STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

April 25, 2013

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

ATTN: Mr. Andy Williams
NCDOT Coordinator

SUBJECT: **Application for Section 404 Individual Permit, Section 401 Individual Water Quality Certification, and Randleman Lake Buffer Authorization** for the proposed widening from SR 1003 (North Main Street) and SR 1820 (Skeet Club Road) to NC 68 in High Point, Guilford County; Division 7; TIP U-3615; Federal Aid Project No. STP-1820(2); WBS Element No. 34962.1.1

Debit $570.00 from WBS Element No. 34962.1.1

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to widen and improve Skeet Club Road to a multi-lane facility from SR 1003 (North Main Street) and SR 1820 (Skeet Club Road) between US 311 to NC 68 and reconfigure the intersection at North Main Street and Skeet Club Road in High Point.

In addition to this cover letter, the application package consists of an ENG Form 4345, the North Carolina Ecosystem Enhancement Program (NCEEP) acceptance letter, September 27, 2010 North Carolina State Historic Preservation Office (NCSHPO) Eligibility Memorandum, Mitigation Plan, Small whorled pogonia Survey Reports for Sections A and B, U-3615B Interagency Hydraulic Design Review Concurrence Points 4B and 4C meeting minutes, U-3615B Stormwater Management Plans, permit drawings, half-size roadway plan sheets and U-3615B Natural Stream Design Plans.

Project Schedule

For construction purposes this project has been divided into two sections: U-3615A – SR 1003 (North Main Street) and SR 1820 (Skeet Club Road) between US 311 and east of SR 1818 (Johnston Street) and U-3615B – SR 1820 (Skeet Club Road) from west of SR 1818 (Johnson Street) to NC 68 (East Chester Drive).

Permit drawings for the proposed project have been prepared based on final design for U-3615B and preliminary design for U-3615A. The NCDOT will apply for any relevant permit modifications for U-3615A when final design is complete for that section. Construction will not commence on

U-3615A until permit modifications have been received based on final designs.

The project has a review date of August 27, 2013 and a letting date of October 15, 2013 for U-3615B and post year date for U-3615A. However, letting of project may advance as funding becomes available.

Purpose and Need

The purpose of this project is to increase the traffic carrying capacity, reduce accident rates, and to relieve traffic congestion in the area surrounding Skeet Club Road.

NEPA DOCUMENT STATUS

An Environmental Assessment (EA) was approved in December 2002. A Finding of No Significant Impact (FONSI) was approved in May 2004. The EA and FONSI have been provided to regulatory review agencies. A Right of Way Consultation to update the EA and FONSI was completed in February 2009 (see attached). Additional copies will be provided upon request.

INDEPENDENT UTILITY

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

(1) The project connects logical termini and is of sufficient length to address environmental matters on a broad scope;
(2) The project is usable and a reasonable expenditure due to both sections being constructed at the same time;
(3) The project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

RESOURCE STATUS

Wetland delineations within the U-3615 construction footprint followed the field delineation method outlined in the *1987 Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987). Stream identification and classification followed the *Identification Methods for the Origins of Intermittent and Perennial Streams* (North Carolina Division of Water Quality [NCDWQ]).

Within the U-3615 construction footprint, sixteen streams, Oak Hollow Lake, and six wetlands sites were identified. Jurisdictional areas were originally verified by USACE Regulatory Specialist John Thomas and NCDWQ representative Sue Homewood. Jurisdictional features were re-verified by USACE Regulatory Specialist Andy Williams and conceded by NCDWQ representative Amy Euliss on September 17, 2008. Also, during this verification two wetlands (W3 and W4) previously determined to be isolated were deemed to be connected to a stream via a natural depression and were no longer considered isolated. No written Jurisdictional Determination (JD) was received from the USACE for the re-verification.

IMPACTS TO WATERS OF THE UNITED STATES

The project lies within the Piedmont Physiographic Province in the Cape Fear River Basin in Guilford County, HUC 03030003. Jurisdictional features within the construction footprint that will be impacted by this project include Oak Hollow Lake (NCDWQ Classification WSIV; CA; NCDWQ Index No. 17-3-(0.7) and ten unnamed tributaries (UTs) to West Fork of Deep River (NCDWQ Classification WS-IV; NCDWQ Index No.17-3-(0.3). There are three riparian wetlands located within the project area that will be impacted.

There are no designated Outstanding Resource Waters (ORW), High Quality Waters (HQW), Water Supply I (WS-I), or Water Supply II (WS-II) waters within 1.0 mile of the project area. None of the streams within the project area are listed on the 2012 303(d) List of Impaired Waters of North Carolina. However, there is one water source within a mile of the project area that is listed on the 2012 303(d) List that is connected with waters in the project area: Rich Fork. Rich Fork is listed as impaired due to ecological/biological integrity for benthos and/or fish community.

Utility Impacts

There will be no impacts from utilities to jurisdictional sites on Section U-3615B. Utility impacts for Section U-3615A will be evaluated during the permit modification process.

Surface Waters

U-3615B

Total surface water impacts for U-3615B are 2,099 linear feet of permanent stream impacts and 117 linear feet of temporary stream impacts. There are also 0.04 acres of surface water impacts for the rock fill in Oak Hollow Lake and a pond along with 0.29 acres of temporary surface water impacts for bents of the bridge at Oak Hollow Lake. The jurisdictional stream impacts are summarized below in Table 1.

Table 1. U-3615B Surface Water Impacts (Final)

Site	Stream JD ID	Classification	Impact Type	Impact Length (lin. ft.)	Pond/Lake Impact Area (acres)	Proposed Mitigation Ratio	Proposed Mitigation Required (lin. ft.)	Temporary Impacts (lin. ft.)
1	UT 3-2/UT 4 W. Fork of Deep River	Perennial	2 x 66" RCP	119		2:1	238	16
2	UT 3-3 W. Fork of Deep River	Perennial	Relocate Channel	594		1:1	594	10
2A	Pond to W. Fork of Deep River	Perennial	Rockfill		0.02			
3	UT 3-3 W. Fork of Deep River	Perennial	Relocate Channel	699		1:1	699	10
3A	UT 5 W. Fork of Deep River	Perennial	2 X 54" RCP	38		2:1	76	10
3B	UT 6 W. Fork of Deep River	Perennial	48" RCP	109		2:1	218	4
			Bank Stabilization	10		0[2]	0	
3C	UT 15 W. Fork of Deep River	Intermittent	Natural Stream Design	63		1:1	63	
5	UT 12 W. Fork of Deep River	Intermittent	30" RCP	131		1:1	131	16
5A	S-7 (Oak Hollow Lake)	Perennial	Rockfill		0.02			
7	UT 9 W. Fork of Deep River	Intermittent	42" RCP	49		1:1	49	19
8	UT 8 W. Fork of Deep River	Perennial	8'X 8' RCBC	186		2:1	372	32
			Bank Stabilization	101		0[1]	0	
Total Impacts:				**2,099**	**0.04**		**2,440**	**117**

[1] Mitigation for bank stabilization not required by USACE and NCDWQ mitigation requirement met under the USACE 2:1 ratio for stream mitigation. [2] Does not meet mitigation threshold of <150 feet (NCDWQ).

* Note: There are 0.29 acres of temporary surface water impact for the bridge for Oak Hollow Lake. Impacts not included in surface water impact total.

U-3615A

Total preliminary surface water impacts for U-3615A are 439 linear feet of permanent stream impacts and 33 linear feet of temporary stream impacts. The jurisdictional stream impacts are summarized below in Table 2.

Table 2. U-3615A Surface Water Impacts (Preliminary)

Site	Stream JD ID	Classification	Impact Type	Impact Length (lin. ft.)	Proposed Mitigation Ratio	Temporary Impact Length (ft.)
2	UT 1 Hiatt Branch	Perennial	36" RCP	148	1:1[1]	10
3	UT 2 Hiatt Branch	Intermittent	48" RCP	132	1:1[1]	13
4	UT 14 W. Fork Deep River	Intermittent	24" RCP	159	0[2]	10
Total Impacts				**439**		**33**

[1]USACE on the field visit 4/9/02 determined mitigation ratio to be 1:1. [2]USACE on a field visit on 9/17/08 and NCDWQ on field visit on 7/20/05 determined UT 14 to be unimportant and no mitigation required.

Wetlands

U-3615B

There will be a total of 0.82 acres of permanent riparian wetland impacts associated with this section. These impacts will result from 0.14 acres of permanent fill, 0.67 of excavation, and 0.01 acres of mechanized clearing. Wetland impacts are summarized below in Table 3.

Table 3. U-3615B Wetland Impacts (Final)

Site	Wetland JD ID	Impact Type	Permanent Impacts (acres)
3C	Wetland WF	Excavation	0.67
4	Wetland 3	Excavation	<0.01
		Permanent Fill	0.13
5	Wetland B	Mechanized Clearing	0.01
		Permanent Fill	<0.01
6	Wetland D	Mechanized Clearing	<0.01
		Permanent Fill	<0.01
Total Impacts			**0.82***

*Total impacts due to rounding.

U-3615A

There are no wetland impacts for this section.

Randleman Lake Water Supply Watershed Buffers

This project impacts buffers in the Randleman Lake water supply watershed. Section U-3615B has final design impacts and Section U-3615A has preliminary impacts. Buffer impacts are summarized in Tables 4–5 for U-3615B and in Tables 6-7 for U-3615A below.

Table 4. U-3615B Randleman Lake Watershed Buffer Impacts (Final)

	Road Crossing	Road Crossing	Impacts Other Than Road Crossings (Parallel Impacts)	Other Impacts (Exceptions*)
Zone 1 Impact (sq. ft.)	31,767	13,765	90,736	2,437
Zone 2 Impact (sq. ft.)	19,572	7,825	64,268	1,947
Mitigation requirements	Allowable	Allowable with mitigation	Allowable with mitigation	Allowable

*No mitigation required if treatment is provided prior to buffers under new Randleman rules.

Table 5. U-3615B Total Buffer Impacts Requiring Mitigation (Final)

	Zone 1 Impacts (sq ft)	Zone 2 Impacts (sq ft)
Buffer Impacts requiring mitigation	104,501	72,093

Table 6. U-3615A Randleman Lake Watershed Buffer Impacts (Preliminary)

	Road Crossing	Road Crossing	Impacts Other Than Road Crossings (Parallel Impacts)
Zone 1 Impact (sq ft)	8,648	17,375	5,898
Zone 2 Impact (sq ft)	5,780	9,175	3,605
Mitigation requirements	Allowable	Allowable with mitigation	Allowable with mitigation

Table 7. U-3615A Total Buffer Impacts Requiring Mitigation (Preliminary)

	Zone 1 Impacts (sq ft)	Zone 2 Impacts (sq ft)
Buffer Impacts requiring mitigation	26,550	12,780

FEDERALLY PROTECTED SPECIES

Plants and animals with a Federal classification of Endangered (E) or Threatened (T) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act (ESA) of 1973, as amended. As of September 22, 2010, the U.S. Fish and Wildlife Service (USFWS) list one federally protected species for Guilford County: Small whorled pogonia (*Isotria medeoloides).* A species description and biological conclusion for the small whorled pogonia was not stated in either the EA or FONSI because the species was not added to the USFWS county list of protected species until after the documents were completed. The project area was later surveyed in May 2008 by NCDOT biologists for habitat for the small whorled pogonia. Section U-3615A does not have habitat for the small whorled pogonia, but section U-3615B does have habitat. A plant by plant survey in the areas

with habitat was done and no small whorled pogonia plants were found. Species survey reports were done for the small whorled pogonia for both sections of U-3615. A search of the North Carolina Natural Heritage Database on December 17, 2012 revealed no known occurrences of any federally protected species within 1.0 mile of the limits. A biological conclusion of "No Effect" was given for both sections. Copies of the survey reports are attached. Due to the last survey date of May 2008 for small whorled pogonia, NCDOT plans to do a re-survey on U-3615B in May 2013. If NCDOT finds a biological conclusion other than No Effect, we will request USFWS consultation.

Since the EA and FONSI the bald eagle has been delisted for Guilford County. The bald eagle has been delisted as of August 2007 and is not subject to Section 7 consultation and a biological conclusion is not required. However, the bald eagle remains protected by the Bald and Golden Eagle Protection Act. Habitat in the vicinity of U-3615B is limited to areas surrounding Oak Hollow Lake. Surveys conducted on February 23, 2007 found no nests within 660 feet of the project limits. No habitat exists for bald eagle in the vicinity of U-3615A.

MITIGATION OPTIONS

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

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

Avoidance and Minimization

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

U-3615B

- NCDOT's Best Management Practices (BMPs) for the Protection of Surface Waters will be enforced;
- Where possible, drainage systems were designed to outlet away from surface waters to allow time for infiltration in ditches or natural areas;
- Rip-rapped ditches and rip-rap along stream banks will be used where warranted to control erosion;
- Bank stabilization activities will not place rip-rap on the stream bottom;
- Best fit alignment has allowed wetland impacts to be reduced;
- Grass swales will be utilized where appropriate;
- Ten Hazardous Spill Basins: Stations 183+00 (RT), 202+00 (LT), 222+00 (LT), 234+50 (RT), 242+00 (RT), 267+00 (LT), 272+00 (RT), 306+00 (RT), 314+50 (RT), and 191+50 (LT) will be constructed. The project is located within 0.5 miles of the Oak Hollow Lake Critical Area;
- Pre-formed scour holes will be constructed at five locations: Stations Y30 17+98 (LT), 176+40 (LT), Y34 11+34 (LT), 242+81 (RT), and Y35 13+18 (LT);
- Five level spreaders will be utilized: Stations 202+00(LT), 222+00 (LT), 242+00 (RT), 267+00 (LT), and 272+00 (RT) and

- Side slopes of 2:1 and 1.5:1will be used in jurisdictional areas along the roadway.

For additional avoidance/minimization for U-3615B see attached Stormwater Management Plan. Despite these best efforts of NCDOT, stream impacts and wetland impacts for U-3615 did increase from the impacts reported in the FONSI. Stream impacts reported in document were 2,200 feet and wetland impacts were 0.03 acres. Total stream impacts for this application are 2,099 feet and total wetland impacts are 0.82 acres. ~~The increase of 101 feet of stream impacts is due to addition of "Y" line streams, bank stabilization, a stream relocation, and additional intermittent streams~~. The increase of 0.79 acres of wetland impacts is mainly due to a newly formed wetland delineated after natural stream design was completed. D.R.

Compensatory Mitigation

Compensatory mitigation requirements for U-3615B are summarized below in Table 8. Due to the status of Section U-3615A being currently unfunded and letting more than 5 years out, NCDOT is not proposing mitigation for Section U-3615A at this time. The U-3615B section will permanently impact a total of 2,099 feet of warm water streams. Of these 2,099 feet, there are 111 feet of bank stabilization that do not require mitigation by the USACE, resulting in 1,988 feet of stream impacts requiring USACE mitigation. The total buffer impacts will be 104,501 square feet (Zone 1) and 72,093 square feet (Zone 2).

Streams/Wetlands

The USACE is requiring 2:1 mitigation for 452 feet and requiring 1:1 mitigation for 1,536 feet of stream impacts. NCDOT is providing onsite mitigation of 760 feet of warm water stream by relocating a section of UT 3-3 at Site 3 (see attached Natural Stream Design Plans). The remaining mitigation requirements of 1,680 feet of permanent warm water stream impacts will be provided by the NCEEP for U-3615B (Table 8). NCEEP will also provide mitigation for the 0.82 acres (2:1 ratio) of permanent riparian wetland impacts resulting from roadway fill, excavation, and mechanized clearing.

Buffers

NCDOT is also providing onsite mitigation of 75,639 square feet (45,810 : Zone 1 and 29,829 : Zone 2) of buffers by relocating a section of UT 3-3 at Site 3 (see attached Natural Stream Design Plans). The remaining buffer mitigation requirements for the 58,691 square feet in Zone 1 and 42,264 square feet in Zone 2 impacts will be provided by the NCEEP for U-3615B.

Table 8. U-3515B USACE Required Compensatory Mitigation Summary

	Stream Impacts in Length (ft)	Riparian Wetland Impacts (ac)	Buffer Zone 1 Impacts (sq ft)	Buffer Zone 2 Impacts (sq ft)
Impacts Requiring Mitigation	1,988*	0.82	104,501	72,093
Onsite Mitigation Credits	760 @ 1:1		45,810	29,829
Total Mitigable Impacts Less Onsite Mitigation	1228	0.82	58,691	42,264
Required Mitigation	452 @ 2:1 776 @ 1:1	0.82 @ 2:1	58,691 @ 3:1	42,264 @ 1.5:1
Total Mitigation	**1,680**	**1.64**	**176,073**	**63,396**

*Does not include the 111 feet of bank stabilization. Total USACE stream mitigation requirements of 2,440 feet is greater than the NCDWQ stream requirements of 2,099 feet.

CULTURAL RESOURCES

The NCSHPO reviewed the project regarding the identification of archaeological sites. The NCSHPO stated in a memorandum dated December 8, 1999 that no archaeological investigation be conducted in connection with this project. See EA for memorandum mentioned above.

A concurrence form for assessment effects was signed by NCDOT, NCSHPO, and FHWA on July 22, 2003. The only identified property within the area of potential effect is the Mendenhall House and it is listed on the National Register of Historic Places (NRHP). However, it was concluded during a merger meeting on March 11, 2004 that this project will have no adverse effect on property with Alternate 1; 3:1 or flatter slopes will be used. See FONSI for memorandums mentioned above. An eligibility memorandum update was issued by NCSHPO in September 24, 2010 (see attached Memorandum). No change has occurred for identifying the property as historic.

FEMA COMPLIANCE

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

INDIRECT AND CUMULATIVE EFFECTS

Although TIP U-3615 is only a widening of an existing facility, its location within a rapidly urbanizing area, the substantial amount of available land that is serviced by public water and sewer, its proximity to major urban centers, and numerous roadway construction projects that will be added to an already efficient transportation system (including Piedmont Triad International Airport), should allow it to accelerate already planned development and generate additional development pressure within the Growth Impact Study Area (GISA) upon its completion. In addition to TIP U-3615 the proposed improvements to Barrow Road, the Sandy Ridge Road feasibility study, and the Hartley Road extension could cumulatively impact residential and commercial growth within the GISA. However, with the water supply watershed regulations that are currently in place, as well as the fact that TIP U-3615 is consistent with all currently adopted plans and ordinances for affected jurisdictions, it is unlikely that growth resulting from the project will further degrade or impair the water resources within and surrounding the GISA."

Additionally, since the Indirect Cumulative Effects (ICE) Assessment was completed (November 2004), Guilford County has updated its Land Use Plan (adopted September, 2006). Davidson County has also adopted a new Zoning Ordinance (adopted June, 2011) and has amended its existing Land Development Plan. The Land Development Plan already contained specific water quality policies to address Abbotts Creek and High Rock Lake. The new amendments are based on the completed Rich Fork Creek Watershed Assessment but are to be implemented county-wide. Stormwater retrofits, riparian buffer restoration, land protection, improved site design, and improved rule enforcement are all covered in the new amendments

WILD AND SCENIC RIVERS

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

ESSENTIAL FISH HABITAT

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

REGULATORY APPROVALS

Application is hereby made for a Department of the Army Section 404 Individual Permit as required for the above-described activities for the proposed T.I.P. Project U-3615 A and B. The NCDOT understands that a permit modification will be required for Section U-3615A after final design is complete and prior to construction.

We are also hereby requesting a Section 401 Individual Water Quality Certification and Randleman Lake Buffer Authorization from NCDWQ. In compliance with Section 143-215.3D (e) of the NCAC, we will provide $570.00 to act as payment for processing the Section 401 permit. We are providing two copies of this application to the North Carolina Department of Environment and Natural Resources (NCDENR), NCDWQ, for their review and approval.

A copy of this permit application and its distribution list will be posted on the NCDOT website at http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html. Thank you for your time and assistance with this project. Please contact Deanna Riffey at either driffey@ncdot.gov or (919) 707-6151 if you have any questions or need additional information.

Sincerely,

E. L. Luck

FCV

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

cc:
NCDOT Permit Application Standard Distribution List

U.S. ARMY CORPS OF ENGINEERS

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

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

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

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

PRIVACY ACT STATEMENT

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

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

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

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Gregory Middle - J. Last - Thorpe	First - Middle - Last -
Company - NC Department of Transportation - PDEA	Company -
E-mail Address -	E-mail Address -
6. APPLICANT'S ADDRESS:	9. AGENT'S ADDRESS:
Address- 1598 Mail Service Center	Address-
City - Raleigh State - NC Zip - 27699 Country - 1598	City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. w/AREA CODE	10. AGENTS PHONE NOs. w/AREA CODE
a. Residence b. Business 919-707-6111 c. Fax 919-212-5785	a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

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

_____ _____
SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
U-3615

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
Oak Hollow Lake and UTs to West Fork Deep River	Address
15. LOCATION OF PROJECT Latitude: °N 36.0393 Longitude: °W 80.0011	City - State- Zip-

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

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

18. Nature of Activity (Description of project, include all features)
The North Carolina Department of Transportation (NCDOT) proposes to widen and improve Skeet Club Road to a multi-lane facility from US 311 to NC 68 and reconfigure the intersection at North Main Street and Skeet Club Road in High Point.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)
The purpose of this project is to increase the traffic carrying capacity, reduce accident rates, and to relieve traffic congestion in the area surrounding Skeet Club Road.

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

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

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

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

See attached cover letter & permit drawings.

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

Acres See attached cover letter and permit drawings.
or
Linear Feet See attached cover letter and permit drawings.

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 property owners in permit drawing packet.

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. Luke for Gregory J. Thorpe, PhD — Apr 25, 2013

SIGNATURE OF APPLICANT — DATE — SIGNATURE OF AGENT — DATE

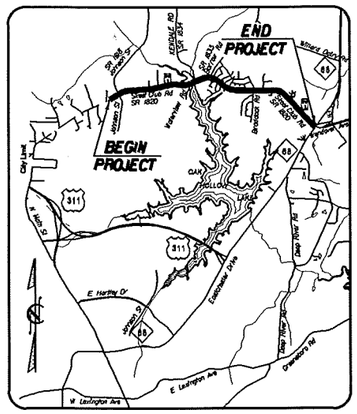
The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

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

09/08/99

CONTRACT: TIP PROJECT: U-3615B

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GUILFORD COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3615B	1	

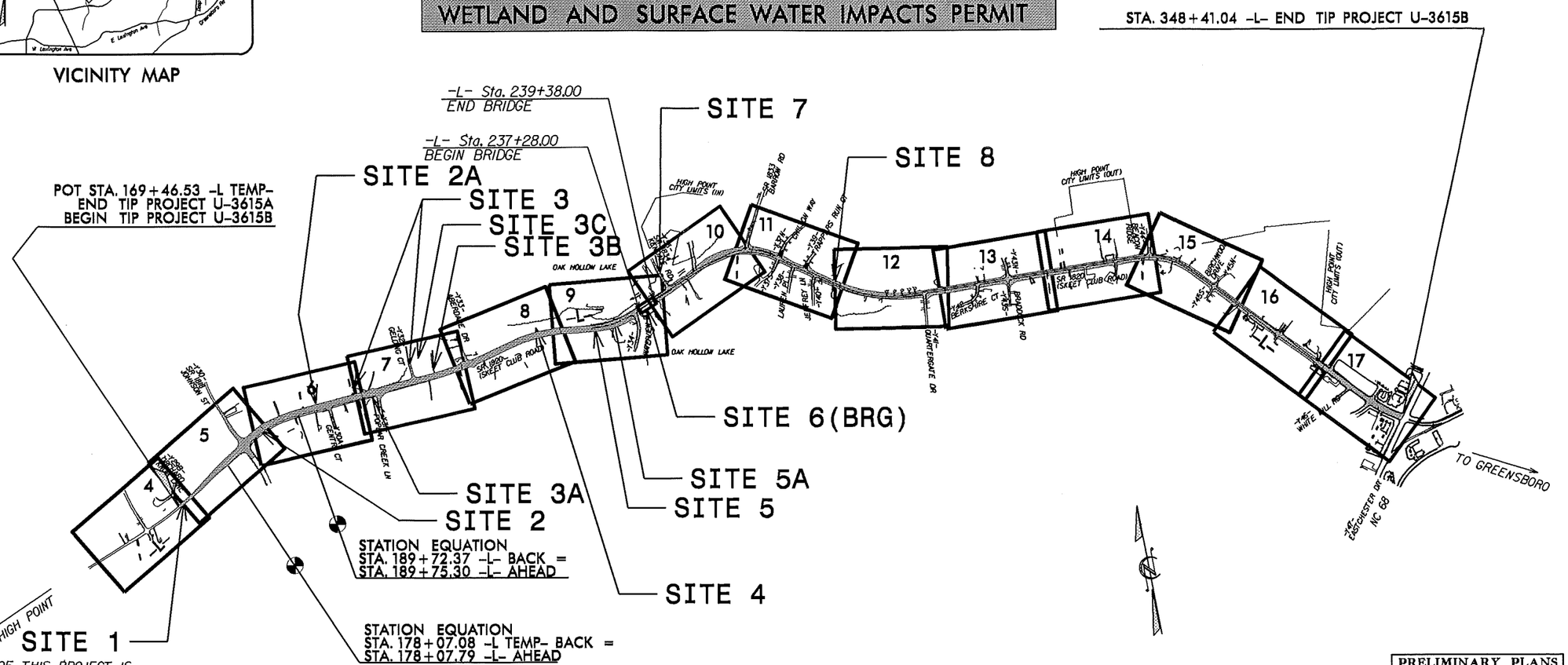
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34962.1.1	STP-1820(2)	P.E.
34962.2.3	STP-1820(2)	R/W, UTL.

Permit Drawing
Sheet 1 of 27

LOCATION: *SR 1820 (SKEET CLUB ROAD) FROM WEST OF SR 1818 (JOHNSON STREET) TO NC 68 (EASTCHESTER DRIVE).*

TYPE OF WORK: *PAVING, GRADING, DRAINAGE, CURB & GUTTER, STRUCTURE, CULVERT, SIGNING AND SIGNALS*

WETLAND AND SURFACE WATER IMPACTS PERMIT



A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF CITY OF HIGH POINT

*"CLEARING ON THIS PROJECT SHALL BE ESTABLISHED BY METHOD III"

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2013 = 10860-23524
ADT 2035 = 17900-34700
DHV = 10 %
D = 60 %
T = 5 % *
V = 50 MPH
* TTST =2% DUAL 3%
FUNC CLASS =
URBAN MINOR ARTERIAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3615B = 3.349 MI
LENGTH STRUCTURE TIP PROJECT U-3615B = 0.040 MI
TOTAL LENGTH OF TIP PROJECT U-3615B = 3.389 MI

Prepared for the North Carolina Department of Transportation by the Office of:
WETHERILL ENGINEERING
539 JONES FRANKLIN ROAD
SUITE 164
Raleigh, N.C. 27606
License No. P-0377
Bus 919 851 8077
Fax 919 851 8071

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 27, 2009

LETTING DATE: OCTOBER 15, 2013

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

GREG S. PURVIS, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT: BRENDA L. MOORE, PE
ROADWAY DESIGN: ENGINEERING COORDINATION SECTION PROJECT ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

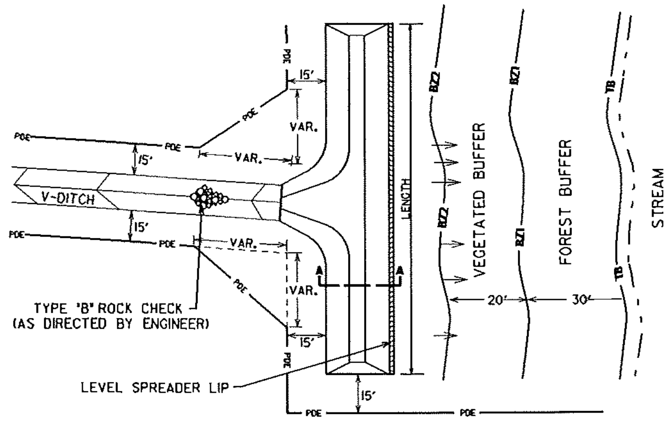
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

$$$$$$$SYSTIME$$$$$$$

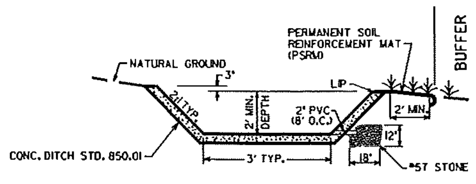
12/15/05

LEVEL SPREADER

(NOT TO SCALE)



PLAN VIEW



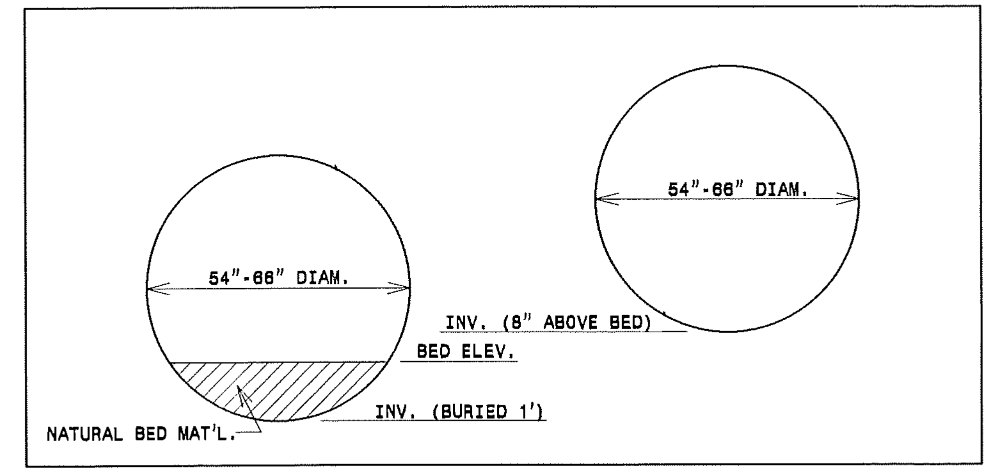
SECTION-AA

DIMENSIONS

BASIN NO.	PROJECT STATION (-L-)	LENGTH	DEPTH	LIP ELEV. (APPROX.)
2	202+00 (LT)	70'	2'	822.5
3	222+00 (LT)	65'	2'	809.0
5	242+00 (RT)	50'	2'	807.5
6	267+00 (LT)	75'	2'	813.0
7	272+00 (RT)	120'	2'	820.0

CONCRETE ENDWALL FOR DOUBLE PIPE CULVERTS

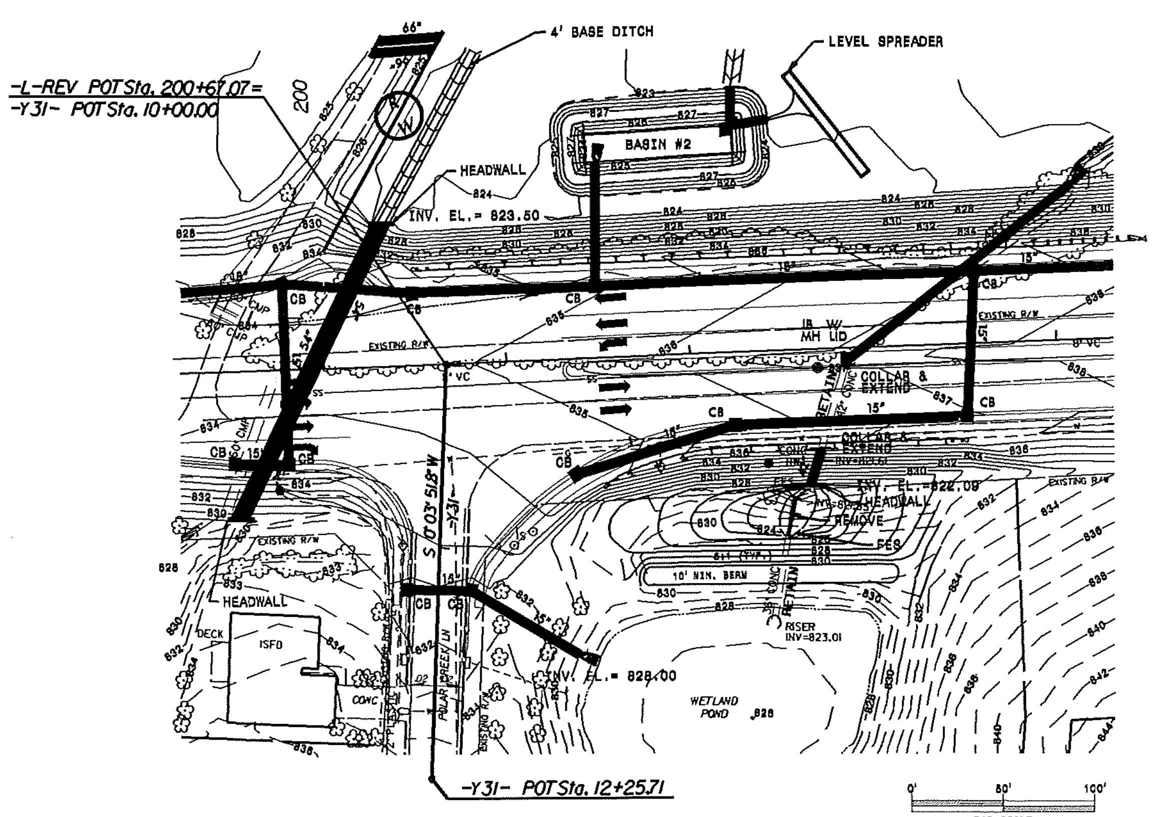
SEE NCDOT STANDARD DRAWINGS 838.22, 838.28 & 838.34 FOR STRUCTURAL DETAILS.



(NOT TO SCALE)

GRADING PLAN AT OUTLET OF WETLAND POND

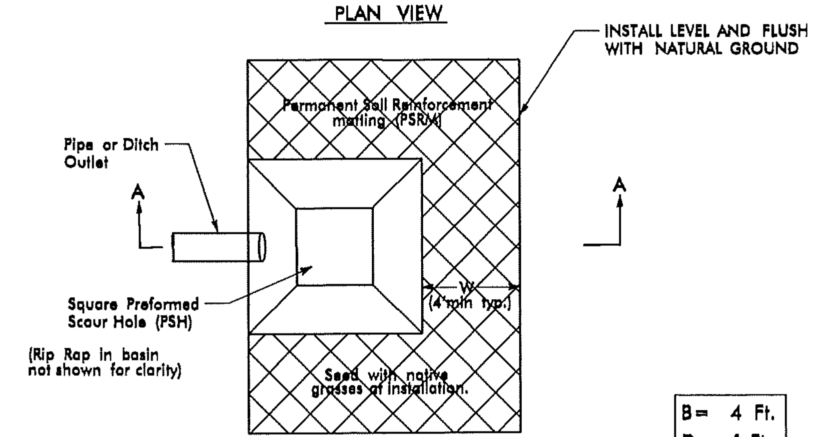
-L- STA. 202+50+/- (RT.)



PREFORMED SCOUR HOLE

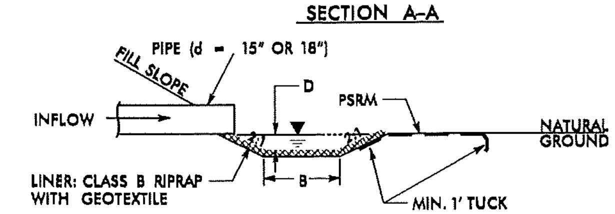
*NOT TO SCALE

PLAN VIEW



B=	4 Ft.
D=	1 Ft.
W=	4 Ft.

SECTION A-A



LOCATIONS:
-Y30- STA. 17+95 (LT.)
-L- STA. 176+40 (LT.)
-Y34- STA. 11+34 (LT.)
-L- STA. 242+81 (RT.)
-Y35- STA. 13+18 (LT.)

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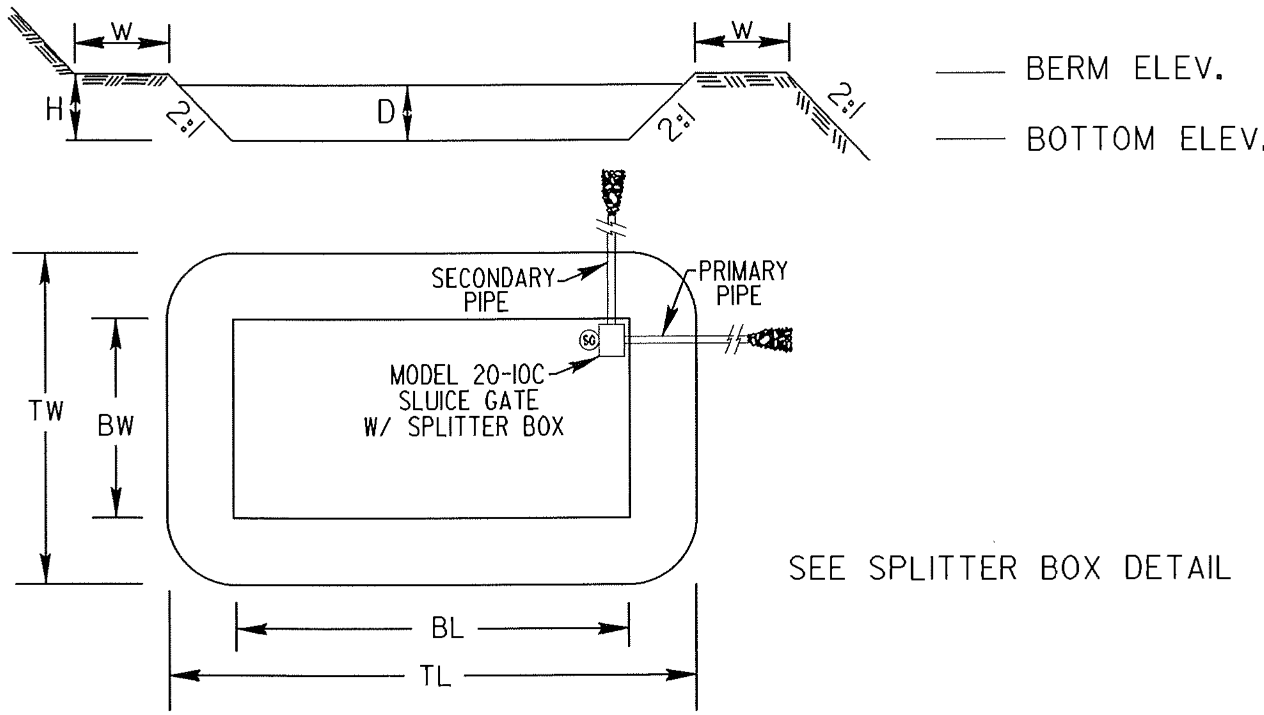
DETAILS

ORIGINAL BY: ____ DATE: ____
MODIFIED BY: ____ DATE: ____
CHECKED BY: ____ DATE: ____
FILE SPEC.:

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

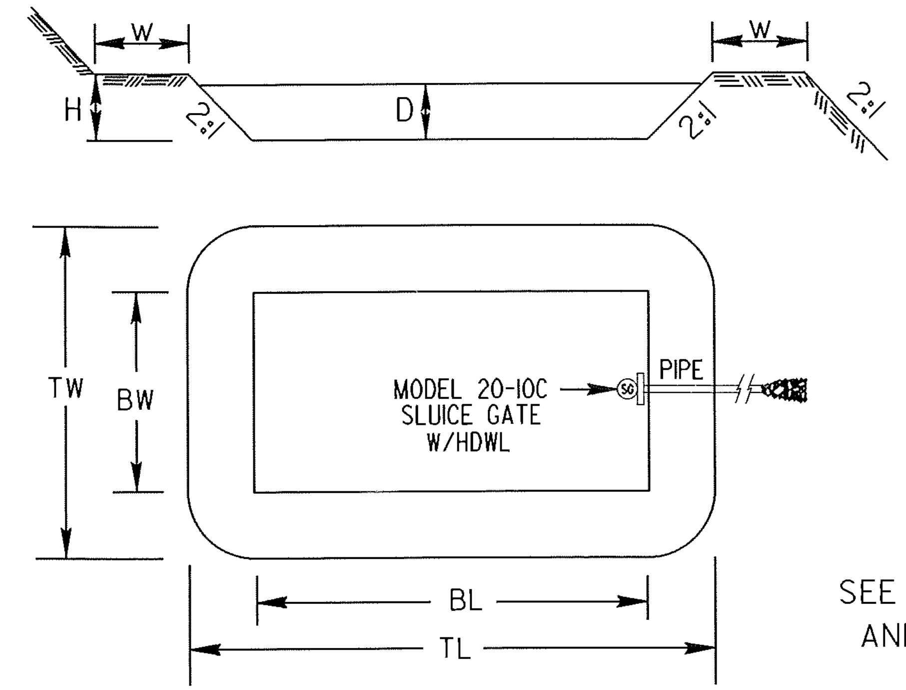
12/15/05

DETAIL A
HAZARDOUS SPILL RETENTION BASIN
(WITH SLUICE GATE AND SPLITTER BOX)



SEE SPLITTER BOX DETAIL

DETAIL B
HAZARDOUS SPILL RETENTION BASIN
(WITH SLUICE GATE AND HEADWALL)



SEE CONCRETE ENDWALL AND SLUICE GATE DETAIL.

