STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

December 9, 2008

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

Attention: Mr. William Wescott, NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permit Numbers 14 and 33, Section 401 Water Quality Certification, and Neuse Riparian Buffer Authorization** for Improvements to US 17 from Mills Street in Bridgeton to North of SR 1433 (Antioch Road), Craven County. State Project: 8.117601. Federal Aid Project: STPNHF-17(24). TIP: R-3403A. Debit $570 from WBS 34538.1.1

The North Carolina Department of Transportation (NCDOT), Division of Highways, in consultation with the Federal Highway Administration (FHWA), proposes to widen US 17 to a multi-lane facility from Mills Street in Bridgeton to North of SR 1433 (Antioch Road) in Craven County. The length of the proposed project (R-3403A) is approximately 2.9 miles (see Permit Drawings, enclosed). The project has been separated into two sections, A & B, due to differences in proposed construction dates. Section A begins at Mills Street in Bridgeton and ends north (of the southernmost intersection) of SR 1433 (Antioch Road); section B starts there and continues to north of NC 43.

The purpose of this letter is to request approval for the United States Army Corps of Engineers (USACE) Section 404 NW 14 & 33 permits and Section 401 Water Quality Certification and Neuse Riparian Buffer authorization from the North Carolina Division of Water Quality (NCDWQ) for Project R-3403A. Public Notice for projects R-3403A and B was published on May 4, 2004, and assigned Action ID 200411285 by USACE.

In addition to the cover letter and PCN Form, this application package includes the following: permit drawings, riparian buffer drawings, a set of half-size roadway plans, EEP acceptance letter, and 4A and 4C meeting minutes.

Purpose and Need

The purpose and need for this project, as identified in the 2002 Environmental Assessment (EA), is to improve safety, increase traffic capacity to meet projected transportation needs, and reduce travel times. The 1992 New Bern-Bridgeton-Trent Woods-River Bend Urban Thoroughfare Plan classifies US 17 as an Urban Major Thoroughfare from Mills Street in Bridgeton to approximately 1.5 miles north of Antioch Road. This project addresses an important regional transportation need to improve traffic flow in the US 17 corridor that accesses the Cherry Point Marine Base and the Atlantic coast. The purpose of the project is to alleviate congestion and improve the level of service along US 17, and by doing so, improve the safety of the route. US 17 currently operates at Level of Service (LOS) "D", and these

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conditions will become worse as traffic volumes are forecast to increase in the future. Providing additional traffic-carrying capacity will improve the operation of US 17 as a hurricane evacuation route.

Project Description

The project widens US 17 symmetrically about the existing centerline, from Mills Street to Pine Street. From Pine Street to south of B Street (SR 1602), the proposed 4-lane divided highway shifts west of the existing US 17 centerline. The project intersects the Norfolk Southern Railway in Bridgeton at grade. The existing right-of-way is 150-feet wide and is offset to the east of the US 17 centerline from Mills Street to B Street. From B Street to Antioch Road, the right-of-way is offset to the west. With the exception of buying temporary construction easements, NCDOT proposes to locate the improved facility within the current 150-foot corridor.

The project has a "best fit" alignment that avoids the Bridgeton Historic District west of US 17 and the Encee Chemical Sales Company located south of the railroad crossing. By avoiding this company's property while providing a 60-mph design speed, this alignment will impact several residences and businesses west of US 17 and north of the railroad tracks.

The project has been further divided into sections AA and AB. The AA section begins at Mill Street and continues to the Norfolk Southern Railway. The AB section begins there and ends north of Antioch Road.

Summary of Impacts

Waters of the U.S.: Proposed impacts to jurisdictional areas of R-3403A total 0.14 acre of permanent riparian wetland impacts, 0.79 acre of permanent non-riparian wetland impacts, 0.13 acre of 401 isolated wetland impacts and 443 linear feet of permanent stream impacts. See Table 1 for the permanent and temporary impact summary for all sites.

Neuse Riparian Buffers: There are mitigable impacts proposed to 13,390 square feet and allowable impacts to 12,759 square feet of Neuse River basin riparian buffer for R-3403A (see Table 2).

Summary of Mitigation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent practicable as described above. The unavoidable impacts to jurisdictional wetlands, streams, and riparian buffer will be offset by compensatory mitigation provided by NC Ecosystem Enhancement Program (EEP).

Project Schedule

Construction of this project is divided into two sections (A and B). Only the A section is included in this permit application. The Let date for R-3403A is December 16, 2008. The Let date for R-3403B is currently scheduled for March 2, 2020. Due to the amount of time between lettings, an application for R-3403B will be submitted at a later date. The attached permit drawings are final in detailing all proposed impacts occurring within Project R-3403A.

NEPA Document Status

This project has been developed through the NEPA/404 merger process. The project was added in June 1995 for inclusion in the 1996-2002 Transportation Improvement Plan (TIP). Concurrence Points 1 (Purpose and Need) and 2 (Alternatives for Study) were approved on October 1, 1999 and June 14, 2001, respectively. The EA was signed June 3, 2002. Concurrence Point 2A (Bridging Decisions and Final Alternatives to Carry Forward) was approved on January 3, 2003. Concurrence Point 3 (Least Environmentally Damaging Practicable Alternative (LEDPA)) and 4A (Avoidance and Minimization)

were both approved on September 9, 2004. Concurrence Point 4C for Project R-3403A was completed on December 13, 2006, and the final field review was held on February 27, 2008.

Independent Utility

R-3403A is in compliance with 23 CFR Part 771.111(f), which lists the FHWA characteristics of the independent utility of a project. The project meets the criteria for independent utility as discussed below:

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

Resource Status

The project study area is located in the Neuse River Basin within the North Carolina Division of Water Quality (NCDWQ) sub-basin 03-04-10 and within the United States Geological Survey (USGS) eight-digit Cataloging Unit 03020204. Surface waters within the project study area are classified as "C", "SC", and "SW". The impacts are located in an unnamed tributary to the Neuse River and an unnamed tributary to Mills Branch.

Jurisdictional Delineation

Wetland and stream identification and preliminary assessment analysis for the study area were performed in 1999, reported in the Natural Resources Technical Report (NRTR), and summarized in the EA for this project. The wetlands and streams within the project study area were delineated based on the 1987 USACE Wetland Delineation Manual and the preliminary design was prepared to avoid and minimize impacts to the extent practicable. Jurisdictional areas were verified in the field by USACE representative Mike Bell on February 21, 2001 and R-3403A wetlands were re-verified in the field on March 5, 2008 by USACE representative William Wescott. Verified jurisdictional wetlands and streams are depicted on the enclosed Permit Drawings.

Characterization of Jurisdictional Sites

Wetlands and streams were described in the NRTR and EA completed for this project as follows:

Wetlands

The EA describes the wetlands occurring in Project R-3403A as "Depressional Wetlands" as follows: "This community is located throughout the project, between areas developed for agriculture and residential/commercial uses. It is also found in the area between US 17 and the railroad tracks, which parallel the road for much of the project length. It is composed of a mosaic of small upland areas interspersed among wet depressions and canebrake areas."

Streams

As part of the 1999 assessment for the NRTR, stream reaches falling within the study corridor of the Preferred Alternative were identified and assessed. This assessment was reported in the NRTR and summarized in the EA as "channelized" with "sand-substrate" and "some flow".

Jurisdictional Resources

Estimated impacts to jurisdictional areas (as shown on the Wetland Permit Impact Summary sheet, enclosed, and in Table 1) are the result of minimization and avoidance measures and represent the final impacts foreseen at this time. Section AA sites include A1-A2 and Section AB sites include B1-B9.

Table 1. Summary of Wetland and Stream Impacts for R-3403A

Site	**Wetland Impacts** (acres)		**Stream Impacts** (linear feet)	
	Permanent	**Temporary**	**Permanent**	**Temporary**
A1	0.04	0.00	0	0
A2	0.23	0.00	0	0
B1+	0.05	0.00	72	80
B2*	0.02	0.00	0	0
B3+	0.09	0.00	105	61
B5	0.04	0.00	0	0
B7	0.48	0.00	0	0
B8	0.00	0.00	266	95
B9*	0.11	0.00	0	0
Total:	1.06	0.00	443	236

*denotes 401 isolated wetlands
+denotes riparian wetlands

Permanent Impacts: Proposed permanent impacts include fill, excavation, and mechanized clearing in wetlands. The total permanent wetland impacts are 0.93 acre. Proposed permanent impacts due to fill in surface waters are 443 linear feet (0.07 acre). Impacts for isolated wetlands are 0.13 acre (see Wetland Permit Impact Summary, enclosed).

Temporary Impacts: Proposed temporary impacts to 0.07 acre of wetlands due to temporary fill in wetlands in the hand clearing areas for the installation of erosion control measures, including Temporary Silt Fence and/or Special Sediment Control Fence. Proposed temporary fill in surface waters is 0.04 acre (236 linear feet).

Hand Clearing: There will be 0.14 acre of hand clearing in riparian wetlands and 0.22 in non-riparian wetlands due to project construction.

Riparian Buffer Impacts: There are mitigable impacts proposed to 13,390 square feet (at Site B3) and allowable impacts to 12,759 square feet (at Site B1) of Neuse River basin riparian buffer for R-3403A (see Table 2 and Buffer Impacts Summary, enclosed). There are 9,175 square feet of buffer impacts at Sites B1 and B3, which are in jurisdictional wetlands.

Utility Impacts: There will be 0.42 acre of hand clearing for aerial power lines.

Table 2. Summary of Buffer Impacts for R-3403A

Site	**Total Buffer Impact** (ft^2)			**Wetland Impact Within Buffer** (ft^2)			**Buffer Requiring Mitigation** (ft^2)		
	Zone 1	**Zone 2**	**Total**	**Zone 1**	**Zone 2**	**Total**	**Zone 1**	**Zone 2**	**Total**
B1	7,913	4,846	12,759	2,747	1,145	3,892	N/A	N/A	N/A
B3	8,264	5,126	13,390	4,602	681	5,283	8,264	5,126	13,390
Total:	16,177	9,972	26,149	7,349	1,826	9,175	8,264	5,126	13,390

Wetlands

Roadway impacts proposed at Site A1 involve 0.02 acre of permanent fill and 0.02 acre of mechanized clearing for a total 0.04 acre within depressional wetlands. Roadway impacts at Site A2 involve 0.14 acre of permanent fill and 0.09 acre of mechanized clearing for a total 0.23 acre.

Extension of the 6-foot by 6-foot Reinforced Concrete Box Culvert (RCBC) proposed at Site B1 involves 0.05 acre of permanent fill with 0.07 acre depressional wetlands to be hand cleared.

Roadway impacts proposed at Site B2 involve 0.02 acre of permanent fill with 0.06 acre of hand clearing in depressional wetlands.

Extension of the double 6-foot by 5-foot RCBC proposed at Site B3 involves 0.09 acre of permanent fill and less than 0.01 acre excavation with 0.07 acre of hand clearing for a total 0.10 acre impact within depressional wetlands.

Ditching through Site B5 is required due to topography. Roadway impacts proposed at Site B5 involve 0.04 acre of permanent fill and 0.09 acre of hand clearing in depressional wetlands.

Roadway impacts at Site B7 will necessitate 0.48 acre permanent fill and 0.05 acre hand clearing in depressional wetlands. Roadway impacts proposed at Site B9 involve 0.11 acre of permanent fill with 0.02 acre of hand clearing within depressional wetlands.

Streams

The existing 6-foot by 6-foot RCBC at Site B1 will be retained and extended. The outlet extension will be buried approximately 1-foot; however, the inlet extension will not, due to the existing inlet being perched. Permanent impacts to 72 linear feet (0.02 acre) of stream channel and temporary impacts to 80 linear feet (0.02 acre) channel tributary to the Neuse River will result.

The existing double 6-foot by 5-foot RCBC at Site B3 will be retained and extended. The extensions will not be buried due to the existing inlet and outlet being perched. Permanent impacts to 105 linear feet (0.02 acre) stream channel and temporary impacts to 61 linear feet (0.01 acre) channel tributary to Mills Branch will result.

The existing 4-foot by 5-foot RCBC at Site B8 will be extended with a 72-inch Reinforced Concrete Pipe (RCP) that will be buried 1-foot. Permanent impacts to 155 linear feet (0.02 acre) stream channel and temporary impacts to 77 linear feet (0.01 acre) channel tributary to Mills Branch will result. The existing 42-inch Corrugated Metal Pipe (CMP) will be replaced with a 72-inch RCP that will be buried 1-foot. Permanent impacts to 111 linear feet (0.01 acre) stream channel and temporary impacts to 18 linear feet (<0.01 acre) channel tributary to Mills Branch will also result at Site B8. Total permanent impacts of 266 linear feet (0.03 acre) channel and temporary impacts of 95 linear feet (<0.02 acre) channel are proposed at Site B8.

Neuse River Basin Riparian Buffer

This project is located in the Neuse River Basin; therefore, the regulations pertaining to the buffer rules apply. There will be a total of 26,149 ft^2 of impacts to riparian buffers (see Table 2). This includes 12,759 ft^2 (7,913 ft^2 in Zone 1 and 4,846 ft^2 in Zone 2) of impacts that will occur from approach fill, excavation, and mechanized clearing activities due to road crossings. These road crossing activities are allowable because impacts are less than the 150-foot or one-third of an acre threshold per crossing, for which mitigation is required. Uses designated as allowable may proceed within the riparian buffer provided that there are no practical alternatives to the requested use pursuant to Item (8) of this rule. There are 13,390 ft^2 (8,264 ft^2 in Zone 1 and 5,126 ft^2 in Zone 2) of road crossing impacts that exceed the threshold for mitigation, which is considered allowable with mitigation. However, a portion of these impacts overlap with jurisdictional wetlands. When this occurs, wetland mitigation will be provided in

lieu of buffer mitigation. There is also an additional 1,600 ft^2 (0.059 acre) of hand clearing in the riparian buffer (800 ft^2 in Zone 1 and 1,000 ft^2 in Zone 2) for aerial power lines. This action is exempt because it is a perpendicular crossing that disturbs equal to or less than 150 linear feet of riparian buffer. Additional information is provided in the buffer impacts summary sheets.

Protected Species

Plants and animals with federal classification of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The United States Fish and Wildlife Service (USFWS) include the five federally protected species summarized in Table 3 for Craven County as of the January 31, 2008, listing. Species characteristics, distribution, and habitat details along with survey and biological conclusion information were reported in the previously referenced EA.

Table 3. Federally Protected Species for Craven County

Scientific Name	Common Name	Status	Habitat Present	Biological Conclusion
Alligator mississippiensis	American alligator	T(S/A)	N/A	Not Required
Dermochelys coriacea	Leatherback sea turtle	E	No	No Effect
Picoides borealis	Red-cockaded woodpecker	E	No	No Effect
Trichechus manatus	West Indian manatee	E	No	No Effect
Aeschynomene virginica	Sensitive joint-vetch	T	Yes	No Effect

Surveys were completed in 1999 prior to the completion of the EA for the above-listed species. During these surveys, no suitable habitat was identified within the study area for Project R-3403A for leatherback sea turtle (*Dermochelys coriacea*), red-cockaded woodpecker (*Picoides borealis*), or West Indian manatee (*Trichechus manatus*). Specific survey for individuals or populations of sensitive joint-vetch (*Aeschynomene virginica*) was conducted because potentially suitable habitat was identified for this species. The Project R-3403 study area was re-surveyed in September 2002 for sensitive joint-vetch and the Project R-3403A study area will be re-surveyed for individuals and/or populations of this species again prior to construction. Therefore, biological conclusions of No Effect were given due to the lack of occurrence or absence of habitat for the federally protected species listed for Craven County.

Bald and Golden Eagle Protection Act

In the July 9, 2007, Federal Register (72:37346-37372), the bald eagle was declared recovered, and removed (de-listed) from the Federal List of Threatened and Endangered wildlife. This de-listing took effect August 8, 2007. After de-listing, the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d) became the primary law protecting bald eagles. No suitable bald eagle nesting habitat was found within 660 feet of the project limits. This project will, therefore, have no effect on the bald eagle.

Cultural Resources

Project effects on archaeological and architectural resources were documented in the EA and summarized as follows:

Archaeological Resources

This is a federally funded project subject to Section 106 of the National Historic Preservation Act which requires consultation with the State Historic Preservation Office (HPO) on possible effects of the project on historic properties. The Area of Potential Effects (APE) for this project is defined as the geographic area or areas within which a project may cause changes in the character or use of historic properties. The

HPO requested that background research be provided for the general project area and a National Register of Historic Places (NRHP) evaluation for site 31CV244/244** be completed.

Field investigations were comprised primarily of pedestrian reconnaissance of plowed field locations. The pedestrian survey revealed a high degree of landform disturbance within the APE due to residential, industrial, and agricultural development. In addition, the presence of the Norfolk and Southern Railroad adjacent to the east side of the existing US 17 right-of-way has lessened the possibility for intact archaeological sites within the eastern limits of the project's APE. A single historic surface scatter designated site 31CV257** was recorded within the project area. A series of twelve 50cm x 50cm subsurface test units were excavated within the limits of site 31CV244/244** which yielded evidence of Woodland and late 19th century components predominantly confined to the plow zone. The Wallace cemetery was documented due to its close proximity to the project area. At least 23 graves are present with an internment date range from 1882-1973.

None of these resources were determined to be significant through application of the criteria established for eligibility to the NRHP under 36 CFR§60.4. In addition, there are no visible remains or features that would be appropriate for public display and interpretation, and would warrant preservation in place as a public exhibit. Therefore, Section 4(f) of the Department of Transportation Act of 1966 (U.S.C.§303) as amended does not apply. No further archaeological work is recommended.

Architectural Resources

An architectural historian with the NCDOT conducted a field study of the project's APE and reported the findings to the HPO. For purposes of compliance with Section 106 of the National Historic Preservation Act, HPO and NCDOT concur that the following properties are eligible for the NRHP as contributing resources with the Bridgeton Historic District:

House (Property #39), House (Property #41), House (Property #44), & House (Property #45).

The Bridgeton Historic District is a "well-preserved early twentieth century community that has local significance both for its architecture and its history." It was determined eligible for the NRHP in 1992, with most buildings within the district contributing to its integrity, in spite of typical alterations such as the addition of artificial siding and the replacement of porches. The project will have no adverse effect on the Bridgeton Historic District because the chosen alignment does not take property in the district and there will be no construction easements in the district. This assessment of effects is recorded on a form signed by NCDOT, HPO, and FHWA on November 29, 2001.

FEMA Compliance

The project has been coordinated with appropriate state and local officials and the Federal Emergency Management Agency (FEMA) to assure compliance with federal, state, and local floodway regulations. The location and conceptual design of the build alternative in the floodplain and floodway were planned to mitigate increases in flooding risk and substantial environmental impacts. A floodplain evaluation was conducted for the project in accordance with Executive Order 11988 "Floodplain Management" and 23 CFR 650, Subpart A "Location and Hydraulic Design of Encroachments of Floodplains." The floodplains in the study area were identified. The recommended alternative crosses the 100-year floodplains of an unnamed tributary to the Neuse River and an unnamed tributary to Mills Branch. Since this is a widening project, existing culverts within the 100-year floodplain will be retained and extended. Potential impacts to the floodplain from erosion will be mitigated through strict adherence to NCDOT's "Best Management Practices for Protection of Surface Waters."

Mitigation Options

The NCDOT is committed to incorporating all reasonable and practical design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation for all remaining,

unavoidable jurisdictional impacts. Avoidance measures were taken during the planning and NEPA compliance stages and minimization measures were incorporated as part of the project design. Because opportunities for on-site mitigation are limited, NCDOT proposes to utilize the EEP to mitigate for wetland, stream, and buffer impacts.

Avoidance and Minimization

Due to the location and extent of wetlands and surface waters within the project study area, complete avoidance of impacts is not possible. Any widening of US 17 will impact jurisdictional areas. All jurisdictional features were delineated, field verified, and surveyed within the project corridor. Using these surveyed features, preliminary designs were adjusted to avoid and/or minimize impacts to wetlands, streams, and riparian buffer areas. NCDOT employs many strategies to avoid and minimize impacts to jurisdictional areas in all of its designs. Many of these strategies have been incorporated into Best Management Practice (BMP) documents that have been reviewed and approved by the resource agencies and which will be followed throughout construction. Wetland areas not affected by the project will be protected from unnecessary encroachment. Avoidance and minimization strategies applied on this project are as follows:

- No staging of construction equipment or storage of construction supplies will be allowed in wetlands or near surface waters.
- The project was designed to avoid or minimize disturbance to aquatic life movements.
- Crossings of jurisdictional areas were angled to cross as perpendicularly as possible to minimize impacts.
- Design Standards in Sensitive Watersheds will be implemented to minimize erosion/sedimentation loss during construction phase.
- Medians were reduced to minimum safe widths in order to minimize impacts to jurisdictional areas.
- 3:1 fill slopes will be applied in jurisdictional areas where practicable.
- Hand-clearing will be used in wetlands where practicable.

Compensation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent practicable as described above. The unavoidable impacts to 1.06 acres of jurisdictional wetlands and 443 linear feet of stream will be offset by compensatory mitigation provided by EEP. A copy of the EEP acceptance letter is included with this application.

Indirect and Cumulative Effects

Indirect and Cumulative Effects (ICE) were described in an addendum titled "Indirect and Cumulative Impacts" to the EA included in the Finding of No Significant Impact (FONSI) completed in January 2005. Based on discussions with the local planning community in Craven County, as well as analysis of demographic characteristics, employment trends, local land use and transportation plans, inventory of notable features, and qualitative assessment of impact-causing conditions, it was determined that construction of R-3403 should have a low potential to generate indirect effects.

Regulatory Approvals

Section 404: The NCDOT requests that these activities be authorized by Nationwide Permit 14. We are also requesting the issuance of a Nationwide Permit 33 for the temporary surface water impacts due to the extension of culverts. (72 CFR; 11092-11198, March 12, 2007).

Section 401: We anticipate 401 General Certification numbers 3704 and 3688 will apply to this project. The NCDOT will adhere to all standard conditions of the aforementioned certifications. In accordance with 15A NCAC 2H, Section .0500(a), we are providing five copies of this application to the NCDWQ for their review and approval.

Riparian Buffer: By copy of this application, NCDOT is requesting Neuse Riparian Buffer authorization from NCDWQ.

CAMA: Due to the absence of any Areas of Environmental Concern, this project will not require a CAMA permit as confirmed by North Carolina Division of Coastal Management staff. As previously stated the project will require a Nationwide permit, which has been determined to be consistent with the State's coastal program.

State Stormwater : NCDOT has received a state stormwater permit for the AB Section and is submitting an application for the AA Section under separate cover.

A copy of this permit application will be posted on the NCDOT website at: http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html. If you have any questions or need additional information, please contact Mr. Chris Underwood at 919-715-1451 or csunderwood@ncdot.gov.

Sincerely,

E. L. Lusk

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

cc:

W/attachment

Mr. Brian Wrenn, NCDWQ (5 copies)

W/o attachment (see website for attachments)

Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Mark Staley, Roadside Environmental
Mr. C. E. Lassiter, P.E., Div. 2 Engineer
Mr. Jay Johnson, Div. 2 Environmental Officer
Mr. Scott McLendon, USACE, Wilmington
Mr. Steve Sollod, NCDCM
Mr. Gary Jordan, USFWS
Mr. Travis Wilson, NCWRC
Mr. Ron Sechler, NMFS
Ms. Anne Deaton, NCDMF
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Ms. Beth Harmon, EEP
Mr. Todd Jones, NCDOT External Audit Branch
Mr. Brian Yamamoto, P.E., PDEA

Office Use Only: Form Version March 05

USACE Action ID No. _____ **DWQ No.** _____

(If any particular item is not applicable to this project, please enter "Not Applicable" or "N/A".)

I. Processing

1. Check all of the approval(s) requested for this project:
   - ☒ Section 404 Permit
   - ☐ Section 10 Permit
   - ☒ 401 Water Quality Certification
   - ☒ Riparian or Watershed Buffer Rules
   - ☐ Isolated Wetland Permit from DWQ
   - ☐ Express 401 Water Quality Certification

2. Nationwide, Regional or General Permit Number(s) Requested: NWP 14 and 33

3. If this notification is solely a courtesy copy because written approval for the 401 Certification is not required, check here: ☐

4. If payment into the North Carolina Ecosystem Enhancement Program (NCEEP) is proposed for mitigation of impacts, attach the acceptance letter from NCEEP, complete section VIII, and check here: ☒

5. If your project is located in any of North Carolina's twenty coastal counties (listed on page 4), and the project is within a North Carolina Division of Coastal Management Area of Environmental Concern (see the top of page 2 for further details), check here: ☐

II. Applicant Information

1. Owner/Applicant Information
   Name: Dr, Gregory J. Thorpe, Ph.D.
   Mailing Address: North Carolina Department of Transportation
   Project Development and Environmental Analysis Branch
   1598 Mail Service Center
   Raleigh, NC 27699-1598
   Telephone Number: 919-715-1500 Fax Number: _____
   E-mail Address: _____

2. Agent/Consultant Information (A signed and dated copy of the Agent Authorization letter must be attached if the Agent has signatory authority for the owner/applicant.)
   Name: _____
   Company Affiliation: _____
   Mailing Address: _____
   _____
   _____
   Telephone Number: _____ Fax Number: _____
   E-mail Address: _____

III. Project Information

Attach a **vicinity map** clearly showing the location of the property with respect to local landmarks such as towns, rivers, and roads. Also provide a detailed **site plan** showing property boundaries and development plans in relation to surrounding properties. Both the vicinity map and site plan must include a scale and north arrow. The specific footprints of all buildings, impervious surfaces, or other facilities must be included. If possible, the maps and plans should include the appropriate USGS Topographic Quad Map and NRCS Soil Survey with the property boundaries outlined. Plan drawings, or other maps may be included at the applicant's discretion, so long as the property is clearly defined. For administrative and distribution purposes, the USACE requires information to be submitted on sheets no larger than 11 by 17-inch format; however, DWQ may accept paperwork of any size. DWQ prefers full-size construction drawings rather than a sequential sheet version of the full-size plans. If full-size plans are reduced to a small scale such that the final version is illegible, the applicant will be informed that the project has been placed on hold until decipherable maps are provided.

1. Name of project: US 17 from Mills Street in Bridgeton to North of SR 1433 (Antioch Road)

2. T.I.P. Project Number or State Project Number (NCDOT Only): R 3403A

3. Property Identification Number (Tax PIN): _____

4. Location
   County: Craven Nearest Town: Bridgeton
   Subdivision name (include phase/lot number): _____
   Directions to site (include road numbers/names, landmarks, etc.): From Washington Field Office, Drive: 30.3 mi – about 46 mins. Head north on Union Dr toward W 2nd St 449 ft; Turn left at W 2nd St 0.3 mi 1 min; Turn left at US-17 16.1 mi 24 mins; Slight left at US-17-BYP S 3.5 mi 6 mins; Slight left at US-17 S 10.3 mi 14 mins. Arrive Project Terminus. Head south on US-17 toward Antioch Rd 2.9 mi., 4 mins. Arrive Project Start (Mills St.)

5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
   Decimal Degrees (6 digits minimum): 35.122330 °N 77.019680 °W

6. Property size (acres): _____

7. Name of nearest receiving body of water: UT to Neuse River; UT to Mills Branch

8. River Basin: Neuse
   (Note – this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at http://h2o.enr.state.nc.us/admin/maps/.)

9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: Agriculture, residential, and commercial (see attached for details)

10. Describe the overall project in detail, including the type of equipment to be used: Widen US 17 to a multi-lane facility for 2.9 miles, retain at-grade intersection with Norfolk Southern Railroad in Bridgeton with new flashing gates and rubberized road surface. Three reinforced concrete box culverts will be retained and extended (see attached letter for more details).

11. Explain the purpose of the proposed work: Alleviate congestion and improve the level of service along US 17, and by doing so, improve the safety of the route. Providing additional traffic-carrying capacity will improve US 17 operation as a hurricane evacuation route (see attached for details).

IV. Prior Project History

If jurisdictional determinations and/or permits have been requested and/or obtained for this project (including all prior phases of the same subdivision) in the past, please explain. Include the USACE Action ID Number, DWQ Project Number, application date, and date permits and certifications were issued or withdrawn. Provide photocopies of previously issued permits, certifications or other useful information. Describe previously approved wetland, stream and buffer impacts, along with associated mitigation (where applicable). If this is a NCDOT project, list and describe permits issued for prior segments of the same T.I.P. project, along with construction schedules. Public Notice for R-3403 issed May 4, 2004 (USACE Action ID 200411285)

V. Future Project Plans

Are any future permit requests anticipated for this project? If so, describe the anticipated work, and provide justification for the exclusion of this work from the current application.
R-3403B anticipated future work excluded from current application due to construction dates

VI. Proposed Impacts to Waters of the United States/Waters of the State

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. Each impact must be listed separately in the tables below (e.g., culvert installation should be listed separately from riprap dissipater pads). Be sure to indicate if an impact is temporary. All proposed impacts, permanent and temporary, must be listed, and must be labeled and clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) should be shown on a delineation map, whether or not impacts are proposed to these systems. Wetland and stream evaluation and delineation forms should be included as appropriate. Photographs may be included at the applicant's discretion. If this proposed impact is strictly for wetland or stream mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

1. Provide a written description of the proposed impacts: See attached letter for details

2. Individually list wetland impacts. Types of impacts include, but are not limited to mechanized clearing, grading, fill, excavation, flooding, ditching/drainage, etc. For dams, separately list impacts due to both structure and flooding.

Wetland Impact Site Number (indicate on map)	Type of Impact	Type of Wetland (e.g., forested, marsh, herbaceous, bog, etc.)	Located within 100-year Floodplain (yes/no)	Distance to Nearest Stream (linear feet)	Area of Impact (acres)
See attached	**Permit drawings**				
Total Wetland Impact (acres)					

3. List the total acreage (estimated) of all existing wetlands on the property: 3.10

4. Individually list all intermittent and perennial stream impacts. Be sure to identify temporary impacts. Stream impacts include, but are not limited to placement of fill or culverts, dam construction, flooding, relocation, stabilization activities (e.g., cement walls, rip-rap, crib walls, gabions, etc.), excavation, ditching/straightening, etc. If stream relocation is proposed, plans and profiles showing the linear footprint for both the original and relocated streams must be included. To calculate acreage, multiply length X width, then divide by 43,560.

Stream Impact Number (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
See attached	**Permit drawings**					
Total Stream Impact (by length and acreage)						

5. Individually list all open water impacts (including lakes, ponds, estuaries, sounds, Atlantic Ocean and any other water of the U.S.). Open water impacts include, but are not limited to fill, excavation, dredging, flooding, drainage, bulkheads, etc.

Open Water Impact Site Number (indicate on map)	Name of Waterbody (if applicable)	Type of Impact	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)	Area of Impact (acres)
N/A				
Total Open Water Impact (acres)				**0.00**

USACE – In accordance with the Final Notice of Issuance and Modification of Nationwide Permits, published in the Federal Register on January 15, 2002, mitigation will be required when necessary to ensure that adverse effects to the aquatic environment are minimal. Factors including size and type of proposed impact and function and relative value of the impacted aquatic resource will be considered in determining acceptability of appropriate and practicable mitigation as proposed. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland and/or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferable in the same watershed.

If mitigation is required for this project, a copy of the mitigation plan must be attached in order for USACE or DWQ to consider the application complete for processing. Any application lacking a required mitigation plan or NCEEP concurrence shall be placed on hold as incomplete. An applicant may also choose to review the current guidelines for stream restoration in DWQ's Draft Technical Guide for Stream Work in North Carolina, available at http://h2o.enr.state.nc.us/ncwetlands/strmgide.html.

1. Provide a brief description of the proposed mitigation plan. The description should provide as much information as possible, including, but not limited to: site location (attach directions and/or map, if offsite), affected stream and river basin, type and amount (acreage/linear feet) of mitigation proposed (restoration, enhancement, creation, or preservation), a plan view, preservation mechanism (e.g., deed restrictions, conservation easement, etc.), and a description of the current site conditions and proposed method of construction. Please attach a separate sheet if more space is needed.
   NCDOT has received compensatory mitigation from EEP.

2. Mitigation may also be made by payment into the North Carolina Ecosystem Enhancement Program (NCEEP). Please note it is the applicant's responsibility to contact the NCEEP at (919) 715-0476 to determine availability, and written approval from the NCEEP indicating that they are will to accept payment for the mitigation must be attached to this form. For additional information regarding the application process for the NCEEP, check the NCEEP website at http://h2o.enr.state.nc.us/wrp/index.htm. If use of the NCEEP is proposed, please check the appropriate box on page five and provide the following information:

   Amount of stream mitigation requested (linear feet): **443**
   Amount of buffer mitigation requested (square feet): **13,390**
   Amount of Riparian wetland mitigation requested (acres): **0.14**
   Amount of Non-riparian wetland mitigation requested (acres): **0.92**
   Amount of Coastal wetland mitigation requested (acres): **0**

6. List the cumulative impact to all Waters of the U.S. resulting from the project:

Stream Impact (acres):	**0.07**
Wetland Impact (acres):	**1.06**
Open Water Impact (acres):	**0.00**
Total Impact to Waters of the U.S. (acres)	**1.13**
Total Stream Impact (linear feet):	**679**

7. Isolated Waters
   Do any isolated waters exist on the property? ☒ Yes ☐ No
   Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.
   Impacts include 0.11 acre of fill.

8. Pond Creation
   If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.
   Pond to be created in (check all that apply): ☐ uplands ☐ stream ☐ wetlands
   Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.):_____
   Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.):_____
   Current land use in the vicinity of the pond:_____
   Size of watershed draining to pond:_____ Expected pond surface area:_____

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. **See attached letter for details**

VIII. Mitigation

DWQ - In accordance with 15A NCAC 2H .0500, mitigation may be required by the NC Division of Water Quality for projects involving greater than or equal to one acre of impacts to freshwater wetlands or greater than or equal to 150 linear feet of total impacts to perennial streams.

IX. Environmental Documentation (required by DWQ)

1. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? Yes ☒ No ☐

2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)? Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation. Yes ☒ No ☐

3. If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter. Yes ☒ No ☐

X. Proposed Impacts on Riparian and Watershed Buffers (required by DWQ)

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to required state and local buffers associated with the project. The applicant must also provide justification for these impacts in Section VII above. All proposed impacts must be listed herein, and must be clearly identifiable on the accompanying site plan. All buffers must be shown on a map, whether or not impacts are proposed to the buffers. Correspondence from the DWQ Regional Office may be included as appropriate. Photographs may also be included at the applicant's discretion.

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify ____)? Yes ☒ No ☐

2. If "yes", identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

Zone*	Impact (square feet)	Multiplier	Required Mitigation
1	**8,264**	3 (2 for Catawba)	**24,792**
2	**5126**	1.5	**7,689**
Total	**13,390**		**32,481**

* Zone 1 extends out 30 feet perpendicular from the top of the near bank of channel; Zone 2 extends an additional 20 feet from the edge of Zone 1.

3. If buffer mitigation is required, please discuss what type of mitigation is proposed (i.e., Donation of Property, Riparian Buffer Restoration / Enhancement, or Payment into the Riparian Buffer Restoration Fund). Please attach all appropriate information as identified within 15A NCAC 2B .0242 or .0244, or .0260. Payment into the Riparian Buffer Restoration Fund

XI. Stormwater (required by DWQ)

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level. NCDOT received a stormwater permit for the AB section and will be submitting one for the AA section.

XII. Sewage Disposal (required by DWQ)

Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility.
N/A

XIII. Violations (required by DWQ)

Is this site in violation of DWQ Wetland Rules (15A NCAC 2H .0500) or any Buffer Rules?
Yes ☐ No ☒

Is this an after-the-fact permit application? Yes ☐ No ☒

XIV. Cumulative Impacts (required by DWQ)

Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes ☐ No ☒
If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at http://h2o.enr.state.nc.us/ncwetlands. If no, please provide a short narrative description:
US 17 will be widened to a four lane, divided highway in Bridgeton, NC.

XV. Other Circumstances (Optional):

It is the applicant's responsibility to submit the application sufficiently in advance of desired construction dates to allow processing time for these permits. However, an applicant may choose to list constraints associated with construction or sequencing that may impose limits on work schedules (e.g., draw-down schedules for lakes, dates associated with Endangered and Threatened Species, accessibility problems, or other issues outside of the applicant's control).
N/A

E. L. Lusk 12-9-08

Applicant/Agent's Signature **Date**
(Agent's signature is valid only if an authorization letter from the applicant is provided.)

Subject: Meeting Minutes for 4C Permit Review Meeting
on December 13, 2006 for R-3403A in Craven County

Team Members:

William Wescott-USACE	(present)
John Hennessy-NCDWQ	(present)
Travis Wilson-NCWRC	(present)
Gary Jordan-USFWS	(present)
Chris Militscher-EPA	(present)
Kathy Matthews-EPA	(present)
Chris Underwood-NEU	(present)
Chris Manley-NEU	(present)
Stephen Lane-NCDCM	(present)
Steve Sollod-NCDCM	(present)
Donnie Brew-FHWA	(present)
Wade Kirby-PDEA	(present)

Participants:
Marshall Clawson, NCDOT Hydraulics
Galen Cail, NCDOT Hydraulics
Will Hines, Sungate Design
Greg Brew, NCDOT Roadway Design
David Williams, NCDOT Roadway Design
Roy Girolami, NCDOT Structure Design
Laura Sutton, NCDOT Structure Design
Mike Robinson, NCDOT Construction
Richard Darling, Buck Engineering

General Comments:

Provide treatment/velocity info table with buffer permit package. (Info will be sent to DWQ for review prior to final submittal).

Make sure any rip rap associated with jurisdictional streams is noted as "ON BANKS ONLY".

Profiles of any culverts 60" or larger will be provided in final wetland/stream permit package. It was stated that all culverts at jurisdictional streams will be buried 1' except at those crossings where existing culverts are already perched (case at both box culvert crossings).

It was requested to provide submittal dates on plan sheets.

Site 1; Sheet 8: Jurisdictional Stream Impacts

-There was discussion about the use of flow spreaders prior to the buffer in the SW corner of the crossing. It was stated a PSH in the ditch would result in either ponding in the ditch (and saturation effects to the pavement subsurface) or require additional excavation in the buffer in order to "daylight" drainage. Treatment is acquired but needs to be shown with table.

Site 2; Sheet 9: Wetland Impacts

There was discussion on use of flow spreaders in the NW and NE corners of the crossing. Since these are in front of houses it was determined the location was not preferred. Treatment is acquired but needs to be shown with table.

Site 3; Sheet 11: Jurisdictional Stream & Wetland Impacts

-No comments

Site 4; Sheet 12: Wetland Impacts

-It was noted this site will be shown as a "total take" due to the proximity of the ditch/excavation in wetlands to the wetland limits. There is an existing roadway ditch. The proposed ditch is required for roadway and pavement subsurface drainage. Separate the "Drained Impacts" from the excavated and filled.

Site 5; Sheet 13: Wetland Impacts

-Additional wetland impacts due to draining effects of the ditch/excavation will be provided. Separate the "Drained Impacts" from the excavated and filled.

Site 6; Sheet 13 & 14: Wetland Impacts

-Except for a short section of cut (approximately 26') the site impacts are due to roadway fill. So no wetland drainage effects due to the cut are anticipated.

Site 7; Sheet 14 & 15: Jurisdictional Stream & Wetland Impacts

-Need to investigate the use of a flow spreader/PSH in the NE corner of the crossing.

-It was stated the existing box culvert is being extended with a 72" pipe.

Site 8; Sheet 14: Jurisdictional Stream Impacts

-It was stated the existing 42" pipe is being replaced by a 72" pipe.

Meeting Adjourned

STORMWATER MANAGEMENT PLAN

Project: 34538.1.1
TIP: R-3403AB
County: Craven

Hydraulics Project Engineers: W. Henry Wells, Jr., PE and William M. Hines, Jr., P.E. (Sungate Design Group); W. Galen Cail, P.E. (NCDOT Hydraulics Unit)

ROADWAY DESCRIPTION

The project involves the widening of US 17, located in Bridgeton, Craven County, from the Norfolk/Southern R/R to North of SR 1433 (Antioch Road). The overall length of the project is approximately 2.88 miles. The existing roadway is a predominately 28-foot wide roadway with two 12-foot wide lanes and 2-foot paved shoulders. With Project R-3403AB, it is proposed to widen US 17 to a four-lane, shoulder section roadway with a narrow grass median. The project drainage system consists of cross pipes, grated inlets and associated pipe systems, and side and lateral ditches and swales.

ENVIRONMENTAL DESCRIPTION

The project is located in the Neuse River Basin. The project crosses three streams, one Tributary to the Neuse River and two Tributaries to Mills Branch. Two of these crossings have designated Neuse River buffers. There are eight wetland sites that will be impacted by the proposed project. Wetland impacts have been kept to a minimum as much as practicable.

BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES

The primary goal of Best Management Practices (BMPs) is to prevent degradation of the states surface waters as a result of the location, construction and operation of the highway system. BMPs are activities, practices and procedures taken to prevent or reduce stormwater pollution. The BMPs and measures that will be used on this project to reduce stormwater impacts are grassed swales, raised drive-pipes in ditch lines, and a preformed scour hole. On the four stream crossings, there are two box culverts and two large pipes. The two large pipes will be buried 1-foot; however, the box culverts, currently in a perched condition, cannot be buried.

GRASSED SWALES AND RAISED DRIVE-PIPES

Grassed swales are proposed along the majority of the project. These ditches will have a maximum 3:1 side slope and a 0.0 to 0.3 % grade. In addition, the grassed swales along the side of the roadway will be used for stormwater storage and encourage infiltration by raising the drive-pipes 3-inches above the ditch line.

BOX CULVERT – STA 66+11 -L- (SITE 1)

The existing 6'x 6' RCBC will be retained and extended. The outlet extension will be buried about 1-foot; however, the inlet extension will not, due to the existing inlet being perched. The stream is a tributary to the Neuse River.

BOX CULVERT – STA 109+36 -L- (SITE 3)

The existing 2 @ 6' x 5' RCBC will be retained and extended. The extensions will not be buried due to the existing inlet and outlet being perched. The stream is a tributary to Mills Branch.

72-INCH PIPE – STA 155+47 -L- (SITE 7)

The existing 4'x 5' RCBC will be extended with a 72-inch RCP that will be buried 1-foot. The stream is a tributary to Mills Branch.

72-INCH PIPE – STA 13+46 -L- (SITE 8)

The existing 42-inch CMP will be replaced with a 72-inch RCP that will be buried 1-foot. The stream is a tributary to Mills Branch.

DITCHING IN BUFFER ZONES AND WETLANDS

BUFFERS

Ditching through all of the Sites with Buffer Zones is required due to topography and the inability to daylight the roadway ditches prior to the Buffer. The median storm system is piped directly to streams at buffer Sites 1 and 2 (JS Sites 1 & 3). All median inlets and roadway ditches that drain directly to the streams meet both of the following requirements: 100 feet of grassed swale per 1.0 acres of drainage and the 2-Year velocity is less than 2 feet per second.

WETLANDS

Ditching through Site 4 and 6 is required due to topography. The 2-Year velocity is less than 2 feet per second in each grassed swale.

Ecosystem Enhancement
PROGRAM

November 13, 2008

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

R-3403AA/AB, US 17 Improvements at Bridgeton, Craven County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream, riparian wetland, and nonriparian wetland mitigation and buffer mitigation for the subject project. **This mitigation acceptance letter replaces the mitigation acceptance letters issued on May 14, 2008 and October 7, 2008.** Based on the information supplied by you on October 6, 2008, the impacts are located in CU 03020204 of the Neuse River Basin in the Southern Outer Coastal Plain (SOCP) Eco-Region, and are as follows:

Warm Stream:	443 feet
Riparian Wetland:	0.15 acre
Nonriparian Wetland:	0.92 acre
Buffer – Zone 1:	8,264 square feet
Buffer – Zone 2:	5,126 square feet

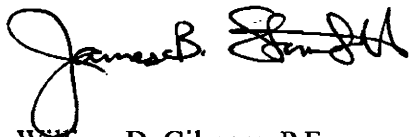
All buffer mitigation requests and approvals are administrated through the Riparian Restoration Buffer Fund. The NCDOT will be responsible to ensure that appropriate compensation for the buffer mitigation will be provided in the agreed upon method of fund transfer. Upon receipt of the NCDWQ's Buffer Authorization

Certification, EEP will transfer funds from Tri-Party MOA Fund into the Riparian Restoration Buffer Fund. Upon completion of transfer payment, NCDOT will have completed its riparian buffer mitigation responsibility for TIP R-3403AA/AB. Subsequently, EEP will conduct a review of current MOA mitigation projects in the river basin to determine if available buffer mitigation credits exist. If there are buffer mitigation credits available, then the Riparian Restoration Buffer Fund will purchase the appropriate amount of buffer mitigation credits from Tri-Party MOA Fund.

EEP commits to implementing sufficient stream, riparian wetland, and nonriparian wetland mitigation credits to offset the impacts associated with this project by the end of the MOA Year in which this project is permitted, in accordance with Section X of the Amendment No. 2 to the Memorandum of Agreement between the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, fully executed on March 8, 2007. If the above referenced stream or buffer impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

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

Sincerely,



William D. Gilmore, P.E.
EEP Director

cc: Mr. William Wescott, USACE – Washington Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: R-3403AA/AB Revised 2

Ecosystem Enhancement PROGRAM

November 13, 2008

Mr. William Wescott
U. S. Army Corps of Engineers
Washington Regulatory Field Office
Post Office Box 1000
Washington, North Carolina 27889-1000

Dear Mr. Wescott:

Subject: EEP Mitigation Acceptance Letter:

R-3403AA/AB, US 17 Improvements in Bridgeton, Craven County; Neuse River Basin (Cataloging Unit 03020204); Southern Outer Coastal Plain (SOCP) Eco-Region

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream, riparian wetland and nonriparian wetland mitigation and the buffer mitigation for the unavoidable impact associated with the above referenced project. **This mitigation notification letter replaces the mitigation notification letters issued on May 14, 2008 and October 7, 2008.** As indicated in the NCDOT's mitigation request dated October 7, 2008, stream, riparian, and nonriparian wetland mitigation from EEP is required for approximately 443 feet of warm stream impacts, 0.15 acre of riparian wetland impacts, and 0.92 acre nonriparian wetland impacts.

Also, this project will impact buffers located in CU 03020204 of the Neuse River Basin. The total buffer impacts are 8,264 square feet in Zone 1 and 5,126 square feet in Zone 2 with a total buffer mitigation requirement of 32,481.0 square feet. If the buffer impacts or the amount of mitigation required from EEP increases or decreases for this project, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required. All buffer mitigation requests and approvals are administrated through the Riparian Restoration Buffer Fund (Fund 2982).

The NCDOT will be responsible to ensure that the appropriate compensation for the buffer mitigation will be provided in the agreed upon method of fund transfer. Upon receipt of the NCDWQ's Buffer Authorization Certification, EEP will transfer funds

from Fund 2984 (Tri-Party MOA Account) into Fund 2982 and commit to provide the appropriate buffer mitigation to offset the impacts associated with this project.

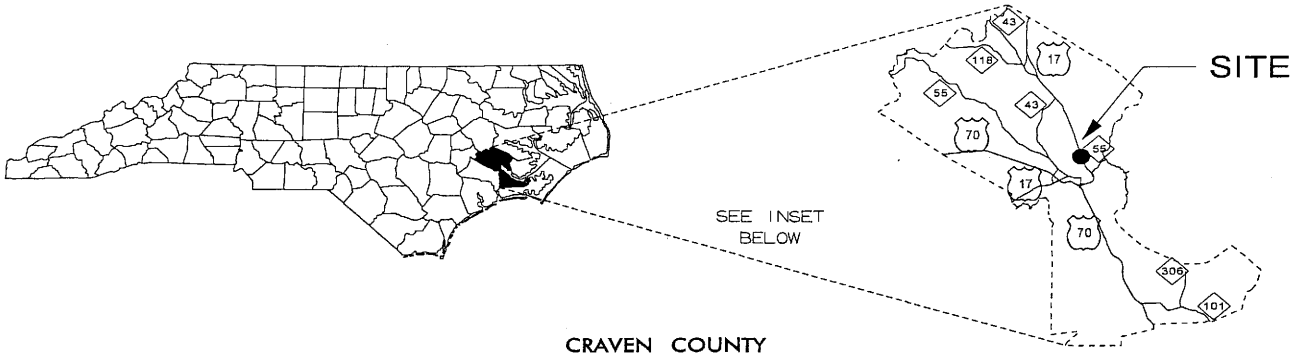
Stream, riparian wetland, and nonriparian wetland mitigation associated with this project will be provided in accordance with Section X of the Amendment No. 2 to the Memorandum of Agreement between the N. C. Department of Environment and Natural Resources, the N. C. Department of Transportation, and the U. S. Army Corps of Engineers fully executed on March 8, 2007 (Tri-Party MOA). EEP commits to implement sufficient stream mitigation up to 886 stream credits, 0.30 riparian wetland credits, and 1.84 nonriparian wetland credits to offset the impacts associated with this project by the end of the MOA year in which this project is permitted. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

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

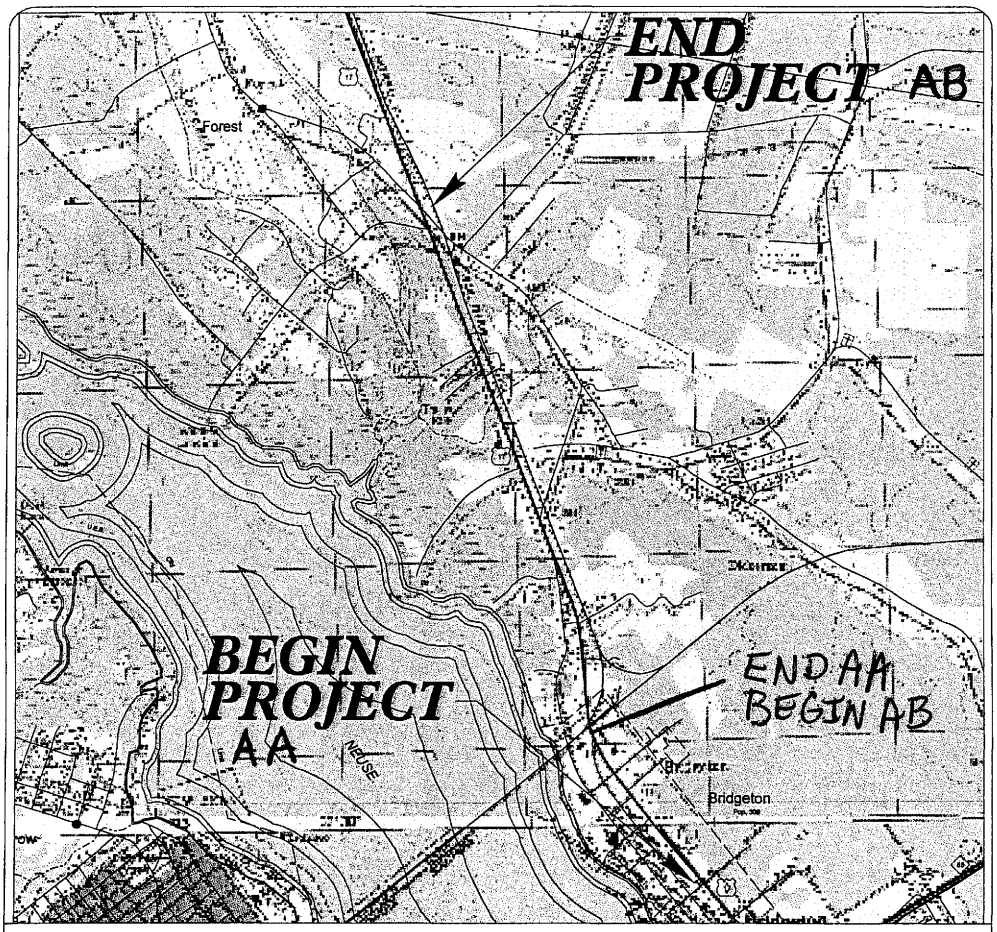
Sincerely,

William D. Gilmore, P.E.
EEP Director

cc: Mr. Gregory J. Thorpe, Ph.D., NCDOT-PDEA
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: R-3403AA/AB Revised 2



CRAVEN COUNTY



VICINITY MAP

WETLAND AND STREAM IMPACTS

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

CRAVEN COUNTY
PROJECT: 34538.1.1 (R-3403A)
US 17 FROM MILLS ST TO
NORTH OF SR 1433 (ANTIOCH RD)

SHEET ____ OF ____

Permit Drawing
Sheet 1 of 13

09/08/99

R-3403AA

CONTRACT: C201877

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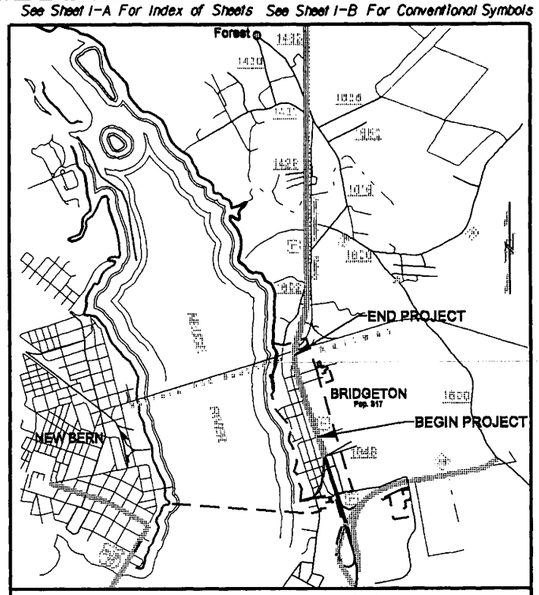
agamber
AT HY22518

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



VICINITY MAP

This Project is within the Municipal Boundaries of Bridgeton

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CRAVEN COUNTY

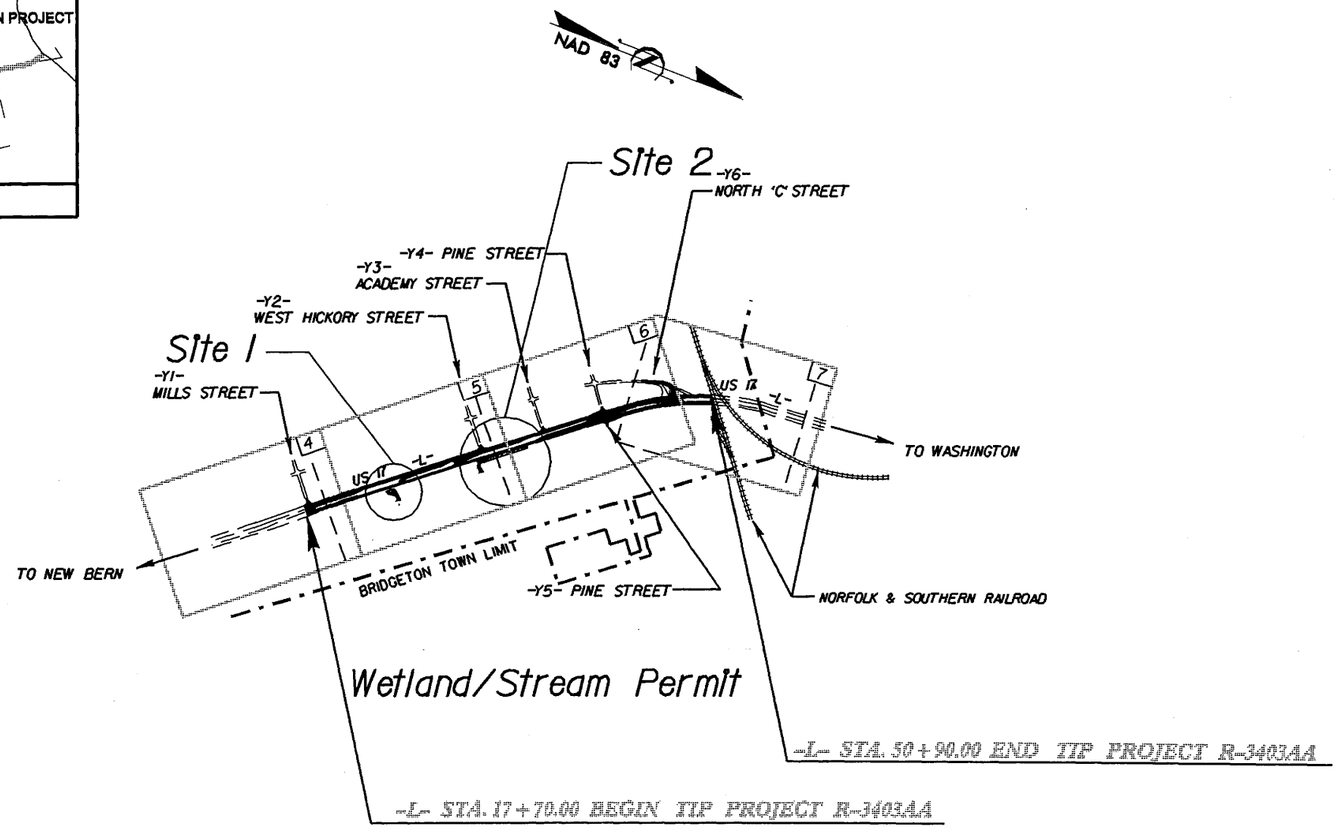
LOCATION: US 17 FROM MILLS STREET
TO NORFOLK & SOUTHERN RAILROAD

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

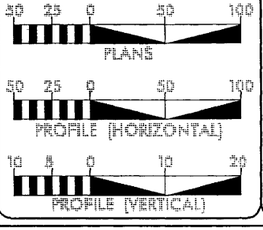
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3403AA	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34538.1.1	STPNHF-17(24)	PE
34538.2.2	STPNHF-17(47)	R/W, UTIL
34538.3.2	STPNHF-17(47)	CONST.

Permit Drawing
Sheet 2 of 13



GRAPHIC SCALES



DESIGN DATA

ADT 2007	=	15,755
ADT 2027	=	25,055
DHV	=	10 %
D	=	60 %
T	=	10 % *
V	=	50 MPH

* TTST 5% DUAL 5%
FUNC. CLASS = ARTERIAL

PROJECT LENGTH

TOTAL LENGTH OF TIP PROJECT R-3403AA -- 0.629 MILES

Prepared in the Office of:
CES Comprehensive Engineering Services, Inc.
201 S Orange Ave, Suite 1300 Orlando, FL 32801-3442

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: March 22, 2005

LETTING DATE: July 15, 2008

R. BADERSCHNEIDER, PE
PROJECT ENGINEER

S. KLAUS, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SIGNATURE P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR DATE

PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing
Sheet 3 of 13

8/17/98

REVISIONS

LEGEND

MILL 6" BELOW PROFILE. RESURFACE PAVEMENT WITH C1 & D2

RESURFACE PAVEMENT AT VARIABLE DEPTH. MILL 4.5" TO 6" BELOW PROFILE. RESURFACE PAVEMENT WITH C1 & C3 OR D2 AS NEEDED.

