



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

July 27, 2012
(Original Submittal Dated March 6, 2012)

Wilmington Regulatory Field Office
US Army Corps of Engineers
69 Darlington Avenue
Wilmington, North Carolina 28403

ATTN: Mr. Brad Shaver
NCDOT Coordinator

Dear Sir:

Subject: **Revised Application for Individual Section 404 and Section 401 Water Quality Certification** for the proposed improvements to NC 24 from 2.8 miles east of I-95 to I-40 in Cumberland, Sampson, and Duplin Counties. Federal Aid Project No. STPNHF-F-8-2(17), TIP No. R-2303. Debit \$570.00 from WBS 34416.1.1

This revised application is being submitted to replace the original application dated March 6, 2012. Revisions were due to corrections, design changes, and clarifications requested by regulatory agencies.

The North Carolina Department of Transportation (NCDOT), Division of Highways, in consultation with the Federal Highway Administration (FHWA), proposes to improve NC 24 from 2.8 miles east of I-95 to I-40, from a two-lane to a four-lane divided facility for a total distance of 41.8 miles. Section A for which we are proposing a final design, begins 2.8 miles east of I-95 (west of SR 1006) and ends at SR 1853 (John Nunnery Rd.).

The purpose of this letter is to request approval for a Section 404 Individual Permit and a Section 401 Water Quality Certification for R-2303 based on final design impacts for Section A and preliminary design for Sections B through F. In addition to the cover letter, this application package includes the following for R-2303: revised permit drawings, half size roadway plans, revised Mitigation Plan for NC Highway 24 Improvements, and revised NC Ecosystem Enhancement Program (EEP) Acceptance Letters.

1.0 Purpose and Need

The purpose and need for this project, as identified in the Final Environmental Impact Statement (FEIS), is to provide an efficient link between two major interstate highways (I-95 and I-40),

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NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
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FAX: 919-212-5785

WEBSITE: WWW.NCDOT.ORG

LOCATION:
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610-4328

increase capacity, improve traffic operations, and improve safety of travel within and through the NC 24 study area corridor.

2.0 Project Description

The proposed action involves a combination of widening, new location segments, and other improvements to the existing NC 24 roadway from 2.8 miles east of I-95 to I-40 to create a four-lane divided facility. There will be bypasses and/or other alternate routings around Stedman, Autryville, and Roseboro. Widening portions will have partial control of access, while new location segments will have limited control of access. R-2303 has been divided into six Sections A through F. This permit application will cover the entire project, but only provides final design and impacts for the A Section.

3.0 Summary of Impacts

Waters of the U.S.: Proposed impacts to jurisdictional areas total 57.27 acres of permanent wetland impacts, 0.12 acre of temporary wetland impacts, 10,845 linear feet (lf) of permanent stream impacts, and 967 lf of temporary stream impacts. See Table 1 for the permanent and temporary impact summary for all sections.

Table 1. Summary of Wetland and Stream Impacts for R-2303

Section	Permanent Wetland (ac.)		Temporary Wetland (ac.)		Permanent Stream (lf.)	Temporary Stream (lf.)
	Riparian	Non-riparian	Riparian	Non-riparian		
A	2.46	5.22	0	0	572**	27
B*	5.13	0.57	0.11	0.01	296	113
C*	10.92	1.21	0	0	2,990	301
D*	7.54	0.84	0	0	1,792	77
E*	1.42	0.16	0	0	1,336	155
F*	19.62	2.18	0	0	3,859	294
Total	47.09	10.18	0.11	0.01	10,845	967

*Impacts are based on preliminary design; therefore, these sections are expected to decrease after final design.

**Includes 41 lf of bank stabilization.

4.0 Summary of Mitigation

The proposed construction of R-2303 will permanently impact 47.09 acres of riparian and 10.18 acres of non-riparian wetlands that will require mitigation. The unavoidable impacts to 12.77 acres of jurisdictional wetlands will be offset by onsite riparian wetland mitigation and NCDOT Umbrella Mitigation Banking Instrument (UMBI) site Privateer Farm. The remaining unavoidable impacts to 34.32 acres of jurisdictional riparian wetlands and 10.18 acres of non-riparian wetlands will be offset by compensatory mitigation provided by the EEP. In addition, the unavoidable impacts to 1,196 lf of jurisdictional streams will be offset by onsite mitigation and stream relocation (902 lf and 294 lf respectively). The remaining mitigation for 9,649 lf of permanent stream impacts will be provided by the EEP.

Table 2. Summary of Onsite Riparian Wetland Mitigation for R-2303

Section	Riparian Wetland Mitigation (ac) (Ratio)			Total Credits Proposed (ac)*
	Restoration (1:1)	Enhancement (5:1)	Preservation (10:1)	
R-2303B (Site 1)	1.84	1.08	0.02	5.13
R-2303B (Site 2)	2.19	0	0	
R-2303C (Site 1)	2.5	0	0	2.5
R-2303D (Site 1)	1.55	0.26	0	2.68
R-2303D (Site 2)	0.87	0	0	

*Credits proposed to be used within the same section as the mitigation.

Table 3. Summary of Onsite Stream Mitigation for R-2303

Section	Stream Mitigation (lf) (Ratio)			Total Credits Proposed (lf)*
	Restoration (1:1)	Preservation (10:1)	NSD**	
R-2303A (Site 8)	0	0	0	0***
R-2303B (Site 1)	284	12.3	0	296
R-2303C (Site 1)	550	0	0	550
R-2303D (Site 22)	0	0	56	56

* Credits proposed to be used within the same section as the mitigation

** Natural Stream Design

*** There will be 294 lf of stream relocation at this site which is proposed to offset a portion of compensatory mitigation needed for impacts at Site 8

5.0 Project Schedule

Currently, R-2303A has a review date of August 28, 2012 and is scheduled to let October 16, 2012. Let dates of the remaining sections are provided in Table 4. below.

Table 4. R-2303 Remaining Sections

Section	Letting Type	Let Date
R-2303B	Traditional	June 18, 2013
R-2303C	Traditional	June 18, 2013
R-2303D	Traditional	June 18, 2013
R-2303E	Design Build	October 1, 2015
R-2303F	Design Build	October 1, 2015

6.0 NEPA Document Status

The FHWA and NCDOT completed the first Draft Environmental Impact Statement (DEIS) in June 1994 in compliance with the NEPA guidelines of that time. A second DEIS was needed due to the changing environmental regulations and the time since the previous DEIS, and was completed in May 2006. The DEIS was approved and circulated to federal, state, and local agencies. A Final Environmental Impact Statement (FEIS) was completed in March 2010. A Record of Decision (ROD) was completed in September 2010. Copies of the project documents have been provided to regulatory review agencies involved in the approval process. Additional copies will be provided upon request.

Sections A through D have gone through Concurrence Point (CP) 4C of the merger process; while sections E and F have been through 4A (December 13, 2007) and are in the Design Build process. R-2303A completed CP 4B in June 13, 2007 and CP 4C in March 17, 2011. R-2303B and C completed CP 4B in February 25, 2009 and CP 4C in December 8, 2011. R-2303D completed CP 4B in December 16, 2009 and CP 4C December 8, 2011.

6.1 *Independent Utility*

R-2303 is in compliance with 23 CFR Part 771.111(f) which lists the FHWA characteristics of the independent utility of a project. The project meets the criteria for independent utility as discussed below:

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

7.0 *Resource Status*

The project is located in the Cape Fear River Basin and lies within Hydrologic Unit 03030006 (Subbasins 03-06-18/03-06-19). This is within the Southern Inner Coastal Plain eco-region. The project crosses South River, Big Swamp, Little Coharie Creek, Bearskin Swamp, Great Coharie Creek, Six Runs Creek, and their tributaries.

7.1 *Wetland Delineations*

A wetland identification and preliminary assessment analysis for the study area was performed and summarized in the 2004 Natural Resources Technical Report (NRTR). The wetlands within the study area were delineated based on the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and a preliminary design was prepared to avoid and minimize wetlands to the maximum extent possible.

Project study area wetlands for the western division and the northern alignment of the eastern division were delineated between December 1999 and October 2000. The wetlands were flagged in the field for future reference. The jurisdictional delineation was reviewed and verified by the USACE during separate visits. These visits were on February 23, 2000; July 26-27, 2000; and October 25-26, 2000. The USACE assigned this jurisdictional determination Action ID No. 199203237, and the Notification of Jurisdictional Determination was issued on October 1, 2001.

The jurisdictional wetlands within the southern alignment of the eastern division were delineated between April 2002 and February 2003. The wetlands were flagged in the field for future reference. These wetlands were reviewed and verified by the USACE on March 13, 2003. Subsequently, wetland delineations were updated August to November of 2011 for the entire

project. This delineation was later field verified by Mr. Brad Shaver of the USACE, Wilmington District, and Mr. Mason Herndon with the N.C. Division of Water Quality (NCDWQ) on November 29, 2011 and December 6, 2011.

Due to the proximity of the current let date of R-2303A, we are requesting a Final Approved Jurisdiction Determination (JD) for only R-2303A and a Preliminary JD for the remaining sections. We will likely request a Final Approved JD for the remaining sections when designs are finalized and before construction commences on Sections B through F.

7.2 Stream Delineations

Data collected for streams were derived from USGS topographic maps, the county soil survey, lidar, and site reconnaissance. Stream delineations were updated in 2011 along with the wetlands for the whole project. This delineation was later field verified by Mr. Brad Shaver of the USACE, Wilmington District, and Mr. Mason Herndon with the N.C. Division of Water Quality (NCDWQ) on November 29, 2011 and December 6, 2011.

7.3 R-2303: Characterization of Jurisdictional Sites

7.3.1 Wetlands

Jurisdictional wetlands within the project study area are primarily palustrine in nature, as defined in Cowardin et al. (1979) and as identified on National Wetland Inventory mapping. Wetland systems vary in vegetative composition depending on hydrological regime and site-specific disturbances. Five Cowardin wetland types were identified within the project study area: palustrine emergent, palustrine forested, palustrine scrub-shrub, palustrine unconsolidated bottom, and riverine lower perennial. Wetlands identified within the study corridors are shown and described in the NRTR and the FEIS.

7.3.2 Streams

The N.C. Division of Water Quality (DWQ) identifies two sub-basins in which the project study area occurs. Sub-basin 03-06-18 includes the South River and Big Swamp and their tributaries. Sub-basin 03-06-19 includes Little Coharie Creek, Bearskin Swamp, Moccasin Branch, Great Coharie Creek, Six Runs Creek, and Buckhall Creek along with their tributaries. All streams located within the project study area have a Best Usage Classification of C Sw.

There are no waters within the project vicinity classified as High Quality Waters (HQW). Neither Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds), nor Outstanding Resource Waters (ORW) occur within 1.0 mile of the project study area. Streams within the R-2303 project area are not designated as North Carolina Natural or Scenic Rivers, or as National Wild and Scenic Rivers. Additionally, these waters are not listed on the Final 2010 303(d) list of impaired waters due to sedimentation or turbidity for the Cape Fear River Basin.

7.4 Impacts to Jurisdictional Resources

Preliminary estimated impacts to jurisdictional areas within Sections B through F (as shown in Table 1) are the result of minimization and avoidance measures and represent the maximum possible impacts foreseen at this time. Proposed changes will be coordinated with the relevant review agencies in the form of permit modification requests. Impacts to jurisdictional wetlands and surface waters for R-2303A are summarized below in Tables 5 & 6 respectively.

Table 5. R-2303A Wetland Impacts

Permit Drawing Site Number (2012)	Map Label in FEIS (2010)	Type	Permanent Impacts (ac.)	Temporary Impacts (ac.)	Mitigation Required
2	7	Non-Riparian	4.97	0	Yes
5	21	Non-Riparian	0.07	0	Yes
8	31	Riparian	2.25	0	Yes
9	33,34,35	Riparian	0.21	0	Yes
10	36	Non-Riparian	0.18	0	Yes
Total:			7.68	0	

Table 6. R-2303A Surface Water Impacts

Permit Drawing Site Number	Waterbody	Permanent (ft)	Temporary (ft)	Permanent (ac.)	Temporary (ac.)	Mitigation Required
1	pond	0	0	0.27	0	No
3	ditch	0	0	<0.01	0	No
4	pond	0	0	0.18	0	No
6	tributary	0	0	0.02	0	No
7	pond	0	0	0.24	0	No
8	stream	572**	27	0.07	<0.01	Yes*
9	tributary	0	0	<0.01	0	No
Total:		572	27	0.79	0	

* For permanent impacts

** Includes 41 lf of bank stabilization; mitigation required by the USACE exceeds the amount required by NCDWQ (see Section 11.3)

Permanent Impacts: Proposed permanent impacts for R-2303A include fill, excavation, and mechanized clearing in wetlands. This includes impacts to 2.46 acres of riparian wetlands and 5.22 acres of non-riparian wetlands. Proposed permanent impacts to streams are 572 linear feet (0.07 acre), which includes two proposed pipes at Sandy Creek (site 8).

Temporary Impacts: There are no proposed temporary impacts to wetlands for R-2303A. Proposed temporary fill in surface waters is 27 feet (<0.01 acre).

Utility Impacts: There will be no impacts to jurisdictional resources as a result of utility relocations for R-2303A.

8.0 Protected Species

The United States Fish and Wildlife Service (USFWS) list 8 federally protected species for Cumberland, Sampson, and Duplin Counties as of the September 22, 2010 listing (Table 7).

Table 7. Federally Protected Species in Cumberland, Sampson, and Duplin Counties

Scientific Name	Common Name	County	Federal Status	Habitat	Biological Conclusion
<i>Alligator mississippiensis</i>	American alligator	C, S, D	T(S/A)	Yes	N/A
<i>Picoides borealis</i>	Red-cockaded woodpecker	C, S, D	E	Yes	No Effect
<i>Mycteria americana</i>	Wood stork	S	E	No	No Effect
<i>Neonympha mitchellii francisci</i>	Saint Francis' satyr butterfly	C	E	No	No Effect
<i>Schwalbea americana</i>	American chaffseed	C	E	No	No Effect
<i>Rhus michauxii</i>	Michaux's sumac	C	E	No	No Effect
<i>Lindera melissifolia</i>	Pondberry	C, S	E	No	No Effect
<i>Lysimachia asperulaefolia</i>	Rough-leaved loosestrife	C	E	No	No Effect

Key: C= Cumberland, S= Sampson, D= Duplin, E= Endangered, T(S/A) = Threatened (Similarity of Appearance)

A review of the North Carolina Natural Heritage Program (NCNHP) database, updated October 2011, indicated one occurrence of a Red-cockaded woodpecker nest site within one mile of the project study area. A record from 1979 documenting a RCW nest site in the Town of Autryville (EO14156). No new information has been added by NHP regarding this historic element occurrence since our February 2012 NHP search. Nest tree surveys conducted in this area revealed no cavity trees. Since the FEIS, the wood stork has been added to Sampson County. During recent fieldwork no nests or wood storks were observed. A call of no effect was determined after a phone conversation (2/16/2012) with Gary Jordan (USFWS) concerning the lack of nests in Sampson County.

8.1 Bald and Golden Eagle Protection Act (BGPA)

In the July 9, 2007 Federal Register (72:37346-37372), the bald eagle was declared recovered, and removed (de-listed) from the Federal List of Threatened and Endangered wildlife. This delisting took effect August 8, 2007. After delisting, the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d) became the primary law protecting bald eagles. Habitat for the bald eagle is not present due to the lack of large water bodies in the study area.

8.2 Moratoria

No in-water construction moratoria have been recommended for R-2303.

9.0 Cultural Resources

Historic Architecture

There were five individual properties identified that were either listed on the National Register of Historic Places (NRHP) or eligible for inclusion in the Register. In addition, one historic district was identified in Stedman that was also determined eligible for the NHRP. The FEIS includes correspondence from the North Carolina State Historic Preservation Office (HPO) concerning the effects of the NC 24 project alternatives on each of these properties. The Preferred Alternative will have a Conditional No Adverse Effect on the Maxwell House, with the stipulation that widening is to the south and landscaping is implemented. None of the other architectural resources will be affected by the selected alternative.

Archaeology

The following summarizes the archaeological resource investigation for the subject project. Detailed information concerning these investigations is on file at the North Carolina Department of Transportation in the following reports:

Botwick, Brad
2003 Archaeological Survey and Evaluation, North Carolina 24- Clinton Bypass,
Cumberland, Duplin, and Sampson Counties, North Carolina. New South Associates,
Stone Mountain, Georgia.

Potential impacts and recommendations for the three archaeological sites identified in the FEIS as eligible for the National Register of Historic Places are shown in the FEIS. Either one or two of these sites would be affected by the detailed study alternatives. The Preferred Alternative would affect Sites 31SP331 and 31DP226 (as shown in the FEIS), but would not affect Site 31SP334. Site 31SP331 is in the D section and Site 31DP226 is in the F section of R-2303. Updates on these sites will be included in the permit modification requests for each of these sections. R-2303A will have no effect on archaeological resources.

There have been no changes within the historic architectural and archaeological resources since the completion of the FEIS.

10.0 FEMA Compliance

The project has been coordinated with appropriate state and local officials and the Federal Emergency Management Agency (FEMA) to assure compliance with FEMA, state, and local floodway regulations.

11.0 Mitigation Options

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during the planning and NEPA compliance stages; minimization measures were incorporated as part of the project design.

11.1 Avoidance and Minimization

All jurisdictional features were delineated, field verified and surveyed within the corridor for R-2303. Using these surveyed features, preliminary designs were adjusted to avoid and/or minimize impacts to jurisdictional areas. NCDOT employs many strategies to avoid and minimize impacts to jurisdictional areas in all of its designs. Many of these strategies have been incorporated into BMP documents that have been reviewed and approved by the resource agencies and which will be followed throughout construction. All wetland areas not affected by the project will be protected from unnecessary encroachment. Individual avoidance and minimization items are as follows:

- No staging of construction equipment or storage of construction supplies will be allowed in wetlands or near surface waters.
- The project was designed to avoid or minimize disturbance to aquatic life movements.
- NCDOT and its contractors will not excavate, fill, or perform land clearing activities within Waters of the U.S. or any areas under the jurisdiction of the USACE, except as authorized by the USACE. To ensure that all borrow and waste activities occur on high ground, except as authorized by permit, the NCDOT shall require its contractors to identify all areas to be used to borrow material, or to dispose of dredged, fill or waste material. Documentation of the location and characteristics of all borrow and disposal sites associated with the project will be available to the USACE on request.
- Preformed Scour Holes will be used where practicable.
- Storm water will be treated using grass swales and an infiltration basin.
- NCDOT will implement Best Management Practices for Bridge Demolition and Removal.
- NCDOT will implement Best Management Practices for the Protection of Surface Waters.
- Special Sediment Control Fence will be used where applicable
- Bridge lengths have been designed to avoid impacts to higher quality wetlands, improve hydrology, and wildlife passage.
- Perpendicular stream crossings will be used.
- 3:1 side slopes will be used within the wetlands.
- Bank stabilization will not place rip-rap in stream bottom and will reduce erosion and sedimentation.
- Reduced median width.
- Equalizer pipes at Site 2 will improve connectivity of and maintain sheet flow between adjacent wetlands.

11.3 Compensation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The unavoidable impacts to jurisdictional riparian, non-riparian wetlands and surface waters will be offset by compensatory mitigation from onsite mitigation, UMBI site Privateer Farm, and EEP. Please see attached Mitigation Plan for NC Highway 24 Improvements for detailed information.

Of the 572 lf of stream impacts for R-2303A, 41 lf are impacts from bank stabilization. The NCDWQ requires that any bank stabilization impact be mitigated for a 1:1 ratio if the total permanent impact to the stream is over 150 lf. However, the 2:1 mitigation ratio will exceed the amount of 1:1 mitigation NCDWQ requires for this impact. Therefore, 2:1 mitigation will be calculated based on 531 lf of impacts.

12.0 Indirect and Cumulative Effects

An ICE analysis was completed for the proposed project in July 2006. The following findings were noted in the NC 24 Indirect and Cumulative Effects Report, or represent subsequent study findings based on additional project investigations.

Sampson, Cumberland, and Duplin Counties, as well as the Towns of Autryville and Roseboro, and the City of Clinton, have all anticipated and planned for the proposed project. The project will service some either planned or existing commercial and industrial developments in Autreyville, Roseboro and Clinton. Industrial and commercial development is planned even in the absence of the NC 24 improvements, but the potential would likely be somewhat less.

A significant portion of the proposed project is widening or improving existing NC 24. New location sections will be Limited Control of Access (Superstreet configuration) or Full Control of Access, thereby limiting any complimentary highway development. The eastern terminus of the project with I-40 is a fully directional interchange which will not allow for any adjacent highway commercial development.

The most recent census data (2010) show Sampson County (which comprises the majority of the study area) has only experienced only 5% population growth from 2000 to 2010 as opposed to the 14% projected in the 2006 report. Cumberland County and Duplin County have seen 5.4% and 19% respectively over the same time period, as compared to the 7% and 14.4% projected in 2006 report.

The ICE concluded that any indirect and cumulative effects attributable to proposed improvements to NC 24 would be low to moderate, primarily due to the rural nature and agrarian economy of the study area. Additionally, limited new access along widen-existing sections, and access control along the new location sections will further limit development potential. No further ICE analysis was deemed necessary.

13.0 Regulatory Approvals

Section 404: Application is hereby made for a USACE Individual 404 Permit as required for the above-described activities. NCDOT is requesting a phased permit to allow construction activities to commence on Section A of R-2303 per the attached plans. NCDOT will apply for a permit modification when designs are finalized and before construction commences on Sections B through F. Due to the long term construction timeframe of R-2303, we are requesting a permit expiration date of 20 years from date of issuance.

Section 401: We are also requesting a Section 401 Water Quality Certification from the NCDWQ. We are providing five (5) copies of this application to the NCDWQ for their approval.

A copy of this revised permit application and its distribution list will be posted on the NCDOT website at: <http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html>

If you have any questions or need additional information, please contact Chris Manley at 919-707-6135 or cdmanley@ncdot.gov.

Sincerely,



for

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

cc:

NCDOT Permit Application Standard Distribution List.

**U.S. ARMY CORPS OF ENGINEERS
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT
(33 CFR 325)**

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

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

PRIVACY ACT STATEMENT

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

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

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE
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(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME First - Gregory Middle - J. Last - Thorpe Company - NCDOT-PDEA 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 c. Fax 919-707-6135			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) R-2303	
13. NAME OF WATERBODY, IF KNOWN (if applicable) South River, Little Coharie Creek, Great Coharie Creek, Six Runs C.	14. PROJECT STREET ADDRESS (if applicable) Address NC 24 City - State- Zip-
15. LOCATION OF PROJECT Latitude: +N 35.0024 Longitude: +W -78.6549	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID Municipality Section - Township - Range -	

17. DIRECTIONS TO THE SITE
NC 24 from 2.8 miles east of I-95 to I-40 in Cumberland, Sampson, and Duplin Counties

18. Nature of Activity (Description of project, include all features)
See attached cover letter

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

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

20. Reason(s) for Discharge

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
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See attached cover letter & permit drawings

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

Acres See attached cover letter & permit drawings

or

Linear Feet

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. Lusk for Gregory J. Thorne, PhD Mar 5, 2012
SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

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

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



July 26, 2012

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

R-2303A, NC 24 from West of SR 1006 (Maxwell Road / Clinton Road) to SR 1853
(John Nunnery Road), Cumberland County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream, riparian and non-riparian wetland mitigation for the subject project. Based on the information supplied by you on July 24, 2012, the impacts are located in CU 03030006 of the Cape Fear River basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Cape Fear 03030006 SICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non- Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	237	0	5.22	0	0	0

This mitigation acceptance letter replaces the mitigation acceptance letters issued on February 28, April 12 and June 26, 2012. EEP commits to implementing sufficient compensatory stream, riparian and non-riparian wetland mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies in accordance with the N.C. Department of Environment and Natural Resources' Ecosystem Enhancement Program In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

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

Sincerely,

Suzanne Klimek
EEP Acting Director

cc: Mr. Ronnie Smith, USACE – Wilmington Regulatory Field Office
Mr. David Wainwright, Division of Water Quality, Wetlands/401 Unit
File: R-2303A Revised 3

Restoring... Enhancing... Protecting Our State





February 28, 2012

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

R-2303B, NC 24 from SR 1853 (John Nunnery Road) to SR 1404 (Dowdy Road),
 Cumberland and Sampson Counties

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory non-riparian wetland mitigation for the subject project. Based on the information supplied by you on February 23, 2012, the impacts are located in CU 03030006 of the Cape Fear River basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Cape Fear 03030006 SICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	0	0	0.57	0	0	0

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

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

Sincerely,

Michael Ellison
 EEP Deputy Director

cc: Mr. Ronnie Smith, USACE – Wilmington Regulatory Field Office
 Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
 File: R-2303

Restoring... Enhancing... Protecting Our State





February 28, 2012

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

R-2303C, NC 24 SR 1404 (Dowdy Road) to SR 1303 (Mitchell Loop Road), Sampson County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream and wetland mitigation for the subject project. Based on the information supplied by you on February 23, 2012, the impacts are located in CU 03030006 of the Cape Fear River basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Cape Fear 03030006 SICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	2,440	8.42	1.21	0	0	0

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

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

Sincerely,

Michael Ellison
EEP Deputy Director

cc: Mr. Ronnie Smith, USACE – Wilmington Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: R-2303

Restoring... Enhancing... Protecting Our State





February 28, 2012

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

R-2303D, NC 24 from SR 1303 (Mitchell Loop Road) to US 421/701 / SR 1296,
Sampson County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream and wetland mitigation for the subject project. Based on the information supplied by you on February 23, 2012, the impacts are located in CU 03030006 of the Cape Fear River basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Cape Fear 03030006 SICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	1,736	4.86	0.84	0	0	0

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

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

Sincerely,

Michael Ellison
EEP Deputy Director

cc: Mr. Ronnie Smith, USACE – Wilmington Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: R-2303

Restoring... Enhancing... Protecting Our State





February 28, 2012

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

R-2303E, NC 24 from US 421 / 701 / SR 1296 (Sunset Avenue) to West of SR 1920 (Moltonville Road), Sampson County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream and wetland mitigation for the subject project. Based on the information supplied by you on February 23, 2012, the impacts are located in CU 03030006 of the Cape Fear River basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Cape Fear 03030006 SICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	1,336	1.42	0.16	0	0	0

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

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

Sincerely,

Michael Ellison
EEP Deputy Director

cc: Mr. Ronnie Smith, USACE – Wilmington Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: R-2303

Restoring... Enhancing... Protecting Our State





July 26, 2012

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

R-2303F, NC 24 from West of SR 1920 (Moltonville Road) in Sampson County to I-40 in Duplin County, Sampson and Duplin Counties

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream and wetland mitigation for the subject project. Based on the information supplied by you on July 25, 2012, the impacts are located in CU 03030006 of the Cape Fear River basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Cape Fear 03030006 SICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	3,859	19.62	2.18	0	0	0

This mitigation acceptance letter replaces the mitigation acceptance letter issued on February 28, 2012. EEP commits to implementing sufficient compensatory stream and wetland mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies in accordance with the N.C. Department of Environment and Natural Resources' Ecosystem Enhancement Program In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

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

Sincerely,

Suzanne Klimek
EEP Acting Director

cc: Mr. Ronnie Smith, USACE – Wilmington Regulatory Field Office
Mr. David Wainwright, Division of Water Quality, Wetlands/401 Unit
File: R-2303F Revised

Restoring... Enhancing... Protecting Our State



Mitigation Plan

NC Highway 24 Improvements Sampson County, North Carolina T.I.P. Number R-2303 WBS No. 34416 July 24, 2012

Transportation Improvement Project (TIP) R-2303 involves improvements to existing NC Highway 24 from 2.8 miles eastward of Interstate 95 (I-95) in Cumberland County to Interstate 40 (I-40) in Duplin County. The project is located within USGS Hydrologic Cataloging Unit 03030006, and NC Division of Water Quality (NCDWQ) sub-basins 03-06-18 and 03-06-19 within the Cape River Basin. Proposed permanent impacts to jurisdictional areas requiring mitigation total 57.27 acres of wetland and 10,845 linear feet of stream.

The proposed construction of R-2303 will impact 47.09 acres of riparian and 10.18 acres of non-riparian wetlands that will require mitigation. The unavoidable impacts to 12.77 acres of jurisdictional wetlands will be offset by on-site riparian wetland mitigation as well as the use of the NCDOT Umbrella Mitigation Banking Instrument (UMBI) site Privateer Farm. The remaining unavoidable impacts to 34.32 acres of jurisdictional riparian wetlands and 10.18 acres of non-riparian wetlands will be offset by compensatory mitigation provided by the EEP. In addition, the unavoidable impacts to 1196 lf of jurisdictional streams will be offset by on-site mitigation and stream relocation (902 lf and 294 lf respectively). The remaining 9,649 lf of permanent stream impacts will be provided by the EEP.

NCDOT UMBI SITE – PRIVATEER FARM

The Privateer Farm stream and wetlands restoration site (the Site) is located in United States Geological Survey (USGS) Hydrologic Unit (HU) 03030005 and North Carolina Division of Water Quality (NCDWQ) Cape Fear River sub-basins 15 and 16 along Little Alligator Swamp and Harrison Creek. The Site is located in the Southeastern Plains Level III Ecoregion (Southeastern Floodplains and Low terraces Level IV Ecoregion) and includes portions of Cumberland and Bladen Counties, approximately 6 miles from the southern boundary of CU 03030004. The Site has been closed out for monitoring and was incorporated into NCDOT's Umbrella Mitigation Banking Instrument.

The NCDOT debit ledger below includes the debit of 7.38 acres of riparian wetland restoration to mitigate for 2.46 acres of riparian impact for R-2303A at a 3:1 ratio.

NCDOT Debit Ledger (as of July 24, 2012)

Site Name	River Basin	HUC	Mitigation Type	Transfer from EEP	Available	TIP Debit	TIP Debit	TIP Debit
Privateer Site	Cape Fear	3030005				U-2519**	U-2519 MOD**	R-2303A**
**Out of service area ratios: 1.5:1 ratio for stream impacts 3:1 for wetland impacts			Warm Stream Restoration	25,676	7,157	18,519		
			Riverine Wetland Restoration	185.58	32.22	145.29	0.69	7.38

ON-SITE MITIGATION

1.0 BASELINE INFORMATION

Transportation Improvement Project (TIP) R-2303 involves improvements to existing NC Highway 24 from 2.8 miles eastward of Interstate 95 (I-95) in Cumberland County to Interstate 40 (I-40) in Duplin County. The study area for this project ranges from 400 feet wide for widening sections to 1000 feet wide for bypass areas and is situated within the inner Coastal Plain physiographic province. Topography within the study area is described as nearly level to sloping with the majority of the topographic breaks found near the larger wetland systems. Land use within the project study between towns is mostly rural in nature and includes a mixture of agricultural, residential, silvicultural, and industrial uses.

The project is located within USGS Hydrologic Cataloging Unit 03030006, and NC Division of Water Quality (NCDWQ) sub-basins 03-06-18 and 03-06-19 within the Cape River Basin. Sub-basin 03-06-18 includes the South River and its tributaries as well as Big Swamp and its tributaries while sub-basin 03-06-19 includes Little Coharie Creek, Bearskin Swamp, Moccasin Branch, Great Coharie Creek, Six Runs Creek, and Buckhall Creek along with all their tributaries.

The R-2303 Natural Resources Technical Report (NRTR) dated January 2004 provides further details concerning existing roadway/project study area conditions and jurisdictional resources. The mitigation site selection and mitigation work plan sections of this plan will refer to the identification labels given the affected jurisdictional resources in that document as well as the Final Environmental Impact Statement (FEIS) dated 3-31-2010.

2.0 SITE SELECTION

R-2303B Mitigation Site 1

This site begins on plan sheet 8 south of Station 423+50 Rt. at the existing intersection of Gray Street and Old Stage Road and ends south of Station 439 Rt. on plan sheet 9. It is part of the South River watershed and involves a series of ponds (43 and 45) as well as three jurisdictional wetlands (42, 44 and 46), and one intermittent stream (SR4) that flows out of pond 43. Lynn Haven sand, a hydric soil in Sampson County, is the soil type found within this area.

R-2303B Mitigation Site 2

This site begins on plan sheet 26 at Sta. 680+20 Lt. at the ROW line and ends on plan sheet 27 at Sta. 685+50.38 Lt. at Boren Brick Road. The pond (88) will be drained as part of the construction of R-2303B. Currently, the pond connects a jurisdictional wetland area upstream to jurisdictional wetlands and a UT to Big Swamp downstream through a series of pipes under Boren Brick Road and existing NC Hwy 24. The existing wetland system above Boren Brick Road, wetland 88A, will be used as the reference wetland system.

R-2303C Mitigation Site 1

This site is located on plan sheet 23 from approximately Sta. 1000 to 1005 Lt. The pond (133) will be drained as part of the construction of R-2303B. The pond is surrounded by Wagram loamy sand soils. It has a headwater wetland system located adjacent to its northeastern corner and outflows into a UT to Little Coharie (LC11) through a 36" pipe under existing NC Hwy 24.

R-2303D Mitigation Site 1

This site is located on plan sheet 18 northwest of approximate Sta. 1290 to 1295 Lt. Wetland 161 located adjacent to NC Hwy24 is a riparian wetland that was bisected by the existing causeway of NC 24. A portion of Wetland 161 has been clear cut. This wetland also includes an excavated pond and side cast spoil. Soils within this mitigation area are either Johns fine sandy loam or Kalmia sandy loam. Both are non-hydric with hydric inclusions in Sampson County.

R-2303D Mitigation Site 2

This site is located on plan sheet 20 from approximately Sta. 1321+50 Lt. to Sta. 1325+50 Lt. on plan sheet 21. It is bordered on the north and west by wetland 165 and on the east by wetland 167. The soils in this area are mapped as Paxville fine loamy sand, a hydric soil in Sampson County. Wetland 165 is part of a 4600 acre NCEEP high quality wetland mitigation site known as the Great Coharie Tract (GCT). An old abandoned causeway extends into the wetland from NC Hwy 24.

3.0 SITE PROTECTION INSTRUMENT

The mitigation areas are presently located within or will be located within the NCDOT Right-of-Way for the project. They will be managed to prohibit all use inconsistent with its use as mitigation property, including any activity that would materially alter the biological integrity or functional and educational value of the site, consistent with the mitigation plan.

The site is designated on the plan sheets as a mitigation area and will be placed on the Natural Environment Section's 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 this mitigation site and the associated roadway impacts to protect the site in perpetuity.

4.0 OBJECTIVES

The goal of the proposed onsite mitigation is to mitigate for impacts due to R-2303 by restoring adjacent wetland and stream systems to their natural conditions through the removal of the degrading factors of ponding, fill, and disturbance. This will be achieved on five individual sites described below on a total of 17.30 acres of wetland and 973 feet of stream.

5.0 MITIGATION WORK PLAN

Each mitigation site will be constructed along with the construction of its associated section of the roadway project. Following the successful completion of site grading and stabilization, a reforestation plan wetland restoration areas will include a mix of bare-root tree species at a density of 680 stems per acre as described in the attached reforestation plan. The stream restoration areas will be stabilized by planting a mix of live stakes on three foot centers and matting with coir fiber on the banks as necessary.

Native wetland seed and mulch will be applied on all disturbed areas within the mitigation sites for stabilization purposes according to guidance and standard procedures of NCDOT's Roadside Environmental Unit. An as-built report will be submitted within 60 days of completion of the project.

The Natural Environment Unit shall be contacted to provide construction assistance to ensure that each mitigation area is constructed appropriately.

R-2303B Mitigation Site 1

NCDOT will drain P43 and P45 in conjunction with the construction of R-2303B. Based on topography, the draining of these two features will result in restoration of a total of 1.84 acres of riparian wetlands. It will also result in the enhancement of 5.41 acres of wetlands (wetlands 42 and 44) and the preservation of 0.23 acres at wetland 46.

The dam at the downstream end of P43 will be graded to match natural topography after the pond is drained. Based on the valley length, this will allow for restoration of 284 ft. of a stream currently impounded within P43. Additionally, NCDOT proposes to tie the stream restoration to the existing stream bed elevation of SR4 and preserve 123 feet of this stream within Wetland 42.

R-2303B Mitigation Site 2

NCDOT will restore 2.19 acres of riparian wetlands at Site 2. The pond associated with this mitigation area, identified as 88 in the NRTR, will be drained as part of the construction of R-2303B. The existing 30" pipe under NC Hwy 24 will be replaced and the invert of the new structure will be adjusted to assist in the wetland restoration within the drained pond 88.

Wetland 88a is a riparian wetland located on the east side of Boren Brick Road. It will be used as a reference for the reforestation plan of wetland restoration within pond 88. Soils within this wetland as well as adjacent to the pond are mapped as Aycock silt loam, a non-hydric soil in Sampson County, as well as Nahunta loam, a non-hydric soil with hydric inclusions.

R-2303C Mitigation Site 1

The pond associated with this mitigation area, identified as 133 in the NRTR, will be drained as part of the construction of R-2303C. The existing pipe under NC Hwy 24 will be replaced and the invert of the new structure will be adjusted to assist in the wetland and stream restoration within the drained pond 133. This new structure will outfall into LC11, a UT to Little Coharie. LC11 has a C Sw classification and is a Rosgen E type channel. Based on valley length and topography, NCDOT will restore 550 ft. of the stream system within this drained pond area as well as restore 2.5 acres of riparian wetlands.

R-2303D Mitigation Site 1

This site involves removing a portion of pavement along existing NC 24 and grading to match elevations within the adjacent Wetland 161. It also involves backfilling the existing pond with material side cast to dig the pond. These areas will also be graded to match adjacent wetland elevations. The clear cut portion of Wetland 161 within the ROW will be revegetated. This

work will result in the restoration of 1.55 acres and enhancement of 1.3 acres of riparian wetland.

R-2303D Mitigation Site 2

This site involves the removal of an old roadway causeway and grading to match elevations within the adjacent Wetlands 165 and 167. NCDOT will restore 0.87 acres of riparian wetland in this area.

6.0 PERFORMANCE STANDARDS

Success for vegetation monitoring within the riparian buffer and wetland 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 lack of significant bank erosion, channel widening or down-cutting.

7.0 MONITORING REQUIREMENTS

No specific hydrological monitoring is proposed for the wetland mitigation areas. The target elevation is based on the reference wetland areas and will be verified during construction. Constructing the site at the adjacent wetland elevation will ensure the hydrology in the restored area is similar to the hydrology in the reference area. Photo points will be located within the stream mitigation areas at equal intervals along the channel with upstream and downstream views. Vegetation monitoring will consist of counts of planted stems within 50 x 50 foot plots established within the riparian buffer areas and wetland areas. The entire reach will be visually inspected for channel stability and vegetation survival.

These monitoring activities will be conducted for five year and documented in an annual report distributed to the regulatory agencies.

8.0 OTHER INFORMATION

NONE

9.0 DETERMINATION OF CREDITS

Based on field and meeting discussions with agency representatives and per the NCDOT plans and 401/404 permit application for R-2303; NCDOT proposes the following types of mitigation and ratios for each site.

Roadway Section Site Number	Wetland Restoration Acres (1:1)	Wetland Enhancement Acres (5:1)	Wetland Preservation Acres (10:1)	Stream Restoration Feet (1:1)	Stream Preservation Feet (10:1)
B Site1	1.84	5.41	0.23	284	123
B Site 2	2.19	-	-	-	-
C Site 1	2.5	-	-	550	-
D Site 1	1.55	1.3	-	-	-
D Site 2	0.87	-	-	-	-

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.

9.1 CREDIT RELEASE SCHEDULE

NCDOT proposes immediate, full release of the proposed mitigation as on-site mitigation for unavoidable impacts associated with R-2303.

10.0 GEOGRAPHIC SERVICE AREA

The proposed Geographic Service Area (GSA) for the mitigation sites is composed of the 8-digit Hydrologic Cataloging Unit (HUC) 03030006.

11.0 MAINTENANCE PLAN

The mitigation site will be held by NCDOT and placed on the NEU mitigation geodatabase. Once monitoring is completed and the site is closed out, it 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 the NCDOT according to the mitigation plan. Beaver management will be instituted during the monitoring period. Encroachments into the area 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 R-2303 to preserve the stream enhancement area. NCDOT has established funds for each project and within each Division to monitor the mitigation site and to protect it in perpetuity.

ECOSYSTEM ENHANCEMENT PROGRAM

Mitigation Total for Sections A-F*

Cape Fear 03030006 SICP	Stream			Wetland			Buffer (sq. ft.)	
	Cold	Cool	Warm	Riparian	Non- Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	9608**	34.32	10.18	0	0	0

*See Appendix A for individual EEP Mitigation Acceptance Letters

** This number is not 9649 lf because due to the following explanation taken from the permit application: *Of the 572 lf of stream impacts for R-2303A, 41 lf are impacts from bank stabilization. The NCDWQ requires that any bank stabilization impact be mitigated for a 1:1 ratio if the total permanent impact to the stream is over 150 lf. However, the 2:1 mitigation ratio will exceed the amount of 1:1 mitigation NCDWQ requires for this impact. Therefore, 2:1 mitigation will be calculated based on 531 lf of impacts.*

APPENDIX A.



R-2303D Mitigation Site 2

Great Coharie Tract (GCT)

91A



165

1325

1325

Restoration

167

19F BUS

93

BEGIN APPROACH SLA
L STA 1325+79.90
BEGIN BRIDGE
L STA 1325+00.00

TOE PROTECTION
CLASS B RIP RAP
SEE DETAIL D
EST 400 TONS
EST 730 SY FF

TOE PROTECTION
CLASS B RIP RAP
SEE DETAIL D
EST 55 TONS
EST 100 SY FF

EXPOSED LIFE

LTS 39° 58' 25.4" E

LREV S 89° 58' 25.4" E

DAP=0.08

DAP=0.20

DAP=0.2

DAP=0.15

GRADE POINTS

GRADE POINT

COL <ITA> LREV <ITA> BCL <BOL>
15.50 <ITA> 25.01 <BOL>

PR1 TABLE 3.4
GRADE POINT TRANSITION

PR1 TABLE 3.4
GRADE POINT TRANSITION

CL B RIP RAP
EST 1 TONS

END DETAIL

R-2303B Mitigation Site 2



Restoration

88

88a

Burns Brick Road

BEGIN CONSTRUCTION
1/23 POT STA 10+75.00

1/2 POT STA 88+00.00
1/23 POT STA 12+00.00

1/2 POT STA 17+15

0 120 240 480 Feet





0 70 140 280 Feet



85A

84

R-2303D Mitigation Site 1

Restoration

Enhancement

161

Restoration

TOE PROTECTION CLASS B RIP RAP SEE DETAIL D EST 60 TONS EST 110 SY FF

TOE PROTECTION CLASS B RIP RAP SEE DETAIL D EST 60 TONS EST 110 SY FF

TOE PROTECTION CLASS B RIP RAP SEE DETAIL D EST 60 TONS EST 110 SY FF

FF=96.8
Sta. 13+08.2
ISFD
REV. 12/07
11/1 L

Subject: Draft Minutes from Interagency Hydraulic Design Review Meeting on June 13, 2007 for R-2303A in Cumberland County

Team Members:

Jennifer Frye- USACE	(absent)
Gary Jordan- USFWS	(absent)
Travis Wilson-NCWRC	(present)
Rob Ridings- NCDWQ	(present)
Kathy Matthews-EPA	(present)
Chris Militscher-EPA	(present)
Ron Lucas-FHWA	(absent)
Elizabeth Lusk-NCDOT-NEU	(present)
David Harris- REU	(absent)
John Frye- Structures	(present)
Gary Lovering-Roadway	(present)
Mark Pierce-PDEA	(present)
Tracey Pittman- NCDOT-DIV 6	(absent)

Participants:

Bill Elam, NCDOT Hydraulics
Bill Zerman, NCDOT Hydraulics
Chris Rivenbark, NCDOT NEU
Chris Manley, NCDOT NEU
Marissa Rodman, NCDOT NEU
Ron McCollum, NCDOT Roadway
Dawn Rierison, NCDOT-PDEA
Mark Staley, Roadside Environmental
Jim Kerko, NCDOT- DEO
Lee Puckett, NCDOT- Bridge Const. Engr.

GENERAL NOTES:

Many of the non jurisdictional outfall ditches are higher than the inverts of the pipes. The ditches will be cleaned out if required. Ditch cleanouts will stop short of any wetland areas.

Jennifer Frye and David Wainwright were not on the original agenda. In the future, if the team members are changed, they should be notified by phone or email prior to the meeting.

Proposed ditches will have 3:1 or flatter side slopes and meet grass swale criteria where practical.

Sheet 4-7:

No comments

Sheet 8-9:

This is the largest impact to wetlands. Equalizer pipes will be spaced approximately every 200 feet to maintain sheet flow in wetland.

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48

Sheet 10:

There is an existing ditch at Station 96+50-L- that has been called a wetland that will require a pipe crossing. The channel is not jurisdictional. The 24" pipe under existing NC 24 will be removed and a channel will be constructed that is similar to the rest of the channel.

Sheet 11-14:

No comments

Sheet 15:

Maxwell property is historic. All impacts to property should be avoided. We will not be able to clean out outfall ditch left of Station 161+50 -L-.

Chris Militscher commented that the slope stakes at 168+00 -L- Rt. appeared wide. Max responded that the grade had been raised to drain the median. Slope stakes are 3:1 in the area of concern because of wetland impacts.

Sheet 16:

There is an excavated ditch that has been called a wetland at Station 179+00-L- Rt. Impact is estimated at 0.01 acres.

Sheet 17:

Clean out of the non jurisdictional ditch will be required at Station 190+50-L- Lt. The existing ditch is a shallow grass lined channel.

Sheet 18-21:

No comments

Sheet 22:

There is an existing channel at the end of North Street at Station 266+00-L-. The channel appears as a blue line stream on the quad. The channel was not called jurisdictional in the NRTR. Richard Spencer suggested that Jennifer Frye and the NCDOT NEU may need to visit this site.

Sheet 2 of 4
R-2303 A
4B

Sheet 23-24:

No comments

Sheet 25:

There are jurisdictional stream and wetland impacts on Sheet 25 at Station 302+00 -L-. The two 48" pipes under existing NC 24 will be removed and a channel will be constructed that is similar to the rest of the channel

The northwest portion of the Dearl L. Bunce property left of the -L- line will not have access under the current design without further impact to wetlands and the jurisdictional stream. The wetland and stream crosses the Bunce property essentially landlocking a large portion of the property. This portion of NC 24 is limited access so a driveway access to the property is not allowed.

NCDOT is proposing a service road (SR2) to provide access to the northeast portion of the Bunce property. Militscher and Spencer expressed the opinion that NCDOT should include the wetlands and stream impacts that are required to provide access to the property in the project impacts.

NCDOT is exploring three options.

- Option 1: Extend Service Road 1 on Sheet 21 to reach Bunce property
- Option 2: Extend Service Road 2 to provide access to the northwest section of the Bunce property and include the impacts to the wetlands and stream in the total impacts.
- Option 3: Purchase the landlocked property and use the property for wetland enhancement.

Sheet 26:

No comments

Sheet 27:

There is jurisdictional stream that crosses NC 24 through an existing 36" crosspipe at Station 322+00 -L-. This pipe will have to be replaced. Wetlands are also impacted at this site.

Sheet 28-29:

There is jurisdictional stream that crosses NC 24 through an existing 24" crosspipe at Station 348+00 -L-. This pipe may have to be replaced. Wetlands are also impacted at this site.

sheet 3 of 4
P-2303 A
4B

Sheet 30-33:

No comments

Meeting adjourned

sheet 4 of 4
R-2303 A
4B

Subject: Draft Minutes from Interagency Hydraulic Design Review Meeting on March 17, 2011 for R-2303A in Cumberland County

Team Members:

Ronnie Smith- USACE	(present)
Gary Jordan- USFWS	(absent)
Travis Wilson-NCWRC	(absent)*
Mason Herndon- NCDWQ	(present)
Chris Militscher-EPA	(absent)
Ron Lucas-FHWA	(present)
Elizabeth Lusk-NCDOT-NEU	(present)
Mark Pierce-PDEA	(absent)

*Absent but provided comments.

Participants:

Galen Cail, NCDOT Hydraulics
Bill Elam, NCDOT Hydraulics
Gary Lovering, NCDOT Roadway
Rick DeCola, NCDOT Roadway
Chris Rivenbark, NCDOT NEU
Chris Manley, NCDOT NEU
Marissa Rodman, NCDOT NEU Mitigation
Byron Moore, NCDOT NEU Mitigation
Mark Staley, Roadside Environmental
Jim Rerko, NCDOT- DEO
Steven Cummings, NCDOT Utilities

GENERAL NOTES:

Rip rap along streams to be placed on banks only or noted otherwise.

Proposed culverts along streams will be buried 20% of culvert diameter up to 1' or noted otherwise. This is standard practice and is noted in permit conditions.

Other than locations with ditching thru wetlands the side slopes for fill look to be 3:1. However, in final permit will verify side slopes as 3:1 where fill in wetlands.

Pond impacts at several locations call for "Rock Fill". Detail will be provided in final permit.

Anticipate final permit drawings for A section and preliminary drawings for B, C and D sections will be prepared by August 2011. Our understanding is JD on all sections has or will soon expire. NEU will verify status of JD and coordinate with agencies what effort remains to complete delineations/verifications. Updated delineations will need to be provided in order to prepare permit drawings.

Impacts/permits relative to PUE will be provided by Utilities Unit.

Site 2; Sheet 8,9:

Equalizer pipe Sta 75+00 -L- doesn't show up since on plan sheet matchline. Will be relocated to make sure it shows up in final plans/permit.

Site 3; Sheet 10:

Ditching thru wetlands. Two wetlands are total takes and 1 wetland is an existing ditch.

Site 4; Sheet 11:

Ditching thru wetlands. Proposed ditch will be no deeper than existing ditch. Improved scale will be provided in final permit.

Site 9; Sheet 19:

In final permit will make sure outlet rip rap pad is accounted for as fill in wetlands. Improved scale will be provided in final permit.

Site 10; Sheet 25:

There was discussion on whether the upstream parcel was purchased for mitigation due to access. NEU will investigate.

Where the pipe under existing NC 24 is to be removed and roadway excavated with floodplain, the final permit will account on summary as "Natural Stream Design" for mitigation credit. A reforestation plan will need to be provided in final plans for this site.

Show and state outlet rip rap at 2 @ 54" as "BANKS ONLY".

Site 11; Sheet 27:

At wetland approximate Sta 321+80 -L- LT, will account for as "total take". However, was recommended to not show as hatched outside of ditch but include in excavation quantity on summary and note below summary the additional impact outside of ditch.

The JS LT is not shown in correct location in existing driveway. Will be shown correctly in final permit.

Site 12; Sheet 28:

Recommendation made to improve outlet angle of 36" pipe. Will look at relocating proposed 2GI line ahead.

Site 13; Sheet 29:

Review if proposed 30" outlet pipe can be relocated outside of wetland.

Meeting adjourned

Comments Provided:

Site 1 -- missing cross sections for the pond fills from station 69+45 to 72+81

- *Standard practice is to provide one x-section sheet if sites are close together. Ie to verify that max side slopes, in this case 3:1, are being used.*

Site 2 -- missing equalizer pipe near station 75+00, the match line may have cut it off

- *Agreed. Will bring up at 4C and will make sure pipe shows up in final permit package.*

Site 4 -- missing cross section for impacts from station 112+53 to 112+55

- *Another x-section sheet (x-34) would provide better verification relative to site. Will provide another x-section at 4C mtg.*

Site 5 -- cross section missing for impacts from station 131+57 to 133

- *The x-section provided does include section at site. However, we will provide rock fill detail at 4C.*

Site 9 -- does the > 0.01 acres of permanent fill include the rip-rap shown outside of the fill line. -- Can you please provide a zoomed in/larger scale map of the impact area.

- *Rip rap impact is included as Mechanized Clearing and is <0.01 ac. Will provide improved scale drawing in final permit. At 4C meeting can zoom in on drawing with CADD.*

Site 10 -- the impact table says two 48" pipes in the channel and the plans show 2-54" pipes. What is the correct pipe size.

- *Agreed. It is a 2 @ 54" so table will be revised.*

Site 11 -- missing cross section of pipe in relation to the stream bed.-- Why will the wetlands located along the north side of the road be permanently filled beyond the fill slope.

- *Standard is to provide pipe/stream bed profile for culverts with conveyance of 60" pipe or larger. Wetland impact shown as total take but can be discussed at 4C.*

Site 12 -- missing plan view for site 12.-- missing cross-section for site 12--missing cross section for of pipe in relation to stream bed.--permanent rip-rap impacts are not shown in the table.

Sheet 3 of 4
R-2303 A
4C

- *Agreed. Will provide at 4C. Standard is to provide pipe/stream bed profile for culverts with conveyance of 60" pipe or larger. Agreed, bank stabilization impact should be permanent.*

Site 13 -- missing plans for half of site 13 from station 344+83 to 347+50.-- Is the rip-rap reflected in the permanent fill area?--missing cross section from station 346 to 349.-- Please provide a zoomed in/large scale map for the impact area.

