



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

February 13, 2008

U.S. Army Corps of Engineers
Raleigh Regulatory Field Office
6508 Falls of Neuse Road, Suite 120
Raleigh, NC 27615-6814

ATTENTION: Mr. Andrew Williams
NCDOT Coordinator, Division 7

Dear Sir:

SUBJECT: **Application for Section 404 Nationwide Permits 13 and 14 and Section 401 Water Quality Certification** for the proposed extension of Grand Oaks Blvd. from NC 62 (Alamance Rd.) to SR 1146 (Kirkpatrick Rd.) in Burlington, Alamance County, Division 7. Federal Aid Project No. STP-0701 (8), State Project No. 8.2472101, WBS Element 34912.1.1 , TIP No. U-3304.

\$570.00 Debit from WBS element 34912.1.1.

The North Carolina Department of Transportation (NCDOT) proposes to widen an existing portion of Grand Oaks Blvd. (a city street with no numerical designation) immediately west of NC 62 (Alamance Rd.) to a multi-lane facility and extend it westward on new location to SR 1146 (Kirkpatrick Rd.). This would connect this portion of Grand Oaks Blvd. with another portion of the road (listed as SR 1213) at Kirkpatrick Rd. The portion of the project stretching westward from Alamance Rd. to just west of Gum Creek will be improved to a five-lane facility with a center turn lane and curb and gutter. The portion beginning just west of Gum Creek and stretching westward to Kirkpatrick Rd. is on new location and will be built as a four-lane divided facility with curb and gutter and a landscaped median. The outer lanes throughout the entire project will be 14 feet wide to accommodate bicycle traffic.

The proposed project is a result of the Alamance County Urban Area Thoroughfare Plan, which was developed by the Statewide Planning Branch of the NCDOT, in cooperation with local municipalities. The project will provide an alternate east-west travel route for traffic utilizing Interstate 40 (I-40) and Interstate 85 (I-85) between the SR 1158 (Huffman Mill Rd.) interchange and the Alamance Rd. interchange. The extension of Grand Oaks Blvd. to Kirkpatrick Rd. will also serve as a vital link in the planned Western Alamance Loop, forming the southernmost portion of that future project.

Please see the enclosed copies of the Pre-Construction Notification (PCN), permit drawings, design plans, U.S. Army Corps of Engineers (USACE) Wetland Determination Forms, USACE Jurisdictional Determination (Rapanos) forms, and Ecosystem Enhancement Program (EEP) mitigation acceptance letter for the above-referenced project.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

TELEPHONE: 919-715-1334
FAX: 919-715-5501
WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD., SUITE 240
RALEIGH NC 27604

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) DOCUMENT STATUS

An Administrative Action, Environmental Assessment (EA) was completed for the project in May 1998 and distributed shortly thereafter. An Administrative Action, Finding of No Significant Impact (FONSI) was issued and distributed in May 2000. Additionally, a Right-of-Way (ROW) Consultation was completed and distributed in February 2006. Additional copies of these documents are available upon request.

IMPACTS TO WATERS OF THE UNITED STATES

General Description

The project is located in the Cape Fear River Basin (sub-basin 03-06-03) in Alamance County. This area is part of Hydrologic Cataloging Unit 03030002. Gum Creek (also called Gunn Creek), an unnamed tributary (UT) of Gum Creek, and one wetland comprise the water resources within the project area. An initial Jurisdictional Determination (JD) was issued by USACE for this project on February 6, 2006 (Action ID No. 200620418). However, the wetland and UT were re-examined during a subsequent JD site visit between NCDOT biologists and USACE Regulatory Specialist Andy Williams on January 3, 2008. During this visit, the wetland boundary was re-delineated and re-verified and an Importance call was made for the UT.

Gum Creek is a perennial stream that flows roughly north to south within the proposed project boundaries. Upstream of the project, Gum Creek makes a sharp turn to the west and roughly parallels a significant portion of the project. The portion of Gum Creek that flows through the study area is assigned Stream Index Number 16-19-7 (12/01/83) by the N. C. Division of Water Quality (NCDWQ) and has a best usage classification of C NSW. It has a channel width of approximately 25 feet, a wetted width of 20 feet, and banks 3 to 5 feet high. During field investigations by NCDOT biologists on September 5, 2007, water depth ranged between 8 and 12 inches (on average), flow was moderate, clarity was to the substrate, and the substrate was primarily composed of bedrock, cobble, gravel, and sand.

The UT to Gum Creek is an intermittent stream that flows roughly southwest to northeast into Gum Creek. During a site visit by NCDOT biologists on January 3, 2008, the UT had a channel width of 2 to 4 feet, a wetted width of 8 inches to 4 feet, and a bank height of 1 inch to 2 feet. Water depth ranged between 0 and 6 inches, there was no flow, clarity ranged from clear to cloudy (depending on location), and the substrate was predominantly composed of clay. During the January 3rd visit, it was determined by Mr. Williams of the USACE that the UT was an intermittent (NCDWQ score of 22.5), Unimportant, Relatively Permanent Water (RPW).

Neither High Quality Waters (HQW), Water Supplies (WS-I or WS-II), nor Outstanding Resource Waters (ORW) occur within 1.0 mile of the project study area. Additionally, no portion of Gum Creek, its tributaries, or other surface waters within 1.0 mile of the project are listed on the NCDWQ 2006 Final 303(d) List of Impaired Waters.

The only wetland located within the proposed project boundaries abuts the UT to Gum Creek and is considered a riverine wetland. During the above-mentioned January 3rd site visit, the wetland was re-delineated with the assistance of Mr. Williams of the USACE. The wetland boundary was changed because some areas previously identified as wetland no longer functioned as such. The wetland impact was reduced in size from 0.19 acres to its current size of 0.02 acres.

Permanent Impacts

Site 1

There will be a total of 205 linear feet of permanent stream impacts to the UT to Gum Creek. These impacts are associated with the placement of a 72-inch reinforced concrete pipe (RCP) where the UT crosses the proposed roadway (this portion of project is on new location). Of the 205 linear feet of permanent impacts, 197 linear feet will be due to the actual placement of the RCP. The remaining 8 linear feet of permanent impacts will result from the placement of Class I rip rap on the stream banks at the pipe outlet. The rip rap will act as erosion control and bank stabilization. The RCP and bank stabilization work will occur at Station 23+37 -L-.

There will also be a total of 0.02 acres of permanent riverine wetland impacts associated with this project. These impacts will result from the placement of fill material associated with the construction of the new roadway into the wetland.

Site 2

A total of 208 linear feet of permanent stream impacts will occur to Gum Creek. These impacts are associated with the placement of a triple-barreled reinforced concrete box culvert (RCBC) into the creek. Of the 208 linear feet of permanent impacts, 161 linear feet will be due to the actual placement of the RCBC. The remaining 47 linear feet of permanent impacts will result from the placement of Class I rip rap along the stream banks at the downstream (south) end of the culvert. First, stream bank excavation will occur to create benches on both sides of the creek just above the existing stream channel. Following this, rip rap will be placed along the modified stream bank to stabilize against erosion and bank failure. The culvert placement and associated bank stabilization work will occur at Station 34+37 -L- and will also occur on new location.

Temporary Impacts

Site 1

A total of 35 linear feet of temporary stream impacts will occur to the UT to Gum Creek. These impacts are associated with the placement of the 72-inch RCP. These impacts will occur at the in-flow and out-flow of the RCP and will extend outward towards the edge of the Permanent Drainage Easements (PDE) located on either side of the structure.

Site 2

A total of 87 linear feet of temporary stream impacts will occur to Gum Creek due to the placement of the above-mentioned RCBC. These impacts will occur near the in-flow and out-flow of the RCBC and will extend outward to the edge of the Temporary Drainage Easements (TDE) located on either side of the structure.

Utility Impacts

No impacts to jurisdictional waters will occur as a result of utility work associated with this project.

AVOIDANCE, MINIMIZATION, AND COMPENSATORY MITIGATION

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

unavoidable jurisdictional impacts. Avoidance measures were taken during the planning and NEPA compliance stages; minimization measures were incorporated as part of the project design.

According to the Clean Water Act (CWA) §404(b) (1) guidelines, NCDOT must avoid, minimize, and mitigate, in sequential order, impacts to waters of the U.S. The following is a list of the project's avoidance/minimization activities proposed or completed by NCDOT:

Avoidance/Minimization

- Pre-formed scour holes will be constructed in areas adjacent to Gum Creek.
- Sills will be used on the RCBC in Gum Creek.
- Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of stringent erosion control methods and use of NCDOT's Best Management Practices (BMP) for Protection of Surface Waters.
- The proposed facility's crossing of Gum Creek and surrounding floodplain will be perpendicular, which reduces the amount of jurisdictional impacts compared to non-perpendicular crossings.

Compensatory Mitigation

During the site visit on January 3, 2008, USACE Regulatory Specialist Andy Williams designated the UT to Gum Creek (Site 1) as Unimportant. Due to this designation and the low quality of the tributary, NCDOT does not propose mitigation for the 197 linear feet of permanent warm water stream impacts to the UT resulting from the placement of the RCP. Additionally, NCDOT does not propose mitigation for the 0.02 acres of permanent riverine wetland impacts at Site 1 because of the minimal amount of impact.

NCDOT also does not propose mitigation for either the 8 linear feet of permanent impacts to the UT to Gum Creek (Site 1) or the 47 linear feet of permanent impacts to Gum Creek (Site 2) resulting from stream bank stabilization. The combined amount of 55 linear feet is below the threshold for requiring mitigation for this type of action for a Nationwide Permit (NWP) 13. Additionally, the impacts will not incur a loss of aquatic use to this part of the stream.

Unavoidable, permanent warm water stream impacts to 161 linear feet of Gum Creek resulting from the placement of the RCBC will be offset by compensatory mitigation provided by the EEP program. Please see the attached EEP mitigation acceptance letter, dated January 17, 2008.

FEDERALLY PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of its most recent update on January 31, 2008, the U.S. Fish and Wildlife Service (USFWS) website lists no federally protected species for Alamance County.

SCHEDULE

The project calls for a review date of April 29, 2008, a letting of June 17, 2008, and a date of availability of July 29, 2008. It is expected that the contractor will choose to start construction in July or August 2008.

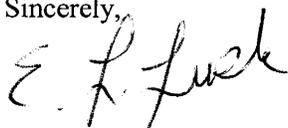
REGULATORY APPROVALS

Section 404 Permit: This project has been processed by the Federal Highway Administration (FHWA) and, in accordance with 23 CFR 771.115(b), has been issued an Administrative Action of "Finding of No Significant Impact" (FONSI). The NCDOT requests that activities associated with this project be authorized by a Nationwide Permit 14 (72 FR 11092 – 11198; March 12, 2007). A request is also hereby submitted for a Nationwide Permit 13, issued under Section 404 of the CWA, authorizing bank stabilization activities associated with this project.

Section 401 Permit: We anticipate that Section 401 General Water Quality Certifications (WQC) 3704 and 3689 will apply to this project. All general conditions of these WQCs will be met. Written concurrence is required for WQC 3704. In compliance with Section 143-215.3D(e) of the NCAC, we will provide \$570.00 to act as payment for processing this Section 401 permit application. In accordance with 15A NCAC 2H, Section .0500 and 15A NCAC 2B, Section .0200, we are providing five 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 will be posted on the NCDOT website at: <http://www.ncdot.org/doh/preconstruct/pe/>. If you have any questions or need additional information, please contact Mr. Jim Mason at (919) 715-5531 or jsmason@dot.state.nc.us.

Sincerely,



EV

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

w/attachment

Mr. Brian Wrenn, NCDWQ (5 copies)
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS

w/o attachment (see website for attachments)

Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Mark Staley, Roadside Environmental
Mr. J. M. Mills, P.E., Division 7 Engineer
Mr. Jerry Parker, Division 7 Environmental Officer
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Ma'ad Hassan, PDEA Project Planning Engineer
Mr. Scott McLendon, USACE, Wilmington
Ms. Beth Harmon, Ecosystem Enhancement Program
Mr. Todd Jones, NCDOT External Audit Branch

Office Use Only:

Form Version March 05

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

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

I. Processing

1. Check all of the approval(s) requested for this project:

<input checked="" type="checkbox"/> Section 404 Permit	<input type="checkbox"/> Riparian or Watershed Buffer Rules
<input type="checkbox"/> Section 10 Permit	<input type="checkbox"/> Isolated Wetland Permit from DWQ
<input checked="" type="checkbox"/> 401 Water Quality Certification	<input type="checkbox"/> Express 401 Water Quality Certification

2. Nationwide, Regional or General Permit Number(s) Requested: Nationwide 13 and 14

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

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

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

II. Applicant Information

1. Owner/Applicant Information

Name: Gregory J. Thorpe, Ph.D., Environmental Management Director

Mailing Address: North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, NC 27699-1598

Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794

E-mail Address: _____

2. Agent/Consultant Information (A signed and dated copy of the Agent Authorization letter must be attached if the Agent has signatory authority for the owner/applicant.)

Name: _____

Company Affiliation: _____

Mailing Address: _____

Telephone Number: _____ Fax Number: _____

E-mail Address: _____

III. Project Information

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

1. Name of project: The proposed extension of Grand Oaks Blvd. from NC 62 (Alamance Rd.) to SR 1146 (Kirkpatrick Rd.) in Burlington.
2. T.I.P. Project Number or State Project Number (NCDOT Only): U-3304
3. Property Identification Number (Tax PIN): N/A
4. Location
County: Alamance Nearest Town: Burlington
Subdivision name (include phase/lot number): N/A
Directions to site (include road numbers/names, landmarks, etc.): From points east, take Interstate 40 (I-40) West/ Interstate 85 (I-85) South to exit 143 (Alamance Rd.). Take a left onto Alamance Rd., then right onto Grand Oaks Blvd. (city street with no numerical designation)
5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
Decimal Degrees (6 digits minimum): _____°N _____°W
6. Property size (acres): please see attached drawings
7. Name of nearest receiving body of water: Gum Creek
8. River Basin: Cape Fear
(Note – this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at <http://h2o.enr.state.nc.us/admin/maps/>.)
9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: Grand Oaks Blvd. (the portion affected by this project) currently exists as a two-lane road, extending westward from Alamance Rd. approximately

1.0 mile to a dead end. The portion west of the dead end is currently forested. Land use in the area includes residential, business, and forested areas.