NAD 83

20 | 25 | 30

-L- (LT) 27+50 TO 28+70
-L- (LT) 28+95 TO 29+20
-L- (LT) 29+65 TO 30+30
-L- (LT) 30+80 TO 32+00
-L- (LT) 32+80 TO 34+60

SEE SHEET NO.4

MATCHLINE STA. 20+00.00

SEE SHEET NO.6

MATCHLINE STA. 34+00.00

IDA MAE CURTIS, et al DB 1305 - PG 1040
WILLIAM E. WATERS, et ux DB 631 - PG 642 MB 1 - PG 157
BRIDGETON RESCUE SQUAD DB 1481 - PG 66
CHARLIE RAY HART DB 1362 - PG 655
KENT D. MARQUESS, et ux DB 1447 - PG 189
DELMA CUTHRELL, et ux DB 497 - PG 374
CHARLES D. FREEMAN DB 1622 - PG 531 MB 1 - PG 25
RICHARD E. FULCHER DB 1667 - PG 55

J. A. THOMAS, et ux, et al DB 1665 - PG 599 MB 1 - PG 157

JAMES A. THOMAS, et ux, et al DB 1510 - PG 12 PC "G" - SLIDE 2-G

P. J. HARMATUK, et ux DB 1567 - PG 794

W. C. FLOWERS DB 1520 - PG 272

ROBERT YALDEN DB 2294 - PG 863

BENJAMIN F. TOMPKINS, et ux DB 1500 - PG 152
ALL UNDERGROUND TANKS HAVE BEEN ABANDONED AND FILLED WITH FOAM (AS PER PROPERTY OWNER)

ACCORDING TO PROPERTY OWNER, THERE ARE FIVE UGS TANKS, COULD ONLY FIND THREE

JOHN C. HARMON DB 1861 - PG 502

DGNC PROPERTIES LLC DB 2122 - PG 455

ARTHUR O. GASKILL, et ux DB 595 - PG 78 DB 948 - PG 535

A. D. WARD, SR., et al DB 1435 - PG 333

HERBERT D. FULCHER, et ux, et al DB 965 - PG 814 DB 949 - PG 41 DB 826 - PG 363

ROY BRANCH DB 2031 - PG 855 PC "C" - SLIDE 352

MARY M. BUNDY DB 958 - PG 673 PC "C" - SLIDE 352

CLYDE E. NELSON, JR. DB 814 - PG 612

CARMEN V. DONOFRIO DB 1299 - PG 11

BM 2 -L- STA. 31+42 266' RIGHT ELEV. 9.75

-L- 32+30.00 EXIST. R/W & 93.00' (RT)

-L- 32+00.00 EXIST. R/W & 93.00' (RT)

SITE 1

SITE 2

WET DETENTION POND TO BE CONSTRUCTED BY OTHERS SEE DETAIL ON SHEET 2C

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

-L-
PI Sta 19+71.52
Δ = 2°09'45.5" (RT)
D = 0°28'38.9"
L = 452.94'
T = 226.50'
R = 12,000.00'
SE = NORMAL CROWN

24-SEP-2008 10:13
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dgardner

PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing Sheet 4 of 13

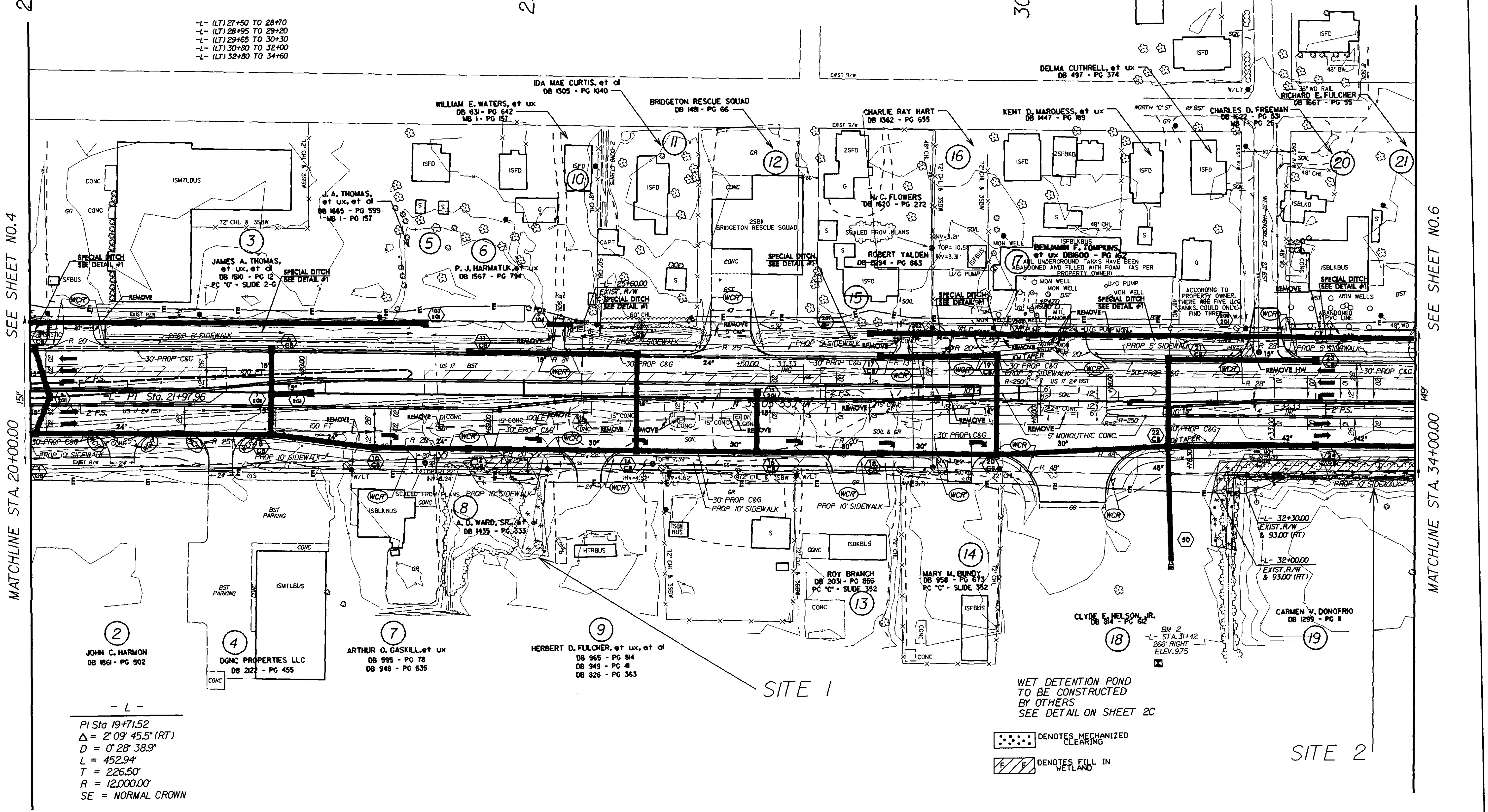
8/17/99

REVISIONS

LEGEND

- MILL 6" BELOW PROFILE. RESURFACE PAVEMENT WITH CI & D2
- RESURFACE PAVEMENT AT VARIABLE DEPTH. MILL 4.5" TO 6" BELOW PROFILE. RESURFACE PAVEMENT WITH CI & C3 OR D2 AS NEEDED.

-L- (LT) 27+50 TO 28+70
-L- (LT) 28+95 TO 29+20
-L- (LT) 29+65 TO 30+30
-L- (LT) 30+80 TO 32+00
-L- (LT) 32+80 TO 34+60



NAD 83
20
25
30
SEE SHEET NO.4
MATCHLINE STA. 20+00.00
SEE SHEET NO.6
MATCHLINE STA. 34+00.00
IDA MAE CURTIS, et al DB 1305 - PG 1040
WILLIAM E. WATERS, et ux DB 631 - PG 642 MB 1 - PG 157
BRIDGETON RESCUE SQUAD DB 1481 - PG 66
CHARLIE RAY HART DB 1362 - PG 655
KENT D. MARQUESS, et ux DB 1447 - PG 189
DELMA CUTHRELL, et ux DB 497 - PG 374
CHARLES D. FREEMAN DB 1622 - PG 531 MB 1 - PG 25
RICHARD E. FULCHER DB 1667 - PG 55
J. A. THOMAS, et ux, et al DB 1665 - PG 599 MB 1 - PG 157
JAMES A. THOMAS, et ux, et al DB 1510 - PG 12 PC "G" - SLIDE 2-G
P. J. HARMATUK, et ux DB 1567 - PG 794
N. C. FLOWERS DB 1620 - PG 272
ROBERT YALDEN DB 1294 - PG 863
BENJAMIN F. TOMPKINS, et ux DB1600 - PG 162
ALL UNDERGROUND TANKS HAVE BEEN ABANDONED AND FILLED WITH FOAM (AS PER PROPERTY OWNER)
ACCORDING TO PROPERTY OWNER, THERE ARE FIVE U/G TANKS. COULD ONLY FIND THREE.
SPECIAL DITCH SEE DETAIL #1
US 17 BST
PI Sta. 21+97.96
PROP 5' SIDEWALK
PROP 10' SIDEWALK
30' PROP C&G
BRIDGETON RESCUE SQUAD
A. D. WARD, SR., et al DB 1435 - PG 333
JOHN C. HARMON DB 1861 - PG 502
DGNC PROPERTIES LLC DB 2122 - PG 455
ARTHUR O. GASKILL, et ux DB 595 - PG 78 DB 948 - PG 535
HERBERT D. FULCHER, et ux, et al DB 965 - PG 814 DB 949 - PG 41 DB 826 - PG 363
ROY BRANCH DB 2031 - PG 855 PC "C" - SLIDE 352
MARY M. BUNDY DB 958 - PG 673 PC "C" - SLIDE 352
CLYDE E. NELSON, JR. DB 814 - PG 62
BM 2 -L- STA. 31+42 266 RIGHT ELEV. 9.75
CARMEN V. DONOFRIO DB 1299 - PG 11
-L- 32+30.00 EXIST. R/W & 93.00 (RT)
-L- 32+00.00 EXIST. R/W & 93.00 (RT)
SITE 1
SITE 2

-L-
PI Sta 19+71.52
Δ = 2°09' 45.5" (RT)
D = 0°28' 38.9"
L = 452.94'
T = 226.50'
R = 12,000.00'
SE = NORMAL CROWN

WET DETENTION POND TO BE CONSTRUCTED BY OTHERS SEE DETAIL ON SHEET 2C

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

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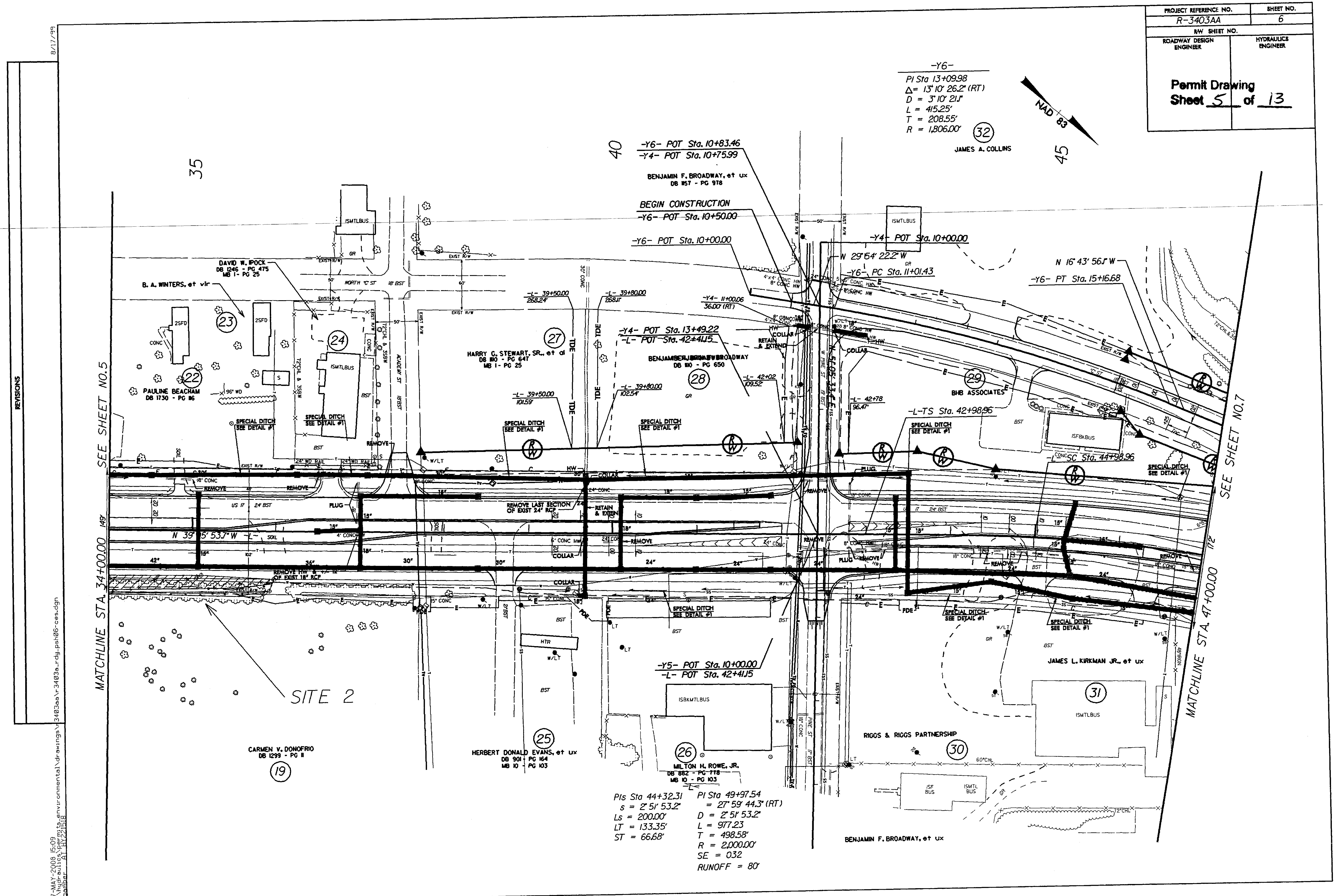

PROJECT REFERENCE NO. R-3403AA
SHEET NO. 6
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Permit Drawing Sheet 5 of 13
-Y6-
PI Sta 13+09.98
Δ= 13°10' 26.2" (RT)
D = 3°10' 21.1"
L = 415.25'
T = 208.55'
R = 1,806.00'
NAD 83
-Y6- POT Sta. 10+83.46
-Y4- POT Sta. 10+75.99
BEGIN CONSTRUCTION
-Y6- POT Sta. 10+50.00
-Y6- POT Sta. 10+00.00
-Y4- POT Sta. 10+00.00
-Y6- PC Sta. 11+01.43
-Y6- PT Sta. 15+16.68
-Y4- POT Sta. 13+49.22
-L- POT Sta. 42+41.15
-L-TS Sta. 42+98.96
-L-SC Sta. 44+98.96
-Y5- POT Sta. 10+00.00
-L- POT Sta. 42+41.15
SEE SHEET NO. 5
SEE SHEET NO. 7
MATCHLINE STA. 34+00.00
MATCHLINE STA. 47+00.00
SITE 2
JAMES A. COLLINS
BENJAMIN F. BROADWAY, et ux
DAVID W. IPOCK
B. A. WINTERS, et vir
PAULINE BEACHAM
HARRY G. STEWART, SR., et al
BHB ASSOCIATES
JAMES L. KIRKMAN JR., et ux
RIGGS & RIGGS PARTNERSHIP
CARMEN V. DONOFRIO
HERBERT DONALD EVANS, et ux
MILTON H. ROWE, JR.
SPECIAL DITCH SEE DETAIL #1
PIs Sta 44+32.31
s = 2°51' 53.2"
Ls = 200.00'
LT = 133.35'
ST = 66.68'
PI Sta 49+97.54
= 27°59' 44.3" (RT)
D = 2°51' 53.2"
L = 977.23
T = 498.58'
R = 2,000.00'
SE = .032
RUNOFF = 80'
07-MAY-2008 15:09
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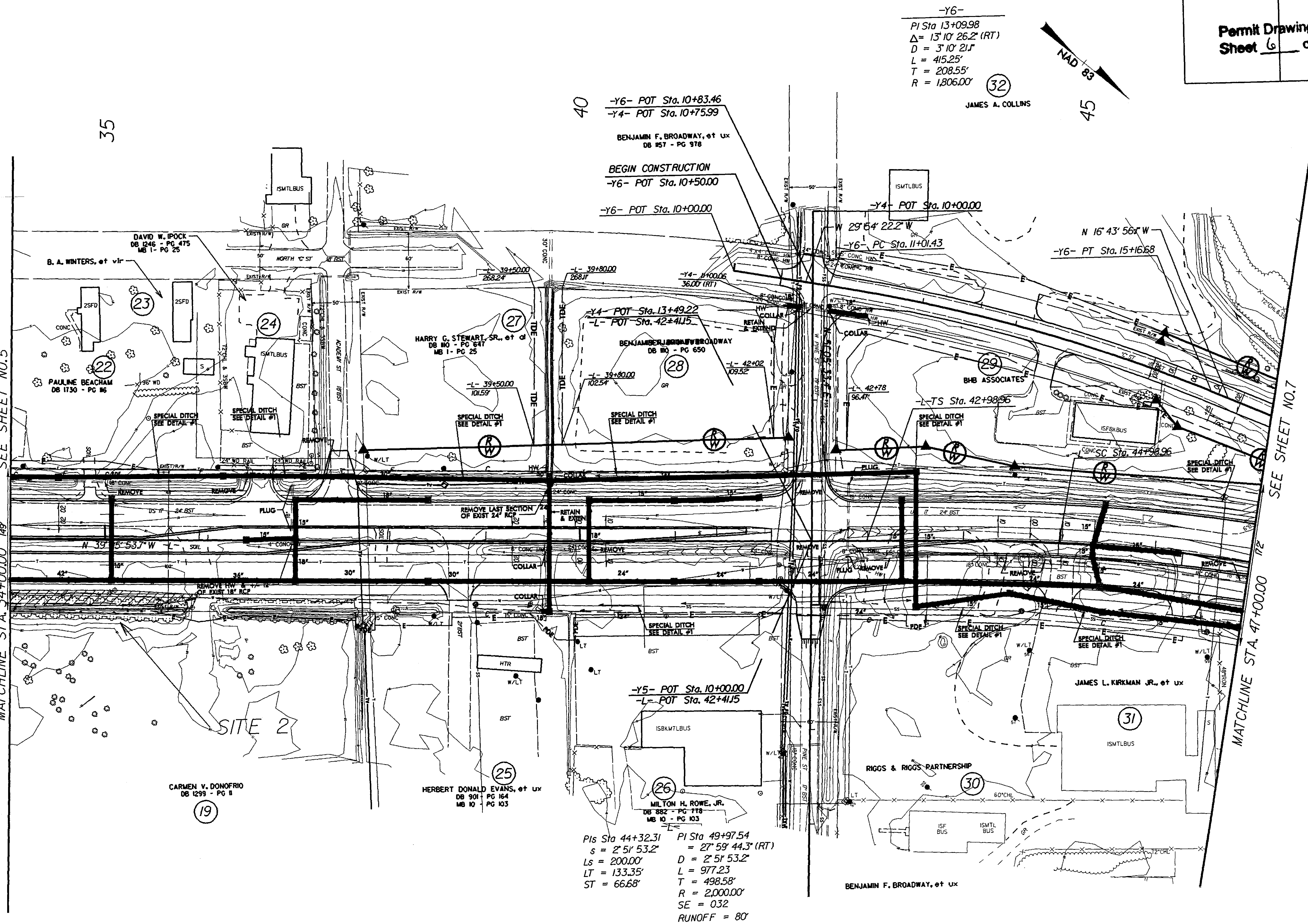
PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing
Sheet 6 of 13



-Y6-
PI Sta 13+09.98
Δ = 13°10' 26.2" (RT)
D = 3°10' 21.5"
L = 415.25'
T = 208.55'
R = 1,806.00'
NAD 83
JAMES A. COLLINS
-Y6- POT Sta. 10+83.46
-Y4- POT Sta. 10+75.99
BENJAMIN F. BROADWAY, et ux
BEGIN CONSTRUCTION
-Y6- POT Sta. 10+50.00
-Y6- POT Sta. 10+00.00
-Y4- POT Sta. 10+00.00
-Y6- PC Sta. 11+01.43
N 16° 43' 56.1" W
-Y6- PT Sta. 15+16.68
DAVID W. IPOCK
B. A. WINTERS, et vir
HARRY G. STEWART, SR., et al
BENJAMIN F. BROADWAY
-Y4- POT Sta. 13+49.22
-L- POT Sta. 42+41.15
BHB ASSOCIATES
-L-TS Sta. 42+98.96
-L- SC Sta. 44+98.96
PAULINE BEACHAM
SPECIAL DITCH SEE DETAIL #1
SEE SHEET NO. 5
SEE SHEET NO. 7
MATCHLINE STA. 34+00.00
MATCHLINE STA. 47+00.00
N 39° 15' 53.7" W
REMOVE LAST SECTION OF EXIST 24" RCP
RETAIN & EXTEND
SITE 2
CARMEN V. DONOFRIO
HERBERT DONALD EVANS, et ux
-Y5- POT Sta. 10+00.00
-L- POT Sta. 42+41.15
MILTON H. ROWE, JR.
RIGGS & RIGGS PARTNERSHIP
JAMES L. KIRKMAN JR., et ux
BENJAMIN F. BROADWAY, et ux
PIs Sta 44+32.31
s = 2° 51' 53.2"
Ls = 200.00'
LT = 133.35'
ST = 66.68'
PI Sta 49+97.54
Δ = 27° 59' 44.3" (RT)
D = 2° 51' 53.2"
L = 977.23
T = 498.58'
R = 2,000.00'
SE = .032
RUNOFF = 80'

REVISIONS

8/17/99

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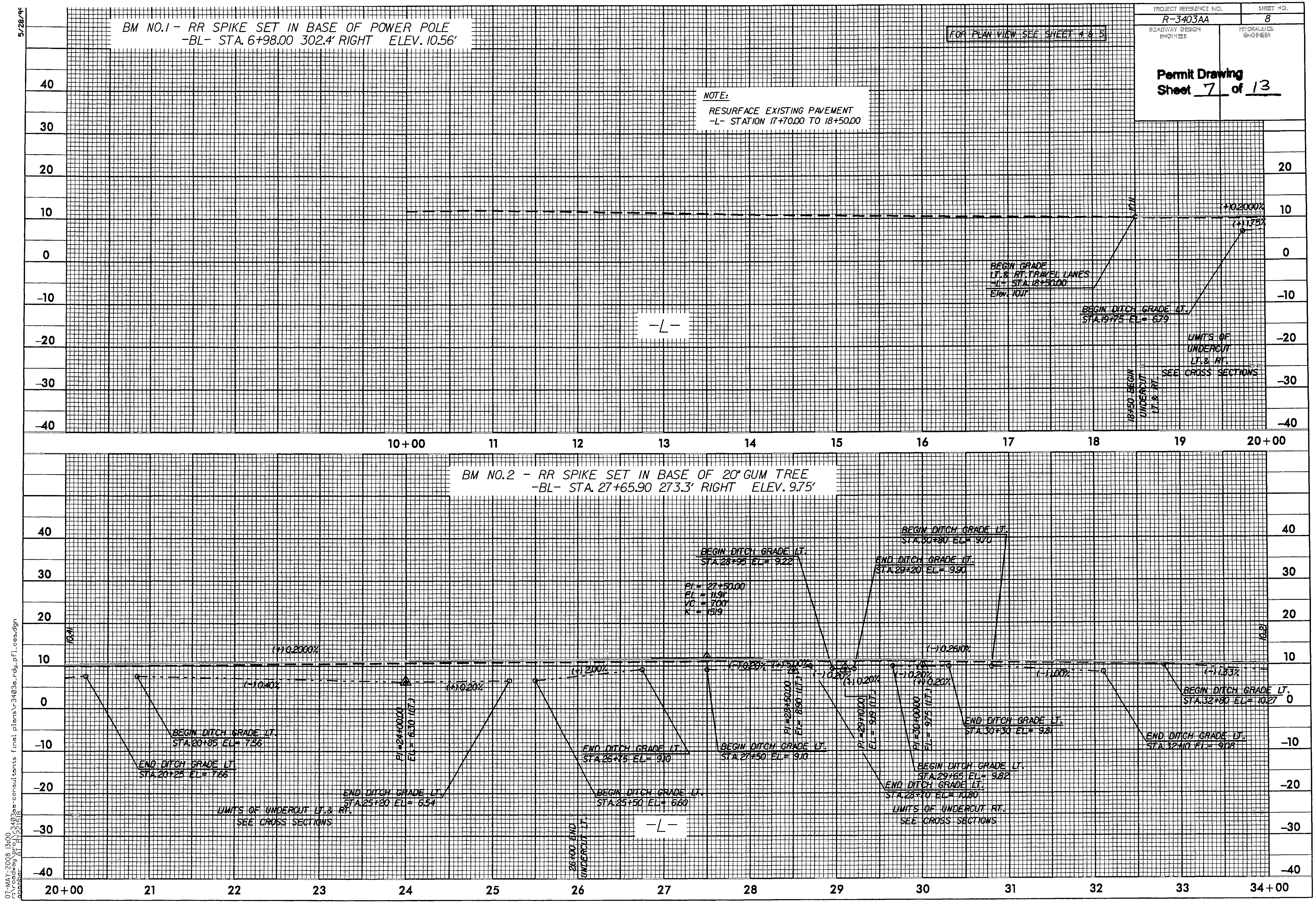
PROJECT REFERENCE NO. R-3403AA
SHEET NO. 8
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Permit Drawing Sheet 7 of 13
BM NO.1 - RR SPIKE SET IN BASE OF POWER POLE
-BL- STA. 6+98.00 302.4' RIGHT ELEV. 10.56'
FOR PLAN VIEW SEE SHEET 4 & 5
NOTE:
RESURFACE EXISTING PAVEMENT
-L- STATION 17+70.00 TO 18+50.00
BEGIN GRADE
LT. & RT. TRAVEL LANES
-L- STA. 18+50.00
Elev. 10.11'
BEGIN DITCH GRADE LT.
STA. 19+75 EL= 6.79
LIMITS OF UNDERCUT LT. & RT.
SEE CROSS SECTIONS
18+50 BEGIN UNDERCUT LT. & RT.
(+)0.2000%
(+)1.75%
-L-
10+00
20+00
BM NO.2 - RR SPIKE SET IN BASE OF 20" GUM TREE
-BL- STA. 27+65.90 273.3' RIGHT ELEV. 9.75'
BEGIN DITCH GRADE LT.
STA. 30+80 EL= 9.70
BEGIN DITCH GRADE LT.
STA. 28+95 EL= 9.22
END DITCH GRADE LT.
STA. 29+20 EL= 9.90
PI = 27+50.00
EL = 11.91'
VC = 700'
K = 151.9
(+)0.2000%
(-)0.40%
(+)0.20%
(+)2.00%
(-)0.20%
(-)0.261%
(-)1.00%
(-)1.33%
BEGIN DITCH GRADE LT.
STA. 32+80 EL= 10.27
BEGIN DITCH GRADE LT.
STA. 20+85 EL= 7.56
END DITCH GRADE LT.
STA. 20+25 EL= 7.66
PI = 24+00.00
EL = 6.30 (LT.)
END DITCH GRADE LT.
STA. 26+75 EL= 9.10
BEGIN DITCH GRADE LT.
STA. 27+50 EL= 9.10
PI = 28+50.00
EL = 8.50 (LT.)
PI = 29+10.00
EL = 9.19 (LT.)
PI = 30+00.00
EL = 9.75 (LT.)
END DITCH GRADE LT.
STA. 30+30 EL= 9.81
END DITCH GRADE LT.
STA. 32+10 EL= 9.08
END DITCH GRADE LT.
STA. 25+20 EL= 6.54
BEGIN DITCH GRADE LT.
STA. 25+50 EL= 6.60
BEGIN DITCH GRADE LT.
STA. 29+65 EL= 9.82
END DITCH GRADE LT.
STA. 28+70 EL= 10.80
LIMITS OF UNDERCUT LT. & RT.
SEE CROSS SECTIONS
LIMITS OF UNDERCUT RT.
SEE CROSS SECTIONS
26+00 END UNDERCUT LT.
-L-
20+00
34+00
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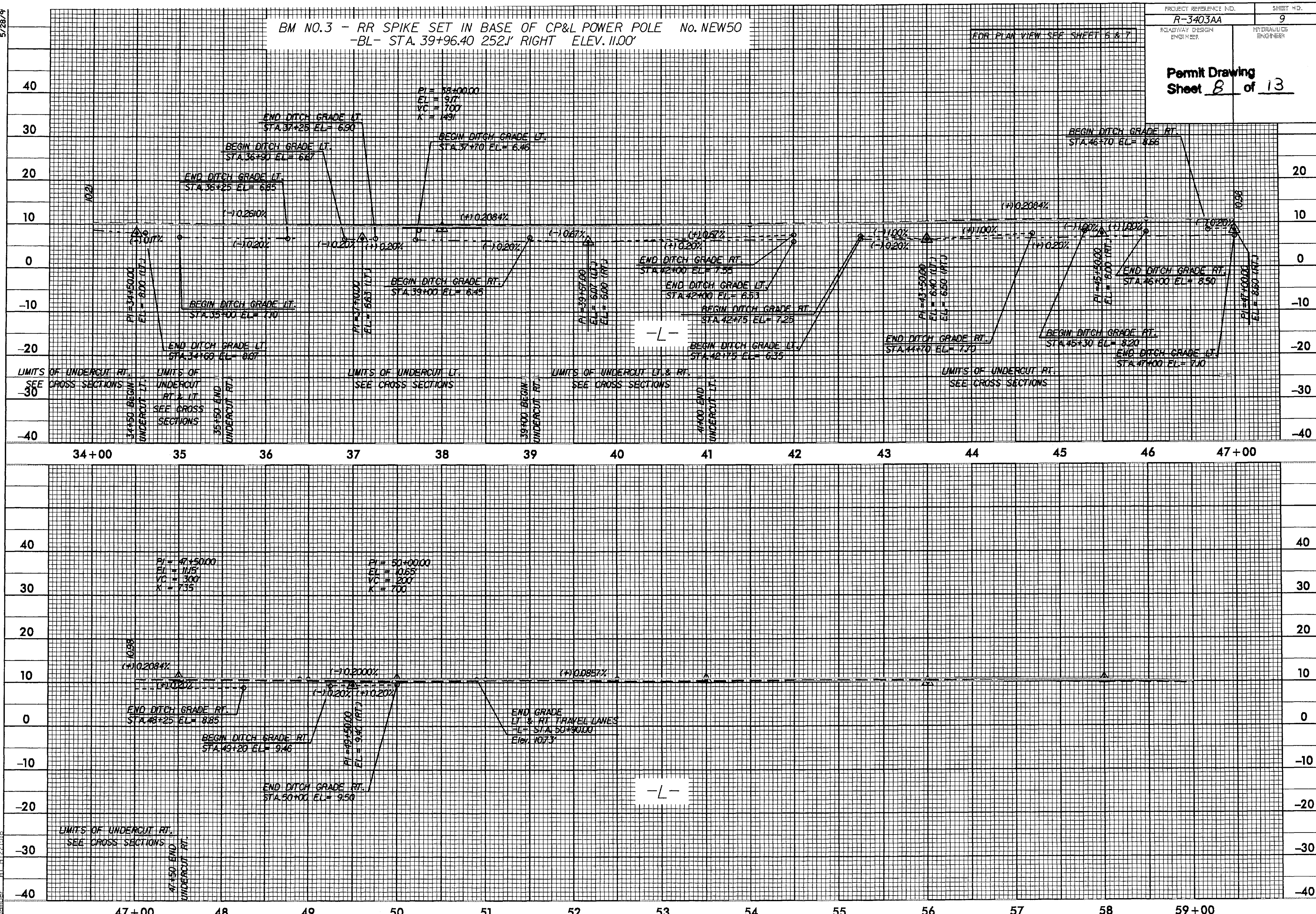
PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing
Sheet 8 of 13



BM NO.3 - RR SPIKE SET IN BASE OF CP&L POWER POLE No. NEW50
-BL- STA. 39+96.40 252.1' RIGHT ELEV. 11.00'
FOR PLAN VIEW SEE SHEET 6 & 7
PI = 38+00.00
EL = 9.17
VC = 700
K = 1491
END DITCH GRADE LT.
STA. 37+25 EL= 6.90
BEGIN DITCH GRADE LT.
STA. 37+70 EL= 6.46
BEGIN DITCH GRADE LT.
STA. 36+90 EL= 6.67
END DITCH GRADE LT.
STA. 36+25 EL= 6.85
BEGIN DITCH GRADE LT.
STA. 35+00 EL= 7.10
END DITCH GRADE LT.
STA. 34+60 EL= 8.67
BEGIN DITCH GRADE RT.
STA. 39+00 EL= 6.45
END DITCH GRADE RT.
STA. 42+00 EL= 7.55
END DITCH GRADE LT.
STA. 42+00 EL= 6.53
BEGIN DITCH GRADE RT.
STA. 42+75 EL= 7.25
BEGIN DITCH GRADE LT.
STA. 42+75 EL= 6.35
END DITCH GRADE RT.
STA. 44+70 EL= 7.70
BEGIN DITCH GRADE RT.
STA. 45+30 EL= 8.20
END DITCH GRADE RT.
STA. 46+00 EL= 8.50
END DITCH GRADE LT.
STA. 47+00 EL= 7.10
BEGIN DITCH GRADE RT.
STA. 46+70 EL= 8.66
(+)0.2084%
(-)0.2610%
(-)0.20%
(+)0.20%
(-)0.67%
(+)0.67%
(-)1.00%
(+)1.00%
PI = 34+50.00 EL = 8.00 (LT.)
PI = 37+10.00 EL = 6.43 (LT.)
PI = 39+67.00 EL = 5.07 (LT.) EL = 5.00 (RT.)
PI = 43+50.00 EL = 6.40 (LT.) EL = 6.50 (RT.)
PI = 45+50.00 EL = 6.00 (RT.)
PI = 47+00.00 EL = 8.60 (RT.)
LIMITS OF UNDERCUT RT.
SEE CROSS SECTIONS
LIMITS OF UNDERCUT RT. & LT.
SEE CROSS SECTIONS
LIMITS OF UNDERCUT LT.
SEE CROSS SECTIONS
LIMITS OF UNDERCUT LT. & RT.
SEE CROSS SECTIONS
34+50 BEGIN UNDERCUT LT.
35+50 END UNDERCUT RT.
39+00 BEGIN UNDERCUT RT.
41+00 END UNDERCUT LT.
-L-
34+00
35
36
37
38
39
40
41
42
43
44
45
46
47+00
PI = 47+50.00
EL = 11.15
VC = 300
K = 735
PI = 50+00.00
EL = 10.65
VC = 200
K = 700
(+)0.2084%
(+)0.20%
(-)0.2000%
(+)0.0857%
END DITCH GRADE RT.
STA. 48+25 EL= 8.85
BEGIN DITCH GRADE RT.
STA. 49+20 EL= 9.46
PI = 49+50.00 EL = 9.40 (RT.)
END DITCH GRADE RT.
STA. 50+00 EL= 9.50
END GRADE
LT. & RT. TRAVEL LANES
-L- STA. 50+90.00
Elev. 10.73'
LIMITS OF UNDERCUT RT.
SEE CROSS SECTIONS
47+50 END UNDERCUT RT.
48
49
50
51
52
53
54
55
56
57
58
59+00

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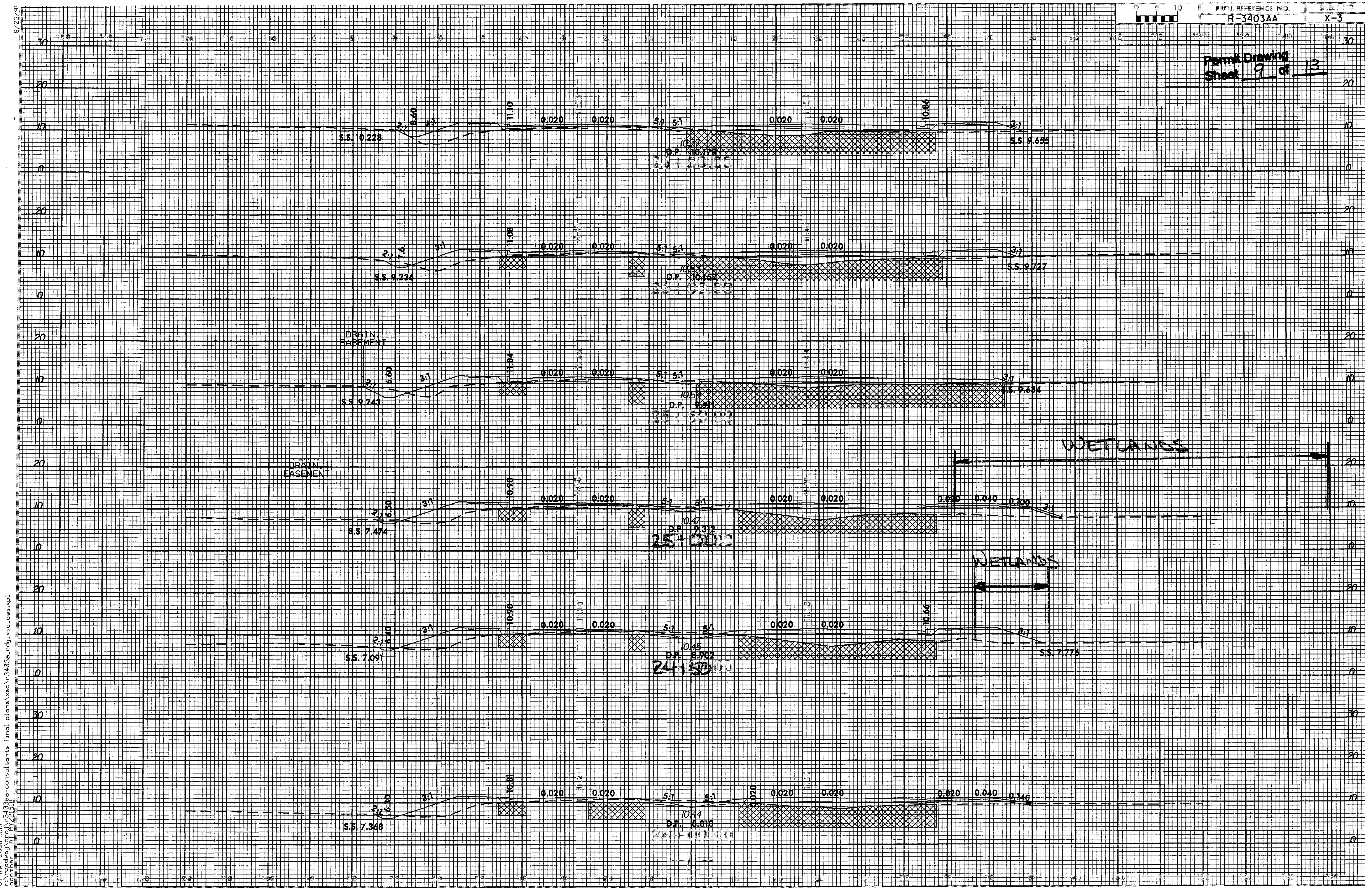
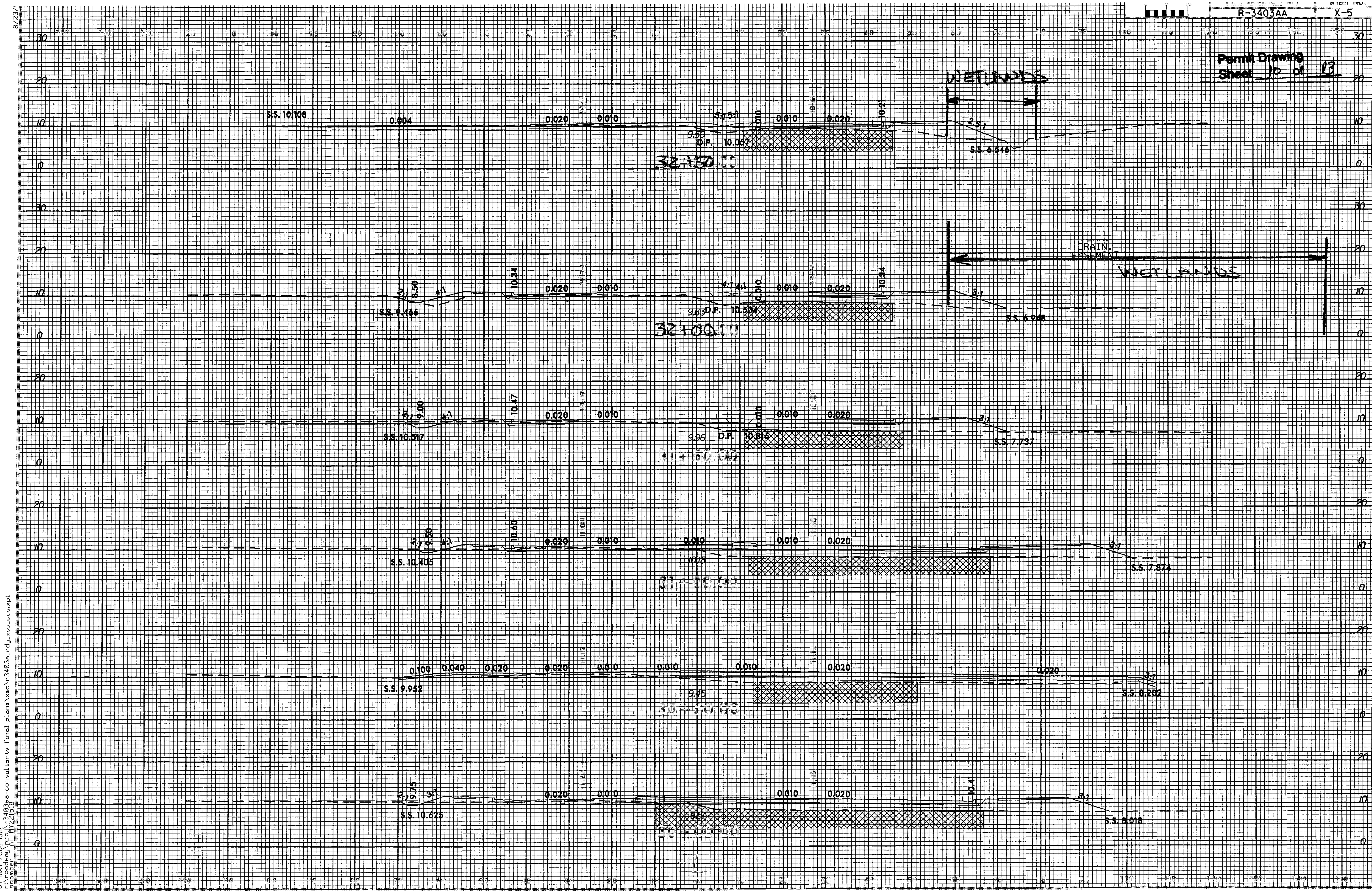

PROJ. REFERENCE NO.
R-3403AA
SHEET NO.
X-3
Permit Drawing Sheet 9 of 13
S.S. 10.228
D.P. 10.378
S.S. 9.655
S.S. 9.236
D.P. 10.182
S.S. 9.727
DRAIN. EASEMENT
S.S. 9.243
D.P. 9.911
S.S. 9.684
WETLANDS
S.S. 7.474
D.P. 9.312
25+00
WETLANDS
S.S. 7.091
D.P. 8.902
24+50
S.S. 7.776
S.S. 7.368
D.P. 8.810



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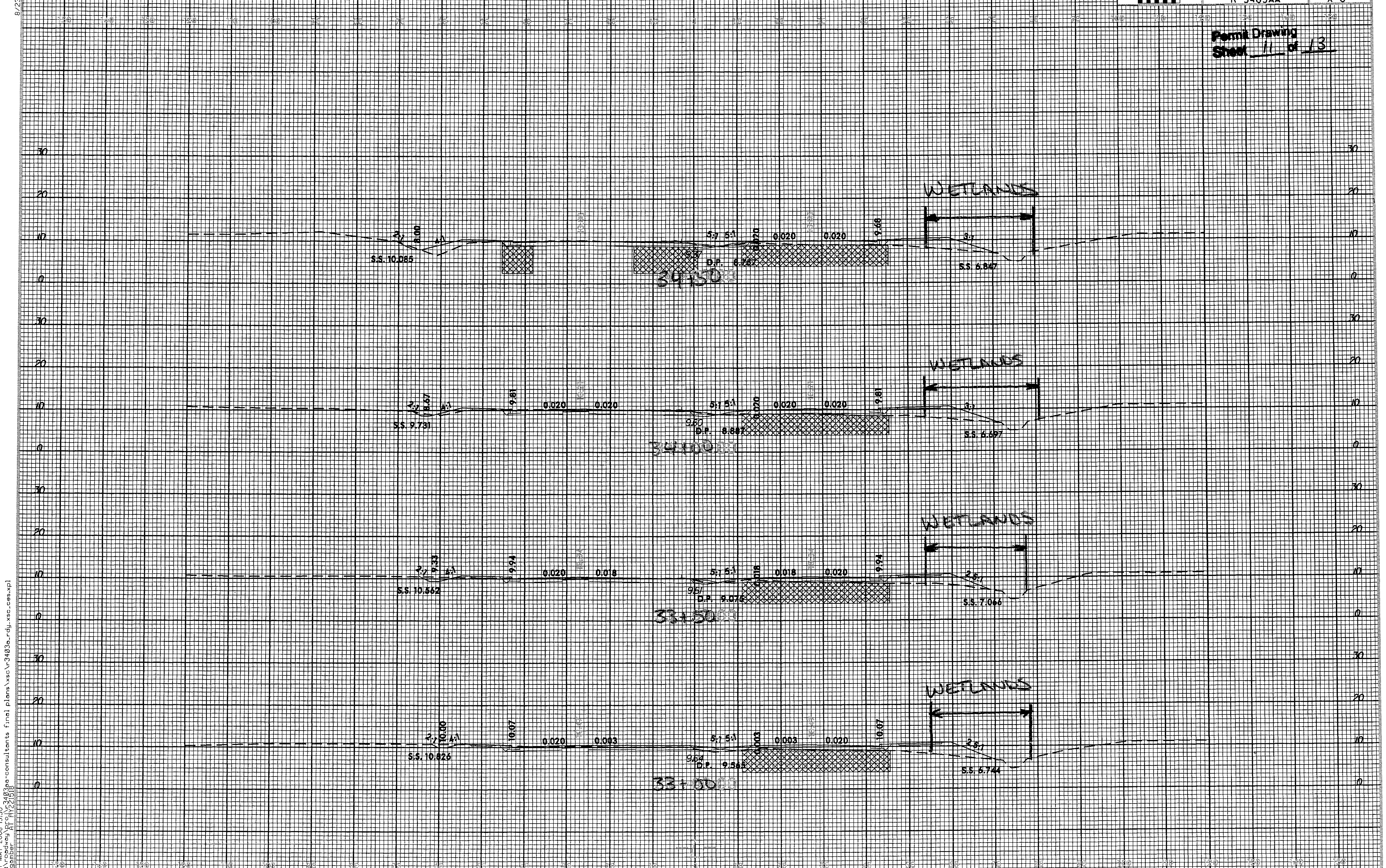
R-3403AA X-6

Permit Drawing
Sheet 11 of 13



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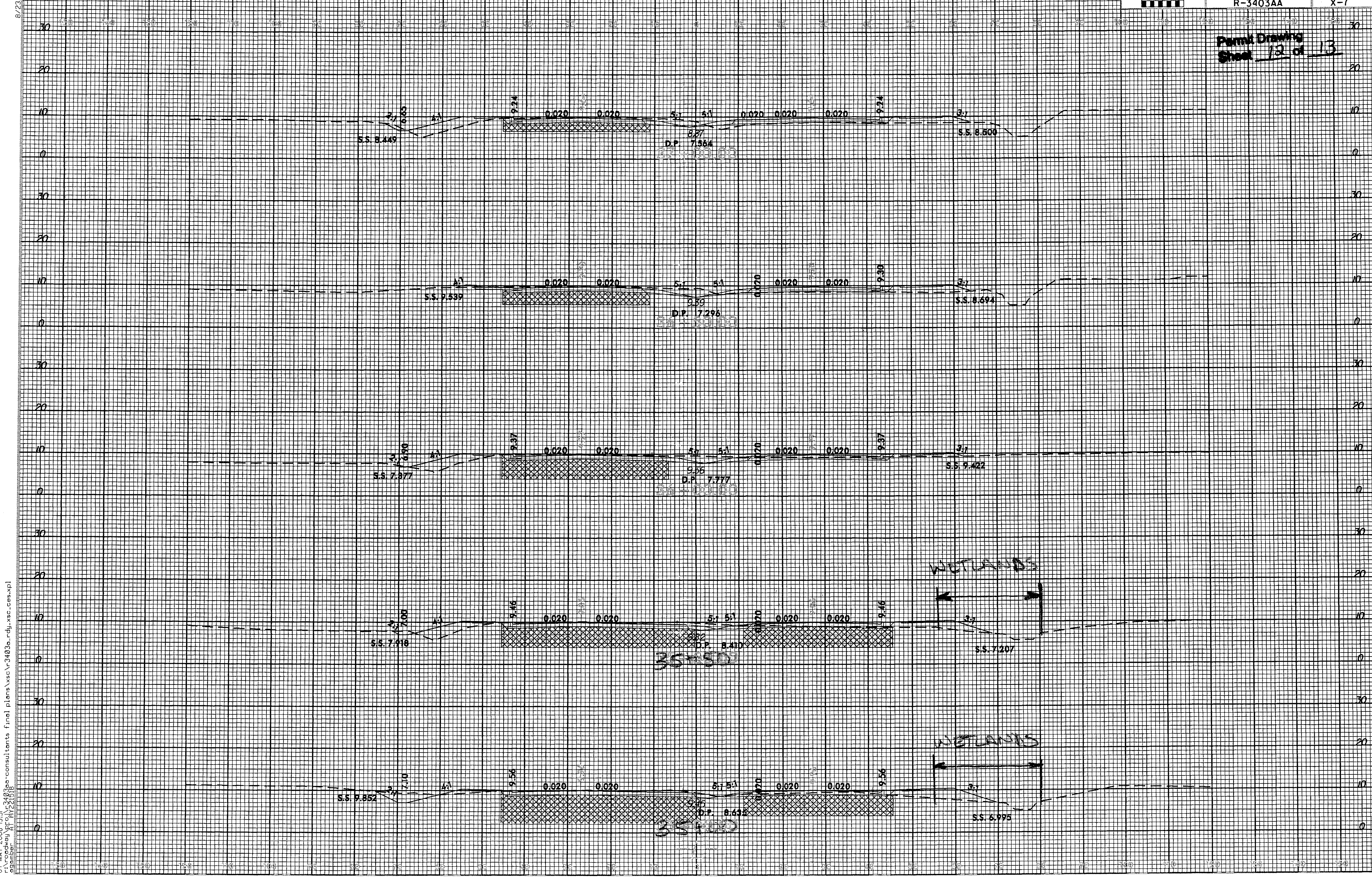
PROJ. REFERENCE NO.	SHEET NO.
R-3403AA	X-7

Permit Drawing Sheet 12 of 13



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WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	25+00 -L- RT	Roadway	0.02			0.02						
2	32+00 to 36+00 -L- RT	Roadway	0.14			0.09						
TOTALS:			0.16		0.00	0.11	0.00	0.00	0.00	0	0	

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WIDENING OF US 17
CRAVEN COUNTY
PROJECT: 34538.1.1 (R-3403AA)

SHEET Apr-08

ATN Revised 3/31/05

Permit Drawing
Sheet 13 of 13

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
8	William F and Martha S. Ward	P O Box 1428 New Bern, NC 28563
19	Carmen V. Donofrio	1540 Ocean Ave Unit 22 Rumson, NJ 07760

Permit Drawing
Sheet 13A of 13

NCDOT

DIVISION OF HIGHWAYS
CRAVEN COUNTY
PROJECT: 34538.1.1 (R-3403AA)
US 17 FROM MILLS STREET
TO NORFOLK & SOUTHERN
RAILROAD

Permit Drawing
SHEET Sheet OF ___ of ___ 05/08/08

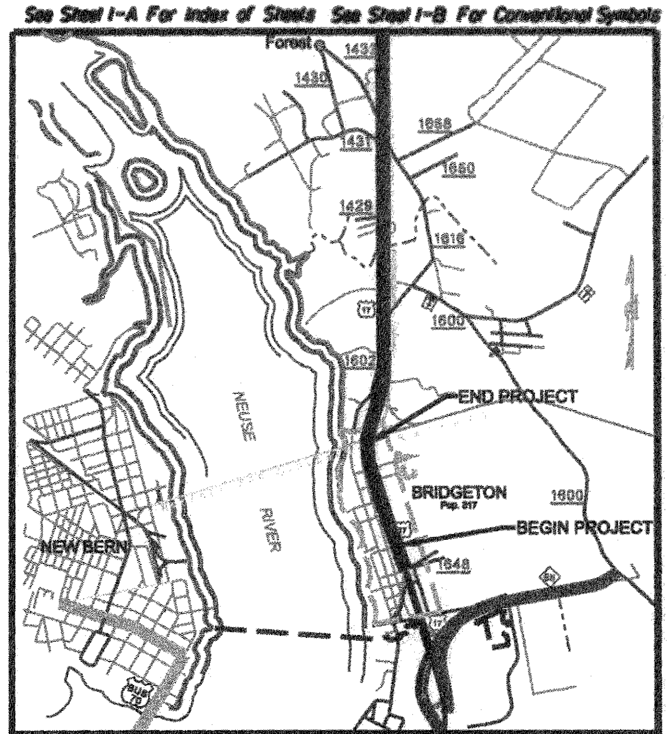
TIP PROJECT: R-3403AA

CONTRACT:

T.I.P. NO.	SHEET NO.
R-3403AA	UO-1

Utility Permit Drawing Sheet 1 of 5

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



VICINITY MAP

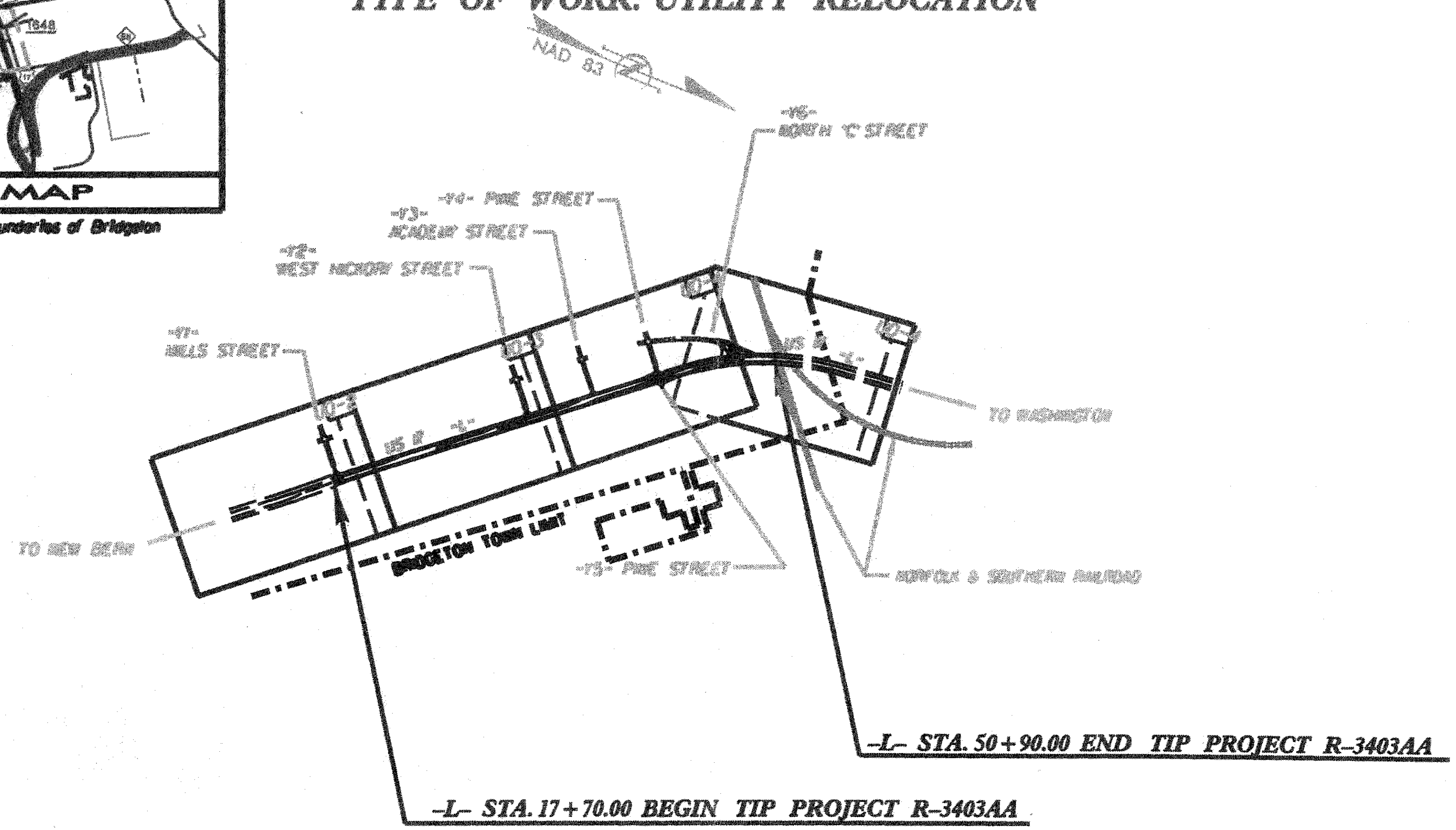
This Project is partially within the Municipal Boundaries of Bridgeton

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

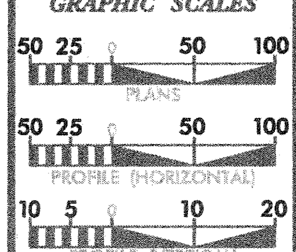
UTILITY BY OTHERS PLANS
CRAVEN COUNTY

LOCATION: US 17 FROM MILLS STREET TO NORFOLK & SOUTHERN RAILROAD

TYPE OF WORK: UTILITY RELOCATION



GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2 THRU UO-5	UTILITY BY OTHERS PLAN SHEETS

UTILITY OWNERS ON PROJECT

(1) PROGRESS ENERGY POWER
(2) EMBARQ TELEPHONE
(3) CABLE VISION-SUDDEN LINK

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
DESIGN SERVICES
UTILITY SECTION
1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 250-4128
FAX (919) 250-4119

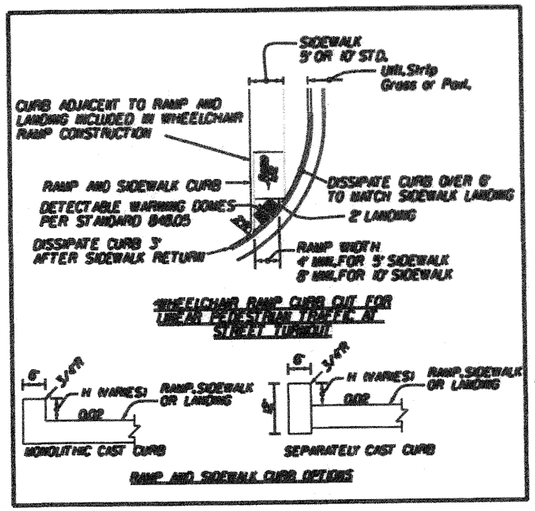
Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Carl Barcaly, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Ali Hamdabi, P.E. UTILITIES PROJECT DESIGNER

PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	UO-2

UTILITIES BY OTHERS

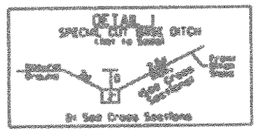
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

Utility Permit Drawing
Sheet 2 of 8



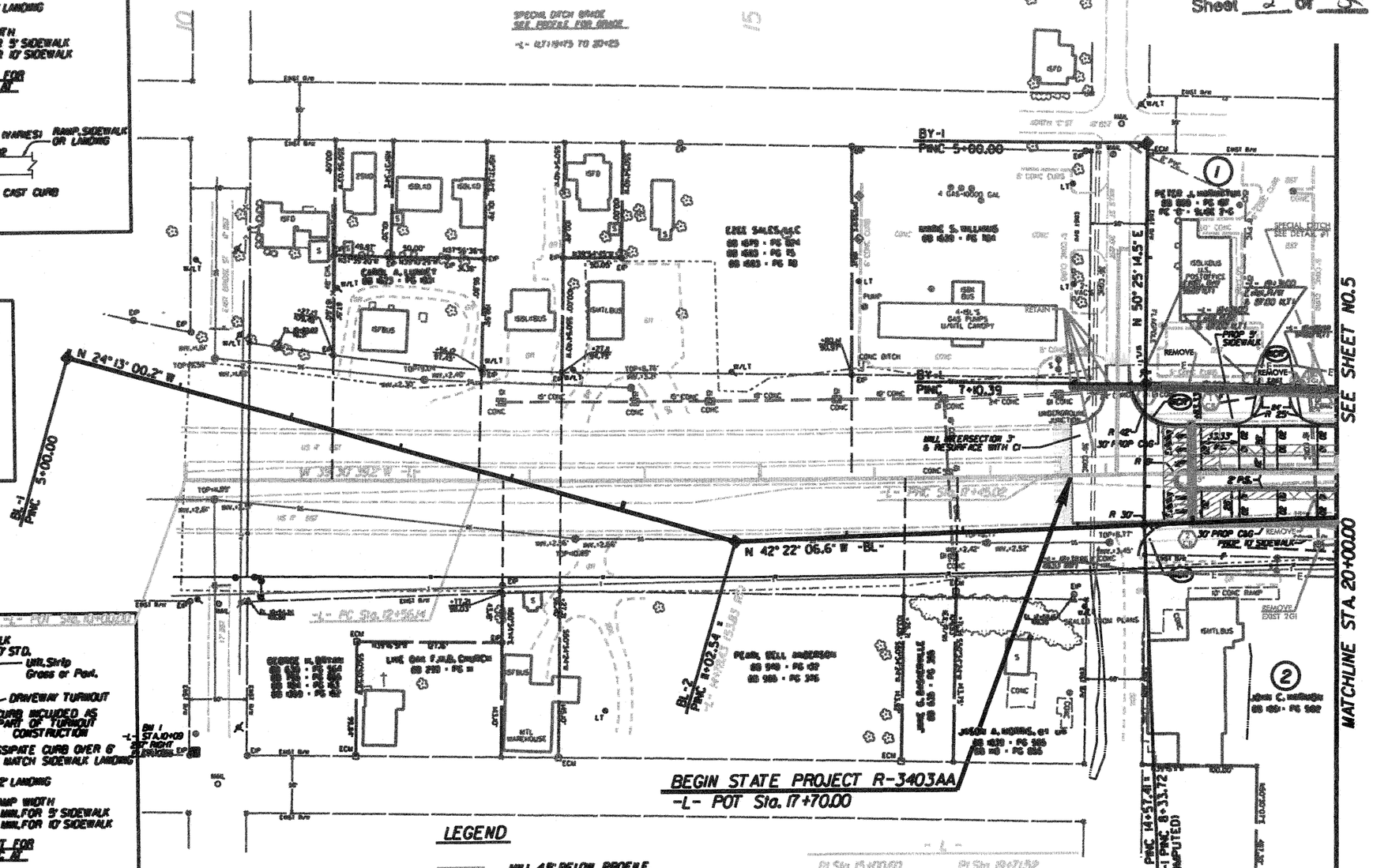
DATUM DESCRIPTION

THE HORIZONTAL COORDINATE SYSTEM DESIGNATED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NGS/CORS FOR MONUMENT "DOT403-4"
WITH NAD 83 STATE PLANE GRID COORDINATES OF
NORTHING: 532162.8250 EASTING: 2361166.8880
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
GROUND TO GRID IS: 0.99991576
THE HORIZONTAL GRID BEARING AND
HORIZONTAL GROUND DISTANCE FROM
"DOT403-4" TO +- STATION 15 17+00.00
S 20° 39' 24.05" E 2000.00 FEET
ALL LINEAR DIMENSIONS ARE HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88



SPECIAL DITCH GRADE
SEE DETAIL FOR GRADE
-L- 17+70.73 TO 20+00

NAD 83

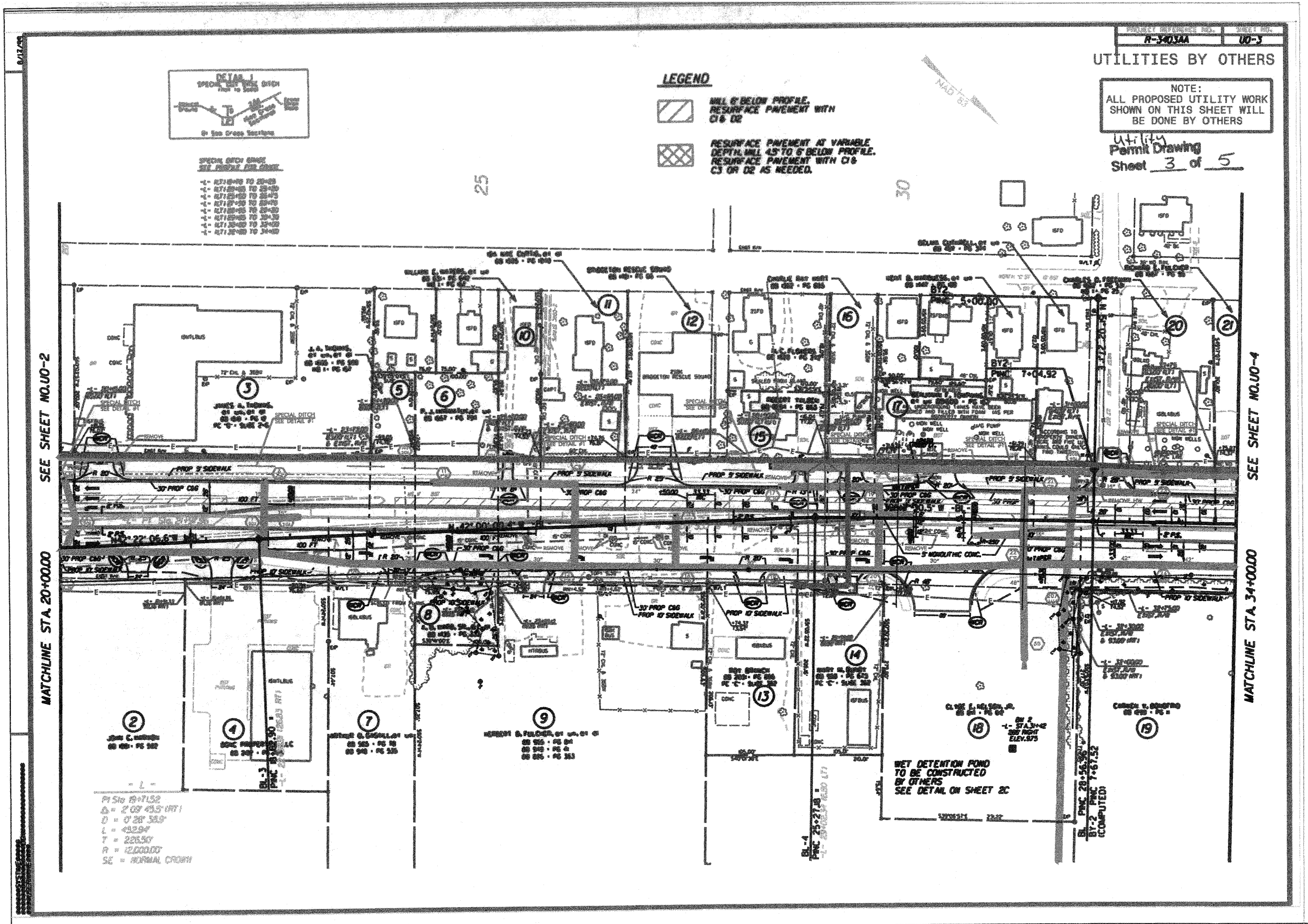


LEGEND

MILL 4.5" BELOW PROFILE. RESURFACE PAVEMENT WITH CI & C3.

