STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

August 26, 2013

U. S. Army Corps of Engineers
Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587

ATTN: Mr. Andy Williams
NCDOT Coordinator

SUBJECT: **Application for Section 404 Individual Permit and Section 401 Individual Water Quality Certification** for the proposed Greensboro Eastern Loop from US 70 Relocation to SR 2303 (Lawndale Drive), Guilford County, Division 7. WBS Element No. 34821.1.1, TIP Nos. U-2525B and U-2525C.

Debit $570.00 from WBS Element No. 34821.1.1

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to construct a section of the Greensboro Eastern Loop from US 70 Relocation to SR 2303 (Lawndale Drive) in Greensboro, for a total of 9.7 miles. The project involves constructing a new four-lane freeway from US 70 Relocation to US 29 and a new six-lane freeway from US 29 to Lawndale Drive.

In addition to this cover letter, the application package consists of an ENG Form 4345, Interagency Hydraulic Design Review meeting minutes for U-2525B (Concurrence Points 4B and 4C), Stormwater Management Plan, permit drawings (U-2525B only), onsite mitigation plans (Section U-2525B only), and half-size roadway plan sheets. The North Carolina Ecosystem Enhancement Program (NCEEP) acceptance letter is forthcoming.

PROJECT SCHEDULE

For construction purposes, the remaining Greensboro Eastern Loop project has been broken down into two sections, U-2525B and U-2525C. Section U-2525A was permitted separately and completed in 2002. Table 1 reflects the project breakdown and section termini.

Table 1. Description of Project Sections for Construction Purposes

Section	Project Termini	Let Date
U-2525A	South of SR 3041 to US 70 Relocation (1.1 miles)	Complete (May 2002)
U-2525B	US 70 Relocation to US 29 (5.0 miles)	May 20, 2014
U-2525C	US 29 to SR 2303 (4.7 miles)	July 17, 2018

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS UNIT
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WEBSITE:NCDOT.GOV

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

Permit drawings for the proposed project have been prepared based on final design for U-2525B. Preliminary design permit drawings have not yet been prepared for U-2525C. The NCDOT will apply for any relevant permit modifications for U-2525C when final design is complete. Construction will not commence on U-2525C until permit modifications have been received based on final designs.

This project calls for a Let date of May 20, 2014 and a review date of April 1, 2014 for Section U-2525B. The Let date for Section U-2525C is July 17, 2018. However, the Let dates may advance as additional funds become available.

PURPOSE AND NEED

The purpose of the proposed project is to provide an efficient circumferential connection for major arterial thoroughfares such as I-85, I-40, US 29, and US 70, and to improve service for local traffic.

NEPA DOCUMENT STATUS

A Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) for U-2525 (includes Sections U-2525A, U-2525B, and U-2525C) were approved on August 12, 1994 and March 7, 1995, respectively, and have been provided to the appropriate agencies. Right of Way (ROW) Consultations for U-2525B to update the U-2525 FEIS were completed on March 31, 2009, June 14, 2010, and February 24, 2012. No ROW Consultations have been done for U-2525C. Additional copies of the FEIS, ROD, and ROW Consultations will be provided upon request.

INDEPENDENT UTILITY

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

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

RESOURCE STATUS

Wetland delineations within the U-2525B project study area followed the field delineation method outlined in the *1987 Corps of Engineers Wetland Delineation Manual* (USACE, 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (USACE, 2010). Stream identification and classification followed the *Methodology for the Identification of Intermittent and Perennial Streams and Their Origins* (NC Division of Water Quality [NCDWQ], 2010 and 2005).

A jurisdictional determination (JD) for both sections, dated September 26, 2005, was received from USACE. The JD expired on September 26, 2010. Jurisdictional features were last re-verified by USACE Regulatory Specialist Andy Williams and NC Division of Water Resources

(NCDWR) representative Amy Euliss on October 10, 2012, December 6, 2012, and January 29, 2013 for U-2525B only. A request packet for the final JD for U-2525B was submitted to the USACE on February 4, 2013. No written JD was received from the USACE for the re-verification.

U-2525B

This project lies within the Piedmont Physiographic Province in the Cape Fear River Basin [Hydrologic Unit Code (HUC) 03030002]. Jurisdictional features within the U-2525B project study area that will be impacted include 4 unnamed tributaries (UT) to South Buffalo Creek (NCDWQ Classification WS-V; NSW; NCDWQ Index No. 16-11-14-2), 18 UTs to North Buffalo Creek (NCDWQ Classification WS-V; NSW; NCDWQ Index No. 16-11-14-1), and 4 UTs to UT at Camp Herman [NCDWQ Classification WS-V; NSW; NCDWQ Index No 16-11-10-(2)], 2 ponds, and 34 riparian wetlands.

U-2525C

Jurisdictional features within the U-2525C project study area that will be impacted include 2 UTs to North Buffalo Creek (NCDWQ Classification WS-V; NSW; NCDWQ Index No. 16-11-14-1), 5 UTs to UT at Camp Herman [NCDWQ Classification WS-V; NSW; NCDWQ Index No 16-11-10-(2)], 14 UTs to Reedy Fork [NCDWQ Classification WS-III; NSW, CA; NCDWQ Index No 16-11-(3.5)], and Richland Creek (Richland Lake) and 10 UTs to Richland Creek [NCDWQ Classification WS-III; NSW; NCDWQ Index No 16-11-7-(1)], 3 ponds, and 16 riparian wetlands.

There are no designated Outstanding Resource Waters (ORW), High Quality Waters (HQW), Water Supply I (WS-I), or Water Supply II (WS-II) waters within 1.0 mile of the project area. North Buffalo Creek and South Buffalo Creek, including their UTs, within the project area and within a mile of the project area are listed on the 2012 303(d) Final List of Impaired Waters of North Carolina due to standard violations of Copper (2008) and Zinc (2008). North Buffalo Creek, including its UTs, is also listed for standard violation of nitrite-nitrate nitrogen series (2012).

IMPACTS TO WATERS OF THE UNITED STATES

Utility Impacts

There will be no impacts from utilities for Section U-2525B. Utility impacts for Section U-2525C will be evaluated during the permit modification process.

Surface Waters

U-2525B

Total surface water impacts for U-2525B are 10,255 linear feet of permanent stream impacts, 607 linear feet of temporary stream impacts, and 0.62 acres of pond impacts. The jurisdictional stream impacts are summarized below in Table 2.

Table 2. U-2525B Stream Impacts (Final)

Permit Site No.	Stream Name/JD Packet ID	I/P Flow Status	Impact Type	Permanent Impacts (ft)	Impacts requiring USACE mitigation (ft)	USACE Mitigation Ratio[1]	Impacts requiring NCDWR mitigation (ft)	Temp Impacts (ft)
1	UT to South Buffalo Creek/SAF	P	Fill	1352	1352	2:1	1352	0
		I	Fill	332	332	1:1	0[3]	0
4	UT to South Buffalo Creek/SAE	P	Fill	394	394	2:1	394	153
			BS	98	0[2]	n/a	98	0
5	UT to South Buffalo Creek/SAD	P	Fill	1598	1598	2:1	1598	20
6	UT to South Buffalo Creek/SAG	I	Fill	138	138	1:1	0[3]	10
9	UT to North Buffalo Creek/SAA	P	Fill	462	462	1:1	462	10
9A	UT to North Buffalo Creek/SAJ	I	Fill	84	84	1:1	0[3]	0
10	UT to North Buffalo Creek/SZ	P	Fill	212	212	2:1	212	29
			BS	97	0[2]	n/a	97	0
11	UT to North Buffalo Creek/SY	P	BS	18	0[2]	n/a	0[4]	0
12	UT to North Buffalo Creek/SX	P	Fill	286	286	2:1	286	22
			BS	30	0[2]	n/a	30	0
13	UT to North Buffalo Creek/SW	P	Fill	137	137	2:1	0[4]	7
			BS	10	0[2]	n/a	0[4]	0
		I	Fill	32	0[5]	n/a	0[3]	0
14	UT to North Buffalo Creek/SV	I	Fill	347	347	1:1	347	35
			BS	10	0[2]	n/a	10	0
15	UT to North Buffalo Creek/SU	P	Fill	292	292	2:1	292	26
			BS	20	0[2]	n/a	20	0
16	UT to North Buffalo Creek/SS	P	Fill	382	382	1:1	382	43
			BS	12	0[2]	n/a	12	0
17	UT to North Buffalo Creek/SR	I	Fill	51	51	1:1	0[3]	20
18	UT to North Buffalo Creek/SQ	P	Fill	241	241	2:1	241	20
			BS	30	02	n/a	30	0

Table 2. U-2525B Stream Impacts (Final) continued

Permit Site No.	Stream Name/JD Packet ID	I/P Flow Status	Impact Type	Permanent Impacts (ft)	Impacts requiring USACE mitigation (ft)	USACE Mitigation Ratio[1]	Impacts requiring NCDWR mitigation (ft)	Temp Impacts (ft)
20	UT to North Buffalo Creek/SL	P	Fill	815	815	2:1	815	49
20A	UT to North Buffalo Creek/SL	P	Fill	236	236	1:1	236	29
20B	UT to North Buffalo Creek/SM	P	Fill	29	29	2:1	0[4]	0
21	UT to North Buffalo Creek/SI	P	Fill	374	374	2:1	374	10
22A	UT to North Buffalo Creek/SK	I	Fill	142	142	1:1	0[3]	10
			BS	10	0[2]	n/a	0[3]	0
25	UT to North Buffalo Creek/SO	I	Fill	12	12	1:1	0[3]	10
			BS	12	0[2]	n/a	0[3]	0
26	UT to North Buffalo Creek/SI	P	Fill	319	319	2:1	319	11
			BS	12	0[2]	n/a	12	0
27	UT to North Buffalo Creek/SH	I	Fill	215	215	1:1	0[3]	10
28	UT to North Buffalo Creek/SH	I	Fill	461	461	1:1	0[3]	0
29	UT to UT at Camp Herman/SF	P	Fill	290	290	2:1	290	4
			BS	10	0[2]	n/a	10	0
31	UT to UT at Camp Herman /SD	P	Fill	191	191	2:1	191	27
			BS	21	0[2]	n/a	21	0
32A	UT to UT at Camp Herman/SB	P	Fill	151	151	2:1	151	25
			BS	28	0[2]	n/a	28	0
33	UT to UT at Camp Herman/SC	I	Fill	115	115	1:1	0[3]	10
			BS	17	0[2]	n/a	0[3]	0
35	UT to UT at Camp Herman/SF	P	Fill	120	120	2:1	120	17
			BS	10	0[2]	n/a	10	0
TOTALS (ft)				**10,255**	**9,778**		**8,440**	**607**

Notes: P = Perennial; I = Intermittent; BS = Bank Stabilization; n/a = not applicable. [1]Determined from USACE during verification site visits on October 10, 2012, December 6, 2012, and January 29, 2013. [2]Mitigation for bank stabilization not required by USACE. [3]Intermittent streams grandfathered from NCDWR mitigation. [4]Mitigation not required by NCDWR (less than 150 linear feet of steam). [5]Stream deemed unimportant by the USACE requiring no mitigation.

U-2525C

Total preliminary surface water impacts for U-2525C are 12,646 linear feet of permanent stream impacts and 1.7 acres of pond impacts. This total was derived by calculating stream and pond impacts within slope stake limits plus 25 additional feet outside of slope stake limits. Impacts are anticipated to be reduced during final design.

Wetlands

U-2525B

There will be a total of 7.65 acres of permanent riparian wetland impacts associated with this section. These impacts will result from 6.96 acres of permanent fill, 0.31 acres of excavation, and 0.38 acres of mechanized clearing. There will also be 0.03 acres of wetland impacts due to hand clearing. Permanent and temporary wetland impacts are summarized below in Table 3 for U-2525B.

Table 3. U-2525B Wetland Impacts (Final)

Permit Site No.	JD Package ID	Permanent Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)	Total Impacts (ac)
1	WAP	0.57	0.04		0.61
1A	WAO	0.03			0.03
1B	WAN	0.01			0.01
2	WAQ	0.05		<0.01	0.06
3	WAM	0.12			0.12
3A	WAX	0.03			0.03
3B	WAL	0.02			0.02
3C	WAK	0.25	0.02	0.02	0.29
4	WAI	0.02			0.02
5A	WAH	0.08			0.08
5B	WAG	0.02			0.02
6	WAE	0.03			0.03
6A	WAD	0.05		<0.01	0.05
7	WAC	1.29	0.05	0.03	1.37
8	WZ	0.88		0.09	0.97
8A	WAA		<0.01		<0.01
9	WX/WY	2.07		0.15	2.22
10A	WU	0.02		0.02	0.04
10B	WT	0.03	<0.01	<0.01	0.04
10C	WS	0.25	0.04		0.29
11	WR	0.33			0.33
13	WO	0.02		0.01	0.03
16	WAY	<0.01			<0.01
18	WK	0.03		0.01	0.04
19	WJ		0.14		0.14
20B	WI	0.02			0.02
21	WE	0.34		0.04	0.38
22	WH	0.03			0.03

Table 3. U-2525B Wetland Impacts (Final) continuted

Permit Site No.	JD Package ID	Permanent Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)	Total Impacts (ac)
22A	WF	0.02			0.02
22B	WG	0.01			0.01
23	WAB	0.02			0.02
24	WAB	0.19			0.19
27	WAR	0.10			0.10
30	WA	0.03	<0.01		0.04
34	WAT	<0.01			<0.01
TOTALS (ac)		**6.96**	**0.31**	**0.38**	**7.65**

Notes: Totals are rounded based upon sum of actual impacts. Most permanent impacts require 2:1 USACE mitigation except for Permit Sites 20B and 34 which USACE determined as 1:1 mitigation. Permit Site 8A is an isolated wetland and therefore not under USACE jurisdiction.

U-2525C

Total preliminary wetland impacts for U-2525C are 2.4 acres. This total was derived by calculating wetland impacts within slope stake limits plus 25 additional feet outside of slope stake limits. Impacts are anticipated to be reduced during final design.

MITIGATION OPTIONS

The USACE has adopted, through the Council on Environmental Quality (CEQ), a wetland mitigation policy that embraces the concept of “no net loss of wetlands” and sequencing. The purpose of this policy is to restore and maintain the chemical, biological, and physical integrity of the waters of the United States. CEQ has defined mitigation of wetland and surface water impacts to include: avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (40 CFR 1508.20).

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during the planning phase and minimization measures were incorporated as part of the project design. Minimization includes the examination of appropriate and practicable steps to reduce the adverse impacts.

Avoidance and Minimization

Avoidance and minimization has been employed in the project area to the maximum extent practicable. The following measures were implemented for the project:

U-2525B Minimization Measures

- NCDOT’s Best Management Practices (BMPs) for the Protection of Surface Waters will be enforced;
- Impacts to wetlands and surface waters were minimized using 2:1 side slopes where practicable. Sites with greater than 2:1 slopes are due to roadway constraints such as grade differences between roadway fill and natural ground, safety issues, and maintenance issues such as mowing;
- No direct discharges into streams from proposed lateral ditches;

- Grass swale treatment will be utilized in drainage systems discharging into jurisdictional streams;
- All storm drainage will be diffused and designed for non-erosive velocities before entering wetland areas to the maximum extent practicable;
- Rip rap stabilization on banks of jurisdictional streams will be implemented to prevent erosion;
- Pre-formed scour holes will be constructed at 14 locations;
- 4 box culverts will be buried one foot below stream bed with one foot sill in one barrel;
- Reduction of permanent wetland and stream impacts at Permit Site 11 due to bridging;

For additional avoidance/minimization for U-2525B see attached Stormwater Management Plan. Despite these best efforts of NCDOT, final wetland impacts (10.05 acres) for U-2525B/U-2525C did increase from the impacts reported in the FEIS (5.1 acres). The FEIS lists 11.2 acres of wetland impacts, but 6.1 acres of the 11.2 acres were for Section U-2525A which has already been completed, leaving 5.1 acres for Sections U-2525B and U-2525C. The increase is due to new wetlands found within the project area that were not calculated in the FEIS. The difference between FEIS calculations and those done for this permit application may be explained based upon differences in field determination methodology of wetlands used between the FEIS and this permit application. Calculations in the FEIS were based mainly on desktop review using soil survey maps, US Geological Survey topographic maps, FEMA Flood Insurance Rate Maps, and stereographic interpretation of aerial photography to determine the locations and extent of the wetlands in the study area. A field reconnaissance was conducted only in selected areas for the FEIS. This mostly likely lead to an underestimation of actual wetlands when compared to complete ground-truthing as done in the most recent re-verification of wetlands for this permit application.

Stream impacts for this permit application cannot be accurately compared to the FEIS since stream impacts in the FEIS were calculated in acres. Streams were treated as bank-to-bank wetlands in the FEIS, and therefore, received the same methodology of determination for wetlands explained above. More accurate stream determination methodology has been developed well after the field work (1991) for the FEIS was completed. Therefore, it is assumed that an underestimation of stream impacts resulted in the FEIS based upon the methodology used when compared to the more accurate methodology used for this permit application. This is reflected by streams shown in the FEIS (fewer stream crossings) than what is shown in the most recent jurisdictional waters re-verification package sent to the USACE in 2013.

Compensatory Mitigation

U-2525B

Compensatory mitigation requirements for U-2525B are summarized below in Table 4. The U-2525B section will permanently impact 10,255 feet of warm water streams. Of these 10,255 feet, there are 445 feet of bank stabilization and 32 feet of an intermittent stream that do not require mitigation by the USACE, resulting in 9,778 feet of stream impacts requiring USACE mitigation.

The USACE is requiring 2:1 mitigation for 4,746 feet and requiring 1:1 mitigation for 2,977 feet of stream impacts. NCDWR is requiring 1:1 mitigation for 8,440 feet. Therefore, the total USACE mitigation requirement exceeds the NCDWR requirement. NCDOT is providing onsite mitigation of 2,055 feet of warm water stream by relocating or restoring streams at three sites. See Table 1 of the attached On-Site Mitigation Plan Document for further information. The remaining mitigation requirements of 7,723 feet of permanent warm water stream impacts will be provided by the NCEEP for U-2525B (Table 4)

NCEEP will also provide mitigation for the 7.65 acres (7.63 acres at 2:1, 0.02 acres at 1:1) of permanent riparian wetland impacts resulting from roadway fill, excavation, and mechanized clearing.

Table 4. U-2525B Required Compensatory Mitigation Summary (Final)

	Stream Impacts in Length (ft)	**Riparian Wetland Impacts (ac)**
Impacts Requiring Mitigation	**9,778**	**7.65**
Onsite Mitigation Credits	**2,055**	
Total Mitigable Impacts Less Onsite Mitigation	**7,723**	**7.65**
Required EEP Mitigation	**4,746 @ 2:1**	**7.63 @ 2:1**
	2,977 @ 1:1	**0.02 @ 1:1**
Total EEP Mitigation	**12,249**	**15.28**

U-2525C

Compensatory mitigation requirements for stream and wetland impacts are summarized in Table 5. The U-2525C section will permanently impact a total of 12,646 feet of warm water streams and 2.4 acres of riparian wetlands. Since these impacts are preliminary, it is assumed that these impacts will require 2:1 mitigation by the USACE for the worst-case scenario. Once a final re-verification of streams and wetlands is made by the USACE and NCDWR and final design drawings are complete for Section U-2525C, the mitigation requirements will be revised in the Permit Modification for this section.

Table 5. U-2525C Required Compensatory Mitigation Summary (Preliminary)

	Stream Impacts in Length (ft)	**Riparian Wetland Impacts (ac)**
Impacts Requiring Mitigation	**12,646**	**2.4**
Required EEP Mitigation	**12,646 @ 2:1**	**2.4 @ 2:1**
Total EEP Mitigation	**25,292**	**4.8**

FEDERALLY PROTECTED SPECIES

Plants and animals with a Federal classification of Endangered (E) or Threatened (T) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act (ESA) of 1973, as amended. As of December 3, 2012, the U.S. Fish and Wildlife Service (USFWS) list one federally protected species for Guilford County: Small whorled pogonia (*Isotria medeoloides)*. A species description and biological conclusion for the small whorled pogonia was not stated in the FEIS because the species was added to the USFWS county list of protected species after the documents were completed. A survey (U-2525B only) was done by Atkins, Inc. biologists on June 13-15 and June 18-19, 2012 and a biological conclusion of “No Effect” was given for small whorled pogonia. A search of the North Carolina Natural Heritage Database on August 1, 2013 revealed no known occurrences of any federally protected species within 1.0 mile of the limits of this section.

Since the FEIS the bald eagle has been delisted for Guilford County. The bald eagle was delisted as of August 2007 and is not subject to Section 7 consultation and a biological conclusion is not required. However, the bald eagle remains protected by the Bald and Golden Eagle Protection Act. No habitat exists in the U-2525 project study area for the bald eagle.

CULTURAL RESOURCES

One historic structure that is listed on the National Register of Historic Places (NRHP) and that will be adversely affected from the proposed project includes the Schoolfield-Hatcher Farm. A Memorandum of Agreement (MOA), regarding impacts to this property, between the USACE, NCDOT, and the North Carolina Department of Cultural Resources, State Historic Preservation Office (HPO) was written and signed by all parties (last signature date on October 2, 2008). The property owner concurred with the MOA on October 12, 2008 (ROW consultation dated March 31, 2009).

Based on stipulations stated in the MOA, the proposed alignment was shifted to reduce impacts to the Schoolfield-Hatcher Farm. The new transportation facility with control-of-access fencing will divide the farm into two discontiguous parcels. Access to the first parcel, containing the house and primary farm structures, will be retained via the current driveway. NCDOT will provide a cul-de-sac to allow access to the second parcel. The driveway and cul-de-sac are included in the U-2525B final design plans. Another stipulation of the MOA involved developing a landscaping plan. In consultation with HPO and the property owner, NCDOT developed a landscape plan for the Schoolfield-Hatcher property which was approved on May 14, 2013. Another stipulation of the MOA states that prior to the initation of construction, NCDOT will record the existing condition of the Schoolfield-Hatcher Farm and its surroundings in accordance with the attached Historic Structures and Landscape Recordation Plan.

Based upon the NCDOT Archaeological Survey Report dated January 22, 2008, NCDOT recommended three sites as being eligible for the NRHP. These sites include Site 31GF452** (Schoolfield-Hatcher Farmstead), Site 31GF456 (long-term multi-component Native American site), and Site 31GF466 (long-term Early Archaic to Middle Woodland Native American site). The proposed project will not adversely impact any of these sites. However, archaeological monitoring will be conducted during initial ground-disturbing activities at both Sites 31GF452** and 31GF466. Given the National Register eligibility of Sites 31GF456 and 31GF466 and their proximity to the proposed project, a visual barrier or fencing of some kind will be placed along the proposed right-of-way in order to avoid and prevent any disturbance to these two archaeological sites. Site 31GF445** (May/Hudson Cemetery) while not eligible, cannot be avoided and will be relocated in accordance with the provisions of NCGS Chapter 65. In addition, five areas within the area of potential effect were not surveyed due to denial of access by the property owners. Of these five areas, only the Louise Coble parcel (15.64 acres) is to be affected by the proposed project and will require additional investigations once access has been granted or right-of-way has been acquired and prior to any construction activities. HPO concurred with these recommendations and findings on September 12, 2008.

FEMA COMPLIANCE

There are streams within the project limits that are within Federal Emergency Management Agency (FEMA)-designated flood zones. Coordination between the NCDOT Hydraulics Unit and FEMA will occur prior to Let to ensure that NCDOT is in full compliance with applicable floodplain ordinances.

INDIRECT AND CUMULATIVE EFFECTS

An Indirect and Cumulative Effects (ICE) report was completed for U-2525. The report details the potential socioeconomic, and ecological effects that may result from U-2525 and other past, present, and reasonably foreseeable future development activities in the region. It was completed in October 2009 and distributed shortly thereafter. Additional copies of the ICE report are available upon request.

Based upon the ICE report, a majority of the study area is urban and suburban in character, and most of the area already has access to an established road network. The project's individual effects on land use and natural resources are minor. The provisions contained in the Water Supply Watershed rules that are in effect and are stringently enforced by the local governments will control and limit development within the watershed areas in the project study area. The potential indirect effects identified in the ICE report are consistent with all local jurisdictions' land use and transportation plans. Current land use and transportation policies contained in the local plans support the proposed project.

WILD AND SCENIC RIVERS

This project will not impact any designated Wild and Scenic Rivers or any rivers included in the list of study rivers (Public Law 90-542, as amended) or North Carolina Natural and Scenic Rivers.

ESSENTIAL FISH HABITAT

The project will not impact any essential fish habitat afforded protection under the Magnuson-Stevens Act of 1996 (16 U.S.C 1801 *et seq.*).

REGULATORY APPROVALS

Application is hereby made for a Department of the Army Section 404 Individual Permit as required for the above-described activities for the proposed T.I.P. Project U-2525B and C. The NCDOT understands that a permit modification will be required for Section U-2525C after final design is complete and prior to construction.

We are also hereby requesting a Section 401 Individual Water Quality Certification from NCDWR. In compliance with Section 143-215.3D (e) of the NCAC, we will provide $570.00 to act as payment for processing the Section 401 permit. We are providing two copies of this application to NCDWR for their review and approval.

A copy of this permit application and its distribution list will be posted on the NCDOT website at https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx. Thank you for your time and assistance with this project. Please contact Greg Price at either gwprice@ncdot.gov or (919) 707-6148 if you have any questions or need additional information.

Sincerely,
E. L. Lusk
for Deborah M. Barbour, PE
Director of Preconstruction

Cc: NCDOT Permit Application Standard Distribution List

U.S. ARMY CORPS OF ENGINEERS

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

OMB APPROVAL NO. 0710-0003
EXPIRES: 28 FEBRUARY 2013

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

PRIVACY ACT STATEMENT

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

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

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

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME
First - Debbie Middle - Last - Barbour
Company - NCDOT-Preconstruction
E-mail Address -

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

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

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

7. APPLICANT'S PHONE NOs. w/AREA CODE
a. Residence b. Business 919-707-2540 c. Fax

10. AGENTS PHONE NOs. w/AREA CODE
a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

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

SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
U-2525B/U-2525C

13. NAME OF WATERBODY, IF KNOWN (if applicable)
UTs to N Buffalo Cr, S Buffalo Cr, Reedy Fork, & Richland Cr.

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

15. LOCATION OF PROJECT
Latitude: °N 36.12707 Longitude: °W 79.71203

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

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

18. Nature of Activity (Description of project, include all features)
U-2525B/U-2525C proposes to construct a section of the Greensboro Eastern Loop from US 70 Relocation to SR 2303 (Lawndale Drive) in Greensboro, NC for a total of 9.7 miles.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)
The purpose of U-2525B/U-2525C is to provide an efficient circumferential connection for major arterial thoroughfares such as I-85, I-40, US 29, and US 70, and to improve service for local traffic.

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

20. Reason(s) for Discharge
Impacts will result from widening the roadway and shoulders, construction of roadway on new location, and bridge construction.

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

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

See attached cover letter.

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

Acres See attached cover letter.
or
Linear Feet See attached cover letter.

23. Description of Avoidance, Minimization, and Compensation (see instructions)
See attached cover letter.

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

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

a. Address- See attached permit drawings.

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

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

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

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

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

E. L. [illegible] for Deborah M. Barbour, PE Aug 20, 2013

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

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

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

Subject: **Final** Minutes of the Interagency Hydraulic Design Review (4b) Meeting on September 24, 2008 for U-2525B, Guilford County

Participants:

Team Members:
Randy Henegar, NCDOT Hydraulics (present)
Andrew Williams, USACE (present)
Amy Euliss, NCDWQ (present)
Travis Wilson, NCWRC (not present)
Gary Jordan, USFWS (present)
Kathy Matthews, EPA (present)
James Speer, NCDOT Roadway (present)
Donnie Brew, FHWA (present)
Lonnie Brooks, NCDOT Structures (present)
Rachelle Beauregard, NCDOT NEU (present)
Patty Eason, NCDOT Division 7 (present)
David Harris, NCDOT REU (not present)
Beverly Robinson, NCDOT PDEA (not present)

Other Attendees
Danny Gardner, NCDOT Roadway
John Gauthier, NCDOT Roadway
Randy Griffin, NCDOT NEU
Tom Payne, NCDOT Structures
Paul Fisher, NCDOT Hydraulics
Lisa Feller, NCDOT PDEA
Brett Feulner, NCDOT NEU
Jamie Lancaster, NCDOT NEU
Zach McNeill, NCDOT PDEA
Daren Pait, Kimley Horn & Assoc.

Randy Henegar opened with a brief description of the project. He commented that throughout the project every effort has been made to protect water quality through best management practices, including discharging outfalls as far away from live streams as practicable, and specifying preformed scour holes wherever they can be effective. It was also noted that NEU and Kimley Horn & Assoc. have been studying this project to determine possible opportunities for mitigation, stream restoration and enhancement, etc. Mr. Henegar then proceeded to go through the plans sheet by sheet addressing the impacted streams or wetland sites.

Items discussed are summarized as follows:

1. Plan Sheets 4 & 5: The existing stream will be relocated to the west. This is Site #1 of the Natural Stream Design Study. A site visit will be scheduled prior to finalizing all of the Natural Stream Designs. Jamie Lancaster will set up the site visit prior to the Field Inspection. The upland wetlands at this site may be incorporated into preservation.

2. Plan Sheet 5: The upstream and downstream benches for the two barrel culvert will be made with rip rap. The voids will fill in and vegetation will form over time. A specific planting plan will not be done, except in cases where the bench is in a cut section.

3. General: All stream relocations, restorations and enhancements will be enclosed in right-of-way.

4. Plan Sheets 6 & 7: The stream leading into the 66" RCP will be restored. This is Site #2 of the Natural Stream Design Study.
5. Plan Sheet 7: The ditches in the wetlands will be allowed. The impacts will need to be shown on the Permit Drawings.
6. Plan Sheet 8: There seems to be a wetland boundary completely inside another wetland boundary. NEU should fix the wetland file to avoid confusion.
7. Plan Sheet 16: The stream will be enhanced both upstream and downstream of the 66" RCP. This is Site #3 of the Natural Stream Design Study.
8. Plan Sheet 18: Stream Restoration is proposed for 400' upstream of the 2 @ 7' x 8' box culvert. This is Site #4 of the Natural Stream Design Study. Hydraulics will investigate the impact of the 24" pipe discharging into the wetlands. The drainage in this area may be adjusted for the 4c Meeting.
9. Plan Sheet 20: The stream will be relocated upstream of the 2 @ 8' x 8' box culvert. This is Site #5 of the Natural Stream Design Study.
10. Plan Sheet 32: Hydraulics will check the velocity of the two pipes discharging into the same stream. Should velocities be erosive, the design will be adjusted.
11. Plan Sheet 33: The pond shown partially under the fill of -Y21- will be a complete take.
12. Plan Sheet 34: The discharge from the ponds near the Service Road (-I26-) should be treated as streams. Coordinate the classifications with Brett Feulner.

Minutes of the Interagency Hydraulic Design Review (4c) Meeting on March 21, 2013 for U-2525B, Guilford County

Participant: **Team Members:**

Randy Henegar, NCDOT Hydraulics (present)
Andrew Williams, USACE (present)
Amy Euliss, NCDWQ (present)
Kevin Fischer NCDOT Structures (present)
Travis Wilson, NCWRC (absent)
Gary Jordan, USFWS (absent)
Chris Militscher, EPA (telephone)
James Speer, NCDOT Roadway (present)
Patty Eason, NCDOT Division 7 (telephone)
Felix Davila, FHWA (absent)
Beverly Robinson, NCDOT PDEA (absent)
David Harris, NCDOT REU (absent)
Rachelle Beauregard, NCDOT PDEA (present)

Other Attendees

Danny Gardner, NCDOT Roadway
John Gauthier, NCDOT Roadway
Paul Fisher, NCDOT Hydraulics
Shawn Harris, NCDOT Hydraulics
David Shaeffer, USACE
Steve McKee, NCDOT Utilities
Greg Price, NCDOT PDEA
Lisa Feller, NCDOT PDEA
Mark Staley, NCDOT REU
Phil Harris, NCDOT NES
Randy Griffin, NCDOT PDEA
Brett Feulner, NCDOT PDEA
Pete Allen, NCDOT PDEA
Michael Abuya, NCDOT TRB
Jamshid Hafshejani, NCDOT Util.

It should be noted that the 30% Hydraulic Design Review (4b) meeting for this project was held on 9/24/2008. The 4C meeting commenced at approximately 10:15 a.m. Randy Henegar (NCDOT Hydraulics Unit) conducted the meeting and began reviewing the project sheet-by-sheet taking comments from the attendees. Comments were as follows:

1. Mitigation Plans: The Mitigation Plans will need to be updated to the current standards. ***Response:* Randy Griffin will coordinate this work.**
2. General: All Plan Sheets need to be checked to ensure that Jurisdictional Streams are labeled "JS". ***Response:* done**
3. General: USACE requested that each Site No. be linked to the Wetland Number in the document. ***Response:* NES will provide this documentation in the Permit Package.**
4. General: DWQ requested that for each multi-barrel culvert, note if sills are used on the plan sheets. ***Response:* done**
5. Plan Sheet #5: Partition Site 3 into 3A, 3B, 3C, etc. Also, do a "total take" on the wetlands near –L- Sta. 46+50 (Lt.) ***Response:* done**
6. Plan Sheet #7: Check to see if the various wetland sites for Site No. 5 between the project slope stake line and Stream Mitigation Site No. 2 are a "take" or not. ***Response:* These sites will be a total take.**

7. General: Several Blow-Ups may be needed in tight spaces throughout the plans to ensure clarity. Field Plans are typically on a small scale. ***Response:*** ***Six (6) sheets have been added to the Permit Drawings showing Blow-ups of the following Sites: 1, 1a, 1b, 2, 5, 5a, 5b, 6, 6a, 7, 22, 22a, 22b, 26, 27, 28 and 35.***

8. Plan Sheet #8: Use Bank Stabilization at pipe outlets in Jurisdictional Streams for Site 9 and throughout the project. ***Response:*** ***done***

9. Plan Sheet #9: Break Site 10 into two separate sites (10-A and 10-B). ***Response:*** ***done***

10. Plan Sheet #13: Show the non-jurisdictional pond near –L- Sta. 164+00. ***Response:*** ***done***

11. Plan Sheet #14: The stream south side of –Y9- is mitigable. The stream north side of –Y9- is not mitigable. Also, DWQ would like the bank stabilization extended on the south side of –Y9-. ***Response:*** ***done***

12. Plan Sheet #19: Near –L- Sta. 240+00 (Lt.) a Permanent Check Dam will be installed just inside the R/W line. This stream will be reclassified as Intermittent (from Perennial) and will have a 1:1 Mitigation Ratio. ***Response:*** ***done***

13. Plan Sheet #33: The general comment was made that NCDOT will attempt to install Stormwater controls inside the loops wherever possible. Hydro agreed to raise the invert and install a rip rap berm at the inlet inside the loop on this sheet. ***Response:*** ***done***

14. Plan Sheet #37: Site 35 will need a "Blow-Up" for clarity. ***Response:*** ***done***

15. The Corps of Engineers questioned whether Concurrence Point 3 needed to be resolved prior to issuing a permit. ***Response:*** ***Lisa Feller will provide the Corps with documentation from a previous meeting addressing this issue.***

No further comments were recorded, and the meeting adjourned at 12:15 p.m.

Subsequent to the March 21, 2013 Meeting, NCDOT received comments from NCDWQ regarding the Mitigation Plans.

1. For the areas that will be excavated down to the floodplain, soil amendments need to be added for vegetative success. I think there is a detail for this, but it is not incorporated into the discussion in the Site Plans. ***Response:*** ***done***

2. Site 2: It is stated that "special attention must be also given to the possible change in flow regime in this system as it may be influenced by storm water runoff from the proposed roadway." Please elaborate on what this means for the design. ***Response:*** ***done***

3. Site 5: As we discussed in the meeting, there is a "potential road" labeled on the plans. Please determine what this road is. Also, if there is no road, can you acquire the right of way between the road and the mitigation site, and incorporate it into the Mitigation Plan? ***Response:*** ***done***

Subsequent to the March 21, 2013 Meeting, NCDOT also received comments from USACE regarding the Mitigation Plans.

1. NCDOT will need to indicate why it is environmentally preferable to provide on-site mitigation instead of through EEP. ***Response:*** ***done***

2. For each stream that is being "relocated" or restored, we will need the appropriate USACE stream score and/or the mitigation ratio that was determined (if it was determined) during the site visit. This will assist us in determining if the relocation may provide all the appropriate mitigation or if additional credits will need to be purchased through EEP. ***Response:*** ***done***

NOTE: NEU will address each of the above comments in detail with the respective agencies.

NCDOT
Highway Stormwater
PROGRAM

(Version 1.2; Released July 2012)

North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR LINEAR ROADWAY PROJECTS

Project/TIP No.:	U-2525B	**County(ies):**	Guilford	**Page**	1	**of**	6

General Project Information

Project No.:	U-2525B	**Project Type:**	New Location	**Date:**	4/3/2013
NCDOT Contact:	Paul Fisher / Shawn Harris	**Contractor / Designer:**			
Address:		**Address:**			
Phone:	(919) 707-6720 / (919) 707-6725	**Phone:**			
Email:	pfisher@ncdot.gov / shawnharrris@ncdot.gov	**Email:**	pfisher@ncdot.gov shawnharrris@ncdot.gov		
City/Town:		**County(ies):**	Guilford		
River Basin(s):	Cape Fear	**CAMA County?**	No		
Primary Receiving Water:	Buffalo Creek	**NCDWQ Stream Index No.:**			

NCDWQ Surface Water Classification for Primary Receiving Water	**Primary:**	Class C	
	Supplemental:	Nutrient Sensitive Waters (NSW)	
Other Stream Classification:			
303(d) Impairments:			
Buffer Rules in Effect			

Project Description

Project Length (lin. Miles or feet):	5.00	**Surrounding Land Use:**	Suburb / Rural

	Proposed Project	**Existing Site**
Project Built-Upon Area (ac.)	ac.	ac.
Typical Cross Section Description:		
Average Daily Traffic (veh/hr/day):	Design/Future: N/A / ADT 2030 = 20000	Existing:

General Project Narrative:

This roadway project is a portion of the Eastern Greensboro Loop. The U-2525B portion is from North of US 70 Relocation to US 29. The surrounding area is predominately wooded and agricultural with some residential neighborhoods interspereseed. The project mainline will have typical sections that predominately consist of a 46' median with 6:1 side slopes, where 38' is grass lined with non-erosive velocities throughout the project to the extent practicable. In cut sections of the typical will have grass lined V-ditch with 6:1 side side slopes in the median and on the lateral ditches the side slopes are 6:1 4:1 with a 2:1 back slope. No discharges directly in the streams, all discharges were made as far away from the streams as practicable. Any pipes that are placed within a jurisdictional stream will include outlet protection on the stream banks for bank stabilization, no riprap will be placed in the stream bed. We have raised pipe inverts within some interchanges and loops were practicable to provide treatment and placed riprap inlet sediment trap (s) Type "A" where feasible as a SCM. Major Structures: Sta. 48+65 -L-, 2@9'x9' RCBC buried one foot below stream bed with one foot sill in on barrel (Grade=0.6%), Sta. 114+55 -L-, 2@7'x8' RCBC buried one foot below stream bed with one foot sill in on barrel (Grade=0.8%), Sta. 218+00 -L-, 2@7'x8' RCBC buried one foot below stream bed with one foot sill in on barrel (Grade=1.5%), Sta. 541+96 -L-, 2@8'x8' RCBC buried one foot below stream bed with one foot sill in on barrel (Grade=1.5%).

References

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STORMWATER MANAGEMENT PLAN

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Project Environmental Summary

Surface Water Impacts

Sheet No.	Station (From / To)	Feature Impacted	Water / Wetland / Buffer Type	Receiving Surface Water Name	NRTR Map ID	NCDWQ Stream Index	NCDWQ Surface Water Classification	303(d) Impairments	Type of Impact	Existing SCM	Proposed SCM
4 & 5	27+25 -Y3RPA- 47+94 -L- (LT)	Stream & Wetland	Perennial Headwater Wetland	S. Buffalo Creek					Fill		
4	24+84 -Y3RPD-	Wetland	Headwater Wetland						Fill		
5	48+75 -L-	Stream & Wetland	Perennial Headwater Wetland	S. Buffalo Creek					Culvert & Fill		
5	48+65 -L-	Wetland	Headwater Wetland						Fill		
5	46+46 -L- (LT) 47+70 -L- (RT)	Wetland	Bottomland Hardwood						Fill		
6 & 7	59+31 -L- (RT) 81+35 -L- (LT)	Stream	Perennial	S. Buffalo Creek					Fill		
7	66+14 -L- (LT) 68+72 -L- (LT)	Wetland	Headwater Wetland						Excavation		
7	70+32 -L- (LT) 71+59 -L- (LT)	Wetland	Headwater Wetland						Excavation		
7	21+56 -Y4RPB- 22+00 -Y4RPB-	Wetland	Headwater Wetland						Fill		
7	22+11 -Y4RPB- 22+75 -Y4RPB-	Wetland	Headwater Wetland						Fill		
7	77+25 -L- LT 25+57 -RPC- (RT)	Wetland	Headwater Wetland						Fill		
7 & 8	93+50 -L- 95+95 -L- (LT)	Wetland	Headwater Wetland						Fill		
7	33+23 -EY4-	Wetland	Small-Basin Wetland (Isolated Wetland Only)						Excavation		
8	95+78 -L- (LT) 102+77 -L- (RT)	Stream & Wetland	Perennial Headwater Wetland	N. Buffalo Creek					Fill		
8	101+78 -L- (LT) 102+19 -L- (LT)	Stream	Intermittent	N. Buffalo Creek					Fill		

* List all stream and surface water impact locations regardless of jurisdiction or size.

Equalizer Pipes to be noted as a minimization of impacts.

All proposed SCMs listed must also be listed under Swales, Preformed Sour Holes and other Energy Dissipators, or Other Stormwater Control Measures.

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Surface Water Impacts

Sheet No.	Station (From / To)	Feature Impacted	Water / Wetland / Buffer Type	Receiving Surface Water Name	NRTR Map ID	NCDWQ Stream Index	NCDWQ Surface Water Classification	303(d) Impairments	Type of Impact	Existing SCM	Proposed SCM
9	113+64 -L- (LT) 117+08 -L- (RT)	Stream	Perennial	N. Buffalo Creek					Culvert		
9	114+23 -L- (RT) 115+15 -L- (RT)	Wetland	Headwater Wetland						Fill		
9	115+19 -L- (LT) 116+17 -L- (RT)	Wetland	Headwater Wetland						Fill		
9	116+15 -L- (LT) 117+08 -L- (RT)	Wetland	Headwater Wetland						Fill		
10	123+22 -L- (LT) 127+94 -L- (RT)	Wetland	Headwater Wetland						Fill		
13	156+90 -L-	Stream	Perennial	N. Buffalo Creek					Culvert		
14	174+23 -L- (LT) 174+67-L-(LT)	Stream	Perennial	N. Buffalo Creek					Culvert		
14	174+72 -L-(RT) 174+17-L-(RT)	Wetland	Headwater Wetland						Fill		
15	182+76 -L-	Stream	Intermittent	N. Buffalo Creek					Culvert		
15	189+55 -L-	Stream	Perennial	N. Buffalo Creek					Culvert		
16	195+35 -L-	Stream & Wetland	Perennial Headwater Wetland	N. Buffalo Creek					Culvert		
17	14+26 -Y10A-	Stream	Intermittent	N. Buffalo Creek					Culvert		
18	218+00-L- (LT) 219+51-L- (RT)	Stream	Perennial	N. Buffalo Creek					Culvert		
18	218+00-L- (LT) 219+51-L- (RT)	Wetland	Bottomland Hardwood						Culvert		
18	218+92 -L-	Open Water	Pond	N. Buffalo Creek					Fill		
19	230+83-L-(RT) 230+83-L-(LT)	Wetland	Headwater Wetland						Excavation		

NCDOT Highway Stormwater Program

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Project Environmental Summary

Surface Water Impacts

Sheet No.	Station (From / To)	Feature Impacted	Water / Wetland / Buffer Type	Receiving Surface Water Name	NRTR Map ID	NCDWQ Stream Index	NCDWQ Surface Water Classification	303(d) Impairments	Type of Impact	Existing SCM	Proposed SCM
19	239+57-L- (LT) 245+33-L- (RT)	Stream	Perennial	N. Buffalo Creek					Culvert		
19	239+59-L- (LT) 241+22-L- (LT)	Stream	Perennial	N. Buffalo Creek					Culvert		
20	11+05-LCD- (RT) 11+57-LCD- (RT)	Stream	Perennial	N. Buffalo Creek					Culvert		
20	11+05-LCD- (RT) 11+57-LCD- (RT)	Wetland	Small-Basin Wetland						Fill		
21	16+35 -Y13LPD-	Stream	Perennial	N. Buffalo Creek					Fill		
21	16+35 -Y13LPD-	Wetland	Headwater Wetland	N. Buffalo Creek					Fill		
21 & 31	17+40-Y13RPB- (RT) 17+81 -Y13RPB- (RT)	Wetland	Headwater Wetland						Fill		
31	16+67-Y13RPB- (LT) 17+13 -Y13RPB- (LT)	Stream & Wetland	Intermittent & Headwater Wetland	N. Buffalo Creek					Fill		
31	17+21-Y13RPB- (LT) 17+46 -Y13RPB- (LT)	Wetland	Headwater Wetland						Fill		
25	16+35 -Y4A- (RT)	Wetland	Headwater Wetland						Fill		
25	36+00 -Y4- (RT)	Wetland	Headwater Wetland						Fill & CULVERT		
28	(RT)	Stream	Intermittent	N. Buffalo Creek					Fill & CULVERT		
32	29+38-Y13RPC-	Stream	Perennial	N. Buffalo Creek					Fill & CULVERT		
32	(RT) (LT)	Stream & Wetland	Intermittent & Headwater Wetland	N. Buffalo Creek					Fill & CULVERT		
32 & 33	(RT) (RT)	Stream & Pond	Intermittent	N. Buffalo Creek					Fill		
33	22+88-Y22RPA-	Stream	Perennial	Unnamed Trib. At Camp Herman					Fill & CULVERT		
34	13+63-Y22RPD-	Wetland	Small-Basin Wetland						Fill		

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Highway Stormwater Program

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Project Environmental Summary

Surface Water Impacts

Sheet No.	Station (From / To)	Feature Impacted	Water / Wetland / Buffer Type	Receiving Surface Water Name	NRTR Map ID	NCDWQ Stream Index	NCDWQ Surface Water Classification	303(d) Impairments	Type of Impact	Existing SCM	Proposed SCM
34	16+35-Y23-	Stream	Perennial	Unnamed Trib. At Camp Herman					Fill & CULVERT		
34	34+30-Y26- (LT)	Open Water	Pond						Fill & CULVERT		
34	28+37-Y26- (LT)	Stream	Perennial	Unnamed Trib. At Camp Herman					Fill & CULVERT		
35	22+14 -Y26-	Stream	Perennial	Unnamed Trib. At Camp Herman					Fill & CULVERT		
35	16+03 -Y23-	Wetland	Headwater Wetland						Fill & CULVERT		
37	48+53 -Y23-	Stream	Perennial	Unnamed Trib. At Camp Herman					Culvert		

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Preformed Scour Holes and Energy Dissipators

Sheet No.	Station	Energy Dissipator Type	Riprap Type	Drainage Area (ac)	Conveyance Structure	Pipe/Structure Dimensions (in)	Q10 (cfs)	V10 (fps)
4	21+00 -Y3RPD- (LT)	PFSH	Class 'B'	0.26	Pipe	15	1.3	1.1
4	19+50 -Y3RPA- (RT)	PFSH	Class 'B'	0.37	Pipe	15	1.9	1.5
7	20+20 -Y3RPB- (LT)	PFSH	Class 'B'	0.23	Pipe	15	1.2	1.0
7	17+00 -Y4- (RT)	PFSH	Class 'B'	0.31	Pipe	15	1.5	1.2
7	26+00 -Y4- (LT)	PFSH	Class 'B'	0.16	Pipe	15	0.8	0.7
25	37+00 -Y4- (RT)	PFSH	Class 'B'	0.45	Pipe	15	2.3	1.9
25	14+50 -Y4A- (RT)	PFSH	Class 'B'	2.57	Pipe	18	6.1	3.6
12	152+50 -L- (LT)	PFSH	Class 'B'	0.23	Pipe	15	1.2	1.0
12	155+70 -L- (LT)	PFSH	Class 'B'	2.20	Pipe	18	9.0	4.0
13	159+50 -L- (LT)	PFSH	Class 'B'	0.87	Pipe	15	3.3	2.7
15	182+00 -L- (LT)	PFSH	Class 'B'	0.92	Pipe	15	3.9	3.1
15	192+50 -L- (LT)	PFSH	Class 'B'	1.27	Pipe	15	5.0	4.0
16	197+50 -L- (RT)	PFSH	Class 'B'	1.45	Pipe	18	6.0	3.5
16	110+50 -Y13- (LT)	PFSH	Class 'B'	0.16	Pipe	15	0.8	0.7

Have minimum design criteria, as presented in the NCDOT Best Management Practices Toolbox (2008), NCDOT Standard Details, or FHWA HEC-14 (July 2006), been met and verified, as applicable? If No, provide further explanantion of why design criteria was not met.

Additional Comments

* Refer to the NCDOT Best Management Practices Toolbox, Version 1 (March 2008), NCDOT Standard Details, the Federal Highway Administration (FHWA) Hydraulic Engineering Circular No. 14 (HEC-14), Third Edition, Hydraulic Design of Energy Dissipators for Culverts and Channels (July 2006), as applicable, for design guidance and criteria.

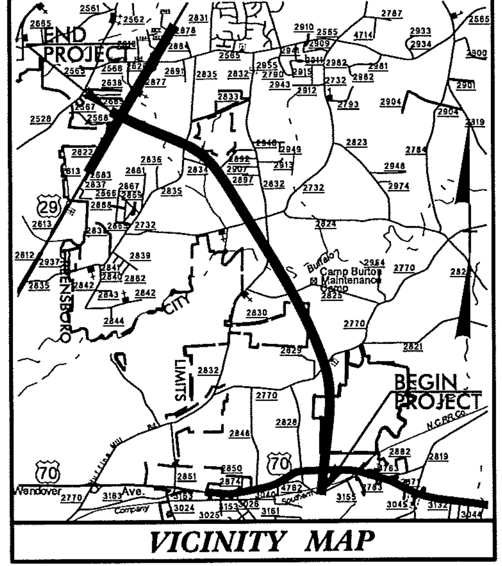
09/08/99

TIP PROJECT: U-2525B

CONTRACT:

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

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Plan Sheet Symbols
See Sheet 1-C and 1-D For Survey Control Sheets



END PROJECT
BEGIN PROJECT
Camp Burton Maintenance Yard
CITY LIMITS
29
70
Wendover Ave.
VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PERMIT DRAWINGS
SHEET 1 OF 93

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2525B	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34821.1.3		PE
34821.2.3		R/W & UTILITIES

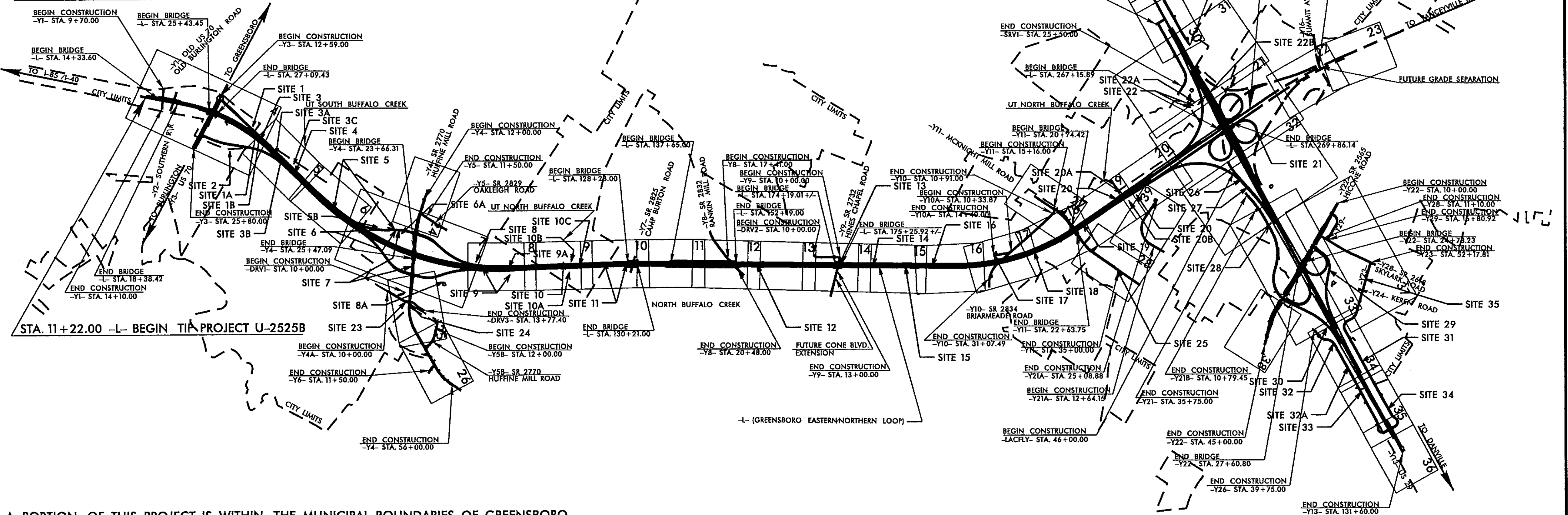
GUILFORD COUNTY

LOCATION: GREENSBORO EASTERN LOOP FROM NORTH OF US 70
RELOCATION TO US 29 NORTH OF GREENSBORO

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS, CULVERTS,
RETAINING WALLS, AND STRUCTURES

NAD 83/95

WETLAND AND SURFACE WATER IMPACTS PERMIT



BEGIN CONSTRUCTION -Y13- STA. 14+00.00
END CONSTRUCTION -Y14- STA. 27+84.49
STA. 275+00.00 -L- END TIP PROJECT U-2525B
STA. 292+66.46 -L- END U-2525B R/W ACQUISITION
BEGIN CONSTRUCTION -SRV1- STA. 10+12.34
END CONSTRUCTION -SRV1- STA. 25+50.00
TO GREENSBORO
CITY LIMITS
TO YANCEYVILLE ROAD
FUTURE GRADE SEPARATION
SUMMIT AVE
BEGIN CONSTRUCTION -Y1- STA. 9+70.00
BEGIN BRIDGE -L- STA. 25+43.45
BEGIN CONSTRUCTION -Y3- STA. 12+59.00
BEGIN BRIDGE -L- STA. 14+33.60
END BRIDGE -L- STA. 27+09.43
TO I-85/I-40
CITY LIMITS
OLD US 70 (BURLINGTON ROAD)
TO GREENSBORO
SITE 1
SITE 2
SITE 3
SITE 3A
SITE 3C
SITE 4
SITE 5
UT SOUTH BUFFALO CREEK
BEGIN BRIDGE -Y4- STA. 23+66.31
SITE 1A
SITE 1B
SITE 3B
SITE 5B
SITE 6
SITE 6A
SITE 7
SITE 8
SITE 8A
SITE 9
SITE 9A
SITE 10
SITE 10A
SITE 10B
SITE 10C
SITE 11
SITE 12
SITE 13
SITE 14
SITE 15
SITE 16
SITE 17
SITE 18
SITE 19
SITE 20
SITE 20A
SITE 20B
SITE 21
SITE 22
SITE 22A
SITE 22B
SITE 23
SITE 24
SITE 25
SITE 26
SITE 27
SITE 28
SITE 29
SITE 30
SITE 31
SITE 32
SITE 32A
SITE 33
SITE 34
SITE 35
-Y2- SOUTHERN R/R
-Y3- US 70
END CONSTRUCTION -Y3- STA. 25+80.00
END BRIDGE -Y4- STA. 25+47.09
BEGIN CONSTRUCTION -DRV1- STA. 10+00.00
END BRIDGE -L- STA. 18+38.42
END CONSTRUCTION -Y1- STA. 14+10.00
STA. 11+22.00 -L- BEGIN TIP PROJECT U-2525B
BEGIN CONSTRUCTION -Y4A- STA. 10+00.00
END CONSTRUCTION -Y6- STA. 11+50.00
CITY LIMITS
END CONSTRUCTION -Y4- STA. 56+00.00
-Y4- SR 2770 HUFFINE MILL ROAD
BEGIN CONSTRUCTION -Y4- STA. 12+00.00
END CONSTRUCTION -Y5- STA. 11+50.00
-Y5- SR 2829 OAKLEIGH ROAD
UT NORTH BUFFALO CREEK
BEGIN BRIDGE -L- STA. 128+25.00
END CONSTRUCTION -DRV3- STA. 13+77.40
BEGIN CONSTRUCTION -Y5B- STA. 12+00.00
-Y5B- SR 2770 HUFFINE MILL ROAD
END BRIDGE -L- STA. 130+21.00
NORTH BUFFALO CREEK
BEGIN BRIDGE -L- STA. 137+65.00
-Y7- SR 2825 CAMP BURTON ROAD
-Y8- SR 2832 RANKIN MILL ROAD
-Y9- SR 2732 HINES CHAPEL ROAD
BEGIN CONSTRUCTION -Y8- STA. 17+41.00
BEGIN CONSTRUCTION -Y9- STA. 10+00.00
BEGIN BRIDGE -L- STA. 174+19.01
END BRIDGE -L- STA. 152+49.00
BEGIN CONSTRUCTION -DRV2- STA. 10+00.00
END BRIDGE -L- STA. 175+25.92
END CONSTRUCTION -Y8- STA. 20+48.00
FUTURE CONE BLVD. EXTENSION
END CONSTRUCTION -Y9- STA. 13+00.00
-L- (GREENSBORO EASTERN-NORTHERN LOOP)
CITY LIMITS
-Y11- MCKNIGHT MILL ROAD
END CONSTRUCTION -Y10- STA. 10+91.00
BEGIN CONSTRUCTION -Y10A- STA. 10+33.87
END CONSTRUCTION -Y10A- STA. 14+40.00
BEGIN BRIDGE -L- STA. 267+15.89
UT NORTH BUFFALO CREEK
BEGIN BRIDGE -Y11- STA. 20+74.42
BEGIN CONSTRUCTION -Y11- STA. 15+16.00
-Y10- SR 2834 BRIARMEADE ROAD
END BRIDGE -Y11- STA. 22+63.75
END CONSTRUCTION -Y10- STA. 31+07.47
END CONSTRUCTION -Y11- STA. 35+00.00
END CONSTRUCTION -Y21A- STA. 25+08.88
BEGIN CONSTRUCTION -Y21A- STA. 12+64.15
BEGIN CONSTRUCTION -LACFLY- STA. 46+00.00
END CONSTRUCTION -Y21B- STA. 10+79.45
END CONSTRUCTION -Y21- STA. 35+75.00
END BRIDGE -L- STA. 269+86.14
-Y22- SR 2565 HIGGONE ROAD
BEGIN CONSTRUCTION -Y22- STA. 10+00.00
END CONSTRUCTION -Y28- STA. 11+10.00
END CONSTRUCTION -Y29- STA. 15+80.92
BEGIN BRIDGE -Y22- STA. 24+78.23
END CONSTRUCTION -Y23- STA. 52+17.81
-Y23- SR 2526 SKYLARK ROAD
-Y24- KEREN ROAD
END CONSTRUCTION -Y22- STA. 45+00.00
END BRIDGE -Y22- STA. 27+60.80
END CONSTRUCTION -Y26- STA. 39+75.00
END CONSTRUCTION -Y13- STA. 131+60.00
TO DANVILLE
CITY LIMITS
-Y12- US 29

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF GREENSBORO.
THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2014 = N/A
ADT 2030 = 20000
DHV = 10 %
D = 60 %
T = 16 % *
V = 70 MPH
* TTST 5% DUAL 11%
FUNC CLASS = INTERSTATE
"STATEWIDE TIER"

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-2525B	=	4.504 Miles
LENGTH STRUCTURE TIP PROJECT U-2525B	=	0.492 Miles
TOTAL LENGTH OF TIP PROJECT U-2525B	=	4.996 Miles

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 22, 2012

LETTING DATE:
MAY 20, 2014

JAMES A. SPEER, PE
PROJECT ENGINEER

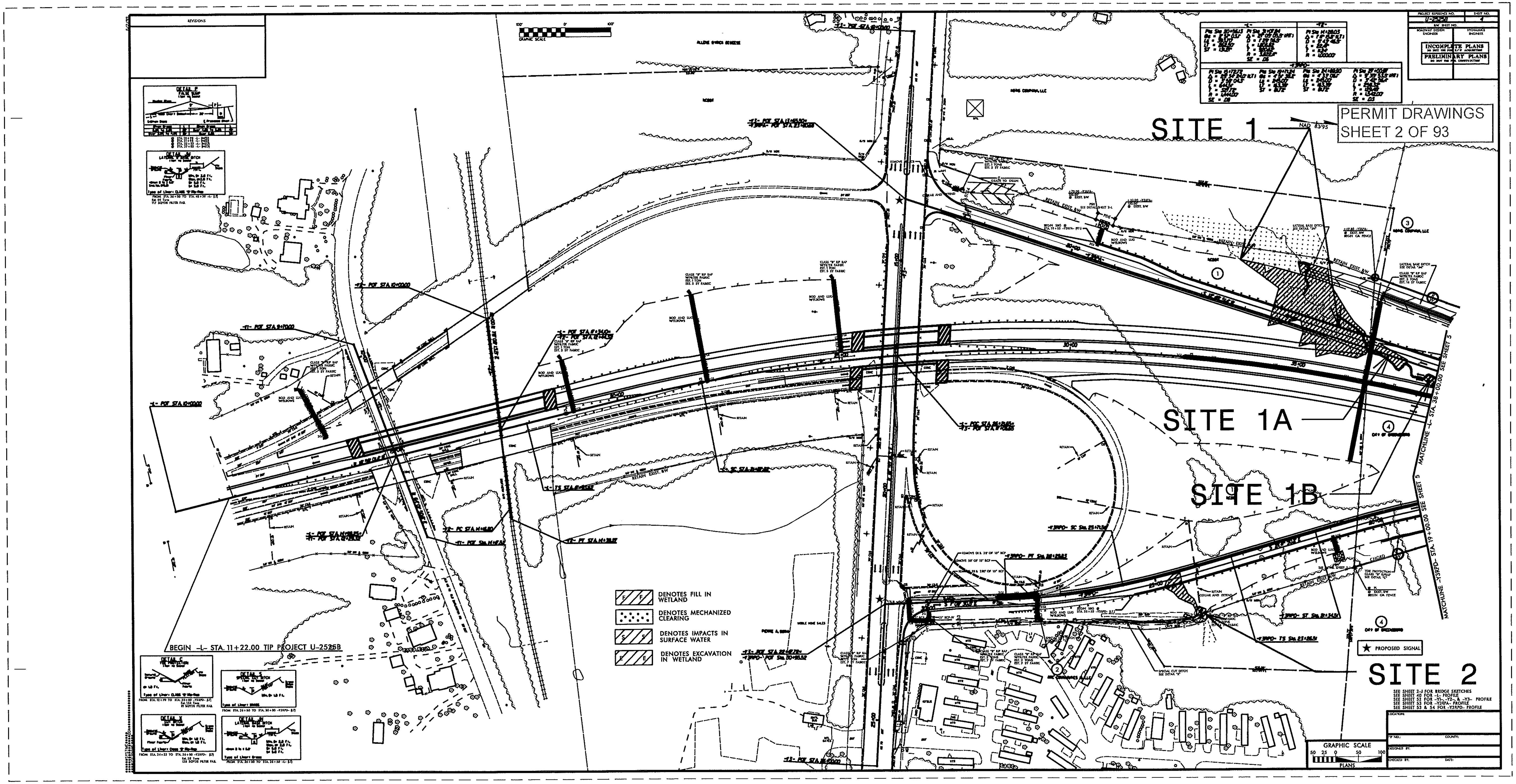
DANIEL W. GARDNER JR., PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

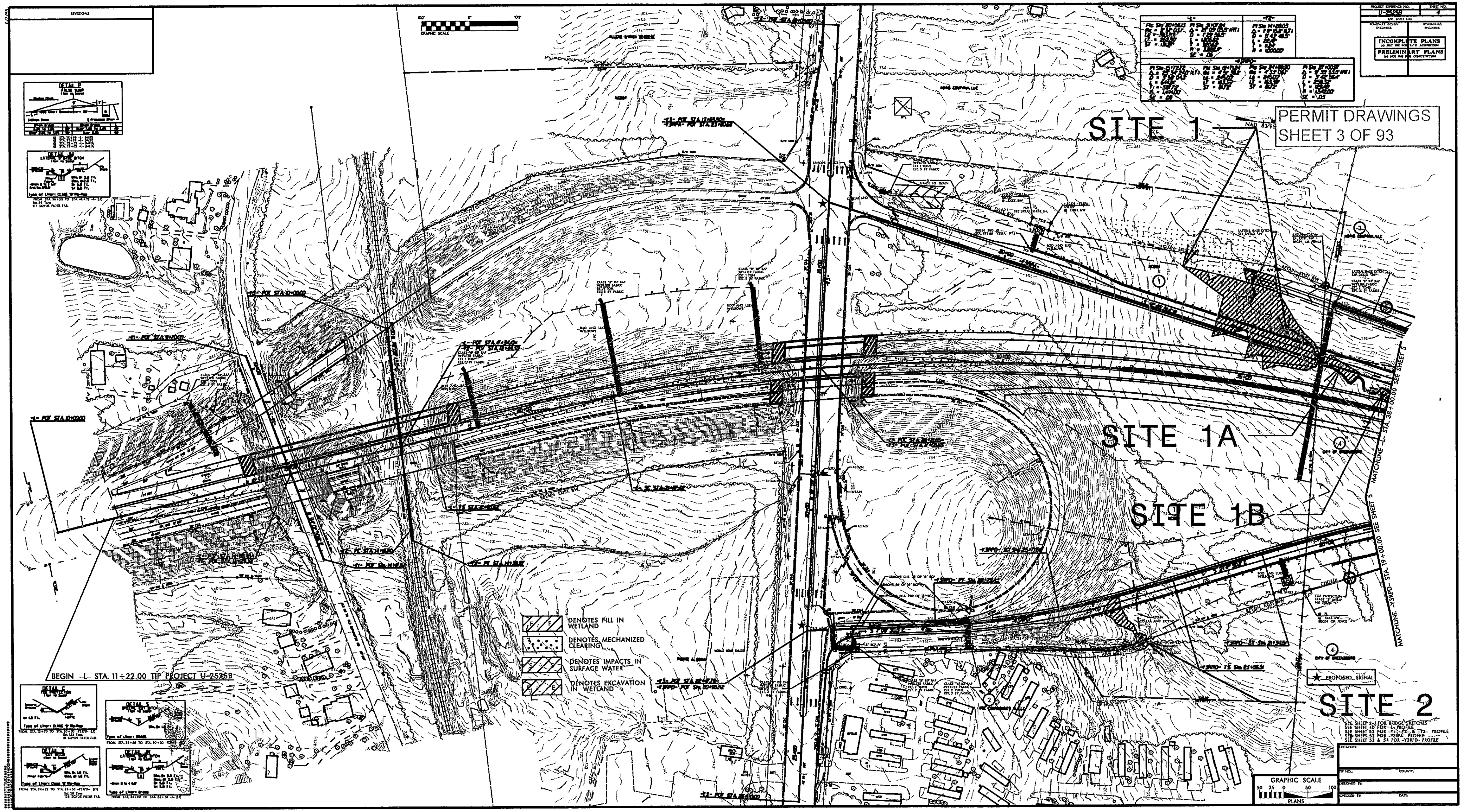
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.


PERMIT DRAWINGS
SHEET 2 OF 93
SITE 1
SITE 1A
SITE 1B
SITE 2
PROJECT REFERENCE NO.
U-2525B
SHEET NO.
4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
PRELIMINARY PLANS
REVISIONS
GRAPHIC SCALE
NAD 83/95
BEGIN -L- STA. 11+22.00 TIP PROJECT U-2525B
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES EXCAVATION IN WETLAND
★ PROPOSED SIGNAL
MATCHLINE -L- STA. 38+00.00 SEE SHEET 5
MATCHLINE -Y3RPD- STA. 19+00.00 SEE SHEET 5
SEE SHEET 2-J FOR BRIDGE SKETCHES
SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 52 FOR -Y1-, -Y2-, & -Y3- PROFILE
SEE SHEET 53 FOR -Y3RPA- PROFILE
SEE SHEET 53 & 54 FOR -Y3RPD- PROFILE
LOCATION:
TIP NO.:
COUNTY:
DESIGNED BY:
CHECKED BY:
DATE:
GRAPHIC SCALE
50 25 0 50 100
PLANS
DETAIL P
DETAIL C
DETAIL S
DETAIL X
DETAIL W
DETAIL W

PERMIT DRAWINGS
SHEET 3 OF 93


PROJECT REFERENCE NO.
SHEET NO.
U-2525B
4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
SITE 1
NAD 83/95
SITE 1A
SITE 1B
SITE 2
MATCHLINE -L- STA. 38+00.00 SEE SHEET 5
MATCHLINE -Y3RPD- STA. 19+00.00 SEE SHEET 5
BEGIN -L- STA. 11+22.00 TIP PROJECT U-2525B
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES EXCAVATION IN WETLAND
PROPOSED SIGNAL
SEE SHEET 2-1 FOR BRIDGE SKETCHES
SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 52 FOR -Y1-, -Y2-, & -Y3- PROFILE
SEE SHEET 53 FOR -Y3RPA- PROFILE
SEE SHEET 53 & 54 FOR -Y3RPD- PROFILE
LOCATION:
TIP NO.:
COUNTY:
DESIGNED BY:
CHECKED BY:
DATE:
GRAPHIC SCALE
50 25 0 50 100
PLANS
REVISIONS
GRAPHIC SCALE
DETAIL
FALSE SUMP
LATERAL BASE DITCH
SPECIAL CUT DITCH
CUT DITCH

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	4 & 5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWINGS
SHEET 4 OF 93

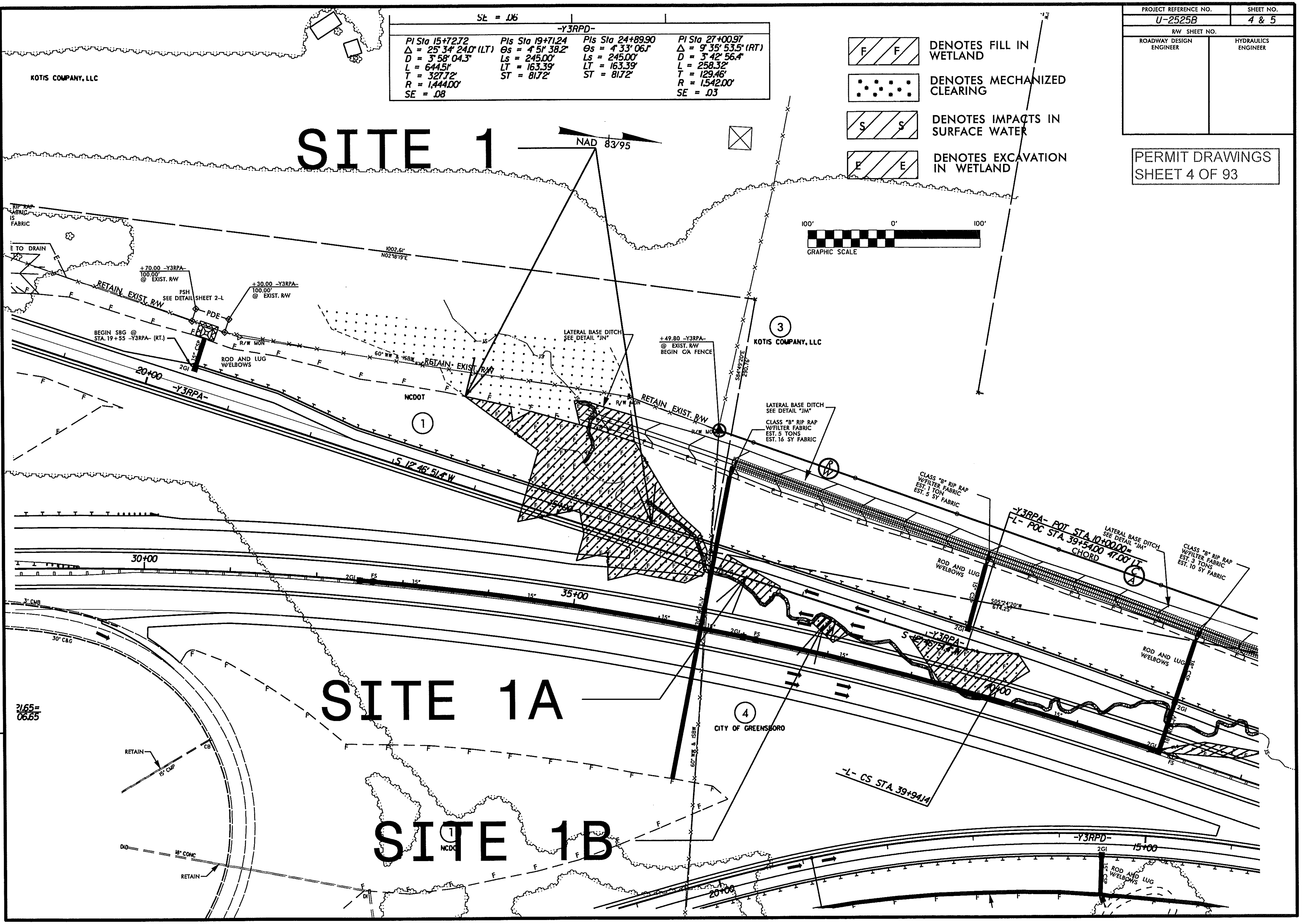
03-19-13 R/W REVISION (DWG) - COMBINED PARCELS 4 AND 79 INTO PARCEL 4 (CITY OF GREENSBORO).

SE = .06

-Y3RPD-

PI Sta 15+72.72	PIs Sta 19+71.24	PIs Sta 24+89.90	PI Sta 27+00.97
Δ = 25° 34' 24.0" (LT)	Θs = 4° 51' 38.2"	Θs = 4° 33' 06.1"	Δ = 9° 35' 53.5" (RT)
D = 3° 58' 04.3"	Ls = 245.00'	Ls = 245.00'	D = 3° 42' 56.4"
L = 644.51'	LT = 163.39'	LT = 163.39'	L = 258.32'
T = 327.72'	ST = 81.72'	ST = 81.72'	T = 129.46'
R = 1,444.00'			R = 1,542.00'
SE = .08			SE = .03

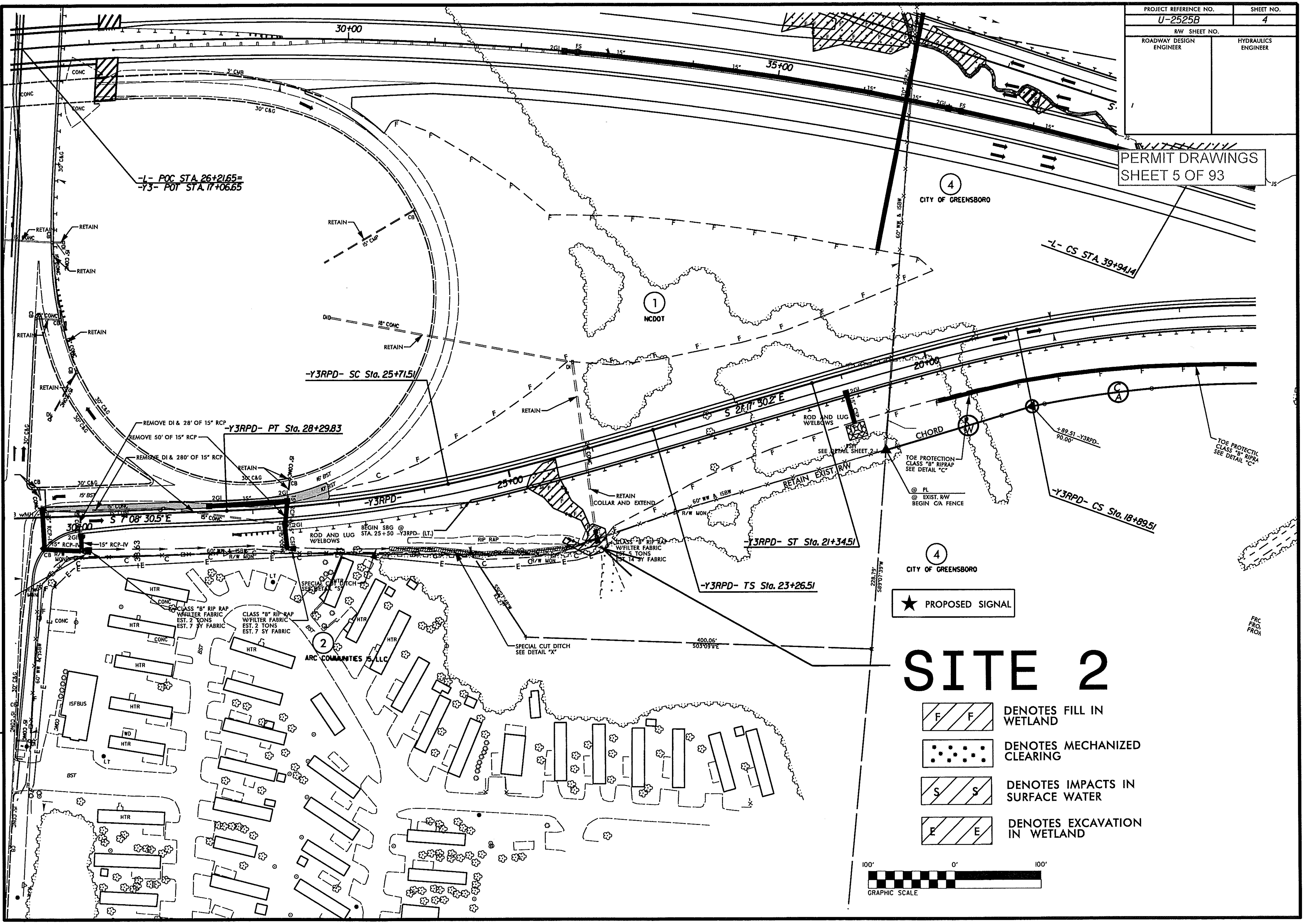
F / F	DENOTES FILL IN WETLAND
⁘	DENOTES MECHANIZED CLEARING
S / S	DENOTES IMPACTS IN SURFACE WATER
E / E	DENOTES EXCAVATION IN WETLAND


SITE 1
SITE 1A
SITE 1B
NAD 83/95
KOTIS COMPANY, LLC
③ KOTIS COMPANY, LLC
① NCDOT
④ CITY OF GREENSBORO
100' 0' 100'
GRAPHIC SCALE
RETAIN EXIST. R/W
+70.00 -Y3RPA- 100.00' @ EXIST. R/W
+30.00 -Y3RPA- 100.00' @ EXIST. R/W
PSH SEE DETAIL SHEET 2-L
PDE
BEGIN SBG @ STA. 19+55 -Y3RPA- (RT.)
ROD AND LUG W/ELBOWS
LATERAL BASE DITCH SEE DETAIL "JN"
+49.80 -Y3RPA- @ EXIST. R/W BEGIN C/A FENCE
LATERAL BASE DITCH SEE DETAIL "JM"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 16 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 10 SY FABRIC
-Y3RPA- POT STA. 10+00.00 = -L- POC STA. 39+54.00 47.00' LT. CHORD
-L- CS STA. 39+94.14
1002.61' N02°18'19"E
S 12° 46' 51.4" W
S05°24'20"W 674.25'
20+00 -Y3RPA-
30+00
35+00
40+00
-Y3RPD- 15+00
20+00
2GI
FS
15"
RETAIN
15" CMP
18" CONC
30' C&G
60' WW & 15BW
21.65= 06.65

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWINGS
SHEET 5 OF 93

03-19-13 R/W REVISION (DWG) - COMBINED PARCELS 4 AND 79 INTO PARCEL 4 (CITY OF GREENSBORO).


30+00
35+00
-L- POC STA. 26+21.65=
-Y3- POT STA. 17+06.65
-L- CS STA. 39+94.14
④ CITY OF GREENSBORO
① NCDOT
② ARC COMMUNITIES 15 LLC
-Y3RPD- SC Sta. 25+71.51
-Y3RPD- PT Sta. 28+29.83
-Y3RPD- ST Sta. 21+34.51
-Y3RPD- TS Sta. 23+26.51
-Y3RPD- CS Sta. 18+89.51
S 28°17' 30.2" E
S 7°08' 30.5" E
-Y3RPD-
25+00
20+00
REMOVE DI & 28' OF 15" RCP
REMOVE 50' OF 15" RCP
REMOVE DI & 280' OF 15" RCP
RETAIN
RETAIN COLLAR AND EXTEND
ROD AND LUG W/ELBOWS
BEGIN SBG @ STA. 25+50 -Y3RPD- (LT.)
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 14 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
SPECIAL CUT DITCH SEE DETAIL "S"
SPECIAL CUT DITCH SEE DETAIL "X"
TOE PROTECTION CLASS "B" RIPRAP SEE DETAIL "C"
@ PL @ EXIST. R/W BEGIN C/A FENCE
RETAIN EXIST. R/W
CHORD
+89.51 -Y3RPD- 90.00'
400.06' S03°09'11"E
228.79' S89°07'39"W
60' WW & ISBW
SEE DETAIL SHEET 2
HTR
ISFBUS
CONC
BST

★ PROPOSED SIGNAL

SITE 2

▨ F F — DENOTES FILL IN WETLAND

▨ DENOTES MECHANIZED CLEARING

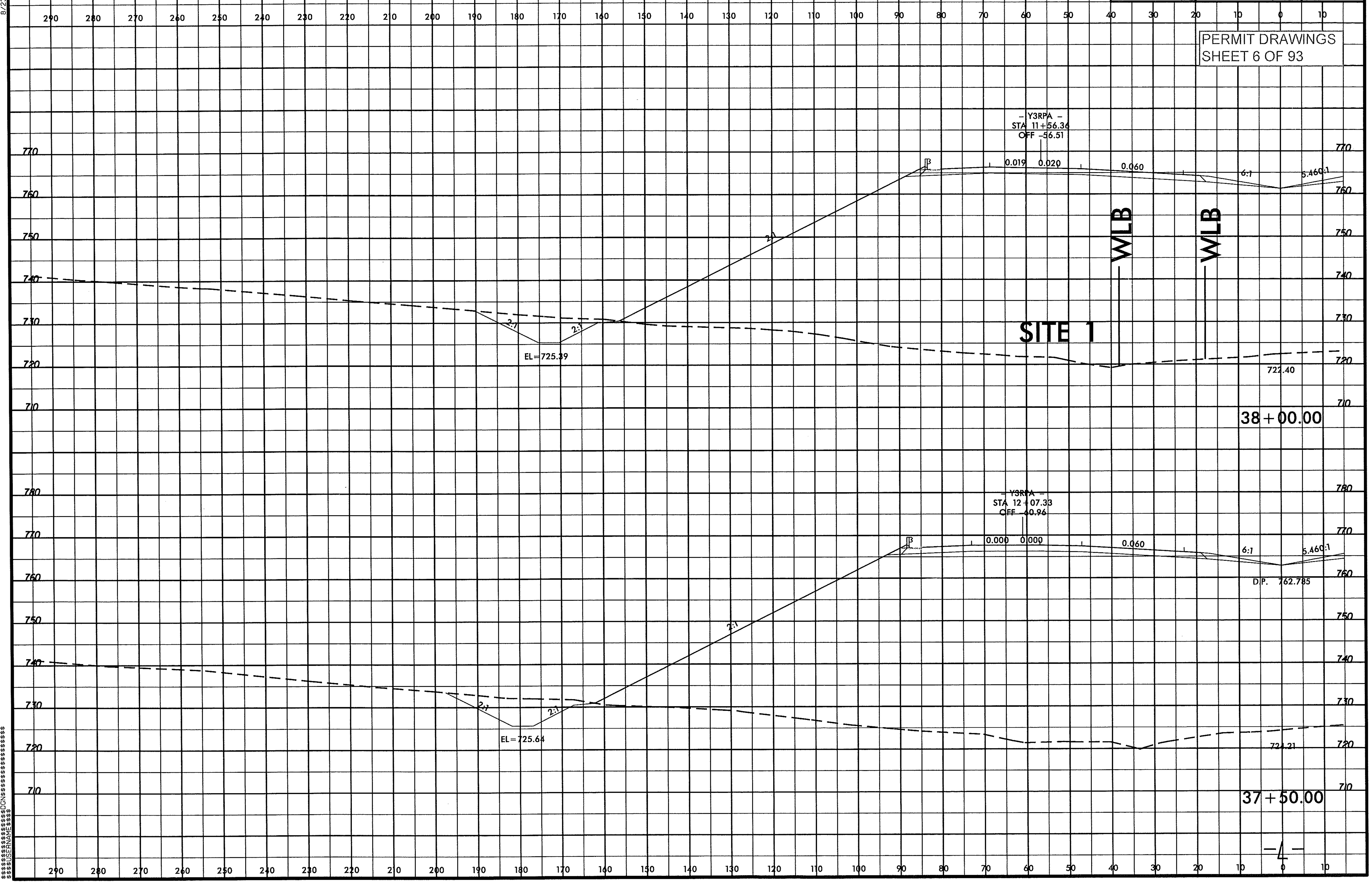
▨ S S — DENOTES IMPACTS IN SURFACE WATER

▨ E E — DENOTES EXCAVATION IN WETLAND

100' 0' 100'
GRAPHIC SCALE

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-19

PERMIT DRAWINGS
SHEET 6 OF 93

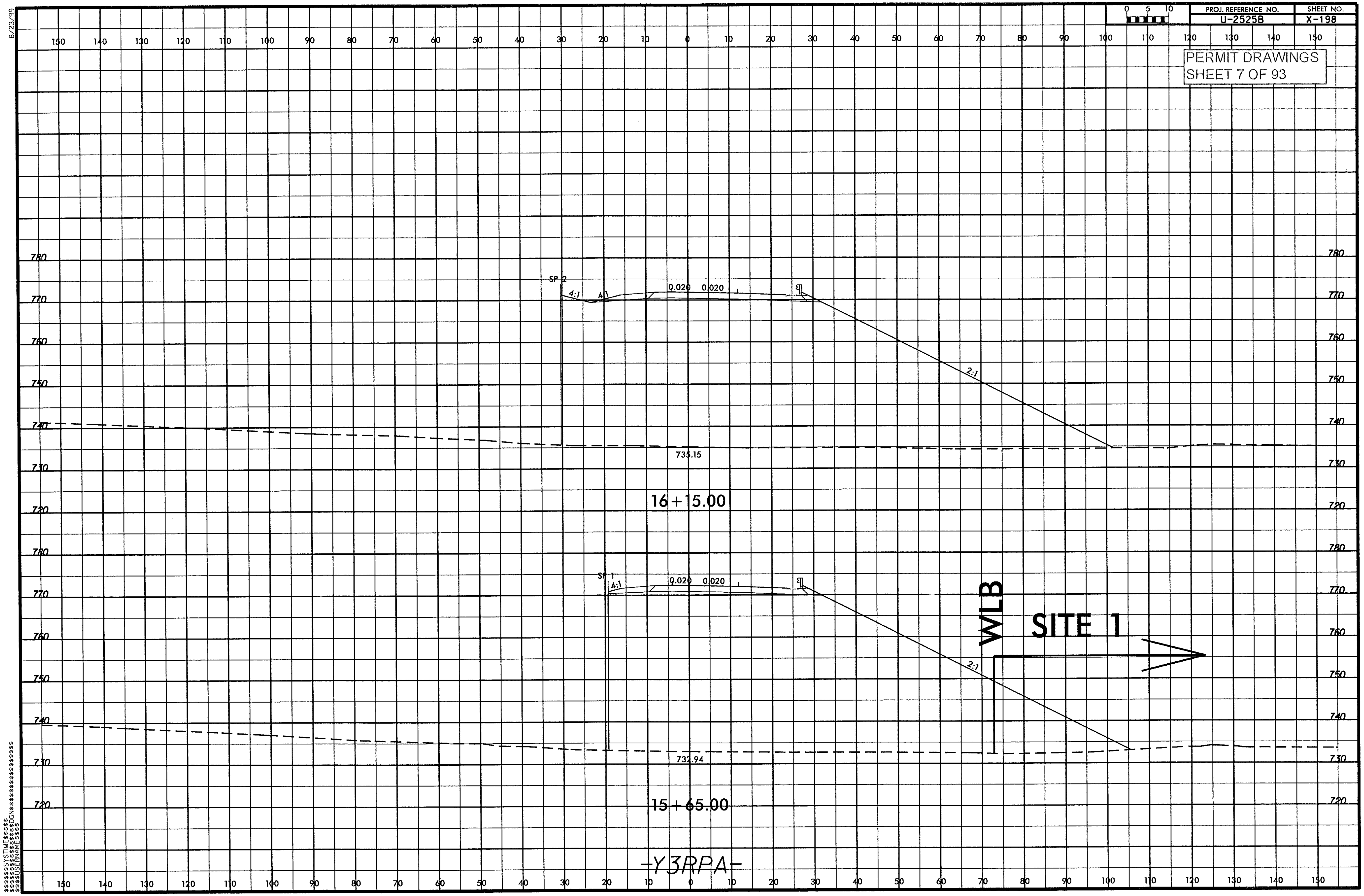

0 5 10
290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10
- Y3RPA -
STA 11+56.36
OFF -56.51
770
760
750
740
730
720
710
0.019
0.020
0.060
6:1
5.460:1
2:1
2:1
2:1
EL=725.39
WLB
WLB
SITE 1
722.40
38+00.00
- Y3RPA -
STA 12+07.33
OFF -60.96
780
770
760
750
740
730
720
710
0.000
0.000
0.060
6:1
5.460:1
D.P. 762.785
2:1
2:1
2:1
EL=725.64
724.21
37+50.00
-4-

8/23/99

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

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-198

PERMIT DRAWINGS
SHEET 7 OF 93

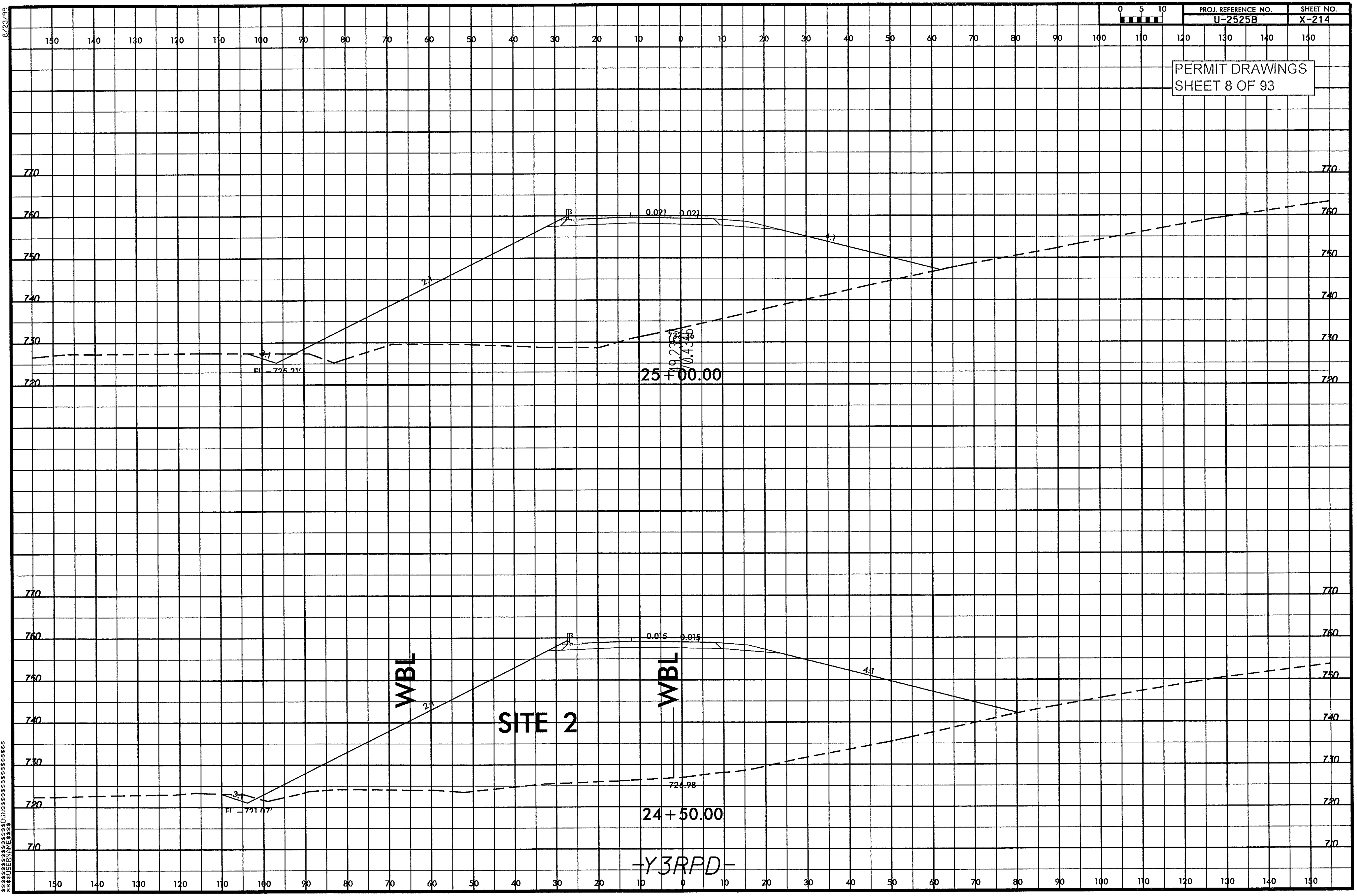

0 5 10
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
780
770
760
750
740
730
720
SP 2
4:1
4:1
0.020 0.020
2:1
735.15
16+15.00
SP 1
4:1
0.020 0.020
2:1
WLB
SITE 1
732.94
15+65.00
-Y3RPA-

8/23/99

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

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-214

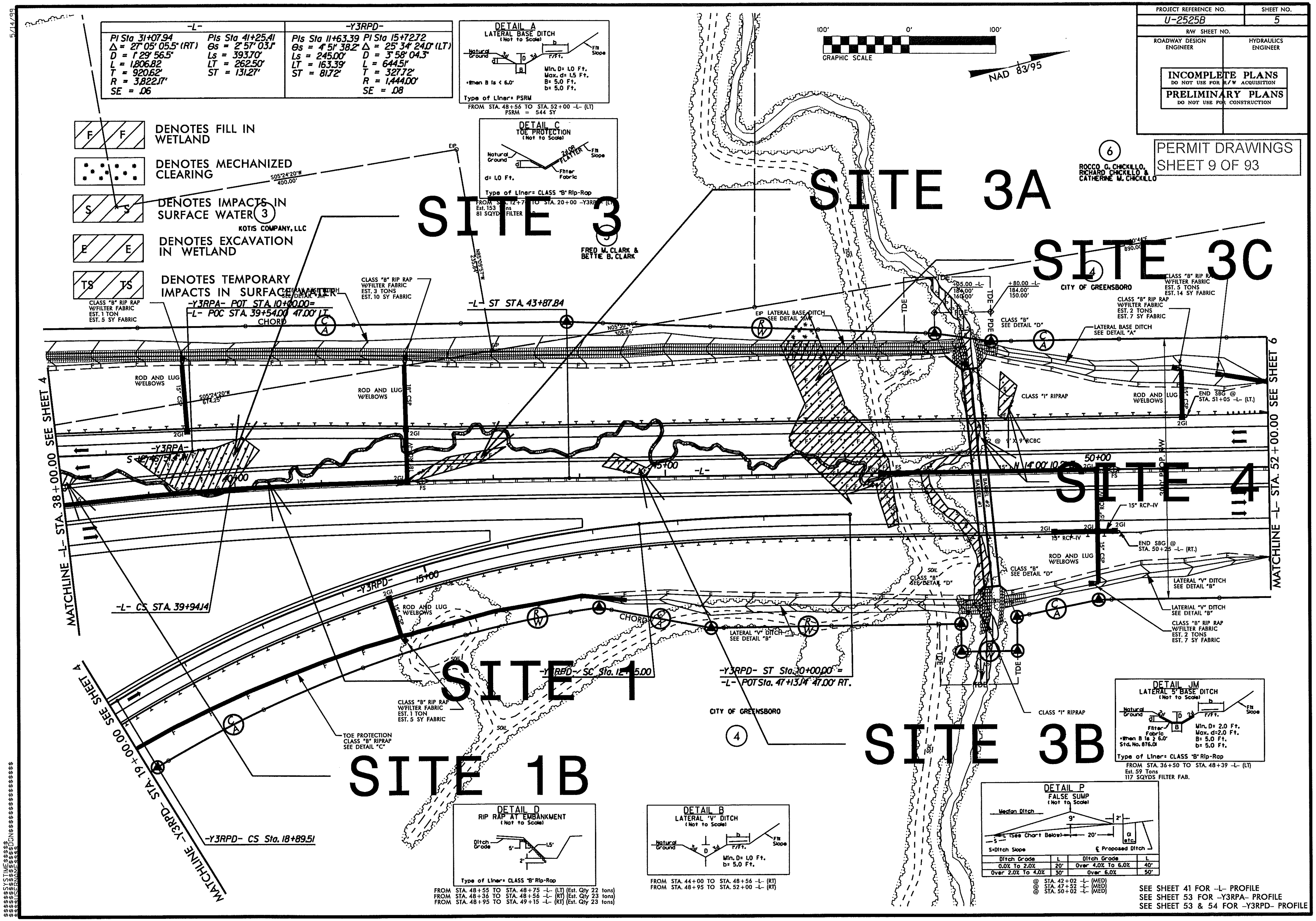

0 5 10
PERMIT DRAWINGS
SHEET 8 OF 93
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
770
760
750
740
730
720
710
0.021
0.021
2:1
4:1
3:1
EL = 725.21′
733.36
25+00.00
0.015
0.015
WBL
WBL
SITE 2
726.98
EL = 721.07′
24+50.00
-Y3RPD-

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

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

PERMIT DRAWINGS
SHEET 9 OF 93


5/14/99
SITE 1
SITE 1B
SITE 3
SITE 3A
SITE 3B
SITE 3C
SITE 4
100'
0'
100'
GRAPHIC SCALE
NAD 83/95
MATCHLINE -L- STA. 38+00.00 SEE SHEET 4
MATCHLINE -L- STA. 52+00.00 SEE SHEET 6
MATCHLINE -Y3RPD- STA. 19+00.00 SEE SHEET 4
③ KOTIS COMPANY, LLC
③ FRED M. CLARK & BETTIE B. CLARK
⑥ ROCCO G. CHICKILLO, RICHARD CHICKILLO & CATHERINE M. CHICKILLO
④ CITY OF GREENSBORO
④ CITY OF GREENSBORO
-L- ST STA. 43+87.84
-Y3RPA- POT STA. 10+00.00= -L- POC STA. 39+54.00 47.00' LT.
CHORD
-L- CS STA. 39+94.14
-Y3RPD- SC Sta. 12+15.00
-Y3RPD- ST Sta. 10+00.00 = -L- POT Sta. 47+13.14 47.00' RT.
-Y3RPD- CS Sta. 18+89.51
-Y3RPA-
-Y3RPD-
-L-
15+00
50+00
S05°24'20"W 400.00'
S05°24'20"W 674.25'
N05°... 308.86'
N85°09'57"W 235.84'
890.00'
EIP
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
LATERAL BASE DITCH SEE DETAIL "JM"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 10 SY FABRIC
EIP LATERAL BASE DITCH SEE DETAIL "JM"
+05.00 -L- 184.00' 160.00'
+80.00 -L- 184.00' 150.00'
CLASS "B" SEE DETAIL "D"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 14 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
LATERAL BASE DITCH SEE DETAIL "A"
ROD AND LUG W/ELBOWS
15" CSP
2GI
FS
CLASS "I" RIPRAP
END SBG @ STA. 51+05 -L- (LT.)
2 @ 9' X 9' RCBC
N 14°00' 10.2"
BARREL #1
BARREL #2
15" RCP-IV
END SBG @ STA. 50+25 -L- (RT.)
CLASS "B" SEE DETAIL "D"
LATERAL "V" DITCH SEE DETAIL "B"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
LATERAL "V" DITCH SEE DETAIL "B"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
TOE PROTECTION CLASS "B" RIPRAP SEE DETAIL "C"
CLASS "I" RIPRAP
TDE
PDE
SOIL
100' PROP. R/W
C/A
R/W

-L-		-Y3RPD-	
PI Sta 31+07.94	PIs Sta 41+25.41	PIs Sta 11+63.39	PI Sta 15+72.72
Δ = 27° 05' 05.5" (RT)	Θs = 2° 57' 03.1"	Θs = 4° 51' 38.2"	Δ = 25° 34' 24.0" (LT)
D = 1° 29' 56.5"	Ls = 393.70'	Ls = 245.00'	D = 3° 58' 04.3"
L = 1,806.82	LT = 262.50'	LT = 163.39'	L = 644.51'
T = 920.62'	ST = 131.27'	ST = 81.72'	T = 327.72'
R = 3,822.17'			R = 1,444.00'
SE = .06			SE = .08

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DETAIL A
LATERAL BASE DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
Max. d= 1.5 Ft.
B= 5.0 Ft.
b= 5.0 Ft.
•When B is < 6.0'
Type of Liner= PSRM
FROM STA. 48+56 TO STA. 52+00 -L- (LT)
PSRM = 544 SY

DETAIL C
TOE PROTECTION
(Not to Scale)
Natural Ground
2:1 OR FLATTER
Fill Slope
Filter Fabric
d= 1.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 12+7? TO STA. 20+00 -Y3RPD- (LT)
Est. 153 Tons
81 SQYDS FILTER FAB.

DETAIL JM
LATERAL 5' BASE DITCH
(Not to Scale)
Natural Ground
Filter Fabric
Fill Slope
•When B is ≥ 6.0'
Std. No. 876.01
Min. D= 2.0 Ft.
Max. d=2.0 Ft.
B= 5.0 Ft.
b= 5.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 36+50 TO STA. 48+39 -L- (LT)
Est. 59 Tons
117 SQYDS FILTER FAB.

DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 48+55 TO STA. 48+75 -L- (LT) (Est. Qty 22 tons)
FROM STA. 48+36 TO STA. 48+56 -L- (RT) (Est. Qty 23 tons)
FROM STA. 48+95 TO STA. 49+15 -L- (RT) (Est. Qty 23 tons)

DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 44+00 TO STA. 48+56 -L- (RT)
FROM STA. 48+95 TO STA. 52+00 -L- (RT)

DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
L (See Chart Below)
S=Ditch Slope
℄ Proposed Ditch

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

@ STA. 42+02 -L- (MED)
@ STA. 47+52 -L- (MED)
@ STA. 50+02 -L- (MED)

SEE SHEET 41 FOR -L- PROFILE
SEE SHEET 53 FOR -Y3RPA- PROFILE
SEE SHEET 53 & 54 FOR -Y3RPD- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

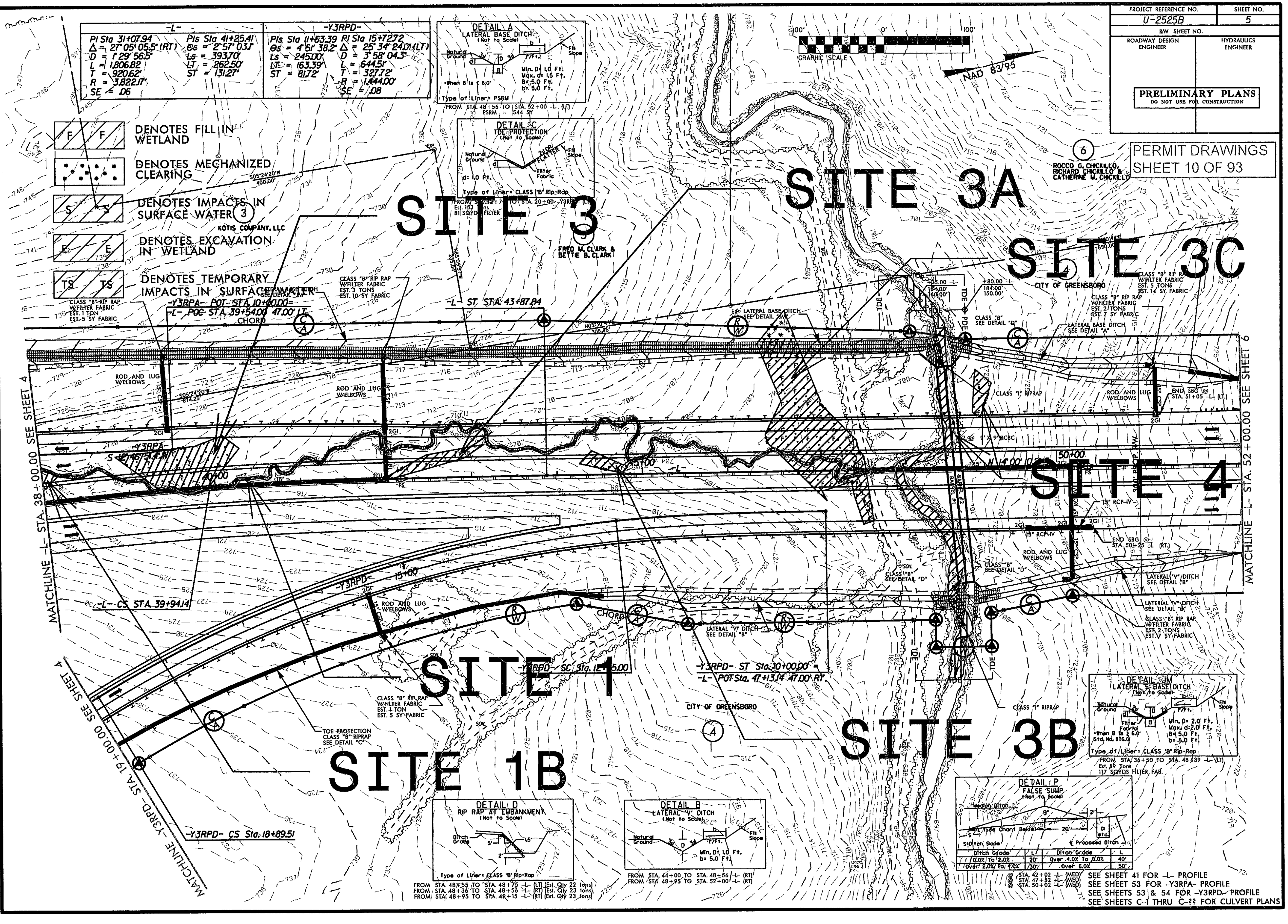
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 10 OF 93

5/14/99

REVISIONS

03-19-13 R/W REVISION (DWG) - COMBINED PARCELS 4 AND 79 INTO PARCEL 4 (CITY OF GREENSBORO).


SITE 3
SITE 3A
SITE 3C
SITE 4
SITE 1
SITE 3B
SITE 1B
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES EXCAVATION IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
100'
0
100'
GRAPHIC SCALE
NAD 83/95
ROCCO G. CHICKILLO, RICHARD CHICKILLO & CATHERINE M. CHICKILLO
KOTIS COMPANY, LLC
FRED M. CLARK & BETTIE B. CLARK
CITY OF GREENSBORO
-L- ST STA 43+87.84
-Y3RPA- POT STA 10+00.00 = -L- POC STA 39+54.00 47.00' LT
CHORD
-L- CS STA 39+94.14
-Y3RPD- SC Sta. 12+15.00
-Y3RPD- ST Sta. 10+00.00 = -L- POT Sta. 47+13.14 47.00' RT.
-Y3RPD- CS Sta. 18+89.51
MATCHLINE -L- STA 38+00.00 SEE SHEET 4
MATCHLINE -L- STA. 52+00.00 SEE SHEET 6
MATCHLINE -Y3RD- STA 19+00.00 SEE SHEET 4
ROD AND LUG W/ELBOWS
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 10 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 14 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
LATERAL BASE DITCH SEE DETAIL "A"
CLASS "B" SEE DETAIL "D"
CLASS "I" RIPRAP
LATERAL "V" DITCH SEE DETAIL "B"
TOE PROTECTION CLASS "B" RIPRAP SEE DETAIL "C"
END SBG @ STA. 51+05 -L- (LT.)
END SBG @ STA. 50+25 -L- (RT.)
15" RCP-IV
TDE
PDE
2GI
50+00
15+00
SOIL

-L-		-Y3RPD-	
PI Sta 31+07.94	PIs Sta 41+25.41	PIs Sta 11+63.39	PI Sta 15+72.72
Δ = 27° 05' 05.5" (RT)	Θs = 2° 57' 03.1"	Θs = 4° 51' 38.2"	Δ = 25° 34' 24.0" (LT)
D = 1° 29' 56.5"	Ls = 393.70'	Ls = 245.00'	D = 3° 58' 04.3"
L = 1,806.82	LT = 262.50'	LT = 163.39'	L = 644.51'
T = 920.62'	ST = 131.27'	ST = 81.72'	T = 327.72'
R = 3,822.17'			R = 1,444.00'
SE = .06			SE = .08

DETAIL A
LATERAL BASE DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
Max. d= 1.5 Ft.
B= 5.0 Ft.
b= 5.0 Ft.
•When B is ≤ 6.0'
Type of Liner= PSRM
FROM STA. 48+56 TO STA. 52+00 -L- (LT)
PSRM = 544 SY

DETAIL C
TOE PROTECTION
(Not to Scale)
Natural Ground
2:1 OR FLATTER
Fill Slope
Filter Fabric
d= 1.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 12+75 TO STA. 20+00 -Y3RPD- (LT)
Est. 153 Tons
81 SQYDS FILTER FAB.

DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 48+65 TO STA. 48+75 -L- (LT) (Est. Qty 22 tons)
FROM STA. 48+36 TO STA. 48+56 -L- (RT) (Est. Qty 23 tons)
FROM STA. 48+95 TO STA. 49+15 -L- (RT) (Est. Qty 23 tons)

DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 44+00 TO STA. 48+56 -L- (RT)
FROM STA. 48+95 TO STA. 52+00 -L- (RT)

DETAIL JM
LATERAL 5' BASE DITCH
(Not to Scale)
Natural Ground
Filter Fabric
Fill Slope
Min. D= 2.0 Ft.
Max. d=2.0 Ft.
B= 5.0 Ft.
b= 5.0 Ft.
•When B is ≥ 6.0'
Std. No. 876.01
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 36+50 TO STA. 48+39 -L- (LT)
Est. 59 Tons
117 SQYDS FILTER FAB.

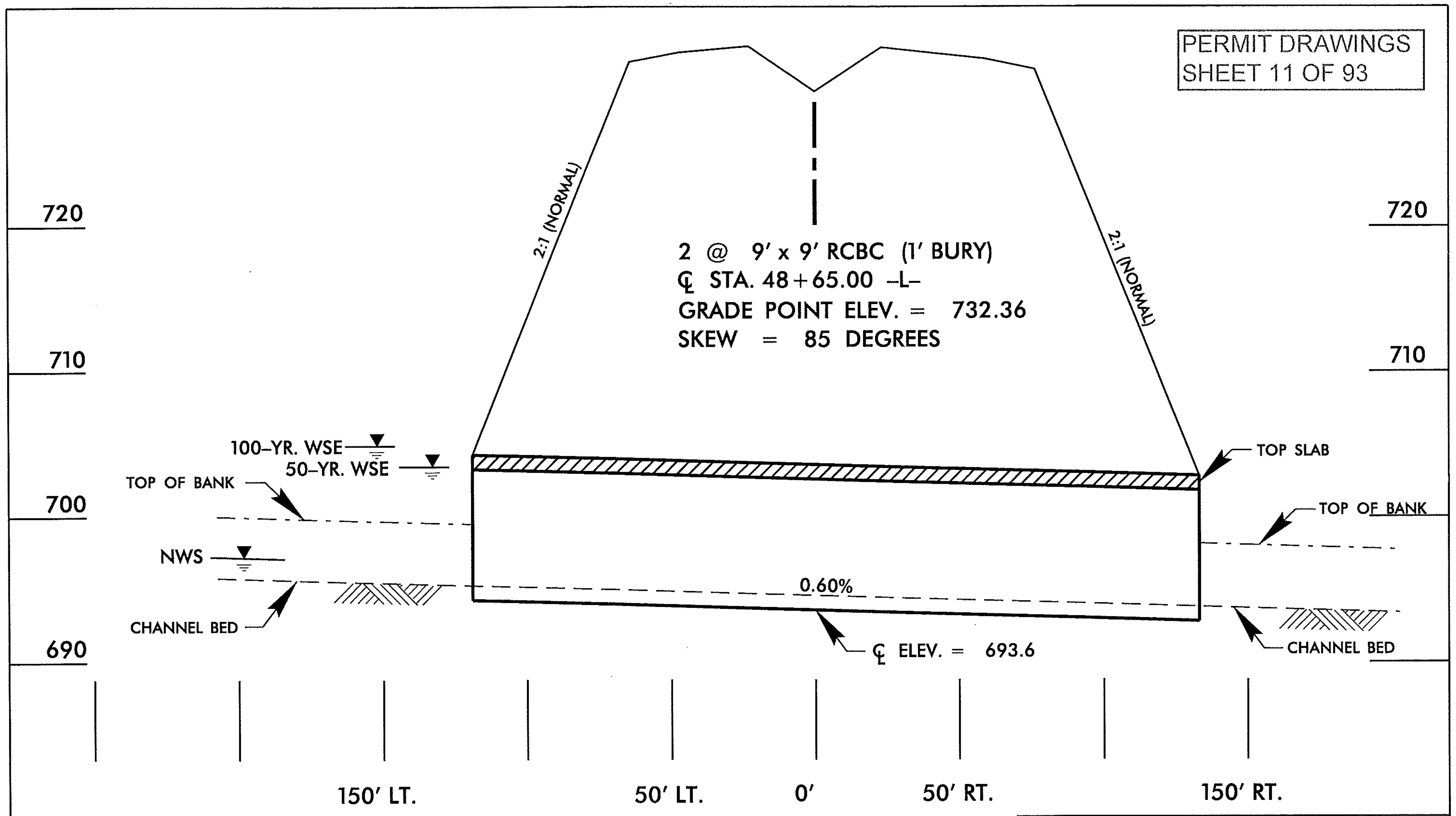
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
L (See Chart Below)
S: Ditch Slope
℄ Proposed Ditch

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

@ STA. 42+02 -L- (MED)
@ STA. 47+52 -L- (MED)
@ STA. 50+02 -L- (MED)

SEE SHEET 41 FOR -L- PROFILE
SEE SHEET 53 FOR -Y3RPA- PROFILE
SEE SHEETS 53 & 54 FOR -Y3RPD- PROFILE
SEE SHEETS C-1 THRU C-?? FOR CULVERT PLANS

PERMIT DRAWINGS
SHEET 11 OF 93


720
710
700
690
720
710
2:1 (NORMAL)
2:1 (NORMAL)
2 @ 9' x 9' RCBC (1' BURY)
℄ STA. 48+65.00 -L-
GRADE POINT ELEV. = 732.36
SKEW = 85 DEGREES
100-YR. WSE
50-YR. WSE
TOP OF BANK
NWS
CHANNEL BED
TOP SLAB
TOP OF BANK
0.60%
℄ ELEV. = 693.6
CHANNEL BED
150' LT.
50' LT.
0'
50' RT.
150' RT.

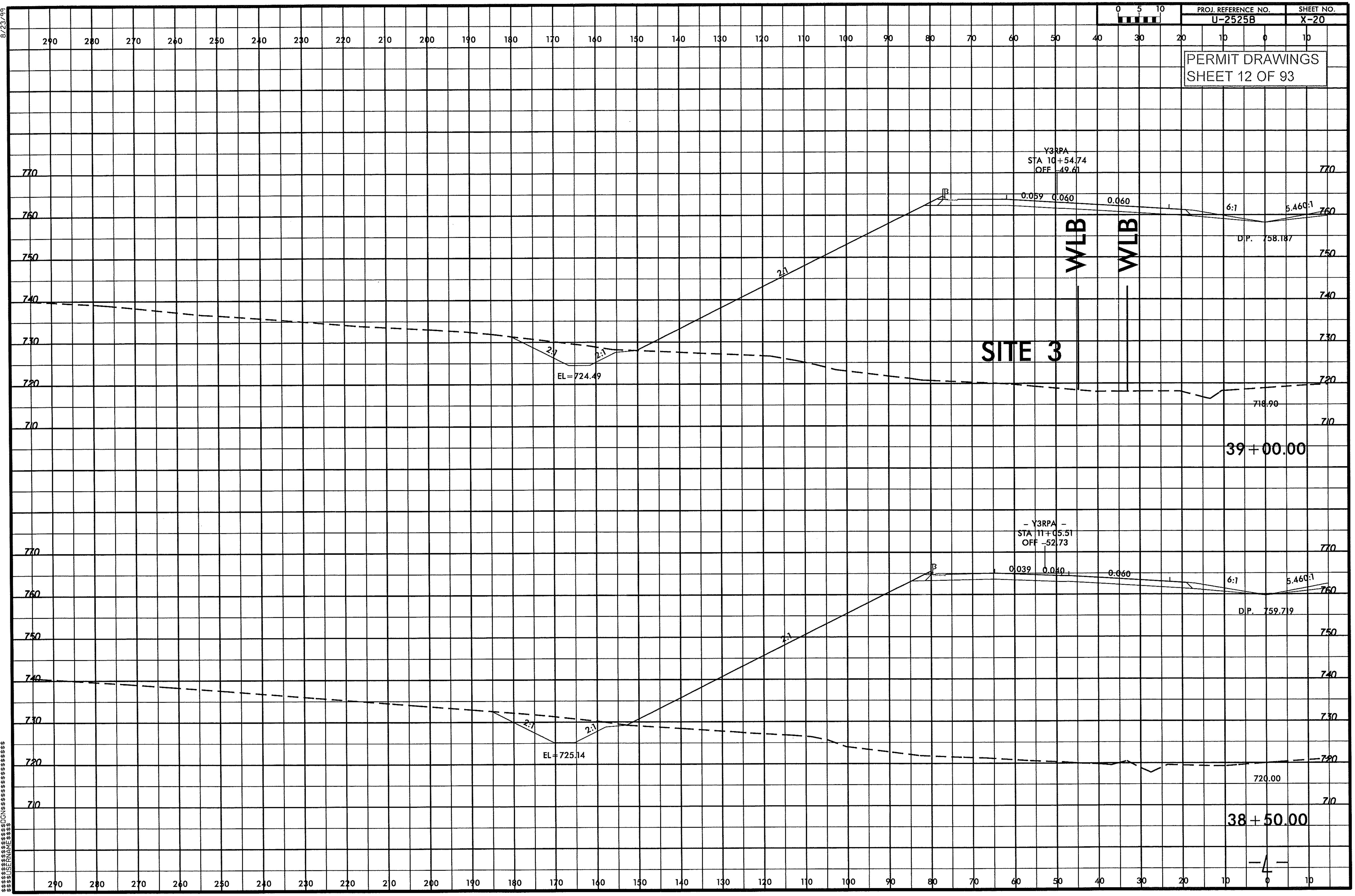
PROFILE

NCDOT
DIVISION OF HIGHWAYS
GUILFORD COUNTY
PROJECT: 34821.1.1 (U-2525B)
GREENSBORO EASTERN LOOP
FROM NORTH OF US 70
RELOCATION TO US 29 NORTH
OF GREENSBORO
SHEET OF 03/08/13

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-20

PERMIT DRAWINGS
SHEET 12 OF 93

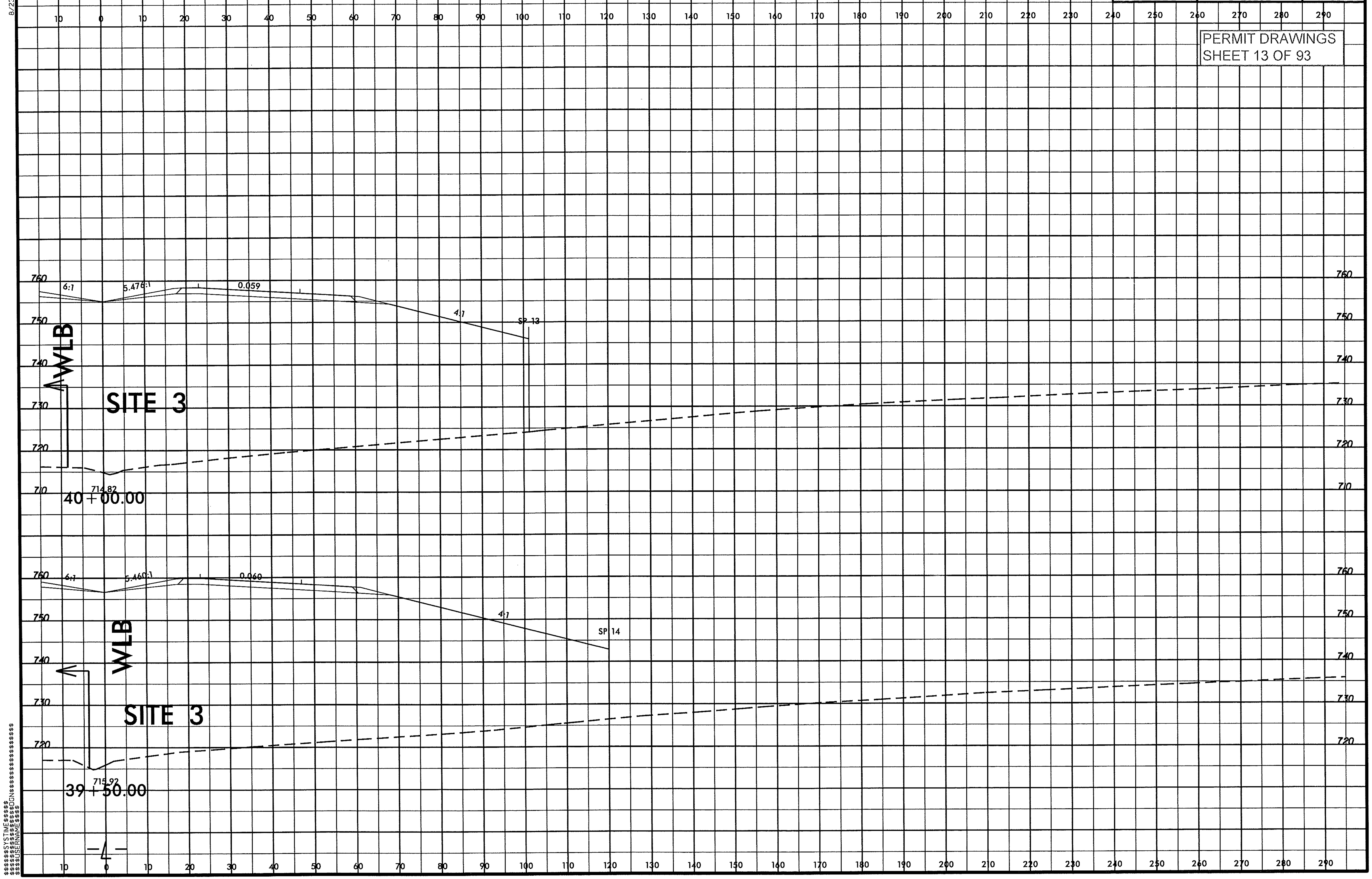

0 5 10
290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10
770
760
750
740
730
720
710
-Y3RPA-
STA 10+54.74
OFF -49.61
0.059
0.060
0.060
6:1
5.460:1
D.P. 758.187
2:1
WLB
WLB
SITE 3
2:1
2:1
EL=724.49
718.90
39+00.00
- Y3RPA -
STA 11+05.51
OFF -52.73
0.039
0.040
0.060
6:1
5.460:1
D.P. 759.719
2:1
2:1
2:1
EL=725.14
720.00
38+50.00
-⊈-

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

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-33

PERMIT DRAWINGS
SHEET 13 OF 93



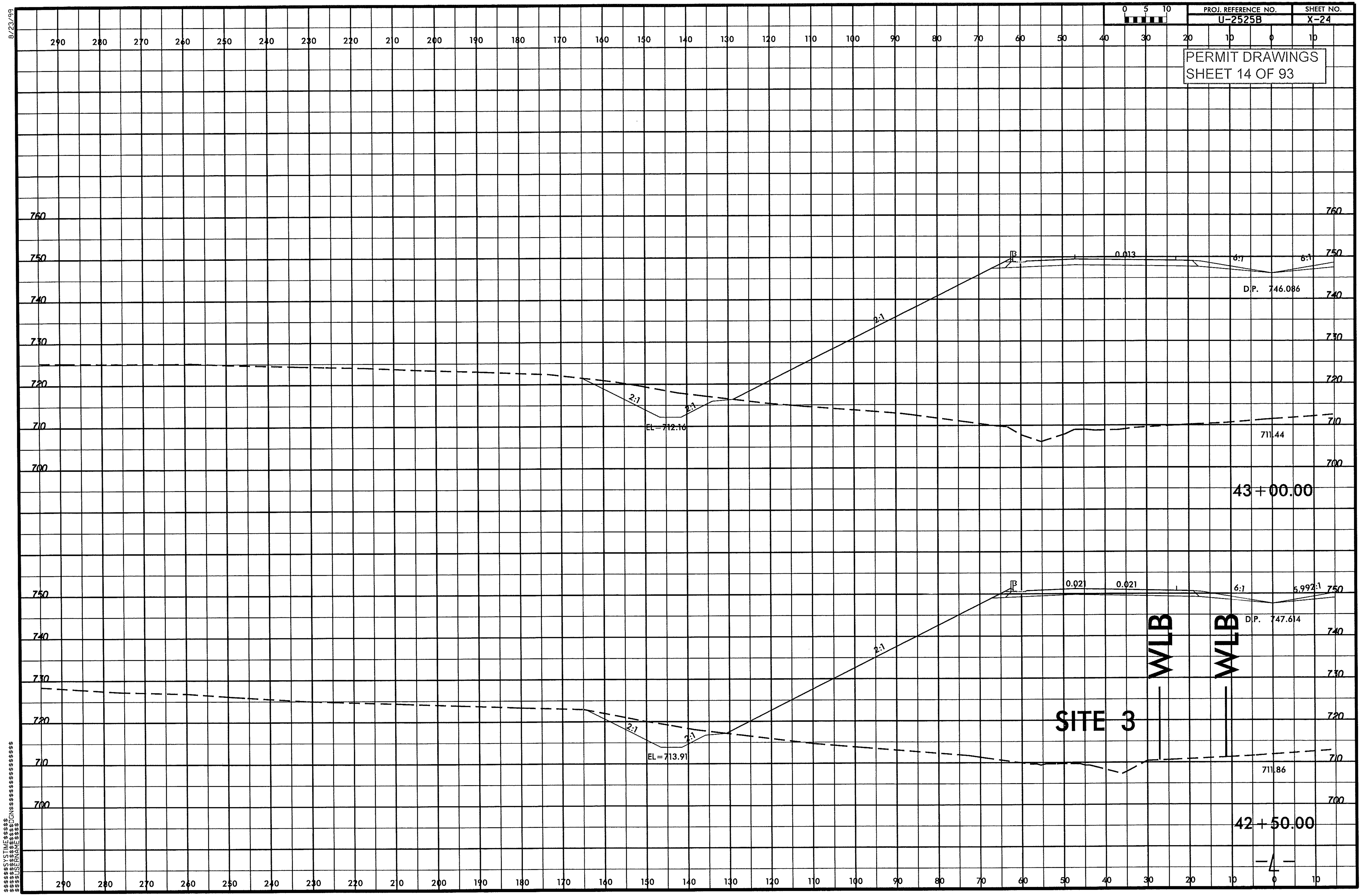
0 5 10
10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290
760
750
740
730
720
710
6:1
5.476:1
0.059
4:1
SP 13
-WLB-
SITE 3
714.82
40+00.00
6:1
5.460:1
0.060
4:1
SP 14
-WLB-
SITE 3
715.92
39+50.00
-L-

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

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-24

PERMIT DRAWINGS
SHEET 14 OF 93

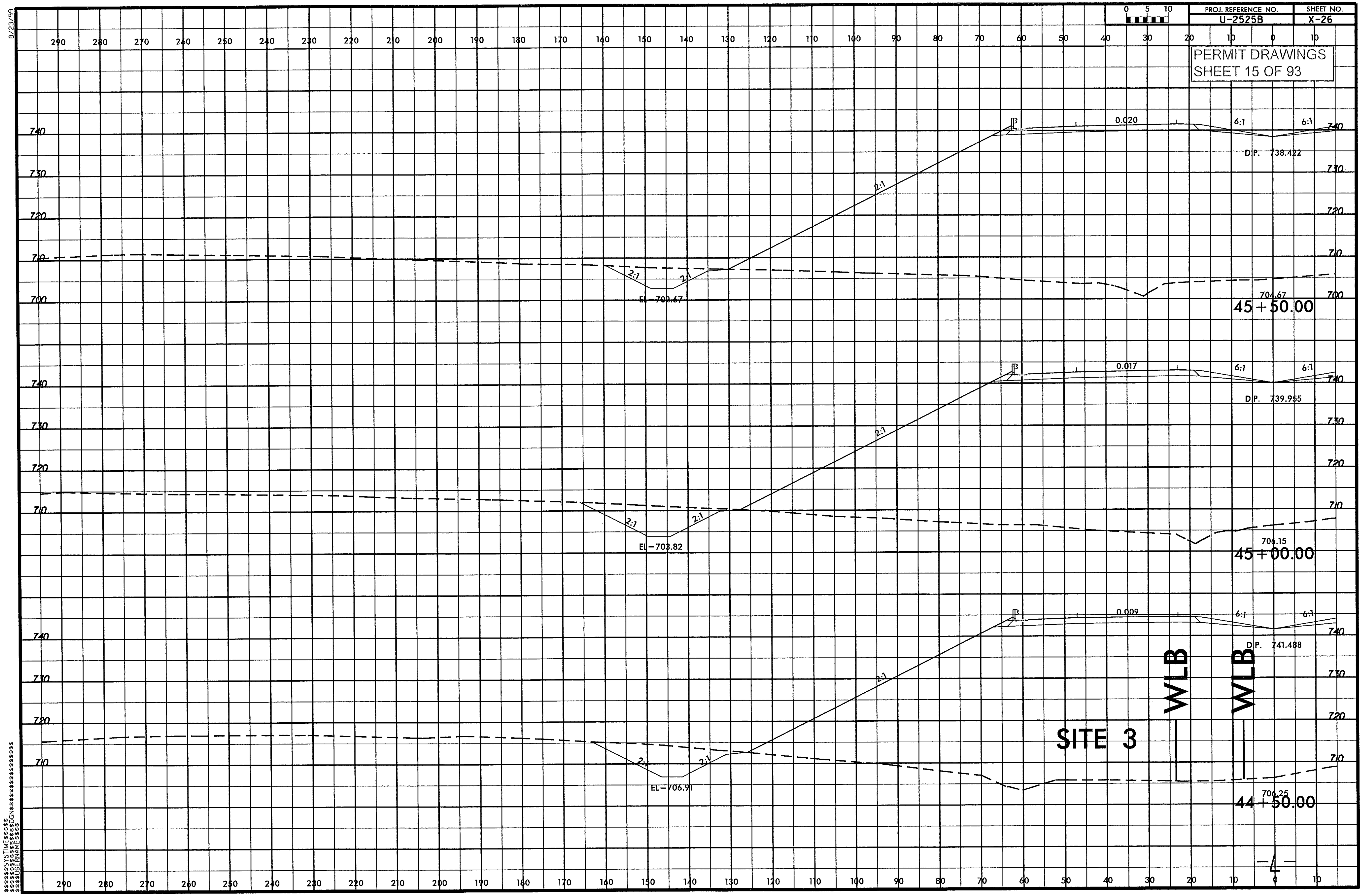

0 5 10
290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10
760
750
740
730
720
710
700
2:1
2:1
EL=712.16
2:1
0.013
6:1
6:1
D.P. 746.086
711.44
43+00.00
0.021
0.021
6:1
5.992:1
D.P. 747.614
WLB
WLB
SITE 3
2:1
2:1
EL=713.91
2:1
711.86
42+50.00
-4-

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

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-26

PERMIT DRAWINGS
SHEET 15 OF 93



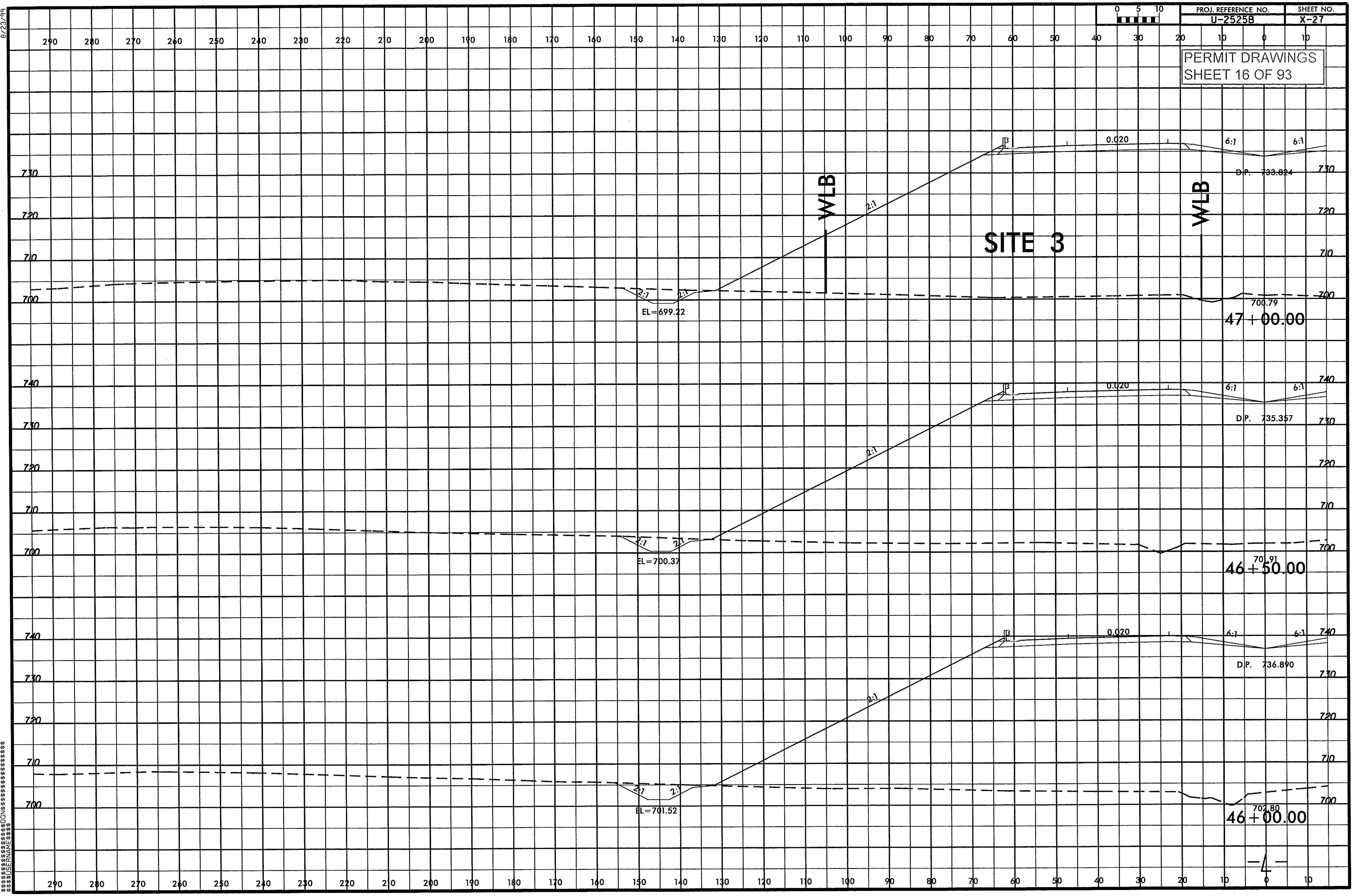
0 5 10
290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10
740
730
720
710
700
0.020
6:1
6:1
D.P. 738.422
2:1
2:1
2:1
EL=702.67
704.67
45+50.00
0.017
D.P. 739.955
EL=703.82
706.15
45+00.00
0.009
D.P. 741.488
EL=706.91
706.25
44+50.00
SITE 3
WLB
WLB
-L-

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

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-27

PERMIT DRAWINGS
SHEET 16 OF 93



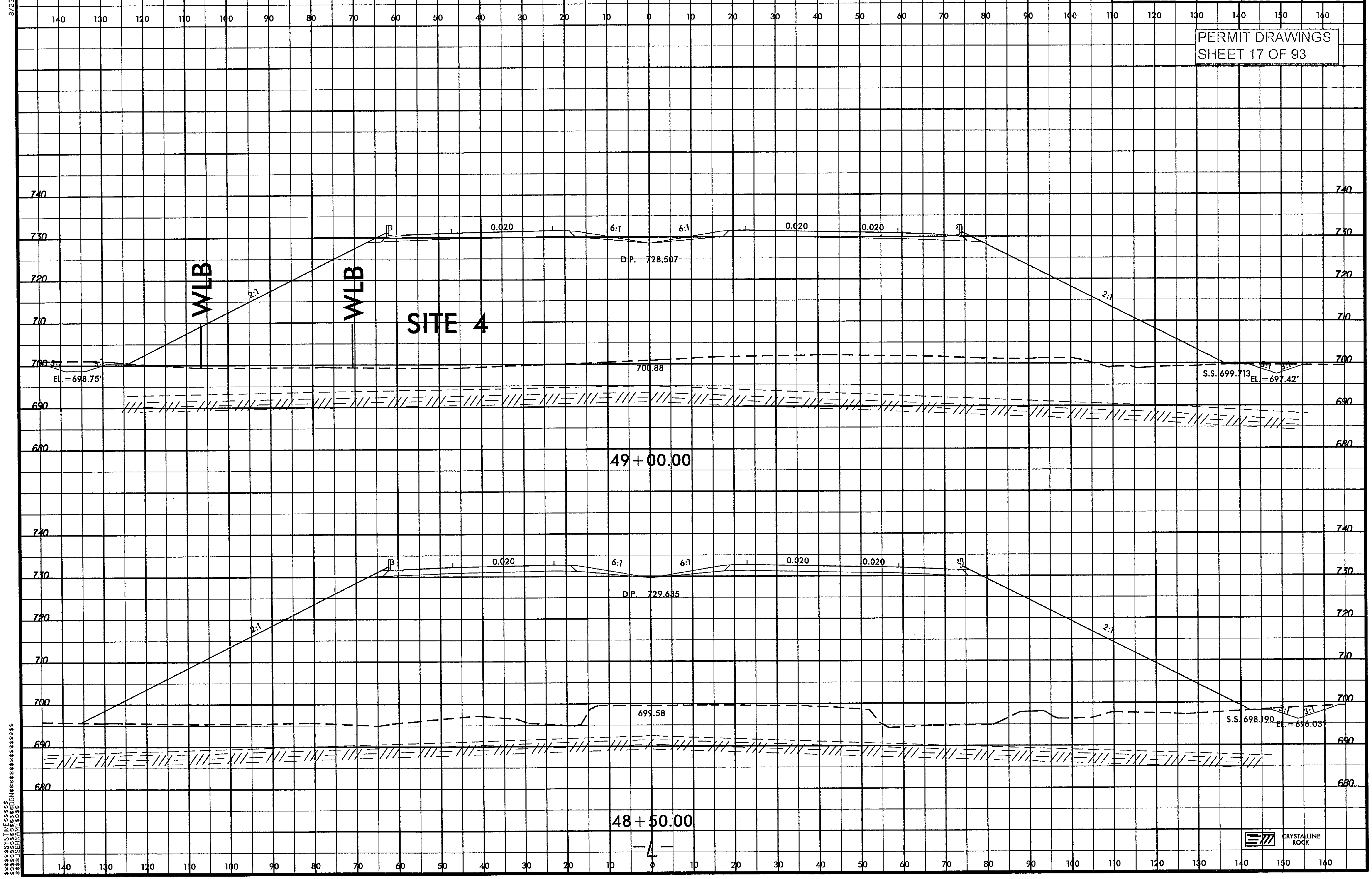
0 5 10
SITE 3
WLB
WLB
0.020
6:1
6:1
2:1
2:1
2:1
D.P. 733.824
EL=699.22
700.79
47+00.00
0.020
6:1
6:1
2:1
2:1
2:1
D.P. 735.357
EL=700.37
701.91
46+50.00
0.020
6:1
6:1
2:1
2:1
2:1
D.P. 736.890
EL=701.52
702.80
46+00.00
740
730
720
710
700
290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

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

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-42

PERMIT DRAWINGS
SHEET 17 OF 93



0 5 10
140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160
740
730
720
710
700
690
680
0.020
6:1
6:1
0.020
0.020
D.P. 728.507
2:1
2:1
WLB
WLB
SITE 4
3:1
3:1
EL.=698.75'
700.88
S.S. 699.713
3:1
3:1
EL.=697.42'
49+00.00
0.020
6:1
6:1
0.020
0.020
D.P. 729.635
2:1
2:1
699.58
S.S. 698.190
3:1
3:1
EL.=696.03'
48+50.00
CRYSTALLINE ROCK

5/14/99

PERMIT DRAWINGS
SHEET 18 OF 93

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	6

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

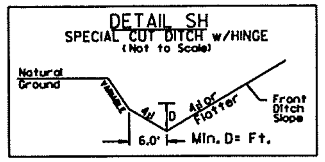
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

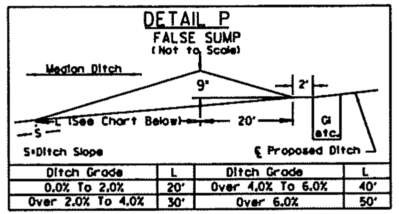
NAD 83

-L-	
PIs Sta 55+78.47	PI Sta 79+71.67
Θs = 0° 59' 59.7"	Δ = 44° 11' 48.7" (LT)
Ls = 200.00'	D = 0° 59' 59.7"
LT = 133.34'	L = 4,420.01'
ST = 66.67'	T = 2,326.53'
	R = 5,730.00'
	SE = .04

-Y4RPB-	
PIs Sta 11+26.24	PI Sta 15+64.37
Θs = 1° 03' 28.8"	Δ = 28° 24' 32.1" (LT)
Θs = 4° 17' 52.0"	D = 4° 05' 33.2"
Ls = 210.00'	L = 694.16'
LT = 126.24'	T = 354.37'
ST = 83.90'	R = 1,400.00'
	SE = .08

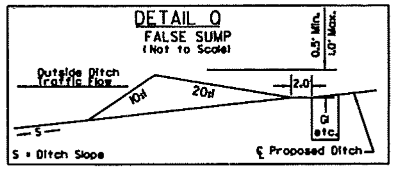

DETAIL SH
SPECIAL CUT DITCH w/HINGE
(Not to Scale)
Natural Ground
VARIABLE
4:1
D
4:1 or Flatter
Front Ditch Slope
6.0'
Min. D= Ft.

FROM STA. 53+00 TO STA. 56+00 -L- (LT)


DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
S
GI etc.
S=Ditch Slope
℄ Proposed Ditch

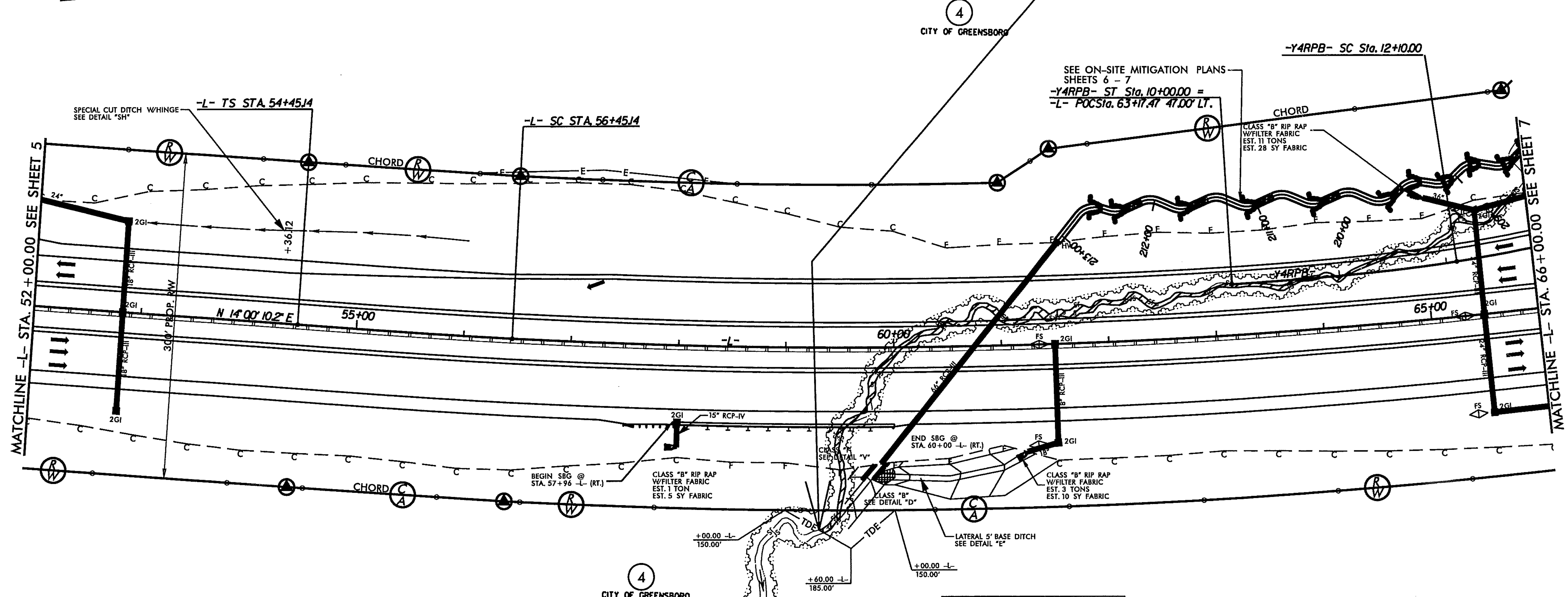
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

@ STA. 61+48 -L- (MED)
@ STA. 65+48 -L- (MED)


DETAIL Q
FALSE SUMP
(Not to Scale)
0.5' Min.
1.0' Max.
Outside Ditch Traffic Flow
10:1
20:1
2.0
S
GI etc.
S = Ditch Slope
℄ Proposed Ditch

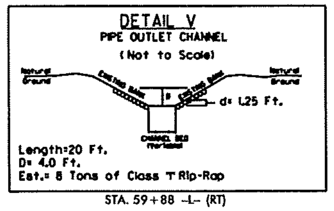
@ STA. 65+48 -L- (LT)

SITE 5

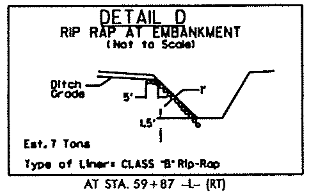

4
CITY OF GREENSBORO
-Y4RPB- SC Sta. 12+10.00
SEE ON-SITE MITIGATION PLANS
SHEETS 6 - 7
-Y4RPB- ST Sta. 10+00.00 =
-L- POCSta. 63+17.47 47.00' LT.
CHORD
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 11 TONS
EST. 28 SY FABRIC
SPECIAL CUT DITCH W/HINGE
SEE DETAIL "SH"
-L- TS STA. 54+45.14
-L- SC STA. 56+45.14
CHORD
MATCHLINE -L- STA. 52+00.00 SEE SHEET 5
MATCHLINE -L- STA. 66+00.00 SEE SHEET 7
24"
2GI
+36.12
18" RCP-III
300' PROP. R/W
N 14°00'10.2" E
55+00
-L-
60+00
65+00
-Y4RPB-
213+00
212+00
211+00
210+00
36"
24" RCP-III
FS
2GI
66" RCP-III
18" RCP-III
2GI
15" RCP-IV
BEGIN SBG @
STA. 57+96 -L- (RT.)
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 1 TON
EST. 5 SY FABRIC
CLASS "B"
SEE DETAIL "V"
END SBG @
STA. 60+00 -L- (RT.)
CLASS "B"
SEE DETAIL "D"
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 3 TONS
EST. 10 SY FABRIC
CHORD
LATERAL 5' BASE DITCH
SEE DETAIL "E"
TDE
+00.00 -L-
150.00'
+60.00 -L-
185.00'
+00.00 -L-
150.00'
4
CITY OF GREENSBORO

▨ TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

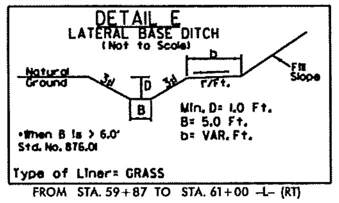
▨ S S DENOTES IMPACTS IN SURFACE WATER


DETAIL V
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
Natural Ground
Existing Bank
Existing Bank
d= 1.25 Ft.
Channel Bed
Length=20 Ft.
D= 4.0 Ft.
Est.= 8 Tons of Class 'I' Rip-Rap

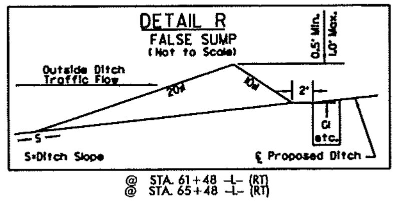
STA. 59+88 -L- (RT)


DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
5'
1'
1.5'
Est. 7 Tons
Type of Liner= CLASS 'B' Rip-Rap

AT STA. 59+87 -L- (RT)


DETAIL E
LATERAL BASE DITCH
(Not to Scale)
Natural Ground
3:1
D
3:1
b
1"/Ft.
Fill Slope
B
*When B is > 6.0'
Std. No. 876.01
Min. D= 1.0 Ft.
B= 5.0 Ft.
b= VAR. Ft.
Type of Liner= GRASS

FROM STA. 59+87 TO STA. 61+00 -L- (RT)


DETAIL R
FALSE SUMP
(Not to Scale)
0.5' Min.
1.0' Max.
Outside Ditch Traffic Flow
20:1
10:1
2'
S
GI etc.
S=Ditch Slope
℄ Proposed Ditch

@ STA. 61+48 -L- (RT)
@ STA. 65+48 -L- (RT)

SEE SHEET 41 FOR -L- PROFILE
SEE SHEET 57 FOR -Y4RPB- PROFILE

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

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

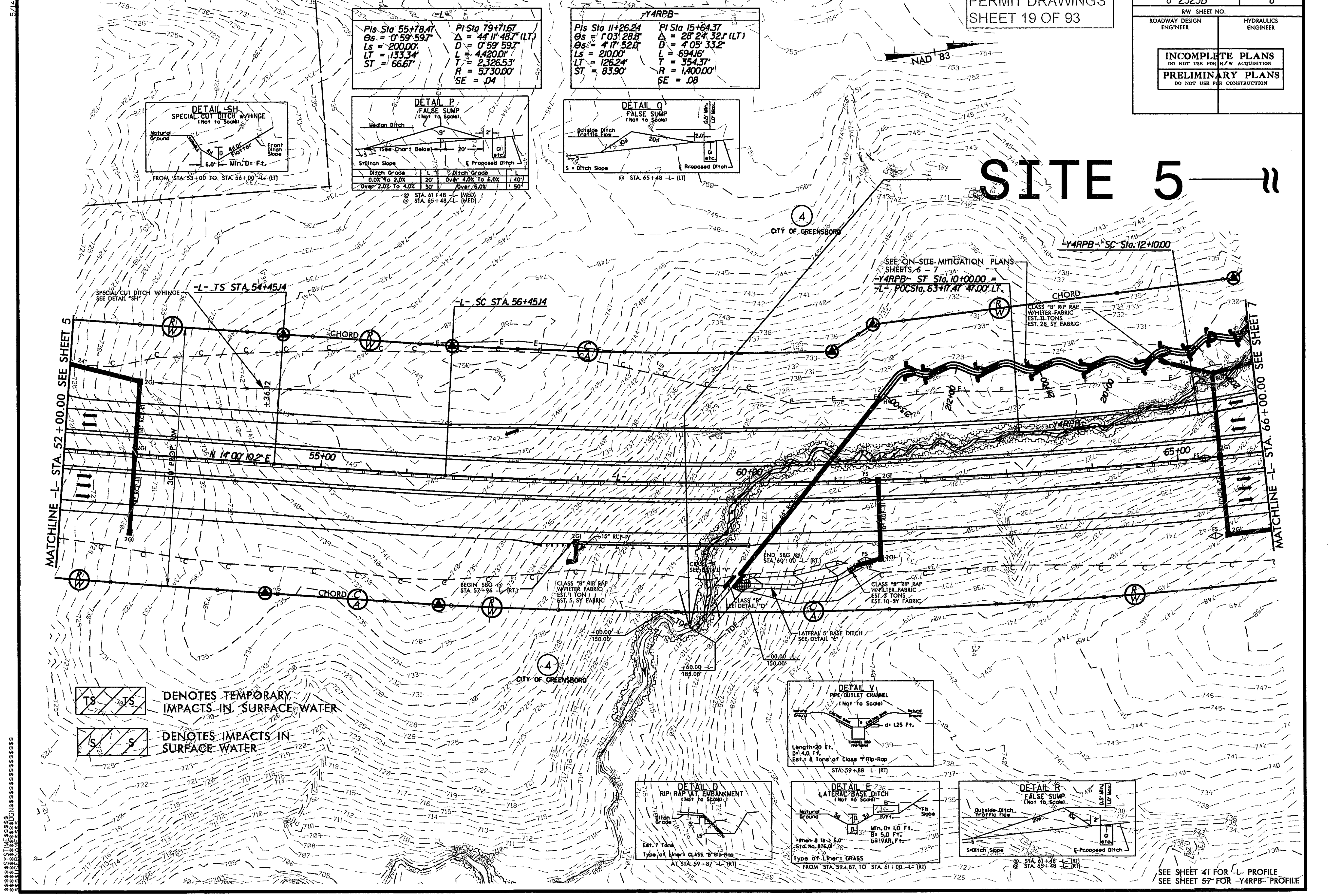
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 19 OF 93

SITE 5

-L-
Pls Sta 55+78.47
Θs = 0°59' 59.7"
Ls = 200.00'
LT = 133.34'
ST = 66.67'
PI Sta 79+71.67
Δ = 44°11' 48.7" (LT)
D = 0°59' 59.7"
L = 4,420.01'
T = 2,326.53'
R = 5,730.00'
SE = .04

-Y4RPB-
Pls Sta 11+26.24
Θs = 1°03' 28.8"
Θs = 4°17' 52.0"
Ls = 210.00'
LT = 126.24'
ST = 83.90'
PI Sta 15+64.37
Δ = 28°24' 32.1" (LT)
D = 4°05' 33.2"
L = 694.16'
T = 354.37'
R = 1,400.00'
SE = .08

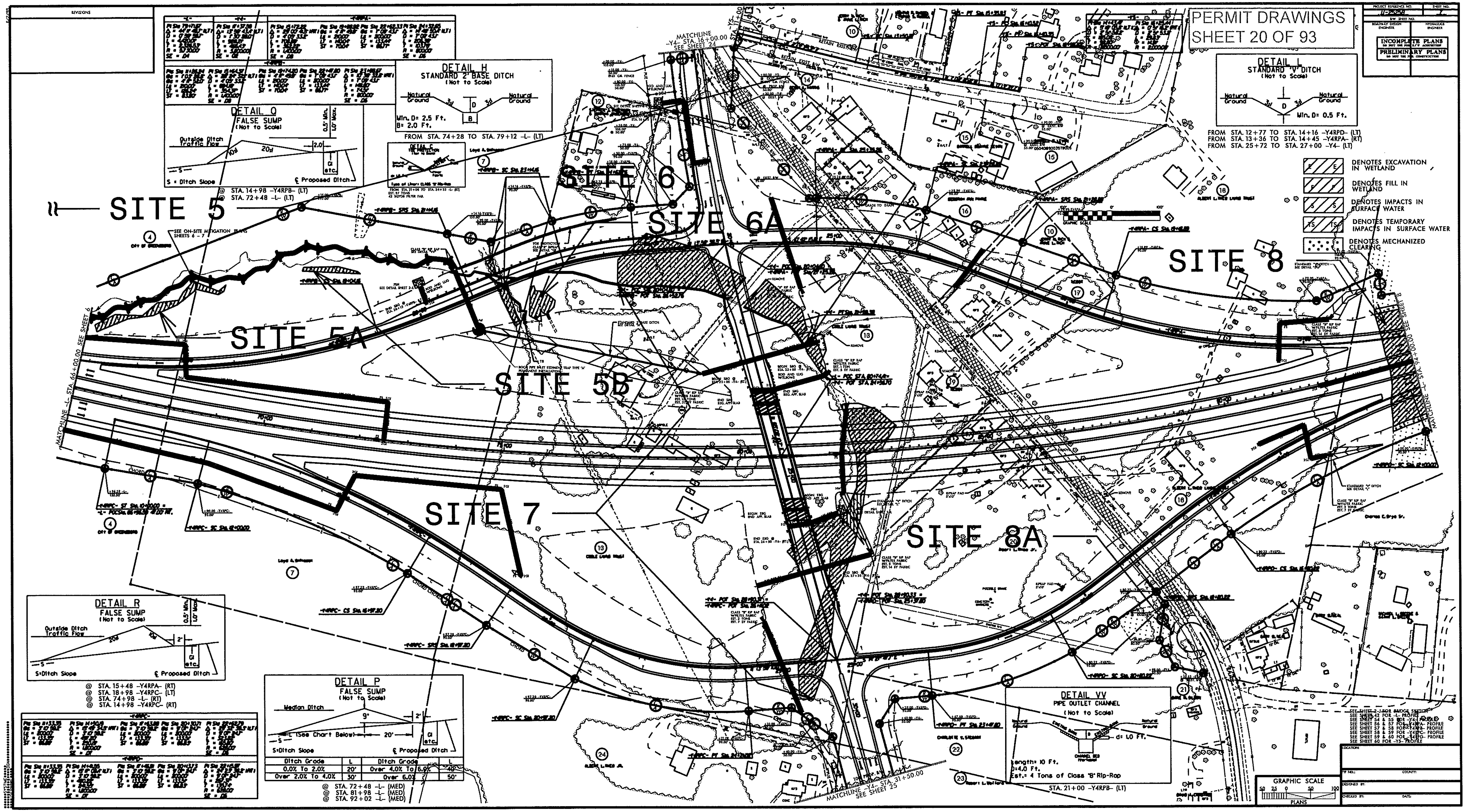

NAD 83
DETAIL SH
SPECIAL CUT DITCH W/HINGE
(Not to Scale)
Natural Ground
4:1
D
4:1 or Flatter
Front Ditch Slope
6.0'
Min. D= Ft.
FROM STA. 53+00 TO STA. 56+00 -L- (LT)
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9'
2'
L (See Chart Below)
20'
GI etc.
S=Ditch Slope
℄ Proposed Ditch
Ditch Grade | L | Ditch Grade | L
0.0% To 2.0% | 20' | Over 4.0% To 6.0% | 40'
Over 2.0% To 4.0% | 30' | Over 6.0% | 50'
@ STA. 61+48 -L- (MED)
@ STA. 65+48 -L- (MED)
DETAIL Q
FALSE SUMP
(Not to Scale)
0.5' Min.
1.0' Max.
Outside Ditch Traffic Flow
10:1
20:1
2.0
GI etc.
S = Ditch Slope
℄ Proposed Ditch
@ STA. 65+48 -L- (LT)
4
CITY OF GREENSBORO
SEE ON-SITE MITIGATION PLANS SHEETS 6 - 7
-Y4RPB- SC Sta. 12+10.00
-Y4RPB- ST Sta. 10+00.00 =
-L- POCSta. 63+17.47 47.00' LT.
CHORD
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 11 TONS
EST. 28 SY FABRIC
SPECIAL CUT DITCH W/HINGE
SEE DETAIL "SH"
-L- TS STA 54+45.14
-L- SC STA 56+45.14
CHORD
MATCHLINE -L- STA. 52+00.00 SEE SHEET 5
MATCHLINE -L- STA. 66+00.00 SEE SHEET 7
24"
2GI
300' PROP. R/W
±36.12
N 14°00' 10.2" E
55+00
60+00
65+00
-L-
-Y4RPB-
66" RCP-III
18" RCP-III
15" RCP-IV
2GI
FS
BEGIN SBG @
STA. 57+96 -L- (RT.)
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 1 TON
EST. 5 SY FABRIC
CLASS "I"
SEE DETAIL "V"
CLASS "B"
SEE DETAIL "D"
END SBG @
STA. 60+00 -L- (RT.)
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 3 TONS
EST. 10 SY FABRIC
LATERAL 5' BASE DITCH
SEE DETAIL "E"
TDE
+00.00 -L-
150.00'
+60.00 -L-
185.00'
+00.00 -L-
150.00'
4
CITY OF GREENSBORO
DETAIL V
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
Existing Bank
d= 1.25 Ft.
Channel Bed Horizontal
Length=20 Ft.
D= 4.0 Ft.
Est.= 8 Tons of Class "I" Rip-Rap
STA. 59+88 -L- (RT)
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
5'
1.5'
Est. 7 Tons
Type of Liner= CLASS "B" Rip-Rap
AT STA. 59+87 -L- (RT)
DETAIL E
LATERAL BASE DITCH
(Not to Scale)
Natural Ground
3:1
D
B
F/Ft.
Fill Slope
Min. D= 1.0 Ft.
B= 5.0 Ft.
b= VAR. Ft.
*When B is > 6.0'
Std. No. 876.01
Type of Liner= GRASS
FROM STA. 59+87 TO STA. 61+00 -L- (RT)
DETAIL R
FALSE SUMP
(Not to Scale)
0.5' Min.
1.0' Max.
Outside Ditch Traffic Flow
20:1
10:1
2'
GI etc.
S=Ditch Slope
℄ Proposed Ditch
@ STA. 61+48 -L- (RT)
@ STA. 65+48 -L- (RT)

TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S — DENOTES IMPACTS IN SURFACE WATER

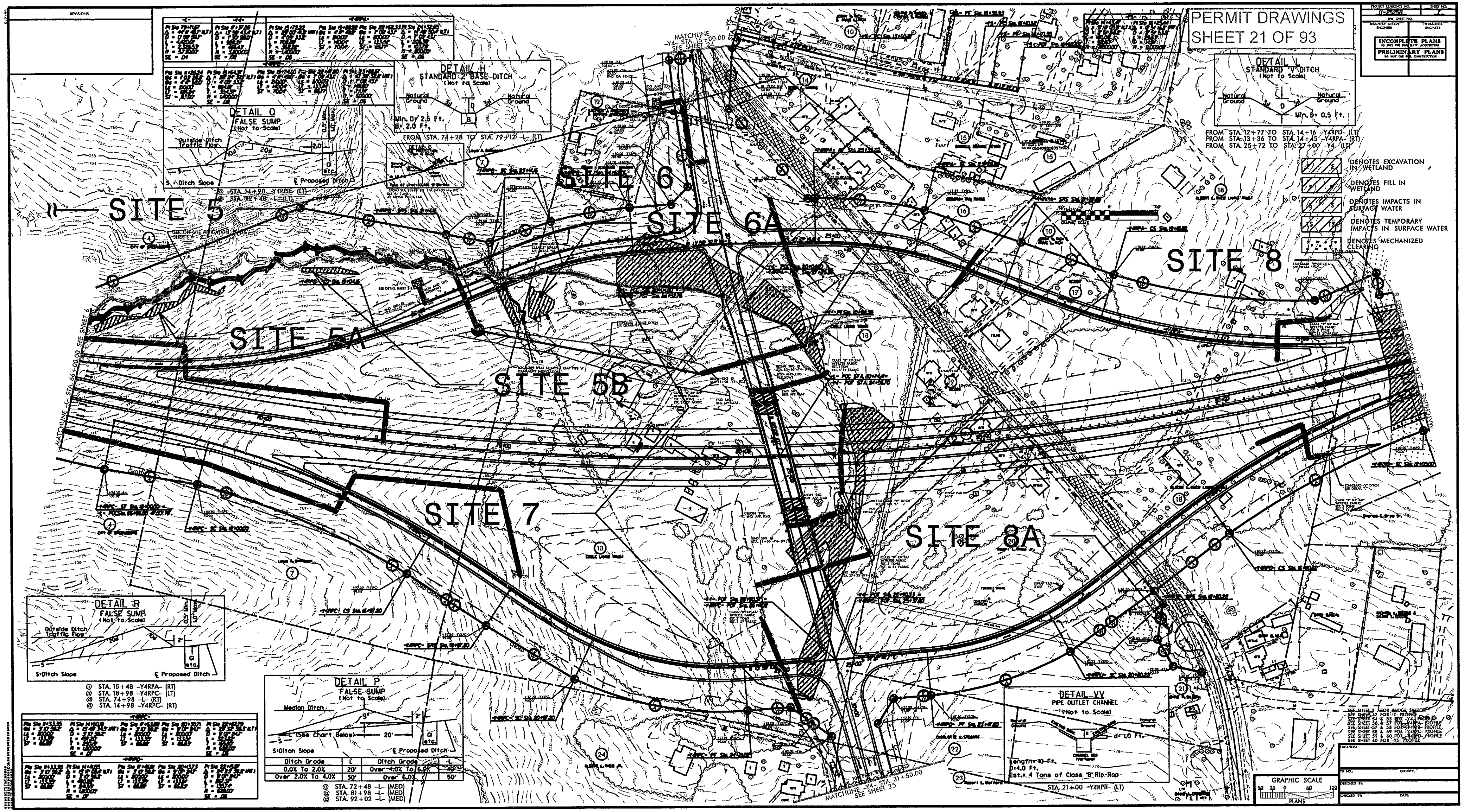
SEE SHEET 41 FOR -L- PROFILE
SEE SHEET ~~57~~ FOR -Y4RPB- PROFILE

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


PERMIT DRAWINGS
SHEET 20 OF 93
PROJECT REFERENCE NO.
SHEET NO.
U-2525B
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
PRELIMINARY PLANS
REVISIONS
SITE 5
SITE 5A
SITE 5B
SITE 6
SITE 6A
SITE 7
SITE 8
SITE 8A
SEE ON-SITE MITIGATION PLANS SHEETS 6 - 7
MATCHLINE -L- STA. 66+00.00 SEE SHEET 6
MATCHLINE -Y4- STA. 16+00.00 SEE SHEET 24
MATCHLINE -Y4- STA. 31+50.00 SEE SHEET 25
MATCHLINE -L- STA. 94+00.00 SEE SHEET 8
DETAIL H
STANDARD 2' BASE DITCH
(Not to Scale)
Natural Ground
Natural Ground
Min. D= 2.5 Ft.
B= 2.0 Ft.
FROM STA. 74+28 TO STA. 79+12 -L- (LT)
DETAIL O
FALSE SUMP
(Not to Scale)
Outside Ditch
Traffic Flow
0.5' Min.
1.0' Max.
10:1
20:1
2.0'
GI etc.
S = Ditch Slope
℄ Proposed Ditch
@ STA. 14+98 -Y4RPB- (LT)
@ STA. 72+48 -L- (LT)
DETAIL C
DETAIL L
STANDARD 'V' DITCH
(Not to Scale)
Natural Ground
Natural Ground
Min. D= 0.5 Ft.
FROM STA. 12+77 TO STA. 14+16 -Y4RPD- (LT)
FROM STA. 13+36 TO STA. 14+45 -Y4RPA- (RT)
FROM STA. 25+72 TO STA. 27+00 -Y4- (LT)
▨ E DENOTES EXCAVATION IN WETLAND
▨ F DENOTES FILL IN WETLAND
▨ S DENOTES IMPACTS IN SURFACE WATER
▨ TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
⁙ DENOTES MECHANIZED CLEARING
DETAIL R
FALSE SUMP
(Not to Scale)
Outside Ditch
Traffic Flow
0.5' Min.
1.0' Max.
20:1
10:1
2'
GI etc.
S=Ditch Slope
℄ Proposed Ditch
@ STA. 15+48 -Y4RPA- (RT)
@ STA. 18+98 -Y4RPC- (LT)
@ STA. 74+98 -L- (RT)
@ STA. 14+98 -Y4RPC- (RT)
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
GI etc.
S=Ditch Slope
℄ Proposed Ditch
@ STA. 72+48 -L- (MED)
@ STA. 81+98 -L- (MED)
@ STA. 92+02 -L- (MED)
DETAIL VV
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
Natural Ground
d= 1.0 FT.
Length= 10 Ft.
D=4.0 Ft.
Est.= 4 Tons of Class "B" Rip-Rap
STA. 21+00 -Y4RPB- (LT)
SEE SHEET 2-3 FOR BRIDGE SKETCH
SEE SHEET 42 FOR -L- PROFILE
SEE SHEET 54 & 55 FOR -Y4- PROFILE
SEE SHEET 56 & 57 FOR -Y4RPA- PROFILE
SEE SHEET 57 & 58 FOR -Y4RPB- PROFILE
SEE SHEET 58 & 59 FOR -Y4RPC- PROFILE
SEE SHEET 59 & 60 FOR -Y4RPD- PROFILE
SEE SHEET 60 FOR -Y5- PROFILE
GRAPHIC SCALE
50 25 0 50 100
PLANS
LOCATION:
TIP NO.:
COUNTY:
DESIGNED BY:
CHECKED BY:
DATE:
4
7
10
12
13
14
15
16
17
18
19
20
21
22
23
24

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

PERMIT DRAWINGS
SHEET 21 OF 93


PROJECT REFERENCE NO.
U-2525B
SHEET NO.
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
REVISIONS
SITE 5
SITE 5A
SITE 5B
SITE 6
SITE 6A
SITE 7
SITE 8
SITE 8A
MATCHLINE -Y4- STA. 16+00.00 SEE SHEET 24
MATCHLINE -Y4- STA. 31+50.00 SEE SHEET 25
MATCHLINE -L- STA. 66+00.00 SEE SHEET 6
MATCHLINE -L- STA. 94+00.00 SEE SHEET 8
SEE ON-SITE MITIGATION PLANS SHEETS 6 - 7
DETAIL L
STANDARD 'V' DITCH
(Not to Scale)
Natural Ground
Natural Ground
3:1
D
Min. D= 0.5 Ft.
DETAIL H
STANDARD 2' BASE DITCH
(Not to Scale)
Natural Ground
Natural Ground
3:1
D
B
Min. D= 2.5 Ft.
B= 2.0 Ft.
DETAIL O
FALSE SUMP
(Not to Scale)
Outside Ditch
Traffic Flow
10d
20d
2.0'
0.5' Min.
1.0' Max.
d etc.
S
S=Ditch Slope
℄ Proposed Ditch
DETAIL R
FALSE SUMP
(Not to Scale)
Outside Ditch
Traffic Flow
20d
10d
2'
0.5' Min.
1.0' Max.
d etc.
S
S=Ditch Slope
℄ Proposed Ditch
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9'
2'
L (See Chart Below)
20'
S
d etc.
S=Ditch Slope
℄ Proposed Ditch
DETAIL VV
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
Natural Ground
D
d= 1.0 Ft.
CHANNEL BED
GRAPHIC SCALE
50 25 0 50 100
PLANS
LOCATION:
TIP NO.:
COUNTY:
DESIGNED BY:
CHECKED BY:
DATE:

FROM STA. 12+77 TO STA. 14+16 -Y4RPD- (LT)
FROM STA. 13+36 TO STA. 14+15 -Y4RPA- (RT)
FROM STA. 25+72 TO STA. 27+00 -Y4- (LT)

FROM STA. 74+28 TO STA. 79+12 -L- (LT)

@ STA. 14+98 -Y4RPB- (LT)
@ STA. 72+48 -L- (LT)

@ STA. 15+48 -Y4RPA- (RT)
@ STA. 18+98 -Y4RPC- (LT)
@ STA. 74+98 -L- (RT)
@ STA. 14+98 -Y4RPC- (RT)

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

@ STA. 72+48 -L- (MED)
@ STA. 81+98 -L- (MED)
@ STA. 92+02 -L- (MED)

Length= 10 Ft.
D=4.0 Ft.
Est.= 4 Tons of Class "B" Rip-Rap
STA. 21+00 -Y4RPB- (LT)

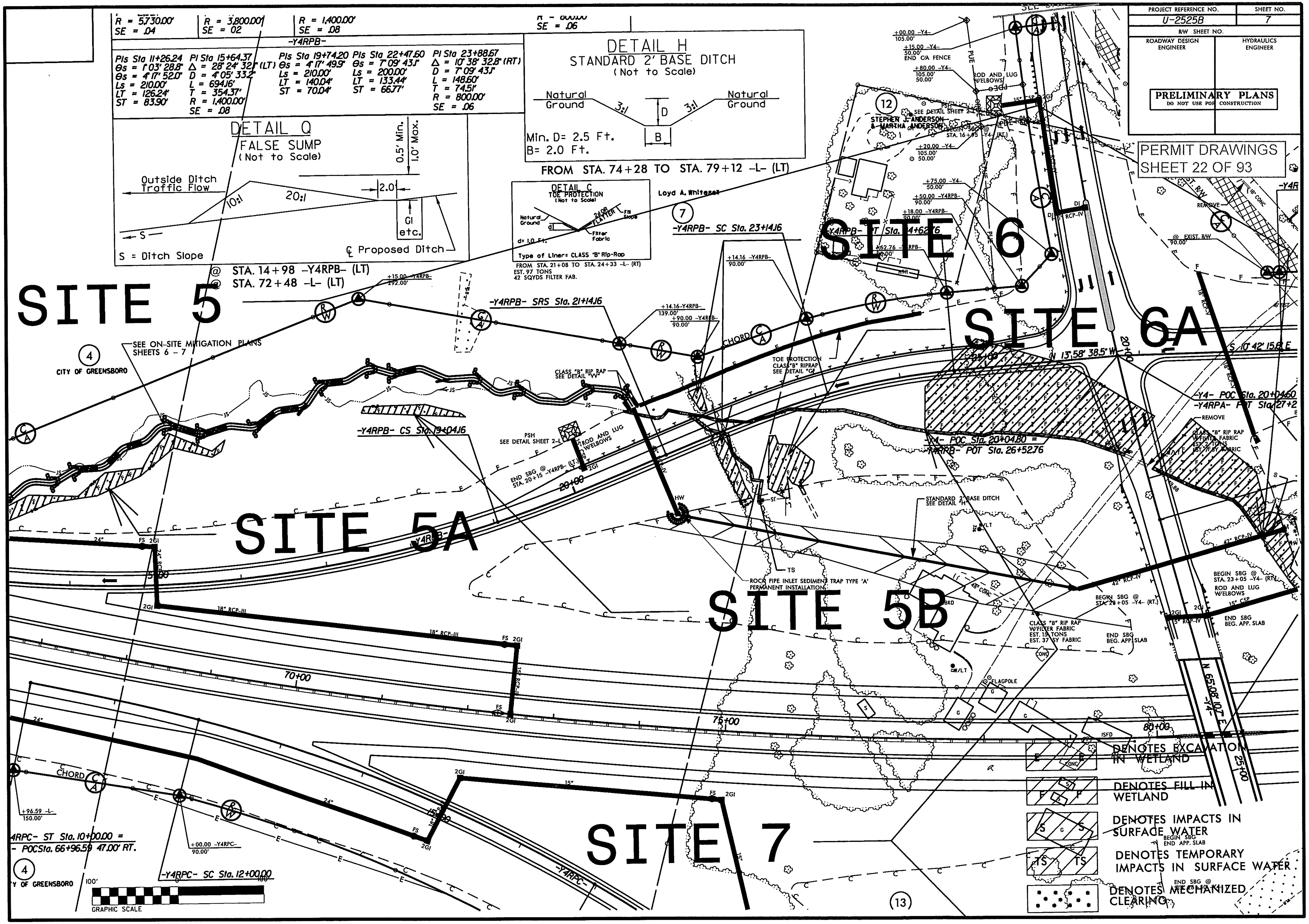
▨ DENOTES EXCAVATION IN WETLAND
▨ DENOTES FILL IN WETLAND
▨ DENOTES IMPACTS IN SURFACE WATER
▨ DENOTES TEMPORARY IMPACTS IN SURFACE WATER
⁙ DENOTES MECHANIZED CLEARING

SEE SHEET 2 FOR BRIDGE SKETCH
SEE SHEET 42 FOR -L- PROFILE
SEE SHEET 54 & 55 FOR -Y4- PROFILE
SEE SHEET 56 & 57 FOR -Y4RPA- PROFILE
SEE SHEET 57 & 58 FOR -Y4RPB- PROFILE
SEE SHEET 58 & 59 FOR -Y4RPC- PROFILE
SEE SHEET 59 & 60 FOR -Y4RPD- PROFILE
SEE SHEET 60 FOR -Y5- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

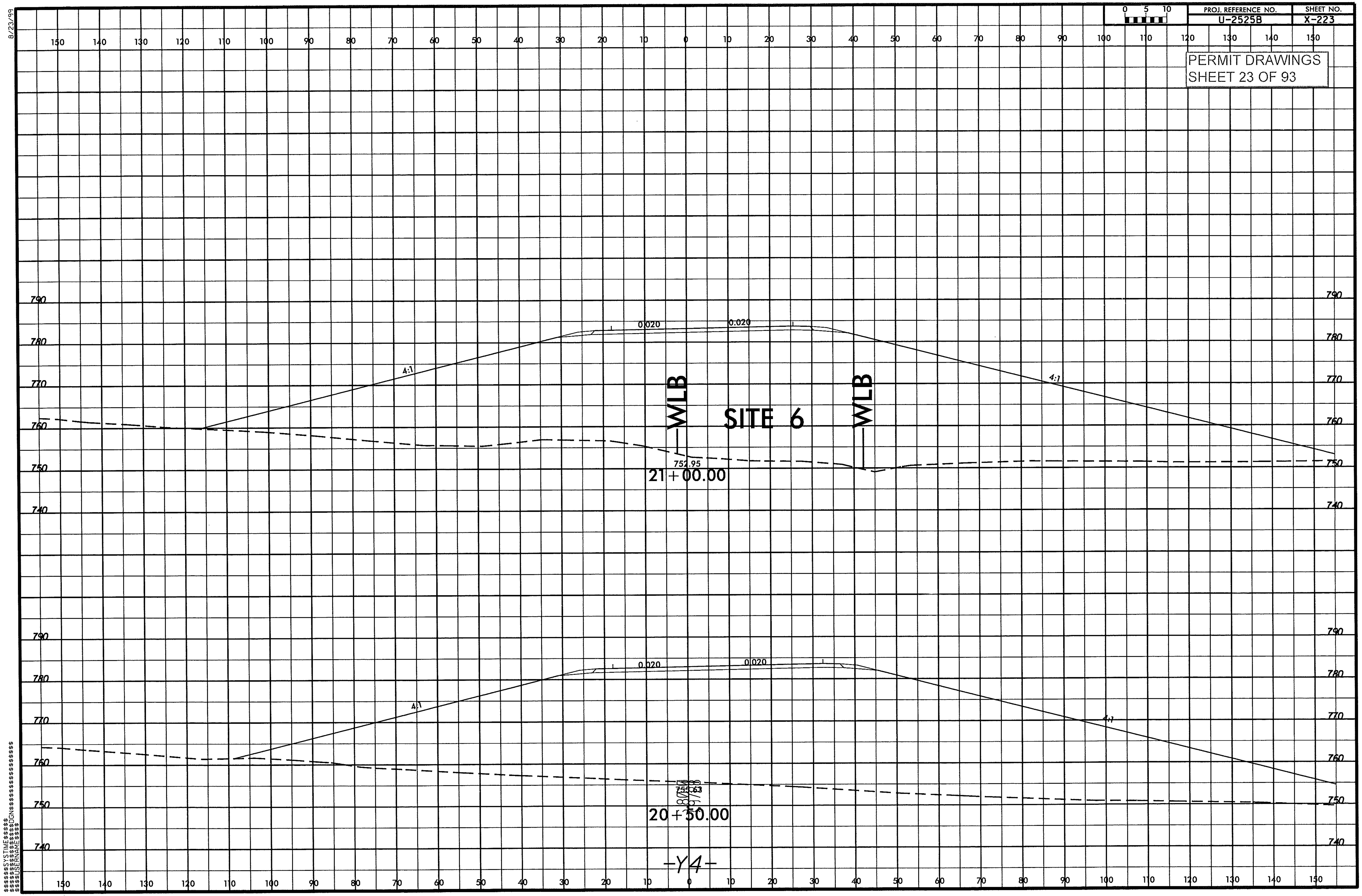
PERMIT DRAWINGS
SHEET 22 OF 93



R = 5,730.00'
SE = .04
R = 3,800.00'
SE = 02
R = 1,400.00'
SE = .08
SE = .06
-Y4RPB-
PIs Sta 11+26.24
Θs = 1° 03' 28.8"
Θs = 4° 17' 52.0"
Ls = 210.00'
LT = 126.24'
ST = 83.90'
PI Sta 15+64.37
Δ = 28° 24' 32.1" (LT)
D = 4° 05' 33.2"
L = 694.16'
T = 354.37'
R = 1,400.00'
SE = .08
PIs Sta 19+74.20
Θs = 4° 17' 49.9"
Ls = 210.00'
LT = 140.04'
ST = 70.04'
PIs Sta 22+47.60
Θs = 7° 09' 43.1"
Ls = 200.00'
LT = 133.44'
ST = 66.77'
PI Sta 23+88.67
Δ = 10° 38' 32.8" (RT)
D = 7° 09' 43.1"
L = 148.60'
T = 74.51'
R = 800.00'
SE = .06
DETAIL Q
FALSE SUMP
(Not to Scale)
0.5' Min.
1.0' Max.
Outside Ditch
Traffic Flow
10:1
20:1
2.0
GI etc.
S
S = Ditch Slope
℄ Proposed Ditch
@ STA. 14+98 -Y4RPB- (LT)
@ STA. 72+48 -L- (LT)
DETAIL H
STANDARD 2' BASE DITCH
(Not to Scale)
Natural Ground
3:1
D
3:1
Natural Ground
B
Min. D= 2.5 Ft.
B= 2.0 Ft.
FROM STA. 74+28 TO STA. 79+12 -L- (LT)
DETAIL C
TOE PROTECTION
(Not to Scale)
Natural Ground
2:1 OR FLATTER
Fill Slope
Filter Fabric
d= 1.0 Ft.
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 21+08 TO STA. 24+33 -L- (RT)
EST. 97 TONS
42 SQYDS FILTER FAB.
Loyd A. Whitesel
7
-Y4RPB- SC Sta. 23+14.16
SITE 5
SITE 5A
SITE 5B
SITE 6
SITE 6A
SITE 7
4
CITY OF GREENSBORO
SEE ON-SITE MITIGATION PLANS SHEETS 6 - 7
+15.00 -Y4RPB- 292.00'
-Y4RPB- SRS Sta. 21+14.16
+14.16 -Y4RPB- 139.00'
+90.00 -Y4RPB- 90.00'
+14.16 -Y4RPB- 90.00'
CHORD
CLASS 'B' RIP RAP SEE DETAIL 'W'
TOE PROTECTION CLASS 'B' RIPRAP SEE DETAIL 'C'
-Y4RPB- CS Sta. 19+04.16
PSH SEE DETAIL SHEET 2-L
ROD AND LUG W/ELBOWS
END SBG @ STA. 20+15 -Y4RPB- (LT)
2GI
20+00
Y4RPB
HW
TS
ROCK PIPE INLET SEDIMENT TRAP TYPE 'A' PERMANENT INSTALLATION
STANDARD 2' BASE DITCH SEE DETAIL 'H'
12
STEPHEN J. ANDERSON & MARTHA ANDERSON
PSH SEE DETAIL SHEET 2-L
BEGIN SBG @ STA. 16+95 -Y4- (RT)
+00.00 -Y4- 105.00'
+15.00 -Y4- 50.00' END C/A FENCE
+80.00 -Y4- 105.00' 50.00'
ROD AND LUG W/ELBOWS
+20.00 -Y4- 105.00' 50.00'
+75.00 -Y4- 50.00'
+50.00 -Y4RPB- 90.00'
+18.00 -Y4RPB- 90.00'
-Y4RPB- PT Sta. 24+62.76
+62.76 -Y4RPB- 90.00'
PUE
DI
RCP-IV
@ EXIST. R/W 90.00'
REMOVE
18" CONC
EXIST. R/W
-Y4R
N 13° 58' 38.5" W
S 10° 42' 15.6" E
20+00
-Y4- POC Sta. 20+04.60
-Y4RPA- POT Sta. 27+2
-Y4- POC Sta. 20+04.80 = -Y4RPB- POT Sta. 26+52.76
CLASS 'B' RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
REMOVE
42" RCP-IV
BEGIN SBG @ STA. 23+05 -Y4- (RT)
ROD AND LUG W/ELBOWS
15" CSP
BEGIN SBG @ STA. 20+05 -Y4- (RT)
2GI
15" RCP-IV
END SBG BEG. APP. SLAB
CLASS 'B' RIP RAP W/FILTER FABRIC EST. 15 TONS EST. 37 SY FABRIC
END SBG BEG. APP. SLAB
48" CONC
FS 2GI
24" RCP
18" RCP-III
FS 2GI
15" RCP
FS
2GI
70+00
75+00
80+00
N 65° 08' 10.7" E
-Y4-
25+00
FLAGPOLE
ISFD
24"
CHORD
+96.59 -L- 150.00'
-Y4RPC- ST Sta. 10+00.00 = -L- POC Sta. 66+96.59 47.00' RT.
+00.00 -Y4RPC- 90.00'
-Y4RPC- SC Sta. 12+00.00
-Y4RPC-
2GI
15"
FS 2GI
FS
2GI
4
CITY OF GREENSBORO
13
100'
GRAPHIC SCALE
DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
BEGIN SBG END APP. SLAB
END SBG @

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-223

PERMIT DRAWINGS
SHEET 23 OF 93


0 5 10
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
790
780
770
760
750
740
0.020
0.020
4:1
4:1
—WLB
SITE 6
—WLB
752.95
21+00.00
0.020
0.020
4:1
4:1
755.63
20+50.00
-Y4-

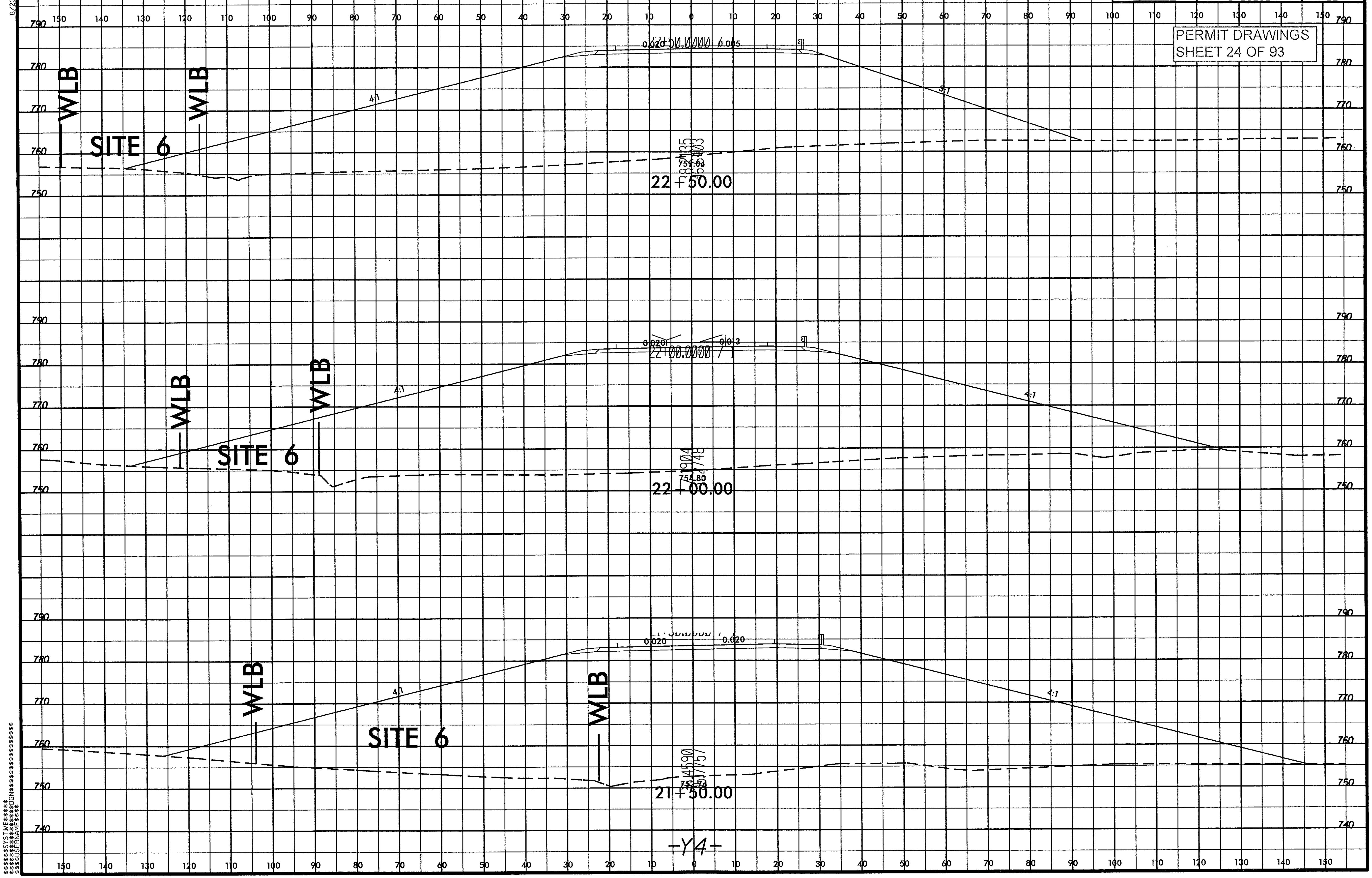
8/23/99

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

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-224

PERMIT DRAWINGS
SHEET 24 OF 93



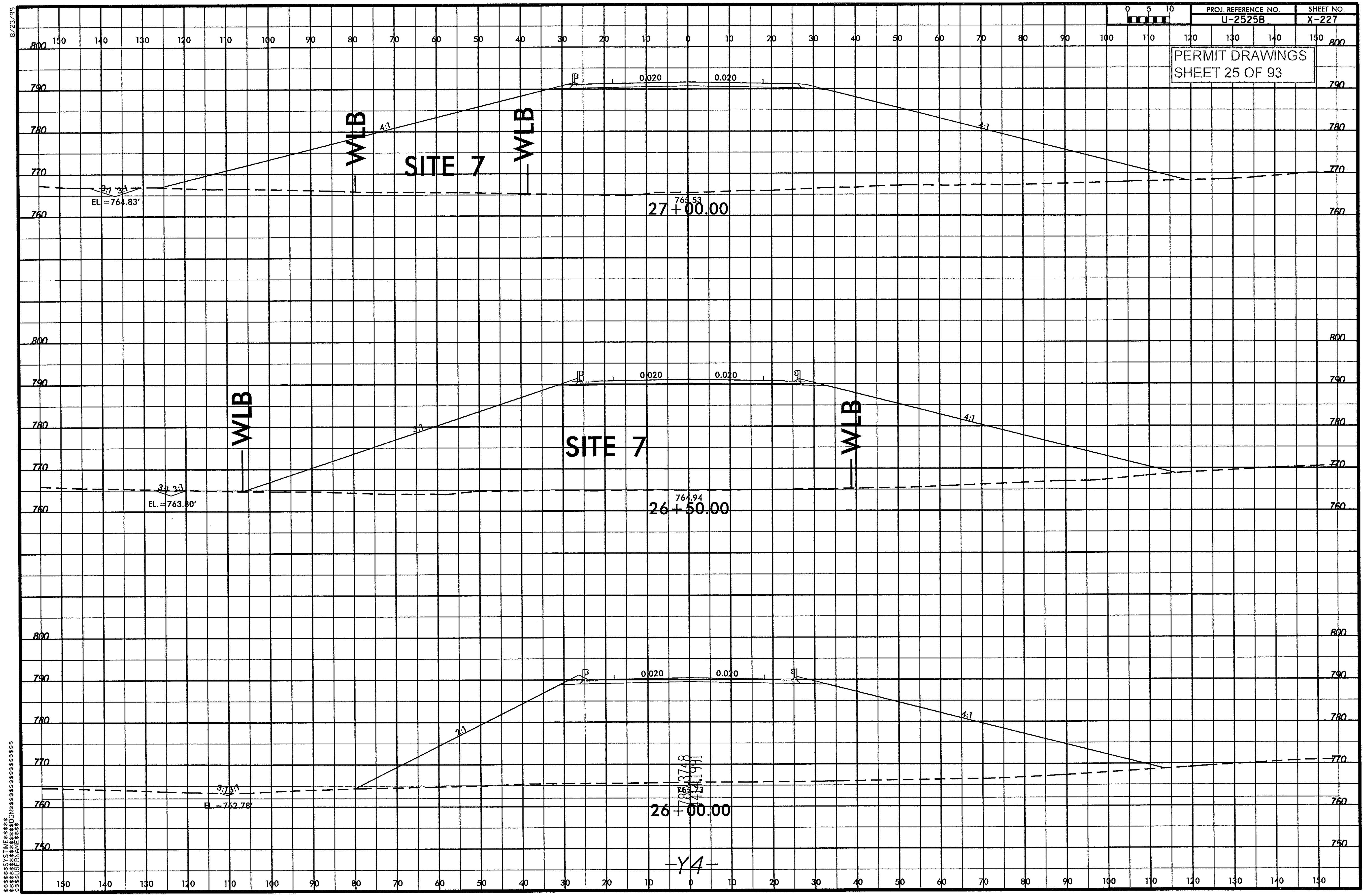
0 5 10
790
780
770
760
750
740
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
WLB
WLB
SITE 6
4:1
3:1
0.020
0.005
22+50.00
WLB
WLB
SITE 6
4:1
4:1
0.020
0.013
754.80
22+00.00
WLB
WLB
SITE 6
4:1
4:1
0.020
0.020
21+50.00
-Y4-

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

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-227

PERMIT DRAWINGS
SHEET 25 OF 93



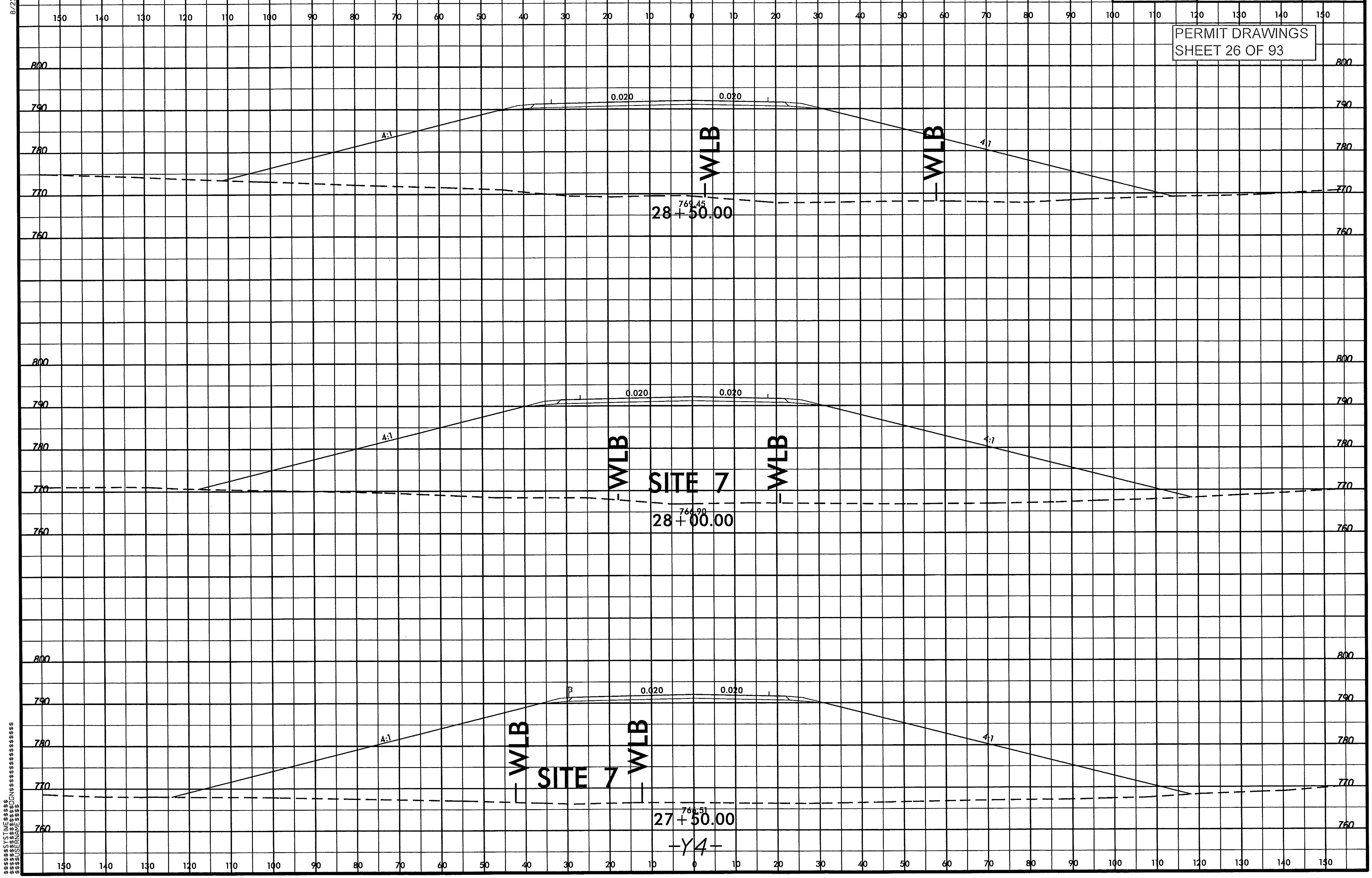
0 5 10
SITE 7
WLB
WLB
4:1
4:1
0.020
0.020
3:1 3:1
EL. = 764.83'
765.53
27 + 00.00
SITE 7
WLB
WLB
3:1
4:1
0.020
0.020
3:1 3:1
EL. = 763.80'
764.94
26 + 50.00
2:1
4:1
0.020
0.020
3:1 3:1
EL. = 762.78'
763.73
7883.3748
4441.1991
26 + 00.00
-Y4-
800
790
780
770
760
750
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

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

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-228

PERMIT DRAWINGS
SHEET 26 OF 93



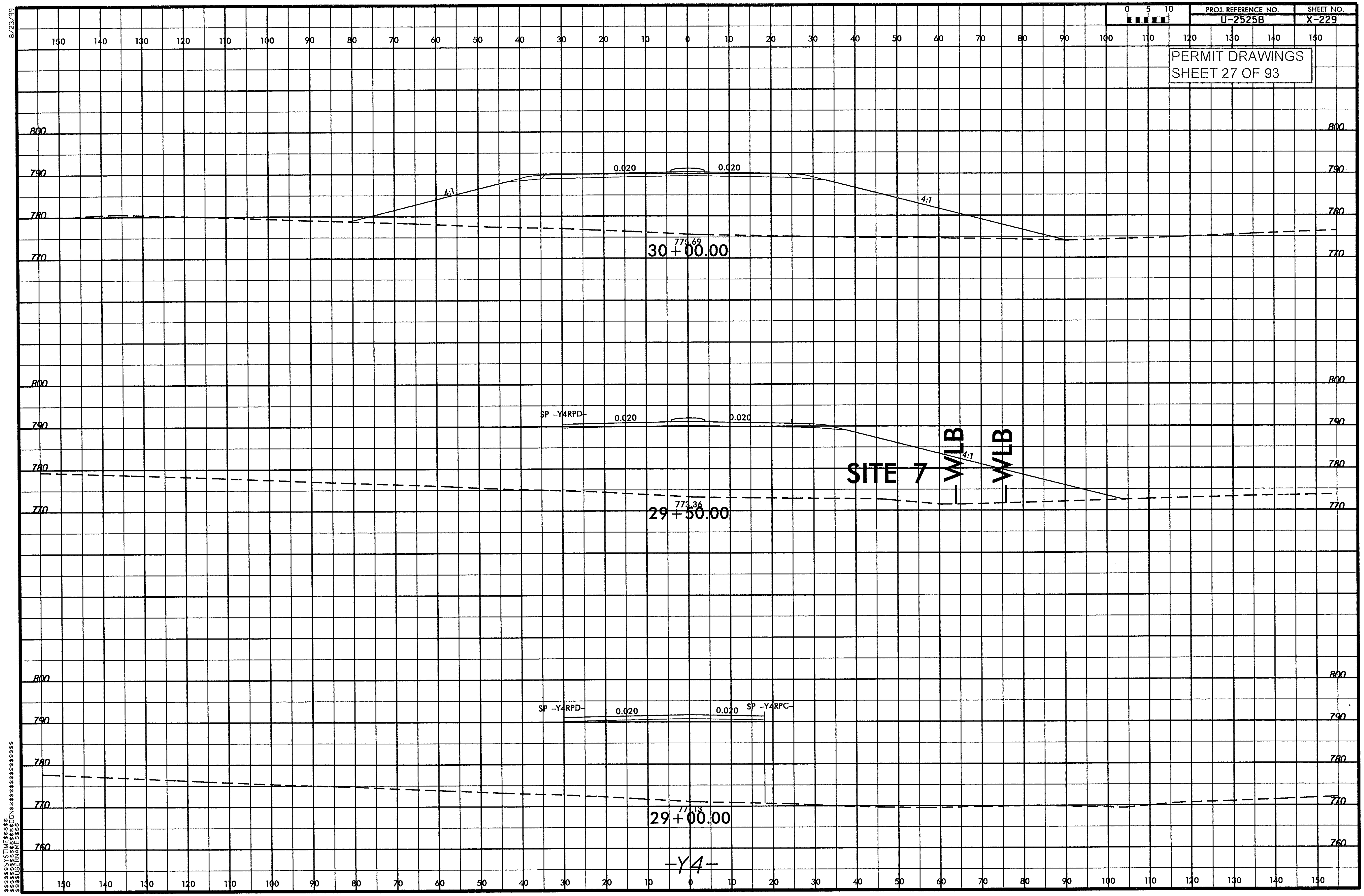
0 5 10
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
800
790
780
770
760
0.020
0.020
4:1
4:1
-WLB
-WLB
769.45
28+50.00
4:1
4:1
0.020
0.020
-WLB
SITE 7
-WLB
766.90
28+00.00
4:1
4:1
0.020
0.020
-WLB
SITE 7
-WLB
766.51
27+50.00
-Y4-

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

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-229

PERMIT DRAWINGS
SHEET 27 OF 93



0 5 10
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
800
790
780
770
760
0.020
4:1
775.69
30+00.00
SP -Y4RPD-
SITE 7
WLB
773.36
29+50.00
SP -Y4RPC-
771.13
29+00.00
-Y4-

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	8

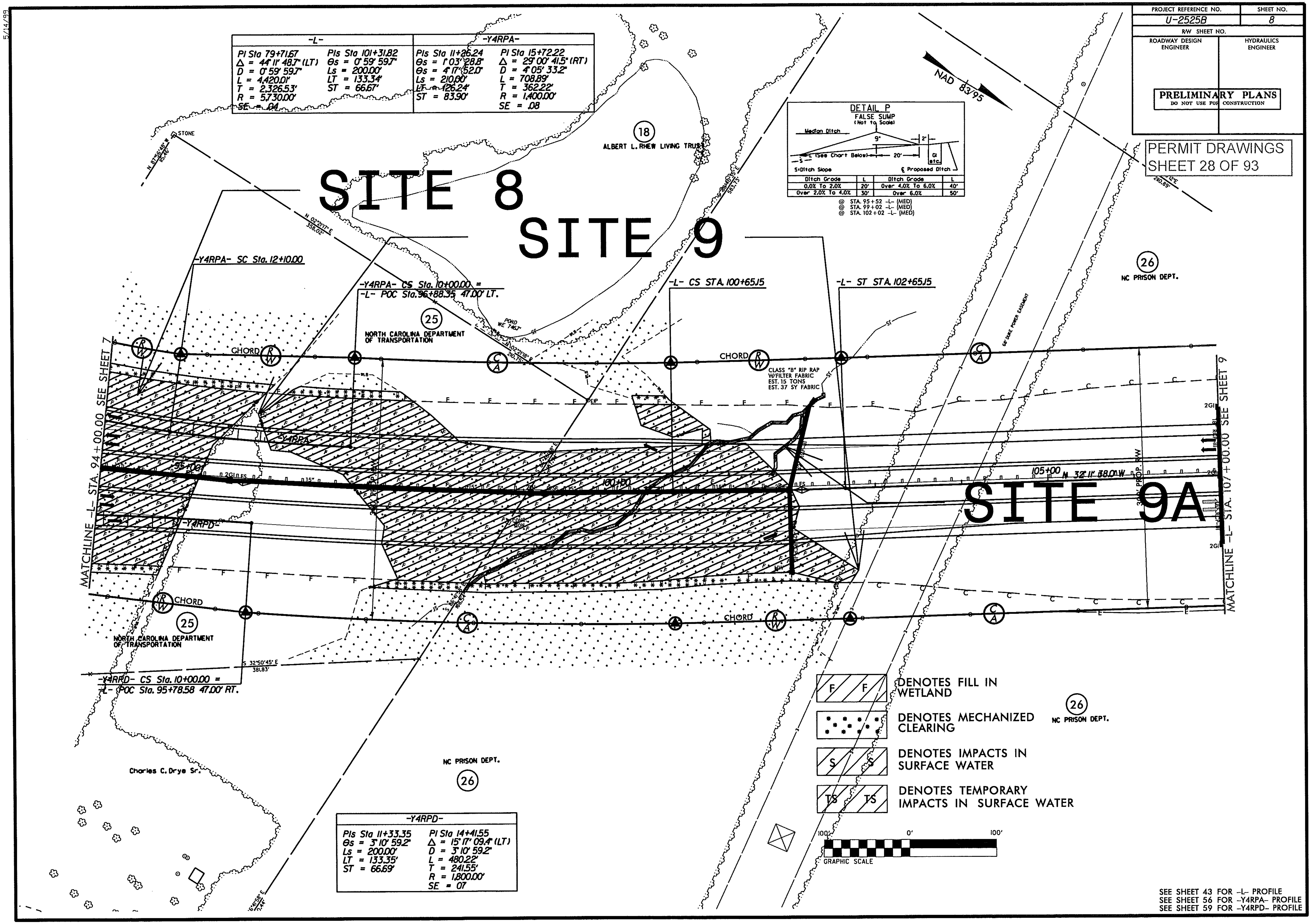
R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 28 OF 93



SITE 8
SITE 9
SITE 9A
NAD 83/95
18
ALBERT L. RHEW LIVING TRUST
STONE
N 02°21'17" E 358.02'
-Y4RPA- SC Sta. 12+10.00
-Y4RPA- CS Sta. 10+00.00 =
-L- POC Sta. 96+88.35 47.00' LT.
25
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
POND WE 7/45.7'
-L- CS STA. 100+65.15
-L- ST STA. 102+65.15
26
NC PRISON DEPT.
CHORD
R/W
C/A
CLASS "B" RIP RAP W/FILTER FABRIC EST. 15 TONS EST. 37 SY FABRIC
-Y4RPA-
-Y4RPD-
95+00
100+00
105+00
N 32°11' 38.0" W
300' PROP. R/W
MATCHLINE -L- STA. 94+00.00 SEE SHEET 7
MATCHLINE -L- STA. 107+00.00 SEE SHEET 9
2GI
S 32°50'45" E 381.83'
-Y4RPD- CS Sta. 10+00.00 =
-L- POC Sta. 95+78.58 47.00' RT.
Charles C. Drye Sr.
NC PRISON DEPT.
26
100'
0'
100'
GRAPHIC SCALE

-L-		-Y4RPA-	
PI Sta 79+71.67	PIs Sta 101+31.82	PIs Sta 11+26.24	PI Sta 15+72.22
Δ = 44° 11' 48.7" (LT)	Θs = 0° 59' 59.7"	Θs = 1° 03' 28.8"	Δ = 29° 00' 41.5" (RT)
D = 0° 59' 59.7"	Ls = 200.00'	Θs = 4° 17' 52.0"	D = 4° 05' 33.2"
L = 4,420.01'	LT = 133.34'	Ls = 210.00'	L = 708.89'
T = 2,326.53'	ST = 66.67'	LT = 126.24'	T = 362.22'
R = 5,730.00'		ST = 83.90'	R = 1,400.00'
SE = .04			SE = .08

DETAIL P
FALSE SUMP
(Not to Scale)

Median Ditch
9"
2'
L (See Chart Below)
20'
GI etc.
S
S=Ditch Slope
℄ Proposed Ditch

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

@ STA. 95+52 -L- (MED)
@ STA. 99+02 -L- (MED)
@ STA. 102+02 -L- (MED)

-Y4RPD-	
PIs Sta 11+33.35	PI Sta 14+41.55
Θs = 3° 10' 59.2"	Δ = 15° 17' 09.4" (LT)
Ls = 200.00'	D = 3° 10' 59.2"
LT = 133.35'	L = 480.22'
ST = 66.69'	T = 241.55'
	R = 1,800.00'
	SE = .07

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

SEE SHEET 43 FOR -L- PROFILE
SEE SHEET 56 FOR -Y4RPA- PROFILE
SEE SHEET 59 FOR -Y4RPD- PROFILE

5/14/99

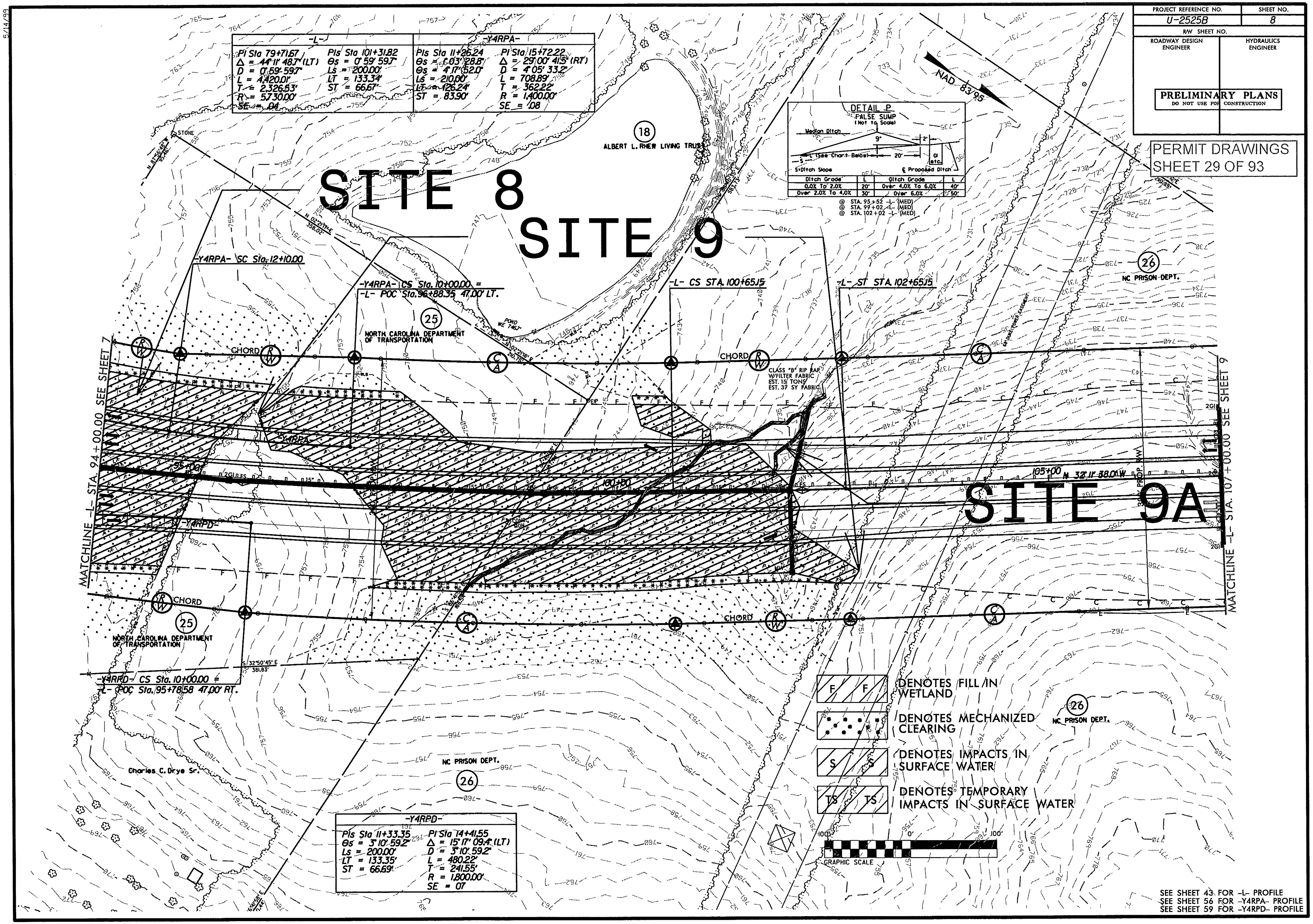
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	8

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 29 OF 93


SITE 8
SITE 9
SITE 9A
NAD 83/95
(18)
ALBERT L. RHEW LIVING TRUST
(25)
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
(26)
NC PRISON DEPT.
Charles C. Drye Sr.
STONE
POND
-Y4RPA- SC Sta. 12+10.00
-Y4RPA- CS Sta. 10+00.00 = -L- POC Sta. 96+88.35 47.00' LT.
-L- CS STA. 100+65.15
-L- ST STA. 102+65.15
-Y4RPD- CS Sta. 10+00.00 = -L- POC Sta. 95+78.58 47.00' RT.
CHORD
R/W
C/A
-Y4RPA-
-Y4RPD-
95+00
100+00
105+00
N 33° 11' 38.0" W
CLASS "B" RIP RAP W/FILTER FABRIC EST. 15 TONS EST. 37 SY FABRIC
MATCHLINE -L- STA. 94+00.00 SEE SHEET 7
MATCHLINE -L- STA. 107+00.00 SEE SHEET 9
S 32°50'45" E 381.83'
GRAPHIC SCALE
0'
100'

-L-

PI Sta 79+71.67
Δ = 44° 11' 48.7" (LT)
D = 0° 59' 59.7"
L = 4,420.01'
T = 2,326.53'
R = 5,730.00'
SE = .04

PIs Sta 101+31.82
Θs = 0° 59' 59.7"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

-Y4RPA-

PIs Sta 11+26.24
Θs = 1° 03' 28.8"
Θs = 4° 17' 52.0"
Ls = 210.00'
LT = 126.24'
ST = 83.90'

PI Sta 15+72.22
Δ = 29° 00' 41.5" (RT)
D = 4° 05' 33.2"
L = 708.89'
T = 362.22'
R = 1,400.00'
SE = .08

DETAIL P
FALSE SUMP
(Not to Scale)

Median Ditch
9"
2'
L (See Chart Below)
20'
S
GI etc.
S=Ditch Slope
℄ Proposed Ditch

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

@ STA. 95+52 -L- (MED)
@ STA. 99+02 -L- (MED)
@ STA. 102+02 -L- (MED)

-Y4RPD-

PIs Sta 11+33.35
Θs = 3° 10' 59.2"
Ls = 200.00'
LT = 133.35'
ST = 66.69'

PI Sta 14+41.55
Δ = 15° 17' 09.4" (LT)
D = 3° 10' 59.2"
L = 480.22'
T = 241.55'
R = 1,800.00'
SE = .07

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

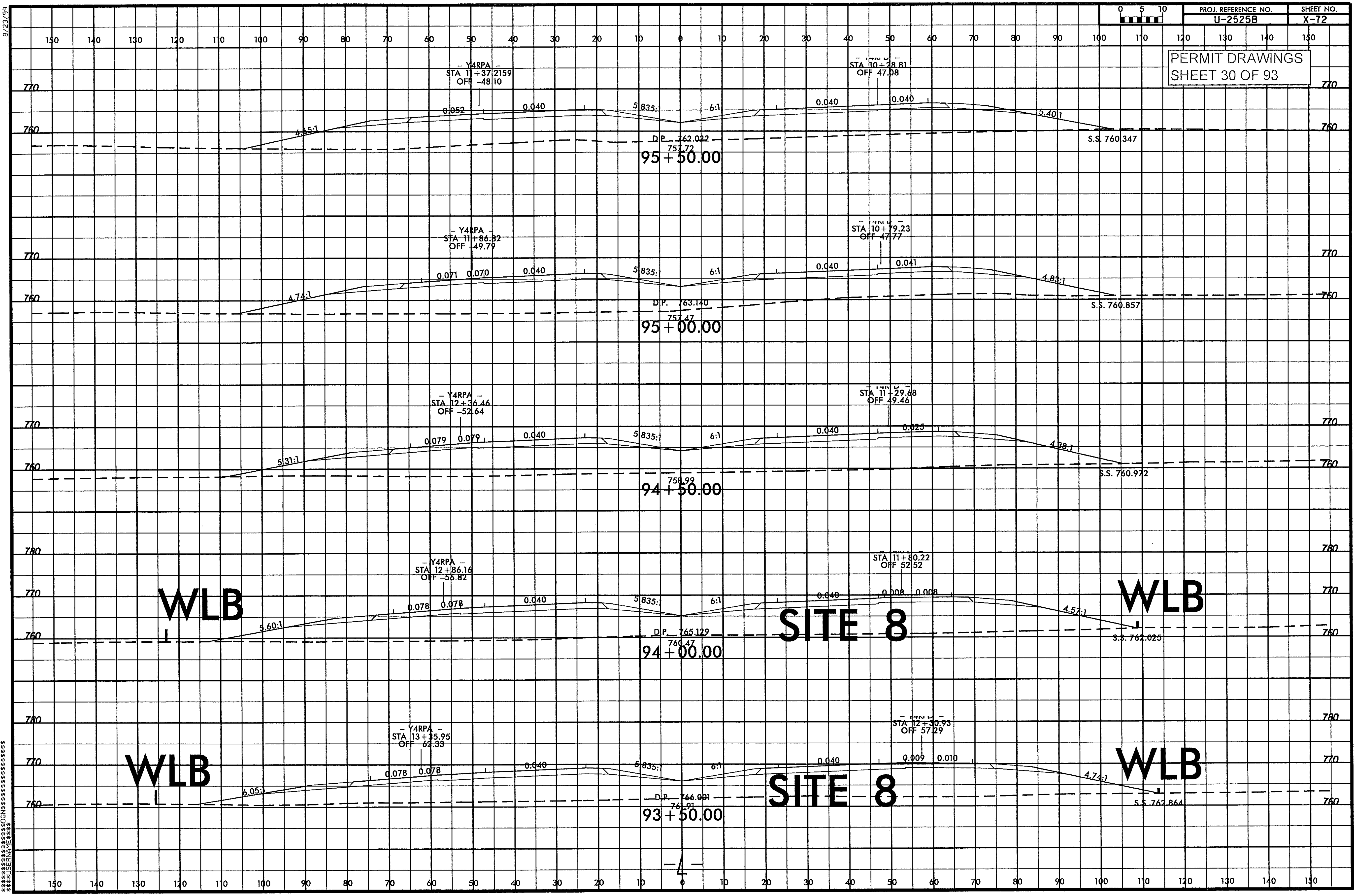
SEE SHEET 43 FOR -L- PROFILE
SEE SHEET 56 FOR -Y4RPA- PROFILE
SEE SHEET 59 FOR -Y4RPD- PROFILE

8/23/99

PROJ. REFERENCE NO. U-2525B

SHEET NO. X-72

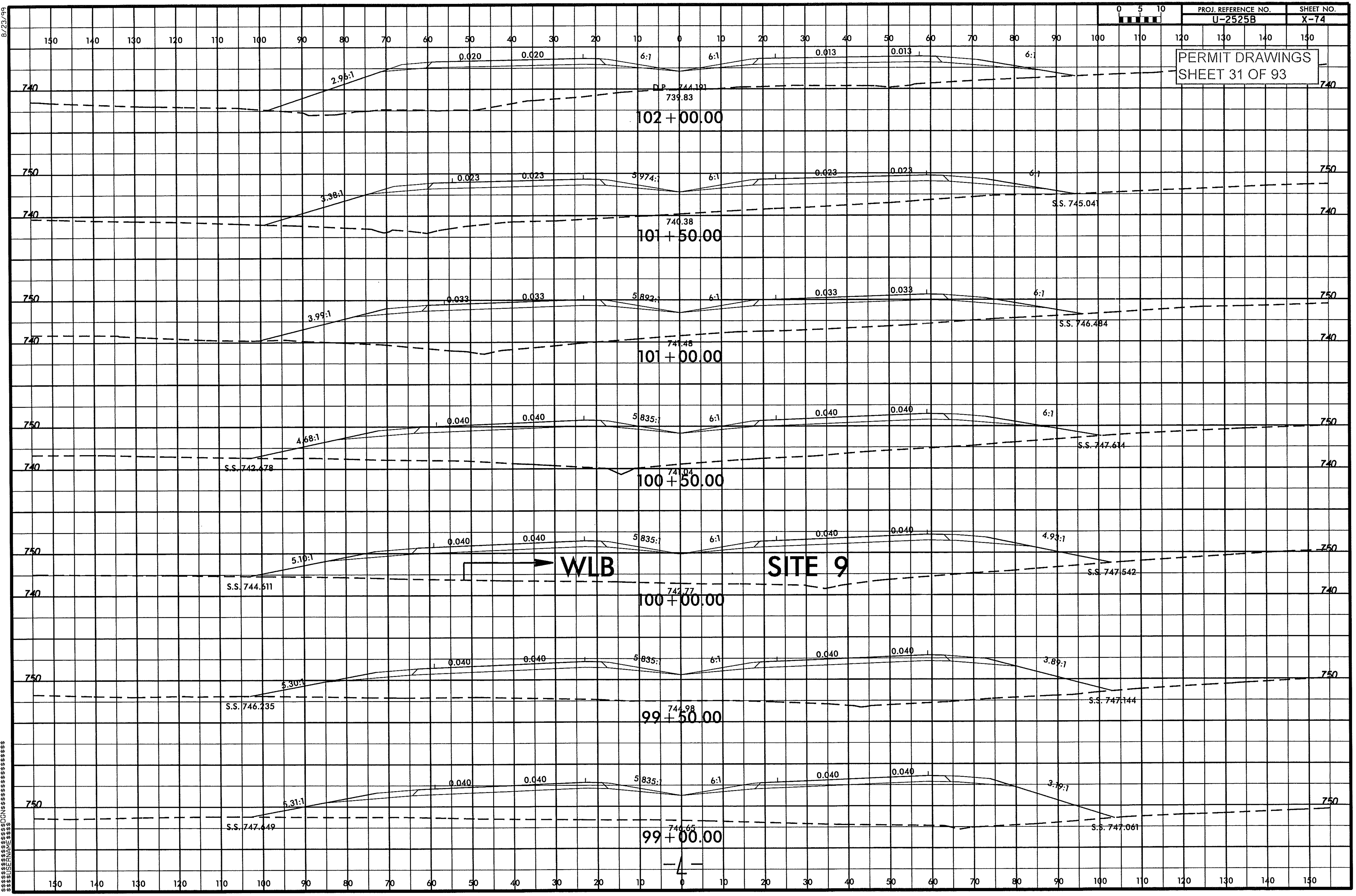
PERMIT DRAWINGS
SHEET 30 OF 93


0 5 10
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
770
760
780
- Y4RPA -
STA 11+37.2159
OFF -48.10
STA 10+28.81
OFF 47.08
0.052
0.040
5.835:1
6:1
0.040
0.040
4.55:1
5.40:1
D.P. 762.022
757.72
95+50.00
S.S. 760.347
- Y4RPA -
STA 11+86.82
OFF -49.79
STA 10+79.23
OFF 47.77
0.071
0.070
0.040
5.835:1
6:1
0.040
0.041
4.74:1
4.83:1
D.P. 763.140
757.47
95+00.00
S.S. 760.857
- Y4RPA -
STA 12+36.46
OFF -52.64
STA 11+29.68
OFF 49.46
0.079
0.079
0.040
5.835:1
6:1
0.040
0.025
5.31:1
4.38:1
758.99
94+50.00
S.S. 760.972
WLB
- Y4RPA -
STA 12+86.16
OFF -56.82
STA 11+80.22
OFF 52.52
0.078
0.078
0.040
5.835:1
6:1
0.040
0.008
0.008
5.60:1
4.57:1
D.P. 765.129
760.47
94+00.00
SITE 8
WLB
S.S. 762.025
WLB
- Y4RPA -
STA 13+35.95
OFF -62.33
STA 12+30.93
OFF 57.29
0.078
0.078
0.040
5.835:1
6:1
0.040
0.009
0.010
6.05:1
4.74:1
D.P. 766.091
761.91
93+50.00
SITE 8
WLB
S.S. 762.864
-4-

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

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-74

PERMIT DRAWINGS
SHEET 31 OF 93

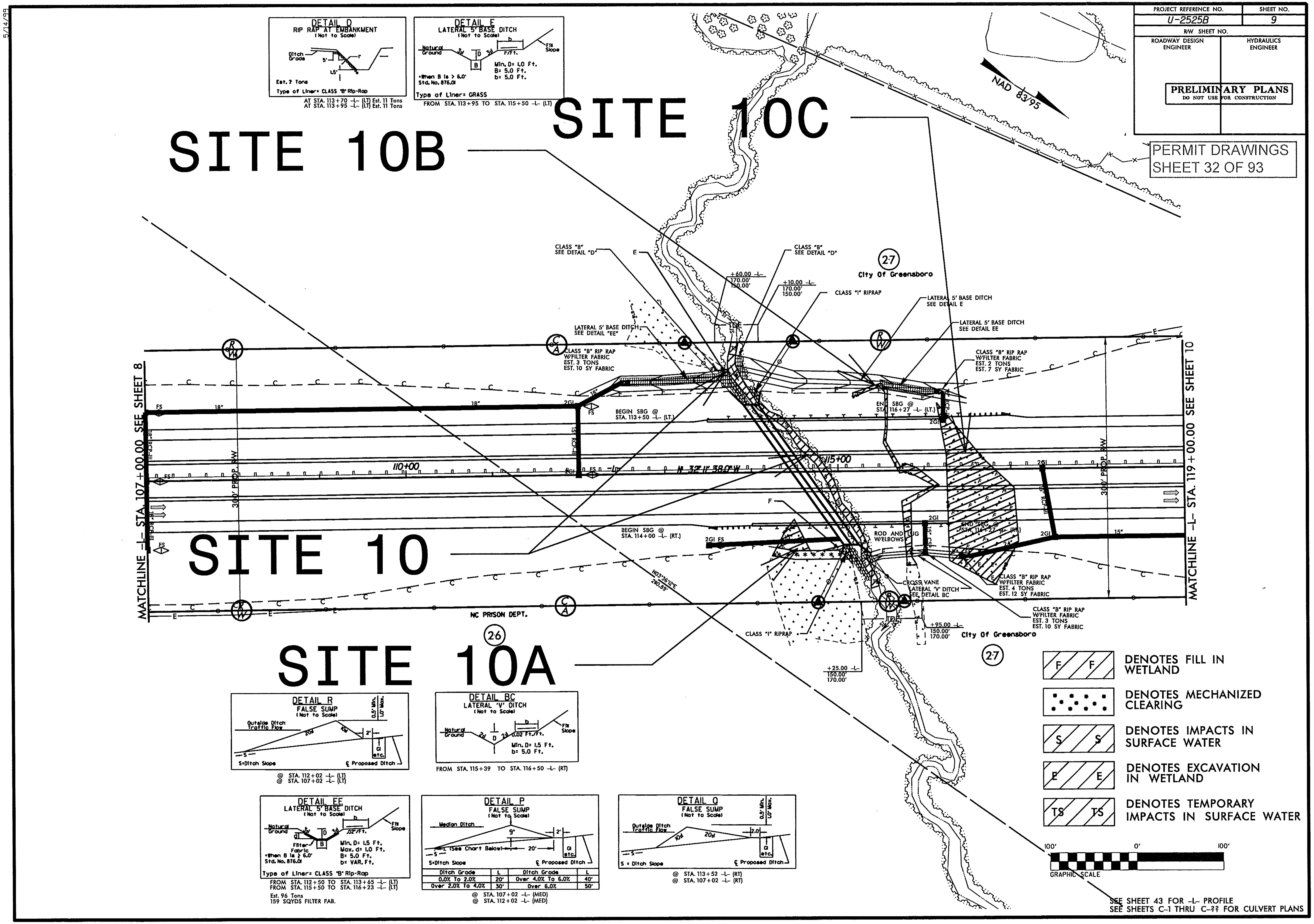

8/23/99
0 5 10
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
740
750
2.96:1
0.020
0.020
6:1
6:1
0.013
0.013
6:1
D.P. 744.191
739.83
102+00.00
3.38:1
0.023
0.023
5.974:1
6:1
0.023
0.023
6:1
S.S. 745.041
740.38
101+50.00
3.99:1
0.033
0.033
5.892:1
6:1
0.033
0.033
6:1
S.S. 746.484
741.48
101+00.00
4.68:1
0.040
0.040
5.835:1
6:1
0.040
0.040
6:1
S.S. 747.614
S.S. 742.678
741.04
100+50.00
5.10:1
0.040
0.040
5.835:1
6:1
0.040
0.040
4.93:1
WLB
SITE 9
S.S. 744.611
742.77
S.S. 747.542
100+00.00
5.30:1
0.040
0.040
5.835:1
6:1
0.040
0.040
3.89:1
S.S. 746.235
744.98
S.S. 747.144
99+50.00
5.31:1
0.040
0.040
5.835:1
6:1
0.040
0.040
3.19:1
S.S. 747.649
746.65
S.S. 747.061
99+00.00
-4-
$$$$$SYSTIME$$$$$
$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 32 OF 93


SITE 10B
SITE 10C
SITE 10
SITE 10A
NAD 83/95
MATCHLINE -L- STA. 107+00.00 SEE SHEET 8
MATCHLINE -L- STA. 119+00.00 SEE SHEET 10
CLASS "B" SEE DETAIL "D"
E
CLASS "B" SEE DETAIL "D"
+60.00 -L- 170.00' 150.00'
+10.00 -L- 170.00' 150.00'
CLASS "I" RIPRAP
27
City Of Greensboro
LATERAL 5' BASE DITCH SEE DETAIL E
LATERAL 5' BASE DITCH SEE DETAIL EE
LATERAL 5' BASE DITCH SEE DETAIL "EE"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 10 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
BEGIN SBG @ STA. 113+50 -L- (LT.)
END SBG @ STA. 116+27 -L- (LT.)
18"
15" RCP-III
2GI
FS
110+00
115+00
-L-
N 32° 11' 38.0" W
300' PROP. R/W
F
BEGIN SBG @ STA. 114+00 -L- (RT.)
2GI FS
ROD AND LUG W/ELBOWS
15" CSP
END SBG @ STA. 116+27 -L- (RT.)
24"
CROSS VANE
LATERAL 'V' DITCH SEE DETAIL BC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 4 TONS EST. 12 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 10 SY FABRIC
+95.00 -L- 150.00' 170.00'
City Of Greensboro
27
N03°36'12"E 210.89'
CLASS "I" RIPRAP
+25.00 -L- 150.00' 170.00'
NC PRISON DEPT.
26
C A
R W
TDE
100'
0'
100'
GRAPHIC SCALE

DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
5'
1'
1.5'
Est. 7 Tons
Type of Liner= CLASS "B" Rip-Rap
AT STA. 113+70 -L- (LT) Est. 11 Tons
AT STA. 113+95 -L- (LT) Est. 11 Tons

DETAIL E
LATERAL 5' BASE DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
B= 5.0 Ft.
b= 5.0 Ft.
•When B is > 6.0'
Std. No. 876.01
Type of Liner= GRASS
FROM STA. 113+95 TO STA. 115+50 -L- (LT)

DETAIL R
FALSE SUMP
(Not to Scale)
0.5' Min. 1.0' Max.
Outside Ditch Traffic Flow
2'
GI etc.
S=Ditch Slope
℄ Proposed Ditch
@ STA. 112+02 -L- (LT)
@ STA. 107+02 -L- (LT)

DETAIL BC
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
0.02 Ft./Ft.
Min. D= 1.5 Ft.
b= 5.0 Ft.
FROM STA. 115+39 TO STA. 116+50 -L- (RT)

DETAIL EE
LATERAL 5' BASE DITCH
(Not to Scale)
Natural Ground
Filter Fabric
Fill Slope
.02"/Ft.
Min. D= 1.5 Ft.
Max. d= 1.0 Ft.
B= 5.0 Ft.
b= VAR. Ft.
•When B is > 6.0'
Std. No. 876.01
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 112+50 TO STA. 113+65 -L- (LT)
FROM STA. 115+50 TO STA. 116+23 -L- (LT)
Est. 96 Tons
159 SQYDS FILTER FAB.

DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
GI etc.
S=Ditch Slope
℄ Proposed Ditch

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

@ STA. 107+02 -L- (MED)
@ STA. 112+02 -L- (MED)

DETAIL Q
FALSE SUMP
(Not to Scale)
0.5' Min. 1.0' Max.
Outside Ditch Traffic Flow
2.0'
GI etc.
S = Ditch Slope
℄ Proposed Ditch
@ STA. 113+52 -L- (RT)
@ STA. 107+02 -L- (RT)

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

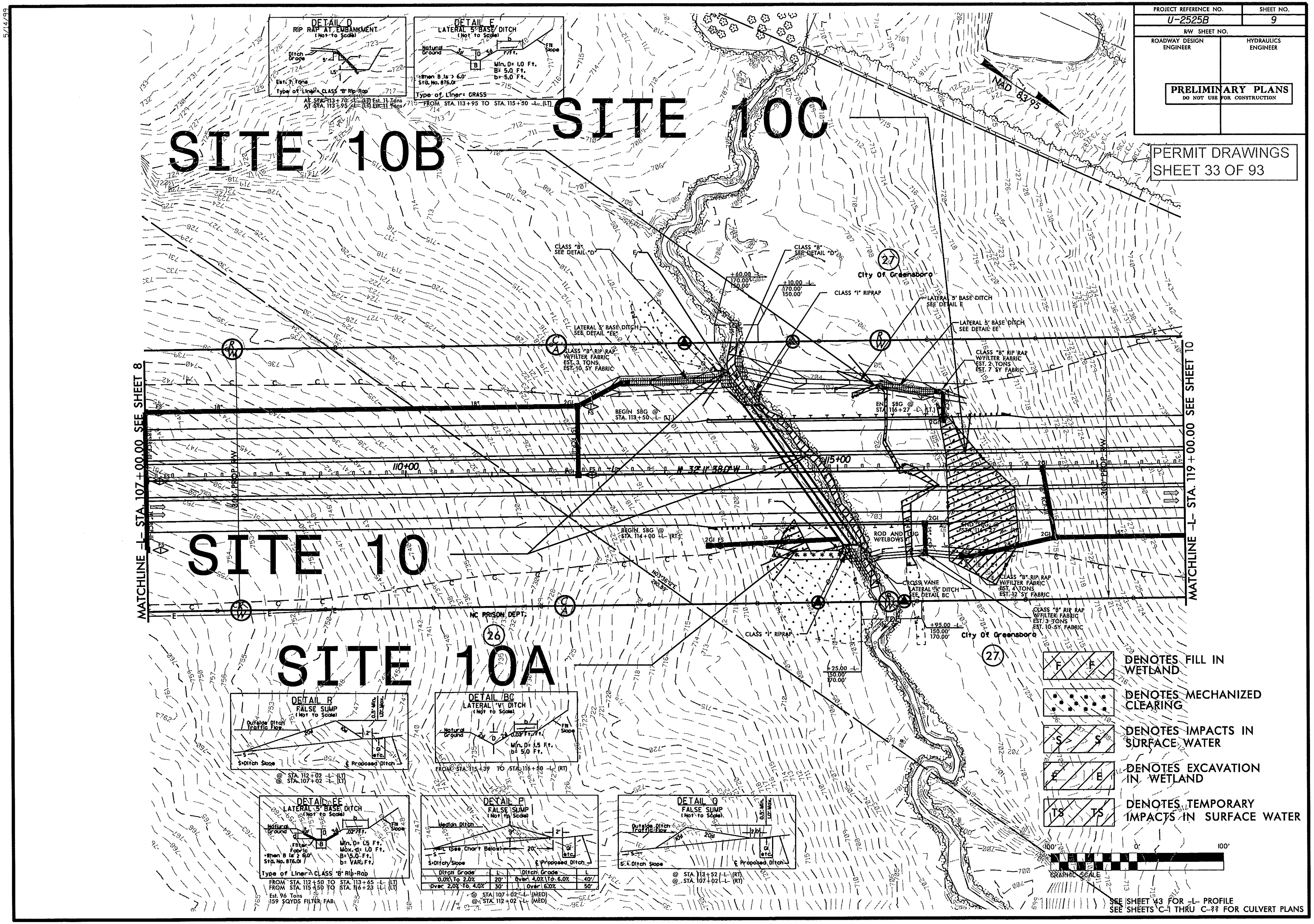
SEE SHEET 43 FOR -L- PROFILE
SEE SHEETS C-1 THRU C-?? FOR CULVERT PLANS

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

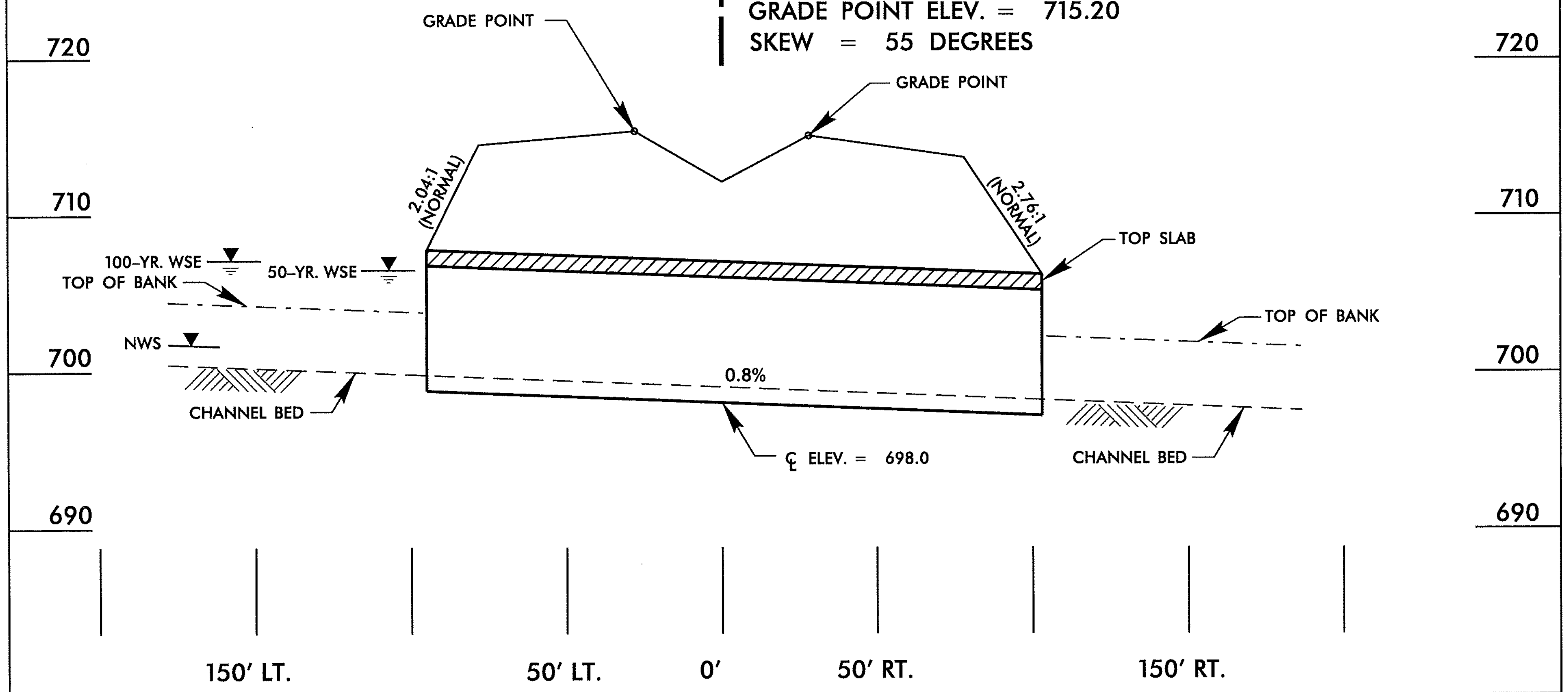
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 33 OF 93


SITE 10B
SITE 10C
SITE 10
SITE 10A
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Est. 7 Tons
Type of Liner= CLASS 'B' Rip-Rap
AT STA. 113+70 -L- (LT) Est. 11 Tons
AT STA. 113+95 -L- (LT) Est. 11 Tons
DETAIL E
LATERAL 5' BASE DITCH
(Not to Scale)
Natural Ground
Min. D= 1.0 Ft.
B= 5.0 Ft.
b= 5.0 Ft.
Type of Liner: GRASS
FROM STA. 113+95 TO STA. 115+50 -L- (LT)
NAD 83/95
City Of Greensboro
NC PRISON DEPT.
CLASS "B" SEE DETAIL "D"
CLASS "I" RIPRAP
LATERAL 5' BASE DITCH SEE DETAIL E
LATERAL 5' BASE DITCH SEE DETAIL "EE"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 10 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
BEGIN SBG @ STA. 113+50 -L- (LT)
END SBG @ STA. 116+27 -L- (LT)
BEGIN SBG @ STA. 114+00 -L- (RT)
END SBG @ STA. 116+27 -L- (RT)
ROD AND LUG W/ELBOWS
CROSS VANE
LATERAL 'V' DITCH SEE DETAIL BC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 4 TONS EST. 12 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 10 SY FABRIC
110+00
115+00
N 32°11'38.0" W
MATCHLINE -L- STA. 107+00.00 SEE SHEET 8
MATCHLINE -L- STA. 119+00.00 SEE SHEET 10
DETAIL R
FALSE SUMP
(Not to Scale)
@ STA. 112+02 -L- (LT)
@ STA. 107+02 -L- (LT)
DETAIL BC
LATERAL 'V' DITCH
(Not to Scale)
Min. D= 1.5 Ft.
b= 5.0 Ft.
FROM STA. 115+39 TO STA. 116+50 -L- (RT)
DETAIL EE
LATERAL 5' BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1.0 Ft.
B= 5.0 Ft.
b= VAR. Ft.
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 112+50 TO STA. 113+65 -L- (LT)
FROM STA. 115+50 TO STA. 116+23 -L- (LT)
Est. 96 Tons
159 SQYDS FILTER FAB.
DETAIL P
FALSE SUMP
(Not to Scale)
Ditch Grade 0.0% To 2.0% L 20'; Ditch Grade Over 4.0% To 6.0% L 40'
Over 2.0% To 4.0% L 30'; Over 6.0% L 50'
@ STA. 107+02 -L- (MED)
@ STA. 112+02 -L- (MED)
DETAIL Q
FALSE SUMP
(Not to Scale)
@ STA. 113+52 -L- (RT)
@ STA. 107+02 -L- (RT)
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES EXCAVATION IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
100' 0' 100'
GRAPHIC SCALE
SEE SHEET 43 FOR -L- PROFILE
SEE SHEETS C-1 THRU C-?? FOR CULVERT PLANS

PERMIT DRAWINGS
SHEET 34 OF 93

2 @ 7′ x 8′ RCBC (1′ BURY)
℄ STA. 114+55.00 -L-
GRADE POINT ELEV. = 715.20
SKEW = 55 DEGREES



720
710
700
690
GRADE POINT
GRADE POINT
2.04:1 (NORMAL)
2.76:1 (NORMAL)
TOP SLAB
100-YR. WSE
50-YR. WSE
TOP OF BANK
TOP OF BANK
NWS
0.8%
CHANNEL BED
CHANNEL BED
℄ ELEV. = 698.0
150′ LT.
50′ LT.
0′
50′ RT.
150′ RT.