DIMENSIONS

BASIN NO.	PROJECT STATION (-L-)	DETAIL	CAPACITY REQUIRED (c.f.)	CAPACITY PROVIDED (c.f.)	DEPTH (D)	HEIGHT (H)	BERM WIDTH (W)	BOTTOM LENGTH (BL)	BOTTOM WIDTH (BW)	TOP LENGTH (TL)	TOP WIDTH (TW)	BOTTOM ELEV.	BERM ELEV.
1	183+00 (RT)	B	5120	7850	6.0'	4.5'	5'	90'	20'	131'	66'	838.96	844.96
2	202+00 (LT)	A	6560	6700	3.5'	4.5'	5'	80'	15'	98'	33'	623.5	628.0
3	222+00 (LT)	A	7240	7320	3.5'	4.5'	5'	66'	15'	106'	33'	810.0	814.5
4	234+50 (RT)	B	4000	4120	3.5'	4.5'	5'	40'	18'	58'	36'	814.5	819.0
5	242+00 (RT)	A	8910	7350	3.0'	4.0'	5'	70'	35'	82'	47'	808.5	612.5
6	267+00 (LT)	A	6500	8590	3.5'	4.5'	5'	50'	26'	68'	44'	814.9	819.4
7	272+00 (RT)	A	8060	8070	3.5'	4.5'	5'	65'	25'	63'	43'	825.5	830.0
8	306+00 (RT)	B	6530	6620	3.5'	4.5'	5'	52'	25'	70'	43'	861.0	865.5
9	314+50 (RT)	B	3380	3390	3.5'	4.5'	5'	35'	16'	53'	34'	863.5	668.0
10	191+50 (LT)	B	2293	2300	2.3'	3.0'	5'	100'	10'	121'	29'	832.0	835.0

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Office 919-250-4128 FAX 919-250-4119

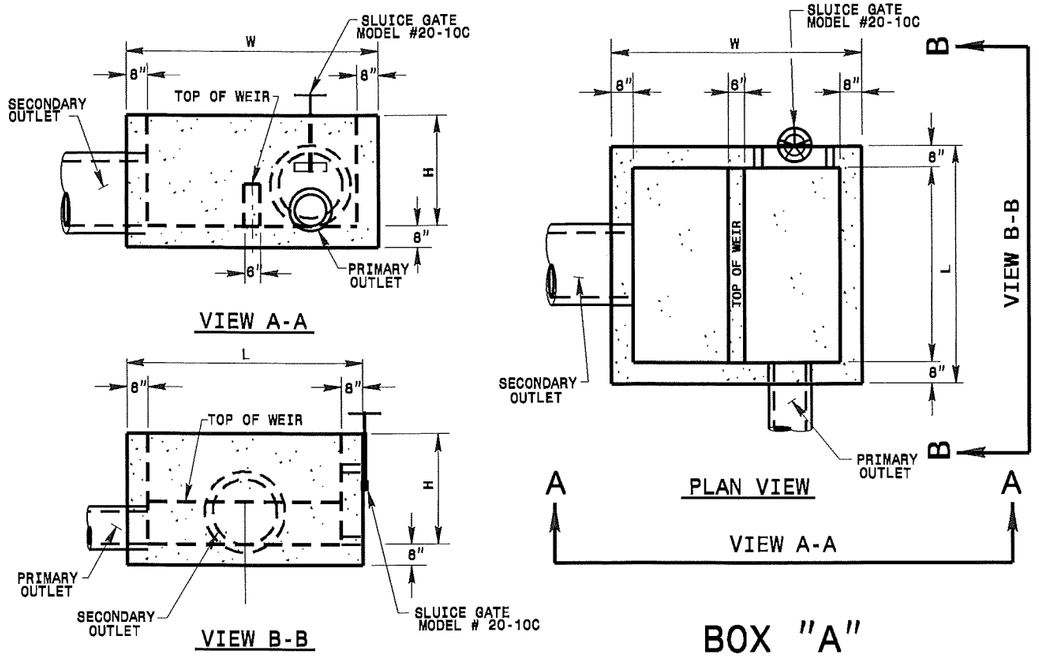
HAZARDOUS SPILL RETENTION BASIN DETAILS

ORIGINAL BY: ______ DATE: ______
MODIFIED BY: ______ DATE: ______
CHECKED BY: ______ DATE: ______
FILE SPEC.: ______

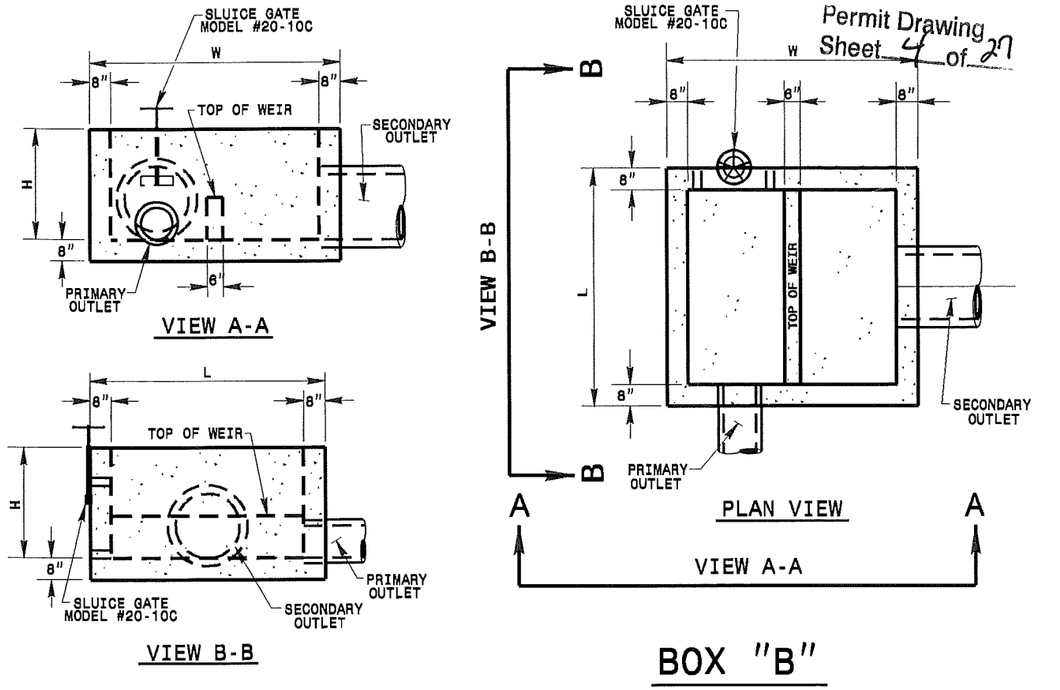
$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3615B	2-G

Permit Drawing Sheet 4 of 27



BOX "A"



BOX "B"

DIMENSIONS

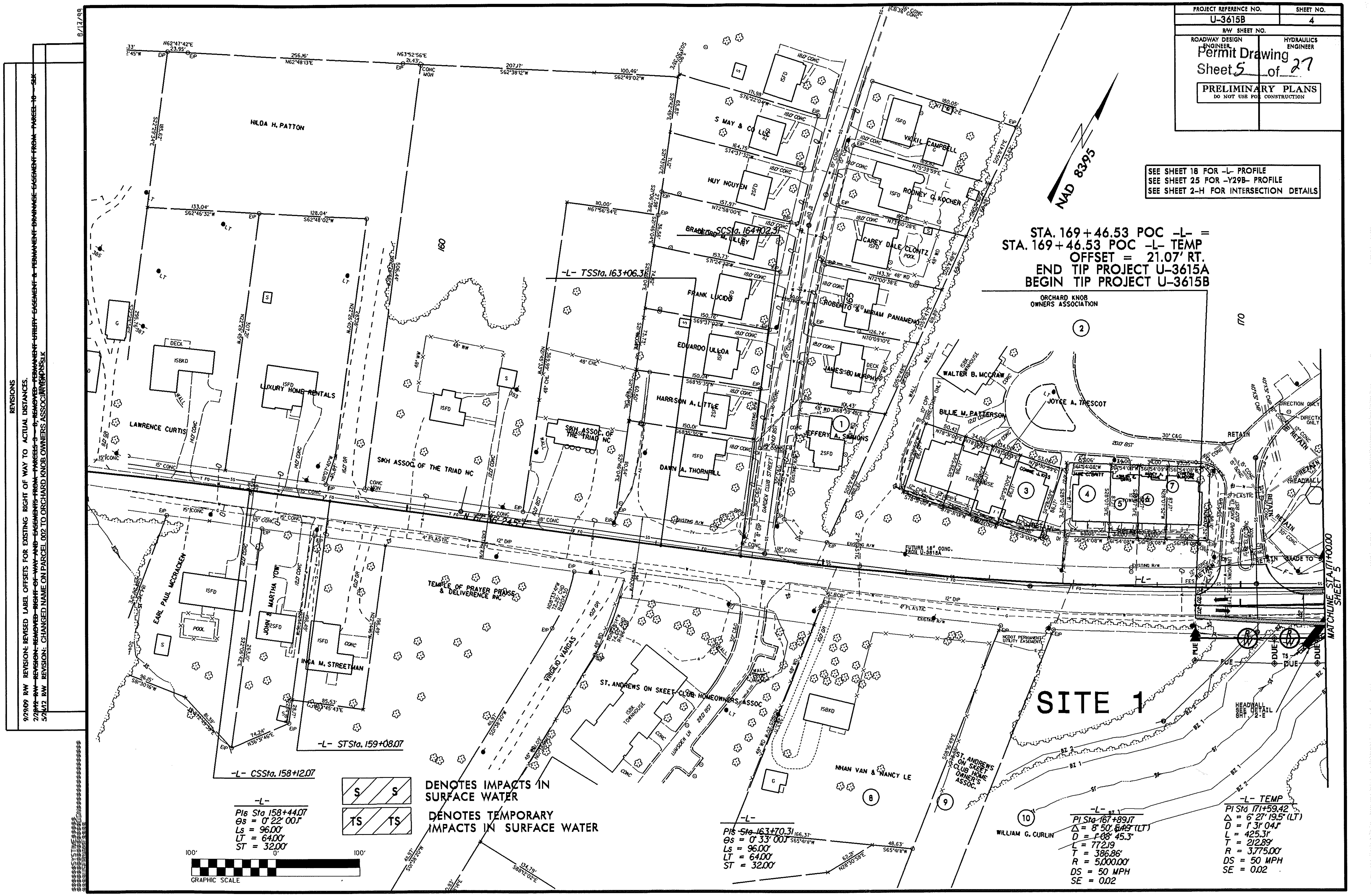
BASIN NO.	PROJECT STATION	BOX DETAIL	PRIMARY OUTLET	SECONDARY OUTLET	INLET DIAMETER	SLUICE GATE DIAMETER	WEIR WIDTH	WEIR HEIGHT	WEIR LENGTH	H	W	L
2	202+00 (LT)	B	12"	24"	24"	32"	0.5'	1.5'	6.0' min.	3.5'	8.0'	7.5'
3	222+00 (LT)	B	12"	30"	24"	32"	0.5'	1.5'	6.0' min.	3.5'	8.0'	7.5'
5	242+00 (RT)	A	12"	18"	24"	32"	0.5'	1.7'	6.0' min.	3.0'	7.5'	7.5'
6	287+00 (LT)	B	12"	24"	24"	32"	0.5'	1.5'	6.0' min.	3.5'	8.0'	7.5'
7	272+00 (RT)	B	15"	24"	30"	38¾"	0.5'	1.4'	8.0' min.	3.5'	9.0'	7.5'

NOTE: HEIGHT OF BOX LISTED IS INSIDE DIMENSION. LENGTH AND WIDTH ARE OUTSIDE DIMENSIONS.
BASE ELEVATION OF SPLITTER BOX EQUALS BOTTOM ELEVATION OF HAZARDOUS SPILL RETENTION BASIN (SEE DETAIL 2-F).

DESIGN SERVICES UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-250-4128 FAX 919-250-4119

SPLITTER BOX DETAILS

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____


PROJECT REFERENCE NO. U-3615B
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Permit Drawing
Sheet 5 of 27
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
SEE SHEET 18 FOR -L- PROFILE
SEE SHEET 25 FOR -Y29B- PROFILE
SEE SHEET 2-H FOR INTERSECTION DETAILS
NAD 83/95
STA. 169+46.53 POC -L- =
STA. 169+46.53 POC -L- TEMP
OFFSET = 21.07' RT.
END TIP PROJECT U-3615A
BEGIN TIP PROJECT U-3615B
ORCHARD KNOB OWNERS ASSOCIATION
HILDA H. PATTON
LAWRENCE CURTIS
LUXURY HOME RENTALS
SIKH ASSOC. OF THE TRIAD NC
S MAY & CO LLC
HUY NGUYEN
FRANK LUCIDO
EDUARDO ULLOA
HARRISON A. LITTLE
DAWN A. THORNHILL
VICKI L. CAMPBELL
RODNEY G. KOCHER
CAREY DALE CLONTZ
ROBERTO & MIRIAM PANAMENO
JAMES B. MURPHY
JEFFERY A. SIMMONS
WALTER B. MCCRAW
BILLIE M. PATTERSON
JOYCE A. TRESCOT
EARL PAUL MCCRACKEN
JOHN & MARTHA YOW
INGA M. STREETMAN
TEMPLE OF PRAYER PRAISE & DELIVERENCE INC
VIRGILIO VARGAS
ST. ANDREWS ON SKEET CLUB HOMEOWNERS ASSOC
NHAN VAN & NANCY LE
ST. ANDREWS ON SKEET CLUB HOME OWNER'S ASSOC.
WILLIAM G. CURLIN
GARDEN CLUB STREET
SITE 1
-L- TSSta. 163+06.31
-L- SCSta. 164+02.31
-L- STSta. 159+08.07
-L- CSSta. 158+12.07
MATCHLINE STA. 171+00.00 SHEET 5
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-L-
PIs Sta 158+44.07
θs = 0° 22' 00.0"
Ls = 96.00'
LT = 64.00'
ST = 32.00'
-L-
PIs Sta 163+70.31
θs = 0° 33' 00.0"
Ls = 96.00'
LT = 64.00'
ST = 32.00'
-L-
PI Sta 167+89.17
Δ = 8° 50' 54.9" (LT)
D = 1° 08' 45.3"
L = 772.19
T = 386.86'
R = 5,000.00'
DS = 50 MPH
SE = 0.02
-L- TEMP
PI Sta 171+59.42
Δ = 6° 27' 19.5" (LT)
D = 1° 31' 04.1"
L = 425.31'
T = 212.89
R = 3,775.00'
DS = 50 MPH
SE = 0.02
GRAPHIC SCALE
REVISIONS
9/29/09 R/W REVISION: REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES.
2/2/12 R/W REVISION: REMOVED RIGHT OF WAY AND EASEMENTS FROM PARCELS 3 - 6, REMOVED PERMANENT UTILITY EASEMENT & PERMANENT DRAINAGE EASEMENT FROM PARCEL 10
5/24/12 R/W REVISION: CHANGED NAME ON PARCEL 002 TO ORCHARD KNOB OWNERS ASSOCIATION

PROJECT REFERENCE NO.	SHEET NO.
U-3615B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing
Sheet 6 of 27

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

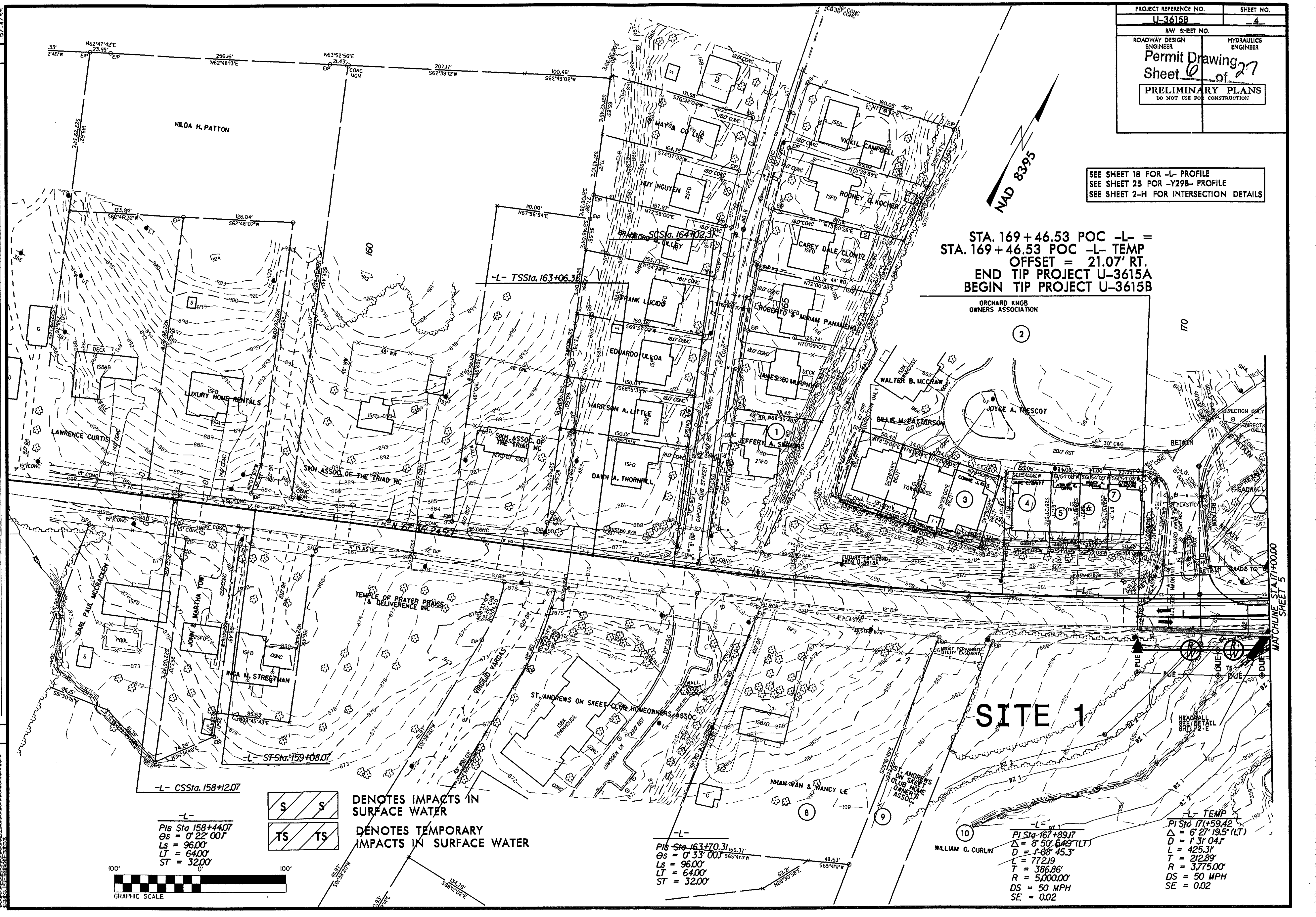
REVISIONS

9/29/09 R/W REVISION: REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES.

~~2/2/12 R/W REVISION: REMOVED RIGHT OF WAY AND EASEMENTS FROM PARCELS 5 - 6, REMOVED PERMANENT UTILITY EASEMENT & TEMPORARY DRAINAGE EASEMENT FROM PARCEL 10 SLK~~

5/24/12 R/W REVISION: CHANGED NAME ON PARCEL 002 TO ORCHARD KNOB OWNERS ASSOCIATION SLK

SEE SHEET 18 FOR -L- PROFILE
SEE SHEET 25 FOR -Y29B- PROFILE
SEE SHEET 2-H FOR INTERSECTION DETAILS



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

-L-
PIs Sta 158+44.07
Θs = 0° 22' 00.1"
Ls = 96.00'
LT = 64.00'
ST = 32.00'

-L-
PIs Sta 163+70.31
Θs = 0° 33' 00.1"
Ls = 96.00'
LT = 64.00'
ST = 32.00'

-L-
PI Sta 167+89.17
Δ = 8° 50' 54.9" (LT)
D = 1° 08' 45.3"
L = 772.19
T = 386.86'
R = 5,000.00'
DS = 50 MPH
SE = 0.02

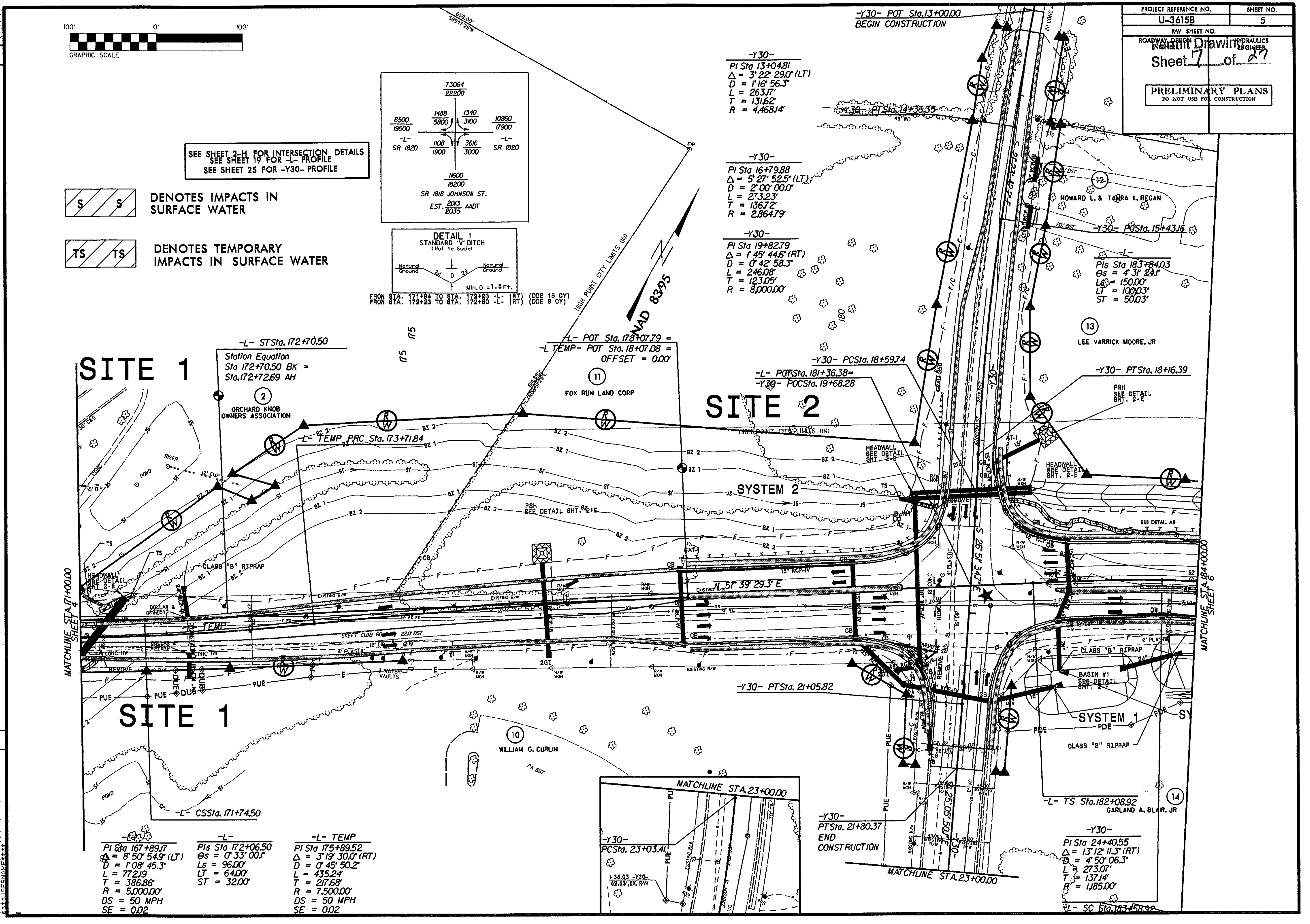
-L- TEMP
PI Sta 171+59.42
Δ = 6° 27' 19.5" (LT)
D = 1° 31' 04.1"
L = 425.31'
T = 212.89'
R = 3,775.00'
DS = 50 MPH
SE = 0.02

100' 0' 100'
GRAPHIC SCALE

8/17/99

REVISIONS

RW REVISION: 9/29/12 REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES.
RW REVISION: 2/27/12: CHANGED PERMANENT DRAINAGE EASEMENT TO RIGHT OF WAY ON PARCEL 2 AND 11; REMOVED PERMANENT DRAINAGE EASEMENT AND TEMPORARY CONSTRUCTION EASEMENT AND ADDED DRAINAGE UTILITY EASEMENT ON PARCEL 10; REVISED TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 12; REMOVED PERMANENT UTILITY EASEMENT, PERMANENT DRAINAGE EASEMENT AND REVISED RIGHT OF WAY ON PARCEL 13. - SLK
5/24/12 RW REVISION: CHANGED NAME ON PARCEL 002 TO ORCHARD KNOB OWNERS ASSOCIATION - SLK



PROJECT REFERENCE NO.	SHEET NO.
U-3615B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing Sheet 8 of 27

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

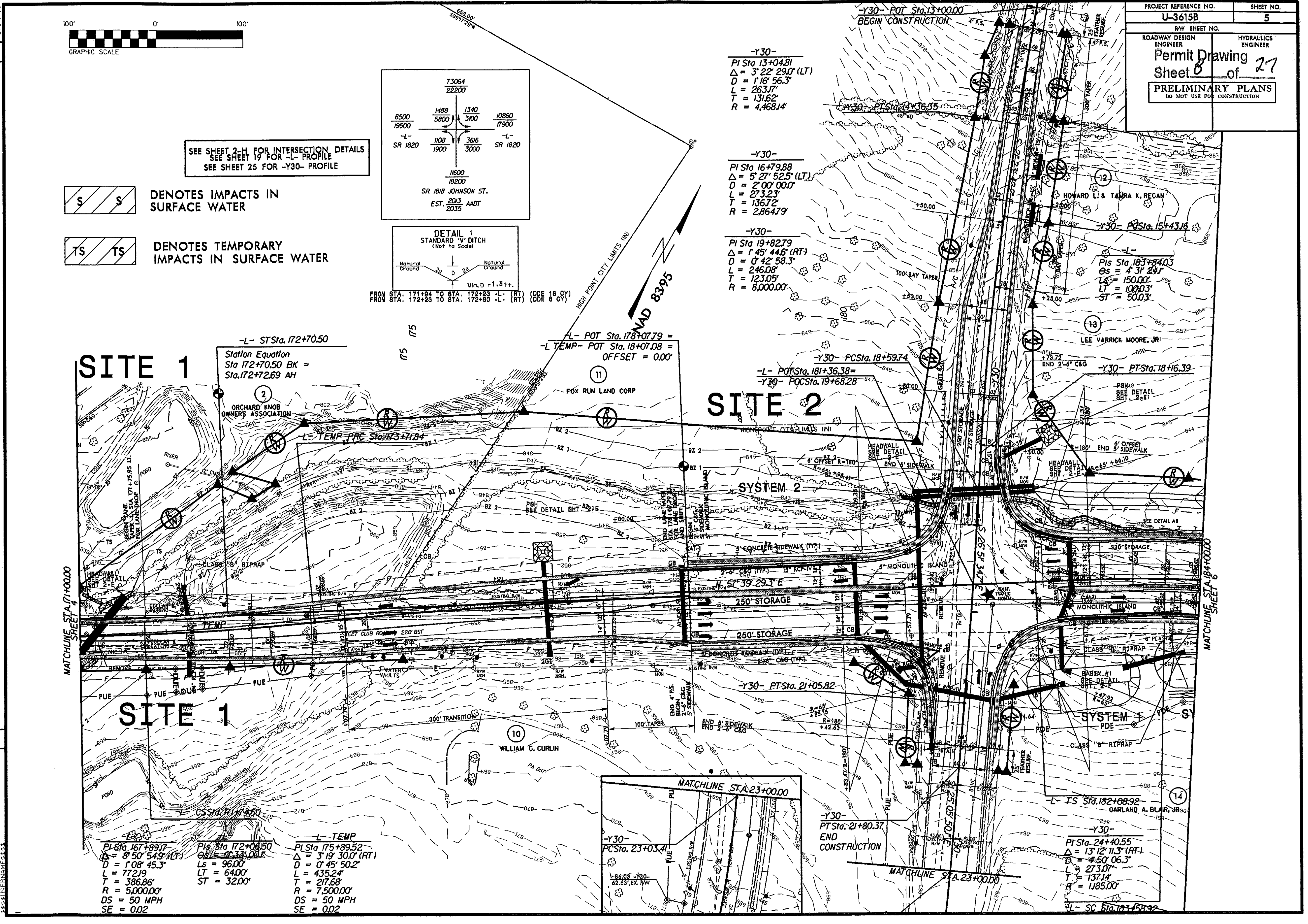
REVISIONS

R/W REVISION: 9/29/12 REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES.

R/W REVISION: 2/29/12: CHANGED PERMANENT DRAINAGE EASEMENT TO RIGHT OF WAY ON PARCEL 7 AND 11; REMOVED PERMANENT DRAINAGE EASEMENT AND TEMPORARY CONSTRUCTION EASEMENT AND ADDED DRAINAGE UTILITY EASEMENT ON PARCEL 10; REVISED TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 12; REMOVED PERMANENT UTILITY EASEMENT, PERMANENT DRAINAGE EASEMENT AND REVISED RIGHT OF WAY ON PARCEL 13. - SLK

5/21/12 R/W REVISION: CHANGED NAME ON PARCEL 002 TO ORCHARD KNOB OWNERS ASSOCIATION - SLK

8/17/99



PROJECT REFERENCE NO.	SHEET NO.
U-3615B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 9 of 27

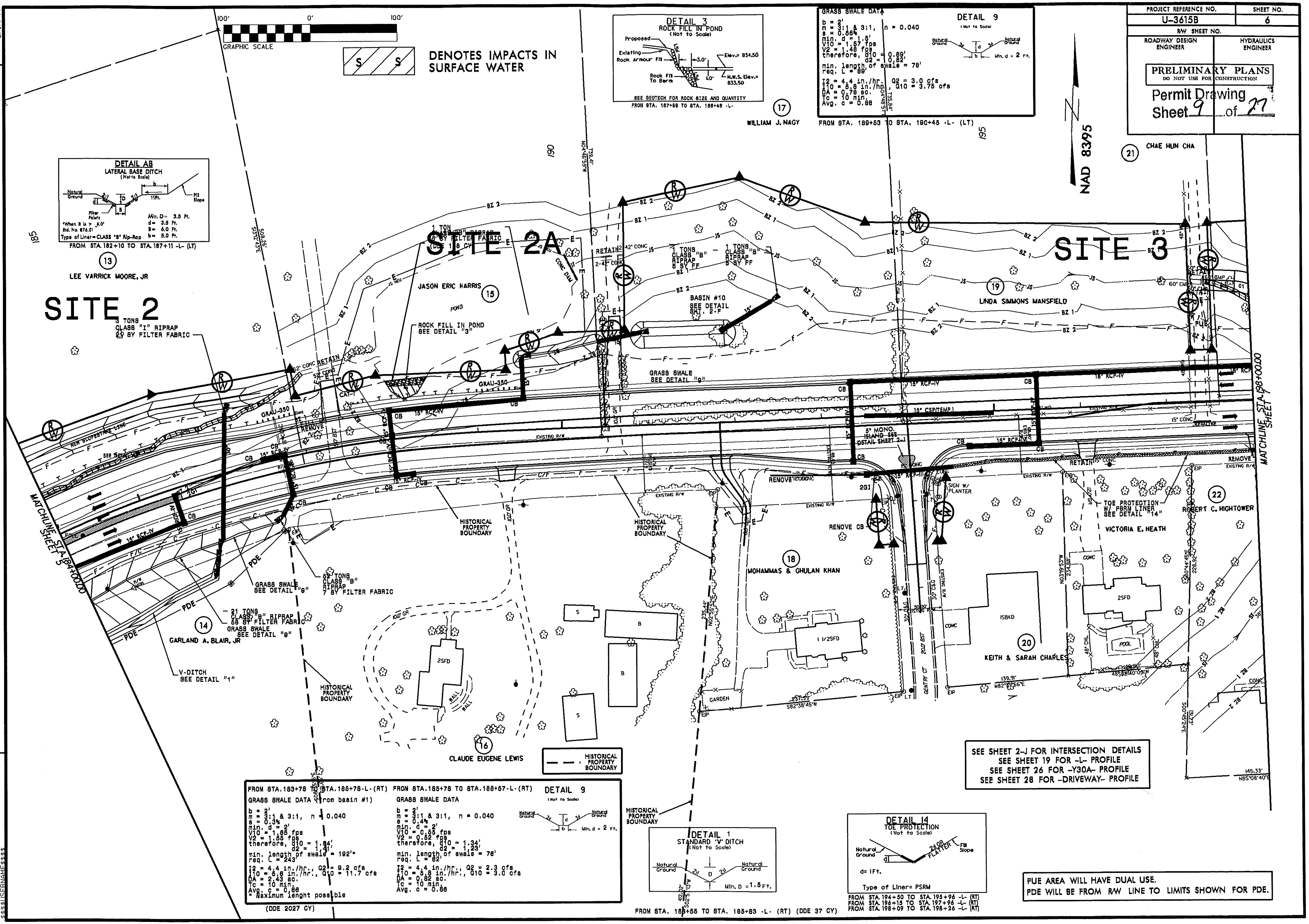
8/17/99

REVISIONS

9/29/09 R/W REVISION: REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES.

2/29/12 R/W REVISION: REMOVED PERMANENT DRAINAGE EASEMENT AND RIGHT OF WAY ON PARCEL 13; REMOVED PERMANENT DRAINAGE EASEMENT AND ADDED RIGHT OF WAY AND TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 15; CHANGED PERMANENT DRAINAGE EASEMENT TO RIGHT OF WAY AND REMOVED PERMANENT UTILITY EASEMENT ON PARCEL 17, 19, AND 21; - SLK

4/9/13 R/W REVISION: ADDED TEMPORARY CONSTRUCTION EASEMENT AROUND DETENTION POND ON PARCEL 15. - SLK



DETAIL AB
LATERAL BASE DITCH (Not to Scale)

*When B is > 6.0' Std. No. 876.01

Min. D = 3.5 Ft.
d = 3.5 Ft.
B = 6.0 Ft.
b = 5.0 Ft.

Type of Liner = CLASS "B" Rip-Rap

FROM STA. 182+10 TO STA. 187+11 -L- (LT)

DETAIL 3
ROCK FILL IN POND (Not to Scale)

Elev. = 834.50
N.W.S. Elev. = 833.50

SEE GEOTECH FOR ROCK SIZE AND QUANTITY

FROM STA. 187+99 TO STA. 188+48 -L-

DETAIL 9
(Not to Scale)

GRASS SWALE DATA

b = 2'
m = 3:1 & 3:1, n = 0.040
s = 0.66%
min. d = 1.5'
V10 = 1.57 fps
V2 = 1.48 fps
therefore, d10 = 0.89'
d2 = 0.82'
min. length of swale = 78'
req. L = 89'

I2 = 4.4 in./hr., Q2 = 3.0 cfs
I10 = 5.8 in./hr., Q10 = 3.75 cfs
DA = 0.78 ac.
Tc = 10 min.
Avg. c = 0.88

Min. d = 2 Ft.

FROM STA. 189+63 TO STA. 190+45 -L- (LT)

SEE SHEET 2-J FOR INTERSECTION DETAILS
SEE SHEET 19 FOR -L- PROFILE
SEE SHEET 26 FOR -Y30A- PROFILE
SEE SHEET 28 FOR -DRIVEWAY- PROFILE

DETAIL 9
(Not to Scale)

FROM STA. 183+78 TO STA. 185+78 -L- (RT)
GRASS SWALE DATA (from basin #1)

b = 2'
m = 3:1 & 3:1, n = 0.040
s = 0.3%
min. d = 2'
V10 = 1.85 fps
V2 = 1.65 fps
therefore, d10 = 1.54'
d2 = 1.41'
min. length of swale = 192'*
req. L = 243'

I2 = 4.4 in./hr., Q2 = 9.2 cfs
I10 = 5.8 in./hr., Q10 = 11.7 cfs
DA = 2.43 ac.
Tc = 10 min.
Avg. c = 0.86
* Maximum lenght possible

(DDE 2027 CY)

FROM STA. 185+78 TO STA. 188+57 -L- (RT)
GRASS SWALE DATA

b = 2'
m = 3:1 & 3:1, n = 0.040
s = 0.4%
min. d = 2'
V10 = 0.65 fps
V2 = 0.62 fps
therefore, d10 = 1.34'
d2 = 1.23'
min. length of swale = 76'
req. L = 82'

I2 = 4.4 in./hr., Q2 = 2.3 cfs
I10 = 5.8 in./hr., Q10 = 3.0 cfs
DA = 0.82 ac.
Tc = 10 min.
Avg. c = 0.86

Min. d = 2 Ft.

DETAIL 1
STANDARD 'V' DITCH (Not to Scale)

Min. D = 1.5 Ft.

FROM STA. 183+55 TO STA. 185+83 -L- (RT) (DDE 37 CY)

DETAIL 14
TOE PROTECTION (Not to Scale)

d = 1Ft.
Type of Liner = PSRM

FROM STA. 194+50 TO STA. 195+96 -L- (RT)
FROM STA. 196+15 TO STA. 197+96 -L- (RT)
FROM STA. 198+09 TO STA. 198+26 -L- (RT)

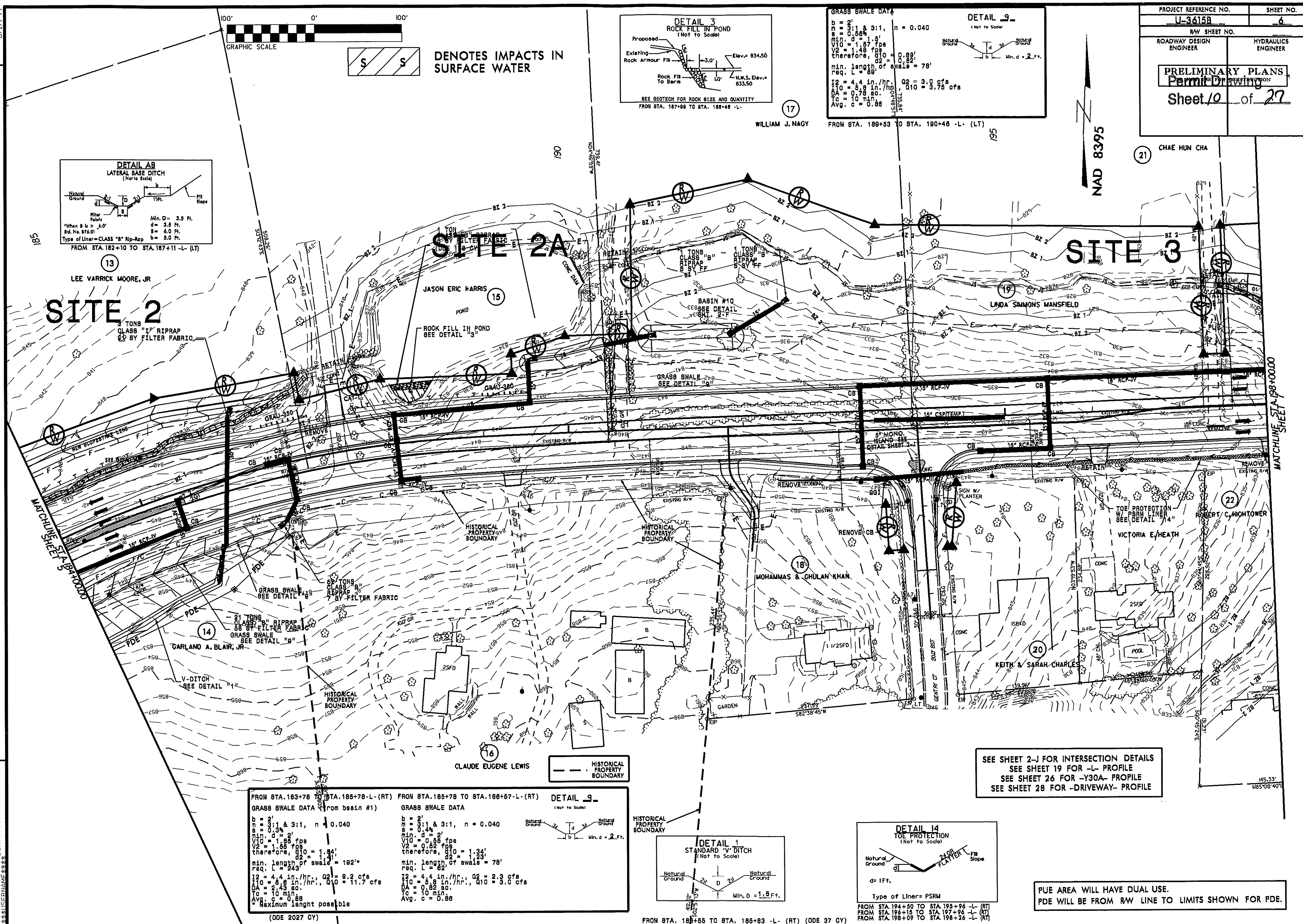
PUE AREA WILL HAVE DUAL USE.
PDE WILL BE FROM R/W LINE TO LIMITS SHOWN FOR PDE.

REVISIONS

9/29/09 R/W REVISION: REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES.
2/29/12 R/W REVISION: REMOVED PERMANENT DRAINAGE EASEMENT AND REVISED RIGHT OF WAY ON PARCEL 13; REMOVED PERMANENT DRAINAGE EASEMENT AND ADDED RIGHT OF WAY AND TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 15; CHANGED PERMANENT DRAINAGE EASEMENT TO RIGHT OF WAY AND REMOVED PERMANENT UTILITY EASEMENT ON PARCEL 17, 19, AND 21; – SLK
4/9/13 R/W REVISION: ADDED TEMPORARY CONSTRUCTION EASEMENT AROUND DETENTION POND ON PARCEL 15. – SLK

8/17/99

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



PROJECT REFERENCE NO.	SHEET NO.
U-3615B	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing
Sheet 11 of 27

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

9/2909 RW REVISION: REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES.
~~10/2912 RW REVISION: CHANGED PERMANENT DRAINAGE EASEMENT TO RIGHT OF WAY AND REMOVED PERMANENT UTILITY EASEMENT ON PARCELS 21 AND 24, REVISED PERMANENT UTILITY EASEMENT AND ADDED TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 28. - SLK~~
5/14/12 RW REVISION: CHANGED PERMANENT UTILITY EASEMENT/PERMANENT DRAINAGE EASEMENT OVERLAP TO DRAINAGE UTILITY EASEMENT ON PARCEL 27. - SLK
7/12/12 RW REVISION: CHANGED PERMANENT UTILITY EASEMENT TO TEMPORARY CONSTRUCTION EASEMENT AND ADDED DRIVEWAY PIPE ON PARCEL 28. - SLK

-DRIVEWAY- STA.199+48.82 LT.
PI Sta 10+53.98
Δ = 50° 33' 42.6" (RT)
D = 57.2° 57' 28.1"
L = 8.82'
T = 4.72'
R = 10.00'

PI Sta 11+09.83
Δ = 15° 40' 55.5" (LT)
D = 190° 59' 09.4"
L = 8.21'
T = 4.13'
R = 30.00'

SEE SHEET 2-J FOR INTERSECTION DETAILS
SEE SHEET 20 FOR -L- PROFILE
SEE SHEET 26 FOR -Y31- & -Y32- PROFILES
SEE SHEET 28 FOR -DRIVEWAY- PROFILE

-L-
PIs Sta 207+71.41
es = 0° 26' 18.6"
Ls = 75.00'
LT = 50.00'
ST = 25.00'

-L-
PI Sta 211+98.99
Δ = 9° 23' 36.9" (LT)
D = 1° 10' 09.5"
L = 803.35'
T = 402.58'
R = 4,900.00'
DS = 50 MPH
SE = 0.02

-L- POT Sta.199+48.84=
-DRIVEWAY- POT Sta.10+00.00
PC Sta. 10+49.25
PT Sta. 10+58.08
PC Sta. 11+05.70
PT Sta. 11+13.91
POT Sta. 11+77.67

-Y32- POT Sta. 10+00.00
-Y32- PT Sta. 10+55.00
BEGIN CONSTRUCTION
-L- POT Sta. 205+75.82=
-Y32- POT Sta. 11+89.18
-L- POT Sta. 200+07.07=
-Y31- POT Sta. 10+00.00

SITE 3C
SITE 3
SITE 3B
SITE 3A

-L- TS Sta. 207+21.41
-L- SC Sta. 209+96.41

NAD 83 95

(21) CHAE HUN CHA
(24) JAY & DAVONIA MICHAEL
(27) LESLIE RIERSON SMITH
BARBARA MAE DERMER-BECKER
(29) MARSHA & CURTIS INLOW
(23) MICHAEL C. CLODFELTER
(22) ROBERT C. HIGHTOWER
ALEXANDER M. CATHEY
ROBERT & WILLIE PARKS
MATHEW W. TENHAEFF
LILLIAN POPE ATCHISON
PRECEPT CONSTRUCTION LLC
(25) GABLES ON SKEET CLUB HOMEOWNERS ASSOC, INC
(26) DAVID & JULIA GALLOWAY
(28) VERNA H. HOUGHTALING
(30) PATSY K. KIMSEY

MATCHLINE STA 198+00.00 SHEET 6
MATCHLINE STA 212+00.00 SHEET 8

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

100' 0' 100'
GRAPHIC SCALE

DETAIL 2
STANDARD 2' BASE DITCH
(Not to Scale)
Min. D = 2 Ft.
B = 2 Ft.
FROM STA. 202+27 TO STA. 202+40 -L- (LT) (DDE 27 CY)

DETAIL 4
STANDARD 4' BASE DITCH
(Not to Scale)
Min. D =3.5Ft.
B = 4 Ft.
FROM STA. 200+34 TO STA. 200+87 -L- (LT) (DDE 145 CY)

10948 / 17268 -L- SR 1820 50/50 300/300 11248 / 17568 -L- SR 1820
300/300
POPLAR CREEK LN.
EST. 2013/2033 AADT

PROJECT REFERENCE NO.	SHEET NO.
U-3615B	7

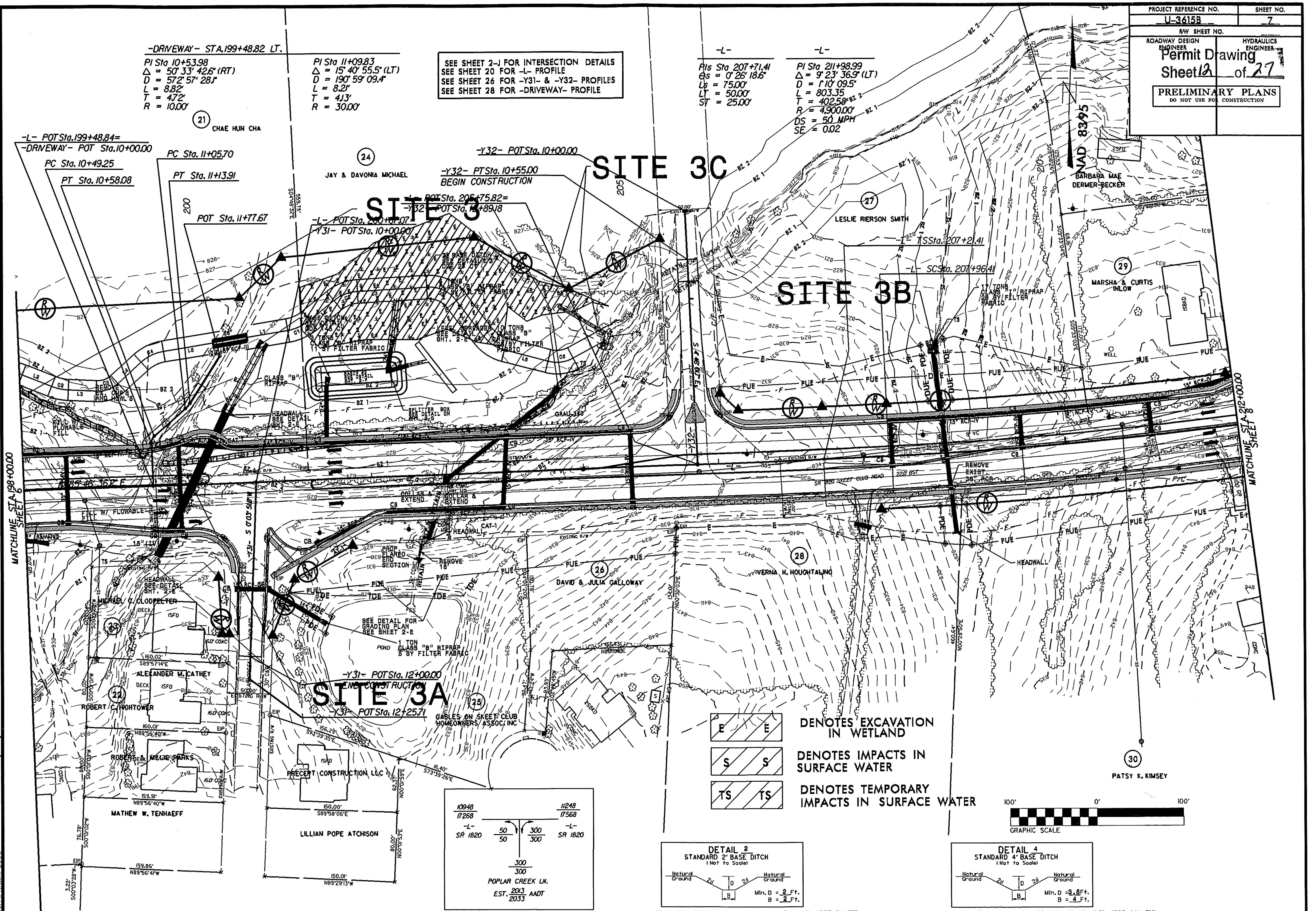
R/W SHEET NO.