10. Describe the overall project in detail, including the type of equipment to be used: See attached cover letter for project description. Heavy duty excavation equipment will be used such as trucks, dozers, cranes and other various equipment necessary for roadway construction.
11. Explain the purpose of the proposed work: The project will provide an alternate east-west travel route for traffic utilizing I-40 and I-85 between the SR 1158 (Huffman Mill Rd.) interchange and the Alamance Rd. interchange. The extension of Grand Oaks Blvd. to Kirkpatrick Rd. will also serve as a vital link in the planned Western Alamance Loop, forming the southernmost portion of that future project.

IV. Prior Project History

If jurisdictional determinations and/or permits have been requested and/or obtained for this project (including all prior phases of the same subdivision) in the past, please explain. Include the USACE Action ID Number, DWQ Project Number, application date, and date permits and certifications were issued or withdrawn. Provide photocopies of previously issued permits, certifications or other useful information. Describe previously approved wetland, stream and buffer impacts, along with associated mitigation (where applicable). If this is a NCDOT project, list and describe permits issued for prior segments of the same T.I.P. project, along with construction schedules. An initial Jurisdictional Determination (JD) was issued by the U.S. Army Corps of Engineers (USACE) for this project on February 6, 2006 (Action ID No. 200620418). However, the wetland and UT were re-examined during a subsequent JD site visit between NCDOT biologists and USACE Regulatory Specialist Andy Williams on January 3, 2008. During this visit, the wetland boundary was re-delineated and re-verified and an Importance call was made for the UT.

V. Future Project Plans

Are any future permit requests anticipated for this project? If so, describe the anticipated work, and provide justification for the exclusion of this work from the current application.

N/A

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

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. Each impact must be listed separately in the tables below (e.g., culvert installation should be listed separately from riprap dissipater pads). Be sure to indicate if an impact is temporary. All proposed impacts, permanent and temporary, must be listed, and must be labeled and clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) should be shown on a delineation map, whether or not impacts are proposed to these systems.

Wetland and stream evaluation and delineation forms should be included as appropriate. Photographs may be included at the applicant's discretion. If this proposed impact is strictly for wetland or stream mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

Provide a written description of the proposed impacts: See attached cover letter.

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

Wetland Impact Site Number (indicate on map)	Type of Impact	Type of Wetland (e.g., forested, marsh, herbaceous, bog, etc.)	Located within 100-year Floodplain (yes/no)	Distance to Nearest Stream (linear feet)	Area of Impact (acres)
1	Permanent Fill	Forested	Yes	0	0.02
Total Wetland Impact (acres)					0.02

2. List the total acreage (estimated) of all existing wetlands on the property: 0.02

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

Stream Impact Number (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
1	UT to Gum Creek	72-inch reinforced concrete pipe	Intermittent	2-4 feet	197	0.01
1	UT to Gum Creek	Bank stabilization	Intermittent	2-4-feet	8	
1	UT to Gum Creek	Temporary Fill	Intermittent	2-4 feet	35	
2	Gum Creek	Triple-barreled reinforced concrete box culvert	Perennial	25 feet	161	0.08
2	Gum Creek	Bank stabilization	Perennial	25 feet	47	
2	Gum Creek	Temporary fill	Perennial	25 feet	87	0.03
Total Stream Impact (by length and acreage)					535	<0.13

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

Open Water Impact Site Number (indicate on map)	Name of Waterbody (if applicable)	Type of Impact	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)	Area of Impact (acres)
Total Open Water Impact (acres)				0.0

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

Stream Impact (acres):	<0.13
Wetland Impact (acres):	0.02
Open Water Impact (acres):	0
Total Impact to Waters of the U.S. (acres)	<0.15
Total Stream Impact (linear feet):	535

6. Isolated Waters

Do any isolated waters exist on the property? Yes No

Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.

7. Pond Creation

If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.

Pond to be created in (check all that apply): uplands stream wetlands

Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.): _____

Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.): _____

Current land use in the vicinity of the pond: _____

Size of watershed draining to pond: _____ Expected pond surface area: _____

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts

were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. See attached cover letter.

VIII. Mitigation

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

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

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

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

2. Mitigation may also be made by payment into the North Carolina Ecosystem Enhancement Program (NCEEP). Please note it is the applicant’s responsibility to contact the NCEEP at (919) 715-0476 to determine availability, and written approval from the NCEEP indicating that they are will to accept payment for the mitigation must be attached to this form. For

additional information regarding the application process for the NCEEP, check the NCEEP website at <http://h2o.enr.state.nc.us/wrp/index.htm>. If use of the NCEEP is proposed, please check the appropriate box on page five and provide the following information:

Amount of stream mitigation requested (linear feet): 161
Amount of buffer mitigation requested (square feet): 0
Amount of Riparian wetland mitigation requested (acres): 0.00
Amount of Non-riparian wetland mitigation requested (acres): 0.00
Amount of Coastal wetland mitigation requested (acres): 0.00

IX. Environmental Documentation (required by DWQ)

1. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? Yes No
2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)?
Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation.
Yes No
3. If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter. Yes No

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

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

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

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

Zone*	Impact (square feet)	Multiplier	Required Mitigation
1	0	3 (2 for Catawba)	0
2	0	1.5	0
Total	0		0

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

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

XI. Stormwater (required by DWQ)

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level. N/A

XII. Sewage Disposal (required by DWQ)

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

XIII. Violations (required by DWQ)

Is this site in violation of DWQ Wetland Rules (15A NCAC 2H .0500) or any Buffer Rules?

Yes No

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

XIV. Cumulative Impacts (required by DWQ)

Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes No

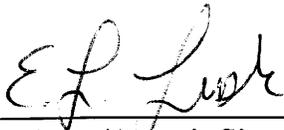
If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at <http://h2o.enr.state.nc.us/ncwetlands>. If no, please provide a short narrative description: _____

N/A

XV. Other Circumstances (Optional):

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

N/A

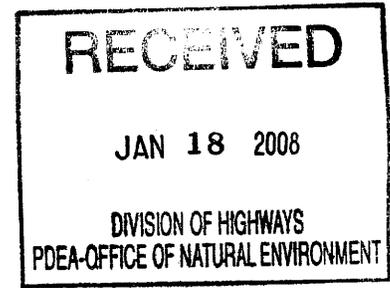


2-19-08

Applicant/Agent's Signature

Date

(Agent's signature is valid only if an authorization letter from the applicant is provided.)



January 17, 2008

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

U-3304, Burlington – Grand Oaks Boulevard Extension from SR
1146 (Kirkpatrick Road) to NC 62, Alamance County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream mitigation for the subject project. Based on the information supplied by you on January 9, 2008, the impacts are located in CU 03030002 of the Cape Fear River Basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Warm Stream: 208 feet

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

Restoring... Enhancing... Protecting Our State

North Carolina Ecosystem Enhancement Program, 1652 Mail Service Center, Raleigh, NC 27699-1652 / 919-715-0476 / www.nceep.net



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

Sincerely,

A handwritten signature in cursive script, reading "William D. Gilmore".

William D. Gilmore, P.E.
EEP Director

cc: Mr. Andy Williams, USACE – Raleigh
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: U-3304

9/7/09, 09:59

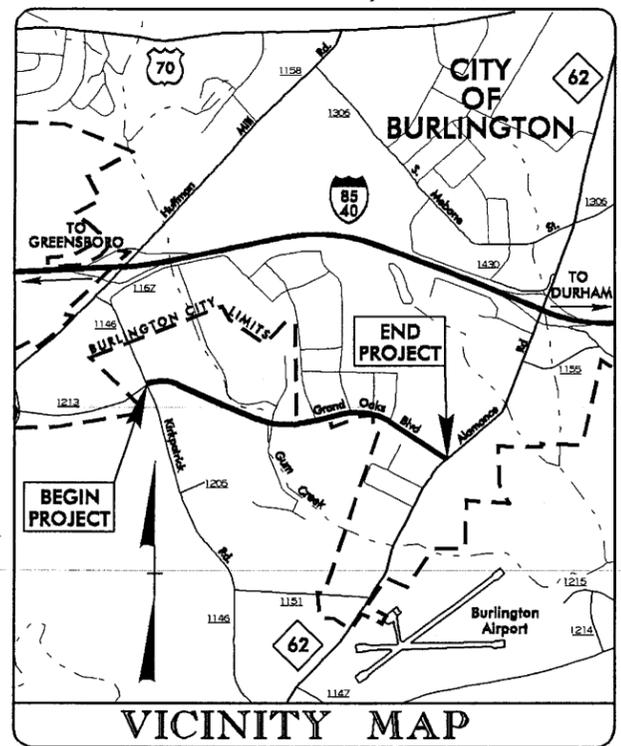
See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols
See Sheet 1-C For Survey Control Sheet

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ALAMANCE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3304	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34912.1.1	STP-0701(8)	P.E.	
34912.2.2	STP-0701(8)	RW, UTIL.	

TIP PROJECT: U-3304

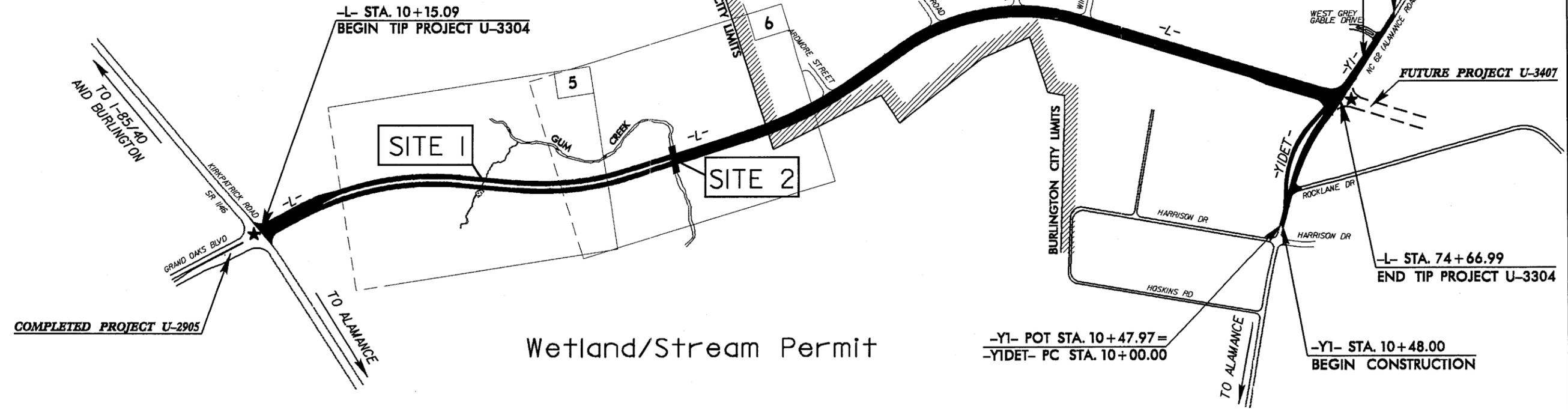


**LOCATION: BURLINGTON - GRAND OAKS BLVD EXTENSION
FROM SR 1146 (KIRKPATRICK ROAD) TO
NC 62 (ALAMANCE ROAD)**

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



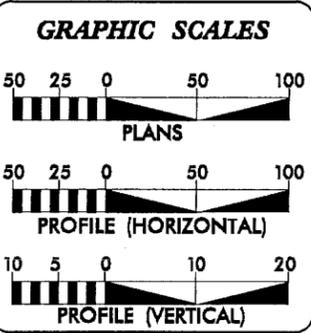
Permit Drawing
Sheet **1** of **10**



Wetland/Stream Permit

CONTRACT: C201857

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



DESIGN DATA

ADT 2008 =	10,575
ADT 2030 =	23,500
DHV =	11 %
D =	60 %
T =	6 % *
V =	50 MPH
* TTST 2 %	DUAL 4 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3304 =	1.215 mi
LENGTH STRUCTURE TIP PROJECT U-3304 =	0.007 mi
TOTAL LENGTH TIP PROJECT U-3304 =	1.222 mi

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 21, 2006

LETTING DATE:
JUNE 17, 2008

JASON MOORE, PE
PROJECT ENGINEER

KEVIN E. MOORE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STATE DESIGN ENGINEER _____ P.E.

**DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION**

APPROVED _____ P.E.

