



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY PERDUE
GOVERNOR

EUGENE CONTI
SECRETARY

March 19, 2009

MEMORANDUM TO: Mr. Richard E. Greene, Jr., PE
Division Four Engineer

FROM: Philip S. Harris, III, P.E., Unit Head *E. L. Fush*
Natural Environment Unit
Project Development and Environmental Analysis Branch

SUBJECT: Johnston County, Smithfield; SR 1923 (Booker Dairy Road
Extension) from US 70 Business to US 301; T.I.P. Number
U-3334; Federal Aid Project No. STP-1923(2); State
Project 8.2312101

Attached are the U.S. Army Corps of Engineers Section 404 Individual Permit, N.C. Division of Water Quality Section 401 Individual Water Quality Certification and Riparian Buffer Authorization for the above referenced project. All environmental permits have been received for the construction of this project.

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

PSH/gyb

Attachment

Cc: W/attachment
Mr. Randy Garris, P.E. State Contract Officer
Ms. Beth Harmon, EEP
Mr. Chad Coggins, Division Environmental Officer

Cc: W/o attachment (see website for attachments)
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Jay Bennett, P.E., Roadway Design
Dr. David Chang, P.E., Hydraulics
Mr. Art McMillan, P.E., Highway Design
Mr. Tom Koch, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. John F. Sullivan, FHWA
Mr. Ron Hancock, P.E., State Roadway Construction Engineer
Mr. Mike Robinson, P.E., State Bridge Construction Engineer
Mr. Rob Hanson, P.E., PDEA Eastern Region Unit Head

PROJECT COMMITMENTS

Smithfield
SR 1923 (Booker Dairy Road Extension)
From US 70 Business to US 301
Johnston County
Federal-Aid Project STP-1923 (2)
State Project 8.2312101
WBS Element 34929.1.1
TIP Project U-3334

COMMITMENTS DEVELOPED THROUGH PROJECT DEVELOPMENT

Current Status, changes, or additions to the project commitments as shown in the environmental document for the project are printed in italics.

Project Development and Environmental Analysis

The buffer zone for the intermittent channel, UT BC1, technically will not be subject to the Neuse River Buffer Rules, because at the point the stream crosses the project area, the stream does not appear on the USGS Topographic Quad and/or the NRCS Soil Survey. Therefore, NCDOT will apply for exemption in the permit application process.

In a letter dated April 16, 2008, The NC Division of Water Quality (DWQ) stated the Neuse Buffer Rules apply to this unnamed tributary south of SR 1923 (Booker Dairy Road). The buffer rules apply because this portion of the stream is "approximately shown" on the NRCS soil survey map. The calculated impacts are considered allowable by DWQ and will not require mitigation.

Hydraulics/Division 4 Construction

Guidelines for Anadromous Fish Passage will be followed during construction of the proposed project.

This commitment will be implemented during project construction.

Hazardous spill basins are not required on this project as the Poplar Creek and Neuse River crossing is more than one mile upstream from the water supply intake. Due to the bridge deck drainage system hazardous spill basins will be installed and DOT will add sluice gates to the hazardous spill basins for stormwater management.

Due to the length and the Neuse River being nutrient sensitive waters, it is likely that a bridge deck drainage system will be required.

The current plans show a bridge deck drainage system and hazardous spill basins.

Division 4 Construction

An in water construction moratorium for anadromous fish passage for the Neuse River and Poplar Creek will be in effect from February 15 to June 15.

The in-water work moratorium is applicable to Poplar Creek and the Neuse River, and includes any surface water that is actively connected to Poplar Creek and the Neuse River, i.e. it would include the wetlands and floodplain only when they were inundated during flood conditions. This commitment will be implemented during project construction.

COMMITMENTS DEVELOPED THROUGH PERMITTING

Project Development and Environmental Analysis

This permit authorizes impacts to wetlands, streams and open waters to section A only. Construction on Section B of this project may occur only after final design has been completed and the NCDWQ and USACE have reviewed these plans and made a determination that all appropriate and practicable measures have been undertaken to minimize impacts to the aquatic environment, and this permit has been modified, in writing, to allow its construction.

Compensatory mitigation for the unavoidable impacts to 0.33 acres of riparian wetlands, 1.99 acres of non-riparian wetlands, and 69 linear feet of stream associated with T.I.P. U-3334 Section A shall be provided by the Ecosystem Enhancement Program (EEP). Pursuant to the EEP Memorandum of Agreement (MOA) between the State of North Carolina and the US Army Corps of Engineers signed on July 22, 2003, the EEP will provide 0.66 acres of restoration equivalent riparian wetlands, 3.98 acres of restoration equivalent non-riparian wetlands, and 138 linear feet of restoration equivalent warm water stream channel in the Neuse River basin (Hydrologic Cataloging Unit 03020201) in accordance with Section X of the MOA. For wetlands, a minimum of 1:1 (impact to mitigation) must be in the form of wetlands restoration. The NCDOT shall, within 30 days of the issue date of this permit, certify that sufficient funds have been provided to EEP to complete the required mitigation, pursuant to Paragraph V. of the MOA.

The permittee shall acquire compensatory mitigation for Section B of this project 5 years in advance of its construction. Proof of such acquisition shall be provided in any subsequent request to modify this permit to allow construction of Section B.



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

March 17, 2009

Regulatory Division

Action ID: SAW 2008-02482

Gregory J. Thorpe, Ph.D.
Environmental Manager Director
Project Development and Environmental Analysis Branch
N.C. Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe,

In accordance with your written request of August 1, 2008, and the ensuing administrative record, enclosed are two copies of a permit to construct the SR 1923 extension (Booker Dairy Road, TIP U-3334), starting from US 70 Business and ending at US 301. The proposed T.I.P. project U-3334 involves constructing a two lane 24-foot roadway with 8-foot shoulders, 4 feet of which will be paved for bicycle accommodations. The project is approximately 4.1 miles in total length and has been divided into two sections, A and B. Section A is the only section that has detailed permit drawings (final design) completed; therefore, only Section A is being authorized for construction at this time. Construction of Section B will only be allowed once all appropriate and practicable avoidance and minimization measures have been employed, final design has been completed and this permit modified to allow its construction. The T.I.P. U-3334 Section A project starts from US 70 Business and ends at the intersection of Booker Dairy Road and Buffalo Road. The T.I.P. U-3334 Section A would permanently impact 2.32 acres of jurisdictional wetlands and 69 linear feet of stream. The project would temporarily impact 0.20 acres of jurisdictional wetlands. The project is located on the north side of Smithfield in Johnston County.

You should acknowledge that you accept the terms and conditions of the enclosed permit by signing and dating each copy in the spaces provided ("Permittee" on page 3). Your signature, as permittee, indicates that, as consideration for the issuance of this permit, you voluntarily accept and agree to comply with all of the terms and conditions of this permit. All pages of both copies of the signed permit with drawings should then be returned to the Wilmington District office for final authorization. A self-addressed envelope is enclosed for your convenience.

This correspondence contains an initial proffered permit for the above described activity. If you object to this decision or the enclosed special conditions you may request that the District Commander reconsider his decision. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this decision you must submit a completed RFA form to the District Commander, Wilmington District Corps of Engineers at the following address:

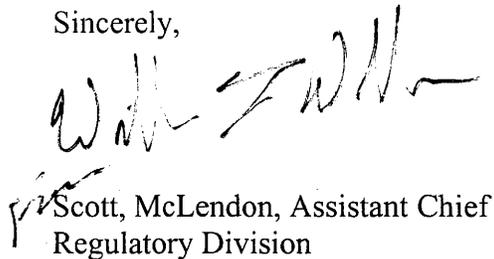
Col. Jefferson Ryscavage, District Commander
US Army Corps of Engineers, Wilmington District
Post Office Box 1890
Wilmington, NC 28402-1890

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete and that it has been received by the District Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by May 12, 2009.

It is not necessary to submit an RFA form to the District Office if you do not object to the decision in contained in this correspondence.

After the permit is authorized in this office, the original copy will be returned to you; the duplicate copy will be permanently retained in this office. If you have questions, please contact William Wescott at the Washington Regulatory Field Office, telephone 252-975-1616 ext. 31.

Sincerely,



William Wescott, Assistant Chief
Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY PERMIT

Permittee **North Carolina Department of Transportation; TIP NO. U-3334**

Permit No. **SAW-2008-02482**

Issuing Office **USAED, WILMINGTON**

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description : to construct the SR 1923 extension (Booker Dairy Road, TIP U-3334), starting from US 70 Business and ending at US 301. The proposed T.I.P. project U-3334 involves constructing a two lane 24-foot roadway with 8-foot shoulders, 4 feet of which will be paved for bicycle accommodations. The project is approximately 4.1 miles in total length and has been divided into two sections, A and B. Section A is the only section that has detailed permit drawings (final design) completed; therefore, only Section A is being authorized for construction at this time. Construction of Section B will only be allowed once all appropriate and practicable avoidance and minimization measures have been employed, final design has been completed and this permit modified to allow its construction. The T.I.P. U-3334 Section A project starts from US 70 Business and ends at the intersection of Booker Dairy Road and Buffalo Road. The T.I.P. U-3334 Section A would permanently impact 2.32 acres of jurisdictional wetlands and 69 linear feet of stream. The project would temporarily impact 0.20 acres of jurisdictional wetlands. The project is located on the north side of Smithfield in Johnston County.

Project Location: The T.I.P. U-3334 Section A project starts from US 70 Business and ends at the intersection of Booker Dairy Road and Buffalo Road. The T.I.P. U-3334 Section A would permanently impact 2.32 acres of jurisdictional wetlands and 69 linear feet of stream. The project would temporarily impact 0.20 acres of jurisdictional wetlands. The project is located on the north side of Smithfield in Johnston County.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **December 31, 2014**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit,

Special Conditions:

SEE ATTACHED SPECIAL CONDITIONS

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
 - (x) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
 - (x) Section 404 of the Clean Water Act (33 U.S.C. 1344).
 - () Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
2. Limits of this authorization.
 - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
 - b. This permit does not grant any property rights or exclusive privileges.
 - c. This permit does not authorize any injury to the property or rights of others.
 - d. This permit does not authorize interference with any existing or proposed Federal project.
3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
 - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
 - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
 - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
 - d. Design or construction deficiencies associated with the permitted work.

- c. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
 5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
 - a. You fail to comply with the terms and conditions of this permit.
 - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
 - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit, Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

E. L. Lusk for Gregory J. Thorpe, PhD Mar 18, 2009
 (PERMITTEE) NC DEPARTMENT OF TRANSPORTATION (DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

 (DISTRICT ENGINEER) JEFFERSON M. RYSCAVAGE, COLONEL (DATE)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

 (TRANSFeree) (DATE)

SPECIAL CONDITIONS (Action ID. SAW 2008-02482; NCDOT/TIP U-3334)

COMPLIANCE WITH PLANS

- a) All work must be performed in strict compliance with the attached plans, which are a part of this permit. Any modification to the permit plans must be approved by the USACE prior to implementation.
- b) This authorization is only for TIP U-3334 Section A. Construction on Section B of this project may occur only after final design has been completed, the District Commander has reviewed these plans and has made a determination that all appropriate and practicable measures have been undertaken to minimize impacts to the aquatic environment, and this permit has been modified, in writing to allow its construction.

ACTIVITIES NOT AUTHORIZED

- c) Except as authorized by this permit or any USACE approved modification to this permit, no excavation, fill, or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands, nor shall any activities take place that cause the degradation of waters or wetlands. In addition, except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within, into, or out of waters or wetlands or to reduce the reach of waters or wetlands.

This permit does not authorize temporary placement or double handling of excavated or fill material within jurisdictional waters, including wetlands, outside the permitted area. Additionally, no construction materials or equipment will be placed or stored within jurisdictional waters, including wetlands.

CONSTRUCTION PLANS

- d) The Permittee will ensure that the construction design plans for this project do not deviate from the permit plans attached to this authorization. Written verification shall be provided to Washington Regulatory Field Office that the final construction drawings comply with the attached permit drawings prior to any active construction in waters of the United States, including wetlands. Any deviation in the construction design plans will be brought to the attention of the Corps of Engineers, Washington Regulatory Field Office prior to any active construction in waters or wetlands.
- e) Prior to commencing construction within jurisdictional waters of the United States for any portion of the proposed project, the Permittee shall forward the latest version of project construction drawings to the Corps of Engineers, Washington Regulatory Field Office NCDOT Regulatory Project Manager. Half-size drawings will be acceptable.

POLLUTION SPILLS

f) All mechanized equipment will be regularly inspected and maintained to prevent contamination of waters and wetlands from fuels, lubricants, hydraulic fluids, or other toxic materials. No equipment staging or storage of construction material will occur in wetlands. Hydro-seeding equipment will not be discharged or washed out into any surface waters or wetlands. In the event of a spill of petroleum products or any other hazardous waste, the Permittee shall immediately report it to the N.C. Division of Water Quality at (919) 733-5083 or (800) 662-7956 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act will be followed.

NOTIFICATION

g) The Permittee shall advise the Corps in writing at least two weeks prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.

CLEAN FILL MATERIAL

h) Unless otherwise authorized by this permit, all fill material placed in waters or wetlands shall be generated from an upland source and will be clean and free of any pollutants except in trace quantities. Metal products, organic materials (including debris from land clearing activities), or unsightly debris will not be used.

CONTRACTOR COMPLIANCE

i) The Permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit, and any authorized modifications. A copy of this permit, and any authorized modifications, including all conditions, shall be available at the project site during construction and maintenance of this project.

SEDIMENTATION AND EROSION CONTROL MEASURES

j) The Permittee shall use appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" to assure compliance with the appropriate turbidity water quality standard. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standards. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4).

Adequate sedimentation and erosion control measures must be implemented prior to any ground disturbing activities to minimize impacts to aquatic resources. These measures must be inspected and maintained regularly, especially following rainfall events. All fill material must be adequately stabilized at the earliest practicable date to prevent sediment from entering into adjacent waters or wetlands.

The Permittee shall remove all sediment and erosion control measures placed in wetlands or waters, and shall restore natural grades in those areas, prior to project completion.

No fill or excavation for the purposes of sedimentation and erosion control shall occur within jurisdictional waters, including wetlands, unless it is included on the plan drawings and specifically authorized by this permit.

REPORTING OF VIOLATIONS

k) The Permittee will report any violation of these conditions or violations of Section 404 of the Clean Water Act to the Corps of Engineers, Washington Regulatory Field Office NCDOT Regulatory Project Manager, within 24 hours of the Permittee's discovery of the violation.

COMPLIANCE WITH SPECIAL CONDITIONS

l) Failure to institute and carry out the details of these special conditions, will result in a directive to cease all ongoing and permitted work within waters and/or wetlands associated with the permitted project, or such other remedies and/or fines as the District Engineer or his authorized representatives may seek.

PRECONSTRUCTION MEETING

m) The Permittee shall schedule a preconstruction meeting between its representatives, the contractor's representatives, and the Corps of Engineers, Washington Regulatory Field Office, NCDOT Regulatory Project Manager, prior to any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all of the terms and conditions contained within this Department of the Army Permit. The Permittee shall provide the Corps of Engineers, Washington Regulatory Field Office, NCDOT Regulatory Project Manager, with a copy of the final plans at least two weeks prior to the preconstruction meeting along with a description of any changes that have been made to the project's design, construction methodology or construction timeframe. The Permittee shall schedule the preconstruction meeting for a time when the Corps of Engineers and North Carolina Division of Water Quality (NCDWQ) Project Managers can attend. The Permittee shall invite the Corps and NCDWQ Project Managers a minimum of thirty (30) days in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedule and participate in the required meeting.

BORROW AND WASTE

n) To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent wetlands and streams, except as authorized by this permit, the Permittee shall require its contractors and/or agents to identify all areas to be used to borrow material, or to dispose of dredged, fill, or waste material. The Permittee shall provide the Corps of Engineers with appropriate maps indicating the locations of proposed borrow or waste sites as soon as the Permittee has that information. The Permittee will coordinate with the Corps of Engineers before approving any borrow or waste sites that are within 400 feet of any streams or wetlands. All jurisdictional wetland boundaries on borrow and waste sites shall be verified by the Corps of Engineers and shown on the approved reclamation plans. The Permittee shall ensure that all such areas comply with Special Condition "C" of this permit, and shall require and maintain documentation of the location and characteristics of all borrow and disposal sites associated with this project. This information will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with the Special Condition "C". All information will be available to the Corps of Engineers upon request. NCDOT shall require its contractors to complete and execute reclamation plans for each waste and borrow site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the Corps of Engineers within 30 days of the completion of the reclamation work.

MITIGATION

o) Compensatory mitigation for the unavoidable impacts to 0.33 acres of riparian wetlands, 1.99 acres of non-riparian wetlands, and 69 linear feet of stream associated with T.I.P. U-3334 Section A shall be provided by the Ecosystem Enhancement Program (EEP). Pursuant to the EEP Memorandum of Agreement (MOA) between the State of North Carolina and the US Army Corps of Engineers signed on July 22, 2003, the EEP will provide 0.66 acres of restoration equivalent riparian wetlands, 3.98 acres of restoration equivalent non-riparian wetlands, and 138 linear feet of restoration equivalent warm water stream channel in the Neuse River basin (Hydrologic Cataloging Unit 03020201) in accordance with Section X of the MOA. For wetlands, a minimum of 1:1 (impact to mitigation) must be in the form of wetlands restoration. The NCDOT shall, within 30 days of the issue date of this permit, certify that sufficient funds have been provided to EEP to complete the required mitigation, pursuant to Paragraph V. of the MOA.

p. The permittee shall acquire compensatory mitigation for Section B of this project 5-years in advance of its construction. Proof of such acquisition shall be provided in any subsequent request to modify this permit to allow construction of Section B.

IN-WATER MORATORIUM

q) A construction moratorium for anadromous fish from February 15 through June 15 of any year will be adhered to for in-water work.



Michael F. Easley, Governor
William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

Coleen Sullins, Director
Division of Water Quality

A. James

RECEIVED

November 4, 2008

Dr. Greg Thorpe, PhD., Manager
Planning and Environmental Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina, 27699-1548

NOV 10 2008

DIVISION OF HIGHWAYS
PDEA-OFFICE OF NATURAL ENVIRONMENT

Subject: CORRECTION to 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act and NEUSE BUFFER RULES with ADDITIONAL CONDITIONS for Proposed extension of SR 1923 in Johnston County, Federal Aid Project No. STP-1923(2), State Project No. 8.2312101, TIP No. U-3334, DWQ Project No. 20081106.

Dear Dr. Thorpe:

Attached hereto is a copy of the corrected Certification No. 3760 issued to The North Carolina Department of Transportation dated originally October 8, 2008.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

Coleen Sullins
Director

Attachments

cc: William Wescott, US Army Corps of Engineers, Washington Field Office
Chris Rivenbark, NCDOT NEU
Chad Coggins, Division 4 Environmental Officer
Kathy Matthews, Environmental Protection Agency
Travis Wilson, NC Wildlife Resources Commission
Beth Harmon, Ecosystem Enhancement Program
File Copy



CORRECTED 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act and NEUSE BUFFER RULES with ADDITIONAL CONDITIONS

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (DWQ) Regulations in 15 NCAC 2H .0500 and 15A NCAC 2B.0233. This certification authorizes the NCDOT to impact 9.59 acres of jurisdictional wetlands, 69 linear feet of jurisdictional streams and 69,270 square feet of protected riparian buffers in Johnston County. The project shall be constructed pursuant to the application dated received July 15, 2008. The authorized impacts are as described below:

Section A Stream Impacts in the Neuse River Basin

Site	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)
5	69	0	69
Total	69	0	69

Total Stream Impact for Project: 69 linear feet

Section A Wetland Impacts in the Neuse River Basin

Site	Permanent Fill (ac)	Temporary Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impact (ac)	Impacts Requiring Mitigation (ac)
1	1.91	0.01	0	0	0.59	2.5	1.91
2	0.05	0	0	0	0.01	0.06	0.05
3	<0.01	0	0.02	0.31	6.15	6.49	0.33
4	0	0	0	0.03	0.30	0.33	0.03
Various (**)	-	0.20 (**)	-	-	-	0.20	0
Total	1.97	0.21	0.02	0.34	7.05	9.59	2.32

Total Wetland Impact for Project: 9.59 acres.

** = 0.20 acre of Temporary Fill in Hand Clearing areas for erosion control measures.

Section A Neuse Riparian Buffer Impacts

Site	Zone 1 Impact (sq ft)	minus Wetlands in Zone 1 (sq ft)	= Zone 1 Buffers (not wetlands) (sq ft)	Zone 1 Buffer Mitigation Required (using 3:1 ratio)	Zone 2 Impact (sq ft)	minus Wetlands in Zone 2 (sq ft)	= Zone 2 Buffers (not wetlands) (sq ft)	Zone 2 Buffer Mitigation Required (using 1.5:1 ratio)
1	21540	21540	0	N/A	8734	8734	0	N/A
2	25499	11547	13952	N/A	10559	5283	5276	N/A
3	1853	0	1853	N/A	1085	0	1085	N/A
Totals	48892	33087	15805	0	20378	14017	6361	0

* n/a = Impact Allowable, no mitigation required

Total Buffer Impact for Project: 69,270 square feet.



Section A Open Water (Rivers) Impacts in the Neuse River Basin

Site	Permanent Fill in Open Waters (ac)	Temporary Fill in Open Waters (ac)	Total Fill in Open Waters (ac)
Bridge Bents	0.001	0	0.001
Total	0.001	0	0.001

Total Open Water Impact for Project: 0.001 acres.

Preliminary Section B Estimated Impacts in the Neuse River Basin*

Section	Permanent Wetland Impacts (ac)	Permanent Stream Impacts (ft)	Zone 1 Buffer (sq ft)	Zone 2 Buffer (sq ft)
B	5.3	176	20378	7040

***Phased Project:** Impacts for this section are preliminary estimates based on the FONSI document and will be modified (including possible temporary impacts) in future certifications prior to construction of this section. Since the stream impacts have not been specified as perennial versus intermittent in the permit application, mitigation will be required for all stream impacts until the finalized plans provide that information.

The application provides adequate assurance that the discharge of fill material into the waters of the Neuse River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your application dated received July 15, 2008. Should your project change, you are required to notify the DWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit. **This Certification replaces the one issued October 8, 2008.**

Conditions of Certification:

1. This Water Quality Certification authorizes impacts to wetlands, streams and open waters to section A only. When final design plans are completed for U-3334 Section B, modifications to the 401 Water Quality Certification shall be submitted with four copies and fees to the NC Division of Water Quality. Final designs shall reflect all appropriate avoidance, minimization, and mitigation for impacts to wetlands, streams, and other surface waters, and buffers. No construction activities that impact any wetlands, streams, riparian buffers or surface waters, located in U-3334 Section B shall begin until after the permittee applies for, and receives a written modification of the 401 Water Quality Certification from the NC Division of Water Quality. Also, any required mitigation shall be secured for U-3334 Section B prior to submittal of the application, or the application will be deemed incomplete and returned to the applicant.



2. Compensatory mitigation for impacts to 2.32 acres of wetlands is required. We understand that you have chosen to perform compensatory mitigation for these impacts to wetlands through the North Carolina Ecosystem Enhancement Program (EEP), and that the EEP has agreed to implement the mitigation for the project. EEP has indicated in a letter dated July 14, 2008 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the Tri-Party MOA signed on July 22, 2003 and the Dual-Party MOA signed on April 12, 2004..

3. In accordance with commitments made in your application, the permittee will need to adhere to all appropriate in-water work moratoriums (including the use of pile driving or vibration techniques) prescribed by the NC Wildlife Resources Commission, the US Fish and Wildlife Service, and National Marine Fisheries Service. No in-water work is permitted between February 15 and June 15 of any year, without prior approval from the NC Division of Water Quality and the NC Wildlife Resources Commission. In addition, the permittee shall conform with the NCDOT policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997) at all times.

4. A copy of the final construction drawings shall be furnished to NCDWQ Central Office prior to the pre-construction meeting. The permittee shall provide written verification that the final construction drawings comply with the permit drawings contained in the application dated July 15, 2008. Any deviations from the approved drawings are not authorized unless approved by the NC Division of Water Quality.

5. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be revegetated with appropriate native species.

6. Strict adherence to the most recent version of NCDOT's Best Management Practices For Bridge Demolition and Removal approved by the US Army Corps of Engineers is a condition of the 401 Water Quality Certification.

7. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (hazardous spill catch basins, detention ponds, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of *Stormwater Best Management Practices*.

8. All riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated. Maintained buffers shall be permanently revegetated with non-woody species by the end of the growing season following completion of construction. For the purpose of this condition, maintained buffer areas are defined as areas within the transportation corridor that will be subject to regular DOT maintenance activities including mowing. The area with non-maintained buffers shall be permanently revegetated, with native woody species before the next growing season following completion of construction.