PROFILE

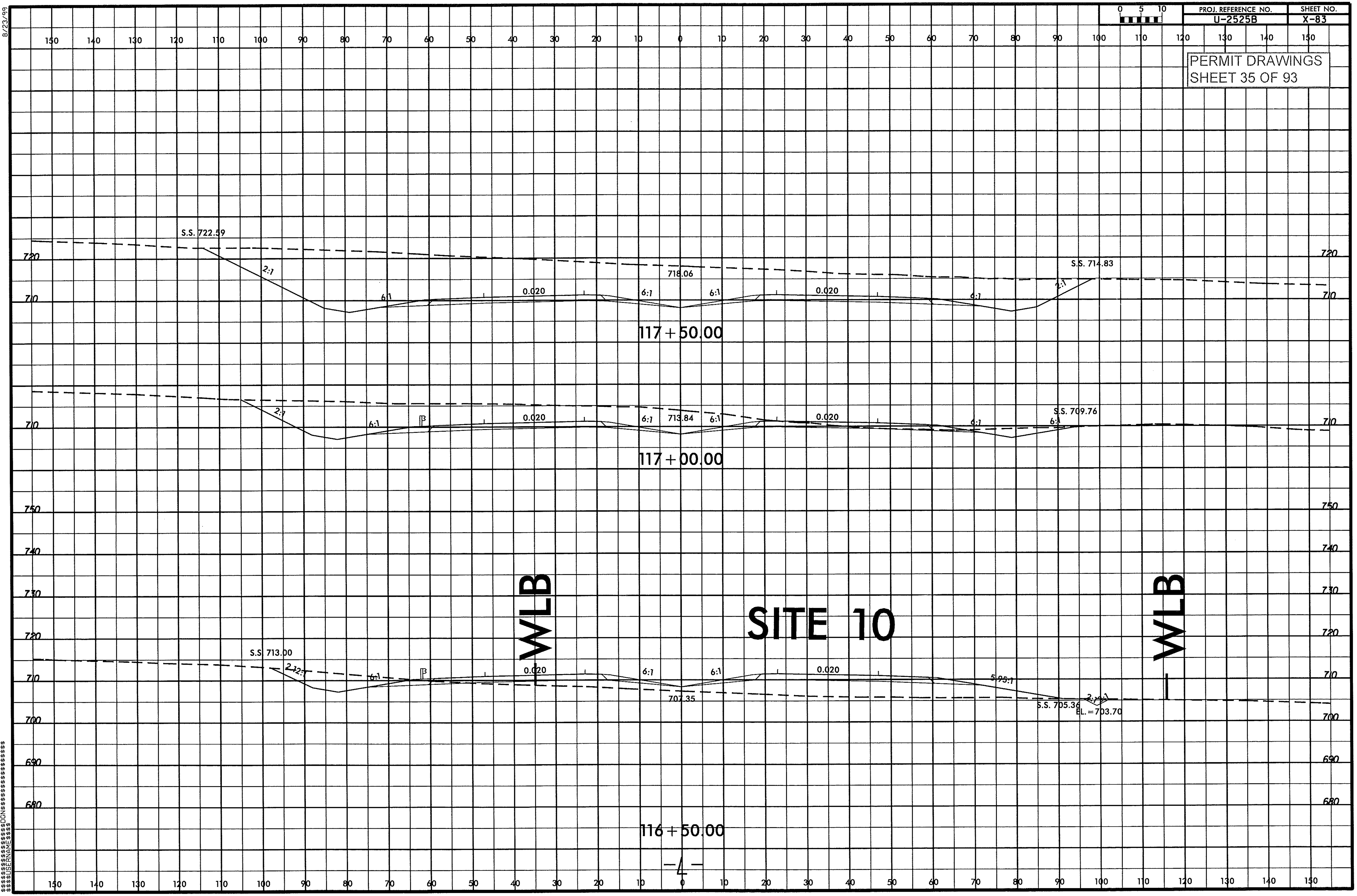
NCDOT
DIVISION OF HIGHWAYS
GUILFORD COUNTY
PROJECT: 34821.1.1 (U-2525B)
GREENSBORO EASTERN LOOP
FROM NORTH OF US 70
RELOCATION TO US 29 NORTH
OF GREENSBORO

SHEET OF 03/08/13

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-83

PERMIT DRAWINGS
SHEET 35 OF 93



0 5 10
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
S.S. 722.59
2:1
6:1
0.020
718.06
6:1
6:1
0.020
6:1
S.S. 714.83
2:1
720
710
117+50.00
2:1
6:1
0.020
6:1
713.84
6:1
0.020
6:1
S.S. 709.76
6:1
710
117+00.00
750
740
730
720
710
700
690
680
WLB
SITE 10
WLB
S.S. 713.00
2.12:1
6:1
0.020
6:1
6:1
0.020
5.95:1
707.35
S.S. 705.36
2.12:1
EL.=703.70
116+50.00

-4-

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

5/14/99

REVISIONS

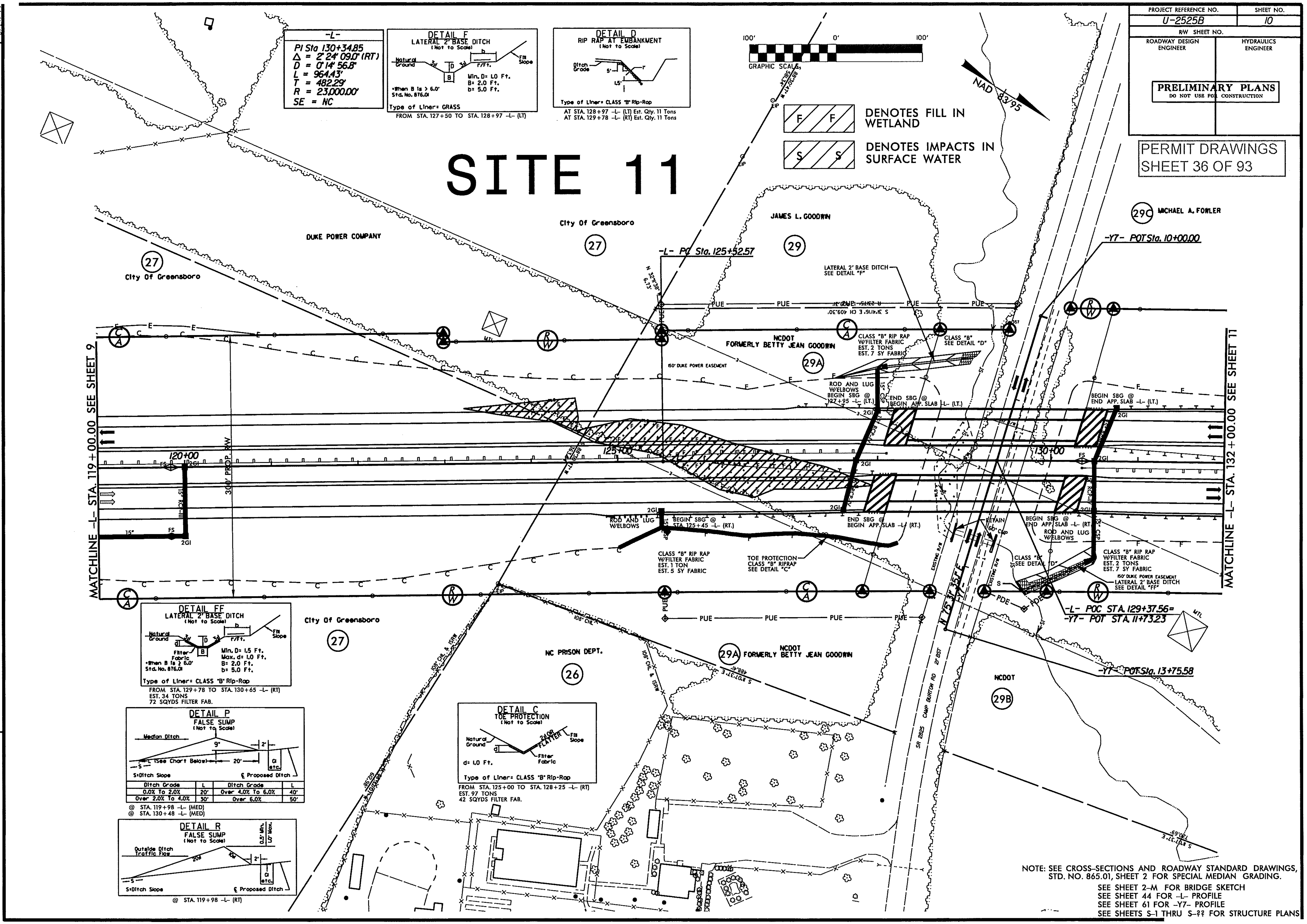
03-19-13 R/W REVISION (DWG) - PARCEL 29 (JAMES L.GOODWIN) WAS SUBDIVIDED,ADDING PARCEL 29A (NCDOT FORMERLY BETTY JEAN GOODWIN),PARCEL 29B (NCDOT),AND PARCEL 29C (MICHAEL A.FOWLER). CHANGED THE NORTHERN PROPERTY LINE ON PARCEL 29A AND THE SOUTHERN PROPERTY LINE ON PARCEL 29B TO R/W. DELETED PARCEL 28 (DUKE POWER COMPANY) DUE TO PROPERTY LINE DELINEATION CHANGING TO EASEMENT. REVISED THE NORTHERN PROPERTY LINE ON PARCEL 27 (CITY OF GREENSBORO) AND THE ADJOINING SOUTHERN PROPERTY LINES ON PARCELS 26 (NC PRISON DEPT.),29 (JAMES L.GOODWIN),AND 29A (NCDOT FORMERLY BETTY JEAN GOODWIN). REVISED THE LOCATION OF THE R/W AND C/A TO THE WESTERN PROPERTY LINE ON PARCEL 29B (NCDOT).

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 36 OF 93

SITE 11


-L-
PI Sta 130+34.85
Δ = 2° 24' 09.0" (RT)
D = 0° 14' 56.8"
L = 964.43'
T = 482.29'
R = 23,000.00'
SE = NC
DETAIL F
LATERAL 2' BASE DITCH
(Not to Scale)
Natural Ground
3:1
D
3:1
b
F/Ft.
Fill Slope
B
*When B is > 6.0' Std. No. 876.01
Min. D= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
Type of Liner= GRASS
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
5'
1'
1.5'
Type of Liner= CLASS "B" Rip-Rap
100'
0'
100'
GRAPHIC SCALE
NAD 83/95
F / F DENOTES FILL IN WETLAND
S / S DENOTES IMPACTS IN SURFACE WATER
DUKE POWER COMPANY
City Of Greensboro
27
City Of Greensboro
27
JAMES L. GOODWIN
29
29C MICHAEL A. FOWLER
-Y7- POT Sta. 10+00.00
-L- PC Sta. 125+52.57
N 32°11'38" 6.73'
LATERAL 2' BASE DITCH SEE DETAIL "F"
PUE
S 31°41'16" E CH 409.30'
C/A
R/W
NCDOT FORMERLY BETTY JEAN GOODWIN
29A
150' DUKE POWER EASEMENT
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
CLASS "B" SEE DETAIL "D"
ROD AND LUG W/ELBOWS BEGIN SBG @ 127+95 -L- (LT.)
15" CSP
END SBG @ BEGIN APP. SLAB -L- (LT.)
BEGIN SBG @ END APP. SLAB -L- (LT.)
2GI
120+00
125+00
130+00
FS
300' PROP. R/W
15" RCP
15"
MATCHLINE -L- STA. 119+00.00 SEE SHEET 9
MATCHLINE -L- STA. 132+00.00 SEE SHEET 11
ROD AND LUG W/ELBOWS
BEGIN SBG @ STA. 125+45 -L- (RT.)
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
TOE PROTECTION CLASS "B" RIPRAP SEE DETAIL "C"
END SBG @ BEGIN APP. SLAB -L- (RT.)
RETAIN 60" CMP
EXISTING R/W
N 75°31'35" E
-Y7-
BEGIN SBG @ END APP. SLAB -L- (RT.)
ROD AND LUG W/ELBOWS
CLASS "B" SEE DETAIL "D"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
150' DUKE POWER EASEMENT
LATERAL 2' BASE DITCH SEE DETAIL "FF"
PDE
-L- POC STA. 129+37.56=
-Y7- POT STA. 11+73.23
MTL
DETAIL FF
LATERAL 2' BASE DITCH
(Not to Scale)
Natural Ground
d
3:1
D
3:1
b
F/Ft.
Fill Slope
Filter Fabric
B
*When B is ≥ 6.0' Std. No. 876.01
Min. D= 1.5 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
City Of Greensboro
27
108" CHL
108" CHL & 15RW
NC PRISON DEPT.
26
NCDOT FORMERLY BETTY JEAN GOODWIN
29A
S 81°07'37" E 488.41'
SR 2825 CAMP BURTON RD 21' BST
NCDOT
29B
-Y7- POT Sta. 13+75.58
S 81°07'37" E 720.69'
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
S
S=Ditch Slope
a etc.
℄ Proposed Ditch
DETAIL R
FALSE SUMP
(Not to Scale)
0.5' Min. 1.0' Max.
Outside Ditch Traffic Flow
20:1
10:1
2'
S
S=Ditch Slope
a etc.
℄ Proposed Ditch
DETAIL C
TOE PROTECTION
(Not to Scale)
Natural Ground
d
2:1 OR FLATTER
Fill Slope
Filter Fabric
d= 1.0 Ft.
Type of Liner= CLASS "B" Rip-Rap

DETAIL F: FROM STA. 127+50 TO STA. 128+97 -L- (LT)

DETAIL D:
AT STA. 128+97 -L- (LT) Est. Qty. 11 Tons
AT STA. 129+78 -L- (RT) Est. Qty. 11 Tons

DETAIL FF:
FROM STA. 129+78 TO STA. 130+65 -L- (RT)
EST. 34 TONS
72 SQYDS FILTER FAB.

DETAIL P:

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

@ STA. 119+98 -L- (MED)
@ STA. 130+48 -L- (MED)

DETAIL R: @ STA. 119+98 -L- (RT)

DETAIL C:
FROM STA. 125+00 TO STA. 128+25 -L- (RT)
EST. 97 TONS
42 SQYDS FILTER FAB.

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 2-M FOR BRIDGE SKETCH
SEE SHEET 44 FOR -L- PROFILE
SEE SHEET 61 FOR -Y7- PROFILE
SEE SHEETS S-1 THRU S-?? FOR STRUCTURE PLANS

5/14/99

REVISIONS

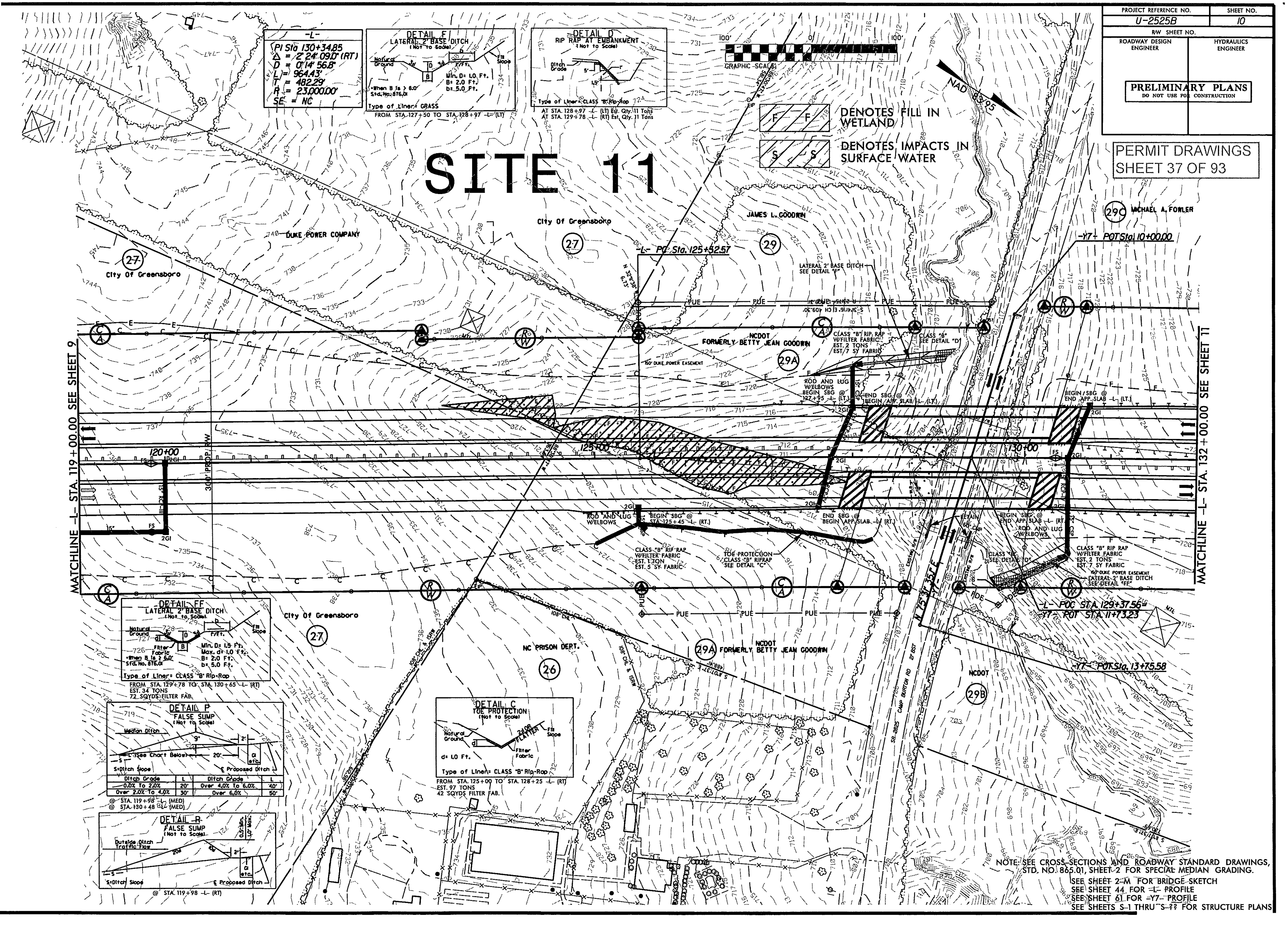
03-19-13 R/W REVISION (DWG) - PARCEL 29 (JAMES L.GOODWIN) WAS SUBDIVIDED,ADDING PARCEL 29A (NCDOT FORMERLY BETTY JEAN GOODWIN),PARCEL 29B (NCDOT),AND PARCEL 29C (MICHAEL A.FOWLER). CHANGED THE NORTHERN PROPERTY LINE ON PARCEL 29A AND THE SOUTHERN PROPERTY LINE ON PARCEL 29B TO R/W. DELETED PARCEL 28 (DUKE POWER COMPANY) DUE TO PROPERTY LINE DELINEATION CHANGING TO EASEMENT. REVISED THE NORTHERN PROPERTY LINE ON PARCEL 27 (CITY OF GREENSBORO) AND THE ADJOINING SOUTHERN PROPERTY LINES ON PARCELS 26 (NC PRISON DEPT.),29 (JAMES L.GOODWIN),AND 29A (NCDOT FORMERLY BETTY JEAN GOODWIN). REVISED THE LOCATION OF THE R/W AND C/A TO THE WESTERN PROPERTY LINE ON PARCEL 29B (NCDOT).

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 37 OF 93

SITE 11

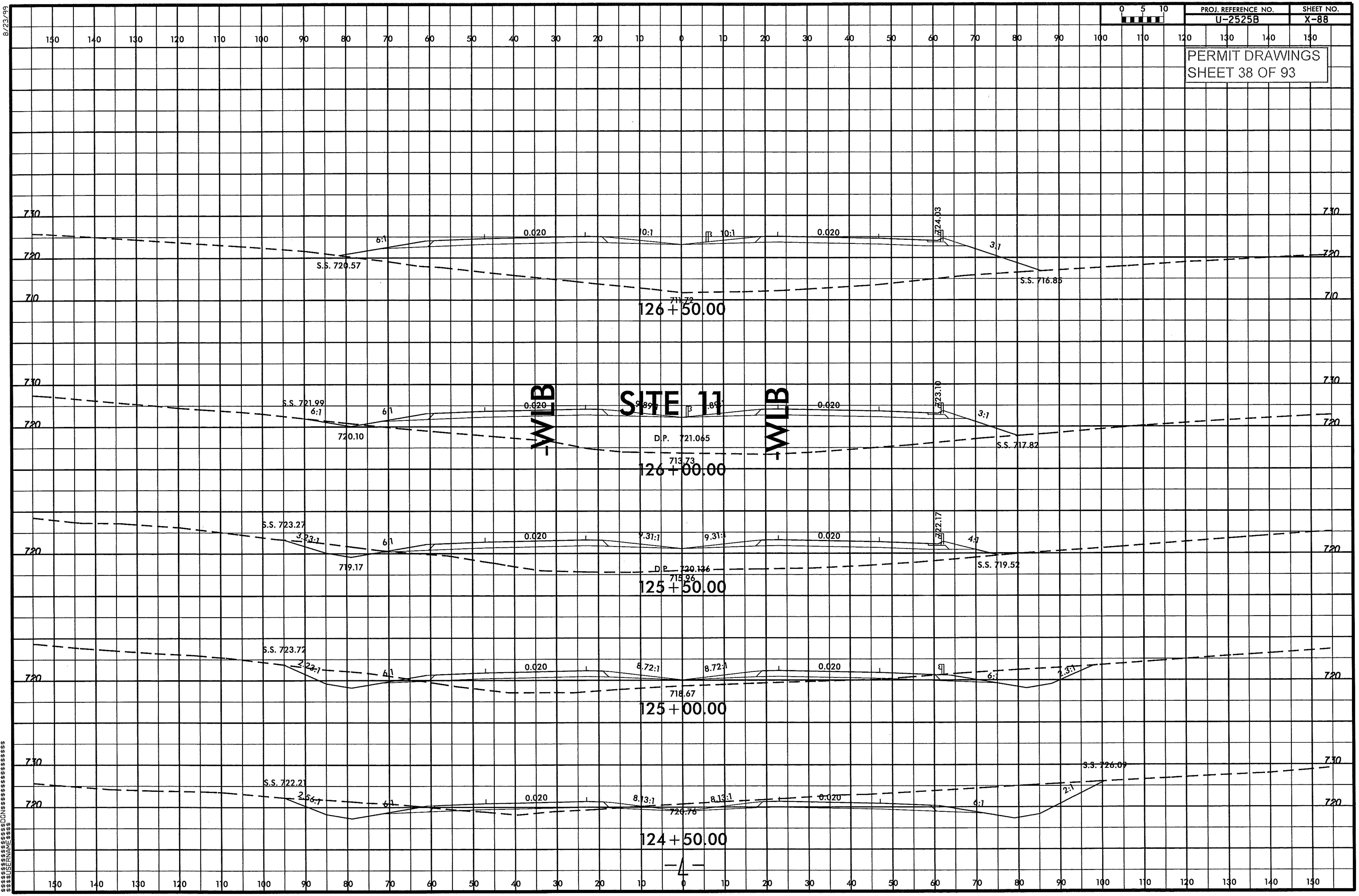

-L-
PI Sta 130+34.85
Δ = 2°24'09.0" (RT)
D = 0°14'56.8"
L = 964.43'
T = 482.29'
R = 23,000.00'
SE = NC
DETAIL F
LATERAL 2' BASE DITCH
Type of Liner= GRASS
FROM STA. 127+50 TO STA. 128+97 -L- (LT)
DETAIL D
RIP RAP AT EMBANKMENT
Type of Liner= CLASS 'B' Rip-Rap
AT STA. 128+97 -L- (LT) Est. Qty. 11 Tons
AT STA. 129+78 -L- (RT) Est. Qty. 11 Tons
GRAPHIC SCALE
100'
NAD 83/95
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DUKE POWER COMPANY
City Of Greensboro
JAMES L. GOODWIN
MICHAEL A. FOWLER
-Y7- POT Sta. 10+00.00
-L- PC Sta. 125+52.57
NCDOT FORMERLY BETTY JEAN GOODWIN
MATCHLINE -L- STA. 119+00.00 SEE SHEET 9
MATCHLINE -L- STA. 132+00.00 SEE SHEET 11
120+00
125+00
130+00
-L- POC STA. 129+37.56 =
-Y7- POT STA. 11+73.23
-Y7- POT Sta. 13+75.58
NC PRISON DEPT.
NCDOT
DETAIL FF
LATERAL 2' BASE DITCH
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 129+78 TO STA. 130+65 -L- (RT)
EST. 34 TONS
72 SQYDS FILTER FAB.
DETAIL P
FALSE SUMP
@ STA. 119+98 -L- (MED)
@ STA. 130+48 -L- (MED)
DETAIL R
FALSE SUMP
@ STA. 119+98 -L- (RT)
DETAIL C
TOE PROTECTION
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 125+00 TO STA. 128+25 -L- (RT)
EST. 97 TONS
42 SQYDS FILTER FAB.
SR 2825 CAMP BURTON RD

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.
SEE SHEET 2-M FOR BRIDGE SKETCH
SEE SHEET 44 FOR -L- PROFILE
SEE SHEET 61 FOR -Y7- PROFILE
SEE SHEETS S-1 THRU S-?? FOR STRUCTURE PLANS

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-88

PERMIT DRAWINGS
SHEET 38 OF 93



0 5 10
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
730
720
710
6:1
0.020
10:1
10:1
0.020
724.03
3:1
S.S. 720.57
S.S. 716.85
711.72
126+50.00
SITE 11
-WLB
-WLB
S.S. 721.99
6:1
6:1
0.020
9.89:1
9.89:1
0.020
723.10
3:1
720.10
D.P. 721.065
S.S. 717.82
713.73
126+00.00
S.S. 723.27
3.23:1
6:1
0.020
9.31:1
9.31:1
0.020
722.17
4:1
719.17
D.P. 720.136
715.96
S.S. 719.52
125+50.00
S.S. 723.72
2.23:1
6:1
0.020
8.72:1
8.72:1
0.020
6:1
2.3:1
718.67
125+00.00
S.S. 726.09
S.S. 722.21
2.56:1
6:1
0.020
8.13:1
8.13:1
0.020
6:1
2:1
720.76
124+50.00
-4-

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

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

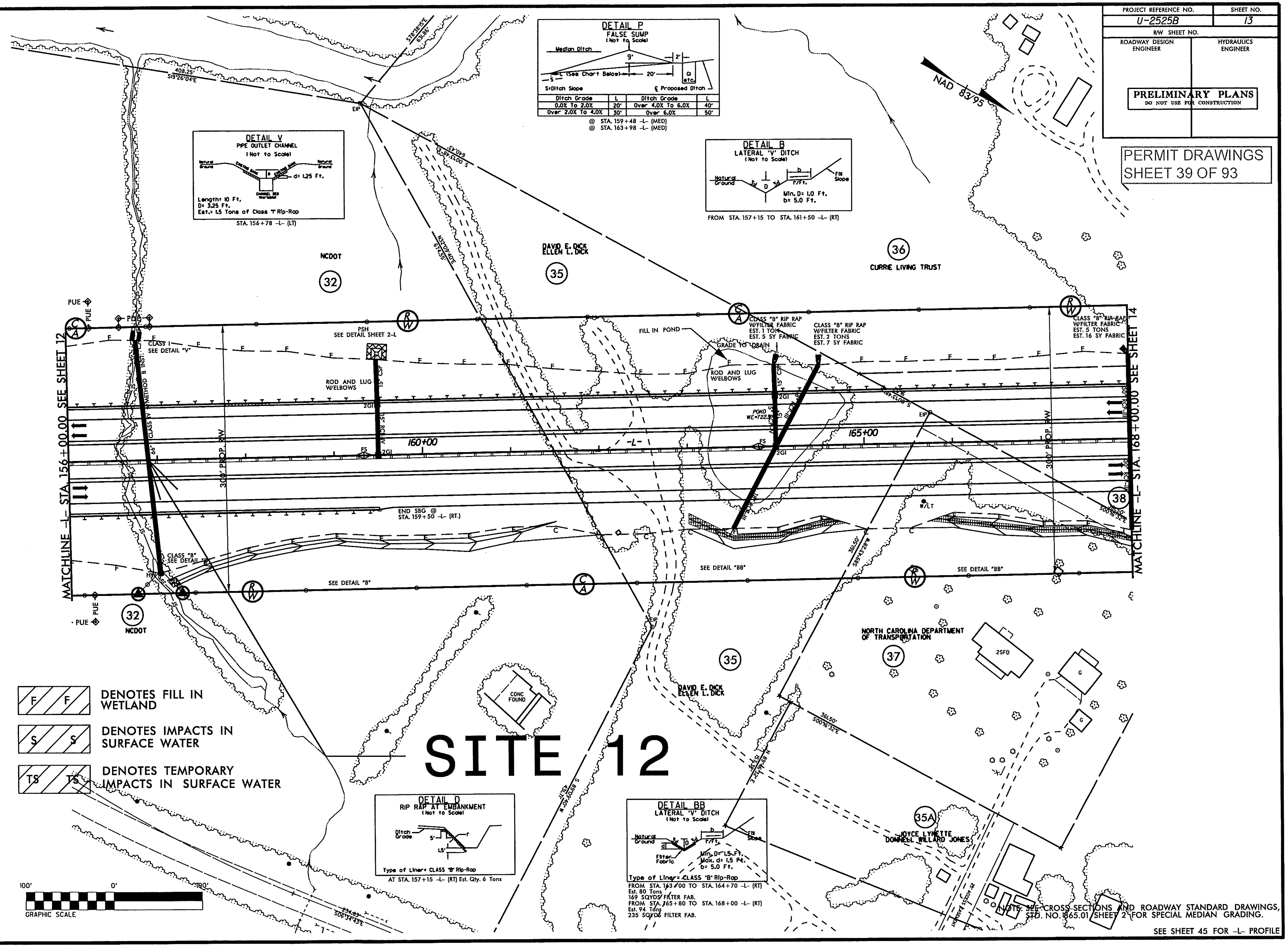
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 39 OF 93

5/14/99

REVISIONS

03-19-13 R/W REVISION (DWG) - REVISED THE PROPERTY OWNER NAME ON PARCEL 35 (RUBY G.DONNELL) TO (DAVID E.DICK,ELLEN L.DICK) AND REVISED THE SOUTHERN PROPERTY LINE.
SUBDIVIDED PARCEL 35,ADDING PARCEL 35A (JOYCE LYNETTE,DONNELL WILLARD JONES) AND PARCEL 35B (ROY E.DONNELL II AND WIFE,NANCY S.DONNELL).
REVISED THE PROPERTY OWNER NAME ON PARCEL 36 (MITCHELL K.CURRIE) TO (CURRIE LIVING TRUST).
CHANGED THE EASTERN PROPERTY LINE ON PARCEL 32 AND THE NORTHERN PROPERTY LINE ON PARCEL 36 TO R/W.


NAD 83/95
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
S=Ditch Slope
℄ Proposed Ditch
@ STA. 159+48 -L- (MED)
@ STA. 163+98 -L- (MED)
DETAIL V
PIPE OUTLET CHANNEL
(Not to Scale)
d= 1.25 Ft.
Length= 10 Ft.
D= 3.25 Ft.
Est.= 1.5 Tons of Class 'I' Rip-Rap
STA. 156+78 -L- (LT)
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 157+15 TO STA. 161+50 -L- (RT)
NCDOT
32
DAVID E. DICK
ELLEN L. DICK
35
36
CURRIE LIVING TRUST
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 16 SY FABRIC
FILL IN POND
GRADE TO DRAIN
ROD AND LUG W/ELBOWS
PSH SEE DETAIL SHEET 2-L
CLASS I SEE DETAIL "V"
POND WE=722.3
160+00
165+00
-L-
300' PROP. R/W
END SBG @ STA. 159+50 -L- (RT.)
MATCHLINE -L- STA 156+00.00 SEE SHEET 12
MATCHLINE -L- STA. 168+00.00 SEE SHEET 14
CLASS "B" SEE DETAIL "B"
SEE DETAIL "B"
SEE DETAIL "BB"
38
W/LT
PUE
32
NCDOT
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
37
2SFD
35
DAVID E. DICK
ELLEN L. DICK
35A
JOYCE LYNETTE
DONNELL WILLARD JONES
CONC FOUND
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Type of Liner= CLASS 'B' Rip-Rap
AT STA. 157+15 -L- (RT) Est. Qty. 6 Tons
DETAIL BB
LATERAL 'V' DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
b= 5.0 Ft.
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 163+00 TO STA. 164+70 -L- (RT)
Est. 80 Tons
169 SQYDS FILTER FAB.
FROM STA. 165+80 TO STA. 168+00 -L- (RT)
Est. 94 Tons
235 SQYDS FILTER FAB.
100' 0' 100'
GRAPHIC SCALE

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

SITE 12

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

NOTE: SEE CROSS SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01 (SHEET 2) FOR SPECIAL MEDIAN GRADING.

SEE SHEET 45 FOR -L- PROFILE

REVISIONS

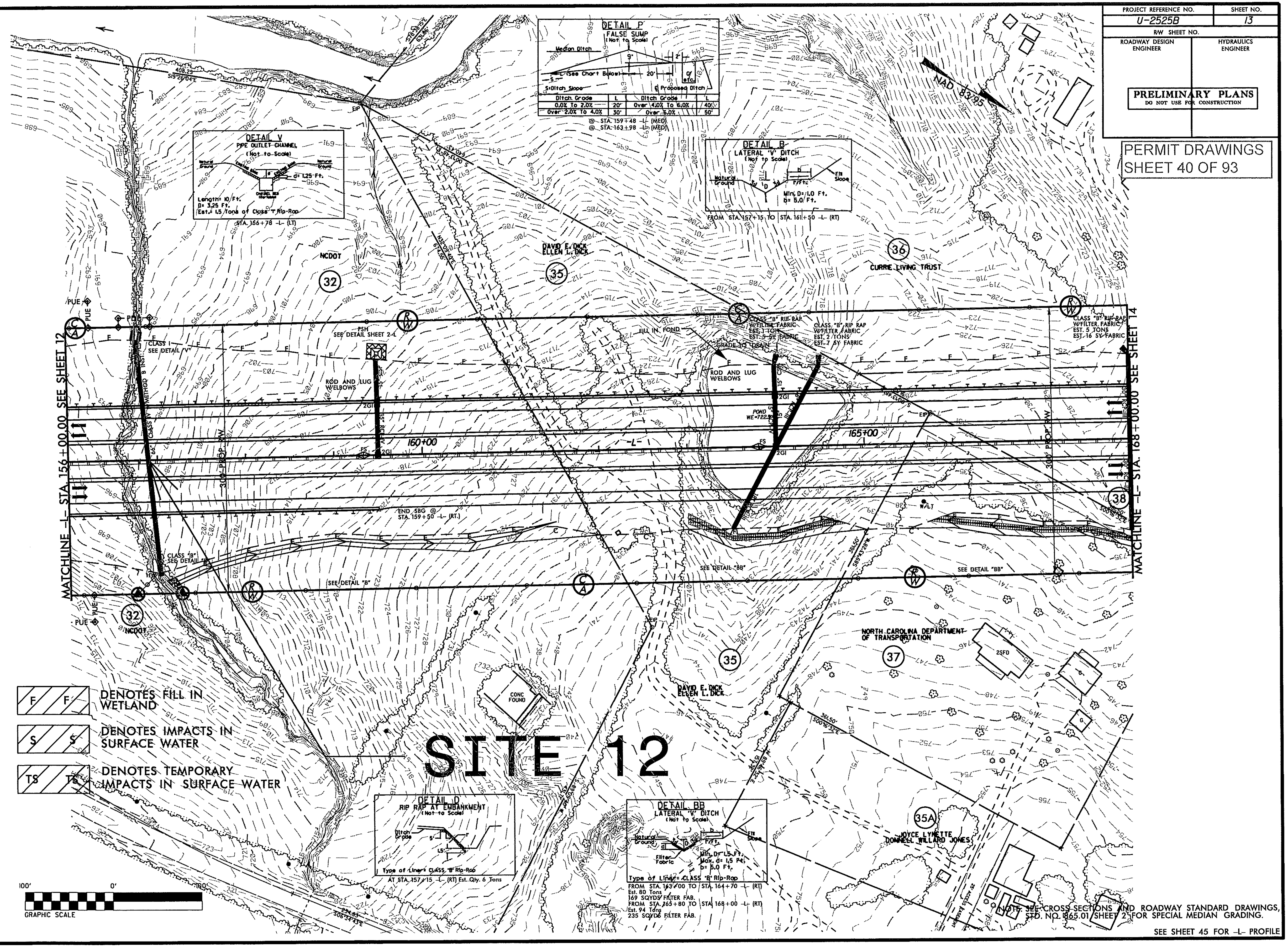
03-19-13 R/W REVISION (DWG) - REVISED THE PROPERTY OWNER NAME ON PARCEL 35 (RUBY G.DONNELL) TO (DAVID E.DICK,ELLEN L.DICK) AND REVISED THE SOUTHERN PROPERTY LINE.
SUBDIVIDED PARCEL 35,ADDING PARCEL 35A (JOYCE LYNETTE DONNELL WILLARD JONES) AND PARCEL 35B (ROY E.DONNELL II AND WIFE,NANCY S.DONNELL).
REVISED THE PROPERTY OWNER NAME ON PARCEL 36 (MITCHELL K.CURRIE) TO (CURRIE LIVING TRUST).
CHANGED THE EASTERN PROPERTY LINE ON PARCEL 32 AND THE NORTHERN PROPERTY LINE ON PARCEL 36 TO R/W.

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 40 OF 93


DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9'
L (See Chart Below)
20'
2'
S
S=Ditch Slope
℄ Proposed Ditch
Ditch Grade | L | Ditch Grade | L
0.0% To 2.0% | 20' | Over 4.0% To 6.0% | 40'
Over 2.0% To 4.0% | 30' | Over 6.0% | 50'
@ STA. 159+48 -L- (MED)
@ STA. 163+98 -L- (MED)
DETAIL V
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
d= 1.25 Ft.
Length= 10 Ft.
D= 3.25 Ft.
Est.= 1.5 Tons of Class 'I' Rip-Rap
STA. 166+78 -L- (LT)
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
D
b
Fill Slope
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 157+15 TO STA. 161+50 -L- (RT)
NAD 83/95
NCDOT
32
DAVID E. DICK
ELLEN L. DICK
35
36
CURRIE LIVING TRUST
PUE
PSH
SEE DETAIL SHEET 2-L
CLASS I
SEE DETAIL 'V'
ROD AND LUG WELBOWS
FILL IN POND
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 16 SY FABRIC
GRADE TO DRAIN
POND WE=722.5
2GI
160+00
165+00
-L-
300' PROP RW
MATCHLINE -L- STA. 156+00.00 SEE SHEET 12
MATCHLINE -L- STA. 168+00.00 SEE SHEET 14
END SBG @ STA. 159+50 -L- (RT.)
CLASS "B" SEE DETAIL "B"
SEE DETAIL "B"
SEE DETAIL "BB"
38
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
37
2SFD
DAVID E. DICK
ELLEN L. DICK
35
CONC FOUND
35A
JOYCE LYNETTE DONNELL WILLARD JONES
F F
DENOTES FILL IN WETLAND
S S
DENOTES IMPACTS IN SURFACE WATER
TS TS
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
SITE 12
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
5'
1.5'
Type of Liner= CLASS "B" Rip-Rap
AT STA. 157+15 -L- (RT) Est. Qty. 6 Tons
DETAIL BB
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Filter Fabric
Fill Slope
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
b= 5.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 163+00 TO STA. 164+70 -L- (RT)
Est. 80 Tons
169 SQYDS FILTER FAB.
FROM STA. 165+80 TO STA. 168+00 -L- (RT)
Est. 94 Tons
235 SQYDS FILTER FAB.
100'
0'
100'
GRAPHIC SCALE
25' ACCESS EASEMENT

NOTE: SEE CROSS SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01 SHEET 2 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 45 FOR -L- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	14

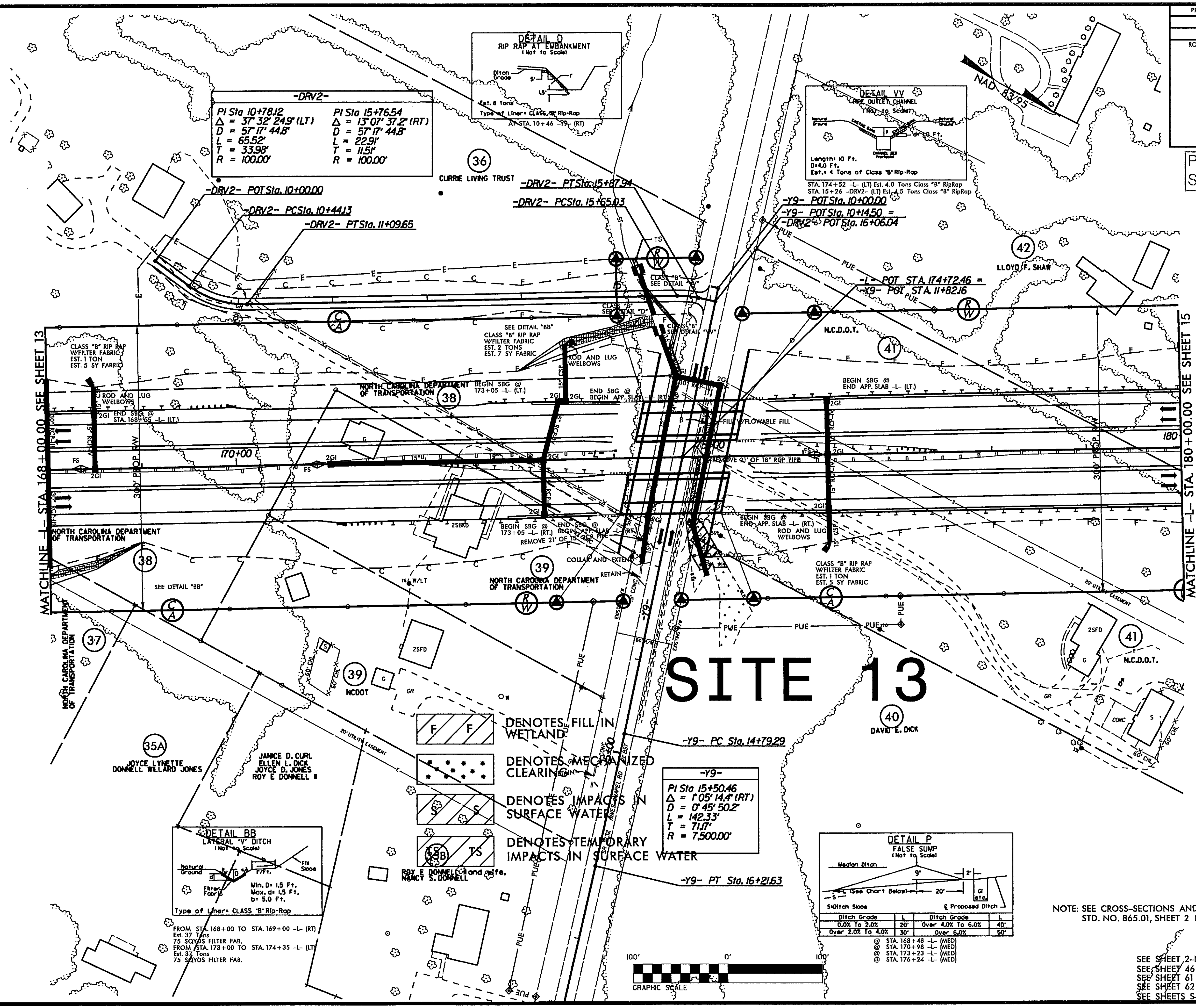
R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 41 OF 93


SITE 13
-DRV2-
PI Sta 10+78.12
Δ = 37° 32' 24.9" (LT)
D = 57° 17' 44.8"
L = 65.52'
T = 33.98'
R = 100.00'
PI Sta 15+76.54
Δ = 13° 07' 37.2" (RT)
D = 57° 17' 44.8"
L = 22.91'
T = 11.51'
R = 100.00'
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
5'
1'
1.5'
Est. 8 Tons
Type of Liner= CLASS "B" Rip-Rap
AT STA. 10+46 -Y9- (RT)
DETAIL VV
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
Existing Bank
Channel Bed
d= 1.0 Ft.
Length= 10 Ft.
D=4.0 Ft.
Est.= 4 Tons of Class "B" Rip-Rap
STA. 174+52 -L- (LT) Est. 4.0 Tons Class "B" RipRap
STA. 15+26 -DRV2- (LT) Est. 4.5 Tons Class "B" RipRap
NAD 83/95
36
CURRIE LIVING TRUST
-DRV2- POT Sta. 10+00.00
-DRV2- PC Sta. 10+44.13
-DRV2- PT Sta. 11+09.65
-DRV2- PT Sta. 15+87.94
-DRV2- PC Sta. 15+65.03
-Y9- POT Sta. 10+00.00
-Y9- POT Sta. 10+14.50 =
-DRV2- POT Sta. 16+06.04
42
LLOYD F. SHAW
-L- POT STA. 174+72.46 =
-Y9- POT STA. 11+82.16
CLASS "B" SEE DETAIL "VV"
CLASS "B" SEE DETAIL "D"
N.C.D.O.T.
41
SEE DETAIL "BB"
CLASS "B" RIP RAP W/FILTER FABRIC
EST. 2 TONS
EST. 7 SY FABRIC
ROD AND LUG W/ELBOWS
CLASS "B" RIP RAP W/FILTER FABRIC
EST. 1 TON
EST. 5 SY FABRIC
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
38
BEGIN SBG @ 173+05 -L- (LT.)
END SBG @ BEGIN APP. SLAB -L- (RT.)
BEGIN SBG @ END APP. SLAB -L- (LT.)
END SBG @ STA. 168+65 -L- (LT.)
FILL W/FLOWABLE FILL
REMOVE 21' OF 18" RCP PIPE
170+00
180
300' PROP. R/W
BEGIN SBG @ 173+05 -L- (RT.)
END SBG @ BEGIN APP. SLAB -L- (RT.)
REMOVE 21' OF 15" RCP PIPE
BEGIN SBG @ END APP. SLAB -L- (RT.)
ROD AND LUG W/ELBOWS
COLLAR AND EXTEND
RETAIN
CLASS "B" RIP RAP W/FILTER FABRIC
EST. 1 TON
EST. 5 SY FABRIC
2SBKD
39
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
MATCHLINE -L- STA. 168+00.00 SEE SHEET 13
MATCHLINE -L- STA. 180+00.00 SEE SHEET 15
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
38
SEE DETAIL "BB"
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
37
2SFD
39
NCDOT
20' UTILITY EASEMENT
20' UTIL. EASEMENT
PUE
-Y9-
2SFD
41
N.C.D.O.T.
40
DAVID E. DICK
35A
JOYCE LYNETTE
DONNELL WILLARD JONES
JANICE D. CURL
ELLEN L. DICK
JOYCE D. JONES
ROY E DONNELL II
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
ROY E DONNELL II and wife,
NANCY S. DONNELL
-Y9- PC Sta. 14+79.29
-Y9-
PI Sta 15+50.46
Δ = 1° 05' 14.4" (RT)
D = 0° 45' 50.2"
L = 142.33'
T = 71.17'
R = 7,500.00'
-Y9- PT Sta. 16+21.63
DETAIL BB
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Filter Fabric
F/Ft.
Fill Slope
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
b= 5.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 168+00 TO STA. 169+00 -L- (RT)
Est. 37 Tons
75 SQYDS FILTER FAB.
FROM STA. 173+00 TO STA. 174+35 -L- (LT)
Est. 37 Tons
75 SQYDS FILTER FAB.
100'
0'
100'
GRAPHIC SCALE
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
GI etc.
S
S=Ditch Slope
℄ Proposed Ditch

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

@ STA. 168+48 -L- (MED)
@ STA. 170+98 -L- (MED)
@ STA. 173+23 -L- (MED)
@ STA. 176+24 -L- (MED)

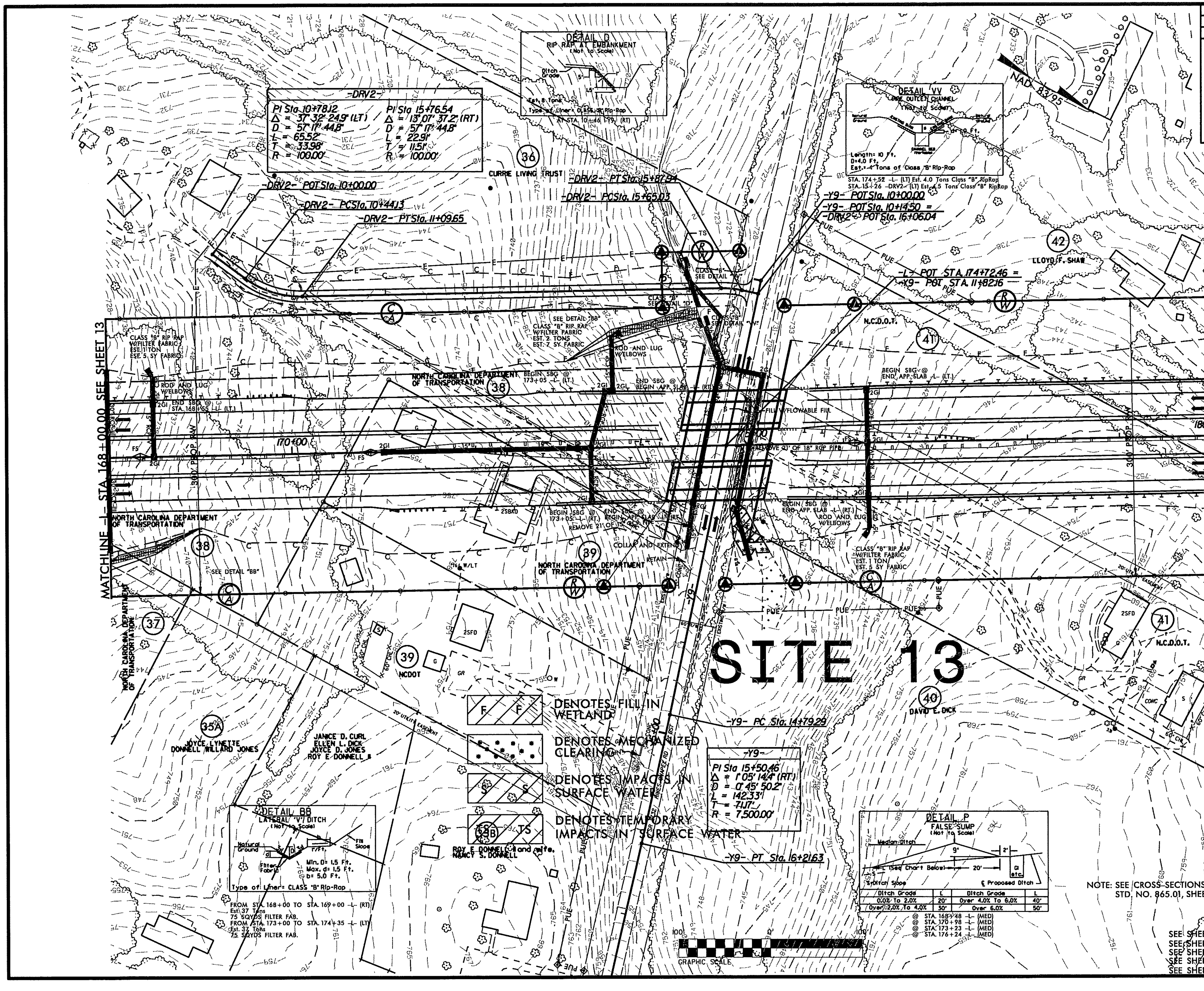
NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 2-N FOR BRIDGE SKETCH
SEE SHEET 46 FOR -L- PROFILE
SEE SHEET 61 FOR -Y9- PROFILE
SEE SHEET 62 FOR -DRV2- PROFILE
SEE SHEETS S-1 THRU S-?? FOR STRUCTURE PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 42 OF 93


SITE 13
NAD 83/95
MATCHLINE -L- STA. 168+00.00 SEE SHEET 13
MATCHLINE -L- STA. 180+00.00 SEE SHEET 15
-DRV2-
PI Sta 10+78.12
Δ = 37° 32' 24.9" (LT)
D = 57° 17' 44.8"
L = 65.52'
T = 33.98'
R = 100.00'
PI Sta 15+76.54
Δ = 13° 07' 37.2" (RT)
D = 57° 17' 44.8"
L = 22.91'
T = 11.51'
R = 100.00'
-DRV2- POT Sta. 10+00.00
-DRV2- PC Sta. 10+44.13
-DRV2- PT Sta. 11+09.65
-DRV2- PT Sta. 15+87.94
-DRV2- PC Sta. 15+65.03
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
5'
1'
1.5'
Est. 5 Tons
Type of Liner= CLASS "B" Rip-Rap
AT STA. 10+46 -Y9- (RT)
36
CURRIE LIVING TRUST
DETAIL VV
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
Length= 10 Ft.
D=4.0 Ft.
Est.= 4 Tons of Class "B" Rip-Rap
STA. 174+52 -L- (LT) Est. 4.0 Tons Class "B" RipRap
STA. 15+26 -DRV2- (LT) Est. 4.5 Tons Class "B" RipRap
-Y9- POT Sta. 10+00.00
-Y9- POT Sta. 10+14.50 =
-DRV2- POT Sta. 16+06.04
42
LLOYD F. SHAW
-L- POT STA. 174+72.46 =
-Y9- POT STA. 11+82.16
N.C.D.O.T.
41
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
SEE DETAIL "BB"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 5 SY FABRIC
ROD AND LUG W/ELBOWS
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
38
BEGIN SBG @ 173+05 -L- (LT)
END SBG @ BEGIN APP. SLAB
BEGIN SBG @ END APP. SLAB -L- (LT)
END SBG @ STA. 168+65 -L- (LT)
FILL W/FLOWABLE FILL
REMOVE 21" OF 18" RCP PIPE
170+00
BEGIN SBG @ 173+05 -L- (RT)
END SBG @ BEGIN APP. SLAB -L- (RT)
REMOVE 21' OF 15" RCP
COLLAR AND EXTEND
RETAIN
BEGIN SBG @ END APP. SLAB -L- (RT)
ROD AND LUG W/ELBOWS
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
39
37
NCDOT
2SFD
41
N.C.D.O.T.
40
DAVID E. DICK
35A
JOYCE LYNETTE DONNELL WILLARD JONES
JANICE D. CURL ELLEN L. DICK JOYCE D. JONES ROY E DONNELL II
ROY E DONNELL II and wife, NANCY S. DONNELL
SR 1432 HINES CHAPEL RD
F F DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
S S DENOTES IMPACTS IN SURFACE WATER
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-Y9- PC Sta. 14+79.29
-Y9-
PI Sta 15+50.46
Δ = 1° 05' 14.4" (RT)
D = 0° 45' 50.2"
L = 142.33'
T = 71.17'
R = 7,500.00'
-Y9- PT Sta. 16+21.63
DETAIL BB
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Filter Fabric
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
b= 5.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 168+00 TO STA. 169+00 -L- (RT)
Est. 37 Tons
75 SQYDS FILTER FAB.
FROM STA. 173+00 TO STA. 174+35 -L- (LT)
Est. 37 Tons
75 SQYDS FILTER FAB.
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
S=Ditch Slope
℄ Proposed Ditch
@ STA. 168+48 -L- (MED)
@ STA. 170+98 -L- (MED)
@ STA. 173+23 -L- (MED)
@ STA. 176+24 -L- (MED)
GRAPHIC SCALE
100'

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

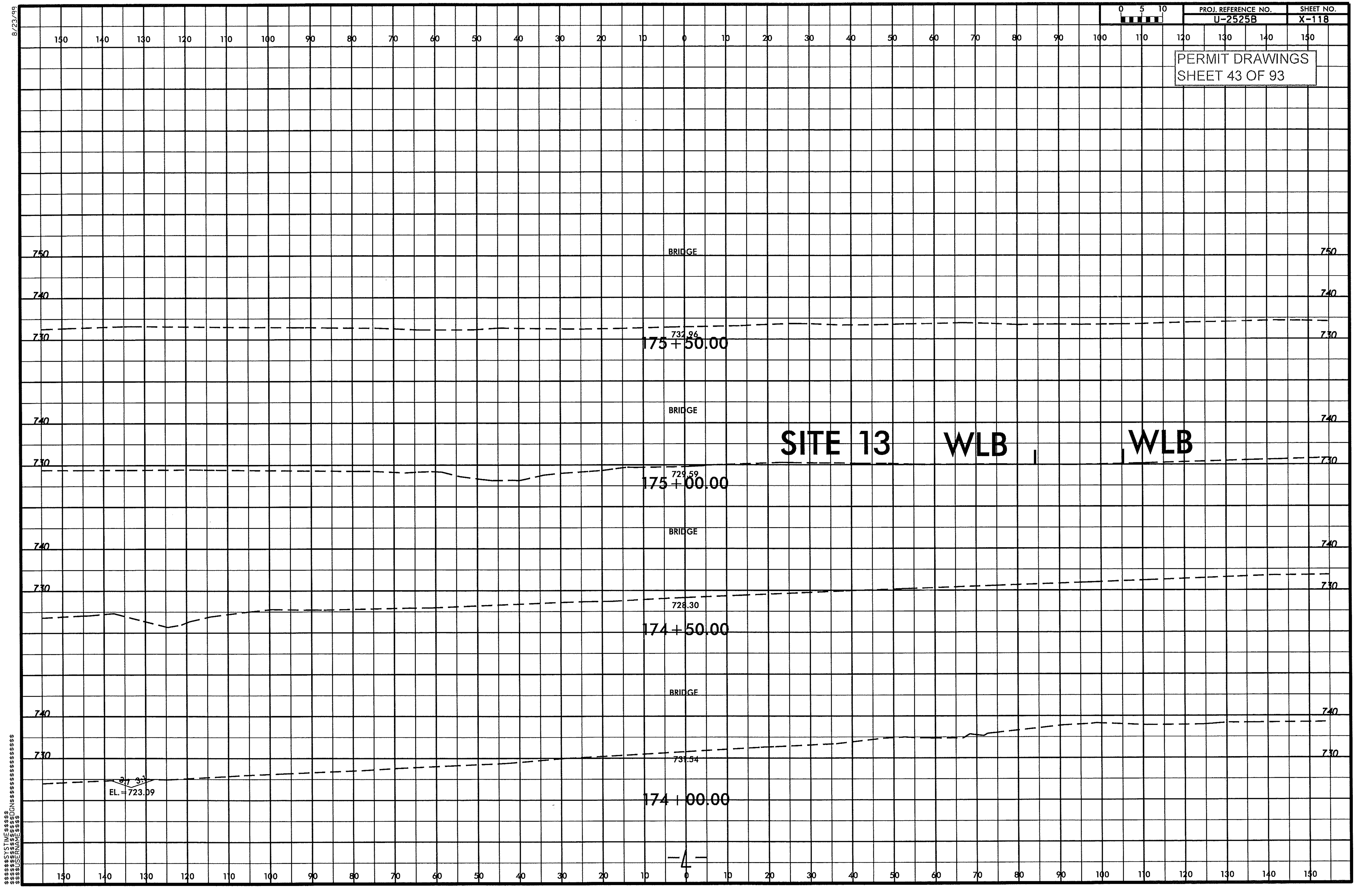
NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 2-N FOR BRIDGE SKETCH
SEE SHEET 46 FOR -L- PROFILE
SEE SHEET 61 FOR -Y9- PROFILE
SEE SHEET 62 FOR -DRV2- PROFILE
SEE SHEETS S-1 THRU S-?? FOR STRUCTURE PLANS

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-118

PERMIT DRAWINGS
SHEET 43 OF 93


0 5 10
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
750
740
730
BRIDGE
732.96
175+50.00
SITE 13
WLB
WLB
729.59
175+00.00
728.30
174+50.00
731.54
3:1
3:1
EL.=723.09
174+00.00
-4-
$$$$$$SYSTIME$$$$$$
$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 44 OF 93

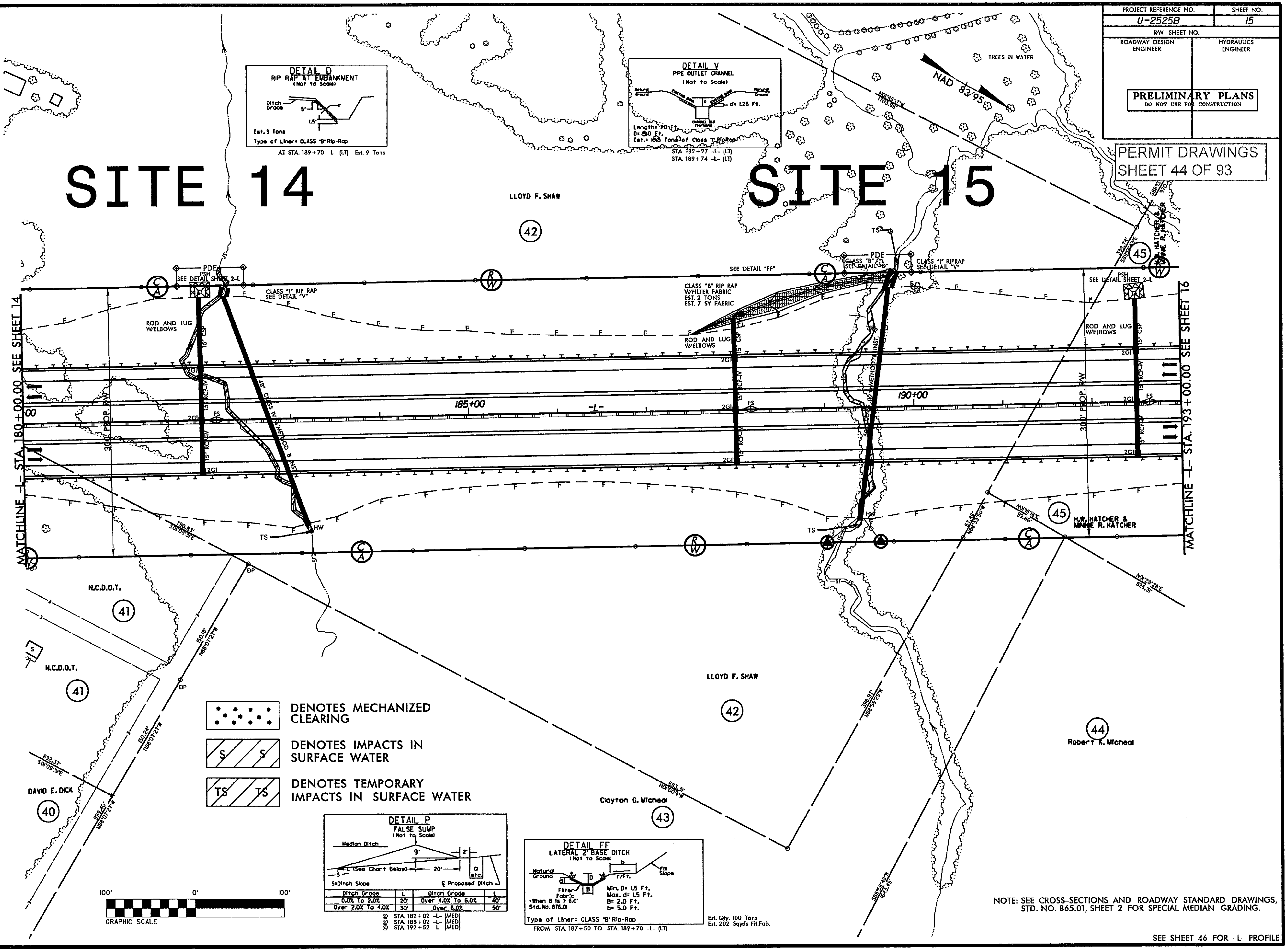
REVISIONS

5/14/99

03-19-13 R/W REVISION (DWG) - CHANGED THE SOUTHERN PROPERTY LINES ON PARCELS 40, 41, AND 42 TO R/W.

SITE 14

SITE 15



DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
5'
L5'
Est. 9 Tons
Type of Liner= CLASS "B" Rip-Rap
AT STA. 189+70 -L- (LT) Est. 9 Tons
DETAIL V
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
d= L25 Ft.
Length= 10 Ft.
Est.= 165 Tons of Class "I" Rip-Rap
STA. 182+27 -L- (LT)
STA. 189+74 -L- (LT)
TREES IN WATER
NAD 83/95
LLOYD F. SHAW
42
PDE
PSH
SEE DETAIL SHEET 2-L
CLASS "I" RIP RAP
SEE DETAIL "V"
ROD AND LUG W/ELBOWS
SEE DETAIL "FF"
CLASS "B" RIP RAP W/FILTER FABRIC
EST. 2 TONS
EST. 7 SY FABRIC
CLASS "B" SEE DETAIL "D"
CLASS "I" RIPRAP SEE DETAIL "V"
H.W. HATCHER & MINNIE R. HATCHER
45
48" CLASS V/METHOD B INST.
15" CSP
15" RCP-IV
2GI
FS
185+00
190+00
-L-
300' PROP. R/W
MATCHLINE -L- STA. 180+00.00 SEE SHEET 14
MATCHLINE -L- STA. 193+00.00 SEE SHEET 16
HW
TS
EIP
N.C.D.O.T.
41
DAVID E. DICK
40
Clayton G. Micheal
43
Robert R. Micheal
44
790.83' S01°09'51"E
150.18' N88°07'27"W
150.24' N88°07'27"W
692.37' S01°09'51"E
999.40' N88°07'27"W
683.31' N01°00'51"W
398.97' N89°55'29"W
57.46' N89°53'50"W
99.86' N01°18'18"E
826.31' N01°28'28"E
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9'
2'
20'
GI etc.
L (See Chart Below)
S=Ditch Slope
℄ Proposed Ditch
DETAIL FF
LATERAL 2' BASE DITCH
(Not to Scale)
Natural Ground
Filter Fabric
Fill Slope
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
*When B is > 6.0' Std. No. 876.01
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 187+50 TO STA. 189+70 -L- (LT)
Est. Qty. 100 Tons
Est. 202 Sqyds Fil.Fab.
100' 0' 100'
GRAPHIC SCALE

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

@ STA. 182+02 -L- (MED)
@ STA. 188+02 -L- (MED)
@ STA. 192+52 -L- (MED)

⁙	DENOTES MECHANIZED CLEARING
S ▨ S	DENOTES IMPACTS IN SURFACE WATER
TS ▨ TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 46 FOR -L- PROFILE

5/14/99

REVISIONS

03-19-13 R/W REVISION (DWG) - CHANGED THE SOUTHERN PROPERTY LINES ON PARCELS 40,41,AND 42 TO R/W.

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	15

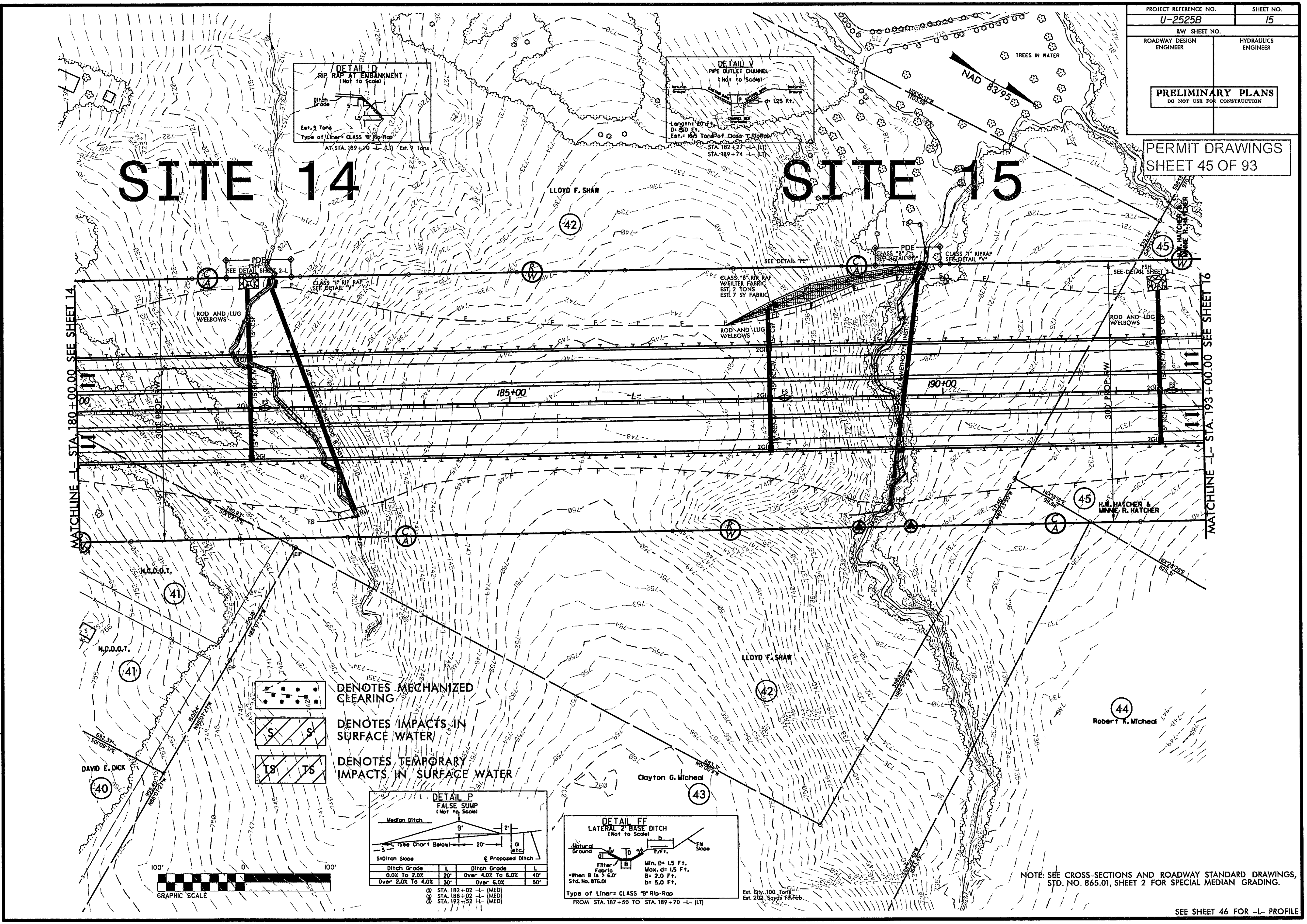
R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 45 OF 93


SITE 14
SITE 15
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
5'
1'
1.5'
Est. 9 Tons
Type of Liner= CLASS "B" Rip-Rap
AT STA. 189+70 -L- (LT) Est. 9 Tons
DETAIL V
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
P
d= 1.25 Ft.
Length= 20 Ft.
D= 5.0 Ft.
Est.= 10.5 Tons of Class "I" RipRap
STA. 182+27 -L- (LT)
STA. 189+74 -L- (LT)
TREES IN WATER
NAD 83/95
LLOYD F. SHAW
42
PDE
PSH
SEE DETAIL SHEET 2-L
CLASS "I" RIP RAP
SEE DETAIL "V"
ROD AND LUG W/ELBOWS
SEE DETAIL "FF"
CLASS "B" RIP RAP W/FILTER FABRIC
EST. 2 TONS
EST. 7 SY FABRIC
CLASS "B" SEE DETAIL "D"
CLASS "I" RIPRAP SEE DETAIL "V"
H.W. HATCHER & MINNIE R. HATCHER
45
185+00
190+00
-L-
300' PROP. R/W
2GI
FS
TS
F
MATCHLINE -L- STA 180+00.00 SEE SHEET 14
MATCHLINE -L- STA. 193+00.00 SEE SHEET 16
N.C.D.O.T.
41
EIP
DAVID E. DICK
40
Clayton G. Micheal
43
Robert R. Micheal
44
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
GI etc.
S
S=Ditch Slope
℄ Proposed Ditch
Ditch Grade | L | Ditch Grade | L
0.0% To 2.0% | 20' | Over 4.0% To 6.0% | 40'
Over 2.0% To 4.0% | 30' | Over 6.0% | 50'
@ STA. 182+02 -L- (MED)
@ STA. 188+02 -L- (MED)
@ STA. 192+52 -L- (MED)
DETAIL FF
LATERAL 2' BASE DITCH
(Not to Scale)
Natural Ground
d
D
B
b
F/Ft.
Fill Slope
Filter Fabric
*When B is > 6.0' Std. No. 876.01
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 187+50 TO STA. 189+70 -L- (LT)
Est. Qty. 100 Tons
Est. 202 Sq.Yds Filt.Fab.
100' 0 100'
GRAPHIC SCALE

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 46 FOR -L- PROFILE

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	16

R/W SHEET NO.

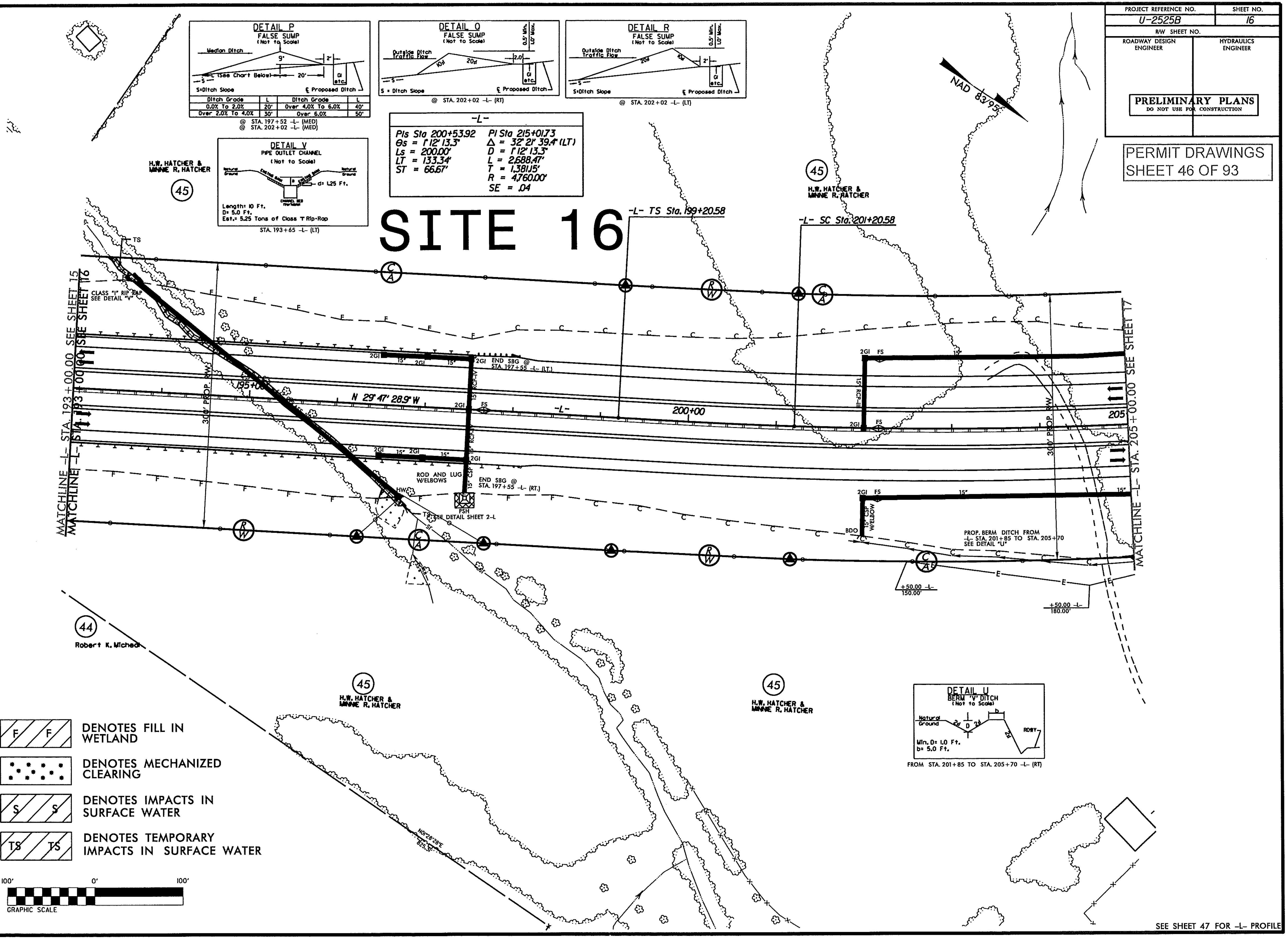
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 46 OF 93

SITE 16


DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9'
2'
L (See Chart Below)
20'
S
S=Ditch Slope
GI etc.
℄ Proposed Ditch
DETAIL Q
FALSE SUMP
(Not to Scale)
0.5' Min.
1.0' Max.
Outside Ditch
Traffic Flow
10:1
20:1
2.0'
S
S = Ditch Slope
℄ Proposed Ditch
DETAIL R
FALSE SUMP
(Not to Scale)
Outside Ditch
Traffic Flow
20:1
10:1
2'
S:Ditch Slope
℄ Proposed Ditch
DETAIL V
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
d= 1.25 Ft.
Length= 10 Ft.
D= 5.0 Ft.
Est.= 5.25 Tons of Class 'I' Rip-Rap
STA. 193+65 -L- (LT)
NAD 83/95
H.W. HATCHER &
MINNIE R. HATCHER
45
44
Robert K. Michedi
-L- TS Sta. 199+20.58
-L- SC Sta. 201+20.58
TS
CLASS "I" RIP RAP
SEE DETAIL "V"
MATCHLINE -L- STA. 193+00.00 SEE SHEET 15
MATCHLINE -L- STA. 193+00.00 SEE SHEET 16
MATCHLINE -L- STA. 205+00.00 SEE SHEET 17
300' PROP. R/W
195+00
N 29° 47' 28.9" W
-L-
200+00
205
2GI
15"
FS
15" RCP-IV
15" RCP-III
15" CSP
END SBG @
STA. 197+55 -L- (LT.)
END SBG @
STA. 197+55 -L- (RT.)
ROD AND LUG
W/ELBOWS
HW
PSH
TS SEE DETAIL SHEET 2-L
BDO
15" CSP W/ELBOW
PROP. BERM DITCH FROM
-L- STA. 201+85 TO STA. 205+70
SEE DETAIL "U"
+50.00 -L-
150.00'
+50.00 -L-
180.00'
N0°28'28"E
DETAIL U
BERM 'V' DITCH
(Not to Scale)
Natural Ground
2:1
D
b
RDWY
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 201+85 TO STA. 205+70 -L- (RT)
100'
0'
100'
GRAPHIC SCALE

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

@ STA. 197+52 -L- (MED)
@ STA. 202+02 -L- (MED)

@ STA. 202+02 -L- (RT)

@ STA. 202+02 -L- (LT)

-L-

Pls Sta 200+53.92
θs = 1° 12' 13.3"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 215+01.73
Δ = 32° 21' 39.4" (LT)
D = 1° 12' 13.3"
L = 2,688.47'
T = 1,381.15'
R = 4,760.00'
SE = .04

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

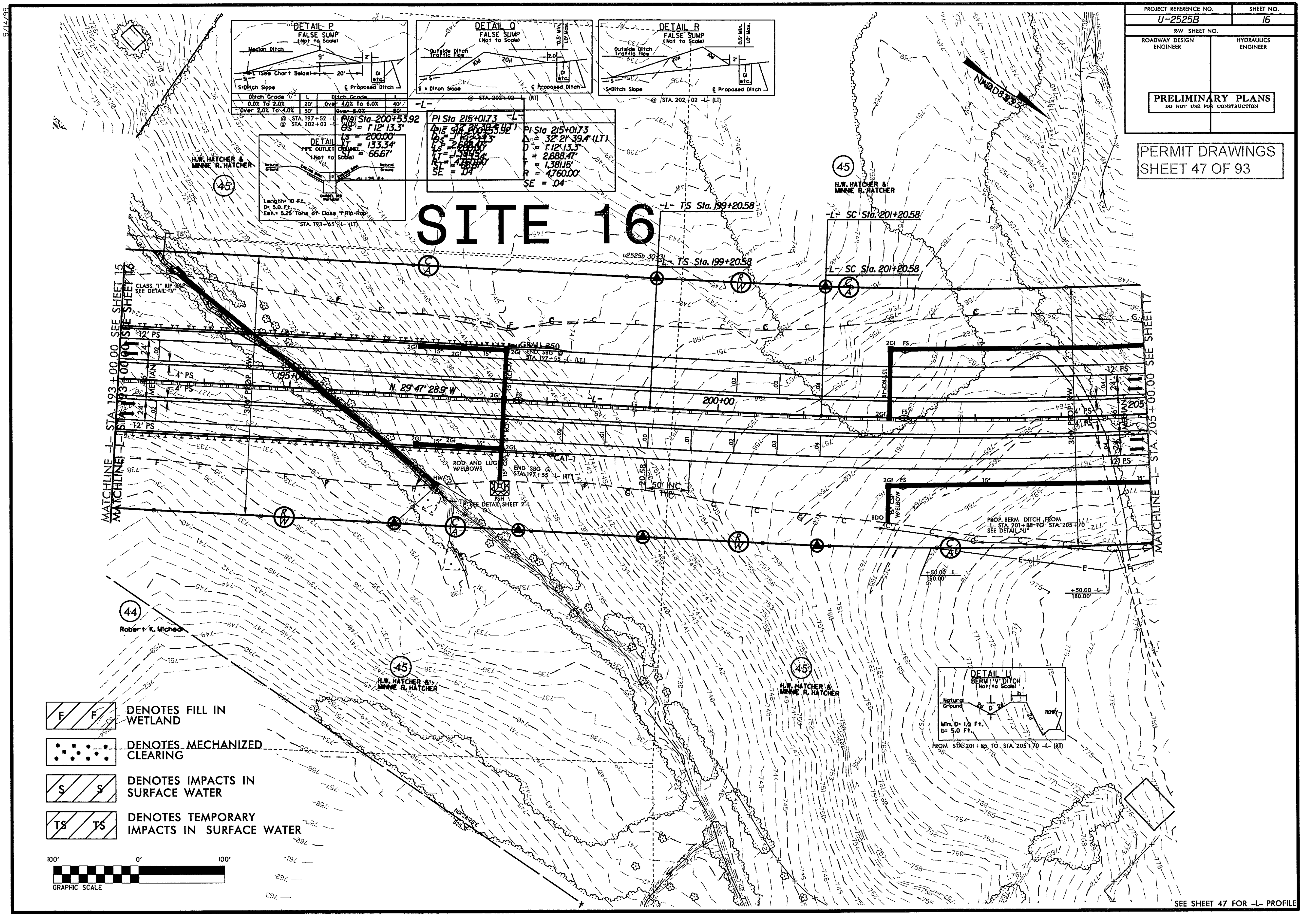
SEE SHEET 47 FOR -L- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 47 OF 93

SITE 16



DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
L (See Chart Below)
S=Ditch Slope
℄ Proposed Ditch
Ditch Grade | L | Ditch Grade | L
0.0% To 2.0% | 20' | Over 4.0% To 6.0% | 40'
Over 2.0% To 4.0% | 30' | Over 6.0% | 50'
@ STA. 197+52 -L- (RT)
@ STA. 202+02 -L- (MED)
DETAIL Q
FALSE SUMP
(Not to Scale)
Outside Ditch
Traffic Flow
S = Ditch Slope
℄ Proposed Ditch
@ STA. 202+02 -L- (RT)
DETAIL R
FALSE SUMP
(Not to Scale)
Outside Ditch
Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
@ STA. 202+02 -L- (LT)
DETAIL V
PIPE OUTLET CHANNEL
(Not to Scale)
Length= 10 Ft.
D= 5.0 Ft.
Est.= 5.25 Tons of Class 'I' Rip-Rap
STA. 193+65 -L- (LT)
-L-
PIS Sta 200+53.92
θs = 1°12' 13.3"
Ls = 200.00'
LT = 133.34'
ST = 66.67'
PI Sta 215+01.73
Δ = 32° 21' 39.4" (LT)
D = 1°12' 13.3"
L = 2,688.47'
T = 1,381.15'
R = 4,760.00'
SE = .04
-L- TS Sta. 199+20.58
-L- SC Sta. 201+20.58
H.W. HATCHER &
MINNIE R. HATCHER
45
44
Robert K. Micheal
CLASS "I" RIP RAP
SEE DETAIL "V"
12' PS
4' PS
24'
MEDIAN
30' PROP. R/W
N 29° 47' 28.9" W
195+00
200+00
205
GRAIL 250
END SBG @ STA. 197+55 -L- (LT)
END SBG @ STA. 197+55 -L- (RT)
ROD AND LUG W/ELBOWS
PSH
SEE DETAIL SHEET 2-L
CAT-1
50' INC.
BDO
PROP. BERM DITCH FROM -L- STA. 201+85 TO STA. 205+70
SEE DETAIL "U"
+50.00 -L-
150.00'
+50.00 -L-
180.00'
DETAIL U
BERM 'V' DITCH
(Not to Scale)
Natural Ground
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 201+85 TO STA. 205+70 -L- (RT)
NAD 83
u2525b

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

100' 0' 100'
GRAPHIC SCALE

SEE SHEET 47 FOR -L- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	17

R/W SHEET NO.

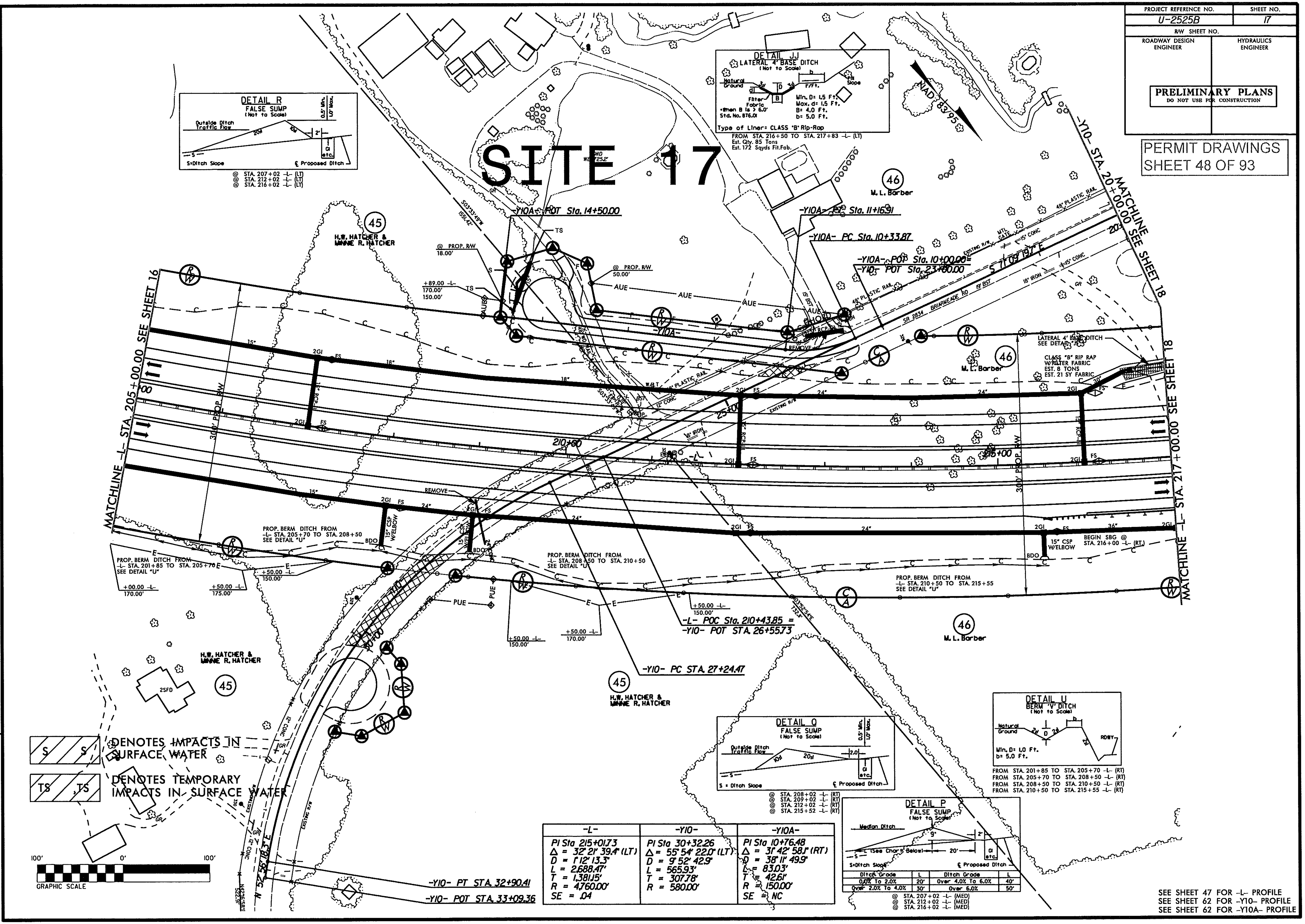
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 48 OF 93

SITE 17



5/14/99
REVISIONS
MATCHLINE -L- STA. 205+00.00 SEE SHEET 16
MATCHLINE -L- STA. 217+00.00 SEE SHEET 18
-Y10- STA. 20+00.00 MATCHLINE SEE SHEET 18
NAD 83/95
-Y10A- POT Sta. 14+50.00
-Y10A- PT Sta. 11+16.31
-Y10A- PC Sta. 10+33.87
-Y10A- POT Sta. 10+00.00 =
-Y10- POT Sta. 23+80.00
S 71°09'19.1" E
SR 2834 BRIARMEADE RD
@ PROP. R/W 18.00'
@ PROP. R/W 50.00'
+89.00 -L- 170.00' 150.00'
AUE
PUE
TS
S
45
H.W. HATCHER & MINNIE R. HATCHER
46
M. L. Barber
300' PROP. R/W
210+00
215+00
25+00
REMOVE
2GI FS
15" CSP W/ELBOW
BDO
BEGIN SBG @ STA. 216+00 -L- (RT)
LATERAL 4' BASE DITCH SEE DETAIL "JJ"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 8 TONS EST. 21 SY FABRIC
PROP. BERM DITCH FROM -L- STA. 201+85 TO STA. 205+70 SEE DETAIL "U"
PROP. BERM DITCH FROM -L- STA. 208+70 TO STA. 208+50 SEE DETAIL "U"
PROP. BERM DITCH FROM -L- STA. 208+50 TO STA. 210+50 SEE DETAIL "U"
PROP. BERM DITCH FROM -L- STA. 210+50 TO STA. 215+55 SEE DETAIL "U"
+00.00 -L- 170.00'
+50.00 -L- 175.00'
+50.00 -L- 150.00'
+50.00 -L- 170.00'
-L- POC Sta. 210+43.85 =
-Y10- POT STA. 26+55.73
-Y10- PC STA. 27+24.47
-Y10- PT STA. 32+90.41
-Y10- POT STA. 33+09.36
2SFD
100' 0' 100'
GRAPHIC SCALE
DETAIL R
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
20:1
10:1
2'
0.5' Min.
1.0' Max.
GI etc.
S=Ditch Slope
℄ Proposed Ditch
DETAIL JJ
LATERAL 4' BASE DITCH
(Not to Scale)
Natural Ground
Filter Fabric
Fill Slope
F/Ft.
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 4.0 Ft.
b= 5.0 Ft.
*When B is > 6.0' Std. No. 876.01
DETAIL Q
FALSE SUMP
(Not to Scale)
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
L (See Chart Below)
20'
DETAIL U
BERM 'V' DITCH
(Not to Scale)
Min. D= 1.0 Ft.
b= 5.0 Ft.
RDWY

@ STA. 207+02 -L- (LT)
@ STA. 212+02 -L- (LT)
@ STA. 216+02 -L- (LT)

Type of Liner= CLASS "B" Rip-Rap
FROM STA. 216+50 TO STA. 217+83 -L- (LT)
Est. Qty. 85 Tons
Est. 172 Sqyds Fit.Fab.

@ STA. 208+02 -L- (RT)
@ STA. 209+02 -L- (RT)
@ STA. 212+02 -L- (RT)
@ STA. 215+52 -L- (RT)

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

@ STA. 207+02 -L- (MED)
@ STA. 212+02 -L- (MED)
@ STA. 216+02 -L- (MED)

FROM STA. 201+85 TO STA. 205+70 -L- (RT)
FROM STA. 205+70 TO STA. 208+50 -L- (RT)
FROM STA. 208+50 TO STA. 210+50 -L- (RT)
FROM STA. 210+50 TO STA. 215+55 -L- (RT)

-L-	-Y10-	-Y10A-
PI Sta 215+01.73	PI Sta 30+32.26	PI Sta 10+76.48
Δ = 32° 21' 39.4" (LT)	Δ = 55° 54' 22.0" (LT)	Δ = 31° 42' 58.1" (RT)
D = 1° 12' 13.3"	D = 9° 52' 42.9"	D = 38° 11' 49.9"
L = 2,688.47'	L = 565.93'	L = 83.03'
T = 1,381.15'	T = 307.78'	T = 42.61'
R = 4,760.00'	R = 580.00'	R = 150.00'
SE = .04		SE = NC

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

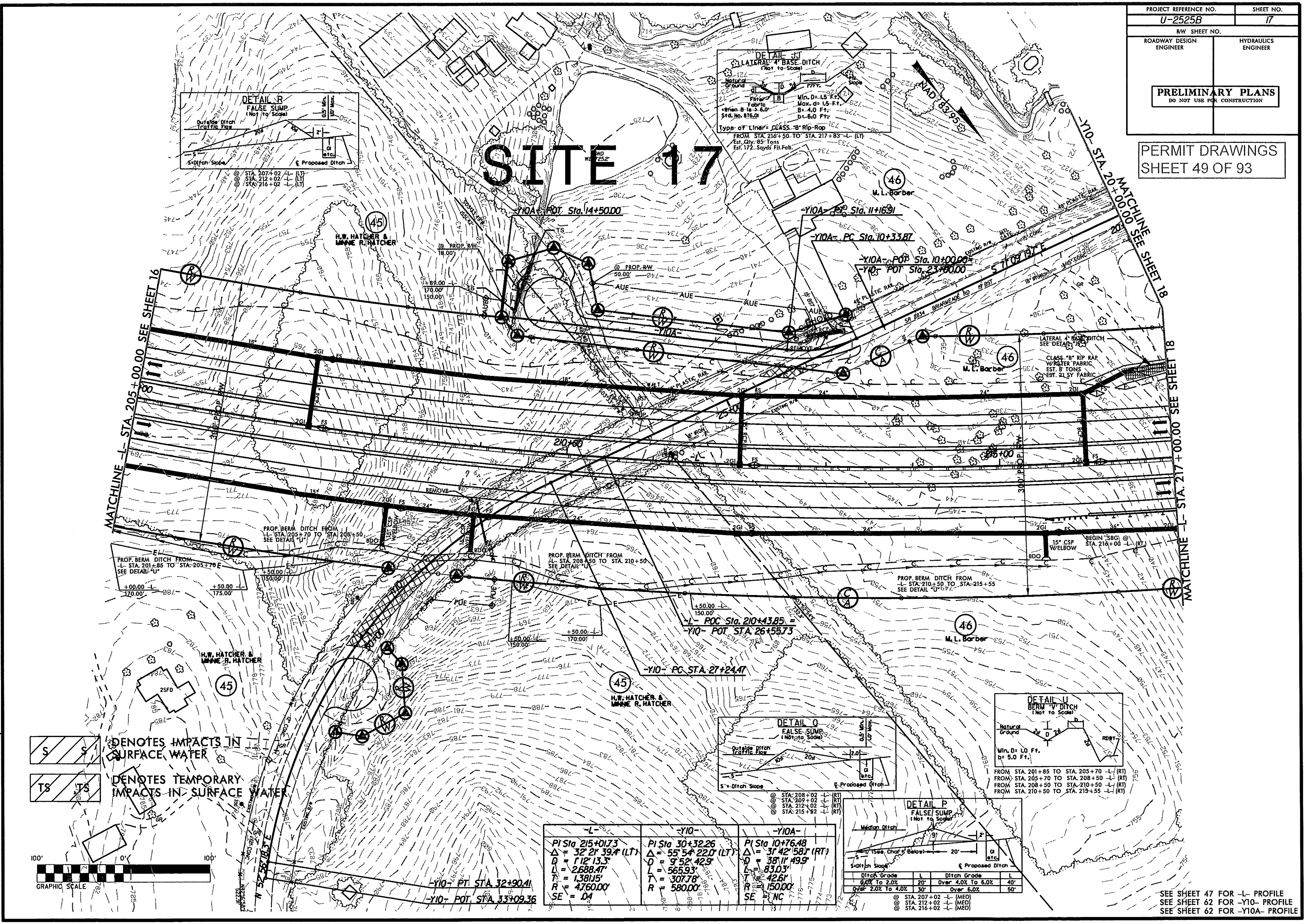
SEE SHEET 47 FOR -L- PROFILE
SEE SHEET 62 FOR -Y10- PROFILE
SEE SHEET 62 FOR -Y10A- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 49 OF 93

SITE 17


5/14/99
REVISIONS
NAD 83/95
MATCHLINE -L- STA. 205+00.00 SEE SHEET 16
MATCHLINE -L- STA. 217+00.00 SEE SHEET 18
-Y10- STA. 20+00.00 MATCHLINE SEE SHEET 18
-Y10A- POT Sta. 14+50.00
-Y10A- PT Sta. 11+16.91
-Y10A- PC Sta. 10+33.87
-Y10A- POT Sta. 10+00.00 =
-Y10- POT Sta. 23+60.00
-L- POC Sta. 210+43.85 =
-Y10- POT STA. 26+55.73
-Y10- PC STA. 27+24.47
-Y10- PT STA. 32+90.41
-Y10- POT STA. 33+09.36
S 71°09'19.7" E
N 52°56'18.3" E
SR 1834 BRIARMEADE RD
H.W. HATCHER & MINNIE R. HATCHER
M. L. Barber
45
46
2SFD
300' PROP. R/W
PROP. BERM DITCH FROM -L- STA. 201+85 TO STA. 205+70 SEE DETAIL "U"
PROP. BERM DITCH FROM -L- STA. 205+70 TO STA. 208+50 SEE DETAIL "U"
PROP. BERM DITCH FROM -L- STA. 208+50 TO STA. 210+50 SEE DETAIL "U"
PROP. BERM DITCH FROM -L- STA. 210+50 TO STA. 215+55 SEE DETAIL "U"
LATERAL 4' BASE DITCH SEE DETAIL "JJ"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 8 TONS EST. 21 SY FABRIC
15" CSP W/ELBOW
BEGIN SBG @ STA. 216+00 -L- (RT)
REMOVE
AUE
PUE
2GI
FS
BDO
GRAPHIC SCALE
100'
0'
100'

DETAIL R
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
0.5' Min.
1.0' Max.
@ STA. 207+02 -L- (LT)
@ STA. 212+02 -L- (LT)
@ STA. 216+02 -L- (LT)

DETAIL JJ
LATERAL 4' BASE DITCH
(Not to Scale)
Natural Ground
Filter Fabric
*When B is > 6.0'
Std. No. 876.01
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 4.0 Ft.
b= 6.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 216+50 TO STA. 217+83 -L- (LT)
Est. Qty. 85 Tons
Est. 172 Sqyds Flt.Fab.

DETAIL O
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S = Ditch Slope
℄ Proposed Ditch
0.5' Min.
1.0' Max.
@ STA. 208+02 -L- (RT)
@ STA. 209+02 -L- (RT)
@ STA. 212+02 -L- (RT)
@ STA. 215+52 -L- (RT)

DETAIL U
BERM 'V' DITCH
(Not to Scale)
Natural Ground
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 201+85 TO STA. 205+70 -L- (RT)
FROM STA. 205+70 TO STA. 208+50 -L- (RT)
FROM STA. 208+50 TO STA. 210+50 -L- (RT)
FROM STA. 210+50 TO STA. 215+55 -L- (RT)

DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
L (See Chart Below)
S=Ditch Slope
℄ Proposed Ditch

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

@ STA. 207+02 -L- (MED)
@ STA. 212+02 -L- (MED)
@ STA. 216+02 -L- (MED)

-L-	-Y10-	-Y10A-
PI Sta 215+01.73	PI Sta 30+32.26	PI Sta 10+76.48
Δ = 32° 21' 39.4" (LT)	Δ = 55° 54' 22.0" (LT)	Δ = 31° 42' 58.1" (RT)
D = 1° 12' 13.3"	D = 9° 52' 42.9"	D = 38° 11' 49.9"
L = 2,688.47'	L = 565.93'	L = 83.03'
T = 1,381.15'	T = 307.78'	T = 42.61'
R = 4,760.00'	R = 580.00'	R = 150.00'
SE = .04		SE = NC

S ▨ S	DENOTES IMPACTS IN SURFACE WATER
TS ▨ TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SEE SHEET 47 FOR -L- PROFILE
SEE SHEET 62 FOR -Y10- PROFILE
SEE SHEET 62 FOR -Y10A- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

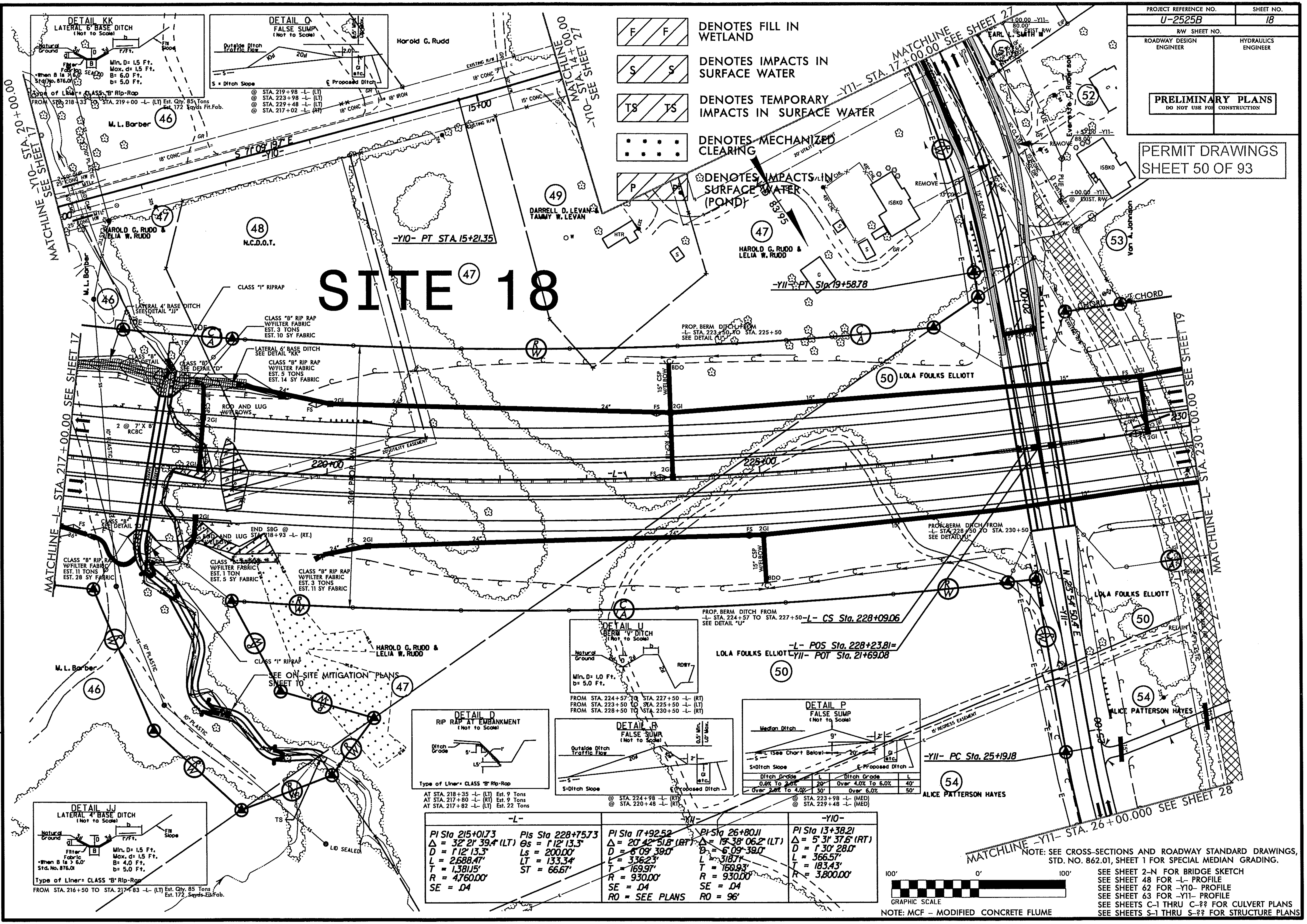
PERMIT DRAWINGS
SHEET 50 OF 93

5/14/99

REVISIONS

SITE 18

F / F	DENOTES FILL IN WETLAND
S / S	DENOTES IMPACTS IN SURFACE WATER
TS / TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
⁘	DENOTES MECHANIZED CLEARING
P / P	DENOTES IMPACTS IN SURFACE WATER (POND)


DETAIL KK
LATERAL 6' BASE DITCH
(Not to Scale)
Natural Ground
Filter Fabric
SEALED
Fill Slope
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 6.0 Ft.
b= 5.0 Ft.
•When B is > 6.0' Std. No. 876.01
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 218+33 TO STA. 219+00 -L- (LT) Est. Qty. 85 Tons Est. 172 Sqyds Flt.Fab.
DETAIL Q
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S = Ditch Slope
℄ Proposed Ditch
@ STA. 219+98 -L- (LT)
@ STA. 223+98 -L- (LT)
@ STA. 229+48 -L- (LT)
@ STA. 217+02 -L- (RT)
Harold G. Rudd
M. L. Barber
46
S 71°09'19.7" E
-Y10-
MATCHLINE -Y10- STA. 20+00.00 SEE SHEET 17
MATCHLINE -Y10- STA. 21+00.00 SEE SHEET 27
-Y10- PT STA. 15+21.35
48
N.C.D.O.T.
49
DARRELL D. LEVAN & TAMMY W. LEVAN
47
HAROLD G. RUDD & LELIA W. RUDD
-Y11- STA. 17+00.00 MATCHLINE SEE SHEET 27
-Y11- PT Sta. 19+58.78
EARL L. SMITH III
51
52
Everette C. Roberson
53
Van A. Johnson
ISBKD
REMOVE
CHORD
CLASS "I" RIPRAP
LATERAL 4' BASE DITCH SEE DETAIL "JJ"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 10 SY FABRIC
LATERAL 6' BASE DITCH SEE DETAIL "KK"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 14 SY FABRIC
ROD AND LUG W/ELBOWS
2 @ 7' X 8' RCBC
PROP. BERM DITCH FROM -L- STA. 223+50 TO STA. 225+50 SEE DETAIL "U"
50 LOLA FOULKS ELLIOTT
220+00
225+00
-L-
MATCHLINE -L- STA. 217+00.00 SEE SHEET 17
MATCHLINE -L- STA. 230+00.00 SEE SHEET 19
END SBG @ STA. 218+93 -L- (RT.)
ROD AND LUG W/ELBOWS
CLASS "B" RIP RAP W/FILTER FABRIC EST. 11 TONS EST. 28 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 11 SY FABRIC
PROP. BERM DITCH FROM -L- STA. 228+50 TO STA. 230+50 SEE DETAIL "U"
PROP. BERM DITCH FROM -L- STA. 224+57 TO STA. 227+50 SEE DETAIL "U"
-L- CS Sta. 228+09.06
-L- POS Sta. 228+23.81= -Y11- POT Sta. 21+69.08
LOLA FOULKS ELLIOTT
N 25°54'50.4" E
-Y11-
HAROLD G. RUDD & LELIA W. RUDD
CLASS "I" RIPRAP
SEE ON-SITE MITIGATION PLANS SHEET 10
10" PLASTIC
L/D SEALED
DETAIL U
BERM "V" DITCH
(Not to Scale)
Natural Ground
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 224+57 TO STA. 227+50 -L- (RT)
FROM STA. 223+50 TO STA. 225+50 -L- (LT)
FROM STA. 228+50 TO STA. 230+50 -L- (RT)
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
Type of Liner= CLASS "B" Rip-Rap
AT STA. 218+35 -L- (LT) Est. 9 Tons
AT STA. 217+80 -L- (RT) Est. 9 Tons
AT STA. 217+82 -L- (LT) Est. 22 Tons
DETAIL R
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
@ STA. 224+98 -L- (RT)
@ STA. 220+48 -L- (RT)
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
L (See Chart Below)
S=Ditch Slope
℄ Proposed Ditch
Ditch Grade | L | Ditch Grade | L
0.0% To 2.0% | 20' | Over 4.0% To 6.0% | 40'
Over 2.0% To 4.0% | 30' | Over 6.0% | 50'
@ STA. 223+98 -L- (MED)
@ STA. 229+48 -L- (MED)
54 ALICE PATTERSON HAYES
-Y11- PC Sta. 25+19.18
15' REGRESS EASEMENT
M. L. Barber
46
DETAIL JJ
LATERAL 4' BASE DITCH
(Not to Scale)
Natural Ground
Filter Fabric
Fill Slope
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 4.0 Ft.
b= 5.0 Ft.
•When B is > 6.0' Std. No. 876.01
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 216+50 TO STA. 217+83 -L- (LT) Est. Qty. 85 Tons Est. 172 Sqyds Flt.Fab.
MATCHLINE -Y11- STA. 26+00.000 SEE SHEET 28
100' 0' 100'
GRAPHIC SCALE

-L-		-Y11-		-Y10-
PI Sta 215+01.73	PIs Sta 228+75.73	PI Sta 17+92.52	PI Sta 26+80.11	PI Sta 13+38.21
Δ = 32°21' 39.4" (LT)	θs = 1°12' 13.3"	Δ = 20°42' 51.8" (RT)	Δ = 19°38' 06.2" (LT)	Δ = 5°31' 37.6" (RT)
D = 1°12' 13.3"	Ls = 200.00'	D = 6°09' 39.0"	D = 6°09' 39.0"	D = 1°30' 28.0"
L = 2,688.47'	LT = 133.34'	L = 336.23'	L = 318.71'	L = 366.57'
T = 1,381.15'	ST = 66.67'	T = 169.97'	T = 160.93'	T = 183.43'
R = 4,760.00'		R = 930.00'	R = 930.00'	R = 3,800.00'
SE = .04		SE = .04	SE = .04	
		RO = SEE PLANS	RO = 96'	

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 862.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 2-N FOR BRIDGE SKETCH
SEE SHEET 48 FOR -L- PROFILE
SEE SHEET 62 FOR -Y10- PROFILE
SEE SHEET 63 FOR -Y11- PROFILE
SEE SHEETS C-1 THRU C-?? FOR CULVERT PLANS
SEE SHEETS S-1 THRU S-?? FOR STRUCTURE PLANS

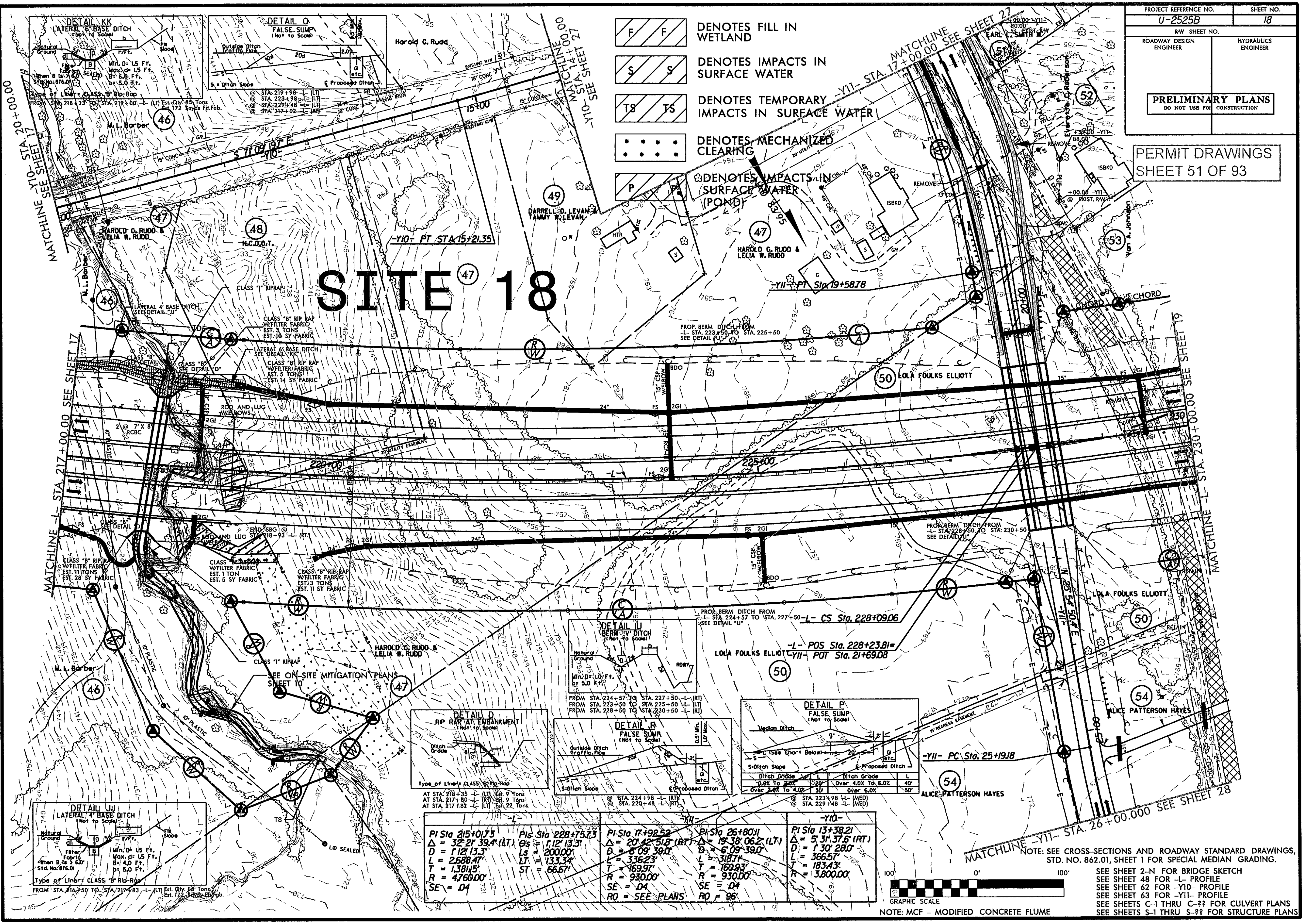
NOTE: MCF - MODIFIED CONCRETE FLUME

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 51 OF 93

F / F	DENOTES FILL IN WETLAND
S / S	DENOTES IMPACTS IN SURFACE WATER
TS / TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
• • • •	DENOTES MECHANIZED CLEARING
P / P	DENOTES IMPACTS IN SURFACE WATER (POND)


5/14/99
REVISIONS
SITE 18
MATCHLINE -Y10- STA. 20+00.00 SEE SHEET 17
MATCHLINE -Y10- STA. 14+00.00 SEE SHEET 27
MATCHLINE -Y11- STA. 17+00.00 SEE SHEET 27
MATCHLINE -L- STA. 217+00.00 SEE SHEET 17
MATCHLINE -L- STA. 230+00.00 SEE SHEET 19
MATCHLINE -Y11- STA. 26+00.000 SEE SHEET 28
DETAIL KK
LATERAL 6' BASE DITCH
(Not to Scale)
DETAIL O
FALSE SUMP
(Not to Scale)
DETAIL JJ
LATERAL 4' BASE DITCH
(Not to Scale)
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
DETAIL R
FALSE SUMP
(Not to Scale)
DETAIL P
FALSE SUMP
(Not to Scale)
DETAIL U
BERM "U" DITCH
(Not to Scale)
Harold G. Rudd
HAROLD G. RUDD & LELIA W. RUDD
M. L. Barber
N.C.D.O.T.
DARRELL O. LEVAN & TAMMY W. LEVAN
LOLA FOULKS ELLIOTT
ALICE PATTERSON HAYES
EARL L. SMITH III
Van A. Johnson
Everett L. Anderson
46
47
48
49
50
51
52
53
54
-Y10- PT STA. 15+21.35
-Y11- PT Sta. 19+58.78
-L- CS Sta. 228+09.06
-L- POS Sta. 228+23.81= -Y11- POT Sta. 21+69.08
-Y11- PC Sta. 25+19.18
S 71°09'19.7" E
N 25°54'50.4" E
220+00
225+00
15+00
20+00
25+00
2 @ 7' X 8' RCBC
CLASS "B" RIP RAP W/FILTER FABRIC
CLASS "I" RIPRAP
ROD AND LUG W/ELBOWS
PROP. BERM DITCH FROM -L- STA. 223+50 TO STA. 225+50 SEE DETAIL "U"
PROP. BERM DITCH FROM -L- STA. 224+57 TO STA. 227+50 -L- SEE DETAIL "U"
PROP. BERM DITCH FROM -L- STA. 228+50 TO STA. 230+50 SEE DETAIL "U"
SEE ON-SITE MITIGATION PLANS SHEET 10
END SBG @ STA. 218+93 -L- (RT)
AT STA. 218+35 -L- (LT) Est. 9 Tons
AT STA. 217+80 -L- (RT) Est. 9 Tons
AT STA. 217+82 -L- (LT) Est. 22 Tons
@ STA. 224+98 -L- (RT)
@ STA. 220+48 -L- (RT)
@ STA. 223+98 -L- (MED)
@ STA. 229+48 -L- (MED)
Ditch Grade
0.0% To 2.0% 20'
Over 2.0% To 4.0% 30'
Over 4.0% To 6.0% 40'
Over 6.0% 50'
100'
0'
100'
GRAPHIC SCALE

-L-		-Y11-		-Y10-
PI Sta 215+01.73	PIs Sta 228+75.73	PI Sta 17+92.52	PI Sta 26+80.11	PI Sta 13+38.21
Δ = 32°21' 39.4" (LT)	θs = 1°12' 13.3"	Δ = 20°42' 51.8" (RT)	Δ = 19°38' 06.2" (LT)	Δ = 5°31' 37.6" (RT)
D = 1°12' 13.3"	Ls = 200.00'	D = 6°09' 39.0"	D = 6°09' 39.0"	D = 1°30' 28.0"
L = 2,688.47'	LT = 133.34'	L = 336.23'	L = 318.71'	L = 366.57'
T = 1,381.15'	ST = 66.67'	T = 169.97'	T = 160.93'	T = 183.43'
R = 4,760.00'		R = 930.00'	R = 930.00'	R = 3,800.00'
SE = .04		SE = .04	SE = .04	
		RO = SEE PLANS	RO = 96'	

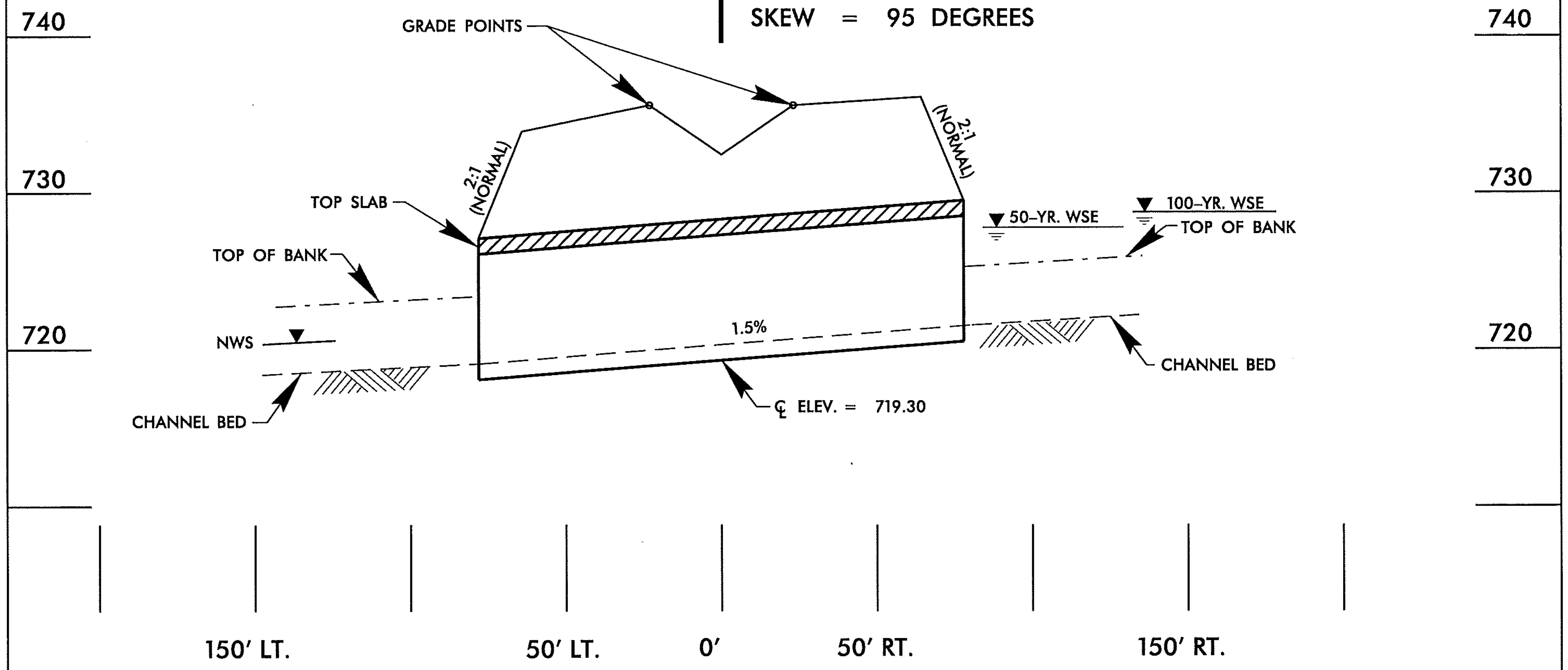
NOTE: MCF - MODIFIED CONCRETE FLUME

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 862.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 2-N FOR BRIDGE SKETCH
SEE SHEET 48 FOR -L- PROFILE
SEE SHEET 62 FOR -Y10- PROFILE
SEE SHEET 63 FOR -Y11- PROFILE
SEE SHEETS C-1 THRU C-?? FOR CULVERT PLANS
SEE SHEETS S-1 THRU S-?? FOR STRUCTURE PLANS

PERMIT DRAWINGS
SHEET 52 OF 93

2 @ 7′ x 8′ RCBC (1′ BURY)
℄ STA. 218+00.00 -L-
GRADE POINT ELEV. = 735.57
SKEW = 95 DEGREES


740
730
720
GRADE POINTS
2:1 (NORMAL)
2:1 (NORMAL)
TOP SLAB
TOP OF BANK
NWS
CHANNEL BED
1.5%
℄ ELEV. = 719.30
50-YR. WSE
100-YR. WSE
TOP OF BANK
CHANNEL BED
740
730
720
150′ LT.
50′ LT.
0′
50′ RT.
150′ RT.

PROFILE

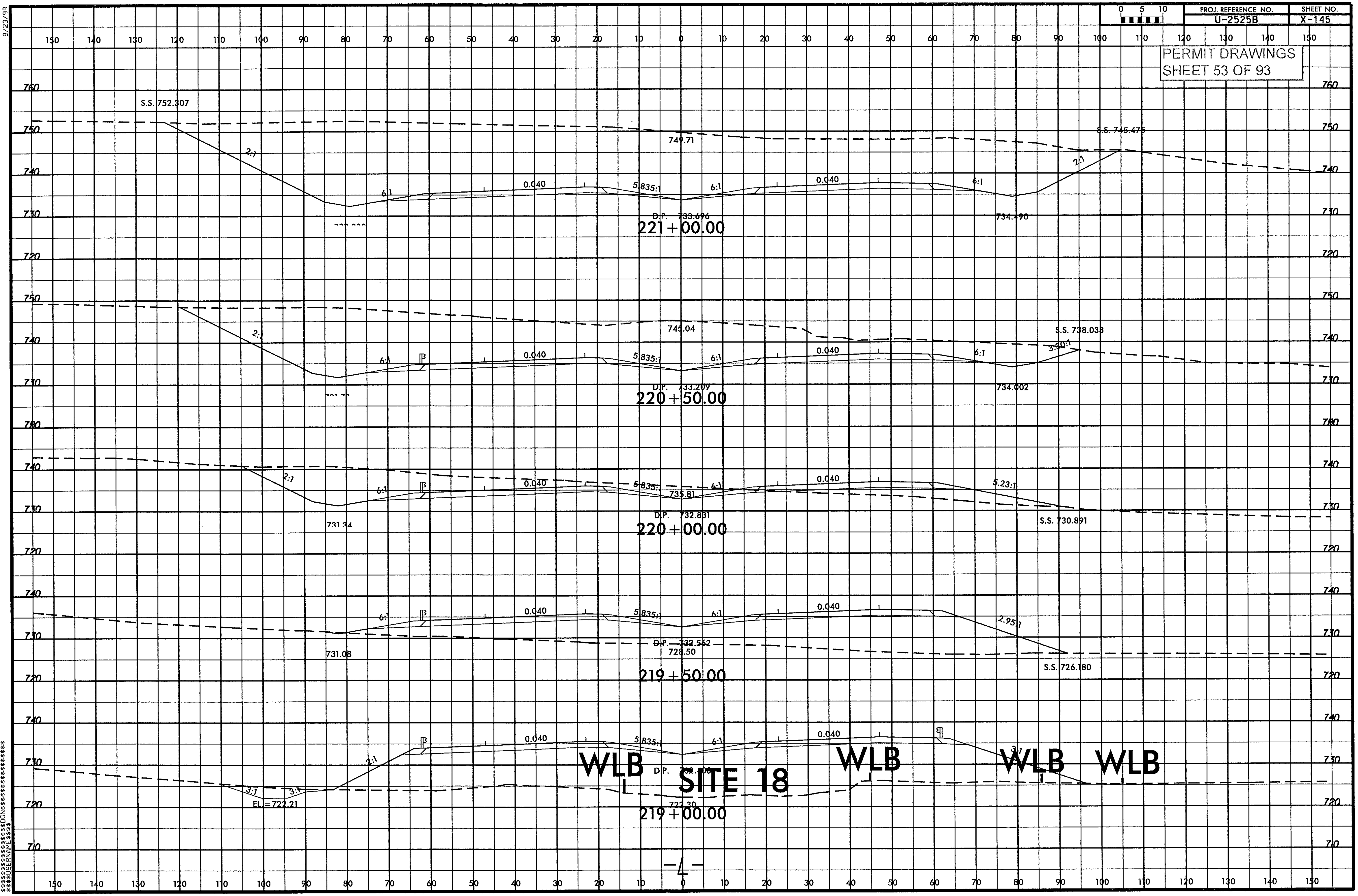
NCDOT
DIVISION OF HIGHWAYS
GUILFORD COUNTY
PROJECT: 34821.1.1 (U-2525B)
GREENSBORO EASTERN LOOP
FROM NORTH OF US 70
RELOCATION TO US 29 NORTH
OF GREENSBORO

SHEET OF 03/08/13

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-145

PERMIT DRAWINGS
SHEET 53 OF 93



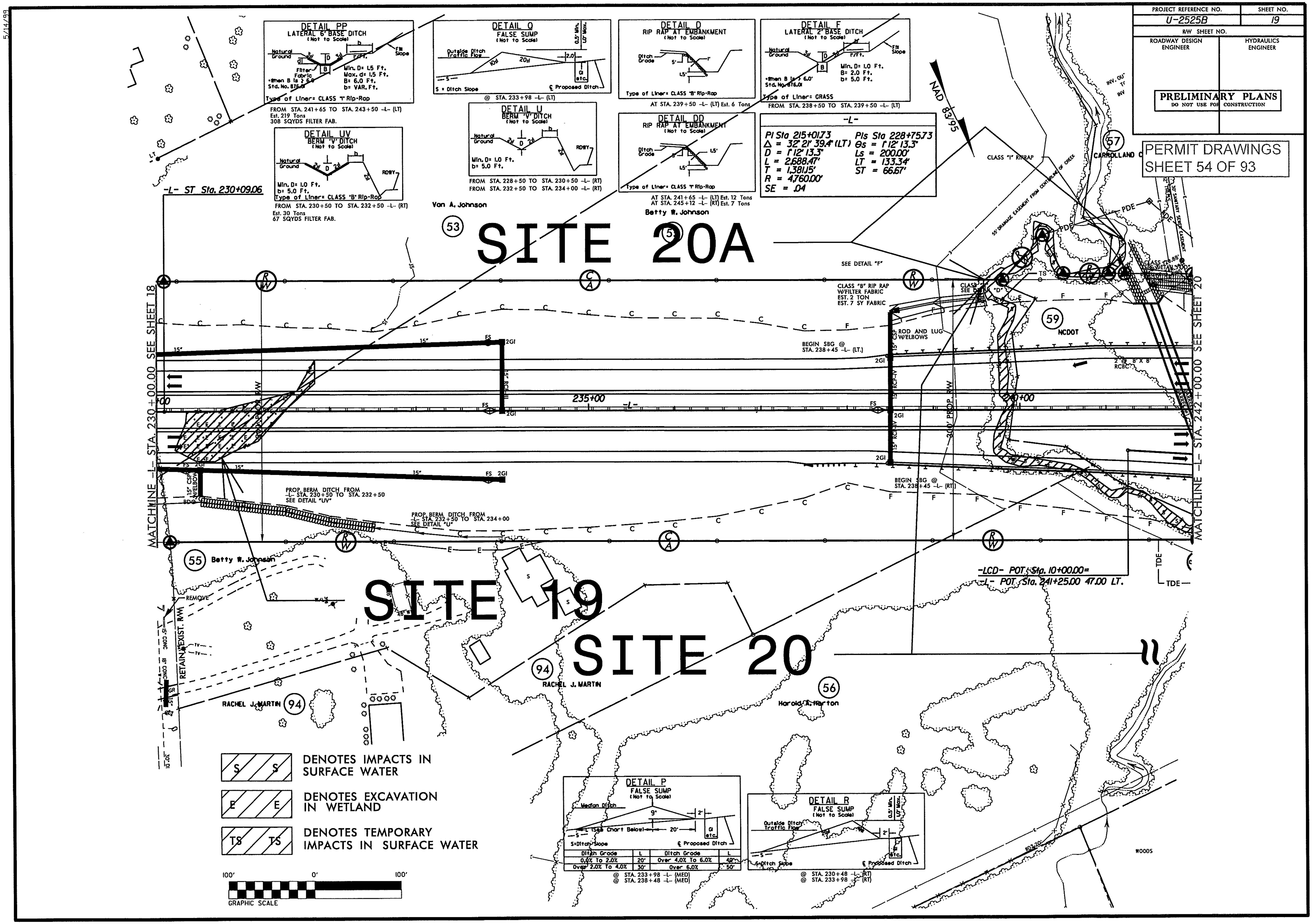
0 5 10
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
760
750
740
730
720
710
S.S. 752.307
2:1
6:1
0.040
5.835:1
749.71
6:1
0.040
6:1
S.S. 745.475
2:1
D.P. 733.696
734.490
221+00.00
2:1
6:1
0.040
5.835:1
745.04
6:1
0.040
6:1
S.S. 738.033
3.30:1
D.P. 733.209
734.002
220+50.00
2:1
6:1
0.040
5.835:1
735.81
6:1
0.040
5.23:1
731.34
D.P. 732.831
S.S. 730.891
220+00.00
6:1
0.040
5.835:1
6:1
0.040
2.95:1
731.08
D.P. 732.562
728.50
S.S. 726.180
219+50.00
2:1
0.040
5.835:1
6:1
0.040
3:1
3:1
3:1
EL.=722.21
WLB
D.P.
SITE 18
722.30
WLB
WLB
WLB
219+00.00
-4-

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 54 OF 93



DETAIL PP
LATERAL 6' BASE DITCH
(Not to Scale)
Natural Ground
3:1
D
d
Filter Fabric
B
b
F/Ft.
Fill Slope
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 6.0 Ft.
b= VAR. Ft.
*When B is ≥ 6.0' Std. No. 876.01
Type of Liner= CLASS 'I' Rip-Rap
FROM STA. 241+65 TO STA. 243+50 -L- (LT)
Est. 219 Tons
308 SQYDS FILTER FAB.
DETAIL Q
FALSE SUMP
(Not to Scale)
0.5' Min.
1.0' Max.
Outside Ditch Traffic Flow
10:1
20:1
2.0
GI etc.
S = Ditch Slope
℄ Proposed Ditch
@ STA. 233+98 -L- (LT)
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
5'
1'
1.5'
Type of Liner= CLASS 'B' Rip-Rap
AT STA. 239+50 -L- (LT) Est. 6 Tons
DETAIL F
LATERAL 2' BASE DITCH
(Not to Scale)
Natural Ground
3:1
D
B
b
F/Ft.
Fill Slope
Min. D= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
*When B is > 6.0' Std. No. 876.01
Type of Liner= GRASS
FROM STA. 238+50 TO STA. 239+50 -L- (LT)
DETAIL UV
BERM 'V' DITCH
(Not to Scale)
Natural Ground
2:1
D
b
RDWY
Min. D= 1.0 Ft.
b= 5.0 Ft.
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 230+50 TO STA. 232+50 -L- (RT)
Est. 30 Tons
67 SQYDS FILTER FAB.
DETAIL U
BERM 'V' DITCH
(Not to Scale)
Natural Ground
2:1
D
b
RDWY
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 228+50 TO STA. 230+50 -L- (RT)
FROM STA. 232+50 TO STA. 234+00 -L- (RT)
DETAIL DD
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
1.5'
Type of Liner= CLASS 'I' Rip-Rap
AT STA. 241+65 -L- (LT) Est. 12 Tons
AT STA. 245+12 -L- (RT) Est. 7 Tons
-L-
PI Sta 215+01.73
Δ = 32° 21' 39.4" (LT)
D = 1° 12' 13.3"
L = 2,688.47'
T = 1,381.15'
R = 4,760.00'
SE = .04
PIs Sta 228+75.73
θs = 1° 12' 13.3"
Ls = 200.00'
LT = 133.34'
ST = 66.67'
NAD 83/95
-L- ST Sta. 230+09.06
LT
Van A. Johnson
Betty W. Johnson
53
SITE 20A
CLASS "I" RIPRAP
55' DRAINAGE EASEMENT FROM CENTERLINE OF CREEK
PDE
57
CARROLLAND C
12" TRUSS
30" SANITARY SEWER EASEMENT
INV. OUT
INV
SEE DETAIL "F"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TON EST. 7 SY FABRIC
CLASS I SEE DETAIL "D"
CLASS I 28.88' SEE DETAIL "DD"
TS
59
NCDOT
ROD AND LUG W/ELBOWS
15" CSP
BEGIN SBG @ STA. 238+45 -L- (LT.)
2GI
2 @ 8' X 8' RCBC
15" RCP-IV
FS
235+00
-L-
10+00
300' PROP. R/W
BARREL #1
BARREL #2
BEGIN SBG @ STA. 238+45 -L- (RT)
MATCHLINE -L- STA. 230+00.00 SEE SHEET 18
MATCHLINE -L- STA. 242+00.00 SEE SHEET 20
15"
15" CSP W/ELBOW
BDO
PROP. BERM DITCH FROM -L- STA. 230+50 TO STA. 232+50 SEE DETAIL "UV"
PROP. BERM DITCH FROM -L- STA. 232+50 TO STA. 234+00 SEE DETAIL "U"
C
F
E
R/W
C/A
-LCD- POT. Sta. 10+00.00=
-L- POT. Sta. 241+25.00 47.00 LT.
TDE
55
Betty W. Johnson
SITE 19
SITE 20
REMOVE
RETAIN EXIST. R/W
18" CONC
TV
S
94
RACHEL J. MARTIN
RACHEL J. MARTIN
94
56
Harold A. Horton
WOODS
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
GI etc.
S=Ditch Slope
℄ Proposed Ditch
DETAIL R
FALSE SUMP
(Not to Scale)
0.5' Min.
1.0' Max.
Outside Ditch Traffic Flow
20:1
10:1
2'
GI etc.
S=Ditch Slope
℄ Proposed Ditch
100'
0'
100'
GRAPHIC SCALE

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

@ STA. 233+98 -L- (MED)
@ STA. 238+48 -L- (MED)

@ STA. 230+48 -L- (RT)
@ STA. 233+98 -L- (RT)

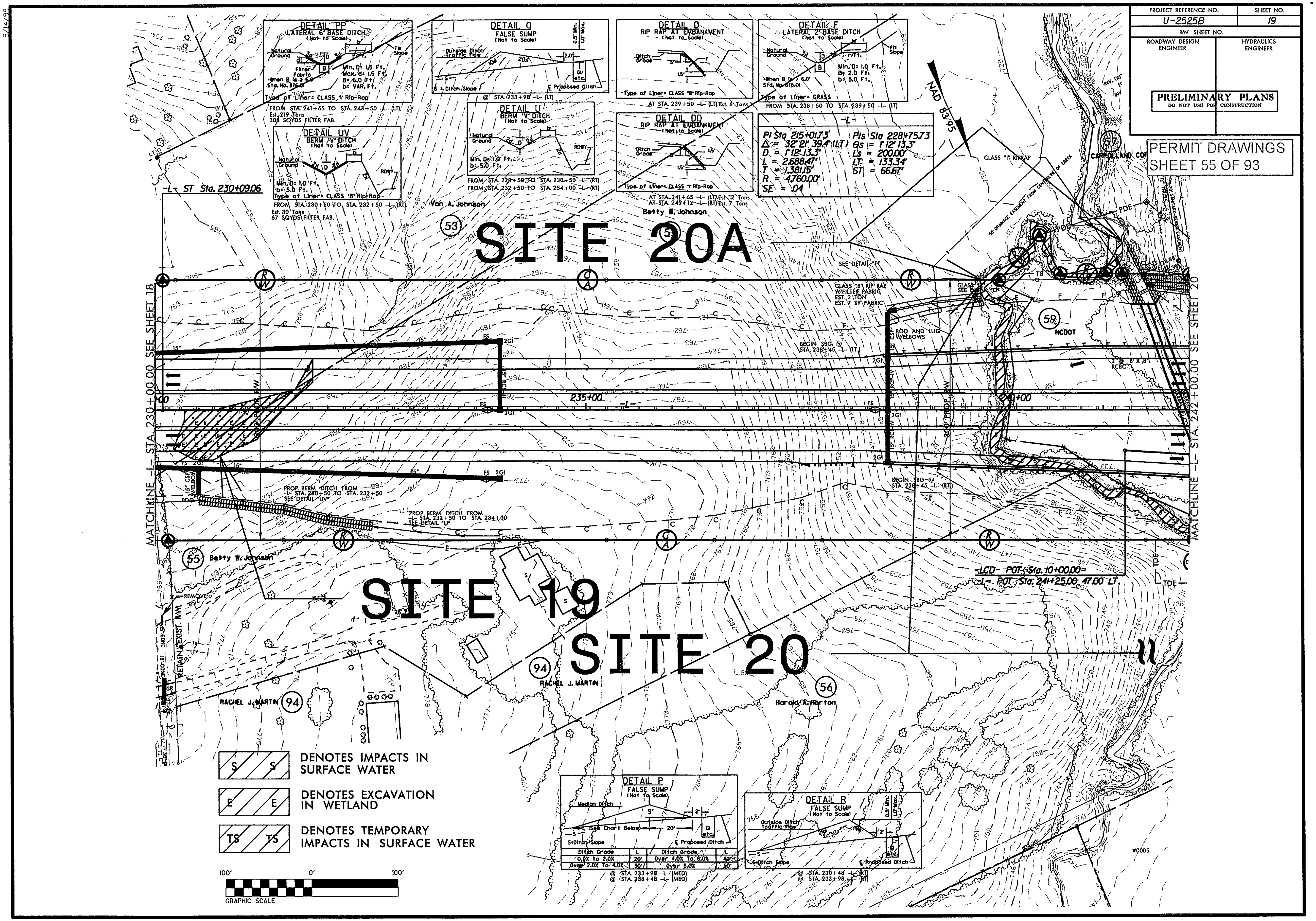
S ▨ S	DENOTES IMPACTS IN SURFACE WATER
E ▨ E	DENOTES EXCAVATION IN WETLAND
TS ▨ TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 55 OF 93



DETAIL PP
LATERAL 6' BASE DITCH
(Not to Scale)
Natural Ground
Filter Fabric
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 6.0 Ft.
b= VAR. Ft.
*When B is > 6.0' Std. No. 876.01
Type of Liner= CLASS "I" Rip-Rap
FROM STA. 241+65 TO STA. 243+50 -L- (LT)
Est. 219 Tons
308 SQYDS FILTER FAB.
DETAIL Q
FALSE SUMP
(Not to Scale)
Outside Ditch
Traffic Flow
20'
GI etc.
S = Ditch Slope
℄ Proposed Ditch
0.5' Min.
1.0' Max.
@ STA. 233+98 -L- (LT)
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
L5'
Type of Liner= CLASS "B" Rip-Rap
AT STA. 239+50 -L- (LT) Est. 6 Tons
DETAIL F
LATERAL 2' BASE DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
*When B is > 6.0' Std. No. 876.01
Type of Liner= GRASS
FROM STA. 238+50 TO STA. 239+50 -L- (LT)
DETAIL UV
BERM "V" DITCH
(Not to Scale)
Natural Ground
Min. D= 1.0 Ft.
b= 5.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 230+50 TO STA. 232+50 -L- (RT)
Est. 30 Tons
67 SQYDS FILTER FAB.
DETAIL U
BERM "V" DITCH
(Not to Scale)
Natural Ground
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 228+50 TO STA. 230+50 -L- (RT)
FROM STA. 232+50 TO STA. 234+00 -L- (RT)
DETAIL DD
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
L5'
Type of Liner= CLASS "I" Rip-Rap
AT STA. 241+65 -L- (LT) Est. 12 Tons
AT STA. 248+12 -L- (RT) Est. 7 Tons
-L-
PI Sta 215+01.73
Δ = 32° 21' 39.4" (LT)
D = 1° 12' 13.3"
L = 2,688.47'
T = 1,381.15'
R = 4,760.00'
SE = .04
PIs Sta 228+75.73
θs = 1° 12' 13.3"
Ls = 200.00'
LT = 133.34'
ST = 66.67'
NAD 83/95
CLASS "I" RIPRAP
CARROLLAND CO
PDE
TDE
-L- ST Sta. 230+09.06
Van A. Johnson
Betty W. Johnson
Rachel J. Martin
Harold A. Horton
NCDOT
53
55
56
59
94
SITE 20A
SITE 19
SITE 20
SEE DETAIL "F"
CLASS "B" RIP RAP W/FILTER FABRIC
EST. 2 TON
EST. 7 SY FABRIC
ROD AND LUG W/ELBOWS
BEGIN SBG @ STA. 238+45 -L- (LT)
BEGIN SBG @ STA. 238+45 -L- (RT)
2 @ 8' X 8' RCBC
235+00 -L-
FS 2GI
PROP. BERM DITCH FROM -L- STA. 230+50 TO STA. 232+50
SEE DETAIL "UV"
PROP. BERM DITCH FROM -L- STA. 232+50 TO STA. 234+00
SEE DETAIL "U"
-LCD- POT Sta. 10+00.00= -L- POT Sta. 241+25.00 47.00 LT.
MATCHLINE -L- STA. 230+00.00 SEE SHEET 18
MATCHLINE -L- STA. 242+00.00 SEE SHEET 20
REMOVE
RETAIN EXIST. R/W
WOODS
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9'
2'
L (See Chart Below)
20'
GI etc.
S=Ditch Slope
℄ Proposed Ditch
DETAIL R
FALSE SUMP
(Not to Scale)
Outside Ditch
Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
0.5' Min.
1.0' Max.
@ STA. 230+48 -L- (RT)
@ STA. 233+98 -L- (RT)

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

@ STA. 233+98 -L- (MED)
@ STA. 238+48 -L- (MED)

▨ S S — DENOTES IMPACTS IN SURFACE WATER

▨ E E — DENOTES EXCAVATION IN WETLAND

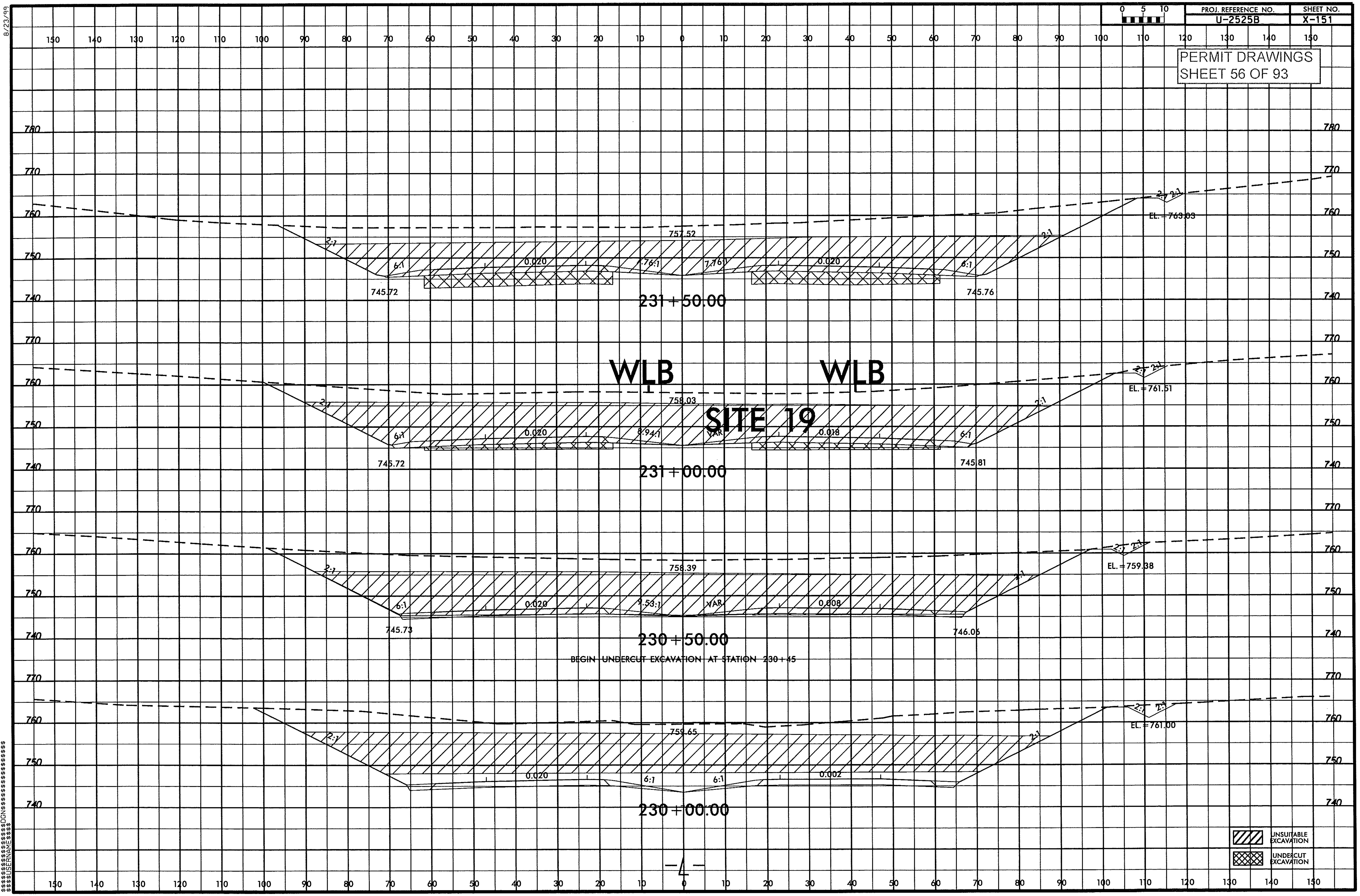
▨ TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

100' 0' 100'
GRAPHIC SCALE

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-151

PERMIT DRAWINGS
SHEET 56 OF 93



0 5 10
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
780
770
760
750
740
2:1
6:1
0.020
7.76:1
7.76:1
0.020
6:1
2:1
2:1 2:1
757.52
745.72
745.76
EL. = 763.03
231+50.00
WLB
WLB
SITE 19
2:1
6:1
0.020
8.94:1
VAR
0.018
6:1
2:1
2:1 2:1
758.03
745.72
745.81
EL. = 761.51
231+00.00
2:1
6:1
0.020
9.53:1
VAR
0.008
2:1
2:1 2:1
758.39
745.73
746.05
EL. = 759.38
230+50.00
BEGIN UNDERCUT EXCAVATION AT STATION 230+45
2:1
0.020
6:1
6:1
0.002
2:1
2:1 2:1
759.65
EL. = 761.00
230+00.00
UNSUITABLE EXCAVATION
UNDERCUT EXCAVATION

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

5/14/99

PERMIT DRAWINGS
SHEET 57 OF 93

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	20

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y13RPC-

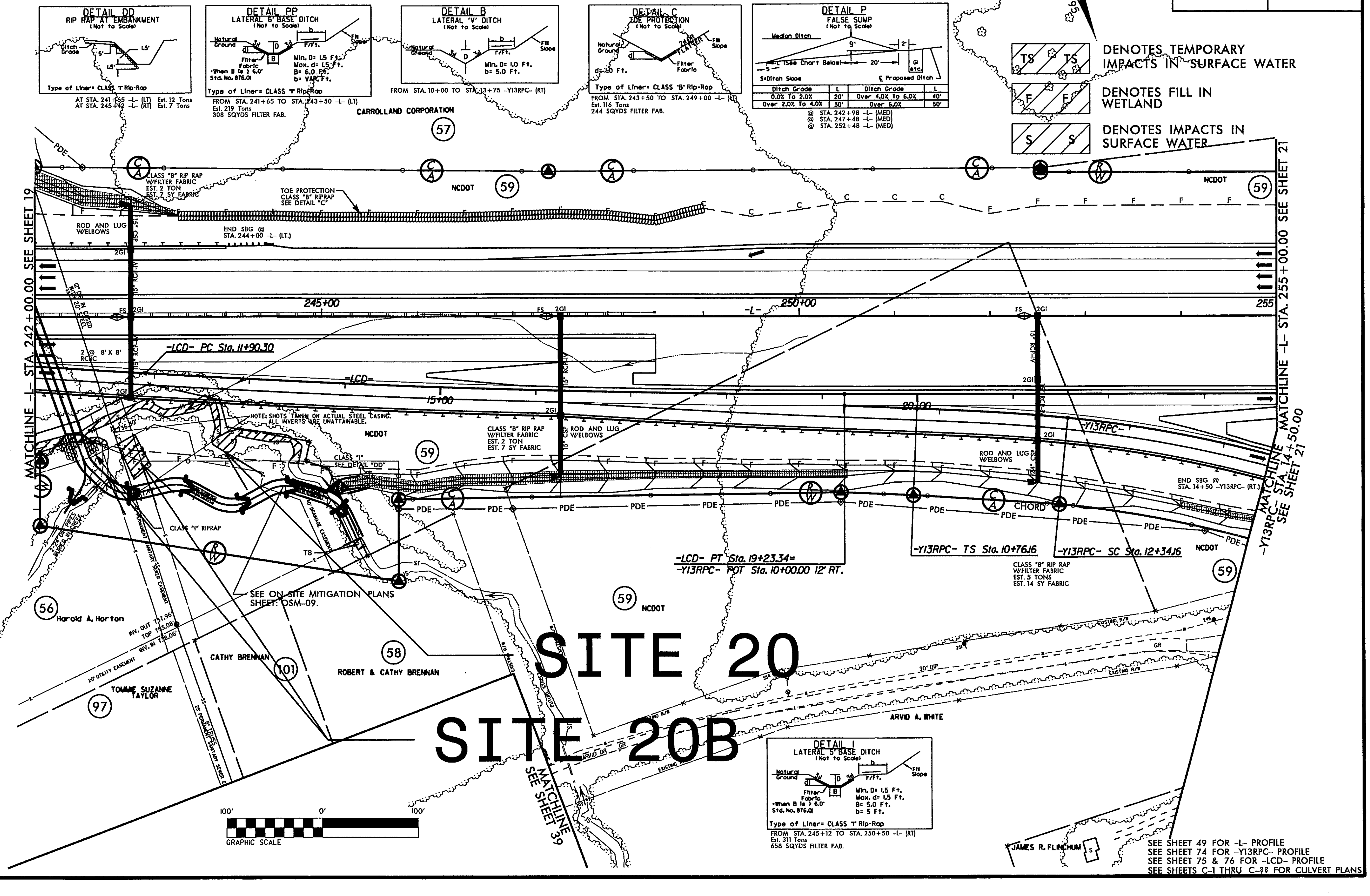
Pls Sta 11+81.52
θs = 3° 22' 49.5"
Ls = 158.00'
LT = 105.35'
ST = 52.68'

PI Sta 22+25.70
Δ = 73° 02' 24.8" (RT)
D = 4° 16' 44.4"
L = 1,706.95'
T = 991.54'
R = 1,339.00'
SE = .07
RO = 158'

Pls Sta 29+93.79
θs = 3° 22' 49.5"
Ls = 158.00'
LT = 105.35'
ST = 52.68'

-LCD-

PI Sta 15+56.93
Δ = 3° 30' 00.0" (LT)
D = 0° 28' 38.9"
L = 733.04'
T = 366.63'
R = 12,000.00'
SE = NC



DETAIL DD
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
5'
1.5'
1.5'
Type of Liner= CLASS "I" Rip-Rap
AT STA. 241+65 -L- (LT) Est. 12 Tons
AT STA. 245+92 -L- (RT) Est. 7 Tons
DETAIL PP
LATERAL 6' BASE DITCH
(Not to Scale)
Natural Ground
d
3:1
D
3:1
B
b
r/Ft.
Fill Slope
Filter Fabric
*When B is ≥ 6.0'
Std. No. 876.01
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 6.0 Ft.
b= VAR. Ft.
Type of Liner= CLASS "I" Rip-Rap
FROM STA. 241+65 TO STA. 243+50 -L- (LT)
Est. 219 Tons
308 SQYDS FILTER FAB.
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
3:1
D
3:1
b
r/Ft.
Fill Slope
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 10+00 TO STA. 13+75 -Y13RPC- (RT)
DETAIL C
TOE PROTECTION
(Not to Scale)
Natural Ground
d
2:1 OR FLATTER
Fill Slope
Filter Fabric
d= 1.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 243+50 TO STA. 249+00 -L- (RT)
Est. 116 Tons
244 SQYDS FILTER FAB.
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
S
GI etc.
S=Ditch Slope
℄ Proposed Ditch
Ditch Grade | L | Ditch Grade | L
0.0% To 2.0% | 20' | Over 4.0% To 6.0% | 40'
Over 2.0% To 4.0% | 30' | Over 6.0% | 50'
@ STA. 242+98 -L- (MED)
@ STA. 247+48 -L- (MED)
@ STA. 252+48 -L- (MED)
CARROLLAND CORPORATION
57
NAD 83/95
TS TS
F F
S S
PDE
C/A
R/W
NCDOT
59
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 2 TON
EST. 7 SY FABRIC
TOE PROTECTION
CLASS "B" RIPRAP
SEE DETAIL "C"
ROD AND LUG
W/ELBOWS
15" CSP
END SBG @
STA. 244+00 -L- (LT.)
2GI
15" RCP-IV
FS
245+00
-L-
250+00
255
12" DIP IN CASED WITH 20" STEEL
2 @ 8' X 8' RCBC
-LCD- PC Sta. 11+90.30
-LCD-
15+00
20+00
-Y13RPC-
NOTE: SHOTS TAKEN ON ACTUAL STEEL CASING. ALL INVERTS ARE UNATTAINABLE.
CLASS "I"
SEE DETAIL "DD"
CLASS "I" RIPRAP
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 2 TON
EST. 7 SY FABRIC
ROD AND LUG
W/ELBOWS
24" CSP
CHORD
END SBG @
STA. 14+50 -Y13RPC- (RT.)
-LCD- PT Sta. 19+23.34=
-Y13RPC- POT Sta. 10+00.00 12' RT.
-Y13RPC- TS Sta. 10+76.16
-Y13RPC- SC Sta. 12+34.16
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 5 TONS
EST. 14 SY FABRIC
TS
2-24" DIP PIPES BURIED IN CREEK
PERMANENT SANITARY SEWER EASEMENT
40' DRAINAGE EASEMENT
20' UTILITY EASEMENT
SEE ON SITE MITIGATION PLANS
SHEET: OSM-09.
56
Harold A. Horton
INV. OUT 737.96'
TOP 753.08'
INV. IN 738.06'
CATHY BRENNAN
101
58
ROBERT & CATHY BRENNAN
97
TOMMIE SUZANNE TAYLOR
EXISTING R/W
30' DIP
GR
ARVID A. WHITE
ARVID DR
JAMES R. FLINCHUM
MATCHLINE -L- STA. 242+00.00 SEE SHEET 19
MATCHLINE -L- STA. 255+00.00 SEE SHEET 21
MATCHLINE -Y13RPC- STA. 14+50.00 SEE SHEET 21
MATCHLINE SEE SHEET 39
SITE 20
SITE 20B
DETAIL I
LATERAL 5' BASE DITCH
(Not to Scale)
Natural Ground
d
3:1
D
3:1
B
b
r/Ft.
Fill Slope
Filter Fabric
*When B is > 6.0'
Std. No. 876.01
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 5.0 Ft.
b= 5 Ft.
Type of Liner= CLASS "I" Rip-Rap
FROM STA. 245+12 TO STA. 250+50 -L- (RT)
Est. 311 Tons
658 SQYDS FILTER FAB.
100'
0'
100'
GRAPHIC SCALE

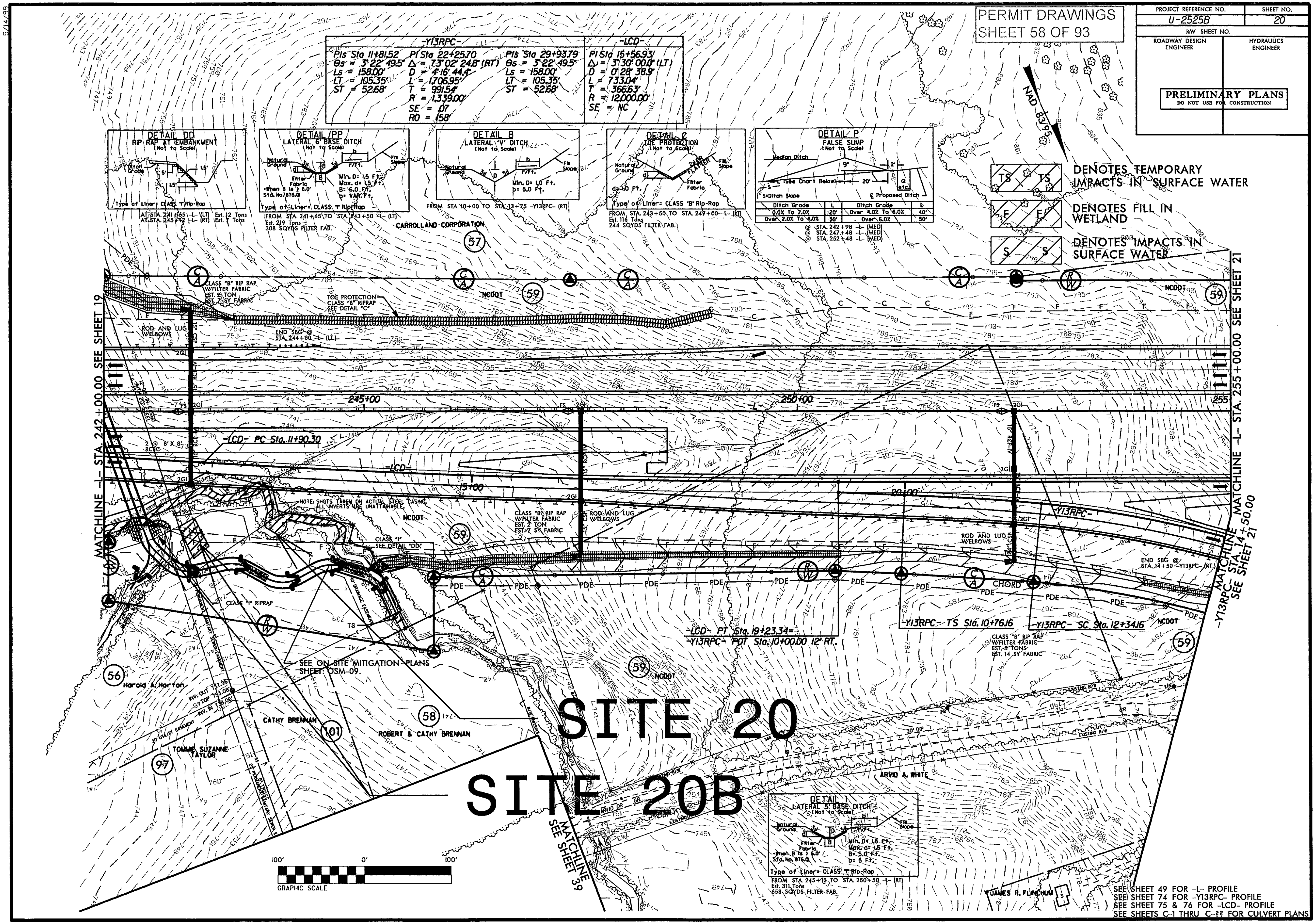
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

SEE SHEET 49 FOR -L- PROFILE
SEE SHEET 74 FOR -Y13RPC- PROFILE
SEE SHEET 75 & 76 FOR -LCD- PROFILE
SEE SHEETS C-1 THRU C-?? FOR CULVERT PLANS

5/14/99


NAD 83/95
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
TS
DENOTES FILL IN WETLAND
F
DENOTES IMPACTS IN SURFACE WATER
S
DETAIL DD
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
5'
1.5'
Type of Liner= CLASS 'I' Rip-Rap
AT STA. 241+65 -L- (LT) Est. 12 Tons
AT STA. 245+12 -L- (RT) Est. 7 Tons
DETAIL PP
LATERAL 6' BASE DITCH
(Not to Scale)
Natural Ground
Filter Fabric
*When B is ≥ 6.0'
Std. No. 876.01
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 6.0 Ft.
b= VAR. Ft.
r/Ft.
Fill Slope
Type of Liner= CLASS 'I' Rip-Rap
FROM STA. 241+65 TO STA. 243+50 -L- (LT)
Est. 219 Tons
308 SQYDS FILTER FAB.
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Min. D= 1.0 Ft.
b= 5.0 Ft.
Fill Slope
FROM STA. 10+00 TO STA. 13+75 -Y13RPC- (RT)
DETAIL C
TOE PROTECTION
(Not to Scale)
Natural Ground
2:1 OR FLATTER
Fill Slope
Filter Fabric
d= 1.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 243+50 TO STA. 249+00 -L- (RT)
Est. 116 Tons
244 SQYDS FILTER FAB.
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
GI etc.
S:Ditch Slope
℄ Proposed Ditch
Ditch Grade | L | Ditch Grade | L
0.0% To 2.0% | 20' | Over 4.0% To 6.0% | 40'
Over 2.0% To 4.0% | 30' | Over 6.0% | 50'
@ STA. 242+98 -L- (MED)
@ STA. 247+48 -L- (MED)
@ STA. 252+48 -L- (MED)
CARROLLAND CORPORATION
57
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TON EST. 7 SY FABRIC
TOE PROTECTION CLASS "B" RIPRAP SEE DETAIL "C"
NCDOT
59
ROD AND LUG W/ELBOWS
END SBG @ STA. 244+00 -L- (LT)
MATCHLINE -L- STA. 242+00.00 SEE SHEET 19
245+00
250+00
255
2GI
FS
15" CSP
15" RCP
-LCD- PC Sta. 11+90.30
2 @ 8' X 8' RCBC
-LCD-
15+00
20+00
NOTE: SHOTS TAKEN ON ACTUAL STEEL CASING. ALL INVERTS ARE UNATTAINABLE.
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TON EST. 7 SY FABRIC
ROD AND LUG W/ELBOWS
CLASS "I" SEE DETAIL "DD"
CLASS "I" RIPRAP
PERMANENT SANITARY SEWER EASEMENT
40' DRAINAGE EASEMENT
TS
PDE
CHORD
-Y13RPC-
ROD AND LUG W/ELBOWS
24" CSP
END SBG @ STA. 14+50 -Y13RPC- (RT)
MATCHLINE -L- STA. 255+00.00 SEE SHEET 21
MATCHLINE -Y13RPC- STA. 14+50.00 SEE SHEET 21
-LCD- PT Sta. 19+23.34= -Y13RPC- POT Sta. 10+00.00 12' RT.
-Y13RPC- TS Sta. 10+76.16
-Y13RPC- SC Sta. 12+34.16
CLASS "B" RIP RAP W/FILTER FABRIC EST. 8 TONS EST. 14 SY FABRIC
SEE ON SITE MITIGATION PLANS SHEET: OSM-09.
56
Harold A. Horton
CATHY BRENNAN
101
58
ROBERT & CATHY BRENNAN
97
TOMMIE SUZANNE TAYLOR
SITE 20
SITE 20B
MATCHLINE SEE SHEET 39
30' DIP
EXISTING R/W
ARVID A. WHITE
JAMES R. FLINCHUM
DETAIL I
LATERAL 5' BASE DITCH
(Not to Scale)
Natural Ground
Filter Fabric
*When B is > 6.0'
Std. No. 876.01
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 5.0 Ft.
b= 5 Ft.
Fill Slope
Type of Liner= CLASS 'I' Rip-Rap
FROM STA. 245+12 TO STA. 250+50 -L- (RT)
Est. 311 Tons
658 SQYDS FILTER FAB.
100'
0'
100'
GRAPHIC SCALE

PERMIT DRAWINGS
SHEET 58 OF 93

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y13RPC-

PIs Sta 11+81.52
θs = 3° 22' 49.5"
Ls = 158.00'
LT = 105.35'
ST = 52.68'

PI Sta 22+25.70
Δ = 73° 02' 24.8" (RT)
D = 4° 16' 44.4"
L = 1,706.95'
T = 991.54'
R = 1,339.00'
SE = .07
RO = 158'

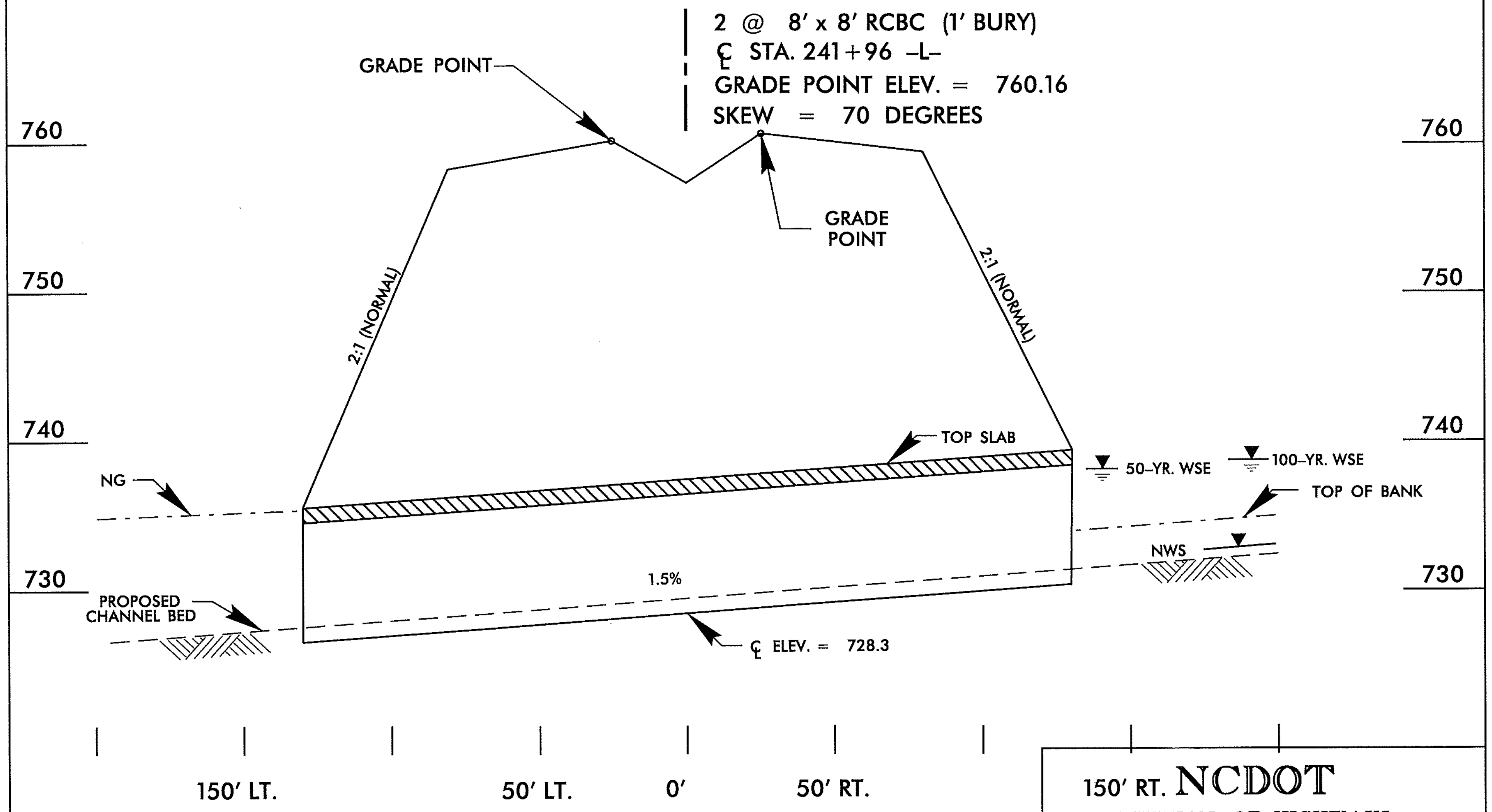
PIs Sta 29+93.79
θs = 3° 22' 49.5"
Ls = 158.00'
LT = 105.35'
ST = 52.68'

-LCD-

PI Sta 15+56.93
Δ = 3° 30' 00.0" (LT)
D = 0° 28' 38.9"
L = 733.04'
T = 366.63'
R = 12,000.00'
SE = NC

SEE SHEET 49 FOR -L- PROFILE
SEE SHEET 74 FOR -Y13RPC- PROFILE
SEE SHEET 75 & 76 FOR -LCD- PROFILE
SEE SHEETS C-1 THRU C-?? FOR CULVERT PLANS

PERMIT DRAWINGS
SHEET 59 OF 93


2 @ 8′ x 8′ RCBC (1′ BURY)
℄ STA. 241+96 -L-
GRADE POINT ELEV. = 760.16
SKEW = 70 DEGREES
GRADE POINT
GRADE POINT
760
750
740
730
760
750
740
730
2:1 (NORMAL)
2:1 (NORMAL)
TOP SLAB
50-YR. WSE
100-YR. WSE
TOP OF BANK
NWS
NG
PROPOSED CHANNEL BED
1.5%
℄ ELEV. = 728.3
150′ LT.
50′ LT.
0′
50′ RT.
150′ RT.

PROFILE

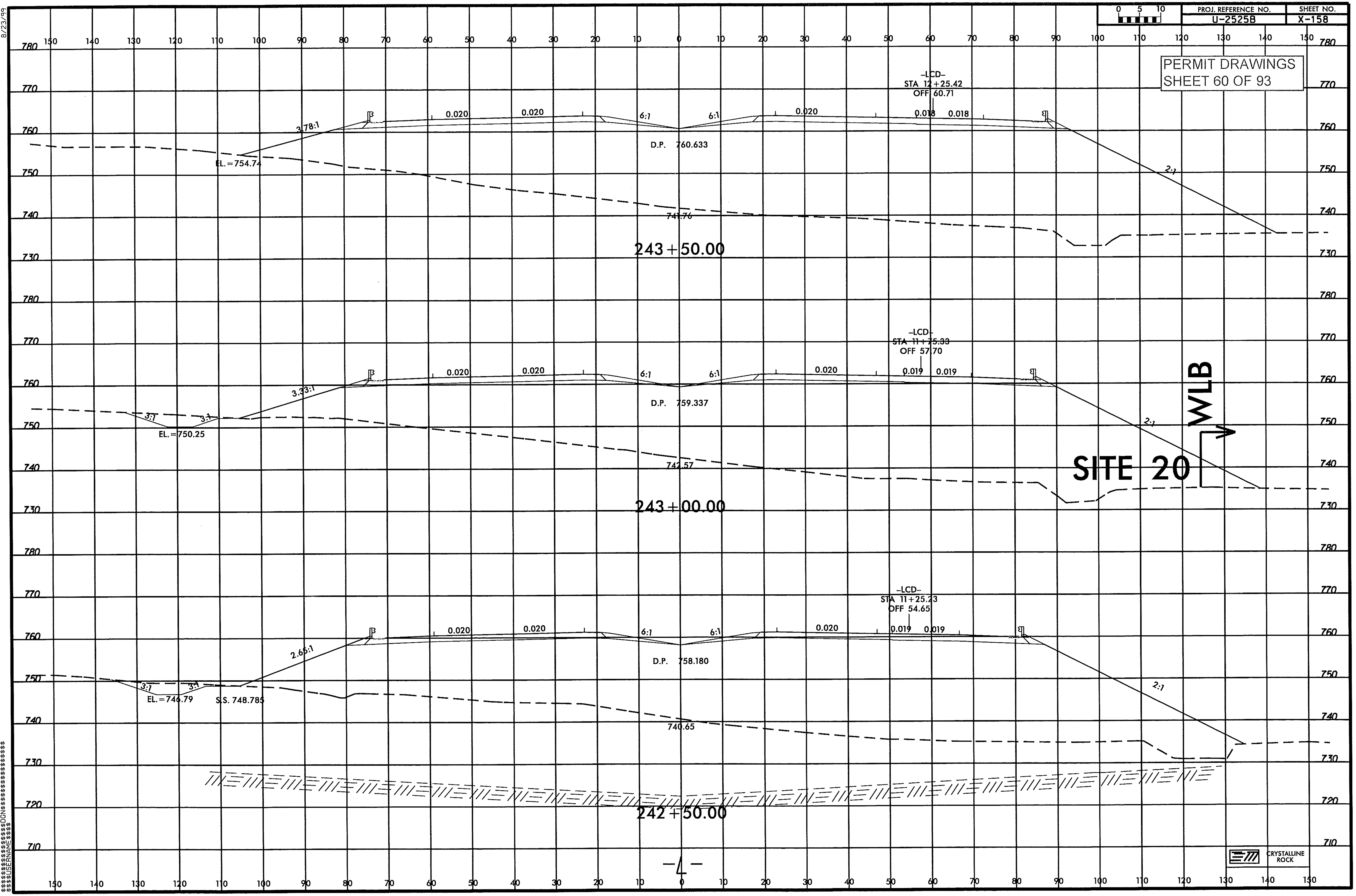
NCDOT
DIVISION OF HIGHWAYS
GUILFORD COUNTY
PROJECT: 34821.1.1 (U-2525B)
GREENSBORO EASTERN LOOP
FROM NORTH OF US 70
RELOCATION TO US 29 NORTH
OF GREENSBORO

SHEET OF 03/08/13

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-158

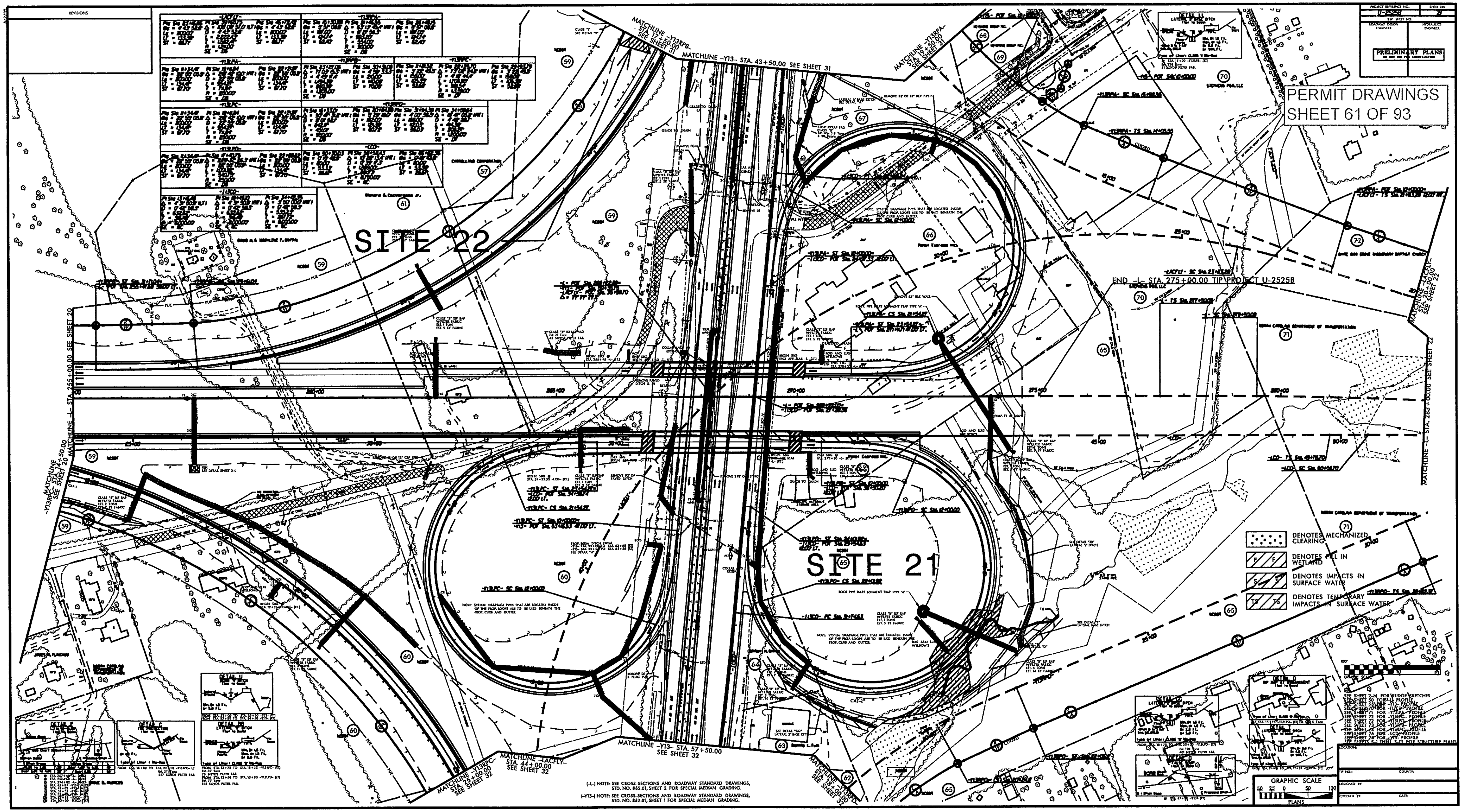
PERMIT DRAWINGS
SHEET 60 OF 93



0 5 10
-LCD-
STA 12+25.42
OFF 60.71
0.020
0.020
6:1
6:1
0.020
0.018
0.018
3.78:1
EL.=754.74
D.P. 760.633
2:1
741.76
243+50.00
-LCD-
STA 11+75.33
OFF 57.70
0.020
0.020
6:1
6:1
0.020
0.019
0.019
3.33:1
3:1
3:1
EL.=750.25
D.P. 759.337
2:1
742.57
243+00.00
SITE 20
WLB
-LCD-
STA 11+25.23
OFF 54.65
0.020
0.020
6:1
6:1
0.020
0.019
0.019
2.65:1
3:1
3:1
EL.=746.79
S.S. 748.785
D.P. 758.180
2:1
740.65
242+50.00
780
770
760
750
740
730
720
710
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
CRYSTALLINE ROCK

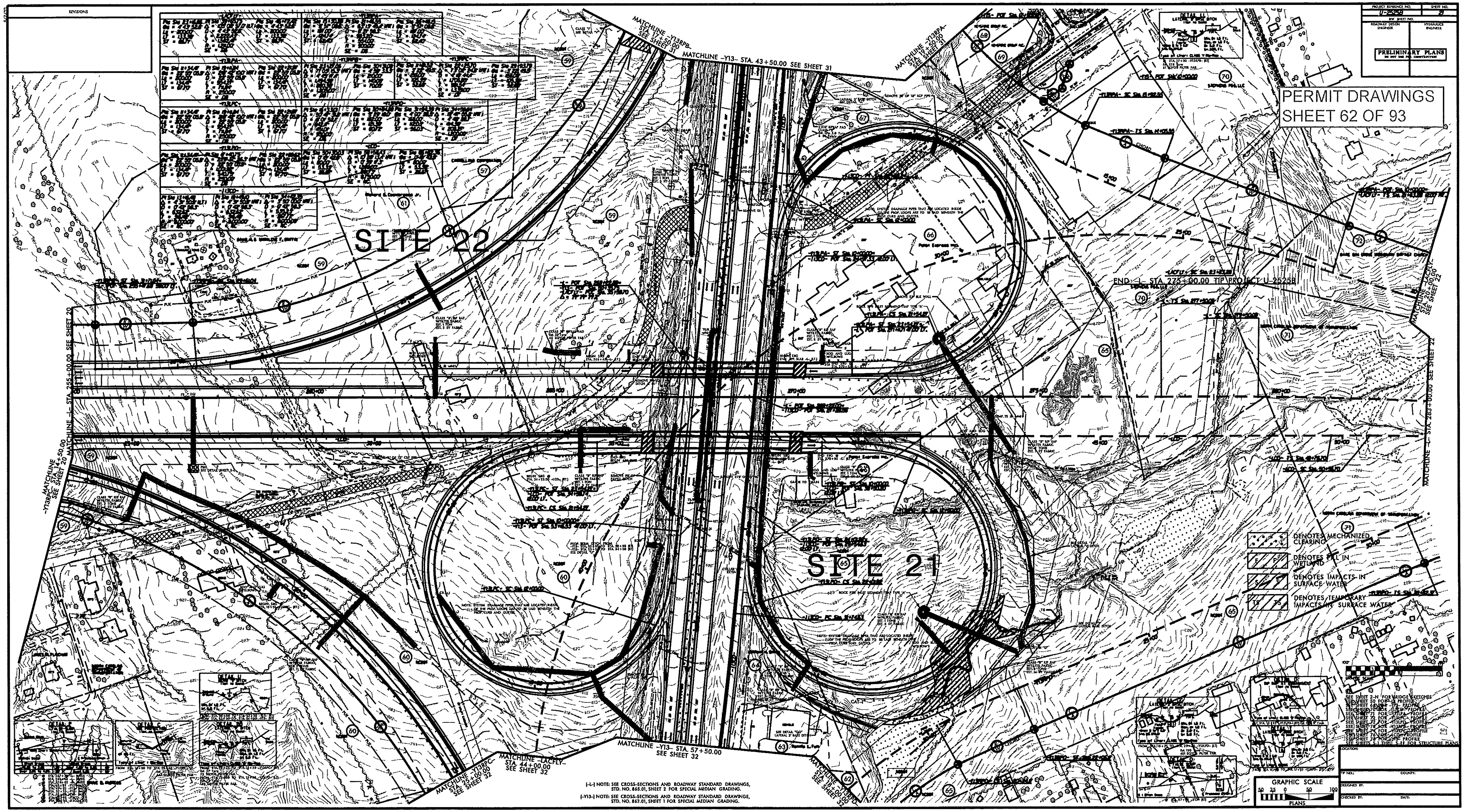
$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PERMIT DRAWINGS
SHEET 61 OF 93


PROJECT REFERENCE NO.
U-2525B
SHEET NO.
21
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
REVISIONS
SITE 22
SITE 21
MATCHLINE -Y13- STA. 43+50.00 SEE SHEET 31
MATCHLINE -Y13- STA. 57+50.00 SEE SHEET 32
MATCHLINE -LACFLY- STA. 44+00.00 SEE SHEET 32
MATCHLINE -L- STA. 265+00.00 SEE SHEET 20
MATCHLINE -L- STA. 283+00.00 SEE SHEET 22
END -L- STA. 275+00.00 TIP PROJECT U-2525B
DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
SEE SHEET 2-N FOR BRIDGE SKETCHES
SEE SHEET 50 FOR -L- PROFILE
SEE SHEET 69 FOR -Y13- PROFILE
SEE SHEET 70 FOR -Y13CD- PROFILE
SEE SHEET 71 FOR -Y13LPA- PROFILE
SEE SHEET 72 FOR -Y13LPC- PROFILE
SEE SHEET 72 FOR -Y13LPD- PROFILE
SEE SHEET 73 FOR -Y13RPB- PROFILE
SEE SHEET 74 FOR -Y13RPC- PROFILE
SEE SHEET 76 FOR -LCD- PROFILE
SEE SHEET 78 FOR -Y13- PROFILE
SEE SHEETS S-1 THRU S-22 FOR STRUCTURE PLANS
GRAPHIC SCALE
50 25 0 50 100
PLANS
LOCATION:
TIP NO.:
COUNTY:
DESIGNED BY:
CHECKED BY:
DATE:

(-L-) NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.

(-Y13-) NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 862.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.


PROJECT REFERENCE NO.
U-2525B
SHEET NO.
21
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
PERMIT DRAWINGS
SHEET 62 OF 93
REVISIONS
SITE 22
SITE 21
MATCHLINE -Y13RPB- STA. 17+50.00 SEE SHEET 31
MATCHLINE -Y13- STA. 43+50.00 SEE SHEET 31
MATCHLINE -Y13RPA- STA. 19+50.00 SEE SHEET 31
MATCHLINE -L- STA. 255+00.00 SEE SHEET 20
MATCHLINE -L- STA. 283+00.00 SEE SHEET 22
MATCHLINE -LACFLY- STA. 43+50.00 SEE SHEET 22
END -L- STA. 275+00.00 TIP PROJECT U-2525B
MATCHLINE -Y13RPC- STA. 14+50.00 SEE SHEET 20
MATCHLINE -Y13RPC- STA. 15+00.00 SEE SHEET 32
MATCHLINE -LACFLY- STA. 44+00.00 SEE SHEET 32
MATCHLINE -Y13- STA. 57+50.00 SEE SHEET 32
MATCHLINE -Y13RPD- STA. 18+00.00 SEE SHEET 32
DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
GRAPHIC SCALE
50 25 0 50 100
PLANS
LOCATION:
TIP NO.:
COUNTY:
DESIGNED BY:
CHECKED BY:
DATE:

SEE SHEET 2-N FOR BRIDGE SKETCHES
SEE SHEET 50 FOR -L- PROFILE
SEE SHEET 69 FOR -Y13- PROFILE
SEE SHEET 70 FOR -Y13CD- PROFILE
SEE SHEET 71 FOR -Y13LPA- PROFILE
SEE SHEET 72 FOR -Y13LPC- PROFILE
SEE SHEET 72 FOR -Y13LPD- PROFILE
SEE SHEET 78 FOR -Y13RPB- PROFILE
SEE SHEET 74 FOR -Y13RPC- PROFILE
SEE SHEET 76 FOR -LCD- PROFILE
SEE SHEET 78 FOR -Y15- PROFILE
SEE SHEETS S-1 THRU S-18 FOR STRUCTURE PLANS

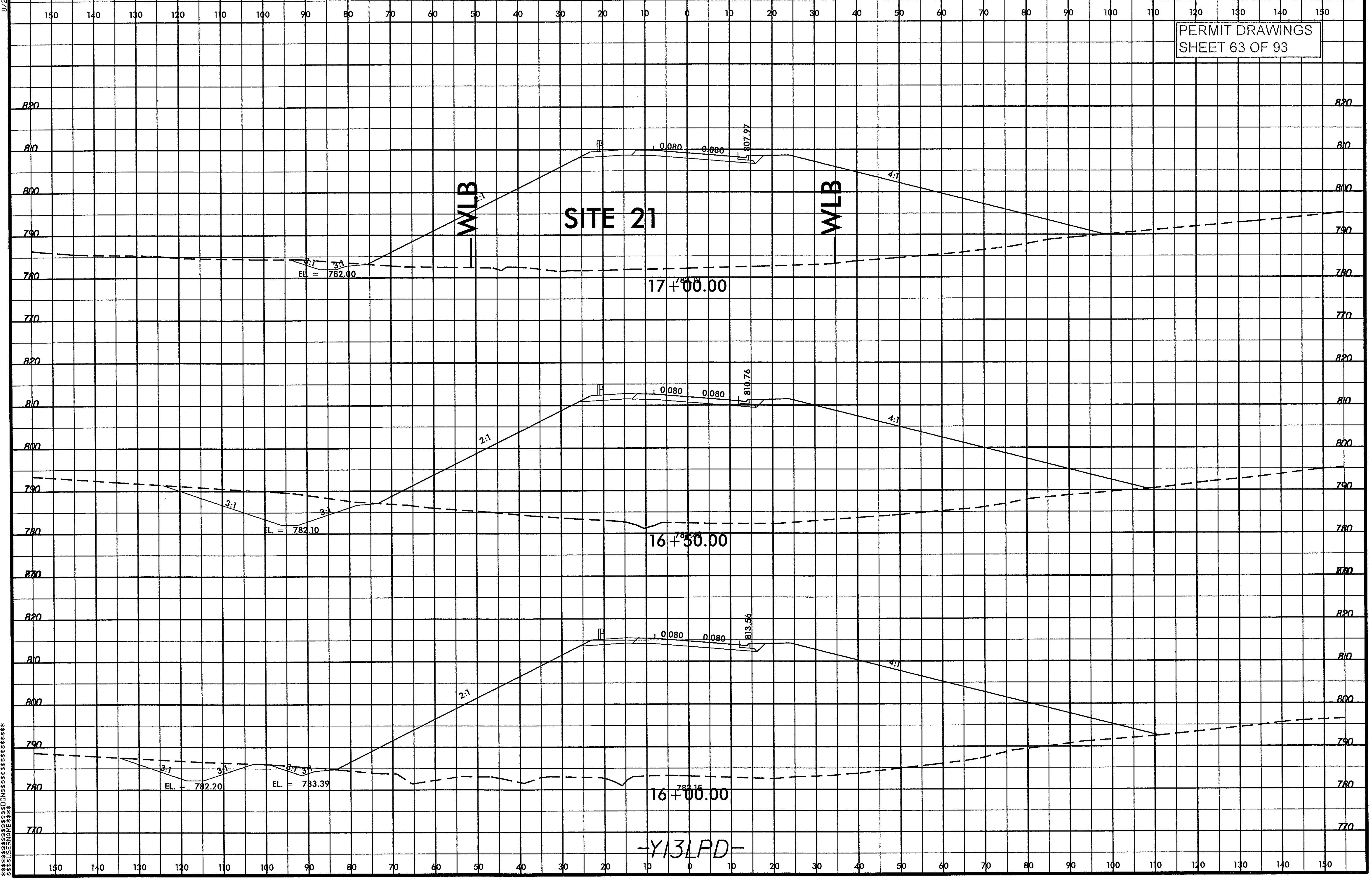
(-L-) NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.

(-Y13-) NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 862.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2525B	X-372

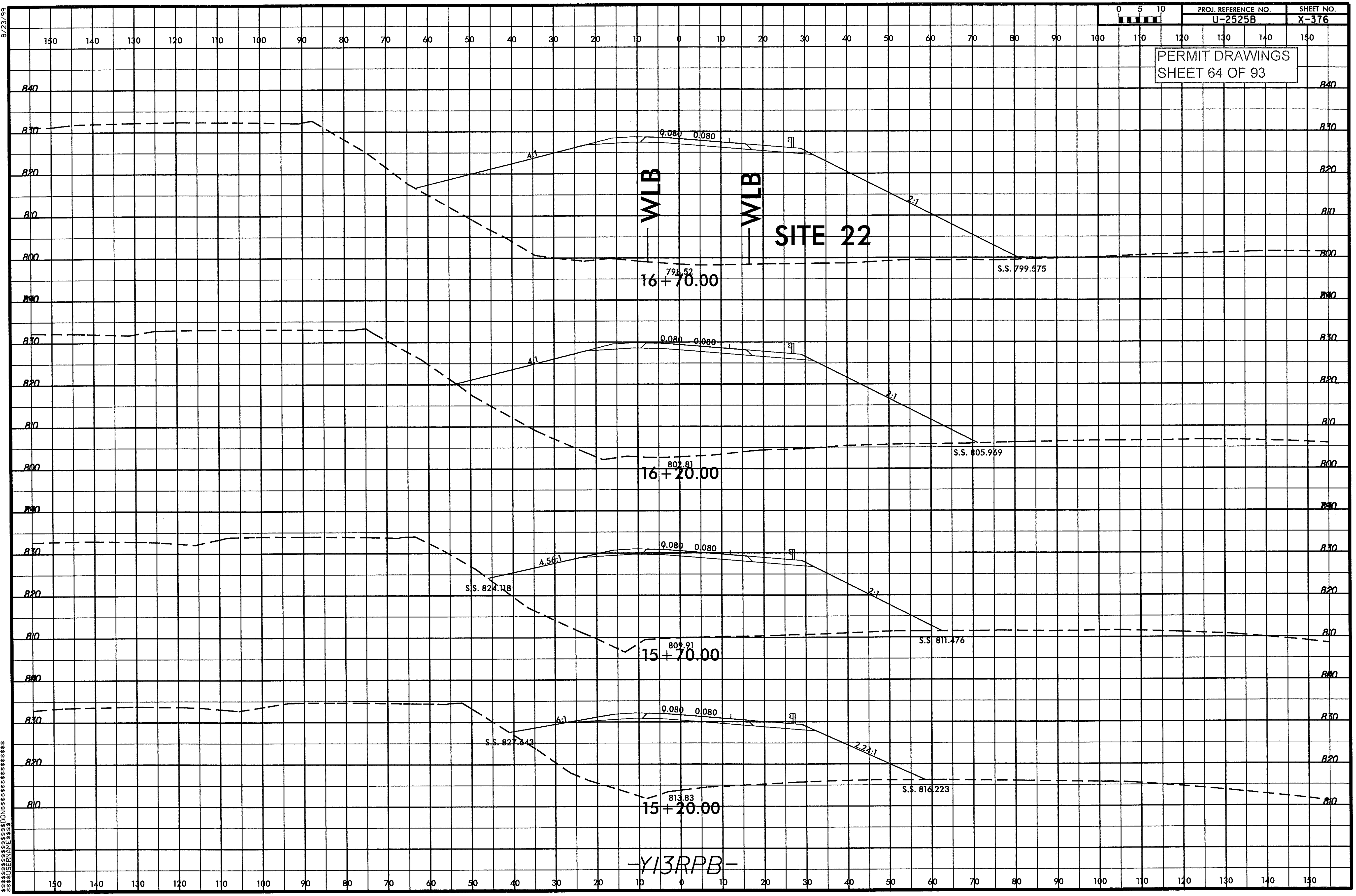
PERMIT DRAWINGS
SHEET 63 OF 93


SITE 21
WLB
WLB
17+00.00
16+50.00
16+00.00
0.080
0.080
807.97
810.76
813.56
2:1
4:1
3:1
EL. = 782.00
EL. = 782.10
EL. = 782.20
EL. = 783.39
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
820
810
800
790
780
770
-Y13LPD-

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

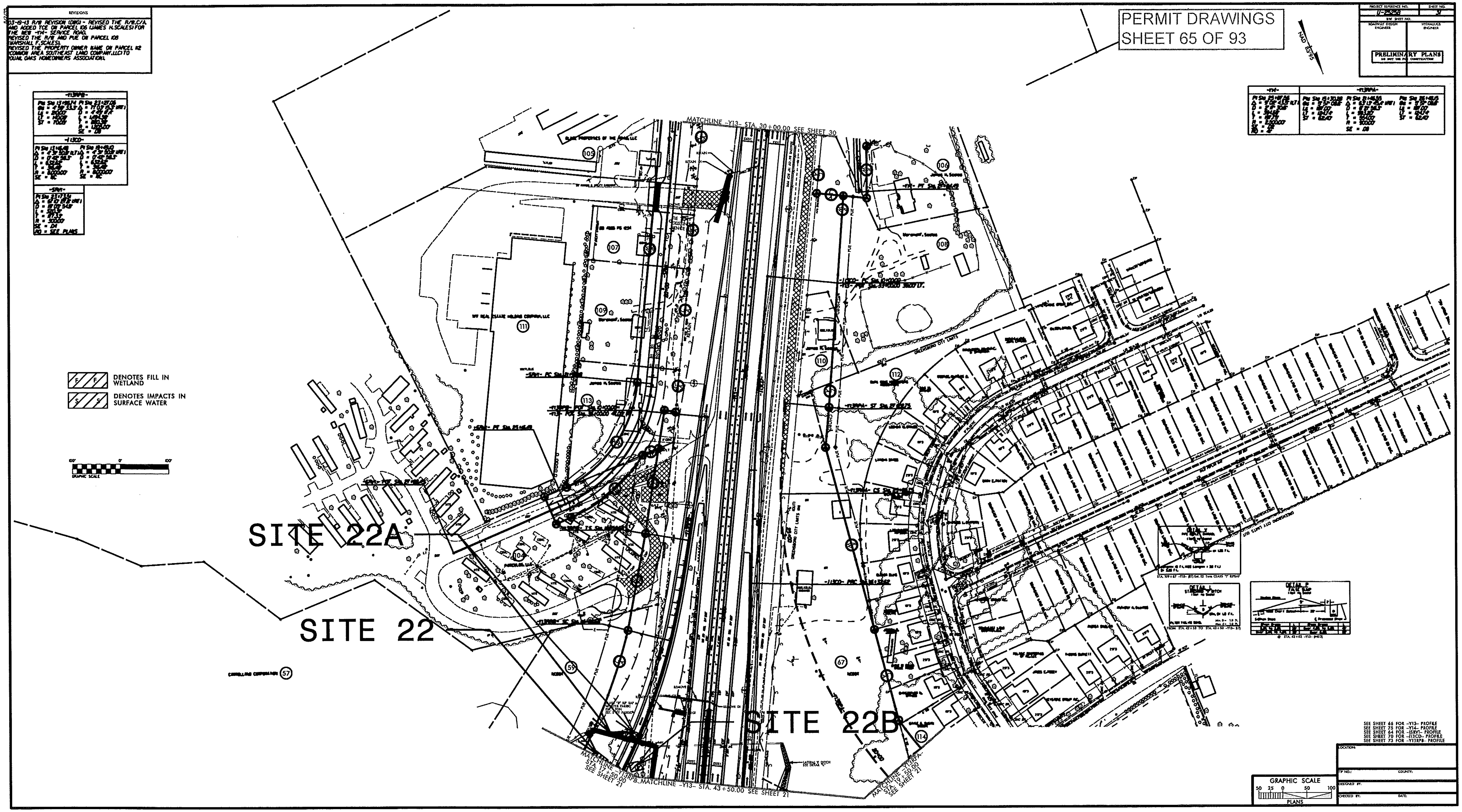
PERMIT DRAWINGS
SHEET 64 OF 93

8/23/99


0 5 10
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
840
830
820
810
800
-WLB-
-WLB-
SITE 22
0.080 0.080
4:1
2:1
798.52
16+70.00
S.S. 799.575
802.81
16+20.00
S.S. 805.969
4.56:1
S.S. 824.118
809.91
15+70.00
S.S. 811.476
6:1
2.24:1
S.S. 827.643
813.83
15+20.00
S.S. 816.223
-Y13RPB-

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

PERMIT DRAWINGS
SHEET 65 OF 93


SITE 22A
SITE 22
SITE 22B
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
MATCHLINE -Y13- STA. 30+00.00 SEE SHEET 30
MATCHLINE -Y13RPB- STA. 17+50.00 SEE SHEET 21
MATCHLINE -Y13- STA. 43+50.00 SEE SHEET 21
MATCHLINE -Y13RPA- STA. 19+50.00 SEE SHEET 21
LATERAL V DITCH SEE DETAIL "L"
GRAPHIC SCALE
50 25 0 50 100
PLANS
PROJECT REFERENCE NO.
U-2525B
SHEET NO.
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
LOCATION:
TIP NO.:
COUNTY:
DESIGNED BY:
CHECKED BY:
DATE:

REVISIONS

03-19-13 R/W REVISION (DRG) - REVISED THE R/W, C/A, AND ADDED TCE ON PARCEL 106 (JAMES H. SCALES) FOR THE NEW -Y14- SERVICE ROAD.
REVISED THE R/W AND PUE ON PARCEL 108 (MARSHALL F. SCALES).
REVISED THE PROPERTY OWNER NAME ON PARCEL 112 (COMMON AREA SOUTHEAST LAND COMPANY, LLC) TO QUAIL OAKS HOMEOWNERS ASSOCIATION.

SEE SHEET 66 FOR -Y13- PROFILE
SEE SHEET 75 FOR -Y14- PROFILE
SEE SHEET 64 FOR -ISRV1- PROFILE
SEE SHEET 70 FOR -I13CD- PROFILE
SEE SHEET 73 FOR -Y13RPB- PROFILE

PERMIT DRAWINGS
SHEET 66 OF 93

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	31

R/W SHEET NO.

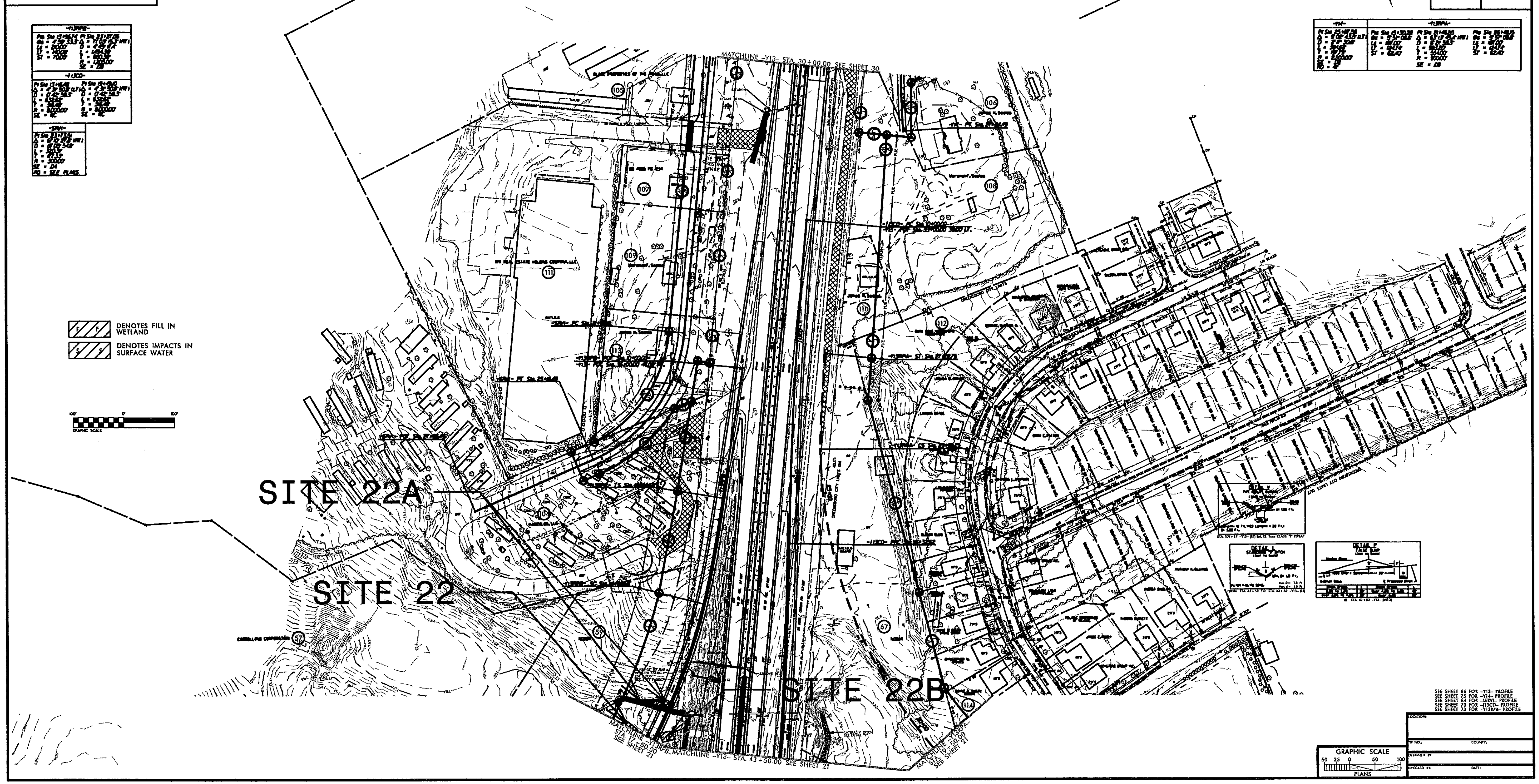
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

03-19-13 R/W REVISION (DWG) - REVISED THE R/W,C/A, AND ADDED TCE ON PARCEL 106 (JAMES H.SCALES) FOR THE NEW -Y14- SERVICE ROAD.
REVISED THE R/W AND PUE ON PARCEL 108 (MARSHALL F.SCALES).
REVISED THE PROPERTY OWNER NAME ON PARCEL 112 (COMMON AREA SOUTHEAST LAND COMPANY,LLC) TO (QUAIL OAKS HOMEOWNERS ASSOCIATION).


NAD 83/95
-Y13RPB-
-I13CD-
-SRV1-
-Y13RPA-
-Y14-
MATCHLINE -Y13- STA. 30+00.00 SEE SHEET 30
SITE 22A
SITE 22
SITE 22B
MATCHLINE -Y13RPB- STA. 17+50.00 SEE SHEET 21
MATCHLINE -Y13- STA. 43+50.00 SEE SHEET 21
MATCHLINE -Y13RPA- STA. 19+50.00 SEE SHEET 21
105
106
107
108
109
111
112
113
114
67
57
DETAIL 1
DETAIL 2
100' 0' 100'
GRAPHIC SCALE

▨ DENOTES FILL IN WETLAND
▨ DENOTES IMPACTS IN SURFACE WATER

SEE SHEET 66 FOR -Y13- PROFILE
SEE SHEET 75 FOR -Y14- PROFILE
SEE SHEET 64 FOR -SRV1- PROFILE
SEE SHEET 70 FOR -I13CD- PROFILE
SEE SHEET 73 FOR -Y13RPB- PROFILE

GRAPHIC SCALE
50 25 0 50 100
PLANS

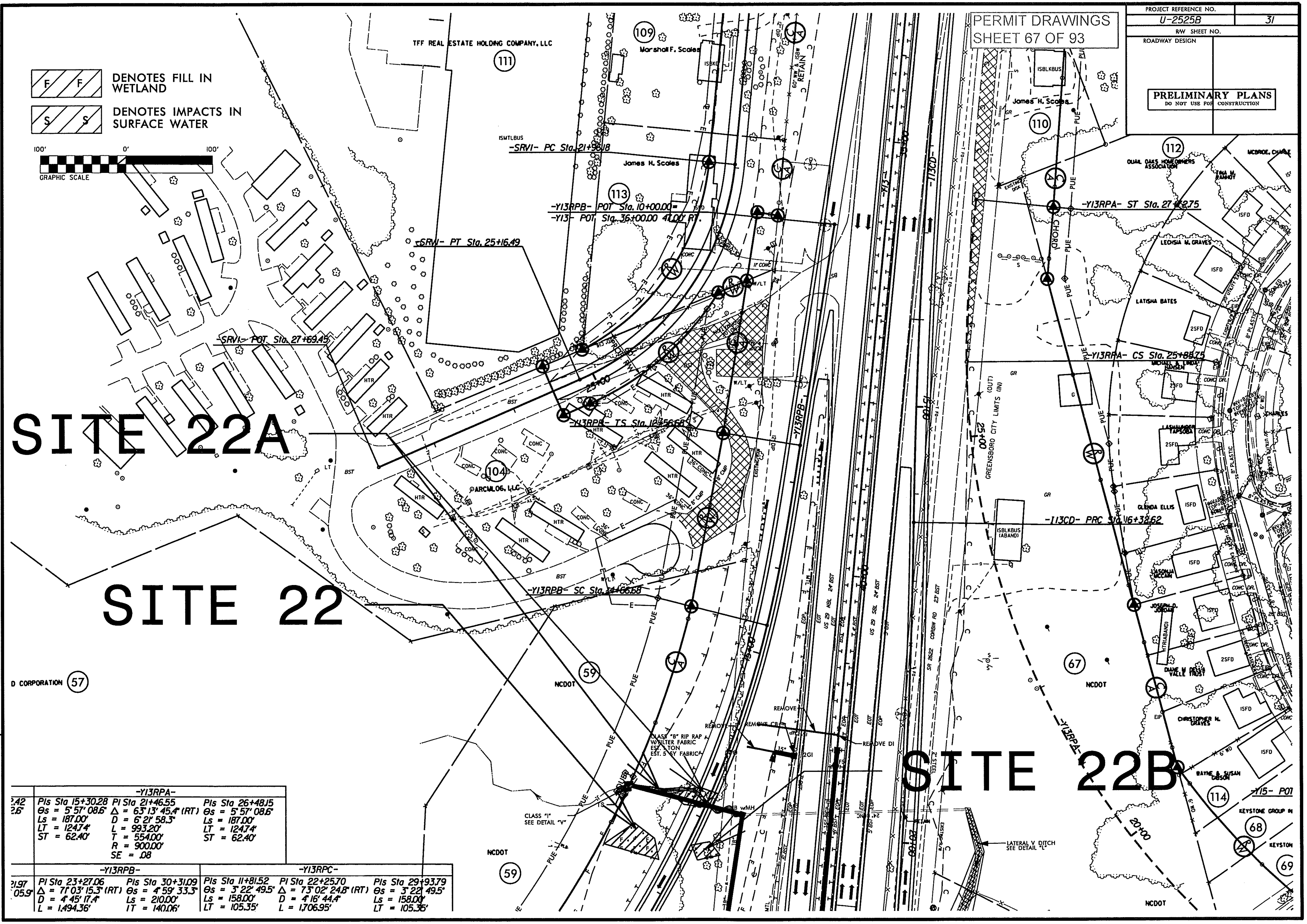
LOCATION:
TIP NO.: COUNTY:
DESIGNED BY:
CHECKED BY: DATE:

PERMIT DRAWINGS
SHEET 67 OF 93

PROJECT REFERENCE NO.	
U-2525B	31
R/W SHEET NO.	
ROADWAY DESIGN	

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

▨ F F	DENOTES FILL IN WETLAND
▨ S S	DENOTES IMPACTS IN SURFACE WATER



100'
0'
100'
GRAPHIC SCALE
SITE 22A
SITE 22
SITE 22B
TFF REAL ESTATE HOLDING COMPANY, LLC
111
109
Marshall F. Scales
James H. Scales
110
112
QUAIL OAKS HOMEOWNERS ASSOCIATION
MCBRIDE, CHARLE
113
104
ARCMLOG, LLC
57
D CORPORATION
59
NCDOT
67
68
69
114
KEYSTONE GROUP IN
ISMTLBUS
-SRVI- PC Sta. 21+96.18
-SRVI- PT Sta. 25+16.49
-SRVI- POT Sta. 27+69.45
-YI3RPB- POT Sta. 10+00.00=
-YI3- POT Sta. 36+00.00 41.00' RT.
-YI3RPB- TS Sta. 16+56.68
-YI3RPB- SC Sta. 14+66.68
-YI3RPA- ST Sta. 27+72.75
-YI3RPA- CS Sta. 25+85.75
-I13CD- PRC Sta. 16+38.62
-Y15- POT
CHORD
LECHSIA M. GRAVES
LATISHA BATES
GLENDA ELLIS
JOSEPH D. JORDAN
CHRISTOPHER N. GRAVES
WAYNE & SUSAN GIBSON
GREENSBORO CITY LIMITS (IN) (OUT)
US 29 NBL
US 29 SBL
CORBIN RD
SR 2622
60' WW & ISBW RETAIN
CLASS "B" RIP RAP W/FILTER FABRIC
CLASS "I" SEE DETAIL "V"
LATERAL V DITCH SEE DETAIL "L"
REMOVE
REMOVE CB
REMOVE DI
ISBLKBUS
ISBLKBUS (ABAND)
PUE
BST
CONC
HTR
2GI

-Y13RPA-		
PIs Sta 15+30.28	PI Sta 21+46.55	PIs Sta 26+48.15
Θs = 5° 57' 08.6"	Δ = 63° 13' 45.4" (RT)	Θs = 5° 57' 08.6"
Ls = 187.00'	D = 6° 21' 58.3"	Ls = 187.00'
LT = 124.74'	L = 993.20'	LT = 124.74'
ST = 62.40'	T = 554.00'	ST = 62.40'
	R = 900.00'	
	SE = .08	

-Y13RPB-	
PI Sta 23+27.06	PIs Sta 30+31.09
Δ = 71° 03' 15.3" (RT)	Θs = 4° 59' 33.3"
D = 4° 45' 17.4"	Ls = 210.00'
L = 1,494.36'	IT = 140.06'

-Y13RPC-		
PIs Sta 11+81.52	PI Sta 22+25.70	PIs Sta 29+93.79
Θs = 3° 22' 49.5"	Δ = 73° 02' 24.8" (RT)	Θs = 3° 22' 49.5"
Ls = 158.00'	D = 4° 16' 44.4"	Ls = 158.00'
LT = 105.35'	L = 1,706.95'	LT = 105.35'

5/14/99

REVISIONS

03-19-13 R/W REVISION (DWG) - COMBINED PARCELS 4 AND 79 INTO PARCEL 4 (CITY OF GREENSBORO), REVISED THE PROPERTY OWNER NAME ON PARCEL 24 (JOHN LEE BROADWAY & TIFFANY N.BROADWAY) TO (ALBERT L.RHEW JR.),COMBINED PARCELS 24 AND 78 INTO PARCEL 24 (ALBERT L.RHEW JR.) AND REVISED THE SOUTHERN PROPERTY LINE, CHANGED THE EXISTING R/W LINES TO PROPERTY LINES BETWEEN PARCEL 24 (ALBERT L.RHEW.JR.) AND PARCEL 80 (NORTHEAST BAPTIST CHURCH) - THIS AREA IS DEEDED TO PARCEL 4 (CITY OF GREENSBORO).

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	25

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

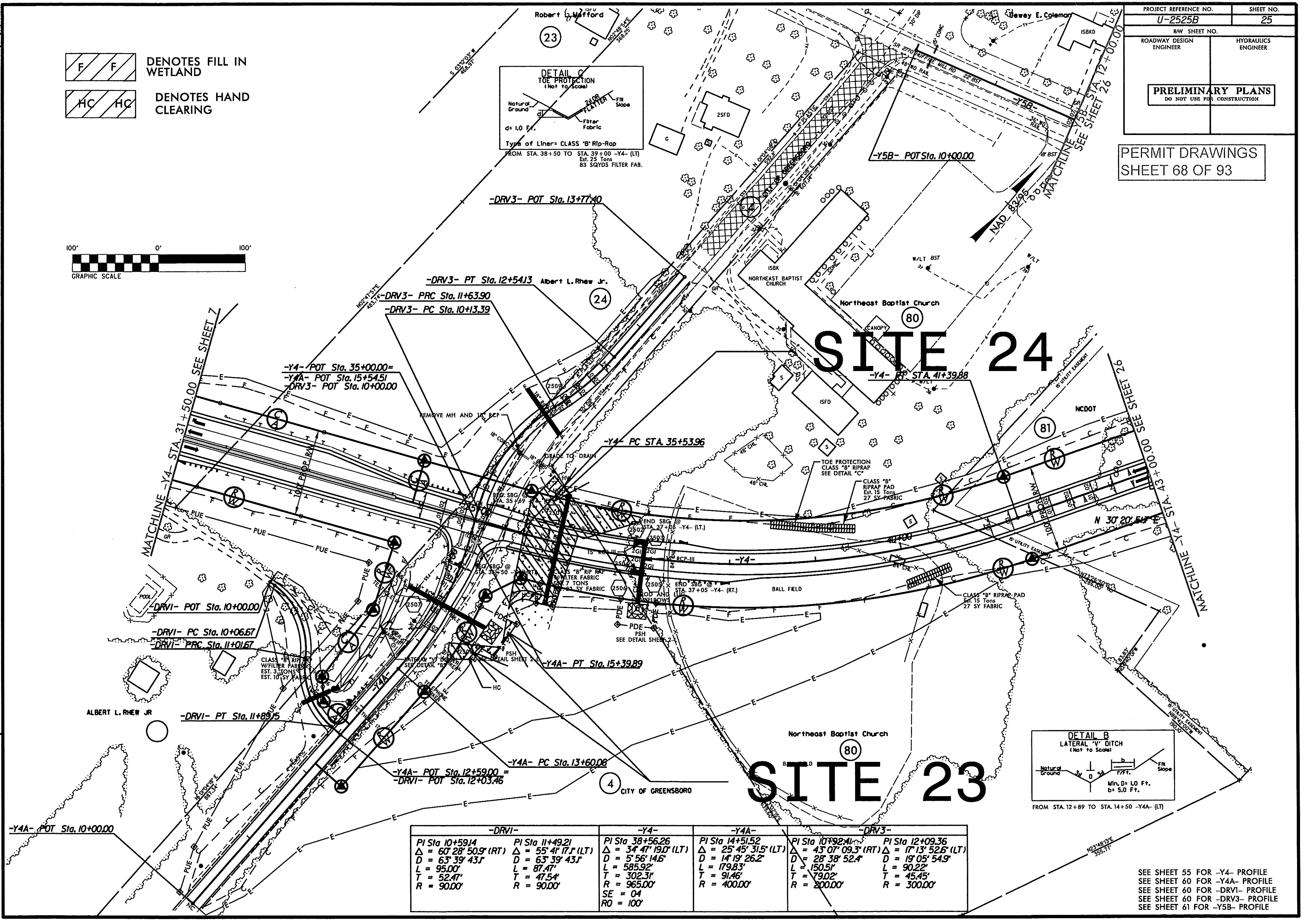
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 68 OF 93

F/ /F DENOTES FILL IN WETLAND

HC/ /HC DENOTES HAND CLEARING


100'
0'
100'
GRAPHIC SCALE
DETAIL C
TOE PROTECTION
(Not to Scale)
Natural Ground
2:1 OR FLATTER
Fill Slope
Filter Fabric
d= 1.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 38+50 TO STA. 39+00 -Y4- (LT)
Est. 25 Tons
83 SQYDS FILTER FAB.
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 12+89 TO STA. 14+50 -Y4A- (LT)
SITE 24
SITE 23
Robert L. Mafford
23
Bewey E. Coleman
24
Albert L. Rhew Jr.
Northeast Baptist Church
80
NORTHEAST BAPTIST CHURCH
81
NCDOT
4
CITY OF GREENSBORO
ALBERT L. RHEW JR
BALL FIELD
NAD 83/95
-DRV3- POT Sta. 13+77.40
-DRV3- PT Sta. 12+54.13
-DRV3- PRC Sta. 11+63.90
-DRV3- PC Sta. 10+13.39
-Y4- POT Sta. 35+00.00=
-Y4A- POT Sta. 15+54.51
-DRV3- POT Sta. 10+00.00
-Y4- PC STA. 35+53.96
-Y4- PT STA. 41+39.88
-Y5B- POT Sta. 10+00.00
-DRV1- POT Sta. 10+00.00
-DRV1- PC Sta. 10+06.67
-DRV1- PRC Sta. 11+01.67
-DRV1- PT Sta. 11+89.15
-Y4A- PT Sta. 15+39.89
-Y4A- PC Sta. 13+60.08
-Y4A- POT Sta. 12+59.00 =
-DRV1- POT Sta. 12+03.46
-Y4A- POT Sta. 10+00.00
MATCHLINE -Y4- STA. 31+50.00 SEE SHEET 7
MATCHLINE -Y4- STA. 43+00.00 SEE SHEET 26
MATCHLINE -Y5B- STA. 12+00.00 SEE SHEET 26
SR 2770 (PAFFORD MILL RD)
REMOVE MH AND 18" RCP
GRADE TO DRAIN
TOE PROTECTION CLASS "B" RIPRAP SEE DETAIL "C"
CLASS "B" RIPRAP PAD Est. 15 Tons 27 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC Est. 7 TONS 23 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 10 SY FABRIC
END SBG STA. 37+05 -Y4- (LT.)
END SBG @ STA. 37+05 -Y4- (RT.)
PSH SEE DETAIL SHEET
N 30°20'51.7" E
15' UTILITY EASEMENT
HC
-Y4-
-Y4A-
-Y5B-

-DRV1-		-Y4-	-Y4A-	-DRV3-	
PI Sta 10+59.14	PI Sta 11+49.21	PI Sta 38+56.26	PI Sta 14+51.52	PI Sta 10+92.41	PI Sta 12+09.36
Δ = 60° 28' 50.9" (RT)	Δ = 55° 41' 17.1" (LT)	Δ = 34° 47' 19.0" (LT)	Δ = 25° 45' 31.5" (LT)	Δ = 43° 07' 09.3" (RT)	Δ = 17° 13' 52.6" (LT)
D = 63° 39' 43.1"	D = 63° 39' 43.1"	D = 5° 56' 14.6"	D = 14° 19' 26.2"	D = 28° 38' 52.4"	D = 19° 05' 54.9"
L = 95.00'	L = 87.47'	L = 585.92'	L = 179.83'	L = 150.51'	L = 90.22'
T = 52.47'	T = 47.54'	T = 302.31'	T = 91.46'	T = 79.02'	T = 45.45'
R = 90.00'	R = 90.00'	R = 965.00'	R = 400.00'	R = 200.00'	R = 300.00'
		SE = 04			
		RO = 100'			

SEE SHEET 55 FOR -Y4- PROFILE
SEE SHEET 60 FOR -Y4A- PROFILE
SEE SHEET 60 FOR -DRV1- PROFILE
SEE SHEET 60 FOR -DRV3- PROFILE
SEE SHEET 61 FOR -Y5B- PROFILE

5/14/99

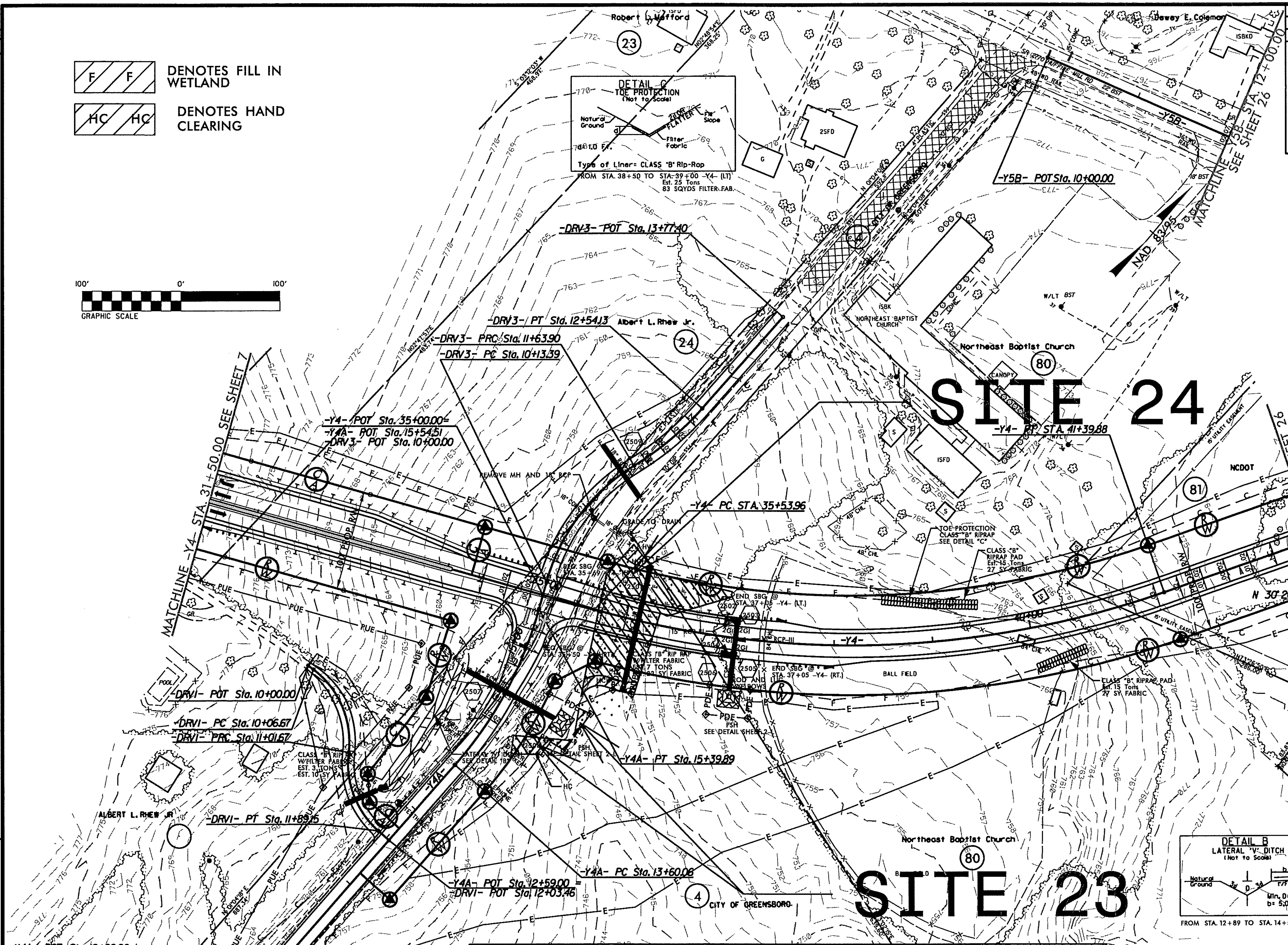
REVISIONS

03-19-13 R/W REVISION (DWG) - COMBINED PARCELS 4 AND 79 INTO PARCEL 4 (CITY OF GREENSBORO). REVISED THE PROPERTY OWNER NAME ON PARCEL 24 (JOHN LEE BROADWAY & TIFFANY N.BROADWAY) TO (ALBERT L.RHEW JR.). COMBINED PARCELS 24 AND 78 INTO PARCEL 24 (ALBERT L.RHEW JR.) AND REVISED THE SOUTHERN PROPERTY LINE. CHANGED THE EXISTING R/W LINES TO PROPERTY LINES BETWEEN PARCEL 24 (ALBERT L.RHEW,JR.) AND PARCEL 80 (NORTHEAST BAPTIST CHURCH) - THIS AREA IS DEEDED TO PARCEL 4 (CITY OF GREENSBORO).

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 69 OF 93



F F DENOTES FILL IN WETLAND
HC HC DENOTES HAND CLEARING
100' 0' 100'
GRAPHIC SCALE
DETAIL C
TOE PROTECTION
(Not to Scale)
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 38+50 TO STA. 39+00 -Y4- (LT)
Est. 25 Tons
83 SQYDS FILTER FAB.
SITE 24
SITE 23
Northeast Baptist Church
Albert L. Rhew Jr.
CITY OF GREENSBORO
NCDOT
-DRV3- POT Sta. 13+77.40
-DRV3- PT Sta. 12+54.13
-DRV3- PRC Sta. 11+63.90
-DRV3- PC Sta. 10+13.39
-Y4- POT Sta. 35+00.00=
-Y4A- POT Sta. 15+54.51
-DRV3- POT Sta. 10+00.00
-Y4- PC STA. 35+53.96
-Y4- PT STA. 41+39.88
-Y5B- POT Sta. 10+00.00
-DRV1- POT Sta. 10+00.00
-DRV1- PC Sta. 10+06.67
-DRV1- PRC Sta. 11+01.67
-DRV1- PT Sta. 11+89.15
-Y4A- PT Sta. 15+39.89
-Y4A- PC Sta. 13+60.06
-Y4A- POT Sta. 12+59.00 =
-DRV1- POT Sta. 12+03.46
-Y4A- POT Sta. 10+00.00
MATCHLINE -Y4- STA. 31+50.00 SEE SHEET 7
MATCHLINE -Y4- STA. 43+00.00 SEE SHEET 26
MATCHLINE -Y5B- STA. 12+00.00 SEE SHEET 26
NAD 83/95
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 12+89 TO STA. 14+50 -Y4A- (LT)

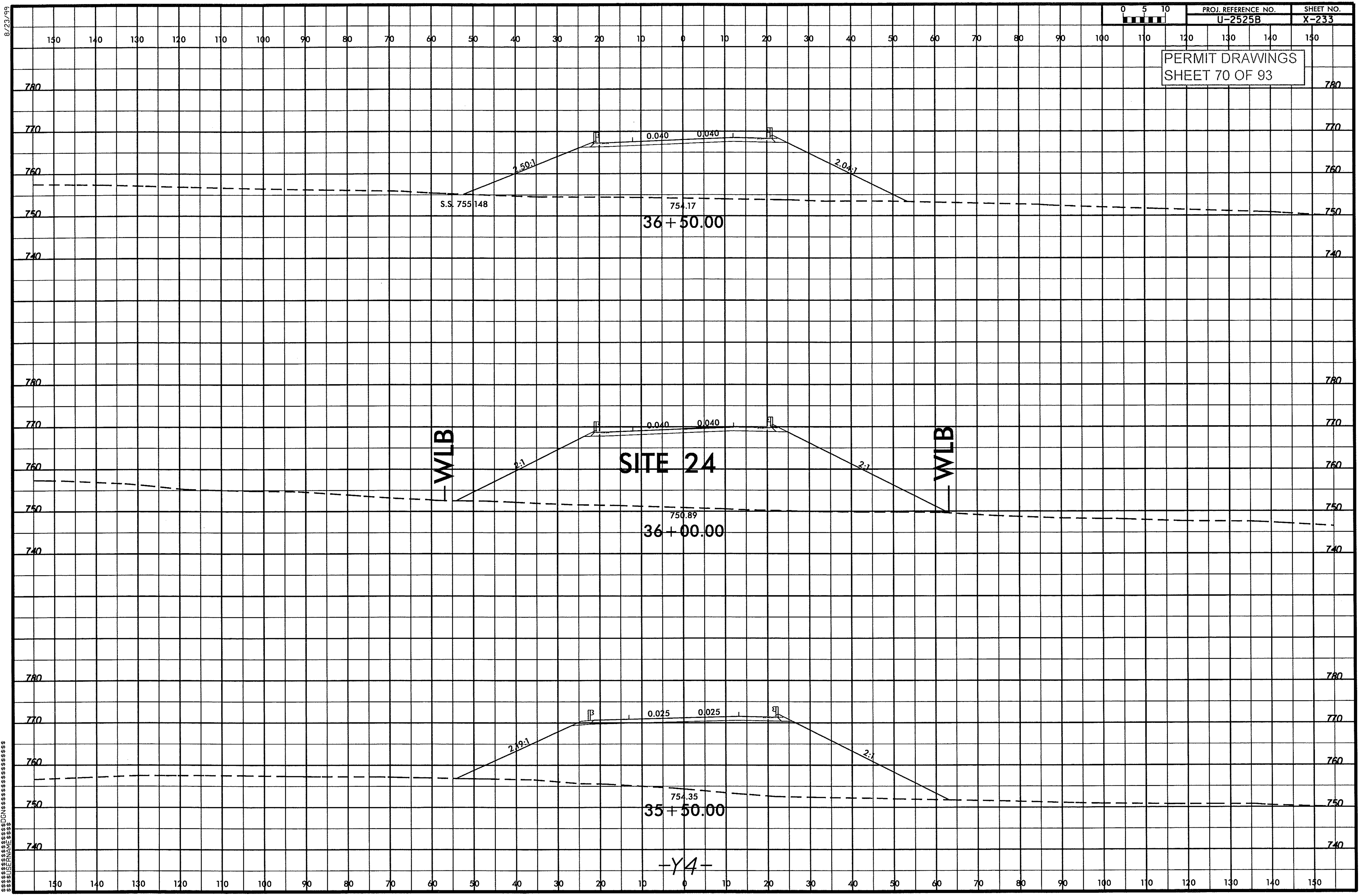
-DRV1-		-Y4-	-Y4A-	-DRV3-	
PI Sta 10+59.14	PI Sta 11+49.21	PI Sta 38+56.26	PI Sta 14+51.52	PI Sta 10+92.41	PI Sta 12+09.36
Δ = 60° 28' 50.9" (RT)	Δ = 55° 41' 17.1" (LT)	Δ = 34° 47' 19.0" (LT)	Δ = 25° 45' 31.5" (LT)	Δ = 43° 07' 09.3" (RT)	Δ = 17° 13' 52.6" (LT)
D = 63° 39' 43.1"	D = 63° 39' 43.1"	D = 5° 56' 14.6"	D = 14° 19' 26.2"	D = 28° 38' 52.4"	D = 19° 05' 54.9"
L = 95.00'	L = 87.47'	L = 585.92'	L = 179.83'	L = 150.51'	L = 90.22'
T = 52.47'	T = 47.54'	T = 302.31'	T = 91.46'	T = 79.02'	T = 45.45'
R = 90.00'	R = 90.00'	R = 965.00'	R = 400.00'	R = 200.00'	R = 300.00'
		SE = 04			
		RO = 100'			

SEE SHEET 55 FOR -Y4- PROFILE
SEE SHEET 60 FOR -Y4A- PROFILE
SEE SHEET 60 FOR -DRV1- PROFILE
SEE SHEET 60 FOR -DRV3- PROFILE
SEE SHEET 61 FOR -Y5B- PROFILE

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-233

PERMIT DRAWINGS
SHEET 70 OF 93



0 5 10
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
780
770
760
750
740
0.040
0.040
2.50:1
2.04:1
S.S. 755.148
754.17
36+50.00
WLB
SITE 24
2:1
2:1
WLB
750.89
36+00.00
0.025
0.025
2.19:1
2:1
754.35
35+50.00
-Y4-

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

PERMIT DRAWINGS
SHEET 71 OF 93

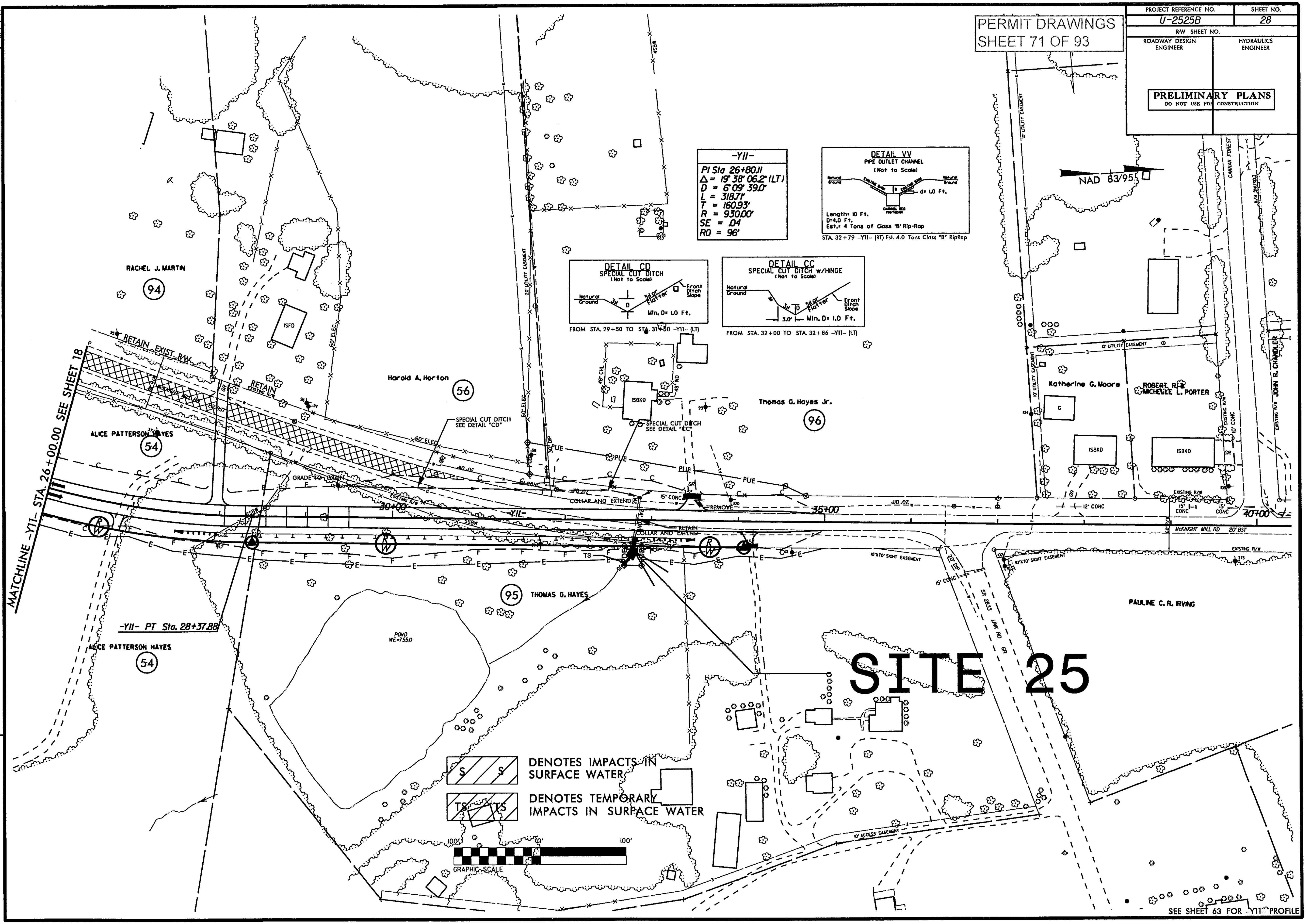
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	28

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



5/14/99
REVISIONS
MATCHLINE -Y11- STA. 26+00.00 SEE SHEET 18
RACHEL J. MARTIN
94
ISFD
Harold A. Horton
56
ALICE PATTERSON HAYES
54
RETAIN EXIST. R/W
RETAIN EXIST R/W
60' ELEC
20' UTILITY EASEMENT
SPECIAL CUT DITCH SEE DETAIL "CD"
SPECIAL CUT DITCH SEE DETAIL "CC"
GRADE TO DRAIN
COLLAR AND EXTEND
COLLAR AND EXTEND
RETAIN
REMOVE
15" CONC
PUE
30+00
35+00
40+00
-Y11-
-Y11- PT Sta. 28+37.88
ISBKD
Thomas G. Hayes Jr.
96
48" CHL
48" WD
THOMAS G. HAYES
95
POND WE=755.0
SITE 25
NAD 83/95
CANNAN FOREST
10' UTILITY EASEMENT
Katherine G. Moore
ROBERT R. & MICHELLE L. PORTER
JOHN R. CHANDLER
ISBKD
ISBKD
12" CONC
EXISTING R/W
McKNIGHT MILL RD 20' BST
10'X70' SIGHT EASEMENT
10'X70' SIGHT EASEMENT
15" CONC
SR 2833 LINK RD GR
PAULINE C. R. IRVING
10' ACCESS EASEMENT
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
100'
0'
100'
GRAPHIC SCALE
SEE SHEET 63 FOR -Y11- PROFILE

-Y11-
PI Sta 26+80.11
Δ = 19° 38' 06.2" (LT)
D = 6° 09' 39.0"
L = 318.71'
T = 160.93'
R = 930.00'
SE = .04
RO = 96'

DETAIL VV
PIPE OUTLET CHANNEL
(Not to Scale)
Length= 10 Ft.
D=4.0 Ft.
Est.= 4 Tons of Class 'B' Rip-Rap
STA. 32+79 -Y11- (RT) Est. 4.0 Tons Class "B" RipRap

DETAIL CD
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
3:1
D
3:1 or Flatter
Front Ditch Slope
Min. D= 1.0 Ft.
FROM STA. 29+50 TO STA. 31+50 -Y11- (LT)

DETAIL CC
SPECIAL CUT DITCH w/HINGE
(Not to Scale)
Natural Ground
3:1
D
3:1 or Flatter
Front Ditch Slope
3.0'
Min. D= 1.0 Ft.
FROM STA. 32+00 TO STA. 32+86 -Y11- (LT)

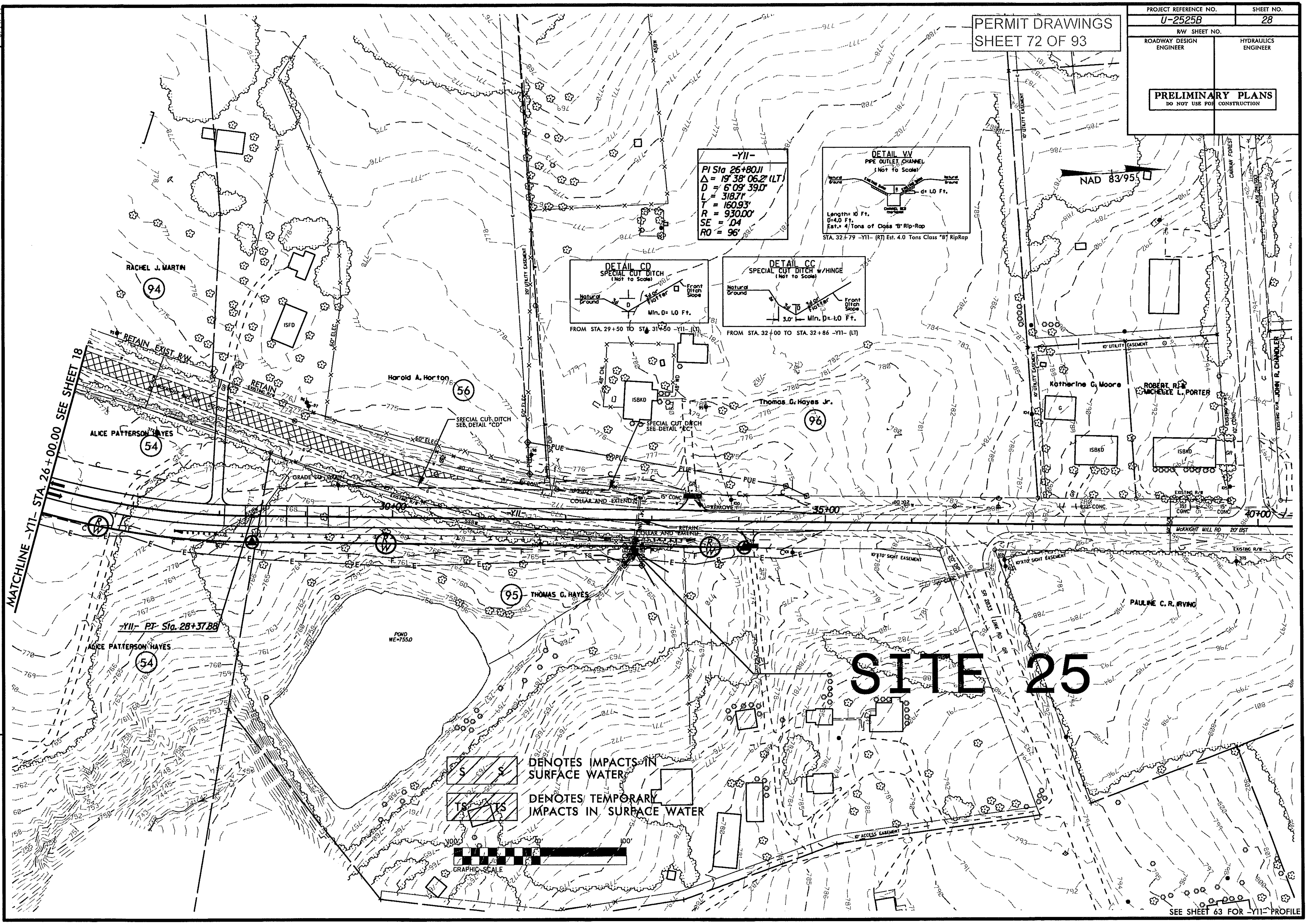
5/14/99

REVISIONS

PERMIT DRAWINGS
SHEET 72 OF 93

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


NAD 83/95
MATCHLINE -Y11- STA. 26+00.00 SEE SHEET 18
RACHEL J. MARTIN
94
ISFD
Harold A. Horton
56
ALICE PATTERSON HAYES
54
RETAIN EXIST. R/W
RETAIN EXIST. R/W
SPECIAL CUT DITCH SEE DETAIL "CD"
SPECIAL CUT DITCH SEE DETAIL "CC"
ISBKD
Thomas G. Hayes Jr.
96
Katherine G. Moore
ROBERT R. & MICHELLE L. PORTER
JOHN R. CHANDLER
CANNAN FOREST
ISBKD
ISBKD
10' UTILITY EASEMENT
20' UTILITY EASEMENT
60' ELEC
50' ELEC
PUE
GRADE TO DRAIN
COLLAR AND EXTEND
COLLAR AND EXTEND
REMOVE
RETAIN
15" CONC
30+00
35+00
40+00
-Y11-
McKNIGHT MILL RD 20' BST
EXISTING R/W
10'x70' SIGHT EASEMENT
10'x70' SIGHT EASEMENT
SR 2833 LINK RD
95
THOMAS G. HAYES
POND WE=755.0
-Y11- PT Sta. 28+37.88
ALICE PATTERSON HAYES
54
PAULINE C. R. IRVING
SITE 25
10' ACCESS EASEMENT
100'
0'
100'
GRAPHIC SCALE
SEE SHEET 63 FOR -Y11- PROFILE

-Y11-
PI Sta 26+80.11
Δ = 19° 38' 06.2" (LT)
D = 6° 09' 39.0"
L = 318.71'
T = 160.93'
R = 930.00'
SE = .04
RO = 96'

DETAIL VV
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
d= 1.0 Ft.
CHANNEL BED
Length= 10 Ft.
D=4.0 Ft.
Est.= 4 Tons of Class "B" Rip-Rap
STA. 32+79 -Y11- (RT) Est. 4.0 Tons Class "B" RipRap

DETAIL CD
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
3:1
D
3:1 or Flatter
Front Ditch Slope
Min. D= 1.0 Ft.
FROM STA. 29+50 TO STA. 31+50 -Y11- (LT)

DETAIL CC
SPECIAL CUT DITCH w/HINGE
(Not to Scale)
Natural Ground
3:1
D
3:1 or Flatter
Front Ditch Slope
3.0'
Min. D= 1.0 Ft.
FROM STA. 32+00 TO STA. 32+86 -Y11- (LT)

S ▨ S	DENOTES IMPACTS IN SURFACE WATER
TS ▨ TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

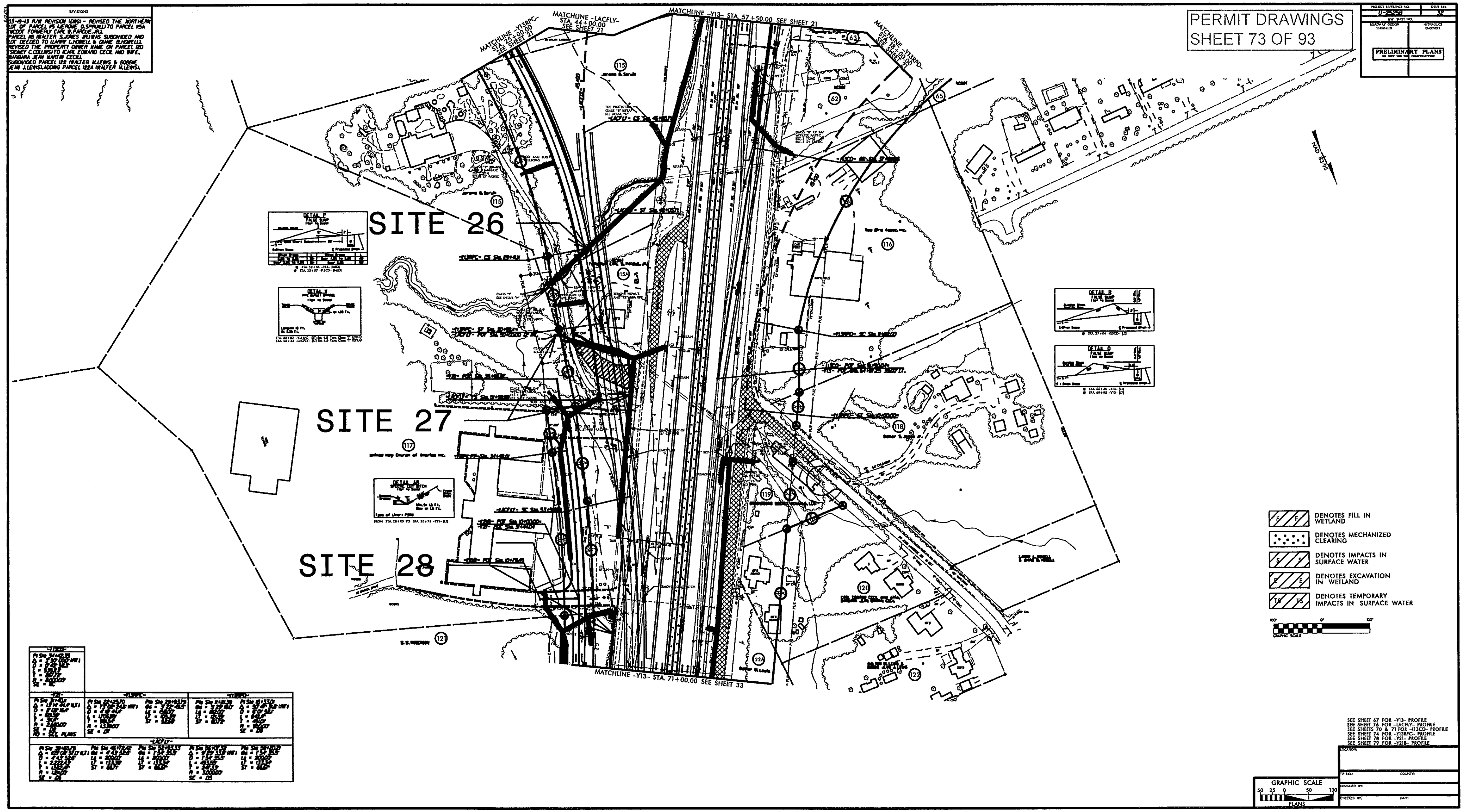
PERMIT DRAWINGS
SHEET 73 OF 93

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

03-19-13 R/W REVISION (DWG) - REVISED THE NORTHERN LOT OF PARCEL #5 (JEROME O.SPRUILL) TO PARCEL #5A (NCDOT FORMERLY CARL W.PARQUE,JR.).
PARCEL #8 (WALTER S.JONES JR.) WAS SUBDIVIDED AND LOT DEEDED TO (LARRY L.HOWELL & DIANE B.HOWELL).
REVISED THE PROPERTY OWNER NAME ON PARCEL 120 (SIDNEY C.COLLINS) TO (CARL EDWARD CECIL AND WIFE, BARBARA JEAN MARTIN CECIL).
SUBDIVIDED PARCEL 122 (WALTER M.LEWIS & BOBBIE JEAN J.LEWIS),ADDING PARCEL 122A (WALTER M.LEWIS).