- *Additional site missing will show up for previous Site 12 sheet. Rip rap impacts included in Mechanized Clearing impact. Standard practice is to provide one x-section sheet if sites are close together. Ie to verify that max side slopes, in this case 3:1, are being used. The x-section sheet provided covers portion of Site 13 and is a typical indication for x-section. Will provide improved scale drawing in final permit. At 4C meeting can zoom in on drawing with CADD.*

Sheet 4 of 4
R-2303 A
4C



North Carolina Department of Transportation
 Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
 FOR LINEAR ROADWAY PROJECTS



(Version 1.2; Released September 2011)

Project/TIP No.: R-2303A County(ies): Cumberland Sampson Page 1 of 1

General Project Information

Project No.:		R-2303A		Project Type: Roadway Widening		Date: 9/27/2011	
NCDOT Contact:		Bill Elam		Contractor / Designer:			
	Address:	1020 Birch Ridge Road Raleigh NC 27610			Address:		
	Phone:	919-707-6718			Phone:		
	Email:	belam@ncdot.gov			Email:		
City/Town:		Stedman		County(ies):		Cumberland Sampson	
River Basin(s):		Cape Fear		CAMA County?		No No	
Primary Receiving Water:		South River		NCDWQ Stream Index No.:		18-68-12-(0.5)	
NCDWQ Surface Water Classification for Primary Receiving Water		Primary:		Class C			
		Supplemental:		Swamp Waters (Sw)			
Other Stream Classification:							
303(d) Impairments:		None					
Buffer Rules in Effect		N/A					

Project Description

Project Length (lin. Miles or feet):		6.807 miles		Surrounding Land Use:		Rural Farmland with Flat terrain and Sandy Soils	
		Proposed Project				Existing Site	
Project Built-Upon Area (ac.)		67.50 ac.				16.20 ac.	
Typical Cross Section Description:		4 lane divided with 38 ft grass median; 12 ft lanes and 4 ft paved shoulders				Two 12 ft lanes with 2 ft paved shoulders	
Average Daily Traffic (veh/hr/day):		Design/Future: 30144		Existing:		19264	

General Project Narrative: This project involves the widening of NC 24. The project is on both existing and new location. There are no major crossing on the project. There are eight sites where streams are impacted for a total of 501 ft. 3 ponds and 5 wetland sites were impacted. Grass swales were used wherever possible. Grass shoulders and the grass median will provide infiltration. The side slopes of the ditches were 4:1 or flatter for most ditches. Most of the project is very flat. 90% of the ditches are flatter than 1%. Many of the existing ditches acted as storage. The new ditches will also be very flat. The average velocity in the ditch will be less than 2.6 fps. Pipes that are in jurisdictional streams are buried 20% or up to one foot. Preformed scours holes were used in three different locations.

References

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

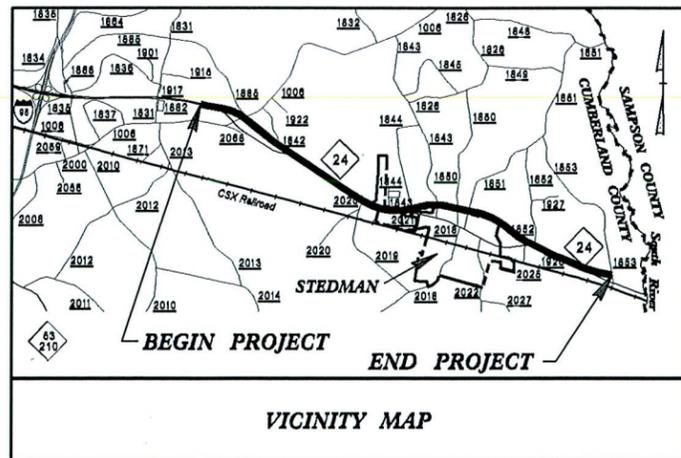
CUMBERLAND COUNTY

LOCATION: NC 24 FROM WEST OF SR 1006 (MAXWELL RD./ CLINTON RD.) TO SR 1853 (JOHN NUNNERY RD.)

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2303A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34416.1.1	STPNHF-F-8-2(17)	P.E.	
34416.2.2		RW, UTIL.	

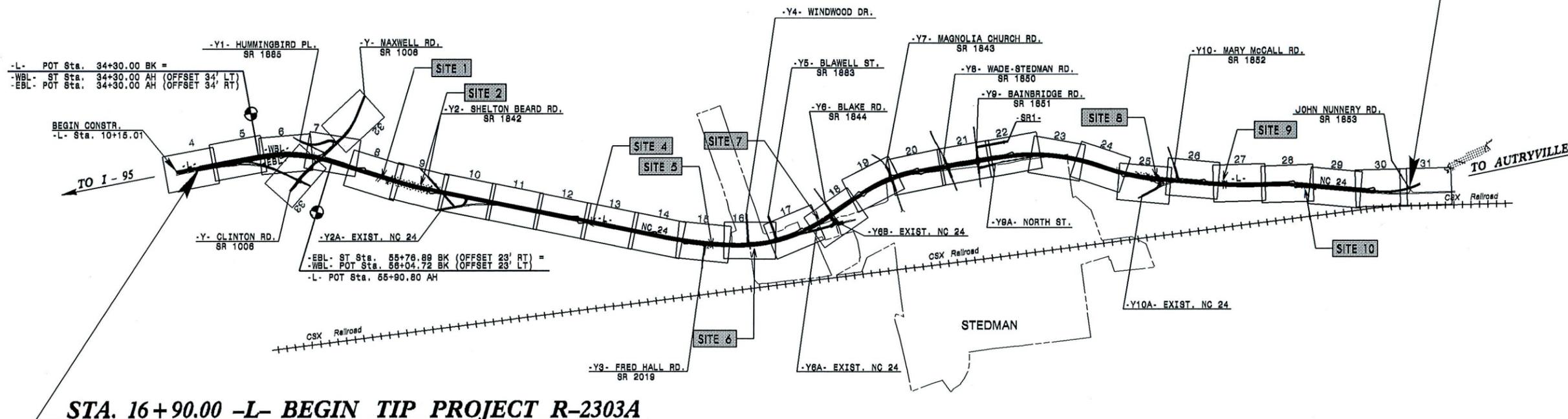
TIP PROJECT: R-2303A



Permit Drawing
Sheet 1 of 40.
Revised 7/23/12



STA. 376+28.96 -L- END TIP PROJECT R-2303A



A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF STEDMAN

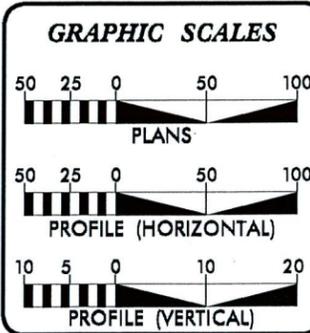
THIS IS A LIMITED AND PARTIAL CONTROL OF ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

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

WETLAND PERMIT / STREAM IMPACT

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2011	=	19,264
ADT 2031	=	30,144
DHV	=	11 %
D	=	65 %
T	=	8 % *
V	=	60 MPH
FUNC. CLASS	=	EXPY TYPE II
* TTST 5% DUAL 3% STATEWIDE TIER		

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2303A	=	6.807 MILES
TOTAL LENGTH TIP PROJECT R-2303A	=	6.807 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: October 15, 2010

LETTING DATE: October 16, 2012

GARY LOVERING, PE
PROJECT ENGINEER

RICK DECOLA, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

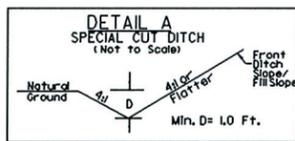
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

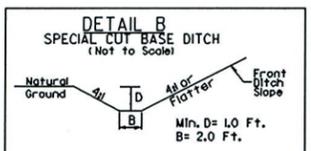
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DITCH DETAILS

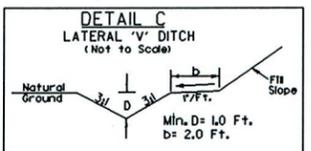
Permit Drawing
Sheet 2 of 40
Revised 7/23/12



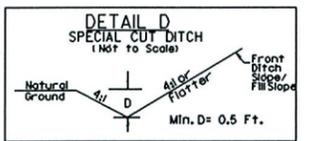
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FROM STA. 125+50 TO STA. 130+00 -L- LT.
FROM STA. 131+50 TO STA. 133+70 -L- LT.
FROM STA. 134+50 TO STA. 143+00 -L- LT.
FROM STA. 148+00 TO STA. 152+00 -L- LT.
FROM STA. 175+00 TO STA. 178+00 -L- LT.
FROM STA. 179+00 TO STA. 181+00 -L- LT.
FROM STA. 182+50 TO STA. 194+00 -L- LT.
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FROM STA. 223+00 TO STA. 224+05 -L- LT.
FROM STA. 241+50 TO STA. 248+50 -L- LT.
FROM STA. 305+50 TO STA. 307+50 -L- LT.
FROM STA. 309+50 TO STA. 310+00 -L- LT.
FROM STA. 311+00 TO STA. 316+00 -L- LT.
FROM STA. 316+50 TO STA. 322+00 -L- LT.
FROM STA. 323+50 TO STA. 330+00 -L- LT.
FROM STA. 330+00 TO STA. 332+50 -L- LT.
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FROM STA. 351+00 TO STA. 360+50 -L- LT.



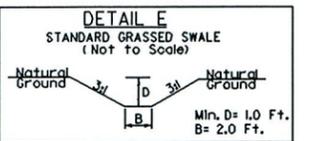
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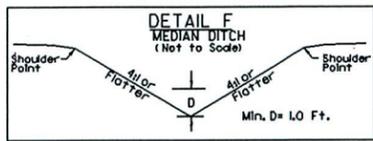
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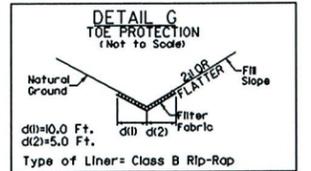
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STA. 190+39 -L- LT.
STA. 215+02 -L- LT.
STA. 96+70 -L- RT.
STA. 304+93 -L- RT.

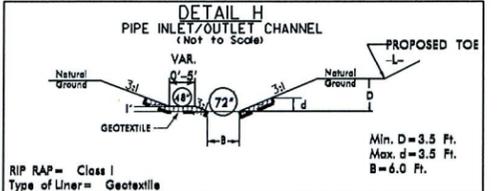


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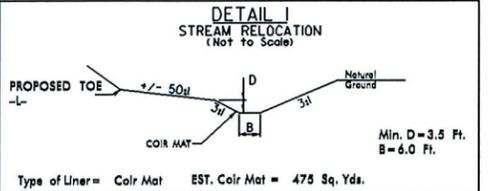


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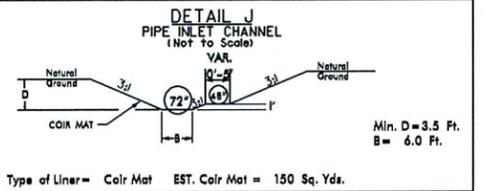
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FROM STA. 343+50 TO STA. 344+27 -L- RT.
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FROM STA. 12+00 TO STA. 13+00 -Y7- RT.
FROM STA. 12+70 TO STA. 13+25 -Y6B- LT.
FROM STA. 12+80 TO STA. 14+40 -Y6B- RT.
FROM STA. 14+86 TO STA. 16+00 -Y7- RT.
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FROM STA. 12+00 TO STA. 13+00 -Y10- RT.



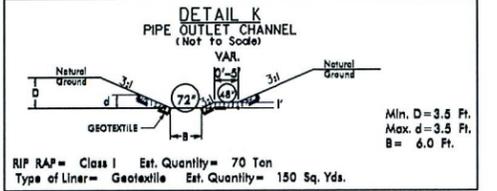
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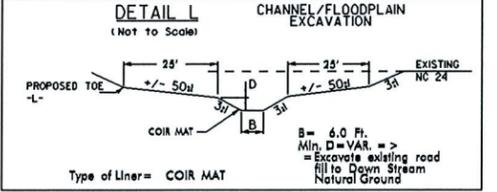
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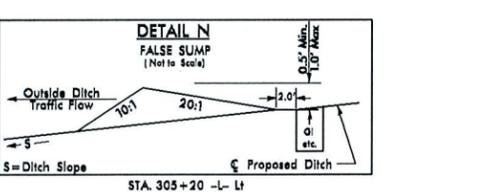
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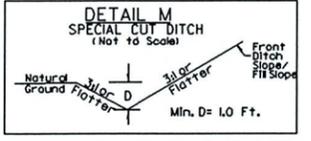
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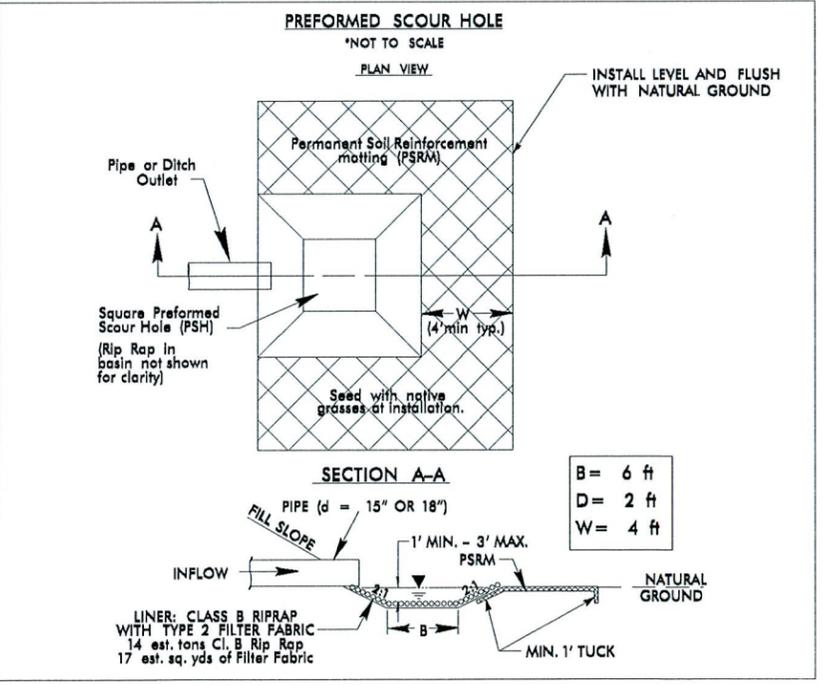
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FROM STA. 300+00 TO STA. 301+33 -L- RT



STA. 73+23 -L- LT
STA. 172+00 -L- RT

8/17/12
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139.97
75 + 50.00

140.16
75 + 00.00

140.22
74 + 50.00

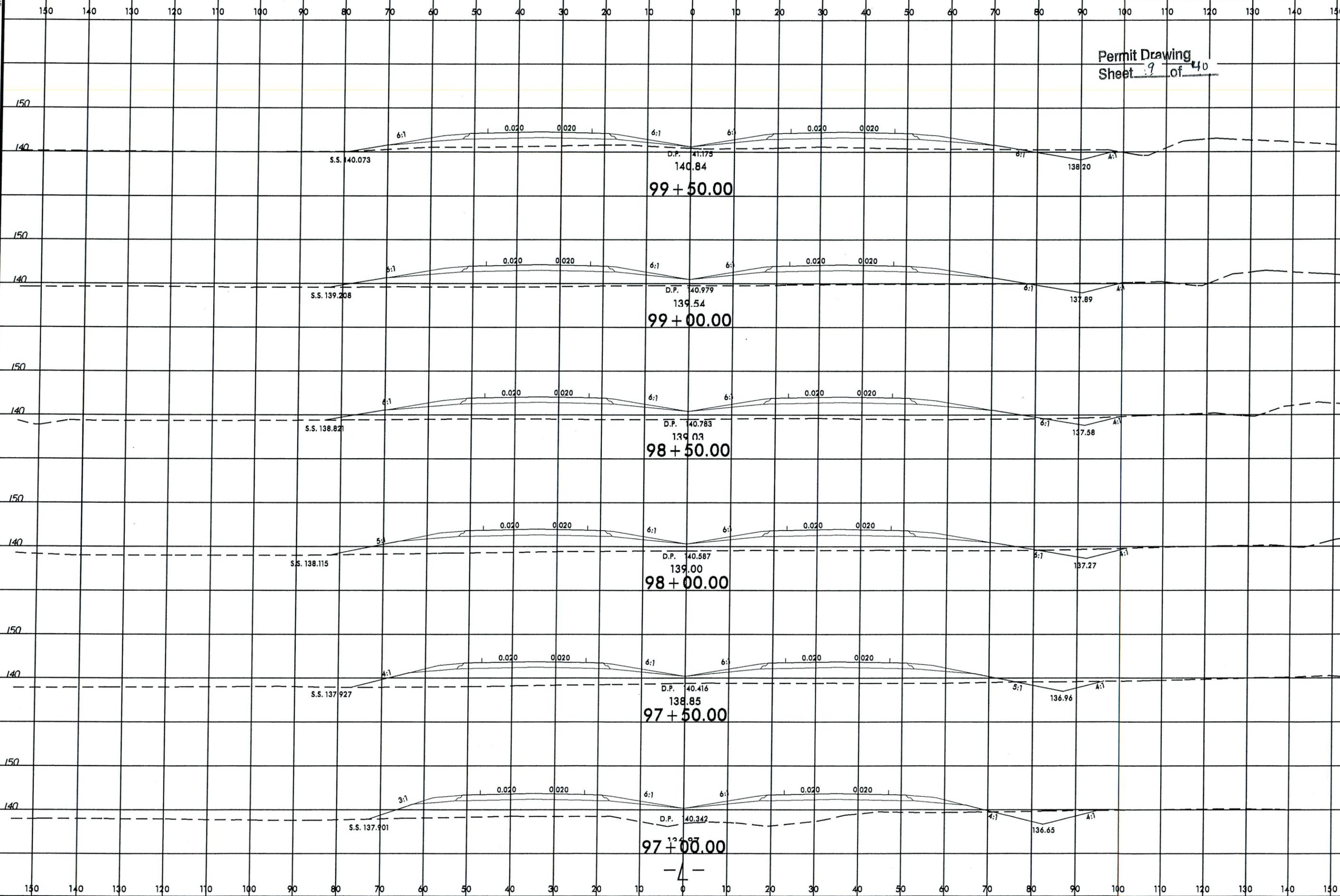
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140.12
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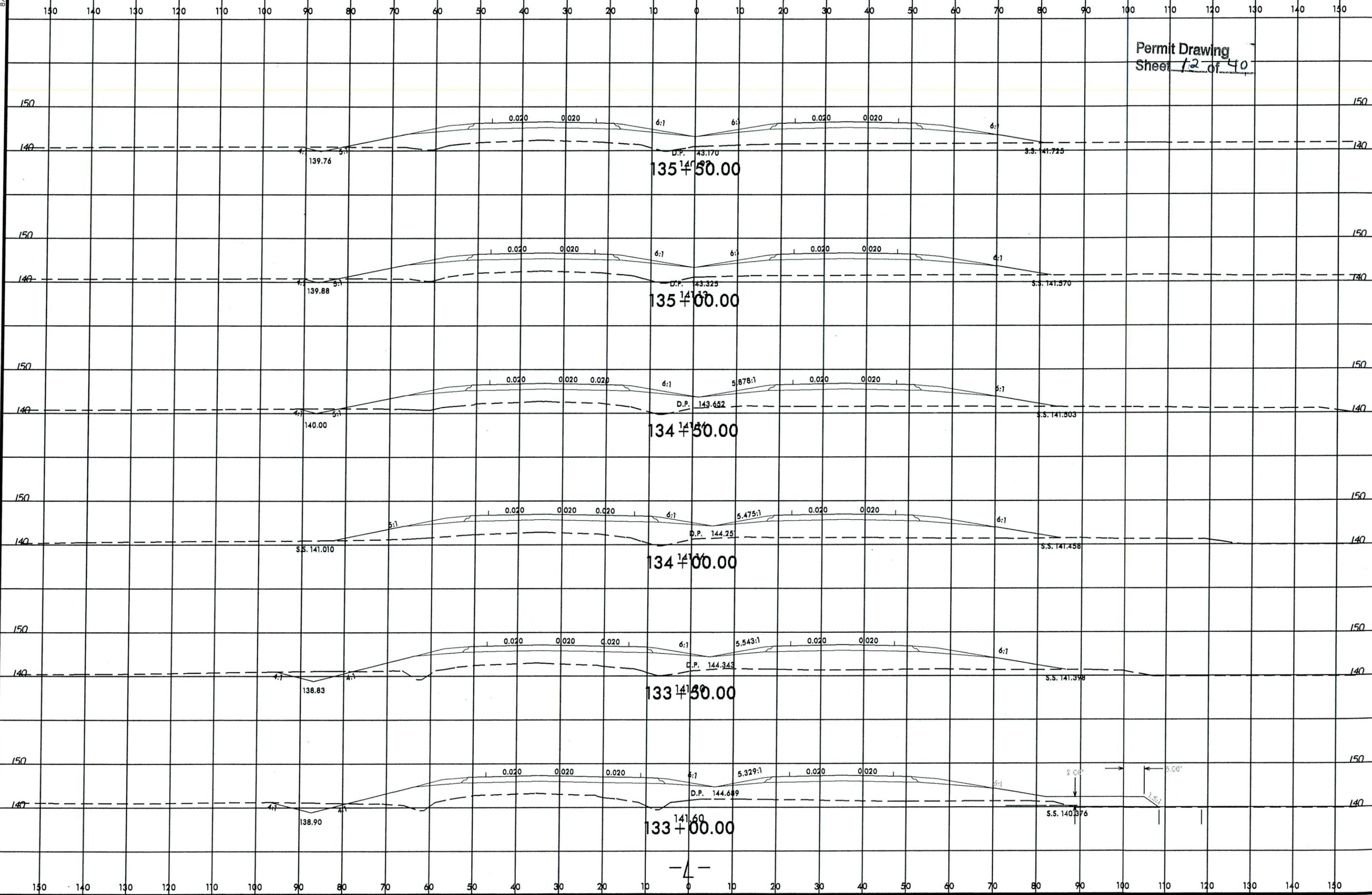
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-4-

1/30/2012
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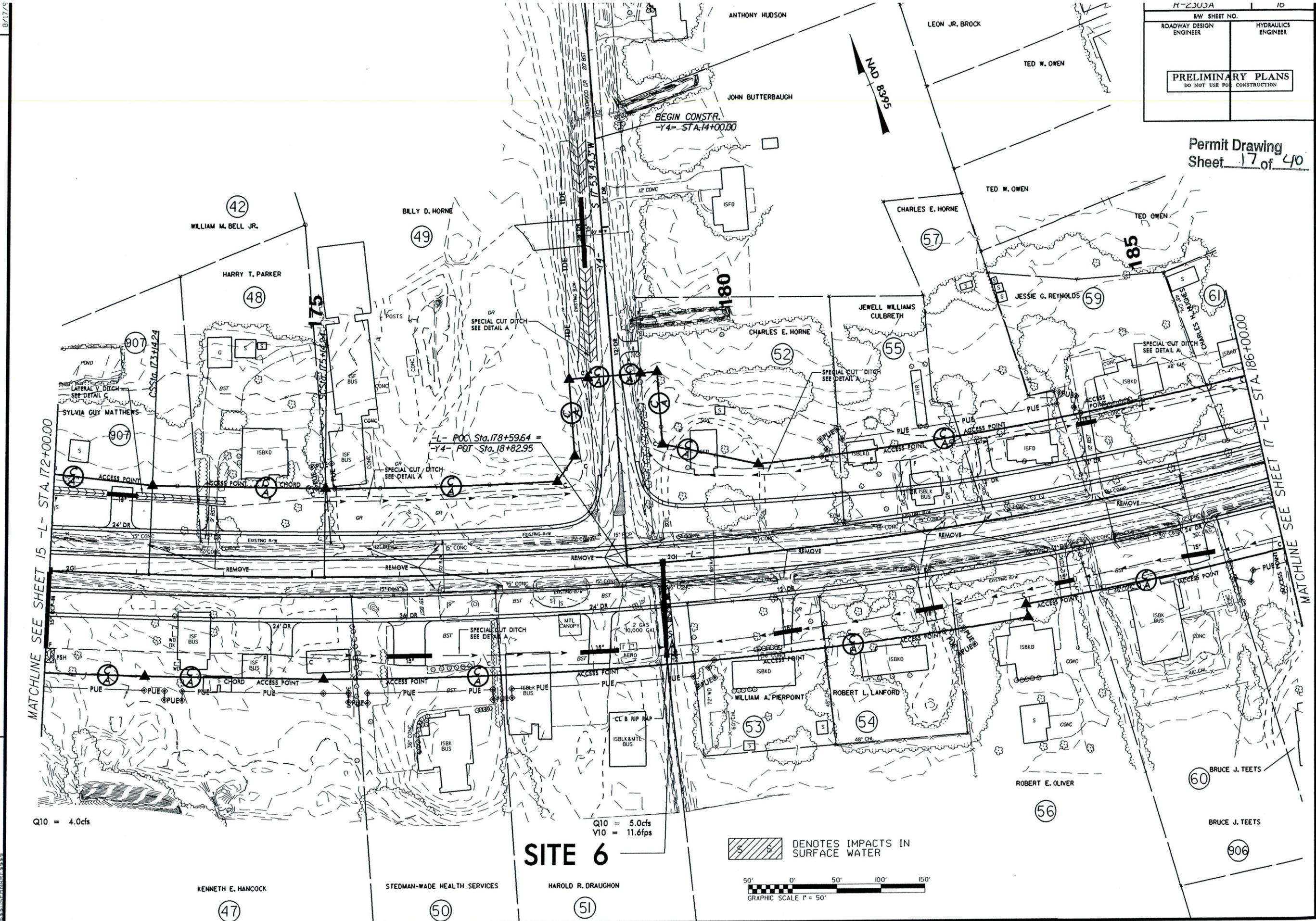
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RW SHEET NO.		ID	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS			
DO NOT USE FOR CONSTRUCTION			

Permit Drawing Sheet 17 of 40

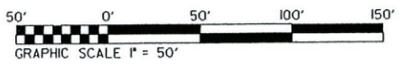


MATCHLINE SEE SHEET 15 - L- STA. 172+00.00

MATCHLINE SEE SHEET 17 - L- STA. 186+00.00

SITE 6

DENOTES IMPACTS IN SURFACE WATER



Q10 = 4.0cfs

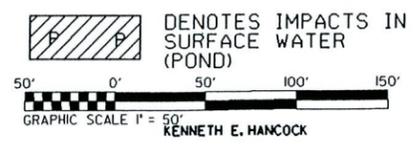
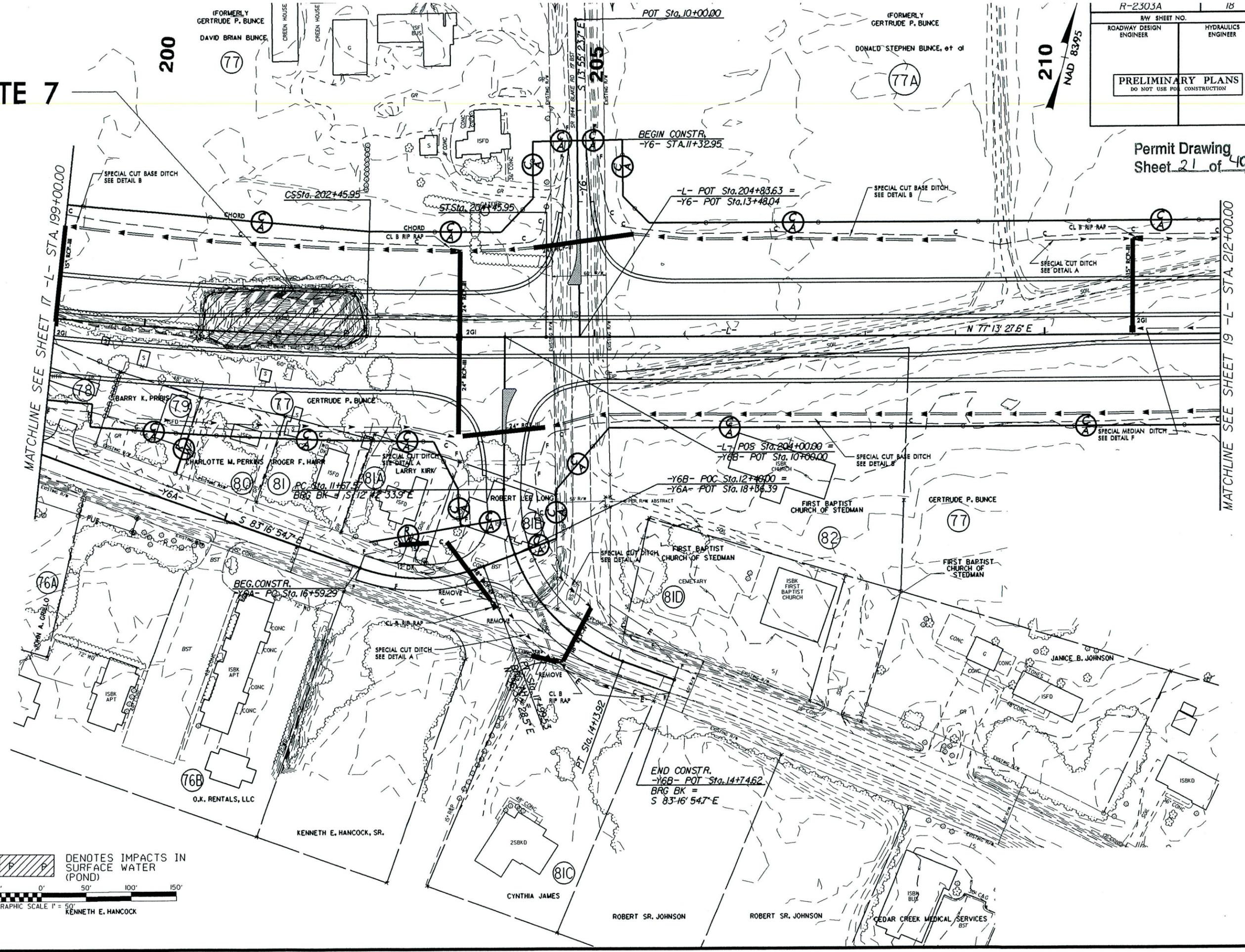
Q10 = 5.0cfs
V10 = 11.6fps

REVISIONS
 DECEMBER 29, 2010 - R/W REVISIONS - REVISED PUE ON PARCEL 47.

2/16/2012
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SYSTEM: \$\$\$\$\$\$
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 PLOTNAME: \$\$\$\$\$\$

SITE 7



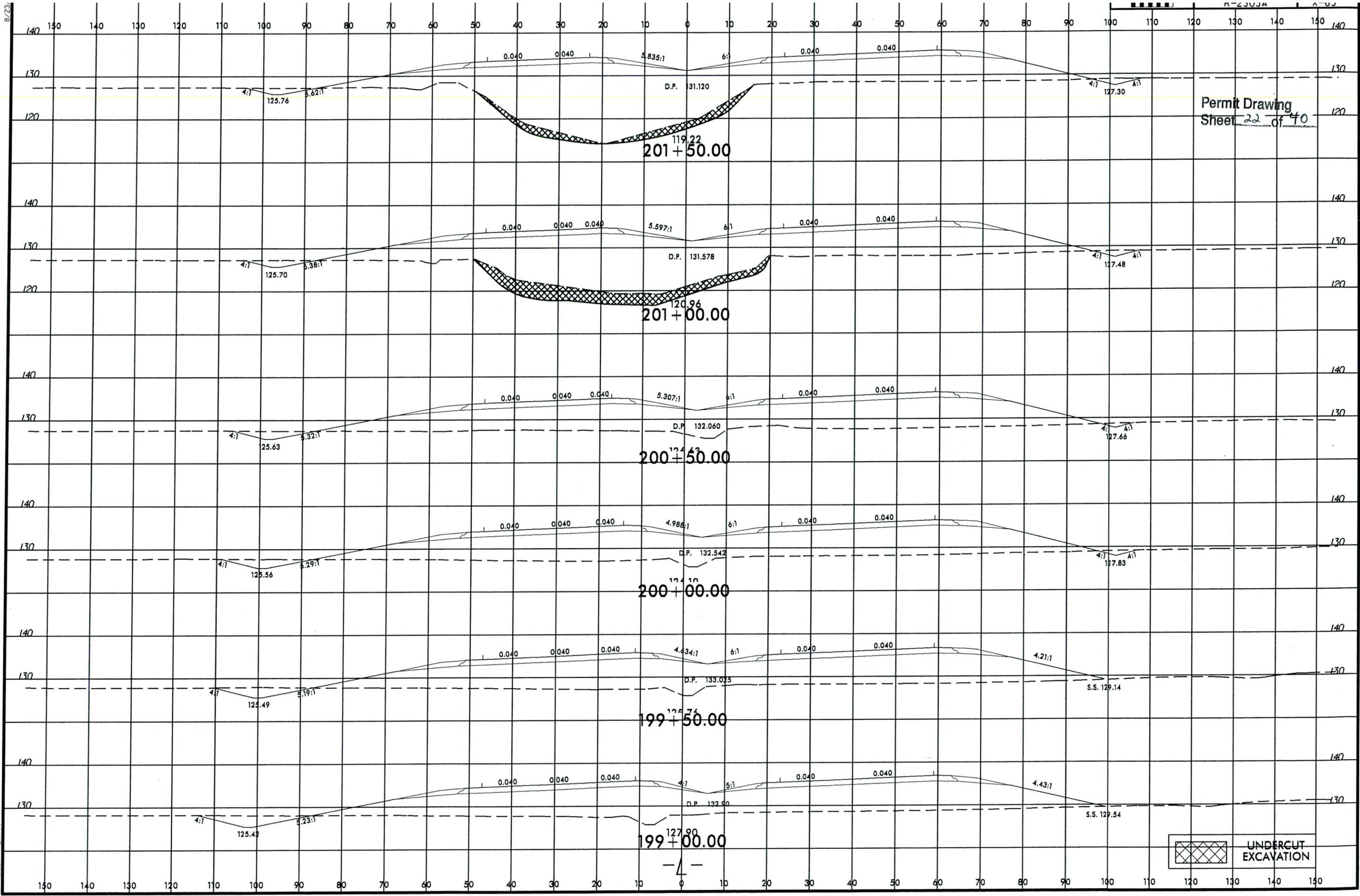
REVISIONS
 RIGHT OF WAY REVISION - JANUARY 18, 2011 - ADD PARCEL NOS. 76A AND 76B.

2/6/2012
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 TIME *****

8/17/12

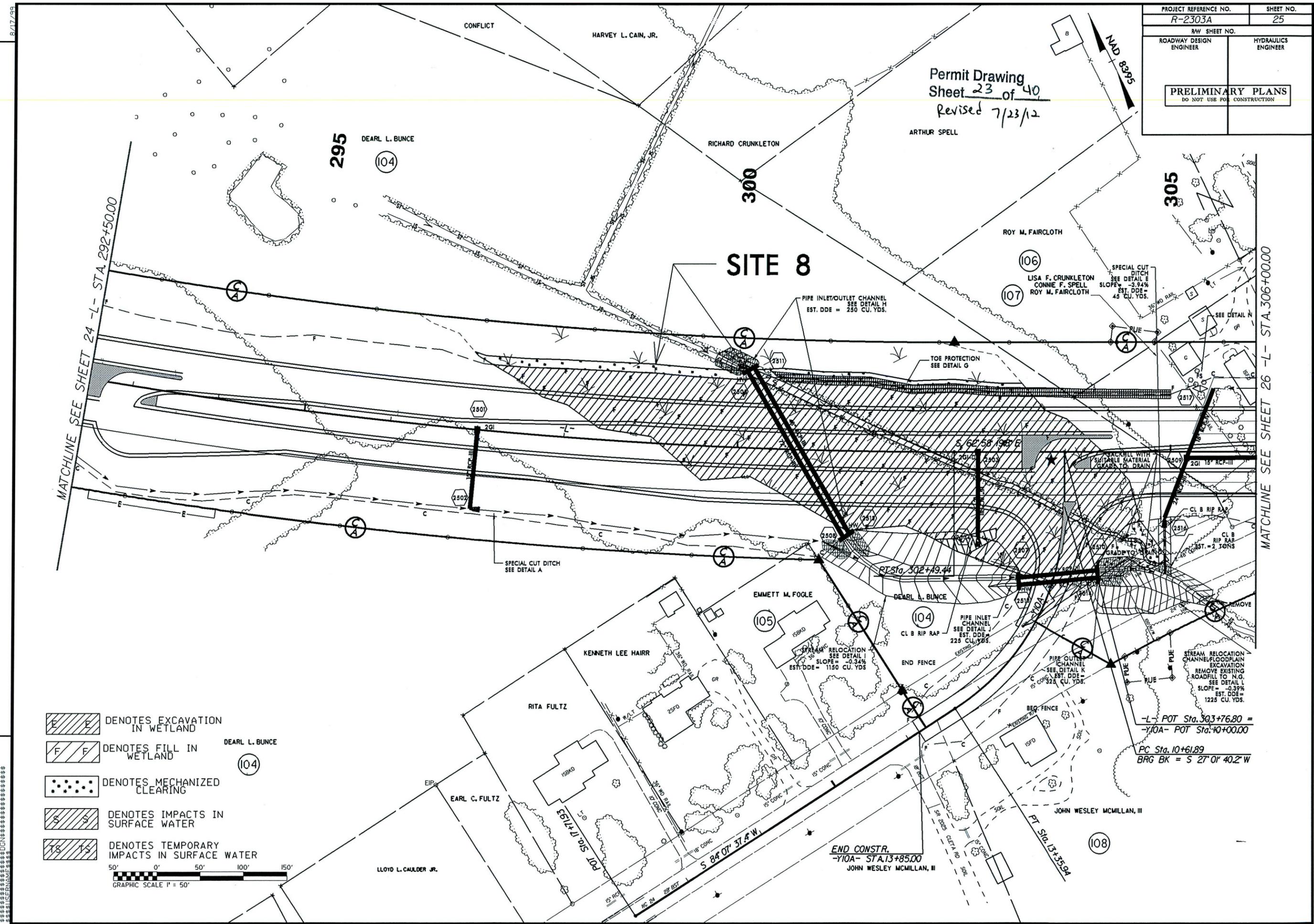
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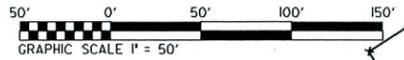
Permit Drawing
Sheet 22 of 40

UNDERCUT
EXCAVATION

Permit Drawing
Sheet 23 of 40
Revised 7/23/12



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



REVISIONS

MATCHLINE SEE SHEET 24 -L- STA. 292+50.00

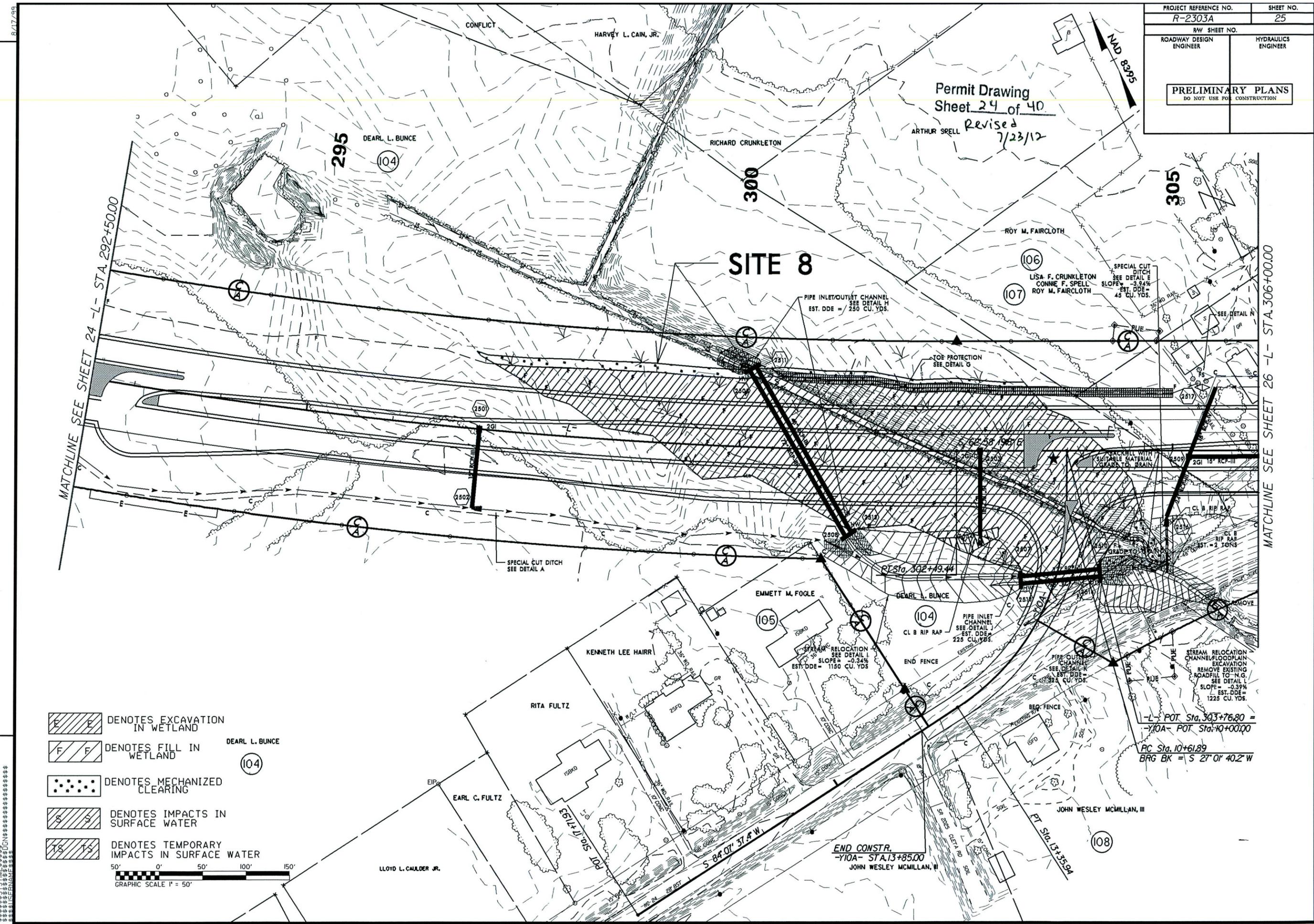
MATCHLINE SEE SHEET 26 -L- STA. 306+00.00

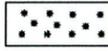
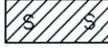
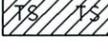
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PROJECT REFERENCE NO. R-2303A	SHEET NO. 25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 24 of 40
Revised 7/23/12
ARTHUR SRELL



-  DENOTES EXCAVATION IN WETLAND
 -  DENOTES FILL IN WETLAND
 -  DENOTES MECHANIZED CLEARING
 -  DENOTES IMPACTS IN SURFACE WATER
 -  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DEARL L. BUNCE (104)
- GRAPHIC SCALE 1" = 50'
- 50' 0' 50' 100' 150'

MATCHLINE SEE SHEET 24 -L- STA. 292+50.00

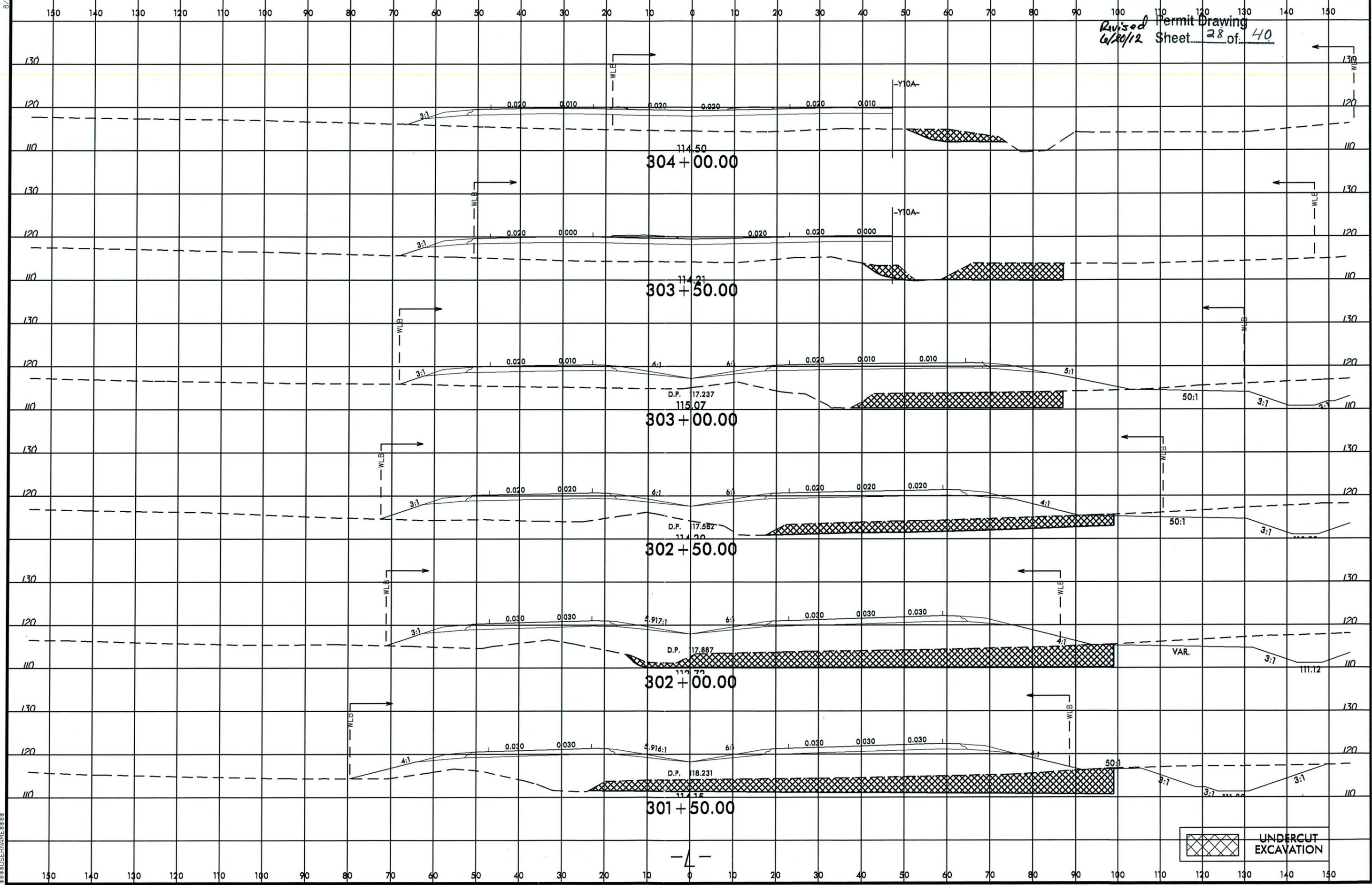
MATCHLINE SEE SHEET 26 -L- STA. 306+00.00

REVISIONS

7/23/2012
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Revised Permit Drawing
 6/20/12 Sheet 28 of 40

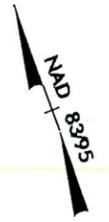


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 *****DATE*****
 *****TIME*****
 *****USER*****

 UNDERCUT EXCAVATION

YULANDA SMITH

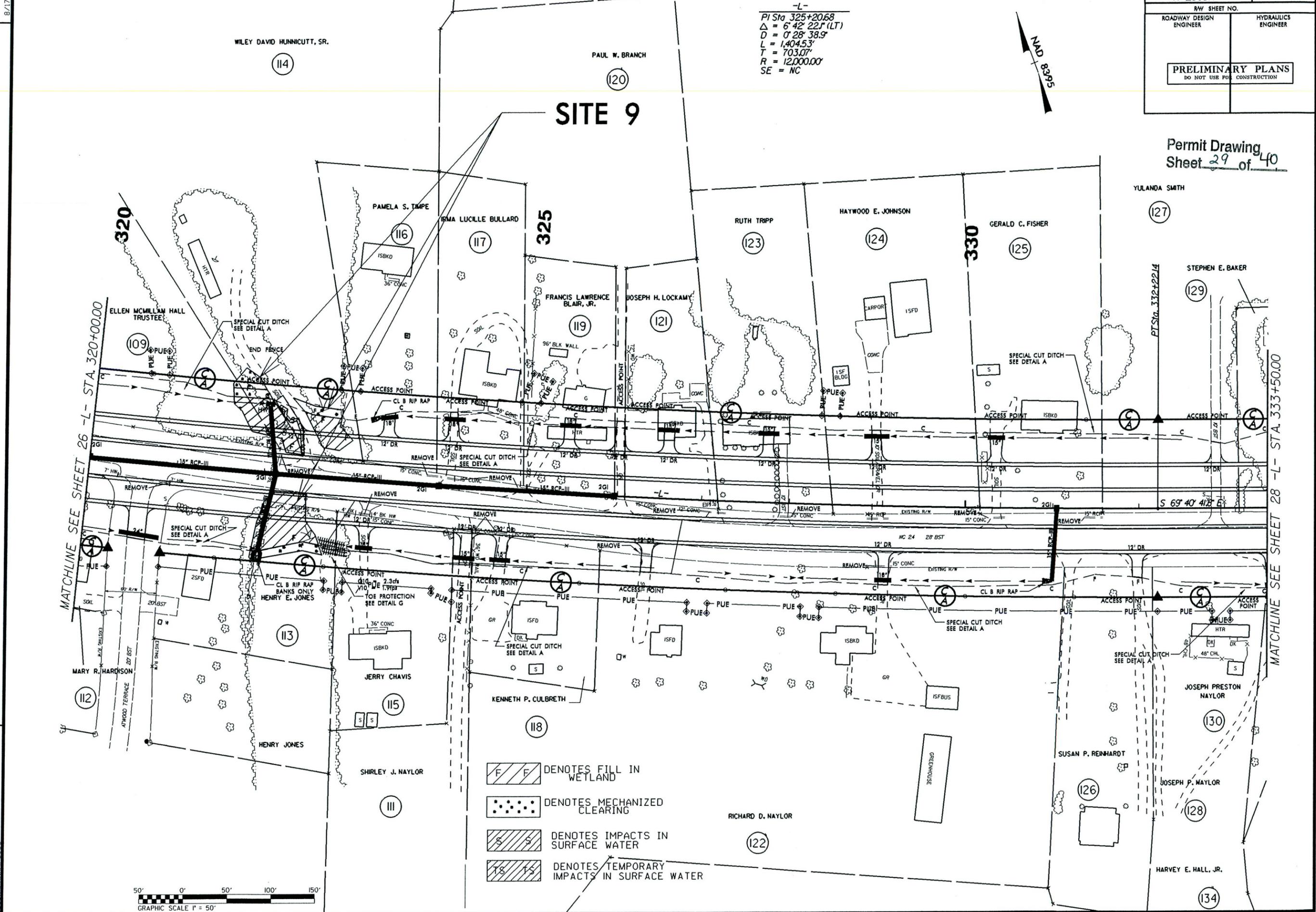
-L-
 PI Sta 325+20.68
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 $D = 0' 28" 38.9$
 $L = 1404.53'$
 $T = 703.07'$
 $R = 12,000.00'$
 SE = NC



WILEY DAVID HUNNICUTT, SR. (114)

PAUL W. BRANCH (120)

SITE 9



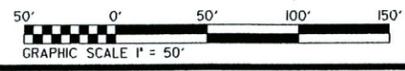
MATCHLINE SEE SHEET 26 -L- STA. 320+00.00

MATCHLINE SEE SHEET 28 -L- STA. 333+50.00

REVISIONS

RIGHT OF WAY REVISION - JANUARY 18, 2011 - ADDED PARCEL NO. III.