9. Pursuant to NCAC15A 2B.0233(6), sediment and erosion control devices shall not be placed in Zone 1 of any Neuse Buffer without prior approval by the NCDWQ. At this time, the NCDWQ has approved no sediment and erosion control devices in Zone 1, outside of the approved project impacts, anywhere on this project. Moreover, sediment and erosion control devices shall be allowed in Zone 2 of the buffers provided that Zone 1 is not compromised and that discharge is released as diffuse flow.

10. All stormwater runoff shall be directed as sheetflow through stream buffers at nonerosive velocities, unless otherwise approved by this certification.

11. Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to



bedrock or other limiting features encountered during construction, please contact the NC DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.

12. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.

13. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.

14. For any streams being impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and revegetated with appropriate native species.

15. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.

16. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers.

17. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions.

18. The use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage.

19. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.

20. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream.

21. All mechanized equipment operated near surface waters, wetlands or riparian buffers must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials.

22. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification.

23. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.

24. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If DWQ determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, DWQ may reevaluate and modify this certification.

25. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification.



26. A copy of this Water Quality Certification shall be maintained on site at the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager.

27. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification.

28. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.

29. The Permittee shall report any violations of this certification to the Division of Water Quality within 24 hours of discovery.

30. Upon completion of the project (including any impacts at associated borrow or waste site), the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed.

31. Native woody riparian vegetation (i.e., trees and shrubs native to your geographic region) must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.

32. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities.

33. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards:

- a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
- b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
- c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
- d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

34. Where placement of sediment and erosion control devices in wetlands is unavoidable, they shall be removed and the natural grade restored upon completion of the project.



35. NC DOT shall use *Design Standards in Sensitive Watersheds* [15A NCAC 4B .0124(a)-(e)] for the entire project. However, due to the size of the project, NC DOT shall not be required to meet 15A NCAC 4B .0124(a) regarding the maximum amount of uncovered acres. Temporary cover (wheat, millet, or similar annual grain) or permanent herbaceous cover should be planted on all bare soil within 15 working days of ground disturbing activities to provide long-term erosion control. Erosion control matting should be used in conjunction with appropriate seeding on disturbed soils in steep slope and riparian areas. Steep slopes are defined as those slopes graded at an angle which cannot retain vegetative cover. Matting shall be secured in place with staples or wherever possible, live stakes of native trees. Straw mulch and tall fescue shall not be used in riparian areas. Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If this Certification is unacceptable to you have the right to an adjudicatory hearing upon written request within sixty (60) days following receipt of this Certification. This request must be in the form of a written petition conforming to Chapter 150B of the North Carolina General Statutes and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. If modifications are made to an original Certification, you have the right to an adjudicatory hearing on the modifications upon written request within sixty (60) days following receipt of the Certification. Unless such demands are made, this Certification shall be final and binding.

This the 4th day of November 2008

DIVISION OF WATER QUALITY

Coleen Sullins
Director

WQC No. 3760



DWQ Project No.: _____ County: _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Quality, 1650 Mail Service Center, Raleigh, NC, 27699-1650. This form may be returned to DWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Engineer's Certification

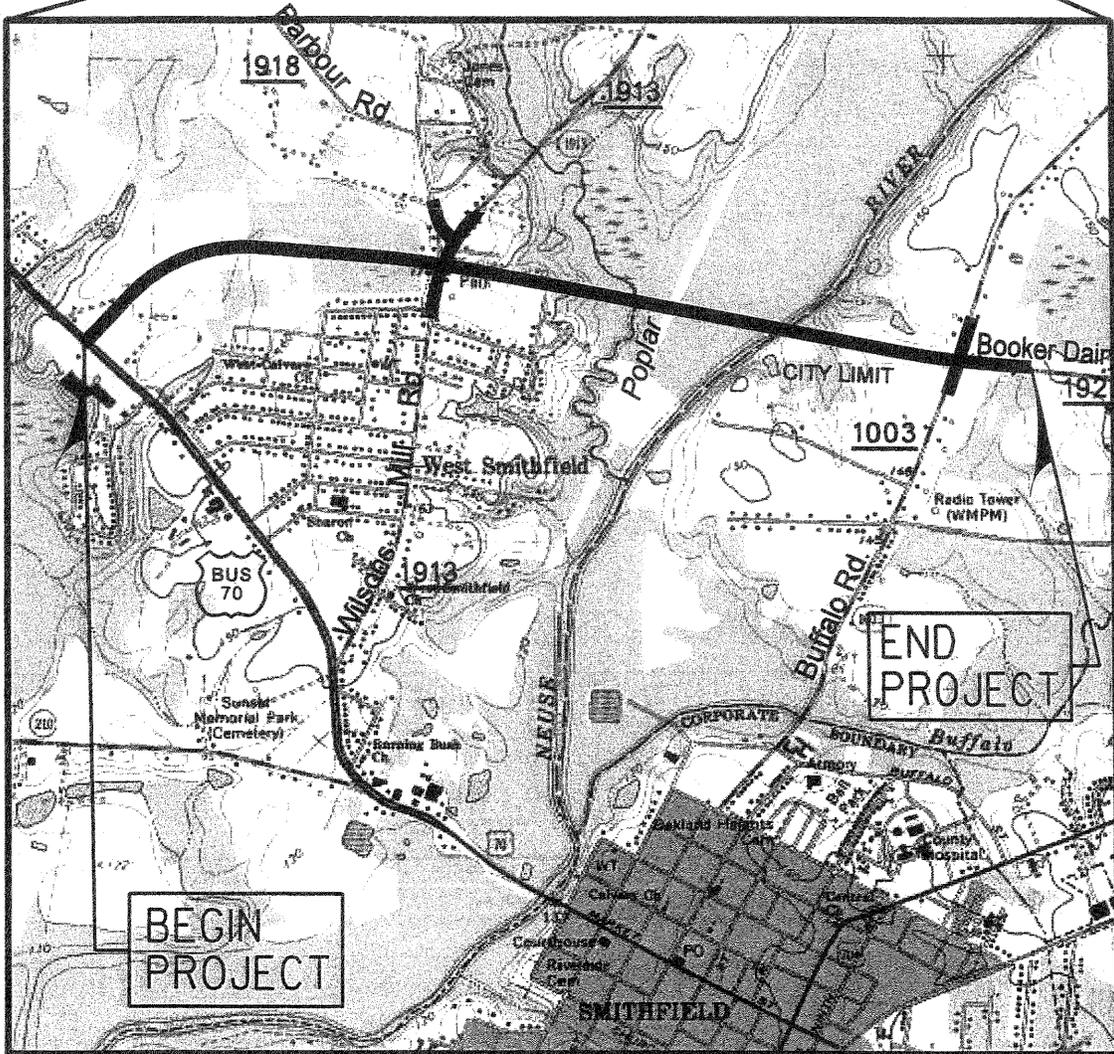
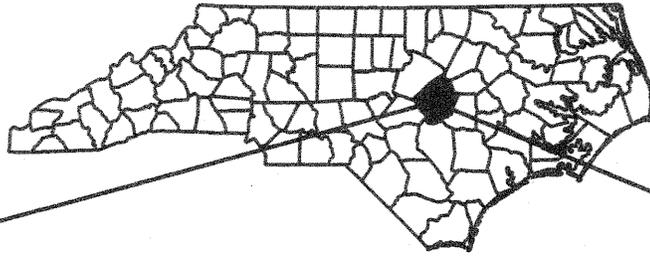
_____ Partial _____ Final

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature _____ Registration No. _____

Date _____

VICINITY MAP



BEGIN
PROJECT

END
PROJECT

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.2312101 (U-3334A)
SR 1923 EXTENSION (BOOKER
DAIRY RD) FROM US 70 BUSINESS
WEST TO SR 1003 (BUFFALO RD)

Buffer Drawing
Sheet 1 of 17

PROPERTY OWNER

NAME AND ADDRESS

OWNER'S NAME	ADDRESS
ROSS W. LAMPE	P.O. BOX 150 SMITHFIELD, NC 27577
NEUSE FORESTRY, LLC	PO BOX 1492 SMITHFIELD, NC 27577
WILLIAM W. SMITH, JR. ET AL	606 BROOKWOOD LAND GOLDSBORO, NC 27534
JANICE REYNOLDS	117-32-142 PLACE JAMAICA, NY 11436
NC DEPT OF TRANSPORTATION	2415 BEDGOOD DRIVE WILSON, NC 27893
IRENE STEVENS, ET AL	690 W. MARKET STREET SMITHFIELD, NC 27577
LEO A SANDERS	101A BARBOUR ROAD SMITHFIELD, NC 27577
JAMES C. WILLIAMS	3713 PINELEA ROAD PIKESVILLE, MD 21208
DIANE B. SLOOP	1010 WILSONS MILLS ROAD SMITHFIELD, NC 27577
JERRY HANSLEY, JR.	176 LAKE VIEW HILLS FOUR OAKS, NC 27524
TOWN OF SMITHFIELD	PO BOX 461 SMITHFIELD, NC 27577
WILSON 1995 FAMILY LIMITED PARTNERSHIP	101E JOHNSTON STREET SMITHFIELD NC 27577
JOHN W. TWISDALE	1755 BUFFALO ROAD SMITHFIELD, NC 27577
WAYNE L. BAREFOOT	258 MEADOWBROOK DRIVE FOUR OAKS, NC 27524

**N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
JOHNSTON COUNTY**

PROJECT: 8.2312101 (U-3334A)

**SR 1923 EXTENSION (BOOKER
DAIRY RD) FROM US 70 BUSINESS
WEST TO SR 1003 (BUFFALO RD)**

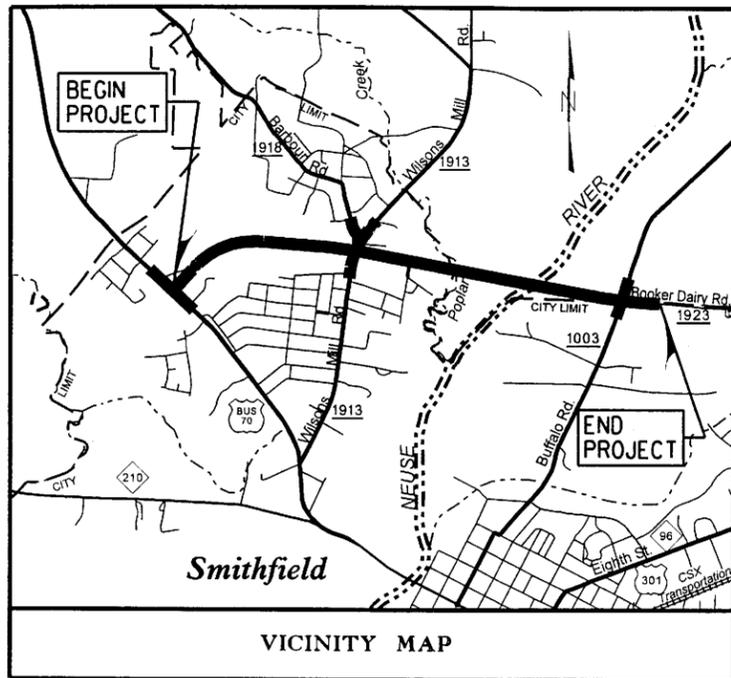
SHEET 3 OF 15

12/19/07

Buffer Drawing
Sheet 4 of 17

CONTRACT: TIP: U-3334A

See Sheet 1-B For Conventional Symbols



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

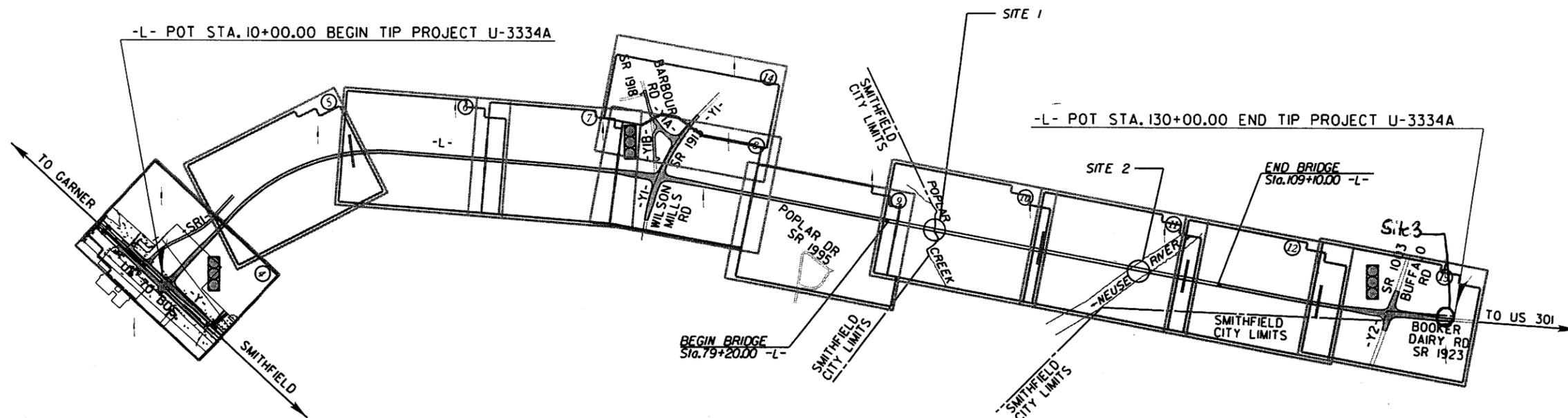
LOCATION: SR 1923 EXTENSION (BOOKER DAIRY RD) FROM US 70
BUSINESS WEST TO SR 1003 (BUFFALO RD)

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

U-3334A: BUFFER SITE MAP

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3334A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34929.1.1	STP-1923(2)	P.E.	
34929.2.4	STP-1923(3)	ROW, UTIL. CONSTR.	

Buffer Drawing Sheet 5 of 17

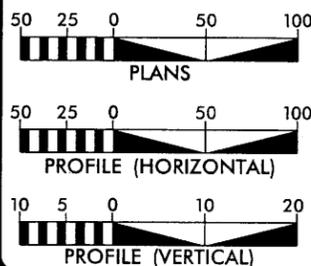


NCDOT CONTACT
TERESA BRUTON, P.E.
ROADWAY DESIGN-
ENGINEERING COORDINATION

THIS IS A FULL CONTROLLED-ACCESS PROJECT
WITH ACCESS BEING LIMITED TO
POINTS SHOWN ON THE PLANS.

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

GRAPHIC SCALES



DESIGN DATA

ADT 2005 = 6,000
ADT 2025 = 9,500
DHV = 10 %
D = 55 %
* T = 10 %
V = 50 MPH
*(TTST 4 % + DUAL 6 %)

PROJECT LENGTH

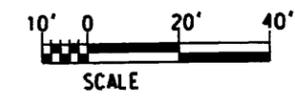
LENGTH OF ROADWAY TIP PROJECT U-3334A = 1.707 miles
LENGTH OF STRUCTURE TIP PROJECT U-3334A = 0.566 miles
TOTAL LENGTH TIP PROJECT U-3334A = 2.273 miles



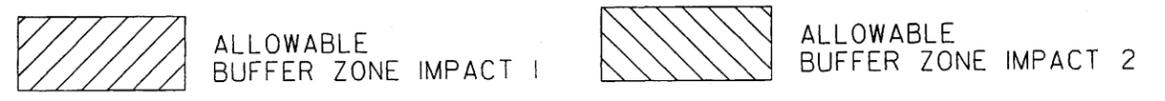
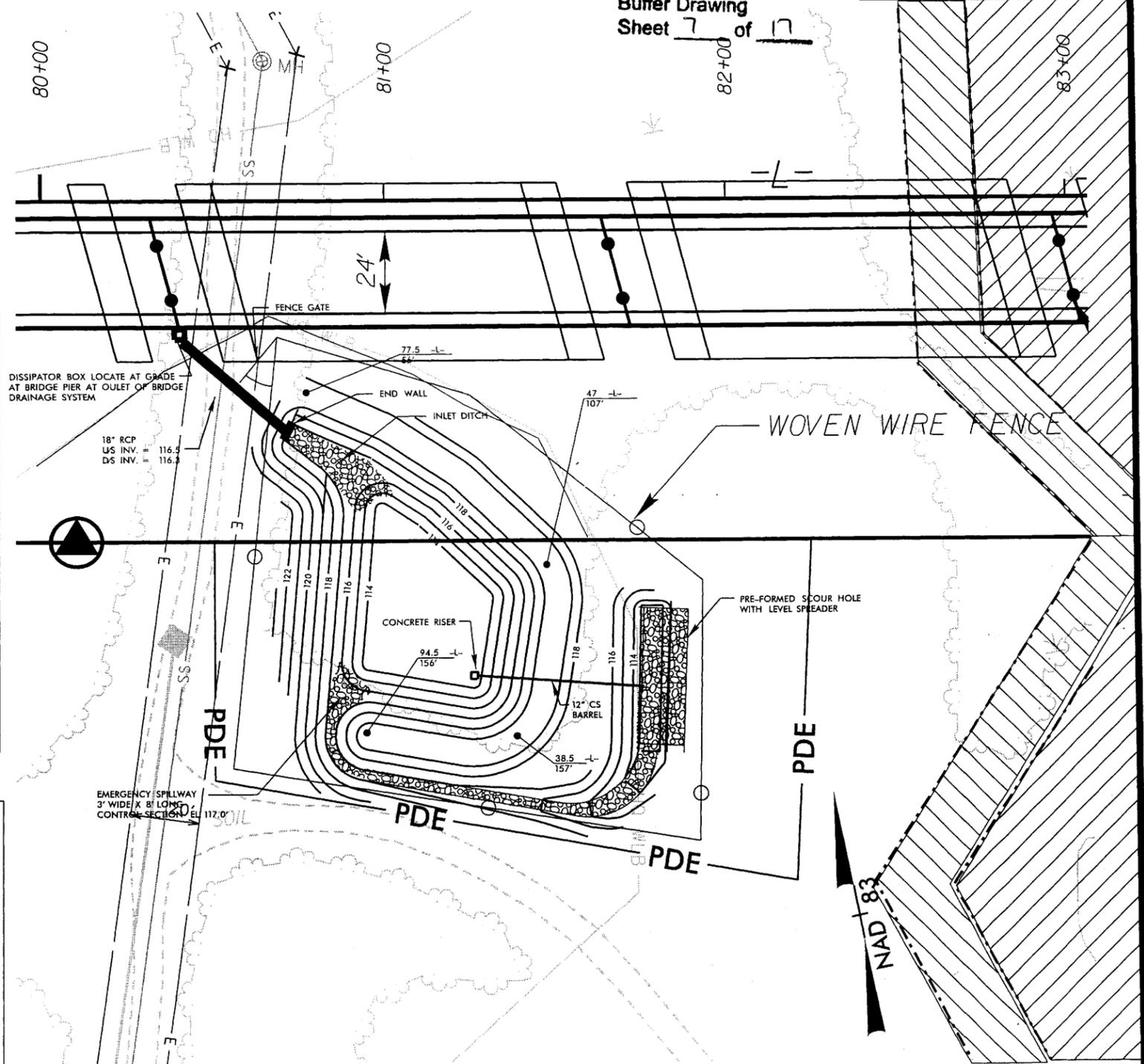
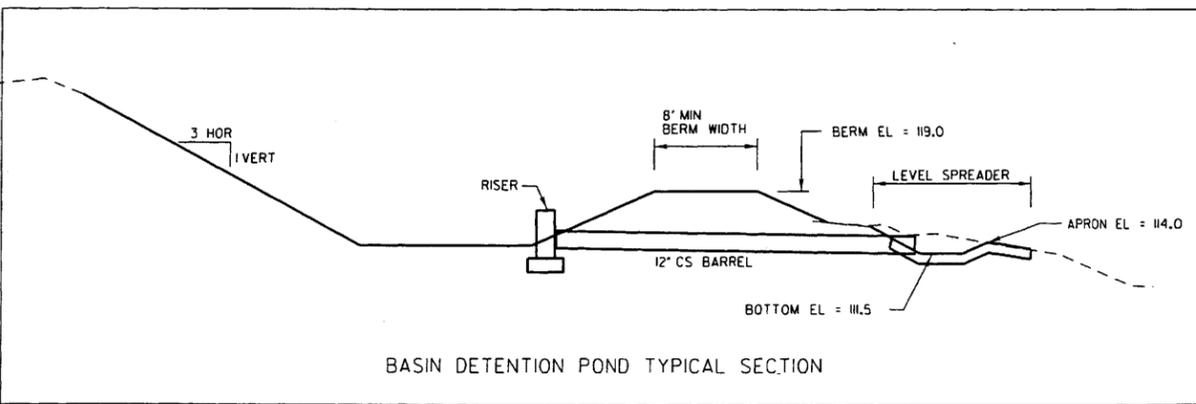
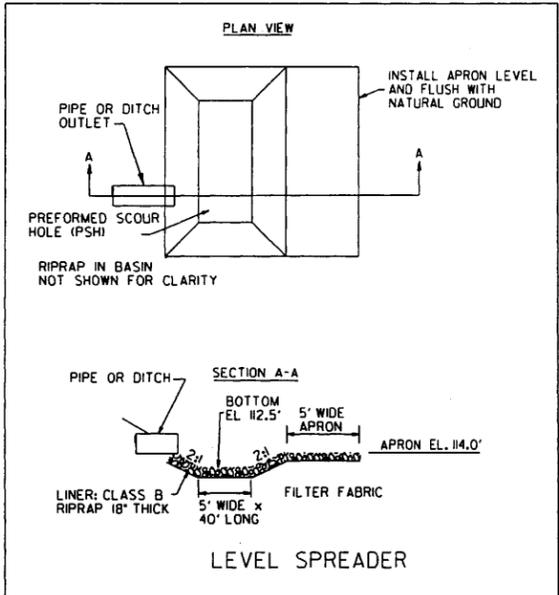
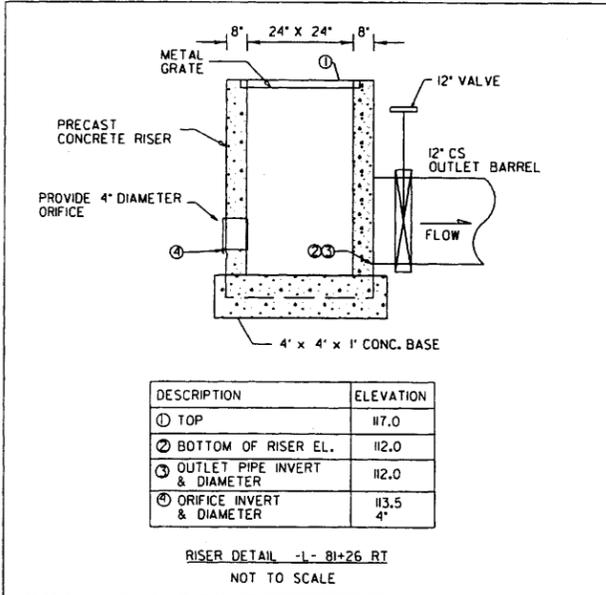
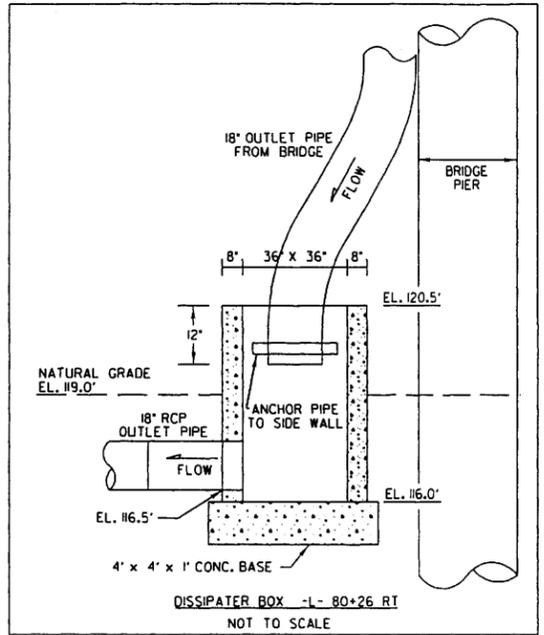
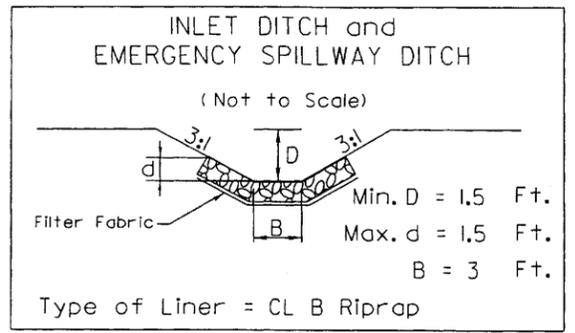
Prepared In The Office of:
ARCADIS
for the North Carolina Department of Transportation
2002 STANDARD SPECIFICATIONS
RIGHT OF WAY DATE: NOVEMBER 13, 2003
LETTING DATE: SEPTEMBER 20, 2005

