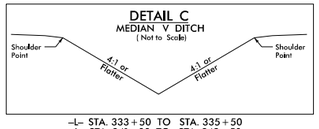
–L– STA. 331+00 TO STA. 333+00 LT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



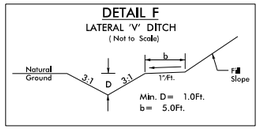
–L– STA. 336+50 TO STA. 341+85 LT

DETAIL C
MEDIAN V DITCH
(Not to Scale)



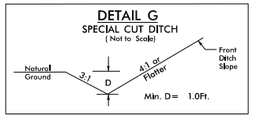
–L– STA. 333+50 TO STA. 335+50
–L– STA. 341+00 TO STA. 342+50

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



–L– STA. 333+00 TO STA. 336+50 LT

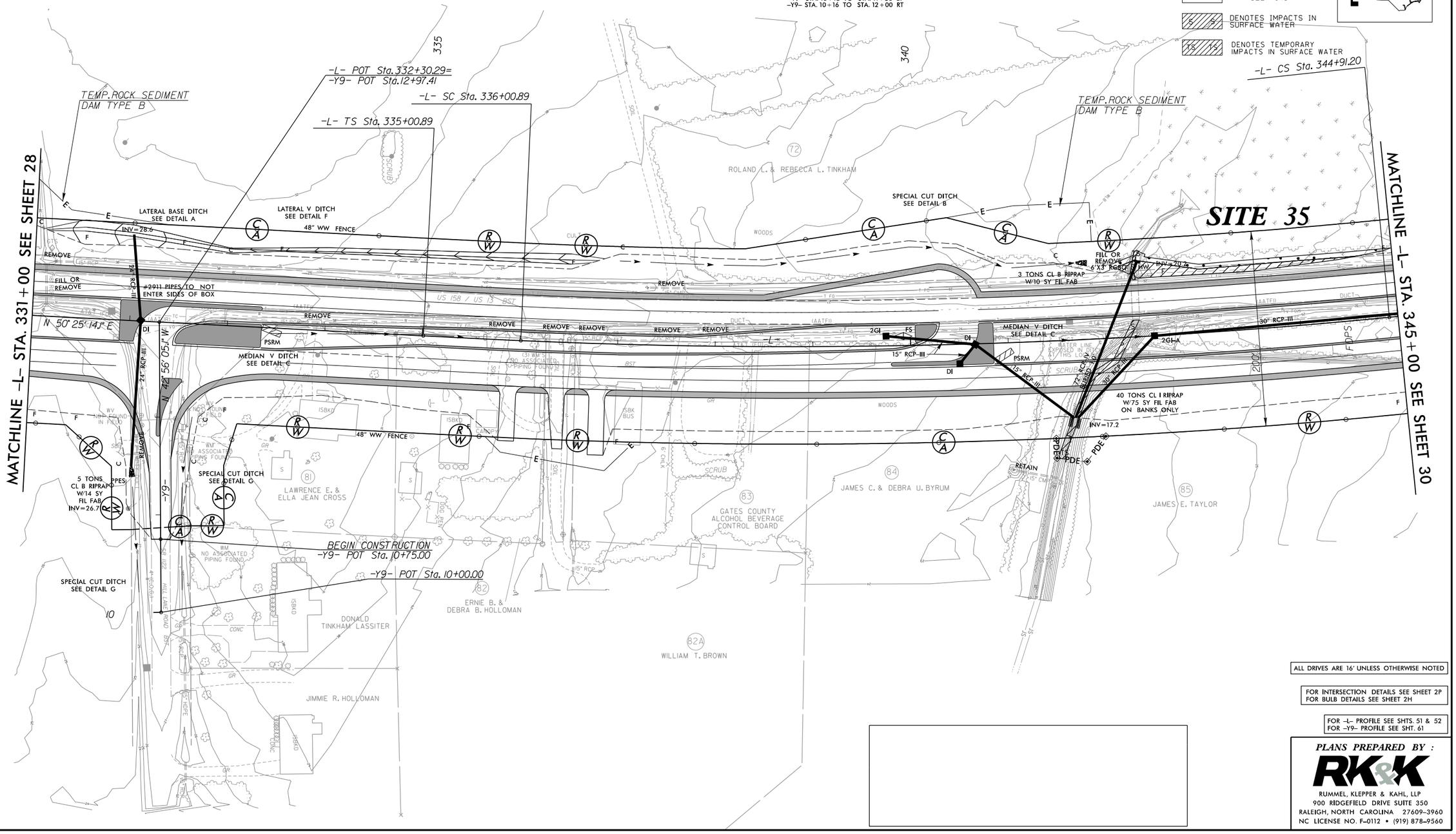
DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



–Y9– STA. 10+18 TO STA. 11+50 LT
–Y9– STA. 10+16 TO STA. 12+00 RT

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

ENGLISH



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAILS SEE SHEET 2P
FOR BULB DETAILS SEE SHEET 2H

FOR –L– PROFILE SEE SHTS. 51 & 52
FOR –Y9– PROFILE SEE SHT. 61

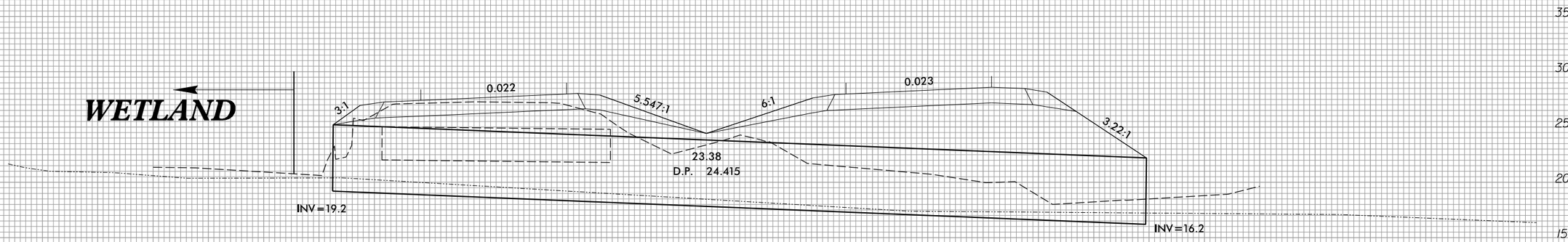
PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/2/2012
R:\Highways\PERMITS_Environmental\Drawings\R2507A_Hyd_prm_wet_psh29_con.dgn
FFerris

PROJ. REFERENCE NO.	SHEET NO.
R-2507A	X-186

PERMIT DRAWING
SHEET 77 OF 78

SITE 35
–L– 342+00.97



PROP. 72" RCP
BURIED 1.0'

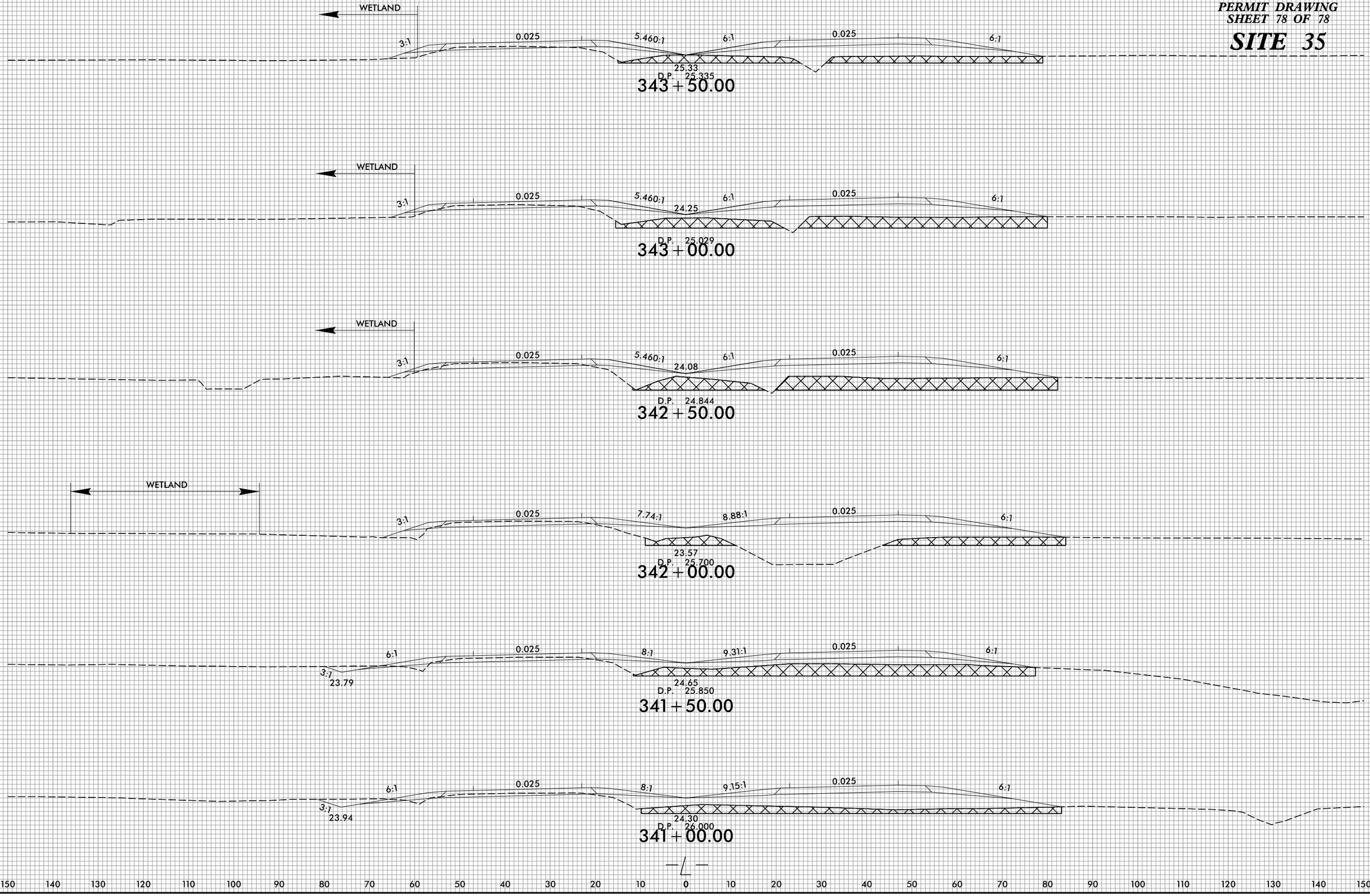
3/2/2012
Drawing: R-2507A_Hyd_prm_wet_XPL_Site35.dgn
User:

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2507A	X-133

PERMIT DRAWING
SHEET 78 OF 78

SITE 35



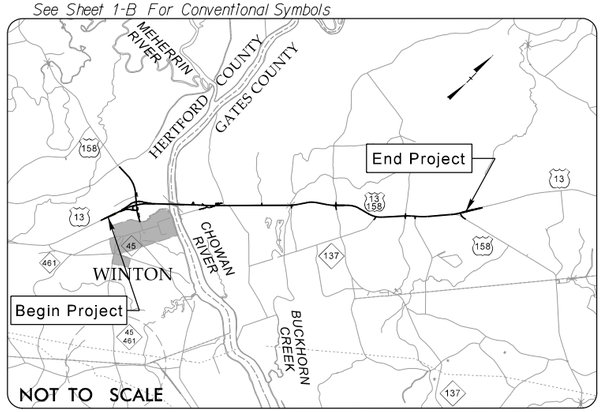
3/2/2012
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09/06/59

TIP PROJECT: R-2507A

CONTRACT: C202616

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HERTFORD / GATES COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2507A	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
35488.3.1		CONST.



LOCATION: US 13 /US 158 WIDENING FROM US 158 /NC 45 NEAR WINTON TO THE US 158 BYPASS IN TARHEEL

TYPE OF WORK: GRADING, DRAINAGE, PAVING, WIDENING, RESURFACING, GUARDRAIL, & STRUCTURES

WETLAND AND STREAM IMPACTS

PROPOSED DUAL BRIDGES
OVER BUCKHORN CREEK
BEG. NB BRIDGE –L– STA. 194+91.00
END NB BRIDGE –L– STA. 196+01.00
BEG. SB BRIDGE –L– STA. 195+15.00
END SB BRIDGE –L– STA. 196+25.0

PROPOSED BRIDGE
OVER CHOWAN RIVER
BEG. BRIDGE –L– STA. 65+19.50
END BRIDGE –L– STA. 76+40.50

PROPOSED DUAL BRIDGES OVER –Y–
BEG. NB BRIDGE –L– STA. 30+30.02
END NB BRIDGE –L– STA. 31+15.23
BEG. SB BRIDGE –L– STA. 30+34.06
END SB BRIDGE –L– STA. 31+18.85

END CONSTRUCTION
–L_END_LT– POT Sta. 27+82.26

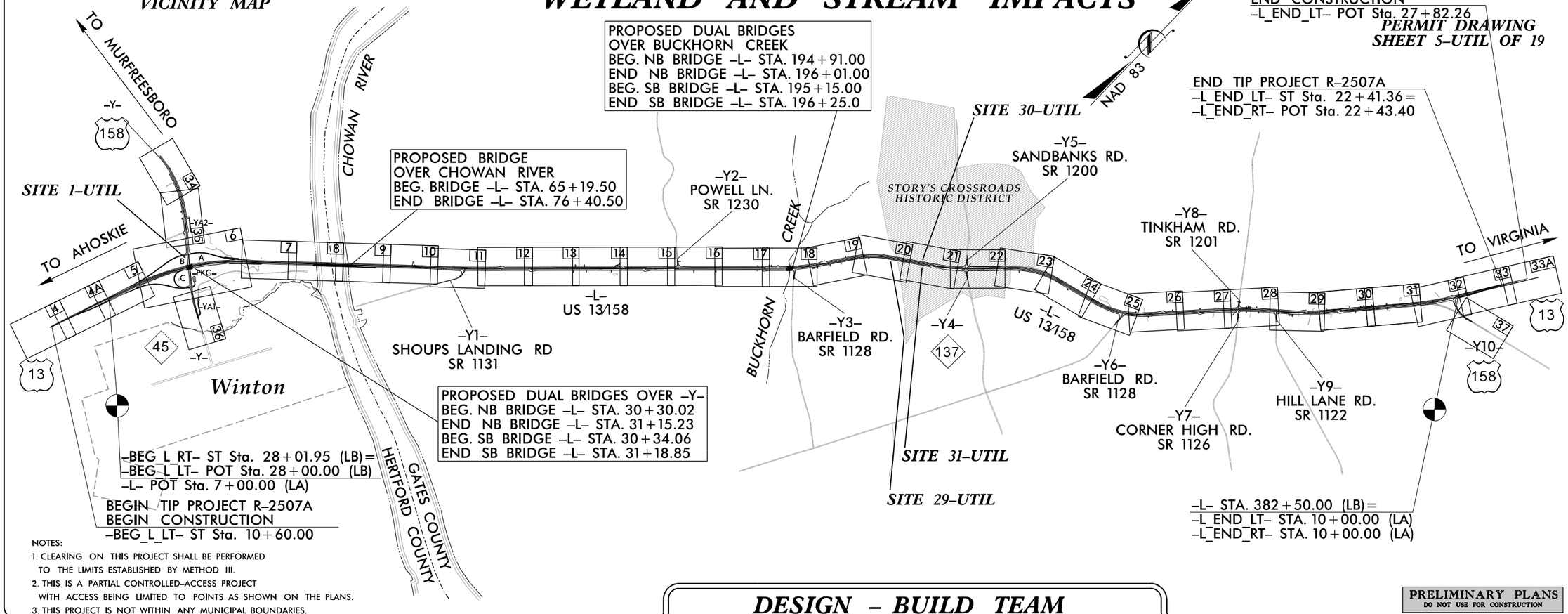
PERMIT DRAWING SHEET 5–UTIL OF 19

END TIP PROJECT R–2507A
–L_END_LT– ST Sta. 22+41.36=
–L_END_RT– POT Sta. 22+43.40

–BEG_L_RT– ST Sta. 28+01.95 (LB)=
–BEG_L_LT– POT Sta. 28+00.00 (LB)
–L– POT Sta. 7+00.00 (LA)

BEGIN TIP PROJECT R–2507A
BEGIN CONSTRUCTION
–BEG_L_LT– ST Sta. 10+60.00

–L– STA. 382+50.00 (LB)=
–L_END_LT– STA. 10+00.00 (LA)
–L_END_RT– STA. 10+00.00 (LA)



NOTES:
1. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
2. THIS IS A PARTIAL CONTROLLED–ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.
3. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

DESIGN – BUILD TEAM

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 2015 = 11,200
ADT 2035 = 16,900
DHV = 11 %
D = 55 %
T = 20 % *
V = 60 MPH

* TTST 13% DUAL 7%

FUNC. CLASS =
RURAL PRINCIPAL ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R–2507A..... 7.539 mi
LENGTH STRUCTURE TIP PROJECT R–2507A..... 0.235 mi
TOTAL LENGTH TIP PROJECT R–2507A..... 7.772 mi

NOTE: LENGTHS BASED ON NORTHBOUND LANES.

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE, SUITE 350
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. F–0112
1–888–521–4455 OR 919–878–9560

FOR
DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 22, 2011

LETTING DATE:
JULY 22, 2011

J. T. Peacock, Jr., P.E.
PROJECT ENGINEER

Michael T. Merritt, P.E.
PROJECT DESIGN ENGINEER

CONTRACTOR :
E.V. WILLIAMS
SITE DEVELOPMENT & HIGHWAY CONSTRUCTION
E.V. WILLIAMS, INC.
925 S. MILITARY HIGHWAY
VIRGINIA BEACH, VA 23464

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

3/2/2012
R:\Hydraulics\PERMITS_Environmental\Drawings\Utility Permits\R2507A_HYD_tsh.dgn
tkeys

REVISIONS

PROJECTED TRAFFIC, VOLUMES

DETAIL
FALSE SUMP
(Not to Scale)

DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)

DETAIL C
MEDIAN "V" DITCH
(Not to Scale)

DETAIL D
LATERAL BASE DITCH
(Not to Scale)

DETAIL E
SPECIAL CUT BASE DITCH
(Not to Scale)

DETAIL F
LATERAL "V" DITCH
(Not to Scale)

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)

DETAIL J
TOE PROTECTION
(Not to Scale)

DENOTES HAND CLEARING

MATCHLINE –Y– STA. 41+00 SEE SHEET 35

MATCHLINE –L– STA. 17+00 SEE SHEET 5

MATCHLINE –L– STA. 45+50 SEE SHEET 7

MATCHLINE –Y– STA. 56+00 SEE SHEET 36

SITE 1–UTIL

A

B

C

-RPB- CS Sta. 25+74.08

-RPB- SC Sta. 23+62.89

-RPB- TS Sta. 21+52.89

-RPB- PT Sta. 18+26.86

-RPB- ST Sta. 27+84.08

-RPA- ST Sta. 26+07.92

-RPA- CS Sta. 23+97.92

-RPA- SC Sta. 21+48.85

-RPA- TS Sta. 19+38.65

-RPA- ST Sta. 19+11.18

-RPA- CS Sta. 17+11.18

-RPA- SC Sta. 15+06.51

-RPA- TS Sta. 13+06.51

-RPA- S. 12+50.24

-Y- POT Sta. 44+09.86=
-RPA- POT Sta. 26+43.70
-RPB- POT Sta. 28+48.30

-L- POC STA. 30+34.04
BEGIN BRIDGE
-L- POC STA. 30+09.94
BEGIN APPROACH SLAB

-L- POC STA. 31+18.24
END BRIDGE
-L- POC STA. 31+34.88
END APPROACH SLAB

-L- POC STA. 31+39.45
END APPROACH SLAB
-L- POC STA. 31+15.23
END BRIDGE
-L- POC Sta. 30+79.54=
-Y- POT Sta. 48+14.62

-L- POC Sta. 22+05.10

-L- POC Sta. 22+18.67 (19' RT)=
-LPC- ST Sta. 10+00.00

-L- POC STA. 30+05.86
BEGIN APPROACH SLAB
-L- POC STA. 30+30.02
BEGIN BRIDGE

-LPC- SC Sta. 12+00.00

-LPC- CS Sta. 16+92.39

-LPC- ST Sta. 18+92.39

-RPC- CS Sta. 20+68.75

-RPC- SRS Sta. 22+68.75

-RPC- SC Sta. 24+68.75

-RPC- PT Sta. 27+12.16

-Y- POC Sta. 53+57.73=
-LPC- POT Sta. 20+05.38

-Y- POC Sta. 53+57.37=
-RPC- POT Sta. 28+61.40

-Y- TS Sta. 52+17.33

-PKG- POT Sta. 13+62.54

-PKG- PT Sta. 11+46.41

-Y- SC Sta. 53+17.33

-PKG- POT Sta. 10+00.00=
-Y- POC Sta. 53+66.73

-PKG- PC Sta. 10+30.11

-L- POC STA. 30+34.06
BEGIN BRIDGE
-L- POC STA. 30+09.89
BEGIN APPROACH SLAB
-L- POC STA. 30+05.86
BEGIN APPROACH SLAB
-L- POC STA. 30+30.02
BEGIN BRIDGE
-L- POC STA. 31+18.85
END BRIDGE
-L- POC STA. 31+43.01
END APPROACH SLAB
-L- POC STA. 31+39.38
END APPROACH SLAB
-L- POC STA. 31+15.22
END BRIDGE
-L- POC Sta. 30+79.54=
-Y- POT Sta. 48+15.47
PROP. SBG
5' MONOLITHIC CONC. ISLAND
Δ 91° 13' 42"
S 49° 08' 34" E
CL FENCE TYP.

PROP U/G (FO) CATV CABLES

HERTFORD COUNTY

CAREER TRANSPORTING, INC.

COPPER STATION HOLDING, INC.

WILLIE C., JR. & JOANN W. GOODWIN

FRED W. LIVERMAN, JR., et ux

ASP RIVERSEDGE, LLC

JEFFREY W. ELLIS

WILLIAM L. O'BRIEN

DAN F. & LOUISE M. SPIVEY

DAN F. SPIVEY, et ux

THOMAS L., JR. & KIMBERLY H. BAZEMORE

JUSTENE GREENE, et ux

PERMIT DRAWING
SHEET 6–UTIL OF 19

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAILS SEE SHEET 25

FOR <L> PROFILE SEE SHTS. 49 & 41
FOR <Y> PROFILE SEE SHT. 55
FOR <RPA> PROFILE SEE SHTS. 57
FOR <RPB> PROFILE SEE SHTS. 58 & 58
FOR <RPC> PROFILE SEE SHTS. 58 & 59
FOR <PKG> PROFILE SEE SHT. 59
FOR <PLL> PROFILE SEE SHT. 60

PLANS PREPARED BY :

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 ROSEMEAD PARKS SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0912 • (919) 878-9560

GRAPHIC SCALE
50 25 0 50 100
PLANS

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

NAD 83

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

6/2/2022
C:\Projects\R2507A Environmental\Drawings\Utility Permits\R2507A_Hyd_pmt_set_utl06.dgn

REVISIONS

PROJECTED TRAFFIC, VOLUMES

2015 ADT 2035 ADT

DETAIL FALSE SUMP (Not to Scale)

DETAIL A SPECIAL LATERAL BASE DITCH (Not to Scale)

DETAIL B SPECIAL CUT DITCH (Not to Scale)

DETAIL C MODIFIED "V" DITCH (Not to Scale)

DETAIL D LATERAL BASE DITCH (Not to Scale)

DETAIL E SPECIAL CUT BASE DITCH (Not to Scale)

DETAIL F LATERAL "V" DITCH (Not to Scale)

DETAIL G SPECIAL CUT DITCH (Not to Scale)

DETAIL J TOE PROTECTION (Not to Scale)

DENOTES HAND CLEARING

MATCHLINE –Y– STA. 41+00 SEE SHEET 35

MATCHLINE –L– STA. 17+00 SEE SHEET 5

MATCHLINE –L– STA. 45+50 SEE SHEET 7

MATCHLINE –Y– STA. 56+00 SEE SHEET 36

SITE 1–UTIL A

SITE 1–UTIL B

SITE 1–UTIL C

-RPB- PC Sta. 23+62.89

-RPB- TS Sta. 21+52.89

-RPB- PT Sta. 18+26.86

-RPB- SC Sta. 23+62.89

-RPB- ST Sta. 27+84.06

-RPB- CS Sta. 25+74.08

-RPA- CS Sta. 23+97.92

-RPA- ST Sta. 26+07.92

-RPA- SC Sta. 21+48.85

-RPA- TS Sta. 19+38.65

-RPA- ST Sta. 16+41.18

-RPA- CS Sta. 17+81.18

-RPA- SC Sta. 15+06.51

-RPA- TS Sta. 13+06.51

-RPA- PC Sta. 10+52.24

-RPC- CS Sta. 20+68.75

-RPC- SRS Sta. 22+68.75

-RPC- SC Sta. 24+68.75

-RPC- PT Sta. 27+12.16

-RPC- POT Sta. 28+61.40

-RPG- POT Sta. 13+62.54

-RPG- PT Sta. 11+46.41

-RPG- PC Sta. 10+50.11

-RPG- POT Sta. 10+00.00=
-Y- POC Sta. 53+67.73

-LPC- CS Sta. 16+92.39

-LPC- ST Sta. 16+92.39

-LPC- POT Sta. 20+05.38

-LPC- SC Sta. 12+00.00

-L- POC Sta. 124+18.67 (139 RT)=
-LPC- ST Sta. 10+00.00

-L- POC Sta. 22+05.10

-L- POC STA. 30+34.06 BEGIN BRIDGE

-L- POC STA. 30+09.89 BEGIN APPROACH SLAB

-L- POC STA. 30+05.86 BEGIN APPROACH SLAB

-L- POC STA. 30+30.02 BEGIN BRIDGE

-L- POC STA. 31+18.85 END BRIDGE

-L- POC STA. 31+43.01 END APPROACH SLAB

-L- POC STA. 31+39.38 END APPROACH SLAB

-L- POC STA. 31+15.22 END BRIDGE

-L- POC Sta. 30+79.54= -Y- POT Sta. 48+15.47

-L- POC STA. 30+34.04 BEGIN BRIDGE

-L- POC STA. 30+09.94 BEGIN APPROACH SLAB

-L- POC STA. 30+05.86 BEGIN APPROACH SLAB

-L- POC STA. 30+05.86 BEGIN APPROACH SLAB

-L- POC STA. 31+18.24 END BRIDGE

-L- POC STA. 31+34.88 END APPROACH SLAB

-L- POC STA. 31+39.46 END APPROACH SLAB

-L- POC STA. 31+15.23 END BRIDGE

-L- POC Sta. 30+79.54= -Y- POT Sta. 48+14.68

-Y- POC Sta. 53+57.73=

-Y- TS Sta. 52+17.33

-Y- SC Sta. 53+17.33

-Y- POC Sta. 53+57.73=

-Y- POC Sta. 53+57.37=

-Y- POT Sta. 28+61.40

PROP. U/G (FO) CATV CABLES

PROP. SBG

PROP. SBG

HERTFORD COUNTY

CAREER TRANSPORTING, INC.

COPPER STATION HOLDING, INC.

WILLIE C., JR. & JOANN W. GODWIN

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ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAILS SEE SHEET 25

FOR <L- PROFILE SEE SHTS. 49 & 49
FOR –L– PROFILE SEE SHT. 55
FOR –RPA– PROFILE SEE SHT. 57
FOR –RPB– PROFILE SEE SHTS. 58 & 58
FOR –RPC– PROFILE SEE SHTS. 58 & 59
FOR –RPG– PROFILE SEE SHT. 59
FOR –Y–L– PROFILE SEE SHT. 60

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 ROSEMARIE DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0912 • (919) 878-9560

PROJECT REFERENCE NO. R-2507A
SHEET NO. 6
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

PERMIT DRAWING
SHEET 7–UTIL OF 19

LOCATION:
TIP NO.: COUNTY:
DESIGNED BY:
CHECKED BY: DATE:

GRAPHIC SCALE
50 25 0 50 100
PLANS

N:\PROJECTS\R2507A\Environmental\Drawings\Utility Permits\R2507A_Hyd_pmt_sht_util08.dgn
10/2/2020 8:36:30 AM

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	6A
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

PERMIT DRAWING
SHEET 8–UTIL OF 19

ENGLISH

HC HC DENOTES HAND CLEARING

DETAIL C
MEDIAN V DITCH
(Not to Scale)

Shoulder Point — 4:1 or Flatter — 4:1 or Flatter — Shoulder Point

–L– STA. 31+50 TO STA. 33+00

Front Ditch Slope — = 1.25Ft. — 7+20 LT

Fill Slope

SITE 1–UTIL

B

A

–RPB– CS Sta. 25+74.08

23+62.89

–RPB– ST Sta. 27+84.08

–RPA– ST Sta. 26+07.92

–RPA– CS Sta. 23+97.92

–RPA– SC Sta. 21+48.65

–Y– POT Sta.44+69.86=
–RPA– POT Sta. 26+43.70
–RPB– POT Sta.28+48.30

–L– POC STA.30+34.04
BEGIN BRIDGE

–L– POC STA.30+09.94
BEGIN APPROACH SLAB

–L– POC STA.31+18.84
END BRIDGE

–L– POC STA.31+34.88
END APPROACH SLAB

N 33° 36' 06.9" E

S 49° 06' 34.7" E

N 34° 47' 42.9" E

S 34° 47' 42.9" W

S 64° 12' 20.3" W

YA2– PC Sta. 13+51.03

YA2– PT Sta. 14+35.93

YA2– POT Sta. 14+85.88

ASP RIVERSEDGE LLC

INV = 40.3 CPES

15 TONS CL I RIPRAP W/30 SY FIL FAB INV=39.0

3 TONS CL B RIPRAP W/10 SY FIL FAB

GRADE OUT EXIST. DITCH

LATERAL V DITCH SEE DETAIL F

SPECIAL CUT DITCH SEE DETAIL G

MEDIAN V DITCH SEE DETAIL C

GRADE TO DRAIN

15" CAAP 2 ELBOWS ROD & LUG

18" RCP–IV

24" RCP–III

30" RCP–III

30" RCP–IV

15" RCP–III

16" ENCASEMENT

6" GAS

10" FSS

READY MIXPRODUCTS,INC.

INDUSTRIAL PARK ROAD BST

TOWN OF WINTON (AATURY)

TOWN OF WINTON (50 PR)

TOWN OF WINTON (25 PR)

RAY ADAMS (103)

ISMTL BUS

US 158/US 13 BST

NAD 83

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609–3960
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	6A
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

PERMIT DRAWING
SHEET 9–UTIL OF 19

ENGLISH

DETAIL C
MEDIAN V DITCH
(Not to Scale)

Front Ditch Slope
= 1.25Ft.
Shoulder Point
4:1 or Flatter
4:1 or Flatter
Shoulder Point
7+20 LT
–L– STA. 31+50 TO STA. 33+00

SITE 1–UTIL

B

A

HC HC DENOTES HAND CLEARING

NAD 83

N 33° 36' 06.9" E

S 49° 06' 34.7" E

S 34° 47' 42.9" W

S 62° 12' 20.3" W

-RPB- CS Sta. 25+74.08

-RPB- ST Sta. 27+84.08

-RPA- ST Sta. 26+07.92

-RPA- CS Sta. 23+97.92

-RPA- SC Sta. 21+48.65

-Y- POT Sta. 44+69.86=
-RPA- POT Sta. 26+43.70
-RPB- POT Sta. 28+48.30

-Y2- PC Sta. 13+51.03

-Y2- PT Sta. 14+35.93

-Y2- POT Sta. 14+85.88

-L- POC STA. 30+34.04
BEGIN BRIDGE

-L- POC STA. 30+09.94
BEGIN APPROACH SLAB

-L- POC STA. 31+18.84
END BRIDGE

-L- POC STA. 31+34.88
END APPROACH SLAB

INV = 40.3 CPES

15 TONS CL I RIPRAP W/30 SY FIL FAB INV=39.0

3 TONS CL II RIPRAP W/10 SY FIL FAB

GRADE OUT EXIST. DITCH

LATERAL V DITCH SEE DETAIL F

MEDIAN V DITCH SEE DETAIL C

SPECIAL CUT DITCH SEE DETAIL G

L CUT DITCH DETAIL G

REMOVE 16" ENCASEMENT

REMOVE 24" RCP-III

REMOVE

GRADE TO DRAIN

18" RCP-III

24" RCP-III

30" RCP-III

36" RCP-III

OTCB

PEH

2GI

15" RCP-III

15" CAAP 2-ELBOWS ROD & LUG

6" GAS

10" FSS

ENCASEMENT

READY MIXPRODUCTS,INC.

INDUSTRIAL PARK ROAD BST

TOWN OF WINTON

RAY ADAMS

ISMTL BUS

CONC

ASP RIVERSEDGE,LLC

WOODS

US 158/US 13 BST

CENTURY LINK

5' WW

23+62.89

40

45

30

10'

25

52

3/2/2012
R:\HydraulicsPERMITS_Environmental\Drawings\Utility Permits\R2507A_Hyd_prm_wet_psh06A_con_utl.dgn
Ekeus

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

8/23/99

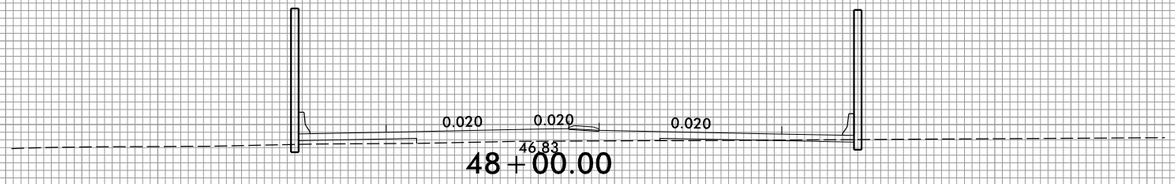
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	R-2507A	X-158

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PERMIT DRAWING
SHEET 10–UTIL OF 19

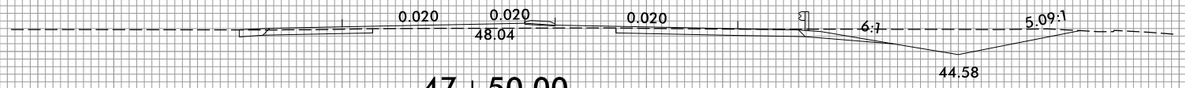
SITE 1–UTIL

65 60 55 50 45 40



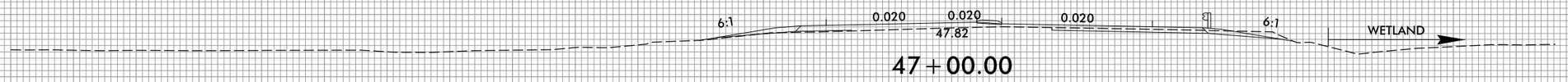
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55 50 45 40



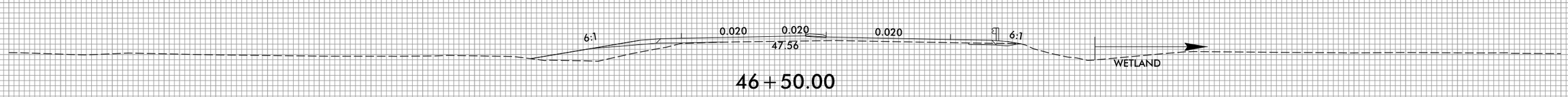
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55 50 45 40



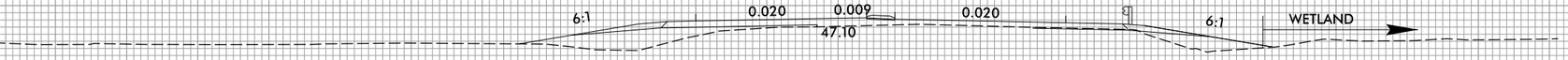
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55 50 45 40



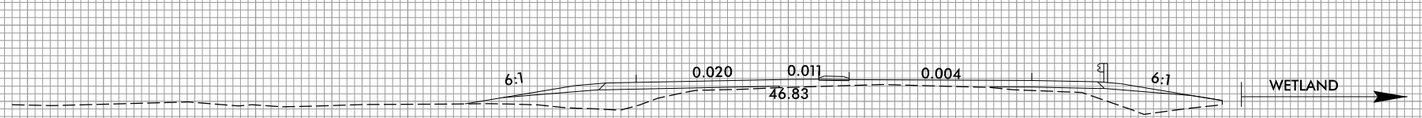
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55 50 45 40



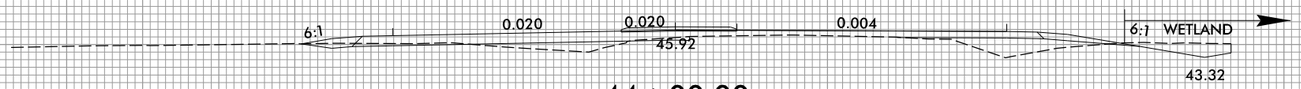
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55 50 45 40



45 + 50.00

50 45 40 35



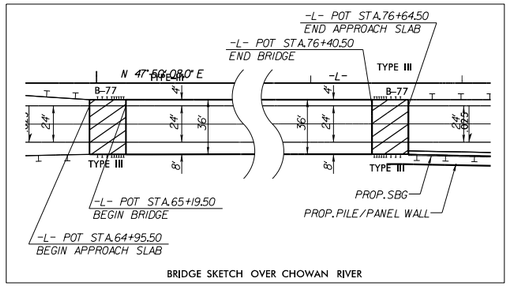
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—Y—

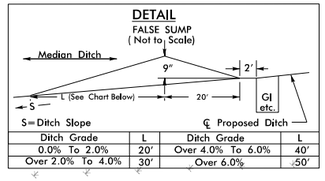
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3/2/2012
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Fkeys

8/17/99



BRIDGE SKETCH OVER CHOWAN RIVER



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

HC HC DENOTES HAND CLEARING

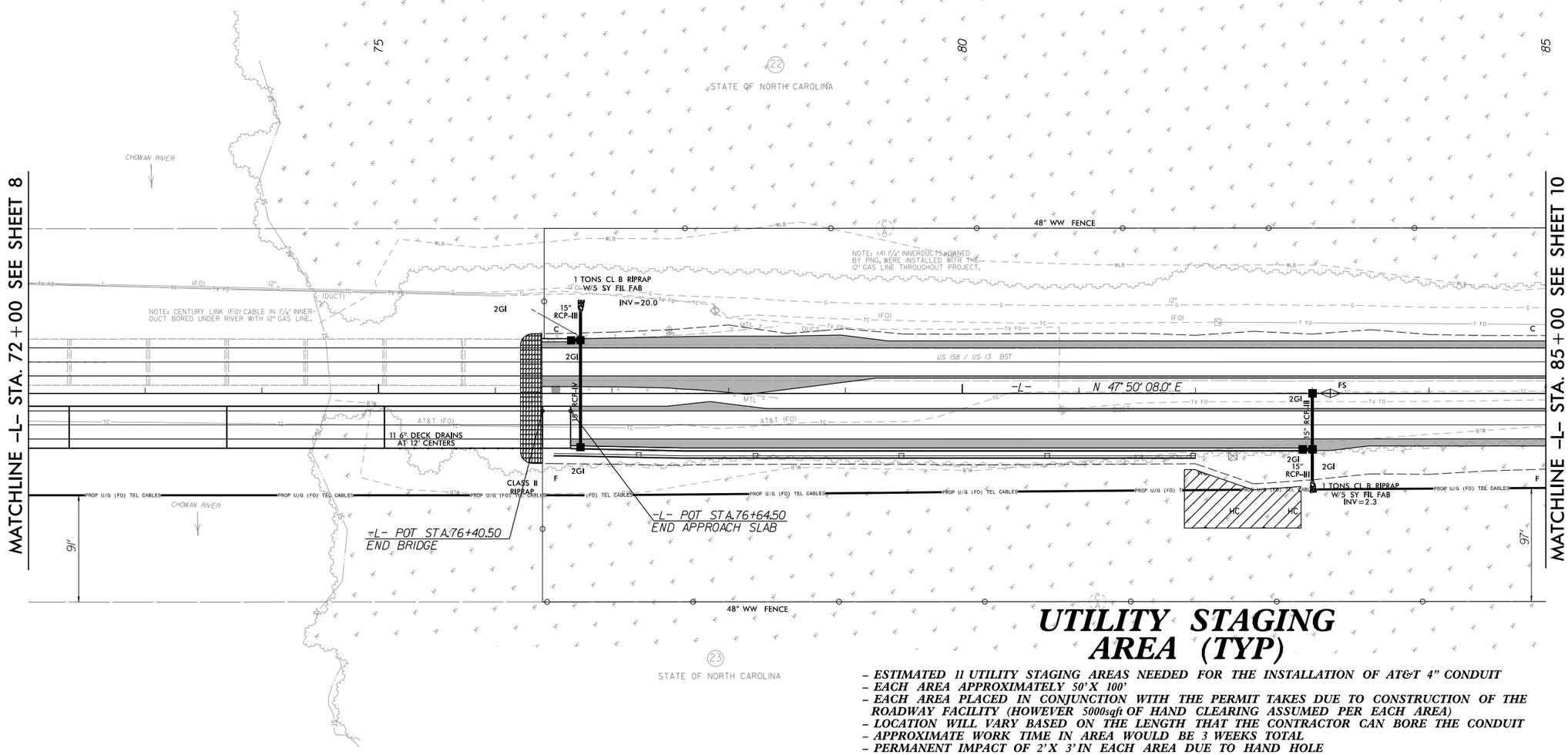
ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 11-UTIL OF 19

NAD 83



UTILITY STAGING AREA (TYP)

- *ESTIMATED 11 UTILITY STAGING AREAS NEEDED FOR THE INSTALLATION OF AT&T 4" CONDUIT*
- *EACH AREA APPROXIMATELY 50'X 100'*
- *EACH AREA PLACED IN CONJUNCTION WITH THE PERMIT TAKES DUE TO CONSTRUCTION OF THE ROADWAY FACILITY (HOWEVER 5000sqft OF HAND CLEARING ASSUMED PER EACH AREA)*
- *LOCATION WILL VARY BASED ON THE LENGTH THAT THE CONTRACTOR CAN BORE THE CONDUIT*
- *APPROXIMATE WORK TIME IN AREA WOULD BE 3 WEEKS TOTAL*
- *PERMANENT IMPACT OF 2'X 3' IN EACH AREA DUE TO HAND HOLE*

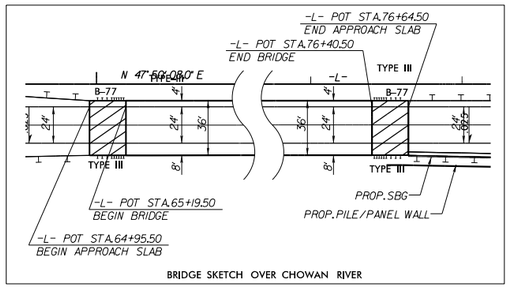
FOR -L- PROFILE SEE SHT. 42

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

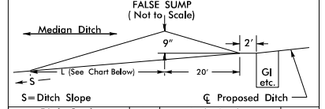
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Ekeys

8/17/99



BRIDGE SKETCH OVER CHOWAN RIVER

DETAIL
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

HC HC DENOTES HAND CLEARING

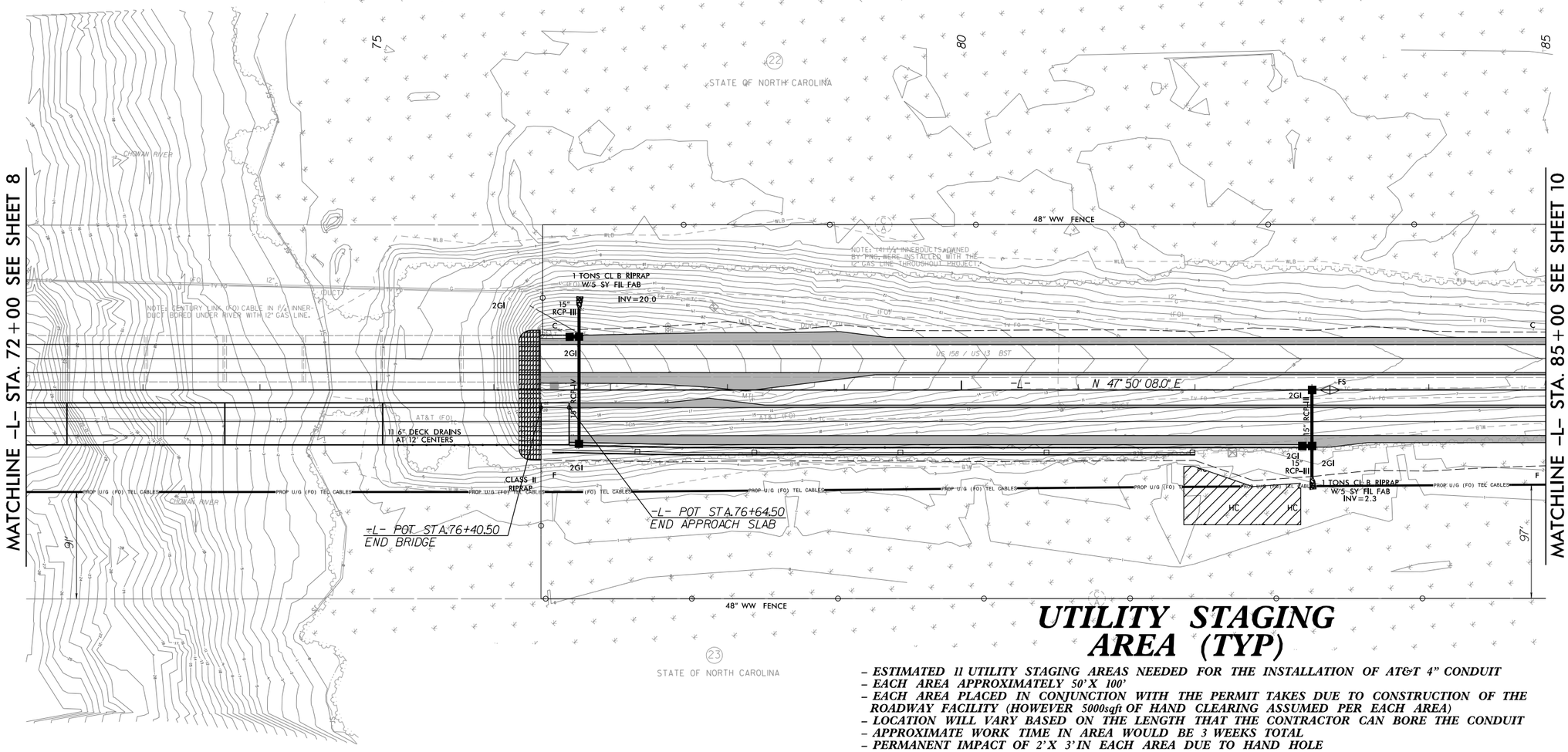
ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 12-UTIL OF 19

NAD 83



UTILITY STAGING AREA (TYP)

- *ESTIMATED 11 UTILITY STAGING AREAS NEEDED FOR THE INSTALLATION OF AT&T 4" CONDUIT*
- *EACH AREA APPROXIMATELY 50'X 100'*
- *EACH AREA PLACED IN CONJUNCTION WITH THE PERMIT TAKES DUE TO CONSTRUCTION OF THE ROADWAY FACILITY (HOWEVER 5000sqft OF HAND CLEARING ASSUMED PER EACH AREA)*
- *LOCATION WILL VARY BASED ON THE LENGTH THAT THE CONTRACTOR CAN BORE THE CONDUIT*
- *APPROXIMATE WORK TIME IN AREA WOULD BE 3 WEEKS TOTAL*
- *PERMANENT IMPACT OF 2'X 3' IN EACH AREA DUE TO HAND HOLE*

FOR -L- PROFILE SEE SHT. 42

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

3/24/2012
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Ekang

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

–L–

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 13–UTIL OF 19

CHOWAN RIVER

CHOWAN RIVER
TOP OF WATER EL = 0.7'

20' (TYP.)

AT&T 4" STEEL CONDUIT

40 30 20 10 0 –10 –20 –30 –40 –50

63+00 64+00 65+00 66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00 74+00 75+00 76+00 77+00

50 40 30 20 10 0 –10 –20 –30

2'X3' HAND HOLE LOCATION

APPROX. 100' UTILITY STAGING AREA (TYP.)

EXISTING GROUND

AT&T 4" STEEL CONDUIT

EXISTING WETLAND

5'–6' (TYP.)

AT&T LONG DISTANCE 3–1¼" DUCTS BUNDLED TOGETHER (TYP.)

APPROX. 100' UTILITY STAGING AREA (TYP.)