MATCHLINE -Y13- STA. 57+50.00 SEE SHEET 21
MATCHLINE -LACFLY- STA. 44+00.00 SEE SHEET 21
SITE 26
SITE 27
SITE 28
MATCHLINE -Y13- STA. 71+00.00 SEE SHEET 33
DETAIL P
DETAIL V
DETAIL AB
DETAIL R
DETAIL Q
115
116
117
118
119
120
121
122
122A
62
63
65
NAD 83

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

100' 0' 100'
GRAPHIC SCALE

SEE SHEET 67 FOR -Y13- PROFILE
SEE SHEET 76 FOR -LACFLY- PROFILE
SEE SHEETS 70 & 71 FOR -I13CD- PROFILE
SEE SHEET 74 FOR -Y13RPC- PROFILE
SEE SHEET 78 FOR -Y21- PROFILE
SEE SHEET 79 FOR -Y21B- PROFILE

GRAPHIC SCALE
50 25 0 50 100
PLANS

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

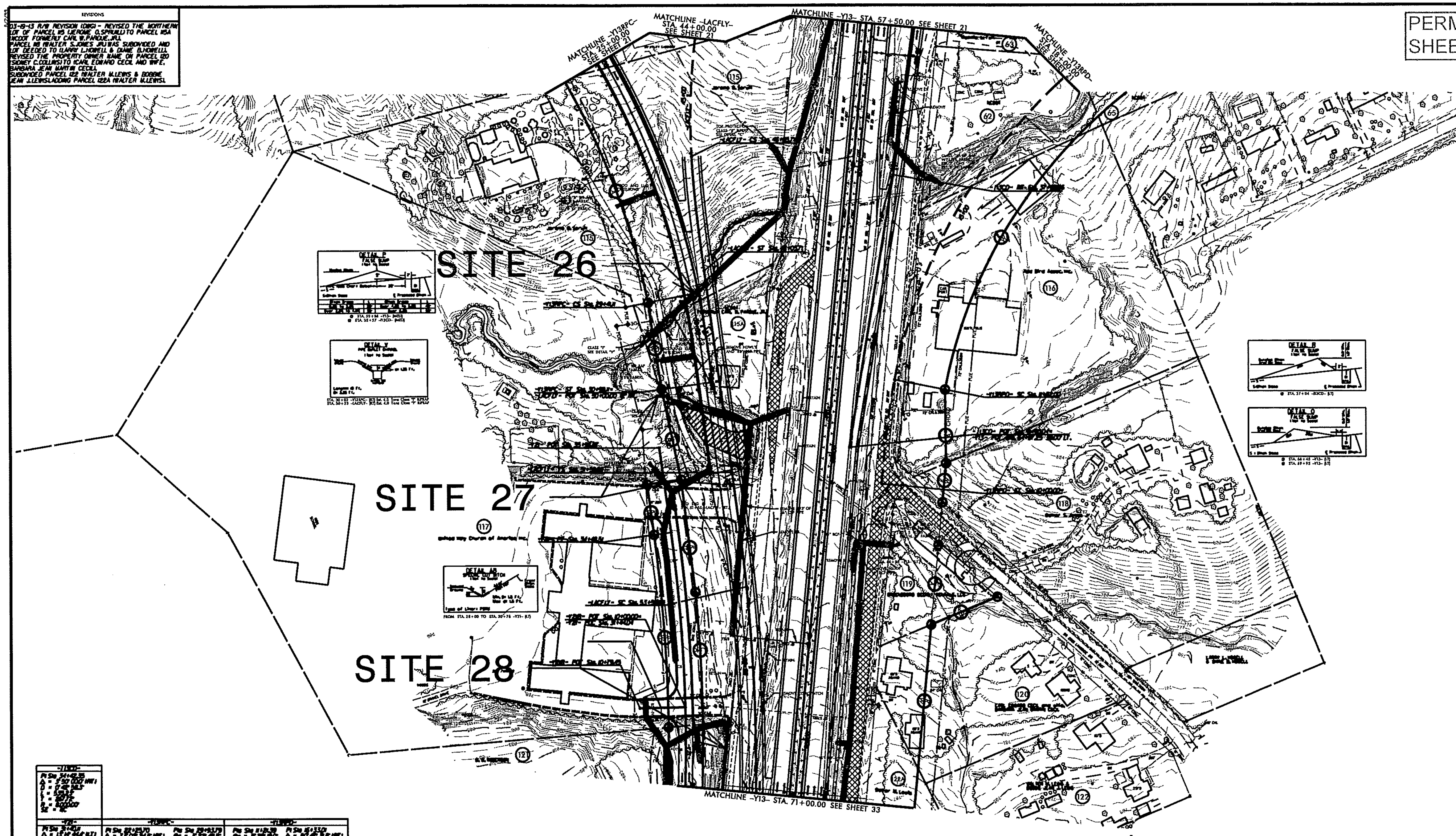
PERMIT DRAWINGS
SHEET 74 OF 93

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

03-19-13 R/W REVISION (DWG) - REVISED THE NORTHERN LOT OF PARCEL 115 (JEROME O.SPRUILL) TO PARCEL 115A (NCDOT FORMERLY CARL W.PARQUE,JR.).
PARCEL 118 (WALTER S.JONES JR.) WAS SUBDIVIDED AND LOT DEEDED TO (LARRY L.HOWELL & DIANE B.HOWELL).
REVISED THE PROPERTY OWNER NAME ON PARCEL 120 (SIDNEY C.COLLINS) TO (CARL EDWARD CECIL AND WIFE, BARBARA JEAN MARTIN CECIL).
SUBDIVIDED PARCEL 122 (WALTER M.LEWIS & BOBBIE JEAN J.LEWIS) ADDING PARCEL 122A (WALTER M.LEWIS).


MATCHLINE -Y13- STA. 57+50.00 SEE SHEET 21
MATCHLINE -LACFLY- STA. 44+00.00 SEE SHEET 21
MATCHLINE -Y13RPC- STA. 25+00.00 SEE SHEET 21
MATCHLINE -Y13RPD- SEE SHEET 21
SITE 26
SITE 27
SITE 28
MATCHLINE -Y13- STA. 71+00.00 SEE SHEET 33
NAD 83/95
DETAIL P
DETAIL V
DETAIL AB
DETAIL B
DETAIL O
115
116
117
118
119
120
121
122
62
63
65

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

100' 0' 100'
GRAPHIC SCALE

-I13CD-
PI Sta 34+42.35
Δ = [illegible] (RT)
D = [illegible]
L = [illegible]
T = [illegible]
R = [illegible]
SE = NC

-Y21-
PI Sta [illegible]
Δ = [illegible] (LT)
D = [illegible]
L = [illegible]
T = [illegible]
R = [illegible]
SE = [illegible]
RO = SEE PLANS

-Y13RPC-
PI Sta [illegible]
Δ = [illegible] (RT)
D = [illegible]
L = [illegible]
T = [illegible]
R = [illegible]
SE = .07

-Y13RPD-
PI Sta [illegible]
Δ = [illegible] (RT)
D = [illegible]
L = [illegible]
T = [illegible]
R = [illegible]
SE = .08

-LACFLY-
PI Sta [illegible]
Δ = [illegible] (LT)
D = [illegible]
L = [illegible]
T = [illegible]
R = [illegible]
SE = .05

PI Sta [illegible]
Δ = [illegible] (RT)
D = [illegible]
L = [illegible]
T = [illegible]
R = 3,000.00'
SE = .05

SEE SHEET 67 FOR -Y13- PROFILE
SEE SHEET 76 FOR -LACFLY- PROFILE
SEE SHEETS 70 & 71 FOR -I13CD- PROFILE
SEE SHEET 74 FOR -Y13RPC- PROFILE
SEE SHEET 78 FOR -Y21- PROFILE
SEE SHEET 79 FOR -Y21B- PROFILE

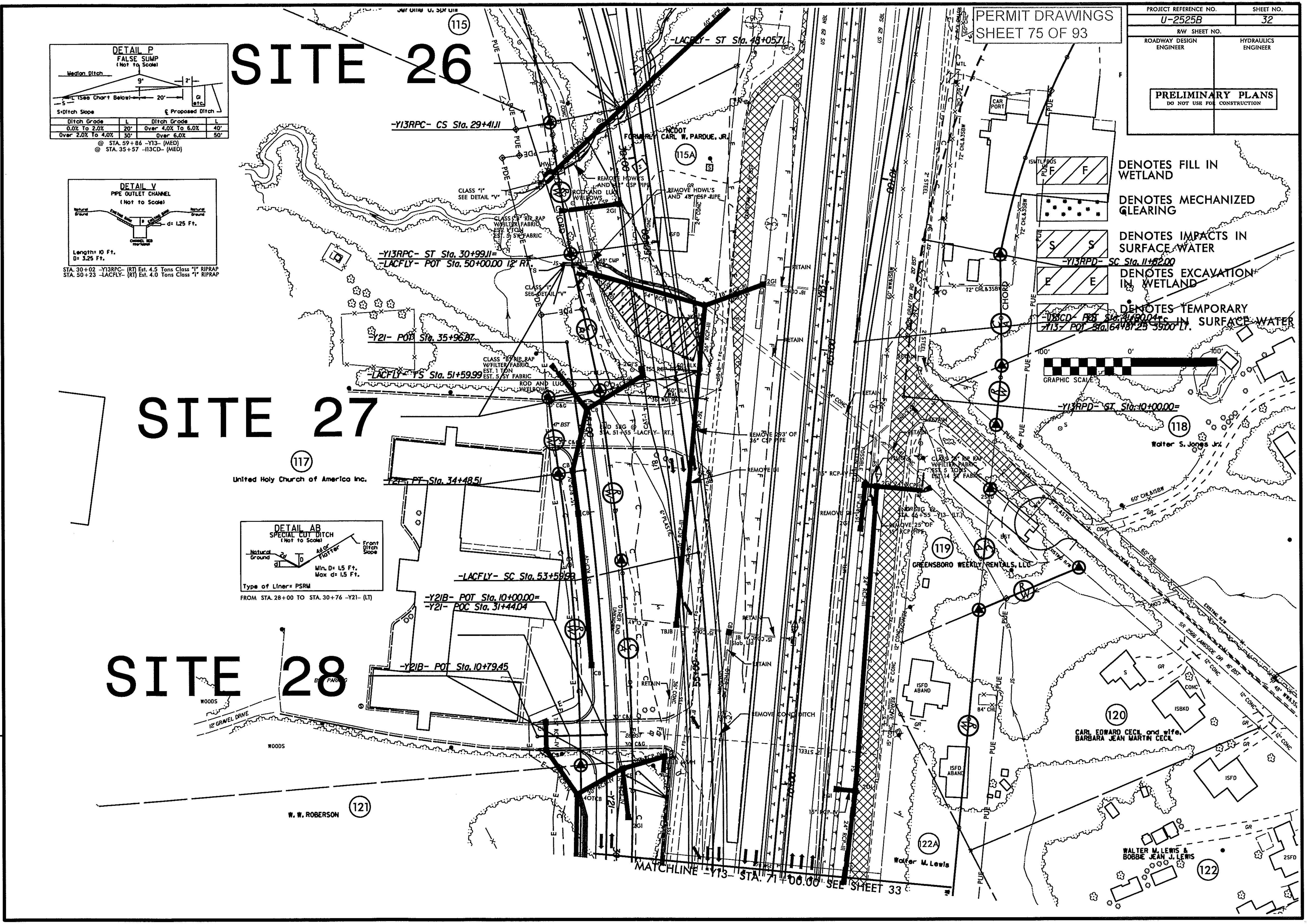
LOCATION:	
TIP NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

GRAPHIC SCALE
50 25 0 50 100
PLANS

PERMIT DRAWINGS
SHEET 75 OF 93

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

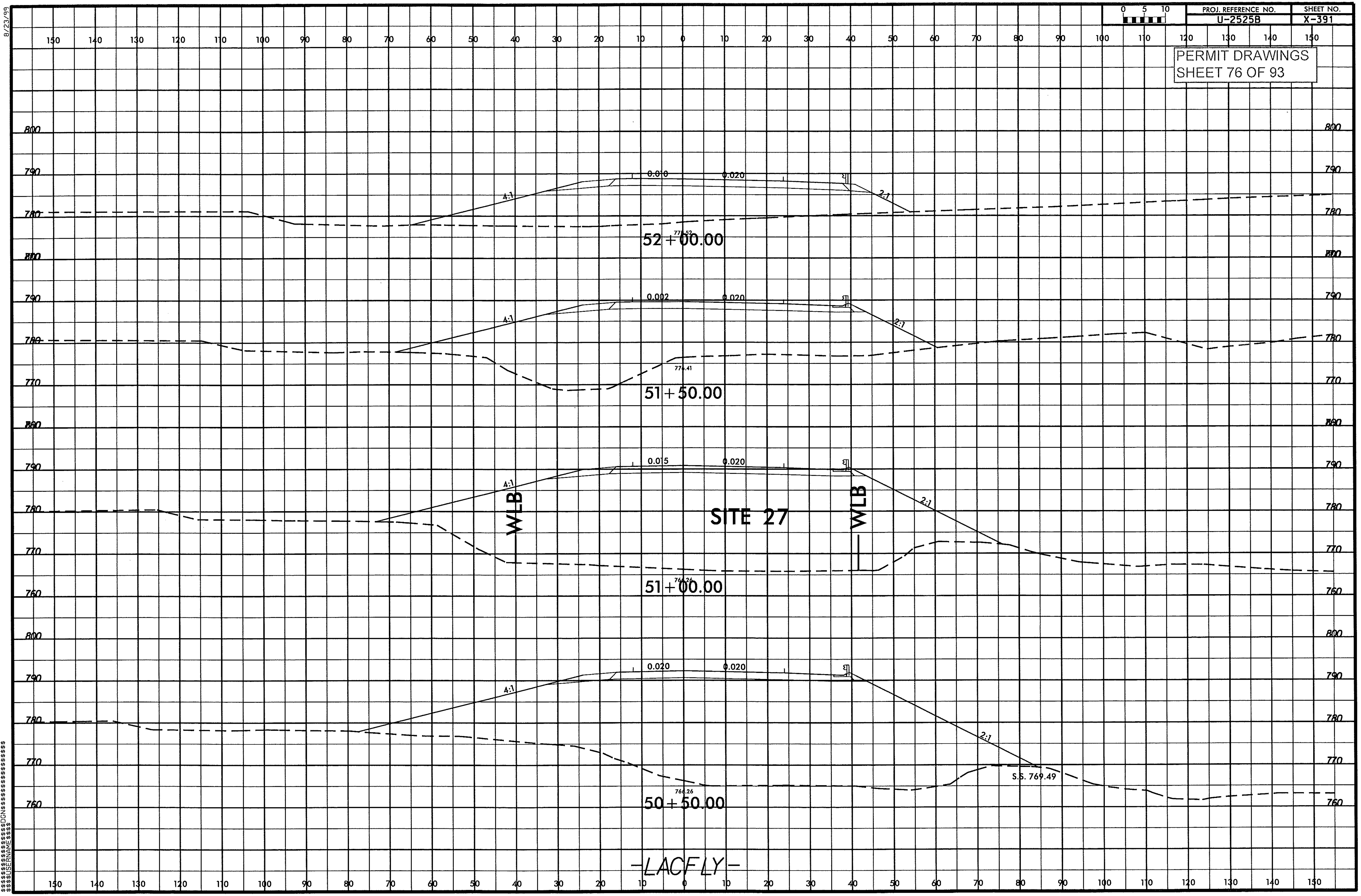

SITE 26
SITE 27
SITE 28
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES EXCAVATION IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
GRAPHIC SCALE
100'
0'
100'
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
S=Ditch Slope
℄ Proposed Ditch
Ditch Grade | L | Ditch Grade | L
0.0% To 2.0% | 20' | Over 4.0% To 6.0% | 40'
Over 2.0% To 4.0% | 30' | Over 6.0% | 50'
@ STA. 59+86 -Y13- (MED)
@ STA. 35+57 -I13CD- (MED)
DETAIL V
PIPE OUTLET CHANNEL
(Not to Scale)
d= 1.25 Ft.
Length= 10 Ft.
D= 3.25 Ft.
STA. 30+02 -Y13RPC- (RT) Est. 4.5 Tons Class "I" RIPRAP
STA. 50+23 -LACFLY- (RT) Est. 4.0 Tons Class "I" RIPRAP
DETAIL AB
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
Front Ditch Slope
Min. D= 1.5 Ft.
Max d= 1.5 Ft.
Type of Liner= PSRM
FROM STA. 28+00 TO STA. 30+76 -Y21- (LT)
-LACFLY- ST Sta. 48+05.71
-Y13RPC- CS Sta. 29+41.11
-Y13RPC- ST Sta. 30+99.11=
-LACFLY- POT Sta. 50+00.00 12' RT.
-Y21- POT Sta. 35+96.87
-LACFLY- TS Sta. 51+59.99
-Y21- PT Sta. 34+48.51
-LACFLY- SC Sta. 53+59.99
-Y21B- POT Sta. 10+00.00=
-Y21- POC Sta. 31+44.04
-Y21B- POT Sta. 10+79.45
-Y13RPD- SC Sta. 11+82.00
-I13CD- POT Sta. 31+80.04=
-Y13- POT Sta. 64+81.25 39.00' LT.
-Y13RPD- ST Sta. 10+00.00=
MATCHLINE -Y13- STA. 71+00.00 SEE SHEET 33
115 Jerome U. Sprui
115A NCDOT FORMERLY CARL W. PARDUE, JR.
117 United Holy Church of America Inc.
118 Walter S. Jones Jr.
119 GREENSBORO WEEKLY RENTALS, LLC
120 CARL EDWARD CECIL and wife, BARBARA JEAN MARTIN CECIL
121 W. W. ROBERSON
122A Walter M. Lewis
122 WALTER M. LEWIS & BOBBIE JEAN J. LEWIS
US 29 NBL
US 29 SBL
SR 2526 LAKESIDE DR
GRAFTON RD
REMOVE 293' OF 36" CSP PIPE
REMOVE CONC DITCH
RETAIN
WOODS
12' GRAVEL DRIVE

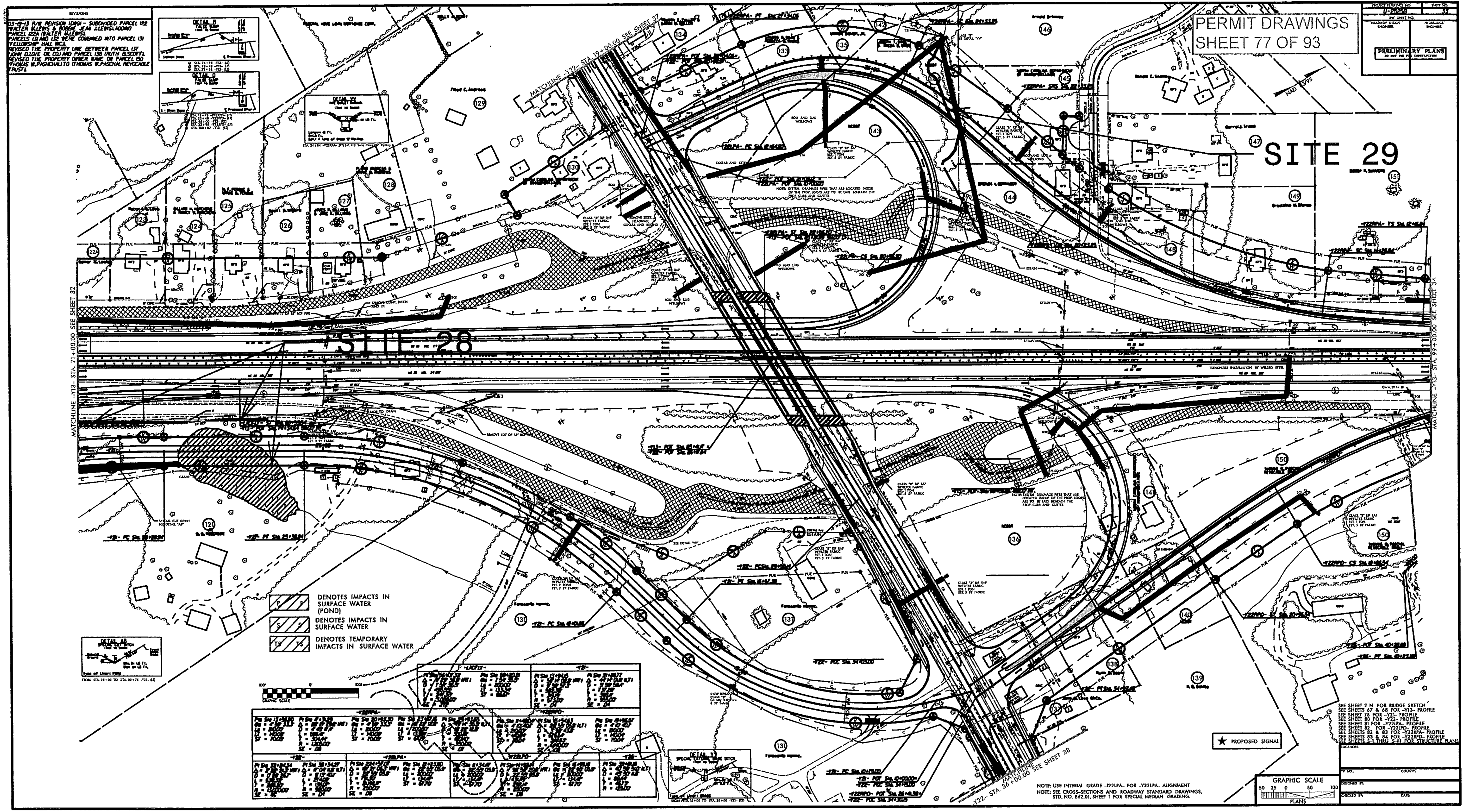
8/23/99

PROJ. REFERENCE NO. U-2525B

SHEET NO. X-391

PERMIT DRAWINGS
SHEET 76 OF 93


0 5 10
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
800
790
780
770
760
0.010
0.020
4:1
2:1
771.52
52+00.00
0.002
0.020
776.41
51+50.00
0.015
0.020
WLB
WLB
SITE 27
766.26
51+00.00
0.020
0.020
S.S. 769.49
766.26
50+50.00
-LACFLY-
$$$$$$SYSTIME$$$$$
$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$



REVISIONS

03-19-13 R/W REVISION (DWG) - SUBDIVIDED PARCEL 122 (WALTER W.LEWIS & BOBBIE JEAN J.LEWIS),ADDING PARCEL 122A (WALTER W.LEWIS).
PARCELS 131 AND 132 WERE COMBINED INTO PARCEL 131 (FELLOWSHIP HALL INC.).
REVISED THE PROPERTY LINE BETWEEN PARCEL 137 (JOHN D.LOVE OIL CO.) AND PARCEL 138 (RUTH B.SCOTT).
REVISED THE PROPERTY OWNER NAME ON PARCEL 150 (THOMAS W.PASHCHAL) TO (THOMAS W.PASCHAL REVOCABLE TRUST).

PERMIT DRAWINGS
SHEET 77 OF 93

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	33

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SITE 29

SITE 28

P	DENOTES IMPACTS IN SURFACE WATER (POND)
S	DENOTES IMPACTS IN SURFACE WATER
TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

★ PROPOSED SIGNAL

SEE SHEET 2-N FOR BRIDGE SKETCH
SEE SHEETS 67 & 68 FOR -Y13- PROFILE
SEE SHEET 78 FOR -Y21- PROFILE
SEE SHEET 80 FOR -Y22- PROFILE
SEE SHEET 81 FOR -Y22LPA- PROFILE
SEE SHEET 82 FOR -Y22LPD- PROFILE
SEE SHEETS 82 & 83 FOR -Y22RPA- PROFILE
SEE SHEETS 83 & 84 FOR -Y22RPD- PROFILE
SEE SHEETS S-1 THRU S-11 FOR STRUCTURE PLANS

NOTE: USE INTERIM GRADE -I22LPA- FOR -Y22LPA- ALIGNMENT
NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 862.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

MATCHLINE -Y22- STA. 19+00.00 SEE SHEET 37
MATCHLINE -Y13- STA. 71+00.00 SEE SHEET 32
MATCHLINE -Y13- STA. 99+00.00 SEE SHEET 34
MATCHLINE -Y22- STA. 36+00.00 SEE SHEET 38
NAD 83/95
DETAIL B
DETAIL C
DETAIL YY
DETAIL AB
DETAIL YZ
GRAPHIC SCALE
50 25 0 50 100
PLANS
100' 0' 100'
121
122A
123
124
125
126
127
128
129
130
131
133
134
135
136
137
138
139
140
141
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143
144
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148
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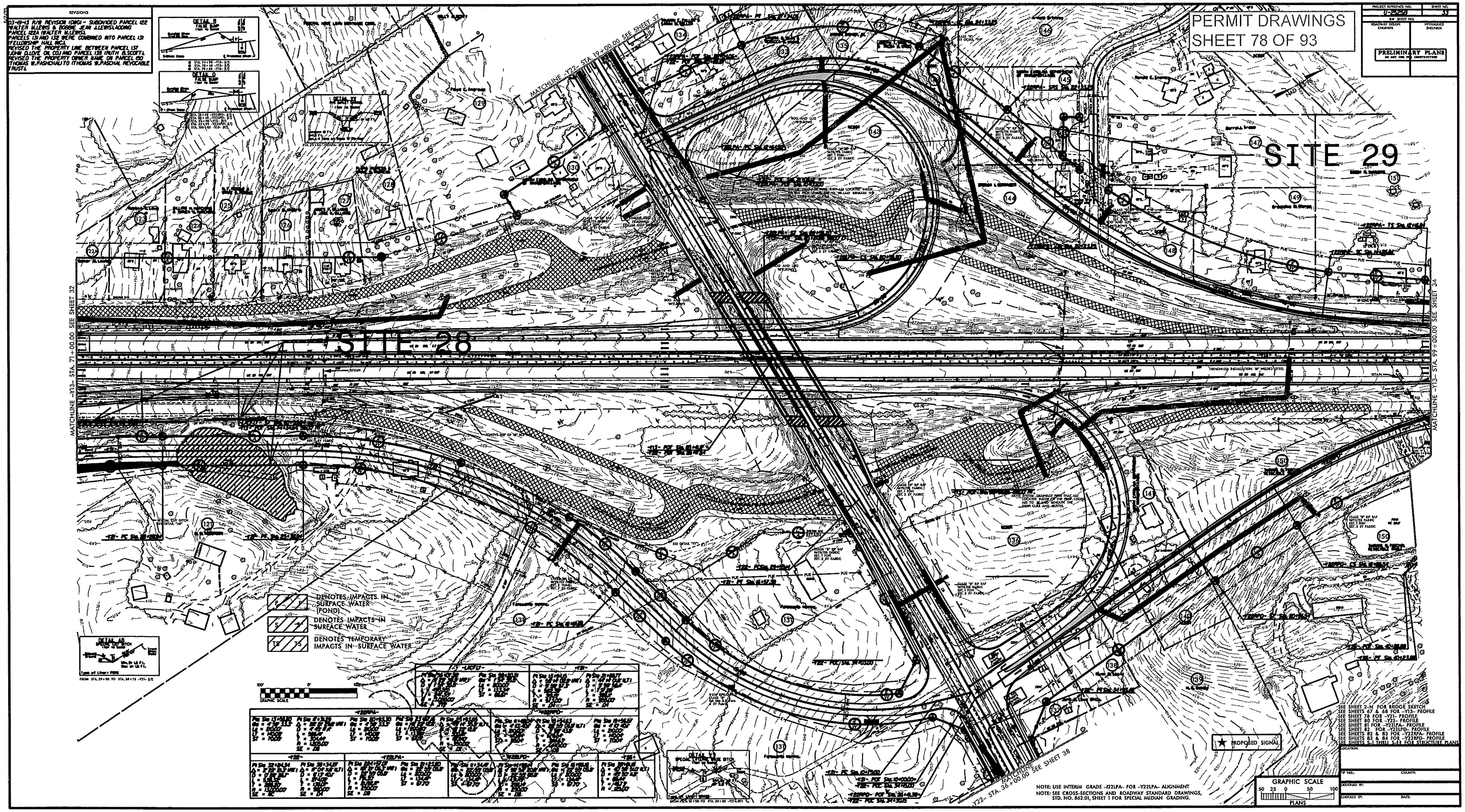
151


SITE 29
SITE 28
MATCHLINE -Y22- STA. 19+00.00 SEE SHEET 37
MATCHLINE -Y13- STA. 71+00.00 SEE SHEET 32
MATCHLINE -Y13- STA. 99+00.00 SEE SHEET 34
MATCHLINE -Y22- STA. 36+00.00 SEE SHEET 38
NAD 83
GRAPHIC SCALE
50 25 0 50 100
PLANS

PERMIT DRAWINGS
SHEET 78 OF 93

REVISIONS

03-19-13 R/W REVISION (DWG) - SUBDIVIDED PARCEL 122 (WALTER M.LEWIS & BOBBIE JEAN J.LEWIS),ADDING PARCEL 122A (WALTER M.LEWIS).
PARCELS 131 AND 132 WERE COMBINED INTO PARCEL 131 (FELLOWSHIP HALL INC.).
REVISED THE PROPERTY LINE BETWEEN PARCEL 137 (JOHN D.LOVE OIL CO.) AND PARCEL 138 (RUTH B.SCOTT).
REVISED THE PROPERTY OWNER NAME ON PARCEL 150 (THOMAS W.PASCHAL) TO (THOMAS W.PASCHAL REVOCABLE TRUST).

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

P	DENOTES IMPACTS IN SURFACE WATER (POND)
S	DENOTES IMPACTS IN SURFACE WATER
TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

★ PROPOSED SIGNAL

- SEE SHEET 2-N FOR BRIDGE SKETCH
- SEE SHEETS 67 & 68 FOR -Y13- PROFILE
- SEE SHEET 78 FOR -Y21- PROFILE
- SEE SHEET 80 FOR -Y22- PROFILE
- SEE SHEET 81 FOR -Y22LPA- PROFILE
- SEE SHEET 82 FOR -Y22LPD- PROFILE
- SEE SHEETS 82 & 83 FOR -Y22RPA- PROFILE
- SEE SHEETS 83 & 84 FOR -Y22RPD- PROFILE
- SEE SHEETS S-1 THRU S-83 FOR STRUCTURE PLANS

NOTE: USE INTERIM GRADE -I22LPA- FOR -Y22LPA- ALIGNMENT
NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 862.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.

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

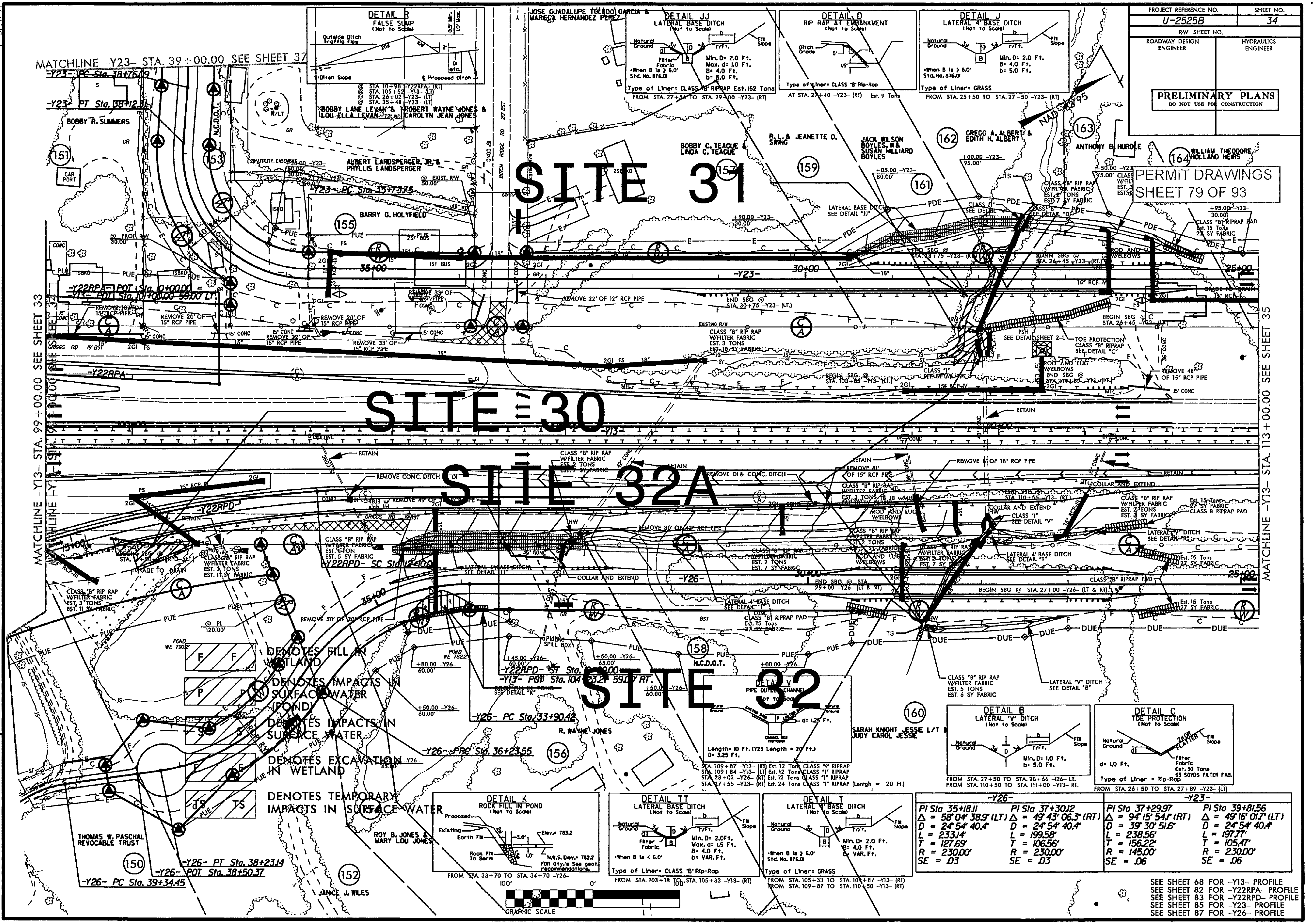
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	34
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 79 OF 93

REVISIONS
03-19-13 R/W REVISION (DWG) - REVISED THE PROPERTY OWNER NAME ON PARCEL 150 (THOMAS W. PASCHAL) TO (THOMAS W. PASCHAL REVOCABLE TRUST).

5/14/99



MATCHLINE -Y23- STA. 39+00.00 SEE SHEET 37
MATCHLINE -Y13- STA. 99+00.00 SEE SHEET 33
MATCHLINE -Y13- STA. 113+00.00 SEE SHEET 35
SITE 31
SITE 30
SITE 32A
SITE 32
-Y23-
-Y13-
-Y26-
-Y22RPA-
-Y22RPD-
DETAIL R FALSE SUMP
DETAIL JJ LATERAL BASE DITCH
DETAIL D RIP RAP AT EMBANKMENT
DETAIL J LATERAL 4' BASE DITCH
DETAIL V PIPE OUTLET
DETAIL B LATERAL 'V' DITCH
DETAIL C TOE PROTECTION
DETAIL K ROCK FILL IN POND
DETAIL TT LATERAL BASE DITCH
DETAIL T LATERAL 4' BASE DITCH
BOBBY R. SUMMERS
BOBBY LANE LEVAN & LOU ELLA LEVAN
ROBERT WAYNE JONES & CAROLYN JEAN JONES
ALBERT LANDSPERGER, JR. & PHYLLIS LANDSPERGER
BARRY G. HOLYFIELD
JOSE GUADALUPE TOLEDO GARCIA & MARIELA HERNANDEZ PEREZ
BOBBY C. TEAGUE & LINDA C. TEAGUE
R.L. & JEANETTE D. SWING
JACK WILSON BOYLES, III & SUSAN HILLIARD BOYLES
GREGG A. ALBERT & EDITH H. ALBERT
ANTHONY B. HURDLE
WILLIAM THEODORE HOLLAND HEIRS
N.C.D.O.T.
R. WAYNE JONES
SARAH KNIGHT JESSE L/T & JUDY CAROL JESSIE
THOMAS W. PASCHAL REVOCABLE TRUST
ROY B. JONES & MARY LOU JONES
JANICE J. WILES
NAD 83/95
GRAPHIC SCALE
100' 0'

F	DENOTES FILL IN WETLAND
P	DENOTES IMPACTS IN SURFACE WATER (POND)
S	DENOTES IMPACTS IN SURFACE WATER
E	DENOTES EXCAVATION IN WETLAND
TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

-Y26-		-Y23-	
PI Sta 35+18.11	PI Sta 37+30.12	PI Sta 37+29.97	PI Sta 39+81.56
Δ = 58° 04' 38.9" (LT)	Δ = 49° 43' 06.3" (RT)	Δ = 94° 15' 54.1" (RT)	Δ = 49° 16' 01.7" (LT)
D = 24° 54' 40.4"	D = 24° 54' 40.4"	D = 39° 30' 51.6"	D = 24° 54' 40.4"
L = 233.14'	L = 199.58'	L = 238.56'	L = 197.77'
T = 127.69'	T = 106.56'	T = 156.22'	T = 105.47'
R = 230.00'	R = 230.00'	R = 145.00'	R = 230.00'
SE = .03	SE = .03	SE = .06	SE = .06

SEE SHEET 68 FOR -Y13- PROFILE
SEE SHEET 82 FOR -Y22RPA- PROFILE
SEE SHEET 83 FOR -Y22RPD- PROFILE
SEE SHEET 85 FOR -Y23- PROFILE
SEE SHEET 87 FOR -Y26- PROFILE

5/14/99

REVISIONS

03-19-13 R/W REVISION (DWG) - REVISED THE PROPERTY OWNER NAME ON PARCEL 150 (THOMAS W. PASCHAL) TO (THOMAS W. PASCHAL REVOCABLE TRUST.

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	34

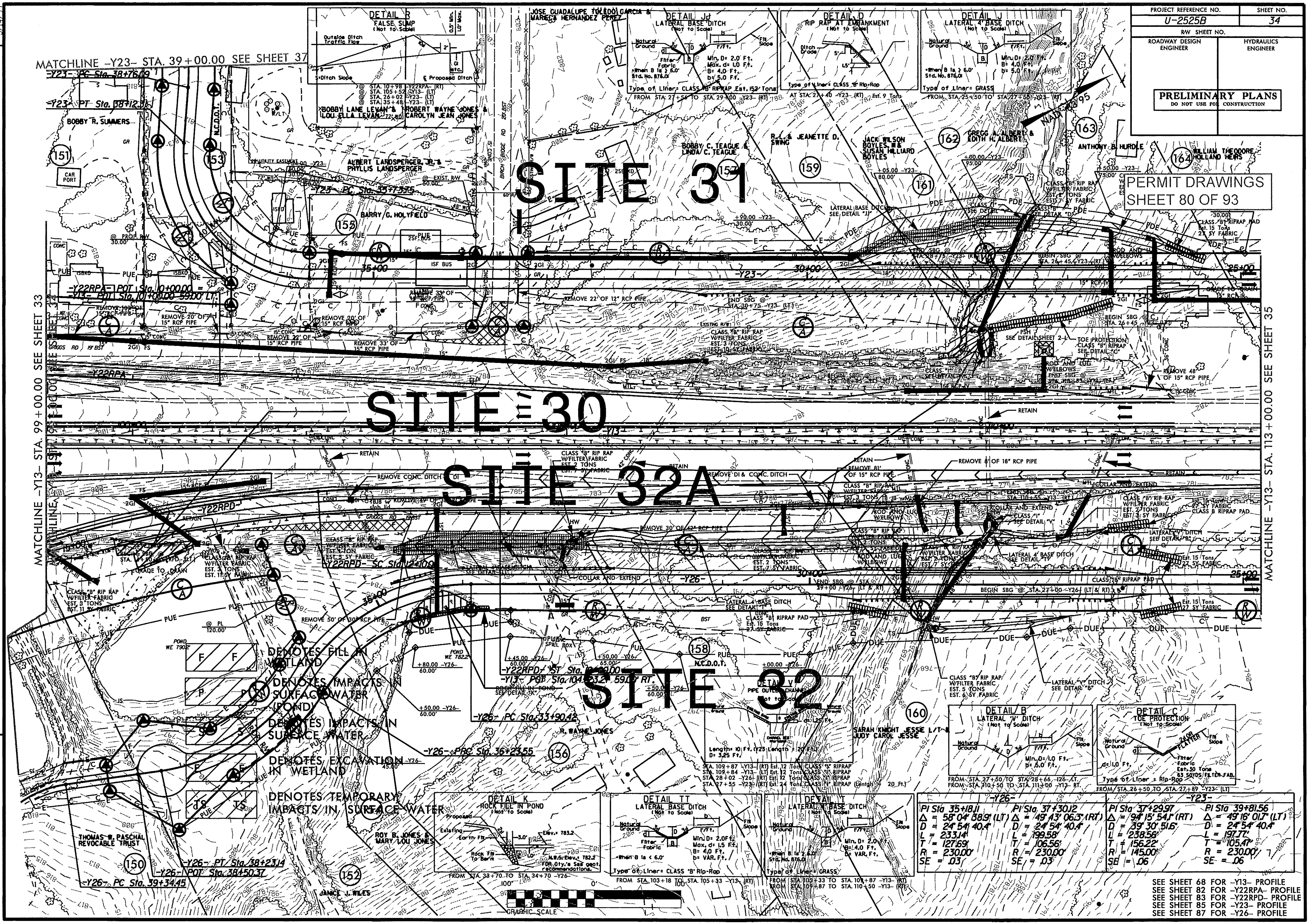
R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 80 OF 93



MATCHLINE -Y23- STA. 39+00.00 SEE SHEET 37
MATCHLINE -Y13- STA. 99+00.00 SEE SHEET 33
MATCHLINE -Y13- STA. 113+00.00 SEE SHEET 35
SITE 31
SITE 30
SITE 32A
SITE 32
DETAIL R FALSE SUMP (Not to Scale)
DETAIL JJ LATERAL BASE DITCH (Not to Scale)
DETAIL D RIP RAP AT EMBANKMENT
DETAIL J LATERAL 4' BASE DITCH (Not to Scale)
DETAIL B LATERAL "V" DITCH (Not to Scale)
DETAIL C TOE PROTECTION (Not to Scale)
DETAIL K ROCK FILL IN POND (Not to Scale)
DETAIL TT LATERAL BASE DITCH (Not to Scale)
DETAIL T LATERAL BASE DITCH (Not to Scale)
DETAIL V PIPE OUTLET CHANNEL (Not to Scale)
-Y23- PC Sta. 38+76.09
-Y23- PT Sta. 38+12.31
-Y23- PC Sta. 35+73.55
-Y22RPA- POT Sta. 10+00.00 = -Y13- POT Sta. 10+00.00 59.00' LT.
-Y22RPD- SC Sta. 12+00
-Y22RPD- ST Sta. 13+00.00
-Y13- POT Sta. 104+32.21 59.07' RT.
-Y26- PC Sta. 33+90.42
-Y26- PRC Sta. 36+23.55
-Y26- PT Sta. 38+23.14
-Y26- POT Sta. 38+50.37
-Y26- PC Sta. 39+34.45
BOBBY R. SUMMERS
BOBBY LANE LEVAN & LOU ELLA LEVAN
ROBERT WAYNE JONES & CAROLYN JEAN JONES
JOSE GUADALUPE TOLEDO GARCIA & MARICELA HERNANDEZ PEREZ
ALBERT LANDSPERGER, JR. & PHYLLIS LANDSPERGER
BARRY G. HOLYFIELD
BOBBY C. TEAGUE & LINDA C. TEAGUE
R.L. & JEANETTE D. SWING
JACK WILSON BOYLES, III & SUSAN HILLIARD BOYLES
GREGG A. ALBERT & EDITH H. ALBERT
ANTHONY B. HURDLE
WILLIAM THEODORE HOLLAND HEIRS
N.C.D.O.T.
R. WAYNE JONES
SARAH KNIGHT JESSE L/T & JUDY CAROL JESSE
THOMAS W. PASCHAL REVOCABLE TRUST
ROY B. JONES & MARY LOU JONES
JANICE J. WILES
150
151
152
153
155
156
157
158
159
160
161
162
163
164
CAR PORT
BIRCH BRIDGE RD
GRIGGS RD
RETAIN
REMOVE 22' OF 12" RCP PIPE
REMOVE 20' OF 15" RCP PIPE
REMOVE 33' OF 15" RCP PIPE
REMOVE 48' OF 15" RCP PIPE
REMOVE 30' OF 42" RCP PIPE
REMOVE 50' OF 30" RCP PIPE
REMOVE 8' OF 18" RCP PIPE
REMOVE 81' OF 15" RCP PIPE
REMOVE CONC. DITCH
REMOVE DI & CONC. DITCH
LATERAL BASE DITCH SEE DETAIL "JJ"
CLASS "B" RIP RAP W/FILTER FABRIC
COLLAR AND EXTEND
BEGIN SBG @ STA. 27+00 -Y26- (LT & RT)
END SBG @ STA. 30+75 -Y23- (LT)
PSH SEE DETAIL SHEET 2-L
TOE PROTECTION CLASS "B" RIPRAP SEE DETAIL "C"
GRAPHIC SCALE

	-Y26-		-Y23-	
PI Sta	35+18.11	37+30.12	37+29.97	39+81.56
Δ	58°04'38.9" (LT)	49°43'06.3" (RT)	94°15'54.1" (RT)	49°16'01.7" (LT)
D	24°54'40.4"	24°54'40.4"	39°30'51.6"	24°54'40.4"
L	233.14'	199.58'	238.56'	197.77'
T	127.69'	106.56'	156.22'	105.47'
R	230.00'	230.00'	145.00'	230.00'
SE	.03	.03	.06	.06

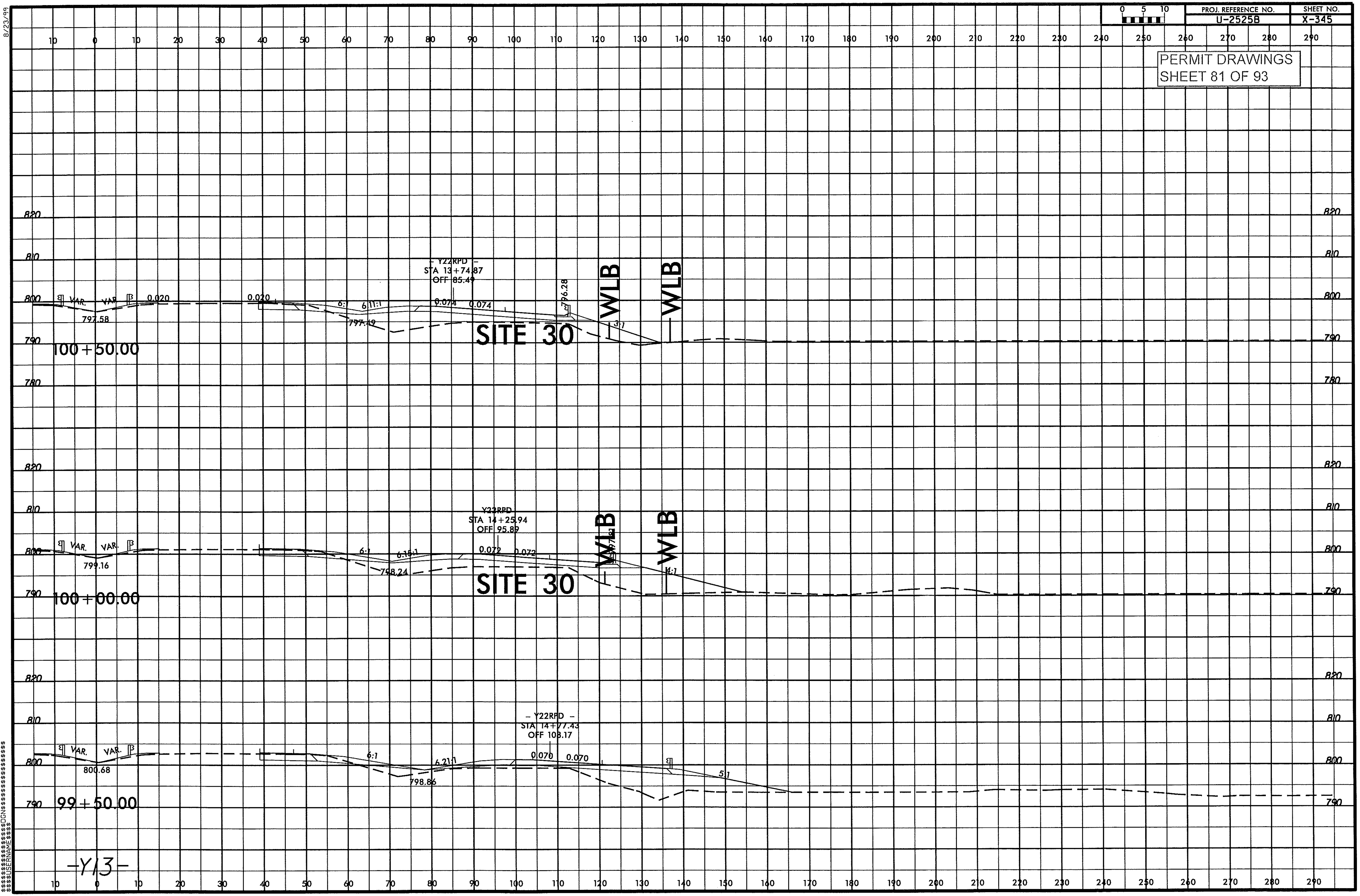
F	DENOTES FILL IN WETLAND
P	DENOTES IMPACTS IN SURFACE WATER (POND)
S	DENOTES IMPACTS IN SURFACE WATER
E	DENOTES EXCAVATION IN WETLAND
TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SEE SHEET 68 FOR -Y13- PROFILE
SEE SHEET 82 FOR -Y22RPA- PROFILE
SEE SHEET 83 FOR -Y22RPD- PROFILE
SEE SHEET 85 FOR -Y23- PROFILE
SEE SHEET 87 FOR -Y26- PROFILE

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2525B	X-345

PERMIT DRAWINGS
SHEET 81 OF 93


0 5 10
10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290
820
810
800
790
780
- Y22RPD -
STA 13+74.87
OFF 85.49
VAR.
VAR.
0.020
0.020
797.58
6:1
6.11:1
0.074
0.074
797.49
796.28
3:1
WLB
WLB
SITE 30
100+50.00
Y22RPD
STA 14+25.94
OFF 95.89
VAR.
VAR.
799.16
6:1
6.15:1
0.072
0.072
798.24
4:1
WLB
WLB
SITE 30
100+00.00
- Y22RPD -
STA 14+77.43
OFF 108.17
VAR.
VAR.
800.68
6:1
6.21:1
0.070
0.070
798.86
5:1
99+50.00
-Y13-

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

5/14/99

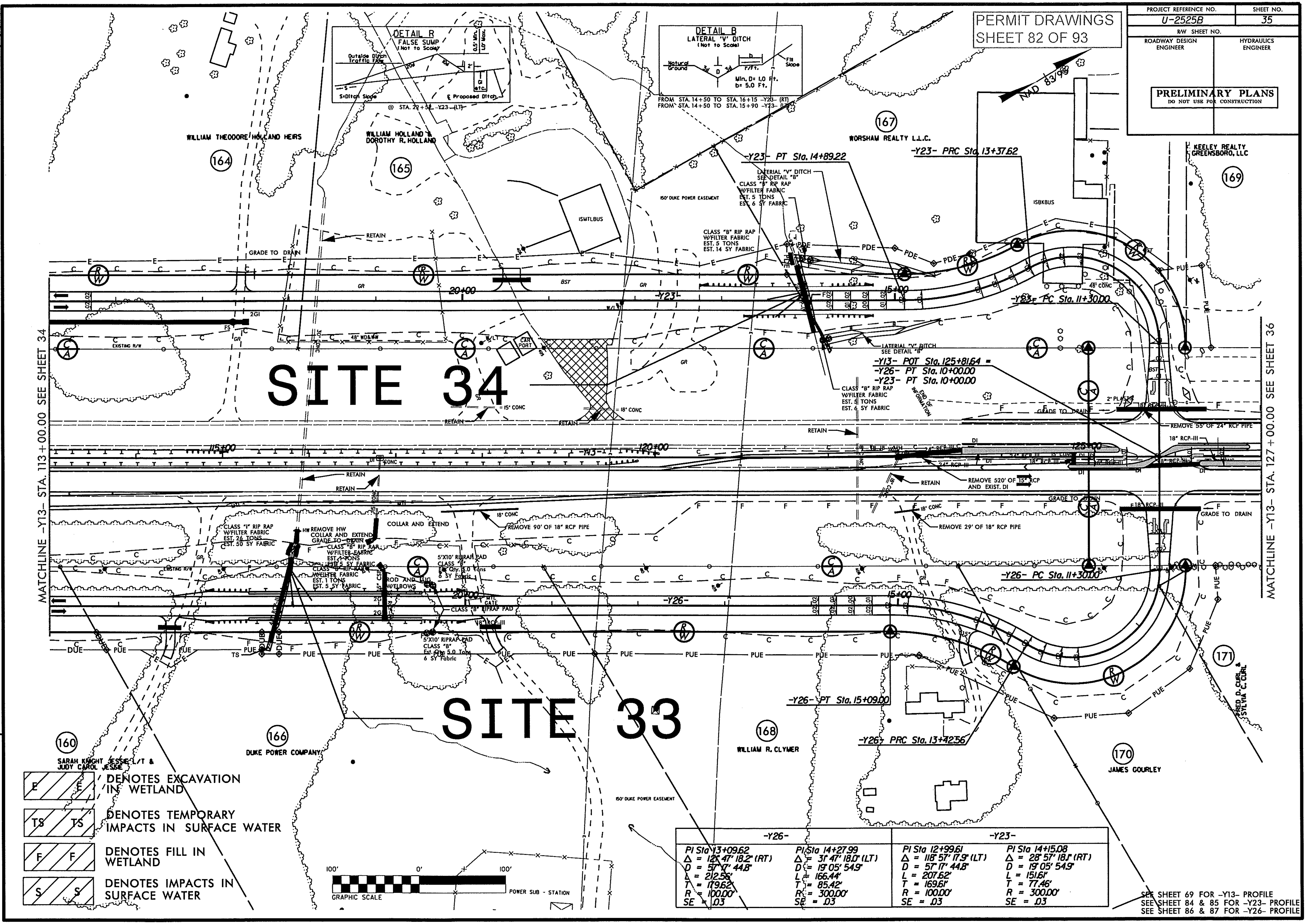
REVISIONS

03-19-13 R/W REVISION (DWG) - REVISED THE PROPERTY OWNER NAME ON PARCEL 168 (KENNETH C.CLYMER) TO (WILLIAM R.CLYMER).
REVISED THE PROPERTY OWNER NAME ON PARCEL 169 (CHARLES A.S.KEELEY) TO (KEELEY REALTY GREENSBORO,LLC).

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	35
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWINGS
SHEET 82 OF 93

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


DETAIL R
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
@ STA. 22+52 -Y23- (LT)
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 14+50 TO STA. 16+15 -Y23- (RT)
FROM STA. 14+50 TO STA. 15+90 -Y23- (LT)
NAD 83/99
WILLIAM THEODORE HOLLAND HEIRS
164
WILLIAM HOLLAND & DOROTHY R. HOLLAND
165
ISMTLBUS
150' DUKE POWER EASEMENT
167
WORSHAM REALTY L.L.C.
-Y23- PT Sta. 14+89.22
-Y23- PRC Sta. 13+37.62
LATERAL "V" DITCH SEE DETAIL "B"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 6 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 14 SY FABRIC
ISBKBUS
KEELEY REALTY GREENSBORO, LLC
169
RETAIN
GRADE TO DRAIN
20+00
-Y23-
15+00
-Y23- PC Sta. 11+30.00
48" CONC
48" WD&WW
EXISTING R/W
CAR PORT
LATERAL "V" DITCH SEE DETAIL "B"
-Y13- POT Sta. 125+81.64 =
-Y26- PT Sta. 10+00.00
-Y23- PT Sta. 10+00.00
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 6 SY FABRIC
END OF INFORMATION
SITE 34
15" CONC
18" CONC
2" PLASTIC
REMOVE 55' OF 24" RCP PIPE
18" RCP-III
115+00
120+00
-Y13-
125+00
REMOVE 520' OF 15" RCP AND EXIST. DI
GRADE TO DRAIN
18" CONC
REMOVE 90' OF 18" RCP PIPE
REMOVE 29' OF 18" RCP PIPE
GRADE TO DRAIN
CLASS "I" RIP RAP W/FILTER FABRIC EST. 26 TONS EST. 50 SY FABRIC
REMOVE HW COLLAR AND EXTEND GRADE TO DRAIN
CLASS "B" RIP RAP W/FILTER FABRIC EST. 4 TONS EST. 5 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TONS EST. 5 SY FABRIC
COLLAR AND EXTEND
5'X10' RIPRAP PAD CLASS "B" Est. Qty. 5.0 Tons 6 SY Fabric
ROD AND LUG W/ELBOWS
20+00
-Y26-
15+00
CLASS "B" RIPRAP PAD
-Y26- PC Sta. 11+30.00
DUE
PUE
TS
-Y26- PT Sta. 15+09.00
-Y26- PRC Sta. 13+42.56
SITE 33
171
FRED D. CURL & SYLVIA C. CURL
160
SARAH KNIGHT JESSE L/T & JUDY CAROL JESSE
166
DUKE POWER COMPANY
168
WILLIAM R. CLYMER
170
JAMES GOURLEY
150' DUKE POWER EASEMENT
POWER SUB - STATION
100'
0'
100'
GRAPHIC SCALE
MATCHLINE -Y13- STA. 113+00.00 SEE SHEET 34
MATCHLINE -Y13- STA. 127+00.00 SEE SHEET 36

E / E	DENOTES EXCAVATION IN WETLAND
TS / TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
F / F	DENOTES FILL IN WETLAND
S / S	DENOTES IMPACTS IN SURFACE WATER

-Y26-		-Y23-	
PI Sta 13+09.62	PI Sta 14+27.99	PI Sta 12+99.61	PI Sta 14+15.08
Δ = 121° 47' 18.2" (RT)	Δ = 31° 47' 18.0" (LT)	Δ = 118° 57' 17.9" (LT)	Δ = 28° 57' 18.1" (RT)
D = 57° 17' 44.8"	D = 19° 05' 54.9"	D = 57° 17' 44.8"	D = 19° 05' 54.9"
L = 212.56'	L = 166.44'	L = 207.62'	L = 151.61'
T = 179.62'	T = 85.42'	T = 169.61'	T = 77.46'
R = 100.00'	R = 300.00'	R = 100.00'	R = 300.00'
SE = .03	SE = .03	SE = .03	SE = .03

SEE SHEET 69 FOR -Y13- PROFILE
SEE SHEET 84 & 85 FOR -Y23- PROFILE
SEE SHEET 86 & 87 FOR -Y26- PROFILE

REVISIONS

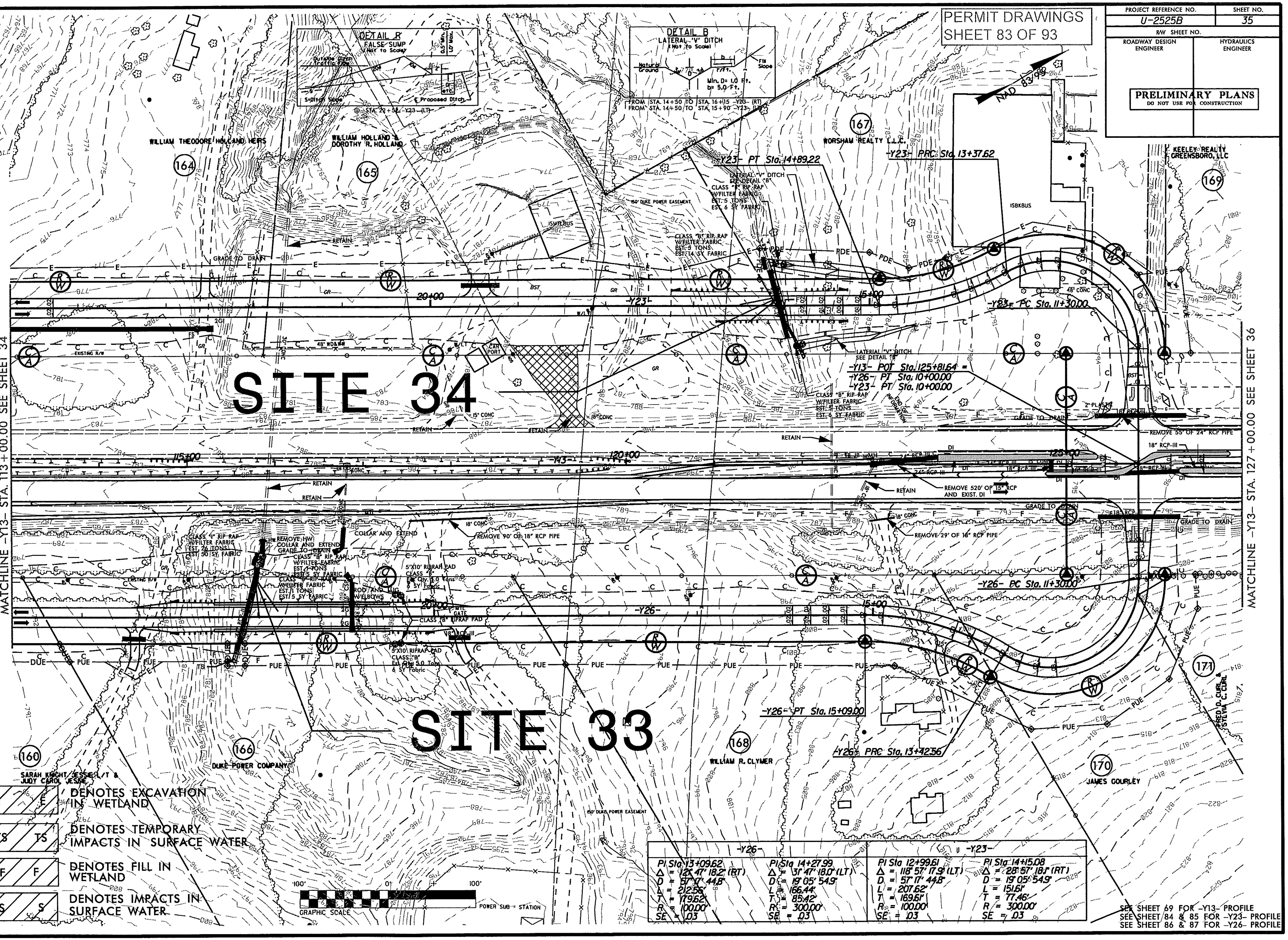
03-19-13 R/W REVISION (DWG) - REVISED THE PROPERTY OWNER NAME ON PARCEL 168 (KENNETH C.CLYMER) TO (WILLIAM R.CLYMER).
REVISED THE PROPERTY OWNER NAME ON PARCEL 169 (CHARLES A.S.KEELEY) TO (KEELEY REALTY GREENSBORO,LLC).

5/14/99

PERMIT DRAWINGS
SHEET 83 OF 93

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	35
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


SITE 34
SITE 33
MATCHLINE -Y13- STA. 113+00.00 SEE SHEET 34
MATCHLINE -Y13- STA. 127+00.00 SEE SHEET 36
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 14+50 TO STA. 16+15 -Y23- (RT)
FROM STA. 14+50 TO STA. 15+90 -Y23- (LT)
DETAIL A
FALSE SUMP
(Not to Scale)
S-Ditch Slope
Proposed Ditch
STA. 22+52 -Y23- (LT)
WILLIAM THEODORE HOLLAND HEIRS
164
WILLIAM HOLLAND & DOROTHY R. HOLLAND
165
WORSHAM REALTY L.L.C.
167
KEELEY REALTY GREENSBORO, LLC
169
NAD 83/99
ISBKBUS
-Y23- PT Sta. 14+89.22
-Y23- PRC Sta. 13+37.62
-Y23- PC Sta. 11+30.00
-Y13- POT Sta. 125+81.64
-Y26- PT Sta. 10+00.00
-Y23- PT Sta. 10+00.00
-Y26- PC Sta. 11+30.00
-Y26- PT Sta. 15+09.00
-Y26- PRC Sta. 13+42.56
LATERAL "V" DITCH SEE DETAIL "B"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 6 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 4 SY FABRIC
150' DUKE POWER EASEMENT
GRADE TO DRAIN
RETAIN
20+00
15+00
115+00
120+00
125+00
-Y23-
-Y13-
-Y26-
REMOVE 55' OF 24" RCP PIPE
REMOVE 520' OF 15" RCP AND EXIST. DI
REMOVE 90' OF 18" RCP PIPE
REMOVE 29' OF 18" RCP PIPE
REMOVE HW COLLAR AND EXTEND GRADE TO DRAIN
COLLAR AND EXTEND
CLASS "I" RIP RAP W/FILTER FABRIC EST. 26 TONS EST. 50 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 4 TONS EST. 5 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TONS EST. 5 SY FABRIC
5'X10' RIPRAP PAD CLASS "B" Est. Qty. 5.0 Tons 6 SY Fabric
CLASS "B" RIPRAP PAD
ROD AND LUG W/ELBOWS
GATE
EXISTING R/W
CAR PORT
48" CONC
15" CONC
18" CONC
18" RCP-III
24" RCP-III
BST
GR
PDE
PUE
DUE
SARAH KNIGHT JESSIE, L/T & JUDY CAROL JESSIE
160
DUKE POWER COMPANY
166
WILLIAM R. CLYMER
168
JAMES GOURLEY
170
FRED D. CLICK & SYLVIA C. CLICK
171
100'
0
100'
GRAPHIC SCALE
POWER SUB - STATION

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

-Y26-		-Y23-	
PI Sta 13+09.62	PI Sta 14+27.99	PI Sta 12+99.61	PI Sta 14+15.08
Δ = 121° 47' 18.2" (RT)	Δ = 31° 47' 18.0" (LT)	Δ = 118° 57' 17.9" (LT)	Δ = 28° 57' 18.1" (RT)
D = 57° 17' 44.8"	D = 19° 05' 54.9"	D = 57° 17' 44.8"	D = 19° 05' 54.9"
L = 212.56'	L = 166.44'	L = 207.62'	L = 151.61'
T = 179.62'	T = 85.42'	T = 169.61'	T = 77.46'
R = 100.00'	R = 300.00'	R = 100.00'	R = 300.00'
SE = .03	SE = .03	SE = .03	SE = .03

SEE SHEET 69 FOR -Y13- PROFILE
SEE SHEET 84 & 85 FOR -Y23- PROFILE
SEE SHEET 86 & 87 FOR -Y26- PROFILE

REVISIONS

03-19-13 R/W REVISION (DWG) - REVISED THE PROPERTY OWNER NAME ON PARCEL 172 (UNKNOWN) TO (JACK O.RUDD REVOCABLE LIVING TRUST).
REVISED THE PROPERTY OWNER NAME ON PARCEL 174 (TERRY L.WATKINS & PATRICIA WATKINS) TO (BETTER WAY BUILDERS,LLC).
REVISED THE PROPERTY OWNER NAME ON PARCEL 190 (WARREN C SMITH & FRANCES T SMITH) TO (FRANCES T SMITH,WIDOW).

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	37

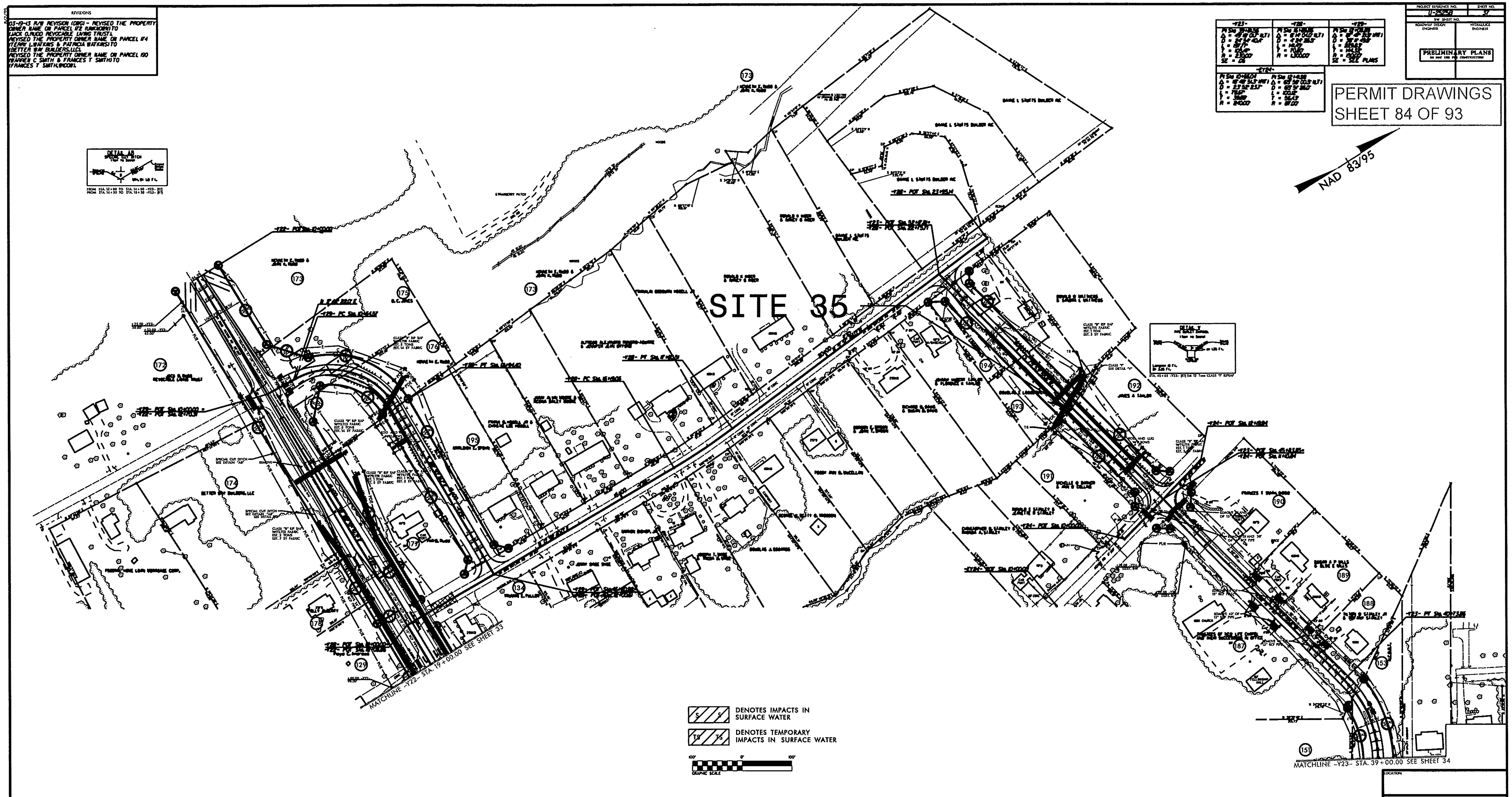
R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 84 OF 93


SITE 35
NAD 83/95
MATCHLINE -Y22- STA. 19+00.00 SEE SHEET 35
MATCHLINE -Y23- STA. 39+00.00 SEE SHEET 34
DETAIL "AB"
DETAIL "V"
172
173
174
175
176
178
179
187
188
189
190
191
192
193
194
195
129
134
151
153

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SEE SHEET 80 FOR -Y22- PROFILE
SEE SHEET 85 FOR -Y23- PROFILE
SEE SHEET 86 FOR -Y24- PROFILE
SEE SHEET 88 FOR -Y28- AND -Y29- PROFILE

GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

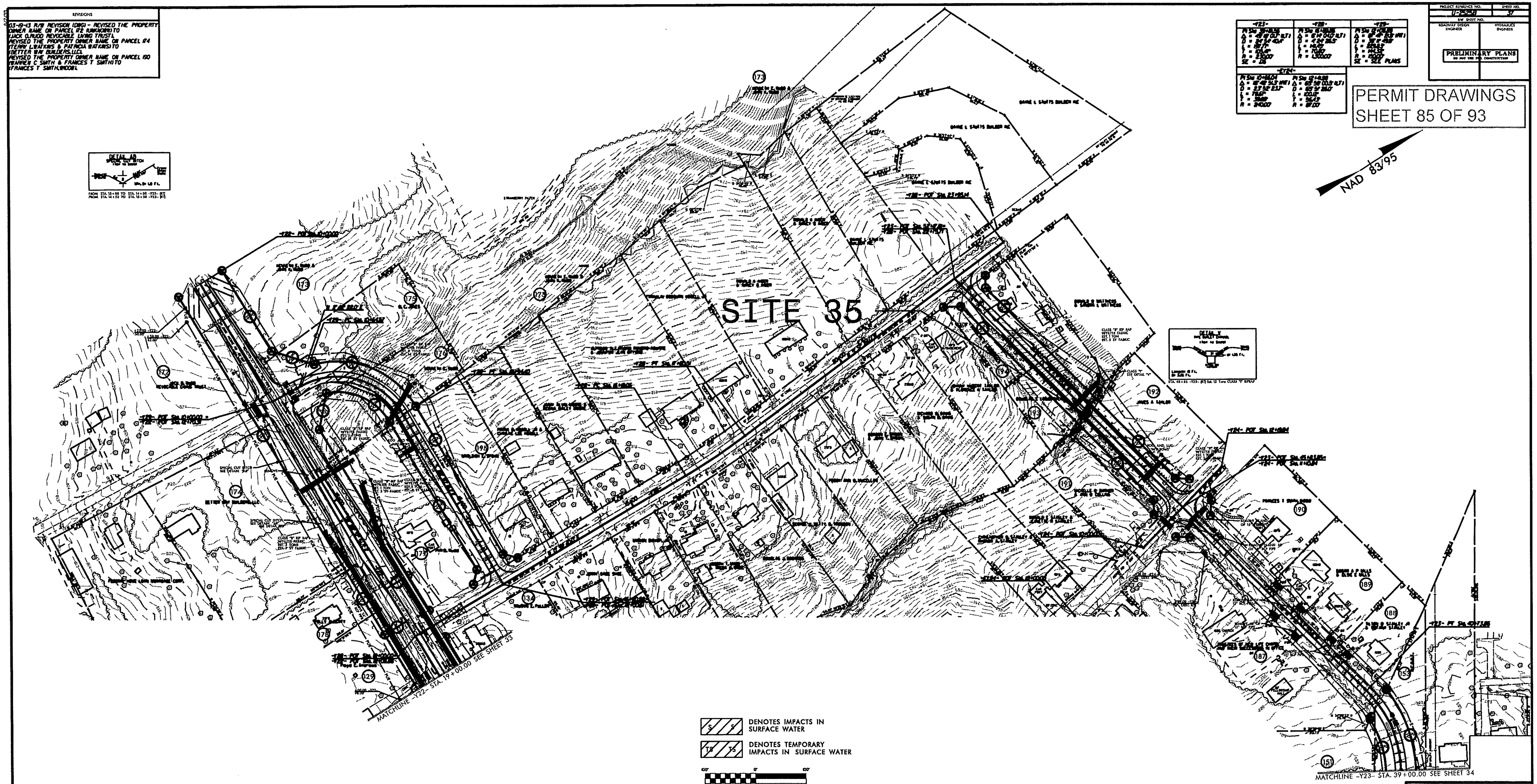
REVISIONS

03-19-13 R/W REVISION (DRG) - REVISED THE PROPERTY
OWNER NAME ON PARCEL 172 (UNKNOWN) TO
(JACK D.RUDD REVOCABLE LIVING TRUST).
REVISED THE PROPERTY OWNER NAME ON PARCEL 174
(TERRY L.WATKINS & PATRICIA WATKINS) TO
(BETTER WAY BUILDERS,LLC).
REVISED THE PROPERTY OWNER NAME ON PARCEL 190
(WARREN C SMITH & FRANCES T SMITH) TO
(FRANCES T SMITH,WIDOW).

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	37
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 85 OF 93


NAD 83/95
SITE 35
MATCHLINE -Y22- STA. 19+00.00 SEE SHEET 35
MATCHLINE -Y23- STA. 39+00.00 SEE SHEET 34
173
175
176
172
174
177
178
129
134
195
194
193
192
191
190
189
188
187
153
151

▨ S	DENOTES IMPACTS IN SURFACE WATER
▨ TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

100' 0' 100'
GRAPHIC SCALE

SEE SHEET 80 FOR -Y22- PROFILE
SEE SHEET 85 FOR -Y23- PROFILE
SEE SHEET 86 FOR -Y24- PROFILE
SEE SHEET 88 FOR -Y28- AND -Y29- PROFILE

GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

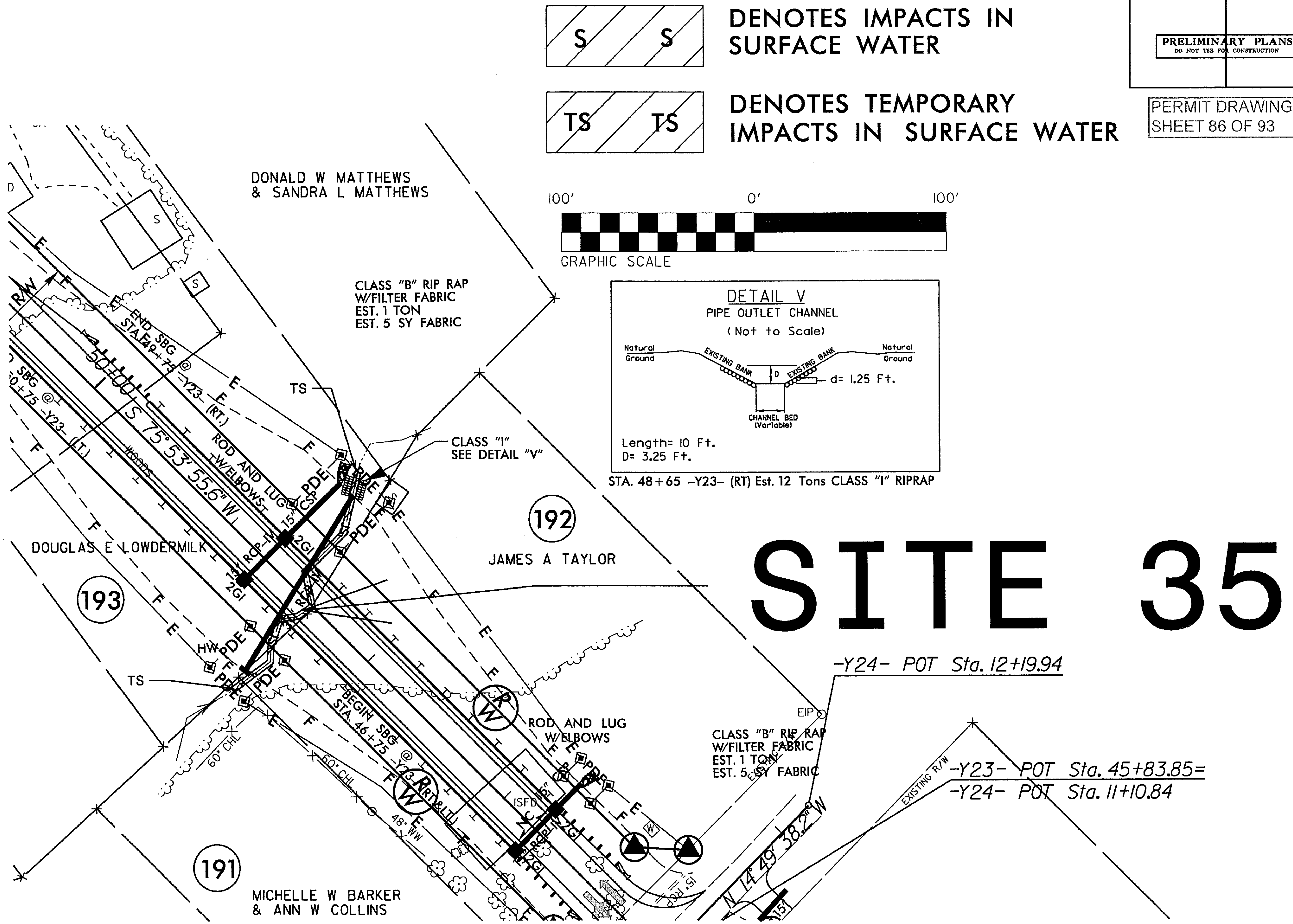
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	37
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWINGS
SHEET 86 OF 93

03-19-13 R/W REVISION (DWG) - REVISED THE PROPERTY OWNER NAME ON PARCEL 168 (KENNETH C.CLYMER)TO (WILLIAM R.CLYMER).
REVISED THE PROPERTY OWNER NAME ON PARCEL 169 (CHARLES A.S.KEELEY)TO (KEELEY REALTY GREENSBORO,LLC).

SITE 35


S S DENOTES IMPACTS IN SURFACE WATER
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
100'
0'
100'
GRAPHIC SCALE
DETAIL V
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
EXISTING BANK
D
EXISTING BANK
Natural Ground
d= 1.25 Ft.
CHANNEL BED (Variable)
Length= 10 Ft.
D= 3.25 Ft.
STA. 48+65 -Y23- (RT) Est. 12 Tons CLASS "I" RIPRAP
DONALD W MATTHEWS & SANDRA L MATTHEWS
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
END SBG @ STA. 49+75 -Y23- (RT.)
R/W
50+00
S 75°53'55.6"W
ROD AND LUG W/ELBOWS
TS
CLASS "I" SEE DETAIL "V"
PDE
15" CSP
15" RCP
2GI
SBG @ 50+75 -Y23- (LT.)
192
JAMES A TAYLOR
DOUGLAS E LOWDERMILK
193
HW
TS
60' CHL
BEGIN SBG @ STA. 46+75 -Y23- (RT.&LT.)
48" WW
191
MICHELLE W BARKER & ANN W COLLINS
ROD AND LUG W/ELBOWS
ISFD
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
EIP
EXISTING R/W
-Y24- POT Sta. 12+19.94
-Y23- POT Sta. 45+83.85=
-Y24- POT Sta. 11+10.84
N 14°49'38.2"W
15" RCP
15'

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	27+25 -Y3RPA- (RT) TO 47+94 -L- (LT)	30" RCP	0.57		0.04			0.09		1684		
1A	24+84 -Y3RPA- (LT) 12+26 -Y3RPA- (LT)		0.03									
1B	37+76 -L- (LT) TO 38+18 -L- (LT)		0.01									
2	24+84 -Y3RPD- (LT)	24" RCP	0.05			<0.01						
3	38+87 -L- (LT) TO 40+30 -L- (LT)		0.12									
3A	41+86 -L- (RT) TO 43+15 -L- (LT)		0.03									
3B	44+26 -L- (LT) TO 44+86 -L- (LT)		0.02									
3C	46+46 -L- (LT) TO 47+70 -L- (RT)		0.25		0.02	0.02						
SUBTOTALS:			1.08		0.06	0.03		0.09		1684		

PERMIT DRAWINGS
SHEET 87 OF 93

NOTE: Rounded totals are based upon sum of actual impacts. Also, Site 1 has 332 linear feet of intermittent stream at 1:1 mitigation; 1352 linear feet of perennial stream at 2:1 mitigation.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY
WBS - 34821.1.1 (U-2525B)

SHEET 4/8/2013

ATN Revised 3/31/05

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
4	48+65 -L-	2 @ 9' X 9' RCBC	0.02					0.10	0.04	394	153	
	Bank Stabilization									98		
5	59+31 -L- (RT) TO	66" RCP,24"RCP, &						0.09	<0.01	1117	20	
	81+35 -L- (LT)	42" RCP										
	Restoration							0.04		481		1307
5A	66+14 -L- (LT) TO		0.08									
	68+72 -L- (LT)											
5B	70+32 -L- (LT) TO		0.02									
	71+59 -L- (LT)											
6	21+56 -Y4 RPB-(LT) TO		0.03					0.01		138	10	
	22+00 -Y4 RPB- (RT)											
6A	22+11 -RPB-(RT) TO		0.05			<0.01						
	22+75 -RPB-(RT)											
7	77+25 -L-(LT) TO		1.29		0.05	0.03						
	25+57 -RPC-(RT)											
8	93+50 -L- TO		0.88			0.09						
	95+95 -L-(LT)											
SUBTOTALS:			2.37		0.05	0.12		0.24	0.04	2228	183	1307

PERMIT DRAWINGS
SHEET 88 OF 93

NOTE: Rounded totals are based upon sum of actual impacts.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY
WBS - 34821.1.1 (U-2525B)

SHEET 4/8/2013

ATN Revised 3/31/05

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
8A	33+23 -EY4-				<0.01							
9	95+78 -L- (LT) TO	15" RCP	2.07			0.15		0.03	<0.01	462	10	
	102+77 -L-(RT)											
9A	101+78 -L- (LT) TO	42" RCP						<0.01		84		
	102+19 -L-(LT)											
10	113+64 -L- (LT) TO	2 @ 7' X 8' RCBC						0.03	<0.01	212	29	
	117+08 -L-(RT)											
	Bank Stabilization									97		
10A	114+23 -L- (RT) TO		0.02			0.02						
	115+15 -L-(RT)											
10B	115+19 -L- (LT) TO		0.03		<0.01	<0.01						
	116+17 -L-(RT)											
10C	116+15 -L- (LT) TO		0.25		0.04							
	117+08 -L-(RT)											
11	123+22 -L- (LT) TO		0.33									
	127+94 -L-(RT)											
	Bank Stabilization									18		
SUBTOTALS:			2.70		0.05	0.17		0.06	<0.01	873	39	

PERMIT DRAWINGS
SHEET 89 OF 93

NOTE: Rounded totals are based upon sum of actual impacts.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY
WBS - 34821.1.1 (U-2525B)

SHEET 4/8/2013

ATN Revised 3/31/05

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)
12	156+90 -L-	66" RCP						0.03	<0.01	286	22	
	Bank Stabilization									30		
13	174+72 -L- (RT)	DUAL BRIDGES	0.02			0.01		0.01		*169	7	
	Bank Stabilization									10		
14	182+76 -L-	48" RCP						0.03	<0.01	347	35	
	Bank Stabilization									10		
15	189+55 -L-	60" RCP						0.03	<0.01	292	26	
	Bank Stabilization									20		
16	195+35 -L-	66" RCP	<0.01					0.05	<0.01	382	43	
	Bank Stabilization									12		
17	14+26 -Y10A- (RT)	15" RCP						<0.01	<0.01	51	20	
18	218+00 -L- TO	2 @ 7' X 8' RCBC	0.03			0.01		0.03	<0.01	241	10	
	219+51 -L- (RT)											
	POND							0.04				
	Bank Stabilization									30		
	Restoration								<0.01		10	386
19	230+21 -L- (RT) TO				0.14							
	230+83 -L- (LT)											
20	239+57 -L- (LT) TO	2 @ 8' X 8' RCBC						0.09	<0.01	520	39	
	245+33 -L- (RT)											
	Relocation							0.06	<0.01	295	10	362
SUBTOTALS:			0.05		0.14	0.02		0.46	0.03	2695	222	748

PERMIT DRAWINGS
SHEET 90 OF 93

NOTE: Rounded totals are based upon sum of actual impacts.

*SITE 13 - Has 32 feet of non-migitable stream impact.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY
WBS - 34821.1.1 (U-2525B)

SHEET 4/8/2013

ATN Revised 3/31/05

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
20A	239+59 -L- (LT) TO							0.04	<0.01	236	29	
	241+22 -L- (LT)											
20B	11+05 -LCD- (RT) TO		0.02					<0.01		29		
	11+57 -LCD-											
21	16+35 -Y13LPD-	24" RCP	0.34			0.04		0.03	<0.01	374	10	
22	17+40 -Y13RPB- (RT) TO		0.03									
	17+81 -Y13RPB- (RT)											
22A	16+67 -Y13RPB- (LT) TO	36" RCP	0.02					0.01	<0.01	142	10	
	17+13 -Y13RPB- (LT)											
	Bank Stabilization									10		
22B	17+21 -Y13RPB- (LT) TO		0.01									
	17+46 -Y13RPB- (LT)											
23	16+35 -Y4A- (RT)	18" RCP	0.02				<0.01					
24	36+00 -Y4-	36" RCP	0.19				0.02					
25	33+80 -Y11- (RT)	24" RCP							<0.01	12	10	
	Bank Stabilization									12		
26	29+38 -Y13RPC-	60" RCP						0.03	<0.01	319	11	
	Bank Stabilization									12		
SUBTOTALS:			0.62			0.04	0.03	0.11	0.01	1146	70	

PERMIT DRAWINGS
SHEET 91 OF 93

NOTE: Rounded totals are based upon sum of actual impacts.

SITE 20A requires 1:1 mitigation.
SITE 23 & 24 Have <0.01 ac. of Temp. Fill in Wetlands in Hand Clearing areas for erosion control measures.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY
WBS - 34821.1.1 (U-2525B)

SHEET 4/8/2013

ATN Revised 3/31/05

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
27	50+09-LACFLY- (RT)TO	54" RCP	0.10					0.01	<0.01	215	10	
	51+53-LACFLY- (LT)											
28	31+25 -Y21- (RT) TO	30" RCP						0.03		461		
	27+81-Y21- (RT)											
	POND							0.58				
29	22+88 -Y22RPA-	30" RCP & 18" RCP						0.02	<0.01	290	4	
	Bank Stabilization									10		
30	13+63 -Y22 RPD- TO	15" RCP W/ 2GI	0.03		<0.01							
	15+35 -Y22 RPD-											
31	16+35 -Y23-	66" RCP						0.03	<0.01	191	27	
	Bank Stabilization									21		
32	34+30 -Y26- (LT)	12" RCP						0.03				
32A	28+37 -Y26-	48" RCP						0.01	<0.01	151	25	
	Bank Stabilization									28		
33	22+14 -Y26-	48" RCP						0.01	<0.01	115	10	
	Bank Stabilization									17		
34	16+03 -Y23-	24" RCP	<0.01									
SUBTOTALS:			0.14		<0.01			0.74	<0.01	1499	76	

NOTE: Rounded totals are based upon sum of actual impacts.

PERMIT DRAWINGS
SHEET 92 OF 93

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY
WBS - 34821.1.1 (U-2525B)

SHEET 4/8/2013

ATN Revised 3/31/05

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
35	48+53 -Y23-	36" RCP						<0.01	<0.01	120	17	
	Bank Stabilization									10		
	THIS SHEET	SUBTOTALS:						<0.01	<0.01	130	17	
SUBTOTALS OF ALL OTHER:			6.96	0.00	0.31	0.38	0.03	1.70	0.09	10125	590	2055
TOTALS:			**6.96**	**0.00**	**0.31**	**0.38**	**0.03**	**1.72**	**0.10**	**10255**	**607**	**2055**

PERMIT DRAWINGS
SHEET 93 OF 93

NOTE: Rounded totals are based upon sum of actual impacts.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY
WBS - 34821.1.1 (U-2525B)

SHEET 4/8/2013

ATN Revised 3/31/05

09/08/99

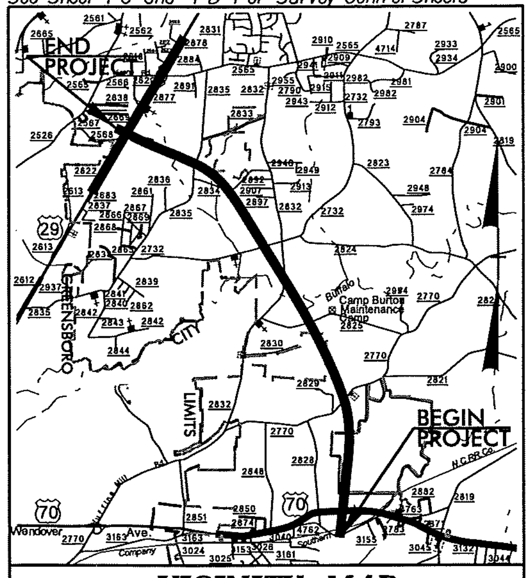
TIP PROJECT: U-2525B

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Plan Sheet Symbols
See Sheet 1-C and 1-D For Survey Control Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2525B	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34821.1.3		PE
34821.2.3		R/W & UTILITIES
34821.3.6		CONST.


END PROJECT
BEGIN PROJECT
Camp Burton Maintenance Camp
CITY LIMITS
GREENSBORO
Wendover Ave.
29
70

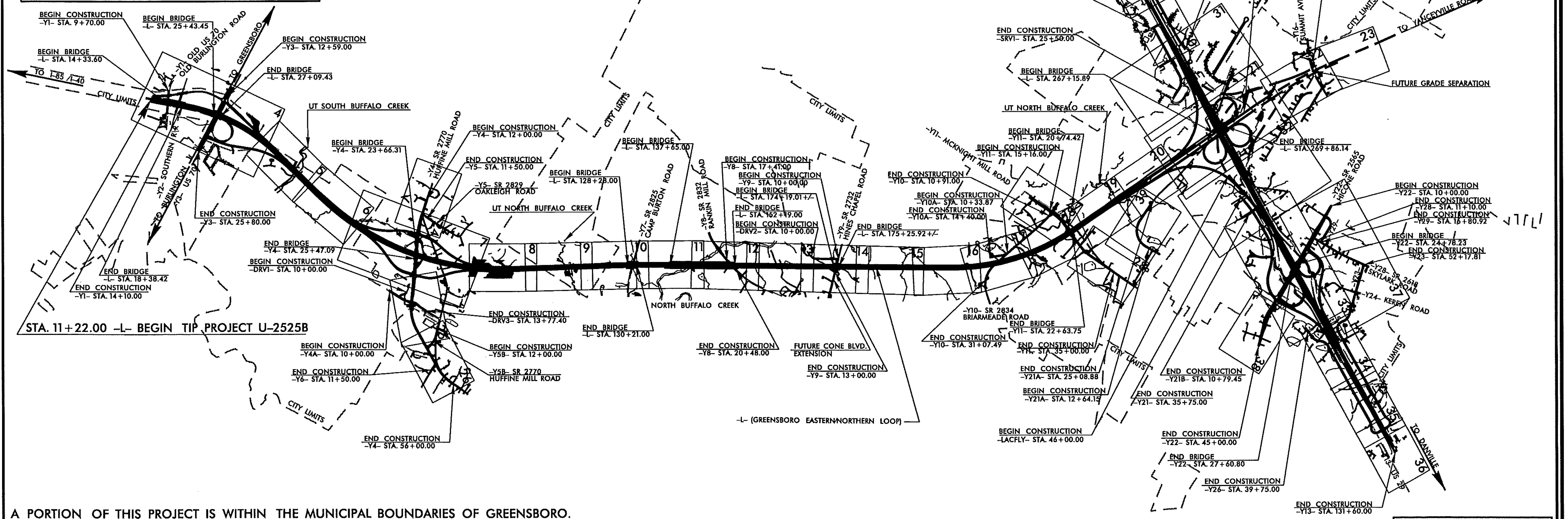
VICINITY MAP

GUILFORD COUNTY

LOCATION: *GREENSBORO EASTERN LOOP FROM NORTH OF US 70 RELOCATION TO US 29 NORTH OF GREENSBORO*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, SIGNALS, CULVERTS, RETAINING WALLS, AND STRUCTURES*

NAD 83/95


BEGIN CONSTRUCTION -Y13- STA. 14+00.00
END CONSTRUCTION -Y14- STA. 27+84.49
STA. 275+00.00 -L- END TIP PROJECT U-2525B
STA. 292+66.46 -L- END U-2525B R/W ACQUISTION
TO GREENSBORO
-Y13- US 29
CITY LIMITS
-Y16- SUMMIT AVE
TO YANCEYVILLE ROAD
FUTURE GRADE SEPARATION
BEGIN CONSTRUCTION -SRV1- STA. 10+12.34
END CONSTRUCTION -SRV1- STA. 25+50.00
BEGIN BRIDGE -L- STA. 267+15.89
UT NORTH BUFFALO CREEK
BEGIN BRIDGE -Y11- STA. 20+74.42
BEGIN CONSTRUCTION -Y11- STA. 15+16.00
END BRIDGE -L- STA. 269+86.14
-Y11- MCKNIGHT MILL ROAD
END CONSTRUCTION -Y10- STA. 10+91.00
BEGIN CONSTRUCTION -Y10A- STA. 10+33.87
END CONSTRUCTION -Y10A- STA. 14+40.00
-Y22- SR 2565 HICONE ROAD
BEGIN CONSTRUCTION -Y22- STA. 10+00.00
END CONSTRUCTION -Y28- STA. 11+10.00
END CONSTRUCTION -Y29- STA. 16+80.92
BEGIN BRIDGE -Y22- STA. 24+78.23
END CONSTRUCTION -Y23- STA. 52+17.81
-Y28- SR 2618 SKYLARK ROAD
-Y24- KERERY ROAD
-Y10- SR 2834 BRIARMEADE ROAD
END BRIDGE -Y11- STA. 22+63.75
END CONSTRUCTION -Y10- STA. 31+07.49
END CONSTRUCTION -Y11- STA. 35+00.00
END CONSTRUCTION -Y21A- STA. 25+08.88
BEGIN CONSTRUCTION -Y21A- STA. 12+64.15
END CONSTRUCTION -Y21B- STA. 10+79.45
END CONSTRUCTION -Y21- STA. 35+75.00
BEGIN CONSTRUCTION -LACFLY- STA. 46+00.00
END CONSTRUCTION -Y22- STA. 45+00.00
END BRIDGE -Y22- STA. 27+60.80
END CONSTRUCTION -Y26- STA. 39+75.00
END CONSTRUCTION -Y13- STA. 131+60.00
TO DANVILLE
BEGIN CONSTRUCTION -Y1- STA. 9+70.00
BEGIN BRIDGE -L- STA. 25+43.45
BEGIN BRIDGE -L- STA. 14+33.60
-Y1- OLD US 70 OLD BURLINGTON ROAD
TO GREENSBORO
BEGIN CONSTRUCTION -Y3- STA. 12+59.00
END BRIDGE -L- STA. 27+09.43
TO I-85 / I-40
CITY LIMITS
UT SOUTH BUFFALO CREEK
-Y2- SOUTHERN R/R
-Y3- US 70
TO BURLINGTON
END CONSTRUCTION -Y3- STA. 25+80.00
END BRIDGE -L- STA. 18+38.42
END CONSTRUCTION -Y1- STA. 14+10.00
STA. 11+22.00 -L- BEGIN TIP PROJECT U-2525B
BEGIN BRIDGE -Y4- STA. 23+66.31
-Y4- SR 2770 HUFFINE MILL ROAD
BEGIN CONSTRUCTION -Y4- STA. 12+00.00
END CONSTRUCTION -Y5- STA. 11+50.00
-Y5- SR 2829 OAKLEIGH ROAD
UT NORTH BUFFALO CREEK
BEGIN BRIDGE -L- STA. 128+28.00
BEGIN BRIDGE -L- STA. 137+65.00
END BRIDGE -Y4- STA. 25+47.09
BEGIN CONSTRUCTION -DRV1- STA. 10+00.00
END CONSTRUCTION -DRV3- STA. 13+77.40
BEGIN CONSTRUCTION -Y4A- STA. 10+00.00
BEGIN CONSTRUCTION -Y5B- STA. 12+00.00
-Y5B- SR 2770 HUFFINE MILL ROAD
END CONSTRUCTION -Y6- STA. 11+50.00
END CONSTRUCTION -Y4- STA. 56+00.00
-Y7- SR 2825 CAMP BURTON ROAD
-Y8- SR 2832 RANKIN MILL ROAD
BEGIN CONSTRUCTION -Y8- STA. 17+41.00
BEGIN CONSTRUCTION -Y9- STA. 10+00.00
BEGIN BRIDGE -L- STA. 174+19.01+/-
END BRIDGE -L- STA. 162+19.00
BEGIN CONSTRUCTION -DRV2- STA. 10+00.00
-Y9- SR 2732 HINES CHAPEL ROAD
END BRIDGE -L- STA. 175+25.92+/-
NORTH BUFFALO CREEK
END BRIDGE -L- STA. 130+21.00
END CONSTRUCTION -Y8- STA. 20+48.00
FUTURE CONE BLVD. EXTENSION
END CONSTRUCTION -Y9- STA. 13+00.00
-L- (GREENSBORO EASTERN/NORTHERN LOOP)

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF GREENSBORO.
THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2014 = N/A
ADT 2030 = 20000
DHV = 10 %
D = 60 %
T = 16 % *
V = 70 MPH
* TTST 5% DUAL 11%
FUNC CLASS = INTERSTATE
"STATEWIDE TIER"

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-2525B	=	4.504 Miles
LENGTH STRUCTURE TIP PROJECT U-2525B	=	0.492 Miles
TOTAL LENGTH OF TIP PROJECT U-2525B	=	4.996 Miles

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 22, 2012

LETTING DATE:
MAY 20, 2014

JAMES A. SPEER, PE
PROJECT ENGINEER

DANIEL W. GARDNER JR., PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _______________ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _______________ P.E.

CONTRACT:

15-APR-2013 14:26
R:\Roadway\Proj\Interim Design\u2525b_rdy_interim_tsh.dgn
$$$$USERNAME$$$$

3/15/06

Note: Not to Scale

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

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	1-B

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	—·—·—·—
County Line	—··—··—
Township Line	—·—·—
City Line	—·—·—
Reservation Line	— · — · —
Property Line	—— ——
Existing Iron Pin	⊙ EIP
Property Corner	—— ——×
Property Monument	⊡ ECM
Parcel/Sequence Number	⑫③
Existing Fence Line	—×——×——×—
Proposed Woven Wire Fence	——o——
Proposed Chain Link Fence	——□——
Proposed Barbed Wire Fence	——◇——
Existing Wetland Boundary	– – – –WLB– – –
Proposed Wetland Boundary	——WLB——
Existing Endangered Animal Boundary	——EAB——
Existing Endangered Plant Boundary	——EPB——

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	⊙ S
Well	○ W
Small Mine	⚒
Foundation	▭
Area Outline	▭
Cemetery	▭ †
Building	⊔
School	⚑
Church	✝
Dam	━━━━

HYDROLOGY:

Stream or Body of Water	——···——
Hydro, Pool or Reservoir	⌐ – – – – ¬
Jurisdictional Stream	—JS——···—
Buffer Zone 1	——BZ 1——
Buffer Zone 2	——BZ 2——
Flow Arrow	←······
Disappearing Stream	>······
Spring	○~~~~
Wetland	⊻
Proposed Lateral, Tail, Head Ditch	⋙ ← FLOW
False Sump	◁▷

RAILROADS:

Standard Gauge	┼┼┼┼┼┼┼┼ CSX TRANSPORTATION
RR Signal Milepost	⊙ MILEPOST 35
Switch	▭ SWITCH
RR Abandoned	–+– –+– –+–
RR Dismantled	— — — — —

RIGHT OF WAY:

Baseline Control Point	◇
Existing Right of Way Marker	△
Existing Right of Way Line	——— ——— – –
Proposed Right of Way Line	━(R/W)━
Proposed Right of Way Line with Iron Pin and Cap Marker	━(R/W)━━△━
Proposed Right of Way Line with Concrete or Granite Marker	━(△)━━(R/W)━
Existing Control of Access	– –(C/A)– –
Proposed Control of Access	━(C/A)━
Existing Easement Line	——E——
Proposed Temporary Construction Easement	——E——
Proposed Temporary Drainage Easement	——TDE——
Proposed Permanent Drainage Easement	——PDE——
Proposed Permanent Utility Easement	——PUE——

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	— — — — —
Existing Curb	━ ━ ━ ━ ━
Proposed Slope Stakes Cut	– – – C – – –
Proposed Slope Stakes Fill	– – – F – – –
Proposed Wheel Chair Ramp	(WCR)
Existing Metal Guardrail	—ᴛ——ᴛ——ᴛ—
Proposed Guardrail	—T—T—T—T—
Existing Cable Guiderail	—⊓——⊓——⊓—
Proposed Cable Guiderail	—⊓—⊓—⊓—⊓—
Equality Symbol	⊕
Pavement Removal	☒☒☒☒☒

VEGETATION:

Single Tree	✿
Single Shrub	✿
Hedge	~~~~~~~~
Woods Line	⌒⌒⌒⌒⌒
Orchard	✿ ✿ ✿ ✿
Vineyard	Vineyard

EXISTING STRUCTURES:

MAJOR:

Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	) CONC WW (

MINOR:

Head and End Wall	⁄CONC HW\
Pipe Culvert	═══
Footbridge	>– – – – –<
Drainage Box: Catch Basin, DI or JB	□CB
Paved Ditch Gutter	— — — — —
Storm Sewer Manhole	Ⓢ
Storm Sewer	——S——

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

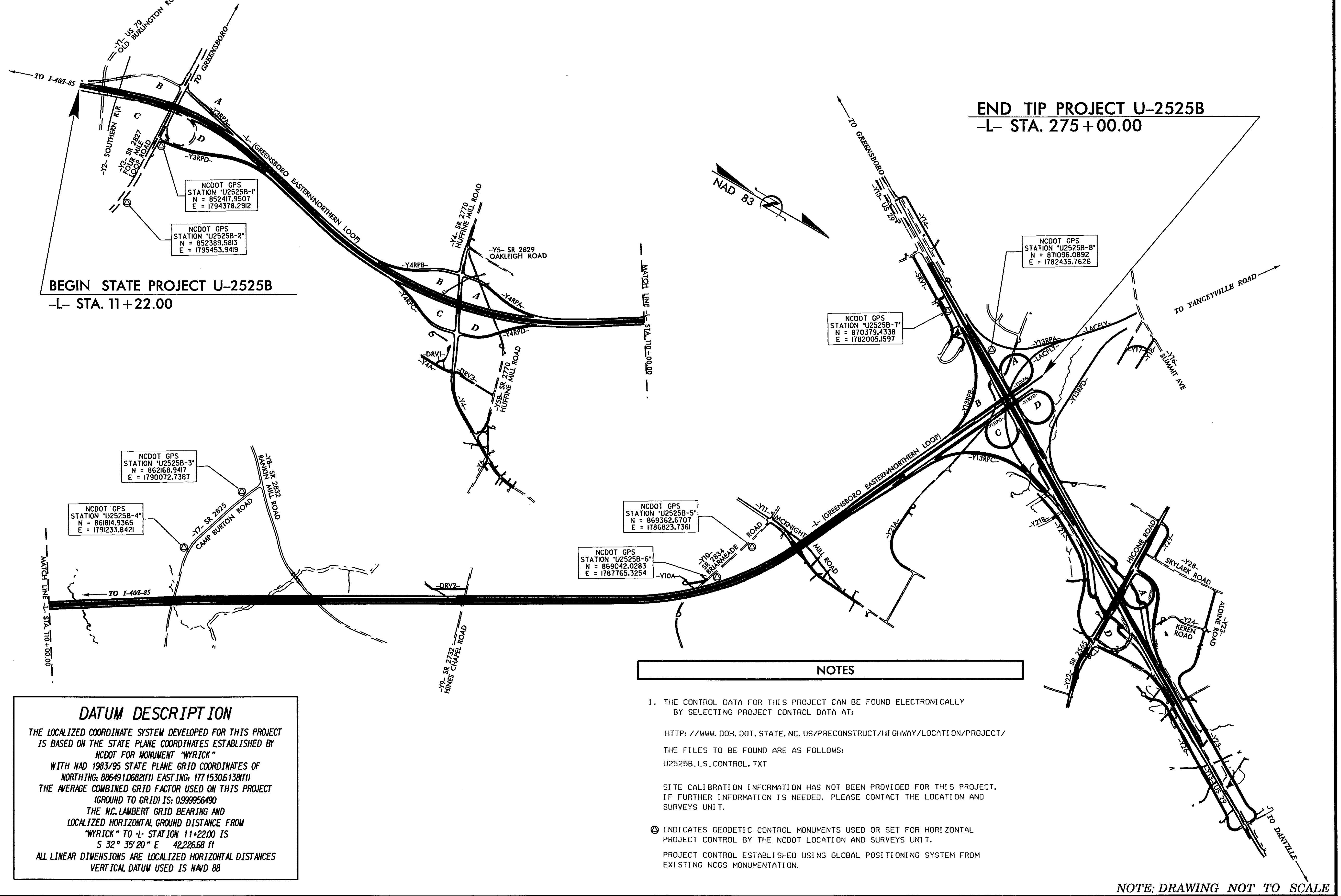
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	——SS——
Above Ground Sanitary Sewer	A/G Sanitary Sewer
Recorded SS Forced Main Line	——FSS——
Designated SS Forced Main Line (S.U.E.*)	– – – –FSS– – – –

MISCELLANEOUS:

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

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	1-C
Location and Surveys	

U-2525B SURVEY CONTROL SHEET


TO I-40/I-85
-Y1- US 70 OLD BURLINGTON ROAD
TO GREENSBORO
-Y2- SOUTHERN R/R
-Y3- SR 2827 FOUR MILE LOOP ROAD
A
B
C
D
-Y3RPA-
-Y3RPD-
-L- (GREENSBORO EASTERN/NORTHERN LOOP)
-Y4- SR 2770 HUFFINE MILL ROAD
-Y5- SR 2829 OAKLEIGH ROAD
-Y4RPB-
-Y4RPA-
-Y4RPC-
-Y4RPD-
-DRV1-
-Y4A-
-DRV3-
-Y5B- SR 2770 HUFFINE MILL ROAD
MATCH LINE -L- STA. 110+00.00
NAD 83
TO GREENSBORO
-Y13- US 29
-Y14-
-SRV1-
-Y13RPA-
-LACFLY-
-Y13RPB-
-Y13RPC-
-Y13RPD-
-Y17-
-Y18-
-Y16- SUMMIT AVE
TO YANCEYVILLE ROAD
-Y8- SR 2832 RANKIN MILL ROAD
-Y7- SR 2825 CAMP BURTON ROAD
TO I-40/I-85
-DRV2-
-Y9- SR 2732 HINES CHAPEL ROAD
-Y10- SR 2834 BRIARMEADE ROAD
-Y10A-
-Y11- MCKNIGHT MILL ROAD
-Y21A-
-Y21B-
-Y21-
HICONE ROAD
-Y27-
-Y28- SKYLARK ROAD
-Y24- KEREN ROAD
-Y23- ALDINE ROAD
-Y22- SR 2565
-Y26-
-Y25-
-Y13- US 29
TO DANVILLE

BEGIN STATE PROJECT U-2525B
-L- STA. 11+22.00

END TIP PROJECT U-2525B
-L- STA. 275+00.00

NCDOT GPS
STATION "U2525B-1"
N = 852417.9507
E = 1794378.2912

NCDOT GPS
STATION "U2525B-2"
N = 852389.5813
E = 1795453.9419

NCDOT GPS
STATION "U2525B-3"
N = 862168.9417
E = 1790072.7387

NCDOT GPS
STATION "U2525B-4"
N = 861814.9365
E = 1791233.8421

NCDOT GPS
STATION "U2525B-5"
N = 869362.6707
E = 1786823.7361

NCDOT GPS
STATION "U2525B-6"
N = 869042.0283
E = 1787765.3254

NCDOT GPS
STATION "U2525B-7"
N = 870379.4338
E = 1782005.1597

NCDOT GPS
STATION "U2525B-8"
N = 871096.0892
E = 1782435.7626

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "WYRICK"
WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF
NORTHING: 886491.0682(ft) EASTING: 1771530.6138(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.99995649O
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"WYRICK" TO -L- STATION 11+22.00 IS
S 32° 35' 20" E 42,226.68 ft
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:

HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

THE FILES TO BE FOUND ARE AS FOLLOWS:

U2525B_LS_CONTROL.TXT

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

⊚ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM FROM EXISTING NCGS MONUMENTATION.

NOTE: DRAWING NOT TO SCALE

12/01/2025

15-APR-2013 14:26
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$$$$USERNAME$$$$

12/01/2005

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	1-D
Location and Surveys	

U-2525B SURVEY CONTROL SHEET

BASELINE DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
10	BL-10	851147.5113	1794087.4481	756.00	14+04.00	100.24 LT
11	BL-11	852400.8917	1793726.0078	758.00	26+92.90	102.07 LT
12	BL-12	852836.7100	1793743.4999	751.55	31+17.35	44.51 LT
13	BL-13	853365.1982	1793768.8911	726.31	36+41.28	36.04 LT
14	BL-14	853695.4336	1793841.0379	716.36	39+76.60	11.36 LT
15	BL-15	854145.8698	1793962.5906	707.24	44+42.36	4.53 RT
16	BL-16	854517.4199	1794049.3236	697.55	48+23.86	1.22 LT
17	BL-17	854869.7195	1794139.3803	723.92	51+87.48	0.91 RT
18	BL-18	855257.6298	1794235.4322	744.94	55+87.10	0.66 RT
19	BL-19	855456.0297	1794276.4329	739.01	57+90.50	2.63 LT
20	BL-20	855811.3705	1794339.7158	723.63	61+50.79	0.29 LT
21	BL-21	856195.0892	1794384.1383	733.00	65+37.00	3.60 RT
22	BL-22	856690.6393	1794405.5194	759.70	70+32.47	11.15 RT
23	BL-23	857205.8981	1794358.0790	767.26	76+28.97	4.59 RT
24	BL-24	857674.4863	1794314.6401	770.02	80+10.99	20.22 RT
25	BL-25	858064.2085	1794211.3362	765.65	84+21.16	5.45 RT
26	BL-26	858283.7054	1794143.0710	773.72	86+50.55	0.60 RT
27	BL-27	858533.8969	1794067.6429	777.33	89+11.87	7.12 RT
28	BL-28	858972.0209	1793892.5070	760.60	93+03.16	9.02 RT
29	BL-29	859475.8262	1793641.9462	744.33	99+44.77	16.29 RT
30	BL-30	859870.8603	1793370.2938	748.86	104+18.97	0.90 LT
31	BL-31	860205.1632	1793181.2137	749.01	108+06.80	10.43 RT
32	BL-32	860764.2425	1792828.4869	703.63	114+67.93	9.81 RT
33	BL-33	861206.0022	1792548.2635	736.30	119+91.06	8.03 RT
34	BL-34	861490.6124	1792370.3123	727.08	123+26.73	9.28 RT
35	BL-35	861991.5945	1792062.4491	706.85	129+14.92	12.61 RT
36	BL-36	862222.6472	1791915.0625	724.12	131+80.98	5.04 RT
37	BL-37	862690.2341	1791630.5755	710.32	137+32.23	0.25 LT
38	BL-38	863108.9611	1791404.4375	685.90	142+11.94	4.59 RT
39	BL-39	863656.7911	1791100.4398	694.60	148+38.41	12.96 RT
40	BL-40	863894.8811	1790973.9033	702.27	151+07.90	21.44 RT
41	BL-41	864250.9402	1790798.6006	706.40	155+10.95	50.10 RT
42	BL-42	864496.1110	1790643.8098	707.06	157+93.60	33.69 RT
43	BL-43	864838.5838	1790459.3947	731.58	161+75.58	39.82 RT
44	BL-44	865139.0737	1790270.4689	734.44	165+37.17	29.13 RT
45	BL-45	865507.3977	1790061.2347	751.58	170+30.19	70.30 RT
46	BL-46	865812.6806	1789974.2087	754.90	172+68.94	106.71 RT
47	BL-47	866351.1920	1789625.4252	753.82	179+09.57	71.57 RT
48	BL-48	867055.6591	1789236.1811	745.76	187+14.33	83.78 RT
49	BL-49	867542.7101	1788902.9172	736.74	192+62.05	105.98 RT
50	BL-50	867916.3021	1788764.8506	729.53	196+95.41	102.35 RT
51	BL-51	868250.6578	1788558.6551	757.93	200+86.72	90.34 RT
52	BL-52	868714.1030	1788208.4700	770.00	206+58.10	59.40 RT
53	BL-53	868924.5825	1788020.1781	756.70	209+37.23	46.24 RT
54	BL-54	869405.2770	1787514.1452	739.83	216+30.14	20.22 RT
55	BL-55	869720.5654	1787092.9016	754.85	221+50.36	26.82 RT
56	BL-56	869938.5665	1786763.0494	766.48	225+47.20	29.19 RT
57	BL-57	870149.2670	1786381.7139	764.69	229+00.22	41.47 RT
58	BL-58	870285.0456	1786094.2409	767.37	232+98.13	40.59 RT
59	BL-59	870425.5932	1785797.6483	760.64	236+26.34	40.10 RT
60	BL-60	870564.9610	1785505.4530	737.36	239+50.07	40.44 RT
61	BL-61	870867.0225	1784871.5892	753.08	246+52.23	40.92 RT
62	BL-62	871321.0214	1783917.2752	811.02	257+09.03	40.95 RT
63	BL-63	871681.3426	1783161.0200	836.87	265+46.73	41.47 RT
64	BL-64	871899.8373	1782831.2363	831.98	269+38.40	97.11 RT
65	BL-65	872034.9400	1782433.9384	824.71	273+55.22	40.44 RT
66	BL-66	872179.7319	1782161.2562	815.87	276+83.65	62.06 RT
67	BL-67	872366.7730	1781727.6372	799.26	281+36.77	40.44 RT
68	BL-68	872561.5422	1781312.8353	820.94	285+95.58	14.49 RT
69	BL-69	872757.8394	1780914.5442	852.08	290+37.97	22.23 LT

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
101	BY1-101	851153.0756	1793955.9867	732.29	10+02.59	10.99 RT
102	BY1-102	851321.7742	1794301.3464	723.60	13+86.95	18.55 RT
3001	BY1-3001	851250.9414	1794060.7107	731.57	11+46.70	19.64 LT
A10	BL-10	851147.5113	1794087.4481	756.00	11+10.34	81.56 RT

BY2

POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
201	BY2-201	851472.7658	1793928.8990	734.42	10+56.57	80.15 RT
202	BY2-202	851541.0899	1794252.5561	731.52	91+58.59	15.34 RT
3002	BY2-3002	851433.7753	1794810.9886	740.69	10+42.35	169.91 RT
B10	BL-10	851147.5113	1794087.4481	756.00	10+75.09	8438.67 RT

BY3

POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
301	BY3-301	852372.4260	1793148.9862	756.07	10+10.96	51.80 LT
A11	BL-11	852400.8917	1793726.0078	758.00	15+96.64	59.40 LT
302	BY3-302	852394.1825	1794168.3121	753.63	20+38.41	36.66 LT
303	BY3-303	852415.3752	1794698.2414	750.41	25+60.76	30.62 LT

BY4

POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
401	BY4-401	857220.9632	1792754.6762	777.52	OUTSIDE PROJECT LIMITS	
402	BY4-402	857364.0809	1793397.6063	777.98	15+00.09	19.29 RT
403	BY4-403	857582.6622	1793996.2596	754.97	21+35.71	0.73 RT
A24	BL-24	857674.4863	1794314.6401	770.02	24+63.04	50.75 RT
404	BY4-404	857822.9516	1794488.0274	764.80	26+82.70	3.05 LT
405	BY4-405	857913.5267	1794688.4213	770.00	29+02.69	0.97 LT
406	BY4-406	858026.9001	1794934.0033	778.74	31+73.90	0.24 LT
407	BY4-407	858202.4159	1795310.1603	750.10	35+00.31	1.06 LT
408	BY4-408	858491.4926	1795641.0602	765.40	40+34.37	0.36 LT
409	BY4-409	858764.6764	1795820.5503	778.93	43+51.41	15.16 LT
410	BY4-410	858965.6459	1795932.3907	782.65	45+91.46	2.92 LT
411	BY4-411	859270.2888	1796103.1442	772.05	49+40.63	9.49 LT
412	BY4-412	859736.4922	1796324.7556	773.33	54+57.80	15.63 RT
413	BY4-413	860265.1447	1796372.6155	764.30	OUTSIDE PROJECT LIMITS	

BY5

POINT	DESC.	NORTH	EAST	ELEVATION	Y5 STATION	OFFSET
501	BY5-501	857870.5264	1793477.3144	777.50	OUTSIDE PROJECT LIMITS	
A402	BY4-402	857364.0809	1793397.6063	UNKNOWN	OUTSIDE PROJECT LIMITS	

BY6

POINT	DESC.	NORTH	EAST	ELEVATION	Y6 STATION	OFFSET
A411	BY4-411	859270.2888	1796103.1442	772.05	OUTSIDE PROJECT LIMITS	
601	BY6-601	859284.5706	1796359.9630	773.92	12+11.86	17.54 RT

BY7

POINT	DESC.	NORTH	EAST	ELEVATION	Y7 STATION	OFFSET
701	BY7-701	861946.8835	1791876.3682	711.14	10+00.47	14.89 RT
A35	BL-35	861991.5945	1792062.4491	706.85	11+91.84	10.03 RT
702	BY7-702	862039.1694	1792233.7937	706.74	13+69.64	14.79 RT

BY8

POINT	DESC.	NORTH	EAST	ELEVATION	Y8 STATION	OFFSET
801	BY8-801	863404.7838	1790813.3660	694.91	13+77.00	60.84 RT
A40	BL-40	863894.8811	1790973.9033	702.27	18+88.39	34.85 RT
802	BY8-802	864452.6472	1791017.3340	723.86	OUTSIDE PROJECT LIMITS	

BY9

POINT	DESC.	NORTH	EAST	ELEVATION	Y9 STATION	OFFSET
901	BY9-901	865899.2919	1789709.0551	727.54	11+03.12	14.96 RT
902	BY9-902	865999.4294	1790045.7262	740.12	14+54.36	15.57 RT
A46	BL-46	865812.6806	1789974.2087	754.90	13+32.30	173.97 RT

BY10

POINT	DESC.	NORTH	EAST	ELEVATION	Y10 STATION	OFFSET
A1102	BY11-1102	869494.0442	1786362.3986	758.90	10+19.71	21.35 LT
1001	BY10-1001	869395.0354	1786710.2462	755.69	13+88.07	14.16 LT
1002	BY10-1002	869192.2029	1787320.9729	729.70	20+23.54	14.53 LT
A6	BL-6	869042.0203	1787765.3254	746.11	24+92.58	15.94 LT
A53	BL-53	868924.5825	1788020.1781	756.70	27+70.50	14.78 RT
1003	BY10-1003	868895.5251	1788214.6980	766.99	29+60.85	27.31 RT
1004	BY10-1004	869057.0261	1788519.3461	782.74	33+04.04	13.39 LT

BY11

POINT	DESC.	NORTH	EAST	ELEVATION	Y11 STATION	OFFSET
1101	BY11-1101	868911.1443	1786319.6766	731.09	10+07.16	13.03 RT
1102	BY11-1102	869494.0442	1786362.3986	758.90	15+91.54	23.15 RT
A57	BL-57	870149.2670	1786381.7139	764.69	22+15.01	155.20 LT
1103	BY11-1103	870726.7758	1786649.9674	773.74	28+07.72	77.77 LT
1104	BY11-1104	871441.6006	1786796.3124	782.19	36+11.47	14.03 RT
1105	BY11-1105	871806.8253	1786828.7423	799.95	40+57.08	13.95 RT

BY12

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1204	BY12-1204	871427.2004	1782818.3374	825.47	267+47.02	335.24 LT
1203	BY12-1203	871595.0062	1782954.5743	838.03	266+96.07	125.10 LT
A63	BL-63	871681.3426	1783161.0200	836.87	265+46.73	41.47 RT
1202	BY12-1202	871637.2150	1783586.0703	820.67	261+43.94	184.21 RT
1201	BY12-1201	871547.7401	1784028.3451	806.46	257+06.12	293.40 RT

BY13

POINT	DESC.	NORTH	EAST	ELEVATION	Y13 STATION	OFFSET
1301	BY13-1301	868301.0789	1780817.4860	800.16	10+00.00	4.39 LT
1302	BY13-1302	869171.7434	1781330.7636	815.21	20+14.10	3.03 LT
1303	BY13-1303	869848.7532	1781737.9183	826.37	27+93.13	4.90 LT
1304	BY13-1304	870012.4211	1782319.0174	834.97	39+25.31	5.29 LT
C64	BL-64	871899.8373	1782831.2363	831.98	51+21.42	124.22 LT
1306	BY13-1306	872028.3969	1783514.7326	781.95	62+52.02	4.34 LT
1307	BY13-1307	873602.6637	1784037.9211	799.08	72+70.09	4.40 LT
1308	BY13-1308	874567.4502	1784565.1875	826.09	83+00.07	6.36 LT
1309	BY13-1309	875384.1754	1785054.4849	822.75	92+52.94	5.95 LT
1310	BY13-1310	876298.3145	1785603.0389	789.32	103+19.04	4.72 LT
1311	BY13-1311	877481.0292	1786310.5304	785.64	116+97.21	5.04 LT
1312	BY13-1312	878562.0581	1786957.7849	798.14	129+57.20	4.83 LT

BY14

POINT	DESC.	NORTH	EAST	ELEVATION	Y14 STATION	OFFSET
1401	BY14-1401	868727.0134	1780987.0467	807.00	10+76.54	20.60 LT
1402	BY14-1402	869379.0779	1781372.2978	817.73	10+03.20	98.06 RT
1403	BY14-1403	869997.1630	1781748.2708	827.34	25+93.57	105.45 RT
1404	BY14-1404	870771.0774	1782208.3508	834.60	10+79.42	2352.01 RT
1405	BY14-1405	871505.4705	1782642.3656	825.89	10+03.76	3205.17 RT
A64	BL-64	871899.8373	1782831.2363	831.98	OUTSIDE PROJECT LIMITS	

BY15

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1501	BY15-1501	871436.0490	1781836.9421	833.20	276+37.39	740.10 LT
1502	BY15-1502	871533.4079	1782374.0531	834.04	271+93.04	430.18 LT
A1405	BY14-1405	871505.4705	1782642.3656	825.89	269+39.55	340.15 LT

BY16

POINT	DESC.	NORTH	EAST	ELEVATION	Y16 STATION	OFFSET
1601	BY16-1601	872463.1560	1780211.7137	855.84	10+62.04	15.00 RT
A70	BL-70	872041.6103	1780683.7278	860.80	16+62.99	27.57 RT
A1701	BY17-1701	873001.5270	1780799.3122	861.52	18+55.94	27.14 RT
1602	BY16-1602	873299.7769	1780965.7843	850.52	21+96.62	25.71 RT

BY17

POINT	DESC.	NORTH	EAST	ELEVATION	Y17 STATION	OFFSET
1701	BY17-1701	873001.5270	1780799.3122	861.52	14+36.55	365.00 LT
1702	BY17-1702	872990.7334	1781464.8096	831.94	10+44.45	13.75 RT

BY18

POINT	DESC.	NORTH	EAST	ELEVATION	Y18 STATION	OFFSET
A1602	BY16-1602	873299.7769	1780965.7843	850.52	14+97.03	22.40 RT
1801	BY18-1801	873271.0110	1781444.7777	845.79	10+10.00	12.30 RT

BY19

POINT	DESC.	NORTH	EAST	ELEVATION	Y19 STATION	OFFSET
B64	BL-64	871899.8373	1782831.2363	831.98	OUTSIDE PROJECT LIMITS	
1901	BY19-1901	872504.4479	1783246.7191	791.72	OUTSIDE PROJECT LIMITS	
1902	BY19-1902	873063.8411	1783574.4178	778.99	20+45.33	96.35 LT
1903	BY19-1903	873673.5826	1783940.0010	794.17	21+33.98	97.60 LT
1904	BY19-1904	874155.7230	1784172.1292	823.42	16+03.02	48.82 LT
1905	BY19-1905	874740.2203	1784436.5754	843.40	10+34.13	259.59 LT

BY20

POINT	DESC.	NORTH	EAST	ELEVATION	Y19 STATION	OFFSET
2001	BY20-2001	873651.7445	1783319.4180	780.26	24+71.03	424.37 RT
A1902	BY19-1902	873063.8411	1783574.4178	778.99	20+45.33	96.35 LT

BY21

POINT	DESC.	NORTH	EAST	ELEVATION	Y21 STATION	OFFSET
A2203	BY22-2203	874798.1311	1785023.3061	852.13	12+27.33	452.54 RT
2104	BY21-2104	874392.4628	1784030.4487	833.03	10+50.72	141.69 RT
2103	BY21-2103	873989.9765	1784349.5631	811.25	24+22.32	89.59 RT
2102	BY21-2102	873369.9746	1783955.2198	784.03	30+92.23	122.80 RT
2101	BY21-2101	872699.7273	1783541.0663	783.30	31+50.45	821.47 RT

BY22

POINT	DESC.	NORTH	EAST	ELEVATION	Y22 STATION	OFFSET
2201	BY22-2201	874730.3010	1783200.3398	829.10	11+23.75	22.30 RT
2202	BY22-2202	874740.7410	1783745.9330	822.49	16+69.40	15.53 RT
A1905	BY19-1905	874740.2203	1784436.5754	843.40	23+60.02	20.49 RT
2203	BY22-2203	874798.1311	1785023.3061	852.13	29+47.06	25.63 LT
A2702	BY27-2702	874744.9198	1785403.6251	850.84	33+27.79	24.70 RT
2204	BY22-2204	874742.1080	1785770.9206	840.96	37+03.16	15.47 RT
2205	BY22-2205	874913.0443	1786566.2761	833.83	45+07.19	15.92 RT

BY23

POINT	DESC.	NORTH	EAST	ELEVATION	Y13 STATION	OFFSET
B1905	BY19-1905	874740.2203	1784436.5754	843.40	83+89.93	209.56 LT
2301	BY23-2301	875189.2503	1784589.8591	819.79	88+47.08	324.52 LT
2302	BY23-2302	875441.5804	1784890.6509	814.36	92+10.06	176.01 LT
2303	BY23-2303	875830.0762	1785226.7027	817.00	97+24.00	87.17 LT
2304	BY23-2304	876399.3439	1785570.4922	791.17	103+89.01	84.53 LT

BY23A

POINT	DESC.	NORTH	EAST	ELEVATION	Y23 STATION	OFFSET
2400	BY24-2400	876232.2106	1784427.7008	781.00	45+95.92	43.85 RT
81	BY23A-81	876126.4210	1784176.4639	767.20	48+65.36	2.46 RT
82	BY23A-82	876026.0732	1783848.6923	798.34	52+07.70	15.00 LT

BY23A

POINT	DESC.	NORTH	EAST	ELEVATION	Y29 STATION	OFFSET
87	BY23A-87	874969.8022	1783359.2045	820.32	11+00.62	56.03 LT
88	BY23A-88	874704.0486	1783340.9991	823.91	10+22.05	6.00 LT

BY24

POINT	DESC.	NORTH	EAST	ELEVATION	Y22RPA STATION	OFFSET
2401	BY24-2401	875080.8696	1784530.8867	795.66	20+21.53	494.10 RT
2402	BY24-2402	875660.7153	1784548.3510	804.10	21+10.78	277.34 RT
A2302	BY23-2302	875441.5804	1784890.6509	814.36	10+70.09	63.61 LT

BY25

POINT	DESC.	NORTH	EAST	ELEVATION	Y23 STATION	OFFSET
2501	BY25-2501	876587.2177	1785301.9626	802.51	33+64.90	231.43 RT
A2304	BY23-2304	876399.3439	1785570.4922	791.17	33+87.52	95.55 LT

BY26

POINT	DESC.	NORTH	EAST	ELEVATION	Y22RPD STATION	OFFSET
2603	BY26-2603	876657.1949	1785922.7990	779.59	OUTSIDE PROJECT LIMITS	
2602	BY26-2602	875944.4572	1785495.1766	790.06	14+61.90	20.45 RT
2601	BY26-2601	875377.1540	1785193.1232	825.74	20+12.10	266.20 RT
B2203	BY22-2203	874798.1311	1785023.3061	852.13	25+73.43	479.41 RT

BY27

POINT	DESC.	NORTH	EAST	ELEVATION	Y22RPD STATION	OFFSET
2701	BY27-2701	875219.5206	1785437.2635	841.46	21+04.03	34.52 RT
2702	BY27-2702	874744.9190	1785403.6251	850.84	OUTSIDE PROJECT LIMITS	

NOTES

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:

HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

THE FILES TO BE FOUND ARE AS FOLLOWS:

U2525B_LS_CONTROL.TXT

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

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM FROM EXISTING NCGS MONUMENTATION.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "WYRICK"
WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF
NORTHING: 886491.0682(ft) EASTING: 1771530.6138(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999956490
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"WYRICK" TO -L- STATION 11+22.00 IS
S 32° 35' 20" E 42,226.68 ft
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

BENCHMARK DATA

BM1 ELEVATION = 757.75'
N 852307 E 1793121
Y3 STATION 10+00
N 9° 14' 22.9" W DIST 67.99'
R/R SPIKE SET IN 10 INCH BLACK GUM

BM2 ELEVATION = 750.94'
N 852460 E 1794711
Y3 STATION 25+03 82' LEFT
R/R SPIKE SET IN 24 INCH PIN OAK

BM3 ELEVATION = 776.63'
N 857271 E 1792667
Y4 STATION 10+00
S 87° 23' 46.1" W DIST 236.40'
R/R SPIKE SET IN 24 INCH PINE

BM4 ELEVATION = 769.58'
N 860340 E 1796291
Y4 STATION 58+34
N 10° 46' 40.8" W DIST 229.74'
R/R SPIKE SET IN 36 INCH PIN OAK

BM5 ELEVATION = 786.00'
N 869077 E 1788513
Y10 STATION 33+09
N 34° 11' 47.3" W DIST 33'
R/R SPIKE SET IN 14 INCH DOUBLE MULBERRY

BM6 ELEVATION = 752.54'
N 869413 E 1786176
Y11 STATION 15+00 150' LEFT
R/R SPIKE SET IN 15 INCH WALNUT

BM7 ELEVATION = 804.20'
N 871932 E 1786771
Y11 STATION 40+60
N 53° 01' 04.7" W DIST 55.86'
R/R SPIKE SET IN 23 INCH PINE

BM8 ELEVATION = 745.86'
N 871367 E 1784927
Y21A STATION 25+09
N 43° 15' 53.0" W DIST 106'
R/R SPIKE SET IN 20 INCH SWEET GUM

BM9 ELEVATION = 838.99'
N 871343 E 1781840
Y15 STATION 10+04 71' RIGHT
R/R SPIKE SET IN 15 INCH PIN OAK

BM10 ELEVATION = 850.03'
N 872473 E 1780146
Y16 STATION 10+16 33' LEFT
R/R SPIKE SET IN 20 INCH PINE

BM11 ELEVATION = 837.02'
N 873012 E 1781522
Y17 STATION 10+00
N 19° 58' 51.1" E DIST 37.47'
R/R SPIKE SET IN 36 INCH OAK

BM12 ELEVATION = 859.66'
N 873531 E 1781045
Y16 STATION 23+44
N 10° 04' 34.9" E DIST 94'
R/R SPIKE SET IN 30 INCH OAK

BM13 ELEVATION = 783.79'
N 873689 E 1783288
Y13 STATION 68+91 651' LEFT
R/R SPIKE SET IN 15 INCH SWEET GUM

BM14 ELEVATION = 829.24'
N 874866 E 1783255
Y22 STATION 11+79 105' LEFT
R/R SPIKE SET IN 24 INCH STUMP

BM15 ELEVATION = 832.86'
N 874965 E 1786563
Y22 STATION 45+13
N 7° 10' 52.2" W DIST 35'
R/R SPIKE SET IN 15 INCH PINE

BM16 ELEVATION = 702.24'
N 854550 E 1793849
L STATION 48+07 203' LEFT
R/R SPIKE SET IN 24 INCH POPLAR

BM17 ELEVATION = 801.27'
N 870779 E 1786925
Y13 STATION 131+27 144' LEFT
R/R SPIKE SET IN 15 INCH PINE

BM18 ELEVATION = 732.66'
N 870377 E 1785380
L STATION 239+75 180' LEFT
R/R SPIKE SET IN 30 INCH BIRCH

BM19 ELEVATION = 729.67'
N 869887 E 1787486
L STATION 219+42 305' RIGHT
R/R SPIKE SET IN 11 INCH GUM

BM20 ELEVATION = 719.05'
N 867201 E 1788935
L STATION 189+90 105' LEFT
R/R SPIKE SET IN 18 INCH SWEET GUM

BM21 ELEVATION = 686.51'
N 862741 E 1792055
L STATION 135+69 306' RIGHT
R/R SPIKE SET IN 14 INCH GUM

BM22 ELEVATION = 786.00'
N 868630 E 1780770
Y13 STATION 12+64 218' LEFT
R/R SPIKE SET IN 12 INCH DOUBLE MULBERRY

BM23 ELEVATION = 757.45'
N 851150 E 1794032
Y1 STATION 10+70 55' RIGHT
X ON SOUTH CONCRETE BRIDGE WING

BM24 ELEVATION = 755.59'
N 852436 E 1793560
Y3 STATION 14+32 101' LEFT
R/R SPIKE SET IN 30 INCH OAK

BM25 ELEVATION = 737.34'
N 856151 E 1794170
Y4RPB STATION 11+62 150' LEFT
R/R SPIKE SET IN 12 INCH PINE

BM26 ELEVATION = 773.52'
N 857625 E 1794488
L STATION 79+41 102' RIGHT
R/R SPIKE SET IN 12 INCH PINE

BM27 ELEVATION = 783.62'
N 858967 E 1796051
Y4 STATION 46+53 99' RIGHT
R/R SPIKE SET IN 20 INCH PINE

BM28 ELEVATION = 740.05'
N 859337 E 1793508
L STATION 98+90 169' LEFT
R/R SPIKE SET IN 19 INCH OAK

BM29 ELEVATION = 703.31'
N 860985 E 1793001
L STATION 115+63 273' RIGHT
R/R SPIKE SET IN 14 INCH RIVER BIRCH

BM30 ELEVATION = 707.62'
N 861891 E 1791867
Y7 STATION 10+00
S 4° 14' 06.4" W DIST 70'
R/R SPIKE SET IN 17 INCH POPLAR

BM31 ELEVATION = 697.32'
N 863402 E 1791459
L STATION 144+39 190' RIGHT
R/R SPIKE SET IN 12 INCH PINE

BM32 ELEVATION = 710.92'
N 864154 E 1791070
Y8 STATION 21+59 75' RIGHT
R/R SPIKE SET IN 20 INCH PINE

BM33 ELEVATION = 720.83'
N 865755 E 1789598
DRV2 STATION 15+00 DIST 79' LEFT
R/R SPIKE SET IN 10 INCH OAK

BM34 ELEVATION = 744.17'
N 868838 E 1787892
L STATION 209+56 107' LEFT
R/R SPIKE SET IN 18 INCH PINE

BM35 ELEVATION = 760.35'
N 869924 E 1786298
Y11 STATION 19+76 140' LEFT
R/R SPIKE SET IN 14 INCH PINE

BM36 ELEVATION = 821.46'
N 871980 E 1783179
Y13LPC STATION 10+55 85' RIGHT
R/R SPIKE SET IN 20 INCH OAK

BM37 ELEVATION = 830.90'
N 870396 E 1782265
Y13 STATION 35+40 162' RIGHT
R/R SPIKE SET IN 32 INCH OAK

BM38 ELEVATION = 798.60'
N 873659 E 1784353
Y21 STATION 26+94 91' LEFT
R/R SPIKE SET IN 14 INCH OAK

BM39 ELEVATION = 772.90'
N 877270 E 1785034
Y13 STATION 112+72 306' LEFT
R/R SPIKE SET IN 15 INCH OAK

BM40 ELEVATION = 813.31'
N 872108 E 1781624
L STATION 281+40 166' LEFT
R/R SPIKE SET IN 15 INCH OAK

BM41 ELEVATION = 861.47'
N 872966 E 1780601
L STATION 293+47 25' RIGHT
R/R SPIKE SET IN 20 INCH OAK

BM42 ELEVATION = 807.90'
N 875658 E 1784668
Y23 STATION 45+03 572' LEFT
R/R SPIKE SET IN 20 INCH MAGNOLIA

15-APR-2013 14:27
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

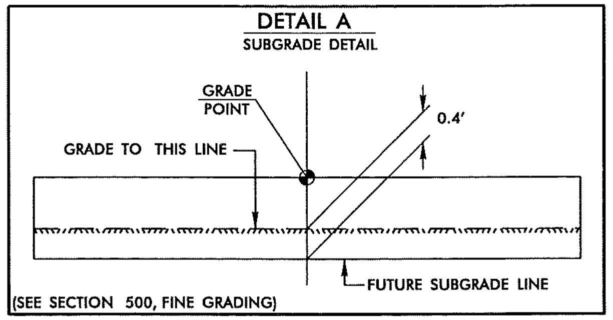
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

6/2/99

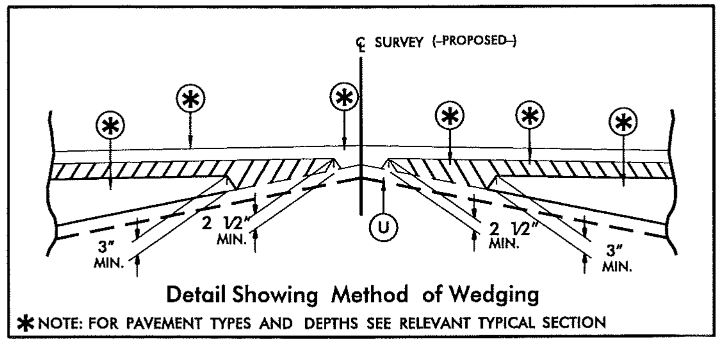
PRELIMINARY PAVEMENT SCHEDULE

C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.	E7	PROP. APPROX. 4½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	E8	PROP. APPROX. 7" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH.	E9	PROP. APPROX. 8½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 484.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	E10	PROP. APPROX. 13" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 494 LBS. PER SQ. YD. IN EACH OF THREE LAYERS.
C5	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 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH.	E11	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	G	PROP. APPROX. 8" CEMENT TREATED BASE COURSE (PLANT MIXED).
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	J1	PROP. 6" AGGREGATE BASE COURSE.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.	J2	PROP. 8" AGGREGATE BASE COURSE.
D4	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	L	BASE TO BE STABILIZED WITH 200 TO 400 LBS PER SQ. YARD OF STABILIZER AGGREGATE MIXED WITH THE TOP 3" OF SUBGRADE SOIL AT LOCATIONS DIRECTED BY THE ENGINEER.
D5	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YD.
D6	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 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.	R1	1'-6" CONCRETE CURB AND GUTTER.
E1	PROP. APPROX. 3" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	R2	2'-6" CONCRETE CURB AND GUTTER.
E2	PROP. APPROX. 3½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.	R3	5" MONOLITHIC CONCRETE ISLAND (KEYED IN).
E3	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	S	4" CONCRETE SIDEWALK
E4	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.	T	EARTH MATERIAL
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" IN DEPTH OR GREATER THAN 5½" IN DEPTH.	U	EXISTING PAVEMENT
E6	PROP. APPROX. 3" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).

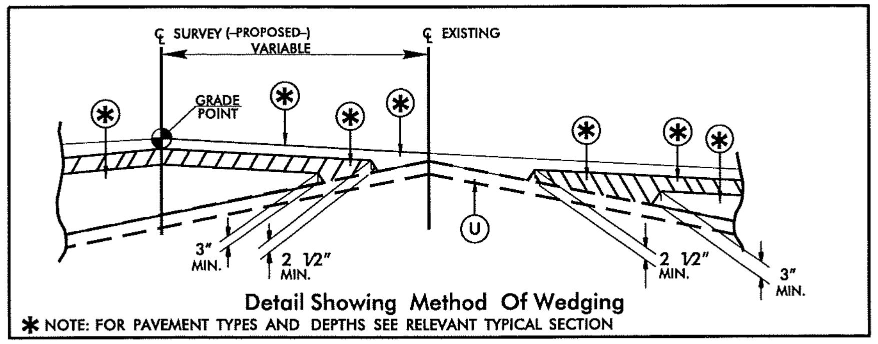
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.


DETAIL A
SUBGRADE DETAIL

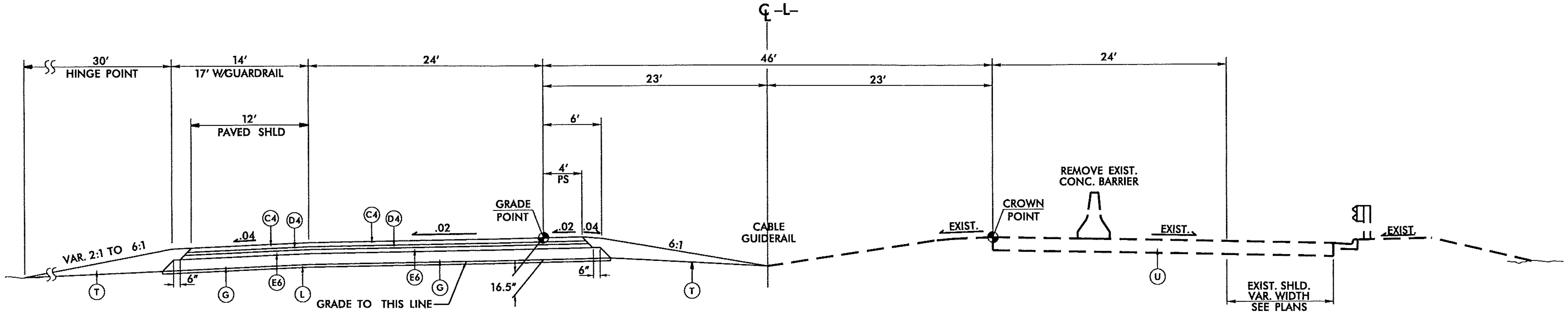
(SEE SECTION 500, FINE GRADING)



Detail Showing Method of Wedging
✱ NOTE: FOR PAVEMENT TYPES AND DEPTHS SEE RELEVANT TYPICAL SECTION



Detail Showing Method Of Wedging
✱ NOTE: FOR PAVEMENT TYPES AND DEPTHS SEE RELEVANT TYPICAL SECTION



NOTE: RESURFACE AND WIDEN -L- STA. 11+22.00 TO STA. 12+66.00 LT.

USE TYPICAL SECTION NO. 1 AS FOLLOWS
-L- STA. 11+22.00 TO STA. 14+34.00+/- (BEGIN BRIDGE)
-L- STA. 18+38.00+/- (END BRIDGE) TO STA. 23+10.00+/-

TYPICAL SECTION NO. 1

NOTE: USE MILLED RUMBLE STRIPS FOR MEDIAN AND OUTSIDE ASPHALT PAVED SHOULDER. SEE STD. 665.01

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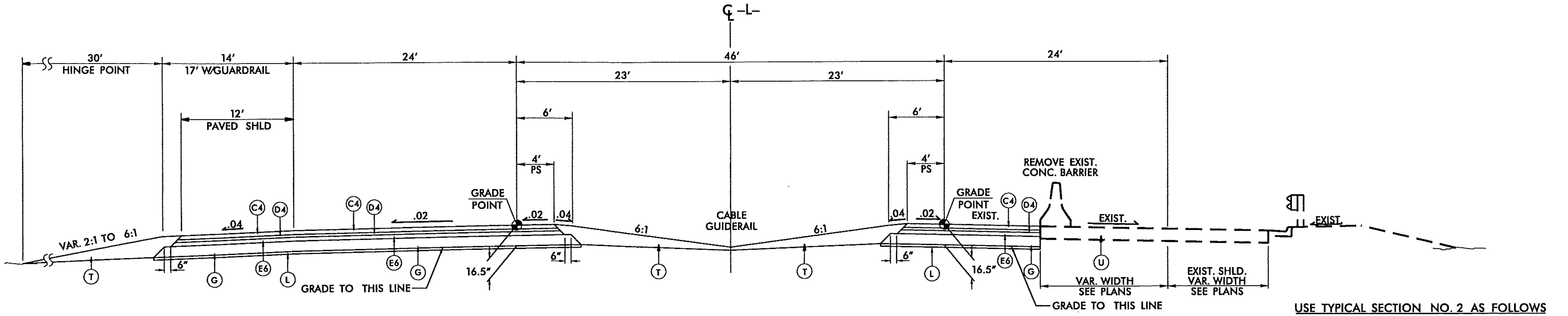
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

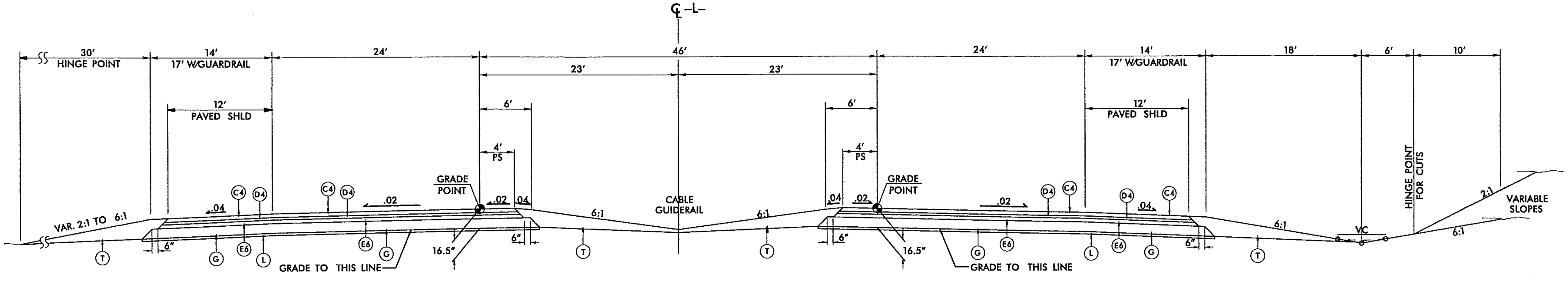


℄ -L-
30' HINGE POINT
14' 17' W/GUARDRAIL
24'
46'
23'
23'
24'
12' PAVED SHLD
6'
4' PS
6'
4' PS
C4
D4
C4
D4
.04
.02
GRADE POINT
.02
.04
6:1
CABLE GUIDERAIL
6:1
.04
.02
GRADE POINT EXIST.
C4
D4
REMOVE EXIST. CONC. BARRIER
EXIST.
EXIST.
VAR. 2:1 TO 6:1
6"
T
G
E6
L
E6
G
GRADE TO THIS LINE
16.5"
6"
T
T
6"
L
16.5"
E6
G
U
VAR. WIDTH SEE PLANS
EXIST. SHLD. VAR. WIDTH SEE PLANS
GRADE TO THIS LINE

TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS
-L- STA. 23+10.00+/- TO STA. 25+43.42 (BEGIN BRIDGE)
-L- STA. 27+07.68 (END BRIDGE) TO STA. 29+06.27

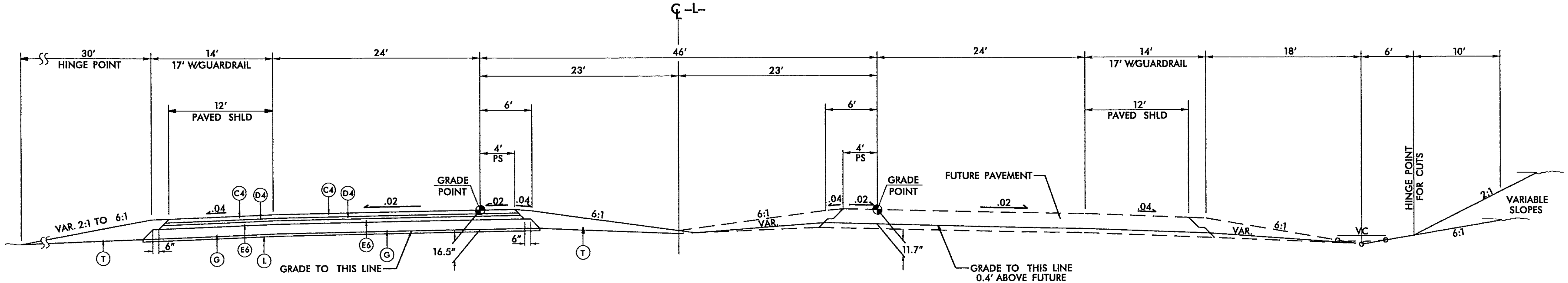
PAVEMENT SCHEDULE	
C1	2" S9.5B
C2	3" S9.5B
C3	VAR. DEPTH S9.5B
C4	3" S9.5C
C5	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	3" B25.0B
E2	3½" B25.0B
E3	4" B25.0B
E4	5" B25.0B
E5	VAR. DEPTH B25.0B
E6	3" B25.0C
E7	4½" B25.0C
E8	7" B25.0C
E9	8½" B25.0C
E10	13" B25.0C
E11	VAR. DEPTH B25.0C
G	8" CTBC (PLANT MIXED)
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
L	SUBGRADE STABILIZATION
P	PRIME COAT
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	5" CONC. ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VAR. DEPTH WEDGING



℄ -L-
30' HINGE POINT
14' 17' W/GUARDRAIL
24'
46'
23'
23'
24'
14' 17' W/GUARDRAIL
18'
6'
10'
12' PAVED SHLD
6'
4' PS
6'
4' PS
12' PAVED SHLD
C4
D4
C4
D4
.04
.02
GRADE POINT
.02
.04
6:1
CABLE GUIDERAIL
6:1
.04
.02
GRADE POINT
.02
D4
C4
D4
C4
.04
6:1
VC
HINGE POINT FOR CUTS
2:1
VARIABLE SLOPES
6:1
VAR. 2:1 TO 6:1
6"
T
G
E6
L
E6
G
GRADE TO THIS LINE
16.5"
6"
T
T
6"
16.5"
G
E6
L
E6
G
6"
T
GRADE TO THIS LINE

TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS
-L- STA. 29+06.27 TO STA. 128+28.00+/- (BEGIN BRIDGE)
-L- STA. 130+21.00+/- (END BRIDGE) TO STA. 137+65.00+/- (BEGIN BRIDGE)
-L- STA. 152+19.00+/- (END BRIDGE) TO STA. 174+17.46 (BEGIN BRIDGE)
-L- STA. 175+27.46 (END BRIDGE) TO STA. 248+50.00



℄ -L-
30' HINGE POINT
14' 17' W/GUARDRAIL
24'
46'
23'
23'
24'
14' 17' W/GUARDRAIL
18'
6'
10'
12' PAVED SHLD
6'
4' PS
6'
4' PS
12' PAVED SHLD
C4
D4
C4
D4
.04
.02
GRADE POINT
.02
.04
6:1
6:1
VAR.
.04
.02
GRADE POINT
FUTURE PAVEMENT
.02
.04
VAR.
6:1
VC
HINGE POINT FOR CUTS
2:1
VARIABLE SLOPES
6:1
VAR. 2:1 TO 6:1
6"
T
G
E6
L
E6
G
GRADE TO THIS LINE
16.5"
6"
T
11.7"
GRADE TO THIS LINE 0.4' ABOVE FUTURE SUBGRADE LINE (SEE DETAIL A, SHT 2)

TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4 AS FOLLOWS
-L- STA. 248+50.00 TO STA. 262+26.00

NOTE: USE MILLED RUMBLE STRIPS FOR MEDIAN AND OUTSIDE ASPHALT PAVED SHOULDER. SEE STD. 665.01

6/2/99

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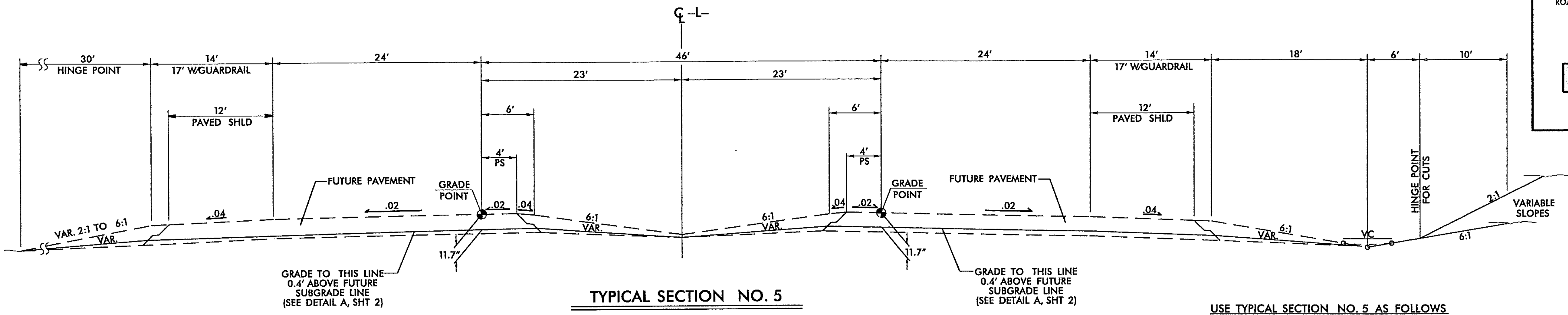
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

6/2/99

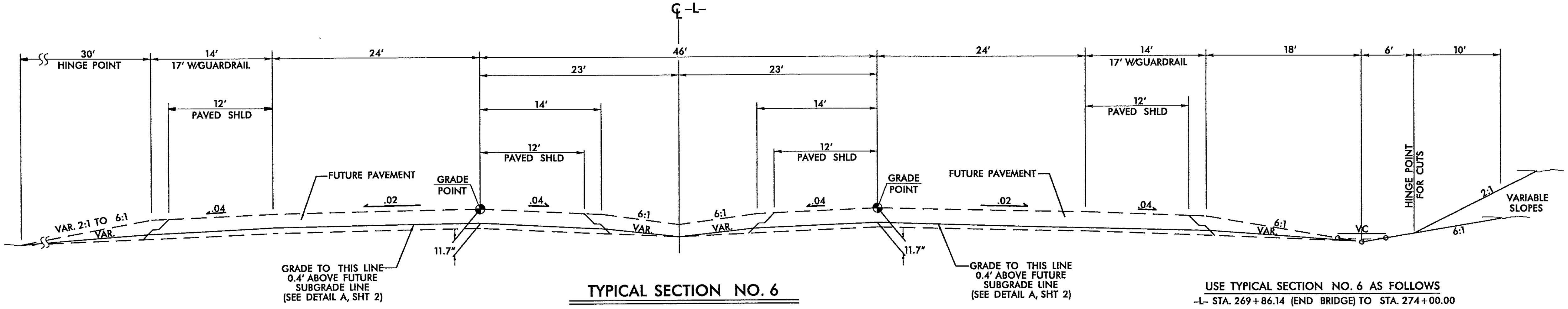


℄ -L-
30'
HINGE POINT
14'
17' W/GUARDRAIL
24'
46'
23'
23'
24'
14'
17' W/GUARDRAIL
18'
6'
10'
12'
PAVED SHLD
6'
4'
PS
6'
4'
PS
12'
PAVED SHLD
FUTURE PAVEMENT
GRADE POINT
.02
.04
.04
.02
.04
.02
6:1
VAR.
6:1
VAR.
.02
.04
GRADE POINT
FUTURE PAVEMENT
VAR. 2:1 TO 6:1
VAR.
11.7"
11.7"
6:1
VAR.
VC
HINGE POINT FOR CUTS
2:1
VARIABLE SLOPES
6:1
GRADE TO THIS LINE 0.4' ABOVE FUTURE SUBGRADE LINE (SEE DETAIL A, SHT 2)
GRADE TO THIS LINE 0.4' ABOVE FUTURE SUBGRADE LINE (SEE DETAIL A, SHT 2)

TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5 AS FOLLOWS
-L- STA. 262+26.00 TO STA. 267+15.89 (BEGIN BRIDGE)

NOTE: SEE PLANS FOR AUXILIARY LANE WIDTHS FOR PAVING



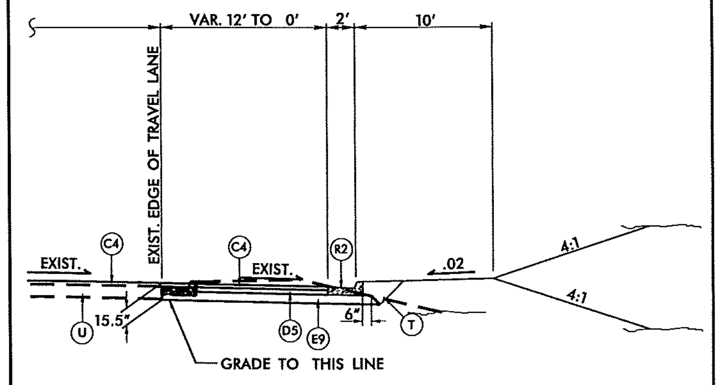
℄ -L-
30'
HINGE POINT
14'
17' W/GUARDRAIL
24'
46'
23'
23'
24'
14'
17' W/GUARDRAIL
18'
6'
10'
12'
PAVED SHLD
14'
12'
PAVED SHLD
14'
12'
PAVED SHLD
12'
PAVED SHLD
FUTURE PAVEMENT
GRADE POINT
.02
.04
.04
.04
.02
.04
6:1
VAR.
6:1
VAR.
GRADE POINT
FUTURE PAVEMENT
VAR. 2:1 TO 6:1
VAR.
11.7"
11.7"
6:1
VAR.
VC
HINGE POINT FOR CUTS
2:1
VARIABLE SLOPES
6:1
GRADE TO THIS LINE 0.4' ABOVE FUTURE SUBGRADE LINE (SEE DETAIL A, SHT 2)
GRADE TO THIS LINE 0.4' ABOVE FUTURE SUBGRADE LINE (SEE DETAIL A, SHT 2)

TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6 AS FOLLOWS
-L- STA. 269+86.14 (END BRIDGE) TO STA. 274+00.00

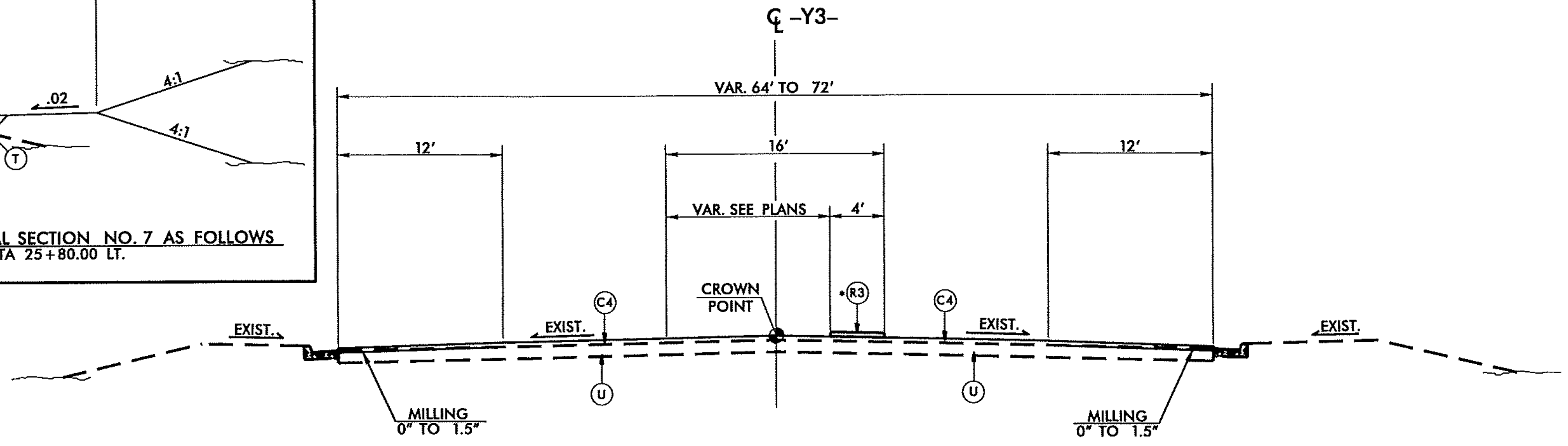
NOTE: SEE PLANS FOR AUXILIARY LANE WIDTHS FOR PAVING AND LIMITS.

PAVEMENT SCHEDULE	
C1	2" S9.5B
C2	3" S9.5B
C3	VAR. DEPTH S9.5B
C4	3" S9.5C
C5	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	3" B25.0B
E2	3½" B25.0B
E3	4" B25.0B
E4	5" B25.0B
E5	VAR. DEPTH B25.0B
E6	3" B25.0C
E7	4½" B25.0C
E8	7" B25.0C
E9	8½" B25.0C
E10	13" B25.0C
E11	VAR. DEPTH B25.0C
G	8" CTBC (PLANT MIXED)
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
L	SUBGRADE STABILIZATION
P	PRIME COAT
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	5" CONC. ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VAR. DEPTH WEDGING



VAR. 12' TO 0'
2'
10'
EXIST. EDGE OF TRAVEL LANE
EXIST.
C4
C4
EXIST.
R2
.02
4:1
4:1
15.5"
U
D5
E9
6"
T
GRADE TO THIS LINE

USE IN CONJUNCTION WITH TYPICAL SECTION NO. 7 AS FOLLOWS
-Y3- STA 23+15.05 TO STA 25+80.00 LT.



℄ -Y3-
VAR. 64' TO 72'
12'
16'
12'
VAR. SEE PLANS
4'
CROWN POINT
*R3
C4
C4
EXIST.
EXIST.
EXIST.
EXIST.
EXIST.
U
U
MILLING 0" TO 1.5"
MILLING 0" TO 1.5"

TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7 AS FOLLOWS
-Y3- STA. 12+59.00 TO STA. 25+80.00
*-Y3- STA. 14+20.00 TO STA. 21+90.00

NOTE: USE MILLED RUMBLE STRIPS FOR MEDIAN AND OUTSIDE ASPHALT PAVED SHOULDER. SEE STD. 665.01

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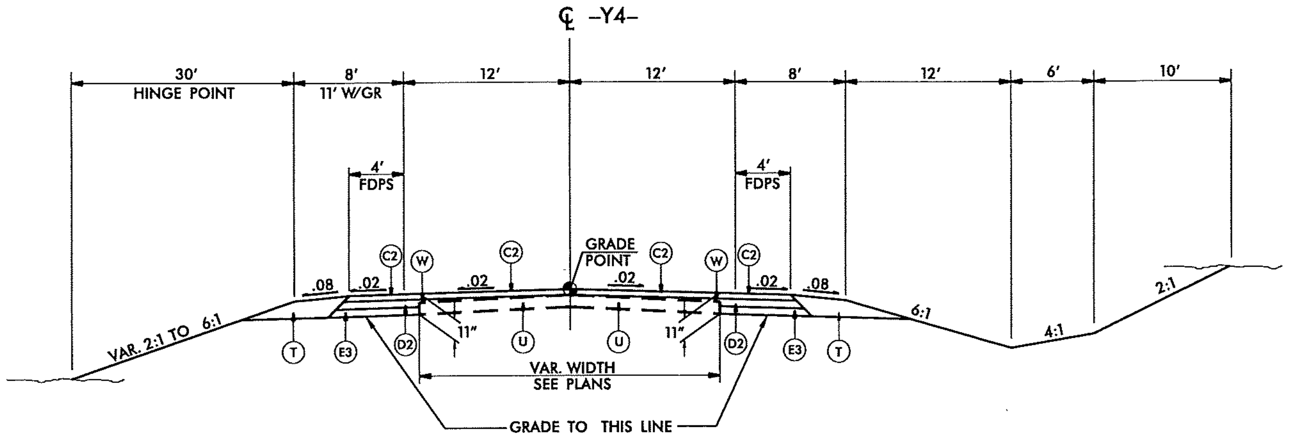
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	2-C

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



℄ -Y4-
30'
HINGE POINT
8'
11' W/GR
12'
12'
8'
12'
6'
10'
4'
FDPS
4'
FDPS
GRADE POINT
C2
W
C2
C2
W
C2
.08
.02
.02
.02
.02
.08
6:1
4:1
2:1
VAR. 2:1 TO 6:1
T
E3
D2
11"
U
U
11"
D2
E3
T
VAR. WIDTH SEE PLANS
GRADE TO THIS LINE

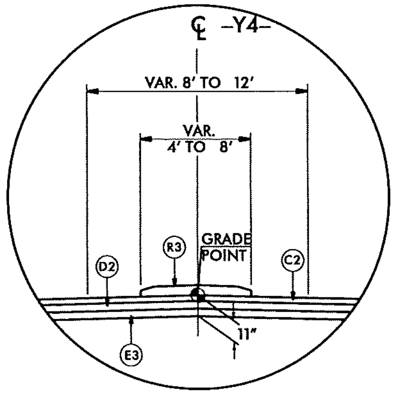
TYPICAL SECTION NO. 8

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 8
-Y4- STA. 12+00.00 TO STA. 12+50.00

USE TYPICAL SECTION NO. 8 AS FOLLOWS
-Y4- STA. 12+50.00 TO STA. 15+74.19
-Y4- STA. 50+54.16 TO STA. 55+50.00

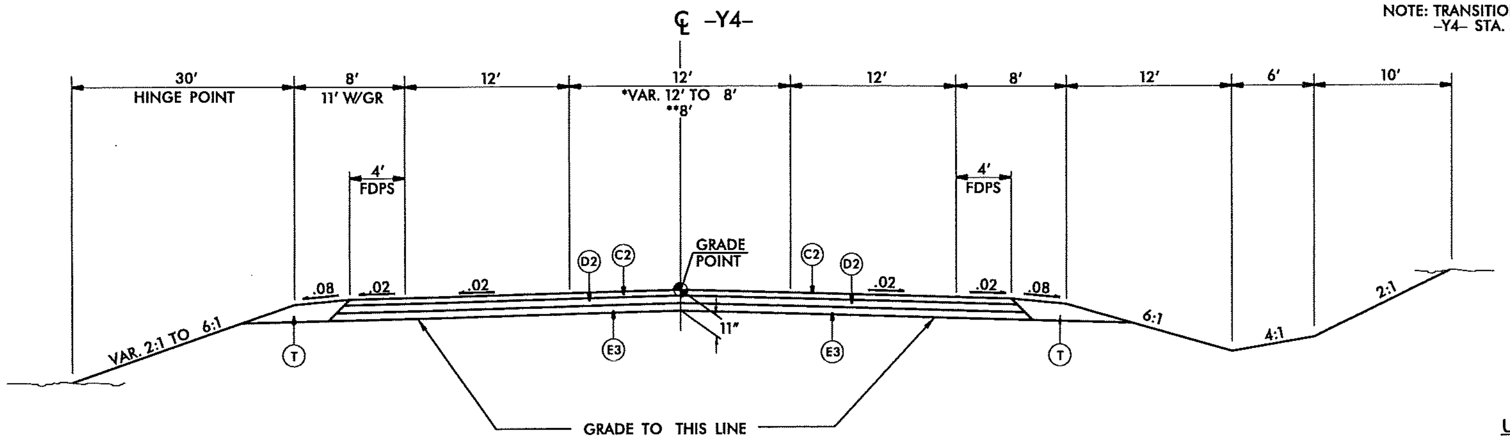
NOTE: TRANSITION FROM TYPICAL SECTION NO. 8 TO TYPICAL SECTION NO. 9
-Y4- STA. 15+74.19 TO STA. 18+74.19

NOTE: TRANSITION FROM TYPICAL SECTION NO. 8 TO EXISTING
-Y4- STA. 55+50.00 TO STA. 56+00.00



℄ -Y4-
VAR. 8' TO 12'
VAR. 4' TO 8'
D2
R3
GRADE POINT
C2
11"
E3

USE WITH TYPICAL SECTION NO. 8 AND 9 AS FOLLOWS
-Y4- STA. 18+21.48 TO STA. 19+76.00
-Y4- STA. 29+19.00 TO STA. 34+05.00

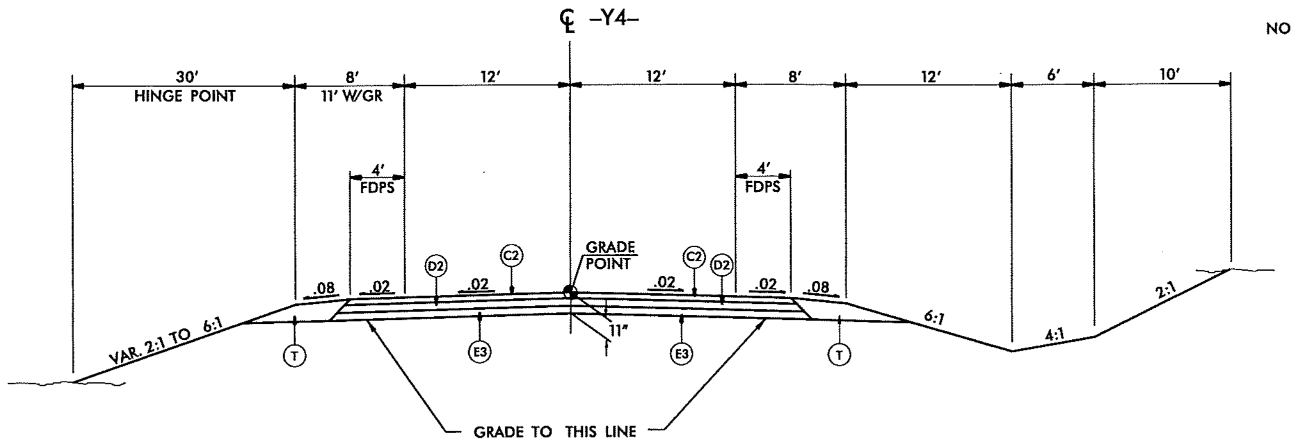


℄ -Y4-
30'
HINGE POINT
8'
11' W/GR
12'
12'
*VAR. 12' TO 8'
**8'
12'
8'
12'
6'
10'
4'
FDPS
4'
FDPS
GRADE POINT
D2
C2
C2
D2
.08
.02
.02
.02
.02
.08
6:1
4:1
2:1
VAR. 2:1 TO 6:1
T
E3
11"
E3
T
GRADE TO THIS LINE

TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9 AS FOLLOWS
-Y4- STA. 18+74.19 TO STA. 23+65.45 (BEGIN BRIDGE)
-Y4- STA. 25+47.95 (END BRIDGE) TO STA. 30+19.76
*-Y4- STA. 30+19.76 TO STA. 31+19.76
**-Y4- STA. 31+19.76 TO STA. 34+05.00

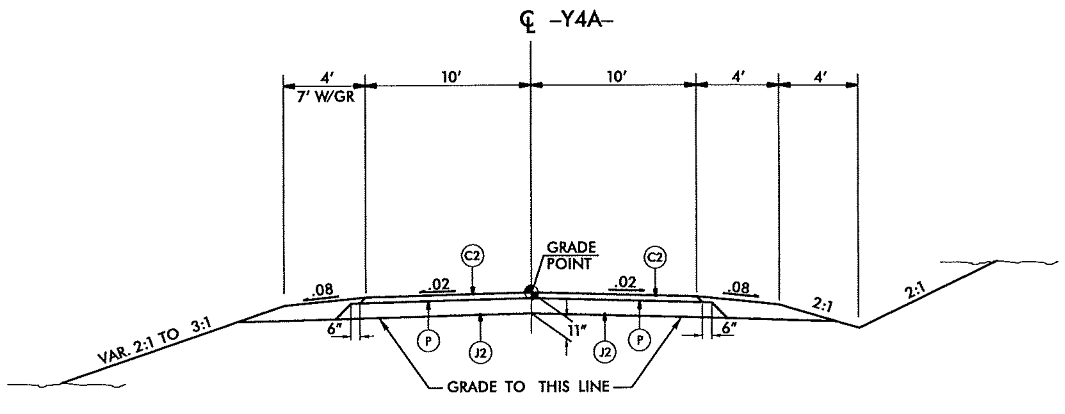
NOTE: TRANSITION FROM TYPICAL SECTION NO. 9 TO TYPICAL SECTION NO. 10
-Y4- STA. 34+05.00 TO STA. 36+05.00



℄ -Y4-
30'
HINGE POINT
8'
11' W/GR
12'
12'
8'
12'
6'
10'
4'
FDPS
4'
FDPS
GRADE POINT
D2
C2
C2
D2
.08
.02
.02
.02
.02
.08
6:1
4:1
2:1
VAR. 2:1 TO 6:1
T
E3
11"
E3
T
GRADE TO THIS LINE

TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10 AS FOLLOWS
-Y4- STA. 36+05.00 TO STA. 50+54.16



℄ -Y4A-
4'
7' W/GR
10'
10'
4'
4'
GRADE POINT
C2
C2
.08
.02
.02
.08
2:1
2:1
VAR. 2:1 TO 3:1
6"
P
J2
11"
J2
P
6"
GRADE TO THIS LINE

TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11 AS FOLLOWS
-Y4A- STA. 10+00.00 TO STA. 14+55.58

NOTE: TRANSITION FROM 20' TO 30' PAVEMENT WIDTH
-Y4A- STA. 14+55.58 TO STA. 15+05.58

PAVEMENT SCHEDULE	
C1	2" S9.5B
C2	3" S9.5B
C3	VAR. DEPTH S9.5B
C4	3" S9.5C
C5	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	3" B25.0B
E2	3½" B25.0B
E3	4" B25.0B
E4	5" B25.0B
E5	VAR. DEPTH B25.0B
E6	3" B25.0C
E7	4½" B25.0C
E8	7" B25.0C
E9	8½" B25.0C
E10	13" B25.0C
E11	VAR. DEPTH B25.0C
G	8" CTBC (PLANT MIXED)
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
L	SUBGRADE STABILIZATION
P	PRIME COAT
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	5" CONC. ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VAR. DEPTH WEDGING

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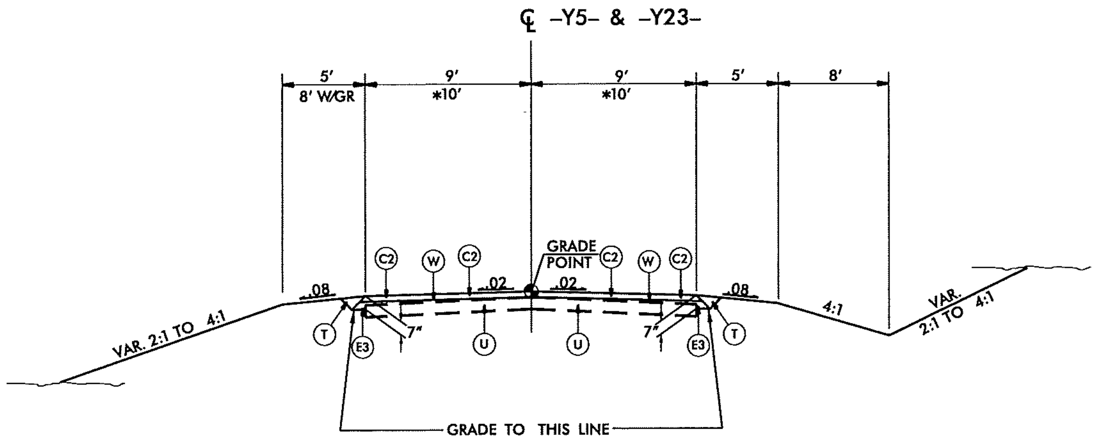
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	2-D

ROADWAY DESIGN ENGINEER

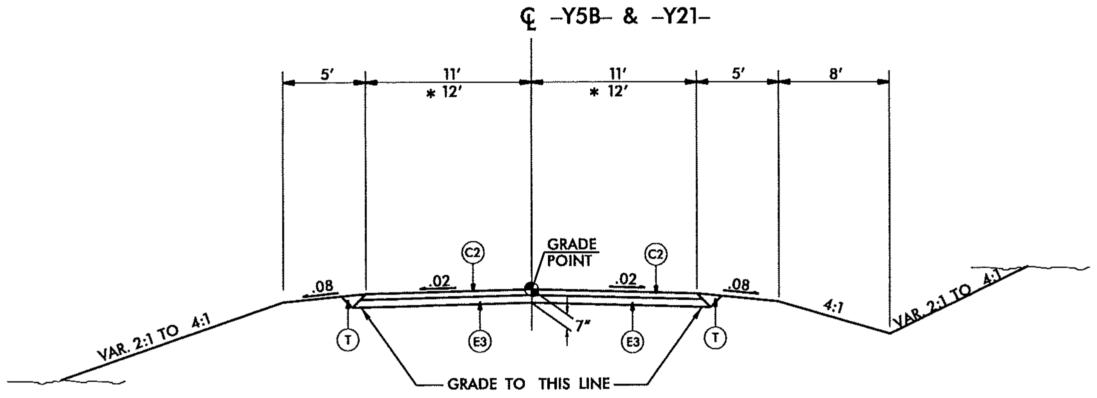
PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


℄ -Y5- & -Y23-
5'
8' W/GR
9'
*10'
9'
*10'
5'
8'
C2
W
C2
GRADE POINT
C2
W
C2
.08
.02
.02
.08
VAR. 2:1 TO 4:1
T
E3
7"
U
U
7"
E3
T
4:1
VAR. 2:1 TO 4:1
GRADE TO THIS LINE

TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12 AS FOLLOWS
-Y5- STA. 10+58.88 TO STA. 11+50.00
*-Y23- STA. 41+25.00 TO STA. 45+50.00


℄ -Y5B- & -Y21-
5'
11'
* 12'
11'
* 12'
5'
8'
C2
GRADE POINT
C2
.08
.02
.02
.08
VAR. 2:1 TO 4:1
T
E3
7"
E3
T
4:1
VAR. 2:1 TO 4:1
GRADE TO THIS LINE

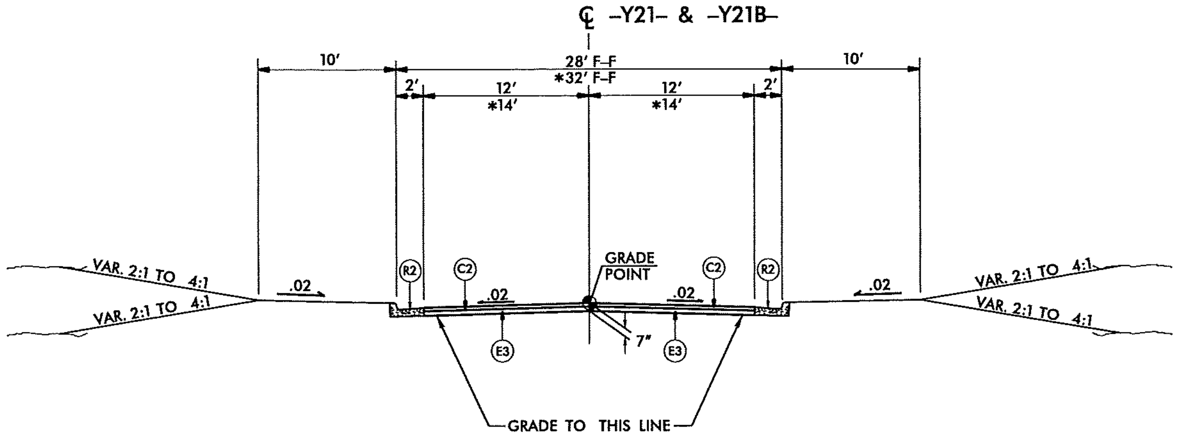
TYPICAL SECTION NO. 13

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 13
-Y5B- STA. 12+00.00 TO STA. 12+50.00

NOTE: TRANSITION FROM 30' TO 24' PAVEMENT WIDTH
-Y21- STA. 11+42.21 TO STA. 11+92.21

USE TYPICAL SECTION NO. 13 AS FOLLOWS
-Y5B- STA. 12+50.00 TO STA. 15+71.37
*-Y21- STA. 11+92.21 TO STA. 31+00.00

NOTE: TRANSITION FROM 22' TO 30' PAVEMENT WIDTH
-Y5B- STA. 15+71.37 TO STA. 16+21.37


℄ -Y21- & -Y21B-
10'
28' F-F
*32' F-F
10'
2'
12'
*14'
12'
*14'
2'
R2
C2
GRADE POINT
C2
R2
VAR. 2:1 TO 4:1
VAR. 2:1 TO 4:1
.02
.02
.02
.02
VAR. 2:1 TO 4:1
VAR. 2:1 TO 4:1
E3
7"
E3
GRADE TO THIS LINE

TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14 AS FOLLOWS
-Y21- STA. 31+00.00 TO STA. 35+25.15
*-Y21B- STA. 10+43.56 TO STA. 10+79.45

PAVEMENT SCHEDULE	
C1	2" S9.5B
C2	3" S9.5B
C3	VAR. DEPTH S9.5B
C4	3" S9.5C
C5	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	3" B25.0B
E2	3½" B25.0B
E3	4" B25.0B
E4	5" B25.0B
E5	VAR. DEPTH B25.0B
E6	3" B25.0C
E7	4½" B25.0C
E8	7" B25.0C
E9	8½" B25.0C
E10	13" B25.0C
E11	VAR. DEPTH B25.0C
G	8" CTBC (PLANT MIXED)
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
L	SUBGRADE STABILIZATION
P	PRIME COAT
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	5" CONC. ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VAR. DEPTH WEDGING

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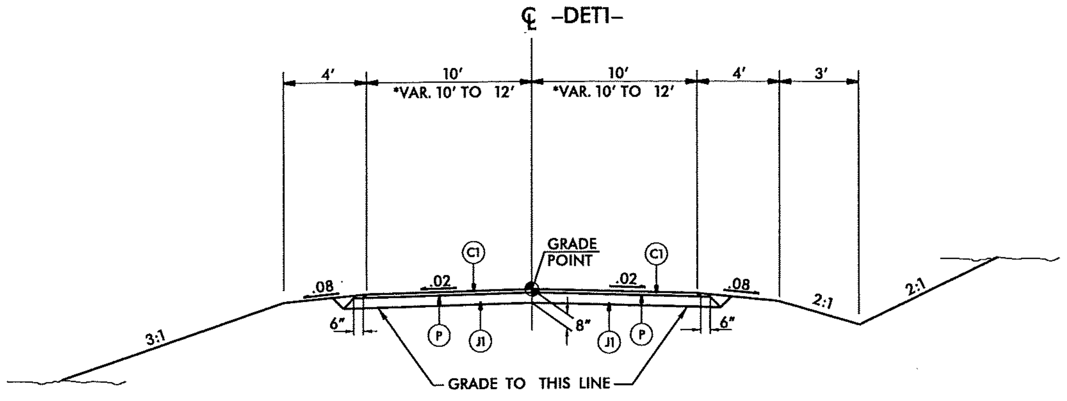
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	2-E
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE	
C1	2" S9.5B
C2	3" S9.5B
C3	VAR. DEPTH S9.5B
C4	3" S9.5C
C5	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	3" B25.0B
E2	3½" B25.0B
E3	4" B25.0B
E4	5" B25.0B
E5	VAR. DEPTH B25.0B
E6	3" B25.0C
E7	4½" B25.0C
E8	7" B25.0C
E9	8½" B25.0C
E10	13" B25.0C
E11	VAR. DEPTH B25.0C
G	8" CTBC (PLANT MIXED)
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
L	SUBGRADE STABILIZATION
P	PRIME COAT
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	5" CONC. ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VAR. DEPTH WEDGING

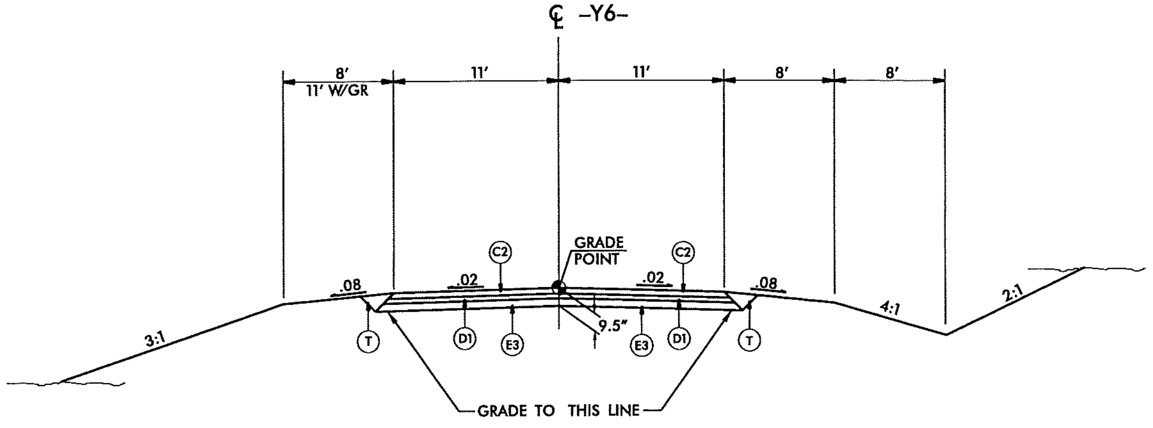


℄ -DET1-
4'
10'
*VAR. 10' TO 12'
10'
*VAR. 10' TO 12'
4'
3'
GRADE POINT
C1
C1
.08
.02
.02
.08
6"
6"
8"
P
J1
J1
P
3:1
2:1
2:1
GRADE TO THIS LINE

TYPICAL SECTION NO. 15

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 15
-DET1- STA. 10+23.26 TO STA. 11+31.69

USE TYPICAL SECTION NO. 15 AS FOLLOWS
-DET1- STA. 11+31.69 TO STA. 20+94.12
*-DET1- STA. 20+94.12 TO STA. 21+44.12

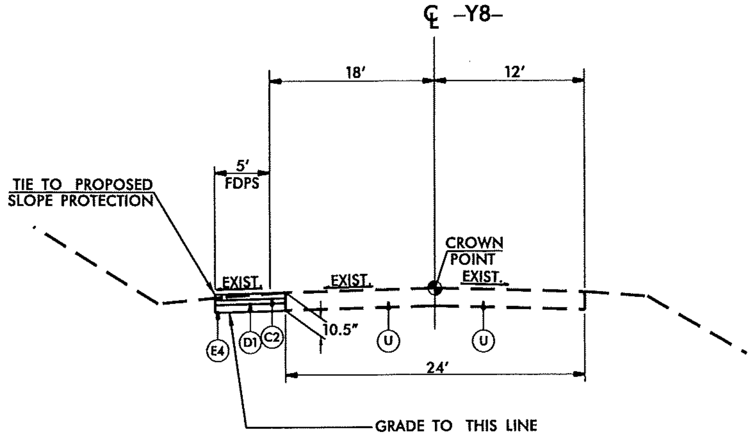


℄ -Y6-
8'
11' W/GR
11'
11'
8'
8'
GRADE POINT
C2
C2
.08
.02
.02
.08
9.5"
T
D1
E3
E3
D1
T
3:1
4:1
2:1
GRADE TO THIS LINE

TYPICAL SECTION NO. 16

NOTE: TRANSITION FROM 30' TO 22' PAVEMENT WIDTH
-Y6- STA. 10+49.97 TO STA. 10+99.97

USE TYPICAL SECTION NO. 16 AS FOLLOWS
-Y6- STA. 10+99.97 TO STA. 11+50.00



℄ -Y8-
18'
12'
5'
FDPS
TIE TO PROPOSED SLOPE PROTECTION
CROWN POINT
EXIST.
EXIST.
EXIST.
10.5"
E4
D1
C2
U
U
24'
GRADE TO THIS LINE

TYPICAL SECTION NO. 17

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 17
-Y8- STA. 17+41.00 TO STA. 17+91.00

USE TYPICAL SECTION NO. 17 AS FOLLOWS
-Y8- STA. 17+91.00 TO STA. 19+98.00

NOTE: TRANSITION FROM TYPICAL SECTION NO. 17 TO EXISTING
-Y8- STA. 19+98.00 TO STA. 20+48.00

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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	2-F

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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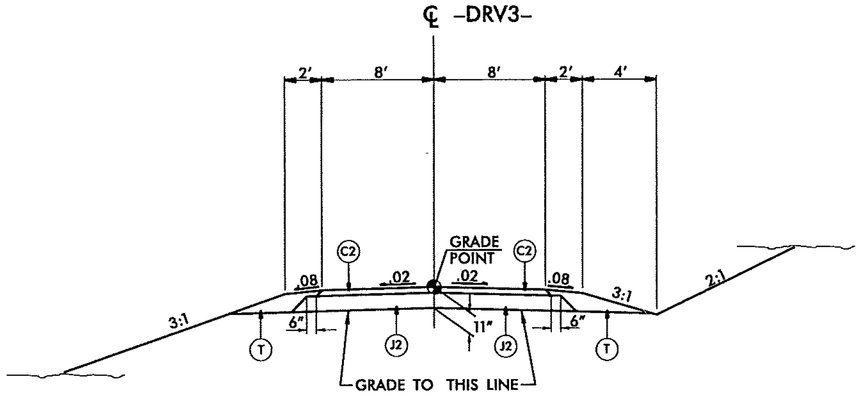
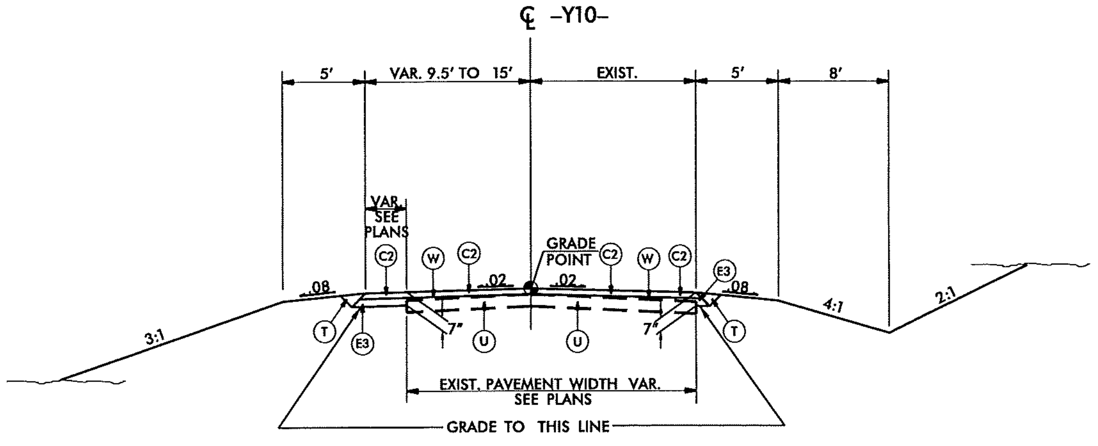

℄ -DRV3-
2'
8'
8'
2'
4'
GRADE POINT
C2
C2
.08
.02
.02
.08
3:1
3:1
2:1
6"
6"
11"
T
J2
J2
T
GRADE TO THIS LINE

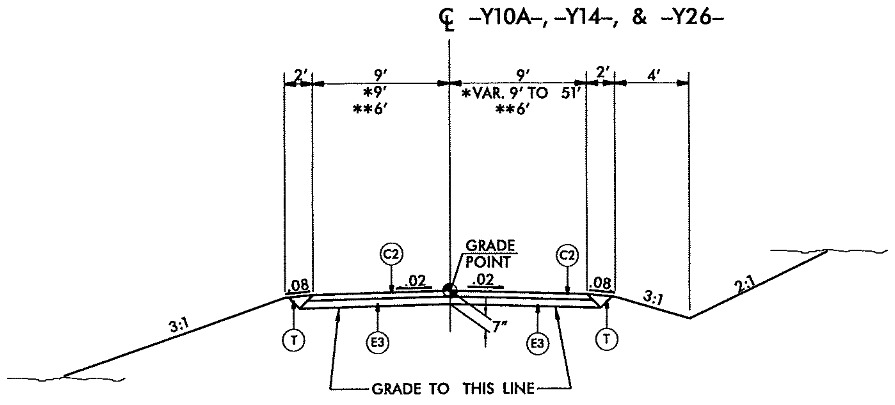
TYPICAL SECTION NO. 18

USE TYPICAL SECTION NO. 18 AS FOLLOWS
-DRV3- STA. 10+24.77 TO STA. 13+77.40


℄ -Y10-
5'
VAR. 9.5' TO 15'
EXIST.
5'
8'
VAR. SEE PLANS
GRADE POINT
C2
W
C2
C2
W
C2
E3
.08
.02
.02
.08
3:1
4:1
2:1
7"
7"
T
E3
U
U
T
EXIST. PAVEMENT WIDTH VAR. SEE PLANS
GRADE TO THIS LINE

TYPICAL SECTION NO. 19

USE TYPICAL SECTION NO. 19 AS FOLLOWS
-Y10- STA. 10+40.73 TO STA. 10+91.00


℄ -Y10A-, -Y14-, & -Y26-
2'
9'
*9'
**6'
9'
*VAR. 9' TO 51'
**6'
2'
4'
GRADE POINT
C2
C2
.08
.02
.02
.08
3:1
3:1
2:1
7"
T
E3
E3
T
GRADE TO THIS LINE

TYPICAL SECTION NO. 20

USE TYPICAL SECTION NO. 20 AS FOLLOWS
-Y10A- STA. 10+33.87 TO STA. 13+50.10
*-Y10A- STA. 13+50.10 TO STA. 14+25.00
**-Y14- STA. 26+60.10 TO STA. 27+84.49
**-Y26- STA. 38+50.00 TO STA. 39+75.00 (USE Ⓙ1 FROM -Y26- STA. 38+85.00 TO STA. 39+75.00)

PAVEMENT SCHEDULE	
C1	2" S9.5B
C2	3" S9.5B
C3	VAR. DEPTH S9.5B
C4	3" S9.5C
C5	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	3" B25.0B
E2	3½" B25.0B
E3	4" B25.0B
E4	5" B25.0B
E5	VAR. DEPTH B25.0B
E6	3" B25.0C
E7	4½" B25.0C
E8	7" B25.0C
E9	8½" B25.0C
E10	13" B25.0C
E11	VAR. DEPTH B25.0C
G	8" CTBC (PLANT MIXED)
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
L	SUBGRADE STABILIZATION
P	PRIME COAT
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	5" CONC. ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VAR. DEPTH WEDGING

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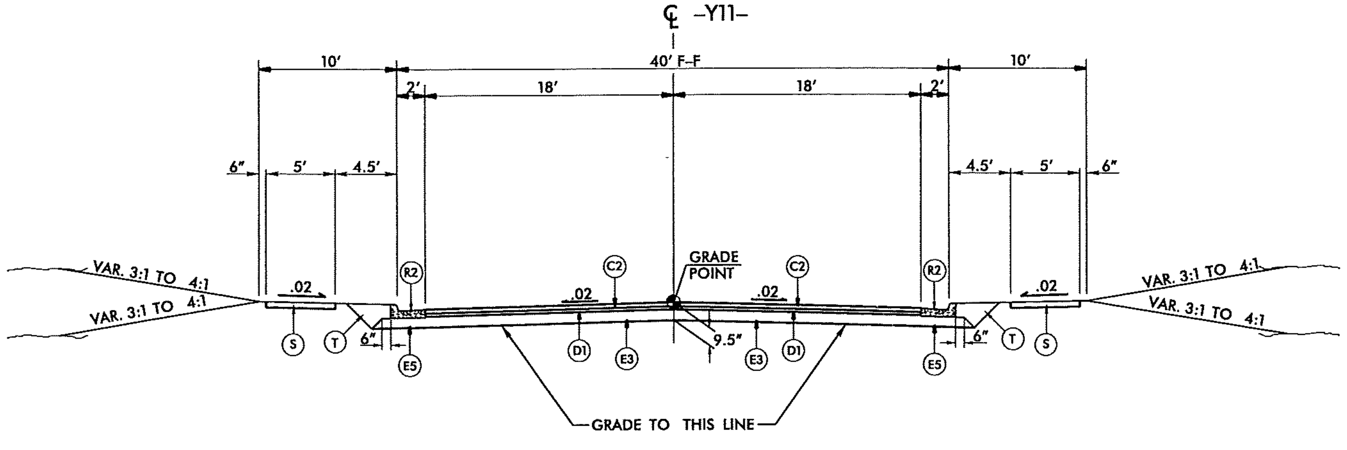
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	2-G
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



℄ -Y11-
10'
40' F-F
10'
2'
18'
18'
2'
6"
5'
4.5'
4.5'
5'
6"
VAR. 3:1 TO 4:1
VAR. 3:1 TO 4:1
VAR. 3:1 TO 4:1
VAR. 3:1 TO 4:1
.02
.02
.02
.02
R2
C2
GRADE POINT
C2
R2
S
T
6"
E5
D1
E3
9.5"
E3
D1
E5
6"
T
S
GRADE TO THIS LINE

TYPICAL SECTION NO. 21

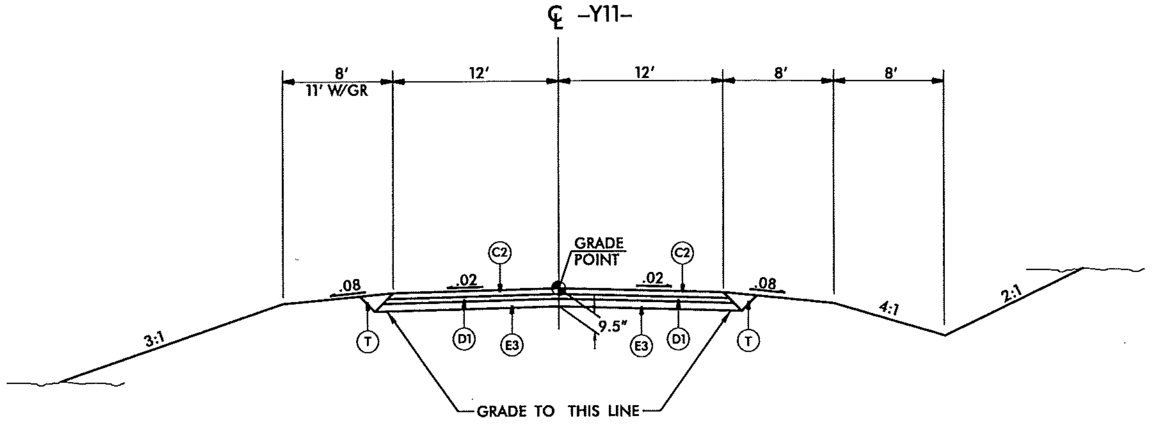
NOTE: RESURFACE EXISTING PAVEMENT
-Y11- STA. 15+16.00 TO STA. 16+22.55

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 21
-Y11- STA. 16+22.55 TO STA. 19+37.55

USE TYPICAL SECTION NO. 21 AS FOLLOWS
-Y11- STA. 19+37.55 TO STA. 20+73.58 (BEGIN BRIDGE)

NOTE: MILLING REQUIRED -Y11- STA. 16+22.55 TO STA. 17+00.00

PAVEMENT SCHEDULE	
C1	2" S9.5B
C2	3" S9.5B
C3	VAR. DEPTH S9.5B
C4	3" S9.5C
C5	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	3" B25.0B
E2	3½" B25.0B
E3	4" B25.0B
E4	5" B25.0B
E5	VAR. DEPTH B25.0B
E6	3" B25.0C
E7	4½" B25.0C
E8	7" B25.0C
E9	8½" B25.0C
E10	13" B25.0C
E11	VAR. DEPTH B25.0C
G	8" CTBC (PLANT MIXED)
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
L	SUBGRADE STABILIZATION
P	PRIME COAT
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	5" CONC. ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VAR. DEPTH WEDGING

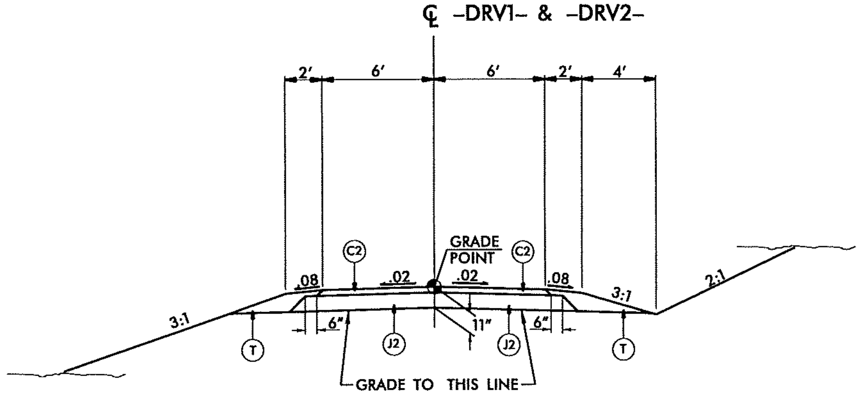


℄ -Y11-
8'
11' W/GR
12'
12'
8'
8'
.08
.02
.02
.08
C2
GRADE POINT
C2
3:1
4:1
2:1
T
D1
E3
9.5"
E3
D1
T
GRADE TO THIS LINE

TYPICAL SECTION NO. 22

USE TYPICAL SECTION NO. 22 AS FOLLOWS
-Y11- STA. 22+64.58 (END BRIDGE) TO STA. 34+50.00

NOTE: TRANSITION FROM TYPICAL SECTION NO. 22 TO EXISTING
-Y11- STA. 34+50.00 TO STA. 35+00.00



℄ -DRV1- & -DRV2-
2'
6'
6'
2'
4'
C2
GRADE POINT
C2
.08
.02
.02
.08
3:1
3:1
2:1
6"
11"
6"
T
J2
J2
T
GRADE TO THIS LINE

TYPICAL SECTION NO. 23

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 23
-DRV1- STA. 10+00.00 TO STA. 10+50.00

USE TYPICAL SECTION NO. 23 AS FOLLOWS
*-DRV1- STA. 10+50.00 TO STA. 11+84.78
*-DRV2- STA. 10+00.00 TO STA. 15+85.93

*(USE Ⓙ1 FROM -DRV1- STA. 10+00.00 TO STA. 11+38.00)
*(USE Ⓙ1 FROM -DRV2- STA. 10+00.00 TO STA. 15+00.00)

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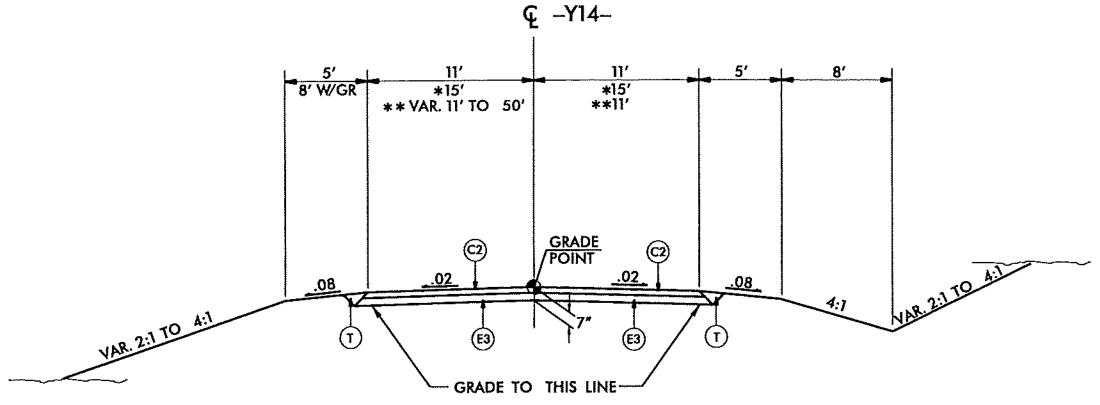
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	2-H
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

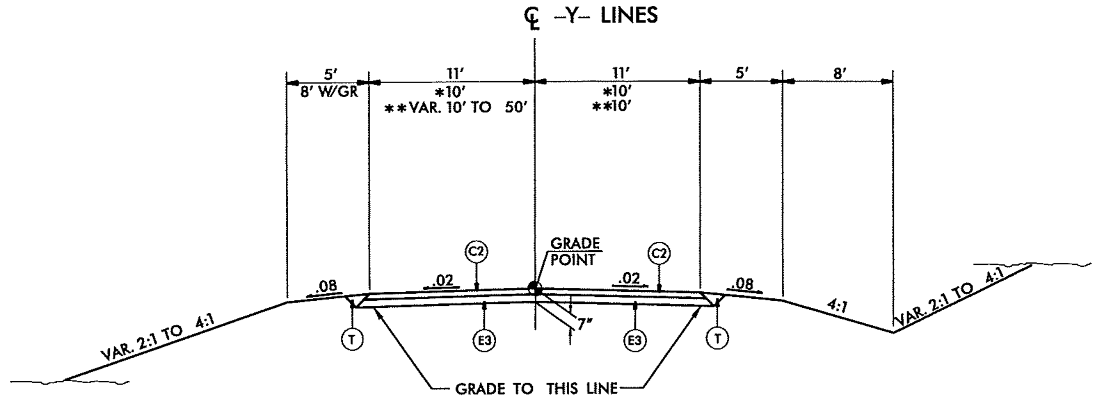
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


℄ -Y14-
5'
8' W/GR
11'
*15'
**VAR. 11' TO 50'
11'
*15'
**11'
5'
8'
GRADE POINT
C2
C2
.08
.02
.02
.08
7"
VAR. 2:1 TO 4:1
4:1
VAR. 2:1 TO 4:1
T
E3
E3
T
GRADE TO THIS LINE

TYPICAL SECTION NO. 24

NOTE: TRANSITION FROM 30' TO 22' PAVEMENT WIDTH
-Y14- STA. 12+14.25 TO STA. 12+64.25

USE TYPICAL SECTION NO. 24 AS FOLLOWS
*-Y14- STA. 10+88.52 TO STA. 12+14.25
-Y14- STA. 12+64.25 TO STA. 25+85.01
**-Y14- STA. 25+85.01 TO STA. 26+60.10


℄ -Y- LINES
5'
8' W/GR
11'
*10'
**VAR. 10' TO 50'
11'
*10'
**10'
5'
8'
GRADE POINT
C2
C2
.08
.02
.02
.08
7"
VAR. 2:1 TO 4:1
4:1
VAR. 2:1 TO 4:1
T
E3
E3
T
GRADE TO THIS LINE

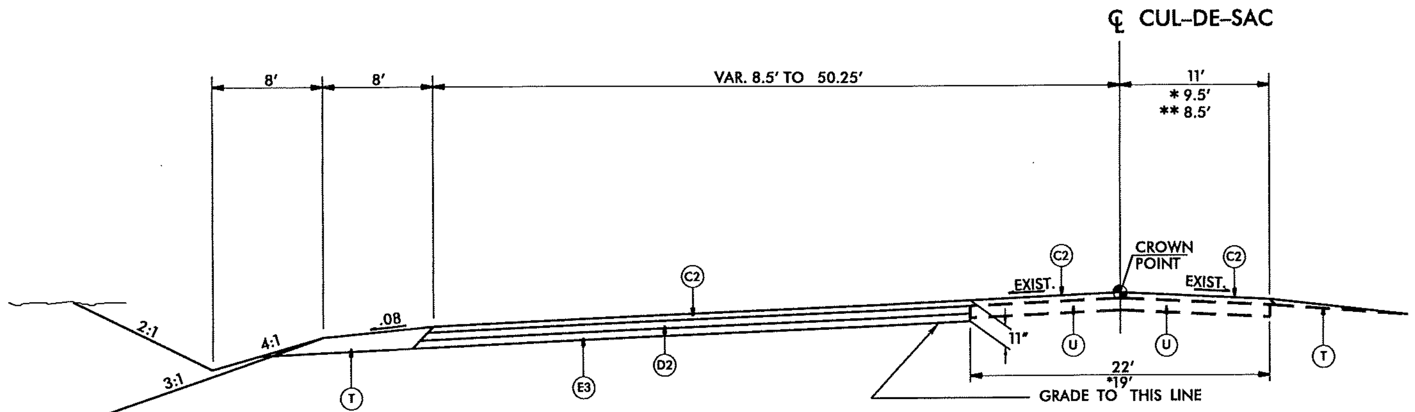
TYPICAL SECTION NO. 25

NOTE: TRANSITION FROM 30' TO 22' PAVEMENT WIDTH
-Y23- STA. 10+67.58 TO STA. 11+17.58
-Y26- STA. 10+69.85 TO STA. 11+19.85

USE TYPICAL SECTION NO. 25 AS FOLLOWS
*-Y21A- STA. 12+64.15 TO STA. 24+20.28
**-Y21A- STA. 24+20.28 TO STA. 24+95.00
-Y23- STA. 11+17.58 TO STA. 40+73.86
*-Y23- STA. 41+73.86 TO STA. 41+25.00
*-Y23- STA. 45+50.00 TO STA. 51+70.52
-Y26- STA. 11+19.85 TO STA. 37+80.95
*-Y29- STA. 11+05.48 TO STA. 16+71.59
-SRV1- STA. 10+12.34 TO STA. 25+50.00

NOTE: TRANSITION FROM 30' TO 20' PAVEMENT WIDTH
-Y29- STA. 10+55.48 TO STA. 11+05.48

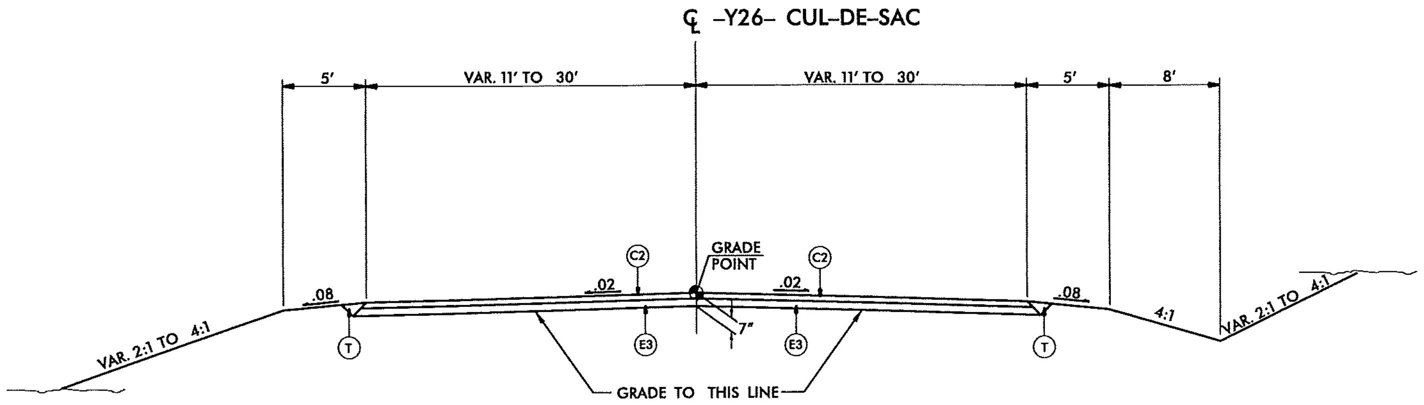
NOTE: TRANSITION FROM 22' TO 20' PAVEMENT WIDTH
-Y23- STA. 40+73.86 TO STA. 41+73.86


℄ CUL-DE-SAC
8'
8'
VAR. 8.5' TO 50.25'
11'
*9.5'
**8.5'
C2
C2
CROWN POINT
C2
EXIST.
EXIST.
.08
2:1
4:1
3:1
11"
U
U
T
T
E3
D2
22'
*19'
GRADE TO THIS LINE

TYPICAL SECTION NO. 26

USE TYPICAL SECTION NO. 26 AS FOLLOWS
-EY4- STA. 33+25.52 TO STA. 34+03.09
*-Y10- STA. 30+29.75 TO STA. 31+07.49
-Y13- STA. 29+15.00 TO STA. 29+89.38 LT.
-Y13RPB- STA. 14+00.00 RT.
-Y15- STA. 11+29.16 TO STA. 12+02.67 LT.
**-EY24- STA. 13+49.81 TO STA. 14+25.22

NOTE: FOR -Y10- AND -Y13-PAVEMENT DESIGN USE - Ⓒ2 & Ⓔ3


℄ -Y26- CUL-DE-SAC
5'
VAR. 11' TO 30'
VAR. 11' TO 30'
5'
8'
GRADE POINT
C2
C2
.08
.02
.02
.08
7"
VAR. 2:1 TO 4:1
4:1
VAR. 2:1 TO 4:1
T
E3
E3
T
GRADE TO THIS LINE

TYPICAL SECTION NO. 27

USE TYPICAL SECTION NO. 27 AS FOLLOWS
-Y26- STA. 37+80.95 TO STA. 38+50.00

PAVEMENT SCHEDULE	
C1	2" S9.5B
C2	3" S9.5B
C3	VAR. DEPTH S9.5B
C4	3" S9.5C
C5	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	3" B25.0B
E2	3½" B25.0B
E3	4" B25.0B
E4	5" B25.0B
E5	VAR. DEPTH B25.0B
E6	3" B25.0C
E7	4½" B25.0C
E8	7" B25.0C
E9	8½" B25.0C
E10	13" B25.0C
E11	VAR. DEPTH B25.0C
G	8" CTBC (PLANT MIXED)
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
L	SUBGRADE STABILIZATION
P	PRIME COAT
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	5" CONC. ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VAR. DEPTH WEDGING

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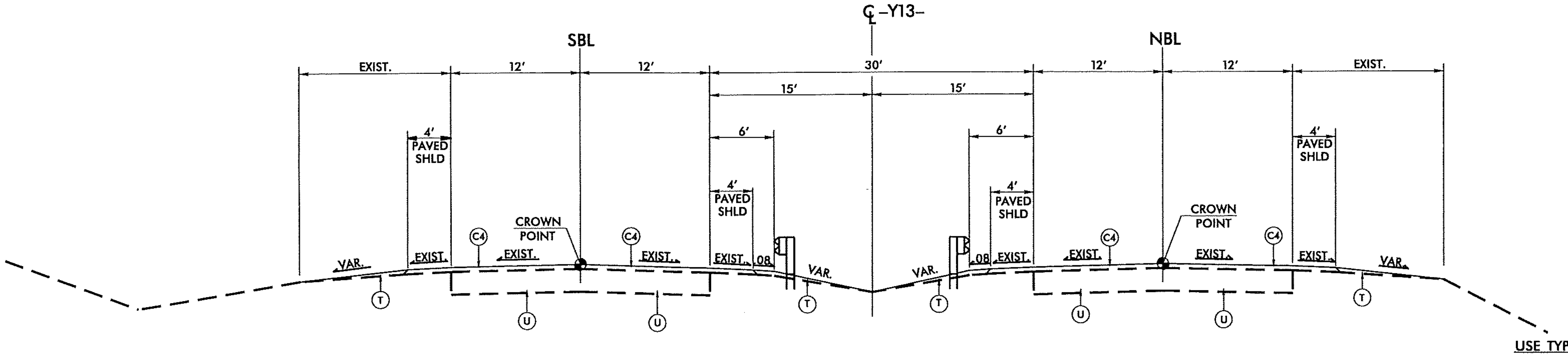
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	2-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

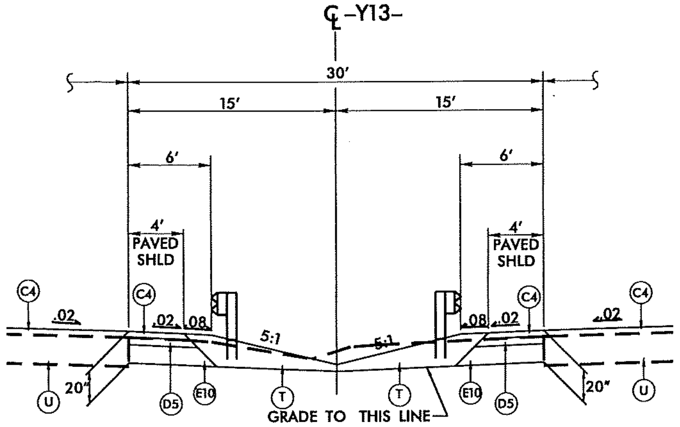


℄ -Y13-
SBL
NBL
EXIST.
12'
12'
30'
12'
12'
EXIST.
15'
15'
6'
6'
4' PAVED SHLD
4' PAVED SHLD
4' PAVED SHLD
4' PAVED SHLD
CROWN POINT
CROWN POINT
C4
C4
C4
C4
VAR.
EXIST.
EXIST.
EXIST.
EXIST.
.08
VAR.
VAR.
.08
EXIST.
EXIST.
EXIST.
EXIST.
VAR.
T
U
U
T
T
U
U
T

TYPICAL SECTION NO. 28

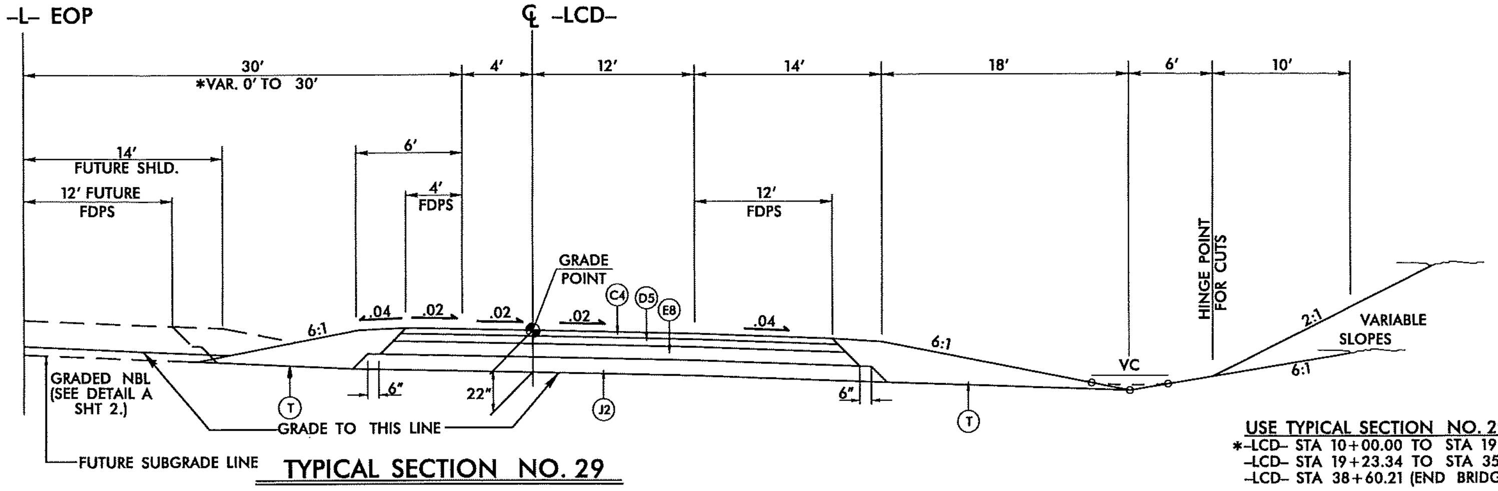
USE TYPICAL SECTION NO. 28 AS FOLLOWS
-Y13- STA 25+80.00 TO STA 112+00.00
-Y13- STA 112+00.00 TO STA 123+54.31 (NBL)
-Y13- STA 123+54.31 TO STA 128+09.00
-Y13- STA 128+09.00 TO STA 131+57.64 (SBL)

NOTE: SEE PLAN SHEETS 35 & 36 FOR LEFTOVER DESIGN
-Y13- STA. 120+05.64 TO STA. 131+57.64



℄ -Y13-
30'
15'
15'
6'
6'
4' PAVED SHLD
4' PAVED SHLD
C4
C4
C4
C4
.02
.02
.08
5:1
5:1
.08
.02
.02
20"
20"
U
D5
E10
T
T
E10
D5
U
GRADE TO THIS LINE

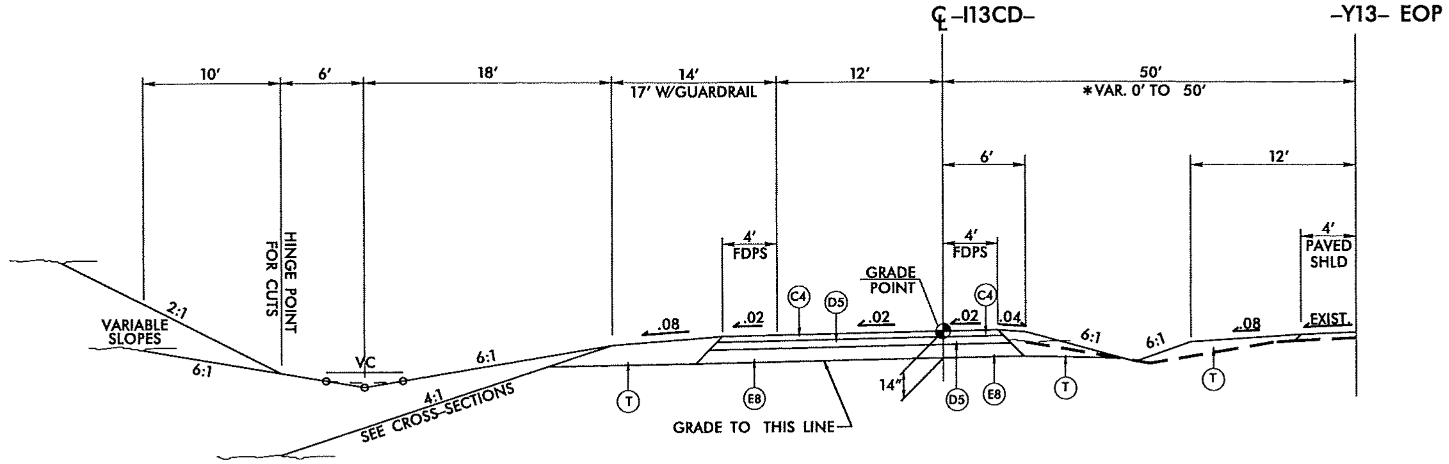
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 27 AS FOLLOWS
-Y13- STA 40+41.00 TO STA 51+88.00
NOTE: REMOVE EXISTING MEDIAN CROSS-OVER AND TURN LANES



-L- EOP
℄ -LCD-
30'
*VAR. 0' TO 30'
4'
12'
14'
18'
6'
10'
14' FUTURE SHLD.
12' FUTURE FDPS
6'
4' FDPS
12' FDPS
HINGE POINT FOR CUTS
GRADE POINT
C4
D5
E8
.04
.02
.02
.02
.04
6:1
6:1
2:1
VARIABLE SLOPES
6:1
VC
6"
22"
6"
GRADED NBL (SEE DETAIL A SHT 2.)
T
GRADE TO THIS LINE
J2
T
FUTURE SUBGRADE LINE

TYPICAL SECTION NO. 29

USE TYPICAL SECTION NO. 29 AS FOLLOWS
*-LCD- STA 10+00.00 TO STA 19+23.34
-LCD- STA 19+23.34 TO STA 35+78.21 (BEGIN BRIDGE)
-LCD- STA 38+60.21 (END BRIDGE) TO STA 41+28.62



℄ -I13CD-
-Y13- EOP
10'
6'
18'
14'
17' W/GUARDRAIL
12'
50'
*VAR. 0' TO 50'
6'
12'
4' FDPS
4' FDPS
4' PAVED SHLD
HINGE POINT FOR CUTS
GRADE POINT
C4
D5
C4
2:1
VARIABLE SLOPES
6:1
VC
6:1
.08
.02
.02
.02
.04
6:1
6:1
.08
EXIST.
4:1
SEE CROSS-SECTIONS
14"
T
E8
GRADE TO THIS LINE
D5
E8
T
T

TYPICAL SECTION NO. 30

USE TYPICAL SECTION NO. 30 AS FOLLOWS
*-I13CD- STA 10+00.00 TO STA 22+65.24
-I13CD- STA 22+65.24 TO STA 31+74.63
*-I13CD- STA 31+74.63 TO STA 41+90.04

PAVEMENT SCHEDULE	
C1	2" S9.5B
C2	3" S9.5B
C3	VAR. DEPTH S9.5B
C4	3" S9.5C
C5	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	3" B25.0B
E2	3½" B25.0B
E3	4" B25.0B
E4	5" B25.0B
E5	VAR. DEPTH B25.0B
E6	3" B25.0C
E7	4½" B25.0C
E8	7" B25.0C
E9	8½" B25.0C
E10	13" B25.0C
E11	VAR. DEPTH B25.0C
G	8" CTBC (PLANT MIXED)
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
L	SUBGRADE STABILIZATION
P	PRIME COAT
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	5" CONC. ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VAR. DEPTH WEDGING

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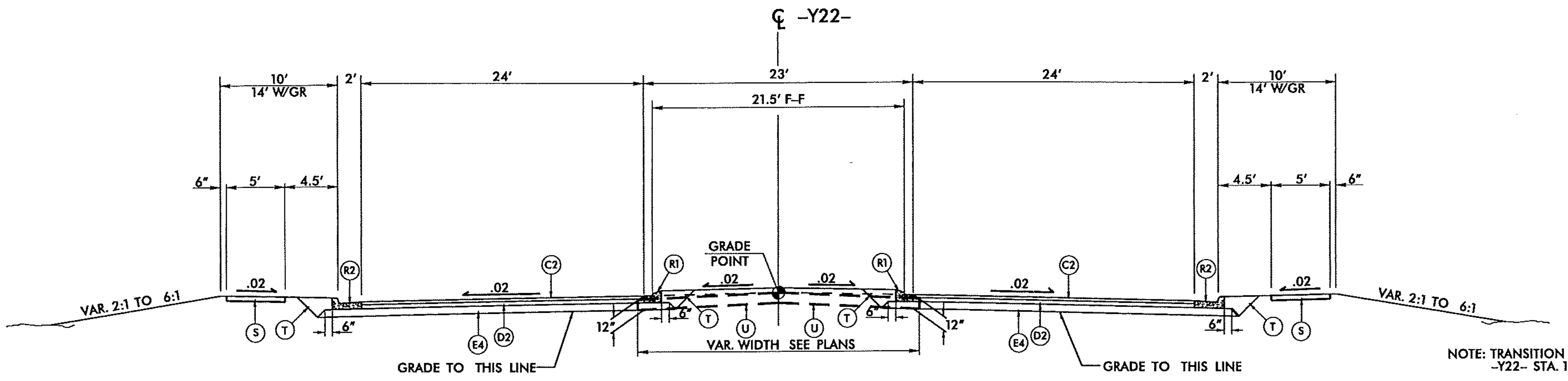
6/2/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	2-J
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

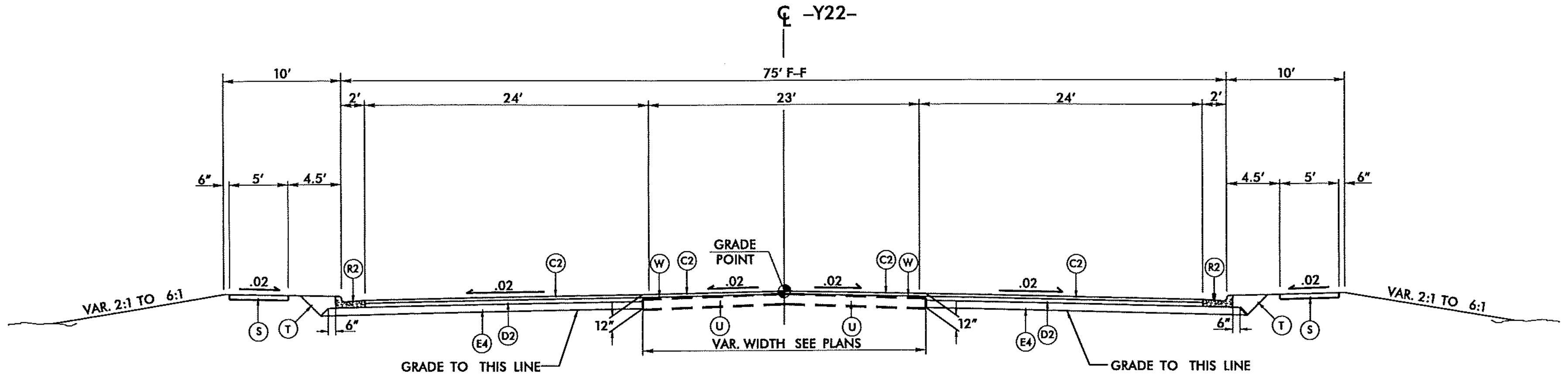

℄ -Y22-
10'
14' W/GR
2'
24'
23'
21.5' F-F
24'
2'
10'
14' W/GR
6"
5'
4.5'
4.5'
5'
6"
GRADE POINT
R2
C2
R1
R1
C2
R2
.02
.02
.02
.02
.02
.02
VAR. 2:1 TO 6:1
VAR. 2:1 TO 6:1
S
T
6"
E4
D2
12"
6"
T
U
U
T
6"
12"
E4
D2
6"
T
S
VAR. WIDTH SEE PLANS
GRADE TO THIS LINE
GRADE TO THIS LINE

TYPICAL SECTION NO. 31

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 30
-Y22- STA. 10+00.00 TO STA. 16+25.00

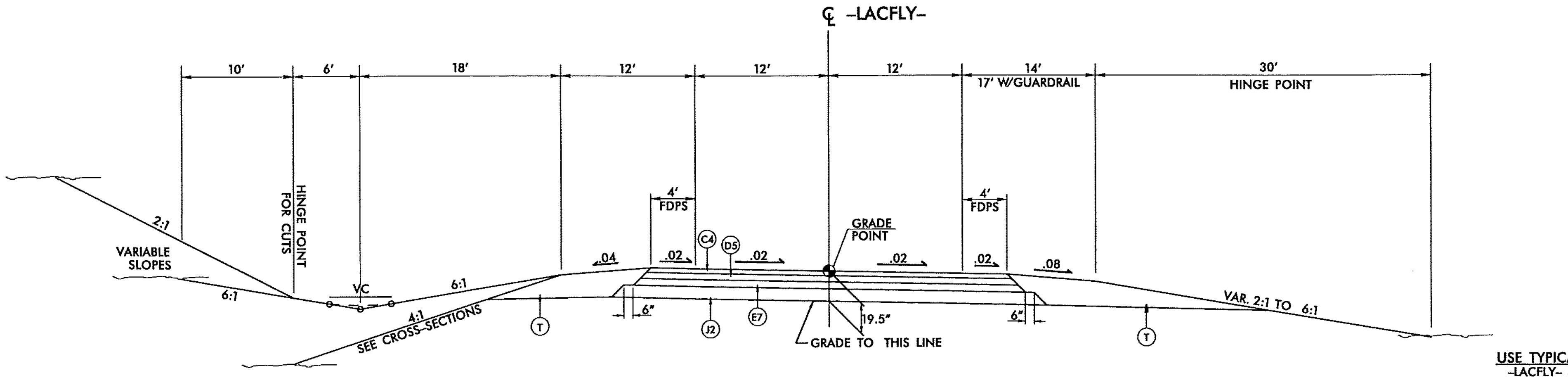
USE TYPICAL SECTION NO. 31 AS FOLLOWS
-Y22- STA. 16+25.00 TO STA. 20+65.25
-Y22- STA. 21+19.25 TO STA. 24+78.23 (BEGIN BRIDGE)
-Y22- STA. 27+60.80 (END BRIDGE) TO STA. 33+57.19
-Y22- STA. 34+96.25 TO STA. 38+75.00

NOTE: TRANSITION FROM TYPICAL SECTION NO. 30 TO EXISTING
-Y22- STA. 38+75.00 TO STA. 45+00.00


℄ -Y22-
10'
75' F-F
10'
2'
24'
23'
24'
2'
6"
5'
4.5'
4.5'
5'
6"
GRADE POINT
R2
C2
W
C2
C2
W
C2
R2
.02
.02
.02
.02
.02
.02
VAR. 2:1 TO 6:1
VAR. 2:1 TO 6:1
S
T
6"
E4
D2
12"
U
U
12"
E4
D2
6"
T
S
VAR. WIDTH SEE PLANS
GRADE TO THIS LINE
GRADE TO THIS LINE

TYPICAL SECTION NO. 32

USE TYPICAL SECTION NO. 32 AS FOLLOWS
-Y22- STA. 20+65.25 TO STA. 21+19.25
-Y22- STA. 33+57.19 TO STA. 34+96.25


℄ -LACFLY-
10'
6'
18'
12'
12'
12'
14'
17' W/GUARDRAIL
30'
HINGE POINT
HINGE POINT FOR CUTS
2:1
VARIABLE SLOPES
6:1
VC
6:1
4:1
SEE CROSS-SECTIONS
4'
FDPS
4'
FDPS
GRADE POINT
.04
.02
C4
D5
.02
.02
.02
.08
VAR. 2:1 TO 6:1
T
6"
J2
E7
19.5"
6"
T
GRADE TO THIS LINE

TYPICAL SECTION NO. 33

USE TYPICAL SECTION NO. 33 AS FOLLOWS
-LACFLY- STA. 46+05.71 TO STA. 60+53.54

PAVEMENT SCHEDULE	
C1	2" S9.5B
C2	3" S9.5B
C3	VAR. DEPTH S9.5B
C4	3" S9.5C
C5	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	3" B25.0B
E2	3½" B25.0B
E3	4" B25.0B
E4	5" B25.0B
E5	VAR. DEPTH B25.0B
E6	3" B25.0C
E7	4½" B25.0C
E8	7" B25.0C
E9	8½" B25.0C
E10	13" B25.0C
E11	VAR. DEPTH B25.0C
G	8" CTBC (PLANT MIXED)
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
L	SUBGRADE STABILIZATION
P	PRIME COAT
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	5" CONC. ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VAR. DEPTH WEDGING