HYDRAULICS ENGINEER
P.E.
SIGNATURE: _____
ROADWAY DESIGN ENGINEER
P.E.
SIGNATURE: _____

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
P.E.
STATE DESIGN ENGINEER
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED DIVISION ADMINISTRATOR
DATE: _____



Buffer Drawing
 Sheet 7 of 17



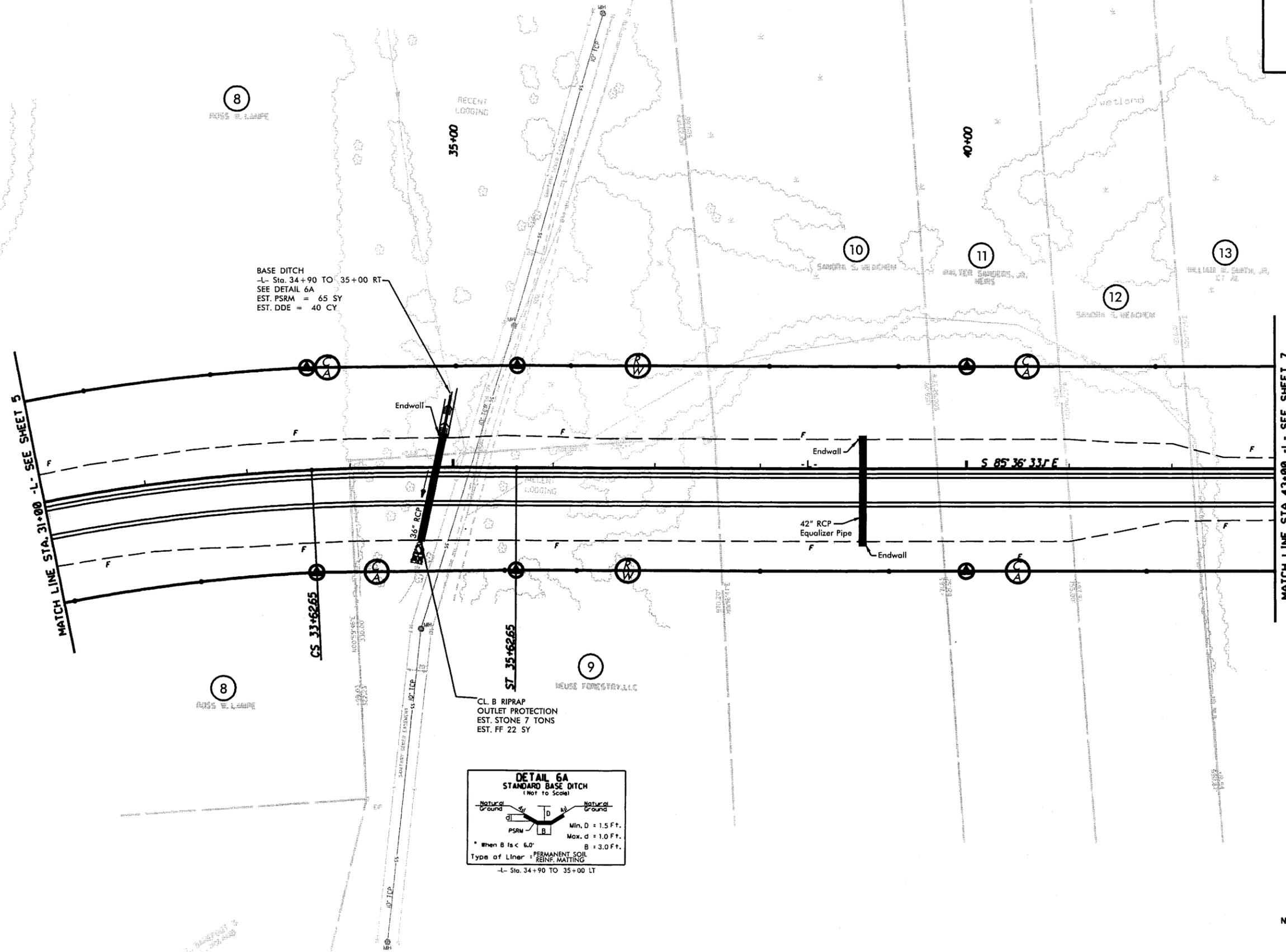
HAZARDOUS SPILL BASIN / DETENTION POND

REVISIONS

Buffer Drawing
 Sheet **8** of **17**



REVISIONS

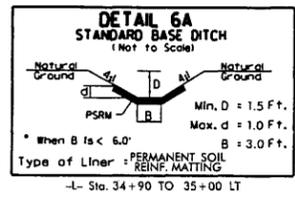


BASE DITCH
 -L- Sta. 34+90 TO 35+00 RT
 SEE DETAIL 6A
 EST. PSRM = 65 SY
 EST. DDE = 40 CY

CS 33+62.65

ST 35+62.65

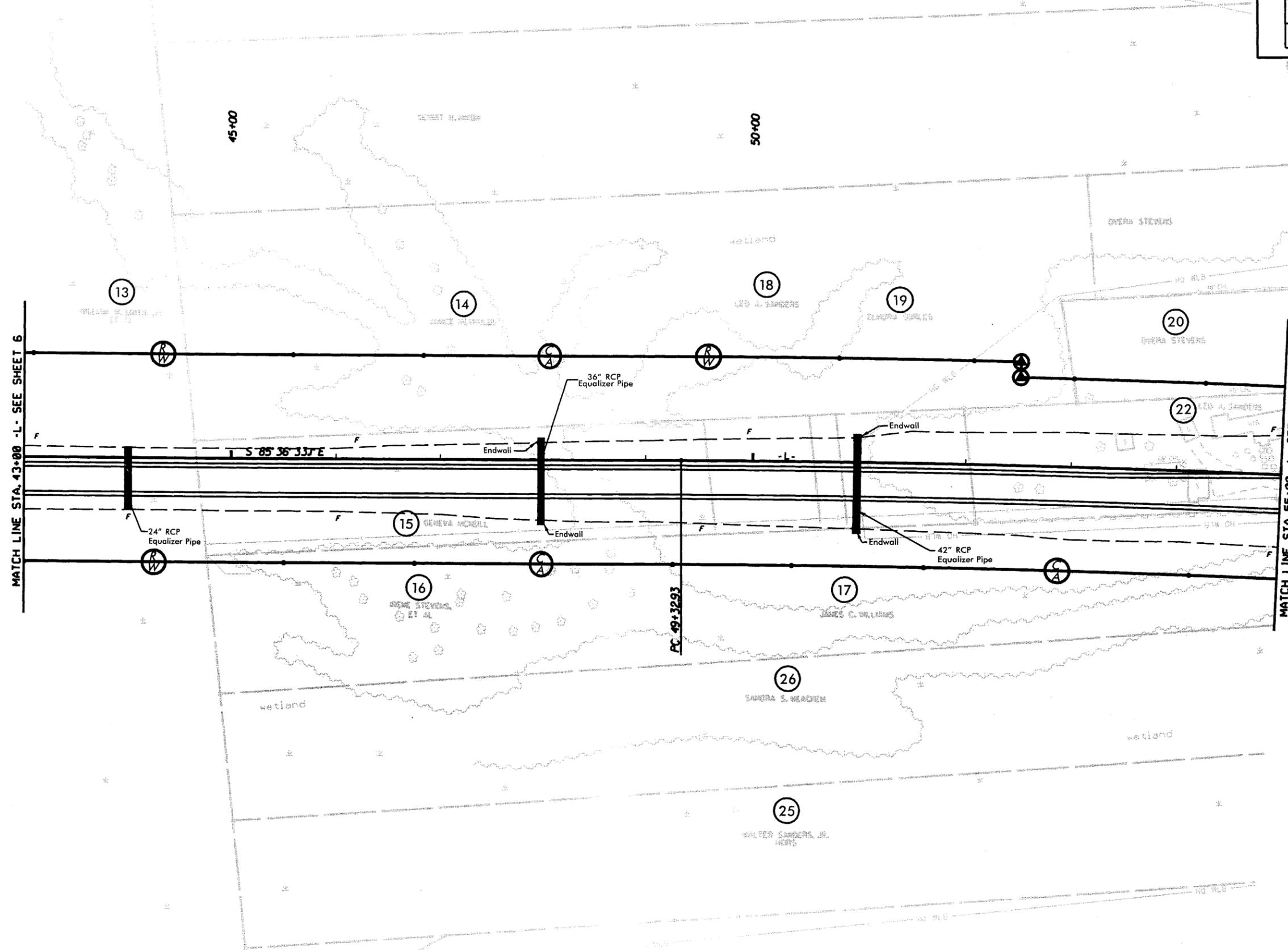
CL. B RIPRAP
 OUTLET PROTECTION
 EST. STONE 7 TONS
 EST. FF 22 SY



NOTE:
 A FUTURE ACCESS POINT IS DESIGNATED AT LEFT AND RIGHT OF -L- Sta. 35+90 FOR PLACEMENT OF A ROAD AS DETERMINED BY THE CITY OF SMITHFIELD.

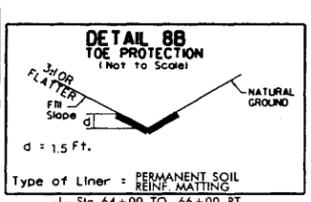
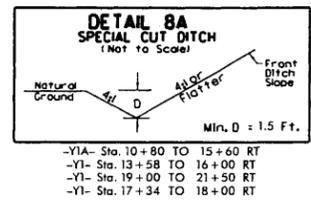
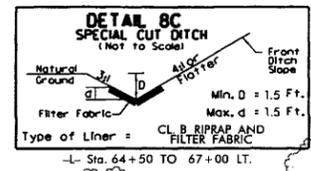
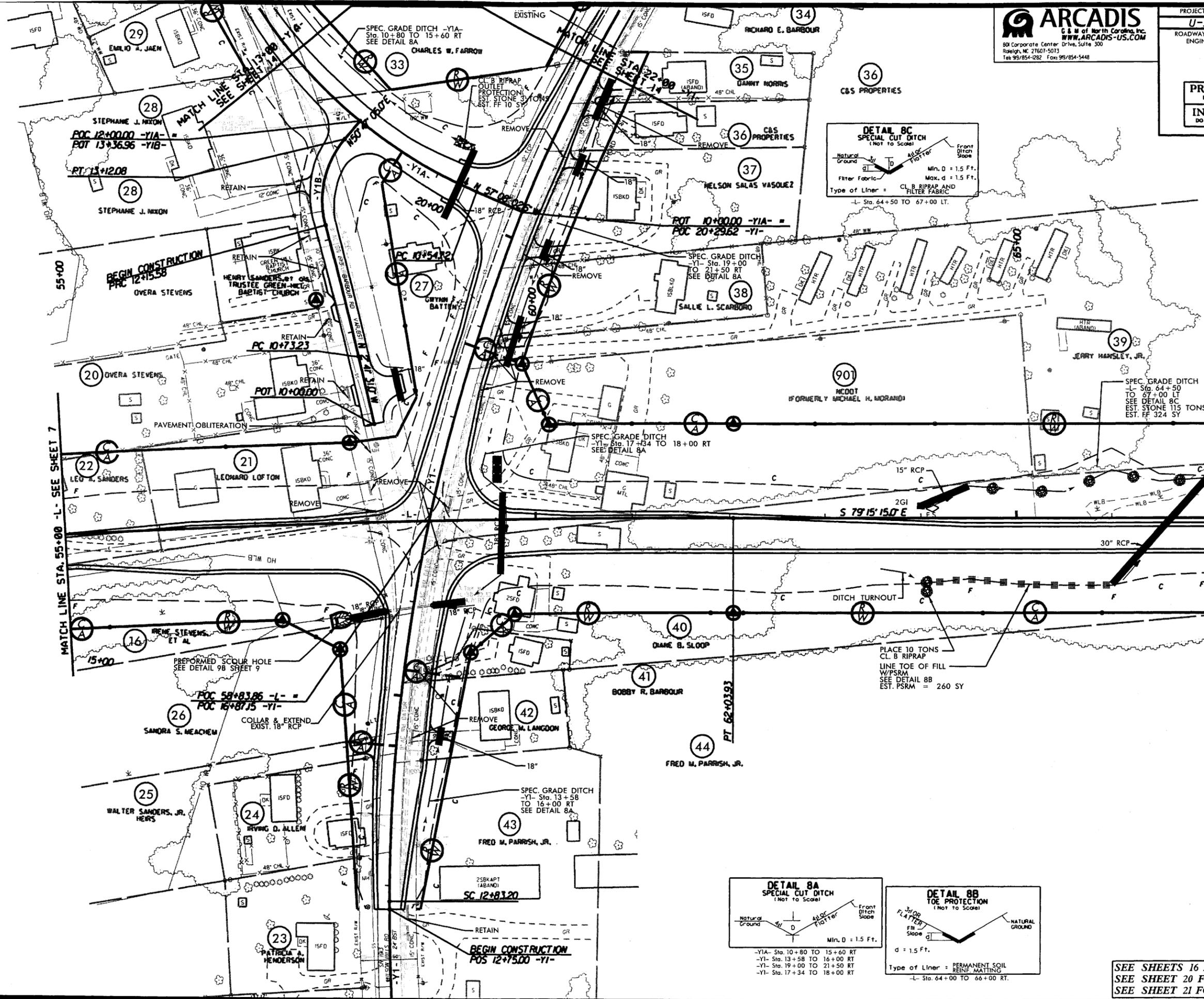
SEE SHEETS 15 AND 16 -L- PROFILE

REVISIONS



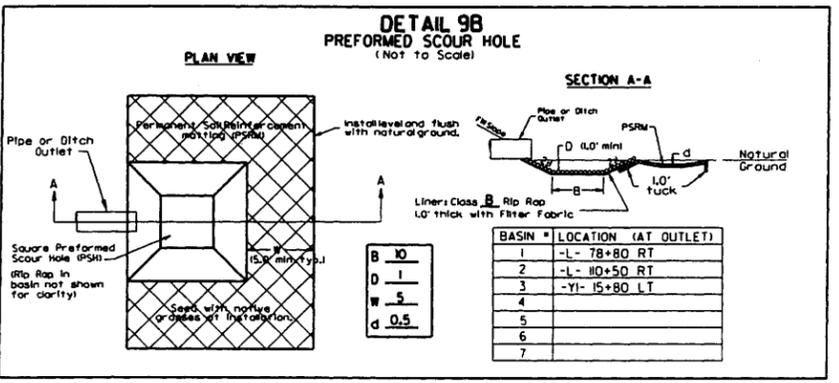
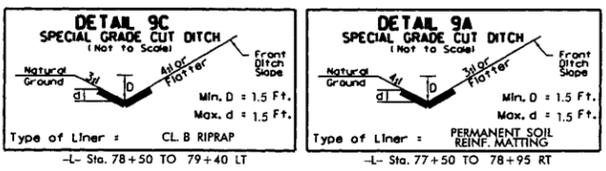
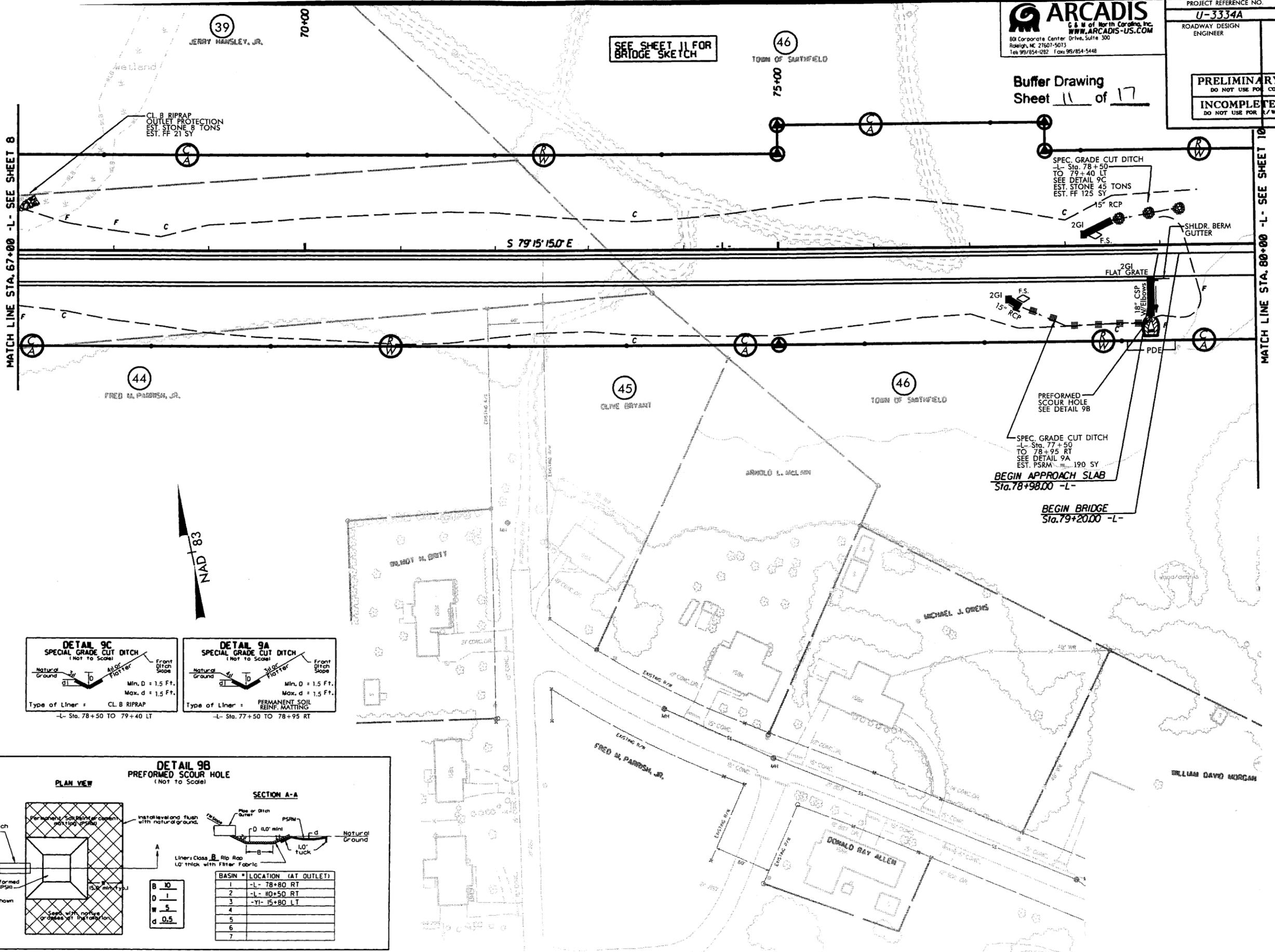
ARCADIS G&M
 DATE: 04/26/07
 TIME: 10:00 AM

SEE SHEET 16 FOR -L- PROFILE



SEE SHEETS 16 AND 17 FOR -L- PROFILE
 SEE SHEET 20 FOR -YI- PROFILE
 SEE SHEET 21 FOR -YIA- PROFILE

REVISIONS
 RW REVISION 55 & /04 MOVED TAPER OF RIGHT SIDE OF -YI- AT END OF CONSTRUCTION TO AVOID UNDERGROUND STORAGE TANK BY ELIMINATE TAKING ON PARCEL 34



REVISIONS

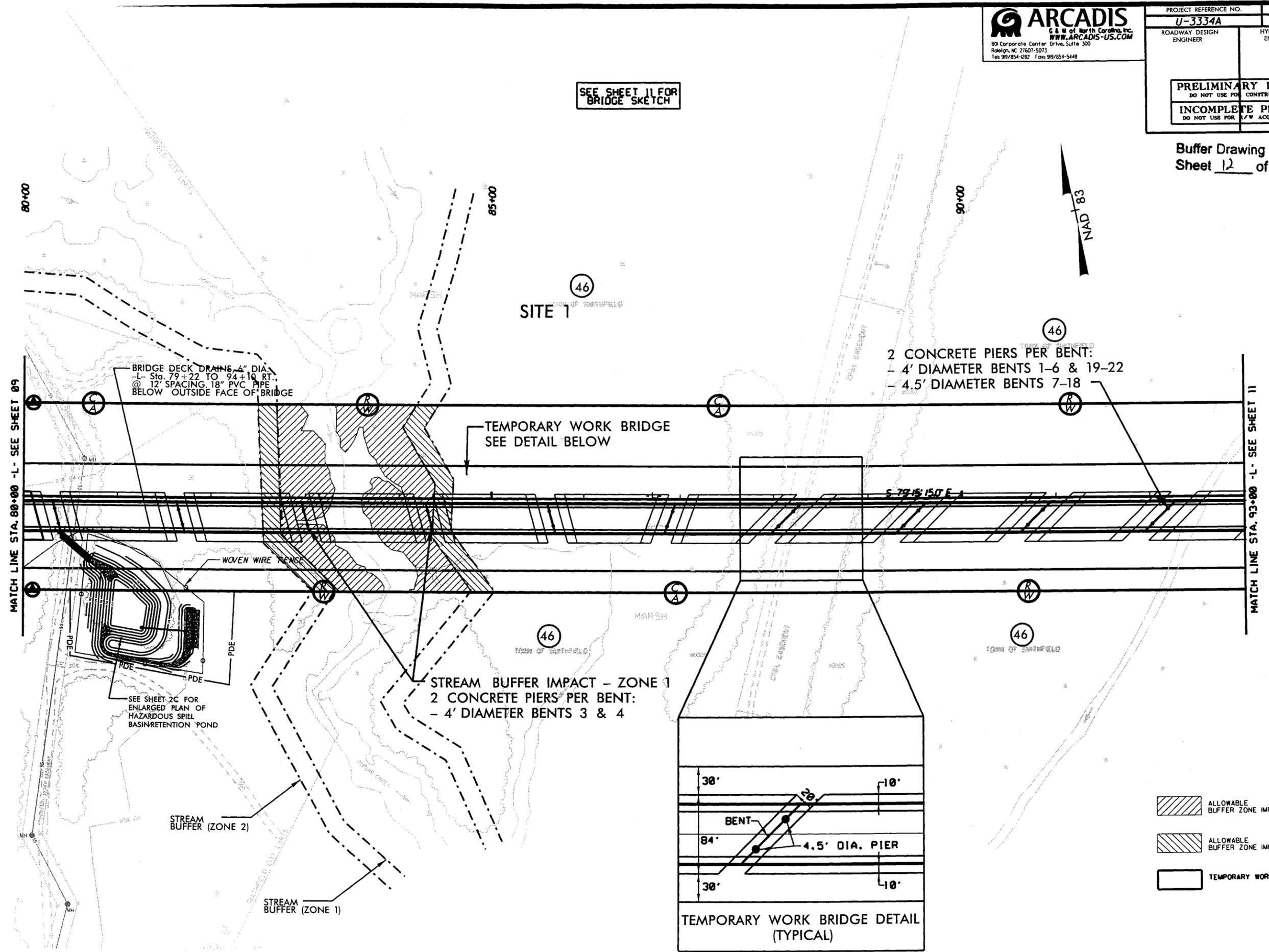
ARCADIS G&M
DATE: 04/20/11
TIME: 11:00 AM

SEE SHEET 17 FOR -L- PROFILE

PROJECT REFERENCE NO. U-3334A	SHEET NO. 10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