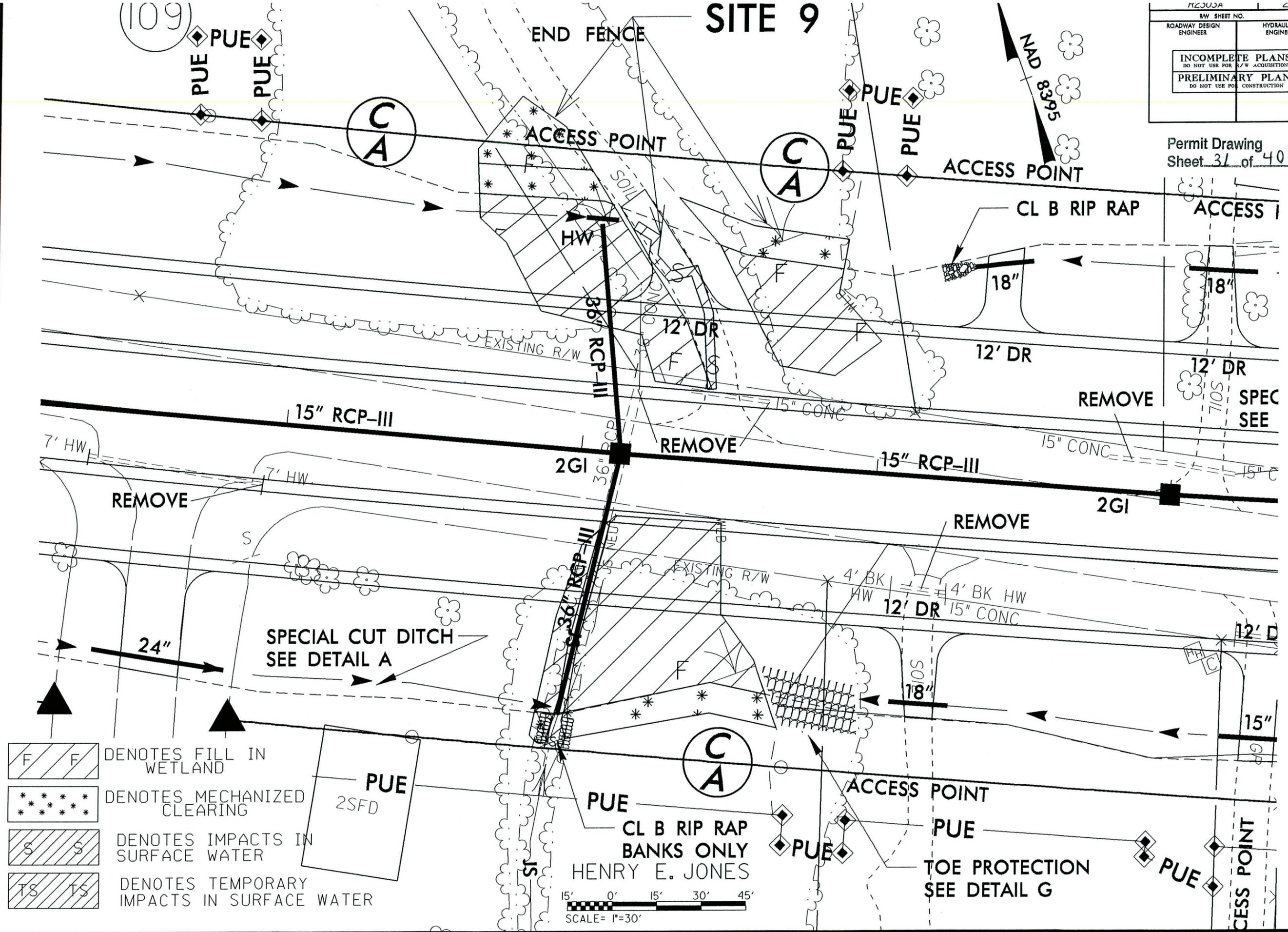
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

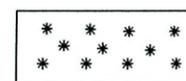


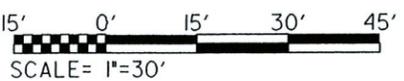
2/6/2012
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8/17

REVISIONS

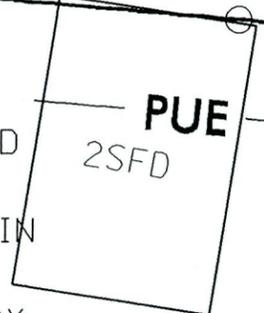


-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER



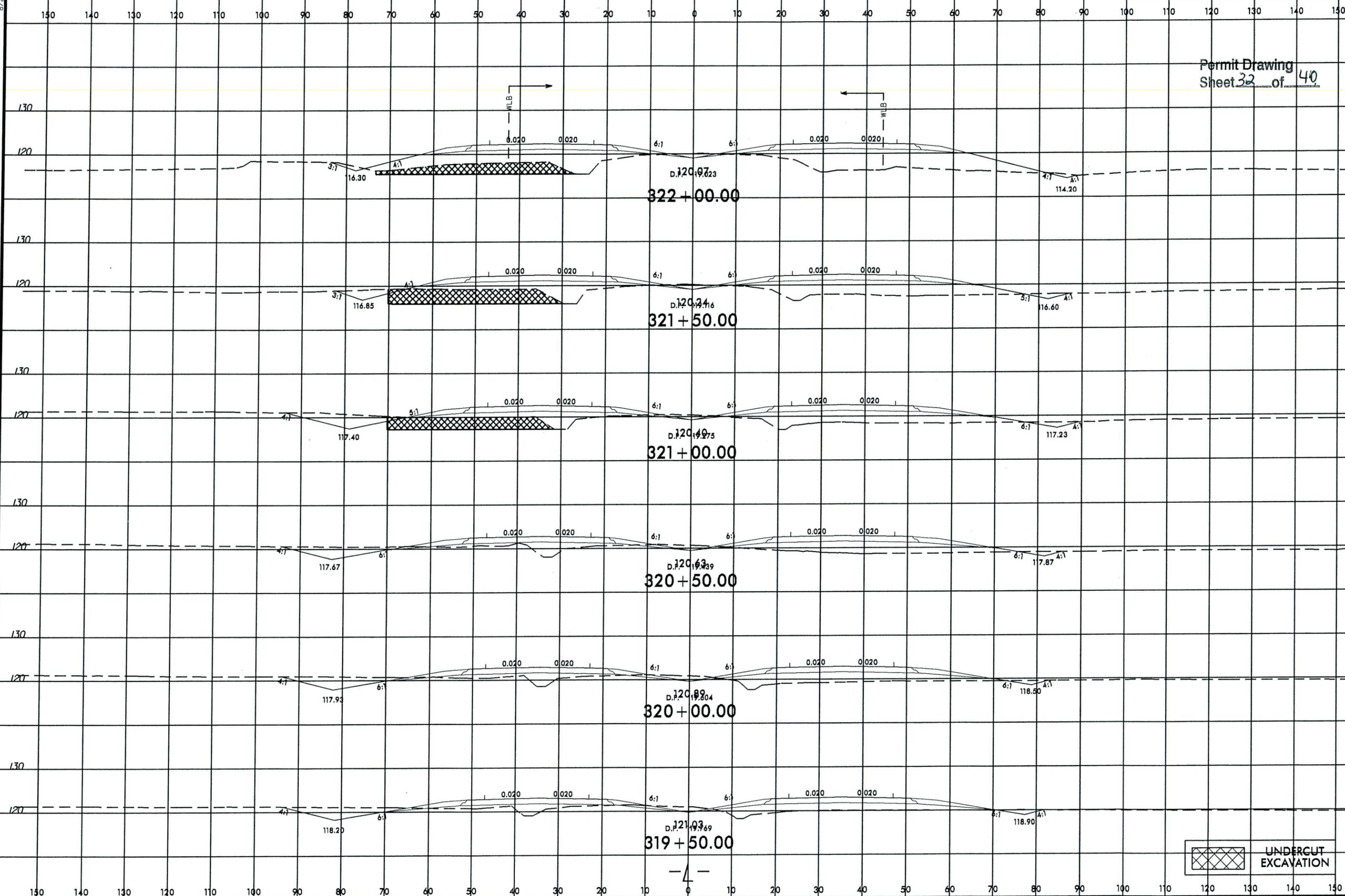
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

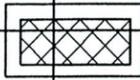
Permit Drawing
Sheet 31 of 40



CL B RIP RAP
BANKS ONLY
HENRY E. JONES

CESS POINT



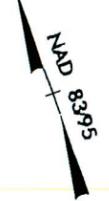
 UNDERCUT EXCAVATION

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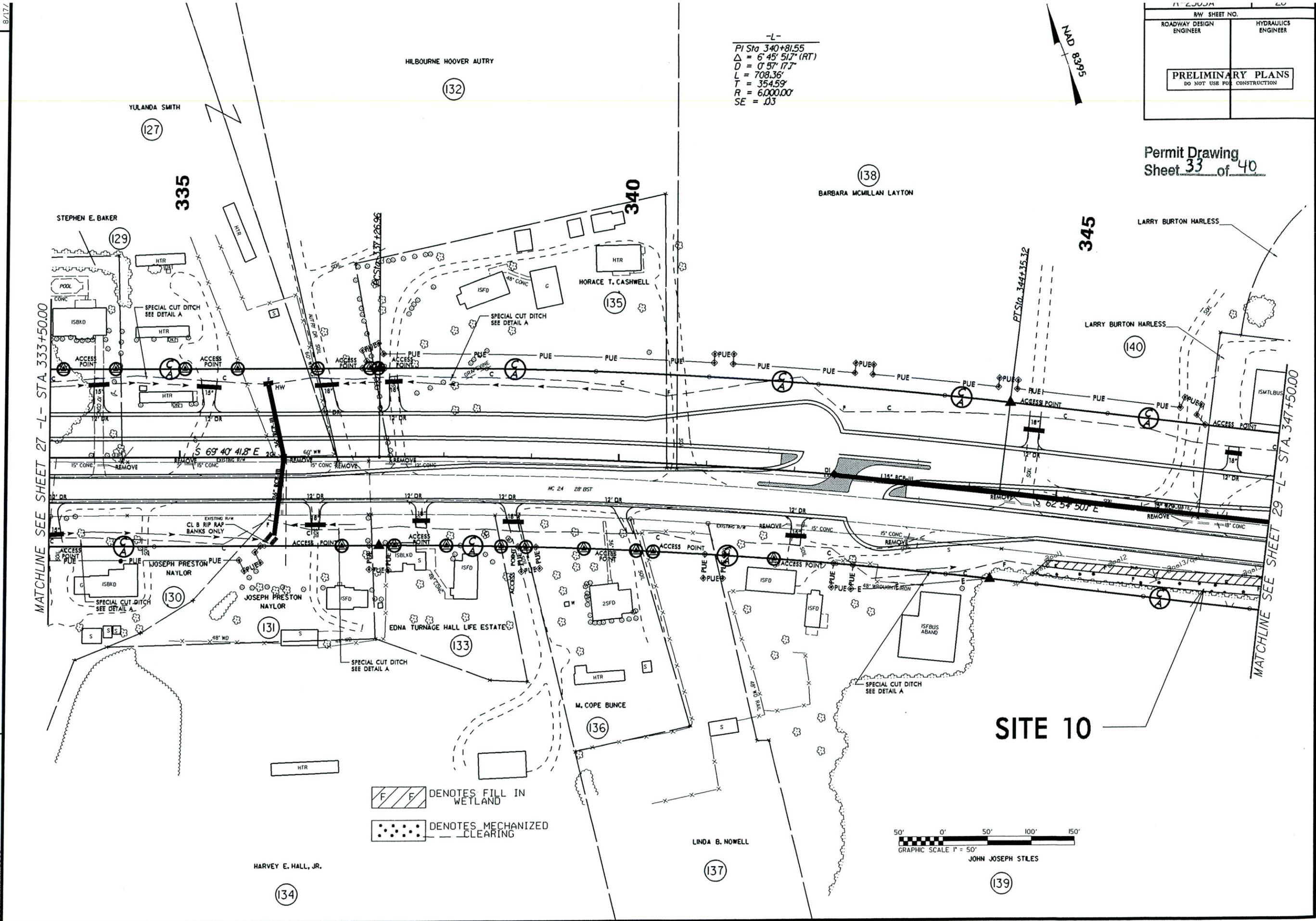
RDW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 33 of 40

-L-
PI Sta 340+81.55
 $\Delta = 6' 45" 51.7" (RT)$
 $D = 0' 57" 17.7"$
 $L = 708.36'$
 $T = 354.59'$
 $R = 6,000.00'$
 $SE = .03$



NOVEMBER 30, 2010 - R/W REVISIONS - REVISED PUE ON PARCELS 131 THROUGH 139. ADDED TCE TO PARCEL 139. ELIMINATED TCE FROM PARCEL 138.

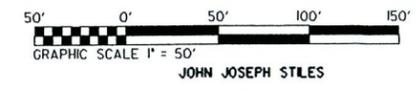


MATCHLINE SEE SHEET 27 - L - STA. 333+50.00

MATCHLINE SEE SHEET 29 - L - STA. 347+50.00

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING



2/13/2012
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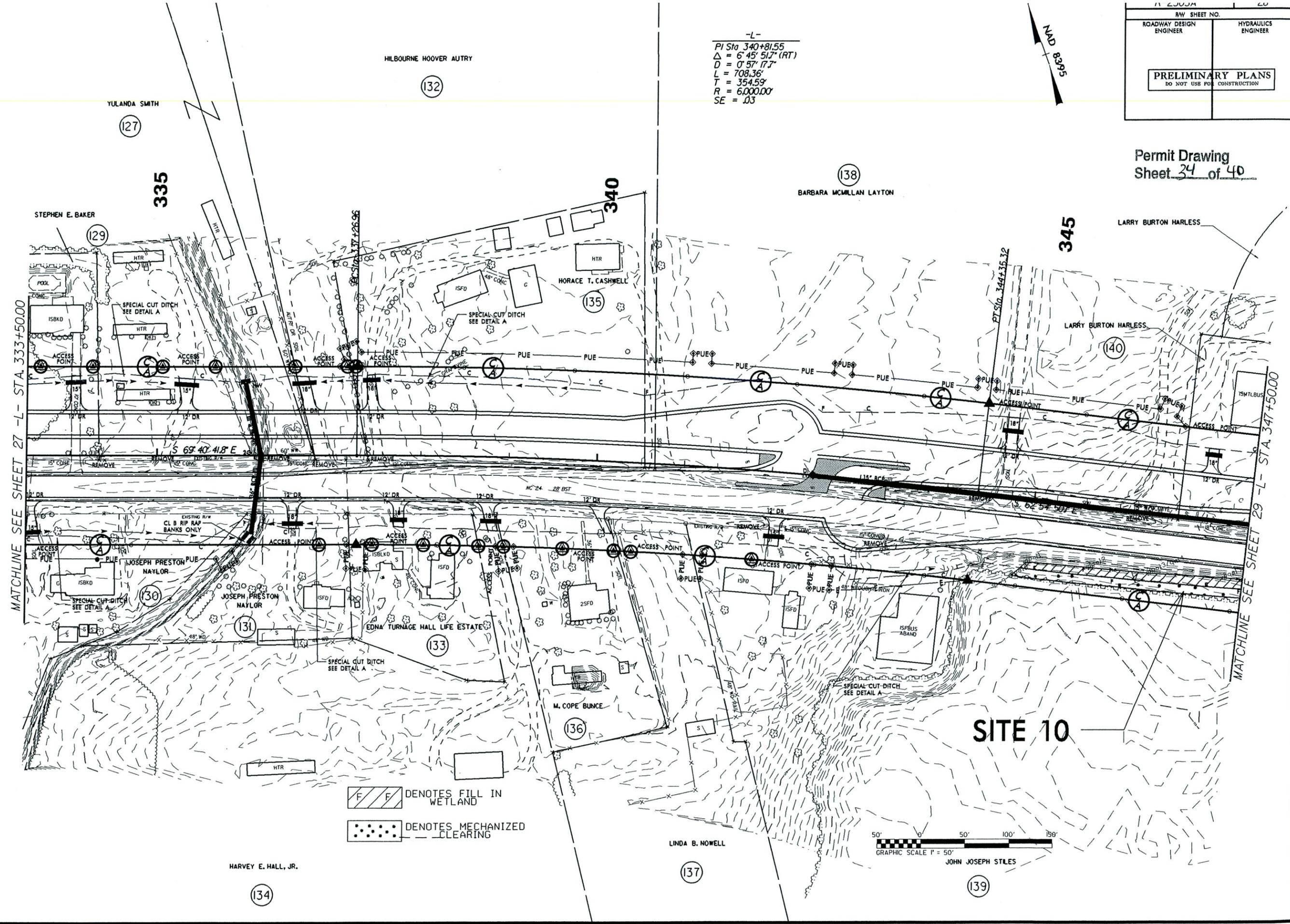
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LUNEDGN\$\$\$\$
SYTIME\$\$\$\$

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NOVEMBER 30, 2010 - R/W REVISIONS - REVISED PUE ON PARCELS 131 THROUGH 139, ADDED TCE TO PARCEL 139, ELIMINATED TCE FROM PARCEL 138.

REVISIONS

8/17



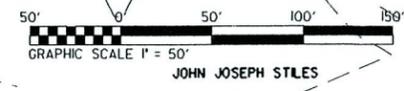
F DENOTES FILL IN WETLAND
••••• DENOTES MECHANIZED CLEARING

-L-
 PI Sta 340+81.55
 $\Delta = 6' 45'' 51.7''$ (RT)
 $D = 0' 57'' 17.7''$
 $L = 708.36'$
 $T = 354.59'$
 $R = 6,000.00'$
 $SE = .03$



ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
 Sheet 34 of 40



SITE 10

RDW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 36 of 40

LEVIE E. JOHNSON

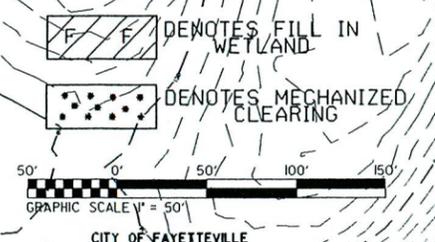
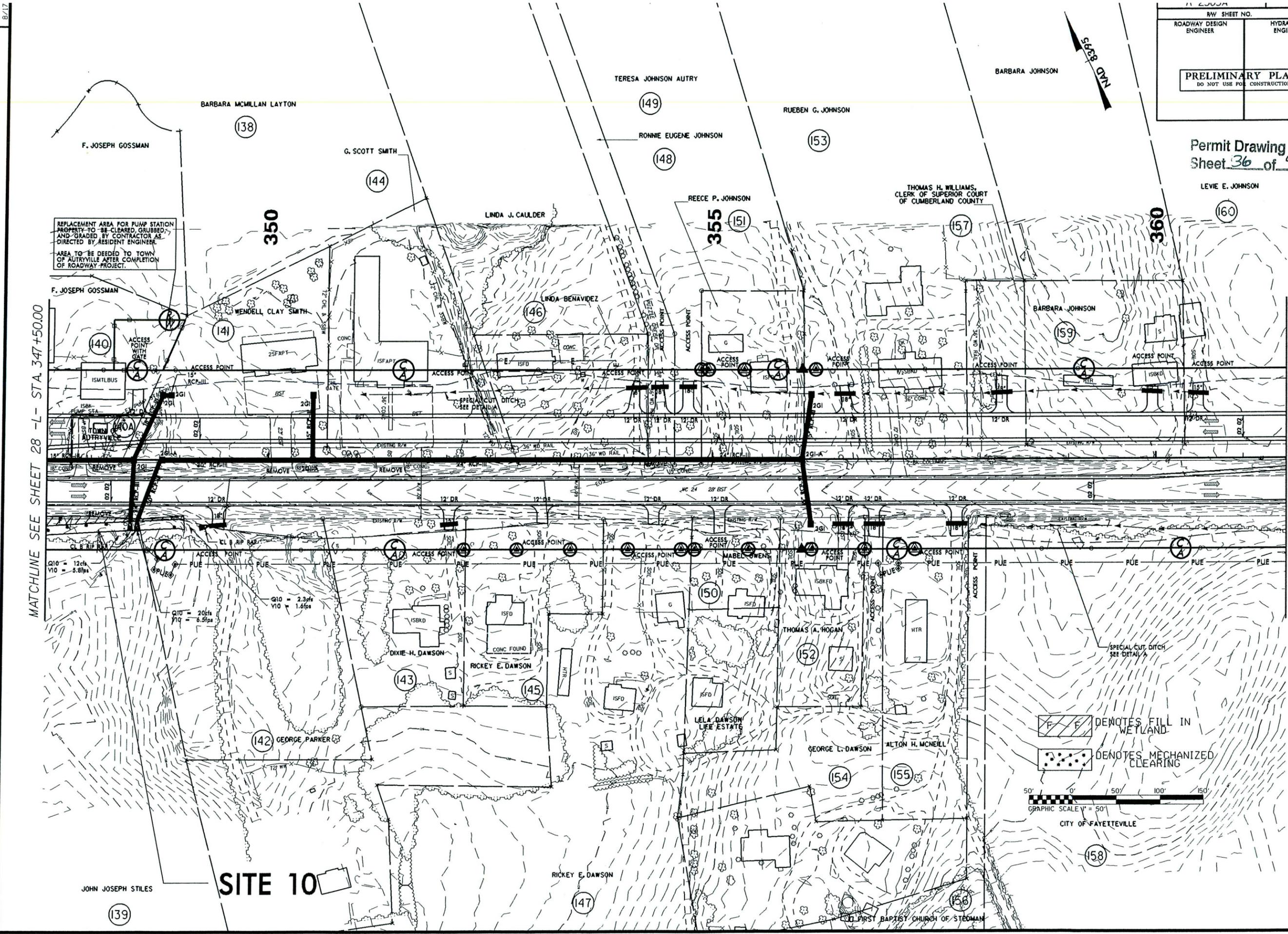


REPLACEMENT AREA FOR PUMP STATION
PROPERTY TO BE CLEARED, GRUBBED,
AND GRADED BY CONTRACTOR AS
DIRECTED BY RESIDENT ENGINEER.
AREA TO BE DEEDED TO TOWN
OF AURYVILLE AFTER COMPLETION
OF ROADWAY PROJECT.

MATCHLINE SEE SHEET 28 - L - STA. 347+50.00

MATCHLINE SEE SHEET 30 - L - STA. 361+50.00

NOVEMBER 30, 2010 - R/W REVISIONS - REVISED PUE ON PARCEL 142. ELIMINATED PUE FROM PARCEL 139.



SITE 10

2/13/2012
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SYSTEM *****

8/17

RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 38 of 40

PROPERTY OWNERS
NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
14	JOSEPH P. RIDDLE, III	P.O. BOX 53729 FAYETTEVILLE, NC 28305
15	PREMIUM STANDARD FARMS	623 SOUTHEAST Blvd. CLINTON, NC 28328
16	DONALD CULBRETH	427 HILLSBORO St. STEDMAN, NC 28391
	PROGRESS ENERGY (EASEMENT) (CAROLINA POWER & LIGHT)	P.O. BOX 1551 CPB-4C4 RALEIGH, NC 27602
20	CANDACE JO CARTER	4160 PLEASANT VIEW DR. FAYETTEVILLE, NC 28301
31	RICHARD R. ALLEN, Jr.	6044 CLINTON RD. STEDMAN, NC 28391
43	DWIGHT KIM JOHNSON	3102 AUDUBON PLACE WILSON, NC 27896
44	STACY R. CARR, III	211 OLD STAGE RD. AUTRYVILLE, NC 28318
56	ROBERT E. OLIVER	6644 CLINTON RD. STEDMAN, NC 28391

NCDOT
DIVISION OF HIGHWAYS
CUMBERLAND COUNTY
PROJECT: 34416.1.1 (R-2303A)
STEDMAN
NC 24 FROM SR 1006
TO SR 1853
SHEET OF 2/16/11

PROPERTY OWNERS
NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
86	DOUGLAS BRYANT	P.O. BOX 513 STEDMAN, NC 28391
104	DEARL L. BUNCE	414 GLENWOOD DR. LEXINGTON, NC 27292
113	HENRY E. JONES	8321 CLINTON RD. STEDMAN, NC 28391
114	WILEY DAVID HUNNICUTT, Sr.	8321 CLINTON RD. STEDMAN, NC 28391
139	JOHN JOSEPH STILES	102 COHARIE DR. CLINTON, NC 28328

NCDOT
DIVISION OF HIGHWAYS
CUMBERLAND COUNTY
PROJECT: 34416.1.1 (R-2303A)
STEDMAN
NC 24 FROM SR 1006
TO SR 1853
SHEET OF 2/16/11

REVISIONS

8/17/11
SYNTHESIS
CUMBERLAND COUNTY
STEDMAN
NC 24 FROM SR 1006
TO SR 1853

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	69+45 to 70+63-L-RT.	Fill						0.16				
	70+93 to 72+81-L-RT	Fill						0.11				
2	73+00 to 85+00-L-	Fill	4.44			0.53						
3	ELIMINATED											
4	131+57 to 133+50-L- RT	Fill						0.18				
5	167+09 to 168+51-L- RT	Fill	0.04			0.03						
6	178+97 to 179+07-L- RT	Fill						0.02				
7	200+65 to 202+44-L-	Fill						0.24				
8	* 296+63 to 304+66-L-	Fill	2.03		0.02	0.20						
	300+06 to 305+40-L-	2*(1@72"&1@48")						0.08		531.00		
	304+40 to 304+51-L- LT	Bank Stabilization						<0.01	<0.01	41.00	27.00	
TOTALS:			6.51		0.02	0.76		0.79	<0.01	572	27	

Site 1, 4 and 7 are Pond surface water impacts.

*Site 8 Wetland sta. 296+63 -L- impact shown as a total take due to ditch. Additional impact outside of ditch is 0.02acres. Also, there will be 294 ft of stream relocation.

Permit Drawing
 Sheet 39 of 40
 Revised 7/23/12

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

CUMBERLAND COUNTY
 WBS - 34416.1.1 (R-2303A)

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
9	321+92 to 322+64-L- RT	Fill	0.07		<0.01	0.02						
	*321+58 to 322+98-L-LT	Fill	0.07		0.02	0.03						
	322+10 -L- RT	36" RCP					0.01					
	322+10-L- RT	Bank Stablization					<0.01					
10	344+83 to 349+06-L- RT	Fill	0.08			0.10						
Page Total:			0.22		0.02	0.15		0.01				
TOTALS:			6.73		0.04	0.91		0.80	<0.01	572	27	0

* Site 9 Wetland sta. 321+80 -L-LT. impact shown as total take due to ditch. Additional impact outside of ditch is 0.01acres.

Permit Drawing
 Sheet 40 of 40
 Revised 7/23/12

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

 CUMBERLAND COUNTY
 WBS - 34416.1.1 (R-2303A)

 SHEET 7/23/2012

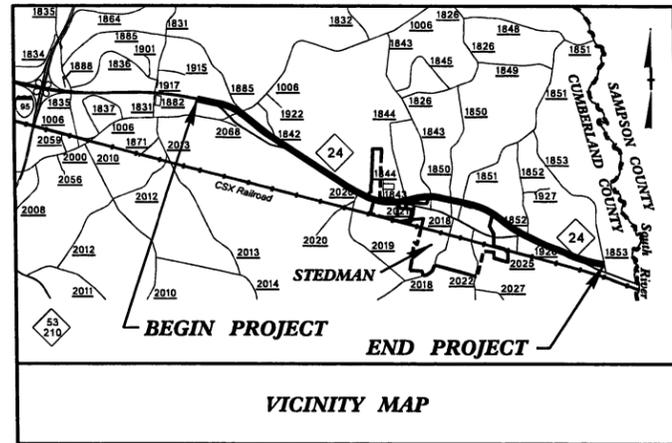
09/08/09

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2303A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34416.1.1	STPNHF-F-8-2(17)	P.E.	
34416.2.2		RW, UTIL.	

TIP PROJECT: R-2303A



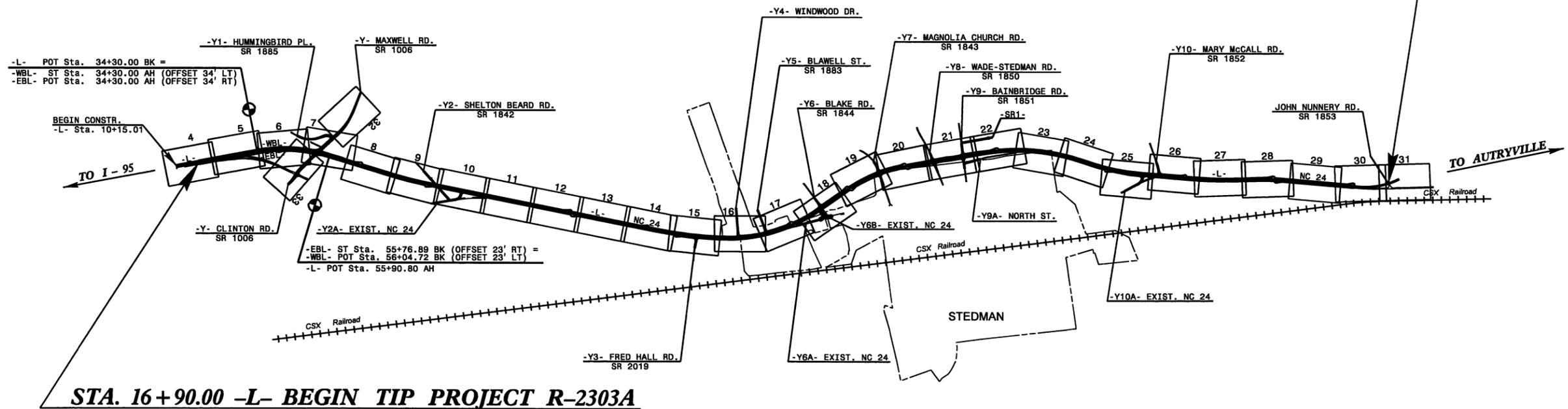
CUMBERLAND COUNTY

LOCATION: NC 24 FROM WEST OF SR 1006 (MAXWELL RD./ CLINTON RD.) TO SR 1853 (JOHN NUNNERY RD.)

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



STA. 376+28.96 -L- END TIP PROJECT R-2303A



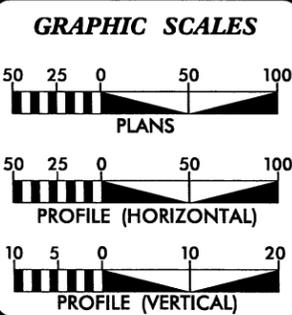
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF STEDMAN

THIS IS A LIMITED AND PARTIAL CONTROL OF ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2011 =	19,264
ADT 2031 =	30,144
DHV =	11 %
D =	65 %
T =	8 % *
V =	60 MPH
FUNC. CLASS =	EXPY TYPE II
* TTST 5% DUAL 3%	STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2303A	=	6.807 MILES
TOTAL LENGTH TIP PROJECT R-2303A	=	6.807 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: October 15, 2010	GARY LOVERING, PE PROJECT ENGINEER
LETTING DATE: October 16, 2012	RICK DECOLA, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

22-SEP-2011 15:28
r:\roadway\proj\R2303a_rdy-tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

01/20/11

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	○
Property Corner	⊠
Property Monument	⊠
Parcel/Sequence Number	Ⓜ
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	⊠
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-----
Proposed Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	⊙
Well	⊙
Small Mine	⊗
Foundation	⊠
Area Outline	⊠
Cemetery	⊠
Building	⊠
School	⊠
Church	⊠
Dam	⊠

HYDROLOGY:

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

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	-----
Switch	-----
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage / Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----
Proposed Permanent Easement with Iron Pin and Cap Marker	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Wheel Chair Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊙
Pavement Removal	-----

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	-----
Paved Ditch Gutter	-----
Storm Sewer Manhole	-----
Storm Sewer	-----

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	-----
H-Frame Pole	-----
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

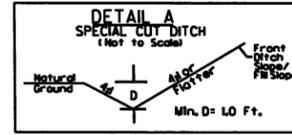
Utility Pole	-----
Utility Pole with Base	-----
Utility Located Object	-----
Utility Traffic Signal Box	-----
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	-----
AG Tank; Water, Gas, Oil	-----
U/G Test Hole (S.U.E.*)	-----
Abandoned According to Utility Records	-----
End of Information	-----

8/17/99

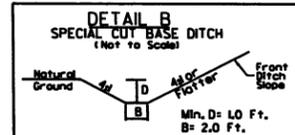
DITCH DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2303A	2-U
RW SHEET NO.	
HYDRAULICS ENGINEER	

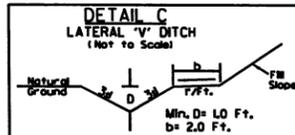
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



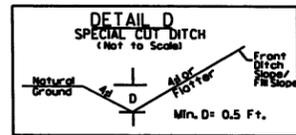
FROM STA. 21+50 TO STA. 28+40 -L- LT.
 FROM STA. 53+70 TO STA. 60+00 -L- LT.
 FROM STA. 64+50 TO STA. 70+76 -L- LT.
 FROM STA. 107+00 TO STA. 112+33 -L- LT.
 FROM STA. 112+33 TO STA. 114+00 -L- LT.
 FROM STA. 115+00 TO STA. 117+90 -L- LT.
 FROM STA. 117+90 TO STA. 120+50 -L- LT.
 FROM STA. 121+00 TO STA. 124+50 -L- LT.
 FROM STA. 125+50 TO STA. 130+00 -L- LT.
 FROM STA. 131+50 TO STA. 133+70 -L- LT.
 FROM STA. 134+50 TO STA. 148+00 -L- LT.
 FROM STA. 148+00 TO STA. 152+00 -L- LT.
 FROM STA. 175+00 TO STA. 178+00 -L- LT.
 FROM STA. 179+00 TO STA. 181+00 -L- LT.
 FROM STA. 182+50 TO STA. 194+00 -L- LT.
 FROM STA. 210+00 TO STA. 215+00 -L- LT.
 FROM STA. 223+00 TO STA. 224+05 -L- LT.
 FROM STA. 241+50 TO STA. 248+50 -L- LT.
 FROM STA. 301+00 TO STA. 305+00 -L- LT.
 FROM STA. 309+50 TO STA. 310+00 -L- LT.
 FROM STA. 311+00 TO STA. 316+00 -L- LT.
 FROM STA. 316+50 TO STA. 322+00 -L- LT.
 FROM STA. 323+50 TO STA. 330+00 -L- LT.
 FROM STA. 330+00 TO STA. 332+50 -L- LT.
 FROM STA. 333+50 TO STA. 335+50 -L- LT.
 FROM STA. 336+50 TO STA. 340+00 -L- LT.
 FROM STA. 351+00 TO STA. 360+50 -L- LT.



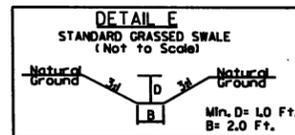
FROM STA. 195+50 TO STA. 209+00 -L- LT.
 FROM STA. 203+50 TO STA. 214+50 -L- RT.



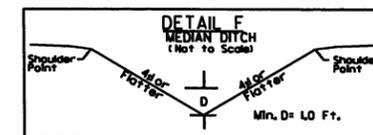
FROM STA. 167+50 TO STA. 174+00 -L- LT.
 FROM STA. 300+50 TO STA. 301+00 -L- LT.
 FROM STA. 236+00 TO STA. 240+50 -L- RT.
 FROM STA. 252+00 TO STA. 258+00 -L- RT.
 FROM STA. 276+50 TO STA. 284+00 -L- RT.



FROM STA. 365+50 TO STA. 367+00 -L- RT.



STA. 124+46 -L- LT.
 STA. 147+98 -L- LT.
 STA. 190+39 -L- LT.
 STA. 215+02 -L- LT.

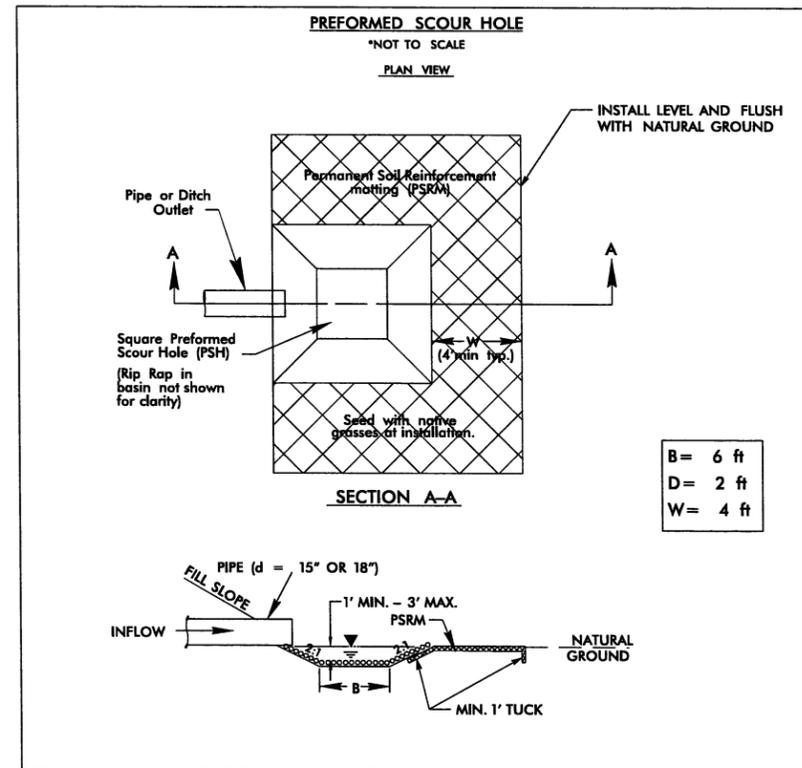


FROM STA. 161+00 TO STA. 162+00 -L- MED.
 FROM STA. 196+00 TO STA. 199+00 -L- MED.
 FROM STA. 211+00 TO STA. 214+00 -L- MED.

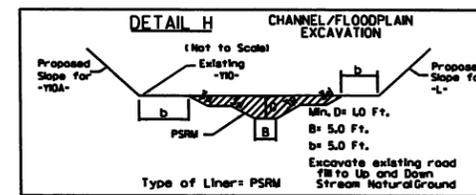


FROM STA. 322+68 TO STA. 323+10 -L- RT.

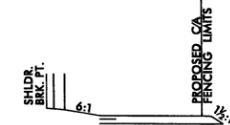
FROM STA. 30+00 TO STA. 33+80 -L- RT.
 FROM STA. 49+00 TO STA. 50+50 -L- RT.
 FROM STA. 52+30 TO STA. 55+00 -L- RT.
 FROM STA. 90+00 TO STA. 96+80 -L- RT.
 FROM STA. 96+92 TO STA. 99+50 -L- RT.
 FROM STA. 107+00 TO STA. 112+80 -L- RT.
 FROM STA. 112+80 TO STA. 115+00 -L- RT.
 FROM STA. 115+50 TO STA. 124+50 -L- RT.
 FROM STA. 129+00 TO STA. 131+00 -L- RT.
 FROM STA. 138+00 TO STA. 148+00 -L- RT.
 FROM STA. 148+00 TO STA. 154+50 -L- RT.
 FROM STA. 155+50 TO STA. 162+00 -L- RT.
 FROM STA. 162+50 TO STA. 165+50 -L- RT.
 FROM STA. 175+00 TO STA. 186+00 -L- RT.
 FROM STA. 187+00 TO STA. 195+00 -L- RT.
 FROM STA. 200+00 TO STA. 203+50 -L- RT.
 FROM STA. 215+00 TO STA. 224+00 -L- RT.
 FROM STA. 225+50 TO STA. 231+00 -L- RT.
 FROM STA. 232+00 TO STA. 236+00 -L- RT.
 FROM STA. 242+00 TO STA. 248+00 -L- RT.
 FROM STA. 250+50 TO STA. 252+00 -L- RT.
 FROM STA. 259+00 TO STA. 267+00 -L- RT.
 FROM STA. 267+00 TO STA. 276+50 -L- RT.
 FROM STA. 289+00 TO STA. 303+00 -L- RT.
 FROM STA. 316+00 TO STA. 322+00 -L- RT.
 FROM STA. 323+00 TO STA. 326+50 -L- RT.
 FROM STA. 327+00 TO STA. 331+00 -L- RT.
 FROM STA. 332+22 TO STA. 335+90 -L- RT.
 FROM STA. 336+21 TO STA. 337+00 -L- RT.
 FROM STA. 343+50 TO STA. 344+27 -L- RT.
 FROM STA. 358+00 TO STA. 361+00 -L- RT.
 FROM STA. 24+50 TO STA. 25+50 -Y- RT.
 FROM STA. 24+22 TO STA. 30+41 -Y- LT.
 FROM STA. 33+11 TO STA. 34+50 -Y- LT.
 FROM STA. 14+00 TO STA. 17+00 -Y4- RT.
 FROM STA. 12+00 TO STA. 13+00 -Y7- RT.
 FROM STA. 14+86 TO STA. 16+00 -Y7- RT.
 FROM STA. 10+00 TO STA. 12+00 -Y8- LT.
 FROM STA. 10+50 TO STA. 11+80 -Y8- RT.
 FROM STA. 14+00 TO STA. 14+50 -Y8- LT.
 FROM STA. 14+00 TO STA. 14+50 -Y8- RT.
 FROM STA. 12+00 TO STA. 13+00 -Y10- RT.
 FROM STA. 11+00 TO STA. 13+50 -DET5- RT.



Sta. 73+23 -L- LT
 Sta. 172+00 -L- RT
 Sta. 24+13 -Y- RT



EST. EXCAVATION = 4000 CU YDS
 EST PSRM = 300 SQ YDS
 305+12 -L- RT.

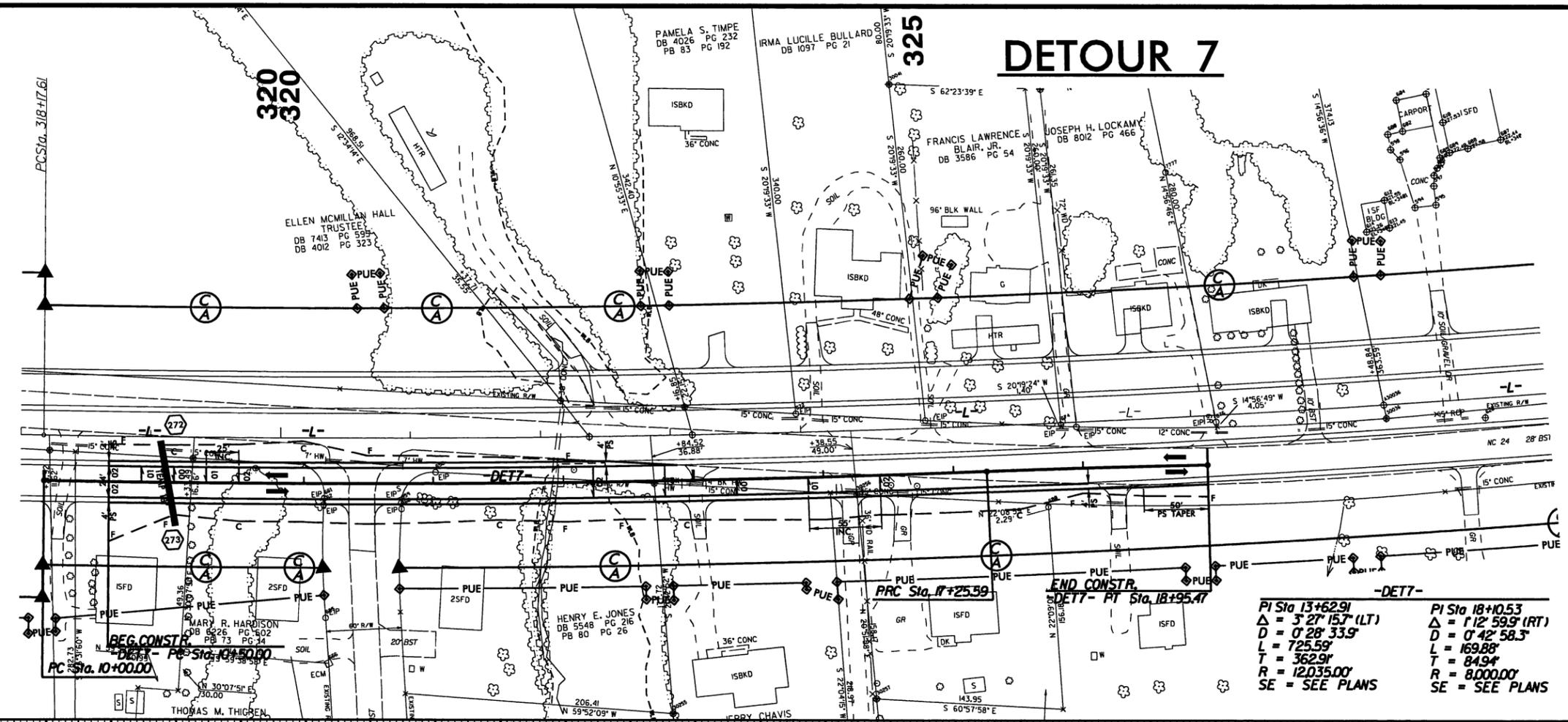


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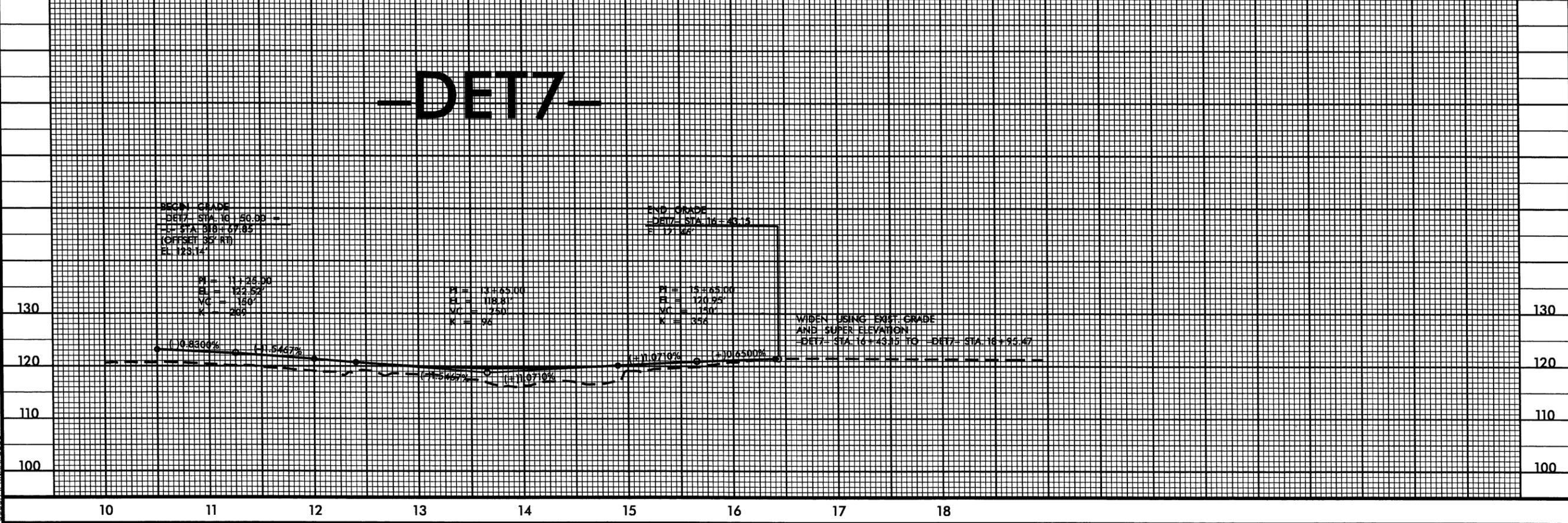
PROJECT REFERENCE NO. R-2303A	SHEET NO. 2-T
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

DETOUR 7



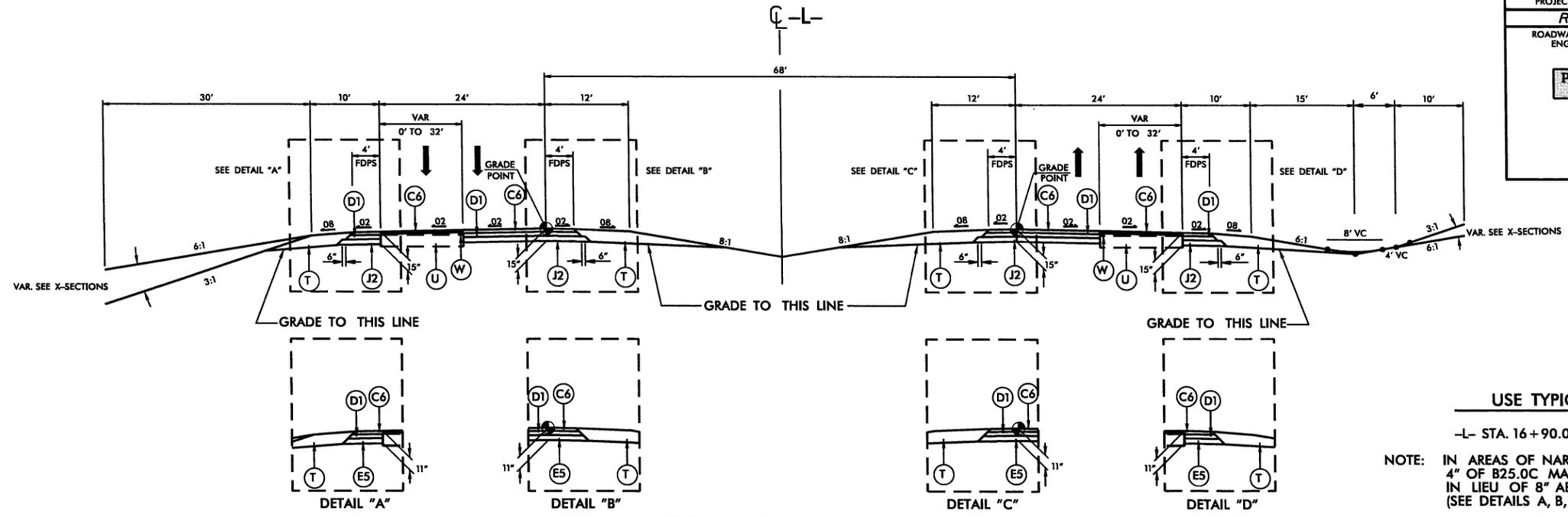
-DET7-	
PI Sta 13+62.91	PI Sta 18+10.53
$\Delta = 3' 27' 15.7''$ (LT)	$\Delta = 1' 12' 59.9''$ (RT)
$D = 0' 28' 33.9''$	$D = 0' 42' 58.3''$
$L = 725.59'$	$L = 169.88'$
$T = 362.9'$	$T = 84.9'$
$R = 12035.00'$	$R = 8000.00'$
SE = SEE PLANS	SE = SEE PLANS

-DET7-



REVISIONS

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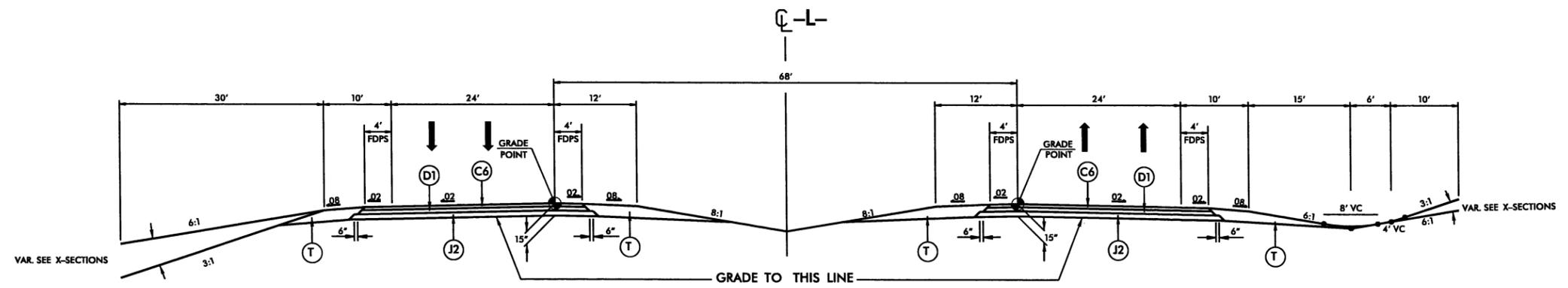
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

-L- STA. 16+90.00 TO -L- STA. 25+50.00

NOTE: IN AREAS OF NARROW WIDENING (6' OR LESS) 4" OF B25.0C MAY BE USED IN LIEU OF 8" ABC. (SEE DETAILS A, B, C, & D)

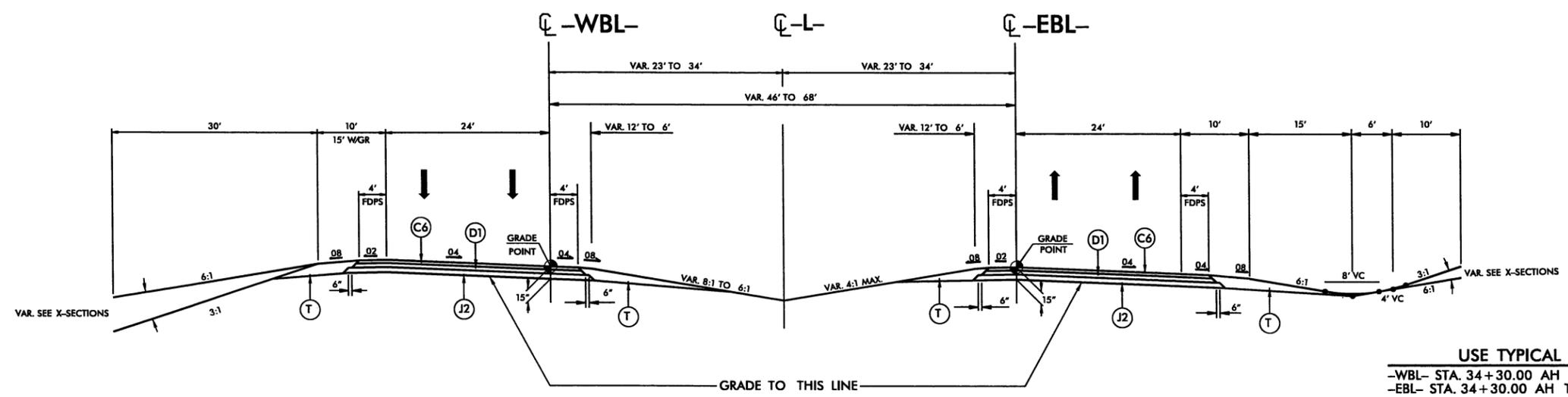
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	VAR. SF9.5A
C4	3.0" S9.5B
C5	VAR. S9.5B
C6	3.0" S9.5C
C7	VAR. S9.5C
D1	4.0" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0B
E2	4.5" B25.0B
E3	5.0" B25.0B
E4	VAR. B25.0B
E5	4.0" B25.0C
E6	VAR. B25.0C
J1	6.0" ABC
J2	8.0" ABC
P	PRIME COAT
R	1'-6" CURB AND GUTTER
U	EXIST. PAVEMENT
T	EARTH MATERIAL
W	WEDGING
Y	6" CONC. SEE SPEC. DET.