RESURFACE PAVEMENT AT VARIABLE DEPTH, MILL 4.5" TO 6" BELOW PROFILE. RESURFACE PAVEMENT WITH CI & C3 OR D2 AS NEEDED.

r3403a_rdy_psh04-ces_uo2.dgn 5/12/2008 3:11:05 PM


R-3403AA
UO-3
UTILITIES BY OTHERS
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS
Utility Permit Drawing
Sheet 3 of 5
LEGEND
MILL 6" BELOW PROFILE. RESURFACE PAVEMENT WITH C16 D2
RESURFACE PAVEMENT AT VARIABLE DEPTH. MILL 4.5" TO 6" BELOW PROFILE. RESURFACE PAVEMENT WITH C16 C3 OR D2 AS NEEDED.
NAD 83
25
30
SEE SHEET NO. UO-2
SEE SHEET NO. UO-4
MATCHLINE STA. 20+00.00
MATCHLINE STA. 34+00.00
PROP 5' SIDEWALK
30' PROP C&G
PROP 10' SIDEWALK
REMOVE
WET DETENTION POND
TO BE CONSTRUCTED
BY OTHERS
SEE DETAIL ON SHEET 2C
BROCKTON RESCUE SQUAD
PINC 7+04.92
-L- STA. 31+42
BL-3
BL-4
BY-2 PINC 7+67.52 (COMPUTED)
1
2
3
4
5
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7
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9
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11
12
13
14
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17
18
19
20
21

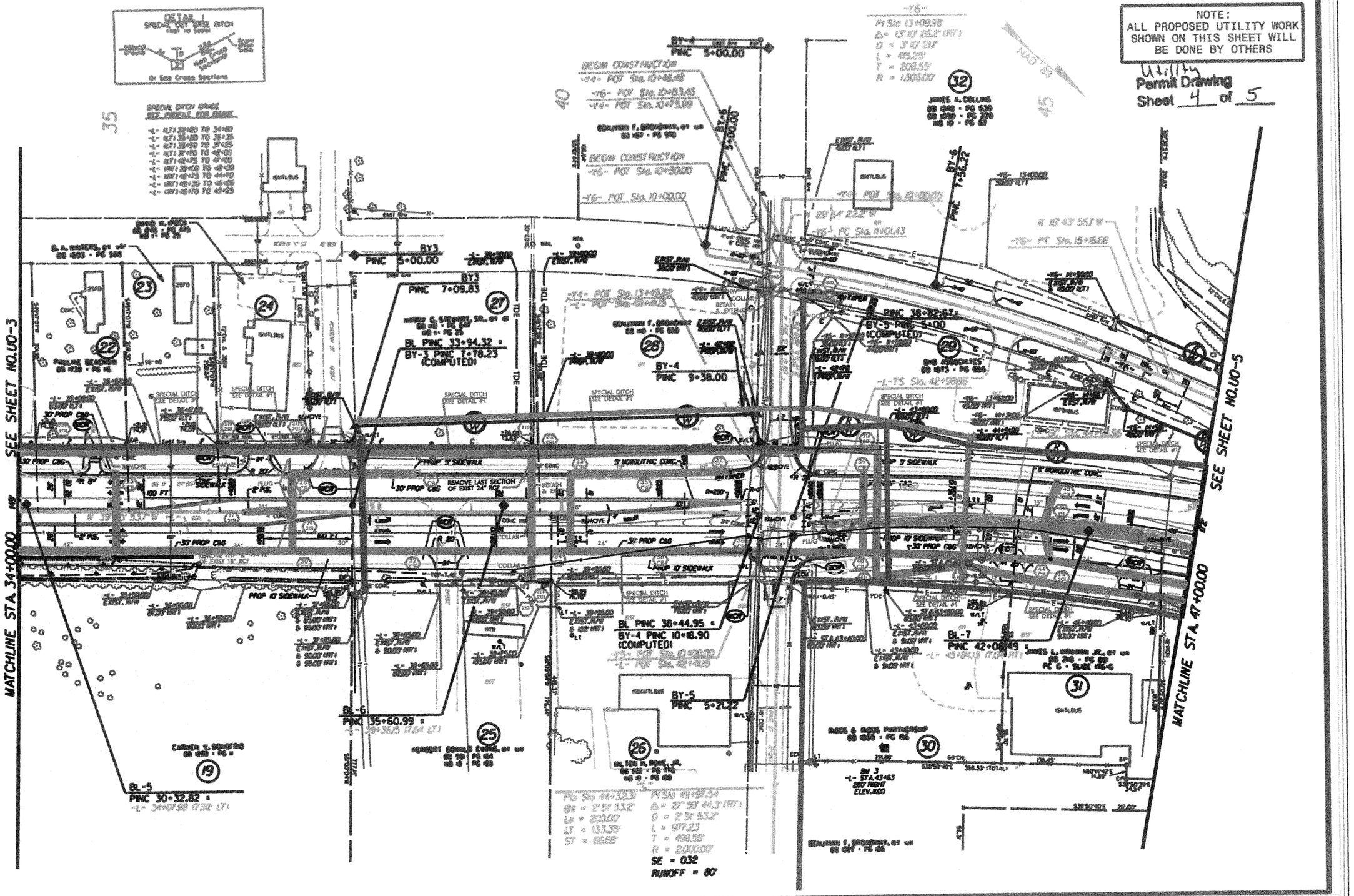
r3403a_rdy_psh05-ces_uo3.dgn 5/12/2008 3:10:03 PM

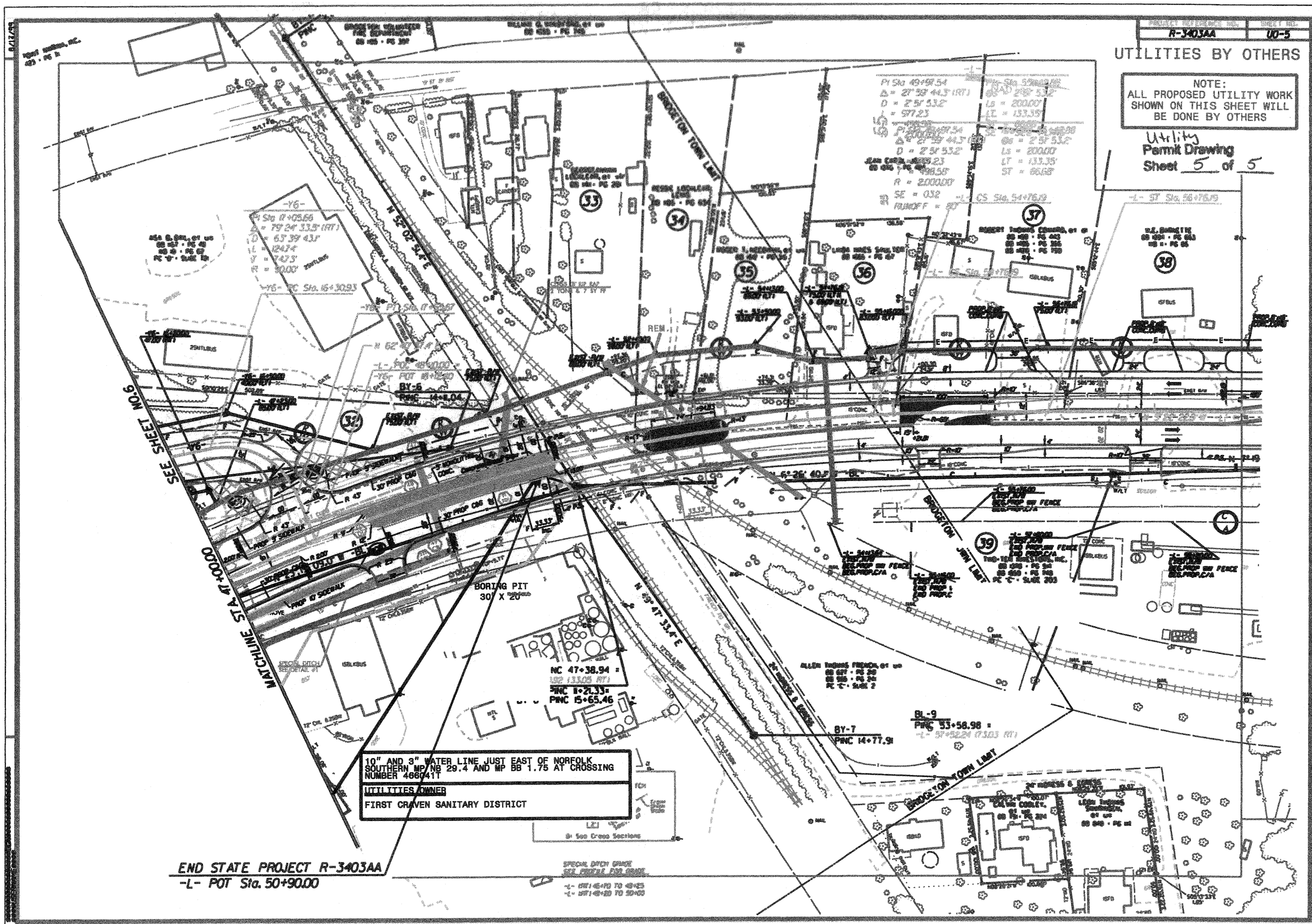
PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	UO-4

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

Utility
Permit Drawing
Sheet 4 of 5



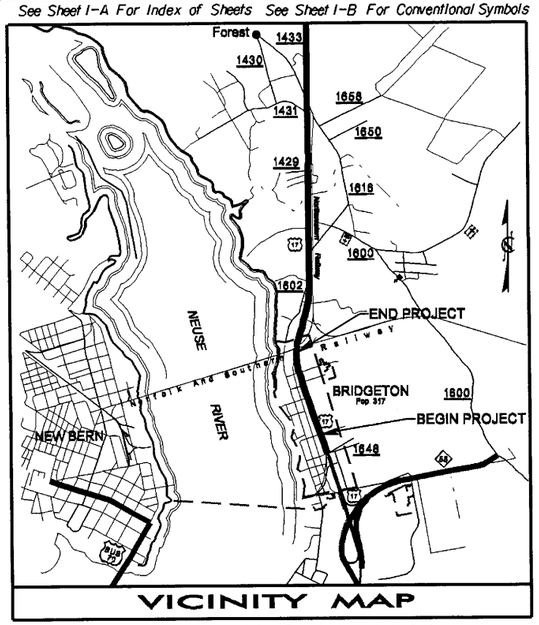

R-3403AA
UO-5
UTILITIES BY OTHERS
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS
Utility Permit Drawing
Sheet 5 of 5
SEE SHEET NO.6
MATCHLINE STA. 47+00.00
BRIDGETON TOWN LIMIT
BORING PIT 30' X 20'
NC 47+38.94 =
PINC 15+65.46
BY-6
PINC 14+8.04
BY-7
PINC 14+77.91
BL-9
PINC 53+58.98 =
10" AND 3" WATER LINE JUST EAST OF NORFOLK SOUTHERN MP NB 29.4 AND MP BB 1.75 AT CROSSING NUMBER 466041T
UTILITIES OWNER
FIRST CRAVEN SANITARY DISTRICT
END STATE PROJECT R-3403AA
-L- POT Sta. 50+90.00

09/08/99

R-3403AA

CONTRACT: C201877

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



This Project is within the Municipal Boundaries of Bridgeton

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

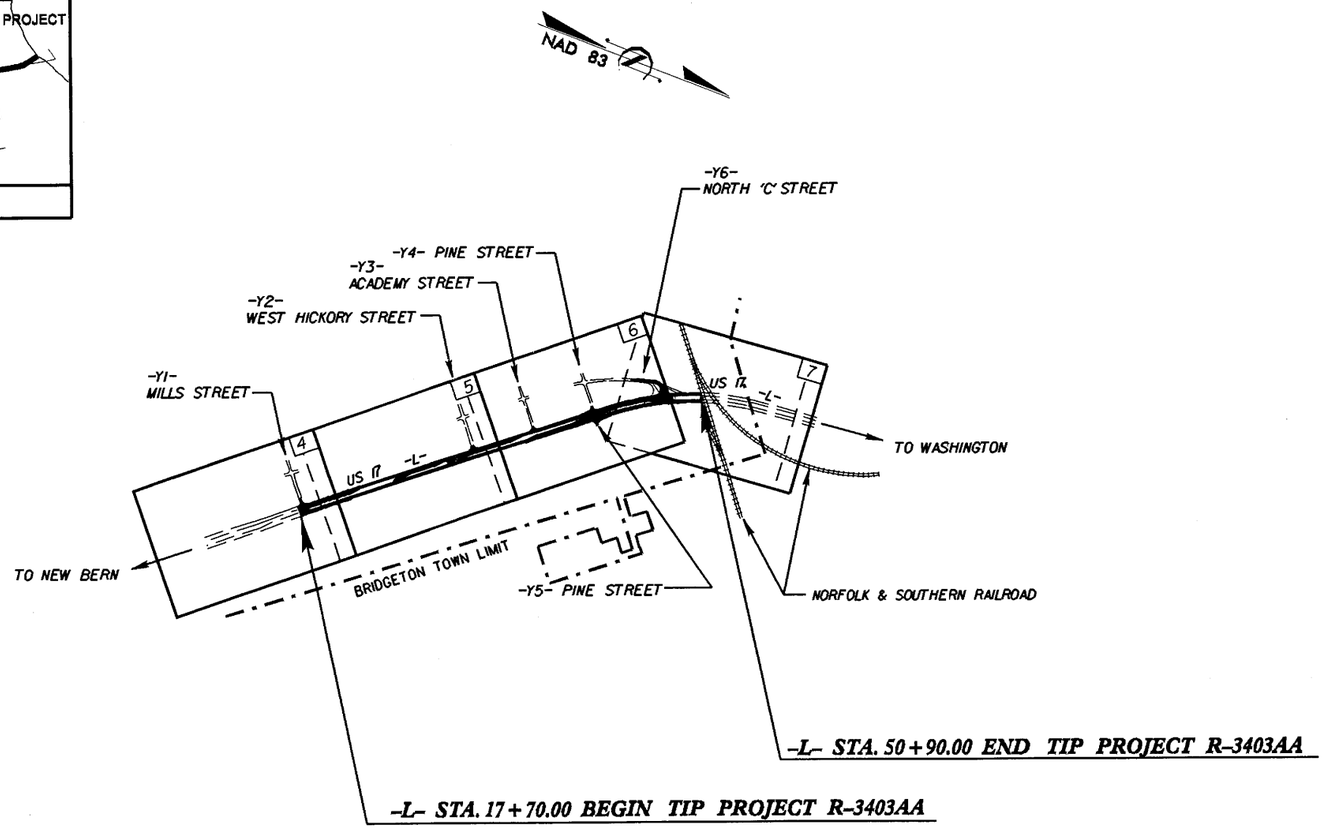
CRAVEN COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3403AA	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34538.1.1	STPNHF-17(24)	PE
34538.2.2	STPNHF-17(47)	R/W, UTIL
34538.3.5	STPNHF-17(74)	CONST.

LOCATION: US 17 FROM MILLS STREET TO NORFOLK & SOUTHERN RAILROAD

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



-L- STA. 50+90.00 END TIP PROJECT R-3403AA

-L- STA. 17+70.00 BEGIN TIP PROJECT R-3403AA

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 2007 = 15,300
ADT 2027 = 30,400
DHV = 11 %
D = 60 %
T = 10 % *
V = 50 MPH
* TTST 5% DUAL 5%
FUNC. CLASS = ARTERIAL

PROJECT LENGTH

TOTAL LENGTH OF TIP PROJECT R-3403AA = 0.629 MILES

Prepared In the Office of:
CES Comprehensive Engineering Services, Inc.
201 S Orange Ave, Suite 1300 Orlando, FL 32801-3442

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: March 22, 2005

LETTING DATE: August 19, 2008

R. BADERSCHNEIDER, PE
PROJECT ENGINEER

S. KLAUS, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

D-MAY-2008 14:48
\roadway\proj\r-3403aa-consultants final plans\r-3403aa_rdy_tsh_ces.dgn
$$USERNAME$$$$

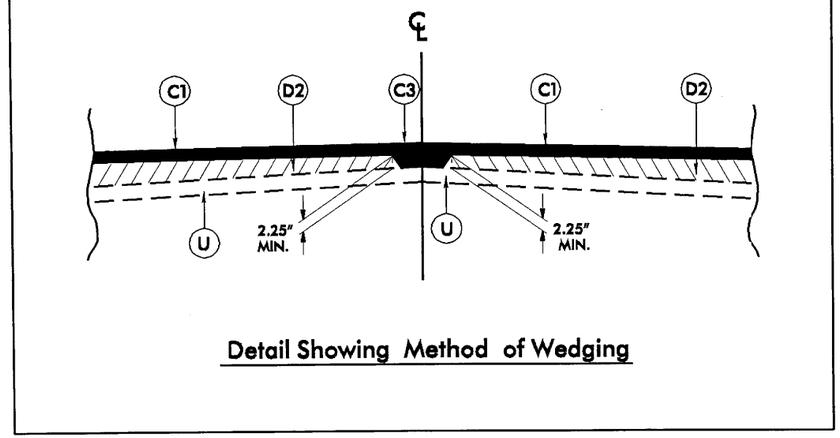
6/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

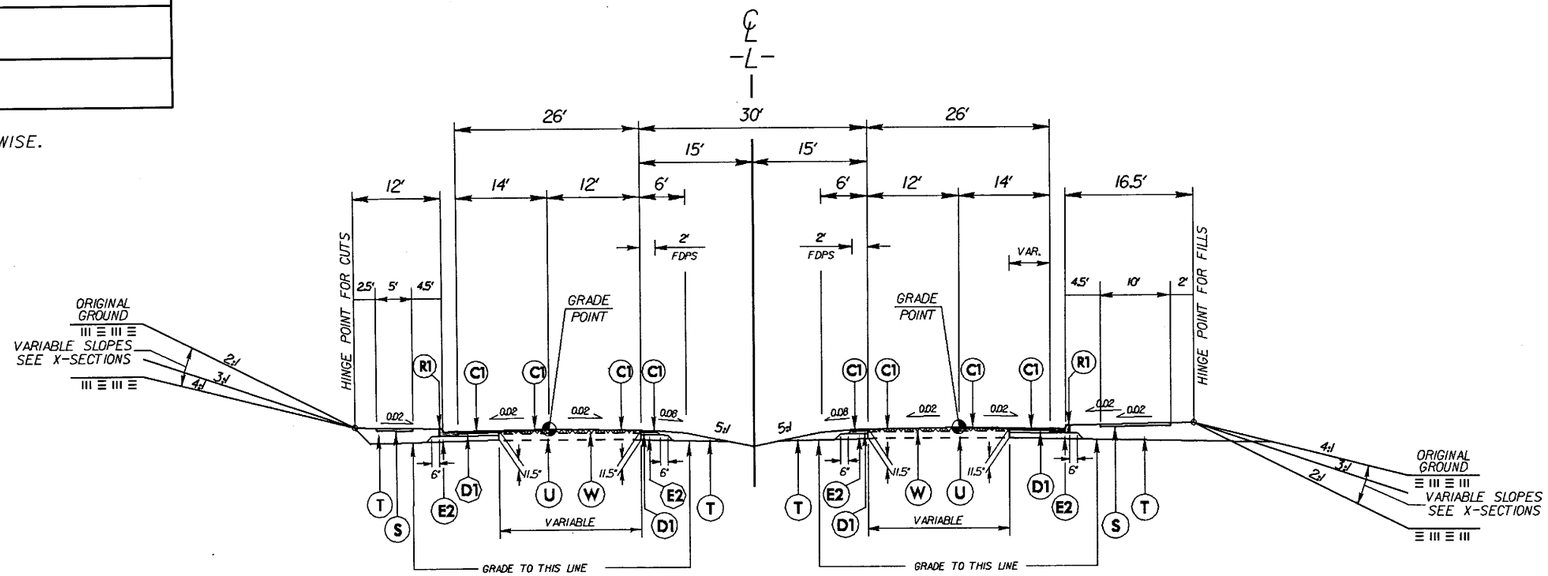
FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 336 LBS. PER SQ.YD.
C2	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 280 LBS. PER SQ.YD.
C3	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 LESS THAN 1.5" IN DEPTH OR GREATER THAN 2.25" IN DEPTH.
D1	PROP. APPROX. 3.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 400 LBS. PER SQ. YD.
D2	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 LESS THAN 2.25" IN DEPTH OR GREATER THAN 4.0" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).
S	4" CONCRETE SIDEWALK.
R1	2'-6" CONCRETE CURB AND GUTTER.

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
FDPS = FULL DEPTH PAVED SHOULDER



Detail Showing Method of Wedging



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
-L- STA. 18+50.00 TO -L- STA. 22+69.25

NOTES:

TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 1
-L- STA. 17+70.00 TO -L- STA. 18+50.00

SEE CROSS SECTIONS FOR UNDERCUT LOCATIONS

-MAY-2008 14:49
\roadway\pro\r-3403aa-consultants final plans\r3403a_rdy_typ_ces.dgn
$$USERNAME$$$

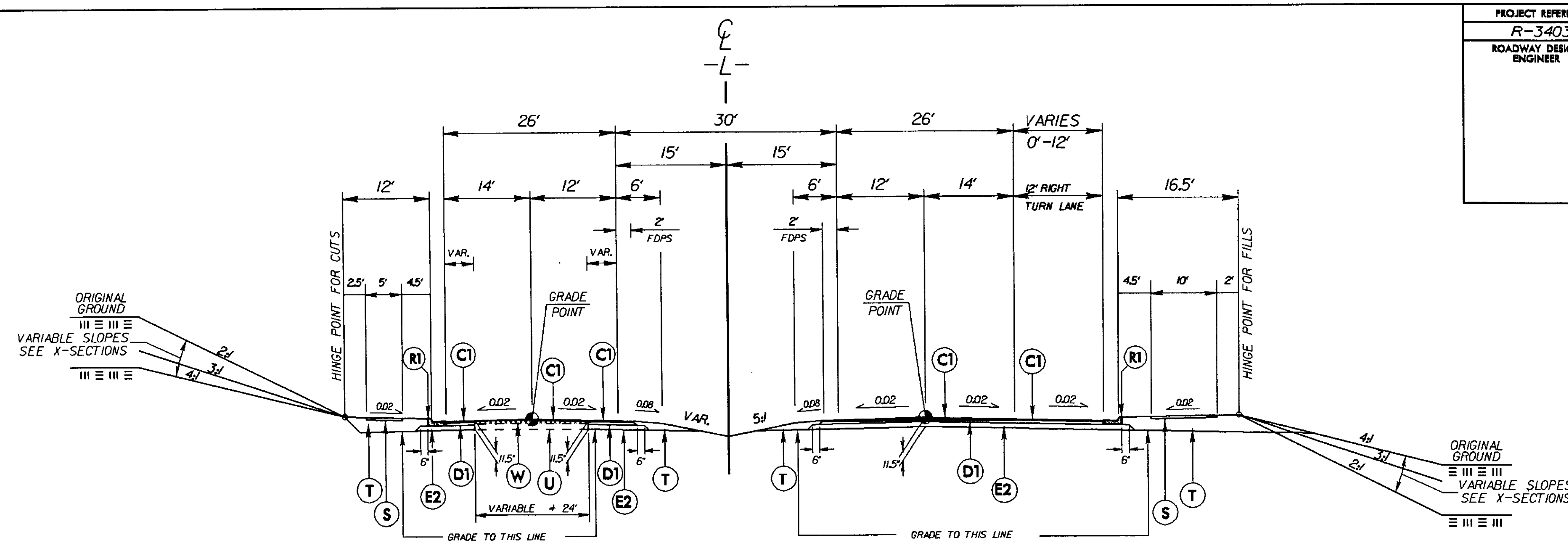
PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	2A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

6/2/99

FINAL PAVEMENT SCHEDULE	
C1	3.0" S9.5C
C2	2.5" SF9.5A
C3	VAR. DEPTH S9.5C
D1	3.5" I19.0C
D2	VAR. DEPTH I19.0C
E1	4" B25.0B
E2	5" B25.0C
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING
S	4" CONC. SIDEWALK
R1	2'-6" CONC. C & G

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

FDPS = FULL DEPTH PAVED SHOULDER



TYPICAL SECTION NO. 2

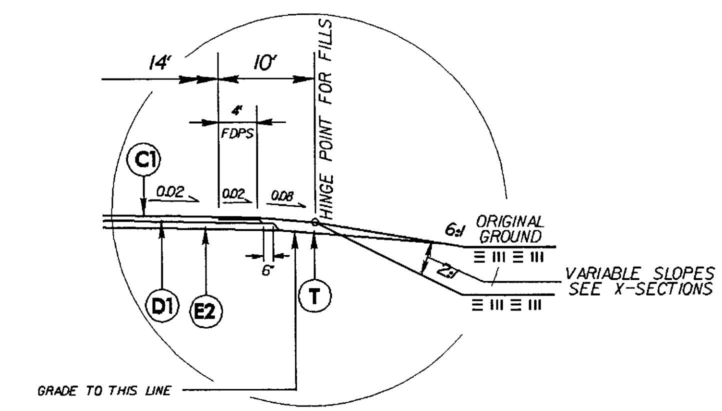
USE TYPICAL SECTION NO. 2

-L- STA. 23+00.00 TO -L- STA. 34+50.00

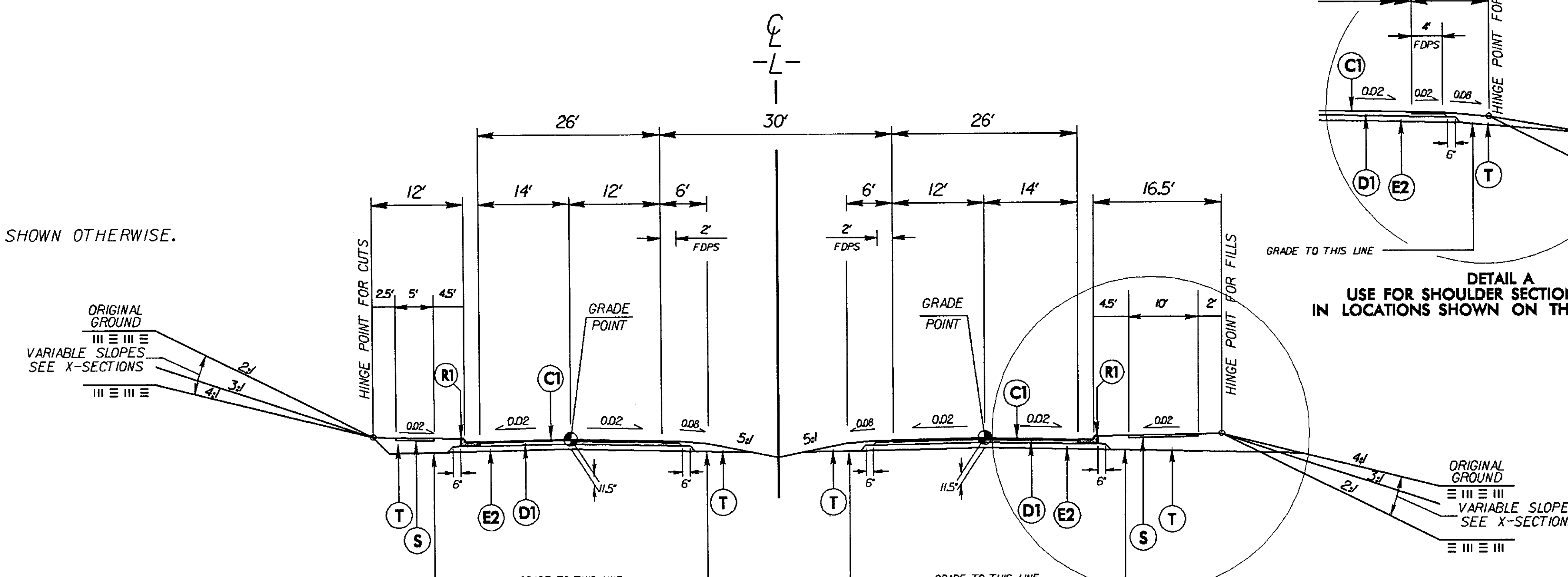
NOTES:

TRANSITION FROM TYPICAL SECTION NO. 1
TO TYPICAL SECTION NO. 2
-L- STA. 22+69.25 TO -L- STA. 23+00.00

SEE CROSS SECTIONS FOR UNDERCUT LOCATIONS



DETAIL A
USE FOR SHOULDER SECTIONS LT & RT
IN LOCATIONS SHOWN ON THE PLAN SHEETS



SEE DETAIL A

TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-L- STA. 34+50.00 TO -L- STA. 50+90.00

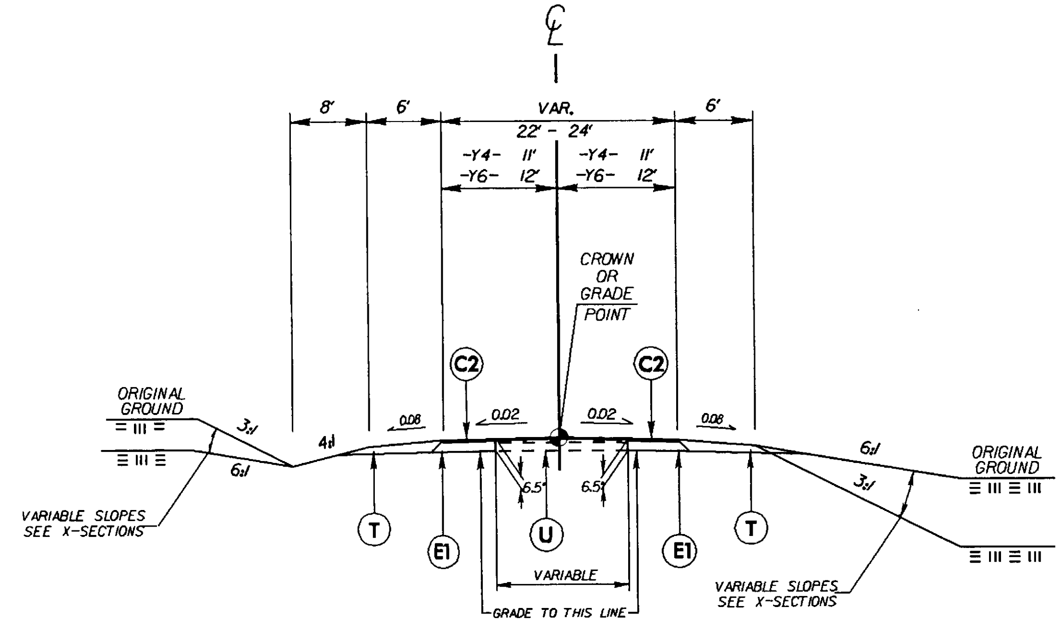
NOTE:

SEE CROSS SECTIONS FOR UNDERCUT LOCATIONS

PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	2B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

FINAL PAVEMENT SCHEDULE	
C1	3.0" S9.5C
C2	2.5" SF9.5A
C3	VAR. DEPTH S9.5C
D1	3.5" I19.0C
D2	VAR. DEPTH I19.0C
E1	4" B25.0B
E2	5" B25.0C
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

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

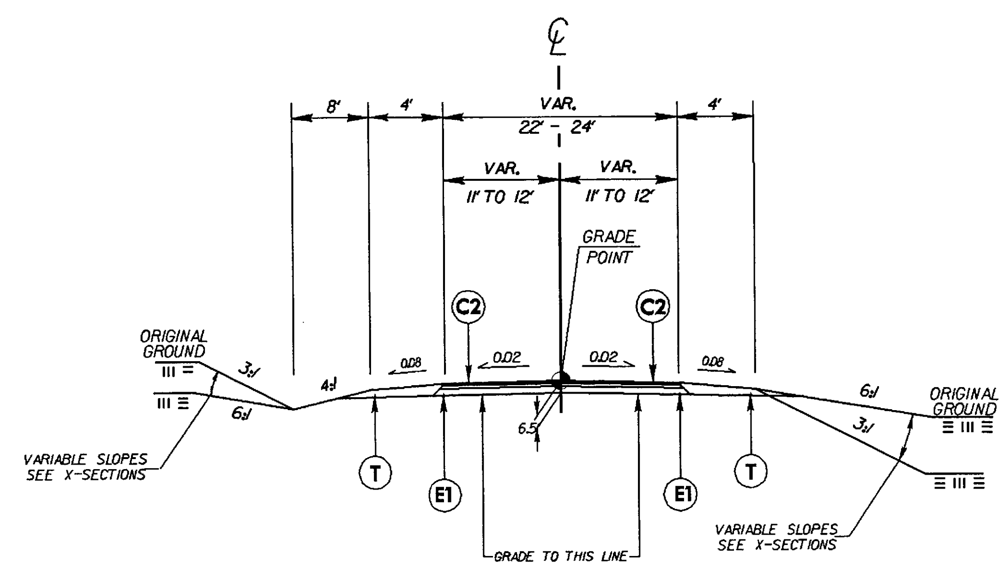


TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

-Y4- STA. 11+00.00 TO STA. 12+45.89
-Y6- STA. 11+00.00 TO STA. 15+00.00

NOTE:
TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 4
-Y4- STA. 10+46.48 TO STA. 11+00.00
-Y6- STA. 10+50.00 TO STA. 11+00.00



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

-Y6- STA. 15+00.00 TO STA. 17+74.00

8/17/99

WET DETENTION POND

PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	2-C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

REMOVE PIPE PLUG AND CONNECT TO EXISTING PIPE OUTFALL TO POND. EXISTING PIPE HAS BEEN CONSTRUCTED AND PLUGGED IN THE DRAINAGE EASTMENT AS PART OF THE POND CONSTRUCTION.

48" PLUG
INV. 4.28

90 LF
48" RCP @ 0.05%

APPROXIMATE WETLAND LINE

SCOUR HOLE

STONE BERM

69 LF
30" RCP

MANHOLE
TOP EL. 9.3
INV. EL. 4.0 (N)
INV. EL. 2.0 (SE)

278 LF
48" RCP @ 0.0%
INV. 0.50

RESTORE AREA TO MATCH EXIST. GRADES

242 LF
30" RCP

MANHOLE
TOP EL. 9.3
INV. EL. 4.0 (E)
INV. EL. 2.0 (NW)

58 LF
30" RCP

MANHOLE
TOP EL. 9.3
INV. EL. 4.0

STONE BERM

APPROXIMATE WETLAND LINE

CONTROL STRUCTURE SEE DETAIL THIS SHEET

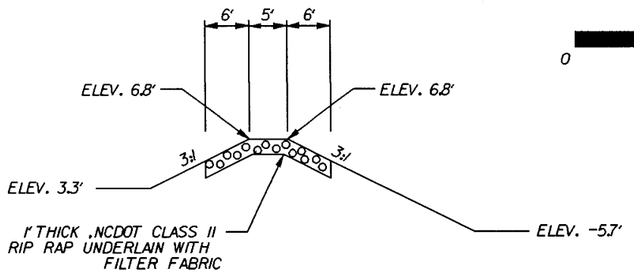
211 LF
30" RCP

MANHOLE
TOP EL. 9.3
INV. EL. 4.0

29 LF
30" RCP @ 0.0%
INV. 4.00

POND SECTION (C'C')

NTS

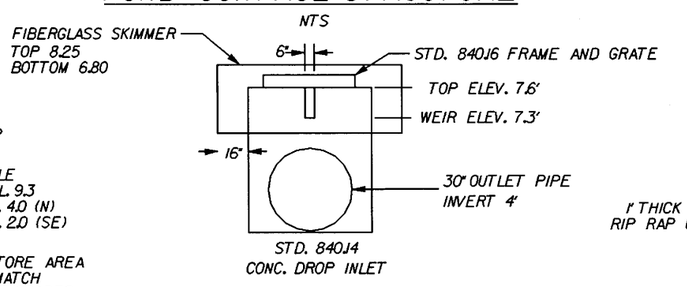


NAD 83

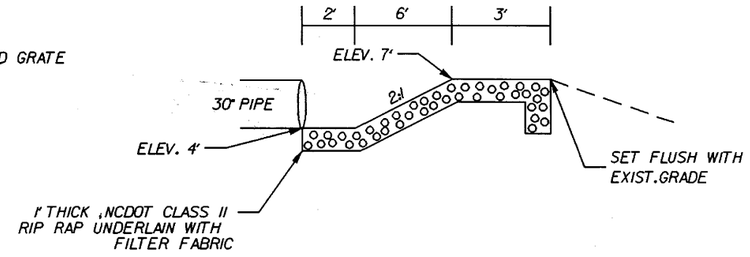
0 50 100

POND CONTROL STRUCTURE

NTS



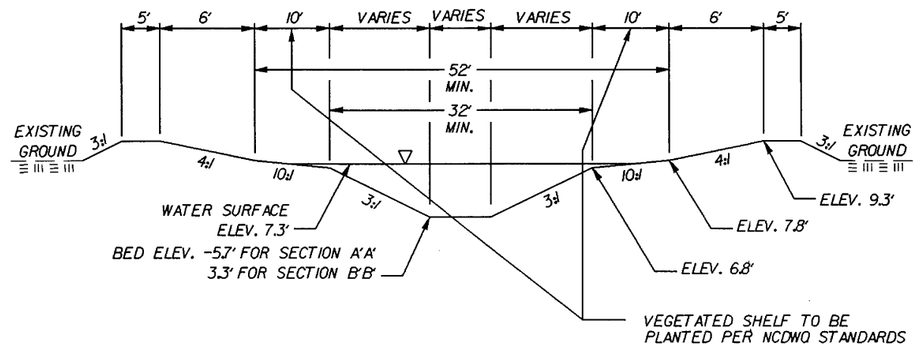
SCOUR HOLE DETAIL



NOTE: POND, DRAINAGE STRUCTURES, AND PIPES SHOWN OUTSIDE OF THE US 17 RIGHT-OF-WAY AND DRAINAGE EASMENTS HAVE BEEN PREVIOUSLY CONSTRUCTED AND ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY.

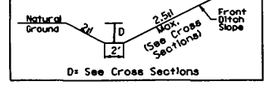
POND SECTION (A'A' & B'B')

NTS



NOTE: ELEVATIONS ON THIS SHEET ARE BASED ON NGVD 29.

02-DEC-2008 09:51
r:\drainage\r3403a_hyd_drn_basindetail_ces.dgn
agomber



PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (LT) 19+75 TO 20+25

BL PINC 14+57.41 =
BY-1 PINC 8+33.72
(COMPUTED)

LEGEND

▨	MILL 4.5" BELOW PROFILE. RESURFACE PAVEMENT WITH C1 & C3.
▩	RESURFACE PAVEMENT AT VARIABLE DEPTH. MILL 4.5" TO 6" BELOW PROFILE. RESURFACE PAVEMENT WITH C1 & C3 OR D2 AS NEEDED.

- L -

PI Sta 15+00.60
Δ = 1° 45' 00.0" (LT)
D = 0° 21' 28.7"
L = 488.88'
T = 244.46'
R = 16,006.00'

PI Sta 19+71.52
Δ = 2° 09' 45.5" (RT)
D = 0° 28' 38.9"
L = 452.94'
T = 226.50'
R = 12,000.00'
SE = NORMAL CROWN

REVISIONS

8/17/99

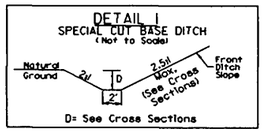
0-MAY-2008 14:52
r:\roadway\proj\r3403aa-consultants final plans\r3403a_rdy_psh04-ces.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

8/17/99

REVISIONS

DETAIL 1
SPECIAL CUT BASE DITCH
(Not to Scale)



D= See Cross Sections

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE

-L- (LT) 19+70 TO 20+25
-L- (LT) 20+85 TO 25+20
-L- (LT) 25+50 TO 26+75
-L- (LT) 27+50 TO 28+70
-L- (LT) 28+95 TO 29+20
-L- (LT) 29+65 TO 30+30
-L- (LT) 30+80 TO 32+00
-L- (LT) 32+80 TO 34+60

LEGEND

MILL 6" BELOW PROFILE. RESURFACE PAVEMENT WITH C1 & D2

RESURFACE PAVEMENT AT VARIABLE DEPTH. MILL 4.5" TO 6" BELOW PROFILE. RESURFACE PAVEMENT WITH C1 & C3 OR D2 AS NEEDED.

NAD 83

SEE SHEET NO.4

SEE SHEET NO.6

MATCHLINE STA. 20+00.00

MATCHLINE STA. 34+00.00

25

30

EXIST R/W

WILLIAM E. WATERS, et ux
DB 631- PG 642
MB 1- PG 157

IDA MAE CURTIS, et al
DB 1305 - PG 1040

BRIDGETON RESCUE SQUAD
DB 1481- PG 66

CHARLIE RAY HART
DB 1362 - PG 655

KENT D. MARQUESS, et ux
DB 1447 - PG 189

DELMA CUTHRELL, et ux
DB 497 - PG 374

CHARLES D. FREEMAN
DB 1622 - PG 531
MB 1- PG 25

RICHARD E. FULCHER
DB 1667 - PG 55

BY2 PING 5+00.00

BY2 PING 7+04.92

J. A. THOMAS, et ux, et al
DB 1665 - PG 599
MB 1- PG 157

N/C. FLOWERS
DB 1620 - PG 272

ROBERT YALDEN
DB 2294 - PG 863

BENJAMIN F. TOMPKINS, et ux DB1600 - PG 162

ALL UNDERGROUND TANKS HAVE BEEN ABANDONED AND FILLED WITH FOAM (AS PER PROPERTY OWNER)

ACCORDING TO PROPERTY OWNER, THERE ARE FIVE U/G TANKS, COULD ONLY FIND THREE

JAMES A. THOMAS, et ux, et al
DB 1510 - PG 12
PC "G" - SLIDE 2-G

P. J. HARMATUK, et ux
DB 1567 - PG 794

A. D. WARD, SR., et al
DB 1435 - PG 333

JOHN C. HARMON
DB 1861- PG 502

DGNC PROPERTIES, LLC
DB 2122 - PG 452

ARTHUR O. GASKILL, et ux
DB 595 - PG 78
DB 948 - PG 535

HERBERT D. FULCHER, et ux, et al
DB 965 - PG 814
DB 949 - PG 41
DB 826 - PG 363

ROY BRANCH
DB 2031- PG 855
PC "C"- SLIDE 352

MARY M. BUNDY
DB 958 - PG 673
PC "C" - SLIDE 352

CLYDE E. NELSON, JR.
DB 814 - PG 612

CARMEN V. DONOFRIO
DB 1299 - PG 11

BM 2
-L- STA.31+42
266' RIGHT
ELEV. 975

-L- PT Sta. 21+97.96

PI Sta 19+71.52
Δ = 2° 09' 45.5" (RT)
D = 0° 28' 38.9"
L = 452.94'
T = 226.50'
R = 12,000.00'
SE = NORMAL CROWN

BL-3
PINC 18+43.90 =
-L- 22+91.29 (26.83 RT)

BL-4
PINC 25+27.18 =
-L- 29+02.34 (6.80 LT)

BL-2 PINC 28+56.96 =
BY-2 PINC 7+67.52
(COMPUTED)

WET DETENTION POND
TO BE CONSTRUCTED
BY OTHERS
SEE DETAIL ON SHEET 2C

20-MAY-2008 14:53
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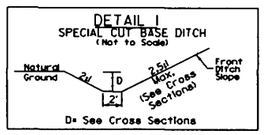
PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

8/17/99

DETAIL 1
SPECIAL CUT BASE DITCH
(Not to Scale)



SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE

-L- (LT) 32+80 TO 34+60
-L- (LT) 35+20 TO 36+35
-L- (LT) 36+90 TO 37+25
-L- (LT) 37+70 TO 42+00
-L- (LT) 42+75 TO 47+00
-L- (RT) 39+00 TO 42+00
-L- (RT) 42+75 TO 44+70
-L- (RT) 45+30 TO 46+00
-L- (RT) 46+70 TO 48+25

-Y6-
PI Sta 13+09.98
Δ= 13° 10' 26.2" (RT)
D = 3° 10' 21"
L = 415.25'
T = 208.55'
R = 1,806.00'

NAD 83

BEGIN CONSTRUCTION
-Y4- POT Sta. 10+46.48
-Y6- POT Sta. 10+83.46
-Y4- POT Sta. 10+75.99

BEGIN CONSTRUCTION
-Y6- POT Sta. 10+50.00
-Y6- POT Sta. 10+00.00

-Y4- POT Sta. 10+00.00
-Y6- PC Sta. 11+01.43
N 29° 54' 22.2" W
-Y6- PT Sta. 15+16.68
N 16° 43' 56.1" W

BY=4 PINC 5+00.00
BY-6 PINC 5+00.00
BY-6 PINC 7+56.22
BY3 PINC 5+00.00
BY3 PINC 7+09.83
BY-4 PINC 9+38.00
BY-5 PINC 5+00 (COMPUTED)
BY-5 PINC 5+21.22

BL PINC 33+94.32 = BY-3 PINC 7+78.23 (COMPUTED)
BL PINC 38+82.67 = BY-5 PINC 5+00 (COMPUTED)
BL-5 PINC 35+60.99 = -L- 39+36.15 (7.54 LT)
BL-5 PINC 30+32.82 = -L- 34+07.98 (7.92 LT)
BL PINC 38+44.95 = BY-4 PINC 10+18.90 (COMPUTED)
-Y5- POT Sta. 10+00.00
-L- POT Sta. 42+41.15
BL-7 PINC 42+08.49 = -L- 45+84.13 (7.04 RT)

-Y4- POT Sta. 13+49.22
-L- POT Sta. 42+41.15

-L-TS Sta. 42+98.96
-L-SC Sta. 44+98.96

Pls Sta 44+32.31
θs = 2° 51' 53.2"
Ls = 200.00'
LT = 133.35'
ST = 66.68'

PI Sta 49+97.54
Δ= 27° 59' 44.3" (RT)
D = 2° 51' 53.2"
L = 977.23'
T = 498.58'
R = 2,000.00'
SE = 032
RUNOFF = 80'

BM 3
-L- ST A 43+63
260' RIGHT
ELEV. 11.00

DAVID W. IPOCK
DB 1246 - PG 475
MB 1 - PG 25

B. A. WINTERS, et vir
DB 1603 - PG 588

PAULINE BEACHAM
DB 1730 - PG 86

CARMEN V. DONOFRIO
DB 1299 - PG 11

HERBERT DONALD EVANS, et ux
DB 901 - PG 164
MB 10 - PG 103

HARRY G. STEWART, SR., et al
DB 810 - PG 647
MB 1 - PG 25

BENJAMIN F. BROADWAY
DB 810 - PG 650

BENJAMIN F. BROADWAY, et ux
DB 157 - PG 978

MILTON H. ROWE, JR.
DB 882 - PG 778
MB 10 - PG 103

JAMES A. COLLINS
DB 1348 - PG 630
DB 1090 - PG 220
MB 10 - PG 62

BHB ASSOCIATES
DB 1073 - PG 656

JAMES L. KIRKMAN JR., et ux
DB 218 - PG 891
PC G - SLIDE 176-G

RIGGS & RIGGS PARTNERSHIP
DB 1030 - PG 156

BENJAMIN F. BROADWAY, et ux
DB 1527 - PG 156

SEE SHEET NO.5
MATCHLINE STA. 34+00.00
SEE SHEET NO.7
MATCHLINE STA. 47+00.00

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PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83

-L-
PI Sta 49+97.54
Δ = 27° 59' 44.3" (RT)
D = 2° 51' 53.2"
L = 977.23
T = 498.58'
R = 2,000.00'
SE = 032
RUNOFF = 80'

PIs Sta 55+42.88
θs = 2° 51' 53.2"
Ls = 200.00'
LT = 133.35'
ST = 66.68'

-L- ST Sta. 56+76.19

-Y6-
PI Sta 17+05.66
Δ = 79° 24' 33.5" (RT)
D = 63° 39' 43.1"
L = 124.74'
T = 74.73'
R = 90.00'

-Y6- PC Sta. 16+30.93
-Y6- PT Sta. 17+55.67

-L- CS Sta. 54+76.19

-L- POT Sta. 50+90.00

END STATE PROJECT R-3403AA

SEE SHEET NO. 6 MATCHLINE STA. 47+00.00

BRIDGETON TOWN LIMIT

ASA B. DAIL, et ux
DB 1167 - PG 48
MB 10 - PG 62
PC "D" - SLIDE 721

GEORGEANNAH LOCKLEAR, et vir
DB 1411 - PG 281

RESSIE LOCKLEAR LEWIS
DB 1186 - PG 834

ROGER T. NEEDHAM, et ux
DB 1612 - PG 385

LINDA HINES SAULTER
DB 1055 - PG 157

ROBERT THOMAS COWARD, et al
DB 1159 - PG 443
DB 1495 - PG 366
DB 1420 - PG 790

W.E. BARNETTE
DB 1994 - PG 663
MB 11 - PG 86

TWO-TEEN INVESTORS, INC.
DB 1378 - PG 514
DB 1550 - PG 748
PC "C" - SLIDE 203

CALVIN COOLEY, et ux
DB 791 - PG 224

LEON THOMAS SWARINGEN, et ux
DB 840 - PG 114

ALLEN THOMAS FRENCH, et ux
DB 627 - PG 210
DB 965 - PG 241
PC "C" - SLIDE 2

EN-CEE CHEMICAL SALES, INC.
DB 648 - PG 35

CLASS 'B' RIP RAP
2 TONS & 7 SY FF

SPECIAL DITCH
SEE DETAIL #1

BL-8 PINC 47+38.94 =
-L- 51+20.92 (33.05 RT)
BY-7 PINC 11+21.33=
BY-6 PINC 15+65.46

BL-9
PINC 53+58.98 =
-L- 57+52.24 (73.03 RT)

BY-7
PINC 14+77.91

DETAIL 1
SPECIAL CUT BASE DITCH
(Not To Scale)
Natural Ground, 2:1, D, 2.5ft MIN., Front ditch Slope, 2', D= See Cross Sections

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (RT) 46+70 TO 48+25
-L- (RT) 49+20 TO 50+00

REVISIONS

8/17/99

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

BM NO.1 - RR SPIKE SET IN BASE OF POWER POLE
-BL- STA. 6+98.00 302.4' RIGHT ELEV. 10.56'

FOR PLAN VIEW SEE SHEET 4 & 5

NOTE:
RESURFACE EXISTING PAVEMENT
-L- STATION 17+70.00 TO 18+50.00

-L-

BEGIN GRADE LT. & RT. TRAVEL LANES -L- STA. 18+50.00 Elev. 10.11'

10.11'

(+)0.2000%

(+)1.75%

BEGIN DITCH GRADE LT. STA. 19+75 EL= 6.79

LIMITS OF UNDERCUT LT. & RT. SEE CROSS SECTIONS

18+50 BEGIN UNDERCUT LT. & RT.

10+00 11 12 13 14 15 16 17 18 19 20+00

BM NO.2 - RR SPIKE SET IN BASE OF 20" GUM TREE
-BL- STA. 27+65.90 273.3' RIGHT ELEV. 9.75'

10.41'

(+)0.2000%

(-)1.040%

BEGIN DITCH GRADE LT. STA. 20+85 EL= 7.56

END DITCH GRADE LT. STA. 20+25 EL= 7.66

PI = 24+00.00 EL= 6.30 (LT.)

(+)0.20%

END DITCH GRADE LT. STA. 25+20 EL= 6.54

LIMITS OF UNDEROUT LT. & RT. SEE CROSS SECTIONS

(+)2.00%

BEGIN DITCH GRADE LT. STA. 25+50 EL= 6.60

END DITCH GRADE LT. STA. 26+75 EL= 9.10

-L-

BEGIN DITCH GRADE LT. STA. 28+95 EL= 9.22

PI = 27+50.00
EL = 11.91'
VC = 700'
K = 151.9

(-)0.23%

BEGIN DITCH GRADE LT. STA. 27+50 EL= 9.10

(+)0.20%

PI = 28+50.00 EL= 8.80 (LT.)

(-)0.20%

PI = 29+40.00 EL = 9.9 (LT.)

(+)0.20%

END DITCH GRADE LT. STA. 28+10 EL= 10.80

LIMITS OF UNDEROUT RT. SEE CROSS SECTIONS

BEGIN DITCH GRADE LT. STA. 29+65 EL= 9.82

PI = 30+40.00 EL = 9.75 (LT.)

(-)0.20%

(+)0.20%

END DITCH GRADE LT. STA. 29+20 EL= 9.90

BEGIN DITCH GRADE LT. STA. 30+80 EL= 9.70

(-)0.260%

END DITCH GRADE LT. STA. 30+30 EL= 9.81

(-)1.00%

(-)1.33%

BEGIN DITCH GRADE LT. STA. 32+80 EL= 10.27

END DITCH GRADE LT. STA. 32+10 EL= 9.08

10.21'

10+00 11 12 13 14 15 16 17 18 19 20+00

20+00 21 22 23 24 25 26 27 28 29 30 31 32 33 34+00

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FOR PLAN VIEW SEE SHEET 6 & 7

BM NO.3 - RR SPIKE SET IN BASE OF CP&L POWER POLE No. NEW50
-BL- STA. 39+96.40 252.1' RIGHT ELEV. 11.00'

PI = 38+00.00
EL = 9.17'
VC = 700'
K = 491

END DITCH GRADE LT.
STA.37+25 EL= 6.90

BEGIN DITCH GRADE LT.
STA.37+70 EL= 6.46

BEGIN DITCH GRADE LT.
STA.36+90 EL= 6.67

END DITCH GRADE LT.
STA.36+25 EL= 6.85

10.21

(-)0.26%

(-)0.20%

(-)0.20%

(+)0.20%

(+)0.2084%

(-)0.26%

(-)0.67%

(+)0.67%

(+)0.20%

(-)1.00%

(-)0.26%

(+)1.00%

(+)0.26%

(-)1.00%

(+)1.00%

(+)0.2084%

(+)0.26%

10.98

PI=34+50.00
EL = 8.00 (LT.)

(+)0.11%

BEGIN DITCH GRADE LT.
STA.35+00 EL= 7.10

END DITCH GRADE LT.
STA.34+60 EL= 8.07

PI=37+10.00
EL= 6.63 (LT.)

PI=39+97.00
EL= 5.07 (LT.)
EL= 6.00 (RT.)

BEGIN DITCH GRADE RT.
STA.39+00 EL= 6.45

END DITCH GRADE RT.
STA.42+00 EL= 7.55

END DITCH GRADE LT.
STA.42+00 EL= 6.53

BEGIN DITCH GRADE RT.
STA.42+75 EL= 7.25

BEGIN DITCH GRADE LT.
STA.42+75 EL= 6.35

PI=43+50.00
EL = 6.40 (LT.)
EL = 6.50 (RT.)

END DITCH GRADE RT.
STA.44+70 EL= 7.70

PI=45+50.00
EL = 8.05 (RT.)

BEGIN DITCH GRADE RT.
STA.45+30 EL= 8.20

END DITCH GRADE LT.
STA.47+00 EL= 7.10

BEGIN DITCH GRADE RT.
STA.46+70 EL= 8.66

END DITCH GRADE RT.
STA.46+00 EL= 8.50

PI=47+00.00
EL= 8.61 (RT.)

-L-

LIMITS OF UNDERCUT RT.
SEE CROSS SECTIONS

34+50 BEGIN UNDERCUT LT.

LIMITS OF UNDERCUT RT. & LT.
SEE CROSS SECTIONS

35+60 END UNDERCUT RT.

LIMITS OF UNDERCUT LT.
SEE CROSS SECTIONS

39+00 BEGIN UNDERCUT RT.

LIMITS OF UNDERCUT LT. & RT.
SEE CROSS SECTIONS

44+00 END UNDERCUT LT.

LIMITS OF UNDERCUT RT.
SEE CROSS SECTIONS

34+00 35 36 37 38 39 40 41 42 43 44 45 46 47+00

40 30 20 10 0 -10 -20 -30 -40

PI= 47+50.00
EL = 11.15'
VC = 300'
K = 735

PI = 50+00.00
EL = 10.65'
VC = 200'
K = 700

10.98

(+)0.2084%

(-)0.2000%

(-)0.20%

(+)0.20%

(+)0.0857%

END DITCH GRADE RT.
STA.48+25 EL= 8.85

BEGIN DITCH GRADE RT.
STA.49+20 EL= 9.46

PI=49+50.00
EL= 9.40 (RT.)

END DITCH GRADE RT.
STA.50+00 EL= 9.50

END GRADE
LT & RT TRAVEL LANES
-L- STA. 50+90.00
Elev. 10.73'

-L-

LIMITS OF UNDERCUT RT.
SEE CROSS SECTIONS

47+50 END UNDERCUT RT.

47+00 48 49 50 51 52 53 54 55 56 57 58 59+00

40 30 20 10 0 -10 -20 -30 -40

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PROJECT REFERENCE NO.	SHEET NO.
R-3403AA	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-Y6-

BEGIN PAVEMENT OVERLAY
-Y6- 10+50.00

BEGIN GRADE
-Y6- 14+50.00
Elev. 9.52

PI = 16+80.00
EL = 10.21'
VC = 100'
K = 117

END GRADE
-Y6- 17+73.40 =
-L- 48+10 (39' Lt)
Elev. 10.74'

PI = 17+50.00
EL = 11.02'
VC = 40'
K = 17

(+)0.30%

(+)11.16%

(-)1.20%

FOR PLAN VIEW SEE SHEET 6 & 7

10+00 11+00 12+00 13+00

13+00 14+00 15+00 16+00 17+00 18+00

20 10 0 -10

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R-3403A

CONTRACT:

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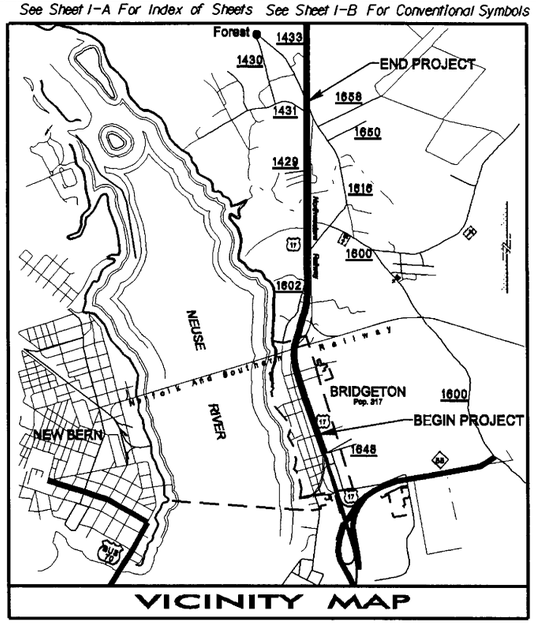
gcail AT HY24577

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CRAVEN COUNTY

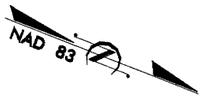
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3403AB	1	

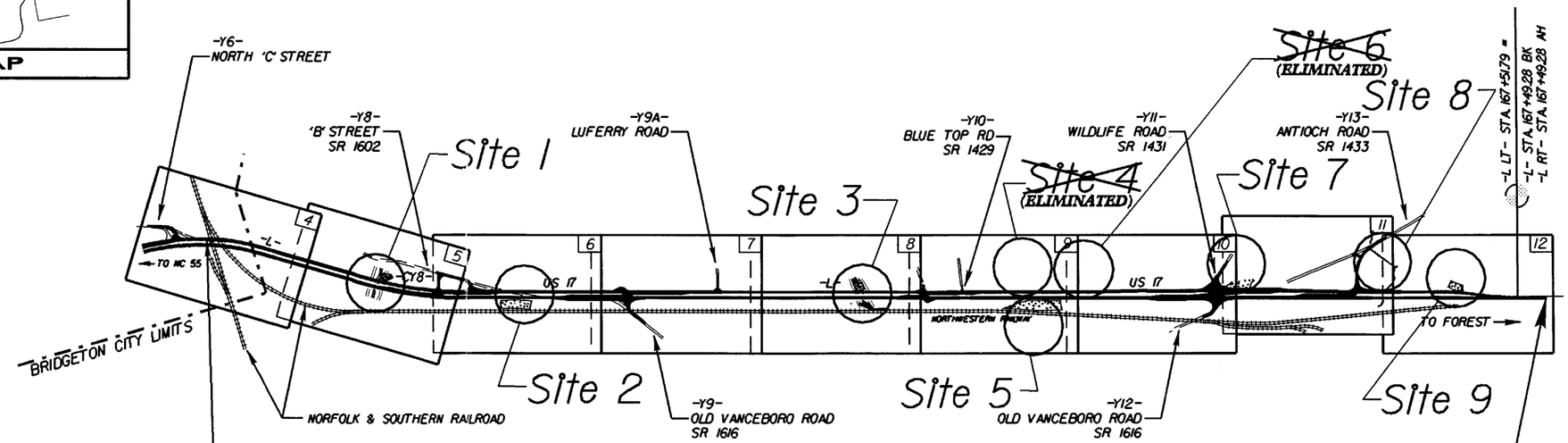
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34538.1.1	STPNHF-17(24)	PE
34538.2.2	STPNHF-17(47)	R/W, UTIL
34538.3.3	STPNHF-17(47)	CONST.