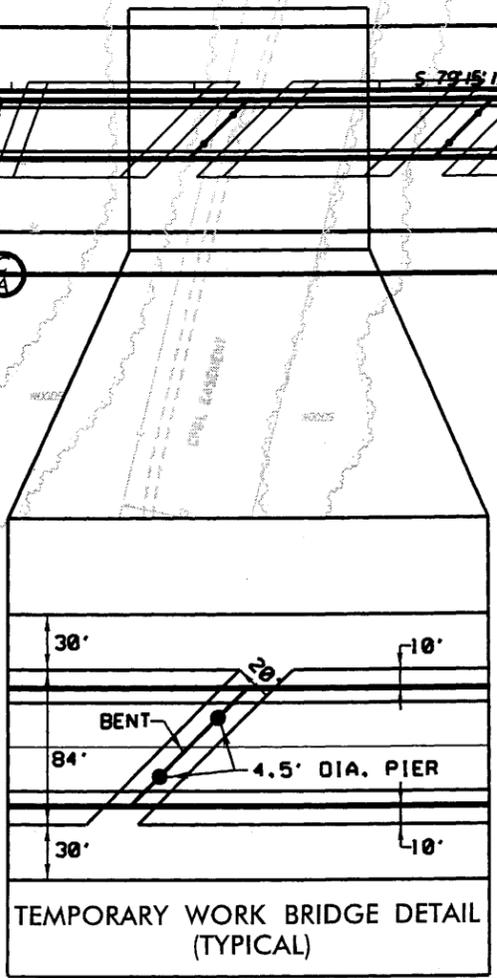
Buffer Drawing
 Sheet 12 of 17

SEE SHEET 11 FOR
 BRIDGE SKETCH



2 CONCRETE PIERS PER BENT:
 - 4' DIAMETER BENTS 1-6 & 19-22
 - 4.5' DIAMETER BENTS 7-18

STREAM BUFFER IMPACT - ZONE 1
 2 CONCRETE PIERS PER BENT:
 - 4' DIAMETER BENTS 3 & 4

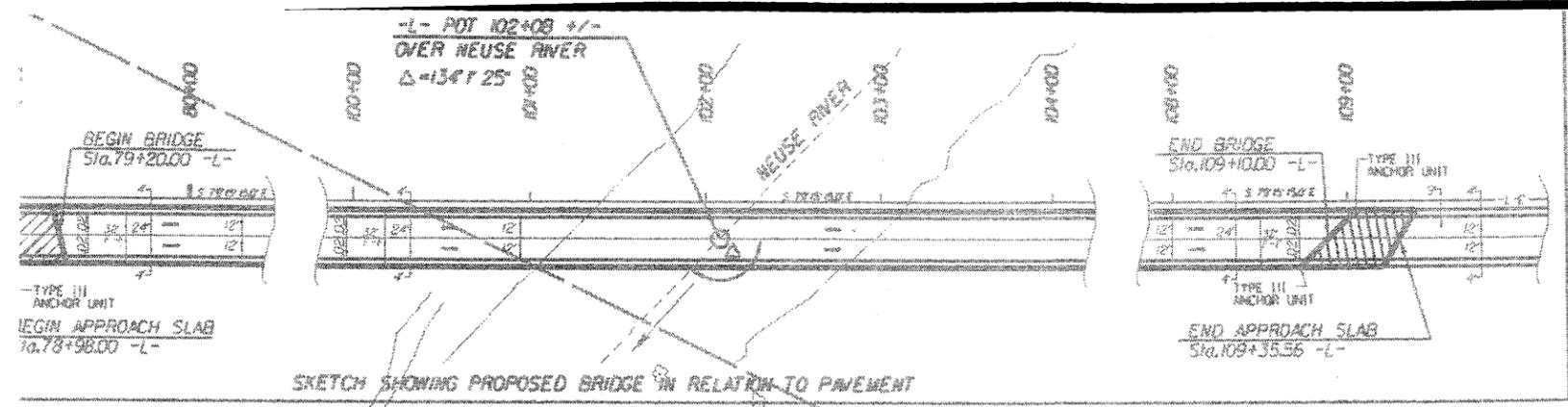


- ALLOWABLE BUFFER ZONE IMPACT 1
- ALLOWABLE BUFFER ZONE IMPACT 2
- TEMPORARY WORK BRIDGE

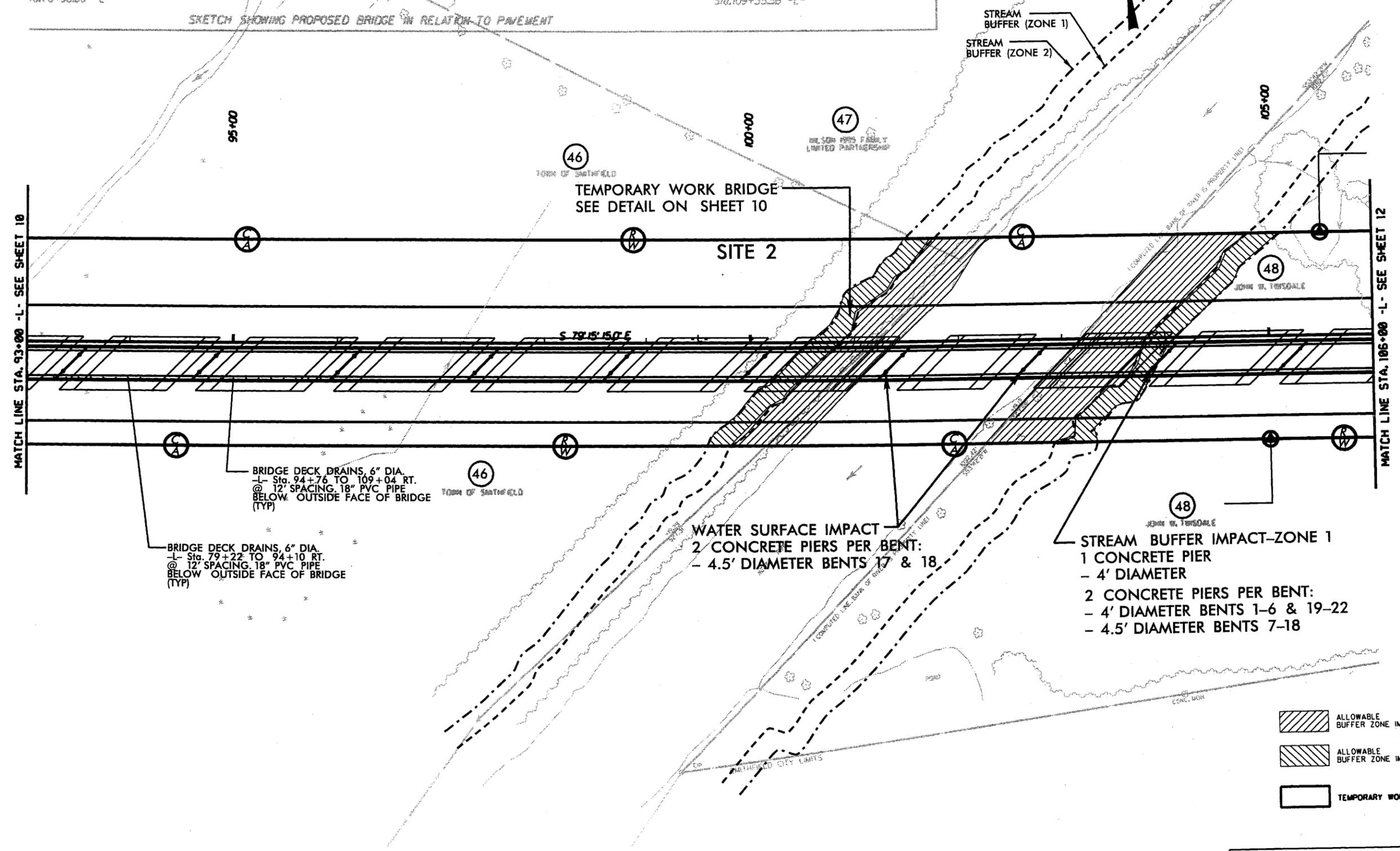
SEE SHEET 17 FOR -L- PROFILE
 SEE SHEET 11 FOR BRIDGE SKETCH

REVISIONS

ARCADIS G&M
 CONSULTANTS
 11/01/11



Buffer Drawing
 Sheet **13** of **17**



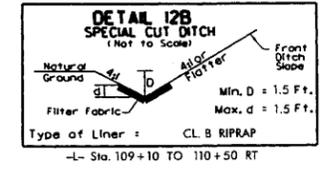
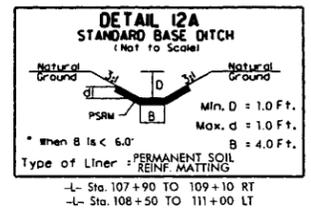
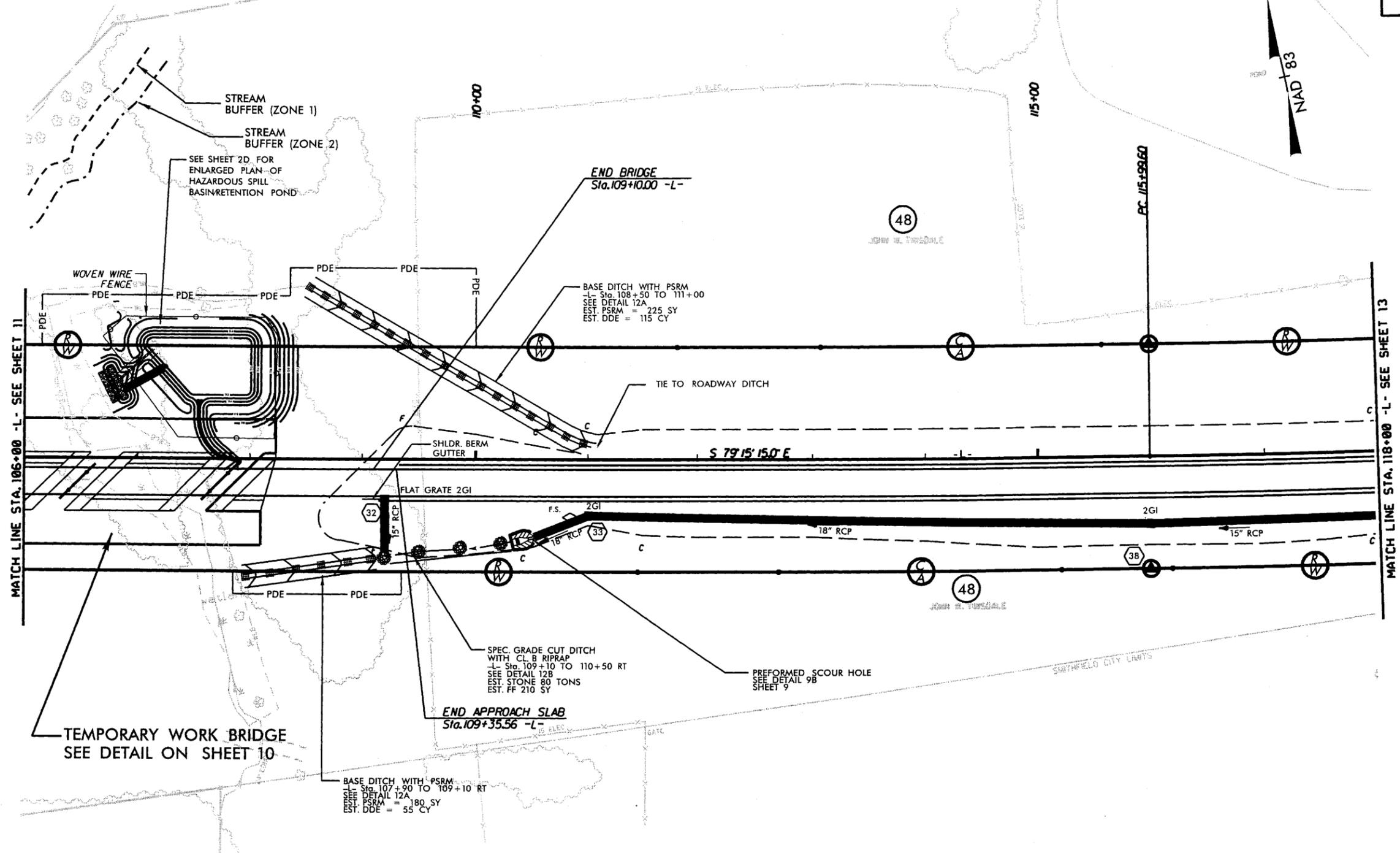
SEE SHEETS 17 AND 18 FOR -L- PROFILE

REVISIONS

ARCADIS G&M
 DATE: 04/15/08
 TIME: 10:00 AM

PROJECT REFERENCE NO. U-3334A	SHEET NO. 12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	

Buffer Drawing
 Sheet 14 of 17

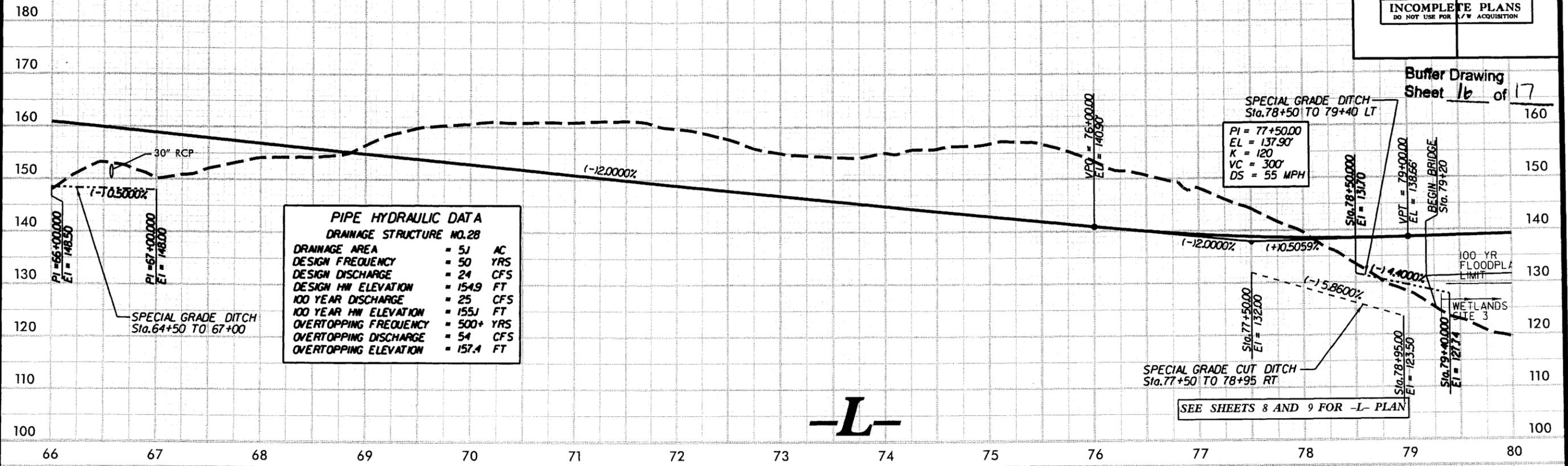


SEE SHEET 18 FOR -L- PROFILE
 SEE SHEET 11 FOR BRIDGE SKETCH

REVISIONS

ARCADIS
 08/15/2011
 10:00 AM

Buffer Drawing
 Sheet **16** of **17**



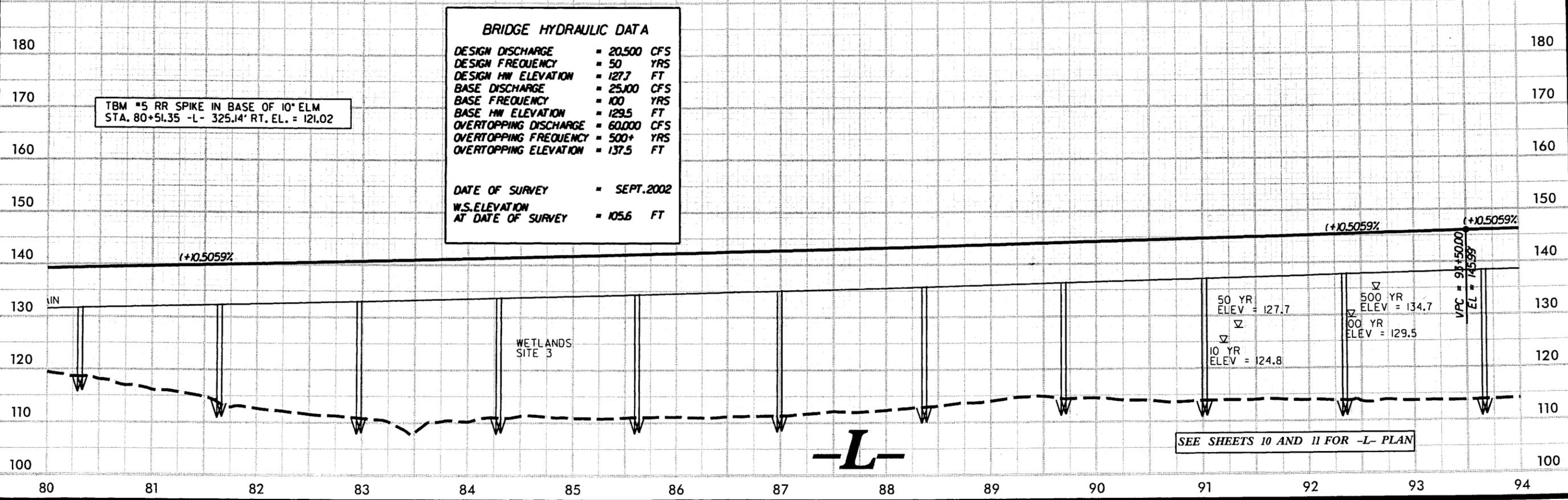
PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.28	
DRAINAGE AREA	= 5J AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 24 CFS
DESIGN HW ELEVATION	= 154.9 FT
100 YEAR DISCHARGE	= 25 CFS
100 YEAR HW ELEVATION	= 155J FT
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 54 CFS
OVERTOPPING ELEVATION	= 157.4 FT

SPECIAL GRADE DITCH
 Sta. 78+50 TO 79+40 LT
 PI = 77+50.00
 EL = 137.90'
 K = 120
 VC = 300'
 DS = 55 MPH

SPECIAL GRADE CUT DITCH
 Sta. 77+50 TO 78+95 RT

SEE SHEETS 8 AND 9 FOR -L- PLAN

-L-



BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	= 20,500 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 127.7 FT
BASE DISCHARGE	= 25,100 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 129.5 FT
OVERTOPPING DISCHARGE	= 60,000 CFS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 137.5 FT
DATE OF SURVEY	= SEPT. 2002
W.S. ELEVATION AT DATE OF SURVEY	= 105.6 FT

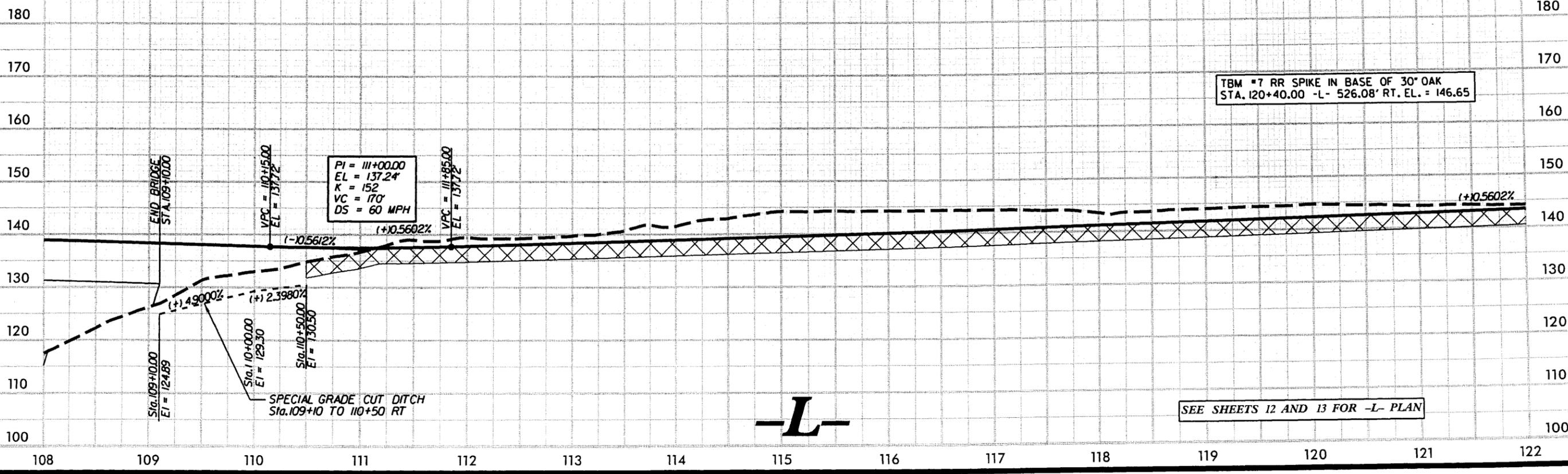
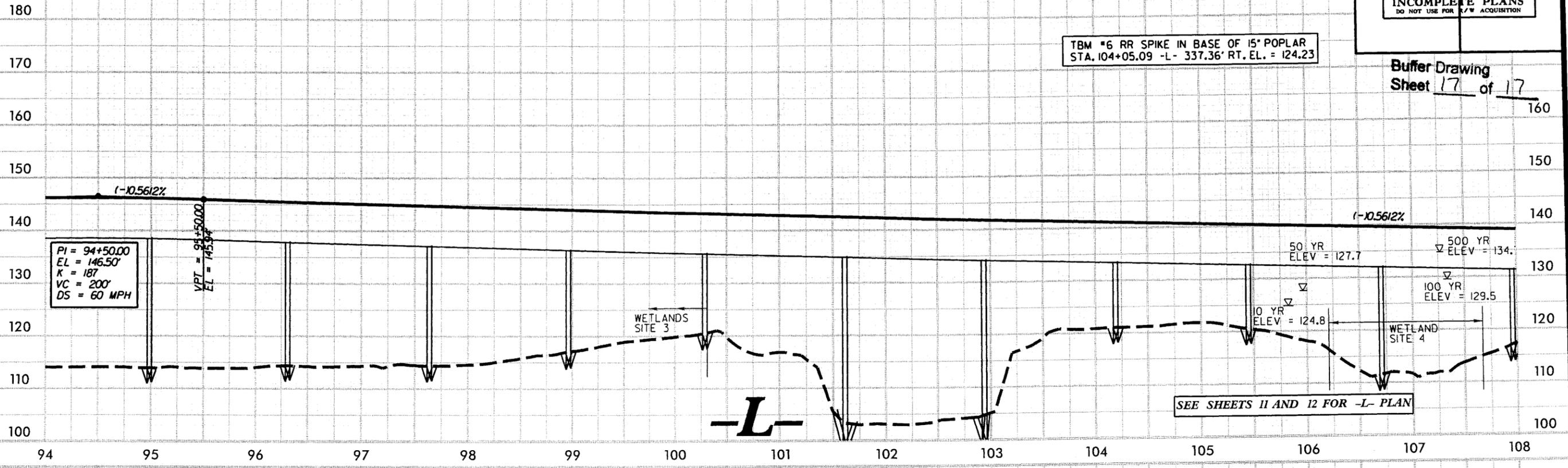
TBM #5 RR SPIKE IN BASE OF 10" ELM
 STA. 80+51.35 -L- 325.14' RT. EL. = 121.02

SEE SHEETS 10 AND 11 FOR -L- PLAN

-L-

TBM #6 RR SPIKE IN BASE OF 15' POPLAR
 STA. 104+05.09 -L- 337.36' RT. EL. = 124.23

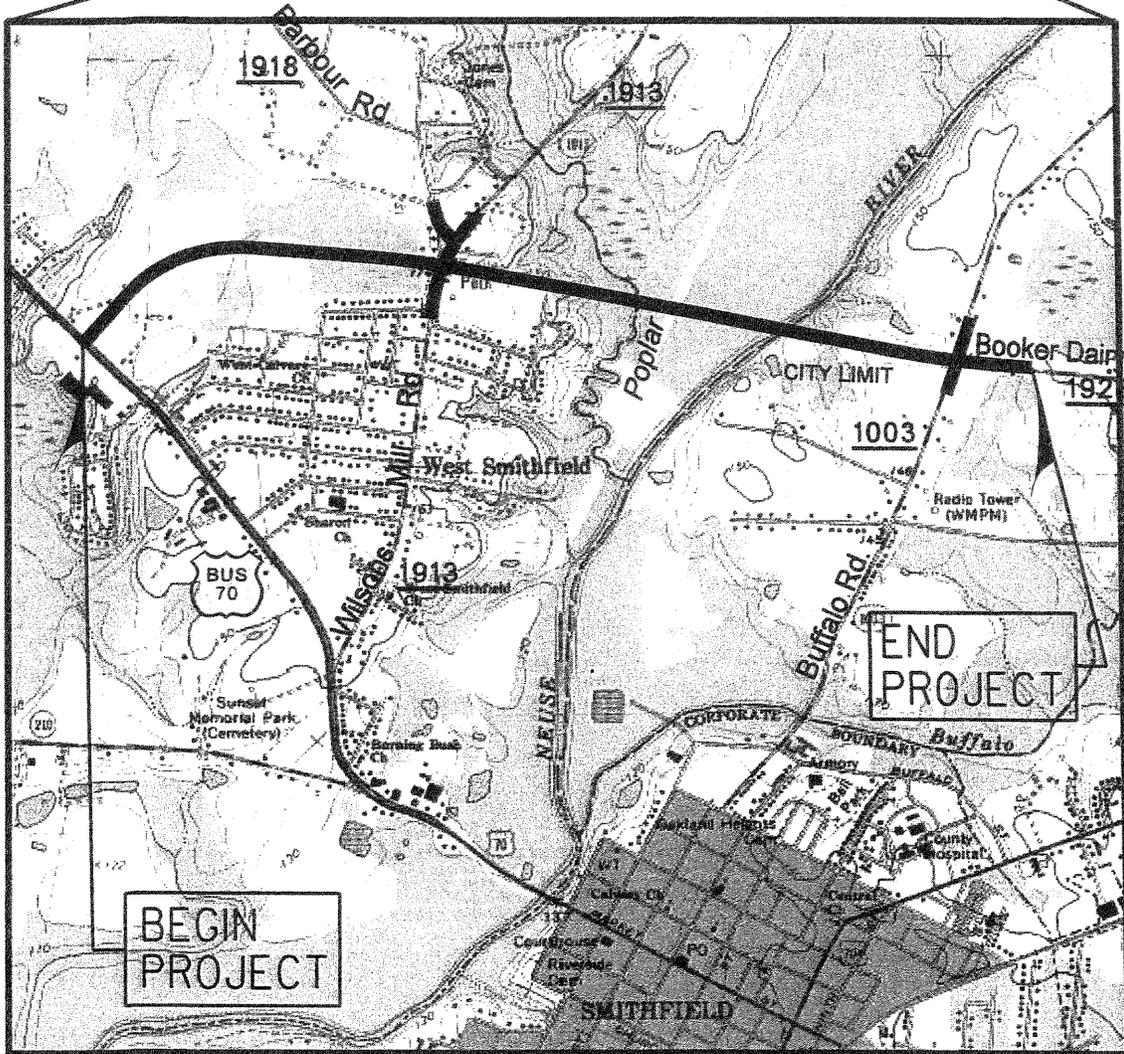
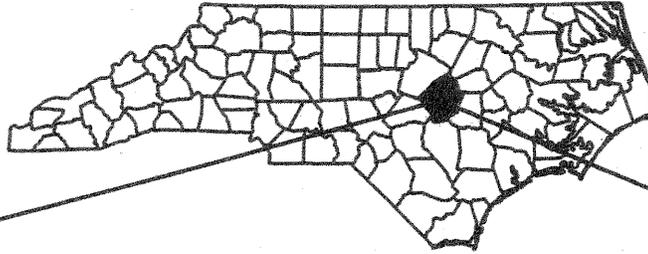
Buffer Drawing
 Sheet 17 of 17