2'X3' HAND HOLE LOCATION

77+00 78+00 79+00 80+00 81+00 82+00 83+00 84+00 85+00 86+00 87+00 88+00 89+00 90+00 91+00

PLANS PREPARED BY :

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NC LICENSE NO. F–0112 • (919) 878–9560

3/2/2012
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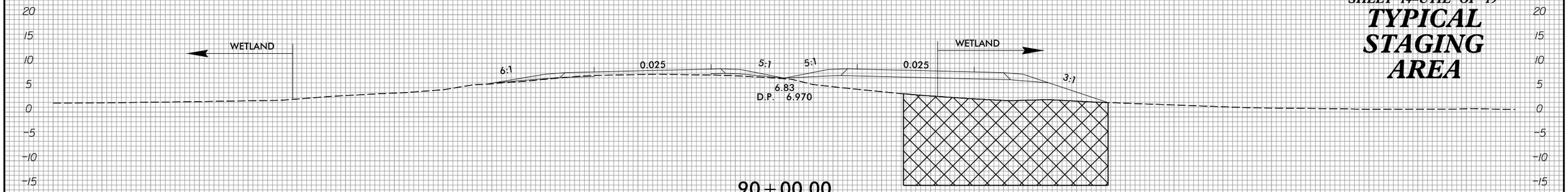
8/23/99

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	R-2507A	X-48

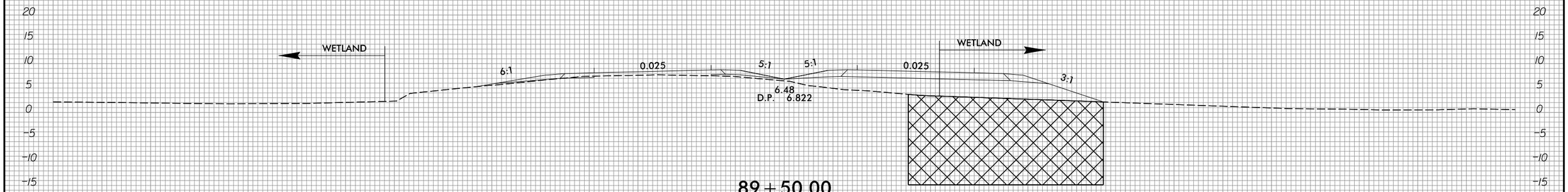
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PERMIT DRAWING
SHEET 14-UTIL OF 19

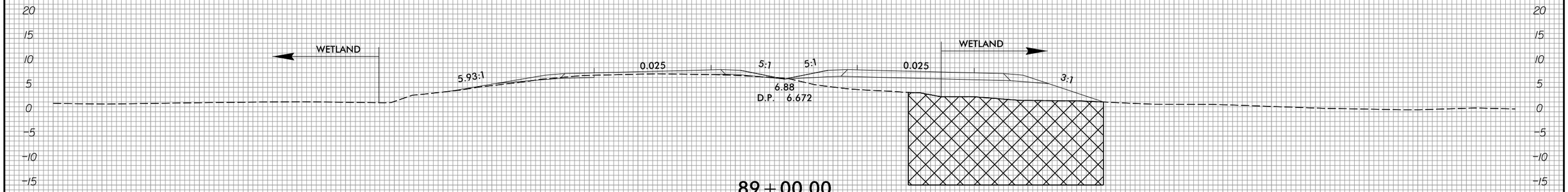
TYPICAL STAGING AREA



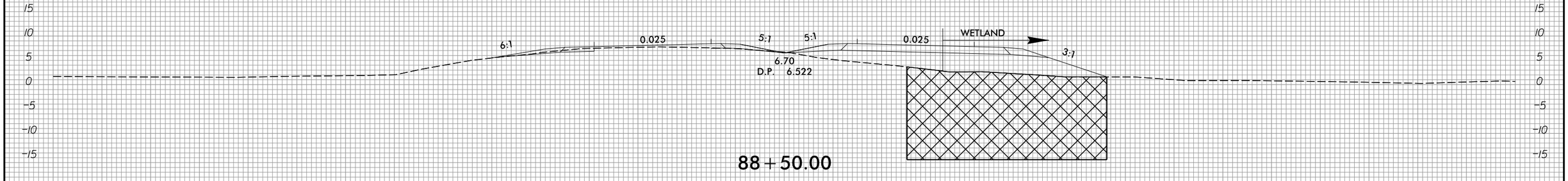
90+00.00



89+50.00



89+00.00



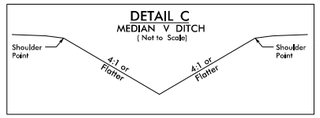
88+50.00

—L—

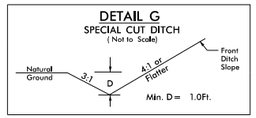
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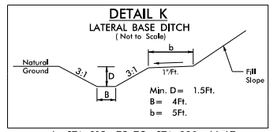
8/17/99



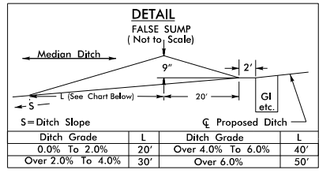
–L– STA. 220+50 TO STA. 225+00



–L– STA. 217+30 TO STA. 221+25 RT



–L– STA. 215+75 TO STA 220+66 LT



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 15–UTIL OF 19

NAD 83

ENGLISH

HC HC DENOTES HAND CLEARING

MATCHLINE –L– STA. 215+00 SEE SHEET 19

MATCHLINE –L– STA. 228+00 SEE SHEET 21

LATERAL BASE DITCH SEE DETAIL K

MEDIAN V DITCH SEE DETAIL C

SPECIAL CUT DITCH SEE DETAIL G

48" WW FENCE

36" RCP–IV EQUALIZER

36" RCP–III EQUALIZER

REMOVE BURIED EXISTING PIPE

N 56° 29' 03.7" E

US 158/US 13 BST

-L- CS Sta. 222+01.62

-L- ST Sta. 224+01.62

SITE 29–UTIL

(44) THOMAS C., IV & NAN L. COXE

(48) JOHN W. ASKEW REVOCABLE LIVING TRUST

(51) MARY S. SMOAK

(47) WAYNE & ROSE HUDGINS

(50) EDWARD S. STORY

(49) RICHARD A. & JACQUELINE C. POPE

(46) CLAYTON P. & JAMES B. PARKER

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR –L– PROFILE SEE SHT. 47

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609–3960
NC LICENSE NO. F–0112 • (919) 878–9560

3/2/2012
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Ekeus

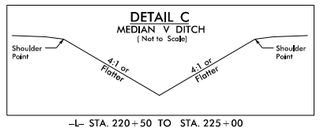
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

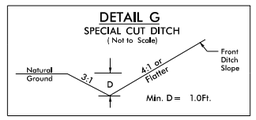
PERMIT DRAWING SHEET 16–UTIL OF 19

DETAIL C
MEDIAN V DITCH
(Not to Scale)



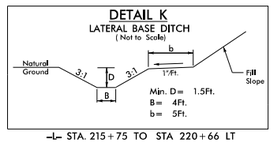
–L– STA. 220+50 TO STA. 225+00

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



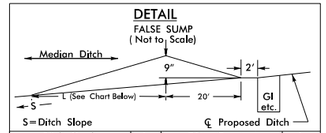
–L– STA. 217+30 TO STA. 221+25 RT

DETAIL K
LATERAL BASE DITCH
(Not to Scale)



–L– STA. 215+75 TO STA 220+66 LT

DETAIL
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

NAD 83

ENGLISH

HC HC DENOTES HAND CLEARING

MATCHLINE –L– STA. 215+00 SEE SHEET 19

MATCHLINE –L– STA. 228+00 SEE SHEET 21

SITE 29–UTIL

–L– CS Sta. 222+01.62

–L– ST Sta. 224+01.62

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR –L– PROFILE SEE SHT. 47

PLANS PREPARED BY :
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900 RIDGEFIELD DRIVE SUITE 350
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

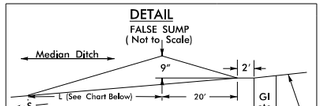
PERMIT DRAWING
SHEET 17–UTIL OF 19

HC HC DENOTES HAND CLEARING

ENGLISH

NAD 83

DETAIL
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

230 235 240

-L- TS Sta. 235+76.58

-L- SC Sta. 237+36.58

51 MARY S. SMOAK

SITE 30–UTIL

MATCHLINE -L- STA. 228+00 SEE SHEET 20

MATCHLINE -L- STA. 241+00 SEE SHEET 22

2 TONS CL B RIPRAP W/7 SY FIL FAB

INV=[illegible]

CPES

15" RCP-III

15" RCP-IV

DI

2GI

2 TONS CL B RIPRAP W/7 SY FIL FAB CUT /FILL TRANSITION

48" WW FENCE

N 56° 29' 03.7" E -L-

200'

US 158/US 13 BST

AT&T (FO)

PROP D/H POW LINES

6'

27'

WOODS

SITE 29–UTIL

SITE 31–UTIL

50 EDWARD S. STORY

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR -L- PROFILE SEE SHTS. 47 & 48

PLANS PREPARED BY :

RK&K

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RALEIGH, NORTH CAROLINA 27609–3960
NC LICENSE NO. F–0112 • (919) 878–9560

3/2/2012
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Ekeus

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

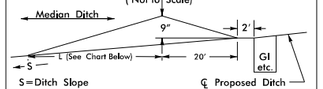
PERMIT DRAWING SHEET 18–UTIL OF 19

HC HC DENOTES HAND CLEARING

ENGLISH

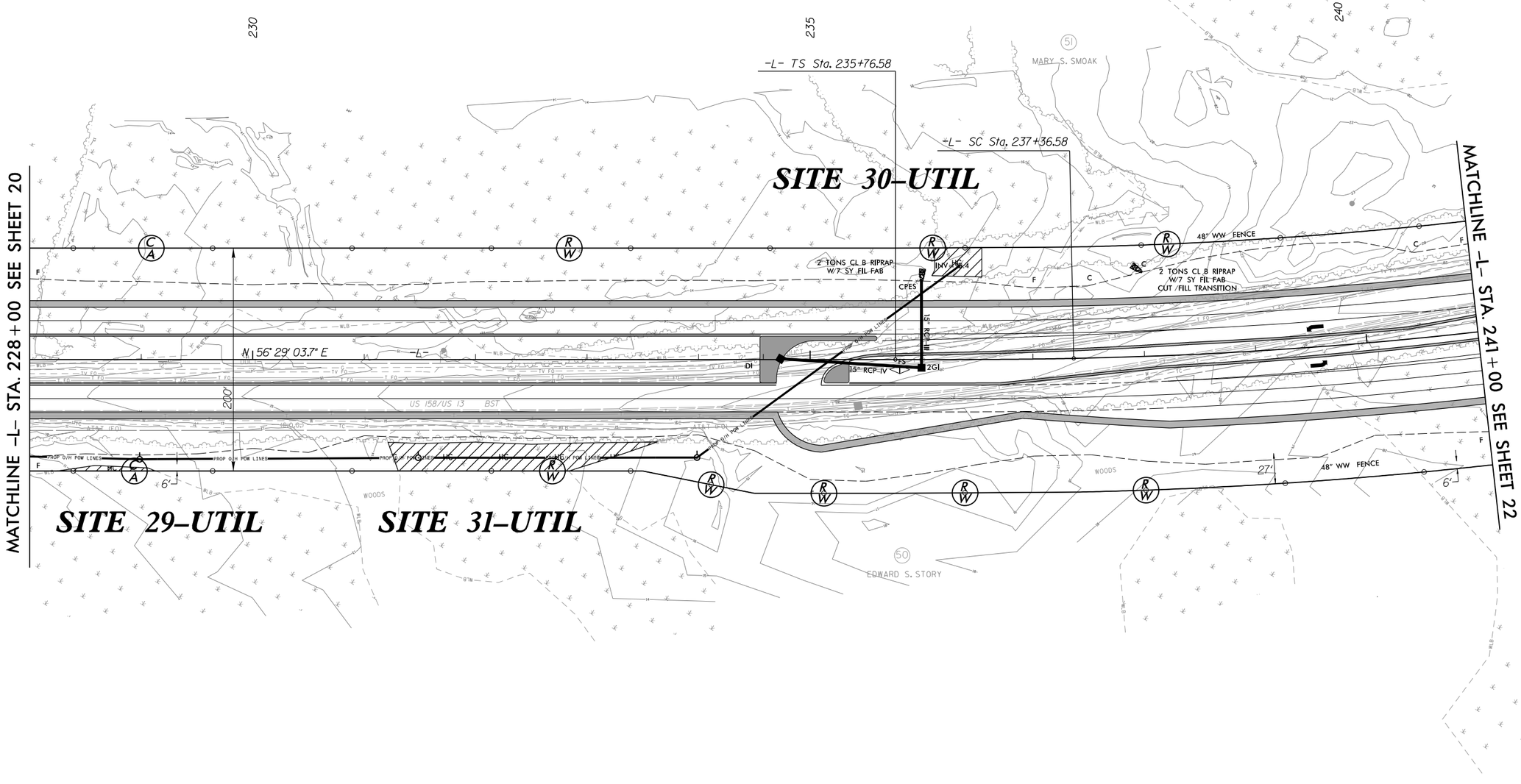
NAD 83

DETAIL
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR -L- PROFILE SEE SHTS. 47 & 48

PLANS PREPARED BY :

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609–3960
NC LICENSE NO. F–0112 • (919) 878–9560

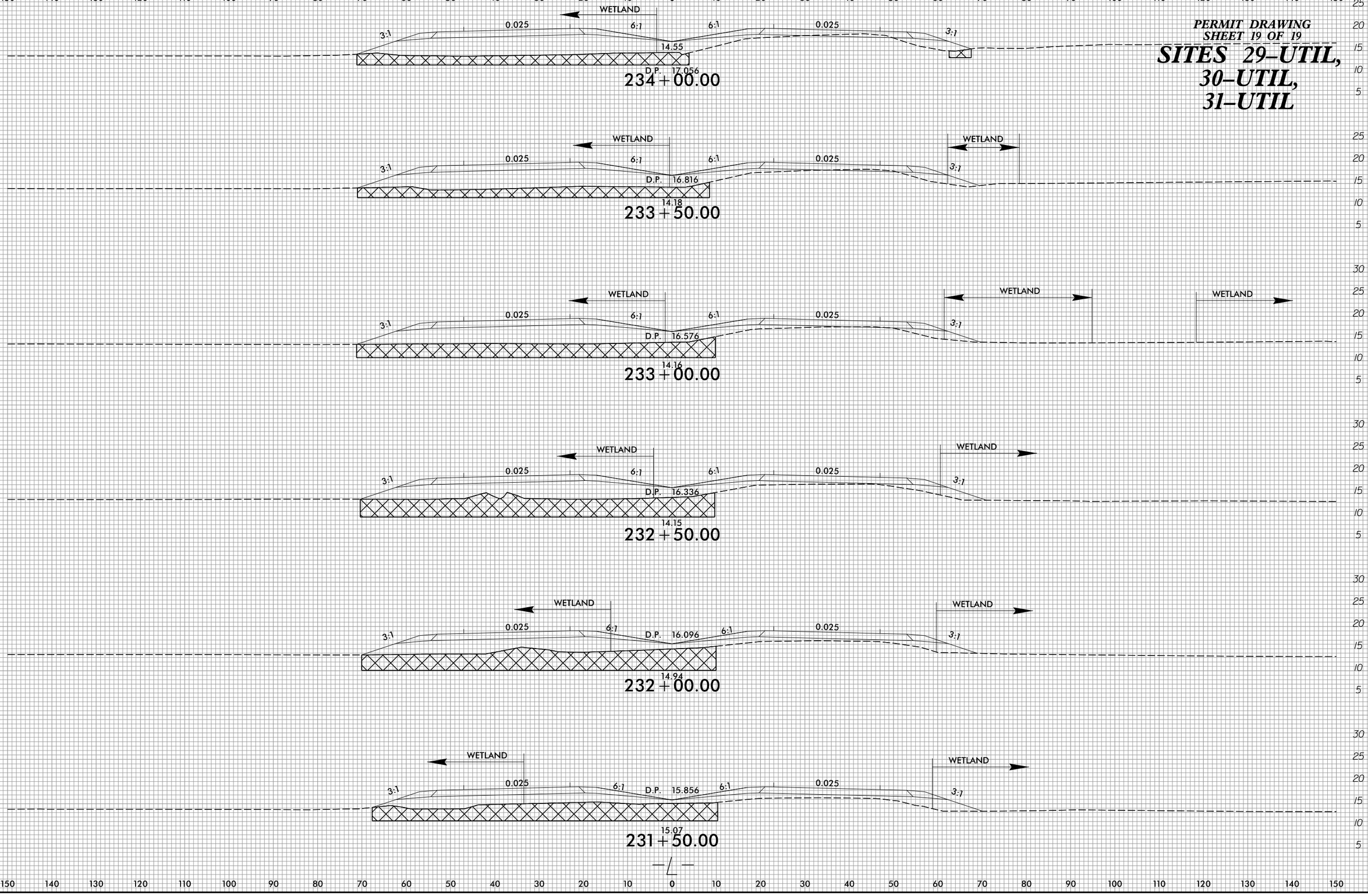
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Ekeus

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2507A	X-98

PERMIT DRAWING
SHEET 19 OF 19

SITES 29–UTIL, 30–UTIL, 31–UTIL



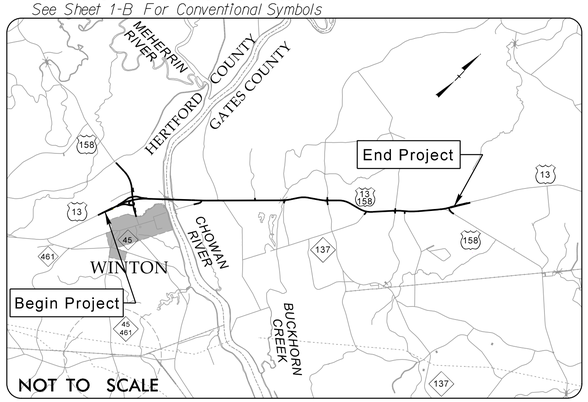
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Fkeys

09/08/99

TIP PROJECT: R-2507A

CONTRACT: C202616

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

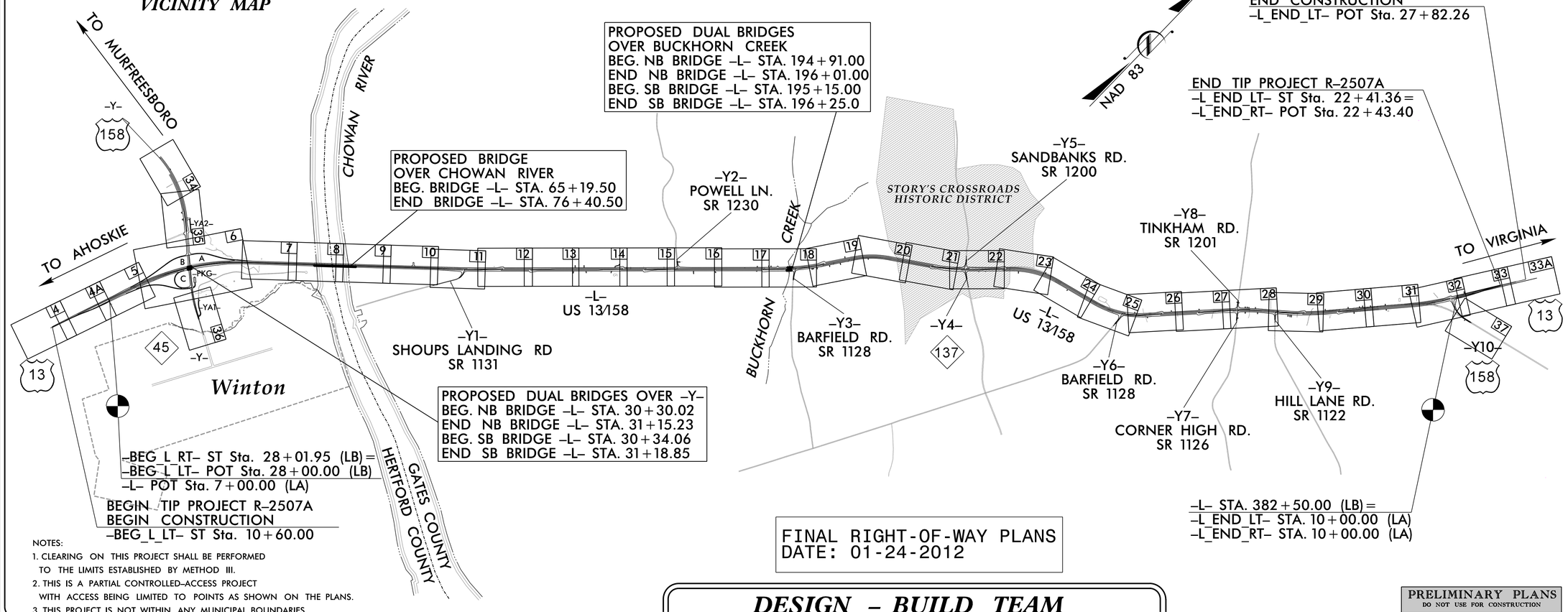
HERTFORD / GATES COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2507A	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
35488.3.1		CONST.	

LOCATION: US 13 /US 158 WIDENING FROM US 158 /NC 45 NEAR WINTON TO THE US 158 BYPASS IN TARHEEL

TYPE OF WORK: GRADING, DRAINAGE, PAVING, WIDENING, RESURFACING, GUARDRAIL, & STRUCTURES



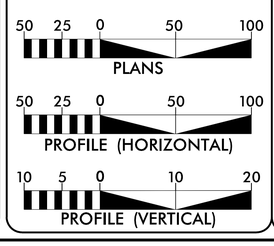


NOTES:
1. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
2. THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.
3. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

FINAL RIGHT-OF-WAY PLANS
DATE: 01-24-2012

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



DESIGN DATA

ADT 2015 = 11,200
ADT 2035 = 16,900
DHV = 11 %
D = 55 %
T = 20 % *
V = 60 MPH

* TTST 13% DUAL 7%

FUNC. CLASS =
RURAL PRINCIPAL ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2507A..... 7.539 mi
LENGTH STRUCTURE TIP PROJECT R-2507A..... 0.235 mi
TOTAL LENGTH TIP PROJECT R-2507A..... 7.772 mi

NOTE: LENGTHS BASED ON NORTHBOUND LANES.

DESIGN – BUILD TEAM

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE, SUITE 350
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. F-0112
1-888-521-4455 OR 919-878-9560

FOR
DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 22, 2011

LETTING DATE:
JULY 22, 2011

J. T. Peacock, Jr., P.E.
PROJECT ENGINEER

Michael T. Merritt, P.E.
PROJECT DESIGN ENGINEER

CONTRACTOR :
E.V. WILLIAMS
SITE DEVELOPMENT & HIGHWAY CONSTRUCTION
E.V.WILLIAMS, INC.
925 S.MILITARY HIGHWAY
VIRGINIA BEACH, VA 23464

HYDRAULICS ENGINEER
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE: P.E.

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

1/24/2012
R:\Roadway\Proj\R2507A_Rdy_tsh.dgn
dhefler

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	1B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

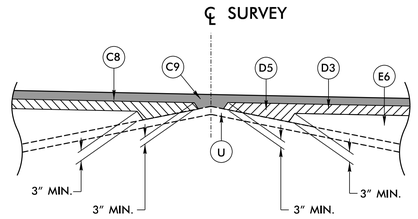
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

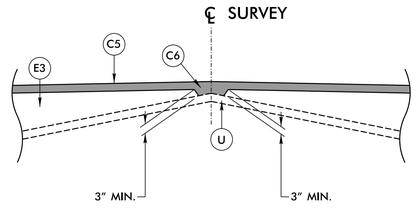
C1	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN ONE LAYER.	E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
C2	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	E4	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD. IN ONE LAYER.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.	E5	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD. IN ONE LAYER.
C4	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN ONE LAYER.	E6	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
C5	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. 6" AGGREGATE BASE COURSE
C6	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	J2	PROP. 8" AGGREGATE BASE COURSE
C7	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN ONE LAYER.	J3	PROP. 10" AGGREGATE BASE COURSE
C8	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	J4	VARIABLE DEPTH AGGREGATE BASE COURSE
C9	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	P1	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YARD
C10	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD. IN ONE LAYER.	R1	CONCRETE EXPRESSWAY GUTTER
D1	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN ONE LAYER.	R2	SHOULDER BERM GUTTER
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 TO EXCEED 4" IN DEPTH.	R3	2'-6" CONCRETE CURB & GUTTER
D3	PROP. APPROX. 3.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD. IN ONE LAYER.	R4	5" MONOLITHIC CONCRETE ISLAND
D4	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN ONE LAYER.	T	EARTH MATERIAL.
D5	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 4" IN DEPTH.	U	EXISTING PAVEMENT.
D6	PROP. APPROX. 3.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD. IN ONE LAYER.	W	VARIABLE DEPTH ASPHALT PAVEMENT
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN ONE LAYER.	Y1	VARIABLE DEPTH MILLING (1.5" MAX)
E2	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD. IN ONE LAYER.		

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

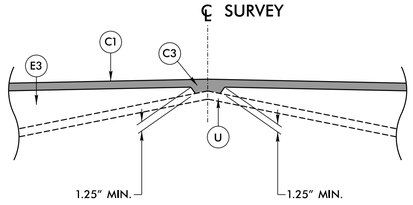
SEE PLANS FOR LOCATION OF CONCRETE ISLANDS, AUXILLARY LANES, AND TAPERS.



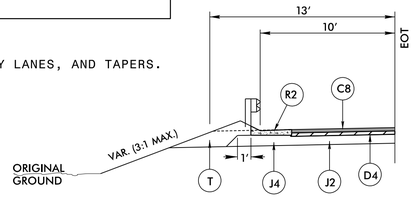
Detail Showing Method Of Wedging 1
USE WITH –L– AND –Y–



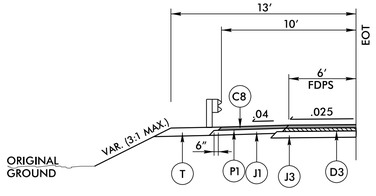
Detail Showing Method Of Wedging 2
USE WITH –Y4– AND –Y10–



Detail Showing Method Of Wedging 3
USE WITH –Y1–, –Y2–, –Y3–, –Y5–, –Y6–, –Y7–, –Y8–, AND –Y9–



SHOULDER BERM GUTTER DETAIL FOR –L–



SHOULDER WIDENING DETAIL FOR GUARDRAIL FOR –L–

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609–3960
NC LICENSE NO. F–0112 • (919) 878–9560

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Roadway\Proj\R2507A_Rdy_typ.dgn
Elaine

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

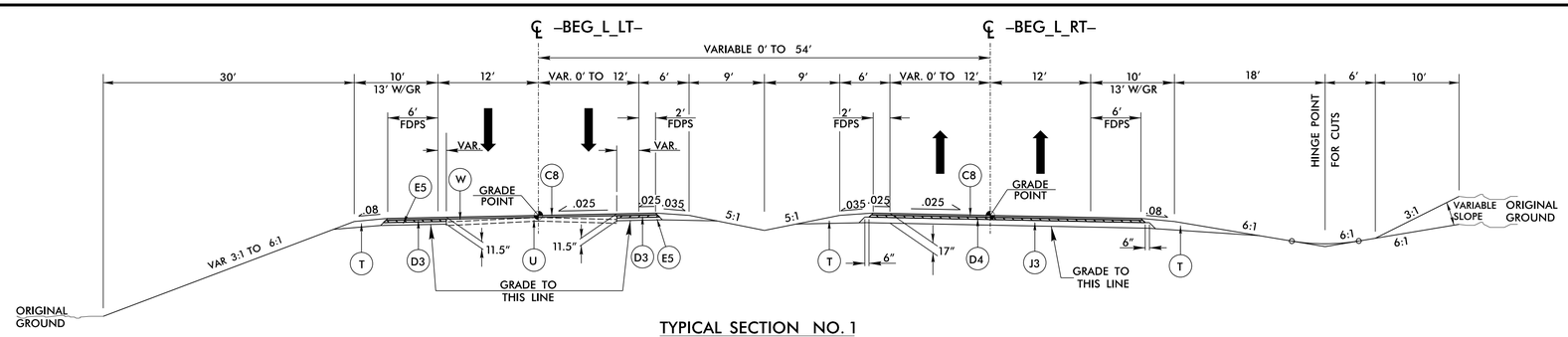
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	VAR. DEPTH S9.5A
C4	1.5" S9.5B
C5	3" S9.5B
C6	VAR. DEPTH S9.5B
C7	1.5" S9.5C
C8	3" S9.5C
C9	VAR. DEPTH S9.5C
C10	2" S9.5B
D1	4" I19.0B
D2	VAR. DEPTH I19.0B
D3	3" I19.0C
D4	4" I19.0C
D5	VAR. DEPTH I19.0C
D6	3" I19.0B
E1	4" B25.0B
E2	5.5" B25.0B
E3	VAR. DEPTH B25.0B
E4	4.5" B25.0C
E5	5.5" B25.0C
E6	VAR. DEPTH B25.0C
J1	6" ABC
J2	8" ABC
J3	10" ABC
J4	VAR. DEPTH ABC
P1	PRIME COAT
R1	CONC. EXPRESSWAY GUTTER
R2	SBG
R3	2'-6" C & G
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING
Y1	MILLING

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

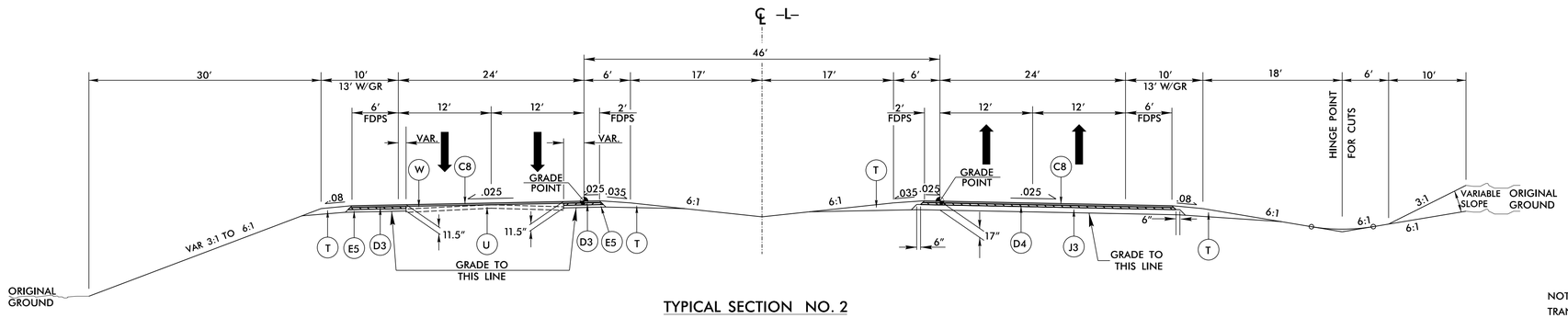
SEE PLANS FOR LOCATION OF CONCRETE ISLANDS, AUXILLARY LANES, AND TAPERS.

SEE PLANS FOR TURN LANE LOCATIONS



TYPICAL SECTION NO. 1

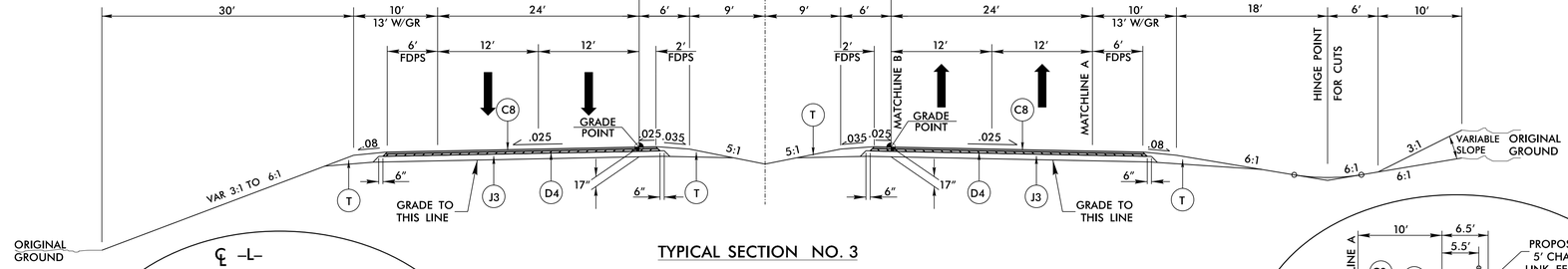
USE TYPICAL SECTION NO. 1
–BEG_L_LT– STA. 10+00.00 TO 28+00.00 (–L– STA. 7+00.00)
–BEG_L_RT– STA. 10+00.00 TO 28+02.04 (–L– STA. 7+00.00)



TYPICAL SECTION NO. 2

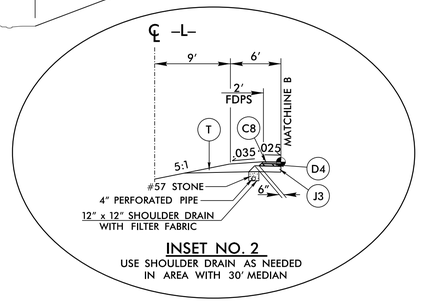
USE TYPICAL SECTION NO. 2
–L– STA. 7+00.00 TO 20+00.00

NOTE:
TRANSITION FROM TYPICAL SECTION NO. 2 TO TYPICAL SECTION NO. 3
–L– STA. 20+00.00 TO 25+00.00

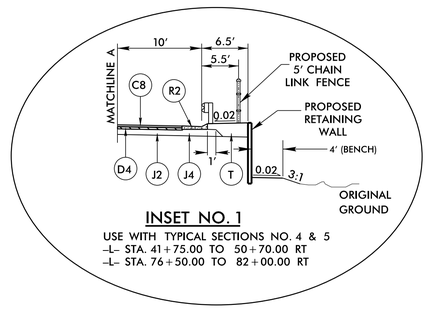


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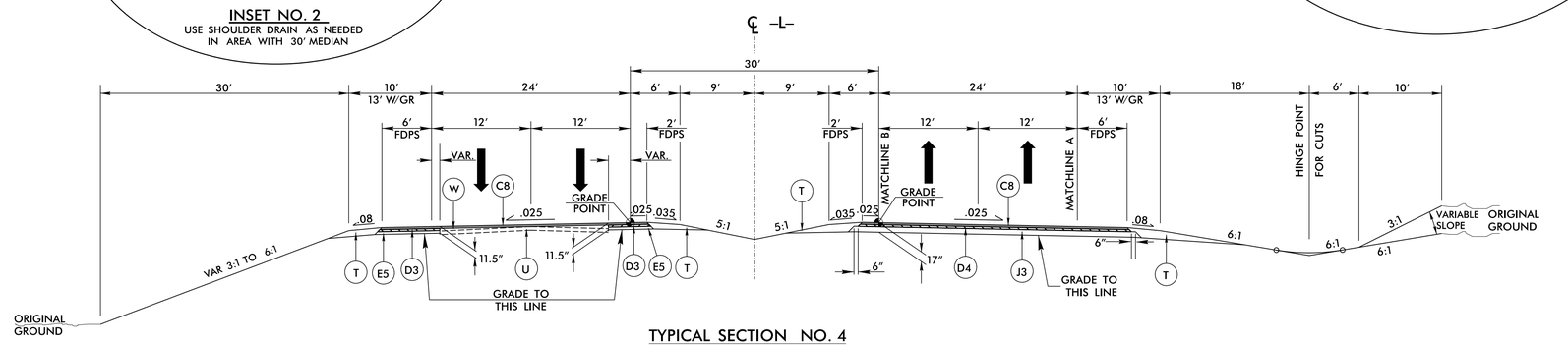
USE TYPICAL SECTION NO. 3
–L– STA. 25+00.00 TO 30+30.03 (BEG. BRIDGE NBL)
–L– STA. 31+15.23 (END BRIDGE NBL) TO 43+75.00



INSET NO. 2
USE SHOULDER DRAIN AS NEEDED IN AREA WITH 30' MEDIAN



INSET NO. 1
USE WITH TYPICAL SECTIONS NO. 4 & 5
–L– STA. 41+75.00 TO 50+70.00 RT
–L– STA. 76+50.00 TO 82+00.00 RT



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
–L– STA. 43+75.00 TO 65+19.50 (BEG. BRIDGE NBL)
–L– STA. 76+40.50 (END BRIDGE NBL) TO 99+00.00

* SEE PLANS FOR TURN LANE LOCATIONS

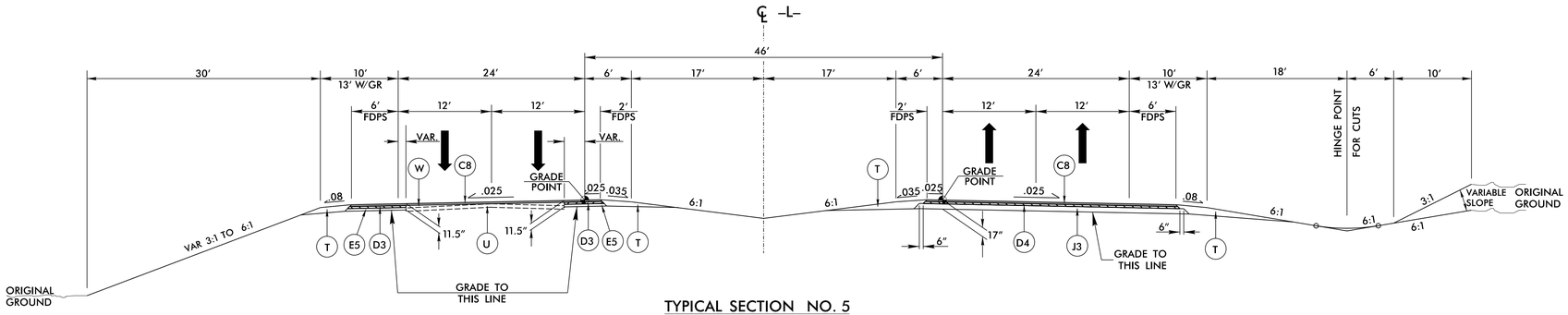
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kevin

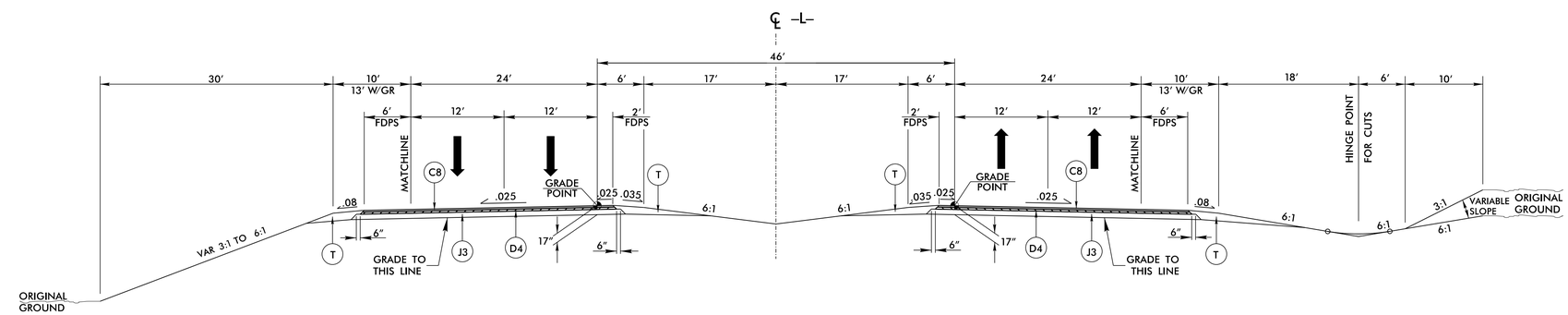
PAVEMENT SCHEDULE	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	VAR. DEPTH S9.5A
C4	1.5" S9.5B
C5	3" S9.5B
C6	VAR. DEPTH S9.5B
C7	1.5" S9.5C
C8	3" S9.5C
C9	VAR. DEPTH S9.5C
C10	2" S9.5B
D1	4" I19.0B
D2	VAR. DEPTH I19.0B
D3	3" I19.0C
D4	4" I19.0C
D5	VAR. DEPTH I19.0C
D6	3" I19.0B
E1	4" B25.0B
E2	5.5" B25.0B
E3	VAR. DEPTH B25.0B
E4	4.5" B25.0C
E5	5.5" B25.0C
E6	VAR. DEPTH B25.0C
J1	6" ABC
J2	8" ABC
J3	10" ABC
J4	VAR. DEPTH ABC
P1	PRIME COAT
R1	CONC. EXPRESSWAY GUTTER
R2	SBG
R3	2'-6" C & G
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING
Y1	MILLING

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

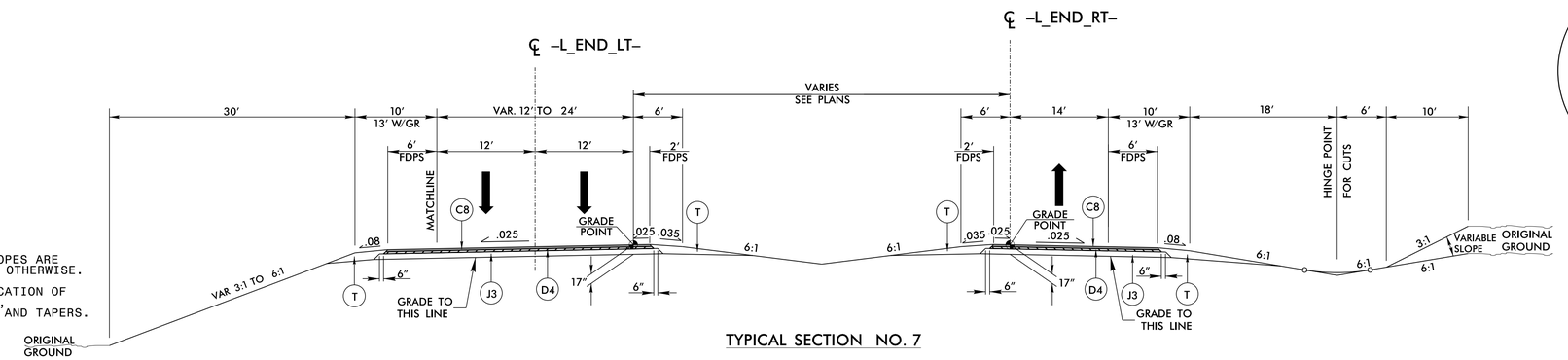
SEE PLANS FOR LOCATION OF CONCRETE ISLANDS, AUXILLARY LANES, AND TAPERS.



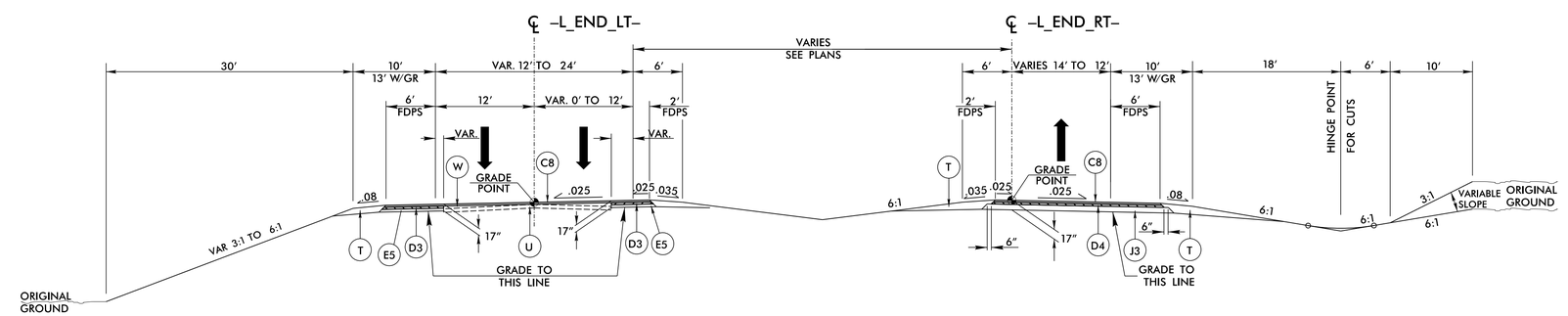
TYPICAL SECTION NO. 5



TYPICAL SECTION NO. 6



TYPICAL SECTION NO. 7



TYPICAL SECTION NO. 8

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

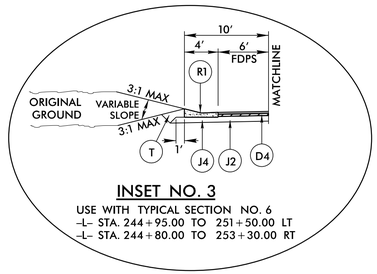
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

USE TYPICAL SECTION NO. 5
-L- STA. 99+00.00 TO 141+55.00

NOTE:
TRANSITION FROM 30' MEDIAN TO 46' MEDIAN
-L- STA. 99+00.00 TO 104+00.00

USE TYPICAL SECTION NO. 6
-L- STA. 141+55.00 TO 194+91.00 (BEG. BRIDGE NBL)
-L- STA. 196+25.17 (END BRIDGE NBL) TO 382+50.00

NOTE:
REMOVE EXISTING PAVEMENT
-L- STA. 141+55.00 TO 194+91.00 (BEG. BRIDGE NBL)
-L- STA. 196+25.17 (END BRIDGE NBL) TO 382+50.00



INSET NO. 3
USE WITH TYPICAL SECTION NO. 6
-L- STA. 244+95.00 TO 251+50.00 LT
-L- STA. 244+80.00 TO 253+30.00 RT

USE TYPICAL SECTION NO. 7
-L_END_LT- STA. 10+00.00 TO 15+00.00
-L_END_RT- STA. 10+00.00 TO 15+00.39

USE TYPICAL SECTION NO. 8
-L_END_LT- STA. 15+00.00 TO 22+41.36
-L_END_RT- STA. 15+00.39 TO 22+43.40

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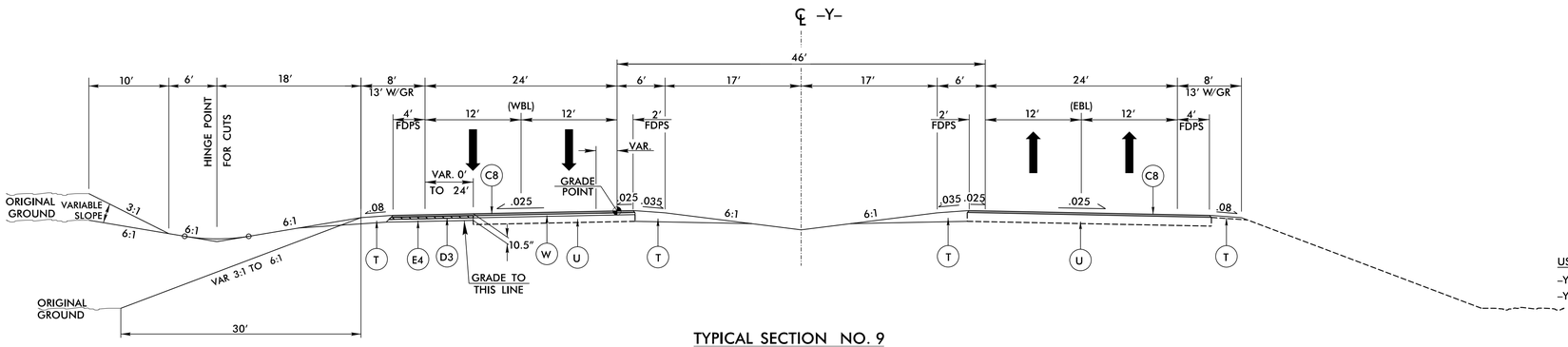
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2C
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	VAR. DEPTH S9.5A
C4	1.5" S9.5B
C5	3" S9.5B
C6	VAR. DEPTH S9.5B
C7	1.5" S9.5C
C8	3" S9.5C
C9	VAR. DEPTH S9.5C
C10	2" S9.5B
D1	4" I19.0B
D2	VAR. DEPTH I19.0B
D3	3" I19.0C
D4	4" I19.0C
D5	VAR. DEPTH I19.0C
D6	3" I19.0B
E1	4" B25.0B
E2	5.5" B25.0B
E3	VAR. DEPTH B25.0B
E4	4.5" B25.0C
E5	5.5" B25.0C
E6	VAR. DEPTH B25.0C
J1	6" ABC
J2	8" ABC
J3	10" ABC
J4	VAR. DEPTH ABC
P1	PRIME COAT
R1	CONC. EXPRESSWAY GUTTER
R2	SBG
R3	2'-6" C & G
R4	5" CONC. ISLAND
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING
Y1	MILLING

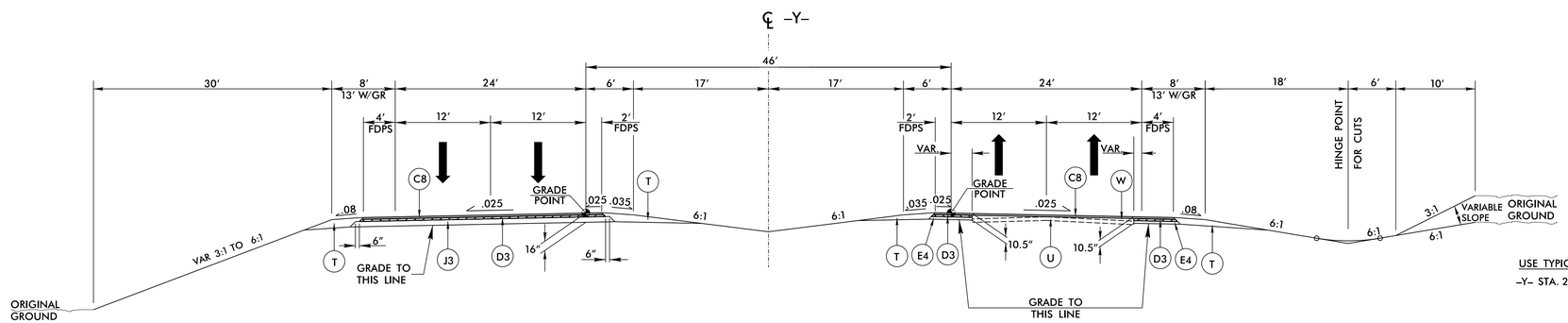
NOTES: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

SEE PLANS FOR LOCATION OF CONCRETE ISLANDS, AUXILLARY LANES, AND TAPERS.