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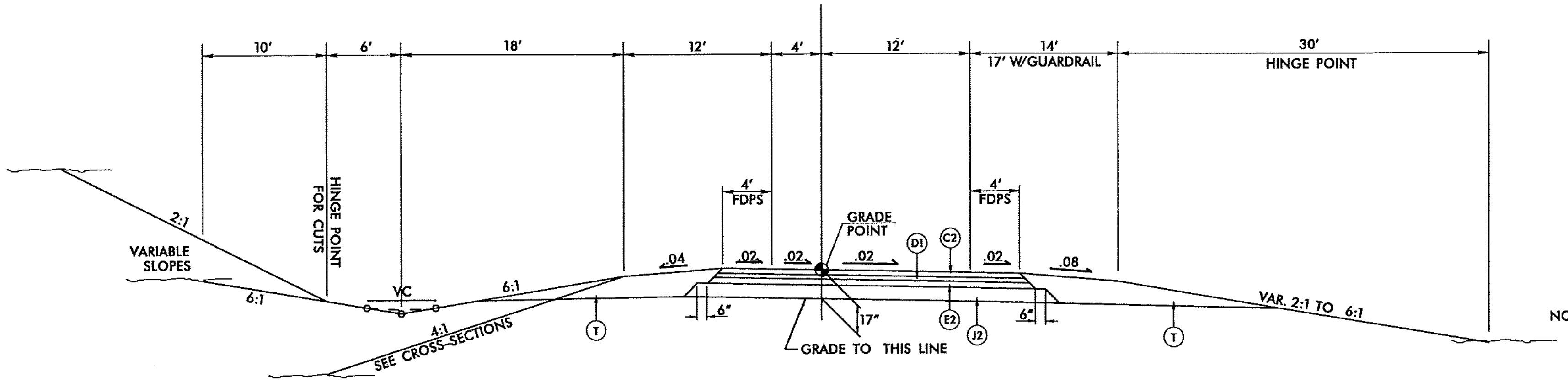
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	2-K
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

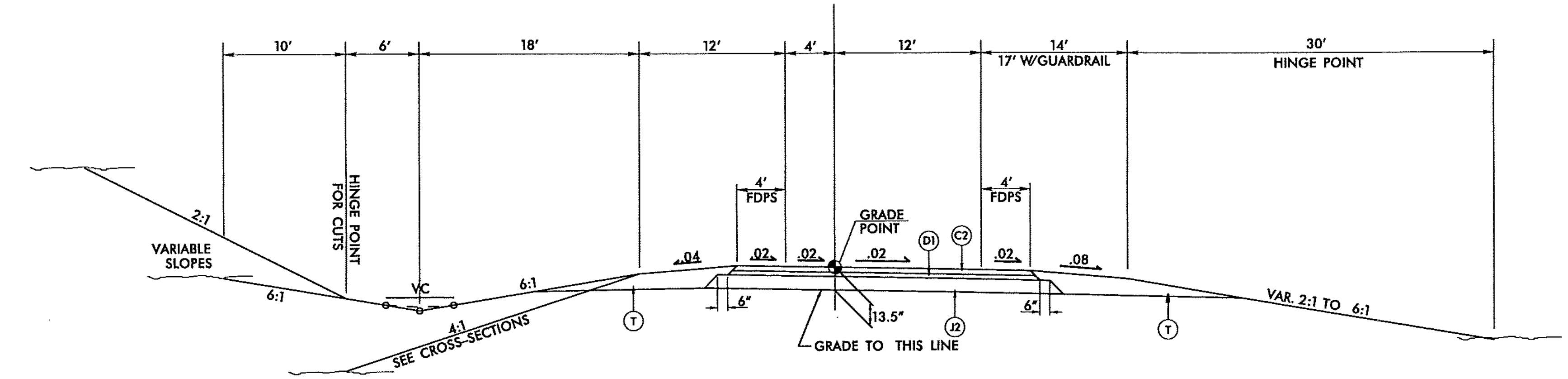


℄ -RAMP SURVEY-
10'
6'
18'
12'
4'
12'
14'
17' W/GUARDRAIL
30'
HINGE POINT
HINGE POINT FOR CUTS
4' FDPS
4' FDPS
GRADE POINT
D1
C2
2:1
VARIABLE SLOPES
6:1
VC
6:1
.04
.02
.02
.02
.02
.08
VAR. 2:1 TO 6:1
4:1
SEE CROSS-SECTIONS
T
6"
17"
E2
J2
6"
T
T
GRADE TO THIS LINE

TYPICAL SECTION NO. 34

NOTE: CONC. MONO. ISLAND -Y3RPD- STA. 27+10.15 TO 30+39.83
SEE PLAN SHEET 4

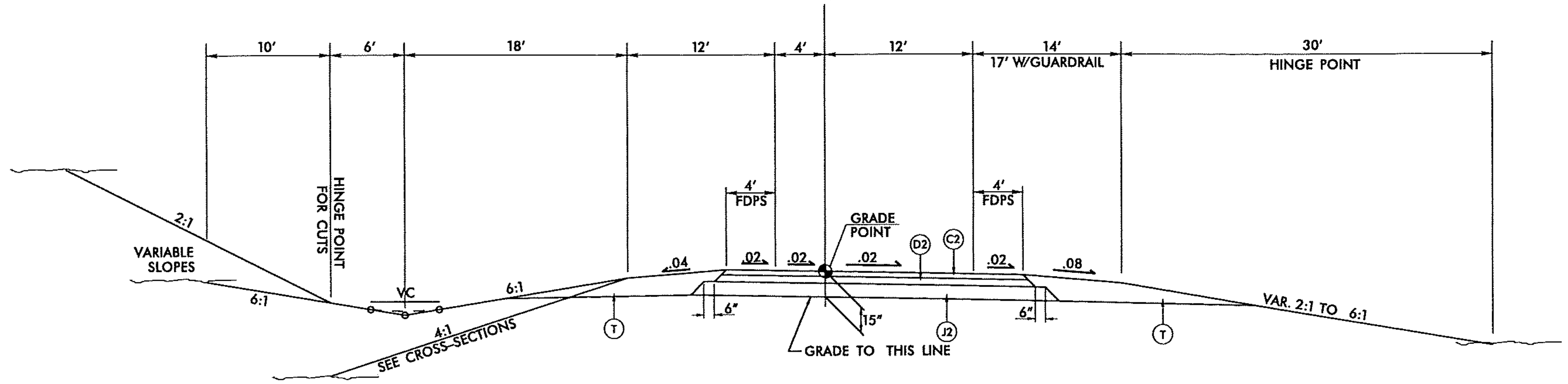
USE TYPICAL SECTION NO. 34 AS FOLLOWS
-Y3RPA- STA. 10+00.00 TO STA. 22+51.14
-Y3RPD- STA. 10+00.00 TO STA. 29+98.63



℄ -RAMP SURVEY-
10'
6'
18'
12'
4'
12'
14'
17' W/GUARDRAIL
30'
HINGE POINT
HINGE POINT FOR CUTS
4' FDPS
4' FDPS
GRADE POINT
D1
C2
2:1
VARIABLE SLOPES
6:1
VC
6:1
.04
.02
.02
.02
.02
.08
VAR. 2:1 TO 6:1
4:1
SEE CROSS-SECTIONS
T
6"
13.5"
J2
6"
T
GRADE TO THIS LINE

TYPICAL SECTION NO. 35

USE TYPICAL SECTION NO. 35 AS FOLLOWS
-Y4RPA- STA. 10+00.00 TO STA. 26+55.64
-Y4RPB- STA. 10+00.00 TO STA. 25+52.07
-Y4RPC- STA. 10+00.00 TO STA. 25+41.63
-Y4RPD- STA. 10+00.00 TO STA. 24+31.78



℄ -RAMP SURVEY-
10'
6'
18'
12'
4'
12'
14'
17' W/GUARDRAIL
30'
HINGE POINT
HINGE POINT FOR CUTS
4' FDPS
4' FDPS
GRADE POINT
D2
C2
2:1
VARIABLE SLOPES
6:1
VC
6:1
.04
.02
.02
.02
.02
.08
VAR. 2:1 TO 6:1
4:1
SEE CROSS-SECTIONS
T
6"
15"
J2
6"
T
GRADE TO THIS LINE

TYPICAL SECTION NO. 36

USE TYPICAL SECTION NO. 36 AS FOLLOWS
-Y13RPB- STA. 10+00.00 TO STA. 31+71.04
-Y22RPA- STA. 10+00.00 TO STA. 29+13.15
-Y22RPD- STA. 20+96.54 TO STA. 25+41.55

PAVEMENT SCHEDULE	
C1	2" S9.5B
C2	3" S9.5B
C3	VAR. DEPTH S9.5B
C4	3" S9.5C
C5	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	3" B25.0B
E2	3½" B25.0B
E3	4" B25.0B
E4	5" B25.0B
E5	VAR. DEPTH B25.0B
E6	3" B25.0C
E7	4½" B25.0C
E8	7" B25.0C
E9	8½" B25.0C
E10	13" B25.0C
E11	VAR. DEPTH B25.0C
G	8" CTBC (PLANT MIXED)
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
L	SUBGRADE STABILIZATION
P	PRIME COAT
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	5" CONC. ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VAR. DEPTH WEDGING

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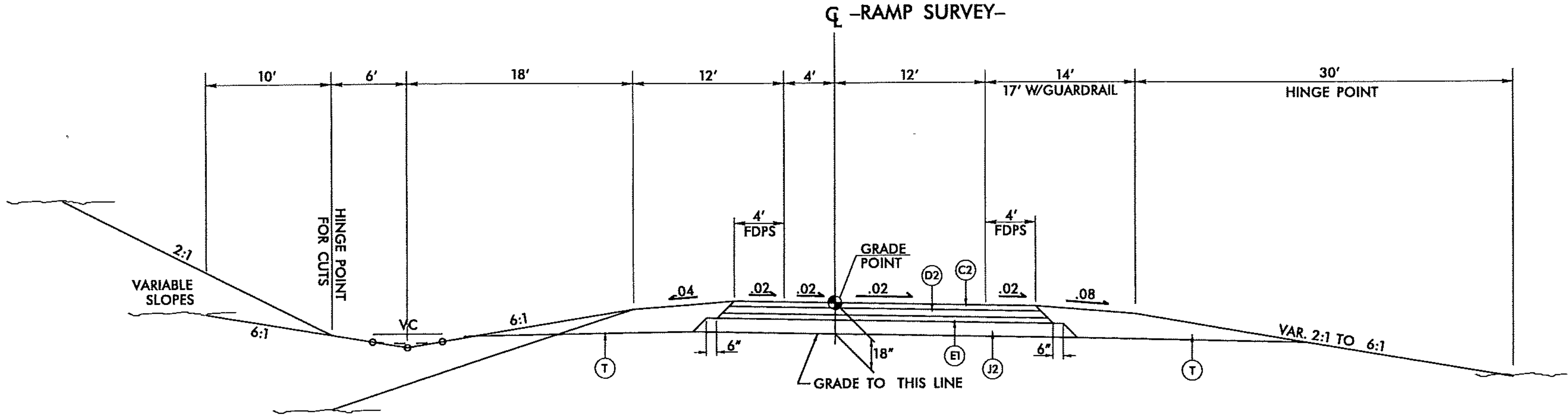
PROJECT REFERENCE NO. U-2525B
SHEET NO. 2-L
ROADWAY DESIGN ENGINEER
PAVEMENT DESIGN ENGINEER

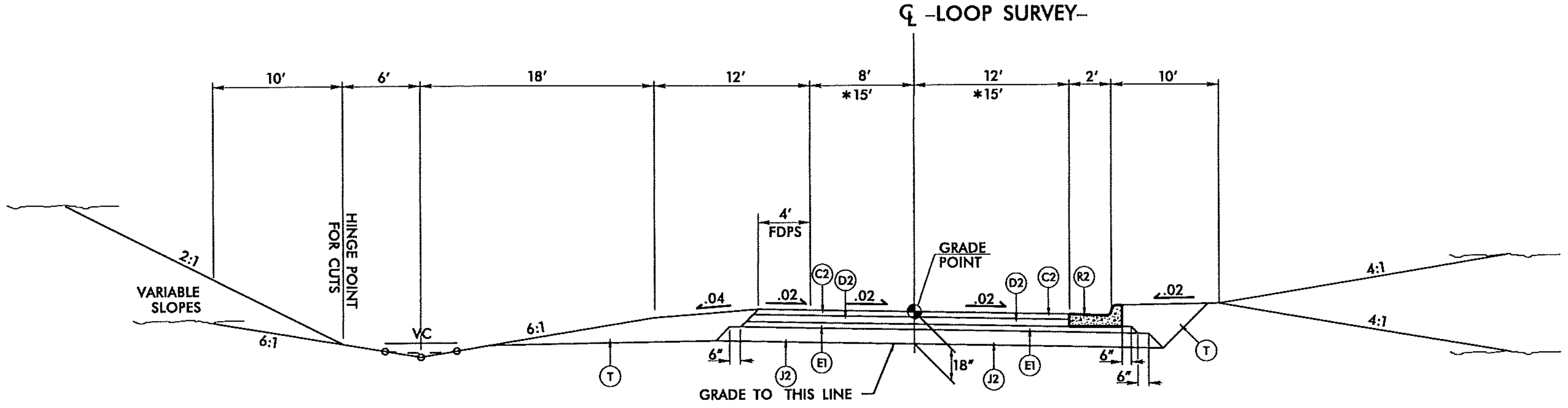
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



℄ -RAMP SURVEY-
10'
6'
18'
12'
4'
12'
14'
17' W/GUARDRAIL
30'
HINGE POINT
HINGE POINT FOR CUTS
4' FDPS
4' FDPS
GRADE POINT
D2
C2
2:1
VARIABLE SLOPES
6:1
VC
6:1
.04
.02
.02
.02
.02
.08
VAR. 2:1 TO 6:1
6"
18"
E1
J2
6"
T
T
GRADE TO THIS LINE

TYPICAL SECTION NO. 37

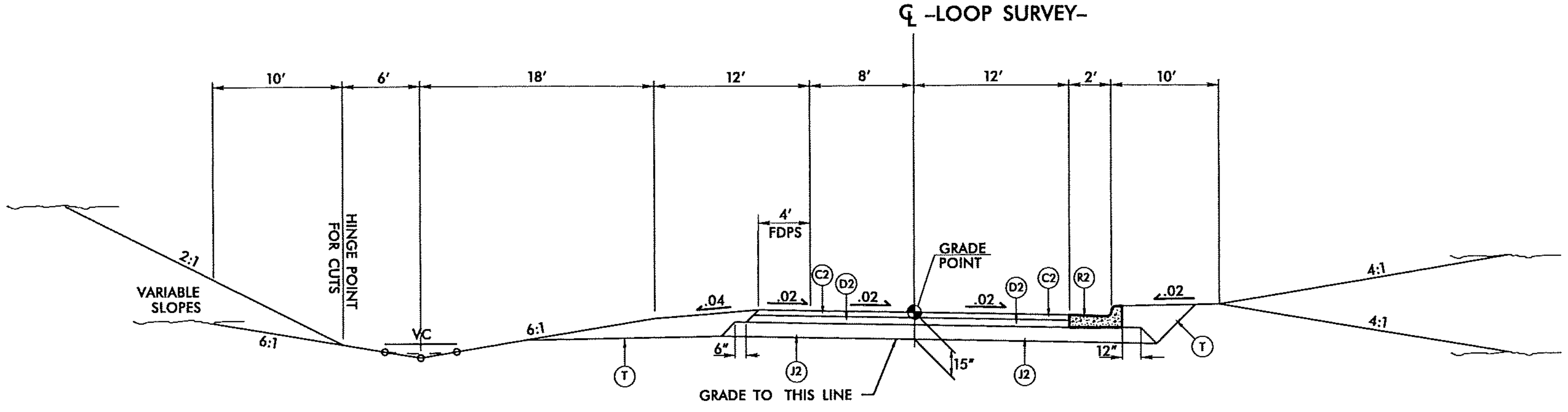
USE TYPICAL SECTION NO. 37 AS FOLLOWS
-Y13RPC- STA. 10+00.00 TO STA. 30+99.11



℄ -LOOP SURVEY-
10'
6'
18'
12'
8'
*15'
12'
*15'
2'
10'
HINGE POINT FOR CUTS
4' FDPS
GRADE POINT
C2
D2
D2
C2
R2
2:1
VARIABLE SLOPES
6:1
VC
6:1
.04
.02
.02
.02
.02
4:1
4:1
6"
J2
E1
18"
J2
E1
6"
6"
T
T
GRADE TO THIS LINE

TYPICAL SECTION NO. 38

USE TYPICAL SECTION NO. 38 AS FOLLOWS
-Y13LPA- STA. 10+00.00 TO STA. 23+54.27
-Y22LPA- STA. 11+21.67 TO STA. 22+56.20
*-Y22LPD- STA. 10+00.00 TO STA. 18+82.69



℄ -LOOP SURVEY-
10'
6'
18'
12'
8'
12'
2'
10'
HINGE POINT FOR CUTS
4' FDPS
GRADE POINT
C2
D2
D2
C2
R2
2:1
VARIABLE SLOPES
6:1
VC
6:1
.04
.02
.02
.02
.02
4:1
4:1
6"
J2
15"
J2
12"
T
T
GRADE TO THIS LINE

TYPICAL SECTION NO. 39

USE TYPICAL SECTION NO. 39 AS FOLLOWS
-Y13LPC- STA. 10+00.00 TO STA. 23+54.27
-Y13LPD- STA. 10+00.00 TO STA. 24+01.92

PAVEMENT SCHEDULE	
C1	2" S9.5B
C2	3" S9.5B
C3	VAR. DEPTH S9.5B
C4	3" S9.5C
C5	VAR. DEPTH S9.5C
D1	2½" I19.0B
D2	4" I19.0B
D3	VAR. DEPTH I19.0B
D4	2½" I19.0C
D5	4" I19.0C
D6	VAR. DEPTH I19.0C
E1	3" B25.0B
E2	3½" B25.0B
E3	4" B25.0B
E4	5" B25.0B
E5	VAR. DEPTH B25.0B
E6	3" B25.0C
E7	4½" B25.0C
E8	7" B25.0C
E9	8½" B25.0C
E10	13" B25.0C
E11	VAR. DEPTH B25.0C
G	8" CTBC (PLANT MIXED)
J1	6" AGGREGATE BASE COURSE
J2	8" AGGREGATE BASE COURSE
L	SUBGRADE STABILIZATION
P	PRIME COAT
R1	1'-6" CURB AND GUTTER
R2	2'-6" CURB AND GUTTER
R3	5" CONC. ISLAND (KEYED IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VAR. DEPTH WEDGING

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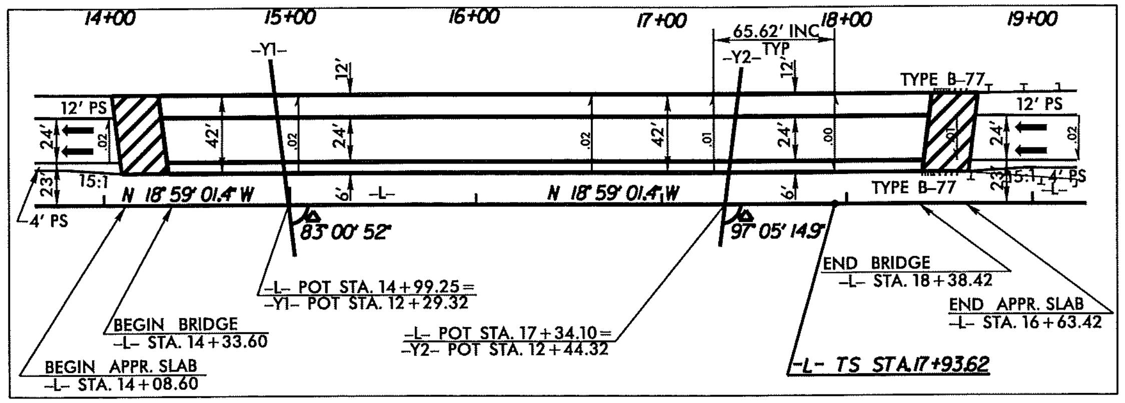
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	2-M
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

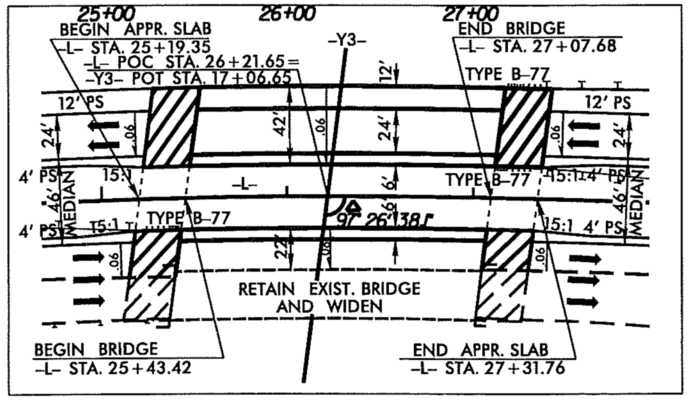
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

6/2/99

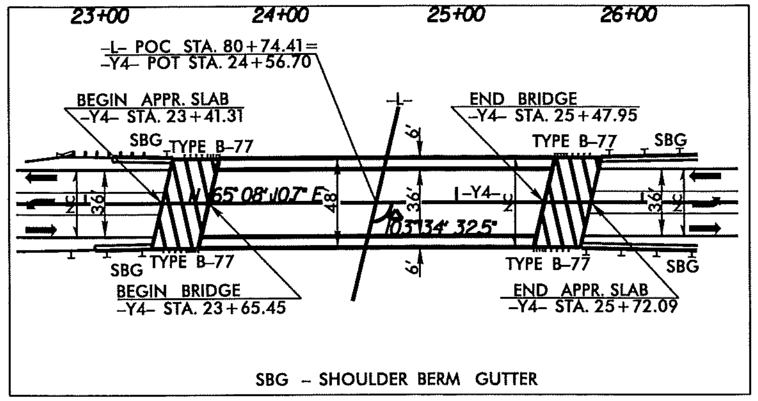
BRIDGE DETAILS
(NOT TO SCALE)


14+00
15+00
16+00
17+00
18+00
19+00
-Y1-
-Y2-
65.62' INC.
TYP
12'
12' PS
24'
42'
.02
.01
.00
23'
15:1
4' PS
N 18° 59' 01.4" W
-L-
6'
83° 00' 52"
97° 05' 14.9"
TYPE B-77
-L- POT STA. 14+99.25=
-Y1- POT STA. 12+29.32
-L- POT STA. 17+34.10=
-Y2- POT STA. 12+44.32
BEGIN BRIDGE
-L- STA. 14+33.60
BEGIN APPR. SLAB
-L- STA. 14+08.60
END BRIDGE
-L- STA. 18+38.42
END APPR. SLAB
-L- STA. 16+63.42
-L- TS STA.17+93.62

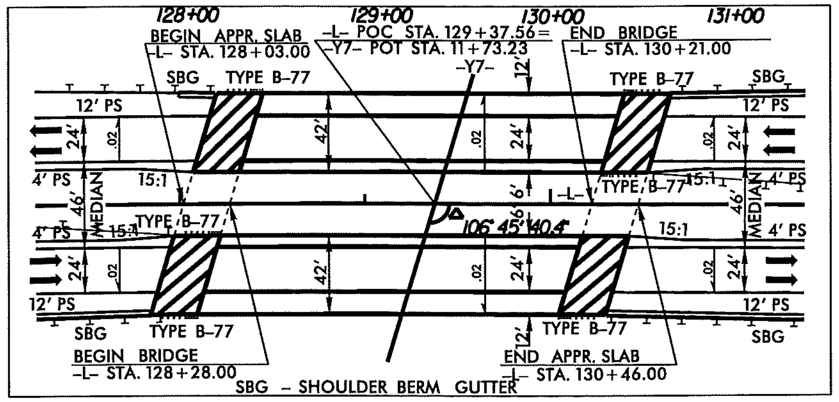
(REVISED)
SBL STRUCTURE AT -L- OVER -Y1- &-Y2-
(RETAIN EXISTING NBL BRIDGE; SEE SHEET 4 FOR PLANS)
(SEE SHEETS S- THRU S- FOR STRUCTURE PLANS)


25+00
26+00
27+00
BEGIN APPR. SLAB
-L- STA. 25+19.35
-L- POC STA. 26+21.65=
-Y3- POT STA. 17+06.65
-Y3-
END BRIDGE
-L- STA. 27+07.68
TYPE B-77
12' PS
24'
42'
.06
12'
4' PS
46' MEDIAN
15:1
-L-
6'
97° 26' 13.8"
RETAIN EXIST. BRIDGE
AND WIDEN
BEGIN BRIDGE
-L- STA. 25+43.42
END APPR. SLAB
-L- STA. 27+31.76

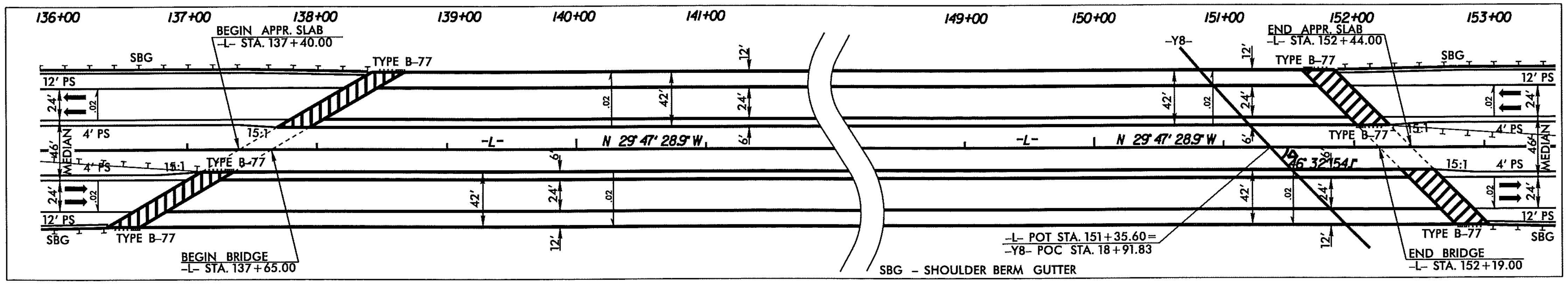
STRUCTURES AT -L- OVER -Y3-
(SEE SHEET 4 FOR PLANS)
(SEE SHEETS S- THRU S- FOR STRUCTURE PLANS)


23+00
24+00
25+00
26+00
-L- POC STA. 80+74.41=
-Y4- POT STA. 24+56.70
BEGIN APPR. SLAB
-Y4- STA. 23+41.31
END BRIDGE
-Y4- STA. 25+47.95
-L-
SBG
TYPE B-77
36'
48'
6'
N 65° 08' 10.7" E
103° 34' 32.5"
-Y4-
BEGIN BRIDGE
-Y4- STA. 23+65.45
END APPR. SLAB
-Y4- STA. 25+72.09
SBG - SHOULDER BERM GUTTER

STRUCTURE AT -Y4- OVER -L-
(SEE SHEET 7 FOR PLANS)
(SEE SHEETS S- THRU S- FOR STRUCTURE PLANS)


128+00
129+00
130+00
131+00
BEGIN APPR. SLAB
-L- STA. 128+03.00
-L- POC STA. 129+37.56=
-Y7- POT STA. 11+73.23
END BRIDGE
-L- STA. 130+21.00
-Y7-
SBG
TYPE B-77
12' PS
24'
42'
.02
4' PS
46' MEDIAN
15:1
-L-
6'
106° 45' 40.4"
12'
BEGIN BRIDGE
-L- STA. 128+28.00
END APPR. SLAB
-L- STA. 130+46.00
SBG - SHOULDER BERM GUTTER

(REVISED)
STRUCTURES AT -L- OVER -Y7-
(SEE SHEET 10 FOR PLANS)
(SEE SHEETS S- THRU S- FOR STRUCTURE PLANS)


136+00
137+00
138+00
139+00
140+00
141+00
149+00
150+00
151+00
152+00
153+00
BEGIN APPR. SLAB
-L- STA. 137+40.00
SBG
TYPE B-77
12' PS
24'
42'
.02
12'
4' PS
46' MEDIAN
15:1
-L-
N 29° 47' 28.9" W
6'
-Y8-
END APPR. SLAB
-L- STA. 152+44.00
46° 32' 15.4"
BEGIN BRIDGE
-L- STA. 137+65.00
-L- POT STA. 151+35.60=
-Y8- POC STA. 18+91.83
END BRIDGE
-L- STA. 152+19.00
SBG - SHOULDER BERM GUTTER

STRUCTURES AT -L- OVER BUFFALO CREEK AND -Y8-
(SEE SHEET 11 & 12 FOR PLANS)
(SEE SHEETS S- THRU S- FOR STRUCTURE PLANS)

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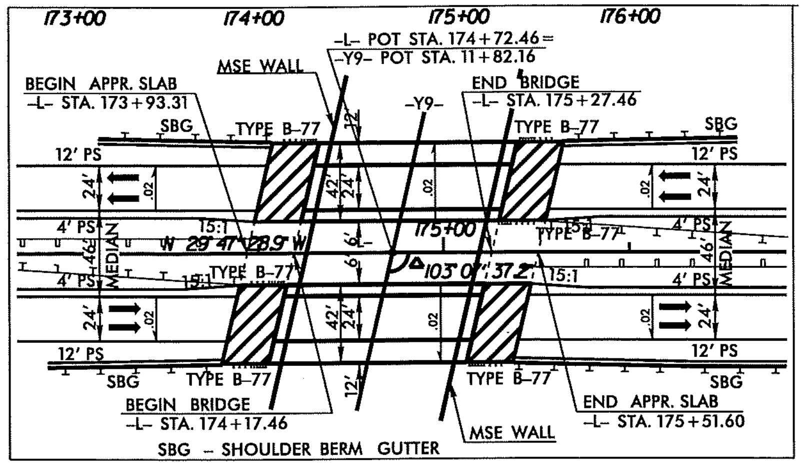
6/2/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	2-N
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

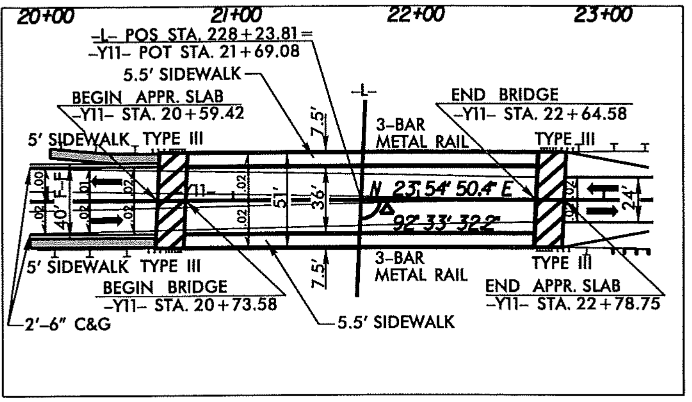
BRIDGE DETAILS
(NOT TO SCALE)


173+00
174+00
175+00
176+00
-L- POT STA. 174+72.46=
-Y9- POT STA. 11+82.16
MSE WALL
BEGIN APPR. SLAB
-L- STA. 173+93.31
END BRIDGE
-L- STA. 175+27.46
-Y9-
SBG
TYPE B-77
12' PS
24'
.02
42'
4' PS
MEDIAN
46'
15:1
N 29° 47' 28.9" W
103° 0' 37.2"
6'
TYPE B-77
BEGIN BRIDGE
-L- STA. 174+17.46
END APPR. SLAB
-L- STA. 175+51.60
MSE WALL
SBG - SHOULDER BERM GUTTER

(REVISED)

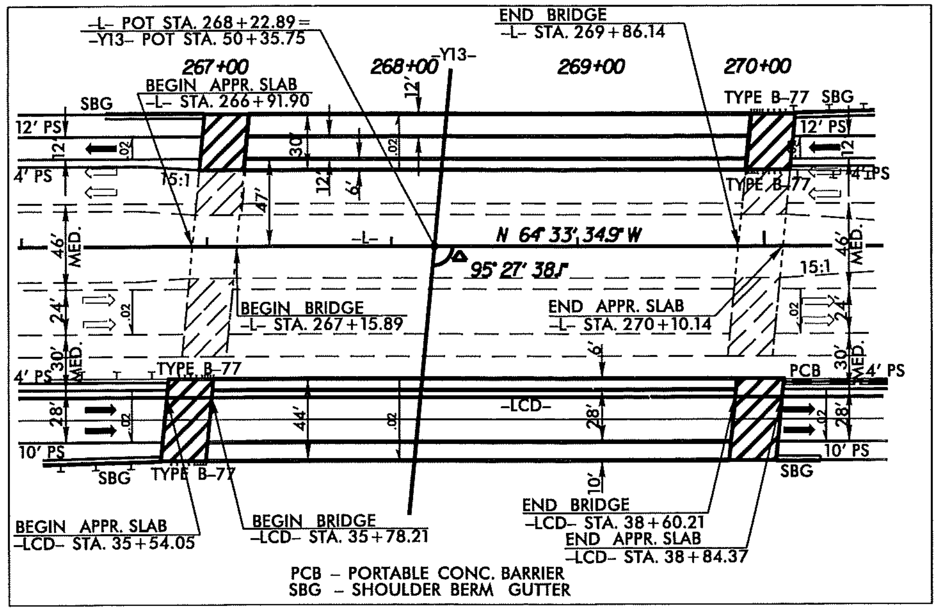
STRUCTURES AT -L- OVER -Y9-

(SEE SHEET 14 FOR PLANS)
(SEE SHEETS S- THRU S- FOR STRUCTURE PLANS)


20+00
21+00
22+00
23+00
-L- POS STA. 228+23.81=
-Y11- POT STA. 21+69.08
5.5' SIDEWALK
-L-
BEGIN APPR. SLAB
-Y11- STA. 20+59.42
END BRIDGE
-Y11- STA. 22+64.58
5' SIDEWALK
TYPE III
7.5'
3-BAR METAL RAIL
.02
36'
51'
24'
N 23° 54' 50.4" E
92° 33' 32.2"
5' SIDEWALK TYPE III
BEGIN BRIDGE
-Y11- STA. 20+73.58
3-BAR METAL RAIL
TYPE III
END APPR. SLAB
-Y11- STA. 22+78.75
2'-6" C&G
5.5' SIDEWALK

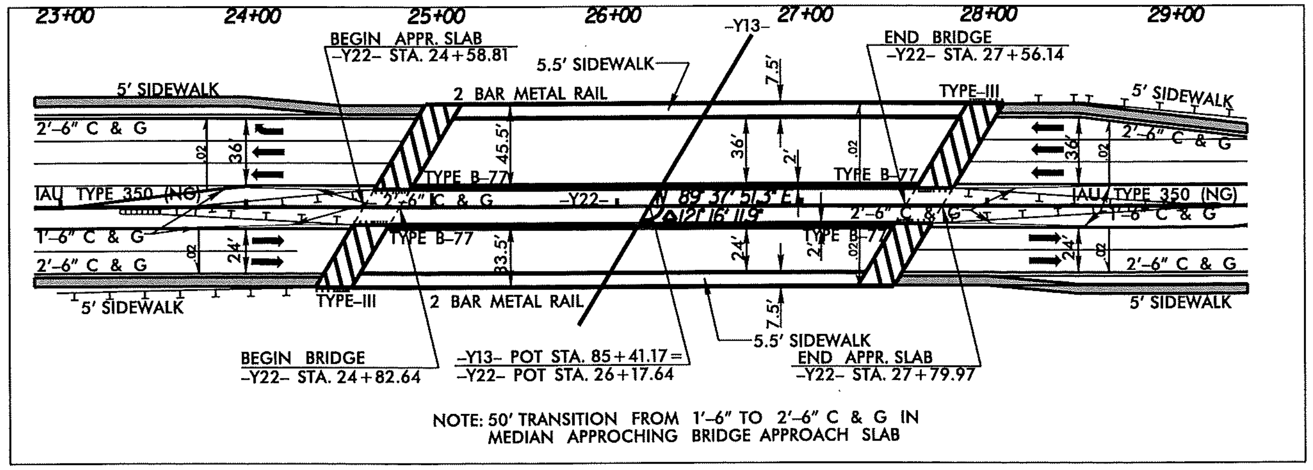
STRUCTURE AT -Y11- OVER -L-

(SEE SHEET 18 FOR PLANS)
(SEE SHEETS S- THRU S- FOR STRUCTURE PLANS)


-L- POT STA. 268+22.89=
-Y13- POT STA. 50+35.75
END BRIDGE
-L- STA. 269+86.14
267+00
268+00
-Y13-
269+00
270+00
BEGIN APPR. SLAB
-L- STA. 266+91.90
SBG
TYPE B-77
12' PS
4' PS
15:1
30'
47'
12'
6'
46' MED.
-L-
N 64° 33' 34.9" W
95° 27' 38.1"
BEGIN BRIDGE
-L- STA. 267+15.89
END APPR. SLAB
-L- STA. 270+10.14
24'
30' MED.
TYPE B-77
PCB
-LCD-
28'
44'
10' PS
SBG
BEGIN APPR. SLAB
-LCD- STA. 35+54.05
BEGIN BRIDGE
-LCD- STA. 35+78.21
END BRIDGE
-LCD- STA. 38+60.21
END APPR. SLAB
-LCD- STA. 38+84.37
PCB - PORTABLE CONC. BARRIER
SBG - SHOULDER BERM GUTTER

STRUCTURES AT -L- OVER -Y13-

(SEE SHEET 21 FOR PLANS)
(SEE SHEETS S- THRU S- FOR STRUCTURE PLANS)


23+00
24+00
25+00
26+00
-Y13-
27+00
28+00
29+00
BEGIN APPR. SLAB
-Y22- STA. 24+58.81
5.5' SIDEWALK
END BRIDGE
-Y22- STA. 27+56.14
5' SIDEWALK
2 BAR METAL RAIL
TYPE-III
2'-6" C & G
36'
45.5'
7.5'
TYPE B-77
IAU TYPE 350 (NG)
-Y22-
N 89° 37' 51.3" E
121° 16' 11.9"
1'-6" C & G
24'
33.5'
TYPE-III
BEGIN BRIDGE
-Y22- STA. 24+82.64
-Y13- POT STA. 85+41.17=
-Y22- POT STA. 26+17.64
5.5' SIDEWALK
END APPR. SLAB
-Y22- STA. 27+79.97
NOTE: 50' TRANSITION FROM 1'-6" TO 2'-6" C & G IN MEDIAN APPROCHING BRIDGE APPROACH SLAB

STRUCTURES AT -Y22- OVER -Y13-

(SEE SHEET 33 FOR PLANS)
(SEE SHEETS S- THRU S- FOR STRUCTURE PLANS)

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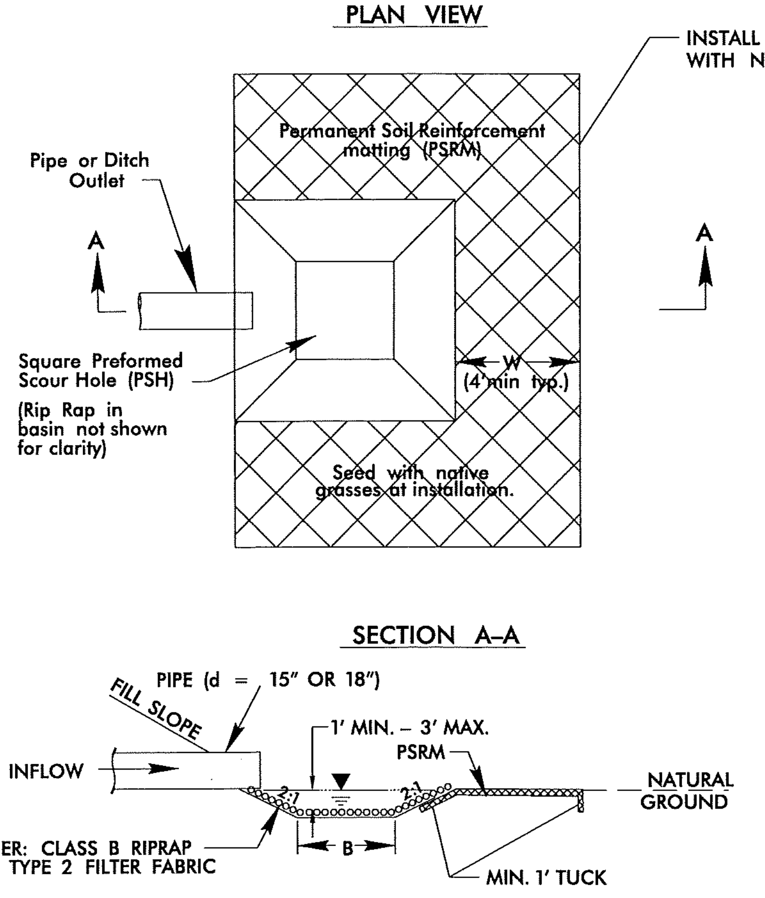
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	2-0
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

6/2/99

PREFORMED SCOUR HOLE

*NOT TO SCALE


PLAN VIEW
INSTALL LEVEL AND FLUSH WITH NATURAL GROUND
Permanent Soil Reinforcement matting (PSRM)
Pipe or Ditch Outlet
A
A
Square Preformed Scour Hole (PSH)
(Rip Rap in basin not shown for clarity)
W
(4' min typ.)
Seed with native grasses at installation.
SECTION A-A
PIPE (d = 15" OR 18")
FILL SLOPE
1' MIN. - 3' MAX.
PSRM
INFLOW
2:1
2:1
NATURAL GROUND
LINER: CLASS B RIPRAP WITH TYPE 2 FILTER FABRIC
B
MIN. 1' TUCK

B= 4'
D= 1' Min.
W= 1"-3"

3/08

AT STA. 19+50 -Y3RPA- (RT)
AT STA. 21+00 -Y3RPD- (LT)
AT STA. 17+00 -Y4- (RT)
AT STA. 26+00 -Y4- (LT)
AT STA. 37+00 -Y4- (RT)
AT STA. 14+50 -Y4A- (RT)
AT STA. 20+20 -Y4RPB- (LT)
AT STA. 152+50 -L- (LT)
AT STA. 155+70 -L- (LT)
AT STA. 159+50 -L- (LT)
AT STA. 182+00 -L- (LT)
AT STA. 192+50 -L- (LT)
AT STA. 197+50 -L- (RT)
AT STA. 257+50 -L- (RT)
AT STA. 110+50 -Y13- (LT)

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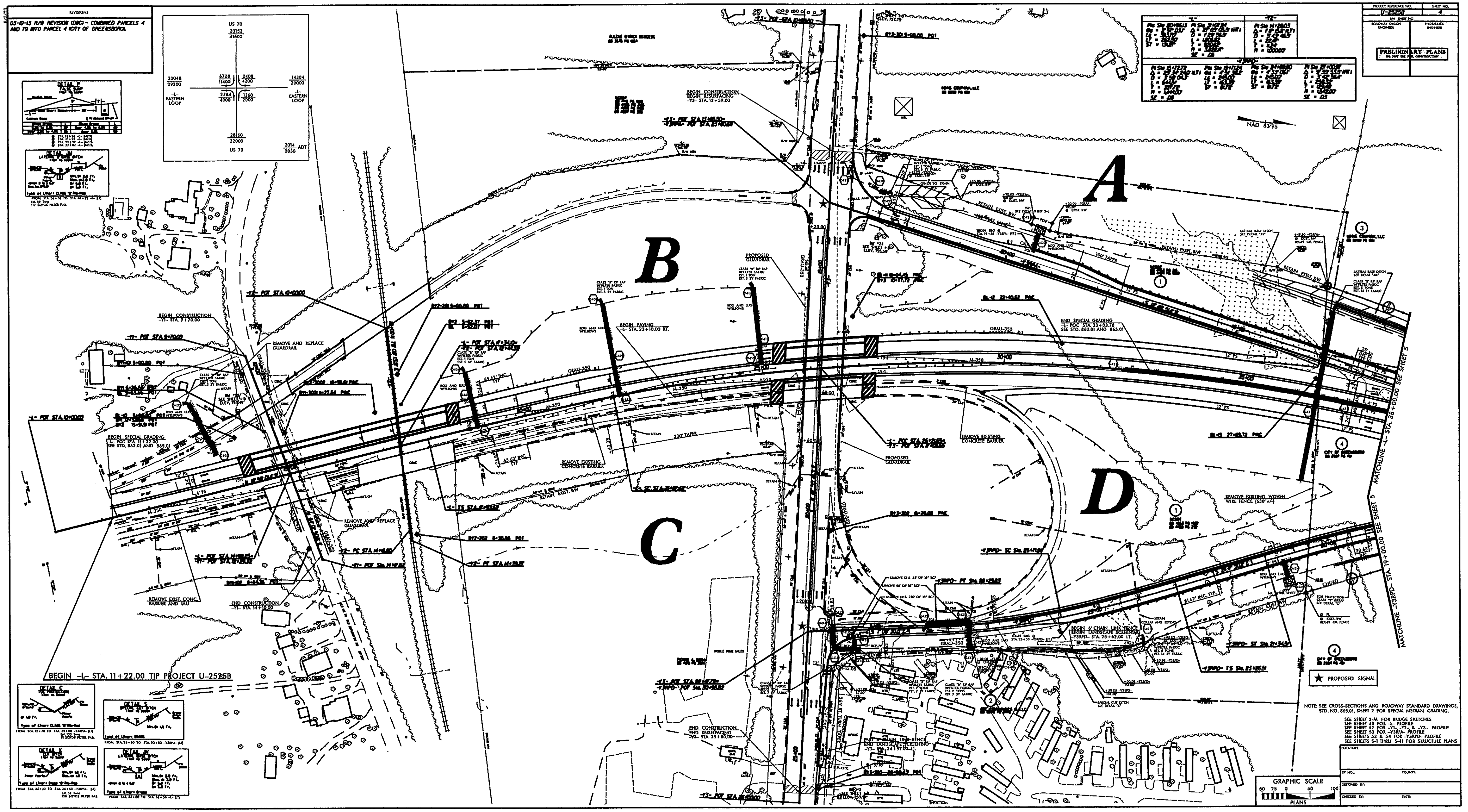
REVISIONS
03-19-13 R/W REVISION (DBG) - COMBINED PARCELS 4 AND 79 INTO PARCEL 4 (CITY OF GREENSBORO)

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


US 70
33152
41600
20048
29200
-L-
EASTERN LOOP
6728
11400
2408
4200
2784
4000
1360
2000
14304
20000
-L-
EASTERN LOOP
28160
32000
US 70
2014
2030
ADT
DETAIL P
DETAIL M
DETAIL C
DETAIL S
DETAIL X
NAD 83/95
A
B
C
D
BEGIN CONSTRUCTION
BEGIN RESURFACING
-Y3- STA. 12+59.00
BEGIN PAVING
-L- STA. 23+10.00 RT.
REMOVE AND REPLACE GUARDRAIL
PROPOSED GUARDRAIL
REMOVE EXISTING CONCRETE BARRIER
REMOVE EXISTING WOVEN WIRE FENCE
END SPECIAL GRADING
BEGIN SPECIAL GRADING
END CONSTRUCTION
END RESURFACING
-Y3- STA. 25+80.00
MATCHLINE -L- STA. 38+00.00 SEE SHEET 5
MATCHLINE -Y3RPD- STA. 19+00.00 SEE SHEET 5
BEGIN -L- STA. 11+22.00 TIP PROJECT U-2525B
GRAPHIC SCALE
50
25
0
50
100
PLANS

★ PROPOSED SIGNAL

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 2-M FOR BRIDGE SKETCHES
SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 52 FOR -Y1-, -Y2-, & -Y3- PROFILE
SEE SHEET 53 FOR -Y3RPA- PROFILE
SEE SHEETS 53 & 54 FOR -Y3RPD- PROFILE
SEE SHEETS S-1 THRU S-11 FOR STRUCTURE PLANS

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

5/14/99

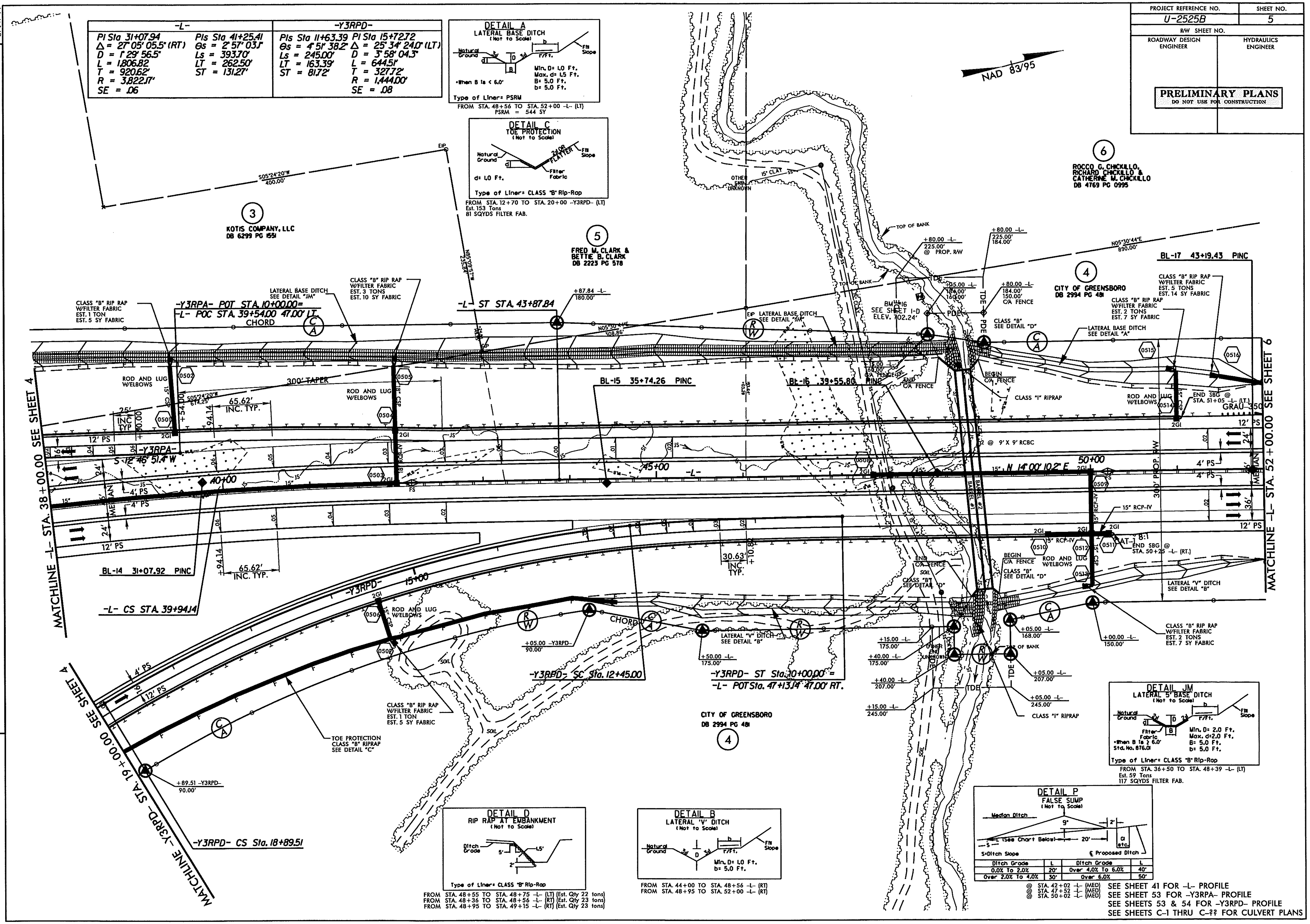
REVISIONS

03-19-13 R/W REVISION (DWG) - COMBINED PARCELS 4 AND 79 INTO PARCEL 4 (CITY OF GREENSBORO).

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-		-Y3RPD-	
PI Sta 31+07.94	PIs Sta 41+25.41	PIs Sta 11+63.39	PI Sta 15+72.72
Δ = 27° 05' 05.5" (RT)	Θs = 2° 57' 03.1"	Θs = 4° 51' 38.2"	Δ = 25° 34' 24.0" (LT)
D = 1° 29' 56.5"	Ls = 393.70'	Ls = 245.00'	D = 3° 58' 04.3"
L = 1,806.82	LT = 262.50'	LT = 163.39'	L = 644.51'
T = 920.62'	ST = 131.27'	ST = 81.72'	T = 327.72'
R = 3,822.17'			R = 1,444.00'
SE = .06			SE = .08


NAD 83/95
3
KOTIS COMPANY, LLC
DB 6299 PG 1551
S05°24'20"W
400.00'
EIP
5
FRED M. CLARK &
BETTIE B. CLARK
DB 2223 PG 578
6
ROCCO G. CHICKILLO,
RICHARD CHICKILLO &
CATHERINE M. CHICKILLO
DB 4769 PG 0995
4
CITY OF GREENSBORO
DB 2994 PG 481
N05°30'44"E
890.00'
-Y3RPA- POT STA. 10+00.00=
-L- POC STA. 39+54.00 47.00' LT.
CHORD
-L- ST STA. 43+87.84
+87.84 -L-
180.00'
LATERAL BASE DITCH
SEE DETAIL "JM"
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 1 TON
EST. 5 SY FABRIC
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 3 TONS
EST. 10 SY FABRIC
ROD AND LUG
W/ELBOWS
300' TAPER
65.62'
INC. TYP.
BL-15 35+74.26 PINC
BL-16 39+55.80 PINC
BL-17 43+19.43 PINC
BL-14 31+07.92 PINC
-Y3RPA-
S 12°46'51.4" W
40+00
45+00
-L-
50+00
N 14°00'10.2" E
12' PS
4' PS
24'
MEDIAN
36'
30.63'
INC.
TYP.
-L- CS STA. 39+94.14
-Y3RPD-
15+00
-Y3RPD- SC Sta. 12+45.00
-Y3RPD- ST Sta. 10+00.00 =
-L- POT Sta. 47+13.14 47.00' RT.
-Y3RPD- CS Sta. 18+89.51
+89.51 -Y3RPD-
90.00'
+05.00 -Y3RPD-
90.00'
TOE PROTECTION
CLASS "B" RIPRAP
SEE DETAIL "C"
LATERAL "V" DITCH
SEE DETAIL "B"
TOP OF BANK
BM #16
SEE SHEET 1-D
ELEV. 702.24'
2 @ 9' X 9' RCBC
CLASS "I" RIPRAP
BEGIN C/A FENCE
END C/A FENCE
CLASS "B"
SEE DETAIL "D"
TDE
PDE
END SBG @
STA. 51+05 -L- (LT)
GRAU-350
END SBG @
STA. 50+25 -L- (RT.)
LATERAL BASE DITCH
SEE DETAIL "A"
LATERAL "V" DITCH
SEE DETAIL "B"
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 5 TONS
EST. 14 SY FABRIC
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 2 TONS
EST. 7 SY FABRIC
15" RCP-IV
2GI
300' PROP. R/W
MATCHLINE -L- STA. 38+00.00 SEE SHEET 4
MATCHLINE -L- STA. 52+00.00 SEE SHEET 6
MATCHLINE -Y3RPD- STA. 19+00.00 SEE SHEET 4

DETAIL A
LATERAL BASE DITCH
(Not to Scale)

Min. D= 1.0 Ft.
Max. d= 1.5 Ft.
B= 5.0 Ft.
b= 5.0 Ft.
*When B is < 6.0'
Type of Liner= PSRM

FROM STA. 48+56 TO STA. 52+00 -L- (LT)
PSRM = 544 SY

DETAIL C
TOE PROTECTION
(Not to Scale)

d= 1.0 Ft.
Type of Liner= CLASS "B" Rip-Rap

FROM STA. 12+70 TO STA. 20+00 -Y3RPD- (LT)
Est. 153 Tons
81 SQYDS FILTER FAB.

DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)

Type of Liner= CLASS "B" Rip-Rap

FROM STA. 48+55 TO STA. 48+75 -L- (LT) (Est. Qty 22 tons)
FROM STA. 48+36 TO STA. 48+56 -L- (RT) (Est. Qty 23 tons)
FROM STA. 48+95 TO STA. 49+15 -L- (RT) (Est. Qty 23 tons)

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

Min. D= 1.0 Ft.
b= 5.0 Ft.

FROM STA. 44+00 TO STA. 48+56 -L- (RT)
FROM STA. 48+95 TO STA. 52+00 -L- (RT)

DETAIL JM
LATERAL 5' BASE DITCH
(Not to Scale)

Min. D= 2.0 Ft.
Max. d=2.0 Ft.
B= 5.0 Ft.
b= 5.0 Ft.
*When B is ≥ 6.0'
Std. No. 876.01
Type of Liner= CLASS "B" Rip-Rap

FROM STA. 36+50 TO STA. 48+39 -L- (LT)
Est. 59 Tons
117 SQYDS FILTER FAB.

DETAIL P
FALSE SUMP
(Not to Scale)

S=Ditch Slope

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

@ STA. 42+02 -L- (MED)
@ STA. 47+52 -L- (MED)
@ STA. 50+02 -L- (MED)

SEE SHEET 41 FOR -L- PROFILE
SEE SHEET 53 FOR -Y3RPA- PROFILE
SEE SHEETS 53 & 54 FOR -Y3RPD- PROFILE
SEE SHEETS C-1 THRU C-?? FOR CULVERT PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99

REVISIONS

03-19-13 R/W REVISION (DWG) - COMBINED PARCELS 4 AND 79 INTO PARCEL 4 (CITY OF GREENSBORO).

-L-

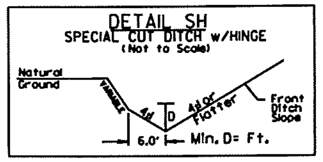
Pls Sta 55+78.47
Θs = 0° 59' 59.7"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 79+71.67
Δ = 44° 11' 48.7" (LT)
D = 0° 59' 59.7"
L = 4,420.01'
T = 2,326.53'
R = 5,730.00'
SE = .04

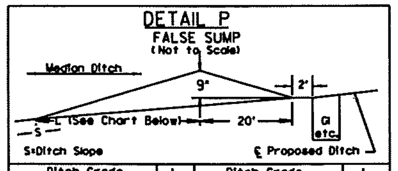
-Y4RPB-

Pls Sta 11+26.24
Θs = 1° 03' 28.8"
Θs = 4° 17' 52.0"
Ls = 210.00'
LT = 126.24'
ST = 83.90'

PI Sta 15+64.37
Δ = 28° 24' 32.1" (LT)
D = 4° 05' 33.2"
L = 694.16'
T = 354.37'
R = 1,400.00'
SE = .08

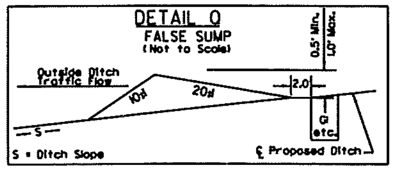

DETAIL SH
SPECIAL CUT DITCH w/HINGE
(Not to Scale)
Natural Ground
VARIABLE
4:1
D
4:1 or Flatter
Front Ditch Slope
6.0'
Min. D= Ft.

FROM STA. 53+00 TO STA. 56+00 -L- (LT)

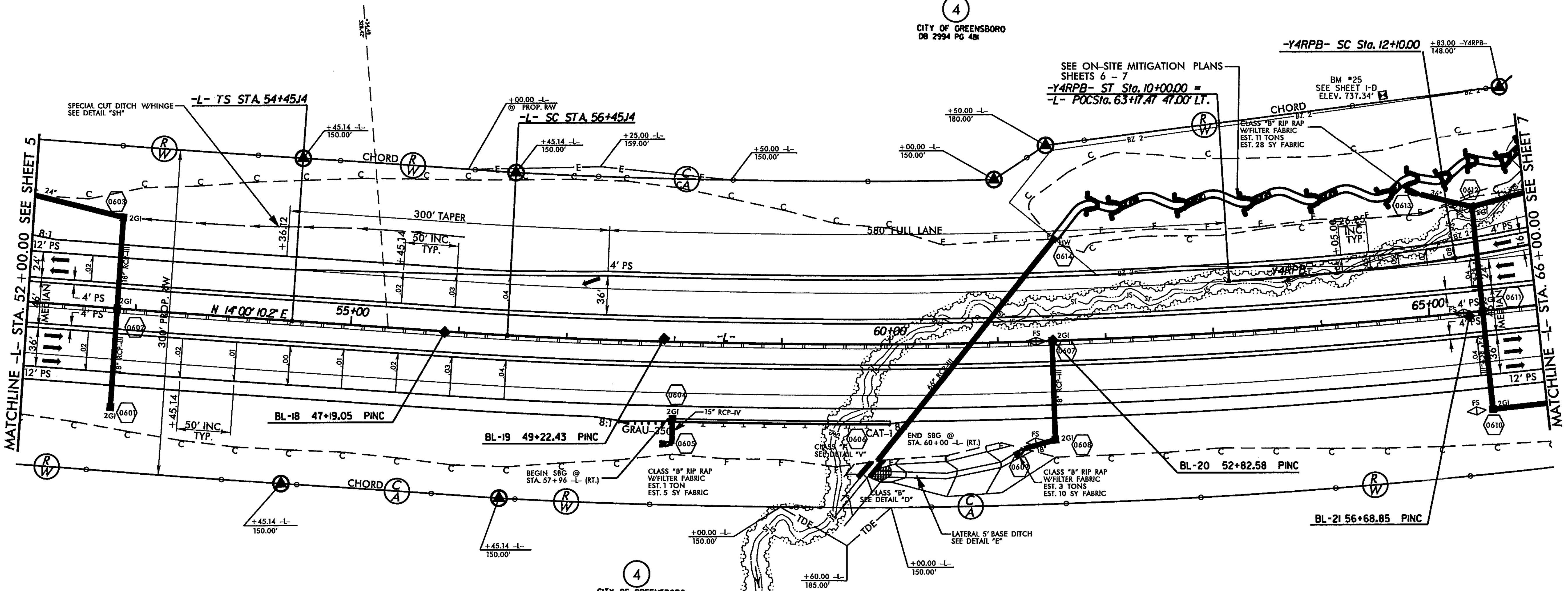

DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
S
GI etc.
S=Ditch Slope
℄ Proposed Ditch

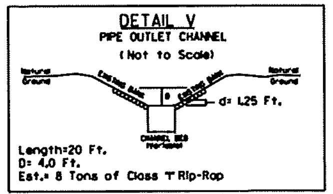
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

@ STA. 61+48 -L- (MED)
@ STA. 65+48 -L- (MED)

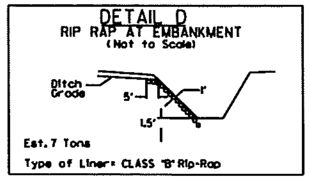

DETAIL Q
FALSE SUMP
(Not to Scale)
0.5' Min.
1.0' Max.
Outside Ditch
Traffic Flow
10:1
20:1
2.0
S
GI etc.
S = Ditch Slope
℄ Proposed Ditch

@ STA. 65+48 -L- (LT)

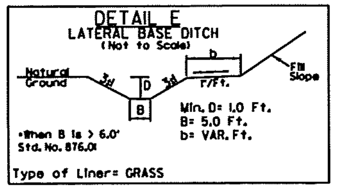

NAD 83/95
4
CITY OF GREENSBORO
DB 2994 PG 481
SPECIAL CUT DITCH W/HINGE
SEE DETAIL "SH"
-L- TS STA. 54+45.14
+45.14 -L-
150.00'
CHORD
+00.00 -L-
@ PROP. R/W
-L- SC STA. 56+45.14
+45.14 -L-
150.00'
+25.00 -L-
159.00'
+50.00 -L-
150.00'
+00.00 -L-
150.00'
+50.00 -L-
180.00'
SEE ON-SITE MITIGATION PLANS
SHEETS 6 - 7
-Y4RPB- ST Sta. 10+00.00 =
-L- POC Sta. 63+17.47 47.00' LT.
-Y4RPB- SC Sta. 12+10.00
+83.00 -Y4RPB-
148.00'
BM #25
SEE SHEET 1-D
ELEV. 737.34'
CHORD
BZ 2
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 11 TONS
EST. 28 SY FABRIC
MATCHLINE -L- STA. 52+00.00 SEE SHEET 5
MATCHLINE -L- STA. 66+00.00 SEE SHEET 7
24"
0603
2GI
300' TAPER
+36.12
+45.14
50' INC.
TYP.
580' FULL LANE
4' PS
12' PS
24'
4' PS
46' MEDIAN
36'
18" RCP-III
0602
300' PROP. R/W
N 14° 00' 10.2" E
55+00
-L-
60+00
65+00
HW
0614
-Y4RPB-
+05.00
26.5'
INC.
TYP.
36"
0612
0613
0611
0610
0607
FS
2GI
0601
+45.14
50' INC.
TYP.
BL-18 47+19.05 PINC
BL-19 49+22.43 PINC
0604
2GI
15" RCP-IV
8:1
GRAU-350
0605
0606
CAT-1
CLASS "I"
SEE DETAIL "V"
66" RCP-III
END SBG @
STA. 60+00 -L- (RT.)
18" RCP-III
2GI
0608
0609
18"
BL-20 52+82.58 PINC
BL-21 56+68.85 PINC
BEGIN SBG @
STA. 57+96 -L- (RT.)
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 1 TON
EST. 5 SY FABRIC
CLASS "B"
SEE DETAIL "D"
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 3 TONS
EST. 10 SY FABRIC
LATERAL 5' BASE DITCH
SEE DETAIL "E"
CHORD
+45.14 -L-
150.00'
+45.14 -L-
150.00'
+00.00 -L-
150.00'
TDE
TDE
+00.00 -L-
150.00'
+60.00 -L-
185.00'
4
CITY OF GREENSBORO
DB 2994 PG 481


DETAIL V
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
Existing Bank
D
d= 1.25 Ft.
Channel Bed Horizontal
Length=20 Ft.
D= 4.0 Ft.
Est.= 8 Tons of Class "I" Rip-Rap

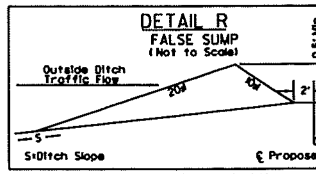
STA. 59+88 -L- (RT)


DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
5'
1'
1.5'
Est. 7 Tons
Type of Liner= CLASS "B" Rip-Rap

AT STA. 59+87 -L- (RT)

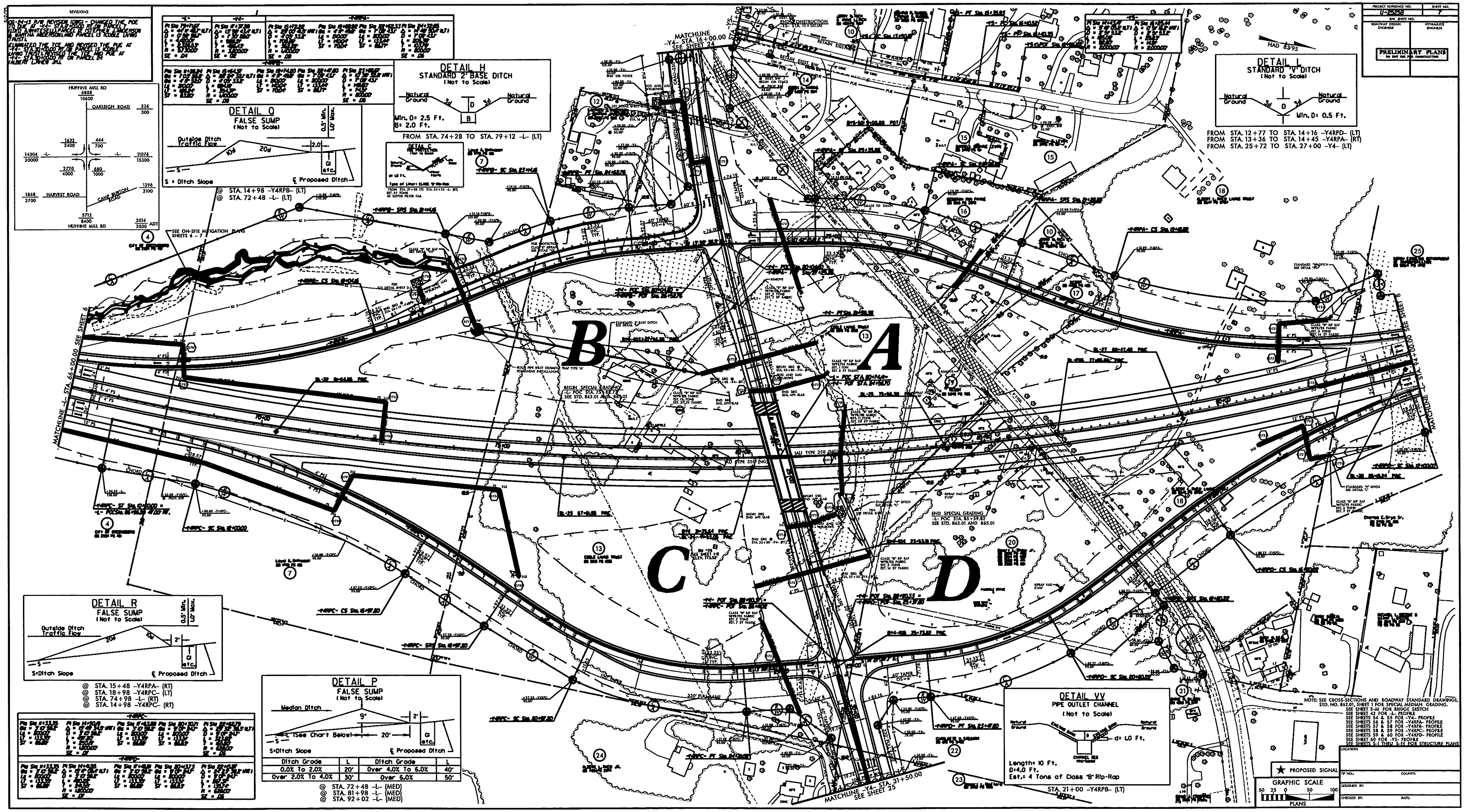

DETAIL E
LATERAL BASE DITCH
(Not to Scale)
Natural Ground
3:1
D
3:1
b
r/Ft.
Fill Slope
B
Min. D= 1.0 Ft.
B= 5.0 Ft.
b= VAR. Ft.
*When B is > 6.0'
Std. No. 876.01
Type of Liner= GRASS

FROM STA. 59+87 TO STA. 61+00 -L- (RT)


DETAIL R
FALSE SUMP
(Not to Scale)
0.5' Min.
1.0' Max.
Outside Ditch
Traffic Flow
20:1
10:1
2'
S
GI etc.
S=Ditch Slope
℄ Proposed Ditch

@ STA. 61+48 -L- (RT)
@ STA. 65+48 -L- (RT)

SEE SHEET 41 FOR -L- PROFILE
SEE SHEET 57 FOR -Y4RPB- PROFILE


A
B
C
D
HUFFINE MILL RD
OAKLEIGH ROAD
HARVEST ROAD
CAMP BURTON ROAD
MATCHLINE -Y4- STA. 16+00.00 SEE SHEET 24
MATCHLINE -Y4- STA. 31+50.00 SEE SHEET 25
MATCHLINE -L- STA. 64+00.00 SEE SHEET 6
MATCHLINE -L- STA. 94+00.00 SEE SHEET 8
SEE ON-SITE MITIGATION PLANS SHEETS 6 - 7
NAD 83/95
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
PROPOSED SIGNAL
GRAPHIC SCALE
50 25 0 50 100
PLANS

REVISIONS

06-24-13 R/W REVISION (DRG) - CHANGED THE PDE TO PUE AT -Y4- STA.17+00.00 RT ON PARCEL 7 (DAVID A. WHITESELL), PARCEL 12 (STEPHEN L. ANDERSON & MARTHA ANDERSON), AND PARCEL 13 (COBLE LIVING TRUST).
ELIMINATED THE TCE AND REVISED THE PUE AT -Y4- STA.30+00.00 RT ON PARCEL 13 (COBLE LIVING TRUST). REVISED THE TCE AND PUE AT -Y4- STA.30+00.00 RT ON PARCEL 24 (ALBERT LAHEW JR.).

DETAIL H
STANDARD 2' BASE DITCH
(Not to Scale)

Natural Ground
Natural Ground
Min. D= 2.5 Ft.
B= 2.0 Ft.

FROM STA. 74+28 TO STA. 79+12 -L- (LT)

DETAIL Q
FALSE SUMP
(Not to Scale)

Outside Ditch
Traffic Flow
S = Ditch Slope
℄ Proposed Ditch

@ STA. 14+98 -Y4RPB- (LT)
@ STA. 72+48 -L- (LT)

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

Natural Ground
Natural Ground
Min. D= 0.5 Ft.

FROM STA. 12+77 TO STA. 14+16 -Y4RPD- (LT)
FROM STA. 13+36 TO STA. 14+45 -Y4RPA- (RT)
FROM STA. 25+72 TO STA. 27+00 -Y4- (LT)

DETAIL R
FALSE SUMP
(Not to Scale)

Outside Ditch
Traffic Flow
S=Ditch Slope
℄ Proposed Ditch

@ STA. 15+48 -Y4RPA- (RT)
@ STA. 18+98 -Y4RPC- (LT)
@ STA. 74+98 -L- (RT)
@ STA. 14+98 -Y4RPC- (RT)

DETAIL P
FALSE SUMP
(Not to Scale)

Median Ditch
L (See Chart Below)
S=Ditch Slope
℄ Proposed Ditch

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

@ STA. 72+48 -L- (MED)
@ STA. 81+98 -L- (MED)
@ STA. 92+02 -L- (MED)

DETAIL VV
PIPE OUTLET CHANNEL
(Not to Scale)

Natural Ground
Natural Ground
d= 1.0 Ft.
Length= 10 Ft.
D=4.0 Ft.
Est.= 4 Tons of Class "B" Rip-Rap

STA. 21+00 -Y4RPB- (LT)

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 862.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.
SEE SHEET 2-M FOR BRIDGE SKETCH
SEE SHEET 42 FOR -L- PROFILE
SEE SHEETS 54 & 55 FOR -Y4- PROFILE
SEE SHEETS 56 & 57 FOR -Y4RPA- PROFILE
SEE SHEETS 57 & 58 FOR -Y4RPB- PROFILE
SEE SHEETS 58 & 59 FOR -Y4RPC- PROFILE
SEE SHEETS 59 & 60 FOR -Y4RPD- PROFILE
SEE SHEET 60 FOR -Y5- PROFILE
SEE SHEETS S-1 THRU S-12 FOR STRUCTURE PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-2524B	7

R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

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

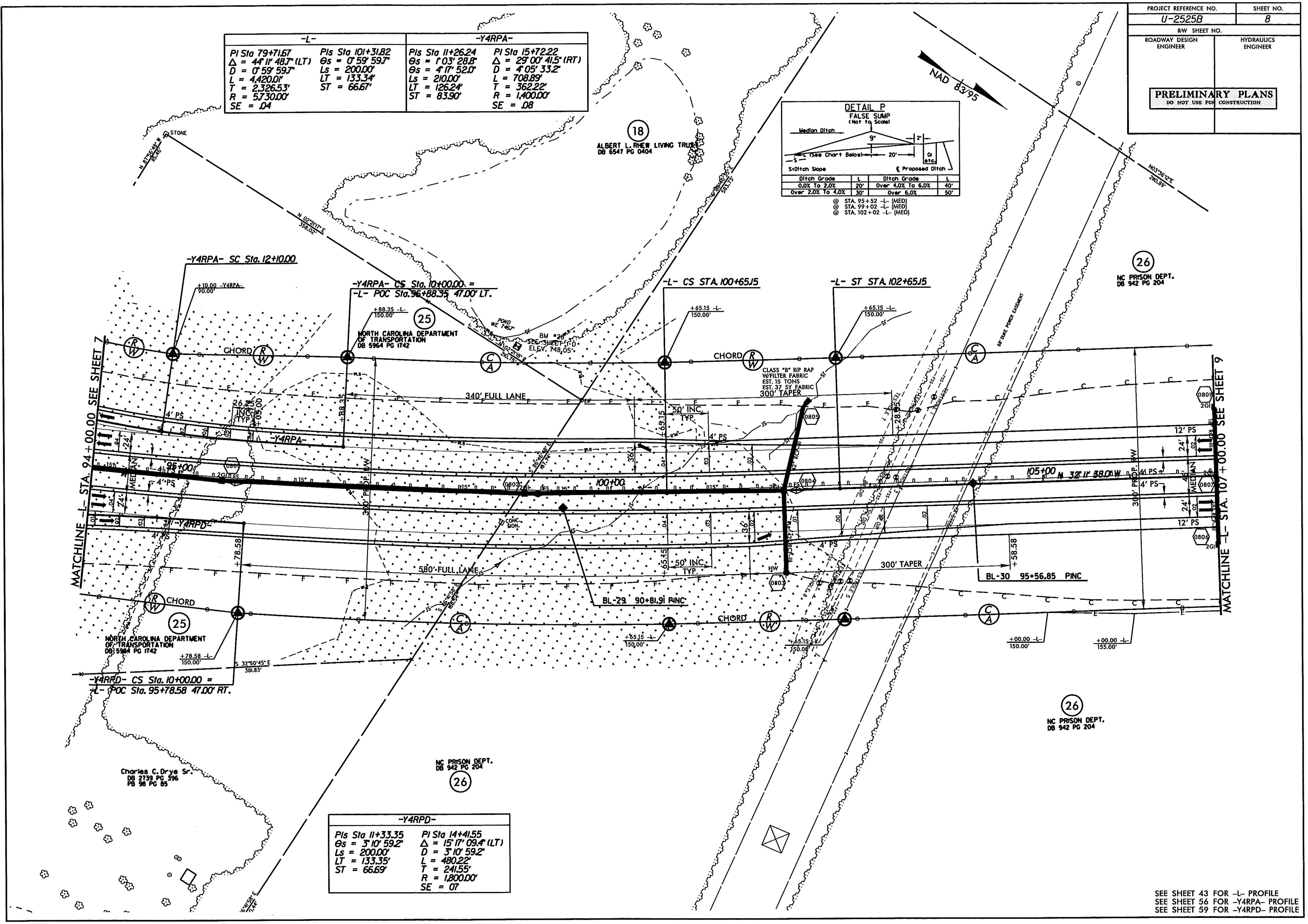
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	8

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


NAD 83/95
STONE
N 87°56'48" W 85.46'
N 02°21'17" E 358.02'
N 03°36'12" E 240.89'
N 31°58'10" E 583.73'
(18)
ALBERT L. RHEW LIVING TRUST
DB 6547 PG 0404
POND WE 746.7'
BM #28 SEE SHEET 1-D ELEV. 748.05'
N 02°21'18" E 210.75'
-Y4RPA- SC Sta. 12+10.00
+10.00 -Y4RPA- 90.00'
-Y4RPA- CS Sta. 10+00.00 =
-L- POC Sta. 96+88.35 47.00' LT.
+88.35 -L- 150.00'
(25)
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DB 5964 PG 1742
-L- CS STA. 100+65.15
+65.15 -L- 150.00'
-L- ST STA. 102+65.15
+65.15 -L- 150.00'
68' DUKE POWER EASEMENT
(26)
NC PRISON DEPT. DB 942 PG 204
CHORD
R/W
C/A
340' FULL LANE
26.25 INC. TYP.
+03.00
+88.35
4' PS
-Y4RPA-
24'
MEDIAN
95+00
0801
2GI
15"
300' PROP. R/W
S 86°46'48" E 187.74'
0802
DES
100+00
50' INC. TYP.
+65.15
36'
CLASS "B" RIP RAP W/FILTER FABRIC EST. 15 TONS EST. 37 SY FABRIC
300' TAPER
0805
42" RCP-III
0804
FES
TEST HOLE 7
+28.55
105+00
N 32°11' 58.0" W
12' PS
0806
0807
0808
MATCHLINE -L- STA. 94+00.00 SEE SHEET 7
MATCHLINE -L- STA. 107+00.00 SEE SHEET 9
-Y4RPD-
+78.58
580' FULL LANE
CONC. MON.
BL-29 90+81.91 PINC
BL-30 95+56.85 PINC
+58.58
TEST HOLE 8
TEST HOLE 5
HW
0803
S 86°41'58" E 188.57'
+78.58 -L- 150.00'
S 32°50'45" E 381.83'
-Y4RPD- CS Sta. 10+00.00 =
-L- POC Sta. 95+78.58 47.00' RT.
+65.15 -L- 150.00'
+00.00 -L- 150.00'
+00.00 -L- 155.00'
Charles C. Drye Sr. DB 2739 PG 396 PB 98 PG 85
NC PRISON DEPT. DB 942 PG 204
(26)
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
S
GI etc.
S=Ditch Slope
℄ Proposed Ditch

-L-

PI Sta 79+71.67
Δ = 44° 11' 48.7" (LT)
D = 0° 59' 59.7"
L = 4,420.01'
T = 2,326.53'
R = 5,730.00'
SE = .04

PIs Sta 101+31.82
θs = 0° 59' 59.7"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

-Y4RPA-

PIs Sta 11+26.24
θs = 1° 03' 28.8"
θs = 4° 17' 52.0"
Ls = 210.00'
LT = 126.24'
ST = 83.90'

PI Sta 15+72.22
Δ = 29° 00' 41.5" (RT)
D = 4° 05' 33.2"
L = 708.89'
T = 362.22'
R = 1,400.00'
SE = .08

DETAIL P
FALSE SUMP
(Not to Scale)

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

@ STA. 95+52 -L- (MED)
@ STA. 99+02 -L- (MED)
@ STA. 102+02 -L- (MED)

-Y4RPD-

PIs Sta 11+33.35
θs = 3° 10' 59.2"
Ls = 200.00'
LT = 133.35'
ST = 66.69'

PI Sta 14+41.55
Δ = 15° 17' 09.4" (LT)
D = 3° 10' 59.2"
L = 480.22'
T = 241.55'
R = 1,800.00'
SE = 07

SEE SHEET 43 FOR -L- PROFILE
SEE SHEET 56 FOR -Y4RPA- PROFILE
SEE SHEET 59 FOR -Y4RPD- PROFILE

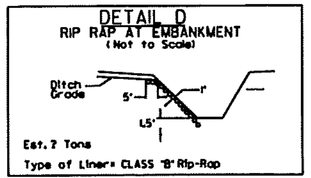
5/14/99

REVISIONS

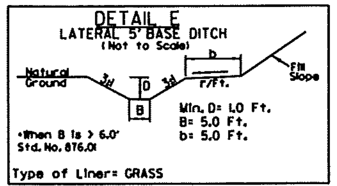
6-24-13 R/W REVISION (DWG) - ADDED PUE AT -L- STA.114+75.00 LT.AND -L- STA.116+57.00 RT.ON PARCEL 27 (CITY OF GREENSBORO).

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

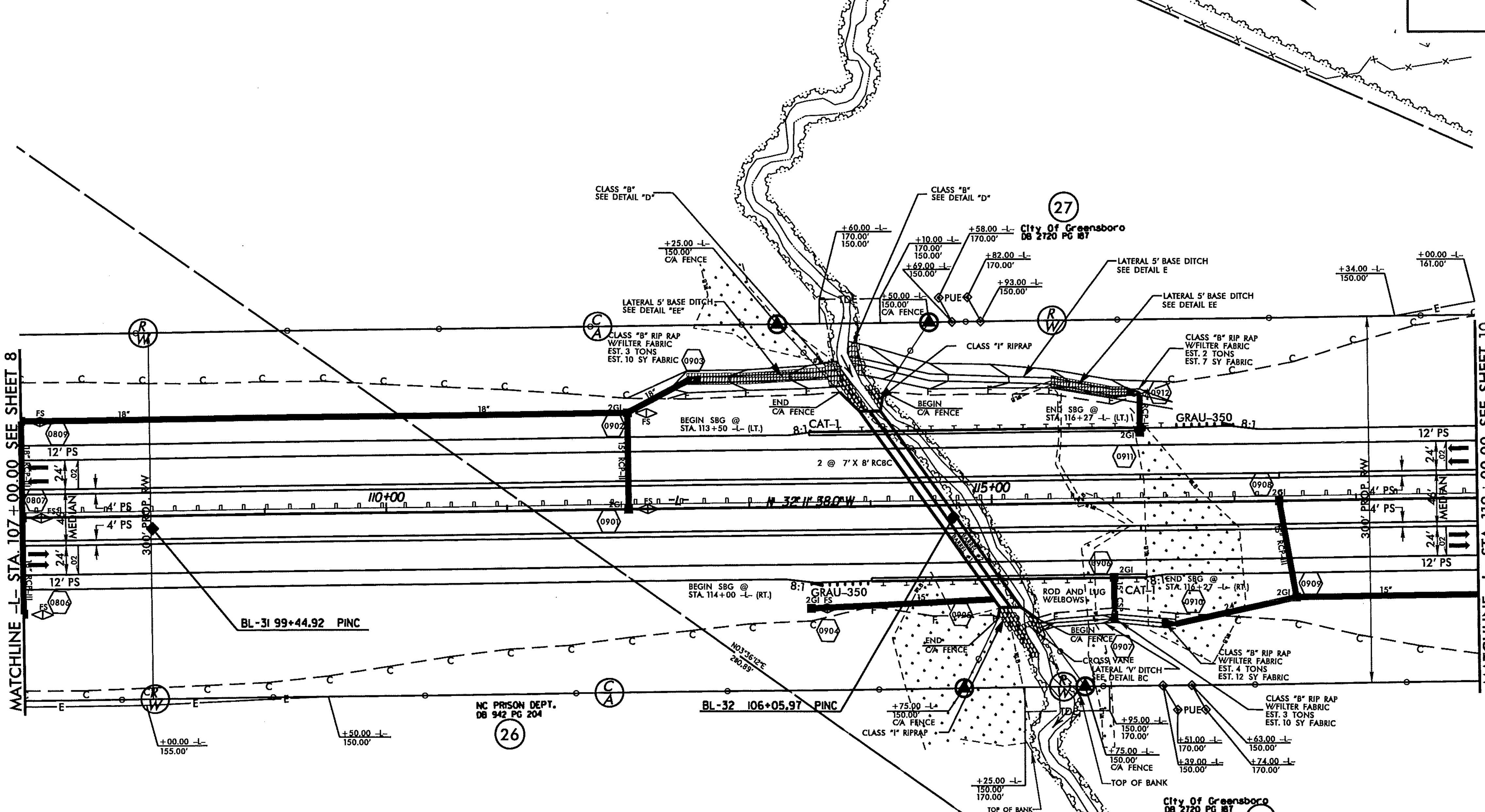
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

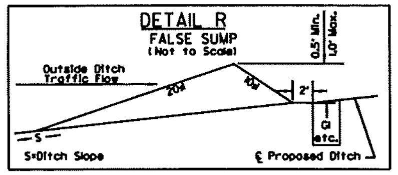

DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
5'
1'
1.5'
Est. ? Tons
Type of Liner= CLASS "B" Rip-Rap

AT STA. 113+70 -L- (LT) Est. 11 Tons
AT STA. 113+95 -L- (LT) Est. 11 Tons

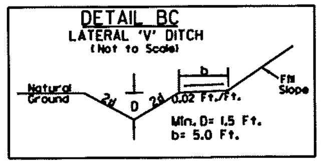

DETAIL E
LATERAL 5' BASE DITCH
(Not to Scale)
Natural Ground
3H
D
3H
B
b
r/Ft.
Fill Slope
Min. D= 1.0 Ft.
B= 5.0 Ft.
b= 5.0 Ft.
*When B is > 6.0'
Std. No. 876.01
Type of Liner= GRASS

FROM STA. 113+95 TO STA. 115+50 -L- (LT)

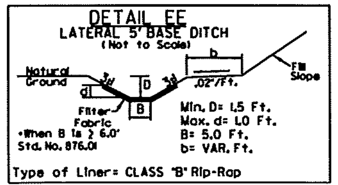

NAD 83/95
CLASS "B" SEE DETAIL "D"
CLASS "B" SEE DETAIL "D"
27
City Of Greensboro DB 2720 PG 187
+60.00 -L- 170.00' 150.00'
+10.00 -L- 170.00' 150.00'
+58.00 -L- 170.00'
+69.00 -L- 150.00'
+82.00 -L- 170.00'
+93.00 -L- 150.00'
+25.00 -L- 150.00' C/A FENCE
+50.00 -L- 150.00' C/A FENCE
PUE
TDE
LATERAL 5' BASE DITCH SEE DETAIL "EE"
LATERAL 5' BASE DITCH SEE DETAIL E
LATERAL 5' BASE DITCH SEE DETAIL EE
+34.00 -L- 150.00'
+00.00 -L- 161.00'
C/A
R/W
CLASS "B" RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 10 SY FABRIC
CLASS "I" RIPRAP
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
0903
0912
18"
2GI
FS
0902
END C/A FENCE
BEGIN C/A FENCE
BEGIN SBG @ STA. 113+50 -L- (LT.)
8:1 CAT-1
END SBG @ STA. 116+27 -L- (LT.)
GRAU-350 8:1
2GI
0911
15" RCP-II
2 @ 7' X 8' RCBC
MATCHLINE -L- STA. 107+00.00 SEE SHEET 8
MATCHLINE -L- STA. 119+00.00 SEE SHEET 10
FS
0809
18"
12' PS
24'
.02
0807
FS
4' PS
MEDIAN
46'
4' PS
0806
300' PROP. R/W
110+00
115+00
-L-
N 32° 11' 38.0" W
0908
2GI
0901
2GI FS
BARREL #1
BARREL #2
0906
2GI
15" CSP
BEGIN SBG @ STA. 114+00 -L- (RT.)
8:1 GRAU-350
2GI FS
15"
0905
0904
ROD AND LUG W/ELBOWS
CAT-1
8:1
END SBG @ STA. 116+27 -L- (RT.)
0910
24"
2GI
0909
15" RCP-III
15"
END C/A FENCE
BEGIN C/A FENCE
0907
CROSS VANE
LATERAL 'V' DITCH SEE DETAIL BC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 4 TONS EST. 12 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 10 SY FABRIC
BL-31 99+44.92 PINC
BL-32 106+05.97 PINC
N03°36'12"E 280.89'
NC PRISON DEPT. DB 942 PG 204
26
+00.00 -L- 155.00'
+50.00 -L- 150.00'
+75.00 -L- 150.00' C/A FENCE
CLASS "I" RIPRAP
+95.00 -L- 150.00' 170.00'
+75.00 -L- 150.00' C/A FENCE
+51.00 -L- 170.00'
+39.00 -L- 150.00'
+63.00 -L- 150.00'
+74.00 -L- 170.00'
TOP OF BANK
+25.00 -L- 150.00' 170.00'
TOP OF BANK
BM #29 SEE SHEET 1-D ELEV. 703.31'
City Of Greensboro DB 2720 PG 187
27


DETAIL R
FALSE SUMP
(Not to Scale)
0.5' Min.
1.0' Max.
Outside Ditch Traffic Flow
20:1
10:1
2'
S
GI etc.
S=Ditch Slope
℄ Proposed Ditch

@ STA. 112+02 -L- (LT)
@ STA. 107+02 -L- (LT)

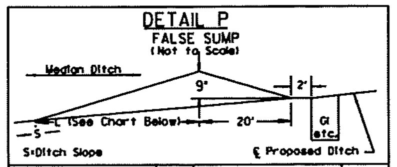

DETAIL BC
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
2H
D
2H
b
0.02 Ft./Ft.
Fill Slope
Min. D= 1.5 Ft.
b= 5.0 Ft.

FROM STA. 115+39 TO STA. 116+50 -L- (RT)


DETAIL EE
LATERAL 5' BASE DITCH
(Not to Scale)
Natural Ground
3H
D
3H
d
b
.02"/Ft.
Fill Slope
Filter Fabric
B
Min. D= 1.5 Ft.
Max. d= 1.0 Ft.
B= 5.0 Ft.
b= VAR. Ft.
*When B is ≥ 6.0'
Std. No. 876.01
Type of Liner= CLASS "B" Rip-Rap

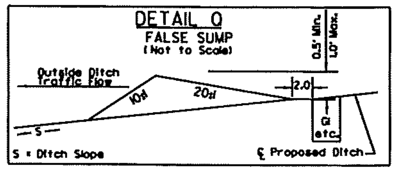
FROM STA. 112+50 TO STA. 113+65 -L- (LT)
FROM STA. 115+50 TO STA. 116+23 -L- (LT)

Est. 96 Tons
159 SQYDS FILTER FAB.


DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
S
GI etc.
S=Ditch Slope
℄ Proposed Ditch

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

@ STA. 107+02 -L- (MED)
@ STA. 112+02 -L- (MED)


DETAIL Q
FALSE SUMP
(Not to Scale)
0.5' Min.
1.0' Max.
Outside Ditch Traffic Flow
10:1
20:1
2.0'
S
GI etc.
S = Ditch Slope
℄ Proposed Ditch

@ STA. 113+52 -L- (RT)
@ STA. 107+02 -L- (RT)

SEE SHEET 43 FOR -L- PROFILE
SEE SHEETS C-1 THRU C-?? FOR CULVERT PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	10

R/W SHEET NO.

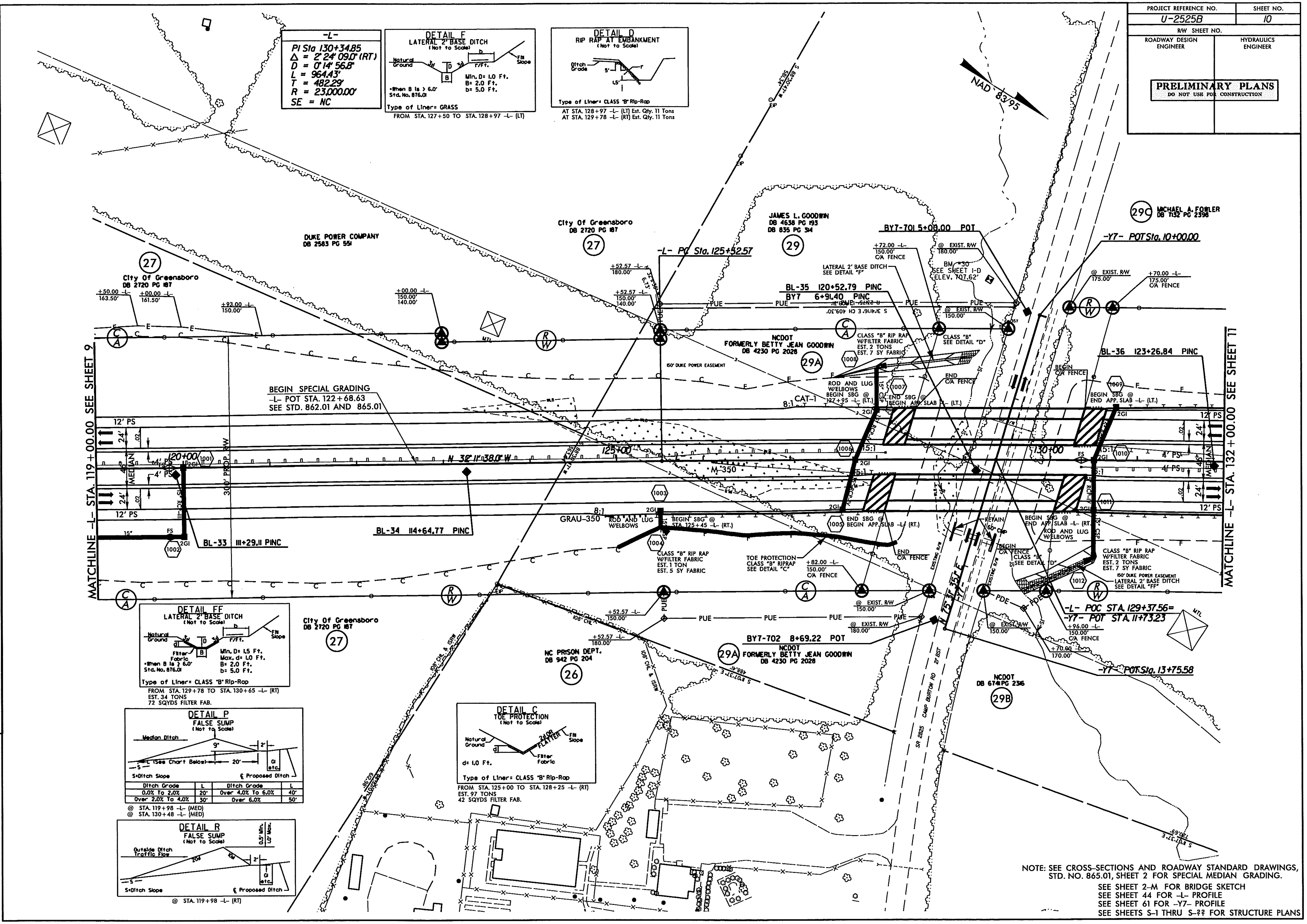
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99

REVISIONS

03-19-13 R/W REVISION (DWG) - PARCEL 29 (JAMES L.GOODWIN) WAS SUBDIVIDED, ADDING PARCEL 29A (NCDOT FORMERLY BETTY JEAN GOODWIN), PARCEL 29B (NCDOT), AND PARCEL 29C (MICHAEL A.FOWLER). CHANGED THE NORTHERN PROPERTY LINE ON PARCEL 29A AND THE SOUTHERN PROPERTY LINE ON PARCEL 29B TO R/W. DELETED PARCEL 28 (DUKE POWER COMPANY) DUE TO PROPERTY LINE DELINEATION CHANGING TO EASEMENT. REVISED THE NORTHERN PROPERTY LINE ON PARCEL 27 (CITY OF GREENSBORO) AND THE ADJOINING SOUTHERN PROPERTY LINES ON PARCELS 26 (NC PRISON DEPT.), 29 (JAMES L.GOODWIN), AND 29A (NCDOT FORMERLY BETTY JEAN GOODWIN). REVISED THE LOCATION OF THE R/W AND C/A TO THE WESTERN PROPERTY LINE ON PARCEL 29B (NCDOT).


-L-
PI Sta 130+34.85
Δ = 2° 24' 09.0" (RT)
D = 0° 14' 56.8"
L = 964.43'
T = 482.29'
R = 23,000.00'
SE = NC
DETAIL F
LATERAL 2' BASE DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
*When B is > 6.0' Std. No. 876.01
Type of Liner= GRASS
FROM STA. 127+50 TO STA. 128+97 -L- (LT)
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
Type of Liner= CLASS "B" Rip-Rap
AT STA. 128+97 -L- (LT) Est. Qty. 11 Tons
AT STA. 129+78 -L- (RT) Est. Qty. 11 Tons
NAD 83/95
MICHAEL A. FOWLER
DB 7132 PG 2398
29C
JAMES L. GOODWIN
DB 4638 PG 193
DB 835 PG 314
29
City Of Greensboro
DB 2720 PG 187
27
DUKE POWER COMPANY
DB 2583 PG 551
-L- PC Sta. 125+52.57
BY7-701 5+00.00 POT
-Y7- POT Sta. 10+00.00
BM #30 SEE SHEET 1-D ELEV. 707.62'
LATERAL 2' BASE DITCH SEE DETAIL "F"
BL-35 120+52.79 PINC
BY7 6+91.40 PINC
BL-36 123+26.84 PINC
NCDOT
FORMERLY BETTY JEAN GOODWIN
DB 4230 PG 2026
29A
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
CLASS "B" SEE DETAIL "D"
150' DUKE POWER EASEMENT
BEGIN SPECIAL GRADING
-L- POT STA. 122+68.63
SEE STD. 862.01 AND 865.01
ROD AND LUG W/ELBOWS
BEGIN SBG @ 127+95 -L- (LT.)
END SBG @ BEGIN APP. SLAB -L- (LT.)
BEGIN C/A FENCE
END C/A FENCE
BEGIN SBG @ END APP. SLAB -L- (LT.)
12' PS
24'
MEDIAN
4' PS
120+00
125+00
130+00
N 38° 11' 38.0" W
M-350
30' PROP. R/W
MATCHLINE -L- STA. 119+00.00 SEE SHEET 9
MATCHLINE -L- STA. 132+00.00 SEE SHEET 11
BL-33 111+29.11 PINC
BL-34 114+64.77 PINC
GRAU-350
ROD AND LUG W/ELBOWS
BEGIN SBG @ STA. 125+45 -L- (RT.)
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
TOE PROTECTION CLASS "B" RIPRAP SEE DETAIL "C"
END SBG @ BEGIN APP. SLAB -L- (RT.)
END C/A FENCE
BEGIN SBG @ END APP. SLAB -L- (RT.)
BEGIN C/A FENCE CLASS "B" SEE DETAIL "D"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
150' DUKE POWER EASEMENT
LATERAL 2' BASE DITCH SEE DETAIL "FF"
-L- POC STA. 129+37.56= -Y7- POT STA. 11+73.23
-Y7- POT Sta. 13+75.58
BY7-702 8+69.22 POT
NCDOT FORMERLY BETTY JEAN GOODWIN DB 4230 PG 2026
29A
NC PRISON DEPT. DB 942 PG 204
26
NCDOT DB 6741 PG 236
29B
City Of Greensboro DB 2720 PG 187
27
SR 2825 CAMP BURTON RD
PUE
PDE
DETAIL FF
LATERAL 2' BASE DITCH
(Not to Scale)
Filter Fabric
Min. D= 1.5 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 129+78 TO STA. 130+65 -L- (RT)
EST. 34 TONS
72 SQYDS FILTER FAB.
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
S=Ditch Slope
℄ Proposed Ditch
@ STA. 119+98 -L- (MED)
@ STA. 130+48 -L- (MED)
DETAIL R
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
@ STA. 119+98 -L- (RT)
DETAIL C
TOE PROTECTION
(Not to Scale)
Natural Ground
Fill Slope
Filter Fabric
d= 1.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 125+00 TO STA. 128+25 -L- (RT)
EST. 97 TONS
42 SQYDS FILTER FAB.

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

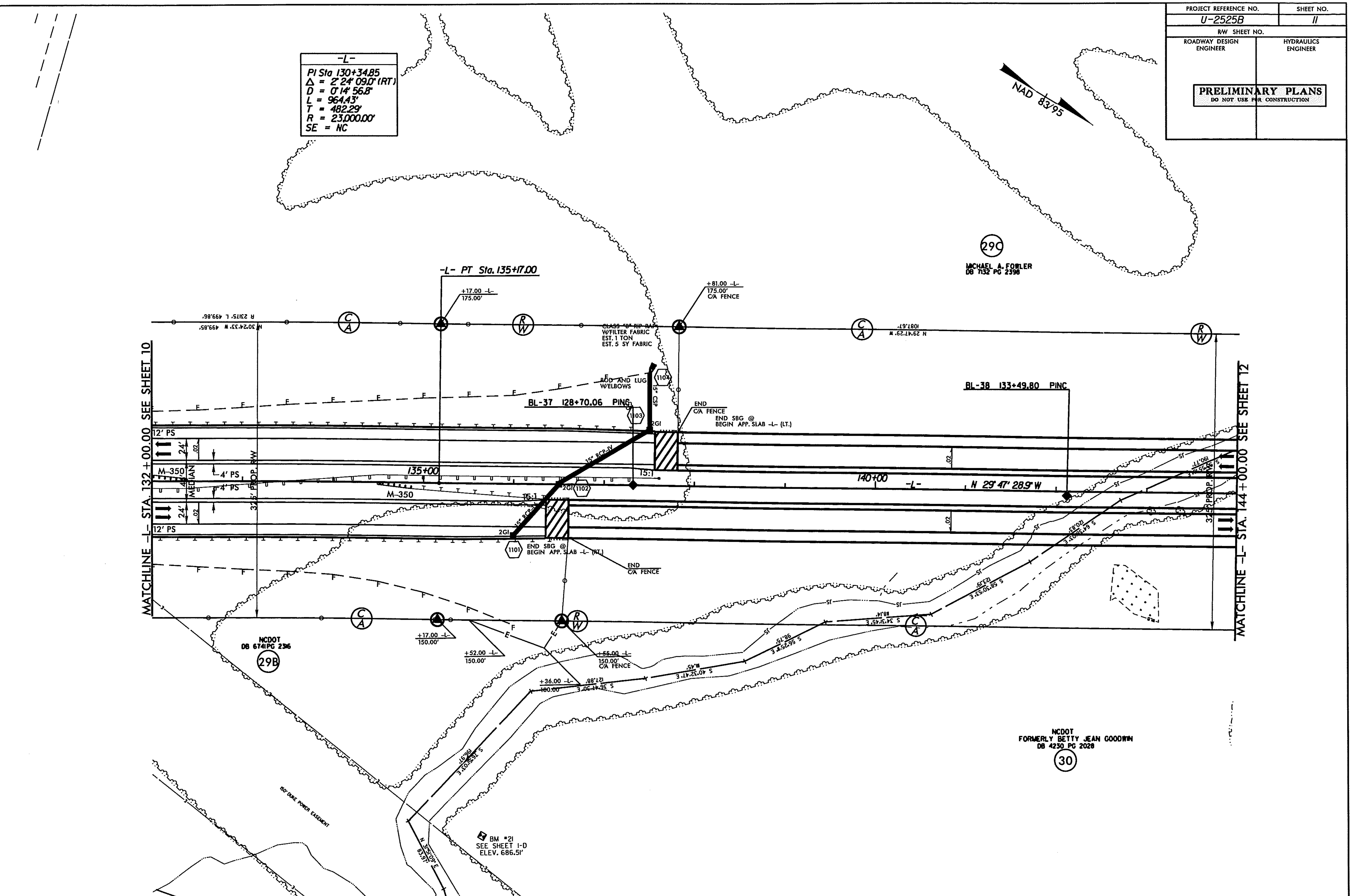
NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.
SEE SHEET 2-M FOR BRIDGE SKETCH
SEE SHEET 44 FOR -L- PROFILE
SEE SHEET 61 FOR -Y7- PROFILE
SEE SHEETS S-1 THRU S-?? FOR STRUCTURE PLANS

5/14/99

REVISIONS
03-19-13 R/W REVISION (DWG) - PARCEL 29 (JAMES L.GOODWIN) WAS SUBDIVIDED, ADDING PARCEL 29A (NCDOT FORMERLY BETTY JEAN GOODWIN). PARCEL 29B (NCDOT), AND PARCEL 29C (MICHAEL A.FOWLER). REVISED THE PROPERTY OWNER NAME ON PARCEL 30 (N.C.D.O.T.) TO (NCDOT FORMERLY BETTY JEAN GOODWIN). REVISED THE NORTHERN PROPERTY LINES ON PARCELS 29B AND 29C AND THE ADJOINING SOUTHERN PROPERTY LINE ON PARCEL 30. REVISED THE LOCATION OF THE R/W AND C/A TO THE WESTERN PROPERTY LINE ON PARCEL 29B (NCDOT).

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


-L-
PI Sta 130+34.85
Δ = 2° 24' 09.0" (RT)
D = 0° 14' 56.8"
L = 964.43'
T = 482.29'
R = 23,000.00'
SE = NC
NAD 83/95
-L- PT Sta. 135+17.00
+17.00 -L- 175.00'
+81.00 -L- 175.00' C/A FENCE
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
ROD AND LUG W/ELBOWS
BL-37 128+70.06 PINC
1103
1104
15" CSP
2GI
15" RCP-IV
END C/A FENCE
END SBG @ BEGIN APP. SLAB -L- (LT.)
BL-38 133+49.80 PINC
29C
MICHAEL A. FOWLER DB 7132 PG 2398
R 23175' L 499.86'
N 30°24'33" W 499.85'
N 29°47'29" W 1087.67'
MATCHLINE -L- STA. 132+00.00 SEE SHEET 10
MATCHLINE -L- STA. 144+00.00 SEE SHEET 12
12' PS
24'
M-350
MEDIAN
4' PS
32.5' PROP. R/W
135+00
140+00
-L-
N 29° 47' 28.9" W
15:1
2GI 1102
2GI
1101
END SBG @ BEGIN APP. SLAB -L- (RT.)
END C/A FENCE
C/A
R/W
+17.00 -L- 150.00'
+52.00 -L- 150.00'
+56.00 -L- 150.00' C/A FENCE
+36.00 -L- 180.00
S 36°41'30" E 127.88'
S 40°32'47" E 81.45'
NCDOT DB 6741 PG 236
29B
NCDOT FORMERLY BETTY JEAN GOODWIN DB 4250 PG 2028
30
150' DUKE POWER EASEMENT
BM #21 SEE SHEET 1-D ELEV. 686.51'
SF

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS,
STD. NO. 865.02, SHEET 2 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 2-M FOR BRIDGE SKETCH
SEE SHEET 44 FOR -L- PROFILE
SEE SHEETS S-1 THRU S-?? FOR STRUCTURE PLANS

5/14/99

REVISIONS

06-24-13 R/W REVISION (DWG) - REVISED THE PUE AT -L- STA.156+10.00 LT./RT.ON PARCEL 32 (NCDOT).

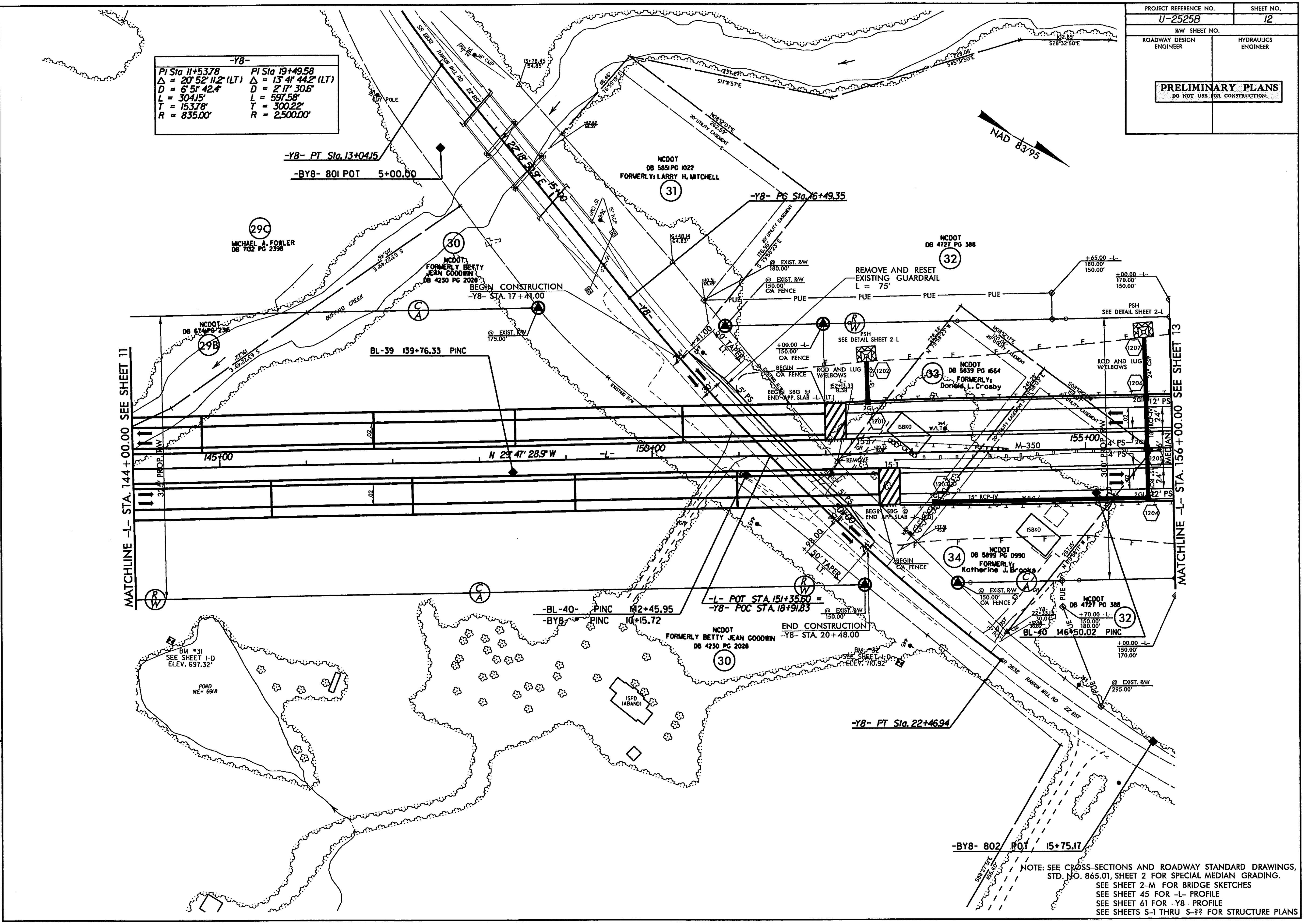
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	12

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


-Y8-
PI Sta 11+53.78
Δ = 20° 52' 11.2" (LT)
D = 6° 51' 42.4"
L = 304.15'
T = 153.78'
R = 835.00'
PI Sta 19+49.58
Δ = 13° 41' 44.2" (LT)
D = 2° 17' 30.6"
L = 597.58'
T = 300.22'
R = 2,500.00'
NAD 83/95
-Y8- PT Sta. 13+04.15
-BY8- 801 POT 5+00.00
SR 2832 RANKIN MILL RD 22' BST
NCDOT DB 5851 PG 1022 FORMERLY: LARRY H. MITCHELL
31
-Y8- PC Sta. 16+49.35
29C
MICHAEL A. FOWLER DB 7132 PG 2398
30
NCDOT FORMERLY BETTY JEAN GOODWIN DB 4230 PG 2028
BEGIN CONSTRUCTION -Y8- STA. 17+41.00
BUFFALO CREEK
NCDOT DB 6744 PG 256
29B
BL-39 139+76.33 PINC
NCDOT DB 4727 PG 388
32
REMOVE AND RESET EXISTING GUARDRAIL L = 75'
PUE
PSH SEE DETAIL SHEET 2-L
NCDOT DB 5839 PG 1664 FORMERLY: Donald L. Crosby
33
ROD AND LUG W/ELBOWS
N 29° 47' 28.9" W
-L-
145+00
150+00
155+00
M-350
30' TAPER LT.
50' TAPER LT.
MATCHLINE -L- STA. 144+00.00 SEE SHEET 11
MATCHLINE -L- STA. 156+00.00 SEE SHEET 13
-BL-40- PINC 142+45.95
-BY8- PINC 10+15.72
-L- POT STA. 151+35.60 = -Y8- POC STA. 18+91.83
END CONSTRUCTION -Y8- STA. 20+48.00
NCDOT DB 5899 PG 0990 FORMERLY: Katherine J. Brooks
34
BL-40 146+50.02 PINC
BM #31 SEE SHEET 1-D ELEV. 697.32'
POND WE= 691.8
ISFD (ABAND)
-Y8- PT Sta. 22+46.94
-BY8- 802 POT 15+75.17

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS,
STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.
SEE SHEET 2-M FOR BRIDGE SKETCHES
SEE SHEET 45 FOR -L- PROFILE
SEE SHEET 61 FOR -Y8- PROFILE
SEE SHEETS S-1 THRU S-?? FOR STRUCTURE PLANS

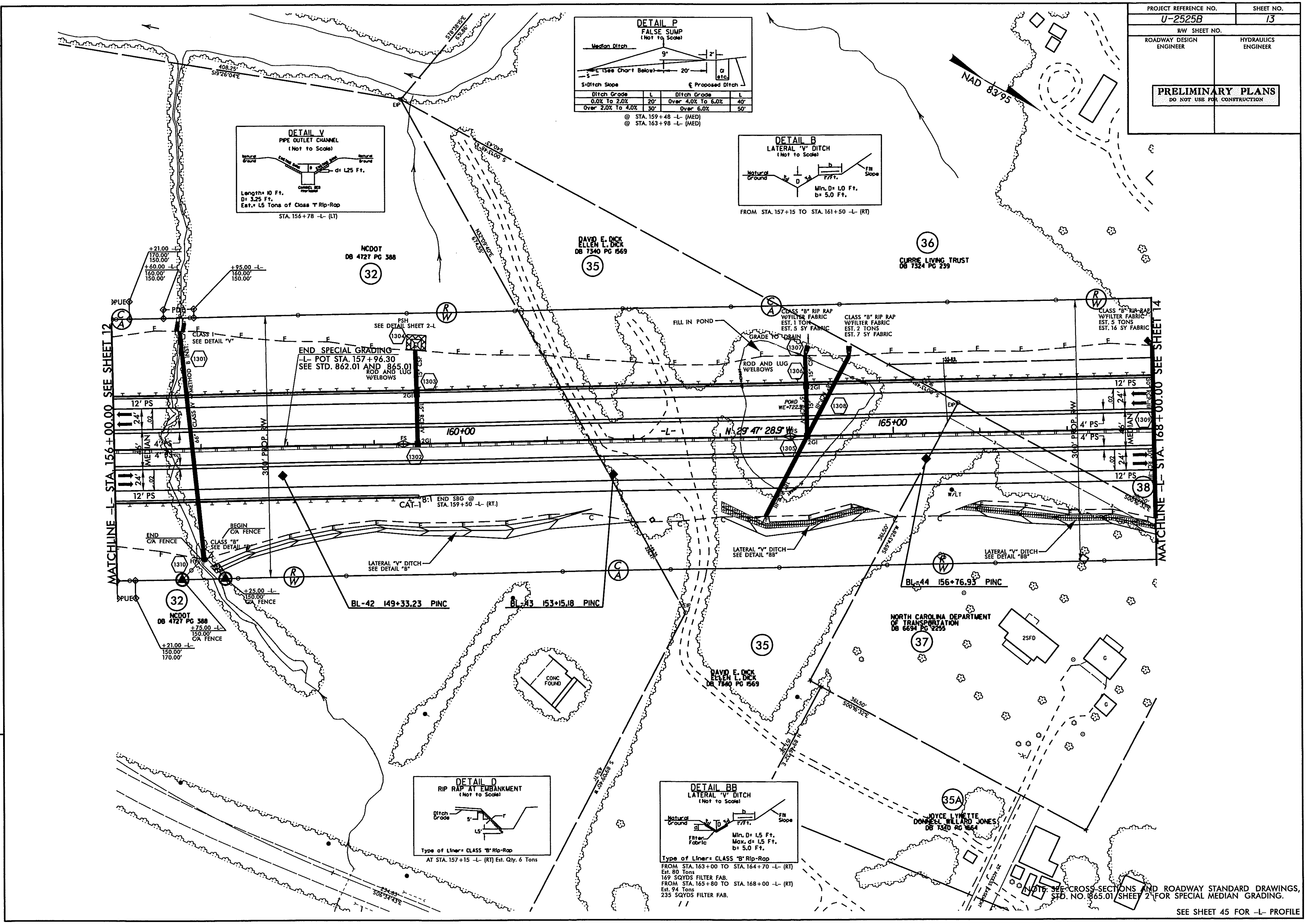
5/14/99

REVISIONS

06-24-13 R/W REVISION (DWG) - REVISED THE PUE AT -L- STA.156+10.00 LT/RT.ON PARCEL 32 (NCDOT).

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



NAD 83/95
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
S=Ditch Slope
℄ Proposed Ditch
Ditch Grade | L | Ditch Grade | L
0.0% To 2.0% | 20' | Over 4.0% To 6.0% | 40'
Over 2.0% To 4.0% | 30' | Over 6.0% | 50'
@ STA. 159+48 -L- (MED)
@ STA. 163+98 -L- (MED)
DETAIL V
PIPE OUTLET CHANNEL
(Not to Scale)
Length= 10 Ft.
D= 3.25 Ft.
Est.= 1.5 Tons of Class 'I' Rip-Rap
d= 1.25 Ft.
STA. 156+78 -L- (LT)
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 157+15 TO STA. 161+50 -L- (RT)
NCDOT
DB 4727 PG 388
32
DAVID E. DICK
ELLEN L. DICK
DB 7340 PG 1569
35
36
CURRIE LIVING TRUST
DB 7324 PG 239
PSH
SEE DETAIL SHEET 2-L
END SPECIAL GRADING
-L- POT STA. 157+96.30
SEE STD. 862.01 AND 865.01
ROD AND LUG W/ELBOWS
CLASS I
SEE DETAIL "V"
FILL IN POND
GRADE TO DRAIN
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 16 SY FABRIC
MATCHLINE -L- STA. 156+00.00 SEE SHEET 12
MATCHLINE -L- STA. 168+00.00 SEE SHEET 14
12' PS
24'
MEDIAN
4' PS
160+00
165+00
-L-
N 29° 47' 28.9" W
300' PROP. R/W
POND WE=722.1
END SBG @ STA. 159+50 -L- (RT.)
CAT-1
BEGIN C/A FENCE
END C/A FENCE
CLASS "B" SEE DETAIL "B"
LATERAL "V" DITCH SEE DETAIL "B"
LATERAL "V" DITCH SEE DETAIL "BB"
BL-42 149+33.23 PINC
BL-43 153+15.18 PINC
BL-44 156+76.93 PINC
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DB 6694 PG 2255
37
38
2SFD
CONC FOUND
35A
JOYCE LYNETTE DONNELL WILLARD JONES
DB 7340 PG 1664
+21.00 -L- 170.00' 150.00'
+60.00 -L- 160.00' 150.00'
+95.00 -L- 160.00' 150.00'
+25.00 -L- 150.00' C/A FENCE
+75.00 -L- 150.00' C/A FENCE
+21.00 -L- 150.00' 170.00'
PUE
PDE
EIP
408.25' S19°26'04"E
1301
1302
1303
1304
1305
1306
1307
1308
1309
1310
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
Type of Liner= CLASS "B" Rip-Rap
AT STA. 157+15 -L- (RT) Est. Qty. 6 Tons
DETAIL BB
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Filter Fabric
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
b= 5.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 163+00 TO STA. 164+70 -L- (RT)
Est. 80 Tons
169 SQYDS FILTER FAB.
FROM STA. 165+80 TO STA. 168+00 -L- (RT)
Est. 94 Tons
235 SQYDS FILTER FAB.

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01 SHEET 2 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 45 FOR -L- PROFILE

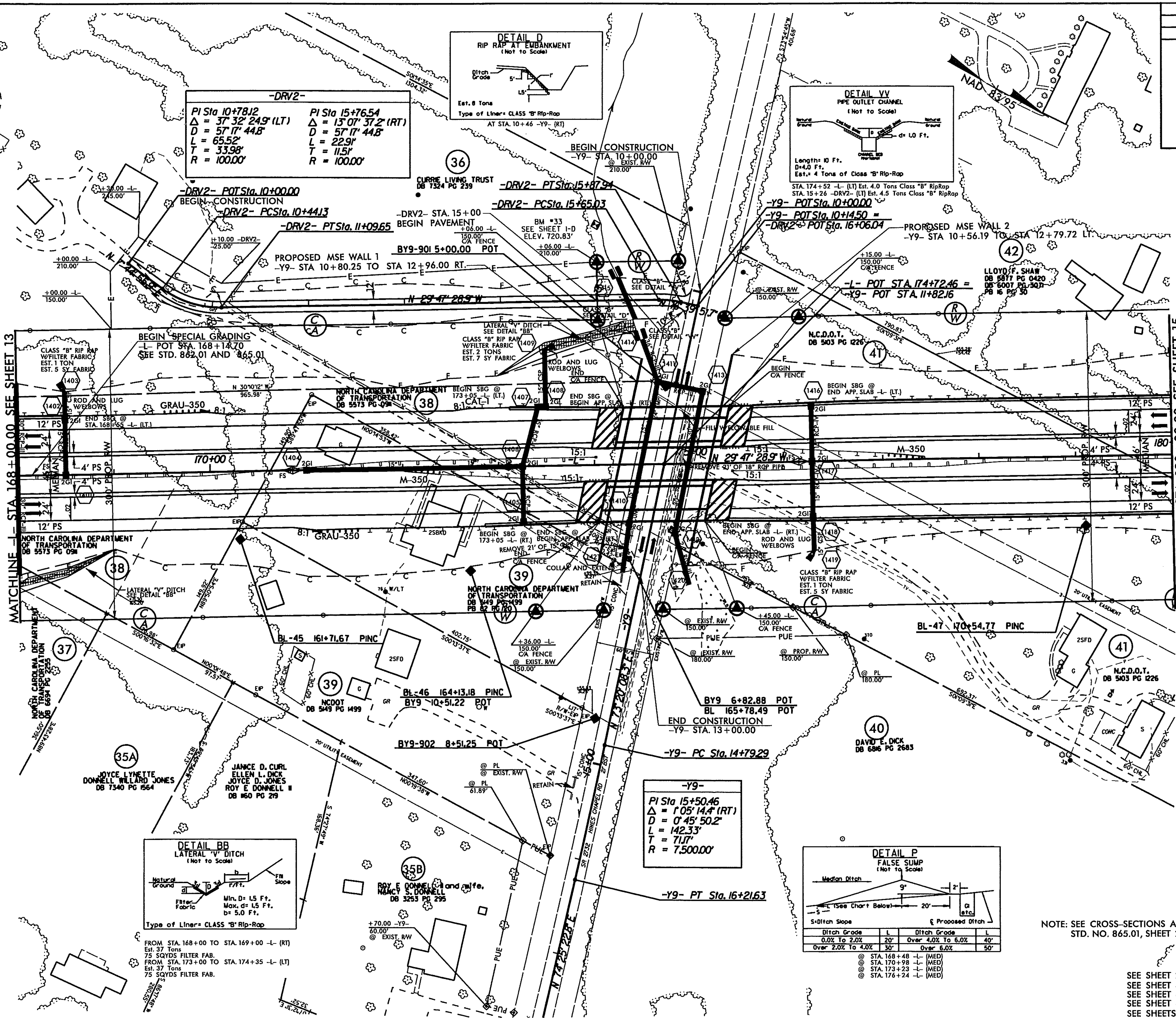
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99

REVISIONS

07-01-13 R/W REVISION (DWG) - THE PUE WAS ADDED BACK ON PARCEL 35B (ROY E. DONNELL II AND WIFE,NANCY S. DONNELL) AND PARCEL 40 (DAVID E.DICK) DUE TO THESE CLAIMS HAVE BEEN PURCHASED.


NAD 83/95
MATCHLINE -L- STA. 168+00.00 SEE SHEET 13
MATCHLINE -L- STA. 180+00.00 SEE SHEET 15
-DRV2-
PI Sta 10+78.12
Δ = 37° 32' 24.9" (LT)
D = 57° 17' 44.8"
L = 65.52'
T = 33.98'
R = 100.00'
PI Sta 15+76.54
Δ = 13° 07' 37.2" (RT)
D = 57° 17' 44.8"
L = 22.91'
T = 11.51'
R = 100.00'
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
Est. 8 Tons
Type of Liner= CLASS "B" Rip-Rap
AT STA. 10+46 -Y9- (RT)
DETAIL VV
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
CHANNEL BED
d= 1.0 Ft.
Length= 10 Ft.
D=4.0 Ft.
Est.= 4 Tons of Class "B" Rip-Rap
STA. 174+52 -L- (LT) Est. 4.0 Tons Class "B" RipRap
STA. 15+26 -DRV2- (LT) Est. 4.5 Tons Class "B" RipRap
BEGIN CONSTRUCTION
-Y9- STA. 10+00.00
@ EXIST. R/W 210.00'
36
CURRIE LIVING TRUST
DB 7324 PG 239
-DRV2- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-DRV2- PC Sta. 10+44.13
-DRV2- PT Sta. 11+09.65
-DRV2- PT Sta. 15+87.94
-DRV2- PC Sta. 15+65.03
-DRV2- STA. 15+00
BEGIN PAVEMENT
BM #33
SEE SHEET 1-D
ELEV. 720.83'
BY9-901 5+00.00 POT
PROPOSED MSE WALL 1
-Y9- STA 10+80.25 TO STA 12+96.00 RT.
-Y9- POT Sta. 10+00.00
-Y9- POT Sta. 10+14.50 =
-DRV2- POT Sta. 16+06.04
PROPOSED MSE WALL 2
-Y9- STA 10+56.19 TO STA 12+79.72 LT.
42
LLOYD F. SHAW
DB 6877 PG 0420
DB 6007 PG 0071
PB 16 PG 30
-L- POT STA. 174+72.46 =
-Y9- POT STA. 11+82.16
N 29° 47' 28.9" W
BEGIN SPECIAL GRADING
-L- POT STA. 168+14.70
SEE STD. 862.01 AND 865.01
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 1 TON
EST. 5 SY FABRIC
ROD AND LUG W/ELBOWS
END SBG @ STA. 168+65 -L- (LT.)
GRAU-350
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DB 5573 PG 0911
38
LATERAL "V" DITCH
SEE DETAIL "BB"
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 2 TONS
EST. 7 SY FABRIC
BEGIN SBG @ 173+05 -L- (LT.)
CAT-1
END SBG @ BEGIN APP. SLAB -L- (RT.)
N.C.D.O.T.
DB 5103 PG 1226
41
BEGIN C/A FENCE
BEGIN SBG @ END APP. SLAB -L- (LT.)
12' PS
4' PS
MEDIAN
170+00
M-350
15:1
8:1
FILL W/FLOWABLE FILL
REMOVE 21' OF 18" RCP PIPE
BEGIN SBG @ 173+05 -L- (RT.)
REMOVE 21' OF 15" CSP
COLLAR AND EXTEND
RETAIN
C/A FENCE
BEGIN SBG @ END APP. SLAB -L- (RT.)
ROD AND LUG W/ELBOWS
BEGIN C/A FENCE
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 1 TON
EST. 5 SY FABRIC
20' UTILITY EASEMENT
39
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DB 5149 PG 1499
PB 62 PG 160
37
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DB 6654 PG 2295
BL-45 161+71.67 PINC
NCDOT
DB 5149 PG 1499
BL-46 164+13.18 PINC
BY9 10+51.22 POT
BY9-902 8+51.25 POT
BY9 6+82.88 POT
BL 165+78.49 POT
END CONSTRUCTION
-Y9- STA. 13+00.00
BL-47 170+54.77 PINC
2SFD
40
DAVID E. DICK
DB 6816 PG 2683
-Y9- PC Sta. 14+79.29
-Y9-
PI Sta 15+50.46
Δ = 1° 05' 14.4" (RT)
D = 0° 45' 50.2"
L = 142.33'
T = 71.17'
R = 7,500.00'
-Y9- PT Sta. 16+21.63
35A
JOYCE LYNETTE DONNELL WILLARD JONES
DB 7340 PG 1564
JANICE D. CURL
ELLEN L. DICK
JOYCE D. JONES
ROY E DONNELL II
DB 1160 PG 219
35B
ROY E DONNELL II and wife, NANCY S. DONNELL
DB 3253 PG 295
HINES CHAPEL RD
SR 2232
PUE
DETAIL BB
LATERAL "V" DITCH
(Not to Scale)
Natural Ground
Filter Fabric
Fill Slope
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
b= 5.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 168+00 TO STA. 169+00 -L- (RT)
Est. 37 Tons
75 SQYDS FILTER FAB.
FROM STA. 173+00 TO STA. 174+35 -L- (LT)
Est. 37 Tons
75 SQYDS FILTER FAB.
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
S=Ditch Slope
℄ Proposed Ditch
Ditch Grade | L | Ditch Grade | L
0.0% To 2.0% | 20' | Over 4.0% To 6.0% | 40'
Over 2.0% To 4.0% | 30' | Over 6.0% | 50'
@ STA. 168+48 -L- (MED)
@ STA. 170+98 -L- (MED)
@ STA. 173+23 -L- (MED)
@ STA. 176+24 -L- (MED)

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 2-N FOR BRIDGE SKETCH
SEE SHEET 46 FOR -L- PROFILE
SEE SHEET 61 FOR -Y9- PROFILE
SEE SHEET 62 FOR -DRV2- PROFILE
SEE SHEETS S-1 THRU S-?? FOR STRUCTURE PLANS

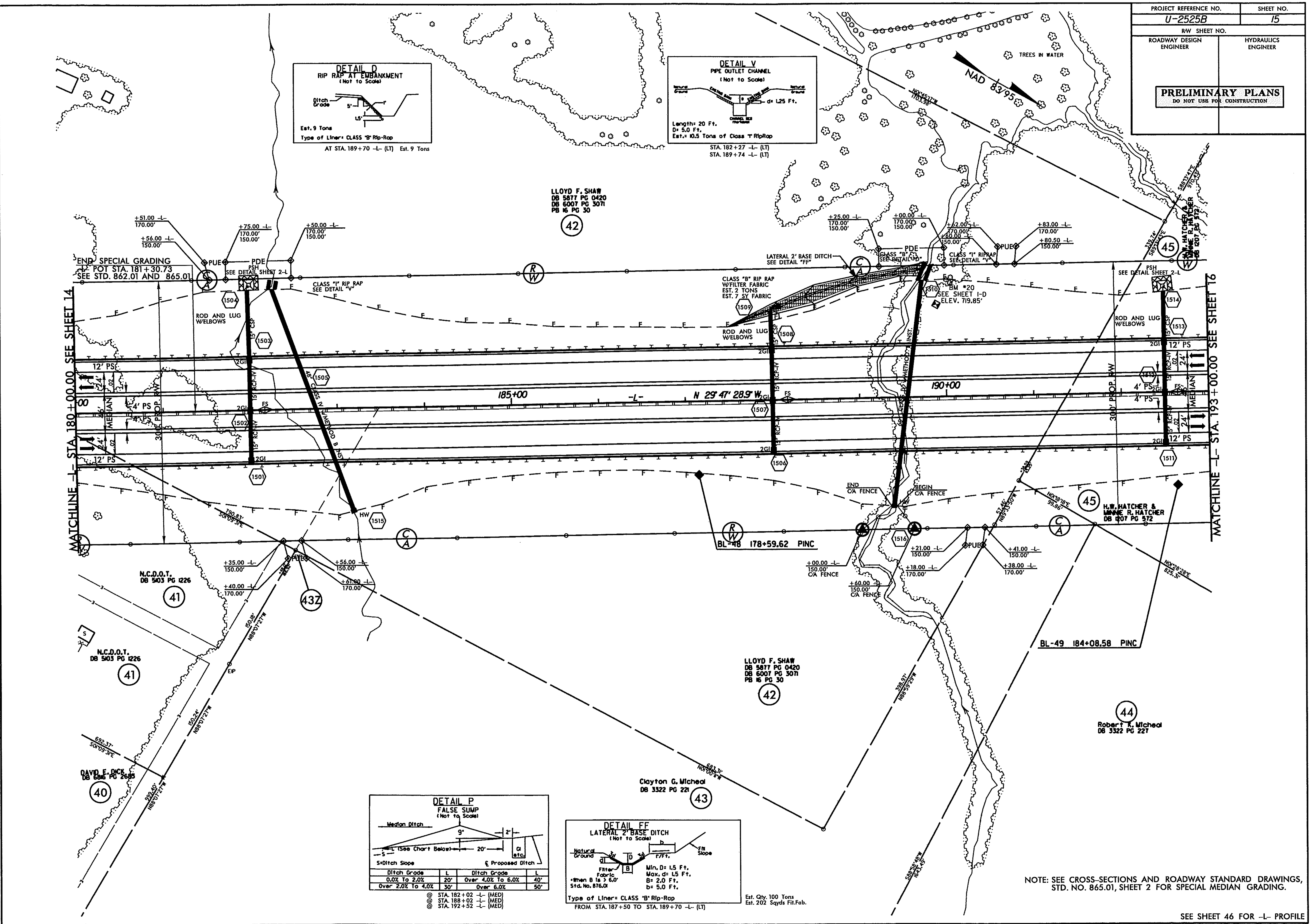
5/14/99

REVISIONS

07-01-13 R/W REVISION (DWG) - AN ADDITIONAL TAKE OF PUE HAS BEEN ADDED TO PARCEL 43Z (CLAYTON G.MICHAEL).

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



MATCHLINE -L- STA. 180+00.00 SEE SHEET 14
MATCHLINE -L- STA. 193+00.00 SEE SHEET 16
END SPECIAL GRADING
-L- POT STA. 181+30.73
SEE STD. 862.01 AND 865.01
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
Est. 9 Tons
Type of Liner= CLASS 'B' Rip-Rap
AT STA. 189+70 -L- (LT) Est. 9 Tons
DETAIL V
PIPE OUTLET CHANNEL
(Not to Scale)
d= 1.25 Ft.
Length= 20 Ft.
D= 5.0 Ft.
Est.= 10.5 Tons of Class 'I' RipRap
STA. 182+27 -L- (LT)
STA. 189+74 -L- (LT)
TREES IN WATER
NAD 83/95
LLOYD F. SHAW
DB 5877 PG 0420
DB 6007 PG 3071
PB 16 PG 30
42
185+00
-L-
N 29°47'28.9" W
190+00
12' PS
4' PS
MEDIAN
300' PROP. R/W
ROD AND LUG W/ELBOWS
CLASS "I" RIP RAP SEE DETAIL "V"
CLASS "B" RIP RAP W/FILTER FABRIC
EST. 2 TONS
EST. 7 SY FABRIC
LATERAL 2' BASE DITCH SEE DETAIL "FF"
BM #20
SEE SHEET 1-D
ELEV. 719.85'
PDE
PSH
SEE DETAIL SHEET 2-L
PUE
HW
END C/A FENCE
BEGIN C/A FENCE
BL-48 178+59.62 PINC
BL-49 184+08.58 PINC
1501
1502
1503
1504
1505
1506
1507
1508
1509
1510
1511
1513
1514
1515
1516
N.C.D.O.T.
DB 5103 PG 1226
41
43Z
H.W. HATCHER & MINNIE R. HATCHER
DB 1207 PG 572
45
Robert K. Micheal
DB 3322 PG 227
44
Clayton G. Micheal
DB 3322 PG 221
43
DAVID E. DICK
DB 5816 PG 2685
40
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
S=Ditch Slope
DETAIL FF
LATERAL 2' BASE DITCH
(Not to Scale)
Natural Ground
Filter Fabric
Fill Slope
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
Std. No. 876.01
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 187+50 TO STA. 189+70 -L- (LT)
Est. Qty. 100 Tons
Est. 202 Sqyds Filt.Fab.

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

@ STA. 182+02 -L- (MED)
@ STA. 188+02 -L- (MED)
@ STA. 192+52 -L- (MED)

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 46 FOR -L- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	16

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

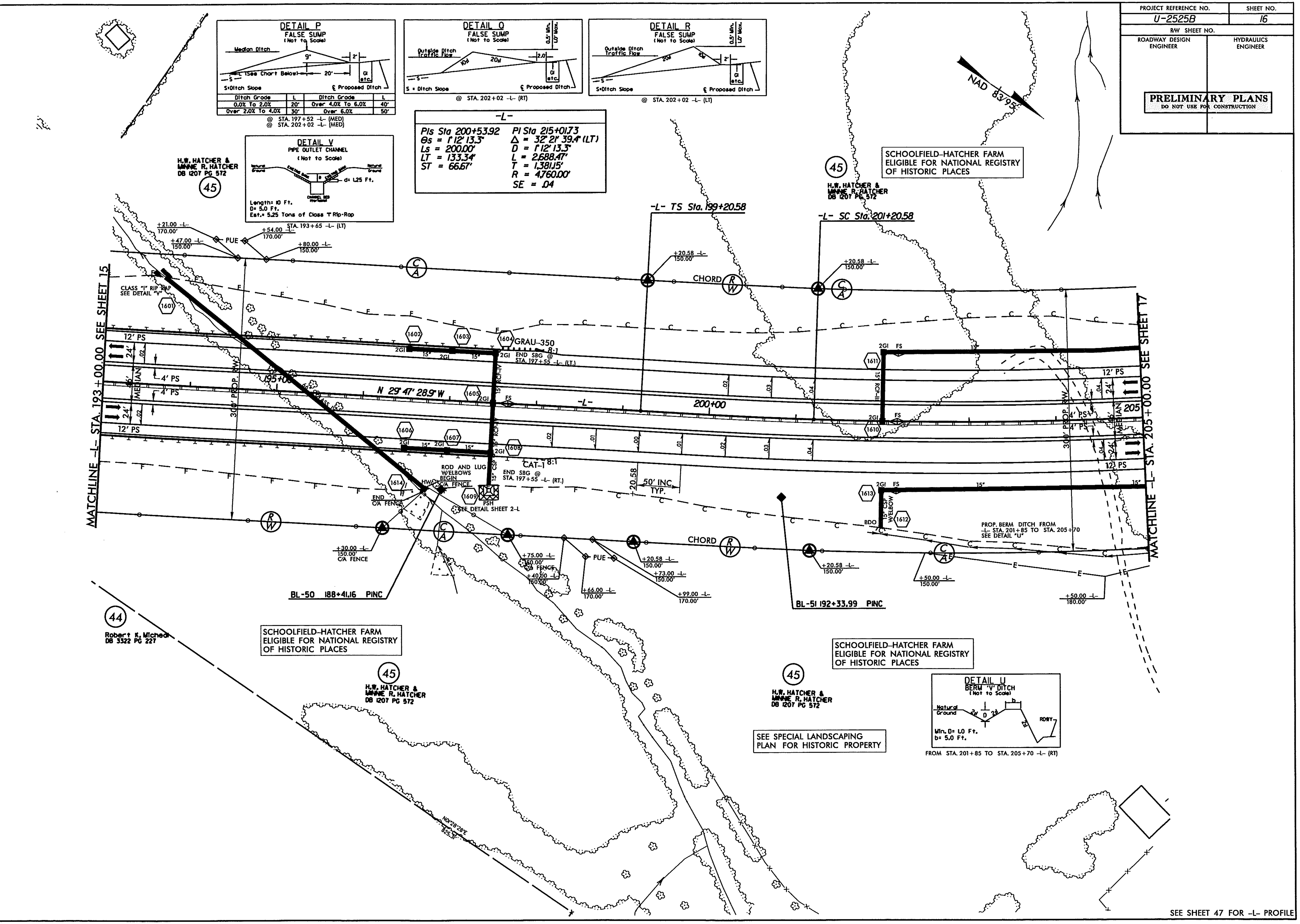
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

06-24-13 R/W REVISION (DWG) - ADDED PUE AT -L- STA.194+60.00 LT. AND -L- STA.198+57.00 RT. ON PARCEL 45 (H.W. HATCHER & MINNIE R. HATCHER).

5/14/99


DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
S
S=Ditch Slope
GI etc.
℄ Proposed Ditch
DETAIL Q
FALSE SUMP
(Not to Scale)
0.5' Min.
1.0' Max.
Outside Ditch Traffic Flow
10:1
20:1
2.0'
S = Ditch Slope
@ STA. 202+02 -L- (RT)
DETAIL R
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
20:1
10:1
@ STA. 202+02 -L- (LT)
DETAIL V
PIPE OUTLET CHANNEL
(Not to Scale)
Natural Ground
Existing Bank
d= 1.25 Ft.
Channel Bed Horizontal
Length= 10 Ft.
D= 5.0 Ft.
Est.= 5.25 Tons of Class 'I' Rip-Rap
STA. 193+65 -L- (LT)
H.W. HATCHER &
MINNIE R. HATCHER
DB 1207 PG 572
45
NAD 83/95
SCHOOLFIELD-HATCHER FARM
ELIGIBLE FOR NATIONAL REGISTRY
OF HISTORIC PLACES
-L- TS Sta. 199+20.58
-L- SC Sta. 201+20.58
+21.00 -L- 170.00'
+47.00 -L- 150.00'
PUE
+54.00 -L- 170.00'
+80.00 -L- 150.00'
+20.58 -L- 150.00'
CHORD
R/W
C/A
CLASS "I" RIP RAP
SEE DETAIL "V"
1601
1602
1603
1604
GRAU-350
8:1
END SBG @ STA. 197+55 -L- (LT.)
2GI
15"
12' PS
24'
4' PS
MEDIAN
195+00
N 29° 47' 28.9" W
1605
FS
-L-
200+00
300' PROP. R/W
1606
1607
1608
CAT-1
END SBG @ STA. 197+55 -L- (RT.)
15" RCP-IV
15" CSP
ROD AND LUG W/ELBOWS
BEGIN C/A FENCE
1609
PSH
SEE DETAIL SHEET 2-L
1614
HW
END C/A FENCE
+20.58
50' INC. TYP.
1611
15" RCP-III
1610
1613
1612
15" CSP W/ELBOW
BDO
PROP. BERM DITCH FROM -L- STA. 201+85 TO STA. 205+70
SEE DETAIL "U"
205
MATCHLINE -L- STA. 193+00.00 SEE SHEET 15
MATCHLINE -L- STA. 205+00.00 SEE SHEET 17
+30.00 -L- 150.00' C/A FENCE
+75.00 -L- 160.00' C/A FENCE
+40.00 -L- 150.00'
+66.00 -L- 170.00'
+73.00 -L- 150.00'
+99.00 -L- 170.00'
+20.58 -L- 150.00'
+50.00 -L- 150.00'
+50.00 -L- 180.00'
E
BL-50 188+41.16 PINC
BL-51 192+33.99 PINC
44
Robert K. Michael
DB 3322 PG 227
N10°28'28"E 825.31'
DETAIL U
BERM 'V' DITCH
(Not to Scale)
Natural Ground
Min. D= 1.0 Ft.
b= 5.0 Ft.
ROWY
FROM STA. 201+85 TO STA. 205+70 -L- (RT)
SEE SPECIAL LANDSCAPING PLAN FOR HISTORIC PROPERTY

DETAIL P – FALSE SUMP (Not to Scale)

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

@ STA. 197+52 -L- (MED)
@ STA. 202+02 -L- (MED)

-L-

PIs Sta 200+53.92
Θs = 1° 12' 13.3"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 215+01.73
Δ = 32° 21' 39.4" (LT)
D = 1° 12' 13.3"
L = 2,688.47'
T = 1,381.15'
R = 4,760.00'
SE = .04

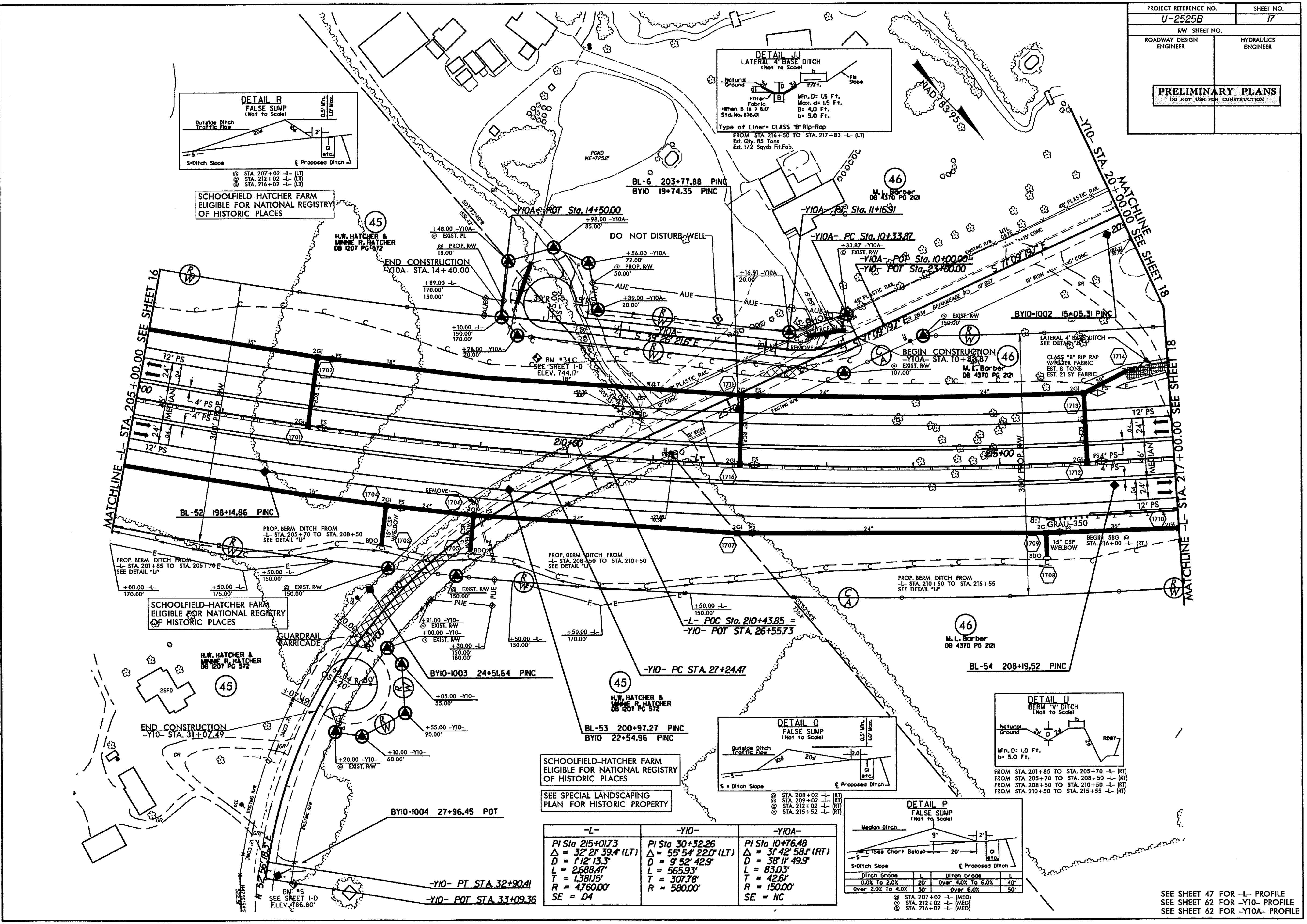
SEE SHEET 47 FOR -L- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99

REVISIONS


MATCHLINE -L- STA. 205+00.00 SEE SHEET 16
MATCHLINE -L- STA. 217+00.00 SEE SHEET 18
-Y10- STA. 20+00.00 MATCHLINE SEE SHEET 18
NAD 83/95
SCHOOLFIELD-HATCHER FARM ELIGIBLE FOR NATIONAL REGISTRY OF HISTORIC PLACES
H.W. HATCHER & MINNIE R. HATCHER DB 1207 PG 572
45
46
M. L. Barber DB 4370 PG 2121
POND WE=725.2'
BL-6 203+77.88 PINC
BY10 19+74.35 PINC
-Y10A- POT Sta. 14+50.00
-Y10A- PT Sta. 11+16.91
-Y10A- PC Sta. 10+33.87
-Y10A- POT Sta. 10+00.00 =
-Y10- POT Sta. 23+80.00
DO NOT DISTURB WELL
END CONSTRUCTION -Y10A- STA. 14+40.00
BEGIN CONSTRUCTION -Y10A- STA. 10+33.87
BY10-1002 15+05.31 PINC
LATERAL 4' BASE DITCH SEE DETAIL "JJ"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 8 TONS EST. 21 SY FABRIC
BM "34C SEE SHEET 1-D ELEV. 744.17'
12' PS
24'
MEDIAN
4' PS
300' PROP. R/W
BL-52 198+14.86 PINC
PROP. BERM DITCH FROM -L- STA. 205+70 TO STA. 208+50 SEE DETAIL "U"
PROP. BERM DITCH FROM -L- STA. 208+50 TO STA. 210+50 SEE DETAIL "U"
PROP. BERM DITCH FROM -L- STA. 201+85 TO STA. 205+70 SEE DETAIL "U"
PROP. BERM DITCH FROM -L- STA. 210+50 TO STA. 215+55 SEE DETAIL "U"
-L- POC Sta. 210+43.85 =
-Y10- POT STA. 26+55.73
-Y10- PC STA. 27+24.47
BL-53 200+97.27 PINC
BY10 22+54.96 PINC
BL-54 208+19.52 PINC
BY10-1003 24+51.64 PINC
BY10-1004 27+96.45 POT
-Y10- PT STA. 32+90.41
-Y10- POT STA. 33+09.36
END CONSTRUCTION -Y10- STA. 31+07.49
GUARDRAIL BARRICADE
BM "5 SEE SHEET 1-D ELEV. 786.80'
GRAU-350
BEGIN SBG @ STA. 216+00 -L- (RT)
15" CSP W/ELBOW
2SFD
1701
1702
1703
1704
1705
1706
1707
1708
1709
1710
1711
1712
1713
1714
1716
210+00
215+00

DETAIL R
FALSE SUMP
(Not to Scale)

0.5' Min.
1.0' Max.
Outside Ditch Traffic Flow
20:1
10:1
2'
GI etc.
S=Ditch Slope
℄ Proposed Ditch

@ STA. 207+02 -L- (LT)
@ STA. 212+02 -L- (LT)
@ STA. 216+02 -L- (LT)

DETAIL JJ
LATERAL 4' BASE DITCH
(Not to Scale)

Natural Ground
d
D
B
b
r/Ft.
Fill Slope
Filter Fabric
•When B is > 6.0'
Std. No. 876.01

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 4.0 Ft.
b= 5.0 Ft.

Type of Liner= CLASS "B" Rip-Rap

FROM STA. 216+50 TO STA. 217+83 -L- (LT)
Est. Qty. 85 Tons
Est. 172 Sqyds Fil.Fab.

DETAIL Q
FALSE SUMP
(Not to Scale)

0.5' Min.
1.0' Max.
Outside Ditch Traffic Flow
10:1
20:1
2.0
GI etc.
S = Ditch Slope
℄ Proposed Ditch

@ STA. 208+02 -L- (RT)
@ STA. 209+02 -L- (RT)
@ STA. 212+02 -L- (RT)
@ STA. 215+52 -L- (RT)

DETAIL U
BERM 'V' DITCH
(Not to Scale)

Natural Ground
2:1
D
2:1
b
RDWY

Min. D= 1.0 Ft.
b= 5.0 Ft.

FROM STA. 201+85 TO STA. 205+70 -L- (RT)
FROM STA. 205+70 TO STA. 208+50 -L- (RT)
FROM STA. 208+50 TO STA. 210+50 -L- (RT)
FROM STA. 210+50 TO STA. 215+55 -L- (RT)

DETAIL P
FALSE SUMP
(Not to Scale)

Median Ditch
9"
2'
L (See Chart Below)
20'
GI etc.
S=Ditch Slope
℄ Proposed Ditch

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

@ STA. 207+02 -L- (MED)
@ STA. 212+02 -L- (MED)
@ STA. 216+02 -L- (MED)

SCHOOLFIELD-HATCHER FARM
ELIGIBLE FOR NATIONAL REGISTRY
OF HISTORIC PLACES

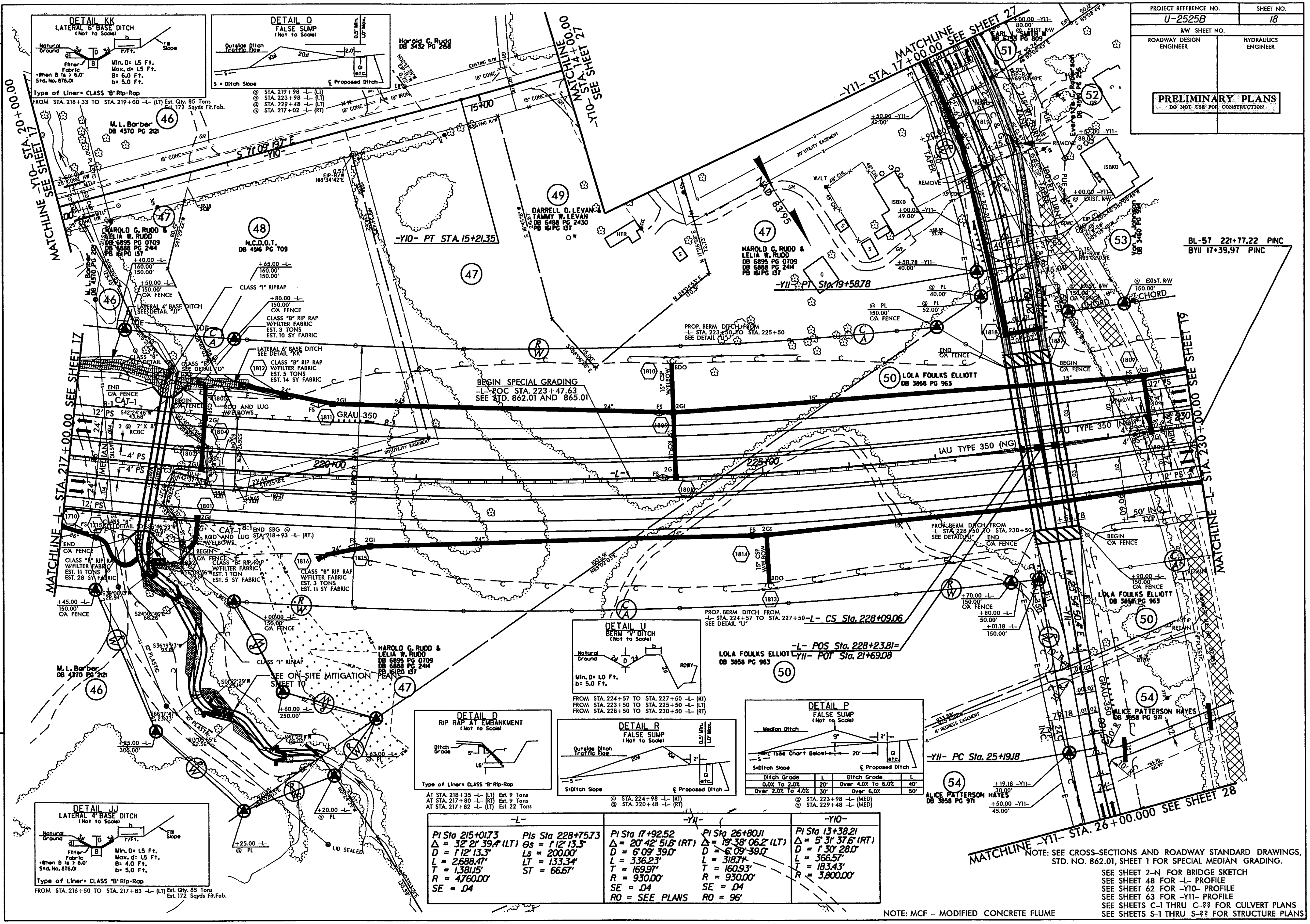
SEE SPECIAL LANDSCAPING
PLAN FOR HISTORIC PROPERTY

-L-	-Y10-	-Y10A-
PI Sta 215+01.73	PI Sta 30+32.26	PI Sta 10+76.48
Δ = 32° 21' 39.4" (LT)	Δ = 55° 54' 22.0" (LT)	Δ = 31° 42' 58.1" (RT)
D = 1° 12' 13.3"	D = 9° 52' 42.9"	D = 38° 11' 49.9"
L = 2,688.47'	L = 565.93'	L = 83.03'
T = 1,381.15'	T = 307.78'	T = 42.61'
R = 4,760.00'	R = 580.00'	R = 150.00'
SE = .04		SE = NC

SEE SHEET 47 FOR -L- PROFILE
SEE SHEET 62 FOR -Y10- PROFILE
SEE SHEET 62 FOR -Y10A- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


5/14/99
REVISIONS
DETAIL KK
LATERAL 6' BASE DITCH
(Not to Scale)
Natural Ground
Filter Fabric
Fill Slope
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 6.0 Ft.
b= 5.0 Ft.
•When B is > 6.0'
Std. No. 876.01
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 218+33 TO STA. 219+00 -L- (LT) Est. Qty. 85 Tons
Est. 172 Sqyds Flt.Fab.
DETAIL O
FALSE SUMP
(Not to Scale)
Outside Ditch
Traffic Flow
S = Ditch Slope
℄ Proposed Ditch
@ STA. 219+98 -L- (LT)
@ STA. 223+98 -L- (LT)
@ STA. 229+48 -L- (LT)
@ STA. 217+02 -L- (RT)
Harold G. Rudd
DB 3432 PG 258
MATCHLINE -Y10- STA. 20+00.00 SEE SHEET 17
MATCHLINE -Y10- STA. 14+00.00 SEE SHEET 27
MATCHLINE -Y11- STA. 17+00.00 SEE SHEET 27
M. L. Barber
DB 4370 PG 2121
S 71°09'19" E
-Y10-
-Y10- PT STA. 15+21.35
HAROLD G. RUDD &
LELIA W. RUDO
DB 6895 PG 0709
DB 6888 PG 2414
PB 161 PG 137
N.C.D.O.T.
DB 4516 PG 709
DARRELL D. LEVAN &
TAMMY W. LEVAN
DB 6488 PG 2430
PB 161 PG 137
-Y11- PT Sta. 19+58.78
CLASS "I" RIPRAP
LATERAL 4' BASE DITCH SEE DETAIL "JJ"
LATERAL 6' BASE DITCH SEE DETAIL "KK"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 10 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 14 SY FABRIC
BEGIN SPECIAL GRADING
-L- POC STA. 223+47.63
SEE STD. 862.01 AND 865.01
PROP. BERM DITCH FROM -L- STA. 223+50 TO STA. 225+50 SEE DETAIL "U"
LOLA FOULKS ELLIOTT
DB 3858 PG 963
ROD AND LUG W/ELBOWS
GRAU-350
IAU TYPE 350 (NG)
220+00
225+00
-L-
MATCHLINE -L- STA. 217+00.00 SEE SHEET 17
MATCHLINE -L- STA. 230+00.00 SEE SHEET 19
END SBG @ STA. 218+93 -L- (RT.)
CLASS "B" RIP RAP W/FILTER FABRIC EST. 1 TON EST. 5 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 3 TONS EST. 11 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 11 TONS EST. 28 SY FABRIC
PROP. BERM DITCH FROM -L- STA. 228+50 TO STA. 230+50 SEE DETAIL "U"
PROP. BERM DITCH FROM -L- STA. 224+57 TO STA. 227+50
-L- CS Sta. 228+09.06
-L- POS Sta. 228+23.81=
-Y11- POT Sta. 21+69.08
-Y11- PC Sta. 25+19.18
SEE ON-SITE MITIGATION PLAN SHEET 10
LID SEALED
BL-57 221+77.22 PINC
BY11 17+39.97 PINC
ALICE PATTERSON HAYES
DB 3858 PG 971
MATCHLINE -Y11- STA. 26+00.000 SEE SHEET 28
PRELIMINARY PLANS
DETAIL U
BERM "V" DITCH
(Not to Scale)
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 224+57 TO STA. 227+50 -L- (RT)
FROM STA. 223+50 TO STA. 225+50 -L- (LT)
FROM STA. 228+50 TO STA. 230+50 -L- (RT)
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Type of Liner= CLASS "B" Rip-Rap
AT STA. 218+35 -L- (LT) Est. 9 Tons
AT STA. 217+80 -L- (RT) Est. 9 Tons
AT STA. 217+82 -L- (LT) Est. 22 Tons
DETAIL R
FALSE SUMP
(Not to Scale)
Outside Ditch
Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
@ STA. 224+98 -L- (RT)
@ STA. 220+48 -L- (RT)
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
L (See Chart Below)
S=Ditch Slope
℄ Proposed Ditch
@ STA. 223+98 -L- (MED)
@ STA. 229+48 -L- (MED)
DETAIL JJ
LATERAL 4' BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 4.0 Ft.
b= 5.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 216+50 TO STA. 217+83 -L- (LT) Est. Qty. 85 Tons
Est. 172 Sqyds Flt.Fab.

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

-L-		-Y11-		-Y10-
PI Sta 215+01.73	PIs Sta 228+75.73	PI Sta 17+92.52	PI Sta 26+80.11	PI Sta 13+38.21
Δ = 32° 21' 39.4" (LT)	θs = 1° 12' 13.3"	Δ = 20° 42' 51.8" (RT)	Δ = 19° 38' 06.2" (LT)	Δ = 5° 31' 37.6" (RT)
D = 1° 12' 13.3"	Ls = 200.00'	D = 6° 09' 39.0"	D = 6° 09' 39.0"	D = 1° 30' 28.0"
L = 2,688.47'	LT = 133.34'	L = 336.23'	L = 318.71'	L = 366.57'
T = 1,381.15'	ST = 66.67'	T = 169.97'	T = 160.93'	T = 183.43'
R = 4,760.00'		R = 930.00'	R = 930.00'	R = 3,800.00'
SE = .04		SE = .04	SE = .04	
		RO = SEE PLANS	RO = 96'	

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 862.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 2-N FOR BRIDGE SKETCH
SEE SHEET 48 FOR -L- PROFILE
SEE SHEET 62 FOR -Y10- PROFILE
SEE SHEET 63 FOR -Y11- PROFILE
SEE SHEETS C-1 THRU C-?? FOR CULVERT PLANS
SEE SHEETS S-1 THRU S-?? FOR STRUCTURE PLANS

NOTE: MCF - MODIFIED CONCRETE FLUME

5/14/99

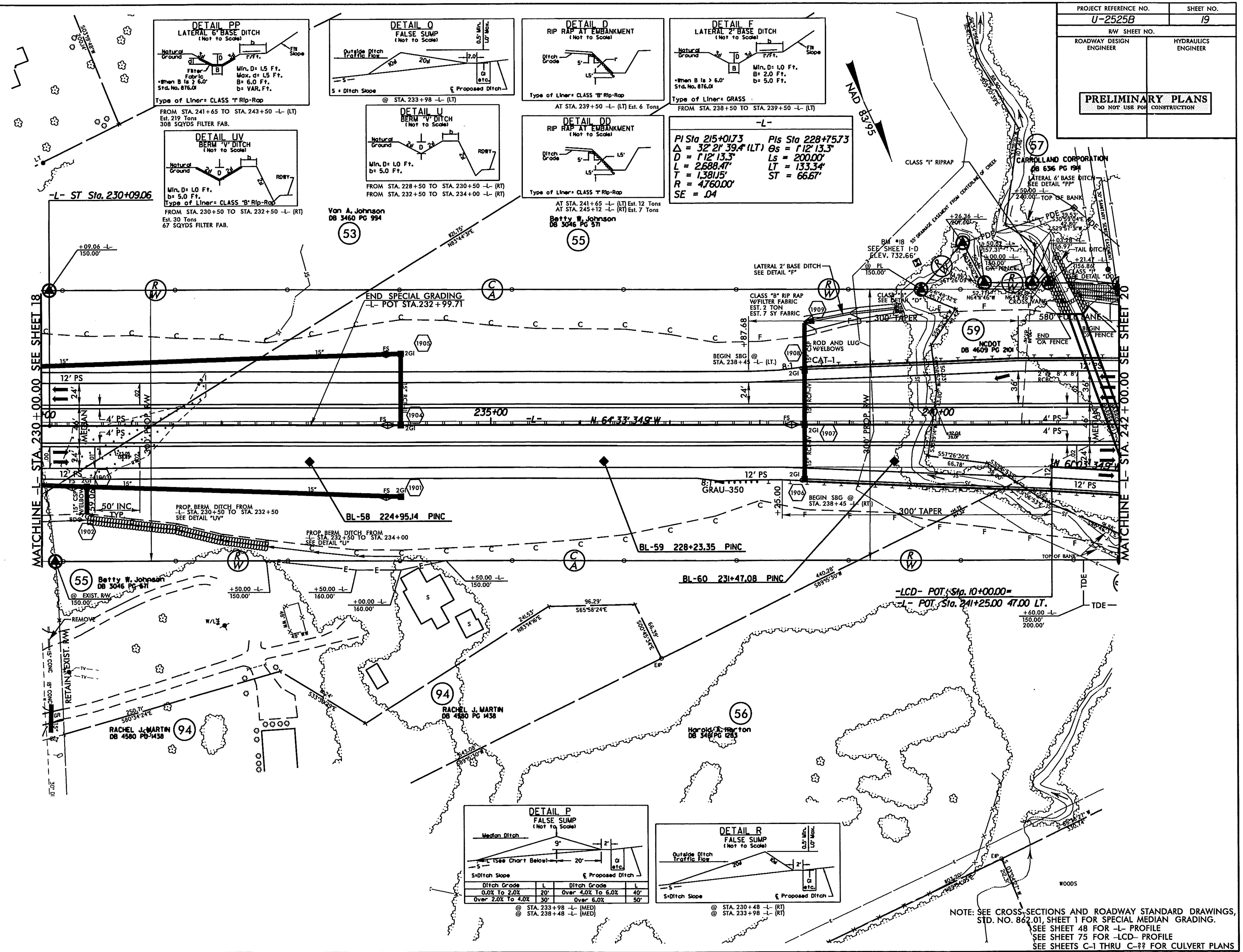
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	19

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


DETAIL PP
LATERAL 6' BASE DITCH
(Not to Scale)
Natural Ground
Filter Fabric
Fill Slope
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 6.0 Ft.
b= VAR. Ft.
*When B is ≥ 6.0' Std. No. 876.01
Type of Liner= CLASS "I" Rip-Rap
FROM STA. 241+65 TO STA. 243+50 -L- (LT)
Est. 219 Tons
308 SQYDS FILTER FAB.
DETAIL Q
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S = Ditch Slope
℄ Proposed Ditch
@ STA. 233+98 -L- (LT)
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
Type of Liner= CLASS "B" Rip-Rap
AT STA. 239+50 -L- (LT) Est. 6 Tons
DETAIL F
LATERAL 2' BASE DITCH
(Not to Scale)
Min. D= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
*When B is > 6.0' Std. No. 876.01
Type of Liner= GRASS
FROM STA. 238+50 TO STA. 239+50 -L- (LT)
DETAIL UV
BERM 'V' DITCH
(Not to Scale)
Min. D= 1.0 Ft.
b= 5.0 Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 230+50 TO STA. 232+50 -L- (RT)
Est. 30 Tons
67 SQYDS FILTER FAB.
DETAIL U
BERM 'V' DITCH
(Not to Scale)
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 228+50 TO STA. 230+50 -L- (RT)
FROM STA. 232+50 TO STA. 234+00 -L- (RT)
DETAIL DD
RIP RAP AT EMBANKMENT
(Not to Scale)
Type of Liner= CLASS "I" Rip-Rap
AT STA. 241+65 -L- (LT) Est. 12 Tons
AT STA. 245+12 -L- (RT) Est. 7 Tons
NAD 83/95
-L- ST Sta. 230+09.06
Van A. Johnson
DB 3460 PG 994
53
Betty W. Johnson
DB 3046 PG 571
55
CLASS "I" RIPRAP
57
CARROLLAND CORPORATION
DB 6316 PG 194
LATERAL 6' BASE DITCH
SEE DETAIL "PP"
TOP OF BANK
BM #18
SEE SHEET 1-D
ELEV. 732.66'
LATERAL 2' BASE DITCH
SEE DETAIL "F"
CLASS "B" RIP RAP W/FILTER FABRIC
EST. 2 TON
EST. 7 SY FABRIC
END SPECIAL GRADING
-L- POT STA.232+99.71
300' TAPER
580' FULL LANE
59
NCDOT
DB 4609 PG 2101
BEGIN C/A FENCE
END C/A FENCE
ROD AND LUG W/ELBOWS
BEGIN SBG @ STA. 238+45 -L- (LT.)
CAT-1
MATCHLINE -L- STA 230+00.00 SEE SHEET 18
MATCHLINE -L- STA. 242+00.00 SEE SHEET 20
12' PS
4' PS
MEDIAN
235+00
-L-
N 64°33'34.9" W
240+00
PROP. R/W
GRAU-350
BEGIN SBG @ STA. 238+45 -L- (RT)
BL-58 224+95.14 PINC
BL-59 228+23.35 PINC
BL-60 231+47.08 PINC
PROP. BERM DITCH FROM -L- STA. 230+50 TO STA. 232+50 SEE DETAIL "UV"
PROP. BERM DITCH FROM -L- STA. 232+50 TO STA. 234+00 SEE DETAIL "U"
50' INC. TYP.
1901
1902
1903
1904
1905
1906
1907
1908
1909
2GI
15" RCP-IV
15" CSP W/ELBOW
-LCD- POT Sta. 10+00.00=
-L- POT Sta. 241+25.00 47.00 LT.
TDE
TOP OF BANK
RETAIN EXIST. R/W
REMOVE
94
RACHEL J. MARTIN
DB 4580 PG 1438
56
Harold A. Horton
DB 3461 PG 1283
WOODS
DETAIL R
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
@ STA. 230+48 -L- (RT)
@ STA. 233+98 -L- (RT)

-L-

PI Sta 215+01.73
Δ = 32° 21' 39.4" (LT)
D = 1° 12' 13.3"
L = 2,688.47'
T = 1,381.15'
R = 4,760.00'
SE = .04

PIs Sta 228+75.73
θs = 1° 12' 13.3"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

DETAIL P
FALSE SUMP
(Not to Scale)

Median Ditch

S=Ditch Slope

℄ Proposed Ditch

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

@ STA. 233+98 -L- (MED)
@ STA. 238+48 -L- (MED)

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 862.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.
SEE SHEET 48 FOR -L- PROFILE
SEE SHEET 75 FOR -LCD- PROFILE
SEE SHEETS C-1 THRU C-?? FOR CULVERT PLANS

5/14/99

REVISIONS

06-03-13 R/W REVISION (DWG) - PARCEL 58 (ROBERT & CATHY BRENNAN) AND PARCEL 101 (CATHY BRENNAN) WERE COMBINED INTO PARCEL 101.

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	20

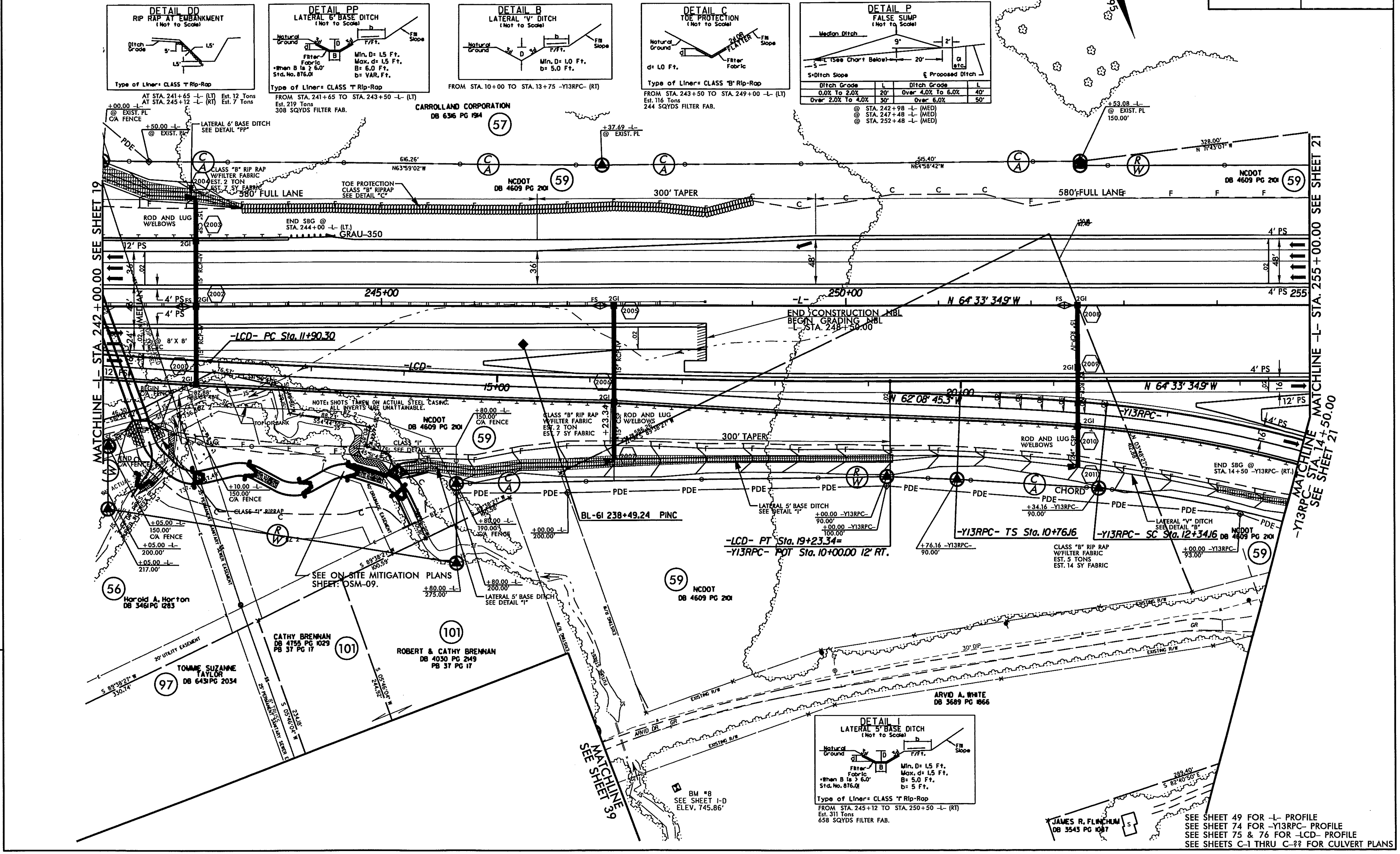
R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

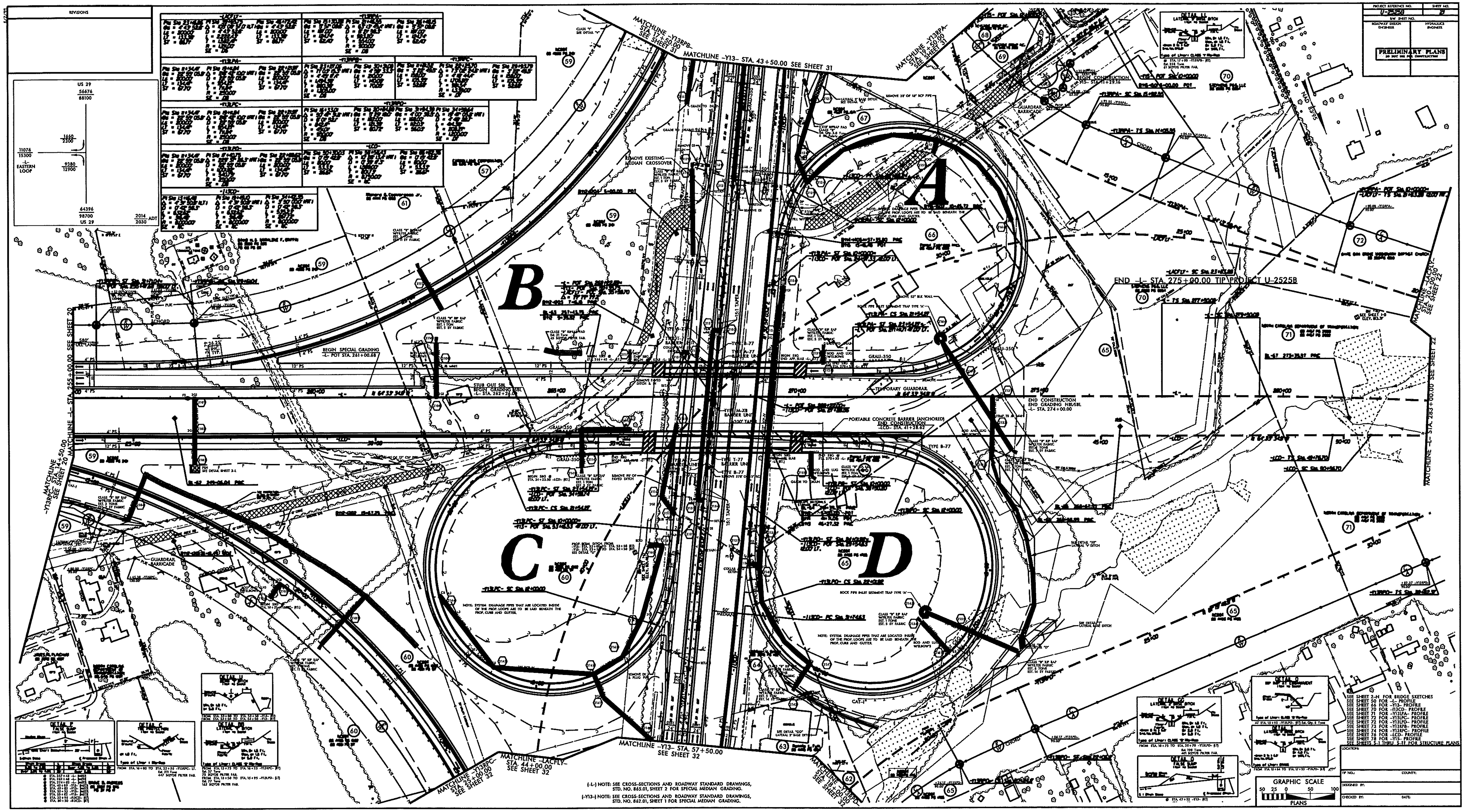
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y13RPC-			-LCD-
PIs Sta 11+81.52	PI Sta 22+25.70	PIs Sta 29+93.79	PI Sta 15+56.93
Θs = 3° 22' 49.5"	Δ = 73° 02' 24.8" (RT)	Θs = 3° 22' 49.5"	Δ = 3° 30' 00.0" (LT)
Ls = 158.00'	D = 4° 16' 44.4"	Ls = 158.00'	D = 0° 28' 38.9"
LT = 105.35'	L = 1,706.95'	LT = 105.35'	L = 733.04'
ST = 52.68'	T = 991.54'	ST = 52.68'	T = 366.63'
	R = 1,339.00'		R = 12,000.00'
	SE = .07		SE = NC
	RO = 158'		


DETAIL DD
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
5'
1.5'
1.5'
Type of Liner: CLASS 'I' Rip-Rap
AT STA. 241+65 -L- (LT) Est. 12 Tons
AT STA. 245+12 -L- (RT) Est. 7 Tons
DETAIL PP
LATERAL 6' BASE DITCH
(Not to Scale)
Natural Ground
Fill Slope
Filter Fabric
*When B is ≥ 6.0'
Std. No. 876.01
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 6.0 Ft.
b= VAR. Ft.
Type of Liner= CLASS 'I' Rip-Rap
FROM STA. 241+65 TO STA. 243+50 -L- (LT)
Est. 219 Tons
308 SQYDS FILTER FAB.
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 10+00 TO STA. 13+75 -Y13RPC- (RT)
DETAIL C
TOE PROTECTION
(Not to Scale)
Natural Ground
2:1 OR FLATTER
Fill Slope
Filter Fabric
d= 1.0 Ft.
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 243+50 TO STA. 249+00 -L- (LT)
Est. 116 Tons
244 SQYDS FILTER FAB.
DETAIL P
FALSE SUMP
(Not to Scale)
Median Ditch
9"
2'
L (See Chart Below)
20'
GI etc.
S=Ditch Slope
℄ Proposed Ditch
@ STA. 242+98 -L- (MED)
@ STA. 247+48 -L- (MED)
@ STA. 252+48 -L- (MED)
NAD 83/95
CARROLLAND CORPORATION
DB 6316 PG 1914
57
+00.00 -L- @ EXIST. PL C/A FENCE
+50.00 -L- @ EXIST. PL
LATERAL 6' BASE DITCH SEE DETAIL "PP"
+37.69 -L- @ EXIST. PL
+53.08 -L- @ EXIST. PL 150.00'
616.26' N63°59'02"W
515.40' N64°58'42"W
328.00' N 11°43'07"E
NCDOT DB 4609 PG 2101
59
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TON EST. 7 SY FABRIC
580' FULL LANE
TOE PROTECTION CLASS "B" RIPRAP SEE DETAIL "C"
300' TAPER
580' FULL LANE
ROD AND LUG W/ELBOWS
END SBG @ STA. 244+00 -L- (LT.)
GRAU-350
12' PS
4' PS
245+00
-L-
250+00
N 64° 33' 34.9" W
END CONSTRUCTION NBL
BEGIN GRADING NBL
-L- STA. 248+50.00
-LCD- PC Sta. 11+90.30
-LCD-
15+00
N 62° 08' 45.3" W
20+00
-Y13RPC-
NOTE: SHOTS TAKEN ON ACTUAL STEEL CASING. ALL INVERTS ARE UNATTAINABLE.
TOP OF BANK
+80.00 -L- 150.00' C/A FENCE
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TON EST. 7 SY FABRIC
ROD AND LUG W/ELBOWS
300' TAPER
CLASS "I" SEE DETAIL "DD"
+10.00 -L- 150.00' C/A FENCE
CLASS "I" RIPRAP
+05.00 -L- 150.00' C/A FENCE
+05.00 -L- 200.00'
+05.00 -L- 217.00'
+80.00 -L- 190.00' C/A FENCE
+00.00 -L- 200.00'
+80.00 -L- 200.00'
+80.00 -L- 275.00'
LATERAL 5' BASE DITCH SEE DETAIL "I"
SEE ON SITE MITIGATION PLANS SHEET: OSM-09.
BL-61 238+49.24 PINC
-LCD- PT Sta. 19+23.34=
-Y13RPC- POT Sta. 10+00.00 12' RT.
LATERAL 5' BASE DITCH SEE DETAIL "I"
+00.00 -Y13RPC- 90.00'
+00.00 -Y13RPC- 100.00'
+76.16 -Y13RPC- 90.00'
-Y13RPC- TS Sta. 10+76.16
+34.16 -Y13RPC- 90.00'
CHORD
-Y13RPC- SC Sta. 12+34.16
LATERAL "V" DITCH SEE DETAIL "B"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 14 SY FABRIC
ROD AND LUG W/ELBOWS
END SBG @ STA. 14+50 -Y13RPC- (RT.)
+00.00 -Y13RPC- 93.00'
NCDOT DB 4609 PG 2101
59
PDE
MATCHLINE -L- STA. 242+00.00 SEE SHEET 19
MATCHLINE -L- STA. 255+00.00 SEE SHEET 21
MATCHLINE -Y13RPC- STA. 14+50.00 SEE SHEET 21
MATCHLINE SEE SHEET 39
56
Harold A. Horton DB 3461 PG 1283
CATHY BRENNAN DB 4755 PG 1029 PB 37 PG 17
101
ROBERT & CATHY BRENNAN DB 4030 PG 2149 PB 37 PG 17
101
TOMMIE SUZANNE TAYLOR DB 6431 PG 2034
97
20' UTILITY EASEMENT
S 89°38'27" W 330.74'
S 89°38'21" W 100.59'
S 05°46'04" W 244.32'
S 05°46'04" W 234.18'
59
NCDOT DB 4609 PG 2101
EXISTING R/W
30' DIP
ARVID A. WHITE DB 3689 PG 1866
ARVID DR
BM #8 SEE SHEET 1-D ELEV. 745.86'
289.40' S 82°40'50" E
JAMES R. FLINCHUM DB 3543 PG 1087
DETAIL I
LATERAL 5' BASE DITCH
(Not to Scale)
Natural Ground
Fill Slope
Filter Fabric
*When B is > 6.0'
Std. No. 876.01
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 5.0 Ft.
b= 5 Ft.
Type of Liner= CLASS 'I' Rip-Rap
FROM STA. 245+12 TO STA. 250+50 -L- (RT)
Est. 311 Tons
658 SQYDS FILTER FAB.

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

SEE SHEET 49 FOR -L- PROFILE
SEE SHEET 74 FOR -Y13RPC- PROFILE
SEE SHEET 75 & 76 FOR -LCD- PROFILE
SEE SHEETS C-1 THRU C-?? FOR CULVERT PLANS


A
B
C
D
MATCHLINE -Y13- STA. 43+50.00 SEE SHEET 31
MATCHLINE -Y13RPB- STA. 17+50.00 SEE SHEET 31
MATCHLINE -Y13RPA- SEE SHEET 31
MATCHLINE -L- STA. 255+00.00 SEE SHEET 20
MATCHLINE -Y13RPC- STA. 14+50.00 SEE SHEET 20
MATCHLINE -L- STA. 283+00.00 SEE SHEET 22
MATCHLINE -LACFLY- SEE SHEET 22
MATCHLINE -Y13- STA. 57+50.00 SEE SHEET 32
MATCHLINE -LACFLY- STA. 44+00.00 SEE SHEET 32
MATCHLINE -Y13RPC- STA. 25+00.00 SEE SHEET 32
MATCHLINE -Y13RPD- STA. 18+00.00 SEE SHEET 32
END -L- STA. 275+00.00 TIP PROJECT U-2525B
BEGIN SPECIAL GRADING -L- POT STA. 261+00.00
END CONSTRUCTION END GRADING NBUSBL -L- STA. 274+00.00
PORTABLE CONCRETE BARRIER (ANCHORED)
TEMPORARY GUARDRAIL
REMOVE EXISTING MEDIAN CROSSOVER
GUARDRAIL BARRICADE
US 29
L EASTERN LOOP
REVISIONS
GRAPHIC SCALE
50 25 0 50 100
PLANS
DETAIL F
DETAIL C
DETAIL II
DETAIL LL
DETAIL GG
DETAIL D
59
60
61
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PROJECT REFERENCE NO. U-2525B

SHEET NO.

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

(-L-) NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.

(-Y13-) NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 862.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.

NOTE: SYSTEM DRAINAGE PIPES THAT ARE LOCATED INSIDE OF THE PROP. LOOPS ARE TO BE LAID BENEATH THE PROP. CURB AND GUTTER.

SEE SHEET 2-N FOR BRIDGE SKETCHES
SEE SHEET 50 FOR -L- PROFILE
SEE SHEET 66 FOR -Y13- PROFILE
SEE SHEET 70 FOR -I13CD- PROFILE
SEE SHEET 71 FOR -Y13LPA- PROFILE
SEE SHEET 72 FOR -Y13LPC- PROFILE
SEE SHEET 72 FOR -Y13LPD- PROFILE
SEE SHEET 73 FOR -Y13RPB- PROFILE
SEE SHEET 74 FOR -Y13RPC- PROFILE
SEE SHEET 76 FOR -LCD- PROFILE
SEE SHEET 78 FOR -Y15- PROFILE
SEE SHEETS S-1 THRU S-11 FOR STRUCTURE PLANS

LOCATION:

TIP NO.:

COUNTY:

DESIGNED BY:

CHECKED BY:

DATE:

5/14/99

REVISIONS

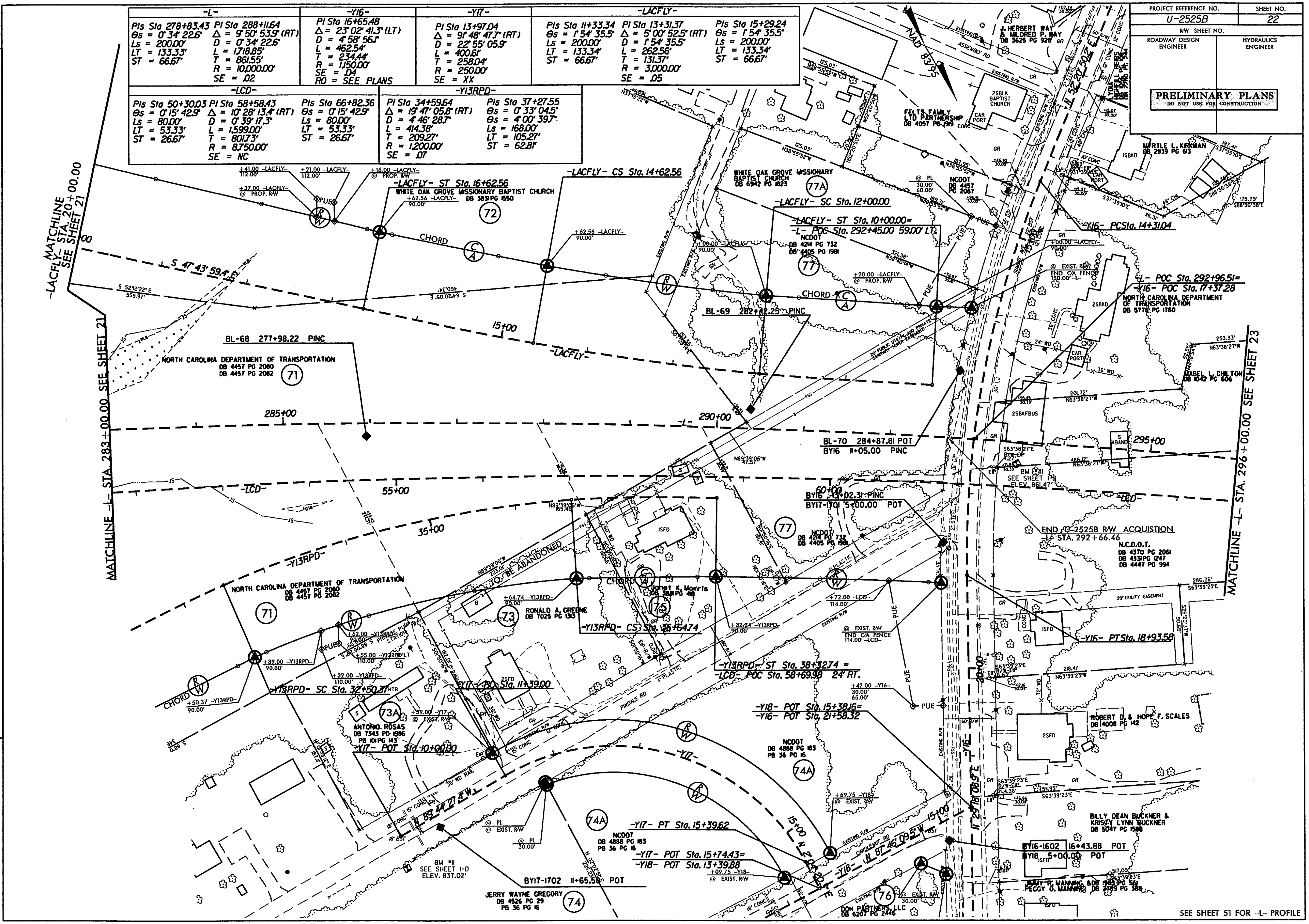
07-01-13 R/W REVISION (DMG) - ELIMINATED THE R/W CLAIM ON PARCEL 74 (JERRY WAYNE GREGORY).

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-		-Y16-	-Y17-	-LACFLY-		
PIs Sta 278+83.43 Θs = 0° 34' 22.6" Ls = 200.00' LT = 133.33' ST = 66.67'	PI Sta 288+11.64 Δ = 9° 50' 53.9" (RT) D = 0° 34' 22.6" L = 1,718.85' T = 861.55' R = 10,000.00' SE = .02	PI Sta 16+65.48 Δ = 23° 02' 41.3" (LT) D = 4° 58' 56.1" L = 462.54' T = 234.44' R = 1,150.00' SE = .04 RO = SEE PLANS	PI Sta 13+97.04 Δ = 91° 48' 47.7" (RT) D = 22° 55' 05.9" L = 400.61' T = 258.04' R = 250.00' SE = XX	PIs Sta 11+33.34 Θs = 1° 54' 35.5" Ls = 200.00' LT = 133.34' ST = 66.67'	PI Sta 13+31.37 Δ = 5° 00' 52.5" (RT) D = 1° 54' 35.5" L = 262.56' T = 131.37' R = 3,000.00' SE = .05	PIs Sta 15+29.24 Θs = 1° 54' 35.5" Ls = 200.00' LT = 133.34' ST = 66.67'

-LCD-			-Y13RPD-	
PIs Sta 50+30.03 Θs = 0° 15' 42.9" Ls = 80.00' LT = 53.33' ST = 26.67'	PI Sta 58+58.43 Δ = 10° 28' 13.4" (RT) D = 0° 39' 17.3" L = 1,599.00' T = 801.73' R = 8,750.00' SE = NC	PIs Sta 66+82.36 Θs = 0° 15' 42.9" Ls = 80.00' LT = 53.33' ST = 26.67'	PI Sta 34+59.64 Δ = 19° 47' 05.8" (RT) D = 4° 46' 28.7" L = 414.38' T = 209.27' R = 1,200.00' SE = .07	PIs Sta 37+27.55 Θs = 0° 33' 04.5" Θs = 4° 00' 39.7" Ls = 168.00' LT = 105.27' ST = 62.81'

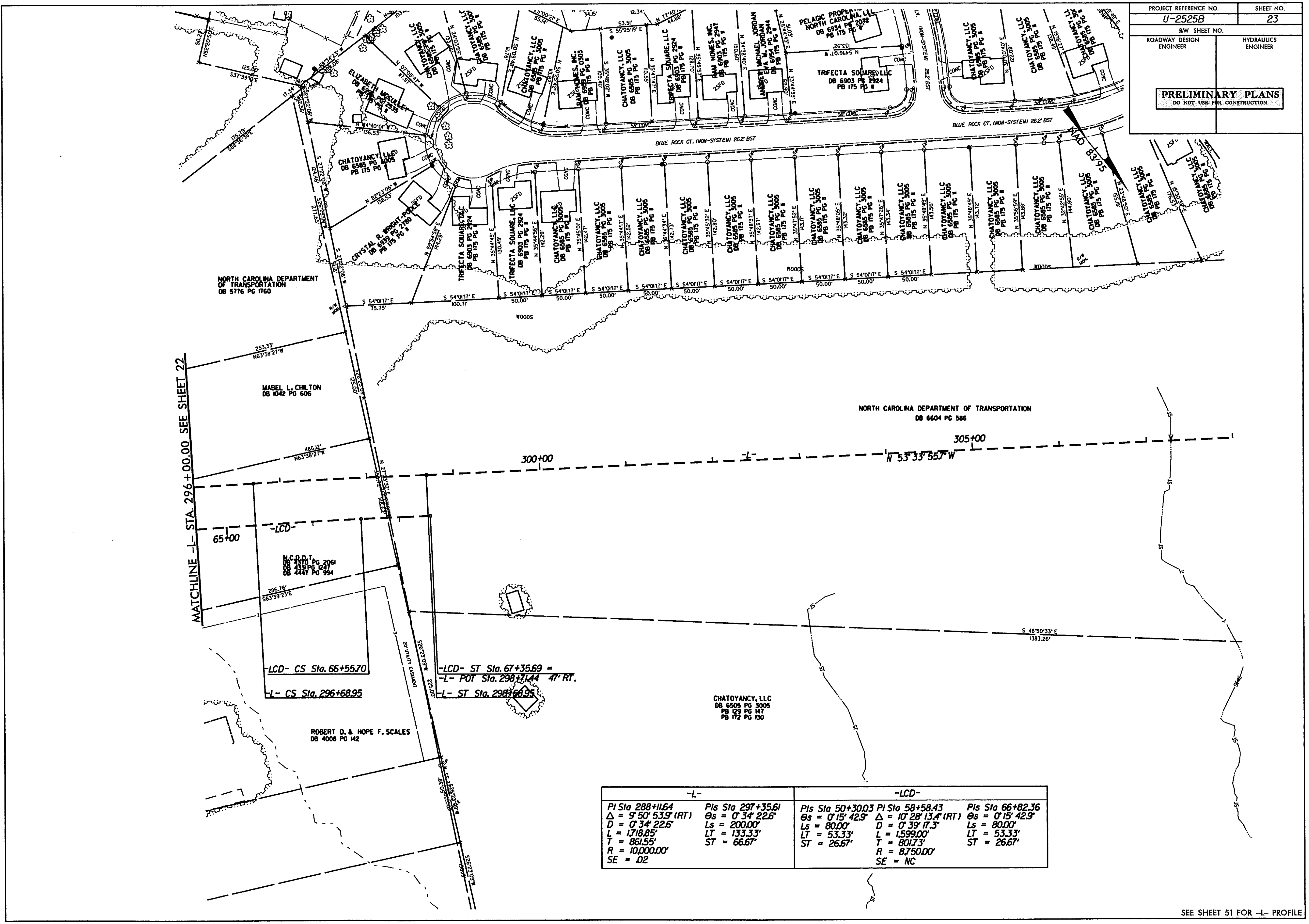

MATCHLINE -LACFLY- STA. 20+00.00 SEE SHEET 21
MATCHLINE -L- STA. 283+00.00 SEE SHEET 21
MATCHLINE -L- STA. 296+00.00 SEE SHEET 23
NAD 83/95
-LACFLY- CS Sta. 14+62.56
-LACFLY- ST Sta. 16+62.56
WHITE OAK GROVE MISSIONARY BAPTIST CHURCH DB 3831 PG 1550
72
-LACFLY- SC Sta. 12+00.00
-LACFLY- ST Sta. 10+00.00= -L- POC Sta. 292+45.00 59.00' LT
WHITE OAK GROVE MISSIONARY BAPTIST CHURCH DB 6942 PG 1823
77A
NCDOT DB 4214 PG 732 DB 4405 PG 1981
77
BL-68 277+98.22 PINC
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DB 4457 PG 2080 DB 4457 PG 2082
71
BL-69 282+42.25 PINC
BL-70 284+87.81 POT
BY16 11+05.00 PINC
-L- POC Sta. 292+96.51= -Y16- POC Sta. 17+37.28
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DB 5776 PG 1760
-Y16- PC Sta. 14+31.04
FELTS FAMILY LTD PARTNERSHIP DB 4057 PG 1919
J. HERBERT WAY & MILDRED P. WAY DB 3625 PG 928
MYRTLE L. KIRKMAN DB 2839 PG 613
MABEL L. CHILTON DB 1042 PG 606
2SBLK BAPTIST CHURCH
CHORD
285+00
290+00
295+00
55+00
60+00
35+00
15+00
-L-
-LCD-
-LACFLY-
-Y13RPD-
-Y16-
-Y17-
-Y18-
S 47° 43' 59.4" E
BY16 13+02.31 PINC
BY17-1701 5+00.00 POT
END U-2525B R/W ACQUISTION -L- STA. 292+66.46
N.C.D.O.T. DB 4370 PG 2061 DB 4331 PG 1247 DB 4447 PG 994
BM #11 SEE SHEET 1-D ELEV. 861.47'
-Y16- PT Sta. 18+93.58
TO BE ABANDONED
RONALD A. GREENE DB 7025 PG 1313
73
-Y13RPD- CS Sta. 36+64.74
-Y13RPD- ST Sta. 38+32.74 = -LCD- POC Sta. 58+69.98 24' RT.
-Y13RPD- SC Sta. 32+60.37
-Y17- POC Sta. 11+39.00
-Y17- POT Sta. 10+00.00
ANTONIO ROSAS DB 7343 PG 1986 PB 101 PG 143
73A
-Y18- POT Sta. 15+38.16= -Y16- POT Sta. 21+58.32
NCDOT DB 4888 PG 183 PB 36 PG 16
74A
-Y17- PT Sta. 15+39.62
-Y17- POT Sta. 15+74.43= -Y18- POT Sta. 13+39.88
BY17-1702 11+65.58 POT
JERRY WAYNE GREGORY DB 4526 PG 29 PB 36 PG 16
74
BM #11 SEE SHEET 1-D ELEV. 837.02'
ROBERT D. & HOPE F. SCALES DB 4008 PG 142
BILLY DEAN BUCKNER & KRISTY LYNN BUCKNER DB 5047 PG 1588
BY16-1602 16+43.88 POT
BY18 5+00.00 POT
JIMMY R. MANNING & PEGGY O. MANNING DB 2143 PG 388
DOH PARTNERS, LLC DB 6207 PG 2446
76
PINDALIS RD
CANDLENUT RD
ASSEMBLY RD
N 89° 44' 27.6" W
N 81° 46' 09.5" W

SEE SHEET 51 FOR -L- PROFILE

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


MATCHLINE -L- STA. 296+00.00 SEE SHEET 22
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DB 5776 PG 1760
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DB 6604 PG 586
MABEL L. CHILTON
DB 1042 PG 606
N.C.D.O.T.
DB 4310 PG 2061
DB 4331 PG 1247
DB 4447 PG 994
ROBERT D. & HOPE F. SCALES
DB 4008 PG 142
CHATOYANCY, LLC
DB 6505 PG 3005
PB 129 PG 147
PB 172 PG 130
ELIZABETH MCCULLEY
CRYSTAL R. WRIGHT-POOLE
TRIFECTA SQUARE, LLC
DB 6903 PG 2924
PB 175 PG 11
CHATOYANCY, LLC
DB 6585 PG 3005
PB 175 PG 11
RAM HOMES, INC.
PELAGIC PROPERTIES NORTH CAROLINA, LLC
MICHAEL JORDAN
ANDREW W. JORDAN
BLUE ROCK CT. (NON-SYSTEM) 26.2' BST
WOODS
CONC
2SFD
300+00
305+00
-L-
N 53°33'55.7" W
65+00
-LCD-
-LCD- CS Sta. 66+55.70
-L- CS Sta. 296+68.95
-LCD- ST Sta. 67+35.69 =
-L- POT Sta. 298+71.44 47' RT.
-L- ST Sta. 298+68.95
20' UTILITY EASEMENT
S 48°50'33" E
1383.26'
S 54°01'17" E
75.79'
100.71'
50.00'
253.33'
N 63°38'27" W
486.12'
286.76'
S 63°39'23" E
R/W MON.
ST

-L-		-LCD-		
PI Sta 288+11.64	PIs Sta 297+35.61	PIs Sta 50+30.03	PI Sta 58+58.43	PIs Sta 66+82.36
Δ = 9° 50' 53.9" (RT)	θs = 0° 34' 22.6"	θs = 0° 15' 42.9"	Δ = 10° 28' 13.4" (RT)	θs = 0° 15' 42.9"
D = 0° 34' 22.6"	Ls = 200.00'	Ls = 80.00'	D = 0° 39' 17.3"	Ls = 80.00'
L = 1,718.85'	LT = 133.33'	LT = 53.33'	L = 1,599.00'	LT = 53.33'
T = 861.55'	ST = 66.67'	ST = 26.67'	T = 801.73'	ST = 26.67'
R = 10,000.00'			R = 8,750.00'	
SE = .02			SE = NC	

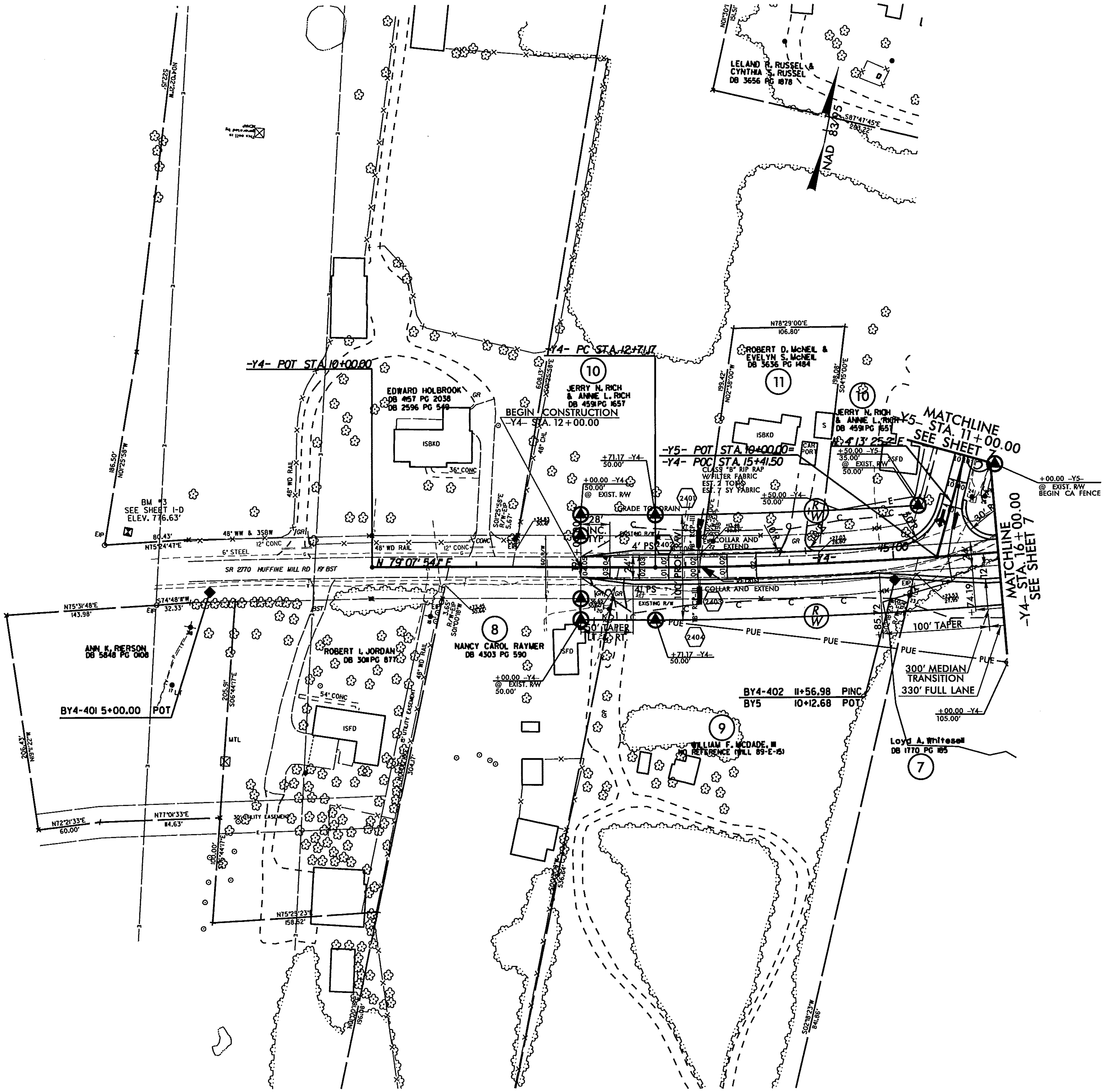
SEE SHEET 51 FOR -L- PROFILE

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y4-
PI Sta 17+37.59
Δ = 13° 59' 43.4" (LT)
D = 1° 30' 28.0"
L = 928.21'
T = 466.43'
R = 3,800.00'
SE = .02
RO = SEE PLANS



LELAND R. RUSSEL & CYNTHIA S. RUSSEL DB 3656 PG 1878
NAD 83/95
S87°47'45"E 281.22'
-Y4- POT STA 10+00.00
-Y4- PC STA 12+71.17
EDWARD HOLBROOK DB 4157 PG 2038 DB 2596 PG 549
JERRY N. RICH & ANNIE L. RICH DB 4591 PG 1657
BEGIN CONSTRUCTION -Y4- STA. 12+00.00
ROBERT D. McNEIL & EVELYN S. McNEIL DB 3636 PG 1484
N78°29'00"E 106.80'
-Y5- POT STA 10+00.00 =
-Y4- POC STA 15+41.50
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
GRADE TO DRAIN
MATCHLINE -Y5- STA. 11+00.00 SEE SHEET 7
MATCHLINE -Y4- STA. 16+00.00 SEE SHEET 7
+00.00 -Y5- @ EXIST. R/W BEGIN CA FENCE
BM #3 SEE SHEET 1-D ELEV. 776.63'
N75°24'41"E
N 79° 07' 54.1" E
SR 2770 HUFFINE MILL RD 19' BST
COLLAR AND EXTEND
4' PS
100' TAPER
300' MEDIAN TRANSITION
330' FULL LANE
NANCY CAROL RAYMER DB 4303 PG 590
ROBERT L. JORDAN DB 3011 PG 877
ANN K. RIERSON DB 5848 PG 0108
BY4-401 5+00.00 POT
BY4-402 11+56.98 PINC
BY5 10+12.68 POT
WILLIAM F. McDADE, III REFERENCE (WILL 89-E-15)
Loyd A. Whitesell DB 1770 PG 185

SEE SHEET 54 FOR -Y4- PROFILE
SEE SHEET 60 FOR -Y5- PROFILE

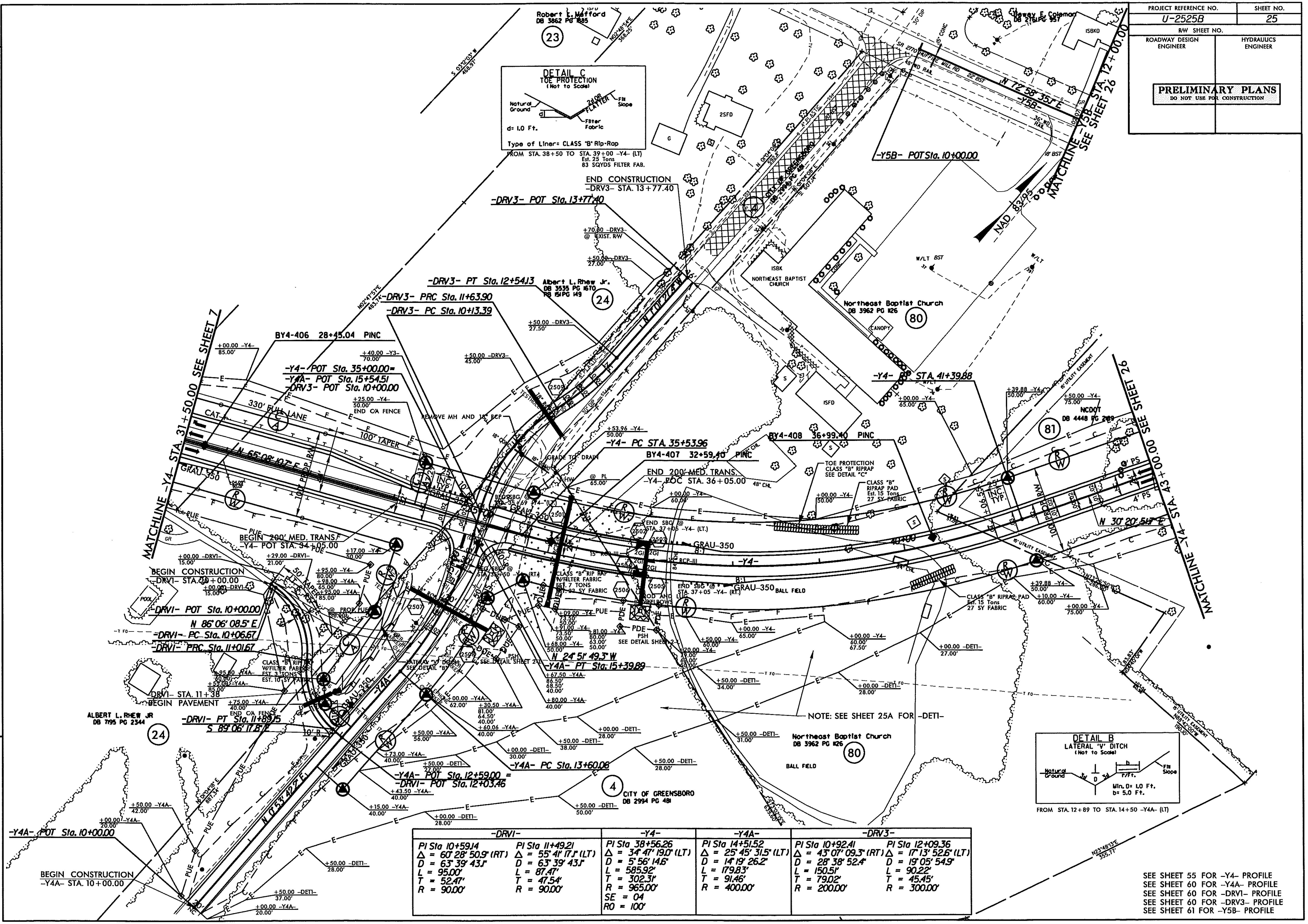
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99

REVISIONS

06-24-13 R/W REVISION (DWG) - REVISED PDE TO PUE AT -Y4- STA.36+00.00 RT., -Y4A- STA.14+50.00 RT., AND REVISED TCE TO PUE FROM -Y4- STA.35+60.00 TO STA.36+81.00 RT. ON PARCEL 4 (CITY OF GREENSBORO).


DETAIL C
TOE PROTECTION
(Not to Scale)
Natural Ground
2:1 OR FLATTER
Fill Slope
Filter Fabric
d= 1.0 Ft.
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 38+50 TO STA. 39+00 -Y4- (LT)
Est. 25 Tons
83 SQYDS FILTER FAB.
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 12+89 TO STA. 14+50 -Y4A- (LT)
Robert L. Mafford
DB 3862 PG 1385
Dewey E. Coleman
Albert L. Rhew Jr.
DB 3535 PG 1670
PB 151 PG 149
Northeast Baptist Church
DB 3962 PG 1126
NORTHEAST BAPTIST CHURCH
NCDOT
DB 4448 PG 269
ALBERT L. RHEW JR
DB 7195 PG 2344
CITY OF GREENSBORO
DB 2994 PG 481
BALL FIELD
23
24
80
81
4
END CONSTRUCTION
-DRV3- STA. 13+77.40
-DRV3- POT Sta. 13+77.40
-DRV3- PT Sta. 12+54.13
-DRV3- PRC Sta. 11+63.90
-DRV3- PC Sta. 10+13.39
-Y5B- POT Sta. 10+00.00
-Y4- POT Sta. 35+00.00=
-Y4A- POT Sta. 15+54.51
-DRV3- POT Sta. 10+00.00
BY4-406 28+45.04 PINC
BY4-407 32+59.40 PINC
BY4-408 36+99.40 PINC
-Y4- PC STA. 35+53.96
-Y4- PT STA. 41+39.88
END 200' MED. TRANS.
-Y4- POC STA. 36+05.00
BEGIN 200' MED. TRANS.
-Y4- POT STA. 34+05.00
BEGIN CONSTRUCTION
-DRV1- STA. 10+00.00
-DRV1- POT Sta. 10+00.00
N 86°06'08.5" E
-DRV1- PC Sta. 10+06.67
-DRV1- PRC Sta. 11+01.67
-DRV1- STA. 11+38
BEGIN PAVEMENT
-DRV1- PT Sta. 11+89.15
S 89°06'17.8" E
N 24°51'49.3" W
-Y4A- PT Sta. 15+39.89
-Y4A- PC Sta. 13+60.08
-Y4A- POT Sta. 12+59.00 =
-DRV1- POT Sta. 12+03.46
-Y4A- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-Y4A- STA. 10+00.00
N 65°08'10.7" E
N 30°20'51.7" E
N 72°58'35.7" E
330' FULL LANE
100' TAPER
GRAU-350
-Y4-
-Y5B-
TOE PROTECTION
CLASS "B" RIPRAP
SEE DETAIL "C"
CLASS "B" RIPRAP PAD
Est. 15 Tons
27 SY FABRIC
NOTE: SEE SHEET 25A FOR -DET1-
MATCHLINE -Y4- STA. 31+50.00 SEE SHEET 7
MATCHLINE -Y4- STA. 43+00.00 SEE SHEET 26
MATCHLINE -Y5B- STA. 12+00.00 SEE SHEET 26
NAD 83/95

-DRV1-		-Y4-	-Y4A-	-DRV3-	
PI Sta 10+59.14	PI Sta 11+49.21	PI Sta 38+56.26	PI Sta 14+51.52	PI Sta 10+92.41	PI Sta 12+09.36
Δ = 60°28'50.9" (RT)	Δ = 55°41'17.1" (LT)	Δ = 34°47'19.0" (LT)	Δ = 25°45'31.5" (LT)	Δ = 43°07'09.3" (RT)	Δ = 17°13'52.6" (LT)
D = 63°39'43.1"	D = 63°39'43.1"	D = 5°56'14.6"	D = 14°19'26.2"	D = 28°38'52.4"	D = 19°05'54.9"
L = 95.00'	L = 87.47'	L = 585.92'	L = 179.83'	L = 150.51'	L = 90.22'
T = 52.47'	T = 47.54'	T = 302.31'	T = 91.46'	T = 79.02'	T = 45.45'
R = 90.00'	R = 90.00'	R = 965.00'	R = 400.00'	R = 200.00'	R = 300.00'
		SE = .04			
		RO = 100'			

SEE SHEET 55 FOR -Y4- PROFILE
SEE SHEET 60 FOR -Y4A- PROFILE
SEE SHEET 60 FOR -DRV1- PROFILE
SEE SHEET 60 FOR -DRV3- PROFILE
SEE SHEET 61 FOR -Y5B- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	25A

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-DET1-

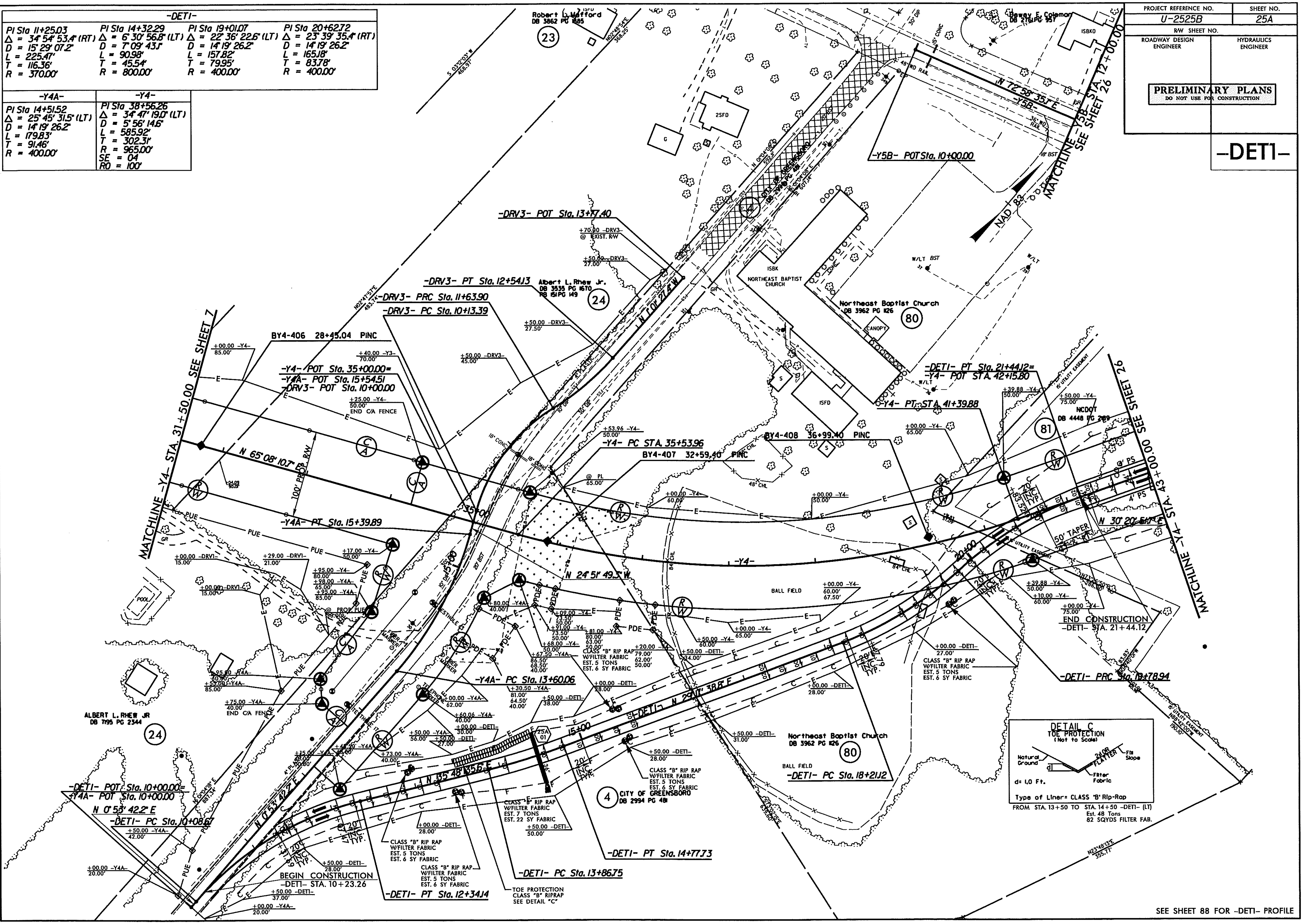
5/14/99

-DET1-			
PI Sta 11+25.03	PI Sta 14+32.29	PI Sta 19+01.07	PI Sta 20+62.72
Δ = 34° 54' 53.4" (RT)	Δ = 6° 30' 56.8" (LT)	Δ = 22° 36' 22.6" (LT)	Δ = 23° 39' 35.4" (RT)
D = 15° 29' 07.2"	D = 7° 09' 43.1"	D = 14° 19' 26.2"	D = 14° 19' 26.2"
L = 225.47'	L = 90.98'	L = 157.82'	L = 165.18'
T = 116.36'	T = 45.54'	T = 79.95'	T = 83.78'
R = 370.00'	R = 800.00'	R = 400.00'	R = 400.00'

-Y4A-	-Y4-
PI Sta 14+51.52	PI Sta 38+56.26
Δ = 25° 45' 31.5" (LT)	Δ = 34° 47' 19.0" (LT)
D = 14° 19' 26.2"	D = 5° 56' 14.6"
L = 179.83'	L = 585.92'
T = 91.46'	T = 302.31'
R = 400.00'	R = 965.00'
	SE = .04
	RO = 100'

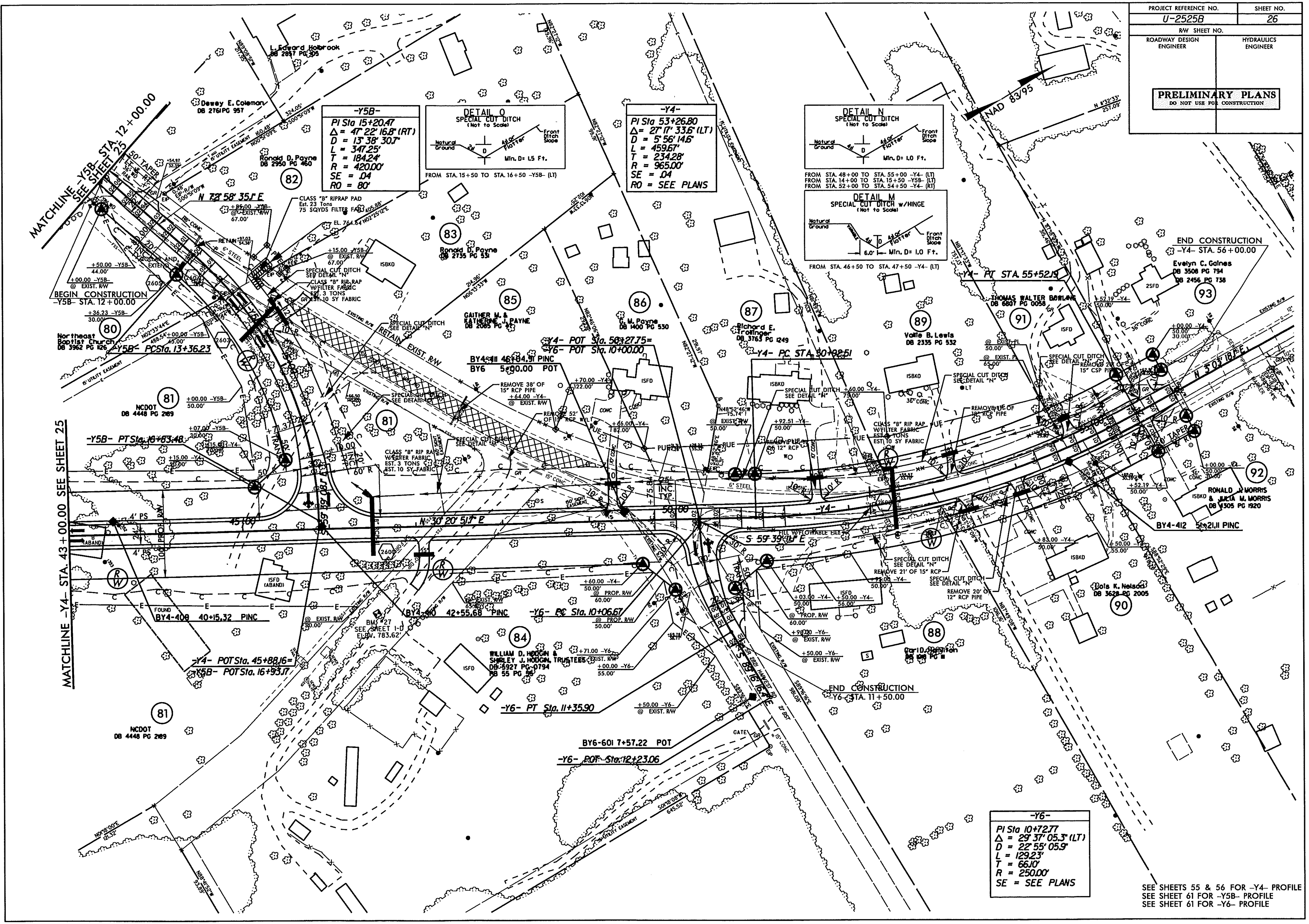
REVISIONS

03-19-13 R/W REVISION (DWG) - COMBINED PARCELS 4 AND 79 INTO PARCEL 4 (CITY OF GREENSBORO), REVISED THE PROPERTY OWNER NAME ON PARCEL 24 (JOHN LEE BROADWAY & TIFFANY N.BROADWAY) TO (ALBERT L.RHEW JR.),COMBINED PARCELS 24 AND 78 INTO PARCEL 24 (ALBERT L.RHEW JR.) AND REVISED THE SOUTHERN PROPERTY LINE,CHANGED THE EXISTING R/W LINES TO PROPERTY LINES BETWEEN PARCEL 24 (ALBERT L.RHEW,JR) AND PARCEL 80 (NORTHEAST BAPTIST CHURCH) - THIS AREA IS DEEDED TO PARCEL 4 (CITY OF GREENSBORO).


Robert L. Mafford
DB 3862 PG 1185
23
Bewey E. Coleman
ISBKD
2SFD
G
NAD 83
MATCHLINE -Y5B- STA. 12+00.00 SEE SHEET 26
N 72° 58' 35.1" E
-Y5B-
-Y5B- POT Sta. 10+00.00
-DRV3- POT Sta. 13+77.40
+70.00 -DRV3-
@ EXIST. R/W
+50.00 -DRV3-
27.00'
-DRV3- PT Sta. 12+54.13
Albert L. Rhew Jr.
DB 3535 PG 1670
PB 151 PG 149
24
-DRV3- PRC Sta. 11+63.90
-DRV3- PC Sta. 10+13.39
+50.00 -DRV3-
27.50'
+50.00 -DRV3-
45.00'
1SBK
NORTHEAST BAPTIST CHURCH
Northeast Baptist Church
DB 3962 PG 1126
80
CANOPY
W/LT BST
W/LT
MATCHLINE -Y4- STA. 31+50.00 SEE SHEET 7
BY4-406 28+45.04 PINC
+00.00 -Y4-
85.00'
+40.00 -Y3-
70.00'
-Y4- POT Sta. 35+00.00=
-Y4A- POT Sta. 15+54.51
-DRV3- POT Sta. 10+00.00
+25.00 -Y4-
50.00'
END C/A FENCE
N 65° 08' 10.7" E
100' PROP. R/W
-Y4A- PT Sta. 15+39.89
PUE
+53.96 -Y4-
50.00'
-Y4- PC STA. 35+53.96
BY4-407 32+59.40 PINC
BY4-408 36+99.40 PINC
@ PL
65.00'
+00.00 -Y4-
60.00'
N 24° 51' 49.3" W
-Y4-
-DET1- PT Sta. 21+44.12=
-Y4- POT STA. 42+15.80
-Y4- PT STA. 41+39.88
+39.88 -Y4-
50.00'
+00.00 -Y4-
65.00'
+50.00 -Y4-
75.00'
NCDOT
DB 4448 PG 289
81
MATCHLINE -Y4- STA. 43+00.00 SEE SHEET 26
N 30° 20' 54.7" E
50' TAPER
4' PS
20' INC. TYP.
BALL FIELD
+00.00 -Y4-
60.00'
67.50'
+39.88 -Y4-
50.00'
+10.00 -Y4-
60.00'
+00.00 -Y4-
75.00'
END CONSTRUCTION
-DET1- STA. 21+44.12
-DET1- PRC Sta. 19+78.94
+00.00 -DET1-
27.00'
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 5 TONS
EST. 6 SY FABRIC
+00.00 -DET1-
28.00'
Northeast Baptist Church
DB 3962 PG 1126
80
BALL FIELD
-DET1- PC Sta. 18+21.12
+29.00 -DRV1-
21.00'
+00.00 -DRV1-
15.00'
+00.00 -DRV1-
15.00'
POOL
+17.00 -Y4-
50.00'
+95.00 -Y4-
80.00'
+98.00 -Y4A-
65.00'
+95.00 -Y4A-
85.00'
+80.00 -Y4A-
40.00'
+09.00 -Y4-
73.50'
+91.00 -Y4A-
73.50'
50.00'
+68.00 -Y4A-
50.00'
+67.50 -Y4A-
86.50'
68.50'
40.00'
+81.00 -Y4-
80.00'
63.00'
60.00'
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 5 TONS
EST. 6 SY FABRIC
+20.00 -Y4-
79.00'
62.00'
50.00'
+50.00 -Y4-
65.00'
+00.00 -Y4-
+50.00 -DET1-
34.00'
+95.00 -Y4A-
40.00'
+50.00 -Y4A-
85.00'
+75.00 -Y4A-
40.00'
END C/A FENCE
-Y4A- PC Sta. 13+60.06
+30.50 -Y4A-
81.00'
64.50'
40.00'
+00.00 -DET1-
28.00'
+50.00 -DET1-
38.00'
+00.00 -Y4A-
62.00'
+60.06 -Y4A-
40.00'
+00.00 -DET1-
30.00'
+50.00 -Y4A-
56.00'
+50.00 -DET1-
27.00'
+73.00 -Y4A-
40.00'
ALBERT L. RHEW JR
DB 7195 PG 2344
24
-DET1- POT Sta. 10+00.00=
-Y4A- POT Sta. 10+00.00
N 0° 53' 42.2" E
-DET1- PC Sta. 10+08.67
+50.00 -Y4A-
42.00'
+00.00 -Y4A-
20.00'
N 0° 53' 42.2" E
N 35° 48' 35.6" E
N 29° 17' 38.8" E
-DET1-
15+00
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 7 TONS
EST. 22 SY FABRIC
+50.00 -DET1-
50.00'
+00.00 -DET1-
28.00'
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 5 TONS
EST. 6 SY FABRIC
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 5 TONS
EST. 6 SY FABRIC
+50.00 -DET1-
28.00'
BEGIN CONSTRUCTION
-DET1- STA. 10+23.26
+50.00 -DET1-
37.00'
+00.00 -Y4A-
20.00'
-DET1- PT Sta. 12+34.14
TOE PROTECTION
CLASS "B" RIPRAP
SEE DETAIL "C"
-DET1- PC Sta. 13+86.75
4
CITY OF GREENSBORO
DB 2994 PG 481
+50.00 -DET1-
28.00'
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 5 TONS
EST. 6 SY FABRIC
+50.00 -DET1-
31.00'
-DET1- PT Sta. 14+77.73
20' INC. TYP.
15' UTILITY EASEMENT
N88°42'00"W
190.10'
N23°48'13"E
355.77'
DETAIL C
TOE PROTECTION
(Not to Scale)
Natural Ground
d
2:1 OR FLATTER
Fill Slope
Filter Fabric
d= 1.0 Ft.
Type of Liner= CLASS 'B' Rip-Rap
FROM STA. 13+50 TO STA. 14+50 -DET1- (LT)
Est. 48 Tons
82 SQYDS FILTER FAB.