TBM #7 RR SPIKE IN BASE OF 30' OAK
 STA. 120+40.00 -L- 526.08' RT. EL. = 146.65

ARCADIS G&M ENGINEERS

VICINITY MAP



N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.2312101 (U-3334A)
SR 1923 EXTENSION (BOOKER
DAIRY RD) FROM US 70 BUSINESS
WEST TO SR 1003 (BUFFALO RD)

Permit Drawing
Sheet 1 of 26

SHEET 1 OF 15

12/19/07

PROPERTY OWNER

NAME AND ADDRESS

OWNER'S NAME	ADDRESS
ROSS W. LAMPE	P.O. BOX 150 SMITHFIELD, NC 27577
NEUSE FORESTRY, LLC	PO BOX 1492 SMITHFIELD, NC 27577
WILLIAM W. SMITH, JR. ET AL	606 BROOKWOOD LAND GOLDSBORO, NC 27534
JANICE REYNOLDS	117-32-142 PLACE JAMAICA, NY 11436
NC DEPT OF TRANSPORTATION	2415 BEDGOOD DRIVE WILSON, NC 27893
IRENE STEVENS, ET AL	690 W. MARKET STREET SMITHFIELD, NC 27577
LEO A SANDERS	101A BARBOUR ROAD SMITHFIELD, NC 27577
JAMES C. WILLIAMS	3713 PINELEA ROAD PIKESVILLE, MD 21208
DIANE B. SLOOP	1010 WILSONS MILLS ROAD SMITHFIELD, NC 27577
JERRY HANSLEY, JR.	176 LAKE VIEW HILLS FOUR OAKS, NC 27524
TOWN OF SMITHFIELD	PO BOX 461 SMITHFIELD, NC 27577
WILSON 1995 FAMILY LIMITED PARTNERSHIP	101E JOHNSTON STREET SMITHFIELD NC 27577
JOHN W. TWISDALE	1755 BUFFALO ROAD SMITHFIELD, NC 27577
WAYNE L. BAREFOOT	258 MEADOWBROOK DRIVE FOUR OAKS, NC 27524

Permit Drawing
Sheet 2 of 26

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 8.2312101 (U-3334A)
SR 1923 EXTENSION (BOOKER
DAIRY RD) FROM US 70 BUSINESS
WEST TO SR 1003 (BUFFALO RD)

SHEET 3 OF 15

12/19/07

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS							
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)			
1	-L- 35+20 to 57+20	1@ 24", 1@36" and 1@42" RCP	1.91				0.59								
2	-L- 65+75 to 68+00	30" RCP	0.05				0.01								
3	-L- 79+40 to 102+00	Bridge	<0.01		0.02	0.31	6.15	<0.01							
4	-L- 107+00	Bridge				0.03	0.30								
5	-L- 128+20	36" RCP						<0.01		69					
TOTALS:			1.96		0.02	0.34	7.05	<0.01		69					

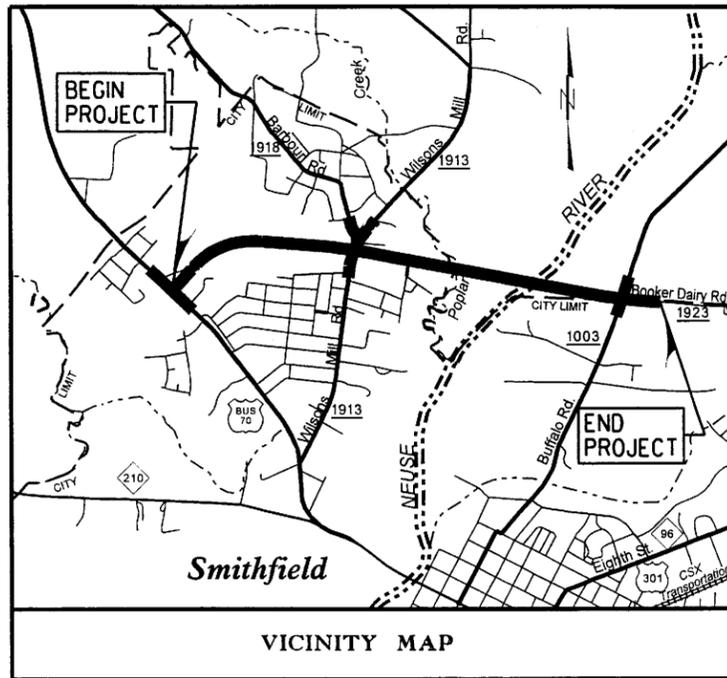
Notes:
 Pier impacts to the Neuse River = 4 drilled shafts at 4.5' diameter each = 64 sf or 0.001 ac or < 0.01 ac or 18 LF.
 0.20 acre of Temporary Fill in Wetlands in the Hand Clearing areas for erosion control measures.

Permit Drawing
 Sheet 3 of 26

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 JOHNSTON COUNTY
 PROJECT: 8.2312101 (U-3334A)
 SHEET REVISION 07/09/08

TIP: U-3334A

See Sheet 1-B For Conventional Symbols



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

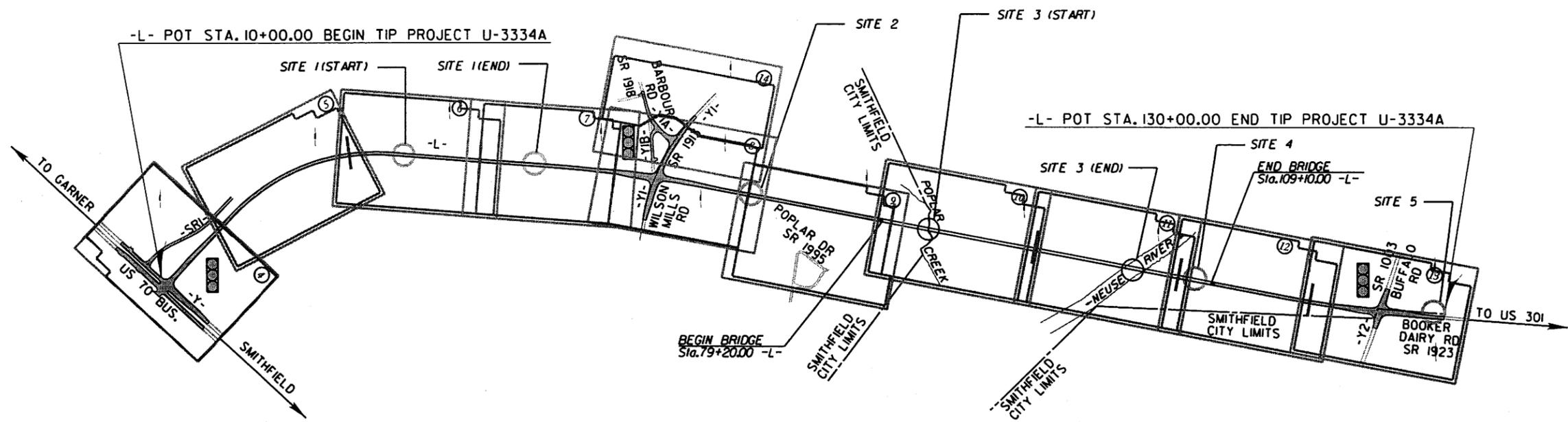
LOCATION: SR 1923 EXTENSION (BOOKER DAIRY RD) FROM US 70
BUSINESS WEST TO SR 1003 (BUFFALO RD)

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

U-3334A: WETLAND SITE MAP

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3334A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34929.1.1	STP-1923(2)	P.E.	
34929.2.4	STP-1923(3)	ROW, UTIL. CONSTR.	

Permit Drawing
Sheet 4 of 26

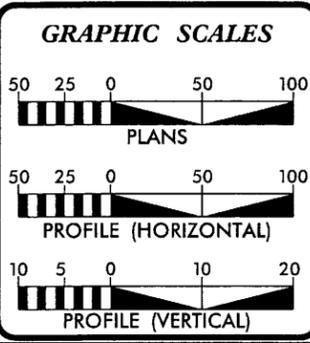


NCDOT CONTACT
TERESA BRUTON, P.E.
ROADWAY DESIGN-
ENGINEERING COORDINATION

THIS IS A FULL CONTROLLED-ACCESS PROJECT
WITH ACCESS BEING LIMITED TO
POINTS SHOWN ON THE PLANS.

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

CONTRACT:



DESIGN DATA

ADT 2005 =	6,000
ADT 2025 =	9,500
DHV =	10 %
D =	55 %
* T =	10 %
V =	50 MPH
*(TTST 4 % + DUAL 6 %)	

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT U-3334A =	1.707 miles
LENGTH OF STRUCTURE TIP PROJECT U-3334A =	0.566 miles
TOTAL LENGTH TIP PROJECT U-3334A =	2.273 miles

Prepared In The Office of:
ARCADIS
S. B. of North Carolina, Inc.
www.ARCADIS-US.COM
83 Corporate Center Drive, Suite 300
Raleigh, NC 27601-5073
Tel: 919/954-0822 Fax: 919/954-5448

for the North Carolina Department of Transportation

2002 STANDARD SPECIFICATIONS	ARCADIS CONTACT
RIGHT OF WAY DATE: NOVEMBER 13, 2003	STEVE SMALLWOOD, P.E. PROJECT ENGINEER
LETTING DATE: SEPTEMBER 20, 2005	

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

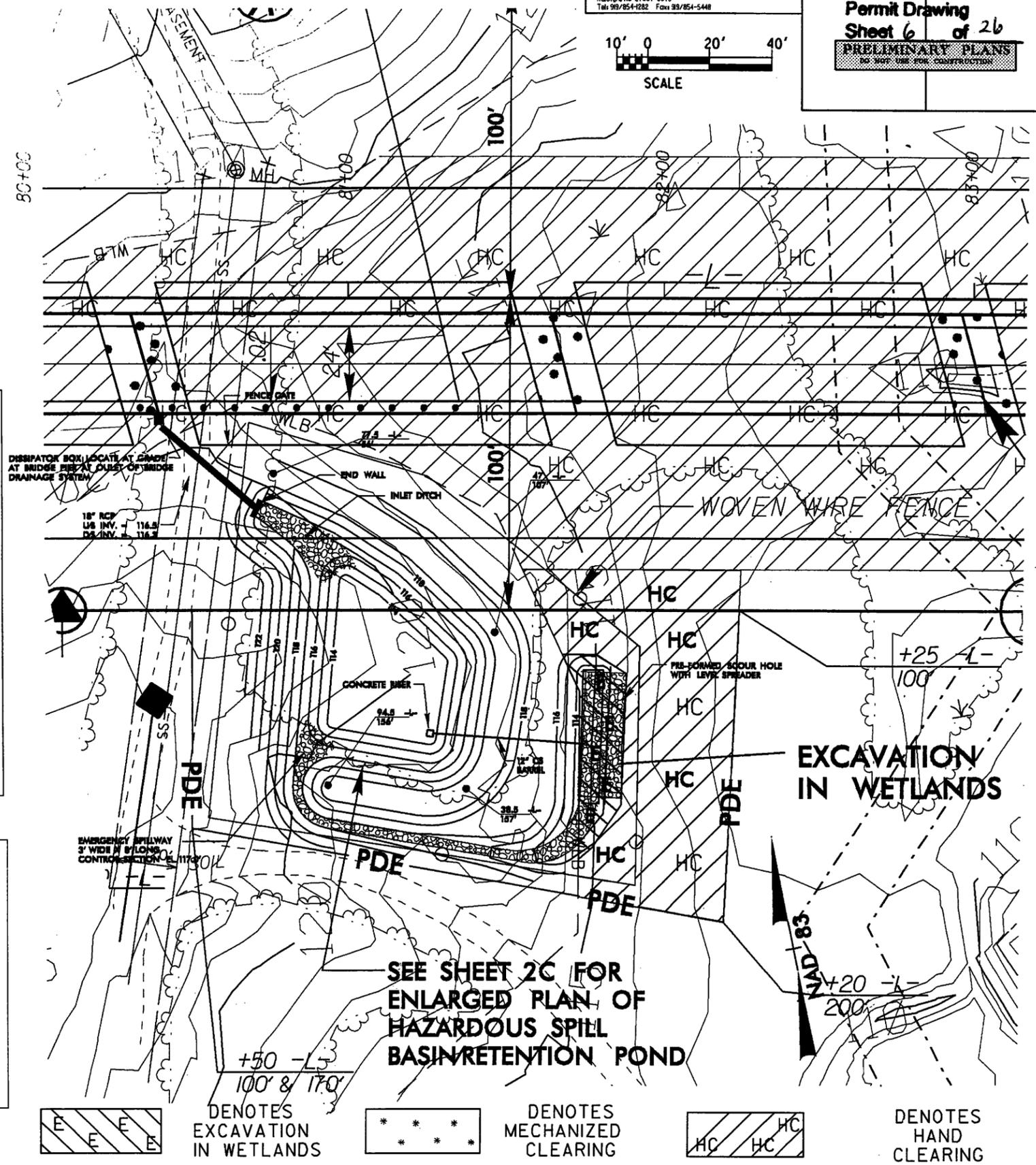
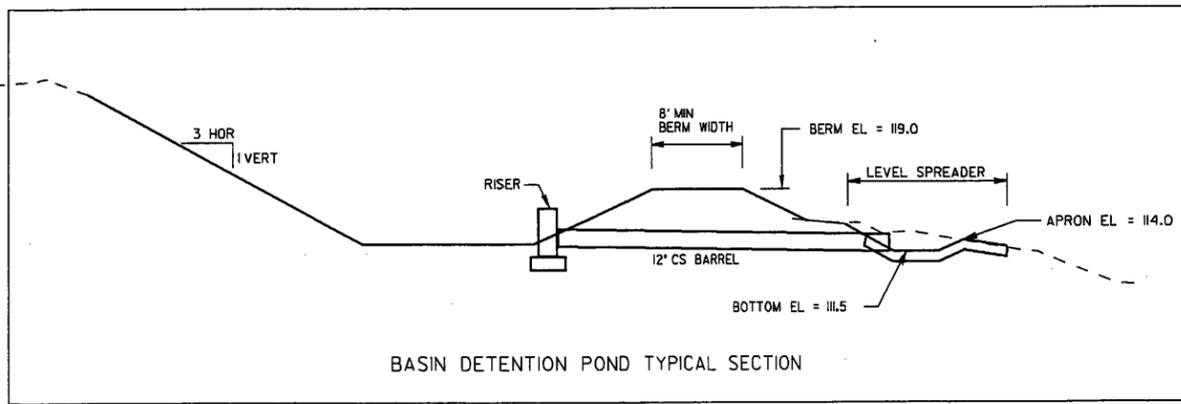
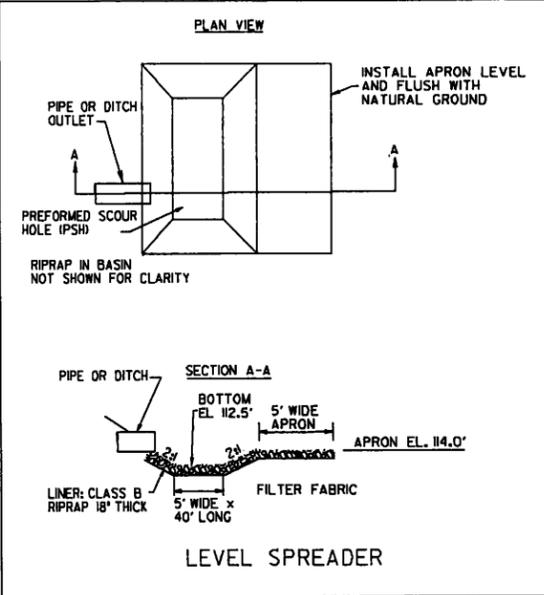
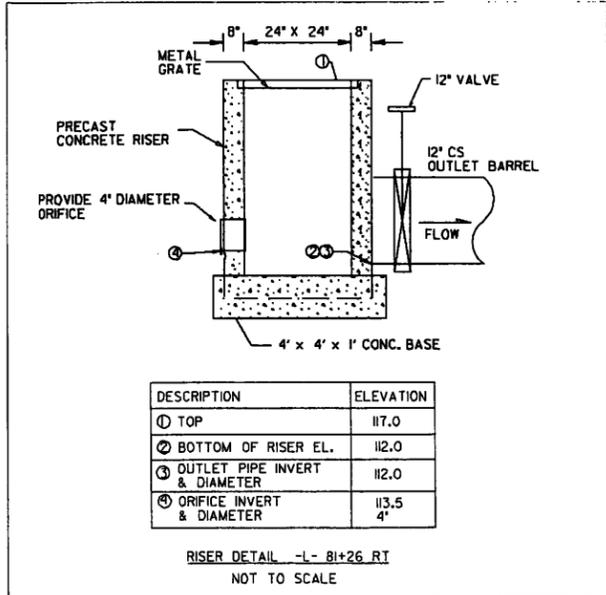
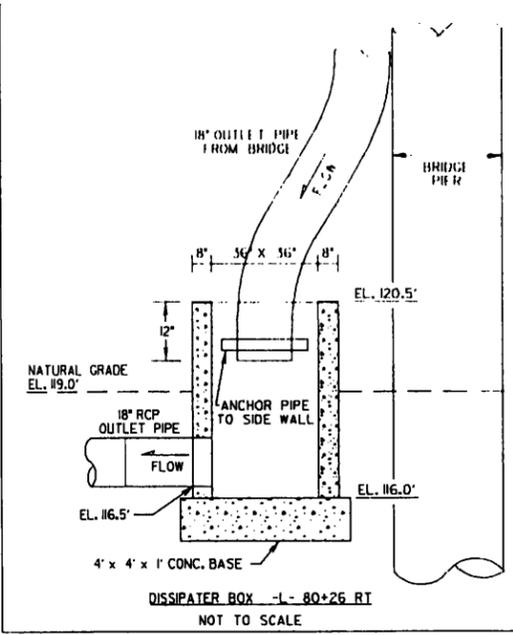
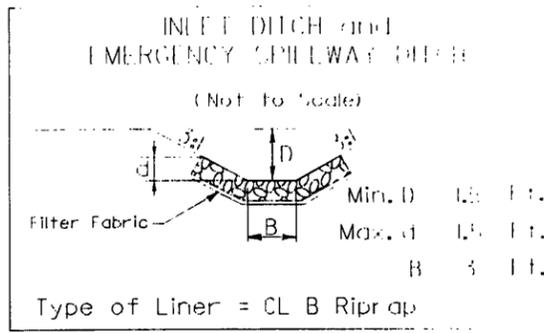
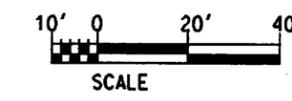
SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

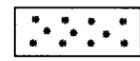
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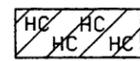
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