TYPICAL SECTION NO. 9

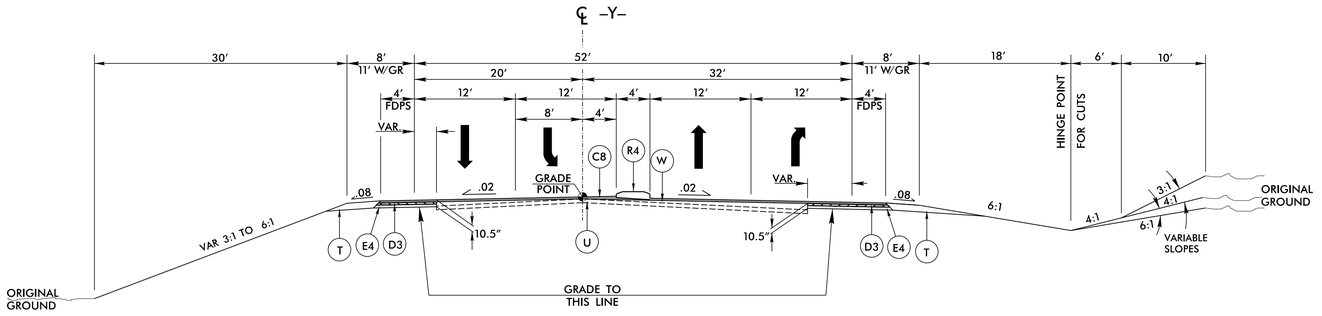
USE TYPICAL SECTION NO. 9
–Y– STA. 16+09.56 TO 27+32.78 (WBL)
–Y– STA. 21+56.11 TO 27+32.78 (EBL)



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10
–Y– STA. 27+32.78 TO 34+07.00

NOTE:
TRANSITION FROM TYPICAL SECTION NO. 10 TO TYPICAL SECTION NO. 11
–Y1– STA. 34+07.00 TO 43+07.00



TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11
–Y– STA. 43+07.00 TO 53+65.00

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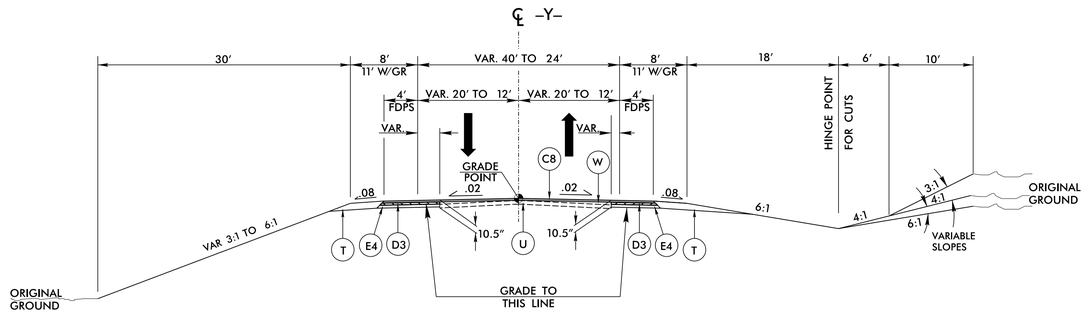
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2D
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	VAR. DEPTH S9.5A
C4	1.5" S9.5B
C5	3" S9.5B
C6	VAR. DEPTH S9.5B
C7	1.5" S9.5C
C8	3" S9.5C
C9	VAR. DEPTH S9.5C
C10	2" S9.5B
D1	4" I19.0B
D2	VAR. DEPTH I19.0B
D3	3" I19.0C
D4	4" I19.0C
D5	VAR. DEPTH I19.0C
D6	3" I19.0B
E1	4" B25.0B
E2	5.5" B25.0B
E3	VAR. DEPTH B25.0B
E4	4.5" B25.0C
E5	5.5" B25.0C
E6	VAR. DEPTH B25.0C
J1	6" ABC
J2	8" ABC
J3	10" ABC
J4	VAR. DEPTH ABC
P1	PRIME COAT
R1	CONC. EXPRESSWAY GUTTER
R2	SBG
R3	2'-6" C & G
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING
Y1	MILLING

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

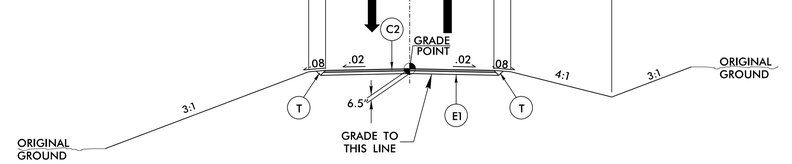
SEE PLANS FOR LOCATION OF CONCRETE ISLANDS, AUXILLARY LANES, AND TAPERS.



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12
–Y– STA. 53+65.00 TO 62+10.00

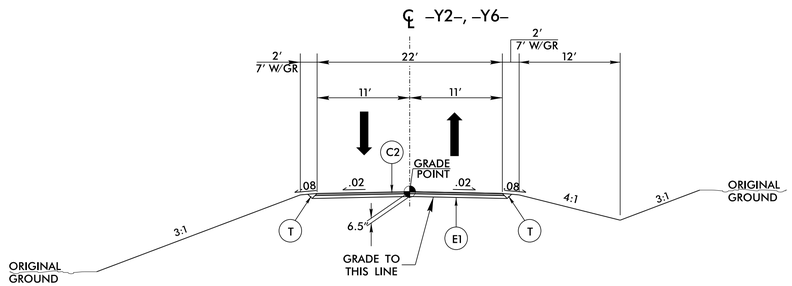
NOTE:
TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 12
–Y– STA. 62+10.00 TO 62+60.00



TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13
–Y1– STA. 10+24.60 TO 12+60.00

NOTE:
TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 13
–Y1– STA. 12+60.00 TO 12+85.00



TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14
–Y2– STA. 10+47.32 TO 12+00.00
–Y6– STA. 11+00.00 TO 13+66.27

NOTE:
TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 14
–Y2– STA. 12+00.00 TO 12+25.00
–Y6– STA. 10+75.00 TO 11+00.00

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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2E
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

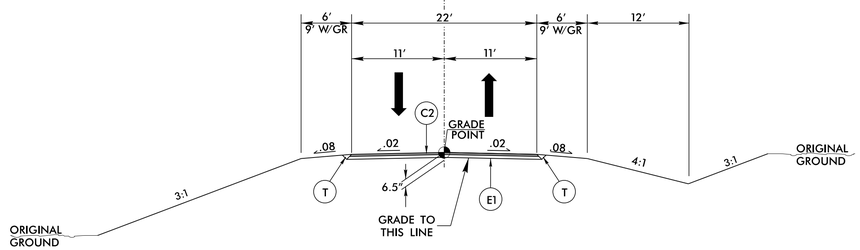
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	VAR. DEPTH S9.5A
C4	1.5" S9.5B
C5	3" S9.5B
C6	VAR. DEPTH S9.5B
C7	1.5" S9.5C
C8	3" S9.5C
C9	VAR. DEPTH S9.5C
C10	2" S9.5B
D1	4" I19.0B
D2	VAR. DEPTH I19.0B
D3	3" I19.0C
D4	4" I19.0C
D5	VAR. DEPTH I19.0C
D6	3" I19.0B
E1	4" B25.0B
E2	5.5" B25.0B
E3	VAR. DEPTH B25.0B
E4	4.5" B25.0C
E5	5.5" B25.0C
E6	VAR. DEPTH B25.0C
J1	6" ABC
J2	8" ABC
J3	10" ABC
J4	VAR. DEPTH ABC
P1	PRIME COAT
R1	CONC. EXPRESSWAY GUTTER
R2	SBG
R3	2'-6" C & G
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING
Y1	MILLING

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

SEE PLANS FOR LOCATION OF CONCRETE ISLANDS, AUXILLARY LANES, AND TAPERS.

℄ –Y3–, –Y5–, –Y7–, –Y8–, –Y9–

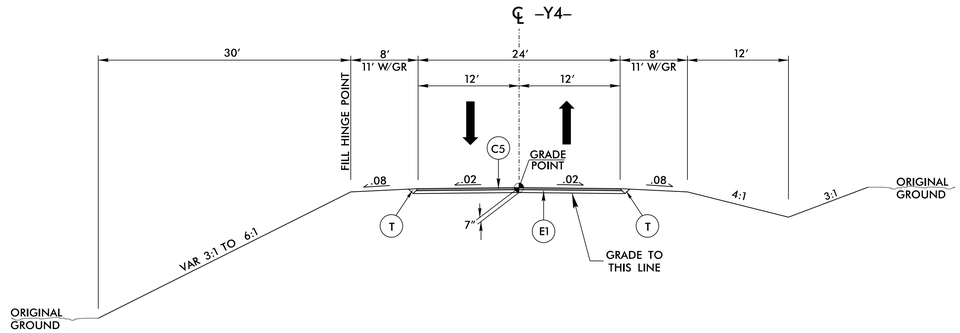


TYPICAL SECTION NO. 15

USE TYPICAL SECTION NO. 15
–Y3– STA. 10+50.00 TO 12+94.42
–Y5– STA. 10+49.29 TO 12+55.00
–Y7– STA. 10+55.00 TO 12+65.61
–Y8– STA. 10+47.58 TO 12+40.00
–Y9– STA. 11+00.00 TO 12+50.33

NOTE:
TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 15
–Y3– STA. 10+25.00 TO 10+50.00
–Y5– STA. 12+55.00 TO 12+80.00
–Y7– STA. 10+30.00 TO 10+55.00
–Y8– STA. 12+40.00 TO 12+65.00
–Y9– STA. 10+75.00 TO 10+00.00

℄ –Y4–

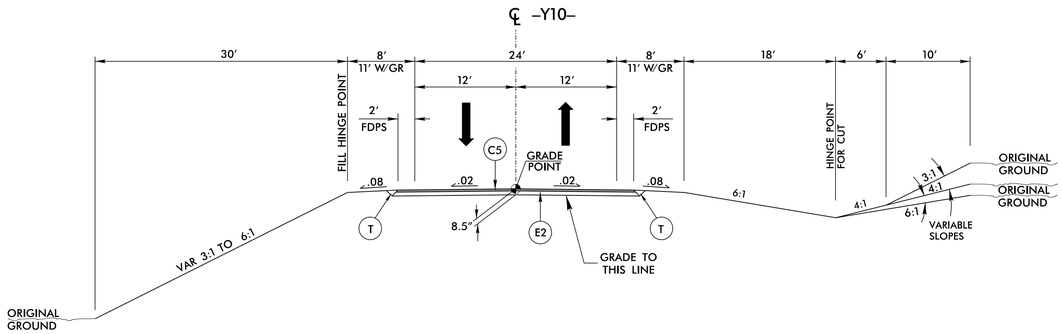


TYPICAL SECTION NO. 16

USE TYPICAL SECTION NO. 16
–Y4– STA. 12+70.00 TO 14+60.43

NOTE:
TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 16
–Y4– STA. 12+45.00 TO 12+70.00

℄ –Y10–



TYPICAL SECTION NO. 17

USE TYPICAL SECTION NO. 17
–Y10– STA. 10+47.00 TO 18+40.00

NOTE:
TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 17
–Y10– STA. 18+40.00 TO 18+65.00

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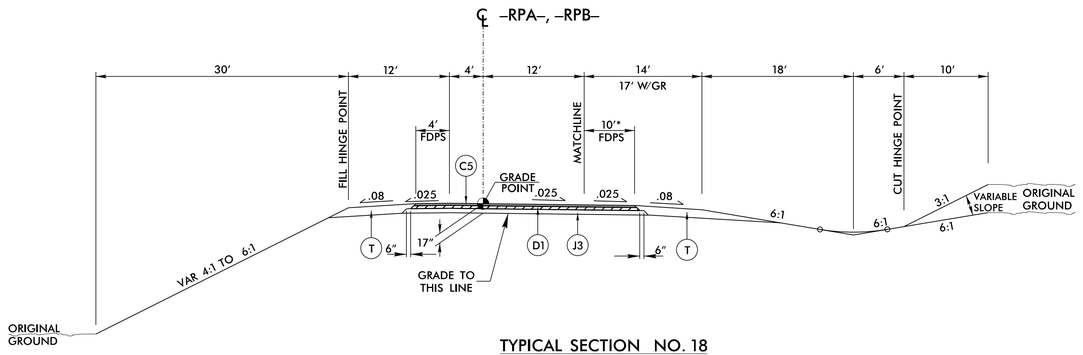
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2F
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	VAR. DEPTH S9.5A
C4	1.5" S9.5B
C5	3" S9.5B
C6	VAR. DEPTH S9.5B
C7	1.5" S9.5C
C8	3" S9.5C
C9	VAR. DEPTH S9.5C
C10	2" S9.5B
D1	4" I19.0B
D2	VAR. DEPTH I19.0B
D3	3" I19.0C
D4	4" I19.0C
D5	VAR. DEPTH I19.0C
D6	3" I19.0B
E1	4" B25.0B
E2	5.5" B25.0B
E3	VAR. DEPTH B25.0B
E4	4.5" B25.0C
E5	5.5" B25.0C
E6	VAR. DEPTH B25.0C
J1	6" ABC
J2	8" ABC
J3	10" ABC
J4	VAR. DEPTH ABC
P1	PRIME COAT
R1	CONC. EXPRESSWAY GUTTER
R2	SBG
R3	2'-6" C & G
R4	5" CONC. ISLAND
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING
Y1	MILLING

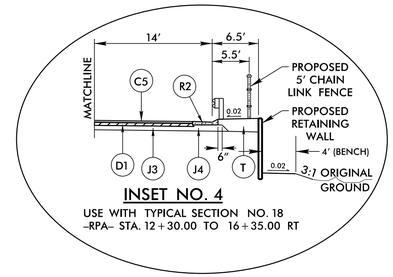
NOTES: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

SEE PLANS FOR LOCATION OF CONCRETE ISLANDS, AUXILLARY LANES, AND TAPERS.

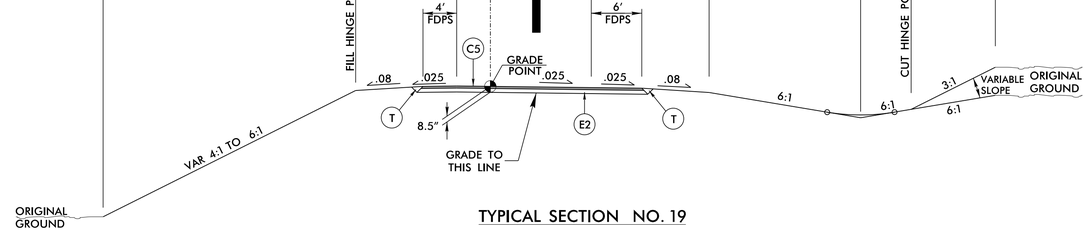


TYPICAL SECTION NO. 18

USE TYPICAL SECTION NO. 18
–RPA– STA. 10+00.00 TO 26+23.60
*INCREASED FDPS FROM 6' TO 10' FOR TEMP. DETOUR
–RPB– STA. 10+00.00 TO 28+45.11 (REVERSE)



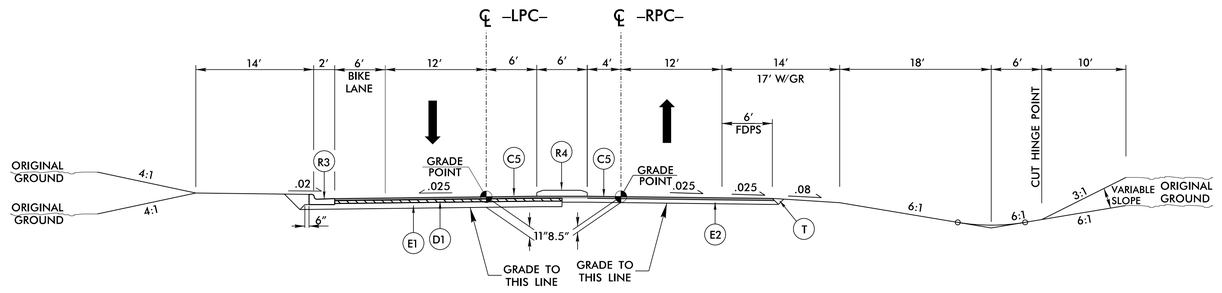
INSET NO. 4
USE WITH TYPICAL SECTION NO. 18
–RPA– STA. 12+30.00 TO 16+35.00 RT



TYPICAL SECTION NO. 19

USE TYPICAL SECTION NO. 19
–RPC– STA. 10+00.00 TO 25+73.36

NOTE:
USE –L– PAVEMENT
–RPC– STA. 10+00.00 TO 14+23.44



TYPICAL SECTION NO. 20

USE TYPICAL SECTION NO. 20
–RPC– STA. 25+73.36 TO 28+43.00
–LPC– STA. 17+19.65 TO 19+74.00

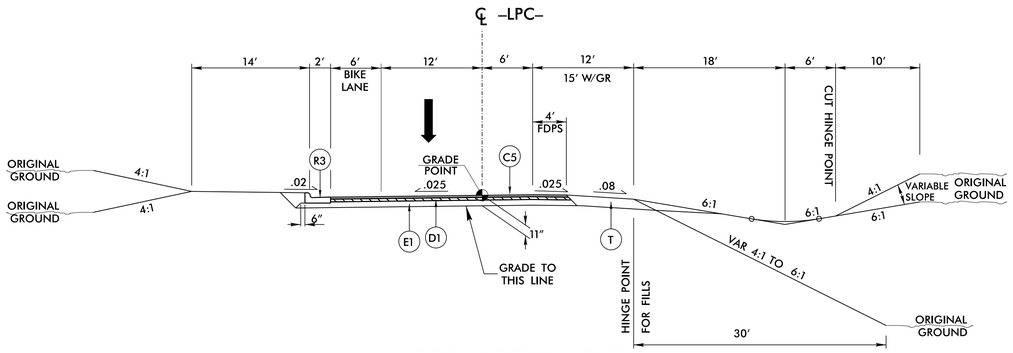
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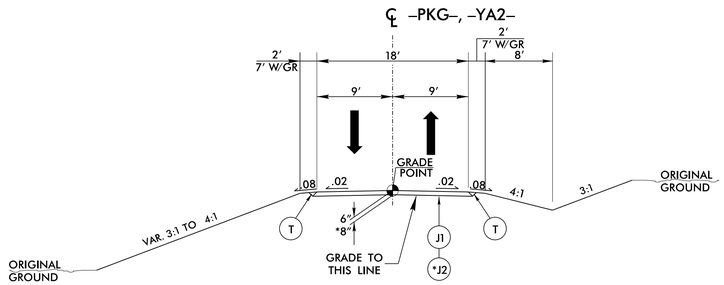
PAVEMENT SCHEDULE	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	VAR. DEPTH S9.5A
C4	1.5" S9.5B
C5	3" S9.5B
C6	VAR. DEPTH S9.5B
C7	1.5" S9.5C
C8	3" S9.5C
C9	VAR. DEPTH S9.5C
C10	2" S9.5B
D1	4" I19.0B
D2	VAR. DEPTH I19.0B
D3	3" I19.0C
D4	4" I19.0C
D5	VAR. DEPTH I19.0C
D6	3" I19.0B
E1	4" B25.0B
E2	5.5" B25.0B
E3	VAR. DEPTH B25.0B
E4	4.5" B25.0C
E5	5.5" B25.0C
E6	VAR. DEPTH B25.0C
J1	6" ABC
J2	8" ABC
J3	10" ABC
J4	VAR. DEPTH ABC
P1	PRIME COAT
R1	CONC. EXPRESSWAY GUTTER
R2	SBG
R3	2'-6" C & G
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING
Y1	MILLING

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

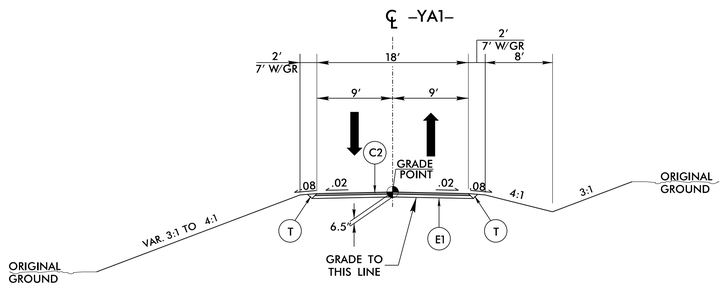
SEE PLANS FOR LOCATION OF CONCRETE ISLANDS, AUXILLARY LANES, AND TAPERS.



TYPICAL SECTION NO. 21



TYPICAL SECTION NO. 22



TYPICAL SECTION NO. 23

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2G
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

USE TYPICAL SECTION NO. 21
–LPC– STA. 10+00.00 TO 19+85.38

NOTE:
USE –L– PAVEMENT
–LPC– STA. 10+00.00 TO 12+08.59

USE TYPICAL SECTION NO. 22
–PKG– STA. 10+20.00 TO 13+42.00
*–Y2A– STA. 10+15.80 TO 14+50.00

USE TYPICAL SECTION NO. 23
–YA1– STA. 10+12.70 TO 15+20.00

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Features

8/17/99

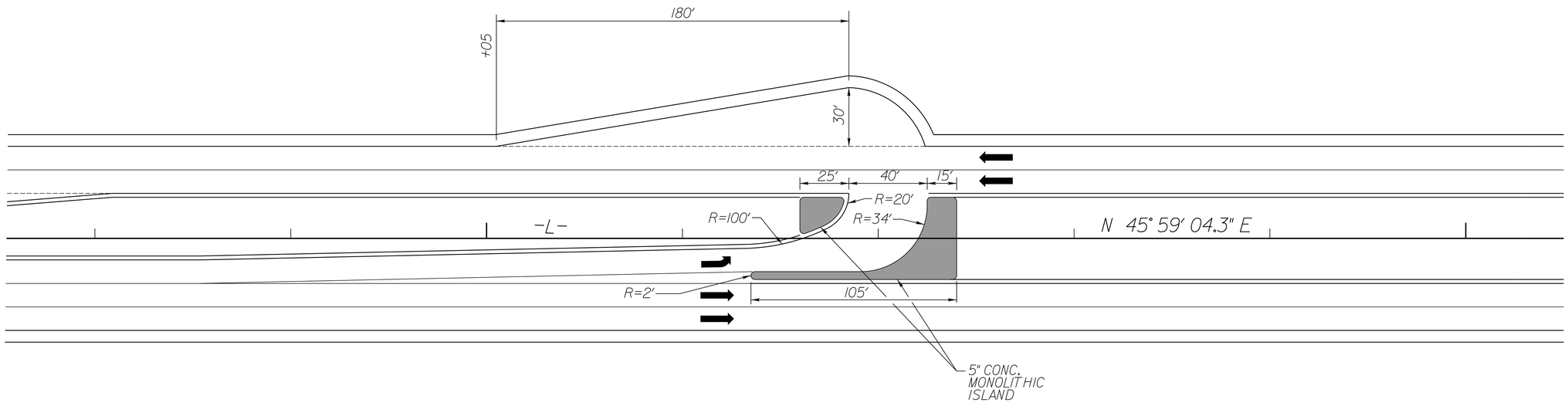
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2H
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BULB DETAIL

SCALE 1" = 30'

NAD 83



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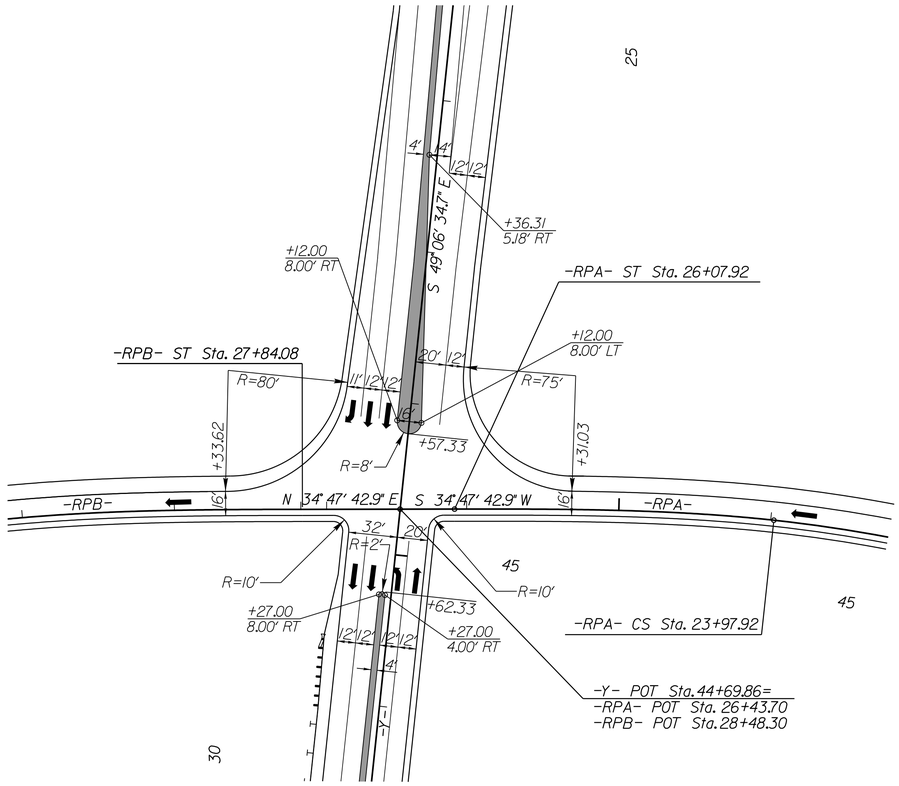
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–Y– INTERSECTION DETAIL

SCALE 1" = 50'

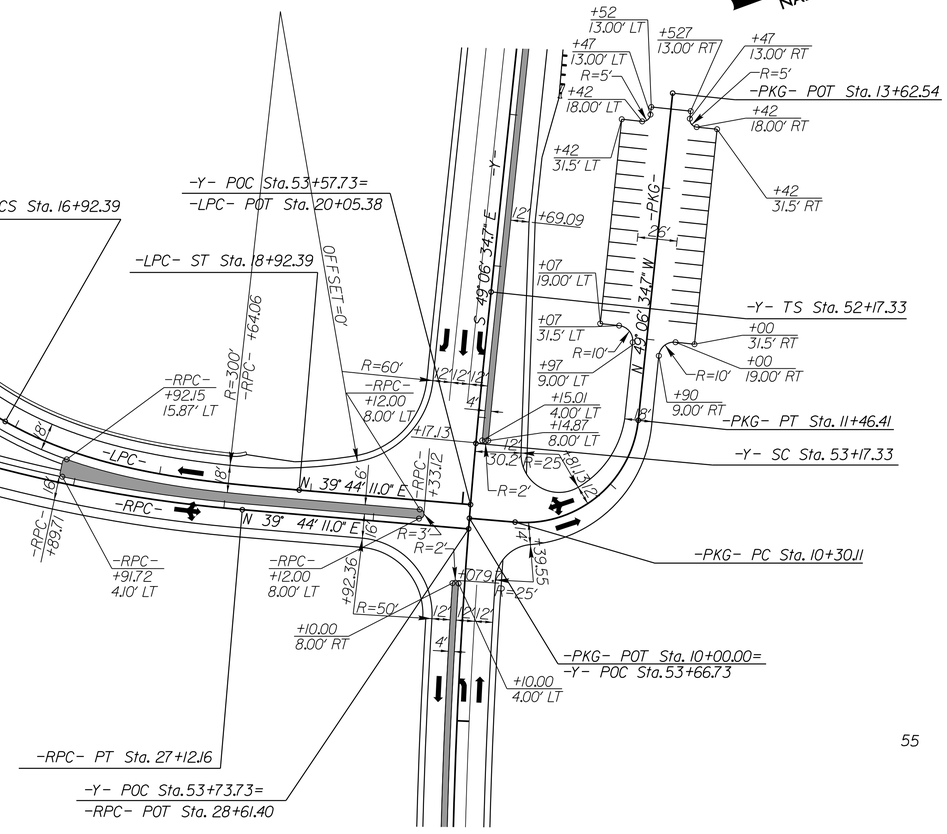
NAD 83



–Y– INTERSECTION DETAIL

SCALE 1" = 50'

NAD 83



FOR PLAN SEE SHT. 6
FOR –L– PROFILE SEE SHTS. 38 & 39
FOR –Y– PROFILE SEE SHTS. 52 & 53

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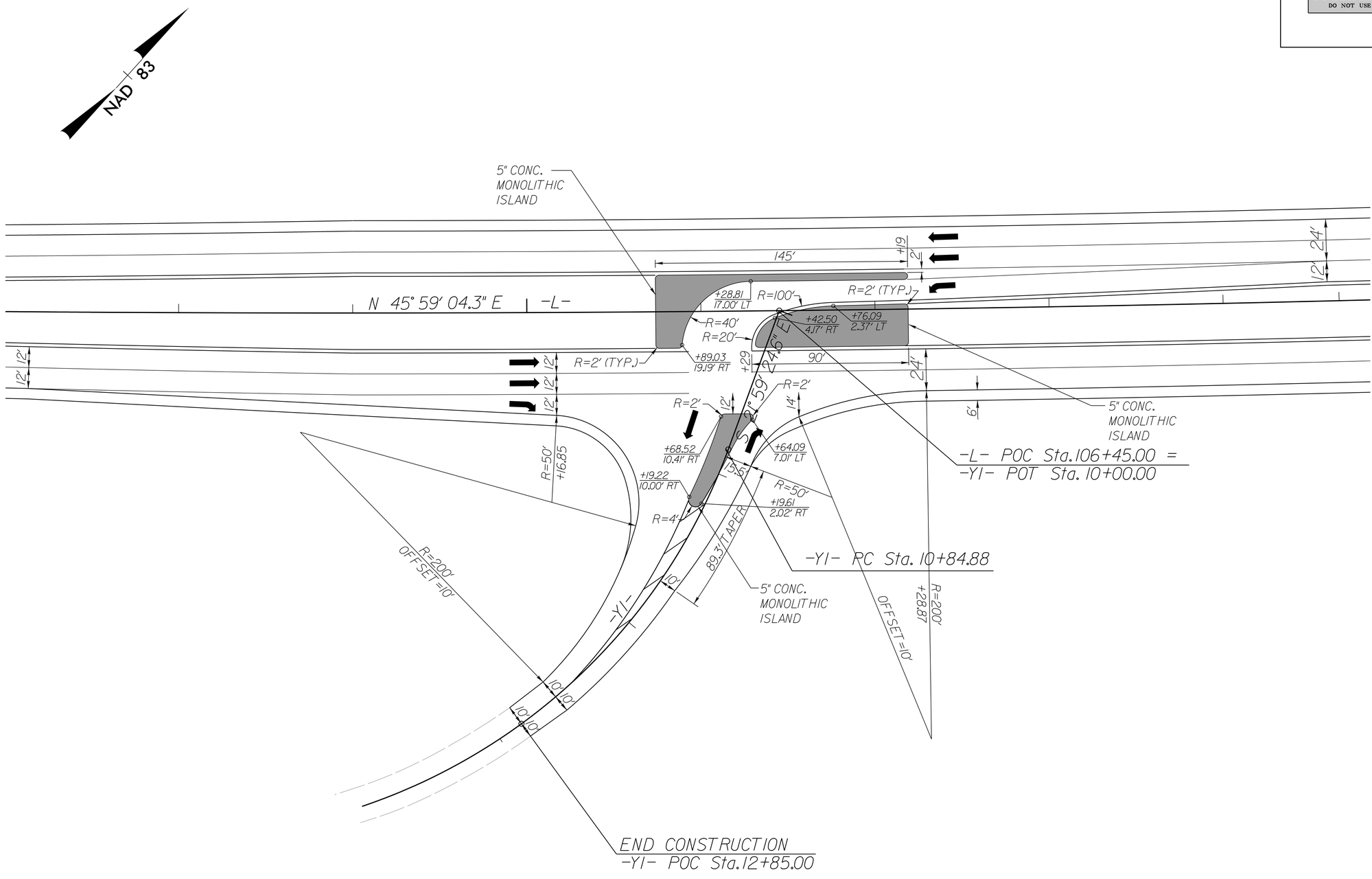
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2J
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–Y1– INTERSECTION DETAIL

SCALE 1" = 30'



FOR PLAN SEE SHT. 11
FOR –L– PROFILE SEE SHT. 41
FOR –Y1– PROFILE SEE SHT. 57

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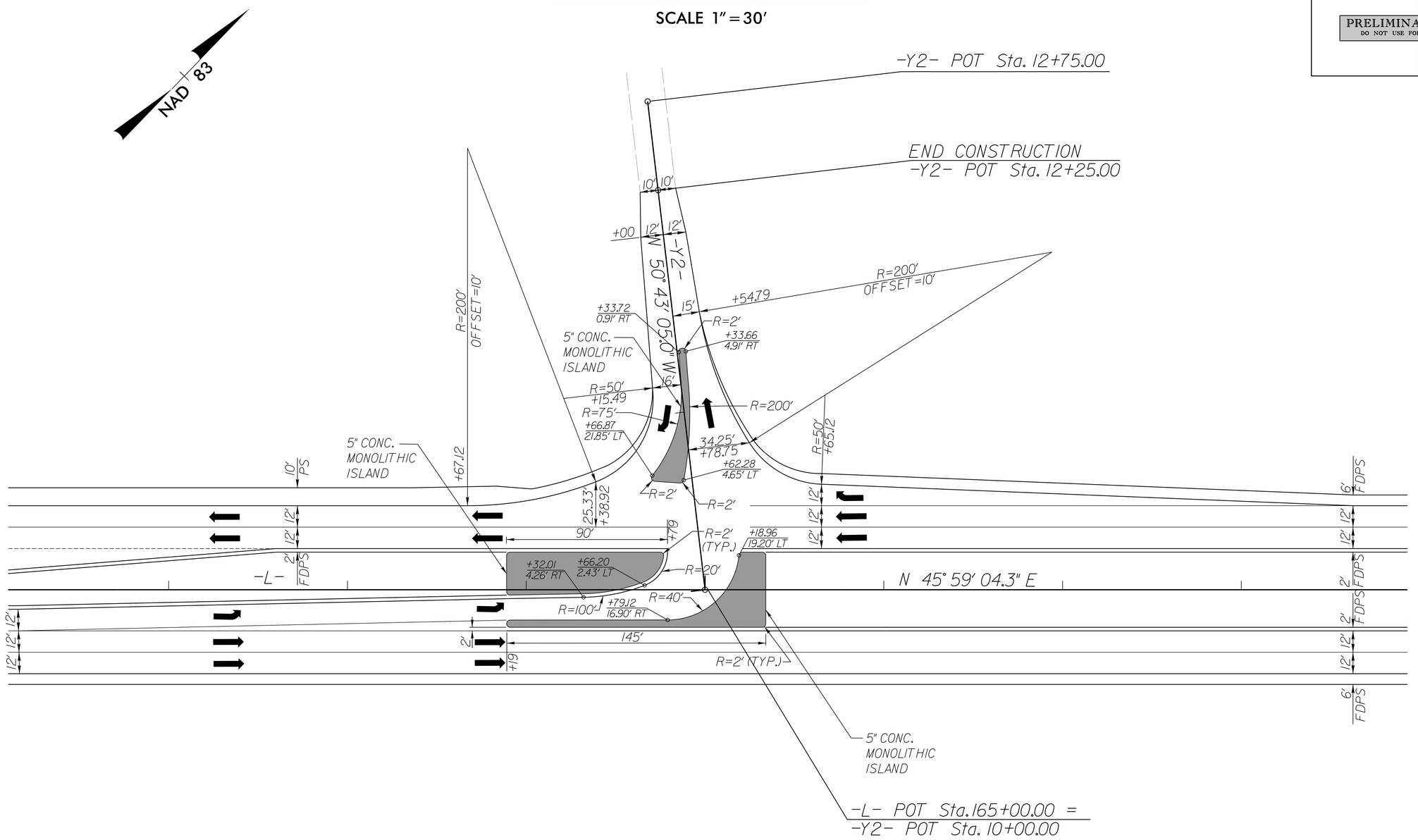
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2K
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–Y2– INTERSECTION DETAIL

SCALE 1" = 30'



FOR PLAN SEE SHT. 16
FOR –L– PROFILE SEE SHT. 43
FOR –Y1– PROFILE SEE SHT. 57

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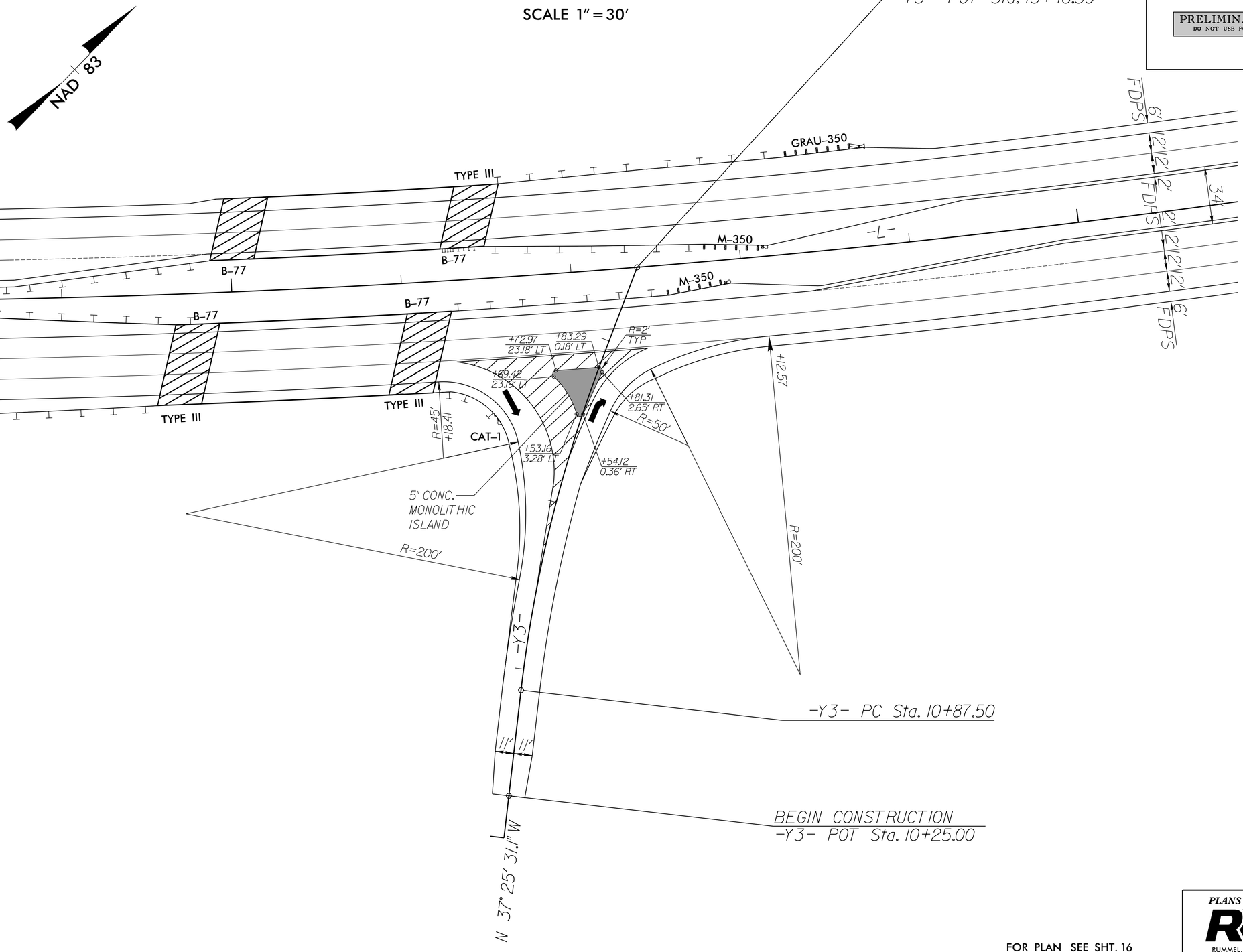
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2L
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–Y2– INTERSECTION DETAIL

SCALE 1" = 30'



FOR PLAN SEE SHT. 16
FOR –L– PROFILE SEE SHT. 43
FOR –Y1– PROFILE SEE SHT. 57

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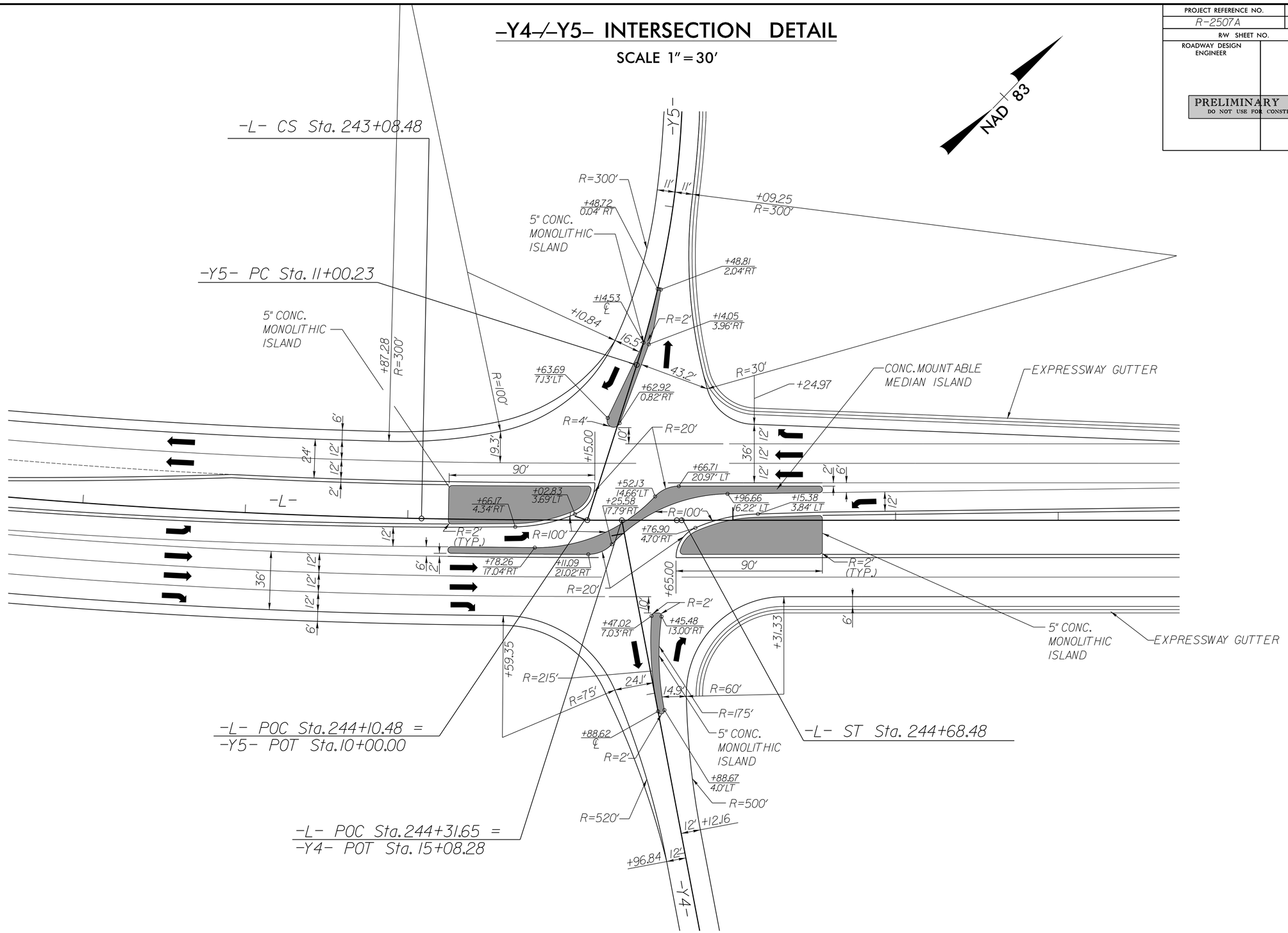
–Y4–/–Y5– INTERSECTION DETAIL

SCALE 1" = 30'

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2M
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83



FOR PLAN SEE SHT. 22
FOR –L– PROFILE SEE SHT. 46
FOR –Y4– PROFILE SEE SHT. 57
FOR –Y5– PROFILE SEE SHT. 58

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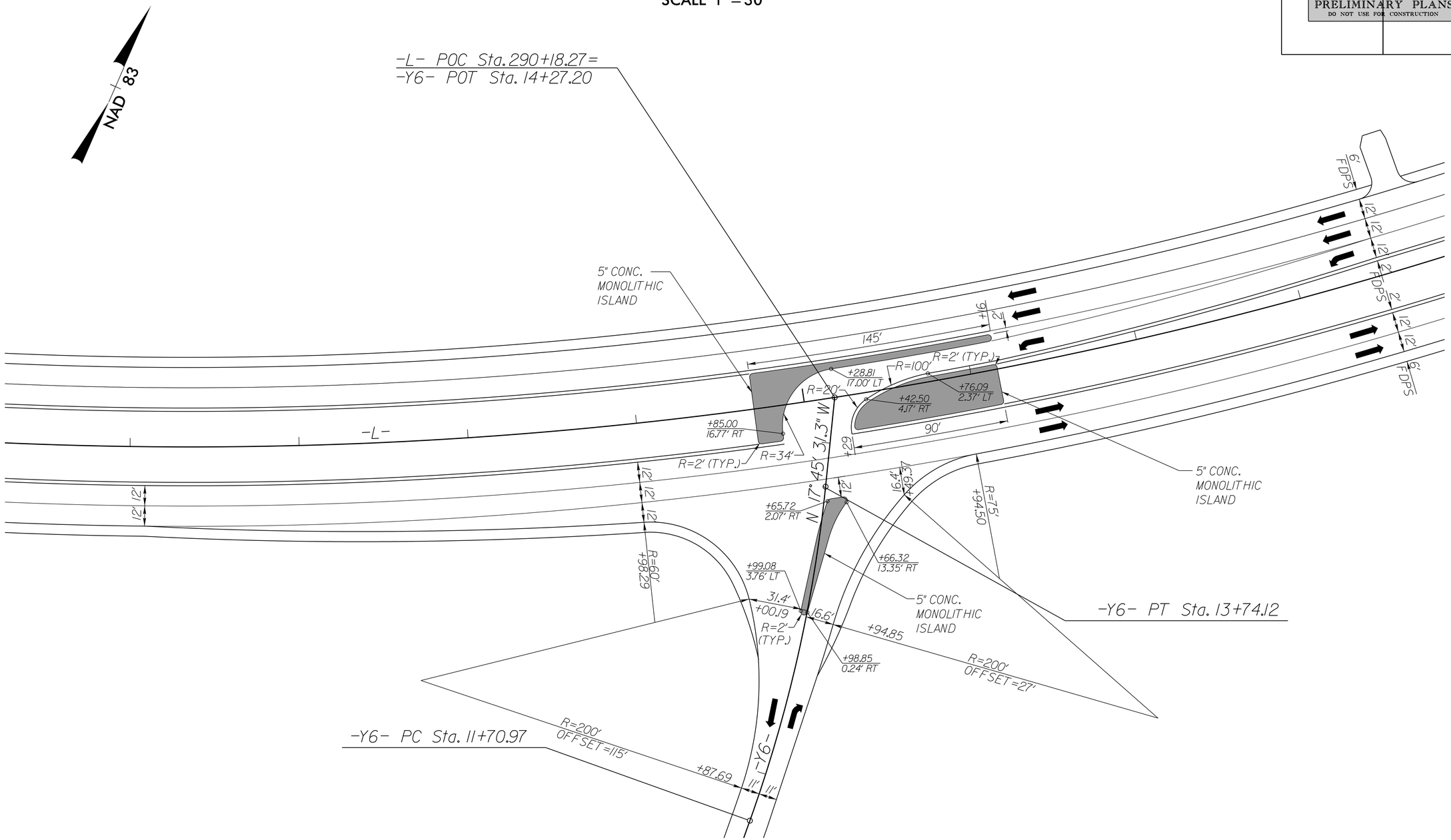
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2N
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–Y6– INTERSECTION DETAIL

SCALE 1" = 30'



FOR PLAN SEE SHT. 25
FOR –L– PROFILE SEE SHT. 48
FOR –Y6– PROFILE SEE SHT. 58

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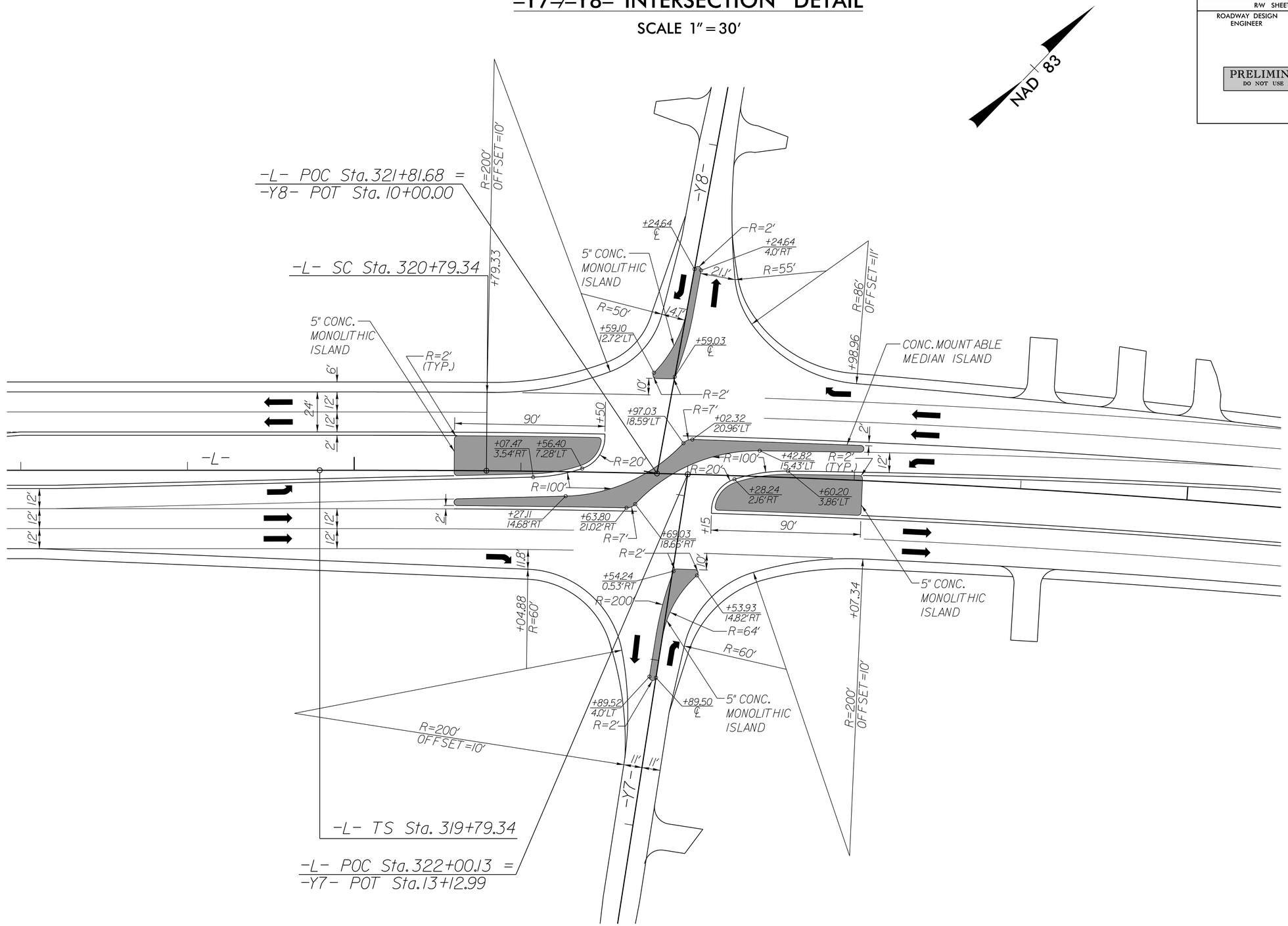
8/17/99

–Y7–/–Y8– INTERSECTION DETAIL

SCALE 1" = 30'

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



FOR PLAN SEE SHT. 22
FOR –L– PROFILE SEE SHT. 46
FOR –Y4– PROFILE SEE SHT. 57
FOR –Y5– PROFILE SEE SHT. 58

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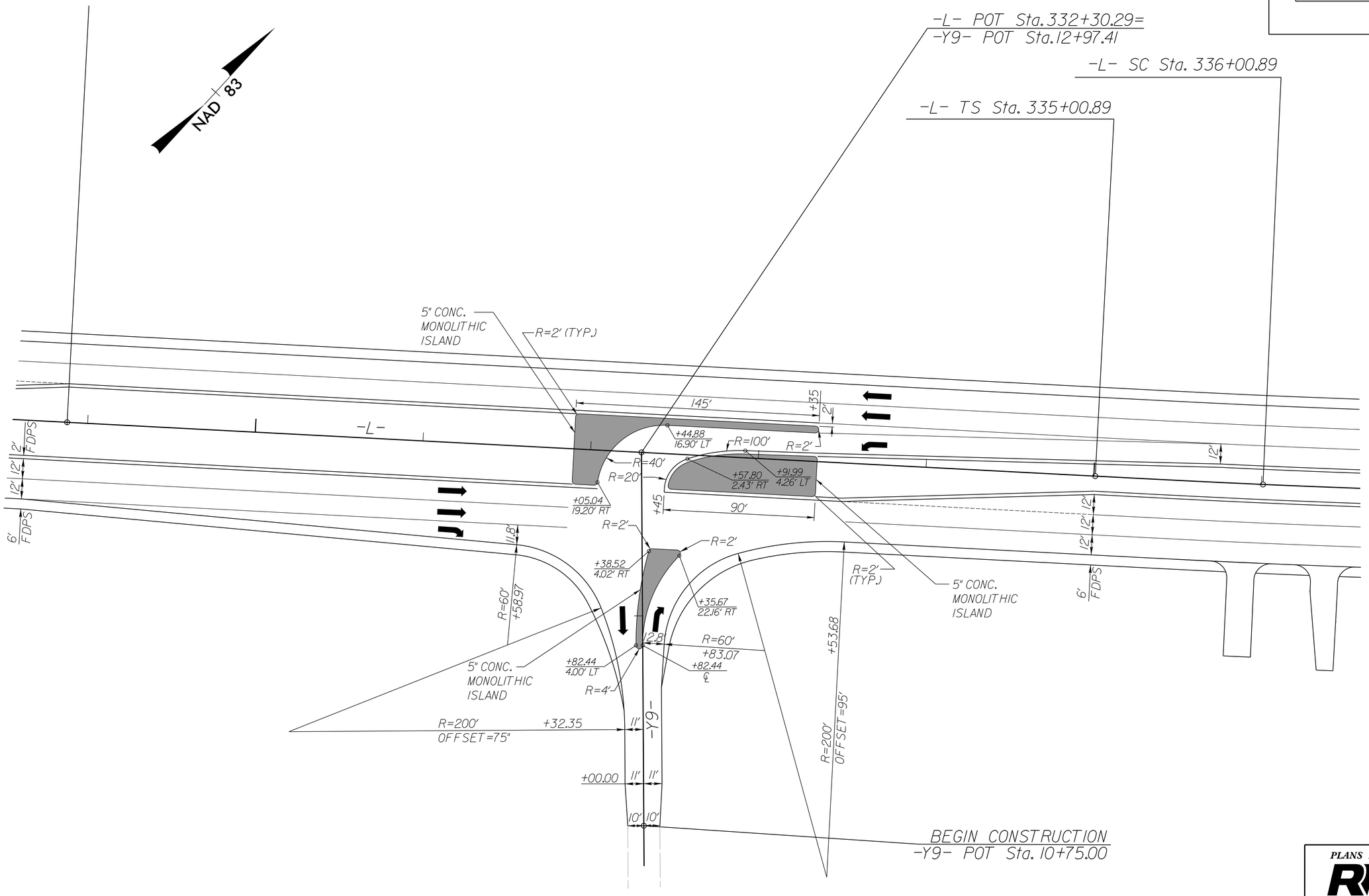
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2P
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–Y9– INTERSECTION DETAIL

SCALE 1" = 30'



FOR PLAN SEE SHT. 29
FOR –L– PROFILE SEE SHT. 49
FOR –Y9– PROFILE SEE SHT. 58

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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2Q
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–Y10– INTERSECTION DETAIL

SCALE 1" = 30'

NAD 83

–L– POT Sta. 381+00.00 =
–Y10– POT Sta. 10+00.00

–L– ST Sta. 380+21.57

180'

+06.47

30'

R=100'

R=20'

–L–

90'

+60

R=100'

R=20'

+37.22
5.03' RT

+82.56
5.12' LT

+26

25'

R=2' (TYP.)