DIVISION ADMINISTRATOR _____ DATE _____

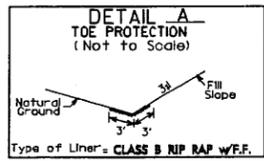
07-JAN-2008 09:43
r:\drawing\2008\200804\prj\m_tah_prop.dgn
sheet 01 of 10

7/22/99

REVISIONS

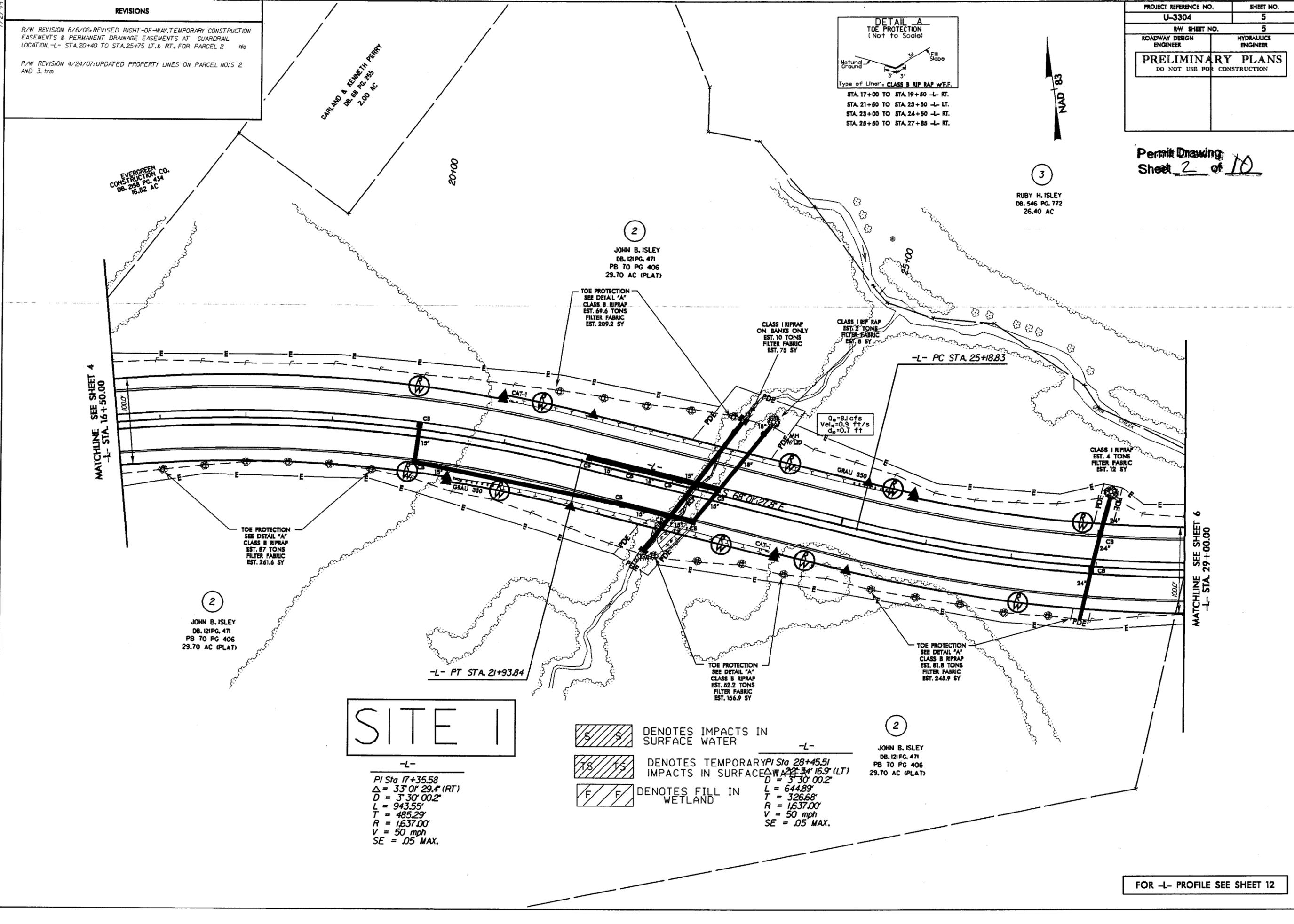
R/W REVISION 6/6/06: REVISED RIGHT-OF-WAY, TEMPORARY CONSTRUCTION EASEMENTS & PERMANENT DRAINAGE EASEMENTS AT GUARDRAIL LOCATION, -L- STA. 20+40 TO STA. 25+75 LT. & RT. FOR PARCEL 2

R/W REVISION 4/24/07: UPDATED PROPERTY LINES ON PARCEL NO.'S 2 AND 3. trm



PROJECT REFERENCE NO. U-3304	SHEET NO. 5
R/W SHEET NO. 5	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 2 of 10



SITE I

-L-
 PI Sta 17+35.58
 $\Delta = 33' 01" 29.4" (RT)$
 $D = 3' 30" 00.2"$
 $L = 943.55'$
 $T = 485.29'$
 $R = 1637.00'$
 $V = 50 \text{ mph}$
 $SE = .05 \text{ MAX.}$

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

-L-
 PI Sta 28+45.51
 $\Delta = 22' 54" 16.9" (LT)$
 $D = 3' 30" 00.2"$
 $L = 644.89'$
 $T = 326.68'$
 $R = 1637.00'$
 $V = 50 \text{ mph}$
 $SE = .05 \text{ MAX.}$

07-JAN-2008 09:44
r:\drawing\U-3304_psh.pfl.prm..5.dgn
goal1 AL HY221524

FOR -L- PROFILE SEE SHEET 12

7/27/99

REVISIONS

R/W REVISION 6/16/06: REVISED RIGHT-OF-WAY, TEMPORARY CONSTRUCTION EASEMENTS & PERMANENT DRAINAGE EASEMENTS AT GUARDRAIL LOCATION, -L- STA. 20+40 TO STA. 25+75 LT. & RT., FOR PARCEL 2

R/W REVISION 4/24/07: UPDATED PROPERTY LINES ON PARCEL NO. 5 2 AND 3, trm

CARLAND & KENNETH PERRY
DB: 08 PG: 255
2.00 AC

EVERGREEN
CONSTRUCTION CO.
DB: 258 PG: 434
16.82 AC

JOHN B. ISLEY
DB: 12 PG: 471
PB 70 PG 406
29.70 AC (PLAT)

JOHN B. ISLEY
DB: 12 PG: 471
PB 70 PG 406
29.70 AC (PLAT)

DETAIL A
TOE PROTECTION
(Not to Scale)



Type of Liner: CLASS B RIP RAP w/F.F.
STA. 17+00 TO STA. 19+50 -L- RT.
STA. 21+50 TO STA. 23+50 -L- LT.
STA. 23+00 TO STA. 24+50 -L- RT.
STA. 25+50 TO STA. 27+85 -L- RT.

PROJECT REFERENCE NO. U-3304	SHEET NO. 5
R/W SHEET NO. 5	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 3 of 10

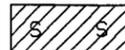
3
RUBY H. ISLEY
DB: 546 PG: 772
26.40 AC

MATCHLINE SEE SHEET 4
-L- STA. 16+50.00

MATCHLINE SEE SHEET 6
-L- STA. 29+00.00

SITE 1

-L-
PI Sta 17+35.58
 $\Delta = 33^{\circ} 01' 29.4''$ (RT)
D = 3' 30" 00.2"
L = 943.55'
T = 485.29'
R = 1637.00'
V = 50 mph
SE = .05 MAX.

-  DENOTES IMPACTS IN SURFACE WATER
 -  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 -  DENOTES FILL IN WETLAND
- L-
PI Sta 28+45.51
 $\Delta = 22^{\circ} 34' 16.9''$ (LT)
D = 3' 30" 00.2"
L = 644.89'
T = 326.68'
R = 1637.00'
V = 50 mph
SE = .05 MAX.

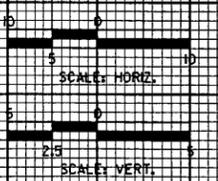
2
JOHN B. ISLEY
DB: 12 PG: 471
PB 70 PG 406
29.70 AC (PLAT)

07-JAN-2008 09:50
r:\drr\p\p\3304_psh_pf1_pr.m_5.dgn
Scale: 1" = 100'

FOR -L- PROFILE SEE SHEET 12

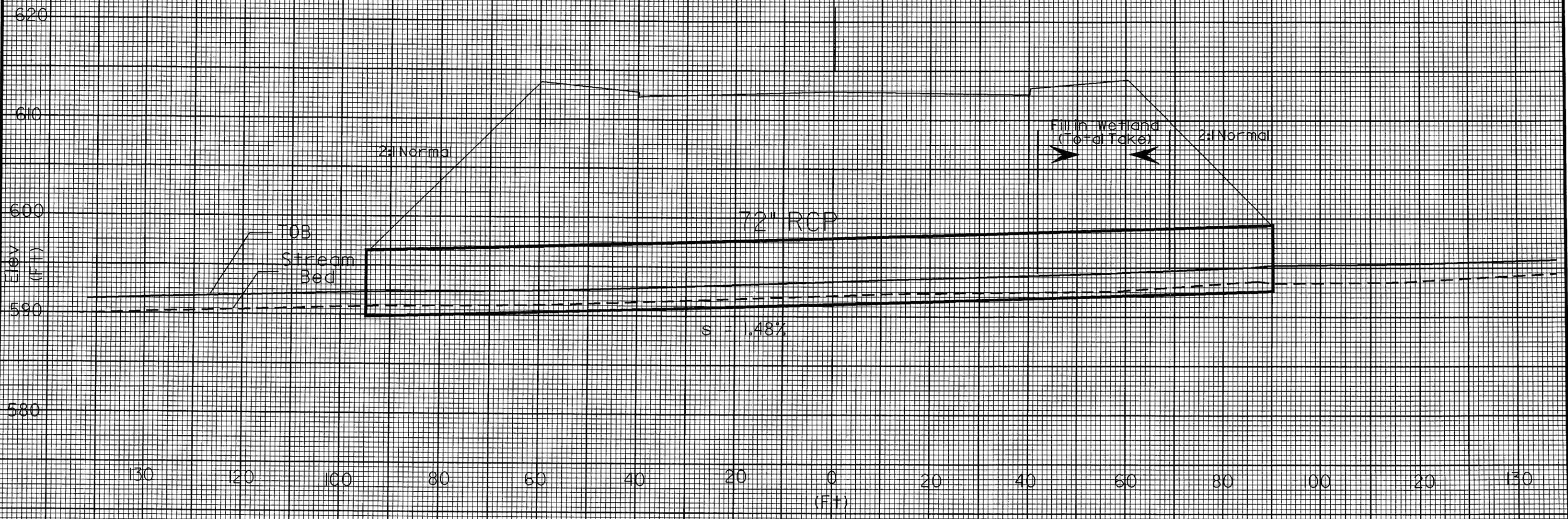
8/23/99

SITE I X-SECTION



Permit Drawing
Sheet 4 of 10

DA = 35 Ac
 $Q_{10} = 75$ cfs
 $V_{10} = 1.9$ ft/s



07-JAN-2008 11:13
 r:\drow\3304\psh.pfl.prm.5.dgn
 geol\221224

7/2/99

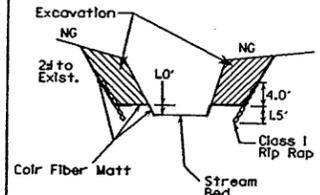
REVISIONS

R/W REVISION 6/6/06: REVISED RIGHT-OF-WAY & TEMPORARY CONSTRUCTION EASEMENTS AT GUARDRAIL LOCATION, -L- STA. 32+05 TO STA. 37+64.93 LT. & RT. FOR PARCEL 2 & 4

R/W REVISION 11/16/06: COMBINED PARCELS 6 AND 7 TO MAKE PARCEL 6, km

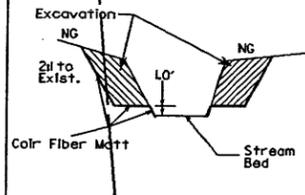
R/W REVISION 4/24/07: UPDATED PROPERTY LINES ON PARCEL NO.'S 2, 3, AND 4, SUB-DIVIDED PARCEL 2, ADDING PARCEL 2A, 1r/m

Outlet Channel Bench Detail B (Not to Scale)



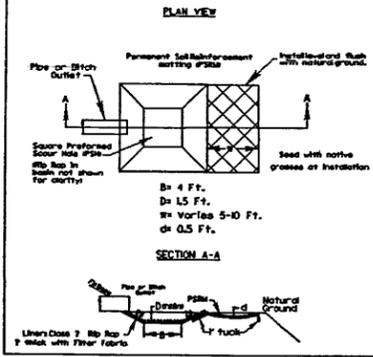
STA 34+40 -L- (RT)

Inlet Channel Bench Detail C (Not to Scale)



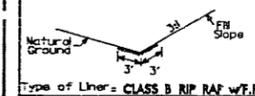
STA 34+55 -L- (LT)

PERFORMED SCOUR HOLE



STA 34+07 -L- (LT)
STA 34+63 -L- (RT)

DETAIL A TOE PROTECTION (Not to Scale)



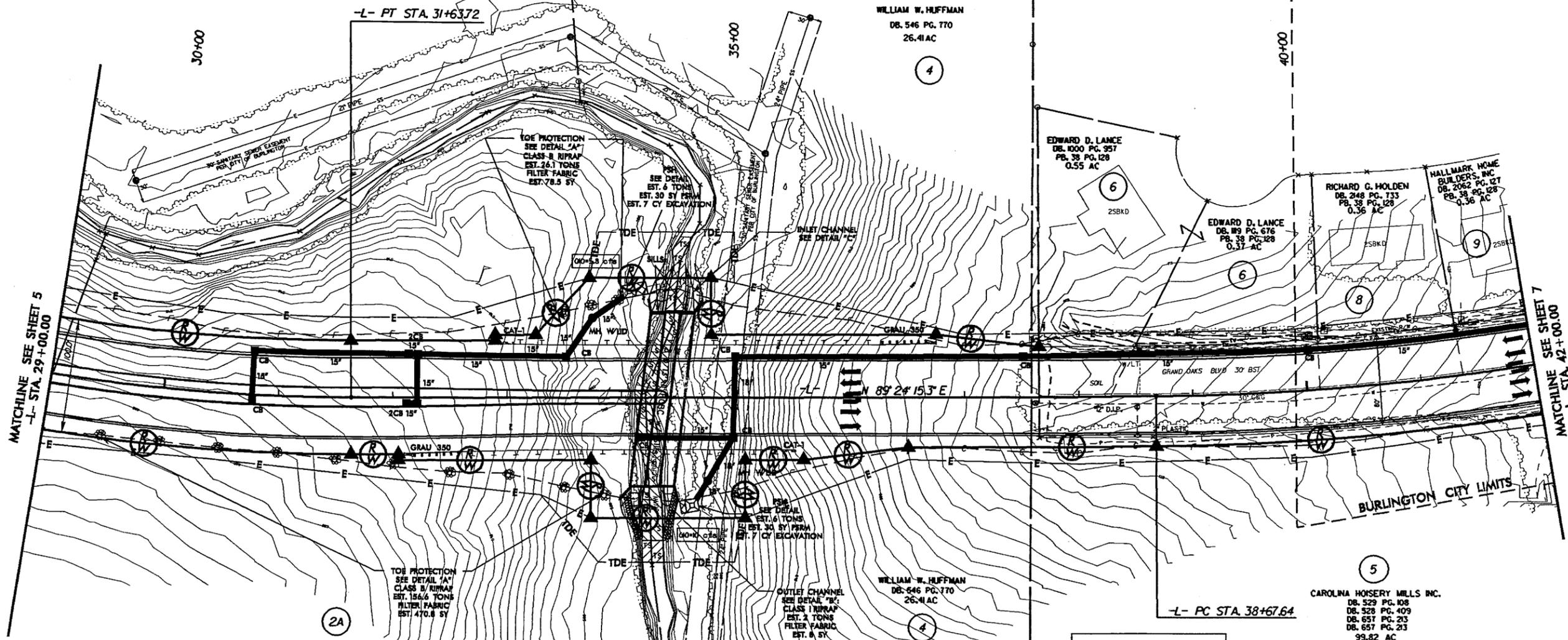
STA 29+50 TO STA. 34+00 -L- RT.
STA. 33+50 TO STA. 34+25 -L- LT.