SEE SHEET 88 FOR -DET1- PROFILE

5/14/99



PROJECT REFERENCE NO.	SHEET NO.
U-2525B	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y5B-
PI Sta 15+20.47
Δ = 47° 22' 16.8" (RT)
D = 13° 38' 30.7"
L = 347.25'
T = 184.24'
R = 420.00'
SE = .04
RO = 80'

DETAIL O
SPECIAL CUT DITCH
(Not to Scale)
Min. D= 1.5 Ft.
FROM STA. 15+50 TO STA. 16+50 -Y5B- (LT)

-Y4-
PI Sta 53+26.80
Δ = 27° 17' 33.6" (LT)
D = 5° 56' 14.6"
L = 459.67'
T = 234.28'
R = 965.00'
SE = .04
RO = SEE PLANS

DETAIL N
SPECIAL CUT DITCH
(Not to Scale)
Min. D= 1.0 Ft.
FROM STA. 48+00 TO STA. 55+00 -Y4- (LT)
FROM STA. 14+00 TO STA. 15+50 -Y5B- (LT)
FROM STA. 52+00 TO STA. 54+50 -Y4- (RT)

DETAIL M
SPECIAL CUT DITCH w/HINGE
(Not to Scale)
6.0' Min. D= 1.0 Ft.
FROM STA. 46+50 TO STA. 47+50 -Y4- (LT)

-Y6-
PI Sta 10+72.77
Δ = 29° 37' 05.3" (LT)
D = 22° 55' 05.9"
L = 129.23'
T = 66.10'
R = 250.00'
SE = SEE PLANS

SEE SHEETS 55 & 56 FOR -Y4- PROFILE
SEE SHEET 61 FOR -Y5B- PROFILE
SEE SHEET 61 FOR -Y6- PROFILE

MATCHLINE -Y5B- STA. 12+00.00 SEE SHEET 25
MATCHLINE -Y4- STA. 43+00.00 SEE SHEET 25
BEGIN CONSTRUCTION
-Y5B- STA. 12+00.00
END CONSTRUCTION
-Y4- STA. 56+00.00
END CONSTRUCTION
-Y6- STA. 11+50.00
NAD 83/95
Natural Ground
Front Ditch Slope
4:1 or Flatter
L. Edward Holbrook
DB 2857 PG 305
Dewey E. Coleman
DB 2761 PG 957
Ronald D. Payne
DB 2950 PG 460
Ronald D. Payne
DB 2735 PG 551
Gaither M. & Katherine J. Payne
DB 2085 PG 1
G. M. Payne
DB 1400 PG 530
Richard E. Trollinger
DB 3763 PG 1249
Vallie B. Lewis
DB 2335 PG 532
THOMAS WALTER BOWLING
DB 6807 PG 0058
Evelyn C. Gaines
DB 3508 PG 794
DB 2456 PG 738
RONALD J. MORRIS & JULIA M. MORRIS
DB 4305 PG 1920
Lois K. Nelson
DB 3628 PG 2005
Northeast Baptist Church
DB 3962 PG 1126
NCDOT
DB 4448 PG 2169
WILLIAM D. HODGIN & SHIRLEY J. HODGIN, TRUSTEES
DB 5927 PG 0794
PB 55 PG 56
80
81
82
83
84
85
86
87
88
89
90
91
92
93
CLASS "B" RIPRAP PAD
Est. 23 Tons
75 SQYDS FILTER FAB.
EL. 764.64
CLASS "B" RIP RAP W/FILTER FABRIC
EST. 3 TONS
EST. 10 SY FABRIC
SPECIAL CUT DITCH SEE DETAIL "N"
SPECIAL CUT DITCH SEE DETAIL "O"
RETAIN EXIST. R/W
REMOVE 38' OF 15" RCP PIPE
REMOVE 21' OF 15" RCP
REMOVE 20' OF 12" RCP PIPE
FILL W/FLOWABLE FILL
-Y5B- PC Sta. 13+36.23
-Y5B- PT Sta. 16+83.48
-Y4- POT Sta. 45+88.16 =
-Y5B- POT Sta. 16+93.17
-Y4- POT Sta. 50+27.75 =
-Y6- POT Sta. 10+00.00
-Y4- PC STA. 50+92.51
-Y4- PT STA. 55+52.19
-Y6- PC Sta. 10+06.67
-Y6- PT Sta. 11+35.90
-Y6- POT Sta. 12+23.06
BY4-409 40+15.32 PINC
BY4-410 42+55.68 PINC
BY4-411 46+84.91 PINC
BY6 5+00.00 POT
BY4-412 51+21.11 PINC
BY6-601 7+57.22 POT
BM #27
SEE SHEET 1-D
ELEV. 783.62'
N 72° 58' 35.1" E
N 30° 20' 51.1" E
S 59° 39' 11.1" E
N 3° 05' 18.7" E
50' TAPER
ISBKD
ISFD
ISFD (ABAND)
CONC
15' UTILITY EASEMENT
EXISTING R/W
@ EXIST. R/W
@ PROP. R/W
GATE

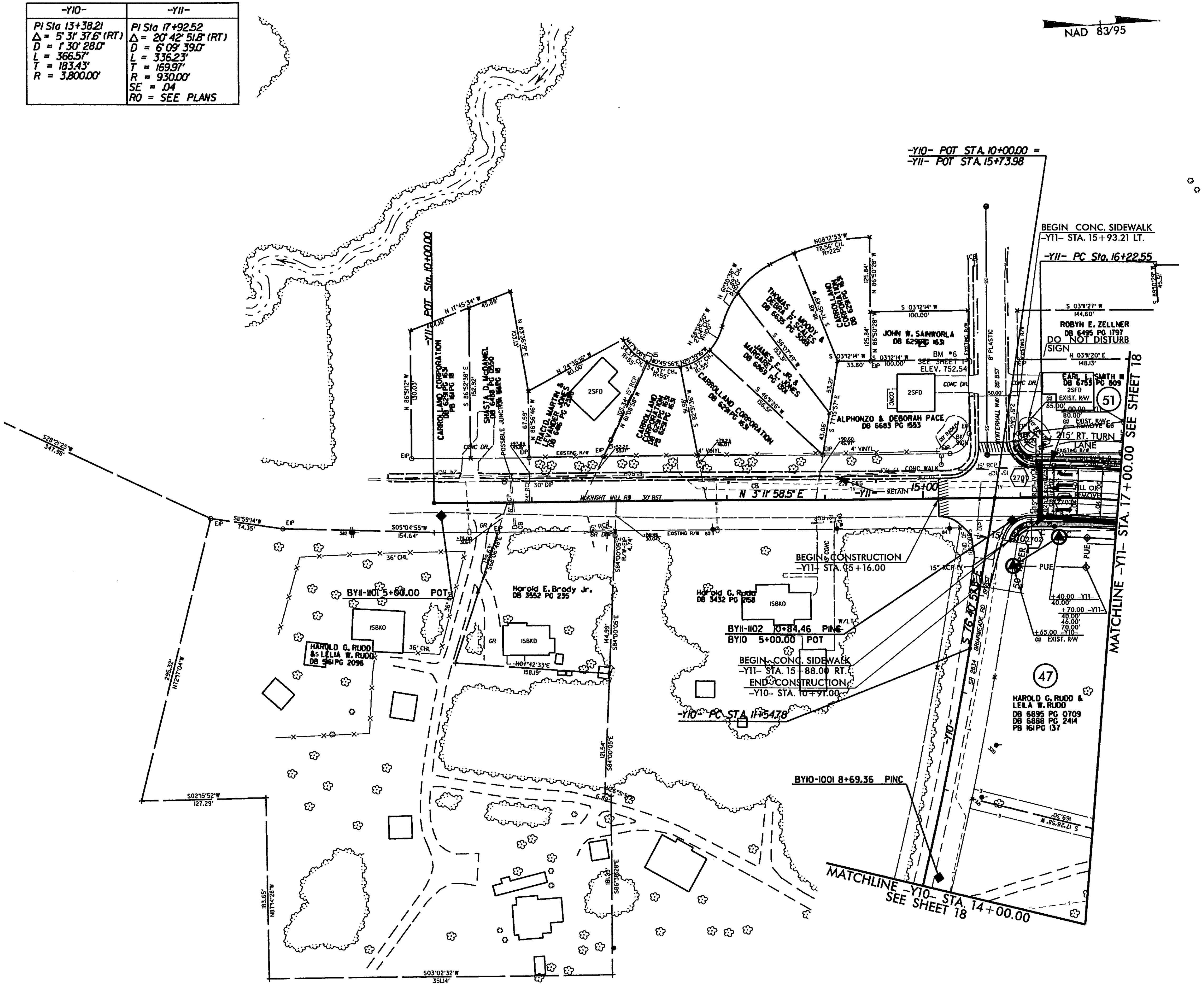
5/14/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y10-	-Y11-
PI Sta 13+38.21	PI Sta 17+92.52
Δ = 5° 31' 37.6" (RT)	Δ = 20° 42' 51.8" (RT)
D = 1° 30' 28.0"	D = 6° 09' 39.0"
L = 366.57'	L = 336.23'
T = 183.43'	T = 169.97'
R = 3,800.00'	R = 930.00'
	SE = .04
	RO = SEE PLANS



NAD 83/95
-Y10- POT STA. 10+00.00 =
-Y11- POT STA. 15+73.98
BEGIN CONC. SIDEWALK
-Y11- STA. 15+93.21 LT.
-Y11- PC Sta. 16+22.55
-Y11- POT Sta. 10+00.00
CARROLLAND CORPORATION DB 6291 PG 1651 PB 161 PG 18
SHASTA D. McDANIEL DB 6488 PG 0550
TRACIO MARTIN & LEVANDER JONES DB 6416 PG 2306
CARROLLAND CORPORATION DB 6291 PG 1651
THOMAS L. MOODY & DEBRA S. SALES DB 6635 PG 2068
JAMES E. JR. & MARGARET E. JONES DB 6869 PG 1301
JOHN W. SAINWORLA DB 6291 PG 1651
BM #6 SEE SHEET 1 ELEV. 752.54
ALPHONZO & DEBORAH PACE DB 6683 PG 1553
ROBYN E. ZELLNER DB 6495 PG 1797
DO NOT DISTURB SIGN
EARL L. SMITH III DB 6753 PG 809
51
215' RT. TURN LANE
FILL OR REMOVE
MATCHLINE -Y11- STA. 17+00.00 SEE SHEET 18
MCKNIGHT MILL RD 30' BST
N 3° 11' 58.5" E
-Y11- 15+00
BEGIN CONSTRUCTION -Y11- STA. 15+16.00
BY11-1101 5+00.00 POT
Harold E. Brody Jr. DB 3552 PG 235
Harold G. Rudd DB 3432 PG 268
HAROLD G. RUDD & LELIA W. RUDD DB 5161 PG 2096
BY11-1102 10+84.46 PINC
BY10 5+00.00 POT
BEGIN CONC. SIDEWALK -Y11- STA. 15+88.00 RT.
END CONSTRUCTION -Y10- STA. 10+91.00
-Y10- PC STA. 11+54.78
BY10-1001 8+69.36 PINC
BRIARHEADE RD
-Y10-
47
HAROLD G. RUDD & LEILA W. RUDD DB 6895 PG 0709 DB 6888 PG 2414 PB 161 PG 137
PUE
@ EXIST. R/W
MATCHLINE -Y10- STA. 14+00.00 SEE SHEET 18
S28°21'25"W 347.98'
S11°59'14"W 74.35'
S05°04'55"W 154.64'
N21°07'04"W 295.32'
S02°15'52"W 127.29'
S03°02'32"W 351.14'
N87°14'28"W 183.65'
S84°00'05"E 144.99'
S84°00'05"E 121.54'
S 76° 40' 53" E
1SBKD
2SFD

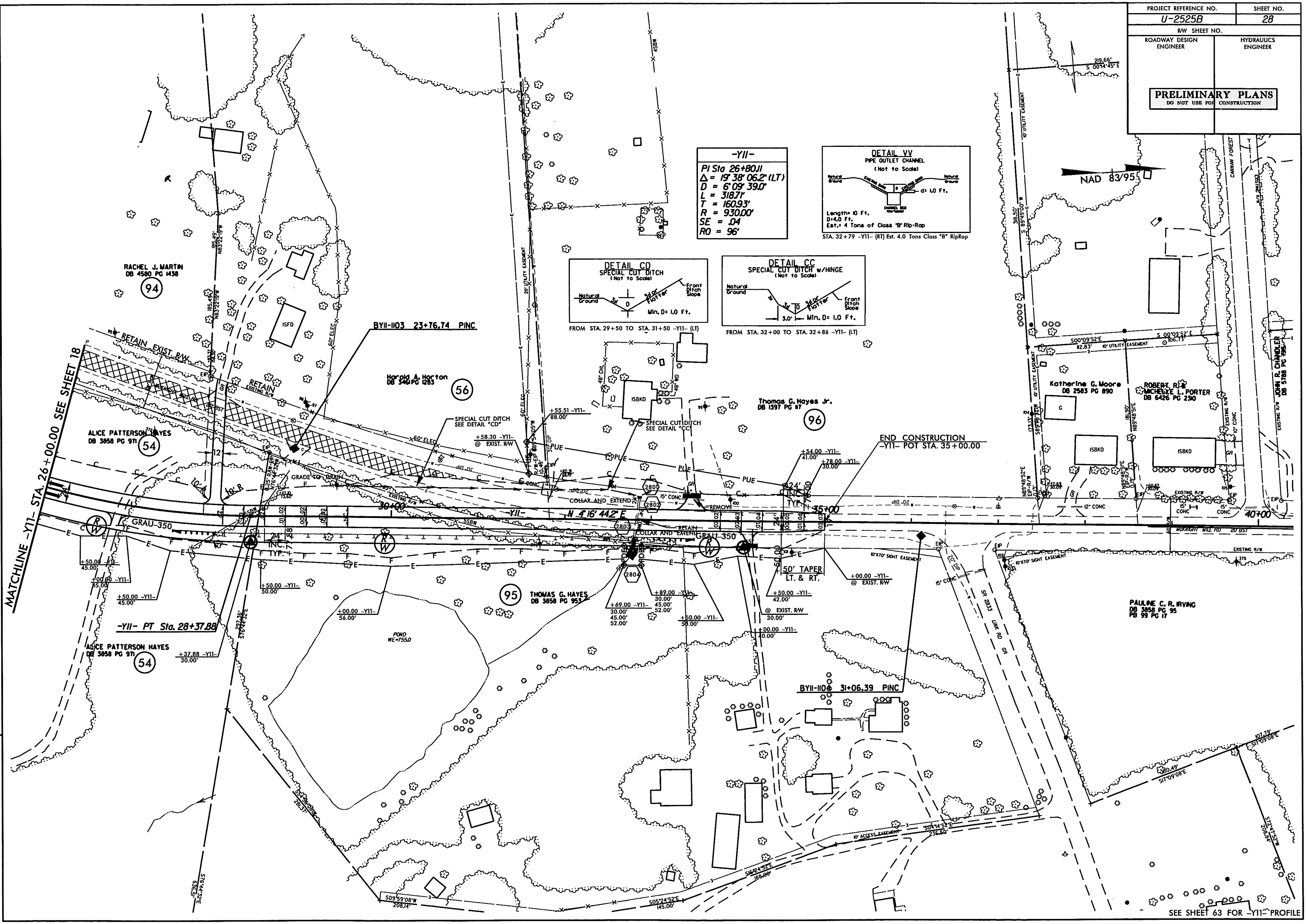
SEE SHEET 63 FOR -Y11- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99

REVISIONS



-Y11-
PI Sta 26+80.11
Δ = 19° 38' 06.2" (LT)
D = 6° 09' 39.0"
L = 318.71'
T = 160.93'
R = 930.00'
SE = .04
RO = 96'

DETAIL VV
PIPE OUTLET CHANNEL
(Not to Scale)
Length= 10 Ft.
D=4.0 Ft.
Est.= 4 Tons of Class "B" Rip-Rap
STA. 32+79 -Y11- (RT) Est. 4.0 Tons Class "B" RipRap

DETAIL CD
SPECIAL CUT DITCH
(Not to Scale)
Min. D= 1.0 Ft.
FROM STA. 29+50 TO STA. 31+50 -Y11- (LT)

DETAIL CC
SPECIAL CUT DITCH w/HINGE
(Not to Scale)
Min. D= 1.0 Ft.
FROM STA. 32+00 TO STA. 32+86 -Y11- (LT)

Natural Ground
Front Ditch Slope
3:1 or Flatter
d= 1.0 Ft.
MATCHLINE -Y11- STA. 26+00.00 SEE SHEET 18
RACHEL J. MARTIN
DB 4580 PG 1438
94
Harold A. Horton
DB 3461 PG 1283
56
ALICE PATTERSON HAYES
DB 3858 PG 971
54
Thomas G. Hayes Jr.
DB 1397 PG 87
96
THOMAS G. HAYES
DB 3858 PG 953
95
Katherine G. Moore
DB 2583 PG 890
ROBERT R. & MICHELLE L. PORTER
DB 6426 PG 2510
JOHN R. CHANDLER
DB 5788 PG 996
PAULINE C. R. IRVING
DB 3858 PG 95
PB 99 PG 17
BY11-1103 23+76.74 PINC
BY11-1106 31+06.39 PINC
RETAIN EXIST. R/W
RETAIN EXISTING R/W
SPECIAL CUT DITCH SEE DETAIL "CD"
SPECIAL CUT DITCH SEE DETAIL "CC"
END CONSTRUCTION -Y11- POT STA. 35+00.00
-Y11- PT Sta. 28+37.88
-Y11- N 4°16'44.2" E
COLLAR AND EXTEND
REMOVE
GRAU-350
24' INC. TYP.
50' TAPER LT. & RT.
10'X70' SIGHT EASEMENT
10' ACCESS EASEMENT
10' UTILITY EASEMENT
20' UTILITY EASEMENT
SR 2833 LINK RD
CANNAN FOREST
McKNIGHT MILL RD
POND WE=755.0
NAD 83/95
30+00
35+00
40+00
SEE SHEET 63 FOR -Y11- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	29

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

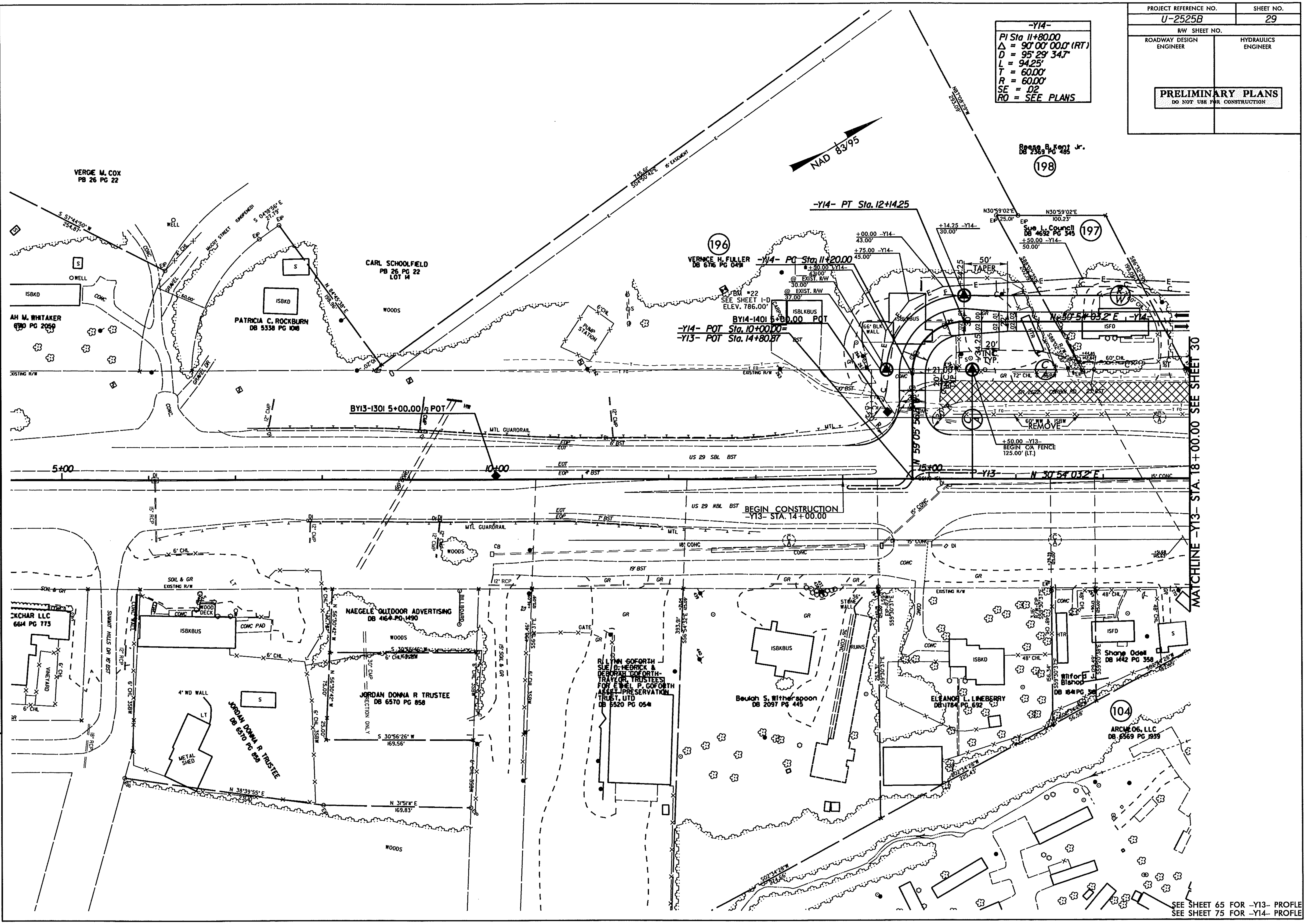
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99

REVISIONS

03-19-13 R/W REVISION (DWG) - ADDED PARCEL 196 (VERNICE H.FULLER),PARCEL 197 (SUE L.COUNCIL),AND PARCEL 198 (REECE B.KENT,JR.) FOR THE R/W AND TCE NEEDED FOR THE NEW -Y14- SERVICE ROAD. ALSO,REVISED THE C/A LOCATION ALONG THESE PARCELS.

-Y14-
PI Sta 11+80.00
Δ = 90° 00' 00.0" (RT)
D = 95° 29' 34.7"
L = 94.25'
T = 60.00'
R = 60.00'
SE = .02
RO = SEE PLANS



NAD 83/95
VERGIE M. COX PB 26 PG 22
S 57°44'50" W 254.87'
CARL SCHOOLFIELD PB 26 PG 22 LOT 14
PATRICIA C. ROCKBURN DB 5338 PG 1018
N 84°45'38" E 186.98'
S 04°18'56" E 27.79'
MCCOY STREET (UNOPENED)
WOODS
ISBKD
AH M. WHITAKER 6780 PG 2059
745.60' S04°30'42"E 15' EASEMENT
N83°08'23"W 293.09'
PUMP STATION
Reese B. Kent Jr. DB 2369 PG 485
198
196
VERNICE H. FULLER DB 6716 PG 0491
197
Sue L. Council DB 4692 PG 345
-Y14- PT Sta. 12+14.25
-Y14- PC Sta. 11+20.00
+00.00 -Y14- 43.00'
+75.00 -Y14- 45.00'
+50.00 -Y14- 43.00'
@ EXIST. R/W 30.00'
@ EXIST. R/W 37.00'
+14.25 -Y14- 30.00'
+50.00 -Y14- 50.00'
N30°59'02"E 25.01'
N30°59'02"E 100.23'
BM #22 SEE SHEET 1-D ELEV. 786.00'
BY14-1401 5+00.00 POT
-Y14- POT Sta. 10+00.00=
-Y13- POT Sta. 14+80.87
50' TAPER
20' INC. TYP.
66' BLK WALL
ISBLKBUS
ISFD
N 30°54'03.2" E -Y14-
S88°02'35"E 202.16'
S86°32'29"E 199.05'
SR 2622 CORBIN RD 23' BST
72" CHL & ISBW
60' WW & ISBW REMOVE
+50.00 -Y13- BEGIN C/A FENCE 125.00' (LT.)
N 59°05'56" W
15+00
-Y13- N 30°54'03.2" E
BEGIN CONSTRUCTION -Y13- STA. 14+00.00
MATCHLINE -Y13- STA. 18+00.00 SEE SHEET 30
BY13-1301 5+00.00 POT
5+00
10+00
US 29 SBL BST
US 29 NBL BST
MTL GUARDRAIL
EXISTING R/W
15' CONC
18' CONC
19' BST
60" CMP
12" CMP
15" RCP
12" RCP
ISBKBUS
CONC PAD
WOOD DECK
NAEGELE OUTDOOR ADVERTISING DB 4164 PG 1490
JORDAN DONNA R TRUSTEE DB 6570 PG 858
S 30°56'26" W 169.56'
N 38°39'55" E 230.00'
N 31°51'11" E 169.83'
4" WD WALL
METAL SHED
SUMMIT HILLS DR 16' BST
VINEYARD
CKCHAR LLC 6614 PG 773
BILLBOARD
R. LYNN GOFORTH SUE D. HEDRICK & DEBORAH GOFORTH-TRAYLOR, TRUSTEES FOR ETHEL P. GOFORTH ASSET PRESERVATION TRUST, UTD DB 6520 PG 0541
GATE
STONE WALL
RUINS
Beulah S. Witherspoon DB 2097 PG 445
ELEANOR L. LINEBERRY DB 1784 PG 692
Wilford Bishop DB 1841 PG 58
Shane Odell DB 1442 PG 358
104
ARCWOOD, LLC DB 6569 PG 1939
S02°34'28"W 225.43'
WOODS
SEE SHEET 65 FOR -Y13- PROFLE
SEE SHEET 75 FOR -Y14- PROFLE

5/14/99

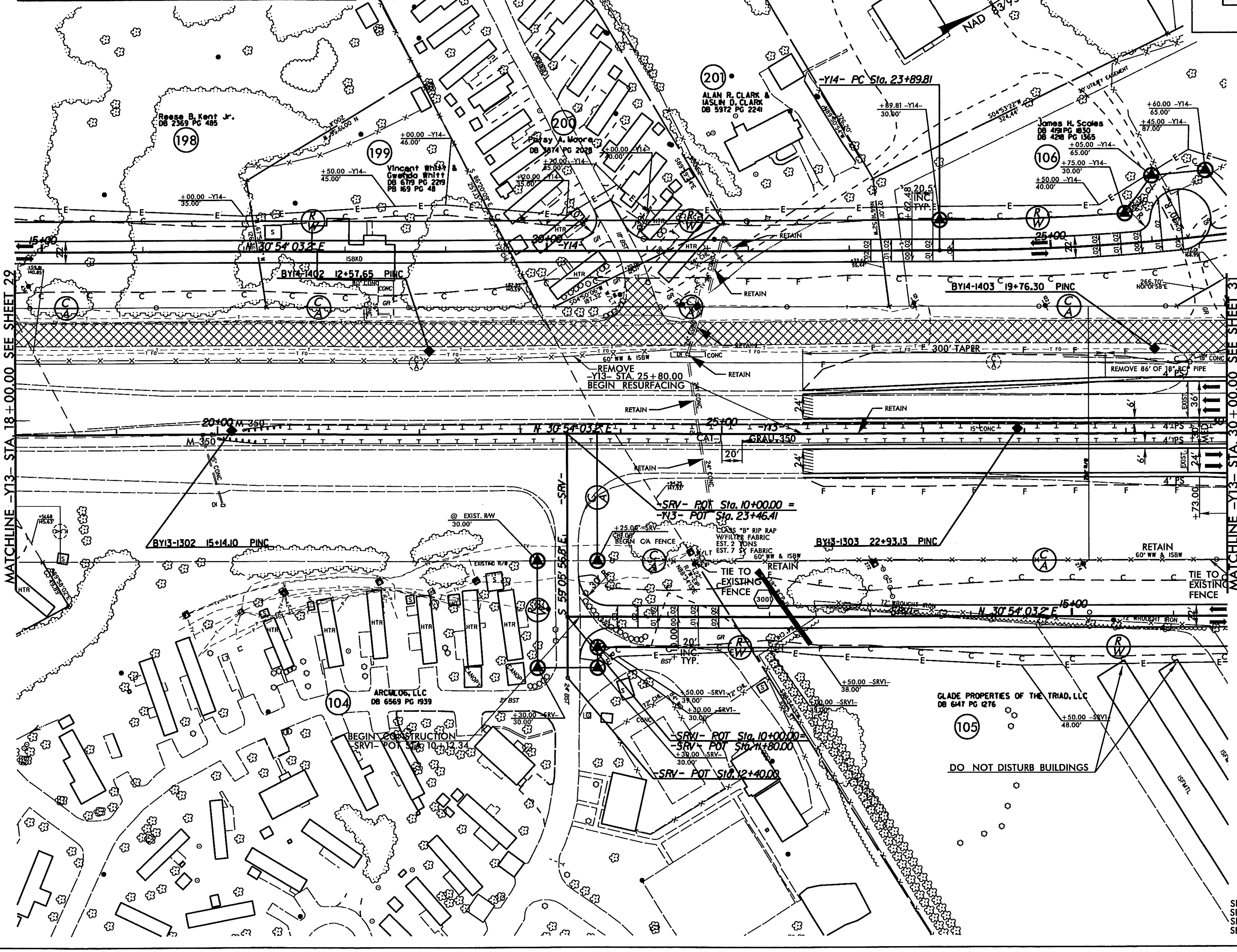
REVISIONS

03-19-13 R/W REVISION (DWG) - ADDED PARCEL 198 (REECE B.KENT,JR.),PARCEL 199 (VINCENT WHITT & GWENDA WHITT),PARCEL 200 (PATSY A.MOORE), PARCEL 201(ALAN R.CLARK & IASLIN D.CLARK) FOR THE R/W AND TCE NEEDED FOR THE NEW -Y14- SERVICE ROAD. ALSO,REVISED THE C/A LOCATION ALONG THESE PARCELS. REVISED THE R/W,C/A,AND ADDED TCE ON PARCEL 106 (JAMES H.SCALES)FOR THE NEW -Y14- SERVICE ROAD.

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y14-	-Y13CD-	
PI Sta 25+87.56	PI Sta 12+45.06	PI Sta 17+35.04
Δ = 9° 02' 43.5" (LT)	Δ = 3° 30' 33.1" (LT)	Δ = 3° 30' 33.1" (RT)
D = 2° 17' 30.6"	D = 0° 42' 58.3"	D = 0° 42' 58.3"
L = 394.68'	L = 489.97'	L = 489.97'
T = 197.75'	T = 245.06'	T = 245.06'
R = 2,500.00'	R = 8,000.00'	R = 8,000.00'
SE = .02	SE = NC	SE = NC
RO = 41'		


MATCHLINE -Y13- STA. 18+00.00 SEE SHEET 29
MATCHLINE -Y13- STA. 30+00.00 SEE SHEET 31
NAD 83/95
Reese B. Kent Jr.
DB 2369 PG 485
198
199
Vincent Whitt & Gwenda Whitt
DB 6119 PG 229
PB 169 PG 48
200
Patsy A. Moore
DB 3874 PG 2028
201
ALAN R. CLARK & IASLIN D. CLARK
DB 5972 PG 2241
-Y14- PC Sta. 23+89.81
James H. Scales
DB 4191 PG 1830
DB 4218 PG 1365
106
BY14-1402 12+57.65 PINC
BY14-1403 19+76.30 PINC
N 30° 54' 03.2" E
300' TAPER
REMOVE 86' OF 18" RCP PIPE
REMOVE
-Y13- STA. 25+80.00
BEGIN RESURFACING
RETAIN
GRAU-350
M-350
-SRV- POT Sta. 10+00.00 =
-Y13- POT Sta. 23+46.41
BY13-1302 15+14.10 PINC
BY13-1303 22+93.13 PINC
@ EXIST. R/W 30.00'
BEGIN C/A FENCE
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
TIE TO EXISTING FENCE
RETAIN 60' WW & ISBW
S 59° 05' 56.8" E
ARCHLOG, LLC
DB 6569 PG 1939
104
BEGIN CONSTRUCTION
-SRV1- POT Sta. 10+12.34
-SRV1- POT Sta. 10+00.00 =
-SRV- POT Sta. 11+80.00
-SRV- POT Sta. 12+40.00
GLADE PROPERTIES OF THE TRIAD, LLC
DB 6147 PG 1276
105
DO NOT DISTURB BUILDINGS
20' INC TYP.

SEE SHEET 65 FOR -Y13- PROFILE
SEE SHEET 75 FOR -Y14- PROFILE
SEE SHEET 64 FOR -SRV- PROFILE
SEE SHEET 64 FOR -ISRV1- PROFILE

REVISIONS

06-24-13 R/W REVISION (DWG) - ELIMINATED THE PUE FROM PARCEL 108 (MARSHALL F. SCALES), PARCEL 110 (JAMES H. SCALES) AND PARCEL 112 (QUAIL OAKS HOMEOWNERS ASSOCIATION).

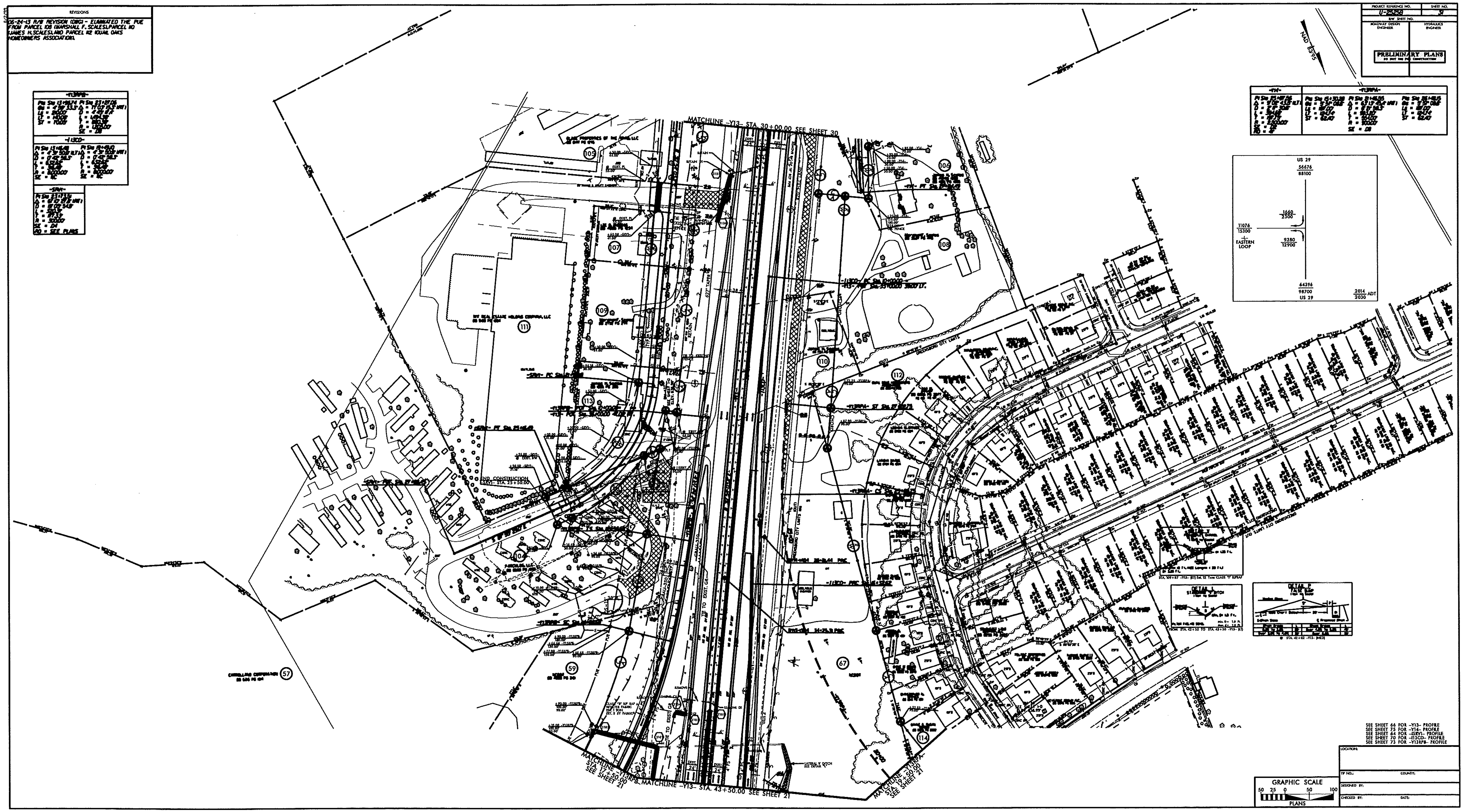
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	31

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



MATCHLINE -Y13- STA. 30+00.00 SEE SHEET 30
MATCHLINE -Y13- STA. 43+50.00 SEE SHEET 21
SEE SHEET 21
END CONSTRUCTION
NAD 83/95
105
106
107
108
109
110
111
112
113
114
104
57
59
67
US 29
56676
88100
1660
2300
11076
15300
-L-
EASTERN LOOP
9380
12900
64396
98700
US 29
2014
2030
ADT
DETAIL P
GRAPHIC SCALE
50 25 0 50 100
PLANS

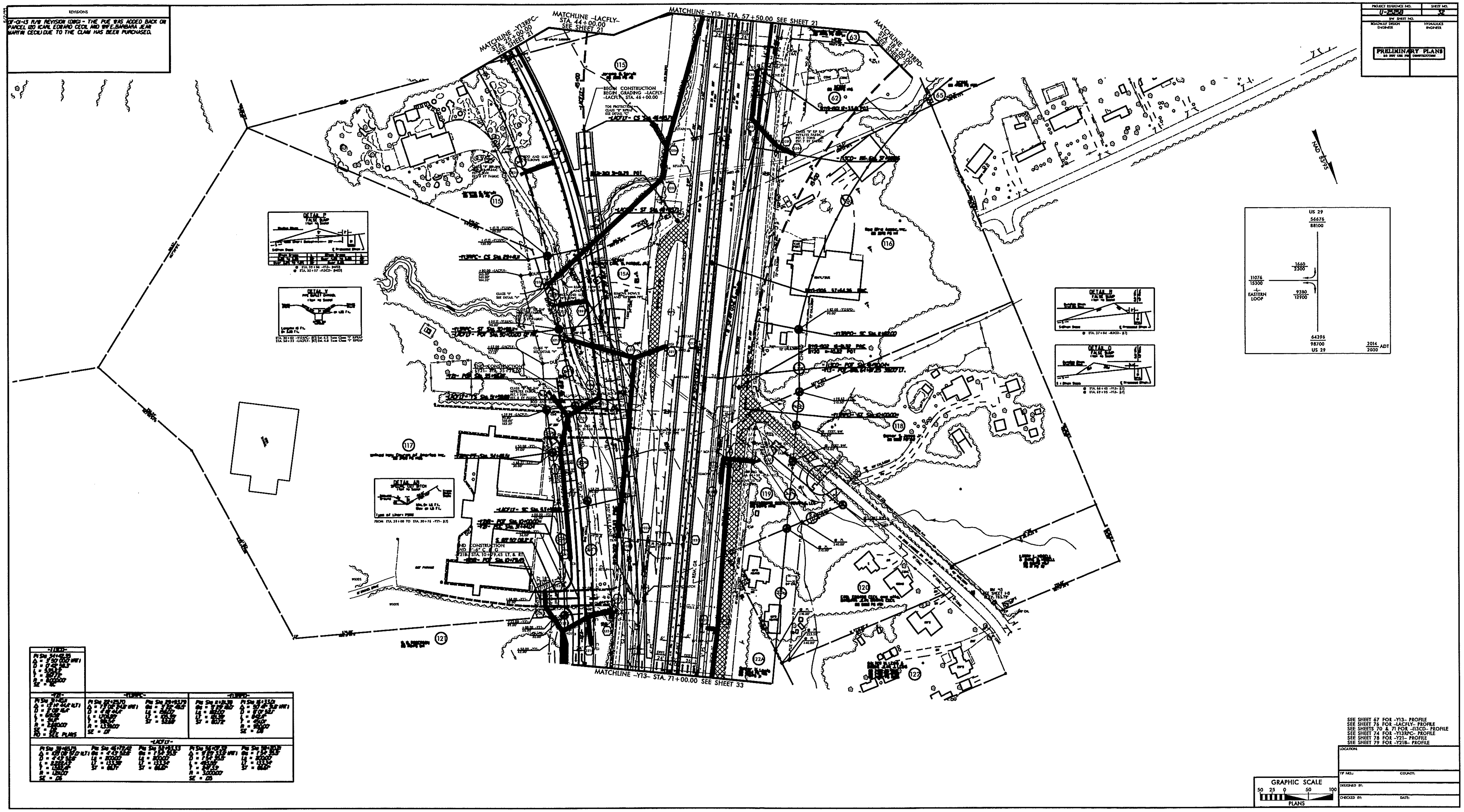
SEE SHEET 66 FOR -Y13- PROFILE
SEE SHEET 75 FOR -Y14- PROFILE
SEE SHEET 64 FOR -SRV1- PROFILE
SEE SHEET 70 FOR -I13CD- PROFILE
SEE SHEET 73 FOR -Y13RPB- PROFILE

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:


5/2/99
REVISIONS
07-01-13 R/W REVISION (DRG) - THE PUE WAS ADDED BACK ON PARCEL 120 (CARL EDWARD CECIL AND WIFE,BARBARA JEAN MARTIN CECIL) DUE TO THE CLAIM HAS BEEN PURCHASED.
MATCHLINE -Y13RPC- STA. 25+00.00 SEE SHEET 21
MATCHLINE -LACFLY- STA. 44+00.00 SEE SHEET 21
MATCHLINE -Y13- STA. 57+50.00 SEE SHEET 21
MATCHLINE -Y13RPD- SEE SHEET 21
MATCHLINE -Y13- STA. 71+00.00 SEE SHEET 33
BEGIN CONSTRUCTION
BEGIN GRADING -LACFLY-
-LACFLY- STA. 44+00.00
115
115A
116
117
118
119
120
121
122
122A
62
63
65
DETAIL P
DETAIL V
DETAIL R
DETAIL Q
DETAIL AB
NAD 83/95
US 29
56676
88100
1660
2300
11076
15300
EASTERN LOOP
9380
12900
64396
98700
US 29
2014
2030
ADT
PROJECT REFERENCE NO.
SHEET NO.
U-2525B
32
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
-LACFLY-
PI Sta 34+42.35
-Y21-
-Y13RPC-
-Y13RPD-
SE = .05
R = 3,000.00'
RO = SEE PLANS
GRAPHIC SCALE
50
25
0
50
100
PLANS

SEE SHEET 67 FOR -Y13- PROFILE
SEE SHEET 76 FOR -LACFLY- PROFILE
SEE SHEETS 70 & 71 FOR -I13CD- PROFILE
SEE SHEET 74 FOR -Y13RPC- PROFILE
SEE SHEET 78 FOR -Y21- PROFILE
SEE SHEET 79 FOR -Y21B- PROFILE

LOCATION:

TIP NO.:
COUNTY:

DESIGNED BY:

CHECKED BY:
DATE:

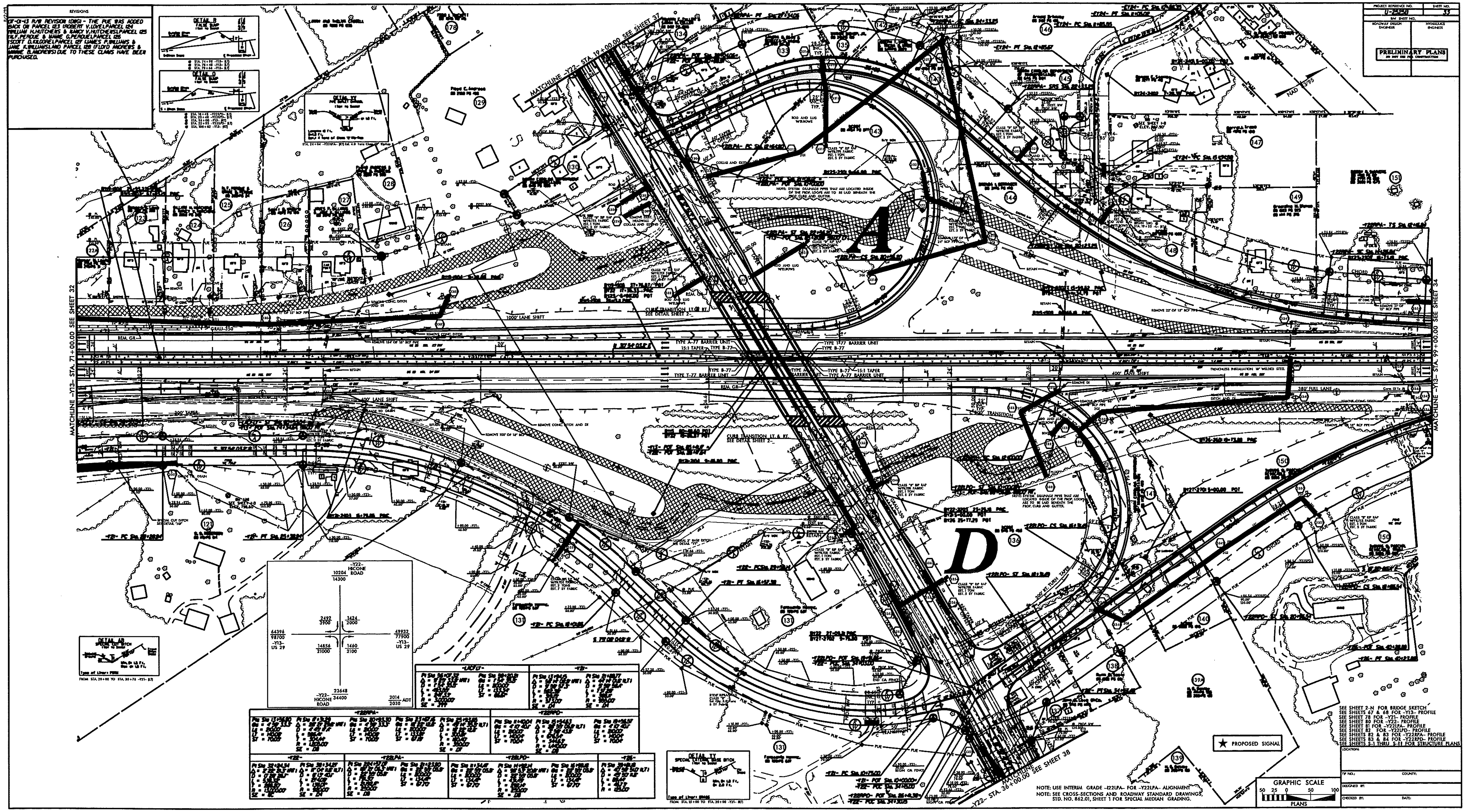
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	33
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/22/99

REVISIONS

07-01-13 R/W REVISION (DBG) - THE PUE WAS ADDED BACK ON PARCEL 123 (ROBERT V.LOVE),PARCEL 124 (WILLIAM H.HUTCHENS & NANCY V.HUTCHENS),PARCEL 125 (H.F.PERDUE & MAMIE G.PERDUE),PARCEL 126 (SCOTT D.KILGORE),PARCEL 127 (JAMES P.WILLIAMS & JANE K.WILLIAMS),AND PARCEL 128 (FLOYD ANDREWS & MINNIE B.ANDREWS) DUE TO THESE CLAIMS HAVE BEEN PURCHASED.


MATCHLINE -Y13- STA. 71+00.00 SEE SHEET 32
MATCHLINE -Y13- STA. 99+00.00 SEE SHEET 34
MATCHLINE -Y22- STA. 19+00.00 SEE SHEET 37
MATCHLINE -Y22- STA. 36+00.00 SEE SHEET 38
A
D
NAD 1983
DETAIL B
DETAIL D
DETAIL YY
DETAIL AB
DETAIL YY
SPECIAL LATERAL BASE DITCH
-Y22-
HICONE
ROAD
10204
14300
2492
3900
1424
2000
64396
98700
-Y13-
US 29
49932
77900
-Y13-
US 29
14856
21000
1460
2100
-Y22-
HICONE
ROAD
23648
34400
2014
2030
ADT
-LREV LT-
-Y21-
-Y22RPA-
-Y22RPD-
-Y22-
-Y22LPA-
-Y22LPD-
-Y25-
TYPE A-77 BARRIER UNIT
TYPE B-77
15:1 TAPER
1000' LANE SHIFT
400' LANE SHIFT
400' FULL LANE
380' FULL LANE
200' TAPER
CURB TRANSITION LT & RT. SEE DETAIL SHEET 2-
RETAIN
★ PROPOSED SIGNAL
GRAPHIC SCALE
50
25
0
50
100
PLANS

NOTE: USE INTERIM GRADE -I22LPA- FOR -Y22LPA- ALIGNMENT
NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 862.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 2-N FOR BRIDGE SKETCH
SEE SHEETS 67 & 68 FOR -Y13- PROFILE
SEE SHEET 78 FOR -Y21- PROFILE
SEE SHEET 80 FOR -Y22- PROFILE
SEE SHEET 81 FOR -Y22LPA- PROFILE
SEE SHEET 82 FOR -Y22LPD- PROFILE
SEE SHEETS 82 & 83 FOR -Y22RPA- PROFILE
SEE SHEETS 83 & 84 FOR -Y22RPD- PROFILE
SEE SHEETS S-1 THRU S-11 FOR STRUCTURE PLANS

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

5/14/99

REVISIONS

06-24-13 R/W REVISION (DWG) - REVISED THE TCE TO INCLUDE THE POND ON PARCEL 150 (THOMAS W.PASCHAL) AND PARCEL 152 (JANICE J.WILES). ADDED DUE AT -Y23- STA.26+68.00 RT.ON PARCEL 163 (ANTHONY B.HURDLE). REVISED PUE TO TCE FROM -Y26- STA.34+80.00 TO STA.38+15.00 LT. ON PARCEL 156 (R.WAYNE JONES), PARCEL 154 (ROY B.JONES & MARY LOU JONES), AND PARCEL 152 (JANICE J.WILES).

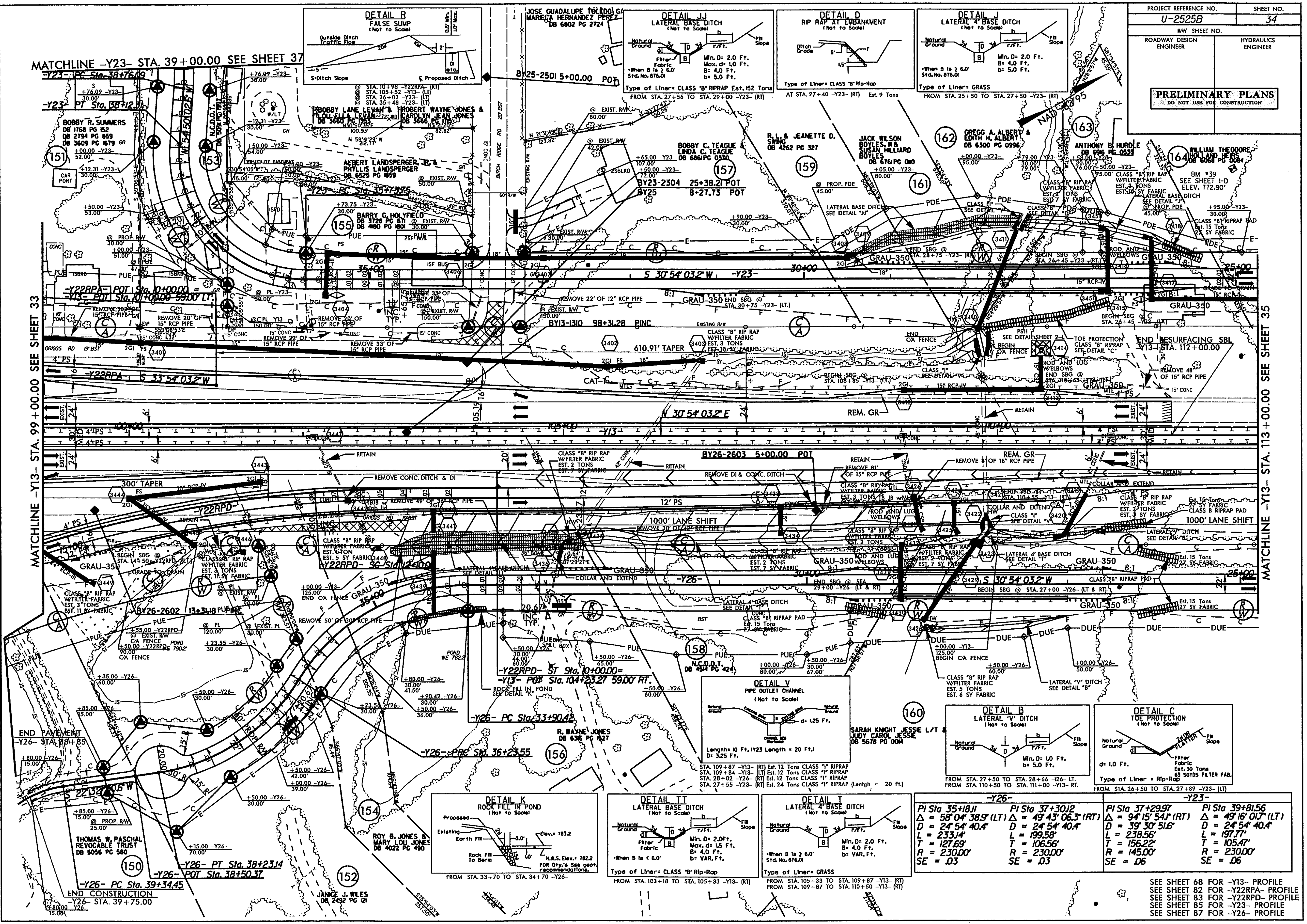
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	34

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


MATCHLINE -Y23- STA. 39+00.00 SEE SHEET 37
MATCHLINE -Y13- STA. 99+00.00 SEE SHEET 33
MATCHLINE -Y13- STA. 113+00.00 SEE SHEET 35
DETAIL R
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
DETAIL JJ
LATERAL BASE DITCH
(Not to Scale)
Min. D= 2.0 Ft.
Max. d= 1.0 Ft.
B= 4.0 Ft.
b= 5.0 Ft.
Type of Liner= CLASS "B" RIPRAP Est. 152 Tons
FROM STA. 27+56 TO STA. 29+00 -Y23- (RT)
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Type of Liner= CLASS 'B' Rip-Rap
AT STA. 27+40 -Y23- (RT) Est. 9 Tons
DETAIL J
LATERAL 4' BASE DITCH
(Not to Scale)
Min. D= 2.0 Ft.
B= 4.0 Ft.
b= 5.0 Ft.
Type of Liner= GRASS
FROM STA. 25+50 TO STA. 27+50 -Y23- (RT)
JOSE GUADALUPE TOLEDO GA
MARIECA HERNANDEZ PEREZ
DB 6802 PG 2724
BY25-2501 5+00.00 POT
BOBBY R. SUMMERS
DB 1768 PG 152
DB 2794 PG 859
DB 3609 PG 1679
BOBBY LANE LEVAN & LOUELLA LEVAN
ROBERT WAYNE JONES & CAROLYN JEAN JONES
DB 3666 PG 1765
ALBERT LANDSPERGER, JR. & PHYLLIS LANDSPERGER
DB 6525 PG 1859
BARRY G. HOLYFIELD
DB 3728 PG 671
DB 4180 PG 1801
BOBBY C. TEAGUE & LINDA C. TEAGUE
DB 6861 PG 0370
BY23-2304 25+38.21 POT
BY25 8+27.73 POT
R. L. & JEANETTE D. SWING
DB 4262 PG 327
JACK WILSON BOYLES, III & SUSAN HILLIARD BOYLES
DB 6761 PG 0110
GREGG A. ALBERT & EDITH H. ALBERT
DB 6300 PG 0996
ANTHONY B. HURDLE
DB 6916 PG 0535
WILLIAM THEODORE HOLLAND HEIRS
DB 6068 PG 0084
BM #39
SEE SHEET 1-D
ELEV. 772.90'
S 30°54'03.2"W -Y23-
-Y22RPA- POT Sta. 10+00.00
-Y13- POT Sta. 10+00.00 59.00' LT.
BY13-1310 98+31.28 BINC
610.91' TAPER
-Y22RPA S 33°54'03.2"W
N 30°54'03.2"E
-Y13-
END RESURFACING SBL -Y13- STA. 112+00.00
BY26-2603 5+00.00 POT
300' TAPER
-Y22RPD-
1000' LANE SHIFT
-Y26-
S 30°54'03.2"W
BY26-2602 13+31.18 PINC
-Y22RPD- ST Sta. 10+00.00= -Y13- POT Sta. 104+23.27 59.00' RT.
-Y26- PC Sta. 33+90.42
-Y26- PRC Sta. 36+23.55
-Y26- PT Sta. 38+23.14
-Y26- POT Sta. 38+50.37
-Y26- PC Sta. 39+34.45
END PAVEMENT -Y26- STA. 38+85
END CONSTRUCTION -Y26- STA. 39+75.00
THOMAS W. PASCHAL REVOCABLE TRUST
DB 5056 PG 580
JANICE J. WILES
DB 2492 PG 121
ROY B. JONES & MARY LOU JONES
DB 4022 PG 490
R. WAYNE JONES
DB 6316 PG 627
N.C.D.O.T.
DB 4514 PG 424
SARAH KNIGHT JESSIE L/T & JUDY CAROL JESSIE
DB 5678 PG 0014
POND
WE 782.2
GRAU-350
DETAIL V
PIPE OUTLET CHANNEL
(Not to Scale)
d= 1.25 Ft.
Length= 10 Ft. (Y23 Length = 20 Ft.)
D= 3.25 Ft.
STA. 109+87 -Y13- (RT) Est. 12 Tons CLASS "I" RIPRAP
STA. 109+84 -Y13- (LT) Est. 12 Tons CLASS "I" RIPRAP
STA. 28+02 -Y26- (RT) Est. 12 Tons CLASS "I" RIPRAP
STA. 27+55 -Y23- (RT) Est. 24 Tons CLASS "I" RIPRAP (Length = 20 Ft.)
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 27+50 TO STA. 28+66 -Y26- LT.
FROM STA. 110+50 TO STA. 111+00 -Y13- RT.
DETAIL C
TOE PROTECTION
(Not to Scale)
d= 1.0 Ft.
Filter Fabric
Est. 30 Tons
63 SQYDS FILTER FAB.
Type of Liner = Rip-Rap
FROM STA. 26+50 TO STA. 27+89 -Y23- (LT)
DETAIL K
ROCK FILL IN POND
(Not to Scale)
N.W.S. Elev.= 782.2
Elev.= 783.2
FOR Qty's See geot. recommendations.
FROM STA. 33+70 TO STA. 34+70 -Y26-
DETAIL TT
LATERAL BASE DITCH
(Not to Scale)
Min. D= 2.0 Ft.
Max. d= 1.5 Ft.
B= 4.0 Ft.
b= VAR. Ft.
Type of Liner= CLASS "B" Rip-Rap
FROM STA. 103+18 TO STA. 105+33 -Y13- (RT)
DETAIL T
LATERAL 4' BASE DITCH
(Not to Scale)
Min. D= 2.0 Ft.
B= 4.0 Ft.
b= VAR. Ft.
Type of Liner= GRASS
FROM STA. 105+33 TO STA. 109+87 -Y13- (RT)
FROM STA. 109+87 TO STA. 110+50 -Y13- (RT)

-Y26-		-Y23-	
PI Sta 35+18.11	PI Sta 37+30.12	PI Sta 37+29.97	PI Sta 39+81.56
Δ = 58°04'38.9" (LT)	Δ = 49°43'06.3" (RT)	Δ = 94°15'54.1" (RT)	Δ = 49°16'01.7" (LT)
D = 24°54'40.4"	D = 24°54'40.4"	D = 39°30'51.6"	D = 24°54'40.4"
L = 233.14'	L = 199.58'	L = 238.56'	L = 197.77'
T = 127.69'	T = 106.56'	T = 156.22'	T = 105.47'
R = 230.00'	R = 230.00'	R = 145.00'	R = 230.00'
SE = .03	SE = .03	SE = .06	SE = .06

SEE SHEET 68 FOR -Y13- PROFILE
SEE SHEET 82 FOR -Y22RPA- PROFILE
SEE SHEET 83 FOR -Y22RPD- PROFILE
SEE SHEET 85 FOR -Y23- PROFILE
SEE SHEET 87 FOR -Y26- PROFILE

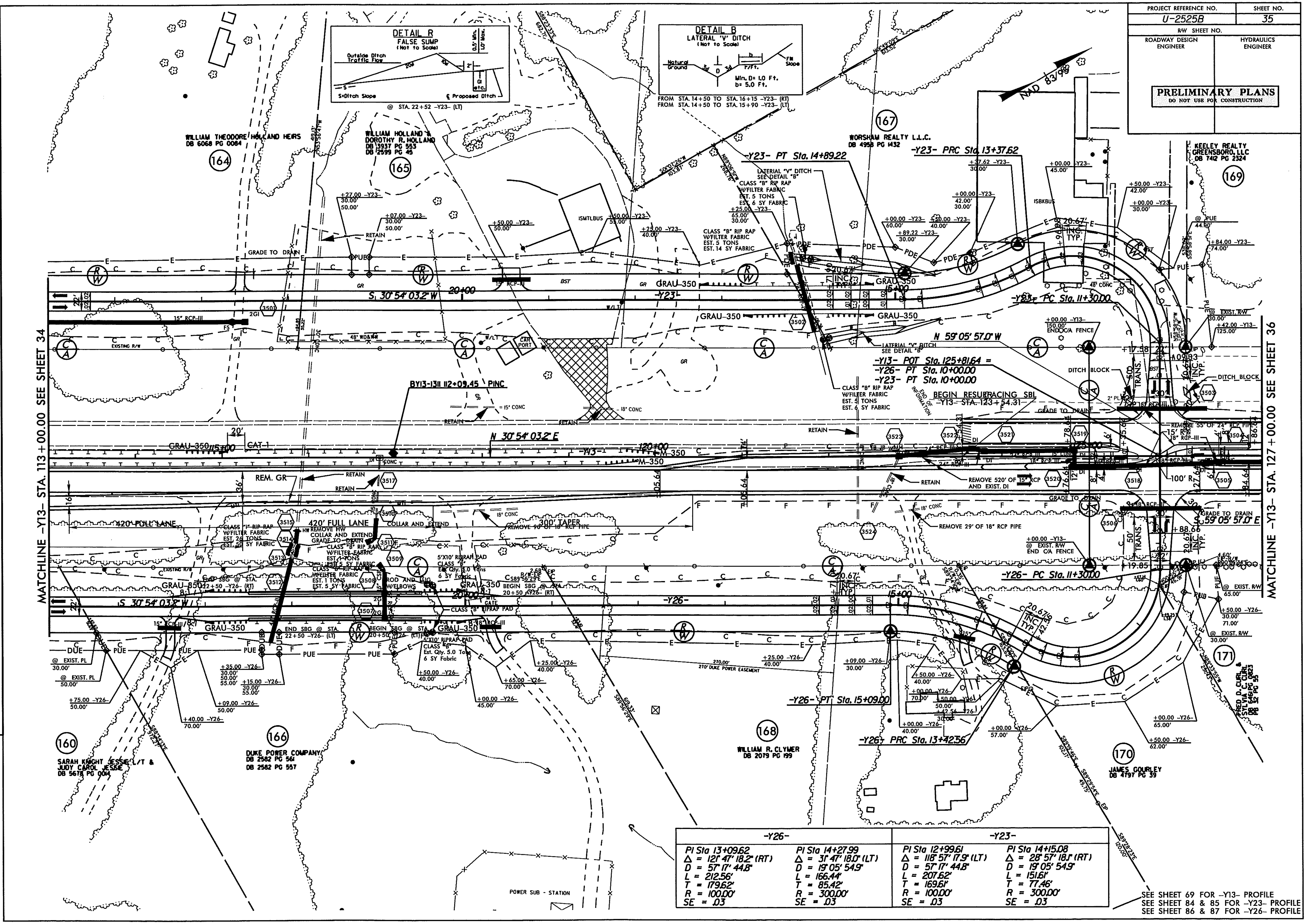
5/14/99

REVISIONS

06-24-13 R/W REVISION (DMG) - ADDED PUE AT -Y23- STA.21+17.00 RT. ON PARCEL 165 (WILLIAM HOLLAND & DOROTHY R.HOLLAND), ELIMINATED THE PUE AND ADDED TCE FROM -Y26- STA.11+50.00 TO STA.20+82.00 LT. ON PARCEL 171 (FRED D.CURL & SYLVIA C.CURL), PARCEL 170 (JAMES GOURLEY), PARCEL 168 (WILLIAM R.CLYMER), AND PARCEL 166 (DUKE POWER COMPANY).

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	35
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


DETAIL R
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
@ STA. 22+52 -Y23- (LT)
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
b= 5.0 Ft.
FROM STA. 14+50 TO STA. 16+15 -Y23- (RT)
FROM STA. 14+50 TO STA. 15+90 -Y23- (LT)
NAD 83/99
WILLIAM THEODORE HOLLAND HEIRS
DB 6068 PG 0084
164
WILLIAM HOLLAND & DOROTHY R. HOLLAND
DB 3937 PG 553
DB 2599 PG 45
165
WORSHAM REALTY L.L.C.
DB 4958 PG 1432
167
KEELEY REALTY GREENSBORO, LLC
DB 7412 PG 2324
169
-Y23- PT Sta. 14+89.22
-Y23- PRC Sta. 13+37.62
-Y23- PC Sta. 11+30.00
LATERAL "V" DITCH SEE DETAIL "B"
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 6 SY FABRIC
CLASS "B" RIP RAP W/FILTER FABRIC EST. 5 TONS EST. 14 SY FABRIC
S 30°54'03.2" W
N 59°05'57.0" W
-Y13- POT Sta. 125+81.64 =
-Y26- PT Sta. 10+00.00
-Y23- PT Sta. 10+00.00
BEGIN RESURFACING SBL -Y13- STA. 123+54.31
BY13-13II 112+09.45 PINC
N 30°54'03.2" E
-Y13-
REMOVE 520' OF 15" RCP AND EXIST. DI
REMOVE 29' OF 18" RCP PIPE
REMOVE 55' OF 24" RCP PIPE
REMOVE 96' OF 18" RCP PIPE
420' FULL LANE
300' TAPER
S 59°05'57.0" E
-Y26- PC Sta. 11+30.00
-Y26- PT Sta. 15+09.00
-Y26- PRC Sta. 13+42.56
DITCH BLOCK
GRADE TO DRAIN
270' DUKE POWER EASEMENT
SARAH KNIGHT JESSIE L/T & JUDY CAROL JESSIE
DB 5678 PG 0014
160
DUKE POWER COMPANY
DB 2582 PG 561
DB 2582 PG 557
166
WILLIAM R. CLYMER
DB 2079 PG 199
168
JAMES GOURLEY
DB 4797 PG 39
170
FRED D. CURL & SYLVIA C. CURL
DB 646 PG 0623
DB 32 PG 55
171
POWER SUB - STATION
MATCHLINE -Y13- STA. 113+00.00 SEE SHEET 34
MATCHLINE -Y13- STA. 127+00.00 SEE SHEET 36

-Y26-		-Y23-	
PI Sta 13+09.62	PI Sta 14+27.99	PI Sta 12+99.61	PI Sta 14+15.08
Δ = 121° 47' 18.2" (RT)	Δ = 31° 47' 18.0" (LT)	Δ = 118° 57' 17.9" (LT)	Δ = 28° 57' 18.1" (RT)
D = 57° 17' 44.8"	D = 19° 05' 54.9"	D = 57° 17' 44.8"	D = 19° 05' 54.9"
L = 212.56'	L = 166.44'	L = 207.62'	L = 151.61'
T = 179.62'	T = 85.42'	T = 169.61'	T = 77.46'
R = 100.00'	R = 300.00'	R = 100.00'	R = 300.00'
SE = .03	SE = .03	SE = .03	SE = .03

SEE SHEET 69 FOR -Y13- PROFILE
SEE SHEET 84 & 85 FOR -Y23- PROFILE
SEE SHEET 86 & 87 FOR -Y26- PROFILE

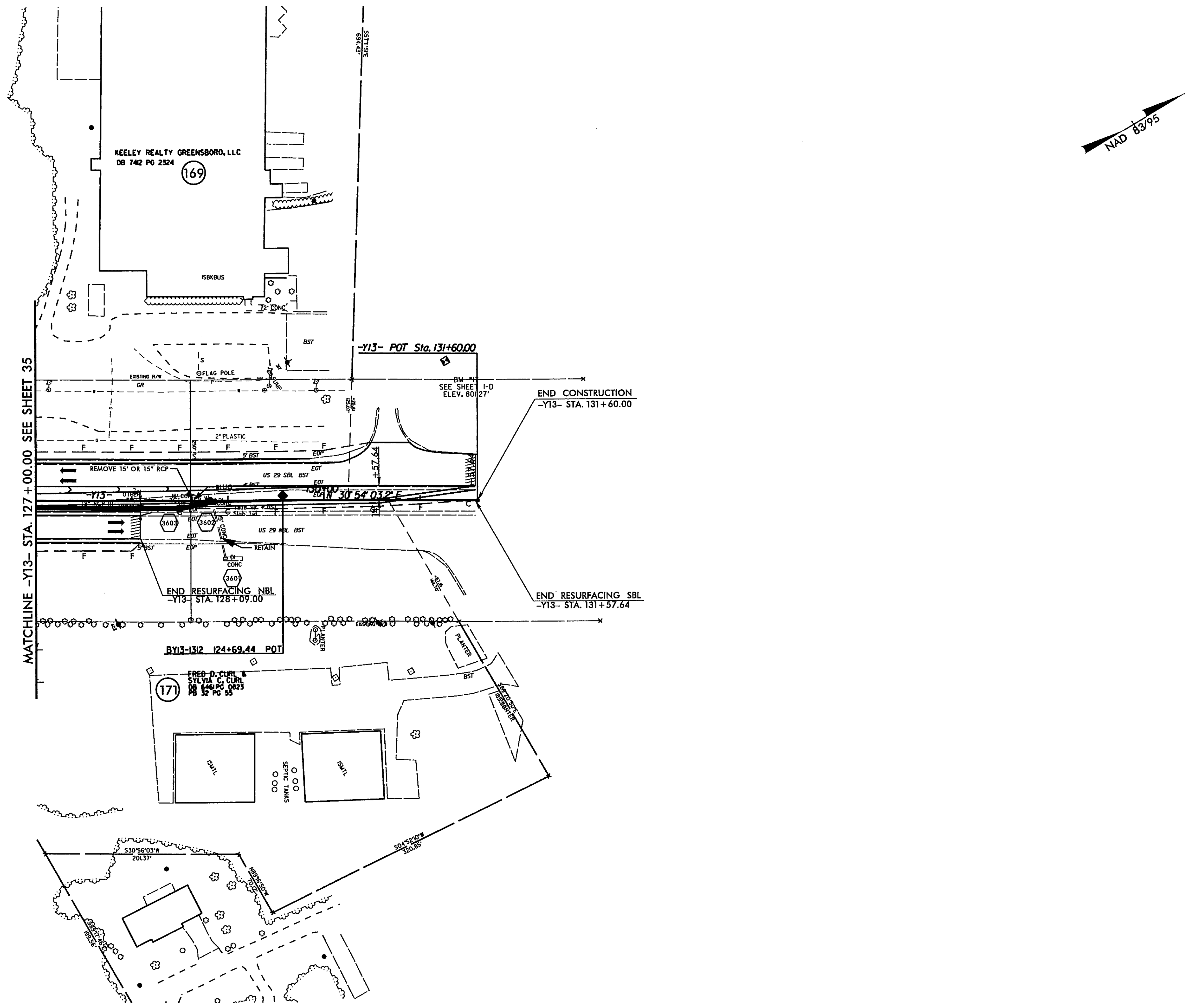
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

03-19-13 R/W REVISION (DWG) - REVISED THE PROPERTY OWNER NAME ON PARCEL 169 (CHARLES A.S.KEELEY) TO (KEELEY REALTY GREENSBORO,LLC).

5/14/99



NAD 83/95
MATCHLINE -Y13- STA. 127+00.00 SEE SHEET 35
KEELEY REALTY GREENSBORO, LLC
DB 7412 PG 2324
169
1SBKBUS
12" CONC
BST
FLAG POLE
EXISTING R/W
GR
PUMP
2" PLASTIC
5' BST
EOP
EOT
REMOVE 15' OR 15" RCP
US 29 SBL BST
-Y13-
130+00
N 30°54'03.2" E
+57.64
-Y13- POT Sta. 131+60.00
BM #1
SEE SHEET 1-D
ELEV. 801.27'
END CONSTRUCTION
-Y13- STA. 131+60.00
3603
3602
3601
15" CONC
US 29 NBL BST
RETAIN
DI
CONC
END RESURFACING NBL
-Y13- STA. 128+09.00
END RESURFACING SBL
-Y13- STA. 131+57.64
BY13-1312 124+69.44 POT
PLANTER
FRED D. CURL &
SYLVIA C. CURL
DB 6461 PG 0823
PB 32 PG 55
171
1SMTL
SEPTIC TANKS
S30°56'03"W
201.37'
S04°52'10"W
320.85'

SEE SHEET 69 FOR -Y13- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	37
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

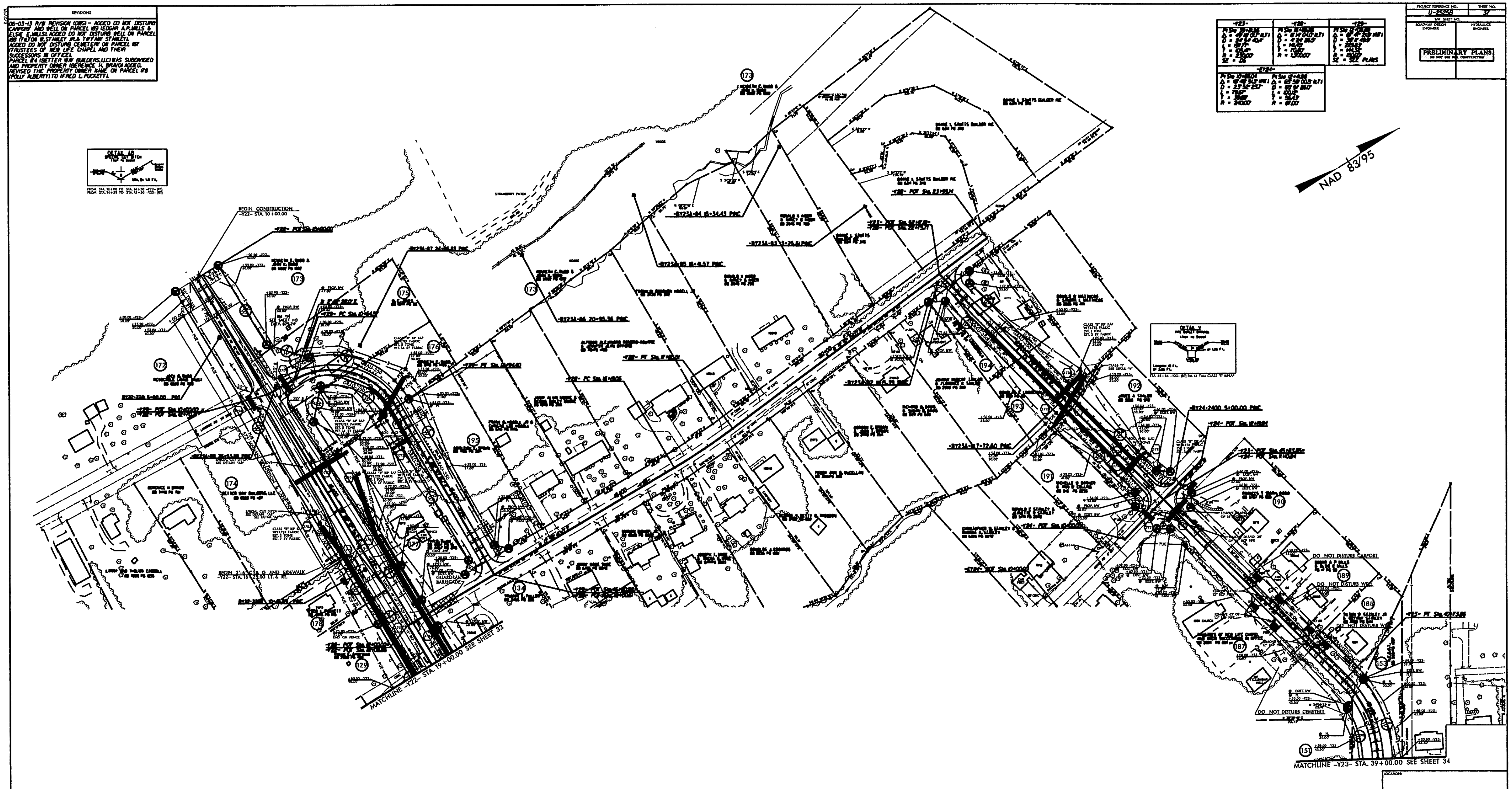
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

06-03-13 R/W REVISION (DMG) - ADDED DO NOT DISTURB CARPORT AND WELL ON PARCEL 189 (EDGAR A.P. MILLS & ELSIE E. MILLS). ADDED DO NOT DISTURB WELL ON PARCEL 188 (TILTON W. STANLEY JR. & TIFFANY STANLEY). ADDED DO NOT DISTURB CEMETERY ON PARCEL 187 (TRUSTEES OF NEW LIFE CHAPEL AND THEIR SUCCESSORS IN OFFICE). PARCEL 174 (BETTER WAY BUILDERS, LLC) WAS SUBDIVIDED AND PROPERTY OWNER (BERENICE H. BRAVO) ADDED. REVISED THE PROPERTY OWNER NAME ON PARCEL 178 (POLLY ALBERTY) TO (FRED L. PUCKETT).

-Y23-	-Y28-	-Y29-
PI Sta [illegible]	PI Sta [illegible]	PI Sta [illegible]
Δ = 45°18'03.7" (LT)	Δ = 6°14'04.0" (LT)	Δ = 61°41'23.3" (RT)
D = 24°54'40.4"	D = 4°24'26.5"	D = 38°11'49.5"
L = 181.71'	L = 141.25'	L = 161.43'
T = 105.41'	T = 70.80'	T = 94.55'
R = 230.00'	R = 1,300.00'	R = 150.00'
SE = .06		SE = SEE PLANS

-Y24-	
PI Sta 10+66.04	PI Sta 12+41.96
Δ = 18°48'56.5" (RT)	Δ = 65°58'00.5" (LT)
D = 23°52'25.3"	D = 65°51'26.0"
L = 78.87'	L = 100.12'
T = 39.80'	T = 56.43'
R = 240.00'	R = 87.00'


NAD 83/95
DETAIL AB
SPECIAL CUT DITCH
(Not to Scale)
Min. D= 1.0 Ft.
FROM STA. 13+00 TO STA. 14+50 -Y22- (RT)
FROM STA. 14+50 TO STA. 15+50 -Y22- (RT)
BEGIN CONSTRUCTION
-Y22- STA. 10+00.00
DETAIL V
(Not to Scale)
STA. 43+65 -Y23- (RT) Est. 12 Tons CLASS "I" RIPRAP
-RY24-2400 5+00.00 PBC
BEGIN 2'-6" C&G AND SIDEWALK
-Y22- STA. 16+25.00 LT. & RT.
GUARDRAIL BARRICADE
DO NOT DISTURB CARPORT
DO NOT DISTURB WELL
DO NOT DISTURB CEMETERY
172
173
174
175
176
177
178
179
151
153
187
188
189
190
191
192
193
194
195
MATCHLINE -Y22- STA. 19+00.00 SEE SHEET 33
MATCHLINE -Y23- STA. 39+00.00 SEE SHEET 34
GRAPHIC SCALE
50 25 0 50 100
PLANS

SEE SHEET 80 FOR -Y22- PROFILE
SEE SHEET 85 FOR -Y23- PROFILE
SEE SHEET 86 FOR -Y24- PROFILE
SEE SHEET 88 FOR -Y28- AND -Y29- PROFILE

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

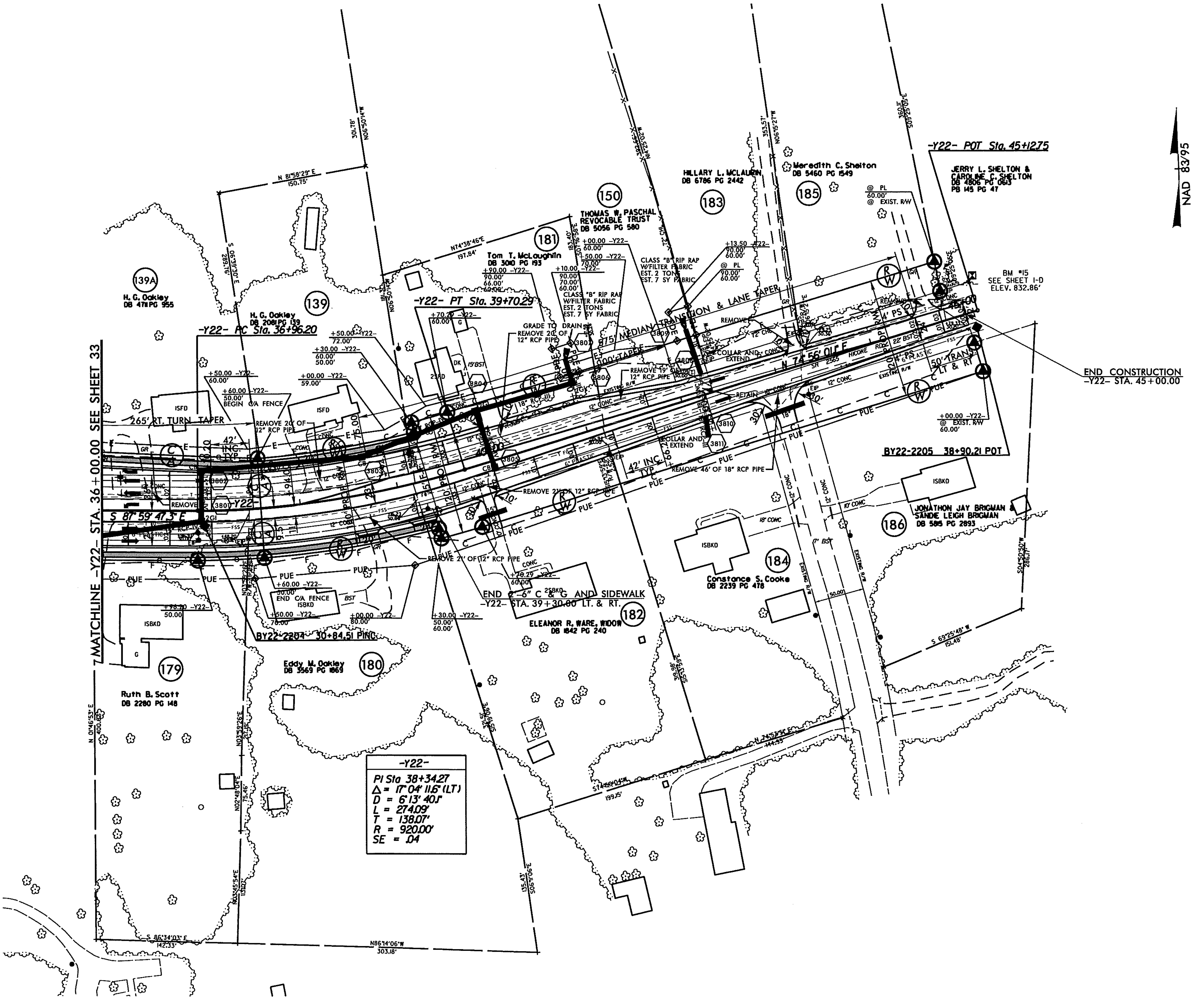
8/17/99

REVISIONS

06-03-13 R/W REVISION (DWG) - SUBDIVIDED PARCEL 139 (H.G.OAKLEY), ADDING PARCEL 139A (H.G.OAKLEY).

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	38
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


MATCHLINE -Y22- STA. 36+00.00 SEE SHEET 33
NAD 83/95
-Y22- PC Sta. 36+96.20
-Y22- PT Sta. 39+70.29
-Y22- POT Sta. 45+12.75
END CONSTRUCTION -Y22- STA. 45+00.00
BM #15 SEE SHEET 1-D ELEV. 832.86'
BY22-2205 38+90.21 POT
BY22-2204 30+84.51 PINC
END 2'-6" C & G AND SIDEWALK -Y22- STA. 39+30.00 LT. & RT.
S 87°59'47.3" E
N 74°56'01" E
265' RT. TURN TAPER
375' MEDIAN TRANSITION & LANE TAPER
100' TAPER
42' INC.
50' TRANS. LT & RT
GRADE TO DRAIN
REMOVE 20' OF 12" RCP PIPE
REMOVE 21' OF 12" RCP PIPE
REMOVE 46' OF 18" RCP PIPE
REMOVE 19' OF 12" RCP PIPE
COLLAR AND EXTEND
CLASS "B" RIP RAP W/FILTER FABRIC EST. 2 TONS EST. 7 SY FABRIC
BEGIN C/A FENCE
END C/A FENCE
139A H. G. Oakley DB 4711 PG 955
139 H. G. Oakley DB 2081 PG 139
181 Tom T. McLaughlin DB 3010 PG 193
150 THOMAS W. PASCHAL REVOCABLE TRUST DB 5056 PG 580
183 HILLARY L. MCLAURIN DB 6786 PG 2442
185 Meredith C. Shelton DB 5460 PG 1549
JERRY L. SHELTON & CAROLINE C. SHELTON DB 4806 PG 0613 PB 145 PG 47
186 JONATHON JAY BRIGMAN & SANDIE LEIGH BRIGMAN DB 585 PG 2893
184 Constance S. Cooke DB 2239 PG 478
182 ELEANOR R. WARE, WIDOW DB 1842 PG 240
180 Eddy W. Oakley DB 3569 PG 1869
179 Ruth B. Scott DB 2280 PG 148
N 81°58'29" E 150.75'
N74°38'46"E 197.84'
N 24°53'51" E 144.35'
S74°50'04"W 199.15'
S 69°25'48" W 151.48'
S 86°34'03" E 142.33'
N86°14'06"W 303.18'
PUE
ISFD
ISBKD
DK

-Y22-
PI Sta 38+34.27
Δ = 17°04' 11.6" (LT)
D = 6°13' 40.1"
L = 274.09'
T = 138.07'
R = 920.00'
SE = .04

SEE SHEETS 80 & 81 FOR -Y22- PROFILE

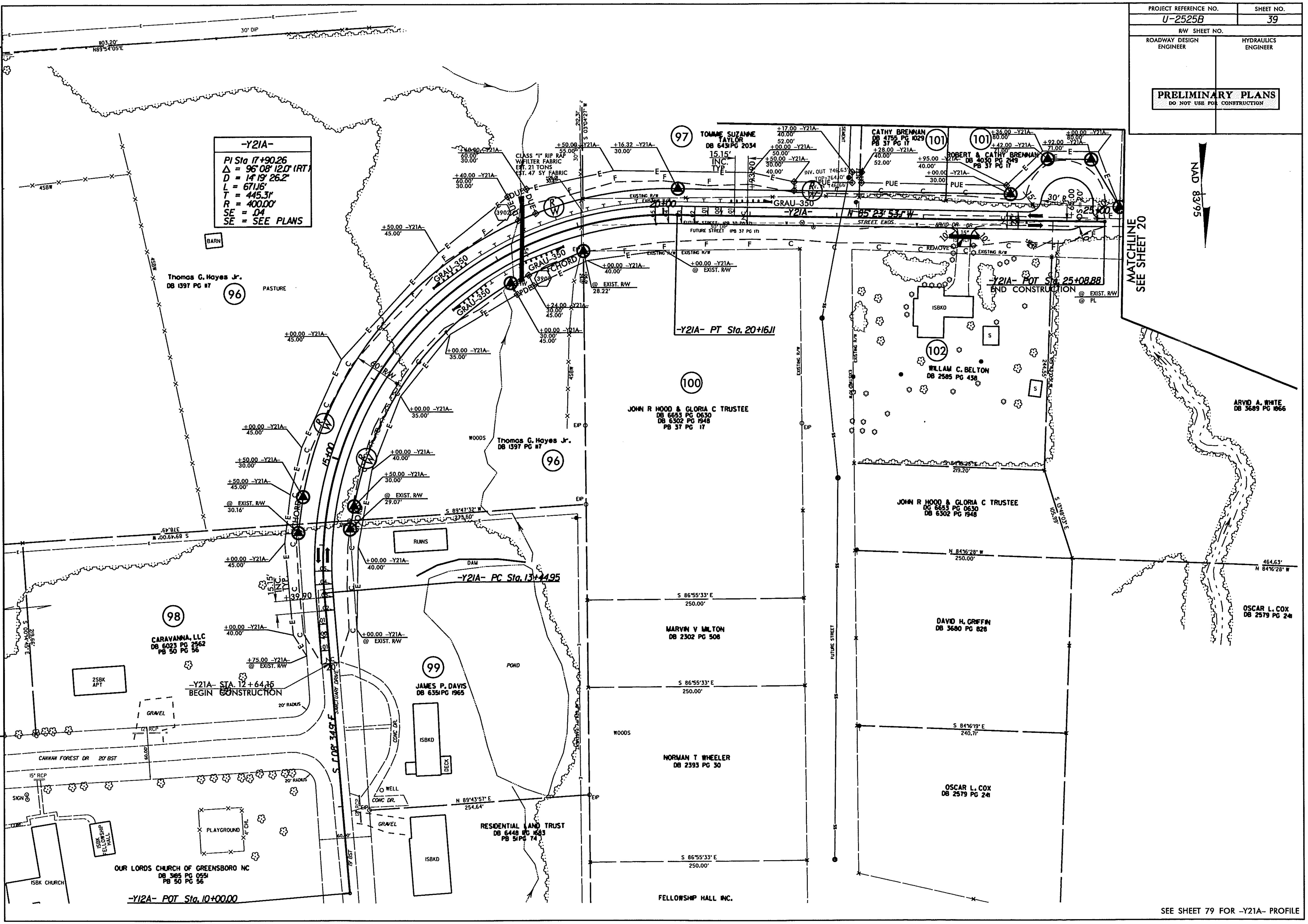
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	39
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99

REVISIONS

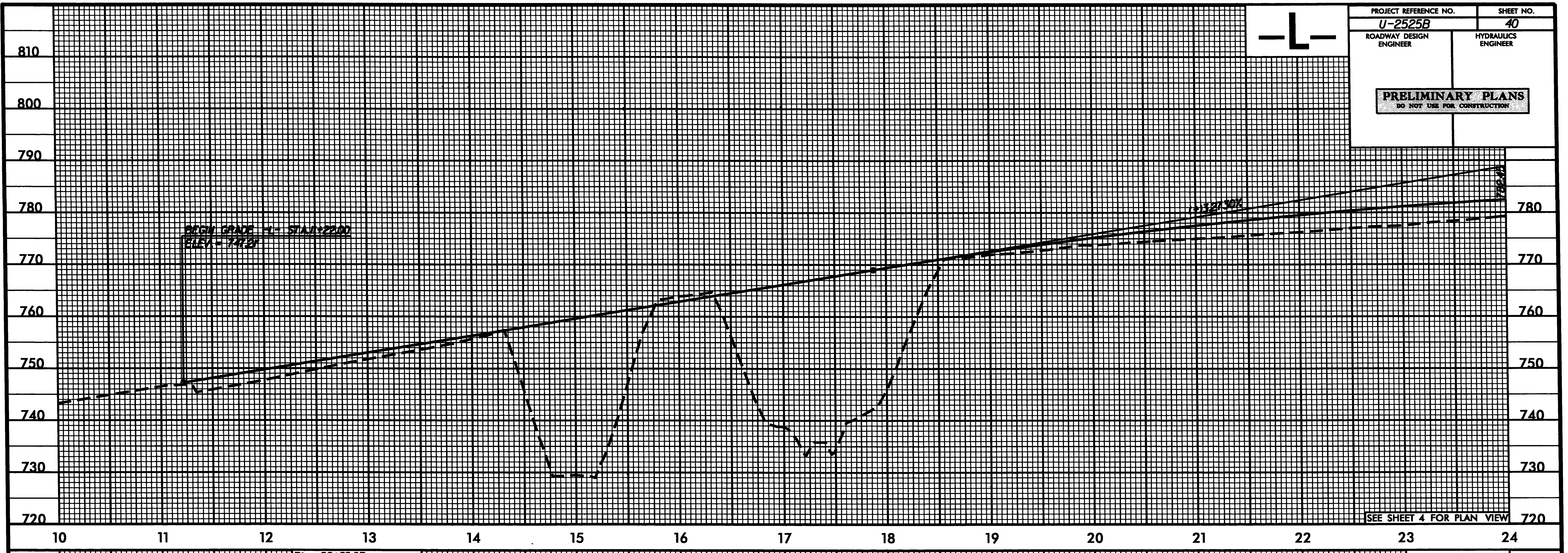
06-24-13 R/W REVISION (DWG) - REVISED THE PUE TO TCE FROM -Y21A- STA.12+75.00 TO STA.21+50.00 LT. AND -Y21A- STA.23+95.00 TO STA.25+08.88 LT. ON PARCEL 98 (CARAVANNA,LLC),PARCEL 96 (THOMAS G.HAYES JR.),PARCEL 97 (TOMMIE SUZANNE TAYLOR),AND PARCEL 101 (ROBERT & CATHY BRENNAN). REVISED PUE FROM -Y21A- STA.21+50.00 TO STA.23+95.00 LT. ON PARCEL 97 (TOMMIE SUZANNE TAYLOR) AND PARCEL 101 (CATHY BRENNAN).

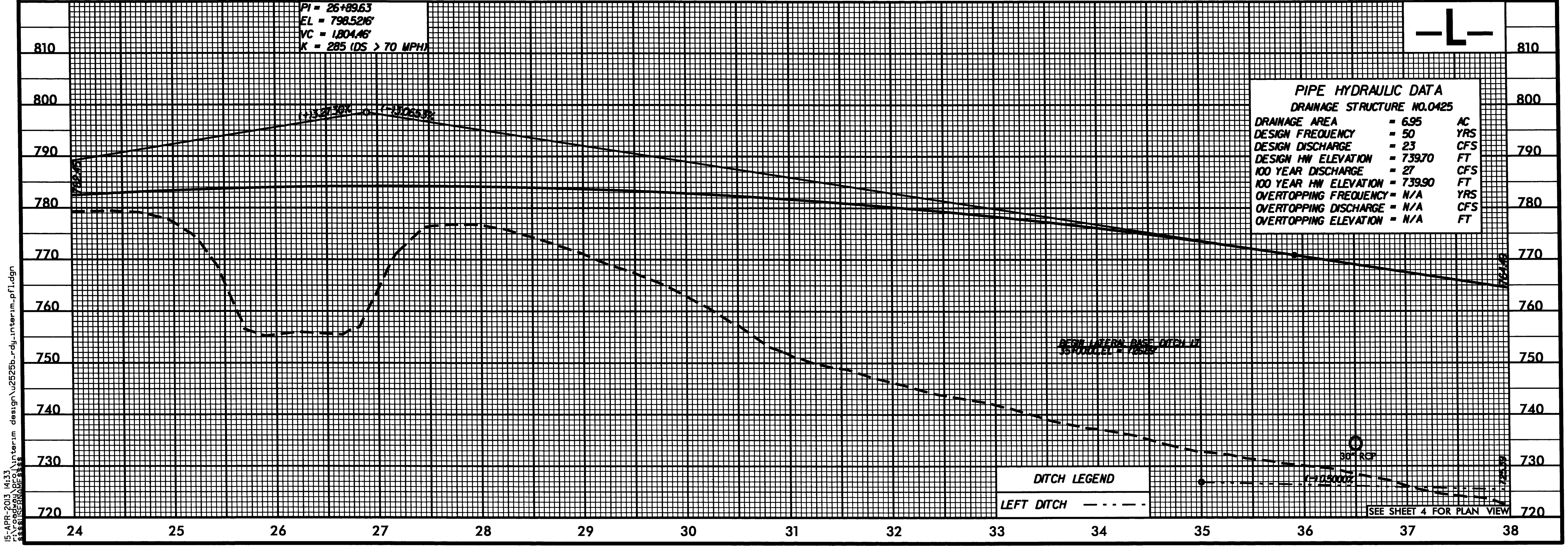

-Y21A-
PI Sta 17+90.26
Δ = 96° 08' 12.0" (RT)
D = 14° 19' 26.2"
L = 671.16'
T = 445.31'
R = 400.00'
SE = .04
SE = SEE PLANS
NAD 83/95
MATCHLINE SEE SHEET 20
Thomas G. Hayes Jr.
DB 1397 PG 87
96
PASTURE
BARN
WOODS
97
TOMMIE SUZANNE TAYLOR
DB 6431 PG 2034
CATHY BRENNAN
DB 4755 PG 1029
PB 37 PG 17
101
ROBERT & CATHY BRENNAN
DB 4030 PG 2149
PB 37 PG 17
100
JOHN R HOOD & GLORIA C TRUSTEE
DB 6653 PG 0630
DB 6302 PG 1948
PB 37 PG 17
102
WILLIAM C. BELTON
DB 2585 PG 438
ARVID A. WHITE
DB 3689 PG 1666
OSCAR L. COX
DB 2579 PG 241
DAVID H. GRIFFIN
DB 3680 PG 826
MARVIN V MILTON
DB 2302 PG 508
NORMAN T WHEELER
DB 2393 PG 30
FELLOWSHIP HALL INC.
RESIDENTIAL LAND TRUST
DB 6448 PG 1683
PB 51 PG 74
99
JAMES P. DAVIS
DB 6351 PG 1965
POND
DAM
RUINS
98
CARAVANNA, LLC
DB 6023 PG 2562
PB 50 PG 56
2SBK APT
OUR LORDS CHURCH OF GREENSBORO NC
DB 3185 PG 0551
PB 50 PG 56
PLAYGROUND
ISBK FELLOWSHIP HALL
ISBK CHURCH
CANNAN FOREST DR 20' BST
SANCTUARY DRIVE
CONC DR.
WELL
GRAVEL
-Y21A- PC Sta. 13+44.95
-Y21A- STA. 12+64.35 BEGIN CONSTRUCTION
-Y12A- POT Sta. 10+00.00
-Y21A- PT Sta. 20+16.11
-Y21A- POT Sta. 25+08.88 END CONSTRUCTION
CLASS "I" RIP RAP W/FILTER FABRIC EST. 21 TONS EST. 47 SY FABRIC
GRAU-350
15+00
20+00
N 85° 23' 53.1" W
FUTURE STREET
STREET ENDS
15.15' INC. TYP.
PUE
REMOVE
SEE SHEET 79 FOR -Y21A- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	40

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


5/28/99
-L-
810
800
790
780
770
760
750
740
730
720
BEGIN GRADE -L- STA.11+22.00
ELEV. = 747.21'
(+)3.2730%
782.45
SEE SHEET 4 FOR PLAN VIEW
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24


-L-
PI = 26+89.63
EL = 798.5216'
VC = 1,804.46'
K = 285 (DS > 70 MPH)
(+)3.2730%
(-)1.5065%
782.45
764.48
BEGIN LATERAL BASE DITCH LT
35+00.00 EL = 725.89
(-)0.5000%
30" RCP
725.39
SEE SHEET 4 FOR PLAN VIEW
810
800
790
780
770
760
750
740
730
720
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.0425

DRAINAGE AREA	=	6.95	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	23	CFS
DESIGN HW ELEVATION	=	739.70	FT
100 YEAR DISCHARGE	=	27	CFS
100 YEAR HW ELEVATION	=	739.90	FT
OVERTOPPING FREQUENCY	=	N/A	YRS
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING ELEVATION	=	N/A	FT

DITCH LEGEND	
LEFT DITCH	— - - — -

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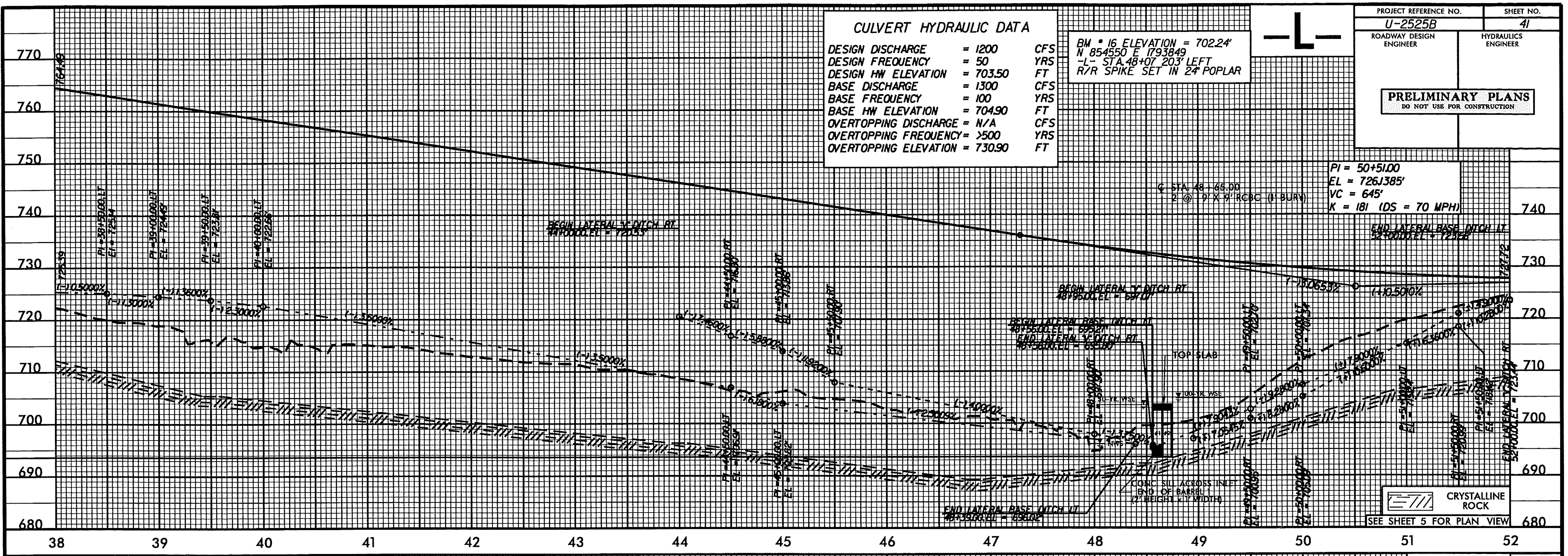
$$$$USERNAME$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	41
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

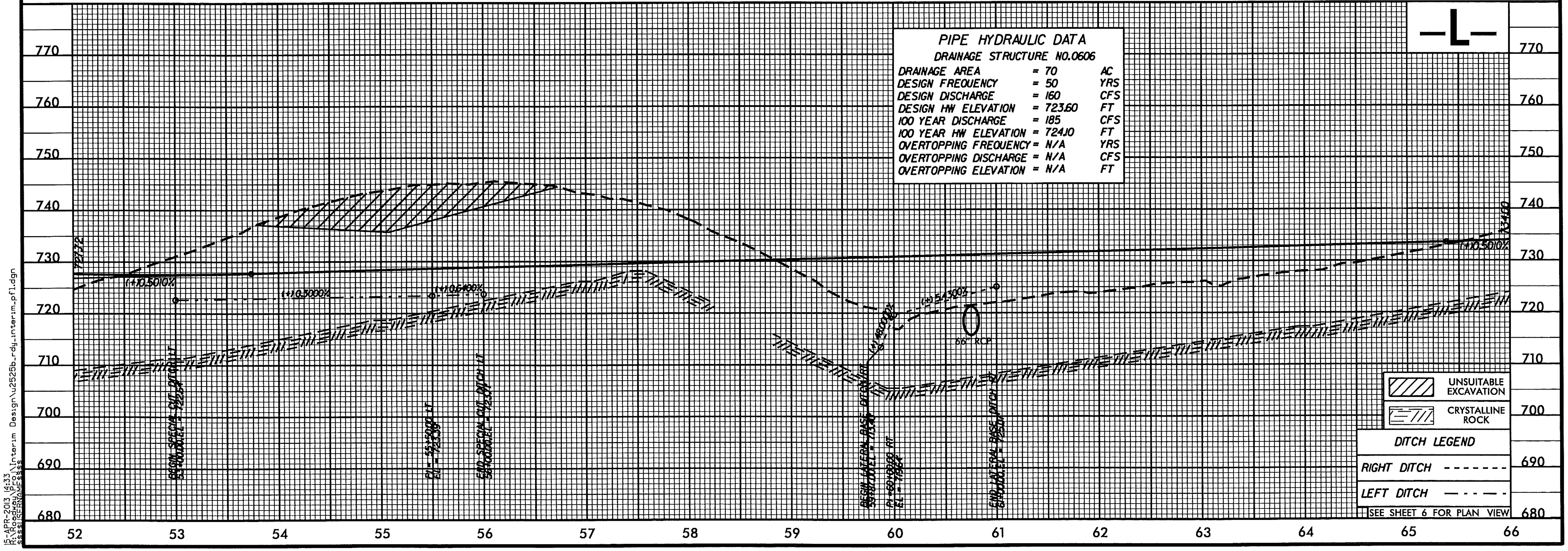

-L-
770
760
750
740
730
720
710
700
690
680
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
725.39
PI = 38+50.00 LT
EL = 725.14
PI = 39+00.00 LT
EL = 724.49
PI = 39+50.00 LT
EL = 723.81
PI = 40+00.00 LT
EL = 722.56
(-)0.5000%
(-)1.3000%
(-)1.3600%
(-)2.3000%
(-)1.35090%
BEGIN LATERAL "V" DITCH RT
44+00.00 EL = 720.53
(-)2.2460%
(-)1.5980%
(-)1.1920%
(-)1.3500%
(-)1.6380%
(-)1.2500%
(-)1.4000%
BEGIN LATERAL "V" DITCH RT
48+95.00 EL = 697.07
BEGIN LATERAL BASE DITCH LT
48+56.00 EL = 695.27
END LATERAL "V" DITCH RT
48+56.00 EL = 695.90
TOP SLAB
100-YR. WSE
50-YR. WSE
NWS
CONC. SILL ACROSS INLET END OF BARREL (2' HEIGHT x 1' WIDTH)
END LATERAL BASE DITCH LT
48+39.00 EL = 696.02
℄ STA. 48+65.00
2 @ 9' X 9' RCBC (1' BURY)
(+)7.9042%
(+)7.0545%
(+)1.9280%
(+)1.8280%
(+)1.3000%
(+)1.6500%
(+)1.6360%
(+)1.3900%
(+)1.0280%
(-)1.0653%
(+)0.5010%
END LATERAL BASE DITCH LT
52+00.00 EL = 723.58
END LATERAL DITCH RT
52+00.00 EL = 723.74
727.72
CRYSTALLINE ROCK
SEE SHEET 5 FOR PLAN VIEW

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 1200	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 703.50	FT
BASE DISCHARGE	= 1300	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 704.90	FT
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING ELEVATION	= 730.90	FT

BM • 16 ELEVATION = 702.24'
N 854550 E 1793849
-L- STA. 48+07 203' LEFT
R/R SPIKE SET IN 24" POPLAR

PI = 50+51.00
EL = 726.1385'
VC = 645'
K = 181 (DS = 70 MPH)


-L-
770
760
750
740
730
720
710
700
690
680
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
727.72
(+)0.5010%
(+)0.3000%
(+)0.6400%
BEGIN SPECIAL CUT DITCH LT
53+00.00 EL = 722.54
PI = 55+50.00 LT
EL = 723.39
END SPECIAL CUT DITCH LT
56+00.00 EL = 723.54
(+)4.8000%
(+)5.4300%
66" RCP
BEGIN LATERAL BASE DITCH RT
59+87.00 EL = 713.40
PI = 60+00.00 RT
EL = 719.64
END LATERAL BASE DITCH
61+00.00 EL = 725.01
(+)0.5010%
734.06
UNSUITABLE EXCAVATION
CRYSTALLINE ROCK
SEE SHEET 6 FOR PLAN VIEW

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.0606

DRAINAGE AREA	= 70	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 160	CFS
DESIGN HW ELEVATION	= 723.60	FT
100 YEAR DISCHARGE	= 185	CFS
100 YEAR HW ELEVATION	= 724.10	FT
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= N/A	FT

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

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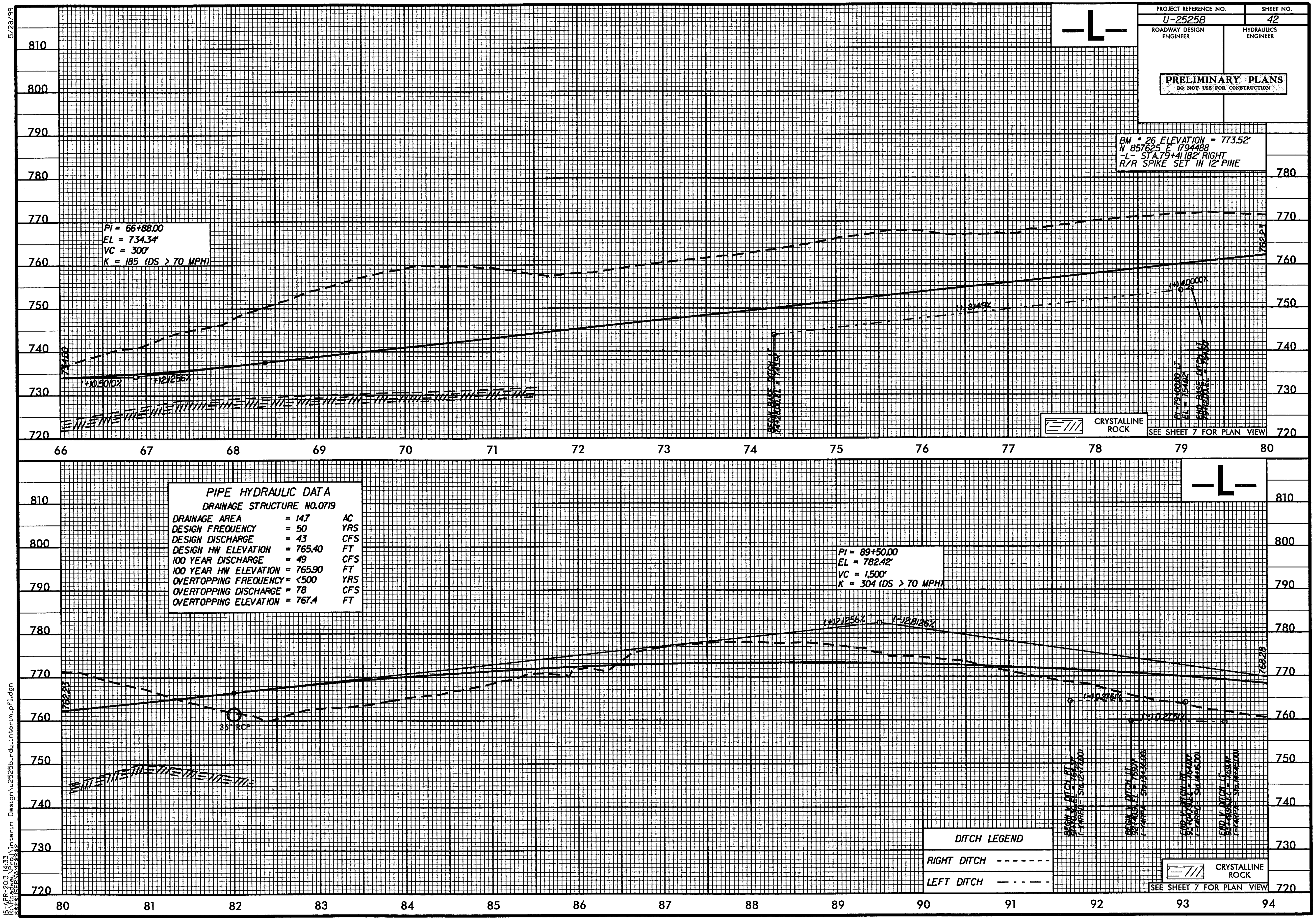
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


-L-
810
800
790
780
770
760
750
740
730
720
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
734.00
(+)0.5010%
(+)2.1256%
BEGIN BASE DITCH LT
74+28.00,EL = 743.59'
(+)2.1419%
(+)4.0000%
PI = 79+00.00 LT
EL = 754.02'
END BASE DITCH LT
79+12.00,EL = 754.50
762.23
CRYSTALLINE ROCK
SEE SHEET 7 FOR PLAN VIEW
-L-
81
82
83
84
85
86
87
88
89
90
91
92
93
94
36" RCP
(+)2.1256%
(-)2.8126%
768.28
(-)0.2275%
(-)0.2275%
BEGIN V DITCH RT
91+70.36,EL = 764.37'
(-Y4RPD- Sta.12+77.00)
BEGIN V DITCH LT
92+40.95,EL = 759.71'
(-Y4RPA- Sta.13+36.00)
END V DITCH RT
93+04.79,EL = 764.00'
(-Y4RPD- Sta.14+16.00)
END V DITCH LT
93+49.95,EL = 759.41'
(-Y4RPA- Sta.14+45.00)
CRYSTALLINE ROCK
SEE SHEET 7 FOR PLAN VIEW

BM * 26 ELEVATION = 773.52'
N 857625 E 1794488
-L- STA.79+41 182' RIGHT
R/R SPIKE SET IN 12" PINE

PI = 66+88.00
EL = 734.34'
VC = 300'
K = 185 (DS > 70 MPH)

PI = 89+50.00
EL = 782.42'
VC = 1,500'
K = 304 (DS > 70 MPH)

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.0719

DRAINAGE AREA	= 14.7	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 43	CFS
DESIGN HW ELEVATION	= 765.40	FT
100 YEAR DISCHARGE	= 49	CFS
100 YEAR HW ELEVATION	= 765.90	FT
OVERTOPPING FREQUENCY	= <500	YRS
OVERTOPPING DISCHARGE	= 78	CFS
OVERTOPPING ELEVATION	= 767.4	FT

DITCH LEGEND

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

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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	43

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
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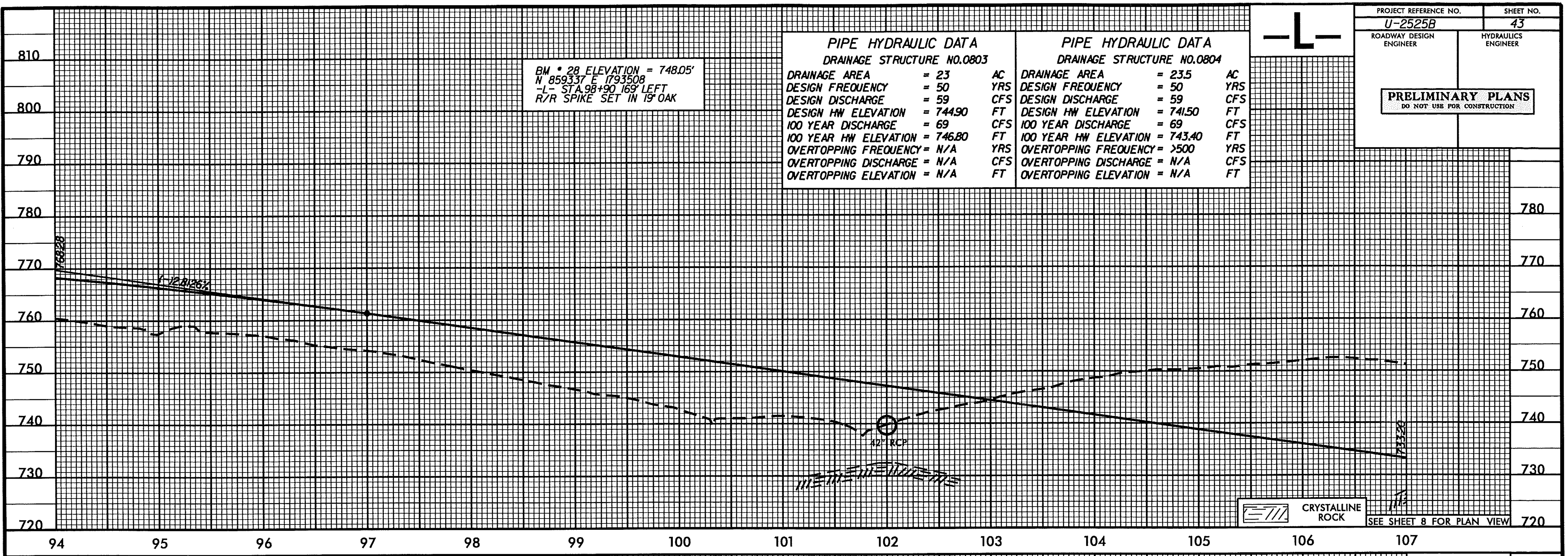

-L-
810
800
790
780
770
760
750
740
730
720
768.28
(-)2.8126%
42" RCP
733.20
CRYSTALLINE ROCK
SEE SHEET 8 FOR PLAN VIEW
94
95
96
97
98
99
100
101
102
103
104
105
106
107

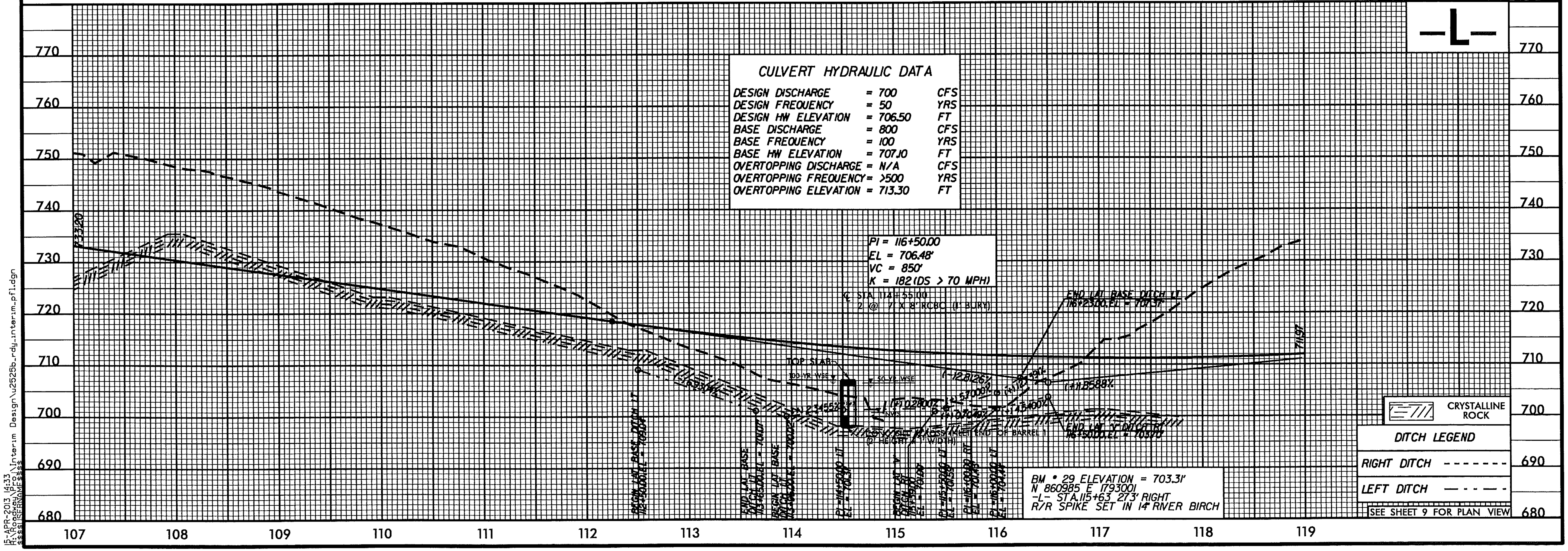
BM • 28 ELEVATION = 748.05'
N 859337 E 1793508
-L- STA.98+90 169' LEFT
R/R SPIKE SET IN 19" OAK

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.0803

DRAINAGE AREA	=	23	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	59	CFS
DESIGN HW ELEVATION	=	744.90	FT
100 YEAR DISCHARGE	=	69	CFS
100 YEAR HW ELEVATION	=	746.80	FT
OVERTOPPING FREQUENCY	=	N/A	YRS
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING ELEVATION	=	N/A	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.0804

DRAINAGE AREA	=	23.5	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	59	CFS
DESIGN HW ELEVATION	=	741.50	FT
100 YEAR DISCHARGE	=	69	CFS
100 YEAR HW ELEVATION	=	743.40	FT
OVERTOPPING FREQUENCY	=	>500	YRS
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING ELEVATION	=	N/A	FT


-L-
770
760
750
740
730
720
710
700
690
680
733.20
711.97
TOP SLAB
100 YR WSE
50 YR WSE
(-)2.8126%
(-)6.9350%
(-)2.3455%
(+)1.0280%
(+)5.7000%
(+)1.0708%
(+)4.5400%
(+)1.8588%
℄ STA. 114+55.00
2 @ 7' X 8' RCBC (1' BURY)
CROSS INLET END OF BARREL 1
(2' HEIGHT X 1' WIDTH)
END LAT BASE DITCH LT
116+25.00, EL = 707.57'
END LAT 'V' DITCH RT
116+50.00, EL = 703.70'
BEGIN LAT BASE DITCH LT
112+50.00, EL = 709.04'
END LAT BASE DITCH LT
113+65.00, EL = 701.07'
BEGIN LAT BASE DITCH LT
113+96.00, EL = 700.02'
PI = 114+50.00 LT
EL = 701.31'
BEGIN LAT 'V' DITCH RT
115+19.00
EL = 701.09'
PI = 115+50.00 LT
EL = 701.59'
PI = 116+00.00 RT
EL = 701.15'
PI = 116+00.00 LT
EL = 704.44'
CRYSTALLINE ROCK
SEE SHEET 9 FOR PLAN VIEW
107
108
109
110
111
112
113
114
115
116
117
118
119

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	700	CFS
DESIGN FREQUENCY	=	50	YRS
DESIGN HW ELEVATION	=	706.50	FT
BASE DISCHARGE	=	800	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	707.10	FT
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING FREQUENCY	=	>500	YRS
OVERTOPPING ELEVATION	=	713.30	FT

PI = 116+50.00
EL = 706.48'
VC = 850'
K = 182 (DS > 70 MPH)

BM • 29 ELEVATION = 703.31'
N 860985 E 1793001
-L- STA.115+63 273' RIGHT
R/R SPIKE SET IN 14" RIVER BIRCH

DITCH LEGEND

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

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PROJECT REFERENCE NO. U-2525B
SHEET NO. 44

ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

PRELIMINARY PLANS
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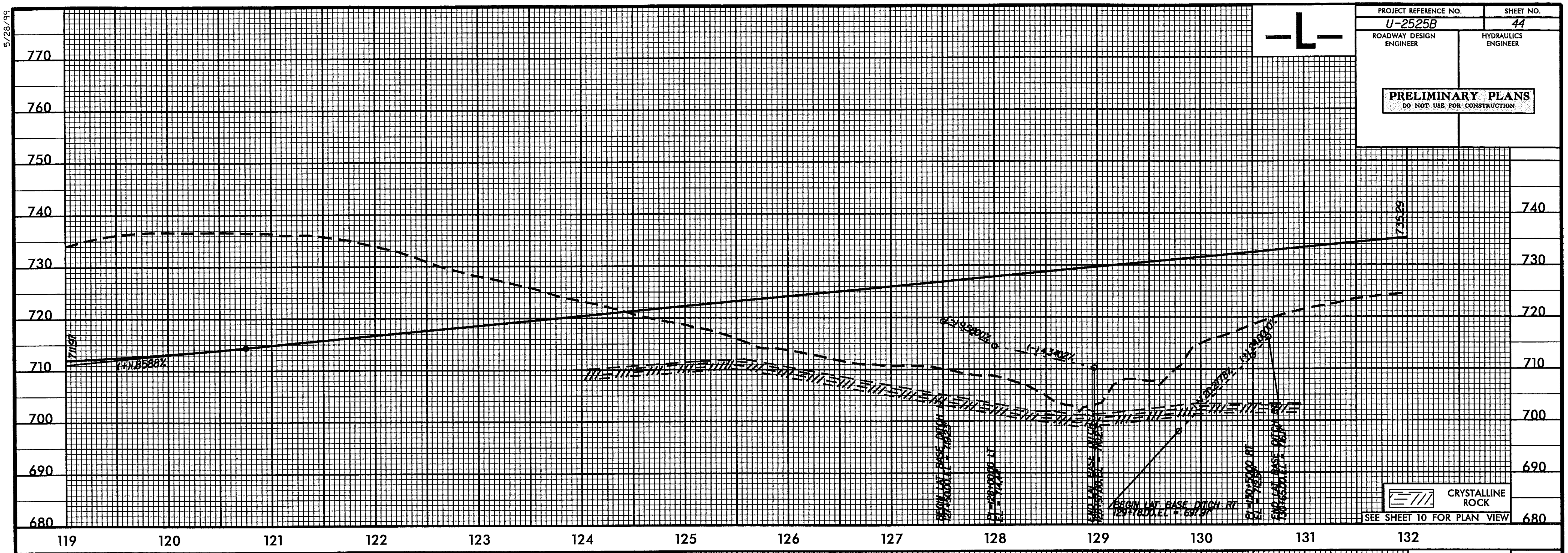
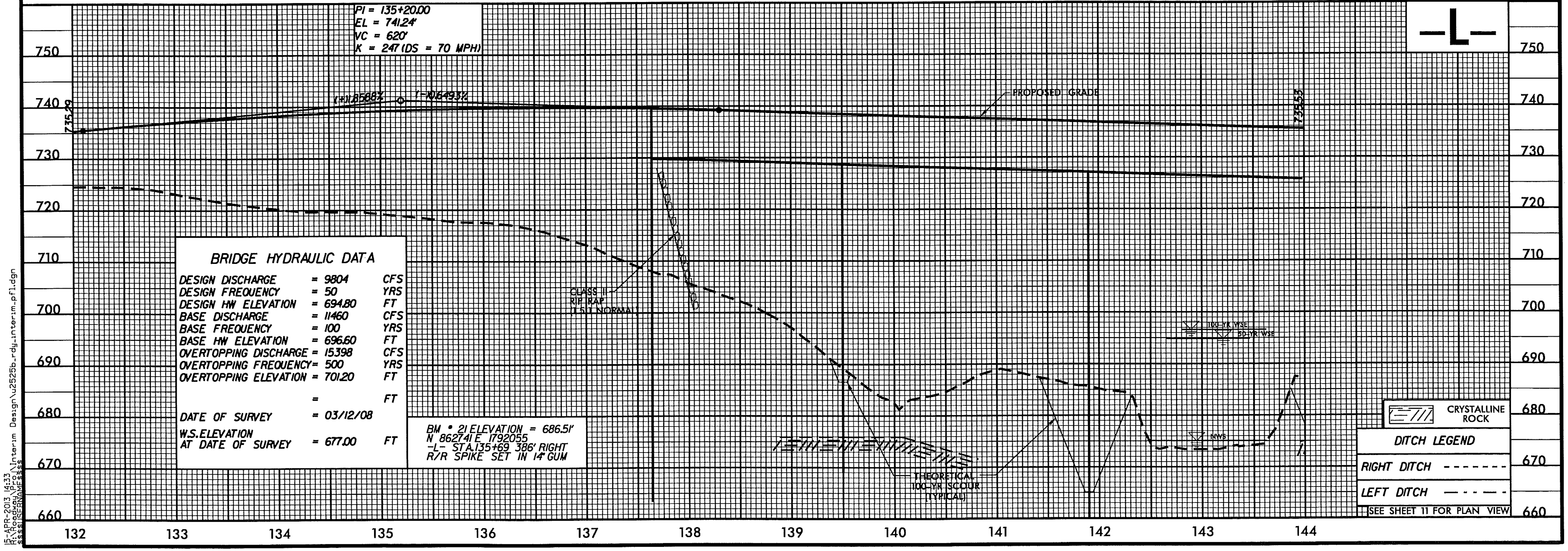

-L-
770
760
750
740
730
720
710
700
690
680
711.97
(+)1.8588%
735.29
(-)1.9580%
(-)1.3402%
(+)2.0278%
(+)2.0800%
BEGIN LAT. BASE DITCH 127+50.00, EL = 711.25
PI = 128+00.00 LT EL = 711.25
END LAT. BASE DITCH 129+00.00, EL = 710.25
BEGIN LAT. BASE DITCH RT 129+18.00, EL = 697.97
PI = 130+50.00 RT EL = 712.59
END LAT. BASE DITCH 130+65.00, EL = 716.17
CRYSTALLINE ROCK
SEE SHEET 10 FOR PLAN VIEW
119
120
121
122
123
124
125
126
127
128
129
130
131
132


PI = 135+20.00
EL = 741.24'
VC = 620'
K = 247 (DS = 70 MPH)

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE = 9804 CFS
DESIGN FREQUENCY = 50 YRS
DESIGN HW ELEVATION = 694.80 FT
BASE DISCHARGE = 11460 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 696.60 FT
OVERTOPPING DISCHARGE = 15398 CFS
OVERTOPPING FREQUENCY = 500 YRS
OVERTOPPING ELEVATION = 701.20 FT
= FT
DATE OF SURVEY = 03/12/08
W.S. ELEVATION AT DATE OF SURVEY = 677.00 FT

BM • 21 ELEVATION = 686.51'
N 862741 E 1792055
-L- STA. 135+69 386' RIGHT
R/R SPIKE SET IN 14" GUM

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

-L-
750
740
730
720
710
700
690
680
670
660
735.29
(+)1.8588%
(-)1.06493%
PROPOSED GRADE
735.53
CLASS II RIP RAP (1.5:1 NORMAL)
100-YR WSE
50-YR WSE
NWS
THEORETICAL 100-YR SCOUR (TYPICAL)
CRYSTALLINE ROCK
SEE SHEET 11 FOR PLAN VIEW
132
133
134
135
136
137
138
139
140
141
142
143
144

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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	45
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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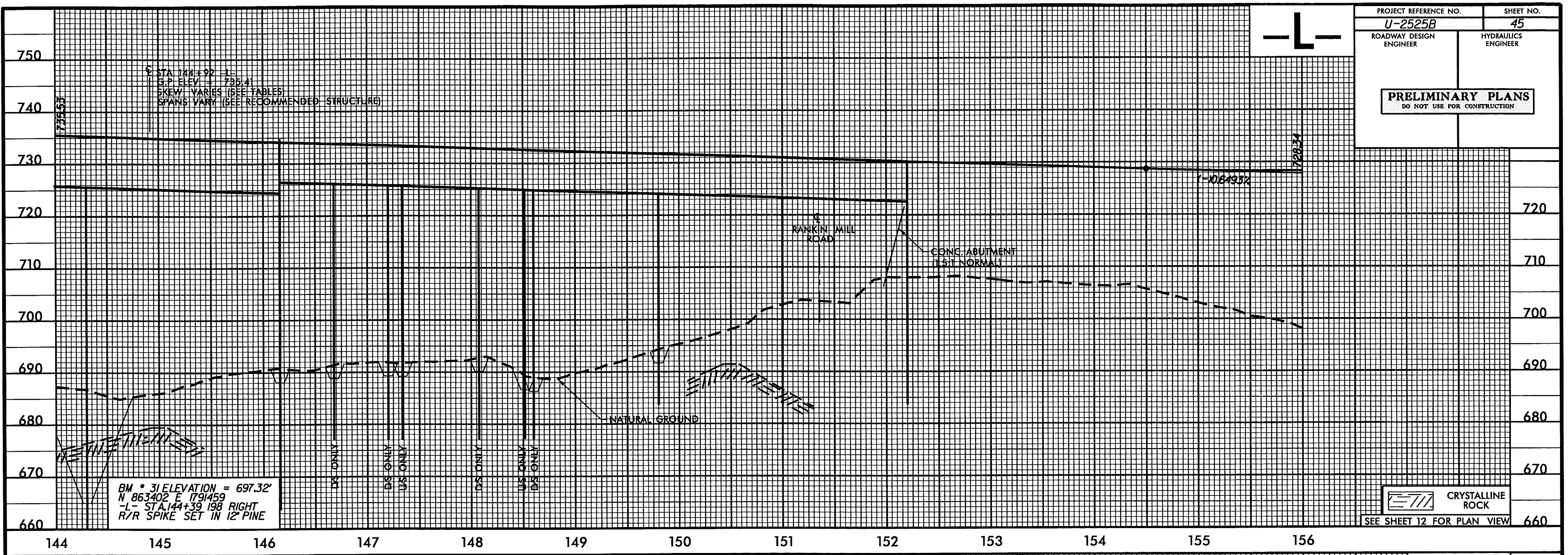
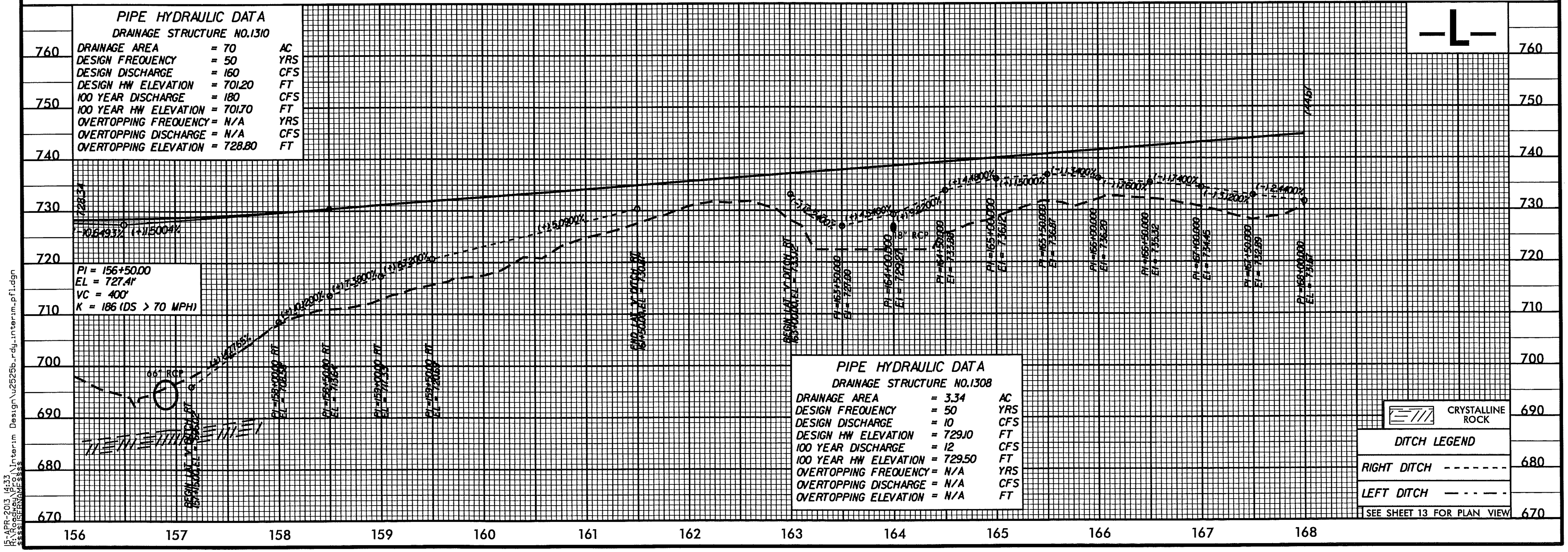

-L-
℄ STA 144+92 -L-
G.P. ELEV. = 735.41
SKEW VARIES (SEE TABLES)
SPANS VARY (SEE RECOMMENDED STRUCTURE)
735.53
728.34
(-)0.6493%
RANKIN MILL ROAD
CONC. ABUTMENT (1.5:1 NORMAL)
NATURAL GROUND
DS ONLY
DS ONLY
US ONLY
DS ONLY
US ONLY
DS ONLY
CRYSTALLINE ROCK
750
740
730
720
710
700
690
680
670
660
144
145
146
147
148
149
150
151
152
153
154
155
156

BM # 31 ELEVATION = 697.32'
N 863402 E 1791459
-L- STA.144+39 198' RIGHT
R/R SPIKE SET IN 12" PINE

SEE SHEET 12 FOR PLAN VIEW


-L-
728.34
744.51
(-)0.6493%
(+)1.5004%
66" RCP
(+)14.7765%
(+)10.1200%
(+)7.3800%
(+)6.7200%
(+)5.0900%
(-)12.5400%
(+)1.5400%
(+)1.9200%
18" RCP
(+)1.4800%
(+)1.5000%
(-)1.3400%
(-)1.7600%
(-)1.7400%
(-)1.5200%
(-)2.4400%
BEGIN LAT. 'V' DITCH RT 157+15.00, EL = 695.02
PI = 158+00.00 RT EL = 708.58
PI = 158+50.00 RT EL = 713.64
PI = 159+00.00 RT EL = 717.33
PI = 159+50.00 RT EL = 720.69
END LAT. 'V' DITCH RT 161+50.00, EL = 730.87
BEGIN LAT. 'V' DITCH RT 163+00.00, EL = 733.12
PI = 163+50.000 EL = 727.00
PI = 164+00.500 EL = 729.21
PI = 164+50.000 EL = 733.88
PI = 165+00.000 EL = 736.12
PI = 165+50.000 EL = 736.87
PI = 166+00.000 EL = 736.20
PI = 166+50.000 EL = 735.32
PI = 167+00.000 EL = 734.45
PI = 167+50.000 EL = 732.89
PI = 168+00.000 EL = 731.57
CRYSTALLINE ROCK
760
750
740
730
720
710
700
690
680
670
156
157
158
159
160
161
162
163
164
165
166
167
168

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.1310

DRAINAGE AREA	= 70	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 160	CFS
DESIGN HW ELEVATION	= 701.20	FT
100 YEAR DISCHARGE	= 180	CFS
100 YEAR HW ELEVATION	= 701.70	FT
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= 728.80	FT

PI = 156+50.00
EL = 727.41'
VC = 400'
K = 186 (DS > 70 MPH)

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.1308

DRAINAGE AREA	= 3.34	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 10	CFS
DESIGN HW ELEVATION	= 729.10	FT
100 YEAR DISCHARGE	= 12	CFS
100 YEAR HW ELEVATION	= 729.50	FT
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= N/A	FT

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

SEE SHEET 13 FOR PLAN VIEW

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PROJECT REFERENCE NO. U-2525B

SHEET NO. 46

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
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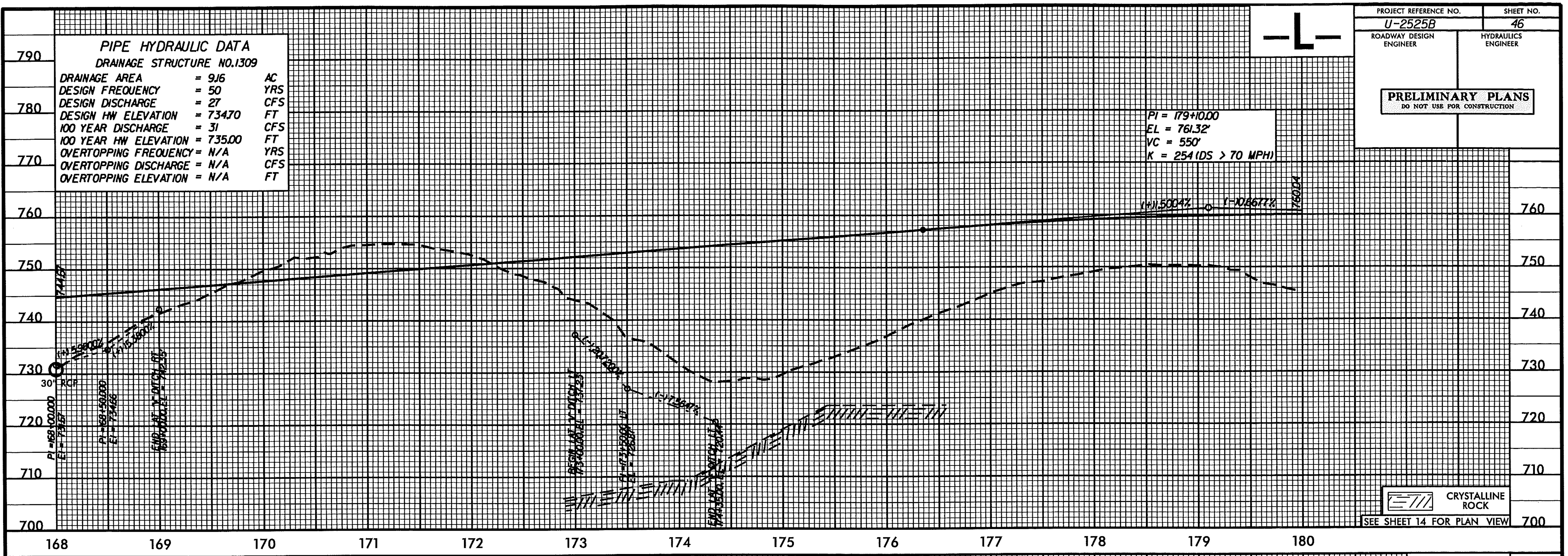
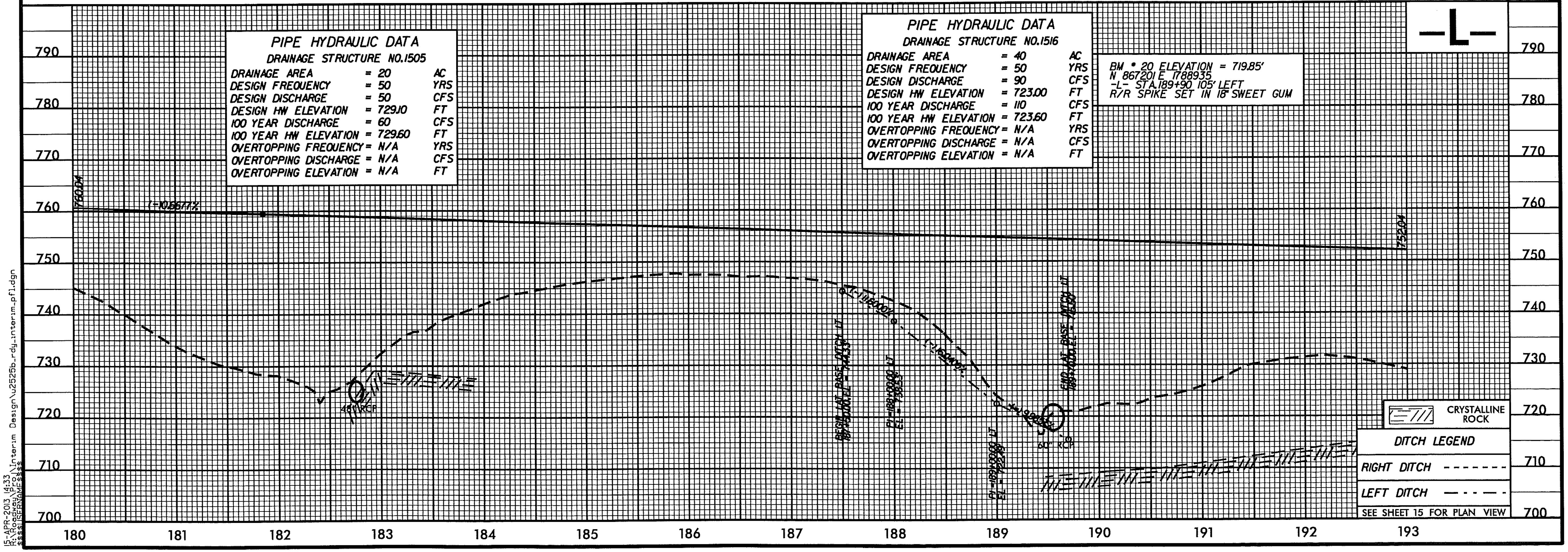

5/28/99
-L-
790
780
770
760
750
740
730
720
710
700
744.57
30" RCP
(+) 5.9800%
(+) 15.3800%
PI = 168+00.000 EL = 731.57
PI = 168+50.000 EL = 734.66
END LAT. "V" DITCH RT 169+00.00 EL = 742.35
BEGIN LAT. "V" DITCH LT 173+00.00 EL = 737.25
(-) 20.1200%
PI = 173+50.00 LT EL = 726.87
(-) 17.3647%
END LAT. "V" DITCH LT 174+35.00 EL = 720.44
(+) 1.5004%
(-) 0.6677%
760.04
PI = 179+10.00
EL = 761.32'
VC = 550'
K = 254 (DS > 70 MPH)
CRYSTALLINE ROCK
SEE SHEET 14 FOR PLAN VIEW
168
169
170
171
172
173
174
175
176
177
178
179
180

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.1309

DRAINAGE AREA = 9.16 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 27 CFS
DESIGN HW ELEVATION = 734.70 FT
100 YEAR DISCHARGE = 31 CFS
100 YEAR HW ELEVATION = 735.00 FT
OVERTOPPING FREQUENCY = N/A YRS
OVERTOPPING DISCHARGE = N/A CFS
OVERTOPPING ELEVATION = N/A FT


-L-
790
780
770
760
750
740
730
720
710
700
760.04
(-) 0.6677%
48" RCP
BEGIN LAT. BASE DITCH LT 187+50.00 EL = 744.33
(-) 11.6000%
PI = 188+00.00 LT EL = 738.53
(-) 16.2400%
PI = 189+00.00 LT EL = 722.29
(-) 4.9800%
60" RCP
END LAT. BASE DITCH LT 189+70.00 EL = 718.80
752.04
CRYSTALLINE ROCK
180
181
182
183
184
185
186
187
188
189
190
191
192
193

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.1505

DRAINAGE AREA = 20 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 50 CFS
DESIGN HW ELEVATION = 729.10 FT
100 YEAR DISCHARGE = 60 CFS
100 YEAR HW ELEVATION = 729.60 FT
OVERTOPPING FREQUENCY = N/A YRS
OVERTOPPING DISCHARGE = N/A CFS
OVERTOPPING ELEVATION = N/A FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.1516

DRAINAGE AREA = 40 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 90 CFS
DESIGN HW ELEVATION = 723.00 FT
100 YEAR DISCHARGE = 110 CFS
100 YEAR HW ELEVATION = 723.60 FT
OVERTOPPING FREQUENCY = N/A YRS
OVERTOPPING DISCHARGE = N/A CFS
OVERTOPPING ELEVATION = N/A FT

BM • 20 ELEVATION = 719.85'
N 867201 E 1788935
-L- STA.189+90 105' LEFT
R/R SPIKE SET IN 18" SWEET GUM

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

SEE SHEET 15 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	47

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
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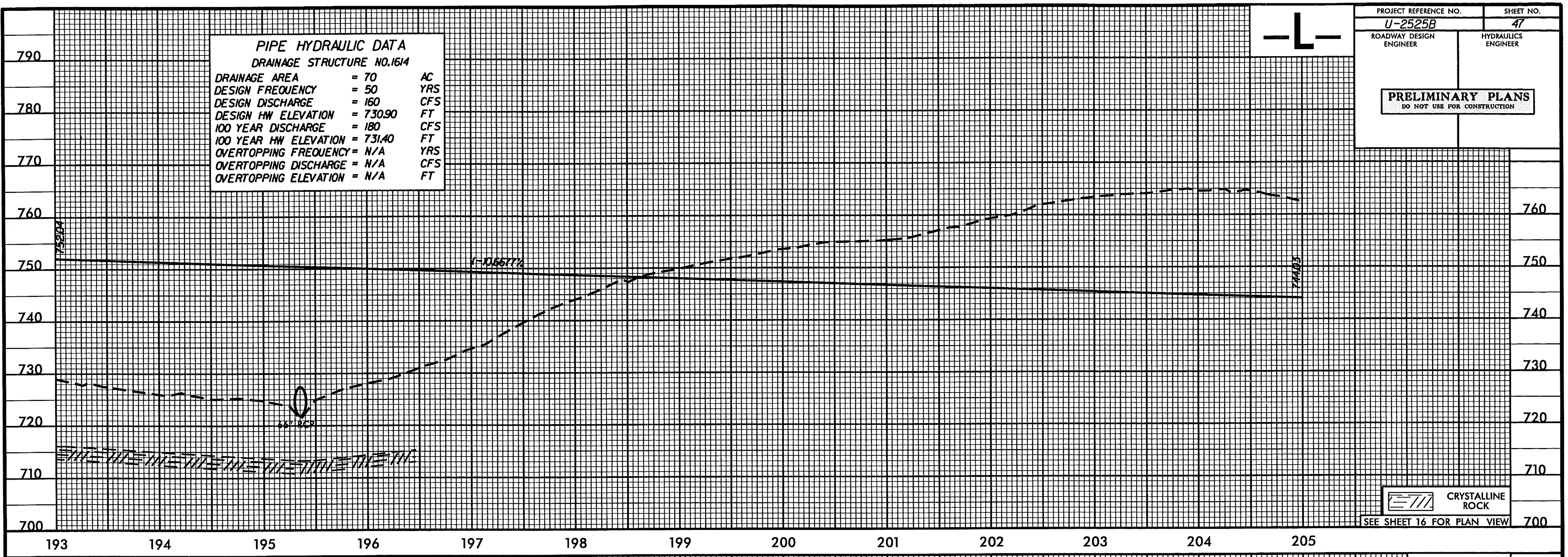
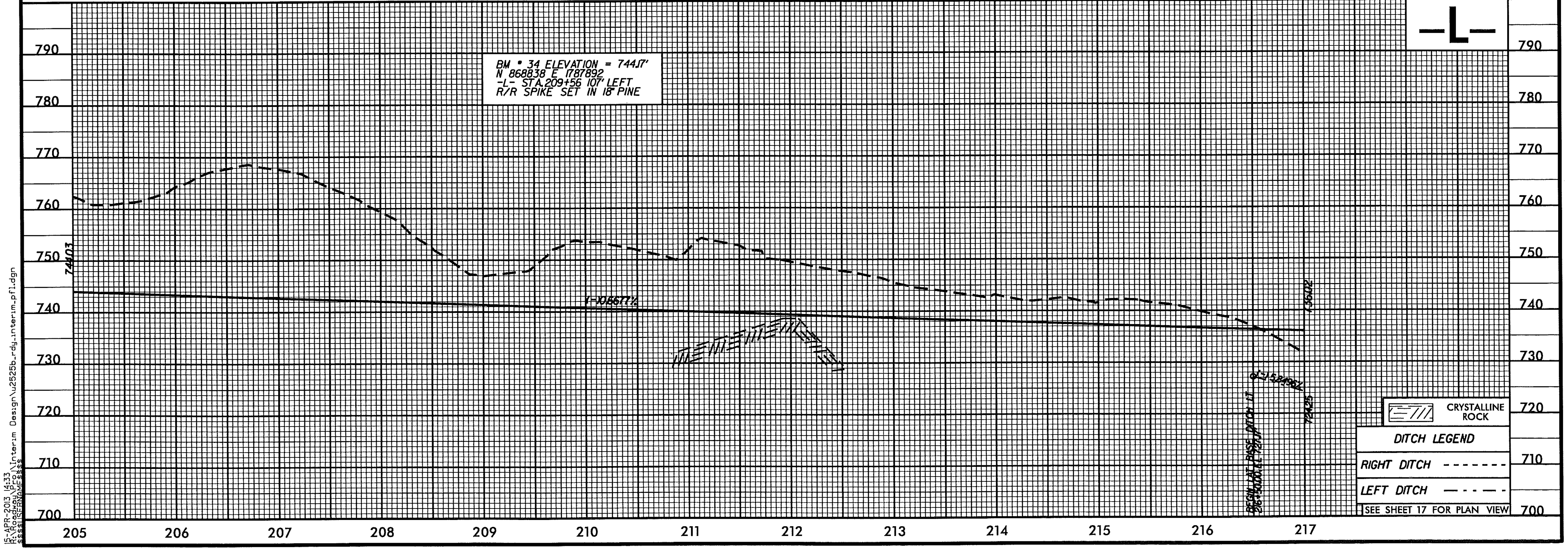

-L-
790
780
770
760
750
740
730
720
710
700
752.04
(-)0.6677%
744.03
66" RCP
CRYSTALLINE ROCK
SEE SHEET 16 FOR PLAN VIEW
193
194
195
196
197
198
199
200
201
202
203
204
205

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.1614

DRAINAGE AREA	= 70	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 160	CFS
DESIGN HW ELEVATION	= 730.90	FT
100 YEAR DISCHARGE	= 180	CFS
100 YEAR HW ELEVATION	= 731.40	FT
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= N/A	FT


-L-
790
780
770
760
750
740
730
720
710
700
744.03
(-)0.6677%
736.02
-1.53496%
724.25
BEGIN AT BASE DITCH LT
216+50.00 LT 729.17
CRYSTALLINE ROCK
SEE SHEET 17 FOR PLAN VIEW
205
206
207
208
209
210
211
212
213
214
215
216
217

BM • 34 ELEVATION = 744.17'
N 868838 E 1787892
-L- STA.209+56 107' LEFT
R/R SPIKE SET IN 18" PINE

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

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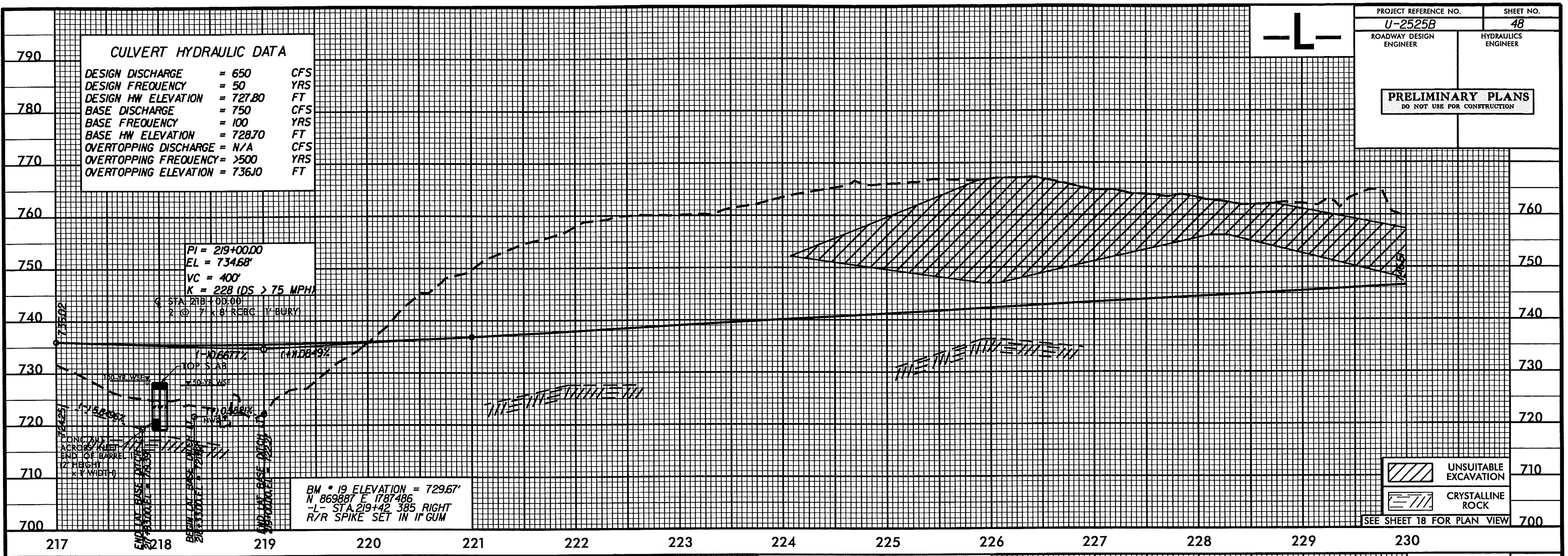
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	48
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



-L-

CULVERT HYDRAULIC DATA

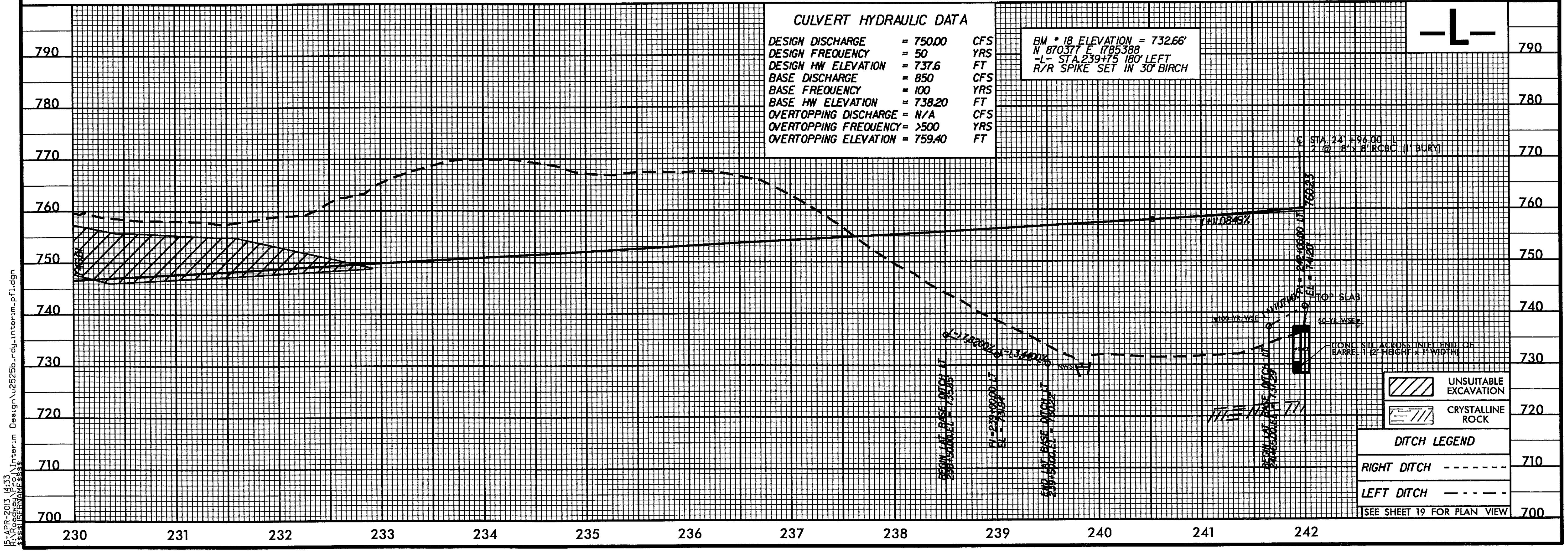
DESIGN DISCHARGE	=	650	CFS
DESIGN FREQUENCY	=	50	YRS
DESIGN HW ELEVATION	=	727.80	FT
BASE DISCHARGE	=	750	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	728.70	FT
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING FREQUENCY	=	>500	YRS
OVERTOPPING ELEVATION	=	736.10	FT

PI = 219+00.00
EL = 734.68'
VC = 400'
K = 228 (DS > 75 MPH)

BM • 19 ELEVATION = 729.67'
N 869887 E 1787486
-L- STA.219+42 385 RIGHT
R/R SPIKE SET IN 11" GUM

SEE SHEET 18 FOR PLAN VIEW

790
780
770
760
750
740
730
720
710
700
735.02
℄ STA. 218+00.00
2 @ 7' x 8' RCBC (1' BURY)
(-)0.6677%
(+)1.0849%
TOP SLAB
100-YR WSE
50-YR WSE
(-)5.8496%
(+)0.4881%
NWS
724.25
CONC. SILL ACROSS INLET END OF BARREL 1 (2' HEIGHT x 1' WIDTH)
END LAT. BASE DITCH LT 217+95.00 EL = 719.39
BEGIN LAT. BASE DITCH LT 218+55.00 EL = 721.81
END LAT. BASE DITCH LT 219+00.00 EL = 722.22
UNSUITABLE EXCAVATION
CRYSTALLINE ROCK
217
218
219
220
221
222
223
224
225
226
227
228
229
230



-L-

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	750.00	CFS
DESIGN FREQUENCY	=	50	YRS
DESIGN HW ELEVATION	=	737.6	FT
BASE DISCHARGE	=	850	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	738.20	FT
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING FREQUENCY	=	>500	YRS
OVERTOPPING ELEVATION	=	759.40	FT

BM • 18 ELEVATION = 732.66'
N 870377 E 1785388
-L- STA.239+75 180' LEFT
R/R SPIKE SET IN 30" BIRCH

DITCH LEGEND

RIGHT DITCH - - - - - - -

LEFT DITCH — - - — - -

SEE SHEET 19 FOR PLAN VIEW

790
780
770
760
750
740
730
720
710
700
℄ STA. 241+96.00 -L-
2 @ 8' x 8' RCBC (1' BURY)
760.23
(+)1.0849%
PI = 242+00.00 EL = 741.26
TOP SLAB
100-YR WSE
50-YR WSE
(+)11.7147%
CONC. SILL ACROSS INLET END OF BARREL 1 (2' HEIGHT x 1' WIDTH)
(-)7.8200%
(-)3.4400%
NWS
BEGIN LAT. BASE DITCH LT 238+50.00 EL = 735.85
PI = 239+00.00 LT EL = 731.94
END LAT. BASE DITCH LT 239+50.00 EL = 730.22
BEGIN LAT. BASE DITCH LT 241+65.00 EL = 737.29
UNSUITABLE EXCAVATION
CRYSTALLINE ROCK
230
231
232
233
234
235
236
237
238
239
240
241
242

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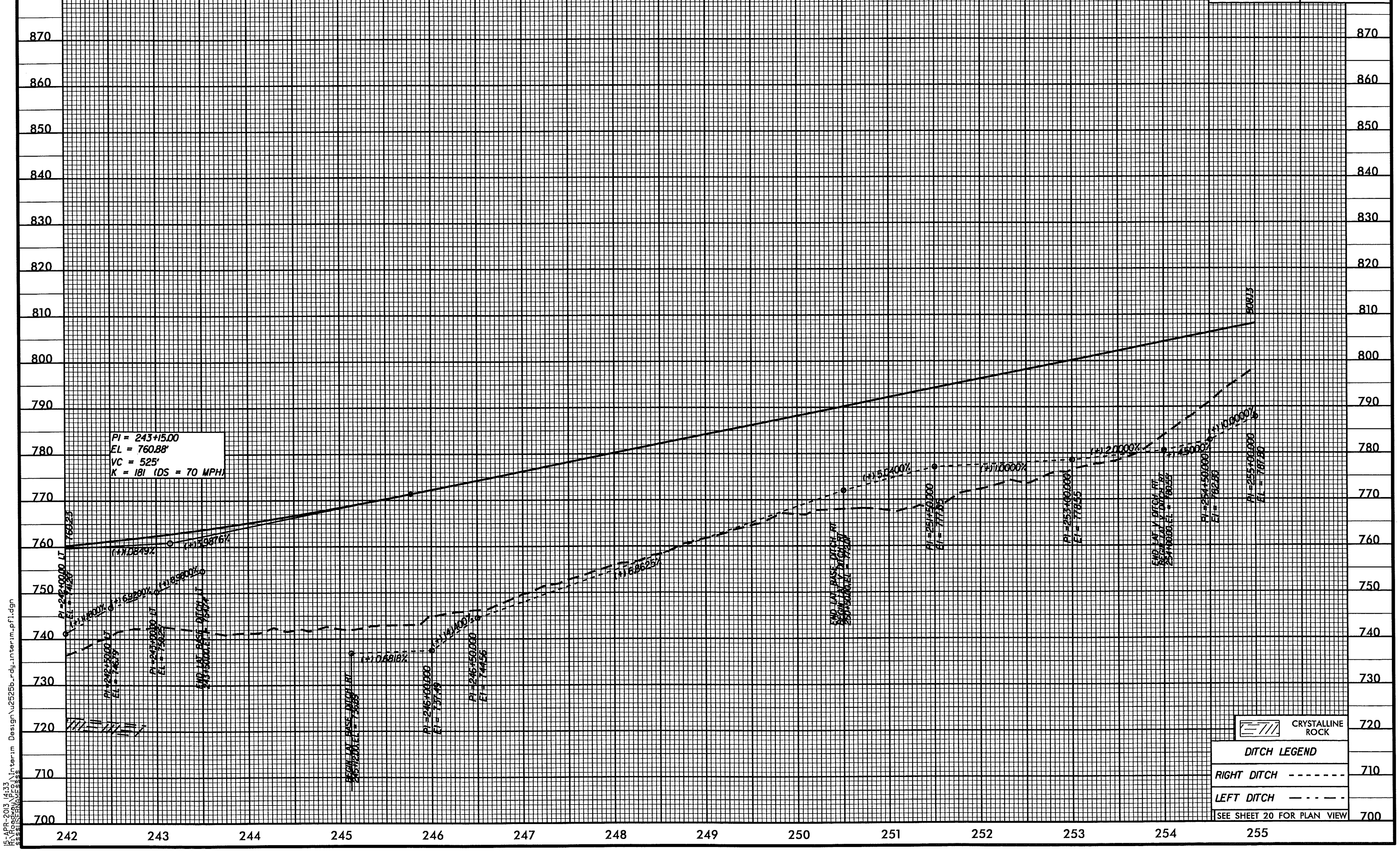
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	49
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


PI = 243+15.00
EL = 760.88'
VC = 525'
K = 181 (DS = 70 MPH)
760.23
808.13
(+)1.0849%
(+)3.9876%
PI =242+00.00 LT
EL = 741.20
(+)1.1900%
(+)1.6.9200%
(+)8.9800%
PI =242+50.00 LT
EL = 746.79
PI =243+00.00 LT
EL = 750.23
END LAT. BASE DITCH LT
243+50.00,EL = 754.74
BEGIN LAT. BASE DITCH RT
245+12.00,EL = 736.85
(+)0.6818%
PI =246+00.000
EL = 737.49
(+)14.1400%
PI =246+50.000
EL = 744.56
(+)6.8625%
END LAT. BASE DITCH RT
BEGIN LAT. V DITCH RT
250+50.00,EL = 772.01
(+)5.0400%
PI =251+50.000
EL = 777.05
(+)1.0000%
PI =253+00.000
EL = 778.55
(+)2.0000%
END LAT. V DITCH RT
BEGIN LAT. V DITCH RT
254+00.00,EL = 780.55
(+)4.5000%
PI =254+50.000
EL = 782.80
(+)10.0000%
PI =255+00.000
EL = 787.80
870
860
850
840
830
820
810
800
790
780
770
760
750
740
730
720
710
700
242
243
244
245
246
247
248
249
250
251
252
253
254
255
CRYSTALLINE ROCK
DITCH LEGEND
RIGHT DITCH - - - - - - -
LEFT DITCH — · — · —
SEE SHEET 20 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	50

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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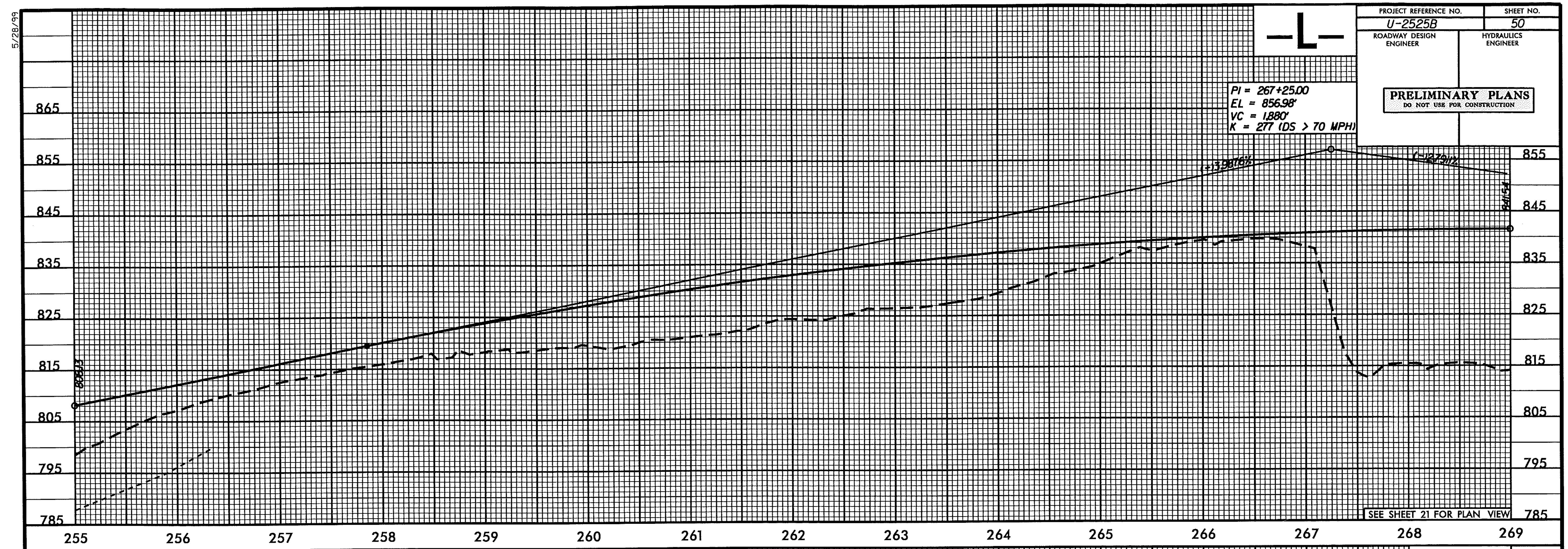

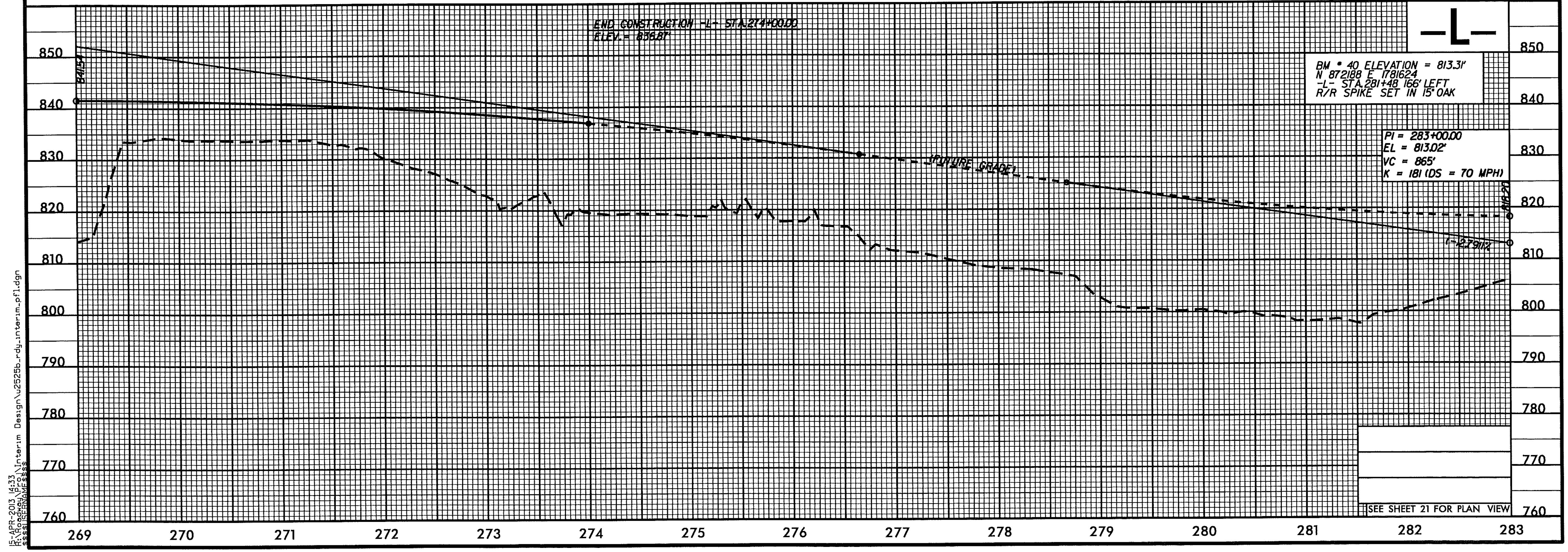

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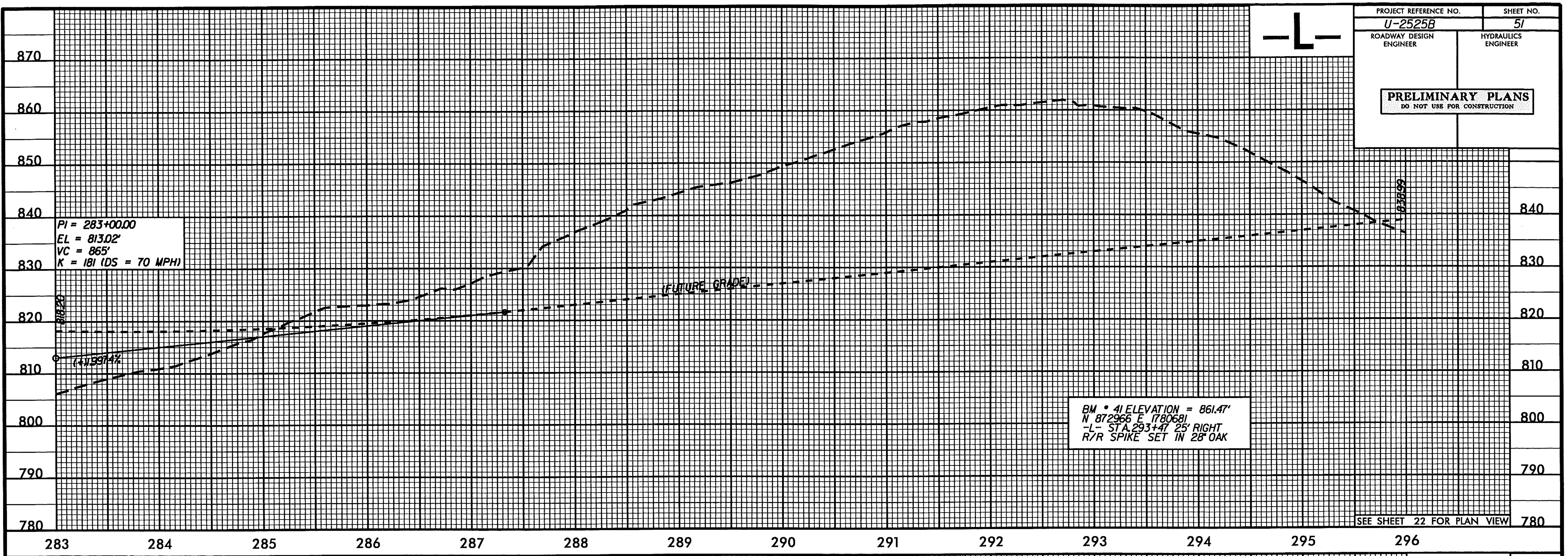
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	51

ROADWAY DESIGN ENGINEER

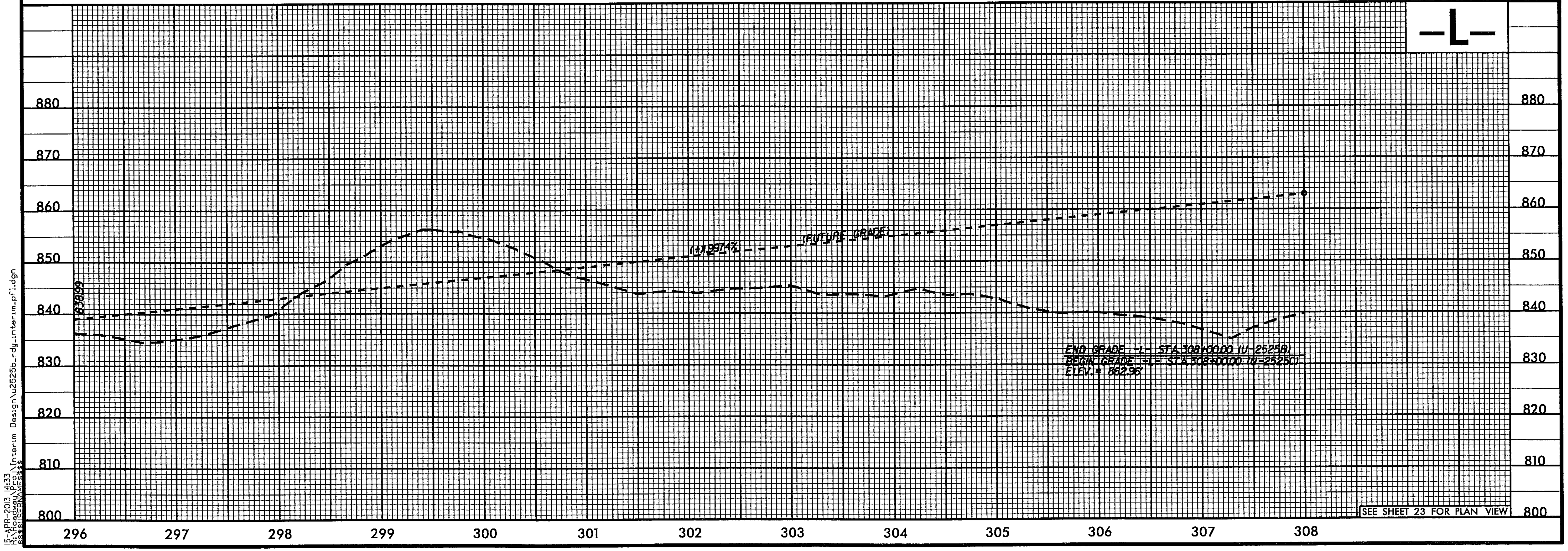
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PI = 283+00.00
EL = 813.02'
VC = 865'
K = 181 (DS = 70 MPH)

BM • 41 ELEVATION = 861.47'
N 872966 E 1780681
-L- STA.293+47 25' RIGHT
R/R SPIKE SET IN 28" OAK



END GRADE -L- STA.308+00.00 (U-2525B)
BEGIN GRADE -L- STA.308+00.00 (U-2525C)
ELEV.= 862.96'

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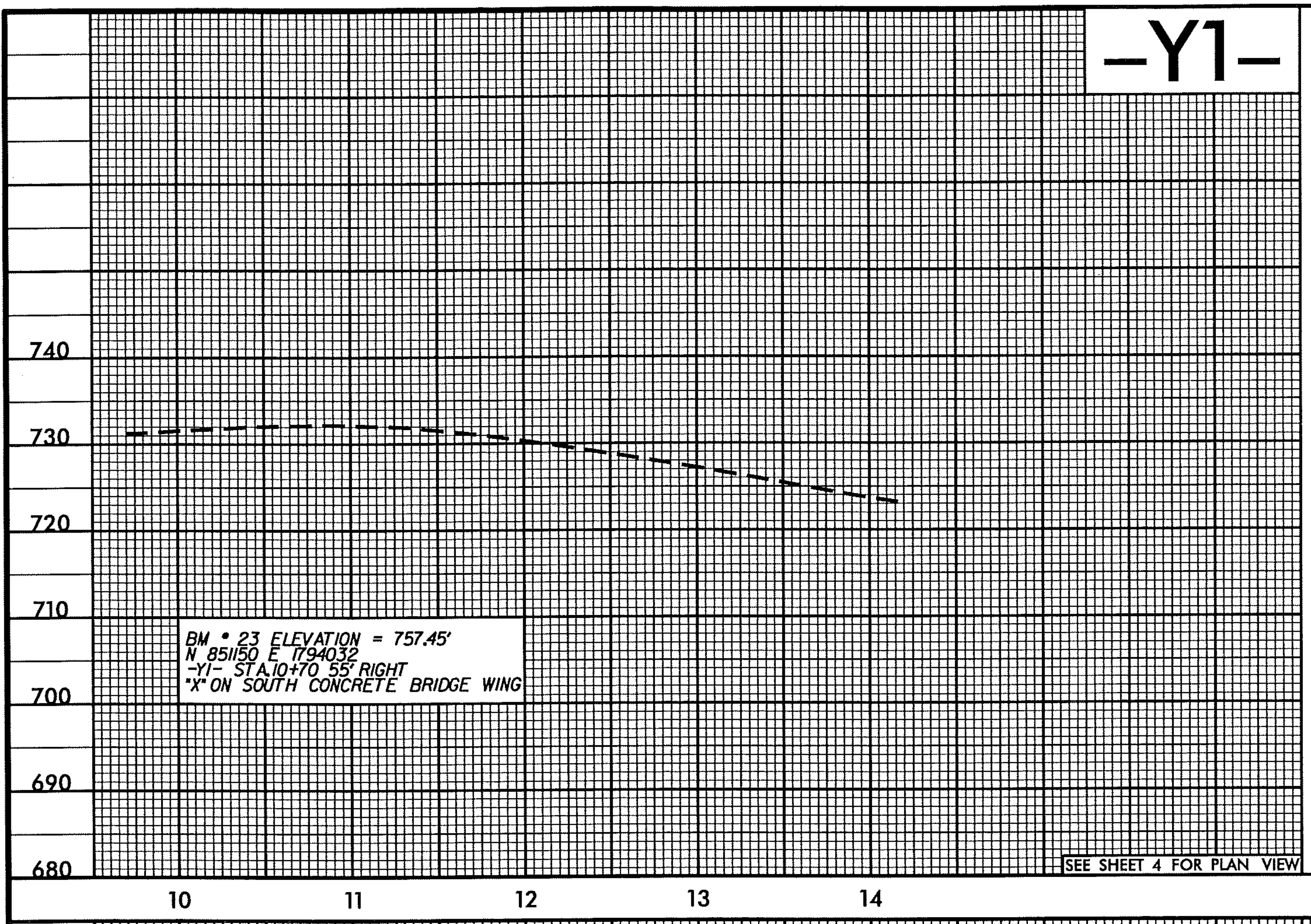
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	52

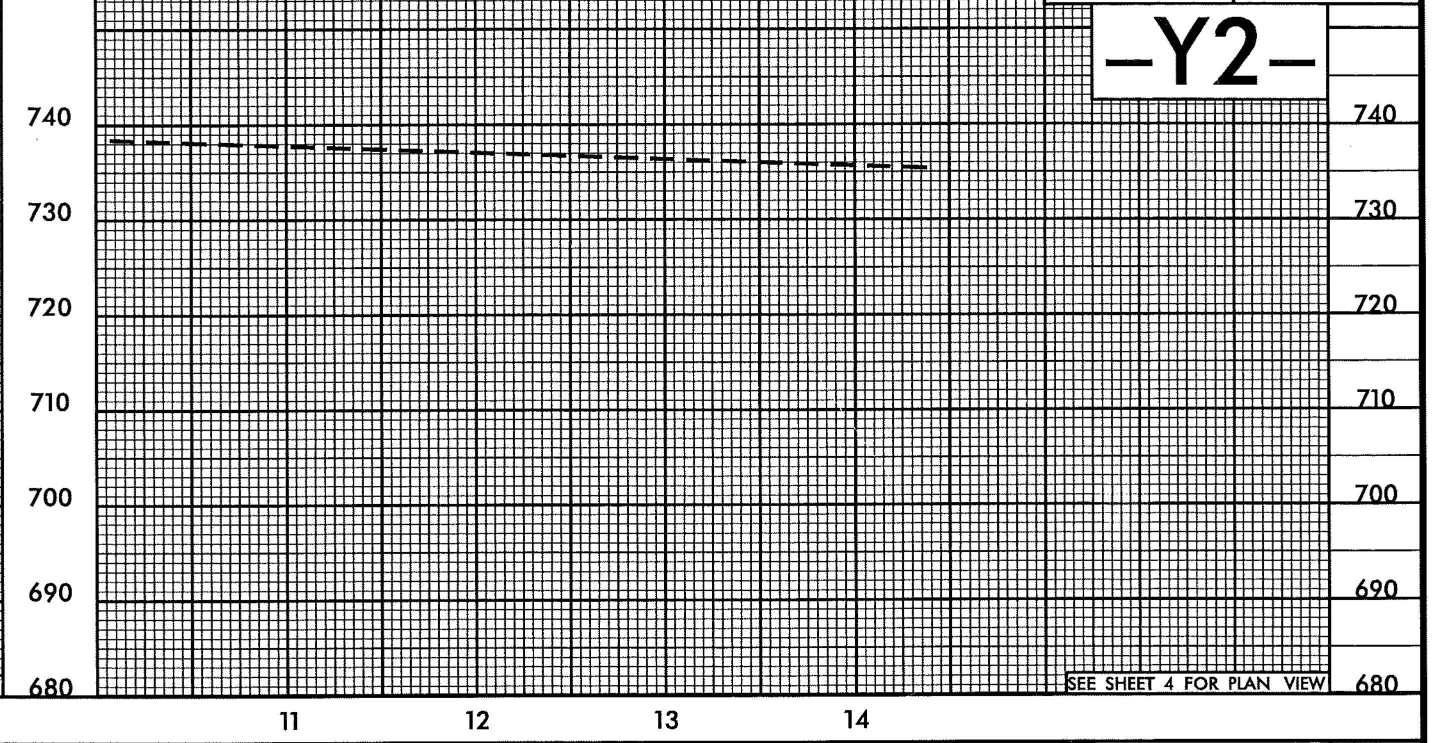
ROADWAY DESIGN ENGINEER

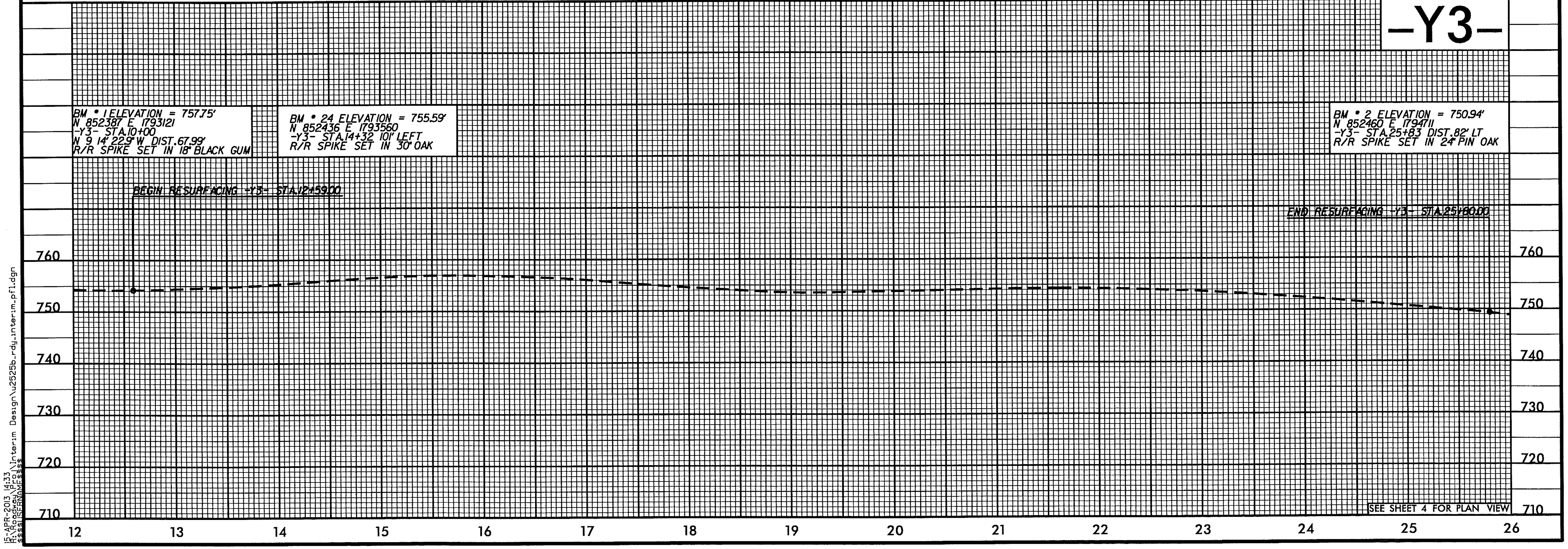
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/28/99







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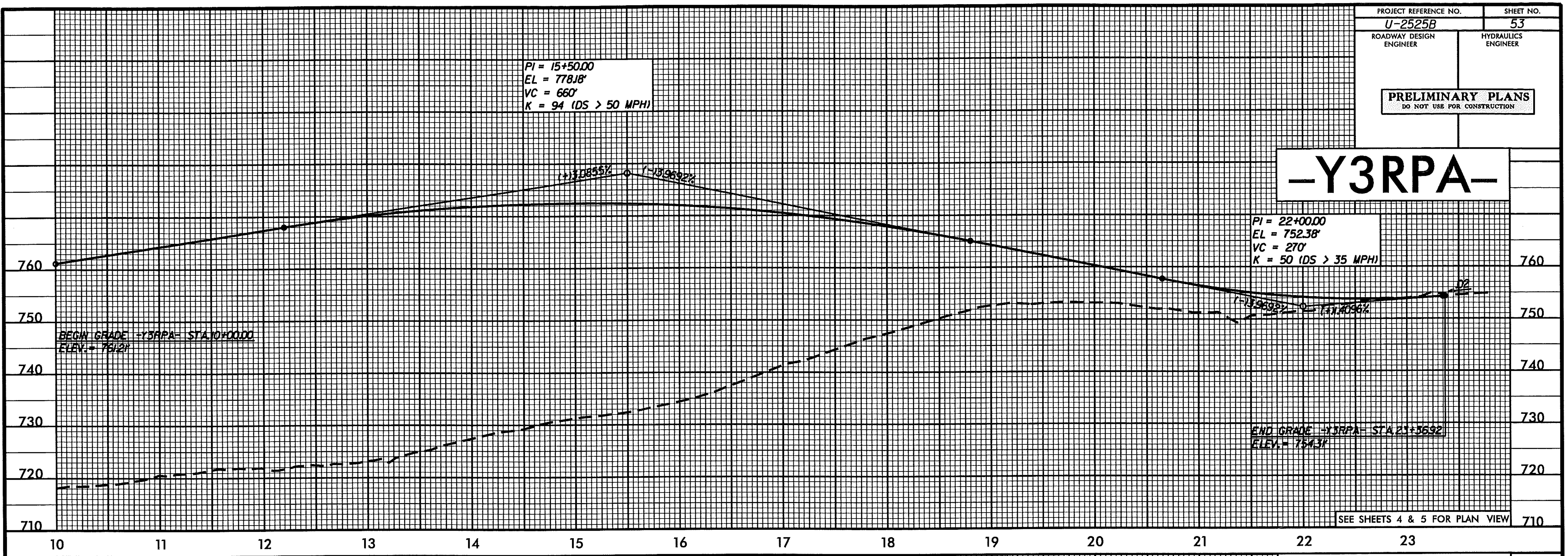
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	53

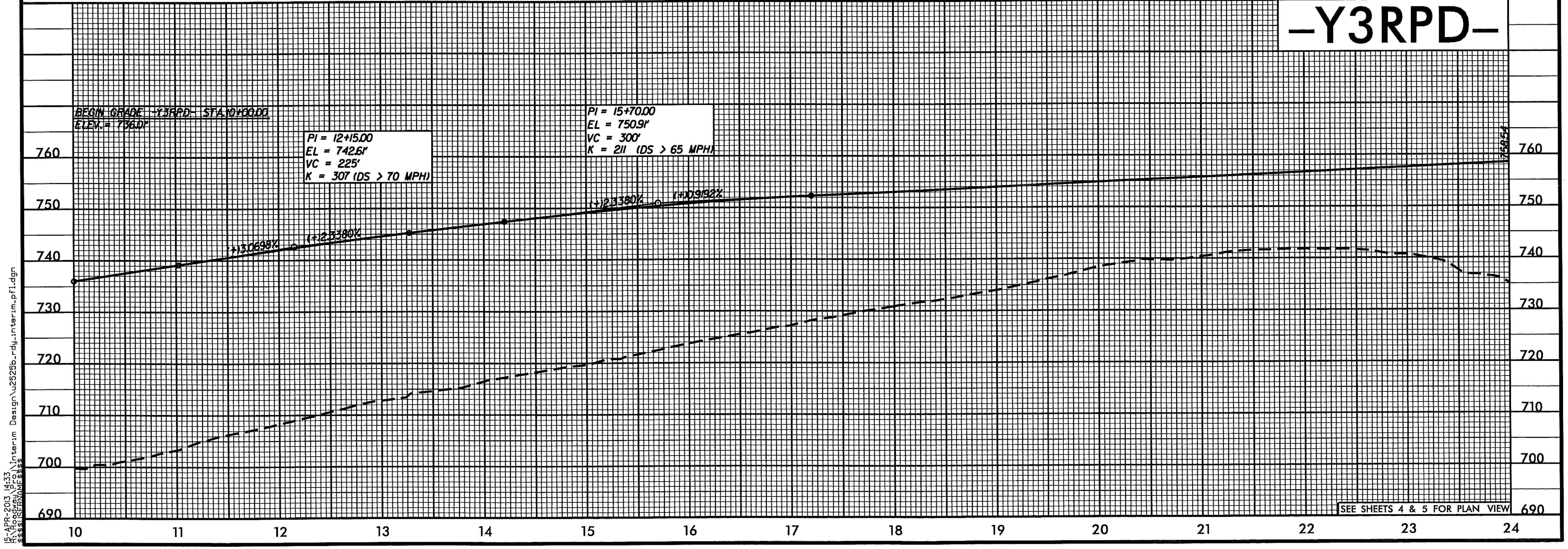
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y3RPA-


PI = 15+50.00
EL = 778.18'
VC = 660'
K = 94 (DS > 50 MPH)
(+)3.0855%
(-)3.9692%
PI = 22+00.00
EL = 752.38'
VC = 270'
K = 50 (DS > 35 MPH)
(-)3.9692%
(+)1.4096%
.02
BEGIN GRADE -Y3RPA- STA.10+00.00
ELEV.= 761.21'
END GRADE -Y3RPA- STA.23+56.92
ELEV.= 754.31'
SEE SHEETS 4 & 5 FOR PLAN VIEW
760
750
740
730
720
710
10
11
12
13
14
15
16
17
18
19
20
21
22
23

-Y3RPD-


BEGIN GRADE -Y3RPD- STA.10+00.00
ELEV.= 736.01'
PI = 12+15.00
EL = 742.61'
VC = 225'
K = 307 (DS > 70 MPH)
PI = 15+70.00
EL = 750.91'
VC = 300'
K = 211 (DS > 65 MPH)
(+)3.0698%
(+)2.3380%
(+)2.3380%
(+)0.9192%
758.54
SEE SHEETS 4 & 5 FOR PLAN VIEW
760
750
740
730
720
710
700
690
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

5/28/99

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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	54
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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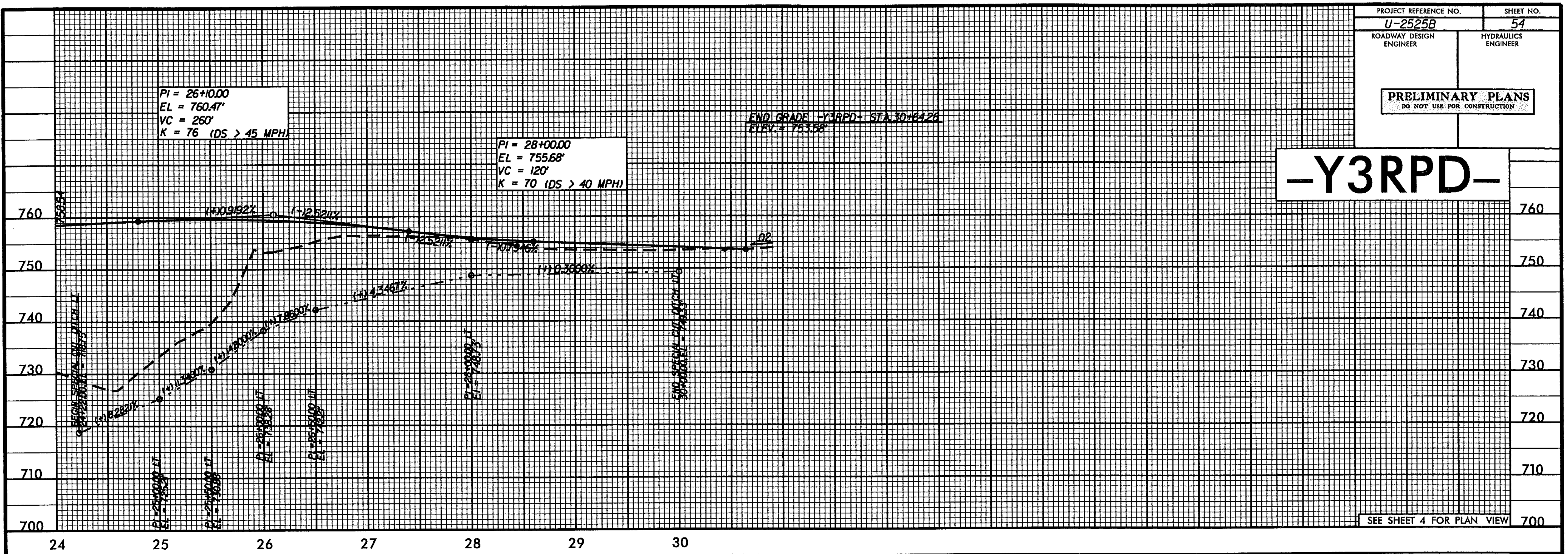
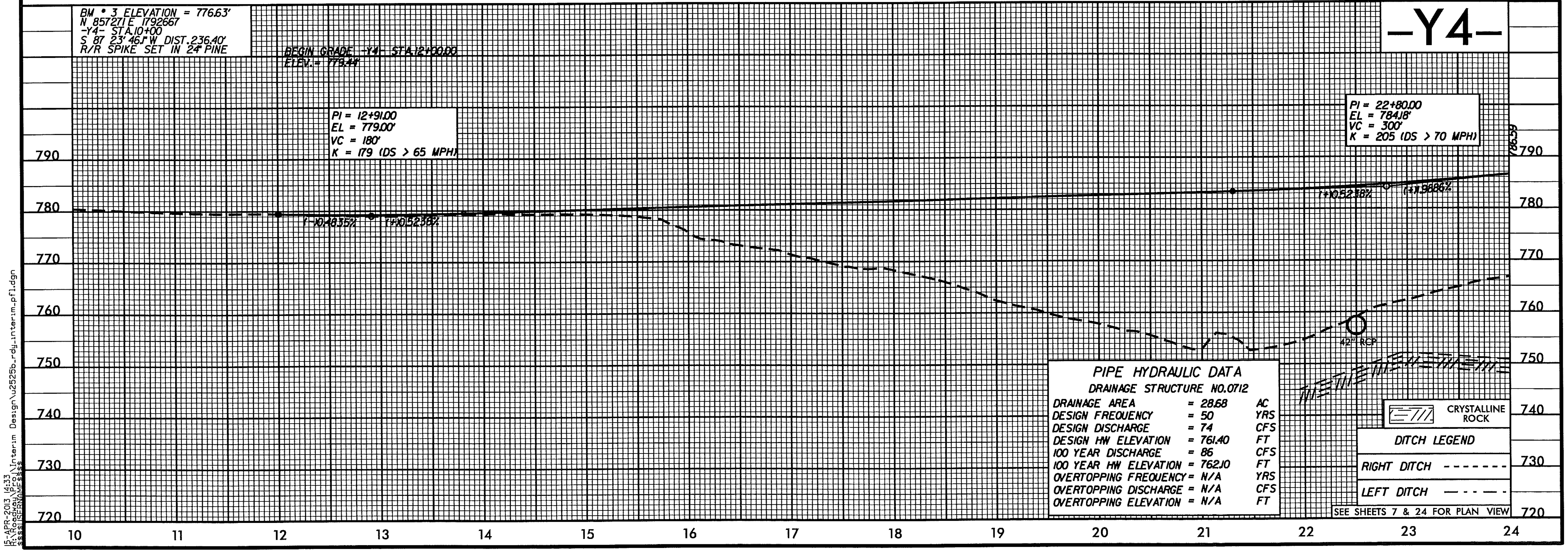
-Y3RPD-


PI = 26+10.00
EL = 760.47'
VC = 260'
K = 76 (DS > 45 MPH)
PI = 28+00.00
EL = 755.68'
VC = 120'
K = 70 (DS > 40 MPH)
END GRADE -Y3RPD- STA.30+64.28
ELEV.= 753.58'
758.54
(+)0.9192%
(-)2.5211%
(-)2.5211%
(-)0.7946%
.02
(+)0.3600%
(+)4.3467%
(+)1.7600%
(+)4.9000%
(+)11.3400%
(+)8.2821%
BEGIN SPECIAL CUT DITCH LT
24+22.00 EL = 718.75'
PI =25+00.00 LT
EL = 725.25'
PI =25+50.00 LT
EL = 730.93'
PI =26+00.00 LT
EL = 738.38'
PI =26+50.00 LT
EL = 742.25'
PI =28+00.00 LT
EL = 748.73'
END SPECIAL CUT DITCH LT
30+00.00 EL = 749.33'
760
750
740
730
720
710
700
24
25
26
27
28
29
30
SEE SHEET 4 FOR PLAN VIEW

-Y4-


BM • 3 ELEVATION = 776.63'
N 857271 E 1792667
-Y4- STA.10+00
S 87 23' 46.1" W DIST.236.40'
R/R SPIKE SET IN 24" PINE
BEGIN GRADE -Y4- STA.12+00.00
ELEV.= 779.44'
PI = 12+91.00
EL = 779.00'
VC = 180'
K = 179 (DS > 65 MPH)
PI = 22+80.00
EL = 784.18'
VC = 300'
K = 205 (DS > 70 MPH)
786.59
(-)0.4835%
(+)0.5238%
(+)0.5238%
(+)1.9886%
42" RCP
CRYSTALLINE ROCK
790
780
770
760
750
740
730
720
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
SEE SHEETS 7 & 24 FOR PLAN VIEW

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.0712

DRAINAGE AREA	=	28.68	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	74	CFS
DESIGN HW ELEVATION	=	761.40	FT
100 YEAR DISCHARGE	=	86	CFS
100 YEAR HW ELEVATION	=	762.10	FT
OVERTOPPING FREQUENCY	=	N/A	YRS
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING ELEVATION	=	N/A	FT

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

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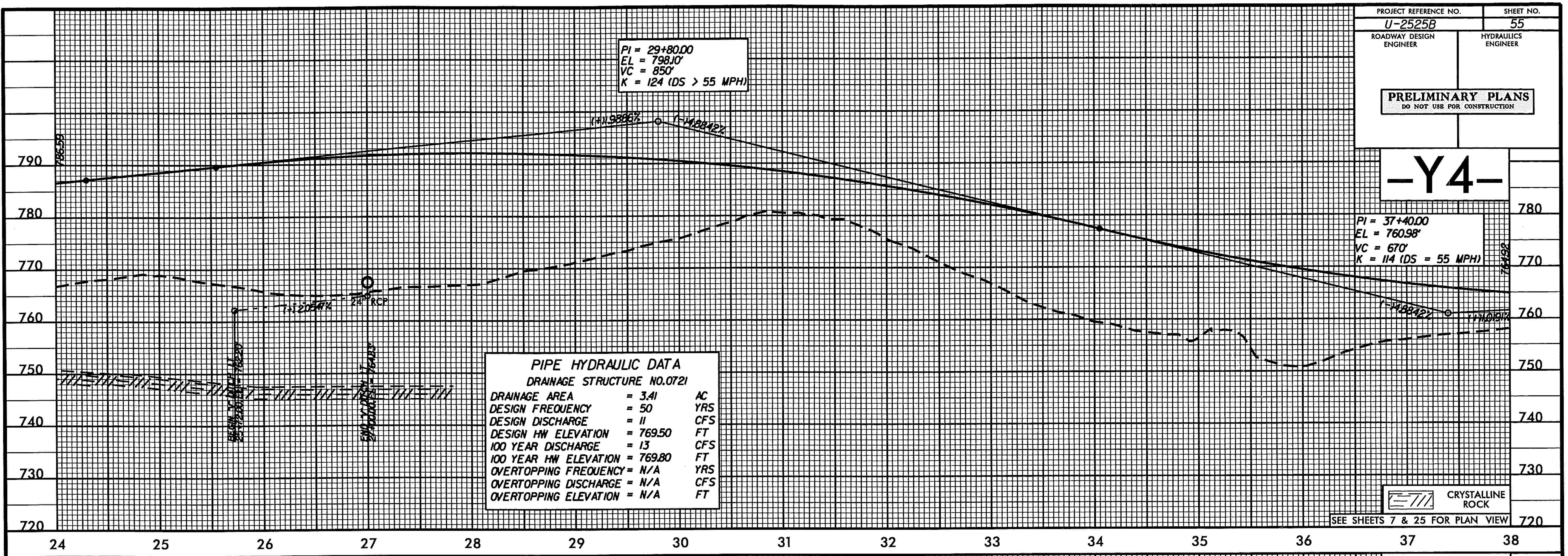
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	55

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y4-


5/28/99
790
780
770
760
750
740
730
720
785.59
(+)1.9886%
(-)1.4884%
(-)1.4884%
(+)1.1205%
24" RCP
(+)0.019%
764.92
BEGIN 'X' DITCH LT. 25+72.00 EL = 762.20
END 'X' DITCH LT. 27+00.00 EL = 764.83
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38

PI = 29+80.00
EL = 798.10'
VC = 850'
K = 124 (DS > 55 MPH)

PI = 37+40.00
EL = 760.98'
VC = 670'
K = 114 (DS = 55 MPH)

PIPE HYDRAULIC DATA

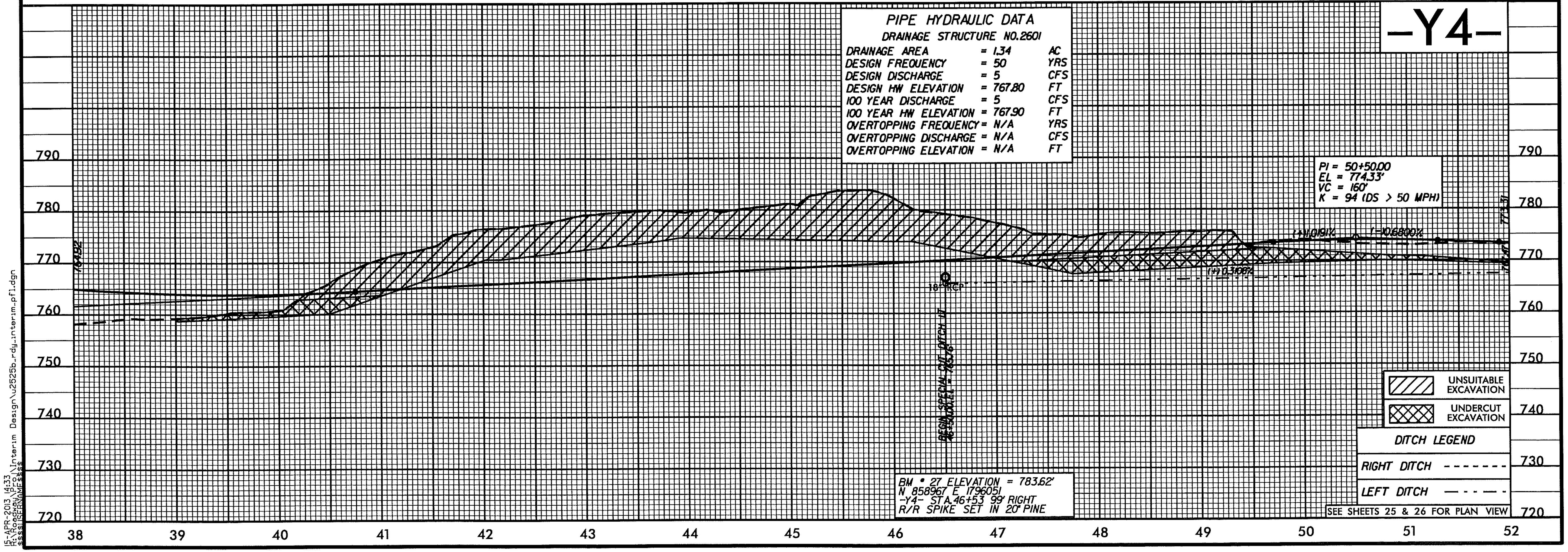
DRAINAGE STRUCTURE NO.0721

DRAINAGE AREA	=	3.41	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	11	CFS
DESIGN HW ELEVATION	=	769.50	FT
100 YEAR DISCHARGE	=	13	CFS
100 YEAR HW ELEVATION	=	769.80	FT
OVERTOPPING FREQUENCY	=	N/A	YRS
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING ELEVATION	=	N/A	FT

▨ CRYSTALLINE ROCK

SEE SHEETS 7 & 25 FOR PLAN VIEW

-Y4-


790
780
770
760
750
740
730
720
764.92
773.31
(+)0.019%
(-)0.6800%
(+)0.3108%
18" RCP
BEGIN SPECIAL CUT DITCH LT 46+50.00 EL = 765.76
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.2601

DRAINAGE AREA	=	1.34	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	5	CFS
DESIGN HW ELEVATION	=	767.80	FT
100 YEAR DISCHARGE	=	5	CFS
100 YEAR HW ELEVATION	=	767.90	FT
OVERTOPPING FREQUENCY	=	N/A	YRS
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING ELEVATION	=	N/A	FT

PI = 50+50.00
EL = 774.33'
VC = 160'
K = 94 (DS > 50 MPH)

▨ UNSUITABLE EXCAVATION

▩ UNDERCUT EXCAVATION

DITCH LEGEND

RIGHT DITCH - - - - - - -

LEFT DITCH — - — - —

BM • 27 ELEVATION = 783.62'
N 858967 E 1796051
-Y4- STA.46+53 99' RIGHT
R/R SPIKE SET IN 20" PINE

SEE SHEETS 25 & 26 FOR PLAN VIEW

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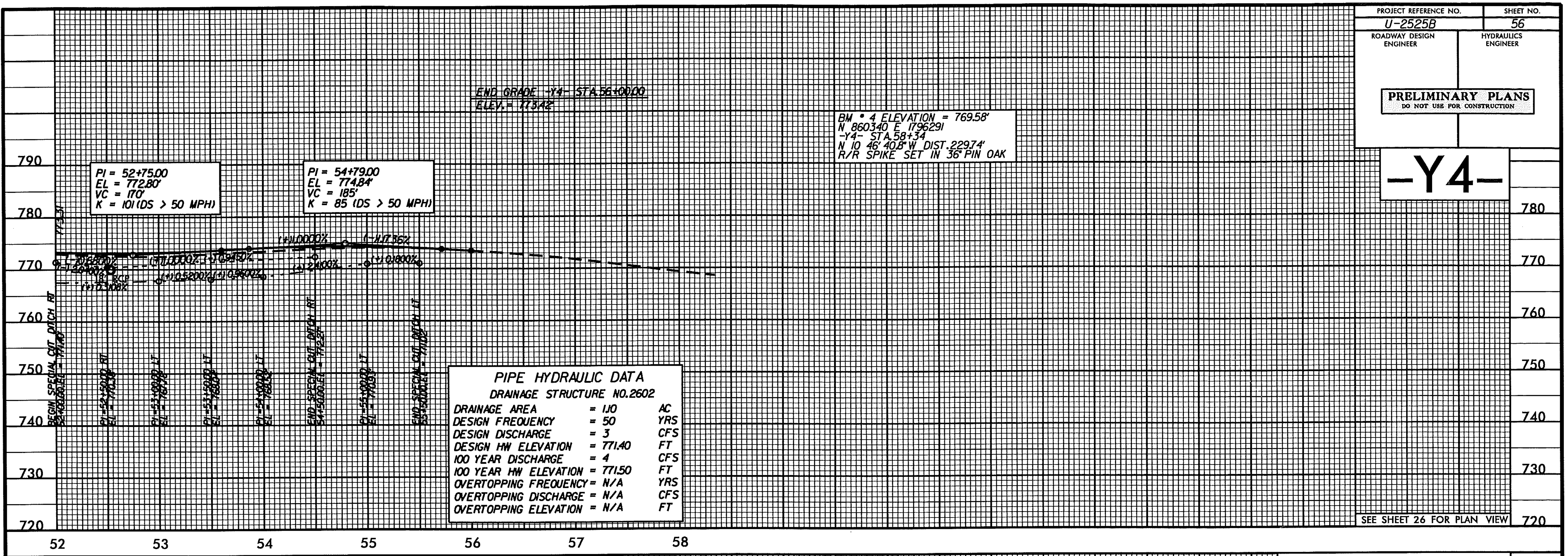
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	56

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y4-



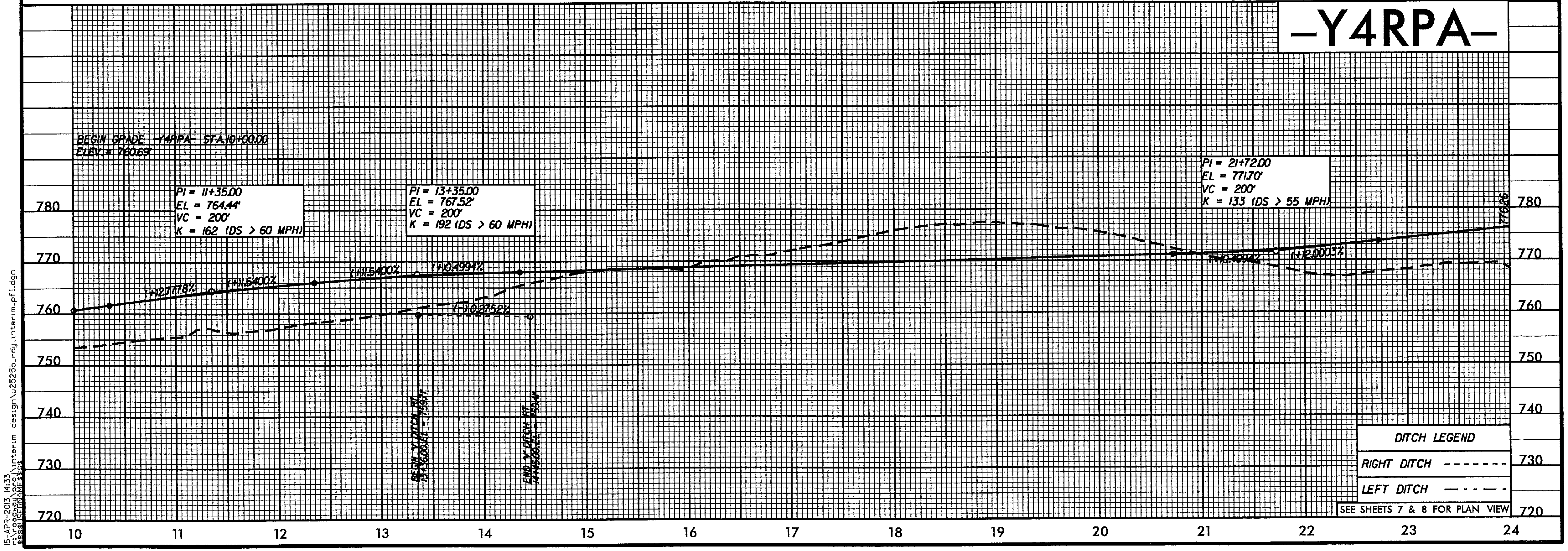
BM • 4 ELEVATION = 769.58'
N 860340 E 1796291
-Y4- STA.58+34
N 10 46' 40.8" W DIST.229.74'
R/R SPIKE SET IN 36" PIN OAK

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.2602

DRAINAGE AREA	=	1.10	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	3	CFS
DESIGN HW ELEVATION	=	771.40	FT
100 YEAR DISCHARGE	=	4	CFS
100 YEAR HW ELEVATION	=	771.50	FT
OVERTOPPING FREQUENCY	=	N/A	YRS
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING ELEVATION	=	N/A	FT

SEE SHEET 26 FOR PLAN VIEW

-Y4RPA-



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

SEE SHEETS 7 & 8 FOR PLAN VIEW

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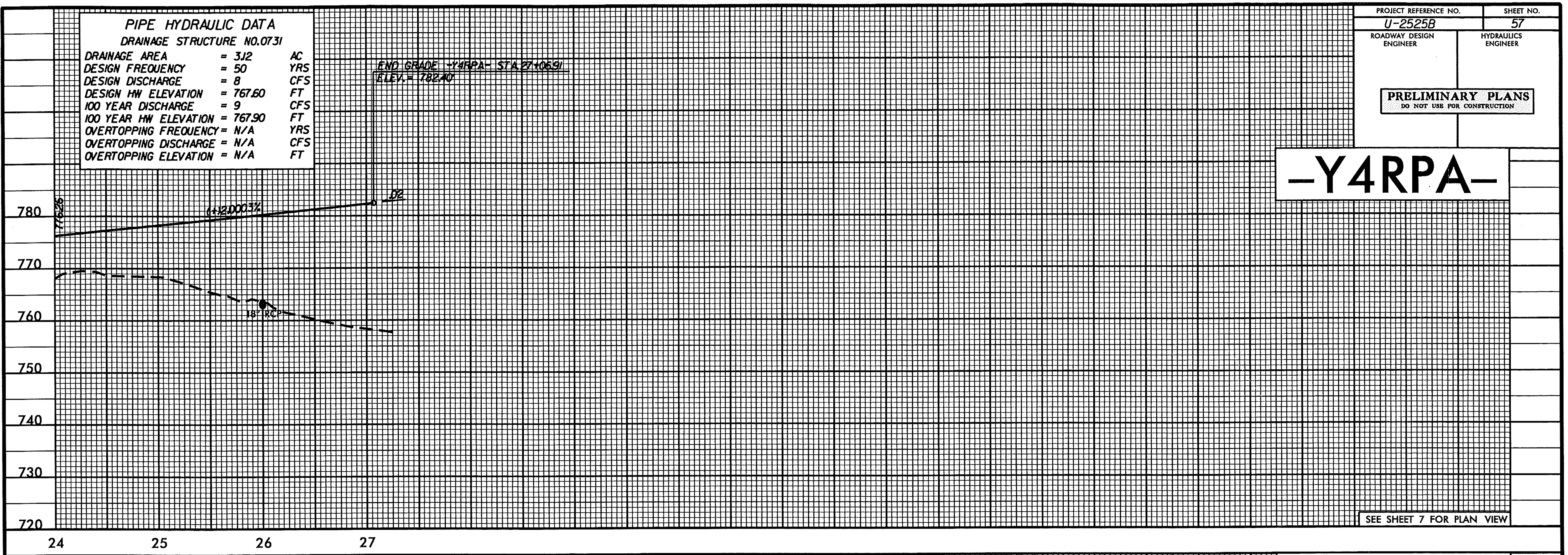
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	57
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

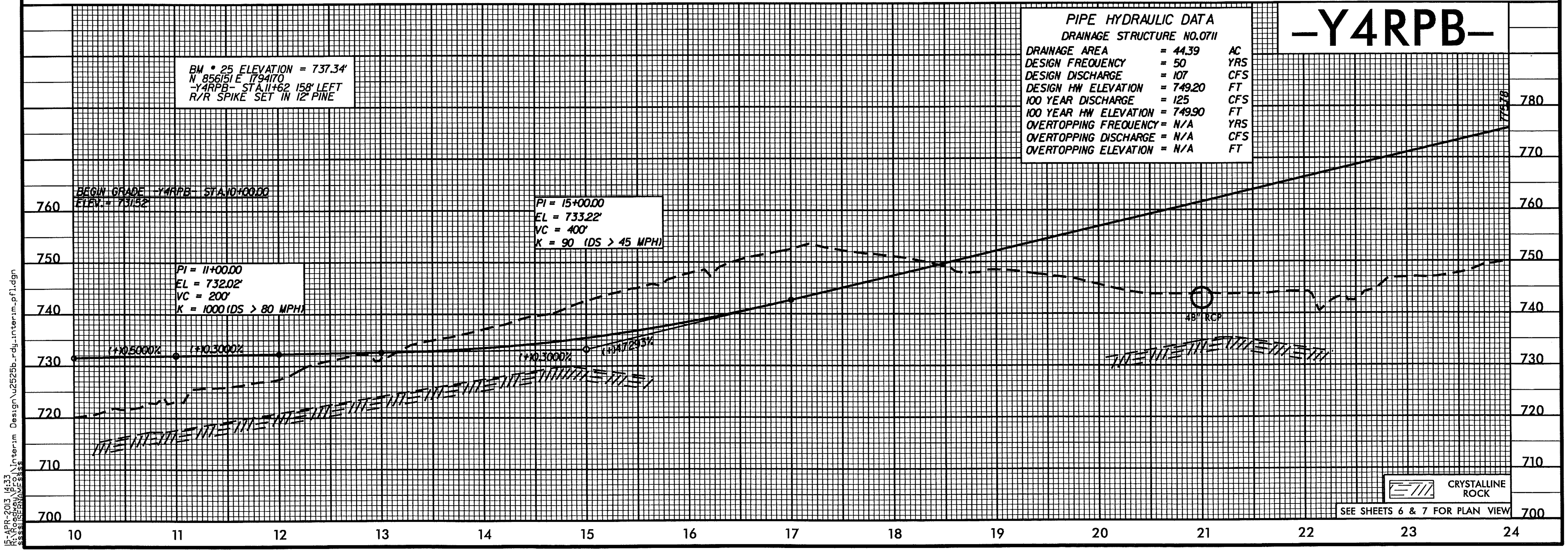


-Y4RPA-
780
770
760
750
740
730
720
24
25
26
27
776.26
(+)2.0003%
.02
18" RCP
SEE SHEET 7 FOR PLAN VIEW

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.0731

DRAINAGE AREA	= 3.12	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 8	CFS
DESIGN HW ELEVATION	= 767.60	FT
100 YEAR DISCHARGE	= 9	CFS
100 YEAR HW ELEVATION	= 767.90	FT
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= N/A	FT

END GRADE -Y4RPA- STA.27+06.91
ELEV.= 782.40'



-Y4RPB-
760
750
740
730
720
710
700
780
770
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
777.78
(+)0.5000%
(+)0.3000%
(+)0.3000%
(+)4.7293%
48" RCP
CRYSTALLINE ROCK
SEE SHEETS 6 & 7 FOR PLAN VIEW

BM • 25 ELEVATION = 737.34'
N 856151 E 1794170
-Y4RPB- STA.11+62 158' LEFT
R/R SPIKE SET IN 12" PINE

BEGIN GRADE -Y4RPB- STA.10+00.00
ELEV.= 731.52'

PI = 11+00.00
EL = 732.02'
VC = 200'
K = 1000 (DS > 80 MPH)

PI = 15+00.00
EL = 733.22'
VC = 400'
K = 90 (DS > 45 MPH)

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.0711

DRAINAGE AREA	= 44.39	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 107	CFS
DESIGN HW ELEVATION	= 749.20	FT
100 YEAR DISCHARGE	= 125	CFS
100 YEAR HW ELEVATION	= 749.90	FT
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= N/A	FT

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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	58

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
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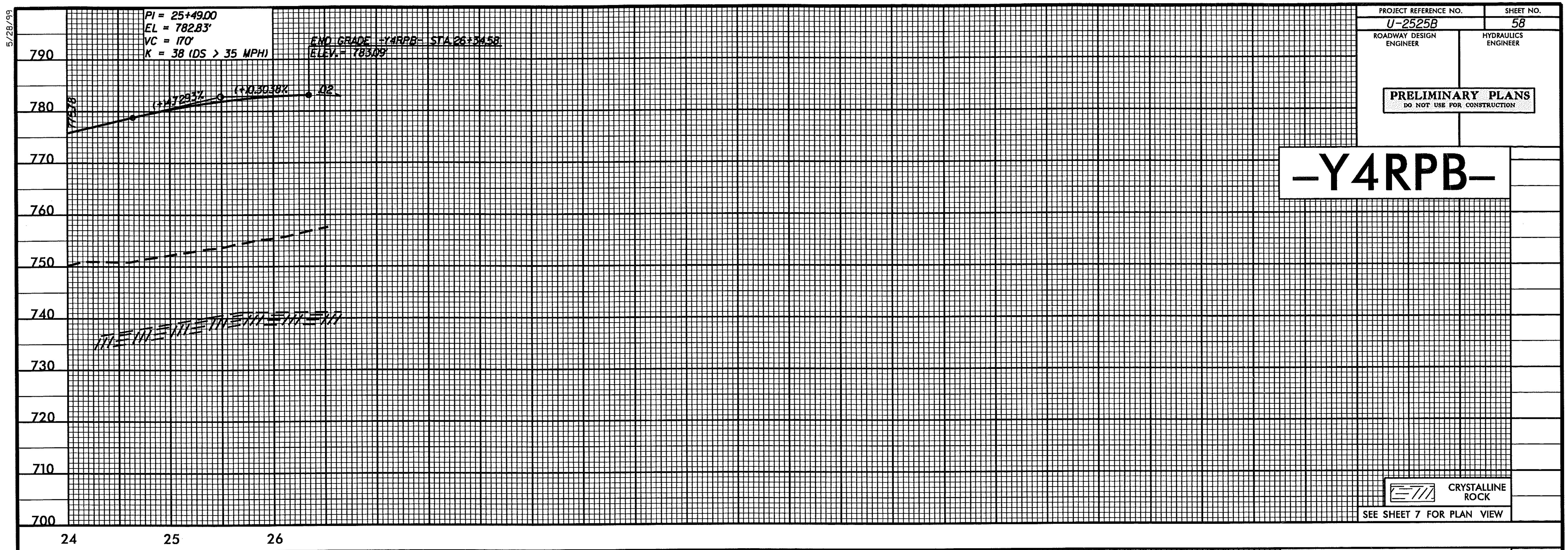
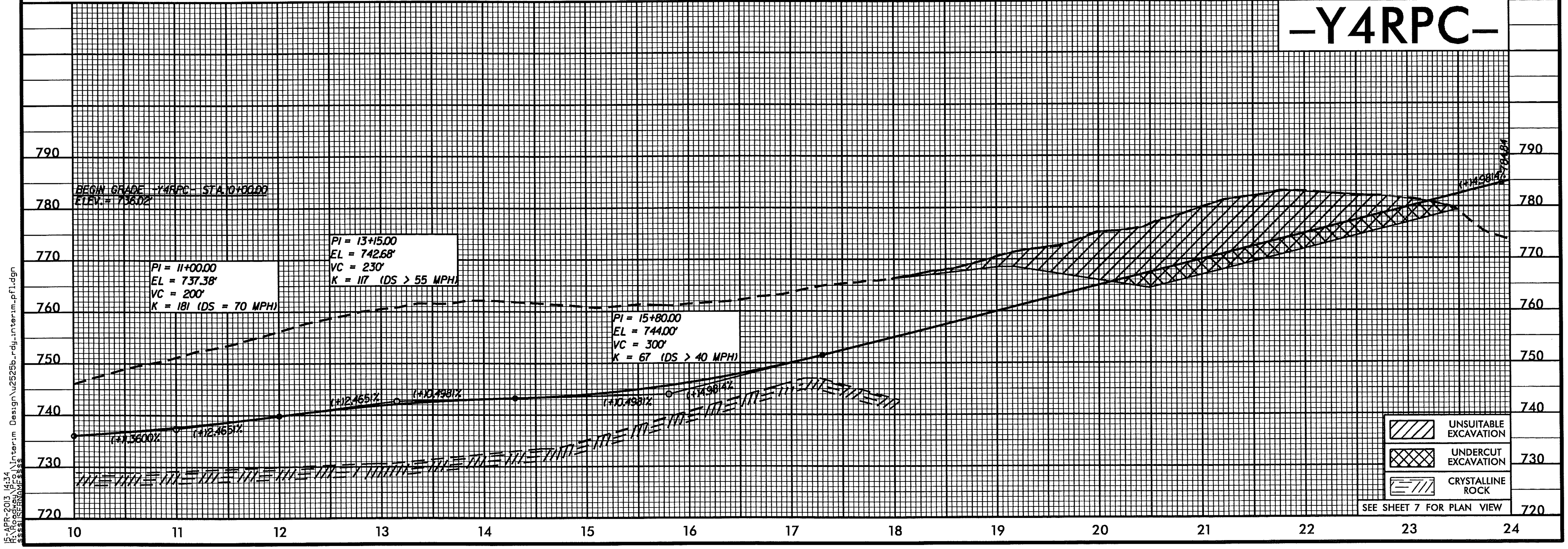
-Y4RPB-


5/28/99
790
780
770
760
750
740
730
720
710
700
PI = 25+49.00
EL = 782.83'
VC = 170'
K = 38 (DS > 35 MPH)
END GRADE -Y4RPB- STA.26+34.58
ELEV.= 783.09'
775.78
(+)4.7293%
(+)0.3038%
.02
CRYSTALLINE ROCK
SEE SHEET 7 FOR PLAN VIEW
24
25
26

-Y4RPC-


790
780
770
760
750
740
730
720
BEGIN GRADE -Y4RPC- STA.10+00.00
ELEV.= 736.02'
PI = 11+00.00
EL = 737.38'
VC = 200'
K = 181 (DS = 70 MPH)
PI = 13+15.00
EL = 742.68'
VC = 230'
K = 117 (DS > 55 MPH)
PI = 15+80.00
EL = 744.00'
VC = 300'
K = 67 (DS > 40 MPH)
(+)1.3600%
(+)2.4651%
(+)2.4651%
(+)0.4981%
(+)0.4981%
(+)4.9814%
(+)4.9814%
784.84
UNSUITABLE EXCAVATION
UNDERCUT EXCAVATION
CRYSTALLINE ROCK
SEE SHEET 7 FOR PLAN VIEW
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	59
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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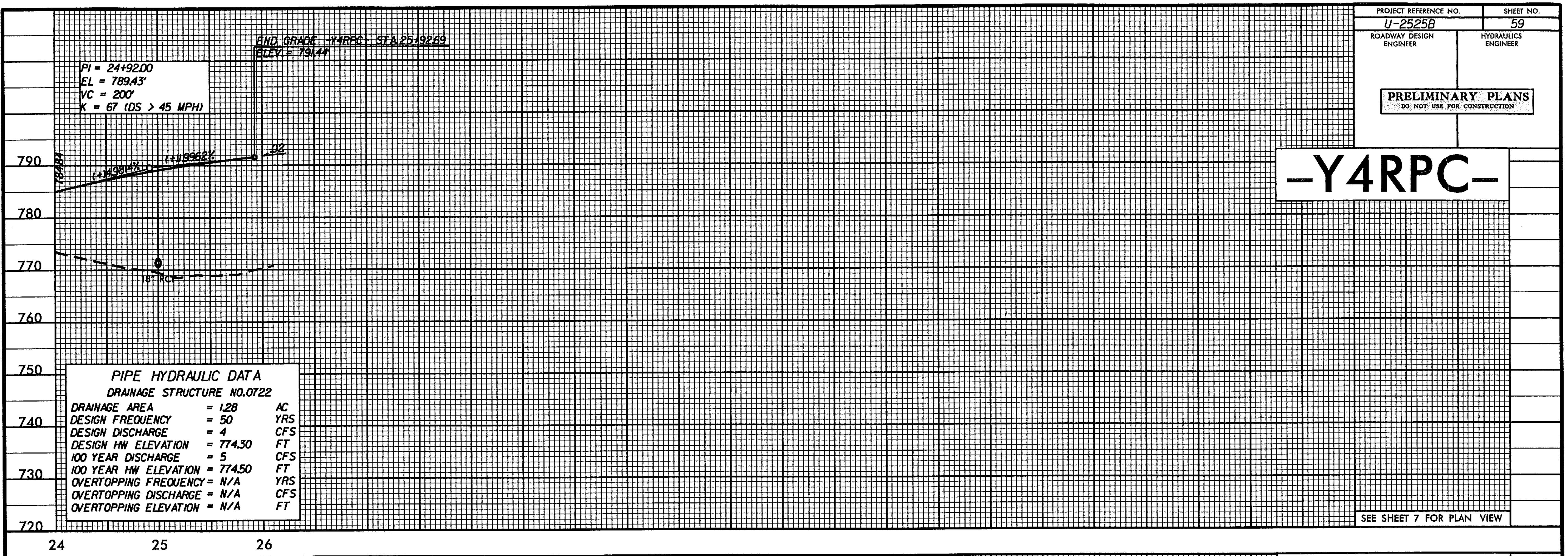
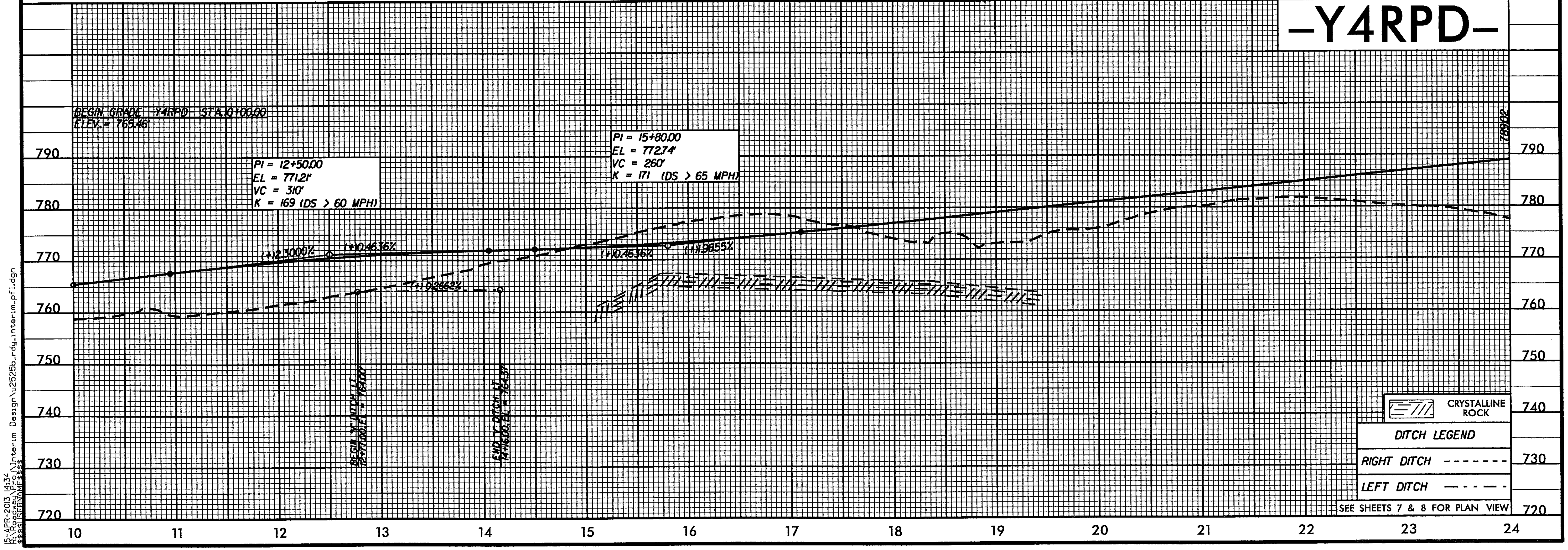
-Y4RPC-


END GRADE -Y4RPC- STA.25+92.69
ELEV. = 791.44'
PI = 24+92.00
EL = 789.43'
VC = 200'
K = 67 (DS > 45 MPH)
784.84
(+)4.9814%
(+)1.8962%
.02
18" RCP
790
780
770
760
750
740
730
720
24
25
26
SEE SHEET 7 FOR PLAN VIEW

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.0722

DRAINAGE AREA	= 1.28	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 4	CFS
DESIGN HW ELEVATION	= 774.30	FT
100 YEAR DISCHARGE	= 5	CFS
100 YEAR HW ELEVATION	= 774.50	FT
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= N/A	FT

-Y4RPD-


BEGIN GRADE -Y4RPD- STA.10+00.00
ELEV. = 765.46'
PI = 12+50.00
EL = 771.21'
VC = 310'
K = 169 (DS > 60 MPH)
PI = 15+80.00
EL = 772.74'
VC = 260'
K = 171 (DS > 65 MPH)
(+)2.3000%
(+)0.4636%
(+)0.4636%
(+)1.9855%
(+)0.2662%
BEGIN 'Y' DITCH LT 12+77.00, EL = 764.00'
END 'Y' DITCH LT 14+16.00, EL = 764.37'
789.02
790
780
770
760
750
740
730
720
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

CRYSTALLINE ROCK

DITCH LEGEND

RIGHT DITCH - - - - - - -

LEFT DITCH — - — - —

SEE SHEETS 7 & 8 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	60
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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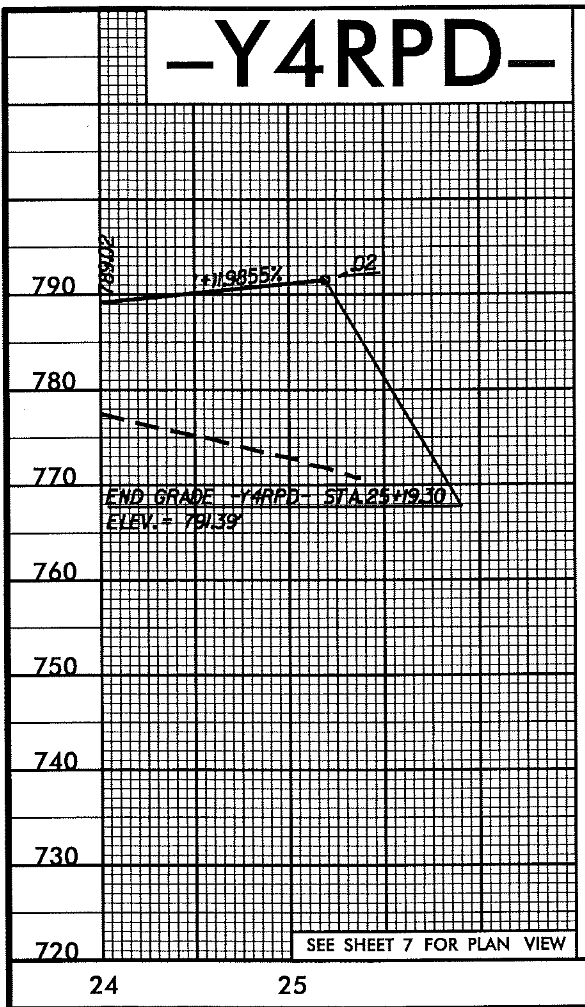
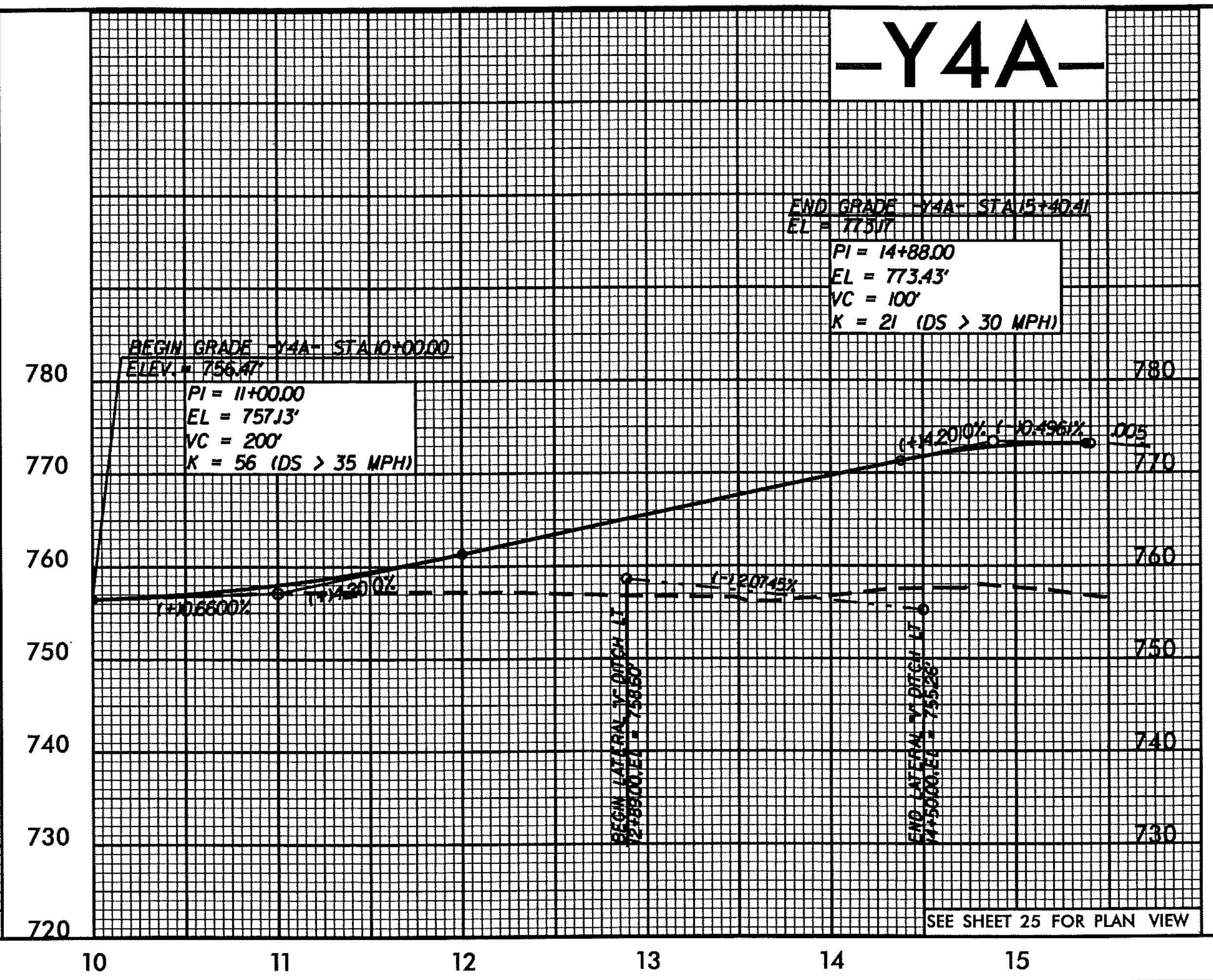
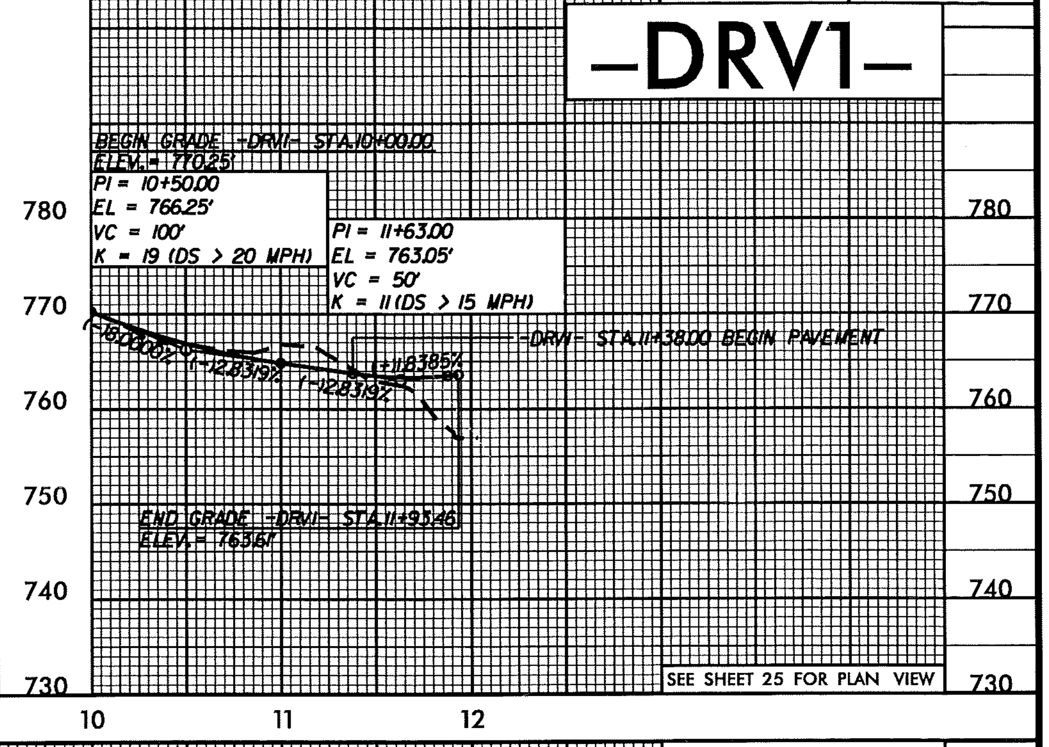


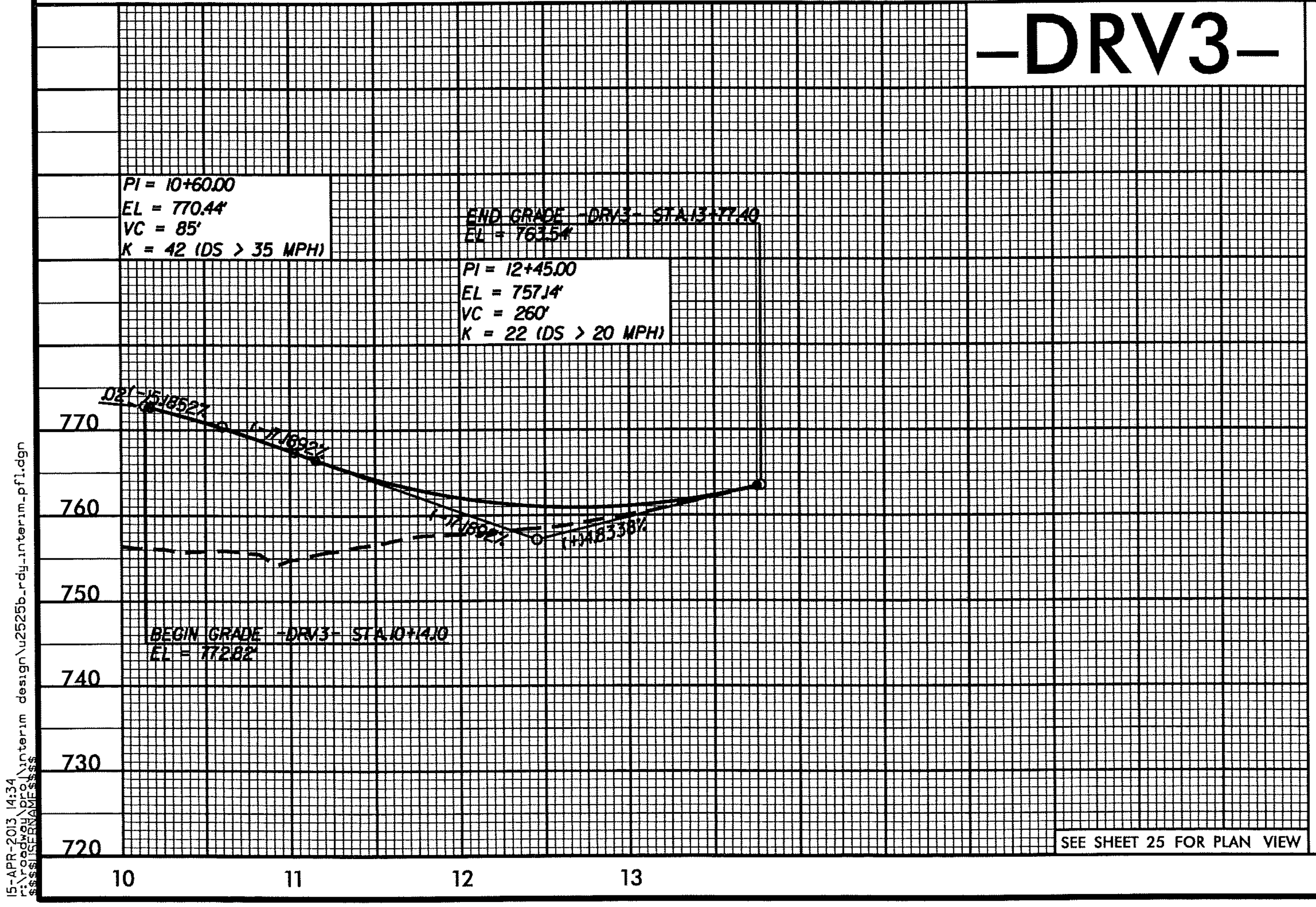
-Y4RPD-
789.02
(+)1.9855%
.02
END GRADE -Y4RPD- STA.25+19.30
ELEV.= 791.39'
790
780
770
760
750
740
730
720
24
25
SEE SHEET 7 FOR PLAN VIEW



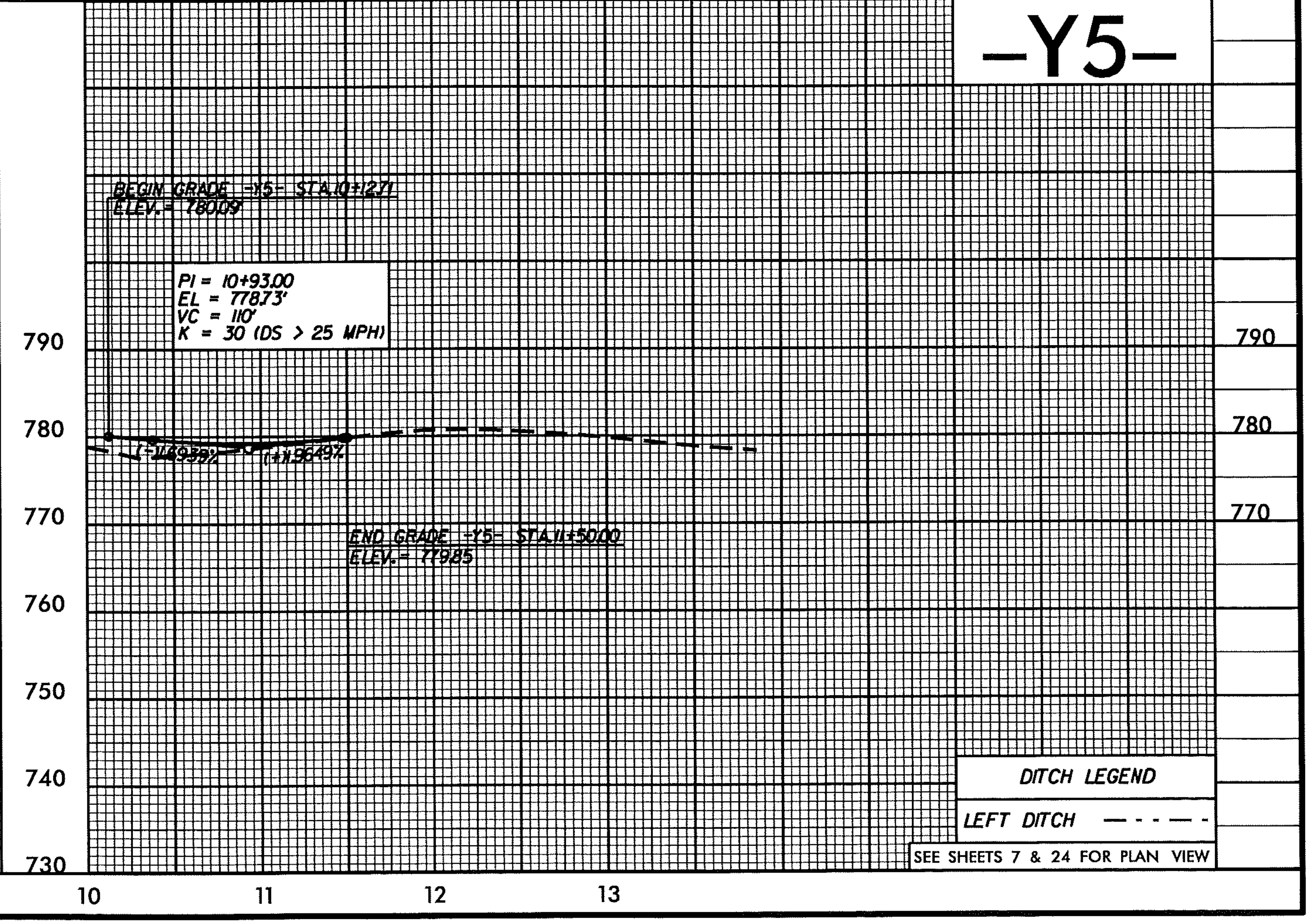
-Y4A-
BEGIN GRADE -Y4A- STA.10+00.00
ELEV.= 756.47'
PI = 11+00.00
EL = 757.13'
VC = 200'
K = 56 (DS > 35 MPH)
(+)0.6600%
(+)4.2010%
(-)2.0745%
BEGIN LATERAL "V" DITCH LT 12+89.00, EL = 758.50'
END LATERAL "V" DITCH LT 14+50.00, EL = 755.26'
END GRADE -Y4A- STA.15+40.41
EL = 773.17'
PI = 14+88.00
EL = 773.43'
VC = 100'
K = 21 (DS > 30 MPH)
(+)4.2010%
(-)0.4961%
.005
780
770
760
750
740
730
720
10
11
12
13
14
15
SEE SHEET 25 FOR PLAN VIEW



-DRV1-
BEGIN GRADE -DRV1- STA.10+00.00
ELEV.= 770.25'
PI = 10+50.00
EL = 766.25'
VC = 100'
K = 19 (DS > 20 MPH)
PI = 11+63.00
EL = 763.05'
VC = 50'
K = 11 (DS > 15 MPH)
-DRV1- STA.11+38.00 BEGIN PAVEMENT
(-)8.0000%
(-)2.8319%
(-)2.8319%
(+)1.8385%
END GRADE -DRV1- STA.11+93.46
ELEV.= 763.61'
780
770
760
750
740
730
10
11
12
SEE SHEET 25 FOR PLAN VIEW



-DRV3-
PI = 10+60.00
EL = 770.44'
VC = 85'
K = 42 (DS > 35 MPH)
END GRADE -DRV3- STA.13+77.40
EL = 763.54'
PI = 12+45.00
EL = 757.14'
VC = 260'
K = 22 (DS > 20 MPH)
.02
(-)5.1852%
(-)7.1692%
(-)7.1692%
(+)4.8338%
BEGIN GRADE -DRV3- STA.10+14.10
EL = 772.82'
770
760
750
740
730
720
10
11
12
13
SEE SHEET 25 FOR PLAN VIEW