Permit Drawing
Sheet 1 of 32

LOCATION: US 17 FROM NORFOLK & SOUTHERN R/R TO NORTH OF SR 1433 (ANTIOCH ROAD)

TYPE OF WORK: GRADING, PAVING, CULVERT EXTENSION, SIGNALS AND DRAINAGE





Wetland/Stream Permit

-L- STA. 50+90.00 BEGIN TIP PROJECT R-3403AB

-L RT- STA. 170+00.00 END TIP PROJECT R-3403AB
-L RT- STA. 170+50.00 END CONSTRUCTION R-3403AB

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 2007 = 15,755
ADT 2027 = 25,055
DHV = 10 %
D = 60 %
T = 10 % *
V = 60 MPH
* TTST 5% DUAL 5%
FUNC. CLASS = ARTERIAL

PROJECT LENGTH

TOTAL LENGTH OF TIP PROJECT R-3403A = 2.884 MILES

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: March 22, 2005

LETTING DATE: July 15, 2008

G. E. BREW, PE
PROJECT ENGINEER

D. WILLIAMS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

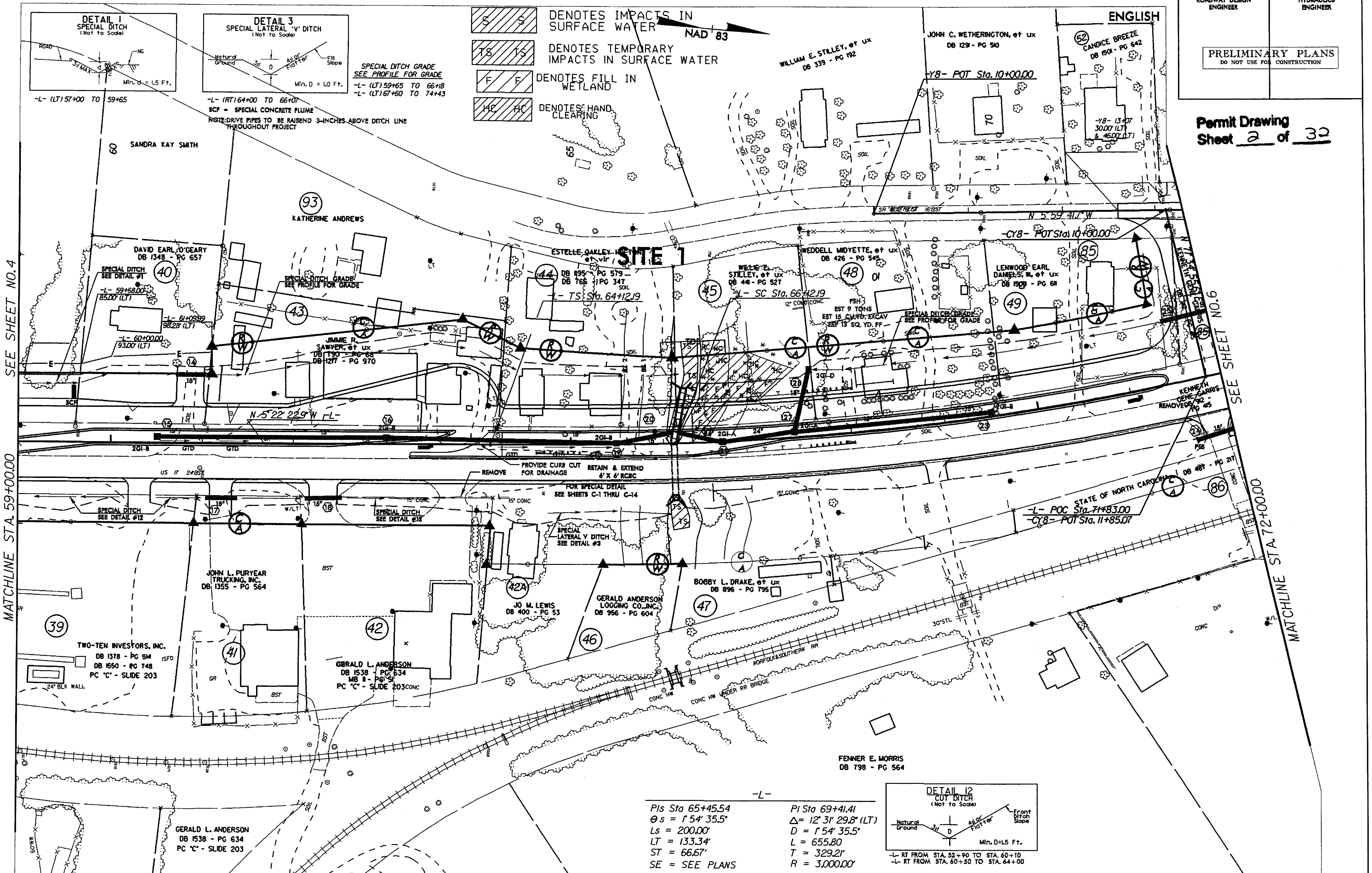
APPROVED
DIVISION ADMINISTRATOR DATE

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing Sheet 2 of 32

FOR -L- PROFILE SEE SHEET 18



DETAIL 1
SPECIAL DITCH
(Not to Scale)
Min. D = 1.5 Ft.
-L- (LT) 57+00 TO 59+65
DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Min. D = 1.0 Ft.
-L- (RT) 64+00 TO 66+07
SCF = SPECIAL CONCRETE FLUME
NOTE: DRIVE PIPES TO BE RAISEND 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (LT) 59+65 TO 66+18
-L- (LT) 67+60 TO 74+43
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES HAND CLEARING
NAD 83
ENGLISH
SITE 1
SEE SHEET NO. 4
SEE SHEET NO. 6
MATCHLINE STA. 59+00.00
MATCHLINE STA. 72+00.00
SANDRA KAY SMITH
KATHERINE ANDREWS
DAVID EARL O'GEARY DB 1348 - PG 657
JIMMIE R. SAWYER, et ux
ESTELLE OAKLEY HOLT, et vir
WILLIE E. STILLEY, et ux DB 44 - PG 527
WEDDELL MIDYETTE, et ux DB 426 - PG 545
LENWOOD EARL DANIELS, III, et ux
WILLIAM E. STILLEY, et ux DB 339 - PG 192
JOHN C. WETHERINGTON, et ux DB 1291 - PG 510
CANDICE BREEZE DB 1501 - PG 642
-Y8- POT Sta. 10+00.00
-CY8- POT Sta. 10+00.00
-L- TS Sta. 64+12.19
-L- SC Sta. 66+12.19
N 5°22' 22.9" W -L-
PROVIDE CURB CUT FOR DRAINAGE
RETAIN & EXTEND 6' X 6' RCBC
FOR SPECIAL DETAIL SEE SHEETS C-1 THRU C-14
REMOVE
STATE OF NORTH CAROLINA
-L- POC Sta. 71+83.00
-CY8- POT Sta. 11+85.07
JOHN L. PURYEAR TRUCKING, INC. DB 1355 - PG 564
JO M. LEWIS DB 400 - PG 53
GERALD ANDERSON LOGGING CO., INC. DB 956 - PG 604
BOBBY L. DRAKE, et ux DB 896 - PG 795
TWO-TEN INVESTORS, INC. DB 1378 - PG 514 DB 1550 - PG 748 PC "C" - SLIDE 203
GERALD L. ANDERSON DB 1538 - PG 634 MB II - PG 51 PC "C" - SLIDE 203
NORFOLK & SOUTHERN RR
CONC HW UNDER RR BRIDGE
FENNER E. MORRIS DB 798 - PG 564
GERALD L. ANDERSON DB 1538 - PG 634 PC "C" - SLIDE 203
-L-
PIs Sta 65+45.54
θs = 1°54' 35.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'
SE = SEE PLANS
PI Sta 69+41.41
Δ = 12° 31' 29.8" (LT)
D = 1°54' 35.5"
L = 655.80
T = 329.21'
R = 3,000.00'
DETAIL 12
CUT DITCH
(Not to Scale)
Min. D=1.5 Ft.
-L- RT FROM STA. 52+90 TO STA. 60+10
-L- RT FROM STA. 60+50 TO STA. 64+00

REVISIONS

14-MAY-2008 09:31
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8/17/99

FOR -L- PROFILE SEE SHEET 18

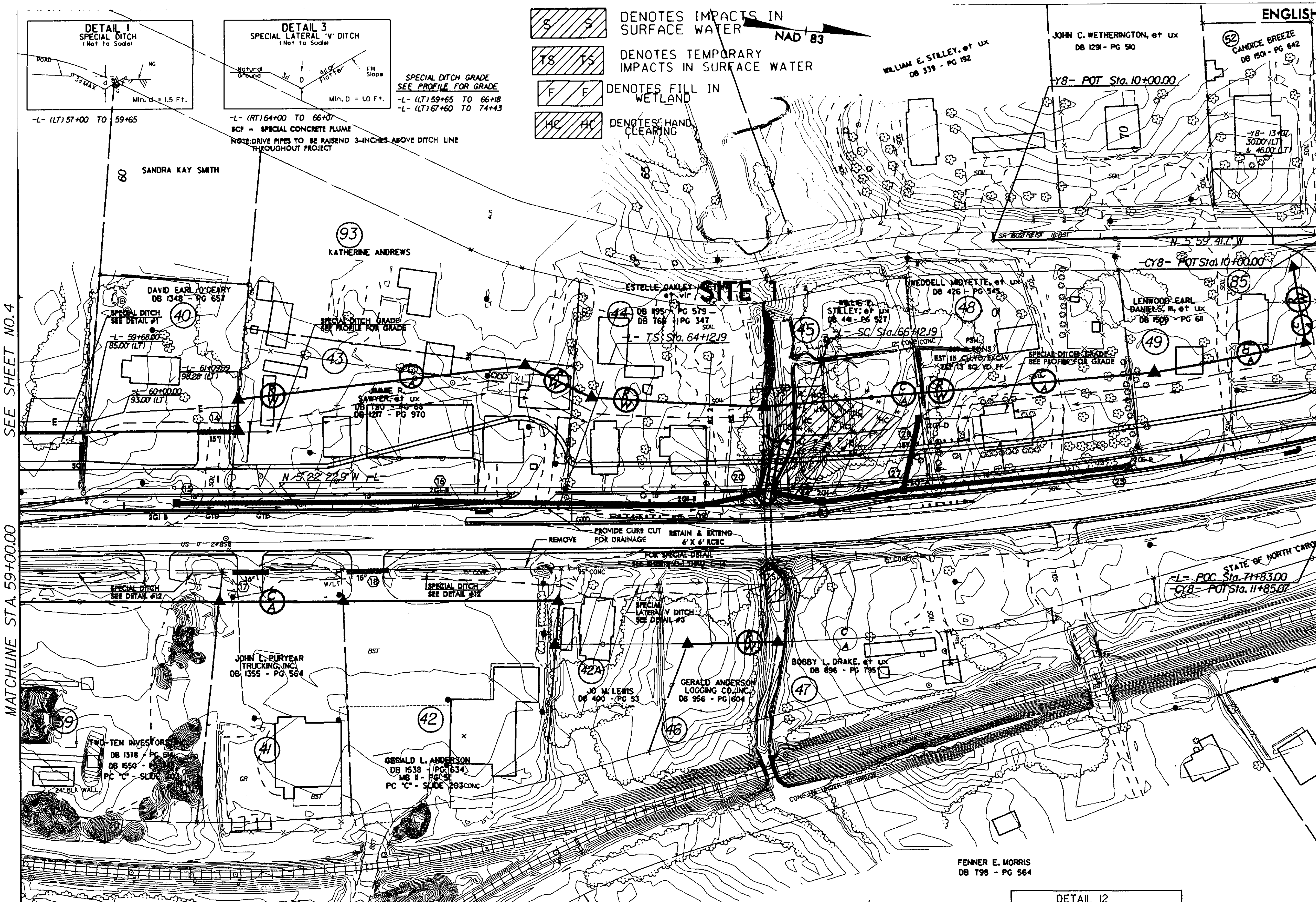
PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 3 of 32

ENGLISH

REVISIONS



DETAIL 1
SPECIAL DITCH
(Not to Scale)
Min. D = 1.5 Ft.
-L- (LT) 57+00 TO 59+65
DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D = 1.0 Ft.
-L- (RT) 64+00 TO 66+07
SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (LT) 59+65 TO 66+18
-L- (LT) 67+60 TO 74+43
SCF - SPECIAL CONCRETE PLUME
NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES HAND CLEARING
NAD 83
SITE
SANDRA KAY SMITH
KATHERINE ANDREWS
DAVID EARL O'GEARY
DB 1348 - PG 657
ESTELLE OAKLEY
WILLIAM E. STILLEY, et ux
DB 339 - PG 192
JOHN C. WETHERINGTON, et ux
DB 1291 - PG 510
CANDICE BREEZE
DB 1501 - PG 642
-Y8- POT Sta. 10+00.00
-CY8- POT Sta. 10+00.00
-L- TS Sta. 64+12.19
-L- SC Sta. 66+12.19
WEDDELL MOYETTE, et ux
LENWOOD EARL DANIELS, III, et ux
JIMMIE R. SAWYER, et ux
SPECIAL DITCH GRADE SEE PROFILE FOR GRADE
N 5°22'22.9" W
PROVIDE CURB CUT FOR DRAINAGE
RETAIN & EXTEND 6' X 6' RCBC
REMOVE
KENNETH GENE GARRIS
STATE OF NORTH CAROLINA
-L- POC Sta. 71+83.00
-CY8- POT Sta. 11+85.07
SPECIAL DITCH SEE DETAIL #12
SPECIAL LATERAL V DITCH SEE DETAIL #3
JOHN L. PURYEAR TRUCKING, INC.
DB 1355 - PG 564
JO M. LEWIS
DB 400 - PG 53
GERALD ANDERSON LOGGING CO., INC.
DB 956 - PG 604
BOBBY L. DRAKE, et ux
DB 896 - PG 795
TWO-TEN INVESTORS
GERALD L. ANDERSON
DB 1538 - PG 634
PC "C" - SLIDE 203
FENNER E. MORRIS
DB 798 - PG 564
SEE SHEET NO. 4
SEE SHEET NO. 6
MATCHLINE STA. 59+00.00
MATCHLINE STA. 72+00.00

-L-

PIs Sta 65+45.54	PI Sta 69+41.41
Θs = 1° 54' 35.5"	Δ = 12° 31' 29.8" (LT)
Ls = 200.00'	D = 1° 54' 35.5"
LT = 133.34'	L = 655.80
ST = 66.67'	T = 329.21'
SE = SEE PLANS	R = 3,000.00'

DETAIL 12
CUT DITCH
(Not to Scale)
Natural Ground
Front Ditch Slope
Min. D = 1.5 Ft.
-L- RT FROM STA. 52+90 TO STA. 60+10
-L- RT FROM STA. 60+50 TO STA. 64+00

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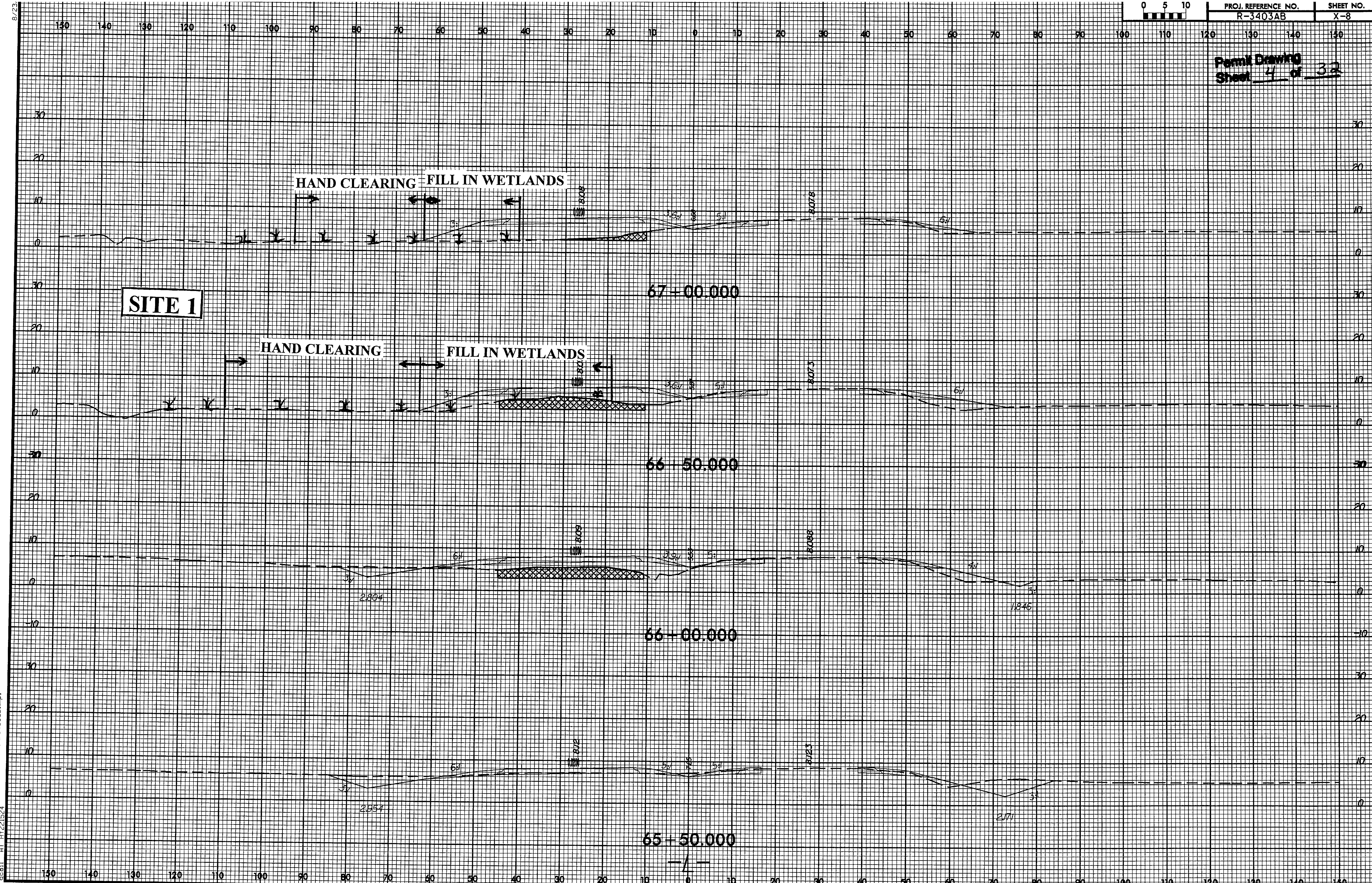


PROJ. REFERENCE NO.
R-3403AB
SHEET NO.
X-8
Permit Drawing
Sheet 4 of 32
SITE 1
HAND CLEARING
FILL IN WETLANDS
67+00.000
HAND CLEARING
FILL IN WETLANDS
66+50.000
66+00.000
65+50.000
-1-

5/28/99

SITE 1

CULVERT ℄ PROFLE

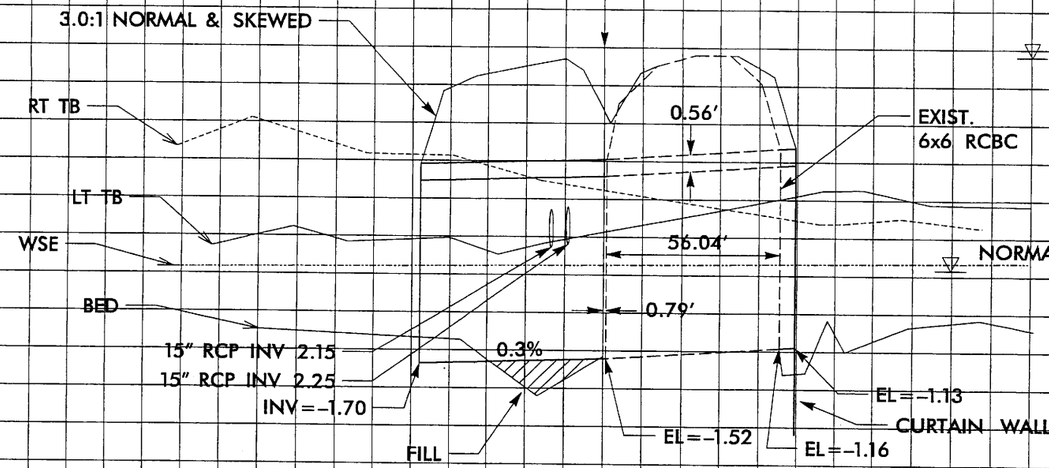
CENTERLINE STA. 66+10.90-L-
RETAIN & EXTEND 6X6 RCBC
GRADE POINT EL. = 8.08'
SKEW = 89°-28'-53"

PROJECT REFERENCE NO.	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 5 of 32



10
5
0
-5

150 100 50 0 50 100 150

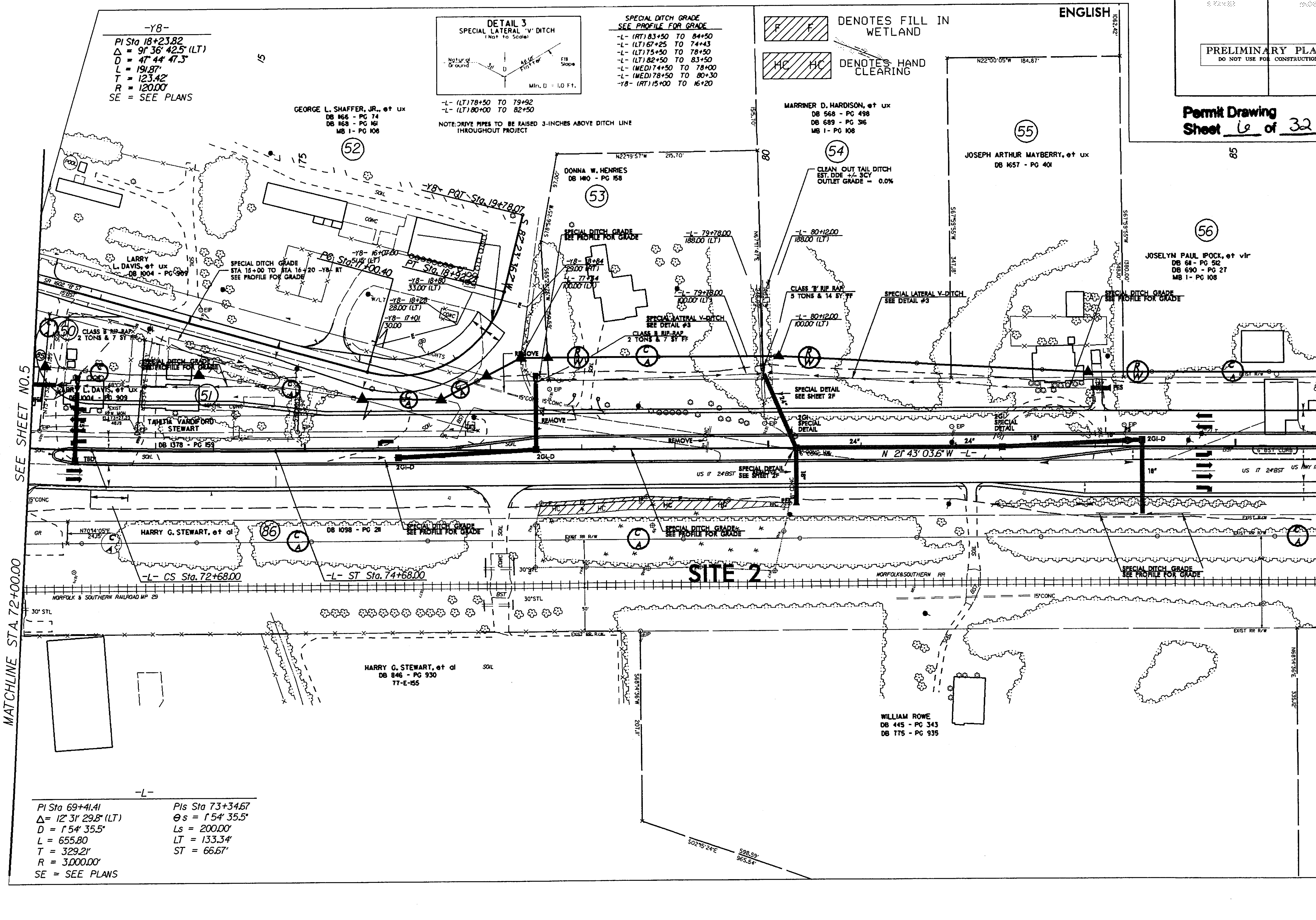
21-April-08

FOR -L- PROFILE SEE SHEET 18

R-3403AB | 6

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 6 of 32



ENGLISH
-Y8-
PI Sta 18+23.82
Δ = 91° 36' 42.5" (LT)
D = 47° 44' 47.3"
L = 191.87'
T = 123.42'
R = 120.00'
SE = SEE PLANS
DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (RT) 83+50 TO 84+50
-L- (LT) 67+25 TO 74+43
-L- (LT) 75+50 TO 78+50
-L- (LT) 82+50 TO 83+50
-L- (MED) 74+50 TO 78+00
-L- (MED) 78+50 TO 80+30
-Y8- (RT) 15+00 TO 16+20
-L- (LT) 78+50 TO 79+92
-L- (LT) 80+00 TO 82+50
NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
DENOTES FILL IN WETLAND
DENOTES HAND CLEARING
GEORGE L. SHAFFER, JR., et ux
DB 1166 - PG 74
DB 1168 - PG 161
MB 1 - PG 106
DONNA W. HENRIES
DB 1410 - PG 158
MARRINER D. HARDISON, et ux
DB 568 - PG 498
DB 689 - PG 316
MB 1 - PG 106
JOSEPH ARTHUR MAYBERRY, et ux
DB 1657 - PG 401
JOSELYN PAUL IPOCK, et vir
DB 611 - PG 512
DB 690 - PG 27
MB 1 - PG 106
LARRY L. DAVIS, et ux
DB 1004 - PG 909
TABITHA VANDIFORD STEWART
DB 1378 - PG 159
HARRY G. STEWART, et al
DB 1098 - PG 211
HARRY G. STEWART, et al
DB 846 - PG 930
77-E-155
WILLIAM ROWE
DB 445 - PG 343
DB 775 - PG 935
CLEAN OUT TAIL DITCH
EST. DDE +/- 3CY
OUTLET GRADE = 0.0%
CLASS 'B' RIP RAP
5 TONS & 14 SY FF
CLASS B RIP-RAP
2 TONS & 7 SY FF
SPECIAL LATERAL V-DITCH
SEE DETAIL #3
SPECIAL DETAIL
SEE SHEET 2F
N 21° 43' 03.6" W -L-
US 17
SITE 2
NORFOLK & SOUTHERN RAILROAD MP 29
-L- CS Sta. 72+68.00
-L- ST Sta. 74+68.00
-Y8- POT Sta. 19+78.07
SEE SHEET NO.5
SEE SHEET NO.7
MATCHLINE STA. 72+00.00
MATCHLINE STA. 86+00.00
-L-
PI Sta 69+41.41
Δ = 12° 31' 29.8" (LT)
D = 1° 54' 35.5"
L = 655.80
T = 329.21'
R = 3,000.00'
SE = SEE PLANS
PIs Sta 73+34.67
θs = 1° 54' 35.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

8/17/99
14-MAY-2008 12:00

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing Sheet 7 of 32

ENGLISH

-Y8-
PI Sta 18+23.82
Δ = 91° 36' 42.5" (LT)
D = 41° 44' 47.3"
L = 191.87'
T = 123.42'
R = 120.00'
SE = SEE PLANS

DETAIL 3
SPECIAL LATERAL "V" DITCH
(Not to Scale)
Natural Ground, 3:1, D, 4.0' Flat, Fill Slope
Min. D = 1.0 Ft.

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (RT) 83+50 TO 84+50
-L- (LT) 67+25 TO 74+43
-L- (LT) 75+50 TO 78+50
-L- (LT) 82+50 TO 83+50
-L- (MED) 74+50 TO 78+00
-L- (MED) 78+50 TO 80+30
-Y8- (RT) 15+00 TO 16+20
-L- (LT) 78+50 TO 79+92
-L- (LT) 80+00 TO 82+50

NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING

GEORGE L. SHAFFER, JR., et ux
DB 1166 - PG 74
DB 1168 - PG 161
MB 1 - PG 106

DONNA W. HENRIES
DB 1410 - PG 158

MARRINER D. HARDISON, et ux
DB 568 - PG 498
DB 689 - PG 316
MB 1 - PG 106

JOSEPH ARTHUR MAYBERRY, et ux
DB 1657 - PG 401

JOSELYN PAUL IPOCK, et vir
DB 681 - PG 512
DB 690 - PG 27
MB 1 - PG 108

LARRY L. DAVIS, et ux
DB 1004 - PG 909

TAHITIA VANDIFORD STEWART
DB 1378 - PG 159

HARRY G. STEWART, et al
DB 1098 - PG 211

HARRY G. STEWART, et al
DB 846 - PG 930
77-E-155

WILLIAM ROWE
DB 445 - PG 343
DB 775 - PG 935

-Y8- POT Sta 19+78.07
PI Sta 18+52.02
-Y8- 16+07.00 51.15' (LT)
POB Sta 17+00.40
-Y8- 18+80 33.00' (LT)
-Y8- 18+28 28.00' (LT)
-Y8- 17+01 30.00'
-Y8- 18+84 29.00' (RT)
-L- 77+34 100.00' (LT)
-L- 79+78.00 188.00' (LT)
-L- 79+78.00 100.00' (LT)
-L- 80+12.00 188.00' (LT)
-L- 80+12.00 100.00' (LT)

CLEAN OUT TAIL DITCH
EST. DIDE +/- 3CY
OUTLET GRADE = 0.0%

CLASS 'B' RIP RAP
2 TONS & 7 SY/TF

CLASS 'B' RIP RAP
3 TONS & 14 SY/TF

SPECIAL LATERAL V-DITCH
SEE DETAIL #3

SPECIAL DETAIL
SEE SHEET 2F

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE

REMOVE

SITE 2

SEE SHEET NO.5

SEE SHEET NO.7

MATCHLINE STA. 72+00.00

MATCHLINE STA. 86+00.00

-L-
PI Sta 69+41.41
Δ = 12° 31' 29.8" (LT)
D = 1° 54' 35.5"
L = 655.80
T = 329.21'
R = 3,000.00'
SE = SEE PLANS

PIs Sta 73+34.67
Θs = 1° 54' 35.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

S02°45'24"E 599.59'
965.54'

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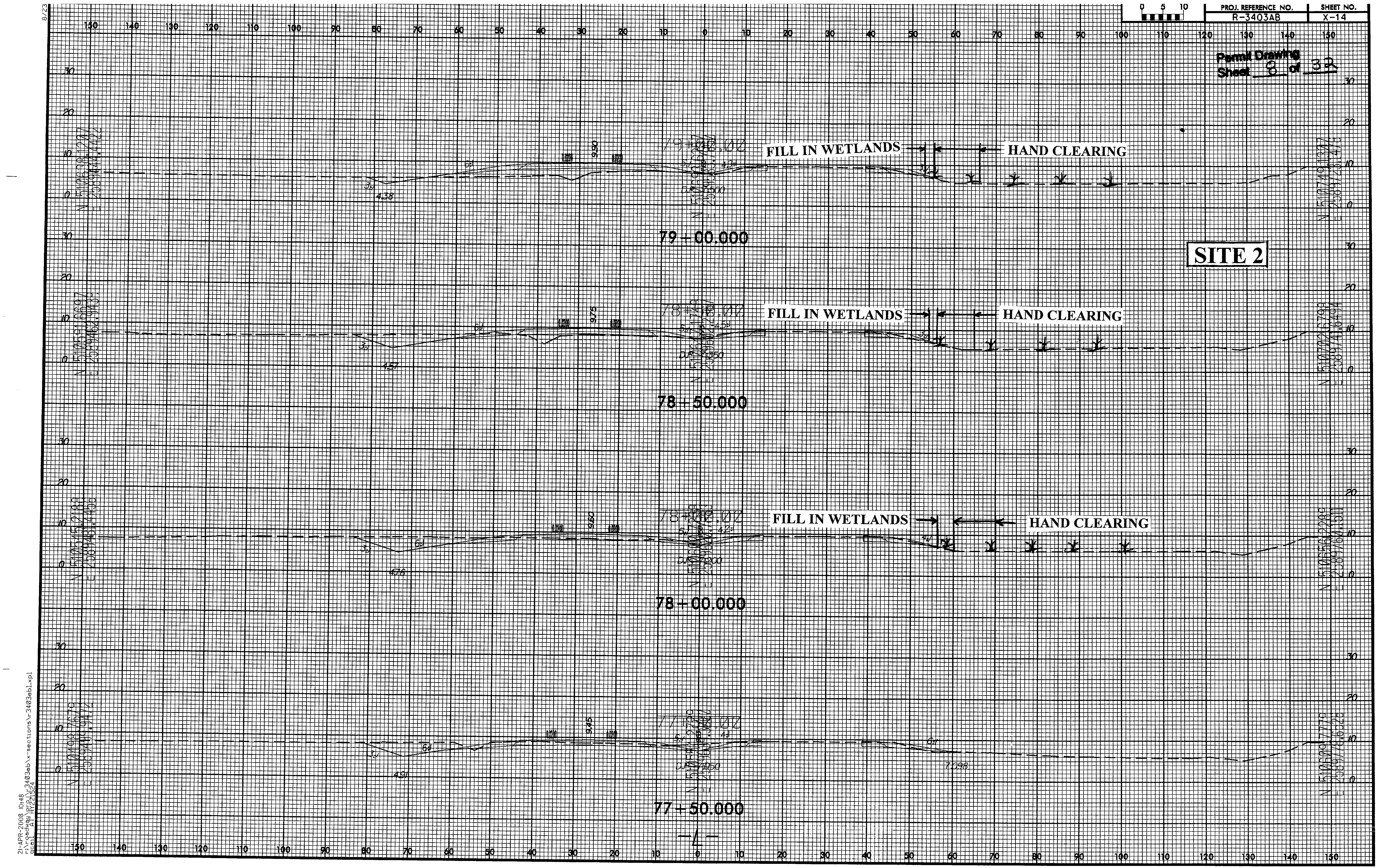


PROJ. REFERENCE NO.
R-3403AB
SHEET NO.
X-14
Permit Drawing Sheet 8 of 32
SITE 2
FILL IN WETLANDS
HAND CLEARING
79+00.000
FILL IN WETLANDS
HAND CLEARING
78+50.000
FILL IN WETLANDS
HAND CLEARING
78+00.000
77+50.000

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-3403A	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 9 of 32

BM NO.4 — RR SPIKE SET IN BASE OF 28" GUM TREE
-BL- STA. 65+04.40 208.3' RIGHT ELEV. 9.44'

FOR PLAN VIEW SEE SHEET 8 & 9

SITE 1

PI = 66+50.00
EL = 7.10'
VC = 1,000'
K = 1284

10.10

(+) 0.28%

(-) 0.30%

END DITCH GRADE RT.
STA. 60+10 E.L.= 6.80

(-) 0.30%

BEGIN DITCH GRADE RT.
STA. 60+50 E.L.= 7.00

(-) 0.4000%

PI = 63+50.00
EL = 6.0

(-) 2.84%

PI = 64+70.00
EL = 2.69

(-) 0.65%

END DITCH GRADE RT.
STA. 66+07 E.L.= 1.80

END DITCH GRADE LT.
STA. 66+18 E.L.= 2.75

(-) 0.60%

PI = 67+00.00
EL = 5.650

BEGIN MED DITCH GRADE
STA. 66+50 E.L.= 5.95

(+) 0.22%

BEGIN DITCH GRADE LT.
STA. 67+25 E.L.= 2.50

(+) 0.53%

END MED DITCH GRADE
STA. 68+00 E.L.= 5.87

(+) 0.3786%

PI = 70+00.00
EL = 4.09

9.18

(+) 0.30%

59+00 60 61 62 63 64 65 66 67 68 69 70 71 72+00

SITE 2

PI = 73+50.00
EL = 9.75'
VC = 200'
K = 295

9.18

END DITCH GRADE LT.
STA. 74+43 E.L.= 5.42

(+) 0.3786%

(-) 0.3000%

(+) 0.30%

(-) 0.20%

BEGIN MED DITCH GRADE
STA. 74+50 E.L.= 7.63

PI = 76+00.00
EL = 9.00'
VC = 300'
K = 500

PI = 76+00.00
EL = 7.330

BEGIN DITCH GRADE LT.
STA. 75+50 E.L.= 5.05

(+) 0.3000%

(+) 0.20%

(-) 0.24%

END MED DITCH GRADE
STA. 78+00 E.L.= 7.73

BEGIN MED DITCH GRADE
STA. 78+50 E.L.= 8.15

(+) 0.25%

END DITCH GRADE LT.
STA. 79+92 E.L.= 4.00

BEGIN DITCH GRADE LT.
STA. 80+00 E.L.= 3.85

PI = 80+50.00
EL = 10.35'
VC = 300'
K = 563

END MED DITCH GRADE
STA. 80+30 E.L.= 7.70

(+) 1.74%

BEGIN DITCH GRADE RT.
STA. 80+30 E.L.= 6.10

(+) 0.78%

END DITCH GRADE RT.
STA. 81+00 E.L.= 7.32

(-) 0.2333%

PI = 83+00.00
EL = 6.20

PI = 83+50.00
EL = 9.65
VC = 300'
K = 563

(+) 1.70%

BEGIN DITCH GRADE RT.
STA. 83+50 E.L.= 7.42

(-) 0.34%

END DITCH GRADE LT.
STA. 83+50 E.L.= 7.05

(+) 0.58%

PI = 84+00.00
EL = 7.25

10.40

(+) 0.3000%

END DITCH GRADE RT
STA. 84+50 E.L.= 7.54

72+00 73 74 75 76 77 78 79 80 81 82 83 84 85 86+00

21-April-08

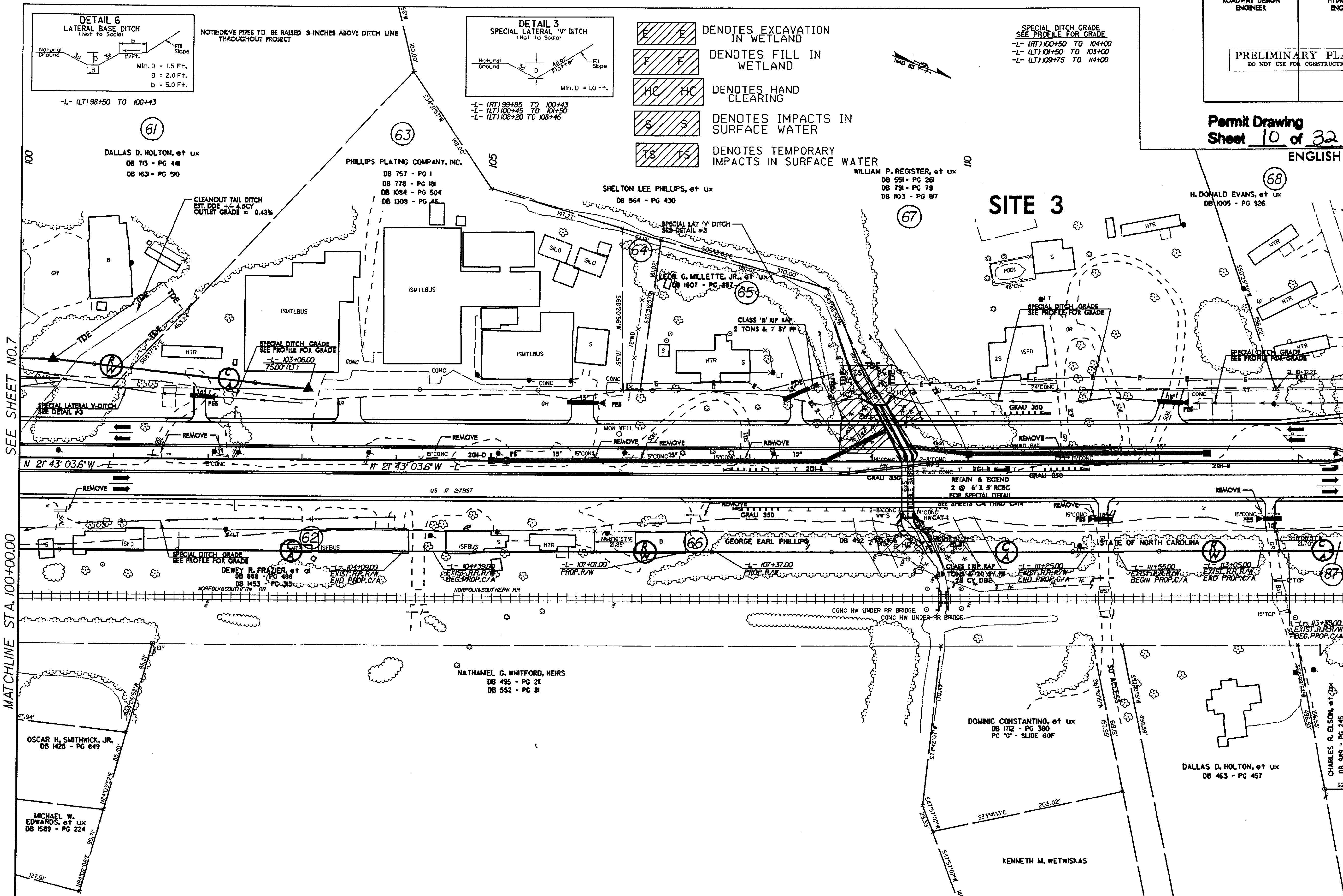
FOR -L- PROFILE SEE SHEET 19

PROJECT REFERENCE NO.	SHEET NO.
R-3403A	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing Sheet 10 of 32

ENGLISH



DETAIL 6
LATERAL BASE DITCH
(Not to Scale)
Min. D = 1.5 Ft.
B = 2.0 Ft.
b = 5.0 Ft.
-L- (LT) 98+50 TO 100+43
NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Min. D = 1.0 Ft.
-L- (RT) 99+85 TO 100+43
-L- (LT) 100+45 TO 101+50
-L- (LT) 108+20 TO 108+46
DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES HAND CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (RT) 100+50 TO 104+00
-L- (LT) 101+50 TO 103+00
-L- (LT) 109+75 TO 114+00
SITE 3
DALLAS D. HOLTON, et ux
DB 713 - PG 441
DB 1631 - PG 510
PHILLIPS PLATING COMPANY, INC.
DB 757 - PG 1
DB 778 - PG 181
DB 1084 - PG 504
DB 1308 - PG 45
SHELTON LEE PHILLIPS, et ux
DB 564 - PG 430
WILLIAM P. REGISTER, et ux
DB 551 - PG 261
DB 791 - PG 79
DB 1103 - PG 817
H. DONALD EVANS, et ux
DB 1005 - PG 926
LEON G. MILLETTE, JR., et ux
DB 1607 - PG 287
CLEANOUT TAIL DITCH
EST. DDE +/- 4.5CY
OUTLET GRADE = 0.43%
CLASS 'B' RIP RAP
2 TONS & 7 SY FF
SPECIAL LAT 'V' DITCH
SEE DETAIL #3
SPECIAL LATERAL V-DITCH
SEE DETAIL #3
SEE SHEET NO. 7
SEE SHEET NO. 9
N 21° 43' 03.6" W
US 17 24' BST
RETAIN & EXTEND
2 @ 6' X 5' RCBC
FOR SPECIAL DETAIL
SEE SHEETS C-1 THRU C-14
GEORGE EARL PHILLIPS
STATE OF NORTH CAROLINA
DEWEY R. FRAZIER, et al
DB 888 - PG 488
DB 1453 - PG 313
NORFOLK & SOUTHERN RR
CLASS I RIP RAP
18 TONS & 20 SY FF
28 CY DDE
CONC HW UNDER RR BRIDGE
NATHANIEL G. WHITFORD, HEIRS
DB 495 - PG 211
DB 552 - PG 81
OSCAR H. SMITHWICK, JR.
DB 1425 - PG 849
MICHAEL W. EDWARDS, et ux
DB 1589 - PG 224
DOMINIC CONSTANTINO, et ux
DB 1712 - PG 380
PC "G" - SLIDE 60F
KENNETH M. WETWISKAS
DALLAS D. HOLTON, et ux
DB 463 - PG 457
CHARLES R. ELSON, et ux
DB 989 - PG 245
30' ACCESS
MATCHLINE STA. 100+00.00
MATCHLINE STA. 114+00.00

REVISIONS

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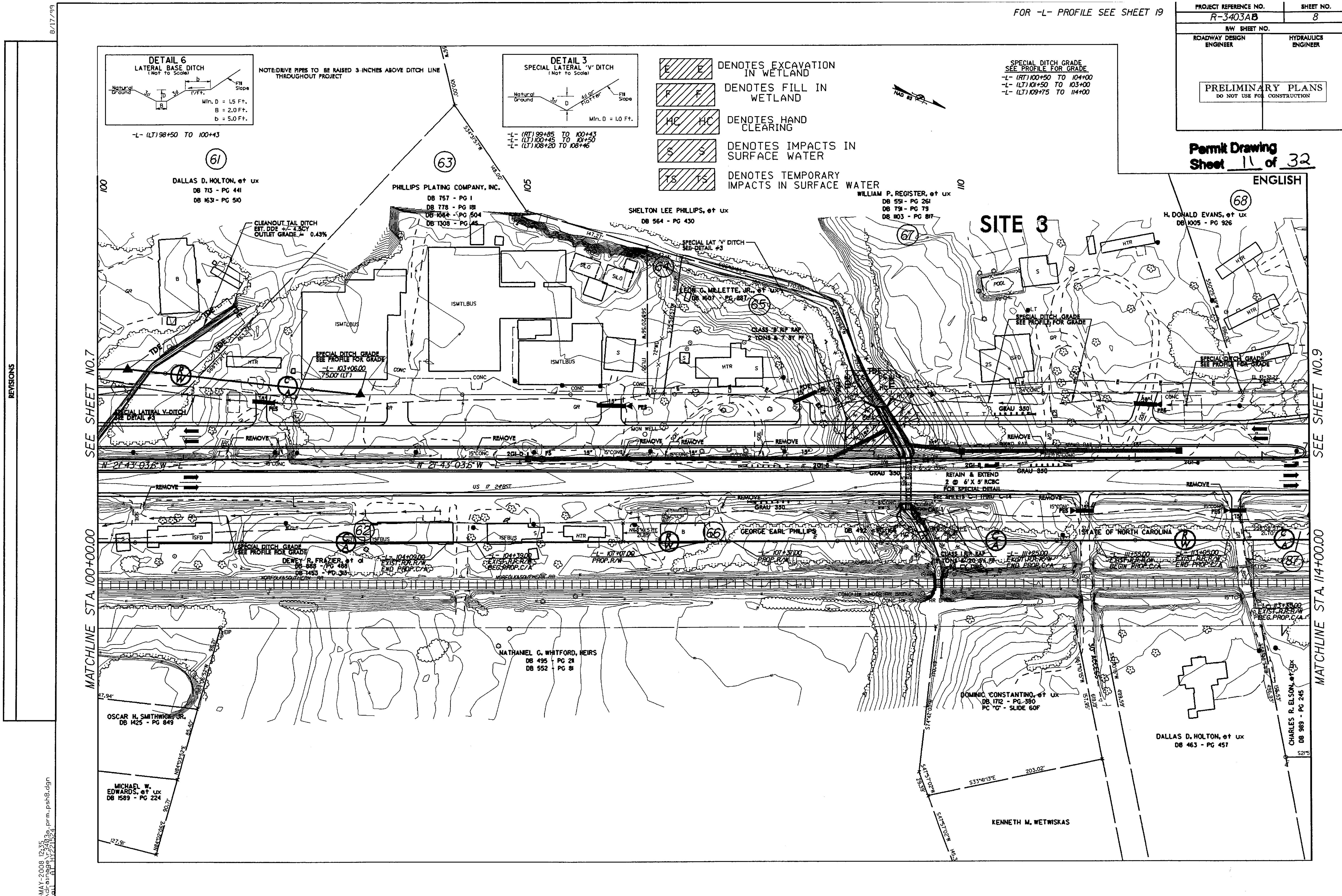
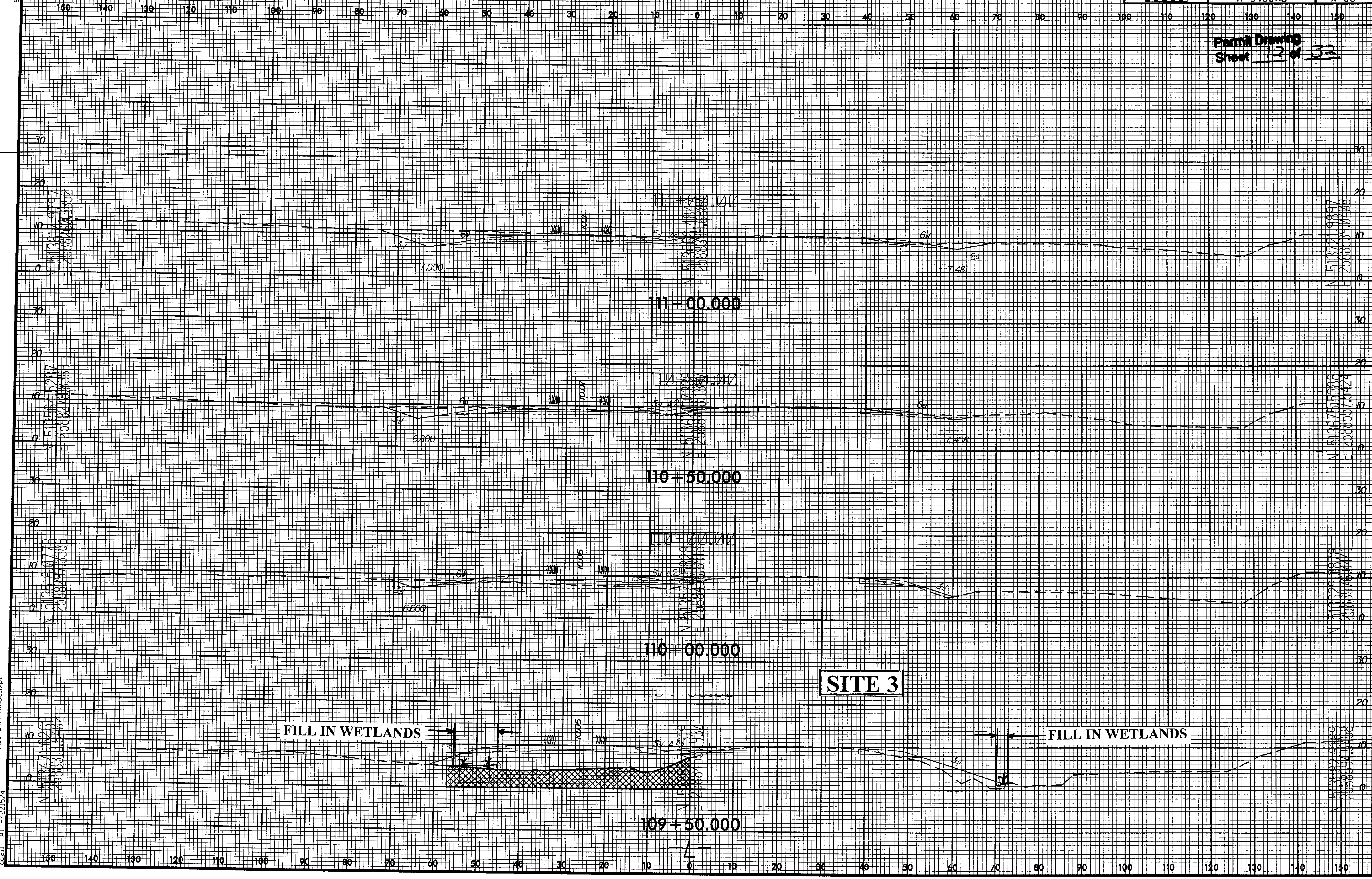


FOR -L- PROFILE SEE SHEET 19
PROJECT REFERENCE NO. R-3403AB
SHEET NO. 8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 11 of 32
ENGLISH
DETAIL 6
LATERAL BASE DITCH
(Not to Scale)
Min. D = 1.5 Ft.
B = 2.0 Ft.
b = 5.0 Ft.
-L- (LT) 98+50 TO 100+43
NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Min. D = 1.0 Ft.
-L- (RT) 99+85 TO 100+43
-L- (LT) 100+45 TO 101+50
-L- (LT) 108+20 TO 108+46
DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES HAND CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (RT) 100+50 TO 104+00
-L- (LT) 101+50 TO 103+00
-L- (LT) 109+75 TO 114+00
SITE 3
DALLAS D. HOLTON, et ux
DB 713 - PG 441
DB 1631 - PG 510
PHILLIPS PLATING COMPANY, INC.
DB 757 - PG 1
DB 778 - PG 181
DB 1084 - PG 504
DB 1308 - PG 45
SHELTON LEE PHILLIPS, et ux
DB 564 - PG 430
WILLIAM P. REGISTER, et ux
DB 551 - PG 261
DB 751 - PG 79
DB 1103 - PG 817
H. DONALD EVANS, et ux
DB 1005 - PG 926
LEON C. MILLETTE, JR., et ux
DB 1607 - PG 287
CLEANOUT TAIL DITCH
EST. DDE +/- 4.5CY
OUTLET GRADE = 0.43%
SPECIAL LAT 'V' DITCH
SEE DETAIL #3
CLASS 'B' RIP RAP
2 TONS & 7 SY FF
SPECIAL LATERAL V-DITCH
SEE DETAIL #3
SEE SHEET NO. 7
SEE SHEET NO. 9
MATCHLINE STA. 100+00.00
MATCHLINE STA. 114+00.00
N 21°43'03.6" W -L-
US 17 24' BST
RETAIN & EXTEND
2 @ 6' X 5' RCBC
FOR SPECIAL DETAIL
SEE SHEETS C-1 THRU C-14
GEORGE EARL PHILLIPS
STATE OF NORTH CAROLINA
DEWEY R. FRAZIER, et al
DB 888 - PG 488
DB 1453 - PG 315
NORFOLK SOUTHERN RR
CLASS I RIP RAP
NATHANIEL G. WHITFORD, HEIRS
DB 495 - PG 21
DB 552 - PG 81
OSCAR H. SMITHWICK, JR.
DB 1425 - PG 849
MICHAEL W. EDWARDS, et ux
DB 1589 - PG 224
DOMINIC CONSTANTINO, et ux
DB 1712 - PG 380
PC "G" - SLIDE 60F
KENNETH M. WETWISKAS
DALLAS D. HOLTON, et ux
DB 463 - PG 457
CHARLES R. ELSON, et ux
DB 989 - PG 245
30' ACCESS
REVISIONS
8/17/99
14-MAY-2008 12:35

PROJ. REFERENCE NO.	SHEET NO.
R-3403AB	X-30

Permit Drawing
Sheet 12 of 32

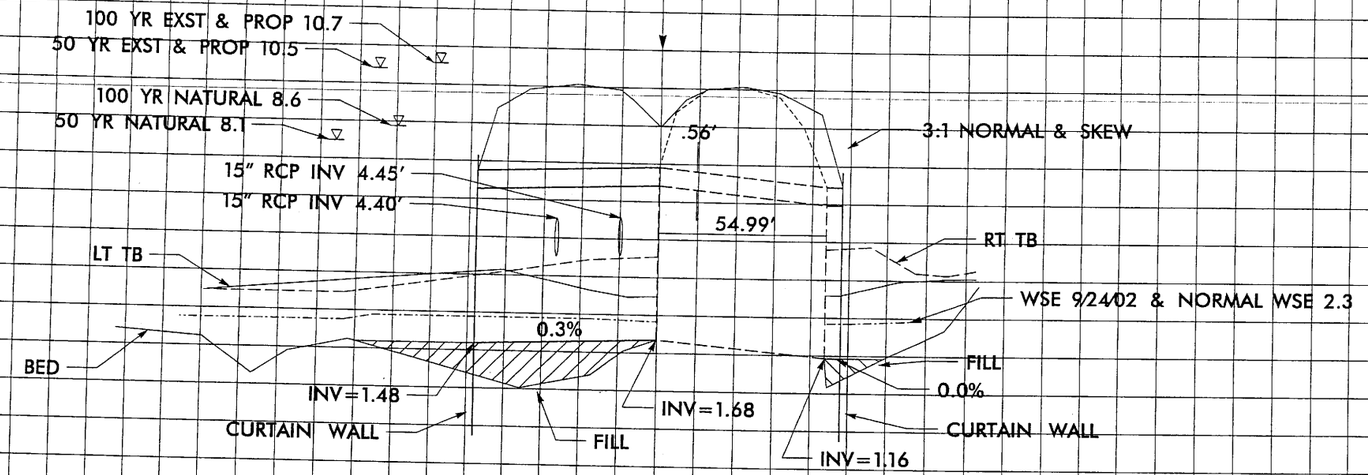


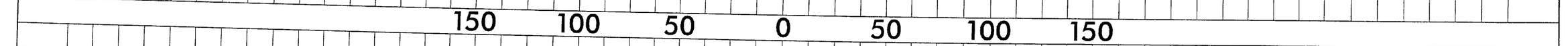
5/28

SITE 3

CULVERT $\mathcal{L}$ PROFLE

CENTERLINE STA. 109+35.67-L-
RETAIN & EXTEND 2@ 6X5 RCBC
GRADE POINT EL. = 10.46'
SKEW = 89°-24'-35"





PROJECT REFERENCE NO.	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 32

21-April-08

5/28/09

PROJECT REFERENCE NO.	SHEET NO.
R-3403A	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing Sheet 14 of 32

BM NO.5 - RR SPIKE SET IN BASE OF 30" PINE TREE
-BL- STA. 86+96.80 150.4' RIGHT ELEV.12.34'

FOR PLAN VIEW SEE SHEET 10 & 11

PI = 89+00.00
EL = 11.30'
VC = 300'
K = 545

PI = 91+50.00
EL = 10.68'
VC = 200'
K = 364

PI = 99+50.00
EL = 13.07'
VC = 1,000'
K = 1516

BEGIN DITCH GRADE RT.
STA.89+50 E.L.= 8.20

END DITCH GRADE RT.
STA.93+50 E.L.= 8.74

BEGIN DITCH GRADE RT.
STA.99+24 E.L.= 5.92

BEGIN DITCH GRADE LT.
STA.88+00 E.L.= 7.70

PI =91+40.00
EL = 7.63

PI =91+40.00
EL = 6.87

PI =99+85.00
EL = 5.80

10.40

12.23

(+) 0.3000%
(+) 0.21%
(-) 0.30%
(-) 0.2500%
(+) 0.53%
(+) 0.3000%
(-) 0.20%
(-) 0.3595%
(-) 0.20%

BM NO.6 - CHISLED SQUARE IN NE CORNER OF SOUTH R/R BRIDGE HEADWALL
-BL- STA. 105+98.40 126.8' RIGHT ELEV. 11.42'

PI = 110+00.00
EL = 9.30'
VC = 800'
K = 1070

SITE 3

END DITCH GRADE LT.
STA.100+43 E.L.= 5.10

END DITCH GRADE LT.
STA.108+46 E.L.= 5.50

BEGIN DITCH GRADE LT.
STA.108+20 E.L.= 5.89

BEGIN DITCH GRADE LT.
STA.100+45 E.L.= 5.86

PI =102+50.00
EL = 8.50

END DITCH GRADE LT.
STA.103+00 E.L.= 9.31

END DITCH GRADE RT.
STA.104+00 E.L.= 9.20

BEGIN DITCH GRADE LT.
STA.109+75 E.L.= 6.50

END DITCH GRADE LT.
STA.114+00 E.L.= 8.22

12.23

10.85

(-) 0.20%
(+) 0.82%
(+) 1.41%
(+) 1.62%
(-) 0.3595%
(-) 1.50%
(+) 0.3878%
(+) 0.40%