14'

R=2'
(TYP.)

–Y10– PC Sta. 10+60.30

12'

R=50'
+22.21

+40.65

R=65'
+93.58

–L– CS Sta. 379+21.57

+79.03

–L_END_RT– CS Sta. 11+62.31

R=180'
OFFSET=180'

12'

+66.75

R=300'
OFFSET=300'

–Y10–

–L_END_RT– TS Sta. 10+62.31

–L– POT Sta. 382+50.00 =
–L_END_LT– POT Sta. 10+00.00 35' LT
–L_END_RT– POT Sta. 10+00.00 23' RT

FOR PLAN SEE SHT. 32
FOR –L– PROFILE SEE SHT. 53
FOR –L_END_LT– PROFILE SEE SHT. 54
FOR –L_END_RT– PROFILE SEE SHT. 54
FOR –Y10– PROFILE SEE SHT. 62

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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2R
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SCALE
100 50 0 100 200

NAD 83

B

A

C

-RPR-

-L-

S.P. #1
S.P. #2
S.P. #3
S.P. #8
S.P. #9
S.P. #10
S.P. #16
S.P. #17
S.P. #18
S.P. #19
S.P. #20
S.P. #21
S.P. #22
S.P. #23
S.P. #24
S.P. #25
S.P. #26
S.P. #27
S.P. #32

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jlee

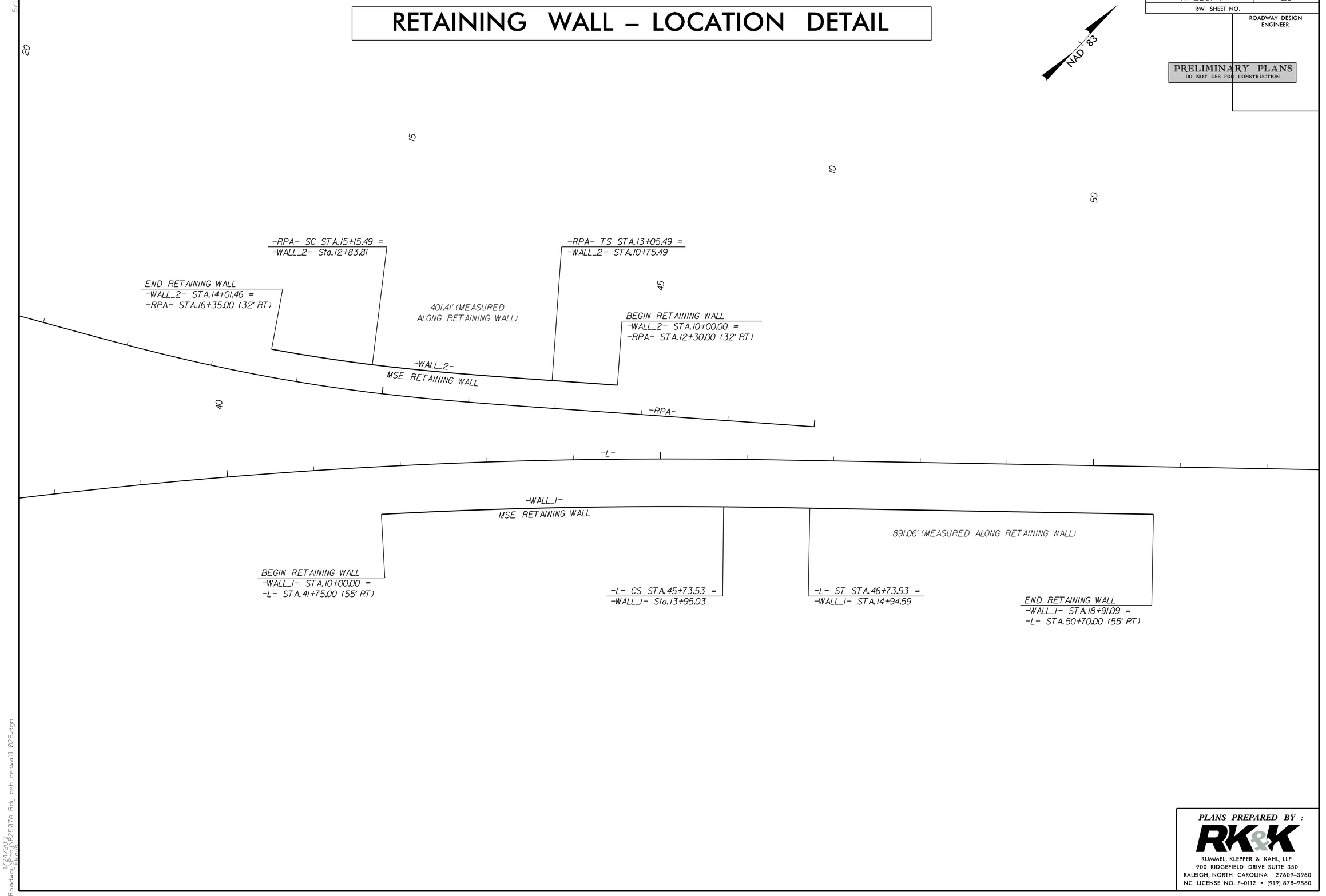
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	2S
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

PRELIMINARY PLANS
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RETAINING WALL – LOCATION DETAIL



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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

Property Owner Unknown

10

BEGIN FENCE
-BEG_L_LT- +60.00
105.82'

720' TAPER

F F F

6' FDPS

8:1

4' 12' 12' 4'

02 02

N 19° 44' 15.0" E

US 13 BST

BEGIN TIP PROJECT R-2507A
BEGIN CONSTRUCTION
-BEG_L_LT- POT Sta. 10+60.00

MATCHLINE -BEG_L_LT- STA. 14+50 SEE SHEET 4A

BEGIN FENCE
-BEG_L_LT- +60.00
214.18'

Property Owner Unknown

PROJECT DATUM DESCRIPTION:
LOCALIZED PROJECT COORDINATES ARE BASED ON THE NAD83 (CORS 96) STATE PLANE COORDINATES FOR MONUMENT "R2583-2- N:973567.076 (US FT) E:2585014.654 (US FT) - USING AN AVERAGE COMBINED GRID FACTOR (LOCALIZED TO GRID) OF 1.0000817467 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES, UNITS ARE "US SURVEY FOOT". VERTICAL DATUM IS NAVD88.

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR -BEG_L_LT- PROFILE SEE SHT. 38

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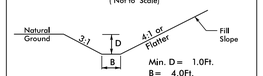
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

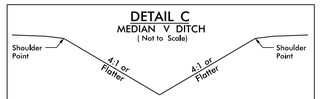
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



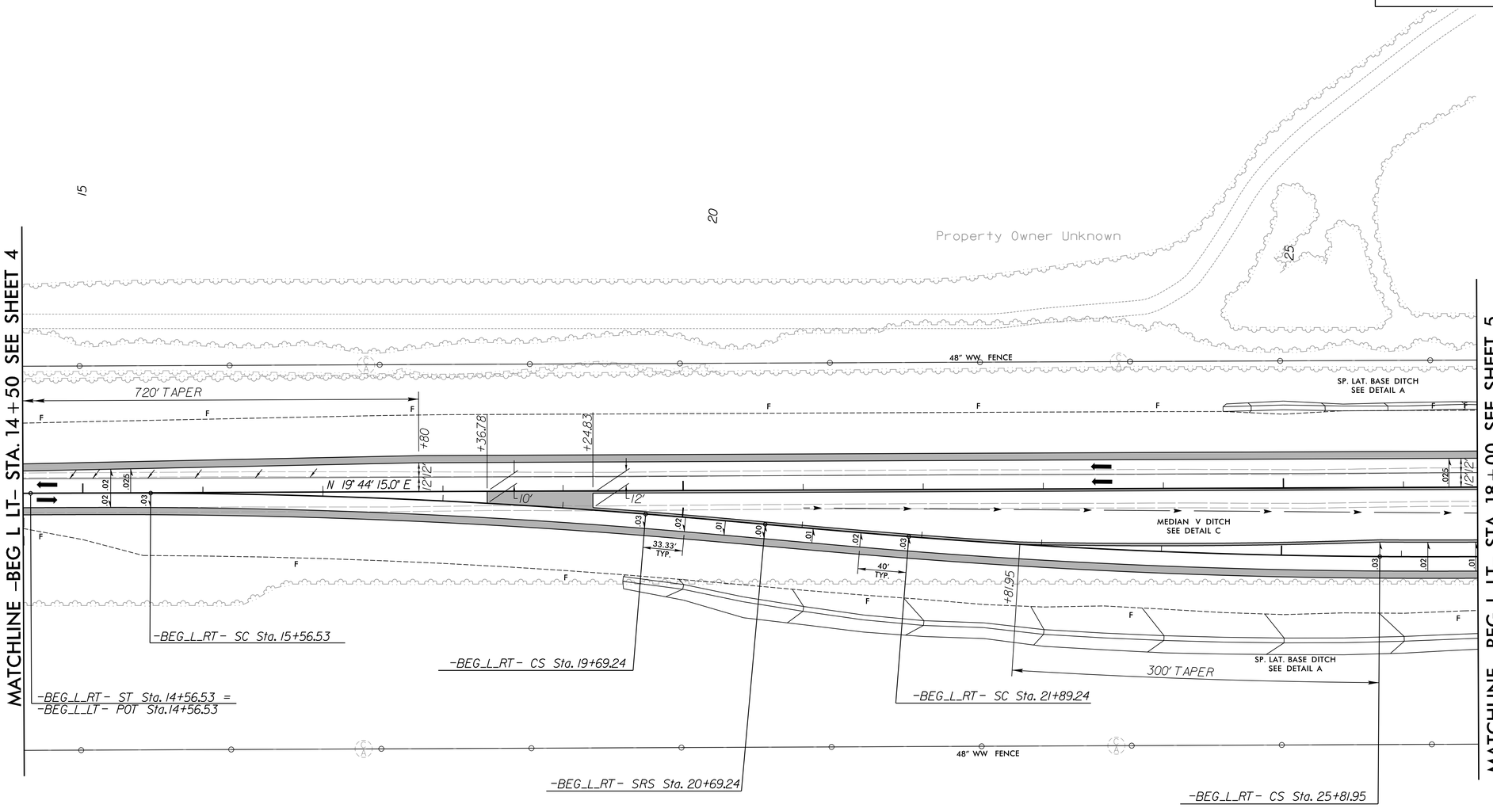
–BEG_L_LT– STA. 24+25 TO STA. 28+00 LT
–BEG_L_RT– STA. 19+38 TO STA. 28+04.04 RT

DETAIL C
MEDIAN V DITCH
(Not to Scale)



–BEG_L_LT– STA. 21+00 TO STA. 28+00

NAD 83



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR –BEG_L_LT– PROFILE SEE SHT. 38
FOR –BEG_L_RT– PROFILE SEE SHT. 39

–BEG_L_RT–

PIs Sta 15+23.20	PI Sta 17+62.98	PIs Sta 20+02.57	PIs Sta 21+49.24	PI Sta 23+85.67	PIs Sta 26+21.95
Θs = 0° 31' 15.1"	△ = 4° 17' 57.7" (RT)	Θs = 0° 31' 15.1"	Θs = 0° 37' 30.2"	△ = 4° 05' 27.6" (LT)	Θs = 0° 37' 30.2"
Ls = 100.00'	D = 1° 02' 30.3"	Ls = 100.00'	Ls = 120.00'	D = 1° 02' 30.3"	Ls = 120.00'
LT = 66.67'	L = 412.71'	LT = 66.67'	LT = 80.00'	L = 392.71'	LT = 80.00'
	T = 206.45'	ST = 33.33'	ST = 40.00'	T = 196.44'	ST = 40.00'
	R = 5,500.00'			R = 5,500.00'	

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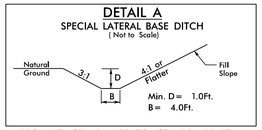
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

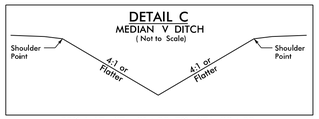
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



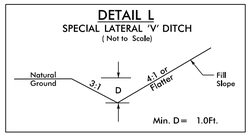
–BEG_L_LT– STA. 24+25 TO STA. 28+00 LT
–BEG_L_RT– STA. 19+38 TO STA. 28+02.04 RT
–L– STA. 7+00 TO STA. 12+00 RT
–L– STA. 7+00 TO STA. 19+00 LT

DETAIL C
MEDIAN V DITCH
(Not to Scale)



–BEG_L_LT– STA. 21+00 TO STA. 28+00
–L– STA. 7+00 TO STA. 17+00

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



–L– STA. 12+00 TO STA. 17+00 RT

NAD 83

MATCHLINE –BEG_L_LT– STA. 18+00 SEE SHEET 4

MATCHLINE –L– STA. 17+00 SEE SHEET 6

Property Owner Unknown

HERTFORD COUNTY
DB 390 PG 315

WOODS

–L– POT Sta.13+60.23=
–RPB– PC Sta. 10+00.00 (47' LT)

SP. LAT. BASE DITCH
SEE DETAIL A

EXISTING R/W

CENTURY LINK

2 TONS CL B RIPRAP
W/7 SY FIL FAB

0502

6' FDPS

+80.23

300' TAPER

180' ACCELERATION LANE

0504

15" RCP-III

N 19° 44' 15.0" E

US 13 BST

TO ANSKIE

40' TYP.

0501 2GI-D

MEDIAN V DITCH
SEE DETAIL C

0503 2GI-D

N 23° 51' 15.0" E

SP. LAT. V DITCH
SEE DETAIL L

28.57' TYP.

–BEG_L_RT– POT Sta. 28+01.95 (LB)=
–BEG_L_LT– POT Sta.28+00.00 (LB)
–L– POT Sta.7+00.00 (LA)

–L– POT Sta.11+75.00=
–RPC– POT Sta. 10+00.00 (47' RT)

–L– TS Sta. 14+28.76

–RPC– TS Sta. 13+09.07

–BEG_L_RT– ST Sta. 27+01.95

48" WW FENCE

–L– SC Sta. 15+28.76

–RPC– SC Sta. 15+09.07

2
COPPER STATION HOLDING, INC.
DB 677 PG 881
PB 261 PG 173

Property Owner Unknown

–BEG_L_RT–	–L–		–RPB–		–RPC–	
PIs Sta 26+21.95	PIs Sta 14+95.42	PI Sta 18+67.19	PIs Sta 11+06.67	PI Sta 13+61.75	PIs Sta 14+42.45	PI Sta 17+94.09
Θs = 0° 37' 30.2"	Θs = 0° 24' 33.3"	△ = 5° 32' 09.5" (RT)	Θs = 1° 25' 56.6"	△ = 7° 12' 54.4" (LT)	Θs = 4° 46' 28.7"	△ = 26° 43' 22.3" (RT)
Ls = 120.00'	Ls = 100.00'	D = 0° 49' 06.6"	Ls = 112.00'	D = 1° 47' 25.8"	Ls = 200.00'	D = 4° 46' 28.7"
LT = 80.00'	LT = 66.67'	L = 676.35'	LT = 106.67'	L = 402.97'	LT = 133.38'	L = 559.68'
ST = 40.00'	ST = 33.33'	T = 338.44'	ST = 53.34'	T = 201.75'	ST = 66.71'	T = 285.03'
		R = 7,000.00'		R = 3,200.00'		R = 1,200.00'
		Runoff = 100'		Runoff = 112'		
		e = 0.025 ft/ft		e = 0.035 ft/ft		

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR –L_BEG_RT– PROFILE SEE SHT. 39
FOR –L_BEG_LT– PROFILE SEE SHT. 38
FOR –L– PROFILE SEE SHT. 40
FOR –RPB– PROFILE SEE SHT. 57
FOR –RPC– PROFILE SEE SHT. 58

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

1/24/2012
R:\Roadway\Proj\R2507A_Rdy_psh05.dgn
Ekaius

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

2015 ADT
2035 ADT

PROJECTED TRAFFIC VOLUMES

DETAIL
FALSE SUMP
(Not to Scale)

S=Ditch Slope

Ditch Grade	L	Ditch Grade	L
0.0% to 2.0%	20	Over 4.0% to 6.0%	50
Over 2.0% to 4.0%	30	Over 6.0%	100

DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)
-L- STA. 7+00 TO STA. 19+00 LT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)
-RPB- STA. 15+43 TO STA. 17+20 LT

DETAIL C
MODIFIED "V" DITCH
(Not to Scale)
-L- STA. 31+50 TO STA. 33+00

DETAIL D
LATERAL BASE DITCH
(Not to Scale)
-L- STA. 31+23 TO STA. 33+80 RT
-LPC- STA. 13+80 TO STA. 19+42.47 LT

DETAIL E
SPECIAL CUT BASE DITCH
(Not to Scale)
-L- STA. 50+00 TO STA. 53+00 RT

DETAIL F
LATERAL "V" DITCH
(Not to Scale)
-RPA- STA. 17+77.86, TO STA. 19+50 LT
-R- STA. 41+00 TO STA. 42+10 LT

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)
-RPA- STA. 19+50 TO STA. 21+00 LT

DETAIL I
TOE PROTECTION
(Not to Scale)
Type of Liner= Class II Rip-Rap
-RPA- STA. 18+20 TO STA. 19+60 RT

MATCHLINE -L- STA. 41+00 SEE SHEET 35

MATCHLINE -L- STA. 17+00 SEE SHEET 5

MATCHLINE -L- STA. 45+50 SEE SHEET 7

MATCHLINE -L- STA. 56+00 SEE SHEET 36

THE EXISTING PAVEMENT IS TO BE REMOVED AND THE ROADBED SCARIFIED TO A MINIMUM DEPTH OF 2'-0" BELOW ORIGINAL SURFACE IN THE AREA WHERE PILES ARE TO BE DRIVEN THROUGH THE PROPOSED EMBANKMENT AND AREAS UNDER THE PROPOSED MSE WALLS AS DIRECTED BY THE ENGINEER.

-RPA-

PI's Sta 14+39.86	PI Sta 16+08.93	PI's Sta 17+77.86	PI's Sta 20+78.74	PI Sta 22+73.99
Δs = 2° 48' 31.0"	Δ = 5° 44' 54.1" (RT)	Δs = 2° 48' 31.0"	Δs = 6° 16' 00.2"	Δ = 14° 52' 36.9" (LT)
Ls = 200.00'	D = 2° 48' 31.0"	Ls = 200.00'	Ls = 210.00'	D = 5° 58' 05.9"
LT = 133.35'	L = 204.57'	LT = 133.35'	LT = 140.09'	L = 249.27'
ST = 66.68'	T = 102.40'	ST = 66.68'	ST = 70.08'	T = 125.34'
	R = 2,040.00'			R = 960.00'
	Runoff = 200'			Runoff = 210'
	e = 0.05 ft/ft			e = 0.08 ft/ft

PI Sta 24+68.00
Δs = 6° 16' 00.2"
Ls = 210.00'
LT = 140.09'
ST = 70.08'

-RPB-

PI Sta 14+14.50	PI's Sta 23+45.55	PI Sta 25+37.48	PI's Sta 27+27.3
Δ = 17° 04' 47.7" (LT)	Δs = 6° 16' 00.2"	Δ = 12° 36' 15.4"	Δs = 6° 16' 00.2"
D = 7° 13' 08.6"	Ls = 210.00'	D = 5° 58' 05.9"	Ls = 210.00'
L = 826.86'	LT = 140.09'	L = 211.29'	LT = 140.09'
T = 414.50'	ST = 70.08'	T = 106.02'	ST = 70.08'
R = 475.00'		R = 960.00'	
Runoff = 150'		Runoff = 195'	
e = 0.025 ft/ft		e = 0.08 ft/ft	

-L-

PI Sta 18+67.19	PI Sta 34+03.67	PI Sta 36+06.87	
Δ = 5° 32' 09.5" (RT)	Δ = 23° 41' 41.3" (RT)	Δs = 12° 27' 28.8"	
D = 0° 49' 06.6"	D = 0° 54' 57.6"	Ls = 100.00'	
L = 676.35'	L = 2,368.43'	LT = 66.67'	
T = 338.44'	T = 1,985.57'	ST = 33.33'	
R = 7,000.00'	R = 6,255.00'		
Runoff = 100'	Runoff = 100'		
e = 0.025 ft/ft	e = 0.025 ft/ft		

-RPB- PT Sta. 18+26.86

-RPB- TS Sta. 21+52.89

-RPB- CS Sta. 25+74.08

-RPB- SC Sta. 23+62.89

-RPB- ST Sta. 27+84.08

-RPA- ST Sta. 26+07.92

-RPA- TS Sta. 19+38.65

-RPA- ST Sta. 19+11.18

-RPA- CS Sta. 17+11.18

-RPA- SC Sta. 21+48.65

-RPA- CS Sta. 23+97.92

-Y- POT Sta. 44+69.86=
-RPA- POT Sta. 26+43.70
-RPB- POT Sta. 28+48.30

-RPA- SC Sta. 15+06.51

-RPA- TS Sta. 13+06.51

-RPA- SC Sta. 10+32.26

-L- POC STA 30+34.04
BEGIN BRIDGE

-L- POC STA 30+34.06
BEGIN BRIDGE

-L- POC STA 30+09.94
BEGIN APPROACH SLAB

-L- POC STA 30+09.89
BEGIN APPROACH SLAB

-L- POC STA 31+18.24
END BRIDGE

-L- POC STA 31+18.85
END BRIDGE

-L- POC STA 31+34.88
END APPROACH SLAB

-L- POC STA 31+43.01
END APPROACH SLAB

-L- POC STA 31+39.45
END APPROACH SLAB

-L- POC STA 31+39.38
END APPROACH SLAB

-L- POC STA 31+15.23
END BRIDGE

-L- POC STA 31+15.22
END BRIDGE

-L- POC STA 30+79.54=
-Y- POT Sta. 48+14.82

-L- POC STA 30+05.86
BEGIN APPROACH SLAB

-L- POC STA 30+30.02
BEGIN BRIDGE

-L- POC Sta. 22+05.10

-L- POC Sta. 29+18.67 (39 RT)=
-LPC- ST Sta. 10+00.00

-LPC- SC Sta. 12+00.00

-LPC- CS Sta. 16+92.39

-LPC- ST Sta. 18+92.39

-Y- POC Sta. 53+57.73=
-LPC- POT Sta. 20+05.38

-Y- TS Sta. 52+17.33

-Y- SC Sta. 53+17.33

-PKG- POT Sta. 13+62.54

-PKG- PT Sta. 11+46.41

-PKG- PC Sta. 10+30.11

-PKG- POT Sta. 10+00.00=
-Y- POC Sta. 53+46.73

-RPC- CS Sta. 20+68.75

-RPC- SRS Sta. 22+68.75

-RPC- SC Sta. 24+68.75

-RPC- PT Sta. 27+12.16

-Y- POC Sta. 53+47.37=
-RPC- POT Sta. 28+64.40

-RPC- TIE TO EXIST. FENCE 87.35' +30.26

-RPB- TIE TO EXIST. FENCE +102.19 +51.20

-RPA- TIE TO EXIST. FENCE +51.20 +44.63

-RPA- BEGIN FENCE -L- 419.77 224.82

-RPA- BEGIN FENCE +75.14 215.99

-RPA- PROP. MSE RETAINING WALL 2 & CHAIN LINK FENCE STA. 12+30.00 TO STA. 16+35.00

PROP. MSE RETAINING WALL 1 & CHAIN LINK FENCE START -L- STA. 41+75.00 TO

-RPA- PROP. MSE RETAINING WALL 1 & CHAIN LINK FENCE START -L- STA. 41+75.00 TO

-RPA- PROP. MSE RETAINING WALL 1 & CHAIN LINK FENCE END -L- STA. 45+50.00

-RPA- PROP. MSE RETAINING WALL 1 & CHAIN LINK FENCE END -L- STA. 47+47.36

-RPA- PROP. MSE RETAINING WALL 1 & CHAIN LINK FENCE END -L- STA. 49+75.00

-RPA- PROP. MSE RETAINING WALL 1 & CHAIN LINK FENCE END -L- STA. 51+75.00

-RPA- PROP. MSE RETAINING WALL 1 & CHAIN LINK FENCE END -L- STA. 53+75.00

-RPA- PROP. MSE RETAINING WALL 1 & CHAIN LINK FENCE END -L- STA. 55+75.00

-BL- LOOKI Sta. 16+14.13
NCGS MON "LOOK"
-BYII- LOOKI Sta. 18+90.47
-BYI2 -LOOKI Sta. 5+00.00
-L- Sta. 31+55.53
(167.89' LT)

-BYII- LOOKI Sta. 25+47.36 =
-L- Sta. 40+42.63
(10.22' LT)

-BYII- 71 Sta. 25+47.36 =
-L- Sta. 40+42.63
(10.22' LT)

PROP. 2'-6" CSD

PROP. 5' MONOLITHIC CONCRETE ISLAND

PROP. SBG

500' MEDIAN TRANSITION

500' ACCELERATION LANE

300' TAPER

15 TONS CL II RIPRAP W/35 SY FIL FAB

7 TONS CL II RIPRAP W/15 SY FIL FAB

8 TONS CL II RIPRAP W/21 SY FIL FAB

5 TONS CL II RIPRAP W/14 SY FIL FAB

3 TONS CL II RIPRAP W/7 SY FIL FAB

2 TONS CL II RIPRAP W/5 SY FIL FAB

1 TONS CL II RIPRAP W/3 SY FIL FAB

15' CAAP 2 ELBOWS 300 & LUG

30' CAAP 3 ELBOWS 900 & LUG

LATERAL V DITCH SEE DETAIL F

LATERAL BASE DITCH SEE DETAIL D

SPECIAL CUT DITCH SEE DETAIL G

SPECIAL CUT BASE DITCH SEE DETAIL E

TOE PROTECTION SEE DETAIL I

HERTFORD COUNTY
DB 662 PG 747
PC 1 SLIDE 94G

CAREER TRANSPORTING, INC.
DB 639 PG 282
PC 1 SLIDE 99

COPPER STATION HOLDING, INC.
DB 637 PG 89
PB 261 PG 173

WILLIE C., JR. & JOANN M. GOODWIN
DB 425 PG 529

FRED W. LIVERMAN, JR., et ux
DB 469 PC 67

ASP RIVERSEDGE, LLC
DB 616 PG 368
PC 1 SLIDE 132

DAN F. & LOUISE M. SPIVEY
DB 490 PG 7
MB 13 PG 52

DAN F. SPIVEY, et ux
DB 435 PG 62

JUSTENE GREENE, et ux
DB 519 PG 134

JEFFREY W. ELLIS
DB 560 PG 218
MB 13 PG 52

WILLIAM E. O'BERRY
DB 615 PG 441
MB 13 PG 52

THOMAS L., JR. & KIMBERLY H. BAZEMORE
DB 538 PG 459
MB 13 PG 52

-RPC-

PI Sta 17+94.09	Pis Sta 21+35.46	PI's Sta 24+02.16	PI Sta 25+91.11
Δ = 26° 43' 22.3" (RT)	Δs = 4° 46' 28.7"	Δs = 5° 56' 14.6"	Δ = 14° 27' 09.2" (LT)
D = 4° 46' 28.7"	Ls = 200.00'	Ls = 200.00'	D = 5° 56' 14.6"
L = 559.68'	LT = 133.38'	LT = 133.41'	L = 243.42'
T = 285.03'	ST = 66.71'	ST = 66.73'	T = 122.36'
R = 1,200.00'			R = 965.00'
Runoff = 224'			Runoff = 240'
e = 0.07 ft/ft			e = 0.075 ft/ft

-LPC-

PI Sta 11+34.68	PI Sta 16+20.63	PI Sta 17+60.28	PI Sta 17+03.62
Δs = 24° 54' 40.4"	Δ = 122° 39' 36.8" (LT)	Δs = 24° 54' 40.4"	Δ = 88° 50' 45.7" (LT)
Ls = 200.00'	D = 24° 54' 40.4"	Ls = 200.00'	D = 76° 23' 39.2"
LT = 134.68'	L = 492.39'	LT = 134.68'	L = 116.30'
ST = 67.89'	T = 400.31'	ST = 67.89'	T = 73.50'
	R = 230.00'		R = 75.00'
	Runoff = 290'		e = 0.02 ft/ft
	e = 0.08 ft/ft		

-Y-

PI Sta 56+51.90	Pis Sta 60+18.09
Δ = 17° 00' 38.4" (LT)	Δs = 17° 44' 59.8"
D = 1° 59' 59.6"	Ls = 100.00'
L = 567.43'	LT = 66.67'
T = 334.56'	ST = 33.33'
R = 2,820.00'	
Runoff = 100'	

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAILS SEE SHEET 21

FOR -L- PROFILE SEE SHTS. 40 & 41
FOR -Y- PROFILE SEE SHT. 55
FOR -RPA- PROFILE SEE SHT. 57
FOR -RPB- PROFILE SEE SHTS. 58 & 58
FOR -RPC- PROFILE SEE SHTS. 58 & 59
FOR -PKG- PROFILE SEE SHT. 59
FOR -PKG- PROFILE SEE SHT. 60

PLANS PREPARED BY:

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RUMMEL, KLEPPER & KAHL, LLP
900 ROCKVILLE PIKE SUITE 230
RALEIGH, NORTH CAROLINA 27609-2960
NC LICENSE NO. F-0112 • (919) 878-9560

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

GRAPHIC SCALE
50 25 0 50 100
PLANS

12/13/2022
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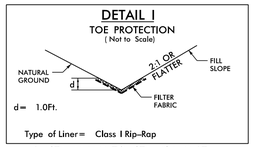
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

DETAIL I
TOE PROTECTION
(Not to Scale)

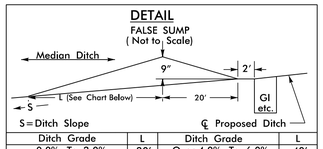


d = 1.0Ft.

Type of Liner = Class I Rip-Rap

-L- STA. 44+50 TO STA. 46+50 LT

DETAIL
FALSE SUMP
(Not to Scale)



S = Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

8
ASP RIVERSEDGE, LLC
DB 651 PG 368
PC I SLIDE 1321

N 34°43'15" E 366.52'
N 41°35'22" E 91.21'
N 38°49'47" E 88.63'
N 34°32'27" E 210.08'
N 30°45'07" E 51.94'
N 37°43'47" E 348.10'
EXISTING R/W
45.00'
GR
S 42°14'27" W 334.58'
S 46°43'18" E 69.80'
N 26°06'26" E 233.18'
WOODS
-BL- 20 Sta. 34+58.59=
-L- Sta. 49+51.02
(53.57' LT)
-L- POT Sta. 46+76.99=
-RPA- POT Sta.10+00.00 (39' LT)
18
STANLEY E. DIXON, JR.
DB 632 PG 299
PC I SLIDE 130B
19
LAWRENCE N., JR. & MARGARET S. LARABEE
DB 646 PG 158
PC I SLIDE 130B
TREES
-BL- 21 Sta. 42+70.66=
-L- Sta. 57+63.08
(57.47' LT)
N 51°20'53" E 229.91' MON. TO MON.
N 48°47'25" E 500.35' MON. TO MON.
48" WW FENCE
TOE PROTECTION SEE DETAIL I
FILL W/ FLOWABLE FILL GRAU 350
40' TYP.
8:1
53.53'
0709
CONC DITCH
RETAIN EXIST. PAVEMENT
TRENCH LESS INSTALLATION 24" WELDED STEEL
FILL W/ FLOWABLE FILL
US 158 / US 13 BST
18" RCP-III
15" RCP-III
-L-
N 47° 50' 08.0" E
DUCT
AT&T (FO)
REMOVE
24" CAAP
5 ELBOWS FS
ROD & LUG
8 TONS CL B RIPRAP
W/21 SY FIL FAB
PROP. SBG
PROP. RETAINING WALL 1
& CHAIN LINK FENCE
END -L- STA.50+70.00
WOODS
S 44°25'15" W 381.47' MON. TO MON.
S 47°52'32" W 899.48' MON. TO MON.
N 42°19'05" E 200.84' MON. TO MON.
-L- ST Sta. 46+73.53
-L- CS Sta. 45+73.53
S 43°57'51" W 201.60'
S 43°57'51" W 482.20'
S 43°57'51" W 321.40'
N 34°15'50" E 99.56'
N 32°32'09" W 276.40'
N 68°58'09" W 286.00'
S 68°58'51" W 86.01'
N 57°37'09" W 260.80'
N 32°54'10" W 120.30'
60.00'
14
ROY L. & EMMETT D. HARRELL
DB 621 PG 473
MB 13 PG 52
15
ROY L. & DONWAN T. HARRELL
DB 575 PG 370
MB 13 PG 52
16
WILLIAM T. & SHANNON ASKEW
DB 660 PG 447
MB 13 PG 52
17
NORMAN L. MEBANE, JR.
DB 548 PG 436
MB 13 PG 52

MATCHLINE -L- STA. 45+50 SEE SHEET 6

MATCHLINE -L- STA. 59+00 SEE SHEET 8

-L-

PI Sta 31+18.27	PIs Sta 46+06.87
△ = 27° 10' 55.3" (RT)	Θs = 0° 27' 28.8"
D = 0° 54' 57.6"	Ls = 100.00'
L = 2,967.47'	LT = 66.67'
T = 1,512.21'	ST = 33.33'
R = 6,255.00'	
Runoff = 100'	

FOR -L- PROFILE SEE SHT. 41
FOR -RPA- PROFILE SEE SHT. 57

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

1/24/2012
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FLEWIS

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

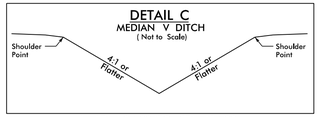
8/17/18

8 ASP RIVERSEDGE, LLC
DB 651 PG 368
PC 1 SLIDE 1321

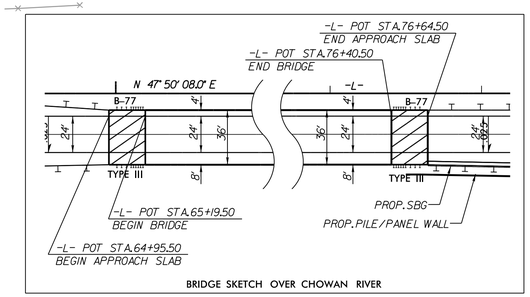
N 45°28'17" E 118.95'

N 36°26'33" E 436.10'

DETAIL C
MEDIAN V DITCH
(Not to Scale)



-L- STA. 63+00 TO STA. 65+00



BRIDGE SKETCH OVER CHOWAN RIVER

NAD 83

GATES COUNTY
HERTFORD COUNTY

60 65 70

S 42°14'27" W 1069.54'

19 LAWRENCE N., JR. & MARGARET S. LARABEE
DB 646 PG 158
PC 1 SLIDE 130B

-BL- 22 Sta. 50+20.61=
-L- Sta. 65+11.09
(3.57' LT)

MATCHLINE -L- STA. 59+00 SEE SHEET 7

MATCHLINE -L- STA. 72+00 SEE SHEET 9

47°48'37" E 1020.10' MON. TO MON.

48" WW FENCE

EXISTING R/W

4' WW

DUCT

T FO

G

TC

(FO)

12"

RETAIN EXIST. PAVEMENT

REMOVE EXISTING GUARDRAIL

20' TYP.

TREES

END FENCE
Sta. 65+20.19

NOTE: CENTURY LINK (FO) CABLE IN 1¼" INNER-DUCT BORED UNDER RIVER WITH 12" GAS LINE.

EXIST. INTERIOR BENT (TYP.)

WD PILINGS

US 158 / US 13 BST 320.00'

MEDIAN V DITCH
SEE DETAIL C

M-350

B-77

TYPE-III

-L-

N 47° 50' 08.0" E

6' FDRS

2 1/2' 12' 2 1/2'

.025

.02

30'

12 1/2'

4'

8"

GRAU-350

TYPE III

CLASS II RIPRAP

END FENCE
Sta. 65+14.04

PROP. INTERIOR BENT (TYP.)

-L- POT STA.64+95.50
BEGIN APPROACH SLAB

-L- POT STA.65+19.50
BEGIN BRIDGE

RETROFIT OUTSIDE BARRIER TO PROVIDE BICYCLE SAFE BARRIER RAIL (SEE STRUCTURE PLANS)

REHABILITATE EXIST. BRIDGE DECK (SEE STRUCTURE PLANS)

CHOWAN RIVER

WOODS

48" WW FENCE

EXISTING R/W

RIVER TRAIL BST

S 48°07'05" W 285.75'

S 47°16'50" W 246.05'

47°16'50" W 148.00'

N 42°49'10" W 324.30'

2SFD

21 JEWEL J. COPELAND
DB 618 PG 248
MB 13 PG 52

20 LOUIS C. & BARBARA H. HARRISON
DB 554 PG 637
MB 13 PG 52

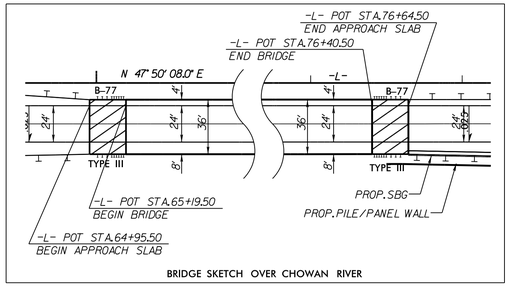
FOR -L- PROFILE SEE SHTS. 41 & 42

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

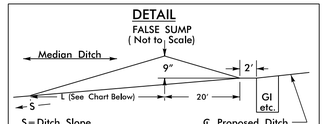
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FLevis

8/17/99



BRIDGE SKETCH OVER CHOWAN RIVER

DETAIL
FALSE SUMP
(Not to Scale)



S = Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

MATCHLINE -L- STA. 72+00 SEE SHEET 8

MATCHLINE -L- STA. 85+00 SEE SHEET 10

75 80 85

STATE OF NORTH CAROLINA
DB 1 PG 80

CHOWAN RIVER

RETROFIT OUTSIDE BARRIER TO PROVIDE BICYCLE SAFE BARRIER RAIL (SEE STRUCTURE PLANS)

REHABILITATE EXIST. BRIDGE DECK (SEE STRUCTURE PLANS)

EXIST. INTERIOR BENT (TYP.)

BEGIN FENCE Sta.76+41.87

48" WW FENCE

S 47°48'37" W 4247.34' MON. TO COR.

NOTE: (4) 1 1/4" INNERDUCTS OWNED BY PNG, WERE INSTALLED WITH THE 12" GAS LINE THROUGHOUT PROJECT.

RETAIN EXIST. PAVEMENT

NOTE: CENTURY LINK (FO) CABLE IN 1 1/4" INNER-DUCT BORED UNDER RIVER WITH 12" GAS LINE.

320.00'

1 TONS CL B RIPRAP W/5 SY FIL FAB

(0904) 15" RCP-III 55.56' 20' TYP.

2GI (0903) TYPE III

(0902) 2GI

GRAU-350 8d

US 158 / US 13 BST

-L- N 47° 50' 08.0" E

TYPE III B-77 M-350 N-350

(0907) 2GI 15" RCP-III FS

11 6" DECK DRAINS AT 12' CENTERS

-BL- 23 Sta. 61+61.23
-L- Sta. 76+51.72
(3.57' LT)

2GI (0901) F

CLASS II RIPRAP

PROP. PILE/PANEL RETAINING WALL & CHAIN LINK FENCE
-L- STA.76+50.00 TO -L- STA.82+00.00

END RETAINING WALL Sta.82+00.00

(0906) 2GI 15" RCP-III

CAT-1 2GI (0905)

1 TONS CL B RIPRAP W/5 SY FIL FAB (0908)

-L- POT STA.76+64.50
END APPROACH SLAB

PROP. SBG

-L- POT STA.76+40.50
END BRIDGE

BEGIN RETAINING WALL Sta.76+50.00

BEGIN FENCE Sta.76+41.87

CHOWAN RIVER

PROP. INTERIOR BENT (TYP.)

48" WW FENCE

S 47°48'37" W 4593.01' MON. TO MON

EXISTING R/W

STATE OF NORTH CAROLINA
DB 222 PG 935

FOR -L- PROFILE SEE SHT. 42

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

PLANS PREPARED BY :
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RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
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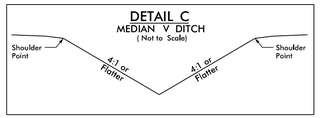
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kevis

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

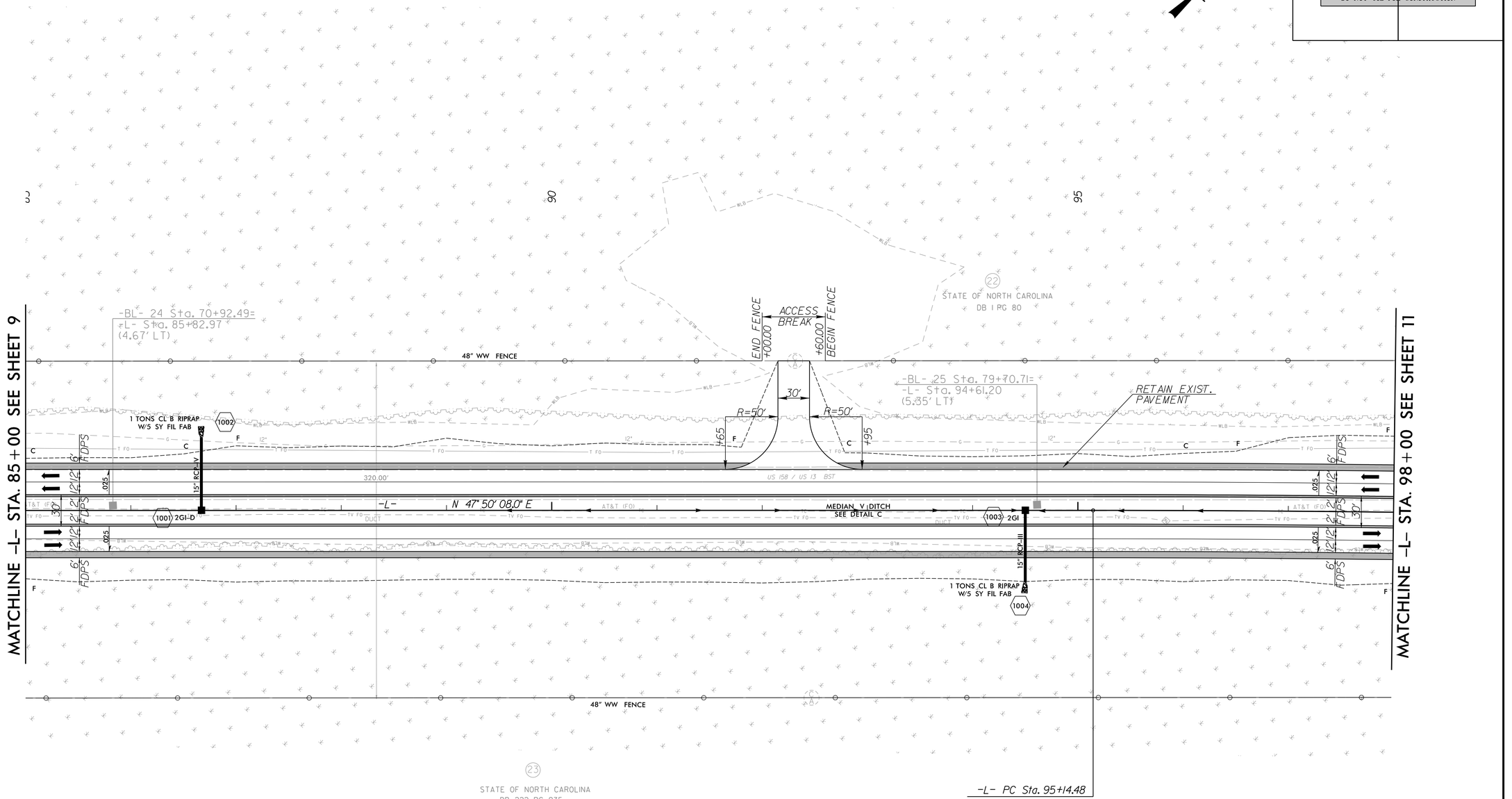
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL C
MEDIAN V DITCH
(Not to Scale)



–L– STA. 89+50 TO STA. 96+50

NAD 83



FOR –L– PROFILE SEE SHTS. 42 & 43

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

–L–
PI Sta 97+34.90
Δ = 1° 05' 53.3" (RT)
D = 0° 14' 56.8"
L = 440.83'
T = 220.42'
R = 23,000.00'

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

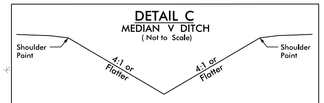
1/24/2012
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tkevis

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

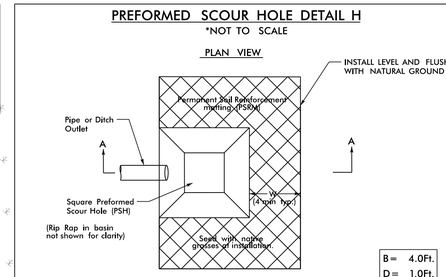
DETAIL C
MEDIAN V DITCH
(Not to Scale)



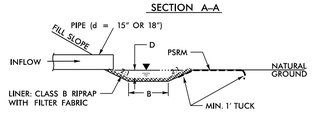
-L- STA. 99+50 TO STA. 101+00
-L- STA. 107+50 TO STA. 109+00

PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE

PLAN VIEW



SECTION A-A



308

-L- STA. 105+66 LT
-L- STA. 110+00 LT

NAD 83

MATCHLINE -L- STA. 98+00 SEE SHEET 10

MATCHLINE -L- STA. 111+00 SEE SHEET 12

STATE OF NORTH CAROLINA
DB I PG 80

48" WW FENCE

500' MEDIAN TRANSITION

RETAIN EXIST. PAVEMENT

PROP. 5" MONOLITHIC CONCRETE ISLAND

530' FULL LANE

320.00'

US 158 / NC 13 BST

MEDIAN V DITCH SEE DETAIL C

AT&T (FO)

CPES

1 TONS CL B RIPRAP W/5 SY FIL FAB

300' TAPER

150' TAPER

WOODS

-L- PRC Sta. 99+55.31

STATE OF NORTH CAROLINA
DB 222 PG 935

END FENCE
-Y1- +10.00
49.59'

BEGIN FENCE
-Y1- +10.05
49.79'

25' BLEND TO EXIST.

END CONSTRUCTION
-Y1- POC Sta.12+85.00

-BYI- 100 Sta. 8+32.86=
-Y1- Sta. 13+68.36
(16.45' LT)

STATE OF NORTH CAROLINA
DB 222 PG 935

-Y1- PT Sta. 14+03.04

S 31° 37' 31.2" W
SR 1131 - SHOUPS LANDING ROAD - BST

-L- POC Sta.106+45.00 =
-Y1- POT Sta. 10+00.00

-Y1- PC Sta. 10+84.88

GPS (R2507-3) Sta. 91+46.46=
-BYI- Sta. 5+00.00
-L- STA. 106+35.87
(31.04' RT)

PROP. 5" MONOLITHIC CONCRETE ISLAND

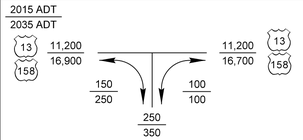
S 45°51'57" W 1515.67' COR. TO MON.