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

-L- STA. 25+50.00 TO -L- STA. 34+30.00 BK



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-WBL- STA. 34+30.00 AH TO -WBL- STA. 56+04.72 BK
-EBL- STA. 34+30.00 AH TO -EBL- STA. 55+76.89 BK

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100

105

110

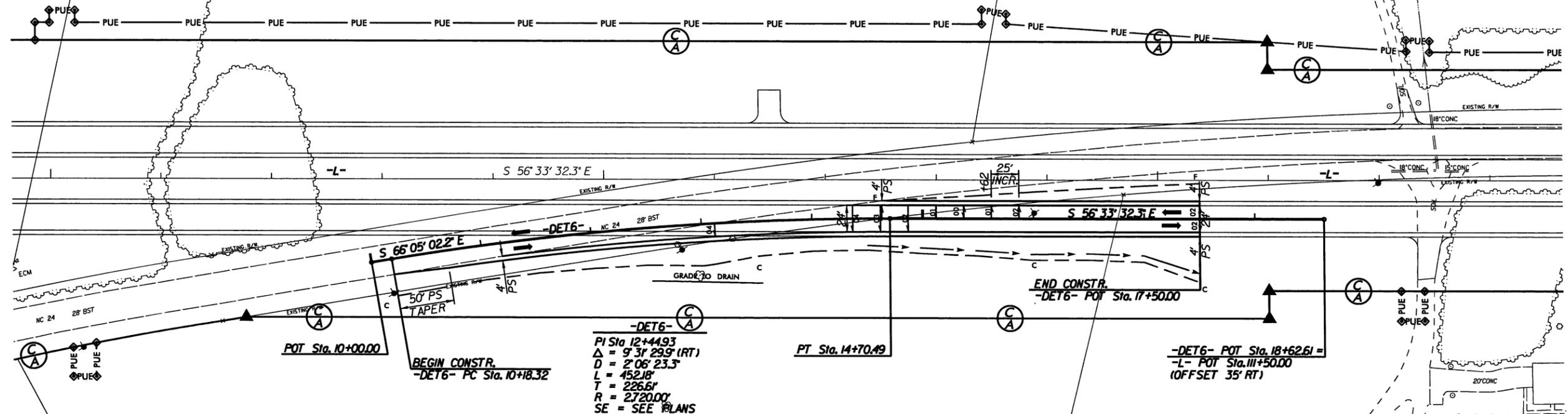
B
ABAND

J. O. CARTER, JR.
DB 2933 PG 75

DETOUR 6

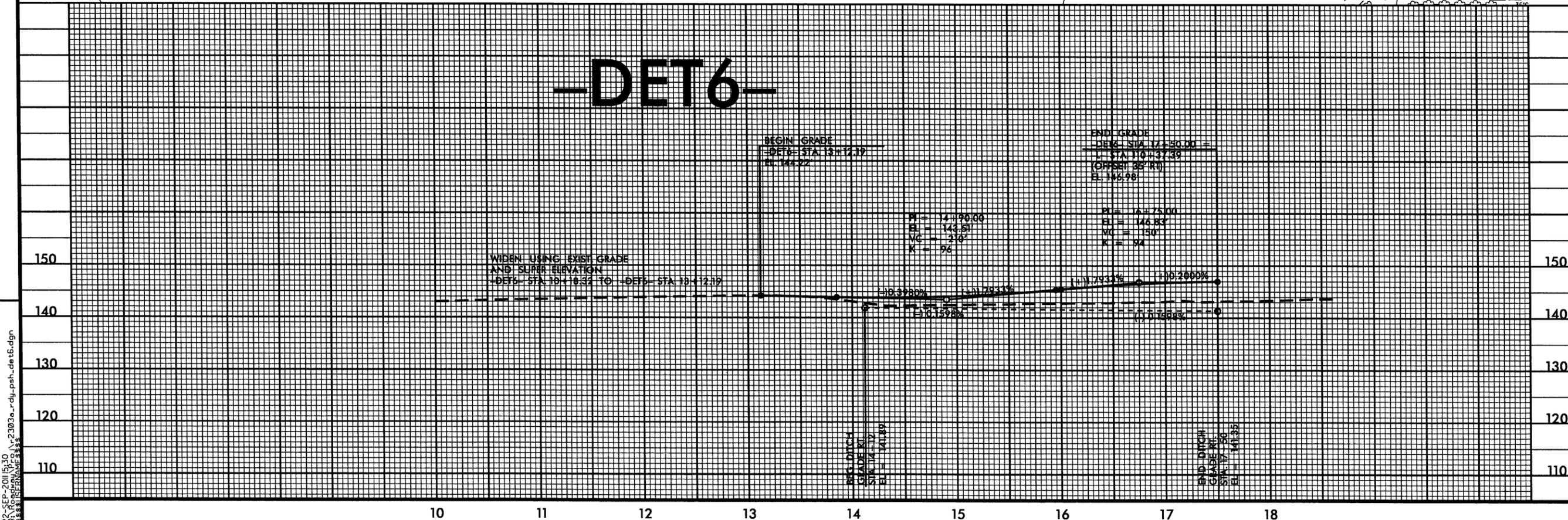


PROJECT REFERENCE NO. R-2303A		SHEET NO. 2-S	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			



REVISIONS

-DET6-



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-DET4-

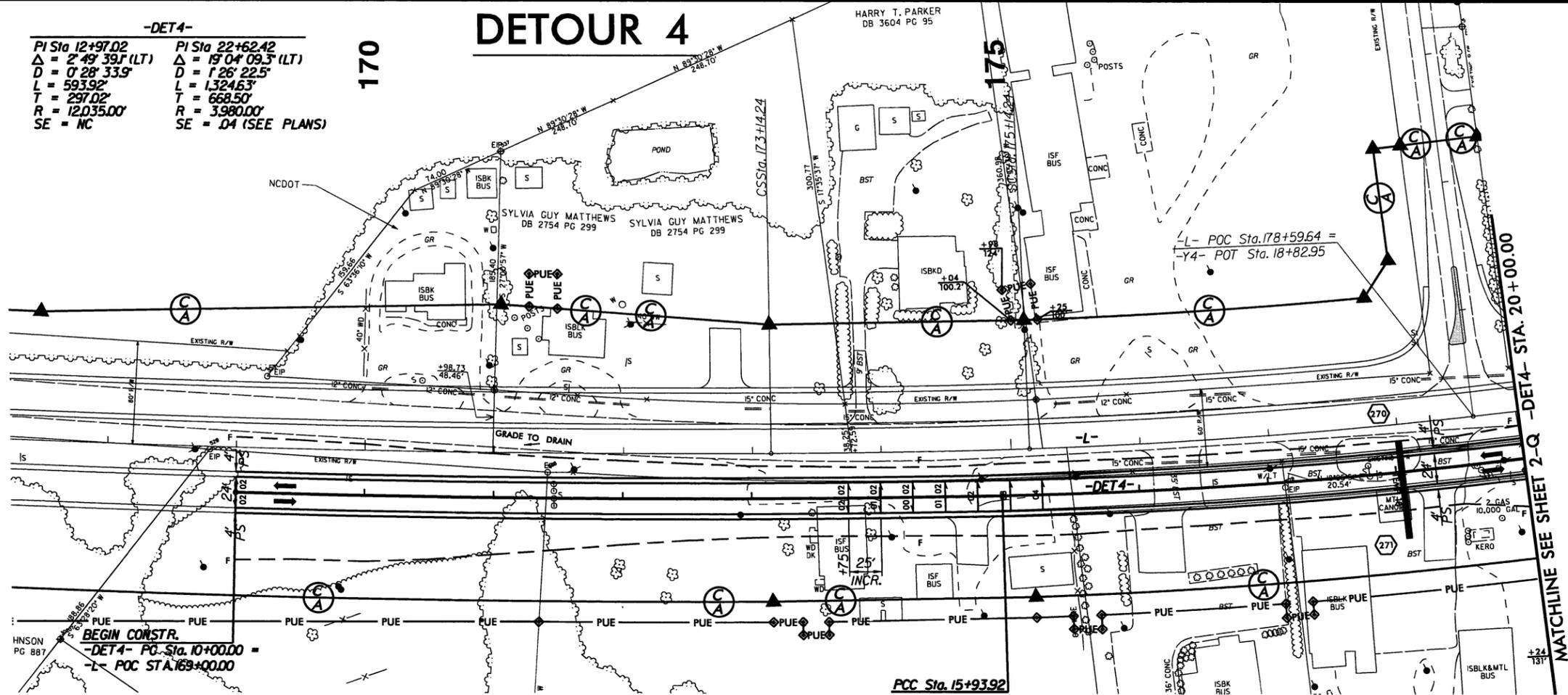
PI Sta 12+97.02	PI Sta 22+62.42
$\Delta = 2^{\circ}49'39.1(LT)$	$\Delta = 1^{\circ}04'09.3(LT)$
D = 0'28'33.5"	D = 1'26'22.5"
L = 593.92'	L = 1324.63'
T = 297.02'	T = 668.50'
R = 12035.00'	R = 3980.00'
SE = NC	SE = .04 (SEE PLANS)

170

DETOUR 4

HARRY T. PARKER
DB 3604 PG 95

PROJECT REFERENCE NO. R-2303A	SHEET NO. 2-P
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



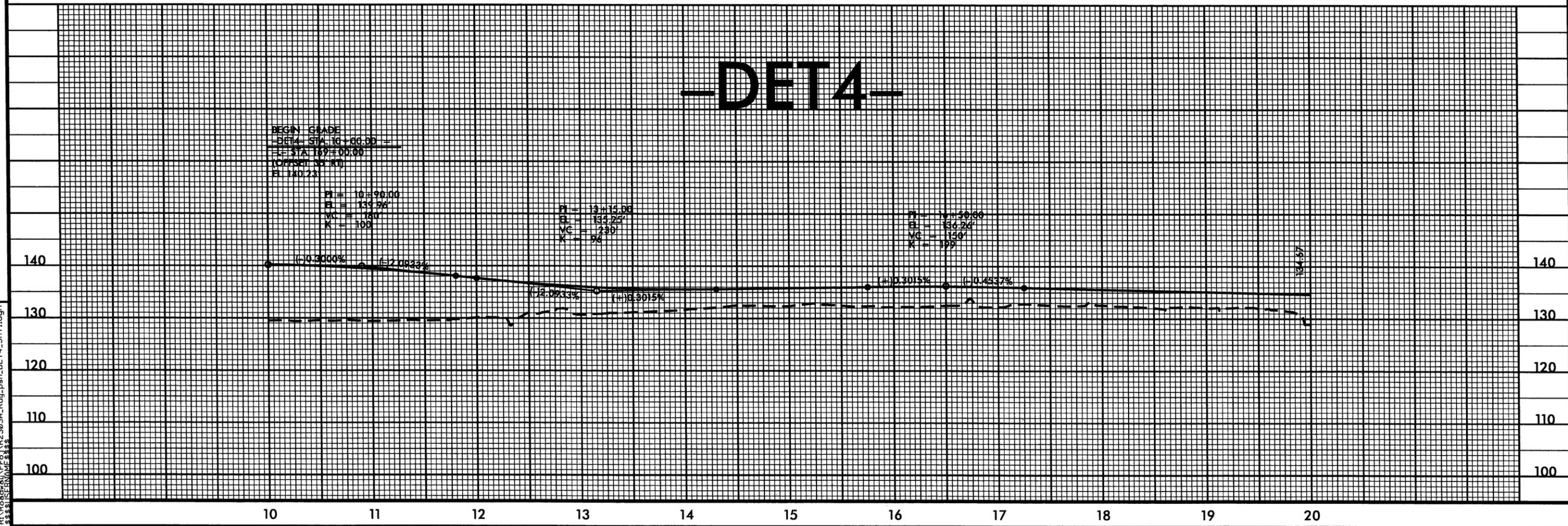
BEGIN CONSTR.
-DET4- PG Sta. 10+00.00 =
-L- POC STA. 169+00.00

PCC Sta. 15+93.92

MATCHLINE SEE SHEET 2-Q -DET4- STA. 20+00.00

REVISIONS

-DET4-



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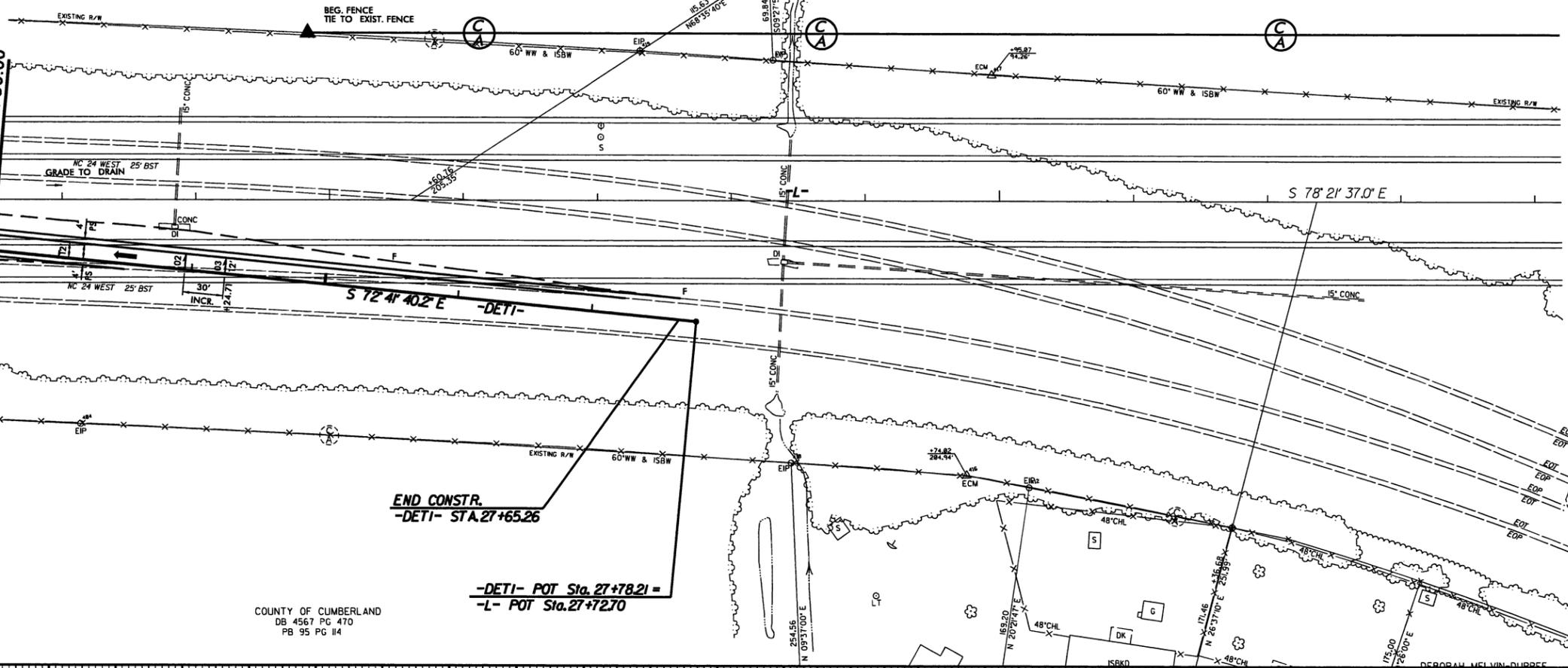
8/17/99

COUNTY OF CUMBERLAND
DB 4567 PG 469
PB 93 PG 90

DETOUR 1

PROJECT REFERENCE NO. R-2303A	SHEET NO. 2-M
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

MATCHLINE SEE SHEET 2-L -DETI- STA. 22 + 50.00



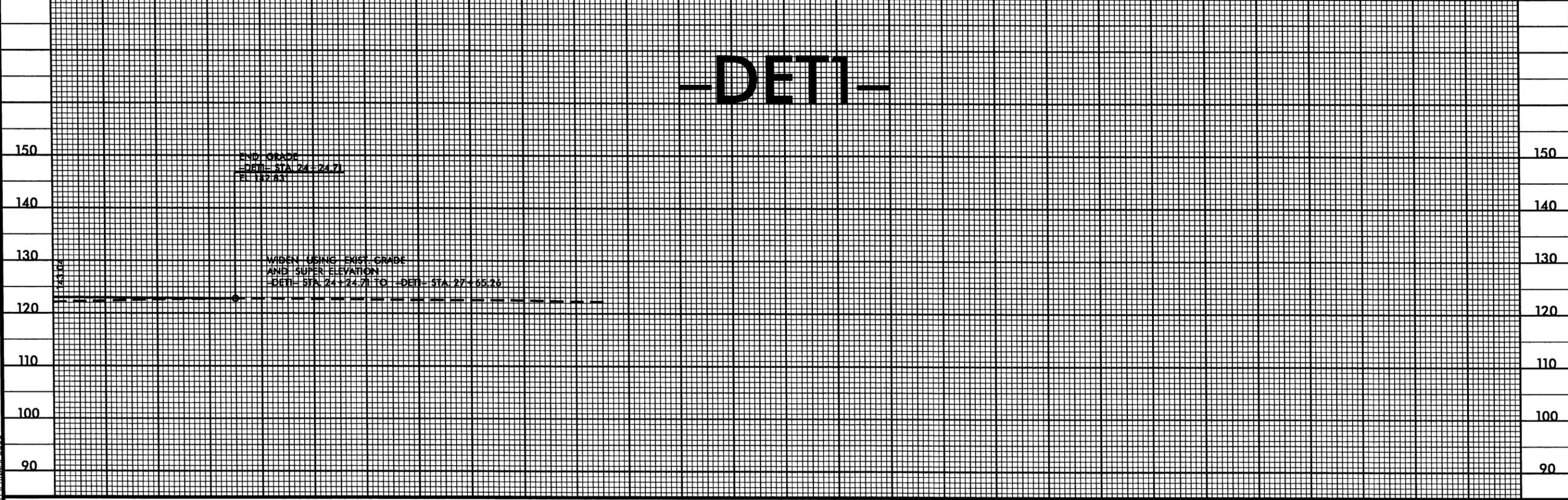
REVISIONS

END CONSTR.
-DETI- STA. 27 + 65.26

-DETI- POT Sta. 27 + 78.21 =
-L- POT Sta. 27 + 72.70

COUNTY OF CUMBERLAND
DB 4567 PG 470
PB 95 PG 114

-DETI-



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23 24 25 26 27

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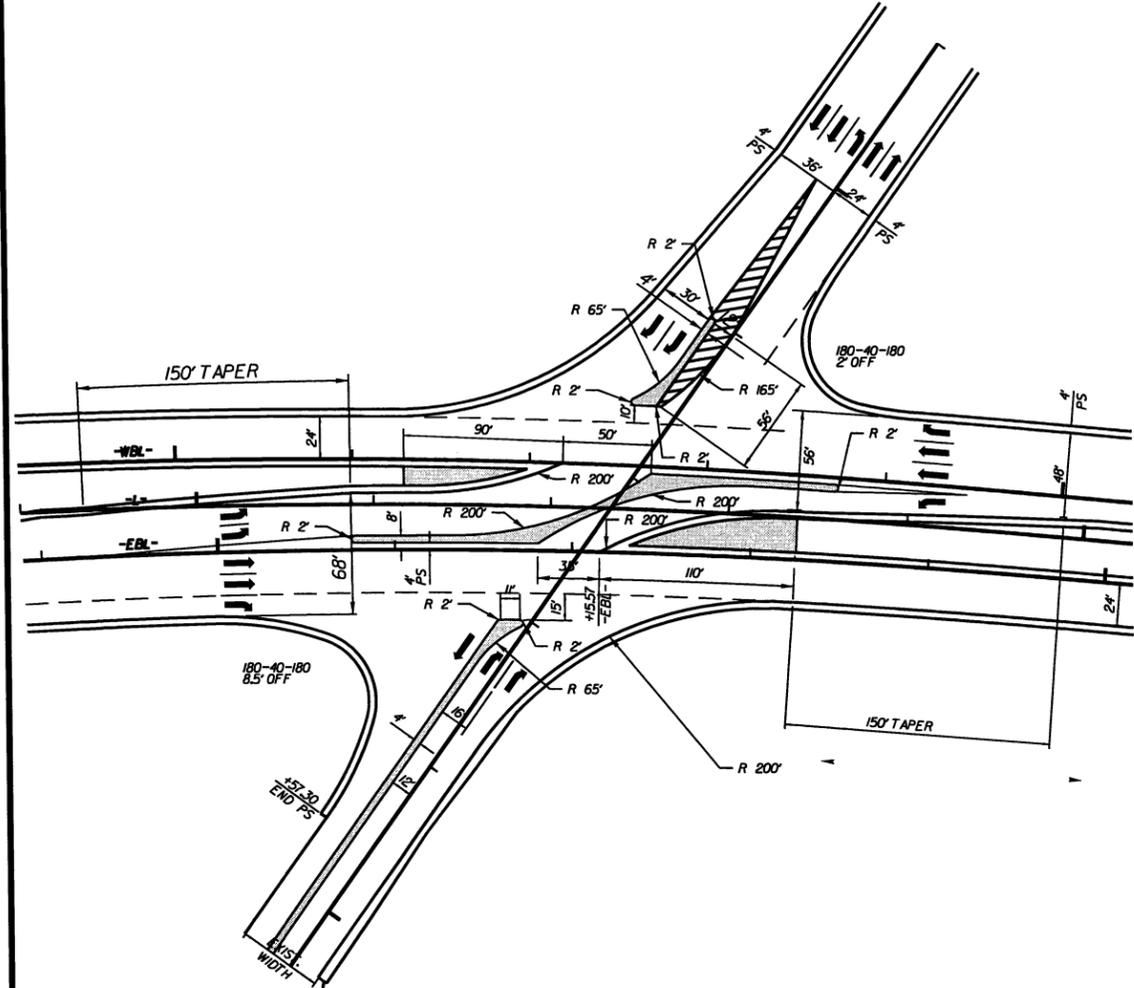
REVISIONS

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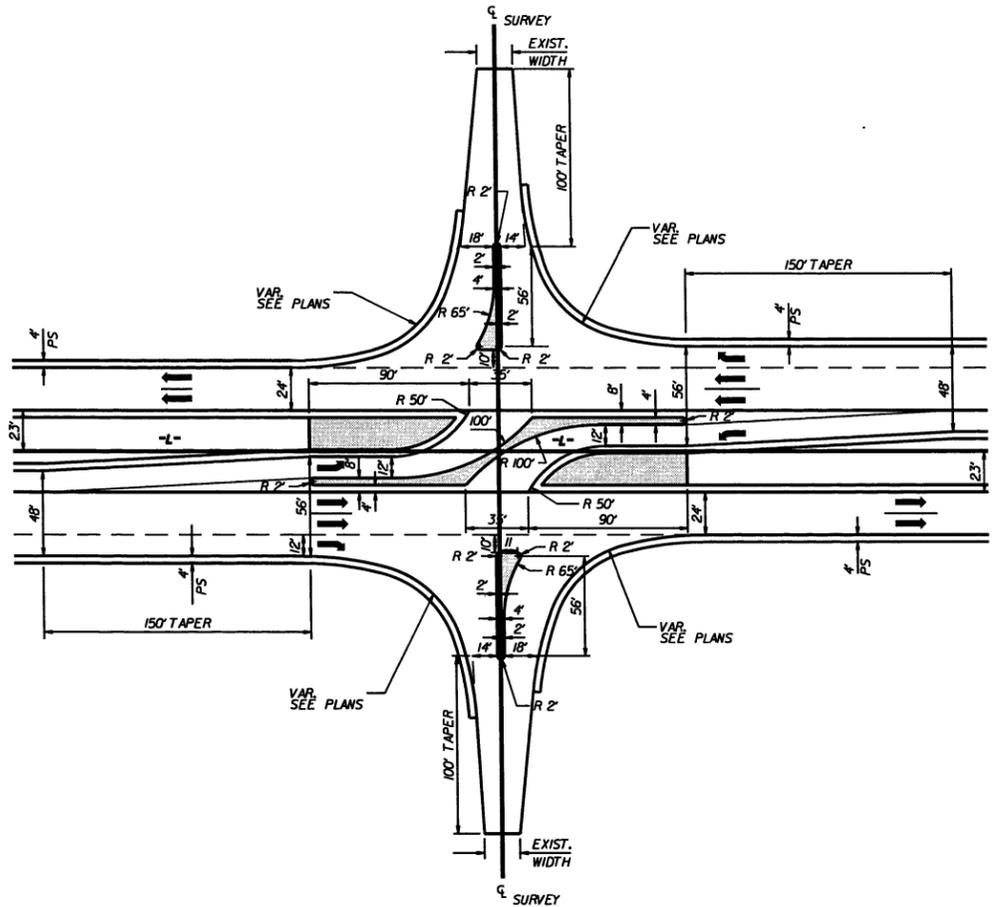
PROJECT REFERENCE NO. R-2303A	SHEET NO. 2-J
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

 5" MONOLITHIC CONCRETE ISLAND (KEYED-IN)

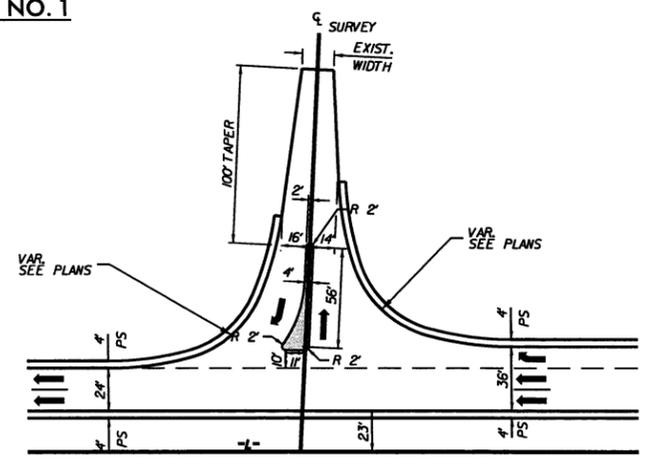
NOTE: ALL DIMENSIONS ARE TYPICAL UNLESS OTHERWISE SHOWN IN THE PLANS.



INTERSECTION DETAIL NO. 1
-Y-

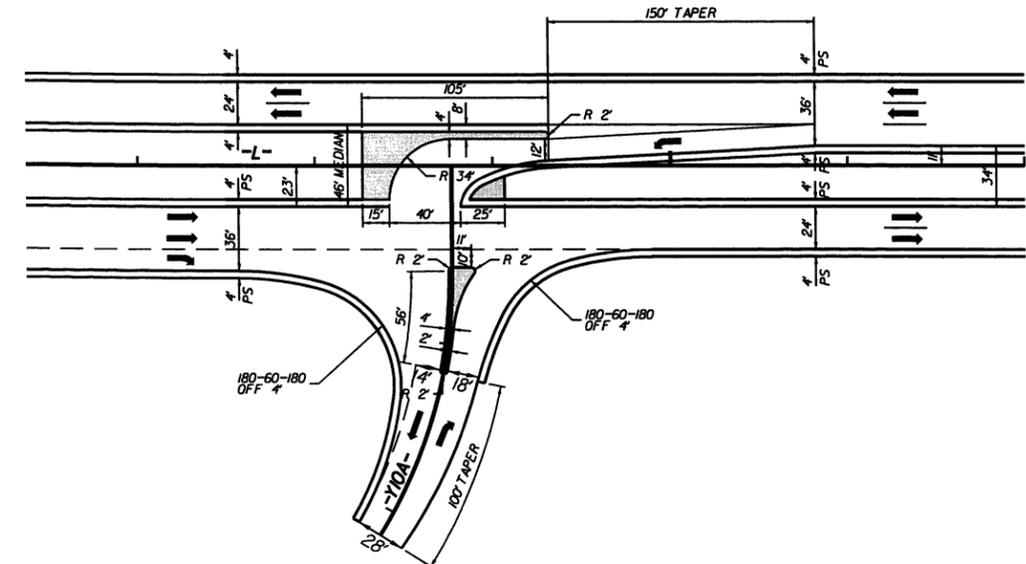


INTERSECTION DETAIL NO. 3
-Y7-
-Y8-



INTERSECTION DETAIL NO. 2

- Y2A-
- Y3-
- Y4-
- Y5-
- Y6-
- Y6B-
- Y9-
- Y10-

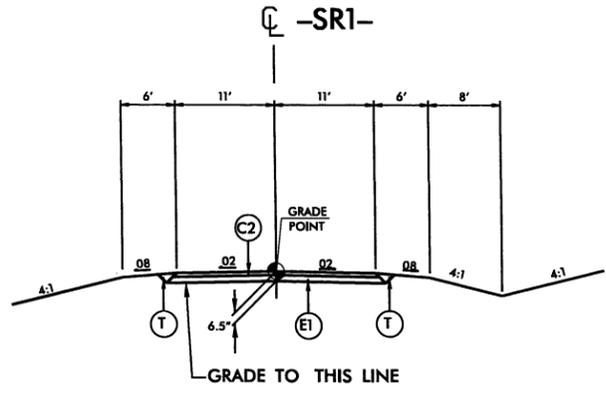


INTERSECTION DETAIL NO. 4
-Y10A-

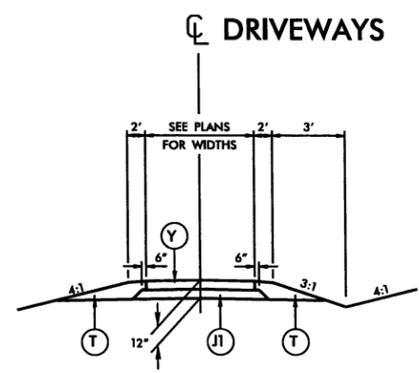
6/2/99

PROJECT REFERENCE NO. R-2303A	SHEET NO. 2-H
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

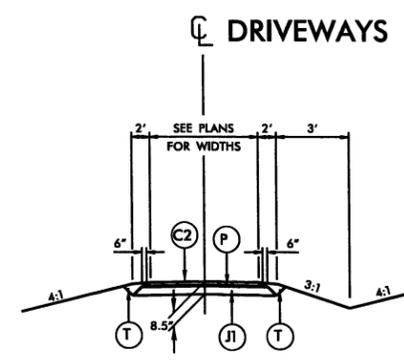
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	VAR. SF9.5A
C4	3.0" S9.5B
C5	VAR. S9.5B
C6	3.0" S9.5C
C7	VAR. S9.5C
D1	4.0" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0B
E2	4.5" B25.0B
E3	5.0" B25.0B
E4	VAR. B25.0B
E5	4.0" B25.0C
E6	VAR. B25.0C
J1	6.0" ABC
J2	8.0" ABC
P	PRIME COAT
R	1'-6" CURB AND GUTTER
U	EXIST. PAVEMENT
T	EARTH MATERIAL
W	WEDGING
Y	6" CONC. SEE SPEC. DET.



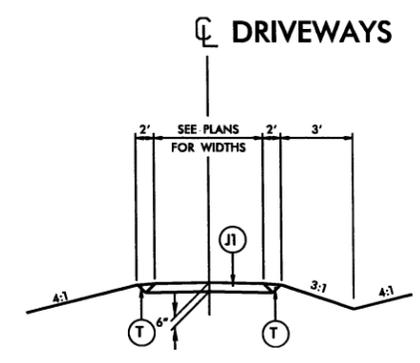
TYPICAL SECTION NO. 23
USE TYPICAL SECTION NO. 23
 -SR1- STA. 10+09.12 TO -SR1- STA. 18+32.83



TYPICAL SECTION NO. 24
USE TYPICAL SECTION NO. 24
 CONCRETE DRIVEWAYS



TYPICAL SECTION NO. 25
USE TYPICAL SECTION NO. 25
 ASPHALT DRIVEWAYS



TYPICAL SECTION NO. 26
USE TYPICAL SECTION NO. 26
 GRAVEL DRIVEWAYS

22-SEP-2011 15:29
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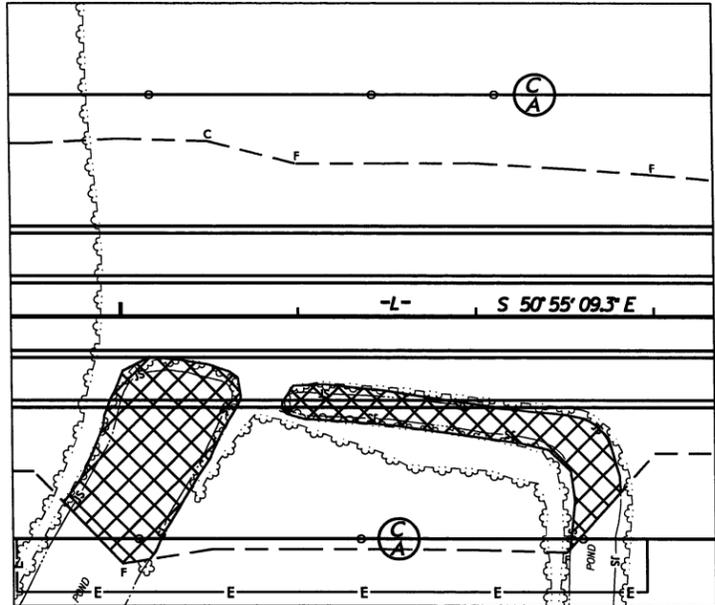
PROJECT REFERENCE NO.	SHEET NO.
R-2303A	2-1
RW SHEET NO.	

UNDERCUT DETAILS

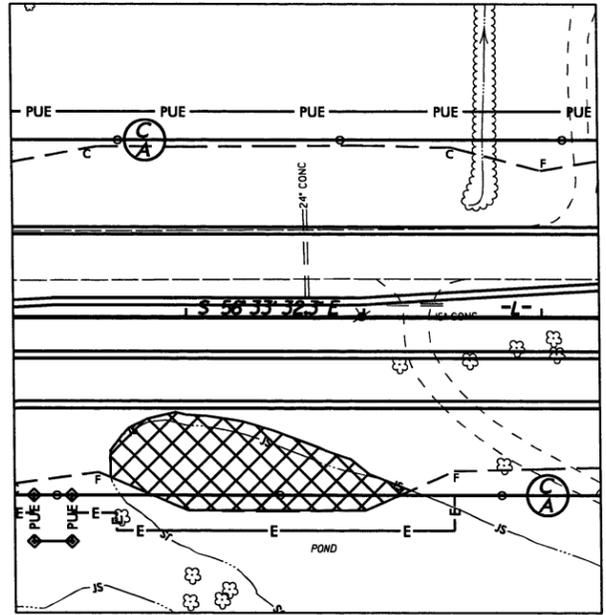
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

 UNDERCUT AREA

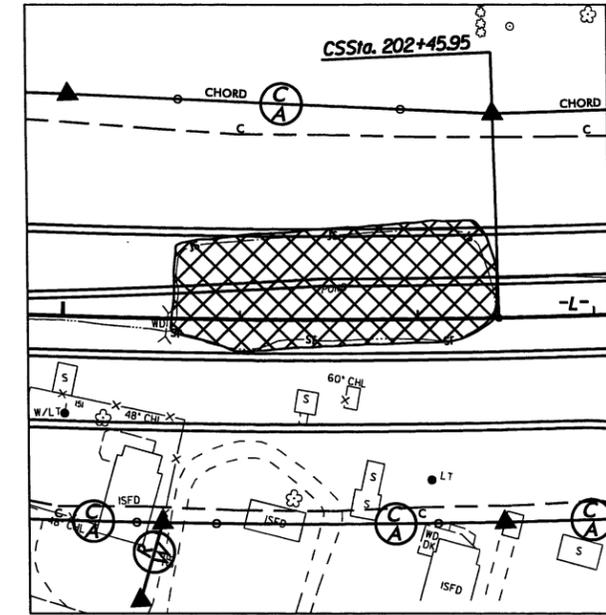
UNDERCUT SHOULD BE MADE TO A DEPTH OF 3 FOOT BELOW SUBGRADE OR TO COMPETENT MATERIAL, WHICHEVER IS LESS.



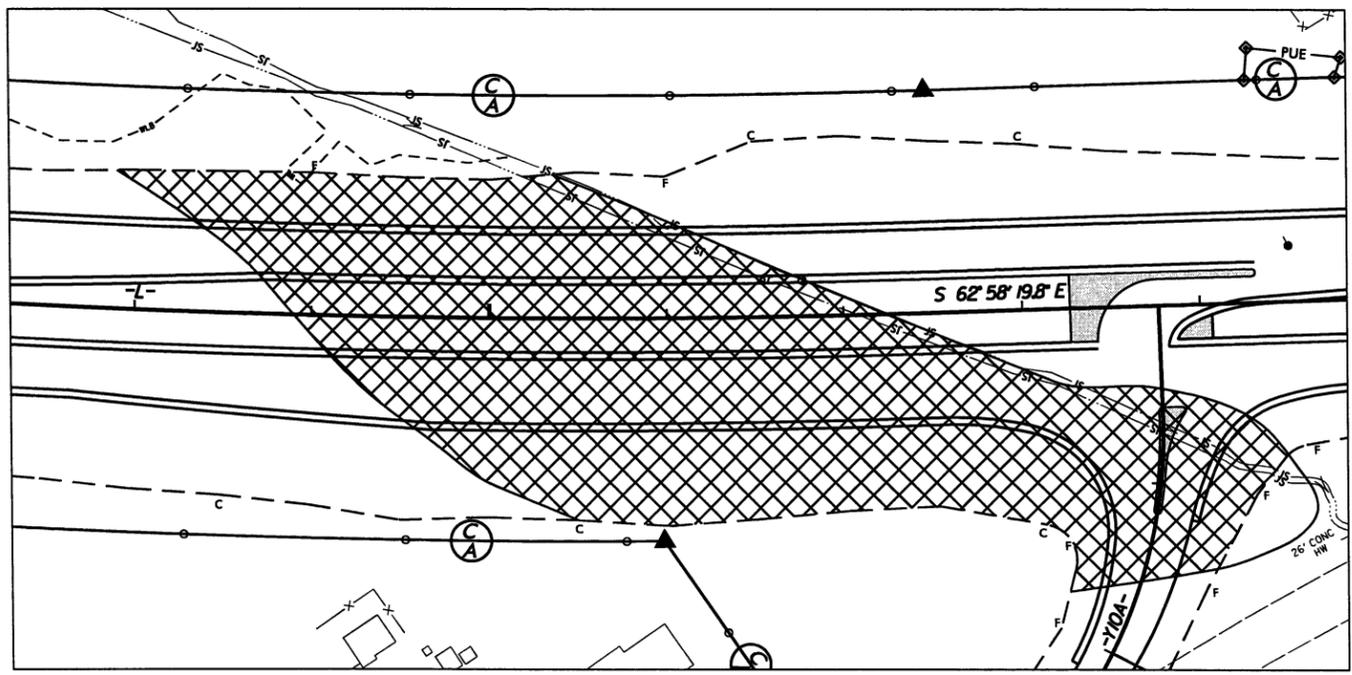
DETAIL NO. 1
 -L- STA. 69+75 TO -L- STA. 70+70
 -L- STA. 70+90 TO -L- STA. 72+80



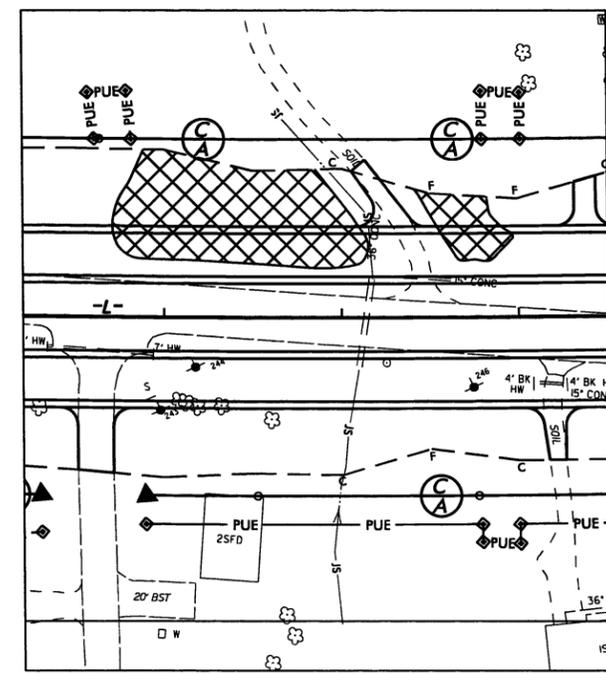
DETAIL NO. 2
 -L- STA. 131+55 TO -L- STA. 133+00



DETAIL NO. 3
 -L- STA. 200+60 TO -L- STA. 202+40



DETAIL NO. 4
 -L- STA. 297+90 TO -L- STA. 303+00
 -Y10A- STA. 10+45 TO -Y10A- STA. 11+80

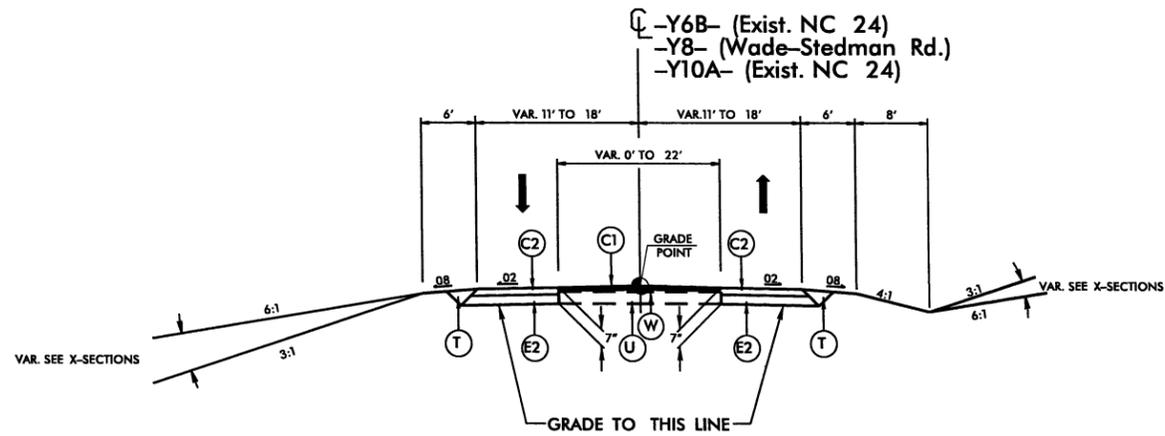


DETAIL NO. 5
 -L- STA. 320+70 TO -L- STA. 322+15
 -L- STA. 322+40 TO -L- STA. 323+00

REVISIONS

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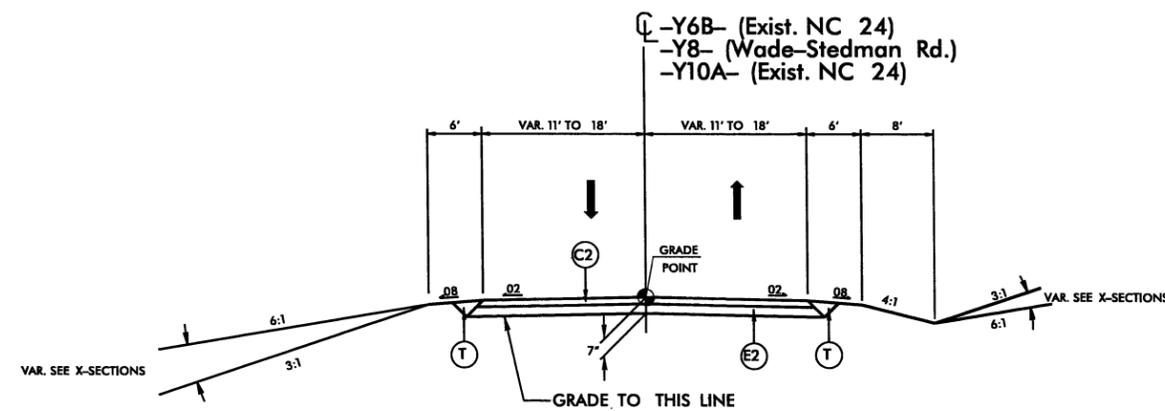
PROJECT REFERENCE NO. R-2303A	SHEET NO. 2-F
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



TYPICAL SECTION NO. 17

USE TYPICAL SECTION NO. 17

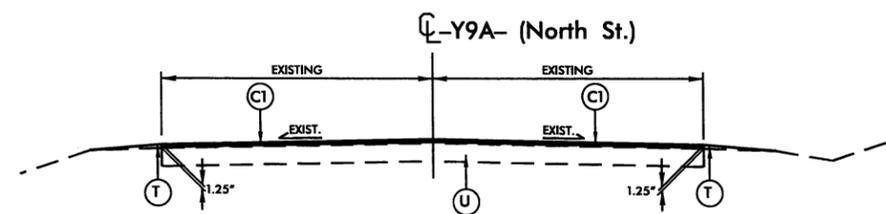
-Y6B- STA. 13+50.00 TO -Y6B- STA. 14+74.62
 -Y8- STA. 10+67.96 TO -Y8- STA. 11+50.00
 -Y8- STA. 14+00.00 TO -Y8- STA. 15+00.79
 -Y10A- STA. 12+19.60 TO -Y10A- STA. 13+85.00



TYPICAL SECTION NO. 18

USE TYPICAL SECTION NO. 18

-Y6B- STA. 10+47.00 TO -Y6B- STA. 13+50.00
 -Y8- STA. 11+50.00 TO -Y8- STA. 12+36.24
 -Y8- STA. 13+32.50 TO -Y8- STA. 14+00.00
 -Y10A- STA. 10+47.00 TO -Y10A- STA. 12+19.60



TYPICAL SECTION NO. 19

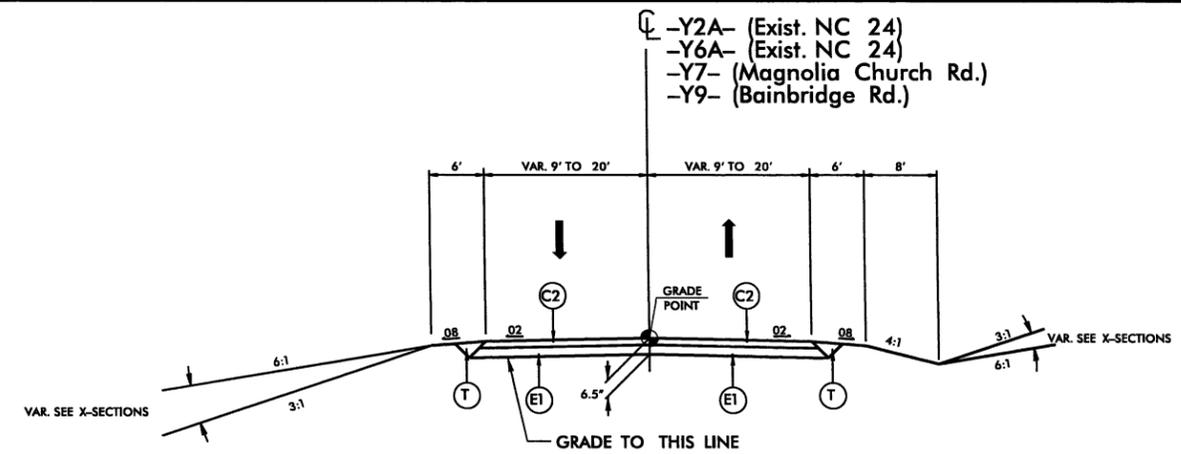
USE TYPICAL SECTION NO. 19

-Y9A- STA. 10+09.58 TO -Y9A- STA. 10+53.85

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	VAR. SF9.5A
C4	3.0" S9.5B
C5	VAR. S9.5B
C6	3.0" S9.5C
C7	VAR. S9.5C
D1	4.0" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0B
E2	4.5" B25.0B
E3	5.0" B25.0B
E4	VAR. B25.0B
E5	4.0" B25.0C
E6	VAR. B25.0C
J1	6.0" ABC
J2	8.0" ABC
P	PRIME COAT
R	1'-6" CURB AND GUTTER
U	EXIST. PAVEMENT
T	EARTH MATERIAL
W	WEDGING
Y	6" CONC. SEE SPEC. DET.

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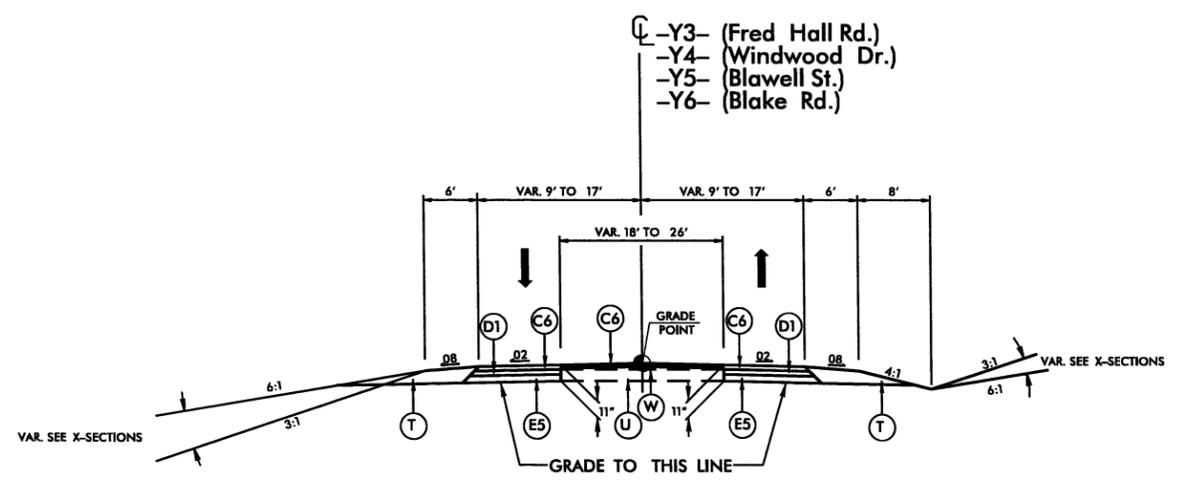
PROJECT REFERENCE NO. R-2303A	SHEET NO. 2-E
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	



TYPICAL SECTION NO. 14

USE TYPICAL SECTION NO. 14

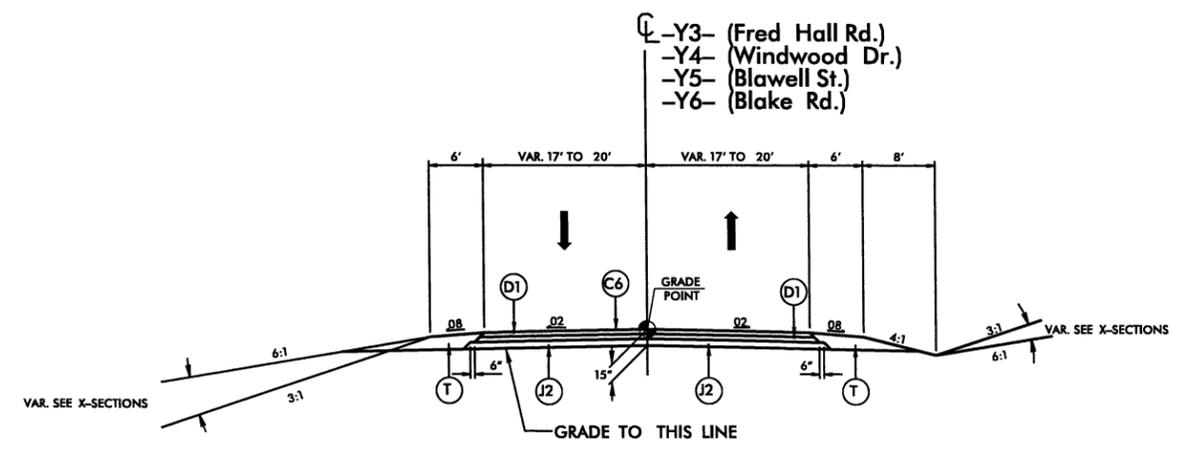
-Y2A- STA. 10+47.00 TO -Y2A- STA. 13+50.00
 -Y6A- STA. 16+59.29 TO -Y6A- STA. 18+18.39
 -Y7- STA. 11+38.34 TO -Y7- STA. 13+36.32
 -Y7- STA. 14+30.32 TO -Y7- STA. 15+36.62
 -Y9- STA. 13+27.82 TO -Y9- STA. 14+37.73
 -Y9- STA. 15+31.87 TO -Y9- STA. 16+10.28



TYPICAL SECTION NO. 15

USE TYPICAL SECTION NO. 15

-Y3- STA. 11+50.00 TO -Y3- STA. 12+14.88
 -Y4- STA. 16+67.91 TO -Y4- STA. 17+00.00
 -Y5- STA. 15+23.71 TO -Y5- STA. 16+00.00
 -Y6- STA. 11+32.95 TO -Y6- STA. 12+00.00



TYPICAL SECTION NO. 16

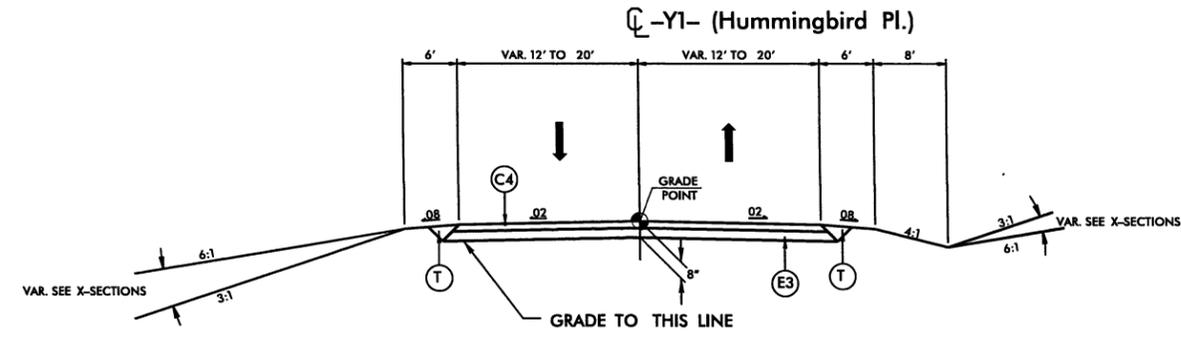
USE TYPICAL SECTION NO. 16

-Y3- STA. 10+47.17 TO -Y3- STA. 11+50.00
 -Y4- STA. 17+00.00 TO -Y4- STA. 18+35.95
 -Y5- STA. 16+00.00 TO -Y5- STA. 16+92.28
 -Y6- STA. 12+00.00 TO -Y6- STA. 13+01.03

PAVEMENT SCHEDULE <small>(FINAL PAVEMENT DESIGN)</small>	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	VAR. SF9.5A
C4	3.0" S9.5B
C5	VAR. S9.5B
C6	3.0" S9.5C
C7	VAR. S9.5C
D1	4.0" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0B
E2	4.5" B25.0B
E3	5.0" B25.0B
E4	VAR. B25.0B
E5	4.0" B25.0C
E6	VAR. B25.0C
J1	6.0" ABC
J2	8.0" ABC
P	PRIME COAT
R	1'-6" CURB AND GUTTER
U	EXIST. PAVEMENT
T	EARTH MATERIAL
W	WEDGING
Y	6" CONC. SEE SPEC. DET.