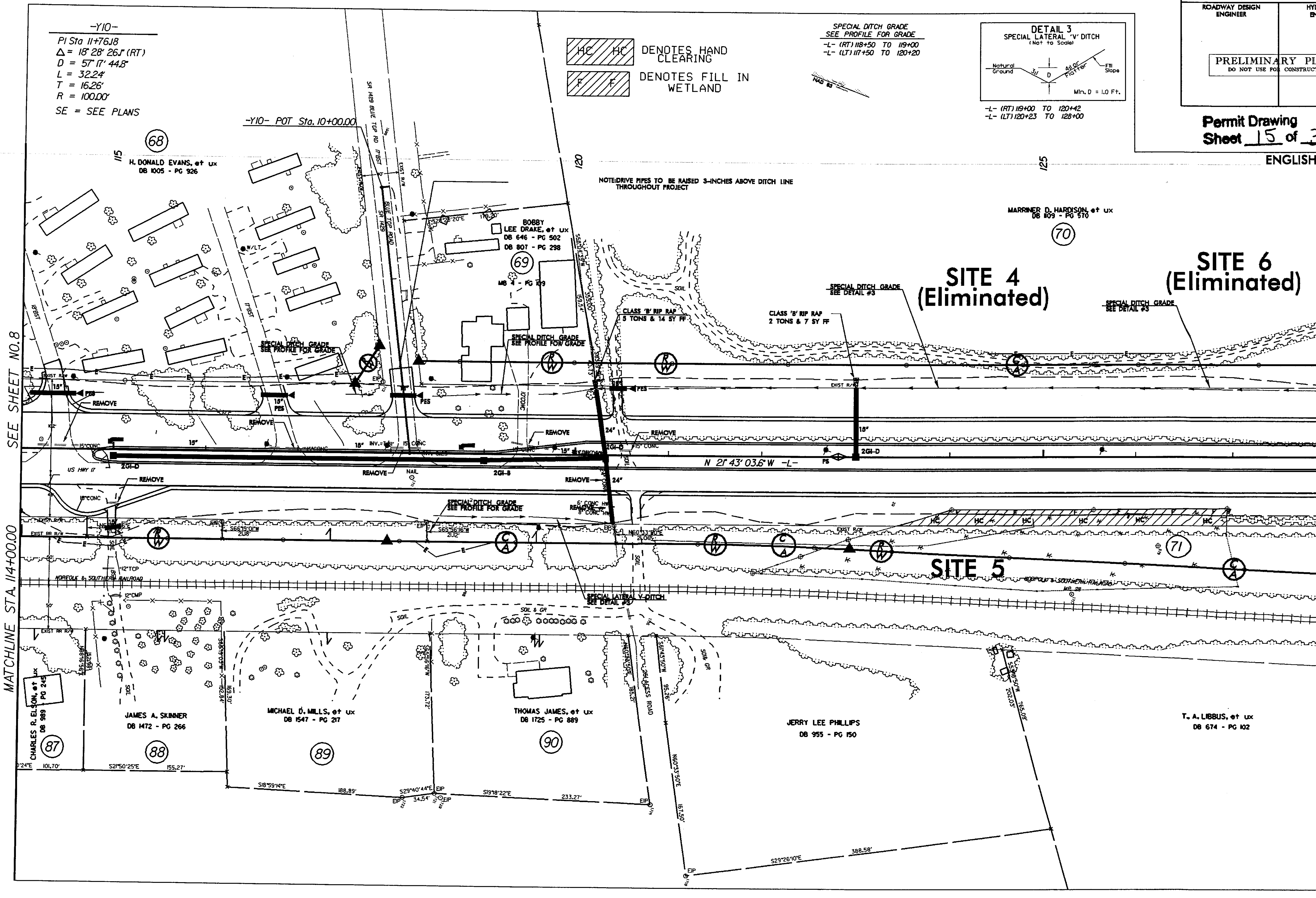
21-April-08

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 15 of 32

ENGLISH



-Y10-
PI Sta 11+76.18
Δ = 18° 28' 26.1" (RT)
D = 57° 17' 44.8"
L = 32.24'
T = 16.26'
R = 100.00'
SE = SEE PLANS
-Y10- POT Sta. 10+00.00
DENOTES HAND CLEARING
DENOTES FILL IN WETLAND
SPECIAL DITCH GRADE SEE PROFILE FOR GRADE
-L- (RT) 118+50 TO 119+00
-L- (LT) 117+50 TO 120+20
DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D = 1.0 Ft.
-L- (RT) 119+00 TO 120+42
-L- (LT) 120+23 TO 128+00
NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
H. DONALD EVANS, et ux
DB 1005 - PG 926
BOBBY LEE DRAKE, et ux
DB 646 - PG 502
DB 807 - PG 298
MARRINER D. HARDISON, et ux
DB 809 - PG 570
SITE 4
(Eliminated)
SITE 6
(Eliminated)
SITE 5
CLASS 'B' RIP RAP
5 TONS & 14 SY FF
CLASS 'B' RIP RAP
2 TONS & 7 SY FF
SPECIAL DITCH GRADE SEE DETAIL #3
SEE SHEET NO. 8
SEE SHEET NO. 10
MATCHLINE STA. 114+00.00
MATCHLINE STA. 128+00.00
N 21° 43' 03.6" W -L-
US HWY 17
REMOVE
NORFOLK & SOUTHERN RAILROAD
SPECIAL LATERAL V-DITCH SEE DETAIL #3
CHARLES R. ELSON, et ux
DB 989 - PG 245
JAMES A. SKINNER
DB 1472 - PG 266
MICHAEL D. MILLS, et ux
DB 1547 - PG 217
THOMAS JAMES, et ux
DB 1725 - PG 889
JERRY LEE PHILLIPS
DB 955 - PG 150
T. A. LIBBUS, et ux
DB 674 - PG 102

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 16 of 32

ENGLISH

-Y10-
PI Sta 11+76.18
Δ = 18° 28′ 26.1″ (RT)
D = 57° 17′ 44.8″
L = 32.24′
T = 16.26′
R = 100.00′
SE = SEE PLANS

HC ▨ HC	DENOTES HAND CLEARING
F ▨ F	DENOTES FILL IN WETLAND

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (RT) 118+50 TO 119+00
-L- (LT) 117+50 TO 120+20

-L- (RT) 119+00 TO 120+42
-L- (LT) 120+23 TO 128+00

NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

REVISIONS

8/17/9

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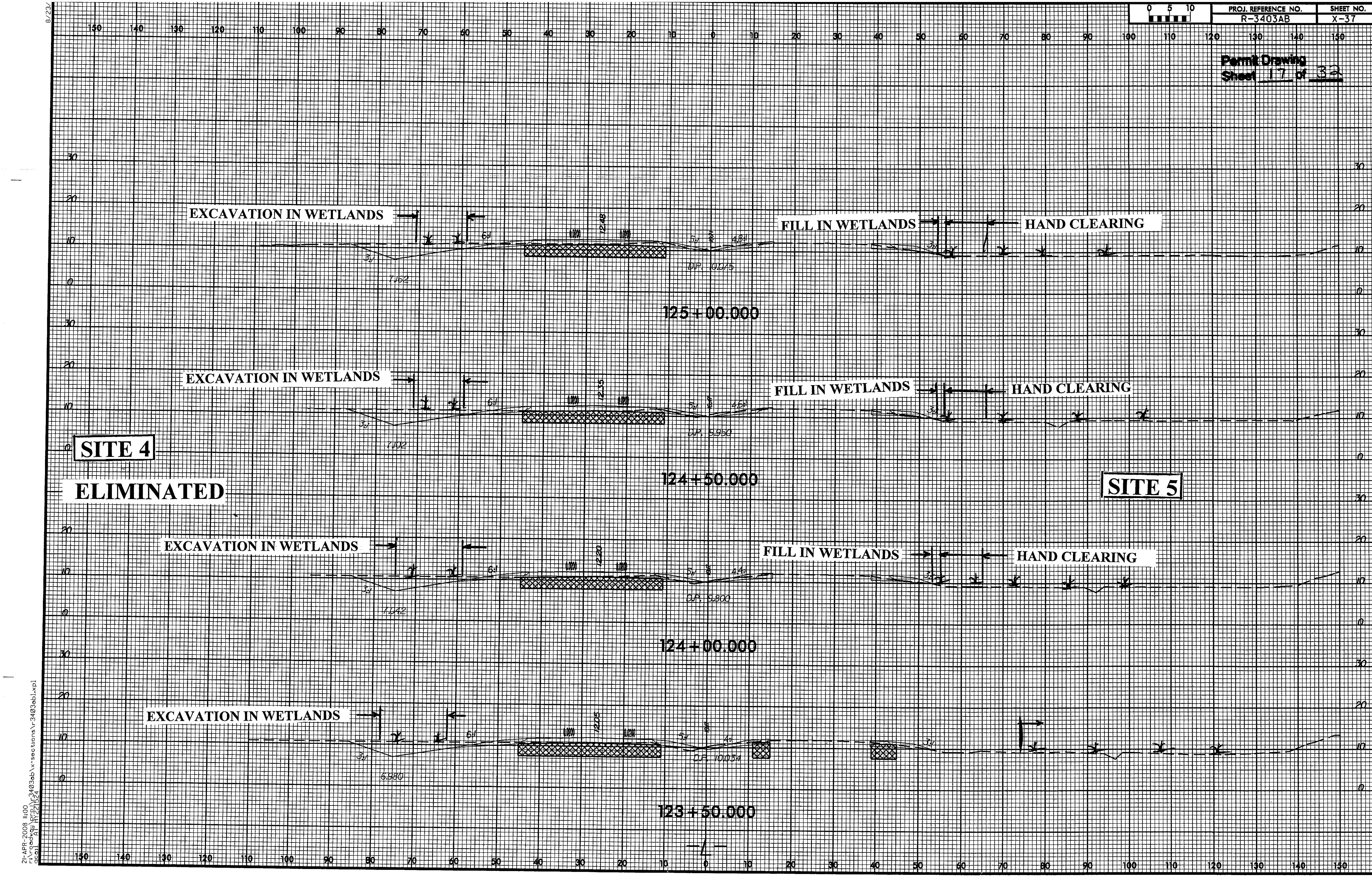
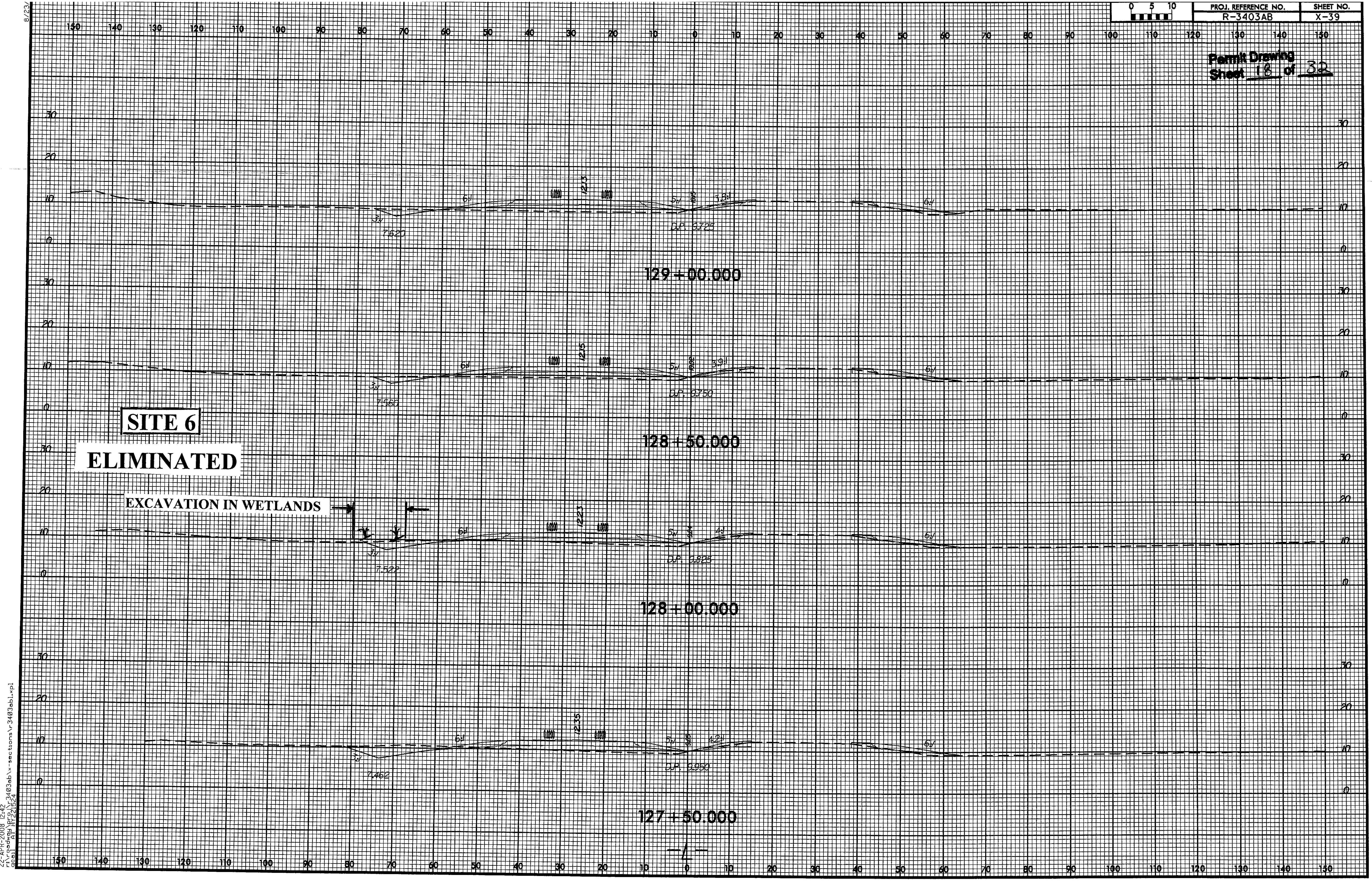

PROJ. REFERENCE NO.
R-3403AB
SHEET NO.
X-37
Permit Drawing
Sheet 17 of 32
EXCAVATION IN WETLANDS
FILL IN WETLANDS
HAND CLEARING
125+00.000
124+50.000
124+00.000
123+50.000
SITE 4
ELIMINATED
SITE 5
-4-


PROJ. REFERENCE NO.
R-3403AB
SHEET NO.
X-39
Permit Drawing
Sheet 18 of 32
129+00.000
SITE 6
ELIMINATED
128+50.000
EXCAVATION IN WETLANDS
128+00.000
127+50.000

PROJECT REFERENCE NO.	SHEET NO.
R-3403A	20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 19 of 32

5/28/9

FOR PLAN VIEW SEE SHEET 12 & 13

SITE 4, 5

ELIMINATED

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO._
DRAINAGE AREA = 7.5 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 18.0 CFS
DESIGN HW ELEVATION = 9.59 FT
100 YEAR DISCHARGE = 19.9 CFS
100 YEAR HW ELEVATION = 9.97 FT
OVERTOPPING FREQUENCY = +50 YRS
OVERTOPPING DISCHARGE = 18.0 CFS
OVERTOPPING ELEVATION = 9.6 FT

SITE 6

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO._
DRAINAGE AREA = 10.3 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 26.0 CFS
DESIGN HW ELEVATION = 11.0 FT
100 YEAR DISCHARGE = 28.3 CFS
100 YEAR HW ELEVATION = 11.3 FT
OVERTOPPING FREQUENCY = -200 YRS
OVERTOPPING DISCHARGE = -39.0 CFS
OVERTOPPING ELEVATION = 12.2 FT

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

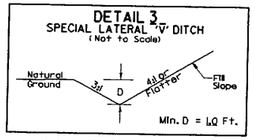
PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing Sheet 20 of 32

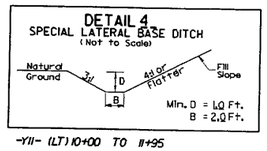
REVISIONS 8/17/

DETAIL 3
SPECIAL LATERAL "V" DITCH
(Not to Scale)



-L- (LT) 128+00 TO 129+50

DETAIL 4
SPECIAL LATERAL BASE DITCH
(Not to Scale)



-Y11- (LT) 10+00 TO 11+95

NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

F F DENOTES FILL IN WETLAND

HC HC DENOTES HAND CLEARING

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (LT) 129+50 TO 134+00
-L- (RT) 134+00 TO 140+00
-L- (RT) 141+30 TO 143+50
-Y12- (LT) 14+00 TO 14+95

-Y11-
PI Sta 11+98.24
Δ = 33° 41' 56.9" (LT)
D = 28° 38' 52.4"
L = 117.63'
T = 60.57'
R = 200.00'
SE = SEE PLANS

NAD 83

VICKIE PHILLIPS HARDEE, et ENGLISH
DB 1052 - PG 934

N03°34'35"E

SITE 6 (Eliminated)

70
MARRINER D. HARDISON, et ux
DB 809 - PG 570

70
MARRINER D. HARDISON, et ux
DB 809 - PG 570

SPECIAL LATERAL V-DITCH SEE DETAIL #3

CLASS 'B' RIP RAP 2 TONS & 7 SY FF

SPECIAL DITCH GRADE SEE PROFILE FOR GRADE

CLASS 'B' RIP RAP 2 TONS & 7 SY FF

SPECIAL DITCH GRADE SEE PROFILE FOR GRADE

-Y11-POT Sta. 10+00.00

SPECIAL LATERAL BASE DITCH SEE DETAIL #4

S 78° 01' 06.9" E

-Y11- PC Sta. 11+37.67

-Y11- PT Sta. 12+55.30

-L- POT Sta. 140+65.00 =
-Y11- POT Sta. 13+27.28 =
-Y12- POT Sta. 16+14.12

SEE SHEET NO.9

MATCHLINE STA. 128+00.00

SEE SHEET NO.11

MATCHLINE STA. 142+00.00

EXIST R/W

EXIST RR R/W

US HWY 17 US 17 24BST

NORFOLK&SOUTHERN RR

NORFOLK & SOUTHERN RR

REMOVE

2GI-D

18"

30"

24"

15"

124"

PLUG

INV.=9.22'

INV.=9.90'

N 21° 43' 03.6" W -L-

N 42° 50' 14.1" W

N 50° 47' 30.2" W

-Y12- PT Sta. 15+28.71

-Y12- PC Sta. 14+08.49

-Y12- PT Sta. 11+73.30

-Y12- PC Sta. 10+20.58

-Y12- POT Sta. 10+00.00

CLASS 'B' RIP RAP 2 TONS & 7 SY FF

CLASS 'B' RIP RAP 8 TONS & 21 SY FF

SPECIAL DITCH GRADE SEE PROFILE FOR GRADE

71
LUTHER EARL GASKINS, et ux
DB 855 - PG 1051
DB 1116 - PG 950

T. A. LIBBUS, et ux
DB 674 - PG 102
MB 5 - PG 8

BETTY D. FOREMAN
DB 1670 - PG 394

ESTHER J. ANTHONY
DB 633 - PG 384
MB 5 - PG 8

ROBERT L. BRYDGE, et ux
DB 1136 - PG 63
DB 1376 - PG 520

SR 1916 (OLD WHITEHEAD ROAD)

WHITEHEAD ROAD 81BST

-Y12-

PI Sta 10+97.06	PI Sta 14+77.07
Δ = 7° 57' 16.1" (RT)	Δ = 68° 52' 49.8" (LT)
D = 5° 12' 31.3"	D = 57° 17' 44.8"
L = 152.71'	L = 120.22'
T = 76.48'	T = 68.57'
R = 1,100.00'	R = 100.00'
	SE = SEE PLANS

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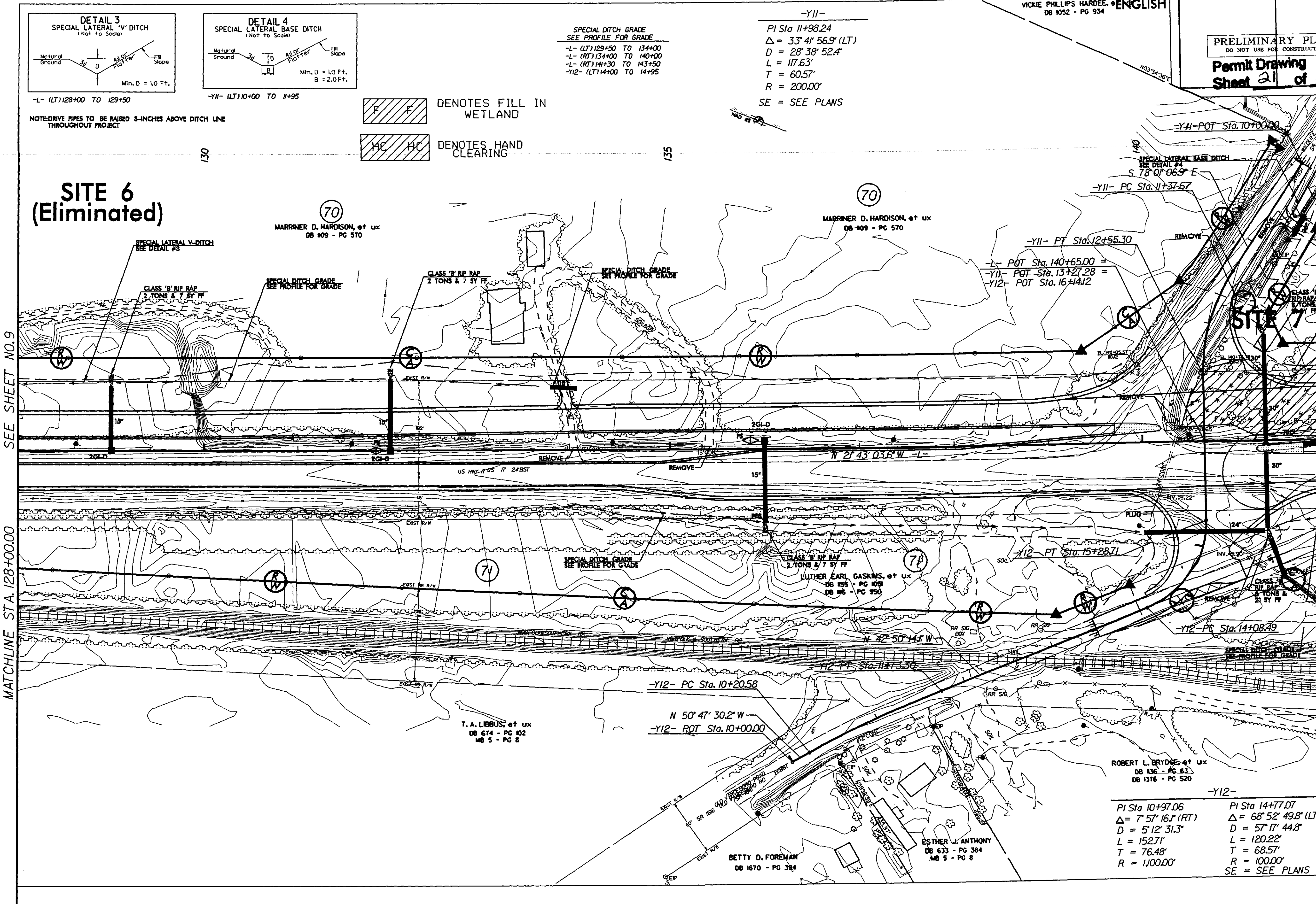
PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing Sheet 21 of 32

ENGLISH



DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Min. D = 1.0 Ft.
-L- (LT) 128+00 TO 129+50
DETAIL 4
SPECIAL LATERAL BASE DITCH
(Not to Scale)
Min. D = 1.0 Ft.
B = 2.0 Ft.
-Y11- (LT) 10+00 TO 11+95
NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (LT) 129+50 TO 134+00
-L- (RT) 134+00 TO 140+00
-L- (RT) 141+30 TO 143+50
-Y12- (LT) 14+00 TO 14+95
DENOTES FILL IN WETLAND
DENOTES HAND CLEARING
-Y11-
PI Sta 11+98.24
Δ = 33° 41' 56.9" (LT)
D = 28° 38' 52.4"
L = 117.63'
T = 60.57'
R = 200.00'
SE = SEE PLANS
VICKIE PHILLIPS HARDEE, et ux
DB 1052 - PG 934
SITE 6
(Eliminated)
MARRINER D. HARDISON, et ux
DB 1109 - PG 570
SPECIAL LATERAL V-DITCH
SEE DETAIL #3
CLASS 'B' RIP RAP
2 TONS & 7 SY FF
SPECIAL LATERAL BASE DITCH
SEE DETAIL #4
S 78° 01' 06.9" E
-Y11- POT Sta. 10+00.00
-Y11- PC Sta. 11+37.67
-Y11- PT Sta. 12+55.30
-L- POT Sta. 140+65.00 =
-Y11- POT Sta. 13+27.28 =
-Y12- POT Sta. 16+14.12
SITE 7
SEE SHEET NO. 9
SEE SHEET NO. 11
MATCHLINE STA. 128+00.00
MATCHLINE STA. 142+00.00
N 21° 43' 03.6" W -L-
US HWY 17
REMOVE
-Y12- PT Sta. 15+28.71
-Y12- PC Sta. 14+08.49
LUTHER EARL GASKINS, et ux
DB 1155 - PG 1051
DB 1116 - PG 950
N 42° 50' 14.1" W
NORFOLK & SOUTHERN RR
-Y12- PT Sta. 11+73.30
-Y12- PC Sta. 10+20.58
N 50° 47' 30.2" W
-Y12- POT Sta. 10+00.00
T. A. LIBBUS, et ux
DB 674 - PG 102
MB 5 - PG 8
ROBERT L. BRYDGE, et ux
DB 1136 - PG 63
DB 1376 - PG 520
ESTHER J. ANTHONY
DB 633 - PG 384
MB 5 - PG 8
BETTY D. FOREMAN
DB 1670 - PG 384
-Y12-
PI Sta 10+97.06
Δ = 7° 57' 16.1" (RT)
D = 5° 12' 31.3"
L = 152.71'
T = 76.48'
R = 1,100.00'
PI Sta 14+77.07
Δ = 68° 52' 49.8" (LT)
D = 57° 17' 44.8"
L = 120.22'
T = 68.57'
R = 100.00'
SE = SEE PLANS

REVISIONS

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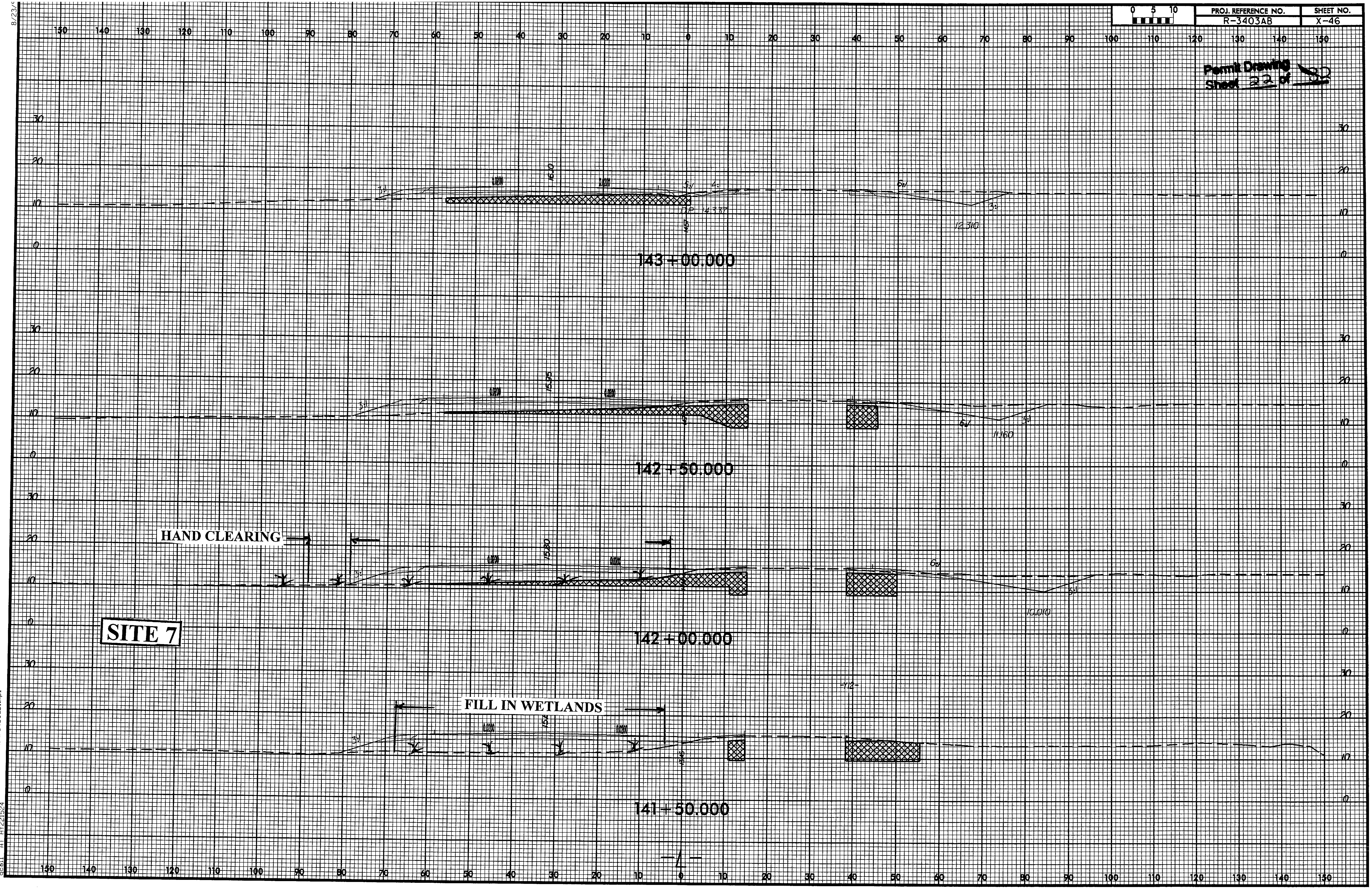

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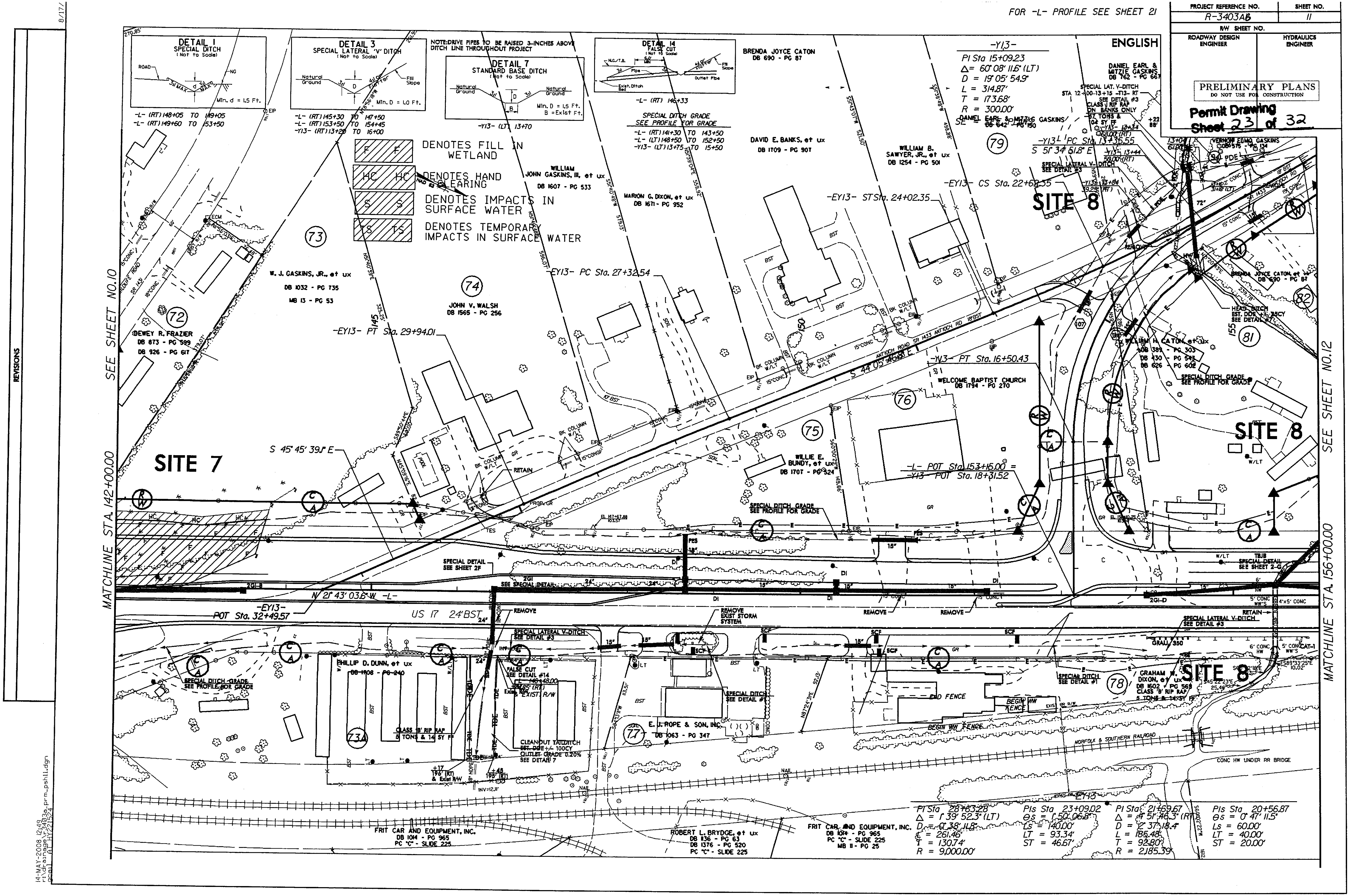
FOR -L- PROFILE SEE SHEET 21
PROJECT REFERENCE NO. R-3403AB
SHEET NO. 11
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
ENGLISH
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing Sheet 23 of 32
REVISIONS
DETAIL 1 SPECIAL DITCH (Not to Scale)
Min. d = 1.5 Ft.
-L- (RT) 148+05 TO 149+05
-L- (RT) 149+60 TO 153+50
DETAIL 3 SPECIAL LATERAL 'V' DITCH (Not to Scale)
Min. D = 1.0 Ft.
-L- (RT) 145+30 TO 147+50
-L- (RT) 153+50 TO 154+45
-Y13- (RT) 13+20 TO 16+00
NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
DETAIL 7 STANDARD BASE DITCH (Not to Scale)
Min. D = 1.5 Ft. B = Exist Ft.
-Y13- (LT) 13+70
DETAIL 14 FALSE CUT (Not to Scale)
-L- (RT) 146+33
SPECIAL DITCH GRADE SEE PROFILE FOR GRADE
-L- (RT) 141+30 TO 143+50
-L- (LT) 148+50 TO 152+50
-Y13- (LT) 13+75 TO 15+50
DENOTES FILL IN WETLAND
DENOTES HAND CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-Y13-
PI Sta 15+09.23
Δ = 60° 08' 11.6" (LT)
D = 19° 05' 54.9"
L = 314.87'
T = 173.68'
R = 300.00'
BRENDA JOYCE CATON DB 690 - PG 87
DAVID E. BANKS, et ux DB 1709 - PG 907
WILLIAM B. SAWYER, JR., et ux DB 1254 - PG 501
DANIEL EARL & MITZIE GASKINS DB 762 - PG 667
WILLIAM JOHN GASKINS, III, et ux DB 1607 - PG 533
MARION G. DIXON, et ux DB 1671 - PG 952
W. J. GASKINS, JR., et ux DB 1032 - PG 735 MB 13 - PG 53
JOHN V. WALSH DB 1565 - PG 256
DEWEY R. FRAZIER DB 873 - PG 599 DB 926 - PG 617
WILLIE E. BUNDY, et ux DB 1707 - PG 324
WELCOME BAPTIST CHURCH DB 1794 - PG 270
VERNON EDMO GASKINS
WILLIAM H. CATON, et ux
PHILLIP D. DUNN, et ux DB 1108 - PG 240
E. J. POPE & SON, INC. DB 1063 - PG 347
GRAHAM W. DIXON, et ux DB 1602 - PG 568
FRIT CAR AND EQUIPMENT, INC. DB 1014 - PG 965 PC "C" - SLIDE 225
ROBERT L. BRYDGE, et ux DB 136 - PG 63 DB 1376 - PG 520 PC "C" - SLIDE 225
FRIT CAR AND EQUIPMENT, INC. DB 1014 - PG 965 PC "C" - SLIDE 225 MB 11 - PG 25
-EY13- PC Sta. 27+32.54
-EY13- PT Sta. 29+94.01
-EY13- ST Sta. 24+02.35
-EY13- CS Sta. 22+63.55
-Y13- PC Sta. 13+35.55
-Y13- PT Sta. 16+50.43
-L- POT Sta. 153+15.00 = -Y13- POT Sta. 18+31.52
-EY13- POT Sta. 32+49.57
S 45° 45' 39.1" E
S 44° 05' 46.8" E
S 51° 34' 51.8" E
N 21° 43' 03.6" W -L-
US 17 24' BST
SITE 7
SITE 8
SEE SHEET NO. 10
SEE SHEET NO. 12
MATCHLINE STA. 142+00.00
MATCHLINE STA. 156+00.00
SPECIAL DETAIL SEE SHEET 2F
SPECIAL LATERAL V-DITCH SEE DETAIL #3
SPECIAL DITCH GRADE SEE PROFILE FOR GRADE
FALSE CUT SEE DETAIL #14
CLASS 'B' RIP RAP 8 TONS & 14 SY FF
CLEANOUT TAILDITCH EST. DDE +/- 100CY OUTLET GRADE 0.20% SEE DETAIL 7
REMOVE EXIST STORM SYSTEM
END FENCE
BEGIN WW FENCE
NORFOLK & SOUTHERN RAILROAD
CONC HW UNDER RR BRIDGE
PI Sta 28+63.28 Δ = 1° 39' 52.3" (LT) D = 0° 38' 11.8" L = 261.46' T = 130.74' R = 9,000.00'
PIs Sta 23+09.02 θs = 1° 50' 06.8" Ls = 140.00' LT = 93.34' ST = 46.67'
PI Sta 21+69.67 Δ = 4° 51' 46.3" (RT) D = 2° 37' 18.4" L = 185.48' T = 92.80' R = 2,185.39'
PIs Sta 20+56.87 θs = 0° 47' 11.5" Ls = 60.00' LT = 40.00' ST = 20.00'
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FOR -L- PROFILE SEE SHEET 21

PROJECT REFERENCE NO.	SHEET NO.
R-3403A B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 24 of 32

ENGLISH

-Y13-
PI Sta 15+09.23
Δ = 60° 08' 11.6" (LT)
D = 19° 05' 54.9"
L = 314.87'
T = 173.68'
R = 300.00'

DETAIL 1
SPECIAL DITCH
(Not to Scale)

DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

DETAIL 7
STANDARD BASE DITCH
(Not to Scale)

DETAIL 14
FALSE CUT
(Not to Scale)

NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

-L- (RT) 148+05 TO 149+05
-L- (RT) 149+60 TO 153+50

-L- (RT) 145+30 TO 147+50
-L- (RT) 153+50 TO 154+45
-Y13- (RT) 13+20 TO 16+00

-Y13- (LT) 13+70

-L- (RT) 146+33

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (RT) 141+30 TO 143+50
-L- (LT) 148+50 TO 152+50
-Y13- (LT) 13+75 TO 15+50

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

SEE SHEET NO.10

MATCHLINE STA. 142+00.00

SITE 7

SITE 8

SEE SHEET NO.12

MATCHLINE STA. 156+00.00

-EY13- PC Sta. 27+32.54
-EY13- PT Sta. 29+94.01
-EY13- POT Sta. 32+49.57
-EY13- CS Sta. 22+69.55
-EY13- ST Sta. 24+02.35
-Y13- PC Sta. 13+35.55
-Y13- RT Sta. 16+50.43
-L- POT Sta. 153+15.00 =
-Y13- POT Sta. 18+31.52

-L- PI Sta 28+63.28
Δ = 1° 39' 52.3" (LT)
D = 0° 38' 41.8"
L = 261.46'
T = 130.74'
R = 9,000.00'

PI Sta 23+09.02
Δ = 1° 50' 08.8" (RT)
Ls = 140.00'
LT = 93.34'
ST = 46.67'

PI Sta 21+69.67
Δ = 4° 51' 46.3" (RT)
D = 2° 37' 18.4"
L = 185.48'
T = 92.80'
R = 2,185.39'

PI Sta 20+56.87
Δ = 0° 41' 11.5"
Ls = 60.00'
LT = 40.00'
ST = 20.00'

REVISIONS

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DEWEY R. FRAZIER DB 873 - PG 239 DB 926 - PG 617
W. J. GASKINS, JR., et ux DB 1032 - PG 735 MB 15 - PG 53
JOHN V. WALSH DB 1565 - PG 256
WILLIAM JOHN GASKINS, III, et ux DB 1607 - PG 533
MARION G. DIXON, et ux DB 1671 - PG 952
BRENDA JOYCE CATON DB 690 - PG 87
DAVID E. BANKS, et ux DB 1709 - PG 907
WILLIAM B. SAWYER, JR., et ux DB 1254 - PG 501
DANIEL EARL & MITZIE GASKINS DB 762 - PG 667
DANIEL EARL & MITZIE GASKINS DB 642 - PG 150
VERNON ELMO GASKINS DB 515 - PG 134
BRENDA JOYCE CATON, et ux DB 690 - PG 87
WILLIAM H. CATON, et ux DB 393 - PG 303 DB 430 - PG 545 DB 626 - PG 602
WELCOME BAPTIST CHURCH DB 1794 - PG 270
WILLIE E. BUNDY, et ux DB 1707 - PG 324
PHILLIP D. DUNN, et ux DB 1908 - PG 240
C. J. ROPE & SON, INC. DB 1063 - PG 347
GRAHAM A. DIXON, et ux DB 1502 - PG 568
FRIT CAR AND EQUIPMENT, INC. DB 1014 - PG 965 PC "C" - SLIDE 225
ROBERT L. BRYDGE, et ux DB 1136 - PG 63 DB 1376 - PG 520 PC "C" - SLIDE 225
FRIT CAR AND EQUIPMENT, INC. DB 1014 - PG 965 PC "C" - SLIDE 225 MB 11 - PG 25

SPECIAL LAT. V-DITCH STA 12+00-13+15 -T13- RT SEE DETAIL #3 CLASS I RIP RAP ON BANKS ONLY 67 TONS & 104 SY FF -Y13- 13+34 58.00' (RT)
SPECIAL LATERAL V-DITCH SEE DETAIL #3 -Y13- 13+44 59.00' (RT) -Y13- 13+84 39.28' (RT)
HEAD DITCH EST. DDE +/- 85CY SEE DETAIL #7
SPECIAL DITCH GRADE SEE PROFILE FOR GRADE
SPECIAL DETAIL SEE SHEET 2F
SPECIAL LATERAL V-DITCH SEE DETAIL #3
REMOVE EXIST STORM SYSTEM
FALSE CUT SEE DETAIL #14 -Y13- 16+48.00 24.65' (RT) EXIST R/W
CLEANOUT TAILDITCH EST. DDE +/- 100CY OUTLET GRADE 0.20% SEE DETAIL 7
CLASS B RIP RAP & TONS & 14 SY FF
SPECIAL DITCH SEE DETAIL #7
END FENCE
BEGIN WW FENCE
MAIN LN. S. SOUTHERN RAILROAD
CONC. HW UNDER RR BRIDGE
TRIB SPECIAL DETAIL SEE SHEET 2F
2GI-D
RETAIN
REMOVE

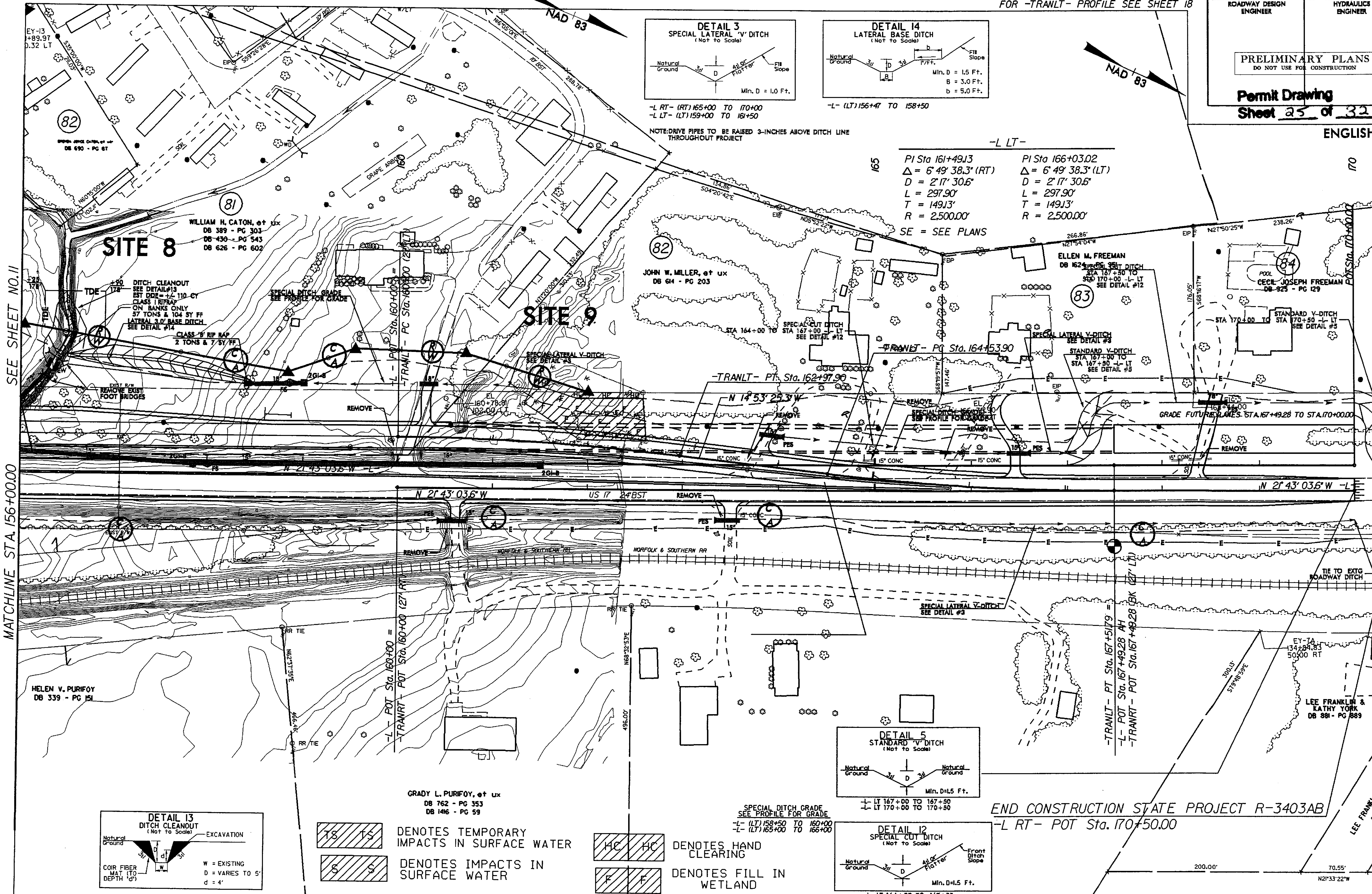
PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 25 of 32

ENGLISH

FOR -L- PROFILE SEE SHEET 21 & 22
FOR -L- PROFILE SEE SHEET 17
FOR -TRANRT- PROFILE SEE SHEET 18
FOR -TRANLT- PROFILE SEE SHEET 18



NAD 83
DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Min. D = 1.0 Ft.
-L RT- (RT) 165+00 TO 170+00
-L LT- (LT) 159+00 TO 161+50
DETAIL 14
LATERAL BASE DITCH
(Not to Scale)
Min. D = 1.5 Ft.
B = 3.0 Ft.
b = 5.0 Ft.
-L- (LT) 156+47 TO 158+50
NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
-L LT-
PI Sta 161+49.13
Δ = 6° 49' 38.3" (RT)
D = 2° 17' 30.6"
L = 297.90'
T = 149.13'
R = 2,500.00'
SE = SEE PLANS
PI Sta 166+03.02
Δ = 6° 49' 38.3" (LT)
D = 2° 17' 30.6"
L = 297.90'
T = 149.13'
R = 2,500.00'
SITE 8
SITE 9
WILLIAM H. CATON, et ux
DB 389 - PG 303
DB 430 - PG 543
DB 626 - PG 602
JOHN W. MILLER, et ux
DB 614 - PG 203
ELLEN M. FREEMAN
CECIL JOSEPH FREEMAN
DB 925 - PG 129
HELEN V. PURIFOY
DB 339 - PG 151
GRADY L. PURIFOY, et ux
DB 762 - PG 353
DB 1416 - PG 59
LEE FRANKLIN & KATHY YORK
DB 881 - PG 889
DITCH CLEANOUT
SEE DETAIL #13
EST DDE = +/- 110 CY
CLASS I RIPRAP ON BANKS ONLY
37 TONS & 104 SY FF
LATERAL 3.0' BASE DITCH
SEE DETAIL #14
CLASS 'B' RIP RAP
2 TONS & 7 SY FF
REMOVE EXIST FOOT BRIDGES
SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
SPECIAL LATERAL V-DITCH
SEE DETAIL #3
SPECIAL CUT DITCH
STA 164+00 TO STA 167+00 -L- LT
SEE DETAIL #12
STANDARD V-DITCH
STA 167+00 TO STA 167+50 -L- LT
SEE DETAIL #5
STANDARD V-DITCH
STA 170+00 TO STA 170+50 -L- LT
SEE DETAIL #5
-TRANLT- PC Sta. 164+53.90
-TRANLT- PT Sta. 162+97.90
N 14° 53' 25.3" W
N 21° 43' 03.6" W -L-
N 21° 43' 03.6" W
US 17 24' BST
NORFOLK & SOUTHERN RR
GRADE FUTURE LANES STA. 167+49.28 TO STA. 170+00.00
TIE TO EXTG ROADWAY DITCH
SEE SHEET NO. 11
MATCHLINE STA. 156+00.00
-L- POT Sta. 160+00 = -TRANLT- PC Sta. 160+00
-L- POT Sta. 160+00 = -TRANRT- POT Sta. 160+00 (27' RT)
-TRANLT- PT Sta. 167+51.79 = -L- POT Sta. 167+49.28 AH
-TRANRT- POT Sta. 167+49.28 (BK (27' LT))
EY-TA 134+84.83 50.00 RT
DETAIL 5
STANDARD 'V' DITCH
(Not to Scale)
Min. D = 1.5 Ft.
-L- LT 167+00 TO 167+50
-L- LT 170+00 TO 170+50
SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (LT) 158+50 TO 160+00
-L- (LT) 165+00 TO 166+00
DETAIL 12
SPECIAL CUT DITCH
(Not to Scale)
Min. D = 1.5 Ft.
-L- LT 164+00 TO 167+00
-L- LT 167+50 TO 170+00
DETAIL 13
DITCH CLEANOUT
(Not to Scale)
EXCAVATION
COIR FIBER MAT (TO DEPTH 'd')
W = EXISTING
D = VARIES TO 5'
d = 4'
TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S DENOTES IMPACTS IN SURFACE WATER
HC DENOTES HAND CLEARING
F DENOTES FILL IN WETLAND
END CONSTRUCTION STATE PROJECT R-3403AB
-L RT- POT Sta. 170+50.00

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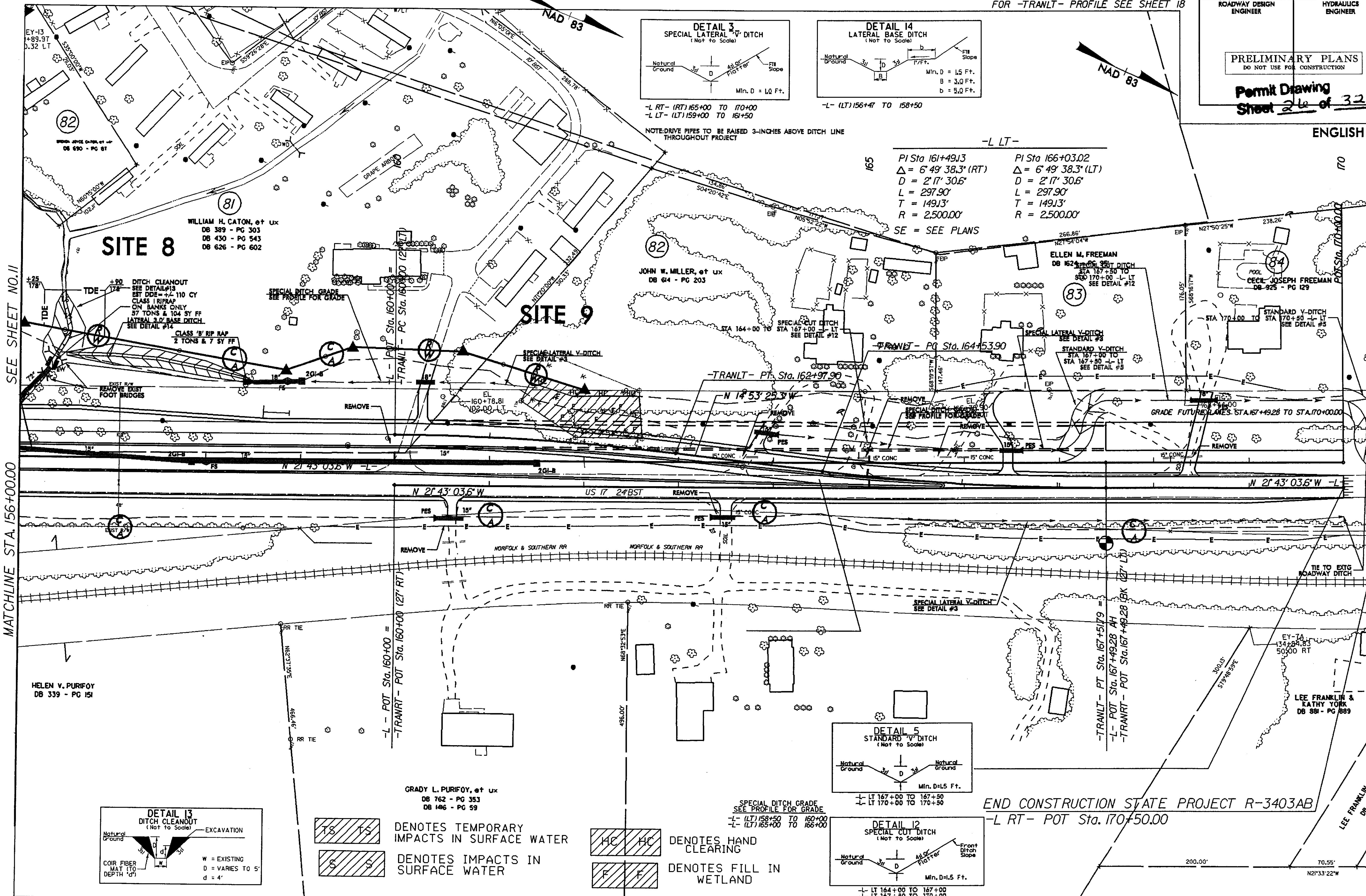
FOR -L- PROFILE SEE SHEET 21 & 22
FOR -L- PROFILE SEE SHEET 17
FOR -TRANRT- PROFILE SEE SHEET 18
FOR -TRANLT- PROFILE SEE SHEET 18

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 26 of 32

ENGLISH



NAD 83
DETAIL 3
SPECIAL LATERAL "V" DITCH
(Not to Scale)
-L RT- (RT) 165+00 TO 170+00
-L LT- (LT) 159+00 TO 161+50
DETAIL 14
LATERAL BASE DITCH
(Not to Scale)
-L- (LT) 156+47 TO 158+50
NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
-L LT-
PI Sta 161+49.13
Δ = 6° 49' 38.3" (RT)
D = 2° 17' 30.6"
L = 297.90'
T = 149.13'
R = 2,500.00'
PI Sta 166+03.02
Δ = 6° 49' 38.3" (LT)
D = 2° 17' 30.6"
L = 297.90'
T = 149.13'
R = 2,500.00'
SE = SEE PLANS
SITE 8
SITE 9
WILLIAM H. CATON, et ux
DB 389 - PG 303
DB 430 - PG 543
DB 626 - PG 602
JOHN W. MILLER, et ux
DB 614 - PG 203
ELLEN M. FREEMAN
CECIL JOSEPH FREEMAN
DB 925 - PG 129
HELEN V. PURIFOY
DB 339 - PG 151
GRADY L. PURIFOY, et ux
DB 762 - PG 353
DB 1416 - PG 59
LEE FRANKLIN & KATHY YORK
DB 881 - PG 889
DITCH CLEANOUT
SEE DETAIL #13
EST DDE = +/- 110 CY
CLASS I RIPRAP
ON BANKS ONLY
37 TONS & 104 SY FF
LATERAL 3.0' BASE DITCH
SEE DETAIL #14
CLASS 'B' RIP RAP
2 TONS & 7 SY FF
SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
SPECIAL LATERAL V-DITCH
SEE DETAIL #3
SPECIAL CUT DITCH
STA 164+00 TO STA 167+00 -L- LT
SEE DETAIL #12
STANDARD V-DITCH
STA 167+00 TO STA 167+50 -L- LT
SEE DETAIL #5
-TRANLT- PT Sta. 162+97.90
-TRANLT- PC Sta. 164+53.90
N 14° 53' 25.3" W
N 21° 43' 03.6" W -L-
US 17 24' BST
NORFOLK & SOUTHERN RR
REMOVE EXIST FOOT BRIDGES
GRADE FUTURE LANES STA.167+49.28 TO STA.170+00.00
TIE TO EXTG ROADWAY DITCH
MATCHLINE STA. 156+00.00
SEE SHEET NO. 11
-L- POT Sta. 160+00 =
-TRANRT- POT Sta. 160+00 (27' RT)
-L- POT Sta. 160+00.00 =
-TRANLT- PC Sta. 160+00.00 (27' LT)
-TRANLT- PT Sta. 167+51.79 =
-L- POT Sta. 167+49.28 AH
-TRANRT- POT Sta. 167+49.28 (BK (27' LT))
EY-7A
134+84.83
50.00 RT
DETAIL 5
STANDARD "V" DITCH
(Not to Scale)
-L- LT 167+00 TO 167+50
-L- LT 170+00 TO 170+50
SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (LT) 158+50 TO 160+00
-L- (LT) 165+00 TO 166+00
DETAIL 12
SPECIAL CUT DITCH
(Not to Scale)
-L- LT 164+00 TO 167+50
-L- LT 167+50 TO 170+00
DETAIL 13
DITCH CLEANOUT
(Not to Scale)
W = EXISTING
D = VARIES TO 5'
d = 4'
COIR FIBER MAT (TO DEPTH "d")
END CONSTRUCTION STATE PROJECT R-3403AB
-L RT- POT Sta. 170+50.00
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
DENOTES HAND CLEARING
DENOTES FILL IN WETLAND

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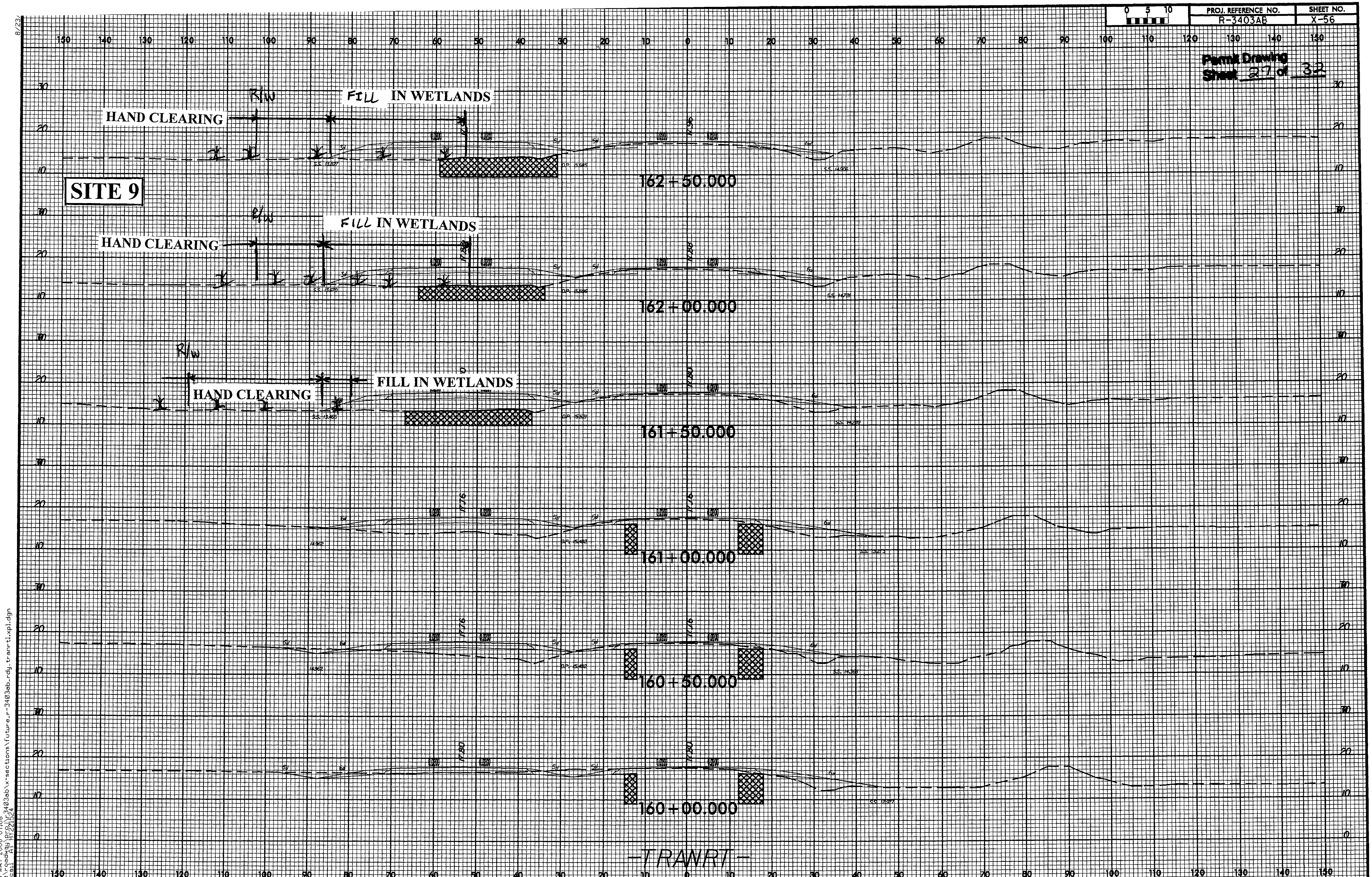


PROJ. REFERENCE NO.
R-3403AB
SHEET NO.
X-56
Permit Drawing
Sheet 27 of 32
SITE 9
HAND CLEARING
FILL IN WETLANDS
R/W
162+50.000
162+00.000
161+50.000
161+00.000
160+50.000
160+00.000
-TRANRT-

5/28/9

PROJECT REFERENCE NO. | SHEET NO.