NAD 83

BURLINGTON CITY LIMITS

PROJECT REFERENCE NO.	U-3304	SHEET NO.	6
R/W SHEET NO.			6
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

Permit Drawing Sheet 6 of 10



MATCHLINE SEE SHEET 5
-L- STA. 29+00.00

MATCHLINE SEE SHEET 7
-L- STA. 42+00.00

SITE 2

DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

-L-
PI Sta 42+27.28
Δ = 18' 32" 06.9" (LT)
D = 2' 35" 58.7"
L = 713.00'
T = 359.64'
R = 2,204.00'
V = 50 mph
RO = 156'

FOR -L- PROFILE SEE SHEETS 12 & 13

24-AUG-2007 09:03
r:\c:\rainage\11221924\pmm-psh_6.dgn
3:01 A 11221924

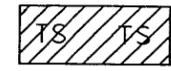
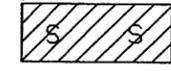
-L-
PI Sta 28+45.51
Δ = 22' 34" 16.9" (LT)
D = 3' 30" 00.2"
L = 644.89'
T = 326.68'
R = 1,637.00'
V = 50 mph
RO = 260'

ETHAN PONTE, LLC
DB. 2389 PG. 88
25.38 AC (PLAT)

TOE PROTECTION
SEE DETAIL 'A'
CLASS B RIPRAP
EST. 156.6 TONS
FILTER FABRIC
EST. 470.8 SY

OUTLET CHANNEL
SEE DETAIL 'B'
CLASS B RIPRAP
EST. 2 TONS
FILTER FABRIC
EST. 8 SY

WILLIAM W. HUFFMAN
DB. 646 PG. 170
26.41 AC



CAROLINA HOISERY MILLS INC.
DB. 329 PG. 408
DB. 528 PG. 409
DB. 657 PG. 213
DB. 657 PG. 213
99.82 AC

EDWARD D. LANCE
DB. 1000 PG. 957
PB. 38 PG. 128
0.55 AC

EDWARD D. LANCE
DB. 89 PG. 676
PB. 38 PG. 128
0.37 AC

RICHARD G. HOLDEN
DB. 248 PG. 733
PB. 38 PG. 128
0.36 AC

HALLMARK HOME BUILDERS, INC.
DB. 2062 PG. 127
PB. 38 PG. 128
0.36 AC

WILLIAM W. HUFFMAN
DB. 546 PG. 170
26.41 AC

RUBY H. ISLEY
DB. 546 PG. 172
26.40 AC

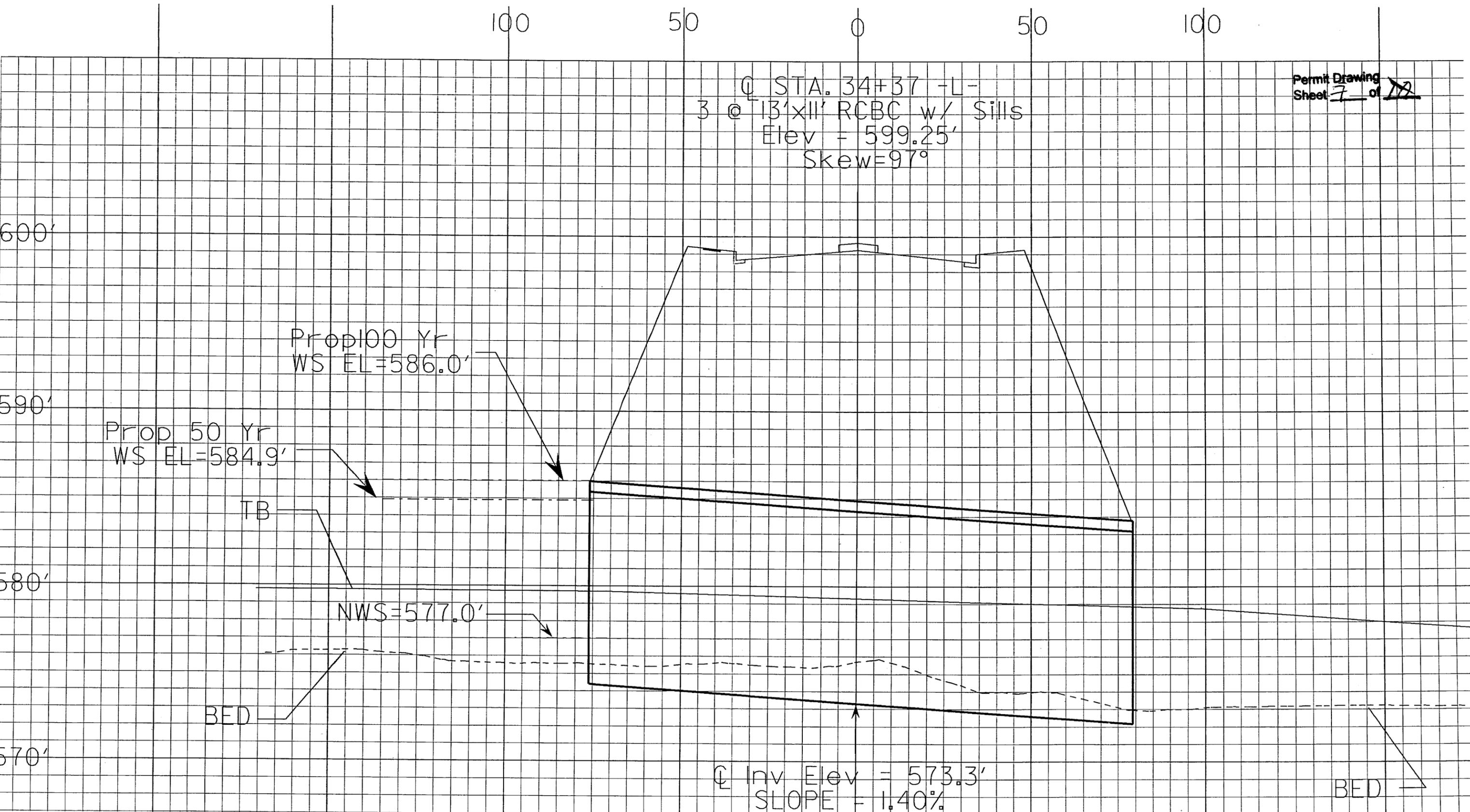
-L- PT STA. 31+63.72

30+00

35+00

40+00

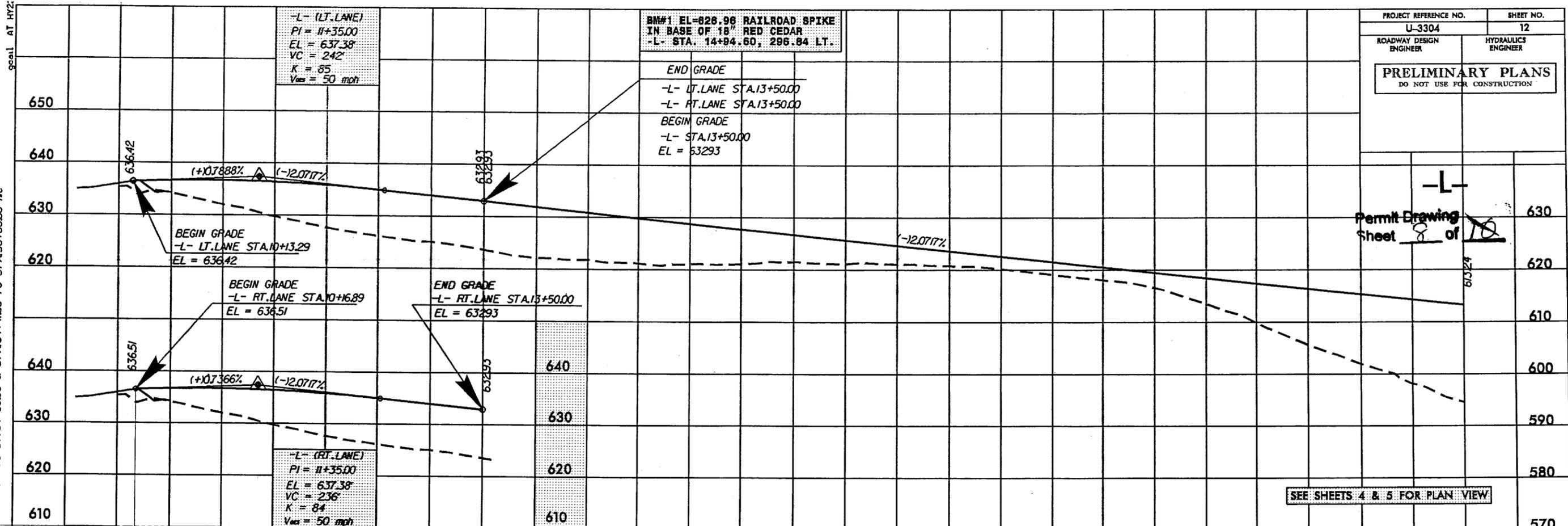
@ STA. 34+37 -L-
3 @ 13'x11' RCBC w/ Sills
Elev = 599.25'
Skew=97°



DESIGN REV. 11/16/06: REV GRADE -L- STA.10+44.47 TO STA.14+60.00 & STA.34+41.00 TO STA.36+00.00 Me

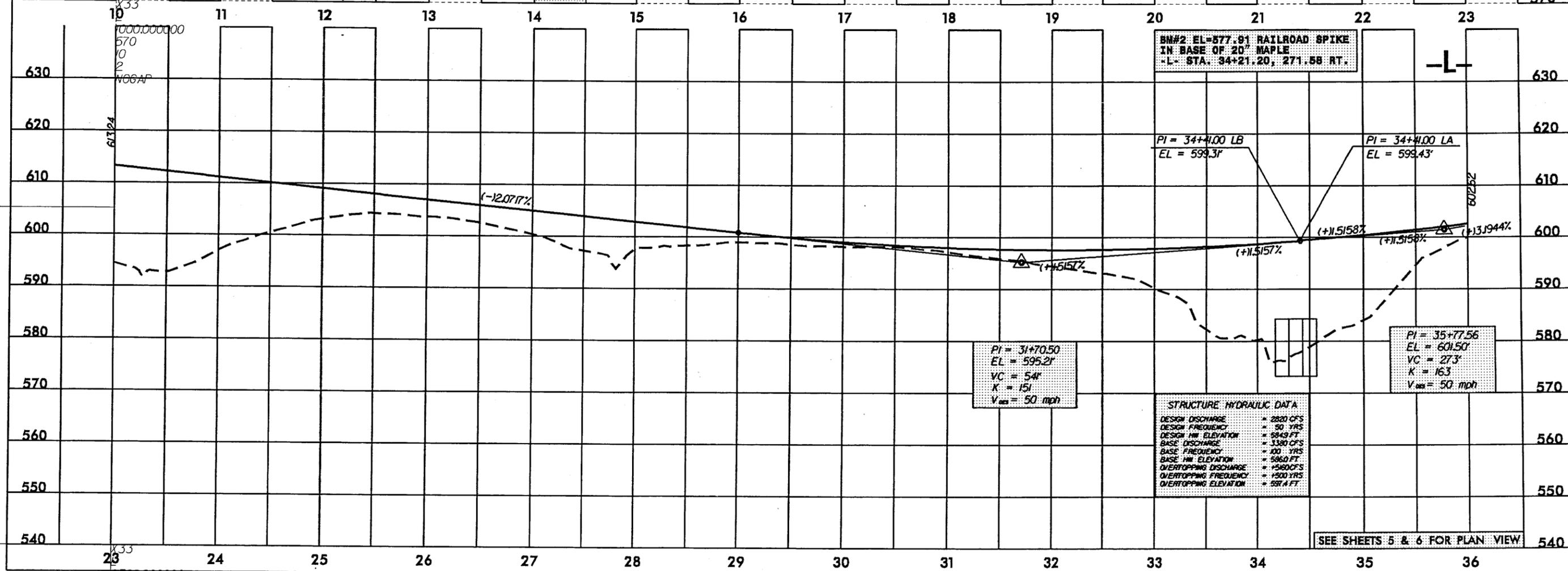
SCALE AT HY2:

PROJECT REFERENCE NO.	SHEET NO.
U-3304	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	



-L-
Permit Drawing
Sheet 8 of 10

SEE SHEETS 4 & 5 FOR PLAN VIEW



STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 2820 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN H.W. ELEVATION	= 584.9 FT
BASE DISCHARGE	= 3380 CFS
BASE FREQUENCY	= 100 YRS
BASE H.W. ELEVATION	= 586.0 FT
OVERTOPPING DISCHARGE	= 1560 CFS
OVERTOPPING FREQUENCY	= 100 YRS
OVERTOPPING ELEVATION	= 591.4 FT

SEE SHEETS 5 & 6 FOR PLAN VIEW

PROPERTY OWNERS

SITE NO.	NAMES	ADDRESSES
1	JOHN ISLEY	PO BOX 413 ALAMANCE, NC 27201
2	ETHAN POINTE, LLC C/O LAWSON BROWN	522 S. LEXINGTON AVE BURLINGTON, NC 27215
2	WILLIAM HUFFMAN C/O LAWSON BROWN	3022 ARDMORE ST BURLINGTON, NC 27215