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 \$\$\$\$USLIFERNA\$\$\$\$

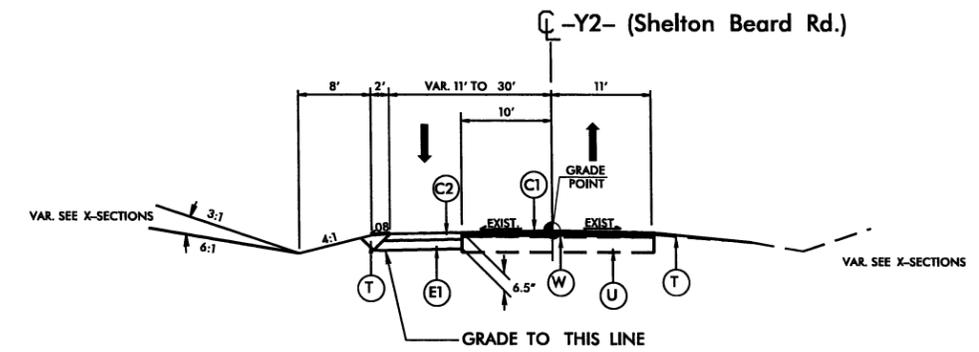
PROJECT REFERENCE NO. R-2303A	SHEET NO. 2-D
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



TYPICAL SECTION NO. 11

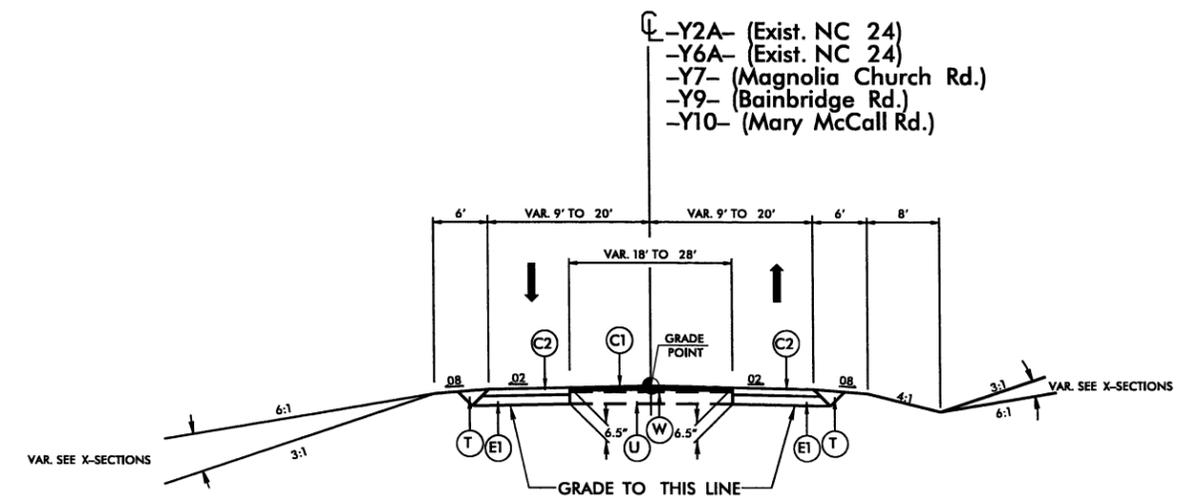
USE TYPICAL SECTION NO. 11
-Y1- STA. 10+36.02 TO -Y1- STA. 18+63.32

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	VAR. SF9.5A
C4	3.0" S9.5B
C5	VAR. S9.5B
C6	3.0" S9.5C
C7	VAR. S9.5C
D1	4.0" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0B
E2	4.5" B25.0B
E3	5.0" B25.0B
E4	VAR. B25.0B
E5	4.0" B25.0C
E6	VAR. B25.0C
J1	6.0" ABC
J2	8.0" ABC
P	PRIME COAT
R	1'-6" CURB AND GUTTER
U	EXIST. PAVEMENT
T	EARTH MATERIAL
W	WEDGING
Y	6" CONC. SEE SPEC. DET.



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12
-Y2- STA. 12+80.00 TO -Y2- STA. 13+60.00

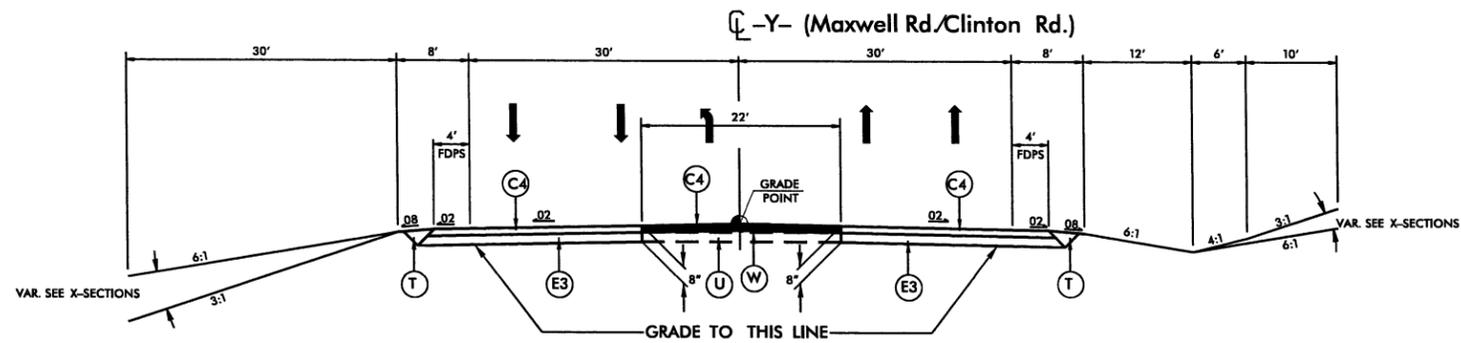


TYPICAL SECTION NO. 13

USE TYPICAL SECTION NO. 13
-Y2A- STA. 13+50.00 TO -Y2A- STA. 14+50.00
-Y6A- STA. 16+59.29 TO -Y6A- STA. 17+25.00
-Y7- STA. 10+80.00 TO -Y7- STA. 11+38.34
-Y7- STA. 15+36.62 TO -Y7- STA. 15+98.32
-Y9- STA. 12+69.93 TO -Y9- STA. 13+27.82
-Y9- STA. 16+10.28 TO -Y9- STA. 17+34.63
-Y10- STA. 12+04.10 TO -Y10- STA. 13+73.66

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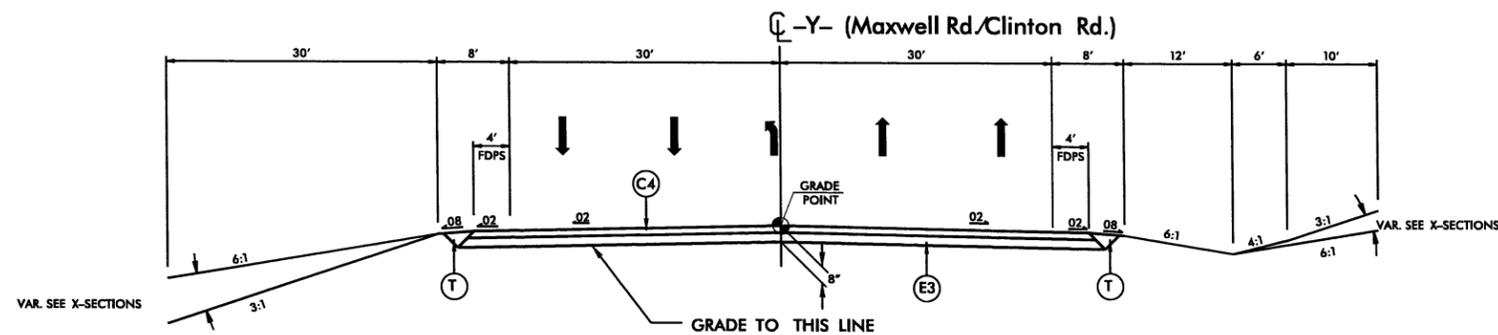
PROJECT REFERENCE NO. R-2303A	SHEET NO. 2-C
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7

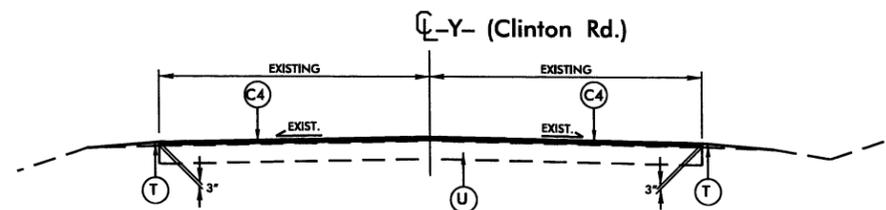
-Y- STA. 17+86.10 TO -Y- STA. 27+50.00
-Y- STA. 33+50.00 TO -Y- STA. 35+00.00



TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8

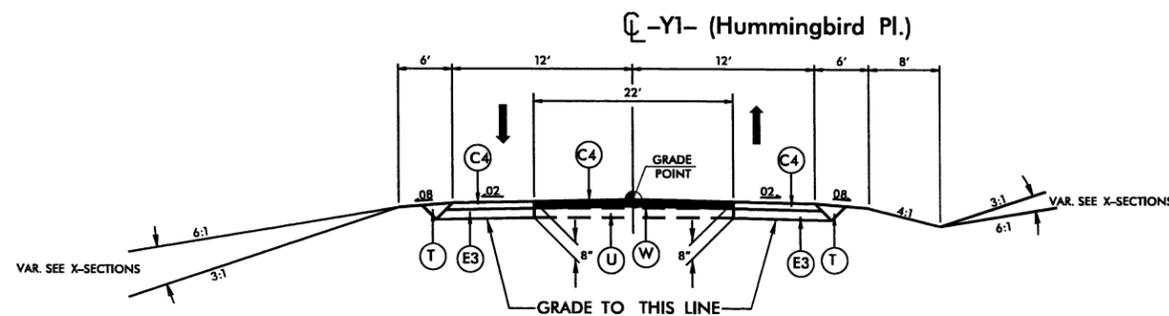
-Y- STA. 27+50.00 TO -Y- STA. 31+63.57
-Y- STA. 32+80.31 TO -Y- STA. 33+50.00



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9

-Y- STA. 35+00.00 TO -Y- STA. 45+06.65



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO. 10

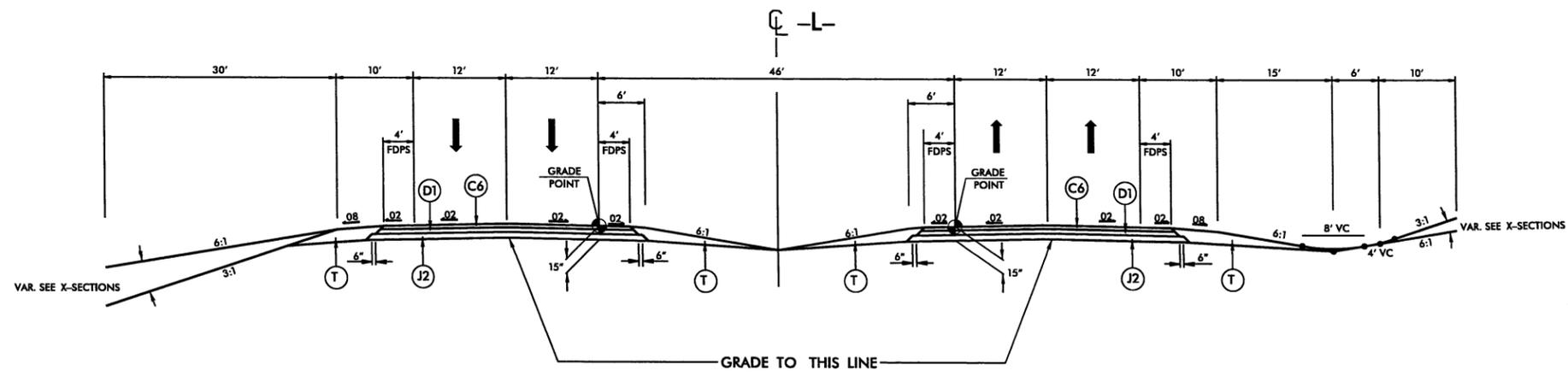
-Y1- STA. 18+63.32 TO -Y1- STA. 21+22.13

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	VAR. SF9.5A
C4	3.0" S9.5B
C5	VAR. S9.5B
C6	3.0" S9.5C
C7	VAR. S9.5C
D1	4.0" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0B
E2	4.5" B25.0B
E3	5.0" B25.0B
E4	VAR. B25.0B
E5	4.0" B25.0C
E6	VAR. B25.0C
J1	6.0" ABC
J2	8.0" ABC
P	PRIME COAT
R	1'-6" CURB AND GUTTER
U	EXIST. PAVEMENT
T	EARTH MATERIAL
W	WEDGING
Y	6" CONC. SEE SPEC. DET.

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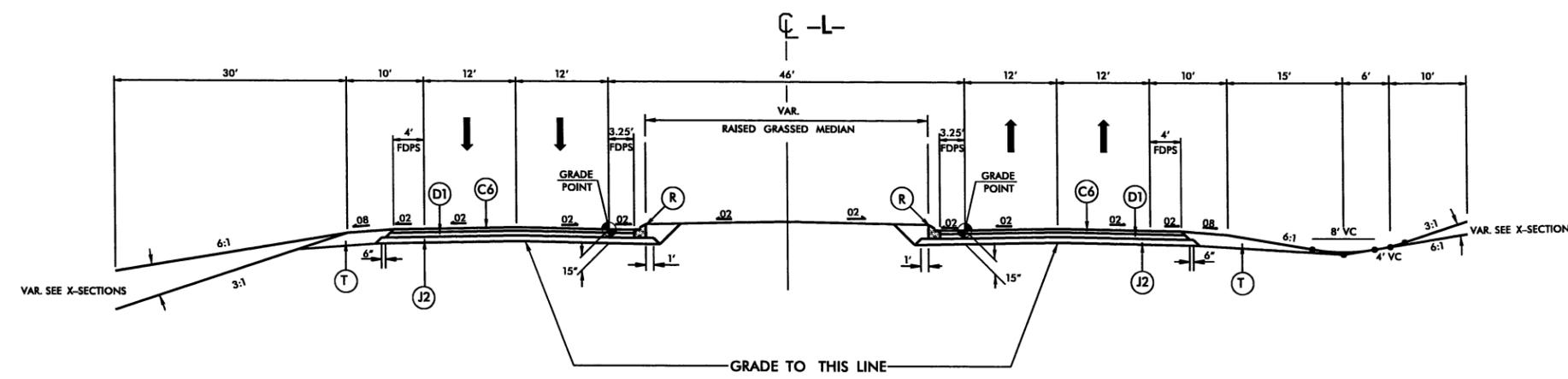
PROJECT REFERENCE NO. R-2303A	SHEET NO. 2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

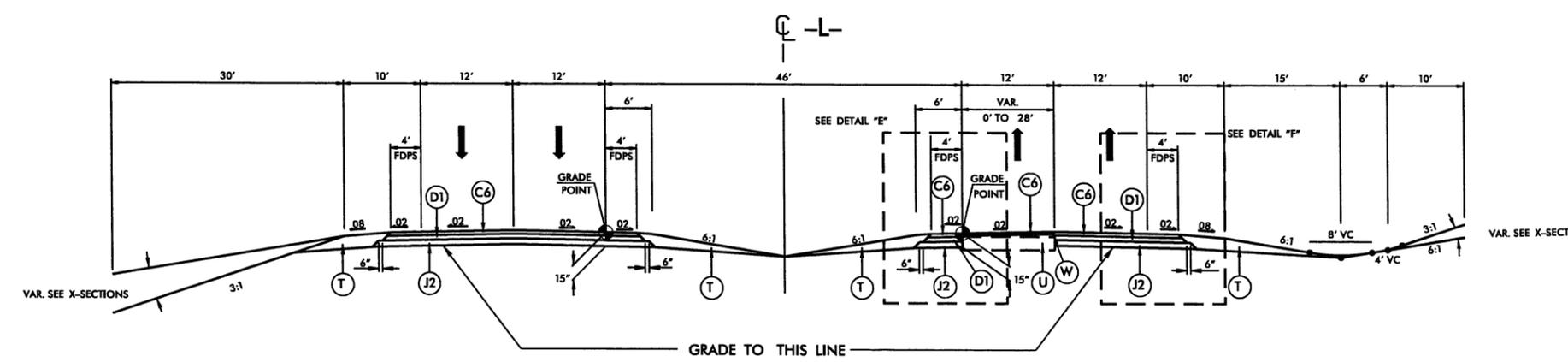
- L- STA. 55+90.80 AH TO -L- STA. 59+05.00
- L- STA. 65+06.24 TO -L- STA. 225+69.37
- L- STA. 240+06.28 TO -L- STA. 256+25.00
- L- STA. 259+76.29 TO -L- STA. 313+50.00
- L- STA. 318+50.00 TO -L- STA. 338+50.00
- L- STA. 343+00.00 TO -L- STA. 349+50.00



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

- L- STA. 59+05.00 TO -L- STA. 65+06.24
- L- STA. 225+69.37 TO -L- STA. 240+06.28
- L- STA. 256+25.00 TO -L- STA. 259+76.29

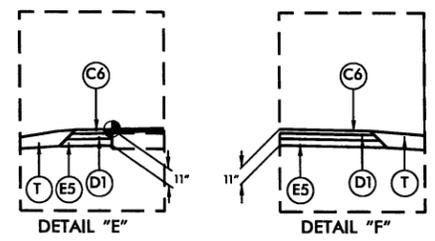


TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

- L- STA. 313+50.00 TO -L- STA. 318+50.00
- L- STA. 338+50.00 TO -L- STA. 343+00.00
- L- STA. 349+50.00 TO -L- STA. 366+14.19

NOTE: IN AREAS OF NARROW WIDENING (6' OR LESS) 4" OF B25.0C MAY BE USED IN LIEU OF 8" ABC. (SEE DETAILS E & F)



PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	VAR. SF9.5A
C4	3.0" S9.5B
C5	VAR. S9.5B
C6	3.0" S9.5C
C7	VAR. S9.5C
D1	4.0" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0B
E2	4.5" B25.0B
E3	5.0" B25.0B
E4	VAR. B25.0B
E5	4.0" B25.0C
E6	VAR. B25.0C
J1	6.0" ABC
J2	8.0" ABC
P	PRIME COAT
R	1'-6" CURB AND GUTTER
U	EXIST. PAVEMENT
T	EARTH MATERIAL
W	WEDGING
Y	6" CONC. SEE SPEC. DET.

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 2303A.dgn

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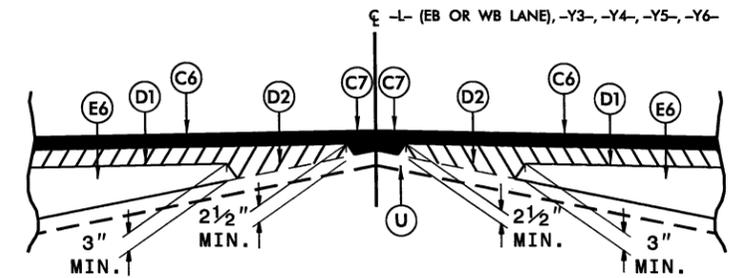
PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN)

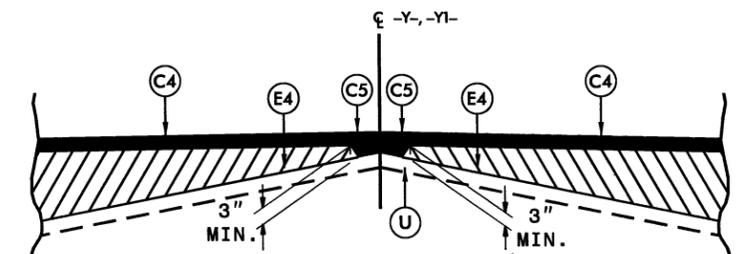
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.50 LBS. PER SQ. YD.	E4	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.50 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	E5	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.	E6	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
C4	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	J1	PROP. 6" AGGREGATE BASE COURSE.
C5	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	J2	PROP. 8" AGGREGATE BASE COURSE.
C6	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.	P	PRIME COAT AT A RATE OF .35 GAL. PER SQ. YD.
C7	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.	R	1'-6" CONCRETE CURB AND GUTTER.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.	T	EARTH MATERIAL.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	W	VARIABLE DEPTH ASPHALT PAVEMENT (See Detail Showing Method of Wedging)
E2	PROP. APPROX. 4 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.	Y	6" JOINTED CONCRETE REINFORCED W/ MESH SEE SHEET 2-0 FOR SPECIAL DETAIL
E3	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.		

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

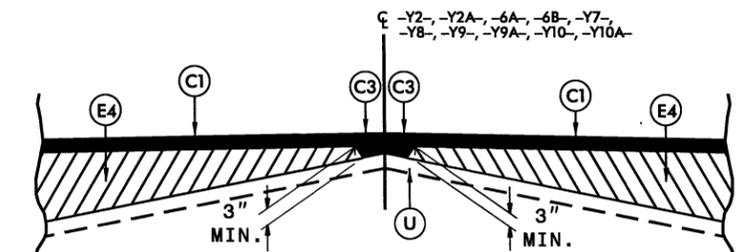
PROJECT REFERENCE NO. R-2303A	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	



Detail Showing Method of Wedging



Detail Showing Method of Wedging



Detail Showing Method of Wedging

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SURVEY CONTROL SHEET R-2303A

PROJECT REFERENCE NO.	SHEET NO.
R-2303A	I-D
Location and Surveys	

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	R-2303A BL-1	469794.3380	2070531.3000	141.40	10+02.35	11.29 RT
2	R-2303A BL-2	469525.7370	2071761.2970	140.05	22+61.24	26.21 RT
3	R-2303A BL-3	469144.6710	2072904.0780	144.02	34+57.42	168.07 RT
4	R-2303A BL-4	468644.3360	2073512.7170	140.09	42+41.53	482.60 RT
5	R-2303A BL-5	468703.9030	2074134.0300	141.86	48+22.13	158.01 RT
6	R-2303A BL-6	468283.3430	2075158.1080	144.25	59+10.07	111.75 LT
7	R-2303A BL-7	467496.0410	2075917.8920	141.47	69+96.18	20.42 RT
8	R-2303A BL-8	467134.7380	2076401.1880	140.10	75+99.11	3.79 LT
9	R-2303A BL-9	466685.1410	2077008.4120	137.33	83+55.25	2.72 LT
10	R-2303A BL-10	466247.2270	2077621.0930	138.04	91+08.51	24.53 RT
11	R-2303A BL-11	465849.0180	2078267.5690	138.68	98+66.74	1.00 RT
12	R-2303A BL-12	465424.4290	2078914.6070	144.43	106+40.65	1.27 LT
13	R-2303A BL-13	464719.9070	2080078.0230	143.08	119+99.71	54.52 LT
104	R2303A-GPS4	464152.3680	2080938.0130	142.08	130+30.09	54.85 LT
14	R-2303A BL-14	463563.3300	2081827.5530	140.81	140+96.98	53.53 LT
15	R-2303A BL-15	462931.5170	2082785.9050	139.09	152+44.86	54.44 LT
16	R-2303A BL-16	462410.6120	2083613.0310	136.16	162+25.94	50.04 LT
17	R-2303A BL-17	461885.4540	2084595.3130	131.62	173+43.66	28.55 LT
18	R-2303A BL-18	461568.2370	2085429.9430	131.06	182+40.53	4.02 LT
19	R-2303A BL-19	461479.7670	2085902.4060	131.36	187+21.86	4.22 LT
20	R-2303A BL-20	461373.3090	2086880.3450	129.72	196+96.32	77.19 RT
21	R-2303A BL-21	461096.3430	2087586.8610	128.33	204+92.25	323.96 LT
22	R-2303A BL-22	461920.2590	2088640.6430	129.87	215+22.31	115.99 LT
23	R-2303A BL-23	462021.4270	2089420.8450	130.01	222+85.80	137.09 LT
24	R-2303A BL-24	462013.7690	2090033.6490	124.39	228+75.62	170.51 LT
25	R-2303A BL-25	461967.3300	2090577.3680	124.13	234+04.68	228.86 LT
26	R-2303A BL-26	461866.3780	2091190.8200	124.29	240+25.59	260.20 LT
27	R-2303A BL-27	461689.2880	2091914.9270	127.34	247+70.78	240.58 LT
28	R-2303A BL-28	461408.2030	2092680.9240	122.73	255+78.12	128.34 LT
29	R-2303A BL-29	461191.7090	2093360.7680	122.19	262+77.97	106.88 LT
30	R-2303A BL-30	460895.4050	2094057.5380	121.54	270+22.51	104.27 LT
31	R-2303A BL-31	460494.6420	2094712.9010	121.30	277+79.03	84.94 LT
32	R-2303A BL-32	460009.3470	2095329.3450	122.41	285+54.74	72.24 LT
33	R-2303A BL-33	459535.4830	2095972.4240	122.72	293+61.17	106.29 LT
34	R-2303A BL-34	459268.1290	2096436.1160	114.99	299+06.81	133.75 LT
35	R-2303A BL-35	458755.3170	2096962.3970	118.00	306+16.47	74.33 RT
36	R-2303A BL-36	458500.0030	2097743.6690	123.32	314+28.43	53.26 LT
37	R-2303A BL-37	457901.1100	2098821.2150	120.59	326+59.72	20.14 RT
38	R-2303A BL-38	457392.7270	2100166.6600	127.02	340+97.79	4.98 RT
39	R-2303A BL-39	456939.3800	2101048.7640	123.99	350+90.03	16.44 RT
40	R-2303A BL-40	456448.6830	2102009.6930	134.18	361+68.99	15.78 RT
41	R-2303A BL-41	456051.2730	2102797.5190	131.05	370+47.78	33.58 RT
42	R-2303A BL-42	455856.2440	2103316.8040	128.79	375+81.60	110.92 RT
43	R-2303A BL-43	455554.9790	2104122.4590	120.05	383+25.38	444.86 RT

BY POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
94	R-2303A BY-94	469769.2700	2076417.4140	144.33	OUTSIDE PROJECT LIMITS	
93	R-2303A BY-93	469312.7010	2075969.9720	144.52	16+37.79	17.96 LT
92	R-2303A BY-92	468952.4090	2075477.6050	144.59	22+44.69	17.78 LT
45	R-2303A BY-45	468682.9340	2074815.6834	143.20	29+57.63	29.37 LT
46	R-2303A BY-46	468592.1030	2074406.2670	143.94	33+72.79	29.90 RT
47	R-2303A BY-47	468328.7282	2073761.0997	145.09	40+63.43	42.87 RT

BY1 POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
44	R-2303A BY1-44	468682.9340	2074815.6834	143.20	13+94.09	322.56 LT
48	R-2303A BY1-48	469147.2155	2074350.0286	140.53	18+96.15	0.61 LT

BY2 POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
49	R-2303A BY2-49	467133.3435	2077180.8711	137.89	OUTSIDE PROJECT LIMITS	
50	R-2303A BY2-50	466369.2935	2077450.8883	137.78	16+30.53	13.44 LT
51	R-2303A BY2-51	465914.0212	2077620.1200	139.62	21+16.18	20.94 LT

BY3 POINT	DESC.	NORTH	EAST	ELEVATION	Y3 STATION	OFFSET
52	R-2303A BY3-52	462226.3341	2083957.7132	135.06	OUTSIDE PROJECT LIMITS	
53	R-2303A BY3-53	461862.9165	2083723.9082	133.24	OUTSIDE PROJECT LIMITS	

BY4 POINT	DESC.	NORTH	EAST	ELEVATION	Y4 STATION	OFFSET
105	R2303A-GPS5	462307.2800	2085237.9980	126.92	12+22.30	29.47 RT
106	R2303A-GPS6	461736.7070	2085049.9440	131.38	18+23.06	33.10 RT
54	NOT SET	461715.3395	2085042.9015	UNKNOWN	18+45.55	33.24 RT

BY5 POINT	DESC.	NORTH	EAST	ELEVATION	Y5 STATION	OFFSET
56	R-2303A BY5-56	462032.1148	2085875.3621	127.29	11+86.48	15.42 RT
55	R-2303A BY5-55	461479.7670	2085902.4060	131.36	17+38.08	24.08 LT

BY6 POINT	DESC.	NORTH	EAST	ELEVATION	Y6 STATION	OFFSET
58	R-2303A BY6-58	462495.9577	2087436.8894	127.85	OUTSIDE PROJECT LIMITS	
59	R-2303A BY6-59	461896.3430	2087586.8610	128.33	10+24.32	15.10 LT
60	R-2303A BY6-60	461285.2785	2087751.2851	128.35	13+75.98(-Y6B-)	37.11 LT

BY7 POINT	DESC.	NORTH	EAST	ELEVATION	Y7 STATION	OFFSET
61	R-2303A BY7-61	462369.3333	2089563.4858	130.91	OUTSIDE PROJECT LIMITS	
62	R-2303A BY7-62	462018.9512	2089618.9515	127.83	12+45.59	13.43 LT
63	R-2303A BY7-63	461284.0365	2089554.4489	128.20	OUTSIDE PROJECT LIMITS	

BY8 POINT	DESC.	NORTH	EAST	ELEVATION	Y8 STATION	OFFSET
107	R2303A-GPS7	462195.6270	2091205.9090	124.00	OUTSIDE PROJECT LIMITS	
64	R-2303A BY8-64	461866.3780	2091190.8200	124.29	10+11.55	28.85 RT
108	R-2303A-GPS8	461063.1390	2091236.9390	125.27	OUTSIDE PROJECT LIMITS	

BY9 POINT	DESC.	NORTH	EAST	ELEVATION	Y9 STATION	OFFSET
65	R-2303A BY9-65	462190.2599	2092318.7770	123.05	OUTSIDE PROJECT LIMITS	
66	R-2303A BY9-66	461601.2005	2092154.9776	124.44	12+78.44	12.85 LT
67	R-2303A BY9-67	460928.6952	2091970.6392	123.61	OUTSIDE PROJECT LIMITS	

BY10 POINT	DESC.	NORTH	EAST	ELEVATION	Y10 STATION	OFFSET
68	R-2303A BY10-68	459301.7928	2097322.1235	121.07	OUTSIDE PROJECT LIMITS	
69	R-2303A BY10-69	458657.1434	2097262.8125	117.89	OUTSIDE PROJECT LIMITS	

BY11 POINT	DESC.	NORTH	EAST	ELEVATION	Y10A STATION	OFFSET
70	R-2303A BY11-70	458755.3170	2096962.3970	118.00	10+68.54	239.82 LT
71	R-2303A BY11-71	458718.4094	2096276.1280	119.51	15+97.03	18.50 RT
96	R-2303A BY11-96	458650.9340	2095611.8930	120.88	OUTSIDE PROJECT LIMITS	
97	R-2303A BY11-97	458621.3530	2095099.6750	121.55	OUTSIDE PROJECT LIMITS	

BY12 POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
112	R-2303A-GPS12	456893.7370	2103214.5600	131.26	372+37.14	894.56 LT
72	R-2303A BY12-72	455856.2440	2103316.8040	128.79	375+81.60	110.92 RT

80 ELEVATION = 139.80
 N 469908 E 2070597
 L STATION 10+44 113 LEFT
 R/R SPIKE IN BASE OF 16 INCH PINE

84 ELEVATION = 144.40
 N 464705 E 2080150
 L STATION 120+68 81 LEFT
 R/R SPIKE IN BASE OF 36 INCH PECAN

88 ELEVATION = 124.64
 N 461981 E 2091264
 L STATION 240+73 388 LEFT
 R/R SPIKE IN BASE OF 18 INCH PINE

81 ELEVATION = 140.30
 N 469136 E 2072969
 L STATION 35+23 164 RIGHT
 R/R SPIKE IN BASE OF 15 INCH PINE

85 ELEVATION = 135.47
 N 462115 E 2083975
 L STATION 166+85 36 RIGHT
 R/R SPIKE IN BASE OF 24 INCH OAK

89 ELEVATION = 123.53
 N 460292 E 2094650
 L STATION 278+40 118 RIGHT
 R/R SPIKE IN BASE OF 15 INCH OAK

82 ELEVATION = 147.78
 N 468292 E 2074869
 L STATION 56+80 64 RIGHT
 R/R SPIKE IN BASE OF 12 INCH TWIN OAK

86 ELEVATION = 131.00
 N 461410 E 2086812
 L STATION 196+31 36 RIGHT
 R/R SPIKE IN BASE OF 13 INCH PINE

90 ELEVATION = 116.00
 N 459037 E 2096673
 L STATION 302+31 45 LEFT
 R/R SPIKE IN BASE OF 18 INCH OAK

83 ELEVATION = 138.99
 N 466453 E 2077439
 L STATION 88+42 46 LEFT
 R/R SPIKE IN BASE OF 12 INCH PINE

87 ELEVATION = 129.48
 N 462201 E 2089627
 L STATION 224+78 320 LEFT
 R/R SPIKE IN BASE OF 12 INCH PINE

91 ELEVATION = 134.19
 N 456624 E 2101698
 L STATION 358+12 2 RIGHT
 R/R SPIKE IN BASE OF 10 INCH PINE

8/17/99

PROJECT REFERENCE NO.		SHEET NO.	
R-2303A		4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS			
DO NOT USE FOR CONSTRUCTION			



FOR -L- PROFILE SEE SHEET 34

REVISIONS

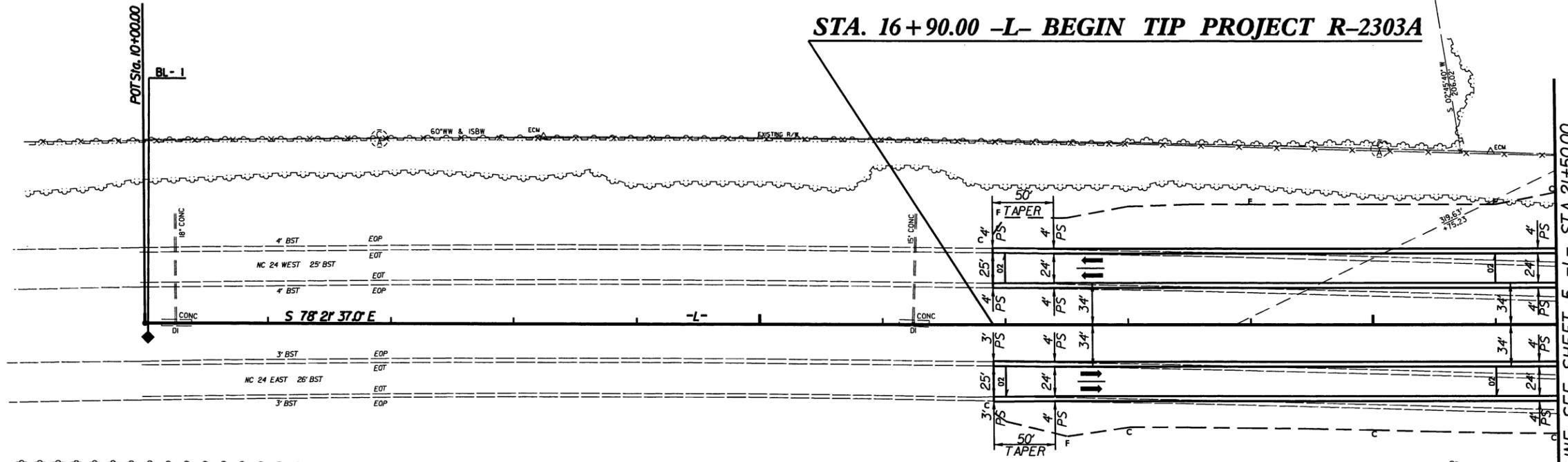
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15

20

STA. 16+90.00 -L- BEGIN TIP PROJECT R-2303A

JOSEPHINE WHITTED
DB 6579 PG 50



MATCHLINE SEE SHEET 5 -L- STA 21+50.00

COUNTY OF CUMBERLAND
DB 4567 PG 470
PB 93 PG 90

22-SEP-2011 15:30
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R. W. HENNINGER

8/17/99

PROJECT REFERENCE NO. R-2303A		SHEET NO. 5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

-WBL-		
Pls Sta 35+63.34	PI Sta 45+01.28	Pls Sta 54+12.42
θs = 1° 25' 56.6"	Δ = 24° 34' 34.5" (RT)	θs = 1° 25' 56.6"
Ls = 200.00'	D = 1° 25' 56.6"	Ls = 200.00'
LT = 133.34'	L = 1715.75'	LT = 133.34'
ST = 66.67'	T = 871.27'	ST = 66.67'
	R = 4000.00'	
	SE = .04	

-L-		
Pls Sta 35+78.91	PI Sta 45+16.84	Pls Sta 54+27.99
θs = 1° 25' 56.6"	Δ = 24° 34' 34.5" (RT)	θs = 1° 25' 56.6"
Ls = 200.00'	D = 1° 25' 56.6"	Ls = 200.00'
LT = 133.34'	L = 1715.75'	LT = 133.34'
ST = 66.67'	T = 871.27'	ST = 66.67'
	R = 4000.00'	

-EBL-		
Pls Sta 35+94.48	PI Sta 45+32.41	Pls Sta 54+43.56
θs = 1° 25' 56.6"	Δ = 24° 34' 34.5" (RT)	θs = 1° 25' 56.6"
Ls = 200.00'	D = 1° 25' 56.6"	Ls = 200.00'
LT = 133.34'	L = 1715.75'	LT = 133.34'
ST = 66.67'	T = 871.27'	ST = 66.67'
	R = 4000.00'	
	SE = .04	

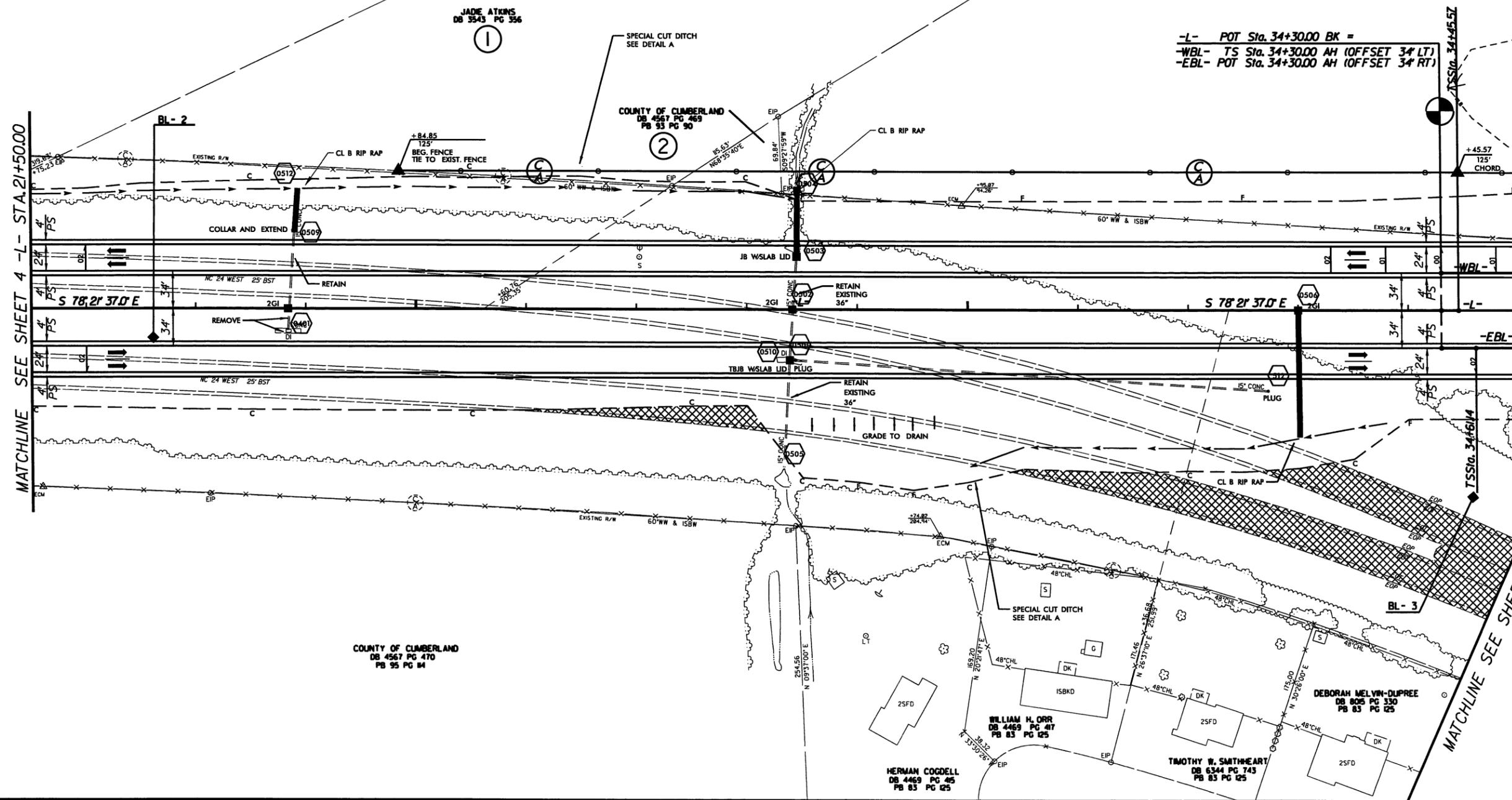
JOSEPHINE WHITTED
DB 6579 PG 50

FOR -L-, -WBL- AND -EBL- PROFILES,
SEE SHEET 35
FOR DITCH DETAILS, SEE SHEET 2-U

TROY HALL
DB 4617 PG 457
PB 92 PG 174

MATCHLINE SEE SHEET 4 -L- STA. 21+50.00

MATCHLINE SEE SHEET 6 -L- STA. 35+00.00



JADE ATKINS
DB 5543 PG 356

COUNTY OF CLUMBERLAND
DB 4567 PG 469
PB 93 PG 90

COUNTY OF CLUMBERLAND
DB 4567 PG 470
PB 95 PG 14

WILLIAM H. ORR
DB 4469 PG 417
PB 83 PG 125

TIMOTHY W. SMITHHEART
DB 6344 PG 743
PB 83 PG 125

DEBORAH MELVIN-DUPREE
DB 8025 PG 330
PB 83 PG 125

HERMAN COGDELL
DB 4469 PG 45
PB 83 PG 125

REVISIONS

22-SEP-2011 15:30
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PROJECT REFERENCE NO. R-2303A	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-WBL-

PI Sta 35+63.34 θs = 1°25'56.6" Ls = 200.00' LT = 133.34' ST = 66.67'	PI Sta 45+01.28 Δ = 24°34'34.5" (RT) D = 1°25'56.6" L = 1715.75' T = 871.27' R = 4000.00' SE = .04	PI Sta 54+12.42 θs = 1°25'56.6" Ls = 200.00' LT = 133.34' ST = 66.67'
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-L-

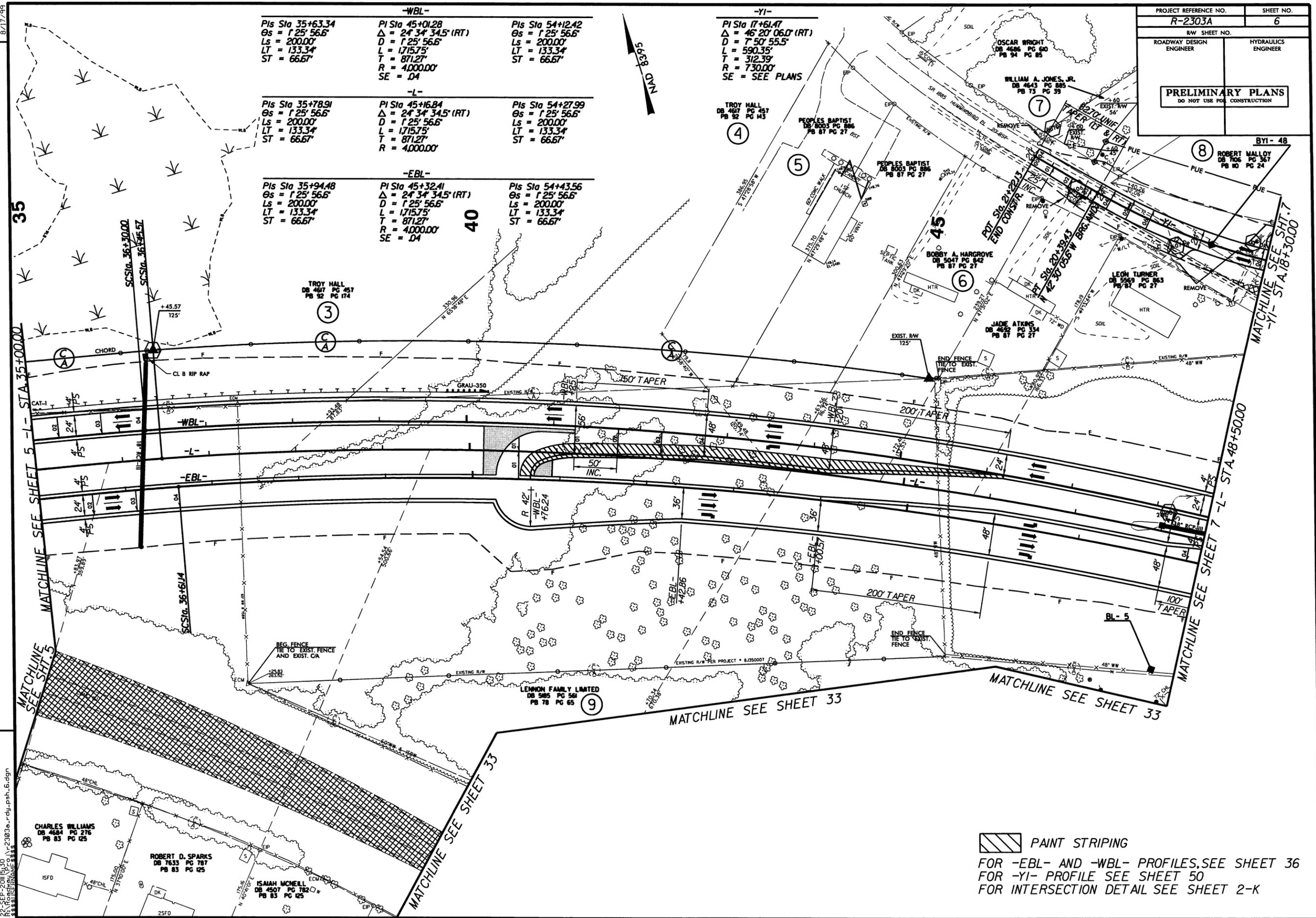
PI Sta 35+78.91 θs = 1°25'56.6" Ls = 200.00' LT = 133.34' ST = 66.67'	PI Sta 45+16.84 Δ = 24°34'34.5" (RT) D = 1°25'56.6" L = 1715.75' T = 871.27' R = 4000.00'	PI Sta 54+27.99 θs = 1°25'56.6" Ls = 200.00' LT = 133.34' ST = 66.67'
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-EBL-

PI Sta 35+94.48 θs = 1°25'56.6" Ls = 200.00' LT = 133.34' ST = 66.67'	PI Sta 45+32.41 Δ = 24°34'34.5" (RT) D = 1°25'56.6" L = 1715.75' T = 871.27' R = 4000.00' SE = .04	PI Sta 54+43.56 θs = 1°25'56.6" Ls = 200.00' LT = 133.34' ST = 66.67'
---	--	---

-YI-

PI Sta 17+61.47
Δ = 46°20'06.0" (RT)
D = 7°50'55.5"
L = 590.35'
T = 312.39'
R = 730.00'
SE = SEE PLANS



 **PAIN STRIPING**
 FOR -EBL- AND -WBL- PROFILES, SEE SHEET 36
 FOR -YI- PROFILE SEE SHEET 50
 FOR INTERSECTION DETAIL SEE SHEET 2-K

8/17/99
 REVISIONS
 22-SEP-2011 15:30
 R:\Projects\2303a\2303a.dwg
 R:\Projects\2303a\2303a.dwg
 R:\Projects\2303a\2303a.dwg

8/17/99

7

WILLIAM A. JONES, JR.
DB 463 PG 85
PB 73 PG 39

EDWARD J. DALY
DB 532 PG 136

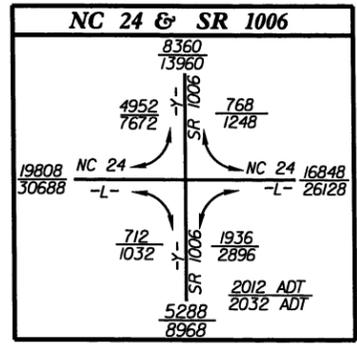
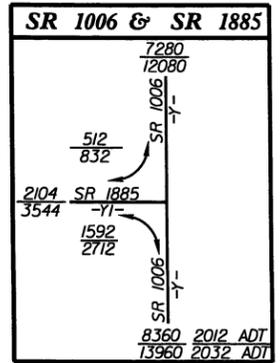
ROBERT MALLOY
DB 706 PG 367
PB 10 PG 24

ROBERT MALLOY
DB 706 PG 367
PB 10 PG 24

8

-YI-

PI Sta 11+74.64 Δ = 68° 12' 08.4" (LT) D = 24' 54" 40.4" L = 273.78' T = 155.73' R = 230.00' SE = SEE PLANS	PI Sta 17+61.47 Δ = 46° 20' 06.0" (RT) D = 7' 50" 55.5" L = 590.35' T = 312.39' R = 730.00' SE = SEE PLANS
---	--



PROJECT REFERENCE NO. R-2303A	SHEET NO. 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

FOR -L-, -EBL- AND -WBL- PROFILES, SEE SHEET 37
FOR -Y- & -YI- PROFILES, SEE SHEET 50
FOR INTERSECTION DETAIL SEE SHEET 2-J
FOR DITCH DETAILS, SEE SHEET 2-U

-WBL-		
PIs Sta 35+63.34 Os = 1' 25" 56.6" Ls = 200.00' LT = 133.34' ST = 66.67'	PI Sta 45+01.28 Δ = 24' 34" 34.5" (RT) D = 1' 25" 56.6" L = 1715.75' T = 871.27' R = 4000.00' SE = .04	PIs Sta 54+12.42 Os = 1' 25" 56.6" Ls = 200.00' LT = 133.34' ST = 66.67'
-L-		
PIs Sta 35+78.91 Os = 1' 25" 56.6" Ls = 200.00' LT = 133.34' ST = 66.67'	PI Sta 45+16.84 Δ = 24' 34" 34.5" (RT) D = 1' 25" 56.6" L = 1715.75' T = 871.27' R = 4000.00'	PIs Sta 54+27.99 Os = 1' 25" 56.6" Ls = 200.00' LT = 133.34' ST = 66.67'
-EBL-		
PIs Sta 35+94.48 Os = 1' 25" 56.6" Ls = 200.00' LT = 133.34' ST = 66.67'	PI Sta 45+32.41 Δ = 24' 34" 34.5" (RT) D = 1' 25" 56.6" L = 1715.75' T = 871.27' R = 4000.00' SE = .04	PIs Sta 54+43.56 Os = 1' 25" 56.6" Ls = 200.00' LT = 133.34' ST = 66.67'