S 45°51'57" W 1342.72' MON. TO COR.

-L-	-Y1-
PI Sta 97+34.90	PI Sta 105+47.37
△ = 1° 05' 53.3" (RT)	△ = 2° 56' 57.0" (LT)
D = 0° 14' 56.8"	D = 0° 14' 56.8"
L = 440.83'	L = 11,183.87'
T = 220.42'	T = 592.07'
R = 23,000.00'	R = 23,000.00'

-Y1-
PI Sta 12+56.68
△ = 53° 36' 55.8" (RT)
D = 16° 51' 06.1"
L = 318.16'
T = 171.80'
R = 340.00'

2015 ADT
2035 ADT



PROJECTED TRAFFIC VOLUMES

FOR INTERSECTION DETAILS SEE SHEET 2J

FOR -L- PROFILE SEE SHT. 43
FOR -Y1- PROFILE SEE SHT. 60

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

PLANS PREPARED BY :
RK&K
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900 RIDGEFIELD DRIVE SUITE 350
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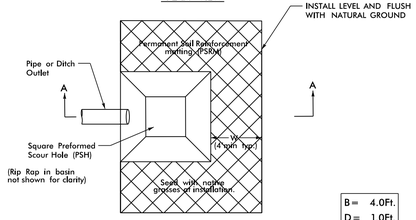
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

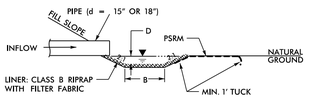
PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE

PLAN VIEW



B = 4.0Ft.
D = 1.0Ft.
W = 4.0Ft.

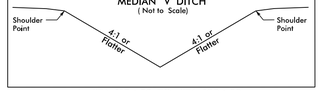
SECTION A-A



3:08

-L- STA. 113+25 RT

DETAIL C
MEDIAN V DITCH
(Not to Scale)



-L- STA. 117+50 TO STA. 123+50

NAD 83

MATCHLINE -L- STA. 111+00 SEE SHEET 11

MATCHLINE -L- STA. 123+50 SEE SHEET 13

STATE OF NORTH CAROLINA
DB 222 PG 935

115

120

-L- PT Sta. 111+39.18

GPS R25074 Sta. 102+60.15=
-L- Sta. 117+48.28
(12.19' LT)

24 CLAUDE B. BUNDY
DB 180 PG 151

48" WW FENCE

RETAIN EXIST. PAVEMENT

150' TAPER

FILL OR REMOVE 60" RCP

60" RCP W/ EQUALIZER

HW

+09

+40

+35

US 158/US 13 BST

320.00'

N 45° 59' 04.3" E

PSRM

MEDIAN V DITCH SEE DETAIL C

15" RCP-III

46'

CPES

PSH SEE DET H

150' TAPER

530' FULL LANE

PROP. 5" MONOLITHIC CONCRETE ISLAND

1 TONS CL B RIPRAP W/5 SY FIL FAB

AT&T (FO)

TV FO

DUCT

WOODS

WLB

BTM

TC

-L-

-L-
PI Sta 105+47.37
Δ = 2° 56' 57.0" (LT)
D = 0° 14' 56.8"
L = 1,183.87'
T = 592.07'
R = 23,000.00'

FOR BULB DETAIL SEE SHEET 2H

FOR -L- PROFILE SEE SHTS. 43 & 44

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
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8/17/99

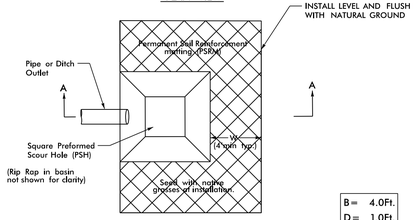
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PREFORMED SCOUR HOLE DETAIL H

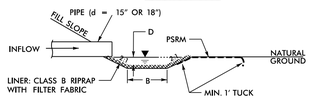
*NOT TO SCALE

PLAN VIEW



B = 4.0Ft.
D = 1.0Ft.
W = 4.0Ft.

SECTION A-A

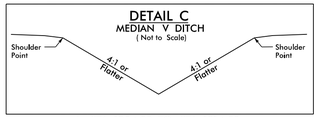


308

-L- STA. 132+00 RT

DETAIL C

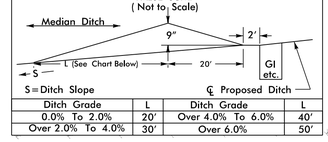
MEDIAN V DITCH
(Not to Scale)



-L- STA. 125+00 TO STA. 131+50

DETAIL

FALSE SUMP
(Not to Scale)



S = Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

NAD 83

MATCHLINE -L- STA. 123+50 SEE SHEET 12

MATCHLINE -L- STA. 137+00 SEE SHEET 14

STATE OF NORTH CAROLINA
DB 222 PG 935

CLAUDE B. BUNDY
DB 180 PG 151

MYRTLE ASKEW IZON
DB 207 PG 918

EASTERN N.C. NATURAL GAS, LLC
DB 196 PG 158

PIEDMONT NATURAL GAS HIGH PRESSURE VALVE STATION

EASTERN NC NATURAL GAS HIGH PRESSURE VALVE

TOM JOYNER LANE

END FENCE +60.00
ACCESS BREAK
BEGIN FENCE +20.00

END FENCE +35.00
ACCESS BREAK
BEGIN FENCE +95.00

END FENCE +20.00
ACCESS BREAK
BEGIN FENCE +80.00

-BL- 26 Sta. 112+34.38=
-L- Sta. 127+22.51
(10.33' LT)

-BL- 27 Sta. 121+95.79=
-L- Sta. 136+83.90
(4.67' LT)

530' FULL LANE
150' TAPER
PROP. 5" MONOLITHIC CONCRETE ISLAND
RETAIN EXIST. PAVEMENT
FILL OR REMOVE
320.00'
25' TYP.
+50
+82.00
+02

HW 1302
36" RCP-III EQUALIZER
DI 1301
MEDIAN V DITCH SEE DETAIL C 1303
2GI
FS -L-
15" RCP-III
PSH SEE DET H 1304
HW

N 45° 59' 04.3" E
S 45°58'37" W 1040.29' MON. TO MON.
S 46°00'48" W 1034.91'
S 45°58'37" W 993.42'
N 16°56'14" W 16.42' ECM TO COR.
S 51°35'40" W 1235.71' ECM
S 17°23'31" E 1588.98'
N 17°10'07" W 21.59'
S 46°01'17" W 79.33'
63.67' ECM TO COR.
48" WW FENCE
5'WW
8ft CHL
WOODS
(AATFI)
AT&T (FO)
US 158/US 13 BST

23 STATE OF NORTH CAROLINA DB 222 PG 935

27 WANDA SCARBOROUGH THURMAN E. ASKEW WB 04 WP E43

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAIL SEE SHEET 2H

FOR -L- PROFILE SEE SHT. 44

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
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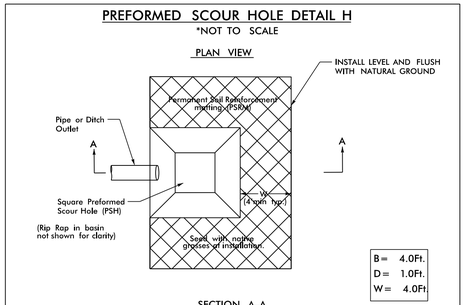
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PREFORMED SCOUR HOLE DETAIL H

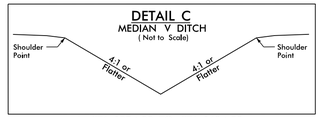
*NOT TO SCALE



-L- STA. 138+50 RT

DETAIL C

MEDIAN V DITCH
(Not to Scale)



-L- STA. 137+00 TO STA. 149+50

NAD 83

MATCHLINE -L- STA. 137+00 SEE SHEET 13

MATCHLINE -L- STA. 150+50 SEE SHEET 15

26 MYRTLE ASKEW-WIZON DB 207 PG 918

28 WALTER L. ASKEW DB 110 PG 133

30 CARTER & SONS FURNITURE COMPANY, INC. DB 114 PG 149

31 MERLE T. HALE WB 95 WP E50

33 ELEAZER A. & PHYLLIS J. TILLETT DB 177 PG 75

27 WANDA SCARBOROUGH THURMAN E. ASKEW WB 04 WP E43

WALTER L. ASKEW DB 110 PG 133

29 WALTER L. ASKEW DB 110 PG 407

32 CHARLES W. & JEAN W. COOKSEY DB 124 PG 05

END RESURFACING SBL -L- Sta.141+55.00

-BL- 28 Sta. 132+21.27= -L- Sta. 147+09.33 (15.11' LT)

ACCESS BREAK

END FENCE +90.00

+50.00 BEGIN FENCE

END FENCE +69.85

+29.85 BEGIN FENCE

END FENCE +60.00

+20.00 BEGIN FENCE

RETAIN EXIST. PAVEMENT

48" WW FENCE

CAT-1

HW

FILL OR REMOVE BURIED EXISTING 4'X2' RCBC

MEDIAN V DITCH N 45° 59' 04.3" E SEE DETAIL C

2GI-D (1402)

15" RCP-III

CPES

PSH SEE DET H

GRAU-350

2GI (1404)

CAT-1 CPES (1405)

1 TONS CL B RIPRAP W/5 SY FIL FAB

30" RCP-V EQUALIZER

PSRM

PROP. 5' MONOLITHIC CONCRETE ISLAND

150' TAPER

530' FULL LANE

+00.00

+40.58 100

+32.09 158

+69.85 100

+25.00 100

+80.00 150

+60.00 130

+90.00 150

+00.00 130

+40.00 100

+30.37

25' TYP.

+39.44

+99.44

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAIL SEE SHEET 2H

FOR -L- PROFILE SEE SHTS. 44 & 45

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
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kevins

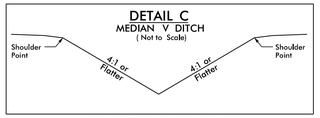
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

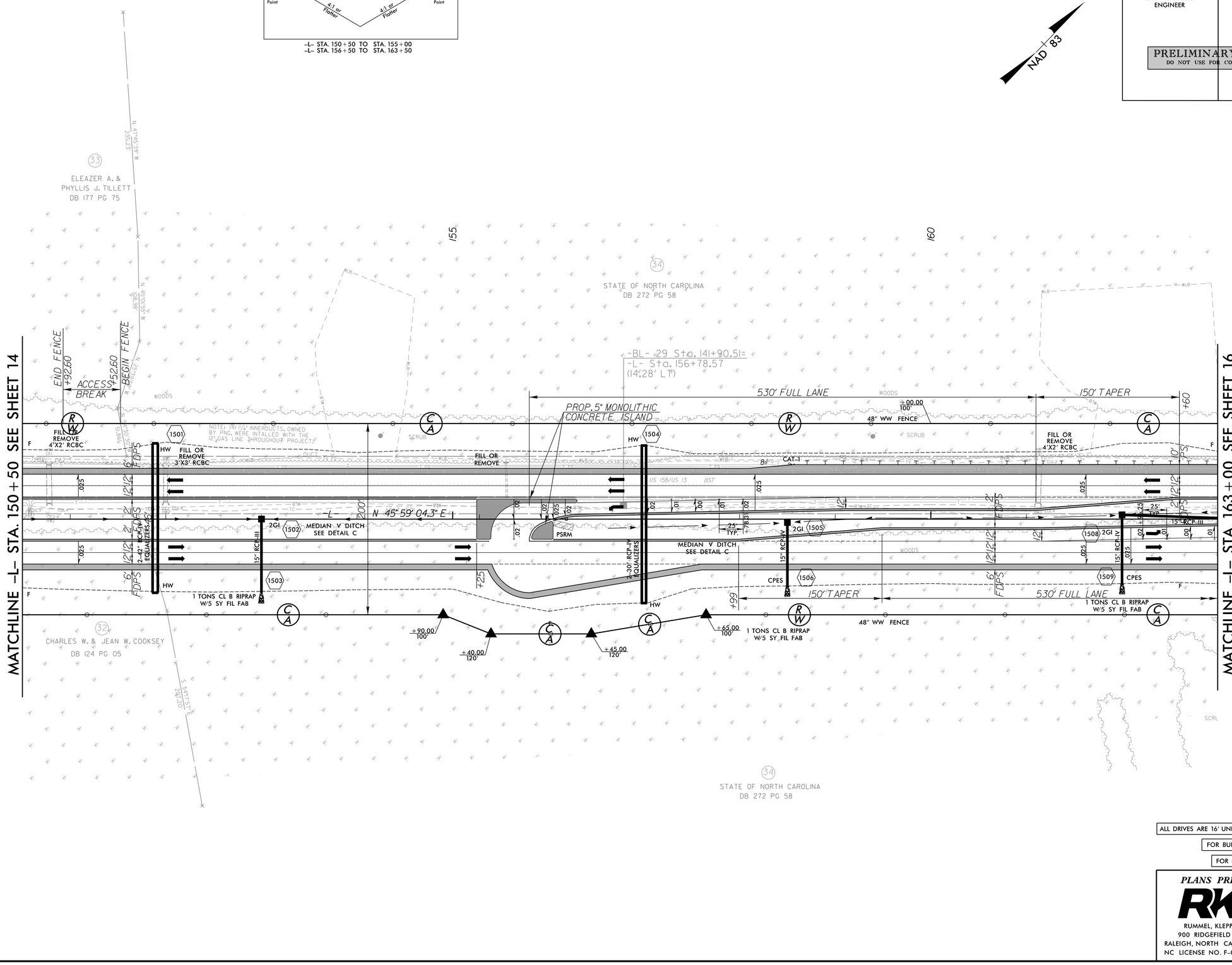
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

DETAIL C
MEDIAN V DITCH
(Not to Scale)



-L- STA. 150+50 TO STA. 155+00
-L- STA. 156+50 TO STA. 163+50



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAIL SEE SHEET 2H

FOR -L- PROFILE SEE SHT. 45

PLANS PREPARED BY :
RK&K
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900 RIDGEFIELD DRIVE SUITE 350
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1/24/2012
K:\Roadway\Proj\R2507A_Rdy_psh15.dgn
kevis

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

DETAIL C
MEDIAN V DITCH
(Not to Scale)

–L– STA. 156+50 TO STA. 163+50

DETAIL
FALSE SUMP
(Not to Scale)

S = Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE

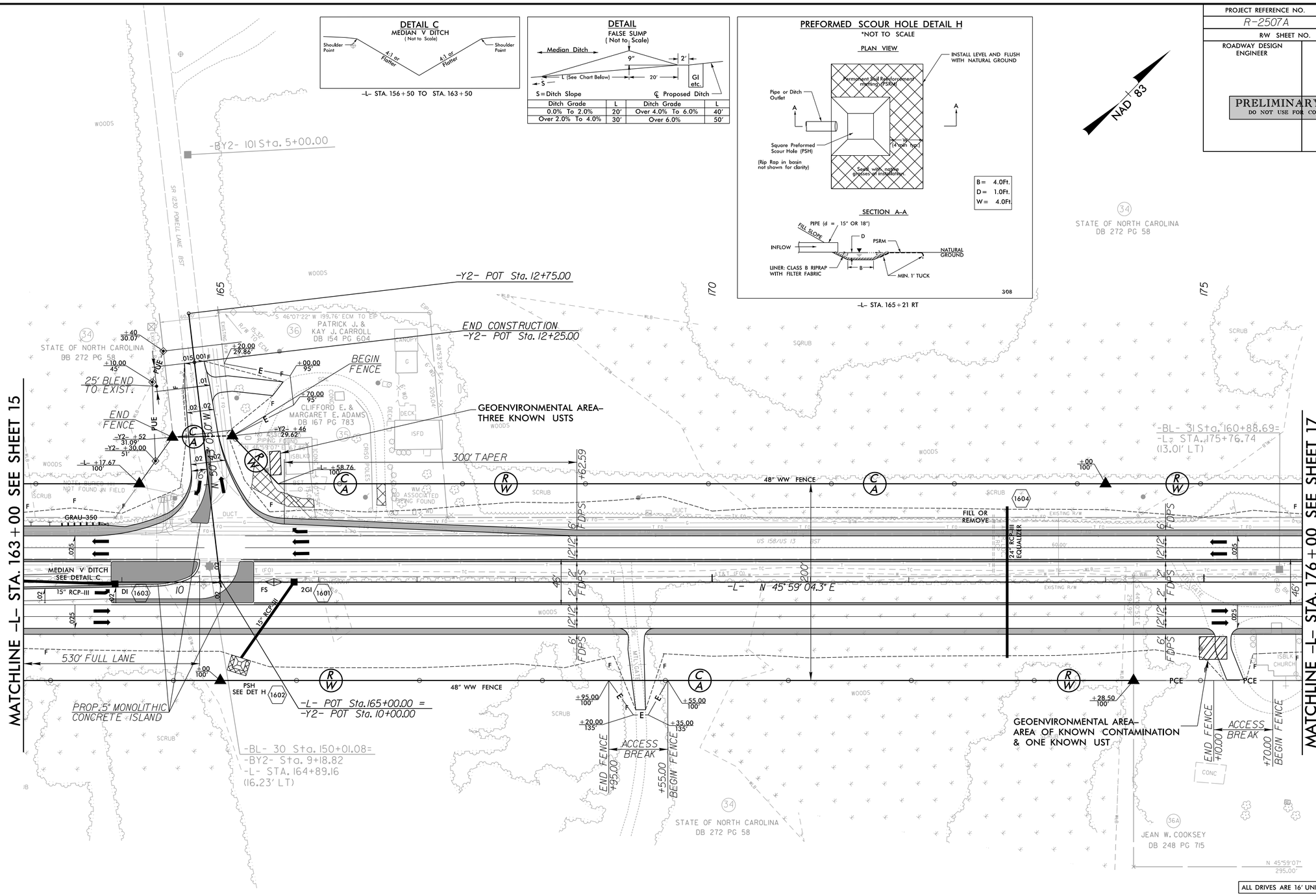
PLAN VIEW

B = 4.0Ft.
D = 1.0Ft.
W = 4.0Ft.

SECTION A–A

3-08

–L– STA. 165+21 RT



2015 ADT / 2035 ADT	POWELL LN (SR 1230)		
	250 / 350		
150 / 250		100 / 100	
13 / 158	11,200 / 16,700	11,100 / 16,600	13 / 158

PROJECTED TRAFFIC VOLUMES

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAIL SEE SHEET 2K

FOR –L– PROFILE SEE SHT. 45 & 46
FOR –Y2– PROFILE SEE SHT. 60

PLANS PREPARED BY :
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1/24/2012
R:\Projects\Roadway\Proj\R2507A_Rdy_psh16.dgn
FLeWis

8/17/99

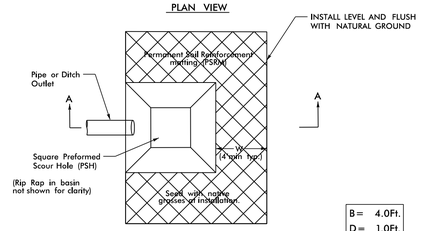
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PREFORMED SCOUR HOLE DETAIL H

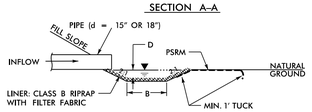
*NOT TO SCALE

PLAN VIEW



B = 4.0Ft.
D = 1.0Ft.
W = 4.0Ft.

SECTION A–A

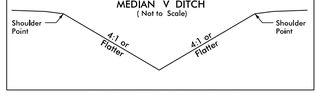


3/08

–L– STA. 177+31 RT

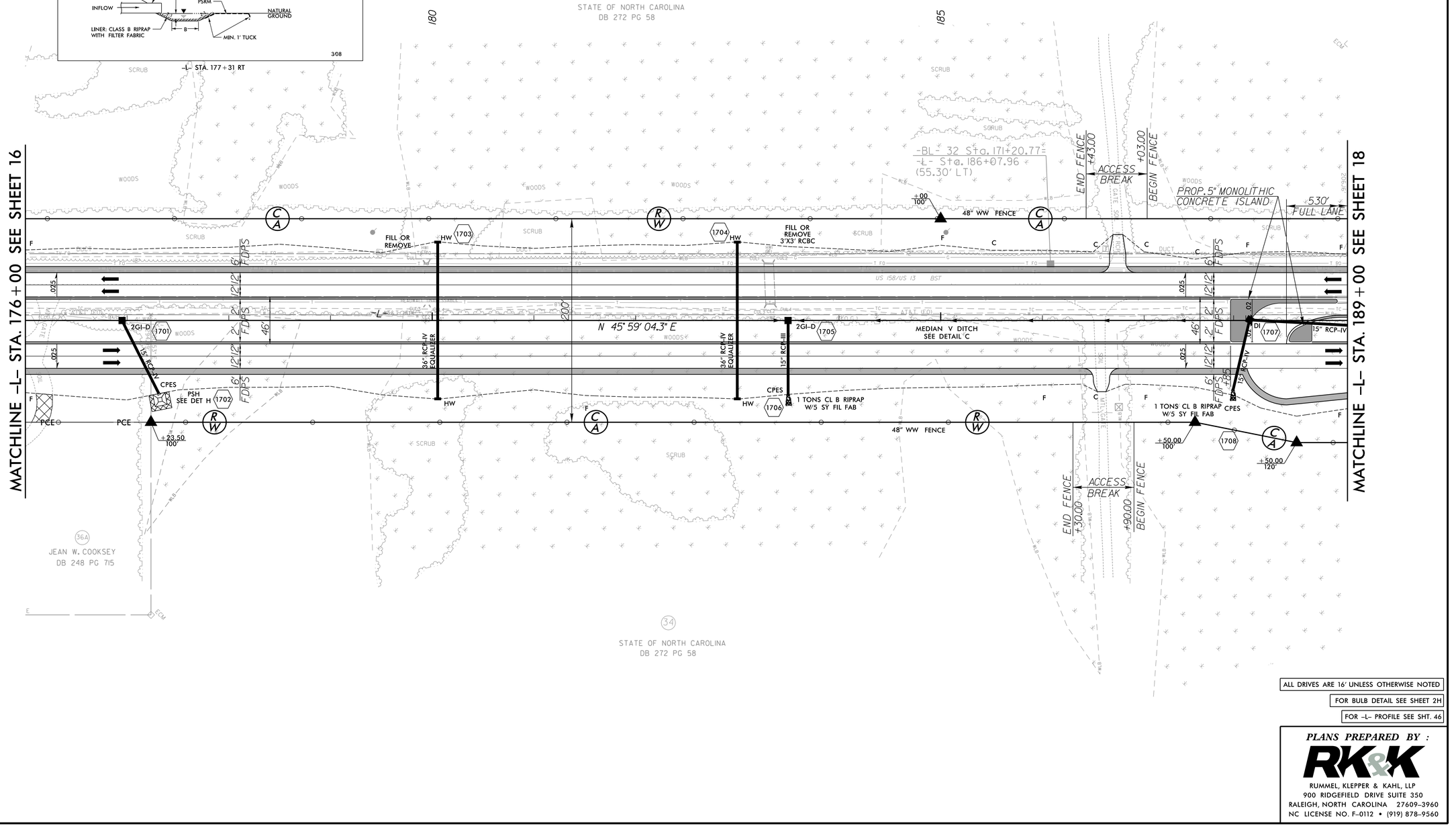
DETAIL C

MEDIAN V DITCH
(Not to Scale)



–L– STA. 183+00 TO STA. 187+50

NAD 83



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAIL SEE SHEET 2H

FOR –L– PROFILE SEE SHT. 46

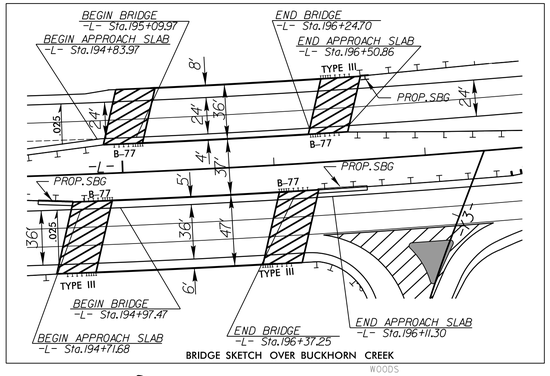
PLANS PREPARED BY :
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RUMMEL, KLEPPER & KAHL, LLP
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FL5 FLS

8/17/99

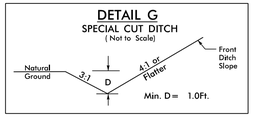
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



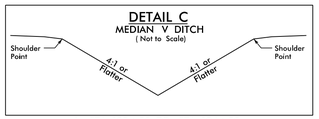
BRIDGE SKETCH OVER BUCKHORN CREEK

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



-L- STA. 200+20 TO STA. 204+00 LT

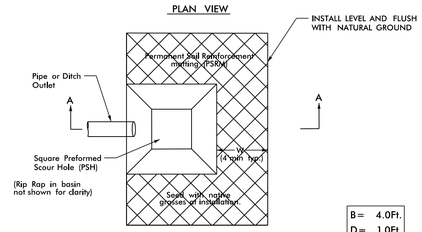
DETAIL C
MEDIAN V DITCH
(Not to Scale)



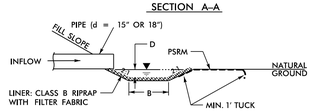
-L- STA. 192+50 TO STA. 194+50

PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE

PLAN VIEW



SECTION A–A



308

-L- STA. 200+20 LT

NAD 83

MATCHLINE -L- STA. 189+00 SEE SHEET 17

MATCHLINE -L- STA. 202+50 SEE SHEET 19

-L- TS Sta. 191+87.77

CHRISTOPHER S. FUTRELL DB 247 PG 835

BRENDA P. DEPRETIS DB 264 PG 583

DAVID A. & JUANITA L. SPRUILL DB 242 PG 248

THOMAS C., IV & NAN L. COXE DB 229 PG 543 PC 1SLIDE 113-6 TRACT 4 (STORY TRACT 1) TRACT 5 (STORY TRACT 2)

STATE OF NORTH CAROLINA DB 272 PG 58

JEANETTE A. HEDGEPETH DB 114 PG 446 PC 2 SLIDE 30-4

RICHARD F., JR. & KATHLEEN M. POWERS DB 156 PG 44

GEOENVIRONMENTAL AREA– THREE KNOWN USTS -L- SC Sta. 192+87.77

-L- POC STA.195+15.00 BEGIN BRIDGE

-L- POC STA.194+89.00 BEGIN APPROACH SLAB

-L- POC STA.196+25.00 END BRIDGE

-L- POC STA.196+51.16 END APPROACH SLAB

-BL- 33 Sta. 182+35.24= -BY3- Sta. 5+00.00 -L- Sta. 197+20.60 (14.67' RT)

-L- POC Sta.197+39.00= -Y3- POT Sta. 13+46.39

BEGIN FENCE Sta.196+34.45 END FENCE Sta.195+20.76

END FENCE +38.18

ACCESS BREAK +98.18

BEGIN FENCE +58.18

END FENCE +88.00

ACCESS BREAK

BEGIN FENCE +56.00

ACCESS BREAK

530' FULL LANE

150' TAPER

CHORD 20' R=40'

+87.77 100'

+18.00 100'

+83.77

+40.00 110'

15" CAAP 2 ELBOWS ROD & LUG 1 TONS CL B RIPRAP W/5 SY FIL FAB

CLASS II RIPRAP

TYPE III

2GI

GRAU-350

8d

48" WW FENCE

SPECIAL CUT DITCH SEE DETAIL G

PSH SEE DET H

TDPS

15" RCP-IV

MEDIAN V DITCH SEE DETAIL C

25' TYP.

+38.35

M-350

PROP. SBG

B-77

TYPE III

CLASS II RIPRAP

BEGIN FENCE Sta.196+14.69

1-TONS CL B RIPRAP W/5 SY FIL FAB

CAT-1

GRADE TO DRAIN

-L- +75.00 100'

-Y3- PT Sta. 12+85.22

SEPTIC SYSTEM

END FENCE +30.00

+90.00

ACCESS BREAK

END FENCE Sta.194+78.88

-L- POC STA.194+65.22 BEGIN APPROACH SLAB

-L- POC STA.194+91.00 BEGIN BRIDGE

PROP. 5" MONOLITHIC CONC. ISLAND

-L- +15.00 120'

+60 40'

+87.50 40'

-Y3- PC Sta. 10+87.50

-L- POC STA.196+01.00 END BRIDGE

-L- POC STA.196+26.94 END APPROACH SLAB

+25.00 40', 24.68'

END FENCE Sta.10+25.00

25' BLEND TO EXIST.

+25.00 40', 25.33'

BEGIN CONSTRUCTION -Y3- POT Sta. 10+25.00

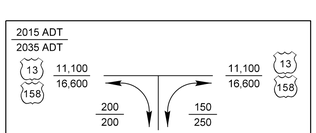
BEGIN FENCE Sta.10+25.00

N 37° 25' 31.1" W

BARFIELD ROAD SR 1128

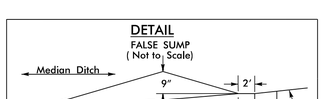
-L-	-Y3-
PIs Sta 192+54.44	PI Sta 198+46.25	PI Sta 11+86.87
Θs = 0° 27' 31.4"	△ = 10° 13' 13.7" (LT)	△ = 14° 09' 38.6" (RT)
Ls = 100.00'	D = 0° 55' 02.9"	D = 7° 09' 43.1"
LT = 66.67'	L = 1,113.99'	L = 197.72'
ST = 33.33'	T = 558.48'	T = 99.37'
	R = 6,245.00'	R = 800.00'
	e = 0.025 ft/ft	e = 0.040 ft/ft
	Runoff = 100'	Runoff = 70'

2015 ADT
2035 ADT



PROJECTED TRAFFIC VOLUMES

DETAIL
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAIL SEE SHEET 2L

FOR –L– PROFILE SEE SHT. 46
FOR –Y3– PROFILE SEE SHT. 60

PLANS PREPARED BY :
RK&K
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NC LICENSE NO. F-0112 • (919) 878-9560

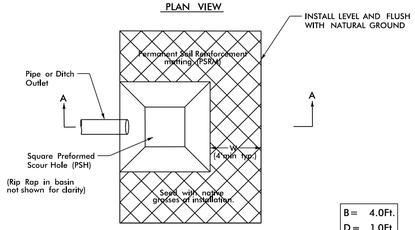
K:\24\2012\R-2507A\Roadway\Proj\R2507A_Rdy_pshl8.dgn
kkeus

8/17/99

PREFORMED SCOUR HOLE DETAIL H

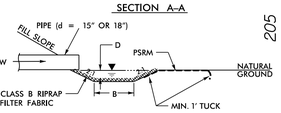
*NOT TO SCALE

PLAN VIEW



B=	4.0Ft.
D=	1.0Ft.
W=	4.0Ft.

SECTION A–A



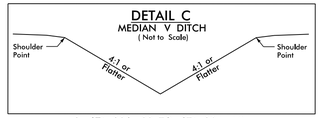
308

–L– STA. 206+92 RT

DETAIL C

MEDIAN V DITCH

(Not to Scale)

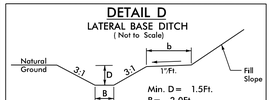


–L– STA. 206+00 TO STA. 207+50
–L– STA. 211+00 TO STA. 213+00

DETAIL D

LATERAL BASE DITCH

(Not to Scale)



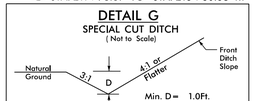
Min. D= 1.5Ft.
B= 2.0Ft.
b= 5.0Ft.

–L– STA. 211+78.67 TO STA. 213+80.38 RT

DETAIL G

SPECIAL CUT DITCH

(Not to Scale)



Min. D= 1.0Ft.

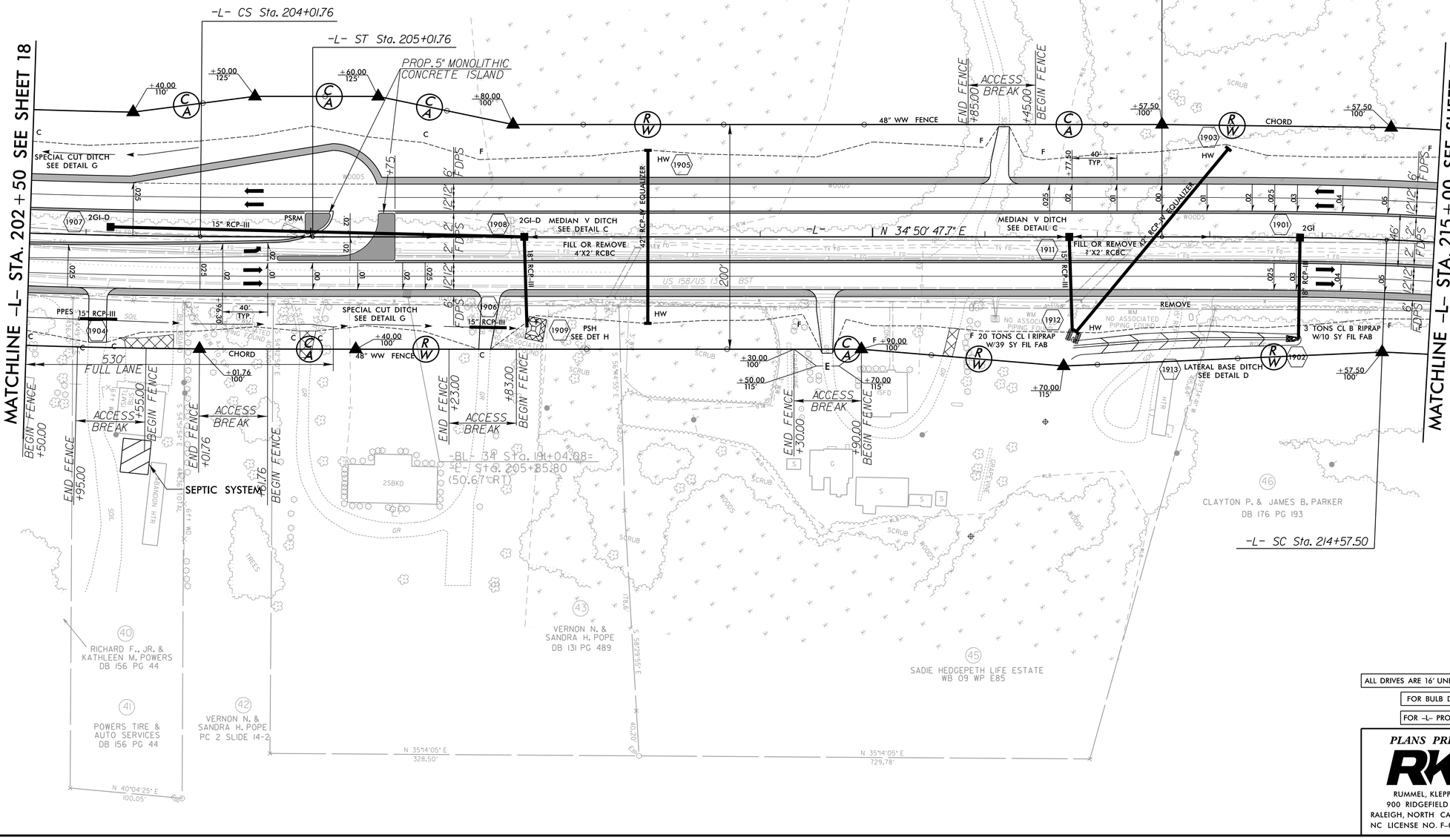
–L– STA. 200+20 TO STA. 204+00 LT
–L– STA. 202+50 TO STA. 206+90 RT

–L–			
PI Sta 198+46.25	PIs Sta 204+35.10	PIs Sta 213+90.84	PI Sta 218+32.33
△ = 10° 13' 13.7" (LT)	Θs = 0° 27' 31.4"	Θs = 2° 17' 30.6"	△ = 17° 03' 14.8" (RT)
D = 0° 55' 02.9"	Ls = 100.00'	Ls = 200.00'	D = 2° 17' 30.6"
L = 1,113.99'	LT = 66.67'	LT = 133.34'	L = 744.13'
T = 558.48'	ST = 33.33'	ST = 66.68'	T = 374.83'
R = 6,245.00'			R = 2,500.00'
e = 0.025 ft/ft			e = 0.050 ft/ft
Runoff = 100'			Runoff = 200'

NAD 83

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR –L– PROFILE SEE SHTS. 46 & 47

PLANS PREPARED BY :

RK&K

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1/24/2012
R:\Projects\Roxboro\Proj\R2507A_Rdy_psh19.dgn
FLEWIS

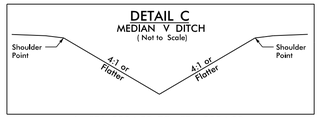
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

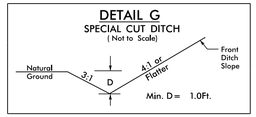
NAD 83

DETAIL C
MEDIAN V DITCH
(Not to Scale)



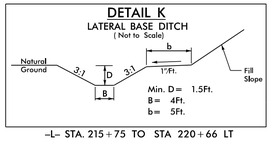
–L– STA. 220+50 TO STA. 225+00

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



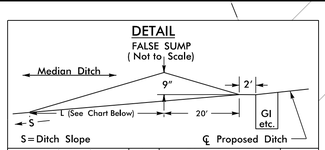
–L– STA. 217+30 TO STA. 221+25 RT

DETAIL K
LATERAL BASE DITCH
(Not to Scale)



–L– STA. 215+75 TO STA 220+66 LT

DETAIL
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

(44)
THOMAS C., IV & NAN L. COXE
DB 229 PG 543
PC I SLIDE 113-6
TRACT 4 (STORY TRACT 1)
TRACT 5 (STORY TRACT 2)

220

STORY'S CROSSROADS HISTORIC DISTRICT

225

(48)
JOHN W. ASKEW
REVOCABLE LIVING TRUST
DB 228 PG 34

(51)
MARY S. SMOAK
WB 92 WP E27

-BL- 35 Sta. 201+82.10=
-L- Sta. 216+65.38
(8.34' RT)

-BL- 36 Sta. 211+32.59=
-L- Sta. 226+21.90
(14.76' RT)

215

+35.00
125'

LATERAL BASE DITCH
SEE DETAIL K

+01.62
100'

END FENCE +01.62

ACCESS BREAK

BEGIN FENCE +61.62

48" WW FENCE
CHORD

+01.62
100'

+65.00
100'

MATCHLINE –L– STA. 215+00 SEE SHEET 19

MEDIAN V DITCH
SEE DETAIL C

N 56° 29' 03.7" E

36" RCP-IV
EQUALIZER

2GI-D

REMOVE BURIED
EXISTING PIPE

36" RCP-III
EQUALIZER

15" RCP-IV

40'
TYP.

SPECIAL CUT DITCH
SEE DETAIL G

15" RCP-III

PPES

CHORD
48" WW FENCE

+01.62
100'

ACCESS BREAK

END FENCE +05.00

+65.00 BEGIN FENCE

END FENCE +30.00

+90.00 BEGIN FENCE

END FENCE +20.00

+80.00 BEGIN FENCE

-L- CS Sta. 222+01.62

-L- ST Sta. 224+01.62

(46)
CLAYTON P. & JAMES B. PARKER
DB 176 PG 193

(47)
WAYNE & ROSE HUDGINS
DB 227 PG 119
PC 2 SLIDE 90-1

(49)
RICHARD A. & JACQUELINE C. POPE
DB 176 PG 193
PC 2 SLIDE 22-5

(50)
EDWARD S. STORY
WB 92 WP E27

STORY'S CROSSROADS HISTORIC DISTRICT

HISTORIC DISTRICT

MATCHLINE –L– STA. 228+00 SEE SHEET 21

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR –L– PROFILE SEE SHT. 47

–L–

PI Sta 218+32.33
Δ = 17° 03' 14.8" (RT)
D = 2° 17' 30.6"
L = 744.13'
T = 374.83'
R = 2,500.00'
e = 0.050 ft/ft
Runoff = 200'

PIs Sta 222+68.30
Θs = 2° 17' 30.6"
Ls = 200.00'
LT = 133.34'
ST = 66.68'

PLANS PREPARED BY :

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

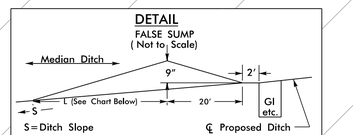
1/24/2012
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kevis

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL
FALSE SUMP
(Not to Scale)



S = Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

NAD 83

STORY'S CROSSROADS HISTORIC DISTRICT

MATCHLINE -L- STA. 228+00 SEE SHEET 20

MATCHLINE -L- STA. 241+00 SEE SHEET 22

-L- TS Sta. 235+76.58

-L- SC Sta. 237+36.58

PROP. 5" MONOLITHIC CONCRETE ISLAND

MARY S. SMOAK
WB 92 WP E27

EDWARD S. STORY
WB 92 WP E27

N 56° 29' 03.7" E

-L-

US 158/US 13 BST

2 TONS CL B RIPRAP W/7 SY FIL FAB

2 TONS CL B RIPRAP W/7 SY FIL FAB CUT /FILL TRANSITION

48" WW FENCE

CHORD

150' TAPER

530' FULL LANE

40' TYP.

25' TYP.

15" RCP-III

15" RCP-IV

INV = 15.4

CPES

DI

2GI

-BL- 37 Sta. 20+54.20=
-L- Sta. 235+43.12
(41.59' RT)

STORY'S CROSSROADS HISTORIC DISTRICT

-L-

PIs Sta 236+83.25	PI Sta 240+23.02
Θs = 1° 08' 45.3"	Δ = 8° 11' 30.6" (LT)
Ls = 160.00'	D = 1° 25' 56.6"
LT = 106.67'	L = 571.90'
ST = 53.34'	T = 286.44'
	R = 4,000.00'
	e = 0.04 ft/ft
	Runoff = 160'

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR -L- PROFILE SEE SHTS. 47 & 48

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

1/24/2012
K:\R\Roadway\Proj\R2507A_Rdy_psh21.dgn
kevis

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

DETAIL
FALSE SUMP
(Not to Scale)

S = Ditch Slope ℄ Proposed Ditch

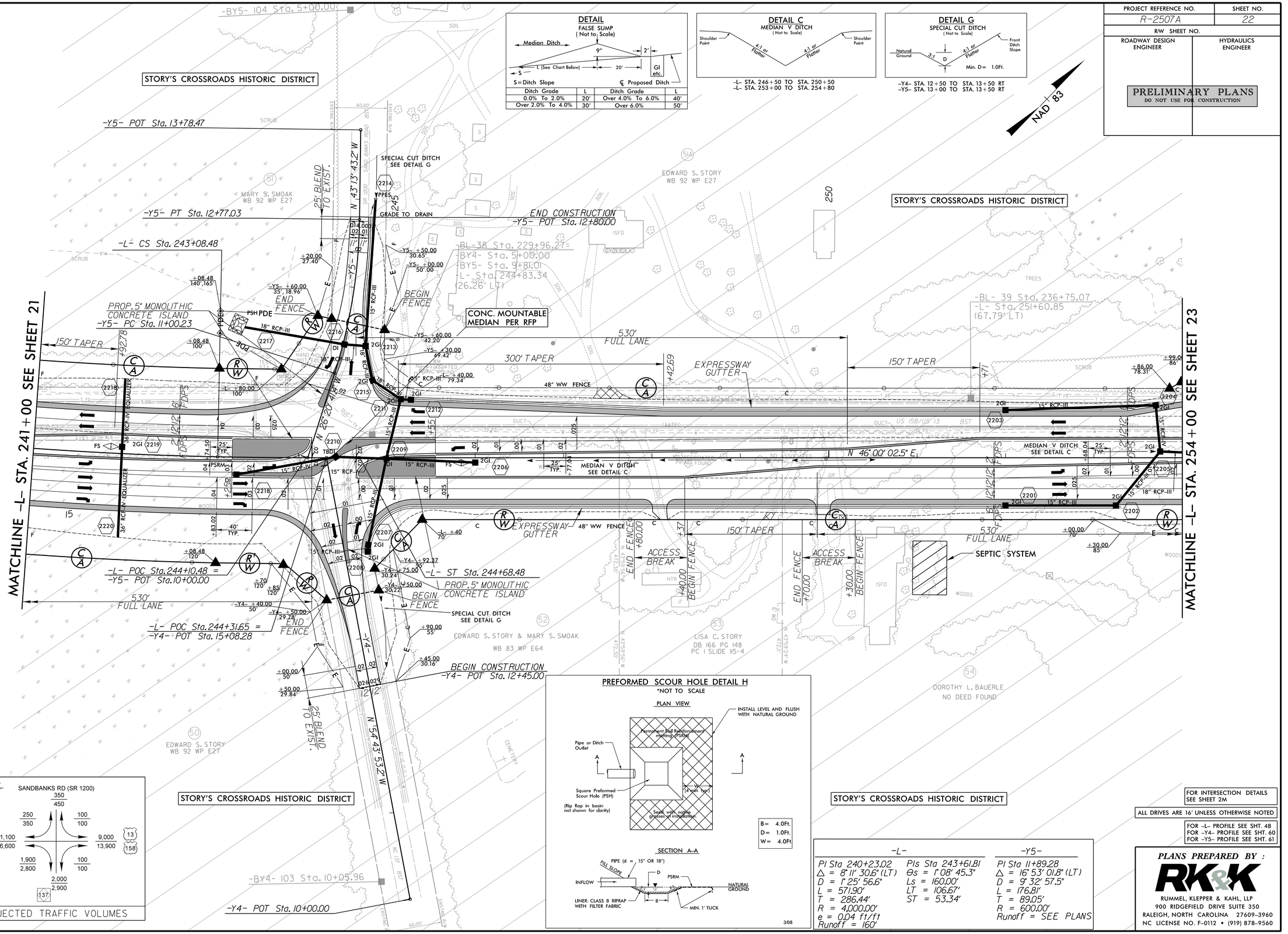
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL C
MEDIAN V DITCH
(Not to Scale)

-L- STA. 246+50 TO STA. 250+50
-L- STA. 253+00 TO STA. 254+80

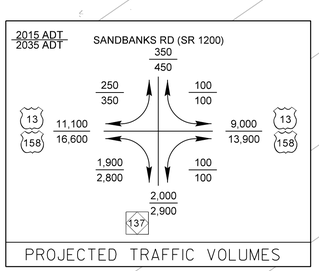
DETAIL G
SPECIAL CUT DITCH
(Not to Scale)

-Y4- STA. 12+50 TO STA. 13+50 RT
-Y5- STA. 13+00 TO STA. 13+50 RT



PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE

308



PROJECTED TRAFFIC VOLUMES

FOR INTERSECTION DETAILS SEE SHEET 2M

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR -L- PROFILE SEE SHT. 48
FOR -Y4- PROFILE SEE SHT. 60
FOR -Y5- PROFILE SEE SHT. 61

-L-		-Y5-
PI Sta 240+23.02	PIs Sta 243+61.81	PI Sta 11+89.28
Δ = 8° 11' 30.6" (LT)	Θs = 1° 08' 45.3"	Δ = 16° 53' 01.8" (LT)
D = 1° 25' 56.6"	Ls = 160.00'	D = 9° 32' 57.5"
L = 571.90'	LT = 106.67'	L = 176.81'
T = 286.44'	ST = 53.34'	T = 89.05'
R = 4,000.00'		R = 600.00'
e = 0.04 ft/ft		Runoff = SEE PLANS
Runoff = 160'		

PLANS PREPARED BY :

RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
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1/24/2012
R:\Roadway\Proj\R2507A_Rdy_psh22.dgn
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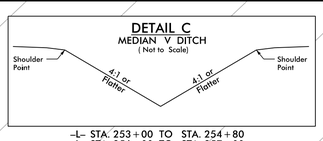
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

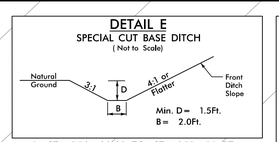
NAD 83

DETAIL C
MEDIAN V DITCH
(Not to Scale)



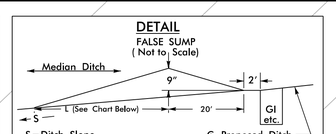
–L– STA. 253+00 TO STA. 254+80
–L– STA. 256+00 TO STA. 257+00

DETAIL E
SPECIAL CUT BASE DITCH
(Not to Scale)



–L– STA. 256+66.65 TO STA. 258+50 RT

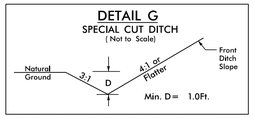
DETAIL
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



–L– STA. 256+00 TO STA. 256+66 RT

STORY'S CROSSROADS HISTORIC DISTRICT

MATCHLINE –L– STA. 254+00 SEE SHEET 22

MATCHLINE –L– STA. 267+00 SEE SHEET 24

EDWARD S. STORY
WB 92 WP E27

FRANKFORD MILAM JOHNSON FAMILY IRREVOCABLE TRUST
DB 198 PG 876
PC I SLIDE 27-2

–BL– 40 Sta. 246+65.30=
–L– Sta. 261+39.26
(82.00' LT)

ALEXANDER M., WILLIE M., & MURIEL E. WOODIS
DB 141 PG 114
PC I SLIDE 26-5

DOROTHY L. BAUERLE
NO DEED FOUND

–L– TS Sta. 256+26.58

–L– SC Sta. 258+26.58

TEMP. ROCK SEDIMENT DAM TYPE B SEE EC PLANS

PROP. 5" MONOLITHIC CONCRETE ISLAND

530' FULL LANE

MEDIAN V DITCH SEE DETAIL C

SPECIAL CUT DITCH SEE DETAIL G

SPECIAL CUT BASE DITCH SEE DETAIL E

FILL OR REMOVE 3'X2' RCBC

20 TONS CL I RIPRAP W/39 SY FIL FAB

REMOVE

RETAIN

18" RCP–III

24" RCP–III

36" RCP–III

15" RCP–III

48" WW FENCE

END FENCE +17.00

ACCESS BREAK

BEGIN FENCE +77.00

END FENCE +75.00

BEGIN FENCE +35.00

FDPS

HISTORIC DISTRICT

–L–

PIs Sta 257+59.92
Θs = 2° 17' 30.6"
Ls = 200.00'
LT = 133.34'
ST = 66.68'

PI Sta 263+99.27
Δ = 25° 48' 18.3" (RT)
D = 2° 17' 30.6"
L = 1,125.96'
T = 572.69'
R = 2,500.00'
e = 0.05 ft/ft
Runoff = 200'

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR –L– PROFILE SEE SHTS. 48 & 49

PLANS PREPARED BY :
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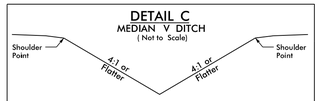
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

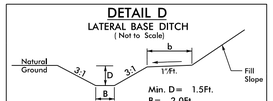
NAD 83

DETAIL C
MEDIAN V DITCH
(Not to Scale)



–L– STA. 274+05 TO STA. 289+50

DETAIL D
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.5Ft.
B= 2.0Ft.
b= 5.0Ft.