NCDOT

DIVISION OF HIGHWAYS

ALAMANCE COUNTY

PROJECT: 34912.1.1 (U-3304)

GRAND OAKS BLVD

EXTENSION AND WIDENING

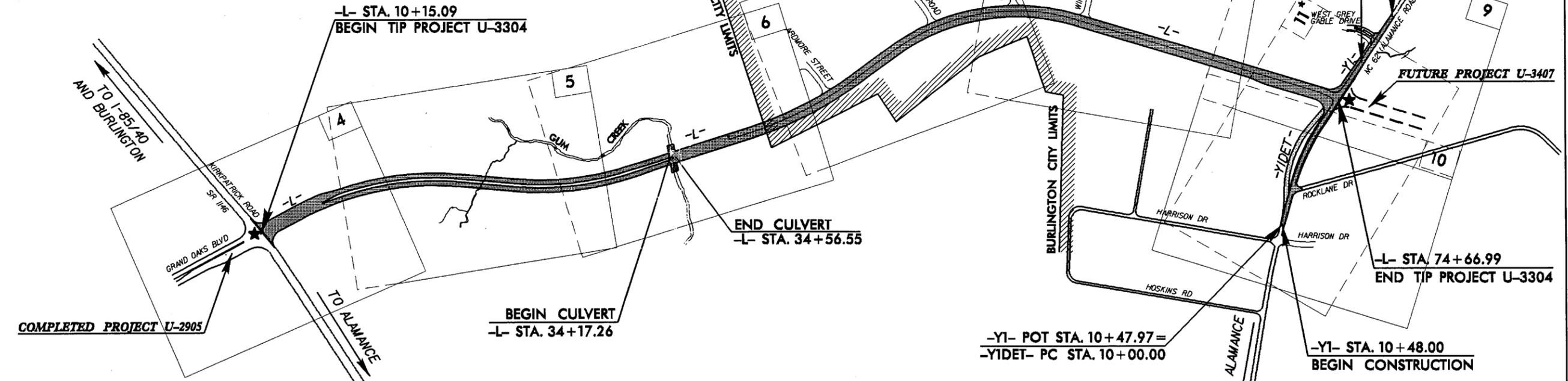
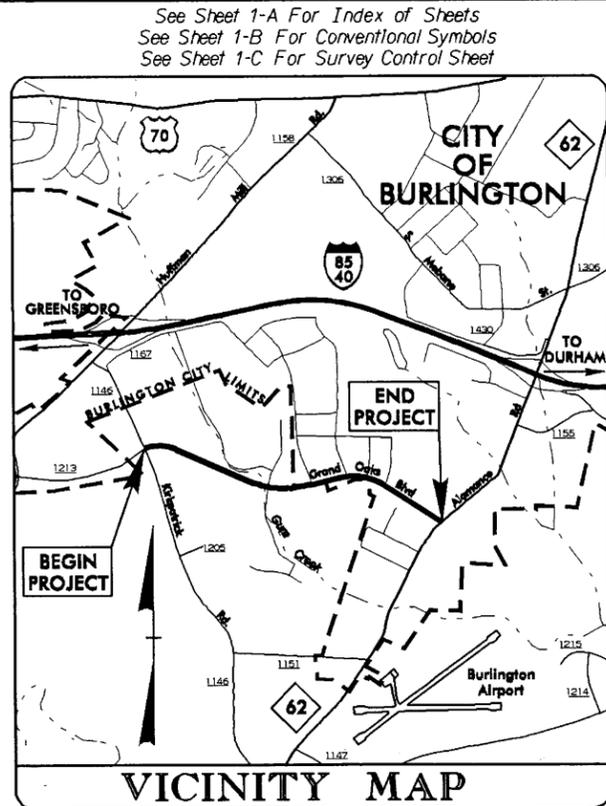
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3304	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
34912.1.1	STP-0701(8)	P.E.	
34912.2.2	STP-0701(8)	RW, UTIL.	



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ALAMANCE COUNTY

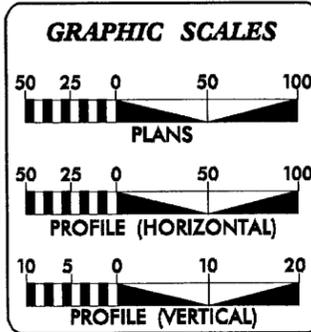
**LOCATION: BURLINGTON - GRAND OAKS BLVD EXTENSION
FROM SR 1146 (KIRKPATRICK ROAD) TO
NC 62 (ALAMANCE ROAD)**

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



DESIGN EXCEPTION NEEDED FOR VERTICAL CURVES
★ PROPOSED SIGNAL
THIS PROJECT IS PARTIALLY WITHIN THE CITY OF BURLINGTON
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

*NOTE: -YI- DETOUR SHOWN ON SHEET 11



DESIGN DATA

ADT 2008 =	10,575
ADT 2030 =	23,500
DHV =	11 %
D =	60 %
T =	6 % *
V =	50 MPH
* TTST 2 %	DUAL 4 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3304 =	1.215 mi
LENGTH STRUCTURE TIP PROJECT U-3304 =	0.007 mi
TOTAL LENGTH TIP PROJECT U-3304 =	1.222 mi

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 21, 2006

LETTING DATE:
JUNE 17, 2006

JASON MOORE, PE
PROJECT ENGINEER

KEVIN E. MOORE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

APPROVED DIVISION ADMINISTRATOR

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STATE DESIGN ENGINEER
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED DIVISION ADMINISTRATOR

CONTRACT: C201857
 TIP PROJECT: U-3304
 26-JUL-2007 13:59
 P:\PROJECTS\2007\2007-07-26\C201857\U-3304_rdy_tsh.dgn

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

Table listing symbols for boundaries and property: State Line, County Line, Township Line, City Line, Reservation Line, Property Line, Existing Iron Pin, Property Corner, Property Monument, Parcel/Sequence Number, Existing Fence Line, Proposed Woven Wire Fence, Proposed Chain Link Fence, Proposed Barbed Wire Fence, Existing Wetland Boundary, Proposed Wetland Boundary, Existing Endangered Animal Boundary, Existing Endangered Plant Boundary.

BUILDINGS AND OTHER CULTURE:

Table listing symbols for buildings and other culture: Gas Pump Vent or U/G Tank Cap, Sign, Well, Small Mine, Foundation, Area Outline, Cemetery, Building, School, Church, Dam.

HYDROLOGY:

Table listing symbols for hydrology: Stream or Body of Water, Hydro, Pool or Reservoir, Jurisdictional Stream, Buffer Zone 1, Buffer Zone 2, Flow Arrow, Disappearing Stream, Spring, Swamp Marsh, Proposed Lateral, Tail, Head Ditch, False Sump.

RAILROADS:

Table listing symbols for railroads: Standard Gauge, RR Signal Milepost, Switch, RR Abandoned, RR Dismantled.

RIGHT OF WAY:

Table listing symbols for right of way: Baseline Control Point, Existing Right of Way Marker, Existing Right of Way Line, Proposed Right of Way Line, Proposed Right of Way Line with Iron Pin and Cap Marker, Proposed Right of Way Line with Concrete or Granite Marker, Existing Control of Access, Proposed Control of Access, Existing Easement Line, Proposed Temporary Construction Easement, Proposed Temporary Drainage Easement, Proposed Permanent Drainage Easement, Proposed Permanent Utility Easement.

ROADS AND RELATED FEATURES:

Table listing symbols for roads and related features: Existing Edge of Pavement, Existing Curb, Proposed Slope Stakes Cut, Proposed Slope Stakes Fill, Proposed Wheel Chair Ramp, Proposed Wheel Chair Ramp Curb Cut, Curb Cut for Future Wheel Chair Ramp, Existing Metal Guardrail, Proposed Guardrail, Existing Cable Guiderail, Proposed Cable Guiderail, Equality Symbol, Pavement Removal.

VEGETATION:

Table listing symbols for vegetation: Single Tree, Single Shrub, Hedge, Woods Line, Orchard, Vineyard.

EXISTING STRUCTURES:

Table listing symbols for existing structures: MAJOR: Bridge, Tunnel or Box Culvert, Bridge Wing Wall, Head Wall and End Wall; MINOR: Head and End Wall, Pipe Culvert, Footbridge, Drainage Box: Catch Basin, DI or JB, Paved Ditch Gutter, Storm Sewer Manhole, Storm Sewer.

UTILITIES:

Table listing symbols for utilities: POWER: Existing Power Pole, Proposed Power Pole, Existing Joint Use Pole, Proposed Joint Use Pole, Power Manhole, Power Line Tower, Power Transformer, U/G Power Cable Hand Hole, H-Frame Pole, Recorded U/G Power Line, Designated U/G Power Line (S.U.E.*); TELEPHONE: Existing Telephone Pole, Proposed Telephone Pole, Telephone Manhole, Telephone Booth, Telephone Pedestal, Telephone Cell Tower, U/G Telephone Cable Hand Hole, Recorded U/G Telephone Cable, Designated U/G Telephone Cable (S.U.E.*), Recorded U/G Telephone Conduit, Designated U/G Telephone Conduit (S.U.E.*), Recorded U/G Fiber Optics Cable, Designated U/G Fiber Optics Cable (S.U.E.*).

WATER:

Table listing symbols for water: Water Manhole, Water Meter, Water Valve, Water Hydrant, Recorded U/G Water Line, Designated U/G Water Line (S.U.E.*), Above Ground Water Line.

TV:

Table listing symbols for TV: TV Satellite Dish, TV Pedestal, TV Tower, U/G TV Cable Hand Hole, Recorded U/G TV Cable, Designated U/G TV Cable (S.U.E.*), Recorded U/G Fiber Optic Cable, Designated U/G Fiber Optic Cable (S.U.E.*).

GAS:

Table listing symbols for gas: Gas Valve, Gas Meter, Recorded U/G Gas Line, Designated U/G Gas Line (S.U.E.*), Above Ground Gas Line.

SANITARY SEWER:

Table listing symbols for sanitary sewer: Sanitary Sewer Manhole, Sanitary Sewer Cleanout, U/G Sanitary Sewer Line, Above Ground Sanitary Sewer, Recorded SS Forced Main Line, Designated SS Forced Main Line (S.U.E.*).

MISCELLANEOUS:

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

7/2/99

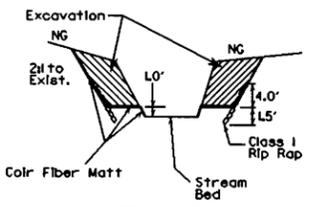
REVISIONS

R/W REVISION 6/6/06: REVISED RIGHT-OF-WAY & TEMPORARY CONSTRUCTION EASEMENTS AT GUARDRAIL LOCATION, -L- STA. 32+05 TO STA. 37+64.93 LT. & RT. FOR PARCEL 2 & 4

R/W REVISION 11/16/06: COMBINED PARCELS 6 AND 7 TO MAKE PARCEL 6, rem

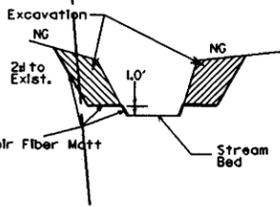
R/W REVISION 4/24/07: UPDATED PROPERTY LINES ON PARCEL NO.'S 2, 3, AND 4, SUB-DIVIDED PARCEL 2, ADDING PARCEL 2A, frm

Outlet Channel Bench Detail B (Not to Scale)



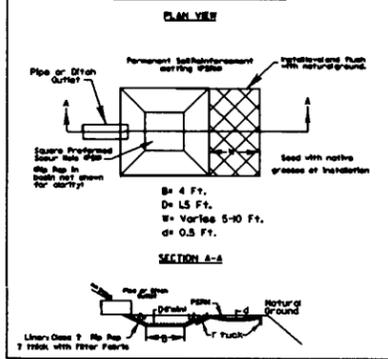
STA 34+40 -L- (RT)

Inlet Channel Bench Detail C (Not to Scale)



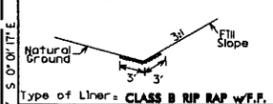
STA 34+55 -L- (LT)

PERFORMED SCOUR HOLE



STA 34+07 -L- (LT)
STA 34+63 -L- (RT)

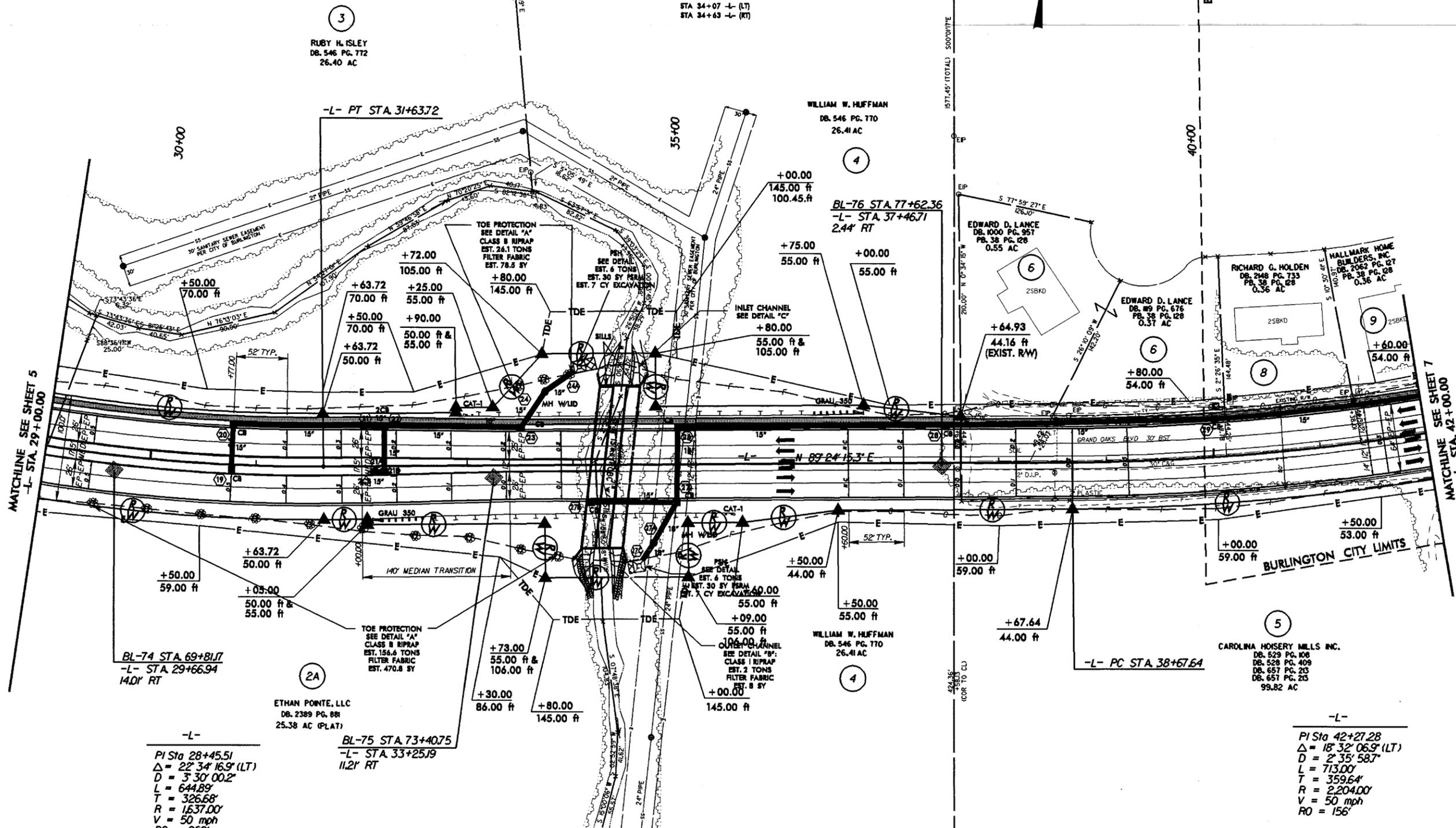
DETAIL A TOE PROTECTION (Not to Scale)