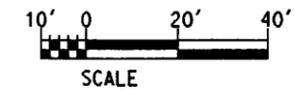
APPROVED DIVISION ADMINISTRATOR DATE



REVISIONS

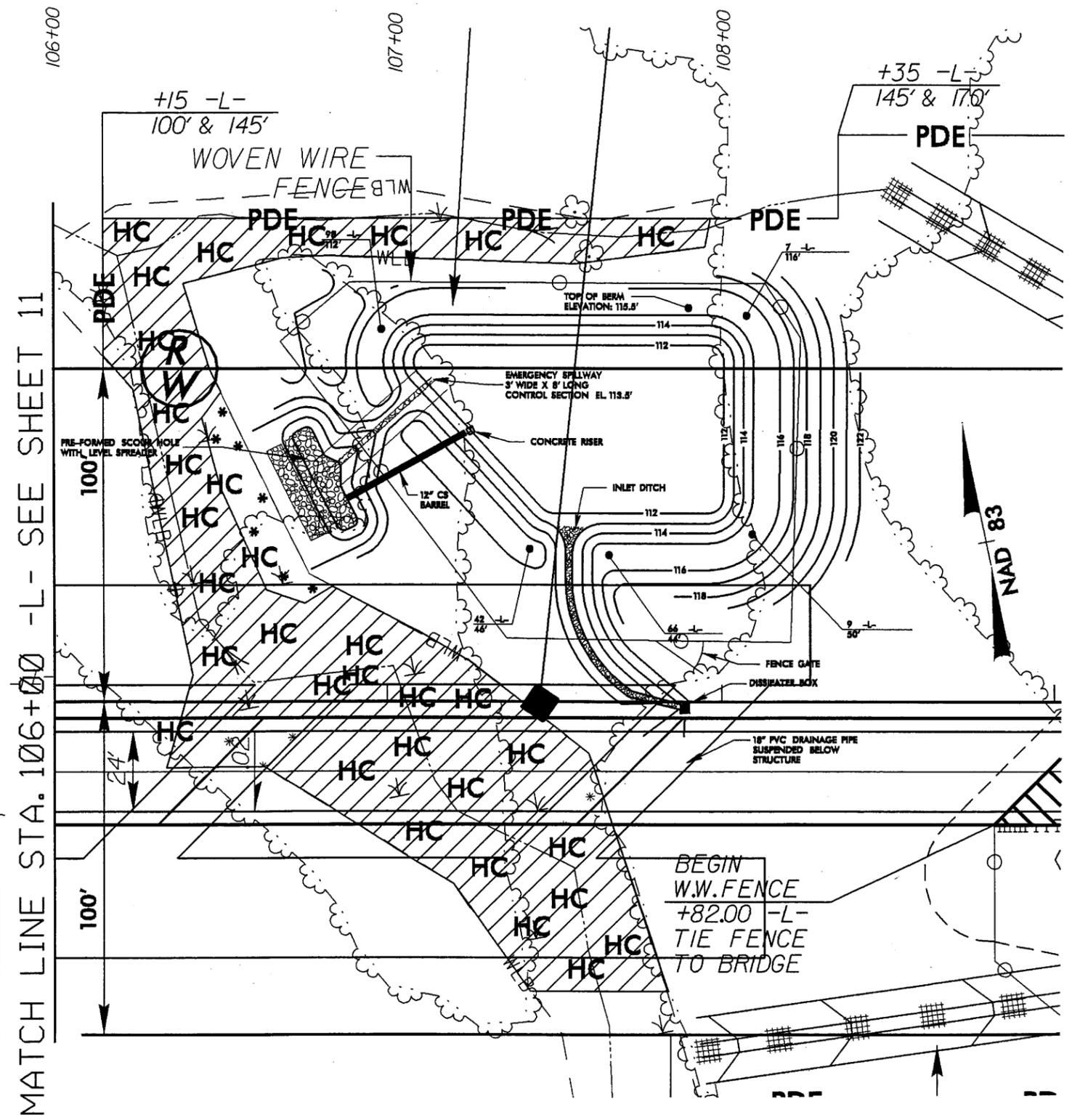
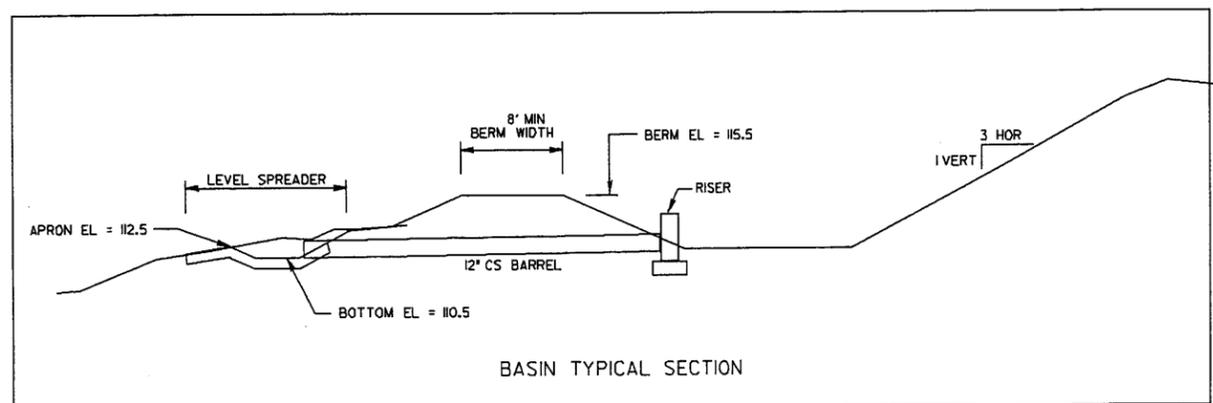
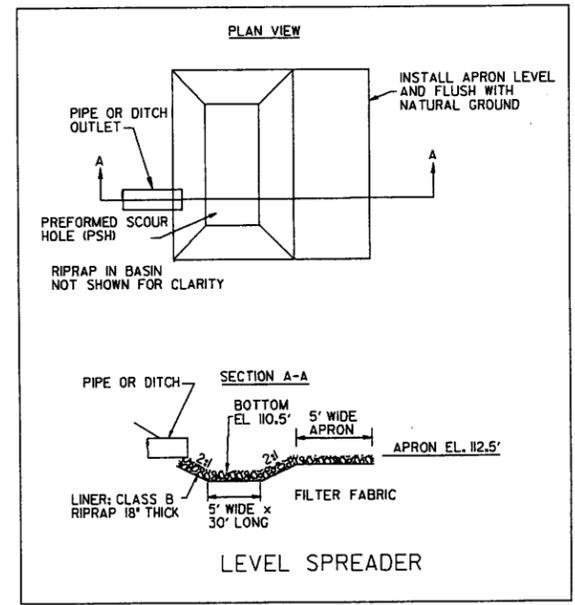
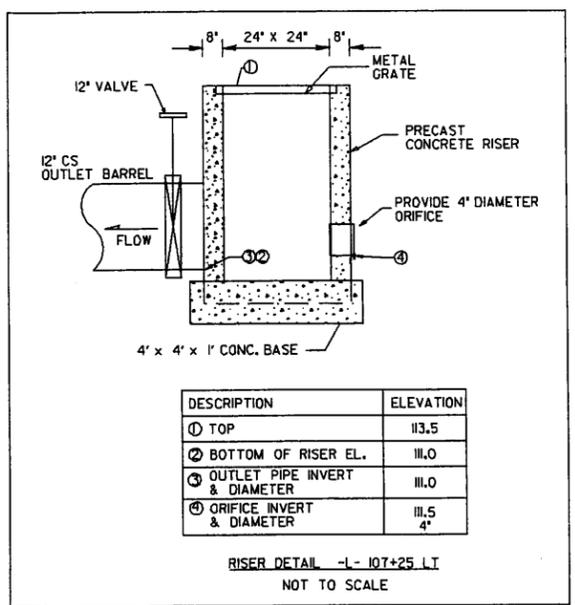
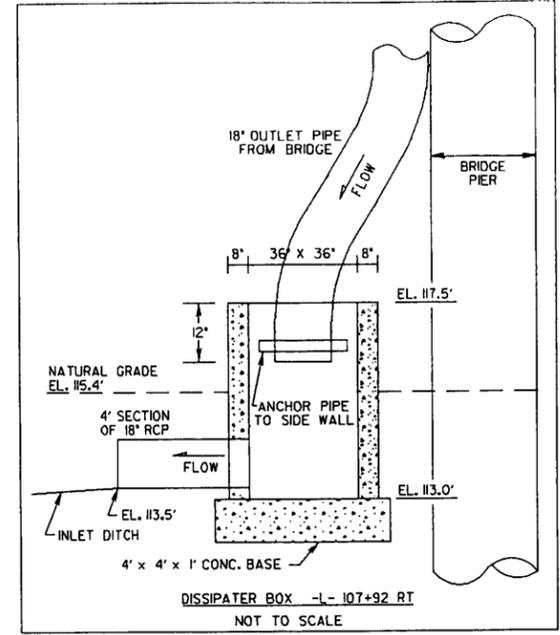
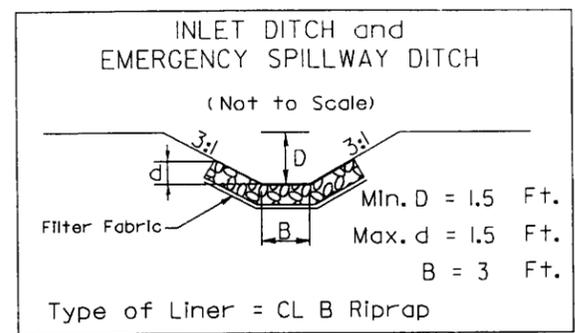
 DENOTES MECHANIZED CLEARING

 DENOTES HAND CLEARING



HAZARDOUS SPILL BASIN / DETENTION POND

Permit Drawing
 Sheet 7 of 26

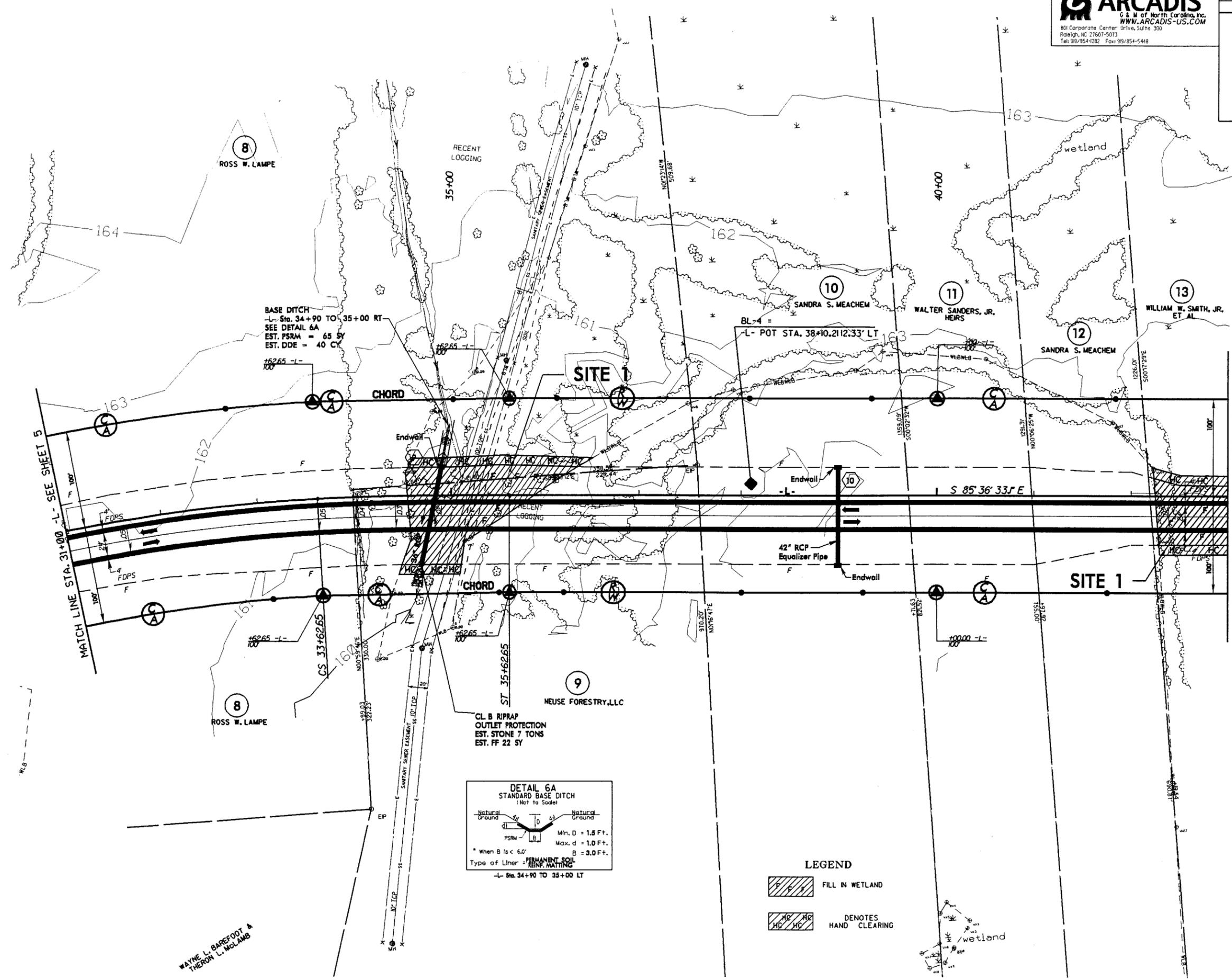


REVISIONS

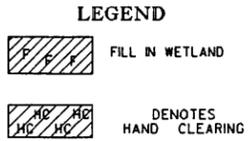
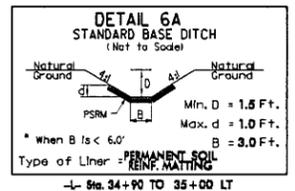
Permit Drawing
 Sheet 9 of 26



REVISIONS



BASE DITCH
 -L- Sta. 34+90 TO 35+00 RT
 SEE DETAIL 6A
 EST. PSRM = 65 SY
 EST. DDE = 40 CY



MATCH LINE STA. 43+00 -L- SEE SHEET 7

NOTE:
 A FUTURE ACCESS POINT IS DESIGNATED AT LEFT AND RIGHT OF -L- Sta. 35+90 FOR PLACEMENT OF A ROAD AS DETERMINED BY THE CITY OF SMITHFIELD.

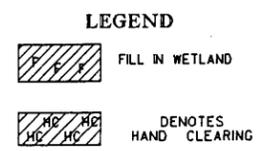
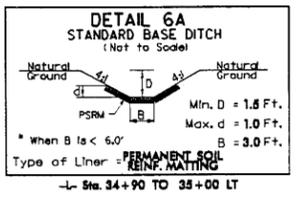
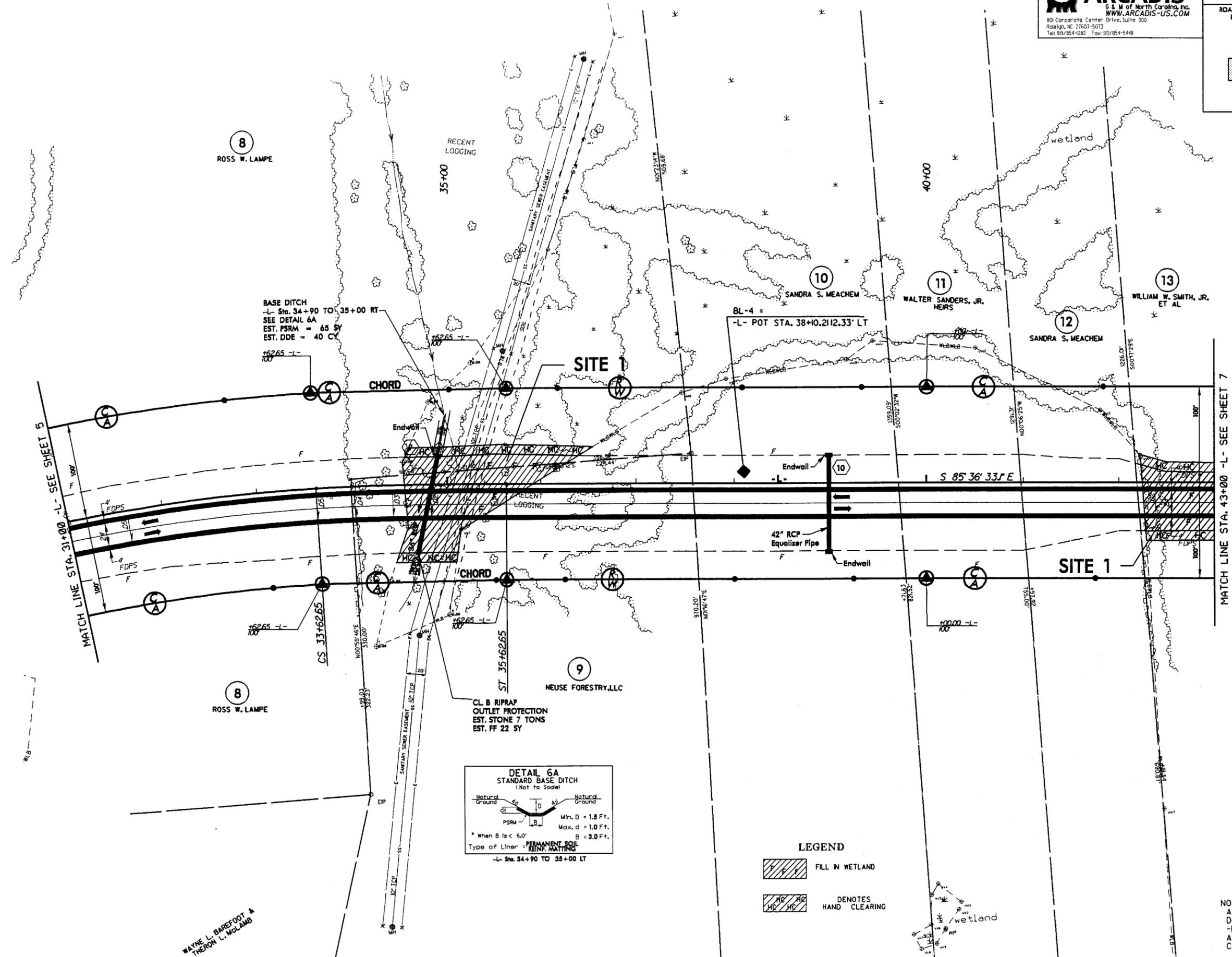
SEE SHEETS 15 AND 16 -L- PROFILE

WAYNE L. BAREFOOT &
 THERON L. McLANE

ARCADIS G&M
 11/18/15
 TLM:KMS



REVISIONS



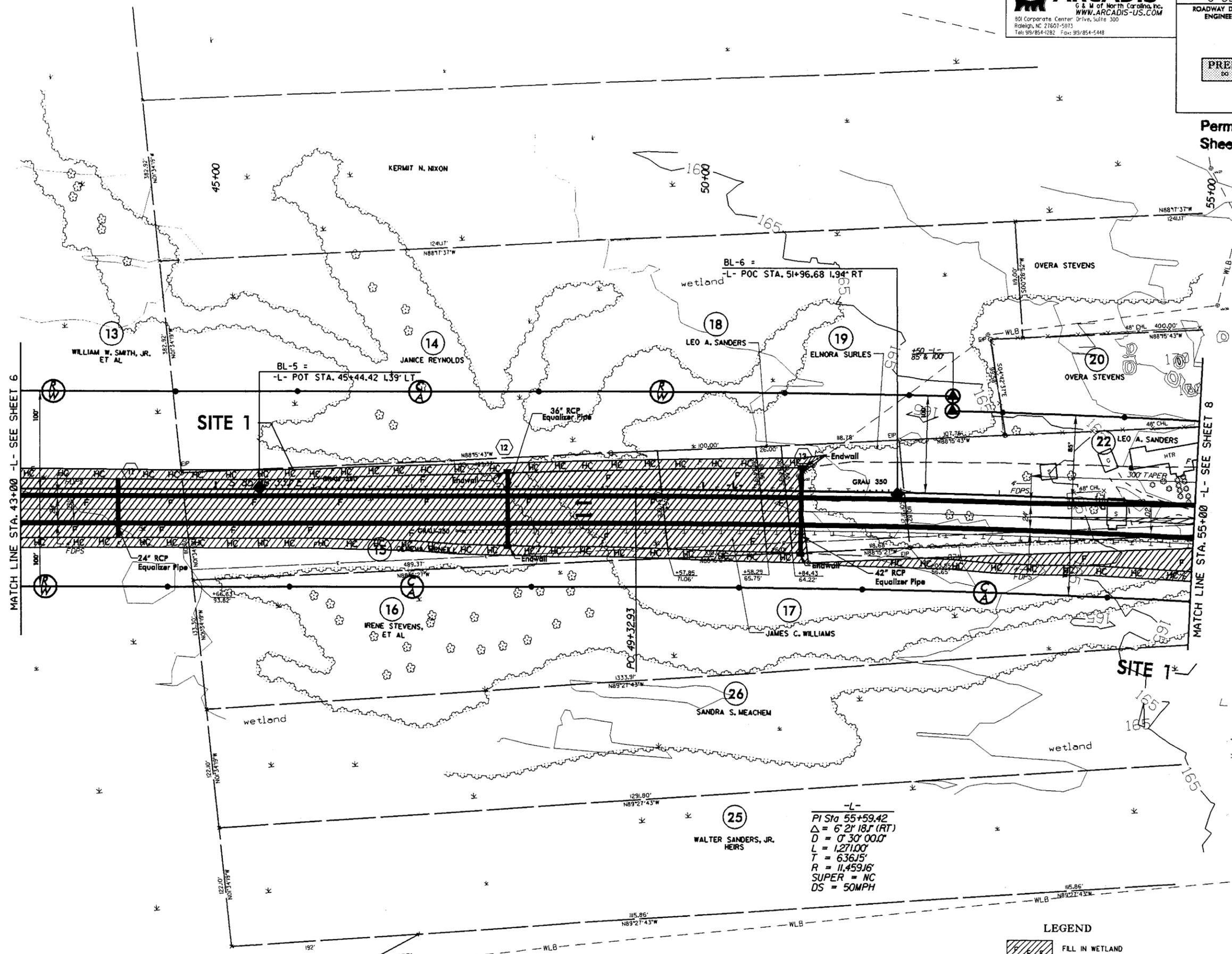
NOTE:
 A FUTURE ACCESS POINT IS DESIGNATED AT LEFT AND RIGHT OF -L- S+G. 35+90 FOR PLACEMENT OF A ROAD AS DETERMINED BY THE CITY OF SMITHFIELD.

SEE SHEETS 15 AND 16 -L- PROFILE

ARCADIS GDM
 DATE: 04/15/14
 TIME: 11:00 AM
 FILE: 140415.DWG

WAYNE L. BAREFOOT &
 THERON L. MOLAMB

NAD 83



REVISIONS

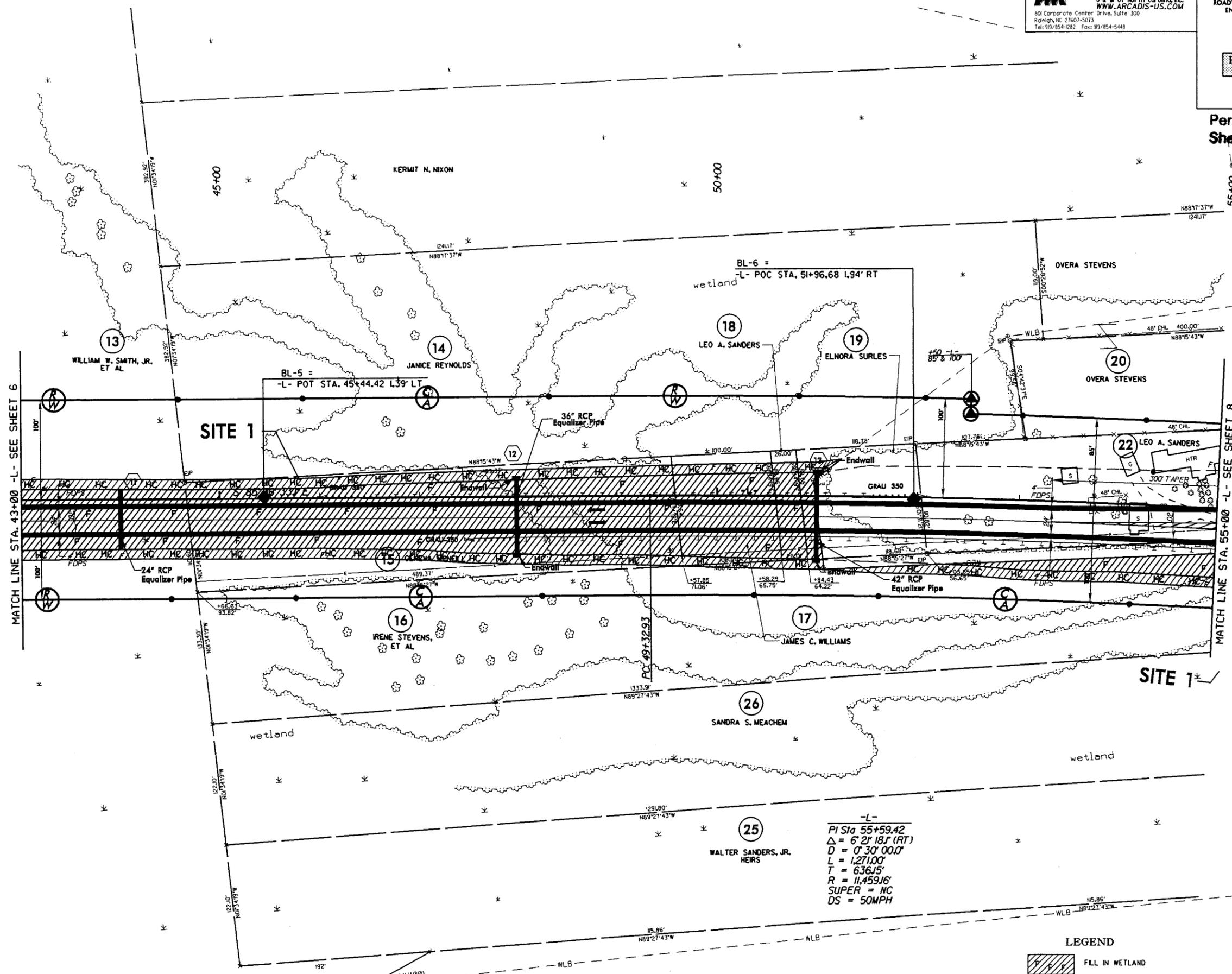
MATCH LINE STA. 43+00 -L- SEE SHEET 6

MATCH LINE STA. 55+00 -L- SEE SHEET 8

-L-
 PI Sta 55+59.42
 $\Delta = 6' 2'' 18''$ (RT)
 $D = 0' 30'' 00''$
 $L = 1,271.00'$
 $T = 636.15'$
 $R = 11,459.16'$
 SUPER = NC
 DS = 50MPH