–L– STA. 279+20 TO STA. 282+40.26 LT

270 275 280

(56)
FRANKFORD MILAM JOHNSON FAMILY IRREVOCABLE TRUST
DB 198 PG 876
PC I SLIDE 27-2

-BL- 41 Sta. 255+87.21=
-L- Sta. 270+41.39
(55.66' LT)

-BL- 42 Sta. 265+39.35=
-L- Sta. 279+92.10
(17.46' LT)

MATCHLINE –L– STA. 267+00 SEE SHEET 23

MATCHLINE –L– STA. 280+00 SEE SHEET 25

WOODS, SCRUB, SOIL, CULT

+43.43 100'
+52.54 90°
+52.54 100'
CHORD
48" WW FENCE
2 TONS CL B RIPRAP W/7 SY FIL FAB
LATERAL BASE DITCH SEE DETAIL D
FILL W/ FLOWABLE FILL
US 158 US 13 BST
24" RCP
15" RCP
MEDIAN V DITCH SEE DETAIL C
N 76° 23' 22.0" E
2GI-D
2401
2402
6' FDPS
2' FDPS
12' 12' 2' 46'
40' TYP.
200'
DUCT
TV FO
T FO
G
TC
C
F
.05 .04 .03 .025 .00 .01 .02

END FENCE +55.00
ACCESS BREAK
+15.00 BEGIN FENCE

(56)
FRANKFORD MILAM JOHNSON FAMILY IRREVOCABLE TRUST
DB 198 PG 873
PC I SLIDE 87-5

-L- CS Sta. 269+52.54

-L- ST Sta. 271+52.54

EIP
N 76°17'44" E
539.00'

–L–	
PI Sta 263+99.27	PIs Sta 270+19.21
Δ = 25° 48' 18.3" (RT)	Θs = 2° 17' 30.6"
D = 2° 17' 30.6"	Ls = 200.00'
L = 1,125.96'	LT = 133.34'
T = 572.69'	ST = 66.68'
R = 2,500.00'	
e = 0.05 ft/ft	
Runoff = 200'	

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR –L– PROFILE SEE SHT. 49

PLANS PREPARED BY :
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1/24/2012
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FE Ellis

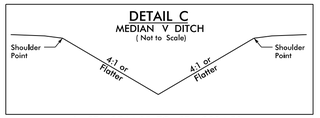
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

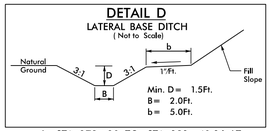
NAD 83

DETAIL C
MEDIAN V DITCH
(Not to Scale)



-L- STA. 274+05 TO STA. 289+50

DETAIL D
LATERAL BASE DITCH
(Not to Scale)

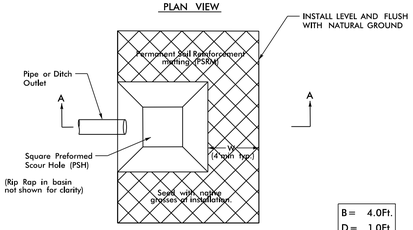


Min. D= 1.5Ft.
B= 2.0Ft.
b= 5.0Ft.

-L- STA. 279+20 TO STA. 282+40.26 LT
-L- STA. 290+50 TO STA. 296+78.95 RT
-Y6- STA. 11+50 TO STA. 13+24.64 RT

PREFORMED SCOUR HOLE DETAIL H
*NOT TO SCALE

PLAN VIEW



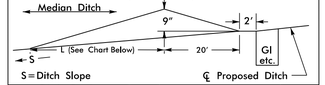
B= 4.0Ft.
D= 1.0Ft.
W= 4.0Ft.

SECTION A-A

308

-L- STA. 284+00 LT

DETAIL
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

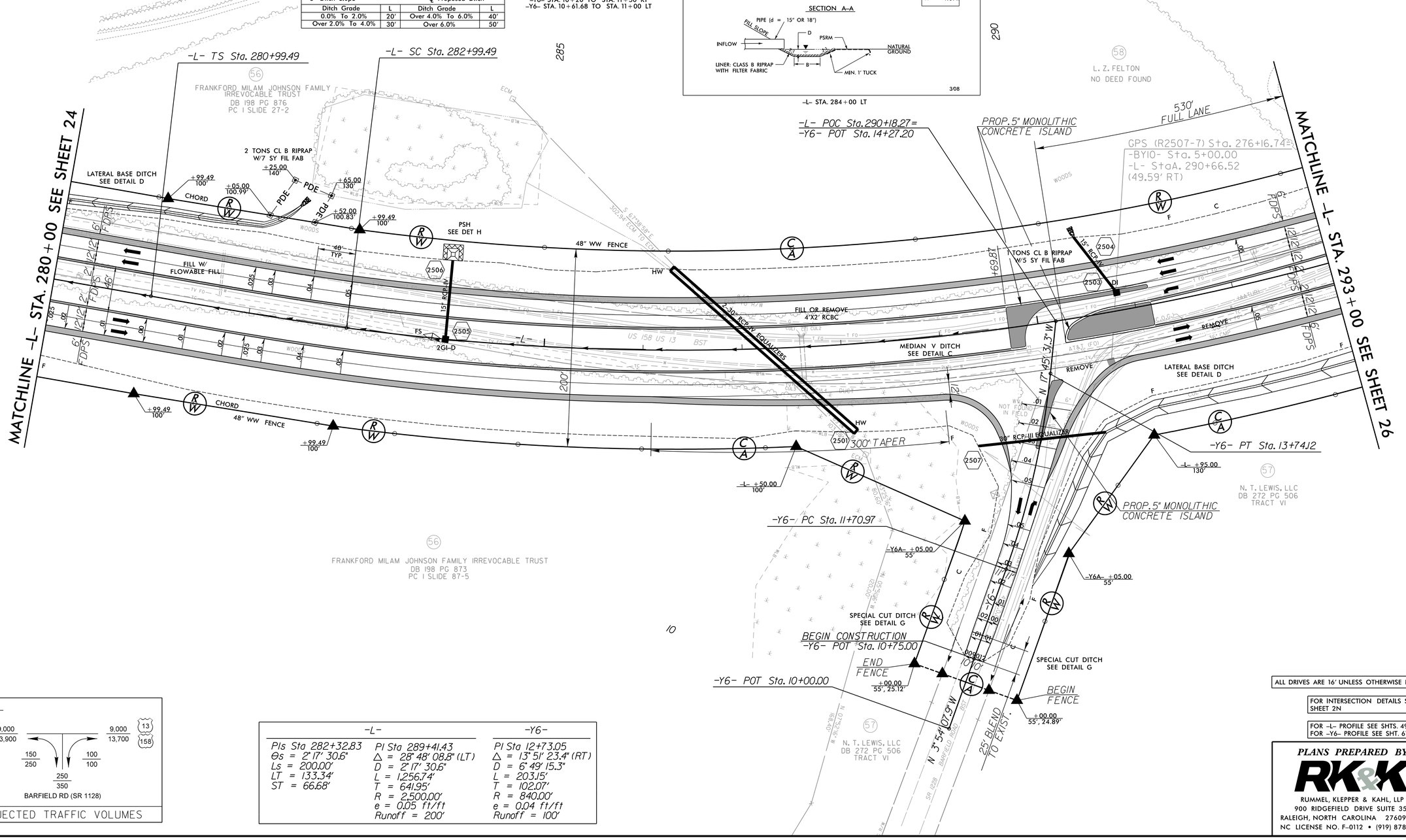
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)

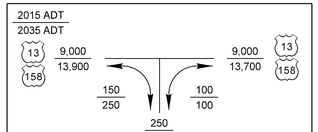


Min. D= 1.0Ft.

-Y6- STA. 10+20 TO STA. 11+50 RT
-Y6- STA. 10+61.68 TO STA. 11+00 LT



2015 ADT
2035 ADT



PROJECTED TRAFFIC VOLUMES

-L-		-Y6-
PIs Sta 282+32.83	PI Sta 289+41.43	PI Sta 12+73.05
Θs = 2° 17' 30.6"	△ = 28° 48' 08.8" (LT)	△ = 13° 51' 23.4" (RT)
Ls = 200.00'	D = 2° 17' 30.6"	D = 6° 49' 15.3"
LT = 133.34'	L = 1,256.74'	L = 203.15'
ST = 66.68'	T = 641.95'	T = 102.07'
	R = 2,500.00'	R = 840.00'
	e = 0.05 ft/ft	e = 0.04 ft/ft
	Runoff = 200'	Runoff = 100'

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAILS SEE SHEET 2N

FOR -L- PROFILE SEE SHTS. 49 & 50
FOR -Y6- PROFILE SEE SHT. 61

PLANS PREPARED BY :
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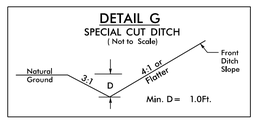
11/24/2012
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Ekeus

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

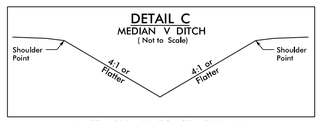
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



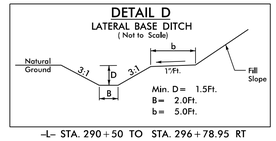
-L- STA. 293+50 TO STA. 295+50 LT
-L- STA. 301+00 TO STA. 302+00 LT
-L- STA. 305+00 TO STA. 306+00 LT

DETAIL C
MEDIAN V DITCH
(Not to Scale)



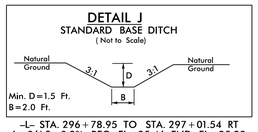
-L- STA. 300+00 TO STA. 300+75
-L- STA. 304+00 TO STA. 310+50

DETAIL D
LATERAL BASE DITCH
(Not to Scale)



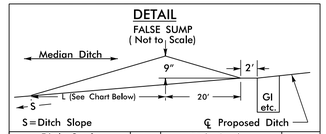
-L- STA. 290+50 TO STA. 296+78.95 RT

DETAIL J
STANDARD BASE DITCH
(Not to Scale)



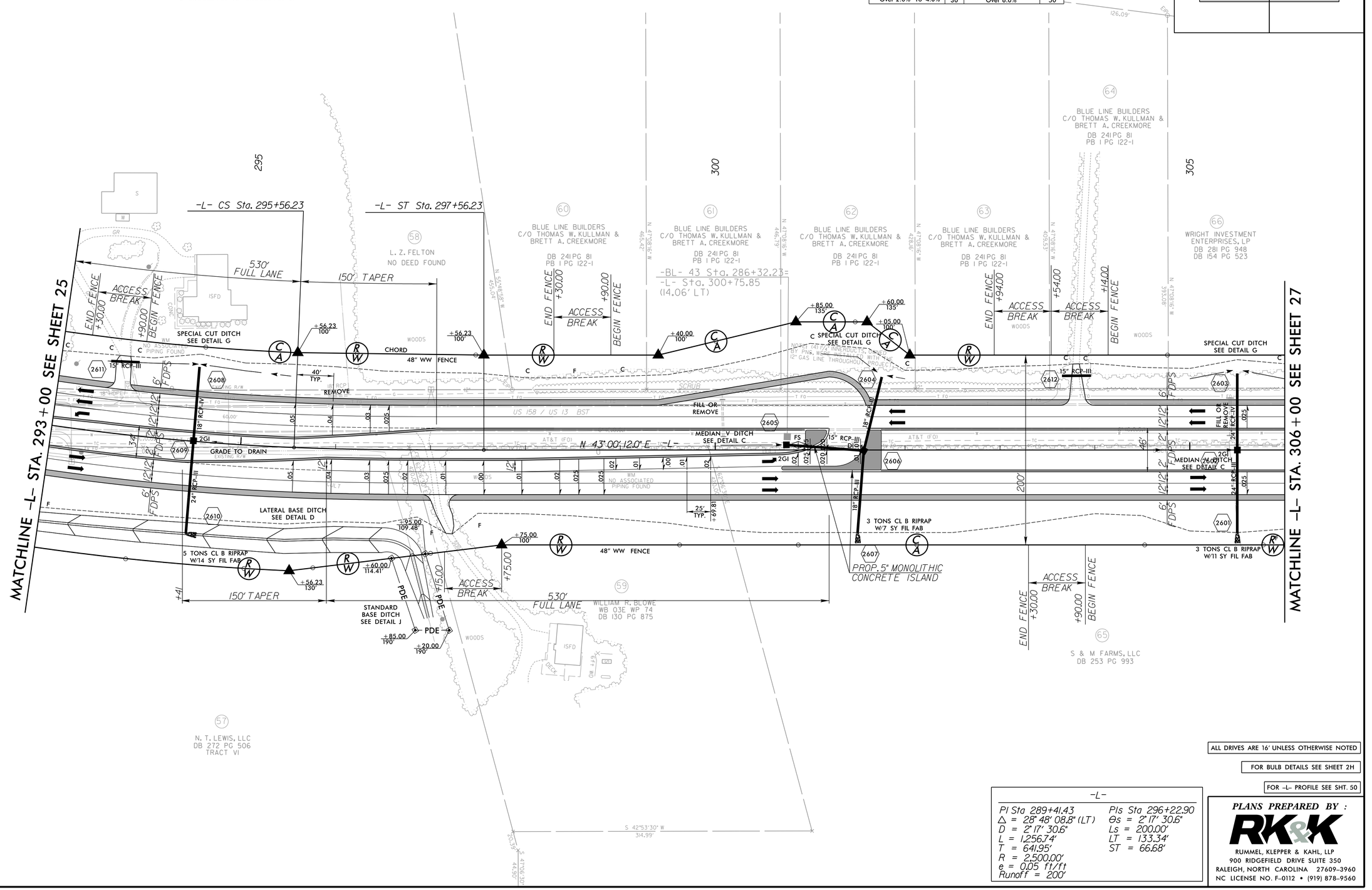
-L- STA. 296+78.95 TO STA. 297+01.54 RT
L=86' S=0.2% BEG EL=25.46 END EL=25.29

DETAIL
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

NAD 83



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR -L- PROFILE SEE SHT. 50

-L-

PI Sta 289+41.43	PIs Sta 296+22.90
Δ = 28° 48' 08.8" (LT)	Θs = 2° 17' 30.6"
D = 2° 17' 30.6"	Ls = 200.00'
L = 1,256.74'	LT = 133.34'
T = 641.95'	ST = 66.68'
R = 2,500.00'	
e = 0.05 ft/ft	
Runoff = 200'	

PLANS PREPARED BY :

RK&K

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NC LICENSE NO. F-0112 • (919) 878-9560

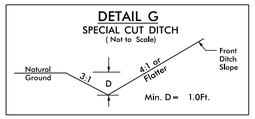
1/24/2012
R:\Roadway\Proj\R2507A_Rdy_psh26.dgn
FLewis

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

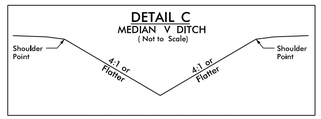
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



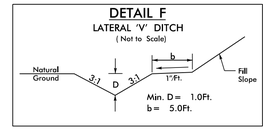
–L– STA. 314+00 TO STA. 318+00 LT

DETAIL C
MEDIAN 'V' DITCH
(Not to Scale)



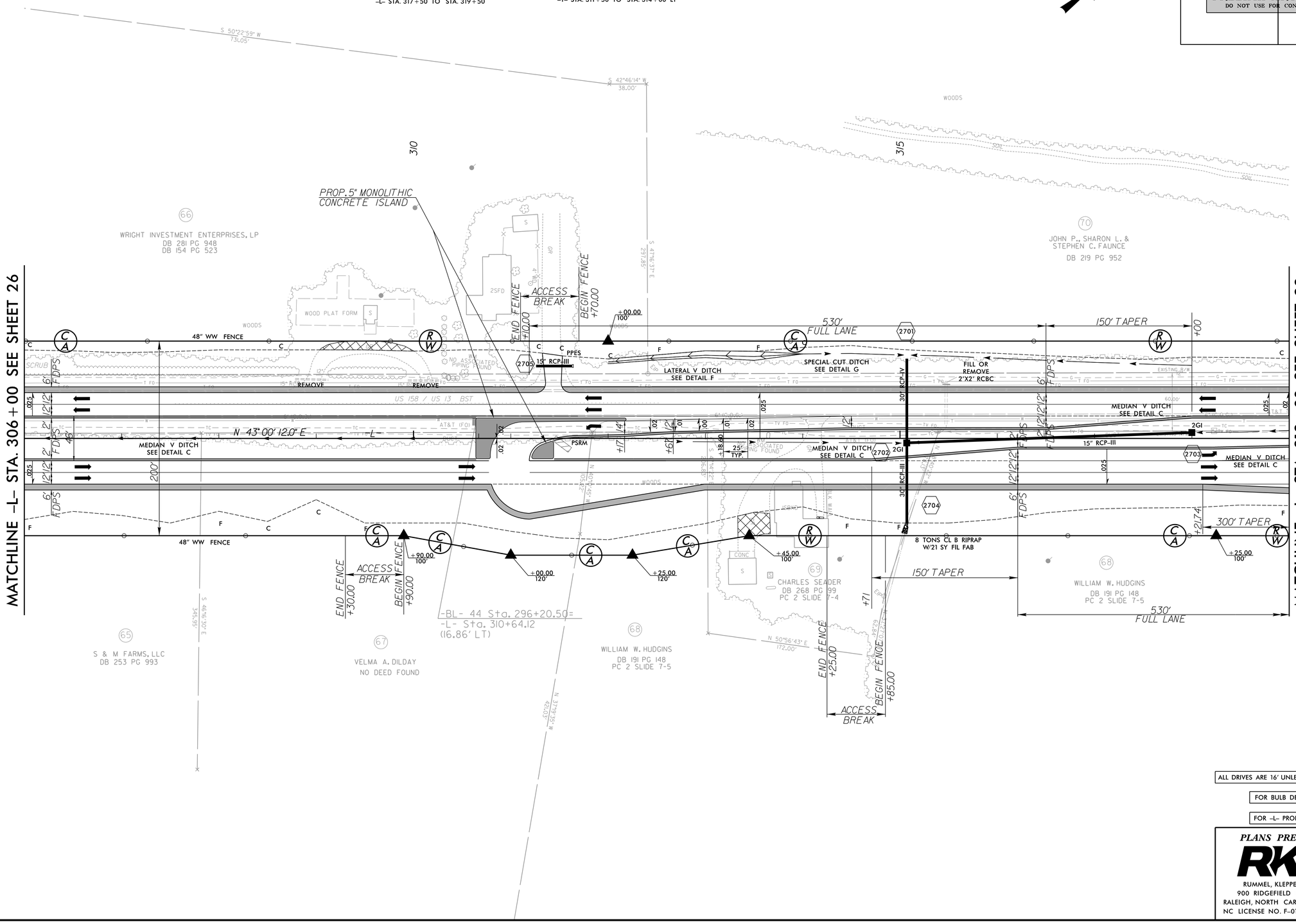
–L– STA. 304+00 TO STA. 310+50
–L– STA. 312+50 TO STA. 315+50
–L– STA. 317+50 TO STA. 319+50

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



–Y– STA. 311+50 TO STA. 314+00 LT

NAD 83



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR –L– PROFILE SEE SHTS. 50 & 51

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

1/24/2012
R:\Roadway\Proj\R2507A_Rdy_psh27.dgn
FLewis

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)

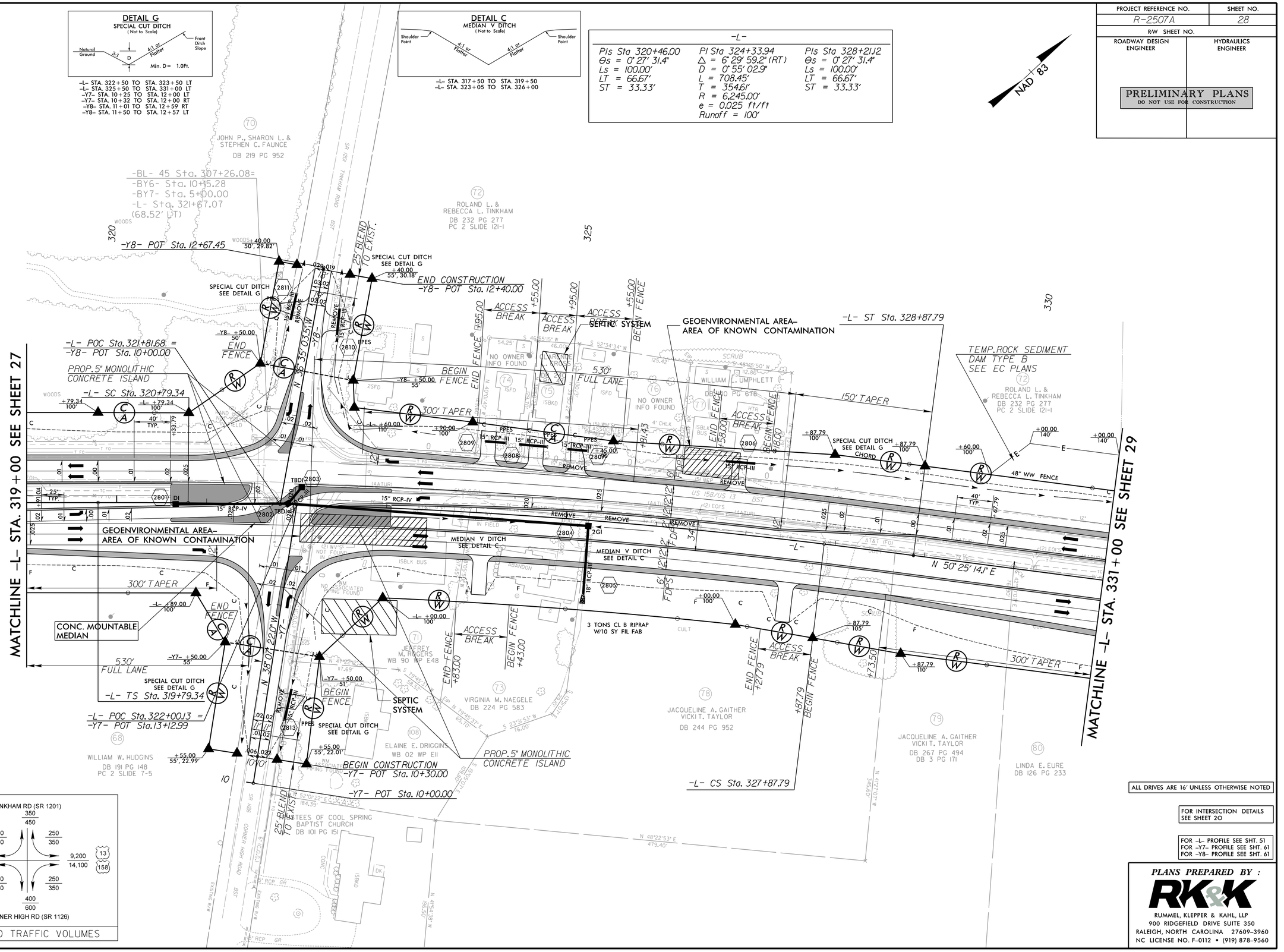
-L- STA. 322+50 TO STA. 323+50 LT
-L- STA. 325+50 TO STA. 331+00 LT
-Y7- STA. 10+25 TO STA. 12+00 LT
-Y7- STA. 10+32 TO STA. 12+00 RT
-Y8- STA. 11+01 TO STA. 12+59 RT
-Y8- STA. 11+50 TO STA. 12+57 LT

DETAIL C
MEDIAN V DITCH
(Not to Scale)

-L- STA. 317+50 TO STA. 319+50
-L- STA. 323+05 TO STA. 326+00

-L-

PIs Sta 320+46.00	PI Sta 324+33.94	PIs Sta 328+21.12
Θs = 0° 27' 31.4"	Δ = 6° 29' 59.2" (RT)	Θs = 0° 27' 31.4"
Ls = 100.00'	D = 0° 55' 02.9"	Ls = 100.00'
LT = 66.67'	L = 708.45'	LT = 66.67'
ST = 33.33'	T = 354.61'	ST = 33.33'
	R = 6,245.00'	
	e = 0.025 ft/ft	
	Runoff = 100'	



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAILS SEE SHEET 2O

FOR -L- PROFILE SEE SHT. 51
FOR -Y7- PROFILE SEE SHT. 61
FOR -Y8- PROFILE SEE SHT. 61

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

1/24/2012
R:\Roadway\Proj\R2507A_Rdy_psh28.dgn
ERAUS

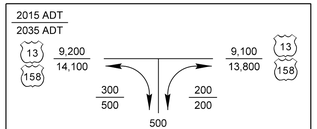
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	29
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

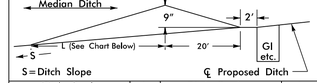
NAD 83

2015 ADT
2035 ADT



PROJECTED TRAFFIC VOLUMES

DETAIL
FALSE SUMP
(Not to Scale)



S = Ditch Slope ℄ Proposed Ditch

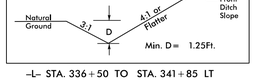
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



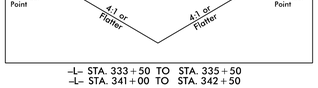
–L– STA. 331+00 TO STA. 333+00 LT

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



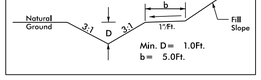
–L– STA. 336+50 TO STA. 341+85 LT

DETAIL C
MEDIAN V DITCH
(Not to Scale)



–L– STA. 333+50 TO STA. 335+50
–L– STA. 341+00 TO STA. 342+50

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

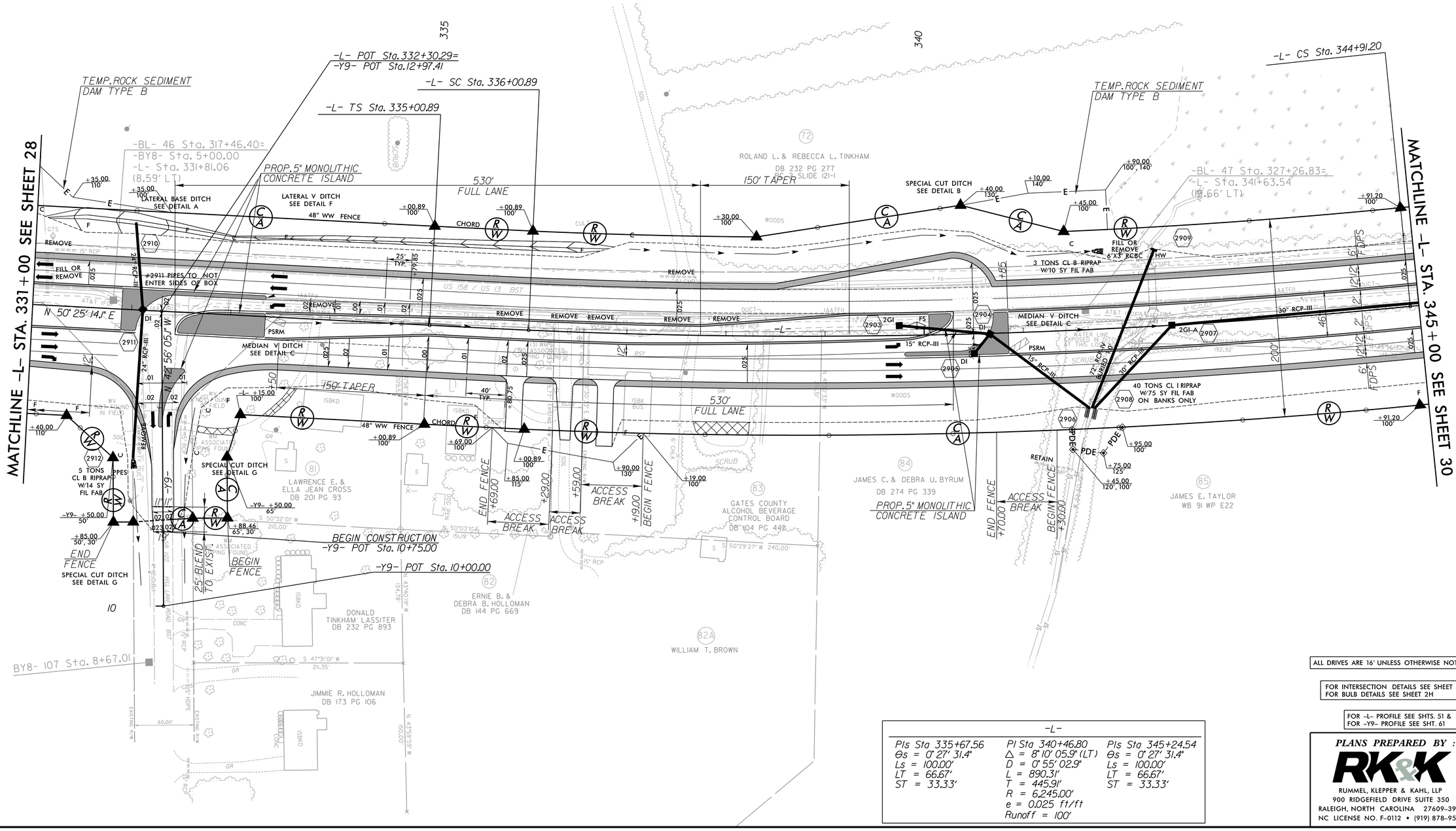


–L– STA. 333+00 TO STA. 336+50 LT

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



–Y9– STA. 10+18 TO STA. 11+50 LT
–Y9– STA. 10+16 TO STA. 12+00 RT



ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAILS SEE SHEET 2P
FOR BULB DETAILS SEE SHEET 2H

FOR –L– PROFILE SEE SHTS. 51 & 52
FOR –Y9– PROFILE SEE SHT. 61

–L–

PIs Sta 335+67.56	PI Sta 340+46.80	PIs Sta 345+24.54
Θs = 0° 27' 31.4"	△ = 8° 10' 05.9" (LT)	Θs = 0° 27' 31.4"
Ls = 100.00'	D = 0° 55' 02.9"	Ls = 100.00'
LT = 66.67'	L = 890.31'	LT = 66.67'
ST = 33.33'	T = 445.91'	ST = 33.33'
	R = 6,245.00'	
	e = 0.025 ft/ft	
	Runoff = 100'	

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609–3960
NC LICENSE NO. F–0112 • (919) 878–9560

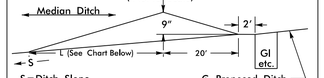
1/24/2012
R:\R-Projects\R-2507A\Rdy_psh\29.dgn
Fleenus

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

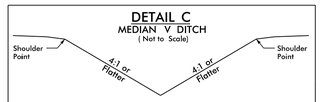
DETAIL
FALSE SUMP
(Not to Scale)



S=Ditch Slope ℄ Proposed Ditch

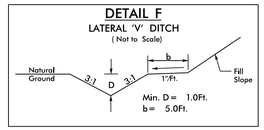
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL C
MEDIAN V DITCH
(Not to Scale)



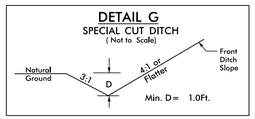
-L- STA. 350+00 TO STA. 356+50

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



-L- STA. 346+30 TO STA. 349+00 LT

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



-L- STA. 349+00 TO STA. 361+00 LT
-L- STA. 353+50 TO STA. 355+25 RT

NAD 83

MATCHLINE -L- STA. 345+00 SEE SHEET 29

MATCHLINE -L- STA. 358+00 SEE SHEET 31

-L- ST Sta. 345+91.20

L. E., JR. & MARY SMITH
DB 141 PG 524 (TRACT 4)
DB 141 PG 326
PC 1 SLIDE 28-4

EDNA D. BOONE
DB 264 PG 591

PHILIP P. GODWAN, JR.
DB 246 PG 332

ROBERT & FAY BEHRENDS
DB 148 PG 800

EMILY CROSS
DB 227 PG 182

JAMES E. TAYLOR
WB 91 WP E22

SKIMMER BASIN
SEE EC PLANS

PROP. 5' MONOLITHIC CONCRETE ISLAND

END FENCE +95.14

BEGIN FENCE +55.14

ACCESS BREAK

END FENCE +15.00

BEGIN FENCE +75.00

END FENCE +30.00

BEGIN FENCE +90.00

ACCESS BREAK 150' TAPER

530' FULL LANE

LATERAL V DITCH
SEE DETAIL F

SPECIAL CUT DITCH
SEE DETAIL G

MEDIAN V DITCH
SEE DETAIL C

48" WW FENCE

30" RCP-III

15" RCP-III

18" RCP-III

24" RCP-III

REMOVE

-BL- 48 Sta. 338+07.06=
-L- Sta. 352+44.53
(6.39' RT)

-L-
PIs Sta 345+24.54
Θs = 0° 27' 31.4"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

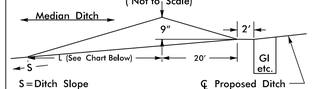
FOR -L- PROFILE SEE SHT. 52

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

1/24/2012
K:\R\Roxboro\Proj\R2507A_Rdy_psh30.dgn
kevis

8/17/99

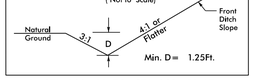
DETAIL
FALSE SUMP
(Not to Scale)



S = Ditch Slope ℄ Proposed Ditch

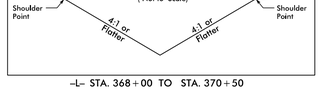
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



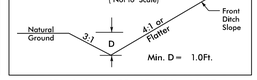
-L- STA. 366+00 TO STA. 369+50 LT

DETAIL C
MEDIAN V DITCH
(Not to Scale)



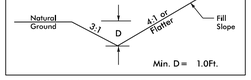
-L- STA. 368+00 TO STA. 370+50

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



-L- STA. 349+00 TO STA. 361+00 LT

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

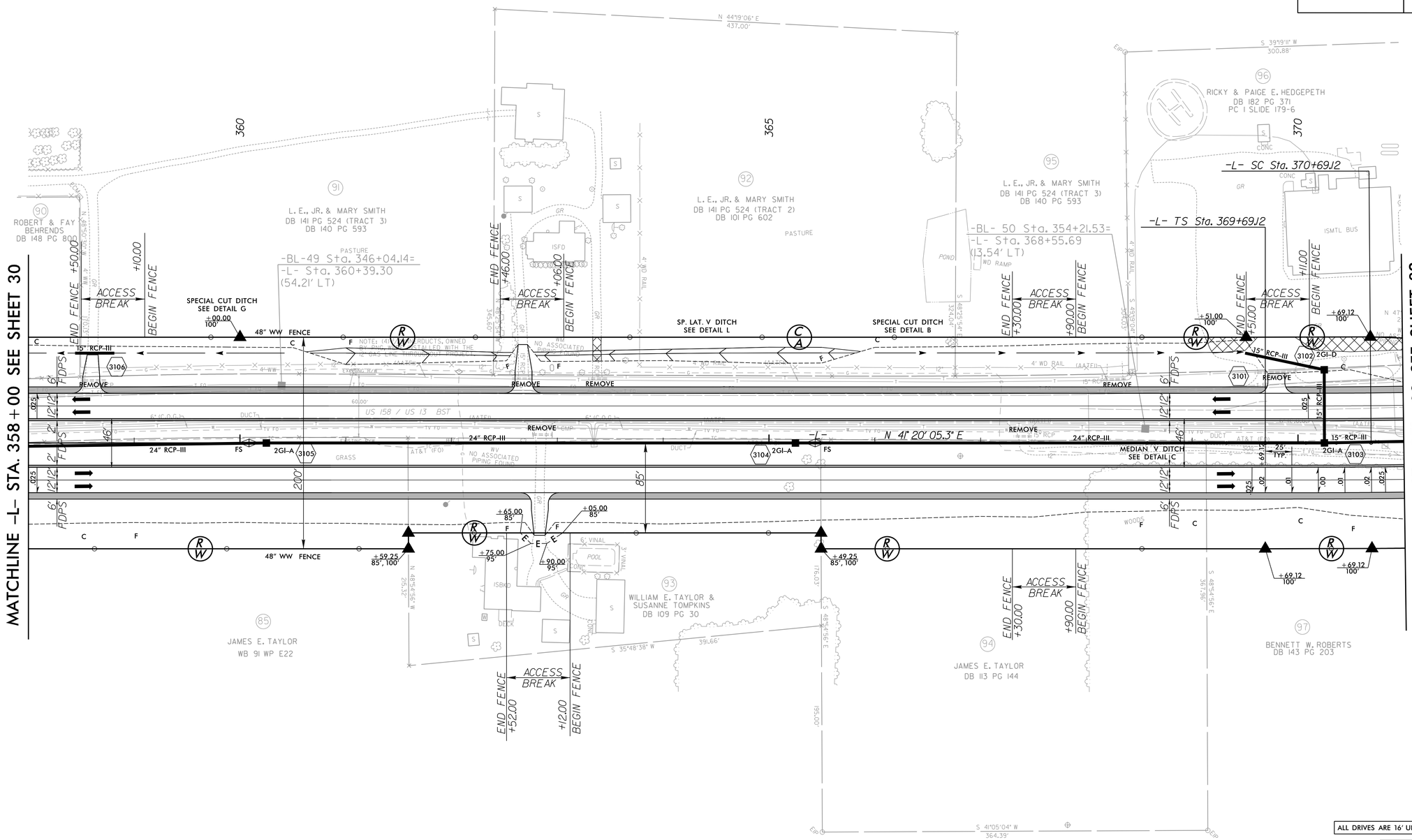


-L- STA. 361+00 TO STA. 366+00 LT

NAD 83

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



-L-	
PIs Sta 370+35.79	PI Sta 375+06.57
Θs = 0° 27' 31.4"	△ = 7° 49' 15.2" (LT)
Ls = 100.00'	D = 0° 55' 02.9"
LT = 66.67'	L = 852.44'
ST = 33.33'	T = 426.88'
	R = 6,245.00'
	e = 0.025 ft/ft
	Runoff = 100'

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR -L- PROFILE SEE SHT. 52
FOR -L_END- PROFILE SEE SHT. 54

PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-3960
NC LICENSE NO. F-0112 • (919) 878-9560

1/24/2012
R-2507A_Roadway\Proj\R2507A_Rdy_psh31.dgn
kevis

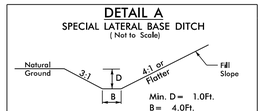
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

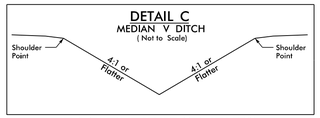
NAD 83

DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



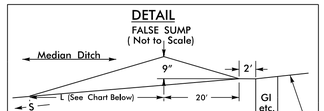
–L– STA. 377+40 TO STA. 382+50 LT
–L– STA. 378+25 TO STA. 382+50 RT
–L_END_LT– STA. 10+00 TO STA. 22+43 LT
–L_END_RT– STA. 10+00 TO STA. 18+00 RT

DETAIL C
MEDIAN V DITCH
(Not to Scale)



–L_END_LT– STA. 10+00 TO STA. 17+00

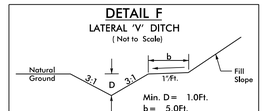
DETAIL
FALSE SUMP
(Not to Scale)



S = Ditch Slope ℄ Proposed Ditch

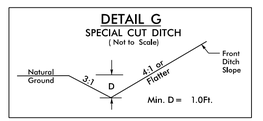
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

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



–L– STA. 375+57 TO STA. 378+25 RT

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



–Y10– STA. 11+00 TO STA. 18+50 LT & RT

–L– STA. 377+40 TO STA. 382+50 LT
–L– STA. 378+25 TO STA. 382+50 RT
–L_END_LT– STA. 10+00 TO STA. 22+43 LT
–L_END_RT– STA. 10+00 TO STA. 18+00 RT

L. E. SMITH, JR.
DB 182 PG 371
PC 1 SLIDE 179-6

-BL- TARHEELI Sta. 361+68.53=
-BL- TARHEELI-BY9- Sta. 5+00.00
-L- STA. 376+04.46
(16.43' LT)

RICKY & PAIGE E. HEDGEPETH
DB 182 PG 371
PC 1 SLIDE 179-6

DAVID R. & DEBORAH FUTRELL
DB 261 PG 908

GEOENVIRONMENTAL AREA–
AREA OF KNOWN CONTAMINATION

-L- POT Sta. 381+00.00=
-Y10- POT Sta. 10+00.00

PROP. 5" MONOLITHIC CONCRETE ISLAND

-L- ST Sta. 380+21.57

530' FULL LANE

TRIANGLE DRIVE-IN, INC.
DB 133 PG 764

MATCHLINE –L– STA. 371+00 SEE SHEET 31

MATCHLINE –L– STA. 384+00 SEE SHEET 33

MATCHLINE –Y10– STA. 15+00 SEE SHEET 37

-Y10- PC Sta. 10+60.30

-L- CS Sta. 379+21.57

-L_END_RT-
TS Sta. 10+62.31

-L- POT Sta. 382+50.00 =
-L_END_LT- POT Sta. 10+00.00 35' LT
-L_END_RT- POT Sta. 10+00.00 23' RT

BENNETT W. ROBERTS
DB 143 PG 203

EASTERN NORTH CAROLINA NATURAL GAS COMPANY
DB 199 PG 680

2015 ADT / 2035 ADT				
13 / 158	9,100 / 13,800	2,600 / 3,850	2,700 / 4,100	200 / 250	6,700 / 10,200	13

PROJECTED TRAFFIC VOLUMES

-L-	-L_END_RT-	-Y10-
PI Sta 374+96.01	PIs Sta 379+54.90	PIs Sta 11+28.98	PI Sta 14+07.07
Δ = 7° 49' 15.2" (LT)	Θs = 0° 27' 31.4"	Θs = 0° 34' 26.8"	Δ = 45° 12' 09.5" (LT)
D = 0° 55' 02.9"	Ls = 100.00'	Ls = 100.00'	D = 6° 52' 41.7"
L = 852.44'	LT = 66.67'	LT = 66.67'	L = 657.18'
T = 426.88'	ST = 33.33'	ST = 33.33'	T = 346.77'
R = 6,245.00'			R = 833.00'
e = 0.025 ft/ft			e = 0.06 ft/ft
Runoff = 100'			Runoff = 144'

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR INTERSECTION DETAILS SEE SHEET 2Q
FOR BULB DETAILS SEE SHEET 2H

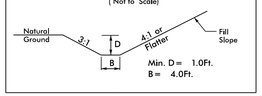
FOR –L– PROFILE SEE SHTS. 52 & 53
FOR –L_END_LT– PROFILE SEE SHT. 54
FOR –L_END_RT– PROFILE SEE SHT. 54
FOR –Y10– PROFILE SEE SHT. 62

PLANS PREPARED BY :
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8/17/99

DETAIL A
SPECIAL LATERAL BASE DITCH
(Not to Scale)



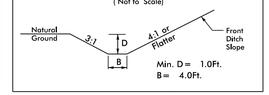
–L_END_LT– STA. 10+00 TO STA. 22+43 LT
–L_END_RT– STA. 10+00 TO STA. 18+00 RT

DETAIL C
MEDIAN V DITCH
(Not to Scale)



–L_END_LT– STA. 10+00 TO STA. 17+00

DETAIL M
SPECIAL CUT BASE DITCH
(Not to Scale)



–L_END_RT– STA. 18+00 TO STA. 22+43 RT

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

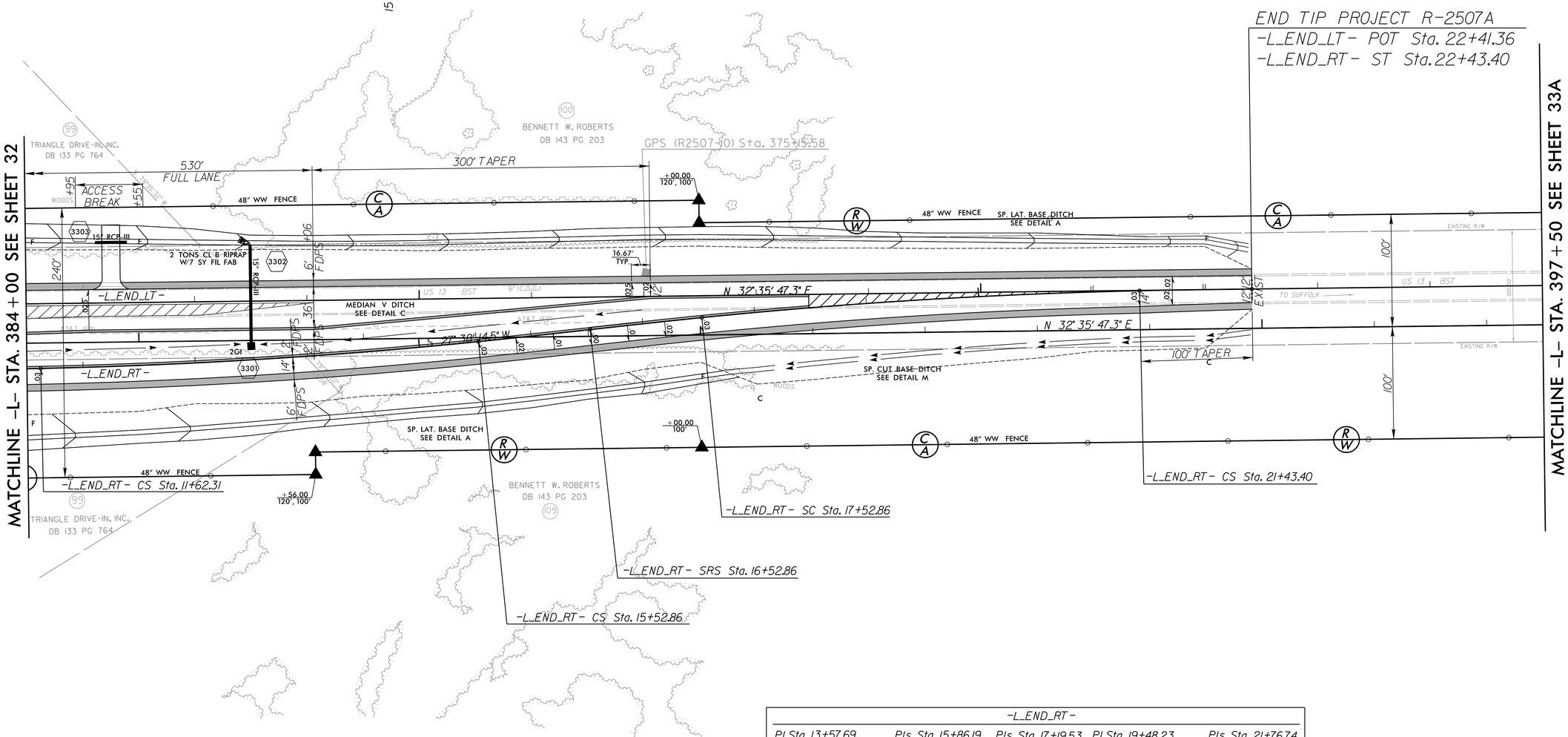
NAD 83

385 15 390 20 395 25

END TIP PROJECT R-2507A
-L_END_LT- POT Sta. 22+41.36
-L_END_RT- ST Sta.22+43.40

MATCHLINE –L– STA. 384+00 SEE SHEET 32

MATCHLINE –L– STA. 397+50 SEE SHEET 33A



-L_END_RT-				
PI Sta 13+57.69	PIs Sta 15+86.19	PIs Sta 17+19.53	PI Sta 19+48.23	PIs Sta 21+76.74
△ = 4° 29' 03.4" (LT)	Θs = 0° 34' 26.8"	Θs = 0° 34' 26.8"	△ = 4° 29' 03.4" (RT)	Θs = 0° 34' 26.8"
D = 1° 08' 53.6"	Ls = 100.00'	Ls = 100.00'	D = 1° 08' 53.6"	Ls = 100.00'
L = 390.54'	LT = 66.67'	LT = 66.67'	L = 390.54'	LT = 66.67'
T = 195.37'	ST = 33.33'	ST = 33.33'	T = 195.37'	ST = 33.33'
R = 4,990.00'			R = 4,990.00'	
e = 0.03 ft/ft			e = 0.03 ft/ft	
Runoff = 100'			Runoff = 100'	

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR –L– PROFILE SEE SHT. 53
FOR –L_END– PROFILE SEE SHT. 54

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kevins

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	33A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

MATCHLINE -L- STA. 397+50 SEE SHEET 33

400

405

-L_END_LT- POT Sta. 29+50.00

-L- POT Sta. 405+07.67

100

BENNETT W. ROBERTS
DB 143 PG 203

END FENCE

R/W

S 32° 35' 47.3" W

100'

US 13 BST

TO SUFFOLK

N 32° 35' 47.3" E

100'

C/A

END FENCE

BENNETT W. ROBERTS
DB 143 PG 203

109

END CONSTRUCTION
-L_END_LT- POT Sta. 27+82.26

NOTE:
WILL IDENTIFY MONUMENTS ONCE PROPERTY LINE IS SURVEYED.