-Y5-
BEGIN GRADE -Y5- STA.10+12.71
ELEV.= 780.09'
PI = 10+93.00
EL = 778.73'
VC = 110'
K = 30 (DS > 25 MPH)
(-)1.6939%
(+)1.9649%
END GRADE -Y5- STA.11+50.00
ELEV.= 779.85
790
780
770
760
750
740
730
10
11
12
13
DITCH LEGEND
LEFT DITCH
SEE SHEETS 7 & 24 FOR PLAN VIEW

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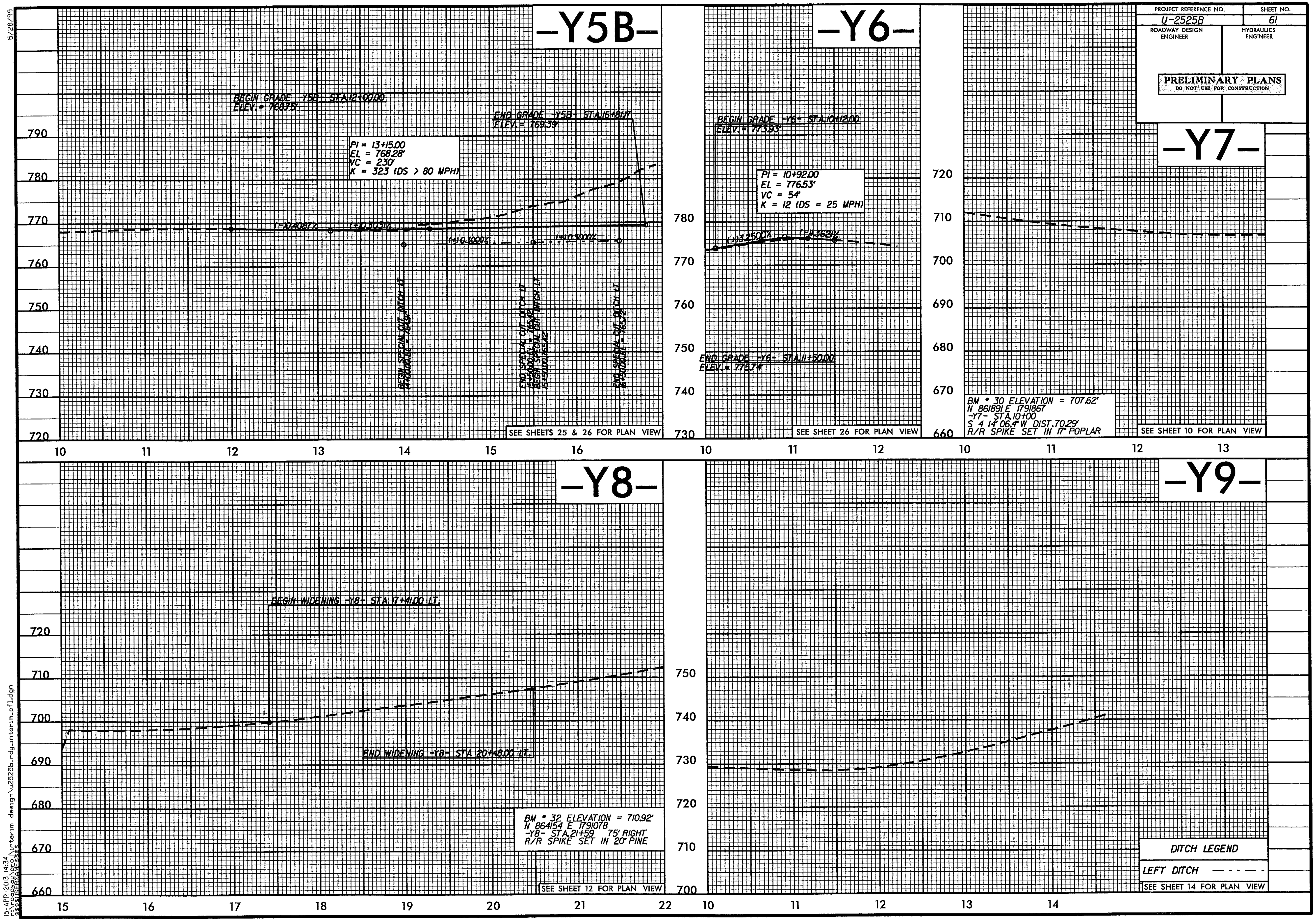
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	61
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


-Y5B-
BEGIN GRADE -Y5B- STA.12+00.00
ELEV. = 768.75'
END GRADE -Y5B- STA.16+81.17
ELEV. = 769.39'
PI = 13+15.00
EL = 768.28'
VC = 230'
K = 323 (DS > 80 MPH)
(-)0.4087%
(+)0.5051%
(+)0.3000%
(+)0.3000%
BEGIN SPECIAL CUT DITCH LT
14+00.00,EL = 764.97
END SPECIAL CUT DITCH LT
15+50.00,EL = 765.42
BEGIN SPECIAL CUT DITCH LT
15+50.00,765.42
END SPECIAL CUT DITCH LT
16+50.00,EL = 765.72
SEE SHEETS 25 & 26 FOR PLAN VIEW
790
780
770
760
750
740
730
720
10
11
12
13
14
15
16
-Y6-
BEGIN GRADE -Y6- STA.10+12.00
ELEV. = 773.93'
PI = 10+92.00
EL = 776.53'
VC = 54'
K = 12 (DS = 25 MPH)
(+)3.2500%
(-)1.3621%
END GRADE -Y6- STA.11+50.00
ELEV. = 775.74'
SEE SHEET 26 FOR PLAN VIEW
780
770
760
750
740
730
10
11
12
-Y7-
BM • 30 ELEVATION = 707.62'
N 861891 E 1791867
-Y7- STA.10+00
S 4 14' 06.4" W DIST.70.29'
R/R SPIKE SET IN 17" POPLAR
SEE SHEET 10 FOR PLAN VIEW
720
710
700
690
680
670
660
10
11
12
13
-Y8-
BEGIN WIDENING -Y8- STA 17+41.00 LT.
END WIDENING -Y8- STA 20+48.00 LT.
BM • 32 ELEVATION = 710.92'
N 864154 E 1791078
-Y8- STA.21+59 75' RIGHT
R/R SPIKE SET IN 20" PINE
SEE SHEET 12 FOR PLAN VIEW
720
710
700
690
680
670
660
15
16
17
18
19
20
21
22
-Y9-
750
740
730
720
710
700
10
11
12
13
14
SEE SHEET 14 FOR PLAN VIEW

DITCH LEGEND

LEFT DITCH — · · —

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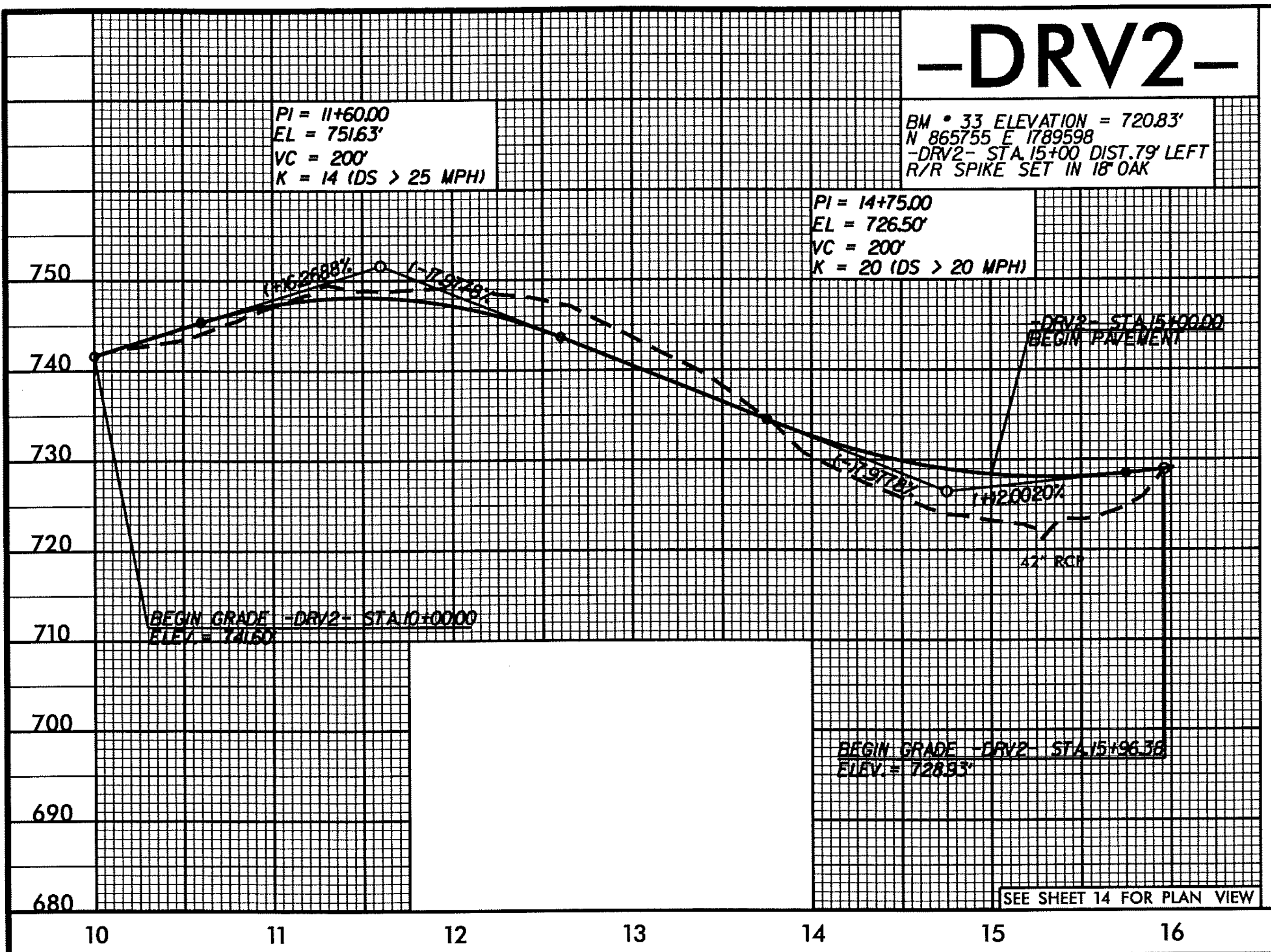
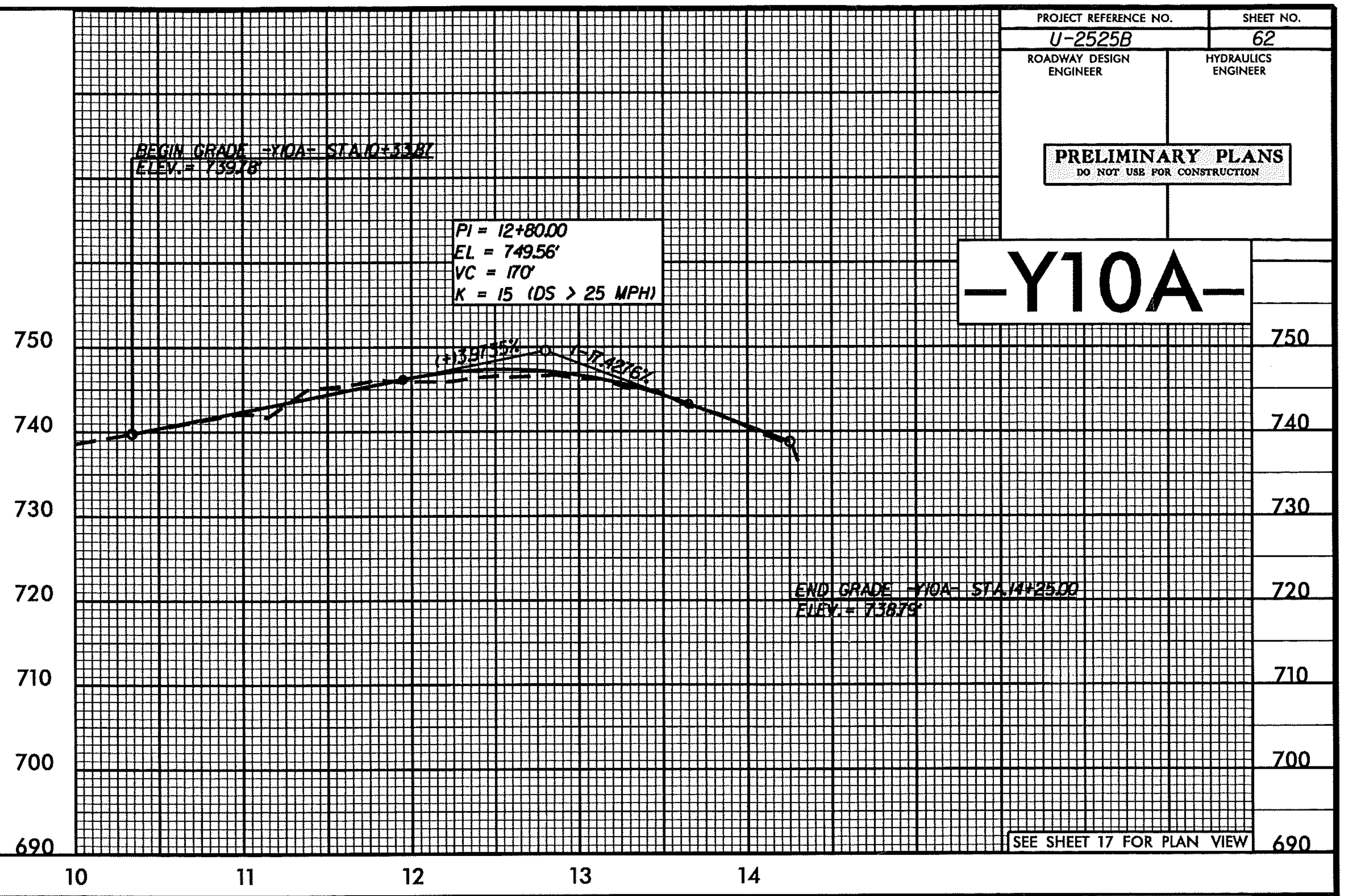
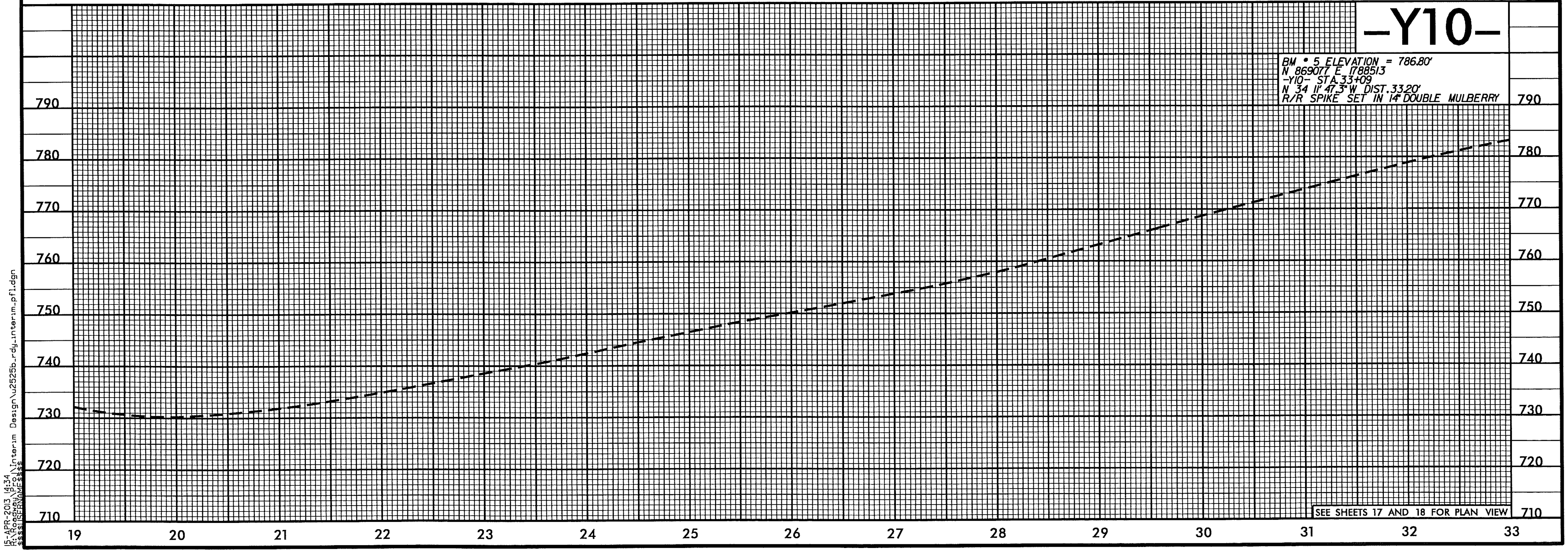
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	62
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


-DRV2-
BM • 33 ELEVATION = 720.83'
N 865755 E 1789598
-DRV2- STA. 15+00 DIST. 79' LEFT
R/R SPIKE SET IN 18" OAK
PI = 11+60.00
EL = 751.63'
VC = 200'
K = 14 (DS > 25 MPH)
PI = 14+75.00
EL = 726.50'
VC = 200'
K = 20 (DS > 20 MPH)
(+)6.2688%
(-)7.9778%
(-)7.9778%
(+)2.0020%
-DRV2- STA. 15+00.00
BEGIN PAVEMENT
42" RCP
BEGIN GRADE -DRV2- STA. 10+00.00
ELEV. = 741.60'
BEGIN GRADE -DRV2- STA. 15+96.38
ELEV. = 728.93'
SEE SHEET 14 FOR PLAN VIEW
750
740
730
720
710
700
690
680
10
11
12
13
14
15
16


-Y10A-
BEGIN GRADE -Y10A- STA. 10+33.87
ELEV. = 739.78'
PI = 12+80.00
EL = 749.56'
VC = 170'
K = 15 (DS > 25 MPH)
(+)3.9735%
(-)7.4276%
END GRADE -Y10A- STA. 14+25.00
ELEV. = 738.79'
SEE SHEET 17 FOR PLAN VIEW
750
740
730
720
710
700
690
10
11
12
13
14


-Y10-
BM • 5 ELEVATION = 786.80'
N 869077 E 1788513
-Y10- STA. 33+09
N 34 11' 47.3" W DIST. 33.20'
R/R SPIKE SET IN 14" DOUBLE MULBERRY
SEE SHEETS 17 AND 18 FOR PLAN VIEW
790
780
770
760
750
740
730
720
710
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33

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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	63
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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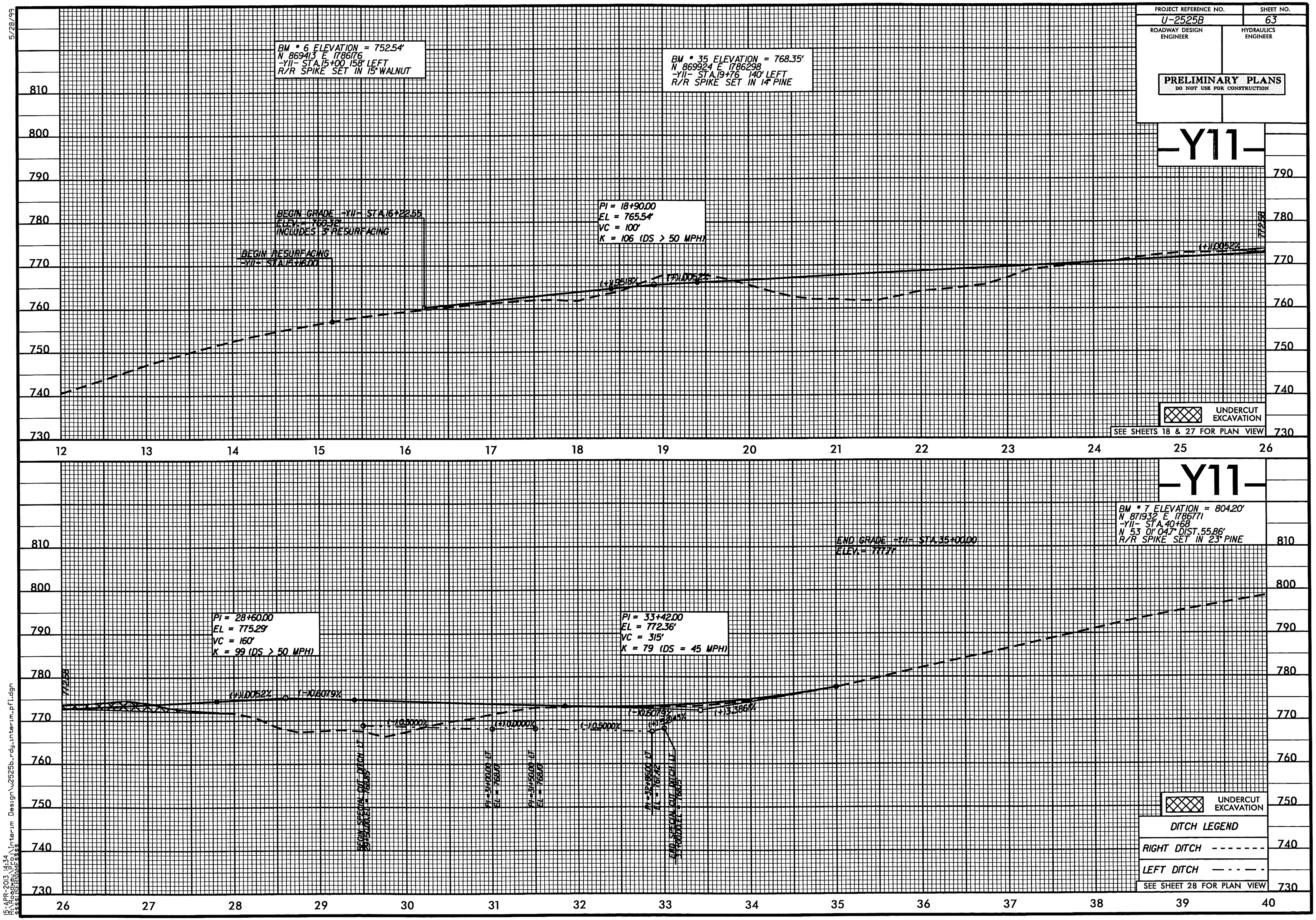
-Y11-
BM • 6 ELEVATION = 752.54'
N 869413 E 1786176
-Y11- STA.15+00 158' LEFT
R/R SPIKE SET IN 15" WALNUT
BM • 35 ELEVATION = 768.35'
N 869924 E 1786298
-Y11- STA.19+76 140' LEFT
R/R SPIKE SET IN 14" PINE
BEGIN GRADE -Y11- STA.16+22.55
ELEV.= 760.32'
INCLUDES 3" RESURFACING
BEGIN RESURFACING
-Y11- STA.15+16.00
PI = 18+90.00
EL = 765.54'
VC = 100'
K = 106 (DS > 50 MPH)
(+)1.9518%
(+)1.0052%
(+)1.0052%
772.58
UNDERCUT EXCAVATION
SEE SHEETS 18 & 27 FOR PLAN VIEW
810
800
790
780
770
760
750
740
730
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
-Y11-
BM • 7 ELEVATION = 804.20'
N 871932 E 1786771
-Y11- STA.40+68
N 53 01' 04.7" DIST.55.86'
R/R SPIKE SET IN 23" PINE
END GRADE -Y11- STA.35+00.00
ELEV.= 777.71'
PI = 28+60.00
EL = 775.29'
VC = 160'
K = 99 (DS > 50 MPH)
PI = 33+42.00
EL = 772.36'
VC = 315'
K = 79 (DS = 45 MPH)
772.58
(+)1.0052%
(-)0.6079%
(-)1.0000%
(+)1.0000%
(-)0.5000%
(-)0.6079%
(+)2.0145%
(+)3.3861%
BEGIN SPECIAL CUT DITCH LT
29+50.00 EL = 768.85
PI = 31+00.00 LT
EL = 768.10
PI = 31+50.00 LT
EL = 768.10
PI = 32+86.00 LT
EL = 767.42
END SPECIAL CUT DITCH LT
33+00.00 EL = 768.15
UNDERCUT EXCAVATION
DITCH LEGEND
RIGHT DITCH - - - - - - -
LEFT DITCH — · — · —
SEE SHEET 28 FOR PLAN VIEW
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40

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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	64
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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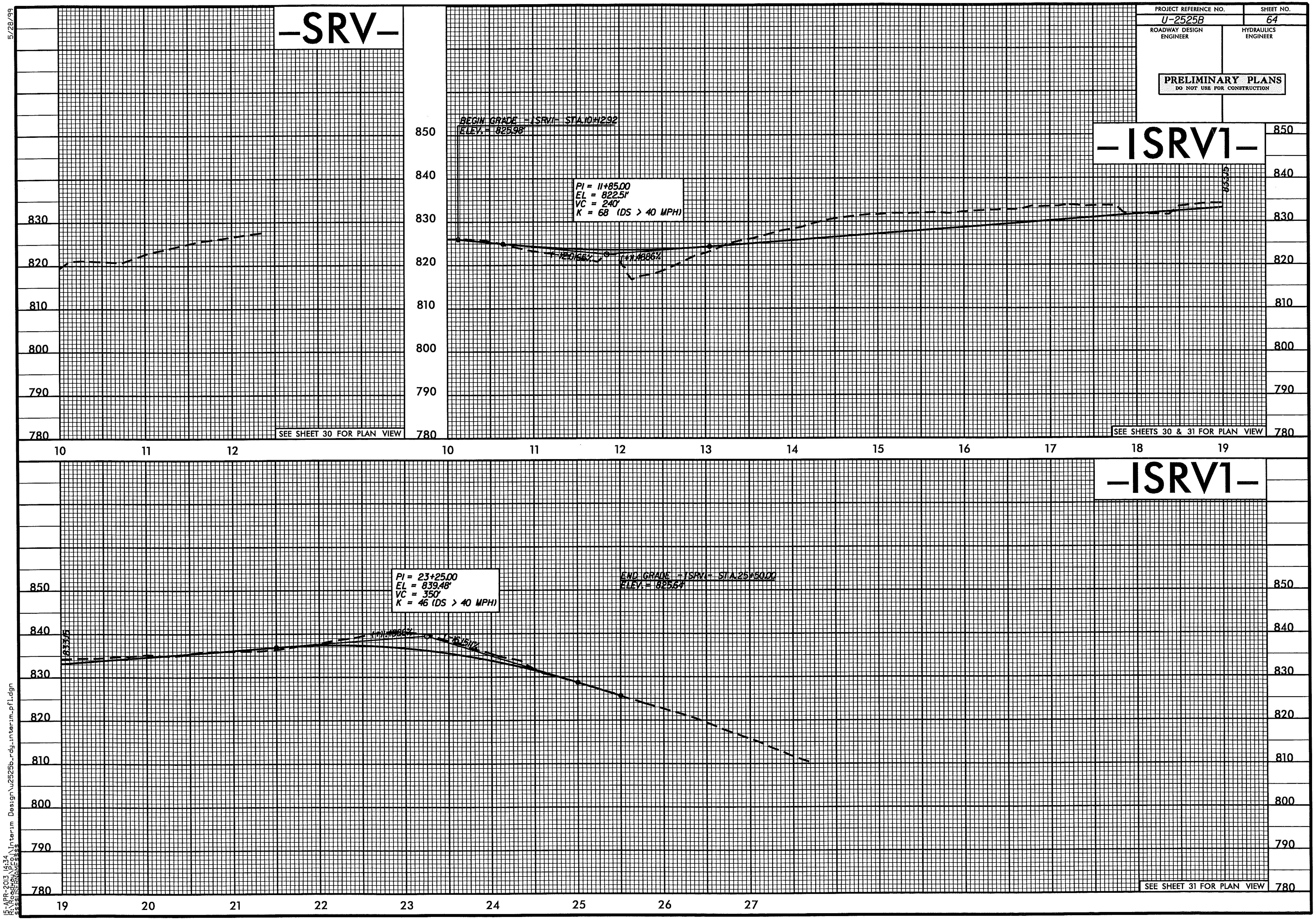
-SRV-
-ISRV1-
-ISRV1-
BEGIN GRADE -ISRV1- STA.10+29.2
ELEV. = 825.98'
PI = 11+85.00
EL = 822.51'
VC = 240'
K = 68 (DS > 40 MPH)
(-)2.0166%
(+)1.4886%
833.75
PI = 23+25.00
EL = 839.48'
VC = 350'
K = 46 (DS > 40 MPH)
(+)1.4886%
(-)6.1511%
END GRADE -ISRV1- STA.25+50.00
ELEV. = 825.64'
833.75
850
840
830
820
810
800
790
780
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
SEE SHEET 30 FOR PLAN VIEW
SEE SHEETS 30 & 31 FOR PLAN VIEW
SEE SHEET 31 FOR PLAN VIEW

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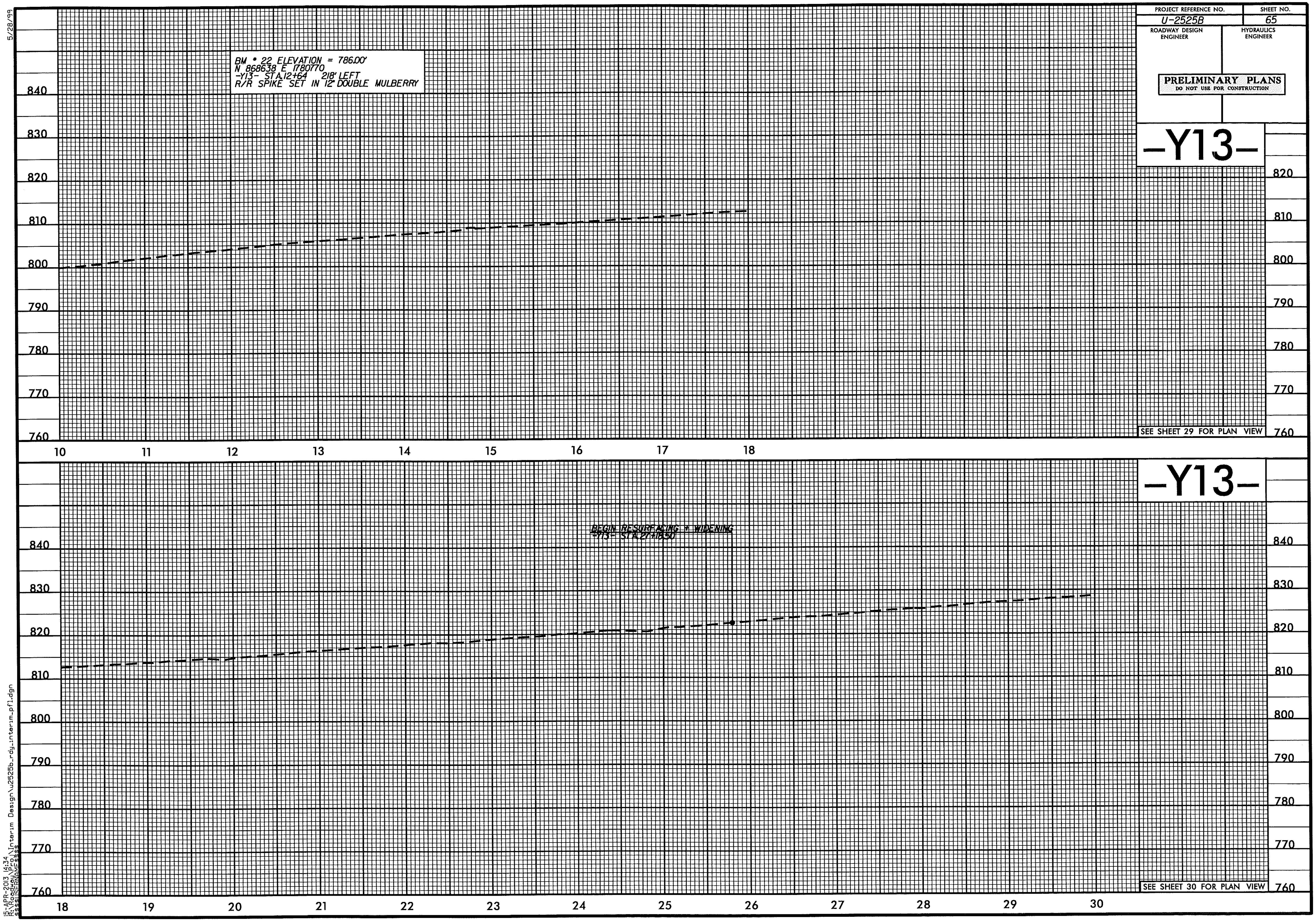
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	65

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y13-


BM • 22 ELEVATION = 786.00'
N 868638 E 1780770
-Y13- STA.12+64 218' LEFT
R/R SPIKE SET IN 12" DOUBLE MULBERRY
840
830
820
810
800
790
780
770
760
10
11
12
13
14
15
16
17
18
SEE SHEET 29 FOR PLAN VIEW
-Y13-
BEGIN RESURFACING + WIDENING
-Y13- STA.27+18.50
19
20
21
22
23
24
25
26
27
28
29
30
SEE SHEET 30 FOR PLAN VIEW

15-APR-2013 14:34
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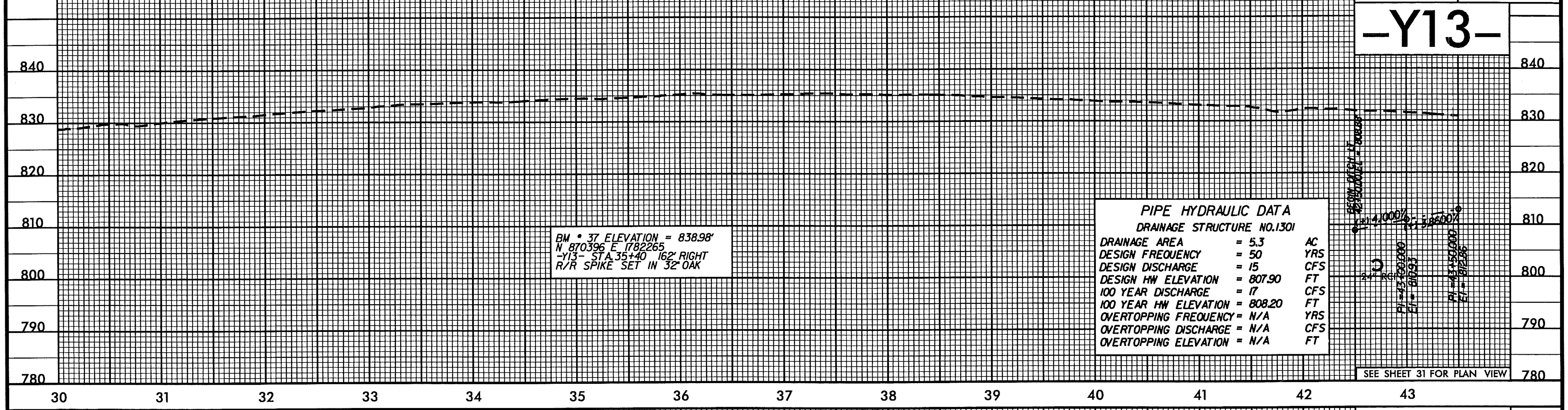
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	66
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/28/99

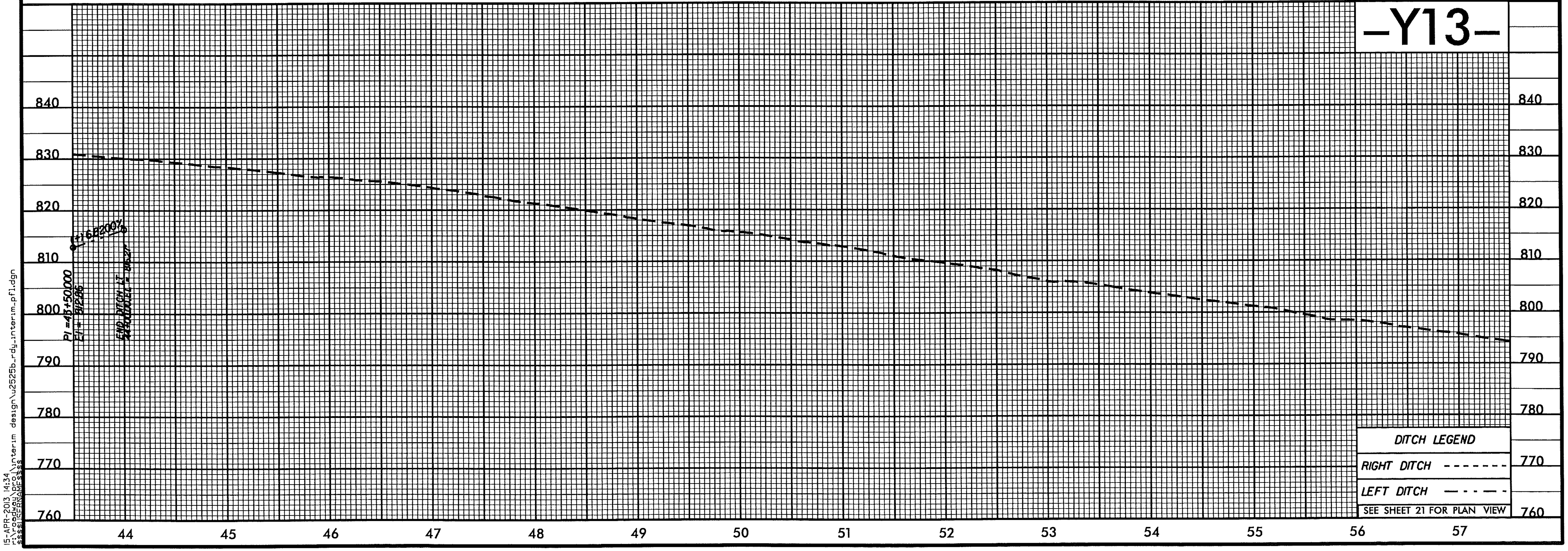

-Y13-
840
830
820
810
800
790
780
30
31
32
33
34
35
36
37
38
39
40
41
42
43
BEGIN DITCH LT
42+50.000 EL = 808.88
(+) 4.000%
(+) 3.8600%
24" RCP
PI = 43+00.000
EL = 810.93
PI = 43+50.000
EL = 812.86
SEE SHEET 31 FOR PLAN VIEW

BM • 37 ELEVATION = 838.98'
N 870396 E 1782265
-Y13- STA.35+40 162' RIGHT
R/R SPIKE SET IN 32" OAK

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.1301

DRAINAGE AREA	=	5.3	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	15	CFS
DESIGN HW ELEVATION	=	807.90	FT
100 YEAR DISCHARGE	=	17	CFS
100 YEAR HW ELEVATION	=	808.20	FT
OVERTOPPING FREQUENCY	=	N/A	YRS
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING ELEVATION	=	N/A	FT


-Y13-
840
830
820
810
800
790
780
770
760
44
45
46
47
48
49
50
51
52
53
54
55
56
57
(+) 6.8200%
PI = 43+50.000
EL = 812.86
END DITCH LT
44+00.000 EL = 815.27
SEE SHEET 21 FOR PLAN VIEW

DITCH LEGEND

RIGHT DITCH - - - - - - -
LEFT DITCH — · — · —

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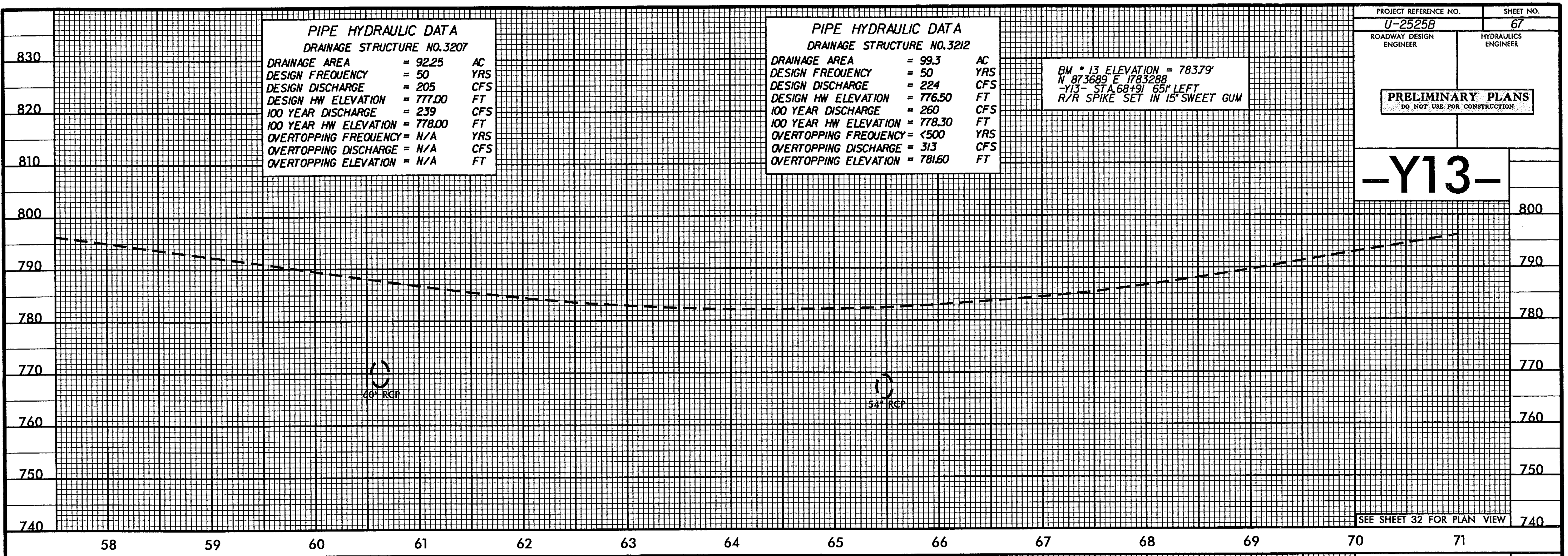
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	67

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y13-


830
820
810
800
790
780
770
760
750
740
60" RCP
54" RCP
58
59
60
61
62
63
64
65
66
67
68
69
70
71
SEE SHEET 32 FOR PLAN VIEW

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.3207

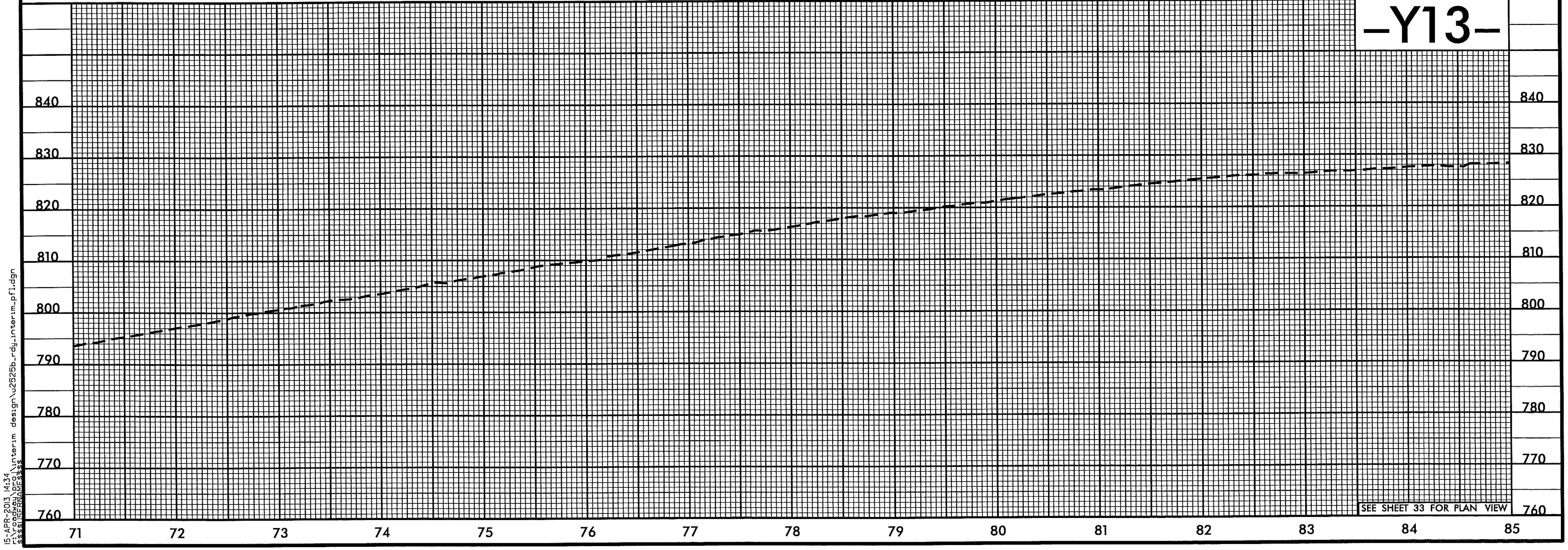
DRAINAGE AREA = 92.25 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 205 CFS
DESIGN HW ELEVATION = 777.00 FT
100 YEAR DISCHARGE = 239 CFS
100 YEAR HW ELEVATION = 778.00 FT
OVERTOPPING FREQUENCY = N/A YRS
OVERTOPPING DISCHARGE = N/A CFS
OVERTOPPING ELEVATION = N/A FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.3212

DRAINAGE AREA = 99.3 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 224 CFS
DESIGN HW ELEVATION = 776.50 FT
100 YEAR DISCHARGE = 260 CFS
100 YEAR HW ELEVATION = 778.30 FT
OVERTOPPING FREQUENCY = <500 YRS
OVERTOPPING DISCHARGE = 313 CFS
OVERTOPPING ELEVATION = 781.60 FT

BM • 13 ELEVATION = 783.79'
N 873689 E 1783288
-Y13- STA.68+91 651' LEFT
R/R SPIKE SET IN 15" SWEET GUM

-Y13-


840
830
820
810
800
790
780
770
760
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
SEE SHEET 33 FOR PLAN VIEW

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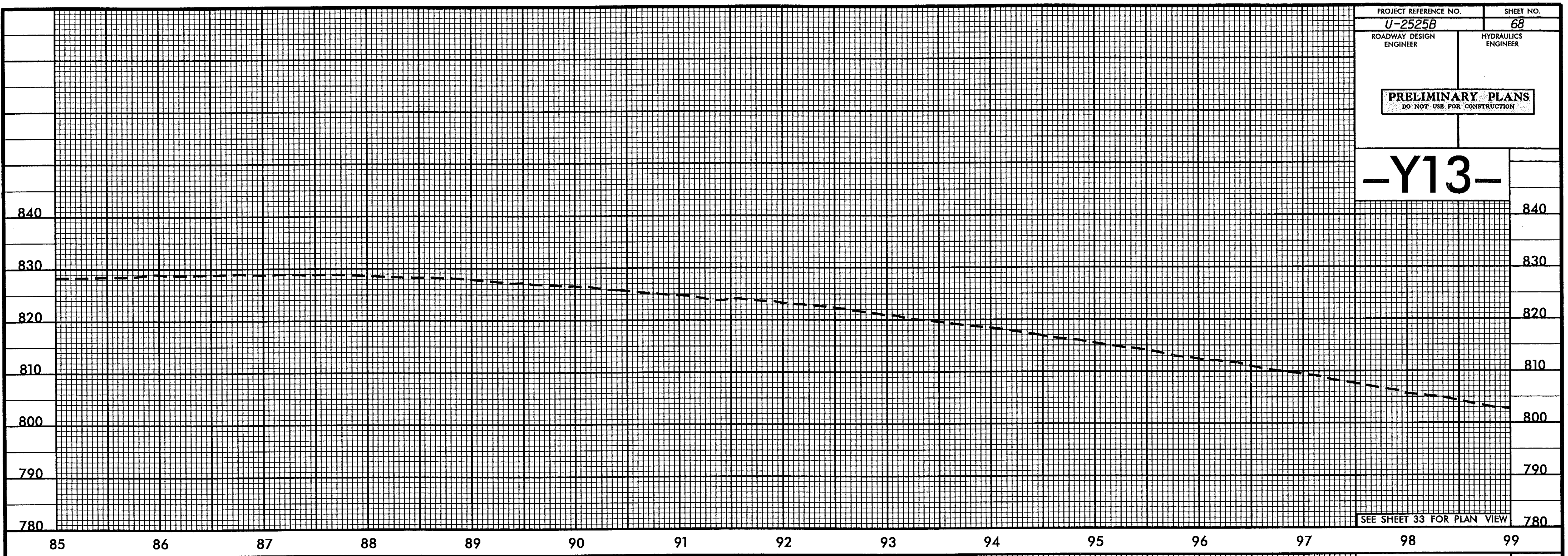
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	68
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

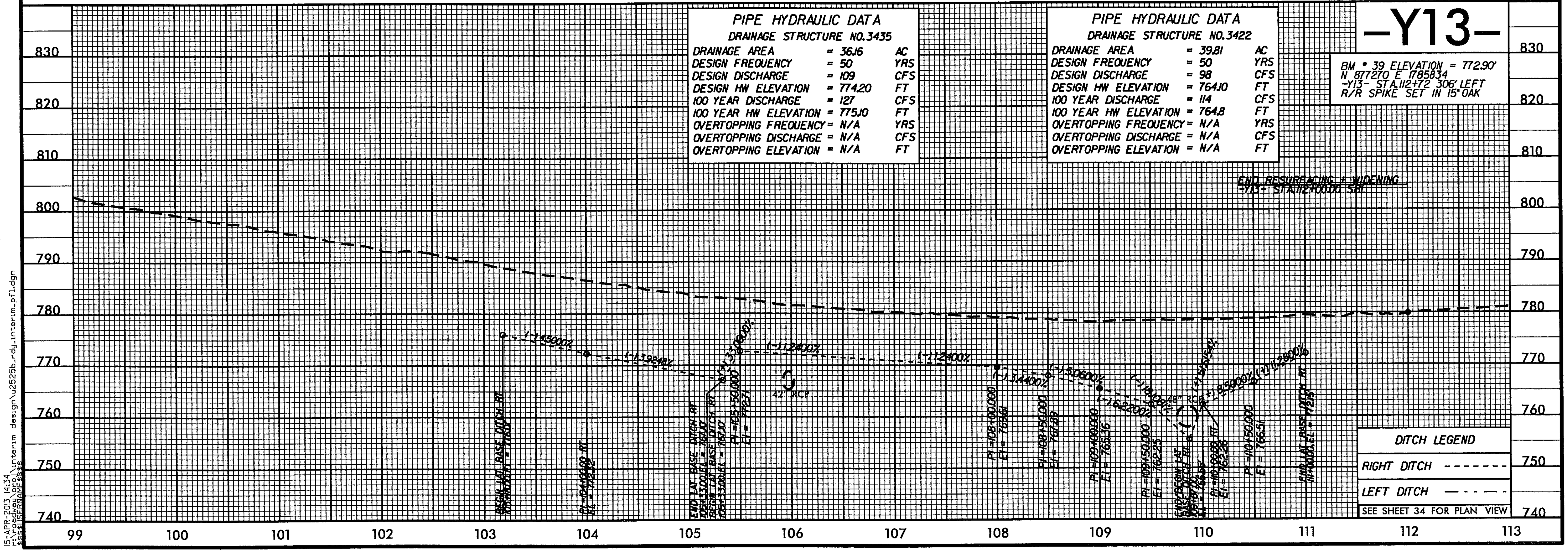
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y13-


5/28/99
840
830
820
810
800
790
780
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99

SEE SHEET 33 FOR PLAN VIEW

-Y13-


830
820
810
800
790
780
770
760
750
740
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
(-)1.45000%
(-)1.39248%
(+)3.50000%
(-)1.12400%
(-)1.12400%
(-)3.44000%
(-)5.06000%
(-)1.62200%
(-)1.60108%
(+)5.15754%
(+)1.85000%
(+)1.28000%
42" RCP
48" RCP
BEGIN LAT. BASE DITCH RT
103+16.00 EL = 776.01
PI =104+00.00 RT
EL = 772.32
END LAT BASE DITCH RT
105+33.00 EL = 767.10
BEGIN LAT BASE DITCH RT
105+33.00 EL = 767.10
PI =105+50.000
El = 772.71
PI =108+00.000
El = 769.61
PI =108+50.000
El = 767.89
PI =109+00.000
El = 765.36
PI =109+50.000
El = 762.25
END/BEGIN LAT BASE DITCH RT
109+87.00
EL = 765.55
PI =110+00.000 RT
El = 762.26
PI =110+50.000
El = 766.51
END LAT BASE DITCH RT
111+00.00 EL = 772.15

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.3435

DRAINAGE AREA	=	36.16	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	109	CFS
DESIGN HW ELEVATION	=	774.20	FT
100 YEAR DISCHARGE	=	127	CFS
100 YEAR HW ELEVATION	=	775.10	FT
OVERTOPPING FREQUENCY	=	N/A	YRS
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING ELEVATION	=	N/A	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.3422

DRAINAGE AREA	=	39.81	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	98	CFS
DESIGN HW ELEVATION	=	764.10	FT
100 YEAR DISCHARGE	=	114	CFS
100 YEAR HW ELEVATION	=	764.8	FT
OVERTOPPING FREQUENCY	=	N/A	YRS
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING ELEVATION	=	N/A	FT

BM • 39 ELEVATION = 772.90'
N 877270 E 1785834
-Y13- STA.112+72 306' LEFT
R/R SPIKE SET IN 15" OAK

END RESURFACING + WIDENING
-Y13- STA.112+00.00 SBL

DITCH LEGEND

RIGHT DITCH	- - - - - - -
LEFT DITCH	— · — · —

SEE SHEET 34 FOR PLAN VIEW

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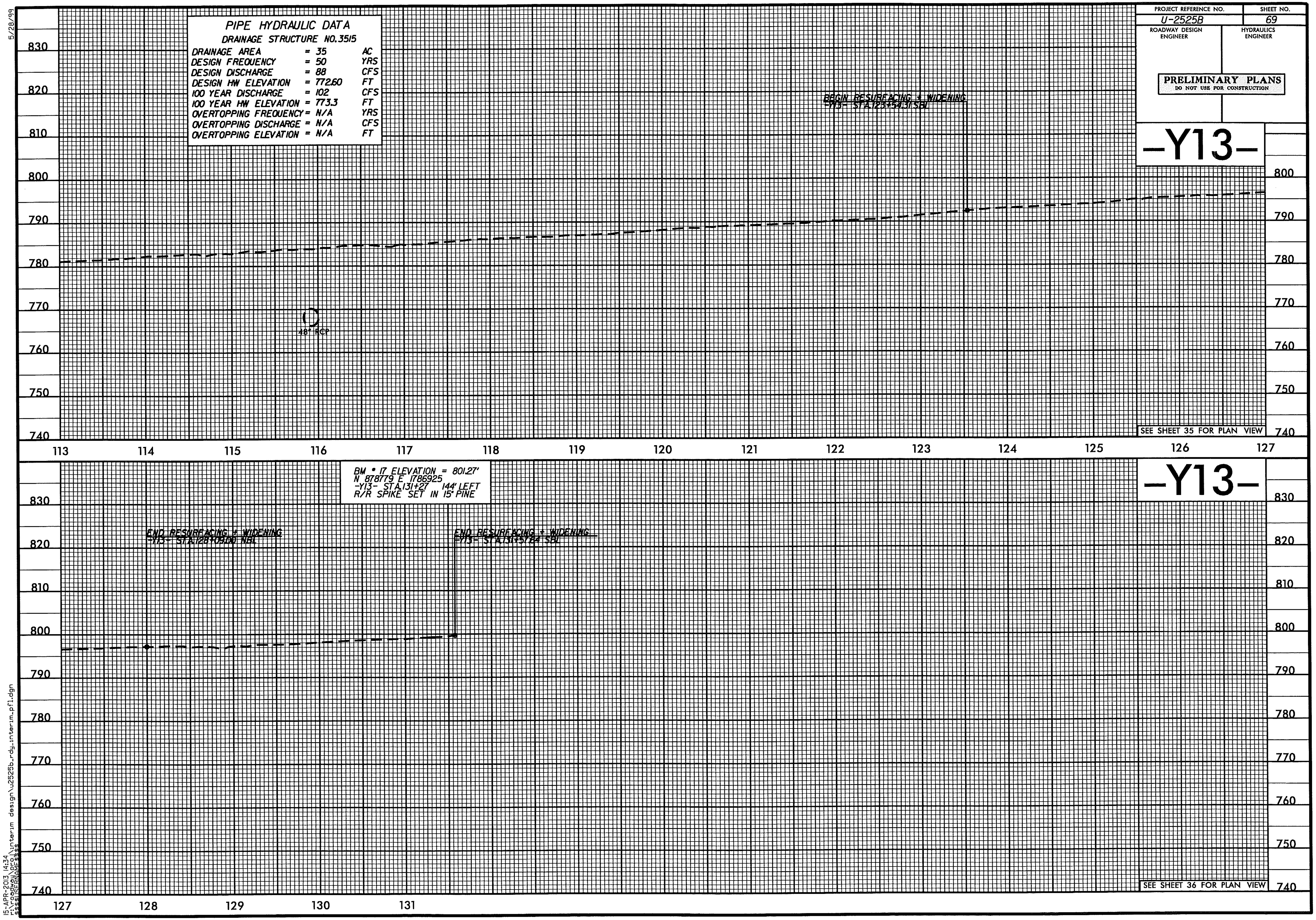
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	69
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.3515

DRAINAGE AREA	= 35	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 88	CFS
DESIGN HW ELEVATION	= 772.60	FT
100 YEAR DISCHARGE	= 102	CFS
100 YEAR HW ELEVATION	= 773.3	FT
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= N/A	FT

BM • 17 ELEVATION = 801.27'
N 878779 E 1786925
-Y13- STA.131+27 144' LEFT
R/R SPIKE SET IN 15" PINE

-Y13-
BEGIN RESURFACING + WIDENING
-Y13- STA.123+54.31 SBL
48" RCP
830
820
810
800
790
780
770
760
750
740
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
SEE SHEET 35 FOR PLAN VIEW
-Y13-
END RESURFACING + WIDENING
-Y13- STA.128+09.00 NBL
END RESURFACING + WIDENING
-Y13- STA.131+57.84 SBL
127
128
129
130
131
SEE SHEET 36 FOR PLAN VIEW

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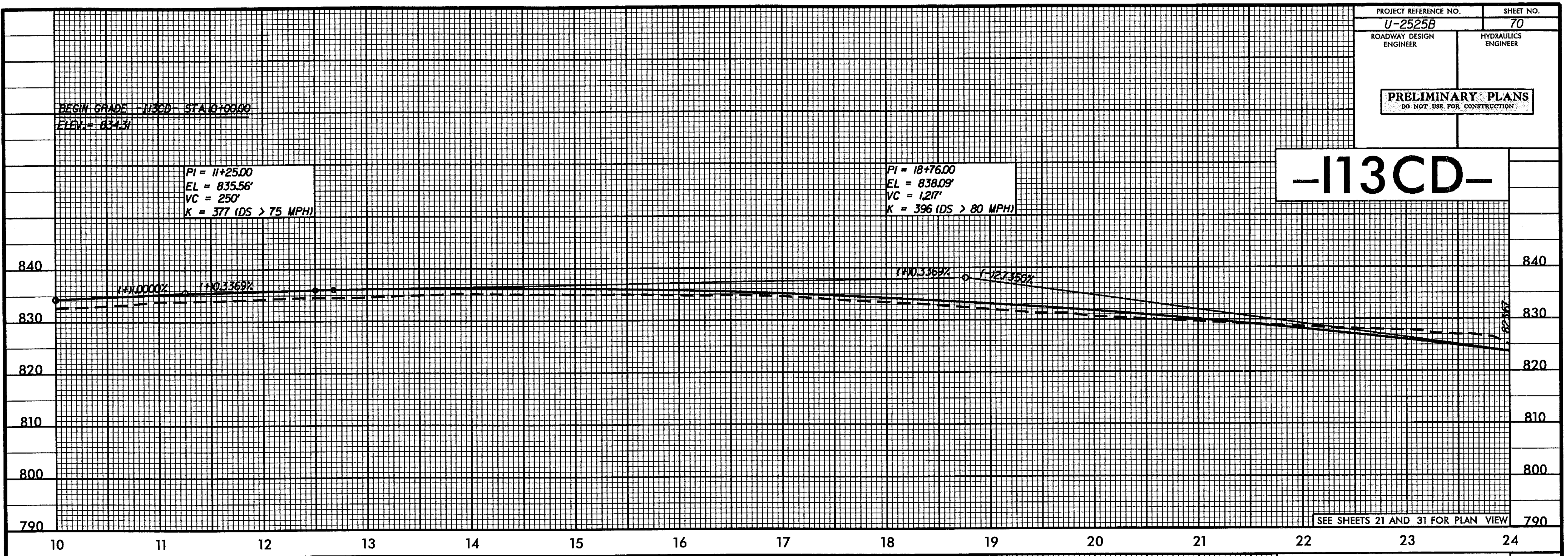
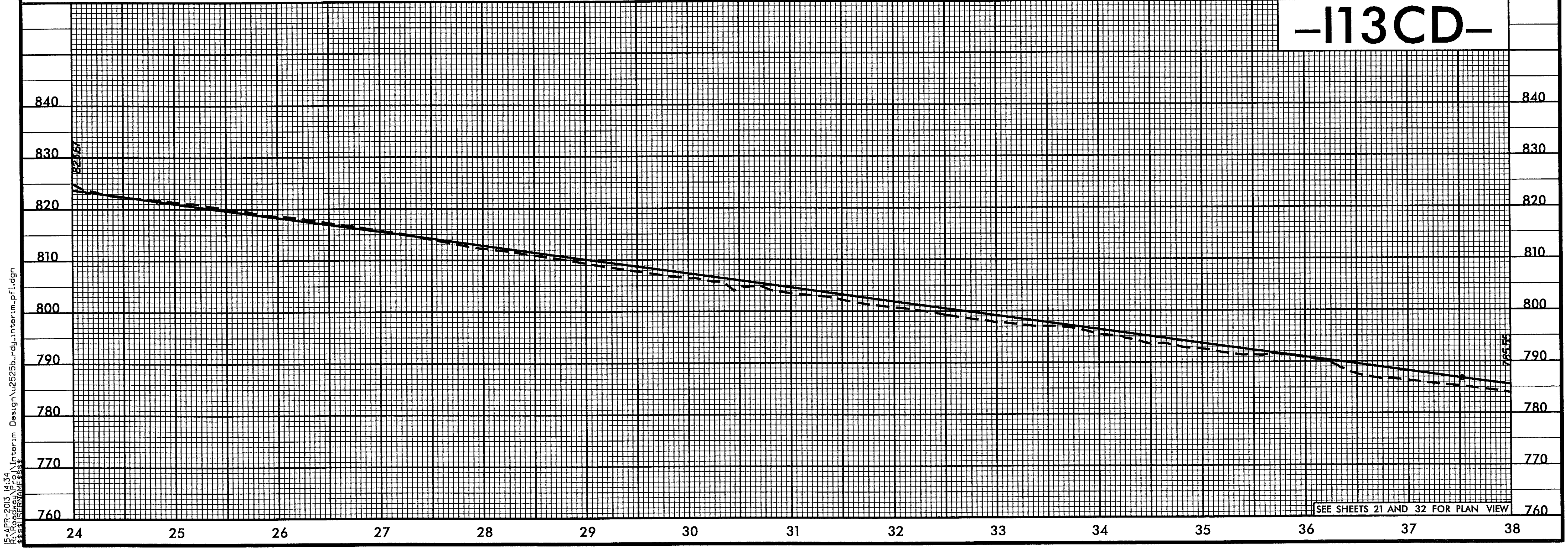
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	70
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





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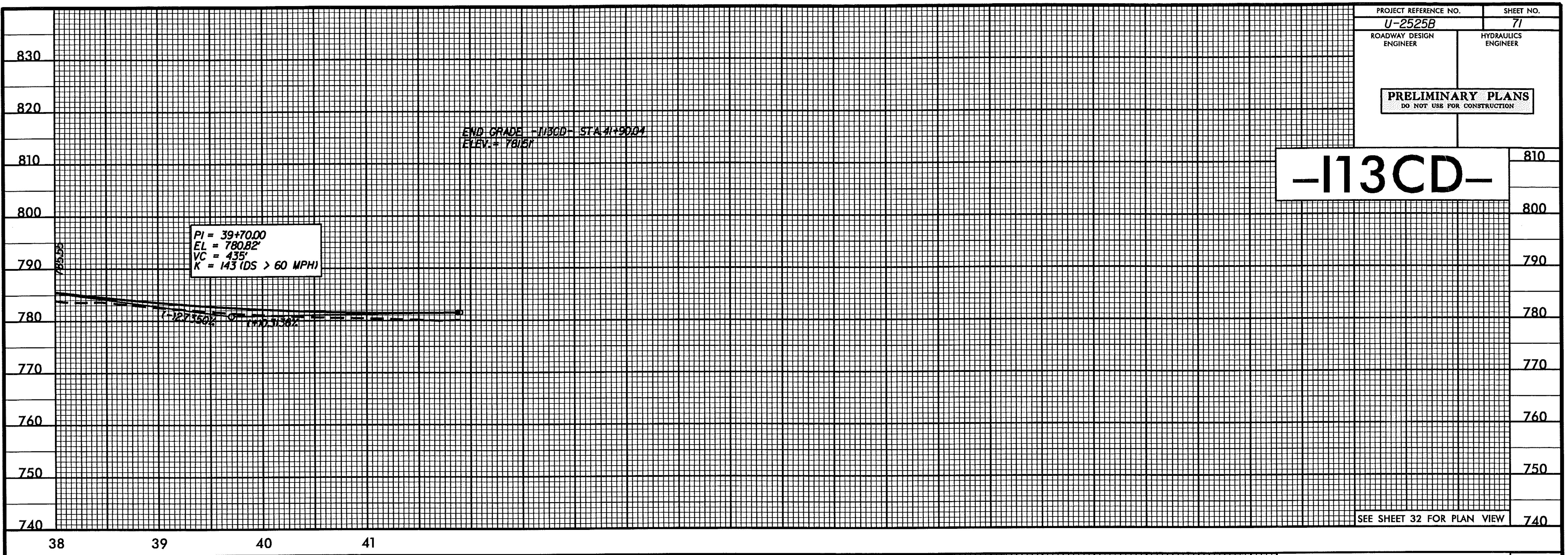
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	71

ROADWAY DESIGN ENGINEER

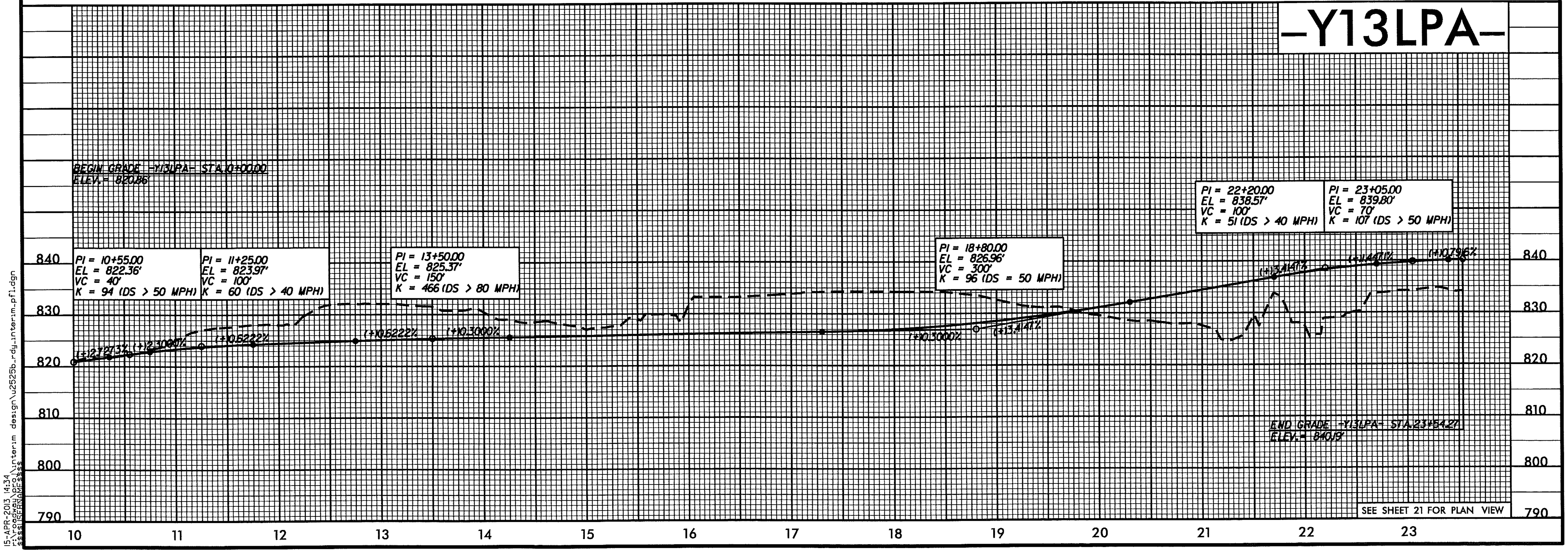
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/28/99



-I13CD-
END GRADE -I13CD- STA.41+90.04
ELEV.= 781.51'
PI = 39+70.00
EL = 780.82'
VC = 435'
K = 143 (DS > 60 MPH)
785.55
(-)2.7350%
(+)0.3136%
830
820
810
800
790
780
770
760
750
740
38
39
40
41
SEE SHEET 32 FOR PLAN VIEW



-Y13LPA-
BEGIN GRADE -Y13LPA- STA.10+00.00
ELEV.= 820.86'
PI = 10+55.00
EL = 822.36'
VC = 40'
K = 94 (DS > 50 MPH)
PI = 11+25.00
EL = 823.97'
VC = 100'
K = 60 (DS > 40 MPH)
PI = 13+50.00
EL = 825.37'
VC = 150'
K = 466 (DS > 80 MPH)
PI = 18+80.00
EL = 826.96'
VC = 300'
K = 96 (DS = 50 MPH)
PI = 22+20.00
EL = 838.57'
VC = 100'
K = 51 (DS > 40 MPH)
PI = 23+05.00
EL = 839.80'
VC = 70'
K = 107 (DS > 50 MPH)
(+)2.7273%
(+)2.3000%
(+)0.6222%
(+)0.6222%
(+)0.3000%
(+)0.3000%
(+)3.4147%
(+)3.4147%
(+)1.4471%
(+)0.7916%
END GRADE -Y13LPA- STA.23+54.27
ELEV.= 840.19'
840
830
820
810
800
790
10
11
12
13
14
15
16
17
18
19
20
21
22
23
SEE SHEET 21 FOR PLAN VIEW

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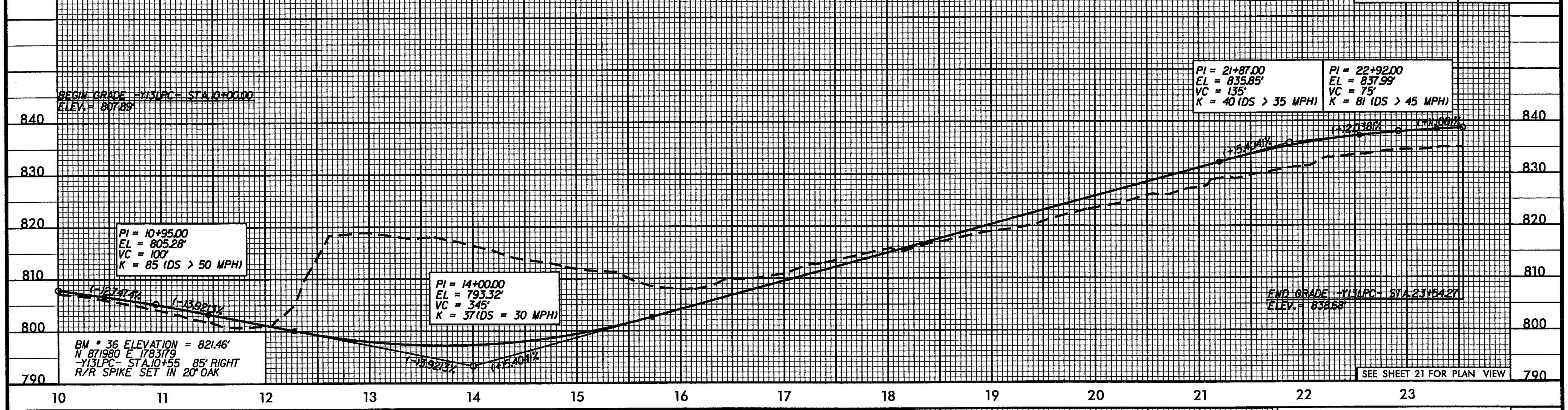
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	72

ROADWAY DESIGN ENGINEER

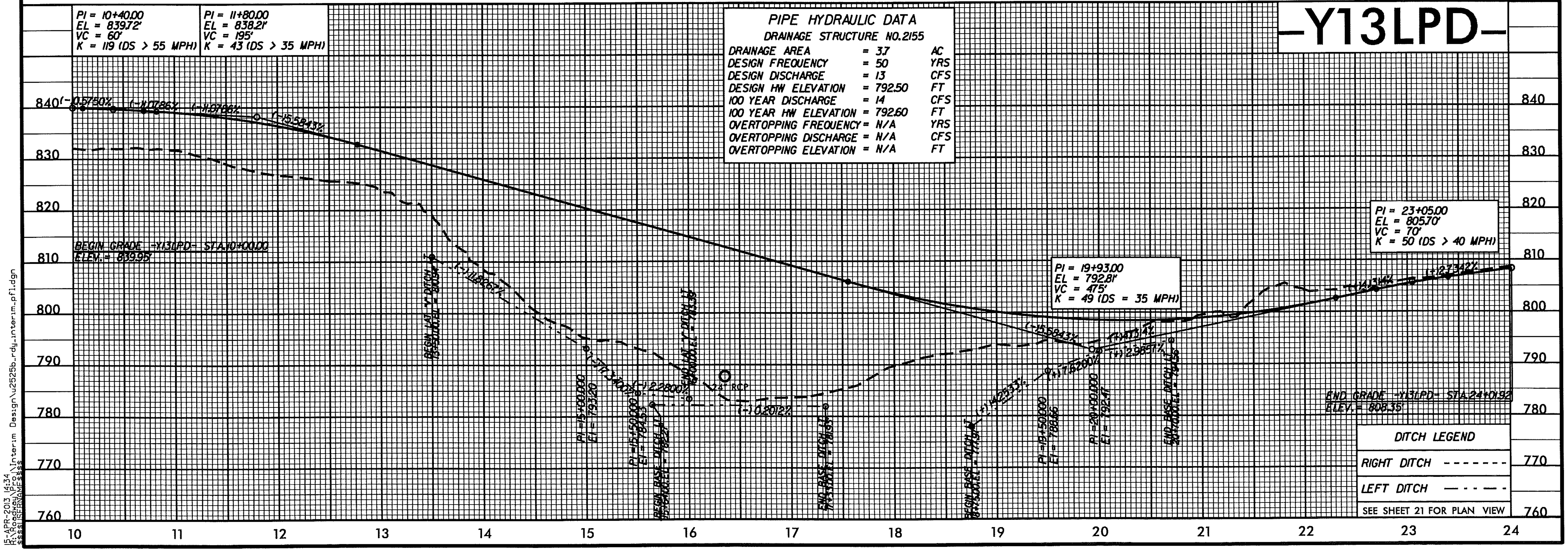
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y13LPC-


BEGIN GRADE -Y13LPC- STA.10+00.00
ELEV.= 807.89'
PI = 10+95.00
EL = 805.28'
VC = 100'
K = 85 (DS > 50 MPH)
PI = 14+00.00
EL = 793.32'
VC = 345'
K = 37 (DS = 30 MPH)
PI = 21+87.00
EL = 835.85'
VC = 135'
K = 40 (DS > 35 MPH)
PI = 22+92.00
EL = 837.99'
VC = 75'
K = 81 (DS > 45 MPH)
(-)2.7474%
(-)3.9213%
(-)3.9213%
(+)5.4041%
(+)5.4041%
(+)2.0381%
(+)1.1081%
END GRADE -Y13LPC- STA.23+54.27
ELEV.= 838.68'
BM • 36 ELEVATION = 821.46'
N 871980 E 1783179
-Y13LPC- STA.10+55 85' RIGHT
R/R SPIKE SET IN 20" OAK
SEE SHEET 21 FOR PLAN VIEW
840
830
820
810
800
790
10
11
12
13
14
15
16
17
18
19
20
21
22
23

-Y13LPD-


PI = 10+40.00
EL = 839.72'
VC = 60'
K = 119 (DS > 55 MPH)
PI = 11+80.00
EL = 838.21'
VC = 195'
K = 43 (DS > 35 MPH)
BEGIN GRADE -Y13LPD- STA.10+00.00
ELEV.= 839.95'
(-)0.5750%
(-)1.0786%
(-)1.9786%
(-)15.5843%
(-)11.8267%
BEGIN LAT "V" DITCH LT
(-)7.3400%
(-)2.2800%
24" RCP
(-)0.2012%
PI =15+00.000
El = 793.20
PI =15+50.000
El = 784.53
BEGIN BASE DITCH LT
END LAT "V" DITCH LT
END BASE DITCH LT
BEGIN BASE DITCH LT
(+)4.2533%
(+)7.5280%
PI =19+50.000
El = 788.66
PI =20+00.000
El = 792.47
(-)15.5843%
(+)4.1314%
(+)2.9857%
END BASE DITCH LT
PI = 19+93.00
EL = 792.81'
VC = 475'
K = 49 (DS = 35 MPH)
PI = 23+05.00
EL = 805.70'
VC = 70'
K = 50 (DS > 40 MPH)
(+)1.4314%
(+)2.7342%
END GRADE -Y13LPD- STA.24+01.92
ELEV.= 808.35'
SEE SHEET 21 FOR PLAN VIEW
840
830
820
810
800
790
780
770
760
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.2155

DRAINAGE AREA	= 3.7	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 13	CFS
DESIGN HW ELEVATION	= 792.50	FT
100 YEAR DISCHARGE	= 14	CFS
100 YEAR HW ELEVATION	= 792.60	FT
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= N/A	FT

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

SEE SHEET 21 FOR PLAN VIEW

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PROJECT REFERENCE NO. U-2525B
SHEET NO. 73
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

PRELIMINARY PLANS
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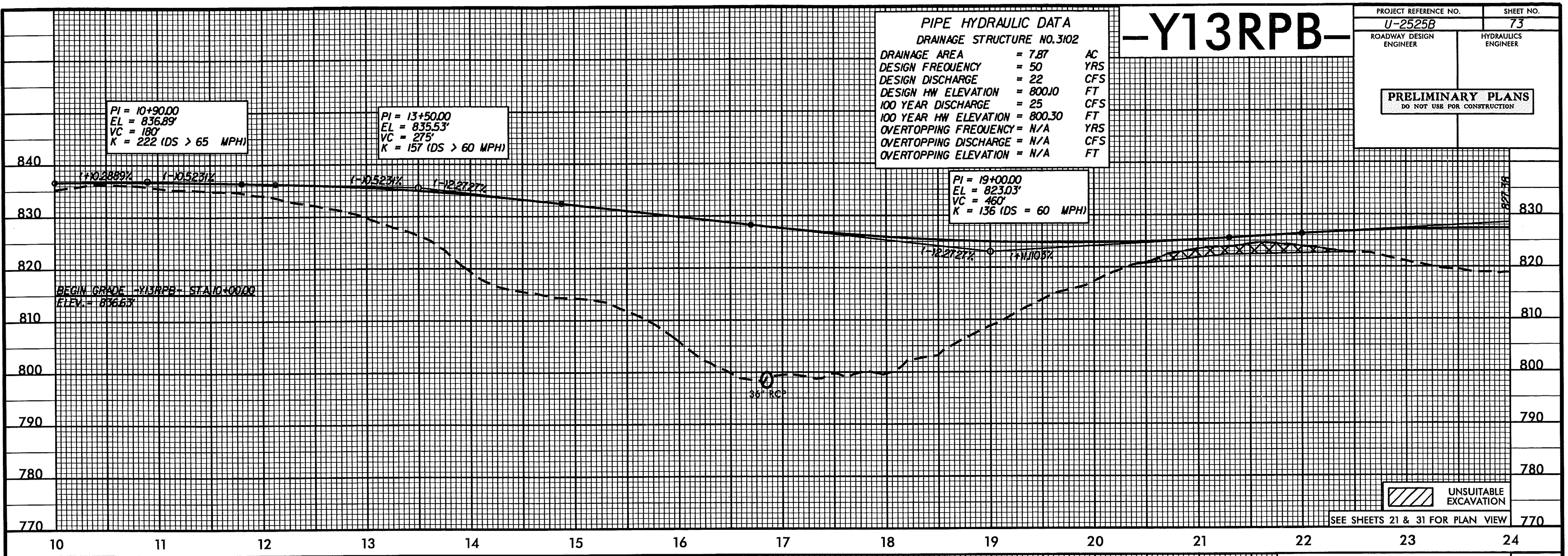
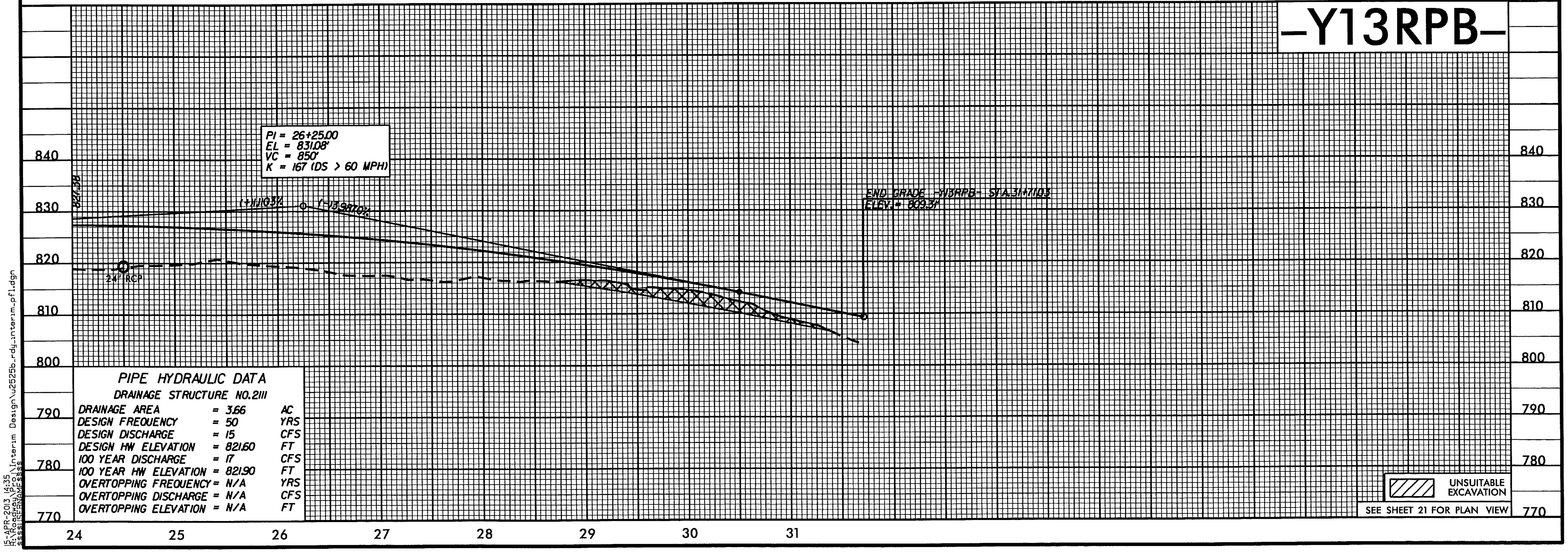
-Y13RPB-


PI = 10+90.00
EL = 836.89'
VC = 180'
K = 222 (DS > 65 MPH)
PI = 13+50.00
EL = 835.53'
VC = 275'
K = 157 (DS > 60 MPH)
PI = 19+00.00
EL = 823.03'
VC = 460'
K = 136 (DS = 60 MPH)
(+)0.2889%
(-)0.5231%
(-)0.5231%
(-)2.2727%
(-)2.2727%
(+)1.1103%
BEGIN GRADE -Y13RPB- STA.10+00.00
ELEV.= 836.63'
36" RCP
827.38
840
830
820
810
800
790
780
770
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
UNSUITABLE EXCAVATION
SEE SHEETS 21 & 31 FOR PLAN VIEW

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.3102
DRAINAGE AREA = 7.87 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 22 CFS
DESIGN HW ELEVATION = 800.10 FT
100 YEAR DISCHARGE = 25 CFS
100 YEAR HW ELEVATION = 800.30 FT
OVERTOPPING FREQUENCY = N/A YRS
OVERTOPPING DISCHARGE = N/A CFS
OVERTOPPING ELEVATION = N/A FT

-Y13RPB-


PI = 26+25.00
EL = 831.08'
VC = 850'
K = 167 (DS > 60 MPH)
(+)1.1103%
(-)3.9870%
827.38
24" RCP
END GRADE -Y13RPB- STA.31+71.03
ELEV.= 809.31'
840
830
820
810
800
790
780
770
24
25
26
27
28
29
30
31
UNSUITABLE EXCAVATION
SEE SHEET 21 FOR PLAN VIEW

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.2111
DRAINAGE AREA = 3.66 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 15 CFS
DESIGN HW ELEVATION = 821.60 FT
100 YEAR DISCHARGE = 17 CFS
100 YEAR HW ELEVATION = 821.90 FT
OVERTOPPING FREQUENCY = N/A YRS
OVERTOPPING DISCHARGE = N/A CFS
OVERTOPPING ELEVATION = N/A FT

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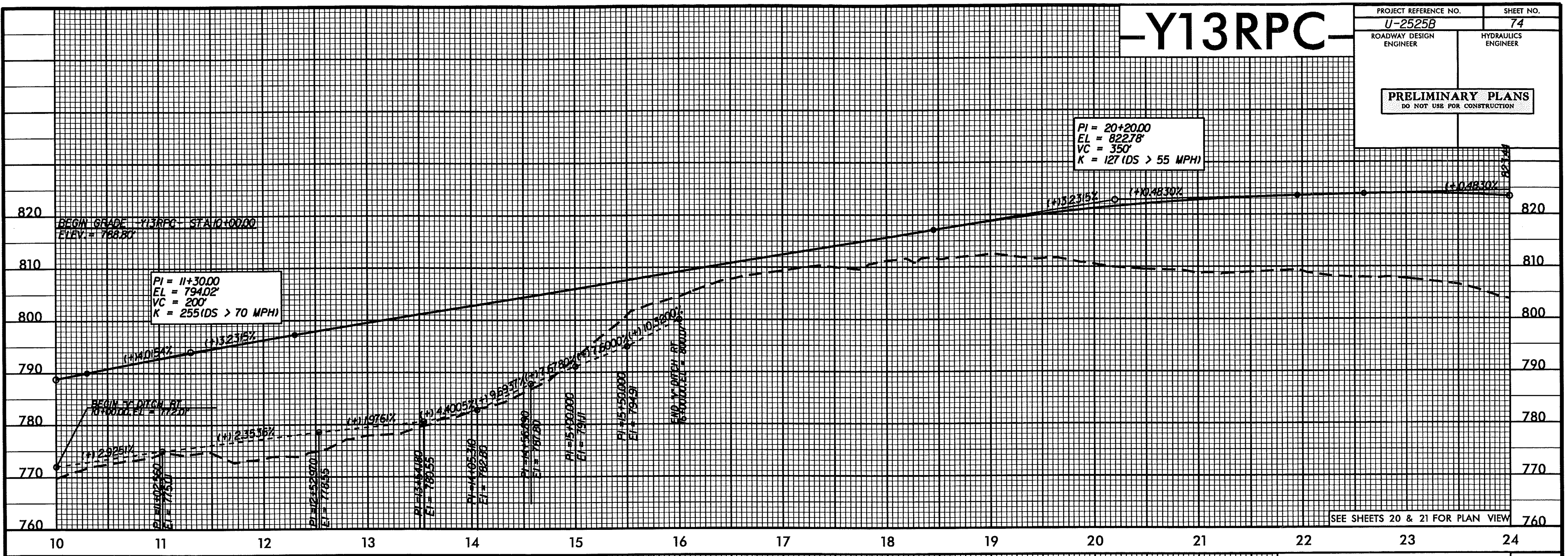
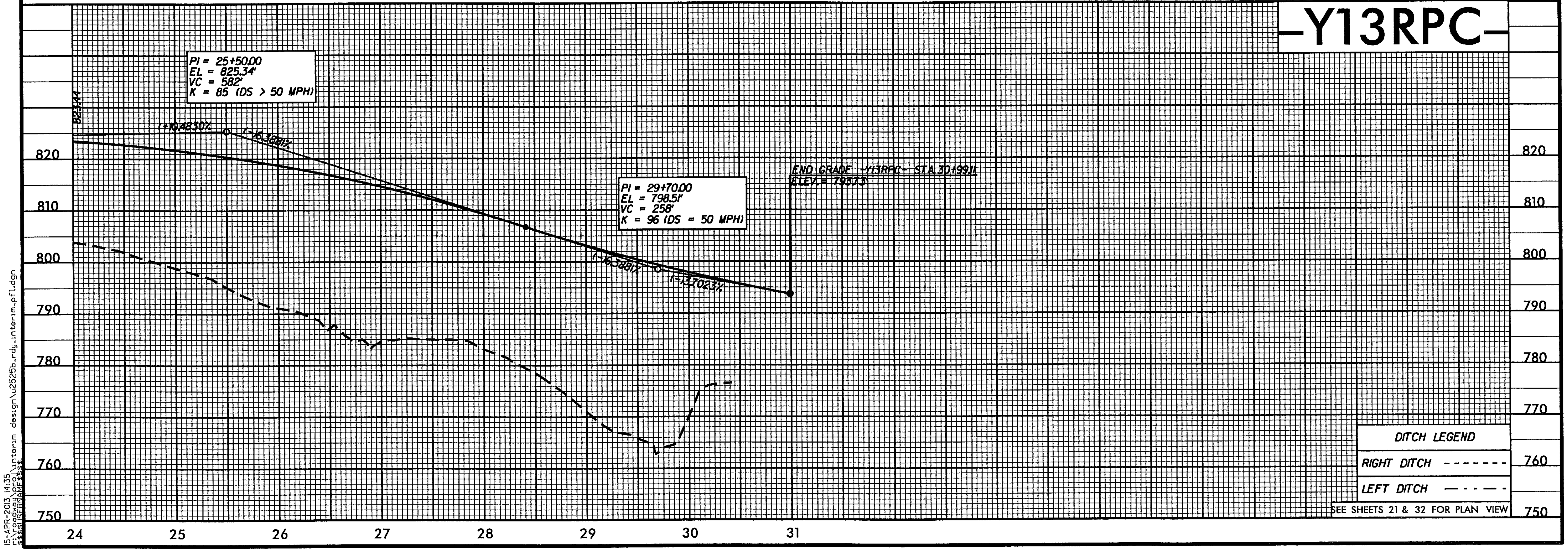
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	74

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


-Y13RPC-
BEGIN GRADE -Y13RPC- STA 10+00.00
ELEV. = 788.80'
PI = 11+30.00
EL = 794.02'
VC = 200'
K = 255 (DS > 70 MPH)
(+)4.0154%
(+)3.2315%
PI = 20+20.00
EL = 822.78'
VC = 350'
K = 127 (DS > 55 MPH)
(+)3.2315%
(+)0.4830%
(+)0.4830%
823.44
BEGIN 'V' DITCH RT
10+00.00, EL = 772.01'
(+) 2.9251%
(+) 2.3536%
(+) 1.9761%
(+) 4.4005%
(+) 9.6937%
(+) 7.6780%
(+) 7.6000%
(+) 10.5800%
PI = 11+02.560
El = 775.01
PI = 12+52.970
El = 778.55
PI = 13+54.180
El = 780.55
PI = 14+05.310
El = 782.80
PI = 14+56.690
El = 787.80
PI = 15+00.000
El = 791.11
PI = 15+50.000
El = 794.91
END 'V' DITCH RT
16+00.00, EL = 800.07'
SEE SHEETS 20 & 21 FOR PLAN VIEW
820
810
800
790
780
770
760
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24


-Y13RPC-
823.44
PI = 25+50.00
EL = 825.34'
VC = 582'
K = 85 (DS > 50 MPH)
(+)0.4830%
(-)6.3881%
PI = 29+70.00
EL = 798.51'
VC = 258'
K = 96 (DS = 50 MPH)
(-)6.3881%
(-)3.7023%
END GRADE -Y13RPC- STA 30+99.11
ELEV. = 793.73'
DITCH LEGEND
RIGHT DITCH - - - - - - -
LEFT DITCH — - — - —
SEE SHEETS 21 & 32 FOR PLAN VIEW
820
810
800
790
780
770
760
750
24
25
26
27
28
29
30
31

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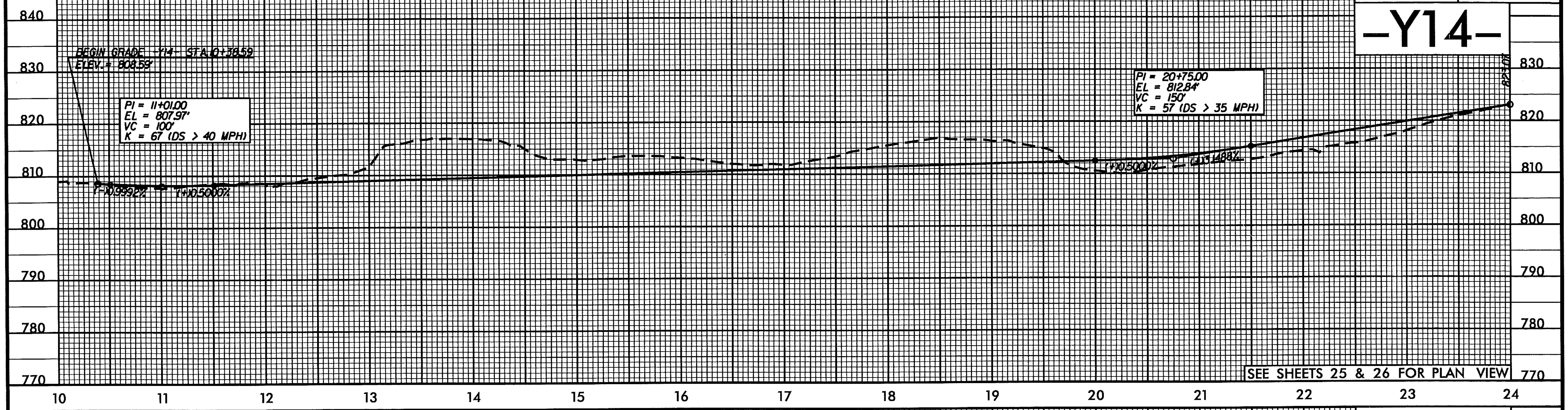
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	75

ROADWAY DESIGN ENGINEER

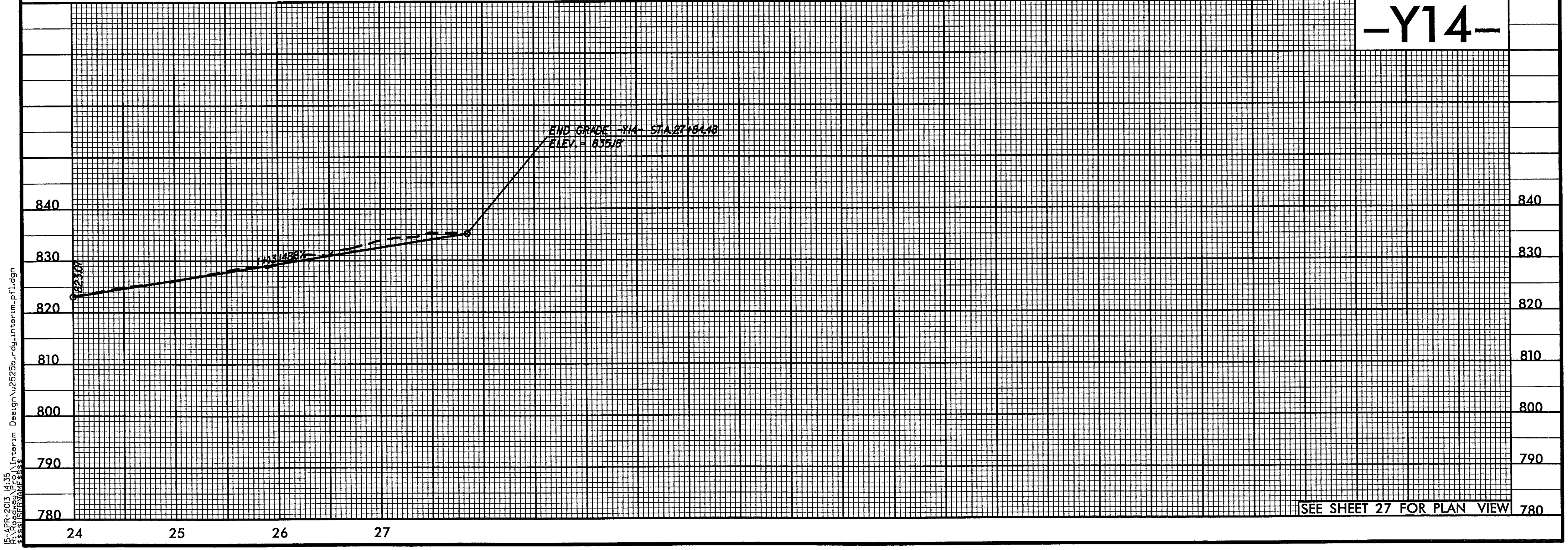
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y14-


840
830
820
810
800
790
780
770
BEGIN GRADE -Y14- STA.10+38.59
ELEV.= 808.59'
PI = 11+01.00
EL = 807.97'
VC = 100'
K = 67 (DS > 40 MPH)
(-)0.9992%
(+)0.5000%
PI = 20+75.00
EL = 812.84'
VC = 150'
K = 57 (DS > 35 MPH)
(+)0.5000%
(+)3.1488%
823.07
SEE SHEETS 25 & 26 FOR PLAN VIEW
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

-Y14-


END GRADE -Y14- STA.27+84.48
ELEV.= 835.18'
(+)3.1488%
823.07
840
830
820
810
800
790
780
SEE SHEET 27 FOR PLAN VIEW
24
25
26
27

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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	76

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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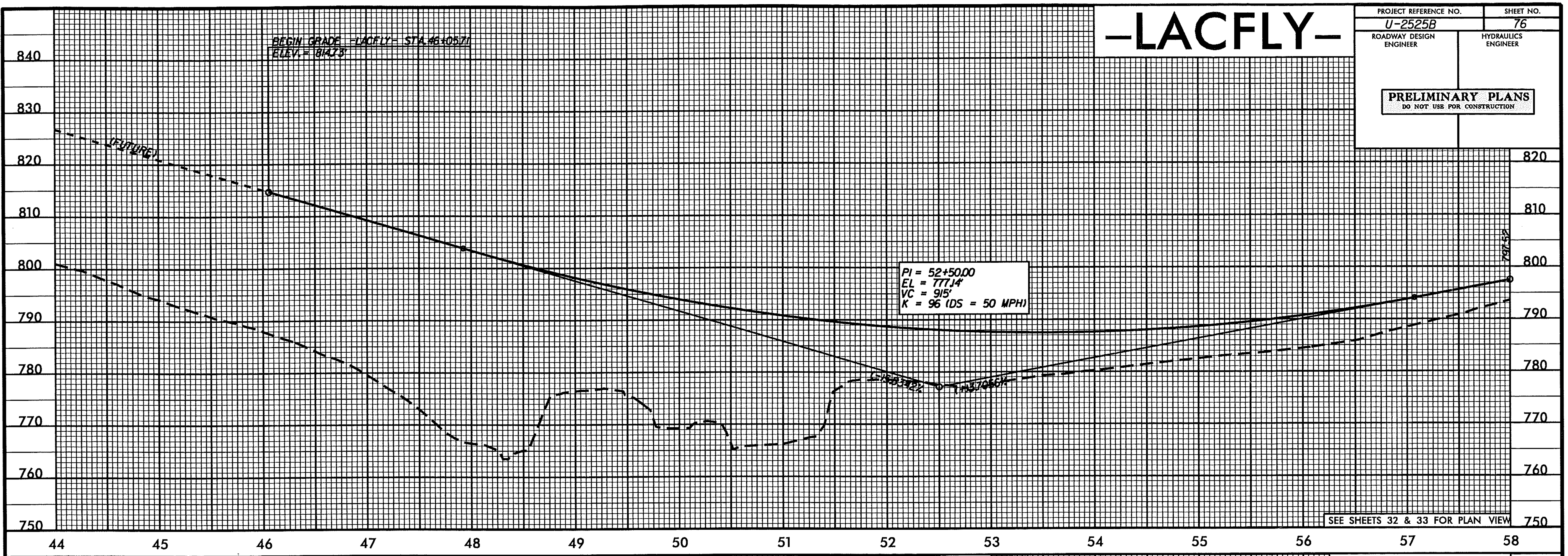

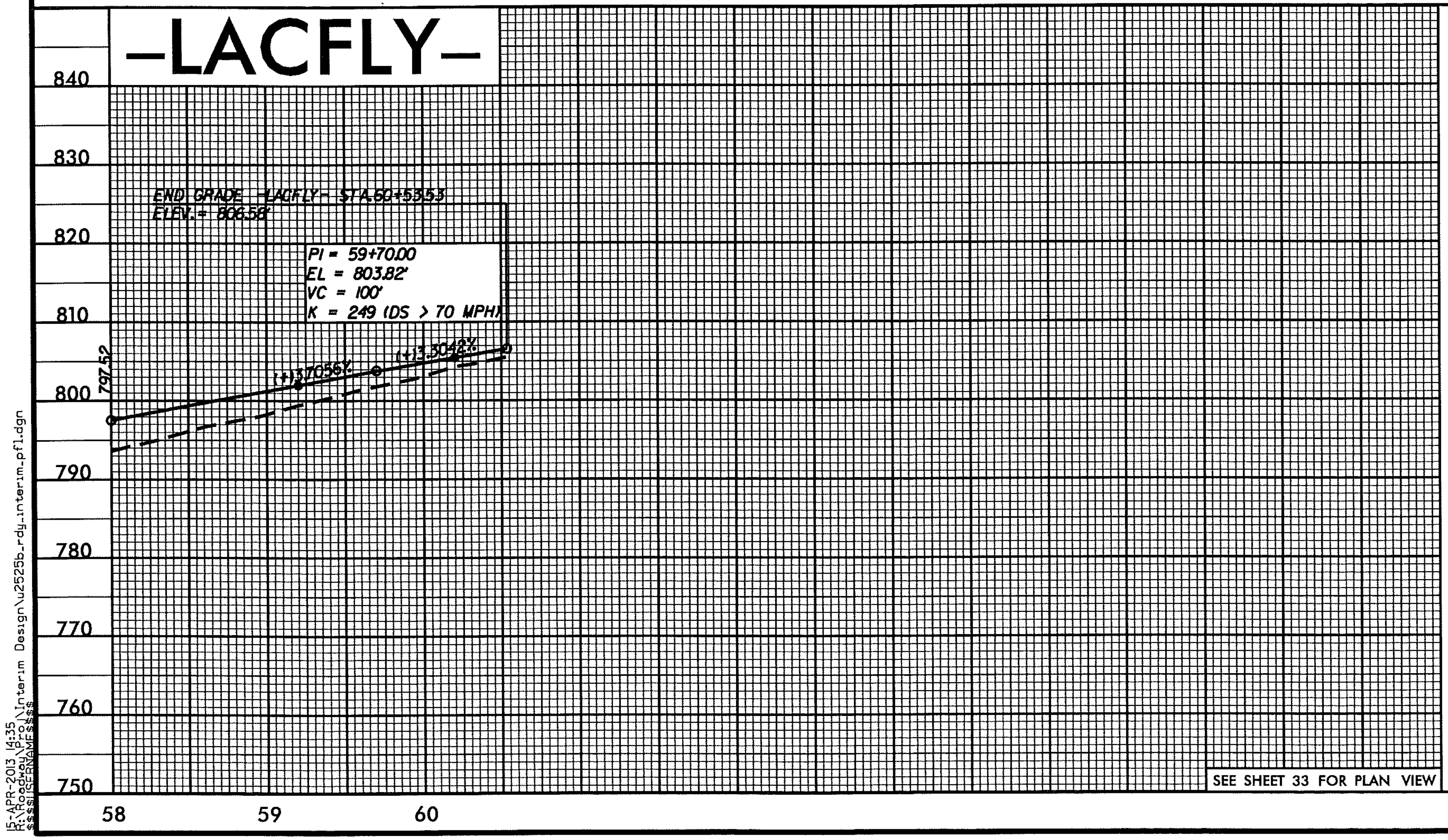

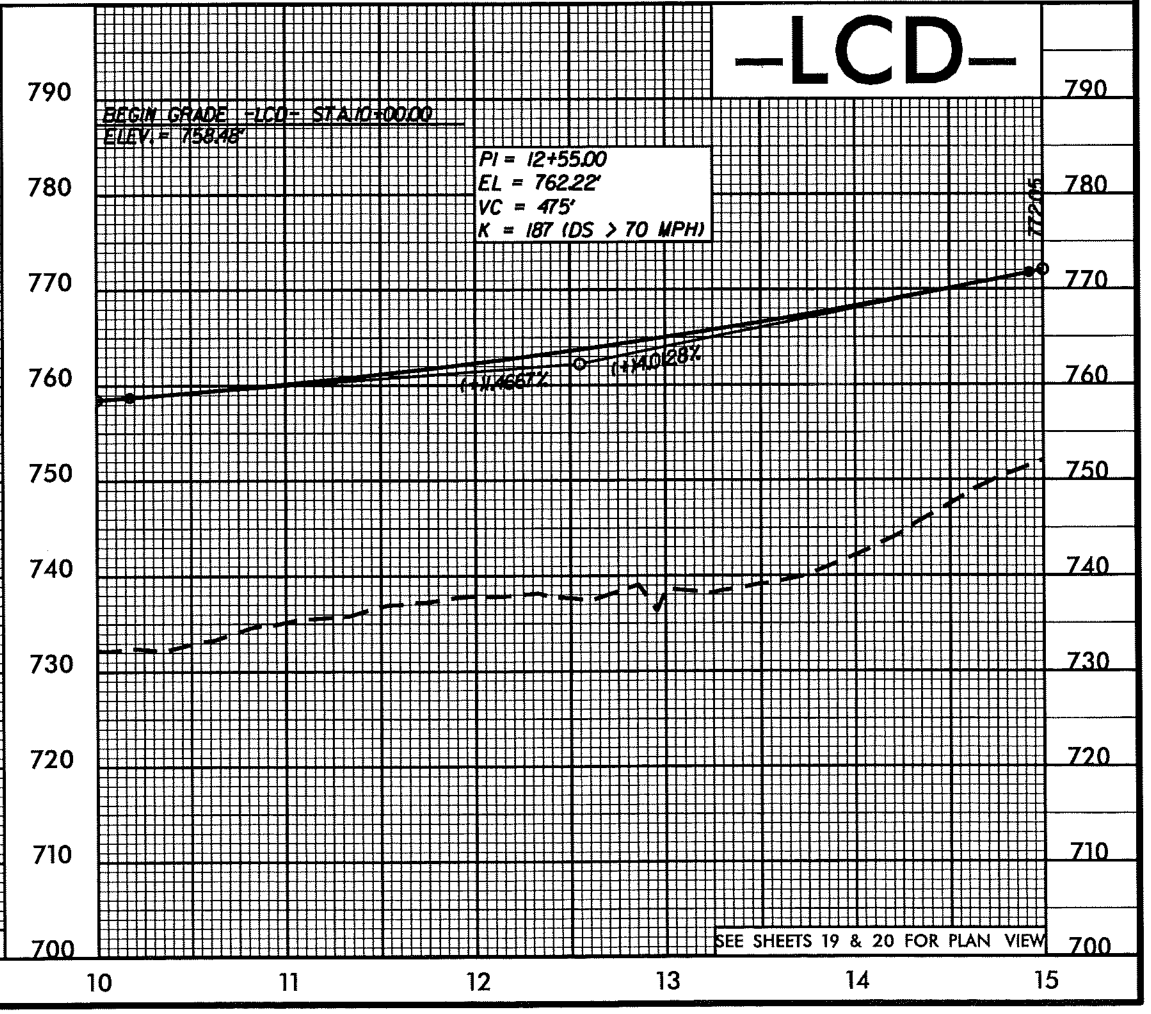

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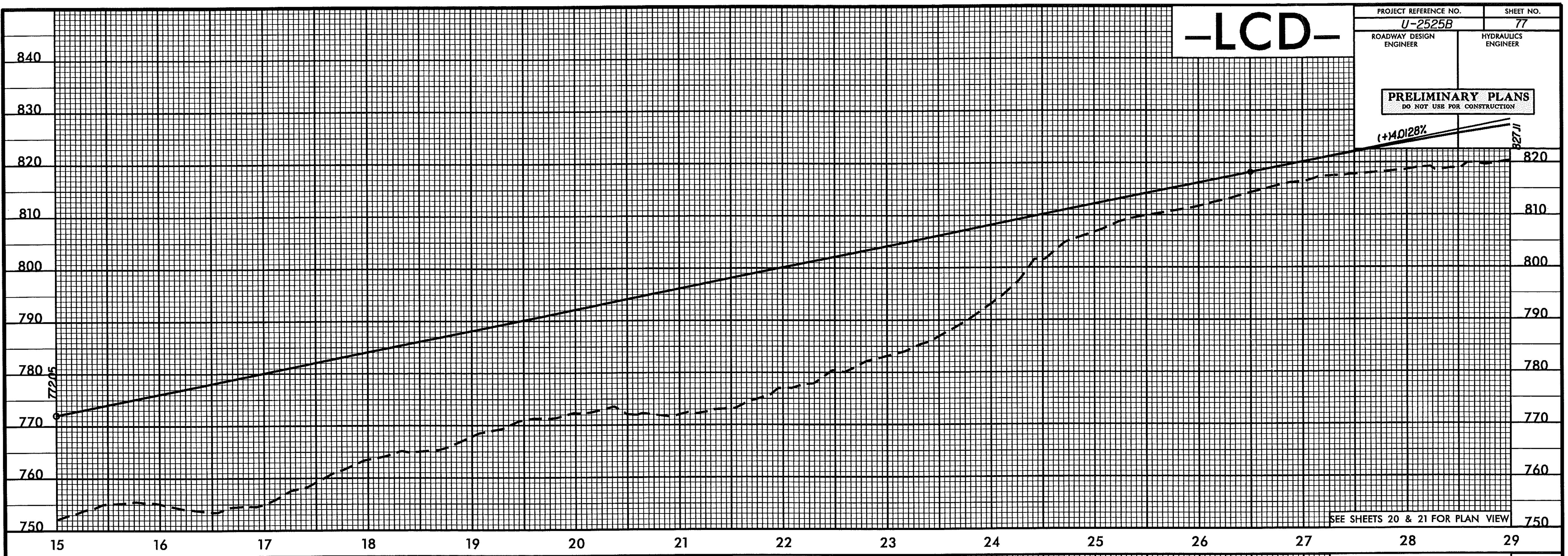
PROJECT REFERENCE NO. U-2525B

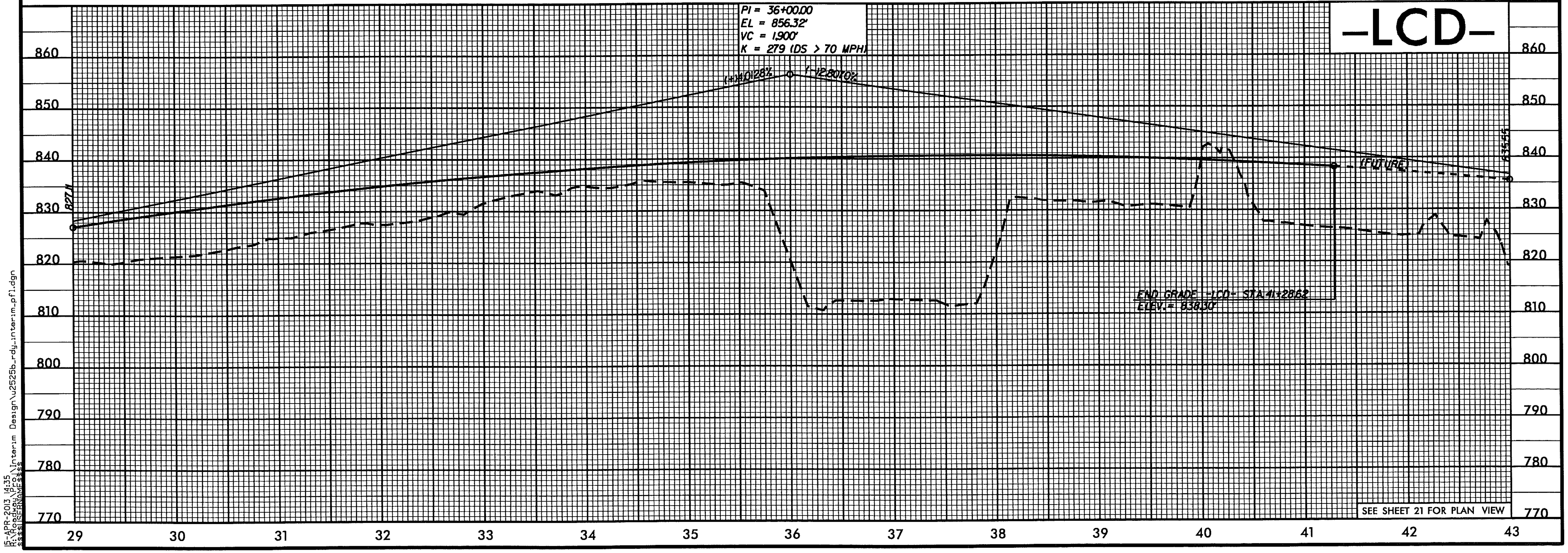
SHEET NO. 77

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	78

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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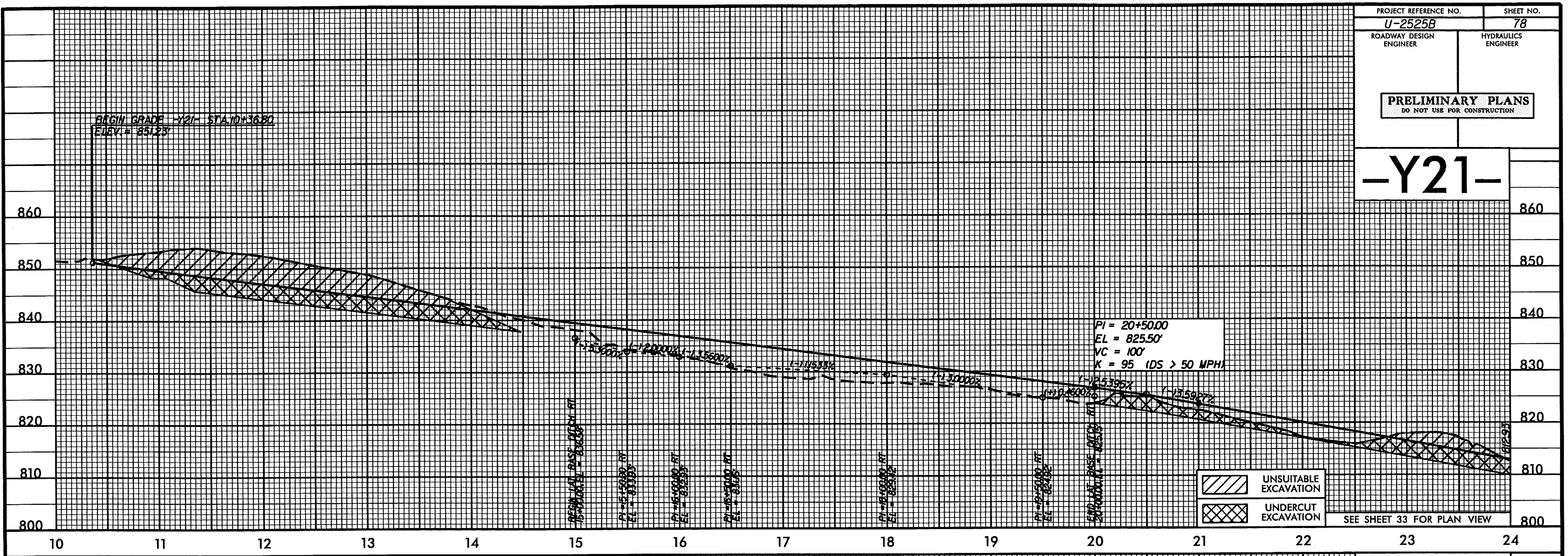
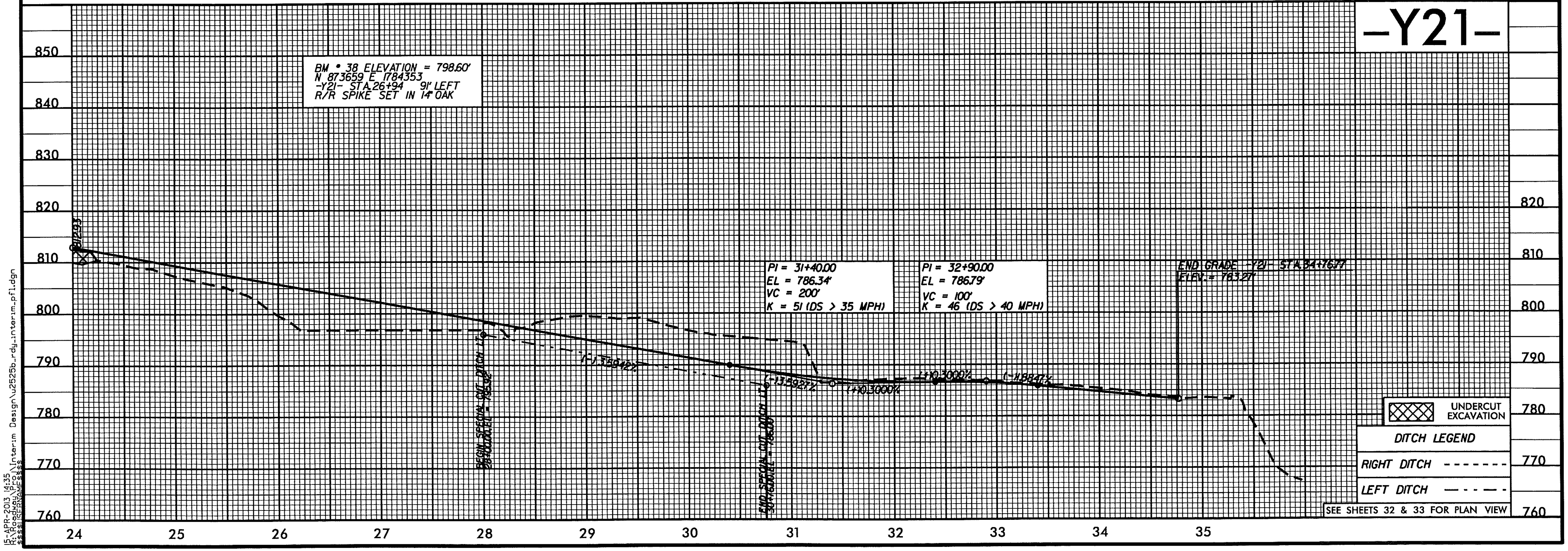

-Y21-
BEGIN GRADE -Y21- STA.10+36.80
ELEV. = 851.23'
PI = 20+50.00
EL = 825.50'
VC = 100'
K = 95 (DS > 50 MPH)
(-)1.5300%
(-)1.2000%
(-)1.3560%
(-)1.1533%
(-)1.3000%
(-)2.5396%
(+)0.4600%
(-)1.3592%
BEGIN LAT. BASE DITCH RT 15+00.00 EL = 836.58'
PI =15+50.00 RT EL = 833.93'
PI =16+00.00 RT EL = 832.93'
PI =16+50.00 RT EL = 831.5'
PI =18+00.00 RT EL = 829.42'
PI =19+50.00 RT EL = 824.92'
END LAT. BASE DITCH RT 20+00.00 EL = 825.15'
812.93
UNSUITABLE EXCAVATION
UNDERCUT EXCAVATION
SEE SHEET 33 FOR PLAN VIEW
860
850
840
830
820
810
800
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24


-Y21-
BM # 38 ELEVATION = 798.60'
N 873659 E 1784353
-Y21- STA.26+94 91' LEFT
R/R SPIKE SET IN 14" OAK
812.93
PI = 31+40.00
EL = 786.34'
VC = 200'
K = 51 (DS > 35 MPH)
PI = 32+90.00
EL = 786.79'
VC = 100'
K = 46 (DS > 40 MPH)
END GRADE -Y21- STA.34+76.77
ELEV. = 783.27'
(-)1.3594%
(-)1.3592%
(+)0.3000%
(+)0.3000%
(-)1.8847%
BEGIN SPECIAL CUT DITCH LT 28+00.00 EL = 795.92'
END SPECIAL CUT DITCH LT 30+80.00 EL = 786.00'
UNDERCUT EXCAVATION
DITCH LEGEND
RIGHT DITCH - - - - - - -
LEFT DITCH — · — · —
SEE SHEETS 32 & 33 FOR PLAN VIEW
850
840
830
820
810
800
790
780
770
760
24
25
26
27
28
29
30
31
32
33
34
35

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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	79

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

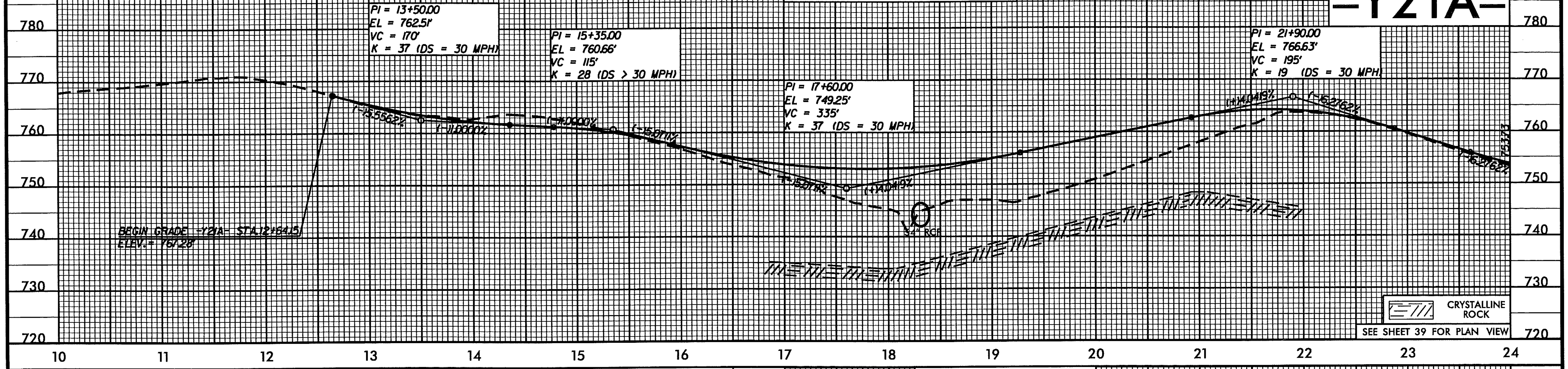
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PIPE HYDRAULIC DATA

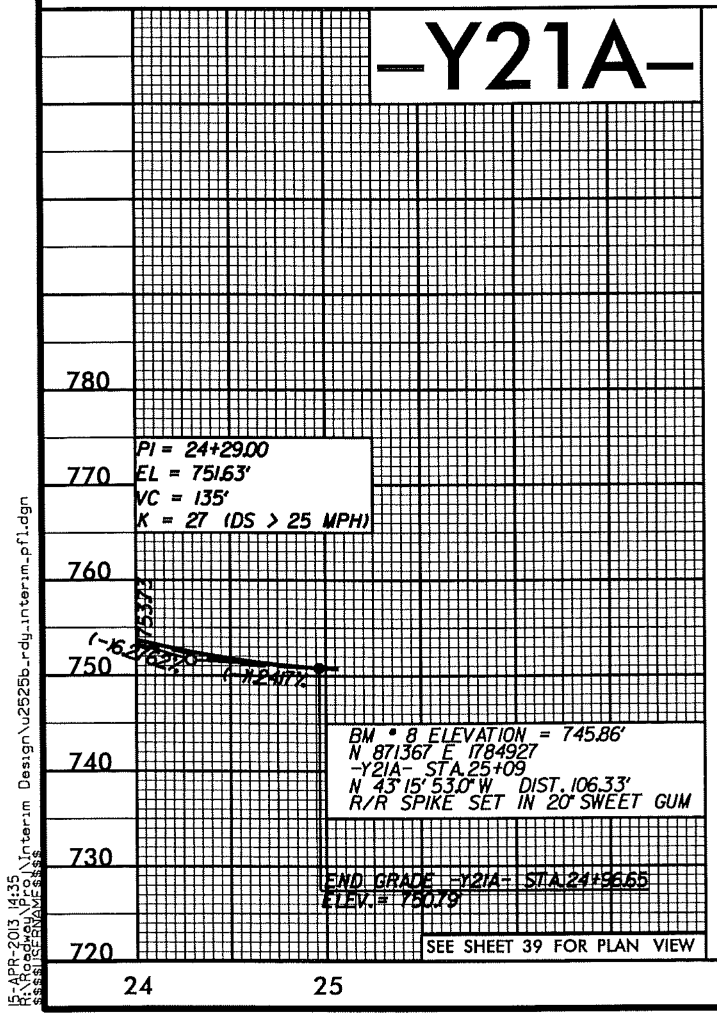
DRAINAGE STRUCTURE NO. 3901

DRAINAGE AREA	= 73	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 167	CFS
DESIGN HW ELEVATION	= 748.90	FT
100 YEAR DISCHARGE	= 194	CFS
100 YEAR HW ELEVATION	= 750.20	FT
OVERTOPPING FREQUENCY	= <500	YRS
OVERTOPPING DISCHARGE	= 268	CFS
OVERTOPPING ELEVATION	= 754.00	FT

-Y21A-

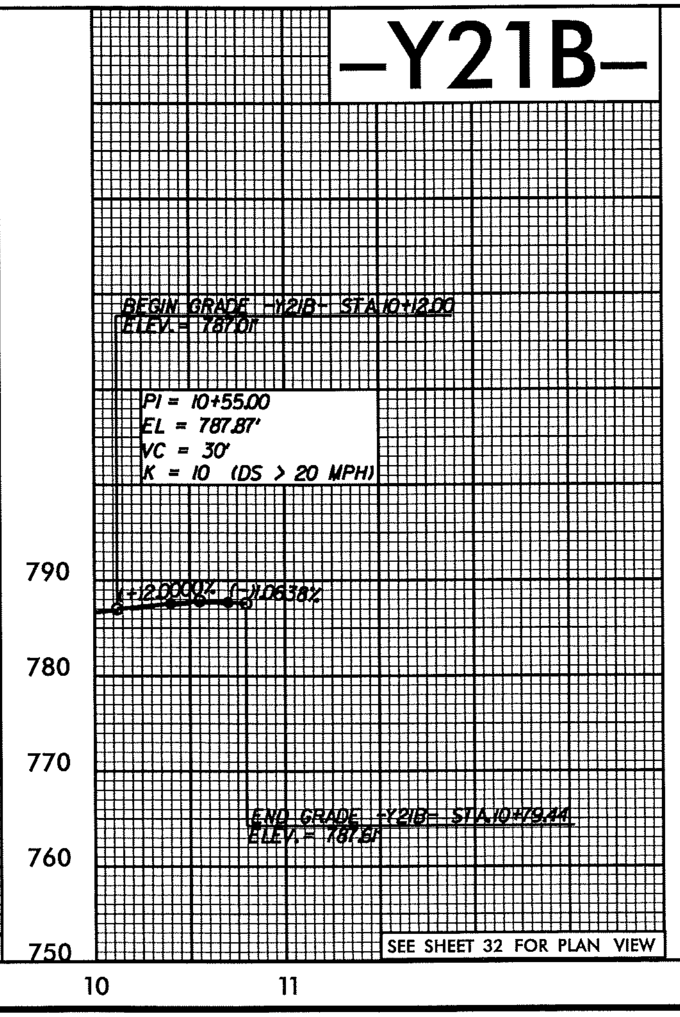

PI = 13+50.00
EL = 762.51'
VC = 170'
K = 37 (DS = 30 MPH)
PI = 15+35.00
EL = 760.66'
VC = 115'
K = 28 (DS > 30 MPH)
PI = 17+60.00
EL = 749.25'
VC = 335'
K = 37 (DS = 30 MPH)
PI = 21+90.00
EL = 766.63'
VC = 195'
K = 19 (DS = 30 MPH)
(-)5.5562%
(-)1.0000%
(+)0.0900%
(-)5.9711%
(-)5.0711%
(+)4.0419%
(+)4.0419%
(-)6.2762%
(-)6.2762%
753.73
54" RCP
BEGIN GRADE -Y21A- STA.12+64.15
ELEV. = 767.28'
CRYSTALLINE ROCK
SEE SHEET 39 FOR PLAN VIEW
780
770
760
750
740
730
720
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

-Y21A-

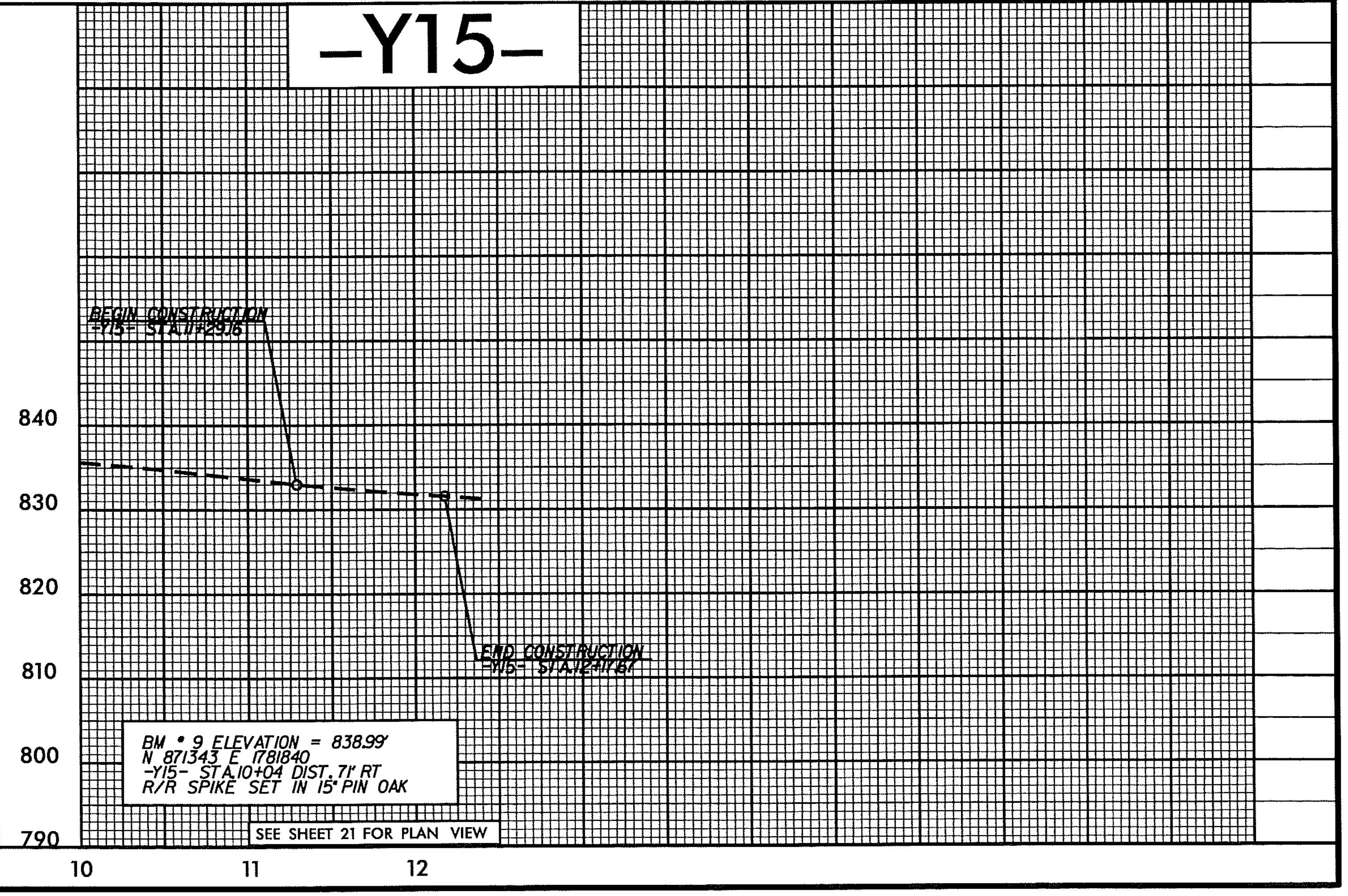

PI = 24+29.00
EL = 751.63'
VC = 135'
K = 27 (DS > 25 MPH)
753.73
(-)6.2762%
(-)1.2417%
END GRADE -Y21A- STA.24+96.65
ELEV. = 750.79'
SEE SHEET 39 FOR PLAN VIEW
780
770
760
750
740
730
720
24
25

BM • 8 ELEVATION = 745.86'
N 871367 E 1784927
-Y21A- STA.25+09
N 43° 15' 53.0" W DIST. 106.33'
R/R SPIKE SET IN 20" SWEET GUM

-Y21B-


BEGIN GRADE -Y21B- STA.10+12.00
ELEV. = 787.01'
PI = 10+55.00
EL = 787.87'
VC = 30'
K = 10 (DS > 20 MPH)
(+)2.0000%
(-)1.0638%
END GRADE -Y21B- STA.10+79.44
ELEV. = 787.81'
SEE SHEET 32 FOR PLAN VIEW
790
780
770
760
750
10
11

-Y15-


BEGIN CONSTRUCTION
-Y15- STA.11+29.16
END CONSTRUCTION
-Y15- STA.12+17.67
SEE SHEET 21 FOR PLAN VIEW
840
830
820
810
800
790
10
11
12

BM • 9 ELEVATION = 838.99'
N 871343 E 1781840
-Y15- STA.10+04 DIST. 71' RT
R/R SPIKE SET IN 15" PIN OAK

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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	80
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

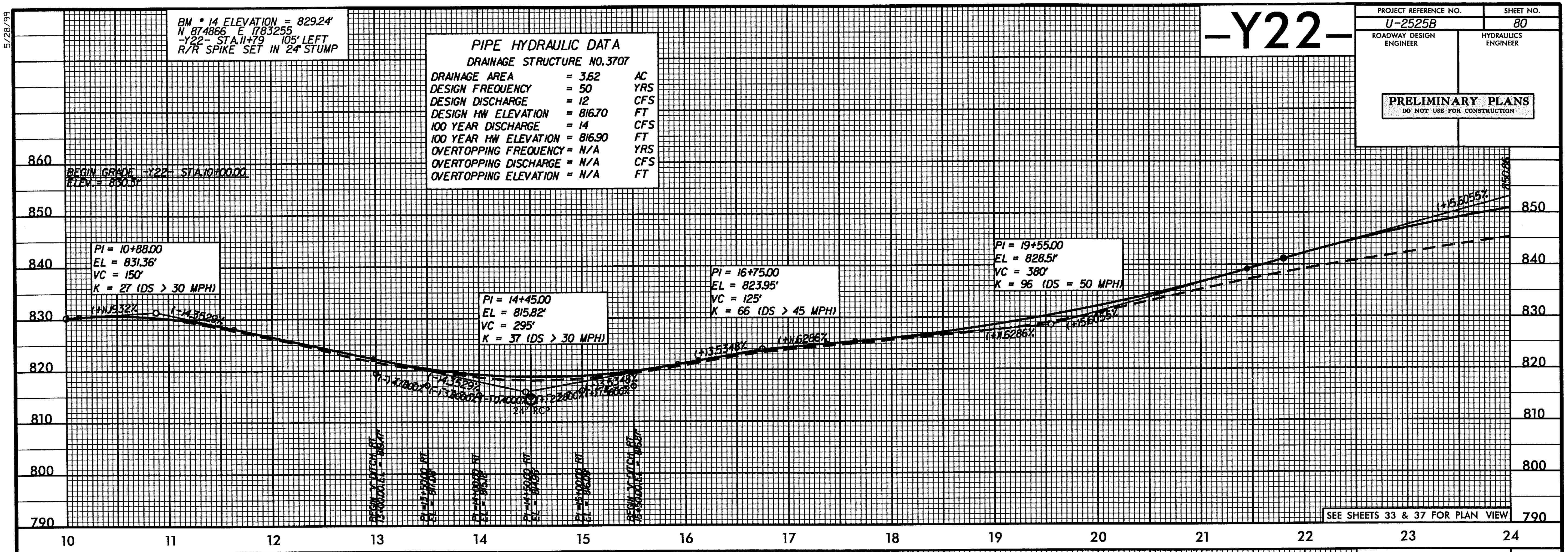
-Y22-

BM • 14 ELEVATION = 829.24'
N 874866 E 1783255
-Y22- STA.11+79 105' LEFT
R/R SPIKE SET IN 24" STUMP

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.3707

DRAINAGE AREA	= 3.62	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 12	CFS
DESIGN HW ELEVATION	= 816.70	FT
100 YEAR DISCHARGE	= 14	CFS
100 YEAR HW ELEVATION	= 816.90	FT
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= N/A	FT



BEGIN GRADE -Y22- STA.10+00.00
ELEV.= 830.51'

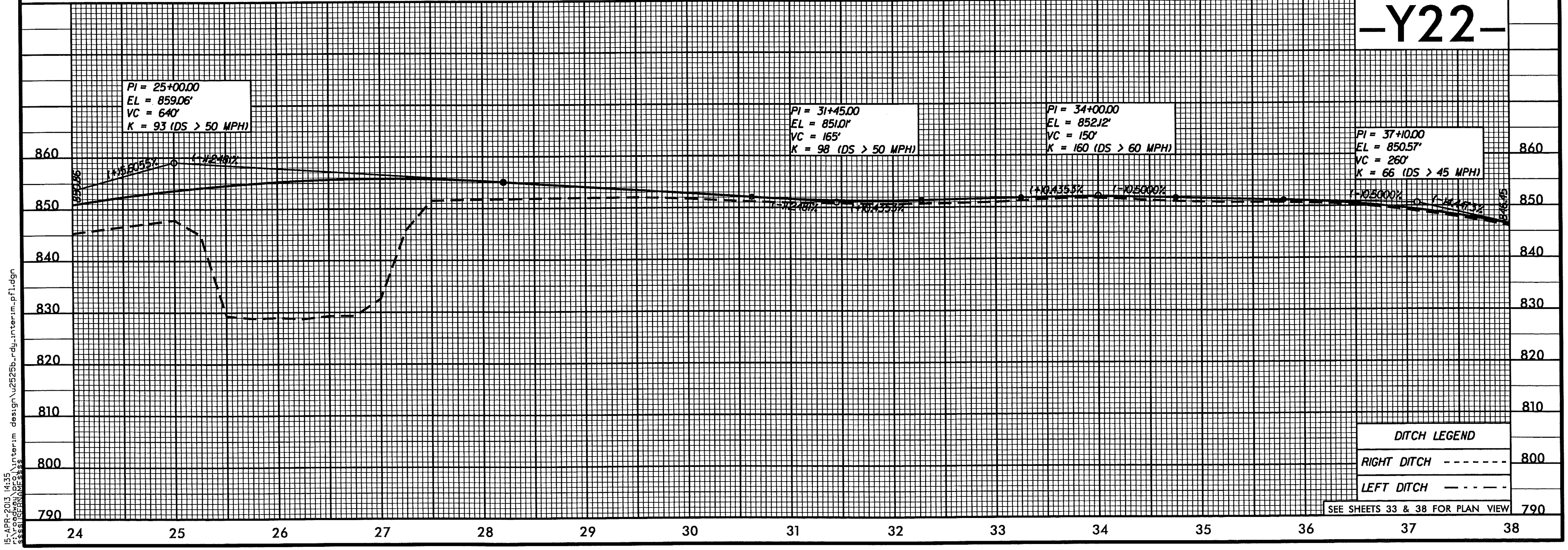
PI = 10+88.00
EL = 831.36'
VC = 150'
K = 27 (DS > 30 MPH)

PI = 14+45.00
EL = 815.82'
VC = 295'
K = 37 (DS > 30 MPH)

PI = 16+75.00
EL = 823.95'
VC = 125'
K = 66 (DS > 45 MPH)

PI = 19+55.00
EL = 828.51'
VC = 380'
K = 96 (DS = 50 MPH)

-Y22-



PI = 25+00.00
EL = 859.06'
VC = 640'
K = 93 (DS > 50 MPH)

PI = 31+45.00
EL = 851.01'
VC = 165'
K = 98 (DS > 50 MPH)

PI = 34+00.00
EL = 852.12'
VC = 150'
K = 160 (DS > 60 MPH)

PI = 37+10.00
EL = 850.57'
VC = 260'
K = 66 (DS > 45 MPH)

DITCH LEGEND

RIGHT DITCH - - - - - - -

LEFT DITCH — · — · —

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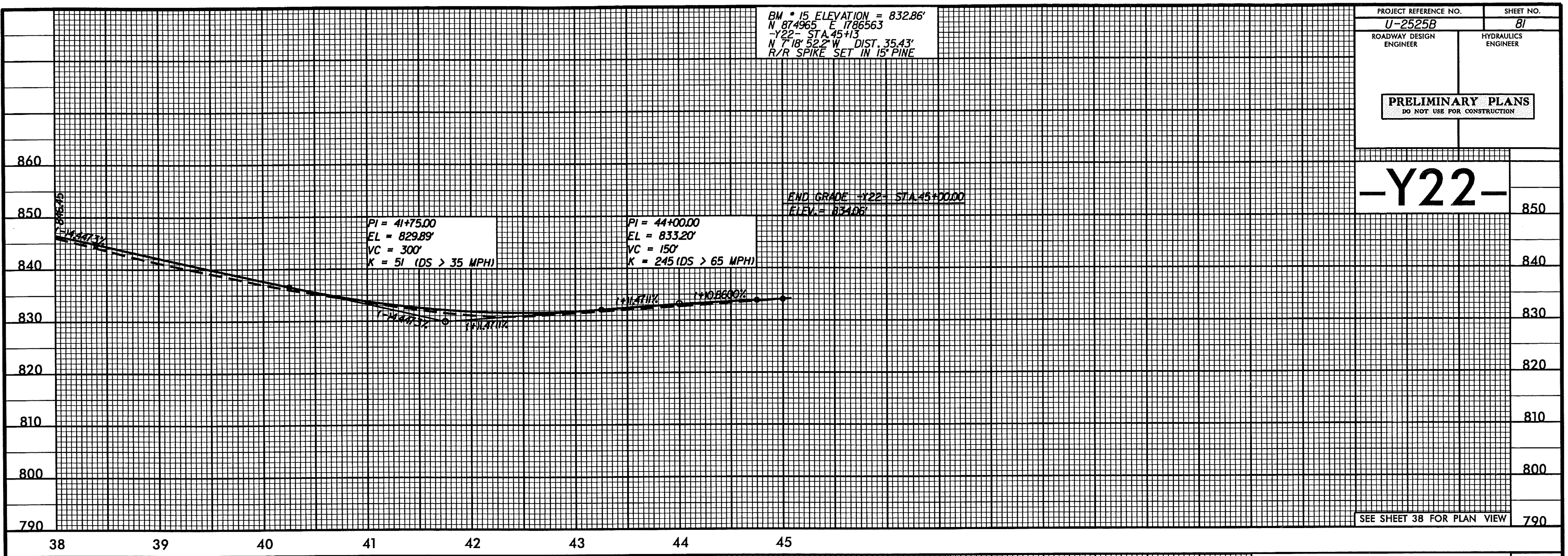
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	81

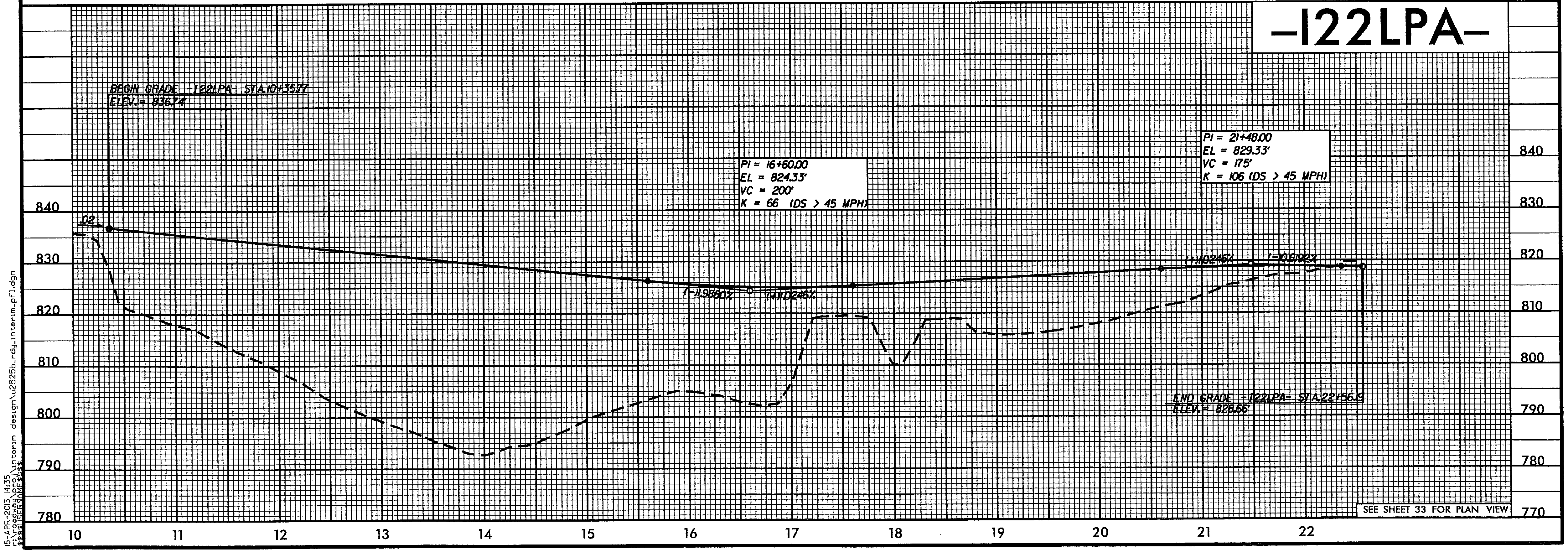
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM • 15 ELEVATION = 832.86'
N 874965 E 1786563
-Y22- STA.45+13
N 7°18' 52.2" W DIST. 35.43'
R/R SPIKE SET IN 15" PINE


-Y22-
860
850
840
830
820
810
800
790
846.45
(-)4.4473%
PI = 41+75.00
EL = 829.89'
VC = 300'
K = 51 (DS > 35 MPH)
(-)4.4473%
(+)1.4711%
PI = 44+00.00
EL = 833.20'
VC = 150'
K = 245 (DS > 65 MPH)
(+)1.4711%
(+)0.8600%
END GRADE -Y22- STA.45+00.00
ELEV.= 834.06'
SEE SHEET 38 FOR PLAN VIEW
38
39
40
41
42
43
44
45


-I22LPA-
BEGIN GRADE -I22LPA- STA.10+35.77
ELEV.= 836.74'
.02
PI = 16+60.00
EL = 824.33'
VC = 200'
K = 66 (DS > 45 MPH)
(-)1.9880%
(+)1.0246%
PI = 21+48.00
EL = 829.33'
VC = 175'
K = 106 (DS > 45 MPH)
(+)1.0246%
(-)0.6192%
END GRADE -I22LPA- STA.22+56.9
ELEV.= 828.66'
SEE SHEET 33 FOR PLAN VIEW
840
830
820
810
800
790
780
770
10
11
12
13
14
15
16
17
18
19
20
21
22

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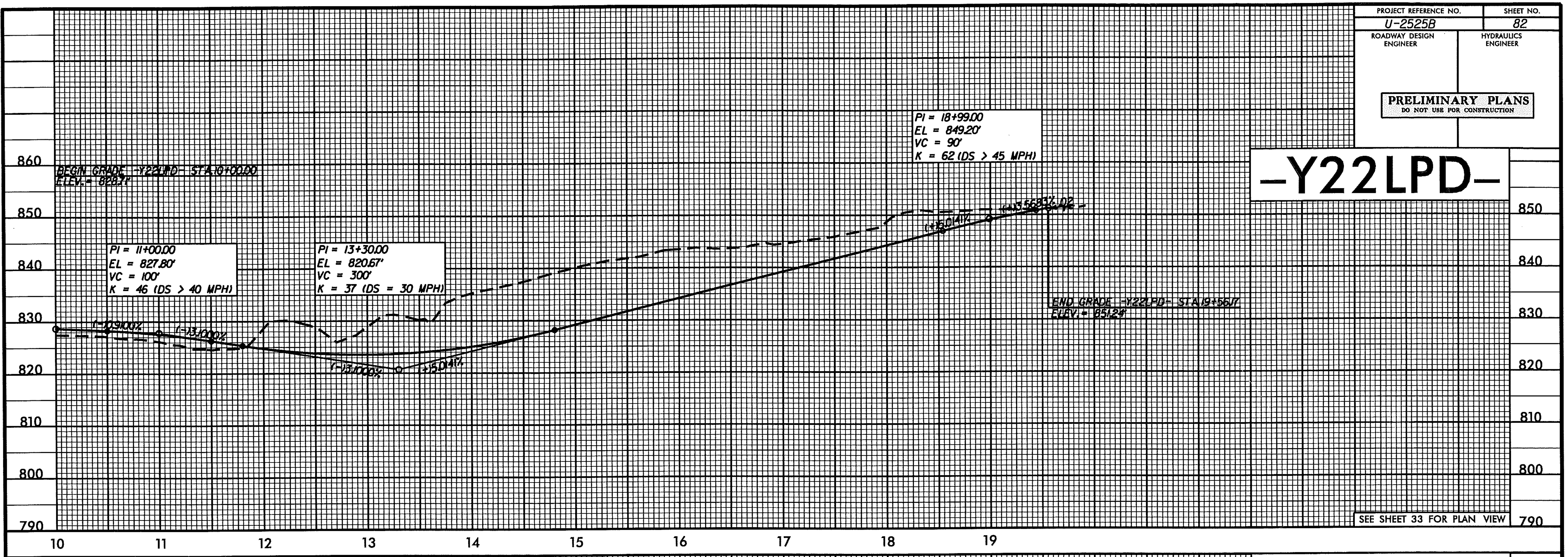
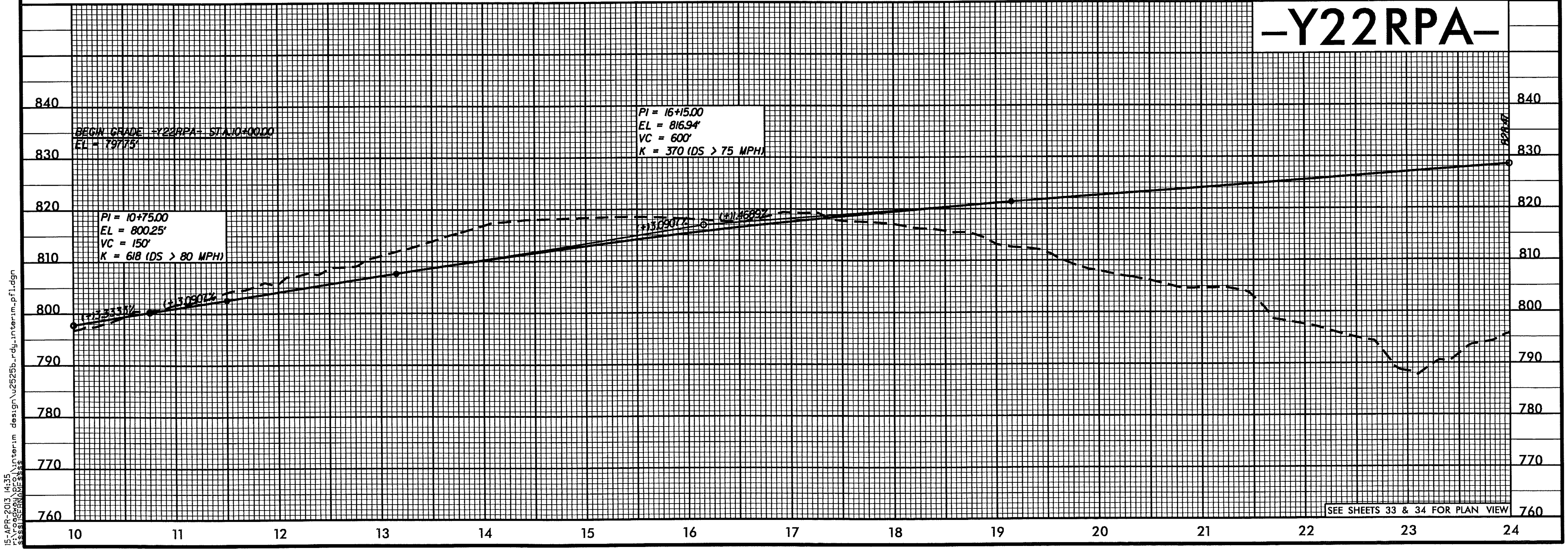
PROJECT REFERENCE NO. U-2525B
SHEET NO. 82
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y22LPD-



-Y22RPA-



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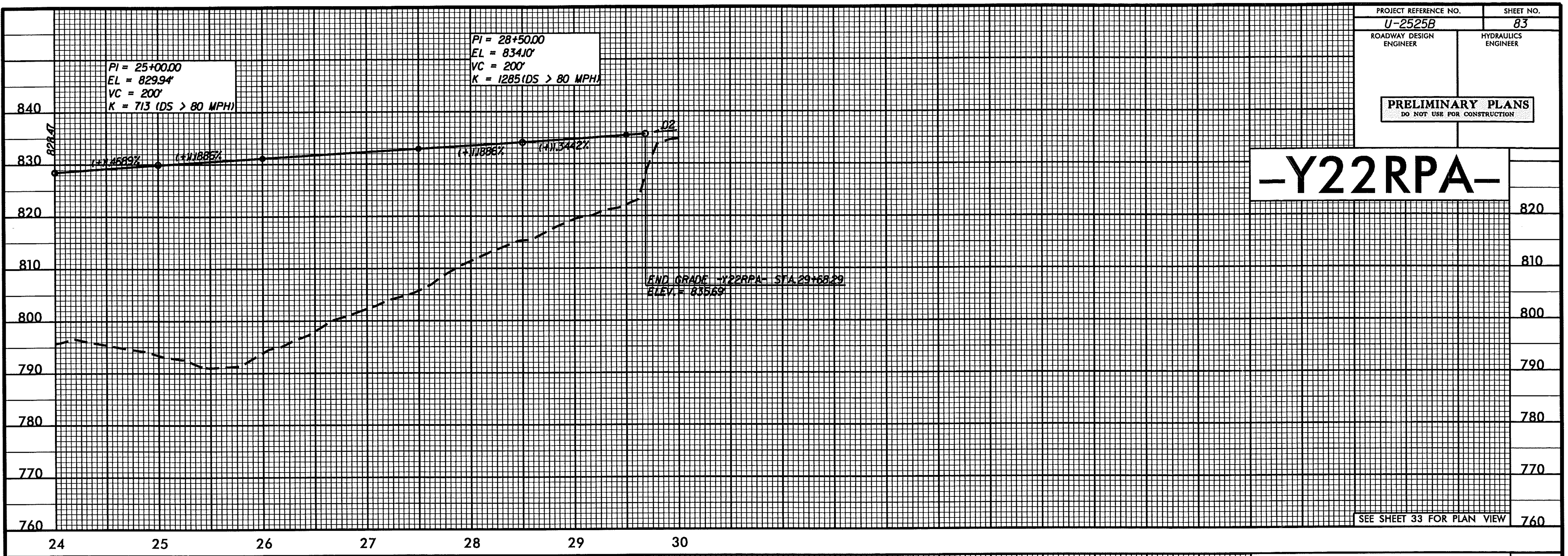
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	83
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

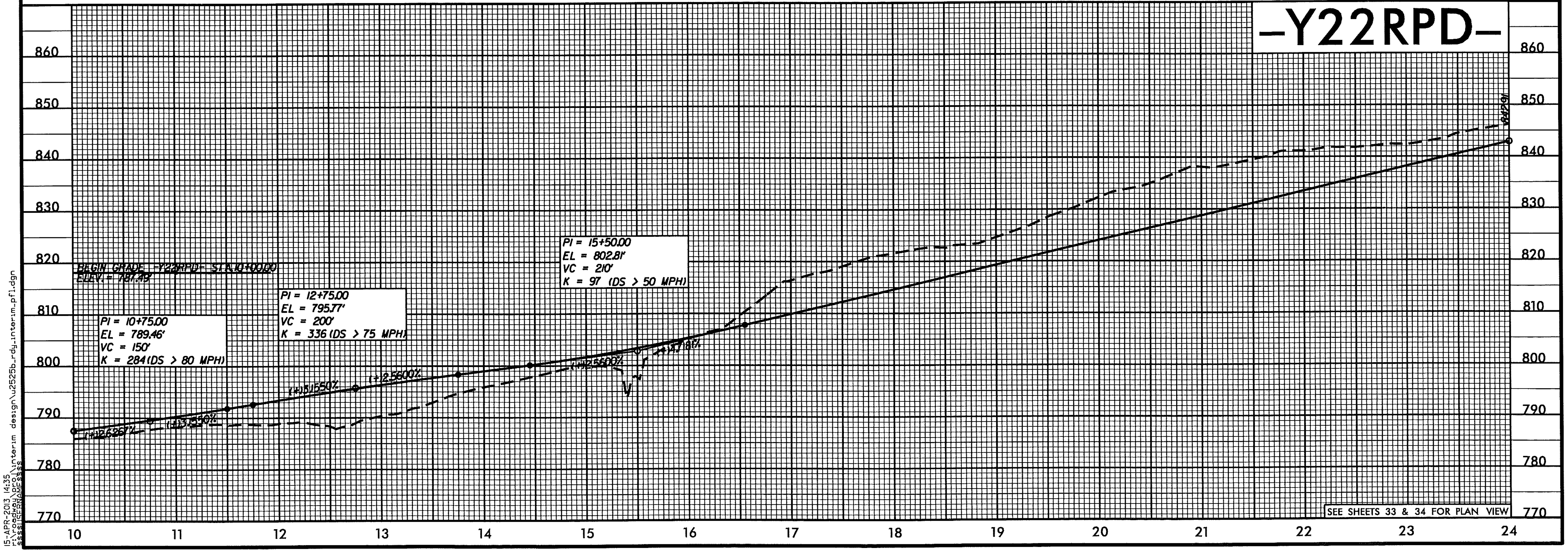
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/28/99

-Y22RPA-


PI = 25+00.00
EL = 829.94'
VC = 200'
K = 713 (DS > 80 MPH)
PI = 28+50.00
EL = 834.10'
VC = 200'
K = 1285 (DS > 80 MPH)
828.47
(+)1.4689%
(+)1.1886%
(+)1.1886%
(+)1.3442%
.02
END GRADE -Y22RPA- STA.29+68.29
ELEV. = 835.69'
840
830
820
810
800
790
780
770
760
24
25
26
27
28
29
30
SEE SHEET 33 FOR PLAN VIEW

-Y22RPD-


BEGIN GRADE -Y22RPD- STA.10+00.00
ELEV. = 787.49'
PI = 10+75.00
EL = 789.46'
VC = 150'
K = 284 (DS > 80 MPH)
PI = 12+75.00
EL = 795.77'
VC = 200'
K = 336 (DS > 75 MPH)
PI = 15+50.00
EL = 802.81'
VC = 210'
K = 97 (DS > 50 MPH)
(+)2.6267%
(+)3.1550%
(+)3.1550%
(+)2.5600%
(+)2.5600%
(+)4.7181%
842.91
860
850
840
830
820
810
800
790
780
770
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
SEE SHEETS 33 & 34 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-2525B	84
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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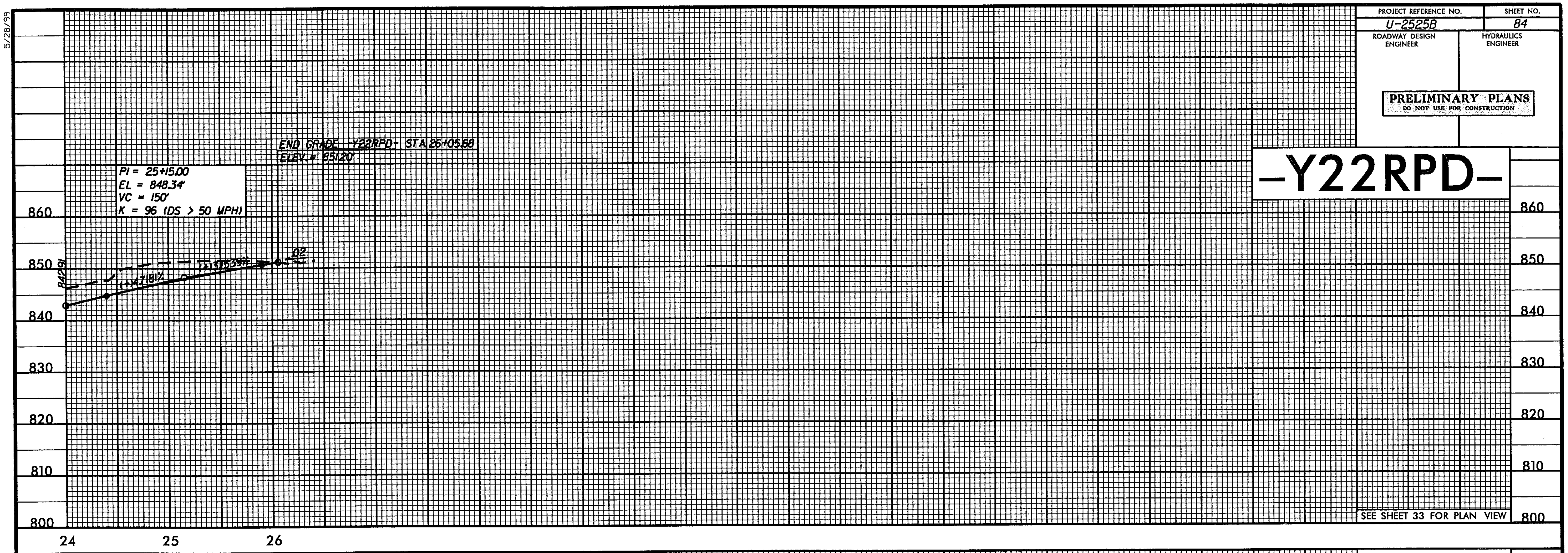
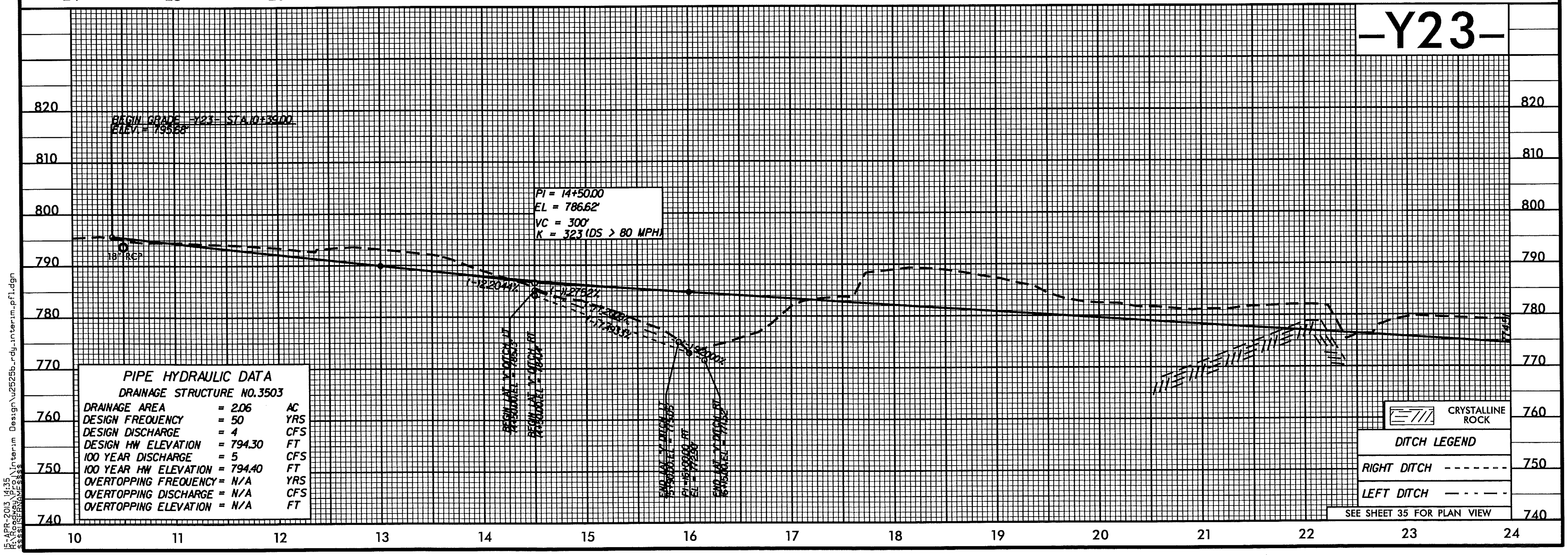
-Y22RPD-



END GRADE -Y22RPD- STA 26+05.68
ELEV. = 851.20'
PI = 25+15.00
EL = 848.34'
VC = 150'
K = 96 (DS > 50 MPH)
842.91
(+)4.7181%
(+)3.5539%
.02
860
850
840
830
820
810
800
24
25
26

SEE SHEET 33 FOR PLAN VIEW

-Y23-



BEGIN GRADE -Y23- STA 10+39.00
ELEV. = 795.68'
18" RCP
PI = 14+50.00
EL = 786.62'
VC = 300'
K = 323 (DS > 80 MPH)
(-)2.2044%
(-)1.2752%
(-)7.2008%
(-)7.7933%
BEGIN LAT 'Y' DITCH LT
14+50.00 EL = 785.13'
BEGIN LAT 'Y' DITCH RT
14+50.00 EL = 784.14'
END LAT 'Y' DITCH LT
15+90.00 EL = 773.05'
PI = 16+00.00 RT
EL = 772.90'
END LAT 'Y' DITCH RT
16+15.00 EL = 771.52'
774.5
820
810
800
790
780
770
760
750
740
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.3503

DRAINAGE AREA	=	2.06	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	4	CFS
DESIGN HW ELEVATION	=	794.30	FT
100 YEAR DISCHARGE	=	5	CFS
100 YEAR HW ELEVATION	=	794.40	FT
OVERTOPPING FREQUENCY	=	N/A	YRS
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING ELEVATION	=	N/A	FT

▨ CRYSTALLINE ROCK

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

SEE SHEET 35 FOR PLAN VIEW

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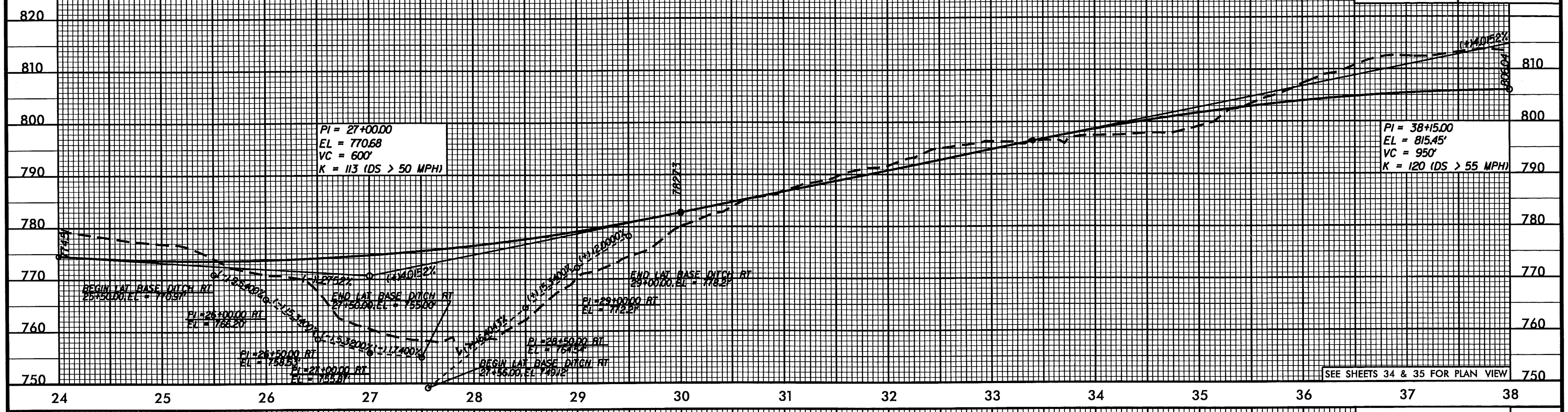
-Y23-

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	85
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


PI = 27+00.00
EL = 770.68
VC = 600'
K = 113 (DS > 50 MPH)
PI = 38+15.00
EL = 815.45'
VC = 950'
K = 120 (DS > 55 MPH)
774.51
782.73
806.04
(+)4.0152%
(-)1.2752%
(+)4.0152%
(-)2.5400%
(-)15.3400%
(-)15.3200%
(+)1.7400%
(+)16.4043%
(+)15.3400%
(+)12.0000%
BEGIN LAT. BASE DITCH RT
25+50.00, EL = 770.97'
PI = 26+00.00 RT
EL = 766.20'
PI = 26+50.00 RT
EL = 758.53'
PI = 27+00.00 RT
EL = 755.87'
END LAT. BASE DITCH RT
27+50.00, EL = 755.00'
BEGIN LAT. BASE DITCH RT
27+56.00, EL 749.12'
PI = 28+50.00 RT
EL = 764.54'
PI = 29+00.00 RT
EL = 772.21'
END LAT. BASE DITCH RT
29+00.00, EL = 778.21'
SEE SHEETS 34 & 35 FOR PLAN VIEW
820
810
800
790
780
770
760
750
24
25
26
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29
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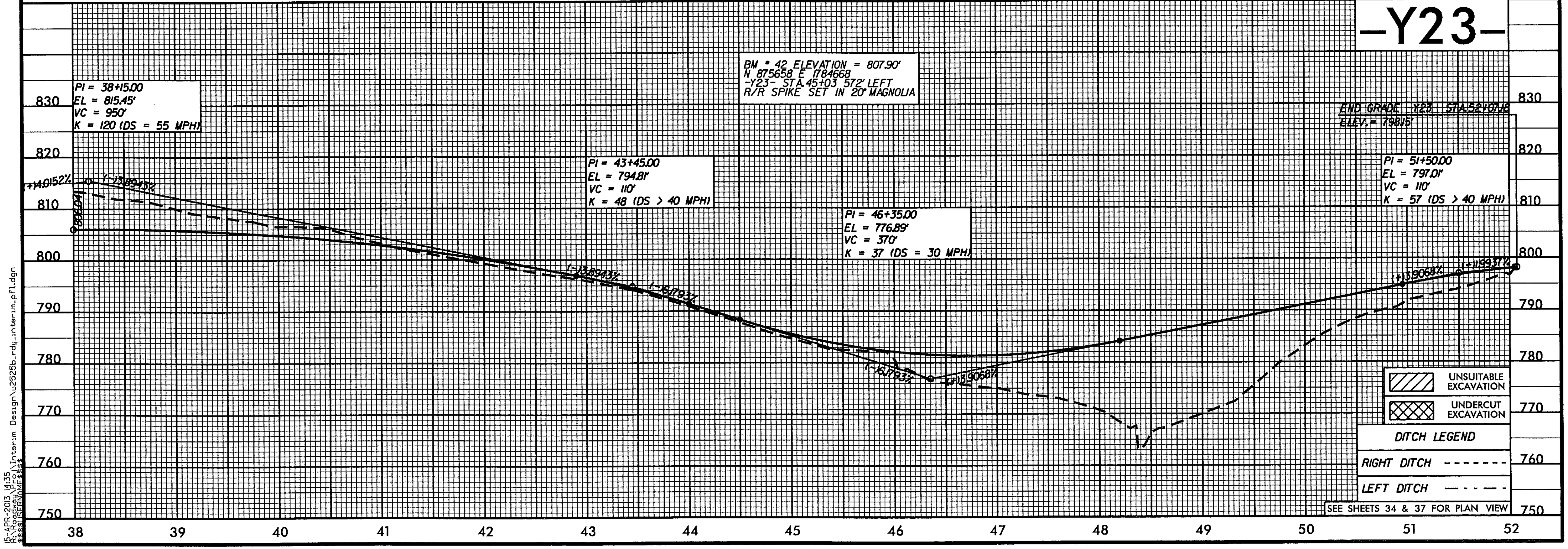
37
38

-Y23-


PI = 38+15.00
EL = 815.45'
VC = 950'
K = 120 (DS = 55 MPH)
BM # 42 ELEVATION = 807.90'
N 875658 E 1784668
-Y23- STA.45+03 57.2' LEFT
R/R SPIKE SET IN 20" MAGNOLIA
END GRADE -Y23- STA.52+07.18
ELEV. = 798.15'
PI = 43+45.00
EL = 794.81'
VC = 110'
K = 48 (DS > 40 MPH)
PI = 46+35.00
EL = 776.89'
VC = 370'
K = 37 (DS = 30 MPH)
PI = 51+50.00
EL = 797.01'
VC = 110'
K = 57 (DS > 40 MPH)
806.04
(+)4.0152%
(-)3.8943%
(-)3.8943%
(-)6.1793%
(-)6.1793%
(+)3.9068%
(+)3.9068%
(+)1.1993%
UNSUITABLE EXCAVATION
UNDERCUT EXCAVATION
DITCH LEGEND
RIGHT DITCH
LEFT DITCH
SEE SHEETS 34 & 37 FOR PLAN VIEW
830
820
810
800
790
780
770
760
750
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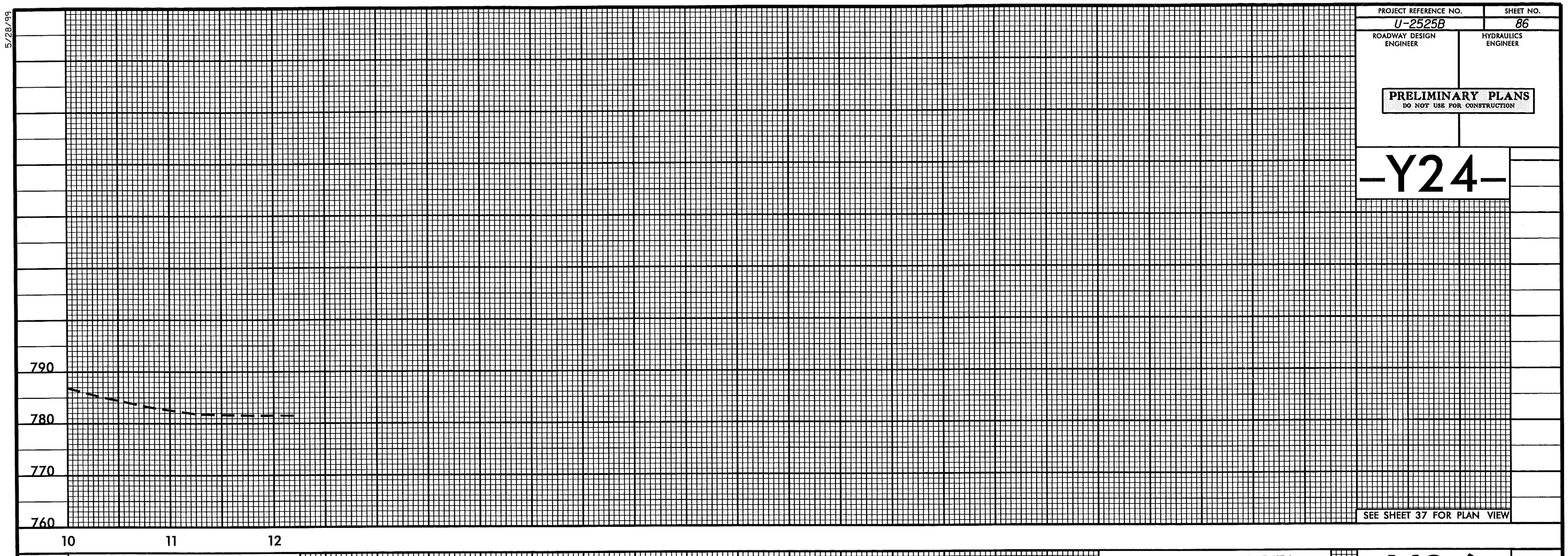
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	86
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y24-


5/28/99
790
780
770
760
10
11
12

SEE SHEET 37 FOR PLAN VIEW

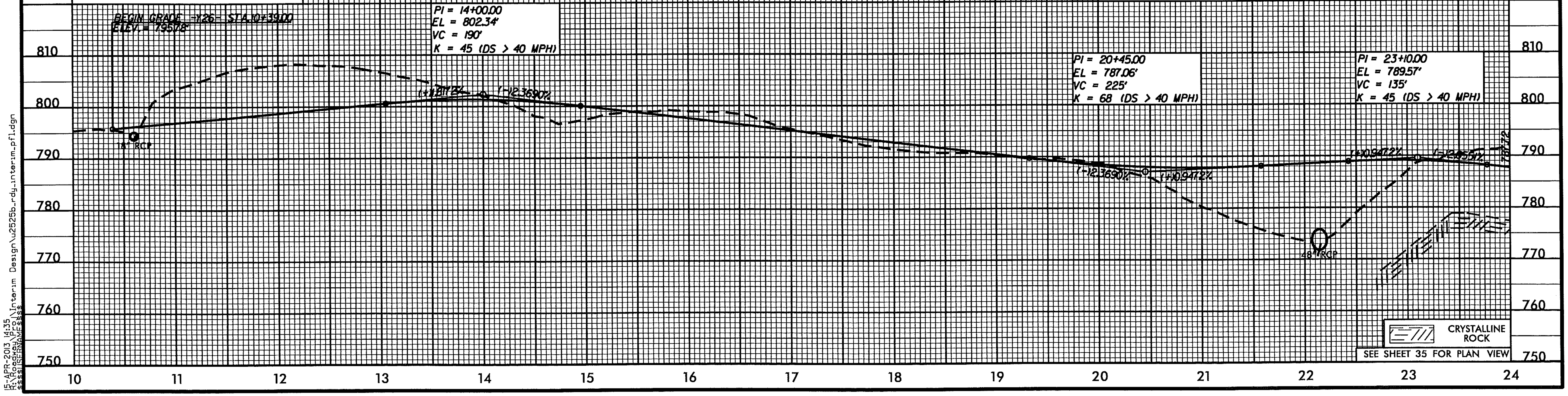
-Y26-

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.3506

DRAINAGE AREA	= 2.12	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 6	CFS
DESIGN HW ELEVATION	= 795.30	FT
100 YEAR DISCHARGE	= 7	CFS
100 YEAR HW ELEVATION	= 795.40	FT
OVERTOPPING FREQUENCY	= <500	YRS
OVERTOPPING DISCHARGE	= 10	CFS
OVERTOPPING ELEVATION	= 796.10	FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.3512

DRAINAGE AREA	= 2.79	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 9	CFS
DESIGN HW ELEVATION	= 788.50	FT
100 YEAR DISCHARGE	= 10	CFS
100 YEAR HW ELEVATION	= 788.80	FT
OVERTOPPING FREQUENCY	= <100	YRS
OVERTOPPING DISCHARGE	= 10	CFS
OVERTOPPING ELEVATION	= 788.60	FT


BEGIN GRADE -Y26- STA.10+39.00
ELEV. = 795.78'
PI = 14+00.00
EL = 802.34'
VC = 190'
K = 45 (DS > 40 MPH)
(+1.8172%
(-1.2.3690%
PI = 20+45.00
EL = 787.06'
VC = 225'
K = 68 (DS > 40 MPH)
(-1.2.3690%
(+1.0.9472%
PI = 23+10.00
EL = 789.57'
VC = 135'
K = 45 (DS > 40 MPH)
(+1.0.9472%
(-1.2.0551%
787.72
18" RCP
48" RCP
CRYSTALLINE ROCK
810
800
790
780
770
760
750
10
11
12
13
14
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SEE SHEET 35 FOR PLAN VIEW

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	87
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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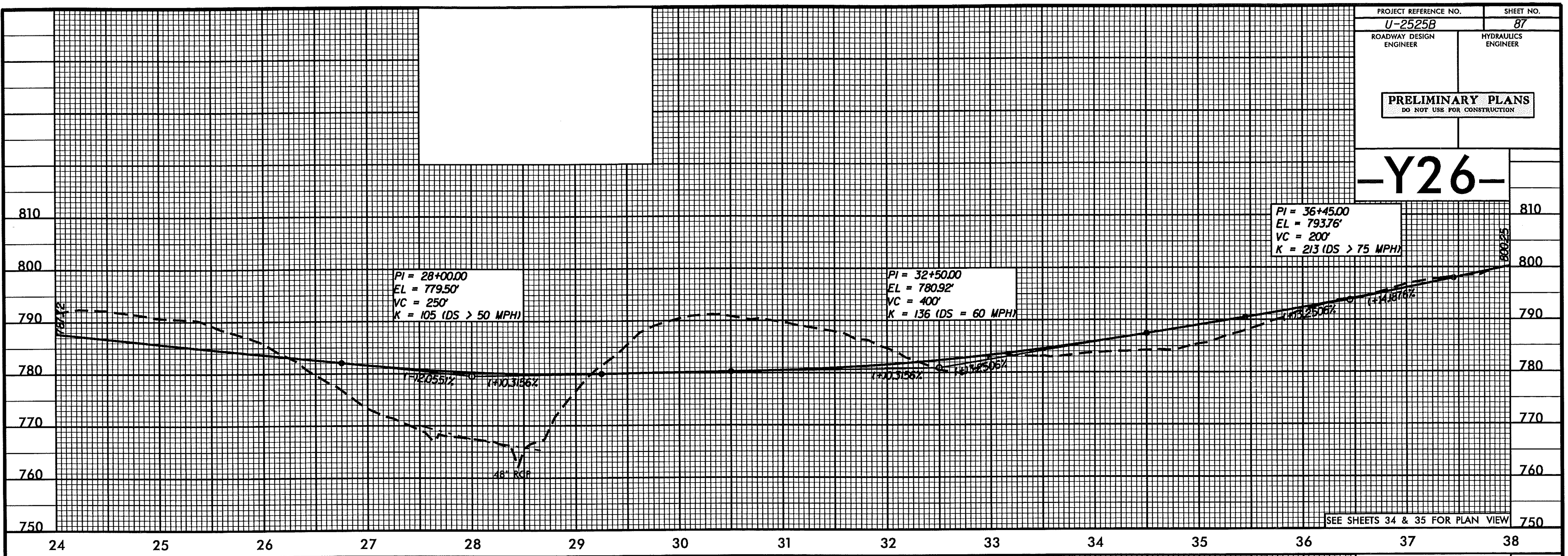
-Y26-
PI = 28+00.00
EL = 779.50'
VC = 250'
K = 105 (DS > 50 MPH)
PI = 32+50.00
EL = 780.92'
VC = 400'
K = 136 (DS = 60 MPH)
PI = 36+45.00
EL = 793.76'
VC = 200'
K = 213 (DS > 75 MPH)
787.12
(-)2.0551%
(+)0.3156%
(+)0.3156%
(+)3.2506%
(+)3.2506%
(+)4.1876%
800.25
48" RCP
SEE SHEETS 34 & 35 FOR PLAN VIEW
810
800
790
780
770
760
750
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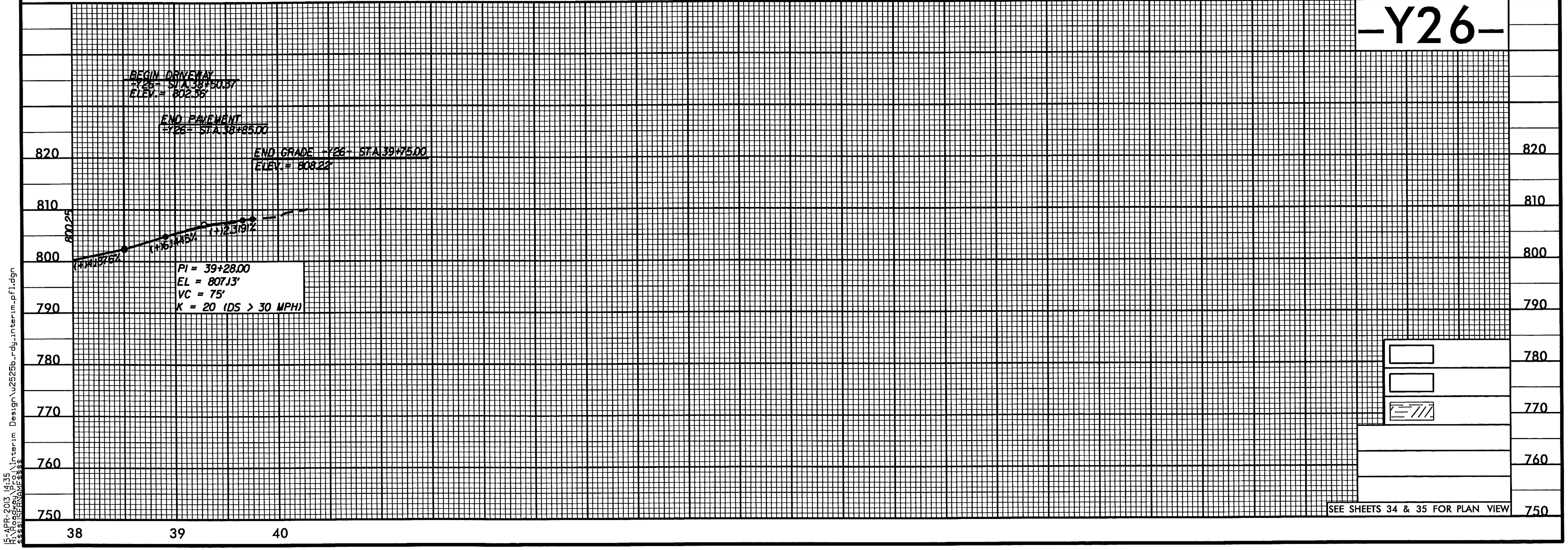
-Y26-
BEGIN DRIVEWAY
-Y26- STA.38+50.37
ELEV.= 802.56'
END PAVEMENT
-Y26- STA.38+85.00
END GRADE -Y26- STA.39+75.00
ELEV.= 808.22'
800.25
(+)4.1876%
(+)6.1445%
(+)2.3191%
PI = 39+28.00
EL = 807.13'
VC = 75'
K = 20 (DS > 30 MPH)
SEE SHEETS 34 & 35 FOR PLAN VIEW
820
810
800
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780
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760
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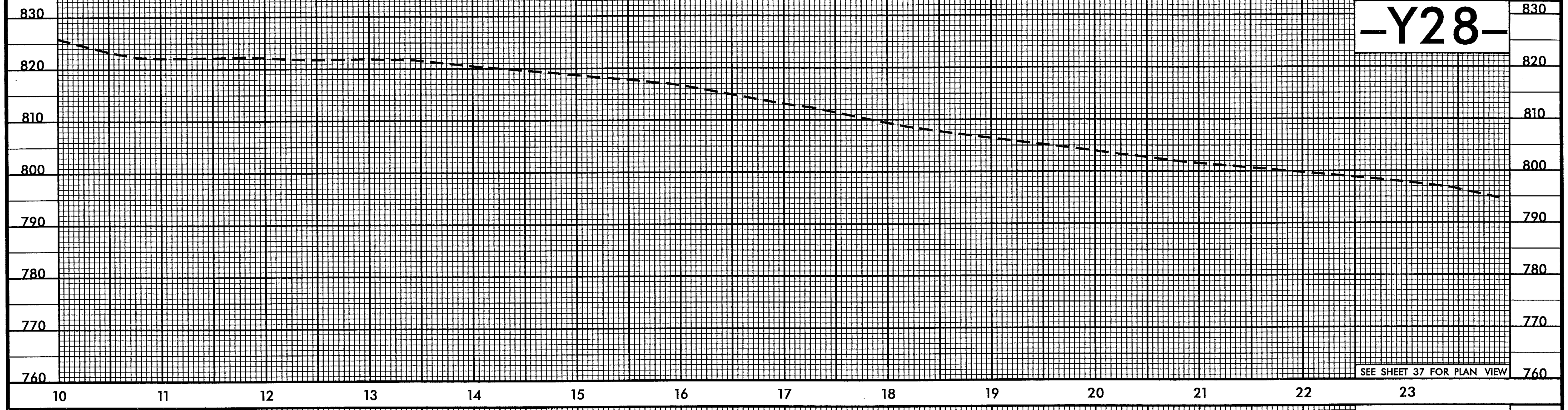
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	88

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y28-


830
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780
770
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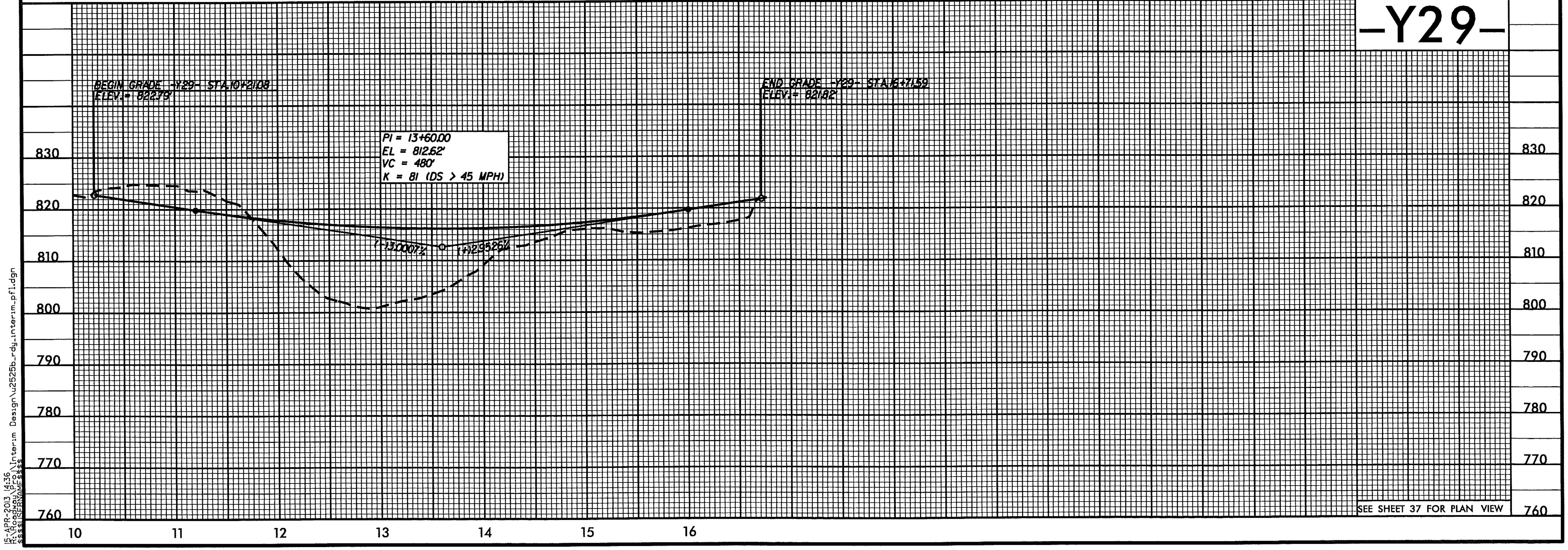
SEE SHEET 37 FOR PLAN VIEW

-Y29-


BEGIN GRADE -Y29- STA.10+21.08
ELEV.= 822.79'
END GRADE -Y29- STA.16+71.59
ELEV.= 821.82'
PI = 13+60.00
EL = 812.62'
VC = 480'
K = 81 (DS > 45 MPH)
(-)3.0007%
(+)2.9526%
830
820
810
800
790
780
770
760
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16

SEE SHEET 37 FOR PLAN VIEW

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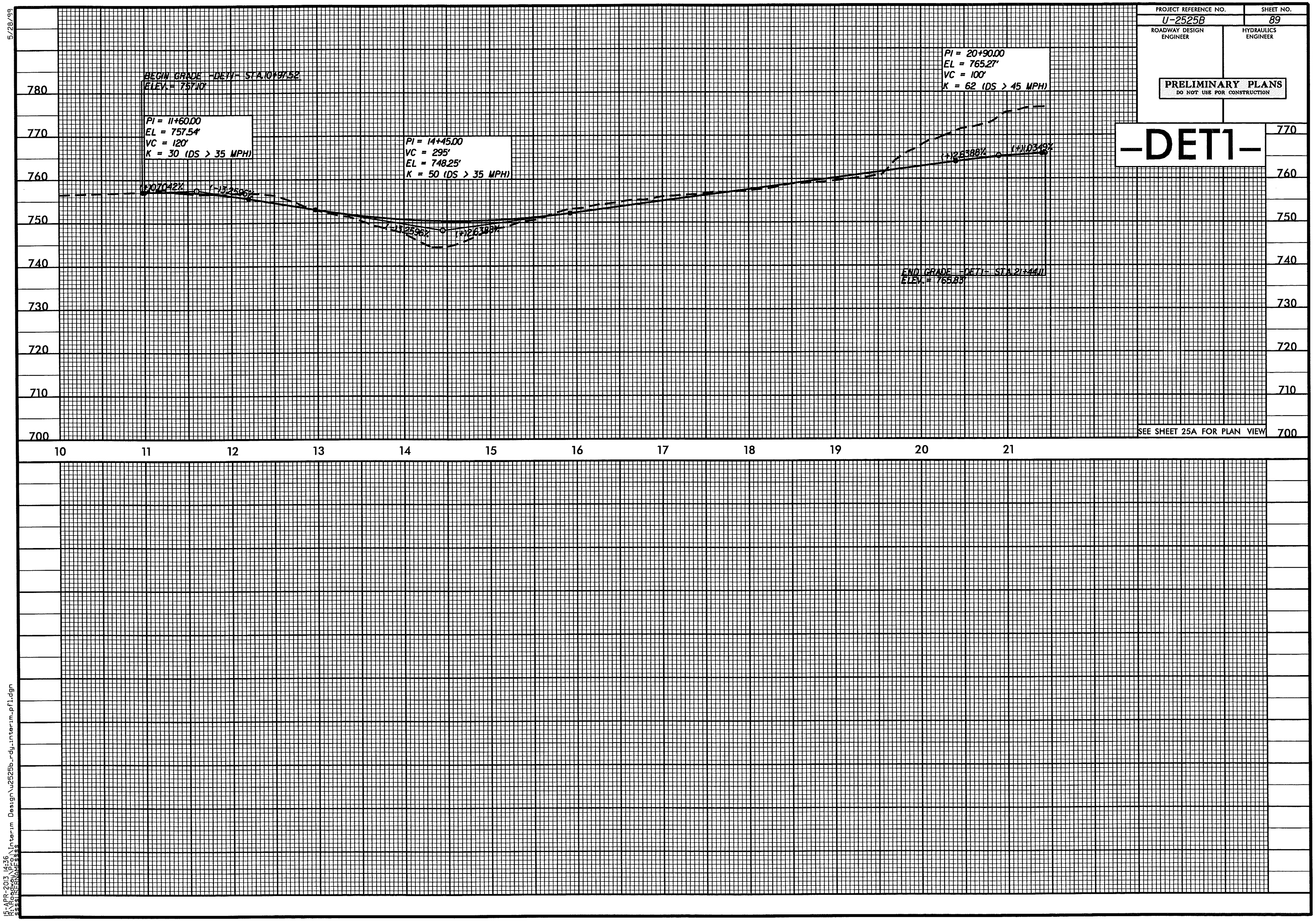
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	89
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-DET1-



5/28/99
BEGIN GRADE -DET1- STA.10+97.52
ELEV.= 757.10'
PI = 11+60.00
EL = 757.54'
VC = 120'
K = 30 (DS > 35 MPH)
PI = 14+45.00
VC = 295'
EL = 748.25'
K = 50 (DS > 35 MPH)
PI = 20+90.00
EL = 765.27'
VC = 100'
K = 62 (DS > 45 MPH)
(+)0.7042%
(-)1.3.2596%
(-)3.2596%
(+)2.6388%
(+)2.6388%
(+)1.0349%
END GRADE -DET1- STA.21+44.11
ELEV.= 765.83'
SEE SHEET 25A FOR PLAN VIEW
780
770
760
750
740
730
720
710
700
770
760
750
740
730
720
710
700
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Mitigation Plan
Greensboro Eastern Loop
Guilford County, North Carolina
T.I.P. Number U-2525B
WBS No. 34821.1.1
August 12, 2013

1.0 BASELINE INFORMATION

Transportation Improvement Project (TIP) U-2525B involves the construction of a new section of highway known as the Greensboro Eastern Loop in Guilford County (Appendix A-Figure 1). The proposed construction of U-2525B involves unavoidable impacts to jurisdictional resources within USGS Hydrologic Unit 03030002 of the Cape Fear River Basin. NCDOT proposes to offset a portion of these impacts with on-site mitigation.

TIP U-2525B is located in the Central Piedmont Ecoregion. The topography in the project study area is generally characterized as rolling hills with moderately steep slopes along the drainage ways. Elevations in the study area range from 700 to 750 feet above mean sea level (USGS 1968). The project study area and surrounding area consists of low density rural, residential, commercial, agricultural, and forested areas.

The mitigation site selection and mitigation work plan sections of this plan will refer to the identification labels given the affected jurisdictional resources in the onsite mitigation review.

2.0 OBJECTIVES

The goal of the proposed onsite mitigation is to offset and mitigate for impacts due to U-2525B by relocating and/or restoring adjacent stream systems to their natural conditions through the removal of structures, restoration of channel dimensions and profiles, and establishment of riparian buffer areas. This will be achieved on three individual sites described below on a total of 2055 linear feet of stream.

3.0 SITE SELECTION

All sites are located within the proposed, new right-of-way for U-2525B. Each site was evaluated both internally as well as discussed and reviewed with regulatory personnel during concurrence meetings and field visits. Existing conditions for each site is provided in this section. Additional information on existing conditions, geomorphology parameters, and proposed stream measurements are provided in Appendix D.

SITE 2-UT to South Buffalo Creek-ONEID 041-029

Site 2 (Site 5 in the Permit Drawings) is located approximately from Station 61+50 to 73+70 and scored 59 on the USACE Stream Quality Assessment Worksheet (Appendix G). Site 2 includes the relocation and restoration of 1307 linear feet of UT to South Buffalo Creek. UT to South Buffalo Creek has a NCDWQ Best Usage Classification of WS-V; NSW. Within Site 2, UT to South Buffalo Creek flows from its headwaters toward a confluence with a larger reach through two distinct valley sections (Appendix A-Figure 2A). Within the upper section, the west side (river right) valley wall is relatively steep. The east side valley wall and surrounding valley of the lower section are relatively flat. The riparian buffer of the upper section has been cleared within the last 5-10 years. The subsequent revegetation has led to a landscape with a high density of scrub-shrub successional species. Within the lower section, the riparian buffer consists of more widely spaced, larger mature woody vegetation. Throughout both valley sections, the channel is incised and entrenched and exhibits signs of instability. These moderately sinuous channels classify as Rosgen B5 streams. Sand materials dominate the channel, but there are also inclusions of gravel and bed rock. The watershed for this UT to South Buffalo Creek is 0.10 square miles at the downstream end of the site. The watershed is approximately 55% forested, 40% agricultural fields, and 5% impervious. Future zoning of the watershed is split between low (3 to 5 dwelling units/acre), interim, and moderate (5 to 12 dwelling units/acre) residential.

SITE 4-UT to North Buffalo Creek- ONEID 041-031

Site 4 (Site 18 in the Permit Drawings) is located approximately from Station 217+00 to 220+10 and scored 52 on the USACE Stream Quality Assessment Worksheet (Appendix G). Site 4 includes restoration of approximately 386 linear feet of UT to North Buffalo Creek. UT to North Buffalo Creek has a best usage classification WS-V; NSW. UT to North Buffalo Creek flows through Site 4 within a broad and gently sloping valley (Appendix A-Figure 2B). The riparian area has been greatly disturbed with some portions remaining cleared of woody vegetation and other areas consisting of scattered large woody vegetation. For most of the stream length, the riparian buffer is densely vegetated with a mix of shrubs and trees. The channel is incised and the upper section is moderately entrenched. The channel appears to have been modified. An earthen dam is located within the bottom third of the reach. This moderately sinuous reach classifies as a Rosgen B5 stream type. An existing 15 foot wide sanitary sewer line is located along the left bank (east side) of the existing channel approximately 25 to 30 feet from the left bank. The watershed is 0.57 square miles at the downstream end of the site. The watershed is 50% forested, 40% agricultural fields, 5% light residential, and 5% impervious. Future zoning of the watershed is primarily low residential (3 to 5 dwelling units/acre) with some moderate residential (5 to 12 dwelling units/acre).

SITE 5-UT to North Buffalo Creek- ONEID 041-032

Site 5 (Site 20 in the Permit Drawings) is located approximately from Station 242+08 to 245+03 and scored 57 on the USACE Stream Quality Assessment Worksheet (Appendix G). Site 5 includes relocation and restoration of approximately 362 linear feet of North Buffalo Creek. UT to North Buffalo Creek has a best usage classification WS-V; NSW. UT to North Buffalo Creek flows within Site 5 from its headwaters to confluence with a larger reach (Appendix A-Figure 2C). The stream valley is relatively broad with a flat down valley slope. The immediate riparian buffer consists of mature woody vegetation and kudzu on portions of the hillside that are located outside of the proposed right of way. The channel is slightly to moderately incised and appears relatively stable with the exception of about 100 feet of channel that is cutting through a meander bend. This moderately sinuous reach classifies as a Rosgen E5 stream type. The channel bed includes a significant amount of artificially introduced large stone. The watershed is 0.51 square miles at the downstream end of the site. The watershed is 50% forested, 5% agricultural fields, 30% light residential, and 15% impervious.

4.0 MITIGATION WORK PLAN

Each mitigation site will be constructed in conjunction with the construction of the roadway project. Following the successful completion of site grading and stabilization, each site will be reforested with a mix of bare-root tree species and live stakes as described in the Streambank Reforestation Specifications in Appendix F. The stream channels will be stabilized by planting live stakes on three foot centers and matting with coir fiber on the banks as necessary. Morphological characteristics of the proposed streams are provided in Appendix D.

In accordance with the guidance and standard procedures of NCDOT's Roadside Environmental Unit (REU), seeding and mulching will be performed on all disturbed areas within the mitigation sites for stabilization purposes. All floodplains and floodplain slopes will be over-excavated 6 inches starting 3 feet from top of stream bank and backfilled with topsoil to final grade (see detail on OSM-2 in design plan sheets). Additionally, per NCDOT's Native Seeding and Mulching Provision, 4000 lbs/acre of lime will be applied and 500 lbs/acre of 10-20-20 fertilizer will be applied. An as-built report will be submitted within 60 days of completion of the project. On sites that have kudzu present within the ROW limits, NCDOT proposes to minimize the potential spread of this species from construction-related activities. NCDOT will attempt to suppress the Kudzu within the ROW of the mitigation sites by herbicide applications prior to reforestation and during the required post construction monitoring period.

The Natural Environment Section shall be contacted to provide construction assistance to ensure that each mitigation area is constructed appropriately.

SITE 2-UT to South Buffalo

This site includes the relocation and restoration of 1307 feet of UT to South Buffalo Creek that is currently located within the footprint of the proposed roadway through a priority II restoration approach. The channel is currently an incised B5 Rosgen stream type channel that will be restored to a stable B5 channel by establishing a lower valley at the bankfull elevation. Proper sinuosity and radius of curvature will be restored to the channel to provide stability. The channel will be elevated to its historic floodplain in some locations where possible, improving its dimension and allowing bankfull and higher flows to access the floodplain. Proper riffle-pool sequencing will also be restored to the channel with corrected pattern and the installation of rock and log structures. The installation of these structures will increase stability of the profile and banks while allowing time for vegetation to establish and natural bed materials to be transported throughout the system.

Special attention was given to the possible change in flow regime in this system as it may be influenced by storm water runoff from the proposed roadway. To account for this change the stream design uses dimensionless ratios that lean toward natural channel systems with a more urban watershed than a rural watershed. For instance, the radius of curvature tends to be on the larger side to ensure that the bends in the stream channel will be gradual enough to accommodate the flashy flows that come with increased impervious area. Additionally, the belt width of the proposed channels were designed slightly more narrow than a system with no development in its watershed and the curvature of floodplains were reduced to account for increased flood flows over time as the watersheds develop. Designing the floodplain to be less sinuous allows for the new system to convey flood flows without excessively increasing shear stress along the edges of the newly constructed floodplain. The buffer for this channel will extend 50 feet from the top of bank on both sides and totals approximately 3.14 acres, all of which lies within the proposed U-2525B right-of-way.

SITE 4-UT to North Buffalo Creek

This site includes the restoration of 386 linear feet of UT to North Buffalo Creek through a Priority II restoration approach. The appropriate dimension, pattern, and profile will be restored to the channel. The dimension will be corrected by connecting the bankfull stream channel to a floodplain bench. A C5 Rosgen stream type channel is proposed. The pattern will be re-adjusted to return the proper pool to pool spacing and radius of curvature to the channel. This channel is confined along the left bank by the adjacent sanitary sewer line. The right bank is densely wooded. Therefore, it is necessary for the proposed stream channel to cross over the existing channel location several times to create the desired pattern. The profile will be corrected and stabilized by using rock structures. These structures will hold the profile in place and prevent head cuts until the proper bed material has had a chance to be distributed through the stream channel and vegetation has had a chance to stabilize the banks. Proposed design parameters for the proposed stream can be found in the morphological table in Appendix C. The buffer for this channel will extend 50 feet from the top of bank on both sides and totals approximately 1.01 acres, all of which lies within the proposed U-2525B right-of-way. Currently, an existing 15 foot wide sewer easement encroaches on the left side of the 50 foot wide buffer.

SITE 5-UT to North Buffalo Creek

This site includes the relocation and restoration of 362 linear feet of UT to North Buffalo Creek with a Priority II restoration approach. The stream will be relocated outside of the fill slope of the proposed roadway. The appropriate dimension, pattern, and profile will be constructed on the relocated channel. A Rosgen type C5 channel is proposed for this stream. A lower belt width ratio is proposed due to the urbanized watershed with potential for flashy flows. The proposed channel profile will be stabilized by rock structures. The structures will provide stability and allow time for native bed materials to be transported through the newly constructed stream and for vegetation to stabilize the banks. Proposed design parameters for the proposed stream can be found in the morphological table in Appendix D. The buffer for this channel will extend 50 feet from the top of bank on both sides and totals approximately 0.91 acres, all of which lies within the proposed U-2525B right-of-way. An existing 15 foot wide sewer easement will make a perpendicular crossing of the stream near the culvert inlet.

During the "4C" Meeting held on March 21, 2013 there was a discussion about the "potential road" shown on the plans at Site 5 and if NCDOT could acquire right of way between the road and mitigation site. There is a no future road planned at this location. That information was from old plans and has been removed from the plans.

5.0 PERFORMANCE STANDARDS

An As-built will be submitted within 60 days of completion of the project. The As-built will document changes in the dimension, pattern, profile, vegetation plantings, and structures of the constructed channels.

Success for vegetation monitoring within the riparian buffer areas are based on the survival of at least 260 stems of five year old trees at year five. Assessment of channel stability will be based on the survival of riparian vegetation and visual observation of channel dimensions, pattern or profile as well as inspection of in stream structure.

6.0 MONITORING REQUIREMENTS

All of the mitigation sites will be monitored according to the April 2003 Stream Mitigation Guidelines. The following components of Level 1 monitoring will be performed each year of the 5-year monitoring period: reference photos, plant survival (identification of specific problem areas, estimated causes and proposed/required remedial action); visual inspection of channel stability. Physical measurements of channel stability/morphology will not be performed. A monitoring report will be submitted within 60 days after completing the monitoring.

7.0 OTHER INFORMATION: STREAM REFERENCE RESTORATION STUDIES

A reference reach is a stream segment that represents a stable channel within a particular valley morphology. A stable stream is defined as a stream, which over time and in the present climate transports the flows and sediment produced by its watershed in such a manner that the dimension, pattern, and profile are maintained without either aggrading or degrading (Rosgen, 1996, 1998).

The methodology used for the reference reach analysis consisted of the following tasks: (1) identify reference quality sections of the project reaches that could be used for dimension and/or pattern analysis, (2) identify nearby reference reaches that have been previously located and surveyed and can be used to provide pattern data, (3) survey and classify the stream morphology for the on-site reference reaches, and (4) develop dimensionless ratios based on reference reach data and past project data under similar morphological conditions.

Several locations were identified and surveyed (Appendix C) within the project reaches where stable bankfull features had developed and provided information regarding bankfull dimension. These locations were identified by the presence of a consistent bankfull indicator, typically a well formed bankfull bench, and stable, vegetated stream banks. Cross-section surveys were conducted in these locations to evaluate stream dimension. The bankfull cross-section areas were then plotted versus drainage area and compared to published Rural Piedmont regional curve data, provided by the North Carolina Stream Restoration Institute (SRI) (See Appendix C-Figure 3).

As illustrated in Figure 3, the cross sectional areas surveyed at stable on-site reference reach locations correlates with the Rural Piedmont Regional Curve Data. Also, three of the four off-site reference reach locations correspond with the Rural Piedmont Regional Curve Data. More consideration is given to the cross sectional data gathered at stable reaches on-site because they more accurately reflect the conditions that will provide stability for that particular stream's flow regime. The three off-site reference reaches that correlate with the Rural Piedmont Regional Curve Data have been used previously in other natural channel designs. The stream designs were based on the collected data since this data was verified by the Rural Piedmont Regional Curve Data.

Shear stress calculations were completed for all reaches and are included in Appendix D. The data shows that the shear stresses for the proposed designs will be able to move the bed material of the streams. Shear stress is reduced on Sites 2 and 5, and slightly increased on site 4. Although most reaches have decreases in shear stress, incorporation of in-stream structures for grade control is implemented on all reaches. This is especially important since all restoration/relocation sites will be excavated on new location and will not immediately have the properly sorted materials transported in from upstream immediately after construction. Constructed riffles and harvesting of existing bed material will be used to the extent feasible to provide this immediate supply of properly sorted bed material.

8.0 DETERMINATION OF CREDITS

NCDOT proposes to supplement mitigation provided by EEP with 2055 feet of onsite stream mitigation. All of the proposed mitigation sites exhibit some form of degradation. Site 2 and Site 5 include relocation of the channels that would be under fill slopes of the original roadway design.

Based on field and meeting discussions with agency representatives and per the NCDOT plans and 401/404 permit application for U-2525B; NCDOT proposes a 1:1 mitigation ratio for a total of 2055 feet of stream credits.

An as-built report will be submitted within 60 days of completion of the each mitigation site to verify actual mitigation areas constructed and planted. The success of the mitigation areas and determination of final credits will be based upon successful completion and closeout of the monitoring period.

8.1 CREDIT RELEASE SCHEDULE

NCDOT proposes immediate, full release of the proposed mitigation to offset the unavoidable impacts associated with U-2525B.

9.0 GEOGRAPHIC SERVICE AREA

The proposed Geographic Service Area (GSA) for the mitigation sites is composed of the 8-digit Hydrologic Cataloging Unit (HUC) 03030002.

10.0 SITE PROTECTION INSTRUMENT

The mitigation areas are within the NCDOT Right-of-Way for the project. They will be managed to prohibit all use inconsistent with their use as mitigation properties, including any activity that would materially alter the biological integrity or functional and educational value of the sites, consistent with the mitigation plan.

The sites will be placed on the Natural Environment Section's (NES) Mitigation GeoDatabase. This database is provided to all NCDOT personnel as a record of mitigation sites and their attributes, including prohibited activities. NCDOT is held by virtue of the permit associated with these mitigation sites and the associated roadway impacts to protect the sites in perpetuity.

11.0 MAINTENANCE PLAN

The mitigation sites will be held by NCDOT and placed on the NES Mitigation GeoDatabase. Once monitoring is completed and the sites are closed out, they will be placed in the NCDOT Stewardship Program for long term maintenance and protection.

If an appropriate third party recipient is identified in the future, then the transfer of the property will include a conservation easement or other measure to protect the natural features and mitigation value of the site in perpetuity.

12.0 LONG TERM ADAPTIVE MANAGEMENT PLAN

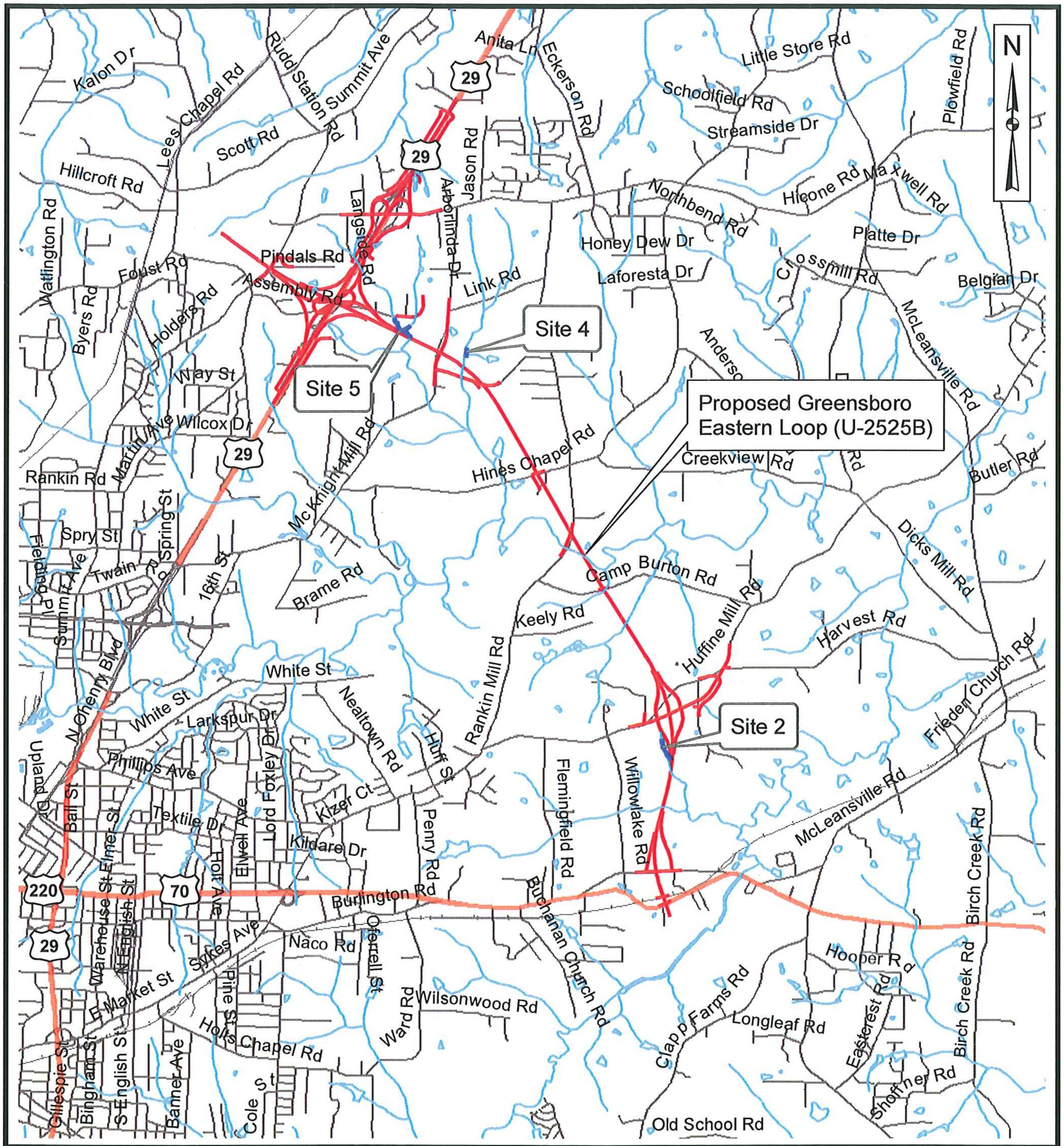
The sites will be managed by NCDOT according to the mitigation plan. Encroachments into the areas will be investigated and appropriate measures taken to minimize any negative effects. In the event that unforeseen issues arise that affect the management of the site, any remediation will be addressed by NCDOT in coordination with the Interagency Review Team.

13.0 FINANCIAL ASSURANCES

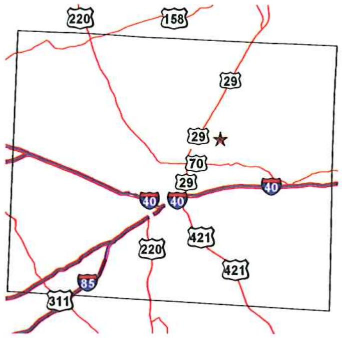
NCDOT is held by permit conditions associated with U-2525B to construct, monitor, and steward the mitigation sites. NCDOT has established funds for each project and within each Division to monitor mitigation sites and protect them in perpetuity.

APPENDIX A

FIGURES

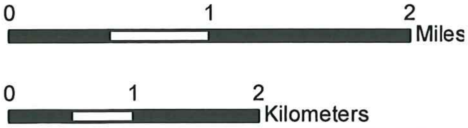

N
Site 4
Site 5
Site 2
Proposed Greensboro Eastern Loop (U-2525B)
29
29
29
29
220
70
Anita Ln
Eckerson Rd
Little Store Rd
Plowfield Rd
Kalon Dr
Lees Chapel Rd
Rudd Station Rd
Summit Ave
Schoolfield Rd
Streamside Dr
Scott Rd
Jason Rd
Hillcroft Rd
Hicone Rd
Maxwell Rd
Northbend Rd
Arborlinda Dr
Langside Rd
Honey Dew Dr
Platte Dr
Pindals Rd
Crossmill Rd
Watlington Rd
Foust Rd
Laforesta Dr
Belgian Dr
Assembly Rd
Link Rd
Byers Rd
Holders Rd
McLeansville Rd
Anderson
Way St
Martin Ave
Wilcox Dr
McKnight Mill Rd
Hines Chapel Rd
Creekview Rd
Butler Rd
Rankin Rd
Spring St
Spry St
Fielding Pl
Summit Ave
Twain Rd
16th St
Camp Burton Rd
Dicks Mill Rd
Brame Rd
Huffine Mill Rd
Keely Rd
Harvest Rd
N Cherry Blvd
White St
White St
Rankin Mill Rd
Frieden Church Rd
Nealtown Rd
Larkspur Dr
Huff St
Upland Dr
Phillips Ave
Lord Foxley Dr
Flemingfield Rd
Willowlake Rd
Ball St
Textile Dr
Kizer Ct
Elwell Ave
Holt Ave
Penny Rd
Kildare Dr
McLeansville Rd
Warehouse St
Elmer St
N English St
Burlington Rd
Buchanan Church Rd
Birch Creek Rd
Naco Rd
Sykes Ave
Ofarrell St
Hooper Rd
E Market St
Pine St
Wilsonwood Rd
Birch Creek Rd
Ward Rd
Clapp Farms Rd
Longleaf Rd
Easterest Rd
Holts Chapel Rd
Gillespie St
Bingham St
S English St
Banner Ave
Cole St
Shoffner Rd
Old School Rd

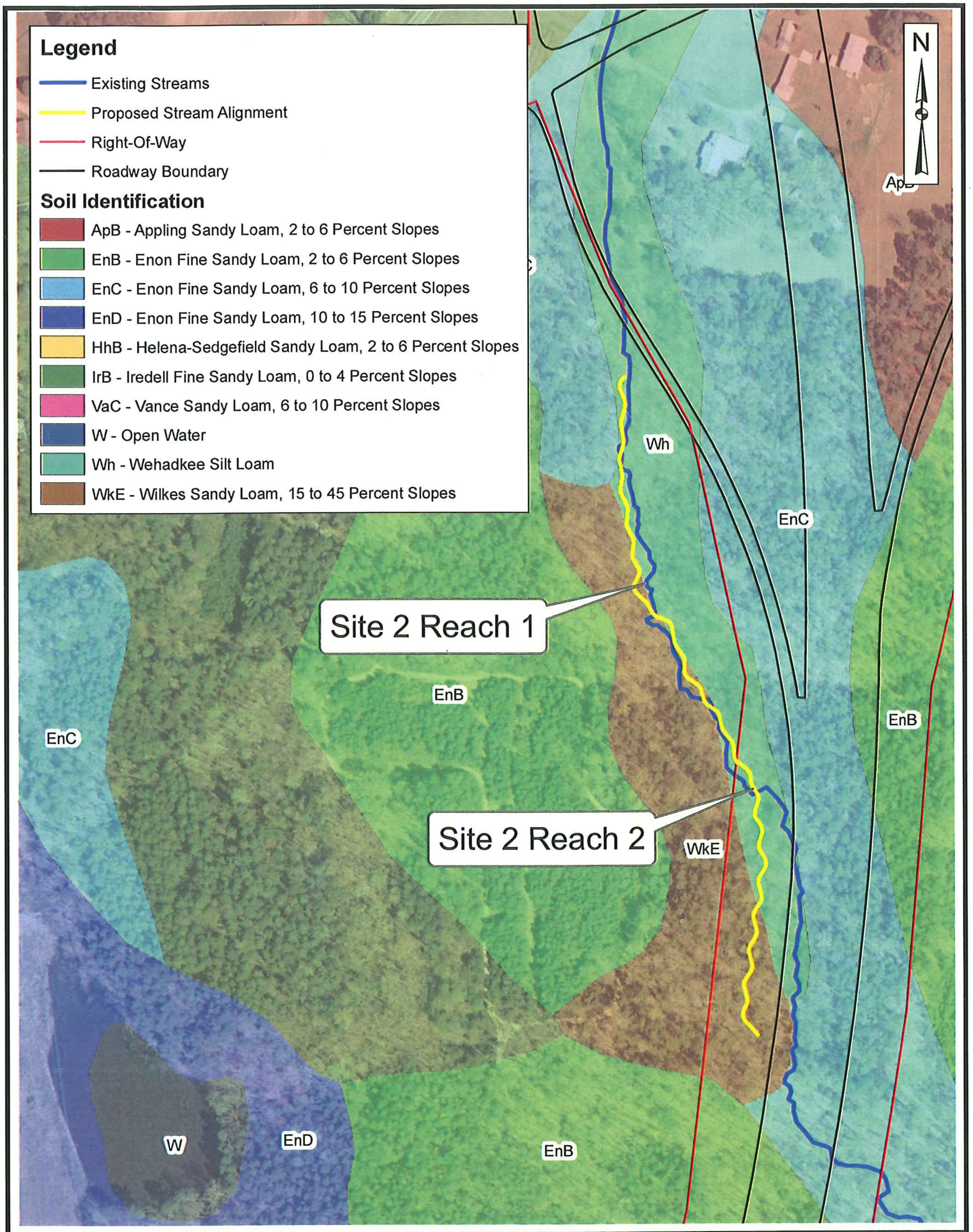
Guilford Co.


220
158
29
29
70
29
40
40
40
421
220
421
85
311

Project Development and Environmental Analysis Branch

Figure 1. Project Vicinity Map
U-2525B


0
1
2
Miles
0
1
2
Kilometers


Legend
Existing Streams
Proposed Stream Alignment
Right-Of-Way
Roadway Boundary
Soil Identification
ApB - Appling Sandy Loam, 2 to 6 Percent Slopes
EnB - Enon Fine Sandy Loam, 2 to 6 Percent Slopes
EnC - Enon Fine Sandy Loam, 6 to 10 Percent Slopes
EnD - Enon Fine Sandy Loam, 10 to 15 Percent Slopes
HhB - Helena-Sedgefield Sandy Loam, 2 to 6 Percent Slopes
IrB - Iredell Fine Sandy Loam, 0 to 4 Percent Slopes
VaC - Vance Sandy Loam, 6 to 10 Percent Slopes
W - Open Water
Wh - Wehadkee Silt Loam
WkE - Wilkes Sandy Loam, 15 to 45 Percent Slopes
N
ApB
Wh
EnC
Site 2 Reach 1
EnB
EnC
EnB
Site 2 Reach 2
WkE
W
EnD
EnB

Project Development and
Environmental Analysis Branch

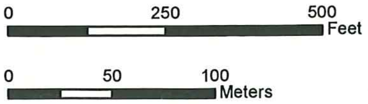
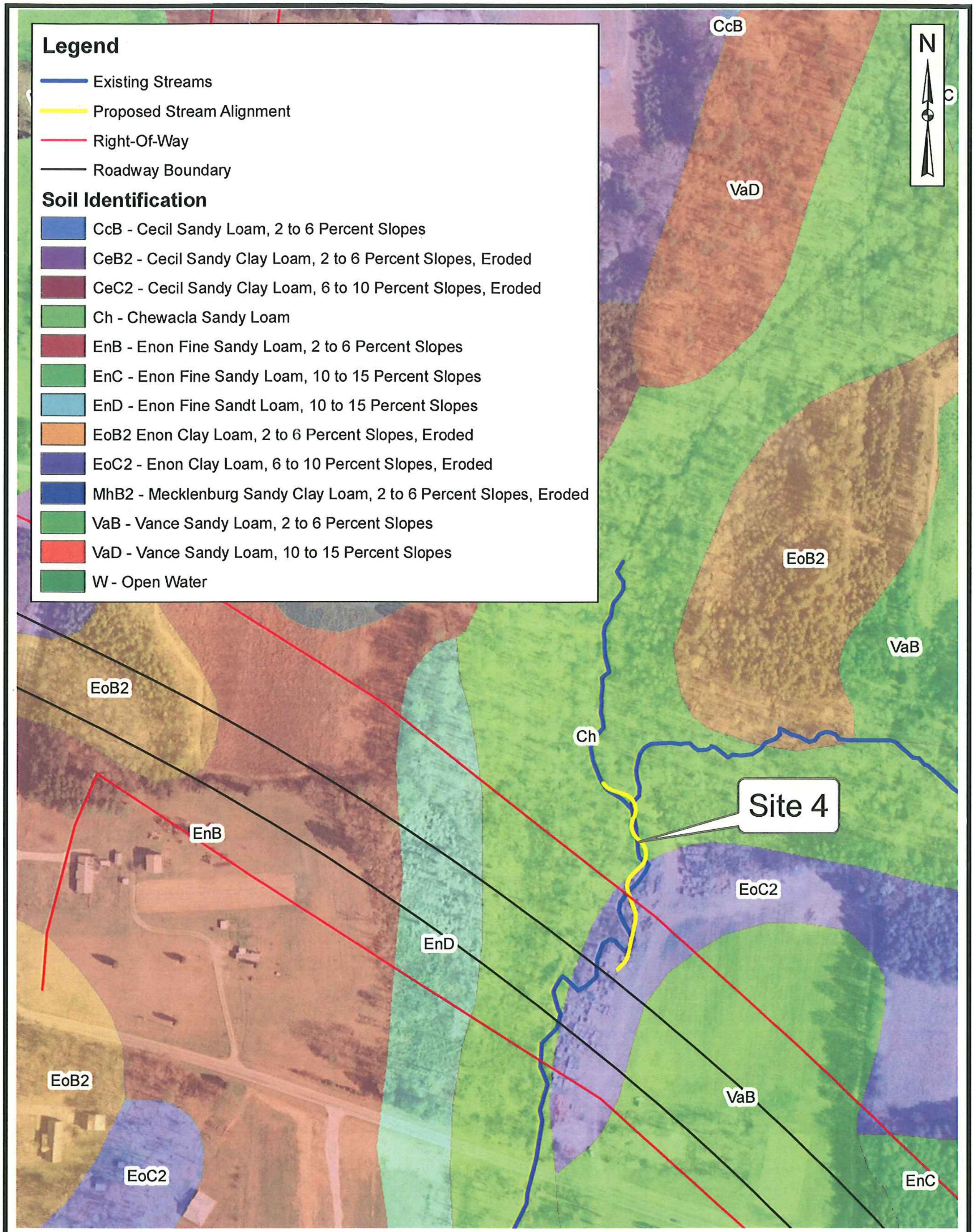

0
250
500
Feet
0
50
100
Meters

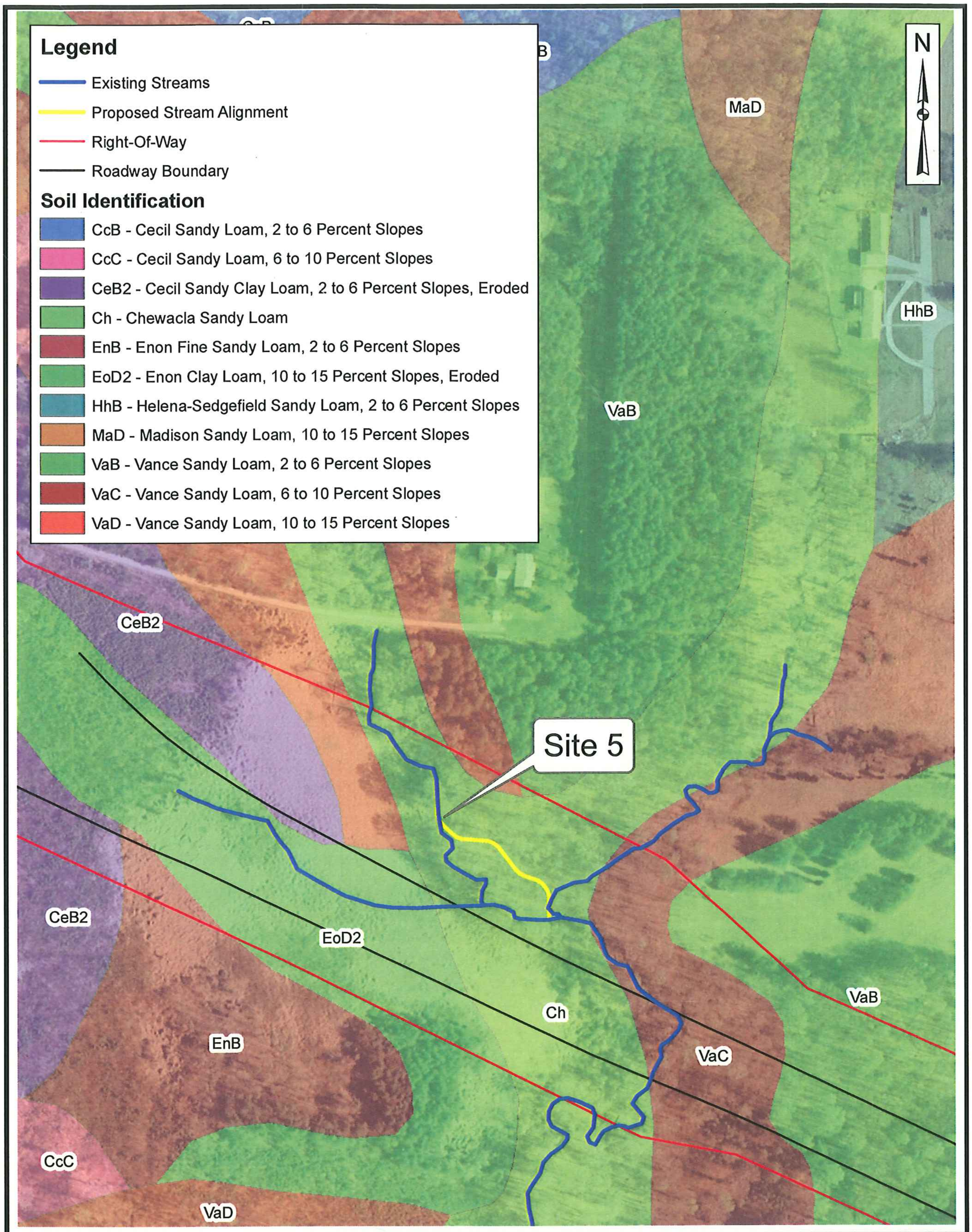
Figure 2A
Soils Map
U-2525B, Site 2


Legend
Existing Streams
Proposed Stream Alignment
Right-Of-Way
Roadway Boundary
Soil Identification
CcB - Cecil Sandy Loam, 2 to 6 Percent Slopes
CeB2 - Cecil Sandy Clay Loam, 2 to 6 Percent Slopes, Eroded
CeC2 - Cecil Sandy Clay Loam, 6 to 10 Percent Slopes, Eroded
Ch - Chewacla Sandy Loam
EnB - Enon Fine Sandy Loam, 2 to 6 Percent Slopes
EnC - Enon Fine Sandy Loam, 10 to 15 Percent Slopes
EnD - Enon Fine Sandt Loam, 10 to 15 Percent Slopes
EoB2 Enon Clay Loam, 2 to 6 Percent Slopes, Eroded
EoC2 - Enon Clay Loam, 6 to 10 Percent Slopes, Eroded
MhB2 - Mecklenburg Sandy Clay Loam, 2 to 6 Percent Slopes, Eroded
VaB - Vance Sandy Loam, 2 to 6 Percent Slopes
VaD - Vance Sandy Loam, 10 to 15 Percent Slopes
W - Open Water
N
CcB
C
VaD
EoB2
VaB
Ch
Site 4
EoB2
EnB
EnD
EoC2
VaB
EoB2
EoC2
EnC

Project Development and
Environmental Analysis Branch

0 250 500 Feet
0 50 100 Meters

Figure 2B
Soils Map
U-2525B, Site 4


Legend
Existing Streams
Proposed Stream Alignment
Right-Of-Way
Roadway Boundary
Soil Identification
CcB - Cecil Sandy Loam, 2 to 6 Percent Slopes
CcC - Cecil Sandy Loam, 6 to 10 Percent Slopes
CeB2 - Cecil Sandy Clay Loam, 2 to 6 Percent Slopes, Eroded
Ch - Chewacla Sandy Loam
EnB - Enon Fine Sandy Loam, 2 to 6 Percent Slopes
EoD2 - Enon Clay Loam, 10 to 15 Percent Slopes, Eroded
HhB - Helena-Sedgefield Sandy Loam, 2 to 6 Percent Slopes
MaD - Madison Sandy Loam, 10 to 15 Percent Slopes
VaB - Vance Sandy Loam, 2 to 6 Percent Slopes
VaC - Vance Sandy Loam, 6 to 10 Percent Slopes
VaD - Vance Sandy Loam, 10 to 15 Percent Slopes
N
MaD
HhB
VaB
CeB2
Site 5
CeB2
EoD2
Ch
VaB
EnB
VaC
CcC
VaD
0
250
500
Feet
0
50
100
Meters

Project Development and
Environmental Analysis Branch

Figure 2C
Soils Map
U-2525B, Site 5

APPENDIX B

ONSITE MITIGATION PERMIT DRAWINGS

TIP PROJECT: U-2525B

CONTRACT:

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2525B	OSM-1	30

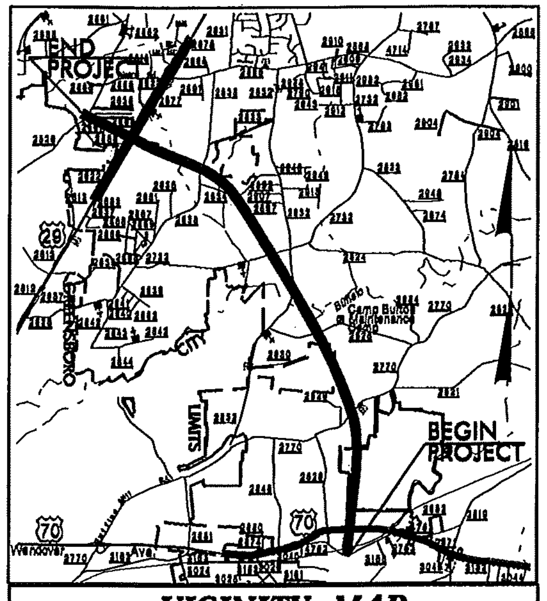
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34821.1.3		PE
34821.2.3		ROW

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR ON-SITE MITIGATION GUILFORD COUNTY

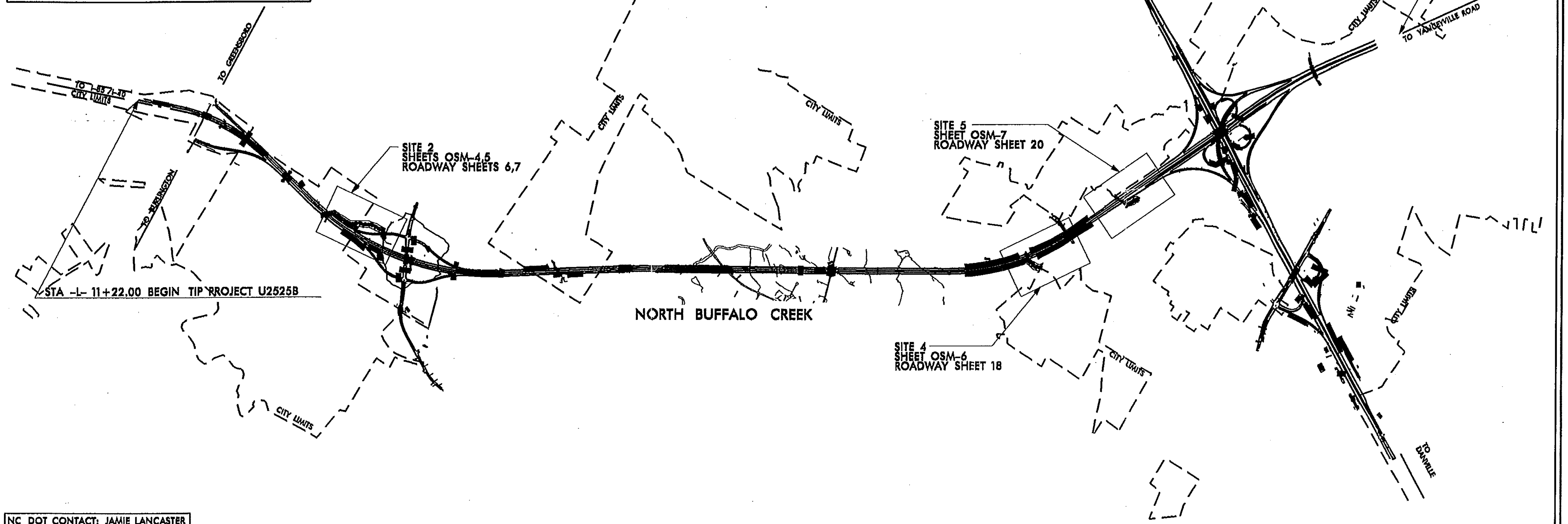
LOCATION: GREENSBORO EASTERN LOOP FROM NORTH OF US 70
TO US 29 NORTH OF GREENSBORO

TYPE OF WORK: STREAM RELOCATION, STREAM RESTORATION, STREAM ENHANCEMENT


END PROJECT
BEGIN PROJECT
29
70
CITY LIMITS
Wendover Ave.