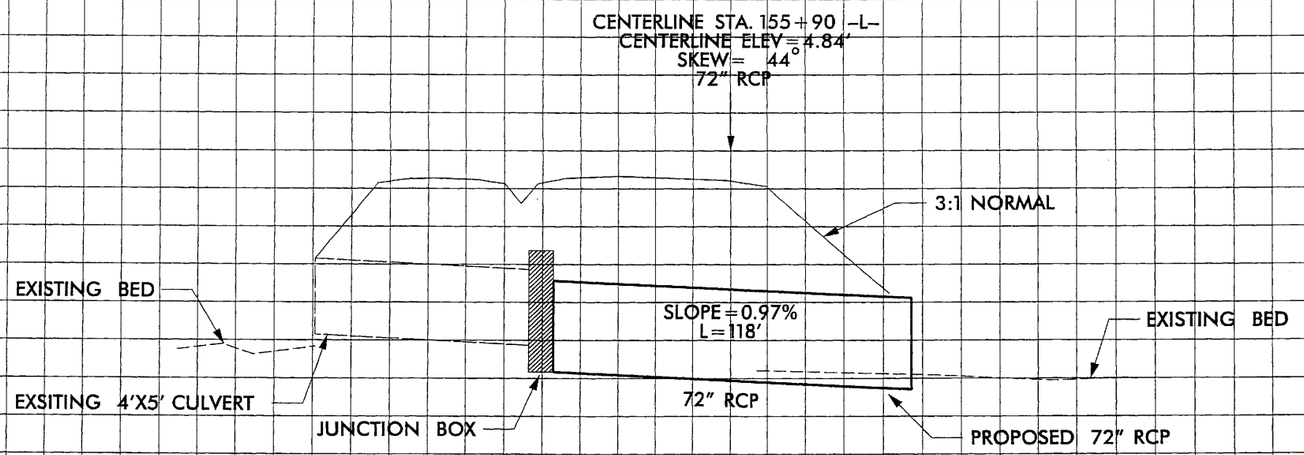
ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 28 of 32

PIPE ℄ PROFLE



SITE 8

21-April-08

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

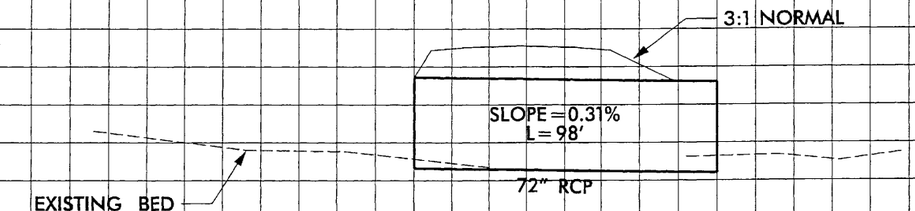
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 29 of 32

PIPE $\mathcal{L}$ PROFLE

CENTERLINE STA. 13+46 –Y13–
CENTERLINE ELEV=3.19'
SKEW= 113°
72" RCP



SITE 8

21-April-08

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-3403A	21.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 30 of 32

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 1

DRAINAGE AREA	= 162	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 1360	CFS
DESIGN HW ELEVATION	= 12.57	FT
100 YEAR DISCHARGE	= 1580	CFS
100 YEAR HW ELEVATION	= 14.17	FT
OVERTOPPING FREQUENCY	= +50	YRS
OVERTOPPING DISCHARGE	= +1360	CFS
OVERTOPPING ELEVATION	= 12.8	FT

FOR PLAN VIEW SEE SHEET 14 & 15

SITE 7

50 40 30 20 10 0 –10 –20 –30

142+00 143 144 145 146 147 148 149 150 151 152 153 154 155 156+00

15.80

(+) 2.30%

END DITCH GRADE RT.
STA.143+50 E.L.= 13.46

(+) 0.3000%

BEGIN DITCH GRADE RT.
STA.146+38 E.L.= 11.55

(+) 0.55%

(+) 1.03%

PI =147+00.00
EI = 11.90

BEGIN DITCH GRADE LT.
STA.148+50 E.L.= 14.58

(–) 1.56%

PI =148+50.00
EI = 13.45

PI =149+00.00
EI = 13.90

(+) 0.30%

PI =150+00.00
EI = 13.50

(+) 0.80%

PI =150+50.00
EI = 14.30

(+) 1.40%

PI = 151+50.00
EL = 18.65'
VC = 1,500'
K = 375.0

END DITCH GRADE RT.
STA.151+00 E.L.= 15.00

(+) 0.30%

END DITCH GRADE LT.
STA.152+50 E.L.= 14.95

(–) 0.1000%

18.08

BEGIN DITCH GRADE LT.
STA.155+70 E.L.= 6.10

(–) 1.20%

SITE 7

BM NO.9 RR SPIKE SET IN BASE OF CP&L POWER POLE No. NEM31
–BL– STA. 158+12.20 176.2' RIGHT ELEV. 19.77'

SITE 8

18.08

(–) 0.1000%

Elev. 17.80 –L– 160+00 BK =
–L LT– 160+00 (27' LT) AH
SEE TYPICAL SECTION NO.6
(SHEET 2-C)

(–) 1.20%

(+) 2.54%

(+) 1.78%

PI =157+85.00
EI = 9.50

PI =159+00.00
EI = 11.55

(+) 0.30%

BEGIN DITCH GRADE LT.
STA.156+47 E.L.= 6.00

END DITCH GRADE LT.
STA.156+41 E.L.= 5.25

END DITCH GRADE LT.
STA.161+50 E.L.= 12+30

20 10 0 –10 –20 –30

156+00 157 158 159 160+00

21-April-08

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-3403A	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 31 of 32

-Y10-

BEGIN GRADE
-Y10- 11+60.00
Elev. 10.59'

PI = 12+03.00
EL = 10.50'
VC = 24'
K = 10

END GRADE
-Y10- 12+15.11 =
-L- 114+37 (39' LT)
Elev. 10.74'

(-) 0.4479%

(+) 2.0000%

FOR PLAN VIEW SEE SHEET 12

-Y11-

PI = 11+00.00
EL = 11.45'
VC = 100'
K = 96

BEGIN GRADE
-Y11- 10+00.00
Elev. 10.53'

END GRADE
-Y11- 12+82.28 =
-L- 140+65.00 (45' LT)
Elev. 15.04'

(+) 0.9250%

(+) 1.9705%

(+) 0.32%

BEGIN DITCH GRADE LT.
STA.10+00 E.L.= 7.18

END DITCH GRADE LT.
STA.11+95 E.L.= 7.80

-Y12-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.-

DRAINAGE AREA	= 2.5	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 10.2	CFS
DESIGN HW ELEVATION	= 11.45	FT
100 YEAR DISCHARGE	= 11.5	CFS
100 YEAR HW ELEVATION	= 11.8	FT
OVERTOPPING FREQUENCY	= +100	YRS
OVERTOPPING DISCHARGE	= +11.5	CFS
OVERTOPPING ELEVATION	= 21.22	FT

PI = 15+00.00
EL = 14.27'
VC = 120'
K = 111

BEGIN GRADE
-Y12- 13+50.00
Elev. 14.11'

END GRADE
-Y12- 15+76.12 =
-L- 140+65.00 (59' RT)
Elev. 15.16'

(+) 0.0064%

(+) 1.1861%

(-) 2.48%

BEGIN DITCH GRADE LT.
STA.14+00 E.L.= 11.16

END DITCH GRADE LT.
STA.14+95 E.L.= 8.80

FOR PLAN VIEW SEE SHEET 13

-Y13-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.-

DRAINAGE AREA	= 8.6	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 17.0.0	CFS
DESIGN HW ELEVATION	= 10.3	FT
100 YEAR DISCHARGE	= 23.6	CFS
100 YEAR HW ELEVATION	= 11.6	FT
OVERTOPPING FREQUENCY	= +100	YRS
OVERTOPPING DISCHARGE	= +28.0	CFS
OVERTOPPING ELEVATION	= 11.3	FT

SITE 8

PI = 14+50.00
EL = 11.15'
VC = 200'
K = 61

PI = 16+50.00
EL = 17.36'
VC = 200'
K = 71

BEGIN GRADE
-Y13- 12+00.00
Elev. 11.65'

END GRADE
-Y13- 17+92.52 =
-L- 153+16.00 (39' LT)
Elev. 17.79'

(-) 0.2000%

(+) 3.1037%

(+) 0.3000%

(+) 2.50%

(+) 6.74%

(+) 1.67%

(+) 2.50%

(+) 4.78%

(+) 1.52%

BEGIN DITCH GRADE RT.
STA.13+20 E.L.= 5.50

END DITCH GRADE RT.
STA.16+00 E.L.= 14.31

BEGIN DITCH GRADE LT.
STA.13+75 E.L.= 6.80

END DITCH GRADE LT.
STA.15+50 E.L.= 10.89

PI = 13+50.000
El = 6.00

PI = 16+00.000
El = 8.50

PI = 15+50.000
El = 11.00

FOR PLAN VIEW SEE SHEET 14

21-April-08

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	66+11 -L- LT	Extend 6'x6' RCBC	0.05				0.07	0.02	0.02	72	80	
2	77+55 - 80+30 -L- RT	Roadway	0.02				0.06					
3	109+35 -L-	Extend 2@6'x5' RCBC	0.09		<0.01		0.07	0.02	0.01	105	61	
4 *	~~121+40 - 125+40 -L- LT~~	SITE ELIMINATED										
5	123+50 - 127+00 -L- RT	Roadway	0.04				0.09					
6 *	~~128+00 -L- LT -~~	SITE ELIMINATED										
7	140+40 - 143+75 -L- LT	Roadway	0.48				0.05					
8	155+48 -L-	Extend w/ 72" RCP						0.02	0.01	155	77	
8	13+48 -Y13-	72" RCP						0.01	<0.01	111	18	
9	161+30 - 163+70 -L- LT	Roadway	0.11				0.02					
TOTALS:			0.79		0.00	0.00	0.36	0.07	0.04	443	236	

SITES 4 and 6 eliminated 7/08.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
WIDENING OF US 17
CRAVEN COUNTY
PROJECT: 34538.1.1 (R-3403A)

SHEET Aug-08

ATN Revised 3/31/05

Permit Drawing
Sheet 32 of 32

PROPERTY OWNERS

NAMES AND ADDRESSES

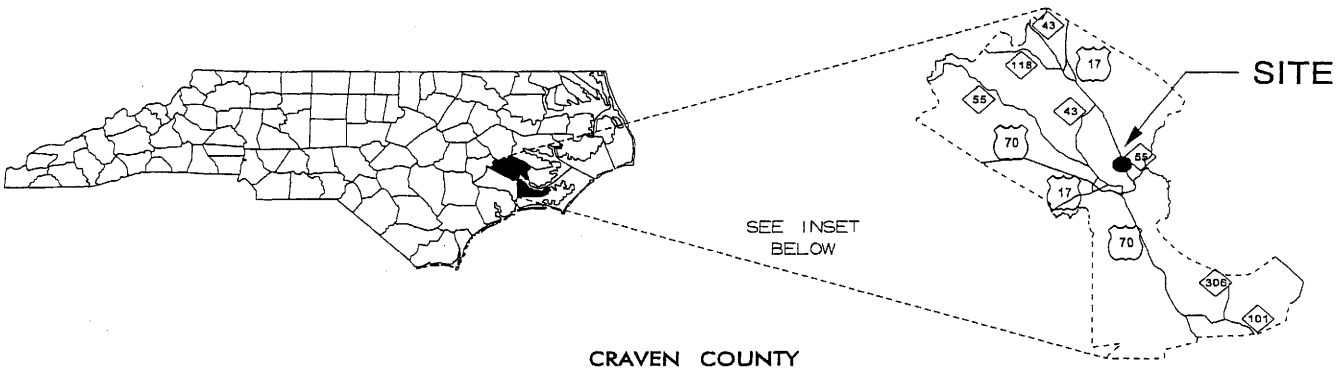
PARCEL NO.	SITE NO.	NAMES	ADDRESSES
1, 2, 3, 4, 5, 6, 7, 8, 9		NCDOT	
	3	Leon G. Millette	1703 US Hwy 17 N New Bern, NC 28560
	3	Juanita T. Register	1707 US Hwy 17 N New Bern, NC 28560
	8	Daniel Earl & Mitzie Gaskins	175 Antioch Road New Bern, NC 28560
	8	Katie Price Caton	2145 US Hwy 17 N New Bern, NC 28560

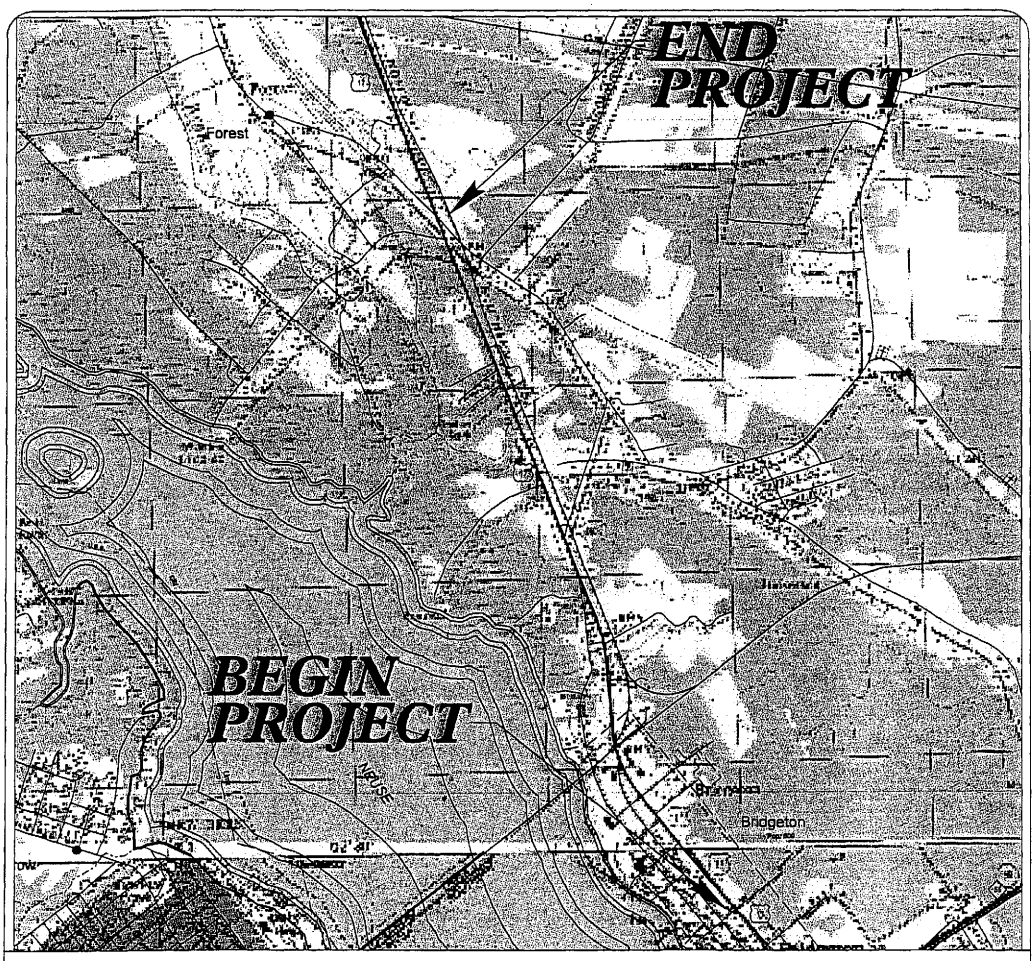
WETLAND / STREAM

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

CRAVEN COUNTY
PROJECT: R-3403AB

SHEET OF Permit Drawing Sheet 32A of 32





VICINITY MAP

BUFFER IMPACTS

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

CRAVEN COUNTY
PROJECT: 34538.1.1 (R-3403A)
US 17 FROM MILLS ST TO
NORTH OF SR 1433 (ANTIOCH RD)

SHEET ____ OF ____

Buffer Drawing
Sheet 1 of 8

BUFFER IMPACTS SUMMARY

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	Extend 6'x6' RCBC	66+11 -L-	X			7913	4846	12759					
2	Extend 2@6'x5' RCBC	109+35 -L-	X						8264	5126	13390		
TOTAL:						7913	4846	12759	8264	5126	13390		

Site 1 Up and Downstream Length of Impacts in Buffer = 137'

Site 2 Up and Downstream Length of Impacts in Buffer = 154'

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

CRAVEN COUNTY
PROJECT: 34538.1.1 (R-3403A)

September-07
SHEET OF

Rev. May 2006

Buffer Drawing
Sheet 2 of 8

Wetlands in Buffer SUMMARY

		WETLANDS IN BUFFER	
Site	Station	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	-L- 66+20 LT	2747	1145
3	-L- 109+35	4602	681
		7349	1826

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

CRAVEN COUNTY
PROJECT: 34538.1.1 (R-3403A)

April-08
SHEET OF

Buffer Drawing
Sheet 3 of 8

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	SITE NO.	NAMES	ADDRESSES
	1, 2	NCDOT	
	2	Leon G. Millette	1703 US Hwy 17 N New Bern, NC 28560
	2	Juanita T. Register	1707 US Hwy 17 N New Bern, NC 28560

BUFFER

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

CRAVEN COUNTY
PROJECT: R-3403AB

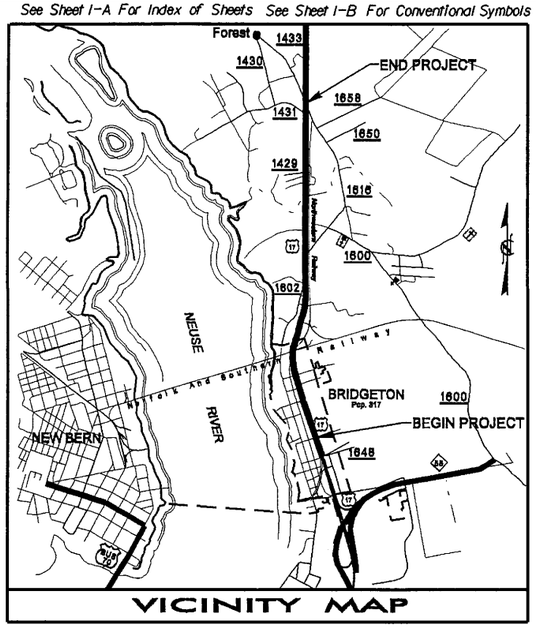
SHEET OF

09/08/99

R-3403AB

CONTRACT:

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



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CRAVEN COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3403AB	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34538.1.1	STPNHF-17(24)	PE
34538.2.2	STPNHF-17(47)	R/W, UTIL
34538.3.3	STPNHF-17(47)	CONST.

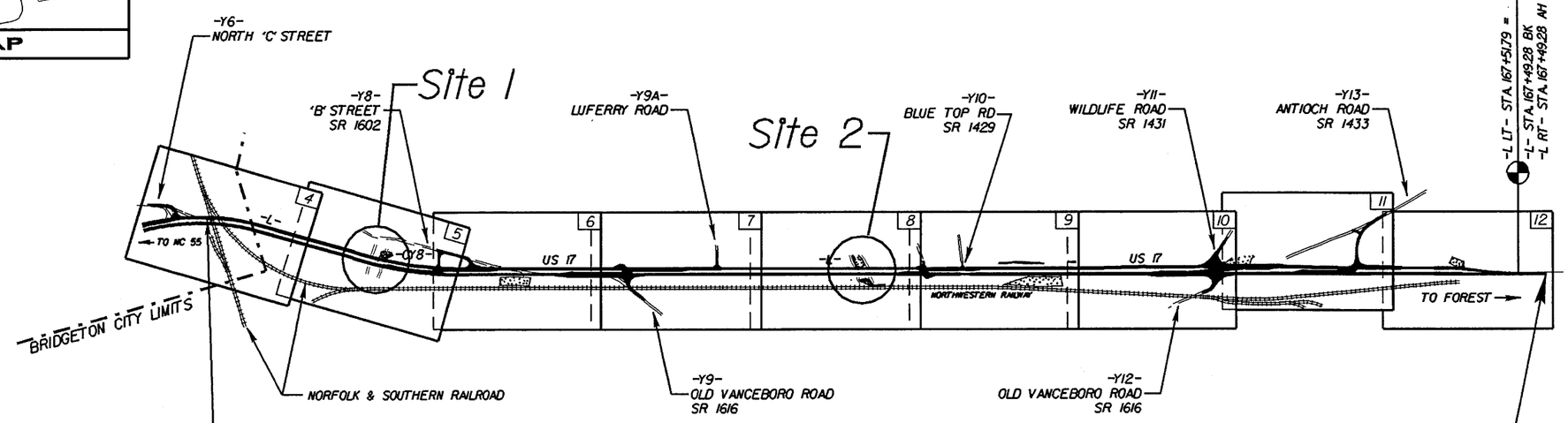
Buffer Drawing
Sheet 4 of 8

LOCATION: US 17 FROM NORFOLK & SOUTHERN R/R TO NORTH OF SR 1433 (ANTIOCH ROAD)

TYPE OF WORK: GRADING, PAVING, CULVERT EXTENSION, SIGNALS AND DRAINAGE

NAD 83

Buffer Permit



-L- STA. 50+90.00 BEGIN TIP PROJECT R-3403AB

-L RT- STA. 170+00.00 END TIP PROJECT R-3403AB
-L RT- STA. 170+50.00 END CONSTRUCTION R-3403AB

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 2007 = 15,755
ADT 2027 = 25,055
DHV = 10 %
D = 60 %
T = 10 % *
V = 60 MPH
* TTST 5% DUAL 5%
FUNC. CLASS = ARTERIAL

PROJECT LENGTH

TOTAL LENGTH OF TIP PROJECT R-3403A = 2.884 MILES

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: March 22, 2005

LETTING DATE: July 15, 2008

G. E. BREW, PE
PROJECT ENGINEER

D. WILLIAMS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER
P.E.
SIGNATURE:

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR DATE

14-MAY-2008 08:59
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gcail AT HY221524

FOR -L- PROFILE SEE SHEET 18

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Buffer Drawing
Sheet 5 of 8

8/17/99

REVISIONS

SEE SHEET NO.4

MATCHLINE STA. 59+00.00

SEE SHEET NO.6

MATCHLINE STA. 72+00.00

NAD 83

SITE 1

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

DETAIL 1
SPECIAL DITCH
(Not to Scale)

Min. d = 1.5 Ft.

-L- (LT) 57+00 TO 59+65

DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Min. D = 1.0 Ft.

-L- (RT) 64+00 TO 66+01

SCF = SPECIAL CONCRETE FLUME

NOTE: DRIVE PIPES TO BE RAISEND 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (LT) 59+65 TO 66+18
-L- (LT) 67+60 TO 74+43

SANDRA KAY SMITH

KATHERINE ANDREWS

DAVID EARL O'GEARY
DB 1348 - PG 657

SPECIAL DITCH
SEE DETAIL #1

-L- 59+68.00
85.00' (LT)

-L- 61+09.29
98.28' (LT)

-L- 60+00.00
93.00' (LT)

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE

ESTELLE OAKLEY HOLTON, et vir
DB 1195 - PG 579
DB 1765 - PG 347

-L- TS Sta. 64+12.19

JIMMIE R. SAWYER, et ux
DB 1130 - PG 88
DB 1277 - PG 970

DA = 0.1 ac
Q10 = 7.5 cfs
VEL10 = 1.7 ft/s

N 5° 22' 29" W -L-

WILLIAM E. STILLEY, et ux
DB 339 - PG 192

JOHN C. WETHERINGTON, et ux
DB 1291 - PG 510

-Y8- POT Sta. 10+00.00

CANDICE BREEZE
DB 1501 - PG 642

-Y8- 13+07
30.00' (LT)
& 46.00' (LT)

N 5° 59' 41.1" W

-CY8- POT Sta. 10+00.00

WILLIE E. STILLEY, et ux
DB 441 - PG 527

-L- SC Sta. 66+12.19

WEDDELL MIDYETTE, et ux
DB 426 - PG 545

PSH
EST 9 TONS
EST 15 CU.YD. EXCAV
EST 13 SQ. YD. FF

LENWOOD EARL DANIELS, III, et ux
DB 1509 - PG 61

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE

KENNETH GENE HARRIS
DB 492 - PG 165
REMOVE

DB 481 - PG 217

REMOVE

PROVIDE CURB CUT FOR DRAINAGE

RETAIN & EXTEND 6' X 6' RCBC FOR SPECIAL DETAIL SEE SHEETS C-1 THRU C-14

SPECIAL DITCH
SEE DETAIL #12

SPECIAL DITCH
SEE DETAIL #12

SPECIAL LATERAL V DITCH
SEE DETAIL #3

DA = 1.3 ac
Q10 = 6.5 cfs
VEL10 = 1.4 ft/s

-L- POC Sta. 71+83.00
-CY8- POT Sta. 11+85.07

JOHN L. PURYEAR TRUCKING, INC.
DB 1355 - PG 564

JO M. LEWIS
DB 400 - PG 53

GERALD ANDERSON LOGGING CO., INC.
DB 956 - PG 604

BOBBY L. DRAKE, et ux
DB 896 - PG 795

TWO-TEN INVESTORS, INC.
DB 1378 - PG 514
DB 1550 - PG 748
PC "C" - SLIDE 203

24" BLK WALL

GERALD L. ANDERSON
DB 1538 - PG 634
MB II - PG 51
PC "C" - SLIDE 203

GERALD L. ANDERSON
DB 1538 - PG 634
PC "C" - SLIDE 203

NORFOLK & SOUTHERN RR

CONC HW UNDER RR BRIDGE

FENNER E. MORRIS
DB 798 - PG 564

-L-

PIs Sta 65+45.54	PI Sta 69+41.41
θs = 1° 54' 35.5"	Δ = 12° 31' 29.8" (LT)
Ls = 200.00'	D = 1° 54' 35.5"
LT = 133.34'	L = 655.80
ST = 66.67'	T = 329.21'
SE = SEE PLANS	R = 3,000.00'

DETAIL 12
CUT DITCH
(Not to Scale)

Min. D=1.5 Ft.

-L- RT FROM STA. 52+90 TO STA. 60+10
-L- RT FROM STA. 60+50 TO STA. 64+00

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gpaul AT 12/21/24

8/17/99

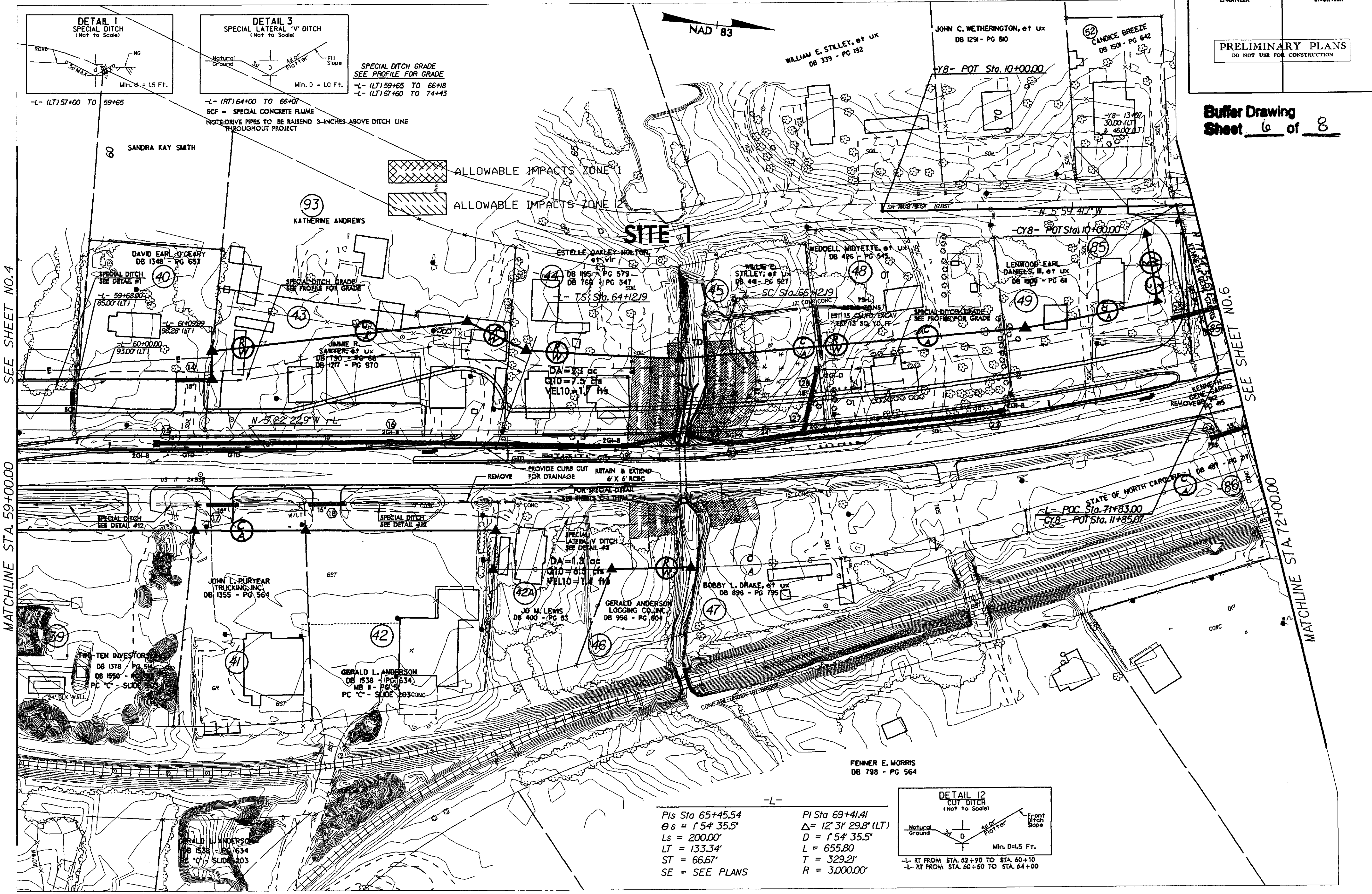
FOR -L- PROFILE SEE SHEET 18

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Buffer Drawing Sheet 6 of 8

REVISIONS



DETAIL 1
SPECIAL DITCH
(Not to Scale)
Min. d = 1.5 Ft.
-L- (LT) 57+00 TO 59+65
DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Min. D = 1.0 Ft.
-L- (RT) 64+00 TO 66+07
SCF = SPECIAL CONCRETE FLUME
NOTE: DRIVE PIPES TO BE RAISEND 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (LT) 59+65 TO 66+18
-L- (LT) 67+60 TO 74+43
NAD 83
ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2
SITE 1
SANDRA KAY SMITH
KATHERINE ANDREWS
WILLIAM E. STILLEY, et ux
DB 339 - PG 192
JOHN C. WETHERINGTON, et ux
DB 1291 - PG 510
CANDICE BREEZE
DB 1501 - PG 642
-Y8- POT Sta. 10+00.00
-CY8- POT Sta. 10+00.00
DAVID EARL O'GEARY
DB 1348 - PG 657
ESTELLE OAKLEY HOLTON, et vir
DB 1195 - PG 579
DB 766 - PG 347
WEDDELL MIDYETTE, et ux
DB 426 - PG 545
LENWOOD EARL DANIELS, III, et ux
DB 1509 - PG 61
JIMMIE R. SAWYER, et ux
DB 1277 - PG 970
-L- TS Sta. 64+12.19
-L- SC Sta. 66+12.19
DA = 2.1 ac
Q10 = 7.5 cfs
VEL10 = 1.7 ft/s
N 5°22'22.9" W -L-
SEE SHEET NO. 4
SEE SHEET NO. 6
MATCHLINE STA. 59+00.00
MATCHLINE STA. 72+00.00
REMOVE
PROVIDE CURB CUT FOR DRAINAGE
RETAIN & EXTEND 6' X 6' RCBC
FOR SPECIAL DETAIL SEE SHEETS C-1 THRU C-14
SPECIAL DITCH SEE DETAIL #12
SPECIAL LATERAL V DITCH SEE DETAIL #3
DA = 1.3 ac
Q10 = 6.5 cfs
VEL10 = 1.4 ft/s
STATE OF NORTH CAROLINA
-L- POC Sta. 71+83.00
-CY8- POT Sta. 11+85.07
JOHN L. PURYEAR TRUCKING, INC.
DB 1355 - PG 564
JO M. LEWIS
DB 400 - PG 53
GERALD ANDERSON LOGGING CO., INC.
DB 956 - PG 604
BOBBY L. DRAKE, et ux
DB 896 - PG 795
TWO-TEN INVESTORS, INC.
DB 1378 - PG 511
DB 1550
PC "C" - SLIDE
GERALD L. ANDERSON
DB 1538 - PG 634
MB 11 - PG 51
PC "C" - SLIDE 203
FENNER E. MORRIS
DB 798 - PG 564
-L-
PIs Sta 65+45.54
θs = 1°54' 35.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'
SE = SEE PLANS
PI Sta 69+41.41
Δ = 12° 31' 29.8" (LT)
D = 1°54' 35.5"
L = 655.80
T = 329.21'
R = 3,000.00'
DETAIL 12
CUT DITCH
(Not to Scale)
Natural Ground
Front Ditch Slope
Min. D=1.5 Ft.
-L- RT FROM STA. 52+90 TO STA. 60+10
-L- RT FROM STA. 60+50 TO STA. 64+00

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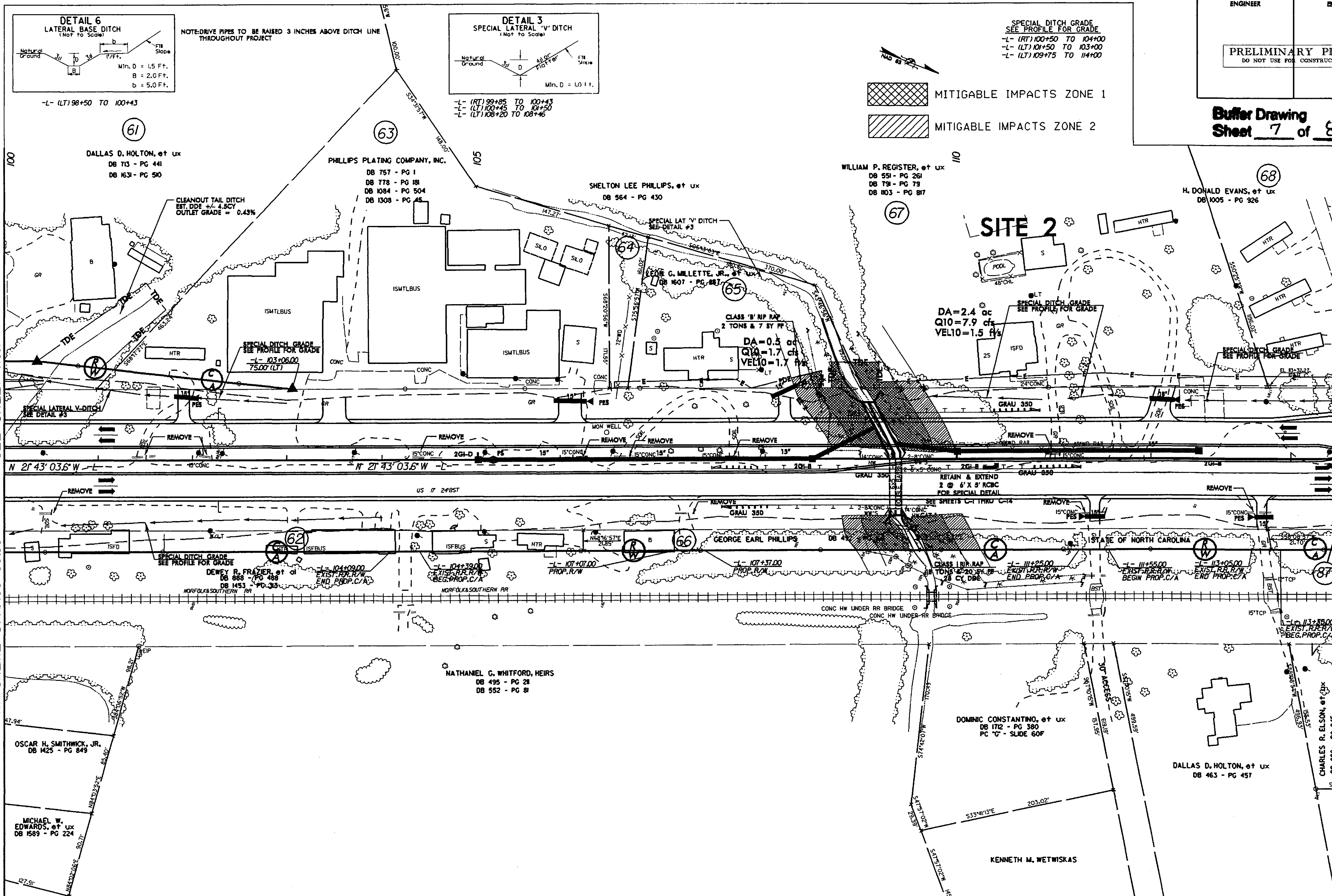
FOR -L- PROFILE SEE SHEET 19

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Buffer Drawing Sheet 7 of 8



DETAIL 6
LATERAL BASE DITCH
(Not to Scale)
Min. D = 1.5 Ft.
B = 2.0 Ft.
b = 5.0 Ft.
-L- (LT) 98+50 TO 100+43
NOTE: DRIVE PIPES TO BE RAISED 3 INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Min. D = 1.0 Ft.
-L- (RT) 99+85 TO 100+43
-L- (LT) 100+45 TO 101+50
-L- (LT) 108+20 TO 108+46
SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (RT) 100+50 TO 104+00
-L- (LT) 101+50 TO 103+00
-L- (LT) 109+75 TO 114+00
MITIGABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2
DALLAS D. HOLTON, et ux
DB 713 - PG 441
DB 1631 - PG 510
PHILLIPS PLATING COMPANY, INC.
DB 757 - PG 1
DB 778 - PG 181
DB 1084 - PG 504
DB 1308 - PG 45
SHELTON LEE PHILLIPS, et ux
DB 564 - PG 430
WILLIAM P. REGISTER, et ux
DB 551 - PG 261
DB 791 - PG 79
DB 1103 - PG 817
H. DONALD EVANS, et ux
DB 1005 - PG 926
SITE 2
CLEANOUT TAIL DITCH
EST. DDE +/- 4.5CY
OUTLET GRADE = 0.43%
SPECIAL LAT 'V' DITCH
SEE DETAIL #3
LEON C. MILLETTE, JR., et ux
DB 1607 - PG 887
CLASS 'B' RIP RAP
2 TONS & 7 SY FF
DA=0.5 ac
Q10=1.7 cfs
VEL10=1.7 f/s
DA=2.4 ac
Q10=7.9 cfs
VEL10=1.5 f/s
SEE SHEET NO.7
SEE SHEET NO.9
N 21° 43' 03.6" W -L-
US 17 24'BST
RETAIN & EXTEND
2 @ 6' X 5' RCBC
FOR SPECIAL DETAIL
SEE SHEETS C-1 THRU C-14
GEORGE EARL PHILLIPS
STATE OF NORTH CAROLINA
DEWEY R. FRAZIER, et al
DB 888 - PG 488
DB 1453 - PG 313
NORFOLK & SOUTHERN RR
CONC HW UNDER RR BRIDGE
NATHANIEL G. WHITFORD, HEIRS
DB 495 - PG 211
DB 552 - PG 81
OSCAR H. SMITHWICK, JR.
DB 1425 - PG 849
MICHAEL W. EDWARDS, et ux
DB 1589 - PG 224
DOMINIC CONSTANTINO, et ux
DB 1712 - PG 380
PC "C" - SLIDE 60F
DALLAS D. HOLTON, et ux
DB 463 - PG 457
CHARLES R. ELSON, et ux
DB 989 - PG 245
KENNETH M. WETWISKAS
30' ACCESS
MATCHLINE STA. 100+00.00
MATCHLINE STA. 114+00.00

REVISIONS

8/17/99

14-MAY-2008 12:40
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8/17/99

REVISIONS

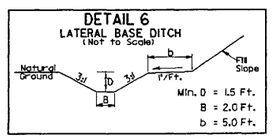
FOR -L- PROFILE SEE SHEET 19

PROJECT REFERENCE NO.	SHEET NO.
R-3403A B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Buffer Drawing Sheet 8 of 8

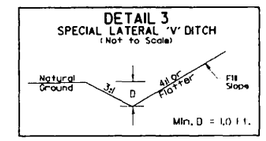
DETAIL 6
LATERAL BASE DITCH
(Not to Scale)



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

-L- (LT) 98+50 TO 100+43

DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D = 1.0 Ft.

-L- (RT) 99+85 TO 100+43
-L- (LT) 100+45 TO 101+50
-L- (LT) 108+20 TO 108+46

NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (RT) 100+50 TO 104+00
-L- (LT) 101+50 TO 103+00
-L- (LT) 109+75 TO 114+00

NAD 83 (NSRS 2007)

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

SEE SHEET NO.7

SEE SHEET NO.9

MATCHLINE STA. 100+00.00

MATCHLINE STA. 114+00.00

(61) DALLAS D. HOLTON, et ux
DB 713 - PG 441
DB 1631 - PG 510

(63) PHILLIPS PLATING COMPANY, INC.
DB 757 - PG 1
DB 778 - PG 181
DB 1084 - PG 504
DB 1308 - PG 48

SHELTON LEE PHILLIPS, et ux
DB 564 - PG 430

WILLIAM P. REGISTER, et ux
DB 551 - PG 261
DB 791 - PG 79
DB 1103 - PG 817

(68) H. DONALD EVANS, et ux
DB 1005 - PG 326

(67)

(65) LEON C. MALLETTE, JR., et ux
DB 1607 - PG 827

SITE 2

CLEANOUT TAIL DITCH
EST. DOE +/- 4.5CY
OUTLET GRADE = 0.43%

SPECIAL LAT 'V' DITCH
SEE DETAIL #3

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- 103+06.00
75.00' (LT)

SPECIAL LATERAL V-DITCH
SEE DETAIL #3

CLASS 'B' RIP RAP
2 TONS @ 7 SY. FT.

DA = 0.5 sq mi
Q10 = 1.7 cfs
VEL10 = 1.7 ft/s

DA = 2.4 sq mi
Q10 = 7.9 cfs
VEL10 = 1.5 ft/s

SPECIAL DITCH GRADE
SEE PROFILES FOR GRADE

RETAIN & EXTEND
2 @ 6'X 5' RCBC
FOR SPECIAL DETAIL
SEE SHEETS C-1 THRU C-14

(62) DEWEY R. FRAZIER, et al
DB 886 - PG 488
DB 7453 - PG 335

(66) GEORGE EARL PHILLIPS
DB 492

STATE OF NORTH CAROLINA

NATHANIEL C. WHITFORD, HEIRS
DB 495 - PG 28
DB 552 - PG 81

OSCAR H. SMITHWICK, JR.
DB 1425 - PG 849

MICHAEL W. EDWARDS, et ux
DB 1589 - PG 224

DOMINIC CONSTANTINO, et ux
DB 1712 - PG 380
PC "G" - SLIDE 60F

KENNETH M. WETWISKAS

DALLAS D. HOLTON, et ux
DB 463 - PG 457

CHARLES R. ELSON, et ux
DB 389 - PG 245

"30' ACCESS"

CLASS I RIP RAP
170 TONS @ 200 SY. FT.
FOR DETAIL

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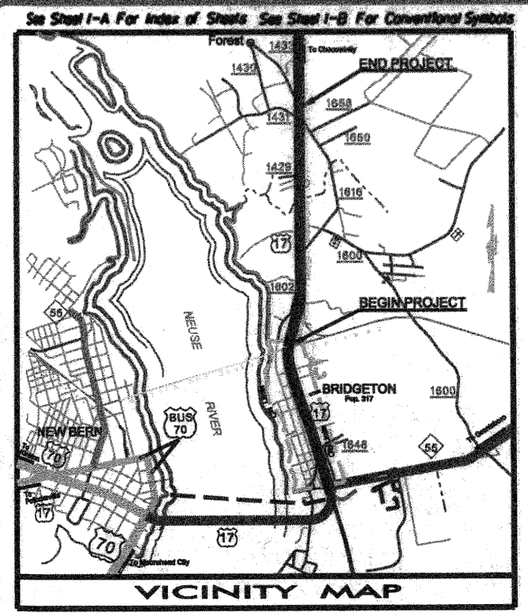
dgn Lib: NCDOT.dgnlib

05/28/08

TIP PROJECT: R-3403AB

CONTRACT: C202017

$$$$USERNAME$$$$



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CRAVEN COUNTY

LOCATION: US 17 FROM NORFOLK & SOUTHERN RR TO NORTH OF SR 1433 (ANTIOCH ROAD)

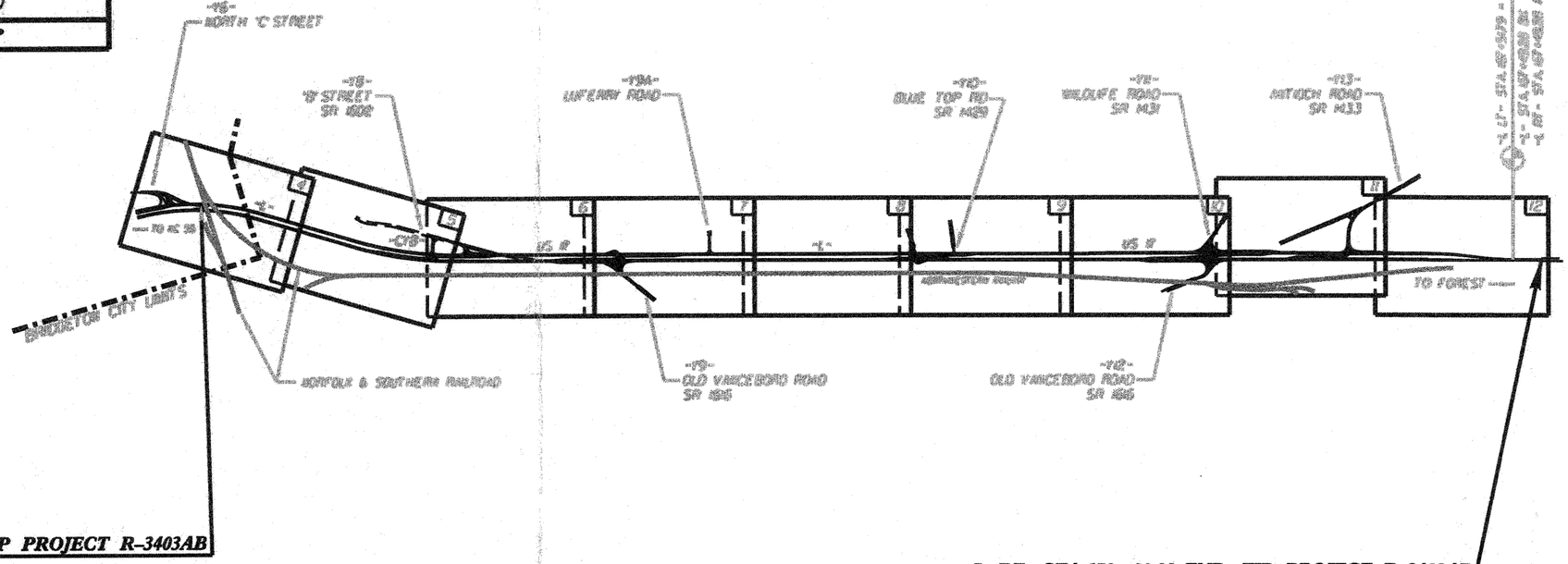
TYPE OF WORK: GRADING, PAVING, CULVERT EXTENSIONS AND DRAINAGE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3403AB	1	

WBS ELEMENT	F.A. PROJ. NO.	DESCRIPTION
34538.1.1	STPNHF-17(24)	PE
34538.2.2	STPNHF-17(47)	R /W, UTIL
34538.3.3	STPNHF-17(47)	CONST.

Utility
Permit Drawing
Sheet 1 of 10

NAD 83



–L– STA. 50+90.00 BEGIN TIP PROJECT R-3403AB

–L RT– STA. 170+00.00 END TIP PROJECT R-3403AB
–L RT– STA. 170+50.00 END CONSTRUCTION R-3403AB

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

GRAPHIC SCALES

PLANS 25 0 50 100
PROFILE (HORIZONTAL) 25 0 50 100
PROFILE (VERTICAL) 10 5 0 10 20

DESIGN DATA

ADT 2007 = 14,100
ADT 2035 = 30,400
DHV = 10 %
D = 60 %
T = 10 % *
V = 60 MPH
* TTST 5% DUAL 5%
FUNC. CLASS = ARTERIAL

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT R-3403AB = 2.256 MILES
TOTAL LENGTH OF TIP PROJECT R-3403AB = 2.256 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: March 22, 2005

LETTING DATE: July 15, 2008

G. E. BREW, PE
PROJECT ENGINEER

D. WILLIAMS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SIGNATURE P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
STATE HIGHWAY DESIGN ENGINEER P.E.

r3403ab_rdy_tsh.dgn 5/14/2008 8:35:35 AM

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	UO-2

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

Utility
Permit Drawing
Sheet 2 of 10

FOR -L- PROFILE SEE SHEET U1

NAD 83

SEE SHEET NO.UO-2

MATCHLINE STA. 59+00.00

r3403ab_rdy_psh04_uo2.dgn 5/12/2008 1:08:48 PM

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	UO-3

FOR -L- PROFILE SEE SHEET M
FOR -CY8- PROFILE SEE SHEET P

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

Utility
Permit Drawing
Sheet 3 of 10

NAD 83

DETAIL 1
SPECIAL DITCH
(NOT to Scale)

DETAIL 3
SPECIAL LATERAL "V" DITCH
(NOT to Scale)

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE

-L- RT 57+00 TO 59+65
-L- RT 57+00 TO M+43

-L- RT 64+00 TO 65+67

SCF = SPECIAL CONCRETE FLUME

NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

BY-8
PINC 5+00.00

DENOTES HAND CLEARING

ZONE 1 AND ZONE 2 IMPCAT AREAS
ZONE 1=800 SQ FT
ZONE 1=.018 ACRE
ZONE 2=1800 SQ FT
ZONE 2=.041 ACRE

SEE SHEET NO.UO-2

MATCHLINE STA. 59+00.00

SEE SHEET NO.UO-4

MATCHLINE STA. 72+00.00

SPECIAL DITCH SEE DETAIL #1

SPECIAL DITCH GRADE SEE PROFILE FOR GRADE

PROPOSED R/W

PROVIDE CURB CUT FOR DRAINAGE

RETAIN & EXTEND 6' X 6' RCBC

SPECIAL LATERAL V DITCH SEE DETAIL #3

PROPOSED R/W

BL-10

BL-11

EST 15 CUBIC YDS EXCAV
TO SQ. YD. FF

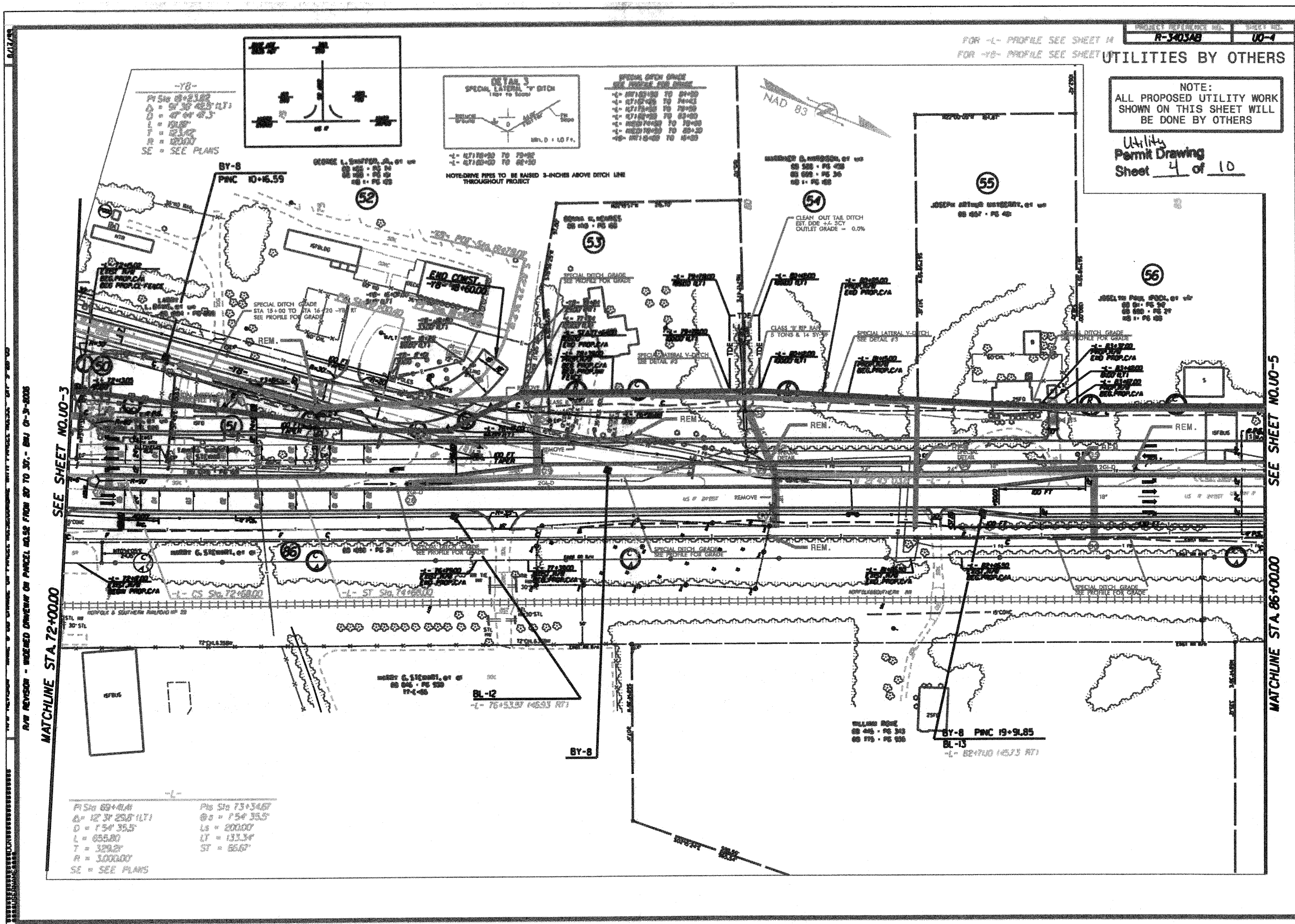
SPECIAL DITCH GRADE SEE PROFILE FOR GRADE

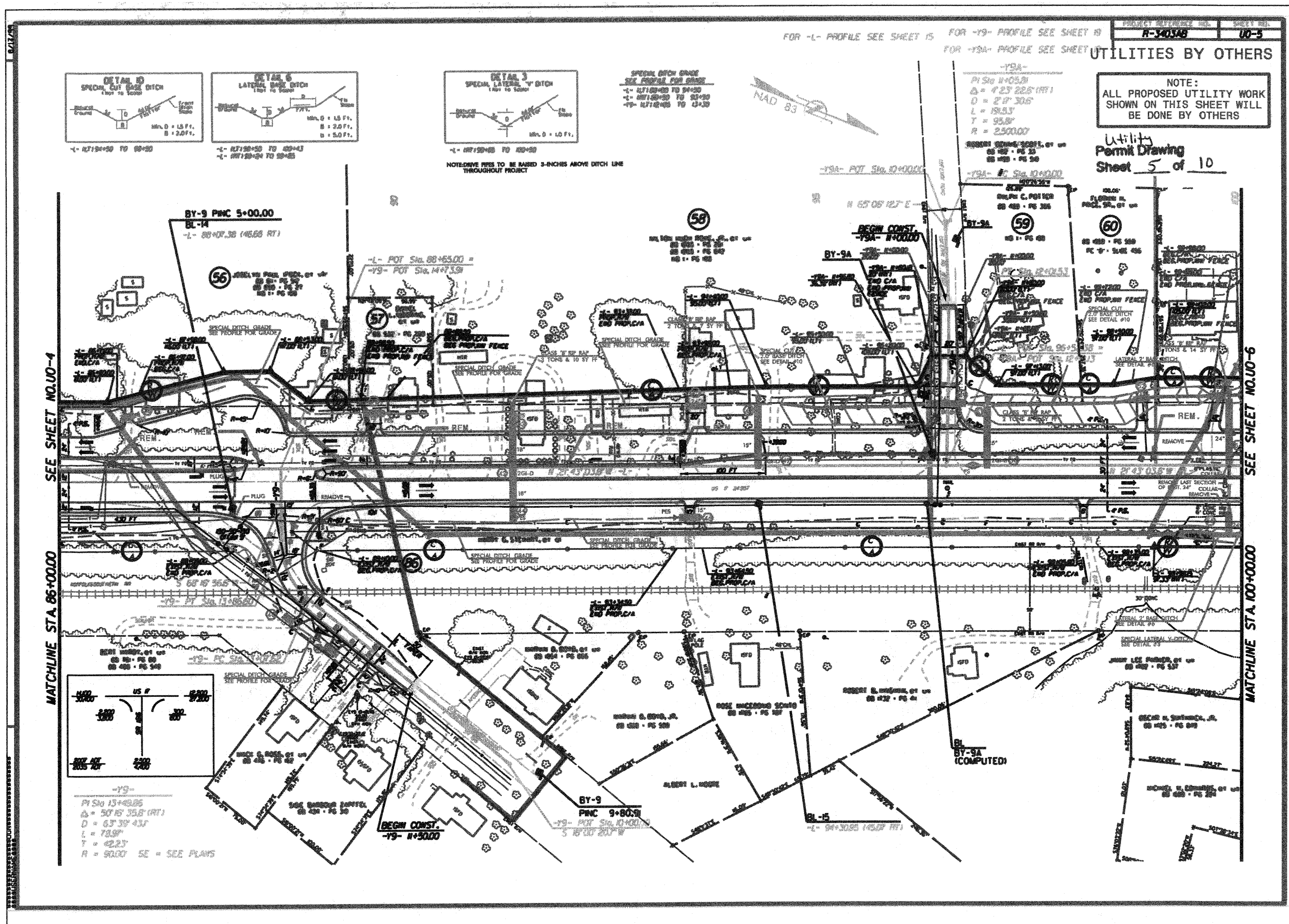
Pc Sta 65+45.54
Ds = 154° 35.8"
Ls = 200.00'
LT = 113.34'
ST = 65.57'
SE = SEE PLANS

Pt Sta 69+46.6
Δ = 12° 37' 29.8" (LT)
D = 154° 35.8"
L = 659.80'
T = 330.82'
R = 37.00'

DETAIL 12
CUT DITCH
(NOT to Scale)

-L- RT FROM STA. 52+90 TO STA. 60+10
-L- RT FROM STA. 60+50 TO STA. 64+00


R-3403AB
UO-4
FOR -L- PROFILE SEE SHEET 14
UTILITIES BY OTHERS
NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS
Utility
Permit Drawing
Sheet 4 of 10
NAD 83
DETAIL 3
SPECIAL LATERAL "V" DITCH
NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
BY-8
PINC 10+16.59
END CONST.
REM.
REMOVE
CLEAN OUT TAIL DITCH
SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
SPECIAL LATERAL V-DITCH
SEE DETAIL #3
CLASS 'B' RIP RAP
SEE SHEET NO.UO-3
MATCHLINE STA 72+00.00
SEE SHEET NO.UO-5
MATCHLINE STA 86+00.00
-L- CS Sta. 72+68.00
-L- ST Sta. 74+68.00
BL-12
-L- 76+53.37 (45.93 RT)
BY-8
BY-8 PINC 19+91.85
BL-13
-L- 82+17.00 (45.73 RT)
-L-
PI Sta 69+41.41
Δ = 12° 31' 25.8" (LT)
D = 1° 54' 35.5"
L = 655.80
T = 329.21
R = 3,000.00
SE = SEE PLANS
Pts Sta 73+34.67
θs = 1° 54' 35.5"
Ls = 200.00
LT = 133.34
ST = 66.67
-Y8-
SE = SEE PLANS
50
51
52
53
54
55
56
96



PROJECT REFERENCE NO.
R-3403AB
SHEET NO.
UO-5
UTILITIES BY OTHERS
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS
Utility Permit Drawing
Sheet 5 of 10
FOR -L- PROFILE SEE SHEET 15
FOR -Y9- PROFILE SEE SHEET 19
DETAIL 10
DETAIL 6
DETAIL 3
NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
BY-9 PINC 5+00.00
BL-14
BEGIN CONST. -Y9A- 11+00.00
BY-9A
SEE SHEET NO. UO-4
MATCHLINE STA. 86+00.00
SEE SHEET NO. UO-6
MATCHLINE STA. 100+00.00
BL BY-9A (COMPUTED)
BY-9 PINC 9+80.9
BEGIN CONST. -Y9- 11+50.00
BL-15

FOR -L- PROFILE SEE SHEET 15

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

Utility
Permit Drawing
Sheet 6 of 10

DETAIL 6
LATERAL BASE DITCH
NOT TO SCALE

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

-L- RT 1+50 TO 4+43

NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

DETAIL 3
SPECIAL LATERAL "V" DITCH
NOT TO SCALE

Min. D = 1.0 Ft.