NAD 83

BURLINGTON CITY LIMITS

PROJECT REFERENCE NO. U-3304	SHEET NO. 6
R/W SHEET NO. 6	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



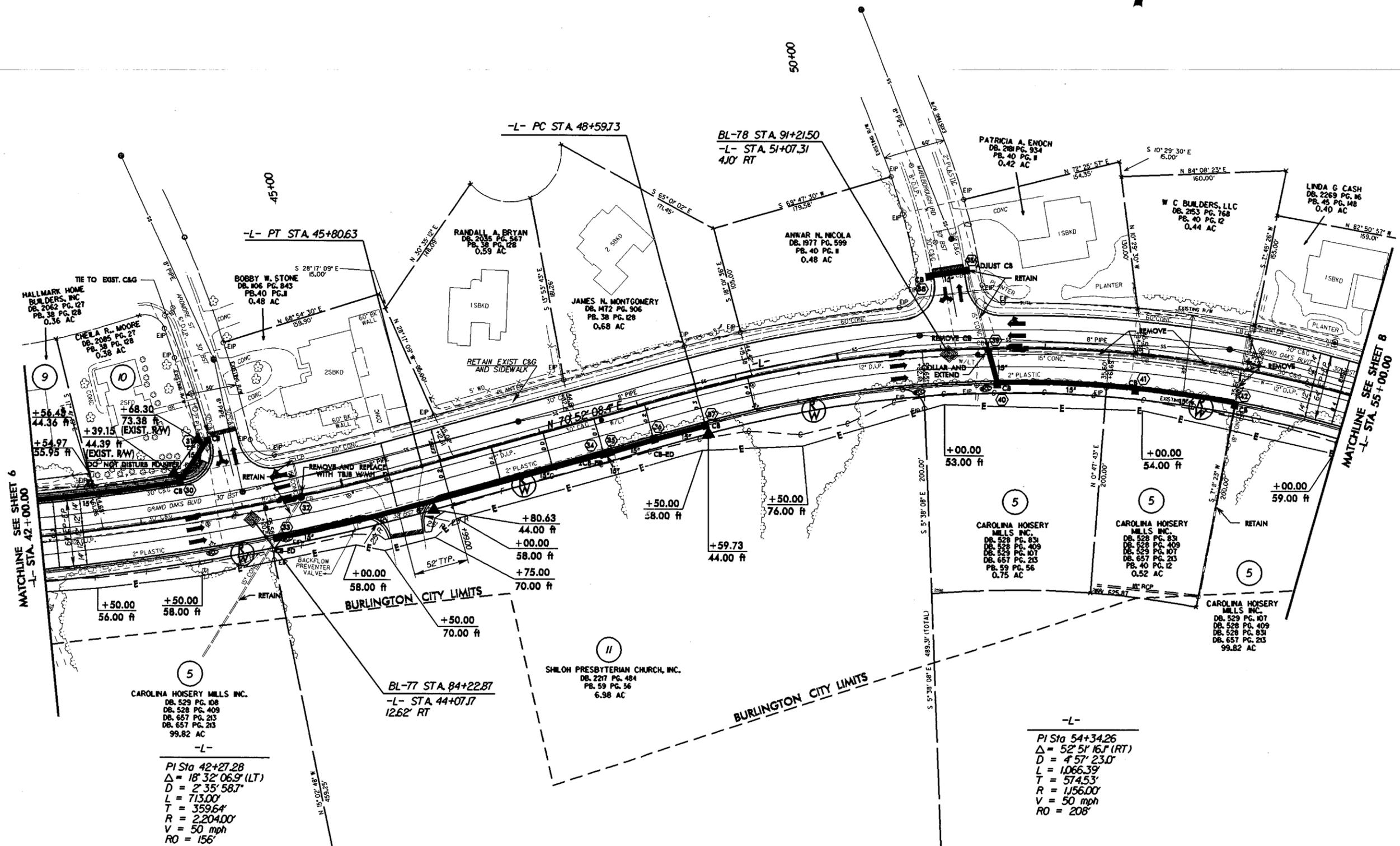
7/2/99

REVISIONS

R/W REVISION TRM 9/10/06 COMBINED PARCEL 12,13 AND 15 INTO PARCEL No.5
DESIGN REVISION 11/16/06 REVERSE SE-L- STA. 45+8800 TO 60+6800 (LAND SLOPE STAKE LIMITS) No

AVERAGE DAILY TRAFFIC		2008		2030	
ADMORE ST.	525	MARLBOROUGH RD.	1,158		
	800		1,800		
10,175	317	10,067	633	525	9,958
23,100	500	22,900	1,000	800	22,700
GRAND OAK BLVD		-L-		SR 1213	

PROJECT REFERENCE NO.	SHEET NO.
U-3304	7
R/W SHEET NO.	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



MATCHLINE SEE SHEET 6
-L- STA. 42+00.00

MATCHLINE SEE SHEET 8
-L- STA. 55+00.00

5
CAROLINA HOISERY MILLS INC.
DB. 529 PG. 108
DB. 528 PG. 409
DB. 657 PG. 213
DB. 657 PG. 213
99.82 AC
-L-

PI Sta 42+27.28
Δ = 18° 32' 06.9" (LT)
D = 2° 35' 58.7"
L = 713.00'
T = 359.64'
R = 2,204.00'
V = 50 mph
RO = 156'

BL-77 STA. 84+22.87
-L- STA. 44+07.17
12.62' RT

11
SHILOH PRESBYTERIAN CHURCH, INC.
DB. 227 PG. 484
PB. 59 PG. 56
6.98 AC

-L-
PI Sta 54+34.26
Δ = 52° 51' 16.1" (RT)
D = 4° 57' 23.0"
L = 1,066.39'
T = 574.53'
R = 1,156.00'
V = 50 mph
RO = 208'

FOR -L- PROFILE SEE SHEET 13

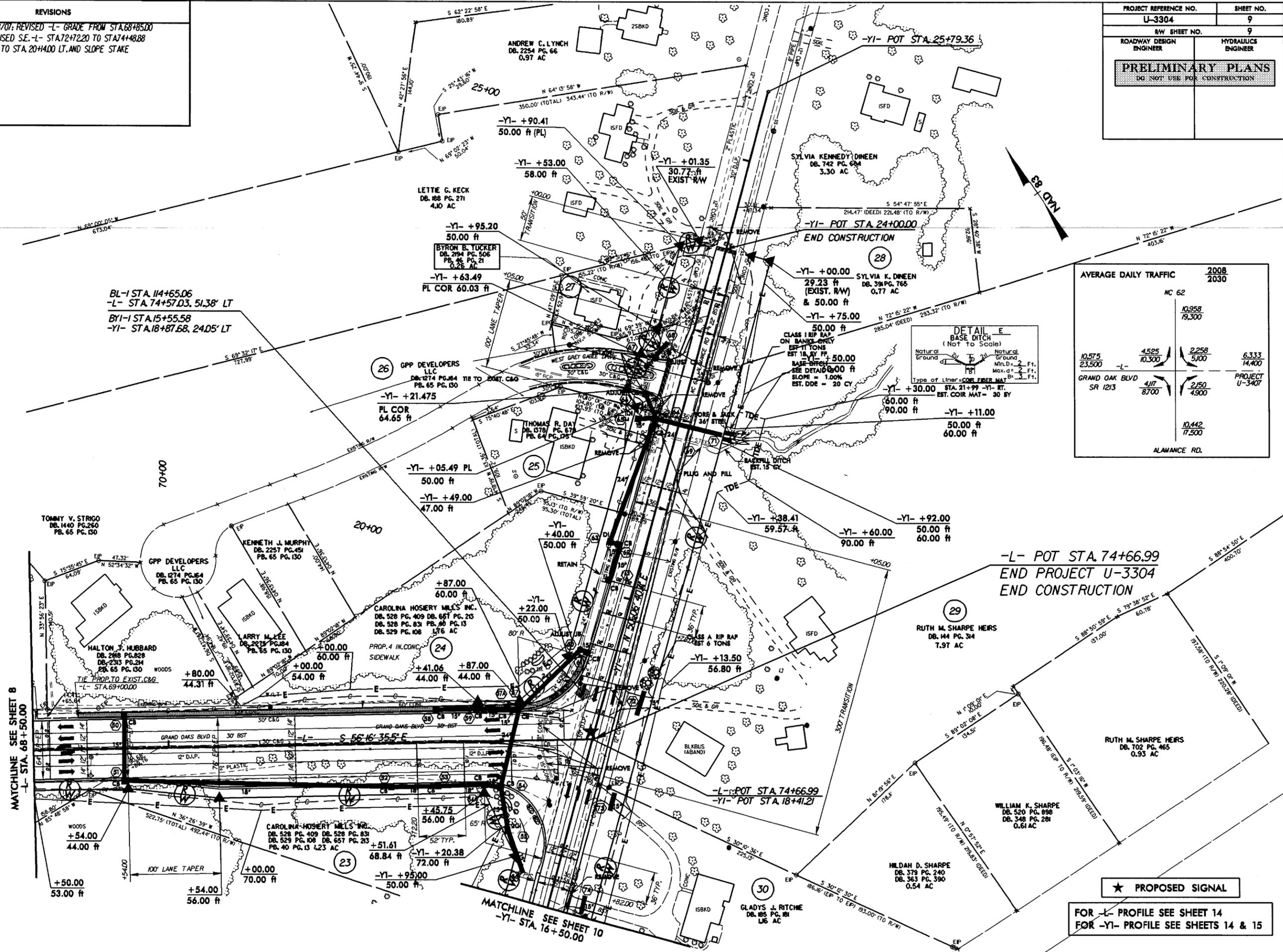
10-AUG-2007 10:29
r:\p\oad\new\proj\ur-3304_rdy_psh.7.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

7/2/09

REVISIONS

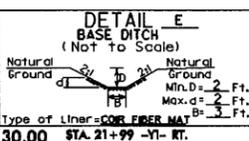
DESIGN REVISION 5/7/07; REVISED -L- GRADE FROM STA. 68+85.00 TO STA. 74+48.88, REVISED S.E. -L- STA. 72+72.20 TO STA. 74+48.88 & -YI- STA. 17+40.00 TO STA. 20+44.00 LT. AND SLOPE STAKE LIMITS.