VICINITY MAP

STREAM MITIGATION IMPACTS (NON-MITIGABLE)


NAD 83
STA -L- 315+50.50 END TIP PROJECT U2525B
TO YANCEYVILLE ROAD
TO GREENSBORO
CITY LIMITS
TO I-85/I-40
TO BURLINGTON
SITE 2
SHEETS OSM-4,5
ROADWAY SHEETS 6,7
STA -L- 11+22.00 BEGIN TIP PROJECT U2525B
NORTH BUFFALO CREEK
SITE 4
SHEET OSM-6
ROADWAY SHEET 18
SITE 5
SHEET OSM-7
ROADWAY SHEET 20
TO DANVILLE

NC DOT CONTACT: JAMIE LANCASTER

GRAPHIC SCALES

30 15 0 30 60
PLANS

30 15 0 30 60
PROFILE (HORIZONTAL)

6 3 0 6 12
PROFILE (VERTICAL)

DESIGN DATA

PROJECT LENGTH

MITIGATION SITE	MITIGATION TYPE	LENGTH
SITE 2	RESTORATION/RELOCATION	1,307LF
SITE 4	RESTORATION	386LF
SITE 5	RELOCATION	362LF

2006 STANDARD SPECIFICATIONS

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

U2525B | OSM-4

PROJECT ENGINEER

APPROVED BY:

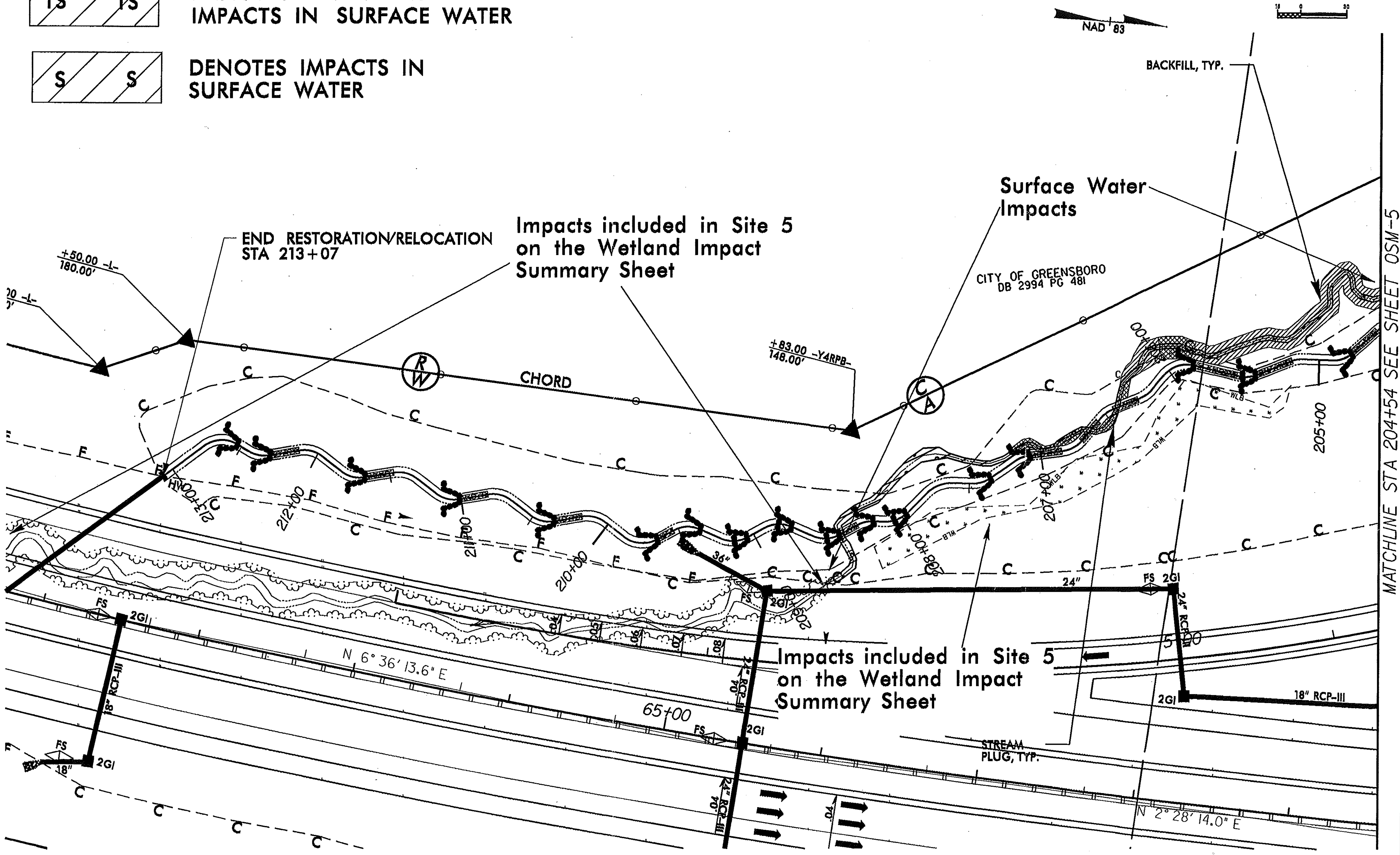
DATE:

SITE 2

Impacts Associated with Mitigation (Non-mitigable)

▨ TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

▨ S S — DENOTES IMPACTS IN SURFACE WATER



NAD 83
BACKFILL, TYP.
Surface Water Impacts
Impacts included in Site 5 on the Wetland Impact Summary Sheet
END RESTORATION/RELOCATION STA 213+07
+50.00 -L- 180.00'
CITY OF GREENSBORO DB 2994 PG 481
+83.00 -Y4RPB- 148.00'
CHORD
R/W
C/A
C
F
HW
213+00
212+00
211+00
210+00
209+00
208+00
207+00
206+00
205+00
36"
24"
FS
2GI
24" RCP-III
18" RCP-III
18"
N 6° 36' 13.6" E
65+00
04
Impacts included in Site 5 on the Wetland Impact Summary Sheet
STREAM PLUG, TYP.
N 2° 28' 14.0" E
WLB
MATCHLINE STA 204+54 SEE SHEET OSM-5

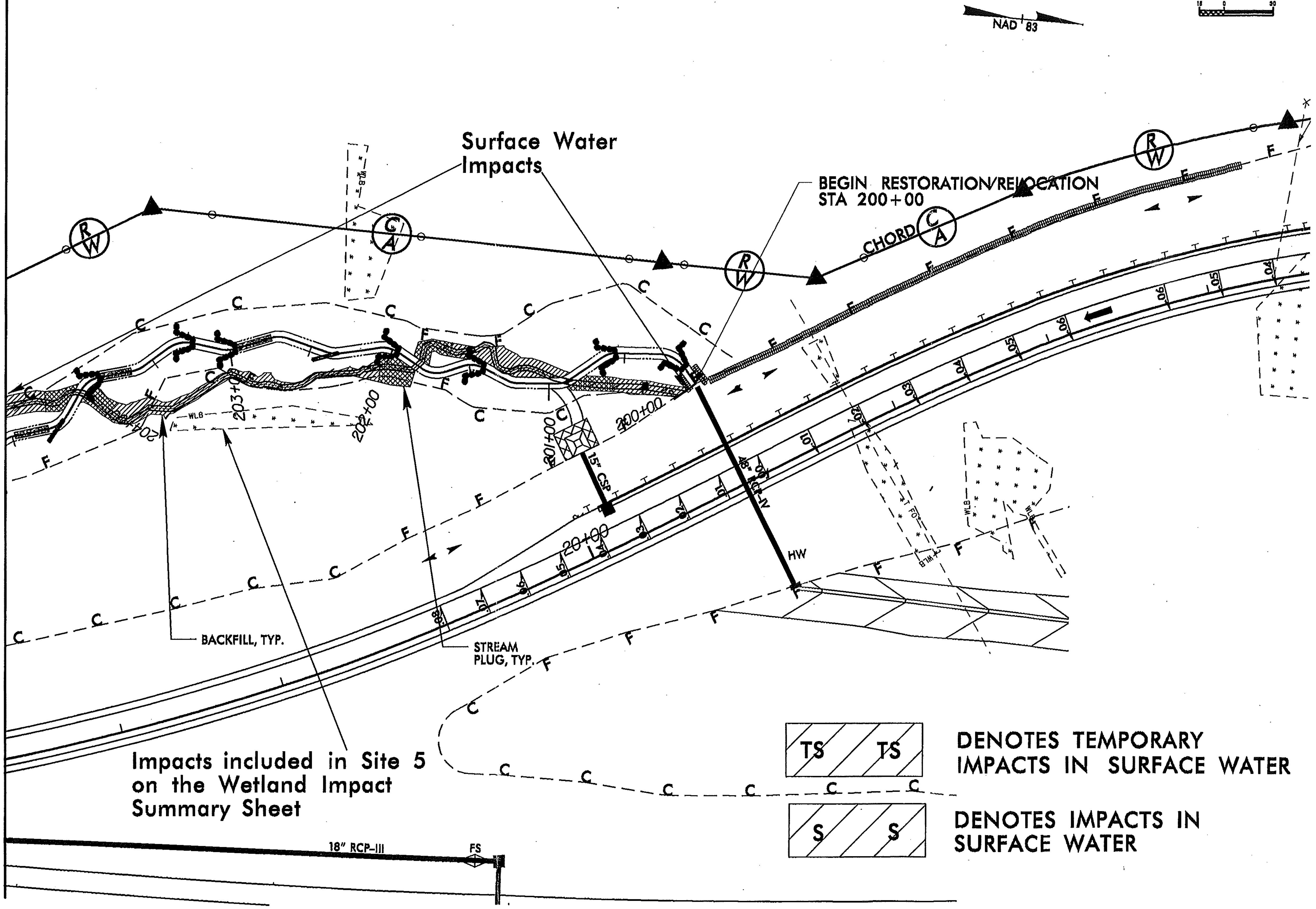
Impacts Associated with Mitigation (Non-mitigable)

PROJECT ENGINEER

APPROVED BY:

DATE:

SITE 2


NAD 83
10 0 20
R/W
C/A
CHORD
BEGIN RESTORATION/RELOCATION STA 200+00
Surface Water Impacts
204+00
203+00
202+00
201+00
200+00
20+00
15" CSP
48" RCP
HW
WLB
FO
C
F
BACKFILL, TYP.
STREAM PLUG, TYP.
18" RCP-III
FS
MATCHLINE STA 204+54 SEE SHEET OSM-4
TS
S

Impacts included in Site 5 on the Wetland Impact Summary Sheet

TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S S	DENOTES IMPACTS IN SURFACE WATER

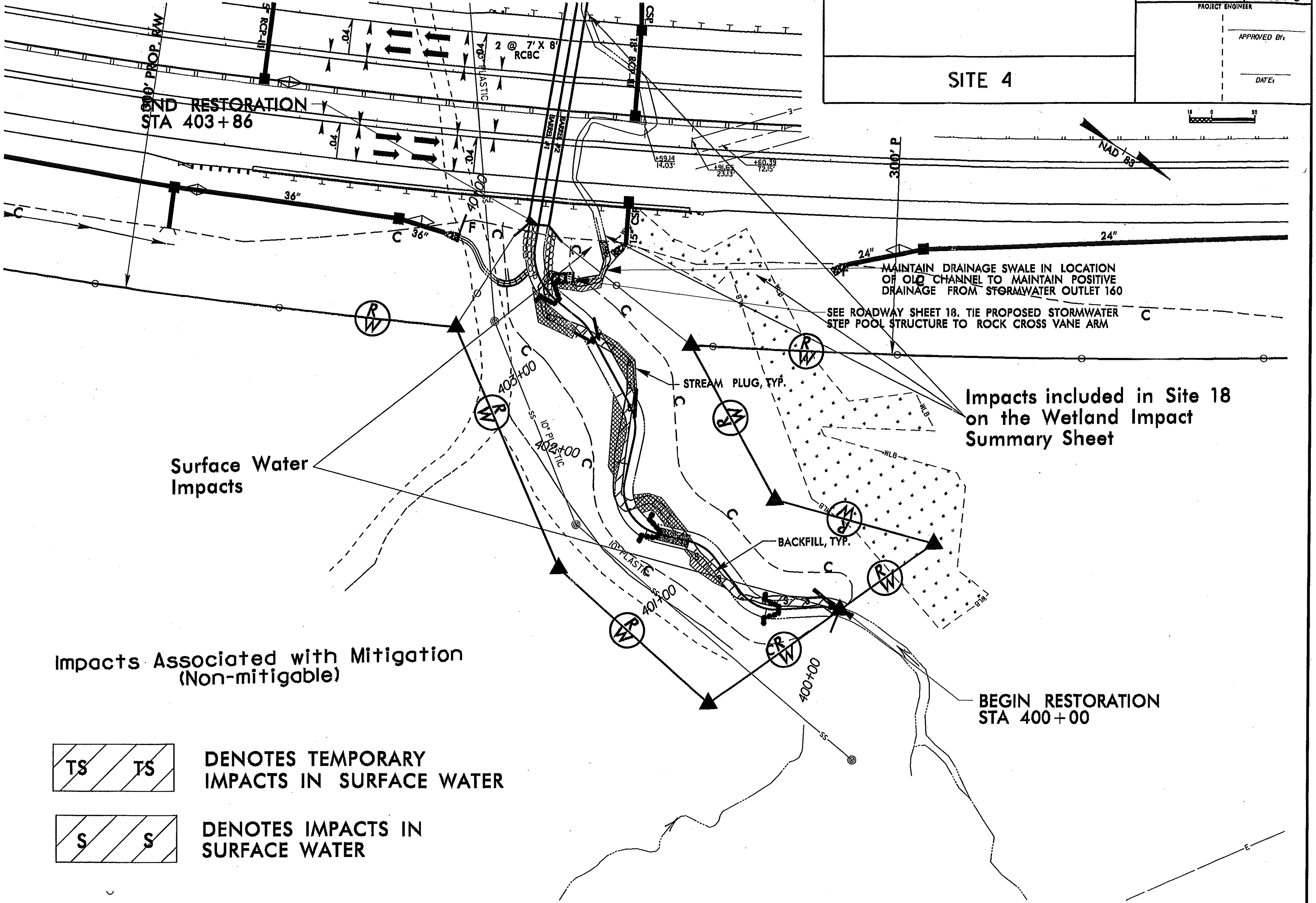
U2525B | OSM-6

PROJECT ENGINEER

APPROVED BY:

DATE:

SITE 4



NAD 83
5" RCP-III
2 @ 7' X 8' RCBC
18" CSP
.04
300' PROP. R/W
300' P
~~END RESTORATION~~
STA 403+86
36"
24"
C
F
10" PLASTIC
BARREL #1
BARREL #2
+59.14
14.03'
+91.65
23.13'
+60.39
72.15'
15" CSP
WLB
SS
403+00
402+00
401+00
400+00
MAINTAIN DRAINAGE SWALE IN LOCATION OF OLD CHANNEL TO MAINTAIN POSITIVE DRAINAGE FROM STORMWATER OUTLET 160
SEE ROADWAY SHEET 18. TIE PROPOSED STORMWATER STEP POOL STRUCTURE TO ROCK CROSS VANE ARM
STREAM PLUG, TYP.
BACKFILL, TYP.
BEGIN RESTORATION
STA 400+00
R/W
E

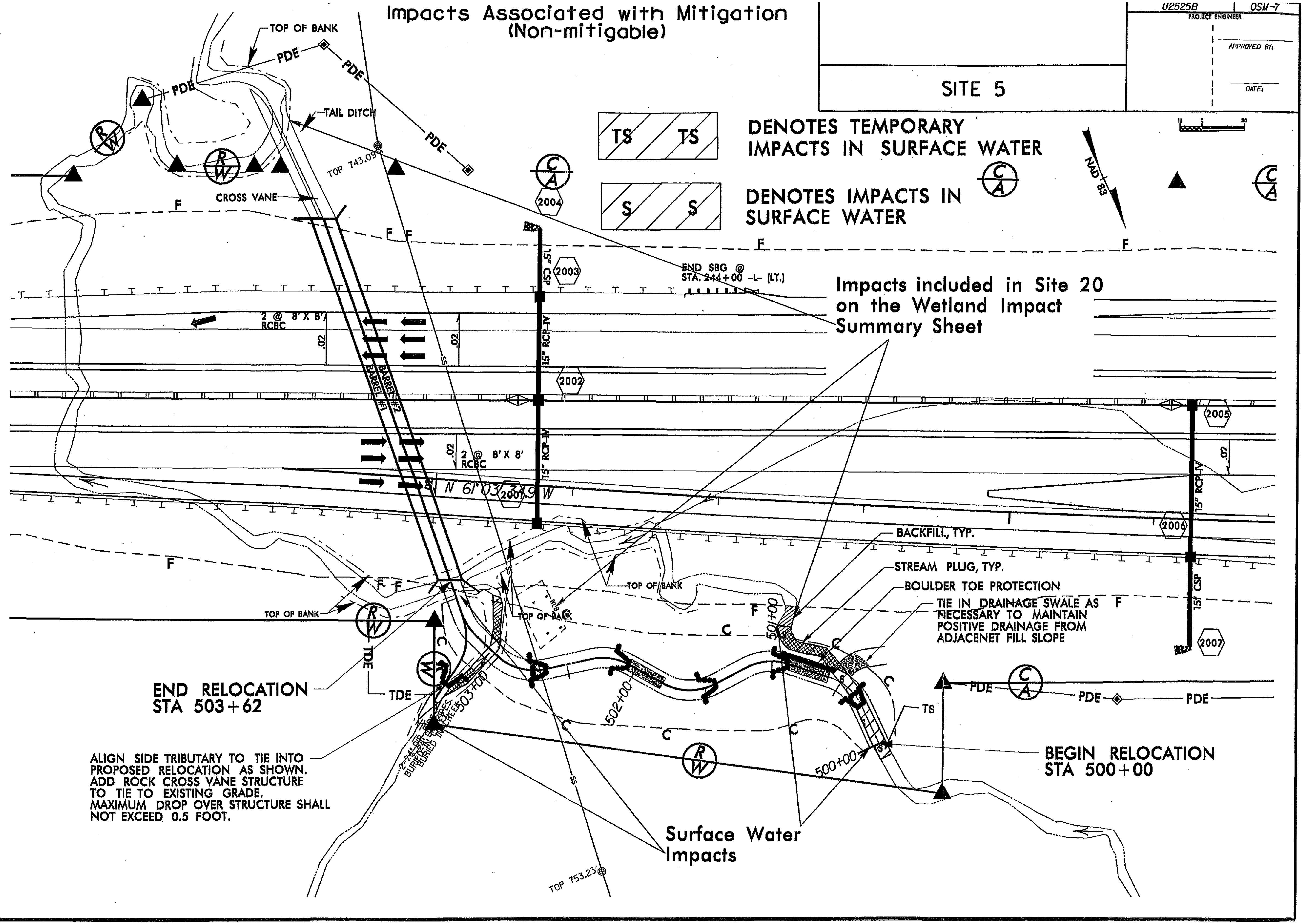
Impacts included in Site 18 on the Wetland Impact Summary Sheet

Surface Water Impacts

Impacts Associated with Mitigation
(Non-mitigable)

TS / / TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S / / S	DENOTES IMPACTS IN SURFACE WATER

Impacts Associated with Mitigation (Non-mitigable)


U2525B
OSM-7
PROJECT ENGINEER
APPROVED BY:
DATE:
SITE 5
TS TS
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
S S
DENOTES IMPACTS IN SURFACE WATER
NAD 83
TOP OF BANK
PDE
TAIL DITCH
TOP 743.09'
CROSS VANE
2004
2003
2002
2001
2005
2006
2007
15" CSP
15" RCP-IV
END SBG @ STA. 244+00 -L- (LT.)
2 @ 8' X 8' RCBC
.02
BARREL #1
BARREL #2
N 61°03'33.9" W
Impacts included in Site 20 on the Wetland Impact Summary Sheet
BACKFILL, TYP.
STREAM PLUG, TYP.
BOULDER TOE PROTECTION
TIE IN DRAINAGE SWALE AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE FROM ADJACENET FILL SLOPE
TOP OF BANK
TDE
END RELOCATION STA 503+62
501+00
502+00
503+00
500+00
BEGIN RELOCATION STA 500+00
TS
ALIGN SIDE TRIBUTARY TO TIE INTO PROPOSED RELOCATION AS SHOWN. ADD ROCK CROSS VANE STRUCTURE TO TIE TO EXISTING GRADE. MAXIMUM DROP OVER STRUCTURE SHALL NOT EXCEED 0.5 FOOT.
BURIED PIPES
Surface Water Impacts
TOP 753.23'
SS
F
C
R/W
C/A

MITIGATION IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Mitigation Site No.	Mitigation Station Station (From/To)	Mitigation Description	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)
2 (Permit Site #5)	200+00 to 213+07	Restoration/ Relocation								934		1307
4 (Permit Site #18)	400+00 to 403+86	Restoration								431		386
5 (Permit Site #20)	500+00 to 503+62	Relocation								106	10	362
TOTALS:										1471		2055

For impacts associated with the roadway fill slopes, culverts and pipes please see Wetland Impact Summary Sheet for Site 5, Site 18, and Site 20 on U-2525B

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD
COUNTY
WBS - 34821.1.3 (U-2525B)

SHEET 1 OF 1 8/12/2013

APPENDIX C

REFERENCE REACH DATA

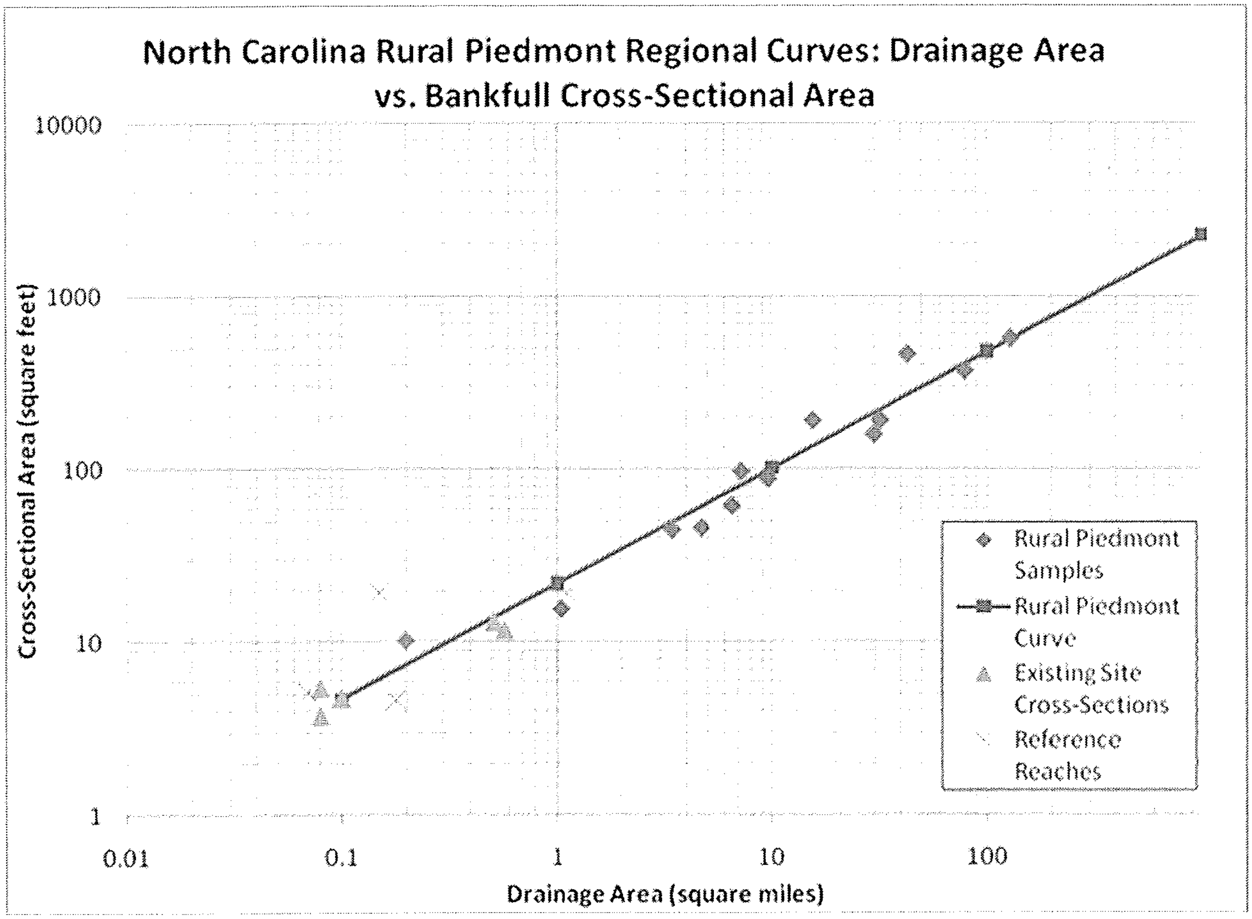


FIGURE 3: COMPARISON OF REGIONAL CURVE INFORMATION FOR PROJECT REACHES

REFERENCE REACH MORPHOLOGICAL MEASUREMENTS TABLE

U-2525 On-Site Mitigation – Tributary to Riddicks Creek (KHA)

	Variables	Reference Reach		
1.	Stream type	C5		
2.	Drainage Area (sq. mi)	0.18		
3.	Bankfull width (ft)	Mean:	7.9	
		Range:	--	--
4.	Bankfull mean depth (ft)	Mean:	0.6	
		Range:	--	--
5.	Width/depth ratio	Mean:	13.5	
		Range:	--	--
6.	Bankfull cross-sectional area (sq. ft)	Mean:	4.6	
		Range:	--	--
7.	Bankfull mean velocity (ft/sec)	Mean:	NA	
		Range:	--	--
8.	Bankfull discharge (cfs)	Mean:	NA	
		Range:	--	--
9.	Bankfull max depth (ft)	Mean:	1.0	
		Range:	--	--
10.	Width of floodprone area (ft)	Mean:	36.0	
		Range:	--	--
11.	Entrenchment ratio	Mean:	4.6	
		Range:	--	--
12.	Meander length (ft)	Mean:	80.5	
		Range:	64.0	97.0
13.	Ratio of meander length to bankfull width	Mean:	10.2	
		Range:	8.1	12.3
14.	Radius of curvature (ft)	Mean:	13.4	
		Range:	8.5	22.0
15.	Ratio of radius of curvature to bankfull width	Mean:	1.7	
		Range:	1.1	2.8
16.	Belt width (ft)	Mean:	34.0	
		Range:	--	--
17.	Meander width ratio	Mean:	4.3	
		Range:	--	--
18.	Sinuosity (stream length/valley length)	Mean:	1.3	
		Range:	--	--
19.	Valley slope (ft/ft)	Mean:	0.0022	
		Range:	--	--
20.	Average slope (ft/ft)	Mean:	0.0017	
		Range:	--	--
21.	Pool slope (ft/ft)	Mean:	0.0002	
		Range:	0.0000	0.0007
22.	Ratio of pool slope to average slope	Mean:	0.1	
		Range:	0.0	0.4
23.	Maximum pool depth (ft)	Mean:	2.0	
		Range:	--	--
24.	Ratio of pool depth to average bankfull depth	Mean:	3.4	
		Range:	--	--
25.	Pool width (ft)	Mean:	11.5	
		Range:	--	--
26.	Ratio of pool width to bankfull width	Mean:	1.5	
		Range:	--	--
27.	Pool to pool spacing (ft)	Mean:	38.3	
		Range:	18	78
28.	Ratio of pool to pool spacing to bankfull width	Mean:	4.8	
		Range:	2.3	9.9

REFERENCE REACH MORPHOLOGICAL MEASUREMENTS TABLE

U-2525 On-Site Mitigation – Riddicks Creek (KHA)

	Variables	Reference Reach		
1.	Stream type	E5		
2.	Drainage Area (sq. mi)	0.07		
3.	Bankfull width (ft)	Mean:	6.6	
		Range:	5.7	7.5
4.	Bankfull mean depth (ft)	Mean:	0.8	
		Range:	0.7	0.8
5.	Width/depth ratio	Mean:	8.7	
		Range:	8.2	9.2
6.	Bankfull cross-sectional area (sq. ft)	Mean:	5.1	
		Range:	4.0	6.1
7.	Bankfull mean velocity (ft/sec)	Mean:	NA	
		Range:	--	--
8.	Bankfull discharge (cfs)	Mean:	NA	
		Range:	--	--
9.	Bankfull max depth (ft)	Mean:	1.5	
		Range:	1.3	1.6
10.	Width of floodprone area (ft)	Mean:	27.4	
		Range:	20.0	34.0
11.	Entrenchment ratio	Mean:	4.2	
		Range:	3.5	4.6
12.	Meander length (ft)	Mean:	32.0	
		Range:	25.0	45.0
13.	Ratio of meander length to bankfull width	Mean:	4.8	
		Range:	3.8	6.8
14.	Radius of curvature (ft)	Mean:	11.3	
		Range:	5.7	18.8
15.	Ratio of radius of curvature to bankfull width	Mean:	1.7	
		Range:	0.9	2.8
16.	Belt width (ft)	Mean:	15.8	
		Range:	10.5	22.0
17.	Meander width ratio	Mean:	2.4	
		Range:	1.6	3.3
18.	Sinuosity (stream length/valley length)	Mean:	1.4	
		Range:	--	--
19.	Valley slope (ft/ft)	Mean:	0.0130	
		Range:	--	--
20.	Average slope (ft/ft)	Mean:	0.0093	
		Range:	--	--
21.	Pool slope (ft/ft)	Mean:	0.0024	
		Range:	0.0000	0.0100
22.	Ratio of pool slope to average slope	Mean:	0.3	
		Range:	0.0	0.6
23.	Maximum pool depth (ft)	Mean:	2.0	
		Range:	--	--
24.	Ratio of pool depth to average bankfull depth	Mean:	2.3	
		Range:	--	--
25.	Pool width (ft)	Mean:	8.1	
		Range:	--	--
26.	Ratio of pool width to bankfull width	Mean:	1.2	
		Range:	--	--
27.	Pool to pool spacing (ft)	Mean:	22.9	
		Range:	8	48
28.	Ratio of pool to pool spacing to bankfull width	Mean:	3.5	
		Range:	1.1	7.3

REFERENCE REACH MORPHOLOGICAL MEASUREMENTS TABLE

U-2525 On-Site Mitigation – Tributary to Lake Jeanette (NCDOT)

	Variables	Reference Reach		
1.	Stream type	E5		
2.	Drainage Area (sq. mi)	0.15		
3.	Bankfull width (ft)	Mean:	12.0	
		Range:	--	--
4.	Bankfull mean depth (ft)	Mean:	1.6	
		Range:	1.4	1.7
5.	Width/depth ratio	Mean:	8.4	
		Range:	7.1	9.6
6.	Bankfull cross-sectional area (sq. ft)	Mean:	19.4	
		Range:	18.8	20.0
7.	Bankfull mean velocity (ft/sec)	Mean:	5.6	
		Range:	5.2	6.2
8.	Bankfull discharge (cfs)	Mean:	109.3	
		Range:	100.7	119.6
9.	Bankfull max depth (ft)	Mean:	2.9	
		Range:	--	--
10.	Width of floodprone area (ft)	Mean:	49.0	
		Range:	--	--
11.	Entrenchment ratio	Mean:	4.4	
		Range:	4.1	4.7
12.	Meander length (ft)	Mean:	22.0	
		Range:	--	--
13.	Ratio of meander length to bankfull width	Mean:	1.8	
		Range:	--	--
14.	Radius of curvature (ft)	Mean:	7.3	
		Range:	--	--
15.	Ratio of radius of curvature to bankfull width	Mean:	0.6	
		Range:	--	--
16.	Belt width (ft)	Mean:	45.0	
		Range:	--	--
17.	Meander width ratio	Mean:	3.8	
		Range:	--	--
18.	Sinuosity (stream length/valley length)	Mean:	NA	
		Range:	--	--
19.	Valley slope (ft/ft)	Mean:	NA	
		Range:	--	--
20.	Average slope (ft/ft)	Mean:	0.0033	
		Range:	--	--
21.	Pool slope (ft/ft)	Mean:	NA	
		Range:	--	--
22.	Ratio of pool slope to average slope	Mean:	NA	
		Range:	--	--
23.	Maximum pool depth (ft)	Mean:	3.1	
		Range:	--	--
24.	Ratio of pool depth to average bankfull depth	Mean:	2.0	
		Range:	--	--
25.	Pool width (ft)	Mean:	19.6	
		Range:	--	--
26.	Ratio of pool width to bankfull width	Mean:	1.6	
		Range:	--	--
27.	Pool to pool spacing (ft)	Mean:	NA	
		Range:	--	--
28.	Ratio of pool to pool spacing to bankfull width	Mean:	NA	
		Range:	--	--

REFERENCE REACH MORPHOLOGICAL MEASUREMENTS TABLE

U-2525 On-Site Mitigation – Tributary to Rich Fork (KHA)

	Variables	Reference Reach		
1.	Stream type	B4		
2.	Drainage Area (sq. mi)	1.12		
3.	Bankfull width (ft)	Mean:	15.2	
		Range:	--	--
4.	Bankfull mean depth (ft)	Mean:	1.2	
		Range:	--	--
5.	Width/depth ratio	Mean:	12.7	
		Range:	--	--
6.	Bankfull cross-sectional area (sq. ft)	Mean:	19.0	
		Range:	--	--
7.	Bankfull mean velocity (ft/sec)	Mean:	5.1	
		Range:	--	--
8.	Bankfull discharge (cfs)	Mean:	96.9	
		Range:	--	--
9.	Bankfull max depth (ft)	Mean:	1.9	
		Range:	--	--
10.	Width of floodprone area (ft)	Mean:	23.3	
		Range:	--	--
11.	Entrenchment ratio	Mean:	1.5	
		Range:	--	--
12.	Meander length (ft)	Mean:	NA	
		Range:	--	--
13.	Ratio of meander length to bankfull width	Mean:	NA	
		Range:	--	--
14.	Radius of curvature (ft)	Mean:	NA	
		Range:	--	--
15.	Ratio of radius of curvature to bankfull width	Mean:	NA	
		Range:	--	--
16.	Belt width (ft)	Mean:	NA	
		Range:	--	--
17.	Meander width ratio	Mean:	NA	
		Range:	--	--
18.	Sinuosity (stream length/valley length)	Mean:	1.07	
		Range:	--	--
19.	Valley slope (ft/ft)	Mean:	0.0168	
		Range:	--	--
20.	Average slope (ft/ft)	Mean:	0.0157	
		Range:	--	--
21.	Pool slope (ft/ft)	Mean:	0.0032	
		Range:	0.0009	0.0065
22.	Ratio of pool slope to average slope	Mean:	0.2	
		Range:	0.1	0.4
23.	Maximum pool depth (ft)	Mean:	3.0	
		Range:	2.3	3.9
24.	Ratio of pool depth to average bankfull depth	Mean:	2.5	
		Range:	1.912	3.28
25.	Pool width (ft)	Mean:	16.3	
		Range:	--	--
26.	Ratio of pool width to bankfull width	Mean:	1.1	
		Range:	--	--
27.	Pool to pool spacing (ft)	Mean:	33.1	
		Range:	20	52
28.	Ratio of pool to pool spacing to bankfull width	Mean:	2.2	
		Range:	1.3	3.4

APPENDIX D

MORPHOLICICAL CHARACTERISTICS OF PROPOSED STREAMS

MORPHOLOGICAL MEASUREMENTS TABLE

U-2525B On-Site Mitigation – Site 2 Reach 1

	Variables	Existing Channel			Proposed Design		
1.	Stream type	Incised B5			B5		
2.	Drainage area (sq. mi)	0.08			0.08		
3.	Bankfull width (ft)	Mean:	7.8		Mean:	7.2	
		Range:	--	--	Range:	--	--
4.	Bankfull mean depth (ft)	Mean:	0.7		Mean:	0.5	
		Range:	--	--	Range:	--	--
5.	Width/depth ratio	Mean:	11.0		Mean:	13.5	
		Range:	--	--	Range:	--	--
6.	Bankfull cross-sectional area (sq. ft)	Mean:	5.5		Mean:	3.8	
		Range:	--	--	Range:	--	--
7.	Bankfull mean velocity (ft/sec)	Mean:	3.4		Mean:	4.9	
		Range:	3.1	3.8	Range:	--	--
8.	Bankfull discharge (cfs)	Mean:	18.6		Mean:	18.6	
		Range:	--	--	Range:	--	--
9.	Bankfull max depth (ft)	Mean:	0.9		Mean:	0.8	
		Range:	--	--	Range:	--	--
10.	Width of floodprone area (ft)	Mean:	12.0		Mean:	14.0	
		Range:	--	--	Range:	--	--
11.	Entrenchment ratio	Mean:	1.5		Mean:	1.9	
		Range:	--	--	Range:	--	--
12.	Meander length (ft)	Mean:	27.9		Mean:	63.0	
		Range:	13.2	51.1	Range:	50.4	75.6
13.	Ratio of meander length to bankfull width	Mean:	3.6		Mean:	8.8	
		Range:	1.7	6.5	Range:	7.0	10.5
14.	Radius of curvature (ft)	Mean:	10.9		Mean:	17.3	
		Range:	7.1	17.1	Range:	15.8	18.9
15.	Ratio of radius of curvature to bankfull width	Mean:	1.4		Mean:	2.4	
		Range:	0.9	2.2	Range:	2.2	2.6
16.	Belt width (ft)	Mean:	12.2		Mean:	12.9	
		Range:	8.1	25.2	Range:	11.3	14.5
17.	Meander width ratio	Mean:	1.6		Mean:	1.8	
		Range:	1.0	3.2	Range:	1.6	2.0
18.	Sinuosity (stream length/valley length)	Mean:	1.15		Mean:	1.07	
		Range:	--	--	Range:	--	--
19.	Valley slope (ft/ft)	Mean:	0.0174		Mean:	0.0110	
		Range:	--	--	Range:	--	--
20.	Average slope (ft/ft)	Mean:	0.0151		Mean:	0.0103	
		Range:	--	--	Range:	--	--
21.	Pool slope (ft/ft)	Mean:	0.0111		Mean:	0.0001	
		Range:	0.0067	0.0165	Range:	0.0001	0.0001
22.	Ratio of pool slope to average slope	Mean:	0.7		Mean:	0.0	
		Range:	0.4	1.1	Range:	0.0	0.0
23.	Maximum pool depth (ft)	Mean:	1.9		Mean:	1.4	
		Range:	1.6	2.1	Range:	--	--
24.	Ratio of pool depth to average bankfull depth	Mean:	2.6		Mean:	2.6	
		Range:	2.2	3.0	Range:	--	--
25.	Pool width (ft)	Mean:	6.7		Mean:	9.8	
		Range:	--	--	Range:	--	--
26.	Ratio of pool width to bankfull width	Mean:	0.9		Mean:	1.4	
		Range:	--	--	Range:	--	--
27.	Pool to pool spacing (ft)	Mean:	20.0		Mean:	31.5	
		Range:	12.6	27.7	Range:	25.2	37.8
28.	Ratio of pool to pool spacing to bankfull width	Mean:	2.6		Mean:	4.4	
		Range:	1.6	3.5	Range:	3.5	5.3

MORPHOLOGICAL MEASUREMENTS TABLE

U-2525B On-Site Mitigation – Site 2 Reach 2

	Variables	Existing Channel			Proposed Design		
1.	Stream type	Incised B5			B5		
2.	Drainage area (sq. mi)	0.10			0.10		
3.	Bankfull width (ft)	Mean:	5.0		Mean:	7.6	
		Range:	--	--	Range:	--	--
4.	Bankfull mean depth (ft)	Mean:	1.0		Mean:	0.5	
		Range:	--	--	Range:	--	--
5.	Width/depth ratio	Mean:	5.2		Mean:	13.9	
		Range:	--	--	Range:	--	--
6.	Bankfull cross-sectional area (sq. ft)	Mean:	4.8		Mean:	4.2	
		Range:	--	--	Range:	--	--
7.	Bankfull mean velocity (ft/sec)	Mean:	4.0		Mean:	4.6	
		Range:	3.6	4.5	Range:	--	--
8.	Bankfull discharge (cfs)	Mean:	19.1		Mean:	19.1	
		Range:	--	--	Range:	--	--
9.	Bankfull max depth (ft)	Mean:	1.3		Mean:	0.8	
		Range:	--	--	Range:	--	--
10.	Width of floodprone area (ft)	Mean:	8.1		Mean:	12.0	
		Range:	--	--	Range:	--	--
11.	Entrenchment ratio	Mean:	1.6		Mean:	1.6	
		Range:	--	--	Range:	--	--
12.	Meander length (ft)	Mean:	42.3		Mean:	65.0	
		Range:	14.2	72.8	Range:	52.0	78.0
13.	Ratio of meander length to bankfull width	Mean:	8.5		Mean:	8.6	
		Range:	2.9	14.7	Range:	6.8	10.3
14.	Radius of curvature (ft)	Mean:	9.4		Mean:	17.9	
		Range:	5.0	16.0	Range:	16.3	19.5
15.	Ratio of radius of curvature to bankfull width	Mean:	1.9		Mean:	2.4	
		Range:	1.0	3.2	Range:	2.1	2.6
16.	Belt width (ft)	Mean:	18.5		Mean:	22.8	
		Range:	9.0	40.7	Range:	16.3	29.3
17.	Meander width ratio	Mean:	3.7		Mean:	3.0	
		Range:	1.8	8.2	Range:	2.1	3.9
18.	Sinuosity (stream length/valley length)	Mean:	1.19		Mean:	1.06	
		Range:	--	--	Range:	--	--
19.	Valley slope (ft/ft)	Mean:	0.0171		Mean:	0.0199	
		Range:	--	--	Range:	--	--
20.	Average slope (ft/ft)	Mean:	0.0144		Mean:	0.0187	
		Range:	--	--	Range:	--	--
21.	Pool slope (ft/ft)	Mean:	0.0040		Mean:	0.0000	
		Range:	0.0027	0.0056	Range:	0.0000	0.0019
22.	Ratio of pool slope to average slope	Mean:	0.3		Mean:	0.0	
		Range:	0.2	0.4	Range:	0.0	0.1
23.	Maximum pool depth (ft)	Mean:	1.8		Mean:	1.5	
		Range:	1.6	2.2	Range:	--	--
24.	Ratio of pool depth to average bankfull depth	Mean:	1.9		Mean:	2.7	
		Range:	1.6	2.3	Range:	--	--
25.	Pool width (ft)	Mean:	5.4		Mean:	10.2	
		Range:	--	--	Range:	--	--
26.	Ratio of pool width to bankfull width	Mean:	1.1		Mean:	1.3	
		Range:	--	--	Range:	--	--
27.	Pool to pool spacing (ft)	Mean:	28.8		Mean:	32.5	
		Range:	24.0	33.7	Range:	29.3	42.3
28.	Ratio of pool to pool spacing to bankfull width	Mean:	5.8		Mean:	4.3	
		Range:	4.8	6.8	Range:	3.9	5.6

MORPHOLOGICAL MEASUREMENTS TABLE

U-2525B On-Site Mitigation – Site 4

	Variables	Existing Channel			Proposed Design		
1.	Stream type	Incised B5			C5		
2.	Drainage area (sq. mi)	0.57			0.57		
3.	Bankfull width (ft)	Mean:	8.9		Mean:	12.7	
		Range:	--	--	Range:	--	--
4.	Bankfull mean depth (ft)	Mean:	1.3		Mean:	0.9	
		Range:	--	--	Range:	--	--
5.	Width/depth ratio	Mean:	6.6		Mean:	13.6	
		Range:	--	--	Range:	--	--
6.	Bankfull cross-sectional area (sq. ft)	Mean:	11.9		Mean:	11.9	
		Range:	--	--	Range:	--	--
7.	Bankfull mean velocity (ft/sec)	Mean:	2.1		Mean:	2.1	
		Range:	1.9	2.3	Range:	--	--
8.	Bankfull discharge (cfs)	Mean:	24.5		Mean:	24.5	
		Range:	--	--	Range:	--	--
9.	Bankfull max depth (ft)	Mean:	2.1		Mean:	1.4	
		Range:	--	--	Range:	--	--
10.	Width of floodprone area (ft)	Mean:	15.1		Mean:	80.0	
		Range:	--	--	Range:	--	--
11.	Entrenchment ratio	Mean:	1.7		Mean:	6.3	
		Range:	--	--	Range:	--	--
12.	Meander length (ft)	Mean:	44.7		Mean:	122.0	
		Range:	25.7	58.3	Range:	97.6	146.4
13.	Ratio of meander length to bankfull width	Mean:	5.0		Mean:	9.6	
		Range:	2.9	6.6	Range:	7.7	11.5
14.	Radius of curvature (ft)	Mean:	33.6		Mean:	33.6	
		Range:	12.0	63.0	Range:	30.5	36.6
15.	Ratio of radius of curvature to bankfull width	Mean:	3.8		Mean:	2.6	
		Range:	1.3	7.1	Range:	2.4	2.9
16.	Belt width (ft)	Mean:	12.3		Mean:	42.7	
		Range:	7.4	17.7	Range:	30.5	54.9
17.	Meander width ratio	Mean:	1.4		Mean:	3.4	
		Range:	0.8	2.0	Range:	2.4	4.3
18.	Sinuosity (stream length/valley length)	Mean:	1.22		Mean:	1.08	
		Range:	--	--	Range:	--	--
19.	Valley slope (ft/ft)	Mean:	0.0029		Mean:	0.0050	
		Range:	--	--	Range:	--	--
20.	Average slope (ft/ft)	Mean:	0.0024		Mean:	0.0046	
		Range:	--	--	Range:	--	--
21.	Pool slope (ft/ft)	Mean:	0.0073		Mean:	0.0000	
		Range:	0.0061	0.0080	Range:	0.0000	0.0005
22.	Ratio of pool slope to average slope	Mean:	3.0		Mean:	0.0	
		Range:	2.5	3.3	Range:	0.0	0.1
23.	Maximum pool depth (ft)	Mean:	2.7		Mean:	2.6	
		Range:	2.5	2.8	Range:	--	--
24.	Ratio of pool depth to average bankfull depth	Mean:	2.0		Mean:	2.8	
		Range:	1.9	2.1	Range:	--	--
25.	Pool width (ft)	Mean:	13.3		Mean:	17.0	
		Range:	--	--	Range:	--	--
26.	Ratio of pool width to bankfull width	Mean:	1.5		Mean:	1.3	
		Range:	--	--	Range:	--	--
27.	Pool to pool spacing (ft)	Mean:	24.4		Mean:	70.2	
		Range:	23.7	25.2	Range:	54.9	85.4
28.	Ratio of pool to pool spacing to bankfull width	Mean:	2.7		Mean:	5.5	
		Range:	2.7	2.8	Range:	4.3	6.7

MORPHOLOGICAL MEASUREMENTS TABLE

U-2525B On-Site Mitigation – Site 5

	Variables	Existing Channel			Proposed Design		
1.	Stream type	E5			C5		
2.	Drainage area (sq. mi)	0.51			0.51		
3.	Bankfull width (ft)	Mean:	11.8		Mean:	13.7	
		Range:	--	--	Range:	--	--
4.	Bankfull mean depth (ft)	Mean:	1.1		Mean:	1.0	
		Range:	--	--	Range:	--	--
5.	Width/depth ratio	Mean:	10.4		Mean:	14.1	
		Range:	--	--	Range:	--	--
6.	Bankfull cross-sectional area (sq. ft)	Mean:	13.3		Mean:	13.3	
		Range:	--	--	Range:	--	--
7.	Bankfull mean velocity (ft/sec)	Mean:	4.3		Mean:	4.3	
		Range:	3.9	4.8	Range:	--	--
8.	Bankfull discharge (cfs)	Mean:	56.5		Mean:	56.5	
		Range:	--	--	Range:	--	--
9.	Bankfull max depth (ft)	Mean:	1.6		Mean:	1.4	
		Range:	--	--	Range:	--	--
10.	Width of floodprone area (ft)	Mean:	147.0		Mean:	147.0	
		Range:	--	--	Range:	--	--
11.	Entrenchment ratio	Mean:	12.5		Mean:	10.7	
		Range:	--	--	Range:	--	--
12.	Meander length (ft)	Mean:	85.2		Mean:	126.0	
		Range:	27.5	138.0	Range:	100.8	151.2
13.	Ratio of meander length to bankfull width	Mean:	7.2		Mean:	9.2	
		Range:	2.3	11.7	Range:	7.4	11.0
14.	Radius of curvature (ft)	Mean:	29.6		Mean:	34.7	
		Range:	6.0	71.0	Range:	31.5	37.8
15.	Ratio of radius of curvature to bankfull width	Mean:	2.5		Mean:	2.5	
		Range:	0.5	6.0	Range:	2.3	2.8
16.	Belt width (ft)	Mean:	33.5		Mean:	36.4	
		Range:	17.6	53.2	Range:	24.6	48.2
17.	Meander width ratio	Mean:	2.8		Mean:	2.7	
		Range:	1.5	4.5	Range:	1.8	3.5
18.	Sinuosity (stream length/valley length)	Mean:	1.16		Mean:	1.13	
		Range:	--	--	Range:	--	--
19.	Valley slope (ft/ft)	Mean:	0.0131		Mean:	0.0118	
		Range:	--	--	Range:	--	--
20.	Average slope (ft/ft)	Mean:	0.0113		Mean:	0.0105	
		Range:	--	--	Range:		
21.	Pool slope (ft/ft)	Mean:	0.0012		Mean:	0.0000	
		Range:	0.0057	0.0017	Range:	0.0000	0.0010
22.	Ratio of pool slope to average slope	Mean:	0.1		Mean:	0.0	
		Range:	0.5	0.1	Range:	0.0	0.1
23.	Maximum pool depth (ft)	Mean:	2.3		Mean:	2.6	
		Range:	1.9	2.6	Range:	--	--
24.	Ratio of pool depth to average bankfull depth	Mean:	2.1		Mean:	2.7	
		Range:	1.7	2.3	Range:	--	--
25.	Pool width (ft)	Mean:	11.8		Mean:	16.0	
		Range:	--	--	Range:	--	--
26.	Ratio of pool width to bankfull width	Mean:	1.0		Mean:	1.2	
		Range:	--	--	Range:	--	--
27.	Pool to pool spacing (ft)	Mean:	32.7		Mean:	72.5	
		Range:	21.3	50.8	Range:	56.7	88.2
28.	Ratio of pool to pool spacing to bankfull width	Mean:	2.8		Mean:	5.3	
		Range:	1.8	4.3	Range:	4.1	6.4

APPENDIX E

SEDIMENT TRANSPORT CALCULATIONS

SHEAR TRANSPORT CALCULATIONS

U-2525B On-Site Mitigation – Site 2 Reach 1

Shear Stress Analysis Data			
Feature		Existing	Proposed
Bankfull Cross-Sectional Area (A_{bkf})	Sq. ft	5.5	3.8
Bankfull Width, (W_{bkf})	ft	7.8	7.2
Width/Depth Ratio (W/D)	ft	11.0	13.5
Wetted Perimeter (WP) WP = W + 2D	ft	9.3	7.5
Hydraulic Radius (R) $R = A_{bkf}/WP$	ft	0.6	0.51
Average Channel Slope (Se)	ft/ft	0.0151	0.0103
Boundary Shear Stress, (τ)	lb/sq. ft	0.56	0.33
Median Diameter of Pavement (D_{50})	mm	13.75	
Median Diameter of Sub-Pavement ($\hat{D}_{50}$)	mm	1.7	
Critical Dimensionless Shear Stress (τ_{ci})		0.029	
Largest Particle from Sub-Pavement (D_i)	mm	45	
Largest Particle from Sub-Pavement (D_i)	ft	0.15	
Required Mean Bankfull Depth (D_r)	ft	0.47	
Required Mean Bankfull Slope (S_r)	ft/ft	0.0100	

SHEAR TRANSPORT CALCULATIONS

U-2525B On-Site Mitigation – Site 2 Reach 2

Shear Stress Analysis Data			
Feature		Existing	Proposed
Bankfull Cross-Sectional Area (A_{bkf})	Sq. ft	4.8	4.2
Bankfull Width, (W_{bkf})	ft	5	7.6
Width/Depth Ratio (W/D)	ft	5.2	13.9
Wetted Perimeter (WP) WP = W + 2D	ft	6.1	7.9
Hydraulic Radius (R) $R = A_{bkf}/WP$	ft	0.8	0.53
Average Channel Slope (Se)	ft/ft	0.0144	0.0187
Boundary Shear Stress, (τ)	lb/sq. ft	0.71	0.62
Median Diameter of Pavement (D_{50})	mm	13.75	
Median Diameter of Sub-Pavement ($\hat{D}_{50}$)	mm	1.7	
Critical Dimensionless Shear Stress (τ_{ci})		0.029	
Largest Particle from Sub-Pavement (D_i)	mm	45	
Largest Particle from Sub-Pavement (D_i)	ft	0.15	
Required Mean Bankfull Depth (D_r)	ft	0.49	
Required Mean Bankfull Slope (S_r)	ft/ft	0.0071	

SHEAR TRANSPORT CALCULATIONS

U-2525B On-Site Mitigation – Site 4

Shear Stress Analysis Data

Feature		Existing	Proposed
Bankfull Cross-Sectional Area (A_{bkf})	Sq. ft	11.9	11.9
Bankfull Width, (W_{bkf})	ft	8.9	12.7
Width/Depth Ratio (W/D)	ft	6.6	13.6
Wetted Perimeter (WP) WP = W + 2D	ft	10.7	13.2
Hydraulic Radius (R) $R = A_{bkf}/WP$	ft	1.11	0.90
Average Channel Slope (Se)	ft/ft	0.0024	0.0046
Boundary Shear Stress, (τ)	lb/sq. ft	0.17	0.26
Median Diameter of Pavement (D_{50})	mm	29.41	
Median Diameter of Sub-Pavement ($\hat{D}_{50}$)	mm	8.3	
Critical Dimensionless Shear Stress (τ_{ci})		0.013	
Largest Particle from Sub-Pavement (D_i)	mm	45	
Largest Particle from Sub-Pavement (D_i)	ft	0.15	
Required Mean Bankfull Depth (D_r)	ft	1.31	
Required Mean Bankfull Slope (S_r)	ft/ft	0.0024	

SHEAR TRANSPORT CALCULATIONS

U-2525B On-Site Mitigation – Site 5

Shear Stress Analysis Data

Feature		Existing	Proposed
Bankfull Cross-Sectional Area (A_{bkf})	Sq. ft	13.3	13.3
Bankfull Width, (W_{bkf})	ft	11.8	13.7
Width/Depth Ratio (W/D)	ft	10.4	14.1
Wetted Perimeter (WP) WP = W + 2D	ft	12.8	14.1
Hydraulic Radius (R) $R = A_{bkf}/WP$	ft	1.04	0.94
Average Channel Slope (Se)	ft/ft	0.0113	0.0105
Boundary Shear Stress, (τ)	lb/sq. ft	0.73	0.61
Median Diameter of Pavement (D_{50})	mm	50	
Median Diameter of Sub-Pavement ($\hat{D}_{50}$)	mm	15.2	
Critical Dimensionless Shear Stress (τ_{ci})		0.021	
Largest Particle from Sub-Pavement (D_i)	mm	50	
Largest Particle from Sub-Pavement (D_i)	ft	0.16	
Required Mean Bankfull Depth (D_r)	ft	0.51	
Required Mean Bankfull Slope (S_r)	ft/ft	0.0052	

APPENDIX F

RIPARIAN PLANTING SPECIFICATIONS

STREAM REFORESTATION:

Description

Stream Reforestation will be planted in areas designated on the plans and as directed. See the Stream Reforestation Detail Sheets.

The entire *Stream Reforestation* operation shall comply with the requirements of Section 1670 of the *Standard Specifications*.

Materials

Live Stakes:

Type I Stream Reforestation shall be live stakes, planted along both streambanks. Live stakes shall be ½"- 2" in diameter. Stakes shall also be 2 ft. - 3 ft. in length.

Live staking plant material shall consist of a random mix made up of the following:

Percent Planted	Common Name	Scientific Name
50%	Buttonbush	*Cephalanthus occidentalis*
50%	Silky Dogwood	*Cornus amomum*

Other species may be substituted upon approval of the Engineer. All plant material shall be harvested locally (within the same physiographic ecoregion and plant hardiness zone) or purchased from a local nursery, with the approval of the Engineer. All live stakes shall be dormant at time of acquisition and planting.

Coir Fiber Matting:

Provide matting that meets the following requirements:

100% coconut fiber (coir) twine woven into high strength matrix

Thickness -	0.30 in. minimum
Tensile Strength	1348 x 626 lb/ft minimum
Elongation	34% x 38% maximum
Flexibility (mg-cm)	65030 x 29590
Flow Velocity	Observed 11 ft/sec
Weight	20 oz/SY
Size	6.6 x 164 ft (120 SY)
"C" Factor	0.002
Open Area (measured)	50%

Staples, stakes, or reinforcement bars shall be used as anchors and shall meet the following requirements:

Wooden Stakes:

Provide hardwood stakes 12"- 24" long with a 2" x 2" nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving through the coir fiber mat and down into the underlying soil. The other end of the stake needs to have a 1"- 2" long head at the top with a 1"- 2" notch following to catch and secure the coir fiber mat.

Steel Reinforcement Bars:

Provide uncoated #10 steel reinforcement bars 24" nominal length. The bars shall have a 4" diameter bend at one end with a 4" straight section at the tip to catch and secure the coir fiber mat.

Staples:

Provide staples made of 0.125" diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

Bare Root Seedlings:

Type II Stream Reforestation shall be bare root seedlings 12"-18" tall. Bare root seedlings shall consist of a random mix made up of the following:

Percent Planted	Common Name	Scientific Name
20%	Tulip Poplar	*Liriodendron tulipifera*
20%	Sycamore	*Platanus occidentalis*
20%	Green Ash	*Fraxinus pennsylvanica*
20%	Willow Oak	*Quercus phellos*
20%	River Birch	*Betula nigra*

Other species may be substituted upon approval of the Engineer.

Construction Methods

Coir fiber matting shall be installed on the streambanks where live staking is to be planted as shown on the Stream Reforestation Detail Sheets and in locations as directed. Work includes providing all materials, excavating and backfilling, and placing and securing coir fiber mat.

Provide a smooth soil surface free from stones, clods, or debris that will prevent the contact of the matting with the soil. Place the matting immediately upon final grading. Take care to preserve the required line, grade, and cross section of the area covered.

Unroll the matting and apply without stretching such that it will lie smoothly but loosely on the soil surface. Bury the top slope end of each piece of matting in a narrow trench at least 6" deep and tamp firmly. Where one roll of matting ends and a second roll begins, overlap the end of the upper roll over the buried end of the second roll so there is a 6" overlap. Construct check trenches at least 12" deep every 50 ft. longitudinally along the edges of the matting, or as directed. Fold over and bury matting to the full depth of the trench, close and tamp firmly. Overlap matting at least 6" where 2 or more widths of matting are installed side be side.

Wooden stakes, reinforcement bars, or staples may be used as anchors in accordance with the Stream Reforestation Detail Sheets and as directed. Place anchors across the matting at ends, junctions, and check trenches approximately 1 ft. apart. Place anchors along the outer edges and down the center of each strip of matting 3 ft. apart. Place anchors along all lapped edges 1 ft. apart. Refer to the Stream Reforestation Detail Sheets for anchoring pattern. The Engineer may require adjustments in the trenching or anchoring requirements to fit individual site conditions.

During preparation of the live stakes, the basal ends shall be cleanly cut at an angle to facilitate easy insertion into the soil, while the tops shall be cut square or blunt for tamping. All limbs shall be removed from the sides of the live cutting prior to installation.

Live stakes shall be installed within 48 hours of cutting. Outside storage locations should be continually shaded and protected from wind and direct sunlight. Live cut plant material shall remain moist at all times before planting.

Stakes shall be spaced approximately 4 ft. on center. Live stakes shall be installed according to the configuration presented on the Stream Reforestation Detail Sheets.

Tamp live stakes perpendicularly into the finished bank slope with a dead blow hammer, with buds oriented in an upward direction. Stakes should be tamped until approximately ¾ of the stake length is within the ground. The area around each live stake shall be compacted by foot after the live stake has been installed.

1"- 2" shall be cut cleanly off of the top of each live stake with loppers at an angle of approximately 15 degrees following installation. Any stakes that are split or damaged during installation shall be removed and replaced.

The bare root seedlings shall be planted as soon as practical following permanent *Seeding and Mulching*. The seedlings shall be planted from top of bank out, along both sides of the stream, as designated on the plans.

Root dip: The roots of reforestation seedlings shall be coated with a slurry of water, and either a fine clay (kaolin) or a superabsorbent that is designated as a bare root dip. The type, mixture ratio, method of application, and the time of application shall be submitted to the Engineer for approval.

With the approval of the Engineer, seedlings may be coated before delivery to the job or at the time of planting, but at no time shall the roots of the seedlings be allowed to dry out. The roots shall be moistened immediately prior to planting.

Seasonal Limitations: Stream reforestation shall be planted from November 15 through March 15.

Measurement and Payment

Stream Reforestation will be measured and paid for as the actual number of acres of land measured along the surface of the ground, which has been acceptably planted in accordance with this section.

Payment will be made under:

Pay Item	**Pay Unit**
Stream Reforestation	Acre

APPENDIX G

STREAM QUALITY ASSESEMENT WORKSHEETS

Mitigation Site 2 USACE 2:1 Ratio

Stream CS56

USACE AID#________ DWQ #________ Site # SAD (indicate on attached map)

STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under assessment:

1. Applicant's name: NCDOT

2. Evaluator's name: Atkins / O'Loughlin

3. Date of evaluation: June 11 2012

4. Time of evaluation: 1:10P

5. Name of stream: UT to South Buffalo Creek

6. River basin: Cape Fear 16-11-14-1

7. Approximate drainage area: 110 acres

8. Stream order: 2

9. Length of reach evaluated: 50 feet

10. County: Guilford

11. Site coordinates (if known): prefer in decimal degrees.

12. Subdivision name (if any): N/A

Latitude (ex. 34.872312): 36.10309

Longitude (ex. –77.556611): -79.69732

Method location determined (circle): [✓ GPS] Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other________

13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location): South of Huffine Mill Road and East of Flemingfield Road

14. Proposed channel work (if any): Highway construction

15. Recent weather conditions: Sunny, warm

16. Site conditions at time of visit: Moderate Flow

17. Identify any special waterway classifications known: ____Section 10 ____Tidal Waters ____Essential Fisheries Habitat ____Trout Waters ____Outstanding Resource Waters _X_ Nutrient Sensitive Waters ____Water Supply Watershed ____(I-IV)

18. Is there a pond or lake located upstream of the evaluation point? YES [✓ NO] If yes, estimate the water surface area:________

19. Does channel appear on USGS quad map? [✓ YES] NO

20. Does channel appear on USDA Soil Survey? [✓ YES] NO

21. Estimated watershed land use: _35_% Residential ____% Commercial ____% Industrial _15_% Agricultural _50_% Forested ____% Cleared / Logged ____% Other (________)

22. Bankfull width: 8 feet

23. Bank height (from bed to top of bank): 2 feet

24. Channel slope down center of stream: ____Flat (0 to 2%) _X_Gentle (2 to 4%) ____Moderate (4 to 10%) ____Steep (>10%)

25. Channel sinuosity: ____Straight _X_Occasional bends ____Frequent meander ____Very sinuous ____Braided channel

Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.

Total Score (from reverse): 59

Comments: Substrate silt, sand, cobble; velocity moderate; clarity turbid

Evaluator's Signature________ **Date** 06/29/12

This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

Stream

SAD

STREAM QUALITY ASSESSMENT WORKSHEET

	#	CHARACTERISTICS	ECOREGION POINT RANGE			SCORE
			Coastal	Piedmont	Mountain	
PHYSICAL	1	**Presence of flow / persistent pools in stream** (no flow or saturation = 0; strong flow = max points)	0 – 5	0 – 4	0 – 5	3
	2	**Evidence of past human alteration** (extensive alteration = 0; no alteration = max points)	0 – 6	0 – 5	0 – 5	3
	3	**Riparian zone** (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0 – 4	0 – 5	2
	4	**Evidence of nutrient or chemical discharges** (extensive discharges = 0; no discharges = max points)	0 – 5	0 – 4	0 – 4	3
	5	**Groundwater discharge** (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 – 3	0 – 4	0 – 4	3
	6	**Presence of adjacent floodplain** (no floodplain = 0; extensive floodplain = max points)	0 – 4	0 – 4	0 – 2	3
	7	**Entrenchment / floodplain access** (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0 – 4	0 – 2	2
	8	**Presence of adjacent wetlands** (no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0 – 4	0 – 2	3
	9	**Channel sinuosity** (extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0 – 3	3
	10	**Sediment input** (extensive deposition= 0; little or no sediment = max points)	0 – 5	0 – 4	0 – 4	3
	11	**Size & diversity of channel bed substrate** (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0 – 4	0 – 5	3
STABILITY	12	**Evidence of channel incision or widening** (deeply incised = 0; stable bed & banks = max points)	0 – 5	0 – 4	0 – 5	3
	13	**Presence of major bank failures** (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0 – 5	0 – 5	3
	14	**Root depth and density on banks** (no visible roots = 0; dense roots throughout = max points)	0 – 3	0 – 4	0 – 5	3
	15	**Impact by agriculture, livestock, or timber production** (substantial impact =0; no evidence = max points)	0 – 5	0 – 4	0 – 5	2
HABITAT	16	**Presence of riffle-pool/ripple-pool complexes** (no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0 – 5	0 – 6	3
	17	**Habitat complexity** (little or no habitat = 0; frequent, varied habitats = max points)	0 – 6	0 – 6	0 – 6	4
	18	**Canopy coverage over streambed** (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0 – 5	0 – 5	3
	19	**Substrate embeddedness** (deeply embedded = 0; loose structure = max)	NA*	0 – 4	0 – 4	3
BIOLOGY	20	**Presence of stream invertebrates** (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 5	0 – 5	1
	21	**Presence of amphibians** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	1
	22	**Presence of fish** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	0
	23	**Evidence of wildlife use** (no evidence = 0; abundant evidence = max points)	0 – 6	0 – 5	0 – 5	4
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on first page)				59

* These characteristics are not assessed in coastal streams.

Mitigation Site 4 USACE 2:1 Ratio

Stream AX01 / CS42

USACE AID#________ DWQ #________ Site # SQ (indicate on attached map)

STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under assessment:

1. Applicant's name: NCDOT

2. Evaluator's name: Atkins / O'Loughlin

3. Date of evaluation: May 9, 2012

4. Time of evaluation: 4:35P

5. Name of stream: UT to North Buffalo Creek

6. River basin: Cape Fear 16-11-14-1

7. Approximate drainage area: 318 acres

8. Stream order: 2

9. Length of reach evaluated: 50 feet

10. County: Guilford

11. Site coordinates (if known): prefer in decimal degrees.

12. Subdivision name (if any): N/A

Latitude (ex. 34.872312): 36.13854

Longitude (ex. –77.556611): -79.71996

Method location determined (circle): [✓ GPS] Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other________

13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location): North of Briarmeade Road

14. Proposed channel work (if any): Highway construction

15. Recent weather conditions: Sunny, warm

16. Site conditions at time of visit: Slow Flow

17. Identify any special waterway classifications known: ___Section 10 ___Tidal Waters ___Essential Fisheries Habitat ___Trout Waters ___Outstanding Resource Waters X Nutrient Sensitive Waters ___Water Supply Watershed ___(I-IV)

18. Is there a pond or lake located upstream of the evaluation point? [✓ YES] NO If yes, estimate the water surface area: 5 ponds 4.8 ac

19. Does channel appear on USGS quad map? [✓ YES] NO

20. Does channel appear on USDA Soil Survey? [✓ YES] NO

21. Estimated watershed land use: 45 % Residential ___% Commercial 15 % Industrial 10 % Agricultural 30 % Forested ___% Cleared / Logged ___% Other (________)

22. Bankfull width: 7 feet

23. Bank height (from bed to top of bank): 4 feet

24. Channel slope down center of stream: ___Flat (0 to 2%) X Gentle (2 to 4%) ___Moderate (4 to 10%) ___Steep (>10%)

25. Channel sinuosity: ___Straight ___Occasional bends X Frequent meander ___Very sinuous ___Braided channel

Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.

Total Score (from reverse): 52 **Comments:** Substrate silt, sand; velocity slow; clarity turbid

Evaluator's Signature________ **Date** 06/28/12

This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

Stream AX01 / CS42
SQ

STREAM QUALITY ASSESSMENT WORKSHEET

	#	CHARACTERISTICS	ECOREGION POINT RANGE			SCORE
			Coastal	Piedmont	Mountain	
PHYSICAL	1	**Presence of flow / persistent pools in stream** (no flow or saturation = 0; strong flow = max points)	0 – 5	0 – 4	0 – 5	2
	2	**Evidence of past human alteration** (extensive alteration = 0; no alteration = max points)	0 – 6	0 – 5	0 – 5	0
	3	**Riparian zone** (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0 – 4	0 – 5	2
	4	**Evidence of nutrient or chemical discharges** (extensive discharges = 0; no discharges = max points)	0 – 5	0 – 4	0 – 4	1
	5	**Groundwater discharge** (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 – 3	0 – 4	0 – 4	3
	6	**Presence of adjacent floodplain** (no floodplain = 0; extensive floodplain = max points)	0 – 4	0 – 4	0 – 2	2
	7	**Entrenchment / floodplain access** (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0 – 4	0 – 2	2
	8	**Presence of adjacent wetlands** (no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0 – 4	0 – 2	4
	9	**Channel sinuosity** (extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0 – 3	3
	10	**Sediment input** (extensive deposition= 0; little or no sediment = max points)	0 – 5	0 – 4	0 – 4	2
	11	**Size & diversity of channel bed substrate** (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0 – 4	0 – 5	1
STABILITY	12	**Evidence of channel incision or widening** (deeply incised = 0; stable bed & banks = max points)	0 – 5	0 – 4	0 – 5	3
	13	**Presence of major bank failures** (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0 – 5	0 – 5	3
	14	**Root depth and density on banks** (no visible roots = 0; dense roots throughout = max points)	0 – 3	0 – 4	0 – 5	2
	15	**Impact by agriculture, livestock, or timber production** (substantial impact =0; no evidence = max points)	0 – 5	0 – 4	0 – 5	4
HABITAT	16	**Presence of riffle-pool/ripple-pool complexes** (no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0 – 5	0 – 6	3
	17	**Habitat complexity** (little or no habitat = 0; frequent, varied habitats = max points)	0 – 6	0 – 6	0 – 6	2
	18	**Canopy coverage over streambed** (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0 – 5	0 – 5	2
	19	**Substrate embeddedness** (deeply embedded = 0; loose structure = max)	NA*	0 – 4	0 – 4	2
BIOLOGY	20	**Presence of stream invertebrates** (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 5	0 – 5	3
	21	**Presence of amphibians** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	3
	22	**Presence of fish** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	2
	23	**Evidence of wildlife use** (no evidence = 0; abundant evidence = max points)	0 – 6	0 – 5	0 – 5	1
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on first page)				52

* These characteristics are not assessed in coastal streams.

Mitigation Site 5 USACE 2:1 Ratio

Stream AR01 / CS38

USACE AID#______ DWQ #______ Site # SL (indicate on attached map)

STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under assessment:

1. Applicant's name: NCDOT
2. Evaluator's name: Atkins / O'Loughlin
3. Date of evaluation: May 9, 2012
4. Time of evaluation: 2:45P
5. Name of stream: UT to North Buffalo Creek
6. River basin: Cape Fear 16-11-14-1
7. Approximate drainage area: 319 acres
8. Stream order: 3
9. Length of reach evaluated: 50 feet
10. County: Guilford
11. Site coordinates (if known): prefer in decimal degrees.
12. Subdivision name (if any): N/A
Latitude (ex. 34.872312): 36.14196
Longitude (ex. –77.556611): -79.72825
Method location determined (circle): [✓ GPS] Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other______
13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location): North of White Rock Road
14. Proposed channel work (if any): Highway construction
15. Recent weather conditions: Sunny, warm
16. Site conditions at time of visit: Moderate Flow
17. Identify any special waterway classifications known: ____Section 10 ____Tidal Waters ____Essential Fisheries Habitat ____Trout Waters ____Outstanding Resource Waters X Nutrient Sensitive Waters ____Water Supply Watershed ____(I-IV)
18. Is there a pond or lake located upstream of the evaluation point? [✓ YES] NO If yes, estimate the water surface area: 0.6 acre
19. Does channel appear on USGS quad map? [✓ YES] NO
20. Does channel appear on USDA Soil Survey? [✓ YES] NO
21. Estimated watershed land use: 25 % Residential ____% Commercial ____% Industrial ____% Agricultural
55 % Forested 20 % Cleared / Logged ____% Other (______)
22. Bankfull width: 8 feet
23. Bank height (from bed to top of bank): 4 feet
24. Channel slope down center of stream: X Flat (0 to 2%) ____Gentle (2 to 4%) ____Moderate (4 to 10%) ____Steep (>10%)
25. Channel sinuosity: ____Straight ____Occasional bends X Frequent meander ____Very sinuous ____Braided channel

Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.

Total Score (from reverse): 57 **Comments:** Substrate silt, boulder; velocity fast; clarity turbid

Evaluator's Signature______ **Date** 06/28/12

This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

Stream AR01 / CS38

SL

STREAM QUALITY ASSESSMENT WORKSHEET

	#	CHARACTERISTICS	ECOREGION POINT RANGE			SCORE
			Coastal	Piedmont	Mountain	
PHYSICAL	1	**Presence of flow / persistent pools in stream** (no flow or saturation = 0; strong flow = max points)	0 – 5	0 – 4	0 – 5	4
	2	**Evidence of past human alteration** (extensive alteration = 0; no alteration = max points)	0 – 6	0 – 5	0 – 5	1
	3	**Riparian zone** (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0 – 4	0 – 5	3
	4	**Evidence of nutrient or chemical discharges** (extensive discharges = 0; no discharges = max points)	0 – 5	0 – 4	0 – 4	2
	5	**Groundwater discharge** (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 – 3	0 – 4	0 – 4	3
	6	**Presence of adjacent floodplain** (no floodplain = 0; extensive floodplain = max points)	0 – 4	0 – 4	0 – 2	1
	7	**Entrenchment / floodplain access** (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0 – 4	0 – 2	1
	8	**Presence of adjacent wetlands** (no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0 – 4	0 – 2	0
	9	**Channel sinuosity** (extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0 – 3	3
	10	**Sediment input** (extensive deposition= 0; little or no sediment = max points)	0 – 5	0 – 4	0 – 4	3
	11	**Size & diversity of channel bed substrate** (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0 – 4	0 – 5	3
STABILITY	12	**Evidence of channel incision or widening** (deeply incised = 0; stable bed & banks = max points)	0 – 5	0 – 4	0 – 5	3
	13	**Presence of major bank failures** (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0 – 5	0 – 5	4
	14	**Root depth and density on banks** (no visible roots = 0; dense roots throughout = max points)	0 – 3	0 – 4	0 – 5	2
	15	**Impact by agriculture, livestock, or timber production** (substantial impact =0; no evidence = max points)	0 – 5	0 – 4	0 – 5	4
HABITAT	16	**Presence of riffle-pool/ripple-pool complexes** (no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0 – 5	0 – 6	3
	17	**Habitat complexity** (little or no habitat = 0; frequent, varied habitats = max points)	0 – 6	0 – 6	0 – 6	3
	18	**Canopy coverage over streambed** (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0 – 5	0 – 5	3
	19	**Substrate embeddedness** (deeply embedded = 0; loose structure = max)	NA*	0 – 4	0 – 4	3
BIOLOGY	20	**Presence of stream invertebrates** (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 5	0 – 5	3
	21	**Presence of amphibians** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	2
	22	**Presence of fish** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	2
	23	**Evidence of wildlife use** (no evidence = 0; abundant evidence = max points)	0 – 6	0 – 5	0 – 5	1
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on first page)				57

* These characteristics are not assessed in coastal streams.

APPENDIX H

PHOTOGRAPHS

Site 2

Site 2

Site 2

Site 2

Site 4

Site 4

Site 4

Site 4

Site 5

Site 5

Site 5

Site 5

TIP PROJECT: U-2525B

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2525B	OSM-1	30

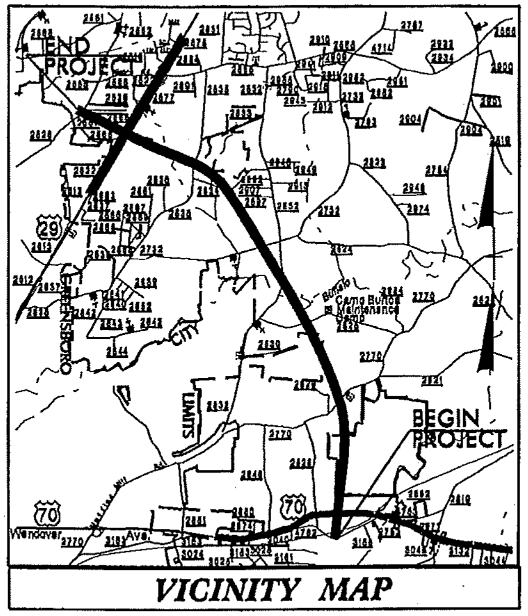
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34821.1.3		PE
34821.2.3		ROW
34821.3.6		CONST.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

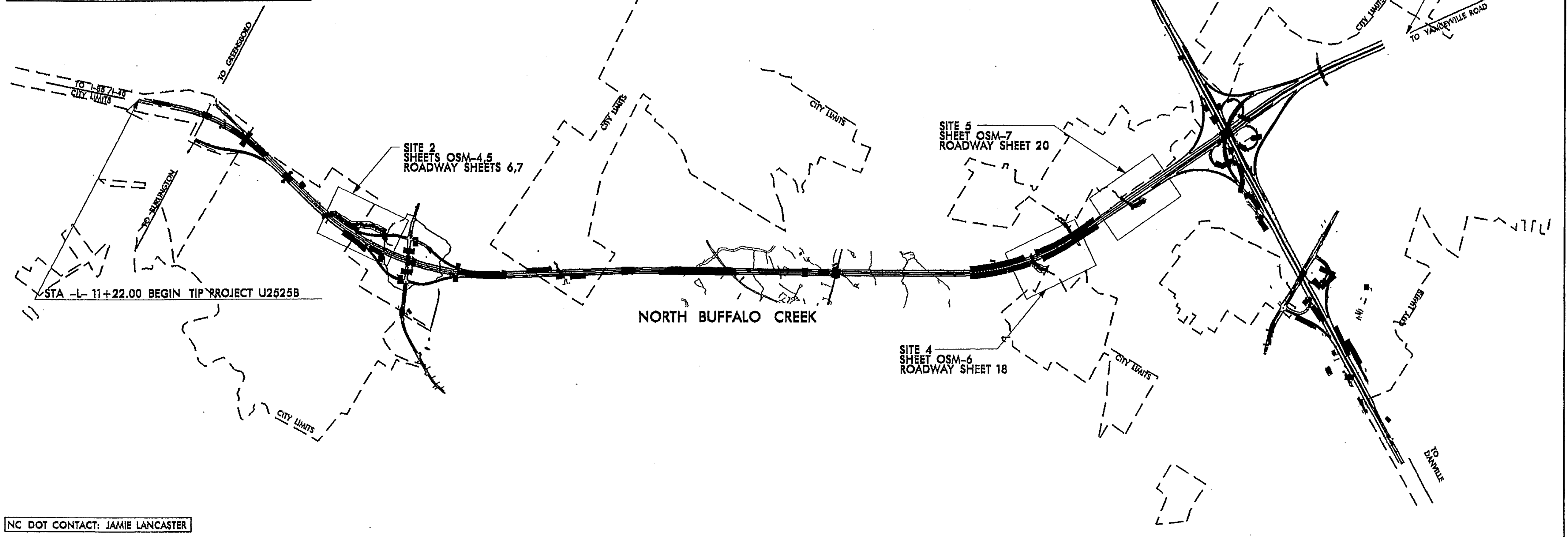
PLAN FOR ON-SITE MITIGATION GUILFORD COUNTY

LOCATION: GREENSBORO EASTERN LOOP FROM NORTH OF US 70 TO US 29 NORTH OF GREENSBORO

TYPE OF WORK: STREAM RELOCATION, STREAM RESTORATION, STREAM ENHANCEMENT


END PROJECT
BEGIN PROJECT
29
70
LIMITS
CITY
Camp Burton Maintenance Center

VICINITY MAP


NAD 83
STA -L- 315+50.50 END TIP PROJECT U2525B
TO GREENSBORO
CITY LIMITS
TO YANCEYVILLE ROAD
TO I-85/I-40
TO BURLINGTON
TO GREENSBORO
SITE 2
SHEETS OSM-4,5
ROADWAY SHEETS 6,7
SITE 5
SHEET OSM-7
ROADWAY SHEET 20
STA -L- 11+22.00 BEGIN TIP PROJECT U2525B
NORTH BUFFALO CREEK
SITE 4
SHEET OSM-6
ROADWAY SHEET 18
TO DANVILLE

NC DOT CONTACT: JAMIE LANCASTER

GRAPHIC SCALES

30 15 0 30 60
PLANS

30 15 0 30 60
PROFILE (HORIZONTAL)

6 3 0 6 12
PROFILE (VERTICAL)

DESIGN DATA

PROJECT LENGTH

MITIGATION SITE	MITIGATION TYPE	LENGTH
SITE 2	RESTORATION/RELOCATION	1,307LF
SITE 4	RESTORATION	386LF
SITE 5	RELOCATION	362LF

PREPARED IN THE OFFICE OF:
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P.O. BOX 33068 – RALEIGH, NORTH CAROLINA 27636-3068
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NC License F-0102

2012 STANDARD SPECIFICATIONS

DESIGN ENGINEER

SEAL 030000
DAREN M. PAIT

SIGNATURE: P.E.

PREPARED IN THE OFFICE OF:

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P.O. BOX 33068 – RALEIGH, NORTH CAROLINA 27636-3068
PHONE: (919) 677-2000 FAX: (919) 677-2050
NC LICENSE F-0102

U-2525B
ON-SITE MITIGATION
GUILFORD COUNTY

PROJECT REFERENCE NO.	SHEET NO.
U2525B	OSM-IA

PROJECT ENGINEER

SEAL 030000
DAREN M. PAIT

APPROVED BY:

DATE:

INDEX OF SHEETS

OSM-1	TITLE SHEET
OSM-1A	INDEX OF SHEETS, CONSTRUCTION SEQUENCING, GENERAL NOTES
OSM-1B	CONVENTIONAL PLAN SHEET SYMBOLS
OSM-2	TYPICAL SECTIONS
OSM-2A	DETAILS -COIR FIBER MATTING -ROCK CROSS VANE -LOG CROSS VANE -STORMWATER STEP POOL PROTECTION STRUCTURE
OSM-2B	-ROCK A-VANE -CONSTRUCTED RIFFLE -ROOTWAD -BOULDER TOE PROTECTION
OSM-2C	-ROCK VANE -LOG VANE -STREAM PLUG
OSM-2D	-PUMP AROUND OPERATION
OSM-2E-2F	-MORPHOLOGICAL TABLES
OSM-3	SUMMARY OF QUANTITIES EARTHWORK SUMMARY
OSM-4-7	PLAN SHEETS
OSM-8-11	PROFILE SHEETS
OSM-12-22	CROSS SECTIONS

GENERAL NOTES

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING STANDARDS:

A) NORTH CAROLINA DEPARTMENT OF TRANSPORTATION 'STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, DATED JANUARY 2012, AND ANY SUPPLEMENTS THERETO ISSUED PRIOR TO THE DATE OF RECEIPT OF BIDS.

B) NORTH CAROLINA DEPARTMENT OF TRANSPORTATION 'ROADWAY STANDARD DRAWINGS, ENGLISH' DATED JANUARY 2012, AND ANY SUPPLEMENTS ISSUED THERETO PRIOR TO THE DATE OF RECEIPT OF BIDS.

ALL RIGHT OF WAY CORNER MARKERS OR FENCING SHALL BE PLACED BY OTHERS AS NECESSARY.

THE CONTRACTOR IS RESPONSIBLE FOR AVOIDING ANY DISTURBANCE OR DAMAGE TO EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR IMMEDIATELY REPAIRING ANY DAMAGES AT A COST INCIDENT TO THIS CONTRACT.

ABANDONED SECTIONS OF THE EXISTING CHANNEL SHALL BE FILLED TO THE MAXIMUM EXTENT FEASIBLE WITH MATERIAL EXCAVATED ON-SITE. THIS EXCAVATED MATERIAL SHALL BE STOCKPILED ADJACENT TO THE REACHES OF CHANNEL OR DITCHES TO BE BACKFILLED.

THE CONTRACTOR MAY UTILIZE THE DESIGNATED STAGING AREA AND THE AREA INSIDE THE PROPOSED RIGHT OF WAY FOR STAGING AND STOCKPILING EQUIPMENT AND MATERIALS.

THE STREAM SHALL BE CONSTRUCTED IN ACCORDANCE TO THE TYPICAL SECTIONS.

SUBSURFACE PLANS: NO SUBSURFACE PLANS ARE AVAILABLE ON THE PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

ROADWAY STANDARD DRAWINGS

(REV. JANUARY 2012)

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN 'ROADWAY STANDARD DRAWINGS' - ROADWAY DESIGN UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 AND THE LATEST REVISION THERETO ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

CONSTRUCTION SEQUENCING

THIS STREAM MITIGATION PROJECT CONSISTS OF THREE SITES. ONCE WORK BEGINS ON A STREAM SITE, THE CONTRACTOR MUST COMPLETE THAT SITE BEFORE MOVING WORK CREWS AND EQUIPMENT TO A DIFFERENT SITE, UNLESS APPROVED TO DO SO BY THE ENGINEER.

LAYOUT LOCATION OF THE NEW STREAM CHANNEL, CONSTRUCTION EASEMENT LIMITS, AND GRADE STAKES. THE ENGINEER MUST INSPECT AND APPROVE ALL LAYOUT WORK BEFORE CONSTRUCTION MAY BEGIN.

MOBILIZE EQUIPMENT AND MATERIALS TO THE SITE.

INSTALL CONSTRUCTION ENTRANCE PER EROSION CONTROL PLAN.

ESTABLISH STAGING AREAS AND MARK CONSTRUCTION EQUIPMENT ACCESS LOCATIONS WITH VISIBLE MARKERS. CONSTRUCTION EQUIPMENT SHALL BE CONTAINED WITHIN THE LIMITS OF CONSTRUCTION AS DEPICTED IN THE PLANS OR SPECIFIED BY THE ENGINEER.

INSTALL TEMPORARY EROSION CONTROL MEASURES.

BEGIN FLOODPLAIN GRADING, INCLUDING EXCAVATION OF BANKFULL BENCHES AT LOCATIONS DEPICTED IN THE PLANS AND AS DIRECTED BY THE ENGINEER. STOCKPILE MATERIALS IN AREAS DESIGNATED ON THE PLANS. KEEP TOPSOIL SEPARATE FROM OTHER STOCKPILE MATERIAL. TOPSOIL MATERIAL WILL BE USED LATER ON FLOODPLAIN.

TOPSOIL SHALL BE EXCAVATED AND STOCKPILED SEPARATELY FROM THE WASTE MATERIAL SO THAT IT CAN BE PLACED BACK ON THE FLOODPLAIN ONCE GRADING IS COMPLETE. NO DIRECT PAYMENT WILL BE MADE FOR THIS EXCAVATION. OVER-EXCAVATE FLOODPLAIN AND FLOODPLAIN SLOPES TO A DEPTH OF 6' BELOW FINAL GRADE AND PLACE 6' OF TOPSOIL TO FILL TO FINAL GRADE. OVER-EXCAVATION SHOULD BEGIN 3' FROM TOP OF BANK AND EXTEND TO EXCAVATION LIMITS. SEE TYPICAL SECTIONS FOR DETAIL.
INSTALL IMPERVIOUS DIKES AND PUMP AROUND SYSTEM TO PUMP STREAM DISCHARGE AROUND THE IMMEDIATE WORK AREA AS NECESSARY.

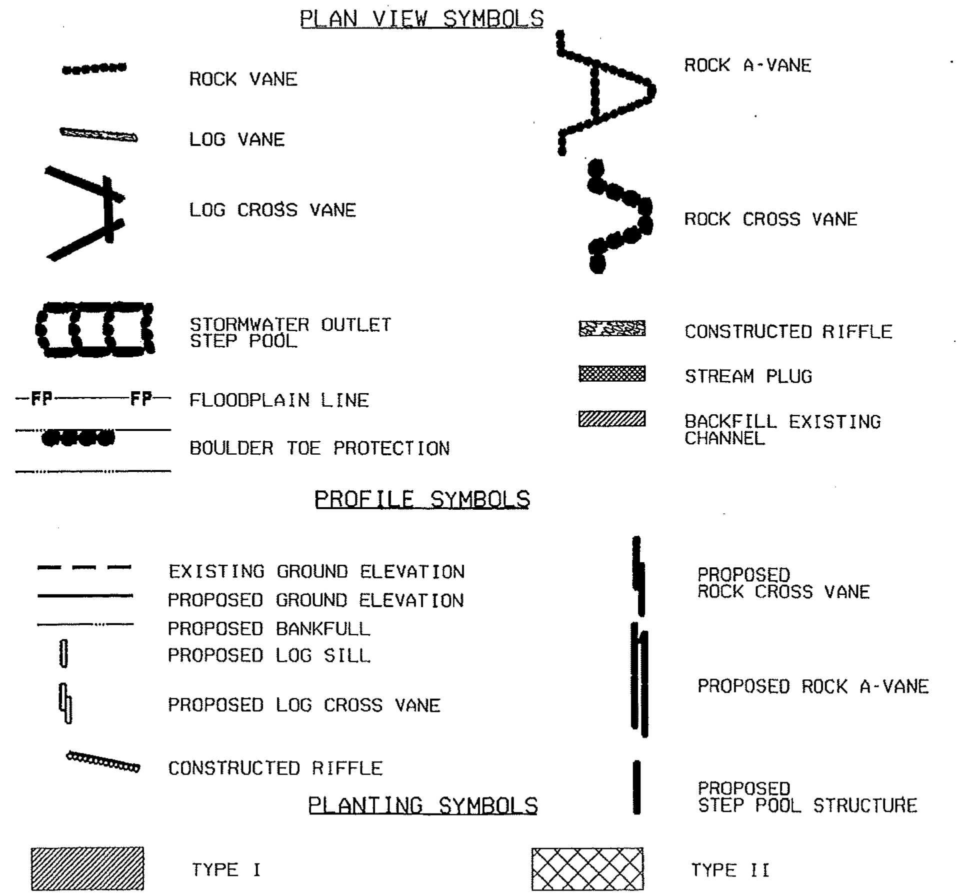
CONSTRUCTION SHALL PROCEED IN SUCCESSIVE REACHES WITH THE UPSTREAM REACH BEING COMPLETED PRIOR TO INITIATING CONSTRUCTION OF THE ADJACENT DOWNSTREAM REACH. EACH REACH SHALL BE LIMITED IN LENGTH TO WORK THAT CAN BE COMPLETED BEFORE ALLOWING WATER TO FLOW THROUGH THAT REACH. COMPLETION OF A REACH SHALL CONSIST OF CHANNEL CONSTRUCTION, FLOODPLAIN GRADING, IN-STREAM STRUCTURE INSTALLATION, BED MATERIAL INSTALLATION, AND EROSION CONTROL MEASURES. CONSTRUCTION SHALL BE DONE IN THE DRY, WITH THE CHANNEL FLOW PUMPED AROUND THE REACH UNDER CONSTRUCTION AS NECESSARY.

AT THE END OF EACH DAY'S CONSTRUCTION WORK, THE CONTRACTOR SHALL SEED ALL DISTURBED AREAS AND COVER THE STREAM BANKS AND BANKFULL BENCHES WITH COIR FIBER MATTING. IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY EROSION CONTROL MEASURES ON A DAILY BASIS THROUGHOUT THE CONSTRUCTION PROCESS.

ONCE NEW CHANNEL CONSTRUCTION IS COMPLETE, THE CONTRACTOR SHALL INSTALL STREAM PLUGS TO DIRECT STREAM FLOW INTO THE NEW CHANNEL. THE CONTRACTOR SHALL THEN FILL IN THE ABANDONED SECTIONS OF THE EXISTING CHANNEL TO THE EXTENT FEASIBLE AND AS DIRECTED BY THE ENGINEER. CONTRACTOR WILL ENSURE THAT VEGETATION HAS BEEN ESTABLISHED ALONG THE BANKS OF THE NEW STREAM CHANNEL BEFORE DIRECTING FLOW INTO THE NEW STREAM CHANNEL. FOR NEW STREAM CHANNEL REACHES WHERE THIS IS NOT POSSIBLE, THE CONTRACTOR SHOULD GET APPROVAL FROM THE ENGINEER BEFORE DIRECTING FLOW INTO THE NEW STREAM CHANNEL.

AFTER ALL IN-STREAM WORK IS COMPLETED, THE CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROL MEASURES AND TEMPORARY STREAM ACCESS AND SCARIFY ANY COMPACTED AREAS AS DIRECTED BY THE ENGINEER. ALL PORTIONS OF THE SITE SHALL BE STABILIZED WITH TEMPORARY EROSION CONTROL MEASURES.

STREAM SYMBOLS



PROJECT REFERENCE NO.	SHEET NO.
U-2525B	0SM-1B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Existing Iron Pin	⊙ EIP
Property Corner	×
Property Monument	⊡ ECM
Parcel/Sequence Number	123
Existing Fence Line	× × ×
Proposed Woven Wire Fence	⊖
Proposed Chain Link Fence	⊟
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	WLB
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	EAB
Existing Endangered Plant Boundary	EPB

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	⊙ S
Well	○ W
Small Mine	⚒
Foundation	▭
Area Outline	▭
Cemetery	†
Building	
School	
Church	
Dam	

HYDROLOGY:

Stream or Body of Water	
Hydro, Pool or Reservoir	
Jurisdictional Stream	JS
Buffer Zone 1	BZ 1
Buffer Zone 2	BZ 2
Flow Arrow	←
Disappearing Stream	>
Spring	⊙
Wetland	⚘
Proposed Lateral, Tail, Head Ditch	⋙ ← FLOW
False Sump	◇

RAILROADS:

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

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	
Proposed Right of Way Line	R/W
Proposed Right of Way Line with Iron Pin and Cap Marker	R/W ▲
Proposed Right of Way Line with Concrete or Granite Marker	▲ R/W
Existing Control of Access	C/A
Proposed Control of Access	C/A
Existing Easement Line	E
Proposed Temporary Construction Easement	E
Proposed Temporary Drainage Easement	TDE
Proposed Permanent Drainage Easement	PDE
Proposed Permanent Utility Easement	PUE

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	C
Proposed Slope Stakes Fill	F
Proposed Wheel Chair Ramp	WCR
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	◑
Pavement Removal	☒

VEGETATION:

Single Tree	✿
Single Shrub	✿
Hedge	
Woods Line	
Orchard	✿ ✿ ✿ ✿
Vineyard	Vineyard

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

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NC LICENSE F–0102

U-2525B
ON-SITE MITIGATION
GUILFORD COUNTY

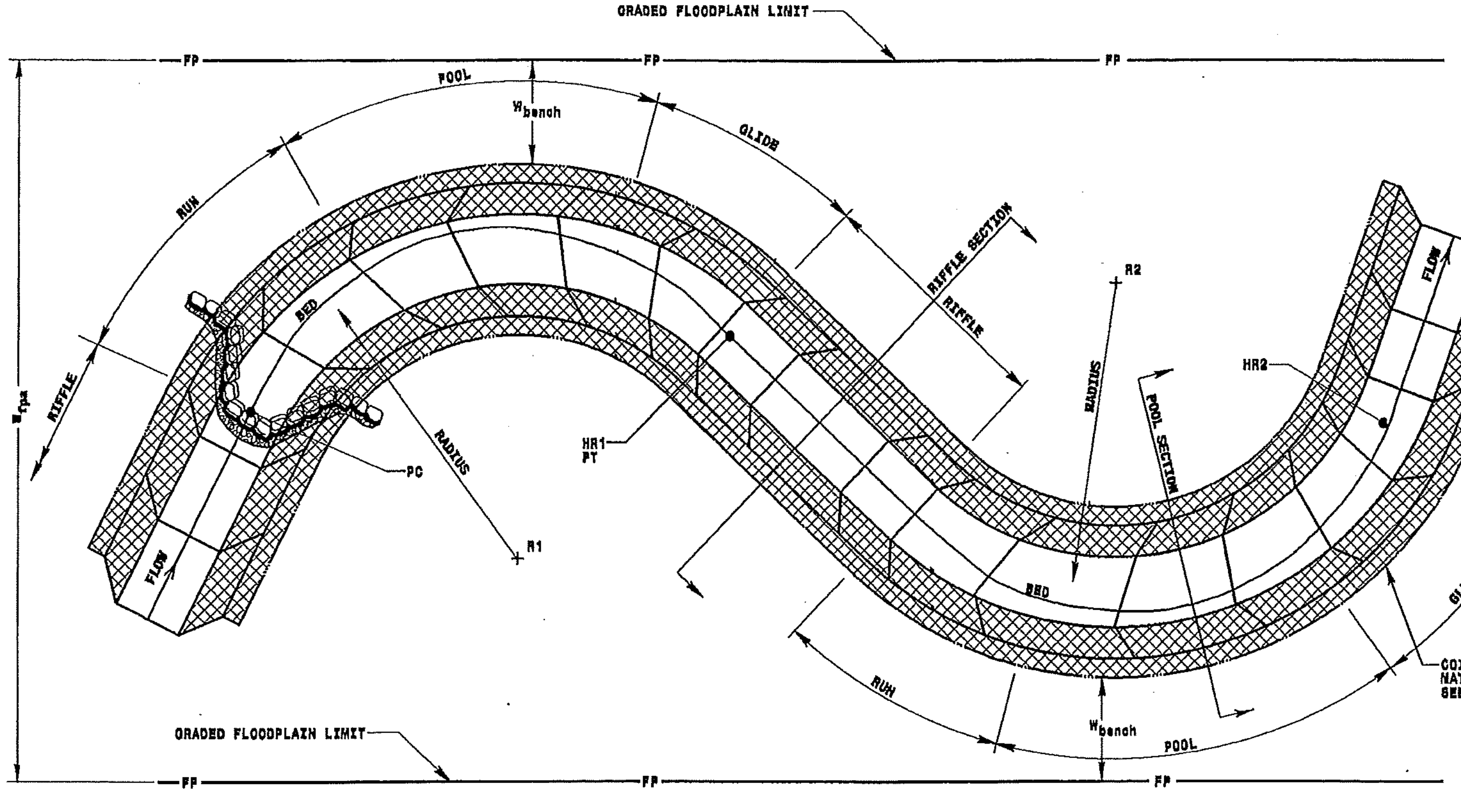
PROJECT REFERENCE NO.	SHEET NO.
U2525B	OSM–2

PROJECT ENGINEER

SEAL 030000 DAREN M. PAIT

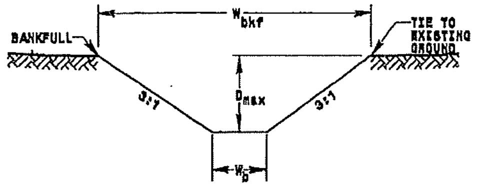
APPROVED BY:

DATE:



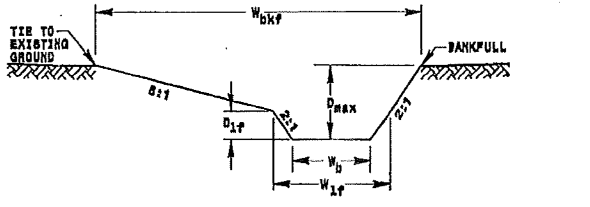
GRADED FLOODPLAIN LIMIT
FP
POOL
W bench
GLIDE
RUN
RIFFLE
RIFFLE SECTION
RIFFLE
W fpa
BED
R2
HR2
RADIUS
POOL SECTION
FLOW
RIFFLE
HR1 PT
PC
RADIUS
R1
FLOW
BED
GLIDE
RUN
COIR FIBER MATTING, SEE DETAIL
W bench
POOL
GRADED FLOODPLAIN LIMIT

TYPICAL PLAN



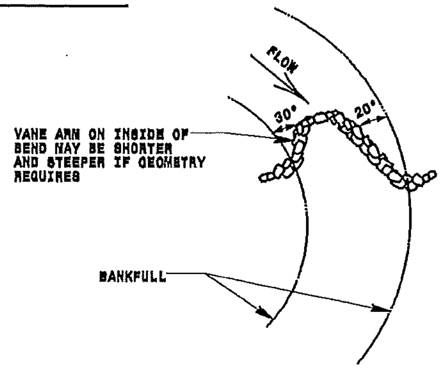
W bkf
BANKFULL
TIE TO EXISTING GROUND
3:1
D max
3:1
W b

TYPICAL RIFFLE



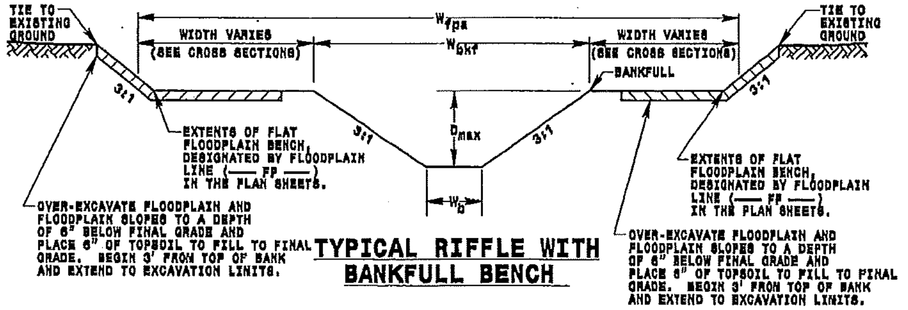
W bkf
TIE TO EXISTING GROUND
BANKFULL
5:1
D max
2:1
2:1
D lf
W b
W lf

TYPICAL POOL



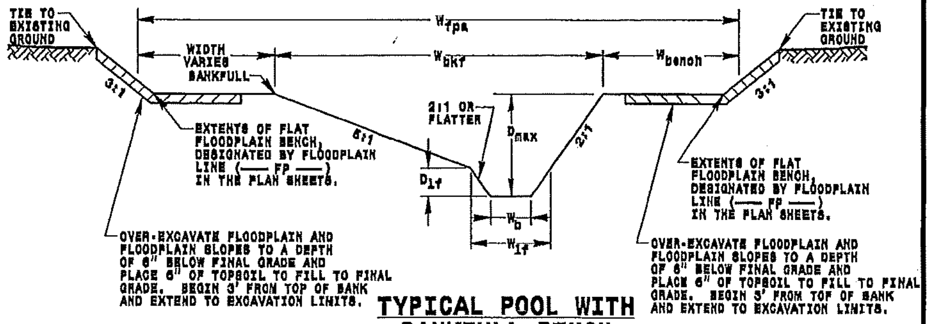
FLOW
30°
20°
VANE ARM ON INSIDE OF BEND MAY BE SHORTER AND STEEPER IF GEOMETRY REQUIRES
BANKFULL

CROSS VANE CONSTRUCTION IN MEANDER-BEND PLAN VIEW



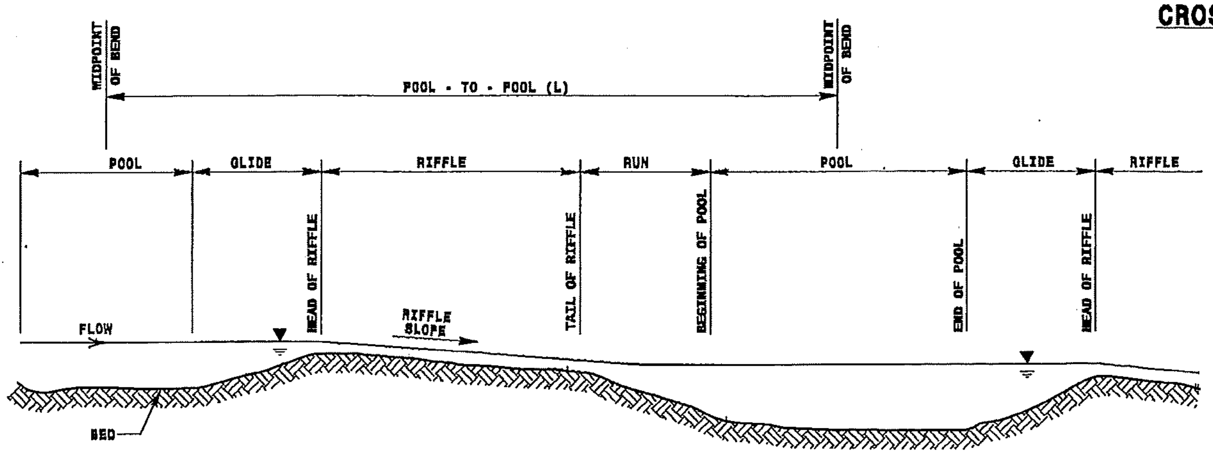
TIE TO EXISTING GROUND
W fpa
WIDTH VARIES (SEE CROSS SECTIONS)
W bkf
WIDTH VARIES (SEE CROSS SECTIONS)
BANKFULL
TIE TO EXISTING GROUND
3:1
3:1
D max
3:1
3:1
W b
EXTENTS OF FLAT FLOODPLAIN BENCH, DESIGNATED BY FLOODPLAIN LINE (— FP —) IN THE PLAN SHEETS.
OVER-EXCAVATE FLOODPLAIN AND FLOODPLAIN SLOPES TO A DEPTH OF 6" BELOW FINAL GRADE AND PLACE 6" OF TOPSOIL TO FILL TO FINAL GRADE. BEGIN 3' FROM TOP OF BANK AND EXTEND TO EXCAVATION LIMITS.
EXTENTS OF FLAT FLOODPLAIN BENCH, DESIGNATED BY FLOODPLAIN LINE (— FP —) IN THE PLAN SHEETS.
OVER-EXCAVATE FLOODPLAIN AND FLOODPLAIN SLOPES TO A DEPTH OF 6" BELOW FINAL GRADE AND PLACE 6" OF TOPSOIL TO FILL TO FINAL GRADE. BEGIN 3' FROM TOP OF BANK AND EXTEND TO EXCAVATION LIMITS.

TYPICAL RIFFLE WITH BANKFULL BENCH



TIE TO EXISTING GROUND
W fpa
WIDTH VARIES
BANKFULL
W bkf
W bench
TIE TO EXISTING GROUND
3:1
2:1 OR FLATTER
D max
5:1
2:1
3:1
D lf
W b
W lf
EXTENTS OF FLAT FLOODPLAIN BENCH, DESIGNATED BY FLOODPLAIN LINE (— FP —) IN THE PLAN SHEETS.
OVER-EXCAVATE FLOODPLAIN AND FLOODPLAIN SLOPES TO A DEPTH OF 6" BELOW FINAL GRADE AND PLACE 6" OF TOPSOIL TO FILL TO FINAL GRADE. BEGIN 3' FROM TOP OF BANK AND EXTEND TO EXCAVATION LIMITS.
EXTENTS OF FLAT FLOODPLAIN BENCH, DESIGNATED BY FLOODPLAIN LINE (— FP —) IN THE PLAN SHEETS.
OVER-EXCAVATE FLOODPLAIN AND FLOODPLAIN SLOPES TO A DEPTH OF 6" BELOW FINAL GRADE AND PLACE 6" OF TOPSOIL TO FILL TO FINAL GRADE. BEGIN 3' FROM TOP OF BANK AND EXTEND TO EXCAVATION LIMITS.

TYPICAL POOL WITH BANKFULL BENCH



MIDPOINT OF BEND
POOL - TO - POOL (L)
MIDPOINT OF BEND
POOL
GLIDE
RIFFLE
RUN
POOL
GLIDE
RIFFLE
HEAD OF RIFFLE
TAIL OF RIFFLE
BEGINNING OF POOL
END OF POOL
HEAD OF RIFFLE
FLOW
RIFFLE SLOPE
BED

TYPICAL PROFILE

NOTES:

1. THE COORDINATES FOR EACH CENTER OF RADIUS (EX. "R1", "R2") AND EACH HEAD OF RIFFLE (EX. "HR1", "HR2") ARE INDICATED ON THE PLAN SHEETS.

W_{bkf} = BANKFULL WIDTH
D_{max} = MAXIMUM DEPTH
W_b = BOTTOM WIDTH
W_{fpa} = FLOOD PRONE AREA WIDTH
W_{lf} = LOW FLOW WIDTH
D_{lf} = LOW FLOW DEPTH

CHANNEL TYPICAL DETAIL

NOT TO SCALE

CROSS-SECTION DIMENSIONS (IN FEET)

		RIFFLE				POOL							
SITE	REACH	W_{bkf}	D_{max}	W_b	W_{fpa}	W_{bkf}	W_{lf}	D_{lf}	D_{max}	W_b	W_{fpa}	W_{bench}	Width/Depth Ratio
SITE 2	Sta. 200+00 - Sta. 205+00	7.2	0.6	2.4	SEE CROSS SECTIONS	9.8	3.4	0.6	1.4	1.0	SEE CROSS SECTIONS	3.5 MIN.	13.5
SITE 2	Sta. 205+00 - Sta. 213+07	7.5	0.6	2.6	SEE CROSS SECTIONS	10.2	3.8	0.7	1.5	1.0	SEE CROSS SECTIONS	3.5 MIN.	13.9
SITE 4	Sta. 400+00 - Sta. 403+85	12.7	1.4	4.3	SEE CROSS SECTIONS	15.8	4.6	0.9	2.5	1.0	SEE CROSS SECTIONS	6.0 MIN.	13.6
SITE 5	Sta. 500+00 - Sta. 503+22	13.7	1.4	5.3	SEE CROSS SECTIONS	17.0	5.6	1.2	2.6	1.4	SEE CROSS SECTIONS	6.5 MIN.	14.1

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NC LICENSE F-0102

U-2525B
ON-SITE MITIGATION
GUILFORD COUNTY

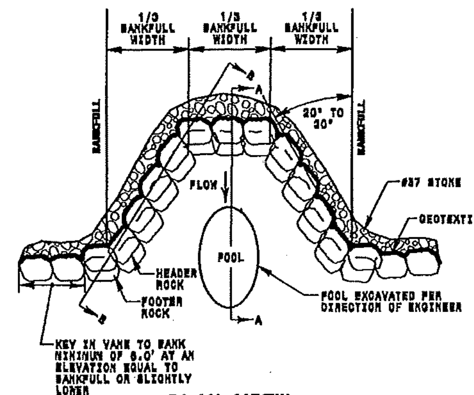
PROJECT REFERENCE NO.	SHEET NO.
U2525B	OSM-2A

PROJECT ENGINEER

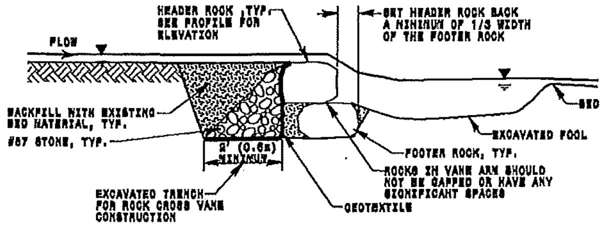
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030000 DAREN M. PAIT

APPROVED BY:

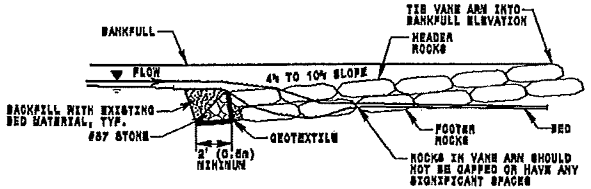
DATE:


1/3 BANKFULL WIDTH
1/3 BANKFULL WIDTH
1/3 BANKFULL WIDTH
BANKFULL
BANKFULL
B
A
20° TO 30°
FLOW
#57 STONE
GEOTEXTILE
POOL
HEADER ROCK
FOOTER ROCK
B
A
POOL EXCAVATED PER DIRECTION OF ENGINEER
KEY IN VANE TO BANK MINIMUM OF 6.0' AT AN ELEVATION EQUAL TO BANKFULL OR SLIGHTLY LOWER

PLAN VIEW


HEADER ROCK, TYP. SEE PROFILE FOR ELEVATION
SET HEADER ROCK BACK A MINIMUM OF 1/3 WIDTH OF THE FOOTER ROCK
FLOW
BED
BACKFILL WITH EXISTING BED MATERIAL, TYP.
EXCAVATED POOL
#57 STONE, TYP.
2' (0.6m) MINIMUM
FOOTER ROCK, TYP.
ROCKS IN VANE ARM SHOULD NOT BE CAPPED OR HAVE ANY SIGNIFICANT SPACES
EXCAVATED TRENCH FOR ROCK CROSS VANE CONSTRUCTION
GEOTEXTILE

SECTION A-A


TIE VANE ARM INTO BANKFULL ELEVATION
BANKFULL
HEADER ROCKS
FLOW
4% TO 10% SLOPE
BACKFILL WITH EXISTING BED MATERIAL, TYP.
#57 STONE
GEOTEXTILE
FOOTER ROCKS
BED
2' (0.6m) MINIMUM
ROCKS IN VANE ARM SHOULD NOT BE CAPPED OR HAVE ANY SIGNIFICANT SPACES

SECTION B-B

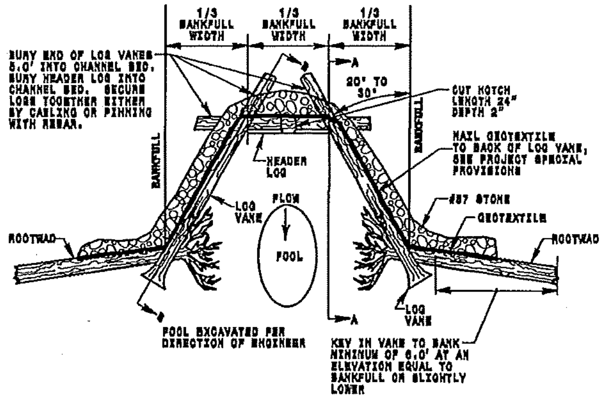
BOULDER SIZE DATA CHART			
REACH	BOULDER DIMENSIONS		
	HEIGHT	WIDTH	LENGTH
SITE 2 REACH 1	2'	3'	4'
SITE 2 REACH 2	2'	3'	4'
SITE 4	2'	3'	4'
SITE 5	2'	3'	4'

NOTE: THESE DIMENSIONS SPECIFY THE MINIMUM BOULDER SIZE

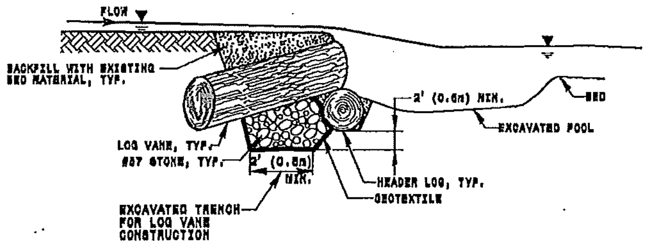
NOTES:
1. DEEPEST PART OF POOL TO BE IN LINE WITH WHERE VANE ARM TIES INTO BANKFULL.
2. DO NOT EXCAVATE POOL TOO CLOSE TO FOOTER BOULDERS.
3. CLASS "A" STONE CAN BE USED TO REDUCE VOIDS BETWEEN HEADERS AND FOOTERS.
4. COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.
5. POOL DEPTH SHOULD BE 2 TO 3 TIMES BANKFULL DEPTH.

ROCK CROSS VANE DETAIL

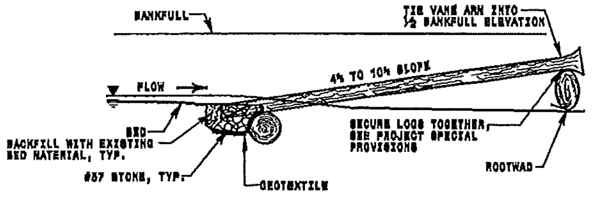
NOT TO SCALE


1/3 BANKFULL WIDTH
1/3 BANKFULL WIDTH
1/3 BANKFULL WIDTH
BURY END OF LOG VANES 5.0' INTO CHANNEL BED. BURY HEADER LOG INTO CHANNEL BED. SECURE LOGS TOGETHER EITHER BY CABLING OR PINNING WITH REBAR.
A
20° TO 30°
CUT NOTCH LENGTH 24" DEPTH 2"
BANKFULL
BANKFULL
HEADER LOG
NAIL GEOTEXTILE TO BACK OF LOG VANE, SEE PROJECT SPECIAL PROVISIONS
LOG VANE
FLOW
#57 STONE
GEOTEXTILE
ROOTWAD
POOL
ROOTWAD
LOG VANE
A
POOL EXCAVATED PER DIRECTION OF ENGINEER
KEY IN VANE TO BANK MINIMUM OF 6.0' AT AN ELEVATION EQUAL TO BANKFULL OR SLIGHTLY LOWER

PLAN VIEW


FLOW
BACKFILL WITH EXISTING BED MATERIAL, TYP.
2' (0.6m) MIN.
BED
EXCAVATED POOL
LOG VANE, TYP.
#57 STONE, TYP.
2' (0.6m) MIN.
HEADER LOG, TYP.
GEOTEXTILE
EXCAVATED TRENCH FOR LOG VANE CONSTRUCTION

SECTION A-A

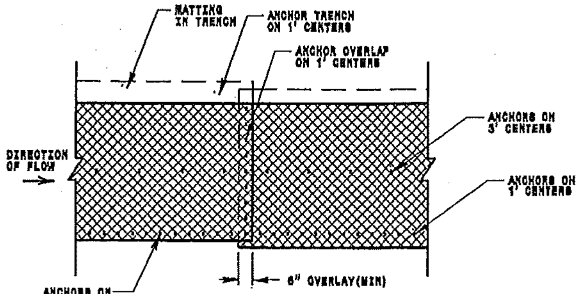

BANKFULL
TIE VANE ARM INTO ½ BANKFULL ELEVATION
4% TO 10% SLOPE
FLOW
BED
BACKFILL WITH EXISTING BED MATERIAL, TYP.
SECURE LOGS TOGETHER, SEE PROJECT SPECIAL PROVISIONS
ROOTWAD
#57 STONE, TYP.
GEOTEXTILE

SECTION B-B

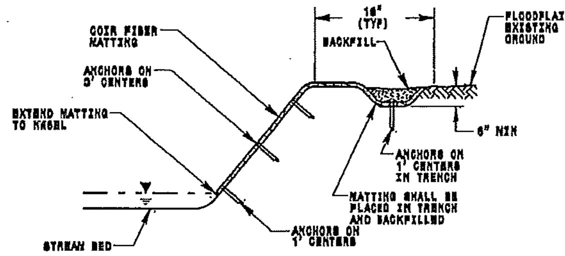
NOTES:
1. DEEPEST PART OF POOL TO BE IN LINE WITH WHERE VANE ARM TIES INTO BANKFULL.
2. DO NOT EXCAVATE POOL TOO CLOSE TO FOOTER BOULDERS.
3. CLASS "A" STONE CAN BE USED TO REDUCE VOIDS BETWEEN HEADERS AND FOOTERS.
4. COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.
5. POOL DEPTH SHOULD BE 2 TO 3 TIMES BANKFULL DEPTH.

LOG CROSS VANE DETAIL

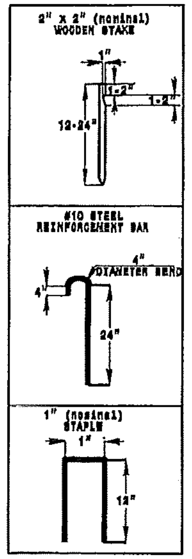
NOT TO SCALE


MATTING IN TRENCH
ANCHOR TRENCH ON 1' CENTERS
ANCHOR OVERLAP ON 1' CENTERS
ANCHORS ON 3' CENTERS
DIRECTION OF FLOW
ANCHORS ON 1' CENTERS
ANCHORS ON 1' CENTERS
6" OVERLAY(MIN)

PLAN VIEW


18" (TYP)
COIR FIBER MATTING
BACKFILL
FLOODPLAIN/ EXISTING GROUND
ANCHORS ON 3' CENTERS
EXTEND MATTING TO KESEL
6" MIN
ANCHORS ON 1' CENTERS IN TRENCH
MATTING SHALL BE PLACED IN TRENCH AND BACKFILLED
ANCHORS ON 1' CENTERS
STREAM BED

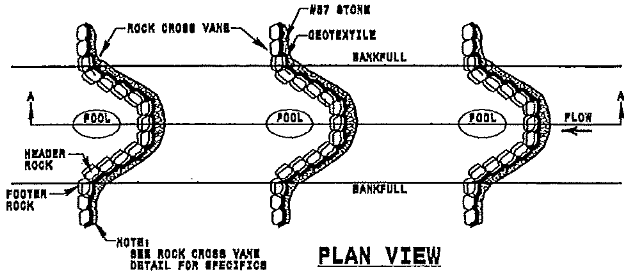
TYPICAL CROSS SECTION


2" x 2" (nominal) WOODEN STAKE
1"
1-2"
1-2"
12-24"
#10 STEEL REINFORCEMENT BAR
4" DIAMETER BEND
4"
24"
1" (nominal) STAPLE
1"
12"

ANCHOR OPTIONS

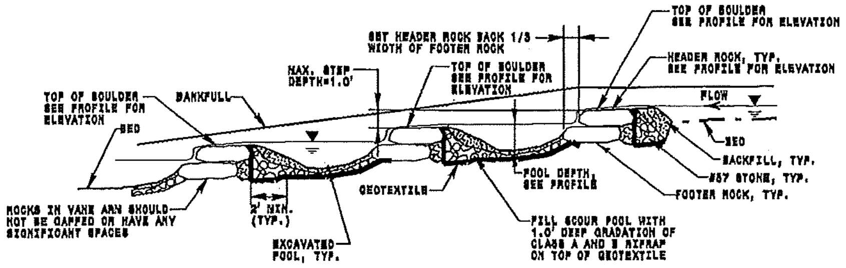
COIR FIBER MATTING DETAIL

NOT TO SCALE


ROCK CROSS VANE
#57 STONE
GEOTEXTILE
BANKFULL
A
POOL
POOL
POOL
FLOW
A
HEADER ROCK
FOOTER ROCK
BANKFULL
NOTE: SEE ROCK CROSS VANE DETAIL FOR SPECIFICS

PLAN VIEW

NOTES:
1. STEPS TO BE SHORT, FREQUENT, AND CLOSELY SPACED.
2. POOL SPACING SHALL BE INVERSELY PROPORTIONAL TO STREAM SLOPE. SEE CHANNEL PROFILE FOR SPACING AND ELEVATIONS
3. ADEQUATE NUMBER OF FOOTER BOULDERS TO BE USED IN ORDER TO HOLD UP THE BOULDERS AT HEAD OF STEPS DURING HIGH ENERGY/HIGH FLOW EVENTS.
4. MINIMUM BOULDER SIZE=30"


TOP OF BOULDER SEE PROFILE FOR ELEVATION
SET HEADER ROCK BACK 1/3 WIDTH OF FOOTER ROCK
HEADER ROCK, TYP. SEE PROFILE FOR ELEVATION
MAX. STEP DEPTH=1.0'
TOP OF BOULDER SEE PROFILE FOR ELEVATION
TOP OF BOULDER SEE PROFILE FOR ELEVATION
BANKFULL
FLOW
BED
BED
BACKFILL, TYP.
#57 STONE, TYP.
GEOTEXTILE
POOL DEPTH, SEE PROFILE
FOOTER ROCK, TYP.
ROCKS IN VANE ARM SHOULD NOT BE CAPPED OR HAVE ANY SIGNIFICANT SPACES
2' MIN. (TYP.)
EXCAVATED POOL, TYP.
FILL SCOUR POOL WITH 1.0' DEEP GRADATION OF CLASS A AND B RIPRAP ON TOP OF GEOTEXTILE

SECTION A-A

STORMWATER STEP POOL PROTECTION STRUCTURE

NOT TO SCALE

PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.

P.O. BOX 33068 – RALEIGH, NORTH CAROLINA 27636-3068
PHONE: (919) 677-2000 FAX: (919) 677-2050
NC LICENSE F-0102

U-2525B
ON-SITE MITIGATION
GUILFORD COUNTY

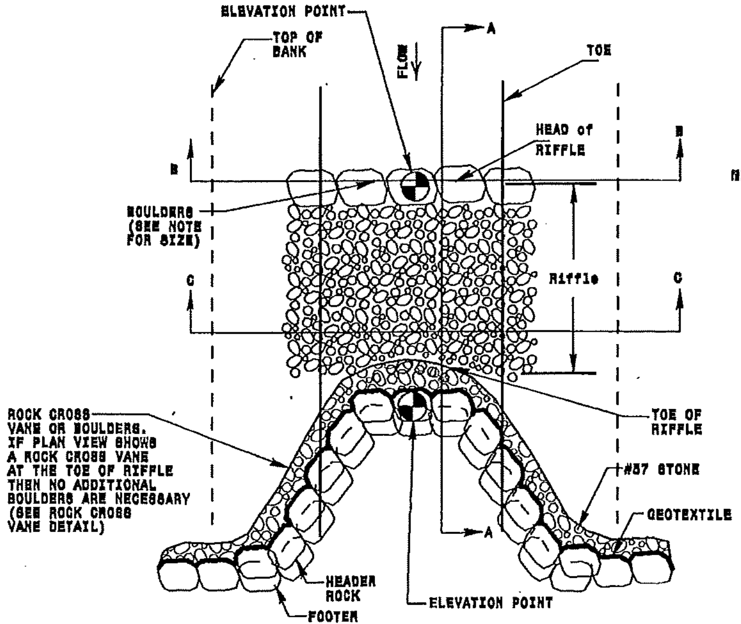
PROJECT REFERENCE NO.	SHEET NO.
U2525B	OSM-2B

PROJECT ENGINEER

SEAL 030000
DAREN M. PAIT

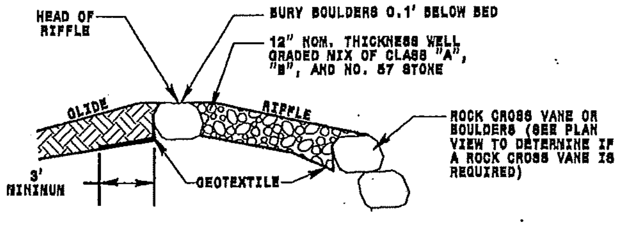
APPROVED BY:

DATE:



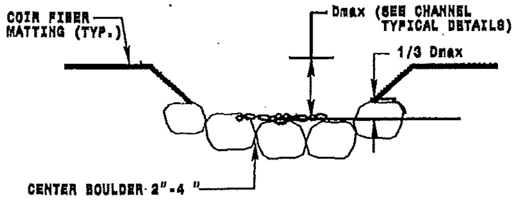
ELEVATION POINT
TOP OF BANK
FLOW
A
TOE
HEAD of RIFFLE
B
BOULDERS (SEE NOTE FOR SIZE)
C
Riffle
ROCK CROSS VANE OR BOULDERS. IF PLAN VIEW SHOWS A ROCK CROSS VANE AT THE TOE OF RIFFLE THEN NO ADDITIONAL BOULDERS ARE NECESSARY (SEE ROCK CROSS VANE DETAIL)
TOE OF RIFFLE
#57 STONE
GEOTEXTILE
HEADER ROCK
FOOTER ROCK
ELEVATION POINT

PLAN VIEW



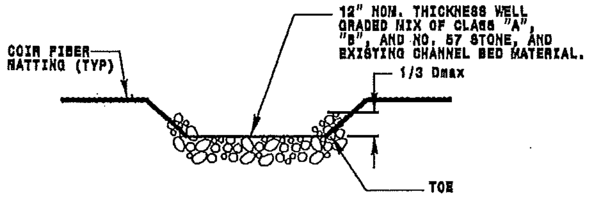
HEAD OF RIFFLE
BURY BOULDERS 0.1' BELOW BED
12" NOM. THICKNESS WELL GRADED MIX OF CLASS "A", "B", AND NO. 57 STONE
GLIDE
RIFFLE
ROCK CROSS VANE OR BOULDERS (SEE PLAN VIEW TO DETERMINE IF A ROCK CROSS VANE IS REQUIRED)
3' MINIMUM
GEOTEXTILE

SECTION A-A



COIR FIBER MATTING (TYP.)
Dmax (SEE CHANNEL TYPICAL DETAILS)
1/3 Dmax
CENTER BOULDER 2"-4 "

SECTION B-B



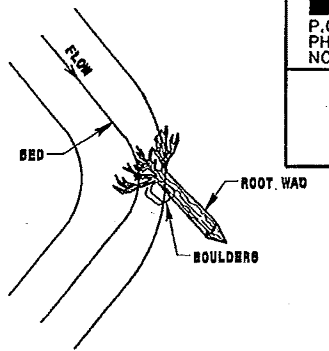
12" NOM. THICKNESS WELL GRADED MIX OF CLASS "A", "B", AND NO. 57 STONE, AND EXISTING CHANNEL BED MATERIAL.
COIR FIBER MATTING (TYP)
1/3 Dmax
TOE

SECTION C-C

NOTE:
1. BOULDERS SHOULD BE NATIVE STONES OR SHOT ROCK, ANGULAR AND OBLONG, WITH AN AXIS APPROXIMATELY 4'Lx3'Wx2'D
2. NOT ALL CONSTRUCTED RIFFLES REQUIRE A ROCK CROSS VANE ON THE TOE OF RIFFLE.
3. IF NO ROCK CROSS VANE IS PROPOSED AT THE TOE OF RIFFLE, INSTALL BOULDERS AT THE TOE OF RIFFLE TO SECURE CONSTRUCTED RIFFLE MATERIAL.

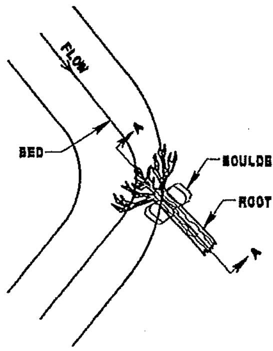
CONSTRUCTED RIFFLE DETAIL

NOT TO SCALE



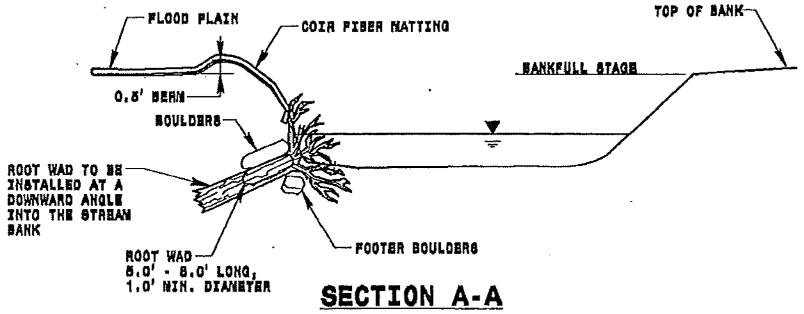
FLOW
BED
ROOT WAD
BOULDERS

PLAN VIEW
DRIVE POINT METHOD



FLOW
BED
A
BOULDERS
ROOT WAD
A

PLAN VIEW
TRENCHING METHOD



FLOOD PLAIN
COIR FIBER MATTING
TOP OF BANK
BANKFULL STAGE
0.5' BERM
BOULDERS
ROOT WAD TO BE INSTALLED AT A DOWNWARD ANGLE INTO THE STREAM BANK
ROOT WAD 5.0' - 8.0' LONG, 1.0' MIN. DIAMETER
FOOTER BOULDERS

SECTION A-A

NOTES:

ORIENT ROOT WADS SO THAT THE STREAM FLOW MEETS THE ROOT WAD STRAIGHT ON, DEFLECTING THE WATER AWAY FROM THE BANK.

METHODS OF INSTALLATION:

DRIVE POINT METHOD:

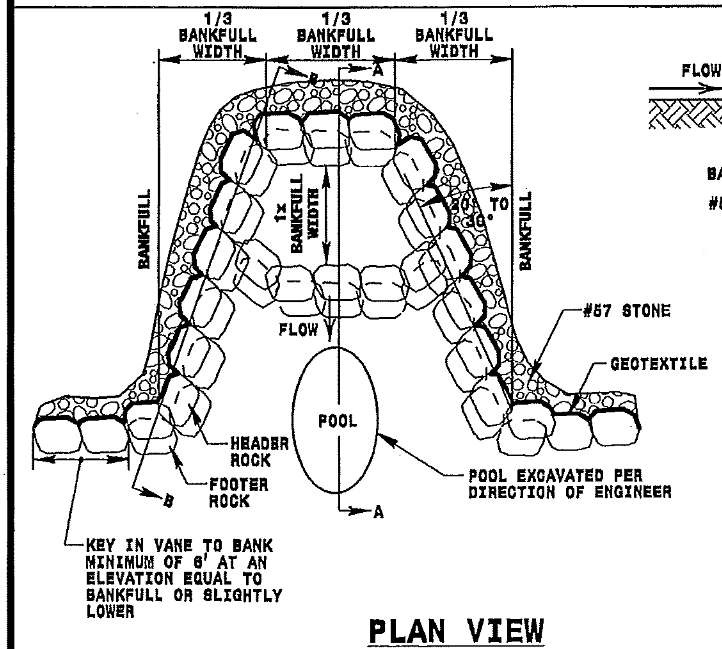
SHARPEN THE END OF THE LOG BEFORE "DRIVING" AT A DOWNWARD ANGLE INTO THE BANK. BOULDER SHOULD BE PLACED ON EACH SIDE OF THE ROOT WAD TO PIN IT IN PLACE. THE BOULDERS SHALL BE APPROXIMATELY 2' X 3' X 4'. ONE-THIRD OF THE ROOT WAD SHOULD REMAIN BELOW NORMAL BASE FLOW CONDITIONS.

TRENCHING METHOD:

IF THE ROOT WAD CANNOT BE DRIVEN INTO THE BANK OR THE BANK NEEDS TO BE RECONSTRUCTED, THE TRENCHING METHOD SHOULD BE USED. THIS METHOD REQUIRES THAT A TRENCH BE EXCAVATED FOR THE LOG PORTION OF THE ROOT WAD. IN THIS CASE, FOOTER BOUDERS SHOULD BE INSTALLED UNDERNEATH THE ROOT WAD IN A TRENCH EXCAVATED PARALLEL TO THE BANK AND WELL BELOW THE STREAM BED. BOULDERS SHOULD BE PLACED ON EACH SIDE OF THE ROOTWAD TO PIN IT IN PLACE. THE BOULDERS SHOULD BE APPROXIMATELY 2' X 3' X 4'. ONE-THIRD OF THE ROOT WAD SHOULD REMAIN BELOW NORMAL BASE FLOW CONDITIONS.

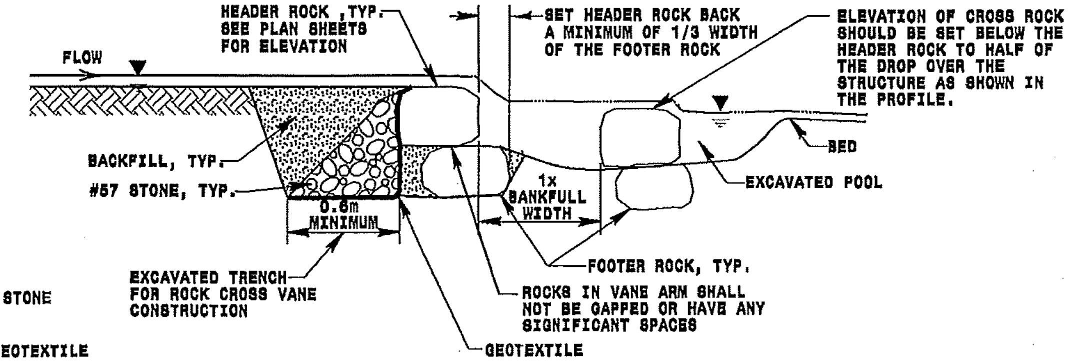
ROOT WAD DETAIL

NOT TO SCALE



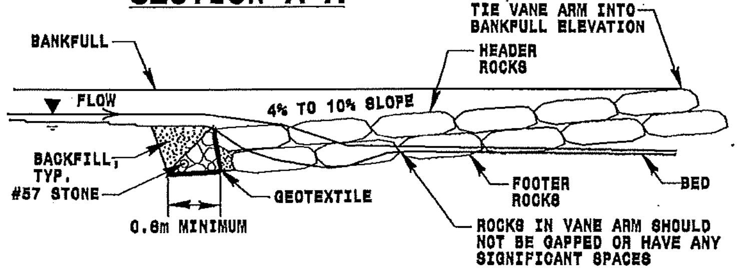
1/3 BANKFULL WIDTH
1/3 BANKFULL WIDTH
1/3 BANKFULL WIDTH
B
A
BANKFULL
1x BANKFULL WIDTH
20° TO 30°
BANKFULL
FLOW
#57 STONE
GEOTEXTILE
POOL
HEADER ROCK
FOOTER ROCK
B
A
POOL EXCAVATED PER DIRECTION OF ENGINEER
KEY IN VANE TO BANK MINIMUM OF 6' AT AN ELEVATION EQUAL TO BANKFULL OR SLIGHTLY LOWER

PLAN VIEW



HEADER ROCK ,TYP. SEE PLAN SHEETS FOR ELEVATION
SET HEADER ROCK BACK A MINIMUM OF 1/3 WIDTH OF THE FOOTER ROCK
ELEVATION OF CROSS ROCK SHOULD BE SET BELOW THE HEADER ROCK TO HALF OF THE DROP OVER THE STRUCTURE AS SHOWN IN THE PROFILE.
FLOW
BED
BACKFILL, TYP.
#57 STONE, TYP.
EXCAVATED POOL
0.6m MINIMUM
1x BANKFULL WIDTH
FOOTER ROCK, TYP.
EXCAVATED TRENCH FOR ROCK CROSS VANE CONSTRUCTION
ROCKS IN VANE ARM SHALL NOT BE GAPPED OR HAVE ANY SIGNIFICANT SPACES
GEOTEXTILE

SECTION A-A



BANKFULL
TIE VANE ARM INTO BANKFULL ELEVATION
HEADER ROCKS
FLOW
4% TO 10% SLOPE
BACKFILL, TYP.
#57 STONE
GEOTEXTILE
FOOTER ROCKS
BED
0.6m MINIMUM
ROCKS IN VANE ARM SHOULD NOT BE GAPPED OR HAVE ANY SIGNIFICANT SPACES

SECTION B-B

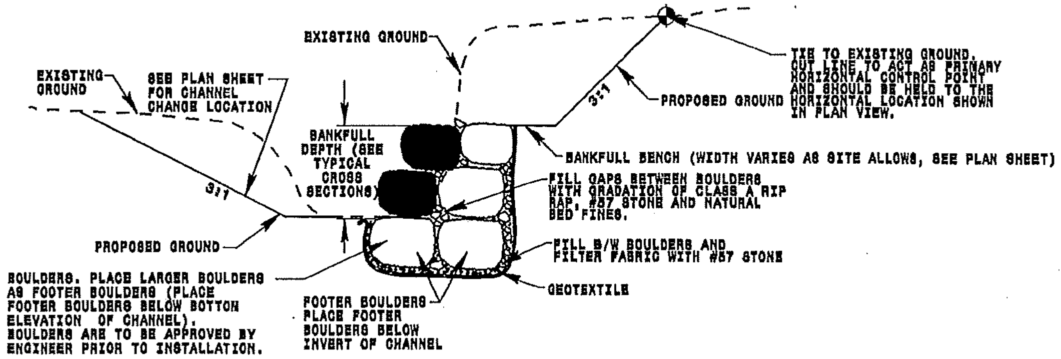
BOULDER SIZE DATA CHART			
	BOULDER DIMENSIONS		
REACH	HEIGHT	WIDTH	LENGTH
SITE 2 REACH 1	2'	3'	4'
SITE 2 REACH 2	2'	3'	4'
SITE 4	2'	3'	4'
SITE 5	2'	3'	4'

NOTE: THESE DIMENSIONS SPECIFY THE MINIMUM BOULDER SIZE

NOTES:
1. DEEPEST PART OF POOL TO BE IN LINE WITH WHERE VANE ARM TIES INTO BANKFULL.
2. DO NOT EXCAVATE POOL TOO CLOSE TO FOOTER BOULDERS.
3. CLASS "A" STONE CAN BE USED TO REDUCE VOIDS BETWEEN HEADERS AND FOOTERS.
4. COMPACT BANKFULL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.
5. POOL DEPTH SHOULD BE 2 TO 3 TIMES BANKFULL DEPTH.

ROCK A VANE DETAIL

NOT TO SCALE



EXISTING GROUND
EXISTING GROUND
SEE PLAN SHEET FOR CHANNEL CHANGE LOCATION
TIE TO EXISTING GROUND. CUT LINE TO ACT AS PRIMARY HORIZONTAL CONTROL POINT AND SHOULD BE HELD TO THE HORIZONTAL LOCATION SHOWN IN PLAN VIEW.
3:1
PROPOSED GROUND
BANKFULL DEPTH (SEE TYPICAL CROSS SECTIONS)
BANKFULL BENCH (WIDTH VARIES AS SITE ALLOWS, SEE PLAN SHEET)
3:1
FILL GAPS BETWEEN BOULDERS WITH GRADATION OF CLASS A RIP RAP, #57 STONE AND NATURAL BED FINES.
PROPOSED GROUND
FILL B/W BOULDERS AND FILTER FABRIC WITH #57 STONE
GEOTEXTILE
BOULDERS. PLACE LARGER BOULDERS AS FOOTER BOULDERS (PLACE FOOTER BOULDERS BELOW BOTTON ELEVATION OF CHANNEL). BOULDERS ARE TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION.
FOOTER BOULDERS PLACE FOOTER BOULDERS BELOW INVERT OF CHANNEL

BOULDER TOE PROTECTION

NOT TO SCALE

PREPARED IN THE OFFICE OF:

Kimley-Horn
and Associates, Inc.

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PHONE: (919) 677–2000 FAX: (919) 677–2050
NC LICENSE F–0102

U-2525B
ON-SITE MITIGATION
GUILFORD COUNTY

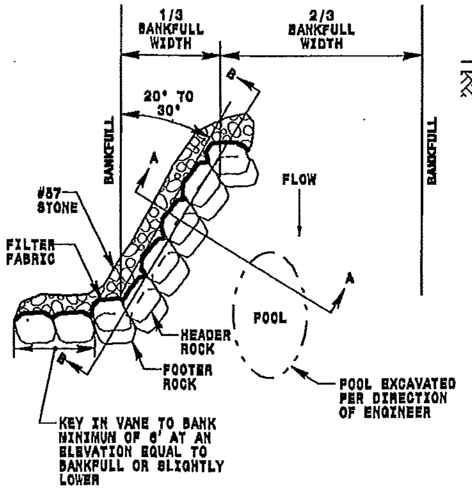
PROJECT REFERENCE NO.	SHEET NO.
U2525B	OSM-2C

PROJECT ENGINEER

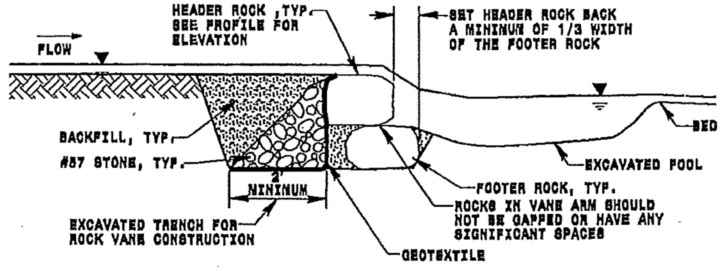
SEAL 030000
DAREN M. PAIT

APPROVED BY:

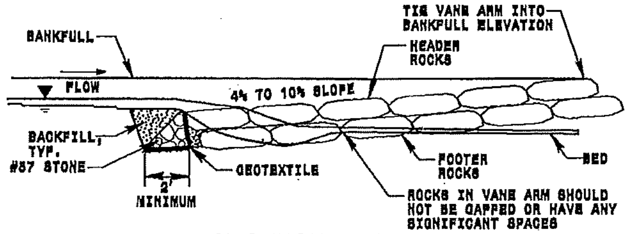
DATE:


1/3 BANKFULL WIDTH
2/3 BANKFULL WIDTH
20° TO 30°
B
BANKFULL
BANKFULL
A
#57 STONE
FLOW
FILTER FABRIC
A
POOL
HEADER ROCK
FOOTER ROCK
B
POOL EXCAVATED PER DIRECTION OF ENGINEER
KEY IN VANE TO BANK MINIMUN OF 6' AT AN ELEVATION EQUAL TO BANKFULL OR SLIGHTLY LOWER

PLAN VIEW


HEADER ROCK ,TYP. SEE PROFILE FOR ELEVATION
SET HEADER ROCK BACK A MINIMUM OF 1/3 WIDTH OF THE FOOTER ROCK
FLOW
BANKFULL
BED
BACKFILL, TYP.
#57 STONE, TYP.
EXCAVATED POOL
2' MINIMUM
FOOTER ROCK, TYP.
EXCAVATED TRENCH FOR ROCK VANE CONSTRUCTION
ROCKS IN VANE ARM SHOULD NOT BE GAPPED OR HAVE ANY SIGNIFICANT SPACES
GEOTEXTILE

SECTION A-A


TIE VANE ARM INTO BANKFULL ELEVATION
BANKFULL
HEADER ROCKS
FLOW
4% TO 10% SLOPE
BACKFILL, TYP.
#57 STONE
GEOTEXTILE
FOOTER ROCKS
BED
2' MINIMUM
ROCKS IN VANE ARM SHOULD NOT BE GAPPED OR HAVE ANY SIGNIFICANT SPACES

SECTION B-B

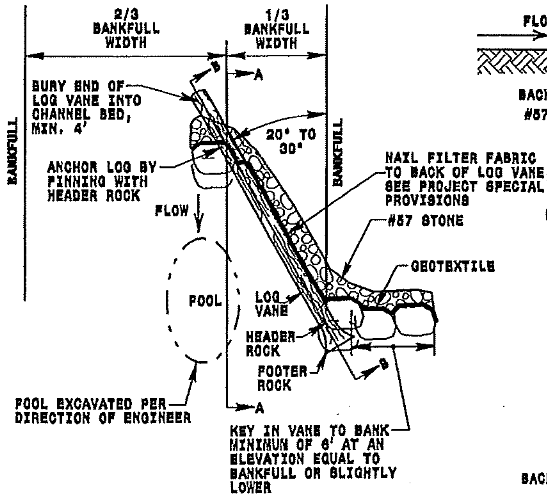
BOULDER SIZE DATA CHART			
	BOULDER DIMENSIONS		
REACH	HEIGHT	WIDTH	LENGTH
SITE 2 REACH 1	2'	3'	4'
SITE 2 REACH 2	2'	3'	4'
SITE 4	2'	3'	4'
SITE 5	2'	3'	4'

NOTE: THESE DIMENSIONS SPECIFY THE MINIMUM BOULDER SIZE

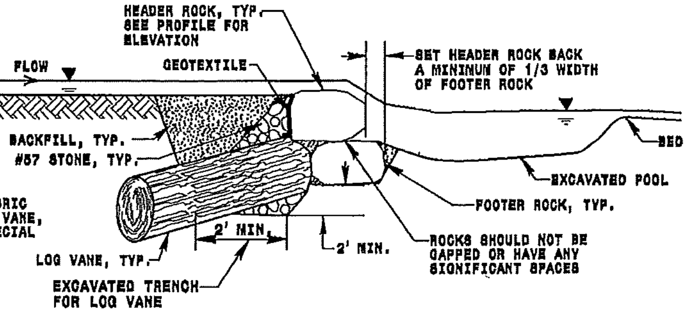
NOTES:
1. DEEPEST PART OF POOL TO BE IN LINE WITH WHERE VANE ARM TIES INTO BANKFULL.
2. DO NOT EXCAVATE POOL TOO CLOSE TO FOOTER BOULDERS.
3. CLASS "A" STONE CAN BE USED TO REDUCE VOIDS BETWEEN HEADERS AND FOOTERS.
4. COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.
5. POOL DEPTH SHOULD BE 2 TO 3 TIMES BANKFULL DEPTH.

ROCK VANE DETAIL

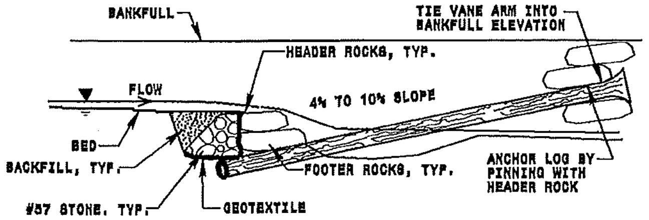
NOT TO SCALE


2/3 BANKFULL WIDTH
1/3 BANKFULL WIDTH
BANKFULL
BANKFULL
B
A
BURY END OF LOG VANE INTO CHANNEL BED, MIN. 4'
20° TO 30°
ANCHOR LOG BY PINNING WITH HEADER ROCK
NAIL FILTER FABRIC TO BACK OF LOG VANE, SEE PROJECT SPECIAL PROVISIONS
FLOW
#57 STONE
GEOTEXTILE
POOL
LOG VANE
HEADER ROCK
FOOTER ROCK
B
A
POOL EXCAVATED PER DIRECTION OF ENGINEER
KEY IN VANE TO BANK MINIMUN OF 6' AT AN ELEVATION EQUAL TO BANKFULL OR SLIGHTLY LOWER

PLAN VIEW


HEADER ROCK, TYP. SEE PROFILE FOR ELEVATION
SET HEADER ROCK BACK A MINIMUN OF 1/3 WIDTH OF FOOTER ROCK
FLOW
GEOTEXTILE
BED
BACKFILL, TYP.
#57 STONE, TYP.
EXCAVATED POOL
FOOTER ROCK, TYP.
2' MIN.
2' MIN.
LOG VANE, TYP.
ROCKS SHOULD NOT BE GAPPED OR HAVE ANY SIGNIFICANT SPACES
EXCAVATED TRENCH FOR LOG VANE CONSTRUCTION

SECTION A-A


BANKFULL
TIE VANE ARM INTO BANKFULL ELEVATION
HEADER ROCKS, TYP.
FLOW
4% TO 10% SLOPE
BED
BACKFILL, TYP.
FOOTER ROCKS, TYP.
ANCHOR LOG BY PINNING WITH HEADER ROCK
#57 STONE. TYP.
GEOTEXTILE

SECTION B-B

BOULDER SIZE DATA CHART			
	BOULDER DIMENSIONS		
REACH	HEIGHT	WIDTH	LENGTH
SITE 2 REACH 1	2'	3'	4'
SITE 2 REACH 2	2'	3'	4'
SITE 4	2'	3'	4'
SITE 5	2'	3'	4'

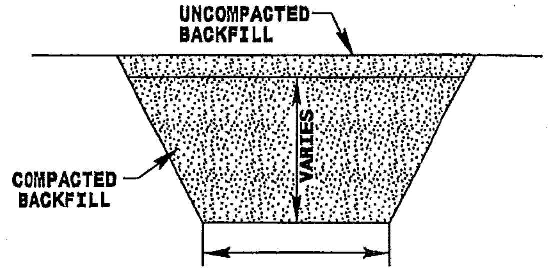
NOTE: THESE DIMENSIONS SPECIFY THE MINIMUM BOULDER SIZE

NOTES:
1. DEEPEST PART OF POOL TO BE IN LINE WITH WHERE VANE ARM TIES INTO BANKFULL.
2. DO NOT EXCAVATE POOL TOO CLOSE TO FOOTER BOULDERS.
3. CLASS "A" STONE CAN BE USED TO REDUCE VOIDS BETWEEN HEADERS AND FOOTERS.
4. COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.
5. POOL DEPTH SHOULD BE 2 TO 3 TIMES BANKFULL DEPTH.

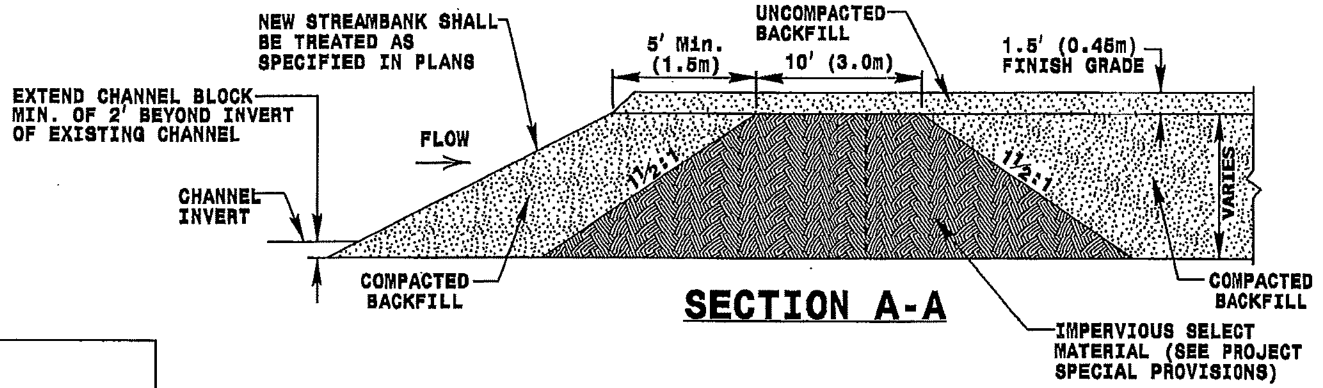
LOG VANE DETAIL

NOT TO SCALE

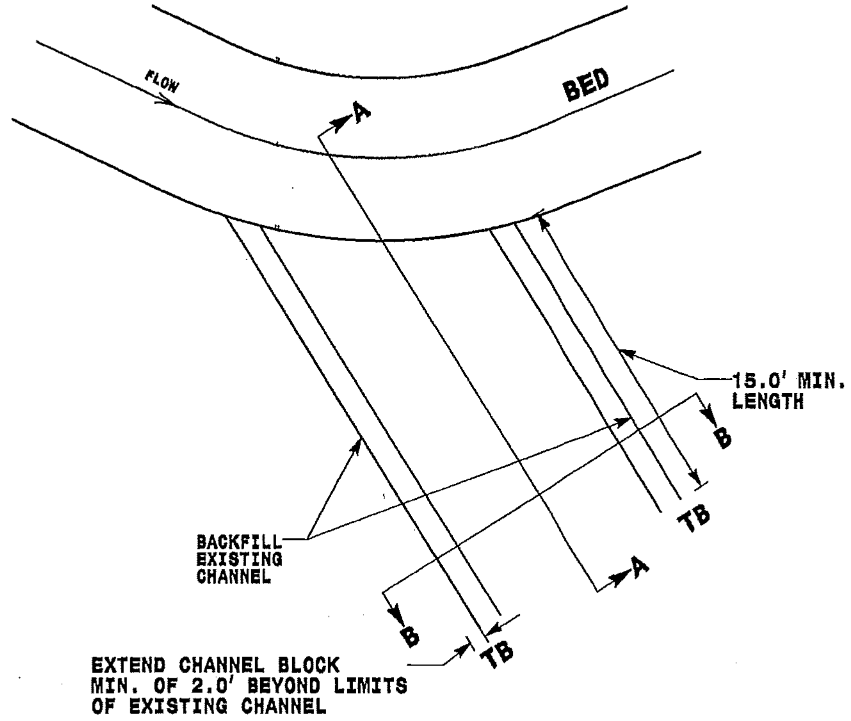
NOTES:
1) CHANNEL BLOCK SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
2) BLOCK SHOULD BE INSTALLED AT THE INTERFACE BETWEEN EXISTING CHANNEL AND PROPOSED CHANNEL.
3) BOTTOM OF BLOCK SHOULD BE A MINIMUM OF 2.0' BELOW THE INVERT OF THE EXISTING CHANNEL.
4) BLOCK SHOULD EXTEND A MINIMUM OF 2.0' BEYOND THE LIMITS OF THE EXISTING STREAM CHANNEL.
5) INSTALL EROSION CONTROL MATTING AND SEED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS IMMEDIATELY AFTER GRADING.
6) COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.


UNCOMPACTED BACKFILL
COMPACTED BACKFILL
VARIES

SECTION B-B


NEW STREAMBANK SHALL BE TREATED AS SPECIFIED IN PLANS
UNCOMPACTED BACKFILL
5' Min. (1.5m)
10' (3.0m)
1.5' (0.46m) FINISH GRADE
EXTEND CHANNEL BLOCK MIN. OF 2' BEYOND INVERT OF EXISTING CHANNEL
FLOW
1½:1
1½:1
VARIES
CHANNEL INVERT
COMPACTED BACKFILL
COMPACTED BACKFILL
IMPERVIOUS SELECT MATERIAL (SEE PROJECT SPECIAL PROVISIONS)

SECTION A-A


FLOW
BED
A
A
15.0' MIN. LENGTH
B
TB
BACKFILL EXISTING CHANNEL
B
TB
EXTEND CHANNEL BLOCK MIN. OF 2.0' BEYOND LIMITS OF EXISTING CHANNEL

PLAN VIEW

STREAM PLUG

NOT TO SCALE

PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.

P.O. BOX 33068 – RALEIGH, NORTH CAROLINA 27636–3068
PHONE: (919) 677–2000 FAX: (919) 677–2050
NC LICENSE F–0102

U-2525B
ON-SITE MITIGATION
GUILFORD COUNTY

PROJECT REFERENCE NO.	SHEET NO.
U2525B	OSM-2D

PROJECT ENGINEER

SEAL 030000
DAREN M. PAIT

APPROVED BY:

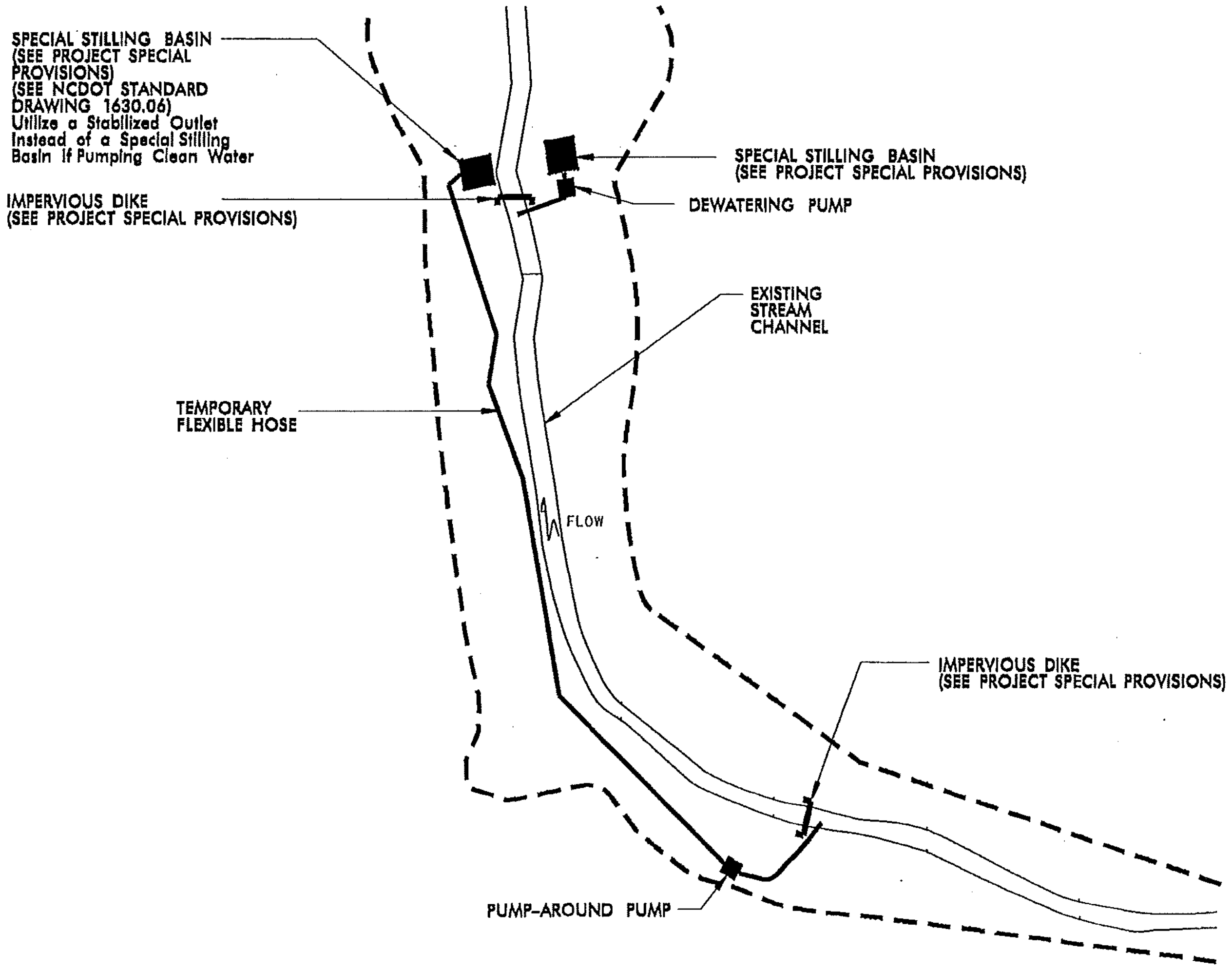
DATE:

NOTES:
1) All excavation shall be performed in only dry or isolated sections of channel.
2) Impervious dikes are to be used to isolate work from stream flow when necessary.
3) All graded areas shall be stabilized within 24 hours.
4) Maintenance of stream flow operations shall be incidental to the work. This includes polyethylene sheeting, diversion pipes, pumps and hoses.
5) Pumps and hoses shall be of sufficient size to dewater the work area.

SEQUENCE OF CONSTRUCTION FOR PUMP AROUND OPERATION

1. INSTALL SPECIAL STILLING BASIN(S).
2. INSTALL UPSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
3. PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DEWATER ENTRAPPED AREA. AREA TO BE DEWATERED SHALL BE EQUAL TO ONE DAY'S WORK.
5. PERFORM STREAM RESTORATION WORK IN ACCORDANCE WITH THE PLANS.
6. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE. (DOWNSTREAM IMPERVIOUS DIKES FIRST).
7. ALL GRADING AND STABILIZATION MUST BE COMPLETED IN ONE DAY WITHIN THE PUMP AROUND AREAS BETWEEN THE IMPERVIOUS DIKES. THE IMPERVIOUS DIKE LOCATIONS AS SHOWN ON THIS SHEET ONLY SHOW THE UPPER AND LOWER EXTENT OF WORK FOR EACH STREAM SEGMENT. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF THE IMPERVIOUS DIKE(S) FOR EACH DAY'S WORK.
8. REMOVE SPECIAL STILLING BASIN(S) AND BACKFILL. STABILIZE DISTURBED AREA WITH SEED AND MULCH.

EXAMPLE OF PUMP-AROUND OPERATION


SPECIAL STILLING BASIN
(SEE PROJECT SPECIAL PROVISIONS)
(SEE NCDOT STANDARD DRAWING 1630.06)
Utilize a Stabilized Outlet Instead of a Special Stilling Basin if Pumping Clean Water
SPECIAL STILLING BASIN
(SEE PROJECT SPECIAL PROVISIONS)
IMPERVIOUS DIKE
(SEE PROJECT SPECIAL PROVISIONS)
DEWATERING PUMP
EXISTING STREAM CHANNEL
TEMPORARY FLEXIBLE HOSE
FLOW
IMPERVIOUS DIKE
(SEE PROJECT SPECIAL PROVISIONS)
PUMP-AROUND PUMP

PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.

P.O. BOX 33068 – RALEIGH, NORTH CAROLINA 27636–3068
PHONE: (919) 677–2000 FAX: (919) 677–2050
NC LICENSE F–0102

U-2525B
ON-SITE MITIGATION
GUILFORD COUNTY

PROJECT REFERENCE NO.	SHEET NO.
U2525B	OSM–2E

PROJECT ENGINEER

SEAL 030000
DAREN M. PAIT

APPROVED BY:

DATE:

	VARIABLES	Reference Reach Tributary to Riddicks Creek (KHA)			Reference Reach Riddicks Creek (KHA)			Reference Reach Tributary to Lake Jeanette (NCDOT)			Reference Reach Tributary to Rich Fork (KHA)		
	STATION	–			–			–			–		
1.	Stream Type (Rosgen)	C5			E5			E5			B4		
2.	Drainage Area (sq. mile)	0.18			0.07			0.15			1.12		
3.	Bankfull Width	Mean:	7.9		Mean:	6.6		Mean:	12.0		Mean:	15.2	
	(W_{bkf})	Range:			Range:	5.7	7.5	Range:	12.0	13.5	Range:		
4.	Bankfull Mean	Mean:	0.6		Mean:	0.8		Mean:	1.6		Mean:	1.2	
	depth (d_{bkf})	Range:	--	–	Range:	0.7	0.8	Range:	1.4	1.7	Range:	--	–
5.	Width/Depth Ratio	Mean:	13.5		Mean:	8.7		Mean:	8.4		Mean:	12.7	
	(W_{bkf}/d_{bkf})	Range:	–	–	Range:	8.2	9.2	Range:	7.1	8.8	Range:	--	–
6.	Bankfull cross-sectional	Mean:	4.6		Mean:	5.1		Mean:	19.4		Mean:	19.0	
	Area (Abkf)	Range:	--	–	Range:	4.0	6.1	Range:	18.8	20.0	Range:	–	–
7.	Bankfull Mean Velocity	Mean:	Not Reported		Mean:	Not Reported		Mean:	5.6		Mean:	5.1	
	(V_{bkf})	Range:	–	–	Range:	–	–	Range:	5.2	6.2	Range:	–	–
8.	Bankfull Discharge, cfs	Mean:	Not Reported		Mean:	Not Reported		Mean:	109.3		Mean:	96.9	
	(Q_{bkf})	Range:	--	–	Range:	–	–	Range:	100.7	119.6	Range:	--	–
9.	Bankfull Maximum Depth	Mean:	1.0		Mean:	1.5		Mean:	2.8		Mean:	1.9	
	(d_{mbkf})	Range:			Range:	1.3	1.6	Range:			Range:		
10.	Max d_{mbkf}/d_{bkf}	Mean:	1.7		Mean:	2.0		Mean:	2.4		Mean:	1.6	
	ratio	Range:	–	–	Range:	1.9	2.0	Range:	–	--	Range:	–	–
11.	Low Bank Height to max	Mean:	1.0		Mean:	1.3		Mean:	Not Reported		Mean:	1.1	
	d_{bkf} ratio	Range:	–	–	Range:	1.20	2.50	Range:	–	–	Range:	–	–
12.	Width of Flood Prone	Mean:	36.0		Mean:	27.4		Mean:	49.0		Mean:	23.3	
	Area (W_{fpa})	Range:	--	–	Range:	20.0	34.0	Range:	–	–	Range:	--	–
13.	Entrenchment Ratio	Mean:	4.6		Mean:	4.2		Mean:	4.4		Mean:	1.5	
	(W_{fpa}/W_{bkf})	Range:			Range:	3.5	4.6	Range:	4.1	4.7	Range:		
14.	Meander Length	Mean:	80.5		Mean:	32.0		Mean:	22.0		Mean:	--	
	(L_m)	Range:	64.0	97.0	Range:	25.0	45.0	Range:	22.0	69.0	Range:	–	–
15.	Ratio of Meander Length to	Mean:	10.2		Mean:	4.8		Mean:	1.8		Mean:	–	
	Bankfull Width (L_m/W_{bkf})	Range:	8.1	12.3	Range:	3.8	6.8	Range:	1.8	5.8	Range:	–	–
16.	Radius of Curvature	Mean:	13.4		Mean:	11.3		Mean:	7.3		Mean:	--	
	(R_c)	Range:	8.5	22.0	Range:	5.7	18.8	Range:	7.3	17.3	Range:	–	–
17.	Ratio of Radius of Curvature	Mean:	1.7		Mean:	1.7		Mean:	0.6		Mean:		
	to Bankfull Width (R_c/W_{bkf})	Range:	1.1	2.8	Range:	0.9	2.8	Range:	0.6	1.4	Range:		
18.	Belt Width	Mean:	34.0		Mean:	15.8		Mean:	45.0		Mean:	–	
	(W_{blt})	Range:	--	–	Range:	10.5	22.0	Range:	–	--	Range:	–	- -
19.	Meander Width Ratio	Mean:	4.3		Mean:	2.4		Mean:	3.8		Mean:	–	
	(W_{blt}/W_{bkf})	Range:	–	–	Range:	1.6	3.3	Range:	–	–	Range:	–	–
20.	Sinuosity (k)	Mean:	1.30		Mean:	1.40		Mean:	Not Reported		Mean:	1.07	
	(Stream Length / Valley Length)	Range:	--	–	Range:	–	–	Range:	–	–	Range:	–	–
21.	Valley Slope (S_{valley})	Mean:	0.0022		Mean:	0.0130		Mean:	Not Reported		Mean:	0.0168	
	(ft/ft)	Range:	–	–	Range:	–	–	Range:	–	–	Range:	–	–
22.	Average Stream Slope	Mean:	0.0017		Mean:	0.0093		Mean:	0.0033		Mean:	0.0157	
	(S_{avg}) = (S_{valley}/k)	Range:	–	–	Range:	–	–	Range:	–	--	Range:	–	–
23.	Riffle Slope	Mean:	0.0049		Mean:	0.0540		Mean:	Not Reported		Mean:	0.0522	
	(S_{riffle})	Range:	0.0000	0.0257	Range:	0.0160	0.0800	Range:			Range:	0.0077	0.0961
24.	Ratio of Riffle Slope to Avg.	Mean:	2.9		Mean:	5.8		Mean:	--		Mean:	3.3	
	Slope (S_{riffle}/S_{avg})	Range:	0.0	15.3	Range:	0.6	4.5	Range:	–	–	Range:	--	–
25.	Pool Slope	Mean:	0.0002		Mean:	0.0024		Mean:	Not Reported		Mean:	0.0032	
	(S_{pool})	Range:	0.0000	0.0037	Range:	0.0000	0.0100	Range:	–	–	Range:	0.0009	0.0089
26.	Ratio of Pool Slope to Avg.	Mean:	0.1		Mean:	0.3		Mean:	–		Mean:	0.2	
	Slope (S_{pool}/S_{avg})	Range:	0.0	0.4	Range:	0.0	0.6	Range:	–	--	Range:	0.1	0.4
27.	Maximum Pool	Mean:	2.0		Mean:	2.0		Mean:	3.1		Mean:	3.0	
	Depth (d_{pool})	Range:			Range:	–		Range:			Range:	2.3	3.9
28.	Ratio of Pool Depth to Avg.	Mean:	3.4		Mean:	2.3		Mean:	2.0		Mean:	2.5	
	Depth (d_{pool}/d_{bkf})	Range:	--	–	Range:	–	–	Range:	–	–	Range:	1.9167	3.2833
29.	Pool Width	Mean:	11.5		Mean:	8.1		Mean:	19.8		Mean:	16.3	
	(W_{pool})	Range:	–	–	Range:	–	–	Range:	–	–	Range:	–	–
30.	Ratio of Pool Width to	Mean:	1.5		Mean:	1.2		Mean:	1.6		Mean:	1.1	
	Bankfull Width (W_{pool}/W_{bkf})	Range:	–	–	Range:	–	--	Range:	–	--	Range:	–	–
31.	Pool Area	Mean:	Not Reported		Mean:	Not Reported		Mean:	27.0		Mean:	22.7	
	(A_{pool})	Range:	–	–	Range:	–	–	Range:	–	–	Range:	–	–
32.	Ratio of Pool Area to	Mean:	--		Mean:	--		Mean:	1.4		Mean:	1.2	
	Bankfull Area (A_{pool}/A_{bkf})	Range:	--	–	Range:	–	–	Range:	–	–	Range:	--	–
33.	Pool to Pool Spacing	Mean:	38.1		Mean:	22.9		Mean:	Not Reported		Mean:	33.1	
	(p-p)	Range:	18	78	Range:	8	48	Range:			Range:	20	52
34.	Ratio of Pool to Pool Spacing	Mean:	4.8		Mean:	3.5		Mean:	–		Mean:	2.2	
	to Bankfull Width (p-p/Wbkf)	Range:	2.3	9.9	Range:	1.1	7.3	Range:	–	–	Range:	1.3	3.4

	VARIABLES	Existing Site 2 Reach 1			Regional Curves Piedmont Rural/Rosgen Reference Values			Site 2 Reach 1 Design Reach		
	STATION	–			–			200+00 to 205+00		
1.	Stream Type (Rosgen)	Incised B5			C/E			B5		
2.	Drainage Area (sq. mile)	0.08			0.08			0.08		
3.	Bankfull Width	Mean:	7.8		Mean:	4.1		Mean:	7.2	
	(W_{bkf})	Range:			Range:			Range:		
4.	Bankfull Mean	Mean:	0.7		Mean:	0.7		Mean:	0.5	
	depth (d_{bkf})	Range:	–	--	Range:	–	–	Range:	--	–
5.	Width/Depth Ratio	Mean:	11.0		Mean:	5.9		Mean:	13.5	
	(W_{bkf}/d_{bkf})	Range:	–	--	Range:	–	–	Range:	–	–
6.	Bankfull cross-sectional	Mean:	5.5		Mean:	4.0		Mean:	3.8	
	Area (Abkf)	Range:	–	–	Range:	–	–	Range:	--	–
7.	Bankfull Mean Velocity	Mean:	3.4		Mean:	3.8		Mean:	4.9	
	(V_{bkf})	Range:	3.1	3.8	Range:	–	–	Range:	–	–
8.	Bankfull Discharge, cfs	Mean:	18.6		Mean:	15.0		Mean:	18.6	
	(Q_{bkf})	Range:	–	--	Range:	–	–	Range:	--	–
9.	Bankfull Maximum Depth	Mean:	0.9		Mean:	–		Mean:	0.8	
	(d_{mbkf})	Range:			Range:			Range:		
10.	Max d_{mbkf}/d_{bkf}	Mean:	1.3		Mean:	1.4		Mean:	1.5	
	ratio	Range:	–	–	Range:	1.2	1.5	Range:	–	–
11.	Low Bank Height to max	Mean:	2.7		Mean:	–		Mean:	1.0	
	d_{bkf} ratio	Range:	2.45	2.80	Range:	–	–	Range:	–	–
12.	Width of Flood Prone	Mean:	12.0		Mean:	–		Mean:	14.0	
	Area (W_{fpa})	Range:	–	--	Range:	–	–	Range:	–	--
13.	Entrenchment Ratio	Mean:	1.5		Mean:	–		Mean:	1.9	
	(W_{fpa}/W_{bkf})	Range:			Range:			Range:		
14.	Meander Length	Mean:	27.9		Mean:	–		Mean:	63.0	
	(L_m)	Range:	13.2	51.1	Range:	–	–	Range:	50.4	75.6
15.	Ratio of Meander Length to	Mean:	3.6		Mean:	11.5		Mean:	8.8	
	Bankfull Width (L_m/W_{bkf})	Range:	1.7	6.5	Range:	9.0	14.0	Range:	7.0	10.5
16.	Radius of Curvature	Mean:	10.9		Mean:	–		Mean:	17.3	
	(R_c)	Range:	7.1	17.1	Range:	–	–	Range:	15.8	18.9
17.	Ratio of Radius of Curvature	Mean:	1.4		Mean:	2.8		Mean:	2.4	
	to Bankfull Width (R_c/W_{bkf})	Range:	0.9	2.2	Range:	2.5	3.0	Range:	2.2	2.6
18.	Belt Width	Mean:	12.2		Mean:	–		Mean:	12.9	
	(W_{blt})	Range:	8.1	25.2	Range:	–	–	Range:	11.3	14.5
19.	Meander Width Ratio	Mean:	1.6		Mean:	4.0		Mean:	1.8	
	(W_{blt}/W_{bkf})	Range:	1.0	3.2	Range:	3.5	5.0	Range:	1.6	2.0
20.	Sinuosity (k)	Mean:	1.15		Mean:	–		Mean:	1.07	
	(Stream Length / Valley Length)	Range:			Range:	–	–	Range:	--	–
21.	Valley Slope (S_{valley})	Mean:	0.0174		Mean:	–		Mean:	0.0110	
	(ft/ft)	Range:			Range:	–	–	Range:	–	–
22.	Average Stream Slope	Mean:	0.0151		Mean:	–		Mean:	0.0103	
	(S_{avg}) = (S_{valley}/k)	Range:	–	–	Range:	–	–	Range:	--	–
23.	Riffle Slope	Mean:	0.0436		Mean:			Mean:	0.0151	
	(S_{riffle})	Range:	0.0158	0.0640	Range:			Range:	0.0086	0.0215
24.	Ratio of Riffle Slope to Avg.	Mean:	2.9		Mean:	1.8		Mean:	1.5	
	Slope (S_{riffle}/S_{avg})	Range:	1.1	4.2	Range:	1.5	2.0	Range:	0.8	2.1
25.	Pool Slope	Mean:	0.0111		Mean:	–		Mean:	0.0001	
	(S_{pool})	Range:	0.0087	0.0185	Range:	–	–	Range:	0.0001	0.0001
26.	Ratio of Pool Slope to Avg.	Mean:	0.7		Mean:	0.0		Mean:	0.0	
	Slope (S_{pool}/S_{avg})	Range:	0.4	1.1	Range:	0.0	0.1	Range:	0.0	0.0
27.	Maximum Pool	Mean:	1.9		Mean:			Mean:	1.4	
	Depth (d_{pool})	Range:	1.5	2.1	Range:			Range:		
28.	Ratio of Pool Depth to Avg.	Mean:	2.6		Mean:	3.0		Mean:	2.6	
	Depth (d_{pool}/d_{bkf})	Range:	2.2	3.0	Range:	2.5	3.5	Range:	--	–
29.	Pool Width	Mean:	6.7		Mean:	–		Mean:	9.8	
	(W_{pool})	Range:	–	–	Range:	–	–	Range:	–	–
30.	Ratio of Pool Width to	Mean:	0.9		Mean:	1.5		Mean:	1.4	
	Bankfull Width (W_{pool}/W_{bkf})	Range:	–	–	Range:	1.3	1.7	Range:	–	–
31.	Pool Area	Mean:	5.5		Mean:			Mean:	6.5	
	(A_{pool})	Range:	–	–	Range:	–	–	Range:	–	–
32.	Ratio of Pool Area to	Mean:	1.0		Mean:	–		Mean:	1.7	
	Bankfull Area (A_{pool}/A_{bkf})	Range:	–	--	Range:	–	–	Range:	–	–
33.	Pool to Pool Spacing	Mean:	20.0		Mean:	–		Mean:	31.5	
	(p-p)	Range:	12.6	27.7	Range:			Range:	25.2	37.8
34.	Ratio of Pool to Pool Spacing		2.6		Mean:	4.5		Mean:	4.4	
	to Bankfull Width (p-p/Wbkf)	Range:	1.6	3.5	Range:	4.0	5.0	Range:	3.5	5.3

	VARIABLES	Existing Site 2 Reach 2			Regional Curves Piedmont Rural/Rosgen Reference Values			Site 2 Reach 2 Design Reach		
	STATION	–			–			205+00 to 213+07		
1.	Stream Type (Rosgen)	Incised B5			C/E			B5		
2.	Drainage Area (sq. mile)	0.10			0.10			0.10		
3.	Bankfull Width	Mean:	5.0		Mean:	4.3		Mean:	7.6	
	(W_{bkf})	Range:			Range:			Range:		
4.	Bankfull Mean	Mean:	1.0		Mean:	0.7		Mean:	0.5	
	depth (d_{bkf})	Range:	--	–	Range:	–	--	Range:	--	–
5.	Width/Depth Ratio	Mean:	5.2		Mean:	6.1		Mean:	13.9	
	(W_{bkf}/d_{bkf})	Range:	--	–	Range:	–	–	Range:	–	–
6.	Bankfull cross-sectional	Mean:	4.8		Mean:	4.3		Mean:	4.2	
	Area (Abkf)	Range:	–	--	Range:	–	–	Range:	--	–
7.	Bankfull Mean Velocity	Mean:	4.0		Mean:	3.8		Mean:	4.5	
	(V_{bkf})	Range:	3.6	4.5	Range:	–	–	Range:	–	–
8.	Bankfull Discharge, cfs	Mean:	19.1		Mean:	16.4		Mean:	19.1	
	(Q_{bkf})	Range:	--	–	Range:	–	--	Range:	–	--
9.	Bankfull Maximum Depth	Mean:	1.3		Mean:	–		Mean:	0.8	
	(d_{mbkf})	Range:			Range:			Range:		
10.	Max d_{mbkf}/d_{bkf}	Mean:	1.3		Mean:	1.4		Mean:	1.5	
	ratio	Range:	–	--	Range:	1.2	1.5	Range:	–	–
11.	Low Bank Height to max	Mean:	3.4		Mean:			Mean:	1.0	
	d_{bkf} ratio	Range:	3.00	3.40	Range:	–	–	Range:	–	–
12.	Width of Flood Prone	Mean:	8.1		Mean:	–		Mean:	12.0	
	Area (W_{fpa})	Range:	--	–	Range:	–	--	Range:	–	--
13.	Entrenchment Ratio	Mean:	1.6		Mean:	–		Mean:	1.6	
	(W_{fpa}/W_{bkf})	Range:			Range:			Range:		
14.	Meander Length	Mean:	42.3		Mean:	–		Mean:	65.0	
	(L_m)	Range:	14.2	72.8	Range:	–	–	Range:	62.0	78.0
15.	Ratio of Meander Length to	Mean:	8.5		Mean:	11.5		Mean:	8.6	
	Bankfull Width (L_m/W_{bkf})	Range:	2.9	14.7	Range:	9.0	14.0	Range:	8.2	10.3
16.	Radius of Curvature	Mean:	9.4		Mean:	–		Mean:	17.9	
	(R_c)	Range:	5.0	16.0	Range:	–	--	Range:	16.3	19.5
17.	Ratio of Radius of Curvature	Mean:	1.9		Mean:	2.8		Mean:	2.4	
	to Bankfull Width (R_c/W_{bkf})	Range:	1.0	3.2	Range:	2.5	3.0	Range:	2.1	2.6
18.	Belt Width	Mean:	18.5		Mean:	–		Mean:	22.8	
	(W_{blt})	Range:	9.0	40.7	Range:	–	–	Range:	16.3	29.3
19.	Meander Width Ratio	Mean:	3.7		Mean:	4.0		Mean:	3.0	
	(W_{blt}/W_{bkf})	Range:	1.8	8.2	Range:	3.5	5.0	Range:	2.1	3.9
20.	Sinuosity (k)	Mean:	1.10		Mean:	–		Mean:	1.06	
	(Stream Length / Valley Length)	Range:	--	–	Range:	–	--	Range:	--	–
21.	Valley Slope (S_{valley})	Mean:	0.0171		Mean:	–		Mean:	0.0198	
	(ft/ft)	Range:	–	–	Range:	–	–	Range:	–	–
22.	Average Stream Slope	Mean:	0.0144		Mean:	–		Mean:	0.0187	
	(S_{avg}) = (S_{valley}/k)	Range:	–	--	Range:	–	–	Range:	–	–
23.	Riffle Slope	Mean:	0.0203		Mean:			Mean:	0.0328	
	(S_{riffle})	Range:	0.0067	0.0303	Range:			Range:	0.0281	0.0374
24.	Ratio of Riffle Slope to Avg.	Mean:	1.4		Mean:	1.8		Mean:	1.8	
	Slope (S_{riffle}/S_{avg})	Range:	0.5	2.1	Range:	1.5	2.0	Range:	1.5	2.0
25.	Pool Slope	Mean:	0.0040		Mean:	–		Mean:	0.0001	
	(S_{pool})	Range:	0.0027	0.0058	Range:	–	–	Range:	0.0000	0.0019
26.	Ratio of Pool Slope to Avg.	Mean:	0.3		Mean:	0.0		Mean:	0.0	
	Slope (S_{pool}/S_{avg})	Range:	0.2	0.4	Range:	0.0	0.1	Range:	0.0	0.1
27.	Maximum Pool	Mean:	1.8		Mean:			Mean:	1.5	
	Depth (d_{pool})	Range:	1.6	2.2	Range:			Range:		
28.	Ratio of Pool Depth to Avg.	Mean:	1.9		Mean:	3.0		Mean:	2.7	
	Depth (d_{pool}/d_{bkf})	Range:	1.6	2.3	Range:	2.5	3.5	Range:	--	–
29.	Pool Width	Mean:	5.4		Mean:	–		Mean:	10.2	
	(W_{pool})	Range:	--	–	Range:	–	–	Range:	–	–
30.	Ratio of Pool Width to	Mean:	1.1		Mean:	1.5		Mean:	1.3	
	Bankfull Width (W_{pool}/W_{bkf})	Range:	–	--	Range:	1.3	1.7	Range:	–	--
31.	Pool Area	Mean:	5.8		Mean:			Mean:	7.3	
	(A_{pool})	Range:	–	–	Range:	–	–	Range:	–	–
32.	Ratio of Pool Area to	Mean:	1.2		Mean:	–		Mean:	1.8	
	Bankfull Area (A_{pool}/A_{bkf})	Range:	--	–	Range:	–	--	Range:	--	–
33.	Pool to Pool Spacing	Mean:	28.8		Mean:	–		Mean:	32.5	
	(p-p)	Range:	24.0	33.7	Range:			Range:	29.3	42.3
34.	Ratio of Pool to Pool Spacing	Mean:	5.8		Mean:	4.5		Mean:	4.3	
	to Bankfull Width (p-p/Wbkf)	Range:	4.8	6.8	Range:	4.0	5.0	Range:	3.9	5.6

PREPARED IN THE OFFICE OF:

Kimley-Horn and Associates, Inc.

P.O. BOX 33068 — RALEIGH, NORTH CAROLINA 27636-3068
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NC LICENSE F-0102

U-2525B
ON-SITE MITIGATION
GUILFORD COUNTY

PROJECT REFERENCE NO.	SHEET NO.
U2525B	OSM-2F

PROJECT ENGINEER

SEAL 030000 DAREN M. PAIT

APPROVED BY:

DATE:

	VARIABLES		Reference Reach Tributary to Riddicks Creek (KHA)		Reference Reach Riddicks Creek (KHA)		Reference Reach Tributary to Lake Jeanette (NCDOT)		Reference Reach Tributary to Rich Fork (KHA)	
	STATION		–		–		–		–	
1.	Stream Type (Rosgen)		C5		E5		E5		B4	
2.	Drainage Area (sq. mile)		0.18		0.07		0.15		1.12	
3.	Bankfull Width	Mean:	7.9		5.6		12.0		15.2	
	(W_{bkf})	Range:			5.7	7.5	12.0	13.5		
4.	Bankfull Mean	Mean:	0.6		0.8		1.6		1.2	
	depth (d_{bkf})	Range:	–	–	0.7	0.8	1.4	1.7	--	--
5.	Width/Depth Ratio	Mean:	13.5		8.7		8.4		12.7	
	(W_{bkf}/d_{bkf})	Range:			8.2	9.2	7.1	9.6		
6.	Bankfull cross-sectional	Mean:	4.6		5.1		19.4		19.0	
	Area (Abkf)	Range:	–	–	4.0	6.1	18.8	20.0	–	--
7.	Bankfull Mean Velocity	Mean:	Not Reported		Not Reported		5.6		5.1	
	(V_{bkf})	Range:					5.2	6.2		
8.	Bankfull Discharge, cfs	Mean:	Not Reported		Not Reported		109.3		96.9	
	(Q_{bkf})	Range:	--	–	–	–	100.7	119.6	--	–
9.	Bankfull Maximum Depth	Mean:	1.0		1.5		2.9		1.9	
	(d_{mbkf})	Range:	–	–	1.3	1.8	–	–	–	–
10.	Max d_{mbkf}/d_{bkf}	Mean:	1.7		2.0		2.4		1.6	
	ratio	Range:	--	–	1.9	2.0	–	–	–	–
11.	Low Bank Height to max	Mean:	1.0		1.3		Not Reported		1.1	
	d_{bkf} ratio	Range:			1.20	2.50				
12.	Width of Flood Prone	Mean:	36.0		27.4		49.0		23.3	
	Area (W_{fpa})	Range:	–	–	20.0	34.0	–	–	–	–
13.	Entrenchment Ratio	Mean:	4.6		4.2		4.4		1.5	
	(W_{fpa}/W_{bkf})	Range:			3.5	4.5	4.1	4.7		
14.	Meander Length	Mean:	80.5		32.0		22.0		--	
	(L_m)	Range:	64.0	97.0	25.0	45.0	22.0	69.0	–	--
15.	Ratio of Meander Length to	Mean:	10.2		4.0		1.8		–	
	Bankfull Width (L_m/W_{bkf})	Range:	8.1	12.3	3.8	6.8	1.8	5.8	–	–
16.	Radius of Curvature	Mean:	13.4		11.3		7.3		--	
	(R_c)	Range:	8.5	22.0	5.7	18.8	7.3	17.3	--	–
17.	Ratio of Radius of Curvature	Mean:	1.7		1.7		0.8		–	
	to Bankfull Width (R_c/W_{bkf})	Range:	1.1	2.8	0.9	2.8	0.6	1.4	–	–
18.	Belt Width	Mean:	34.0		15.8		45.0		–	
	(W_{blt})	Range:	--	–	10.5	22.0	--	–	--	–
19.	Meander Width Ratio	Mean:	4.3		2.4		3.8			
	(W_{blt}/W_{bkf})	Range:			1.5	3.3				
20.	Sinuosity (K)	Mean:	1.30		1.40		Not Reported		1.07	
	(Stream Length / Valley Length)	Range:	–	–	–	–	–	–	–	--
21.	Valley Slope (S_{valley})	Mean:	0.0022		0.0130		Not Reported		0.0168	
	(ft/ft)	Range:								
22.	Average Stream Slope	Mean:	0.0017		0.0093		0.0033		0.0157	
	$(S_{avg}) = (S_{valley}/K)$	Range:	–	–	–	--	–	–	–	–
23.	Riffle Slope	Mean:	0.0049		0.0540		Not Reported		0.0522	
	(S_{riffle})	Range:	0.0010	0.0257	0.0100	0.0800	–	–	0.0077	0.0381
24.	Ratio of Riffle Slope to Avg.	Mean:	2.9		5.8		--		3.3	
	Slope (S_{riffle}/S_{avg})	Range:	0.0	15.3	0.6	4.5	–	–	--	–
25.	Pool Slope	Mean:	0.0002		0.0024		Not Reported		0.0032	
	(S_{pool})	Range:	0.0000	0.0007	0.0000	0.0130			0.0009	0.0065
26.	Ratio of Pool Slope to Avg.	Mean:	0.1		0.3		--		0.2	
	Slope (S_{pool}/S_{avg})	Range:	0.0	0.4	0.0	0.6	–	–	0.1	0.4
27.	Maximum Pool	Mean:	2.0		2.0		3.1		3.0	
	Depth (d_{pool})	Range:							2.3	3.9
28.	Ratio of Pool Depth to Avg.	Mean:	3.4		2.3		2.0		2.5	
	Depth (d_{pool}/d_{bkf})	Range:	–	–	–	--	–	–	1.9167	3.2833
29.	Pool Width	Mean:	11.5		8.1		19.8		18.3	
	(W_{pool})	Range:	–	–	–	--	–	–	–	–
30.	Ratio of Pool Width to	Mean:	1.5		1.2		1.6		1.1	
	Bankfull Width (W_{pool}/W_{bkf})	Range:	--	–	–	--	–	–	--	–
31.	Pool Area	Mean:	Not Reported		Not Reported		27.0		22.7	
	(A_{pool})	Range:	–	–	–	–	–	–	–	–
32.	Ratio of Pool Area to	Mean:	–		--		1.4		1.2	
	Bankfull Area (A_{pool}/A_{bkf})	Range:	--	–	–	--	–	–	--	–
33.	Pool to Pool Spacing	Mean:	38.9		22.9		Not Reported		33.1	
	(p - p)	Range:	18	78	8	48			20	52
34.	Ratio of Pool to Pool Spacing	Mean:	4.8		3.5		--		2.2	
	to Bankfull Width (p-p/Wbkf)	Range:	2.3	9.9	1.1	7.3	–	–	1.3	3.4

	VARIABLES		Existing Site 4		Regional Curves Piedmont Rural/Rosgen Reference Values		Site 4 Design Reach		Existing Site 5		Regional Curves Piedmont Rural/Rosgen Reference Values		Site 5 Design Reach	
	STATION		–		–		400+00 to 403+86		–		–		500+00 to 503+62	
1.	Stream Type (Rosgen)		Incised B5		C/E		C5		E5		C/E		C5	
2.	Drainage Area (sq. mile)		0.57		0.57		0.57		0.51		0.51		0.51	
3.	Bankfull Width	Mean:	8.9		9.3		12.7		11.8		8.9		13.7	
	(W_{bkf})	Range:												
4.	Bankfull Mean	Mean:	1.3		1.3		0.9		1.1		1.2		1.0	
	depth (d_{bkf})	Range:	–	–	–	--	--	–	–	–	–	--	--	–
5.	Width/Depth Ratio	Mean:	6.8		7.5		13.6		10.4		7.4		14.1	
	(W_{bkf}/d_{bkf})	Range:												
6.	Bankfull cross-sectional	Mean:	11.9		14.6		11.9		13.3		13.6		13.3	
	Area (Abkf)	Range:	–	–	–	--	–	–	–	--	–	--	--	–
7.	Bankfull Mean Velocity	Mean:	2.1		4.1		2.1		4.3		4.0		4.3	
	(V_{bkf})	Range:	1.9	2.3					3.9	4.8				
8.	Bankfull Discharge, cfs	Mean:	24.5		59.4		24.5		56.5		54.8		56.5	
	(Q_{bkf})	Range:	–	–	--	--	--	--			-	--	--	--
9.	Bankfull Maximum Depth	Mean:	2.1		–		1.4		1.8		–		1.4	
	(d_{mbkf})	Range:	–	–	--	–	–	–	–	–	–	–	–	–
10.	Max d_{mbkf}/d_{bkf}	Mean:	1.5		1.4		1.5		1.4		1.4		1.4	
	ratio	Range:	–	–	1.2	1.5	–	--	--	--	1.2	1.5	–	–
11.	Low Bank Height to max	Mean:	3.1				1.0		2.5				1.0	
	d_{bkf} ratio	Range:	2.86	3.19					2.42	2.52				
12.	Width of Flood Prone	Mean:	15.1		–		80.0		147.0		–		147.0	
	Area (W_{fpa})	Range:	–	–	–	--	--	–	–	--	–	--	--	–
13.	Entrenchment Ratio	Mean:	1.7				6.3		12.5				10.7	
	(W_{fpa}/W_{bkf})	Range:												
14.	Meander Length	Mean:	44.7		--		122.0		85.2		--		126.0	
	(L_m)	Range:	25.7	58.3	--	--	97.6	146.4	27.5	138.0	–	--	100.8	151.2
15.	Ratio of Meander Length to	Mean:	5.0		11.5		9.6		7.2		11.5		9.2	
	Bankfull Width (L_m/W_{bkf})	Range:	2.9	6.6	9.0	14.0	7.7	11.5	2.3	11.7	9.0	14.0	7.4	11.0
16.	Radius of Curvature	Mean:	33.0		--		33.6		29.6		–		34.7	
	(R_c)	Range:	12.0	63.0	--	–	30.5	36.6	6.0	71.0	–	–	31.5	37.8
17.	Ratio of Radius of Curvature	Mean:	3.8		2.8		2.6		2.5		2.0		2.5	
	to Bankfull Width (R_c/W_{bkf})	Range:	1.3	7.1	2.5	3.0	2.4	2.9	0.5	6.0	2.5	3.0	2.3	2.8
18.	Belt Width	Mean:	12.3		–		42.7		33.5		–		38.4	
	(W_{blt})	Range:	7.4	17.7	--	–	30.5	54.9	17.0	53.2	–	--	24.6	48.2
19.	Meander Width Ratio	Mean:	1.4		4.0		3.4		2.8		4.0		2.7	
	(W_{blt}/W_{bkf})	Range:	0.8	2.0	3.0	5.0	2.4	4.3	1.5	4.5	3.0	5.0	1.8	3.5
20.	Sinuosity (K)	Mean:	1.22		–		1.08		1.16		–		1.13	
	(Stream Length / Valley Length)	Range:	–	–	–	--	--	–	–	--	–	--	--	–
21.	Valley Slope (S_{valley})	Mean:	0.0029				0.0050		0.0131				0.0118	
	(ft/ft)	Range:												
22.	Average Stream Slope	Mean:	0.0024		–		0.0046		0.0113		–		0.0105	
	$(S_{avg}) = (S_{valley}/K)$	Range:	–	–	–	–	--	–	–	--	–	--	--	–
23.	Riffle Slope	Mean:	0.0380		–		0.0081		0.0277		–		0.0183	
	(S_{riffle})	Range:	0.0129	0.0774	–	–	0.0069	0.0092	0.0236	0.0196	–	–	0.0157	0.0210
24.	Ratio of Riffle Slope to Avg.	Mean:	15.8		1.8		1.8		2.5		1.8		1.8	
	Slope (S_{riffle}/S_{avg})	Range:	5.3	32.1	1.5	2.0	1.5	2.0	2.1	3.5	1.5	2.0	1.5	2.0
25.	Pool Slope	Mean:	0.0073				0.000		0.0032				0.000	
	(S_{pool})	Range:	0.0061	0.0080			0.0000	0.0005	0.0057	0.0017			0.0000	0.0010
26.	Ratio of Pool Slope to Avg.	Mean:	3.0		0.0		0.0		0.1		0.0		0.0	
	Slope (S_{pool}/S_{avg})	Range:	2.5	3.3	0.0	0.1	0.0	0.1	0.5	0.1	0.0	0.1	0.0	0.1
27.	Maximum Pool	Mean:	2.7				2.6		2.3				2.6	
	Depth (d_{pool})	Range:	2.5	2.8					1.9	2.6				
28.	Ratio of Pool Depth to Avg.	Mean:	2.0		3.0		2.8		2.1		3.0		2.7	
	Depth (d_{pool}/d_{bkf})	Range:	1.9	2.1	2.5	3.5	--	–	1.7	2.3	2.5	3.5	--	–
29.	Pool Width	Mean:	13.3		–		17.0		11.8		–		16.0	
	(W_{pool})	Range:	–	–	–	–	–	–	–	–	–	–	–	–
30.	Ratio of Pool Width to	Mean:	1.5		1.5		1.3		1.0		1.5		1.2	
	Bankfull Width (W_{pool}/W_{bkf})	Range:	–	–	1.3	1.7	–	--	--	--	1.3	1.7	–	--
31.	Pool Area	Mean:	28.4		–		20.0		13.3		–		20.1	
	(A_{pool})	Range:	–	–	–	–	–	–	–	–	–	–	–	–
32.	Ratio of Pool Area to	Mean:	2.4		–		1.7		1.0		–		1.5	
	Bankfull Area (A_{pool}/A_{bkf})	Range:	–	–	--	–	–	--	--	–	--	–	–	--
33.	Pool to Pool Spacing	Mean:	24.4				70.2		32.7				72.5	
	(p - p)	Range:	23.7	25.2			54.9	85.4	21.3	50.8			56.7	88.2
34.	Ratio of Pool to Pool Spacing	Mean:	2.7		6.0		5.5		2.8		6.0		5.3	
	to Bankfull Width (p-p/Wbkf)	Range:	2.7	2.8	5.0	7.0	4.3	6.7	1.8	4.3	5.0	7.0	4.1	6.4

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U-2525B
ON-SITE MITIGATION
GUILFORD COUNTY

PROJECT REFERENCE NO. U2525B
SHEET NO. 0SM-3
PROJECT ENGINEER
SEAL 030000
DAREN M. PAIT
APPROVED BY:
DATE:

SUMMARY OF QUANTITIES

DESCRIPTION	SECTION	QUANTITIY	UNIT	ITEM DESCRIPTION
6133000000-N	SP	1	LS	CONSTRUCTION SURVEYING FOR MITIGATION
6133000000-N	SP	1	LS	GRADING FOR MITIGATION
1077000000-E	SP	600	TON	#57 STONE
3656000000-E	876	1,250	SY	FILTER FABRIC FOR DRAINAGE
3651000000-E	SP	975	TON	BOULDER
3642000000-E	876	60	TON	PLAIN RIP RAP, CLASS A
3649000000-E	876	50	TON	PLAIN RIP RAP, CLASS B
6133000000-N	SP	1	LS	DIVERSION PUMPING FOR MITIGATION
6132000000-N	SP	6	EA	LOGS
6132000000-N	SP	2	EA	ROOTWADS

SUMMARY OF EARTHWORK FOR MITIGATION

LOCATION	MITIGATION UNCLASSIFIED EXCAV. (CU.YD.)	MITIGATION EMBANKMENT	MITIGATION BORROW (CU.YD.)	MITIGATION WASTE (CU.YD.)
SITE 2	7,304	785	0	6,519
SITE 4	1,369	235	0	1,134
SITE 5	1,810	31	0	1,779
SUBTOTAL	10,483	1,051	0	9,432

APPROXIMATE QUANTITIES ONLY, MITIGATION UNCLASSIFIED EXCAVATION, MITIGATION BORROW EXCAVATION, MITIGATION FINE GRADING AND MITIGATION CLEARING AND GRUBBING WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING FOR MITIGATION".

DESC.	STATION	NORTHING	EASTING	ELEV.	RADIUS	DESC.	STATION	NORTHING	EASTING	ELEV.	RADIUS	DESC.	STATION	NORTHING	EASTING	ELEV.	RADIUS
HR16	204+56.3	856586.17	1794087.12	733.77		HR25	207+48.2	856337.99	1794206.44	728.58		HR34	210+17.7	856094.49	1794249.29	721.32	
RCV8	204+78.9	856670.54	1794108.38	733.34		TR13	207+60.4	856325.83	1794207.22	728.40		RCV15	210+35.8	856076.88	1794253.80	721.45	
R16		856559.01	1794092.29		16	R25		856327.28	1794229.97		22.8	R34		856072.04	1794234.91		19.5
HR17	204+90.7	856560.00	1794108.25	733.14		HR26	207+78.8	856309.86	1794215.27	728.43		HR35	210+51.9	856061.51	1794251.32	721.15	
TR9	205+11.2	856538.54	1794109.53	732.88		RAV2	207+95.9	856298.80	1794228.37	728.09		TR15	210+66.7	856049.04	1794243.32	721.03	
R17		856540.54	1794125.50		16	R26		856283.90	1794218.78		19.5	R35		856038.51	1794258.74		19.5
HR18	205+17.6	856533.46	1794111.15	732.88		HR27	208+11.7	856285.15	1794235.24	727.29		HR36	210+82.7	856033.67	1794240.85	721.08	
RAV1	205+43.0	856510.62	1794122.41	732.43		RCV12	208+19.0	856277.82	1794235.71	727.20		RCV16	211+01.0	856015.89	1794245.40	720.56	
R18		856608.11	1794107.17		17	R27		856278.84	1794255.19		19.5	R36		856011.06	1794226.51		19.5
HR19	205+53.2	856500.79	1794124.01	731.42		HR28	208+29.5	856268.01	1794238.97	726.70		HR37	211+17.1	856000.52	1794242.92	720.27	
RCV9	205+82.7	856470.99	179411.92	730.91		RAV3	208+42.3	856257.30	1794246.12	726.46		TR16	211+31.5	855988.39	1794235.14	720.15	
R19		856468.34	1794139.23		19.5	R28		856246.86	1794229.65		19.5	R37		855977.86	1794251.56		19.5
HR20	206+05.4	856451.94	1794128.69	730.53		HR29	208+59.6	856240.72	1794248.16	725.46		HR38	211+47.5	855973.03	1794232.67	720.15	
TR10	206+16.1	856445.73	1794137.44	730.44		RAV4	208+74.3	856226.79	1794243.53	725.31		RCV17	211+65.8	855955.27	1794237.21	719.68	
R20		856428.60	1794125.80		21	R29		856220.65	1794262.04		19.5	R38		855950.43	1794218.32		19.5
HR21	206+26.5	856437.87	1794144.14	730.44		HR30	208+92.0	856209.82	1794245.83	724.31		HR39	211+81.8	855939.91	1794234.74	719.49	
TR11	206+44.2	856422.05	1794151.92	730.05		RAV5	209+04.2	856199.71	1794252.57	724.25		TR17	211+96.5	855927.59	1794226.83	719.26	
R21		856430.66	1794169.42		19.5	R30		856188.88	1794236.36		19.5	R39		855917.06	1794243.25		19.5
HR22	206+56.5	856413.49	1794160.53	730.06		HR31	209+21.9	856182.74	1794254.87	723.25		HR40	212+12.5	855912.22	1794224.36	719.26	
TR12	206+72.7	856403.94	1794173.54	729.67		RCV13	209+35.6	856169.75	1794250.55	723.14		RCV18	212+30.7	855894.57	1794228.88	718.80	
R22		856388.22	1794162.00		19.5	R31		856163.57	1794269.06		19.5	R40		855889.73	1794209.99		19.5
HR23	206+86.7	856392.45	1794181.04	729.67		HR32	209+53.8	856152.74	1794252.83	722.64		HR41	212+44.4	855881.20	1794227.52	718.60	
RCV10	207+07.3	856372.31	1794185.51	729.24		RCV14	209+64.9	856143.13	1794259.23	722.42		RCV19	212+52.8	855873.67	1794223.86	718.50	
R23		856376.54	1794204.54		19.5	R32		856132.83	1794243.02		19.5	R41		855865.14	1794241.40		19.5
HR24	207+16.6	856364.03	1794189.58	729.04		HR33	209+87.5	856121.80	1794259.43	722.12		HR42	212+75.7	855852.24	1794226.78	718.10	
RCV11	207+35.9	856349.27	1794201.94	728.88		TR14	210+01.7	856109.86	1794251.77	721.92		TIE IN	213+07.2	855828.61	1794247.62	718.00	
R24		856336.69	1794187.05		19.5	R33		856099.33	1794268.18		19.5						

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and Associates, Inc.

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PROJECT REFERENCE NO.	SHEET NO.
U2525B	OSM-4

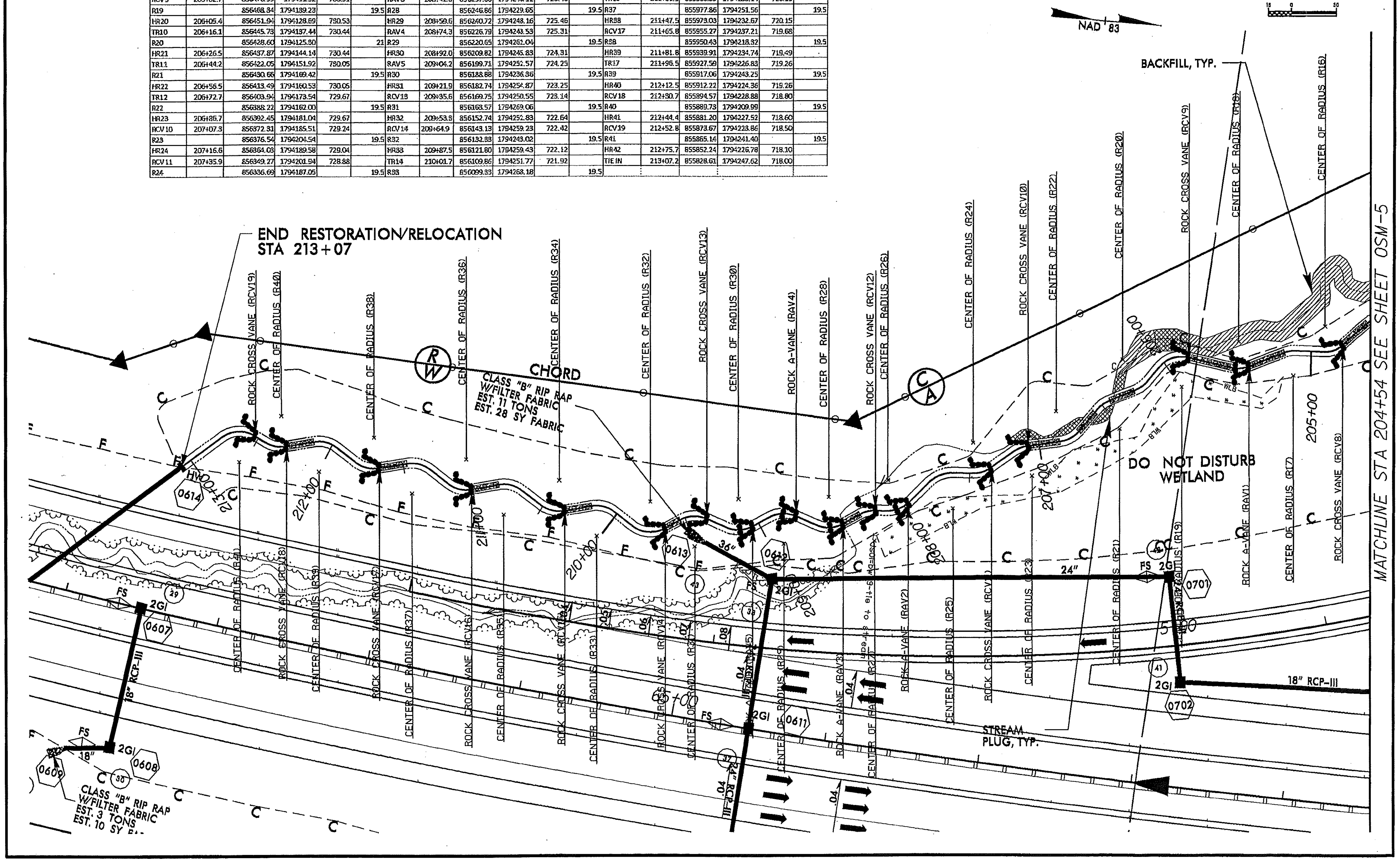
PROJECT ENGINEER

SEAL 030000
DAREN M. PAIT

APPROVED BY:

DATE:

SITE 2


NAD 83
BACKFILL, TYP.
END RESTORATION/RELOCATION
STA 213+07
CHORD
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 11 TONS
EST. 28 SY FABRIC
ROCK CROSS VANE (RCV19)
CENTER OF RADIUS (R40)
CENTER OF RADIUS (R38)
CENTER OF RADIUS (R36)
CENTER OF RADIUS (R34)
CENTER OF RADIUS (R32)
ROCK CROSS VANE (RCV13)
CENTER OF RADIUS (R30)
ROCK A-VANE (RAV4)
CENTER OF RADIUS (R28)
ROCK CROSS VANE (RCV12)
CENTER OF RADIUS (R26)
CENTER OF RADIUS (R24)
ROCK CROSS VANE (RCV10)
CENTER OF RADIUS (R22)
CENTER OF RADIUS (R20)
ROCK CROSS VANE (RCV9)
CENTER OF RADIUS (R18)
CENTER OF RADIUS (R16)
CENTER OF RADIUS (R41)
ROCK CROSS VANE (RCV18)
CENTER OF RADIUS (R39)
ROCK CROSS VANE (RCV17)
CENTER OF RADIUS (R37)
ROCK CROSS VANE (RCV16)
CENTER OF RADIUS (R35)
ROCK CROSS VANE (RCV15)
CENTER OF RADIUS (R33)
ROCK CROSS VANE (RCV14)
CENTER OF RADIUS (R31)
ROCK A-VANE (RAV5)
CENTER OF RADIUS (R29)
ROCK A-VANE (RAV3)
CENTER OF RADIUS (R27)
ROCK A-VANE (RAV2)
CENTER OF RADIUS (R25)
ROCK CROSS VANE (RCV11)
CENTER OF RADIUS (R23)
CENTER OF RADIUS (R21)
CENTER OF RADIUS (R19)
ROCK A-VANE (RAV1)
CENTER OF RADIUS (R17)
ROCK CROSS VANE (RCV8)
DO NOT DISTURB WETLAND
STREAM PLUG, TYP.
213+00
212+00
211+00
210+00
209+00
208+00
207+00
206+00
205+00
0614
0613
0612
0611
0607
0608
0609
0701
0702
2GI
FS
36"
24"
18"
18" RCP-III
CLASS "B" RIP RAP
W/FILTER FABRIC
EST. 3 TONS
EST. 10 SY
MATCHLINE STA 204+54 SEE SHEET OSM-5

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Kimley-Horn and Associates, Inc.

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SITE 2

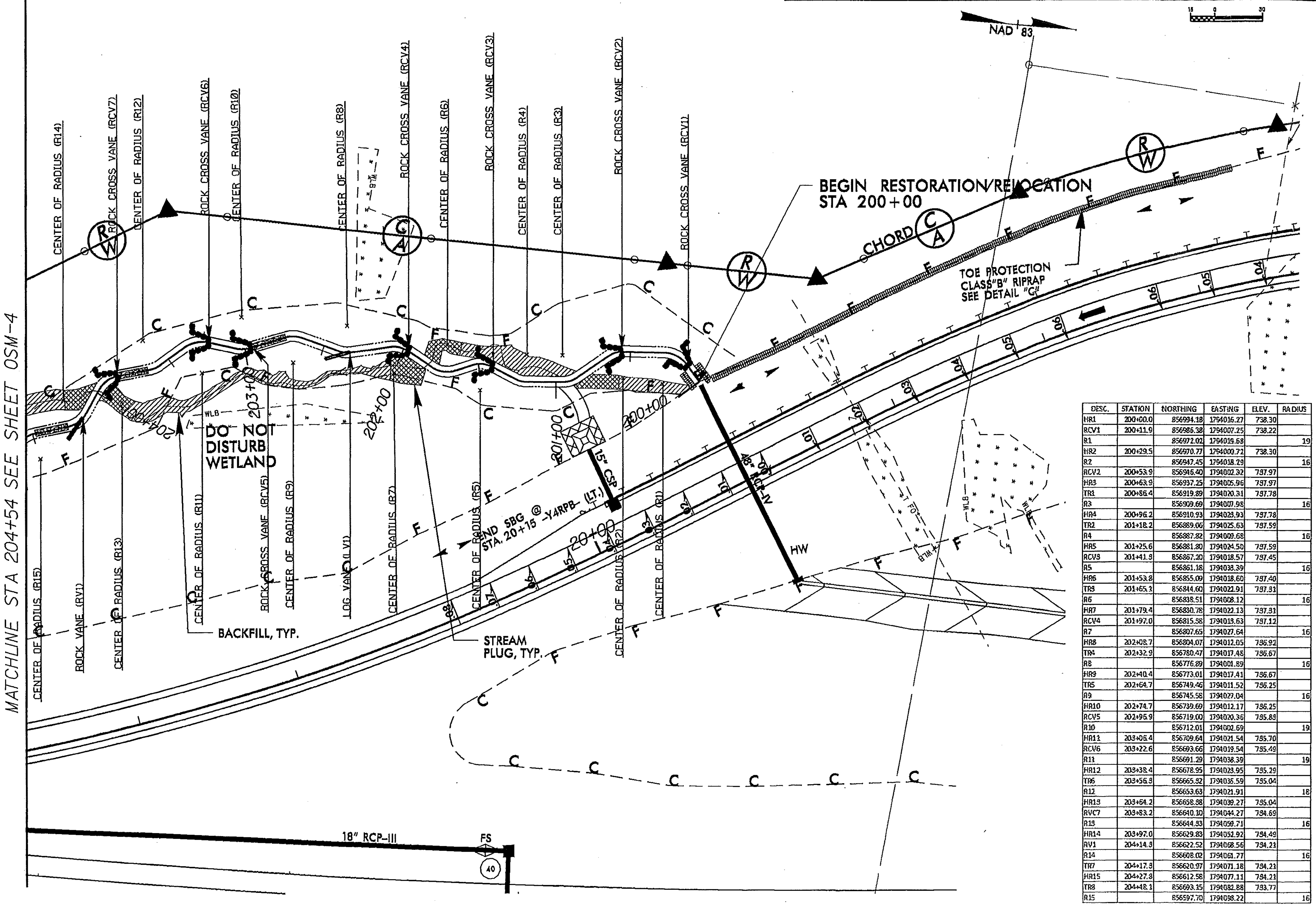
PROJECT REFERENCE NO.	SHEET NO.
U2525B	OSM–5

PROJECT ENGINEER

SEAL 030000
DAREN M. PAIT

APPROVED BY:

DATE:



Loyd
DB 177
NAD 83
15 0 30
MATCHLINE STA 204+54 SEE SHEET OSM-4
BEGIN RESTORATION/RELOCATION
STA 200+00
CHORD
TOE PROTECTION
CLASS "B" RIPRAP
SEE DETAIL "G"
CENTER OF RADIUS (R14)
ROCK CROSS VANE (RCV7)
CENTER OF RADIUS (R12)
ROCK CROSS VANE (RCV6)
CENTER OF RADIUS (R10)
CENTER OF RADIUS (R8)
ROCK CROSS VANE (RCV4)
CENTER OF RADIUS (R6)
ROCK CROSS VANE (RCV3)
CENTER OF RADIUS (R4)
CENTER OF RADIUS (R3)
ROCK CROSS VANE (RCV2)
ROCK CROSS VANE (RCV1)
CENTER OF RADIUS (R15)
ROCK VANE (RV1)
CENTER OF RADIUS (R13)
CENTER OF RADIUS (R11)
ROCK CROSS VANE (RCV5)
CENTER OF RADIUS (R9)
LOG VANE (LV1)
CENTER OF RADIUS (R7)
CENTER OF RADIUS (R5)
CENTER OF RADIUS (R2)
CENTER OF RADIUS (R1)
DO NOT DISTURB WETLAND
WLB
BACKFILL, TYP.
STREAM PLUG, TYP.
END SBG @ STA. 20+15 -Y4RPB- (LT.)
15" CSP
48" RCP-IV
HW
18" RCP-III
FS
40
200+00
201+00
202+00
203+00
204+00
20+00
R/W
C/A
C
F

DESC.	STATION	NORTHING	EASTING	ELEV.	RADIUS
HR1	200+00.0	856994.18	1794016.27	738.30	
RCV1	200+11.9	856986.38	1794007.25	738.22	
R1		856972.02	1794019.68		19
HR2	200+29.5	856970.77	1794000.72	738.30	
R2		856947.45	1794018.29		16
RCV2	200+53.9	856946.40	1794002.32	737.97	
HR3	200+63.9	856937.25	1794005.96	737.97	
TR1	200+86.4	856919.89	1794020.31	737.78	
R3		856909.69	1794007.98		16
HR4	200+96.2	856910.93	1794023.93	737.78	
TR2	201+18.2	856889.06	1794025.63	737.59	
R4		856887.82	1794009.68		16
HR5	201+25.6	856881.80	1794024.50	737.59	
RCV3	201+41.8	856867.20	1794018.57	737.45	
R5		856861.18	1794038.39		16
HR6	201+53.8	856855.09	1794018.60	737.40	
TR3	201+65.3	856844.60	1794021.91	737.31	
R6		856838.51	1794008.12		16
HR7	201+79.4	856830.78	1794022.13	737.31	
RCV4	201+97.0	856815.58	1794013.63	737.12	
R7		856807.65	1794027.64		16
HR8	202+08.7	856804.07	1794012.05	736.92	
TR4	202+32.9	856780.47	1794017.45	736.67	
R8		856776.89	1794001.89		16
HR9	202+40.4	856773.01	1794017.41	736.67	
TR5	202+64.7	856749.46	1794011.52	736.25	
R9		856745.58	1794027.04		16
HR10	202+74.7	856739.69	1794012.17	736.25	
RCV5	202+95.9	856719.00	1794020.36	735.88	
R10		856712.01	1794002.69		19
HR11	203+06.4	856709.64	1794021.54	735.70	
RCV6	203+22.6	856693.66	1794019.54	735.49	
R11		856691.29	1794038.39		19
HR12	203+38.4	856678.95	1794023.95	735.29	
TR6	203+56.8	856665.82	1794035.59	735.04	
R12		856653.63	1794021.91		18
HR13	203+64.2	856658.88	1794039.27	735.04	
RVC7	203+83.2	856640.10	1794044.27	734.69	
R13		856644.53	1794059.71		16
HR14	203+97.0	856629.83	1794052.92	734.49	
RV1	204+14.8	856622.52	1794068.56	734.21	
R14		856608.02	1794061.77		16
TR7	204+17.8	856620.97	1794071.18	734.21	
HR15	204+27.8	856612.58	1794077.11	734.21	
TR8	204+48.1	856603.15	1794082.88	733.77	
R15		856597.70	1794098.22		16

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SITE 4

PROJECT REFERENCE NO.	SHEET NO.
U2525B	OSM-6

PROJECT ENGINEER

SEAL 030000 DAREN M. PAIT

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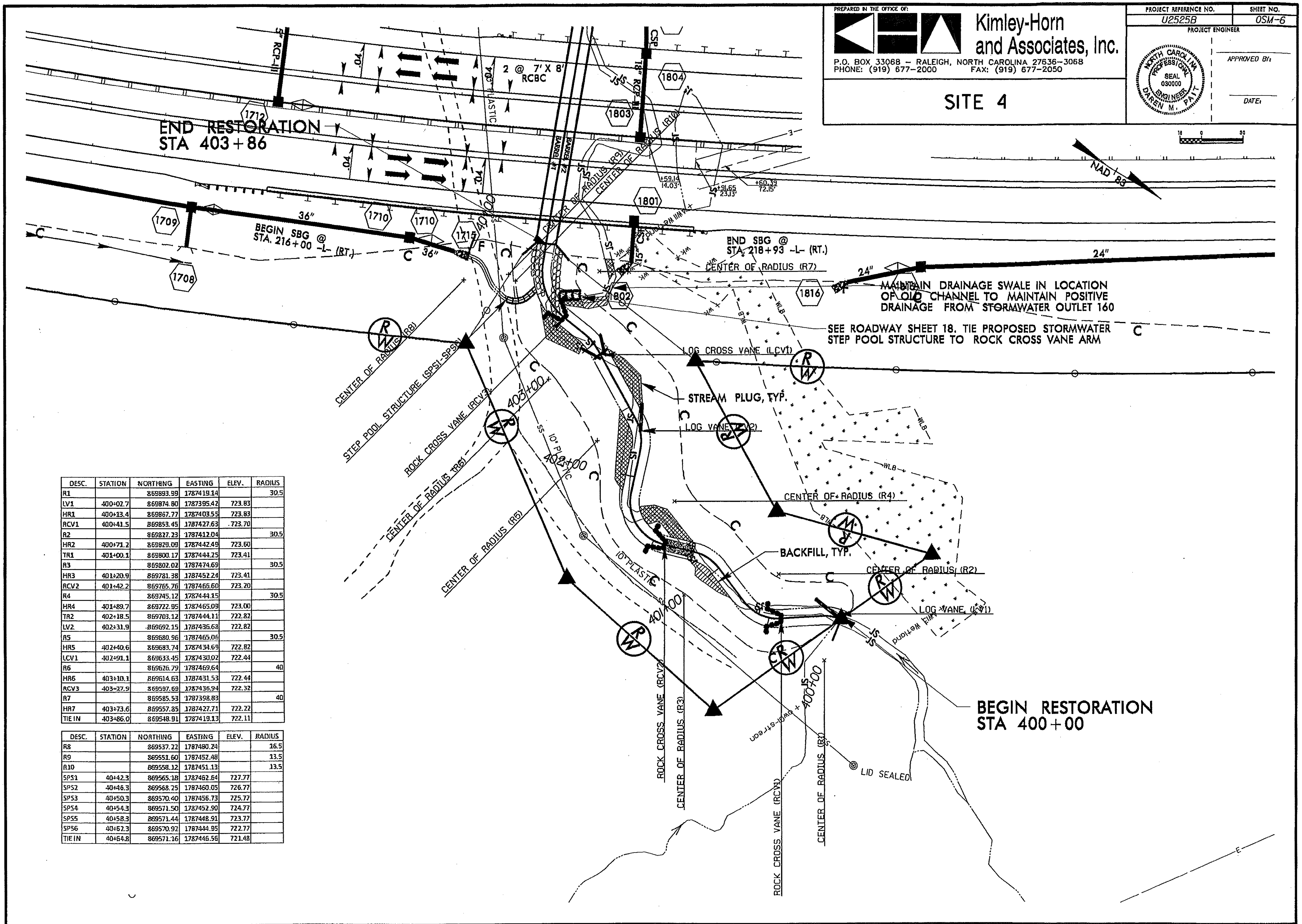
DATE:



10 0 30
NAD 83
END RESTORATION
STA 403+86
BEGIN RESTORATION
STA 400+00
BEGIN SBG @
STA. 216+00 -L- (RT.)
END SBG @
STA. 218+93 -L- (RT.)
2 @ 7' X 8'
RCBC
5" RCP-III
18" RCP-III
15" CSP
CSP
36"
24"
.04
10" PLASTIC
SS
1712
1709
1708
1710
1715
1803
1804
1801
1802
1816
+59.14
14.03'
+91.65
23.13'
+60.39
72.15'
F
C
RW
BARREL #1
BARREL #2
CENTER OF RADIUS (R10)
CENTER OF RADIUS (R9)
CENTER OF RADIUS (R8)
CENTER OF RADIUS (R7)
CENTER OF RADIUS (R6)
CENTER OF RADIUS (R5)
CENTER OF RADIUS (R4)
CENTER OF RADIUS (R3)
CENTER OF RADIUS (R2)
CENTER OF RADIUS (R1)
STEP POOL STRUCTURE (SPS1-SPS6)
ROCK CROSS VANE (RCV3)
ROCK CROSS VANE (RCV2)
ROCK CROSS VANE (RCV1)
LOG CROSS VANE (LCV1)
LOG VANE (LV2)
LOG VANE (LV1)
MAINTAIN DRAINAGE SWALE IN LOCATION OF OLD CHANNEL TO MAINTAIN POSITIVE DRAINAGE FROM STORMWATER OUTLET 160
SEE ROADWAY SHEET 18. TIE PROPOSED STORMWATER STEP POOL STRUCTURE TO ROCK CROSS VANE ARM
STREAM PLUG, TYP.
BACKFILL, TYP.
403+00
402+00
401+00
400+00
WLB
WK
JS
LID SEALED
Limit Wetland
E

DESC.	STATION	NORTHING	EASTING	ELEV.	RADIUS
R1		869893.99	1787419.14		30.5
LV1	400+02.7	869874.80	1787395.42	723.83	
HR1	400+13.4	869867.77	1787403.55	723.83	
RCV1	400+41.5	869853.45	1787427.63	723.70	
R2		869827.23	1787412.04		30.5
HR2	400+71.2	869829.09	1787442.49	723.60	
TR1	401+00.1	869800.17	1787444.25	723.41	
R3		869802.02	1787474.69		30.5
HR3	401+20.9	869781.38	1787452.24	723.41	
RCV2	401+42.2	869765.76	1787466.60	723.20	
R4		869745.12	1787444.15		30.5
HR4	401+89.7	869722.95	1787465.09	723.00	
TR2	402+18.5	869703.12	1787444.11	722.82	
LV2	402+31.9	869692.15	1787436.68	722.82	
R5		869680.96	1787465.06		30.5
HR5	402+40.6	869683.74	1787434.69	722.82	
LCV1	402+91.1	869633.45	1787430.02	722.44	
R6		869626.79	1787469.64		40
HR6	403+10.1	869614.63	1787431.53	722.44	
RCV3	403+27.9	869597.69	1787436.94	722.32	
R7		869585.53	1787398.83		40
HR7	403+73.6	869557.85	1787427.71	722.22	
TIE IN	403+86.0	869548.91	1787419.13	722.11	

DESC.	STATION	NORTHING	EASTING	ELEV.	RADIUS
R8		869537.22	1787480.24		16.5
R9		869551.60	1787452.48		13.5
R10		869558.12	1787451.13		13.5
SPS1	40+42.3	869565.18	1787462.64	727.77	
SPS2	40+46.3	869568.25	1787460.05	726.77	
SPS3	40+50.3	869570.40	1787456.73	725.77	
SPS4	40+54.3	869571.50	1787452.90	724.77	
SPS5	40+58.3	869571.44	1787448.91	723.77	
SPS6	40+62.3	869570.92	1787444.95	722.77	
TIE IN	40+64.8	869571.16	1787446.56	721.48	

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PHONE: (919) 677–2000 FAX: (919) 677–2050

SITE 5

PROJECT REFERENCE NO.	SHEET NO.
U2525B	OSM-7

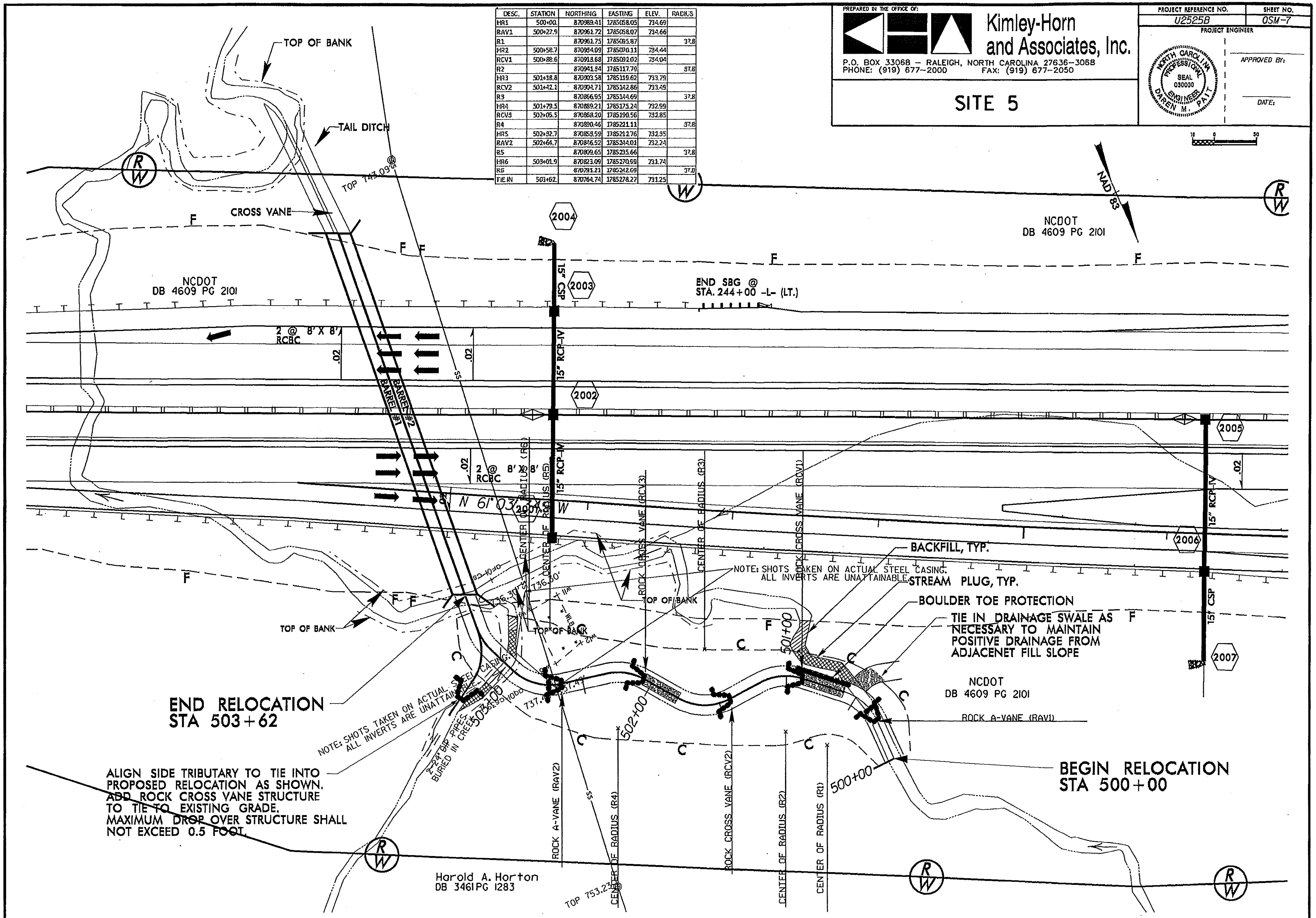
PROJECT ENGINEER

SEAL 030000 DAREN M. PAIT

APPROVED BY:

DATE:

DESC.	STATION	NORTHING	EASTING	ELEV.	RADIUS
HR1	500+00	870989.41	1785058.05	734.69	
RAV1	500+27.9	870961.72	1785058.07	734.66	
R1		870961.75	1785085.87		37.8
HR2	500+58.7	870984.09	1785070.11	734.44	
RCV1	500+88.6	870913.68	1785092.02	734.04	
R2		870941.84	1785117.79		37.8
HR3	501+18.8	870903.58	1785119.62	733.79	
RCV2	501+42.1	870904.71	1785142.86	733.49	
R3		870866.95	1785144.69		37.8
HR4	501+79.5	870889.21	1785175.24	732.99	
RCV3	502+05.5	870868.20	1785190.56	732.85	
R4		870890.46	1785221.11		37.8
HR5	502+32.7	870859.59	1785212.76	732.35	
RAV2	502+64.7	870846.52	1785244.01	732.24	
R5		870809.65	1785235.66		37.8
HR6	503+01.9	870823.09	1785270.99	731.74	
R6		870791.21	1785242.09		37.8
TIE IN	503+62	870764.74	1785278.27	731.25	



15 0 30
NAD 83
TOP OF BANK
TAIL DITCH
TOP 743.09
CROSS VANE
F
NCDOT
DB 4609 PG 2101
2004
2003
2002
2001
2005
2006
2007
15" CSP
15" RCP-IV
END SBG @
STA. 244+00 -L- (LT.)
2 @ 8' X 8' RCBC
.02
BARREL #2
BARREL #1
N 61°03' W
CENTER OF RADIUS (R6)
CENTER OF RADIUS (R5)
ROCK CROSS VANE (RCV3)
CENTER OF RADIUS (R3)
ROCK CROSS VANE (RCV1)
BACKFILL, TYP.
NOTE: SHOTS TAKEN ON ACTUAL STEEL CASING.
ALL INVERTS ARE UNATTAINABLE.
STREAM PLUG, TYP.
BOULDER TOE PROTECTION
TIE IN DRAINAGE SWALE AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE FROM ADJACENET FILL SLOPE
TOP OF BANK
736.30'
C
501+00
502+00
503+00
500+00
END RELOCATION
STA 503+62
NOTE: SHOTS TAKEN ON ACTUAL STEEL CASING. ALL INVERTS ARE UNATTAINABLE.
2-24" DIP PIPES BURIED IN CREEK
737.4
ROCK A-VANE (RAV1)
BEGIN RELOCATION
STA 500+00
ALIGN SIDE TRIBUTARY TO TIE INTO PROPOSED RELOCATION AS SHOWN. ADD ROCK CROSS VANE STRUCTURE TO TIE TO EXISTING GRADE. MAXIMUM DROP OVER STRUCTURE SHALL NOT EXCEED 0.5 FOOT.
ROCK A-VANE (RAV2)
SS
CENTER OF RADIUS (R4)
ROCK CROSS VANE (RCV2)
CENTER OF RADIUS (R2)
CENTER OF RADIUS (R1)
R/W
Harold A. Horton
DB 3461 PG 1283
TOP 753.23

TIP PROJECT: U-2525C

CONTRACT:

09/08/99

13-MAY-2013 08:10
R:\Roadway\Proj\u2525c_rdy_tsh.dgn
$$$$USERNAME$$$$

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Plan Sheet Symbols
See Sheet 1-C For Survey Control Sheet

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

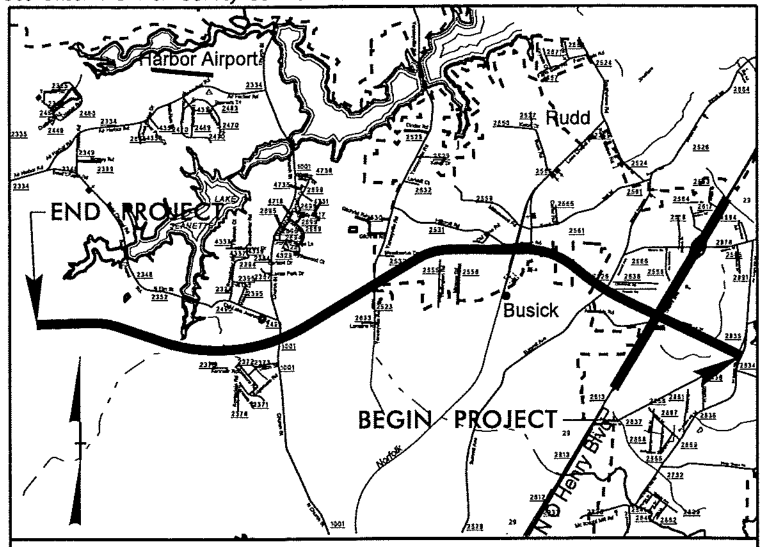
GUILFORD COUNTY

LOCATION: GREENSBORO EASTERN LOOP FROM US 29 NORTH OF GREENSBORO TO SR 2303 (LAWNDALE DRIVE)

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

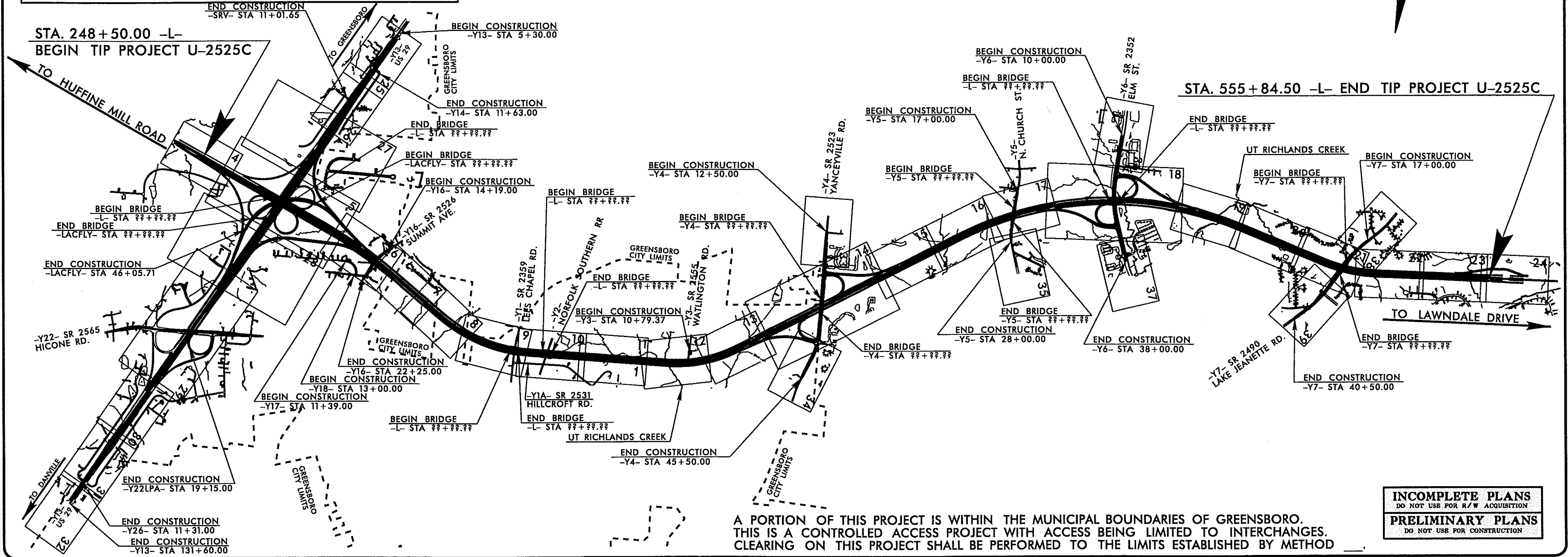
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2525C	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34821.1.4		PE



Harbor Airport
Rudd
END PROJECT
Busick
BEGIN PROJECT
N.O. Henry Blvd

VICINITY MAP



NAD 83/95
END CONSTRUCTION -SRV- STA 11+01.65
STA. 248+50.00 -L- BEGIN TIP PROJECT U-2525C
TO HUFFINE MILL ROAD
TO GREENSBORO
-Y13- US 29
BEGIN CONSTRUCTION -Y13- STA 5+30.00
GREENSBORO CITY LIMITS
END CONSTRUCTION -Y14- STA 11+63.00
END BRIDGE -L- STA ??+??.??
BEGIN BRIDGE -LACFLY- STA ??+??.??
BEGIN CONSTRUCTION -Y16- STA 14+19.00
-Y16- SR 2526 SUMMIT AVE.
BEGIN BRIDGE -L- STA ??+??.??
END BRIDGE -LACFLY- STA ??+??.??
END CONSTRUCTION -LACFLY- STA 46+05.71
-Y22- SR 2565 HICONE RD.
GREENSBORO CITY LIMITS
END CONSTRUCTION -Y16- STA 22+25.00
BEGIN CONSTRUCTION -Y18- STA 13+00.00
BEGIN CONSTRUCTION -Y17- STA 11+39.00
BEGIN BRIDGE -L- STA ??+??.??
TO DANVILLE
-Y13- US 29
END CONSTRUCTION -Y22LPA- STA 19+15.00
END CONSTRUCTION -Y26- STA 11+31.00
END CONSTRUCTION -Y13- STA 131+60.00
GREENSBORO CITY LIMITS
BEGIN BRIDGE -L- STA ??+??.??
-Y1- SR 2359 LEES CHAPEL RD.
-Y2- NORFOLK SOUTHERN RR
GREENSBORO CITY LIMITS
END BRIDGE -L- STA ??+??.??
BEGIN CONSTRUCTION -Y3- STA 10+79.37
-Y3- SR 2551 WATLINGTON RD.
-Y1A- SR 2531 HILLCROFT RD.
END BRIDGE -L- STA ??+??.??
UT RICHLANDS CREEK
END CONSTRUCTION -Y4- STA 45+50.00
BEGIN CONSTRUCTION -Y4- STA 12+50.00
BEGIN BRIDGE -Y4- STA ??+??.??
-Y4- SR 2523 YANCEYVILLE RD.
END BRIDGE -Y4- STA ??+??.??
GREENSBORO CITY LIMITS
BEGIN CONSTRUCTION -Y5- STA 17+00.00
BEGIN BRIDGE -Y5- STA ??+??.??
-Y5- N. CHURCH ST.
END BRIDGE -Y5- STA ??+??.??
END CONSTRUCTION -Y5- STA 28+00.00
BEGIN CONSTRUCTION -Y6- STA 10+00.00
BEGIN BRIDGE -L- STA ??+??.??
-Y6- SR 2352 ELM ST.
END CONSTRUCTION -Y6- STA 38+00.00
STA. 555+84.50 -L- END TIP PROJECT U-2525C
END BRIDGE -L- STA ??+??.??
UT RICHLANDS CREEK
BEGIN BRIDGE -Y7- STA ??+??.??
BEGIN CONSTRUCTION -Y7- STA 17+00.00
TO LAWNDALE DRIVE
END BRIDGE -Y7- STA ??+??.??
-Y7- SR 2490 LAKE JEANETTE RD.
END CONSTRUCTION -Y7- STA 40+50.00

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF GREENSBORO.
THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ___.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2018 = N/A
ADT 2030 = 72200
DHV = 10 %
D = 60 %
T = 15 % *
V = 70 MPH
* TTST 5% DUAL 10%
FUNC CLASS = INTERSTATE "STATEWIDE TIER"

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-2525C = 0.000 MILES
LENGTH STRUCTURE TIP PROJECT U-2525C = 0.000 MILES
TOTAL LENGTH OF TIP PROJECT U-2525C = 4.665 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 17, 2015

LETTING DATE:
JULY 17, 2018

JAMES A. SPEER, PE
PROJECT ENGINEER

DANIEL W. GARDNER, JR., PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: ____________ *P.E.*

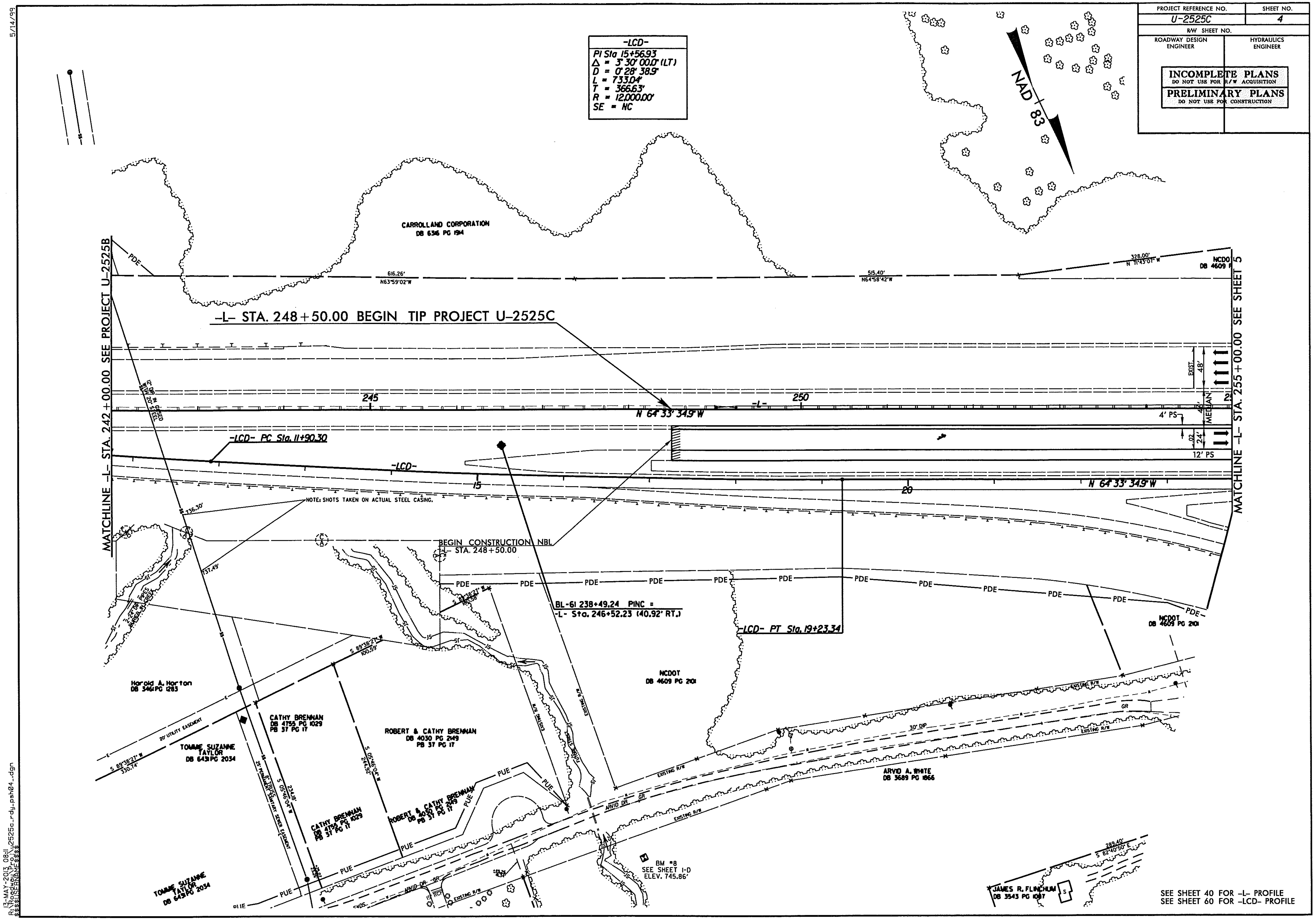
ROADWAY DESIGN ENGINEER

SIGNATURE: ____________ *P.E.*

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



-LCD-
PI Sta 15+56.93
Δ = 3° 30' 00.0" (LT)
D = 0° 28' 38.9"
L = 733.04'
T = 366.63'
R = 12,000.00'
SE = NC

NAD 83
CARROLLAND CORPORATION
DB 6516 PG 1914
616.26'
N63°59'02"W
515.40'
N64°58'42"W
328.00'
N 11°43'01" W
NCDOT
DB 4609
MATCHLINE -L- STA. 242+00.00 SEE PROJECT U-2525B
MATCHLINE -L- STA. 255+00.00 SEE SHEET 5
-L- STA. 248+50.00 BEGIN TIP PROJECT U-2525C
PDE
245
250
-L-
N 64° 33' 34.9" W
EXIST. 48'
MEDIAN
4' PS
24'
12' PS
-LCD- PC Sta. 11+90.30
-LCD-
15
20
N 64° 33' 34.9" W
NOTE: SHOTS TAKEN ON ACTUAL STEEL CASING.
136.30'
137.49'
BEGIN CONSTRUCTION NBL
-L- STA. 248+50.00
BL-61 238+49.24 PINC =
-L- Sta. 246+52.23 (40.92' RT.)
-LCD- PT Sta. 19+23.34
NCDOT
DB 4609 PG 2101
NCDOT
DB 4609 PG 2101
S 89°38'27" W
100.59'
Harold A. Horton
DB 3461 PG 1283
CATHY BRENNAN
DB 4755 PG 1029
PB 37 PG 17
ROBERT & CATHY BRENNAN
DB 4030 PG 2149
PB 37 PG 17
TOMMIE SUZANNE TAYLOR
DB 6431 PG 2034
20' UTILITY EASEMENT
S 89°38'27" W
330.74'
25' PERMANENT SANITARY SEWER EASEMENT
S 05°46'04" W
234.18'
S 05°46'04" W
249.59'
CATHY BRENNAN
DB 4755 PG 1029
PB 37 PG 17
ROBERT & CATHY BRENNAN
DB 4030 PG 2149
PB 37 PG 17
TOMMIE SUZANNE TAYLOR
DB 6431 PG 2034
PUE
ARVID DR.
GR
EXISTING R/W
30' DIP
ARVID A. WHITE
DB 3689 PG 1866
BM #8
SEE SHEET 1-D
ELEV. 745.86'
JAMES R. FLINCHUM
DB 3543 PG 1087
289.40'
S 82°40'50" E

SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 60 FOR -LCD- PROFILE

5/14/99

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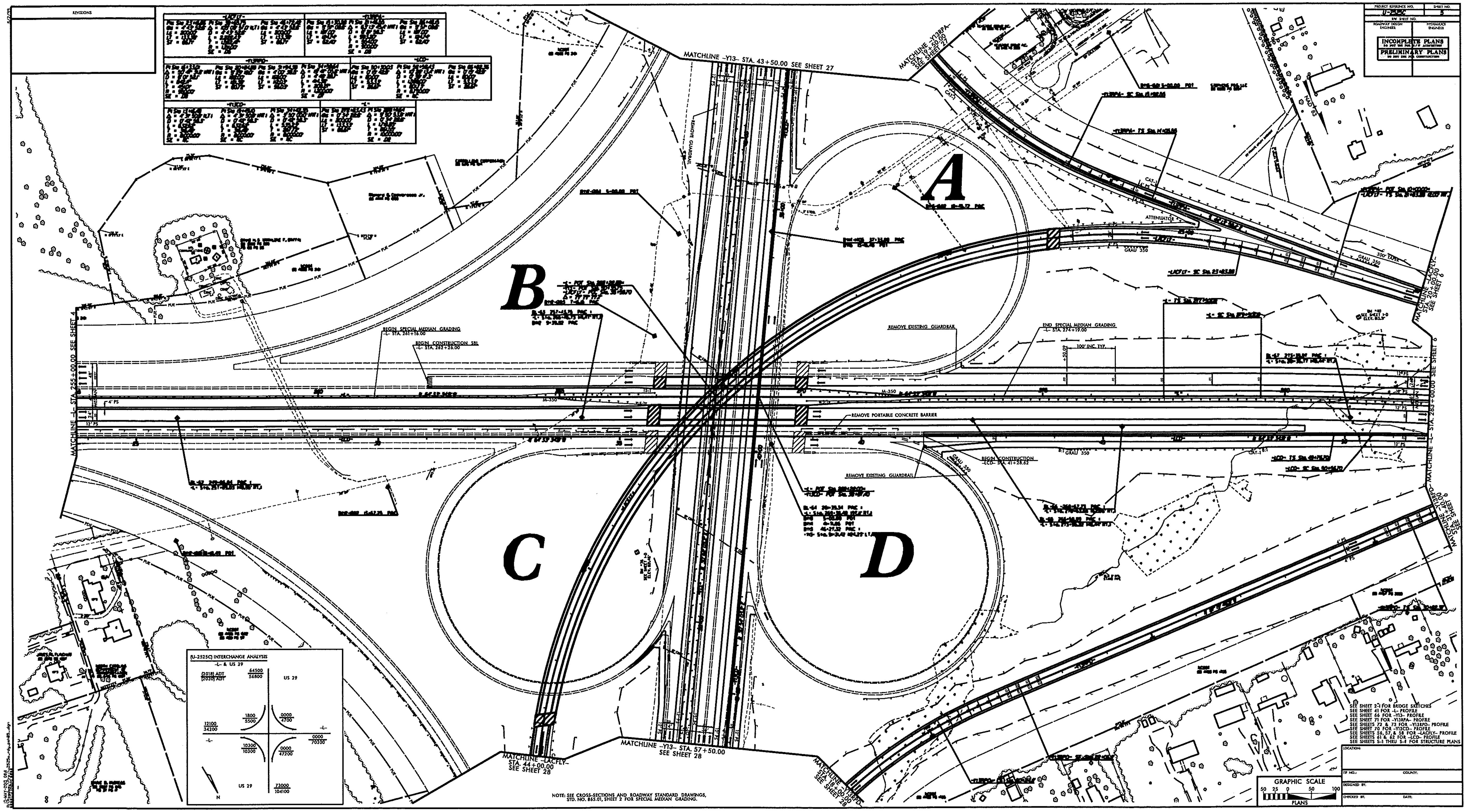
PROJECT REFERENCE NO.	SHEET NO.
U-2525C	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


REVISIONS
A
B
C
D
MATCHLINE -Y13- STA. 43+50.00 SEE SHEET 27
MATCHLINE -Y13RPA- STA. 15+50.00 SEE SHEET 27
MATCHLINE -L- STA. 255+00.00 SEE SHEET 4
MATCHLINE -LACFLY- STA. 20+00.00 SEE SHEET 6
MATCHLINE -L- STA. 283+00.00 SEE SHEET 6
MATCHLINE -Y13CD- SEE SHEET 6
MATCHLINE -LACFLY- STA. 44+00.00 SEE SHEET 28
MATCHLINE -Y13- STA. 57+50.00 SEE SHEET 28
MATCHLINE -Y13RPD- STA. 18+00.00 SEE SHEET 28
NAD 83
REMOVE EXISTING GUARDRAIL
REMOVE EXISTING GUARDRAIL
REMOVE EXISTING GUARDRAIL
REMOVE PORTABLE CONCRETE BARRIER
BEGIN SPECIAL MEDIAN GRADING -L- STA. 261+18.00
BEGIN CONSTRUCTION SBL -L- STA. 262+26.00
END SPECIAL MEDIAN GRADING -L- STA. 274+19.00
BEGIN CONSTRUCTION -LCD- STA. 41+28.62
100' INC. TYP.
ATTENUATOR
GRAU 350
200' TAPER
M-350
4' PS
12' PS
(U-2525C) INTERCHANGE ANALYSIS
-L- & US 29
(2018) ADT
(2030) ADT
64500
56800
US 29
1800
5500
0000
4700
12100
34200
-L-
-L-
0000
70300
10300
10300
0000
47200
US 29
73000
104100
N

SEE SHEET 2-I FOR BRIDGE SKETCHES
SEE SHEET 41 FOR -L- PROFILE
SEE SHEET 66 FOR -Y13- PROFILE
SEE SHEET 71 FOR -Y13RPA- PROFILE
SEE SHEETS 72 & 73 FOR -Y13RPD- PROFILE
SEE SHEET 70 FOR -Y13CD- PROFILE
SEE SHEETS 56, 57, & 58 FOR -LACFLY- PROFILE
SEE SHEETS 61 & 62 FOR -LCD- PROFILE
SEE SHEETS S-1 THRU S-# FOR STRUCTURE PLANS

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.