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

Permit Drawing Sheet 12 of 27

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHEET 2-J FOR INTERSECTION DETAILS
SEE SHEET 20 FOR -L- PROFILE
SEE SHEET 26 FOR -Y31- & -Y32- PROFILES
SEE SHEET 28 FOR -DRIVEWAY- PROFILE



-DRIVEWAY- STA.199+48.82 LT.
PI Sta 10+53.98
Δ = 50° 33' 42.6" (RT)
D = 572° 57' 28.1"
L = 8.82'
T = 4.72'
R = 10.00'
PI Sta 11+09.83
Δ = 15° 40' 55.5" (LT)
D = 190° 59' 09.4"
L = 8.21'
T = 4.13'
R = 30.00'
-L-
PIs Sta 207+71.41
θs = 0° 26' 18.6"
Ls = 75.00'
LT = 50.00'
ST = 25.00'
-L-
PI Sta 211+98.99
Δ = 9° 23' 36.9" (LT)
D = 1° 10' 09.5"
L = 803.35
T = 402.58'
R = 4,900.00'
DS = 50 MPH
SE = 0.02
-L- POT Sta.199+48.84=
-DRIVEWAY- POT Sta.10+00.00
PC Sta. 10+49.25
PT Sta. 10+58.08
PC Sta. 11+05.70
PT Sta. 11+13.91
POT Sta. 11+77.67
-Y32- POT Sta. 10+00.00
-Y32- PT Sta. 10+55.00
BEGIN CONSTRUCTION
-L- POT Sta. 205+75.82=
-Y32- POT Sta. 10+89.18
-L- POT Sta. 200+61.07
-Y31- POT Sta. 10+00.00
-L- TS Sta. 207+21.41
-L- SC Sta. 207+96.41
-Y31- POT Sta. 12+00.00
END CONSTRUCTION
-Y31- POT Sta. 12+25.71
SITE 3
SITE 3A
SITE 3B
SITE 3C
NAD 83/95
MATCHLINE STA.198+00.00 SHEET 6
MATCHLINE STA. 212+00.00 SHEET 8
CHAE HUN CHA
JAY & DAVONIA MICHAEL
LESLIE RIERSON SMITH
BARBARA MAE DERMER-BECKER
MARSHA & CURTIS INLOW
VERNA H. HOUGHTALING
DAVID & JULIA GALLOWAY
MICHAEL G. CLODFELTER
ALEXANDER M. CATHEY
ROBERT C. HIGHTOWER
GABLES ON SKEET CLUB HOMEOWNERS ASSOC. INC
PRECEPT CONSTRUCTION LLC
MATHEW W. TENHAEFF
LILLIAN POPE ATCHISON
PATSY K. KIMSEY
SR 1820 SKEET CLUB ROAD
SEE DETAIL FOR GRADING PLAN SEE SHEET 2-E
1 TON CLASS "B" RIPRAP 5 SY FILTER FABRIC
17 TONS CLASS "I" RIPRAP 28 SY FILTER FABRIC

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

100' 0' 100'
GRAPHIC SCALE

10948 / 17268		11248 / 17568
-L- SR 1820	50/50 — 300/300	-L- SR 1820

300 / 300
POPLAR CREEK LN.
EST. 2013 / 2033 AADT

DETAIL 2
STANDARD 2' BASE DITCH
(Not to Scale)
Natural Ground — Natural Ground
Min. D = 2 Ft.
B = 2 Ft.
FROM STA. 202+27 TO STA. 202+40 -L- (LT) (DDE 27 CY)

DETAIL 4
STANDARD 4' BASE DITCH
(Not to Scale)
Natural Ground — Natural Ground
Min. D = 3.5 Ft.
B = 4 Ft.
FROM STA. 200+34 TO STA. 200+87 -L- (LT) (DDE 145 CY)

REVISIONS

9/29/09 R/W REVISION: REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES.
2/2/12 R/W REVISION: CHANGED PERMANENT DRAINAGE EASEMENT TO RIGHT OF WAY AND REMOVED PERMANENT UTILITY EASEMENT ON PARCELS 21 AND 24, REVISED PERMANENT UTILITY EASEMENT AND ADDED TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 28. - SLK
5/1/12 R/W REVISION: CHANGED PERMANENT UTILITY EASEMENT/PERMANENT DRAINAGE EASEMENT OVERLAP TO DRAINAGE UTILITY EASEMENT ON PARCEL 27. - SLK
7/11/12 R/W REVISION: CHANGED PERMANENT UTILITY EASEMENT TO TEMPORARY CONSTRUCTION EASEMENT AND ADDED DRIVEWAY PIPE ON PARCEL 28. - SLK

8/17/99

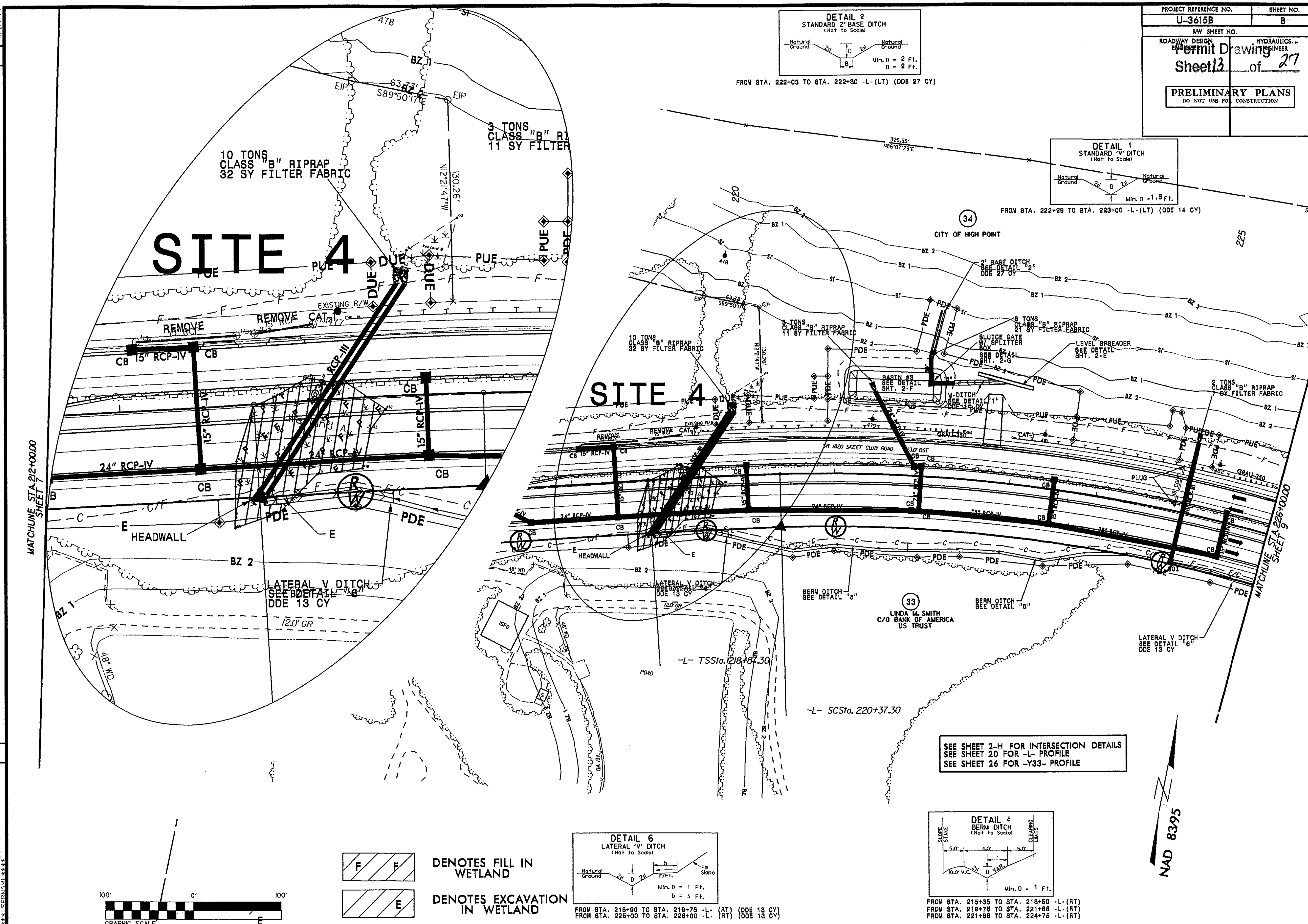
REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/29/09
2. CHANGED PUE/PDE OVERLAP TO DUE ON PARCEL 32.
3. NAME CHANGE ON PARCELS 29 AND 32.
4. ~~CHANGE PUE TO DUE. CLOSED CLAIM ON PARCEL 33.~~
5. ADDED 3 - CURB CUTS ON PARCEL 32.
6. CHANGE PDE TO DUE ON PARCEL 31. (1-10-12) S.L.K.

REVISIONS

8/17/99

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



PROJECT REFERENCE NO.	SHEET NO.
U-3615B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing Sheet 14 of 27

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-
PI Sta 211+98.99
Δ = 9° 23′ 36.9″ (LT)
D = 1°10′ 09.5″
L = 803.35
T = 402.58′
R = 4,900.00′
DS = 50 MPH
SE = 0.02

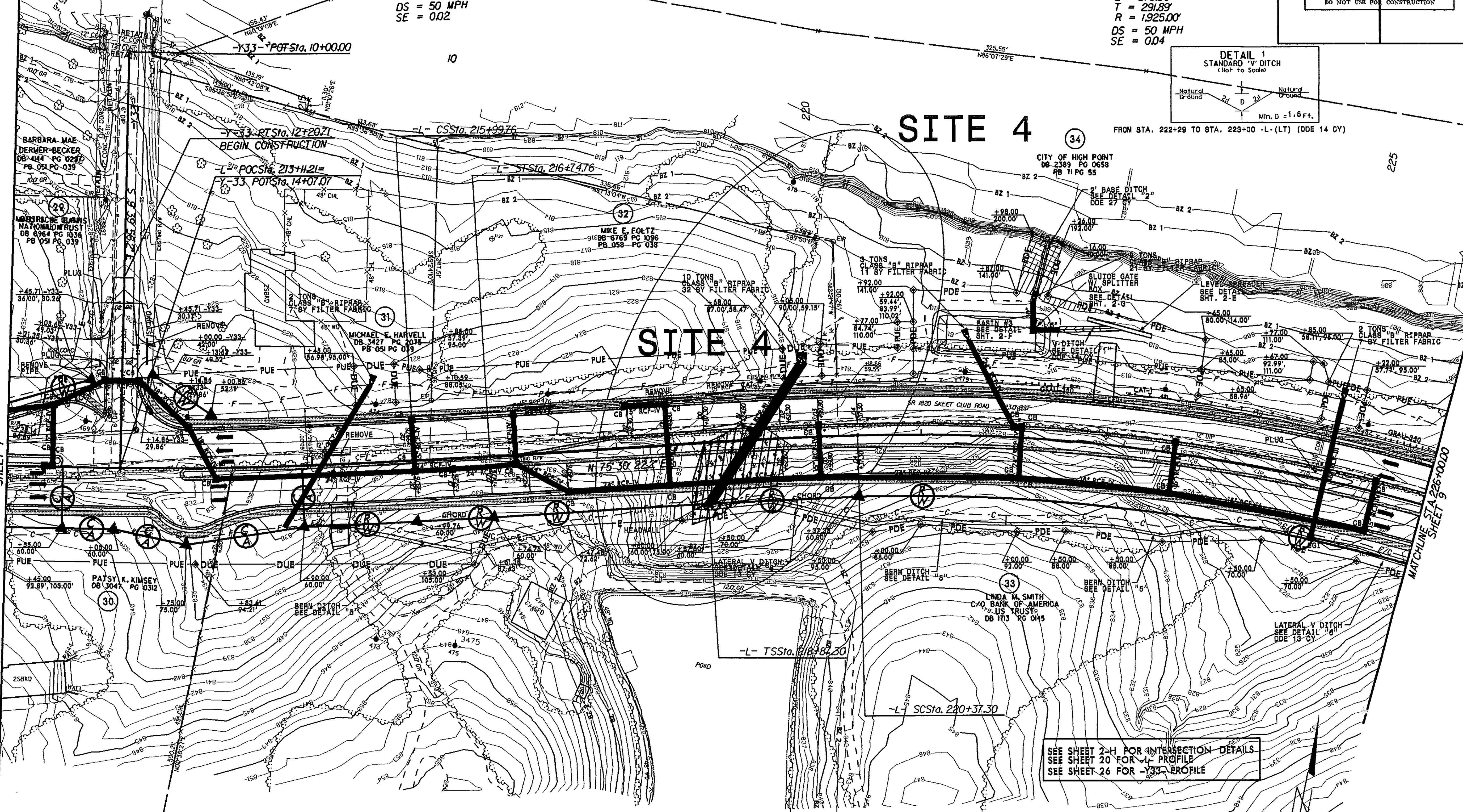
-L-
PIs Sta 216+24.76
θs = 0° 26′ 18.6″
Ls = 75.00′
LT = 50.00′
ST = 25.00′

-L-
PIs Sta 219+87.31
θs = 2° 13′ 56.3″
Ls = 150.00′
LT = 100.01′
ST = 50.01′

-L-
PI Sta 223+29.19
Δ = 17° 14′ 38.9″ (RT)
D = 2° 58′ 35.1″
L = 579.36
T = 291.89′
R = 1,925.00′
DS = 50 MPH
SE = 0.04

DETAIL 2
STANDARD 2′ BASE DITCH
(Not to Scale)
Natural Ground 2:1 D 2:1 Natural Ground B
Min. D = 2 Ft.
B = 2 Ft.
FROM STA. 222+03 TO STA. 222+30 -L-(LT) (DDE 27 CY)

DETAIL 1
STANDARD 'V' DITCH
(Not to Scale)
Natural Ground 2:1 D 2:1 Natural Ground
Min. D = 1.5 Ft.
FROM STA. 222+29 TO STA. 223+00 -L-(LT) (DDE 14 CY)



DETAIL 6
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground 2:1 D 2:1 F/Ft. b Fill Slope
Min. D = 1 Ft.
b = 3 Ft.
FROM STA. 218+90 TO STA. 219+75 -L- (RT) (DDE 13 CY)
FROM STA. 225+00 TO STA. 228+00 -L- (RT) (DDE 13 CY)

DETAIL 5
BERM DITCH
(Not to Scale)
SLOPE STAKE 5.0′ 4.0′ 5.0′ CLEARING LIMITS
10.0′ V.C. 2:1 D VAR.
Min. D = 1 Ft.
FROM STA. 215+35 TO STA. 216+50 -L-(RT)
FROM STA. 219+75 TO STA. 221+88 -L-(RT)
FROM STA. 221+88 TO STA. 224+75 -L-(RT)

F F — DENOTES FILL IN WETLAND

E — DENOTES EXCAVATION IN WETLAND

100′ 0′ 100′
GRAPHIC SCALE

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/29/09
2. CHANGED PUE/PDE OVERLAP TO DUE ON PARCEL 32.
3. NAME CHANGE ON PARCELS 29 AND 32.
4. CHANGE PUE TO DUE. CLOSED CLAIM ON PARCEL 32.
5. ADDED 3 - CURB CUTS ON PARCEL 32.
6. CHANGE PDE TO DUE ON PARCEL 31. (1-10-12) S.L.K.

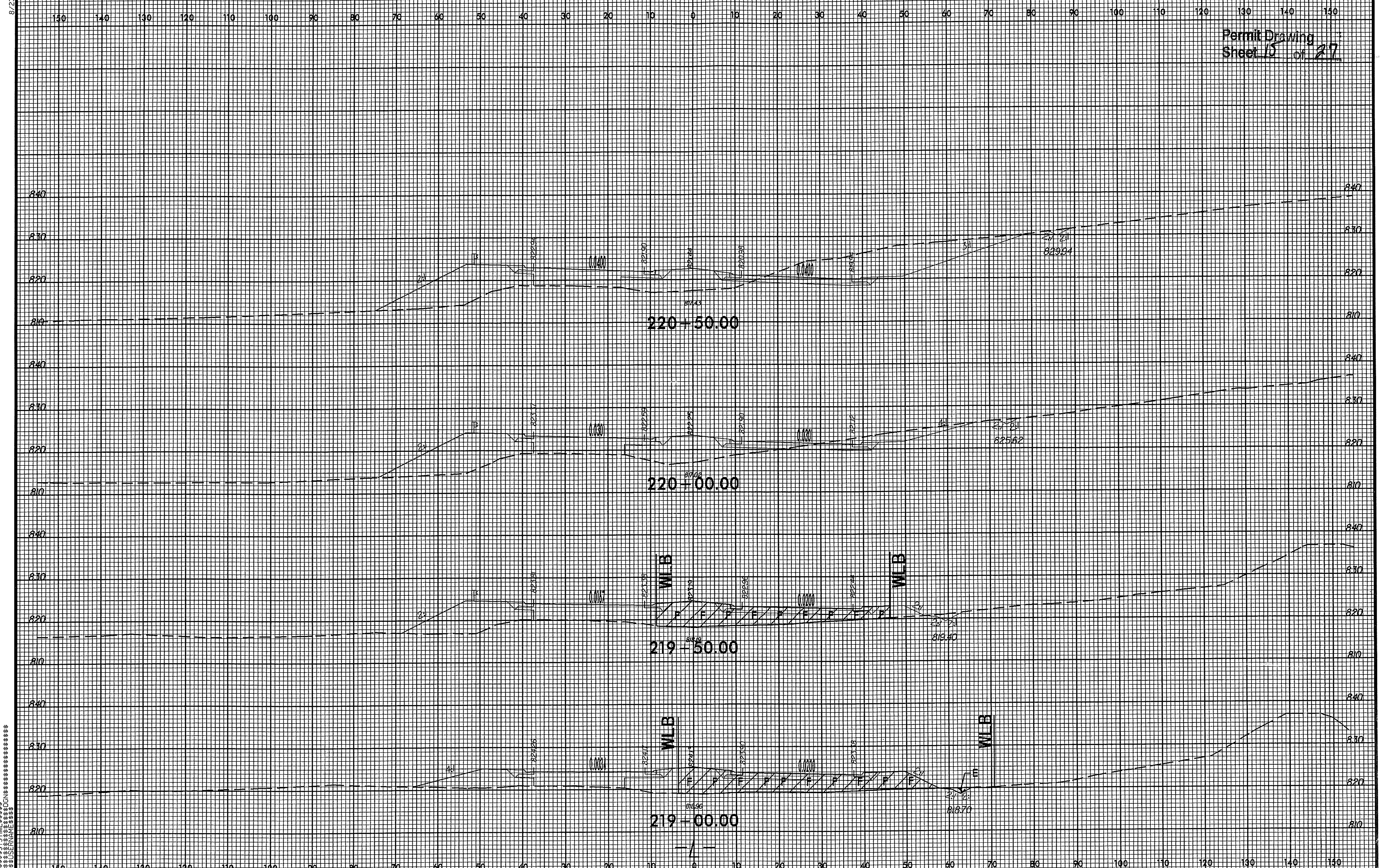
8/17/99

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

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-3615B	X-23

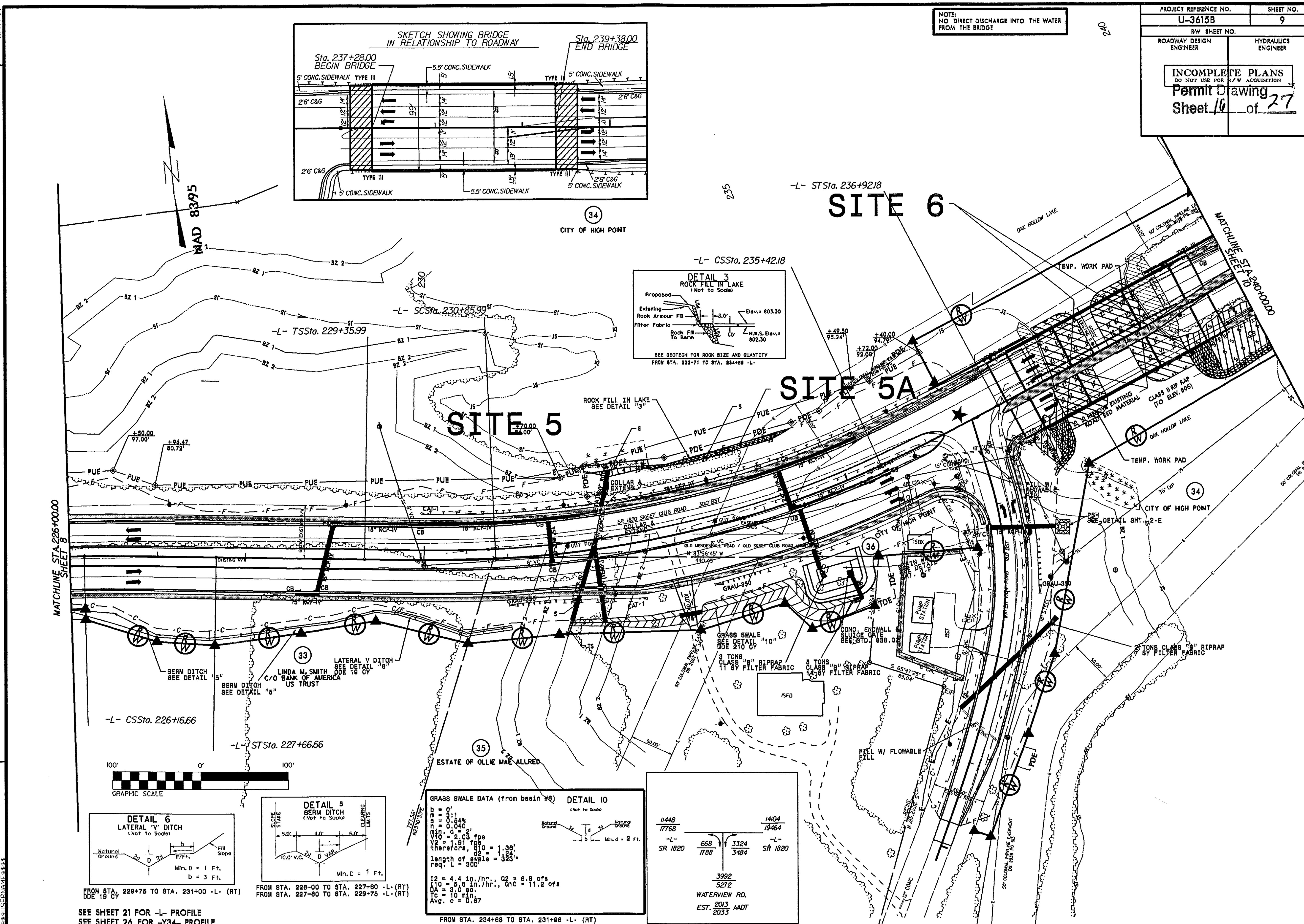
Permit Drawing
Sheet 15 of 27

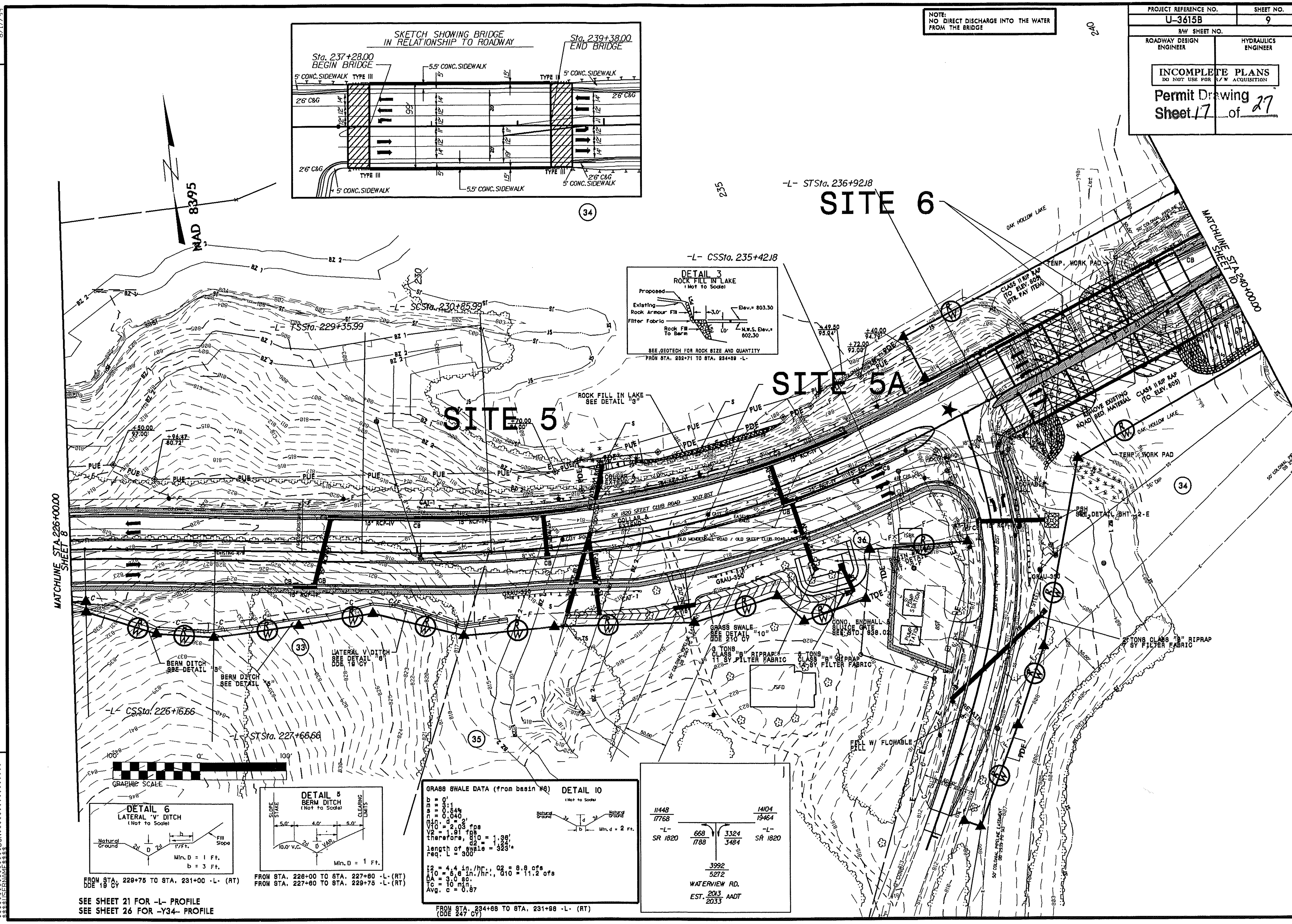


8/17/99

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/29/09
2. NAME CHANGE ON PARCEL 35.
3. REVISED R/W TO PROPERTY LINE, ADDED TDE, ADDED NOTE TO PLANS FOR EXIST. FENCE, ADDED NOTE TO PLANS FOR POWER TRANSFORMER ON PARCEL 36.
5/14/12 R/W REVISION: NAME CHANGE TO ESTATE OF OLLIE MAE ALLRED ON PARCEL 35. -- SLK





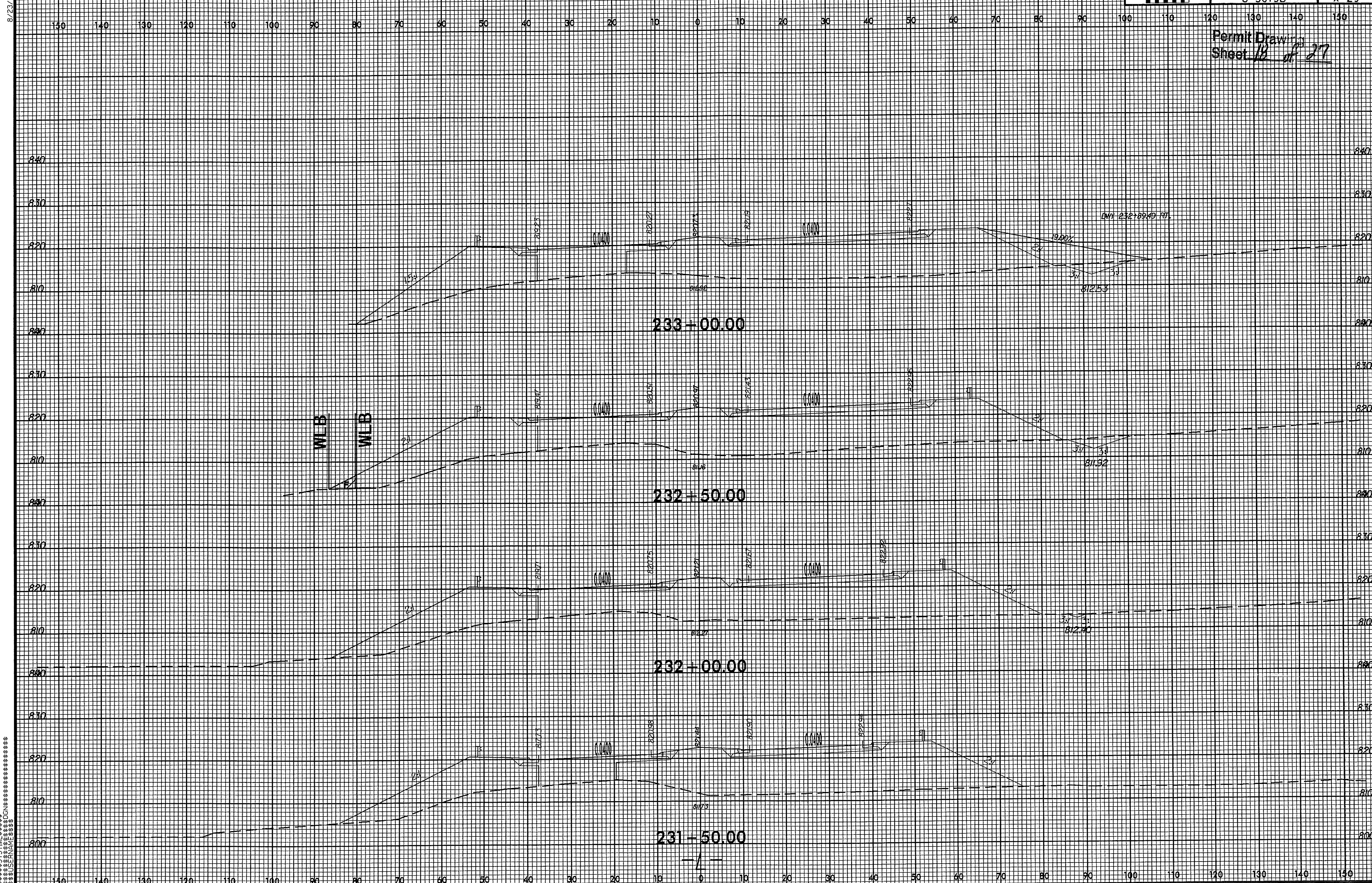
REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/29/09
2. NAME CHANGE ON PARCEL 35.
3. REVISED R/W TO PROPERTY LINE, ADDED TDE, ADDED NOTE TO PLANS FOR EXIST. FENCE, ADDED NOTE TO PLANS FOR POWER TRANSFORMER ON PARCEL 36.
5/14/12 R/W REVISION: NAME CHANGE TO ESTATE OF OLLIE MAE ALLRED ON PARCEL 35. - SLK

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-3615B	X-29

Permit Drawing
Sheet 18 of 27



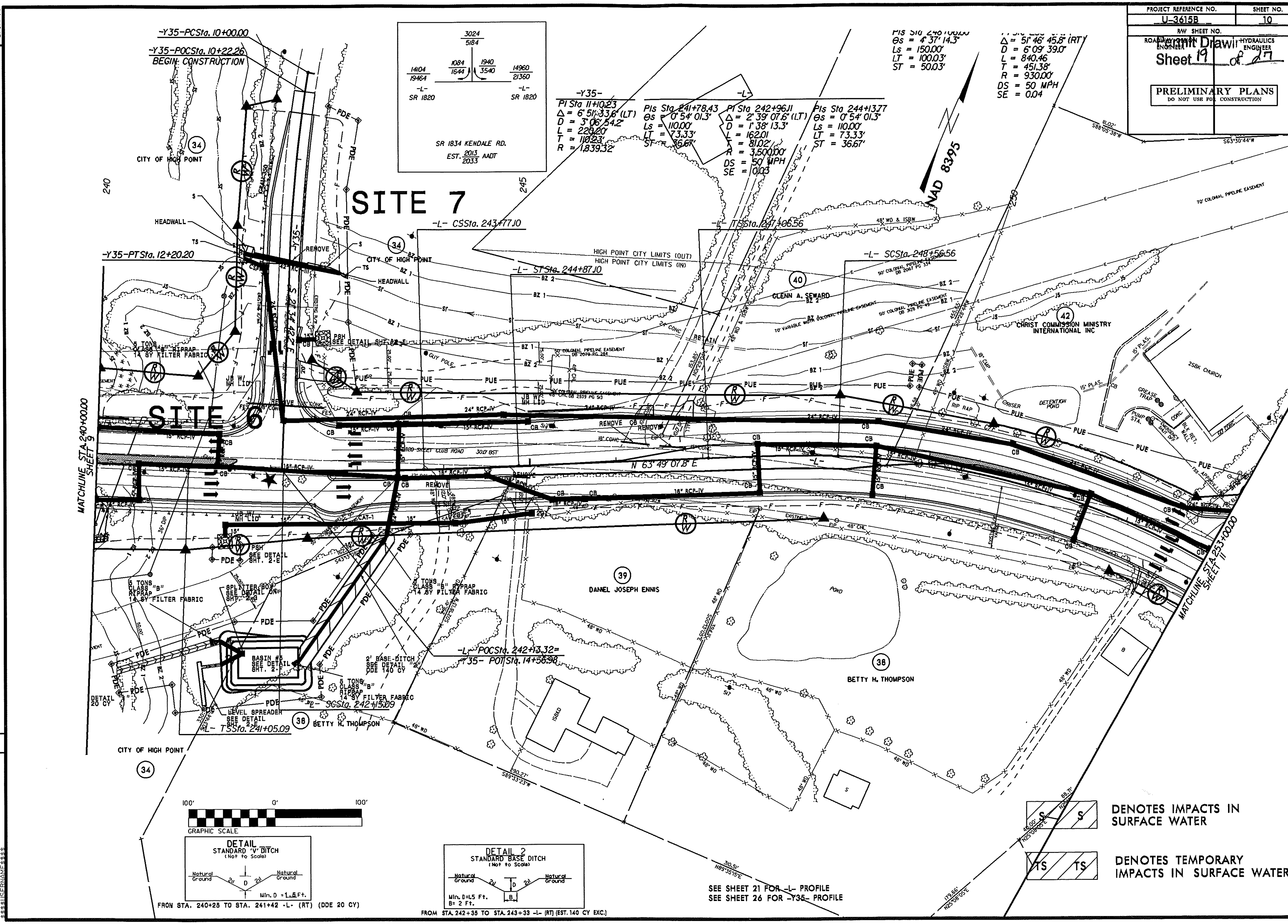
$$$$$SYSTIME$$$$$
$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

REVISIONS

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES 9/29/08
2. NAME CHANGE ON PARCEL 38 AND AND COMBINE WITH PARCEL 41.
3. NAME CHANGE ON PARCEL 42.
02/25/13 R/W REVISION: THE PDE WAS REVISED AROUND RELOCATED BASIN #5 ON PARCELS 34 AND 38 AND PDE WAS ADDED FROM -L- STA. 241+36.00 TO STA. 241+68.00 RT. ON PARCEL 34. - TEM

8/17/99



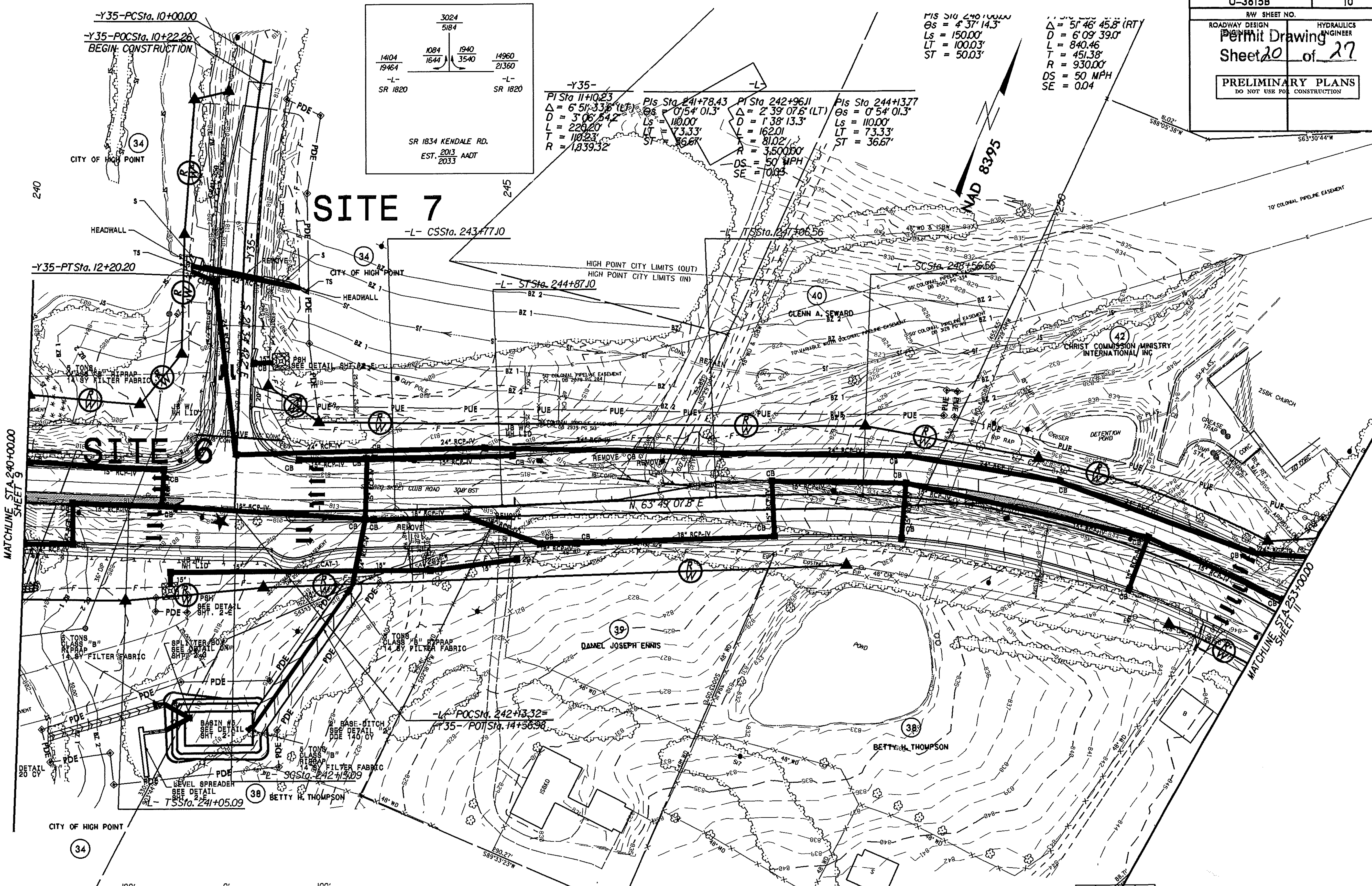
PROJECT REFERENCE NO.	SHEET NO.
U-3615B	10

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

Permit Drawing
Sheet 20 of 27

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SEE SHEET 21 FOR -L- PROFILE
SEE SHEET 26 FOR -Y35- PROFILE

DETAIL
STANDARD 'V' DITCH
(Not to Scale)
Min. D = 1.5 Ft.
FROM STA. 240+25 TO STA. 241+42 -L- (RT) (DDE 20 CY)

DETAIL 2
STANDARD BASE DITCH
(Not to Scale)
Min. D=1.5 Ft.
B= 2 Ft.
FROM STA. 242+35 TO STA. 243+33 -L- (RT) (EST. 140 CY EXC.)

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES 9/29/09
2. NAME CHANGE ON PARCEL 38 AND AND COMBINE WITH PARCEL 41.
3. NAME CHANGE ON PARCEL 42.

02/25/13 R/W REVISION: THE PDE WAS REVISED AROUND RELOCATED BASIN #5 ON PARCELS 34 AND 38 AND PDE WAS ADDED FROM -L- STA. 241+36.00 TO STA. 241+68.00 RT. ON PARCEL 34. - TEM

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-3615B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing
Sheet 21 of 27

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

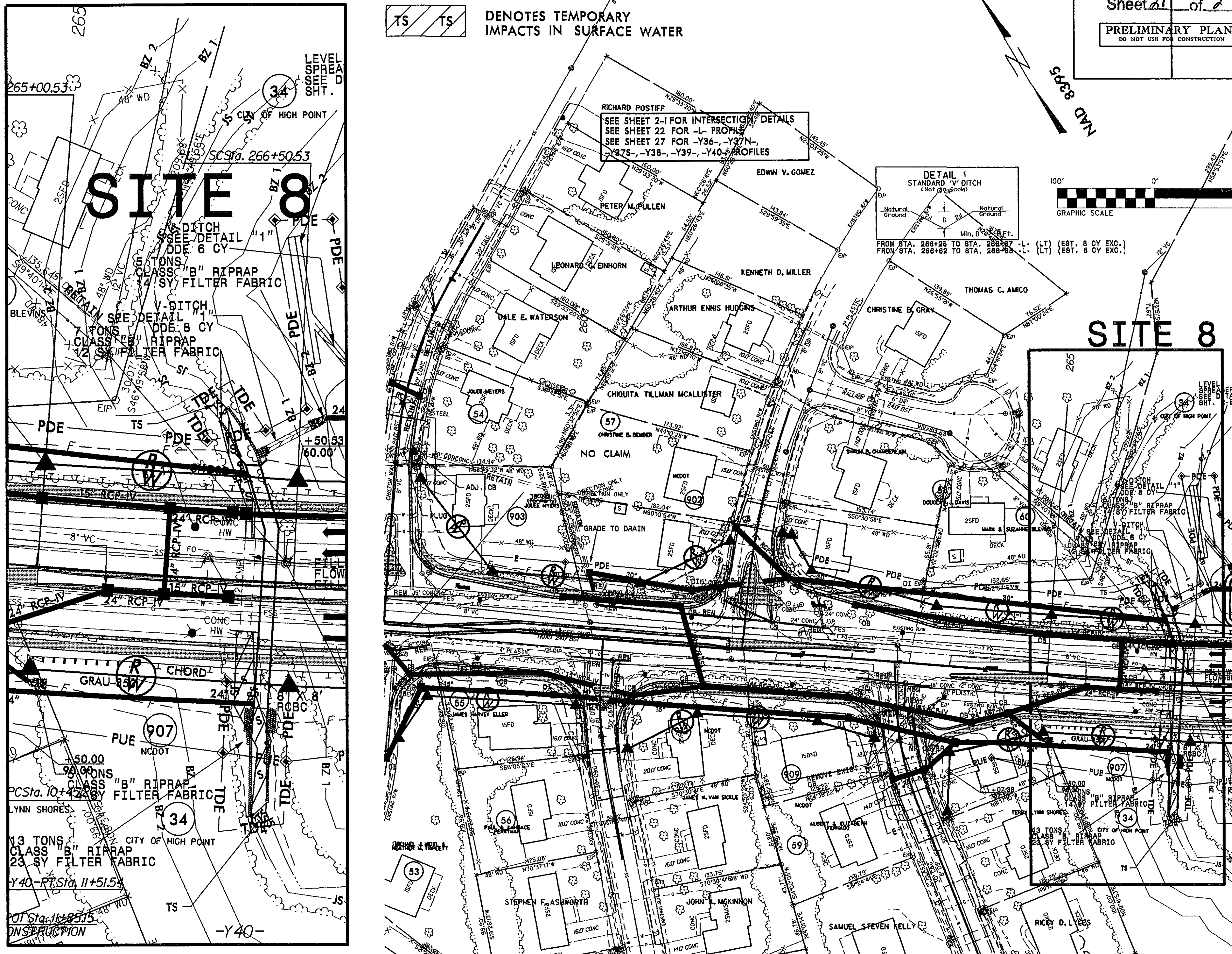
8/17/99

REVISIONS

100' 0' 100'
GRAPHIC SCALE

S / S — DENOTES IMPACTS IN SURFACE WATER

TS / TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER



8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-3615B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

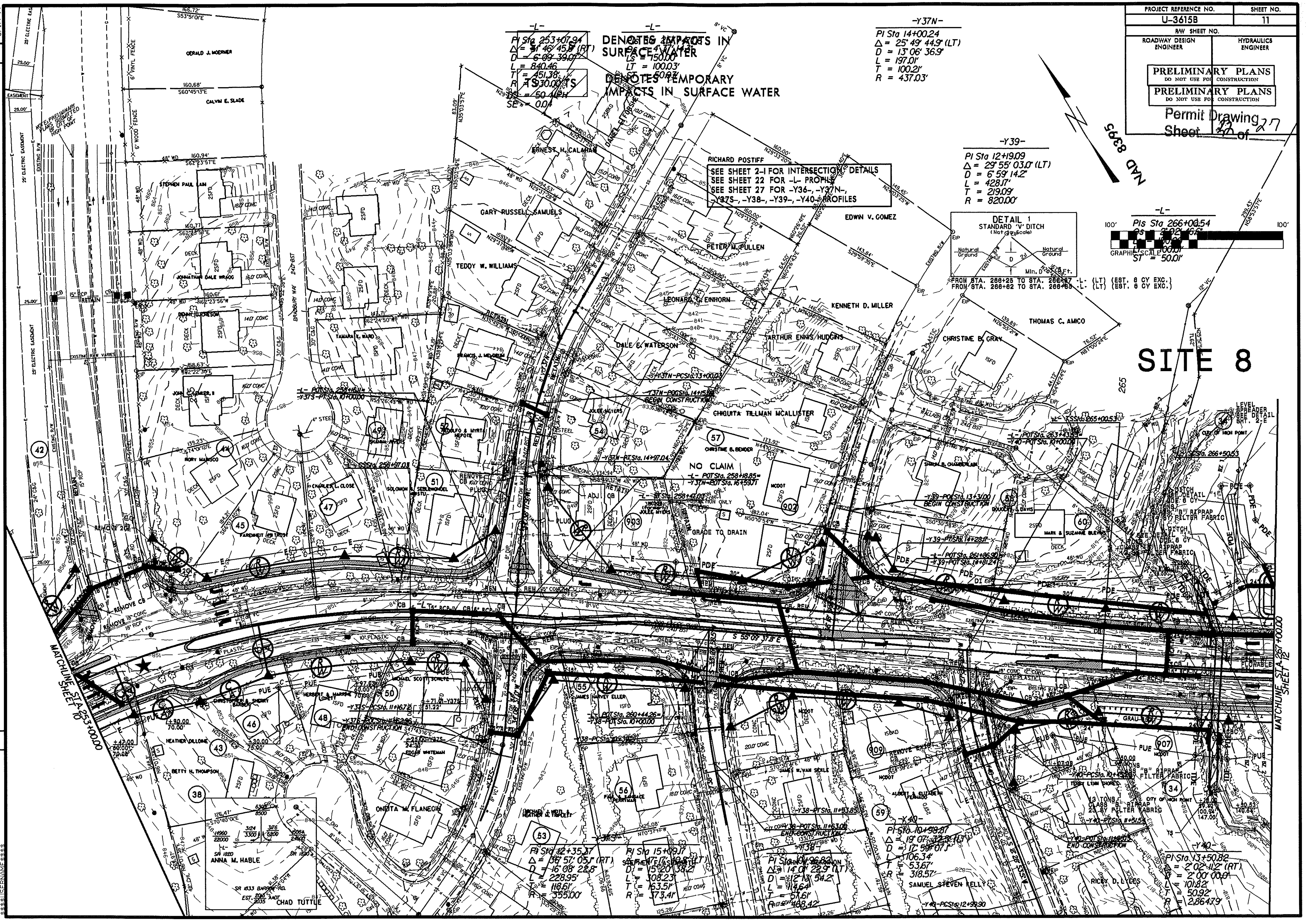
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

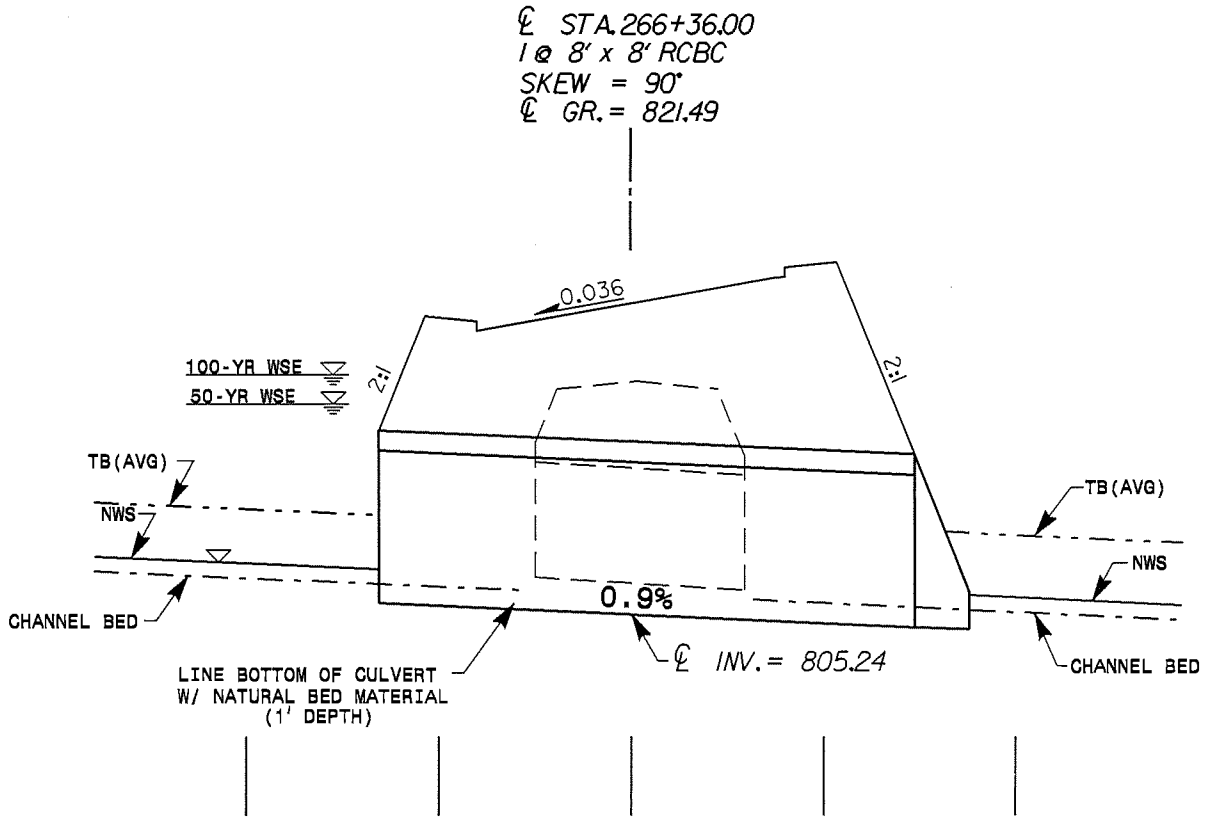
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 22 of 27

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/29/09
2. ~~NAME CHANGE ON PARCELS 43,44,45,46,48,49,51,52,53,56,59 AND 60~~
3. PDE LINE SHIFT ON PARCEL 58.
4. ~~NAME CHANGE ON PARCELS 902, 903 AND 909 TO NCDOT.~~
5. 7/27/12 R/W REVISION: REMOVED TEMPORARY CONSTRUCTION EASEMENT AND CLAIM ON PARCEL 57, CHANGED THE NAME ON PARCEL 57. SLK





PROFILE

NCDOT

DIVISION OF HIGHWAYS
GUILFORD COUNTY
WBS: 34962.1.1 (U-3615B)
WIDEN SR 1003-1008 (SKEET CLUB RD.) EAST OF SR 1818 (JOHNSON ST.) TO WEST OF NC 68 (EASTCHESTER DRIVE)

PROPERTY OWNERS

Site	Last Name	First Name	Address	City/Town	State	Zip Code
1	CURLIN	WILLIAM G.	PO Box 10	Wilson	NC	27894-0010
1	ORCHARDS KNOB OWNERS ASSOCIATION		UNKNOWN			
2	FOX RUN LAND CORP		4144 Johnson Street	High Point	NC	27265
2	LEE VARRICK MOORE, JR.		4302 Johnson Street	High Point	NC	27265
2 & 2A	HARRIS	JASON E.	P.O. Box 1550	Jamestown	NC	27282
3	MANSFIELD	LINDA S.	1121 Skeet Club Road	High Point	NC	27265
3	BRODD	RANDALL & ELIZABETH	UNKNOWN			
3 & 3A	CHA HUN CHAE		1127 Skeet Club Road	High Point	NC	27265
3B	SMITH	LESLIE R.	4302 Gelding Court	High Point	NC	27265
4	SMITH	LINDA M.	380 Knollwood St, Ste 201	Winston Salem	NC	27103

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY
WBS - 34962.1.1 (U-3615B)

PROPERTY OWNERS

Site	Last Name	First Name	Address	City/Town	State	Zip Code
5	ALLRED	W.G.	1256 Skeet Club Road	High Point	NC	27265
5 & 5A	CITY OF HIGH POINT		P.O. Box 230	High Point	NC	27261
6 & 6A	CITY OF HIGH POINT		P.O. Box 230	High Point	NC	27261
7	CITY OF HIGH POINT		P.O. Box 230	High Point	NC	27261
8	CITY OF HIGH POINT		P.O. Box 230	High Point	NC	27261
8A	HORNE	DAVID S.	1426 Skeet Club Road	High Point	NC	27265
8A & 9	SHERWOOD HOA INC.		P.O. Box 24961	Winston Salem	NC	27114

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY
WBS - 34962.1.1 (U-3615B)

 11/5/2012

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
1	170+67 -L-	2@66" RCP						0.01	<0.01	119	16	
2	180+59/188+46 -L-	RELOCATE CHANNEL						2.20		594	10	
2A	187+99/188+46-L-	ROCK FILL IN POND						0.02				
3	197+50/204+26-L-	NAT. STREAM DESIGN								699	10	760
3A	199+27/199+95 -L-	2@54" RCP						<0.01	<0.01	38	10	
3B	208+63 -L-	48" RCP						<0.01	<0.01	109	4	
		BANK STABILIZATION								10		
3C	201+27/204+76 -L-	NAT. STREAM DESIGN			0.67			<0.01		63		
4	218+72/219+72 -L-	2@30" RCP	0.13		<0.01							
5	231+60/232+27-L-	30" RCP	<0.01			0.01		<0.01		131	16	
5A	232+87/236+40 -L-	ROCK FILL IN LAKE						0.02				
6	237+28/239+38 -L-	BRIDGE	<0.01			<0.01		0.20	0.29			
SUBTOTALS:			0.14		0.67	0.01		2.47	0.30	1763	66	760

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILDFORD COUNTY

WBS 34962.1.1 (U-3615B)

SHEET 26 of 27 4/9/2013

ATN Revised 3/31/05

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
7	12+20 -Y35-	42" RCP						<0.01	<0.01	49	19	
8	266+36 -L-	8'X8' RCBC						0.03	<0.01	186	32	
		BANK STABILIZATION								101		
	SHEET 1	SUBTOTALS:	0.14		0.67	0.01		2.47	0.30	1763	66	760
SHEET 2 SUBTOTALS:								0.03	<0.01	336	51	
TOTALS:			**0.14**		**0.67**	**0.01**		**2.50**	**0.31**	**2099**	**117**	**760**

BRIDGE SURFACE WATER TEMPORARY IMPACTS = 0.29 a.c. (Work Pads)

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILDFORD COUNTY

WBS - 34962.1.1 (U-3615B)

SHEET 27 of 27

4/9/2013

ATN Revised 3/31/05

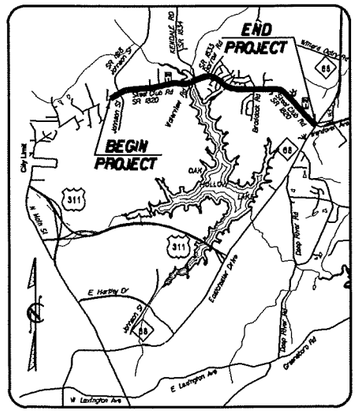
09/08/99

TIP PROJECT: U-3615B

CONTRACT:

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

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GUILFORD COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3615B	1	

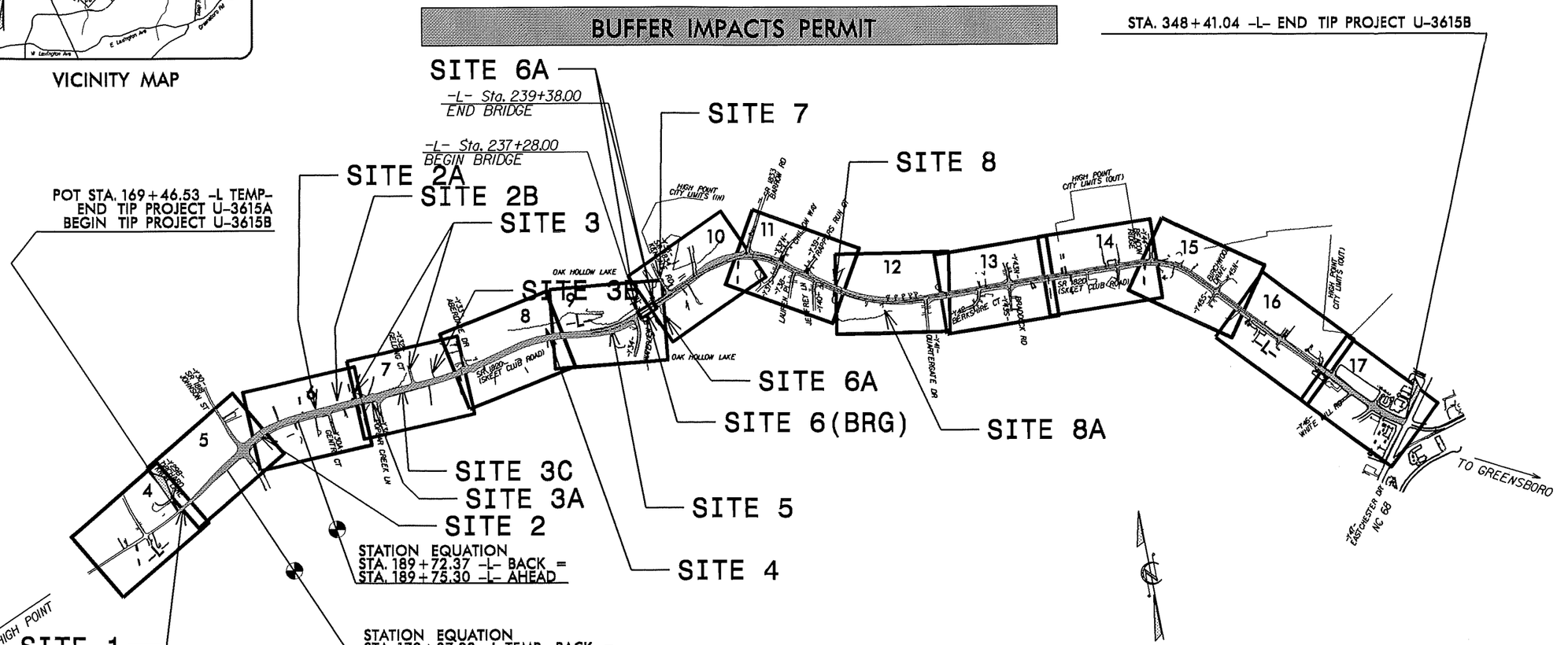
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34962.1.1	STP-1820(2)	P.E.
34962.2.3	STP-1820(2)	R/W, UTL.

Buffer Drawing
Sheet 1 of 13

LOCATION: *SR 1820 (SKEET CLUB ROAD) FROM WEST OF SR 1818 (JOHNSON STREET) TO NC 68 (EASTCHESTER DRIVE).*

TYPE OF WORK: *PAVING, GRADING, DRAINAGE, CURB & GUTTER, STRUCTURE, CULVERT, SIGNING AND SIGNALS*

BUFFER IMPACTS PERMIT



A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF CITY OF HIGH POINT

*"CLEARING ON THIS PROJECT SHALL BE ESTABLISHED BY METHOD III"

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

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

DESIGN DATA

ADT 2013 = 10860-23524
ADT 2035 = 17900-34700
DHV = 10 %
D = 60 %
T = 5 % *
V = 50 MPH
* TTST =2% DUAL 3%
FUNC CLASS =
URBAN MINOR ARTERIAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3615B = 3.349 MI
LENGTH STRUCTURE TIP PROJECT U-3615B = 0.040 MI
TOTAL LENGTH OF TIP PROJECT U-3615B = 3.389 MI

Prepared for the North Carolina Department of Transportation in the Office of:
WETHERILL ENGINEERING
859 JONES FRANKLIN ROAD
SUITE 164
Raleigh, N.C. 27606
License No. P-0377
Tel: 919 851 8077
Fax: 919 851 8067

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 27, 2009

LETTING DATE: OCTOBER 15, 2013

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

GREG S. PURVIS, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT: BRENDA L. MOORE, PE
ROADWAY DESIGN: ENGINEERING COORDINATION SECTION PROJECT ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

PROJECT REFERENCE NO.	SHEET NO.
U-3615B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Buffer Drawing
Sheet 2 of 13

REVISIONS 8/17/99

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

STA. 169+46.53 POC -L- =
STA. 169+46.53 POC -L- TEMP
OFFSET = 21.07' RT.
END TIP PROJECT U-3615A
BEGIN TIP PROJECT U-3615B

SITE 1

-L- CSSta. 158+12.07

-L-
PI Sta 158+44.07
Θs = 0° 22' 00"
Ls = 96.00'
LT = 64.00'
ST = 32.00'

-L- STSta. 159+08.07

-L- TSSta. 163+06.38

-L-
~~PI Sta 163+70.31~~
Θs = 0° 33' 00"
Ls = 96.00'
LT = 64.00'
ST = 32.00'

-L- SCSta. 164+02.38

-L-
PI Sta 167+89.17
Δ = 8° 50' 54.8" (LT)
D = 1° 08' 45.3"
L = 772.19
T = 386.86'
R = 5,000.00'
DS = 50 MPH
SE = 0.02

-L- TEMP
PI Sta 171+59.42
Δ = 6° 27' 19.5" (LT)
D = 1° 31' 04.1"
L = 425.31'
T = 212.89'
R = 3,775.00'
DS = 50 MPH
SE = 0.02

MATCHLINE STA. 171+00.00
SHEET 5

HILDA H. PATTON
LARRY D. RANDOLPH
NORMAND P. FOURNIER
WILLIAM HAZLIP
RODNEY G. KOCHER
BRADFORD A. ULLEY
CAREY DALE CLONTZ
KRISH PURSWANI
PATRICK THOMAS HANNON
JEFFERY L. BARKER
JAMES SO MURPHY
HARRISON A. LITTLE
LARRY DEAN STAMEY
JEFFERY A. SIMMONS
NICKIE J. KEENE
LARRY D. STAMEY
JOHN W. & JANE B. RIERSON
WALTER B. MCCRAW
JOYCE A. TRESCOT
BILLIE M. PATTERSON
EARL PAUL MCCRACKEN
ANNA EDWARDS
INGA M. STREETMAN
WILLIAM MCLEAN
TEMPLE OF PRAYER PRAISE & DELIVERENCE INC
KEOUNG H. KWON
ST. ANDREWS ON SKEET CLUB HOMEOWNERS ASSOC
NHAN VAN & NANCY LE
ST. ANDREWS ON SKEET CLUB WHERRY OWNERS ASSOC.
WILLIAM G. CURLIN

GRAPHIC SCALE 100' 0' 100'

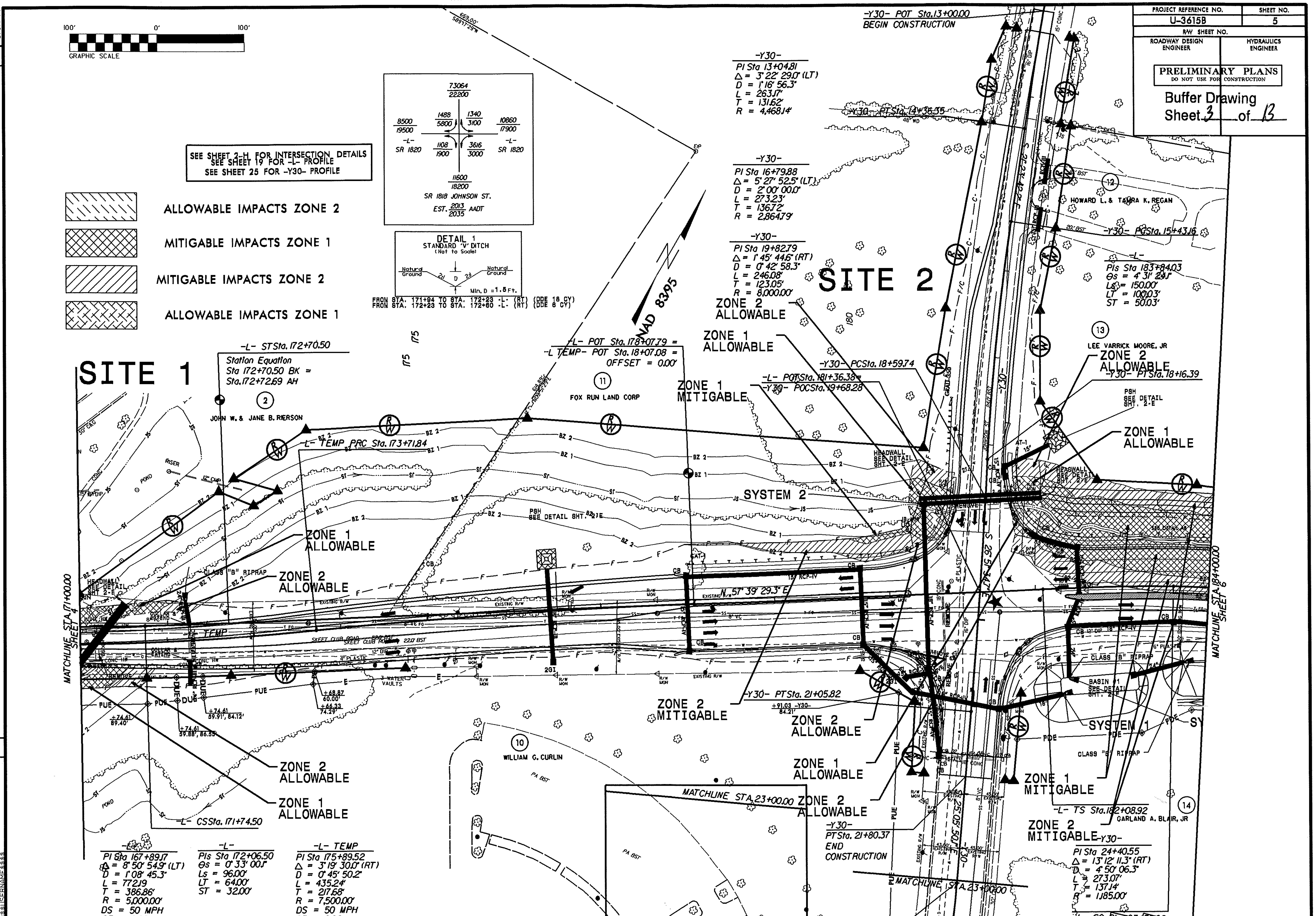
REVISIONS

RW REVISION: 9/2/12 REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES.

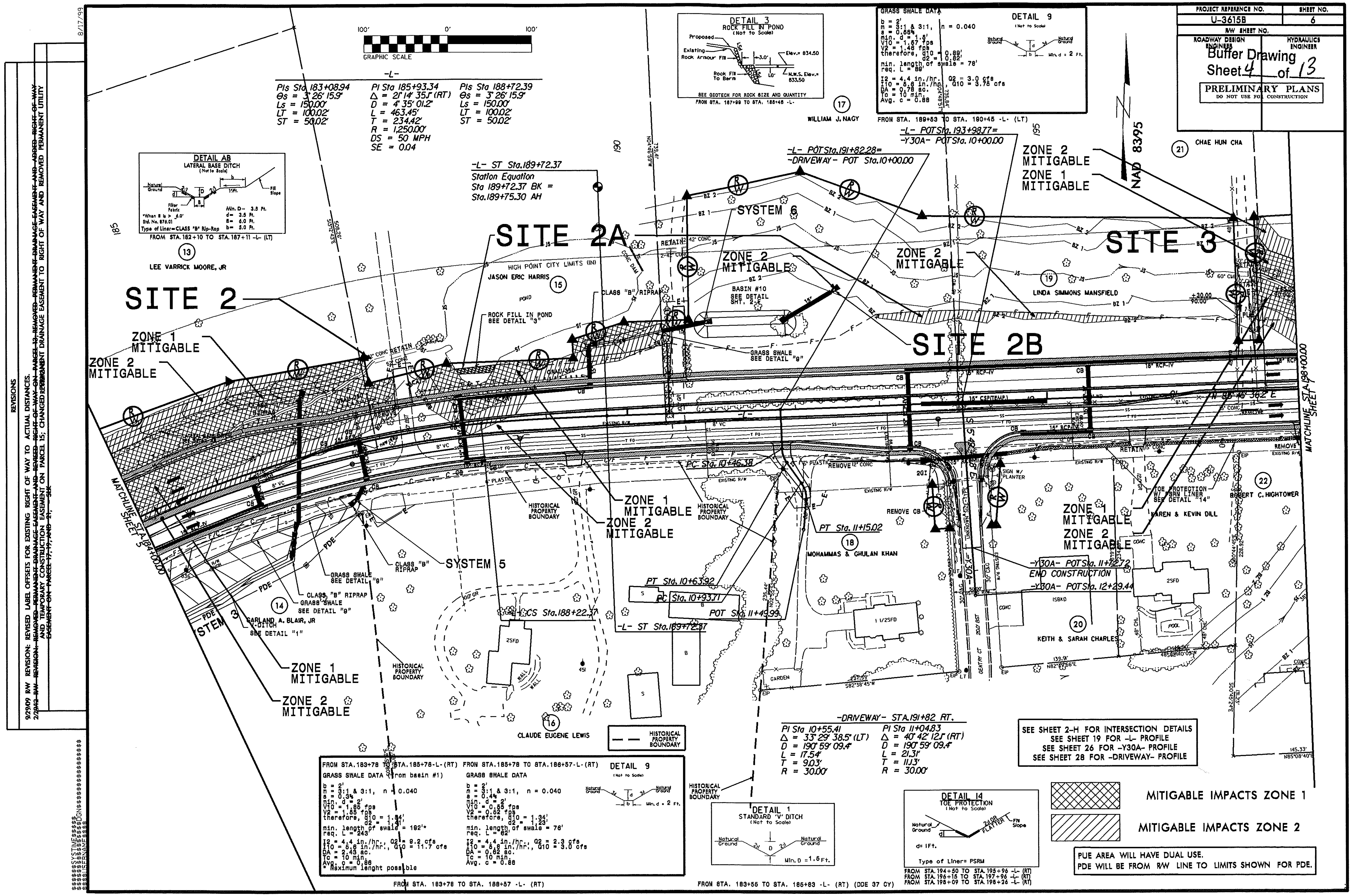
RW REVISION: 2/29/12: CHANGED PERMANENT DRAINAGE EASEMENT TO RIGHT OF WAY ON PARCEL 2 AND 11; REMOVED PERMANENT DRAINAGE EASEMENT AND TEMPORARY CONSTRUCTION EASEMENT AND ADDED DRAINAGE UTILITY EASEMENT ON PARCEL 10; REVISED TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 12; REMOVED PERMANENT UTILITY EASEMENT, PERMANENT DRAINAGE EASEMENT AND REVISED RIGHT OF WAY ON PARCEL 13. - SLK

5/24/12 RW REVISION: CHANGED NAME ON PARCEL 002 TO ORCHARD KNOB OWNERS ASSOCIATION - SLK

8/17/99



PROJECT REFERENCE NO. U-3615B
SHEET NO. 5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Buffer Drawing Sheet 3 of 13
GRAPHIC SCALE
100' 0' 100'
SEE SHEET 2-H FOR INTERSECTION DETAILS
SEE SHEET 19 FOR -L- PROFILE
SEE SHEET 25 FOR -Y30- PROFILE
ALLOWABLE IMPACTS ZONE 2
MITIGABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2
ALLOWABLE IMPACTS ZONE 1
SR 1818 JOHNSON ST.
SR 1820
EST. 2013 / 2035 AADT
DETAIL 1
STANDARD 'V' DITCH
(Not to Scale)
FROM STA. 171+94 TO STA. 172+23 -L- (RT) (DDE 16 CY)
FROM STA. 172+23 TO STA. 172+60 -L- (RT) (DDE 8 CY)
NAD 83/95
SITE 1
SITE 2
-Y30- POT Sta. 13+00.00
BEGIN CONSTRUCTION
-L- ST Sta. 172+70.50
Station Equation
Sta 172+70.50 BK = Sta. 172+72.69 AH
-L- POT Sta. 178+07.79 = -L TEMP- POT Sta. 18+07.08 = OFFSET = 0.00'
-L- TEMP PRC Sta. 173+71.84
JOHN W. & JANE B. RIERSON
FOX RUN LAND CORP
HOWARD L. & TAMRA K. REGAN
LEE VARRICK MOORE, JR
WILLIAM G. CURLIN
GARLAND A. BLAIR, JR
ZONE 1 ALLOWABLE
ZONE 2 ALLOWABLE
ZONE 1 MITIGABLE
ZONE 2 MITIGABLE
SYSTEM 1
SYSTEM 2
N 57° 39' 29.3" E
-Y30- PC Sta. 18+59.74
-Y30- PI Sta. 18+16.39
-L- POT Sta. 181+36.38 = -Y30- POC Sta. 19+68.28
-Y30- PC Sta. 15+43.16
-Y30- PT Sta. 21+05.82
-Y30- PT Sta. 21+80.37 END CONSTRUCTION
-L- TS Sta. 182+08.92
-L- CS Sta. 171+74.50
MATCHLINE STA. 171+00.00 SHEET 4
MATCHLINE STA. 184+00.00 SHEET 6
MATCHLINE STA. 23+00.00
-Y30- PI Sta 13+04.81 Δ = 3° 22' 29.0" (LT) D = 1° 16' 56.3" L = 263.17' T = 131.62' R = 4,468.14'
-Y30- PI Sta 16+79.88 Δ = 5° 27' 52.5" (LT) D = 2° 00' 00.0" L = 273.23' T = 136.72' R = 2,864.79'
-Y30- PI Sta 19+82.79 Δ = 1° 45' 44.6" (RT) D = 0° 42' 58.3" L = 246.08' T = 123.05' R = 8,000.00'
-L- PIs Sta 183+84.03 Θs = 4° 31' 29.1" Ls = 150.00' LT = 100.03' ST = 50.03'
-Y30- PI Sta 24+40.55 Δ = 13° 12' 11.3" (RT) D = 4° 50' 06.3" L = 273.07' T = 137.14' R = 1,185.00'
-L- PI Sta 167+89.17 Δ = 8° 50' 54.9" (LT) D = 1° 08' 45.3" L = 772.19 T = 386.86' R = 5,000.00' DS = 50 MPH SE = 0.02
-L- PIs Sta 172+06.50 Θs = 0° 33' 00.1" Ls = 96.00' LT = 64.00' ST = 32.00'
-L- TEMP PI Sta 175+89.52 Δ = 3° 19' 30.0" (RT) D = 0° 45' 50.2" L = 435.24' T = 217.68' R = 7,500.00' DS = 50 MPH SE = 0.02



PROJECT REFERENCE NO. U-3615B
SHEET NO. 6
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Buffer Drawing Sheet 4 of 13
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
GRAPHIC SCALE
-L-
PIs Sta 183+08.94
PI Sta 185+93.34
PIs Sta 188+72.39
-L- ST Sta.189+72.37
Station Equation
Sta 189+72.37 BK = Sta.189+75.30 AH
-L- POT Sta.191+82.28= -DRIVEWAY- POT Sta.10+00.00
-L- POT Sta.193+98.77= -Y30A- POT Sta.10+00.00
DETAIL AB
LATERAL BASE DITCH
DETAIL 3
ROCK FILL IN POND
DETAIL 9
DETAIL 1
STANDARD 'V' DITCH
DETAIL 14
TOE PROTECTION
SITE 2
SITE 2A
SITE 2B
SITE 3
SYSTEM 5
SYSTEM 6
ZONE 1 MITIGABLE
ZONE 2 MITIGABLE
NAD 83/95
LEE VARRICK MOORE, JR
JASON ERIC HARRIS
WILLIAM J. NAGY
CHAE HUN CHA
LINDA SIMMONS MANSFIELD
GARLAND A. BLAIR, JR
CLAUDE EUGENE LEWIS
MOHAMMAS & GHULAN KHAN
KEITH & SARAH CHARLES
KAREN & KEVIN DILL
ROBERT C. HIGHTOWER
HIGH POINT CITY LIMITS (IN)
HISTORICAL PROPERTY BOUNDARY
MATCHLINE STA.184+00.00 SHEET 5
MATCHLINE STA.198+00.00 SHEET 7
-Y30A- POT Sta. 11+72.72 END CONSTRUCTION
-Y30A- POT Sta. 12+29.44
-DRIVEWAY- STA.191+82 RT.
SEE SHEET 2-H FOR INTERSECTION DETAILS
SEE SHEET 19 FOR -L- PROFILE
SEE SHEET 26 FOR -Y30A- PROFILE
SEE SHEET 28 FOR -DRIVEWAY- PROFILE
MITIGABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2
PUE AREA WILL HAVE DUAL USE.
PDE WILL BE FROM R/W LINE TO LIMITS SHOWN FOR PDE.
REVISIONS
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-3615B	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Buffer Drawing Sheet 5 of 13

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

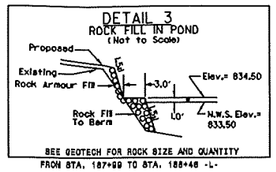
REVISIONS

9/29/09 R/W REVISION: REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES.
2/29/12 R/W REVISION: REMOVED PERMANENT DRAINAGE EASEMENT AND REVISED RIGHT OF WAY AND TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 15; CHANGED PERMANENT DRAINAGE EASEMENT TO RIGHT OF WAY AND REMOVED PERMANENT UTILITY EASEMENT ON PARCEL 17,19, AND 21; - SJK
4/9/13 R/W REVISION: ADDED TEMPORARY CONSTRUCTION EASEMENT AROUND DETENTION POND ON PARCEL 15. - SJK

8/17/99

GRAPHIC SCALE 100' 0' 100'

DETAIL 3
ROCK FILL IN POND
(Not to Scale)



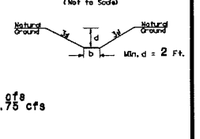
SEE GEOTECH FOR ROCK SIZE AND QUANTITY
FROM STA. 187+99 TO STA. 188+48 -L-

GRASS SWALE DATA

b = 2'
m = 3:1 & 3:1, n = 0.040
s = 0.56%
Q10, d = 1.5'
Q10 = 1.67 cfs
V2 = 1.46 fps
therefore, Q10 = 0.89'
Q2 = 0.82'
min. length of swale = 78'
req. L = 89'

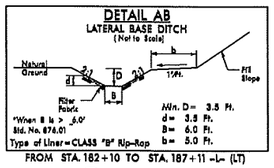
I2 = 4.4 in./hr., Q2 = 3.0 cfs
I10 = 5.6 in./hr., Q10 = 3.75 cfs
DA = 0.78 ac.
Tc = 10 min.
Avg. c = 0.88

DETAIL 9
(Not to Scale)



FROM STA. 188+53 TO STA. 190+45 -L- (LT)

DETAIL AB
LATERAL BASE DITCH
(Not to Scale)



FROM STA. 182+10 TO STA. 187+11 -L- (LT)

(13) LEE WARRICK MOORE, JR

-L- ST Sta.189+72.37

SITE 2

SITE 2A

SITE 2B

SITE 3

SYSTEM 6

SYSTEM 5

3 TONS CLASS "A" RIPRAP
33 SY FILTER FABRIC

ZONE 1 MITIGABLE
ZONE 2 MITIGABLE

HIGH POINT CITY LIMITS (IN)

(15) JASON ERIC HARRIS

POND

ROCK FILL IN POND SEE DETAIL "3"

BASIN #10 SEE DETAIL SHT. 2-F

GRASS SWALE SEE DETAIL "9"

1 TONS CLASS "B" RIPRAP
5 SY FILTER FABRIC

21 TONS CLASS "B" RIPRAP
55 SY FILTER FABRIC

(14) GARLAND A. BLAIR, JR

V-DITCH SEE DETAIL "1"

HISTORICAL PROPERTY BOUNDARY

(16) CLAUDE EUGENE LEWIS

(17) WILLIAM J. NAGY

(18) MOHAMMAS & GHULAN KHAN

(19) LINDA SIMMONS MANSFIELD

(20) KEITH & SARAH CHARLES

(21) CHAE HUN CHA

(22) ROBERT C. HIGHTOWER

KAREN & KEVIN DILL

TOE PROTECTION W/ FABRIC LINER SEE DETAIL "14"

NAD 83'95

MATCHLINE STA 184+00.00 SHEET 5

MATCHLINE STA 198+00.00 SHEET 7

PC Sta. 10+46.38
PT Sta. 10+63.92
PC Sta. 10+93.71
POT Sta. 11+49.99
PT Sta. 11+15.02
PCCS Sta.188+22.37

HISTORICAL PROPERTY BOUNDARY

FROM STA.183+78 TO STA.185+78-L-(RT)

GRASS SWALE DATA (from basin #1)

b = 2'
m = 3:1 & 3:1, n = 0.040
s = 0.3%
min. d = 2'
V10 = 1.56 fps
V2 = 1.55 fps
therefore, d10 = 1.34'
d2 = 1.41'
min. length of swale = 192'*
req. L = 243'

I2 = 4.4 in./hr., Q2 = 9.2 cfs
I10 = 6.6 in./hr., Q10 = 11.7 cfs
DA = 2.43 ac.
Tc = 10 min.
Avg. c = 0.88
* Maximum lenght possible

(DDE 2027 CY)

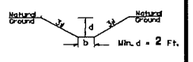
FROM STA.185+78 TO STA.186+57-L-(RT)

GRASS SWALE DATA

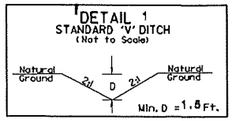
b = 2'
m = 3:1 & 3:1, n = 0.040
s = 0.4%
min. d = 2'
V10 = 0.56 fps
V2 = 0.62 fps
therefore, d10 = 1.34'
d2 = 1.23'
min. length of swale = 76'
req. L = 82'

I2 = 4.4 in./hr., Q2 = 2.3 cfs
I10 = 5.6 in./hr., Q10 = 3.0 cfs
DA = 0.62 ac.
Tc = 10 min.
Avg. c = 0.88

DETAIL 9
(Not to Scale)



DETAIL 1
STANDARD 'V' DITCH
(Not to Scale)



FROM STA. 183+55 TO STA. 185+83 -L- (RT) (DDE 37 CY)

DETAIL 14
TOE PROTECTION
(Not to Scale)

d= 1Ft.
Type of Liner= PSRM

FROM STA. 194+50 TO STA. 196+96 -L- (RT)
FROM STA. 196+15 TO STA. 197+96 -L- (RT)
FROM STA. 198+09 TO STA. 198+26 -L- (RT)

SEE SHEET 2-J FOR INTERSECTION DETAILS
SEE SHEET 19 FOR -L- PROFILE
SEE SHEET 26 FOR -Y30A- PROFILE
SEE SHEET 28 FOR -DRIVEWAY- PROFILE

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

PUE AREA WILL HAVE DUAL USE.
PDE WILL BE FROM R/W LINE TO LIMITS SHOWN FOR PDE.

PROJECT REFERENCE NO.	SHEET NO.
U-3615B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Buffer Drawing
Sheet 6 of 13

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

9/29/09 R/W REVISION: REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES.
~~2/23/12 R/W REVISION: CHANGED PERMANENT DRAINAGE EASEMENT TO RIGHT OF WAY AND REMOVED PERMANENT UTILITY EASEMENT ON PARCELS 21 AND 24. REVISED PERMANENT UTILITY EASEMENT AND ADDED TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 28. - SLK~~
5/14/12 R/W REVISION: CHANGED PERMANENT UTILITY EASEMENT/PERMANENT DRAINAGE EASEMENT OVERLAP TO DRAINAGE UTILITY EASEMENT ON PARCEL 27. - SLK
7/12/12 R/W REVISION: CHANGED PERMANENT UTILITY EASEMENT TO TEMPORARY CONSTRUCTION EASEMENT AND ADDED DRIVEWAY PIPE ON PARCEL 28. - SLK

-DRIVEWAY- STA.199+48.82 LT.
PI Sta 10+53.98
Δ = 50° 33' 42.6" (RT)
D = 57° 27' 28.1"
L = 8.82'
T = 4.72'
R = 10.00'

PI Sta 11+09.83
Δ = 15° 40' 55.5" (LT)
D = 190° 59' 09.4"
L = 8.20'
T = 4.13'
R = 30.00'

SEE SHEET 2-J FOR INTERSECTION DETAILS
SEE SHEET 20 FOR -L- PROFILE
SEE SHEET 26 FOR -Y31- & -Y32- PROFILES
SEE SHEET 28 FOR -DRIVEWAY- PROFILE

100' 0' 100'
GRAPHIC SCALE

-L-
Pls Sta 207+71.41
es = 0° 26' 18.6"
Ls = 75.00'
LT = 50.00'
ST = 25.00'

-L-
PI Sta 211+98.99
Δ = 9° 23' 36.9" (LT)
D = 1° 10' 09.5"
L = 803.35
T = 402.58'
R = 4,900.00'
DS = 50 MPH
SE = 0.02

-L- POT Sta.199+48.84=
-DRIVEWAY- POT Sta.10+00.00
PC Sta. 10+49.25
PT Sta. 10+58.08
PC Sta. 11+05.70
PT Sta. 11+13.91
POT Sta. 11+77.67

-Y32- POT Sta. 10+00.00
-Y32- PT Sta. 10+55.00
BEGIN CONSTRUCTION
-L- POT Sta. 205+75.82=
-Y32- POT Sta. 12+89.18
-L- POT Sta. 200+67.07=
-Y31- POT Sta. 10+00.00

-L- TS Sta. 207+21.41
-L- SC Sta. 207+96.41

-Y31- POT Sta. 12+00.00
END CONSTRUCTION
-Y31- POT Sta. 12+25.71

MATCHLINE STA. 198+00.00 SHEET 6
MATCHLINE STA. 212+00.00 SHEET 8

HIGH POINT CITY LIMITS (IN)

ZONE 1 MITIGABLE
ZONE 2 MITIGABLE

21 CHAE HUN CHA
22 ROBERT C. HIGHTOWER
23 MICHAEL C. CLODFELTER
24 JAY & DAVONIA MICHAEL
25 GABLES ON SKEET CLUB HOMEOWNERS ASSOC. INC
26 DAVID & JULIA GALLOWAY
27 LESLIE RIERSON SMITH
28 VERNA H. HOUGHTALING
29 MARSHA & CURTIS INLOW
30 PATSY K. KIMSEY

SITE 3C
SITE 3B
SITE 3A

ALEXANDER M. CATHEY
ROBERT LEE PARKS
MATHEW W. TENHAEFF
PRECEPT CONSTRUCTION LLC
LILLIAN POPE ATCHISON
BARBARA MAE DERMER-BECKER

SR 1820 SKEET CLUB ROAD 22ft BST

POPLAR CREEK LN.
EST. 2013 / 2033 AADT

10948 / 17268 -L- SR 1820 — 50/50 — 300/300 — 11248 / 17568 -L- SR 1820

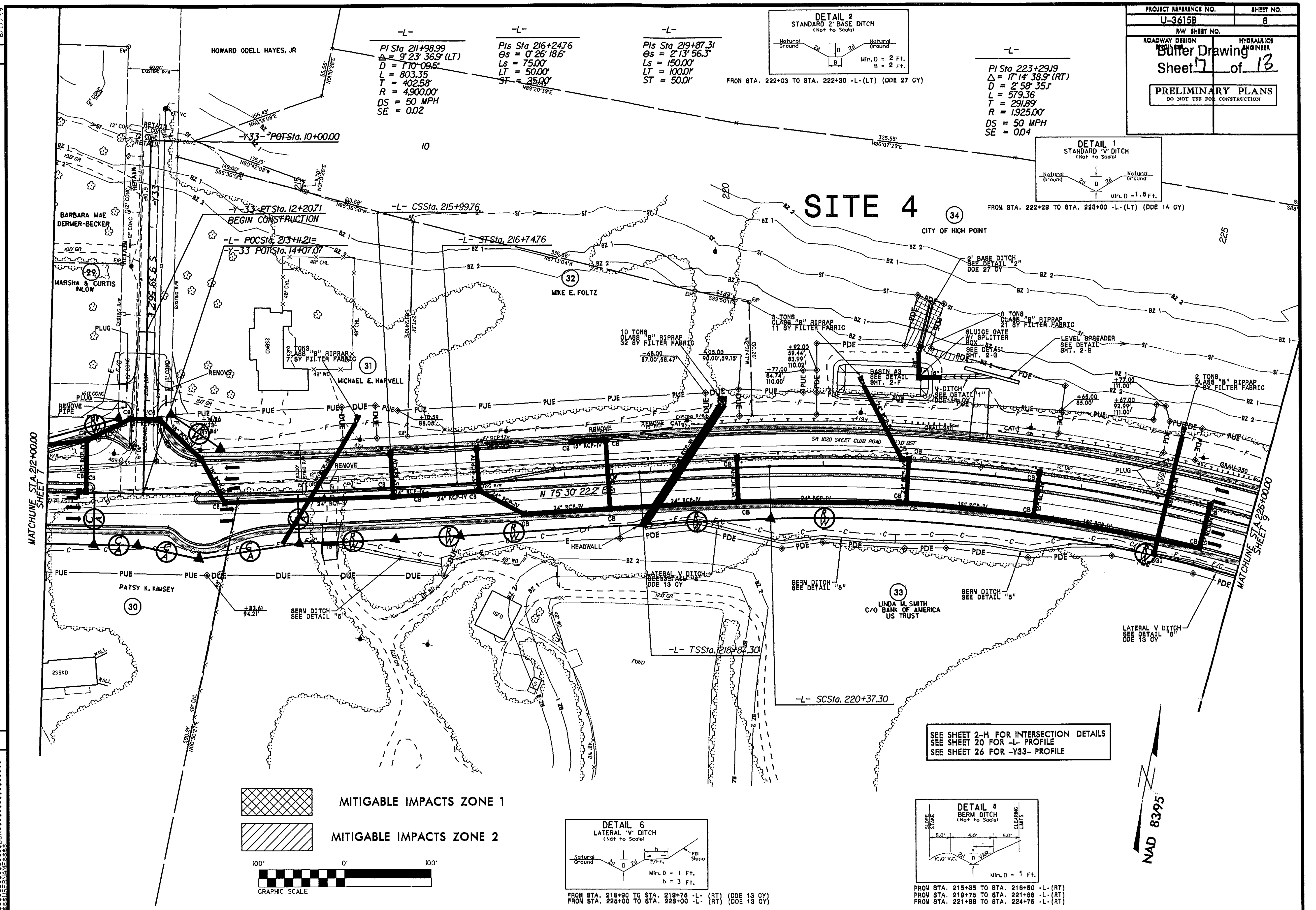
ZONE 1 ALLOWABLE
ZONE 2 ALLOWABLE
ZONE 1 MITIGABLE
ZONE 2 MITIGABLE

ALLOWABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2
MITIGABLE IMPACTS ZONE 2

DETAIL 2
STANDARD 2' BASE DITCH
(Not to Scale)
Natural Ground, 2:1, D, 2:1, Natural Ground, B
Min. D = 2 Ft.
B = 2 Ft.
FROM STA. 202+27 TO STA. 202+40 -L- (LT) (DDE 27 CY)

DETAIL 4
STANDARD 4' BASE DITCH
(Not to Scale)
Natural Ground, 2:1, D, 2:1, Natural Ground, B
Min. D = 3.5Ft.
B = 4 Ft.
FROM STA. 200+34 TO STA. 200+87 -L-(LT) (DDE 145 CY)

NAD 83/95



PROJECT REFERENCE NO. U-3615B
SHEET NO. 8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Buffer Drawing
Sheet 7 of 13
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
SITE 4
-L-
PI Sta 211+98.99
Δ = 9° 23' 36.9" (LT)
D = 1°10' 09.5"
L = 803.35'
T = 402.58'
R = 4,900.00'
DS = 50 MPH
SE = 0.02
-L-
PIs Sta 216+24.76
θs = 0° 26' 18.6"
Ls = 75.00'
LT = 50.00'
ST = 25.00'
-L-
PIs Sta 219+87.31
θs = 2° 13' 56.3"
Ls = 150.00'
LT = 100.01'
ST = 50.01'
-L-
PI Sta 223+29.19
Δ = 17° 14' 38.9" (RT)
D = 2° 58' 35.1"
L = 579.36'
T = 291.89'
R = 1,925.00'
DS = 50 MPH
SE = 0.04
DETAIL 2
STANDARD 2' BASE DITCH
(Not to Scale)
FROM STA. 222+03 TO STA. 222+30 -L-(LT) (DDE 27 CY)
DETAIL 1
STANDARD 'V' DITCH
(Not to Scale)
FROM STA. 222+29 TO STA. 223+00 -L-(LT) (DDE 14 CY)
HOWARD ODELL HAYES, JR
BARBARA MAE DERMER-BECKER
MARSHA & CURTIS INLOW
MIKE E. FOLTZ
MICHAEL E. HARVELL
CITY OF HIGH POINT
PATSY K. KIMSEY
LINDA M. SMITH C/O BANK OF AMERICA US TRUST
-Y33- POT Sta. 10+00.00
-Y-33- PT Sta. 12+20.71
BEGIN CONSTRUCTION
-L- POC Sta. 213+11.21=
-Y-33 POT Sta. 14+07.07
-L- CS Sta. 215+99.76
-L- ST Sta. 216+74.76
-L- TS Sta. 218+87.30
-L- SC Sta. 220+37.30
SR 1820 SKEET CLUB ROAD
N 75° 30' 22.2" E
MATCHLINE STA. 212+00.00 SHEET 7
MATCHLINE STA. 226+00.00 SHEET 9
2 TONS CLASS "B" RIPRAP 7 SY FILTER FABRIC
10 TONS CLASS "B" RIPRAP 32 SY FILTER FABRIC
3 TONS CLASS "B" RIPRAP 11 SY FILTER FABRIC
8 TONS CLASS "B" RIPRAP 21 SY FILTER FABRIC
2 TONS CLASS "B" RIPRAP 7 SY FILTER FABRIC
2' BASE DITCH SEE DETAIL "2" DDE 27 CY
SLUICE GATE W/ SPLITTER BOX SEE DETAIL SHT. 2-G
LEVEL SPREADER SEE DETAIL SHT. 2-E
BASIN #3 SEE DETAIL SHT. 2-F
V-DITCH SEE DETAIL "1"
BERM DITCH SEE DETAIL "5"
LATERAL V DITCH SEE DETAIL "6" DDE 13 CY
HEADWALL
POND
SEE SHEET 2-H FOR INTERSECTION DETAILS
SEE SHEET 20 FOR -L- PROFILE
SEE SHEET 26 FOR -Y33- PROFILE
MITIGABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2
GRAPHIC SCALE
100' 0' 100'
DETAIL 6
LATERAL 'V' DITCH
(Not to Scale)
Min. D = 1 Ft.
b = 3 Ft.
FROM STA. 218+90 TO STA. 219+75 -L- (RT) (DDE 13 CY)
FROM STA. 225+00 TO STA. 226+00 -L- (RT) (DDE 13 CY)
DETAIL 5
BERM DITCH
(Not to Scale)
Min. D = 1 Ft.
FROM STA. 215+35 TO STA. 218+50 -L-(RT)
FROM STA. 219+75 TO STA. 221+88 -L-(RT)
FROM STA. 221+88 TO STA. 224+75 -L-(RT)
NAD 83/95

REVISIONS

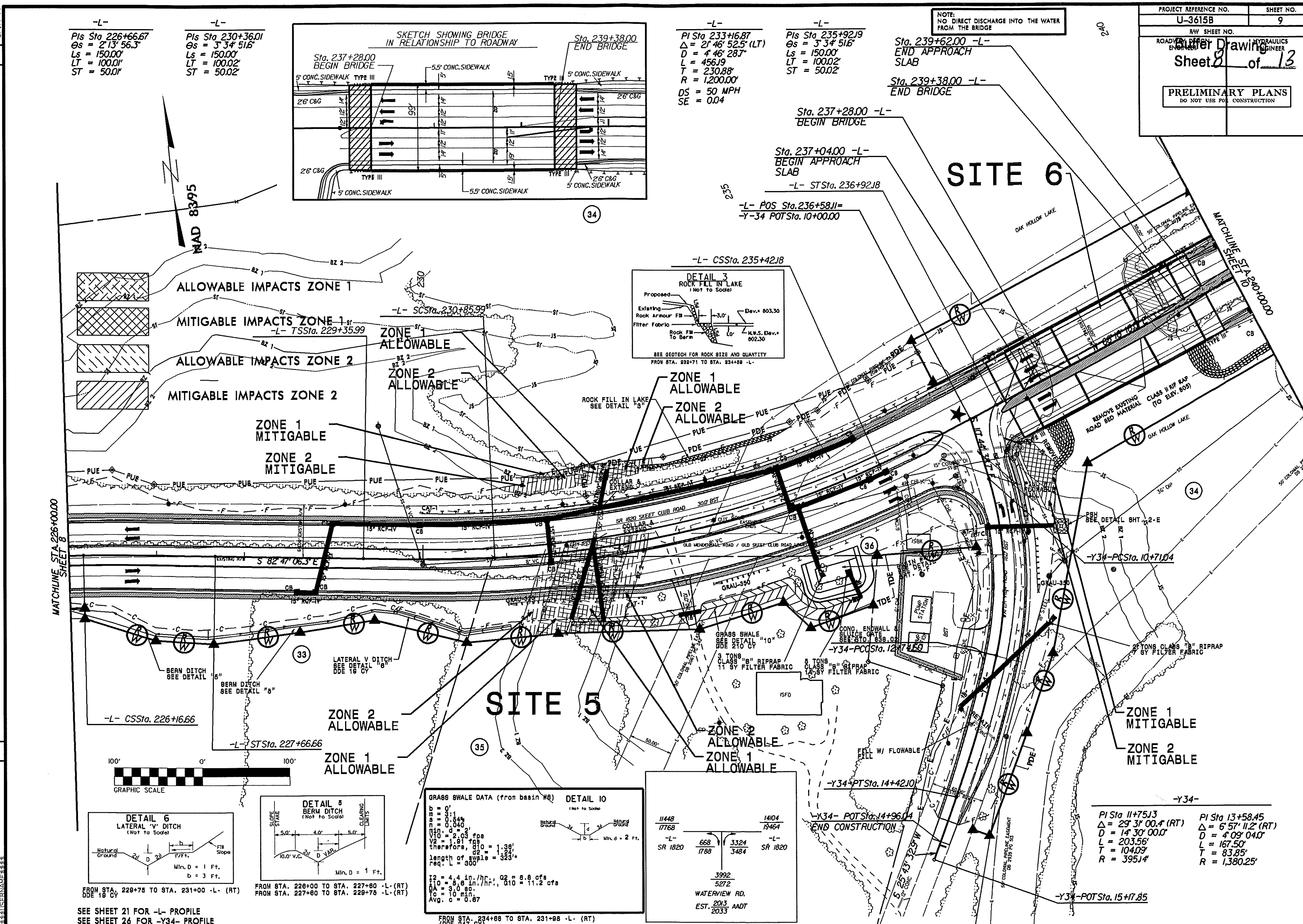
1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/29/09
2. CHANGED PUE/DUE OVERLAP TO DUE ON PARCEL 32.
3. NAME CHANGE ON PARCELS 29 AND 32.
4. CHANGE PUE TO DUE, CLOSED CLAIM ON PARCEL 32.
5. ADDED 3 - CURB CUTS ON PARCEL 32.
6. CHANGE PDE TO DUE ON PARCEL 31. (1-10-12) S.L.K.

8/17/99

8/17/99

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES 9/29/09
2. NAME CHANGE ON PARCEL 35.
3. REVISED R/W TO PROPERTY LINE, ADDED TDE, ADDED NOTE TO PLANS FOR EXIST. FENCE, ADDED NOTE TO PLANS FOR POWER TRANSFORMER ON PARCEL 36.
5/1/12 R/W REVISION: NAME CHANGE TO ESTATE OF OLLIE MAE ALLRED ON PARCEL 35. - SLK

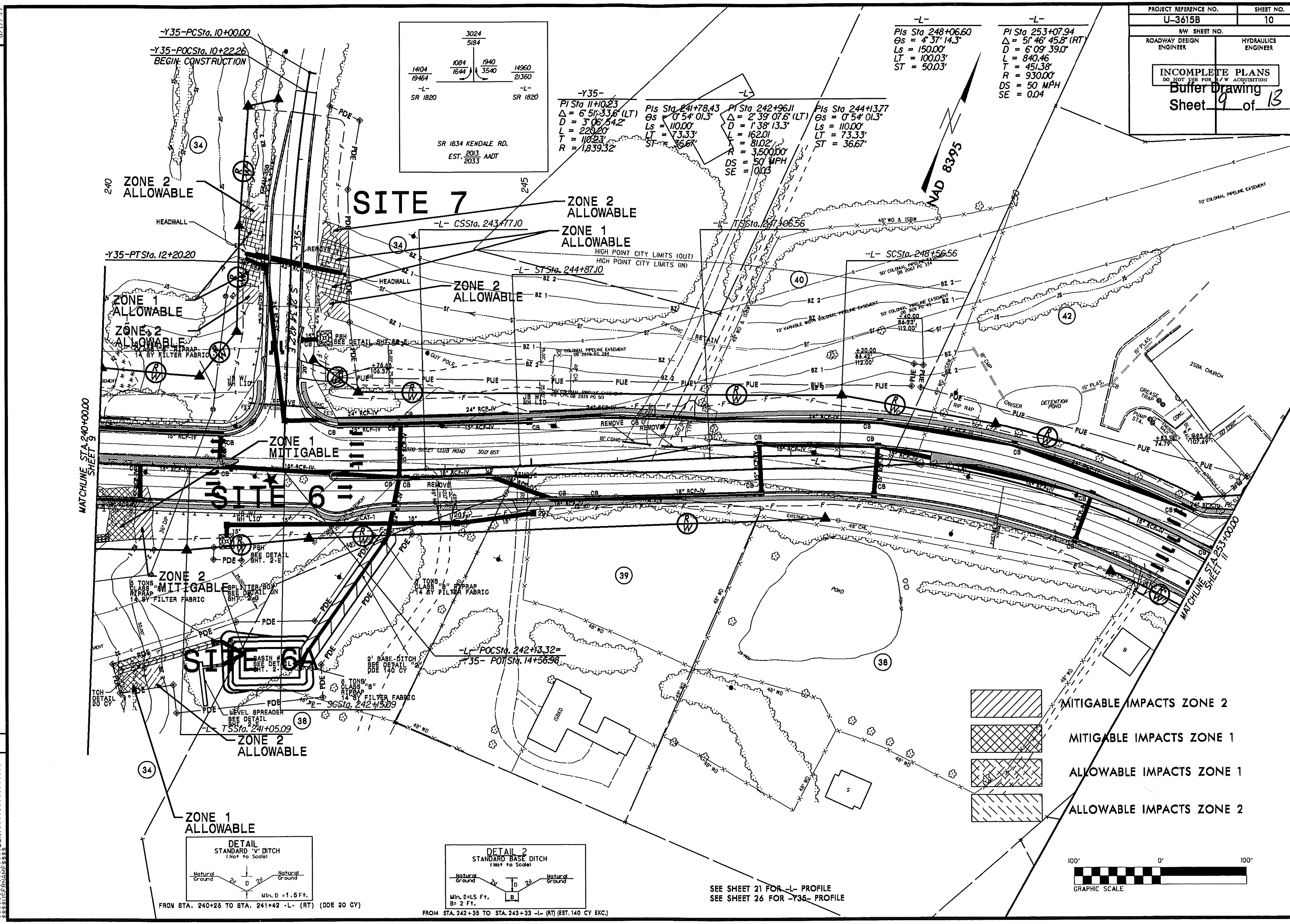


REVISIONS

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES 9/29/09
2. NAME CHANGE ON PARCEL 38 AND COMBINE WITH PARCEL 41.
3. NAME CHANGE ON PARCEL 42.
02/25/13 R/W REVISION: THE PDE WAS REVISED AROUND RELOCATED BASIN #5 ON PARCELS 34 AND 38 AND PDE WAS ADDED FROM -L- STA. 241+36.00 TO STA. 241+68.00 RT. ON PARCEL 34.- TEM

8/17/99

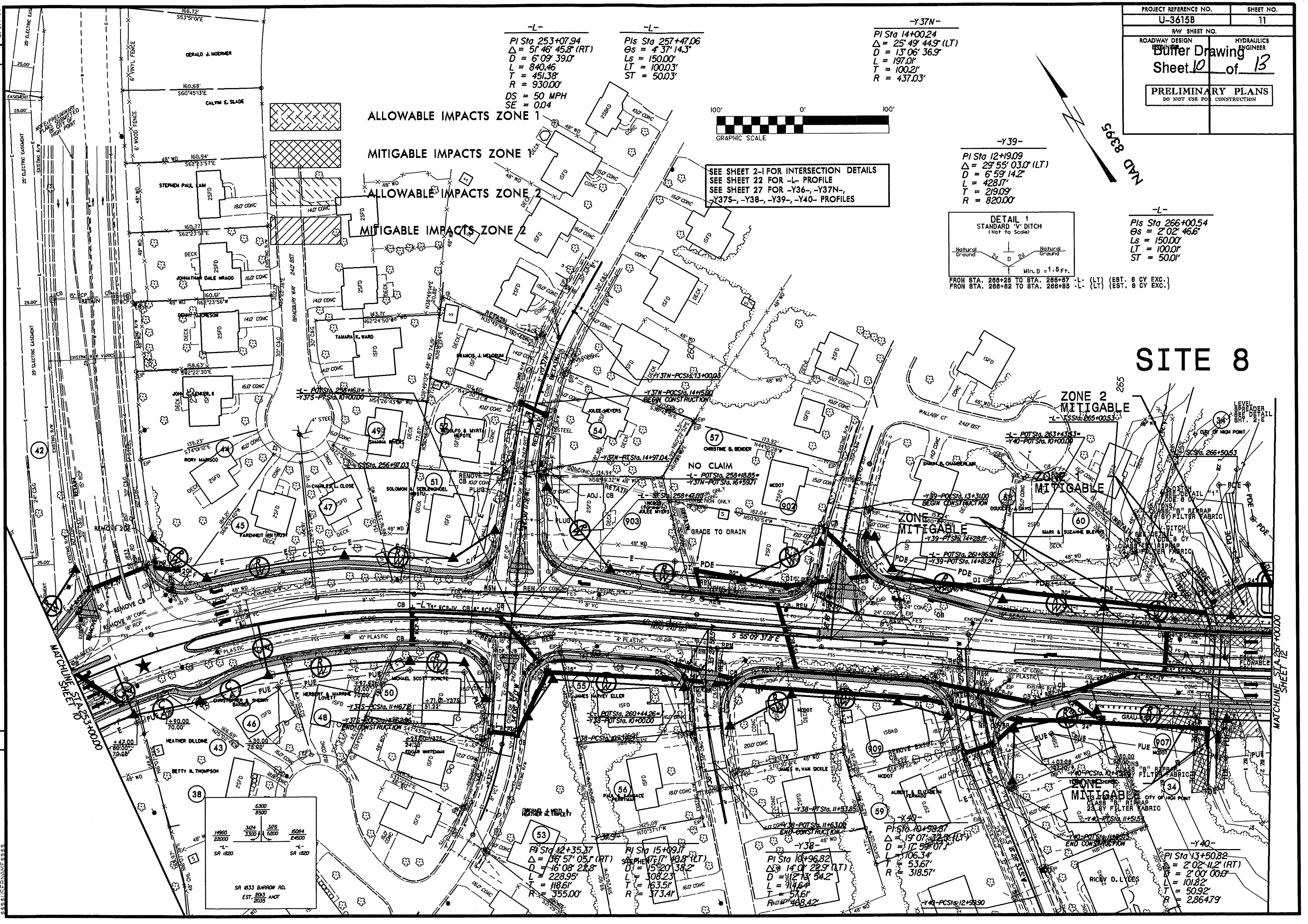


PROJECT REFERENCE NO.
U-3615B
SHEET NO.
10
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
Buffer Drawing
Sheet 9 of 13
-L-
PIs Sta 248+06.60
Θs = 4° 37' 14.3"
Ls = 150.00'
LT = 100.03'
ST = 50.03'
-L-
PI Sta 253+07.94
Δ = 51° 46' 45.8" (RT)
D = 6° 09' 39.0"
L = 840.46
T = 451.38'
R = 930.00'
DS = 50 MPH
SE = 0.04
-Y35-
PI Sta 11+10.23
Δ = 6° 51' 33.6" (LT)
D = 3° 06' 54.2"
L = 220.20'
T = 110.23'
R = 1,839.32'
PIs Sta 241+78.43
Θs = 0° 54' 01.3"
Ls = 110.00'
LT = 73.33'
ST = 36.67'
-L-
PI Sta 242+96.11
Δ = 2° 39' 07.6" (LT)
D = 1° 38' 13.3"
L = 162.01
T = 81.02'
R = 3,500.00'
DS = 50 MPH
SE = 0.03
PIs Sta 244+13.77
Θs = 0° 54' 01.3"
Ls = 110.00'
LT = 73.33'
ST = 36.67'
SR 1834 KENDALE RD.
EST. 2013/2033 AADT
-Y35-PCSta. 10+00.00
-Y35-POCSta. 10+22.26
BEGIN CONSTRUCTION
-Y35-PTSta. 12+20.20
SITE 7
SITE 6
SITE 6A
ZONE 2 ALLOWABLE
ZONE 1 ALLOWABLE
ZONE 1 MITIGABLE
ZONE 2 MITIGABLE
-L- CSSta. 243+77.10
-L- TSSta. 247+06.56
-L- STSta. 244+87.10
-L- SCSta. 248+56.56
-L- POCSta. 242+13.32= -Y35- POTSta. 14+56.98
-L- SCSta. 242+15.09
-L- TSSta. 241+05.09
HIGH POINT CITY LIMITS (OUT)
HIGH POINT CITY LIMITS (IN)
NAD 83/95
MATCHLINE STA. 240+00.00 SHEET 9
MATCHLINE STA. 253+00.00 SHEET 11
2SBK CHURCH
DETENTION POND
POND
MITIGABLE IMPACTS ZONE 2
MITIGABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2
DETAIL
STANDARD 'V' DITCH
(Not to Scale)
Min. D = 1.5 Ft.
FROM STA. 240+25 TO STA. 241+42 -L- (RT) (DDE 20 CY)
DETAIL 2
STANDARD BASE DITCH
(Not to Scale)
Min. D=1.5 Ft.
B= 2 Ft.
FROM STA. 242+35 TO STA. 243+33 -L- (RT) (EST. 140 CY EXC.)
SEE SHEET 21 FOR -L- PROFILE
SEE SHEET 26 FOR -Y35- PROFILE
GRAPHIC SCALE

PROJECT REFERENCE NO.	SHEET NO.
U-3615B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Buffer Drawing Sheet 10 of 13

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



8/17/99

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/29/09
2. NAME CHANGE ON PARCELS 43, 44, 45, 46, 48, 49, 51, 52, 53, 54, 59, AND 60
3. PDE LINE SHIFT ON PARCEL 58.
4. NAME CHANGE ON PARCELS 902, 903 AND 909 TO NCDOT.
5. 7/27/12 R/W REVISION: REMOVED TEMPORARY CONSTRUCTION EASEMENT AND CLAIM ON PARCEL 57, CHANGED THE NAME ON PARCEL 57. SLK

PROJECT REFERENCE NO.	SHEET NO.
U-3615B	12

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Buffer Drawing
Sheet 11 of 13

8/17/99

SEE SHEET 2-H FOR INTERSECTION DETAILS
SEE SHEET 22 FOR -L- PROFILE
SEE SHEET 27 FOR -Y41- PROFILE

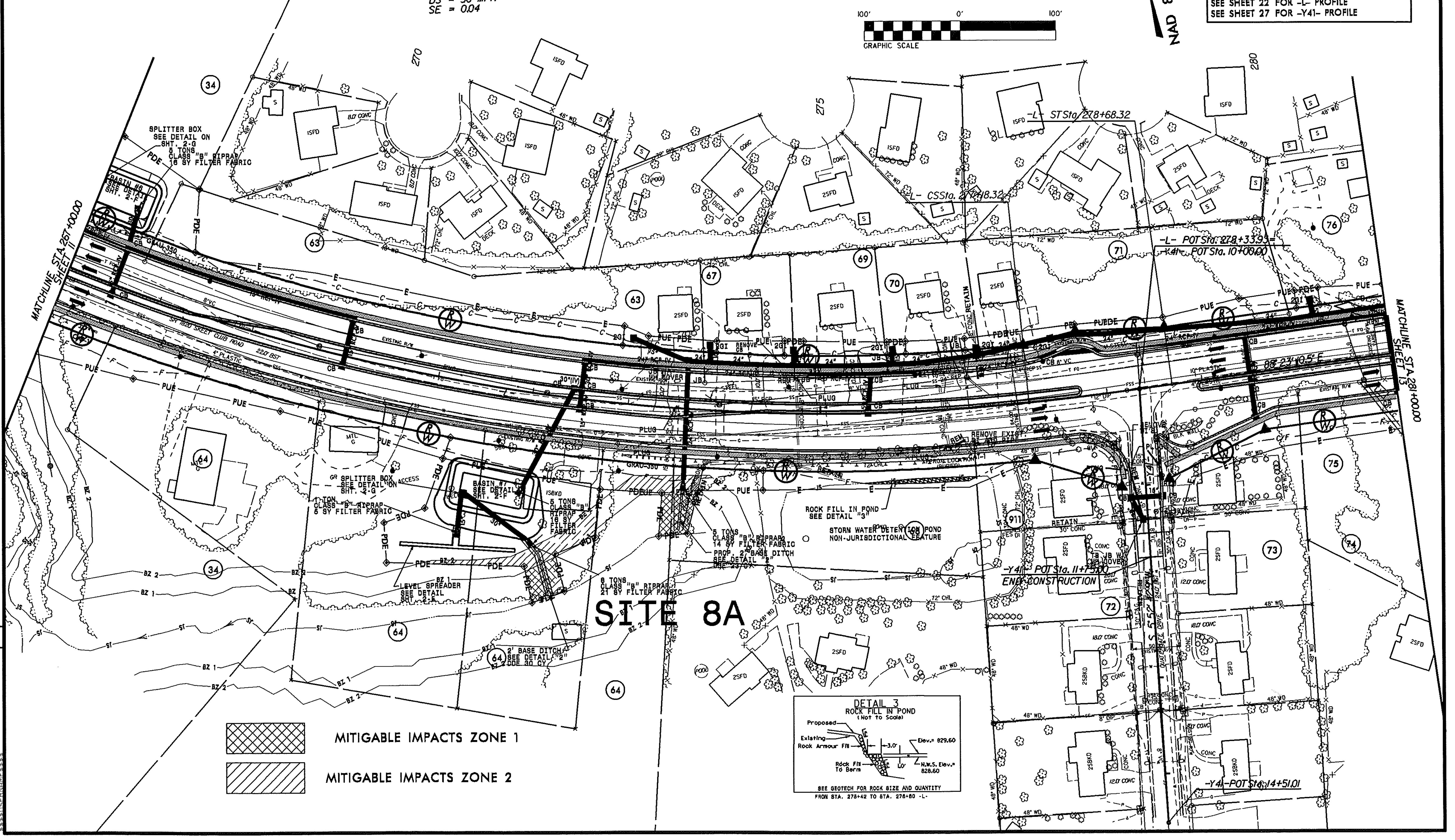
DETAIL 2
STANDARD 2' BASE DITCH
(Not to Scale)

Natural Ground — Natural Ground — Min. D = 2 Ft. B = 2 Ft.

FROM STA. 272+04 TO STA. 272+43 -L-(RT) (DDE 30 CY)
FROM STA. 273+81 TO STA. 273+83 -L-(RT) (DDE 23 CY)

-L-
PI Sta 271+96.23
Δ = 29° 07' 59.5" (LT)
D = 2° 43' 42.1"
L = 1,067.79
T = 545.70'
R = 2,100.00'
DS = 50 MPH
SE = 0.04

-L-
PIs Sta 277+68.32
θs = 2° 02' 46.6"
Ls = 150.00'
LT = 100.01'
ST = 50.01'



DETAIL 3
ROCK FILL IN POND
(Not to Scale)

Proposed — Existing Rock Armour Fill — 3.0' — Elev.= 829.60 — Rock Fill To Berm — N.W.S. Elev.= 828.60

SEE GEOTECH FOR ROCK SIZE AND QUANTITY
FROM STA. 275+42 TO STA. 275+60 -L-

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/29/09
2. NAME CHANGE ON PARCELS 63, 67, 69, 70, 71, 74 AND 75.
3. KEEP EXISTING DRIVE OPEN ON PARCEL 65.
4. NAME CHANGE ON PARCELS 76 AND DRIVE ENTRANCE CHANGE.
5. NAME CHANGE ON PARCEL 911 TO NCDOT.
5/24/12 R/W REVISION: COMBINED PARCELS 064, 065, AND 066 INTO ONE PARCEL AS 064 - SLK

$$$$SYSTIME$$$$
$$$$USERNAME$$$$

BUFFER IMPACTS SUMMARY

			IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
SITE NO.	STATION (FROM/TO)	STRUCTURE SIZE / TYPE	ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	170+06/172+39 -L-	2@66" RCP	X			3854	1931						
2	177+99/187+30 -L-(LT)	RELOCATE CHANNEL	X		X	4787	2292		36705	22604			
2A	187+45/196+55-L-(LT)	ROCK FILL IN POND			X				1369	9662			
2B	192+48 -L-(LT)	RIPRAP PAD			X								
3	197+50/205+22-L-(LT)	NAT. STREAM DESIGN			X				52487	31125		45810	29829
3A	198+75/200+23 -L-(RT)	2@54" RCP	X			2216	623						
3B	208+02/209+14 -L-(LT)	48" RCP	X			6967	4638						
3C	202+96-L-(LT)	LEVEL SPREADER			X		64						
4	221+87 /223+01-L-(LT)	2' BASE DITCH(BYPASS)			X	1166	998						
5	230+94/232+87-L-(LT&RT)	30" RCP	X		X	8784	5141		175	877			
SUBTOTALS=:						27774	15687		90736	64268		45810	29829

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY
PROJECT: 34962.1.1 (U-3615B)

Sheet 12 of 13 4/9/2013

Rev. May 2006

BUFFER IMPACTS SUMMARY

			IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
SITE NO.	STATION (FROM/TO)	STRUCTURE SIZE / TYPE	ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
6	237+28 /239+38-L-	BRIDGE APPROACH	X						3478	1674			
6A	240+18/240+81 -L-(RT)	"V" DITCH (BYPASS)			X	1271	834						
7	11+52/12+86-L-(LT&RT)	42" RCP	X			3933	2411						
8	265+24/266+91-L-(LT&RT)	8'X8' RCBC	X						8902	4658			
8A	271+16/273+92 -L-(RT)	30" & 24" RCP				1226	2536		1385	1493			
SUBTOTALS=:	THIS SHEET					6430	5781		13765	7825			
SUBTOTALS=:	SHEET 1					27774	15687		90736	64268		45810	29829
TOTALS=:						**34204**	**21468**		**104501**	**72093**		**45810**	**29829**

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY
PROJECT: 34962.1.1 (U-3615B)

4/9/2013

SHEET 13 OF 13

Rev. May 2006

09/08/99

TIP: U-3615B

CONTRACT:

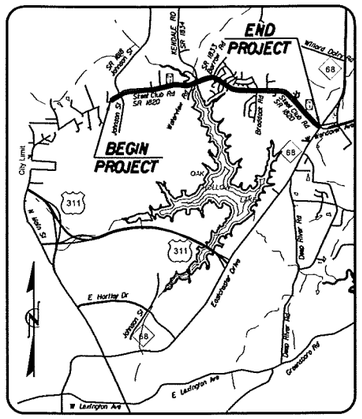
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3615B	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34962.1.1	STP-1820(2)	P.E.
34962.2.3	STP-1820(5)	R/W, UTIL.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GUILFORD COUNTY

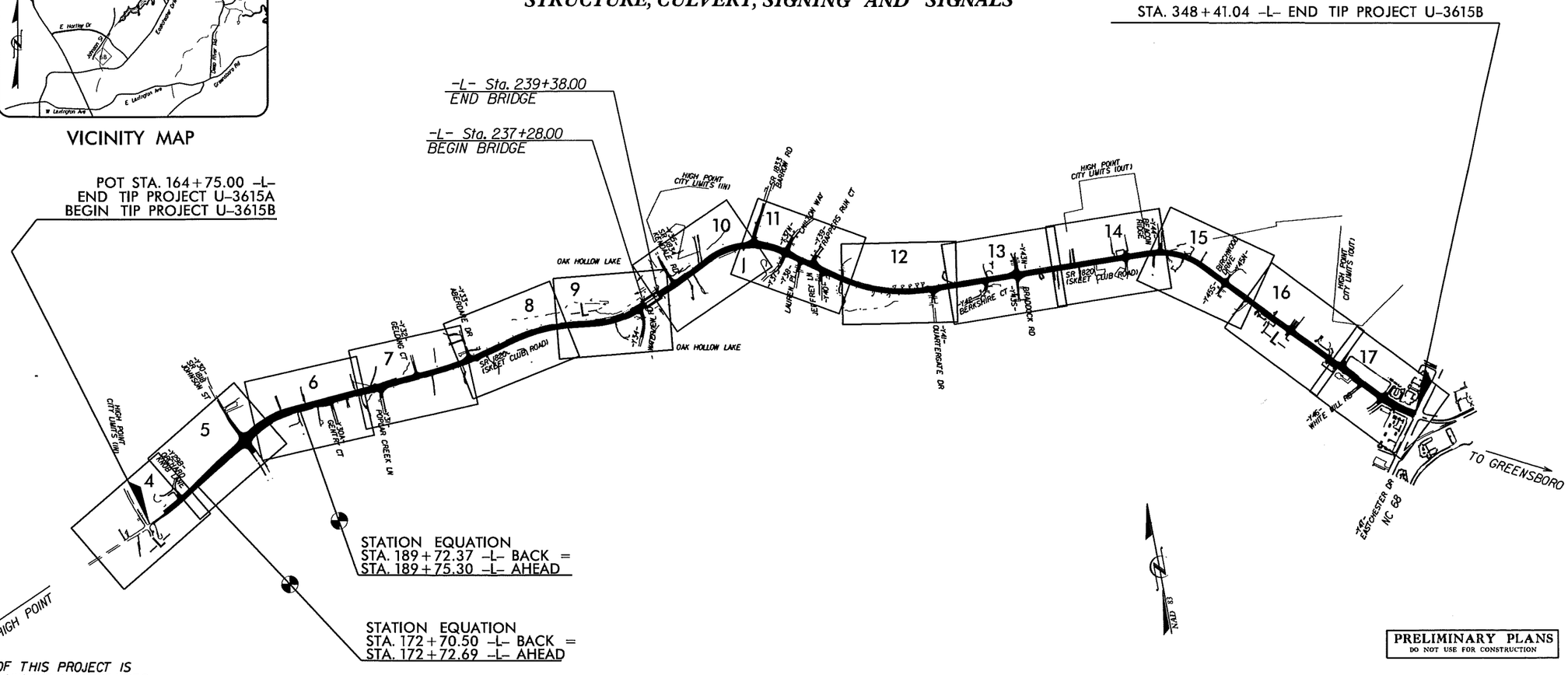
See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP

LOCATION: *SR 1820 (SKEET CLUB ROAD) FROM WEST OF SR 1818 (JOHNSON STREET) TO NC 68 (EASTCHESTER DRIVE).*

TYPE OF WORK: *PAVING, GRADING, DRAINAGE, CURB & GUTTER, STRUCTURE, CULVERT, SIGNING AND SIGNALS*



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF CITY OF HIGH POINT

NCDOT CONTACT: B. Doug Taylor, P.E. PROJECT ENGINEER - ROADWAY DESIGN UNIT

"CLEARING ON THIS PROJECT SHALL BE ESTABLISHED BY METHOD III"

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2008 = 9600–23400
ADT 2030 = 18100–40400
DHV = 10 %
D = 60 %
T = 5 %
V = 50 MPH
TTST 2% DUAL 3%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3615B = 3.438 MI
LENGTH STRUCTURE TIP PROJECT U-3615B = 0.040 MI
TOTAL LENGTH OF TIP PROJECT U-3615B = 3.478 MI

Prepared in the Office of:
WANG ENGINEERING COMPANY, INC.
CARY, N.C.
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 27, 2009

LETTING DATE: OCTOBER 15, 2013

CLIFTON T. REGISTER, PE
PROJECT ENGINEER

SCOTT L. KENNEDY
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

3/15/06

PROJECT REFERENCE NO.	SHEET NO.
U-3615B	1-B

Note: Not to Scale

S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 23
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

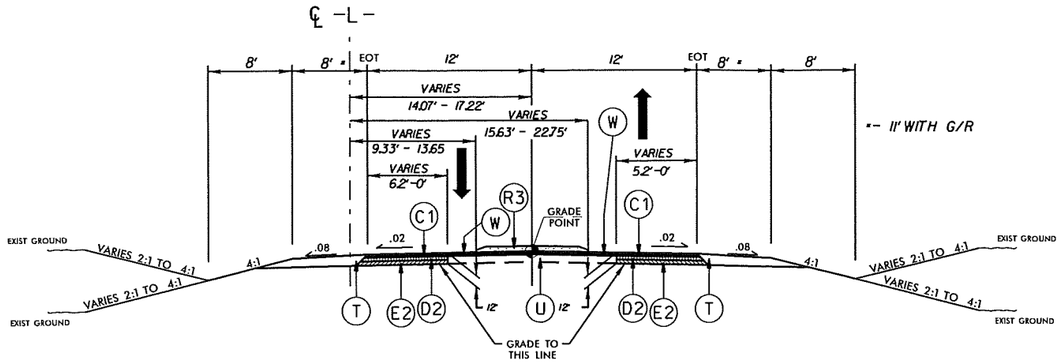
MISCELLANEOUS:

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

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
U-3615B	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

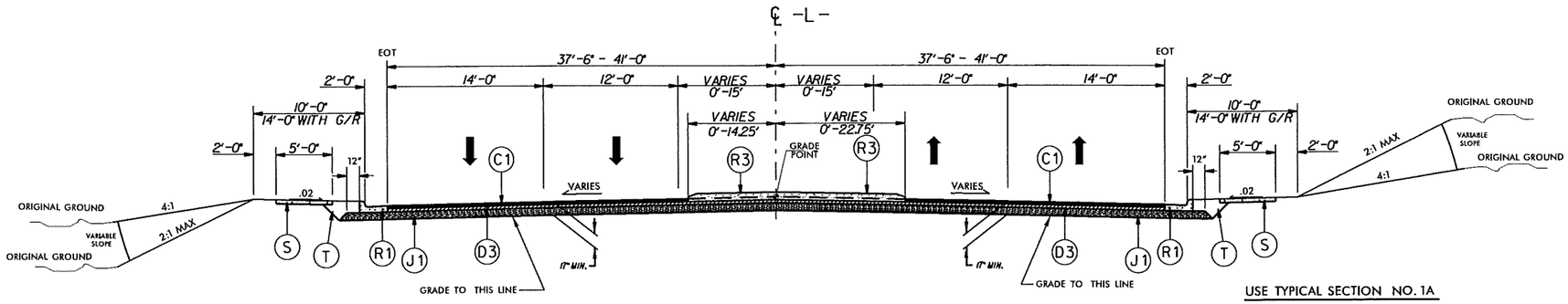
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO.1

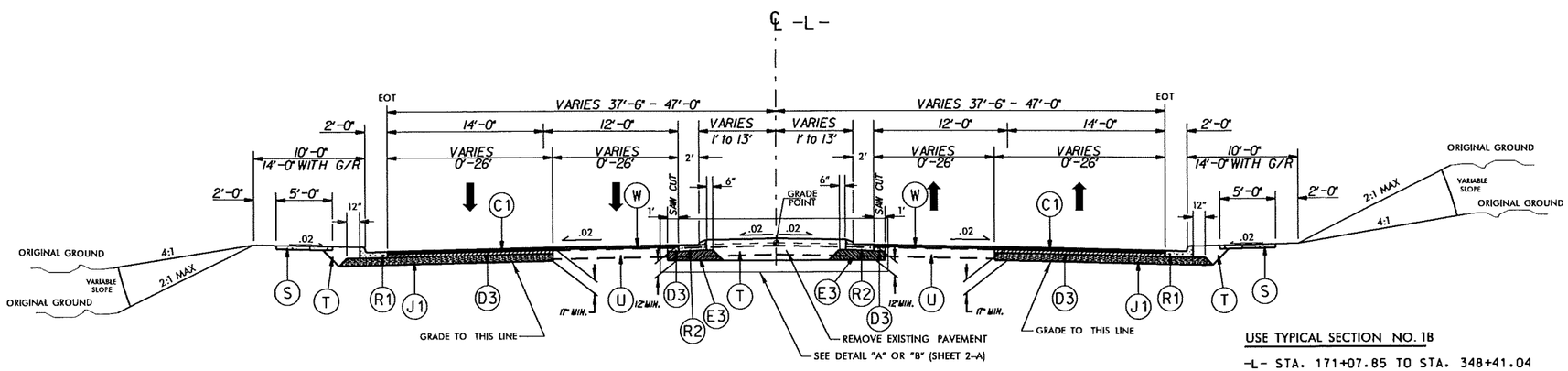
-L- STA. 164+75.00 TO STA. 167+12.23



TYPICAL SECTION NO. 1A

USE TYPICAL SECTION NO. 1A

-L- STA. 167+12.23 TO STA. 171+07.85



TYPICAL SECTION NO. 1B

USE TYPICAL SECTION NO. 1B

-L- STA. 171+07.85 TO STA. 348+41.04

PAVEMENT SCHEDULE

C1	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.25" OR GREATER THAN 1.5" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 140 LBS PER SQ. YD. IN EACH OF TWO LAYERS
D2	PROP. APPROX. 3" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS PER SQ. YD.
D3	PROP. APPROX. 4" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS PER SQ. YD.
D4	PROP. VAR. DEPTH ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS PER SQ. YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.25" OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS PER SQ. YD.
E2	PROP. APPROX. 5" ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONC. 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" OR GREATER THAN 5.5" IN DEPTH.
J1	10" AGGREGATE BASE COURSE
R1	2'-6" CONCRETE CURB AND GUTTER
R2	2'-9" CONCRETE CURB AND GUTTER
R3	5" MON. CONCRETE ISLAND (KEY IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (SEE DETAIL)

NOTE: ALL SLOPES 1:1 UNLESS OTHERWISE SPECIFIED
EOT = EDGE OF TRAVEL LANE

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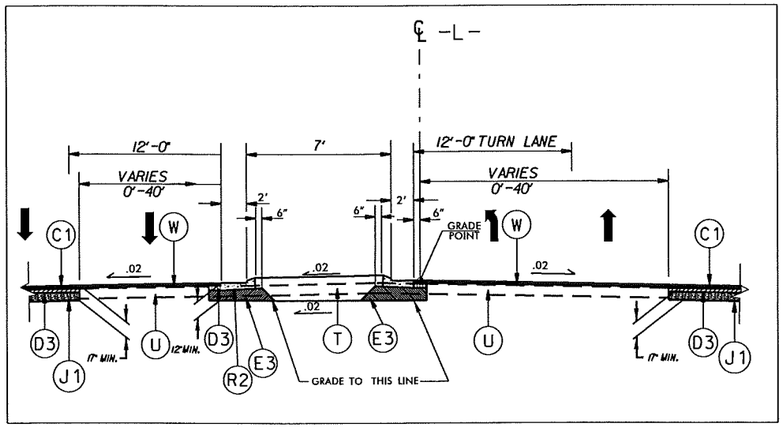
PROJECT REFERENCE NO.	SHEET NO.
U-3615B	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

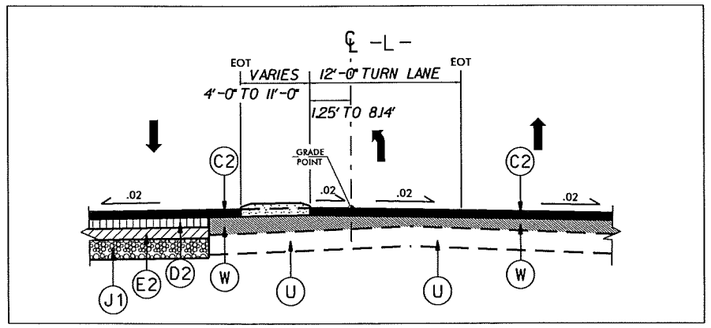
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION DETAIL "A"

USE TYPICAL SECTION DETAIL "A"

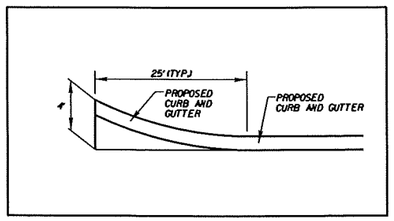
-L- STA. 195+83.37 TO STA. 199+13.03
-L- STA. 202+30.40 TO STA. 205+60.40 (REVERSE)
-L- STA. 208+25.16 TO STA. 211+55.16
-L- STA. 214+88.24 TO STA. 218+18.24 (REVERSE)
-L- STA. 259+58.80 TO STA. 261+73.08
-L- STA. 265+00.96 TO STA. 268+30.96 (REVERSE)
-L- STA. 273+44.04TO STA. 276+74.04
-L- STA. 279+93.87 TO STA. 283+23.86 (REVERSE)
-L- STA. 284+75.24 TO STA. 288+05.26
-L- STA. 291+13.41 TO STA. 294+43.41 (REVERSE)
-L- STA. 299+34.87 TO STA. 303+64.89
-L- STA. 305+50.57 TO STA. 308+80.57 (REVERSE)
-L- STA. 313+39.07 TO STA. 317+69.06
-L- STA. 319+69.93 TO STA. 323+04.77 (REVERSE)



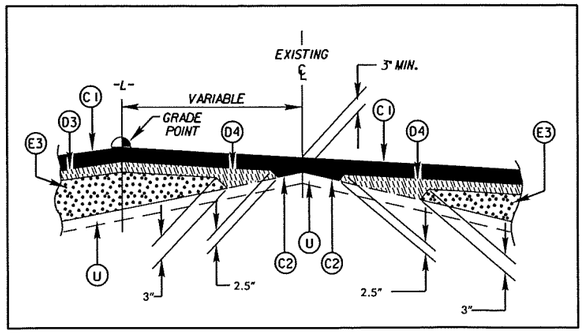
TYPICAL SECTION DETAIL "B"

USE TYPICAL SECTION DETAIL "B"

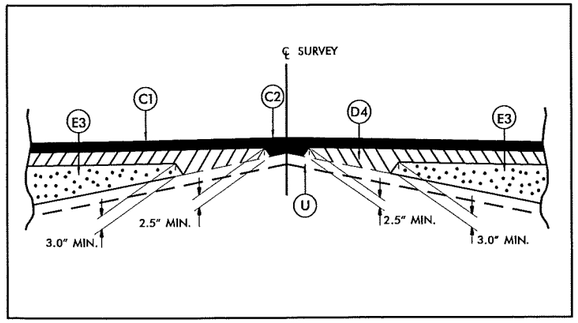
-L- STA. 199+13.30 TO STA. 200+13.37
-L- STA. 201+30.40 TO STA. 202+30.40 (REVERSE)
-L- STA. 211+55.16 TO STA. 212+55.16
-L- STA. 213+88.24 TO STA. 214+88.24 (REVERSE)
-L- STA. 236+73.36 TO STA. 241+81.10
-L- STA. 261+73.08 TO STA. 262+73.08
-L- STA. 264+00.96 TO STA. 265+00.96 (REVERSE)
-L- STA. 276+74.04 TO STA. 277+74.04
-L- STA. 278+93.87 TO STA. 279+93.87 (REVERSE)
-L- STA. 288+05.26 TO STA. 289+05.26
-L- STA. 290+13.41 TO STA. 291+13.41 (REVERSE)
-L- STA. 302+64.89 TO STA. 303+64.89
-L- STA. 304+50.57 TO STA. 305+50.57 (REVERSE)
-L- STA. 316+69.06 TO STA. 317+69.06
-L- STA. 318+69.93 TO STA. 319+69.93 (REVERSE)
-L- STA. 332+15.11 TO STA. 336+45.11
-L- STA. 337+60.19 TO STA. 348+31.91



DETAIL SHOWING FLARE OF CURB AND GUTTER



DETAIL SHOWING METHOD OF WEDGING



DETAIL SHOWING METHOD OF WEDGING
USE ON ALL Y LINES

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.25" OR GREATER THAN 1.5" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 140 LBS PER SQ. YD. IN EACH OF TWO LAYERS
D2	PROP. APPROX. 3" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS PER SQ. YD.
D3	PROP. APPROX. 4" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS PER SQ. YD.
D4	PROP. VAR. DEPTH ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS PER SQ. YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS PER SQ. YD.
E2	PROP. APPROX. 5" ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONC. 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" OR GREATER THAN 5.5" IN DEPTH.
J1	10" AGGREGATE BASE COURSE
R1	2'-6" CONCRETE CURB AND GUTTER
R2	2'-9" CONCRETE CURB AND GUTTER
R3	5" MON. CONCRETE ISLAND (KEY IN)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (SEE DETAIL)

NOTE: ALL SLOPES 1:1 UNLESS OTHERWISE SPECIFIED
EOT = EDGE OF TRAVEL LANE

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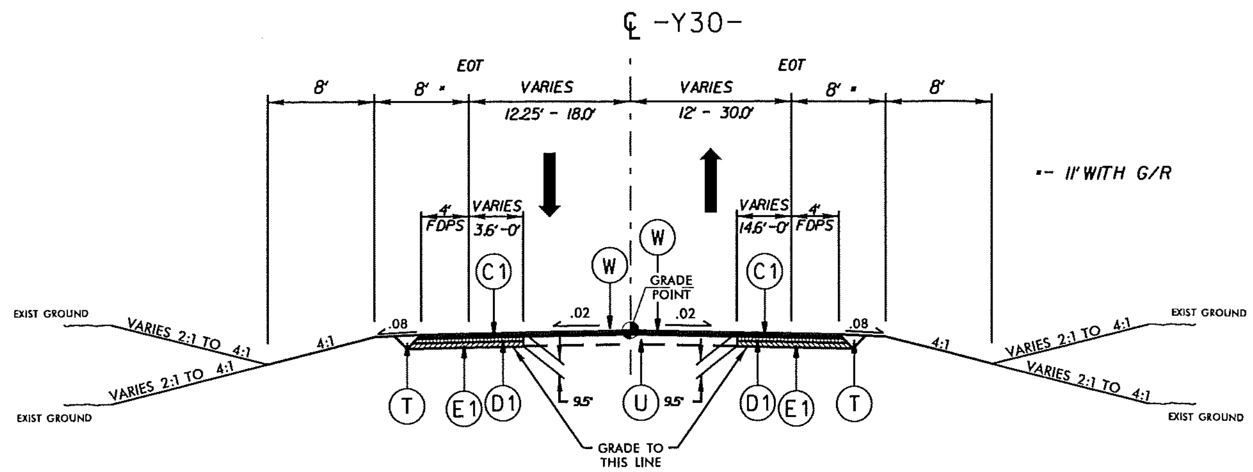
PROJECT REFERENCE NO.	SHEET NO.
U-3615B	2-B

ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

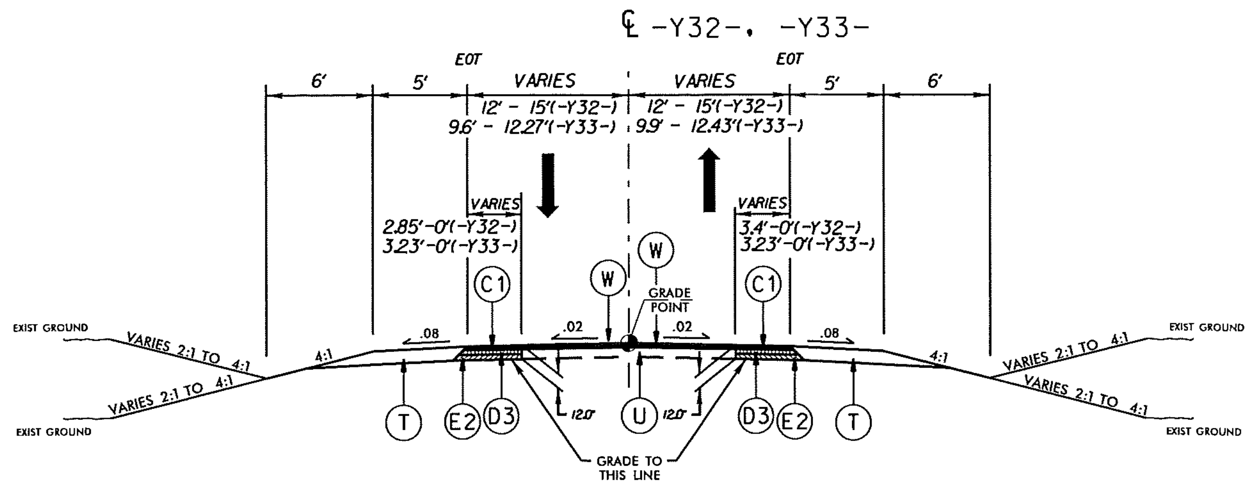
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO.2

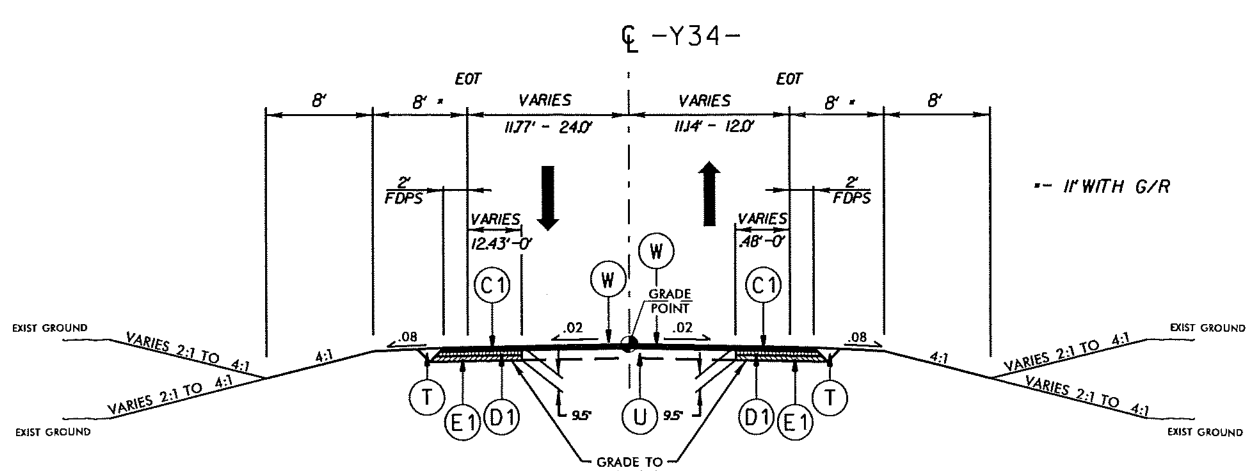
-Y30- STA. 13+25.00 TO STA. 17+73.72



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO.3

-Y32- STA. 10+80.00 TO STA. 12+03.48
-Y33- STA. 12+45.71 TO STA. 12+79.32



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO.4

-Y34- STA. 11+44.53 TO STA. 14+71.04

PAVEMENT SCHEDULE (*)

C1	3" A.C.S.C. TYPE S9.5B
C2	VAR. DEPTH A.C.S.C. TYPE S9.5B
D1	2.5" A.C.I.C. TYPE I19.0B
D2	3" A.C.I.C. TYPE I19.0B
D3	4" A.C.I.C. TYPE I19.0B
D4	VAR. DEPTH A.C.I.C. TYPE I19.0B
E1	4" A.C.B.C. TYPE B25.0B
E2	5" A.C.B.C. TYPE B25.0B
E3	VAR. DEPTH A.C.B.C. TYPE B25.0B
R1	2'-6" CONC. CURB & GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

(*) = REFER TO SHEET No 2 FOR FULL DESCRIPTIONS.

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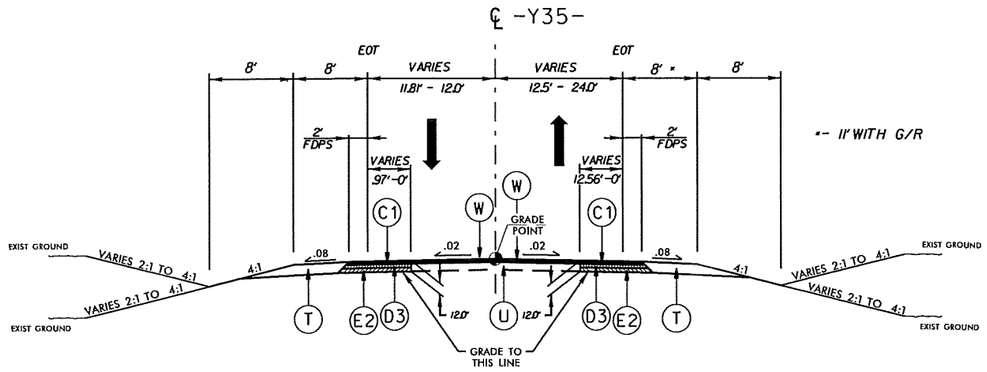
PROJECT REFERENCE NO.	SHEET NO.
U-3615B	2-C
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

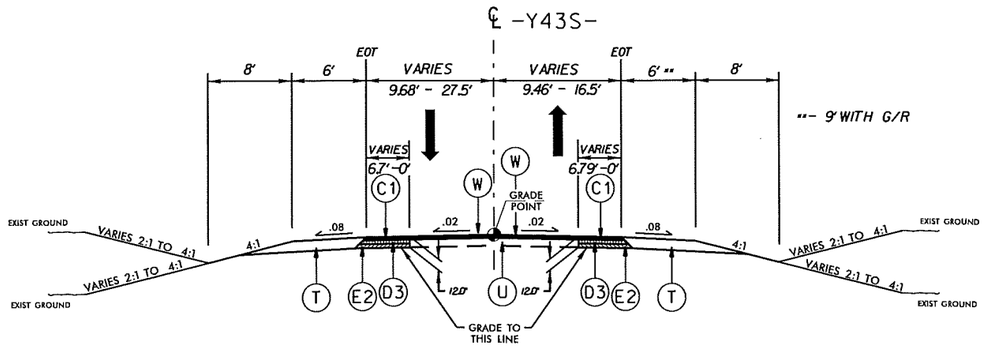
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO.5

-Y35- STA. 10+47.26 TO STA. 13+27.78



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO.6

-Y43S- STA. 11+15.89 TO STA. 13+02.62

PAVEMENT SCHEDULE (*)

C1	3" A.C.S.C. TYPE S9.5B
C2	VAR. DEPTH A.C.S.C. TYPE S9.5B
D1	2.5" A.C.I.C. TYPE I19.0B
D2	3" A.C.I.C. TYPE I19.0B
D3	4" A.C.I.C. TYPE I19.0B
D4	VAR. DEPTH A.C.I.C. TYPE I19.0B
E1	4" A.C.B.C. TYPE B25.0B
E2	5" A.C.B.C. TYPE B25.0B
E3	VAR. DEPTH A.C.B.C. TYPE B25.0B
R1	2'-6" CONC. CURB & GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

(*) = REFER TO SHEET No 2 FOR FULL DESCRIPTIONS.

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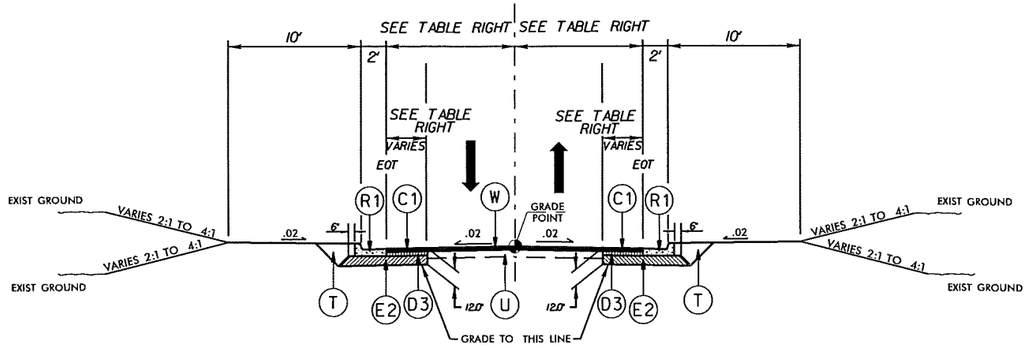
PROJECT REFERENCE NO.	SHEET NO.
U-3615B	2-D
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y29B-, -Y30A-, -Y31-, -Y37N-,
℄ -Y37S-, -Y38-, -Y40-, -Y41-, -Y42-,
-Y43N-, -Y44-



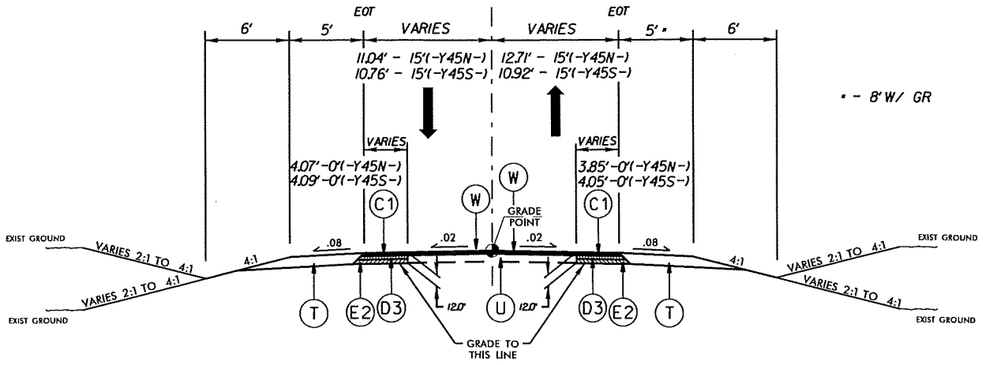
TYPICAL SECTION NO. 7

LINE	WIDTH LT.	WIDTH RT.	WIDENING LT.	WIDENING RT.
-Y29B-	18'-21.10'	18'-20.67'	0'	0'
-Y30A-	11.07'-15.0'	11.06'-15.0'	0'-3.82'	0'-3.95'
-Y31-	13.12'-15.0'	12.95'-15.0'	0'-1.86'	0'-2.07'
-Y37N-	14.06'-19.96'	12.8'-20.6'	0'	0'
-Y37S-	13.35'-15.00'	14.29'-15.0'	0'-1.19'	0'-1.0'
-Y38-	13.97'-15.0'	13.64'-15.0'	0'-1.24'	0'-1.28'
-Y40-	13.98'-15.0'	13.95'-15.0'	0'-1.06'	0'-1.04'
-Y41-	12.90'-15.0'	12.96'-15.0'	0'-2.09'	0'-2.00'
-Y42-	12.0'-15.0'	12.0'-15.0'	0'-3.10'	0'-3.01'
-Y43N-	14.19'-16.50'	13.64'-16.50'	0'-2.52'	0'-1.93'
-Y44-	15.49'-16.19'	16.48'-17.06'	0'	0'

USE TYPICAL SECTION NO.7

-Y29B- STA. 10+25.00 TO STA. 10+65.11
-Y30A- STA. 10+97.72 TO STA. 11+47.72
-Y31- STA. 11+31.63 TO STA. 11+75.00
-Y37N- STA. 14+50.00 TO STA. 15+64.78
-Y37S- STA. 10+88.26 TO STA. 11+37.96
-Y38- STA. 10+97.36 TO STA. 11+38.00
-Y40- STA. 11+35.15 TO STA. 11+60.15
-Y41- STA. 11+10.79 TO STA. 11+50.00
-Y42- STA. 11+25.45 TO STA. 11+49.45
-Y43N- STA. 10+76.64 TO STA. 11+81.44
-Y44- STA. 12+25.00 TO STA. 12+94.55

℄ -Y45N-, -Y45S-



TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO.8

-Y45N- STA. 12+22.82 TO STA. 12+48.87
-Y45S- STA. 10+91.74 TO STA. 11+41.74

PAVEMENT SCHEDULE (*)

C1	3" A.C.S.C. TYPE S9.5B
C2	VAR. DEPTH A.C.S.C. TYPE S9.5B
D1	2.5" A.C.I.C. TYPE I19.0B
D2	3" A.C.I.C. TYPE I19.0B
D3	4" A.C.I.C. TYPE I19.0B
D4	VAR. DEPTH A.C.I.C. TYPE I19.0B
E1	4" A.C.B.C. TYPE B25.0B
E2	5" A.C.B.C. TYPE B25.0B
E3	VAR. DEPTH A.C.B.C. TYPE B25.0B
R1	2'-6" CONC. CURB & GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

(*) = REFER TO SHEET No 2 FOR FULL DESCRIPTIONS.

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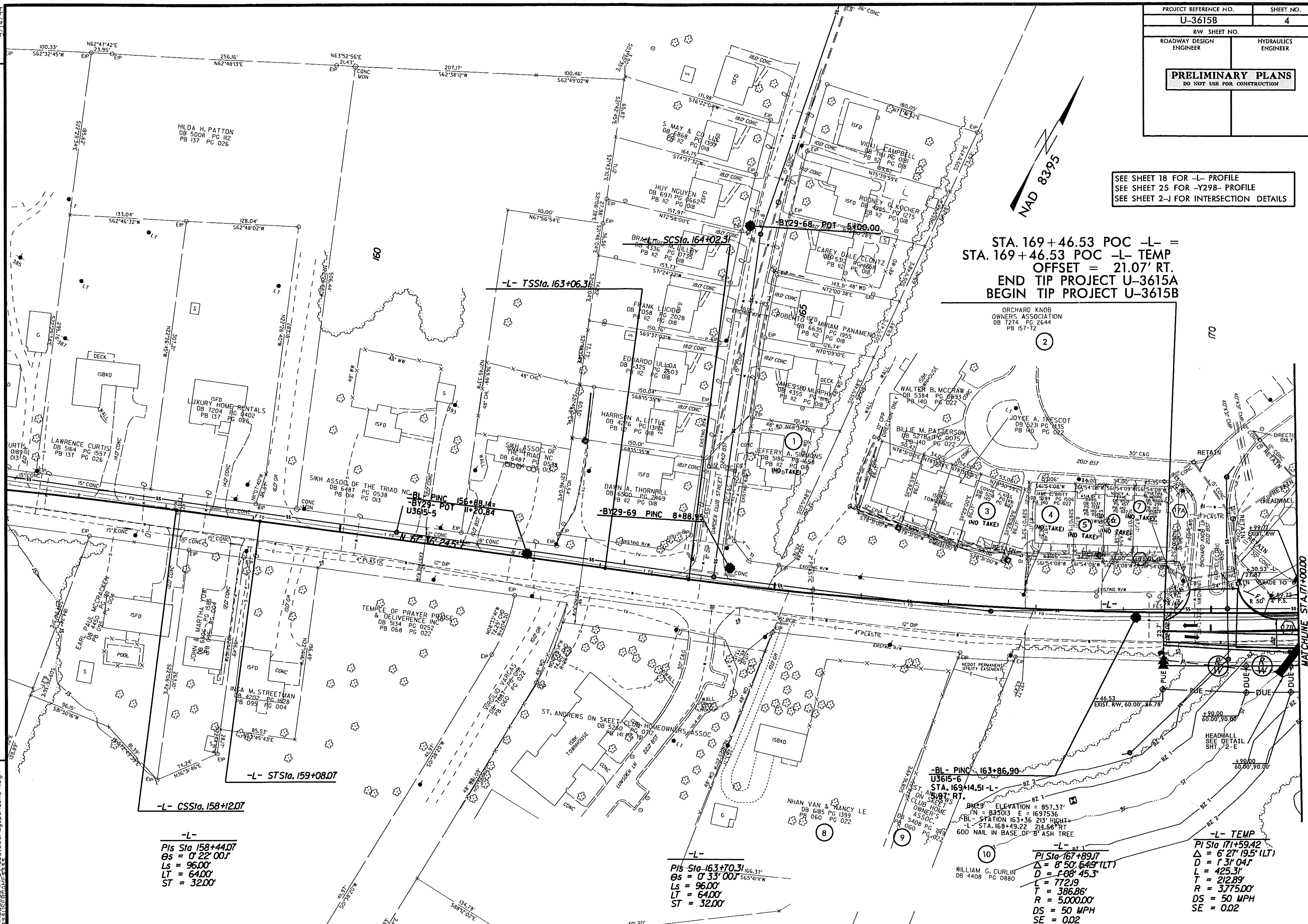
REVISIONS

9/29/09 R/W REVISION: REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES.

2/29/12 R/W REVISION: REMOVED RIGHT OF WAY AND EASEMENTS FROM PARCELS 3 - 8; REMOVED PERMANENT UTILITY EASEMENT & PERMANENT DRAINAGE EASEMENT FROM PARCEL 10 - SLK

5/14/12 R/W REVISION: NAME CHANGE TO ORCHARD KNOB OWNERS ASSOCIATION ON PARCEL 2 - SLK

5/14/99



PROJECT REFERENCE NO. U-3615B
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
SEE SHEET 18 FOR -L- PROFILE
SEE SHEET 25 FOR -Y29B- PROFILE
SEE SHEET 2-J FOR INTERSECTION DETAILS
NAD 83/95
STA. 169+46.53 POC -L- =
STA. 169+46.53 POC -L- TEMP
OFFSET = 21.07' RT.
END TIP PROJECT U-3615A
BEGIN TIP PROJECT U-3615B
ORCHARD KNOB OWNERS ASSOCIATION DB 7274 PG 2644 PB 157-72
HILDA H. PATTON DB 5008 PG 1112 PB 137 PG 026
LAWRENCE CURTIS DB 5164 PG 1557 PB 137 PG 026
LUXURY HOME RENTALS DB 7204 PG 0402 PB 137 PG 086
SIKH ASSOC OF THE TRIAD NC DB 6487 PG 0538 PB 014 PG 013
TEMPLE OF PRAYER PRAISE & DELIVERENCE INC DB 5134 PG 0252 PB 068 PG 022
ST. ANDREWS ON SKEET CLUB HOMEOWNERS ASSOC
NHAN VAN & NANCY LE DB 6185 PG 1399 PB 060 PG 022
WILLIAM G. CURLIN DB 4408 PG 0880
EARL PAUL MCCRACKEN
JOHN & MARTHA YOW
INGA M. STREETMAN DB 4202 PG 1823 PB 095 PG 004
VIRGILIO VARGAS
JOYCE A. TRESCOTT DB 5231 PG 1435 PB 140 PG 022
WALTER B. MCCRAW DB 5384 PG 0893 PB 140 PG 022
BILLIE M. PATTERSON
-L- TSSta. 163+06.31
-L- SCSta. 164+02.31
-BY29-68 POT 5+00.00
-BY29-69 PINC 8+88.85
-BL- PINC 156+88.14= -BY29- POT 11+20.84 U3615-5
-L- STSta. 159+08.07
-L- CSSta. 158+12.07
-BL- PINC 163+86.90 U3615-6 STA. 169+14.51 -L- 5.87' RT.
BM#9 ELEVATION = 857.37' N = 833013 E = 1697536 -BL- STATION 163+36 213' RIGHT -L- STA. 168+49.22 214.56' RT 600 NAIL IN BASE OF 8" ASH TREE
MATCHLINE STA. 171+00.00 SHEET 5
-L-
PIs Sta 158+44.07
θs = 0° 22' 00.1"
Ls = 96.00'
LT = 64.00'
ST = 32.00'
-L-
PIs Sta 163+70.31
θs = 0° 33' 00.1"
Ls = 96.00'
LT = 64.00'
ST = 32.00'
-L-
PI Sta 167+89.17
Δ = 8° 50' 54.9" (LT)
D = 1° 08' 45.3"
L = 772.19
T = 386.86'
R = 5,000.00'
DS = 50 MPH
SE = 0.02
-L- TEMP
PI Sta 171+59.42
Δ = 6° 27' 19.5" (LT)
D = 1° 31' 04.1"
L = 425.31'
T = 212.89'
R = 3,775.00'
DS = 50 MPH
SE = 0.02

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PROJECT REFERENCE NO.	SHEET NO.
U-3615B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

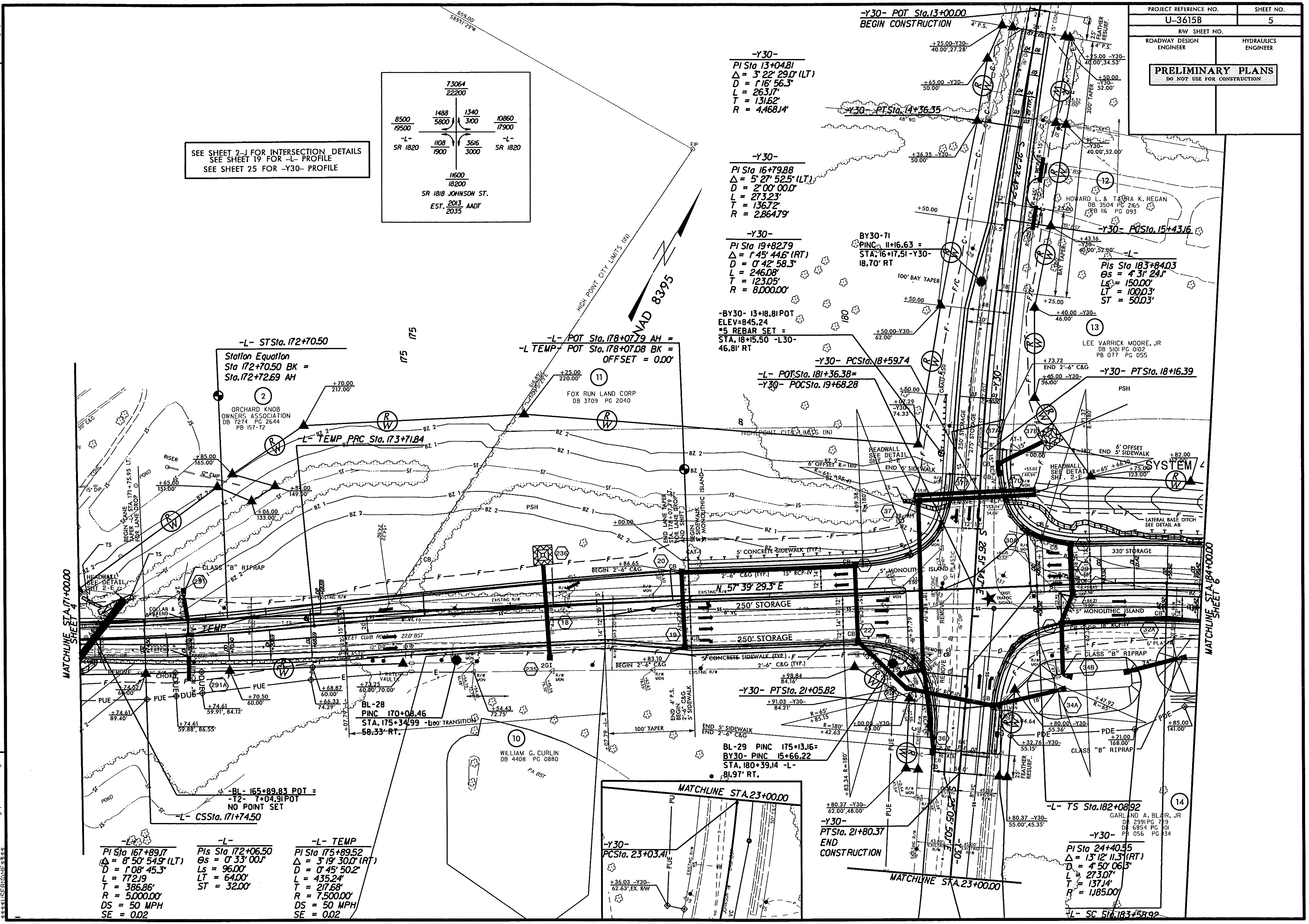
REVISIONS

RW REVISION: 9/29/12 REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES.

RW REVISION: 2/29/12: CHANGED PERMANENT DRAINAGE EASEMENT TO RIGHT OF WAY ON PARCEL 2 AND 11; REMOVED PERMANENT DRAINAGE EASEMENT AND TEMPORARY CONSTRUCTION EASEMENT AND ADDED DRAINAGE UTILITY EASEMENT ON PARCEL 10; REVISED TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 12; REMOVED PERMANENT UTILITY EASEMENT, PERMANENT DRAINAGE EASEMENT AND REVISED RIGHT OF WAY ON PARCEL 13. - SLK

5/14/12 RW REVISION: NAME CHANGE TO ORCHARD KNOB OWNERS ASSOCIATION ON PARCEL 2 - SLK

8/17/99



-Y30- POT Sta. 13+00.00
BEGIN CONSTRUCTION
SEE SHEET 2-J FOR INTERSECTION DETAILS
SEE SHEET 19 FOR -L- PROFILE
SEE SHEET 25 FOR -Y30- PROFILE
SR 1818 JOHNSON ST.
-Y30- PI Sta 13+04.81 Δ = 3° 22' 29.0" (LT) D = 1° 16' 56.3" L = 263.17' T = 131.62' R = 4,468.14'
-Y30- PT Sta. 14+36.35
-Y30- PI Sta 16+79.88 Δ = 5° 27' 52.5" (LT) D = 2° 00' 00.0" L = 273.23' T = 136.72' R = 2,864.79'
-Y30- PI Sta 19+82.79 Δ = 1° 45' 44.6" (RT) D = 0° 42' 58.3" L = 246.08' T = 123.05' R = 8,000.00'
BY30-71 PINC 11+16.63 = STA. 16+17.51 -Y30- 18.70' RT
-Y30- PCSta. 15+43.16
-L- PIs Sta 183+84.03 θs = 4° 31' 24.1" Ls = 150.00' LT = 100.03' ST = 50.03'
HOWARD L. & TANRA K. REGAN DB 3504 PG 2165 PB 116 PG 093
LEE VARRICK MOORE, JR DB 5101 PG 0102 PB 077 PG 055
-BY30- 13+18.81 POT ELEV=845.24 #5 REBAR SET = STA. 18+15.50 -L30- 46.81' RT
-Y30- PCSta. 18+59.74
-L- POT Sta. 181+36.38= -Y30- POCSta. 19+68.28
-Y30- PT Sta. 18+16.39
-L- ST Sta. 172+70.50 Station Equation Sta 172+70.50 BK = Sta. 172+72.69 AH
-L- POT Sta. 178+07.79 AH = -L TEMP- POT Sta. 178+07.08 BK = OFFSET = 0.00'
FOX RUN LAND CORP DB 3709 PG 2040
ORCHARD KNOB OWNERS ASSOCIATION DB 7274 PG 2644 PB 157-72
-L- TEMP PRC Sta. 173+71.84
HIGH POINT CITY LIMITS (IN)
NAD 83/95
N 57° 39' 29.3" E
250' STORAGE
330' STORAGE
MATCHLINE STA. 171+00.00 SHEET 4
MATCHLINE STA. 184+00.00 SHEET 6
-Y30- PT Sta. 21+05.82
BL-28 PINC 170+08.46 STA. 175+34.99 -L- 58.33' RT.
BL-29 PINC 175+13.16= BY30- PINC 15+66.22 STA. 180+39.14 -L- 81.97' RT.
WILLIAM G. CURLIN DB 4408 PG 0880
-BL- 165+89.83 POT = -T2- 7+04.91 POT NO POINT SET
-L- CSSta. 171+74.50
-Y30- PT Sta. 21+80.37 END CONSTRUCTION
MATCHLINE STA. 23+00.00
-Y30- PCSta. 23+03.41
-L- TS Sta. 182+08.92
GARLAND A. BLAIR, JR DB 2991 PG 729 DB 6854 PG 101 PB 056 PG 34
-Y30- PI Sta 24+40.55 Δ = 13° 12' 11.3" (RT) D = 4° 50' 06.3" L = 273.07' T = 137.14' R = 1,185.00'
-L- SC Sta. 183+58.92
-L- PI Sta 167+89.17 Δ = 8° 50' 54.9" (LT) D = 1° 08' 45.3" L = 772.19 T = 386.86' R = 5,000.00' DS = 50 MPH SE = 0.02
-L- PIs Sta 172+06.50 θs = 0° 33' 00.1" Ls = 96.00' LT = 64.00' ST = 32.00'
-L- TEMP PI Sta 175+89.52 Δ = 3° 19' 30.0" (RT) D = 0° 45' 50.2" L = 435.24' T = 217.68' R = 7,500.00' DS = 50 MPH SE = 0.02

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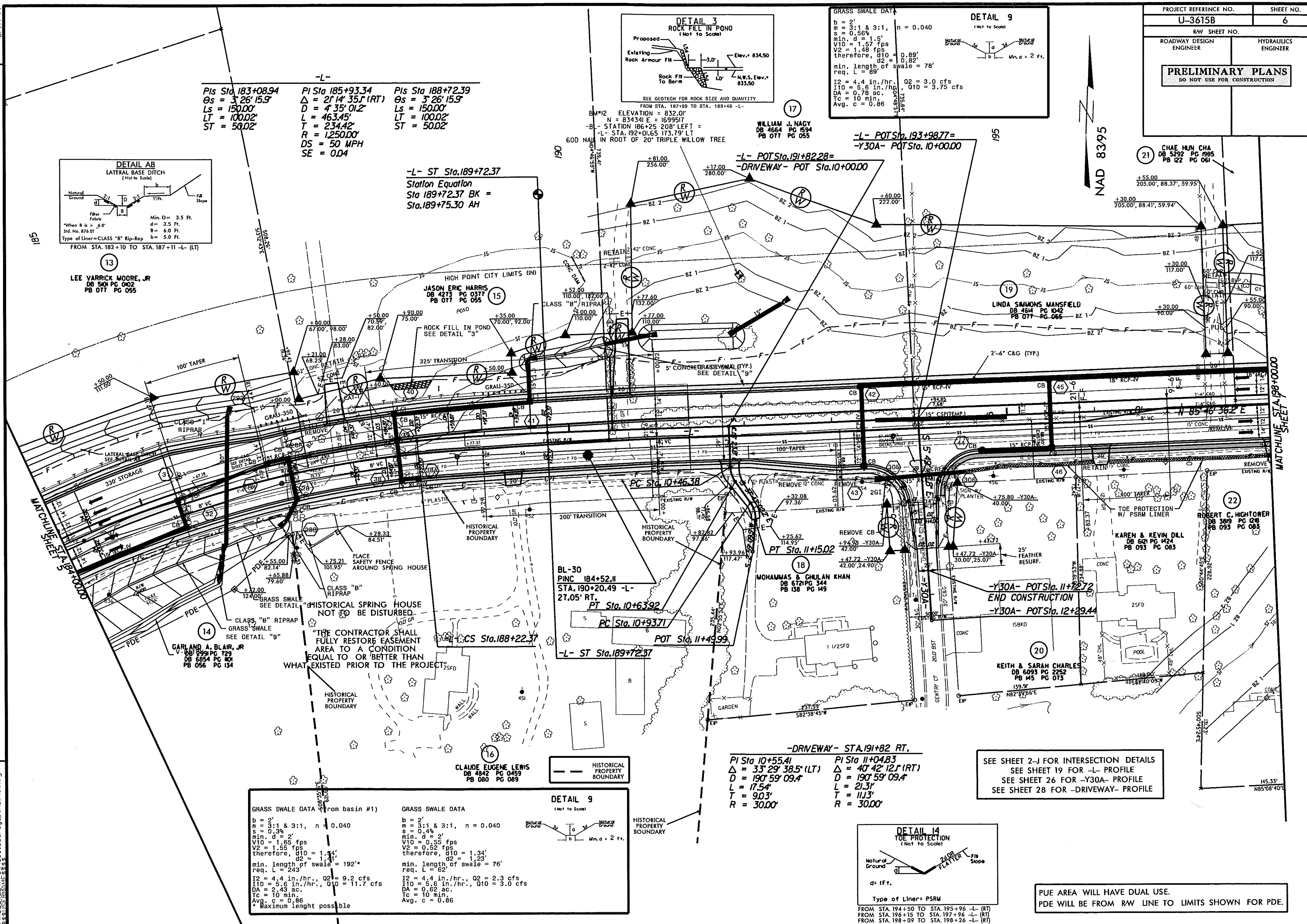
PROJECT REFERENCE NO.	SHEET NO.
U-3615B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



-L-
PIs Sta 183+08.94
Θs = 3°26'15.9"
Ls = 150.00'
LT = 100.02'
ST = 50.02'
PI Sta 185+93.34
Δ = 21°14'35.1" (RT)
D = 4°35'01.2"
L = 463.45'
T = 234.42'
R = 1,250.00'
DS = 50 MPH
SE = 0.04
PIs Sta 188+72.39
Θs = 3°26'15.9"
Ls = 150.00'
LT = 100.02'
ST = 50.02'
DETAIL AB
LATERAL BASE DITCH (Not to Scale)
FROM STA. 182+10 TO STA. 187+11 -L- (LT)
DETAIL 3
ROCK FILL IN POND (Not to Scale)
SEE GEOTECH FOR ROCK SIZE AND QUANTITY
FROM STA. 187+99 TO STA. 188+46 -L-
BM#12 ELEVATION = 832.01'
N = 834341 E = 1699517
-BL- STATION 186+25 208' LEFT =
-L- STA. 192+01.65 173.79' LT
60D NAIL IN ROOT OF 20' TRIPLE WILLOW TREE
-L- ST Sta.189+72.37
Station Equation
Sta 189+72.37 BK =
Sta.189+75.30 AH
-L- POT Sta.191+82.28=
-DRIVEWAY- POT Sta.10+00.00
-L- POT Sta.193+98.77=
-Y30A- POT Sta.10+00.00
NAD 83/95
DETAIL 9
GRASS SWALE DATA
b = 2'
m = 3:1 & 3:1, n = 0.040
s = 0.56%
min. d = 1.5'
V10 = 1.57 fps
V2 = 1.48 fps
therefore, d10 = 0.89'
d2 = 0.82'
min. length of swale = 78'
req. L = 89'
I2 = 4.4 in./hr., Q2 = 3.0 cfs
I10 = 5.6 in./hr., Q10 = 3.75 cfs
DA = 0.78 ac.
Tc = 10 min.
Avg. c = 0.86
LEE VARRICK MOORE, JR
JASON ERIC HARRIS
WILLIAM J. NAGY
LINDA SIMMONS MANSFIELD
CHAE HUN CHA
GARLAND A. BLAIR, JR
MOHAMMAS & GHULAN KHAN
KAREN & KEVIN DILL
ROBERT C. HIGHTOWER
KEITH & SARAH CHARLES
CLAUDE EUGENE LEWIS
HIGH POINT CITY LIMITS (IN)
ROCK FILL IN POND SEE DETAIL "3"
HISTORICAL SPRING HOUSE NOT TO BE DISTURBED
"THE CONTRACTOR SHALL FULLY RESTORE EASEMENT AREA TO A CONDITION EQUAL TO OR BETTER THAN WHAT EXISTED PRIOR TO THE PROJECT"
HISTORICAL PROPERTY BOUNDARY
MATCHLINE STA.184+00.00 SHEET 5
MATCHLINE STA.198+00.00 SHEET 7
BL-30
PINC 184+52.11
STA. 190+20.49 -L-
27.05' RT.
PT Sta. 10+63.92
PC Sta. 10+93.71
POT Sta. 11+49.99
-L- ST Sta.189+72.37
CS Sta.188+22.37
PC Sta. 10+46.38
PT Sta. 11+15.02
-Y30A- POT Sta. 11+72.72
END CONSTRUCTION
-Y30A- POT Sta. 12+29.44
-DRIVEWAY- STA.191+82 RT.
PI Sta 10+55.41
Δ = 33°29'38.5" (LT)
D = 190°59'09.4"
L = 17.54'
T = 9.03'
R = 30.00'
PI Sta 11+04.83
Δ = 40°42'12.1" (RT)
D = 190°59'09.4"
L = 21.31'
T = 11.13'
R = 30.00'
SEE SHEET 2-J FOR INTERSECTION DETAILS
SEE SHEET 19 FOR -L- PROFILE
SEE SHEET 26 FOR -Y30A- PROFILE
SEE SHEET 28 FOR -DRIVEWAY- PROFILE
DETAIL 9
GRASS SWALE DATA (from basin #1)
b = 2'
m = 3:1 & 3:1, n = 0.040
s = 0.3%
min. d = 2'
V10 = 1.65 fps
V2 = 1.55 fps
therefore, d10 = 1.34'
d2 = 1.41'
min. length of swale = 192'*
req. L = 243'
I2 = 4.4 in./hr., Q2 = 9.2 cfs
I10 = 5.6 in./hr., Q10 = 11.7 cfs
DA = 2.43 ac.
Tc = 10 min.
Avg. c = 0.86
* Maximum lenght possible
GRASS SWALE DATA
b = 2'
m = 3:1 & 3:1, n = 0.040
s = 0.4%
min. d = 2'
V10 = 0.55 fps
V2 = 0.52 fps
therefore, d10 = 1.34'
d2 = 1.23'
min. length of swale = 76'
req. L = 62'
I2 = 4.4 in./hr., Q2 = 2.3 cfs
I10 = 5.6 in./hr., Q10 = 3.0 cfs
DA = 0.62 ac.
Tc = 10 min.
Avg. c = 0.86
DETAIL 14
TOE PROTECTION (Not to Scale)
d= 1Ft.
Type of Liner= PSRM
FROM STA. 194+50 TO STA. 195+96 -L- (RT)
FROM STA. 196+15 TO STA. 197+96 -L- (RT)
FROM STA. 198+09 TO STA. 198+26 -L- (RT)
PUE AREA WILL HAVE DUAL USE.
PDE WILL BE FROM R/W LINE TO LIMITS SHOWN FOR PDE.

REVISIONS

2. R/W LINE SHIFT PER HYDRO ON PARCELS 13, 15, 17, 19 AND 21.
3. NAME CHANGE ON PARCELS 14, 18, AND 20.
4. DELETION OF PARCEL 22.
5. REVISE FILL SLOPE TO 3:1 ON PARCEL 22 TO ELIMINATE EASEMENT.
9/29/09 R/W REVISION: REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES.
2/29/12 R/W REVISION: REMOVED PERMANENT DRAINAGE EASEMENT AND REVISED RIGHT OF WAY ON PARCEL 13; REMOVED PERMANENT DRAINAGE EASEMENT AND ADDED RIGHT OF WAY AND TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 15; CHANGED PERMANENT DRAINAGE EASEMENT TO RIGHT OF WAY AND REMOVED PERMANENT UTILITY EASEMENT ON PARCEL 17, 19, AND 21; - SLK

8/17/99

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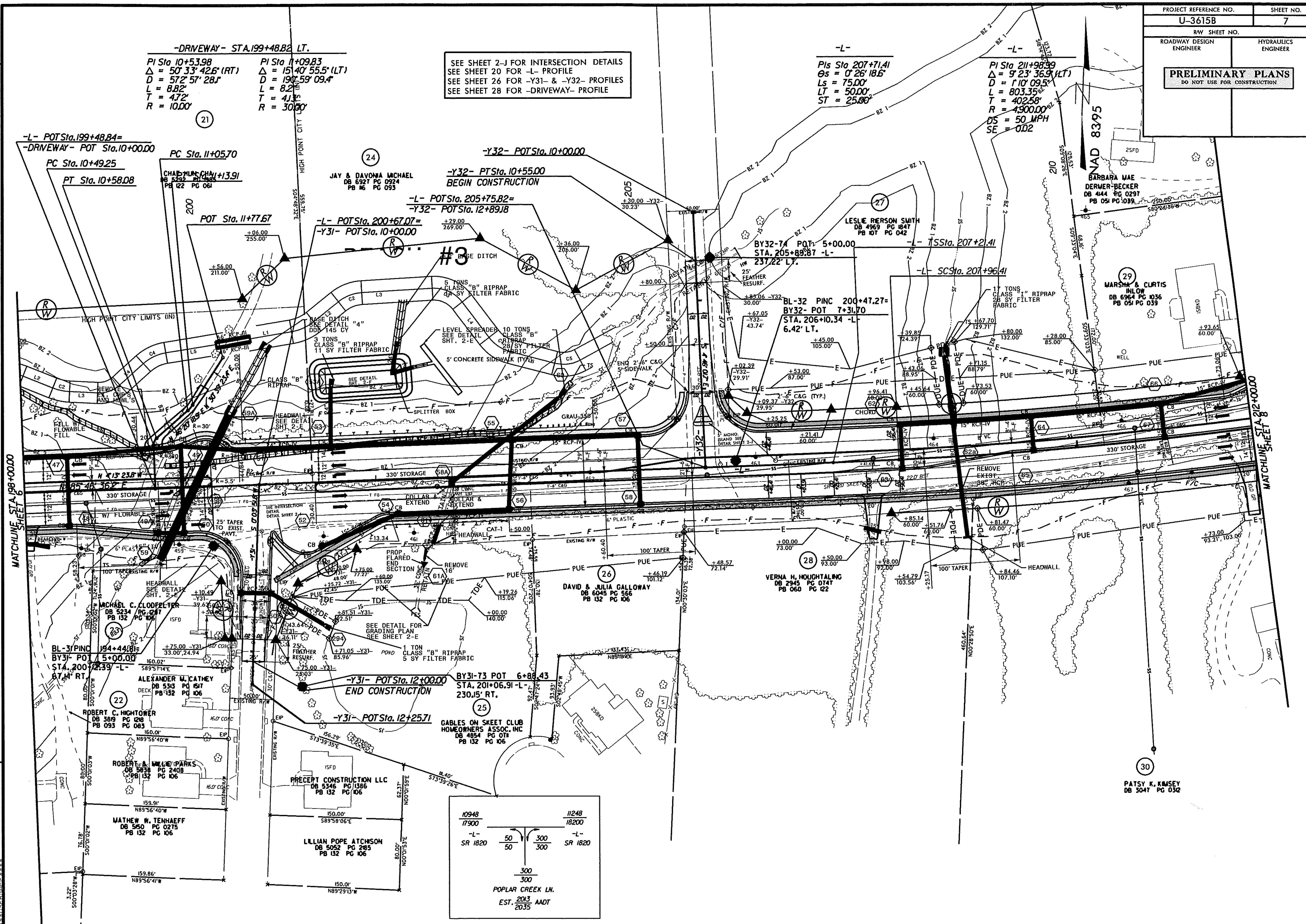
PROJECT REFERENCE NO.	SHEET NO.
U-3615B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHEET 2-J FOR INTERSECTION DETAILS
SEE SHEET 20 FOR -L- PROFILE
SEE SHEET 26 FOR -Y31- & -Y32- PROFILES
SEE SHEET 28 FOR -DRIVEWAY- PROFILE



-DRIVEWAY- STA.199+48.82 LT.
PI Sta 10+53.98
Δ = 50° 33' 42.6" (RT)
D = 572° 57' 28.1"
L = 8.82'
T = 4.72'
R = 10.00'
PI Sta 11+09.83
Δ = 15° 40' 55.5" (LT)
D = 190° 59' 09.4"
L = 8.21'
T = 4.13'
R = 30.00'
-L-
PIs Sta 207+71.41
Θs = 0° 26' 18.6"
Ls = 75.00'
LT = 50.00'
ST = 25.00'
-L-
PI Sta 211+98.99
Δ = 9° 23' 36.9" (LT)
D = 1° 10' 09.5"
L = 803.35'
T = 402.58'
R = 4,900.00'
DS = 50 MPH
SE = 0.02
NAD 83/95
-L- POT Sta. 199+48.84 =
-DRIVEWAY- POT Sta. 10+00.00
PC Sta. 10+49.25
PT Sta. 10+58.08
PC Sta. 11+05.70
POT Sta. 11+77.67
-Y32- POT Sta. 10+00.00
-Y32- PT Sta. 10+55.00
BEGIN CONSTRUCTION
-L- POT Sta. 205+75.82 =
-Y32- POT Sta. 12+89.18
-L- POT Sta. 200+67.07 =
-Y31- POT Sta. 10+00.00
BY32-74 POT 5+00.00
STA. 205+89.87 -L-
237.22' LT.
-L- TS Sta. 207+21.41
-L- SC Sta. 207+96.41
BL-32 PINC 200+47.27 =
BY32- POT 7+31.70
STA. 206+10.34 -L-
6.42' LT.
BL-31 PINC 194+44.81 =
BY31- POT 5+00.00
STA. 200+12.39 -L-
67.14' RT.
-Y31- POT Sta. 12+00.00
END CONSTRUCTION
BY31-73 POT 6+88.43
STA. 201+06.91 -L-
230.15' RT.
-Y31- POT Sta. 12+25.71
HIGH POINT CITY LIMITS (IN)
MATCHLINE STA. 198+00.00 SHEET 6
MATCHLINE STA. 212+00.00 SHEET 8
330' STORAGE
BASE DITCH
SEE DETAIL "4"
3 TONS CLASS "B" RIPRAP
11 SY FILTER FABRIC
5 TONS CLASS "B" RIPRAP
45 SY FILTER FABRIC
LEVEL SPREADER 10 TONS CLASS "B" RIPRAP
SEE DETAIL SHT. 2-E
5' CONCRETE SIDEWALK (TYP.)
17 TONS CLASS "I" RIPRAP
28 SY FILTER FABRIC
SEE DETAIL FOR GRADING PLAN SEE SHEET 2-E
1 TON CLASS "B" RIPRAP
5 SY FILTER FABRIC
CHAD HUN CHI
JAY & DAVONNA MICHAEL
DB 6927 PG 0924
PB 116 PG 093
LESLIE RIERSON SMITH
DB 4969 PG 1847
PB 107 PG 042
BARBARA MAE DERMER-BECKER
DB 4144 PG 0297
PB 051 PG 039
MARSHA & CURTIS INLOW
DB 6964 PG 1036
PB 051 PG 039
MICHAEL C. CLODFELTER
DB 5234 PG 1287
PB 132 PG 106
ALEXANDER M. CATHEY
DB 5313 PG 1517
PB 132 PG 106
ROBERT C. HIGHTOWER
DB 3819 PG 1218
PB 093 PG 083
ROBERT & MILLIE PARKS
DB 5838 PG 2408
PB 132 PG 106
MATHEW W. TENHAEFF
DB 5150 PG 0275
PB 132 PG 106
PRECEPT CONSTRUCTION LLC
DB 5346 PG 1386
PB 132 PG 106
LILLIAN POPE ATCHISON
DB 5052 PG 2185
PB 132 PG 106
GABLES ON SKEET CLUB HOMEOWNERS ASSOC. INC
DB 4854 PG 0111
PB 132 PG 106
DAVID & JULIA GALLOWAY
DB 6045 PG 566
PB 132 PG 106
VERNA H. HOUGHTALING
DB 2945 PG 0747
PB 060 PG 122
PATSY K. KINSEY
DB 3047 PG 0312
10948 / 17900
11248 / 18200
-L- SR 1820
POPLAR CREEK LN.
EST. 2013 / 2035 AADT

REVISIONS

2. RW LINE SHIFT PER HYDRO ON PARCEL 21.
3. NAME CHANGE ON PARCELS 24, 26 AND 29.
4. DELETION OF PARCEL 22.
5. REVISE FILL SLOPE TO 3:1 ON PARCEL 22 TO ELIMINATE EASEMENT.