OCTOBER 24, 2011 - R/W REVISION - ADDED PUE TO EXISTING NCDOT R/W PER PROJECT BJ350007

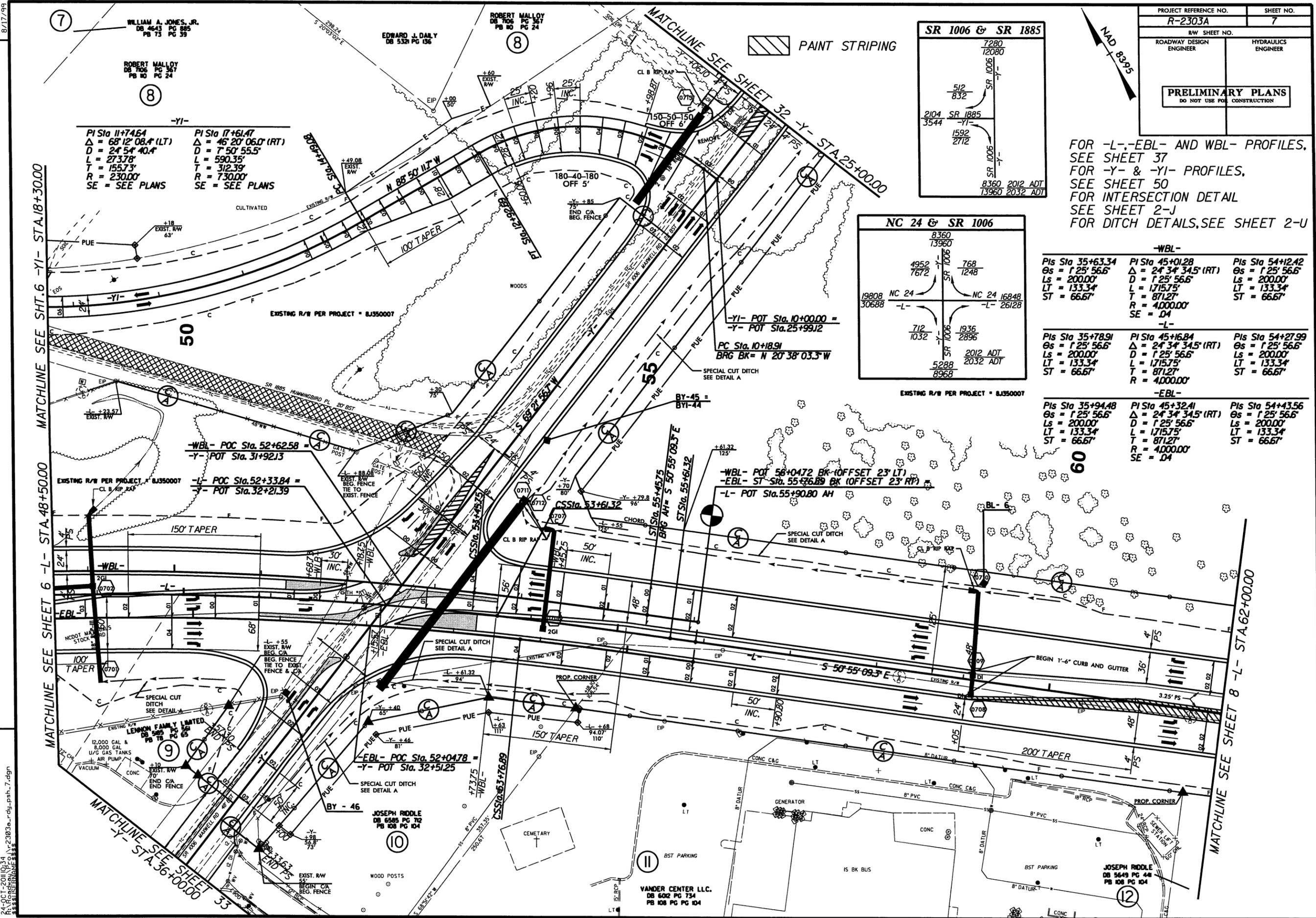
MATCHLINE SEE SHEET 6 -YI- STA.18+30.00

MATCHLINE SEE SHEET 6 -L- STA.48+50.00

MATCHLINE SEE SHEET -Y- STA.36+00.00

MATCHLINE SEE SHEET 8 -L- STA.62+00.00

24-OCT-2011 10:34
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8/17/99

22-SEP-2011 15:31
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PROJECT REFERENCE NO. R-2303A	SHEET NO. 8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

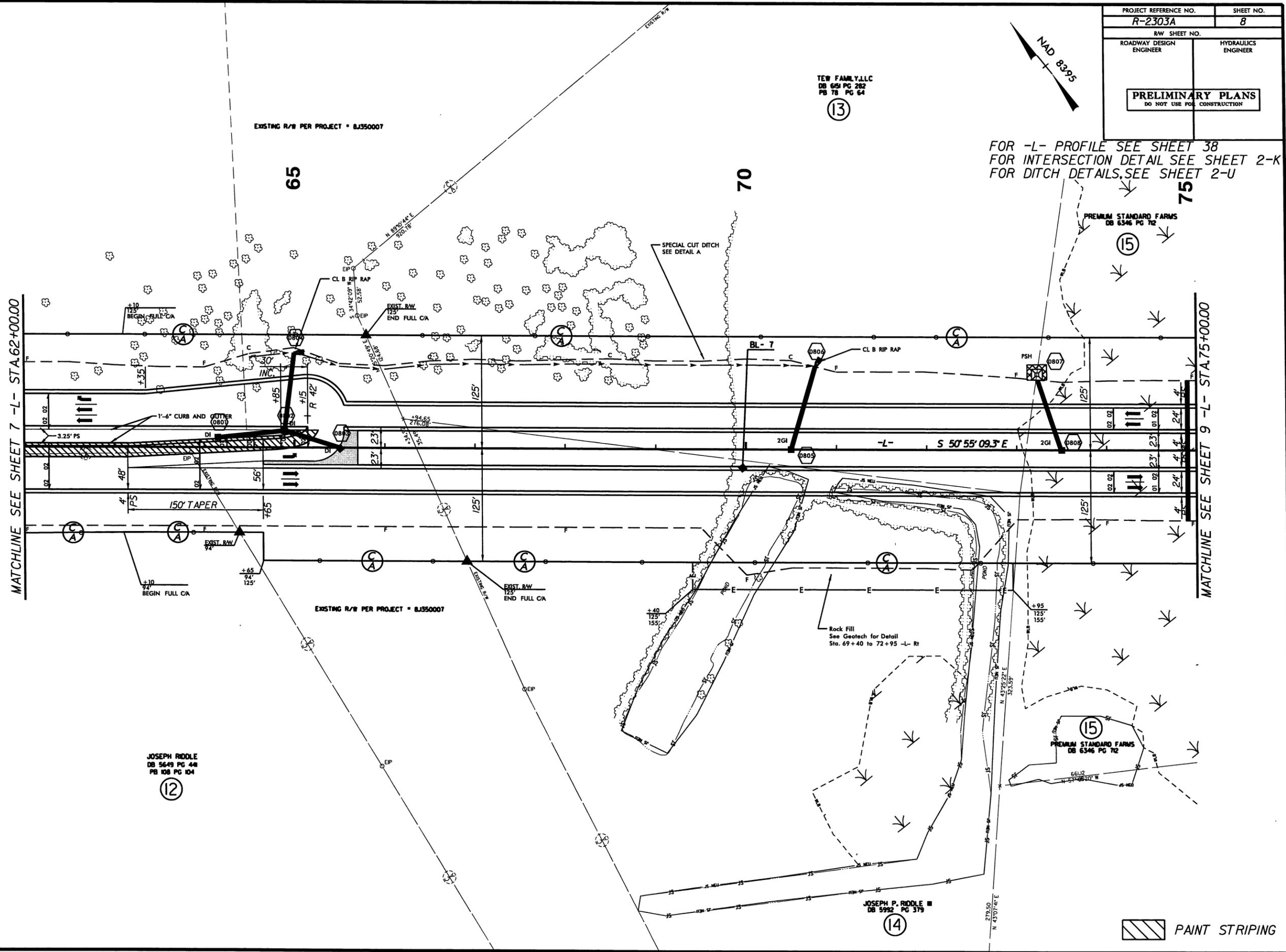


TEW FAMILY, LLC
DB 651 PG 282
PB 78 PG 64
(13)

FOR -L- PROFILE SEE SHEET 38
FOR INTERSECTION DETAIL SEE SHEET 2-K
FOR DITCH DETAILS SEE SHEET 2-U

MATCHLINE SEE SHEET 7 -L- STA. 62+00.00

MATCHLINE SEE SHEET 9 -L- STA. 75+00.00



PREMIUM STANDARD FARMS
DB 6346 PG 72
(15)

PREMIUM STANDARD FARMS
DB 6346 PG 72
(15)

Rock Fill
See Geotech for Detail
Sta. 69+40 to 72+95 -L- Rt

JOSEPH RIDDLE
DB 5649 PG 44
PB 108 PG 104
(12)

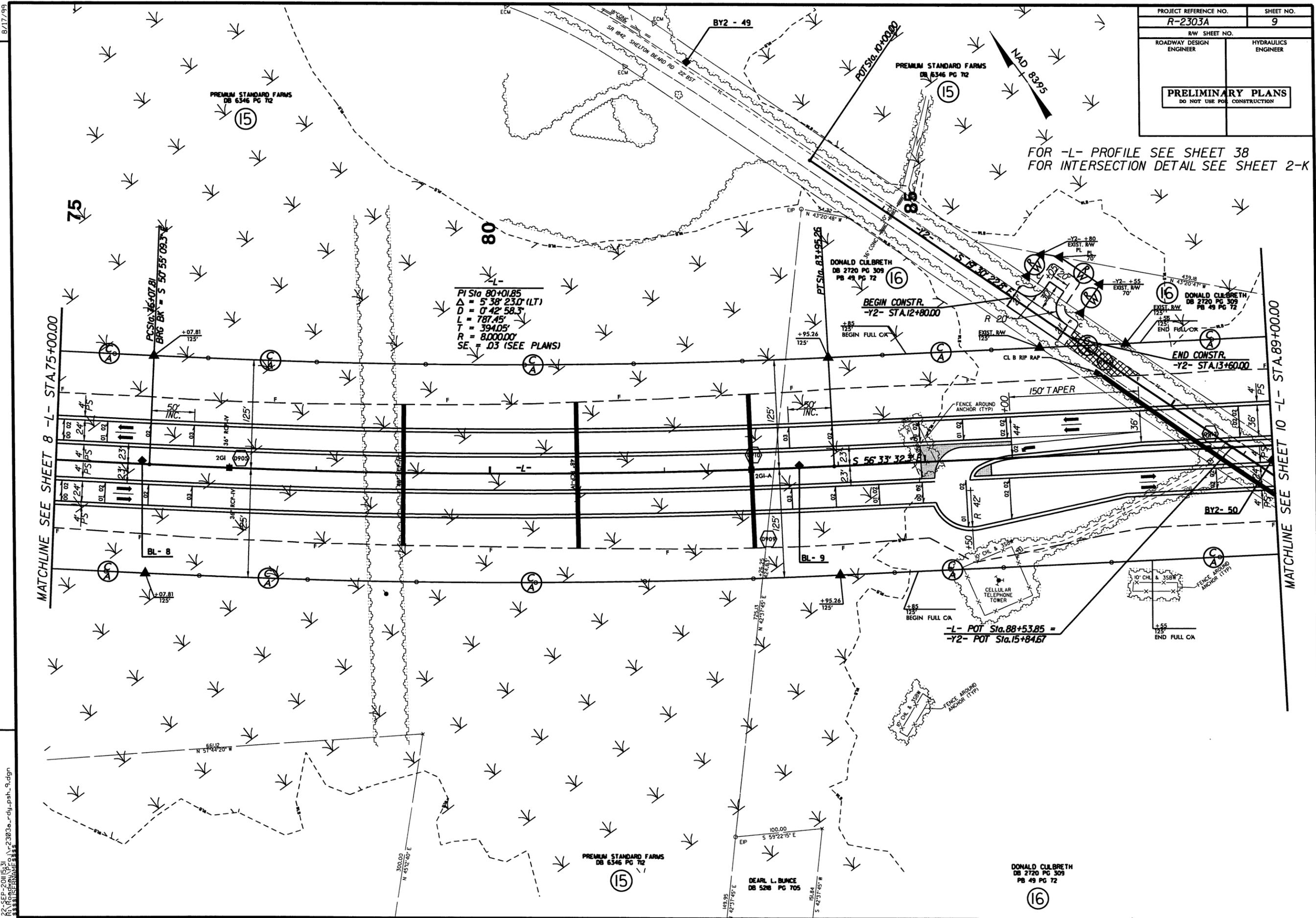
JOSEPH P. RIDDLE
DB 5992 PG 379
(14)

PAINT STRIPING

REVISIONS

PROJECT REFERENCE NO. R-2303A	SHEET NO. 9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

FOR -L- PROFILE SEE SHEET 38
FOR INTERSECTION DETAIL SEE SHEET 2-K



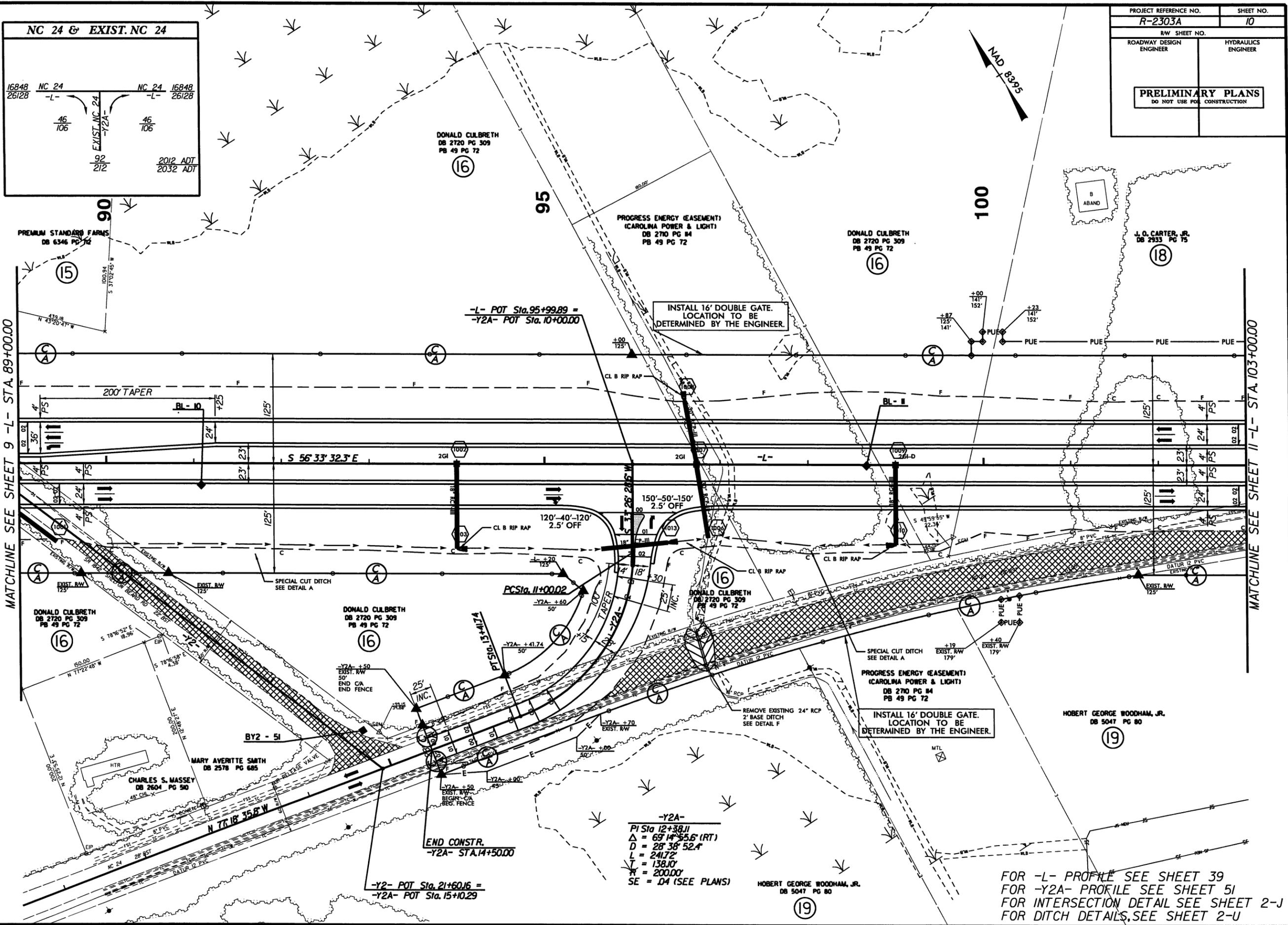
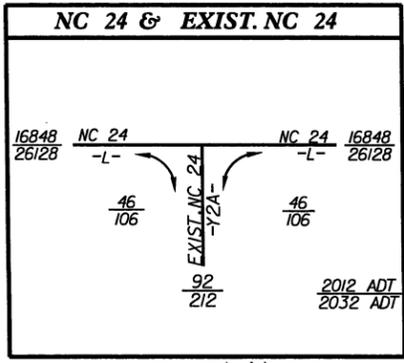
MATCHLINE SEE SHEET 8 -L- STA. 75+00.00

MATCHLINE SEE SHEET 10 -L- STA. 89+00.00

REVISIONS

8/17/99
22-SEP-2011 15:31
R:\PROJECTS\2303A\RDY\psh_9.dgn
\$\$\$\$\$SUSPENSE\$\$\$\$\$

PROJECT REFERENCE NO. R-2303A	SHEET NO. 10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



REVISIONS

MATCHLINE SEE SHEET 9 -L- STA. 89+00.00

MATCHLINE SEE SHEET 11 -L- STA. 103+00.00

-Y2A-
 PI Sta 12+38.11
 $\Delta = 69^{\circ}14'55.6''$ (RT)
 $D = 28^{\circ}38'52.4''$
 $L = 241.72'$
 $T = 138.0'$
 $R = 200.00'$
 $SE = .04$ (SEE PLANS)

FOR -L- PROFILE SEE SHEET 39
 FOR -Y2A- PROFILE SEE SHEET 51
 FOR INTERSECTION DETAIL SEE SHEET 2-J
 FOR DITCH DETAILS, SEE SHEET 2-U

22-SEP-2011 15:31
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 \$\$\$\$USERNAME\$\$\$

PROJECT REFERENCE NO. R-2303A	SHEET NO. 11
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



J & M INVESTMENTS
DB 4948 PG 653
PB 93 PG 62

(22)

FOR -L- PROFILE SEE SHEET 39
FOR DITCH DETAILS, SEE SHEET 2-U

CHRISTINE CARTER
DB 2037 PG 203

(25)

CANDACE JO CARTER
DB 2933 PG 73

(20)

L. O. CARTER, JR.
DB 2933 PG 75

(18)

105

110

HOBERT GEORGE WOODHAM, JR.
DB 5047 PG 80

(19)

LOUANE A. WOODHAM
DB 4396 PG 258

(21)

DAY HAY
DB 8002 PG 523

(23)

JAMES HAY
DB 4062 PG 170

(24)

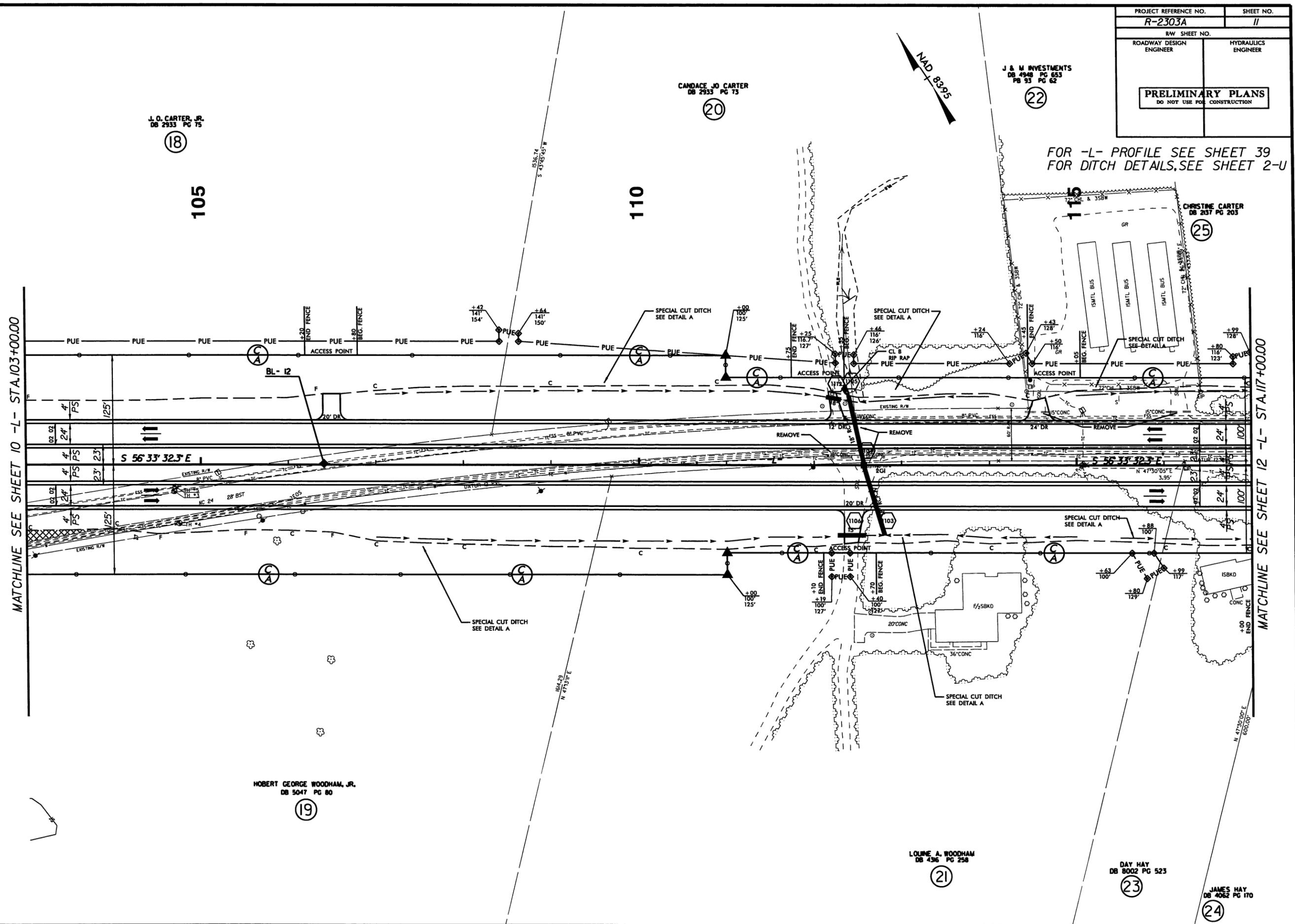
MATCHLINE SEE SHEET 10 -L- STA.103+00.00

MATCHLINE SEE SHEET 12 -L- STA.117+00.00

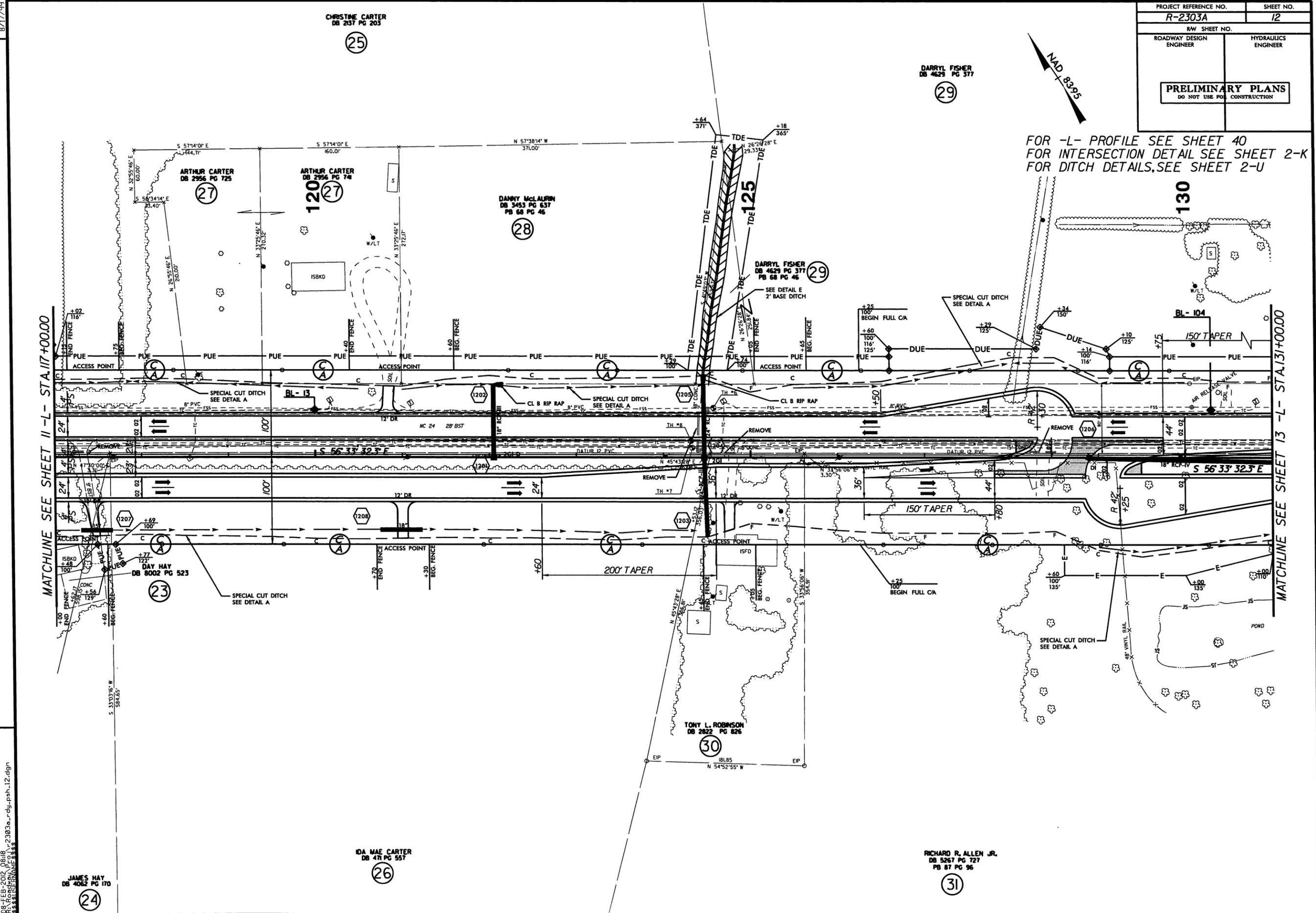
REVISIONS
RIGHT OF WAY REVISION - APRIL 6, 2011 - ADDED A CONTROL OF ACCESS BREAK AND DRIVEWAY TO PARCEL NO. 18.

8/17/99

22-SEP-2011 15:31
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PROJECT REFERENCE NO. R-2303A		SHEET NO. 12	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			



REVISIONS
02/07/12 R/W REVISION (KEM) - ADDED AN ACCESS BREAK AT / NEAR CENTER OF PROPERTY ON PARCEL 026.

MATCHLINE SEE SHEET 11 - L - STA. 117+00.00

MATCHLINE SEE SHEET 13 - L - STA. 131+00.00

8/17/99

08-FEB-2012 08:18
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S:\USER\RD\2303A

JAMES HAY
DB 4052 PG 170
(24)

DA MAE CARTER
DB 471 PG 557
(26)

RICHARD R. ALLEN JR.
DB 5267 PG 727
PB 87 PG 96
(31)

CHRISTINE CARTER
DB 237 PG 203
(25)

ARTHUR CARTER
DB 2956 PG 725
(27)

ARTHUR CARTER
DB 2956 PG 741
(27)

DANNY McLAURIN
DB 3453 PG 637
PB 68 PG 46
(28)

DARRYL FISHER
DB 4629 PG 377
PB 68 PG 46
(29)

DARRYL FISHER
DB 4629 PG 377
(29)

DAY HAY
DB 8002 PG 523
(23)

TONY L. ROBINSON
DB 2822 PG 826
(30)

8/17/99

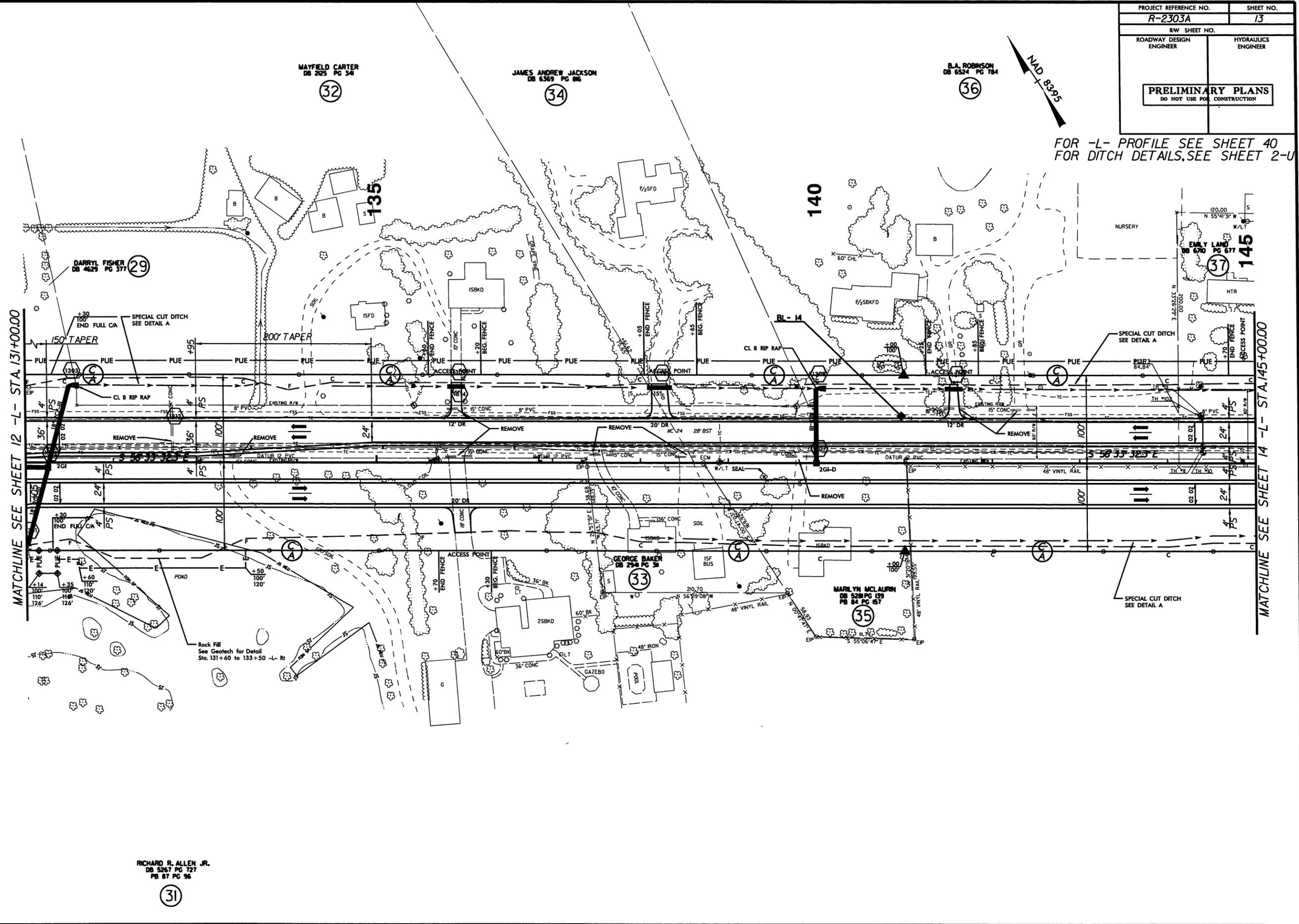
PROJECT REFERENCE NO. R-2303A	SHEET NO. 13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



FOR -L- PROFILE SEE SHEET 40
FOR DITCH DETAILS, SEE SHEET 2-U

MATCHLINE SEE SHEET 12 -L- STA. 131+00.00

MATCHLINE SEE SHEET 14 -L- STA. 145+00.00



REVISIONS

22-SEP-2011 15:31 R:\GIS\PROJECTS\12-2303A\12-2303A.dwg -dj-psh-13.dgn

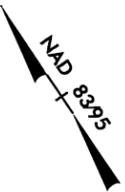
RICHARD R. ALLEN JR.
DB 5267 PG 727
PB 87 PG 96

(31)

B/17/99

PROJECT REFERENCE NO. R-2303A	SHEET NO. 14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

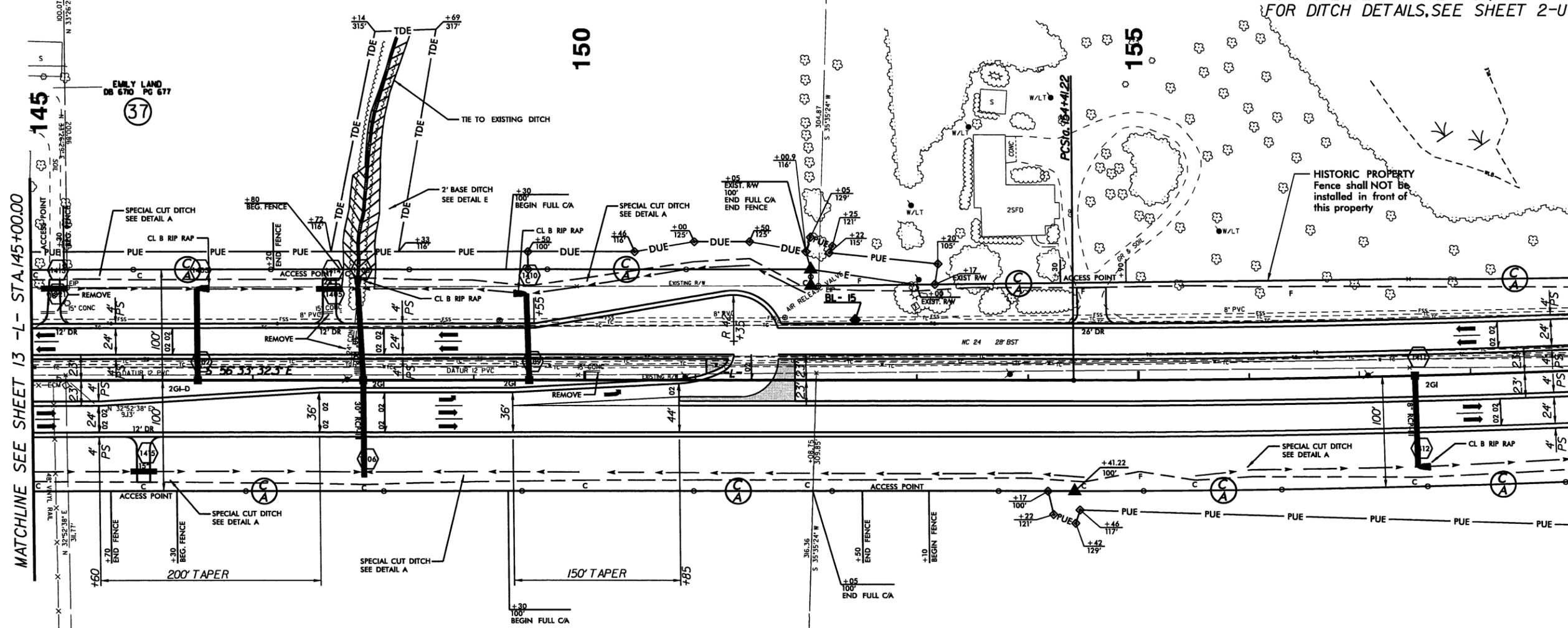
-L-
 PI Sta 163+79.64
 $\Delta = 8' 56" 35.0" (LT)$
 $D = 0' 28" 38.9"$
 $L = 187.303'$
 $T = 938.42'$
 $R = 12,000.00'$
 SE = NC



FOR -L- PROFILE SEE SHEET 4I
 FOR INTERSECTION DETAILS, SEE SHEET 2-K
 FOR DITCH DETAILS, SEE SHEET 2-U

MATCHLINE SEE SHEET 13 -L- STA. 145+00.00

MATCHLINE SEE SHEET 15 -L- STA. 159+00.00



REVISIONS

22-SEP-2011 15:31
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RICHARD R. ALLEN JR.
 DB 5267 PG 724
 PB 87 PG 96

KATHERINE M. REEVES
 DB 2702 PG 599

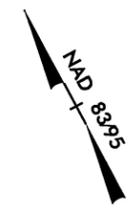
RAYMOND H. MAXWELL
 DB 2226 PG 233

(31)

(38)

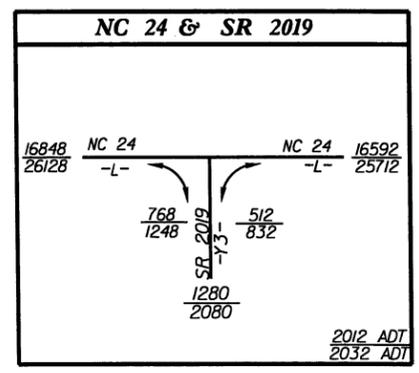
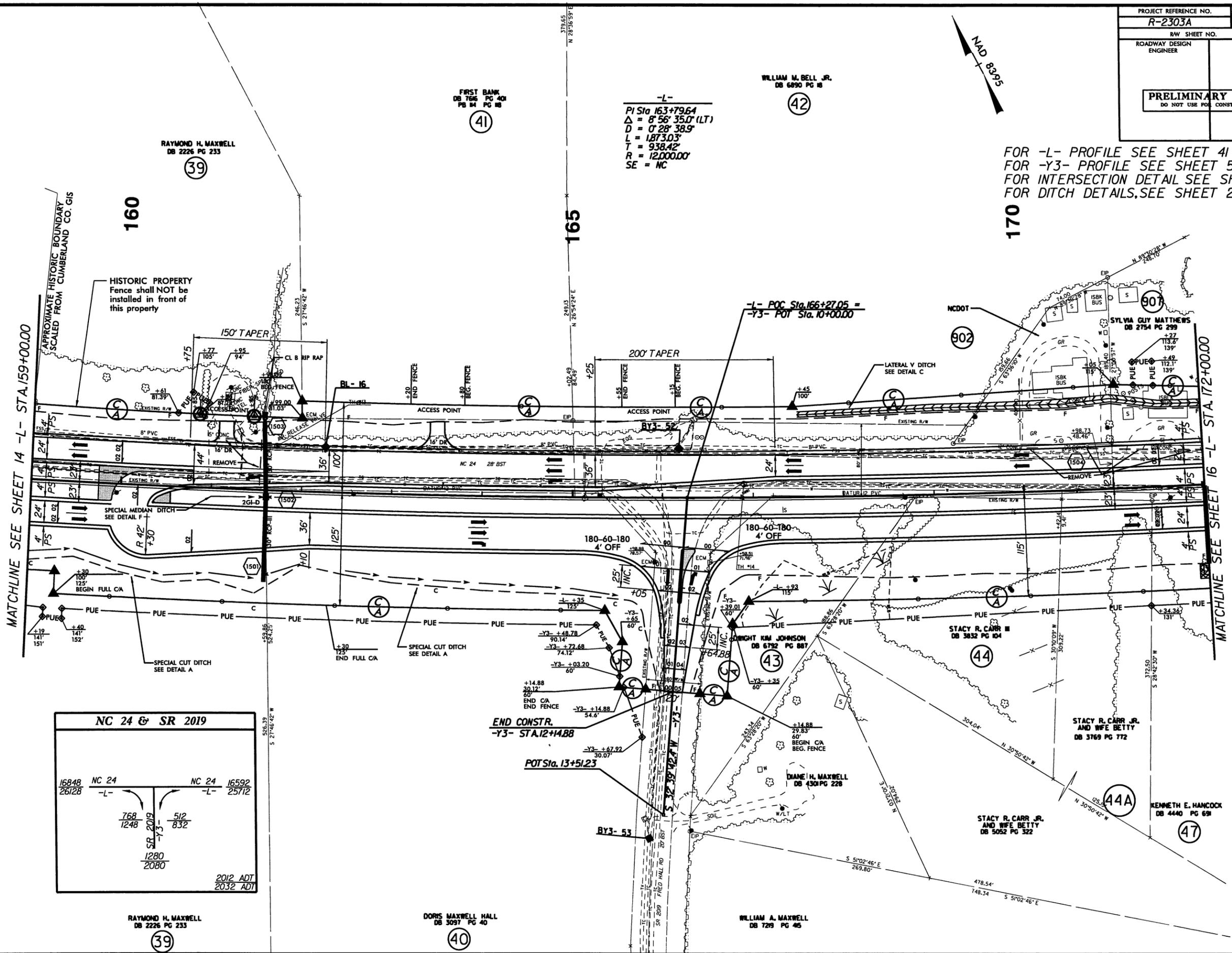
(39)

PROJECT REFERENCE NO. R-2303A		SHEET NO. 15	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			



-L-
 PI Sta 163+79.64
 $\Delta = 8^{\circ}56'35.0''$ (LT)
 $D = 0^{\circ}28'38.9''$
 $L = 1873.03'$
 $T = 938.42'$
 $R = 12,000.00'$
 SE = NC

FOR -L- PROFILE SEE SHEET 41
 FOR -Y3- PROFILE SEE SHEET 51
 FOR INTERSECTION DETAIL SEE SHEET 2-J
 FOR DITCH DETAILS, SEE SHEET 2-U



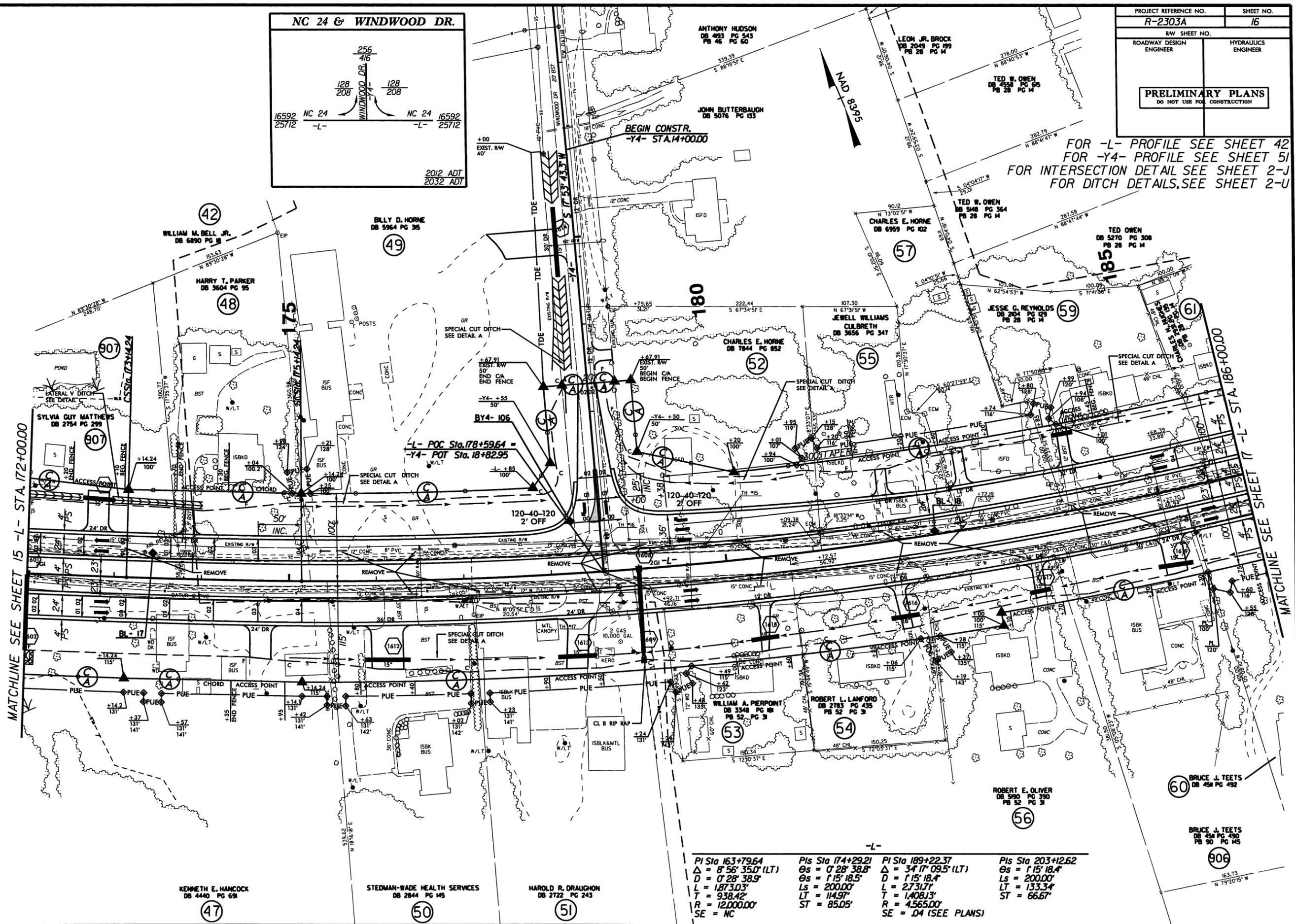
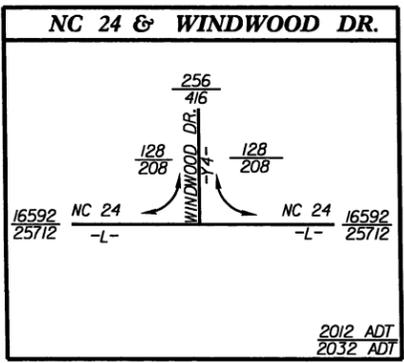
REVISIONS
 02/07/12 R/W REVISIONS (KEM) - ADDED AN ACCESS BREAK AT / NEAR CENTER OF PROPERTY ON PARCEL 041
 SPLIT PARCEL 044 INTO TWO PARCELS: 044 (STACY R. CARR, III AND 044A (STACY R. CARR, JR. AND WIFE BETTY)

8/17/99

RS-FEB-2018 14:07
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PROJECT REFERENCE NO. R-2303A	SHEET NO. 16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

FOR -L- PROFILE SEE SHEET 42
 FOR -Y4- PROFILE SEE SHEET 51
 FOR INTERSECTION DETAIL SEE SHEET 2-J
 FOR DITCH DETAILS, SEE SHEET 2-U



REVISIONS
 DECEMBER 29, 2010 - R/W REVISIONS - REVISED PUE ON PARCEL 47.

MATCHLINE SEE SHEET 15 - L - STA. 172+00.00

MATCHLINE SEE SHEET 17 - L - STA. 186+00.00

PI Sta 163+79.64 $\Delta = 8' 56" 35.0' (LT)$ $D = 0' 28" 38.9'$ $L = 187.303'$ $T = 938.42'$ $R = 12,000.00'$ $SE = NC$	Pis Sta 174+29.21 $\Delta = 0' 28" 38.8'$ $\Delta = 1' 15" 18.5'$ $Ls = 200.00'$ $LT = 114.97'$ $ST = 85.05'$	PI Sta 189+22.37 $\Delta = 34' 17" 09.5' (LT)$ $D = 1' 15" 18.4'$ $L = 273.17'$ $T = 1,408.13'$ $R = 4,565.00'$ $SE = 04' (SEE PLANS)$	Pis Sta 203+12.62 $\Delta = 1' 15" 18.4'$ $Ls = 200.00'$ $LT = 133.34'$ $ST = 66.67'$
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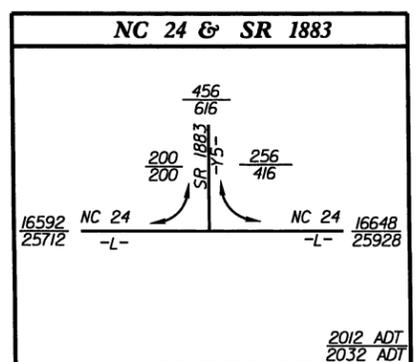
8/17/99
 22-SEP-2011 15:31
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 \$\$\$\$USERSERIAL\$\$\$\$

8/17/99

REVISIONS
02/07/12 RAW REVISION (KEM) - SHIFTED ACCESS BREAK AND REVISED EXISTING AND PROPOSED DRIVEWAYS ON PARCEL NO. 064 TO ALLOW ACCESS TO SINGLE CAR GARAGE AND THE BUILDING IN THE REAR OF THE HOUSE.
RIGHT OF WAY REVISION - JANUARY 18, 2011 - ADDED PARCEL NO. 76A.

02-FEB-2012 09:47
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R:\Roadwork\2303a_rdy_pah_17.dgn

PROJECT REFERENCE NO. R-2303A		SHEET NO. 17	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

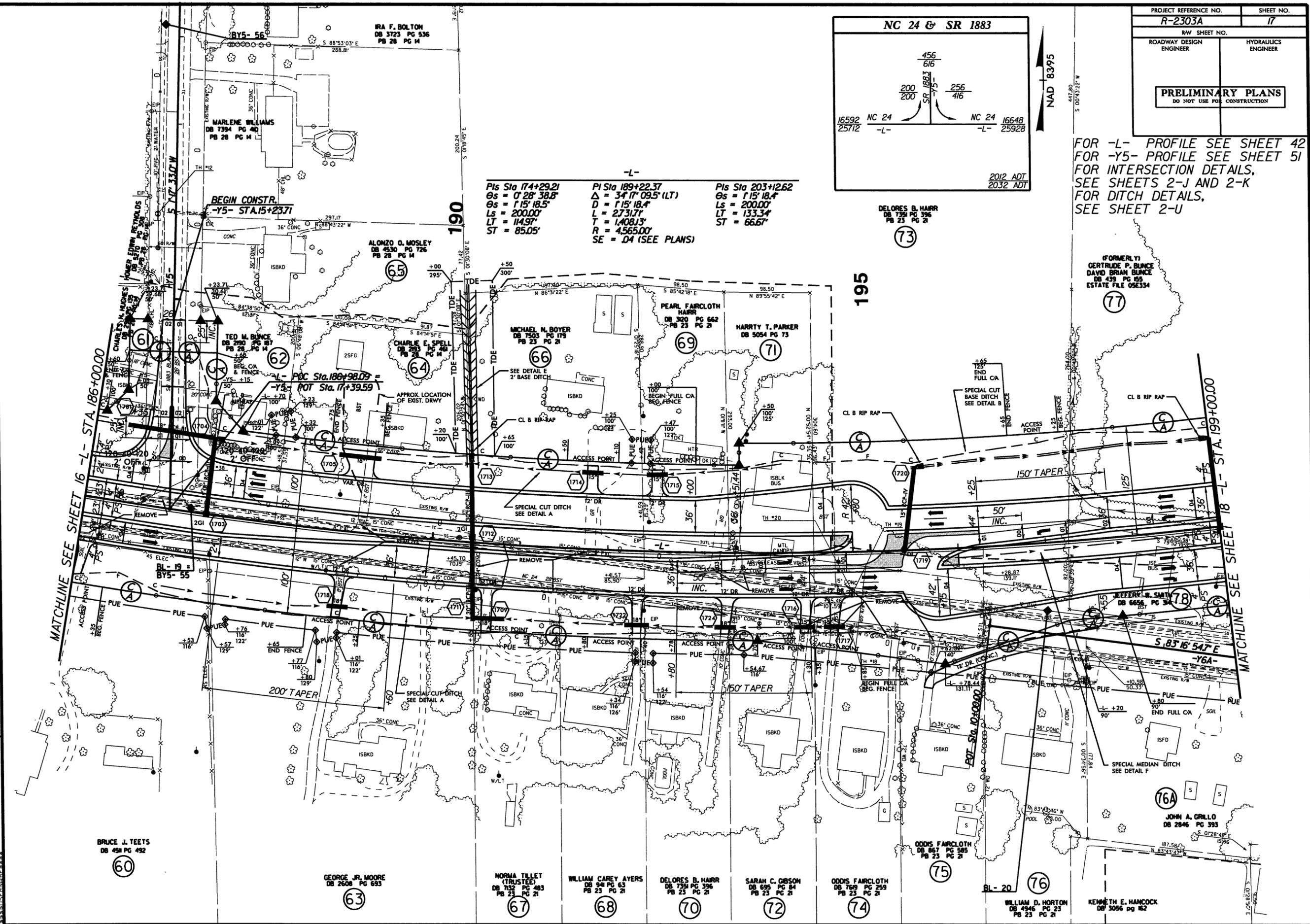


-L-

Pls Sta 174+29.21 Δs = 0' 28' 38.8" Δs = 1' 15' 18.5" Ls = 200.00' LT = 14.97' ST = 85.05'	PI Sta 189+22.37 Δ = 3' 17' 09.5" (LT) D = 1' 15' 18.4" L = 273.17' T = 1,408.13' R = 4,565.00' SE = D4 (SEE PLANS)	Pls Sta 203+12.62 Δs = 1' 15' 18.4" Ls = 200.00' LT = 133.34' ST = 66.67'
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2012 ADT
2032 ADT
DELORES B. HARR
DB 7381 PG 396
PB 23 PG 21
(73)

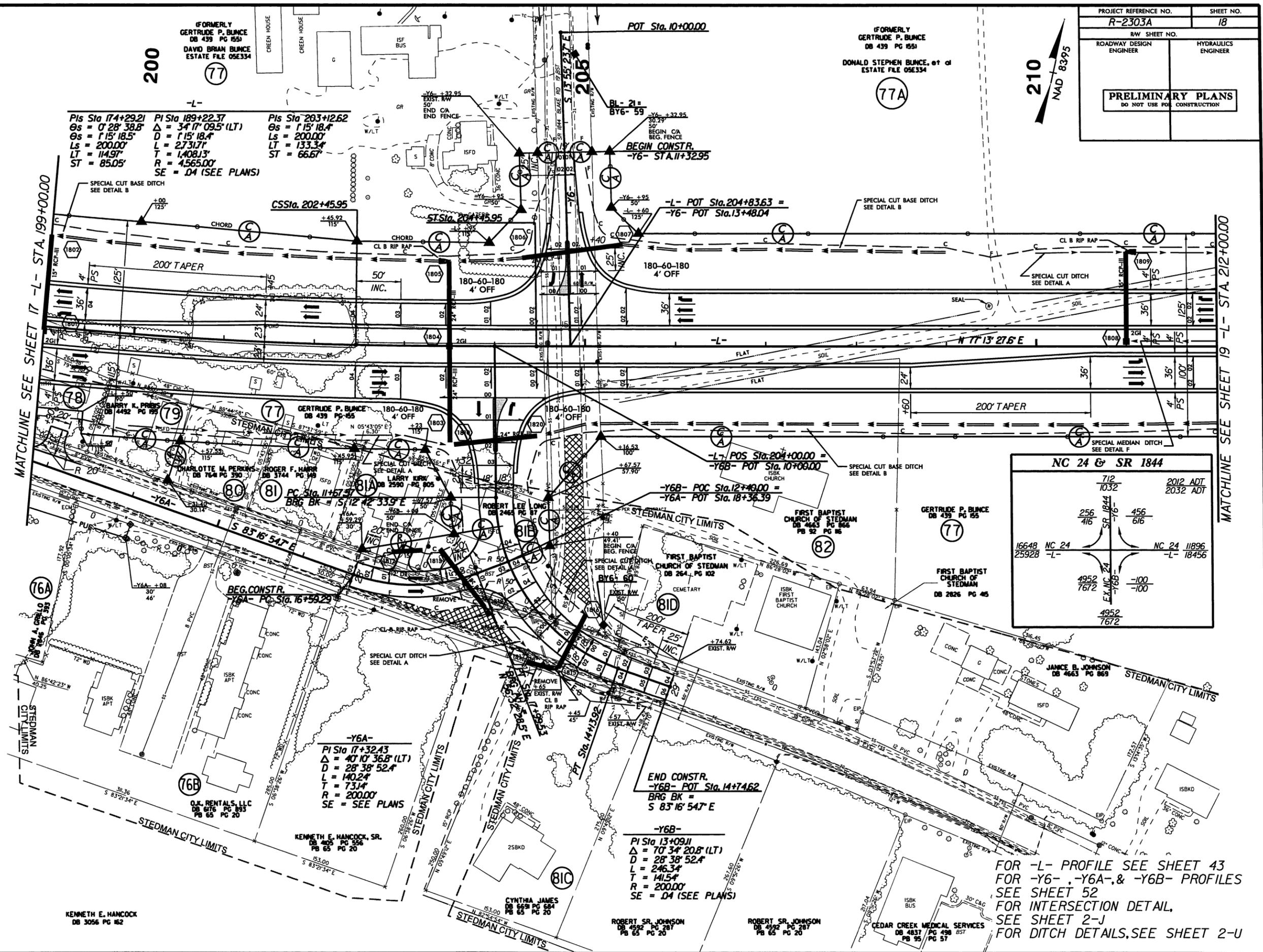
FOR -L- PROFILE SEE SHEET 42
FOR -Y5- PROFILE SEE SHEET 51
FOR INTERSECTION DETAILS,
SEE SHEETS 2-J AND 2-K
FOR DITCH DETAILS,
SEE SHEET 2-U



MATCHLINE SEE SHEET 16 -L- STA. 186+00.00

MATCHLINE SEE SHEET 18 -L- STA. 199+00.00

PROJECT REFERENCE NO. R-2303A	SHEET NO. 18
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



Pls Sta 174+29.21 PI Sta 189+22.37 Pls Sta 203+12.62
 Os = 0' 28" 38.8" Δ = 34' 17" 09.5" (LT) Os = 1' 15" 18.4"
 Ls = 1' 15" 18.5" D = 1' 15" 18.4" Ls = 200.00'
 LT = 114.97' T = 1.40813' LT = 133.34'
 ST = 85.05' R = 4.56500' ST = 66.67'
 SE = .04 (SEE PLANS)

CSS Sta. 202+45.95
 ST Sta. 204+18.95

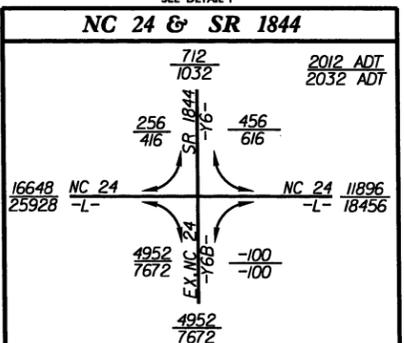
-L- POT Sta. 204+83.63 =
 -Y6- POT Sta. 13+48.04

-L- POS Sta. 204+00.00 =
 -Y6B- POT Sta. 10+00.00
 -Y6A- POT Sta. 18+36.39

-Y6A-
 PI Sta 17+32.43
 Δ = 40' 10" 36.8" (LT)
 D = 28' 38" 52.4"
 L = 140.24'
 T = 73.14'
 R = 200.00'
 SE = SEE PLANS

END CONSTR.
 -Y6B- POT Sta. 14+74.62
 BRG BK =
 S 83° 16' 54.7" E

-Y6B-
 PI Sta 13+09.11
 Δ = 70' 34" 20.8" (LT)
 D = 28' 38" 52.4"
 L = 246.34'
 T = 141.54'
 R = 200.00'
 SE = .04 (SEE PLANS)



FOR -L- PROFILE SEE SHEET 43
 FOR -Y6-, -Y6A-, & -Y6B- PROFILES
 SEE SHEET 52
 FOR INTERSECTION DETAIL,
 SEE SHEET 2-J
 FOR DITCH DETAILS, SEE SHEET 2-U

02/07/12 R/W REVISION (KEM) - SPLIT PARCEL 077 WEST OF -Y6- DAVID BRIAN BUNCE PER ESTATE FILE 05E334 AND 077A EAST OF -Y6-
 (DONALD STEPHEN BUNCE, et al PER ESTATE FILE 05E334) AND KEPT PREVIOUS DEED AS A REFERENCE.
 RIGHT OF WAY REVISION - APRIL 8, 2011 - ADDED A DRIVEWAY TO PARCEL NO. 81A AND A NEW DRAINAGE SYSTEM TO -Y6B-.