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- RT 1+00+50 TO 1+04+00
-L- RT 1+12+50 TO 1+15+00
-L- RT 1+23+75 TO 1+44+00

NAD 83

SEE SHEET NO.U0-5

MATCHLINE STA. 100+00.00

SEE SHEET NO.7

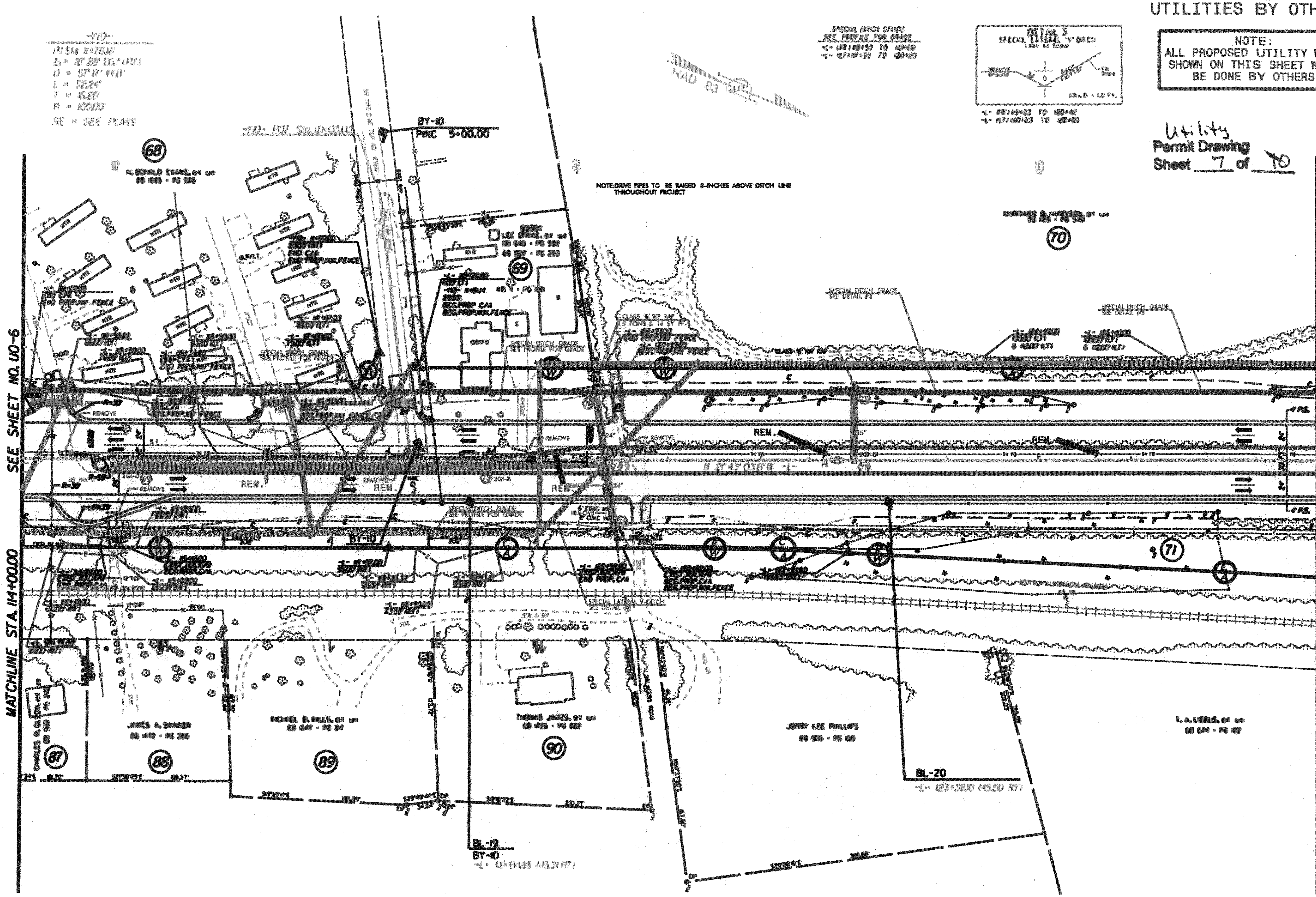
MATCHLINE STA. 114+00.00

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	UO-7

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

Utility Permit Drawing Sheet 7 of 10



PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	UO-8

UTILITIES BY OTHERS

Utility Permit Drawing Sheet 8 of 10

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

FOR -L- PROFILE SEE SHEET 16
FOR -Y1- PROFILE SEE SHEET 20
FOR -Y12- PROFILE SEE SHEET 20

DETAIL 3
SPECIAL LATERAL V-DITCH
(NOT TO SCALE)

DETAIL 4
SPECIAL LATERAL BASE DITCH
(NOT TO SCALE)

-L- STA 128+00.00 TO 135+30

-Y1- STA 10+00.00 TO 12+55.30

NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

NAD 83

AREA=25566 SQ FEET
AREA=.059 ACRE
PERIMETER=452

DENOTES HAND CLEARING

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- STA 128+00.00 TO 134+00
-L- RT STA 134+00 TO 140+00
-L- RT STA 140+30 TO 143+50
-Y12- STA 10+00.00 TO 14+95

-Y1-
PI Sta 11+98.24
Δ = 33° 41' 56.8" (LT)
D = 28° 38' 52.4"
L = 117.63'
T = 60.51'
R = 200.00'
SE = SEE PLANS

SPECIAL LATERAL V-DITCH SEE DETAIL #3

SPECIAL LATERAL BASE DITCH SEE DETAIL #4

CLASS 'B' RIP RAP 2 TONS & 7 SY FF

SPECIAL DITCH GRADE SEE PROFILE FOR GRADE

BEGIN CONST. -Y1- 10+00.00

-Y1- PC Sta 11+17.67

-Y1- PT Sta 12+55.30

-L- POT Sta 142+65.00 =
-Y1- POT Sta 13+27.38 =
-Y12- POT Sta 15+14.02

BY-11
BL-22
-L- 138+07.31 (57.38 RT)

BY-12
BL-21
-L- 128+15.12 (46.76 RT)

-Y12-
PI Sta 10+97.15
Δ = 7° 59' 15" (RT)
D = 5° 16' 33"
L = 152.71'
T = 76.48'
R = 1100.00'

PI Sta 14+77.19
Δ = 60° 52' 19.8" (LT)
D = 57° 17' 44.8"
L = 120.22'
T = 68.57'
R = 100.00'
SE = SEE PLANS

SEE SHEET NO.UO-7

MATCHLINE STA. 128+00.00

SEE SHEET NO.UO-9

MATCHLINE STA. 142+00.00

PROJECT REFERENCE NO. R-3403AB | SHEET NO. UO-9

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

Utility Permit Drawing Sheet 9 of 10

FOR -L- PROFILE SEE SHEET F
FOR -Y13- PROFILE SEE SHEET 20

DETAIL 1
SPECIAL DITCH
NOT TO SCALE

DETAIL 3
SPECIAL LATERAL "V" DITCH
NOT TO SCALE

NOTE:DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

DETAIL 7
STANDARD BANK DITCH
NOT TO SCALE

DETAIL 8
NOT TO SCALE

-L- STA 11+43.25 TO 14+05
-L- STA 11+49.50 TO 13.50

-L- STA 11+53.33 TO 14+20
-L- STA 11+53.50 TO 15+45
-Y13- STA 11+53.50 TO 15+50

-L- STA 11+30 TO 14+20
-L- STA 11+30 TO 15+20
-Y13- STA 11+34.75 TO 15+50

-Y13-
PI Sta 15+09.23
Δ = 60°08'56"
D = 19°05'56"
L = 314.27'
T = 173.58'
R = 300.00'
SE = SEE PLANS

-Y13- PC Sta 13+35.65
5°34'59.8"

BY-11
PINC 5+00.00

BY-13
PINC 12+82.60

SEE SHEET NO.UO-8

SEE SHEET NO.UO-10

MATCHLINE STA. 142+00.00

MATCHLINE STA. 156+00.00

NAD 83

TOTAL AREA IN THE WETLAND= 4266 SQ FT
TOTAL AREA IN THE WET LAND=.098 ACRE
PERIMETER 500

EY-13 23+84.25 30.00 RT
EY-13 24+84.53 30.00 RT
EY-13 25+84.36 30.00 RT
EY-13 27+84.22 30.00 RT
EY-13 28+83.97 30.00 RT

-Y13- PT Sta 13+40.43

-L- POT Sta 13+16.00 =
-Y13- POT Sta 13+33.2

-Y13- POT Sta 12+48.57

BL-23
-L- 144+83.97 (43.93 RT)

BL-24
-L- 150+35.08 (50.3 RT)

BY-12
BY-13

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE

SPECIAL LATERAL V-DITCH
SEE DETAIL #3

CLASS 'B' RIP RAP
5 TONS & 14 SY FF

CLEANOUT TAILDITCH
EST. DIA.=/- 100CY
SLOPE GRADE 12.20%
SEE DETAIL 7

FALSE CUT
SEE DETAIL #14

REMOVE EXIST STORM SYSTEM

RETAIN

HOMES OF BST. DOMINICAN SEE DETAIL #7

CONC HW UNDER RR BRIDGE

NORFOLK & SOUTHERN RAILROAD

PDE

72 73 73A 74 75 76 77 78 79 81 82

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	UO-10

FOR -L- PROFILE SEE SHEET C
FOR -TRANS- PROFILE SEE SHEET D
FOR -TRANS- PROFILE SEE SHEET E

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

Utility
Permit Drawing
Sheet 10 of 10

SEE SHEET NO.UO-9

MATCHLINE STA.156+00.00

DETAIL 3
SPECIAL LATERAL V-DITCH
(Not to Scale)

DETAIL 14
LATERAL BASE DITCH
(Not to Scale)

-L RT- PI1 Sta 169+00 TO 170+00
-L LT- PI1 Sta 169+00 TO 169+50

-L- PI1 Sta 166+47 TO 166+90

NOTE-DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

-L LT-
PI Sta 161+49.13
Δ = 6°49'38.3" (RT)
D = 2°0'30.6"
L = 287.90'
T = 143.13'
R = 2,500.00'
SE = SEE PLANS

PI Sta 166+03.02
Δ = 6°49'38.3" (LT)
D = 2°0'30.6"
L = 287.90'
T = 143.13'
R = 2,500.00'

TOTAL AREA= 11613 SQ FT
TOTAL AREA= 0.267 ACRE
PERIMETER 433'

DETAIL 13
DITCH CLEANOUT
(Not to Scale)

DETAIL 5
STANDARD V-DITCH
(Not to Scale)

-L LT 167+00 TO 167+50
-L LT 170+00 TO 170+50

DETAIL 12
SPECIAL CUT DITCH
(Not to Scale)

-L LT 164+00 TO 167+00
-L LT 167+50 TO 170+00

END STATE PROJECT R-3403AB
-L RT- POT Sta. 170+00.00

END CONSTRUCTION STATE PROJECT R-3403AB
-L RT- POT Sta. 170+50.00

BL-25
-L- 156+26.62 (43.22 RT)

BL-26
-L RT- 162+12.59 (16.75 RT)

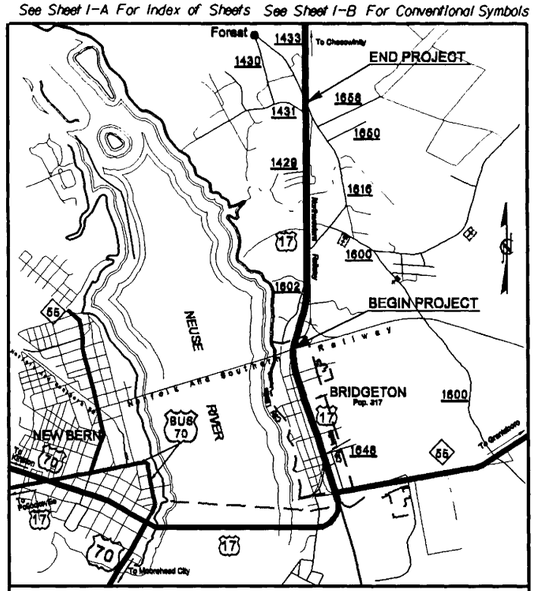
BL-27
-L RT- 168+13.27 (16.84 RT)

09/08/99

TIP PROJECT: R-3403AB

CONTRACT: C202017

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



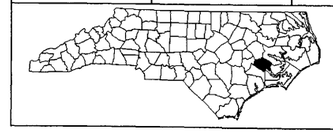
VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CRAVEN COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3403AB	1	

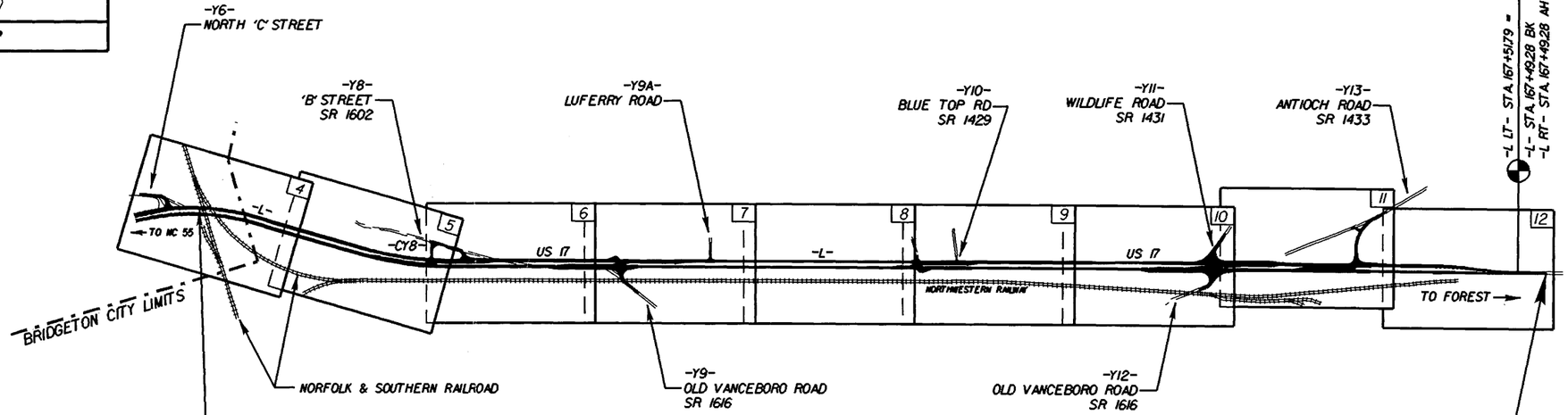
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34538.1.1	STPNHF-17(24)	PE
34538.2.2	STPNHF-17(47)	R /W, UTIL
34538.3.3	STPNHF-17(47)	CONST.



LOCATION: US 17 FROM NORFOLK & SOUTHERN RR TO NORTH OF SR 1433 (ANTIOCH ROAD)

TYPE OF WORK: GRADING, PAVING, CULVERT EXTENSIONS AND DRAINAGE

NAD 83



-L- STA. 50+90.00 BEGIN TIP PROJECT R-3403AB

-L RT- STA. 170+00.00 END TIP PROJECT R-3403AB
-L RT- STA. 170+50.00 END CONSTRUCTION R-3403AB

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

GRAPHIC SCALES

25 0 50 100
PLANS

25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2007 = 14,100
ADT 2035 = 30,400
DHV = 10 %
D = 60 %
T = 10 % *
V = 60 MPH
* TTST 5% DUAL 5%
FUNC. CLASS = ARTERIAL

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT R-3403AB = 2.256 MILES

TOTAL LENGTH OF TIP PROJECT R-3403AB = 2.256 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: March 22, 2005

LETTING DATE: July 15, 2008

G. E. BREW, PE
PROJECT ENGINEER

D. WILLIAMS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

APR-2008 11:20
roadway\proj\r3403ab\r3403ab_rdy_tsh.dgn
$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

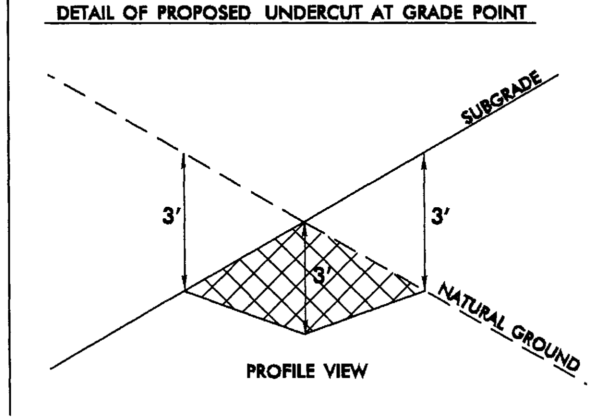
FINAL PAVEMENT SCHEDULE

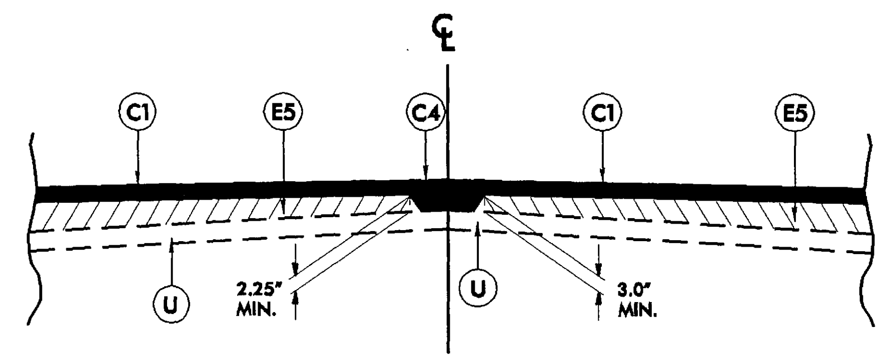
C1	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ.YD.
C2	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ.YD. IN EACH OF TWO LAYERS.
C3	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD. IN EACH OF TWO LAYERS.
C4	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 LESS THAN 1.5" IN DEPTH
D1	PROP. APPROX. 3.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 159.6 LBS. PER SQ. YD.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 152 LBS. PER SQ. YD.
E2	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 171 LBS. PER SQ. YD.
E3	PROP. APPROX. 5.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 190 LBS. PER SQ. YD.
E4	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 209 LBS. PER SQ. YD.
E5	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 3.0" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).

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

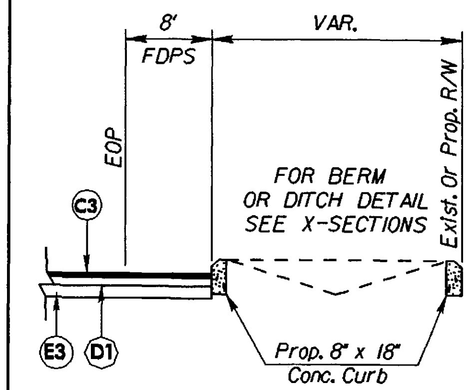
FDPS = FULL DEPTH PAVED SHOULDER

DETAIL OF PROPOSED UNDERCUT AT GRADE POINT



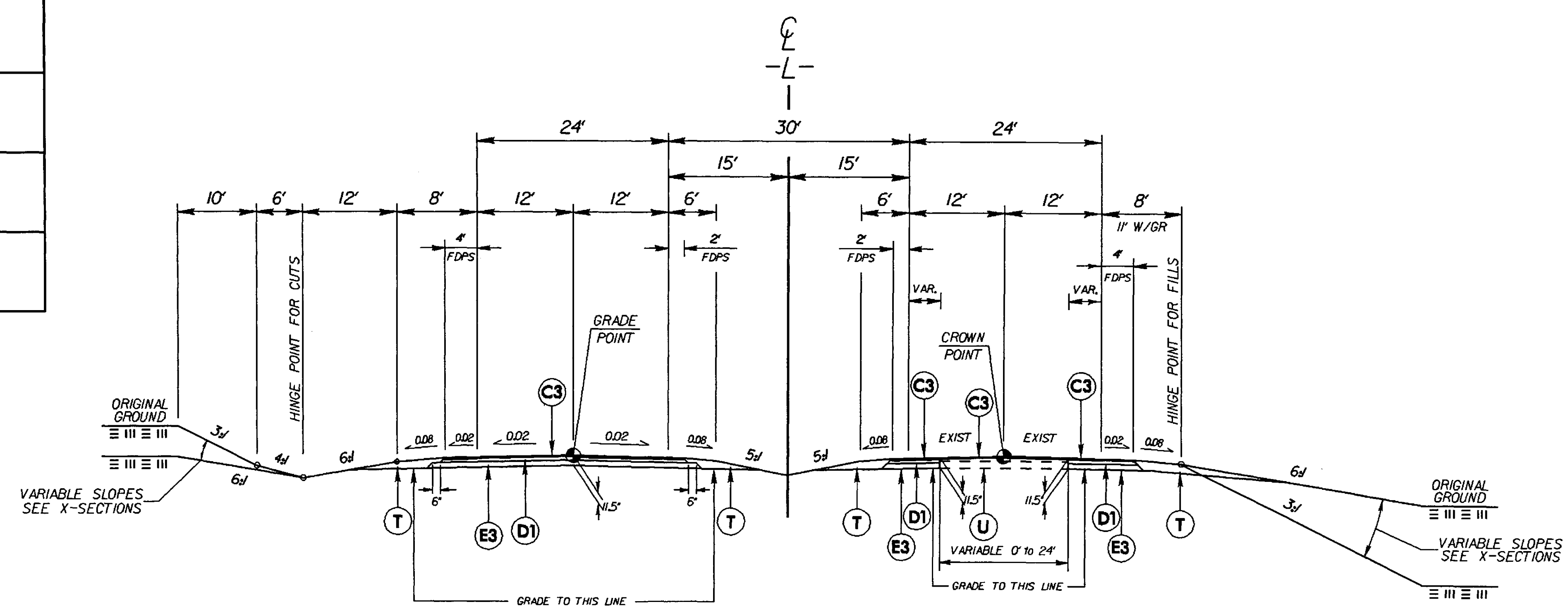


Detail Showing Method of Wedging



Detail for Business Channelization

See Plans for Locations



TYPICAL SECTION NO. 3

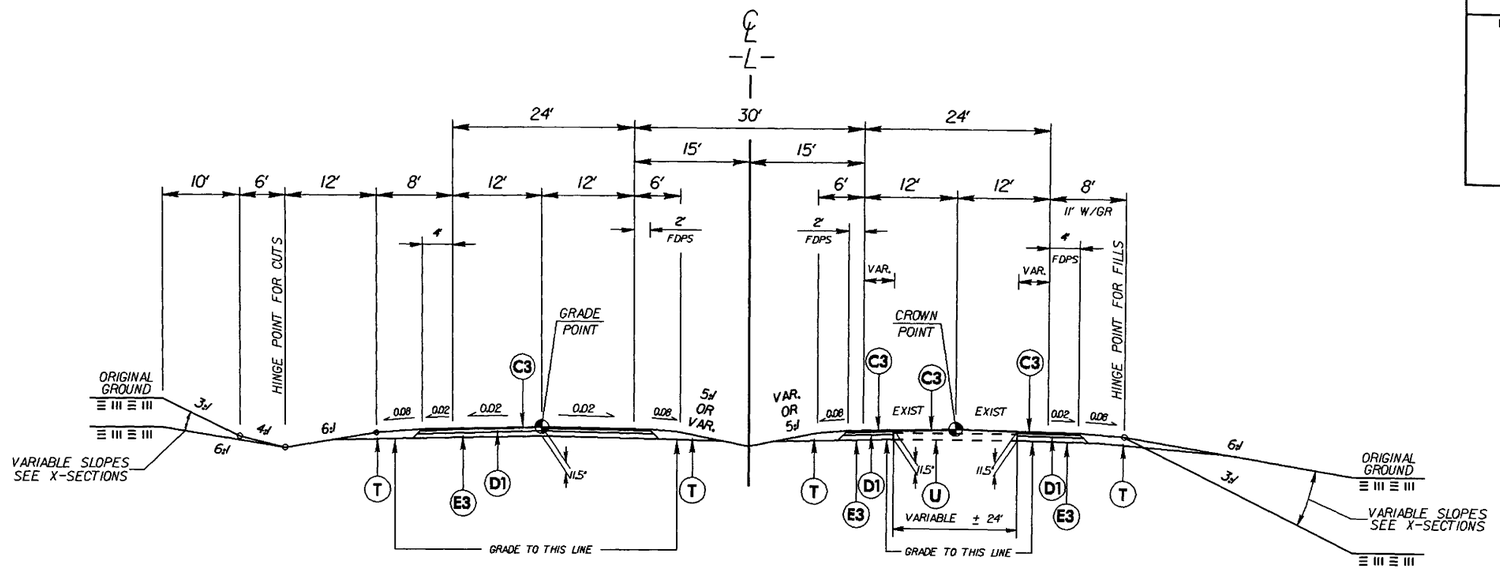
USE TYPICAL SECTION NO. 3
-L- STA. 50+90.00 TO -L- STA. 56+00.00

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

FINAL PAVEMENT SCHEDULE	
C3	3.0" S9.5C
D1	3.5" I19.0C
E3	5.0" B25.0B
T	EARTH MATERIAL
U	EXISTING PAVEMENT

FDPS = FULL DEPTH PAVED SHOULDER



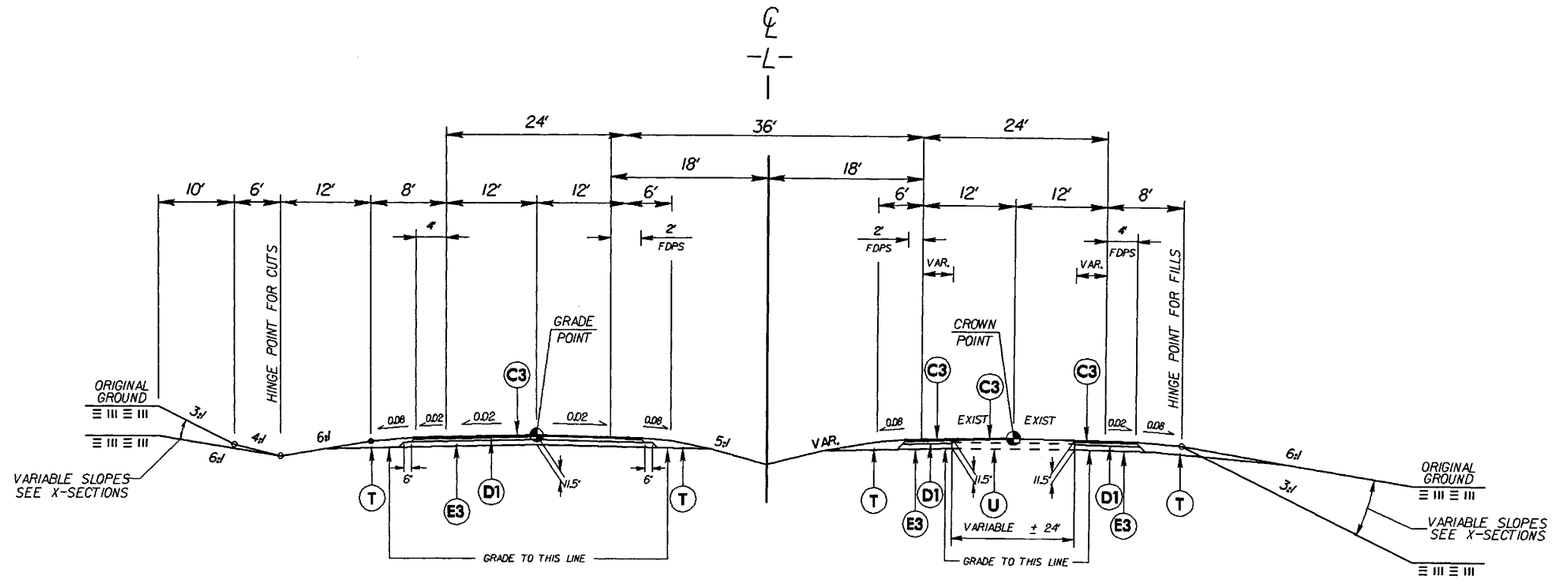
TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

-L- STA. 56+50.00 TO -L- STA. 130+00.00
-L- STA. 151+50.00 TO -L- STA. 160+00.00

NOTE:

TRANSITION FROM TYPICAL SECTION NO. 3 TO TYPICAL SECTION NO. 4
-L- STA. 56+00.00 TO -L- STA. 56+50.00



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

-L- STA. 134+50.00 TO -L- STA. 147+00.00

NOTE:

TRANSITION FROM TYPICAL SECTION NO. 4 TO TYPICAL SECTION NO. 5
-L- STA. 130+00.00 TO -L- STA. 134+50.00

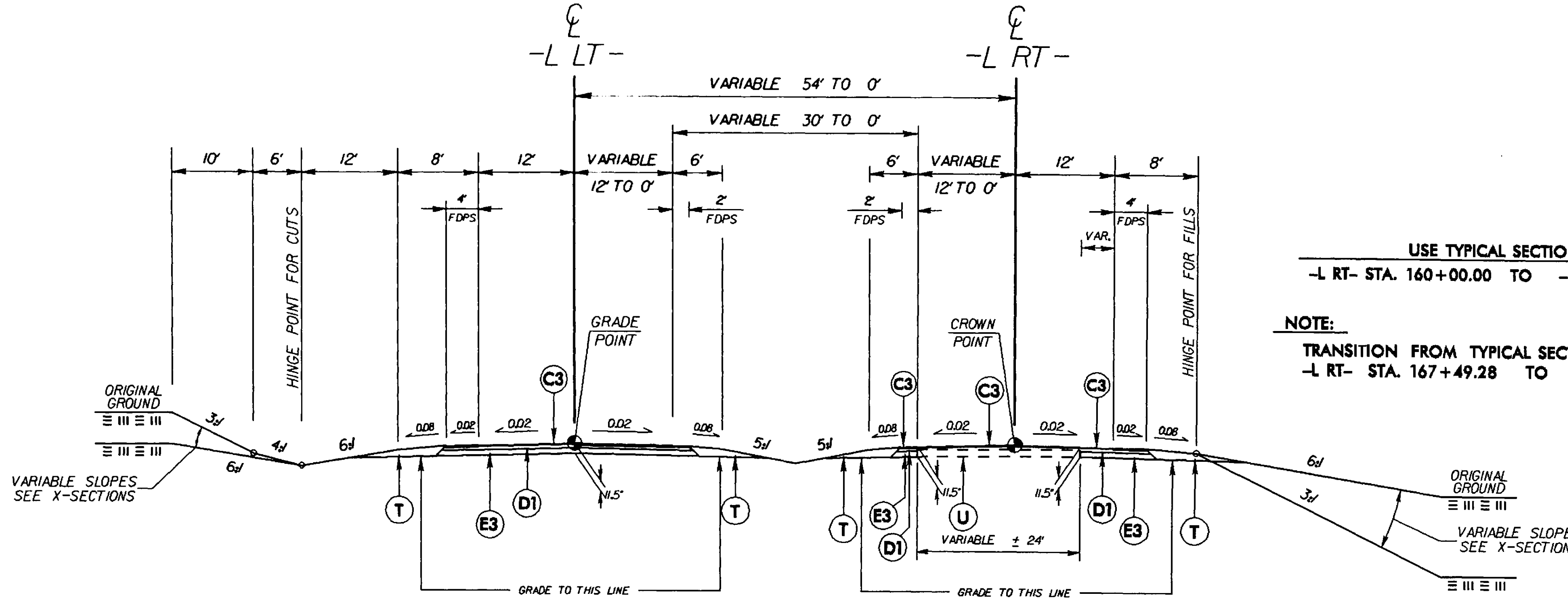
TRANSITION FROM TYPICAL SECTION NO. 5 TO TYPICAL SECTION NO. 4
-L- STA. 147+00.00 TO -L- STA. 151+50.00

PR-2008 (12)
c:\projects\r-3403ab\r-3403ab_rdy_typ.dgn
$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

FINAL PAVEMENT SCHEDULE	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	3.0" S9.5C
D1	3.5" I19.0C
E1	4.0" B25.0B
E3	5.0" B25.0B
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

FDPS = FULL DEPTH PAVED SHOULDER



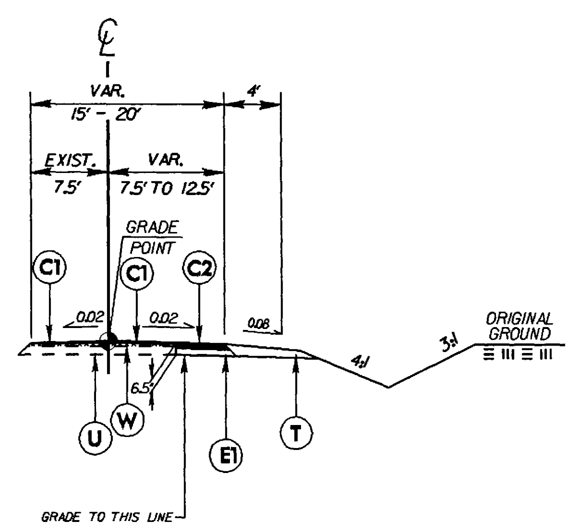
TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

-L RT- STA. 160+00.00 TO -L RT- STA. 167+49.28

NOTE:

TRANSITION FROM TYPICAL SECTION NO. 6 TO EXISTING
-L RT- STA. 167+49.28 TO -L RT- STA. 170+00.00



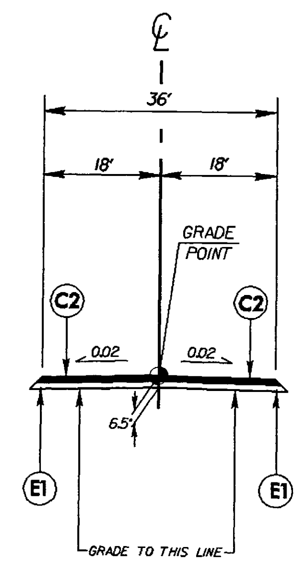
TYPICAL SECTION NO. 7A

USE TYPICAL SECTION NO. 7A

-Y8- STA. 13+88.00 TO STA. 16+00.00

NOTE:

TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 7A
-Y8- STA. 12+60.00 TO STA. 13+88.00



TYPICAL SECTION NO. 7B

TRANSITION FROM TYPICAL SECTION NO. 7A TO TYPICAL SECTION 7B
-Y8- STA. 16+00.00 TO STA. 17+00.00

USE TYPICAL SECTION NO. 7B

-Y8- STA. 17+00.00 TO STA 18+20.55

NOTE:

TRANSITION FROM TYPICAL SECTION NO. 7B TO EXISTING
-Y8- STA. 18+20.55 TO STA. 18+60.00

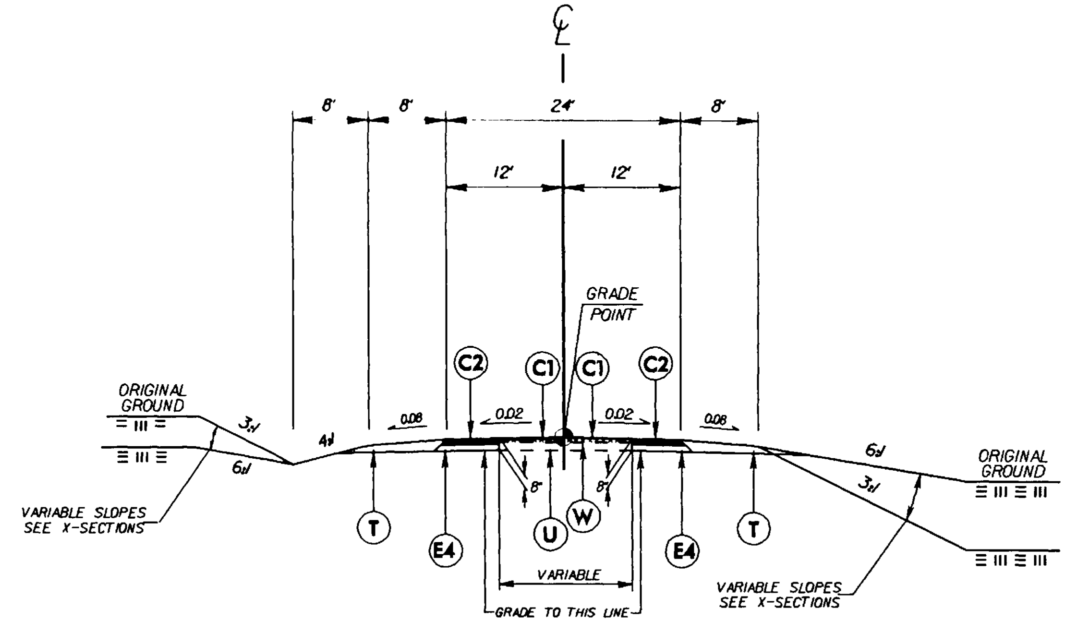
6/2/99

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	2-C
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

FINAL PAVEMENT SCHEDULE	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
E1	4.0" B25.0B
E2	4.5" B25.0B
E4	5.5" B25.0B
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

FDPS = FULL DEPTH PAVED SHOULDER

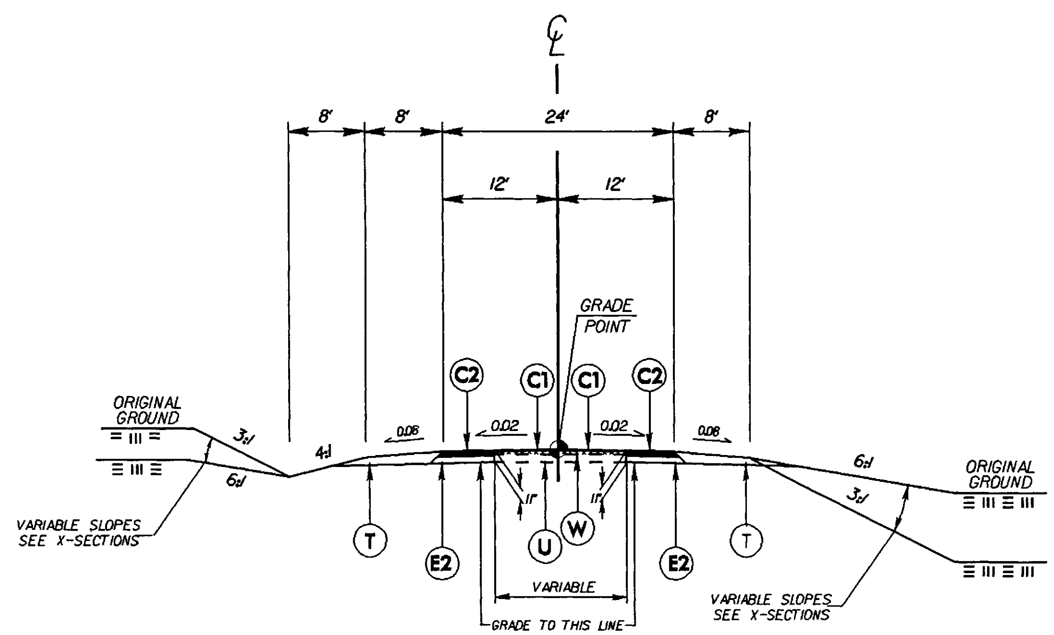


TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 98

-Y9- STA. 12+00 TO STA. 13+00
-Y11- STA. 10+50 TO STA. 11+43
-Y12- STA. 14+00 TO STA. 14+13

NOTE:
TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 9
-Y9- STA. 11+50 TO STA. 12+00
-Y11- STA. 10+00 TO STA. 10+50
-Y12- STA. 13+50 TO STA. 14+00

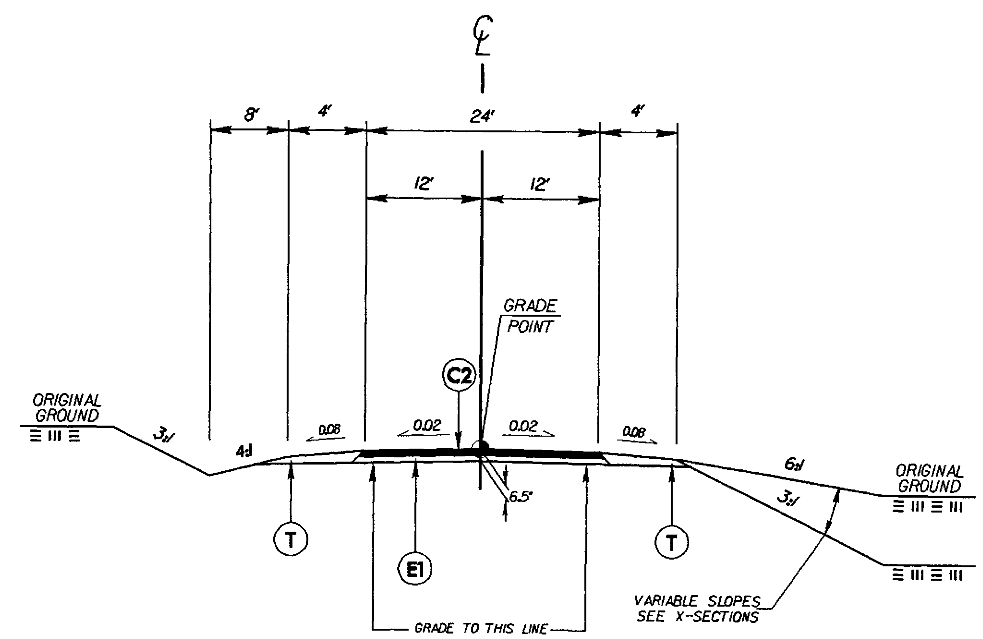


TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 10

-Y13- STA. 13+00 TO STA. 14+22

NOTE:
TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 10
-Y13- STA. 12+00 TO STA. 13+00



TYPICAL SECTION NO. 10

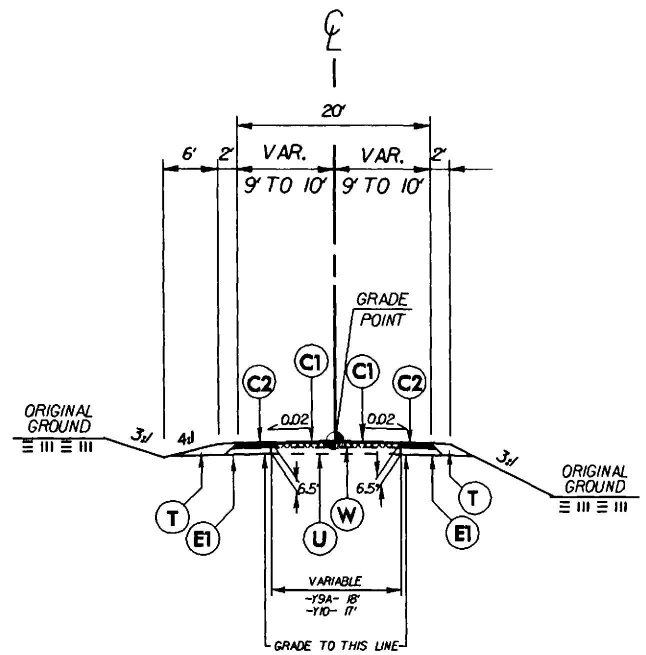
USE TYPICAL SECTION NO. 11

-CY8- STA. 10+37 TO STA. 11+26

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	2-D
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

FINAL PAVEMENT SCHEDULE	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
E1	4.0" B25.0B
E2	4.5" B25.0B
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

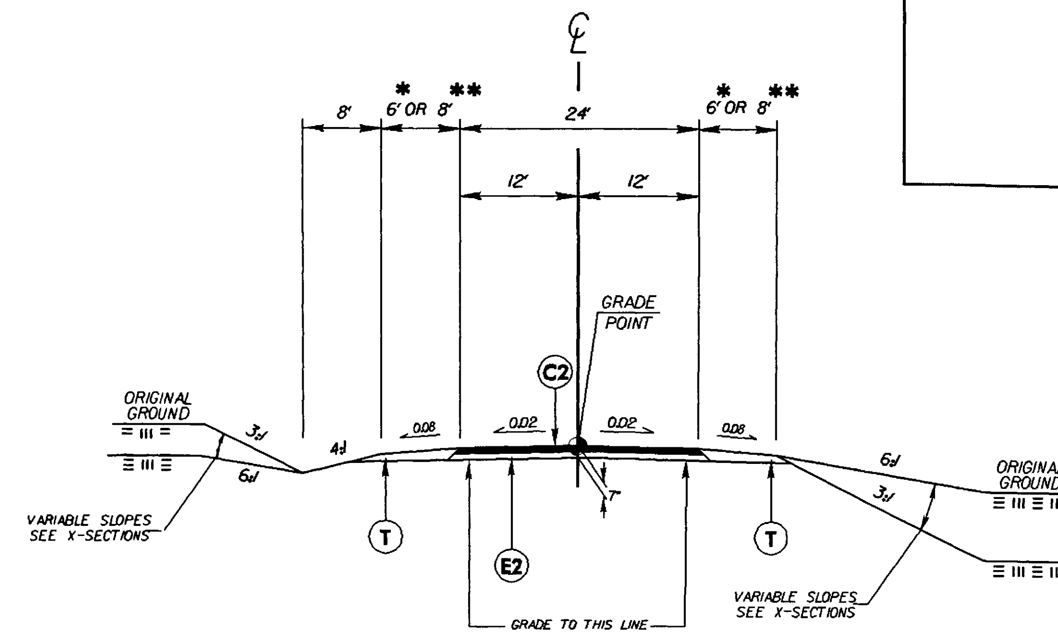
FDPS = FULL DEPTH PAVED SHOULDER



TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 12

-Y9A- STA. 11+00 TO STA. 12+21



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 13

-Y13- STA. 14+22 TO STA. 16+95

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PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FOR -L- PROFILE SEE SHEET 13

NAD 83

-L- PI Sta 49+97.54
Δ = 27° 59' 44.3" (RT)
D = 2° 51' 53.2"
L = 977.23
T = 498.58'
R = 2,000.00'

-L- Pls Sta 55+42.88
θs = 2° 51' 53.2"
Ls = 200.00'
LT = 133.35'
ST = 66.68'

DETAIL 12
CUT DITCH
(Not to Scale)
Natural Ground, 3H, D, 4H OR Flatter, Front Ditch Slope
Min. D=1.5 Ft.

-L- LT FROM STA. 48+80 TO STA. 50+60
-L- RT FROM STA. 52+90 TO STA. 60+10

-Y6- PC Sta. 16+30.93
-Y6- PT Sta. 17+55.67
N 62° 40' 37.4" E
-L- POC 48+10.00 = -Y6- POT 18+12.40
BY-6 PINC 14+11.04
-L- 47+23.00 85.00' (LT)
-L- 49+06.65 75.00' (LT)
-Y6- 16+20.00 41.00' (RT)
-Y6- 16+50.00 40.00' (LT) 102.09'
50+40.88 75.00' (LT)
-L- 52+40.00 99.00' (LT)
-L- 54+82.88 89.00' (LT)
-L- 54+43.00 68.00' (LT)
-L- 53+50.00 93.00' (LT)
-L- 54+76.19 75.00' (LT) & 68.00' (LT)
-L- 55+60.00 83.000' (LT)
-L- 56+76.19 75.00' (LT)

-L- ST Sta. 56+76.19
-L- CS Sta. 54+76.19

BL-8 PINC 47+38.94 = -L- 51+20.92 (33.05 RT)
BY-7 PINC 11+21.33=
BY-6 PINC 15+65.46
BY-7 PINC 14+77.91
BL-9 PINC 53+58.98 = -L- 57+52.24 (73.03 RT)

-L- 53+46.40 78.09 RT
-L- 54+69.66 83.64' RT
-L- 55+16.00 END PROP WW FENCE END PROP.C/A
-L- 54+13.75 123.58' RT
-L- 54+65.99 152.67' RT
-L- 55+76.00 BEG.PROP.WW FENCE BEG.PROP.C/A
-L- 58+00.00 END PROP.WW FENCE END PROP.C/A
-L- 58+20.00 BEG.PROP WW FENCE BEG.PROP.C/A

-L- STA 53+46.40 BEG.PROP.R/W 75' (RT) BEG.PROP.WW FENCE BEG.PROP.C/A
-L- STA 54+13.75 BEG.PROP.R/W 75' (RT) BEG.PROP.WW FENCE BEG.PROP.C/A

CLEANOUT TAIL DITCH EST. DOE +/- 48CY OUTLET GRADE = 0.18%
CLEANOUT HEAD DITCH EST. DOE +/- 12CY
CLEANOUT HEAD DITCH EST. DOE +/- 20CY

SPECIAL LATERAL V-DITCH SEE DETAIL #3
SPECIAL DITCH SEE DETAIL #1
SPECIAL DITCH SEE DETAIL #12
PROP. 8"x18" CONC. CURB
REMOVE HW
REMOVE
RETAIN & RESET
COLLAR
PUE
24" INGRESS & EGRESS EASEMENT (TO BE ESTABLISHED)
EXISTING EASEMENT
EXIST. R/W
EXIST. R/R R/W
EXIST RR R/W
BRIDGETON TOWN LIMIT
FRENCH RD
SOIL&GR
GR&SOIL
ISFD
ISBLKBUS
ISBKD
2SMTLBUS
MTLS
CANOPY
CONC
GATE
FENCE
GUARDRAIL
6'BST CURB
72" CONC
72" CMP
72" CHL & 35BW
48" CONC
48" CMP
24" CONC
24" CMP
18" CONC
15" CONC
12" CONC
8" CONC HW
6" PSSW
SCF = SPECIAL CONCRETE FLUME
NOTE: DRIVE PIPES TO BE RAISED 3 INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

SPECIAL DITCH GRADE SEE PROFILE FOR GRADE
-L- (LT) 48+00 TO 49+15
-L- (Median) 50+00 TO 50+68
-Y6- (LT) 15+95 TO 16+97

DETAIL 1
SPECIAL DITCH
(Not to Scale)
ROAD, NG, 3H MAX, d, 3H MAX
Min. d = 1.5 Ft.
-L- (LT) 55+15 TO 56+00
-L- (LT) 57+00 TO 59+65

DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground, 3H, D, 4H OR Flatter, FW Slope
Min. D = 1.0 Ft.
-L- (LT) 51+55 TO 53+90

END STATE PROJECT R-3403AA = BEGIN STATE PROJECT R-3403AB
-L- Sta. 50+90.00

ASA B. DAIL, et ux DB 1167 - PG 48 PC "D" - SLIDE 721 MB 10 - PG 62
CLARKE A. SIMPSON DB 1204 - PG 307
SHIRLEY R. BROWN DB 1110 - PG 345
WILLIAM O. VANDIFORD, et ux DB 1055 - PG 745
BETTY A. MURPHY DB 1546 - PG 951
ROBERT LEE COWARD DB 1562 - PG 769
JEAN CAROL JONES DB 1376 - PG 424
ROBERT THOMAS COWARD, et al DB 1159 - PG 443 DB 1495 - PG 366 DB 1420 - PG 790
DEWEY R. FRAZIER, et ux DB 1453 - PG 313 MB 11 - PG 86
GEORGEANNAH LOCKLEAR, et vir DB 1411 - PG 281
RESSIE LOCKLEAR LEWIS DB 1186 - PG 834
ROGER T. NEEDHAM, et ux DB 1512 - PG 315
LINDA HINES SAULTER DB 1055 - PG 157
EN-CEE CHEMICAL SALES, INC. DB 648 - PG 35
ALLEN THOMAS FRENCH, et ux DB 621 - PG 210 DB 965 - PG 241 PC "C" - SLIDE 2
TWO-TEN INVESTORS, INC. DB 1378 - PG 514 DB 1580 - PG 748 PC "C" - SLIDE 203
CALVIN COOLEY, et ux DB 791 - PG 224
LEON THOMAS SWARINGEN, et ux DB 840 - PG 84

SEE SHEET NO.5
MATCHLINE STA. 59+00.00

REVISIONS
8/17/95

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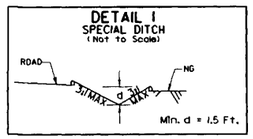
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

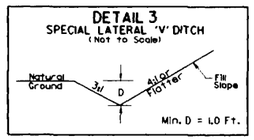
FOR -L- PROFILE SEE SHEET 14
FOR -CY8- PROFILE SEE SHEET 21

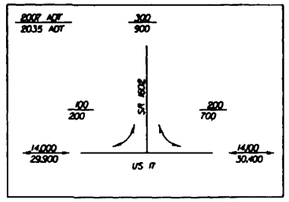
NAD 83

DETAIL 1
SPECIAL DITCH
(Not to Scale)



DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)





SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (LT) 59+65 TO 66+18
-L- (LT) 67+60 TO 74+43

-L- (LT) 57+00 TO 59+65

-L- (RT) 64+00 TO 66+07

SCF = SPECIAL CONCRETE FLUME

NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

SEE SHEET NO.4

SEE SHEET NO.6

MATCHLINE STA. 59+00.00

MATCHLINE STA. 72+00.00

BY-8
PINC 5+00.00

-Y8- POT Sta. 10+00.00

-Y8- 13+07
30.00' (LT)
& 45.00' (LT)

BEGIN CONST
-Y8- 12+60.00

-CY8- POT Sta. 10+00.00

-L- TS Sta. 64+12.19

-L- SC Sta. 66+12.19

-L- 71+57.35
90.00' (LT) &

-Y8- 12+79.00
30.00' (RT)
END C/A
END FENCE

-L- 69+89.00
89.00' (LT) &

-L- 63+82.00
136.00' (LT)

-L- 64+45.00
105.00' (LT)

-L- 66+70.00
95.50' (LT) &
& 110.00' (LT)

-L- 68+00.00
95.00' (LT) &
110.00' (LT)

-L- 61+09.93
75.00' (LT)
BEG. PROP. C/A
BEG. PROP. WW. FENCE

-L- 61+10.00
105.00' (LT)

-L- 61+09.99
98.28' (LT)

-L- 60+00.00
93.00' (LT)

-L- 59+68.00
85.00' (LT)

-L- 66+12.16
93.16' (LT)

-L- 62+45.00
BEG. TEMP. GR

-L- 65+80.00
END TEMP GR

-L- 68+00.00
END TEMP GR

-L- 62+46.00
BEG. PROP. WW FENCE
BEG. PROP. C/A

-L- 62+02.00
END PROP. WW FENCE
END PROP. C/A

-L- 61+63.00
PROPOSED R/W
BEG. PROP. WW FENCE
BEG. PROP. C/A

-L- 61+03.00
PROPOSED R/W
END PROP. WW FENCE
END PROP. C/A

-L- 60+62.00
BEG. PROP. WW FENCE
BEG. PROP. C/A

-L- 60+02.00
END PROP. WW FENCE
END PROP. C/A

-L- STA. 62+11.00
88' (RT)

-L- STA. 64+12.83
88' (RT)

-L- STA. 64+09.48
END PROP. R/W
130' (RT)

-L- STA. 60+87.00
PROPOSED R/W
130' (RT)

-L- STA. 65+34.00
BEG. PROP. R/W
131' (RT)

-L- STA. 66+16.00
END PROP. R/W
132' (RT)

-L- 68+98.00
EXIST. R/W
BEGIN PROP. C/A

-L- 68+66.00
EXIST. R/W
END PROP. C/A

-L- 71+57.00
EXIST. R/W
END PROP. C/A

-L- POC Sta. 71+83.00
-CY8- POT Sta. 11+85.07

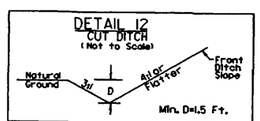
BL-10
PINC 60+74.42 =
-L- 64+67.15 (48.76 RT)

BL-11
PINC 66+32.92 =
-L- 70+18.26 (48.80 RT)

-L-
Pls Sta 65+45.54
Θs = 1° 54' 35.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

Pl Sta 69+41.41
Δ = 12° 31' 29.8" (LT)
D = 1° 54' 35.5"
L = 655.80
T = 329.21'
R = 3,000.00'

DETAIL 12
CUT DITCH
(Not to Scale)



-L- RT FROM STA. 52+90 TO STA. 60+10
-L- RT FROM STA. 60+50 TO STA. 64+00

93 KATHERINE ANDREWS

DAVID EARL O'GEARY
DB 1348 - PG 657

SPECIAL DITCH
SEE DETAIL #1

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE

JAMES R. SAWYER, ET UX
DB 790 - PG 68
DB 1211 - PG 970

ESTELLE OAKLEY HOLTON, ET VIR

WILLIAM E. STILLEY, ET UX
DB 195 - PG 579
DB 765 - PG 347

WILLIAM E. STILLEY, ET UX
DB 441 - PG 527

WEDDELL MIDYETTE, ET UX
DB 426 - PG 545

JOHN C. WETHERINGTON, ET UX
DB 1291 - PG 510

CANDICE BREEZE
DB 1501 - PG 642

LENWOOD EARL DANIELS, III, ET UX
DB 1509 - PG 68

KENNETH GENE GARRIS
REMOVED DB 492 - PG 415

STATE OF NORTH CAROLINA
DB 487 - PG 217

PSH
EST 9 TONS
EST 15 CU. YD. EXCAV
EST 13 SQ. YD. FF

SEE TYPICAL SECTIONS & SPECIAL PLANS

PROVIDE CURB CUT FOR DRAINAGE

RETAIN & EXTEND 6' X 6' RCBC

8' CONC HW
2-10' CONC. WW'S

SPECIAL LATERAL V DITCH
SEE DETAIL #3

SPECIAL DITCH
SEE DETAIL #12

PROPOSED R/W

TWO-TEN INVESTORS, INC.
DB 1378 - PG 514
DB 1550 - PG 748
PC "C" - SLIDE 203

GERALD L. ANDERSON
DB 1538 - PG 634
MB II - PG 51
PC "C" - SLIDE 203

JOHN L. PURYEAR TRUCKING, INC.
DB 1355 - PG 564

JO M. LEWIS
DB 400 - PG 53

GERALD ANDERSON LOGGING CO., INC.
DB 956 - PG 604

BOBBY L. DRAKE, ET UX
DB 896 - PG 795

FENNER E. MORRIS
DB 798 - PG 564

NORFOLK & SOUTHERN RR

CONC HW UNDER RR BRIDGE

24" BLK WALL

PROP. 8"x18" CONC. CURB

4' P.S.