LEGEND
 FILL IN WETLAND
 DENOTES HAND CLEARING

SEE SHEET 16 FOR -L- PROFILE



REVISIONS

MATCH LINE STA. 43+00 -L- SEE SHEET 6

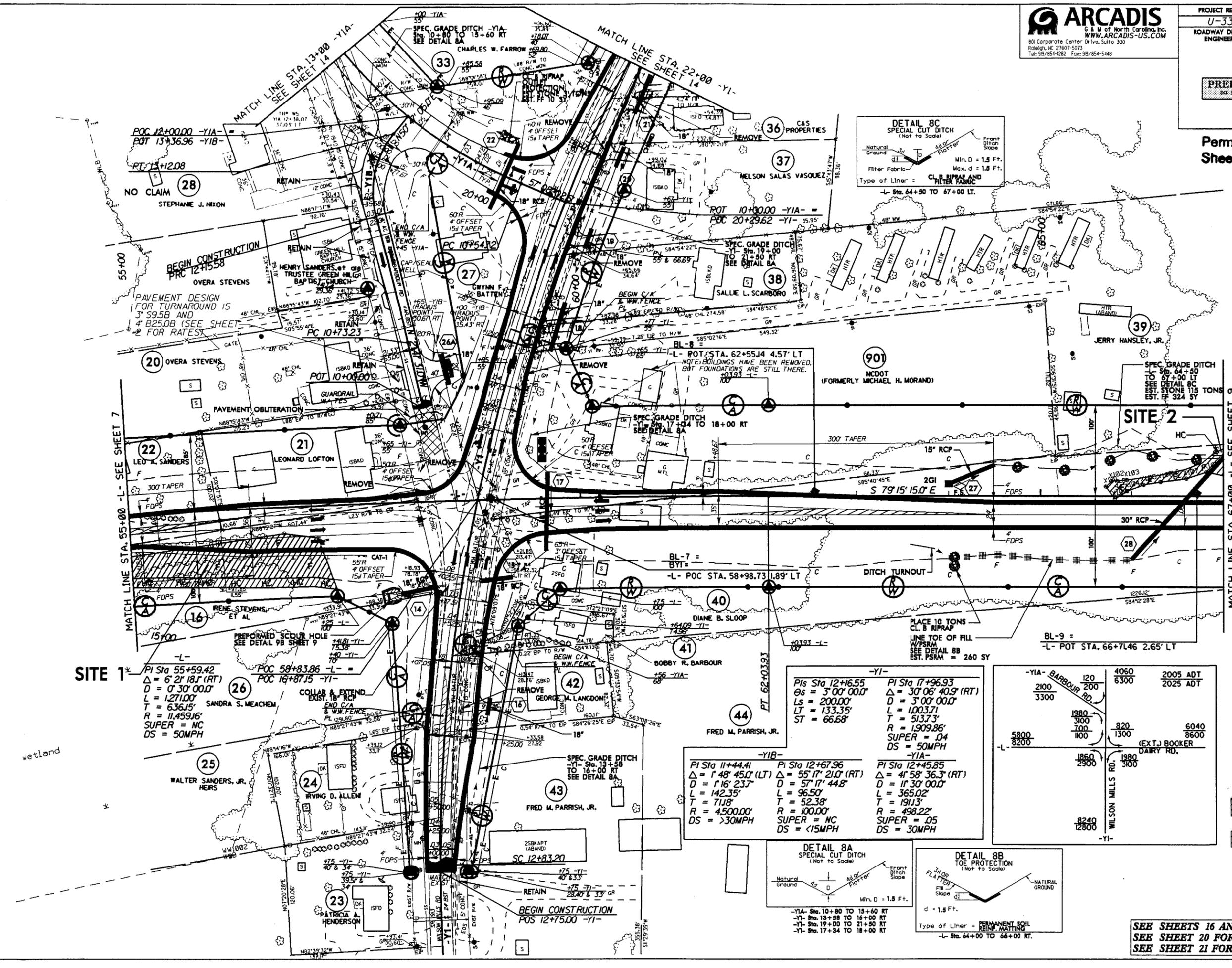
MATCH LINE STA. 55+00 -L- SEE SHEET 8

-L-
 P/ Sta 55+59.42
 $\Delta = 6' 2'' 18.7'' (RT)$
 $D = 0' 30'' 00.0''$
 $L = 1271.00'$
 $T = 636.15'$
 $R = 11,459.16'$
 SUPER = NC
 DS = 50MPH

LEGEND

	FILL IN WETLAND
	DENOTES HAND CLEARING

SEE SHEET 16 FOR -L- PROFILE



SITE 1
 PI Sta 55+59.42
 $\Delta = 6' 21'' 18.1''$ (RT)
 $D = 0' 30'' 00.0''$
 $L = 1271.00'$
 $T = 636.15'$
 $R = 11,459.16'$
 $SUPER = NC$
 $DS = 50MPH$

-YI-
 PI Sta 12+16.55
 $\Delta = 3' 00'' 00.0''$
 $Ls = 200.00'$
 $LT = 133.35'$
 $ST = 66.68'$

-YI-
 PI Sta 17+96.93
 $\Delta = 30' 06'' 40.9''$ (RT)
 $D = 3' 00'' 00.0''$
 $L = 1003.71'$
 $T = 513.73'$
 $R = 1,909.86'$
 $SUPER = .04$
 $DS = 50MPH$

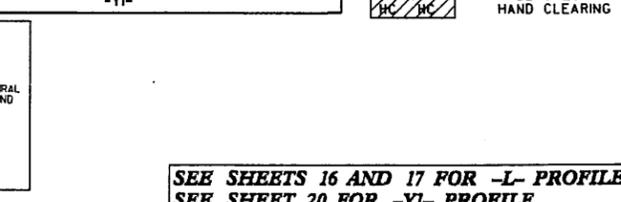
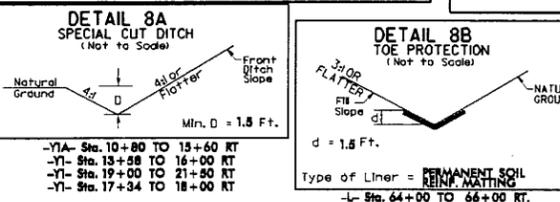
-YI-
 PI Sta 12+45.85
 $\Delta = 41' 58'' 36.3''$ (RT)
 $D = 11' 30'' 00.0''$
 $L = 365.02'$
 $T = 191.13'$
 $R = 498.22'$
 $SUPER = .05$
 $DS = 30MPH$

-YIA- BARBOUR RD.	120	4060	2005 ADT
	200	6300	2025 ADT
	2100		
	3300		
5800	1980	820	6040
8200	3100	1300	8600
	700		
	100		
	1860	1980	
	2900	3100	
			WILSON MILLS RD.
			8240
			12800

LEGEND

FILL IN WETLAND

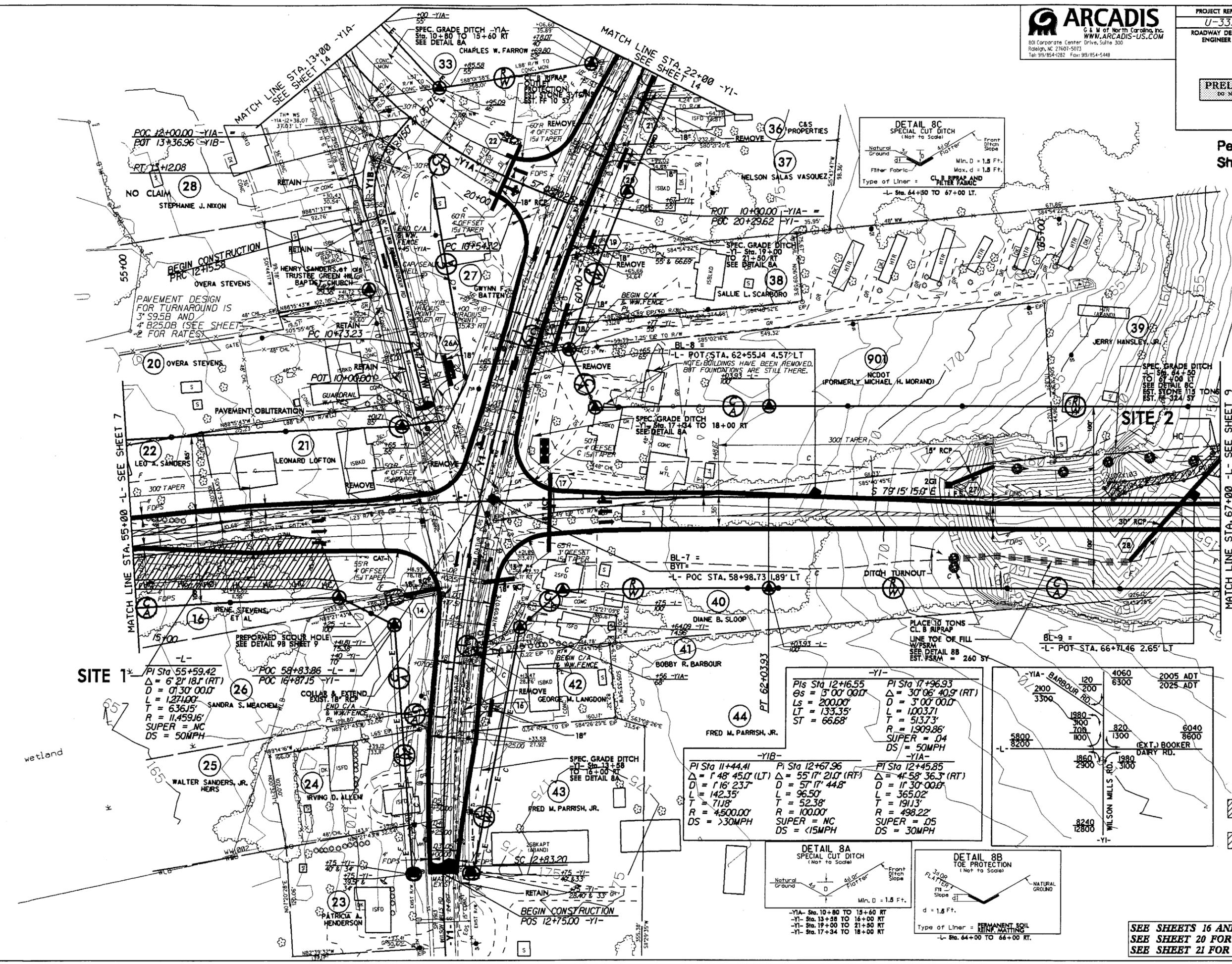
DENOTES HAND CLEARING



SEE SHEETS 16 AND 17 FOR -L- PROFILE
 SEE SHEET 20 FOR -YI- PROFILE
 SEE SHEET 21 FOR -YIA- PROFILE

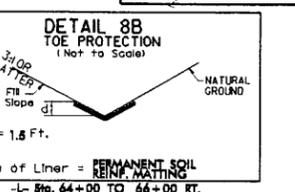
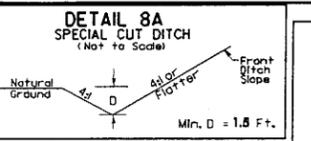
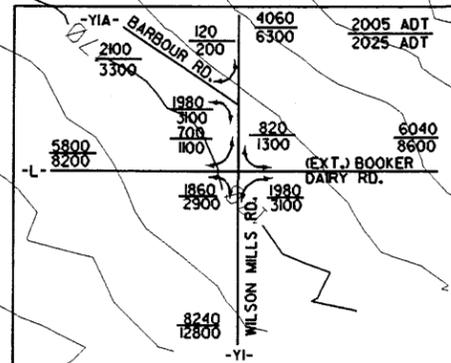
REVISIONS

ARCADIS GDM
 DATE: 04/11/05
 TIME: 9:15 AM



SITE 1
 PI Sta 55+59.42
 $\Delta = 6' 21' 18.1''$ (RT)
 $D = 01' 30' 00.0''$
 $L = 1271.00'$
 $T = 636.15'$
 $R = 11,459.16'$
 $DS = 50MPH$

<p>PI Sta 12+65.55 $\Delta = 1' 30' 00.0''$ $D = 200.00'$ $L = 133.35'$ $ST = 66.68'$</p>	<p>PI Sta 17+96.93 $\Delta = 30' 06' 40.9''$ (RT) $D = 3' 00' 00.0''$ $L = 1003.71'$ $T = 513.73'$ $R = 1909.86'$ $SUPER = .04$ $DS = 50MPH$</p>
<p>PI Sta 11+44.41 $\Delta = 1' 48' 45.0''$ (LT) $D = 116' 23.7''$ $L = 142.35'$ $T = 71.8'$ $R = 4500.00'$ $DS = >30MPH$</p>	<p>PI Sta 12+67.96 $\Delta = 55' 17' 21.0''$ (RT) $D = 57' 17' 44.8''$ $L = 96.50'$ $T = 52.38'$ $R = 100.00'$ $SUPER = NC$ $DS = <15MPH$</p>
<p>PI Sta 12+45.85 $\Delta = 4' 58' 36.3''$ (RT) $D = 11' 30' 00.0''$ $L = 365.02'$ $T = 191.13'$ $R = 498.22'$ $SUPER = .05$ $DS = 30MPH$</p>	



LEGEND

- FILL IN WETLAND
- DENOTES HAND CLEARING

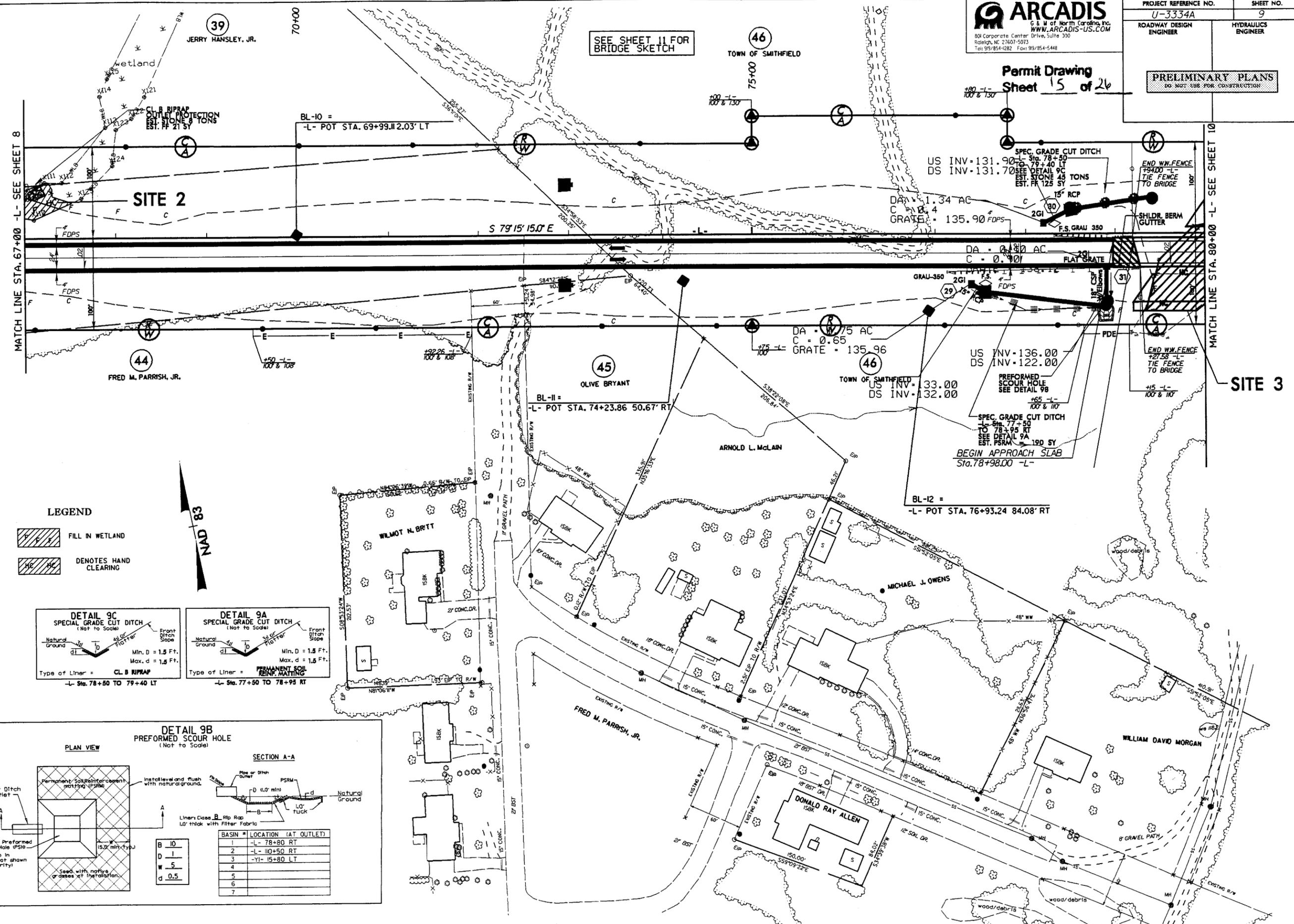
SEE SHEETS 16 AND 17 FOR -L- PROFILE
 SEE SHEET 20 FOR -Y1- PROFILE
 SEE SHEET 21 FOR -Y1A- PROFILE

REVISIONS

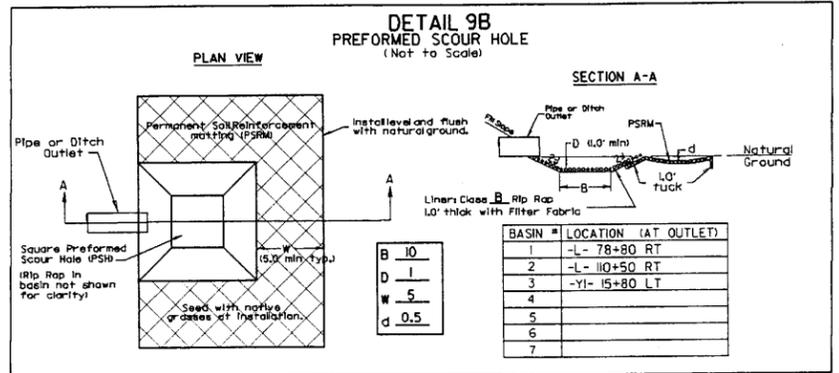
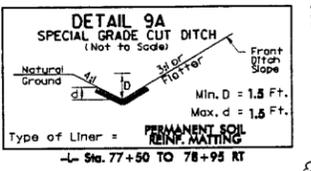
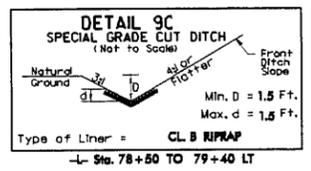
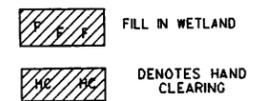
ARCADIS G&M
 DATE: 04/15/08
 TIME: 11:00 AM
 FILE: U-3334A-14

Permit Drawing Sheet 15 of 26

SEE SHEET 11 FOR BRIDGE SKETCH



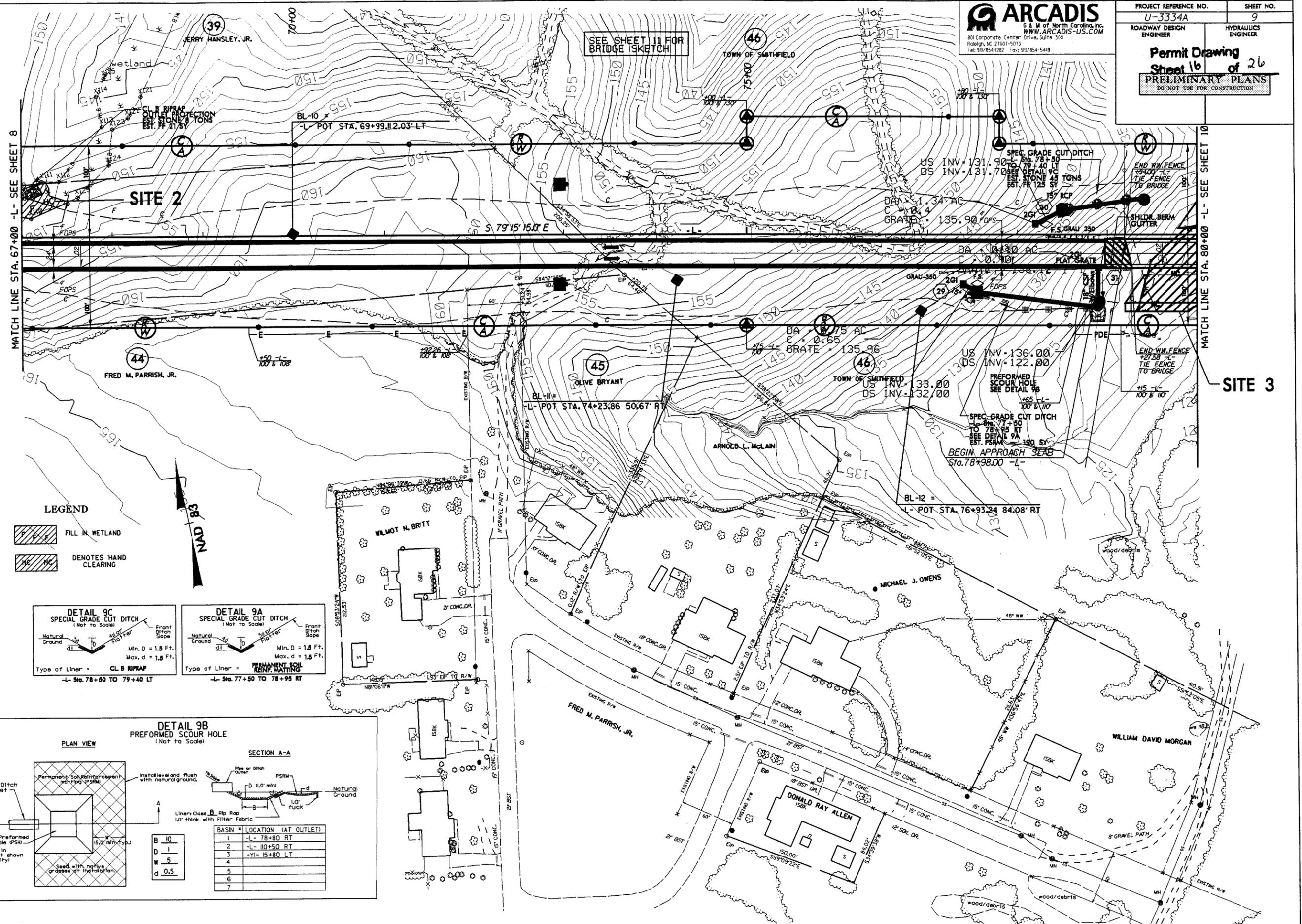
LEGEND



SEE STRUCTURE SHEETS S-1 THRU S- FOR STRUCTURE PLANS SEE SHEET 17 FOR -L- PROFILE

REVISIONS

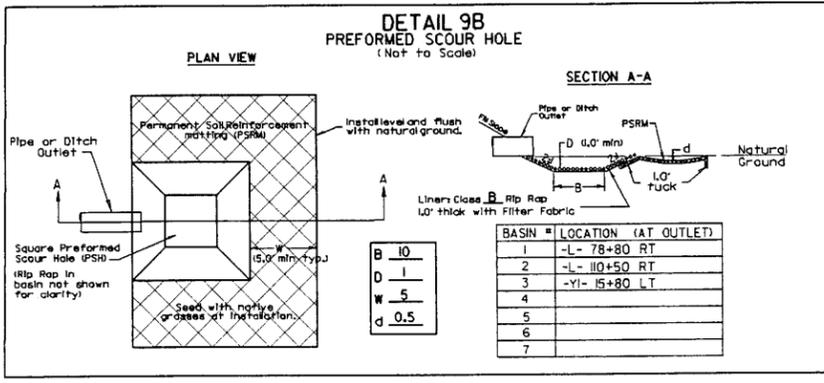
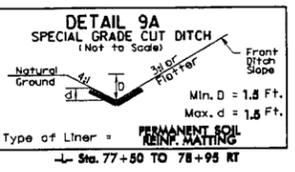
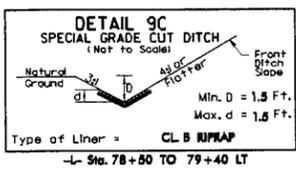
ARCADIS G&M
 02/28/2018
 JPH/MLL



LEGEND

FILL IN WETLAND

DENOTES HAND CLEARING

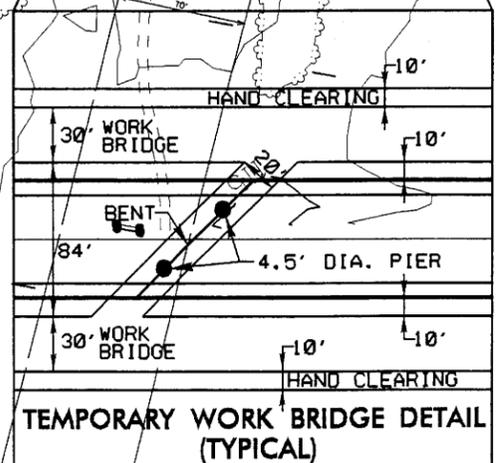
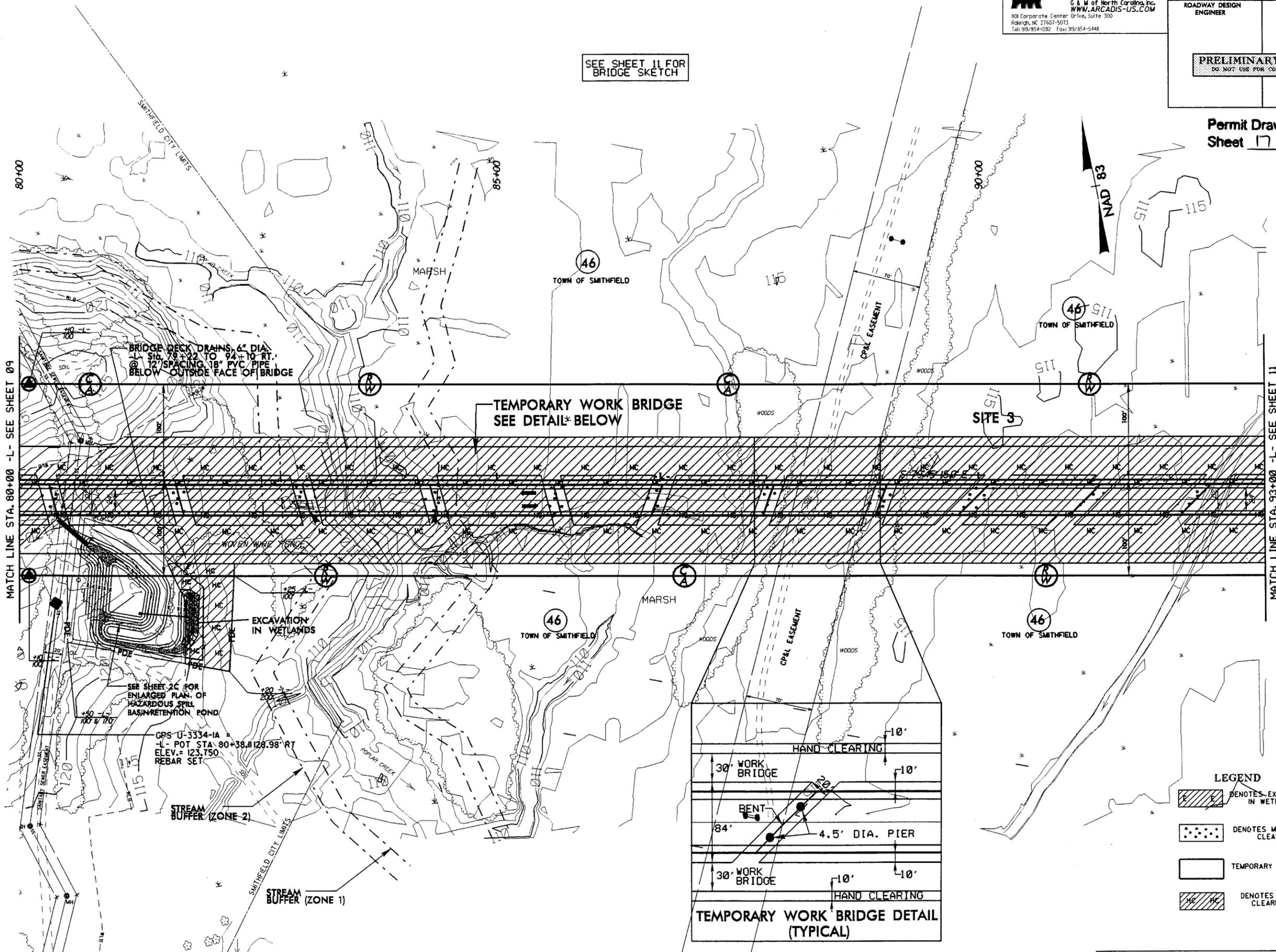