GRAPHIC SCALE
50 25 0 50 100
PLANS

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

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	6

R/W SHEET NO.

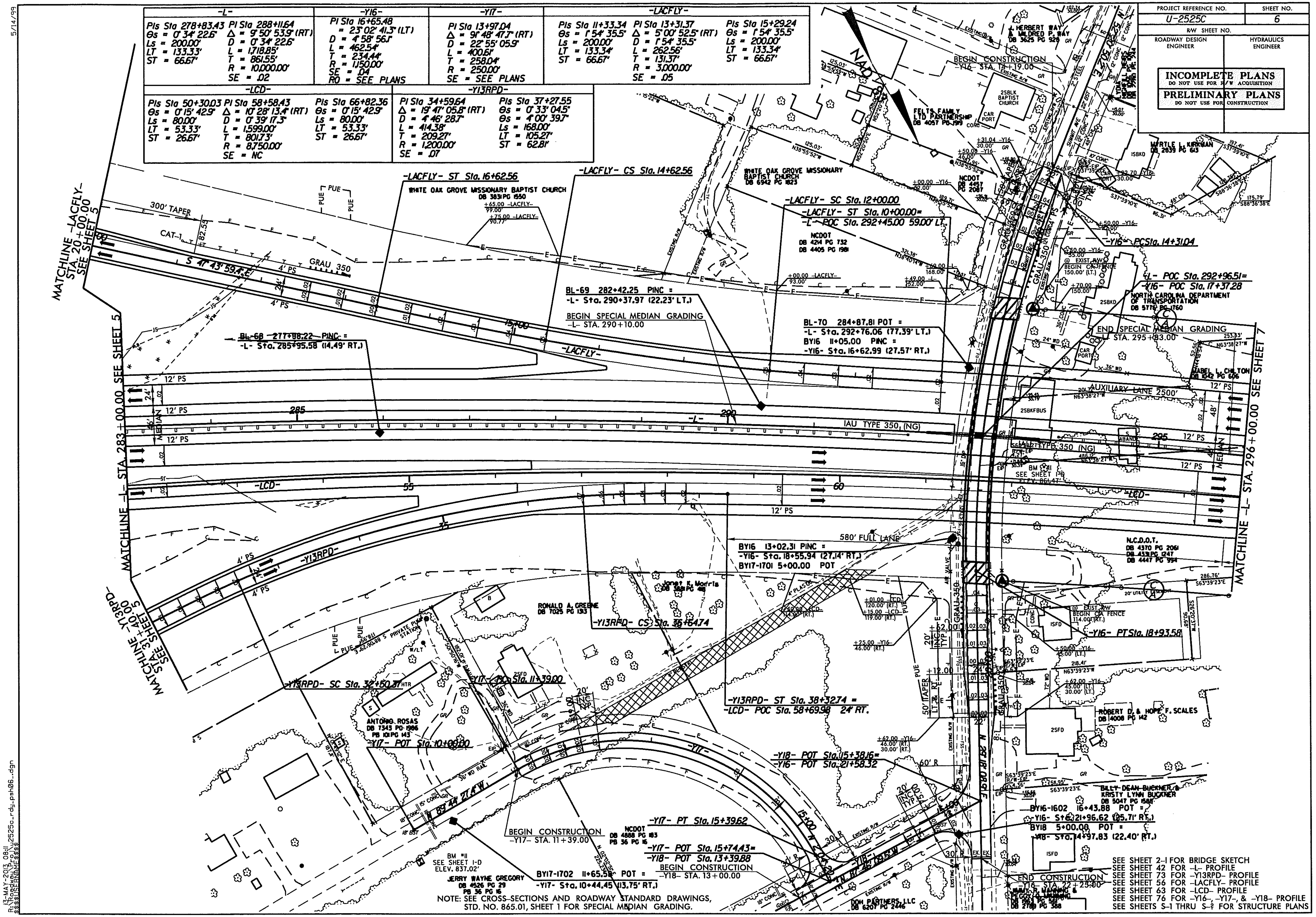
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-		-Y16-	-Y17-	-LACFLY-		
PIs Sta 278+83.43 Θs = 0° 34' 22.6" Ls = 200.00' LT = 133.33' ST = 66.67'	PI Sta 288+11.64 Δ = 9° 50' 53.9" (RT) D = 0° 34' 22.6" L = 1,718.85' T = 861.55' R = 10,000.00' SE = .02	PI Sta 16+65.48 = 23° 02' 41.3" (LT) D = 4° 58' 56.1" L = 462.54' T = 234.44' R = 1,150.00' SE = .04 RO = SEE PLANS	PI Sta 13+97.04 Δ = 91° 48' 47.7" (RT) D = 22° 55' 05.9" L = 400.61' T = 258.04' R = 250.00' SE = SEE PLANS	PIs Sta 11+33.34 Θs = 1° 54' 35.5" Ls = 200.00' LT = 133.34' ST = 66.67'	PI Sta 13+31.37 Δ = 5° 00' 52.5" (RT) D = 1° 54' 35.5" L = 262.56' T = 131.37' R = 3,000.00' SE = .05	PIs Sta 15+29.24 Θs = 1° 54' 35.5" Ls = 200.00' LT = 133.34' ST = 66.67'

-LCD-			-Y13RPD-	
PIs Sta 50+30.03 Θs = 0° 15' 42.9" Ls = 80.00' LT = 53.33' ST = 26.67'	PI Sta 58+58.43 Δ = 10° 28' 13.4" (RT) D = 0° 39' 17.3" L = 1,599.00' T = 801.73' R = 8,750.00' SE = NC	PIs Sta 66+82.36 Θs = 0° 15' 42.9" Ls = 80.00' LT = 53.33' ST = 26.67'	PI Sta 34+59.64 Δ = 19° 47' 05.8" (RT) D = 4° 46' 28.7" L = 414.38' T = 209.27' R = 1,200.00' SE = .07	PIs Sta 37+27.55 Θs = 0° 33' 04.5" Θs = 4° 00' 39.7" Ls = 168.00' LT = 105.27' ST = 62.81'


MATCHLINE -LACFLY- STA. 20+00.00 SEE SHEET 5
MATCHLINE -L- STA. 283+00.00 SEE SHEET 5
MATCHLINE -Y13RPD- STA. 31+40.05 SEE SHEET 5
MATCHLINE -L- STA. 296+00.00 SEE SHEET 7
-LACFLY- ST Sta. 16+62.56
WHITE OAK GROVE MISSIONARY BAPTIST CHURCH
DB 3831 PG 1550
-LACFLY- CS Sta. 14+62.56
WHITE OAK GROVE MISSIONARY BAPTIST CHURCH
DB 6942 PG 1823
-LACFLY- SC Sta. 12+00.00
-LACFLY- ST Sta. 10+00.00=
-L- POC Sta. 292+45.00 59.00' LT.
NCDOT
DB 4214 PG 732
DB 4405 PG 1981
300' TAPER
CAT-1
S 47° 43' 59.4" E
GRAU 350
4' PS
BL-68 277+88.22 PINC =
-L- Sta. 285+95.58 (14.49' RT.)
BL-69 282+42.25 PINC =
-L- Sta. 290+37.97 (22.23' LT.)
BEGIN SPECIAL MEDIAN GRADING
-L- STA. 290+10.00
BL-70 284+87.81 POT =
-L- Sta. 292+76.06 (77.39' LT.)
BY16 11+05.00 PINC =
-Y16- Sta. 16+62.99 (27.57' RT.)
-LACFLY-
12' PS
MEDIAN
285
290
295
-L-
IAU TYPE 350 (NG)
-LCD-
55
60
-Y13RPD-
580' FULL LANE
BY16 13+02.31 PINC =
-Y16- Sta. 18+55.94 (27.14' RT.)
BY17-1701 5+00.00 POT
RONALD A. GREENE
DB 7025 PG 133
-Y13RPD- CS Sta. 36+64.74
-Y13RPD- SC Sta. 32+50.37
-Y13RPD- ST Sta. 38+32.74 =
-LCD- POC Sta. 58+69.98 24' RT.
-Y17- POT Sta. 10+00.00
-Y17- PC Sta. 11+39.00
ANTONIO ROSAS
DB 7343 PG 1986
PB 101 PG 143
-Y18- POT Sta. 15+38.16=
-Y16- POT Sta. 21+58.32
-Y17-
BEGIN CONSTRUCTION
-Y17- STA. 11+39.00
NCDOT
DB 4888 PG 183
PB 36 PG 16
-Y17- PT Sta. 15+39.62
-Y17- POT Sta. 15+74.43=
-Y18- POT Sta. 13+39.88
BEGIN CONSTRUCTION
-Y18- STA. 13+00.00
BM #11
SEE SHEET 1-D
ELEV. 837.02'
JERRY WAYNE GREGORY
DB 4526 PG 29
PB 36 PG 16
BY17-1702 11+65.58 POT =
-Y17- Sta. 10+44.45 (13.75' RT.)
N 89° 44' 27.4" W
DDH PARTNERS, LLC
DB 6207 PG 2446
BEGIN CONSTRUCTION
-Y16- STA. 12+19.00
FELTS FAMILY LTD PARTNERSHIP
DB 4057 PG 1919
J. HERBERT WAY & MILDRED P. WAY
DB 3625 PG 526
2SBLK BAPTIST CHURCH
MYRTLE L. KIRKMAN
DB 2839 PG 613
-Y16- PC Sta. 14+31.04
-L- POC Sta. 292+96.51=
-Y16- POC Sta. 17+37.28
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DB 5776 PG 1760
END SPECIAL MEDIAN GRADING
-L- STA. 295+83.00
MABEL L. CHILTON
DB 1042 PG 606
AUXILIARY LANE 2500'
2SBKFBUS
N.C.D.O.T.
DB 4370 PG 2061
DB 4331 PG 1247
DB 4447 PG 954
-Y16- PT Sta. 18+93.58
ROBERT D. & HOPE F. SCALES
DB 14008 PG 142
BILLY DEAN BUCKNER & KRISTY LYNN BUCKNER
DB 5047 PG 1588
BY16-1602 16+43.88 POT =
-Y16- Sta. 21+96.62 (25.71' RT.)
BY18 5+00.00 POT =
-Y18- Sta. 14+97.83 (22.40' RT.)
END CONSTRUCTION
-Y16- STA. 22+25.00
GRAU-350
AIR VALVE
50' TAPER
60' R
20' INC. TYP.
2SFD
ISFD

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 2-1 FOR BRIDGE SKETCH
SEE SHEET 42 FOR -L- PROFILE
SEE SHEET 73 FOR -Y13RPD- PROFILE
SEE SHEET 56 FOR -LACFLY- PROFILE
SEE SHEET 63 FOR -LCD- PROFILE
SEE SHEET 76 FOR -Y16-, -Y17-, & -Y18- PROFILE
SEE SHEETS S-1 THRU S-? FOR STRUCTURE PLANS

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PROJECT REFERENCE NO.	SHEET NO.
U-2525C	7

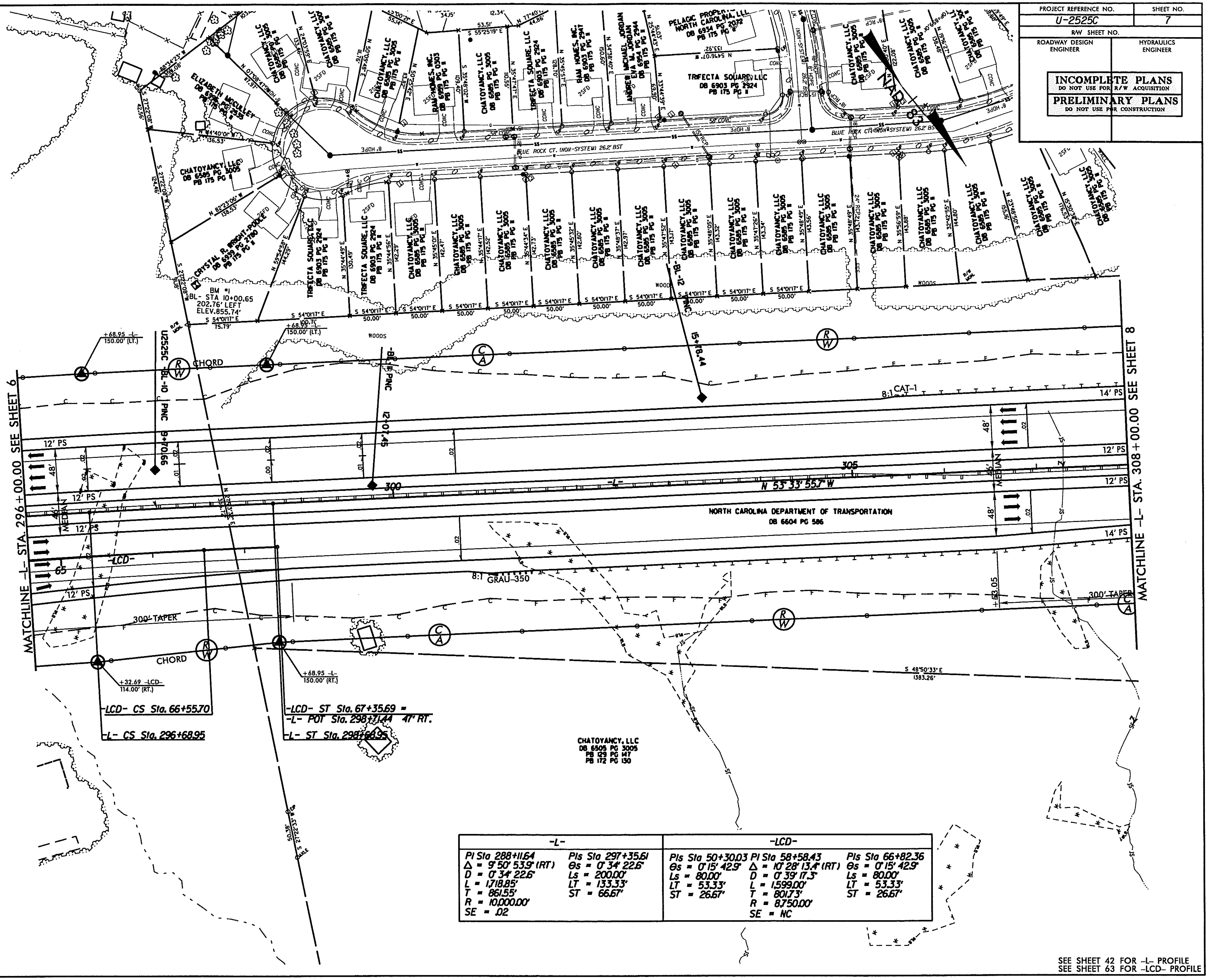
R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


MATCHLINE -L- STA. 296+00.00 SEE SHEET 6
MATCHLINE -L- STA. 308+00.00 SEE SHEET 8
BM #1
-BL- STA 10+00.65
202.76' LEFT
ELEV.855.74'
R/W MON.
S 54°01'17" E
75.79'
100.71'
50.00'
+68.95 -L-
150.00' (LT.)
+68.95 -L-
150.00' (RT.)
+32.69 -LCD-
114.00' (RT.)
CHORD
WOODS
U2525C -BL-10 PINC 9+70.66
-BL- PINC 12+07.45
-BL-12 PINC 15+78.44
12' PS
14' PS
48'
MEDIAN
65
-LCD-
-L-
300
305
N 53° 33' 55.7" W
8:1 CAT-1
8:1 GRAU-350
300' TAPER
+53.05
S 48°50'33" E
1383.26'
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DB 6604 PG 586
CHATOYANCY, LLC
DB 6505 PG 3005
PB 129 PG 147
PB 172 PG 130
CRYSTAL R. WRIGHT-POOLE
DB 6959 PG 2780
PB 175 PG 11
TRIFECTA SQUARE, LLC
DB 6903 PG 2924
PB 175 PG 11
CHATOYANCY, LLC
DB 6585 PG 3005
PB 175 PG 11
ELIZABETH MCCULLEY
RAM HOMES, INC.
DB 6999 PG 0503
MICHAEL JORDAN
ANDREW JORDAN
DB 6954 PG 2944
PELAGIC PROPERTIES NORTH CAROLINA, LLC
DB 6954 PG 2072
PB 175 PG 11
BLUE ROCK CT. (NON-SYSTEM) 26.2' BST
8" HDPE
CONC
25FD
-LCD- CS Sta. 66+55.70
-L- CS Sta. 296+68.95
-LCD- ST Sta. 67+35.69 =
-L- POT Sta. 298+71.44 47' RT.
-L- ST Sta. 298+68.95

-L-		-LCD-		
PI Sta 288+11.64	PIs Sta 297+35.61	PIs Sta 50+30.03	PI Sta 58+58.43	PIs Sta 66+82.36
Δ = 9° 50' 53.9" (RT)	Θs = 0° 34' 22.6"	Θs = 0° 15' 42.9"	Δ = 10° 28' 13.4" (RT)	Θs = 0° 15' 42.9"
D = 0° 34' 22.6"	Ls = 200.00'	Ls = 80.00'	D = 0° 39' 17.3"	Ls = 80.00'
L = 1,718.85'	LT = 133.33'	LT = 53.33'	L = 1,599.00'	LT = 53.33'
T = 861.55'	ST = 66.67'	ST = 26.67'	T = 801.73'	ST = 26.67'
R = 10,000.00'			R = 8,750.00'	
SE = .02			SE = NC	

SEE SHEET 42 FOR -L- PROFILE
SEE SHEET 63 FOR -LCD- PROFILE

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5/14/99

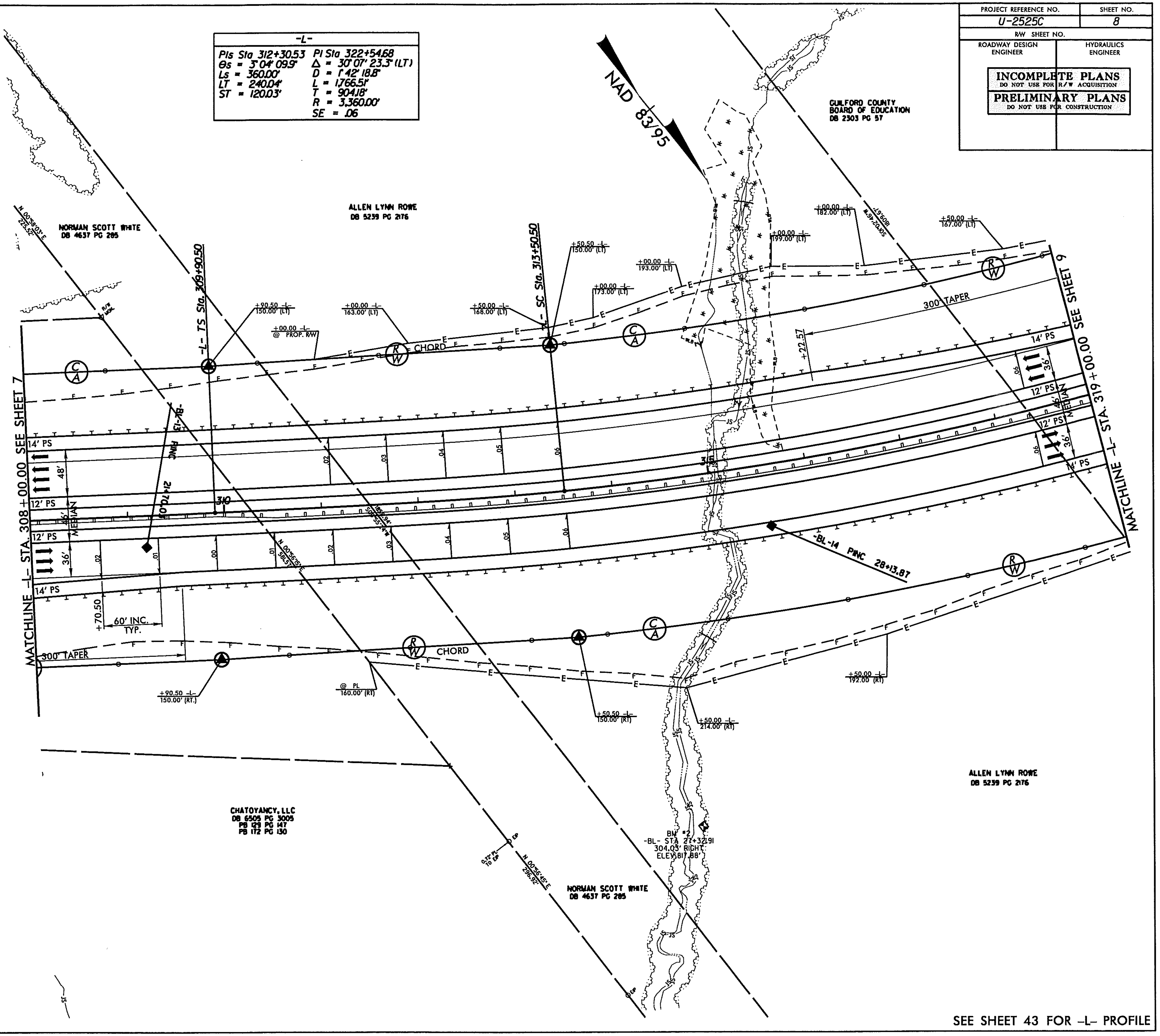
PROJECT REFERENCE NO.	SHEET NO.
U-2525C	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-

PIs Sta 312+30.53	PI Sta 322+54.68
Θs = 3°04′09.9″	Δ = 30°07′23.3″ (LT)
Ls = 360.00′	D = 1°42′18.8″
LT = 240.04′	L = 1,766.51′
ST = 120.03′	T = 904.18′
	R = 3,360.00′
	SE = .06



NAD 83/95
GUILFORD COUNTY
BOARD OF EDUCATION
DB 2303 PG 57
ALLEN LYNN ROWE
DB 5239 PG 2176
NORMAN SCOTT WHITE
DB 4637 PG 285
N 00°58′03″ E
225.52′
R/W MON.
-L- TS Sta. 309+90.50
+90.50 -L-
150.00′ (LT)
+00.00 -L-
163.00′ (LT)
+00.00 -L-
@ PROP. R/W
CHORD
+50.00 -L-
168.00′ (LT)
-L- SC Sta. 313+50.50
+50.50 -L-
150.00′ (LT)
+00.00 -L-
173.00′ (LT)
+00.00 -L-
193.00′ (LT)
+00.00 -L-
199.00′ (LT)
+00.00 -L-
182.00′ (LT)
S01°02′46″W
1809.67′
+50.00 -L-
167.00′ (LT)
300′ TAPER
+22.57
14′ PS
36′
12′ PS
46′ MEDIAN
MATCHLINE -L- STA. 319+00.00 SEE SHEET 9
MATCHLINE -L- STA. 308+00.00 SEE SHEET 7
14′ PS
48′
12′ PS
46′ MEDIAN
12′ PS
36′
14′ PS
-BL-13 PINC 21+70.08
310
-BL-14 PINC 28+13.87
N 00°56′45″ E
+70.50
60′ INC.
TYP.
300′ TAPER
+90.50 -L-
150.00′ (RT.)
@ PL
160.00′ (RT)
CHORD
+50.50 -L-
150.00′ (RT)
+50.00 -L-
214.00′ (RT)
+50.00 -L-
192.00′ (RT)
ALLEN LYNN ROWE
DB 5239 PG 2176
CHATOYANCY, LLC
DB 6505 PG 3005
PB 129 PG 147
PB 172 PG 130
0.72′ PL TO EP
EP
N 00°56′45″ E
296.92′
NORMAN SCOTT WHITE
DB 4637 PG 285
BM #2
-BL- STA 27+32.91
304.03′ RIGHT
ELEV 817.88′
JS

SEE SHEET 43 FOR -L- PROFILE

13-MAY-2013 08:12
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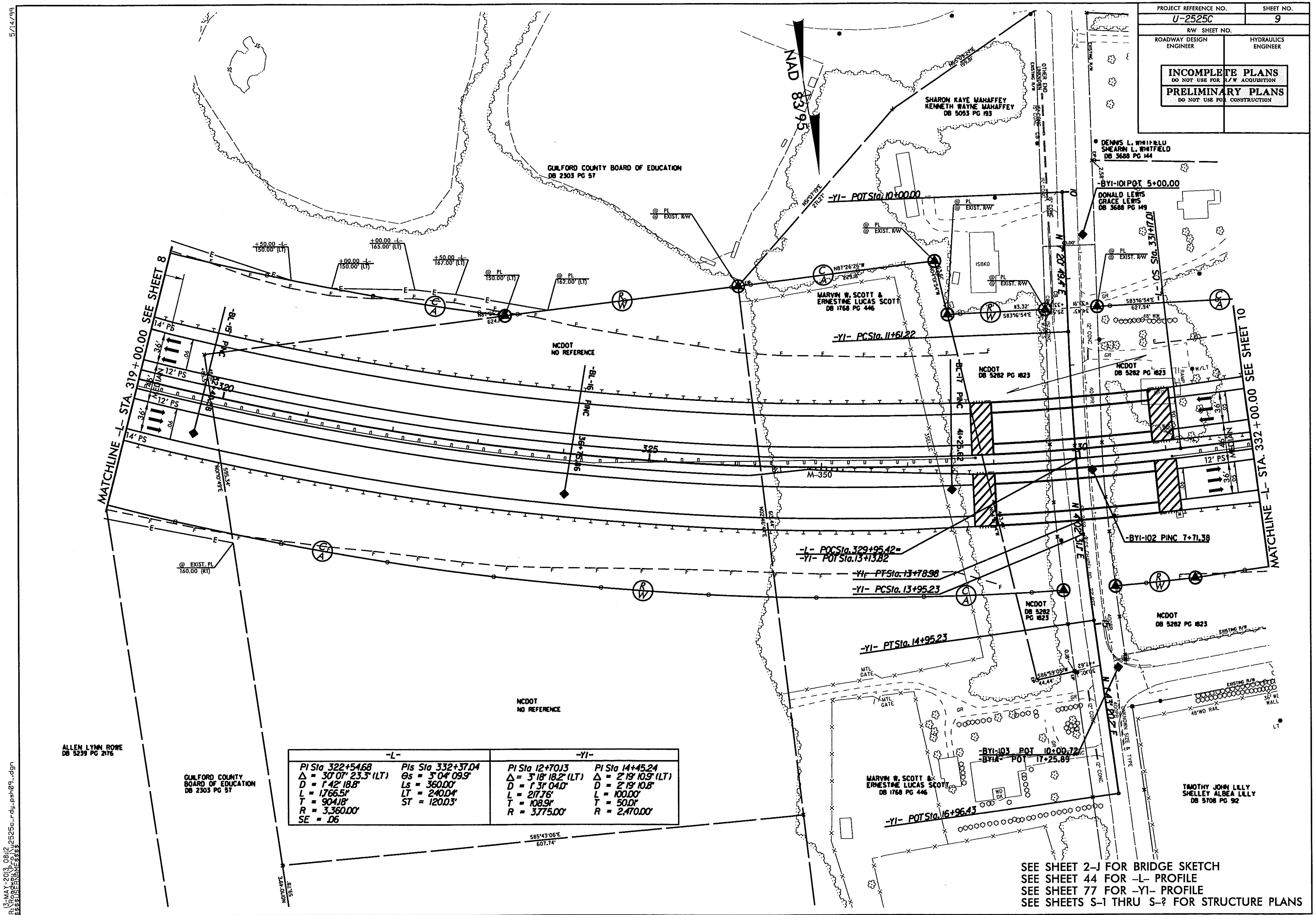
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


NAD 83/95
GUILFORD COUNTY BOARD OF EDUCATION
DB 2303 PG 57
SHARON KAYE MAHAFFEY
KENNETH WAYNE MAHAFFEY
DB 5053 PG 193
DENNIS L. WHITFIELD
SHEARIN L. WHITFIELD
DB 3688 PG 144
-BY1-101 POT 5+00.00
DONALD LEWIS
GRACE LEWIS
DB 3688 PG 149
-Y1- POT Sta. 10+00.00
@ PL
@ EXIST. R/W
N51°07'19"E
271.27'
+50.00 -L-
150.00' (LT)
+00.00 -L-
165.00' (LT)
+00.00 -L-
150.00' (LT)
+50.00 -L-
167.00' (LT)
@ PL
150.00' (LT)
@ PL
162.00' (LT)
N87°26'26"W
229.18'
N04°01'54"W
ISBKD
S83°16'54"E
627.94'
48' WW
-L- CS Sta. 331+17.01
MARVIN W. SCOTT &
ERNESTINE LUCAS SCOTT
DB 1768 PG 446
-Y1- PC Sta. 11+61.22
N 20°49.4' E
12" CONC
15" CONC
NCDOT
NO REFERENCE
NCDOT
DB 5282 PG 1823
W/LT
RAMP
MATCHLINE -L- STA. 319+00.00 SEE SHEET 8
MATCHLINE -L- STA. 332+00.00 SEE SHEET 10
14' PS
12' PS
36'
MEDIAN
.06
-BL-15 PINC
-BL-16 PINC
-BL-17 PINC
320
325
330
M-350
N01°10'49"E
595.34'
N02°46'41"E
40' PR
-BY1-102 PINC 7+71.38
-L- POC Sta. 329+95.42=
-Y1- POT Sta. 13+13.82
-Y1F- PT Sta. 13+78.98
-Y1- PC Sta. 13+95.23
-Y1- PT Sta. 14+95.23
N 40°2.31' E
LEES CHAPEL RD
22' BST
@ EXIST. PL
160.00' (RT)
MTL GATE
S86°59'05"W
44.44'
EXISTING R/W
48' WD RAIL
36' WD WALL
LT
GR
N 43°20.7' E
UNKNOWN SIZE & TYPE
-BY1-103 POT 10+00.72
-BY1A- POT 17+25.89
WD DK
-Y1- POT Sta. 16+96.43
TIMOTHY JOHN LILLY
SHELLEY ALBEA LILLY
DB 5708 PG 912
ALLEN LYNN ROWE
DB 5239 PG 2176
GUILFORD COUNTY
BOARD OF EDUCATION
DB 2303 PG 57
S85°43'06"E
607.74'
N01°10'49"E
59.78'

-L-		-Y1-	
PI Sta 322+54.68	PIs Sta 332+37.04	PI Sta 12+70.13	PI Sta 14+45.24
Δ = 30° 07' 23.3" (LT)	θs = 3° 04' 09.9"	Δ = 3° 18' 18.2" (LT)	Δ = 2° 19' 10.9" (LT)
D = 1° 42' 18.8"	Ls = 360.00'	D = 1° 31' 04.0"	D = 2° 19' 10.8"
L = 1,766.51'	LT = 240.04'	L = 217.76'	L = 100.00'
T = 904.18'	ST = 120.03'	T = 108.91'	T = 50.01'
R = 3,360.00'		R = 3,775.00'	R = 2,470.00'
SE = .06			

SEE SHEET 2-J FOR BRIDGE SKETCH
SEE SHEET 44 FOR -L- PROFILE
SEE SHEET 77 FOR -Y1- PROFILE
SEE SHEETS S-1 THRU S-? FOR STRUCTURE PLANS

5/14/99

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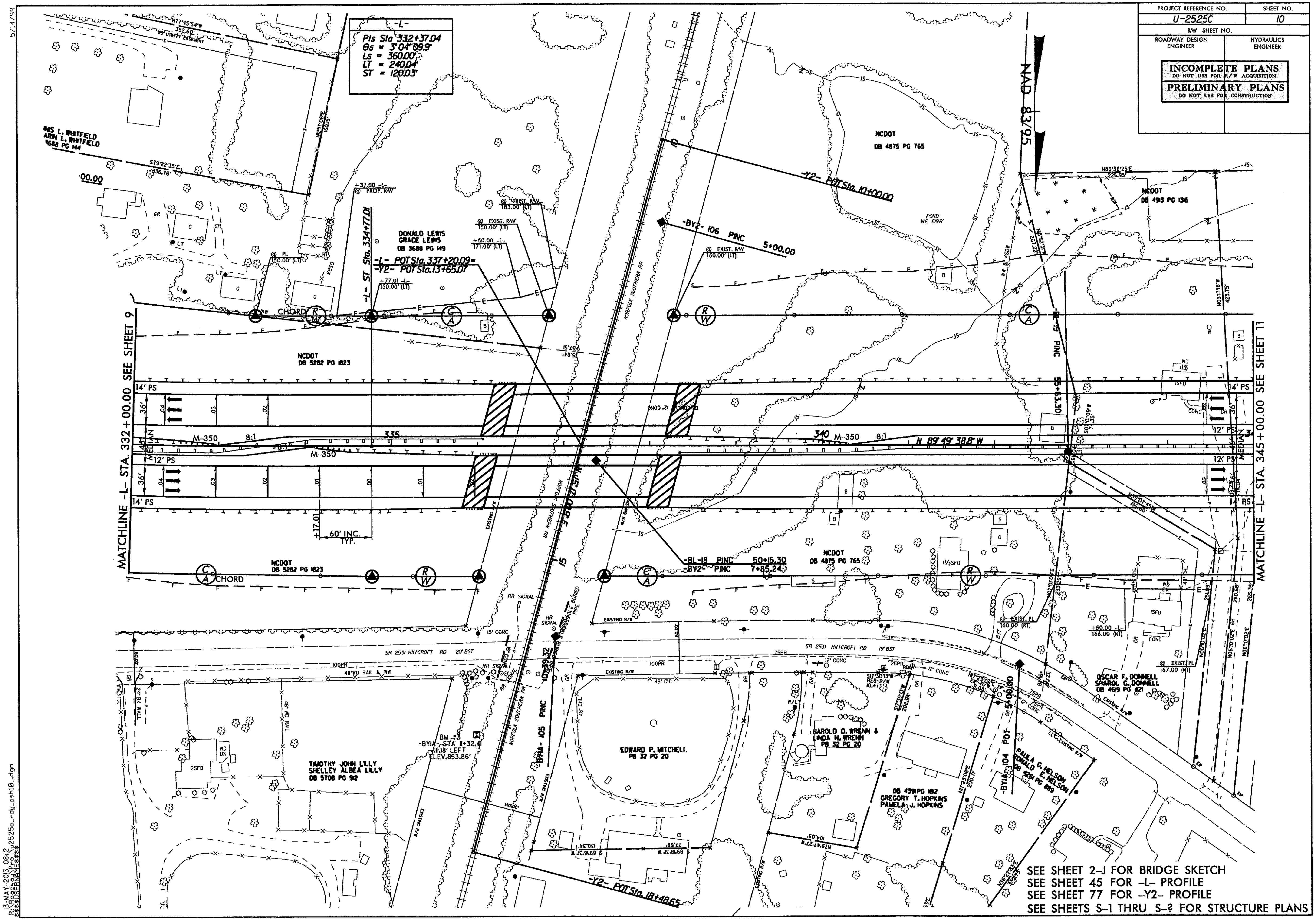
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-
PIs Sta 332+37.04
Θs = 3°04'09.9"
Ls = 360.00'
LT = 240.04'
ST = 120.03'



NAD 83/95
MATCHLINE -L- STA. 332+00.00 SEE SHEET 9
MATCHLINE -L- STA. 345+00.00 SEE SHEET 11
-L- POT Sta. 337+20.09 = -Y2- POT Sta. 13+65.07
-L- ST Sta. 334+77.01
-Y2- POT Sta. 10+00.00
-Y2- POT Sta. 18+48.65
-BY2- 106 PINC 5+00.00
-BL-18 PINC 50+15.30
-BY2- PINC 7+85.24
-BL-19 PINC 55+63.30
-BY1A- 105 PINC
-BY1A- 104 POT 5+00.00
N 89°49'38.8" W
M-350
8:1
335
340
14' PS
12' PS
36'
MEDIAN
60' INC. TYP.
+17.01
CHORD
NCDOT DB 5282 PG 1823
NCDOT DB 4875 PG 765
NCDOT DB 4913 PG 136
DONALD LEWIS GRACE LEWIS DB 3688 PG 149
NORFOLK SOUTHERN RR
SR 2531 HILLCROFT RD 20' BST
SR 2531 HILLCROFT RD 19' BST
POND WE 898'
TIMOTHY JOHN LILLY SHELLEY ALBEA LILLY DB 5708 PG 912
EDWARD P. MITCHELL PB 32 PG 20
HAROLD D. WRENN & LINDA N. WRENN PB 32 PG 20
DB 4391 PG 182 GREGORY T. HOPKINS PAMELA J. HOPKINS
PAULA G. NELSON RONALD E. NELSON
OSCAR F. DONNELL SHAROL G. DONNELL DB 4619 PG 421
BM 53 -BY1A- STA 11+32.4 118' LEFT ELEV. 853.86'
@ EXIST. R/W 183.00' (LT)
@ EXIST. R/W 150.00' (LT)
+50.00 -L- 171.00' (LT)
+37.00 -L- @ PROP. R/W
+77.01 -L- 150.00' (LT)
@ PL 150.00' (LT)
@ EXIST. PL 160.00 (RT)
+50.00 -L- 166.00 (RT)
@ EXIST. PL 167.00 (RT)
N89°36'25"E 225.95'
S79°22'35"E 336.76'
N77°45'54"W 352.60'
RR SIGNAL
EXISTING R/W
1½SFD
2SFD
1SFD
15' CONC
12' CONC
48" CHL
48" WD RAIL & WW

SEE SHEET 2-J FOR BRIDGE SKETCH
SEE SHEET 45 FOR -L- PROFILE
SEE SHEET 77 FOR -Y2- PROFILE
SEE SHEETS S-1 THRU S-? FOR STRUCTURE PLANS

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PROJECT REFERENCE NO.	SHEET NO.
U-2525C	11

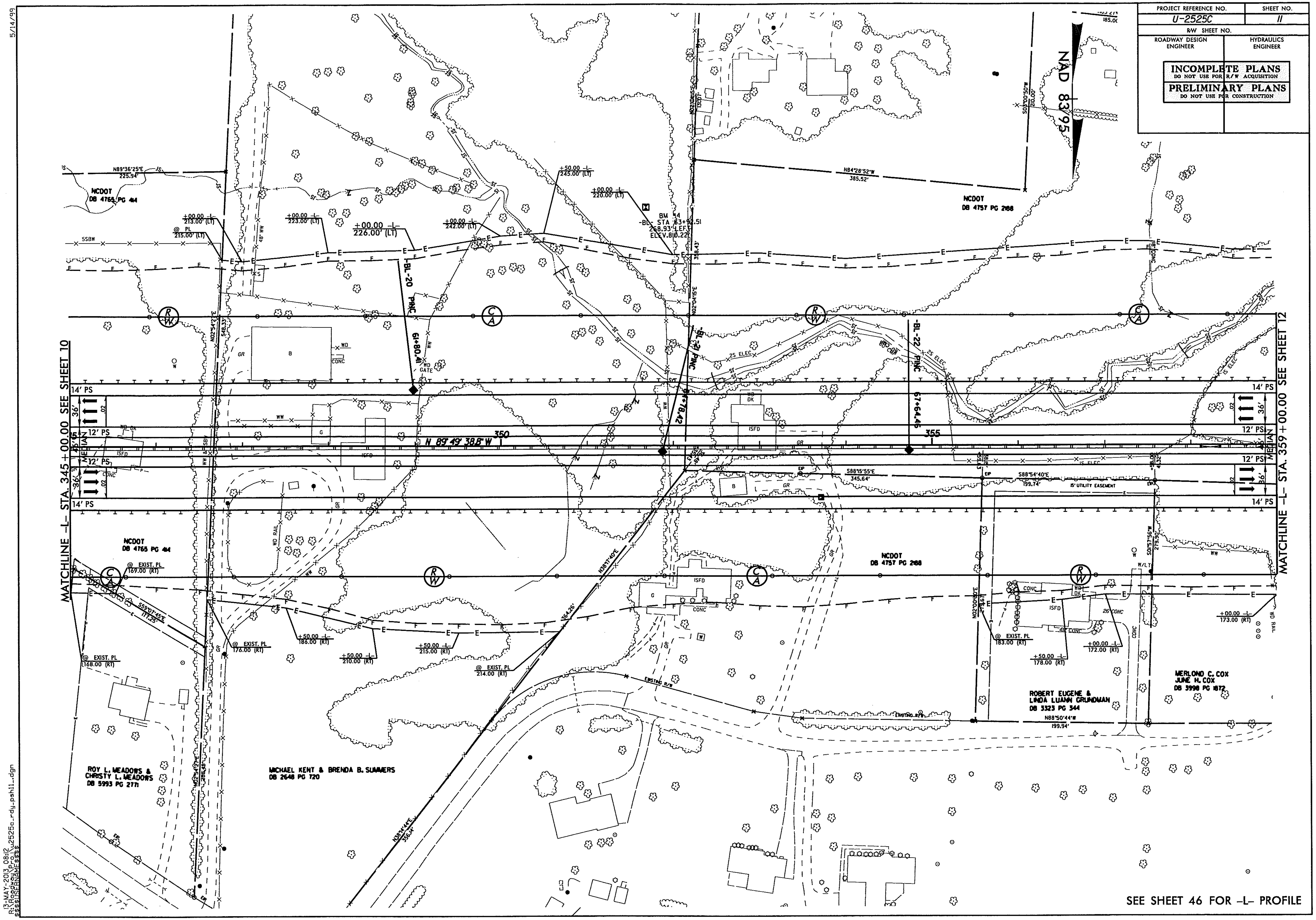
R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


MATCHLINE -L- STA. 345+00.00 SEE SHEET 10
MATCHLINE -L- STA. 359+00.00 SEE SHEET 12
NAD 83/95
N89°36'25"E 225.94'
NCDOT DB 4765 PG 414
+00.00 -L- 213.00' (LT)
@ PL 215.00' (LT)
5SBW
48" WW
+00.00 -L- 223.00' (LT)
+00.00 -L- 226.00' (LT)
+00.00 -L- 242.00' (LT)
+50.00 -L- 245.00' (LT)
+00.00 -L- 220.00' (LT)
BM 14 -BL- STA 63+92.51 268.93' LEFT ELEV.810.22
358.43'
N02°04'15"E
N84°28'52"W 385.52'
NCDOT DB 4757 PG 2168
S01°00'50"W 210.00'
-BL-20 PINC 61+80.41
WD GATE
B
CONC
WD
GR
W
N02°54'21"E 548.33'
14' PS
36'
12' PS
MEDIAN
.02
WD DK
ISFD
G
CONC
P
WW
N 89°49'38.8" W
350
-BL-21 PINC 64+78.42
25 ELEC
60" CMP
WD DK
ISFD
GR
B
EP
S88°15'55"E 345.64'
-BL-22 PINC 67+64.46
355
S88°54'40"E 199.74'
15' UTILITY EASEMENT
1S ELEC
NCDOT DB 4765 PG 414
@ EXIST. PL 169.00 (RT)
S59°07'45"E 177.25'
@ EXIST. PL 168.00 (RT)
@ EXIST. PL 176.00 (RT)
WD RAIL
+50.00 -L- 186.00 (RT)
+50.00 -L- 210.00 (RT)
+50.00 -L- 215.00 (RT)
@ EXIST. PL 214.00 (RT)
N38°17'40"E 364.26'
N38°14'44"E 356.14'
N02°54'21"E 286.45'
ROY L. MEADOWS & CHRISTY L. MEADOWS DB 5993 PG 2771
MICHAEL KENT & BRENDA B. SUMMERS DB 2648 PG 720
ISFD
G
CONC
EXISTING R/W
NCDOT DB 4757 PG 2168
N02°00'30"E 274.67'
CONC
WD DK
ISFD
4B' CONC
26' CONC
@ EXIST. PL 183.00 (RT)
+50.00 -L- 178.00 (RT)
+00.00 -L- 172.00 (RT)
S01°57'56"W 279.90'
W/LT
+00.00 -L- 173.00 (RT)
ROBERT EUGENE & LINDA LUANN GRUNDMAN DB 3323 PG 344
MERLOND C. COX JUNE H. COX DB 3998 PG 1872
N88°50'44"W 199.94'

SEE SHEET 46 FOR -L- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-2525C	12

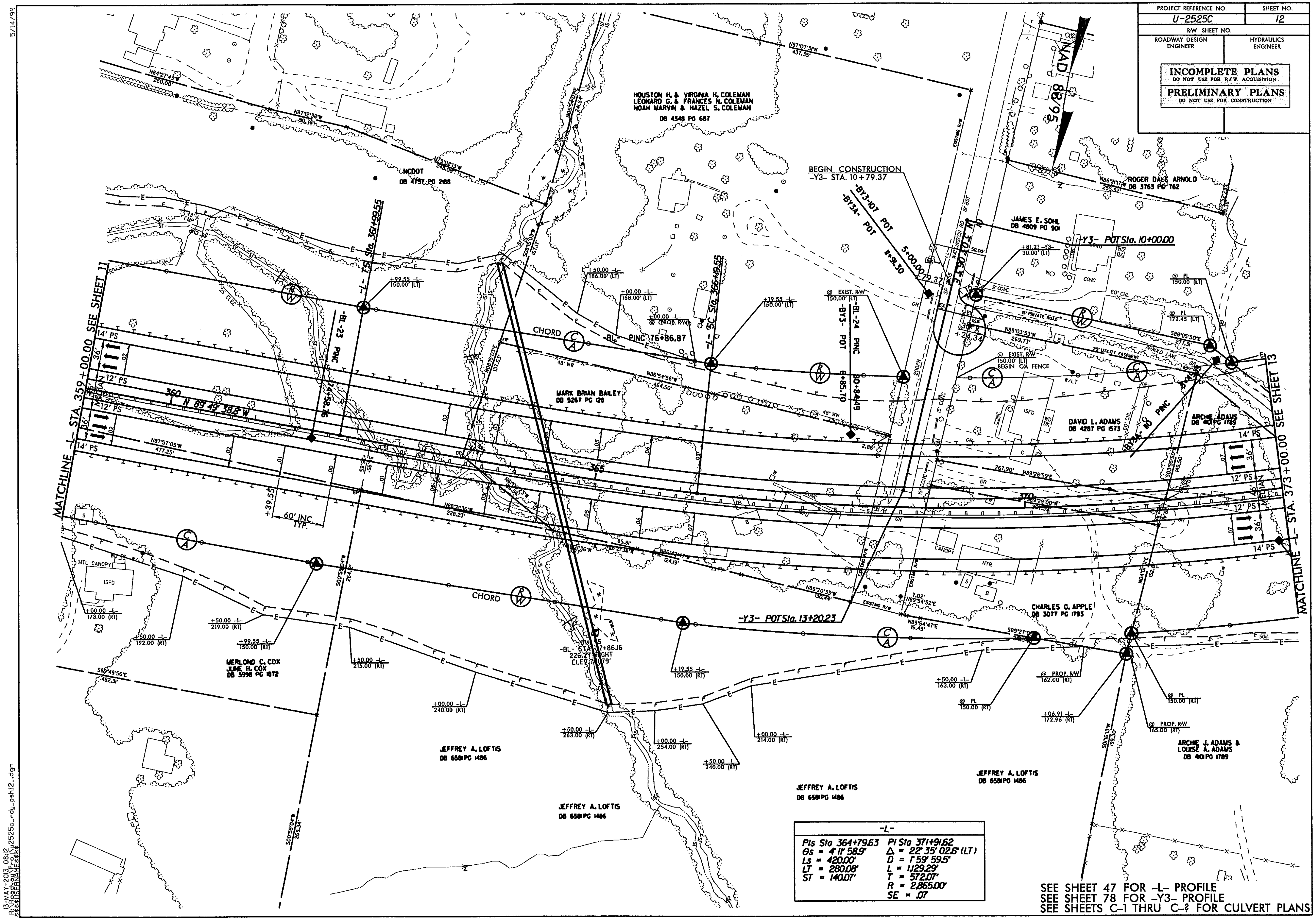
R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


NAD 83/95
MATCHLINE -L- STA. 359+00.00 SEE SHEET 11
MATCHLINE -L- STA. 373+00.00 SEE SHEET 13
HOUSTON H. & VIRGINIA H. COLEMAN
LEONARD G. & FRANCES N. COLEMAN
NOAH MARVIN & HAZEL S. COLEMAN
DB 4348 PG 687
NCDOT
DB 4737 PG 2168
ROGER DALE ARNOLD
DB 3763 PG 762
JAMES E. SOHL
DB 4809 PG 901
MARK BRIAN BAILEY
DB 5267 PG 128
DAVID L. ADAMS
DB 4287 PG 1573
ARCHIE ADAMS
DB 401 PG 1789
CHARLES G. APPLE
DB 3077 PG 1793
MERLOND C. COX
JUNE H. COX
DB 3996 PG 1872
JEFFREY A. LOFTIS
DB 6581 PG 1486
ARCHIE J. ADAMS &
LOUISE A. ADAMS
DB 401 PG 1789
BEGIN CONSTRUCTION
-Y3- STA. 10+79.37
-Y3- POT Sta. 10+00.00
-Y3- POT Sta. 13+20.23
-BY3- POT 5+00.00
-BY3A- POT 8+91.50
-BY3- POT 6+85.70
-BL-24 PINC 80+84.49
-BL-23 PINC 74+58.96
-BL- PINC 76+86.87
-L- TS Sta. 361+99.55
-L- SC Sta. 365+19.55
L N 89°49'38.8" W
CHORD
14' PS
12' PS
36'
46' MEDIAN
60' INC. TYP.
BM 5
-BL- STA. 77+86.16
226.27' RIGHT
ELEV. 79'
EXISTING R/W
15' PRIVATE ROAD
20' UTILITY EASEMENT
ARNOLD LANE
WASHINGTON RD
BEGIN C/A FENCE
ISFD
CANOPY
HTR
MTL CANOPY
+99.55 -L- 150.00' (LT)
+50.00 -L- 186.00' (LT)
+00.00 -L- 168.00' (LT)
+19.55 -L- 150.00' (LT)
@ EXIST. R/W 150.00' (LT)
+81.21 -Y3- 30.00' (LT)
@ PL 150.00' (LT)
@ PL 172.45' (LT)
+00.00 -L- 173.00' (RT)
+50.00 -L- 219.00' (RT)
+50.00 -L- 192.00' (RT)
+99.55 -L- 150.00' (RT)
+50.00 -L- 215.00' (RT)
+00.00 -L- 240.00' (RT)
+50.00 -L- 263.00' (RT)
+00.00 -L- 254.00' (RT)
+50.00 -L- 240.00' (RT)
+19.55 -L- 150.00' (RT)
+00.00 -L- 214.00' (RT)
+50.00 -L- 163.00' (RT)
@ PL 150.00' (RT)
@ PROP. R/W 162.00' (RT)
+06.91 -L- 172.96' (RT)
@ PL 150.00' (RT)
@ PROP. R/W 165.00' (RT)
N84°27'43" W 260.00'
N87°12'38" W 90.79'
N79°08'13" W 248.09'
N87°07'37" W 437.35'
N86°21'17" W 255.92'
N86°54'56" W 464.50'
N87°57'05" W 477.25'
N88°21'36" W 228.23'
N88°05'53" W 269.73'
S88°05'50" E 277.31'
N89°28'59" E 267.90'
N86°20'33" W 130.44'
N89°54'52" E 7.02'
N89°54'47" E 16.45'
S86°49'56" E 482.31'
S00°55'04" W 264.2'
S00°55'04" W 269.34'
S01°15'13" W 199.30'
360
365
370

-L-	
PIs Sta 364+79.63	PI Sta 371+91.62
Θs = 4° 11' 58.9"	Δ = 22° 35' 02.6" (LT)
Ls = 420.00'	D = 1° 59' 59.5"
LT = 280.08'	L = 1,129.29'
ST = 140.07'	T = 572.07'
	R = 2,865.00'
	SE = .07

SEE SHEET 47 FOR -L- PROFILE
SEE SHEET 78 FOR -Y3- PROFILE
SEE SHEETS C-1 THRU C-? FOR CULVERT PLANS

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$$$$USERNAME$$$$

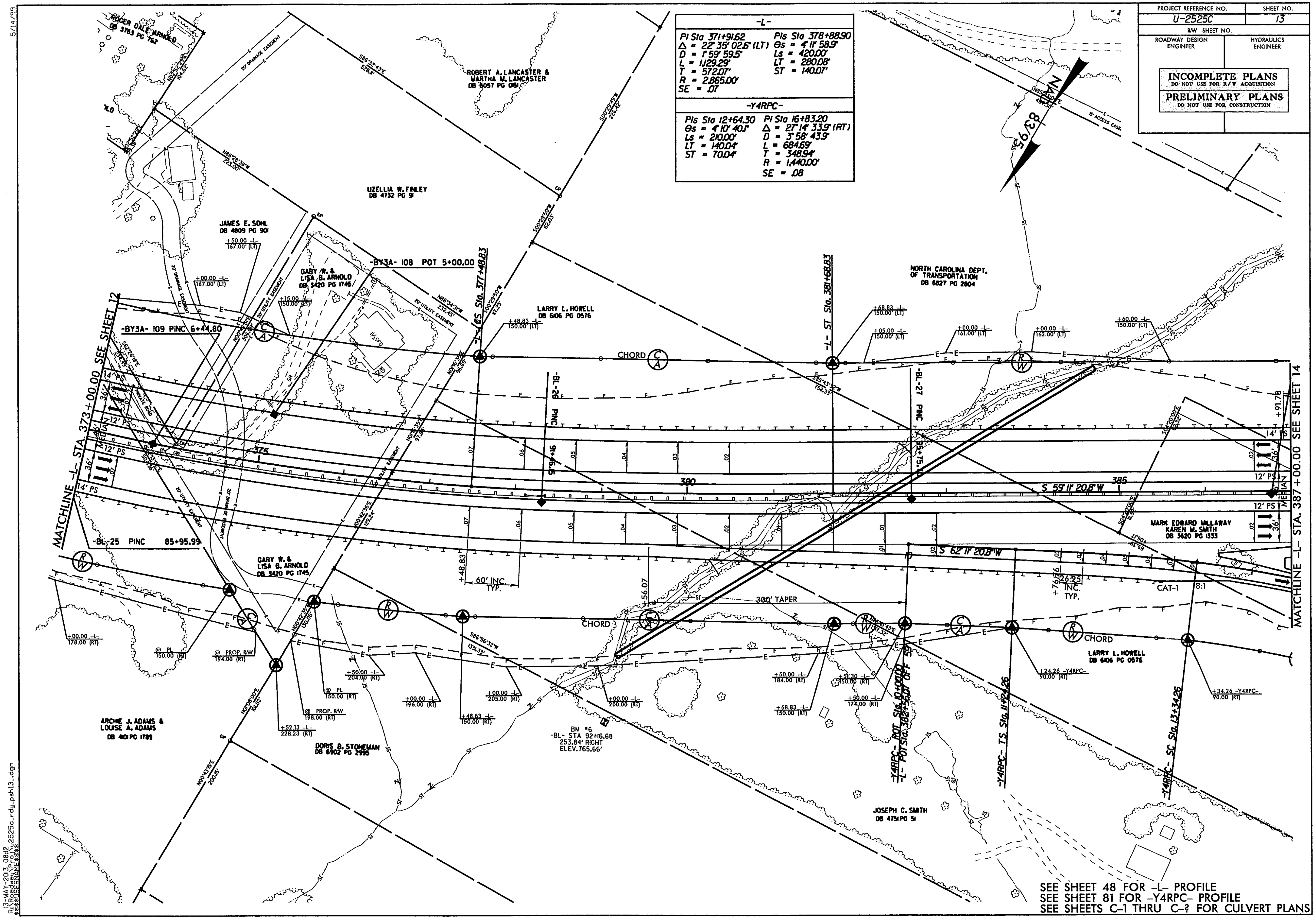
PROJECT REFERENCE NO.	SHEET NO.
U-2525C	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-	
PI Sta 371+91.62 Δ = 22° 35' 02.6" (LT) D = 1° 59' 59.5" L = 1,129.29' T = 572.07' R = 2,865.00' SE = .07	PIs Sta 378+88.90 θs = 4° 11' 58.9" Ls = 420.00' LT = 280.08' ST = 140.07'

-Y4RPC-	
PIs Sta 12+64.30 θs = 4° 10' 40.1" Ls = 210.00' LT = 140.04' ST = 70.04'	PI Sta 16+83.20 Δ = 27° 14' 33.9" (RT) D = 3° 58' 43.9" L = 684.69' T = 348.94' R = 1,440.00' SE = .08



ROGER DALE ARNOLD
DB 3763 PG 162
ROBERT A. LANCASTER &
MARTHA M. LANCASTER
DB 8057 PG 051
UZELLIA W. FINLEY
DB 4732 PG 91
JAMES E. SOHL
DB 4809 PG 901
GARY W. &
LISA B. ARNOLD
DB 3420 PG 1745
LARRY L. HOWELL
DB 6106 PG 0576
NORTH CAROLINA DEPT.
OF TRANSPORTATION
DB 6827 PG 2804
MARK EDWARD MILLAWAY
KAREN M. SMITH
DB 3620 PG 1333
ARCHIE J. ADAMS &
LOUISE A. ADAMS
DB 4101 PG 1789
DORIS B. STONEMAN
DB 6902 PG 2995
JOSEPH C. SMITH
DB 4751 PG 51
-BY3A- 108 POT 5+00.00
-BY3A- 109 PINC 6+44.80
-BL-25 PINC 85+95.99
-BL-26 PINC
-BL-27 PINC
-L- ES Sta. 377+48.83
-L- ST Sta. 381+68.83
MATCHLINE -L- STA. 373+00.00 SEE SHEET 12
MATCHLINE -L- STA. 387+00.00 SEE SHEET 14
S 59° 11' 20.8" W
S 62° 11' 20.8" W
375
380
385
CHORD
300' TAPER
60' INC. TYP.
26.25' INC. TYP.
CAT-1
8:1
14' PS
12' PS
36'
MEDIAN
-Y4RPC- POT Sta. 10+00.00
-L- POT Sta. 382+56.07 OFF 59.1'
-Y4RPC- TS Sta. 11+24.26
-Y4RPC- SC Sta. 13+34.26
BM #6
-BL- STA 92+16.68
253.84' RIGHT
ELEV. 765.66'
N 83°95' E
20' DRAINAGE EASEMENT
20' UTILITY EASEMENT
15' ACCESS EASE.
S86°32'43"E 528.4'
S00°29'49"W 226.42'
S00°29'50"W 62.03'
S00°29'50"W 81.23'
N86°28'38"W 223.00'
N86°34'31"W 232.45'
S86°56'32"W 133.33'
S85°43'32"W 758.33'
N00°43'15"E 200.5'
+50.00 -L- 167.00' (LT)
+00.00 -L- 167.00' (LT)
+15.00 -L- 150.00' (LT)
+48.83 -L- 150.00' (LT)
+68.83 -L- 150.00' (LT)
+05.00 -L- 150.00' (LT)
+00.00 -L- 161.00' (LT)
+00.00 -L- 162.00' (LT)
+60.00 -L- 150.00' (LT)
+00.00 -L- 178.00 (RT)
@ PL 150.00 (RT)
@ PROP. R/W 194.00 (RT)
+50.00 -L- 204.00 (RT)
@ PL 150.00 (RT)
@ PROP. R/W 198.00 (RT)
+52.13 -L- 228.23 (RT)
+00.00 -L- 196.00 (RT)
+00.00 -L- 205.00 (RT)
+48.83 -L- 150.00 (RT)
+00.00 -L- 200.00 (RT)
+50.00 -L- 184.00 (RT)
+68.83 -L- 150.00 (RT)
+51.30 -L- 150.00 (RT)
+50.00 -L- 174.00 (RT)
+24.26 -Y4RPC- 90.00 (RT)
+34.26 -Y4RPC- 90.00 (RT)
+48.83
56.07
+76.76
+91.78

SEE SHEET 48 FOR -L- PROFILE
SEE SHEET 81 FOR -Y4RPC- PROFILE
SEE SHEETS C-1 THRU C-? FOR CULVERT PLANS

5/14/99

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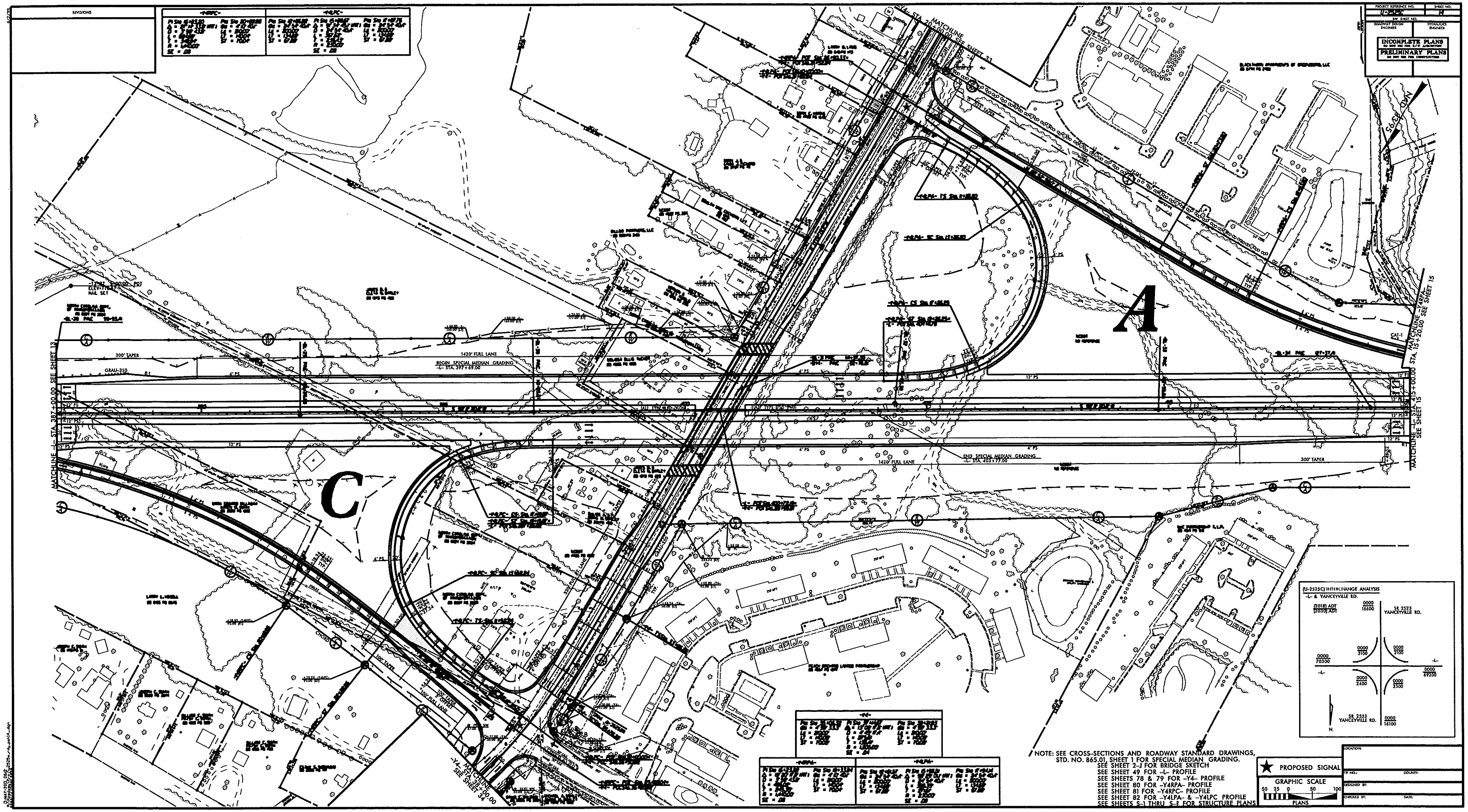

A
C
1420' FULL LANE
300' TAPER
BEGIN SPECIAL MEDIAN GRADING
-L- STA. 397+69.00
END SPECIAL MEDIAN GRADING
-L- STA. 403+77.00
MATCHLINE -L- STA. 387+00.00 SEE SHEET 13
MATCHLINE -L- STA. 415+00.00 SEE SHEET 15
REVISIONS
(U-2525C) INTERCHANGE ANALYSIS
-L- & YANCEYVILLE RD.
(2018) ADT
(2030) ADT
0000 / 16600
SR 2523 YANCEYVILLE RD.
0000 / 3100
0000 / 2100
0000 / 70300
-L-
-L-
0000 / 69200
0000 / 2400
0000 / 2300
N
SR 2523 YANCEYVILLE RD.
0000 / 16100
PROJECT REFERENCE NO.
SHEET NO.
U-2525C
14
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
N

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.
SEE SHEET 2-J FOR BRIDGE SKETCH
SEE SHEET 49 FOR -L- PROFILE
SEE SHEETS 78 & 79 FOR -Y4- PROFILE
SEE SHEET 80 FOR -Y4RPA- PROFILE
SEE SHEET 81 FOR -Y4RPC- PROFILE
SEE SHEET 82 FOR -Y4LPA- & -Y4LPC PROFILE
SEE SHEETS S-1 THRU S-? FOR STRUCTURE PLANS

★ PROPOSED SIGNAL

GRAPHIC SCALE
50 25 0 50 100
PLANS

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

PROJECT REFERENCE NO. | SHEET NO.
U-2525C | 14A

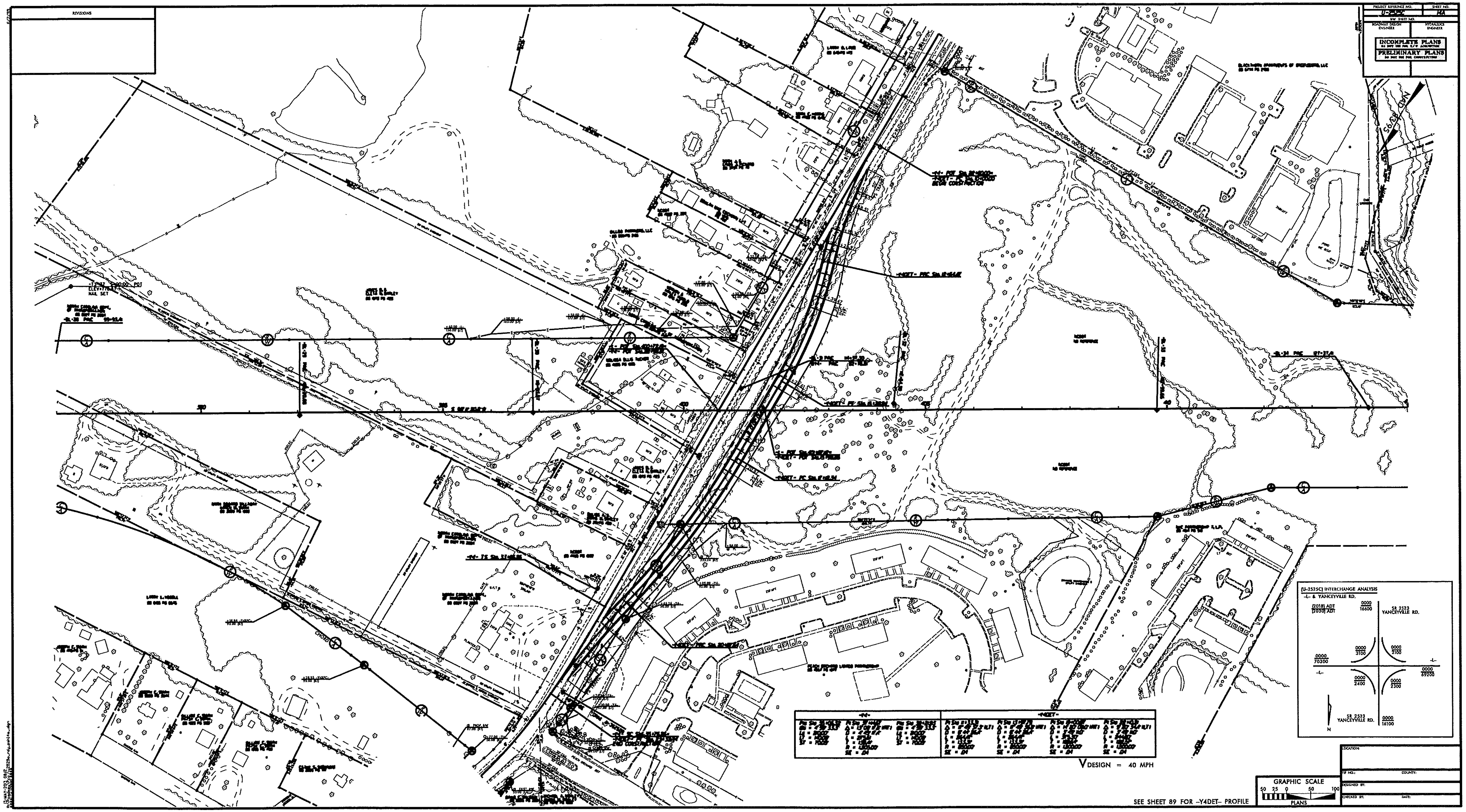
RW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS



(U-2525C) INTERCHANGE ANALYSIS
-L- & YANCEYVILLE RD.
(2018) ADT
(2030) ADT
0000
16600
SR 2523
YANCEYVILLE RD.
0000
3100
0000
2100
0000
70300
-L-
-L-
0000
69200
0000
2400
0000
2300
SR 2523
YANCEYVILLE RD.
0000
16100
N

VDESIGN = 40 MPH

SEE SHEET 89 FOR -Y4DET- PROFILE

GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION:

TIP NO.: COUNTY:

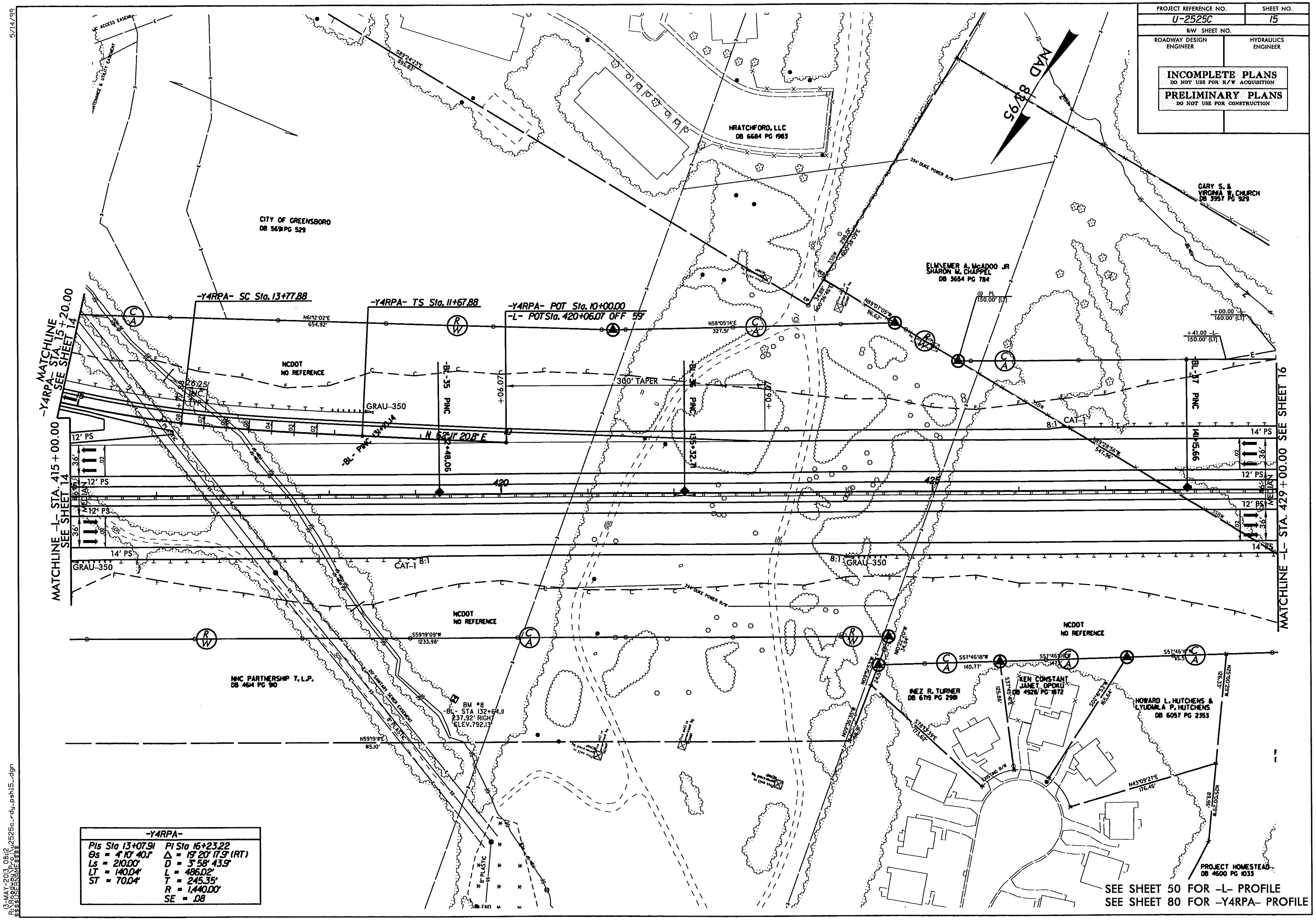
DESIGNED BY:

CHECKED BY: DATE:

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


NAD 83/95
CITY OF GREENSBORO
DB 5691 PG 529
HRATCHFORD, LLC
DB 6684 PG 1983
394' DUKE POWER R/W
GARY S. &
VIRGINIA W. CHURCH
DB 3957 PG 929
ELMS\EMER A. McADOO JR
SHARON M. CHAPPEL
DB 3654 PG 784
S89°24'23"E
895.83'
-Y4RPA- SC Sta. 13+77.88
-Y4RPA- TS Sta. 11+67.88
-Y4RPA- POT Sta. 10+00.00
-L- POT Sta. 420+06.07 OFF 59'
N61°12'02"E
654.92'
N58°05'14"E
327.51'
34.88'
N00°36'46"E
298.01'
N00°38'09"E
N89°07'05"W
96.62'
@ PL
150.00' (LT)
+00.00 -L-
160.00' (LT)
+41.00 -L-
150.00' (LT)
NCDOT
NO REFERENCE
300' TAPER
+06.07
-BL-35 PINC
-BL-36 PINC
-BL-37 PINC
-BL- PINC 131+10.14
N 62°11' 20.8" E
420+48.06
135+32.71
141+15.66
420
425
GRAU-350
CAT-1
8:1
12' PS
14' PS
36'
MEDIAN
N89°28'56"W
547.96'
MATCHLINE -Y4RPA- STA. 15+20.00 SEE SHEET 14
MATCHLINE -L- STA. 415+00.00 SEE SHEET 14
MATCHLINE -L- STA. 429+00.00 SEE SHEET 16
S59°19'09"W
1233.98'
N59°19'11"E
115.10'
NHC PARTNERSHIP 7, L.P.
DB 4614 PG 910
20' SANITARY SEWER EASEMENT
8" PLASTIC
SOIL
BM #8
-BL- STA 132+64.11
237.92' RIGHT
ELEV. 792.13'
N10°22'20"W
34.94'
N09°51'53"W
24.51'
N09°36'35"W
S57°46'18"W
140.77'
S57°46'08"W
S57°46'18"W
INEZ R. TURNER
DB 6719 PG 2981
KEN CONSTANT
JANET OPOKU
DB 4928 PG 1872
S37°45'41"E
125.86'
S78°13'39"E
173.62'
S02°41'53"W
165.64'
HOWARD L. HUTCHENS &
LYUDMILA P. HUTCHENS
DB 6057 PG 2353
N25°00'29"W
126.33'
N43°09'27"E
176.46'
N25°00'29"W
89.96'
EXISTING R/W
PROJECT HOMESTEAD
DB 4600 PG 1033

-Y4RPA-

PIs Sta 13+07.91	PI Sta 16+23.22
Θs = 4° 10' 40.5"	Δ = 19° 20' 17.9" (RT)
Ls = 210.00'	D = 3° 58' 43.9"
LT = 140.04'	L = 486.02'
ST = 70.04'	T = 245.35'
	R = 1,440.00'
	SE = .08

SEE SHEET 50 FOR -L- PROFILE
SEE SHEET 80 FOR -Y4RPA- PROFILE

5/14/99

13-MAY-2013 08:12
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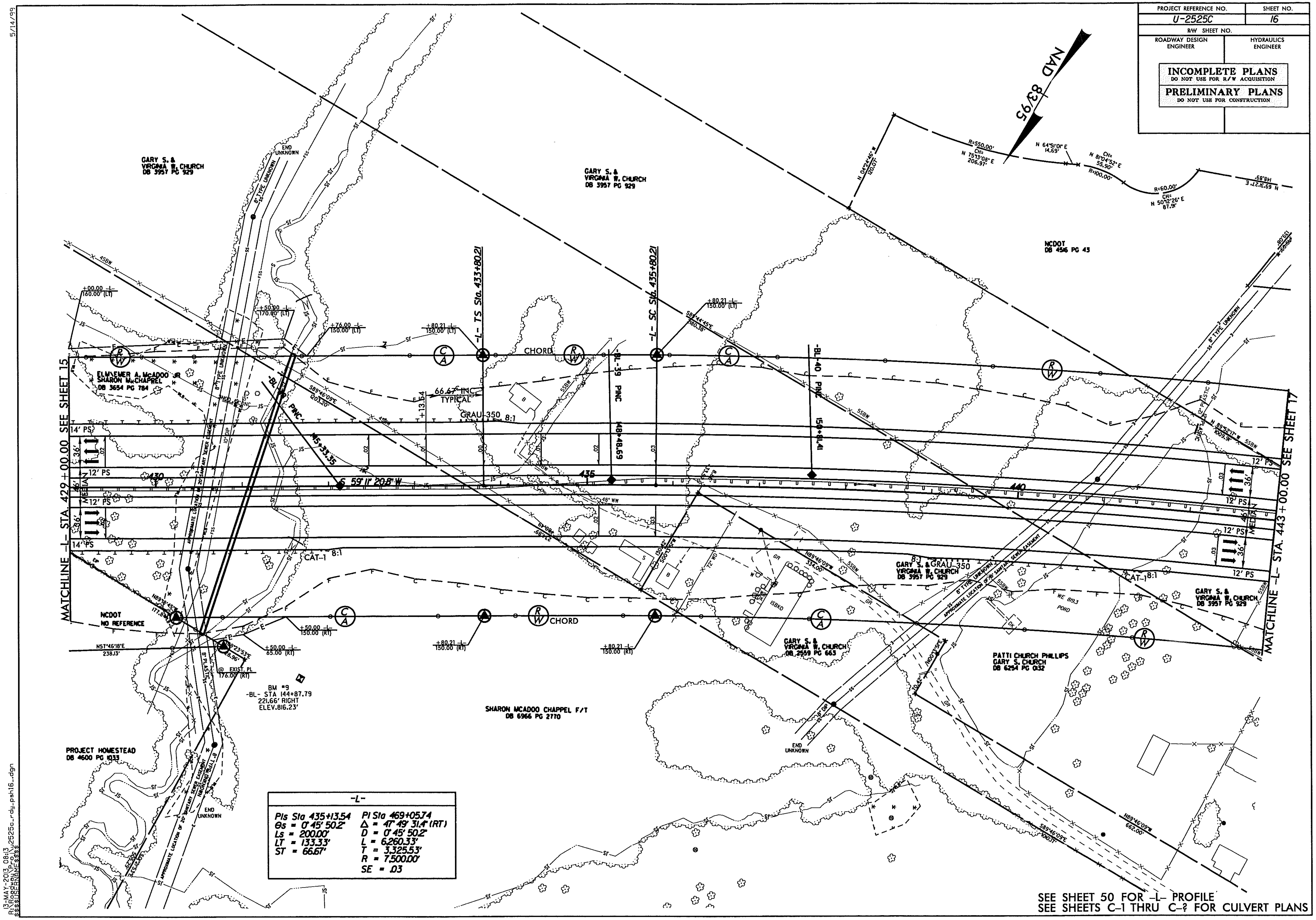
PROJECT REFERENCE NO.	SHEET NO.
U-2525C	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99


NAD 83/95
GARY S. & VIRGINIA W. CHURCH DB 3957 PG 929
NCDOT DB 4516 PG 43
ELMER A. McADOO JR SHARON McCHAPREL DB 3654 PG 784
NCDOT NO REFERENCE
PROJECT HOMESTEAD DB 4600 PG 1033
SHARON MCADOO CHAPPEL F/T DB 6966 PG 2770
GARY S. & VIRGINIA W. CHURCH DB 2559 PG 663
PATTI CHURCH PHILLIPS GARY S. CHURCH DB 6254 PG 0132
MATCHLINE -L- STA. 429+00.00 SEE SHEET 15
MATCHLINE -L- STA. 443+00.00 SEE SHEET 17
-L- TS Sta. 433+80.21
-L- SC Sta. 435+80.21
-BL-39 PINC 148+48.69
-BL-40 PINC 150+81.41
-BL- PINC 145+33.35
S 59° 11' 20.8" W
430
435
440
CHORD
GRAU-350 8:1
CAT-1 8:1
66.67' INC TYPICAL
14' PS
12' PS
36'
46'
MEDIAN
BM #9 -BL- STA 144+87.79 221.66' RIGHT ELEV.816.23'
EXIST. PL
END UNKNOWN
8" TYPE UNKNOWN
APPROXIMATE LOCATION OF 20' SANITARY SEWER EASEMENT
POND
WE 819.3

-L-

Pls Sta 435+13.54
θs = 0° 45' 50.2"
Ls = 200.00'
LT = 133.33'
ST = 66.67'

PI Sta 469+05.74
Δ = 47° 49' 31.4" (RT)
D = 0° 45' 50.2"
L = 6,260.33'
T = 3,325.53'
R = 7,500.00'
SE = .03

SEE SHEET 50 FOR -L- PROFILE
SEE SHEETS C-1 THRU C-? FOR CULVERT PLANS

13-MAY-2013 08:13
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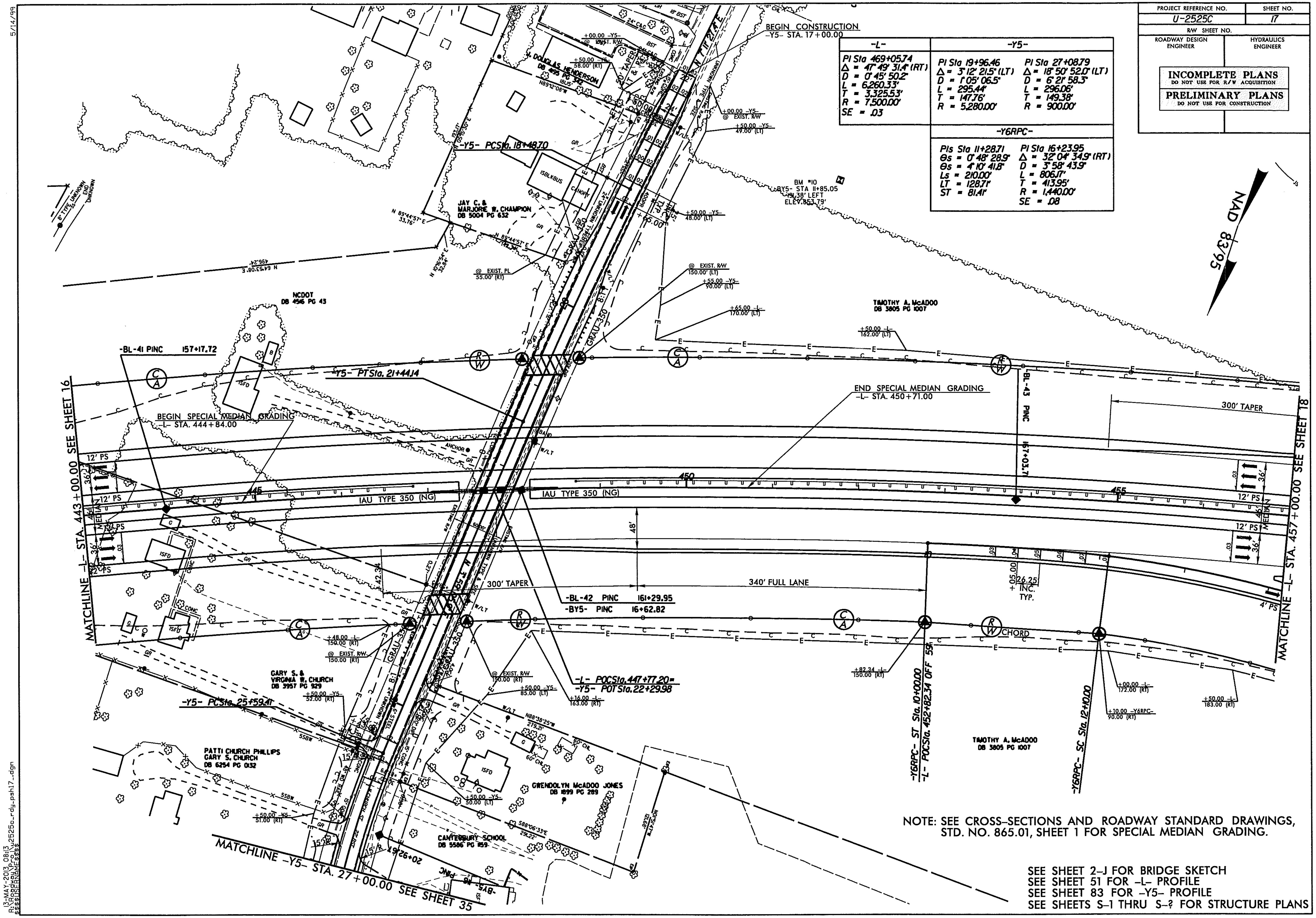
PROJECT REFERENCE NO.	SHEET NO.
U-2525C	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



BEGIN CONSTRUCTION
-Y5- STA. 17+00.00
NAD 83/95
-Y5- PCSta. 18+48.70
-Y5- PTSta. 21+44.14
-BL-41 PINC 157+17.72
BEGIN SPECIAL MEDIAN GRADING
-L- STA. 444+84.00
END SPECIAL MEDIAN GRADING
-L- STA. 450+71.00
IAU TYPE 350 (NG)
300' TAPER
340' FULL LANE
-BL-42 PINC 161+29.95
-BY5- PINC 16+62.82
-L- POCSta. 447+77.20=
-Y5- POTSta. 22+29.98
-Y5- PCSta. 25+59.41
-BL-43 PINC 167+03.71
-Y6RPC- ST Sta. 10+00.00
-L- POCSta. 452+82.34 OFF 58'
-Y6RPC- SC Sta. 12+10.00
MATCHLINE -L- STA. 443+00.00 SEE SHEET 16
MATCHLINE -L- STA. 457+00.00 SEE SHEET 18
MATCHLINE -Y5- STA. 27+00.00 SEE SHEET 35
BM #10
BY5- STA 11+85.05
14.38' LEFT
ELEV. 853.79'
NCDOT
DB 4516 PG 43
JAY C. & MARJORIE W. CHAMPION
DB 5004 PG 632
DOUGLAS HENDERSON
TIMOTHY A. McADOO
DB 3805 PG 1007
GARY S. & VIRGINIA W. CHURCH
DB 3957 PG 929
PATTI CHURCH PHILLIPS
GARY S. CHURCH
DB 6254 PG 0132
GWENDOLYN McADOO JONES
DB 1899 PG 289
CANTERBURY SCHOOL
DB 5586 PG 153
8" TYPE UNKNOWN
12' PS
36'
MEDIAN
48'
4' PS
CHORD
26.25 INC. TYP.

-L-
PI Sta 469+05.74
Δ = 47° 49' 31.4" (RT)
D = 0° 45' 50.2"
L = 6,260.33'
T = 3,325.53'
R = 7,500.00'
SE = .03

-Y5-
PI Sta 19+96.46
Δ = 3° 12' 21.5" (LT)
D = 1° 05' 06.5"
L = 295.44'
T = 147.76'
R = 5,280.00'

PI Sta 27+08.79
Δ = 18° 50' 52.0" (LT)
D = 6° 21' 58.3"
L = 296.06'
T = 149.38'
R = 900.00'

-Y6RPC-
PIs Sta 11+28.71
Θs = 0° 48' 28.9"
Θs = 4° 10' 41.8"
Ls = 210.00'
LT = 128.71'
ST = 81.41'

PI Sta 16+23.95
Δ = 32° 04' 34.9" (RT)
D = 3° 58' 43.9"
L = 806.17'
T = 413.95'
R = 1,440.00'
SE = .08

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 2-J FOR BRIDGE SKETCH
SEE SHEET 51 FOR -L- PROFILE
SEE SHEET 83 FOR -Y5- PROFILE
SEE SHEETS S-1 THRU S-? FOR STRUCTURE PLANS

5/14/99

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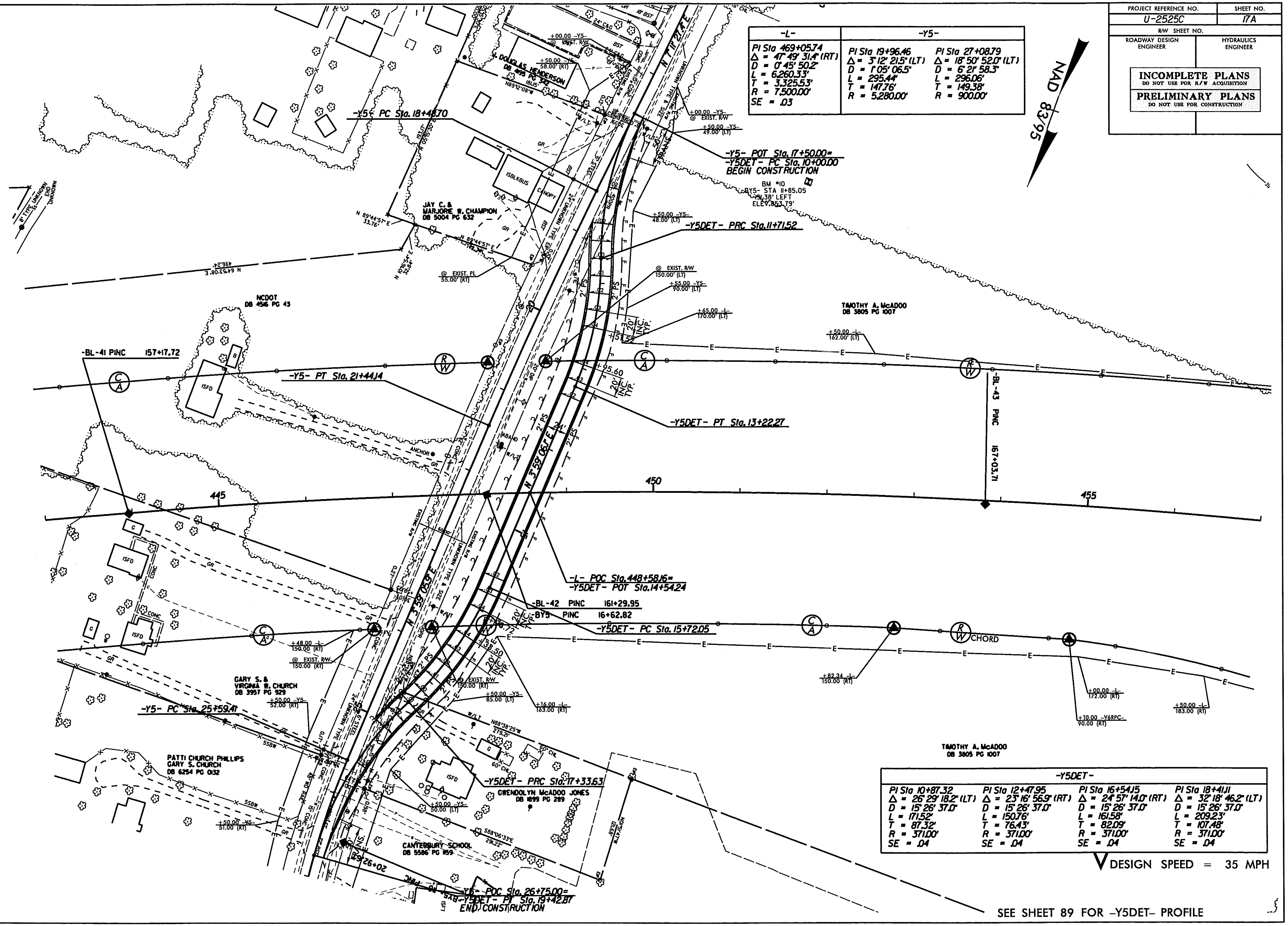
PROJECT REFERENCE NO.	SHEET NO.
U-2525C	17A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-	-Y5-	
PI Sta 469+05.74 Δ = 47° 49' 31.4" (RT) D = 0° 45' 50.2" L = 6,260.33' T = 3,325.53' R = 7,500.00' SE = .03	PI Sta 19+96.46 Δ = 3° 12' 21.5" (LT) D = 1° 05' 06.5" L = 295.44' T = 147.76' R = 5,280.00'	PI Sta 27+08.79 Δ = 18° 50' 52.0" (LT) D = 6° 21' 58.3" L = 296.06' T = 149.38' R = 900.00'



NAD 83/95
-Y5- PC Sta. 18+48.70
-Y5- POT Sta. 17+50.00=
-Y5DET- PC Sta. 10+00.00
BEGIN CONSTRUCTION
BM #10
-BY5- STA 11+85.05
19.38' LEFT
ELEV. 853.79'
-Y5DET- PRC Sta. 11+71.52
+00.00 -Y5-
@ EXIST. R/W
+50.00 -Y5-
58.00' (RT)
+50.00 -Y5-
49.00' (LT)
+50.00 -Y5-
48.00' (LT)
J. DOUGLAS HENDERSON
DB 495 PG 342
JAY C. & MARJORIE W. CHAMPION
DB 5004 PG 632
ISBLKBUS
CANOPY
N 89°44'57" E
33.76'
N 64°53'08" E
496.24'
@ EXIST. PL
55.00' (RT)
@ EXIST. R/W
150.00' (LT)
+55.00 -Y5-
90.00' (LT)
+65.00 -L-
170.00' (LT)
+50.00 -L-
162.00' (LT)
TIMOTHY A. McADOO
DB 3805 PG 1007
NCDOT
DB 4516 PG 43
-BL-41 PINC 157+17.72
-Y5- PT Sta. 21+44.14
-Y5DET- PT Sta. 13+22.27
-BL-43 PINC 167+03.71
N 3°59'06.1" E
N 3°59'05.9" E
N 1°11'27.4" E
445
450
455
ISFD
ANCHOR
-L- POC Sta. 448+58.16=
-Y5DET- POT Sta. 14+54.24
-BL-42 PINC 161+29.95
-BY5 PINC 16+62.82
-Y5DET- PC Sta. 15+72.05
CHORD
+48.00 -L-
150.00' (RT)
@ EXIST. R/W
150.00' (RT)
+82.34 -L-
150.00' (RT)
+00.00 -L-
172.00' (RT)
+10.00 -Y6RPC-
90.00' (RT)
+50.00 -L-
183.00' (RT)
GARY S. & VIRGINIA W. CHURCH
DB 3957 PG 929
+50.00 -Y5-
52.00' (RT)
-Y5- PC Sta. 25+59.41
EXIST. R/W
150.00' (RT)
+50.00 -Y5-
85.00' (LT)
+16.00 -L-
163.00' (RT)
PATTI CHURCH PHILLIPS
GARY S. CHURCH
DB 6254 PG 0132
-Y5DET- PRC Sta. 17+33.63
GWENDOLYN McADOO JONES
DB 1899 PG 289
+50.00 -Y5-
30.00' (LT)
+50.00 -Y5-
51.00' (RT)
CANTERBURY SCHOOL
DB 5586 PG 859
N88°38'25"W
279.21'
S88°06'33"E
29.22'
-Y5- POC Sta. 26+75.00=
-Y5DET- PT Sta. 19+42.87
END CONSTRUCTION

-Y5DET-			
PI Sta 10+87.32 Δ = 26° 29' 18.2" (LT) D = 15° 26' 37.0" L = 171.52' T = 87.32' R = 371.00' SE = .04	PI Sta 12+47.95 Δ = 23° 16' 56.9" (RT) D = 15° 26' 37.0" L = 150.76' T = 76.43' R = 371.00' SE = .04	PI Sta 16+54.15 Δ = 24° 57' 14.0" (RT) D = 15° 26' 37.0" L = 161.58' T = 82.09' R = 371.00' SE = .04	PI Sta 18+41.11 Δ = 32° 18' 46.2" (LT) D = 15° 26' 37.0" L = 209.23' T = 107.48' R = 371.00' SE = .04

V DESIGN SPEED = 35 MPH

SEE SHEET 89 FOR -Y5DET- PROFILE

5/14/99

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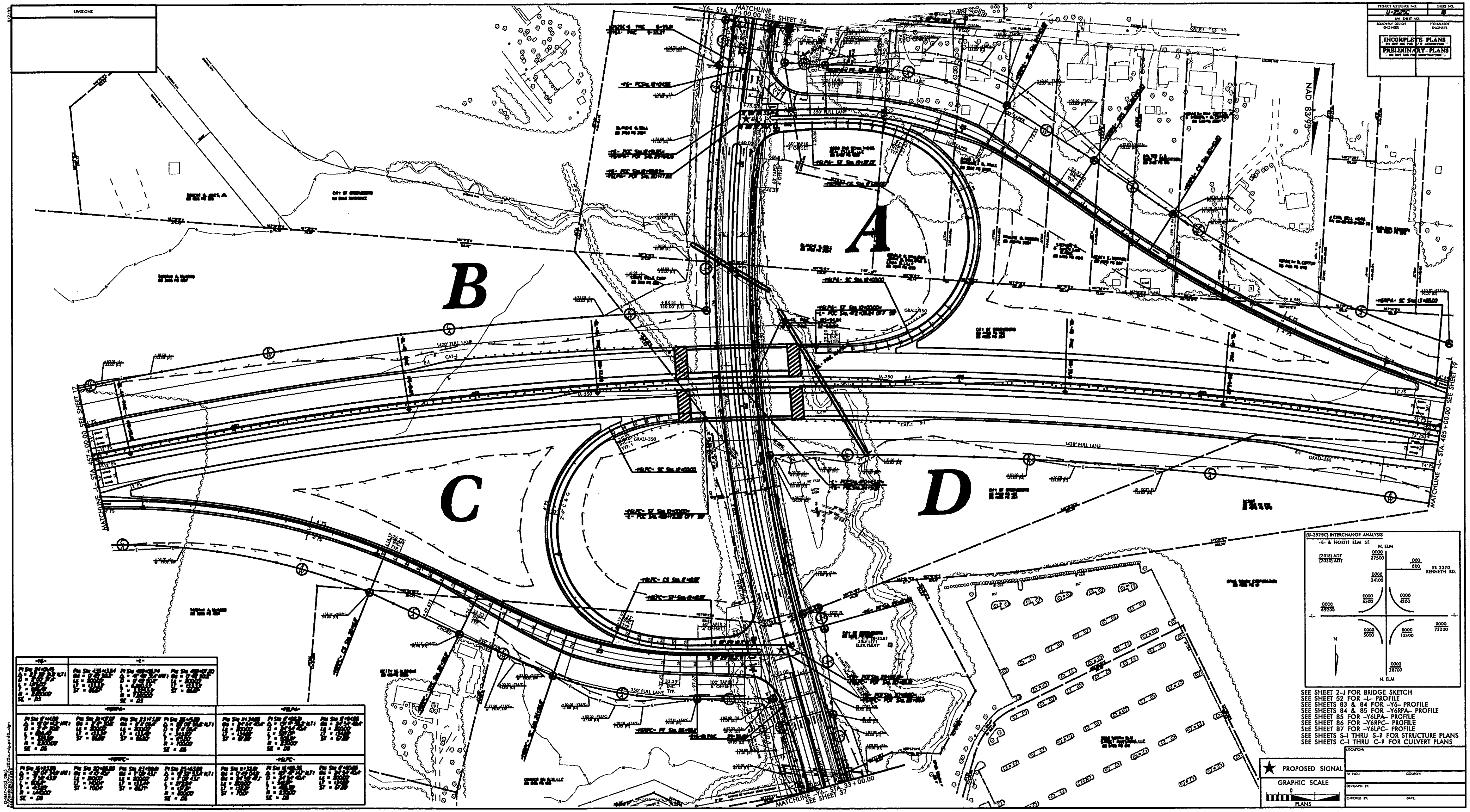

REVISIONS
MATCHLINE -Y6- STA. 17+00.00 SEE SHEET 36
MATCHLINE -Y6- STA. 33+00.00 SEE SHEET 37
MATCHLINE -L- STA. 485+00.00 SEE SHEET 19
MATCHLINE -L- STA. 467+00.00 SEE SHEET 17
NAD 83/95
A
B
C
D
1420' FULL LANE
350' FULL LANE
M-350
GRAU-350
CAT-1
(U-2525C) INTERCHANGE ANALYSIS
-L- & NORTH ELM ST.
(2018) ADT
(2030) ADT
N. ELM
0000
27500
000
800
SR 2370
KENNETH RD.
0000
24100
0000
6500
0000
4200
0000
69200
-L-
-L-
0000
5000
0000
10300
0000
72200
N
0000
28700
N. ELM
GRAPHIC SCALE
0
PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	[illegible]
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHEET 2-J FOR BRIDGE SKETCH
SEE SHEET 52 FOR -L- PROFILE
SEE SHEETS 83 & 84 FOR -Y6- PROFILE
SEE SHEETS 84 & 85 FOR -Y6RPA- PROFILE
SEE SHEET 85 FOR -Y6LPA- PROFILE
SEE SHEET 86 FOR -Y6RPC- PROFILE
SEE SHEET 87 FOR -Y6LPC- PROFILE
SEE SHEETS S-1 THRU S-? FOR STRUCTURE PLANS
SEE SHEETS C-1 THRU C-? FOR CULVERT PLANS

★ PROPOSED SIGNAL

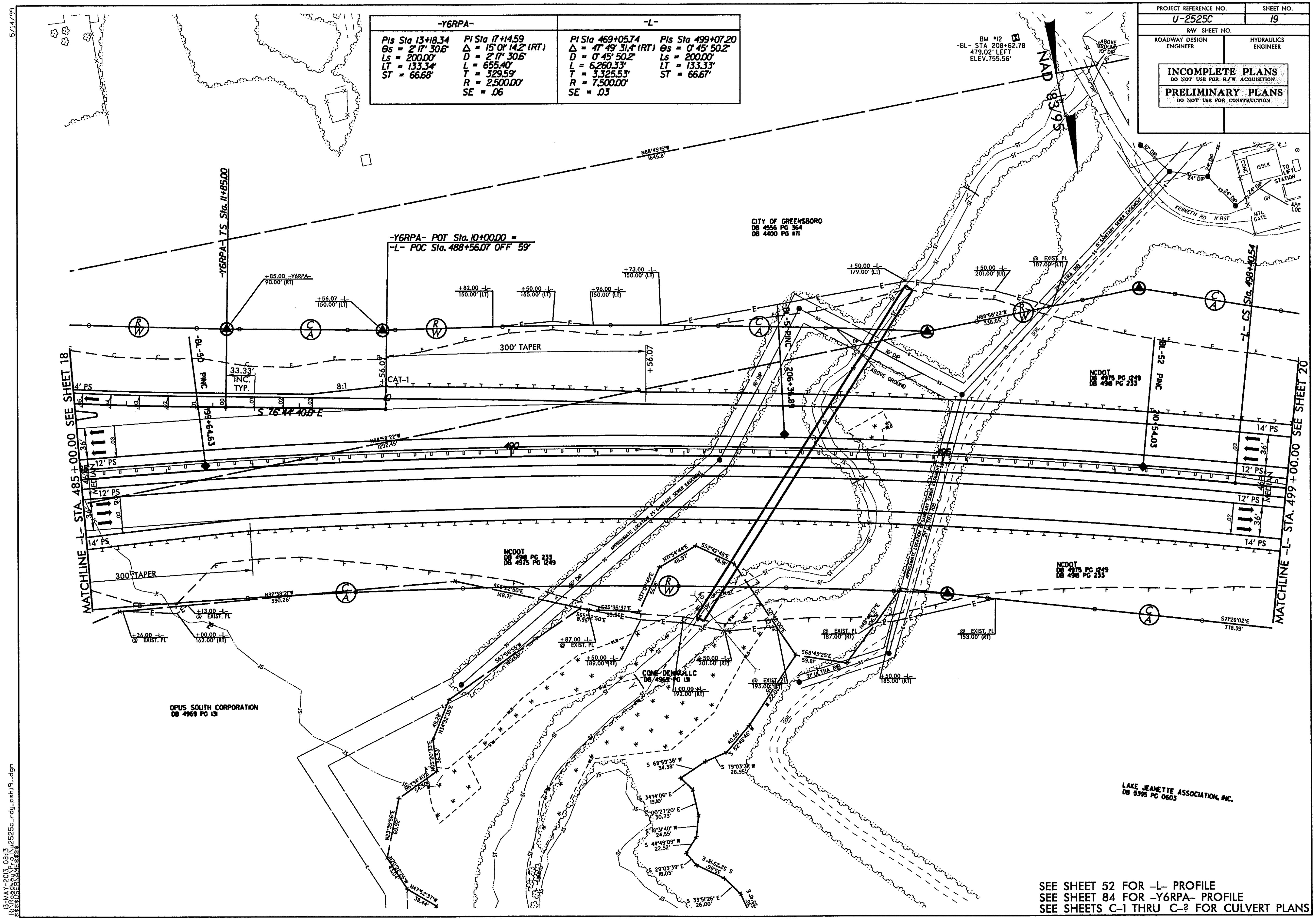
LOCATION:	
TIP NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99



-Y6RPA-		-L-	
PIs Sta 13+18.34	PI Sta 17+14.59	PI Sta 469+05.74	PIs Sta 499+07.20
θs = 2° 17' 30.6"	Δ = 15° 01' 14.2" (RT)	Δ = 47° 49' 31.4" (RT)	θs = 0° 45' 50.2"
Ls = 200.00'	D = 2° 17' 30.6"	D = 0° 45' 50.2"	Ls = 200.00'
LT = 133.34'	L = 655.40'	L = 6,260.33'	LT = 133.33'
ST = 66.68'	T = 329.59'	T = 3,325.53'	ST = 66.67'
	R = 2,500.00'	R = 7,500.00'	
	SE = .06	SE = .03	

BM #12
-BL- STA 208+62.78
479.02' LEFT
ELEV.755.56'

-Y6RPA- POT Sta. 10+00.00 =
-L- POC Sta. 488+56.07 OFF 59'

SEE SHEET 52 FOR -L- PROFILE
SEE SHEET 84 FOR -Y6RPA- PROFILE
SEE SHEETS C-1 THRU C-? FOR CULVERT PLANS

NAD 83/95
-Y6RPA- TS Sta. 11+85.00
-L- CS Sta. 498+40.54
MATCHLINE -L- STA. 485+00.00 SEE SHEET 18
MATCHLINE -L- STA. 499+00.00 SEE SHEET 20
CITY OF GREENSBORO
DB 4556 PG 364
DB 4400 PG 171
NCDOT
DB 498 PG 233
DB 4975 PG 1249
OPUS SOUTH CORPORATION
DB 4969 PG 131
CONE-DENNIS LLC
DB 4963 PG 131
LAKE JEANETTE ASSOCIATION, INC.
DB 5395 PG 0603
-BL-50 PINC 195+64.63
-BL-51 PINC 206+36.89
-BL-52 PINC 210+54.03
N88°45'15"W 1645.8'
N88°58'22"W 1292.45'
N88°58'22"W 336.65'
N82°38'21"W 390.26'
S71°26'02"E 778.39'
S 76°44' 40.0" E
+85.00 -Y6RPA- 90.00' (RT)
+56.07 -L- 150.00' (LT)
+82.00 -L- 150.00' (LT)
+50.00 -L- 155.00' (LT)
+96.00 -L- 150.00' (LT)
+73.00 -L- 150.00' (LT)
+50.00 -L- 179.00' (LT)
+50.00 -L- 201.00' (LT)
@ EXIST. PL 187.00' (LT)
300' TAPER
+56.07
33.33' INC. TYP.
CAT-1
8:1
4' PS
12' PS
14' PS
36'
MEDIAN
490
495
+13.00 -L- @ EXIST. PL
+36.00 -L- @ EXIST. PL
+00.00 -L- 162.00' (RT)
+87.00 -L- @ EXIST. PL
+50.00 -L- 189.00' (RT)
+50.00 -L- 201.00' (RT)
+00.00 -L- 192.00' (RT)
@ EXIST. PL 195.00' (RT)
@ EXIST. PL 187.00' (RT)
+50.00 -L- 185.00' (RT)
@ EXIST. PL 153.00' (RT)
S66°42'50"E 148.71'
S76°36'37"E 33.56'
S68°43'25"E 59.81'
N71°54'44"E 48.91'
S52°42'48"E 48.91'
APPROXIMATE LOCATION 25' SANITARY SEWER EASEMENT
16" DIP
24" DIP
10" DIP
ABOVE GROUND
2" ULTRA RIB
ISBLK
CONC
TO LIFT STATION
KENNETH RD
MTL GATE
GR
APP LOC
S 68°59'38" W 34.38'
S 79°03'33" W 26.95'
S 44°49'09" W 22.52'
S 29°03'39" E 18.05'
S 33°51'26" E 26.00'
N47°52'37"W 38.44'
N23°35'55"E 68.52'

13-MAY-2013 08:13
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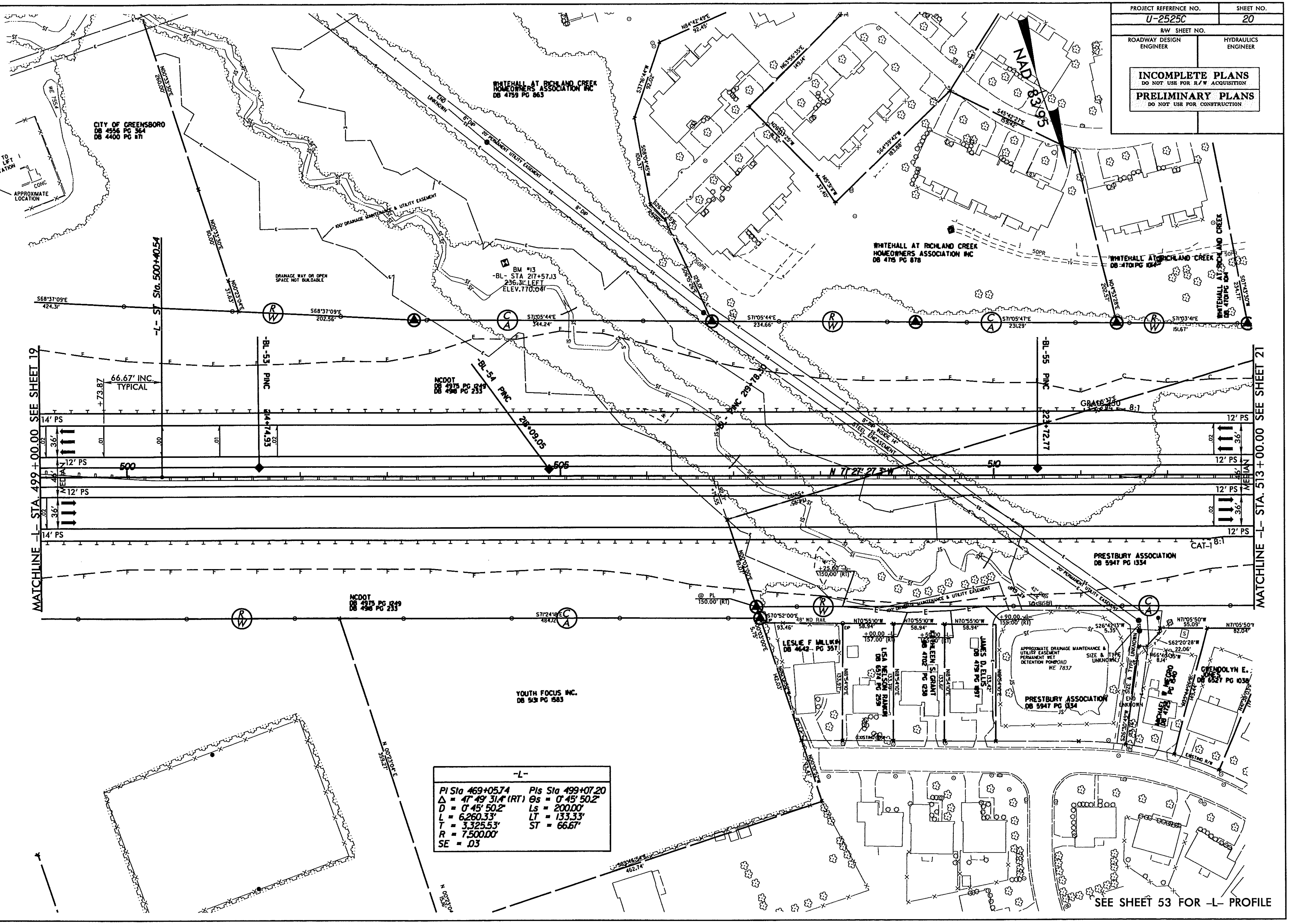
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


5/14/99
NAD 83/95
CITY OF GREENSBORO
DB 4556 PG 364
DB 4400 PG 171
TO LIFT STATION
CONC
APPROXIMATE LOCATION
WHITEHALL AT RICHLAND CREEK HOMEOWNERS ASSOCIATION INC
DB 4759 PG 863
WHITEHALL AT RICHLAND CREEK HOMEOWNERS ASSOCIATION INC
DB 4715 PG 878
WHITEHALL AT RICHLAND CREEK
DB 4701 PG 1014
20' PERMANENT UTILITY EASEMENT
100' DRAINAGE MAINTENANCE & UTILITY EASEMENT
DRAINAGE WAY OR OPEN SPACE NOT BUILDABLE
BM #13
-BL- STA 217+57.13
236.31' LEFT
ELEV.770.04'
S68°37'09"E
424.31'
S68°37'09"E
202.56'
S71°05'44"E
344.24'
S71°05'44"E
234.66'
S71°05'47"E
231.29'
S71°03'41"E
151.67'
-L- ST Sta. 500+40.54
-BL-53 PINC 214+74.93
-BL-54 PINC 218+09.05
-BL- PINC 219+78.30
-BL-55 PINC 223+72.77
66.67' INC.
TYPICAL
+73.87
14' PS
12' PS
36'
MEDIAN
500
505
510
N 71°27'27.3"W
NCDOT
DB 4975 PG 1249
DB 498 PG 233
MATCHLINE -L- STA. 499+00.00 SEE SHEET 19
MATCHLINE -L- STA. 513+00.00 SEE SHEET 21
GRADE
CAT-1
8:1
PRESTBURY ASSOCIATION
DB 5947 PG 1334
+25.00
150.00' (RT)
@ PL
150.00' (RT)
+90.00
155.00' (RT)
S71°24'18"E
484.12'
S70°52'00"E
48" WD RAIL
N70°55'10"W
58.94'
+00.00
157.00' (RT)
+50.00
N71°05'50"W
55.09'
N71°05'50"W
82.04'
S62°20'28"W
22.06'
LESLIE F MILLIKIN
DB 4642 PG 357
LISA NELSON RANKIN
DB 6574 PG 259
KATHLEEN S GRANT
DB 4702 PG 1230
JAMES D ELLIS
DB 4751 PG 1957
APPROXIMATE DRAINAGE MAINTENANCE & UTILITY EASEMENT
PERMANENT WET DETENTION POND
WE 7837
SIZE & TYPE UNKNOWN
PRESTBURY ASSOCIATION
DB 5947 PG 1334
MICHAEL W NEGRO
GWENDOLYN E. JONES
DB 6527 PG 1038
YOUTH FOCUS INC.
DB 5131 PG 1583
EXISTING R/W
462.74'

-L-	
PI Sta 469+05.74	PIs Sta 499+07.20
Δ = 47° 49' 31.4" (RT)	θs = 0° 45' 50.2"
D = 0° 45' 50.2"	Ls = 200.00'
L = 6,260.33'	LT = 133.33'
T = 3,325.53'	ST = 66.67'
R = 7,500.00'	
SE = .03	

SEE SHEET 53 FOR -L- PROFILE

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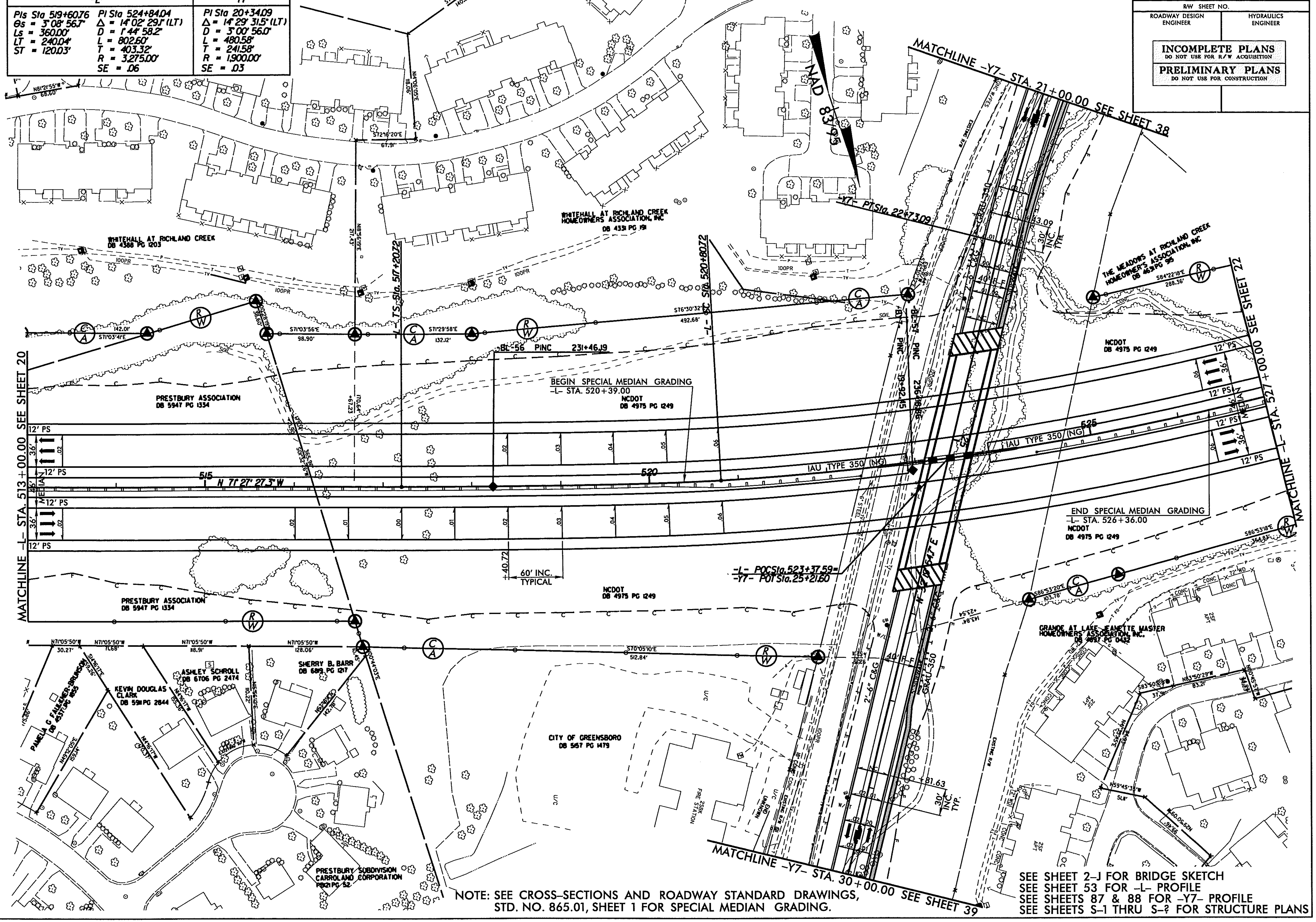
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-		-Y7-
PIs Sta 519+60.76	PI Sta 524+84.04	PI Sta 20+34.09
θs = 3°08′56.7″	Δ = 14°02′29.1″ (LT)	Δ = 14°29′31.5″ (LT)
Ls = 360.00′	D = 1°44′58.2″	D = 3°00′56.0″
LT = 240.04′	L = 802.60′	L = 480.58′
ST = 120.03′	T = 403.32′	T = 241.58′
	R = 3,275.00′	R = 1,900.00′
	SE = .06	SE = .03


MATCHLINE -L- STA. 513+00.00 SEE SHEET 20
MATCHLINE -L- STA. 527+00.00 SEE SHEET 22
MATCHLINE -Y7- STA. 21+00.00 SEE SHEET 38
MATCHLINE -Y7- STA. 30+00.00 SEE SHEET 39
NAD 83/95
WHITEHALL AT RICHLAND CREEK
DB 4388 PG 1203
WHITEHALL AT RICHLAND CREEK HOMEOWNERS ASSOCIATION, INC
DB 4331 PG 191
THE MEADOWS AT RICHLAND CREEK HOMEOWNER'S ASSOCIATION, INC
DB 4631 PG 95
PRESTBURY ASSOCIATION
DB 5947 PG 1334
NCDOT
DB 4975 PG 1249
BEGIN SPECIAL MEDIAN GRADING
-L- STA. 520+39.00
END SPECIAL MEDIAN GRADING
-L- STA. 526+36.00
-L- TS Sta. 517+20.22
-L- Sta. 520+80.72
BL-56 PINC 231+46.19
-Y7- PT Sta. 22+73.09
-L- POC Sta. 523+37.59=
-Y7- POT Sta. 25+21.60
N 71° 27′ 27.3″ W
515
520
525
IAU TYPE 350 (NG)
12′ PS
36′
46′
MEDIAN
60′ INC. TYPICAL
30′ INC. TYP.
40′ F
2′-6″ C&G
GRAU-350
GRANDE AT LAKE JEANETTE MASTER HOMEOWNERS ASSOCIATION, INC.
DB 4837 PG 0452
CITY OF GREENSBORO
DB 5457 PG 1479
FIRE STATION
PAMELA G FAULKNER-BRUNSON
DB 4570 PG 1855
KEVIN DOUGLAS CLARK
DB 5911 PG 2644
ASHLEY SCHROLL
DB 6706 PG 2474
SHERRY B. BARR
DB 6819 PG 1217
PRESTBURY SUBDIVISION
CARROLAND CORPORATION
PB 121 PG 52
N81°21′55″W 68.60′
S71°03′56″E 98.90′
S71°29′58″E 132.12′
S71°03′41″E 142.01′
S76°30′32″E 492.68′
S70°05′10″E 512.84′
N71°05′50″W 30.27′
N71°05′50″W 71.68′
N71°05′50″W 18.91′
N71°05′50″W 128.06′
S84°22′18″E 288.36′
S86°53′18″E 354.82′
S86°53′20″E 103.78′
S72°16′20″E 67.91′
100PR
APT
CONC

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.

SEE SHEET 2-J FOR BRIDGE SKETCH
SEE SHEET 53 FOR -L- PROFILE
SEE SHEETS 87 & 88 FOR -Y7- PROFILE
SEE SHEETS S-1 THRU S-? FOR STRUCTURE PLANS

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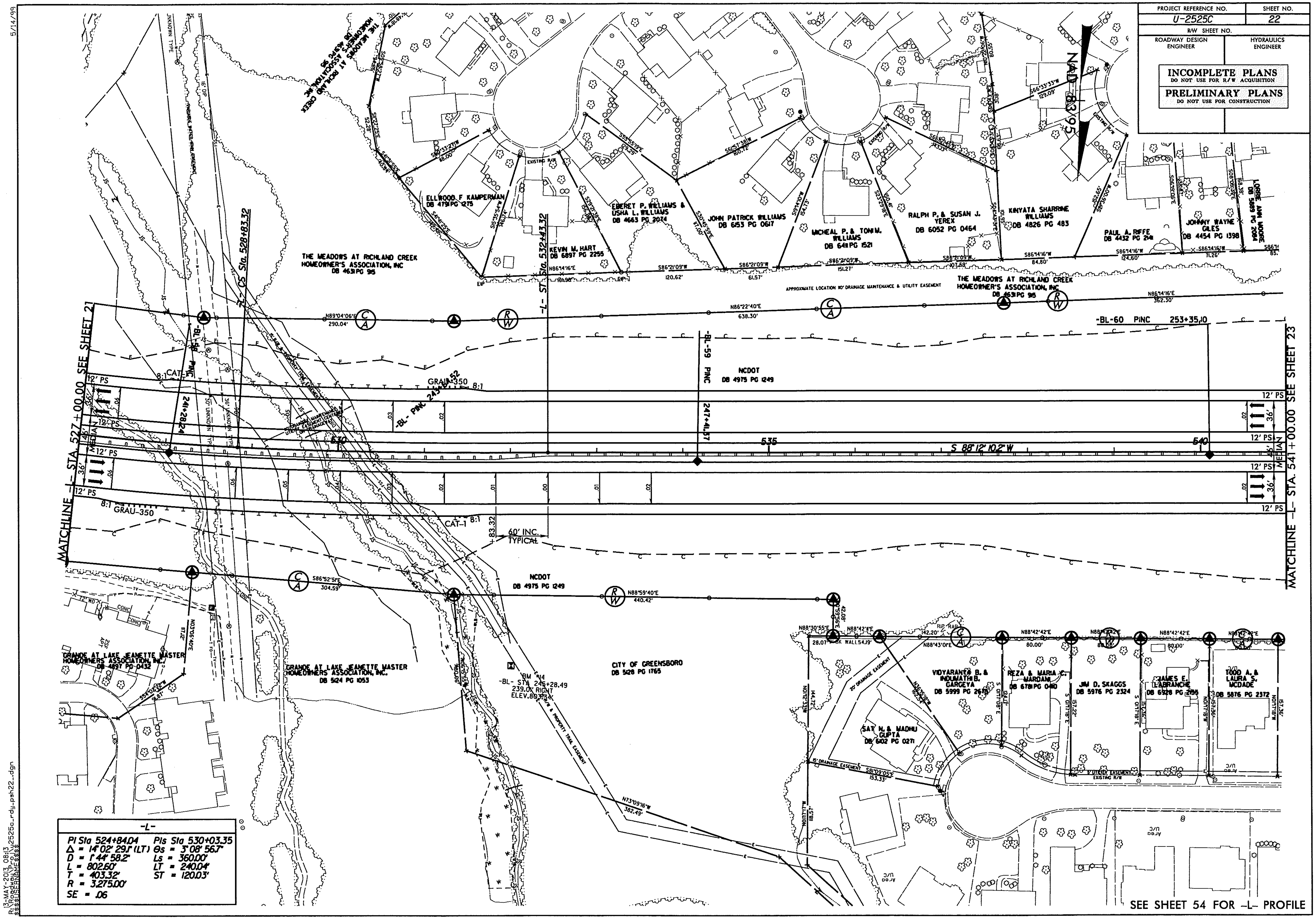
PROJECT REFERENCE NO.	SHEET NO.
U-2525C	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



5/14/99
NAD 83/95
THE MEADOWS AT RICHLAND CREEK HOMEOWNER'S ASSOCIATION, INC DB 4631 PG 95
ELLWOOD F KAMPERMAN DB 4791 PG 1275
KEVIN M. HART DB 6897 PG 2255
EBERET P. WILLIAMS & USHA L. WILLIAMS DB 4663 PG 2074
JOHN PATRICK WILLIAMS DB 6153 PG 0617
MICHEAL P. & TONI M. WILLIAMS DB 6411 PG 1521
RALPH P. & SUSAN J. YEREX DB 6052 PG 0464
KINYATA SHARRINE WILLIAMS DB 4826 PG 483
PAUL A. RIFFE DB 4432 PG 2141
JOHNNY WAYNE GILES DB 4454 PG 1398
LORRIE ANN MOORE DB 5889 PG 2064
APPROXIMATE LOCATION 10' DRAINAGE MAINTENANCE & UTILITY EASEMENT
MATCHLINE -L- STA. 527+00.00 SEE SHEET 21
MATCHLINE -L- STA. 541+00.00 SEE SHEET 23
-L- STA. 532+43.32
POS Sta. 528+83.32
-BL-58 PINC 241+28.24
-BL- PINC 243+83.52
-BL-59 PINC 247+41.57
-BL-60 PINC 253+35.10
S 88°12' 10.2" W
530
535
540
NCDOT DB 4975 PG 1249
12' PS
36'
MEDIAN
GRAU-350
CAT-1
8:1
60' INC. TYPICAL
N89°04'06"E 290.04'
N86°22'40"E 638.30'
N86°14'16"E 362.30'
S86°52'51"E 304.59'
N88°59'40"E 440.42'
GRANDE AT LAKE JEANETTE MASTER HOMEOWNERS ASSOCIATION, INC. DB 4897 PG 0432
GRANDE AT LAKE JEANETTE MASTER HOMEOWNERS ASSOCIATION, INC. DB 5124 PG 1053
BM #4 -BL- STA 246+28.49 239.00' RIGHT ELEV. 863.74
CITY OF GREENSBORO DB 5128 PG 1765
N73°09'16"W 382.49'
SAT N. & MADHU GUPTA DB 6102 PG 0271
VIDYARANYA B. & INDUMATHI B. GARGEYA DB 5999 PG 2613
REZA & MARIA C. MARDANI DB 6781 PG 0410
JIM D. SKAGGS DB 5976 PG 2324
JAMES E. LABRANCHE DB 6528 PG 2155
TODD A. & LAURA S. MCDADE DB 5876 PG 2372
20' DRAINAGE EASEMENT
15' DRAINAGE EASEMENT
EXISTING R/W
SEE SHEET 54 FOR -L- PROFILE

-L-	
PI Sta 524+84.04	PIs Sta 530+03.35
Δ = 14°02' 29.1" (LT)	θs = 3°08' 56.7"
D = 1°44' 58.2"	Ls = 360.00'
L = 802.60'	LT = 240.04'
T = 403.32'	ST = 120.03'
R = 3,275.00'	
SE = .06	

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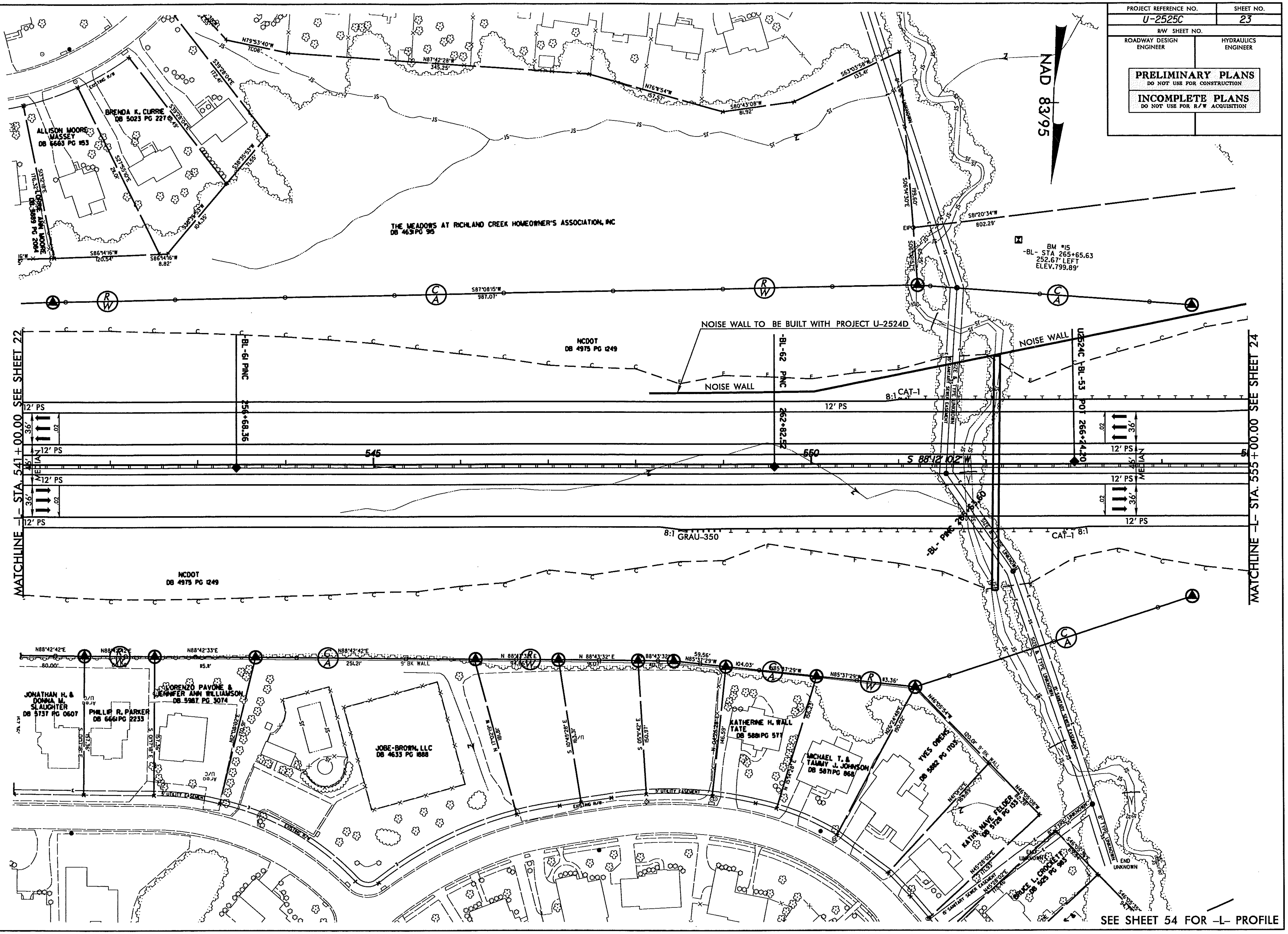
PROJECT REFERENCE NO.	SHEET NO.
U-2525C	23
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION


NAD 83/95
ALLISON MOORE MASSEY DB 6663 PG 153
LORRIE ANN MOORE DB 8089 PG 2084
BRENDA K. CURRIE DB 5023 PG 227
EXISTING R/W
S13°12'18"E 176.32'
S27°55'10"E 211.01'
S39°28'04"E 172.41'
S38°35'53"W 71.55'
S38°35'53"W 104.35'
S86°14'16"W 120.54'
S86°14'16"W 8.82'
N79°53'40"W 71.08'
N87°42'28"W 345.25'
N76°11'54"W 157.57'
S80°43'08"W 81.92'
S63°03'58"W 133.41'
S06°14'30"E 119.60'
S81°20'34"W 802.29'
EIP
THE MEADOWS AT RICHLAND CREEK HOMEOWNER'S ASSOCIATION, INC DB 4631 PG 95
BM #15 -BL- STA 265+65.63 252.67' LEFT ELEV. 799.89'
S87°08'15"W 987.07'
NOISE WALL TO BE BUILT WITH PROJECT U-2524D
NOISE WALL
NCDOT DB 4975 PG 1249
-BL-61 PINC 256+68.36
-BL-62 PINC 262+82.52
U-2524C -BL-53 POT 266+24.20
-BL- PINC 266+37.60
12' PS
36'
46' MEDIAN
545
550
S 88°12'10.2"W
8:1 CAT-1
8:1 GRAU-350
SIZE & TYPE UNKNOWN
15' SANITARY SEWER EASEMENT
MATCHLINE -L- STA. 541+00.00 SEE SHEET 22
MATCHLINE -L- STA. 555+00.00 SEE SHEET 24
N88°42'42"E 80.00'
N88°42'42"E 84.00'
N88°42'33"E 115.11'
N88°42'42"E 251.21'
9' BK WALL
N 88°43'32"E 94.68'
N 88°43'32"E 36.01'
88°43'32" 40.17'
N85°37'29"W 59.56'
104.03'
N85°37'29"W 83.36'
JONATHAN H. & DONNA M. SLAUGHTER DB 5737 PG 0607
PHILLIP R. PARKER DB 6661 PG 2233
LORENZO PAVONE & JENNIFER ANN WILLIAMSON DB 5987 PG 3074
JOBE-BROWN, LLC DB 4633 PG 1888
KATHERINE H. WALL TATE DB 5881 PG 577
MICHAEL T. & TAMMY J. JOHNSON DB 5871 PG 868
YVES OWENS DB 5882 PG 1705
KATHY NAVE FELDER DB 5728 PG 135
BRUCE L. CROCKETT DB 5625 PG 983
S 01°17'18" E 157.36'
N12°08'02"E 170.91'
N 17°02'19" W 181.81'
S 10°49'28" E 163.31'
S 05°11'42" E 150.91'
N 04°26'28" 146.59'
N 15°14'28" E 156.23'
N26°24'48"E 190.02'
N46°05'54"W 120.01'
N41°01'12"E 169.89'
N46°05'08"W 82.28'
N45°28'02"E 171.93'
N45°28'02"E 176.46'
S46°05'35"E 63.34'
S46°05'35"E 94.71'
5' UTILITY EASEMENT
8" TYPE UNKNOWN
END UNKNOWN
SEE SHEET 54 FOR -L- PROFILE

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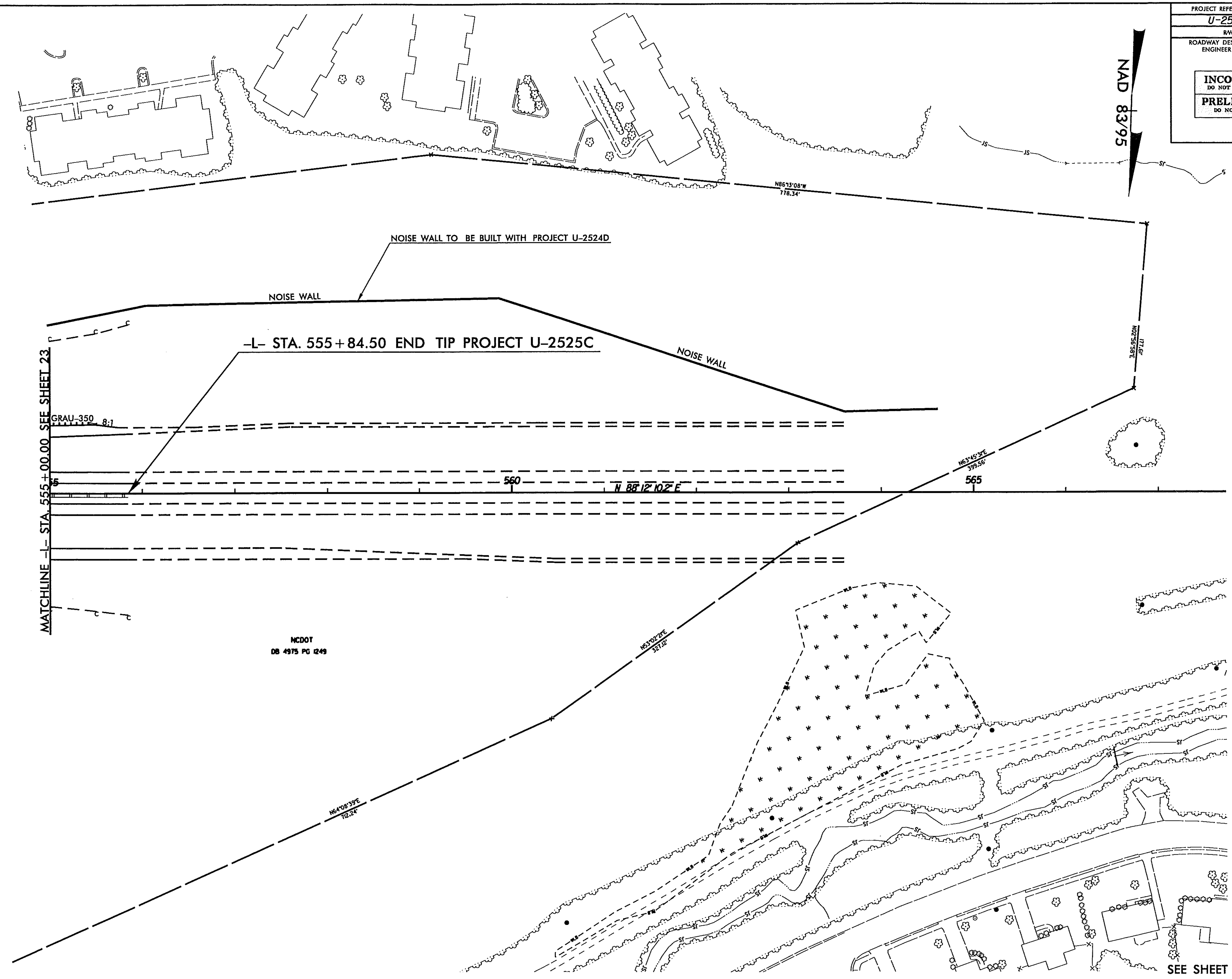
PROJECT REFERENCE NO.	SHEET NO.
U-2525C	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


NAD 83/95
NOISE WALL TO BE BUILT WITH PROJECT U-2524D
NOISE WALL
NOISE WALL
-L- STA. 555+84.50 END TIP PROJECT U-2525C
MATCHLINE -L- STA. 555+00.00 SEE SHEET 23
GRAU-350
8:1
55
560
565
N 88° 12' 10.2" E
N86°13'08"W
778.34'
N02°56'58"E
177.61'
N63°45'31"E
399.56'
N53°02'21"E
327.12'
N64°08'39"E
712.24'
NCDOT
DB 4975 PG 1249
JS
SS
S

SEE SHEET 55 FOR -L- PROFILE

5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
U-2525C	25

R/W SHEET NO.

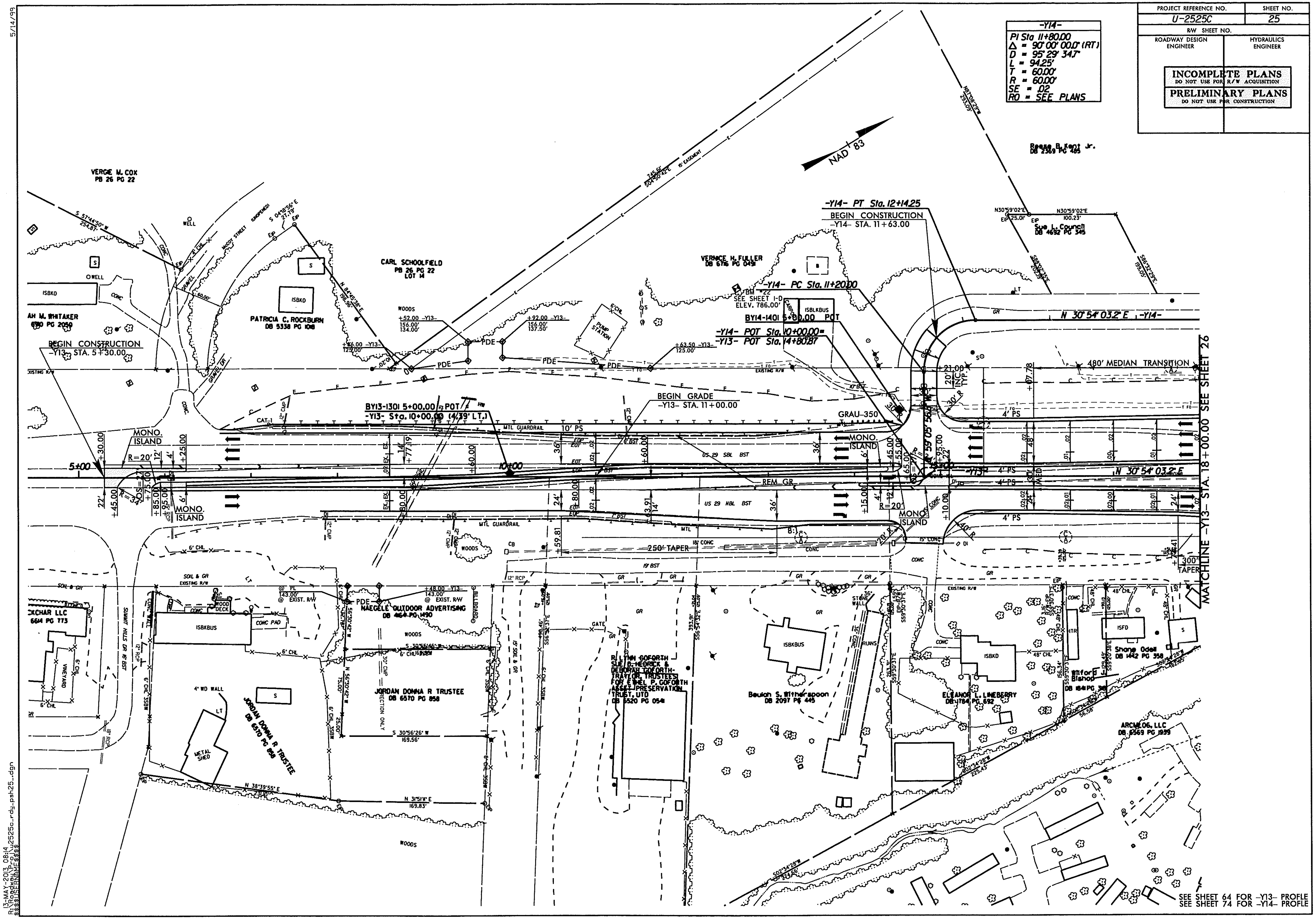
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y14-
PI Sta 11+80.00
Δ = 90°00′00.0″ (RT)
D = 95°29′34.7″
L = 94.25′
T = 60.00′
R = 60.00′
SE = .02
RO = SEE PLANS


5/14/99
NAD 83
VERGIE M. COX
PB 26 PG 22
S 57°44′50″ W
254.87′
WELL
McCOY STREET (UNOPENED)
S 04°18′56″ E
27.79′
EIP
CARL SCHOOLFIELD
PB 26 PG 22
LOT 14
PATRICIA C. ROCKBURN
DB 5338 PG 1018
N 84°45′38″ E
198.96′
ISBKD
AH M. WHITAKER
6930 PG 2050
GRAVEL
GRAVEL DR
CONC
60.00′
WOODS
+52.00 -Y13-
156.00′
134.00′
+92.00 -Y13-
156.00′
137.50′
+16.00 -Y13-
125.00′
PDE
BEGIN CONSTRUCTION
-Y13- STA. 5+30.00
EXISTING R/W
745.61′
S04°50′42″E
15′ EASEMENT
PUMP STATION
6′ CHL
+63.50 -Y13-
125.00′
VERNICE H. FULLER
DB 6716 PG 0491
BM #22
SEE SHEET 1-D
ELEV. 786.00′
CARPORT
ISBLKBUS
-Y14- PC Sta. 11+20.00
BY14-1401 5+00.00 POT
-Y14- POT Sta. 10+00.00=
-Y13- POT Sta. 14+80.87
-Y14- PT Sta. 12+14.25
BEGIN CONSTRUCTION
-Y14- STA. 11+63.00
Reese B. Kent Jr.
DB 2369 PG 485
N30°59′02″E
25.01′
N30°59′02″E
100.23′
Sue L. Council
DB 4692 PG 345
S88°02′15″E
202.19′
S86°32′29″E
199.05′
N81°08′25″W
253.05′
N 30°54′03.2″ E -Y14-
GR
LT
21.00
20′ INC. TYP.
30′ R
+07.78
480′ MEDIAN TRANSITION
4′ PS
BEGIN GRADE
-Y13- STA. 11+00.00
BY13-1301 5+00.00 POT
-Y13- Sta. 10+00.00 (4.39′ LT.)
HW
CAT-1
12″ CMP
MTL GUARDRAIL
10′ PS
GRAU-350
MONO. ISLAND
R=20′
12′
4′
+30.00
+25.00
5+00
10+00
+77.19
+60.00
14′
36′
EOP
EOT
6′ BST
US 29 SBL BST
US 29 NBL BST
REM GR
N 30°54′03.2″ E
-Y13-
+45.00
+55.00
+65.00
+95.00
MED
22′
+45.00
+75.00
+85.00
+95.00
+80.00
+43.91
+59.81
24′
+15.00
+10.00
R=20′
R=34′
250′ TAPER
18″ CONC
15″ CONC
CONC
19′ BST
12″ RCP
CB
DI
+24.41
300′ TAPER
MATCHLINE -Y13- STA. 18+00.00 SEE SHEET 26
SOIL & GR
6′ CHL
ECKCHAR LLC
6614 PG 773
VINEYARD
SUMMIT HILLS DR 16′ BST
12″ RCP
18″ RCP
CONC WALL
ISBKBUS
WOOD DECK
CONC PAD
@ PL
143.00′
@ EXIST. R/W
+48.00 -Y13-
143.00′
@ EXIST. R/W
BILLBOARD
NAEGELE OUTDOOR ADVERTISING
DB 4464 PG 1490
S 30°55′46″ W
N 56°30′42″ W
75.00′
25.00′
30″ CMP
DIRECTION ONLY
JORDAN DONNA R TRUSTEE
DB 6570 PG 858
S 30°56′26″ W
169.56′
4′ WD WALL
METAL SHED
JORDAN DONNA R TRUSTEE
DB 6570 PG 858
N 38°39′55″ E
231.0′
N 31°51′11″ E
169.83′
WOODS
15′ SOIL & GR
490.46′
S56°32′37″E
GATE
393.91′
S56°54′32″E
R. LYNN GOFORTH
SUE D. HEDRICK &
DEBORAH GOFORTH-
TRAYLOR, TRUSTEES
FOR ETHEL P. GOFORTH
ASSET PRESERVATION
TRUST, UTD
DB 6520 PG 0541
STONE WALL
36″
36′ CONC
RUINS
Beulah S. Witherspoon
DB 2097 PG 445
263.31′
S59°30′37″E
ELEANOR L. LINEBERRY
DB 1784 PG 692
48″ CHL
HTR
156.34′
S59°30′37″E
ISFD
Shane Odell
DB 1442 PG 358
Wilford J. Bishop
DB 1841 PG 38
129.49′
S59°20′38″E
S02°34′28″W
182.65′
56.58′
225.43′
ARCMLO6, LLC
DB 6569 PG 1939
S02°34′28″W
SEE SHEET 64 FOR -Y13- PROFILE
SEE SHEET 74 FOR -Y14- PROFILE
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PROJECT REFERENCE NO. U-2525C

SHEET NO. 26

R/W SHEET NO.

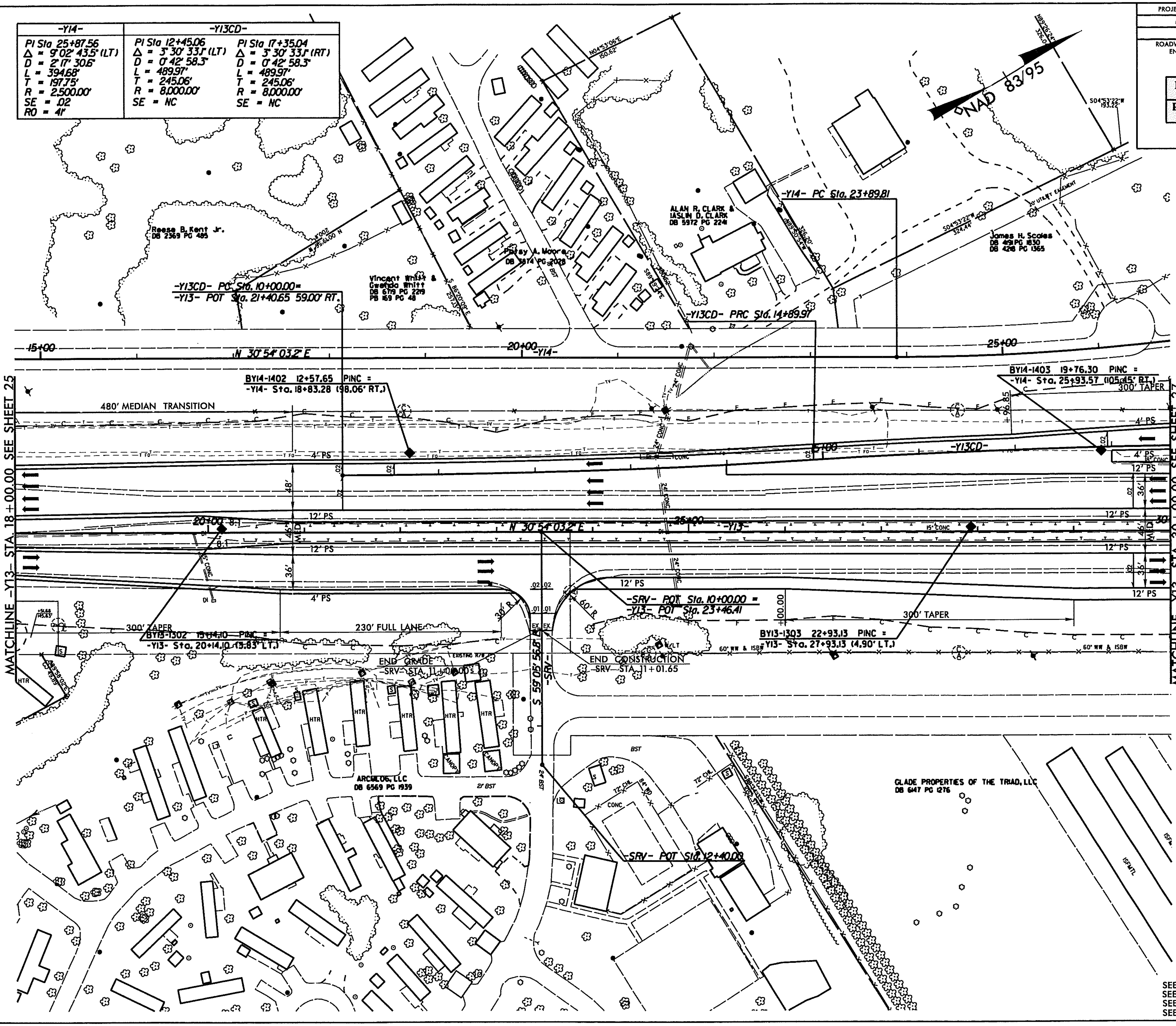
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y14-	-Y13CD-	
PI Sta 25+87.56	PI Sta 12+45.06	PI Sta 17+35.04
Δ = 9° 02' 43.5" (LT)	Δ = 3° 30' 33.1" (LT)	Δ = 3° 30' 33.1" (RT)
D = 2° 17' 30.6"	D = 0° 42' 58.3"	D = 0° 42' 58.3"
L = 394.68'	L = 489.97'	L = 489.97'
T = 197.75'	T = 245.06'	T = 245.06'
R = 2,500.00'	R = 8,000.00'	R = 8,000.00'
SE = .02	SE = NC	SE = NC
RO = 41'		


NAD 83/95
Reese B. Kent Jr.
DB 2369 PG 485
N 35.61.00 N
Vincent Whitt &
Gwendo Whitt
DB 6119 PG 2219
PB 169 PG 48
S 86°20'09" E
257.13'
Patsy A. Moore
DB 3874 PG 2028
N04°53'06"E
150.62
ALAN R. CLARK &
IASLIN D. CLARK
DB 5972 PG 2241
N89°50'54"W
326.20'
S89°
-Y14- PC Sta. 23+89.81
20' UTILITY EASEMENT
S04°53'22"W
324.44'
S04°53'22"W
193.22'
James H. Scales
DB 4191 PG 1830
DB 4218 PG 1365
-Y13CD- PC Sta. 10+00.00 =
-Y13- POT Sta. 21+40.65 59.00' RT.
-Y13CD- PRC Sta. 14+89.97
15+00
20+00 -Y14-
25+00
N 30°54' 03.2" E
BY14-1402 12+57.65 PINC =
-Y14- Sta. 18+83.28 (98.06' RT.)
BY14-1403 19+76.30 PINC =
-Y14- Sta. 25+93.57 (105.45' RT.)
480' MEDIAN TRANSITION
300' TAPER
+96.85
24" CONC
4' PS
-Y13CD-
15+00
12' PS
48'
46' MED
36'
20+00
25+00 -Y13-
30'
15" CONC
8:1
5" CONC
DI
-SRV- POT Sta. 10+00.00 =
-Y13- POT Sta. 23+46.41
00.00
300' TAPER
BY13-1302 15+14.10 PINC =
-Y13- Sta. 20+14.10 (5.83' LT.)
BY13-1303 22+93.13 PINC =
-Y13- Sta. 27+93.13 (4.90' LT.)
230' FULL LANE
30' R
60' R
.02 .02
.01 .01
EX. EX.
60" WW & ISBW
END GRADE
-SRV- STA. 11+00.00
EXISTING R/W
END CONSTRUCTION
-SRV- STA. 11+01.65
S 59° 05' 56.8" E
-SRV-
S89°58'02"E
HTR
CANOPY
ARCHLOG, LLC
DB 6569 PG 1939
21' BST
24' BST
BST
CONC
12' CHL
-SRV- POT Sta. 12+40.00
GLADE PROPERTIES OF THE TRIAD, LLC
DB 6147 PG 1276
ISFMTL
ISFM
MATCHLINE -Y13- STA. 18+00.00 SEE SHEET 25
MATCHLINE -Y13- STA. 30+00.00 SEE SHEET 27

SEE SHEET 64 FOR -SRV- PROFILE
SEE SHEET 65 FOR -Y13- PROFILE
SEE SHEET 69 FOR -Y13CD- PROFILE
SEE SHEET 74 FOR -Y14- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-2525C	27

R/W SHEET NO.

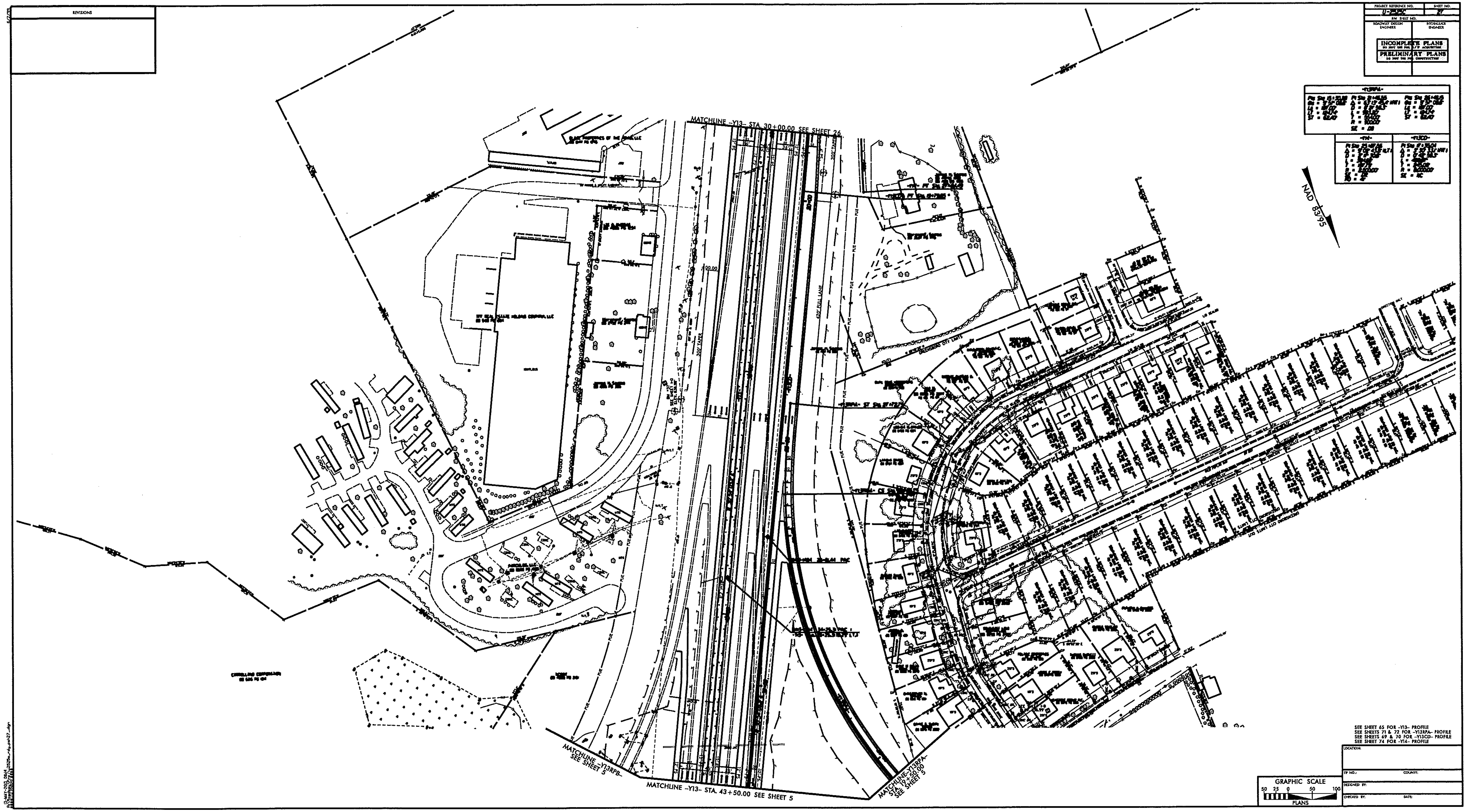
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS



MATCHLINE -Y13- STA. 30+00.00 SEE SHEET 26
MATCHLINE -Y13- STA. 43+50.00 SEE SHEET 5
MATCHLINE -Y13RPB- SEE SHEET 5
MATCHLINE -Y13RPA- STA. 19+50.00 SEE SHEET 5
NAD 83/95
GRAPHIC SCALE
50
25
0
50
100
PLANS

SEE SHEET 65 FOR -Y13- PROFILE
SEE SHEETS 71 & 72 FOR -Y13RPA- PROFILE
SEE SHEETS 69 & 70 FOR -Y13CD- PROFILE
SEE SHEET 74 FOR -Y14- PROFILE

LOCATION:

TIP NO.:
COUNTY:

DESIGNED BY:

CHECKED BY:
DATE:

PROJECT REFERENCE NO.	SHEET NO.
U-2525BC	28

R/W SHEET NO.

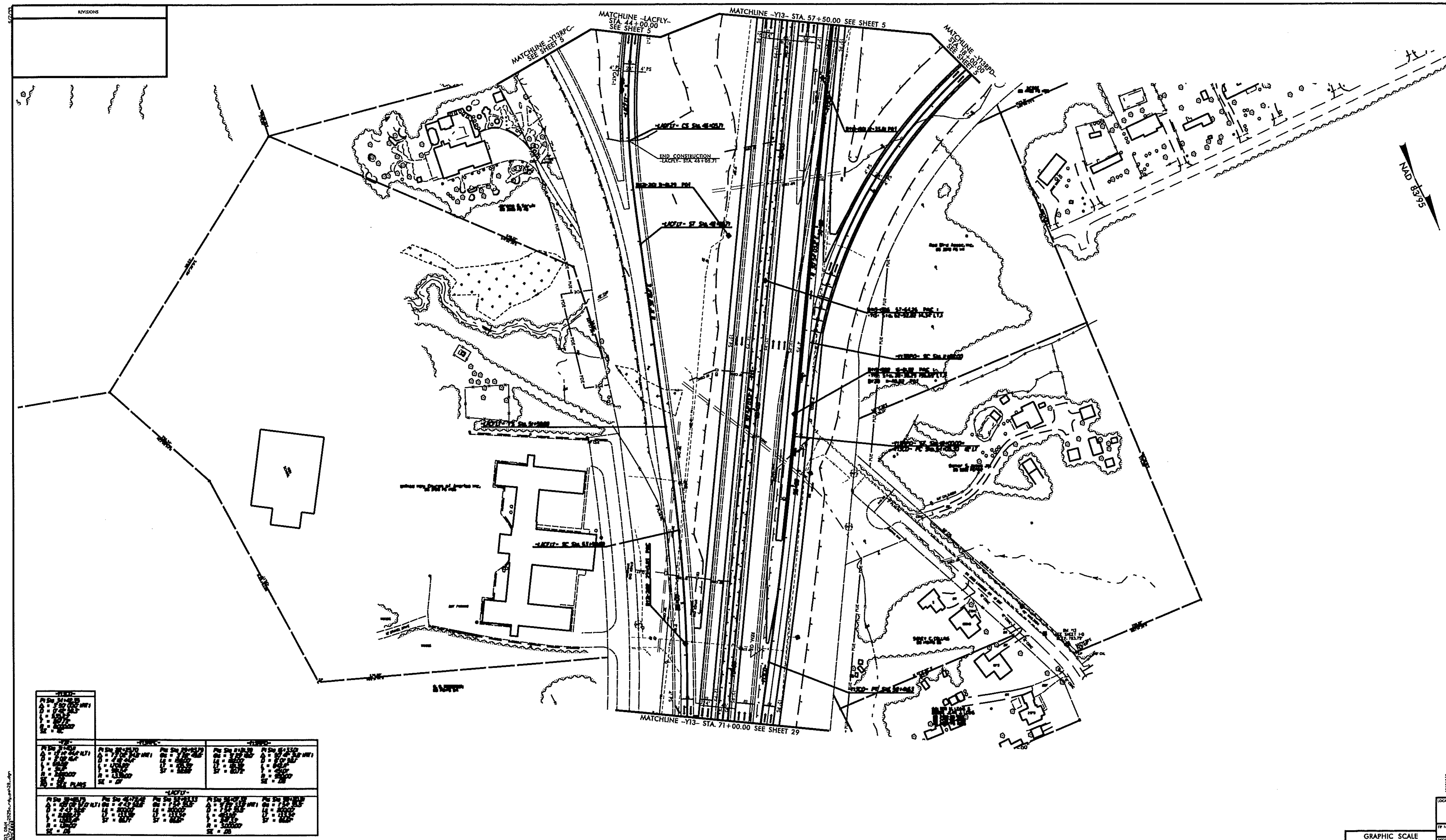
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS


MATCHLINE -Y13RPC- SEE SHEET 5
MATCHLINE -LACFLY- STA. 44+00.00 SEE SHEET 5
MATCHLINE -Y13- STA. 57+50.00 SEE SHEET 5
MATCHLINE -Y13RPD- STA. 18+00.00 SEE SHEET 5
END CONSTRUCTION -LACFLY- STA. 46+05.71
4' PS
4' PS
CAT-1
NAD 83/95
MATCHLINE -Y13- STA. 71+00.00 SEE SHEET 29

SEE SHEET 66 FOR -Y13- PROFILE
SEE SHEET 72 FOR -Y13RPD- PROFILE
SEE SHEETS 58 & 59 FOR -LACFLY- PROFILE
SEE SHEET 70 & 71 FOR -Y13CD- PROFILE

LOCATION:

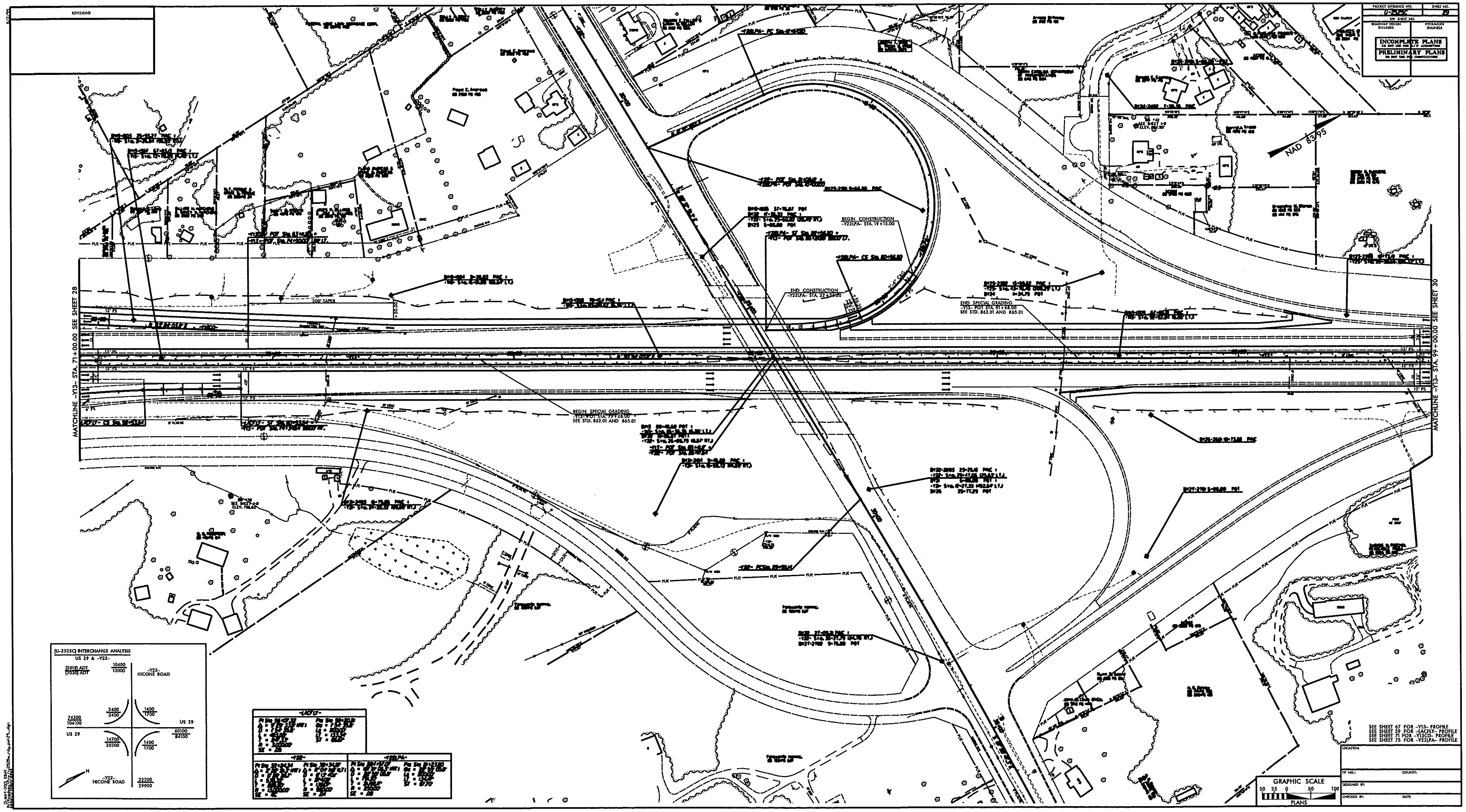
TIP NO.: COUNTY:

DESIGNED BY:

CHECKED BY: DATE:

GRAPHIC SCALE
50 25 0 50 100
PLANS

15-MAY-2013 08:14


REVISIONS
MATCHLINE -Y13- STA. 71+00.00 SEE SHEET 28
MATCHLINE -Y13- STA. 99+00.00 SEE SHEET 30
NAD 83/95
200' TAPER
BEGIN CONSTRUCTION
-Y22LPA- STA. 19+15.00
END CONSTRUCTION
-Y22LPA- STA. 22+56.20
END SPECIAL GRADING
-Y13- POT STA. 91+68.00
SEE STD. 862.01 AND 865.01
BEGIN SPECIAL GRADING
-Y13- POT STA. 79+28.00
SEE STD. 862.01 AND 865.01
2'-6" C&G
25' INC. TYP
(U-2525C) INTERCHANGE ANALYSIS
US 29 & -Y22-
(2018) ADT
(2030) ADT
10400
13000
-Y22-
HICONE ROAD
2400
3400
1400
1700
74300
104100
US 29
US 29
60100
84100
14700
20300
1400
1700
N
-Y22-
HICONE ROAD
22700
29900
-LACFLY-
-Y22-
-Y22LPA-

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	29

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHEET 67 FOR -Y13- PROFILE
SEE SHEET 59 FOR -LACFLY- PROFILE
SEE SHEET 71 FOR -Y13CD- PROFILE
SEE SHEET 75 FOR -Y22LPA- PROFILE

GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY:

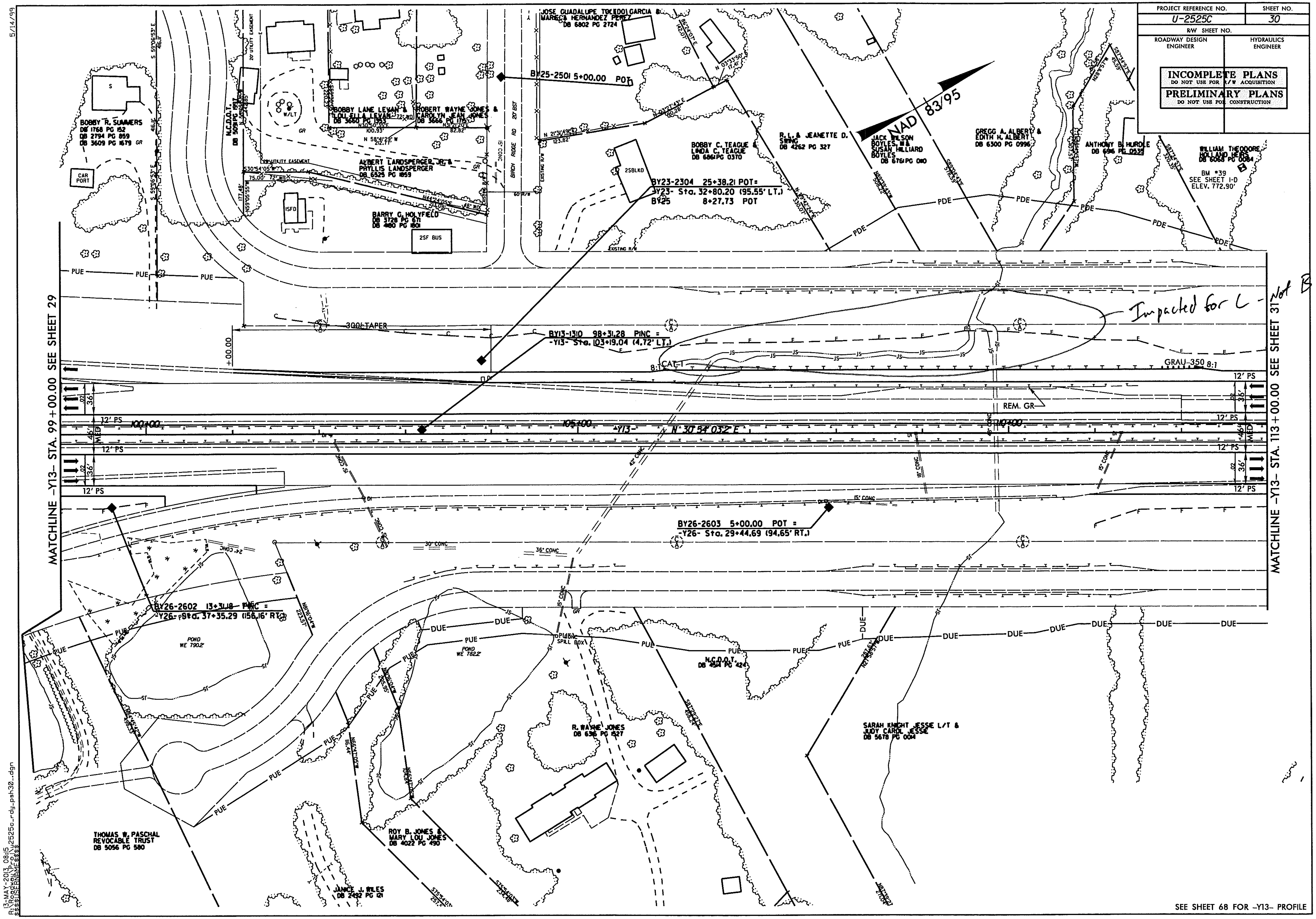
CHECKED BY: DATE:

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


MATCHLINE -Y13- STA. 99+00.00 SEE SHEET 29
MATCHLINE -Y13- STA. 113+00.00 SEE SHEET 31
NAD 83/95
BOBBY R. SUMMERS
DB 1768 PG 152
DB 2794 PG 859
DB 3609 PG 1679
CAR PORT
N.C.D.O.T.
20' UTILITY EASEMENT
W/LT
BOBBY LANE LEVAN & LOU ELLA LEVAN
DB 3660 PG 1983
ROBERT WAYNE JONES & CAROLYN JEAN JONES
DB 3666 PG 1175
ALBERT LANDSPERGER, JR. & PHYLLIS LANDSPERGER
DB 6525 PG 1059
BARRY G. HOLYFIELD
DB 3728 PG 671
DB 4180 PG 1801
ISFD
2SF BUS
BIRCH RIDGE RD 20' BST
JOSE GUADALUPE TOLEDO GARCIA & MARECA HERNANDEZ PEREZ
DB 6802 PG 2724
BY25-2501 5+00.00 POT
2SBLKD
BY23-2304 25+38.21 POT=
-Y23- Sta. 32+80.20 (95.55' LT.)
BY25 8+27.73 POT
BOBBY C. TEAGUE & LINDA C. TEAGUE
DB 6861 PG 0370
R.L. & JEANETTE D. SWING
DB 4262 PG 327
JACK WILSON BOYLES, III & SUSAN HILLIARD BOYLES
DB 6761 PG 080
GREGG A. ALBERT & EDITH H. ALBERT
DB 6300 PG 0996
ANTHONY B. HURDLE
DB 696 PG 0535
WILLIAM THEODORE HOLLAND HEIRS
DB 6068 PG 0084
BM #39
SEE SHEET 1-D
ELEV. 772.90'
PDE
PUE
DUE
300' TAPER
BY13-1310 98+31.28 PINC =
-Y13- Sta. 103+19.04 (4.72' LT.)
CAT-1
GRAU-350 8:1
REM. GR
12' PS
36'
46' MED
100+00
105+00
110+00
-Y13-
N 30°54'03.2" E
42" CONC
15" CONC
18" CONC
30" CONC
36" CONC
24" CONC
BY26-2603 5+00.00 POT =
-Y26- Sta. 29+44.69 (94.65' RT.)
BY26-2602 13+31.18 PINC =
-Y26- Sta. 37+35.29 (156.16' RT.)
POND WE 790.2'
POND WE 782.2'
SPILL BOX
N.C.D.O.T.
DB 414 PG 424
R. WAYNE JONES
DB 636 PG 1527
SARAH KNIGHT JESSE L/T & JUDY CAROL JESSE
DB 5678 PG 0014
THOMAS W. PASCHAL REVOCABLE TRUST
DB 5056 PG 580
ROY B. JONES & MARY LOU JONES
DB 4022 PG 490
JANICE J. WILES
DB 2492 PG 121

Impacted for C - Not B

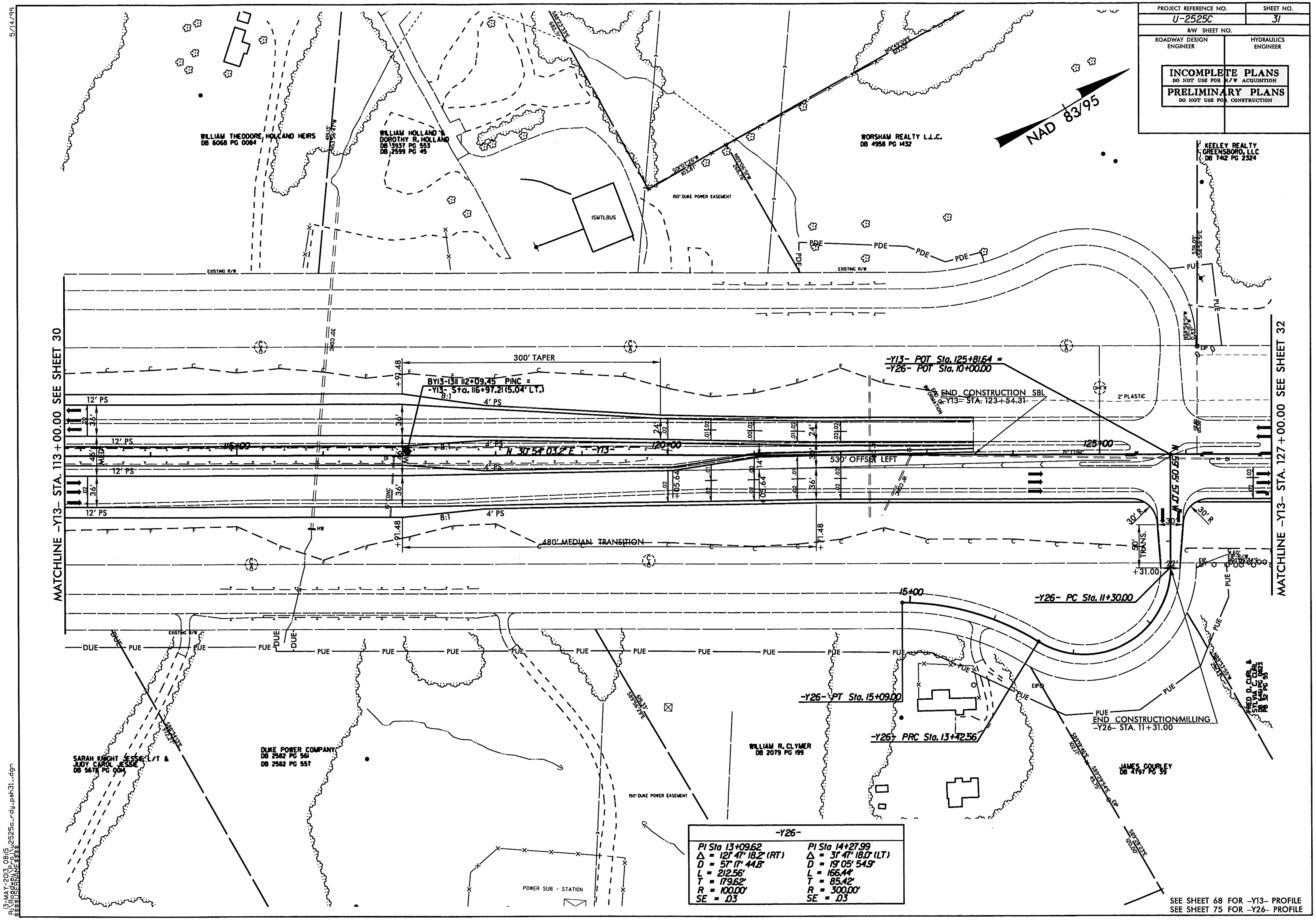
SEE SHEET 68 FOR -Y13- PROFILE

13-MAY-2013 08:15
R:\Roadway\Proj\u2525c_rdy_psh30.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


5/14/99
NAD 83/95
WILLIAM THEODORE HOLLAND HEIRS
DB 6068 PG 0084
419.13'
N53°56'47"W
WILLIAM HOLLAND &
DOROTHY R. HOLLAND
DB 3937 PG 553
DB 2599 PG 45
ISMTLBUS
150' DUKE POWER EASEMENT
S01°07'26"W
103.87'
N89°06'51"W
268.76'
N00°49'09"E
WORSHAM REALTY L.L.C.
DB 4958 PG 1432
KEELEY REALTY
GREENSBORO, LLC
DB 7412 PG 2324
538.09'
S58°58'51"E
N58°58'51"W
EIP-R/W
0.83'
EIP
PDE
PUE
EXISTING R/W
MATCHLINE -Y13- STA. 113+00.00 SEE SHEET 30
MATCHLINE -Y13- STA. 127+00.00 SEE SHEET 32
30" CONC
300' TAPER
+91.48
BY13-13II 112+09.45 PINC =
-Y13- Sta. 116+97.21 (5.04' LT.)
12' PS
4' PS
8:1
36'
46'
MED
115+00
120+00
125+00
N 30°54'03.2" E
-Y13-
15" CONC
HW
DI
24'
30'
14'
.02
.01
+05.64
+71.48
480' MEDIAN TRANSITION
530' OFFSET LEFT
18" CONC
-Y13- POT Sta. 125+81.64 =
-Y26- POT Sta. 10+00.00
END CONSTRUCTION SBL
-Y13- STA. 123+54.31
END OF INFORMATION
2" PLASTIC
N59°05'57.0"W
30' R
30'
50' TRANS.
22'
+31.00
4.60'
EIP-R/W
N00°55'24"E
-Y26- PC Sta. 11+30.00
15+00
-Y26- PT Sta. 15+09.00
-Y26- PRC Sta. 13+42.56
END CONSTRUCTION/MILLING
-Y26- STA. 11+31.00
DUE
SARAH KNIGHT JESSE L/T &
JUDY CAROL JESSE
DB 5678 PG 0014
DUKE POWER COMPANY
DB 2582 PG 561
DB 2582 PG 557
POWER SUB - STATION
150' DUKE POWER EASEMENT
WILLIAM R. CLYMER
DB 2079 PG 199
JAMES GOURLEY
DB 4797 PG 39
FRED D. CURL &
SYLVIA C. CURL
DB 5461 PG 0823
PB 52 PG 55
N89°33'55"W
S89°19'46"E
102.17'
S89°29'54"E
49.75'
S89°28'23"E
120.00'
13-MAY-2013 08:15
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$$$$USERNAME$$$$

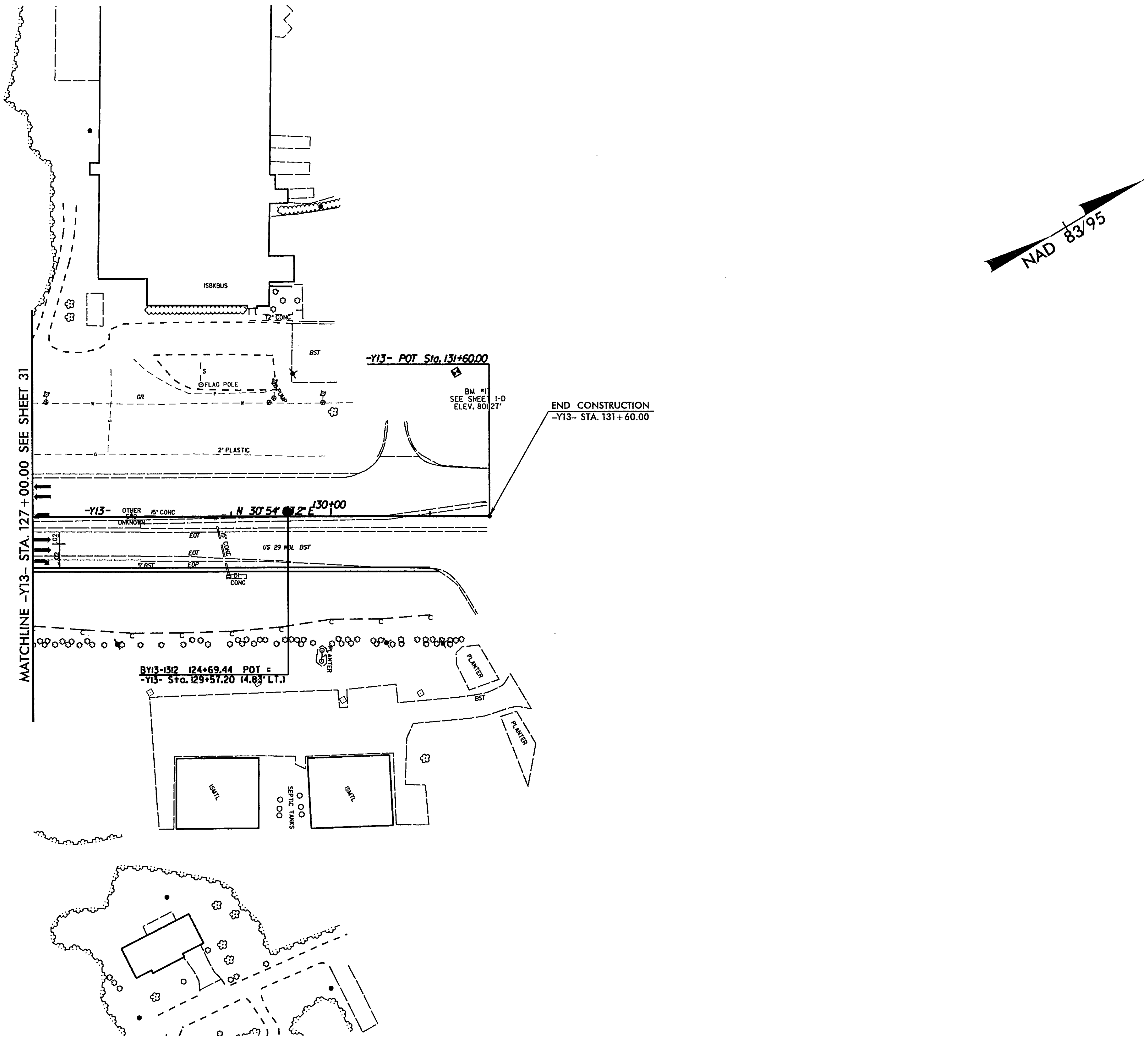
-Y26-	
PI Sta 13+09.62	PI Sta 14+27.99
Δ = 121° 47' 18.2" (RT)	Δ = 31° 47' 18.0" (LT)
D = 57° 17' 44.8"	D = 19° 05' 54.9"
L = 212.56'	L = 166.44'
T = 179.62'	T = 85.42'
R = 100.00'	R = 300.00'
SE = .03	SE = .03

SEE SHEET 68 FOR -Y13- PROFILE
SEE SHEET 75 FOR -Y26- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



MATCHLINE -Y13- STA. 127+00.00 SEE SHEET 31
ISBXBUS
12" CONC
BST
FLAG POLE
PUMP
GR
2" PLASTIC
-Y13- POT Sta. 131+60.00
BM "1"
SEE SHEET 1-D
ELEV. 801.27'
END CONSTRUCTION
-Y13- STA. 131+60.00
-Y13-
OTHER
UNKNOWN
15" CONC
N 30°54'03.2" E
130+00
EOT
EOP
5' BST
US 29 NBL BST
CONC
BY13-1312 124+69.44 POT =
-Y13- Sta. 129+57.20 (4.83' LT.)
PLANTER
BST
1SMTL
SEPTIC TANKS
NAD 83/95

SEE SHEET 69 FOR -Y13- PROFILE

5/14/99

13-MAY-2013 08:15
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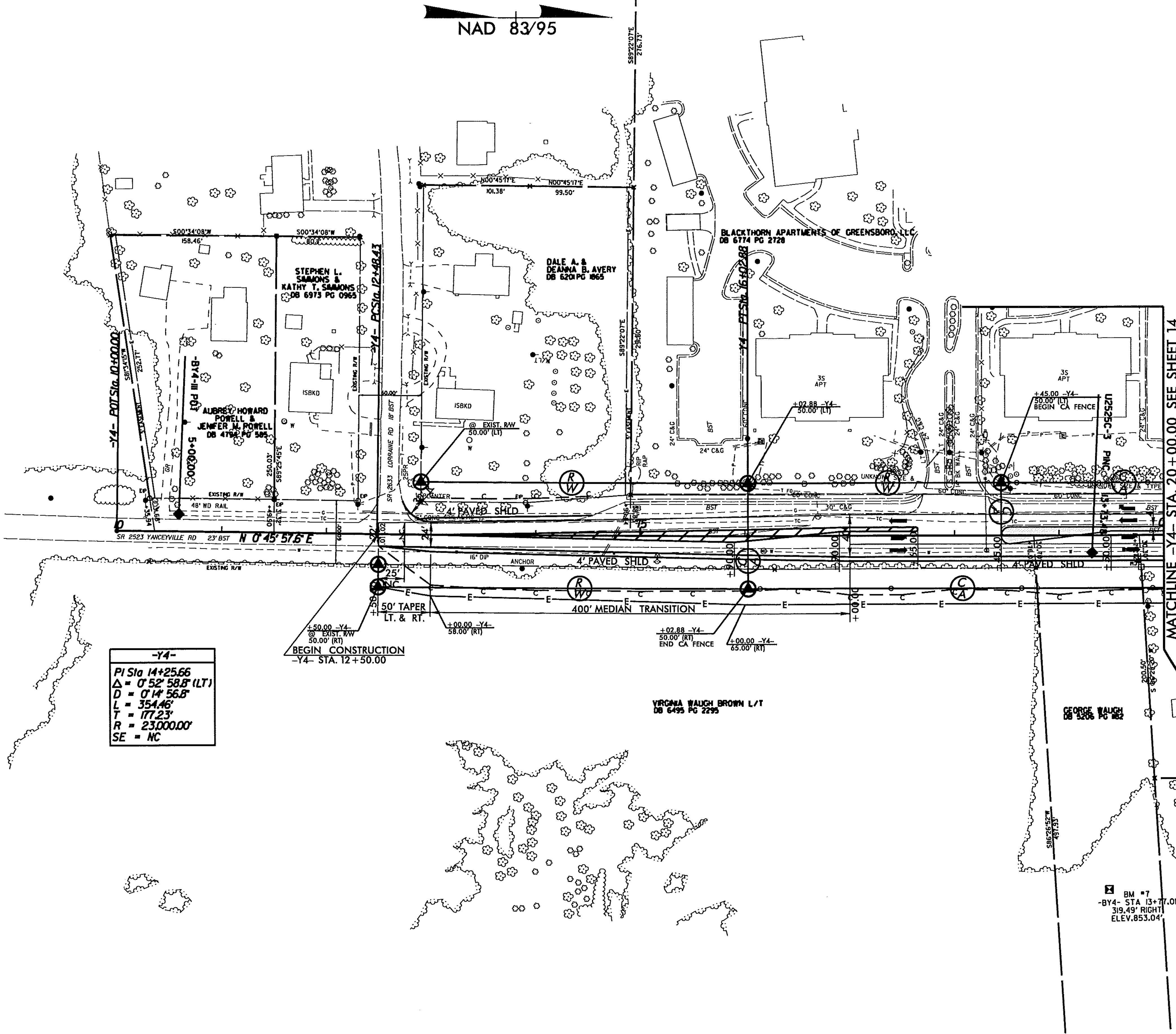
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99


NAD 83/95
S89°22'07"E
276.73'
N00°45'17"E
101.38'
N00°45'17"E
99.50'
S00°34'08"W
158.46'
S00°34'08"W
80.11'
STEPHEN L.
SIMMONS &
KATHY T. SIMMONS
DB 6973 PG 0965
-Y4- PCSta. 12+48.43
DALE A. &
DEANNA B. AVERY
DB 6201 PG 1865
BLACKTHORN APARTMENTS OF GREENSBORO, LLC
DB 6774 PG 2728
-Y4- PTSta. 16+02.88
-Y4- POTSta. 10+00.00
S81°34'15"W
252.77'
-BY4-III POT
5+00.00
AUBREY HOWARD
POWELL &
JENIFER M. POWELL
DB 4794 PG 585
ISBKD
250.03'
S89°25'45"E
EXISTING R/W
48' WD RAIL
EIP
GR
SR 2523 YANCEYVILLE RD
23' BST
N 0°45'57.6" E
SR 2633 LORRAINE RD 18' BST
25PR
@ EXIST. R/W
50.00' (LT)
S89°22'07"E
291.80'
RIP RAP
24' C&G
BST
3S APT
+02.88 -Y4-
50.00' (LT)
4' PAVED SHLD
16" DIP
ANCHOR
60' CONC
30' C&G
UNKNOWN SIZE &
UNKNOWN SIZE & TYPE
BK WALL
+45.00 -Y4-
50.00' (LT)
BEGIN CA FENCE
U2525C-3 PINC 13+73.48
25'
NC
50' TAPER
LT. & RT.
400' MEDIAN TRANSITION
+50.00 -Y4-
@ EXIST. R/W
50.00' (RT)
BEGIN CONSTRUCTION
-Y4- STA. 12+50.00
+00.00 -Y4-
58.00' (RT)
+02.88 -Y4-
50.00' (RT)
END CA FENCE
+00.00 -Y4-
65.00' (RT)
VIRGINIA WAUGH BROWN L/T
DB 6495 PG 2295
GEORGE WAUGH
DB 5206 PG 182
200.50'
S 86°28'20" W
S86°26'52"W
497.93'
S 00°12'26" E
81.16'
BM #7
-BY4- STA 13+77.01
319.49' RIGHT
ELEV.853.04'
WILLOW OAKS
PARTNERS
DB 5891 PG 2136
MATCHLINE -Y4- STA. 20+00.00 SEE SHEET 14

-Y4-
PI Sta 14+25.66
Δ = 0° 52' 58.8" (LT)
D = 0° 14' 56.8"
L = 354.46'
T = 177.23'
R = 23,000.00'
SE = NC

SEE SHEET 78 FOR -Y4- PROFILE

13-MAY-2013 08:15
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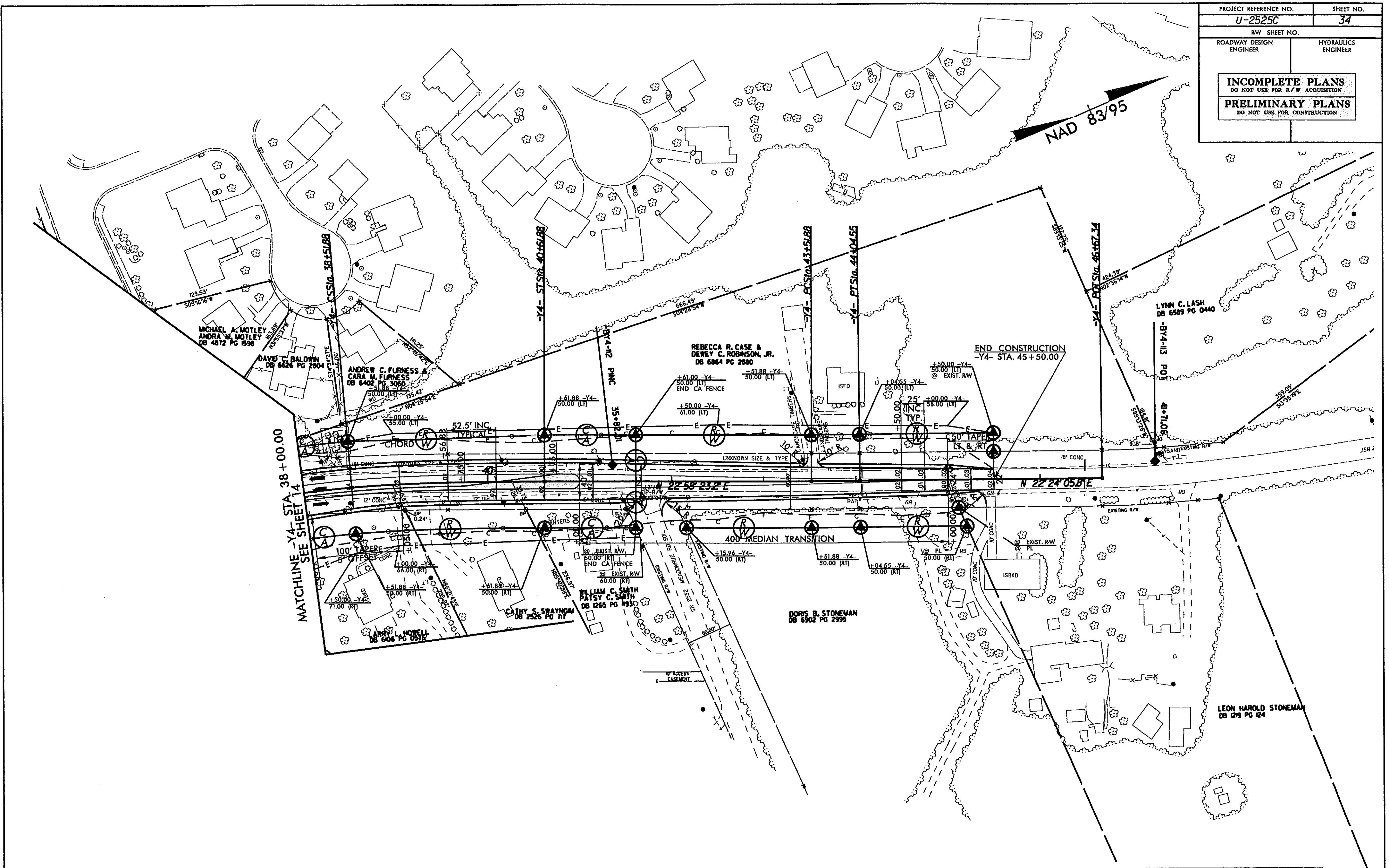
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	34
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99


NAD 83/95
MATCHLINE -Y4- STA. 38+00.00
SEE SHEET 14
MICHAEL A. MOTLEY
ANDRA M. MOTLEY
DB 4872 PG 1598
DAVID C. BALDWIN
DB 6626 PG 2804
ANDREW C. FURNESS &
CARA M. FURNESS
DB 6402 PG 3060
129.53'
S09°16'16"W
163.69'
N31°55'37"W
S74°34'21"E
116.06'
141.25'
N62°46'42"E
135.42'
N04°28'54"E
666.49'
S04°28'54"W
-Y4- CS Sta. 38+51.88
-Y4- ST Sta. 40+51.88
-Y4- PC Sta. 43+51.88
-Y4- PT Sta. 44+04.55
-Y4- POT Sta. 46+67.34
-BY4-112 PINC
35+82.01
-BY4-113 POT
41+71.06
REBECCA R. CASE &
DEWEY C. ROBINSON, JR.
DB 6864 PG 2880
LYNN C. LASH
DB 6589 PG 0440
END CONSTRUCTION
-Y4- STA. 45+50.00
+51.88 -Y4-
50.00 (LT)
+00.00 -Y4-
55.00 (LT)
52.5' INC.
TYPICAL
CHORD
+61.88 -Y4-
50.00 (LT)
+61.00 -Y4-
50.00 (LT)
END CA FENCE
+50.00 -Y4-
61.00 (LT)
+51.88 -Y4-
50.00 (LT)
+04.55 -Y4-
50.00 (LT)
25' INC. TYP.
+00.00 -Y4-
58.00 (LT)
+50.00 -Y4-
50.00 (LT)
@ EXIST. R/W
50' TAPER
LT & RT
ISFD
LANDSCAPE TIMBERS
10' R
UNKNOWN SIZE & TYPE
18" CONC
12" CONC
12" DIP
15" CONC
N 22°58'23.2" E
N 22°24'05.8" E
424.39'
N02°36'14"W
359.05'
S03°35'19"E
EXISTING R/W
100' TAPER
5' OFFSET
+00.00 -Y4-
66.00 (RT)
+50.00 -Y4-
71.00 (RT)
+51.88 -Y4-
50.00 (RT)
+61.88 -Y4-
50.00 (RT)
N86°21'41"E
295.97'
N85°40'38"E
236.97'
@ EXIST. R/W
50.00 (RT)
END CA FENCE
@ EXIST. R/W
60.00 (RT)
LARRY L. HOWELL
DB 606 PG 0575
CATHY S. SWAYNGIM
DB 2526 PG 717
WILLIAM C. SMITH
PATSY C. SMITH
DB 1265 PG 493
MEADOWRUE RD
SR 2532
EXISTING R/W
50.00'
10' ACCESS EASEMENT
+15.96 -Y4-
50.00 (RT)
400' MEDIAN TRANSITION
+51.88 -Y4-
50.00 (RT)
+04.55 -Y4-
50.00 (RT)
@ PL
50.00 (RT)
@ EXIST. R/W
@ PL
ISBKD
10' CONC
DORIS B. STONEMAN
DB 6902 PG 2995
LEON HAROLD STONEMAN
DB 1219 PG 124

-Y4-

PI Sta 37+14.67	PIs Sta 39+21.93	PI Sta 43+78.21
Δ = 13°06' 17.8" (RT)	θs = 4°59' 33.3"	Δ = 0°34' 17.4" (LT)
D = 4°45' 17.4"	Ls = 210.00'	D = 1°05' 06.5"
L = 275.61	LT = 140.06'	L = 52.67'
T = 138.41'	ST = 70.05'	T = 26.33'
R = 1,205.00'		R = 5,280.00'
SE = .04		SE = .04

SEE SHEET 79 FOR -Y4- PROFILE

13-MAY-2013 08:15
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	35

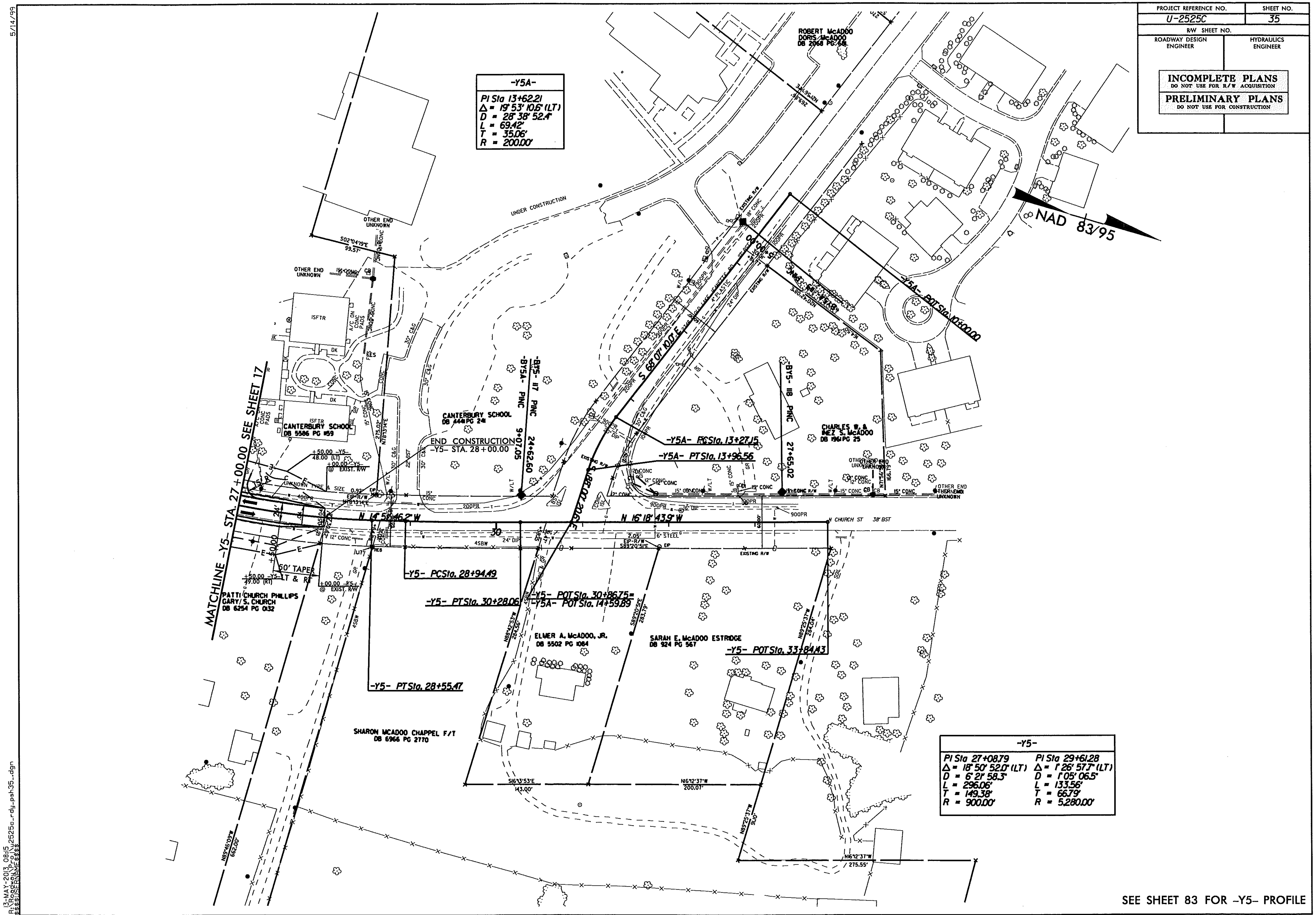
R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


ROBERT McADOO
DORIS McADOO
DB 2068 PG 58
UNDER CONSTRUCTION
OTHER END UNKNOWN
S02°04'19"E
99.57'
ISFTR
A/C ON CONC PADS
DK
CANTERBURY SCHOOL
DB 5586 PG 159
CANTERBURY SCHOOL
DB 4441 PG 241
END CONSTRUCTION
-Y5- STA. 28+00.00
-BY5A- 117 PINC 9+07.05
-BY5- 117 PINC 24+62.60
-BY5- 118 PINC 27+65.02
+50.00 -Y5- 48.00 (LT)
+00.00 -Y5- @ EXIST. R/W
UNKNOWN TYPE & SIZE
0.92'
EIP-R/W
N78°13'14"E
275.02'
MATCHLINE -Y5- STA. 27+00.00 SEE SHEET 17
50' TAPER LT & RT
+50.00 -Y5- 49.00 (RT)
+00.00 -Y5- @ EXIST. R/W
PATTI CHURCH PHILLIPS
GARY/S. CHURCH
DB 6254 PG 0132
N 14°51'46.2" W
N 16°18'43.9" W
S 68°07'10.1" E
S 88°00'20.6" E
N CHURCH ST 38' BST
-Y5A- PCSta. 13+27.15
-Y5A- PTSta. 13+96.56
-Y5A- POT Sta. 10+00.00
-Y5- PCSta. 28+94.49
-Y5- PTSta. 30+28.06
-Y5- POT Sta. 30+86.75 =
-Y5A- POT Sta. 14+59.89
-Y5- POT Sta. 33+84.43
-Y5- PTSta. 28+55.47
CHARLES W. & INEZ S. McADOO
DB 1961 PG 25
ELMER A. McADOO, JR.
DB 5502 PG 1084
SARAH E. McADOO ESTRIDGE
DB 924 PG 567
SHARON MCADOO CHAPPEL F/T
DB 6966 PG 2770
N88°42'53"W 284.56'
S89°20'51"E 283.79'
N89°25'37"W 284.04'
S16°13'53"E 143.00'
N16°12'37"W 200.07'
N16°12'37"W 275.55'
N89°25'37"W 91.00'
N89°46'09"W 662.00'
N71°56'18"E 166.79'
EXISTING R/W
12" CONC
15" CONC
24" DIP
4SBW
200PR
900PR
6" STEEL
NAD 83/95

-Y5A-
PI Sta 13+62.21
Δ = 19° 53' 10.6" (LT)
D = 28° 38' 52.4"
L = 69.42'
T = 35.06'
R = 200.00'

-Y5-	
PI Sta 27+08.79	PI Sta 29+61.28
Δ = 18° 50' 52.0" (LT)	Δ = 1° 26' 57.7" (LT)
D = 6° 21' 58.3"	D = 1° 05' 06.5"
L = 296.06'	L = 133.56'
T = 149.38'	T = 66.79'
R = 900.00'	R = 5,280.00'

SEE SHEET 83 FOR -Y5- PROFILE

5/14/99

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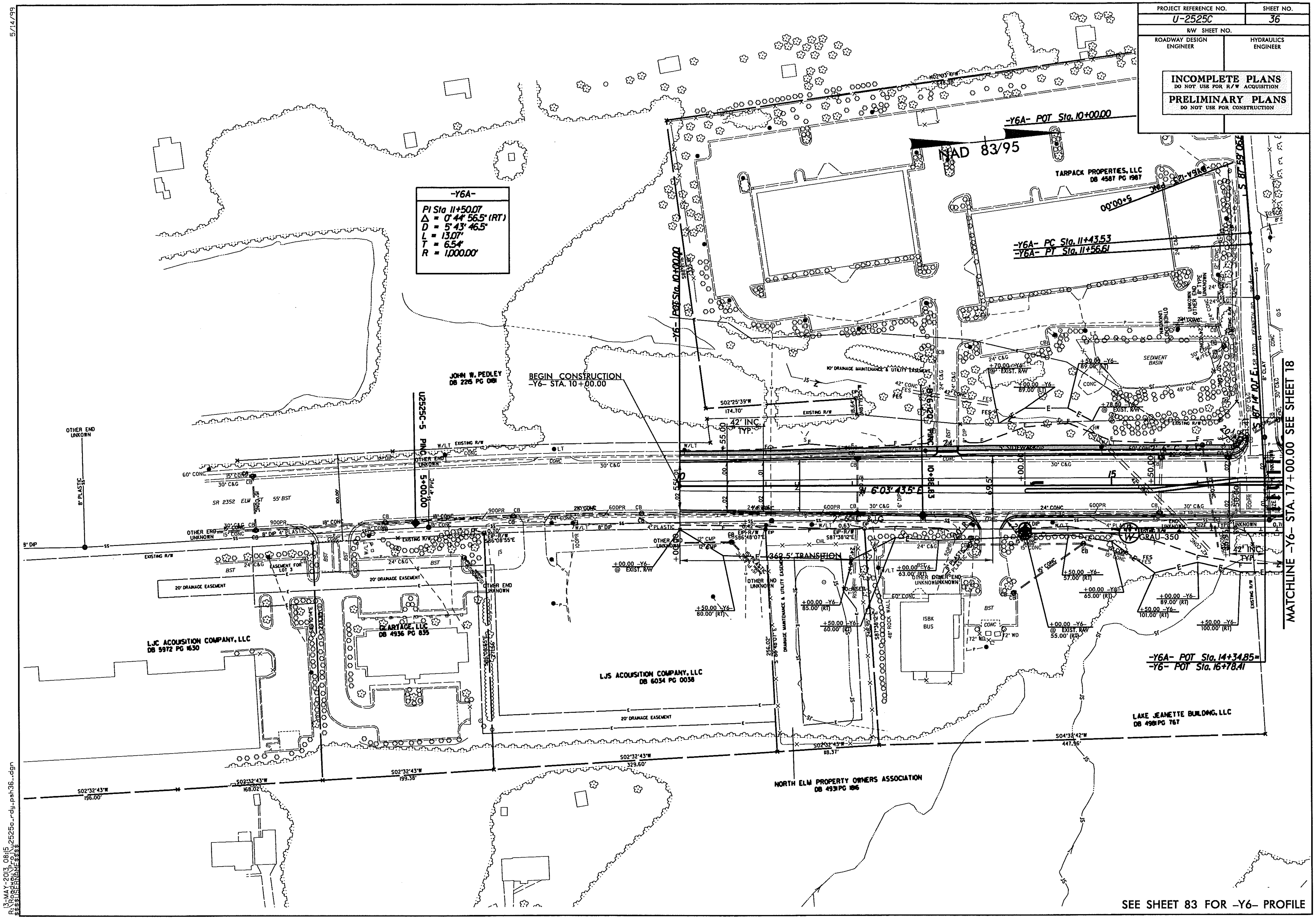
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525C	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


-Y6A-
PI Sta 11+50.07
Δ = 0° 44' 56.5" (RT)
D = 5° 43' 46.5"
L = 13.07'
T = 6.54'
R = 1,000.00'
-Y6A- POT Sta. 10+00.00
NAD 83/95
TARPACK PROPERTIES, LLC
DB 4587 PG 1987
-Y6A- PC Sta. 11+43.53
-Y6A- PT Sta. 11+56.61
-Y6- POT Sta. 10+00.00
JOHN W. PEDLEY
DB 225 PG 081
BEGIN CONSTRUCTION
-Y6- STA. 10+00.00
U2525C-5 PINC 5+00.00
OTHER END UNKOWN
8" PLASTIC
SR 2352 ELM ST
55' BST
10' DRAINAGE MAINTENANCE & UTILITY EASEMENT
SEDIMENT BASIN
42' INC. TYP.
S02°25'39"W
174.70'
6°03'43.5"E
362.5' TRANSITION
20' DRAINAGE EASEMENT
EASEMENT FOR LOT 3
LJC ACQUISITION COMPANY, LLC
DB 5972 PG 1630
CLARTAGE, LLC
DB 4936 PG 835
LJS ACQUISITION COMPANY, LLC
DB 6034 PG 0038
ISBK BUS
GRAU-350
LAKE JEANETTE BUILDING, LLC
DB 4981 PG 767
NORTH ELM PROPERTY OWNERS ASSOCIATION
DB 4931 PG 186
S02°32'43"W
196.00'
S02°32'43"W
168.02'
S02°32'43"W
199.38'
S02°32'43"W
329.60'
S02°32'43"W
88.37'
S04°32'42"W
447.56'
-Y6A- POT Sta. 14+34.85 =
-Y6- POT Sta. 16+78.41
MATCHLINE -Y6- STA. 17+00.00 SEE SHEET 18
+00.00 -Y6- @ EXIST. R/W
+50.00 -Y6- 80.00' (RT)
+00.00 -Y6- 85.00' (RT)
+50.00 -Y6- 60.00' (RT)
+00.00 -Y6- 63.00' (RT)
+50.00 -Y6- 57.00' (RT)
+00.00 -Y6- 65.00' (RT)
+00.00 -Y6- 89.00' (RT)
+50.00 -Y6- 101.00' (RT)
+50.00 -Y6- 100.00' (RT)
+00.00 -Y6- @ EXIST. R/W 55.00' (RT)
+50.00 -Y6- 89.00' (LT)
+70.00 -Y6- 89.00' EXIST. R/W
+00.00 -Y6- 89.00' (LT)
+78.60 -Y6- @ EXIST. R/W
48" ROCK WALL
EXISTING R/W

SEE SHEET 83 FOR -Y6- PROFILE

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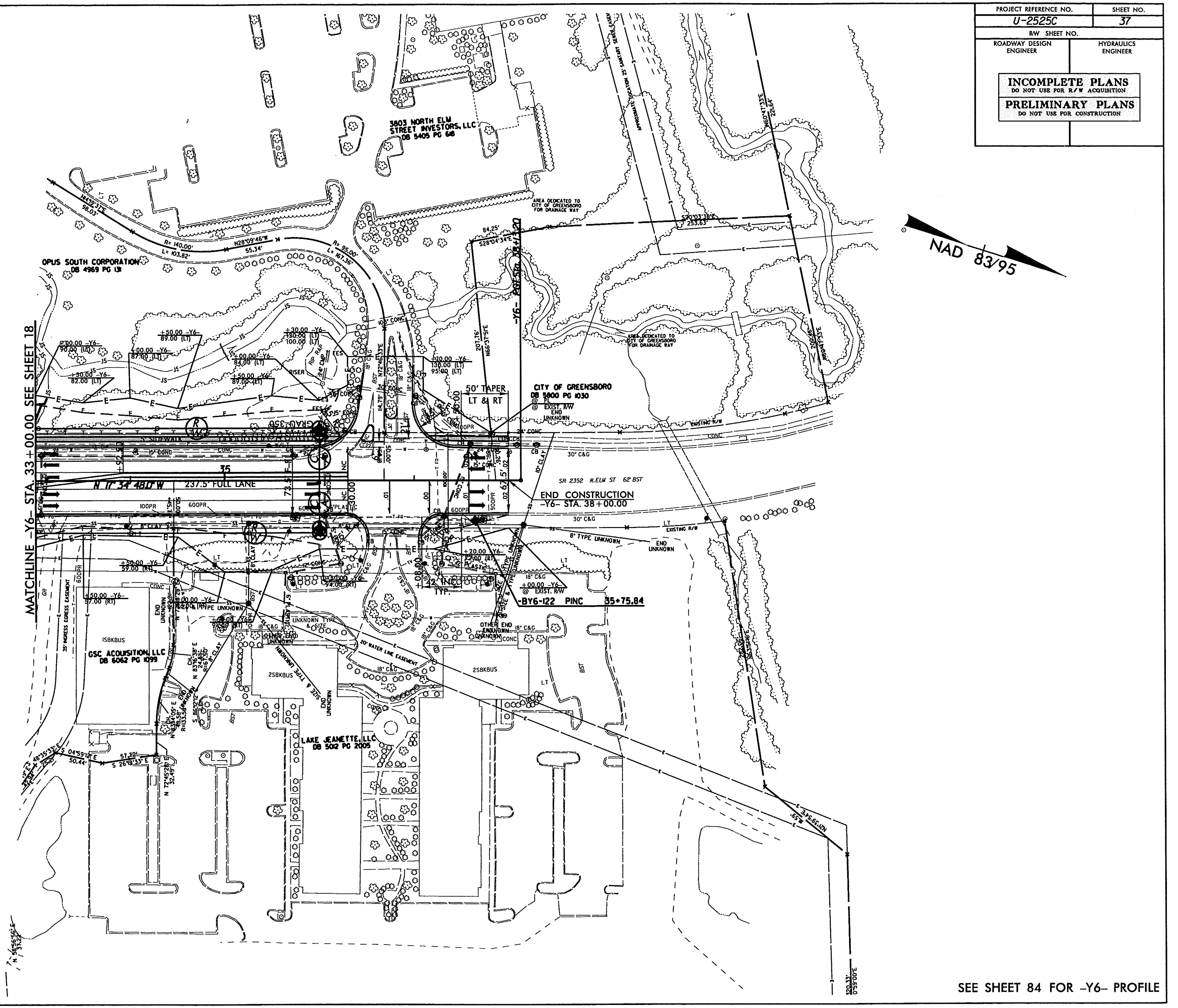
PROJECT REFERENCE NO.	SHEET NO.
U-2525C	37
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


MATCHLINE -Y6- STA. 33+00.00 SEE SHEET 18
NAD 83/95
3803 NORTH ELM STREET INVESTORS, LLC DB 5405 PG 68
OPUS SOUTH CORPORATION DB 4969 PG 131
AREA DEDICATED TO CITY OF GREENSBORO FOR DRAINAGE WAY
CITY OF GREENSBORO DB 5800 PG 1030
@ PL
@ EXIST. R/W
END UNKNOWN
50' TAPER LT & RT
N 17° 34' 48.0" W
237.5' FULL LANE
35
SR 2352 N.ELM ST 62' BST
END CONSTRUCTION
-Y6- STA. 38+00.00
-BY6-122 PINC 35+75.84
+00.00 -Y6- @ EXIST. R/W
+20.00 -Y6- 72.00 (RT)
+10.00 -Y6- 130.00 (LT) 95.00 (LT)
+30.00 -Y6- 130.00 (LT) 100.00 (LT)
+50.00 -Y6- 89.00 (LT)
+00.00 -Y6- 87.00 (LT)
+00.00 -Y6- 90.00 (LT)
+50.00 -Y6- 82.00 (LT)
+00.00 -Y6- 84.00 (LT)
+50.00 -Y6- 89.00 (LT)
+50.00 -Y6- 59.00 (RT)
+50.00 -Y6- 57.00 (RT)
R= 140.00'
L= 103.82'
N28°09'46"W 55.34'
R= 95.00'
L= 167.35'
207.76' N66°37'51"E
114.79' N72°46'33"E
RIP RAP
24" CMP
RISER
FES
30' C&G
18' C&G
24' CONC
15' CONC
10' CLAY
8' CLAY
8' TYPE UNKNOWN
EXISTING R/W
20' WATER LINE EASEMENT
35' INGRESS EGRESS EASEMENT
UNKNOWN TYPE & SIZE
OTHER END UNKNOWN
42" INC TYP.
GSC ACQUISITION, LLC DB 6062 PG 1099
1SBKBUS
2SBKBUS
LAKE JEANETTE, LLC DB 5012 PG 2005
S 04°59'10" E 50.44'
S 26°18'33" E 57.22'
N 72°45'28" E 32.49'

SEE SHEET 84 FOR -Y6- PROFILE

5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
U-2525C	38

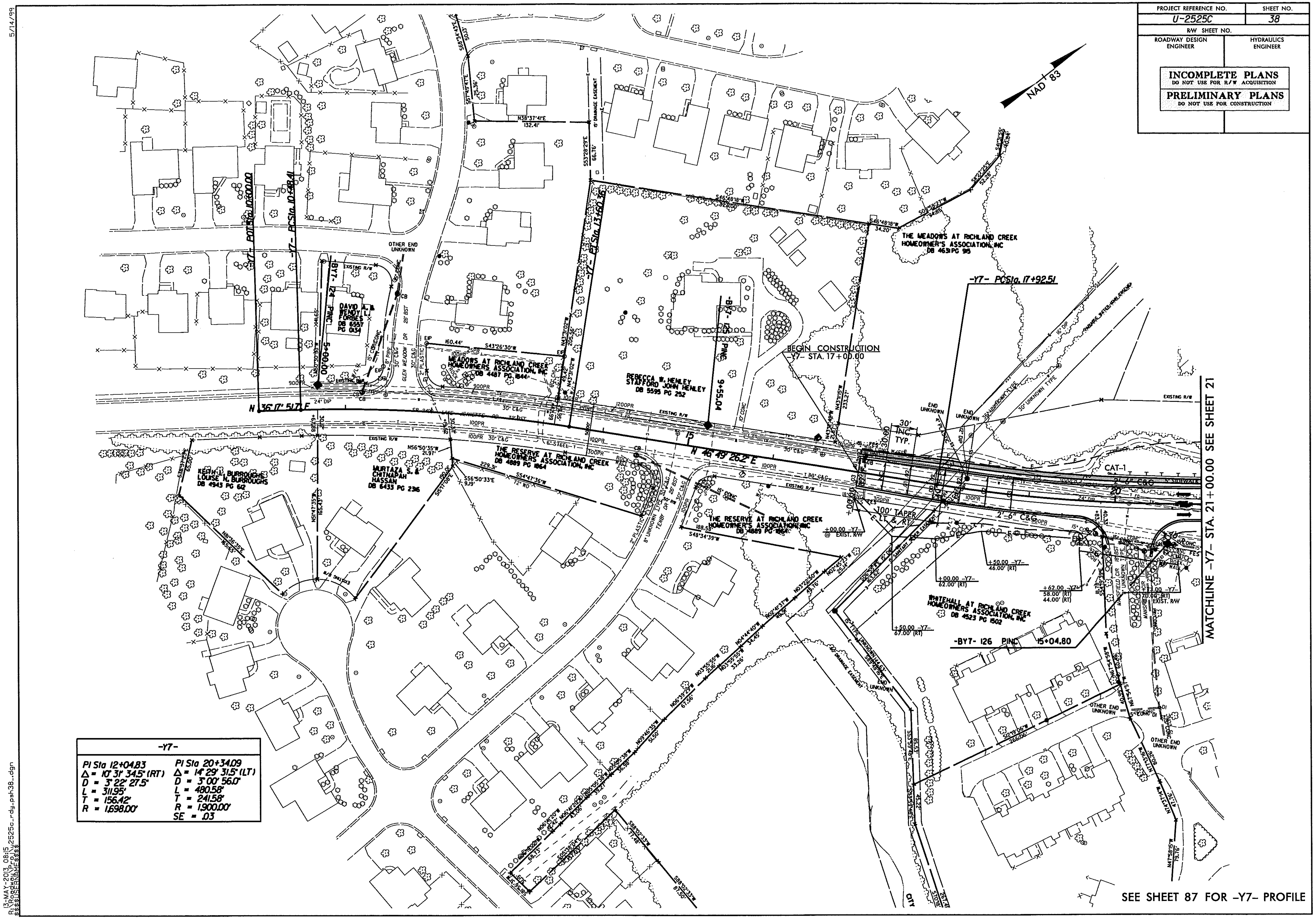
R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION


NAD 83
-Y7- POT Sta. 10+00.00
-Y7- PC Sta. 10+48.41
-BY7- 124 PINC
5+00.00
N 36°17' 51.7" E
OTHER END UNKNOWN
EXISTING R/W
DAVID A. & WENDY L. FORBES DB 6557 PG 0134
GLEN MEADOW DR
26' BST
30' C&G
MEADOWS AT RICHLAND CREEK HOMEOWNERS ASSOCIATION, INC DB 4487 PG 1844
160.44'
S43°26'30"W
N43°31'02"W 205.56'
-Y7- PT Sta. 13+60.36
REBECCA W. HENLEY STAFFORD JOHN HENLEY DB 5595 PG 252
-BY7- 125 PINC
9+55.04
N 46°49' 26.2" E
S46°48'18"W
S46°48'18"W 34.20'
THE MEADOWS AT RICHLAND CREEK HOMEOWNER'S ASSOCIATION, INC DB 4631 PG 95
-Y7- PC Sta. 17+92.51
BEGIN CONSTRUCTION -Y7- STA. 17+00.00
N43°11'15"W 233.27'
30' INC. TYP.
END UNKNOWN
30' UNKNOWN TYPE
16' DIP
EXISTING R/W
CAT-1
2'-6" C&G
24" DIP
MATCHLINE -Y7- STA. 21+00.00 SEE SHEET 21
KEITH L. BURROUGHS LOUISE N. BURROUGHS DB 4943 PG 612
N81°36'35"E 165.65'
N51°47'35"W 165.43'
MURTAZA S. & CHINTNAPAH HASSAN DB 6433 PG 2316
N56°50'35"W 21.97'
S56°50'33"E 9.19'
S51°17'08"E 190.01'
THE RESERVE AT RICHLAND CREEK HOMEOWNERS ASSOCIATION, INC DB 4889 PG 1864
229.31'
S54°47'36"W
72" WO
TENBY DR
THE RESERVE AT RICHLAND CREEK HOMEOWNER'S ASSOCIATION, INC DB 4889 PG 1864
188.58'
S48°34'39"W
+00.00 -Y7- @ EXIST. R/W
100' TAPER LT. & RT.
+00.00 -Y7- 62.00' (RT)
+50.00 -Y7- 46.00' (RT)
+50.00 -Y7- 67.00' (RT)
+62.00 -Y7- 58.00' (RT) 44.00' (RT)
+73.00 -Y7- 70.00' (RT) EXIST. R/W
WHITEHALL AT RICHLAND CREEK HOMEOWNERS ASSOCIATION, INC DB 4523 PG 1502
-BY7- 126 PINC 15+04.80
MANSFIELD CIR
60' DRAINAGE EASEMENT
15' SANITARY SEWER EASEMENT
N02°45'23"W 25.14'
N03°22'50"W 48.76'
N02°41'37"W 46.91'
N04°44'40"W 34.45'
N03°55'55"W 33.26'
N06°39'29"W 67.56'
OTHER END UNKNOWN
CITY

-Y7-

PI Sta 12+04.83
Δ = 10° 31' 34.5" (RT)
D = 3° 22' 27.5"
L = 311.95'
T = 156.42'
R = 1,698.00'

PI Sta 20+34.09
Δ = 14° 29' 31.5" (LT)
D = 3° 00' 56.0"
L = 480.58'
T = 241.58'
R = 1,900.00'
SE = .03

SEE SHEET 87 FOR -Y7- PROFILE

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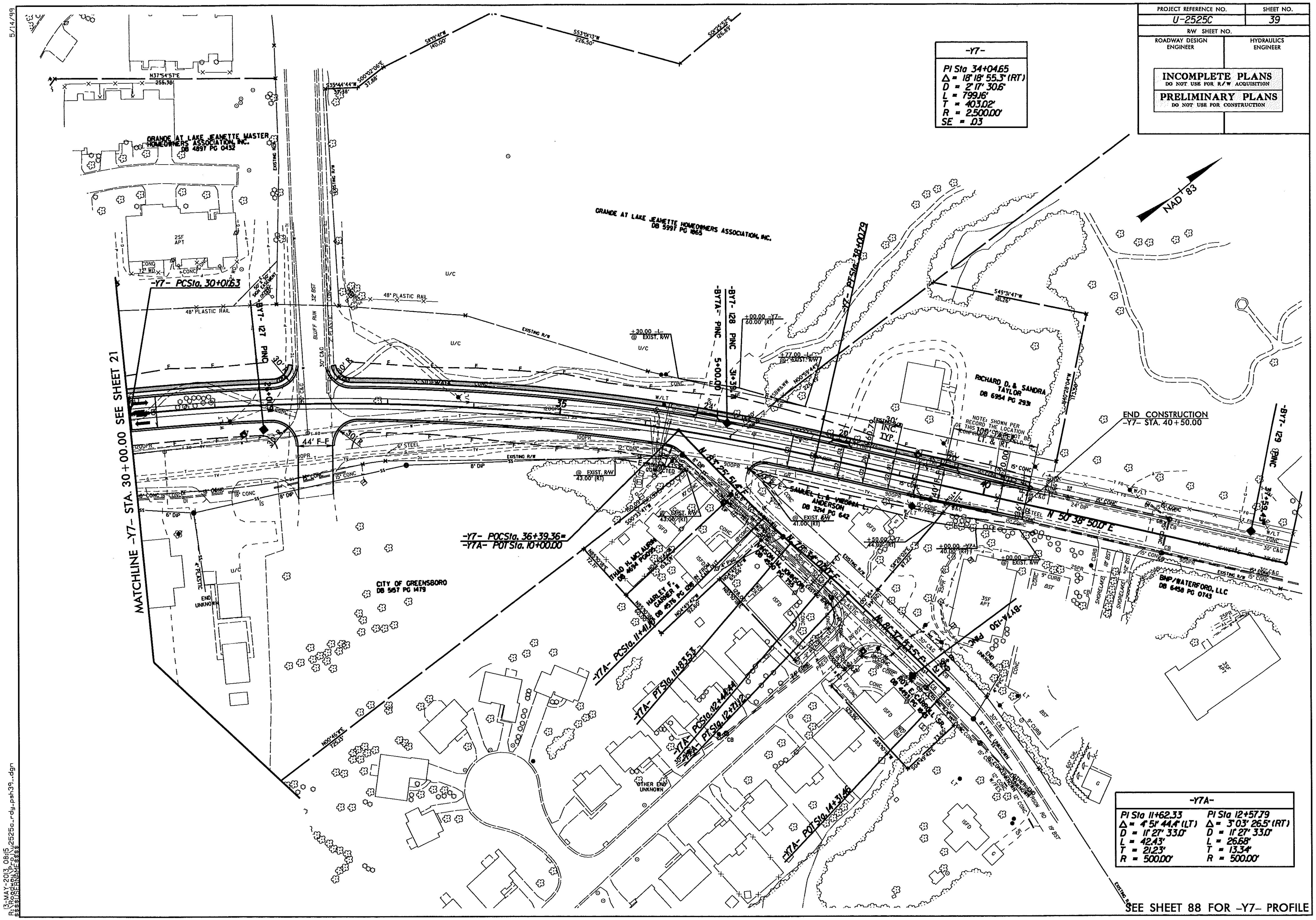
PROJECT REFERENCE NO.	SHEET NO.
U-2525C	39
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99


NAD 83
GRANDE AT LAKE JEANETTE MASTER HOMEOWNERS ASSOCIATION, INC.
DB 4897 PG 0452
GRANDE AT LAKE JEANETTE HOMEOWNERS ASSOCIATION, INC.
DB 5997 PG 1865
2SF APT
N37°54'57"E 255.38'
S19°41'41"W 140.00'
S53°01'13"W 226.50'
S00°02'06"E 37.88'
S35°44'44"W 37.38'
S49°31'47"W 181.26'
N40°28'04"W 173.50'
N00°59'44"E
-Y7- PCSta. 30+01.83
-BY7- 127 PINC
-BYTA- PINC 5+00.00
-BY7- 128 PINC 31+39
-Y7- PTSta. 38+00.79
-BY7- 129 PINC 37+59.4
-BY7A-130 PINC
48" PLASTIC RAIL
EXISTING R/W
BLUFF RUN
32' BST
30' C&G
44' F-F
U/C
+30.00 -L- @ EXIST. R/W
+00.00 -Y7- 60.00' (RT)
+77.00 -L- @ EXIST. R/W
@ EXIST. R/W 43.00' (RT)
@ EXIST. R/W 43.00' (RT)
@ EXIST. R/W 41.00' (RT)
+50.00 -Y7- 44.00' (RT)
+00.00 -Y7A- 40.00' (RT)
+00.00 -Y7- @ EXIST. R/W
1200PR
100PR
900PR
50PR
25PR
6" STEEL
8" DIP
6" DIP
24" DIP
12" CONC
15" CONC
18" CONC
W/LT
RICHARD D. & SANDRA TAYLOR
DB 6954 PG 2931
NOTE: SHOWN PER RECORD THE LOCATION OF THIS 100' COULD NOT BE CONFIRMED IN FIELD.
100' TAPER LT. & RT.
INC. TYP.
END CONSTRUCTION
-Y7- STA. 40+50.00
N 50°38'50.0" E
N 83°25'51.4" E
N 78°34'02.0" E
N 81°37'41.5" E
SAMUEL L. & REGINA L. ANDERSON
DB 3214 PG 642
BNP/WATERFORD, LLC
DB 6458 PG 0743
SHORELAKE
3SF APT
ISFD
THAD H. MCLAURIN
DB 4694 PG0092
HARLEY F. GARNER II
DB 4576 PG 1218
WINSTON M. JOHNSON
DB 4540 PG 755
ROY E. CARROLL SR.
DB 4453 PG 985
S00°33'47"W 150.09'
N85°10'18"E 72.71'
N85°10'18"E 60.00'
N04°49'42"W 151.75'
N04°49'42"W 92.60'
N04°49'42"W 65.66'
N85°10'18"E 128.00'
S85°10'18"W 129.96'
S04°49'42"E
-Y7- POCSta. 36+39.36=
-Y7A- POTSta. 10+00.00
-Y7A- PCSta. 11+41.10
-Y7A- PTSta. 11+83.53
-Y7A- PCSta. 12+44.44
-Y7A- PTSta. 12+71.12
-Y7A- POTSta. 14+31.46
CITY OF GREENSBORO
DB 5157 PG 1479
N00°46'18"E 725.31'
MATCHLINE -Y7- STA. 30+00.00 SEE SHEET 21
OTHER END UNKNOWN
END UNKNOWN
PRESTBURY RD
CB
EXISTING R/W

-Y7-
PI Sta 34+04.65
Δ = 18°18' 55.3" (RT)
D = 2°17' 30.6"
L = 799.16'
T = 403.02'
R = 2,500.00'
SE = .03

-Y7A-	
PI Sta 11+62.33	PI Sta 12+57.79
Δ = 4°51' 44.4" (LT)	Δ = 3°03' 26.5" (RT)
D = 11°27' 33.0"	D = 11°27' 33.0"
L = 42.43'	L = 26.68'
T = 21.23'	T = 13.34'
R = 500.00'	R = 500.00'

SEE SHEET 88 FOR -Y7- PROFILE

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