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

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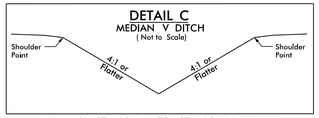
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	34
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

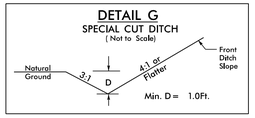
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL C
MEDIAN V DITCH
(Not to Scale)



–Y– STA. 16+50 TO STA. 36+00

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



–Y– STA. 27+00 TO STA. 39+00 RT

NAD 83

20

25

ASP RIVERSEDGE,LLC
DB 651 PG 368
PC 1 SLIDE 1321

BEGIN CONSTRUCTION
R2583 –L– STA.393+35.28 BK=
R2507A –Y– STA.16+09.56 AH

PERMANENT DRAINAGE EASEMENT
79-CVS-160

422+04-FL-
65.00'

425+04-FL-
65.00'

4" FDPS

12:12

2% FDPS

045

MEDIAN V DITCH
SEE DETAIL C

TO MURFREESBORO

–L– (R–2583) TS Sta. 391+08.39

–L– (R–2583) SC Sta. 392+88.39

WILLIAM JORDAN III
BONNIE P. JORDAN
PATRICIA J. REA

DB 693 PG 754

BEGIN RESURFACING EB LANE
–Y– STA.21+56.11

24" RCP (18'-8" x 14'-1" ARCH)

2GI-D

(3401)

SPECIAL CUT DITCH
SEE DETAIL G

BEGIN GRADE
–Y– PCC Sta. 27+32.78

S 15°55'47" W
235.63' TO CRD

101

COMMERICAL READY MIXPRODUCTS,INC.
DB 583 PG 154
PC 1 SLIDE 114F

MATCHLINE –Y– STA. 28+00 SEE SHEET 35

–Y–	
PI Sta 21+55.26	PI Sta 30+59.19
Δ = 22° 20' 51.1" (RT)	Δ = 12° 31' 21.2" (RT)
D = 1° 54' 35.5"	D = 1° 55' 33.3"
L = 1,170.11'	L = 650.22'
T = 592.59'	T = 326.41'
R = 3,000.00'	R = 2,975.00'
Runoff = 180'	e = 0.045 ft/ft
e = 0.045 ft/ft	

EXISTING R/W SHOWN PURCHASED UNDER THE R–2583 PROJECT

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR –Y– PROFILE SEE SHT. 55

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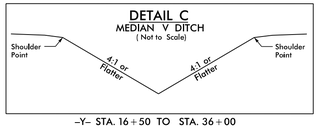
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	35
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

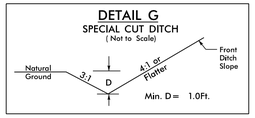
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL C
MEDIAN V DITCH
(Not to Scale)



-Y- STA. 16+50 TO STA. 36+00

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



-Y- STA. 27+00 TO STA. 39+00 RT
-Y- STA. 35+00 TO STA. 41+00 LT

-Y-

PI Sta 30+59.19
Δ = 12° 31' 21.2" (RT)
D = 1° 55' 33.3"
L = 650.22'
T = 326.41'
R = 2,975.00'
Runoff = 180'

PIs Sta 34+43.01
Θs = 1° 43' 59.9"
Ls = 180.00'
LT = 120.01'
ST = 60.01'

-YA2-

PI Sta 14+07.83
Δ = 97° 17' 18.4" (LT)
D = 114° 35' 29.6"
L = 84.90'
T = 56.80'
R = 50.00'
e = 0.02 ft/ft

NAD 83

YA2- PC Sta. 13+51.03

YA2- POT Sta. 14+85.88

YA2- PT Sta. 14+35.93

END FENCE +50.00
155.00'

-YA2- POT Sta. 10+00.00=
-Y- POS Sta. 34+75.10 (122.58' LT)

BEGIN FENCE +10.00
100.00'

GRAVEL

BEGIN FENCE
+76.94

150' TAPER

S 49° 06' 34.7" E

-YA2-

TIE TO EXIST. FENCE

PROP. 5" MONOLITHIC CONCRETE ISLAND

SPECIAL CUT DITCH
SEE DETAIL G

MEDIAN V DITCH
SEE DETAIL C

24" RCP-III

30" RCP-III

18" RCP-IV

15" RCP-IV

2GI-A (3501)

2GI-A (3503)

2GI-A (3505)

DI (3506)

CPES (3502)

PPES (3504)

PPES (3507)

REMOVE 18" RCP-IV

3 TONS CL B RIPRAP W/10 SY FIL FAB

900' MEDIAN TRANSITION

SPECIAL CUT DITCH
SEE DETAIL G

GPS R2507I =
-Y- STA. 32+49.56
(56.07' RT)

BEGIN FENCE
+76.14

END FENCE +55.00

ACCESS BREAK

BEGIN FENCE +15.00

END FENCE +50.00

ACCESS BREAK

BEGIN FENCE +10.00

END FENCE +43.99
117.86'

-Y- CS Sta. 33+83.00

-Y- ST Sta. 35+63.00

MATCHLINE -Y- STA. 28+00 SEE SHEET 34

MATCHLINE -Y- STA. 41+00 SEE SHEET 6

NOTE: AS PER MR. HENRY INGRAM OF THE 2M STRAND F.O. LINE OWNED BY HAND HOLE ADJACENT TO 4-PED** FENCE, THIS HAND HOLE WAS NOT

(8) ASP RIVERSEDGE,LLC
DB 651 PG 368
PC 1 SLIDE 1321

(101) COMMERICAL READY MIXPRODUCTS,INC.
DB 583 PG 154
PC 1 SLIDE 114F

(102) HERTFORD COUNTY
DB 390 PG 513

(103) RAY ADAMS
DB 616 PG 658

2015 ADT
2035 ADT

158 5,400 / 8,900 — 200 / 250 — 300 / 500 — 200 / 250 — 5,400 / 8,900 158

INDUSTRIAL PARK DR (SR 1218)

PROJECTED TRAFFIC VOLUMES

EXISTING R/W SHOWN PURCHASED UNDER THE R-2583 PROJECT

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR BULB DETAILS SEE SHEET 2H

FOR -Y- PROFILE SEE SHT. 55
FOR -YA2- PROFILE SEE SHT. 62

PLANS PREPARED BY :
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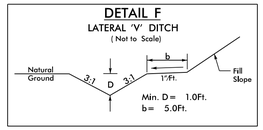
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

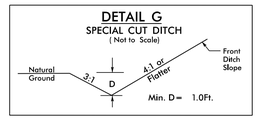
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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



-Y- STA. 55+50 TO STA. 56+50 LT

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



-Y- STA. 56+00 TO STA. 62+00 RT
-Y- STA. 56+50 TO STA. 62+00 LT

NAD 83

MATCHLINE -Y- STA. 56+00 SEE SHEET 6

-YAI- POT Sta. 15+30.70
END CONSTRUCTION
-YAI- Sta. 15+20.00
-YAI- PT Sta. 14+01.72
-YAI- PC Sta. 12+52.71
-YAI- PC Sta. 10+19.46
-YAI- POT Sta. 10+00.00 =
-Y- POT Sta. 61+75.00
-YAI- PT Sta. 11+37.29
POT Sta. 67+10.79

BEGIN FENCE +11.91
116.58'
LATERAL V DITCH
SEE DETAIL F

SPECIAL CUT DITCH
SEE DETAIL G

3 TONS CL B RIPRAP
W/10 SY FIL FAB

150' TAPER

END FENCE

3 TONS CL B RIPRAP
W/10 SY FIL FAB
(2 TYPES)

50' BLEND
TO EXISTING

PROP. 5" MONOLITHIC
CONCRETE ISLAND

-Y- ST Sta. 60+84.76

BEGIN FENCE +11.68
115.64'

-BY12- 73=
-Y- STA. 51+39.54
(49.89' RT)

-BY12- 74 =
-Y- STA. 60+65.59
(18.96' RT)

N 60° 37' 51.1" W

S 60° 37' 12.7" E

FRED W. LIVERMAN, JR
DB 469 PG 617

FRED W. LIVERMAN
DB 469 PG 617

DEANA R. ASKEW
DB 666 PG 1041

JAMES E. MCGRAW, SR
DB 558 PG 476

NEWSOME JONES CEMETERY
DB 530 PG 815

ANDREW M. REILLY
WB 02E PG 155

-Y-		-YAI-	
PI Sta 56+51.90	PIs Sta 60+18.09	PI Sta 10+94.48	PI Sta 13+27.77
△ = 10° 00' 38.4" (LT)	Θs = 0° 44' 59.8"	△ = 90° 00' 38.4" (LT)	△ = 17° 04' 27.8" (RT)
D = 1° 29' 59.6"	Ls = 100.00'	D = 76° 23' 39.7"	D = 11° 27' 33.0"
L = 667.43'	LT = 66.67'	L = 117.82'	L = 149.00'
T = 334.56'	ST = 33.33'	T = 75.01'	T = 75.06'
R = 3,820.00'		R = 75.00'	R = 500.00'
Runoff = 100'		e = 0.02 ft/ft	e = 0.03 ft/ft
e = 0.03 ft/ft			

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR -Y- PROFILE SEE SHT. 56
FOR -YA1- PROFILE SEE SHT. 62

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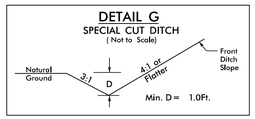
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	37
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

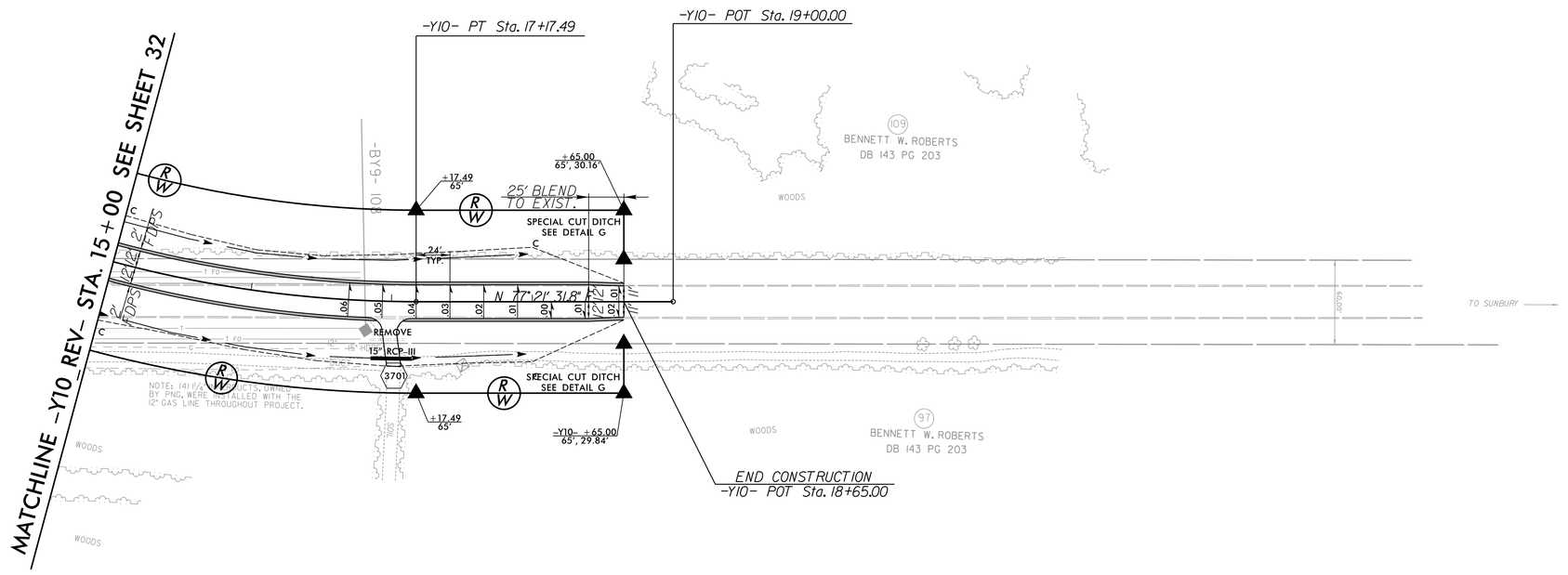
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



-Y10- STA. 11+00 TO STA. 18+50 LT & RT

NAD 83



-Y10-
PI Sta 14+07.07
△ = 45° 12' 09.5" (LT)
D = 6° 52' 41.7"
L = 657.18'
T = 346.77'
R = 833.00'
e = 0.06 ft/ft
Runoff = 144'

ALL DRIVES ARE 16' UNLESS OTHERWISE NOTED

FOR -Y10- PROFILE SEE SHT. 62

PLANS PREPARED BY :

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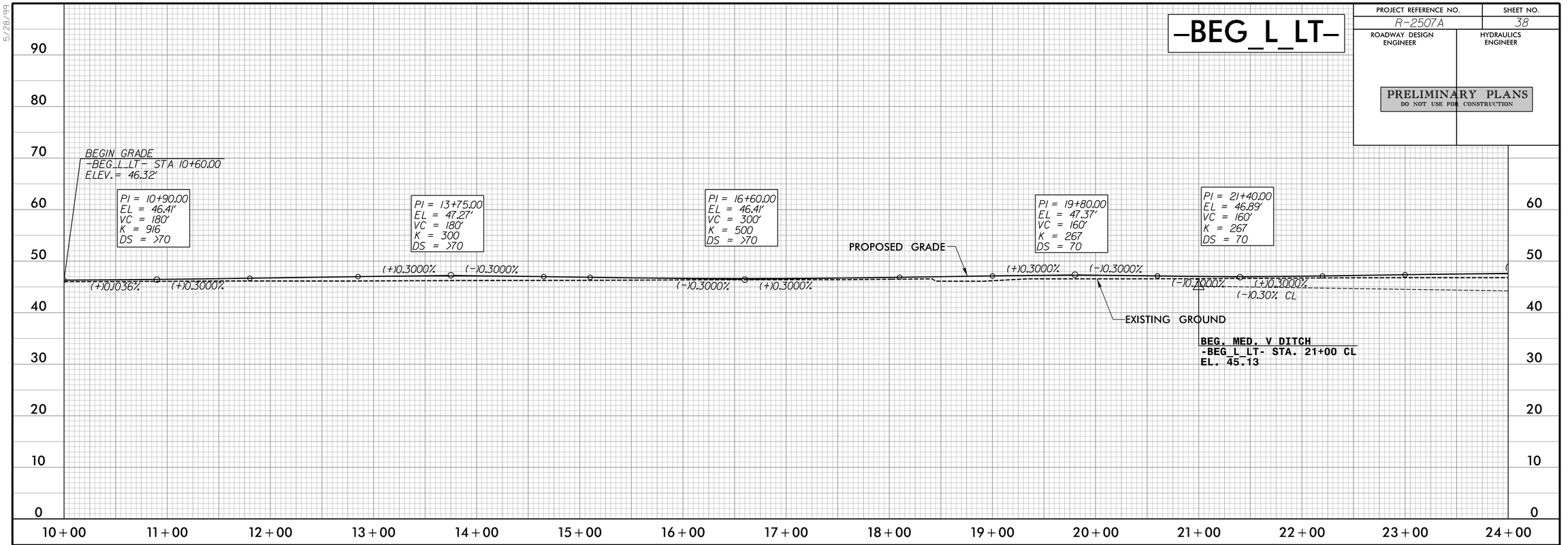
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5/28/99

–BEG_L_LT–

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	38
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





FOR –BEG_L_LT– PLAN SEE SHTS. 4 THRU 5

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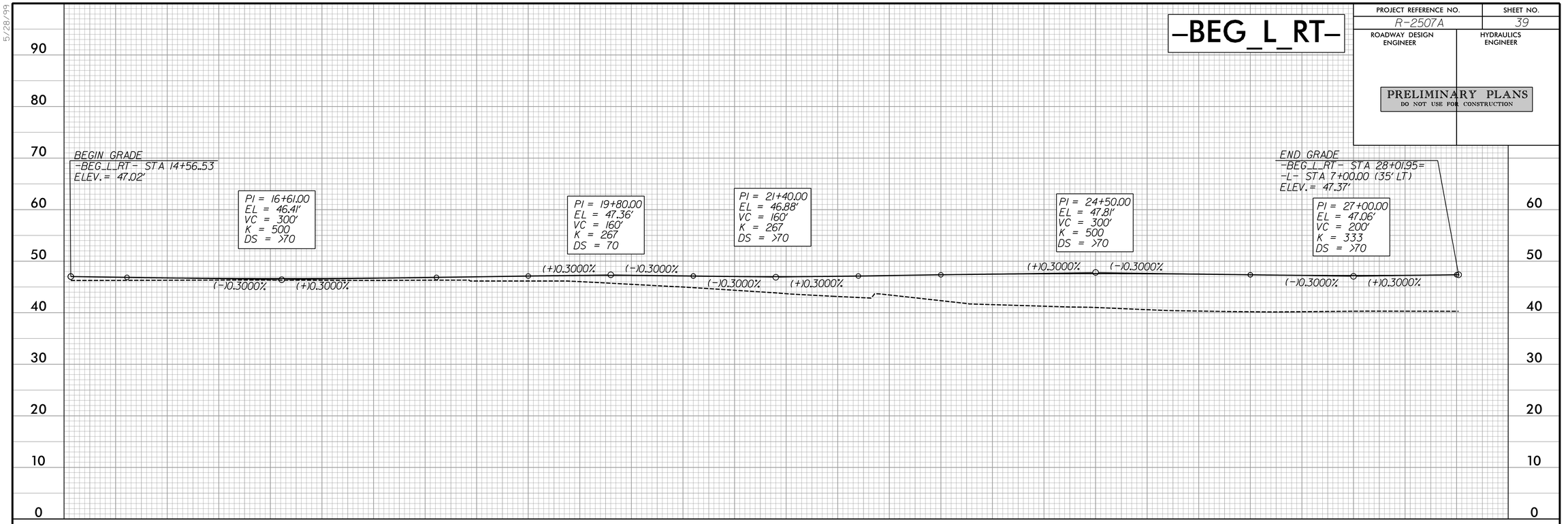
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5/28/99

–BEG_L_RT–

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	39
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



FOR –BEG_L_RT– PLAN SEE SHTS. 4A & 5

PLANS PREPARED BY :

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4/24/2012
kfields

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-2507A	40
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–L–

BEGIN GRADE –L– STA 7+00.00=
–BEG_L_RT– STA 28+02.04 (35'RT) ELEV.= 47.37'
–BEG_L_LT– STA 28+00.00 (23' LT) ELEV.= 47.37'

PI = 9+70.00
EL = 48.18'
VC = 160'
K = 267
DS = 70

PI = 11+30.00
EL = 47.70'
VC = 160'
K = 267
DS = 70

PI = 14+27.00
EL = 48.59'
VC = 180'
K = 300
DS = >70

PI = 16+10.00
EL = 48.04'
VC = 180'
K = 300
DS = >70

PI = 20+74.00
EL = 49.44'
VC = 370'
K = 137
DS = 60

PROPOSED GRADE

(+)0.3000%
(–)0.3000%
(–)0.3000%
(+)0.3000%
(+)0.3000%
(–)0.3000%
(–)0.3000%
(+)0.3000%
(+)0.3000%

(+)0.50% CL
(+)0.23% LT
(+)0.16% RT
(–)0.30% CL
EXISTING GROUND
(+)0.16% RT
(+)0.30% CL

BEG. MED. V DITCH
-L- STA. 7+00 CL
EL. 43.03

BEG. SP. LAT. BASE DITCH
-L- STA. 7+00 RT
EL. 40.14

BEG. SP. LAT. BASE DITCH
-L- STA. 9+30 LT
EL. 40.08

PI -L- STA. 12+00 CL
EL. 45.55

END SP. LAT. BASE DITCH
BEG. SP. LAT. V DITCH
-L- STA. 12+00 RT
EL. 40.96

PI -L- STA. 15+00 CL
EL. 44.65

END MED. V DITCH
-L- STA. 17+00 CL
EL. 45.25

END SP. LAT. V DITCH
-L- STA. 17+00 RT
EL. 41.77

END SP. LAT. BASE DITCH
-L- STA. 19+00 LT
EL. 42.88

7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00

100 90 80 70 60 50 40 30 20 10

BEG. MED. V DITCH
-L- STA. 31+50 CL
EL. 69.25

PI -L- STA. 32+50 CL
EL. 68.95

END MED. V DITCH
-L- STA. 33+00 CL
EL. 68.35

(+)3.0000%
(–)3.0000%
–Y–
(–)0.30% CL
(–)1.20% CL
PROPOSED GRADE

PI = 30+70.00
EL = 79.32'
VC = 1,140'
K = 190
DS = 64

BEG. LAT. BASE DITCH
-L- STA. 31+25 RT
EL. 40.50

(+)3.0000%
(–)10.54% RT
EXISTING GROUND

FOR –L– PLAN SEE SHTs. 5 & 6

21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00

90 80 70 60 50 40 30 20 10 0

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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	41
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–L–

48" WELDED STEEL
–L– STA. 44+00

DESIGN DISCHARGE	= 29.1	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 44.0	FT
BASE DISCHARGE	= 31.9	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 44.2	FT
OVERTOPPING DISCHARGE	= 50.5	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 46.6	FT
DATE OF SURVEY	= 08/2011	
W.S. ELEVATION AT DATE OF SURVEY	= 8.1	FT

PI = 43+10.00
EL = 42.12'
VC = 310'
K = 138
DS = 60

END LAT. BASE DITCH
-L- STA. 35+85 RT
EL. 38.00

(–)13.0000%
(–)10.7500%

PROPOSED GRADE

EXISTING GROUND

48" WELDED STEEL

90 80 70 60 50 40 30 20 10 0

35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00

80 70 60 50 40 30 20 10 0 –10

PI = 50+50.00
EL = 36.57'
VC = 330'
K = 244
DS = >70

(–)0.7500%
(+)0.6000%

BM12 ELEV = 36.86
N 971093 E 2607008
BL STA. 43+78.00 (93' LT)
–L– STA. 58+76.95 (142' LT)
R/R SPIKE IN 24" PINE

PROPOSED GRADE

BEG. MED. V DITCH
-L- STA. 63+00 CL
EL. 41.99

EXISTING GROUND

24" WELDED STEEL

FOR –L– PLAN SEE SHTS. 6 THRU 8

49+00 50+00 51+00 52+00 53+00 54+00 55+00 56+00 57+00 58+00 59+00 60+00 61+00 62+00 63+00

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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

–L–

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PI -L- STA. 63+50 CL
EL. 43.14

END MED. V DITCH
-L- STA. 65+00 CL
EL. 43.61

(+)0.6000%

(–)3.0000%

(+)0.30% CL

(+)0.30% CL

(+)2.30% CL

EXISTING BRIDGE

NAVIGABLE CHANNEL

PI = 69+35.00
EL = 47.88'
VC = 1,520'
K = 422
DS = >70

CL II RIPRAP
1.5:1 NORMAL
(TYP.)

CONCRETE GIRDER BRIDGE
1@135'-6", 1@135', 2@87'-6", 4@135', 1@135'-6"
-L- STA.70+80

DESIGN DISCHARGE	= 46,500	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 3.5	FT
BASE DISCHARGE	= 53,200	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 7.7	FT
OVERTOPPING DISCHARGE	= 49,000	CFS
OVERTOPPING FREQUENCY	= 100–	YRS
OVERTOPPING ELEVATION	= 5.3	FT
DATE OF SURVEY	= 08/2011	
W.S. ELEVATION AT DATE OF SURVEY	= 0.7	FT

63+00 64+00 65+00 66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00 74+00 75+00 76+00 77+00

50 40 30 20 10 0 –10 –20 –30 –40

BM1 ELEV=22.80
N 972529 E 2608885
BL STA. 67+41.00 (58' RT)
–L– STA. 82+31.89 (53' RT)
R/R SPIKE IN 16" GUM

PI = 83+05.00
EL = 6.78'
VC = 885'
K = 268
DS = >70

PROPOSED GRADE

EXISTING GROUND

(–)3.9000%

(+)0.3000%

PI -L- STA. 91+00 CL
EL. 7.27

BEG. MED. V DITCH
-L- STA. 89+50 CL
EL. 6.82

PROPOSED GRADE

(+)0.3000%

(+)0.30% CL

EXISTING GROUND

UNDERCUT EXCAVATION

FOR –L– PLAN SEE SHTS. 8 THRU 10

77+00 78+00 79+00 80+00 81+00 82+00 83+00 84+00 85+00 86+00 87+00 88+00 89+00 90+00 91+00

50 40 30 20 10 0 –10 –20 –30 –40

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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	43
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–L–

BM2 ELEV = 3.04
N 974021 E 2610749
BL STA. 91+31.00 (161 RT)
–L– STA. 106+13.05 (191 RT)
R/R SPIKE IN 18" PINE

PI -L- STA. 94+50 CL
EL. 6.19

END MED. V DITCH
-L- STA. 96+50 CL
EL. 6.79

BEG. MED. V DITCH
-L- STA. 99+50 CL
EL. 7.15

END MED. V DITCH
-L- STA. 101+00 CL
EL. 6.65

PI = 91+00.00
EL = 9.16'
VC = 310'
K = 517
DS = >70

PI = 94+55.00
EL = 8.10'
VC = 400'
K = 667
DS = >70

PI = 99+20.00
EL = 9.49'
VC = 300'
K = 429
DS = >70

PI = 103+40.00
EL = 7.81'
VC = 500'
K = 714
DS = >70

PROPOSED GRADE

(–)0.3000%
(–)0.31% CL
(–)0.31% CL
(+)0.30% CL
(–)0.3000%
(+)0.3000%
(+)0.3000%
(–)0.4000%
(–)0.33% CL
(–)0.4000%
(+)0.3000%

EXISTING GROUND

PI = 94+55.00
EL = 8.10'
VC = 400'
K = 667
DS = >70

60 40 30 20 10 0 –10 –20 –30

91+00 92+00 93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00 101+00 102+00 103+00 104+00 105+00

BEG. MED. V DITCH
-L- STA. 107+50 CL
EL. 7.70

END MED. V DITCH
-L- STA. 109+00 CL
EL. 7.25

BEG. MED. V DITCH
-L- STA. 117+50 CL
EL. 6.90

PI = 108+40.00
EL = 9.31'
VC = 300'
K = 500
DS = >70

PI = 112+40.00
EL = 8.11'
VC = 300'
K = 500
DS = >70

PI = 117+80.00
EL = 9.73'
VC = 300'
K = 500
DS = >70

–Y1–

PROPOSED GRADE

(+)0.3000%
(–)0.3000%
(–)0.30% CL
(–)0.3000%
(+)0.3000%
(+)0.3000%
(–)0.3000%
(–)0.30% CL

EXISTING GROUND

60" RCP-IV EQUALIZER

50 40 30 20 10 0 –10 –20 –30 –40

105+00 106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00 118+00 119+00

UNDERCUT EXCAVATION

FOR –L– PLAN SEE SHTS. 10 THRU 12

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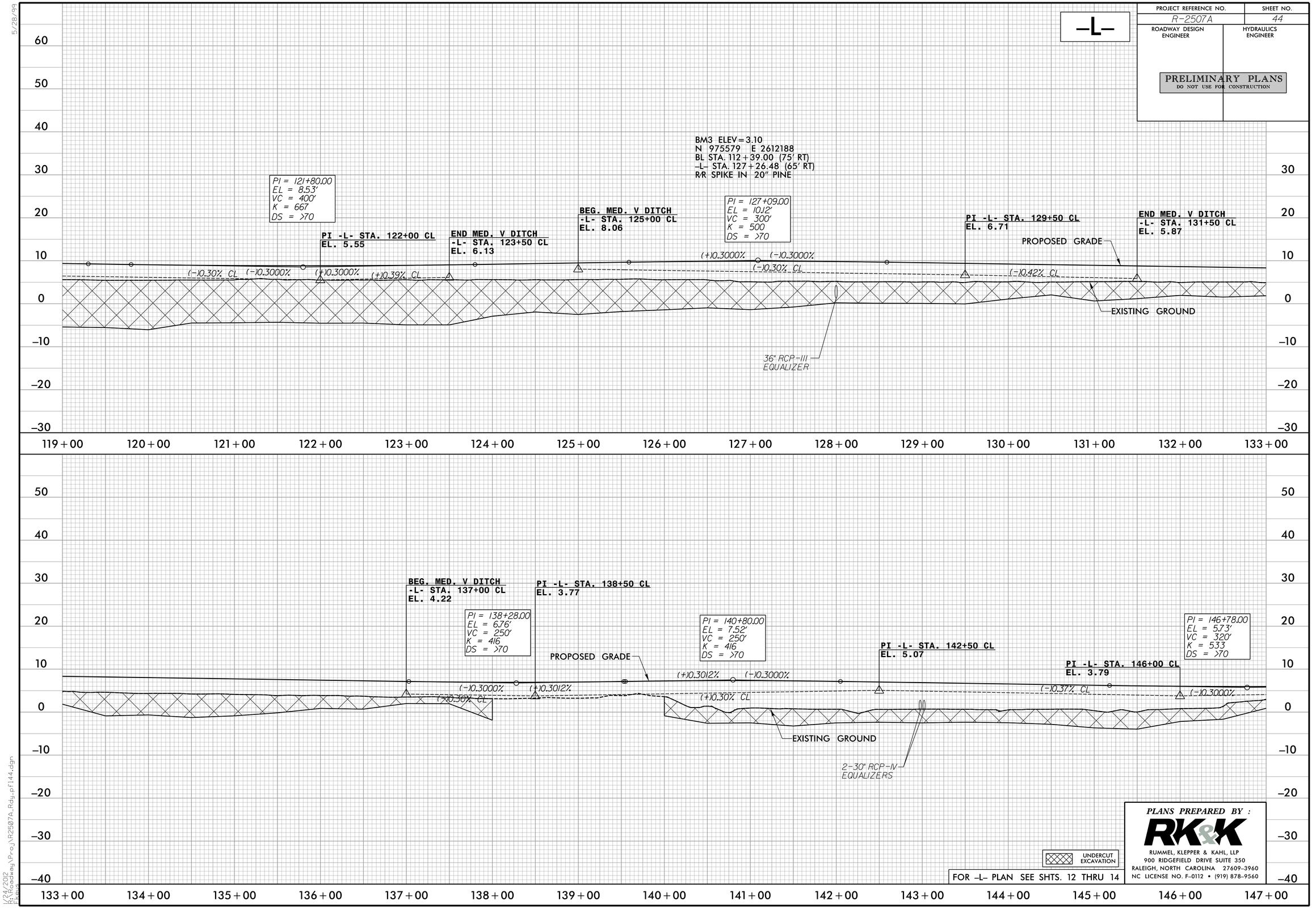
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	44
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–L–



UNDERCUT EXCAVATION

FOR –L– PLAN SEE SHTS. 12 THRU 14

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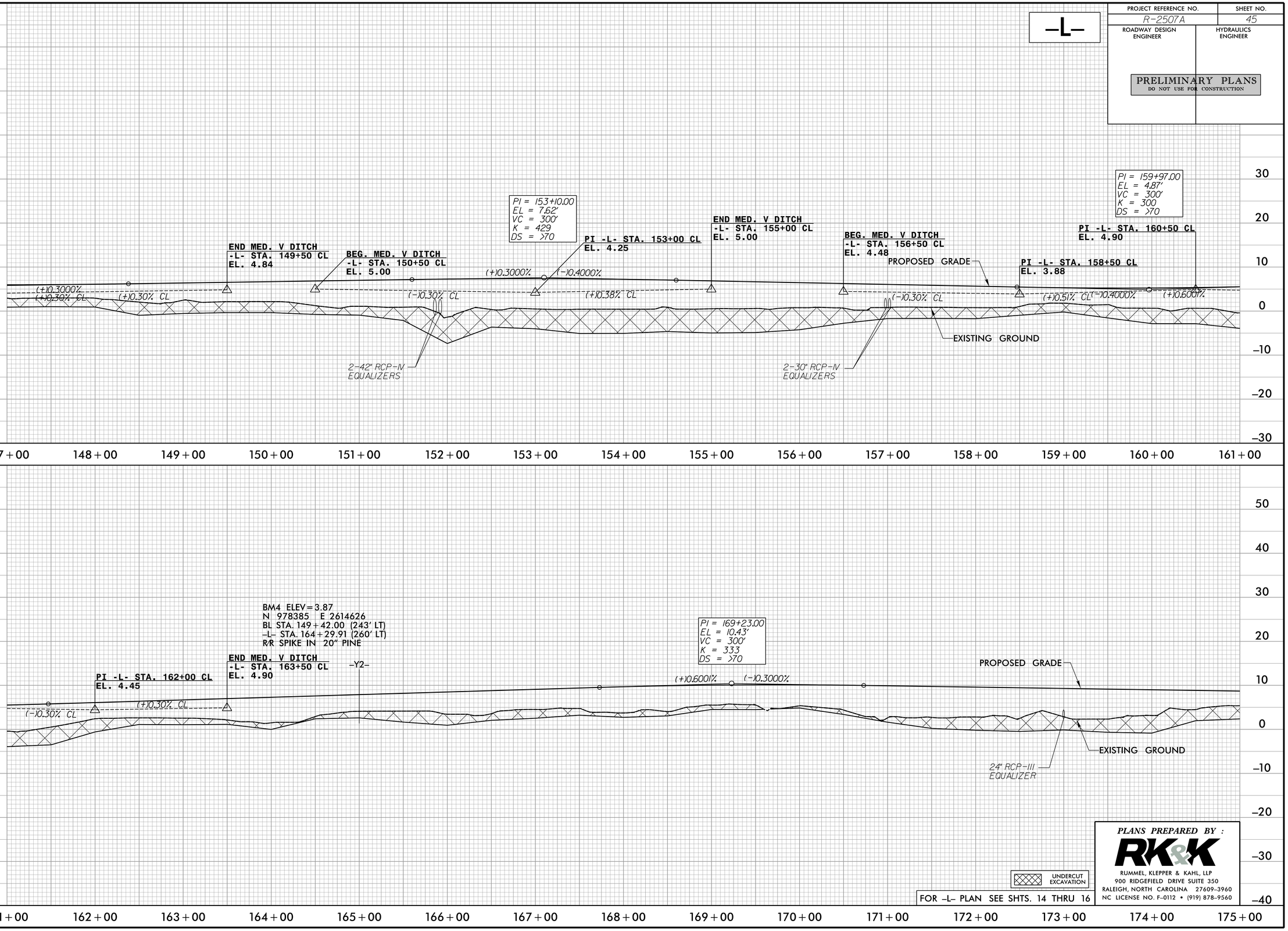
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	45
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–L–



UNDERCUT EXCAVATION

FOR –L– PLAN SEE SHTS. 14 THRU 16

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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	46
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–L–

60 50 40 30 20 10 0 –10 –20 –30

PI = 176+95.00
EL = 8.11'
VC = 300'
K = 500
DS = >70

PI = 180+95.00
EL = 9.31'
VC = 300'
K = 500
DS = >70

BEG. MED. V DITCH
-L- STA. 183+00 CL
EL. 5.78

PI -L- STA. 183+50 CL
EL. 4.62

BM5 ELEV=7.70
N 979698 E 2616480
BL STA. 171+94.00 (137' RT)
–L– STA. 186+75.16 (85' RT)
R/R SPIKE IN 20" PINE

PI = 186+30.00
EL = 7.71'
VC = 300'
K = 261
DS = >70

END MED. V DITCH
-L- STA. 187+50 CL
EL. 5.82

PROPOSED GRADE

(–)0.3000% (+)0.3000% (+)0.3000% (–)0.3000% (–)0.3000% (+)0.8500% (+)0.30% CL (–)2.32% CL

EXISTING GROUND

36" RCP-IV EQUALIZER

36" RCP-IV EQUALIZER

175+00 176+00 177+00 178+00 179+00 180+00 181+00 182+00 183+00 184+00 185+00 186+00 187+00 188+00 189+00

50 40 30 20 10 0 –10 –20 –30 –40

PI = 195+50.00
EL = 15.53'
VC = 450'
K = 276
DS = 70

BEG. MED. V DITCH
-L- STA. 192+50 CL
EL. 10.79

PI -L- STA. 193+00 CL
EL. 12.15

END MED. V DITCH
-L- STA. 194+50 CL
EL. 12.60

(+)2.72% CL (+)0.30% CL (+)0.8500% (–)0.7800%

–Y3–

PROPOSED GRADE

BEG. SP. CUT DITCH
-L- STA. 200+20 LT
EL. 6.00

BEG. SP. CUT DITCH
-L- STA. 202+50 RT
EL. 7.61

PI = 202+55.00
EL = 10.03'
VC = 300'
K = 278
DS = >70

(–)0.7800% (+)0.30% LT

NB BRIDGE SB BRIDGE

EXISTING GROUND

CL II RIPRAP 1.5:1 NORMAL (TYP.)

54" PRESTRESSED GIRDER BRIDGE
NB: 109'; SB: 109.87'
NB: -L- STA.195+54.82; SB: -L- STA.195+66.94

BRIDGE FUNCTIONS AS A SWAMP FED BY BACKWATER FROM CHOWAN RIVER. NO RUNNING WATER NOR EVIDENCE OF A DEFINED CHANNEL WAS OBSERVED UNDER THE EXISTING BRIDGE IN FIELD. (08/11)

UNDERCUT EXCAVATION

FOR –L– PLAN SEE SHTS. 16 THRU 19

189+00 190+00 191+00 192+00 193+00 194+00 195+00 196+00 197+00 198+00 199+00 200+00 201+00 202+00 203+00

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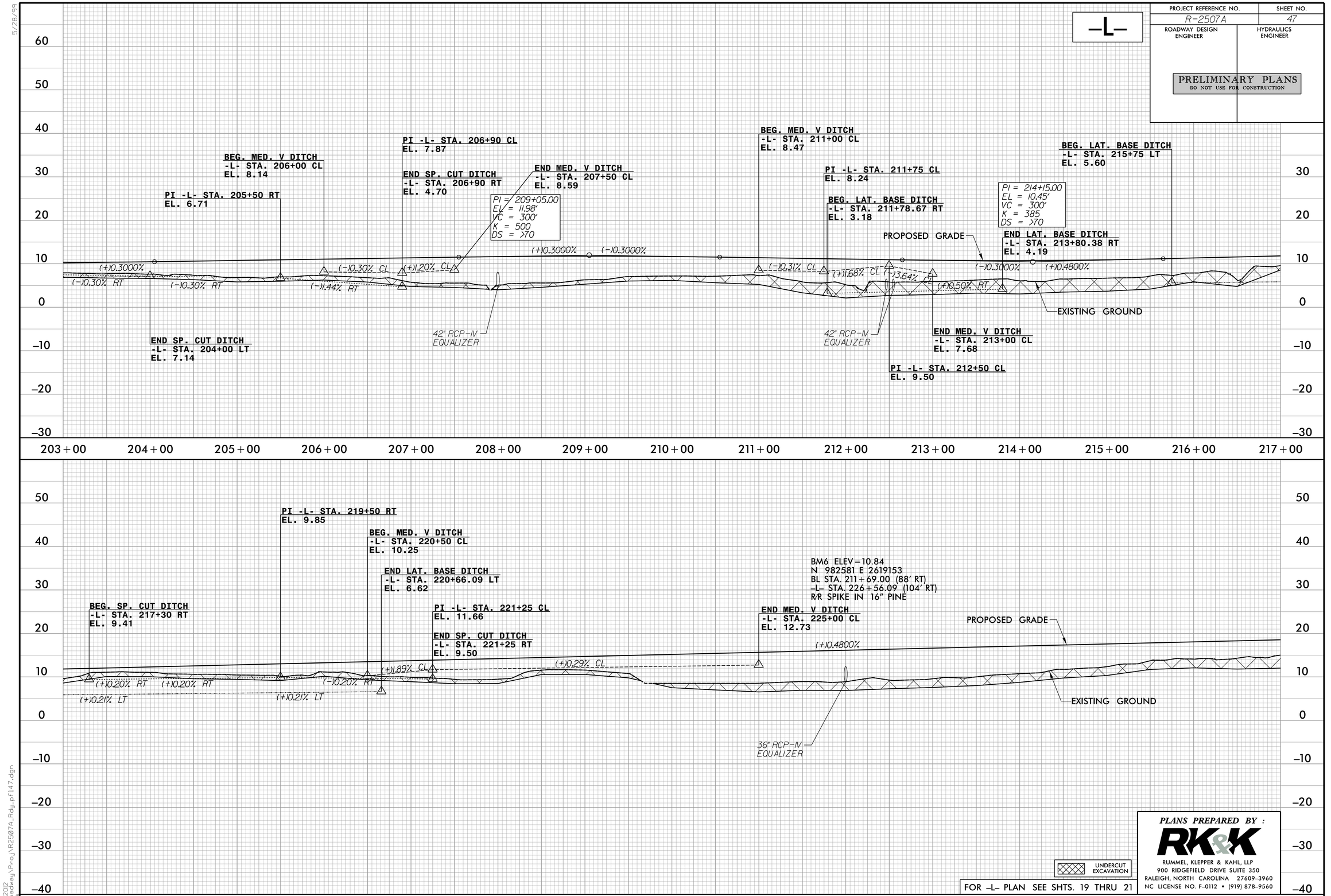
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	47
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–L–



UNDERCUT EXCAVATION

FOR –L– PLAN SEE SHTS. 19 THRU 21

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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	48
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–L–

80 70 60 50 40 30 20 10 0 –10

231+00 232+00 233+00 234+00 235+00 236+00 237+00 238+00 239+00 240+00 241+00 242+00 243+00 244+00 245+00

PI = 239+55.00
EL = 22.64'
VC = 300'
K = 280
DS = >70

PROPOSED GRADE

EXISTING GROUND

(+)0.4800%

(+)1.5500%

–Y4–

–Y5–

(+)1.5500%

36" RCP–IV EQUALIZER

70 60 50 40 30 20 10 0 –10 –20

245+00 246+00 247+00 248+00 249+00 250+00 251+00 252+00 253+00 254+00 255+00 256+00 257+00 258+00 259+00

PI = 246+55.00
EL = 33.49'
VC = 600'
K = 318
DS = >70

(–)0.3346%

(+)0.40% CL

BEG. MED. V DITCH
-L- STA. 246+50 CL
EL. 30.16

PI -L- STA. 250+00 CL
EL. 31.56

(–)0.54% CL

END MED. V DITCH
-L- STA. 250+50 CL
EL. 31.29

EXISTING GROUND

PROPOSED GRADE

BM7 ELEV=34.18
N 984180 E 2621212
BL STA. 237+68.00 (199' RT)
–L– STA. 252+49.83 (133' RT)
R/R SPIKE IN 30" PINE

PI = 253+05.00
EL = 31.32'
VC = 300'
K = 821
DS = >70

(–)0.3346%

(–)0.7000%

(–)1.84% CL

(+)0.30% CL

BEG. MED. V DITCH
-L- STA. 253+00 CL
EL. 29.38

PI -L- STA. 253+75 CL
EL. 28.00

END MED. V DITCH
-L- STA. 254+80 CL
EL. 28.32

BEG. MED. V DITCH
-L- STA. 256+00 CL
EL. 27.50

PI -L- STA. 256+50 CL
EL. 27.35

PI = 257+45.00
EL = 28.24'
VC = 300'
K = 300
DS = >70

(–)0.30% CL

(–)0.7000%

(–)3.60% CL

(–)5.87% RT

(+)0.55% RT

END SP. CUT DITCH
BEG. SP. CUT BASE DITCH
-L- STA. 256+66.65 RT
EL. 21.27

BEG. SP. CUT DITCH
-L- STA. 256+00 RT
EL. 25.18

END MED. V DITCH
-L- STA. 257+00 CL
EL. 25.55

PI -L- STA. 258+00 RT
EL. 22.00

(+)0.3000%

(+)3.54% RT

END SP. CUT BASE DITCH
-L- STA. 258+50 RT
EL. 23.77

UNDERCUT EXCAVATION

FOR –L– PLAN SEE SHTS. 21 THRU 23

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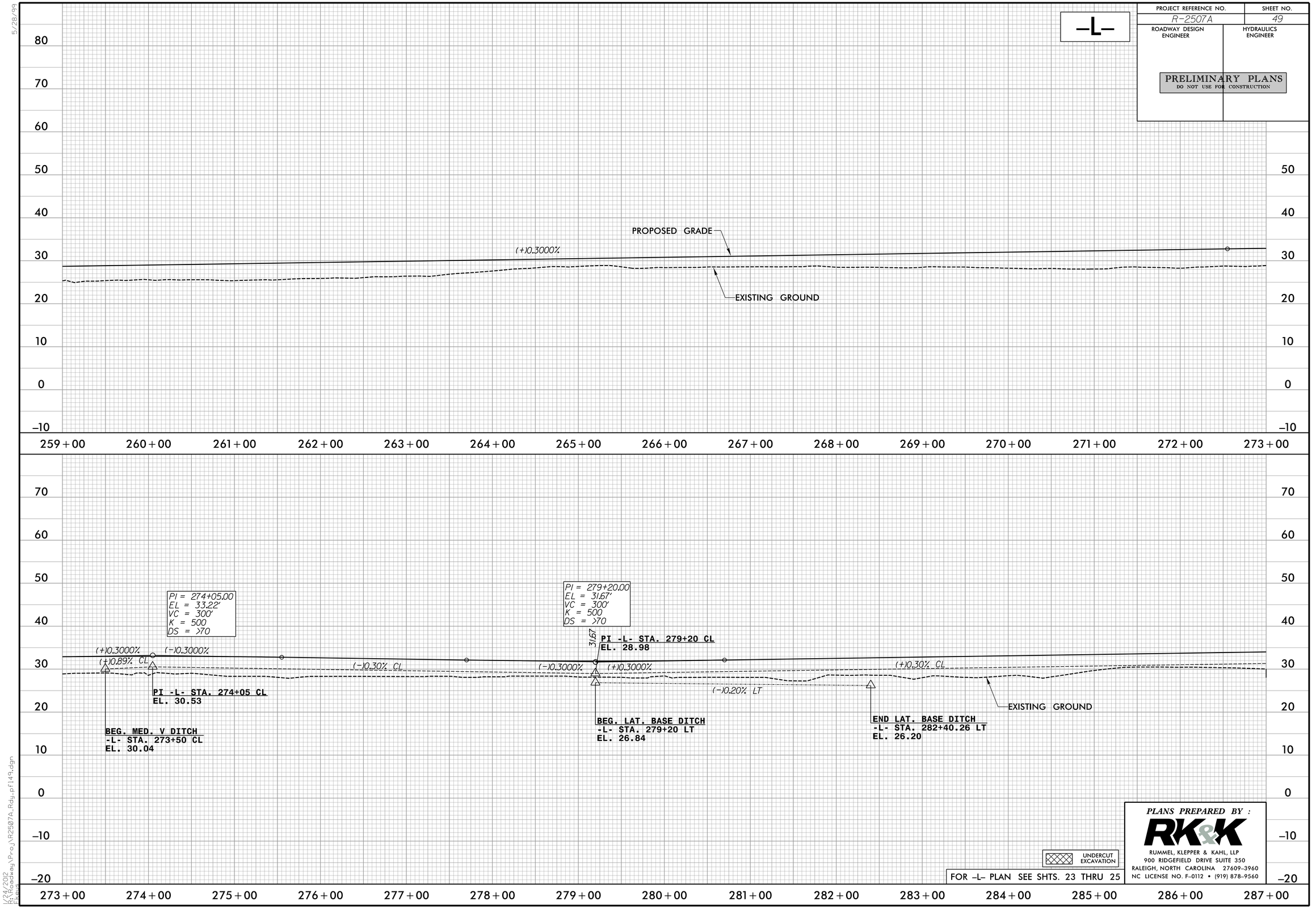
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	49
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

–L–

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



UNDERCUT EXCAVATION

FOR –L– PLAN SEE SHTS. 23 THRU 25

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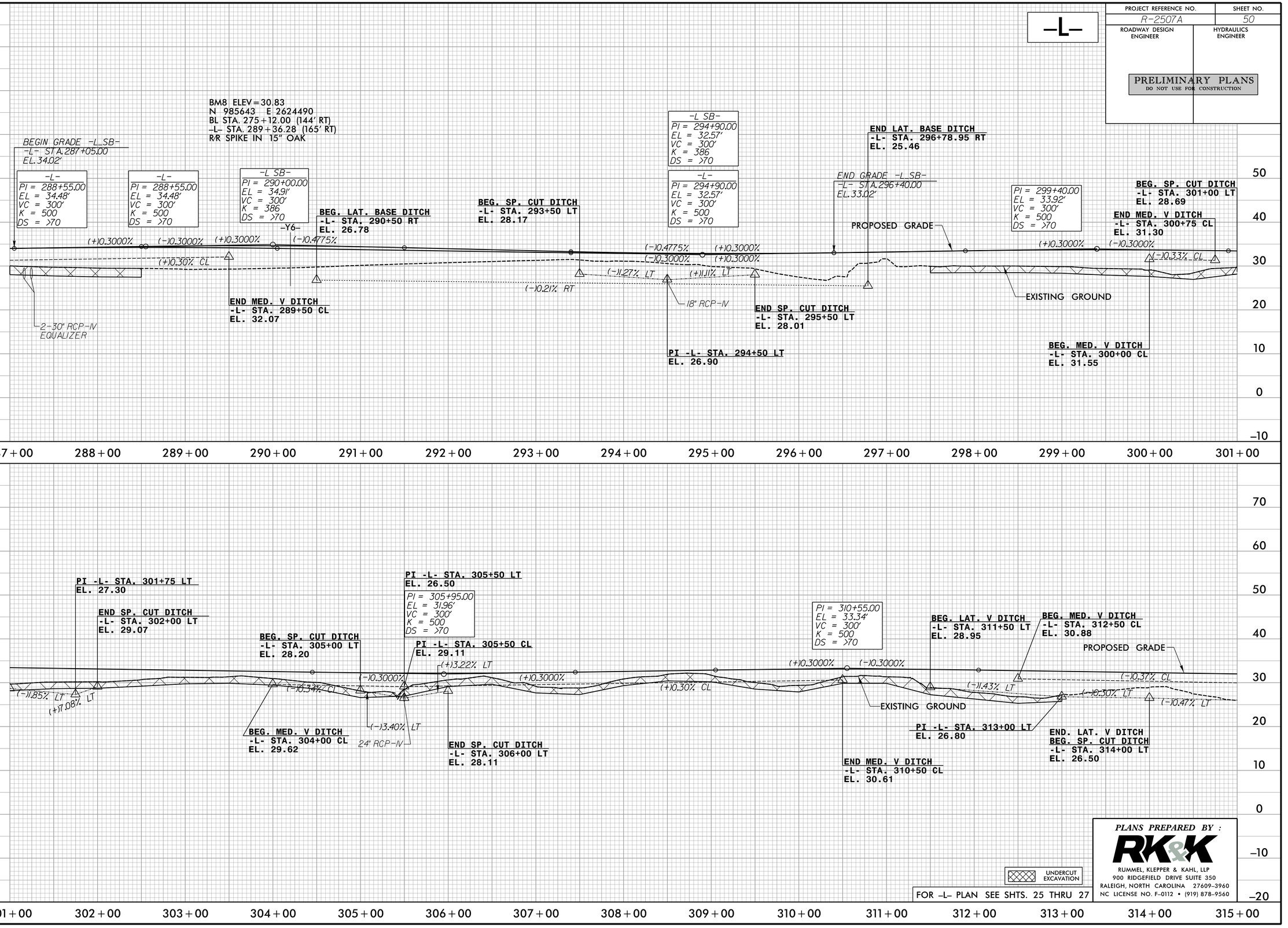
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	50
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–L–