REVISIONS

8/17/99

08-FEB-2012 09:47
 P:\Projects\2303a_rdy_psh_18.dgn
 \$\$\$\$BILSENMAN\$\$\$\$

KENNETH E. HANCOCK
 DB 3056 PG 152

KENNETH E. HANCOCK, SR.
 DB 405 PG 556
 PB 65 PG 20

CYNTHIA JAMES
 DB 659 PG 684
 PB 65 PG 20

ROBERT SR. JOHNSON
 DB 452 PG 287
 PB 65 PG 20

ROBERT SR. JOHNSON
 DB 452 PG 287
 PB 65 PG 20

CEDAR CREEK MEDICAL SERVICES
 DB 4837 PG 498
 PB 95 PG 57

GERTRUDE P. BUNCE
 DB 439 PG 155

FIRST BAPTIST
 CHURCH OF STEDMAN
 DB 4663 PG 866
 PB 92 PG 16

FIRST BAPTIST
 CHURCH OF STEDMAN
 DB 2826 PG 45

JANICE B. JOHNSON
 DB 4663 PG 869

200

(77)

(77A)

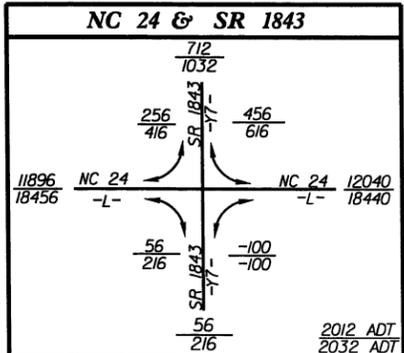
MATCHLINE SEE SHEET 17 -L- STA. 199+00.00

MATCHLINE SEE SHEET 19 -L- STA. 212+00.00

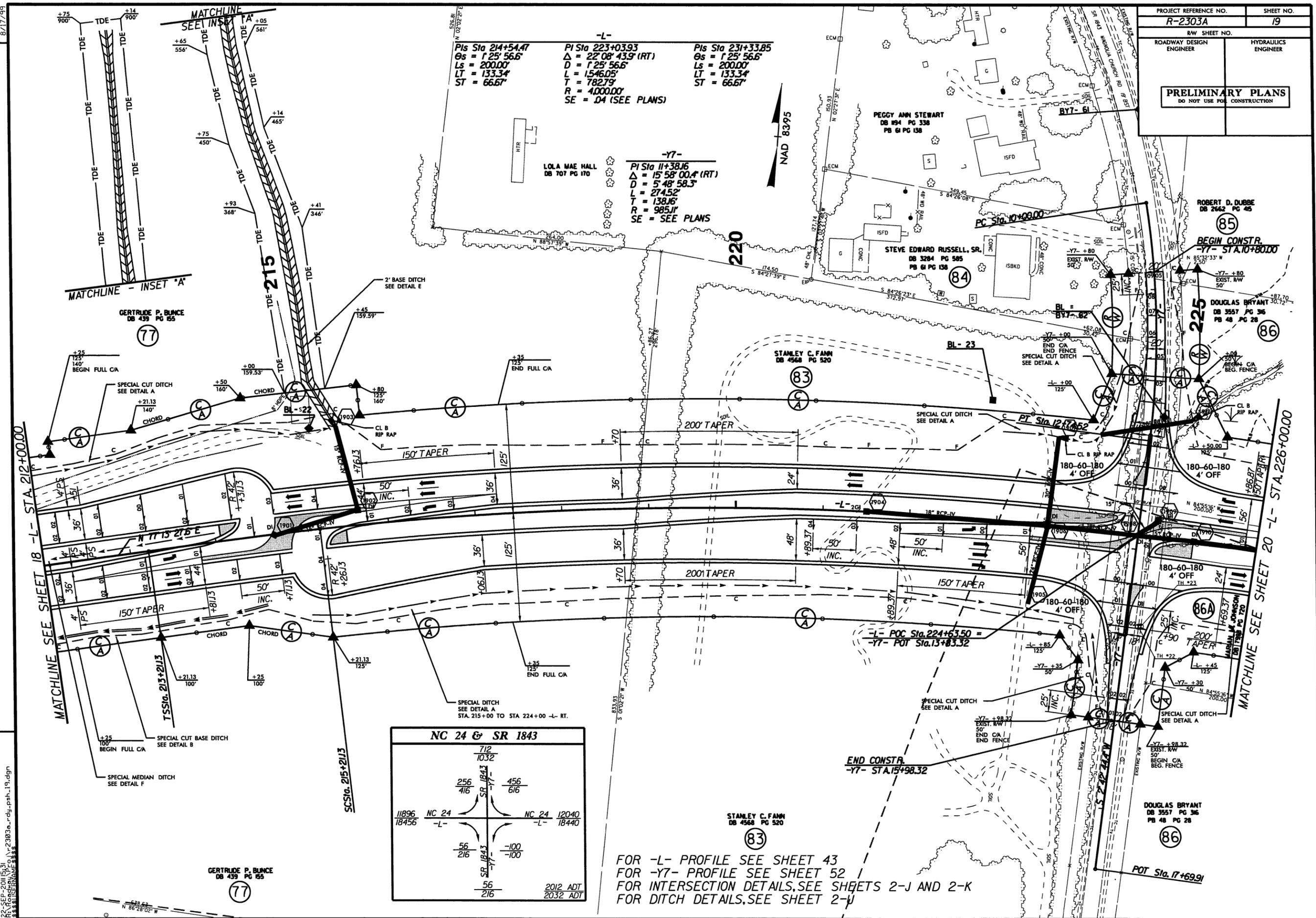
PROJECT REFERENCE NO. R-2303A	SHEET NO. 19
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-L-
 PIs Sta 214+54.47 PI Sta 223+03.93 PIs Sta 231+33.85
 Os = 1° 25' 56.6" Δ = 22° 08' 43.9" (RT) Os = 1° 25' 56.6"
 Ls = 200.00' D = 1° 25' 56.6" Ls = 200.00'
 LT = 133.34' T = 782.79' LT = 133.34'
 R = 4,000.00' SE = .04 (SEE PLANS) ST = 66.67'

-Y7-
 PI Sta 11+38.16
 Δ = 15° 58' 00.4" (RT)
 D = 5° 48' 58.3"
 L = 274.52'
 T = 138.16'
 R = 985.11'
 SE = SEE PLANS



FOR -L- PROFILE SEE SHEET 43
 FOR -Y7- PROFILE SEE SHEET 52
 FOR INTERSECTION DETAILS, SEE SHEETS 2-J AND 2-K
 FOR DITCH DETAILS, SEE SHEET 2-J



22-SEP-2011 15:31
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 8/17/99

GERTRUDE P. BUNCE
 DB 439 PG 155
 (77)

STANLEY C. FANN
 DB 4568 PG 520
 (83)

DOUGLAS BRYANT
 DB 3557 PG 36
 PB 48 PG 28
 (86)

ROBERT D. DUBBE
 DB 2662 PG 45
 (85)

DOUGLAS BRYANT
 DB 3557 PG 36
 PB 48 PG 28
 (86)

PEGGY ANN STEWART
 DB 194 PG 338
 PB 61 PG 138
 (84)

STEVE EDWARD RUSSELL, SR.
 DB 3264 PG 585
 PB 61 PG 138
 (84)

STANLEY C. FANN
 DB 4568 PG 520
 (83)

GERTRUDE P. BUNCE
 DB 439 PG 155
 (77)

SPECIAL MEDIAN DITCH
 SEE DETAIL F

SPECIAL CUT BASE DITCH
 SEE DETAIL B

SPECIAL CUT DITCH
 SEE DETAIL A

BEGIN FULL CA

2' BASE DITCH
 SEE DETAIL E

SPECIAL CUT DITCH
 SEE DETAIL A

8/17/99

PROJECT REFERENCE NO. R-2303A	SHEET NO. 20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-L-

PIs Sta 214+54.47	PIs Sta 223+03.93	PIs Sta 231+33.85
$\Theta_s = 125^\circ 56.6'$	$\Delta = 22^\circ 08' 43.9" (RT)$	$\Theta_s = 125^\circ 56.6'$
$L_s = 200.00'$	$D = 125^\circ 56.6'$	$L_s = 200.00'$
$LT = 133.34'$	$L = 1546.05'$	$LT = 133.34'$
$ST = 66.67'$	$T = 782.79'$	$ST = 66.67'$
	$R = 4000.00'$	
	$SE = D4 (SEE PLANS)$	

ROBERT D. DUBBE
DB 2662 PG 45
(85)

DOUGLAS BRYANT
DB 3557 PG 36
PB 48 PG 28
(86)

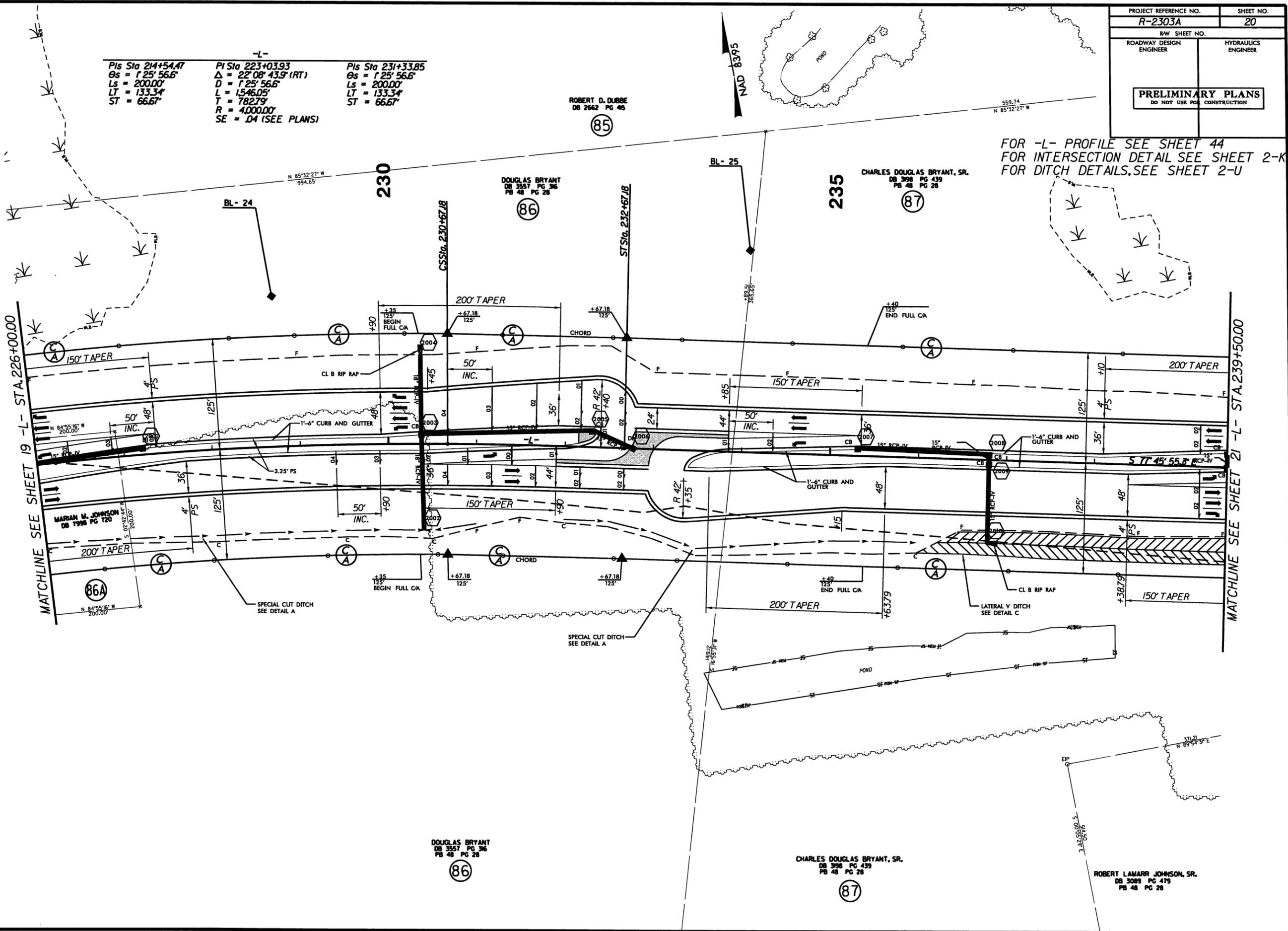
CHARLES DOUGLAS BRYANT, SR.
DB 398 PG 439
PB 48 PG 28
(87)

DOUGLAS BRYANT
DB 3557 PG 36
PB 48 PG 28
(86)

CHARLES DOUGLAS BRYANT, SR.
DB 398 PG 439
PB 48 PG 28
(87)

ROBERT LAMARR JOHNSON, SR.
DB 3089 PG 479
PB 48 PG 28

REVISIONS

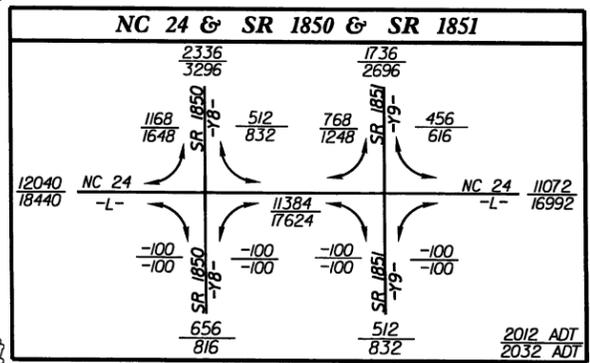


FOR -L- PROFILE SEE SHEET 44
FOR INTERSECTION DETAIL SEE SHEET 2-K
FOR DITCH DETAILS, SEE SHEET 2-U

22-SEP-2011 15:31
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\$\$\$\$\$USERNAME\$\$\$\$\$

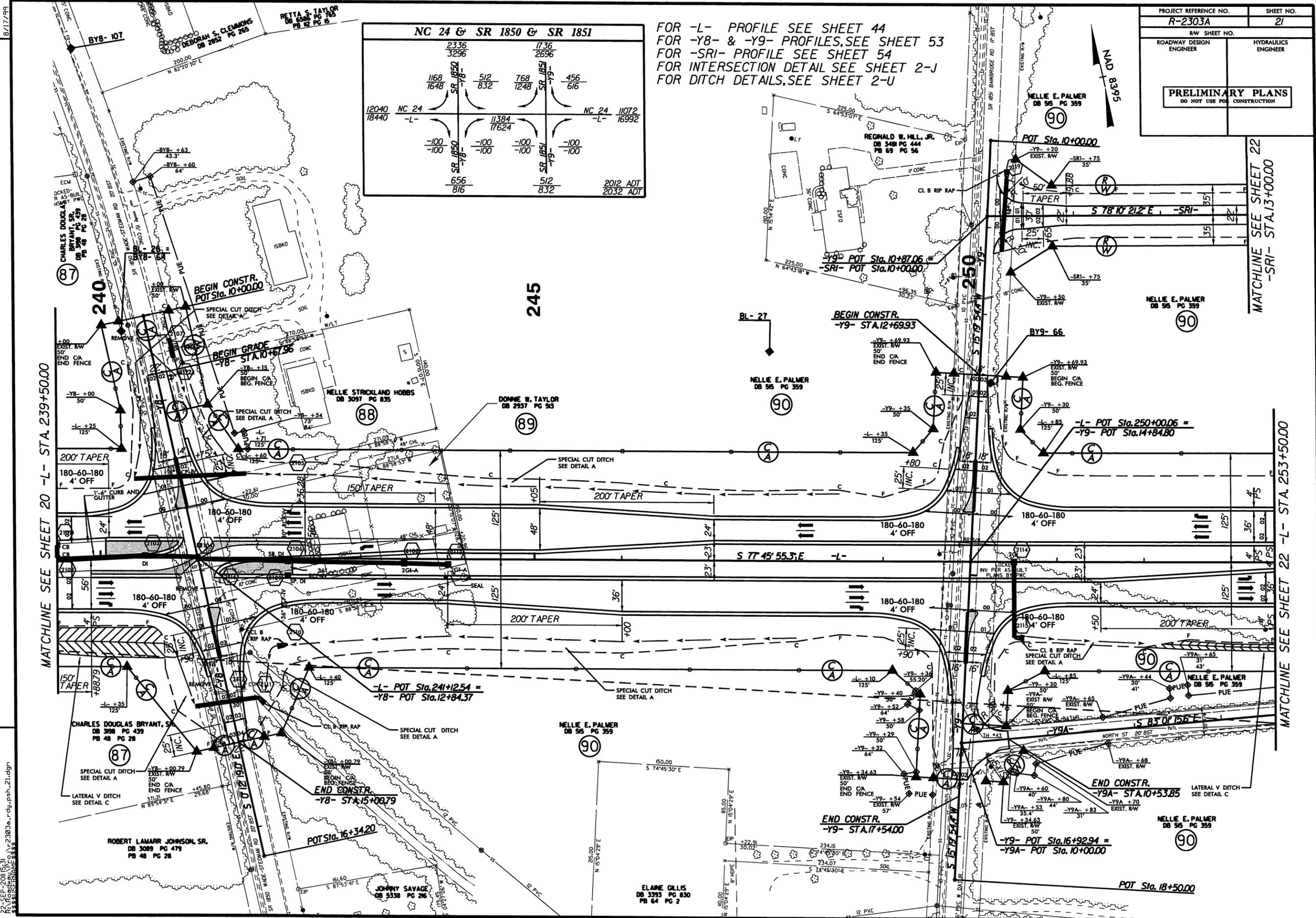
PROJECT REFERENCE NO. R-2303A	SHEET NO. 21
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	

FOR -L- PROFILE SEE SHEET 44
 FOR -Y8- & -Y9- PROFILES, SEE SHEET 53
 FOR -SRI- PROFILE SEE SHEET 54
 FOR INTERSECTION DETAIL SEE SHEET 2-J
 FOR DITCH DETAILS, SEE SHEET 2-U



RIGHT OF WAY REVISION - APRIL 8, 2011 - REVISED R/W MONUMENT STATION FROM +35 TO +30 AT -Y9- STA.16+30.50' LEFT.

REVISIONS



MATCHLINE SEE SHEET 20 -L- STA. 239+50.00

MATCHLINE SEE SHEET 22 -SRI- STA.13+00.00

MATCHLINE SEE SHEET 22 -L- STA. 253+50.00

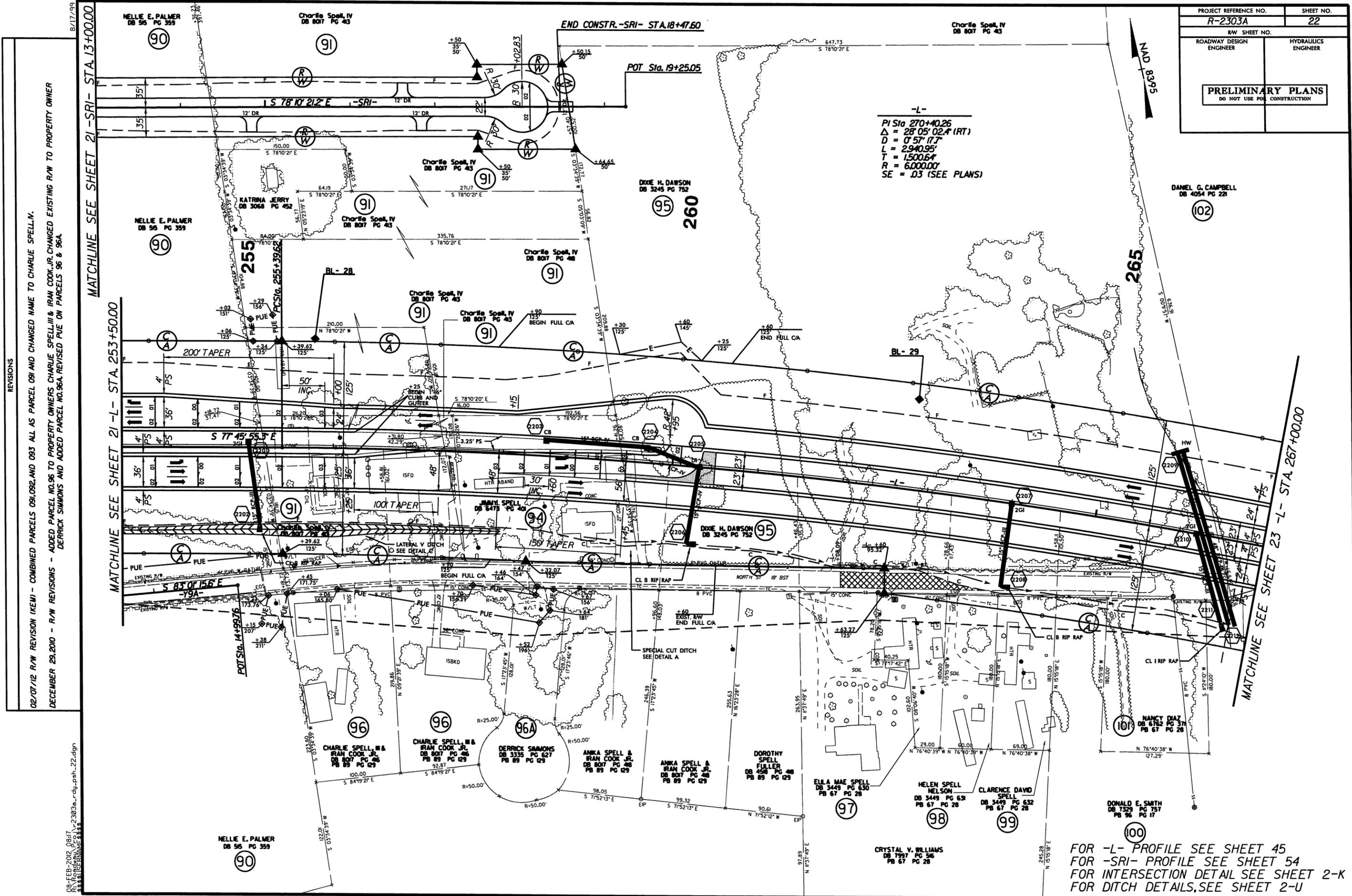
22-SEP-2011 15:31
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 \$\$\$\$SPLINE\$\$\$\$

PROJECT REFERENCE NO. R-2303A	SHEET NO. 22
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

DANIEL G. CAMPBELL
DB 4054 PG 22

NAD 8395

-L-
 PI Sta 270+40.26
 $\Delta = 28^{\circ} 05' 02.4" (RT)$
 $D = 0' 57' 17.7"$
 $L = 2940.95'$
 $T = 1500.64'$
 $R = 6000.00'$
 $SE = .03 (SEE PLANS)$



MATCHLINE SEE SHEET 21 -SRI- STA. 13+00.00

MATCHLINE SEE SHEET 21 -L- STA. 253+50.00

MATCHLINE SEE SHEET 23 -L- STA. 267+00.00

REVISIONS
 02/07/12 R/W REVISION (KEW) - COMBINED PARCELS 081,082, AND 083 ALL AS PARCEL 081 AND CHANGED NAME TO CHARLIE SPELL, IV.
 DECEMBER 29, 2010 - R/W REVISIONS - ADDED PARCEL NO. 96 TO PROPERTY OWNERS CHARLIE SPELL, III & IRAN COOK, JR. CHANGED EXISTING R/W TO PROPERTY OWNER DERRICK SIMMONS AND ADDED PARCEL NO. 96A. REVISED PUE ON PARCELS 96 & 96A.

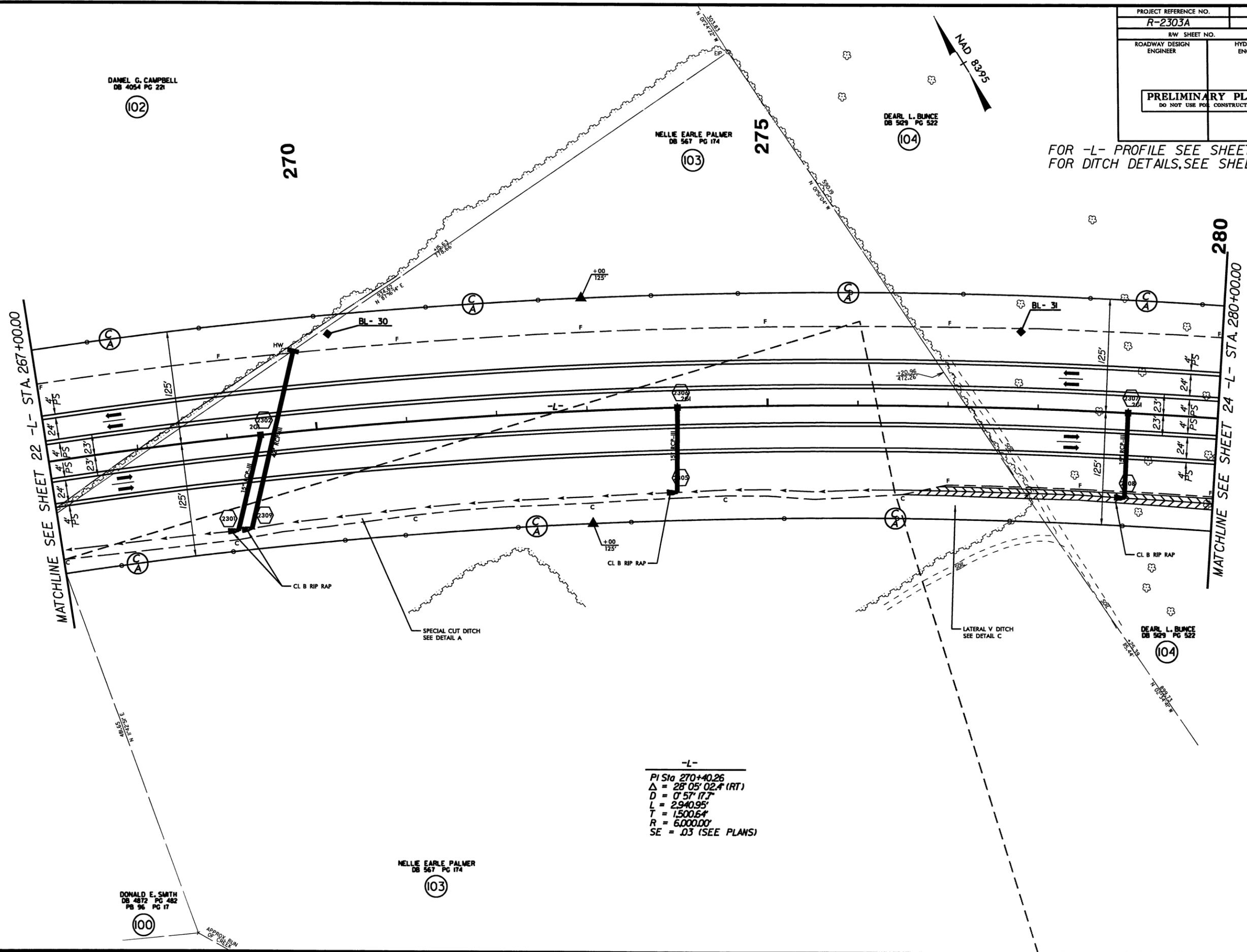
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FOR -L- PROFILE SEE SHEET 45
 FOR -SRI- PROFILE SEE SHEET 54
 FOR INTERSECTION DETAIL SEE SHEET 2-K
 FOR DITCH DETAILS, SEE SHEET 2-U

8/17/99

PROJECT REFERENCE NO. R-2303A	SHEET NO. 23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

FOR -L- PROFILE SEE SHEET 45
FOR DITCH DETAILS, SEE SHEET 2-U



-L-
 PI Sta 270+40.26
 $\Delta = 28^{\circ} 05' 02.4" (RT)$
 $D = 0^{\circ} 57' 17.7"$
 $L = 2,940.95'$
 $T = 1,500.64'$
 $R = 6,000.00'$
 $SE = .03 (SEE PLANS)$

REVISIONS

22-SEP-2011 15:32
 R:\PROJECTS\2303A\2303a_rdy_psh_23.dgn
 8/17/99

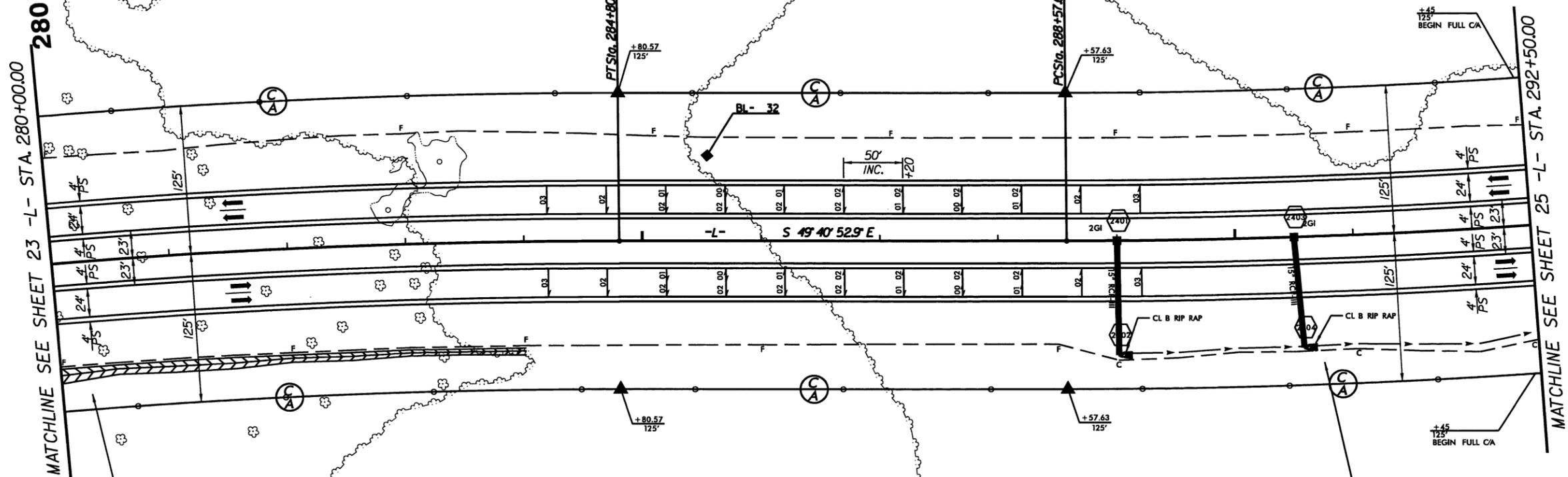
DONALD E. SMITH
 DB 4872 PG 482
 PB 96 PG 17

NELLIE EARLE PALMER
 DB 567 PG 174

DEARL L. BUNCE
 DB 529 PG 522

8/17/99

PROJECT REFERENCE NO. R-2303A	SHEET NO. 24
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



REVISIONS

MATCHLINE SEE SHEET 23 -L- STA. 280+00.00

MATCHLINE SEE SHEET 25 -L- STA. 292+50.00

DEARL L. BUNCE
DB 529 PG 522
(104)

285

290



PTSig. 284+80.57

PCSig. 288+57.63

-L- S 49° 40' 52.9\"/>

LATERAL V DITCH
SEE DETAIL C

SPECIAL CUT DITCH
SEE DETAIL A

-L-

PI Sta 270+40.26	PI Sta 295+56.68
$\Delta = 28^{\circ} 05' 02.4\"/> $	

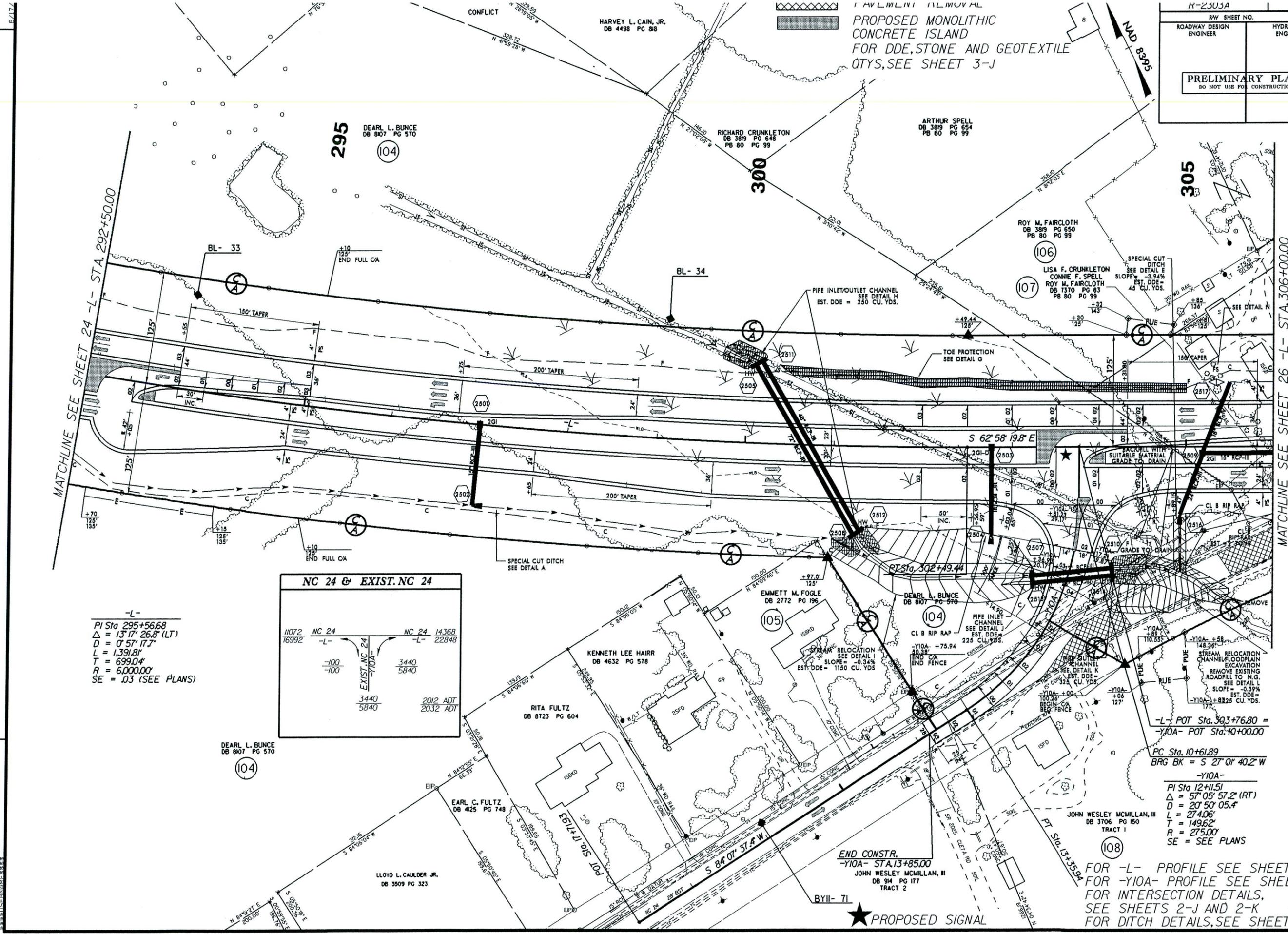
DEARL L. BUNCE
DB 529 PG 522
(104)

NELLE EARLE PALMER
DB 567 PG 174
(103)

FOR -L- PROFILE SEE SHEET 46
FOR DITCH DETAILS, SEE SHEET 2-U

22-SEP-2011 15:32
R:\Roadway\2303a_rdl_psh_24.dgn
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PROPOSED MONOLITHIC CONCRETE ISLAND FOR DDE, STONE AND GEOTEXTILE QTYS, SEE SHEET 3-J



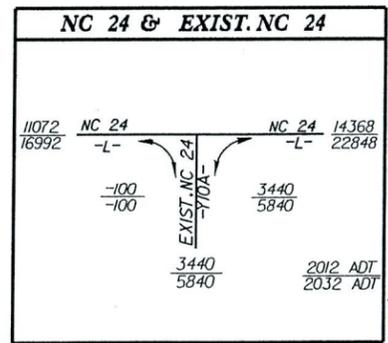
REVISIONS

06/20/12 R/W REVISION (TLS) - ADDED TCE TO PARCEL NOS. 104 AND 105.

MATCHLINE SEE SHEET 24 -L- STA. 292+50.00

MATCHLINE SEE SHEET 26 -L- STA. 306+00.00

-L-
 PI Sta 295+56.68
 $\Delta = 13^\circ 17' 26.8''$ (LT)
 $D = 0' 57'' 17.7''$
 $L = 1,391.81'$
 $T = 699.04'$
 $R = 6,000.00'$
 $SE = .03$ (SEE PLANS)



-L- POT Sta. 303+76.80 =
 -Y10A- POT Sta. 10+00.00

PC Sta. 10+61.89
 BRG BK = S 27° 01' 40.2" W

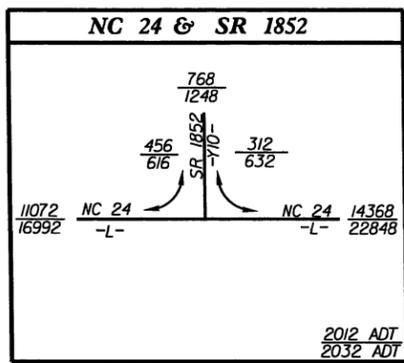
-Y10A-
 PI Sta 12+11.51
 $\Delta = 57^\circ 05' 57.2''$ (RT)
 $D = 20' 50'' 05.4''$
 $L = 274.06'$
 $T = 149.62'$
 $R = 275.00'$
 $SE =$ SEE PLANS

FOR -L- PROFILE SEE SHEET 46
 FOR -Y10A- PROFILE SEE SHEET 53
 FOR INTERSECTION DETAILS,
 SEE SHEETS 2-J AND 2-K
 FOR DITCH DETAILS, SEE SHEET 2-T

★ PROPOSED SIGNAL

SYSTEMS
 CONSTRUCTION
 ENGINEERING
 INC.

PROJECT REFERENCE NO. R-2303A	SHEET NO. 26
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



ELLEN McMILLAN HALL TRUSTEE
DB 402 PG 323
DB 743 PG 595
(109)

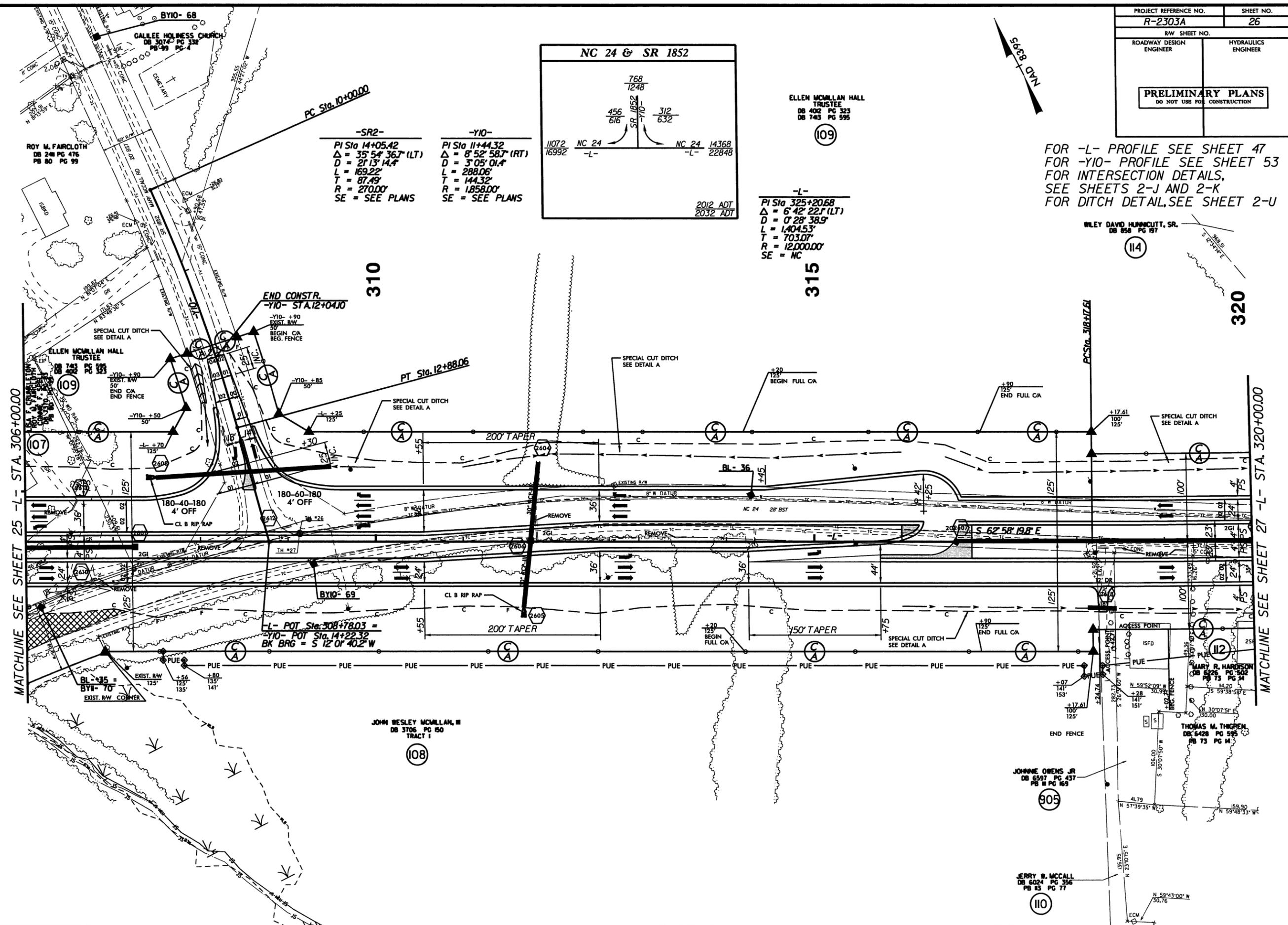
-L-
PI Sta 325+20.68
Δ = 6°42'22" (LT)
D = 0°28'38.9"
L = 1,404.53'
T = 703.07'
R = 12,000.00'
SE = NC

-SR2-
PI Sta 14+05.42
Δ = 35°54'36.7" (LT)
D = 21°13'14.4"
L = 169.22'
T = 87.49'
R = 270.00'
SE = SEE PLANS

-Y10-
PI Sta 11+44.32
Δ = 8°52'58.7" (RT)
D = 3°05'01.4"
L = 288.06'
T = 144.32'
R = 1,858.00'
SE = SEE PLANS

FOR -L- PROFILE SEE SHEET 47
FOR -Y10- PROFILE SEE SHEET 53
FOR INTERSECTION DETAILS,
SEE SHEETS 2-J AND 2-K
FOR DITCH DETAIL, SEE SHEET 2-U

WILEY DAVID HUNNICUTT, SR.
DB 858 PG 197
(114)



MATCHLINE SEE SHEET 25 -L- STA. 306+00.00

MATCHLINE SEE SHEET 27 -L- STA. 320+00.00

REVISIONS
DECEMBER 29, 2010 - R/W REVISIONS - REVISED PUE ON PARCEL 108.

22-SEP-2011 15:32
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\$\$\$\$ UNRELEASABLE \$\$\$

8/17/99

PROJECT REFERENCE NO.		SHEET NO.	
R-2303A		27	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS			
DO NOT USE FOR CONSTRUCTION			

-L-
 PI Sta 325+20.68
 $\Delta = 6' 42" 22.1 (LT)$
 $D = 0' 28" 38.9$
 $L = 1404.53'$
 $T = 703.07'$
 $R = 12,000.00'$
 $SE = NC$



FOR -L- PROFILE SEE SHEET 47
 FOR DITCH DETAILS, SEE SHEET 2-U



REVISIONS

22-SEP-2011 15:32
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PROJECT REFERENCE NO.	SHEET NO.
R-2303A	28
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	

FOR -L- PROFILE SEE SHEET 48
 FOR INTERSECTION DETAIL SEE SHEET 2-K
 FOR DITCH DETAILS, SEE SHEET 2-U

-L-
 PI Sta 340+81.55
 $\Delta = 6' 45" 51.7' (RT)$
 $D = 0' 57" 17.7'$
 $L = 708.36'$
 $T = 354.59'$
 $R = 6000.00'$
 $SE = 03$

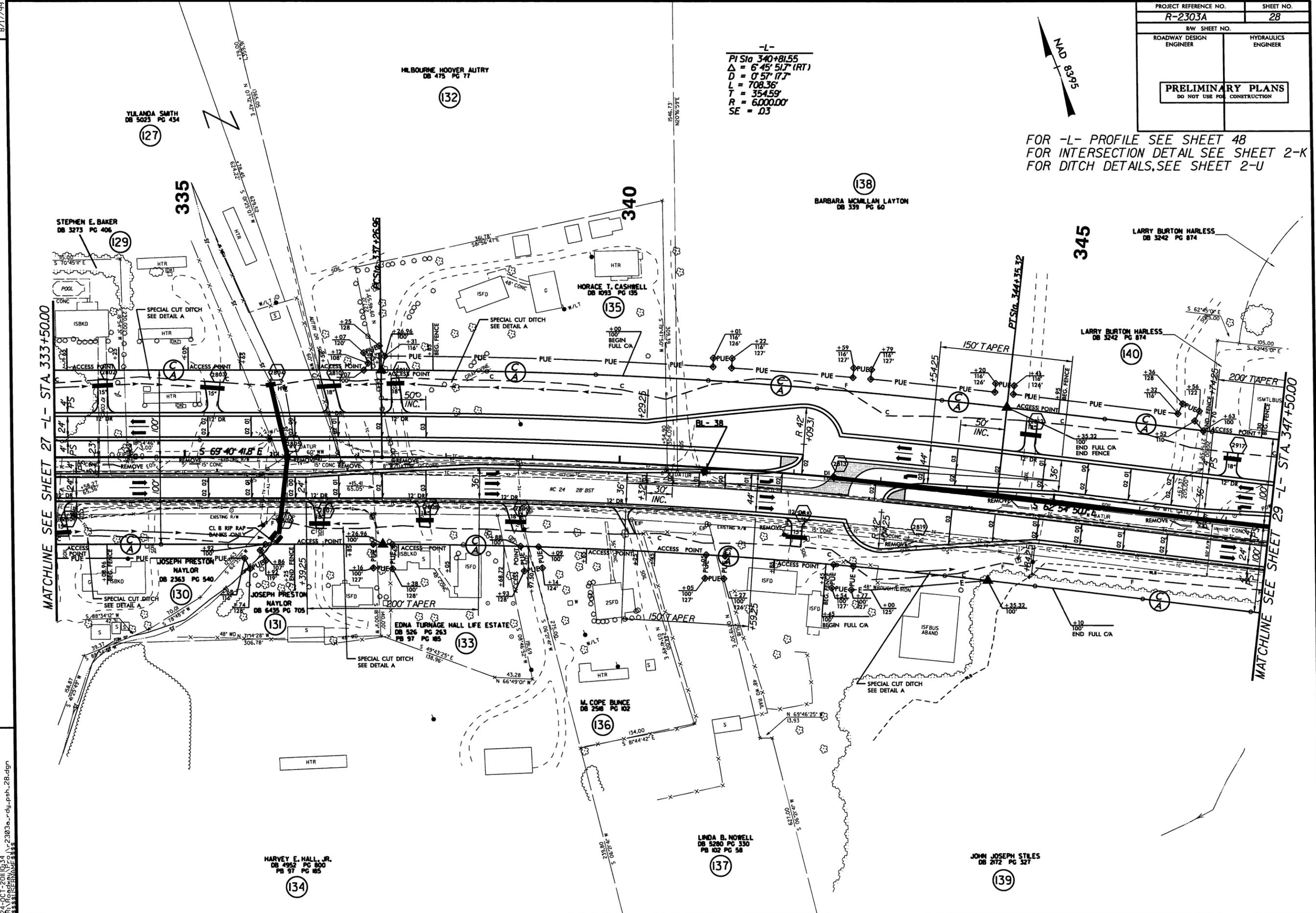


OCTOBER 24, 2011 - R/W REVISION - ADDED PUE ON PARCELS 138 & 139, REVISED TCE ON PARCEL 139 AND DELETED PUE ON PARCEL 129.