PROJECT REFERENCE NO.	SHEET NO.
U-3304	9
R/W SHEET NO.	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



BL-1 STA. 114+65.06
 -L- STA. 74+57.03, 51.38' LT
 BY-1 STA. 15+55.58
 -YI- STA. 18+87.68, 24.05' LT

AVERAGE DAILY TRAFFIC		2008	2030
NC 62		10,958	19,300
10,575	4,525	2,258	6,333
23,500	10,300	5,100	14,400
GRAND OAK BLVD SR 1213		4,117	2,150
		8,700	4,900
ALAMANCE RD.		10,442	17,500
			PROJECT U-3407



MATCHLINE SEE SHEET 8
 -L- STA. 68+50.00

MATCHLINE SEE SHEET 10
 -YI- STA. 16+50.00

-L- POT STA. 74+66.99
 END PROJECT U-3304
 END CONSTRUCTION

★ PROPOSED SIGNAL

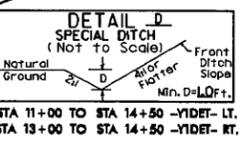
FOR -L- PROFILE SEE SHEET 14
 FOR -YI- PROFILE SEE SHEETS 14 & 15

10-AUG-2007 10:29
 T:\PROJECTS\U-3304_r.dwg_psh_9.dgn
 \$\$\$SUSERRRME\$\$\$

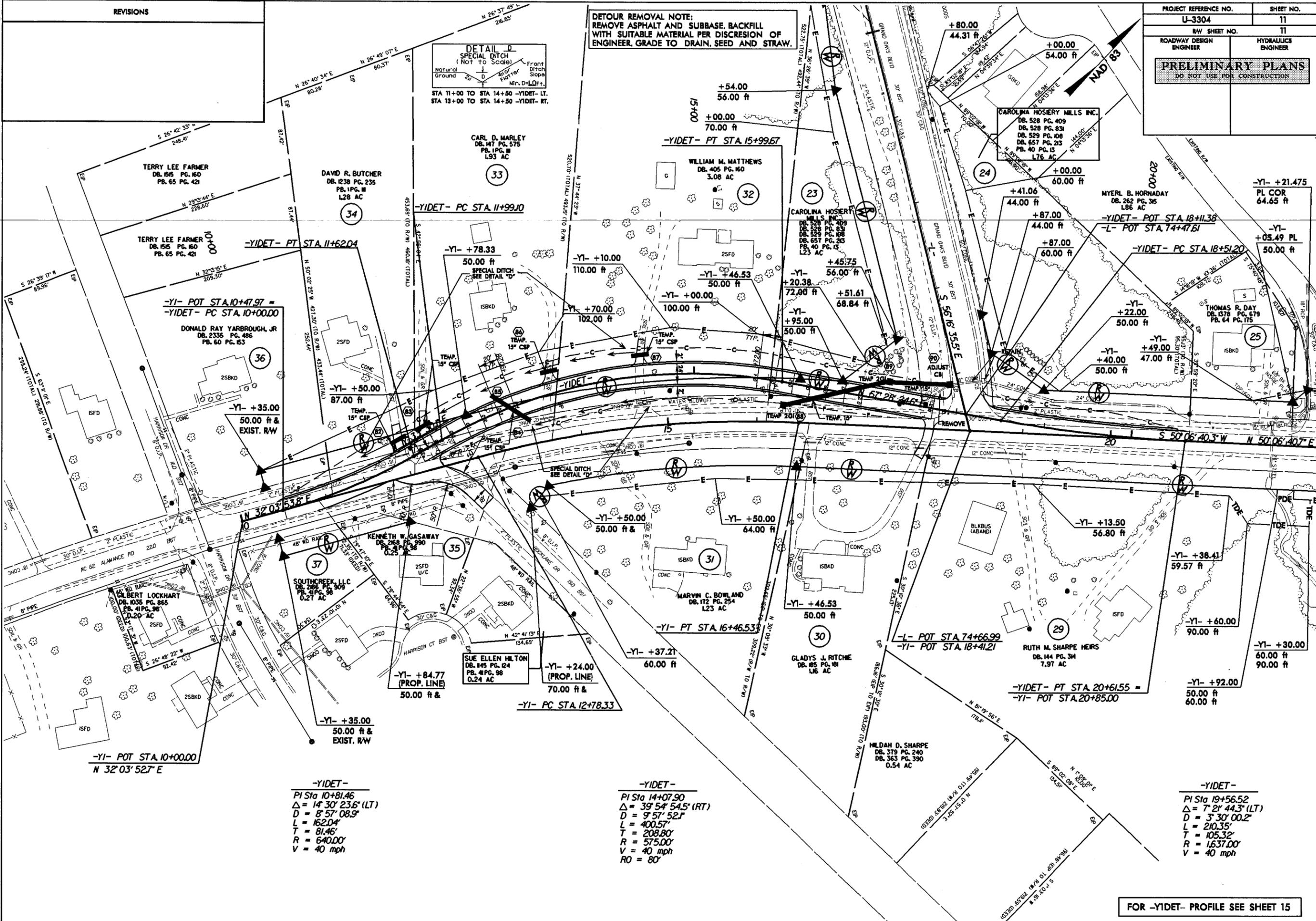
7/2/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-3304	11
R/W SHEET NO.	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	



DETOUR REMOVAL NOTE:
REMOVE ASPHALT AND SUBBASE, BACKFILL WITH SUITABLE MATERIAL PER DISCRETION OF ENGINEER, GRADE TO DRAIN, SEED AND STRAW.



-YIELD-
PI Sta 10+81.46
Δ = 14° 30' 23.6" (LT)
D = 8° 57' 08.9"
L = 162.04'
T = 81.46'
R = 640.00'
V = 40 mph

-YIELD-
PI Sta 14+07.90
Δ = 39° 54' 54.5" (RT)
D = 9° 57' 52.1"
L = 400.57'
T = 208.80'
R = 575.00'
V = 40 mph
RO = 80'

-YIELD-
PI Sta 19+56.52
Δ = 7° 21' 44.3" (LT)
D = 3° 30' 00.2"
L = 210.35'
T = 105.32'
R = 1,637.00'
V = 40 mph

FOR -YIELD- PROFILE SEE SHEET 15

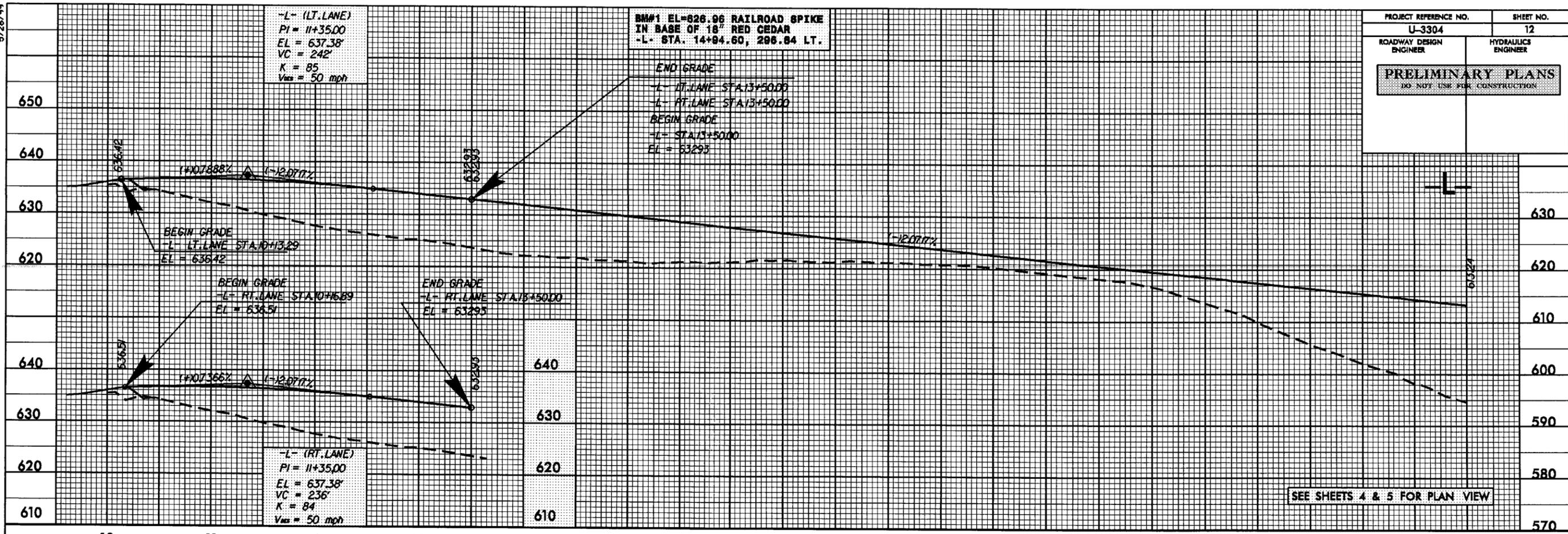
26-JUL-2007 14:00
C:\PROJECTS\U-3304-rdy-psh-11.dgn
R:\SUBSET\U-3304

5/28/99

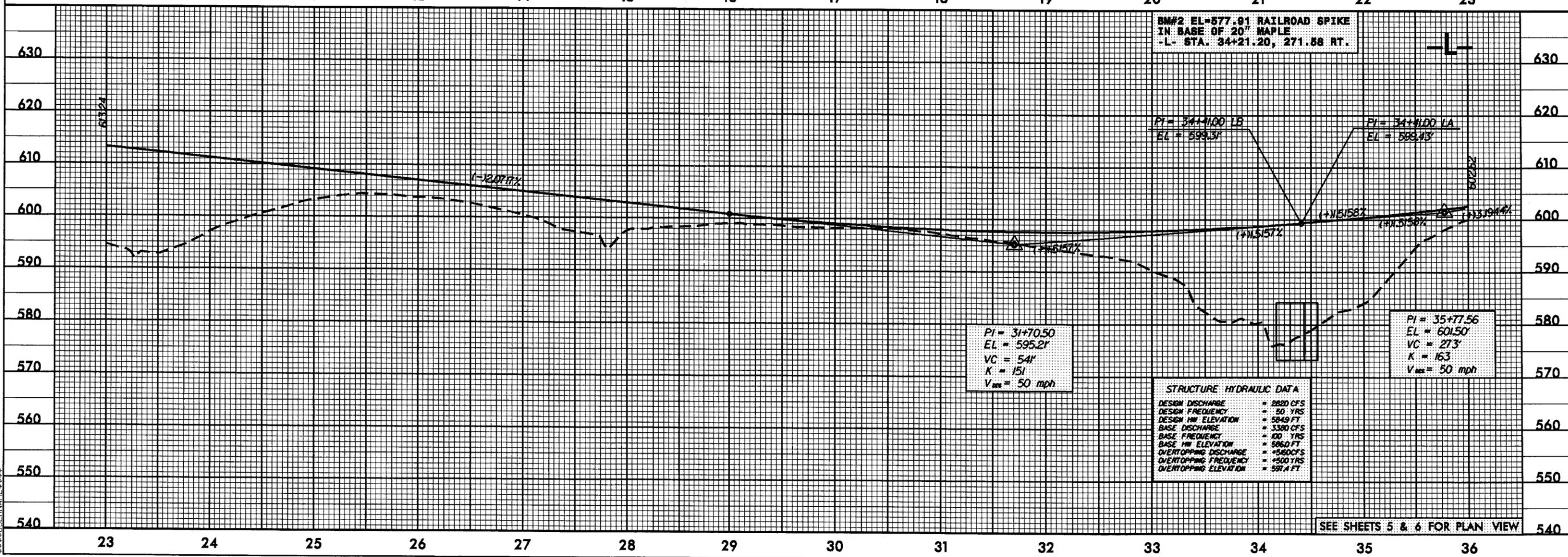
DESIGN REV. 11/16/06: REV GRADE -L- STA. 10+14.47 TO STA. 14+60.00 & STA. 34+41.00 TO STA. 36+00.00 No

26-111-2007 14:00
R:\Roadway\pco\3304_rdu\p1.dgn
\$\$\$\$\$SERVARE\$\$\$\$\$

PROJECT REFERENCE NO. U-3304	SHEET NO. 12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



SEE SHEETS 4 & 5 FOR PLAN VIEW



SEE SHEETS 5 & 6 FOR PLAN VIEW

STRUCTURE HYDRAULIC DATA

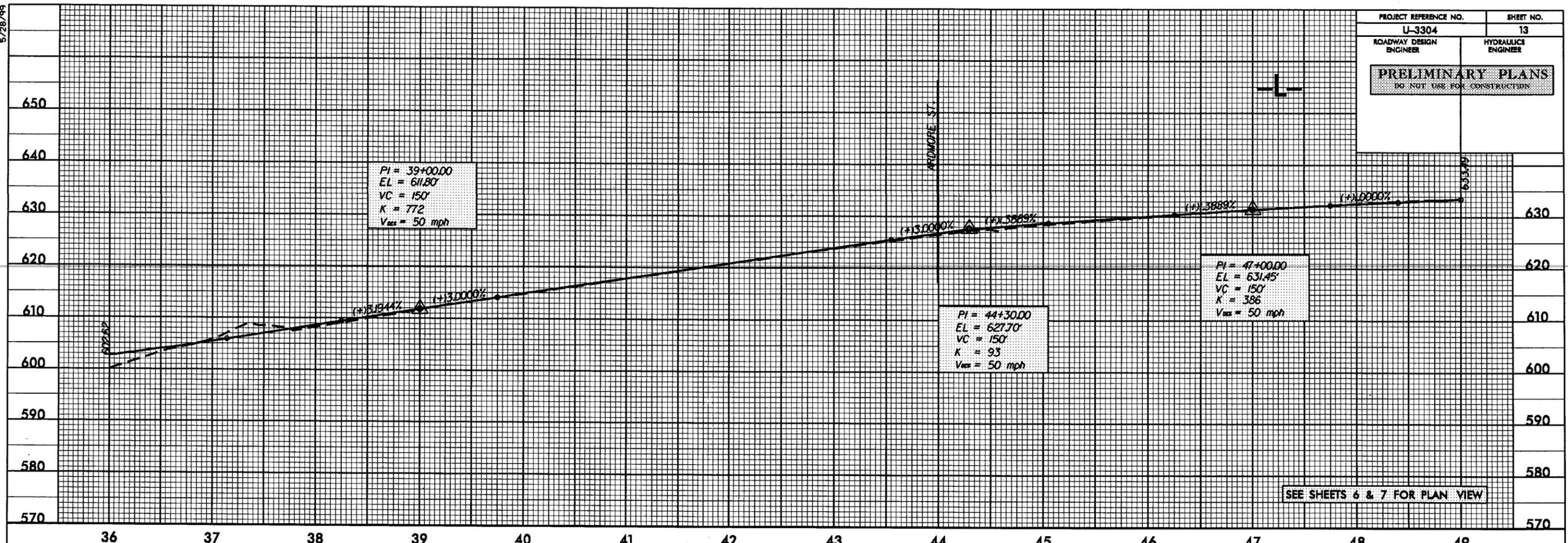
DESIGN DISCHARGE	= 2820 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 5849 FT
BASE DISCHARGE	= 3380 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 5860 FT
OVERTOPPING DISCHARGE	= 4500 CFS
OVERTOPPING FREQUENCY	= 4500 YRS
OVERTOPPING ELEVATION	= 5914 FT