100' TAPER

REMOVE

2GI-B

GTD

2GI-A

ISMTL BUS

ISBLK CHURCH

ISBKF BUS

ISFD

HTR

SOIL

BST

NAIL

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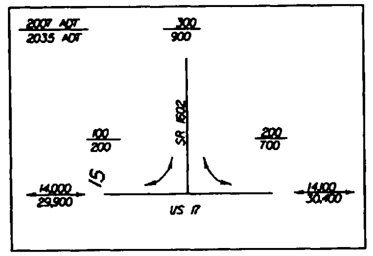
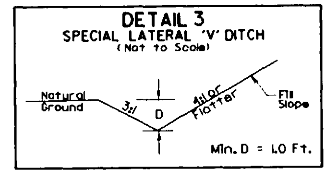
PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FOR -L- PROFILE SEE SHEET 14
FOR -Y8- PROFILE SEE SHEET 19

-Y8-
PI Sta 18+23.82
Δ = 91° 36' 42.5" (LT)
D = 47° 44' 47.3"
L = 191.87'
T = 123.42'
R = 120.00'

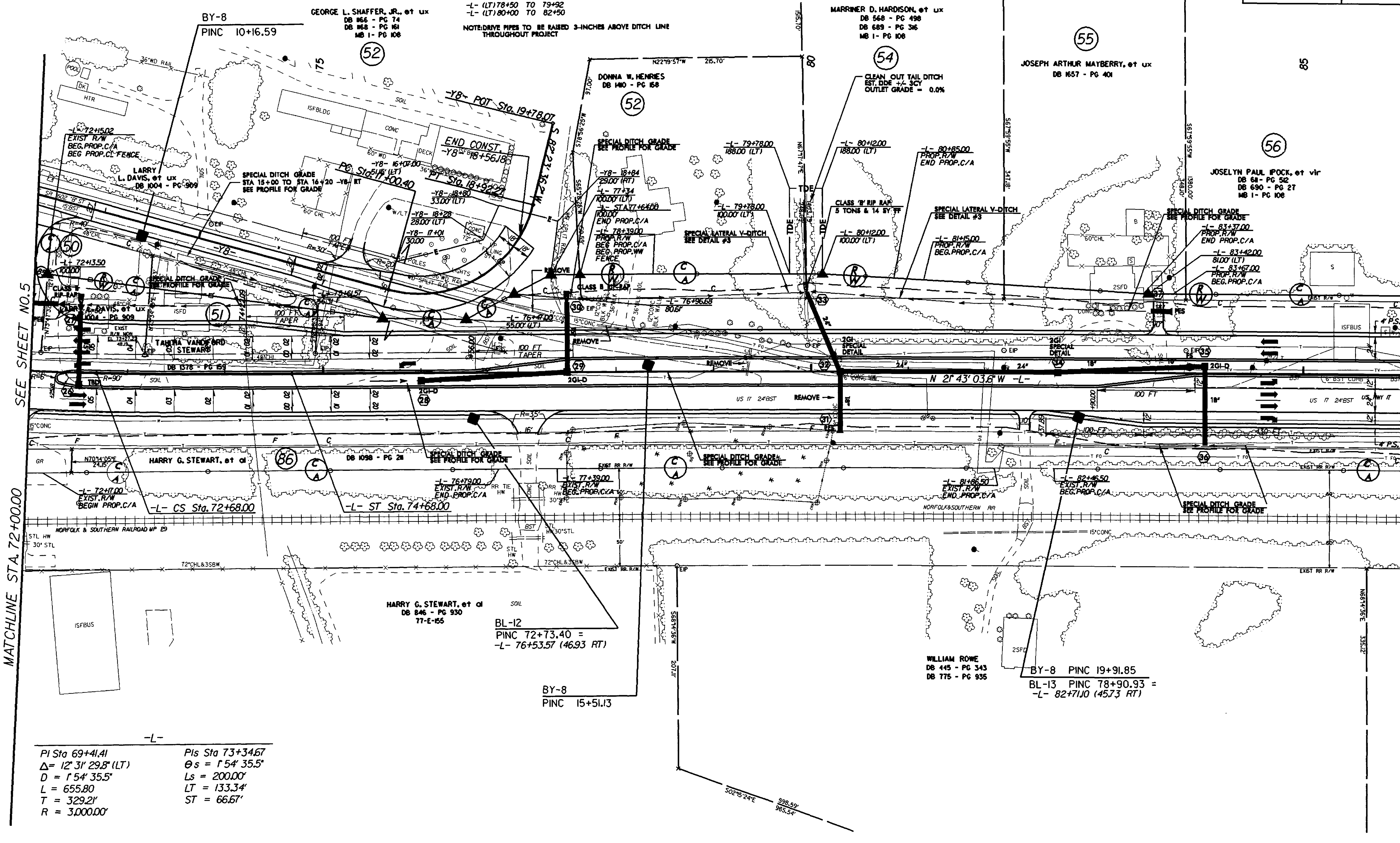




-L- (LT) 78+50 TO 79+92
-L- (LT) 80+00 TO 82+50

NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (RT) 83+50 TO 84+50
-L- (LT) 67+25 TO 74+43
-L- (LT) 75+50 TO 78+50
-L- (LT) 82+50 TO 83+50
-L- (MED) 74+50 TO 78+00
-L- (MED) 78+50 TO 80+30
-Y8- (RT) 15+00 TO 16+20

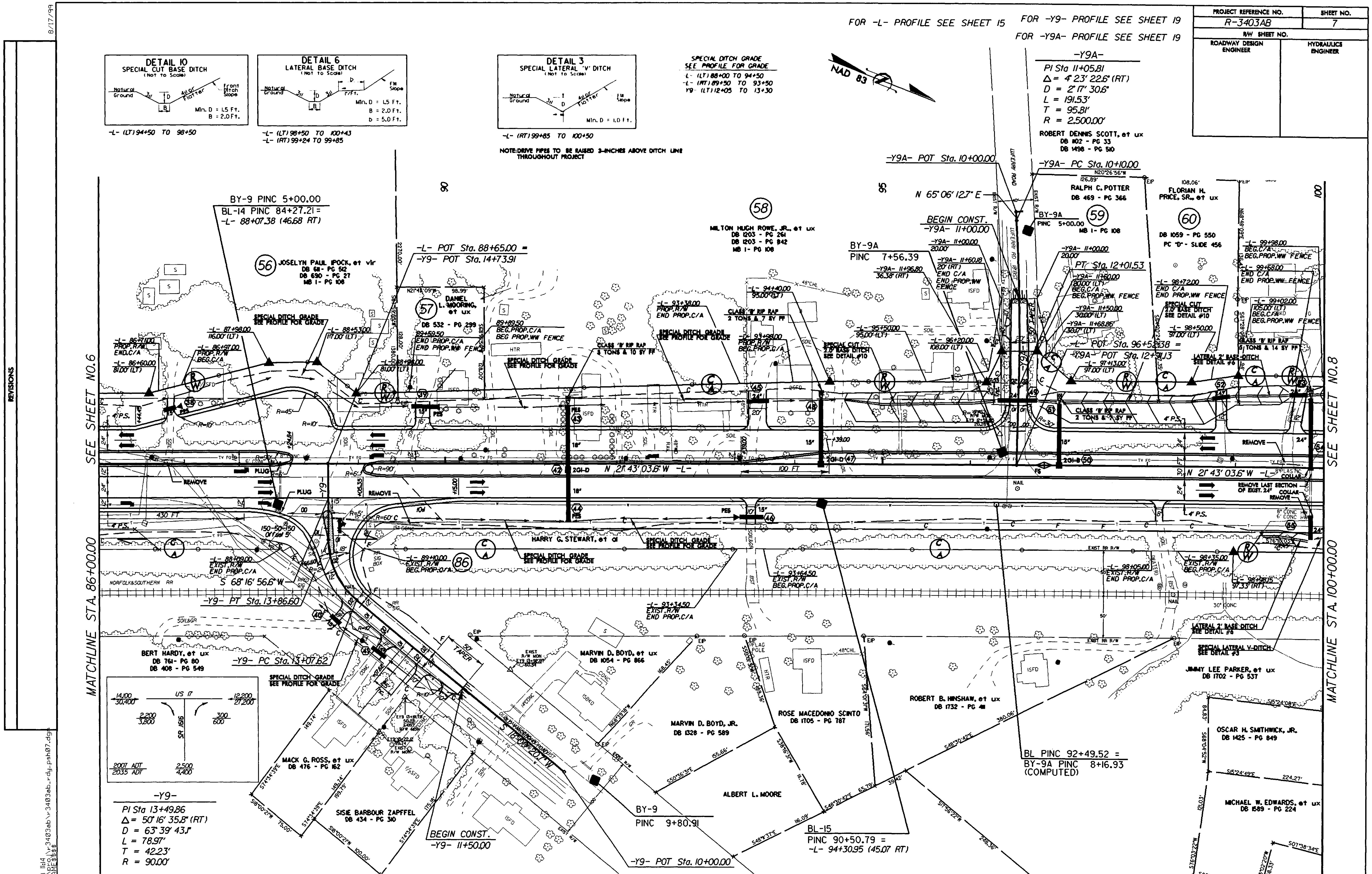


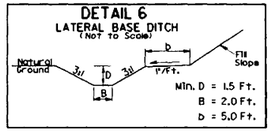
-L-

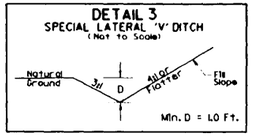
PI Sta 69+41.41	PIs Sta 73+34.67
Δ = 12° 31' 29.8" (LT)	θs = 1° 54' 35.5"
D = 1° 54' 35.5"	Ls = 200.00'
L = 655.80	LT = 133.34'
T = 329.21'	ST = 66.67'
R = 3,000.00'	

REVISIONS
R/W REVISION - ADDED PARCEL LABEL ON PARCEL NO.85. DYP 9-28-05
R/W REVISION - ADDED PARCEL LABEL ON PARCEL NO.86.- DYP 9-28-05
R/W REVISION - NAME & DB CHANGE ON PARCEL NO.52,COMBINE WITH PARCEL NO.53.- DYP 9-28-05
R/W REVISION - WIDENED DRIVEWAY ON PARCEL NO.52 FROM 20' TO 30'.- BWJ 01-31-2006

8/17/99


PROJECT REFERENCE NO. R-3403AB
SHEET NO. 7
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
FOR -L- PROFILE SEE SHEET 15
FOR -Y9- PROFILE SEE SHEET 19
FOR -Y9A- PROFILE SEE SHEET 19
DETAIL 10 SPECIAL CUT BASE DITCH (Not To Scale)
-L- (LT) 94+50 TO 98+50
DETAIL 6 LATERAL BASE DITCH (Not To Scale)
-L- (LT) 98+50 TO 100+43
-L- (RT) 99+24 TO 99+85
DETAIL 3 SPECIAL LATERAL 'V' DITCH (Not To Scale)
-L- (RT) 99+85 TO 100+50
NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
SPECIAL DITCH GRADE SEE PROFILE FOR GRADE
-L- (LT) 88+00 TO 94+50
-L- (RT) 89+50 TO 93+50
-Y9- (LT) 12+05 TO 13+30
NAD 83
-Y9A-
PI Sta 11+05.81
Δ = 4° 23' 22.6" (RT)
D = 2° 17' 30.6"
L = 191.53'
T = 95.81'
R = 2,500.00'
-Y9A- POT Sta. 10+00.00
-Y9A- PC Sta. 10+10.00
BEGIN CONST. -Y9A- 11+00.00
N 65° 06' 12.7" E
BY-9 PINC 5+00.00
BL-14 PINC 84+27.21 = -L- 88+07.38 (46.68 RT)
-L- POT Sta. 88+65.00 = -Y9- POT Sta. 14+73.91
BY-9A PINC 7+56.39
-L- POT Sta. 96+52.38 = -Y9A- POT Sta. 12+3.13
N 21° 43' 03.6" W -L-
SEE SHEET NO. 6
SEE SHEET NO. 8
MATCHLINE STA. 86+00.00
MATCHLINE STA. 100+00.00
S 68° 16' 56.6" W
-Y9- PT Sta. 13+86.60
-Y9- PC Sta. 13+07.62
BEGIN CONST. -Y9- 11+50.00
-Y9- POT Sta. 10+00.00
BY-9 PINC 9+80.91
BL-15 PINC 90+50.79 = -L- 94+30.95 (45.07 RT)
BL PINC 92+49.52 = BY-9A PINC 8+16.93 (COMPUTED)
-Y9-
PI Sta 13+49.86
Δ = 50° 16' 35.8" (RT)
D = 63° 39' 43.1"
L = 78.97'
T = 42.23'
R = 90.00'
US 17
SR 1616
2007 ADT
2035 ADT
JOSELYN PAUL IPOCK, et vir DB 611 - PG 512 DB 690 - PG 27 MB 1 - PG 108
DANIEL L. MOORING, et ux DB 532 - PG 299
MILTON HUGH ROWE, JR., et ux DB 1203 - PG 261 DB 1203 - PG 842 MB 1 - PG 108
ROBERT DENNIS SCOTT, et ux DB 1102 - PG 33 DB 1498 - PG 510
RALPH C. POTTER DB 469 - PG 366
FLORIAN H. PRICE, SR., et ux
DB 1059 - PG 550 PC "D" - SLIDE 456
HARRY G. STEWART, et al
BERT HARDY, et ux DB 761 - PG 80 DB 408 - PG 549
MARVIN D. BOYD, et ux DB 1054 - PG 866
MARVIN D. BOYD, JR. DB 1328 - PG 589
ROSE MACEDONIO SCINTO DB 1705 - PG 787
ROBERT B. HINSHAW, et ux DB 1732 - PG 411
JIMMY LEE PARKER, et ux DB 1702 - PG 537
OSCAR H. SMITHWICK, JR. DB 1425 - PG 849
MICHAEL W. EDWARDS, et ux DB 1589 - PG 224
MACK G. ROSS, et ux DB 476 - PG 162
SISIE BARBOUR ZAPPFEL DB 434 - PG 310
ALBERT L. MOORE
NORFOLK&SOUTHERN RR
REVISIONS
8/17/99





PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FOR -L- PROFILE SEE SHEET 15

-L- (LT) 98+50 TO 100+43

NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

-L- (RT) 99+85 TO 100+43
-L- (LT) 100+45 TO 101+50
-L- (LT) 108+20 TO 108+46

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (RT) 100+50 TO 104+00
-L- (LT) 101+50 TO 103+00
-L- (LT) 109+75 TO 114+00

8/17/99

REVISIONS

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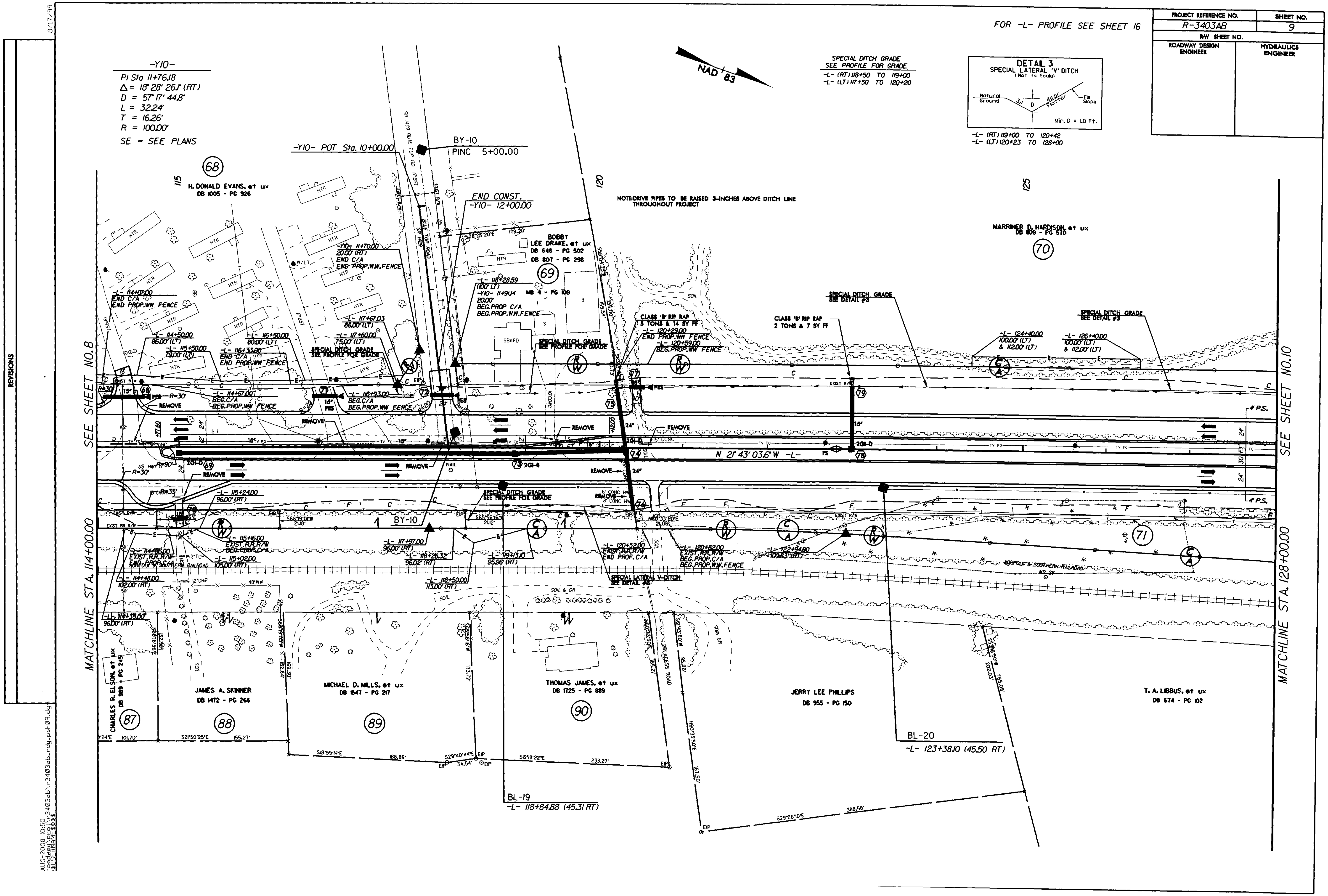

PROJECT REFERENCE NO.
R-3403AB
SHEET NO.
9
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
FOR -L- PROFILE SEE SHEET 16
NAD 83
SPECIAL DITCH GRADE SEE PROFILE FOR GRADE
-L- (RT) 118+50 TO 119+00
-L- (LT) 117+50 TO 120+20
DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D = 1.0 Ft.
-L- (RT) 119+00 TO 120+42
-L- (LT) 120+23 TO 128+00
-Y10-
PI Sta 11+76.18
Δ = 18° 28' 26.1" (RT)
D = 57° 17' 44.8"
L = 32.24'
T = 16.26'
R = 100.00'
SE = SEE PLANS
-Y10- POT Sta. 10+00.00
BY-10
PINC 5+00.00
END CONST. -Y10- 12+00.00
NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT
H. DONALD EVANS, et ux
DB 1005 - PG 926
BOBBY LEE DRAKE, et ux
DB 646 - PG 502
DB 807 - PG 298
MARRINER D. HARDISON, et ux
DB 809 - PG 570
SEE SHEET NO. 8
MATCHLINE STA. 114+00.00
SEE SHEET NO. 10
MATCHLINE STA. 128+00.00
N 21° 43' 03.6" W -L-
CLASS 'B' RIP RAP 5 TONS & 14 SY FF
CLASS 'B' RIP RAP 2 TONS & 7 SY FF
SPECIAL DITCH GRADE SEE DETAIL #3
SPECIAL LATERAL V-DITCH SEE DETAIL #3
NORFOLK & SOUTHERN RAILROAD
CHARLES R. ELSON, et ux DB 989 - PG 245
JAMES A. SKINNER
DB 1472 - PG 266
MICHAEL D. MILLS, et ux
DB 1547 - PG 217
THOMAS JAMES, et ux
DB 1725 - PG 889
JERRY LEE PHILLIPS
DB 955 - PG 150
T. A. LIBBUS, et ux
DB 674 - PG 102
BL-19
-L- 118+84.88 (45.31 RT)
BL-20
-L- 123+38.10 (45.50 RT)
REVISIONS
8/17/99

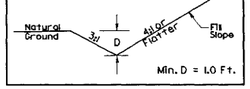
PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FOR -L- PROFILE SEE SHEET 16
FOR -Y11- PROFILE SEE SHEET 20
FOR -Y12- PROFILE SEE SHEET 20

8/17/99

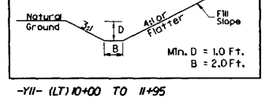
REVISIONS

DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



-L- (LT) 128+00 TO 129+50

DETAIL 4
SPECIAL LATERAL BASE DITCH
(Not to Scale)



-Y11- (LT) 10+00 TO 11+95

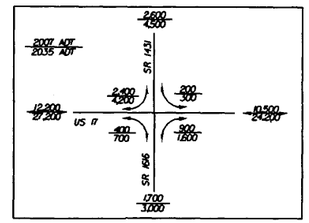
NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

NAD 83

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE

-L- (LT) 129+50 TO 134+00
-L- (RT) 134+00 TO 140+00
-L- (RT) 141+30 TO 143+50
-Y12- (LT) 14+00 TO 14+95

-Y11-
PI Sta 11+98.24
Δ = 33° 41' 56.9" (LT)
D = 28° 38' 52.4"
L = 117.63'
T = 60.57'
R = 200.00'
SE = SEE PLANS



VICKIE PHILLIPS HARDEE, et vir
DB 1052 - PG 934
N03°34'36"E

SEE SHEET NO.9

MATCHLINE STA. 128+00.00

130

135

140

MARRINER D. HARDISON, et ux
DB 1109 - PG 570

SPECIAL LATERAL V-DITCH
SEE DETAIL #3

CLASS 'B' RIP RAP
2 TONS & 7 SY FT

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE

-L- 133+45.00
100' LT
END C/A

-L- 134+05.00
100' LT
BEG. C/A

2SFD ABAND

CLASS 'B' RIP RAP
2 TONS & 7 SY FT

450 FT TAPER (WIDEN 30' MEDIAN TO 36')

4' P.S.

15"

2GI-D

TV FO

REMOVE

100 FT

HEDGING

US HWY 17 US 17 24'BST

EXIST R/W

BL-21
-L- 128+15.12 (46.76 RT)

BL-22
-L- 138+07.31 (57.95 RT)

MARRINER D. HARDISON, et ux
DB 1109 - PG 570

-L- 139+36.00
100.00' (LT)

150-75-36
Off set 5'

10:1 TAPER

N 21° 43' 03.6" W -L-

430 FT

PLUG

SPECIAL LATERAL BASE DITCH
SEE DETAIL #4

S 78° 01' 06.9" E

-Y11- PC Sta. 11+37.67

-Y11- 11+70.00
43.00' (RT)
END PROP. W.W. FENCE

-Y11- PT Sta. 12+55.30

-L- POT Sta. 140+65.00 =
-Y11- POT Sta. 13+27.28 =
-Y12- POT Sta. 16+14.12

BY-11

REMOVE
R=500'

-L- 141+50.00
104.00 (LT)

BEGIN CONST.
-Y11- 10+00.00

-Y11-POT Sta. 10+00.00

-Y11- 10+00.00
30.00' (RT)
40.00' (RT)

-Y11- 11+60.00
35.00' (RT)
BEG. PROP. W.W. FENCE
CLASS 'B' RIP RAP
8 TONS & 21 SY FT

-Y12- PT Sta. 15+28.71

-Y12- 14+00.00
30.00' (LT)
END PROP. W.W. FENCE

-Y12- ST A 14+40.00
EXIST. R/W
BEG. PROP. W.W. FENCE

-Y12- PC Sta. 14+08.49

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE

-Y12- PT Sta. 11+73.30

-Y12- PC Sta. 10+20.58

N 50° 47' 30.2" W
-Y12- POT Sta. 10+00.00

N 42° 50' 14.1" W

BEGIN CONST.
-Y12- 13+50.00

72"CMC

72"CHL & 3SBW

139+04.49
185.82 (RT)

MATCHLINE STA. 142+00.00

SEE SHEET NO.11

NORFOLK & SOUTHERN RR

EXIST RR R/W

T. A. LIBBUS, et ux
DB 674 - PG 102
MB 5 - PG 8

LUTHER EARL GASKINS, et ux
DB 1155 - PG 1051
DB 116 - PG 950

ROBERT L. BRYDGE, et ux
DB 1136 - PG 63
DB 1376 - PG 520

ESTHER J. ANTHONY
DB 633 - PG 384
MB 5 - PG 8

BETTY D. FOREMAN
DB 1670 - PG 394

SR 1636 OLD VANCE ROAD 21'BST

-Y12-

PI Sta 10+97.06	PI Sta 14+77.07
Δ = 7° 57' 16.1" (RT)	Δ = 68° 52' 49.8" (LT)
D = 5° 12' 31.3"	D = 57° 17' 44.8"
L = 152.71'	L = 120.22'
T = 76.48'	T = 68.57'
R = 1100.00'	R = 100.00'
	SE = SEE PLANS

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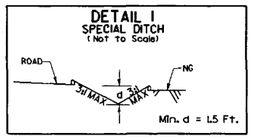
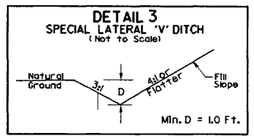
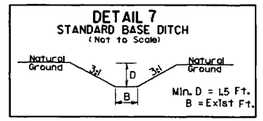
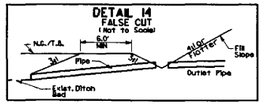
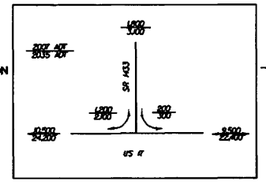










PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	11

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FOR -L- PROFILE SEE SHEET 17
FOR -Y13- PROFILE SEE SHEET 20

-Y13-
PI Sta 15+09.23
Δ = 60° 08' 11.6" (LT)
D = 19° 05' 54.9"
L = 314.87'
T = 173.68'
R = 300.00'

NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

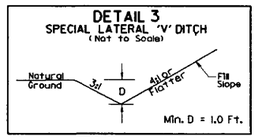
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FOR -L- PROFILE SEE SHEET 17
FOR -TRANRT- PROFILE SEE SHEET 18
FOR -TRANLT- PROFILE SEE SHEET 18

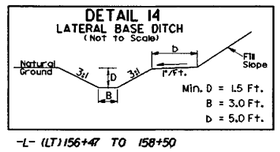
NAD 83

DETAIL 3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



-L RT- (RT) 165+00 TO 170+00
-L LT- (LT) 159+00 TO 161+50

DETAIL 14
LATERAL BASE DITCH
(Not to Scale)



-L- (LT) 156+47 TO 158+50

NOTE: DRIVE PIPES TO BE RAISED 3-INCHES ABOVE DITCH LINE THROUGHOUT PROJECT

-L LT-

PI Sta 161+49.13
Δ = 6° 49' 38.3" (RT)
D = 2° 17' 30.6"
L = 297.90'
T = 149.13'
R = 2,500.00'

PI Sta 166+03.02
Δ = 6° 49' 38.3" (LT)
D = 2° 17' 30.6"
L = 297.90'
T = 149.13'
R = 2,500.00'

SEE SHEET NO.11

MATCHLINE STA. 156+00.00

-L- 156+04.00
143.00' (LT)

TDE

+25 165 +50 165 DITCH CLEANOUT SEE DETAIL #13 EST DDE= +/- 110 CY

CLASS I RIPRAP ON BANKS ONLY

LATERAL 3.0' BASE DITCH SEE DETAIL #14

CLASS 'B' RIP RAP 2 TONS & 7 SY FF

-L- 158+84.00
95.00' (LT)

SPECIAL DITCH GRADE SEE PROFILE FOR GRADE

-L- 159+55
120.00' (LT)

-L LT- POT Sta. 160+00 = -L RT- POT Sta. 160+00 (27' LT)

-L LT-160+69.00
90.00' (LT)
Beg.C/A
GREEN WW FENCE

SPECIAL LATERAL V-DITCH SEE DETAIL #3

-L- 161+96.00
56.90' (LT)

-L LT-163+83.00
Exist.R/W
BEG.C/A
END FENCE

-L LT- PT Sta. 162+97.90

STA 164+00 TO STA 167+00 -L LT- SPECIAL CUT DITCH SEE DETAIL #12

-L LT- 164+43.00
Exist.R/W
BEG.C/A

-L LT- 165+64.00
96.48' (LT)
END C/A

-L LT- PC Sta. 164+53.90

-L RT- 166+50.00
92.00' (LT)
SPECIAL LATERAL V-DITCH SEE DETAIL #3

-L RT- 169+40.00
76.47' (LT)

-L RT- 168+64.64
92.00' (LT)

STANDARD V-DITCH STA 167+00 TO STA 167+50 -L- LT SEE DETAIL #5

STANDARD V-DITCH STA 170+00 TO STA 170+50 -L- LT SEE DETAIL #5

PROPOSED SLOPE STAKES

GRADE FUTURE LANES STA.167+49.28 TO STA.170+00.00

FUTURE SLOPE STAKES

FUTURE LANES

-L- 156+00.00

-L LT-160+09.00
END C/A
END FENCE

REMOVE EXIST FOOT BRIDGES

REMOVE

N 14° 53' 25.3" W

N 21° 43' 03.6" W -L-

-L RT- 159+24.00
71.80' (RT)
END FENCE
-L- STA.159+00.00

US 17 24'BST

-L RT- 164+50.67
64.43' (RT)

-L RT- 166+50.20
47.00' (RT)

-L RT- 166+50.00
54.00' (RT)

-L RT- 169+50.00
83.00' (RT)

-L RT- 170+00
73.50' (RT)
END C/A

TIE TO EXTG ROADWAY DITCH

NORFOLK & SOUTHERN RR

NORFOLK & SOUTHERN RR

BM #9
-L- STA 159+12.2
176.2' RT.
ELEV. 19.77'

RR TIE

PAVEMENT FOR TRAFFIC MAINTENANCE SEE TRAFFIC CONTROL PLANS

SPECIAL LATERAL V-DITCH SEE DETAIL #3

-L LT- PT Sta. 167+51.79 = -L- POT Sta. 167+49.28 AH
-LRT- POT Sta. 167+49.28 BK (27' LT)

BL-27
PINC 164+65.85 =
-L RT- 168+43.23 (118.14 RT)

BL-26
PINC 158+35.21 =
-L RT- 162+12.59 (116.76 RT)

BL-25
PINC 152+49.44 =
-L- 156+26.82 (45.22 RT)

-L - POT Sta. 160+00 = -L RT- POT Sta. 160+00 (27' RT)

HELEN V. PURIFOY
DB 339 - PG 151

GRADY L. PURIFOY, et ux
DB 762 - PG 353
DB 1486 - PG 59

JOHN W. MILLER, et ux
DB 614 - PG 203

WILLIAM H. CATON, et ux
DB 389 - PG 303
DB 430 - PG 543
DB 626 - PG 602

ELLEN M. FREEMAN
DB 1521 - PG 2387

CECIL JOSEPH FREEMAN
DB 925 - PG 129

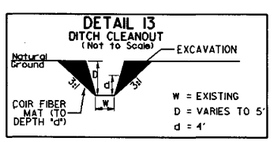
LEE FRANKLIN & KATHY YORK
DB 881 - PG 889

LEE FRANKLIN & ...
DB 107...

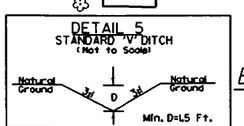
END STATE PROJECT R-3403AB
-L RT- POT Sta. 170+00.00

END CONSTRUCTION STATE PROJECT R-3403AB
-L RT- POT Sta. 170+50.00

DETAIL 13
DITCH CLEANOUT
(Not to Scale)



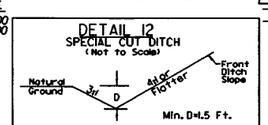
DETAIL 5
STANDARD 'V' DITCH
(Not to Scale)



-L- LT 167+00 TO 167+50
-L- LT 170+00 TO 170+50

SPECIAL DITCH GRADE
SEE PROFILE FOR GRADE
-L- (LT) 158+50 TO 160+00
-L- (LT) 165+00 TO 166+00

DETAIL 12
SPECIAL CUT DITCH
(Not to Scale)



-L- LT 164+00 TO 167+00
-L- LT 167+50 TO 170+00

200.00'
70.55'
N21°33'22"W

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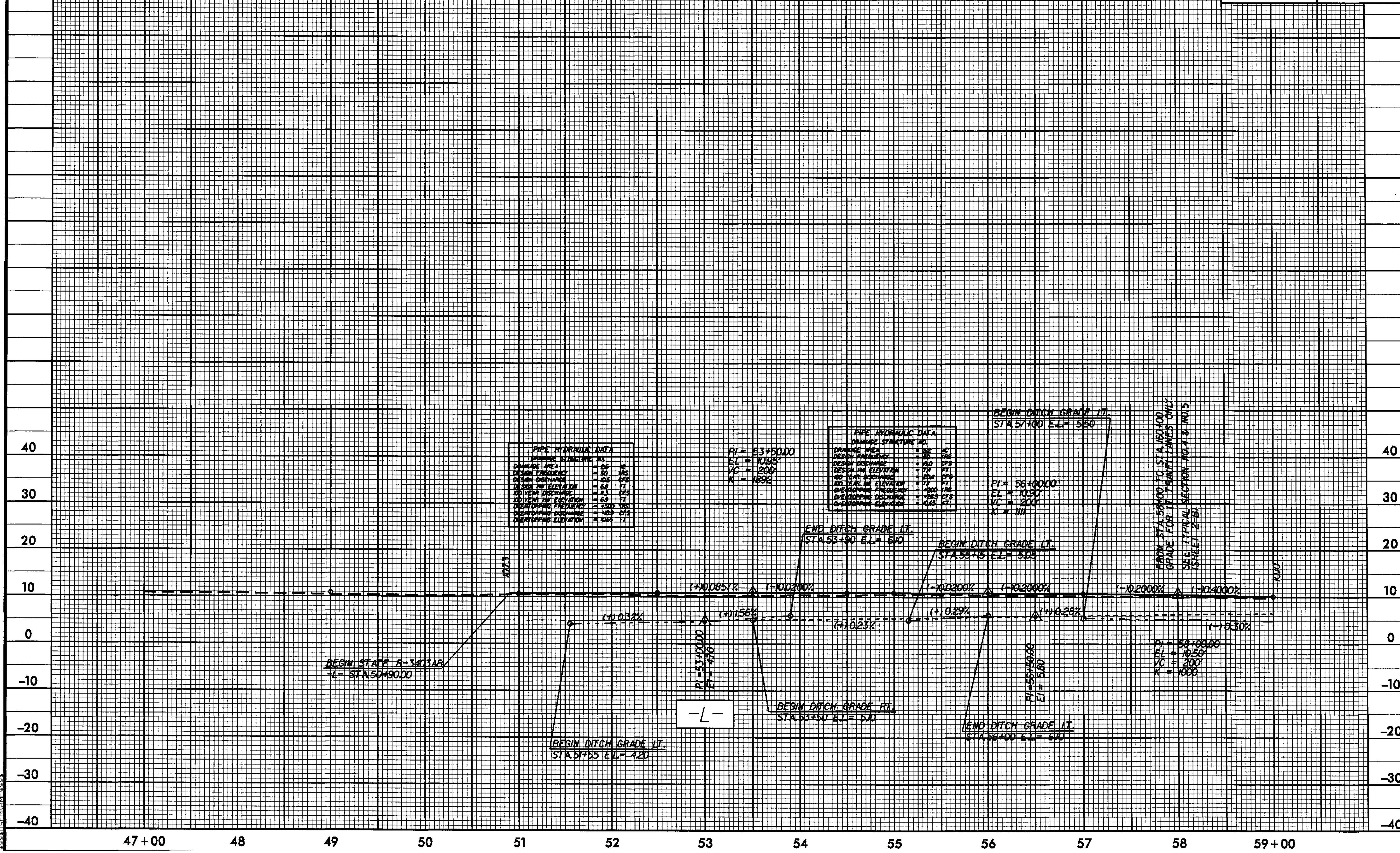
PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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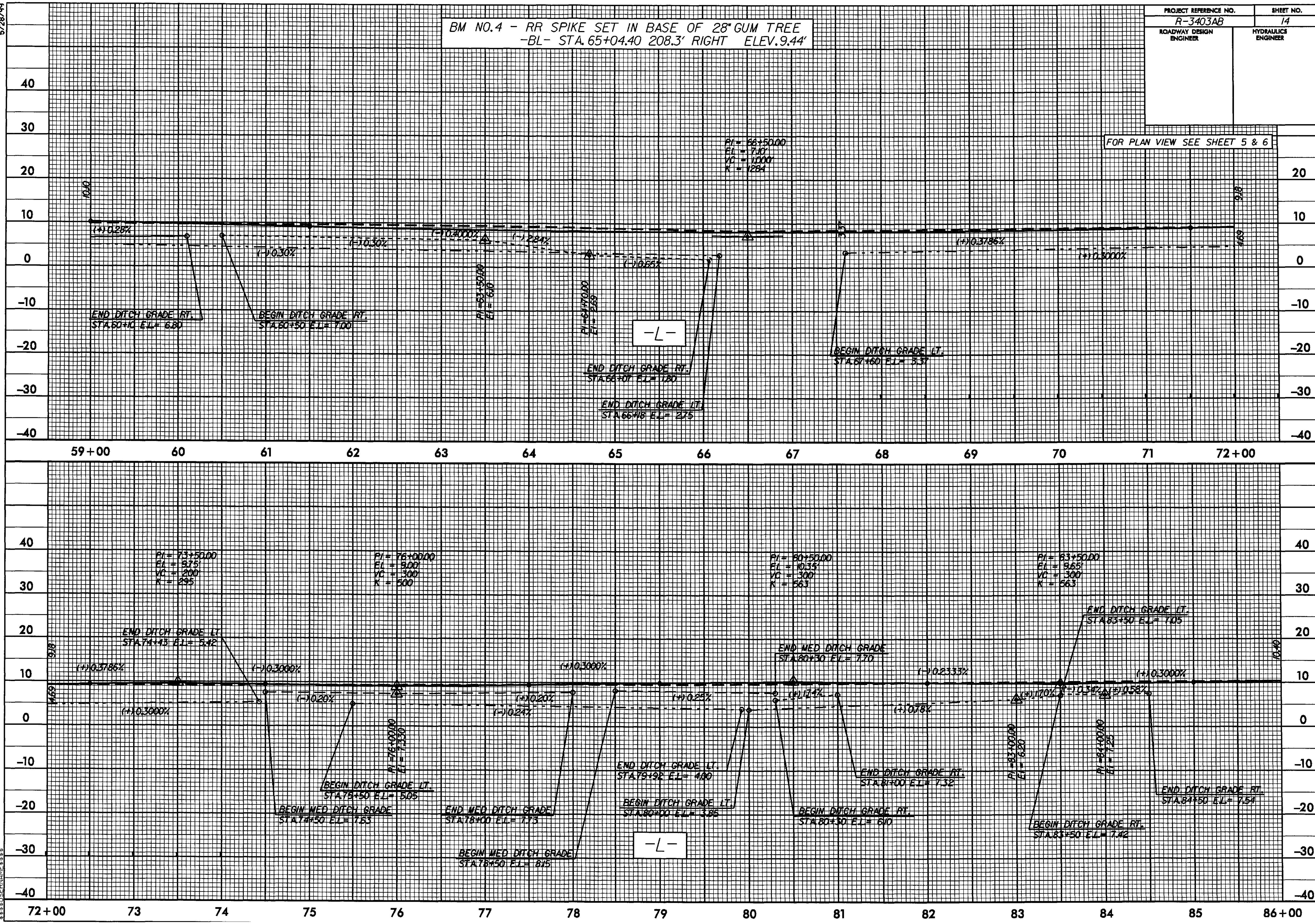
PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



BM NO.4 - RR SPIKE SET IN BASE OF 28" GUM TREE
-BL- STA. 65+04.40 208.3' RIGHT ELEV. 9.44'
FOR PLAN VIEW SEE SHEET 5 & 6
PI = 66+50.00
EL = 7.10
VC = 1,000'
K = 1284
(+) 0.28%
(-) 0.30%
(-) 0.30%
(-) 0.4000%
(-) 2.84%
(-) 0.65%
(+) 0.3786%
(+) 0.3000%
PI = 63+50.00
EL = 6.10
PI = 64+70.00
EL = 2.69
END DITCH GRADE RT.
STA. 60+10 EL = 6.80
BEGIN DITCH GRADE RT.
STA. 60+50 EL = 7.00
-L-
END DITCH GRADE RT.
STA. 66+07 EL = 1.80
END DITCH GRADE LT.
STA. 66+18 EL = 2.75
BEGIN DITCH GRADE LT.
STA. 67+60 EL = 3.37
59+00
60
61
62
63
64
65
66
67
68
69
70
71
72+00
PI = 73+50.00
EL = 9.75
VC = 200'
K = 295
PI = 76+00.00
EL = 9.00
VC = 300'
K = 500
PI = 80+50.00
EL = 10.35
VC = 300'
K = 563
PI = 83+50.00
EL = 9.65
VC = 300'
K = 563
END DITCH GRADE LT.
STA. 74+43 EL = 5.42
END MED DITCH GRADE
STA. 80+30 EL = 7.70
END DITCH GRADE LT.
STA. 83+50 EL = 7.05
(+) 0.3786%
(-) 0.3000%
(+) 0.3000%
(-) 0.2333%
(+) 0.3000%
(+) 0.3000%
(-) 0.20%
(+) 0.20%
(-) 0.24%
(+) 0.25%
(+) 1.74%
(+) 0.78%
(+) 1.70%
(-) 0.54%
(+) 0.58%
PI = 76+00.00
EL = 7.330
PI = 83+00.00
EL = 6.20
PI = 84+00.00
EL = 7.25
BEGIN DITCH GRADE LT.
STA. 75+50 EL = 5.05
BEGIN MED DITCH GRADE
STA. 74+50 EL = 7.63
END MED DITCH GRADE
STA. 78+00 EL = 7.73
BEGIN MED DITCH GRADE
STA. 78+50 EL = 8.15
END DITCH GRADE LT.
STA. 79+92 EL = 4.80
BEGIN DITCH GRADE LT.
STA. 80+00 EL = 3.85
BEGIN DITCH GRADE RT.
STA. 80+30 EL = 6.10
END DITCH GRADE RT.
STA. 81+00 EL = 7.32
BEGIN DITCH GRADE RT.
STA. 83+50 EL = 7.42
END DITCH GRADE RT.
STA. 84+50 EL = 7.54
-L-
72+00
73
74
75
76
77
78
79
80
81
82
83
84
85
86+00

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PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

BM NO.5 - RR SPIKE SET IN BASE OF 30" PINE TREE
-BL- STA. 86+96.80 150.4' RIGHT ELEV. 12.34'

FOR PLAN VIEW SEE SHEET 7 & 8

PI = 88+00.00
EL = 11.30'
VC = 300'
K = 545

PI = 91+50.00
EL = 10.58'
VC = 200'
K = 364

BEGIN DITCH GRADE RT.
STA. 89+50 EL = 8.20

END DITCH GRADE RT.
STA. 93+50 EL = 8.74

PI = 99+50.00
EL = 13.07'
VC = 1000'
K = 156

BEGIN DITCH GRADE RT.
STA. 99+28 EL = 5.92

(12.33)

(12.99)

(+)0.3000%

(-)0.30%

(-)0.2500%

(+)0.53%

(+)0.3000%

(-)0.20%

(-)0.3595%

(-)0.20%

PI=91+40.00
EL = 7.80

PI=99+05.00
EL = 5.80

BEGIN DITCH GRADE LT.
STA. 88+00 EL = 7.70

-L-

86+00 87 88 89 90 91 92 93 94 95 96 97 98 99 100+00

BM NO.6 - CHISLED SQUARE IN NE CORNER OF SOUTH R/R BRIDGE HEADWALL
-BL- STA. 105+98.40 126.8' RIGHT ELEV. 11.42'

PI = 110+00.00
EL = 9.30'
VC = 800'
K = 1070

END DITCH GRADE LT.
STA. 100+43 EL = 5.0

END DITCH GRADE LT.
STA. 108+46 EL = 6.50

BEGIN DITCH GRADE LT.
STA. 108+20 EL = 5.89

(12.23)

(11.26)

(+)0.82%

(+)1.41%

(+)1.62%

(-)0.20%

(-)0.3595%

(-)1.50%

(+)0.3878%

(+)0.40%

BEGIN DITCH GRADE LT.
STA. 100+45 EL = 5.60

PI=102+50.00
EL = 9.50

BEGIN DITCH GRADE LT.
STA. 109+75 EL = 6.50

END DITCH GRADE RT.
STA. 104+00 EL = 9.20

END DITCH GRADE LT.
STA. 103+00 EL = 9.31

END DITCH GRADE LT.
STA. 114+00 EL = 8.22

-L-

100+00 101 102 103 104 105 106 107 108 109 110 111 112 113 114+00

40 30 20 10 0 -10 -20 -30 -40

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PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

BM NO.7 - RR SPIKE SET IN BASE OF 6" PINE TREE
-BL- STA. 119+19.20 152.7' RIGHT ELEV. 13.26'

FOR PLAN VIEW SEE SHEET 9 & 10

PI = 116+00.00
EL = 11.63'
VC = 400
K = 57.4

PI = 119+00.00
EL = 10.70'
VC = 200
K = 32.8

PI = 126+00.00
EL = 12.80'
VC = 300
K = 50.0

PIPE HYDRAULIC DATA		
DRAINAGE STRUCTURE NO.		
DRAINAGE AREA	= 17.5	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 180	CFS
DESIGN HW ELEVATION	= 13.23	FT
100 YEAR DISCHARGE	= 255	CFS
100 YEAR HW ELEVATION	= 13.88	FT
OVERTOPPING FREQUENCY	= 50	YRS
OVERTOPPING DISCHARGE	= 180	CFS
OVERTOPPING ELEVATION	= 13.23	FT

10.35 — 13.23

(+)0.387% | (-)0.309% | (-)0.45% | (-)0.52% | (+)0.300% | (+)0.12% | (-)0.300%

BEGIN DITCH GRADE LT.
STA. 117+50 EL.= 8.21

BEGIN DITCH GRADE RT.
STA. 118+50 EL.= 7.99

END DITCH GRADE LT.
STA. 120+20 EL.= 7.00

BEGIN DITCH GRADE LT.
STA. 120+23 EL.= 6.59

END DITCH GRADE RT.
STA. 120+42 EL.= 7.00

-L-

114+00 115 116 117 118 119 120 121 122 123 124 125 126 127 128+00

40 30 20 10 0 -10 -20 -30 -40

BM NO.8 - TOP OF WEST ANCHOR BOLT OF EAST R/R SIGNAL LIGHTS
-BL- STA. 134+59.40 204.0' RIGHT ELEV. 15.50'

PI = 129+00.00
EL = 11.90'
VC = 300
K = 50.0

PIPE HYDRAULIC DATA		
DRAINAGE STRUCTURE NO.		
DRAINAGE AREA	= 0.5	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 3.0	CFS
DESIGN HW ELEVATION	= 13.0	FT
100 YEAR DISCHARGE	= 5.0	CFS
100 YEAR HW ELEVATION	= 13.1	FT
OVERTOPPING FREQUENCY	= >100	YRS
OVERTOPPING DISCHARGE	= >5.0	CFS
OVERTOPPING ELEVATION	= 15.5	FT

12.23 — 15.50

(+)0.300% | (+)0.12% | (+)1.31% | (-)10.76% | (-)0.25% | (+)2.30%

PI = 132+00.00
EL = 9.56

PI = 136+00.00
EL = 9.60

END DITCH GRADE LT.
STA. 134+00 EL.= 10.60

BEGIN DITCH GRADE RT.
STA. 134+50 EL.= 10.94

END DITCH GRADE RT.
STA. 140+00 EL.= 8.80

BEGIN DITCH GRADE RT.
STA. 141+30 EL.= 8.40

-L-

128+00 129 130 131 132 133 134 135 136 137 138 139 140 141 142+00

40 30 20 10 0 -10 -20 -30 -40

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PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.
DRAINAGE AREA = 65 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 1260 CFS
DESIGN HW ELEVATION = 1825 FT
50 YEAR DISCHARGE = 1500 CFS
50 YEAR HW ELEVATION = 1827 FT
OVERTOPPING FREQUENCY = 100 YRS
OVERTOPPING DISCHARGE = 1460 CFS
OVERTOPPING ELEVATION = 1829 FT

FOR PLAN VIEW SEE SHEET 11 & 12

BEGIN DITCH GRADE LT.
STA.148+50 EL.= 1468

PI = 149+00.00
EL = 1330

PI = 151+50.00
EL = 1865
VC = 1500
K = 37.50

BEGIN DITCH GRADE RT.
STA.145+50 EL.= 1360

END DITCH GRADE RT.
STA.143+50 EL.= 1346

PI = 141+35.00
EL = 1160

PI = 147+50.00
EL = 1340

BEGIN DITCH GRADE RT.
STA.149+60 EL.= 1480

END DITCH GRADE LT.
STA.152+50 EL.= 1495

END DITCH GRADE RT.
STA.149+05 EL.= 1330

PI = 153+50.00
EL = 1400

BEGIN DITCH GRADE LT.
STA.155+70 EL.= 610

END DITCH GRADE RT.
STA.154+45 EL.= 1210

(+)0.3000%
(+)1.5789%
(+)0.3926%
(-)1.56%
(+)0.30%
(-)1.0205%
(-)2.0000%
(-)1.8868%
(+)2.30%
(-)1.20%

-L-

142+00 143 144 145 146 147 148 149 150 151 152 153 154 155 156+00

BM NO.9 RR SPIKE SET IN BASE OF CP&L POWER POLE No. NEM31
-BL- STA. 158+12.20 176.2' RIGHT ELEV. 19.77'

PI = 157+85.00
EL = 950

PI = 159+00.00
EL = 1155

-L- 160+00 BK =
-L- 160+00 AH =
SEE TYPICAL SECTION NO.6
(SHEET 2-D)

END DITCH GRADE LT.
STA.156+50 EL.= 1230

BEGIN DITCH GRADE LT.
STA.156+47 EL.= 600

END DITCH GRADE LT.
STA.155+41 EL.= 525

(+)0.30%
(+)1.78%
(+)2.54%
(-)1.20%

-L-

156+00 157 158 159 160+00

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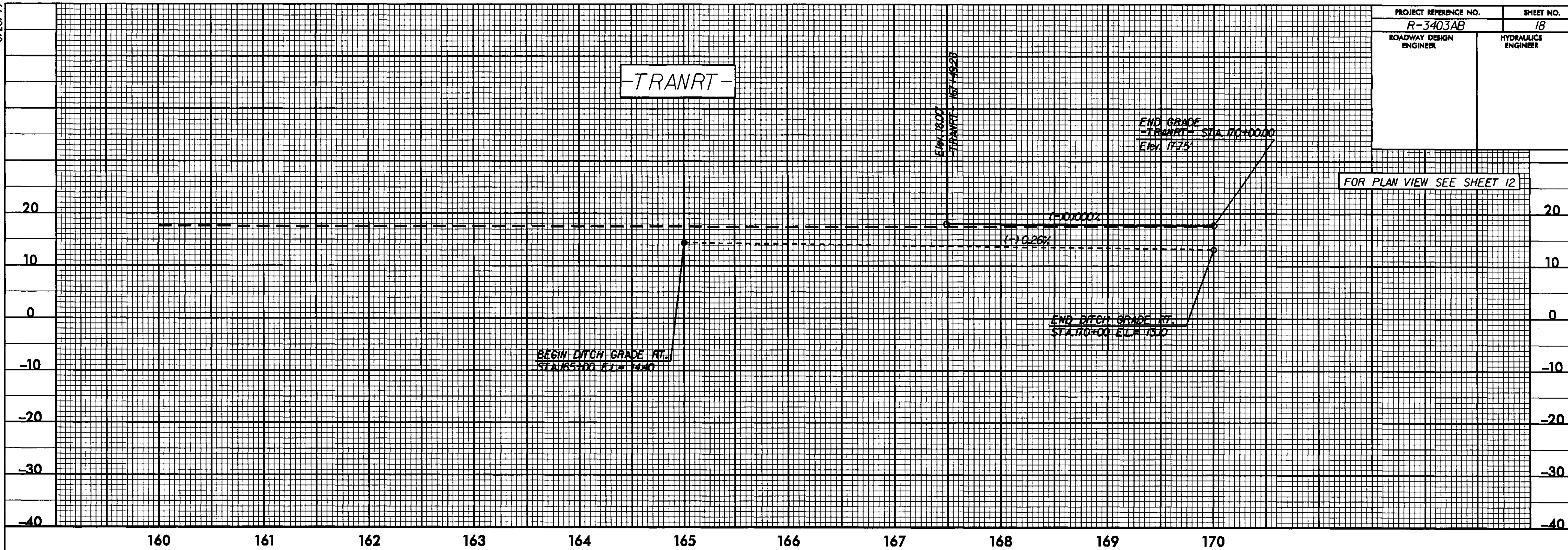
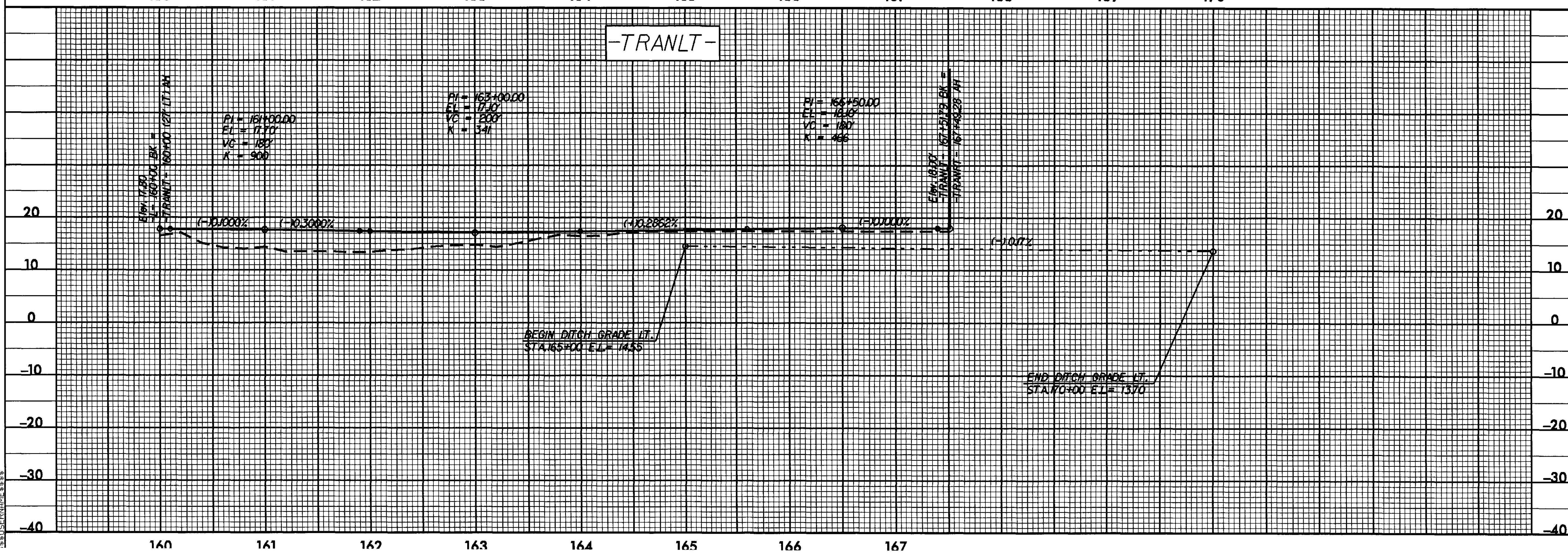
PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FOR PLAN VIEW SEE SHEET 12





PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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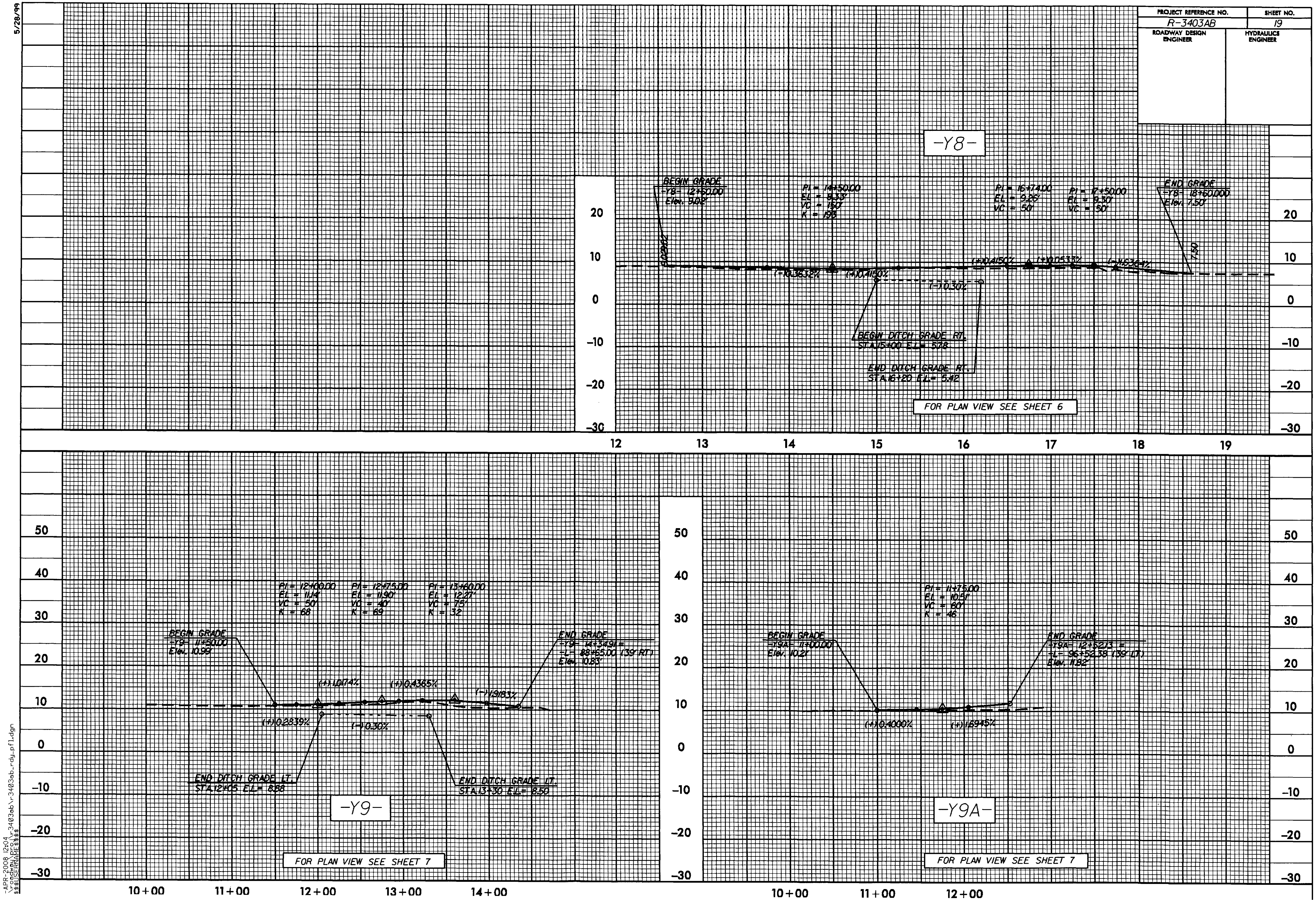

-Y8-
BEGIN GRADE
-Y8- 12+60.00
Elev. 9.02'
PI = 14+50.00
EL = 8.33'
VC = 150'
K = 193
PI = 16+74.00
EL = 9.26'
VC = 50'
PI = 17+50.00
EL = 9.30'
VC = 50'
END GRADE
-Y8- 18+60.000
Elev. 7.50'
9.02
7.50
(-)0.3632%
(+)0.4150%
(+)0.4150%
(+)0.0533%
(-)1.6364%
(-)0.30%
BEGIN DITCH GRADE RT.
STA.15+00 E.L.= 5.78
END DITCH GRADE RT.
STA.16+20 E.L.= 5.42
FOR PLAN VIEW SEE SHEET 6
20
10
0
-10
-20
-30
12
13
14
15
16
17
18
19
50
40
30
20
10
0
-10
-20
-30
PI = 12+00.00
EL = 11.14'
VC = 50'
K = 68
PI = 12+75.00
EL = 11.90'
VC = 40'
K = 69
PI = 13+60.00
EL = 12.27'
VC = 75'
K = 32
BEGIN GRADE
-Y9- 11+50.00
Elev. 10.99'
END GRADE
-Y9- 14+34.91 =
-L- 88+65.00 (39' RT)
Elev. 10.83'
(+)1.0174%
(+)0.4365%
(-)1.9183%
(+)0.2839%
(-)0.30%
END DITCH GRADE LT.
STA.12+05 E.L.= 8.88
END DITCH GRADE LT.
STA.13+30 E.L.= 8.50
-Y9-
FOR PLAN VIEW SEE SHEET 7
10+00
11+00
12+00
13+00
14+00
PI = 11+75.00
EL = 10.51'
VC = 60'
K = 46
BEGIN GRADE
-Y9A- 11+00.00
Elev. 10.21'
END GRADE
-Y9A- 12+52.13 =
-L- 96+52.38 (39' LT)
Elev. 11.82'
(+)0.4000%
(+)1.6945%
-Y9A-
FOR PLAN VIEW SEE SHEET 7
10+00
11+00
12+00

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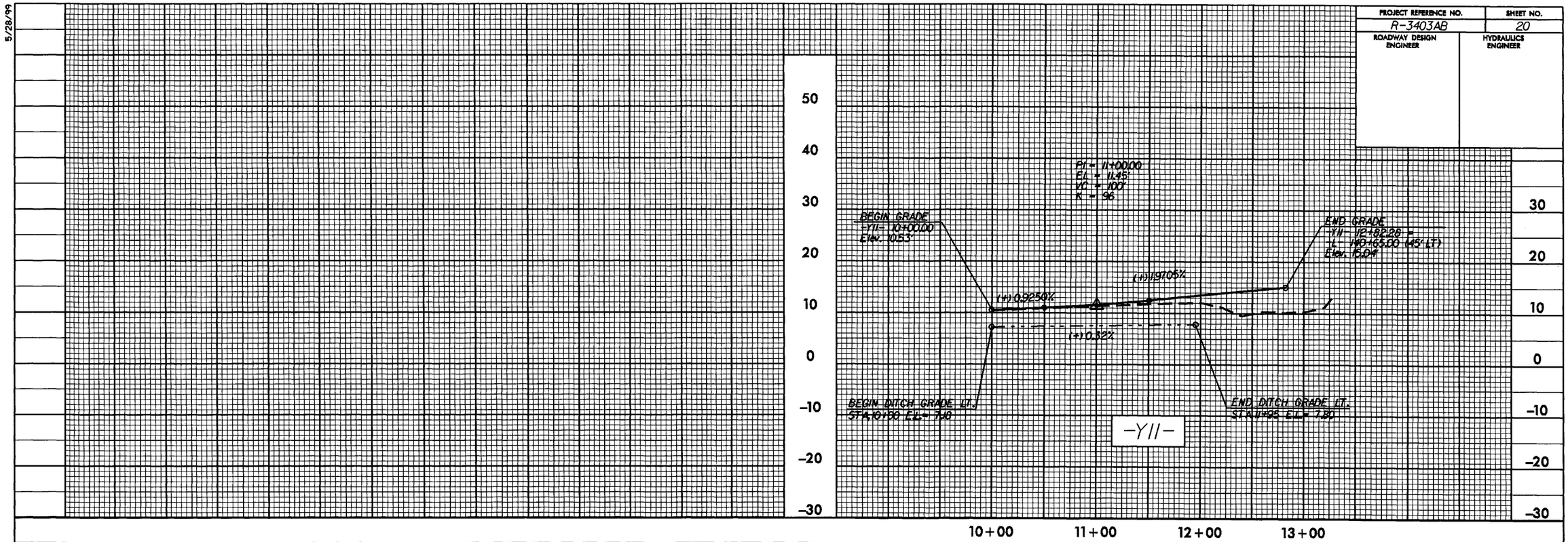
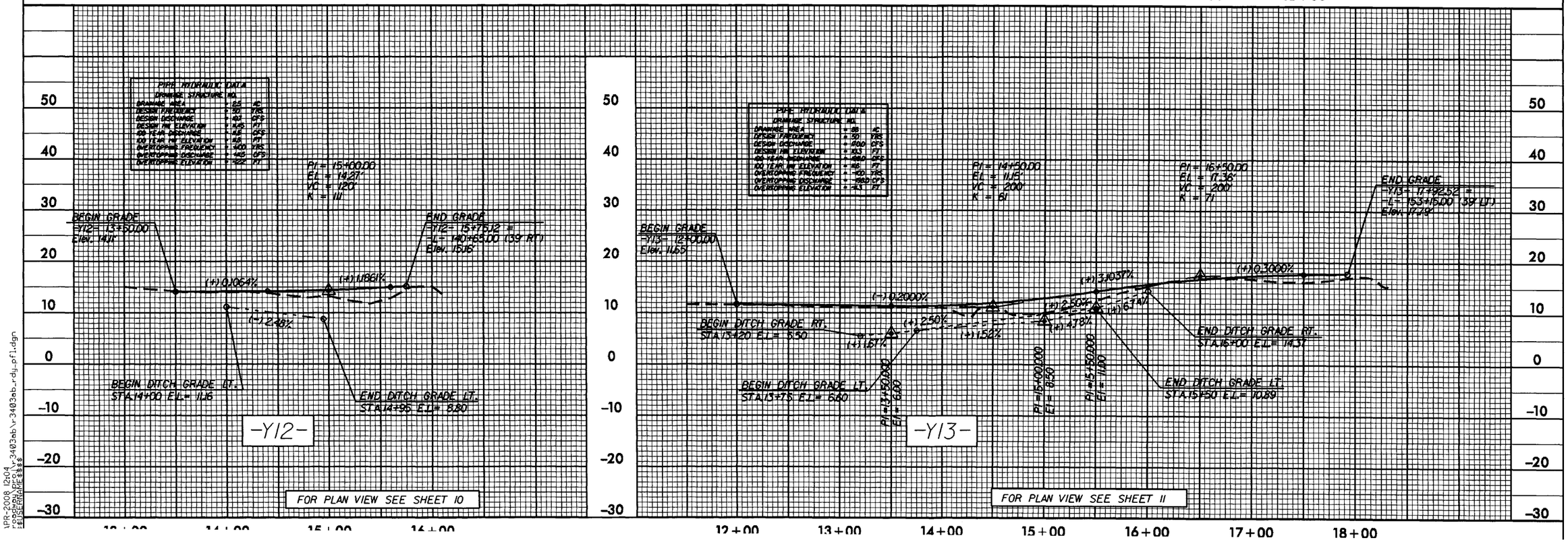
PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER





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PROJECT REFERENCE NO.	SHEET NO.
R-3403AB	21

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER