STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

October 2, 2008

U. S. Army Corps of Engineers
Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, NC 28801-5006

ATTENTION: Mr. Steve Lund
NCDOT Coordinator

Dear Sir:

SUBJECT: **Nationwide Permit 14 and Section 401 Certification Application** for the widening of NC 51 from SR 3645 (Downs Circle) to the South Carolina State Line in Mecklenburg County. Federal Aid Project No. STP-51(2), WBS Element 34948.1.1, Division 10, TIP No. U-3447.
Debit Work Order 34948.1.1 $570.00 for processing the Section 401 certification application.

Please see the enclosed Pre-Construction Notification form, Ecosystem Enhancement Program (EEP) mitigation acceptance letter, FWS concurrence letter, permit drawings and design plans for the above referenced project. An Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) have been completed and distributed for this project. Additional copies are available upon request. The North Carolina Department of Transportation (NCDOT) proposes to widen the existing 2 lane facility to a 4 lane curb and gutter facility with a 23-foot raised median. The purpose of this facility is to improve safety and improve the traffic carrying capacity of NC 51. The project will permanently impact 0.19 acre of riparian wetlands, 250 linear feet of streams and temporarily impact 0.07 acre of streams.

NEPA DOCUMENT STATUS

The United States Department of Transportation Federal Highway Administration (FEWA) and the North Carolina Department of Transportation (NCDOT) approve the previous administrative actions of this project including the Environmental Assessment (EA) on March 29, 2004 and the Finding of No Significant Impact (FONSI) on March 2, 2005. Copies of the EA and FONSI have been provided to regulatory review agencies involved in the approval process. Additional copies will be provided upon request.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-715-1334
FAX: 919-715-5501

WEBSITE: WWW.NCDOT.ORG

LOCATION:
PARKER LINCOLN BUILDING,
2728 CAPITAL BLVD.
RALEIGH NC 27604

Site 5 (-L- 65+50 Rt)
Roadway widening fill, necessary to provide a proper curve alignment to NC 51, will result in 0.01 acre of permanent wetland fill and 0.02 acre of mechanized clearing in wetlands.

Site 6 (-Y2- 11+43 Rt)
An 18" concrete pipe will be replaced with three pipes consisting of an 18" pipe at the most upstream section, a 24" pipe in the middle, and a 36" pipe at the most downstream section. The total length of the three pipes is 82 feet. The existing pipe measures 33 feet in length, however, this pipe cannot be reused because its elevation will not align with the new roadway and associated drainage system, and is not large enough to carry the ultimate design flow. A tail ditch will be necessary at the outlet of this pipe as the 36" pipe will need to be lower than the existing outlet. As the jurisdiction of this system begins at the outlet of the existing pipe, the tail ditch will result in 37 linear feet of permanent stream impacts and <0.01 acre of temporary stream impacts to UT to Sugar Creek.

Total Impacts
The project will permanently impact 0.19 acre of riparian wetlands, 250 linear feet of streams, and temporarily impact 0.02 acre of streams as outlined in the attached Impact Summary Table (found on Permit Drawing Sheet 4 of 17.)

Utility Impacts:
A natural gas line, sanitary sewer line, power and cable television utilities are present within the project area. All of these utilities will be relocated without impacts to jurisdictional resources.

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 January 31, 2008, the United States Fish and Wildlife Service (USFWS) lists four federally protected species for Mecklenburg County (Table 1).

Surveys for the plants listed below were completed on 11/18/2002, and 11/1/2007. Suitable habitat was found for these species, but no individuals were located, resulting in a biological conclusion of No Effect.

Surveys for the Carolina heelsplitter were completed on July 6, 2004, and no individuals were located, resulting in a biological conclusion of May Affect, Not Likely to Adversely Affect. NCDOT is in receipt of a letter (attached to this package) dated February 4, 2005 from FWS concurring with these findings.

The bald eagle has been delisted from the Endangered Species Act as of August 8, 2007. It is still protected under the Bald and Golden Eagle Protection Act. There are no large water bodies within 1 mile and 660 feet of the project study area, therefore no survey is needed.

Table 1. Federally Protected Species for Mecklenburg County

Common Name	Scientific Name	Status	Survey Notes	Biological Conclusion
Carolina heelsplitter	*Lasmigona decorata*	E	Habitat Present	MANLTAA
Michaux's sumac	*Rhus michauxii*	E	Habitat Present	No Effect
Schweinitz's sunflower	*Helianthus schweinitzii*	E	Habitat Present	No Effect
Smooth coneflower	*Echinacea laevigata*	E	Habitat Present	No Effect

MANLTAA= May Affect, Not Likely to Adversely Affect.

AVOIDANCE, MINIMIZATION AND MITIGATION

Avoidance and Minimization:
Avoidance examines all appropriate and practicable possibilities of averting impacts to "Waters of the United States." The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impact. In addition, Best Management Practices will be followed as outlined in "NCDOT's Best Management Practices for Construction and Maintenance Activities".

- The new culvert carrying McCullough Branch will replace a significantly perched culvert and will be buried one foot allowing natural material to fill the culvert. This should restore McCullough Branch to its natural stream dimensions. Construction of this culvert will be staged to maintain traffic during construction.

- Three pre-formed scour holes will be placed at Sites 4 & 5 to minimize impacts to wetlands.

- 2:1 slopes will be used to reduce wetland and stream impacts.

Compensatory Mitigation: A letter dated August 11, 2008 from the NC EEP confirming they will provide mitigation for the 250 linear feet of stream and 0.19 acre of riparian wetland impacts is included with this application.

PROJECT SCEHDULE

The project schedule calls for a January 20, 2009 let date, and a review date of December 2, 2008.

REGULATORY APPROVALS

Section 404 Permit:
It is anticipated that the permanent and temporary impacts to streams and wetlands associated with this linear transportation project will be authorized under Section 404 Nationwide Permit 14. We are, therefore, requesting the issuance of a Nationwide Permit 14.

Section 401 Certification:
We anticipate 401 General Certification number 3704 will apply to this project. 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 certification application (debit WBS element 34948.1.1). We are providing five copies of

this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality for their approval.

A copy of this application will be posted on the NCDOT website at http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Michael Turchy at maturchy@ncdot.gov or (919) 715-1468.

Sincerely,

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

W/attachment

Mr. Brian Wrenn, NCDWQ (5 Copies)
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC

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. Barry Moose, PE, Division 10
Mr. Larry Thompson, Division 10
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Ms. Beth Harmon, EEP
Mr. Todd Jones, NCDOT External Audit Branch
Mr. Andy Hussey, Project Planning Engineer

Office Use Only:	Form Version March 05
USACE Action ID No. _____	**DWQ No.** _____

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

I. Processing

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

2. Nationwide, Regional or General Permit Number(s) Requested: NW 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: 1598 Mail Service Center
   _____
   _____
   _____
   Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794
   E-mail Address: maturchy@ncdot.gov

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: U-3447, The widening of NC 51 from Downs Circle to the South Carolina State Line.

2. T.I.P. Project Number or State Project Number (NCDOT Only): U-3447

3. Property Identification Number (Tax PIN): N/A

4. Location
   County: Mecklenburg Nearest Town: Pineville
   Subdivision name (include phase/lot number): N/A
   Directions to site (include road numbers/names, landmarks, etc.): _____

5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
   Decimal Degrees (6 digits minimum): 35.0967 °N -80.8886 °W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: Sugar Creek

8. River Basin: Catawba
   (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: Light industrial, Light residential, and light agricultural.

10. Describe the overall project in detail, including the type of equipment to be used: NC 51 will be widened from a 2 lane, to a 4 lane curb and gutter facility. Equipment may include, but is not limited to, earth moving equipment including graders, pavers, bull dozers, backhoes, etc.

11. Explain the purpose of the proposed work: To improve safety and carrying capacity of NC 51.

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. Mr. Steve Lund of the U.S. Army Corps of Engineers verified the jurisdictional resources on January 31, 2005 (Action ID# 200430086).

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.

1. Provide a written description of the proposed impacts: Proposed impacts are limited to pipe extensions and a culvert replacement at six individual sites. Specific descriptions and reasons for replacement can be found on the attached coversheet.

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

Wetland Impact Site Number (indicate on map)	Type of Impact	Type of Wetland (e.g., forested, marsh, herbaceous, bog, etc.)	Located within 100-year Floodplain (yes/no)	Distance to Nearest Stream (linear feet)	Area of Impact (acres)
Site 4	Pipe Replacement	floodplain	Yes	0	0.16
Site 5	Road Widening	floodplain	Yes	approx 250'	0.03
Total Wetland Impact (acres)					0.19

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

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

Stream Impact Number (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
Site 1	UT to McCullough Branch	Permanent	Intermittent	1.5'	9	<0.01
Site 2	UT to McCullough Branch	Permanent	Intermittent	1-2'	8	<0.01
Site 3	McCullough Branch	Permanent	Perennial	20'	97	0.04
Site 3	McCullough Branch	Temporary	Perennial	20'	78	0.04
Site 4	UT to Sugar Creek	Permanent	Perennial	2'	99	<0.01
Site 6	UT to Sugar Creek	Permanent	Perennial	1.5'	37	<0.01
Site 6	UT to Sugar Creek	Temporary	Perennial	1.5	151	<0.01
Total Stream Impact (Linear feet)				Permanent Temporary	250 229	0.07 0.02

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

Open Water Impact Site Number (indicate on map)	Name of Waterbody (if applicable)	Type of Impact	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)	Area of Impact (acres)
NONE				
Total Open Water Impact (acres)				

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

Stream Impact (acres):	0.02 (temp) 0.07 (permanent)
Wetland Impact (acres):	0.19
Open Water Impact (acres):	n/a
Total Impact to Waters of the U.S. (acres)	0.02 (temp) 0.07 (permanent)
Total Stream Impact (linear feet):	229 (temp) 250 (permanent)

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

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

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. All jurisdictional impacts for this project are limited to extensions of current structures. Widening occurs asymmetrically throughout the project to minimize impacts to jurisdictional resources.

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.
   Mitigation will be provided by the EEP for this project.

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): 250'
   Amount of buffer mitigation requested (square feet): n/a
   Amount of Riparian wetland mitigation requested (acres): n/a
   Amount of Non-riparian wetland mitigation requested (acres): n/a
   Amount of Coastal wetland mitigation requested (acres): n/a

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		3 (2 for Catawba)	
2		1.5	
Total			

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

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

XI. Stormwater (required by DWQ)

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level. NCDOT's Best Management Practices will be followed throughout the construction of the project.

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:_____

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

10/02/08

Applicant/Agent's Signature **Date**

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

Ecosystem Enhancement PROGRAM

October 2, 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-3447, Widening of NC 51 from South Carolina State Line to SR 3645 (Downs Circle), Mecklenburg County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream and riparian wetland mitigation for the subject project. Based on the information supplied by you on August 11, 2008, the impacts are located in CU 03050103 of the Catawba River Basin in the Southern Piedmont (SP) Eco-Region, and are as follows:

Warm Stream:	250 feet
Riparian Wetland	0.19 acre

This mitigation acceptance letter replaces the mitigation acceptance letter issued on August 11, 2008. EEP commits to implementing sufficient compensatory stream and riparian wetland mitigation 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 **and consistent with the Guidance for Expanded Service Area for Mitigating Impacts within the Lower Catawba River Basin adopted by the PACG-TC on September 12, 2006.** If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

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

Sincerely,

William D. Gilmore, P.E.
EEP Director

cc: Mr. Steve Lund, USACE – Asheville Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: U-3447 Revised

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801

February 4, 2005

Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

Subject: Endangered Species Concurrence for the Proposed Widening of NC 51 from the South Carolina State Line to SR 3645 (Down's Circle), Mecklenburg County, North Carolina (TIP No. U-3447)

As requested by the North Carolina Department of Transportation (NCDOT), we have reviewed the natural resources information and biological conclusions for federally protected species for the subject project. We provide the following comments in accordance with the provisions of section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act).

The NCDOT proposes to widen the existing NC 51 for approximately 1 mile from the South Carolina state line to Down's Circle in Mecklenburg County. The proposed project will cross McCollough Branch. Currently, McCollough Branch flows under NC 51 through a triple-barrel box culvert that is "perched" and does not provide for aquatic life passage. As part of the proposed project, the culvert will be replaced and installed to reestablish aquatic life passage. Although McCollough Branch is degraded in the project area, a field survey for native freshwater mussels was conducted; none were found. Given the information provided, we concur with your conclusion that implementation of this project is "not likely to adversely affect" the Carolina heelsplitter in the project area. We believe the requirements under section 7(c) of the Act are fulfilled regarding listed species for the subject project. However, obligations under section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered, (2) this action is subsequently modified in a manner that was not considered in this review, or (3) a new species is listed or critical habitat is determined that may be affected by the identified action.

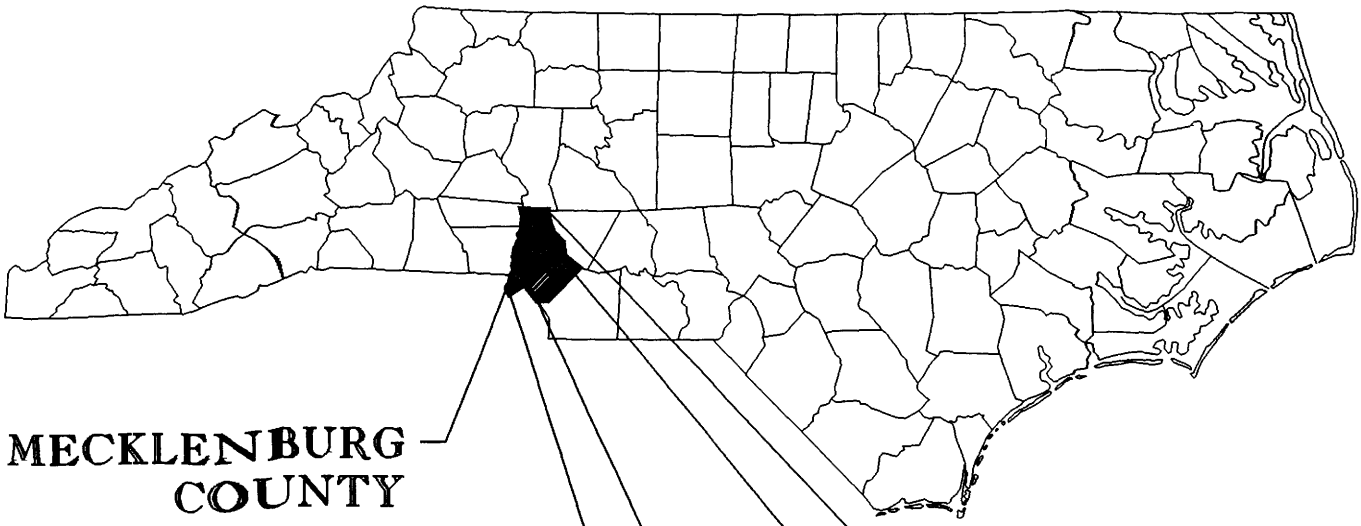
If you have questions about these comments, please contact Ms. Marella Buncick of our staff at 828/258-3939, Ext. 237. In any future correspondence concerning this project, please reference our Log No. 4-2-05-098.

Sincerely,

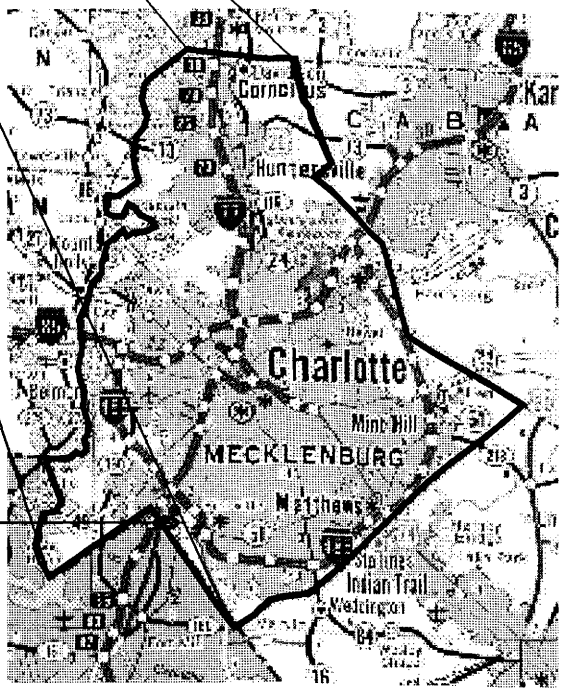
Brian P. Cole
Field Supervisor

cc:
Mr. Michael Turchy, Environmental Specialist, North Carolina Department of Transportation, 1598 Mail Service Center, Raleigh, NC 27699-1598

NORTH CAROLINA



MECKLENBURG COUNTY



PROJECT LOCATION

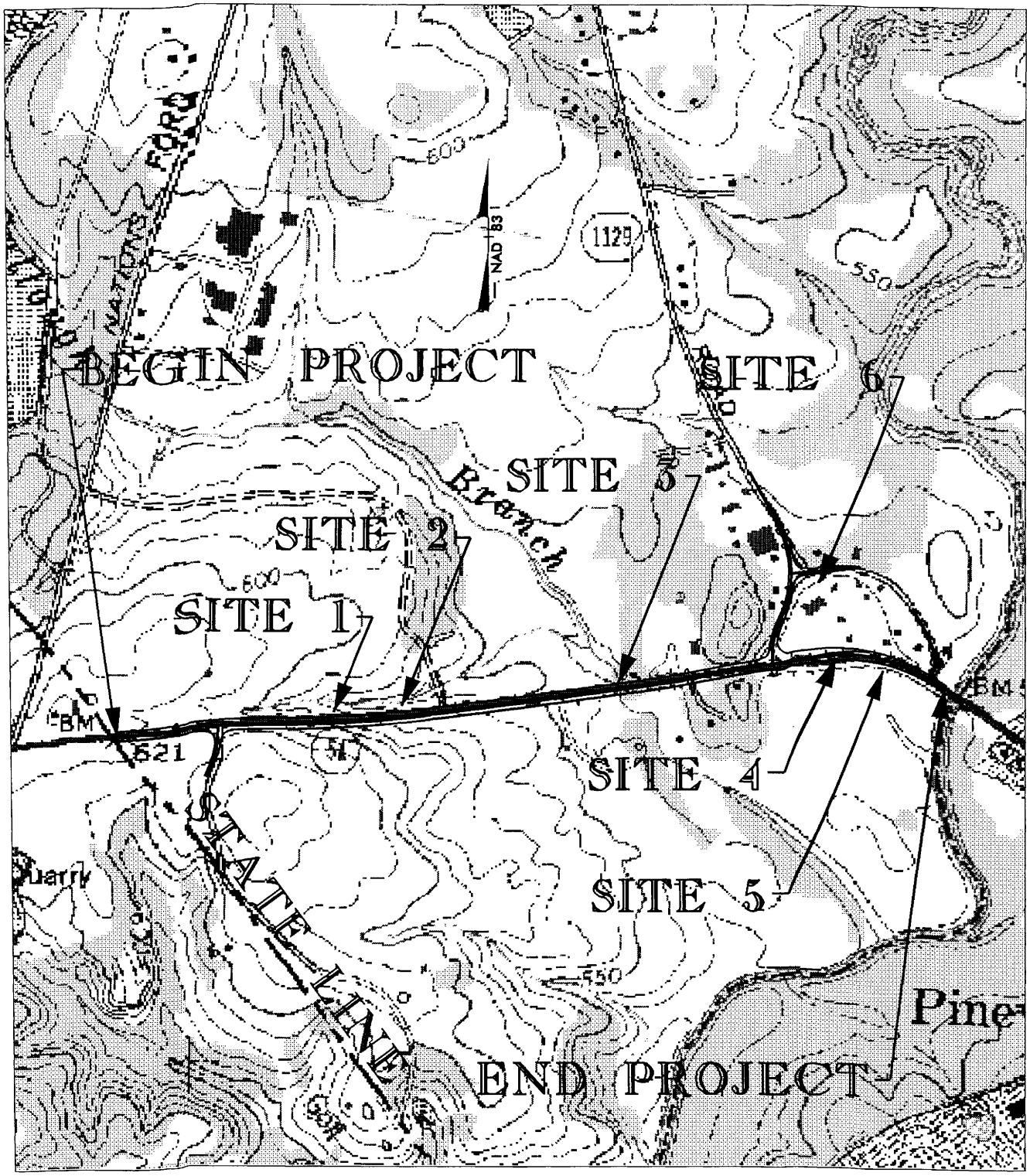
VICINITY MAPS

NCDOT

DIVISION OF HIGHWAYS
MECKLENBURG COUNTY
PROJECT: 34948.1.1 (U-3447)

NC 51, ROCKHILL - PINEVILLE RD
FROM THE SC STATE LINE
TO SR 3645 (DOWNS CIRCLE)

SHEET 1 OF 17 DATE:



VICINITY MAPS

NCDOT
DIVISION OF HIGHWAYS
MECKLENBURG COUNTY
PROJECT: 34948.1.1 (U-3447)

NC 51, ROCKHILL - PINEVILLE RD
FROM THE SC STATE LINE
TO SR 3645 (DOWNS CIRCLE)

SHEET 2 OF 17 DATE:

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	James Ross Miller, Jr.	3685 Highway 51 North
		Fort Mill, SC 29715
5	BEBCO, LLC.	1635 Brandon Road
		Charlotte, NC 28207
6	Rebekah B. Miller	1444 6th Street
		Circle Court NW
		Hickory, NC 28601
9	James S. & Tula Kleitches	3624 Garden Club Lane
		Charlotte, NC 28210
10	All Points Trucking, Inc.	P.O. Box 240801
		Charlotte, NC 28224

NCDOT

DIVISION OF HIGHWAYS
MECKLENBURG COUNTY
PROJECT: 34948.1.1 (U-3447)

NC 51, ROCKHILL - PINEVILLE RD
FROM THE SC STATE LINE
TO SR 3645 (DOWNS CIRCLE)

SHEET 3 OF 17 DATE:

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 25+00 Lt	24" System Pipe						<0.01	<0.01	9	6	
2	-L- 29+60 Lt	24" System Pipe						<0.01	<0.01	8	7	
3	-L- 44+29 Lt & Rt	Culvert						0.04	0.02	97	78	
4	-L- 59+34 Lt	60" Pipe	0.12			0.04		0.01	<0.01	99	10	
5	-L- 62+50 Rt	Roadway Fill	0.01			0.02						
6	-Y2- 11+43 Rt	Pipe and Tail Ditch						<0.01	0.02	37	151	
TOTALS:			0.13			0.06		0.07	0.02	250	252	

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY
WBS - 34948.1.1 (U-3447)

SHEET 4/17 DATE

ATN Revised 3/31/05

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

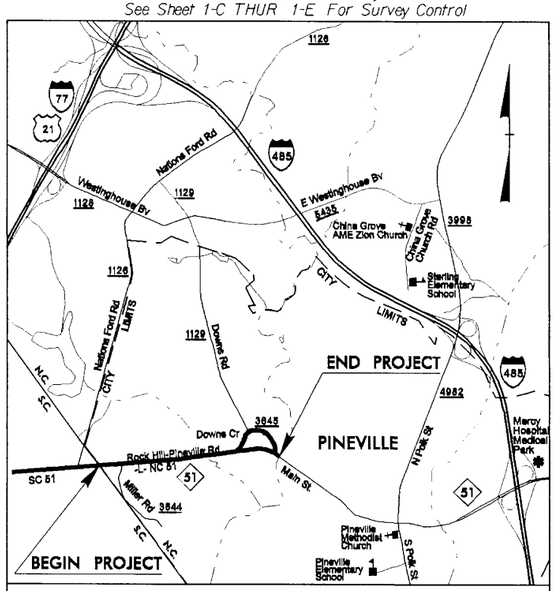
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3447	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34948.1.1	STP-51(2)	PE
34948.2.1	STP-51(2)	R/W, UTIL

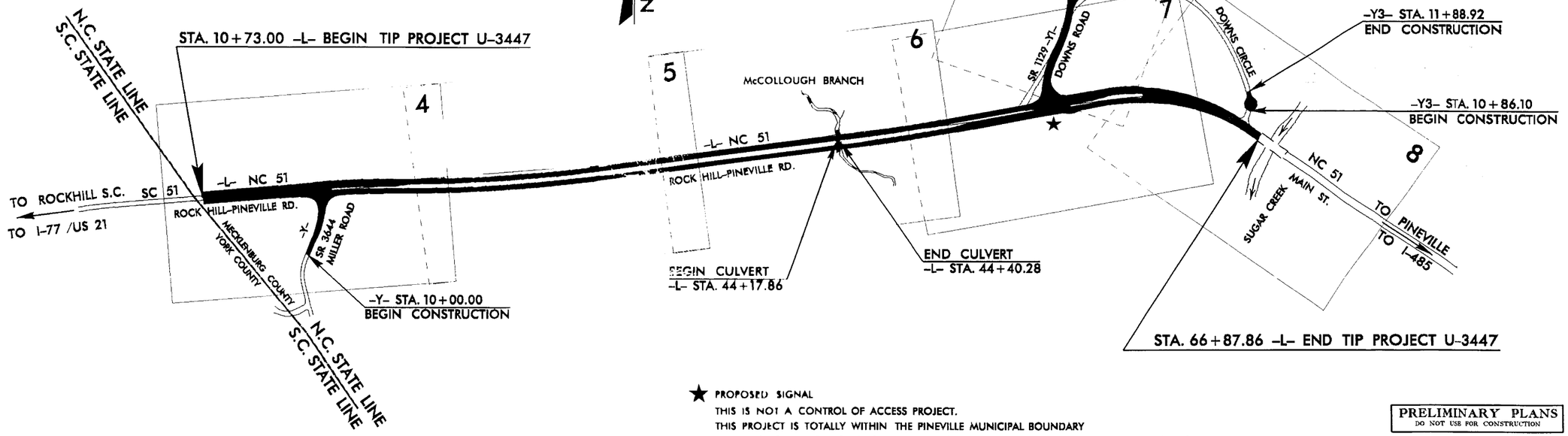
LOCATION: NC 51, ROCKHILL - PINEVILLE RD. FROM THE SC STATE LINE TO SR 3645 (DOWNS CIRCLE)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, RESUFACING, GUARDRAIL, SIGNAL, UTILITIES AND CULVERT

Permit Drawing
Sheet 5 of 17



VICINITY MAP



PERMIT DRAWINGS

★ PROPOSED SIGNAL
THIS IS NOT A CONTROL OF ACCESS PROJECT.
THIS PROJECT IS TOTALLY WITHIN THE PINEVILLE MUNICIPAL BOUNDARY
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TIP PROJECT: U-3447

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 2004 = 19300
ADT 2025 = 35900
DHV = 9 %
D = 60 %
T = 3 % *
V = 50 MPH
CLASS = COLLECTOR
* TTST 1% DUAL 2%

PROJECT LENGTH

LENGTH ROADWAY T.I.P. PROJECT U-3447 = 1.059 MI
LENGTH STRUCTURE T.I.P. PROJECT U-3447 = 0.004 MI
TOTAL LENGTH OF T.I.P. PROJECT U-3447 = 1.063 MI

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

2006 STANDARD SPECIFICATIONS
RIGHT OF WAY DATE: SEPTEMBER 16, 2005
LETTING DATE: JANUARY 20, 2009
LET SHELF DATE: OCTOBER 16, 2007

JASON MOORE, PE
PROJECT ENGINEER

KEVIN E. MOORE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE: P.E.

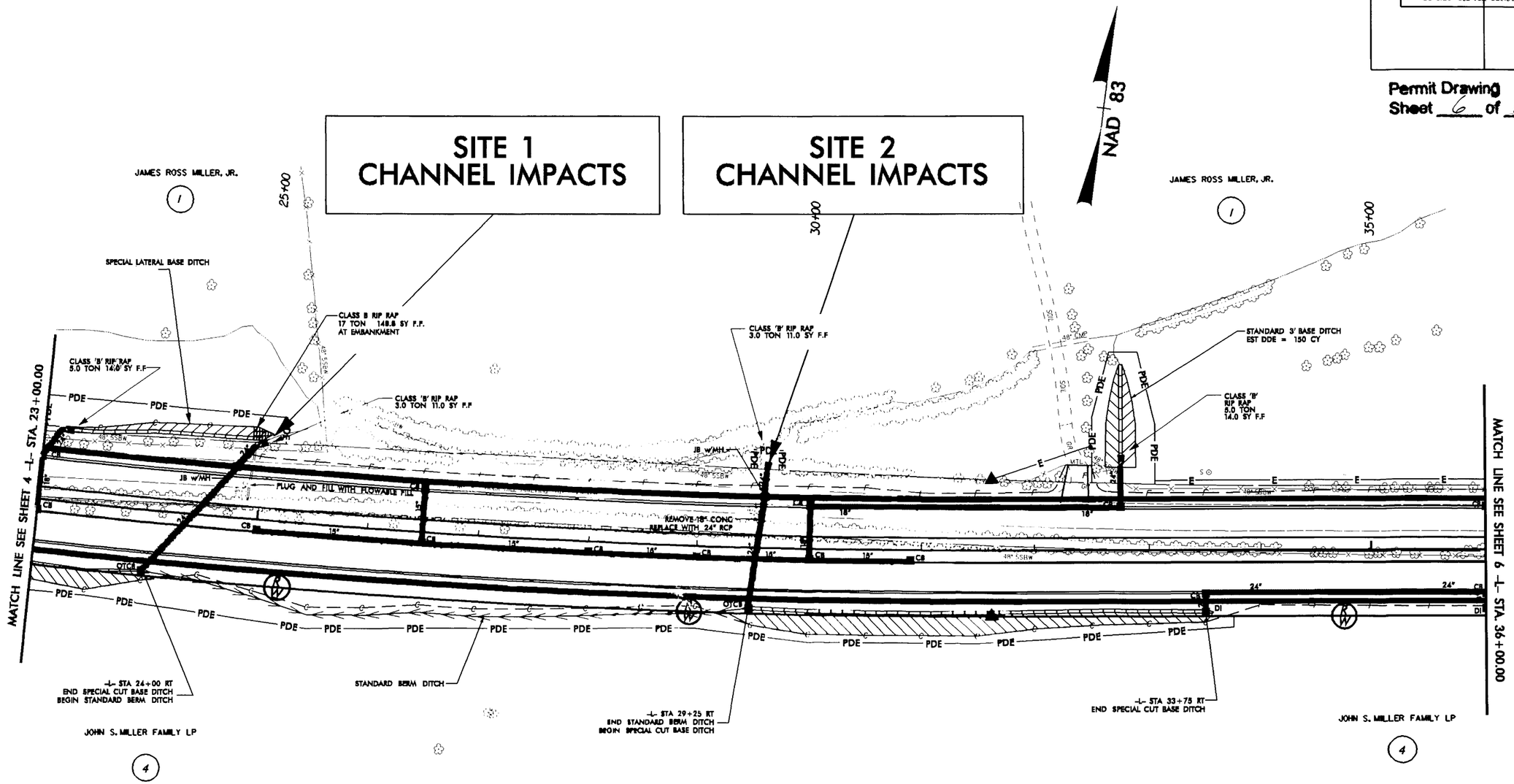
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
STATE HIGHWAY DESIGN ENGINEER P.E.

17-APR-2007 16:14
r:\hydraulics\permits\u3447_rdy_tsh for Permits .dgn
rlovingood AT HY22I536
09/08/99

PROJECT REFERENCE NO.	SHEET NO.
U-3447	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 6 of 17



SEE SHEET 10 FOR -L- PROFILE

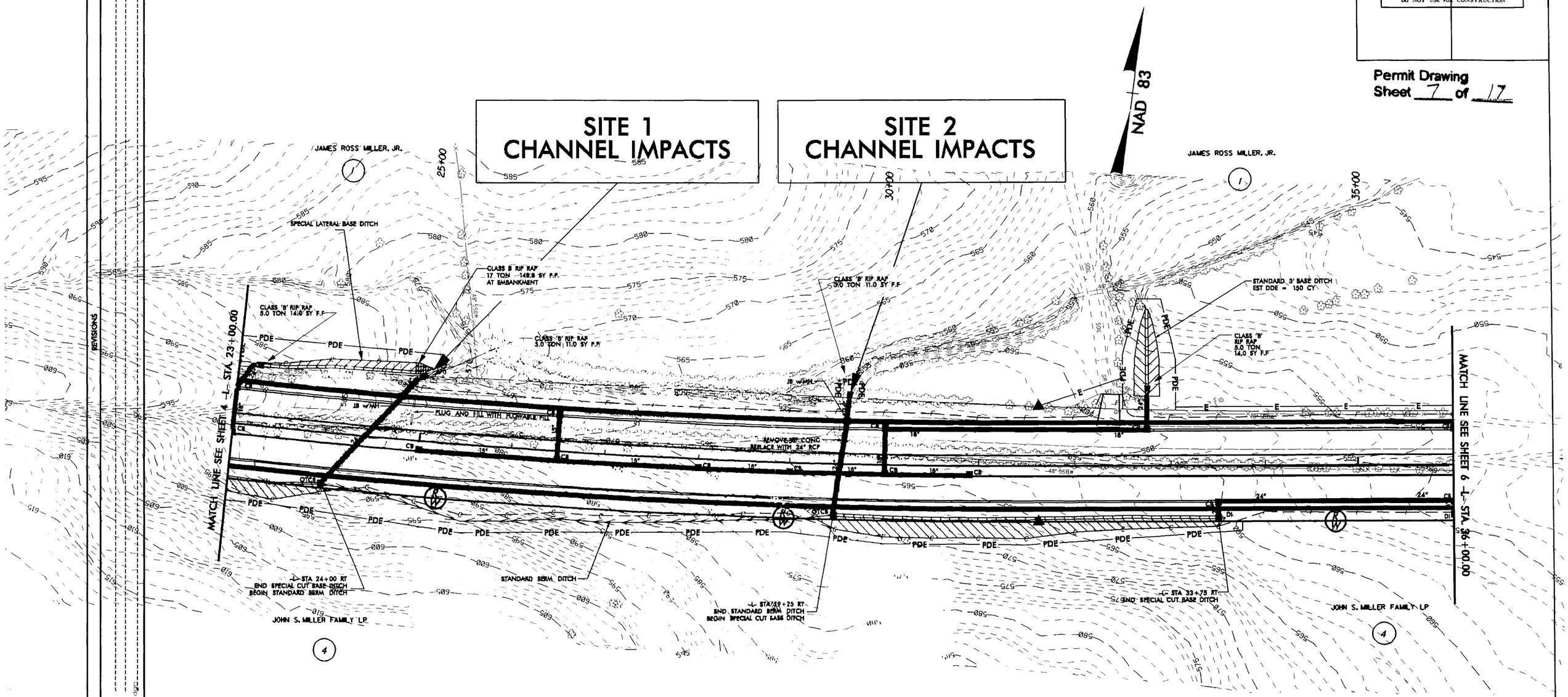
REVISIONS

18-APR-2007 09:25
r:\hydraulics\permits\u3447_hyd_prm_wet_psh 05.dgn
rlovingood AT HY221536

PROJECT REFERENCE NO.	SHEET NO.
U-3447	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

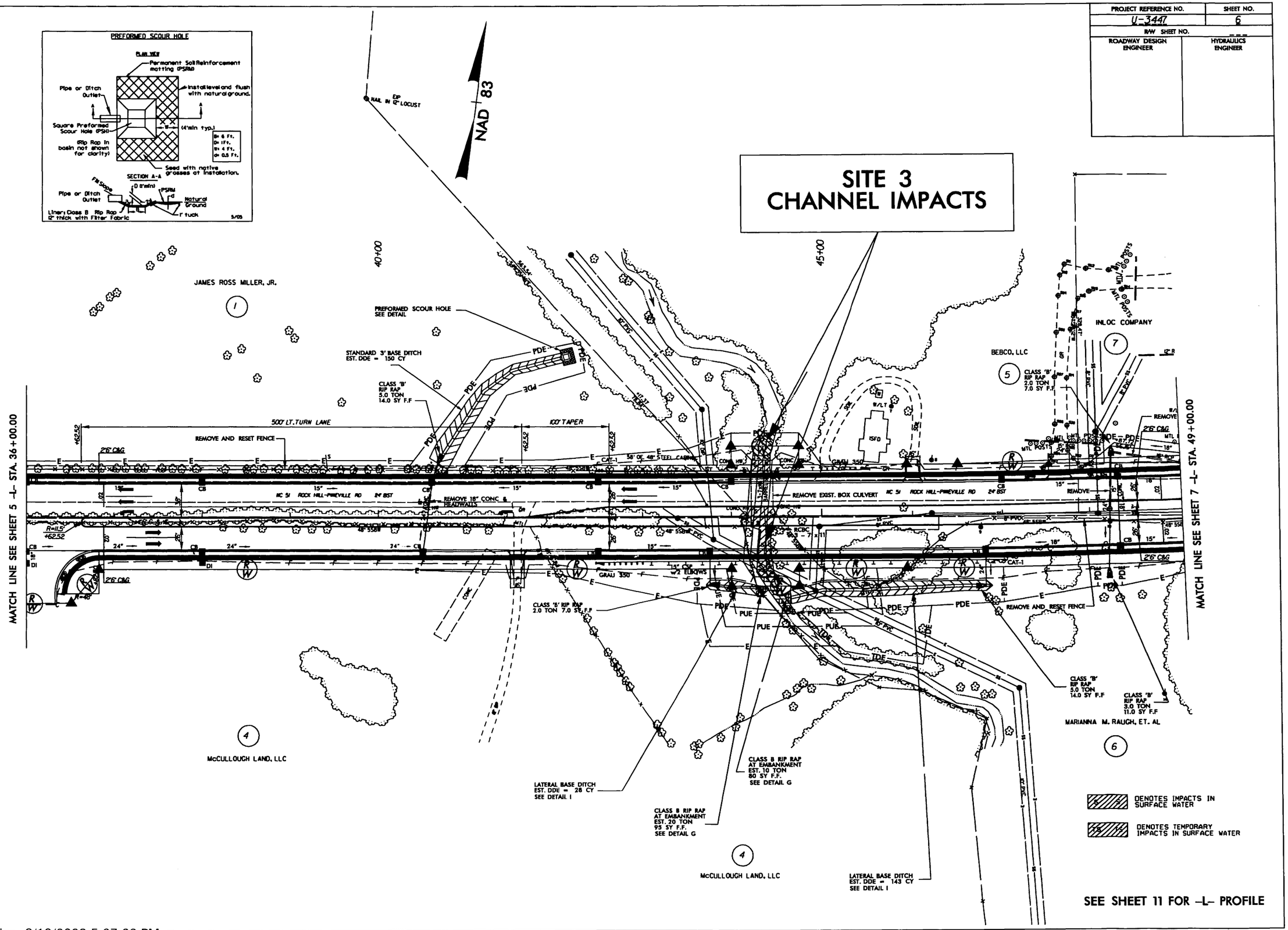
Permit Drawing
Sheet 7 of 17



SEE SHEET 10 FOR -L- PROFILE

18-APR-2007 09:45
r:\hydraulics\permits\u3447_hyd_prm_wet_psh 05.dgn
clovingood AT HY221536

PROJECT REFERENCE NO.	SHEET NO.
U-3447	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



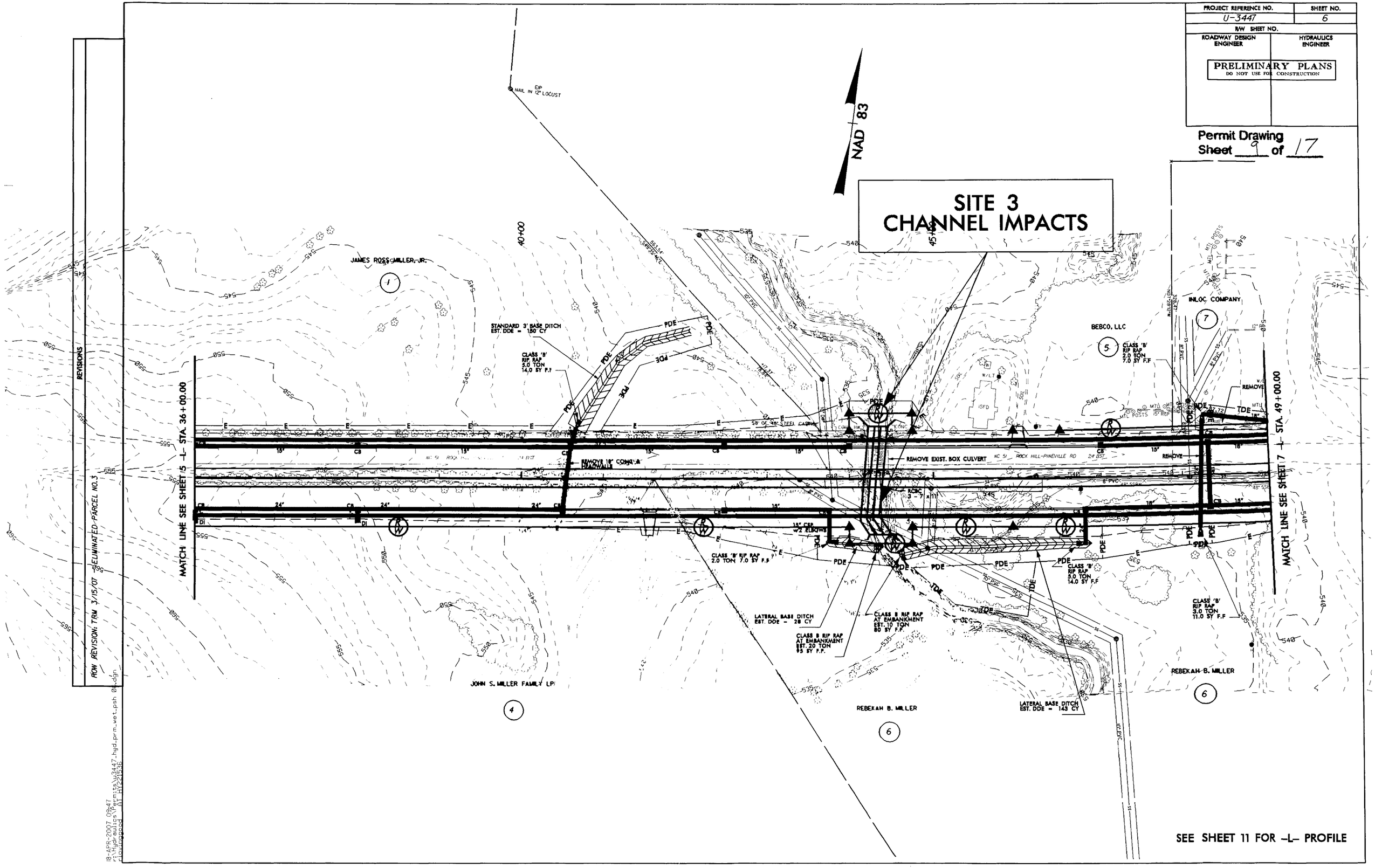
REVISIONS

u3447 hyd prm wet psh 06.dgn 8/19/2008 5:07:00 PM

PROJECT REFERENCE NO.	SHEET NO.
U-3447	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 9 of 17

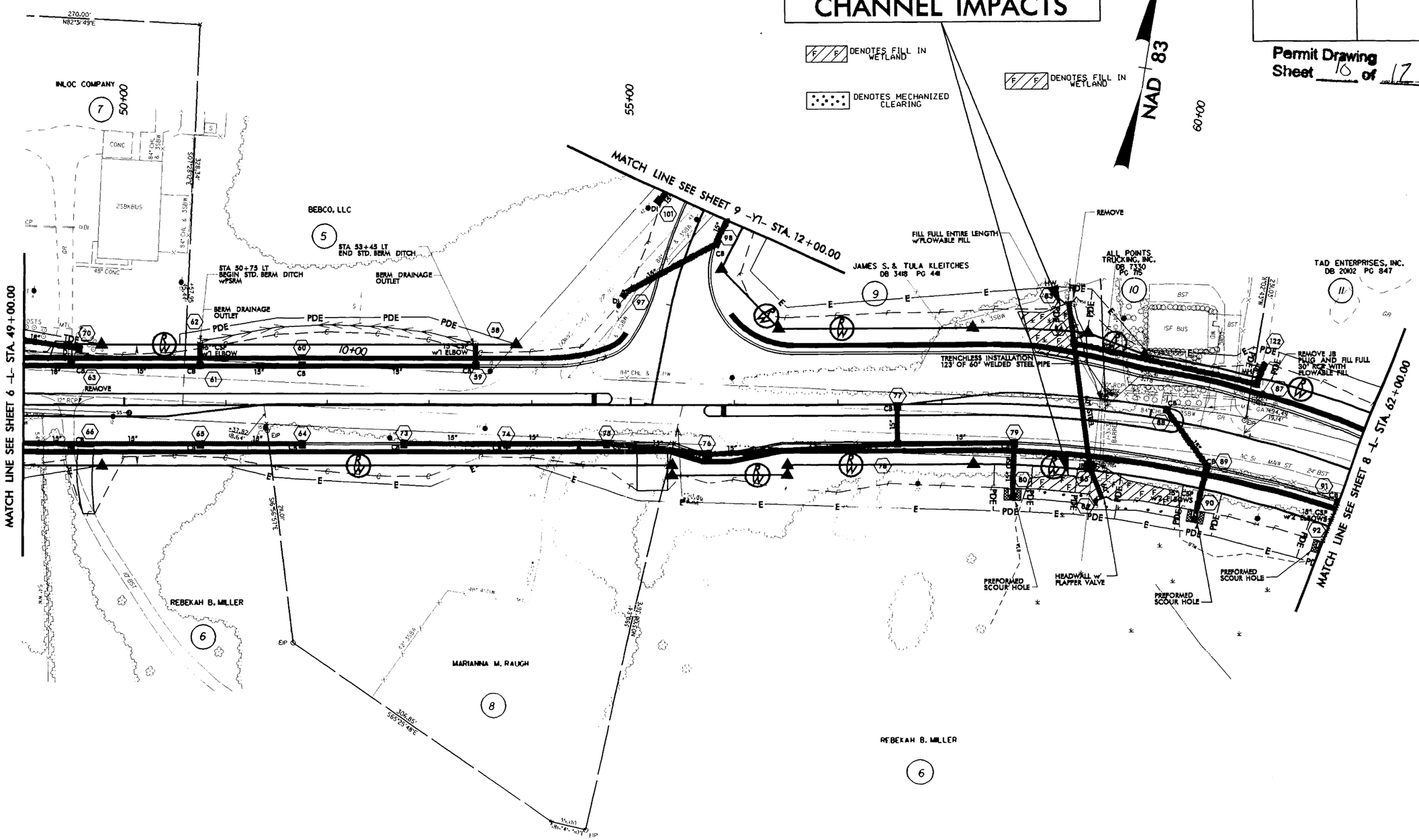


PROJECT REFERENCE NO.	SHEET NO.
U-3447	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 10 of 17

SITE 4 WETLAND & CHANNEL IMPACTS



REVISIONS

ROW REVISION: TRM 3/15/2007 REVISED THE -TCE- AND -PDE- ON PARCEL NO:S 6,8,9,AND 10. REVISED R/W ON PARCEL NO:S 9,10,AND 11.REVISED PROPERTY OWNER ON PARCEL NO.11

8/17/99

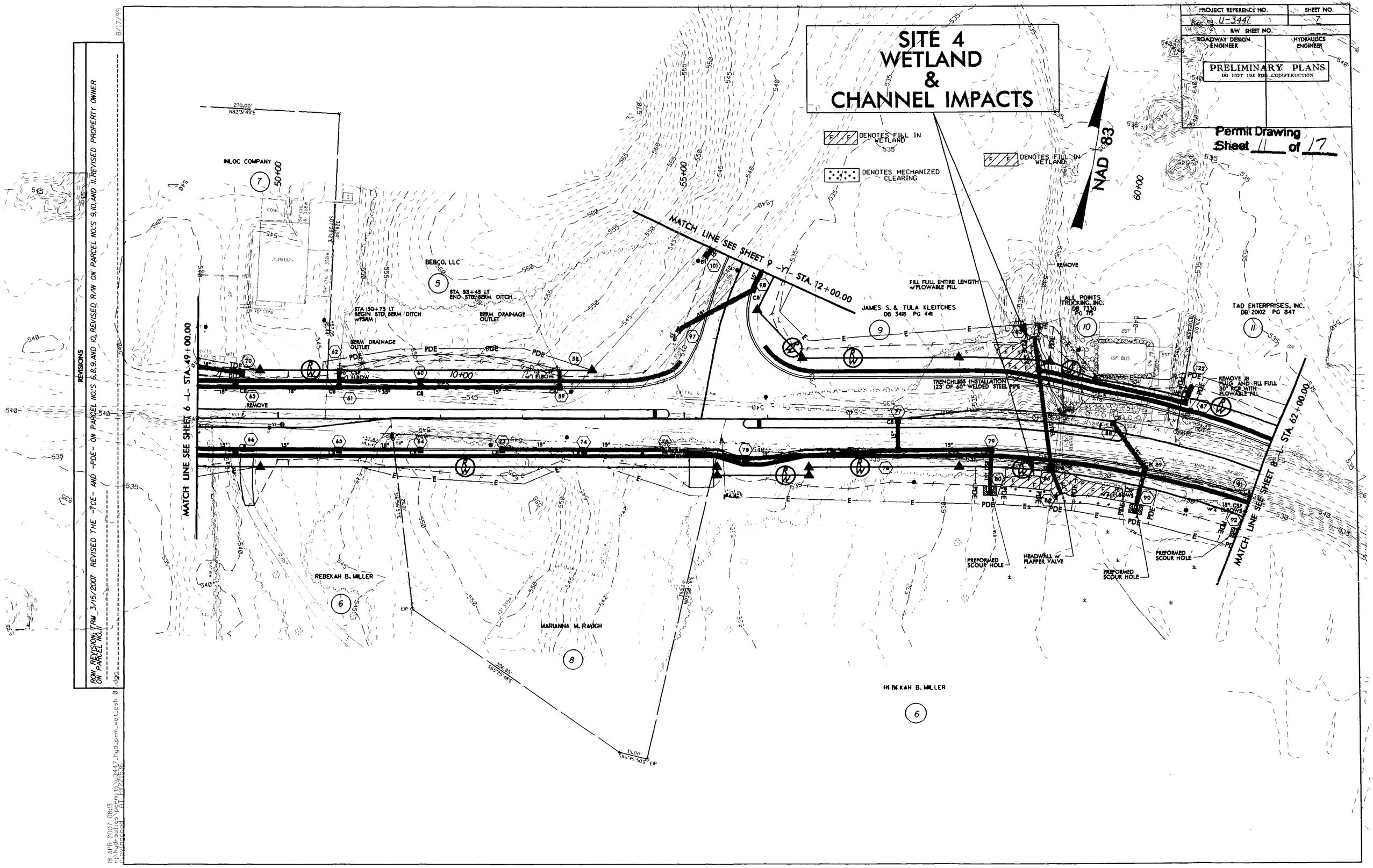
18-APR-2007 08:10
r:\hydraulics\permits\u3447_hyd_prm_wet_psh 07.dgn
rlovingood AT HY221536

PROJECT REFERENCE NO.	SHEET NO.
U-3447	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 11 of 17

SITE 4 WETLAND & CHANNEL IMPACTS



REVISIONS

ROW REVISION TRM 3/15/2007 REVISED THE -TCE- AND -PDE- ON PARCEL NO.'S 9,10,AND 11,REVISED PROPERTY OWNER ON PARCEL NO.11

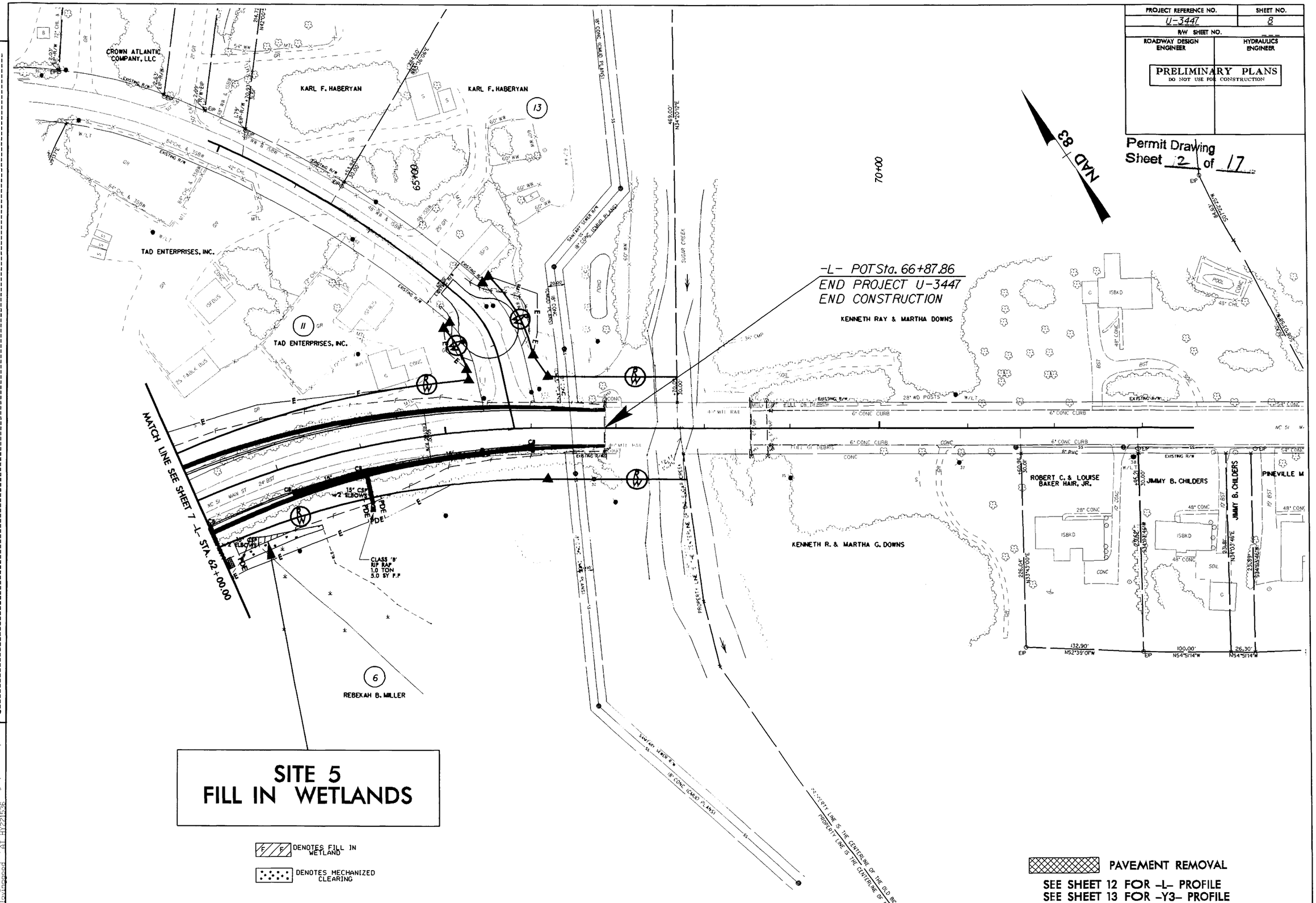
ROW REVISION TRM 8/17/99 REVISED THE -TCE- AND -PDE- ON PARCEL NO.'S 5,8,9,AND 10, REVISED R/W ON PARCEL NO.'S 9,10,AND 11,REVISED PROPERTY OWNER

18-APR-2007 08:03
r:\hydraulics\permits\u3447_hyd_prm_wet.psh 0.0
texproject BY: TRZ/TGS

PROJECT REFERENCE NO.	SHEET NO.
U-3447	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 12 of 17



SITE 5
FILL IN WETLANDS

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PAVEMENT REMOVAL

SEE SHEET 12 FOR -L- PROFILE
SEE SHEET 13 FOR -Y3- PROFILE

REVISIONS

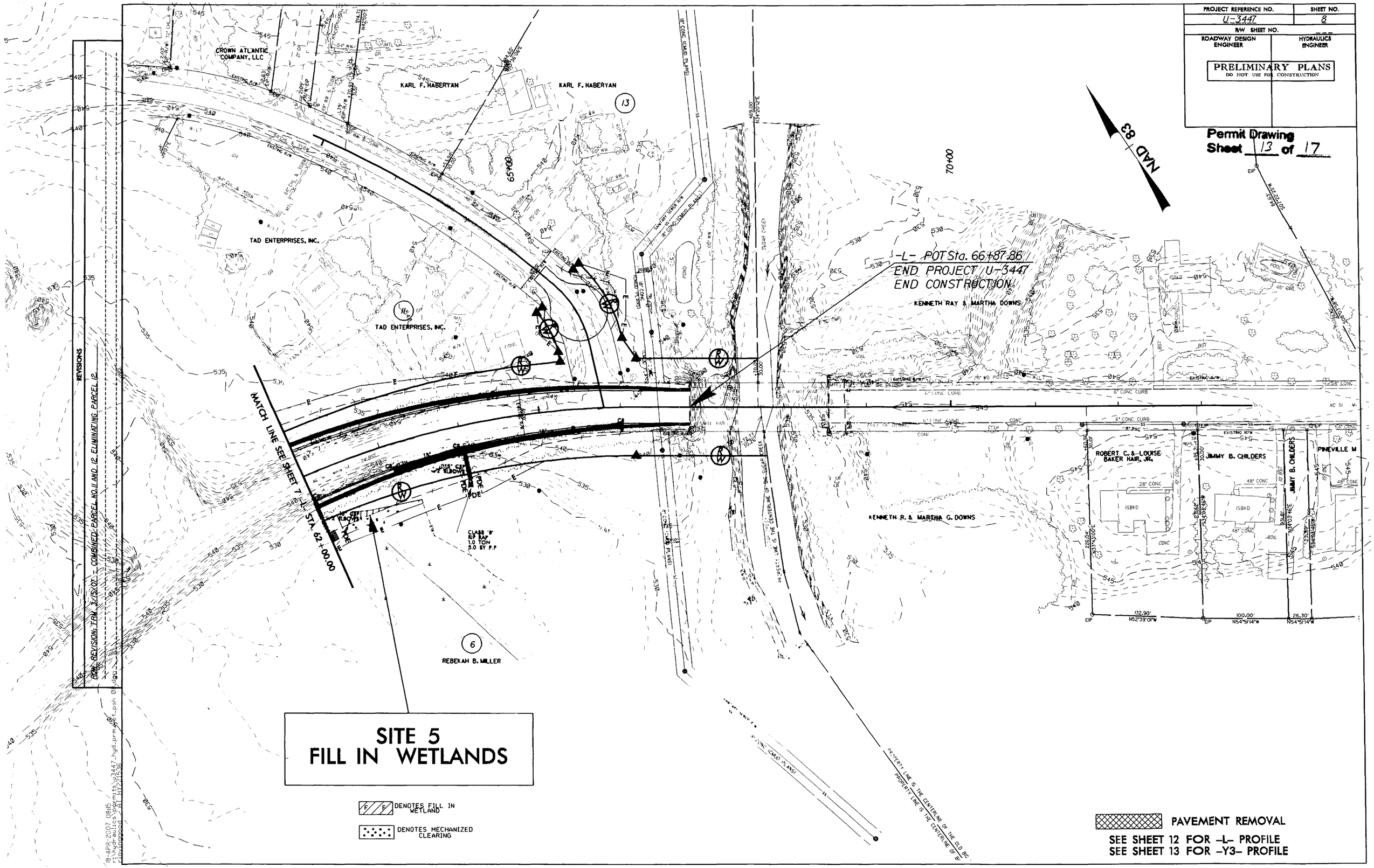
ROW REVISION: TRM 3/15/07 - COMBINED PARCEL NO. 11 AND 12 ELIMINATING PARCEL 12

17-APR-2007 08:17
r:\hydraulics\permits\u3447_hyd_prm_wet_psh 08.dgn
rlpyingood AT HY221536

PROJECT REFERENCE NO.	SHEET NO.
U-3447	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 13 of 17

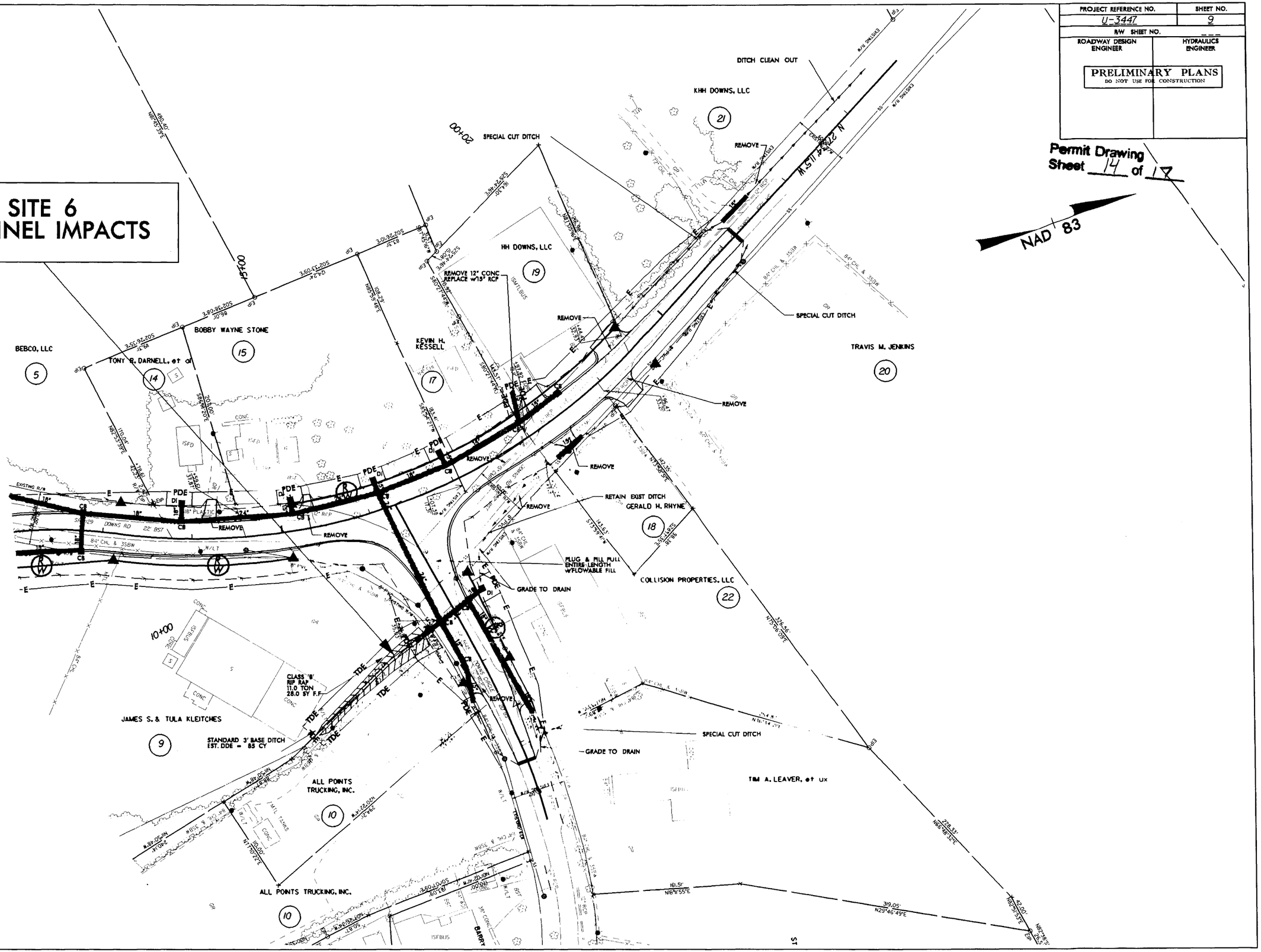


PROJECT REFERENCE NO.	SHEET NO.
U-3447	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 14 of 17

SITE 6
CHANNEL IMPACTS



REVISIONS

ROW REVISION: TRM 3/15/2007 ADJUSTED THE -TCE- ON PARCEL NO.22 AND ELIMINATED -TCE- AND PARCEL NO.ON PARCEL NO.23.
REVISED THE PROPERTY OWNERS ON PARCELS NO.14,17,19,20,21,22 AND 23.COMBINED PARCEL NO.'S 15 AND 16.ELIMINATING PARCEL NO.16.

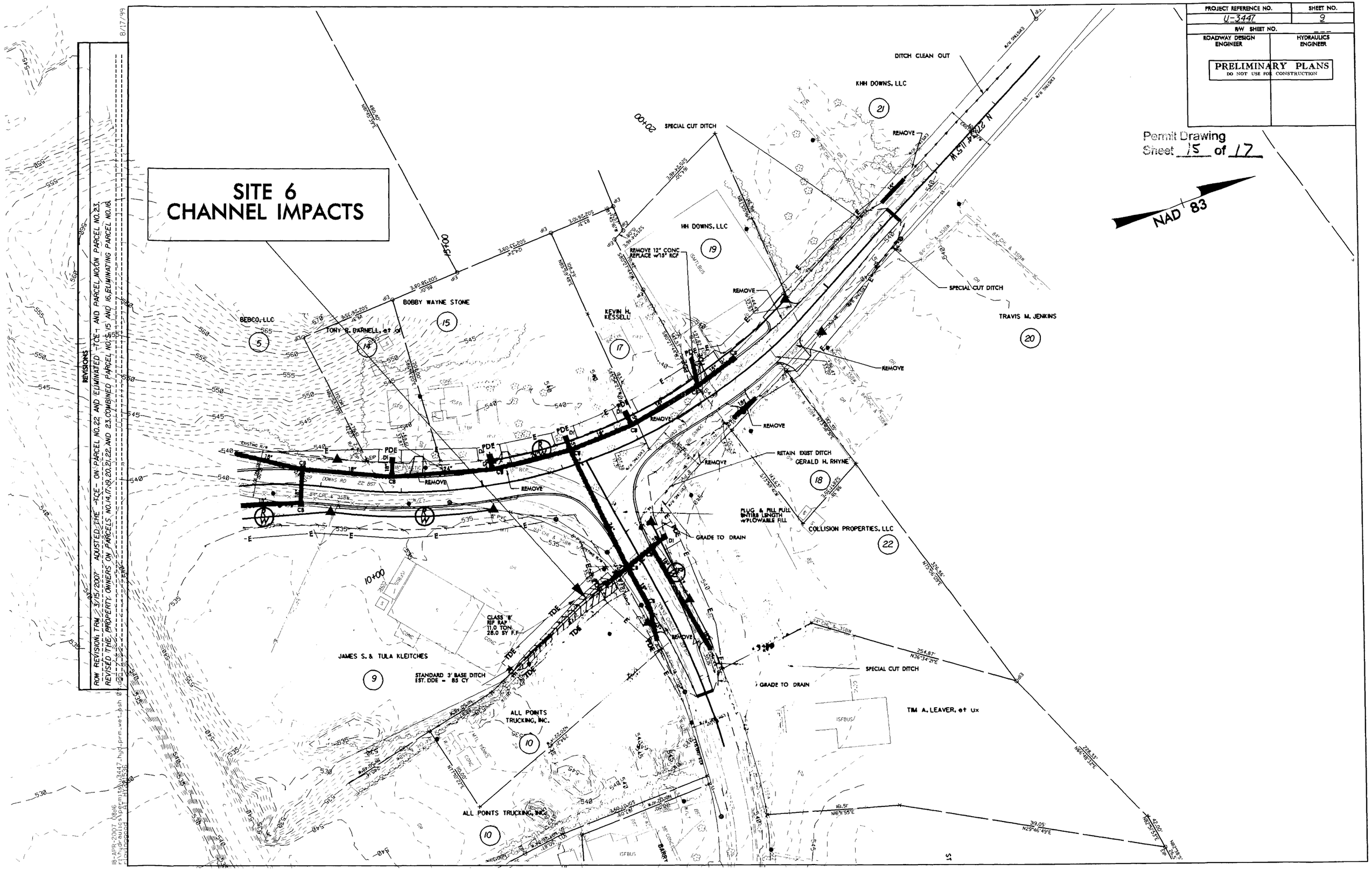
8/17/99

17-APR-2007 15:56
r:\hydraulics\permits\u3447_hyd_prm_wet.psh 08.dgn
rlovingood AT HY221536

PROJECT REFERENCE NO.	SHEET NO.
U-3447	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 15 of 17



REVISIONS

ROW REVISION: TRM 3/15/2007 ADJUSTED THE -TCE- ON PARCEL NO.22 AND ELIMINATED -TCE- AND PARCEL NO.ON PARCEL NO.23.
REVISED THE PROPERTY OWNERS ON PARCELS NO.14,17,19,20,21,22, AND 23.COMBINED PARCEL NO.15 AND 16,ELIMINATING PARCEL NO.16.

8/17/99

18-APR-2007 08:16
r:\hydraulics\permits\u3447_hyd_prm_wet_psh 01.dgn
rlovingood AT HY3536

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3447	11.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 16 of 17

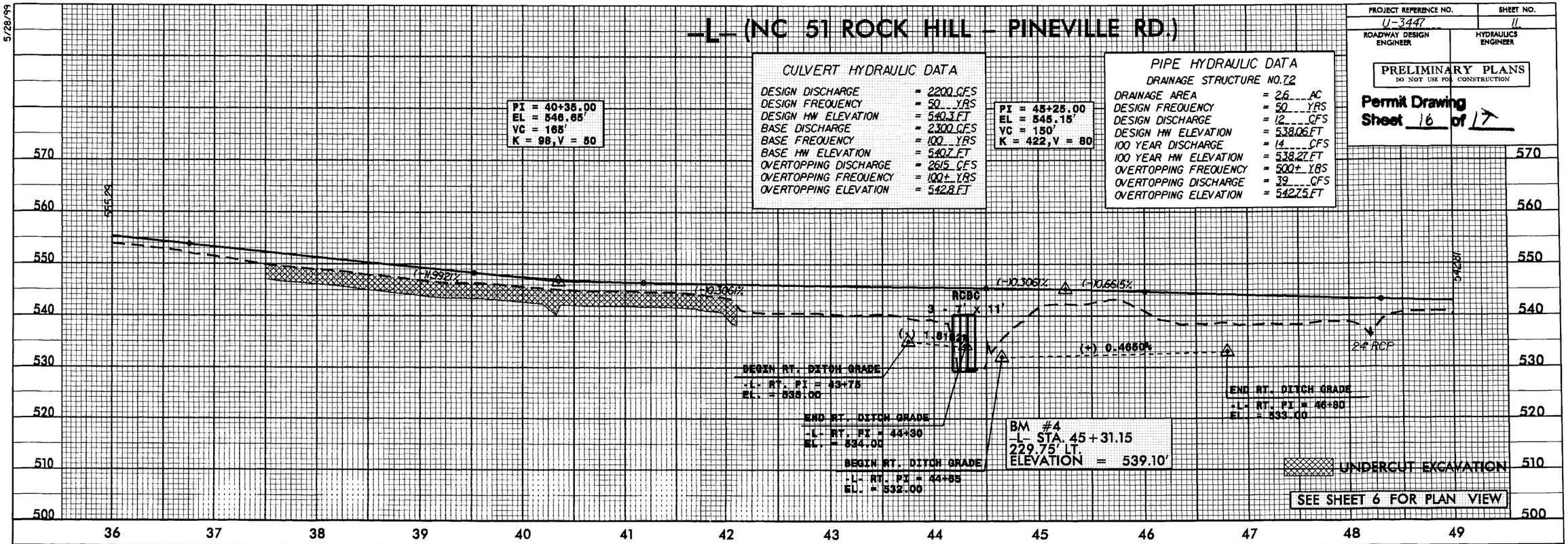
-L- (NC 51 ROCK HILL - PINEVILLE RD.)

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 2200 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 540.3 FT
BASE DISCHARGE	= 2300 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 540.7 FT
OVERTOPPING DISCHARGE	= 2615 CFS
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING ELEVATION	= 542.8 FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 72

DRAINAGE AREA	= 2.6 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 12 CFS
DESIGN HW ELEVATION	= 538.06 FT
100 YEAR DISCHARGE	= 14 CFS
100 YEAR HW ELEVATION	= 538.27 FT
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 39 CFS
OVERTOPPING ELEVATION	= 542.75 FT



-L- (NC 51 ROCK HILL - PINEVILLE RD.)

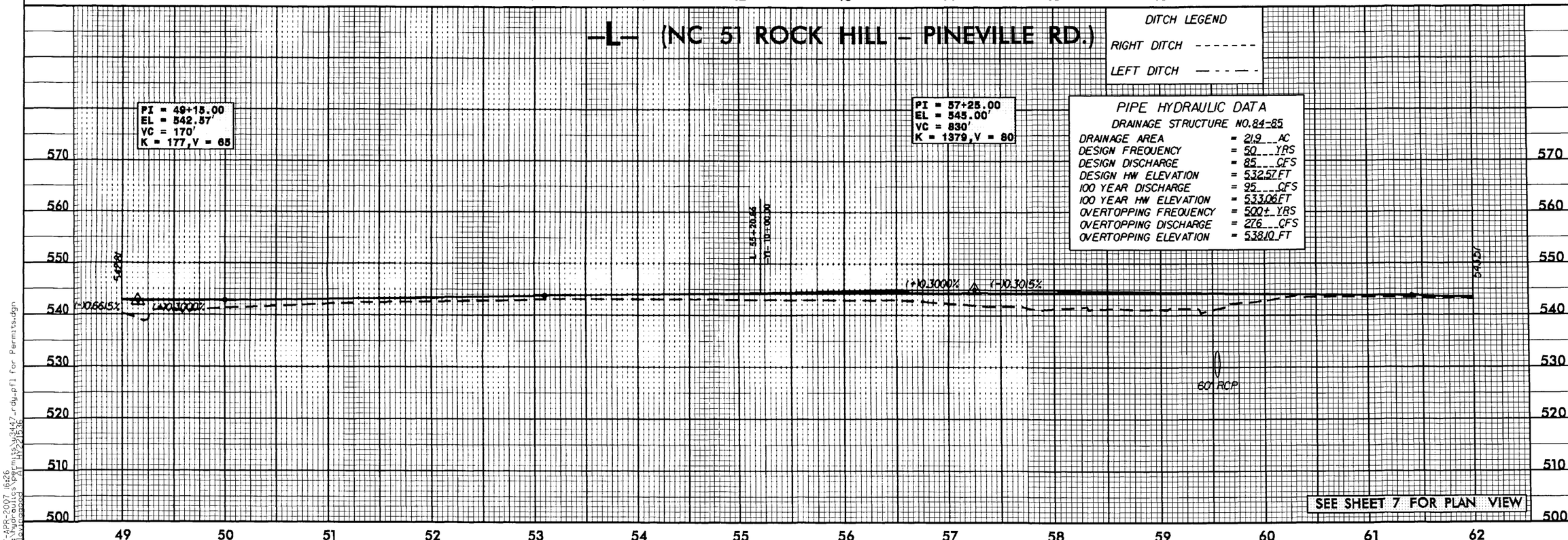
DITCH LEGEND

RIGHT DITCH - - - - - - -

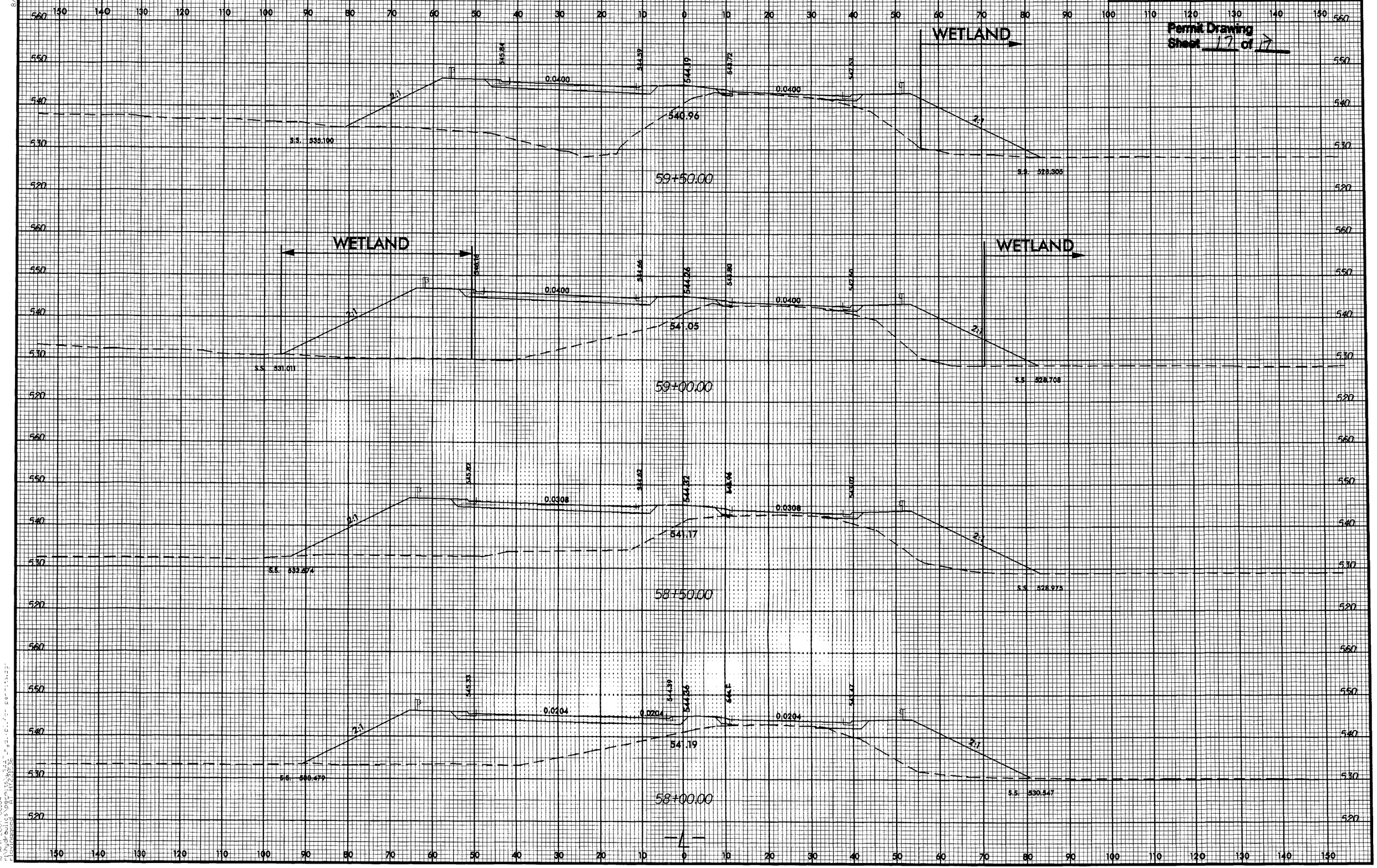
LEFT DITCH — - - — -

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 84-85

DRAINAGE AREA	= 21.9 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 85 CFS
DESIGN HW ELEVATION	= 532.57 FT
100 YEAR DISCHARGE	= 95 CFS
100 YEAR HW ELEVATION	= 533.06 FT
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 276 CFS
OVERTOPPING ELEVATION	= 538.10 FT



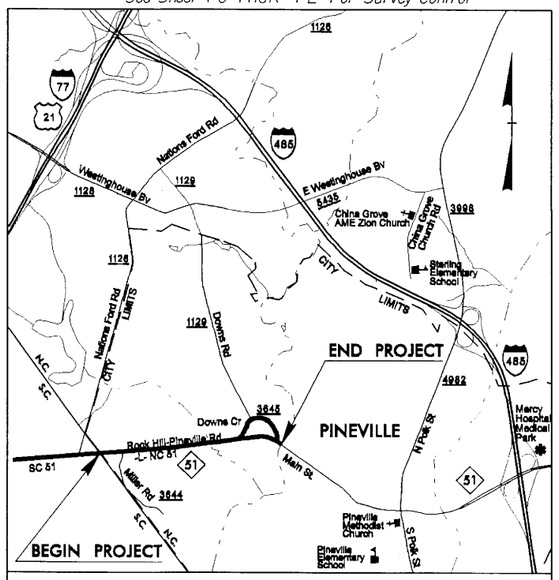
17-APR-2007 16:26
r:\hydraulics\permits\u3447_rdy.pfl for Permits.dgn
rlexingood AT HY221536



PROJ. REFERENCE NO.
U-3447
SHEET NO.
X-22
Permit Drawing
Sheet 17 of 17
WETLAND
WETLAND
WETLAND
0.0400
0.0400
0.0400
0.0400
0.0308
0.0308
0.0204
0.0204
0.0204
2:1
540.96
541.05
541.17
541.19
S.S. 535.100
S.S. 528.305
S.S. 531.011
S.S. 528.708
S.S. 532.874
S.S. 528.975
S.S. 530.547
59+50.00
59+00.00
58+50.00
58+00.00

TIP PROJECT: U-3447

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

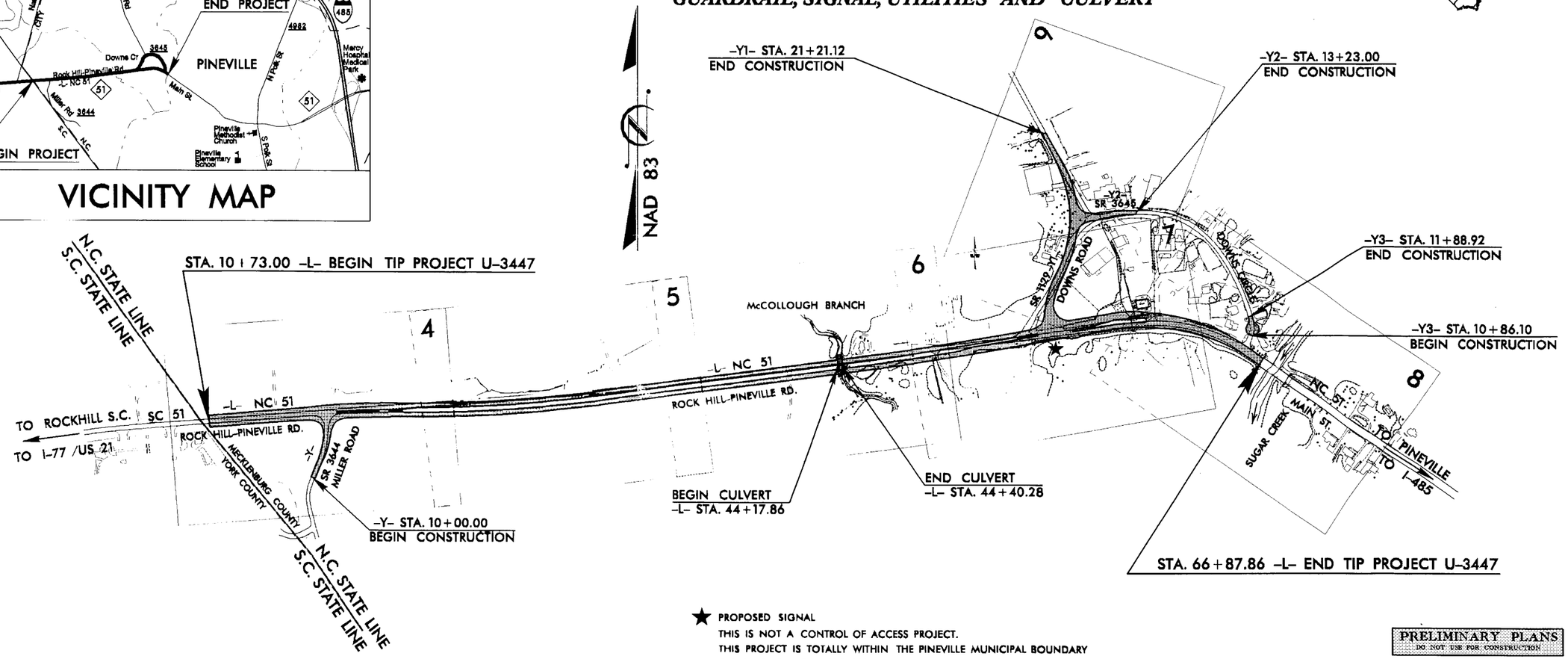
MECKLENBURG COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3447	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34948.1.1	STP-51(2)	PE
34948.2.1	STP-51(2)	R/W, UTIL

LOCATION: NC 51, ROCKHILL - PINEVILLE RD. FROM THE SC STATE LINE TO SR 3645 (DOWNS CIRCLE)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, RESUFACING, GUARDRAIL, SIGNAL, UTILITIES AND CULVERT



★ PROPOSED SIGNAL
THIS IS NOT A CONTROL OF ACCESS PROJECT.
THIS PROJECT IS TOTALLY WITHIN THE PINEVILLE MUNICIPAL BOUNDARY
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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 2004 = 19300
ADT 2025 = 35900
DHV = 9 %
D = 60 %
T = 3 % *
V = 50 MPH
CLASS = COLLECTOR
* TTST 1% DUAL 2%

PROJECT LENGTH

LENGTH ROADWAY T.I.P. PROJECT U-3447 = 1.059 MI
LENGTH STRUCTURE T.I.P. PROJECT U-3447 = 0.004 MI
TOTAL LENGTH OF T.I.P. PROJECT U-3447 = 1.063 MI

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

2006 STANDARD SPECIFICATIONS
RIGHT OF WAY DATE: SEPTEMBER 16, 2005
LETTING DATE: JANUARY 20, 2009
LET SHELF DATE: OCTOBER 16, 2007

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
STATE HIGHWAY DESIGN ENGINEER P.E.