9/29/09 RW REVISION: REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES.
2/29/12 RW REVISION: CHANGED PERMANENT DRAINAGE EASEMENT TO RIGHT OF WAY AND REMOVED PERMANENT UTILITY EASEMENT ON PARCELS 21 AND 24; REVISED PERMANENT UTILITY EASEMENT AND ADDED TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 28. - SLK
5/14/12 RW REVISION: CHANGED PERMANENT UTILITY EASEMENT/PERMANENT DRAINAGE EASEMENT OVERLAP TO DRAINAGE UTILITY EASEMENT ON PARCEL 27. - SLK
7/12/12 RW REVISION: CHANGED PERMANENT UTILITY EASEMENT TO TEMPORARY CONSTRUCTION EASEMENT AND ADDED DRIVEWAY PIPE ON PARCEL 28. - SLK

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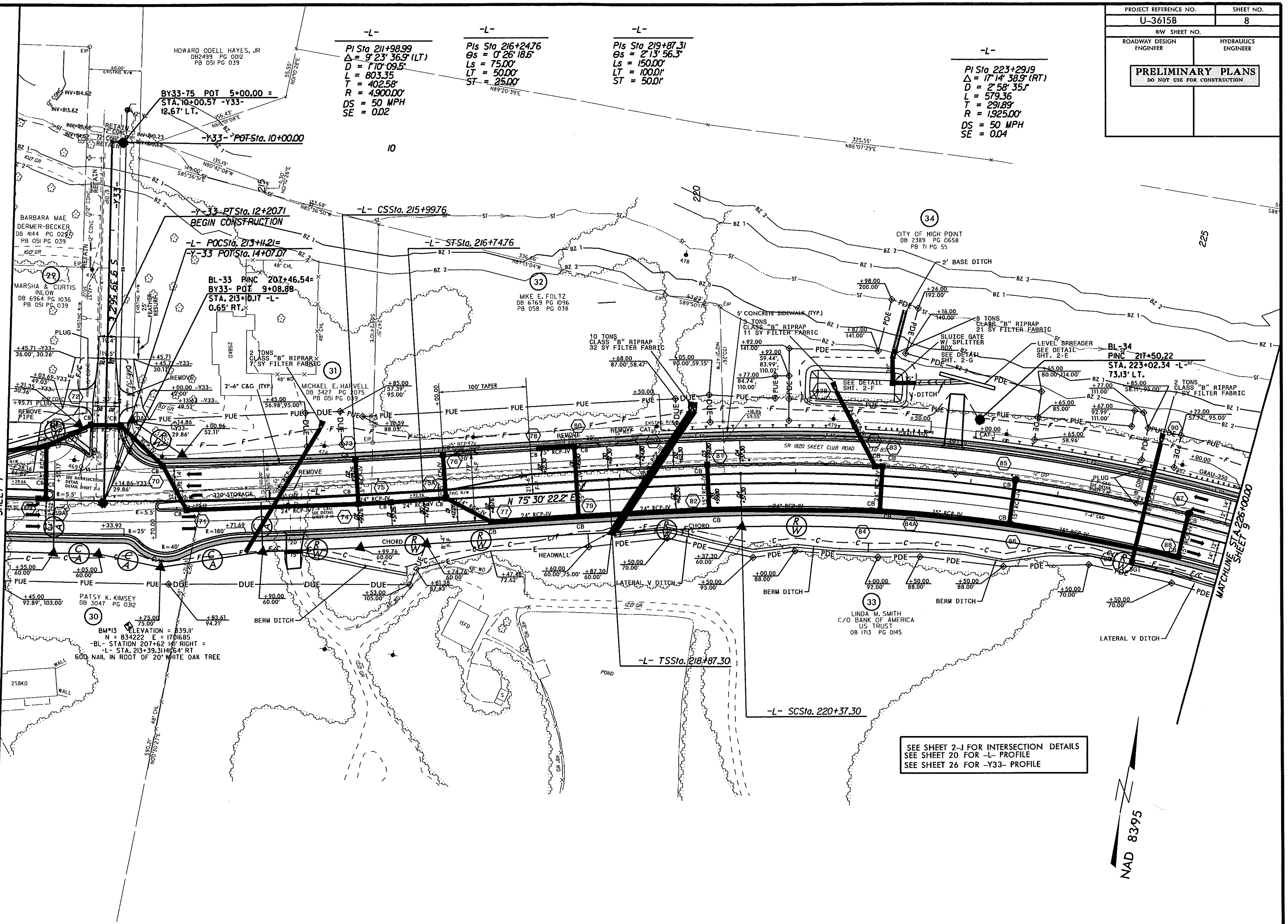
PROJECT REFERENCE NO.	SHEET NO.
U-3615B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



SEE SHEET 2-J FOR INTERSECTION DETAILS
SEE SHEET 20 FOR -L- PROFILE
SEE SHEET 26 FOR -Y33- PROFILE

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/29/09
2. CHANGED PUE/PDE OVERLAP TO DUE ON PARCEL 32.
3. NAME CHANGE ON PARCELS 29 AND 32.
4. CHANGE PUE TO DUE - CLOSED CLAIM ON PARCEL 33.
5. ADDED 3 - CURB CUTS ON PARCEL 32.
6. CHANGE PDE TO DUE ON PARCEL 31. (1-10-12) S.L.K.

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3615B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

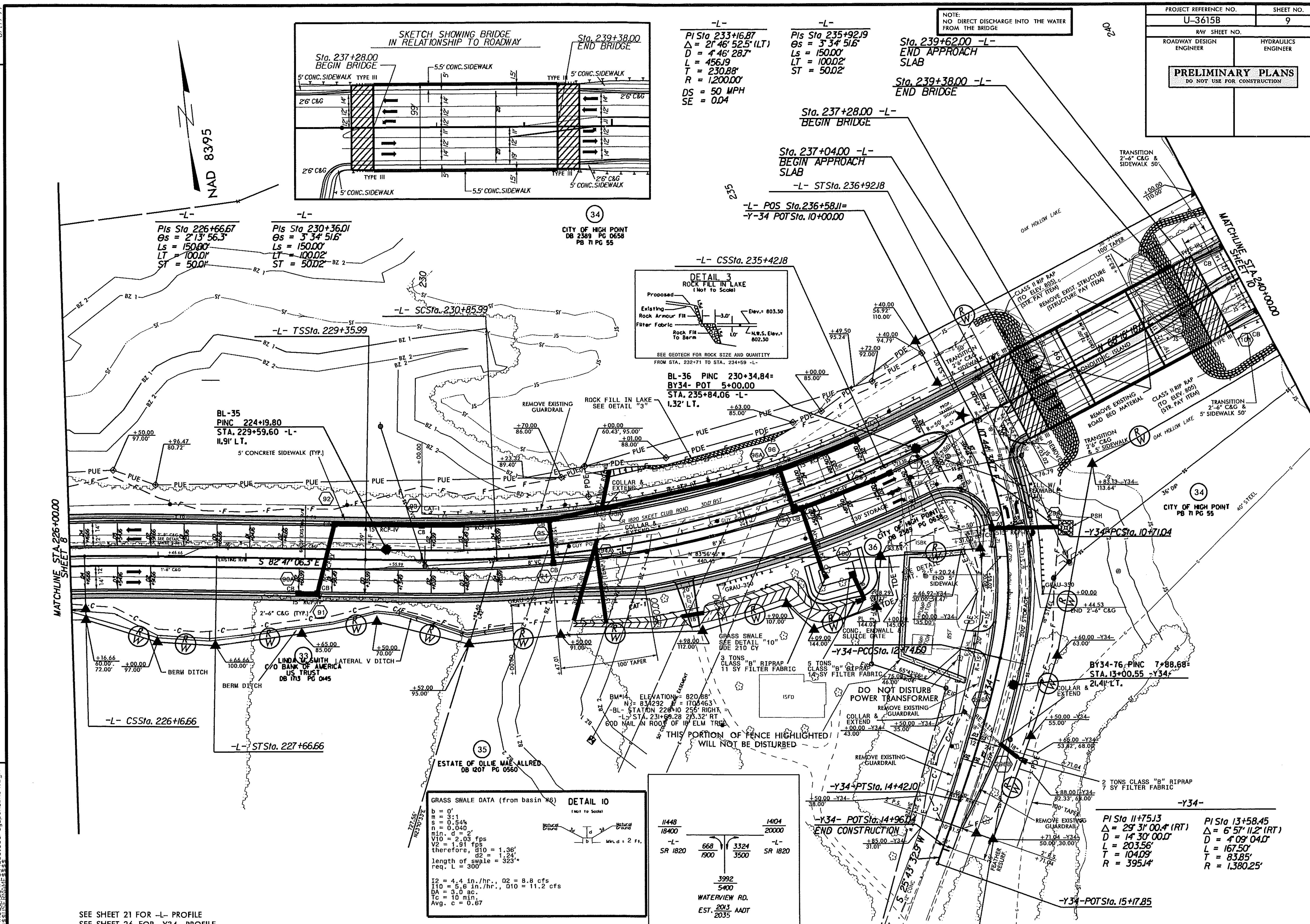
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/2/09
2. NAME CHANGE ON PARCEL 35.
3. REVISED RW TO PROPERTY LINE, ADDED TDE, ADDED NOTE TO PLANS FOR EXIST. FENCE, ADDED NOTE TO PLANS FOR POWER TRANSFORMER ON PARCEL 36.

5/14/12 RW REVISION: NAME CHANGE TO ESTATE OF OLLIE MAE ALLRED ON PARCEL 35. - SLK



SKETCH SHOWING BRIDGE IN RELATIONSHIP TO ROADWAY
Sta. 237+28.00 BEGIN BRIDGE
Sta. 239+38.00 END BRIDGE
NAD 83/95
NOTE: NO DIRECT DISCHARGE INTO THE WATER FROM THE BRIDGE
-L- PI Sta 233+16.87 Δ = 21° 46' 52.5" (LT) D = 4° 46' 28.7" L = 456.19 T = 230.88' R = 1,200.00' DS = 50 MPH SE = 0.04
-L- PIs Sta 235+92.19 θs = 3° 34' 51.6" Ls = 150.00' LT = 100.02' ST = 50.02'
Sta. 239+62.00 -L- END APPROACH SLAB
Sta. 239+38.00 -L- END BRIDGE
Sta. 237+28.00 -L- BEGIN BRIDGE
Sta. 237+04.00 -L- BEGIN APPROACH SLAB
-L- STSta. 236+92.18
-L- POS Sta. 236+58.11= -Y-34 POT Sta. 10+00.00
-L- PIs Sta 226+66.67 θs = 2° 13' 56.3" Ls = 150.00' LT = 100.01' ST = 50.01'
-L- PIs Sta 230+36.01 θs = 3° 34' 51.6" Ls = 150.00' LT = 100.02' ST = 50.02'
CITY OF HIGH POINT DB 2389 PG 0658 PB 71 PG 55
-L- CSSta. 235+42.18
DETAIL 3 ROCK FILL IN LAKE (Not to Scale)
SEE GEOTECH FOR ROCK SIZE AND QUANTITY FROM STA. 232+71 TO STA. 234+59 -L-
-L- SCSta. 230+85.99
-L- TSSta. 229+35.99
BL-36 PINC 230+34.84= BY34- POT 5+00.00 STA. 235+84.06 -L- 1.32' LT.
BL-35 PINC 224+19.80 STA. 229+59.60 -L- 11.91' LT.
MATCHLINE STA. 226+00.00 SHEET 8
MATCHLINE STA. 240+00.00 SHEET 10
-Y34- PCSta. 10+71.04
-Y34- PCCSta. 12+74.60
BY34-76 PINC 7+88.68= STA. 13+00.55 -Y34- 21.41' LT.
DO NOT DISTURB POWER TRANSFORMER
THIS PORTION OF FENCE HIGHLIGHTED WILL NOT BE DISTURBED
BM#14 ELEVATION = 820.88'
LINDA V. SMITH C/O BANK OF AMERICA US TRUST DB 1713 PG 0445
ESTATE OF OLLIE MAE ALLRED DB 1207 PG 0560
-L- CSSta. 226+16.66
-L- STSta. 227+66.66
-Y34- PTSta. 14+42.10
-Y34- POTSta. 14+96.14 END CONSTRUCTION
-Y34- POTSta. 15+17.85
-Y34- PI Sta 11+75.13 Δ = 29° 31' 00.4" (RT) D = 14° 30' 00.0" L = 203.56' T = 104.09' R = 395.14'
PI Sta 13+58.45 Δ = 6° 57' 11.2" (RT) D = 4° 09' 04.0" L = 167.50' T = 83.85' R = 1,380.25'
GRASS SWALE DATA (from basin #6) DETAIL 10
b = 0' m = 3:1 s = 0.54% n = 0.040 min. d = 2' V10 = 2.03 fps V2 = 1.91 fps therefore, d10 = 1.36' d2 = 1.24' length of swale = 323'± req. L = 300'
I2 = 4.4 in./hr., Q2 = 8.8 cfs I10 = 5.6 in./hr., Q10 = 11.2 cfs DA = 3.0 ac. Tc = 10 min. Avg. c = 0.67
WATERVIEW RD. EST. 2013/2035 AADT

SEE SHEET 21 FOR -L- PROFILE
SEE SHEET 26 FOR -Y34- PROFILE

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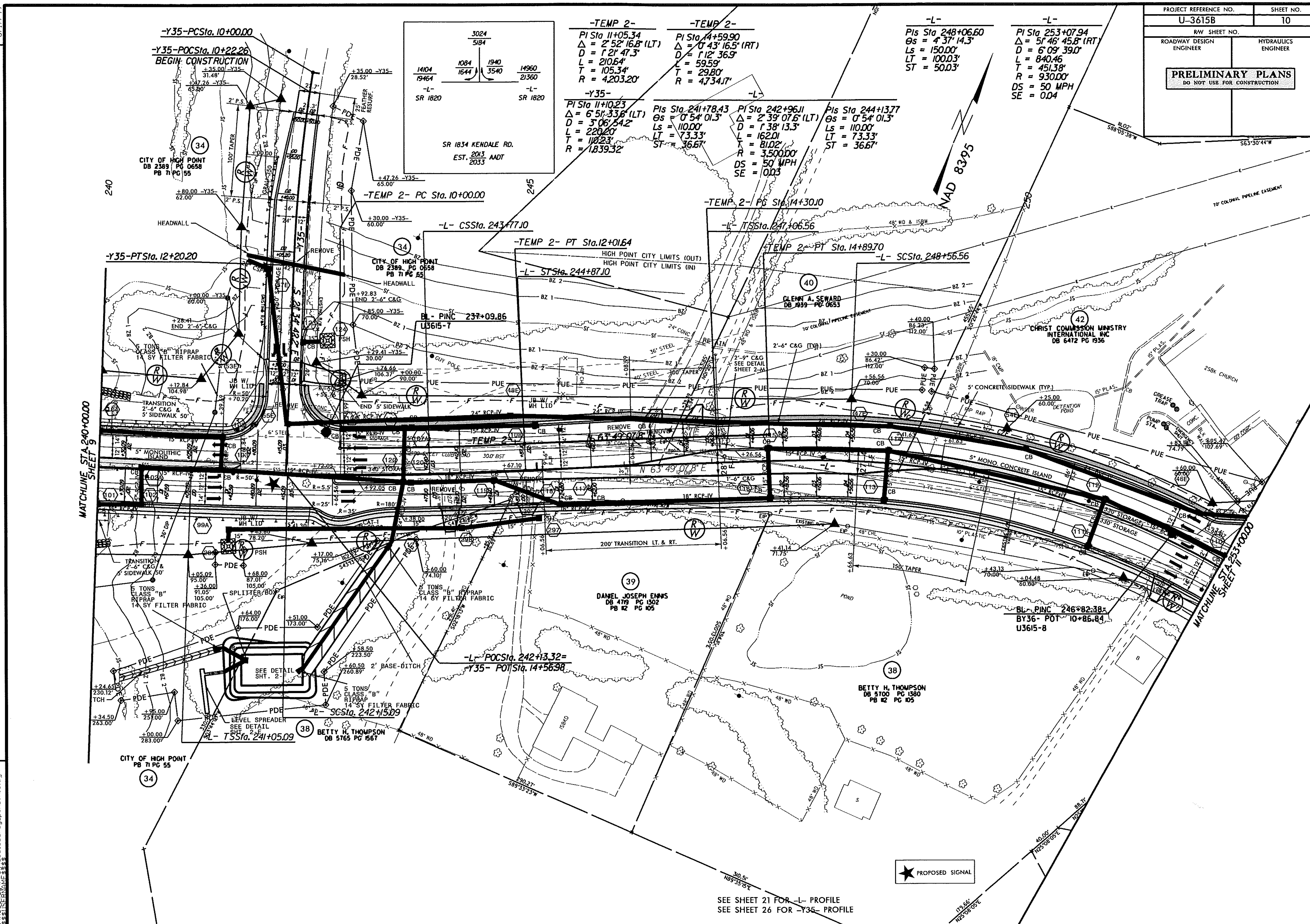

PROJECT REFERENCE NO. U-3615B
SHEET NO. 10
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
-TEMP 2-
PI Sta 11+05.34
Δ = 2° 52' 16.8" (LT)
D = 1° 21' 47.3"
L = 210.64'
T = 105.34'
R = 4,203.20'
-TEMP 2-
PI Sta 14+59.90
Δ = 0° 43' 16.5" (RT)
D = 1° 12' 36.9"
L = 59.59'
T = 29.80'
R = 4,734.17'
-Y35-
PI Sta 11+10.23
Δ = 6° 51' 33.6" (LT)
D = 3° 06' 54.2"
L = 220.20'
T = 110.23'
R = 1,839.32'
-L-
PIs Sta 241+78.43
θs = 0° 54' 01.3"
Ls = 110.00'
LT = 73.33'
ST = 36.67'
PI Sta 242+96.11
Δ = 2° 39' 07.6" (LT)
D = 1° 38' 13.3"
L = 162.01'
R = 3,500.00'
DS = 50 MPH
SE = 0.03
PIs Sta 244+13.77
θs = 0° 54' 01.3"
Ls = 110.00'
LT = 73.33'
ST = 36.67'
-L-
PIs Sta 248+06.60
θs = 4° 37' 14.3"
Ls = 150.00'
LT = 100.03'
ST = 50.03'
-L-
PI Sta 253+07.94
Δ = 51° 46' 45.8" (RT)
D = 6° 09' 39.0"
L = 840.46
T = 451.38'
R = 930.00'
DS = 50 MPH
SE = 0.04
SR 1834 KENDALE RD.
EST. 2013 / 2033 AADT
NAD 83/95
-Y35-PCSta. 10+00.00
-Y35-POCSta. 10+22.26
BEGIN CONSTRUCTION
-Y35-PTSta. 12+20.20
-TEMP 2- PC Sta. 10+00.00
-L- CSSta. 243+77.10
-TEMP 2- PT Sta. 12+01.64
-L- STSta. 244+87.10
-TEMP 2- PC Sta. 14+30.10
-L- TSSta. 247+06.56
-TEMP 2- PT Sta. 14+89.70
-L- SCSta. 248+56.56
HIGH POINT CITY LIMITS (OUT)
HIGH POINT CITY LIMITS (IN)
BL- PINC 237+09.86
U3615-7
BL- PINC 246+82.38
BY36- POT 10+86.84
U3615-8
-L- POCSta. 242+13.32=
-Y35- POTSta. 14+56.98
-L- SCSta. 242+15.09
-L- TSSta. 241+05.09
MATCHLINE STA. 240+00.00 SHEET 9
MATCHLINE STA. 253+00.00 SHEET 11
CITY OF HIGH POINT DB 2389 PG 0658 PB 11 PG 55
GLENN A. SEWARD DB 1939 PG 0653
CHRIST COMMISSION MINISTRY INTERNATIONAL INC DB 6472 PG 1936
DANIEL JOSEPH ENNIS DB 4719 PG 1302 PB 112 PG 105
BETTY H. THOMPSON DB 5700 PG 1380 PB 112 PG 105
BETTY H. THOMPSON DB 5765 PG 1567
5' CONCRETE SIDEWALK (TYP.)
5' MONO CONCRETE ISLAND
200' TRANSITION LT. & RT.
150' TAPER
SEE DETAIL SHT. 2
PROPOSED SIGNAL
SEE SHEET 21 FOR -L- PROFILE
SEE SHEET 26 FOR -Y35- PROFILE

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/2/09
2. NAME CHANGE ON PARCEL 38 AND AND COMBINE WITH PARCEL 41.
3. NAME CHANGE ON PARCEL 42.

02/2013 R/W REVISION: THE PDE WAS REVISED AROUND RELOCATED BASIN #5 ON PARCELS 34 AND 38 AND PDE WAS ADDED FROM -L- STA. 241+36.00 TO STA. 241+68.00 RT. ON PARCEL 34.- TEM

8/17/99

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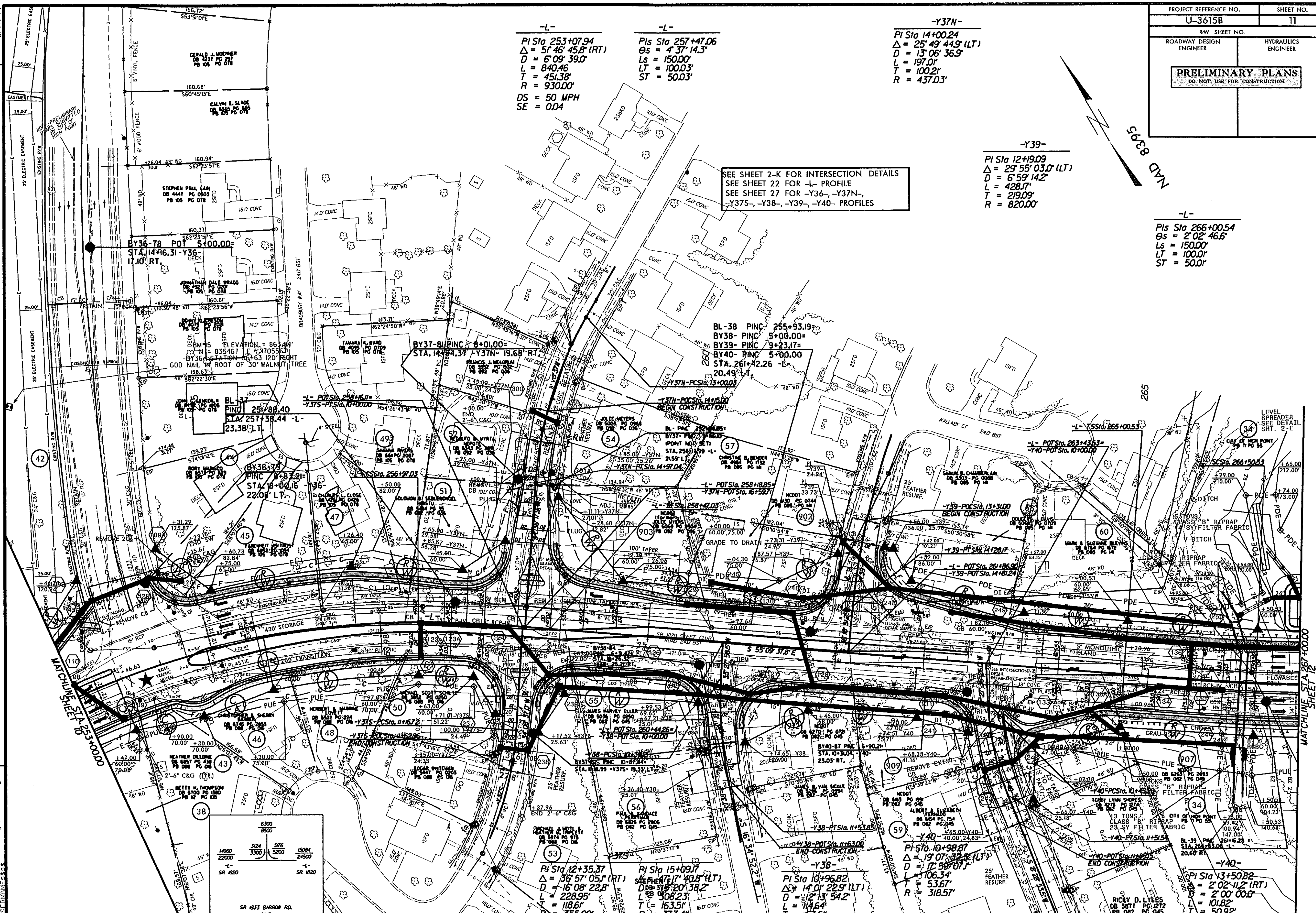
8/17/99

REVISIONS

2. NAME CHANGE ON PARCEL 45 TO FARENHEIT 451.
1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/29/09
2. NAME CHANGE ON PARCELS 43, 44, 45, 46, 48, 49, 51, 52, 53, 56, 59, AND 60.
3. PDE LINE SHIFT ON PARCEL 58.
4. NAME CHANGE ON PARCELS 902, 903 AND 909 TO NCDOT.
5. 7/23/12 R/W REVISION: REVISED CONSTRUCTION EASEMENT AND LABELS; PROPOSED CATCH BASIN SHIFTED AND NAME CHANGE ON PARCEL 57. SLK



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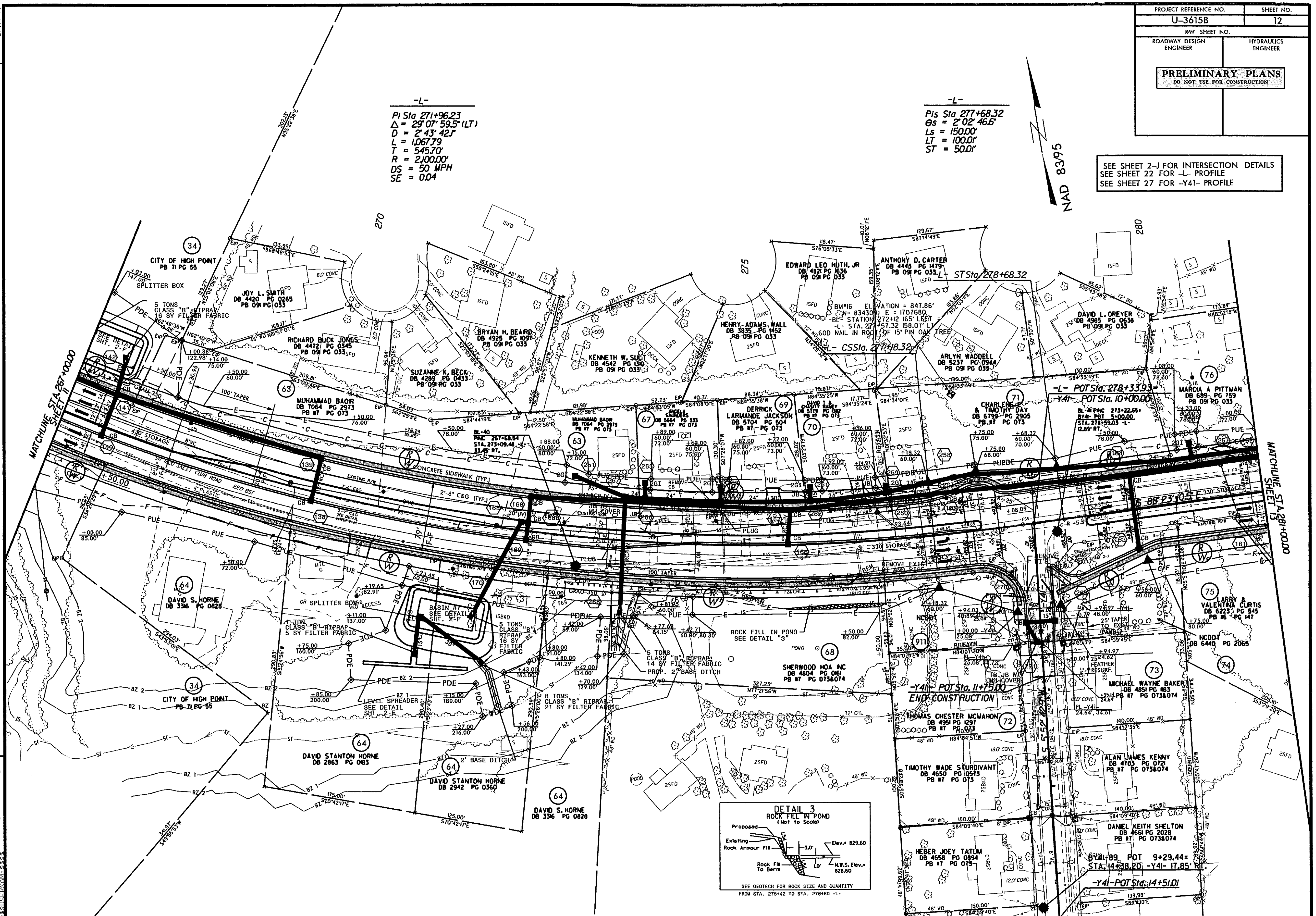
PROJECT REFERENCE NO.	SHEET NO.
U-3615B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-
PI Sta 271+96.23
Δ = 29° 07' 59.5" (LT)
D = 2° 43' 42.1"
L = 1,067.79
T = 545.70'
R = 2,100.00'
DS = 50 MPH
SE = 0.04

-L-
PIs Sta 277+68.32
θs = 2° 02' 46.6"
Ls = 150.00'
LT = 100.01'
ST = 50.01'

SEE SHEET 2-J FOR INTERSECTION DETAILS
SEE SHEET 22 FOR -L- PROFILE
SEE SHEET 27 FOR -Y41- PROFILE



NAD 83/95
MATCHLINE STA 267+00.00 SHEET 11
MATCHLINE STA 281+00.00 SHEET 13
CITY OF HIGH POINT PB 71 PG 55
JOY L. SMITH DB 4420 PG 0265 PB 09 PG 033
RICHARD BUCK JONES DB 4472 PG 0345 PB 09 PG 033
BRYAN H. BEARD DB 4925 PG 1097 PB 09 PG 033
SUZANNE K. BECK DB 4289 PG 0433 PB 09 PG 033
MUHAMMAD BADIR DB 7064 PG 2973 PB 87 PG 073
KENNETH W. SUL DB 4542 PG 134 PB 09 PG 033
HENRY ADAMS WALL DB 3835 PG 1452 PB 09 PG 033
EDWARD LEO HUTH, JR DB 4821 PG 1636 PB 09 PG 033
ANTHONY D. CARTER DB 4443 PG 1479 PB 09 PG 033
ARLYN WADDELL DB 5237 PG 0944 PB 09 PG 033
DAVID L. DREYER DB 4985 PG 0638 PB 09 PG 033
DERRICK LARMANDE JACKSON DB 5704 PG 504 PB 87 PG 073
CHARLENE & TIMOTHY DAY DB 6799 PG 2905 PB 87 PG 073
MARCIA A PITTMAN DB 689 PG 759 PB 09 PG 033
DAVID S. HORNE DB 3516 PG 0828
SHERWOOD HOA INC DB 4804 PG 0161 PB 87 PG 073&074
LARRY & VALENTINA CURTIS DB 6223 PG 545 PB 86 PG 147
NCDOT DB 6440 PG 2065
MICHAEL WAYNE BAKER DB 4851 PG 83 PB 87 PG 073&074
THOMAS CHESTER MCMAHON DB 4951 PG 1297 PB 87 PG 073
TIMOTHY WADE STURDIVANT DB 4650 PG 0573 PB 87 PG 073
ALAN JAMES KENNY DB 4703 PG 0721 PB 87 PG 073&074
DANIEL KEITH SHELTON DB 4661 PG 2028 PB 87 PG 073&074
HEBER JOEY TATUM DB 4658 PG 0894 PB 87 PG 073
DAVID STANTON HORNE DB 2863 PG 0183
DAVID STANTON HORNE DB 2942 PG 0360
BM#16 ELEVATION = 847.86' N= 834309 E = 1707680 -BL- STATION 272+12 165' LEFT -L- STA. 27+57.32 158.07' LT 60D NAIL IN ROOT OF 15" PIN OAK TREE
-L- STSta 278+68.32
-L- CSSta 277+18.32
-L- POTSta. 278+33.93= -Y41- POTSta. 10+00.00
-Y41- POTSta. 11+75.00 END CONSTRUCTION
-Y41- POTSta. 14+51.01
SPLITTER BOX
5 TONS CLASS "B" RIPRAP 16 SY FILTER FABRIC
BASIN #1 SEE DETAIL SHT. 2-F
ROCK FILL IN POND SEE DETAIL "3"
LEVEL SPREADER SEE DETAIL SHT. 2-E
8 TONS CLASS "B" RIPRAP 21 SY FILTER FABRIC
CONCRETE SIDEWALK (TYP.)
2'-6" C&G (TYP.)
330' STORAGE
430' STORAGE
100' TAPER
DETAIL 3 ROCK FILL IN POND (Not to Scale)
SEE GEOTECH FOR ROCK SIZE AND QUANTITY
FROM STA. 275+42 TO STA. 276+60 -L-

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/2/09
2. NAME CHANGE ON PARCELS 63, 67, 69, 70, 71, 74 AND 75.
3. KEEP EXISTING DRIVE OPEN ON PARCEL 65.
4. NAME CHANGE ON PARCELS 76 AND DRIVE ENTRANCE CHANGE.
5. NAME CHANGE ON PARCEL 911 TO NCDOT.
5/1/12 R/W REVISION: COMBINED PARCELS 64, 65 & 66 INTO PARCEL 64. - SLK

8/17/99

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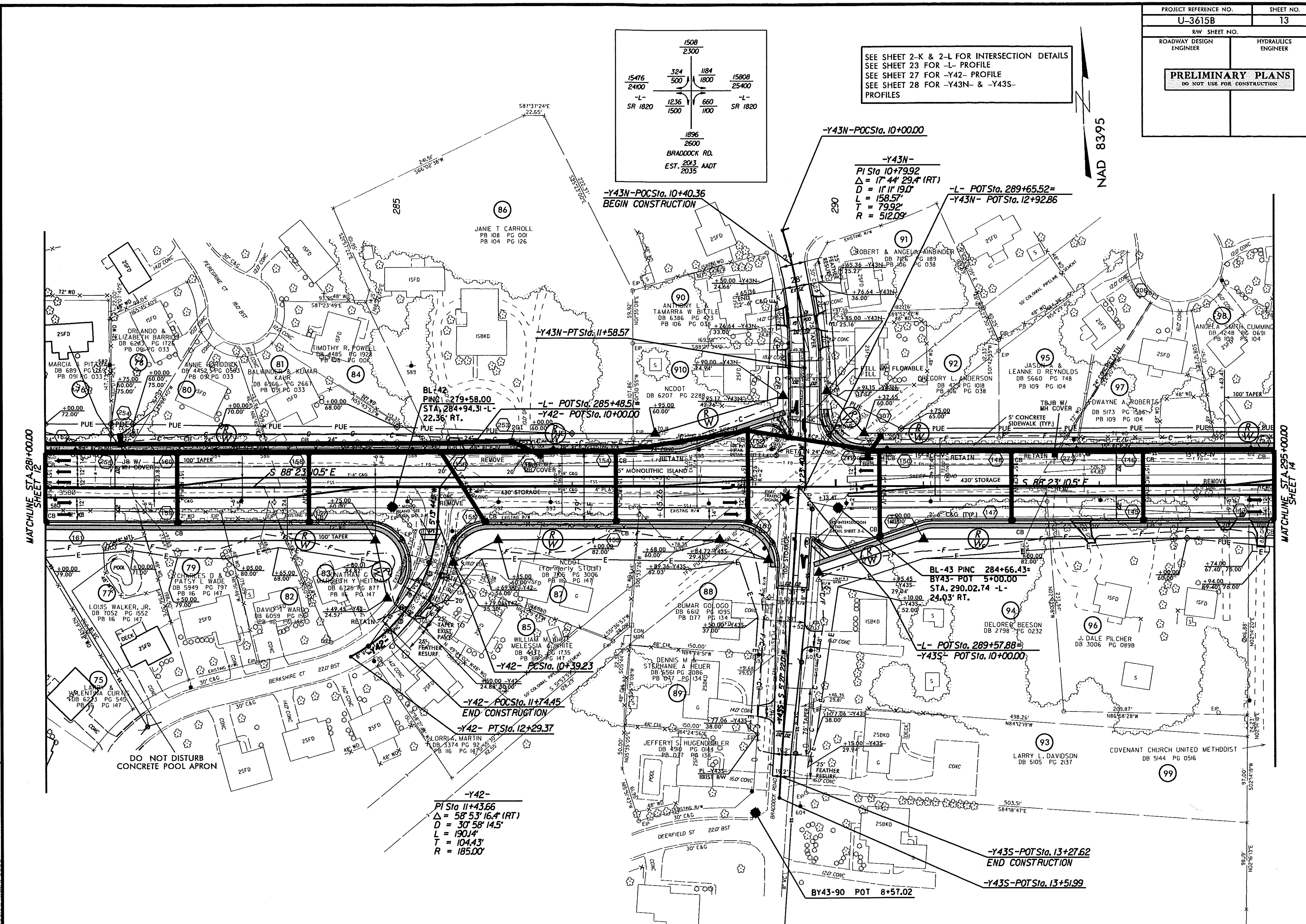
PROJECT REFERENCE NO.	SHEET NO.
U-3615B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHEET 2-K & 2-L FOR INTERSECTION DETAILS
SEE SHEET 23 FOR -L- PROFILE
SEE SHEET 27 FOR -Y42- PROFILE
SEE SHEET 28 FOR -Y43N- & -Y43S- PROFILES



REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/29/09
2. ADDED NOTE FOR POOL AND FLATTEN FILL SLOPE ON PARCEL 77.
3. NAME CHANGE ON PARCELS 78, 79, 81, 82, 83, 86, 87, 88, 89, 94, 95 AND 97.
4. NAME CHANGE ON PARCEL 910 TO NCDOT.
5. REVISED EASEMENT ON PARCEL 87.

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3615B	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

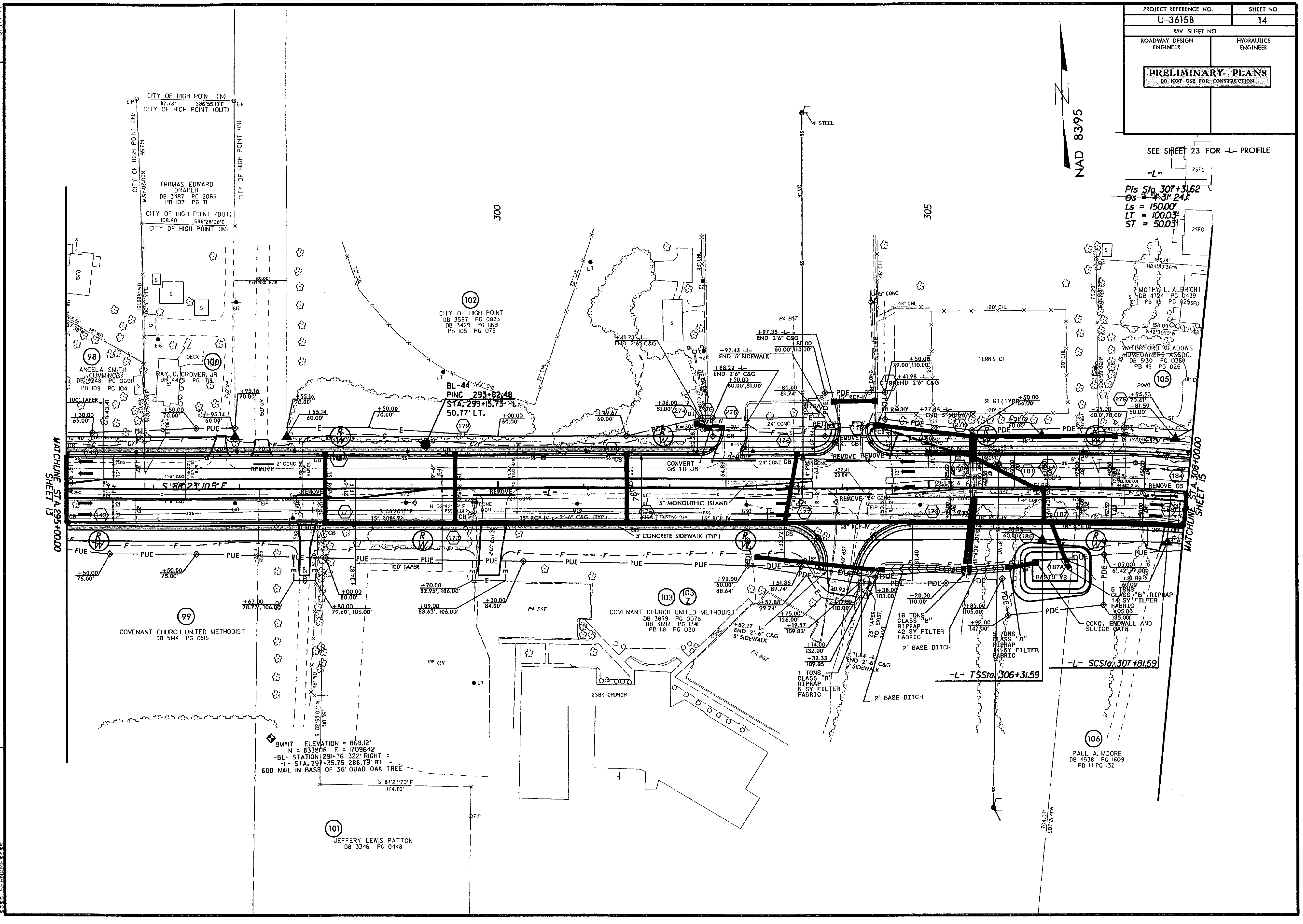
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/29/09
2. PROPERTY LINE CHANGE (ALREADY SENT IN) ON PARCEL 103. COMBINE WITH PARCEL 104 AND CHANGE PORTION OF PUE TO DUE.
3. CHANGE PORTION OF PUE TO DUE ON PARCEL 106.

12/18/12 - R/W REVISIONS; CHANGED PUE TO DUE FROM -L- STA. 302+90.00 TO STA. 307+05.00 RIGHT ON PARCEL 103; ADDED PDE FROM -L- STA. 302+90.00 TO STA. 305+20.00 RIGHT
CREATING PARCEL 103Z; THE NEW PDE REPLACES TCE FROM -L- STATION 303+51.36 TO 304+38.00 RIGHT.

8/17/99



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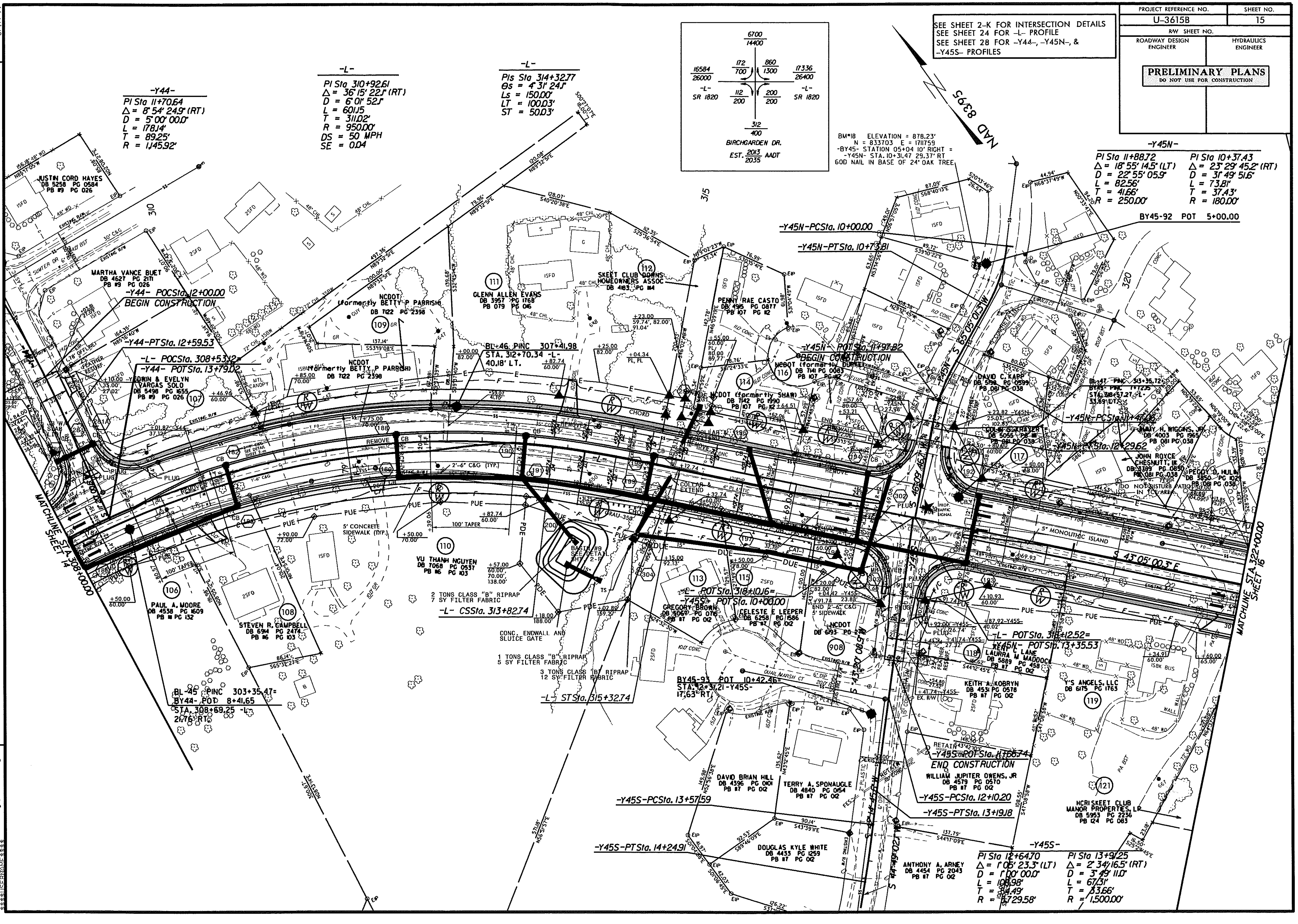
PROJECT REFERENCE NO.	SHEET NO.
U-3615B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHEET 2-K FOR INTERSECTION DETAILS
SEE SHEET 24 FOR -L- PROFILE
SEE SHEET 28 FOR -Y44-, -Y45N-, &
-Y45S- PROFILES



-Y44-
PI Sta 11+70.64
Δ = 8° 54' 24.9" (RT)
D = 5° 00' 00.0"
L = 178.14'
T = 89.25'
R = 1,145.92'
-L-
PI Sta 310+92.61
Δ = 36° 15' 22.1" (RT)
D = 6° 01' 52.1"
L = 601.15
T = 311.02'
R = 950.00'
DS = 50 MPH
SE = 0.04
-L-
PIs Sta 314+32.77
θs = 4° 31' 24.1"
Ls = 150.00'
LT = 100.03'
ST = 50.03'
-Y45N-
PI Sta 11+88.72
Δ = 18° 55' 14.5" (LT)
D = 22° 55' 05.9"
L = 82.56'
T = 41.66'
R = 250.00'
PI Sta 10+37.43
Δ = 23° 29' 45.2" (RT)
D = 31° 49' 51.6"
L = 73.81'
T = 37.43'
R = 180.00'
BY45-92 POT 5+00.00
BM#18 ELEVATION = 878.23'
N = 833703 E = 1711759
-BY45- STATION 05+04 10' RIGHT =
-Y45N- STA. 10+31.47 29.37' RT
60D NAIL IN BASE OF 24" OAK TREE
NAD 83/95
BIRCHGARDEN DR.
EST. 2013/2035 AADT
SR 1820
JUSTIN CORD HAYES
MARTHA VANCE BUET
-Y44- POCSta. 12+00.00
BEGIN CONSTRUCTION
-Y44-PTSta. 12+59.53
-L- POCSta. 308+53.12=
-Y44- POTSta. 13+79.02
NCDOT (formerly BETTY P PARRISH)
GLENN ALLEN EVANS
SKEET CLUB DOWNS HOMEOWNERS ASSOC
PENNY RAE CASTO
BL-46 PINC 307+41.98
STA. 312+70.34 -L- 40.18' LT.
-Y45N-PCSta. 10+00.00
-Y45N-PTSta. 10+73.81
-Y45N- POTSta. 11+97.82
BEGIN CONSTRUCTION
DAVID C. KAPP
MARY H. WIGGINS
JOHN ROYCE CHESNUTT, III
PEGGY D. HULL
MATCHLINE STA. 308+00.00 SHEET 14
MATCHLINE STA. 322+00.00 SHEET 16
S 43° 05' 00.3" E
5' MONOLITHIC ISLAND
PAUL A. MOORE
STEVEN R. CAMPBELL
VU THANH NGUYEN
GREGORY BROWN
CELESTE E LEEPER
-L- ROTSta. 318+10.16=
-Y45S- POTSta. 10+00.00
-L- CSSta. 313+82.74
-L- STSta. 315+32.74
BL-45 PINC 303+35.47=
BY44- POT 8+41.65
STA. 308+69.25 -L- 21.76' RT.
BY45-93 POT 10+42.46=
STA. 12+37.21 -Y45S- 17.63' RT.
-L- POTSta. 318+12.52=
-Y45N- POTSta. 13+35.53
KENT L LANE
LAURRA M MADDOCK
KEITH A. KOBRYN
Y'S ANGELS, LLC
-Y45S-POTSta. 11+06.74
END CONSTRUCTION
WILLIAM JUPITER OWENS, JR
DAVID BRIAN HILL
TERRY A. SPONAUGLE
HCRI SKEET CLUB MANOR PROPERTIES, LP
-Y45S-PCSta. 12+10.20
-Y45S-PTSta. 13+19.18
-Y45S-PCSta. 13+57.59
-Y45S-PTSta. 14+24.91
DOUGLAS KYLE WHITE
ANTHONY A. ARNEY
-Y45S-
PI Sta 12+64.70
Δ = 1° 05' 23.3" (LT)
D = 1° 00' 00.0"
L = 108.98'
R = 5,729.58'
PI Sta 13+91.25
Δ = 2° 34' 16.5" (RT)
D = 3° 49' 11.0"
L = 67.31'
T = 33.66'
R = 1,500.00'
2 TONS CLASS "B" RIPRAP
7 SY FILTER FABRIC
CONC. ENDWALL AND SLUICE GATE
1 TONS CLASS "B" RIPRAP
5 SY FILTER FABRIC
3 TONS CLASS "B" RIPRAP
12 SY FILTER FABRIC

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/29/09
2. NAME CHANGE ON PARCELS 107, 108, 109, 110, 112, 115, 118, 119 AND 121.
3. CHANGE PUE TO DUE ON PARCEL 115.
4. NAME CHANGE ON PARCEL 908 TO NCDOT.