5/28/99

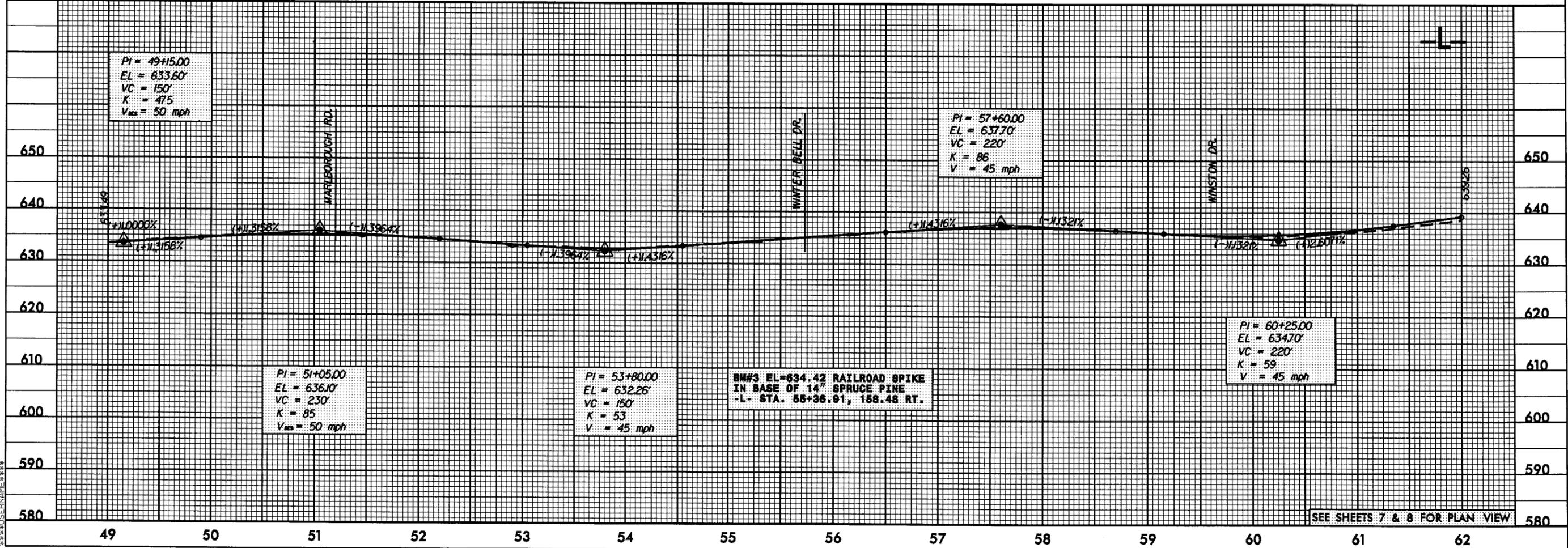
DESIGN REV. 11/16/06: REV GRADE -L- STA. 36+00.00 TO STA. 62+00.00

25 JUL 2007 14:00 U:\3304_rdu\p1.dgn

PROJECT REFERENCE NO. U-3304	SHEET NO. 13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



SEE SHEETS 6 & 7 FOR PLAN VIEW



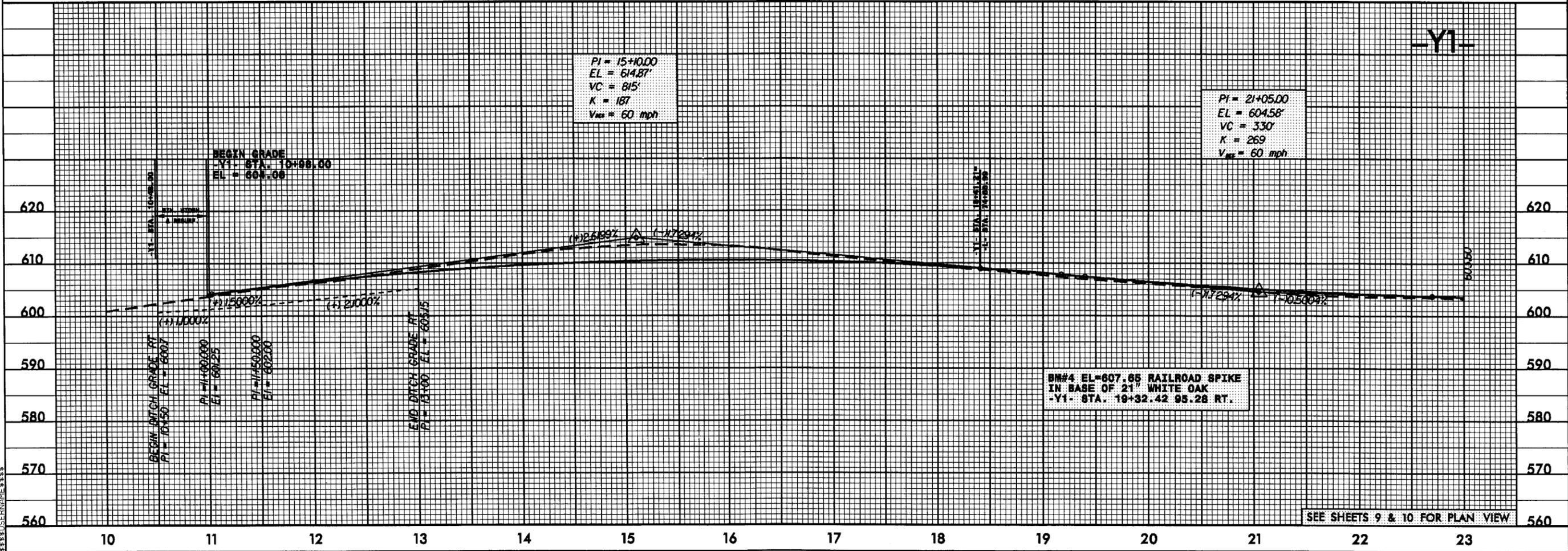
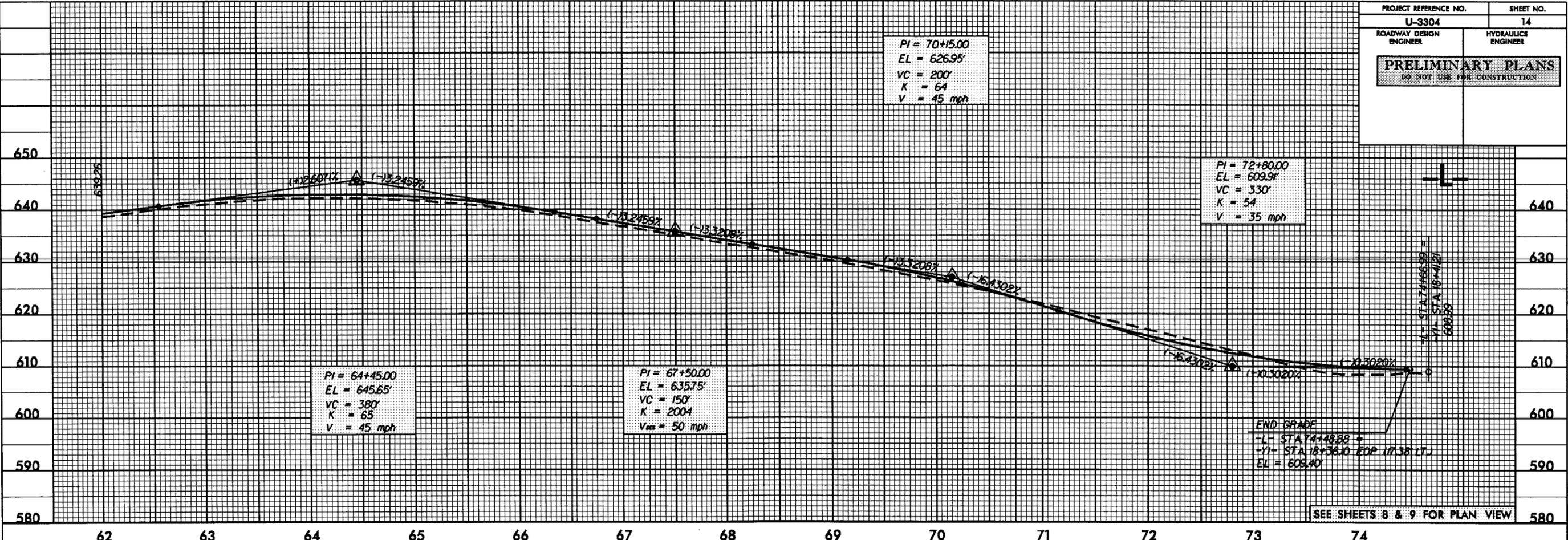
SEE SHEETS 7 & 8 FOR PLAN VIEW

5/28/99

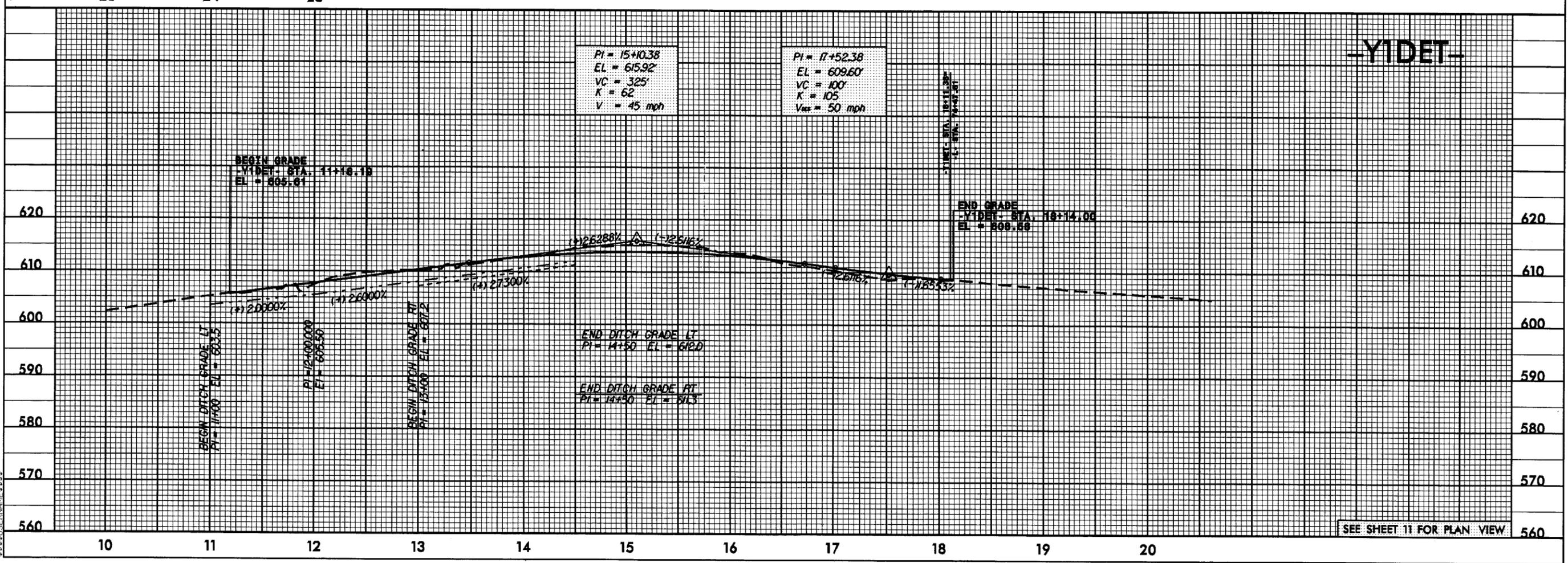
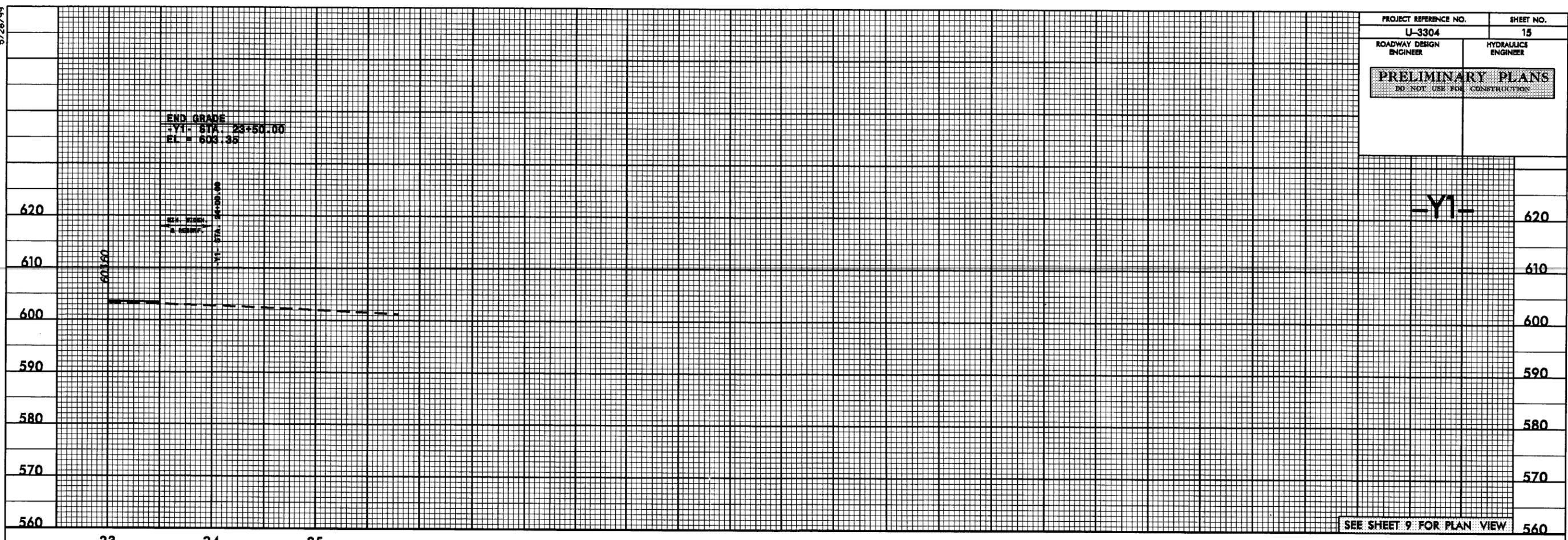
DESIGN REV. 5/8/07: REV GRADE -L- STA 68+85.00 TO STA 74+48.88

05 JUL -2007 14:00
C:\PROJECTS\U-3304-rdy.pfl.dgn
\$\$\$\$\$USPENNY\$\$\$\$\$

PROJECT REFERENCE NO. U-3304	SHEET NO. 14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



5/28/99



26-JUL-2007 14:00
C:\COURT\PROJECTS\U-3304-rdy.pfl.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$