17-APR-2007 16:10
r:\roadway\proj\u3447_rdy_tsh.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3447	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETAIL A
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, B, 3:1, Natural Ground
Min. D= 0 Ft.
B= 3 Ft.

-L- STA 19+28 LT LENGTH = 24 FT.
SLOPE = 2.7%

DETAIL C
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, B, 3:1 or Flatter, Fill Slope
B= 2 Ft.
SEE PROFILE FOR DITCH ELEV.

-L- STA 16+20 LT - STA 17+36 LT

DETAIL D
BERM DITCH
(Not to Scale)

SLOPE STAKE, 5.0', 6', 5.0', 4', 10.0' V.C., 3:1, D VAR, d, CLEARING LIMITS
Min. D= 1Ft.
Max. d= 1Ft.
Type of Liner= PSRM

-L- STA 18+00 RT - STA 22+25 RT

DETAIL E
SPECIAL CUT BASE DITCH
(Not to Scale)

10', Natural Ground, 3:1, Front Ditch Slope, D, B, d, 2'-6" Curb & Gutter
D= 1Ft. Min.
d= 1Ft.
B= 2 Ft.
SEE PROFILE FOR DITCH ELEV. Type of Liner = PSRM

-L- STA 22+25 RT - STA 24+00 RT

-L-
PI Sta 18+80.62
Δ = 4° 45' 09.5" (RT)
D = 1° 08' 45.3"
L = 414.75'
T = 207.49'
R = 5,000.00'
SE = 0.02

NAD 83

BEGIN PROJECT U-3447
-L- POT Sta. 10+73.00
BEGIN CONSTRUCTION

-L- POT Sta. 10+00.00
-L- PC Sta. 16+73.13
-Y- POT Sta. 13+60.81
-L- POT Sta. 17+04.96
-BL-10 PINC 24+38.02=
-L- STA. 22+01.44, 43.74' LT
-Y- PT Sta. 12+32.82
-Y- PC Sta. 10+86.22
-Y- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-BL- PINC 12+77.81=
USGS "45 EGB"
-L- STA 10+46.47, 27.42' RT
-BY- POT 5+00.00
-BL-9 PINC 19+68.83 =
-BY- POT 5+00.00
-L- STA. 17+37.89, 35.57' RT
-Y- STA. 13+32.24, 38.14' RT
-L- PRC Sta. 20+87.87
MATCH LINE SEE SHEET 5 -L- STA. 23+00.00

JAMES ROSS MILLER, JR. DB 2286 PG 210
CHARLES STEPHEN MILLER DB 2084 PG 950
CHARLES STEPHEN MILLER, etal DB 0479 PG 250
CHARLES STEPHEN MILLER DB 4883 PG 816
JOHN S. MILLER FAMILY LP DB 8880 PG 462

NORTH CAROLINA STATE LINE MECKLENBURG CO.
SOUTH CAROLINA STATE LINE YORK CO.

SPECIAL LATERAL BASE DITCH SEE DETAIL C
SPECIAL LATERAL 'V' DITCH SEE DETAIL B
STANDARD 3' BASE DITCH SEE DETAIL A EST. DDE = 17 CY
STA 18+00 RT BEGIN STD. BERM DITCH w/PSRM SEE DETAIL D
STA 22+25 RT END STD. BERM SEE DETAIL D DITCH w/PSRM BEGIN SPECIAL CUT BASE DITCH SEE DETAIL E
END 2'6" C&G LT&RT -Y- STA.12+26.66
BEG. 2'6" C&G LT&RT -L- STA.10+73.00
REMOVE AND RESET FENCE
275' UNIFORM TRANSITION
330' FULL LANE
100' UNIFORM TRANSITION
CLASS 'B' RIP RAP 2.0 TON 7.0 SY F.F
CLASS 'B' RIP RAP 8.0 TON 21.0 SY F.F
N 85° 26' 47.8" E
NC 51 ROCK HILL-PINEVILLE HWY
EXISTING R/W
BM #3 BY STATION 9+46 21' LEFT ELEVATION=621.45'

-Y-
PI Sta 11+60.05
Δ = 16° 47' 58.4" (LT)
D = 11° 27' 33.0"
L = 146.60'
T = 73.83'
R = 500.00'
SE = 0.04

2004/2025 AVERAGE DAILY TRAFFIC

17600 / 32600	17500 / 32500

NC 51 -L-

200/300 100/200

300/500

-Y- MILLER RD (SR 3644)

SEE SHEET 10 FOR -L- PROFILE
SEE SHEET 12 FOR -Y- PROFILE

REVISIONS
ROW REVISION: TRM 3/15/2007 - ADJUSTED THE -TCE- ON PARCEL NO.2
ROW REVISION: TRM 8/17/99 - REVISED THE PROPERTY OWNER ON PARCEL NO.4

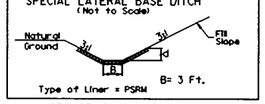
17-APR-2007 16:11
r:\roadway\proj\u3447_rdy_psh_4.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3447	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

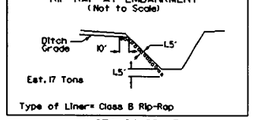
DETAIL F
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Type of Liner = PSRM

-L- STA 23+15 LT - STA 24+90 LT

DETAIL G
RIP RAP AT EMBANKMENT
(Not to Scale)

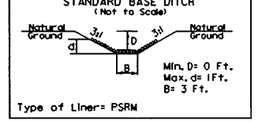


Type of Liner= Class B Rip-Rap

-L- STA 24+95 LT

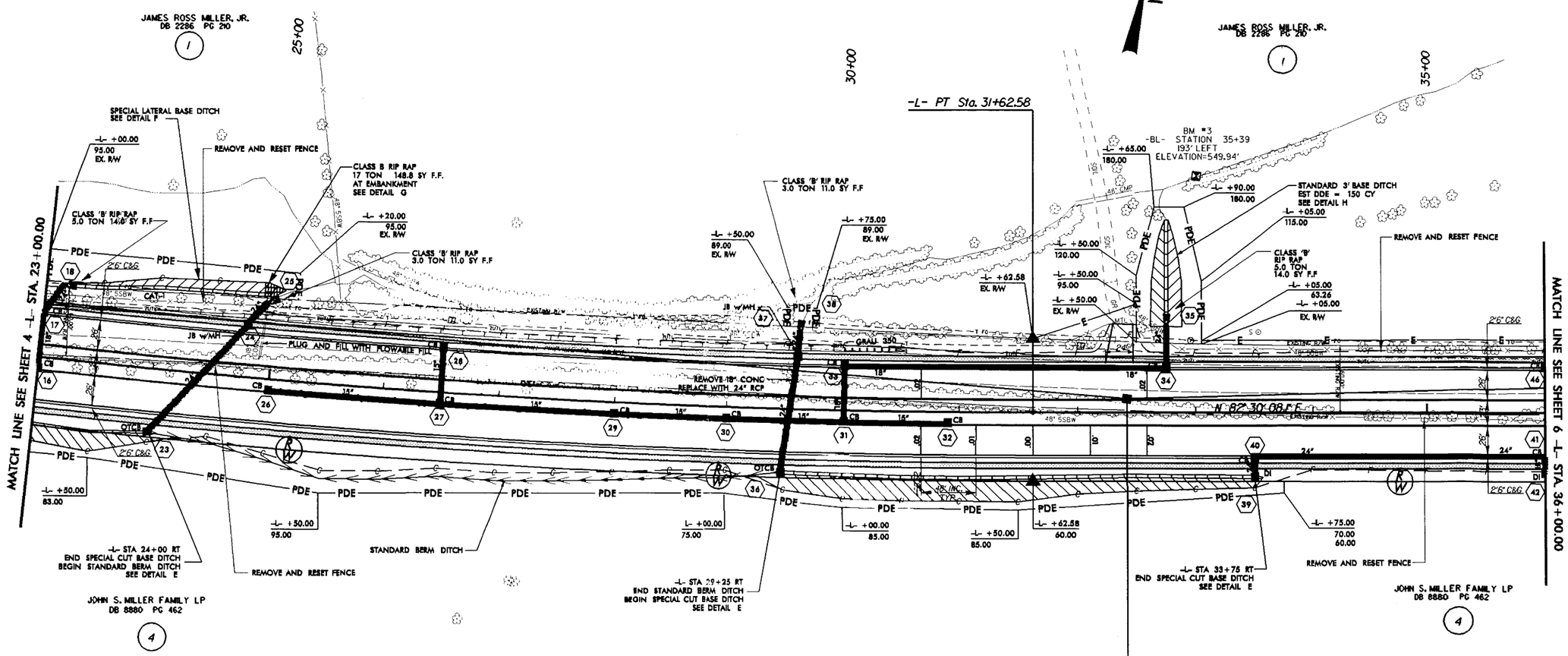
-L-
PI Sta 26+26.04
Δ = 7° 41' 49.3" (LT)
D = 0° 42' 58.3"
L = 1,074.71'
T = 538.16'
R = 8,000.00'
SE = 0.02

DETAIL H
STANDARD BASE DITCH
(Not to Scale)



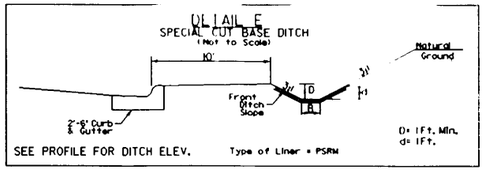
Type of Liner= PSRM

-L- STA 32+75 LT LENGTH = 93 FT.
SLOPE = 3.8%



-BL-II PINC 34+74.41=
-L- STA. 32+41.55, 12.01' LT

DETAIL E
SPECIAL CUT BASE DITCH
(Not to Scale)



SEE PROFILE FOR DITCH ELEV.

Type of Liner = PSRM

STATION LIMITS	FRONT SLOPE	BASE WIDTH	BACKSLOPE
-L- STA 22+25 RT - STA 24+00 RT	3:1	2 FT.	3:1
-L- STA 29+25 RT - STA 33+75 RT	4:1	3 FT.	4:1

SEE SHEET 10 FOR -L- PROFILE

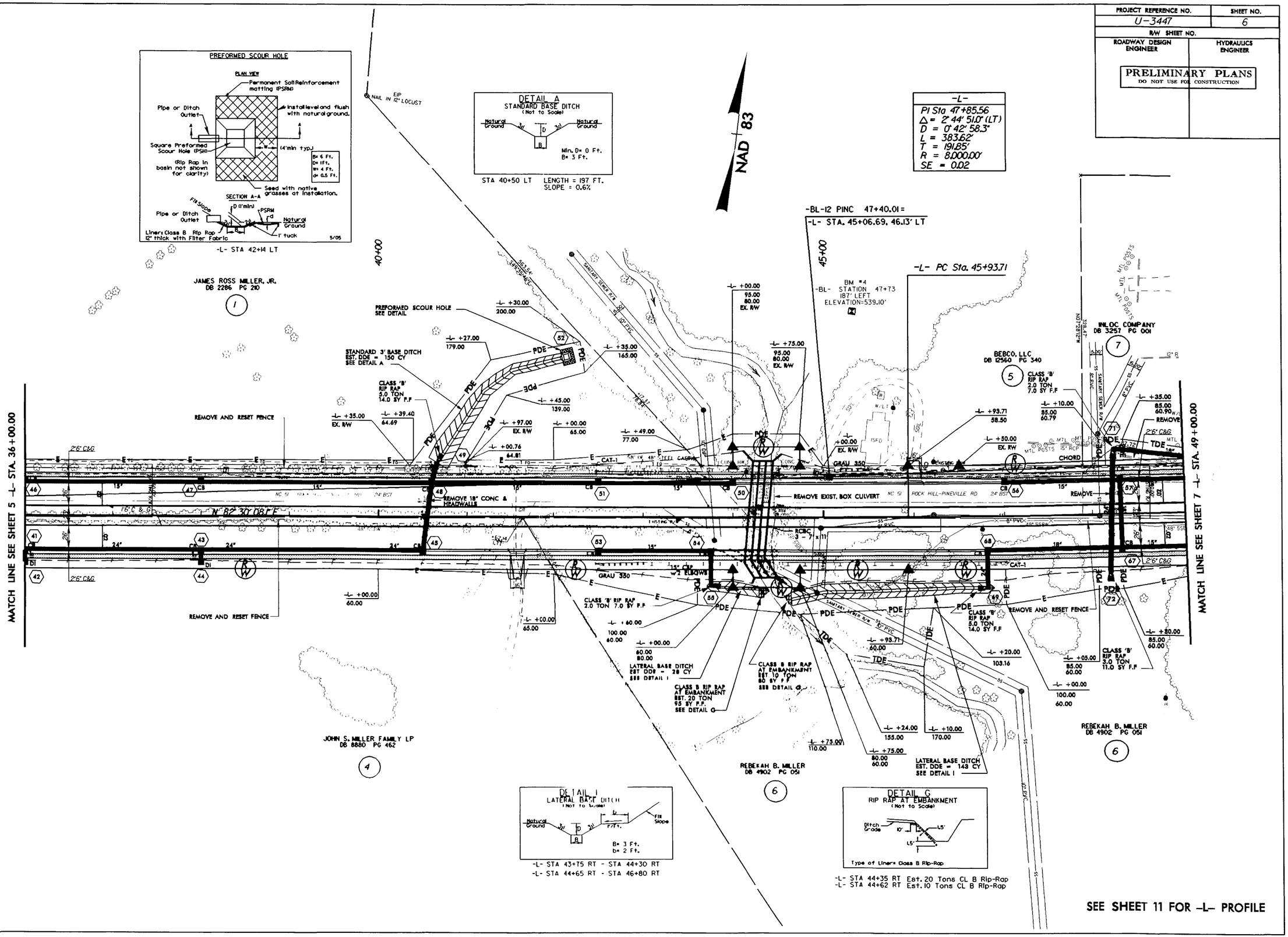
17-APR-2007 16:11
$$$$DGNLIB$$$$
$$$$DGNFILE$$$$
$$$$USERNAME$$$$
$$$$CELL$$$$
$$$$DATE$$$$
$$$$TIME$$$$
$$$$DGN$$$$
$$$$DATE$$$$
$$$$TIME$$$$
$$$$DGN$$$$
$$$$USERNAME$$$$
$$$$CELL$$$$
$$$$DGNLIB$$$$
$$$$DGNFILE$$$$
$$$$USERNAME$$$$
$$$$CELL

PROJECT REFERENCE NO.	SHEET NO.
U-3447	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

ROW REVISION, TRM 3/15/07 - ELIMINATED PARCEL NO.3



SEE SHEET 11 FOR -L- PROFILE

17-APR-2007 16:11
r:\roadway\proj\u3447_rdy_psh_6.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3447	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99 ROW REVISION, TRM 3/15/2007 REVISED THE -TCE- AND -PDE- ON PARCEL NO.S 6,8,9, AND 10. REVISED R/W ON PARCEL NO.S 9,10, AND 11. REVISED PROPERTY OWNER ON PARCEL NO.11

2004/2025 AVERAGE DAILY TRAFFIC

-Y1- DOWNS CIRCLE (SR 3645)

4800/8800

17500/32500 — 1500/2700 — 3300/6100 — 19300/35900

NC 51 -L-

NAD 83

-BL-13 PINC 51+87.66=
-L- STA. 49+56.65, 55.83' LT

-Y1-
PI Sta 11+97.57
Δ = 27° 43' 16.6" (RT)
D = 11° 27' 33.0"
L = 241.91'
T = 123.37'
R = 500.00'
SE = 0.04

-Y1- POT Sta. 10+00.00
-L- POT Sta. 55+20.86

-Y1- PC Sta. 10+74.20

BM #5
-BYI- STATION 7+14
119' LEFT
ELEVATION=554.07'

MATCH LINE SEE SHEET 9 -Y1- STA. 12+00.00

MATCH LINE SEE SHEET 6 -L- STA. 49+00.00

MATCH LINE SEE SHEET 8 -L- STA. 62+00.00

INLOC COMPANY
DB 3257 PG 001
(7)

BEBCO, LLC
DB 12560 PG 340
(5)

JAMES S. & TULA KLEITCHES
DB 3418 PG 441
(9)

ALL POINTS TRUCKING, INC.
DB 7330 PG 715
(10)

TAD ENTERPRISES, INC.
DB 20102 PG 847
(11)

REBEKAH B. MILLER
DB 4902 PG 051
(6)

MARIANNA M. RAUGH
DB 2359 PG 147
DB 1088 PG 258
(8)

STA 53+45 LT
END STD. BERM DITCH

STA 50+75 LT
BEGIN STD. BERM DITCH
w/PSRM
SEE DETAIL D

BERM DRAINAGE OUTLET

REMOVE AND RESET FENCE

DO NOT DISTURB BUILDING

REMOVE

FILL FULL ENTIRE LENGTH w/FLOWABLE FILL

230' FULL LANE (RT TURN LANE)

TRENCHLESS INSTALLATION 123' OF 60" WELDED STEEL PIPE

REMOVE JB PLUG AND FILL FULL 30" RCP WITH FLOWABLE FILL

-BL-15 PINC 63+20.36=
-L- STA. 60+82.40, 12.97' LT

-BL-14 PINC 56+56.19 =
-BYI- POT 5+00.00
-L- STA. 54+18.80, 22.03' RT

-L- PT Sta. 49+77.34

-L- PC Sta. 58+29.99

330' FULL LANE (LT TURN LANE)

100' TAPER

90' FULL LANE (LT TURN LANE)

PREFORMED SCOUR HOLE

HEADWALL w/ FLAPPER VALVE SEE DETAIL SHT. ???

575' UNIFORM TRANSITION (LT & RT)

-L-
PI Sta 62+46.50
Δ = 45° 13' 25.7" (RT)
D = 5° 43' 46.5"
L = 789.30'
T = 416.50'
R = 1,000.00'
SE = 0.04

DETAIL D
BERM DITCH
(Not to Scale)

SLOPE STAKE — CLEARING LIMITS

5.0' — 6' — 5.0' — 4'

10.0' V.C. — 2% — D VAR. — d

Min. D= 1Ft.
Max. d= 1Ft.

Type of Liner= PSRM

-L- STA 50+75 LT - STA 53+45 LT

PREFORMED SCOUR HOLE

PLAN VIEW

Permanent Soil Reinforcement matting (PSRM)

Pipe or Ditch Outlet

Install level and flush with natural ground.

Square Preformed Scour Hole (PSH)

(Rip Rap in basin not shown for clarity)

(4' min typ.)

B= 4 Ft.
D= 1Ft.
w= 4 Ft.
d= 0.5 Ft.

Seed with native grasses at installation.

SECTION A-A

FIN Slope

D (1' min)

PSRM

Natural Ground

1' tuck

Pipe or Ditch Outlet

Liner: Class B Rip Rap 12" thick with Filter Fabric

5/05

-L- STA 58+70 RT
-L- STA 60+65 RT
-L- STA 62+00 RT

★ TRAFFIC SIGNAL
SEE SHEET 13 FOR -Y1- PROFILE
SEE SHEET 11 FOR -L- PROFILE

PAVEMENT REMOVAL

17-APR-2007 16:11
r:\roadway\proj\3447_rdy_psh_7.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3447	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y3-
PI Sta 13+50.95
Δ = 16° 39' 14.2" (LT)
D = 5° 02' 53.1"
L = 329.91'
T = 166.12'
R = 1,135.00'

-Y3-
PI Sta 11+25.87
Δ = 37° 55' 16.8" (LT)
D = 42° 26' 28.7"
L = 89.35'
T = 46.38'
R = 135.00'

-L-
PI Sta 62+46.50
Δ = 45° 13' 25.7" (RT)
D = 5° 43' 46.5"
L = 789.30'
T = 416.50'
R = 1,000.00'
SE = 0.04

-Y3- Sta. 11+88.92
END CONSTRUCTION

-Y3- POC Sta. 11+20.82, 2.31' RT.

-Y3- Sta. 10+86.10
BEG. CONSTRUCTION

-Y3- PC Sta. 10+79.49

-BL-16 PINC 68+79.23 =
-BYI- POT 25+94.29
-L- STA. 66+23.75, 68.59' LT
-Y3- STA. 10+58.25, 57.45' RT

-L- POT Sta. 73+58.14

END PROJECT U-3447
-L- POT Sta. 66+87.86
END CONSTRUCTION

-Y3- PT Sta. 15+14.73

-Y3- PC Sta. 11+84.82

-Y3- PT Sta. 11+68.84

-Y3- POT Sta. 10+00.00
-L- POC Sta. 65+80.34

-L- PT Sta. 66+19.30

-BL-17 PINC 72+53.69=
-L- Sta. 69+84.04, 33.49' RT

MATCH LINE SEE SHEET 7 -L- STA. 62+00.00

NAD 83

S 55° 01' 17.2" E

N 32° 09' 35.2" W

CROWN ATLANTIC COMPANY, LLC
DB 10478 PG 332

KARL F. HABERYAN
DB 5266 PG 752
PB 34 PG 555

TAD ENTERPRISES, INC.
DB 20102 PG 847

KENNETH RAY & MARTHA DOWNS
DB 1906 PG 014

KENNETH R. & MARTHA G. DOWNS
DB 2629 PG 249
DB 2792 PG 403

ROBERT C. & LOUISE BAKER HAIR, JR.
DB 3068 PG 246

JIMMY B. CHILDERS
DB 11033 PG 122

JIMMY B. CHILDERS
DB 12594 PG 026

PINEVILLE M
DB 2758

REBEKAH B. MILLER
DB 4902 PG 051

BM #6
-BL- STATION 72+54
160' RIGHT
ELEVATION=537.48'

NOTE: DO NOT DISTURB

REMOVE AND RESET FENCE

CLASS 'B' RIP RAP
1.0 TON
5.0 SY P.F.

PREFORMED SCOUR HOLE

575' UNIFORM TRANSITION (LT & RT)

PAVEMENT REMOVAL

SEE SHEET 12 FOR -L- PROFILE
SEE SHEET 13 FOR -Y3- PROFILE

REVISIONS

ROW REVISION: TRM 3/15/07 - COMBINED PARCEL NO.11 AND 12 ELIMINATING PARCEL 12.

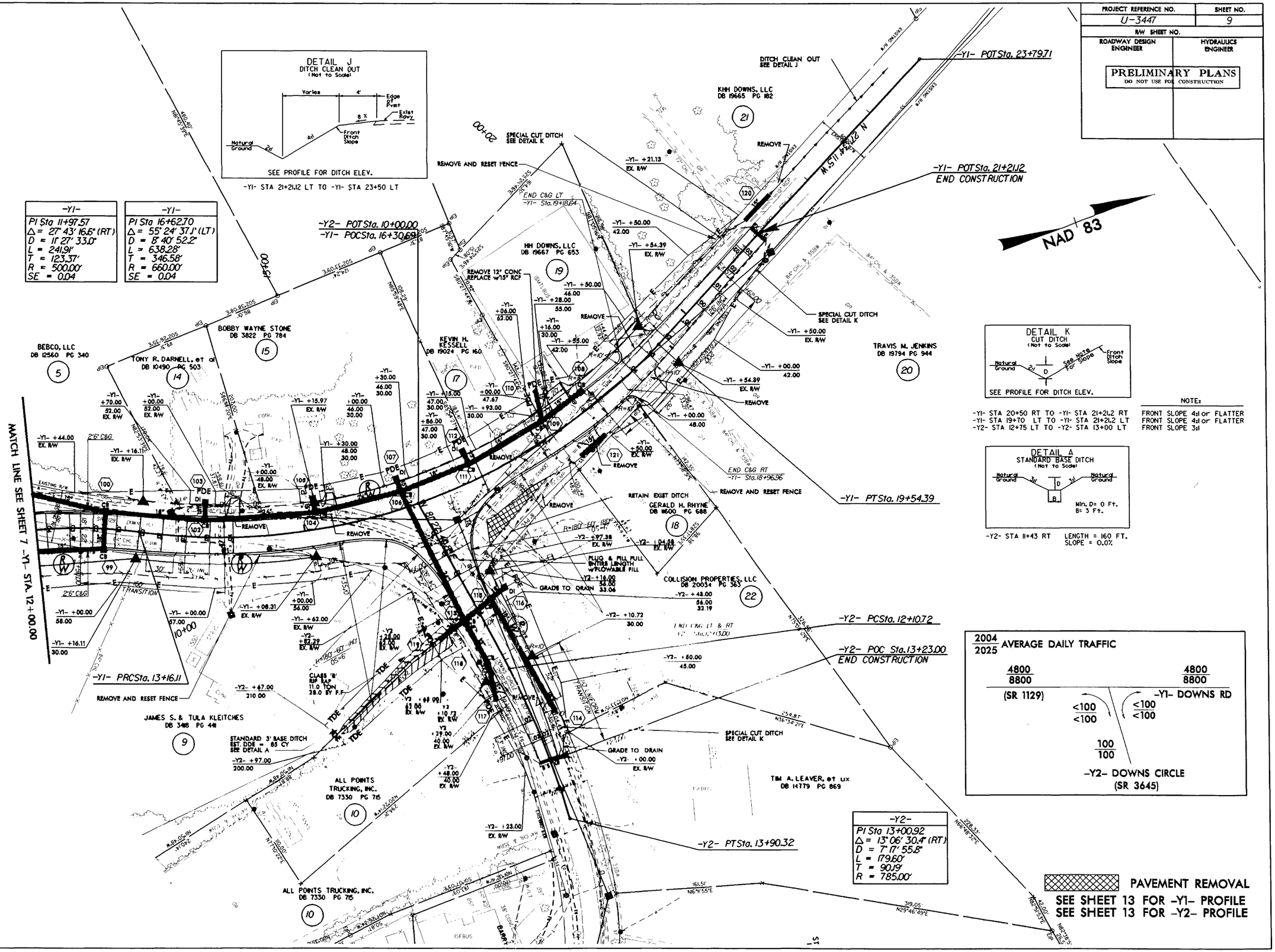
17-APR-2007 16:11
r:\roadway\proj\u3447_rdy_psh_8.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3447	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99 ROW REVISION, TRM 3/15/2007 ADJUSTED THE -TCE- ON PARCEL NO.22 AND ELIMINATED -TCE- AND PARCEL NO.ON PARCEL NO.23.
REVISED THE PROPERTY OWNERS ON PARCELS NO.14,17,19,20,21,22 AND 23.COMBINED PARCEL NO'S 15 AND 16.ELIMINATING PARCEL NO.16.



17-APR-2007 16:11
s:\design\projects\u3447_rdy_psh_9.dgn