5/14/12 R/W REVISION: CHANGED TEMPORARY CONSTRUCTION EASEMENT TO R/W AND MOVE R/W LINE TO ACCOUNT FOR STRIPE OF LAND LEFT BETWEEN PROPERTY LINE AND TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 112. - SLK

8/17/99

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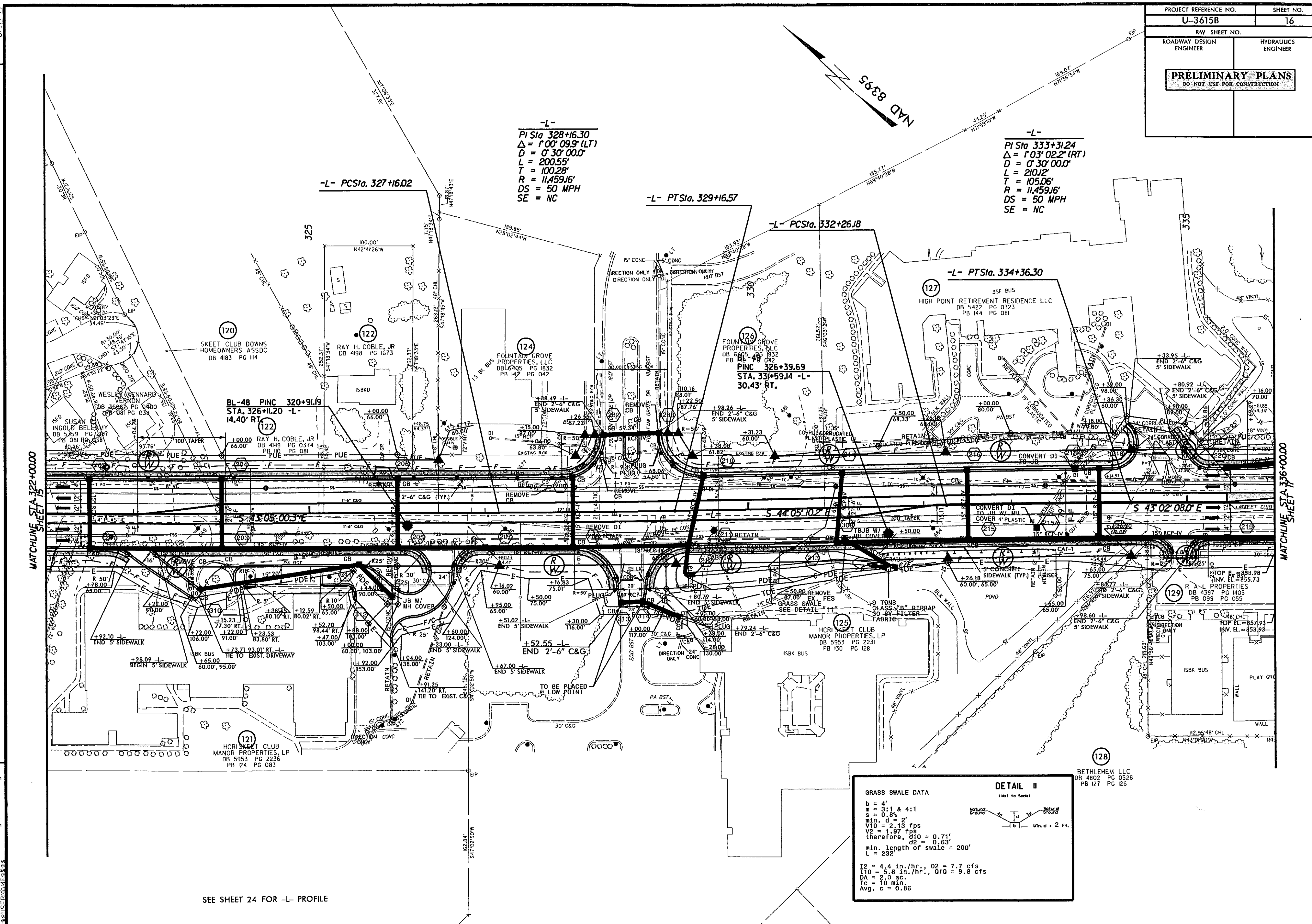
REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/29/09
2. NAME CHANGE ON PARCELS 120, 121, 124, 125 AND 126.

8/17/99



PROJECT REFERENCE NO. U-3615B
SHEET NO. 16
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
NAD 83/95
-L-
PI Sta 328+16.30
Δ = 1°00' 09.9" (LT)
D = 0°30' 00.0"
L = 200.55'
T = 100.28'
R = 11,459.16'
DS = 50 MPH
SE = NC
-L-
PI Sta 333+31.24
Δ = 1°03' 02.2" (RT)
D = 0°30' 00.0"
L = 210.12'
T = 105.06'
R = 11,459.16'
DS = 50 MPH
SE = NC
-L- PCSta. 327+16.02
-L- PTSta. 329+16.57
-L- PCSta. 332+26.18
-L- PTSta. 334+36.30
BL-48 PINC 320+91.19
STA. 326+11.20 -L- 14.40' RT.
BL-48 PINC 326+39.69
STA. 331+59.14 -L- 30.43' RT.
S 43°05' 00.3" E
S 44°05' 10.2" E
S 43°02' 08.0" E
MATCHLINE STA. 322+00.00 SHEET 15
MATCHLINE STA. 336+00.00 SHEET 17
SKEET CLUB DOWNS HOMEOWNERS ASSOC DB 4183 PG 1114
RAY H. COBLE, JR DB 4198 PG 1673
RAY H. COBLE, JR DB 4149 PG 0374 PB 118 PG 081
FOUNTAIN GROVE PROPERTIES, LLC DB 6405 PG 1832 PB 142 PG 042
HIGH POINT RETIREMENT RESIDENCE LLC DB 5422 PG 0723 PB 144 PG 081
HCRI SKEET CLUB MANOR PROPERTIES, LP DB 5953 PG 2236 PB 124 PG 083
HCRI SKEET CLUB MANOR PROPERTIES, LP DB 5953 PG 2231 PB 130 PG 128
R A L PROPERTIES DB 4397 PG 1405 PB 099 PG 055
BETHLEHEM LLC DB 4802 PG 0528 PB 127 PG 126
+52.55 -L- END 2'-6" C&G
9 TONS CLASS "B" RIPRAP 30 SY FILTER FABRIC
SEE DETAIL "11"
TO BE PLACED @ LOW POINT
DETAIL 11 (Not to Scale)
GRASS SWALE DATA
b = 4'
m = 3:1 & 4:1
s = 0.8%
min. d = 2'
V10 = 2.13 fps
V2 = 1.97 fps
therefore, d10 = 0.71'
d2 = 0.63'
min. length of swale = 200'
L = 232'
I2 = 4.4 in./hr., Q2 = 7.7 cfs
I10 = 5.6 in./hr., Q10 = 9.8 cfs
DA = 2.0 ac.
Tc = 10 min.
Avg. c = 0.86
SEE SHEET 24 FOR -L- PROFILE

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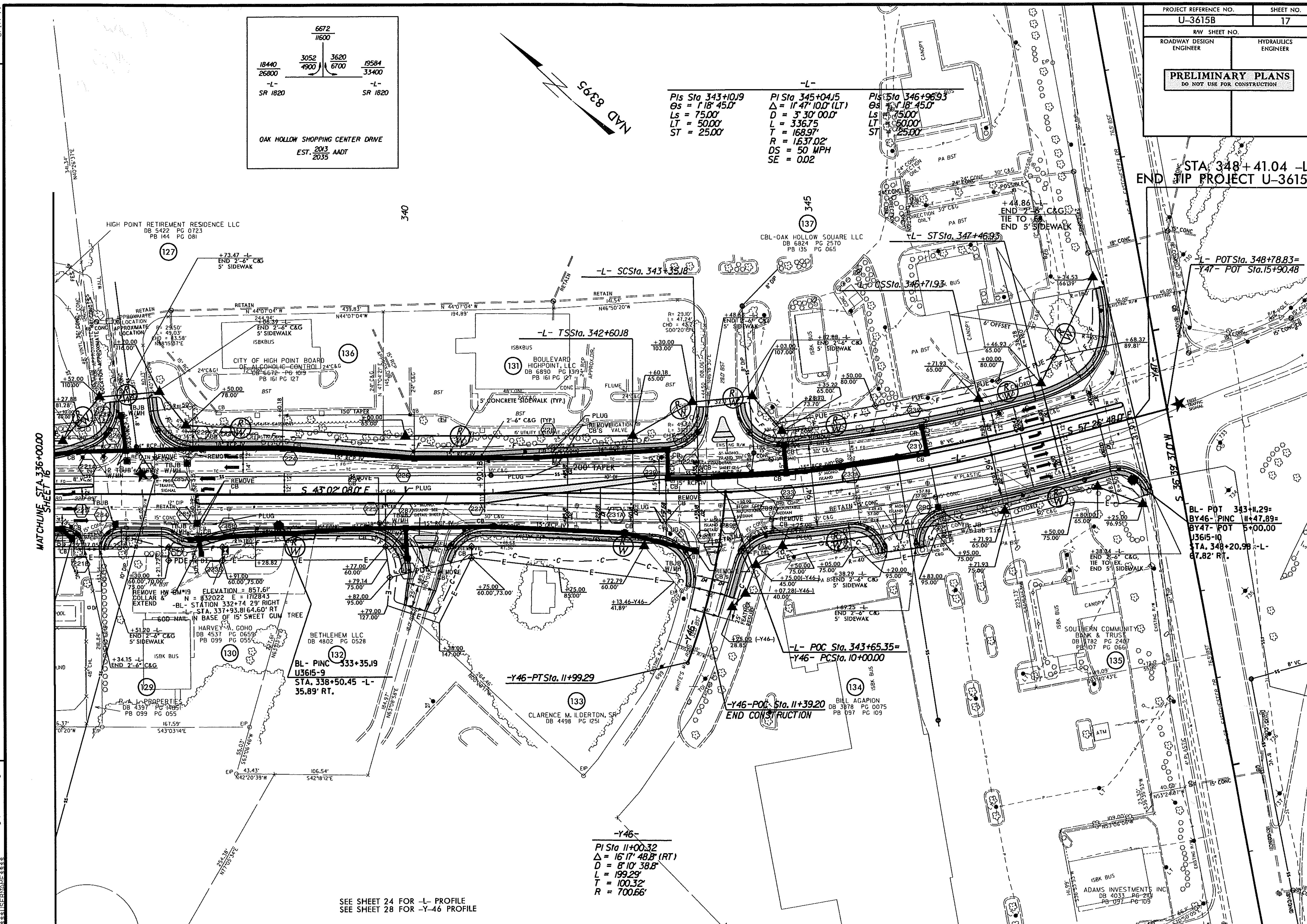
PROJECT REFERENCE NO.	SHEET NO.
U-3615B	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

1. REVISED LABEL OFFSETS FOR EXISTING RIGHT OF WAY TO ACTUAL DISTANCES. 9/29/09
2. REVISED PDE TO TCE PARCEL 132.
3. PROPERTY LINES, NAMES AND PARCEL NUMBERS CHANGED ON PARCEL 131.
4. NUMBER CHANGE ON PARCELS 124 TO 127.
5. NUMBER CHANGE ON PARCELS 127 TO 137.
6. NAME CHANGE ON PARCEL 135.
7. REDUCED SIDEWALK TO WITHIN PDE LIMITS ON PARCEL 132. (1-10-12) S.L.K.

8/17/99



OAK HOLLOW SHOPPING CENTER DRIVE
EST. 2013/2035 AADT
NAD 83/95
-L-
PIs Sta 343+10.19 Θs = 1°18' 45.0" Ls = 75.00' LT = 50.00' ST = 25.00'
PI Sta 345+04.15 Δ = 11° 47' 10.0" (LT) D = 3° 30' 00.0" L = 336.75 T = 168.97' R = 1,637.02' DS = 50 MPH SE = 0.02
PIs Sta 346+96.93 Θs = 1° 18' 45.0" Ls = 75.00' LT = 50.00' ST = 25.00'
STA. 348+41.04 -L- END TIP PROJECT U-3615B
MATCHLINE STA 336+00.00 SHEET 16
HIGH POINT RETIREMENT RESIDENCE LLC DB 5422 PG 0723 PB 144 PG 081
CITY OF HIGH POINT BOARD OF ALCOHOLIC CONTROL
BOULEVARD HIGHPOINT, LLC DB 6890 PG 1319 PB 161 PG 127
CBL-OAK HOLLOW SQUARE LLC DB 6824 PG 2570 PB 135 PG 065
HARVEY A. GOHO DB 4537 PG 0659 PB 099 PG 0055
BETHLEHEM LLC DB 4802 PG 0528
L PROPERTIES DB 4397 PG 1405 PB 099 PG 055
CLARENCE M. ILDERTON, SR. DB 4498 PG 1251
BILL AGAPION DB 3878 PG 0075 PB 097 PG 109
SOUTHERN COMMUNITY BANK & TRUST
ADAMS INVESTMENTS INC DB 4033 PG 210 PB 057 PG 109
S 43° 02' 08.0" E
S 57° 26' 48.0" E
-L- TS Sta. 342+60.18
-L- SC Sta. 343+35.18
-L- CS Sta. 346+71.93
-L- ST Sta. 347+46.93
-L- POT Sta. 348+78.83= -Y47- POT Sta. 15+90.48
-L- POC Sta. 343+65.35= -Y46- PC Sta. 10+00.00
-Y46- PT Sta. 11+99.29
-Y46- POC Sta. 11+39.20 END CONSTRUCTION
BL- PINC 333+35.19 U3615-9 STA. 338+50.45 -L- 35.89' RT.
BL- POT 343+11.29= BY46- PINC 11+47.89= BY47- POT 5+00.00 U3615-10 STA. 348+20.98 -L- 67.82' RT.
REMOVE HW BM#19 ELEVATION = 857.61' N = 832022 E = 1712843 -BL- STATION 332+74 29' RIGHT -L- STA. 337+93.81 64.60' RT 60D NAIL IN BASE OF 15' SWEET GUM TREE
-Y46- PI Sta 11+00.32 Δ = 16° 17' 48.8" (RT) D = 8° 10' 38.8" L = 199.29' T = 100.32' R = 700.66'
SEE SHEET 24 FOR -L- PROFILE
SEE SHEET 28 FOR -Y-46 PROFILE

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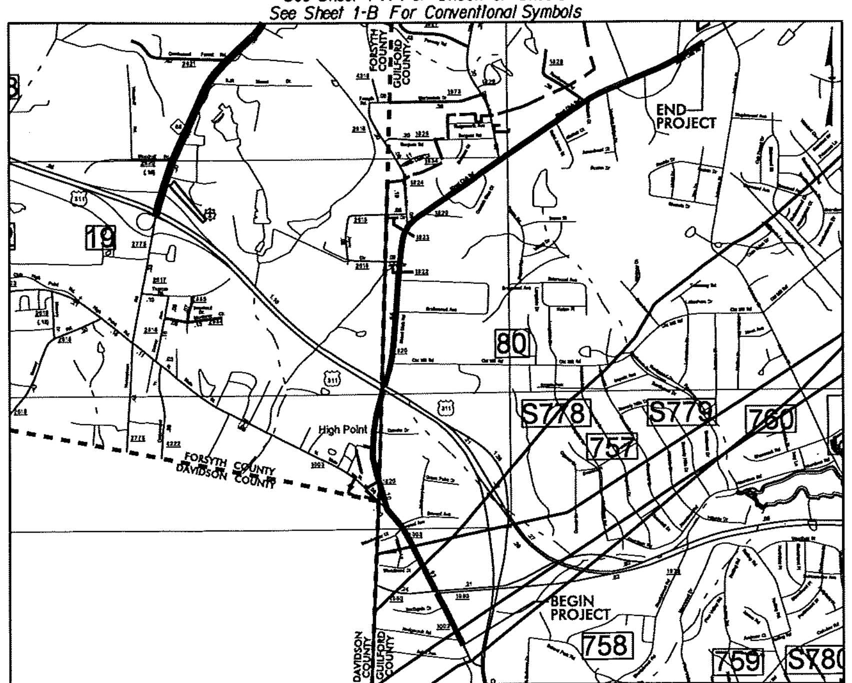
9/09/99

TIP: U-3615A

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



VICINITY MAP

Not To Scale

R/W PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GUILFORD COUNTY

ENGLISH

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3615A	1	

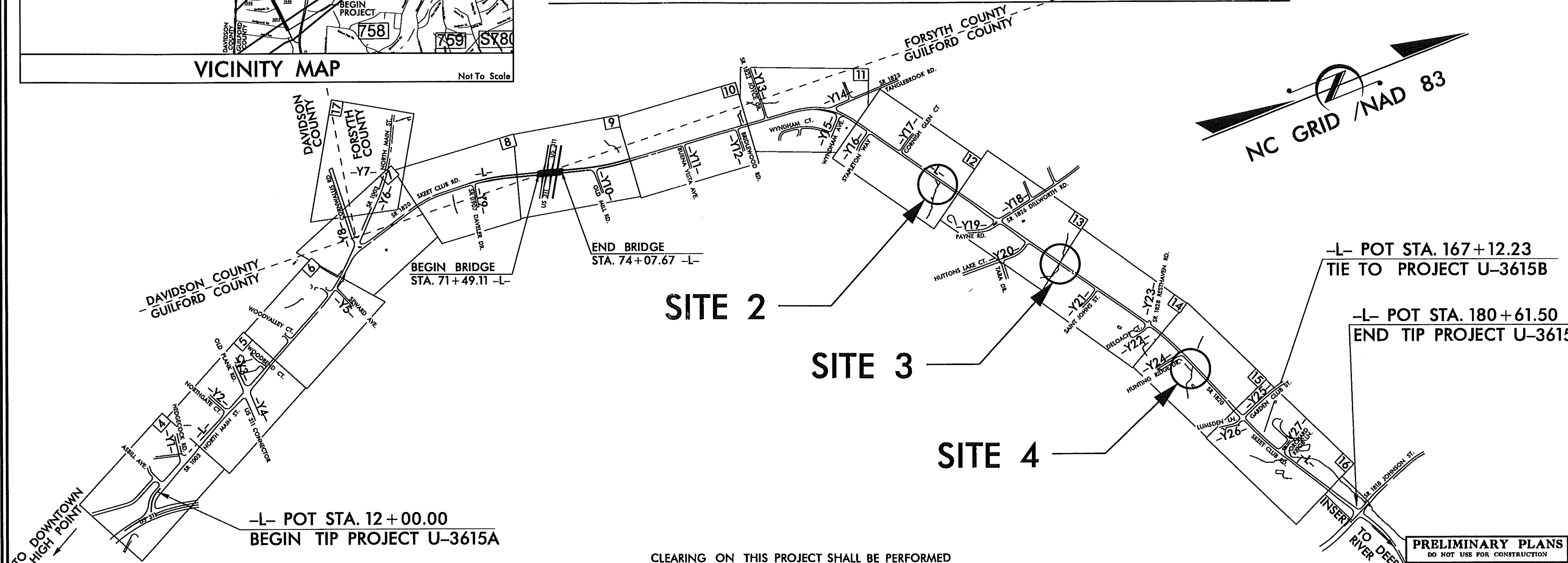
WBS NO.	F.A. PROJ. NO.	DESCRIPTION
34962.1.1	STP-1820(2)	P.E.
34962.2.2	STP-1820(4)	R/W & UTILITIES

Permit Drawing
Sheet 1 of 14

LOCATION: SR 1003 (NORTH MAIN STREET) AND SR 1820 (SKEET CLUB ROAD) BETWEEN US 311 AND SR 1818 (JOHNSON STREET).

TYPE OF WORK: GRADING, PAVING, DRAINAGE, GUARDRAIL, STRUCTURE, SIGNING AND SIGNALS

WETLAND/SURFACE WATER PERMIT DRAWING



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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

CONTRACT:

GRAPHIC SCALES

50 25 0 50 100 — PLANS

50 25 0 50 100 — PROFILE (HORIZONTAL)

10 5 0 10 20 — PROFILE (VERTICAL)

DESIGN DATA

ADT 2015 = 18,100
ADT 2035 = 29,800
DHV = 10 %
D = 55 %
T = 3 % *
V = 50 MPH
* TTST 1 % DUAL 2 %
FUNCTIONAL CLASS:
MINOR ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3615A = 3.144 mi.
LENGTH STRUCTURE TIP PROJECT U-3615A = 0.049 mi.
TOTAL LENGTH TIP PROJECT U-3615A = 3.193 mi.

NCDOT CONTACT: CATHY HOUSER, PE
PROJECT ENGINEER, ROADWAY DESIGN UNIT

Prepared in the Office of: STEWART ENGINEERING, INC.
STEWART ENGINEERING
STRUCTURAL
TRANSPORTATION
CIVIL
250 TOWN HALL DR., STE C, MORRISVILLE, NC 27560
TEL 919.380.8750 FAX 919.380.8752
FOR: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: OCT 18, 2013

LETTING DATE: OCT 20, 2015

DAVID RUGGLES, PE
PROJECT ENGINEER

DREW BAIRD, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR *DATE*

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

PROJECT REFERENCE NO.	SHEET NO.
U-3615A	12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing Sheet 2 of 14

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STEWART ENGINEERING
STRUCTURAL
TRANSPORTATION
CIVIL
203 TOWN HALL DR., STE C, MORRISVILLE, NC 27560
TEL 919.303.6950 FAX 919.303.6951

WETLAND/SURFACE WATER PERMIT DWG.

ENGLISH

GRAPHIC SCALE 100' 0' 100'

REVISIONS

8/17/99

MATCHLINE -L- STA. 109+00 SEE SHEET NO. 11

MATCHLINE -L- STA. 123+00 SEE SHEET NO. 13

DALE H. GUTHRIE

ALEX W. STOUT

ELTON D. MILLER (66)

JAMES E. HARRIS (69)

ROBERT LEE SKIDMORE (70)

BRENDA W. NEALY (72)

G. LARRY GUY (73)

EDWARD D. GIBSON (74)

ANNIE WELBORN ESTATE (75)

(76)

NCDOT (formerly DAKOTA CONSULTANTS) (67)

NCDOT (formerly NANCY C. JOYCE) (68)

PERLEY A. THOMAS, JR

CHRISTOPHER & CHRISTAN HOLT

GEORGE C. MCILATY, JR (71)

THANG CAO NGUYEN, DB 6458 PG 879, LOT 20 PB 52 PG 013 (78)

CORNWALL GLEN CT

STAPLETON WAY

SITE 2
(SEE ENLARGEMENT)

IMPACTS IN SURFACE WATER

TEMP. IMPACTS IN SURFACE WATER

CONC. FLUME EXTEND TO BOTTOM OF DITCH

CLASS "B" RIP RAP

SPECIAL BACK OF CURB BASE DITCH SEE DETAIL "R"

SPECIAL BACK OF CURB BASE DITCH SEE DETAIL "T"

LATERAL BASE DITCH (GRASS SWALE) SEE DETAIL "V"

REMOVE EXIST. DI & PIPE

REMOVE DI & PIPE

2GI TYPE 'A' W/O APRON

CROSS TIES

DENOTES MONOLITHIC CONCRETE ISLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DETAIL "R"
SPECIAL BACK OF CURB BASE DITCH
(NOT TO SCALE)

NATURAL GROUND

Min. D= 1.0 Ft.
B= 8.0 Ft.

FROM STA.112+46 TO STA.119+00 -L-(RT)

DETAIL "T"
SPECIAL BACK OF CURB BASE DITCH
(NOT TO SCALE)

NATURAL GROUND

Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.

Type of Liner= PSRM

FROM STA.120+84 TO STA.124+00-L-(LT)

DETAIL "V"
LATERAL BASE DITCH
(Not To Scale)

Natural Ground

Fill Slope

Min. D= 1.0 Ft.
Max. d= 2.0 Ft.
B= 2.0 Ft.
D= 5.0 Ft.

*When B Is < 6.0'

Type of Liner= PSRM

FROM STA.120+69.80 TO STA.122+80-L-(RT)

PROJECT REFERENCE NO.	SHEET NO.
U-3615A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing Sheet 3 of 14

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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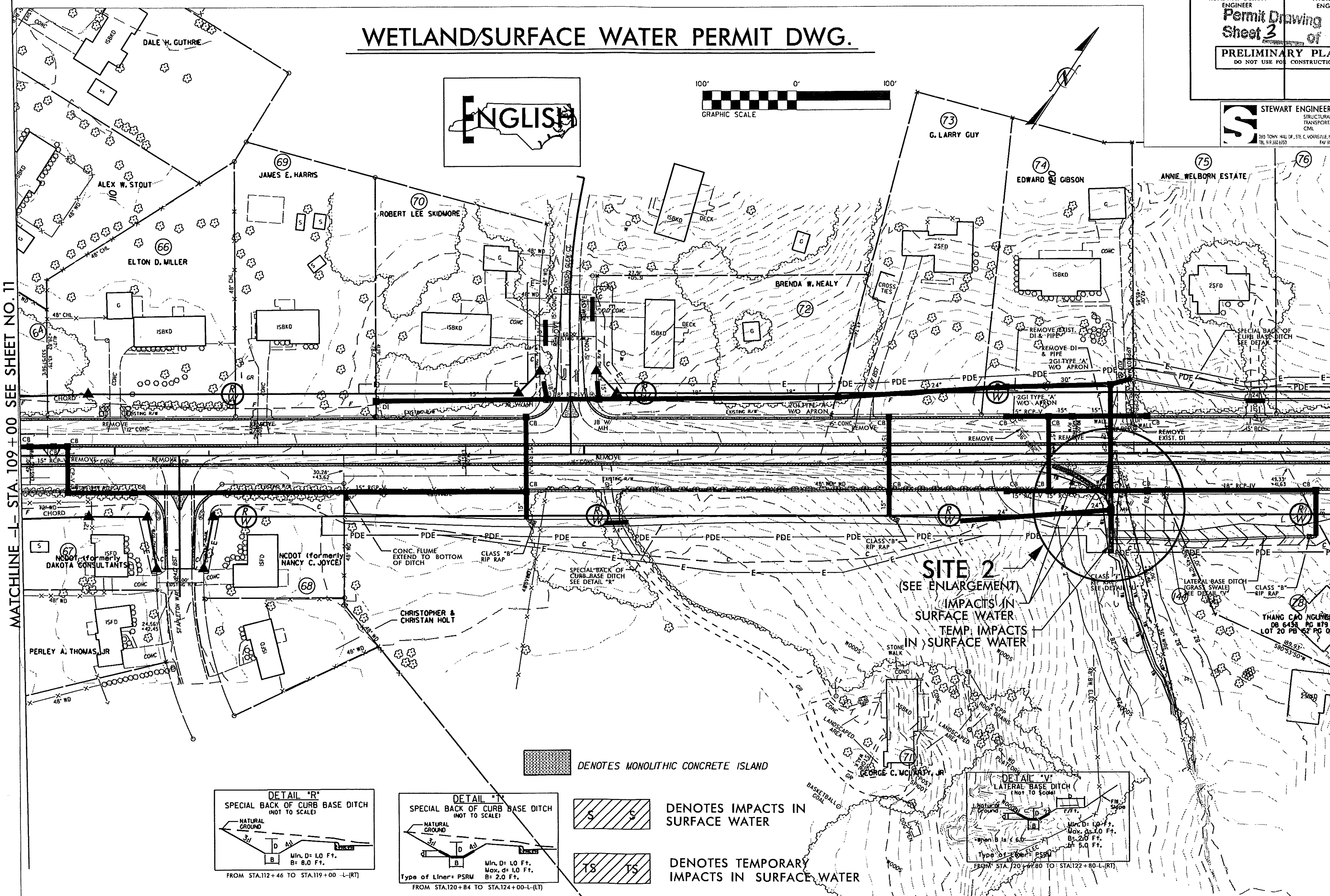
STRUCTURAL
TRANSPORTATION
CIVIL

WETLAND/SURFACE WATER PERMIT DWG.



ENGLISH
GRAPHIC SCALE
100'
0'
100'
MATCHLINE -L- STA. 109+00 SEE SHEET NO. 11
MATCHLINE -L- STA. 123+00 SEE SHEET NO. 13
DALE H. GUTHRIE
ALEX W. STOUT
ELTON D. MILLER
JAMES E. HARRIS
ROBERT LEE SKIDMORE
BRENDA W. NEALY
G. LARRY GUY
EDWARD GIBSON
ANNIE WELBORN ESTATE
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NCDOT (formerly NANCY C. JOYCE)
CHRISTOPHER & CHRISTAN HOLT
PERLEY A. THOMAS, JR
GEORGE C. MCKNATY, JR
THANG CAO NGUYEN
SITE 2
(SEE ENLARGEMENT)
IMPACTS IN SURFACE WATER
TEMP. IMPACTS IN SURFACE WATER
CONC. FLUME EXTEND TO BOTTOM OF DITCH
CLASS "B" RIP RAP
SPECIAL BACK OF CURB BASE DITCH SEE DETAIL "R"
DENOTES MONOLITHIC CONCRETE ISLAND
DETAIL "R"
SPECIAL BACK OF CURB BASE DITCH
(NOT TO SCALE)
NATURAL GROUND
Min. D= 1.0 Ft.
B= 8.0 Ft.
FROM STA.112+46 TO STA.119+00 -L-(RT)
DETAIL "T"
SPECIAL BACK OF CURB BASE DITCH
(NOT TO SCALE)
NATURAL GROUND
Type of Liner= PSRM
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
FROM STA.120+84 TO STA.124+00-L-(LT)
DETAIL "V"
LATERAL BASE DITCH
(Not TO Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
Type of Liner= PSRM
FROM STA.120+69.80 TO STA.122+80-L-(RT)
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

REVISIONS

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-3615A	13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing Sheet 4 of 14

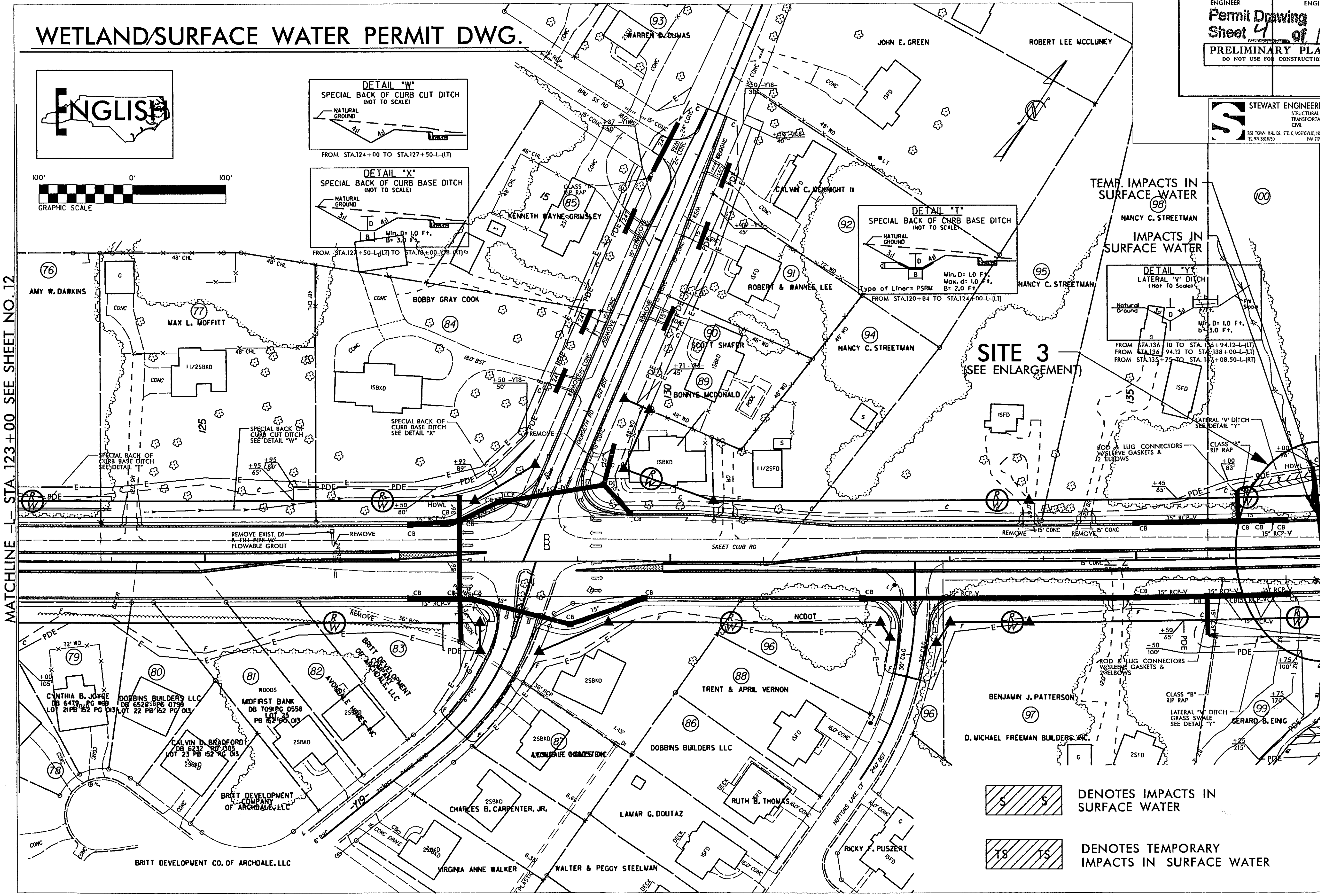
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STEWART ENGINEERING
STRUCTURAL TRANSPORTATION CIVIL

8/17/99

REVISIONS

WETLAND/SURFACE WATER PERMIT DWG.



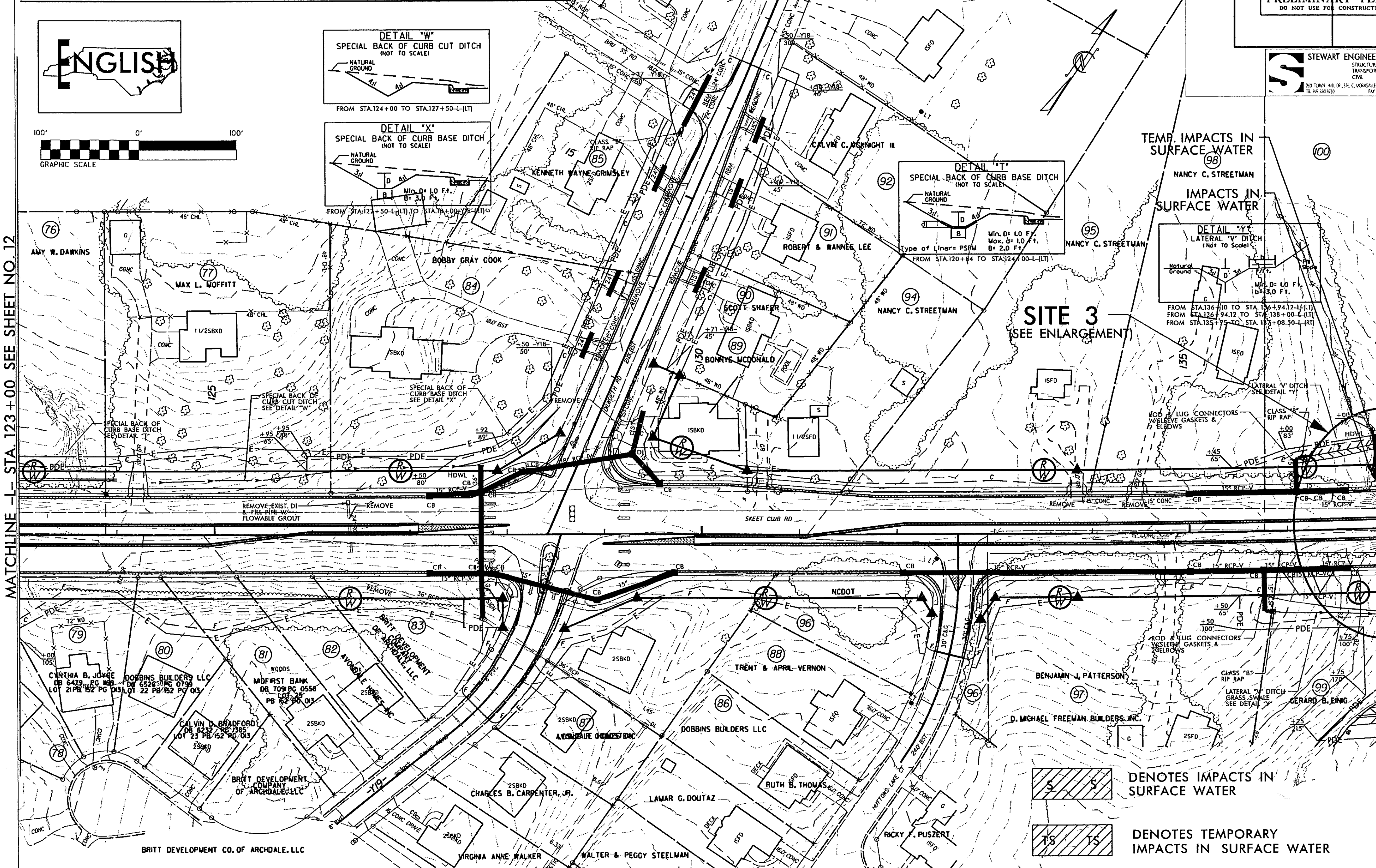
PROJECT REFERENCE NO.	SHEET NO.
U-3615A	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing Sheet 5 of 14

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

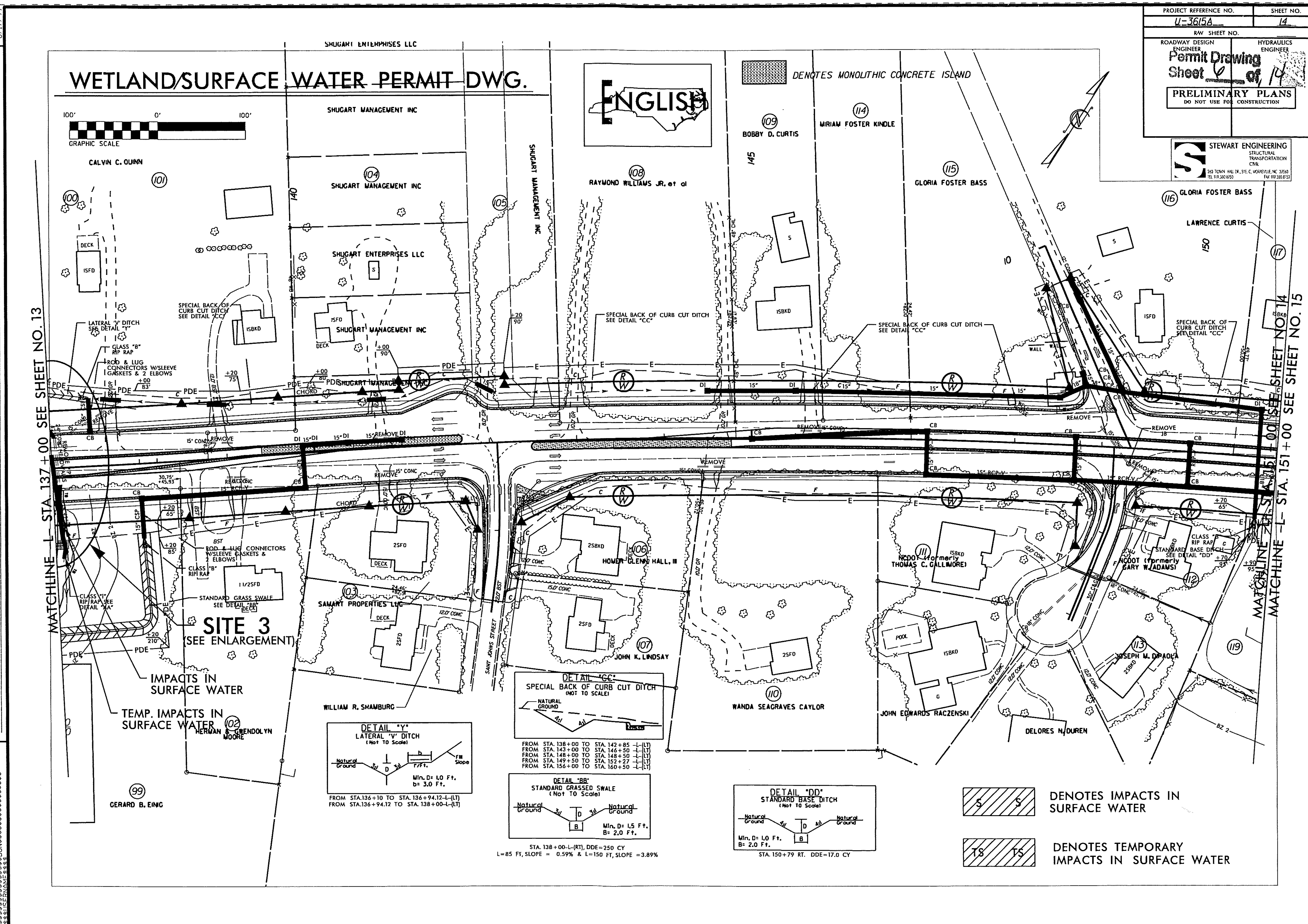
STEWART ENGINEERING
STRUCTURAL
TRANSPORTATION
CIVIL
260 TOWN HALL DR., STE. C, MORRISVILLE, NC 27560
TEL 919.380.8750 FAX 919.380.8752

WETLAND/SURFACE WATER PERMIT DWG.



8/17/99

REVISIONS



PROJECT REFERENCE NO. U-3615A
SHEET NO. 14
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Permit Drawing Sheet 6 of 14
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
STEWART ENGINEERING
STRUCTURAL TRANSPORTATION CIVIL
WETLAND/SURFACE WATER PERMIT DWG.
GRAPHIC SCALE
100'
0'
100'
ENGLISH
DENOTES MONOLITHIC CONCRETE ISLAND
SHUGART ENTERPRISES LLC
SHUGART MANAGEMENT INC
CALVIN C. QUINN
BOBBY D. CURTIS
MIRIAM FOSTER KINDLE
RAYMOND WILLIAMS JR. et al
GLORIA FOSTER BASS
LAWRENCE CURTIS
SAMART PROPERTIES LLC
HOMER GLENN HALL, III
JOHN K. LINDSAY
WANDA SEAGRAVES CAYLOR
NCDOT (formerly THOMAS C. GALLIMORE)
NCDOT (formerly GARY W. ADAMS)
JOSEPH M. DIPAOLA
JOHN EDWARDS RACZENSKI
DELORES N. DUREN
WILLIAM R. SHAMBURG
HERMAN & GWENDOLYN MOORE
GERARD B. EING
SAINT JOHNS STREET
MATCHLINE -L- STA. 137+00 SEE SHEET NO. 13
MATCHLINE -L- STA. 151+00 SEE SHEET NO. 15
SITE 3 (SEE ENLARGEMENT)
IMPACTS IN SURFACE WATER
TEMP. IMPACTS IN SURFACE WATER
SPECIAL BACK OF CURB CUT DITCH SEE DETAIL "CC"
LATERAL "V" DITCH SEE DETAIL "Y"
CLASS "B" RIP RAP
ROD & LUG CONNECTORS W/SLEEVE GASKETS & 2 ELBOWS
STANDARD GRASS SWALE SEE DETAIL "BB"
CLASS "I" RIP RAP SEE DETAIL "AA"
STANDARD BASE DITCH SEE DETAIL "DD"
DETAIL "Y" LATERAL "V" DITCH (Not To Scale)
Min. D= 1.0 Ft. b= 3.0 Ft.
FROM STA.136+10 TO STA. 136+94.12-L-(LT)
FROM STA.136+94.12 TO STA. 138+00-L-(LT)
DETAIL "CC" SPECIAL BACK OF CURB CUT DITCH (NOT TO SCALE)
FROM STA. 138+00 TO STA. 142+85 -L-(LT)
FROM STA. 143+00 TO STA. 146+50 -L-(LT)
FROM STA. 148+00 TO STA. 148+50 -L-(LT)
FROM STA. 149+50 TO STA. 152+27 -L-(LT)
FROM STA. 156+00 TO STA. 160+50 -L-(LT)
DETAIL "BB" STANDARD GRASSED SWALE (Not To Scale)
Min. D= 1.5 Ft. B= 2.0 Ft.
STA. 138+00-L-(RT), DDE=250 CY
L=85 FT, SLOPE = 0.59% & L=150 FT, SLOPE =3.89%
DETAIL "DD" STANDARD BASE DITCH (Not To Scale)
Min. D= 1.0 Ft. B= 2.0 Ft.
STA. 150+79 RT. DDE=17.0 CY
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
REVISIONS
8/17/99