REVISIONS

MATCHLINE SEE SHEET 27 -L- STA. 333+50.00

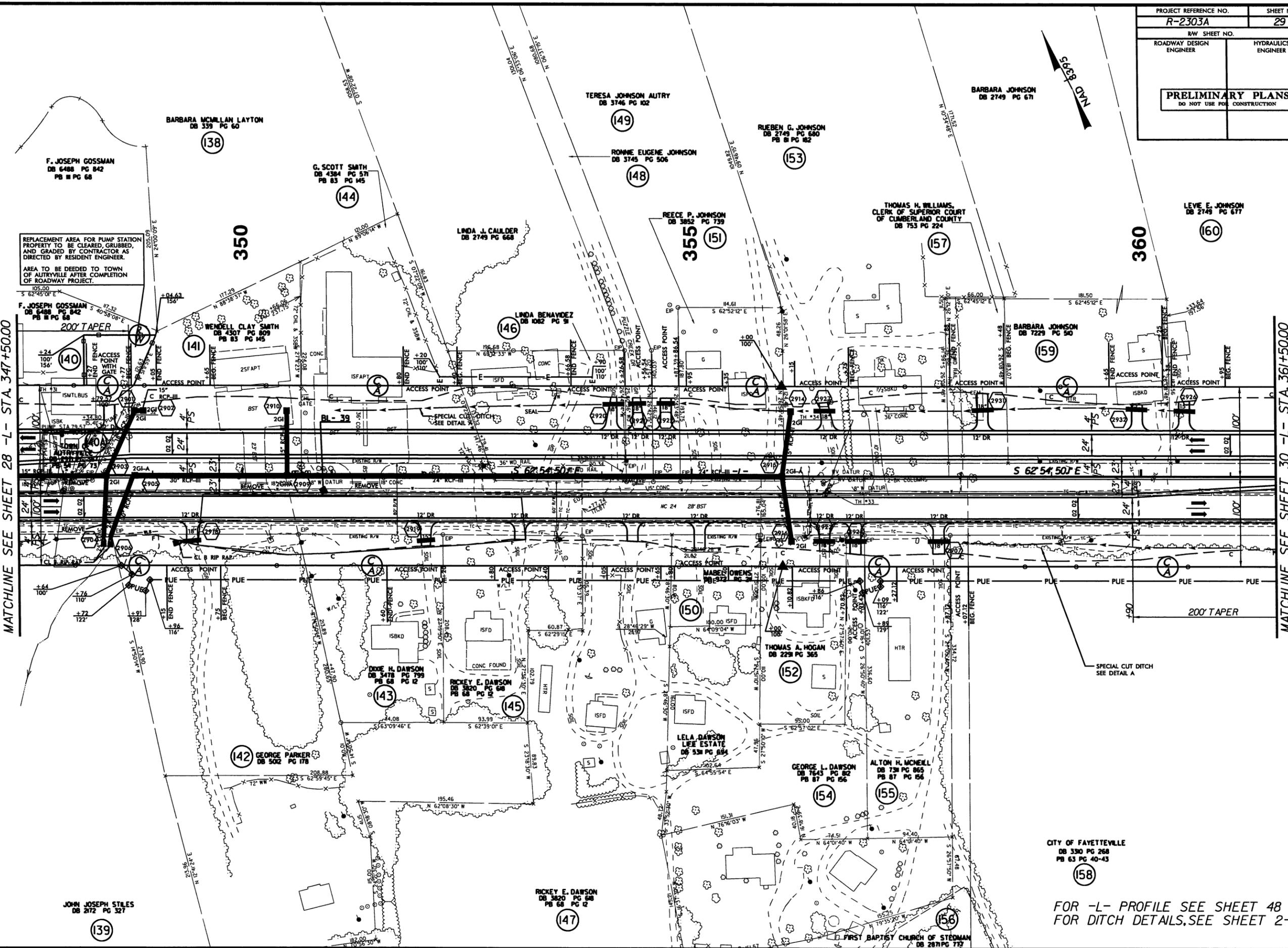
MATCHLINE SEE SHEET 29 -L- STA. 347+50.00



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 3311518000

8/17/99

PROJECT REFERENCE NO. R-2303A		SHEET NO. 29	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS			
DO NOT USE FOR CONSTRUCTION			



REPLACEMENT AREA FOR PUMP STATION
PROPERTY TO BE CLEARED, GRUBBED,
AND GRADED BY CONTRACTOR AS
DIRECTED BY RESIDENT ENGINEER.

AREA TO BE DEEDED TO TOWN
OF ALTRIVILLE AFTER COMPLETION
OF ROADWAY PROJECT.

MATCHLINE SEE SHEET 28 -L- STA. 347+50.00

MATCHLINE SEE SHEET 30 -L- STA. 361+50.00

REVISIONS
 02/07/12 R/W REVISIONS (KEN) - ADDED A DRIVEWAY INTO CEMETERY, CHANGED NAME OF CEMETERY TO THOMAS H. WILLIAMS, CLERK OF SUPERIOR COURT OF CUMBERLAND COUNTY
 DB 755 PG 294 OF PARCEL 157
 SHIPPED DRIVE TO EAST SIDE OF PROPERTY AND INSTALLED ACCESS BREAK FROM STA. 359+65 TO STA. 350+25 LT. OF "L" ON PARCEL 159.
 CHANGED NAME OF ADJOINING PROPERTY IN REAR FROM WILLIE A. JOHNSON TO BARBARA JOHNSON AND ADDED A TIE BAR BETWEEN PROPERTIES.
 CHANGED NAME OF ADJOINING PROPERTY IN REAR FROM WILLIE A. JOHNSON TO BARBARA JOHNSON AND ADDED A TIE BAR BETWEEN PROPERTIES.
 CONVERTED AREA SHOWN AS PUE FOR THE REPLACEMENT AREA FOR THE PUMP STATION TO RIGHT OF WAY ON PARCEL 140.

OCTOBER 24, 2011 - R/W REVISION - ADDED NOTE REGARDING DEEDING PARCEL 140 TO THE TOWN OF ALTRIVILLE AFTER COMPLETION OF ROADWAY PROJECT.

8/17/99

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 \$\$\$SHEEDNAME\$\$\$

CITY OF FAYETTEVILLE
 DB 330 PG 268
 PB 63 PG 40-43

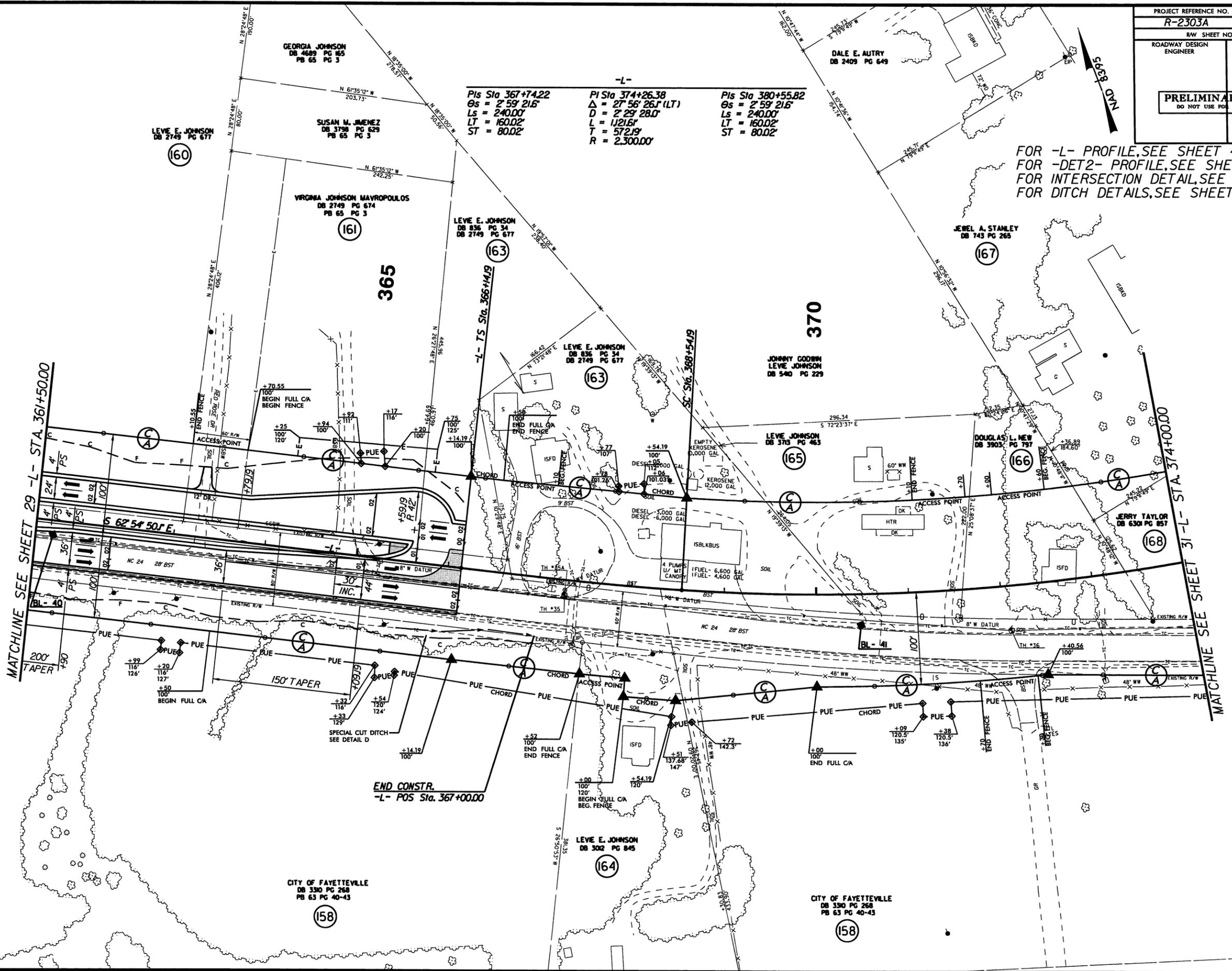
FOR -L- PROFILE SEE SHEET 48
 FOR DITCH DETAILS, SEE SHEET 2-U

PROJECT REFERENCE NO. R-2303A	SHEET NO. 30
RWY SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

FOR -L- PROFILE, SEE SHEET 49
 FOR -DET2- PROFILE, SEE SHEET 2-N
 FOR INTERSECTION DETAIL, SEE SHEET 2-K
 FOR DITCH DETAILS, SEE SHEET 2-U

-L-

PIs Sta 367+74.22 Os = 2' 59" 21.6" Ls = 240.00' LT = 160.02' ST = 80.02'	PI Sta 374+26.38 Δ = 27' 56" 26.1" (LT) D = 2' 29" 28.0" L = 1121.6' T = 572.19' R = 2,300.00'	PIs Sta 380+55.82 Os = 2' 59" 21.6" Ls = 240.00' LT = 160.02' ST = 80.02'
---	---	---



REVISIONS
 02/07/12 - R/W REVISION (REM) - COMBINED PARCELS 162 AND 163 INTO ONE PARCEL 163 AND SHOWED A TIE BAR BETWEEN THE PROPERTIES.
 DECEMBER 29, 2010 - R/W REVISIONS - REVISED PUE ON PARCEL 158, ADDED PUE TO PARCELS 161 & 163.

MATCHLINE SEE SHEET 29 -L- STA. 361+50.00

MATCHLINE SEE SHEET 31-L- STA. 374+00.00

END CONSTR.
 -L- POS Sta. 367+00.00

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 \$\$\$USERNAME\$\$\$

8/17/99

PROJECT REFERENCE NO. R-2303A	SHEET NO. 32
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-Y-

PI Sta 18+25.27	PI Sta 22+14.65
$\Delta = 113^{\circ} 19' 30''$ (RT)	$\Delta = 132^{\circ} 13' 30''$ (RT)
D = 2' 41" 4.7"	D = 3' 41" 16.0"
L = 416.43'	L = 362.11'
T = 208.93'	T = 181.88'
R = 2050.00'	R = 1553.67'
SE = SEE PLANS	SE = SEE PLANS

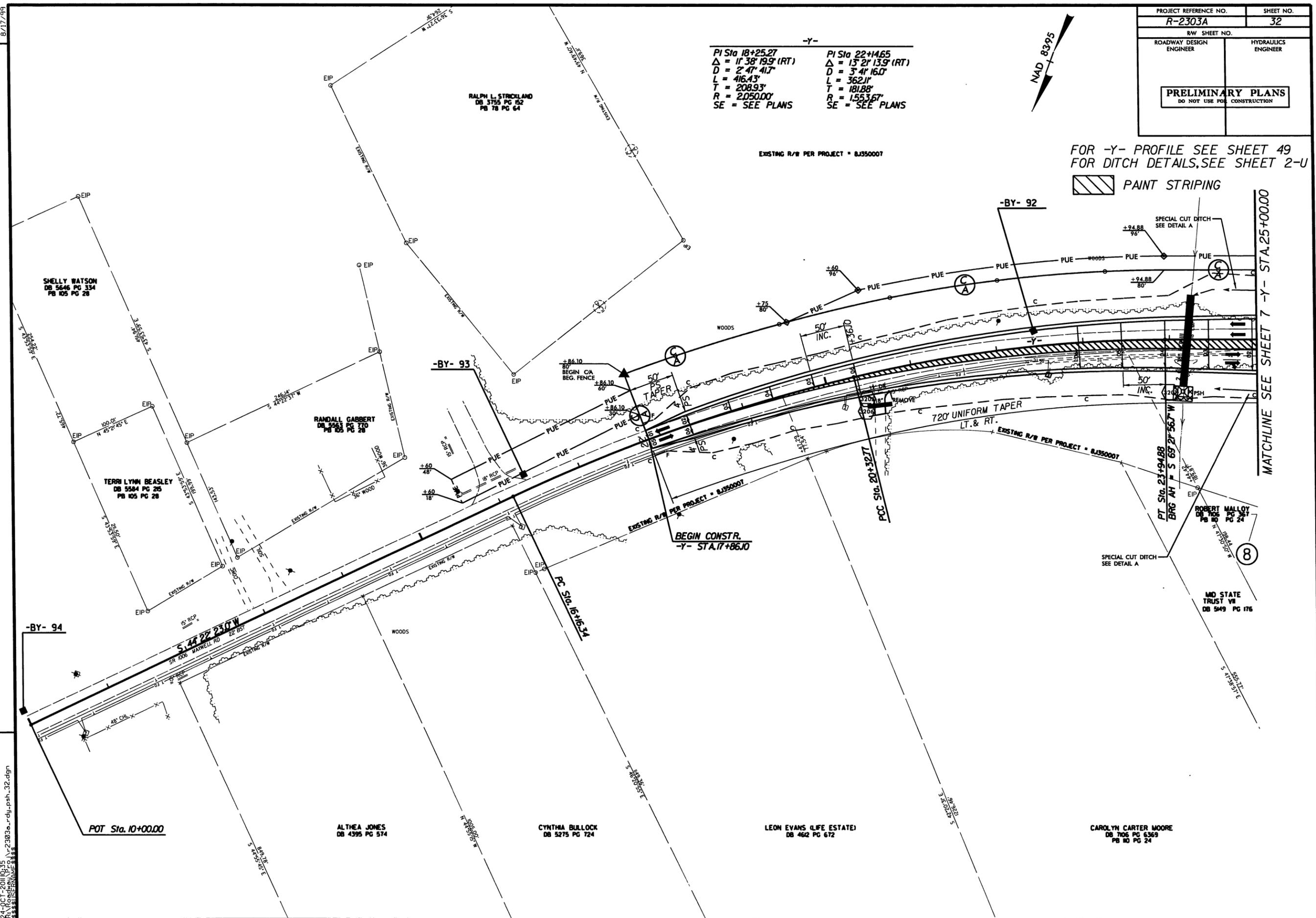


EXISTING R/W PER PROJECT = 8J350007

FOR -Y- PROFILE SEE SHEET 49
FOR DITCH DETAILS, SEE SHEET 2-U



REVISIONS
 OCTOBER 24, 2011 - R/W REVISION - ADDED PUE TO EXISTING NCDOT R/W PER PROJECT 8J350007.



MATCHLINE SEE SHEET 7 -Y- STA. 25+00.00

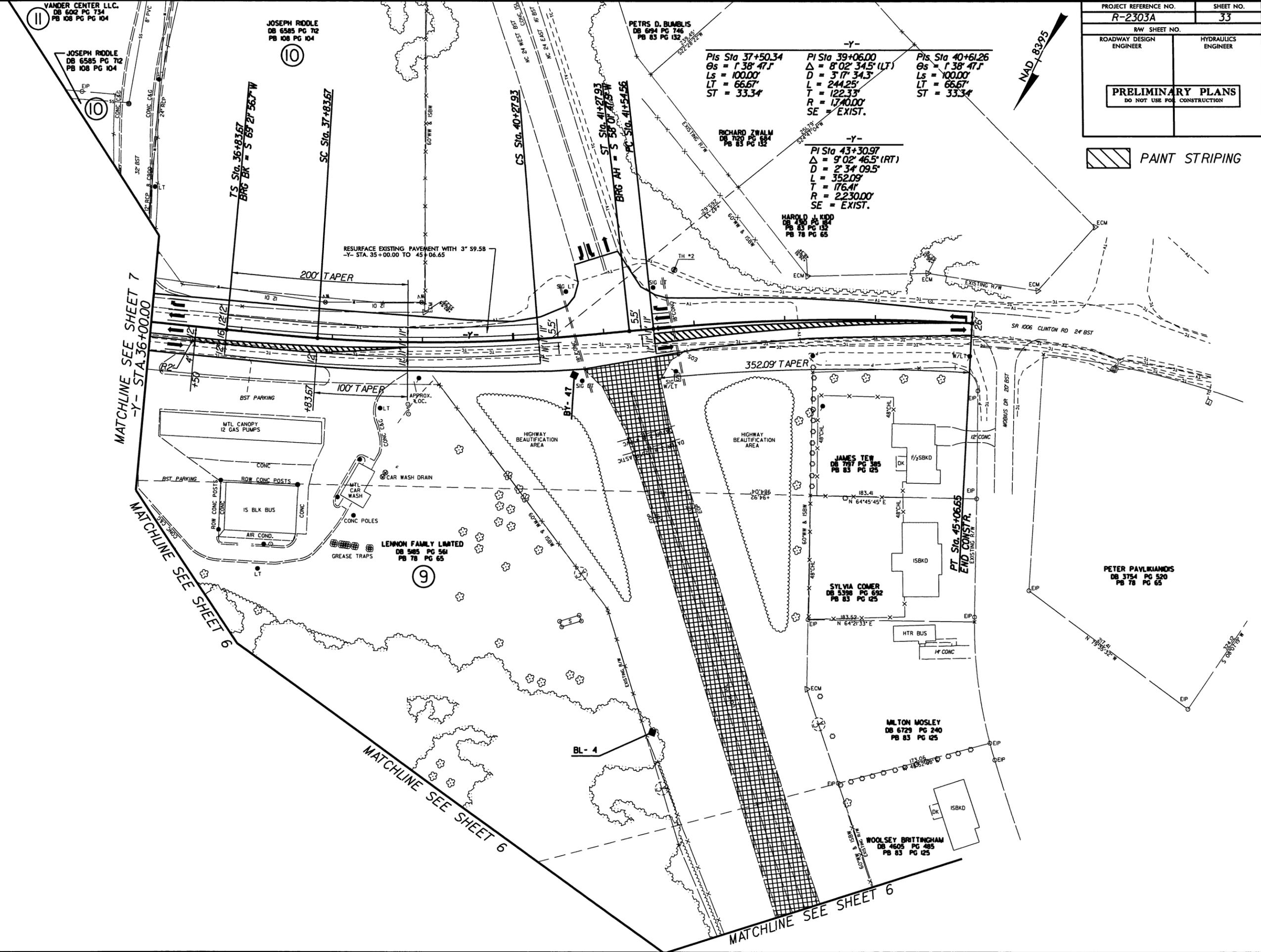
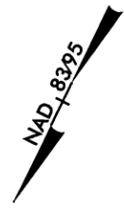
24-OCT-2011 10:35
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 8/17/99

8/17/99

22-SEP-2011 15:32 N:\23036_rdy_psh_33.dgn

PROJECT REFERENCE NO. R-2303A	SHEET NO. 33
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

 PAINT STRIPING



-Y-

PIs Sta 37+50.34 Os = 1' 38' 47.1" Ls = 100.00' LT = 66.67' ST = 33.34'	PI Sta 39+06.00 Δ = 8' 02' 34.5" (LT) D = 3' 17' 34.3" L = 244.25' T = 122.33' R = 1740.00' SE = EXIST.	PIs Sta 40+61.26 Os = 1' 38' 47.1" Ls = 100.00' LT = 66.67' ST = 33.34'
---	---	---

-Y-

PI Sta 43+30.97 Δ = 9' 02' 46.5" (RT) D = 2' 34' 09.5" L = 352.09' T = 176.41' R = 2230.00' SE = EXIST.

MATCHLINE SEE SHEET 7
-Y- STA. 36+00.00

MATCHLINE SEE SHEET 6

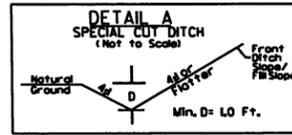
MATCHLINE SEE SHEET 6

MATCHLINE SEE SHEET 6

REVISIONS

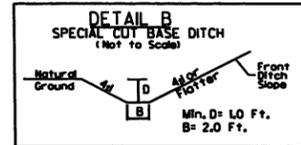
DITCH DETAILS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

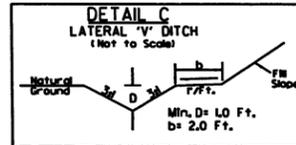


FROM STA. 21+50 TO STA. 28+40 -L- LT.
 FROM STA. 53+70 TO STA. 60+00 -L- LT.
 FROM STA. 64+50 TO STA. 70+76 -L- LT.
 FROM STA. 107+00 TO STA. 112+33 -L- LT.
 FROM STA. 112+33 TO STA. 114+00 -L- LT.
 FROM STA. 115+00 TO STA. 117+90 -L- LT.
 FROM STA. 117+90 TO STA. 120+50 -L- LT.
 FROM STA. 121+00 TO STA. 124+50 -L- LT.
 FROM STA. 125+50 TO STA. 130+00 -L- LT.
 FROM STA. 131+50 TO STA. 133+70 -L- LT.
 FROM STA. 134+50 TO STA. 148+00 -L- LT.
 FROM STA. 148+00 TO STA. 152+00 -L- LT.
 FROM STA. 175+00 TO STA. 178+00 -L- LT.
 FROM STA. 179+00 TO STA. 181+00 -L- LT.
 FROM STA. 182+50 TO STA. 194+00 -L- LT.
 FROM STA. 210+00 TO STA. 215+00 -L- LT.
 FROM STA. 223+00 TO STA. 224+05 -L- LT.
 FROM STA. 241+50 TO STA. 248+50 -L- LT.
 FROM STA. 301+00 TO STA. 305+00 -L- LT.
 FROM STA. 309+50 TO STA. 310+00 -L- LT.
 FROM STA. 311+00 TO STA. 316+00 -L- LT.
 FROM STA. 316+50 TO STA. 322+00 -L- LT.
 FROM STA. 323+50 TO STA. 330+00 -L- LT.
 FROM STA. 330+00 TO STA. 332+50 -L- LT.
 FROM STA. 333+50 TO STA. 335+50 -L- LT.
 FROM STA. 336+50 TO STA. 340+00 -L- LT.
 FROM STA. 351+00 TO STA. 360+50 -L- LT.

FROM STA. 30+00 TO STA. 33+80 -L- RT.
 FROM STA. 49+00 TO STA. 50+50 -L- RT.
 FROM STA. 52+30 TO STA. 55+00 -L- RT.
 FROM STA. 90+00 TO STA. 96+80 -L- RT.
 FROM STA. 96+92 TO STA. 99+50 -L- RT.
 FROM STA. 107+00 TO STA. 112+80 -L- RT.
 FROM STA. 112+80 TO STA. 115+00 -L- RT.
 FROM STA. 115+50 TO STA. 124+50 -L- RT.
 FROM STA. 129+00 TO STA. 131+00 -L- RT.
 FROM STA. 138+00 TO STA. 148+00 -L- RT.
 FROM STA. 148+00 TO STA. 154+50 -L- RT.
 FROM STA. 155+50 TO STA. 162+00 -L- RT.
 FROM STA. 162+50 TO STA. 165+50 -L- RT.
 FROM STA. 175+00 TO STA. 186+00 -L- RT.
 FROM STA. 187+00 TO STA. 195+00 -L- RT.
 FROM STA. 200+00 TO STA. 203+50 -L- RT.
 FROM STA. 215+00 TO STA. 224+00 -L- RT.
 FROM STA. 225+50 TO STA. 231+00 -L- RT.
 FROM STA. 232+00 TO STA. 236+00 -L- RT.
 FROM STA. 242+00 TO STA. 248+00 -L- RT.
 FROM STA. 250+50 TO STA. 252+00 -L- RT.
 FROM STA. 259+00 TO STA. 267+00 -L- RT.
 FROM STA. 267+00 TO STA. 276+50 -L- RT.
 FROM STA. 289+00 TO STA. 303+00 -L- RT.
 FROM STA. 316+00 TO STA. 322+00 -L- RT.
 FROM STA. 323+00 TO STA. 326+50 -L- RT.
 FROM STA. 327+00 TO STA. 331+00 -L- RT.
 FROM STA. 332+22 TO STA. 335+90 -L- RT.
 FROM STA. 336+21 TO STA. 337+00 -L- RT.
 FROM STA. 343+50 TO STA. 344+27 -L- RT.
 FROM STA. 358+00 TO STA. 361+00 -L- RT.
 FROM STA. 24+50 TO STA. 25+50 -Y- RT.
 FROM STA. 24+22 TO STA. 30+41 -Y- LT.
 FROM STA. 33+11 TO STA. 34+50 -Y- LT.
 FROM STA. 14+00 TO STA. 17+00 -Y4- RT.
 FROM STA. 12+00 TO STA. 13+00 -Y7- RT.
 FROM STA. 14+86 TO STA. 16+00 -Y7- RT.
 FROM STA. 10+00 TO STA. 12+00 -Y8- LT.
 FROM STA. 10+50 TO STA. 11+80 -Y8- RT.
 FROM STA. 14+00 TO STA. 14+50 -Y8- LT.
 FROM STA. 14+00 TO STA. 14+50 -Y8- RT.
 FROM STA. 12+00 TO STA. 13+00 -Y10- RT.
 FROM STA. 11+00 TO STA. 13+50 -DETS- RT.

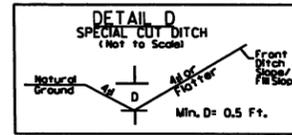


FROM STA. 195+50 TO STA. 209+00 -L- LT.
 FROM STA. 203+50 TO STA. 214+50 -L- RT.

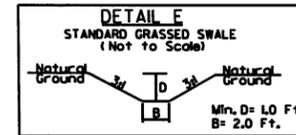


FROM STA. 167+50 TO STA. 174+00 -L- LT.
 FROM STA. 300+50 TO STA. 301+00 -L- LT.

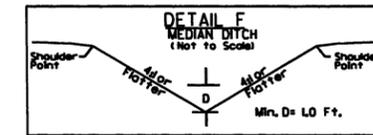
FROM STA. 236+00 TO STA. 240+50 -L- RT.
 FROM STA. 252+00 TO STA. 258+00 -L- RT.
 FROM STA. 276+50 TO STA. 284+00 -L- RT.



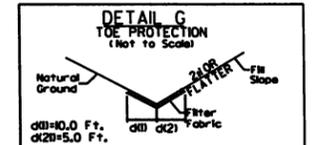
FROM STA. 365+50 TO STA. 367+00 -L- RT.



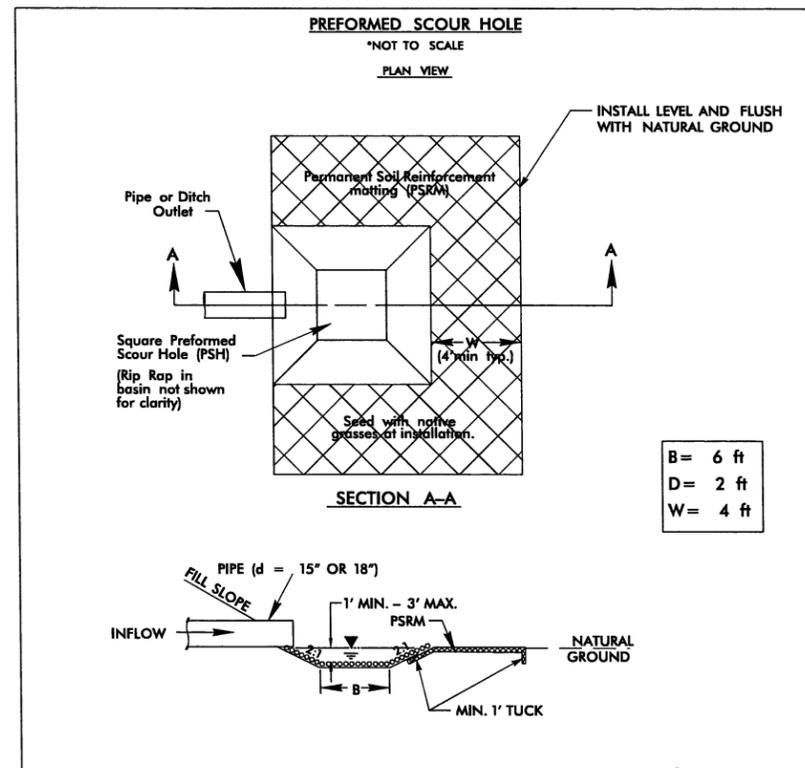
STA. 124+46 -L- LT.
 STA. 147+98 -L- LT.
 STA. 190+39 -L- LT.
 STA. 215+02 -L- LT.



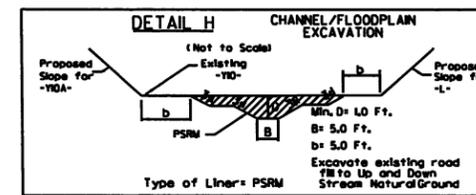
FROM STA. 161+00 TO STA. 162+00 -L- MED.
 FROM STA. 196+00 TO STA. 199+00 -L- MED.
 FROM STA. 211+00 TO STA. 214+00 -L- MED.



FROM STA. 322+68 TO STA. 323+10 -L- RT.



Sta. 73+23 -L- LT.
 Sta. 172+00 -L- RT.
 Sta. 24+13 -Y- RT.



EST. EXCAVATION = 4000 CU YDS
 EST PSRM = 300 SQ YDS
 305+12 -L- RT.



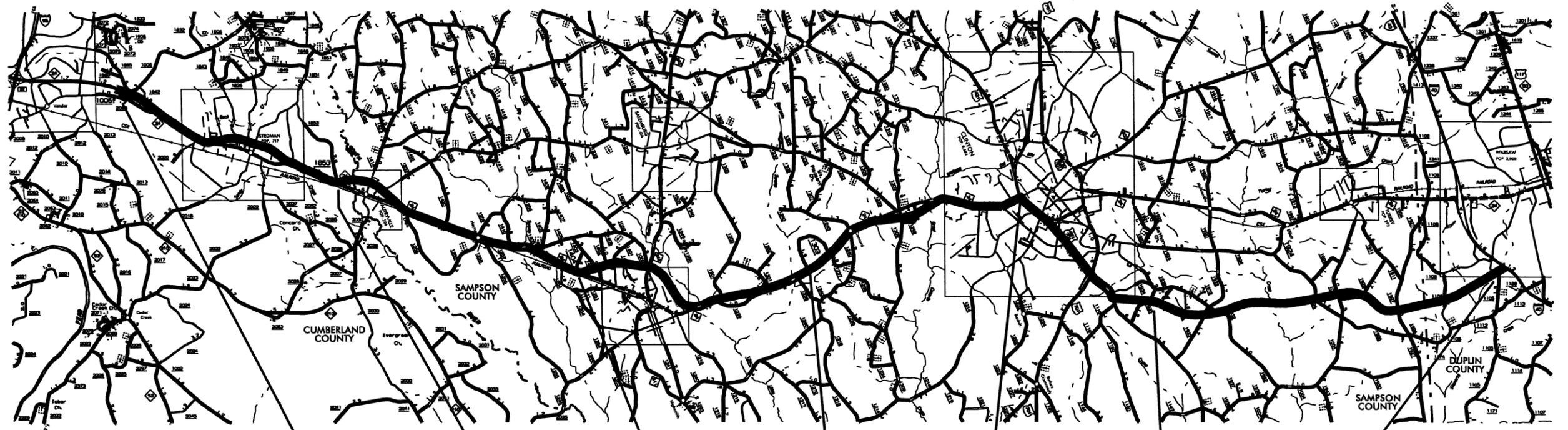
R-2303

CUMBERLAND-SAMPSON-DUPLIN COUNTIES

NC 24

PROJECT BREAKDOWN MAP

PROJECT SCHEDULES AND COSTS ARE ACCURATE AS OF DATE SHOWN.



I.D. NO. / D.S.R. NO.	R-2303 A	R-2303 B	R-2303 C	R-2303 D	R-2303 E	R-2303 F
STATE PROJECT NO. (P.E.)	8T280802	8T280802	8T280802	8T280802	8T280802	8T280802
PROJECT ENGINEER	LOVERING	MOORE	MOORE	MOORE	MOORE	MOORE
PROJECT DESCRIPTION	0.9 MILES WEST OF SR 1006 TO SR 1853	SR 1853 TO SR 1404	SR 1404 TO SR 1303	SR 1303 TO US 421/US 701/ SR 1296	US 421/US 701/SR 1296 TO EAST OF SR 1935	EAST OF SR 1935 TO I-40
COUNTY / DIVISION	CUMBERLAND / DIV. 6	CUMB.-SAMPSON / DIV. 6-3	SAMPSON / DIV. 3	SAMPSON / DIV. 3	SAMPSON / DIV. 3	SAMPSON-DUPLIN / DIV. 3
LENGTH	6.8 MILES	6.9 MILES	7.0 MILES	6.5 MILES	4.8 MILES	9.8 MILES
TYPE OF CONTRACT				TURNKEY	TURNKEY	TURNKEY
REMARKS						
BEGIN R/W ACQUISITION (T.I.P.)						
BEGIN R/W ACQUISITION (PRODUCTION)	FY-11	FY-11	FY-11	FY-11	PY	PY
PROPOSED LETTING (T.I.P.)						
PROPOSED LETTING (PRODUCTION)	FY-13	FY-13	FY-13	FY-13	PY	PY
EST. COMP. DATE (T.I.P.)						
ESTIMATED R/W COST	\$ 14,100,000	\$ 11,200,000	\$ 11,400,000	\$ 17,800,000	\$ 7,250,000	\$ 13,900,000
ESTIMATED CONSTRUCTION COST	\$ 31,800,000	\$ 50,100,000	\$ 46,900,000	\$ 49,800,000	\$ 26,400,000	\$ 105,000,000



R-2303

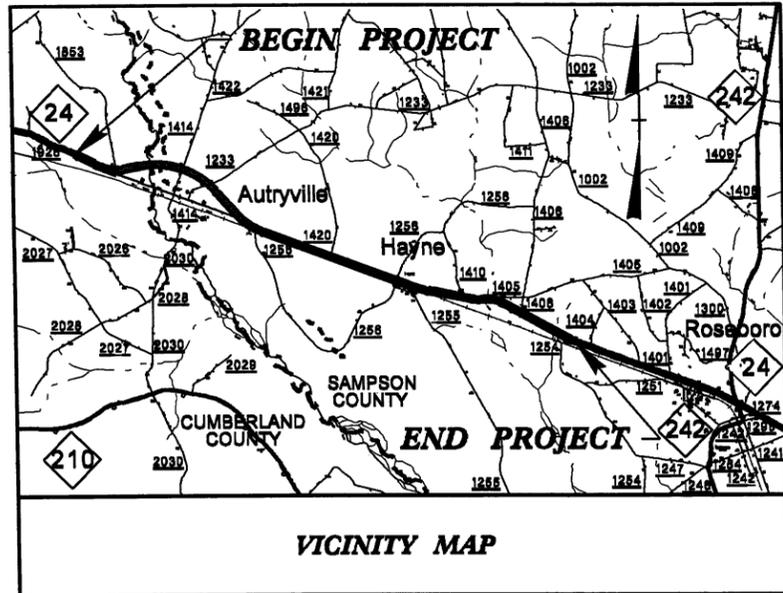
09/08/09

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2303B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34416.1.1	STPNHF-F-8-2(17)	P.E.	
34416.2.3		R/W	

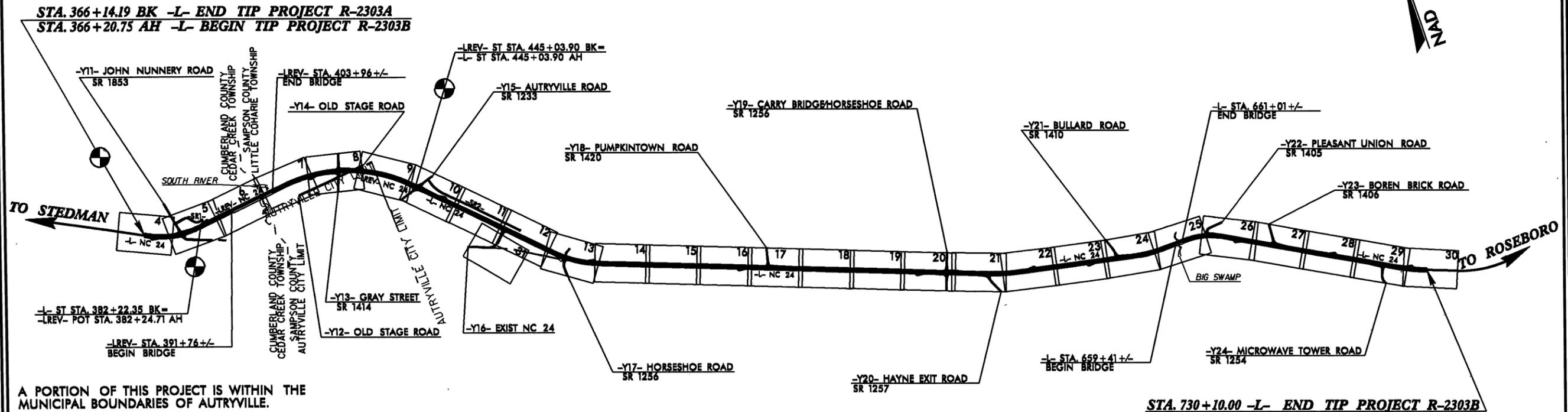
TIP PROJECT: R-2303B



CUMBERLAND & SAMPSON COUNTIES

LOCATION: NC 24 FROM WEST OF SR 1853 (JOHN NUNNERY ROAD) TO WEST OF SR 1404 (DOWDY ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURES



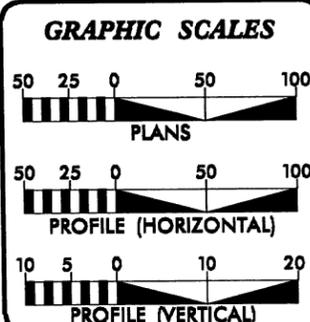
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF AUTRYVILLE.

THIS IS A LIMITED AND PARTIAL CONTROL OF ACCESS PROJECT WITH ACCESS BEING LIMITED TO THE POINTS AS SHOWN ON THE PLANS.

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2010 =	13520
ADT 2030 =	22000
DHV =	11 %
D =	65 %
T =	9 % *
V =	60 MPH
* TTST 6% DUAL 3%	
FUNC. CLASS -	ARTERIAL TIER-STATEWIDE

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2303B	=	6.628 MILES
LENGTH STRUCTURES TIP PROJECT R-2303B	=	0.263 MILES
TOTAL LENGTH TIP PROJECT R-2303B	=	6.891 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 29, 2011

LETTING DATE:
MARCH 19, 2013

GARY LOVERING, PE
PROJECT ENGINEER

KEVIN E. MOORE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



23-NOV-2011 08:43
C:\Roadway\Projects\R-2303b_rdy_tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

09/08/99

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

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

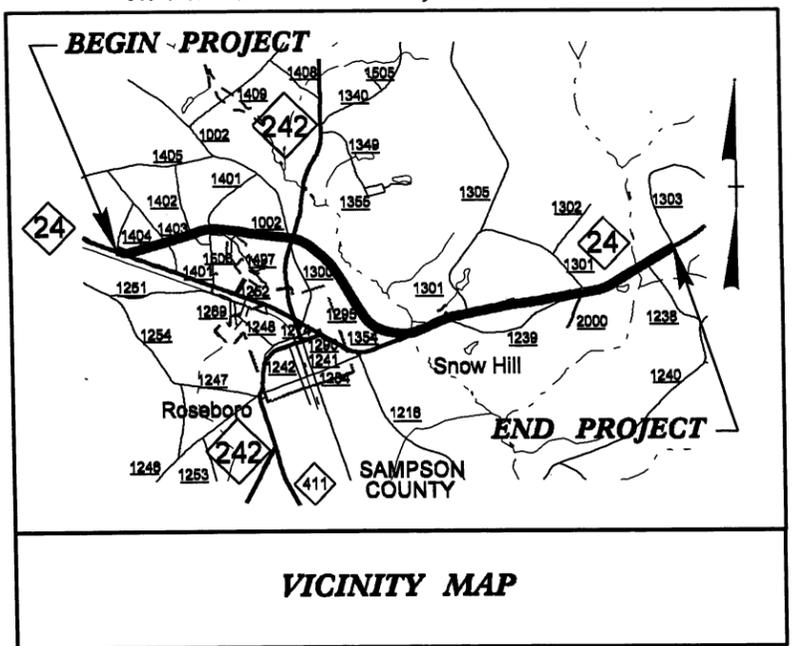
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2303C	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34416.1.1	STPNHF-F-8-2(17)	PE	
34416.2.4		ROW & UTL.	

SAMPSON COUNTY

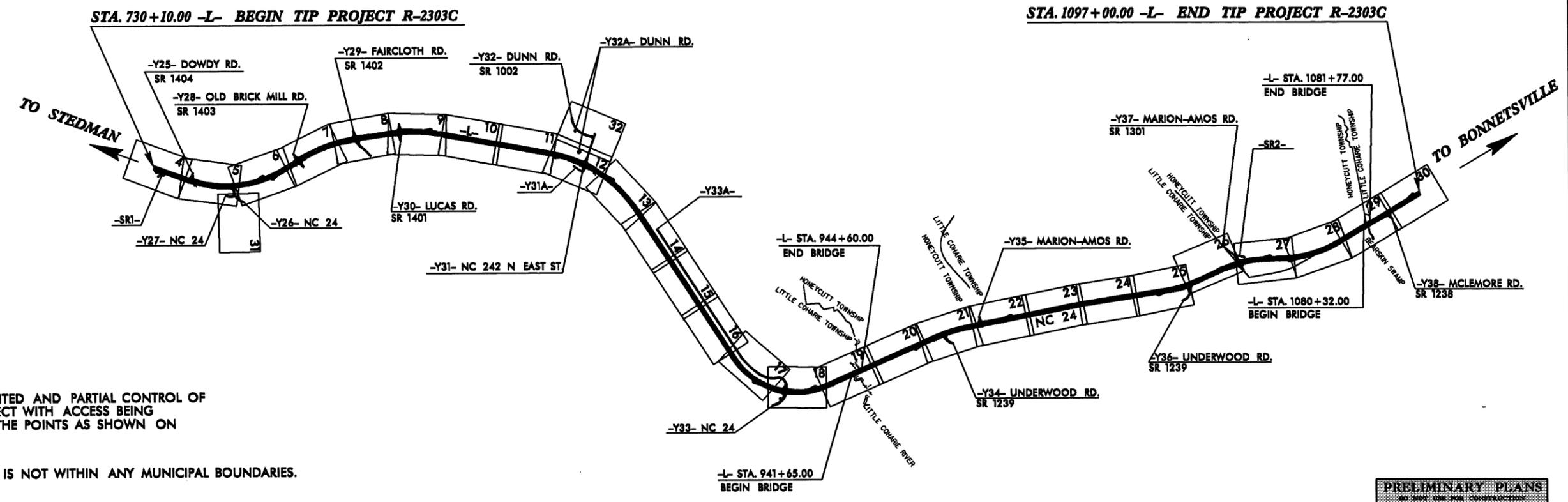
LOCATION: NC 24 FROM SR 1404 (DOWDY ROAD) TO SR 1303
(MITCHELL LOOP ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURES

TIP PROJECT: R-2303C



VICINITY MAP

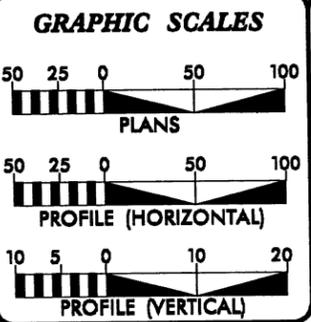


THIS IS A LIMITED AND PARTIAL CONTROL OF ACCESS PROJECT WITH ACCESS BEING LIMITED TO THE POINTS AS SHOWN ON THE PLANS.

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2013 =	13,296
ADT 2033 =	19,536
DHV =	11 %
D =	55 %
T =	8 % *
V =	60 MPH
FUNC CLASS =	ARTERIAL
* (TTST 5% + DUAL 3%)	
CLASS =	STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2303C =	6.866 MILES
LENGTH STRUCTURES TIP PROJECT R-2303C =	0.083 MILES
TOTAL LENGTH TIP PROJECT R-2303C =	6.949 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 27, 2011

LETTING DATE:
MAY 21, 2013

GREG BREW, PE
PROJECT ENGINEER

WAYNE BEST
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

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CONTRACT:

09/08/99

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

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

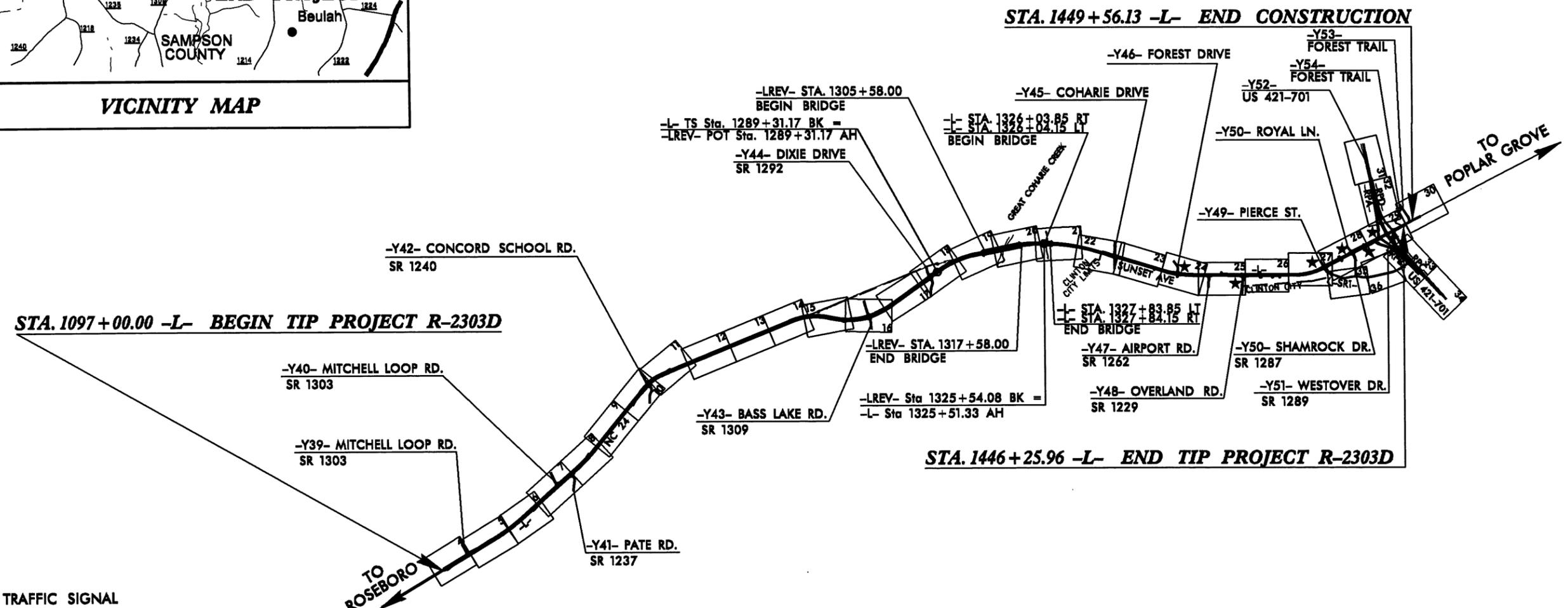
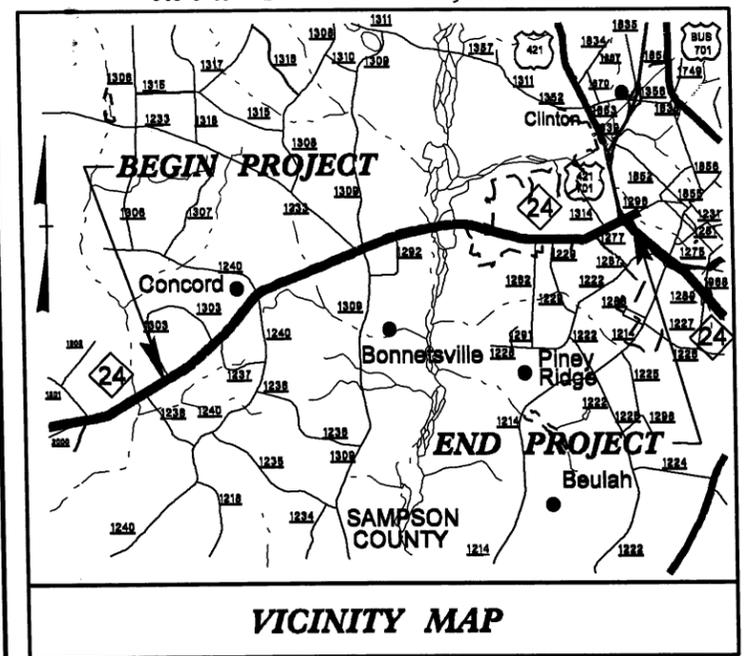
SAMPSON COUNTY

LOCATION: NC 24 FROM SR 1303 (MITCHELL LOOP ROAD)
TO US 421-701 /SR 1296 (SUNSET AVENUE)

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2303D	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34416.1.1		PE	
34416.2.5		R/W, UTIL.	

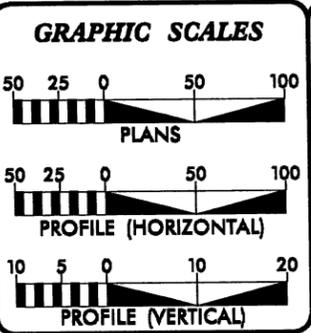
TIP PROJECT: R-2303D



★ TRAFFIC SIGNAL

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
PORTIONS OF THIS PROJECT ARE WITHIN THE TOWN LIMITS OF BELVOIR & LITTLE COHAIRE AND CITY LIMITS OF CLINTON.
THIS IS A LIMITED AND PARTIAL CONTROL OF ACCESS PROJECT WITH ACCESS BEING LIMITED TO THE POINTS AS SHOWN ON THE PLANS.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2013 =	40480
ADT 2033 =	59680
DHV =	11 %
D =	55 %
T =	8 % *
V (SHOULDER) =	60 MPH
V (CURB & GUTTER) =	50 MPH
* (TTST 5% + DUAL 3%)	
FUNC. CLASS = ARTERIAL REGIONAL TIER	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2303D =	6.35 MILES
LENGTH STRUCTURES TIP PROJECT R-2303D =	0.26 MILES
TOTAL LENGTH TIP PROJECT R-2303D =	6.61 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 30, 2011	GREG BREW, PE PROJECT ENGINEER
LETTING DATE: JUNE 18, 2013	WAYNE BEST PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER

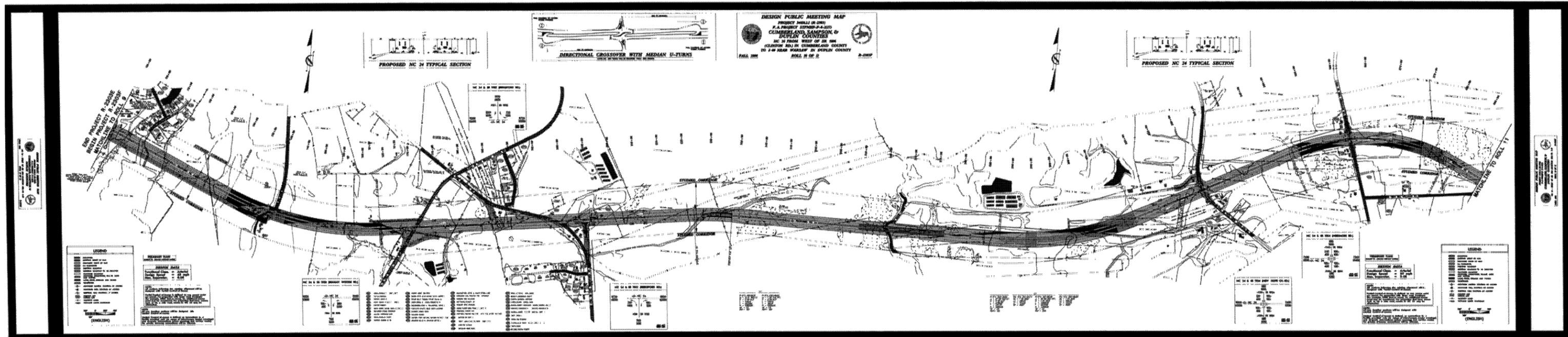
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\$\$\$\$\$USERNAME\$\$\$\$\$

CONTRACT:

NAD 83995

R-2303E

SHT. 10 OF 11



R-2303 F

SKT. 11 OF 11