UNDERCUT EXCAVATION

FOR –L– PLAN SEE SHTS. 25 THRU 27

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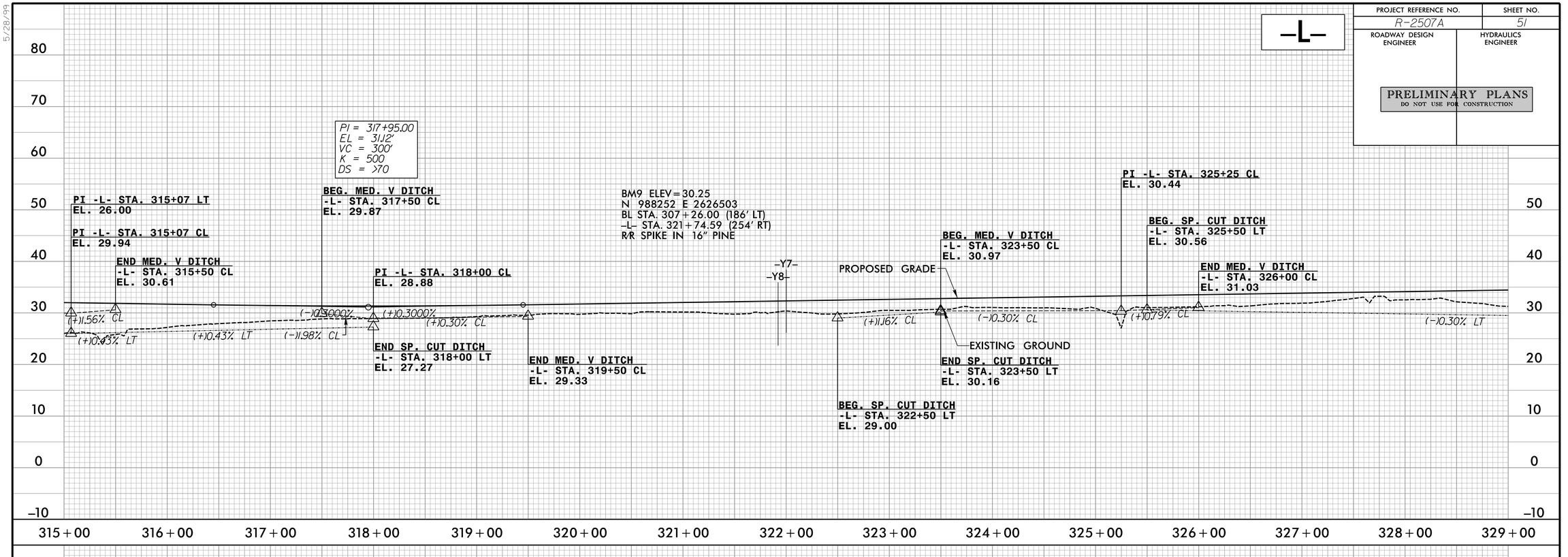
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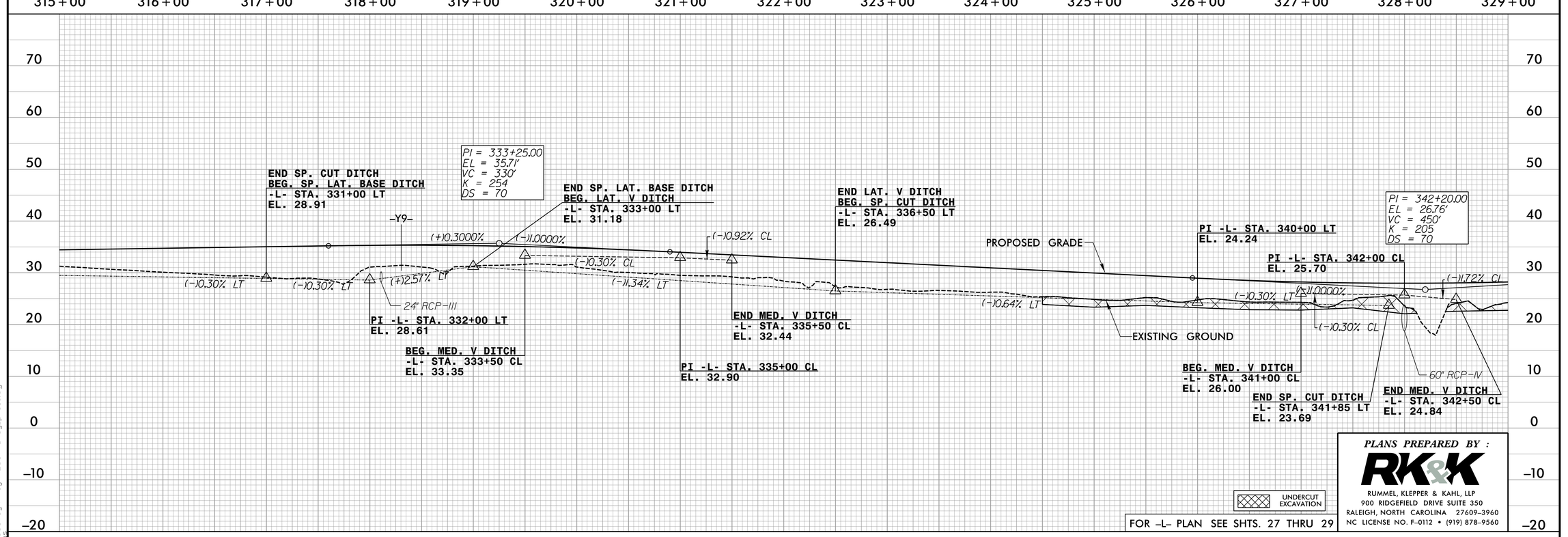
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	5I
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–L–





UNDERCUT EXCAVATION

FOR –L– PLAN SEE SHTS. 27 THRU 29

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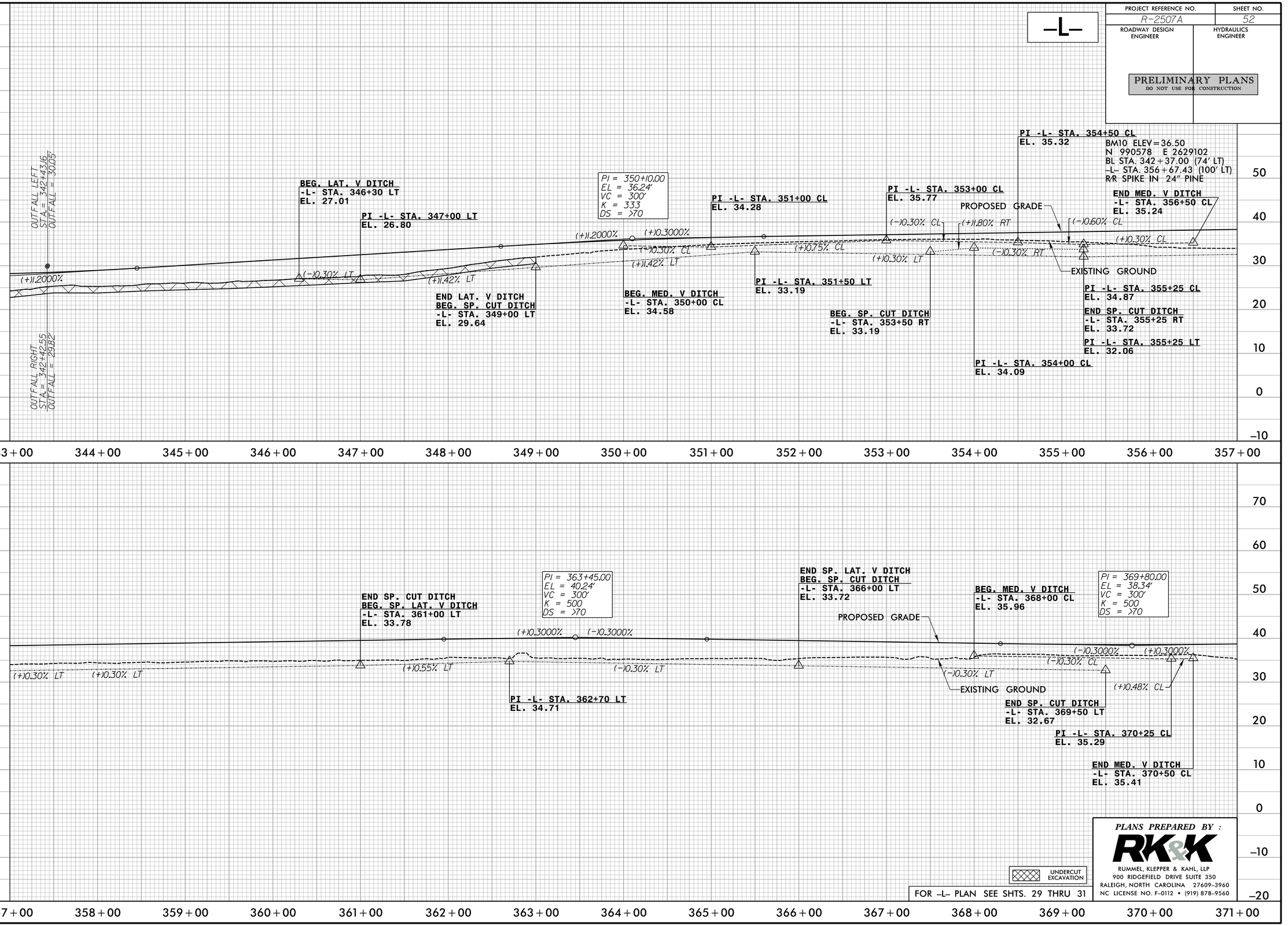
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	52
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–L–



UNDERCUT EXCAVATION

FOR –L– PLAN SEE SHTS. 29 THRU 31

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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	53
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–L–

PI = 378+97.00
EL = 41.09'
VC = 300'
K = 500
DS = >70

BM11 ELEV=36.89
N 992215 E 2631434
BL STA. 368+85.00 (749' RT)
–L– STA. 383+37.69 (707' RT)
R/R SPIKE IN 14" PINE

END GRADE
–L– STA 382+50.00=
–L_END_LT– STA 10+00.00=
ELEV.= 40.03'

PROPOSED GRADE

(+)0.3000%

(–)0.3004%

–Y10–

(–)0.55% RT

(+)0.09% LT

(+)0.08% RT

24" RCP–III

BEG. LAT. V DITCH
-L- STA. 375+57 RT
EL. 34.60

BEGIN SP. LAT. BASE DITCH
-L- STA. 377+40 LT
EL. 32.75

END LAT. V DITCH
BEGIN SP. LAT. BASE DITCH
-L- STA. 378+25 RT
EL. 33.12

END SP. LAT. BASE DITCH
-L- STA. 382+50
EL. 33.23 LT
EL. 33.48 RT

EXISTING GROUND

80 70 60 50 40 30 20 10 0 –10

371+00 372+00 373+00 374+00 375+00 376+00 377+00 378+00 379+00 380+00 381+00 382+00 383+00 384+00 385+00

FOR –L– PLAN SEE SHTS. 32

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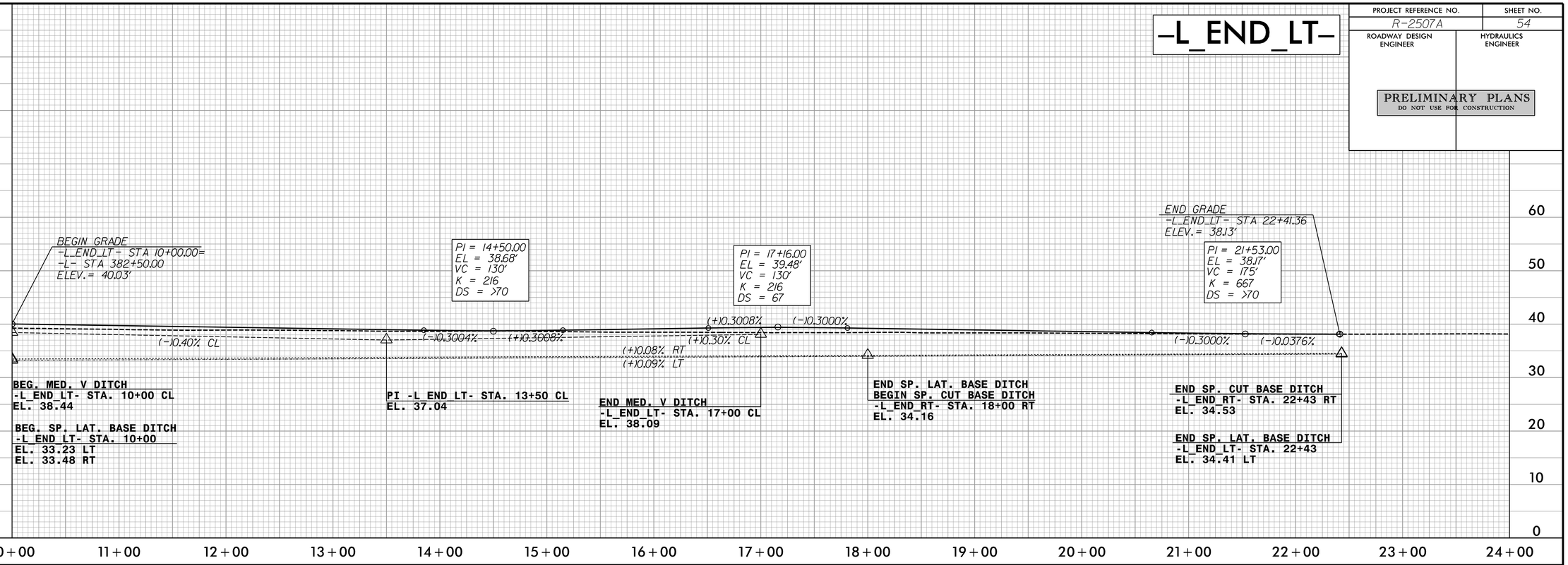
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5/28/99

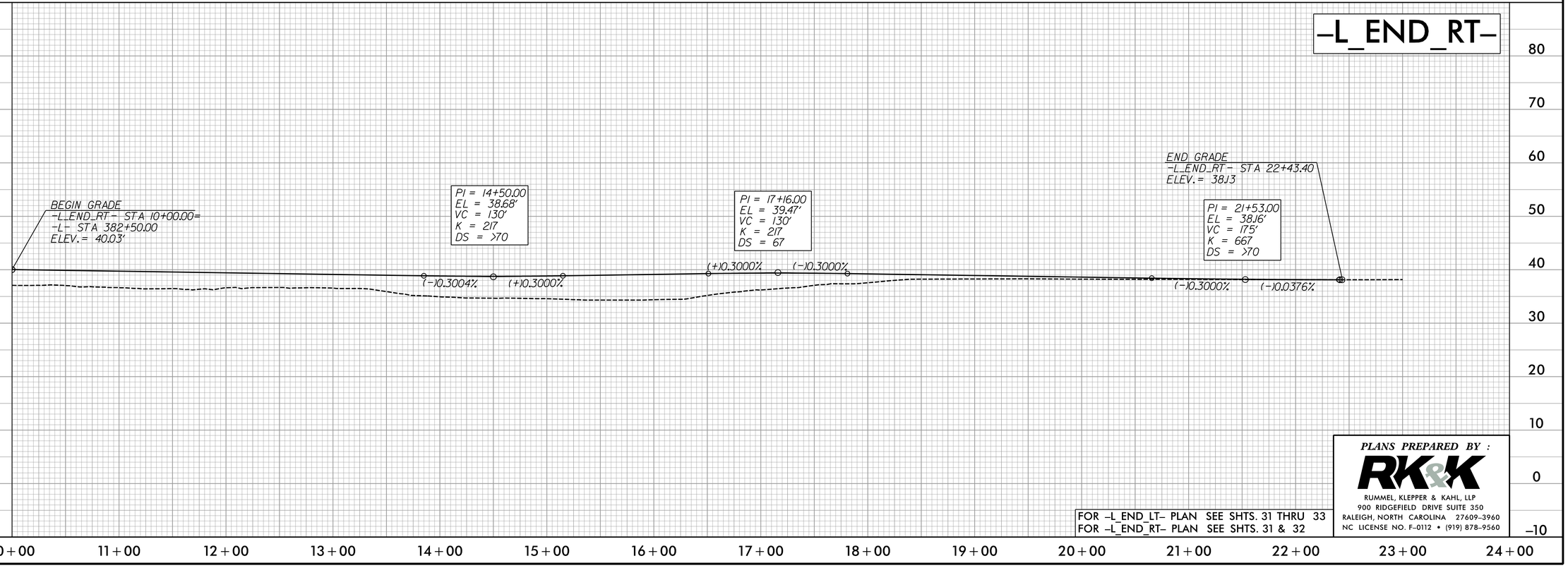
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	54
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–L_END_LT–



–L_END_RT–



FOR –L_END_LT– PLAN SEE SHTS. 31 THRU 33
FOR –L_END_RT– PLAN SEE SHTS. 31 & 32

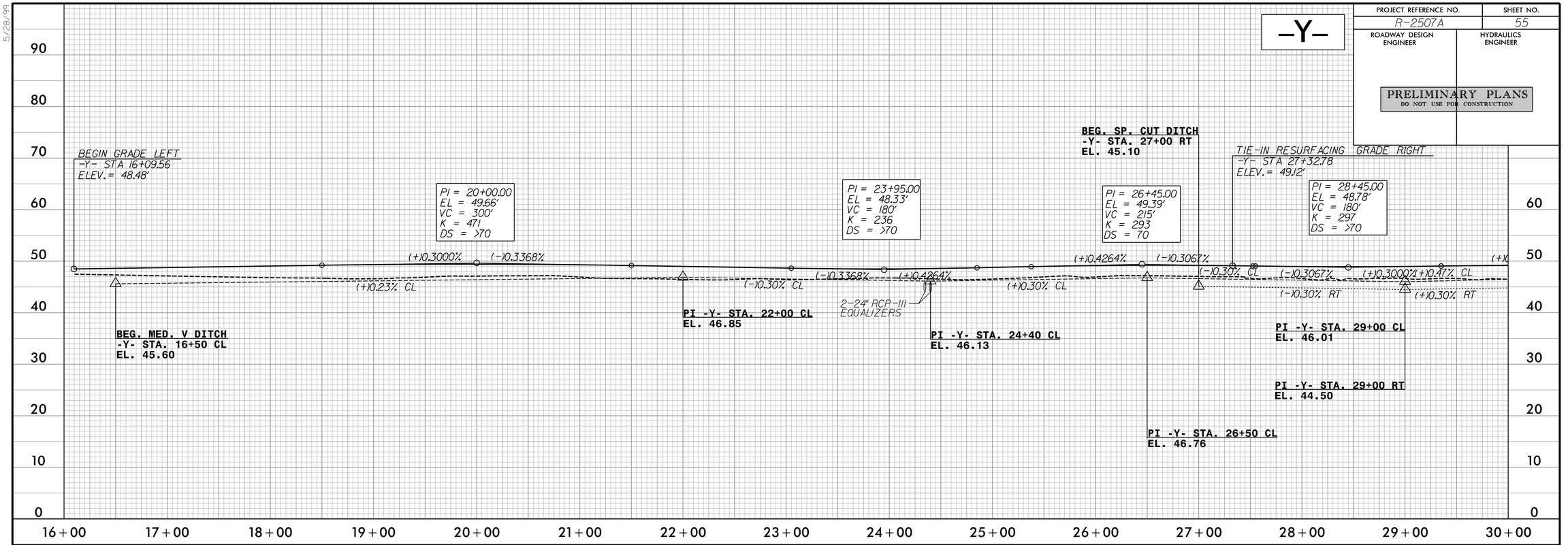
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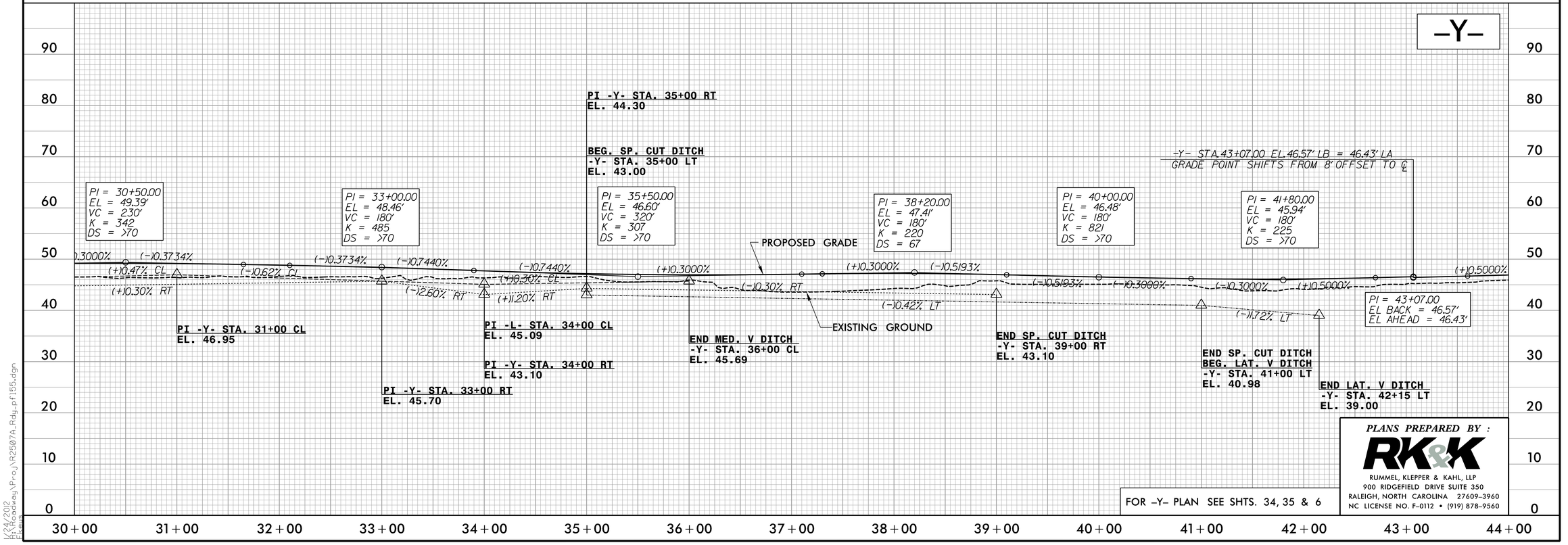
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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	55
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





FOR -Y- PLAN SEE SHTS. 34, 35 & 6

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PROJECT REFERENCE NO.	SHEET NO.
R-2507A	56
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–Y–

PI = 44+50.00
EL = 47.15'
VC = 180'
K = 765
DS = >70

–RPA–
–RPB–

(+)0.7352%

PI = 47+20.00
EL = 49.13'
VC = 240'
K = 153
DS = 60

(+)0.7352%
(–)0.8318%

PI = 49+40.00
EL = 47.30'
VC = 180'
K = 359
DS = >70

(–)0.8318%
(–)0.3306%

30" RCP–IV

PI = 51+20.00
EL = 46.70'
VC = 180'
K = 1045
DS = >70

(–)0.3306%
(–)0.5028%
(+)0.30% RT

BEG. SP. CUT BASE DITCH
-Y- STA. 50+00 RT
EL. 41.13

PI = 53+00.00
EL = 45.80'
VC = 180'
K = 224
DS = >70

(–)0.5028%

END SP. CUT BASE DITCH
-Y- STA. 53+00 RT
EL. 42.03

PI = 53+00.00
EL = 45.80'
VC = 180'
K = 224
DS = >70

–LPC–
–PKG–
–RPC–
(+)0.3000%

PI = 54+65.00
EL = 46.30'
VC = 150'
K = 189
DS = 64

(+)0.3000%
(–)0.4943%

BEG. LAT. V DITCH
-Y- STA. 55+50 LT
EL. 36.82

PI = 54+65.00
EL = 46.30'
VC = 150'
K = 189
DS = >70

(–)0.4943%
(–)12.34%
(+)2.67% LT

PI = 56+40.00
EL = 45.43'
VC = 200'
K = 252
DS = >70

BEG. SP. CUT DITCH
-Y- STA. 56+00 RT
EL. 42.90

(–)0.4943%
(+)0.3000%
(+)1.68% RT
(+)2.67% LT

PI -Y- STA. 56+64 RT
EL. 41.40

18" RCP–III

END LAT. V DITCH
BEG. SP. CUT DITCH
-Y- STA. 56+50 LT
EL. 39.48

END CONSTRUCTION
–Y– STA 62+60.00

END GRADE
–Y– STA 62+10.00
ELEV.= 44.91'

PI = 60+20.00
EL = 46.57'
VC = 300'
K = 255
DS = 70

50' BLEND TO EXIST.

–YA1–

(+)0.3000%
(–)0.8753%
(–)0.30% RT
(–)0.30% LT

PI -Y- STA. 58+00 RT
EL. 43.68

PI -Y- STA. 58+00 LT
EL. 43.49

END SP. CUT DITCH
-Y- STA. 62+00 RT
EL. 42.48

END SP. CUT DITCH
-Y- STA. 62+00 LT
EL. 42.29

FOR –Y– PLAN SEE SHTS. 6 AND 36

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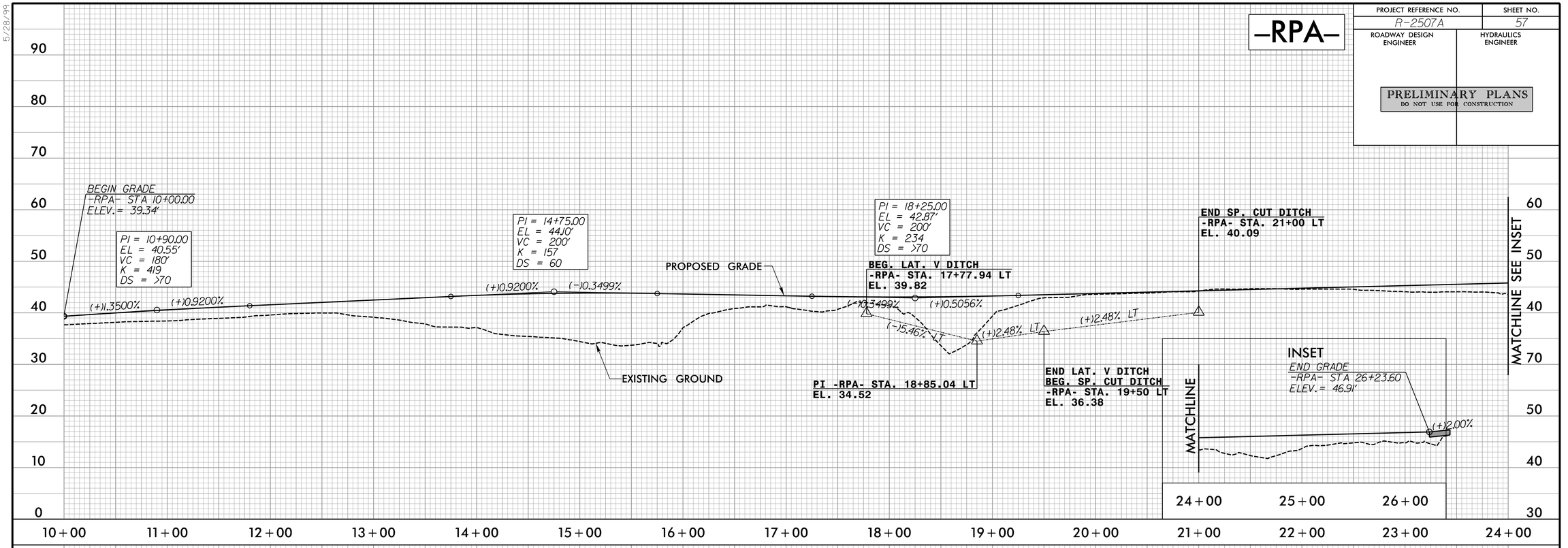
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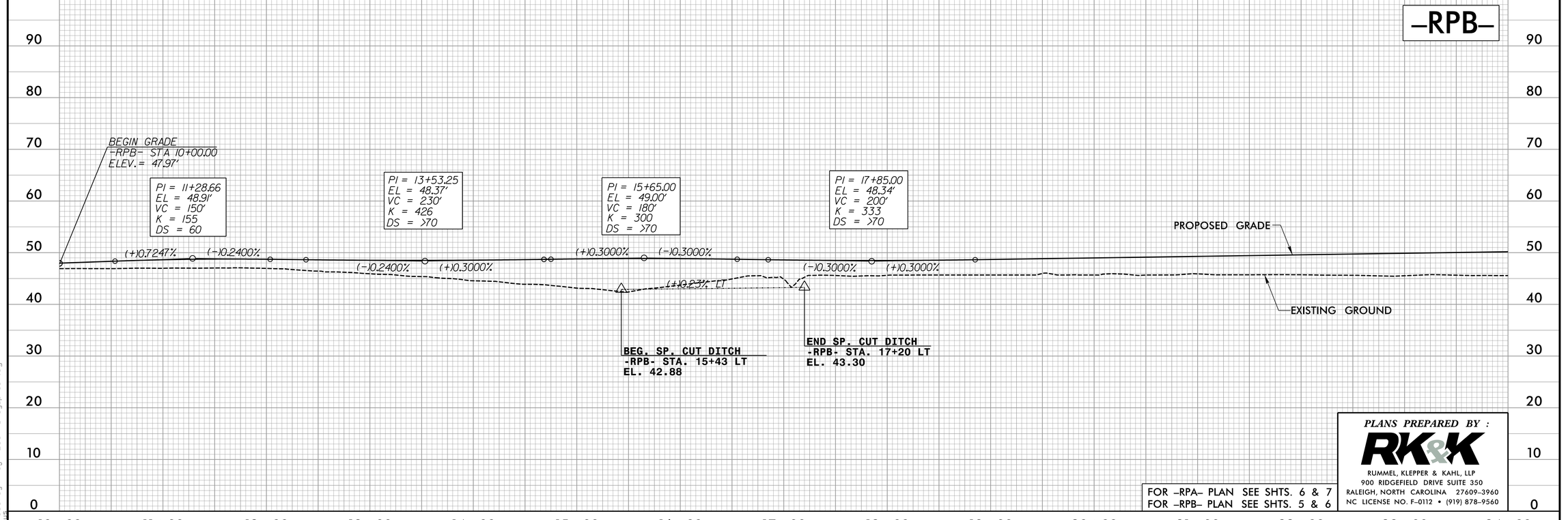
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	57
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–RPA–



–RPB–



FOR –RPA– PLAN SEE SHTS. 6 & 7
FOR –RPB– PLAN SEE SHTS. 5 & 6

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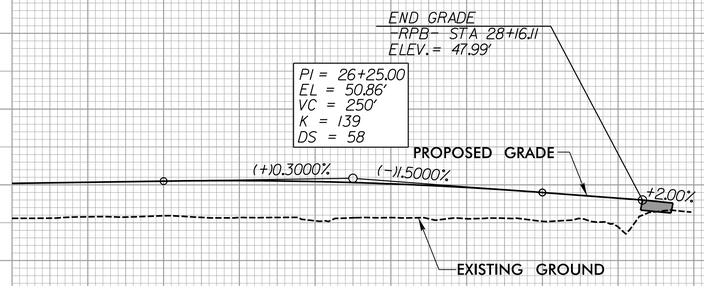
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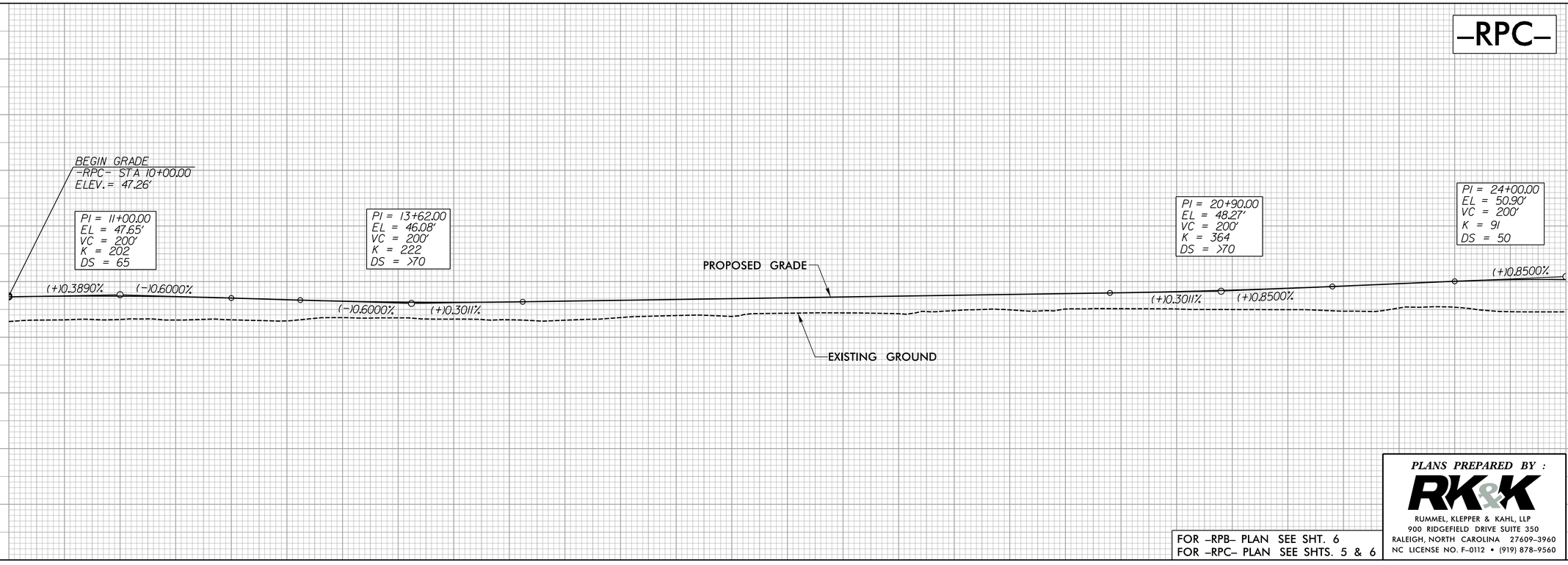
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	58
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–RPB–



–RPC–



FOR –RPB– PLAN SEE SHT. 6
FOR –RPC– PLAN SEE SHTS. 5 & 6

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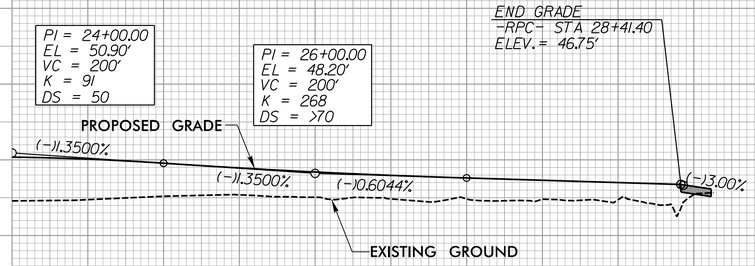
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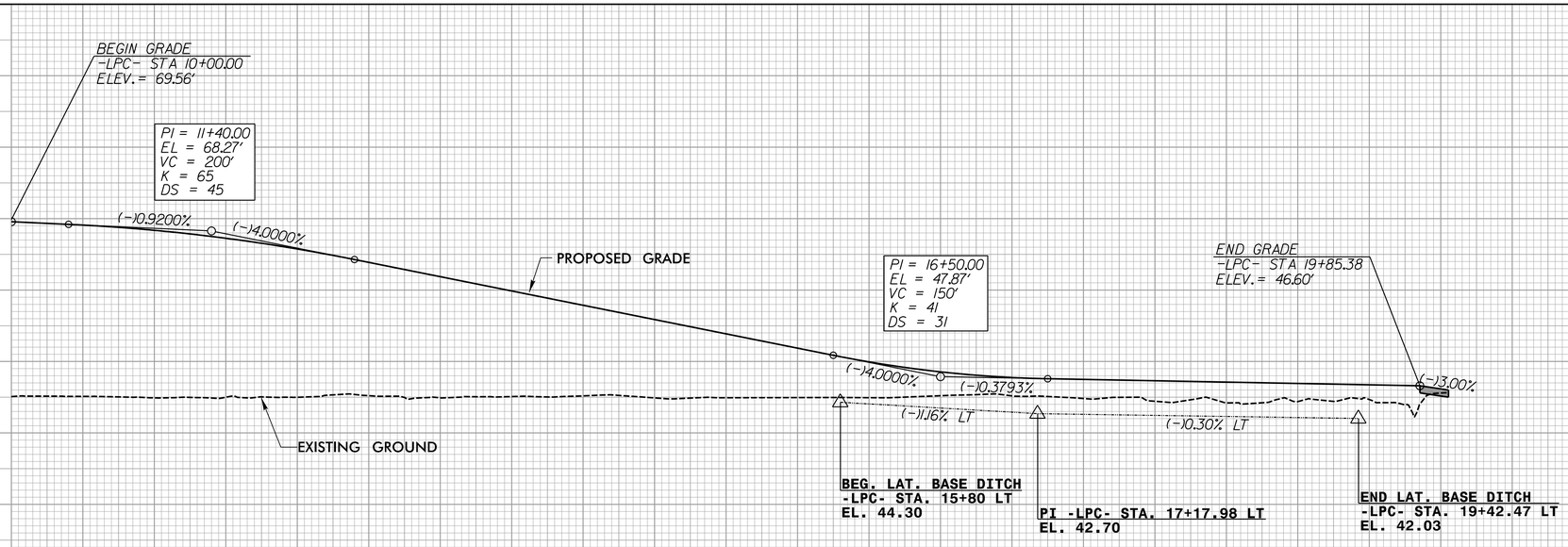
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	59
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–RPC–



–LPC–



FOR –RPC– PLAN SEE SHT. 6
FOR –LPC– PLAN SEE SHT. 6

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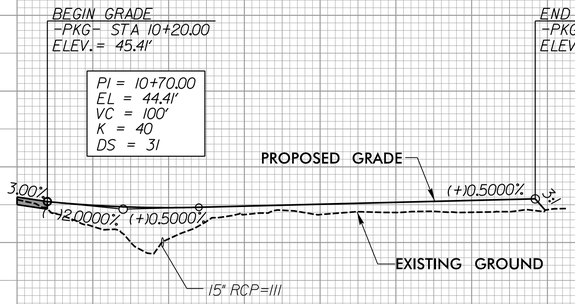
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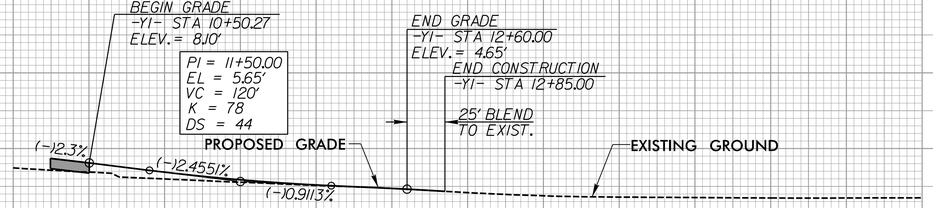
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	60
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

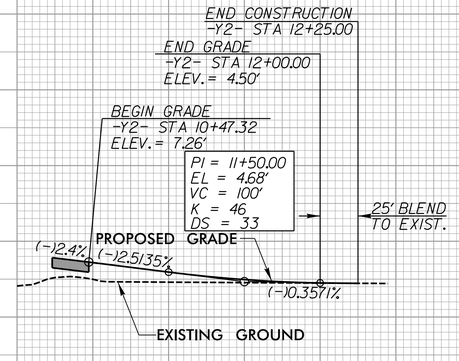
–PKG–



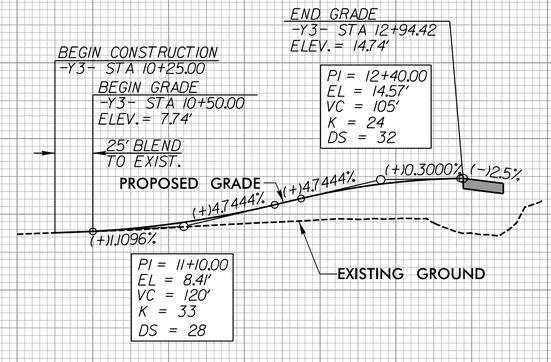
–Y1–



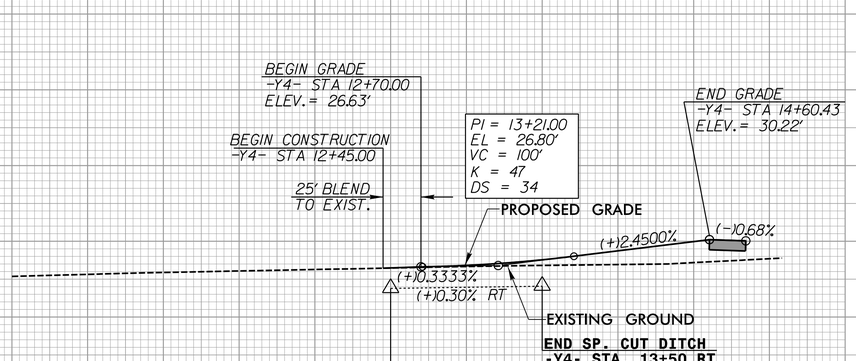
–Y2–



–Y3–



–Y4–



FOR –PKG– PLAN SEE SHT. 6
FOR –Y1– PLAN SEE SHT. 11
FOR –Y2– PLAN SEE SHT. 16
FOR –Y3– PLAN SEE SHT. 18
FOR –Y4– PLAN SEE SHT. 22

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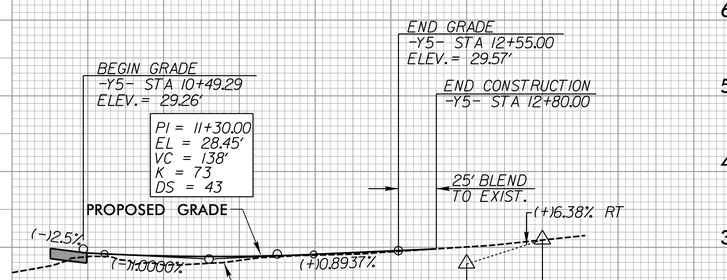
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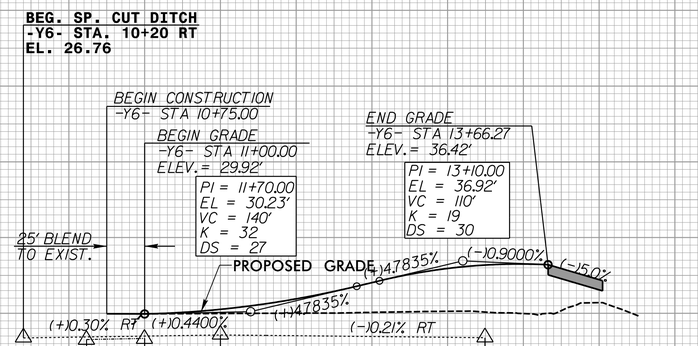
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	61
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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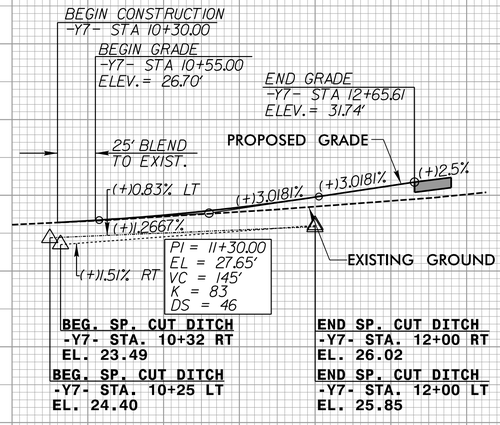
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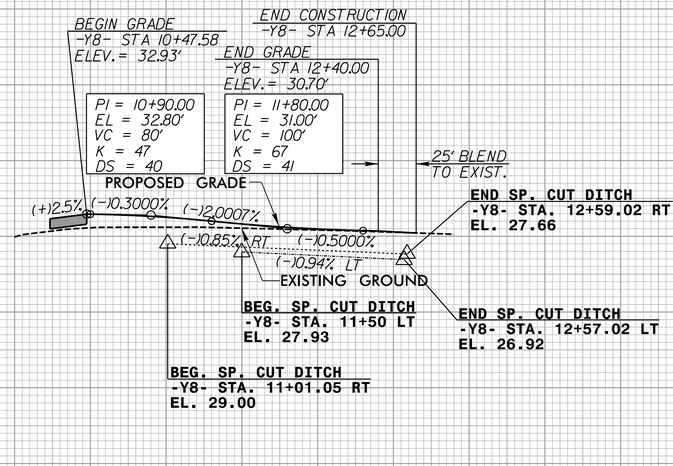
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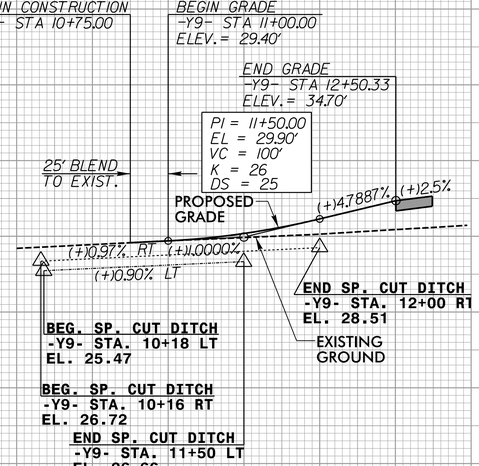
–Y7–



–Y8–



–Y9–



FOR –Y5– PLAN SEE SHT. 22
FOR –Y6– PLAN SEE SHT. 25
FOR –Y7– PLAN SEE SHT. 28
FOR –Y8– PLAN SEE SHT. 28
FOR –Y9– PLAN SEE SHT. 29

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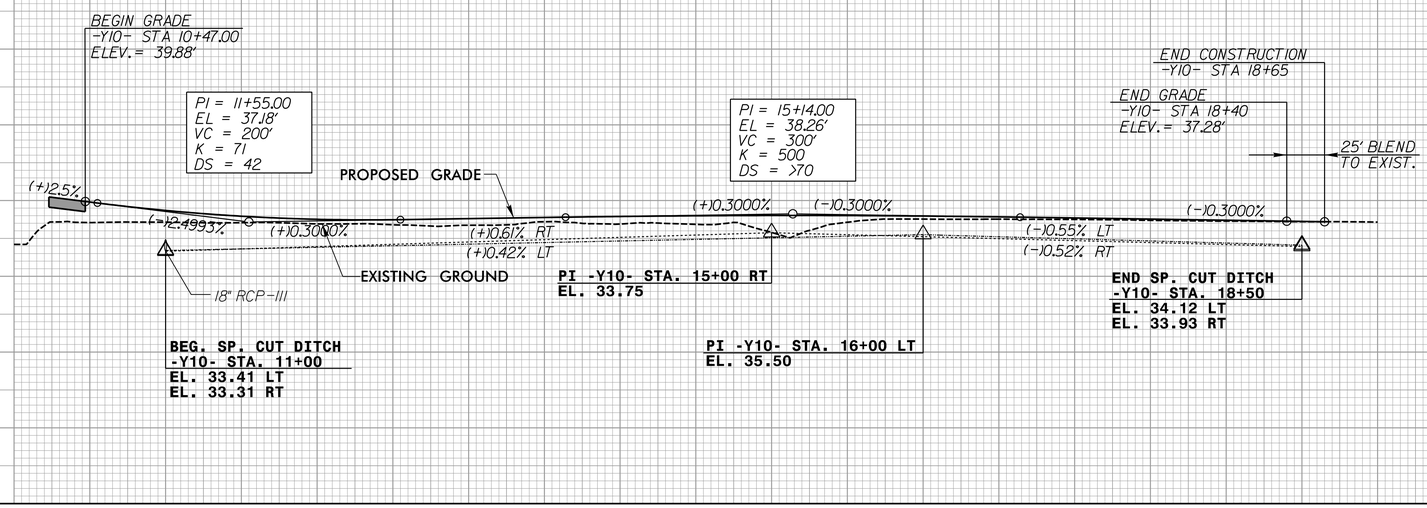
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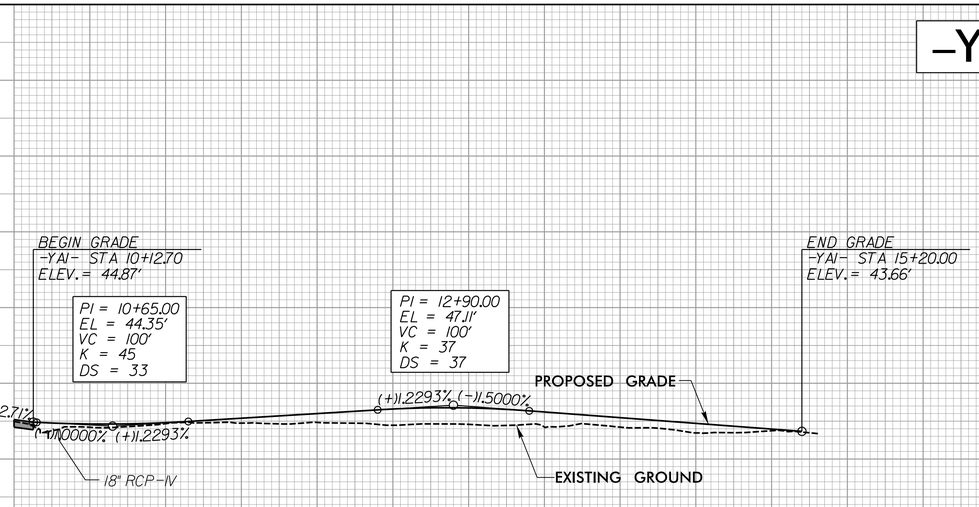
PROJECT REFERENCE NO.	SHEET NO.
R-2507A	62
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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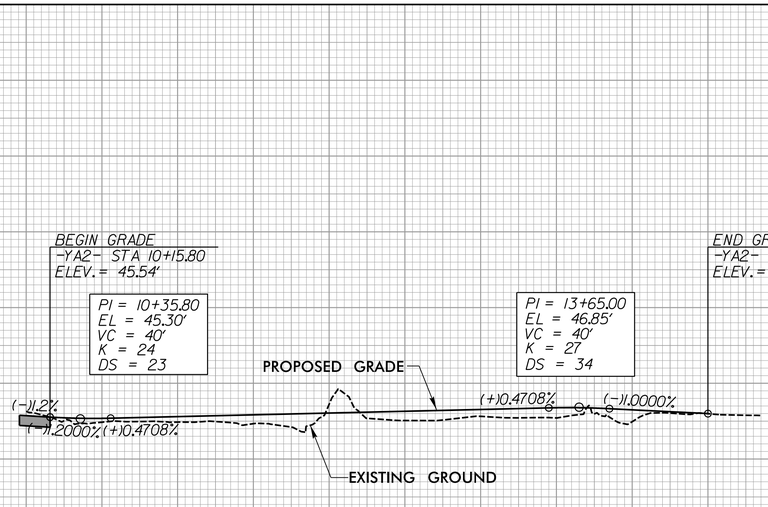
–Y10–



–YA1–



–YA2–



FOR –Y10– PLAN SEE SHTS. 32 & 37
FOR –YA1– PLAN SEE SHT. 36
FOR –YA2– PLAN SEE SHT. 35

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