SEE SHEET 11 FOR BRIDGE SKETCH

SITE 3

SEE STRUCTURE SHEETS S-1 THRU S- FOR STRUCTURE PLANS SEE SHEET 17 FOR -L- PROFILE

SEE SHEET 11 FOR
 BRIDGE SKETCH



- LEGEND**
- DENOTES EXCAVATION IN WETLAND
 - DENOTES MECHANIZED CLEARING
 - TEMPORARY WORK BRIDGE
 - DENOTES HAND CLEARING

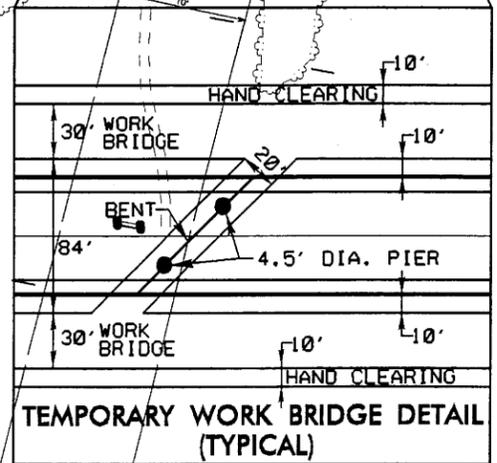
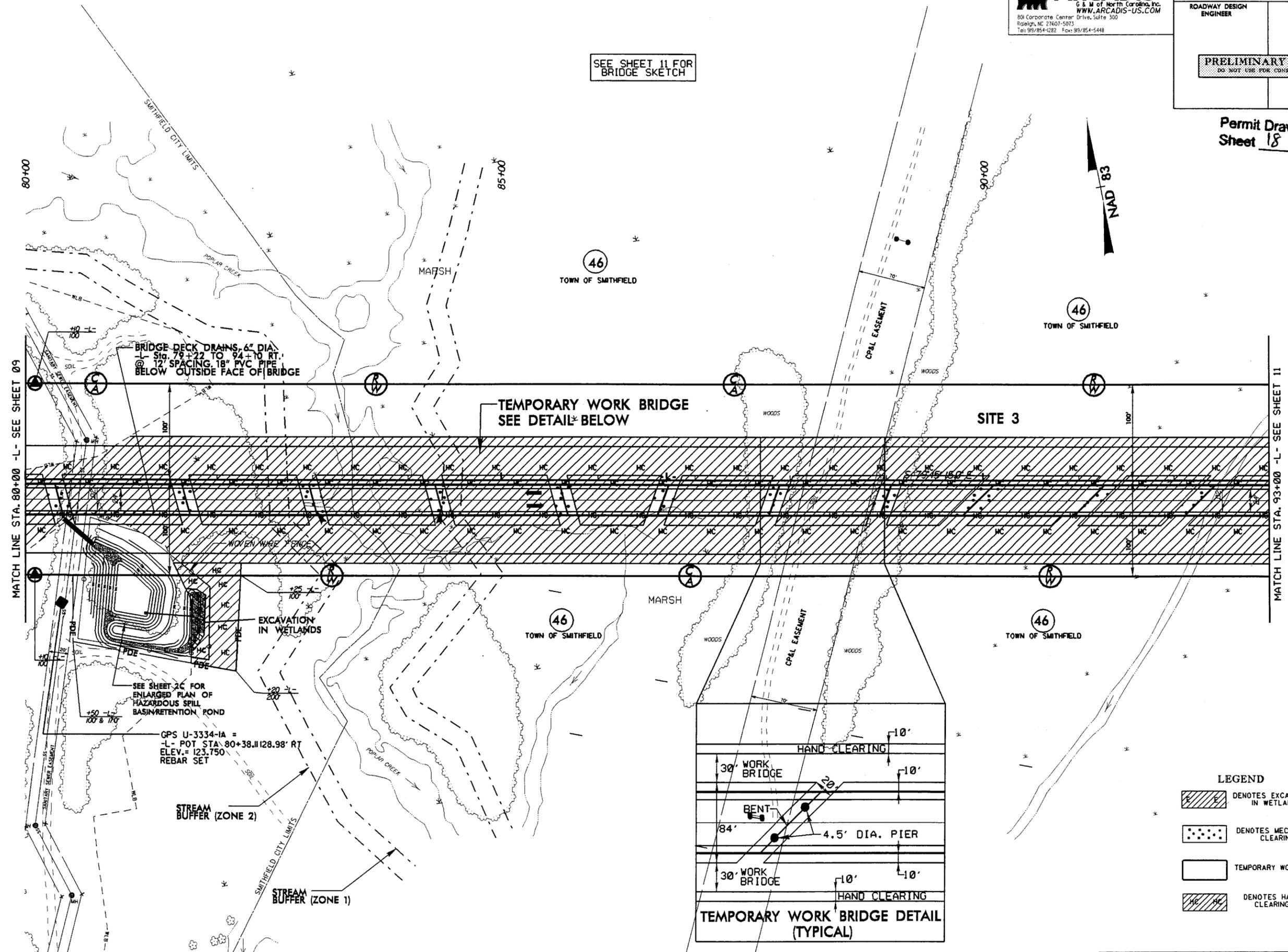
SEE STRUCTURE SHEETS S-1 THRU S- FOR STRUCTURE PLANS

SEE SHEET 17 FOR -L- PROFILE
 SEE SHEET 11 FOR BRIDGE SKETCH

REVISIONS

ARCADIS G&M
 DATE: 04/15/15
 TIME: 11:00 AM
 FILE: 17

SEE SHEET 11 FOR
 BRIDGE SKETCH



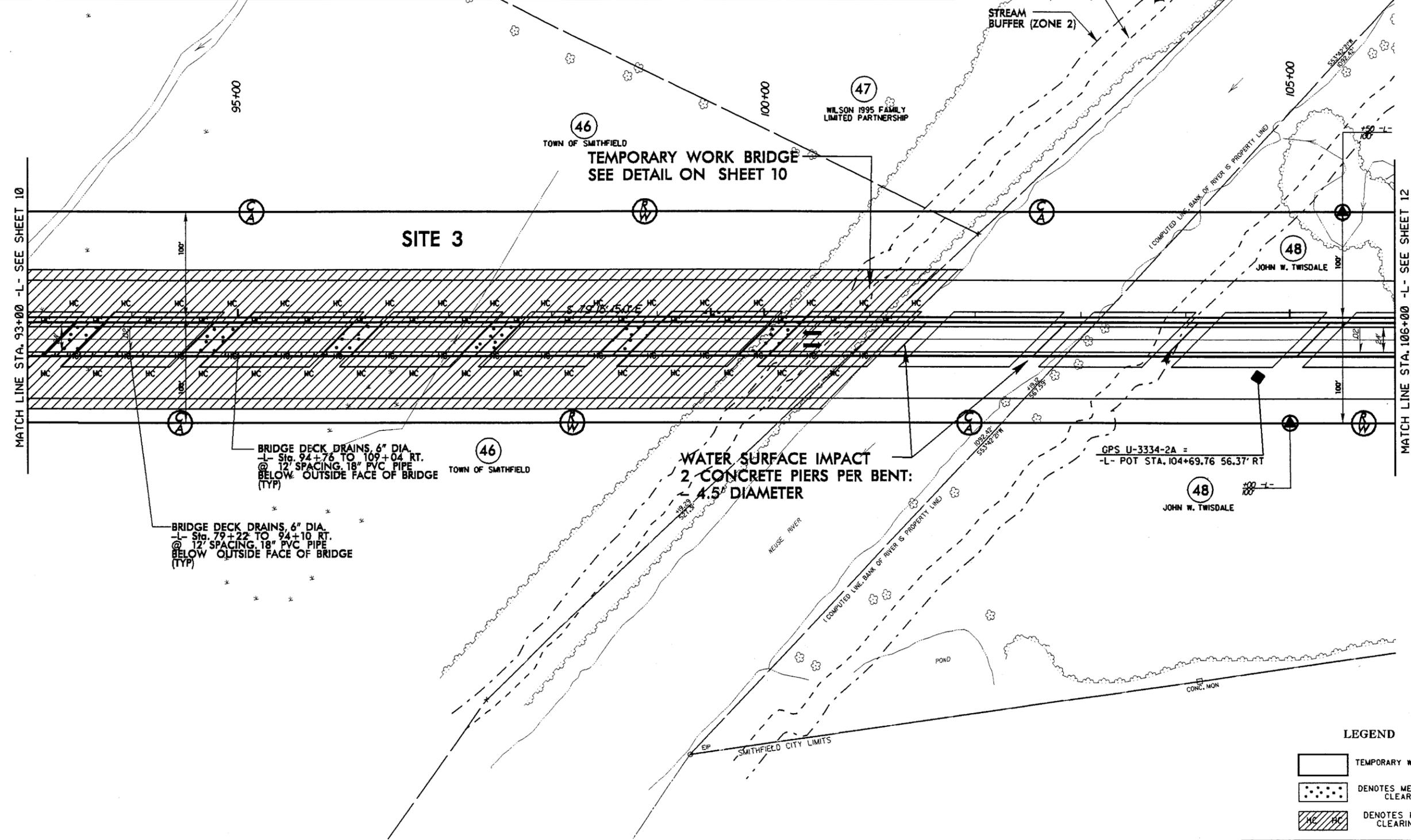
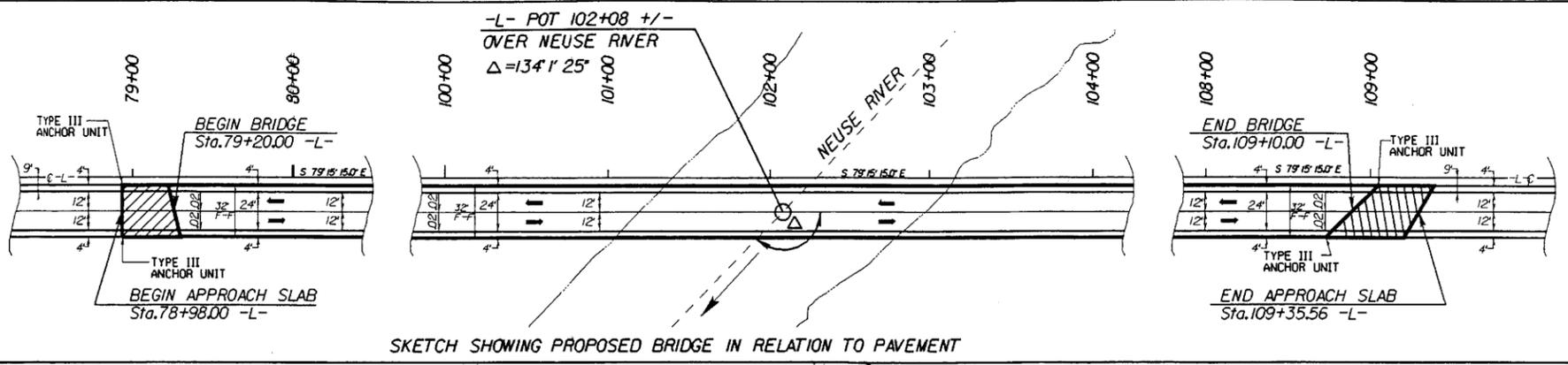
- LEGEND**
- DENOTES EXCAVATION IN WETLAND
 - DENOTES MECHANIZED CLEARING
 - TEMPORARY WORK BRIDGE
 - DENOTES HAND CLEARING

SEE STRUCTURE SHEETS S-1 THRU S- FOR STRUCTURE PLANS

SEE SHEET 17 FOR -L- PROFILE
 SEE SHEET 11 FOR BRIDGE SKETCH

REVISIONS

ARCADIS GDM
 DATE/DATE
 TIME/ TIME
 FILE/FILE



LEGEND

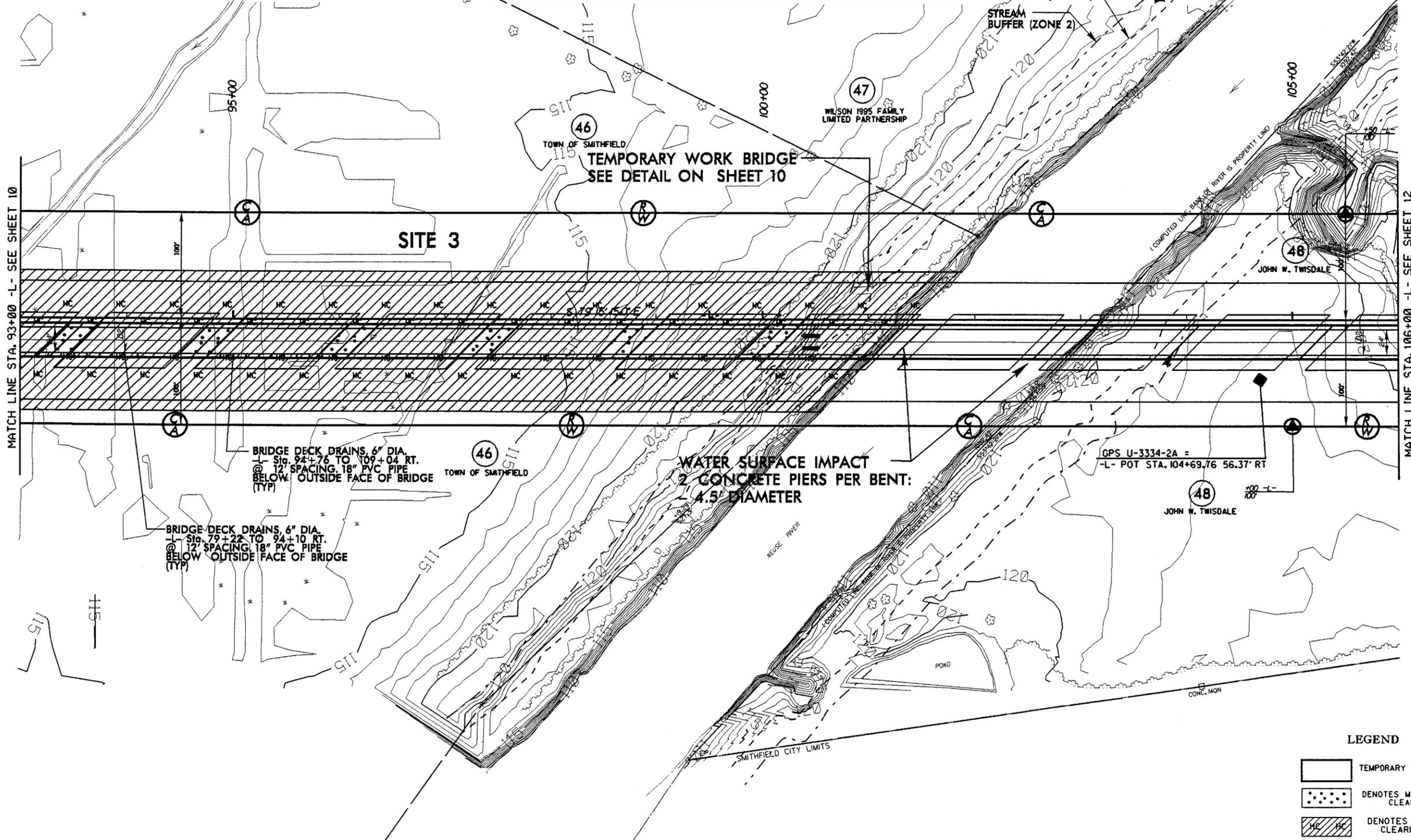
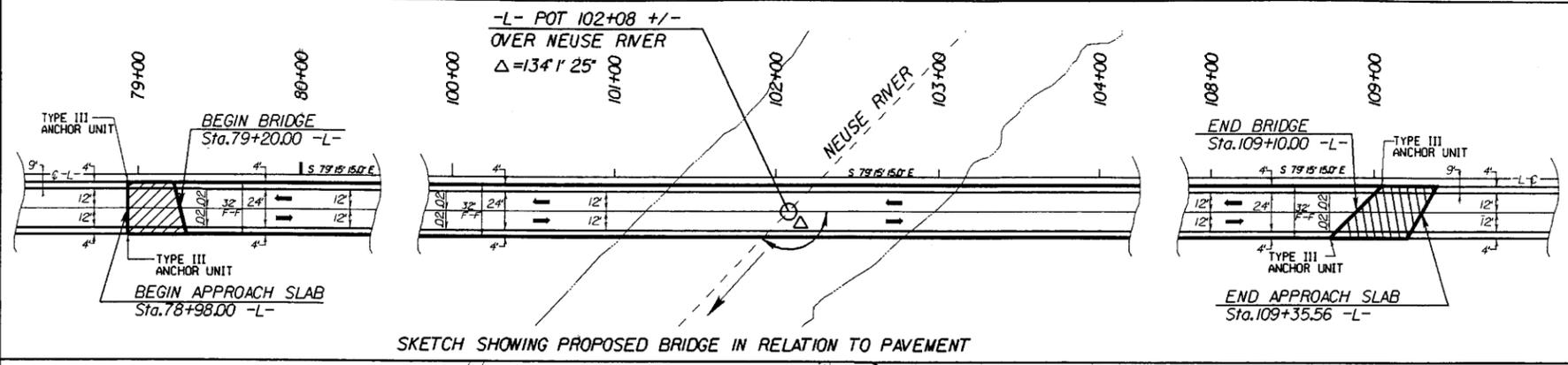
	TEMPORARY WORK BRIDGE
	DENOTES MECHANIZED CLEARING
	DENOTES HAND CLEARING

SEE STRUCTURE SHEETS S-1 THRU S- FOR STRUCTURE PLANS

SEE SHEETS 17 AND 18 FOR -L- PROFILE

REVISIONS

ARCADIS CAN GET WATER Filenotes\FLEX Time: 6TMEP



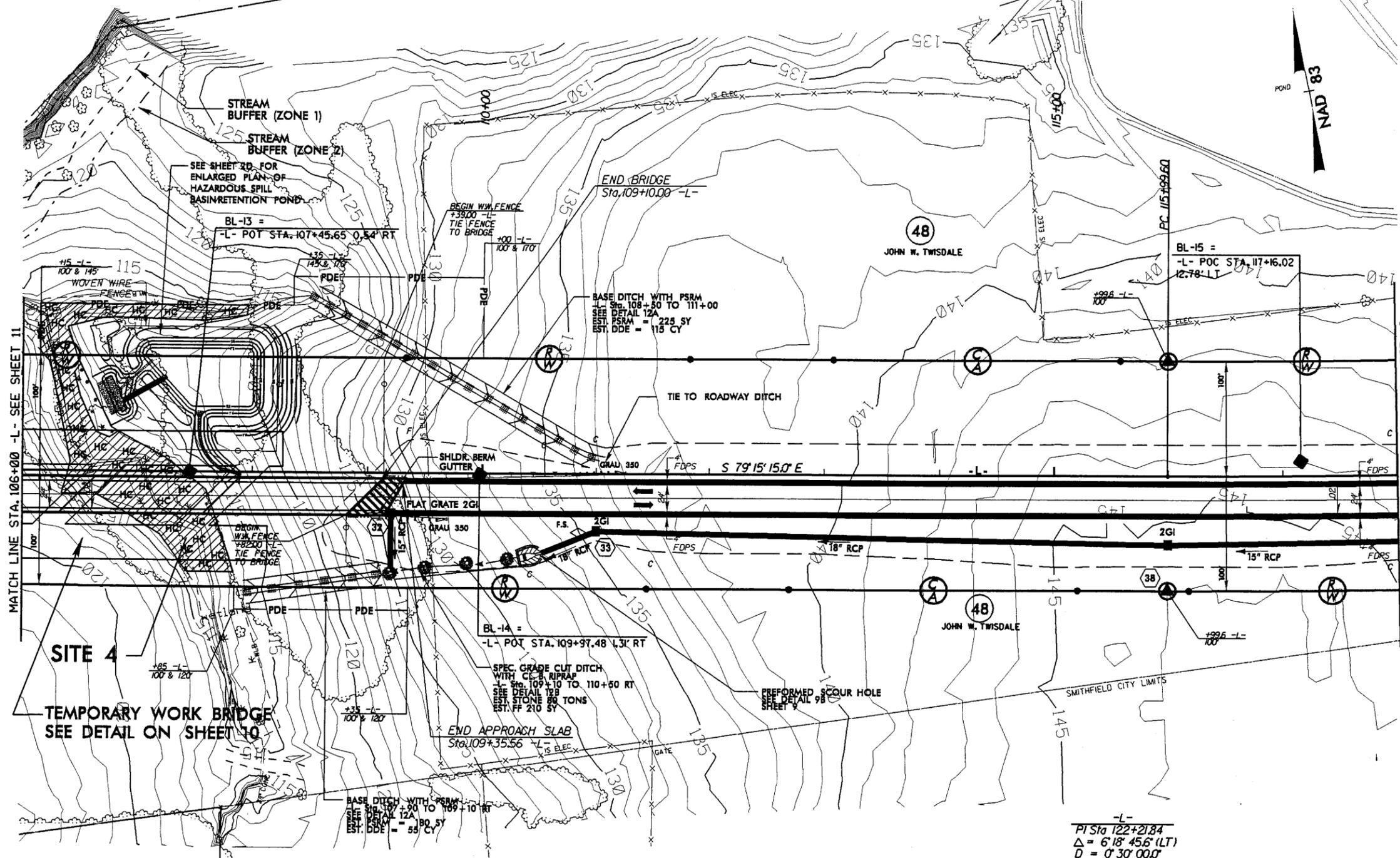
LEGEND

	TEMPORARY WORK BRIDGE
	DENOTES MECHANIZED CLEARING
	DENOTES HAND CLEARING

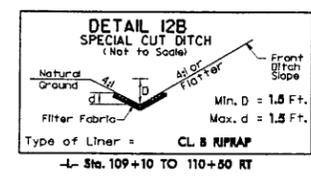
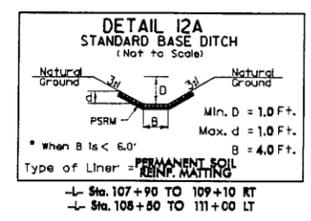
SEE STRUCTURE SHEETS S-1 THRU S- FOR STRUCTURE PLANS
 SEE SHEETS 17 AND 18 FOR -L- PROFILE

REVISIONS

ARCADIS G&M
 DATE: 04/25/18
 TIME: 4:16PM
 FILE: U-3334-2A



-L-
 PI Sta 122+21.84
 $\Delta = 6^{\circ} 18' 45.6" (LT)$
 $D = 0^{\circ} 30' 00.0"$
 $L = 1262.53'$
 $T = 631.91'$
 $R = 11,459.16'$
 SUPER = NC
 DS = 50MPH

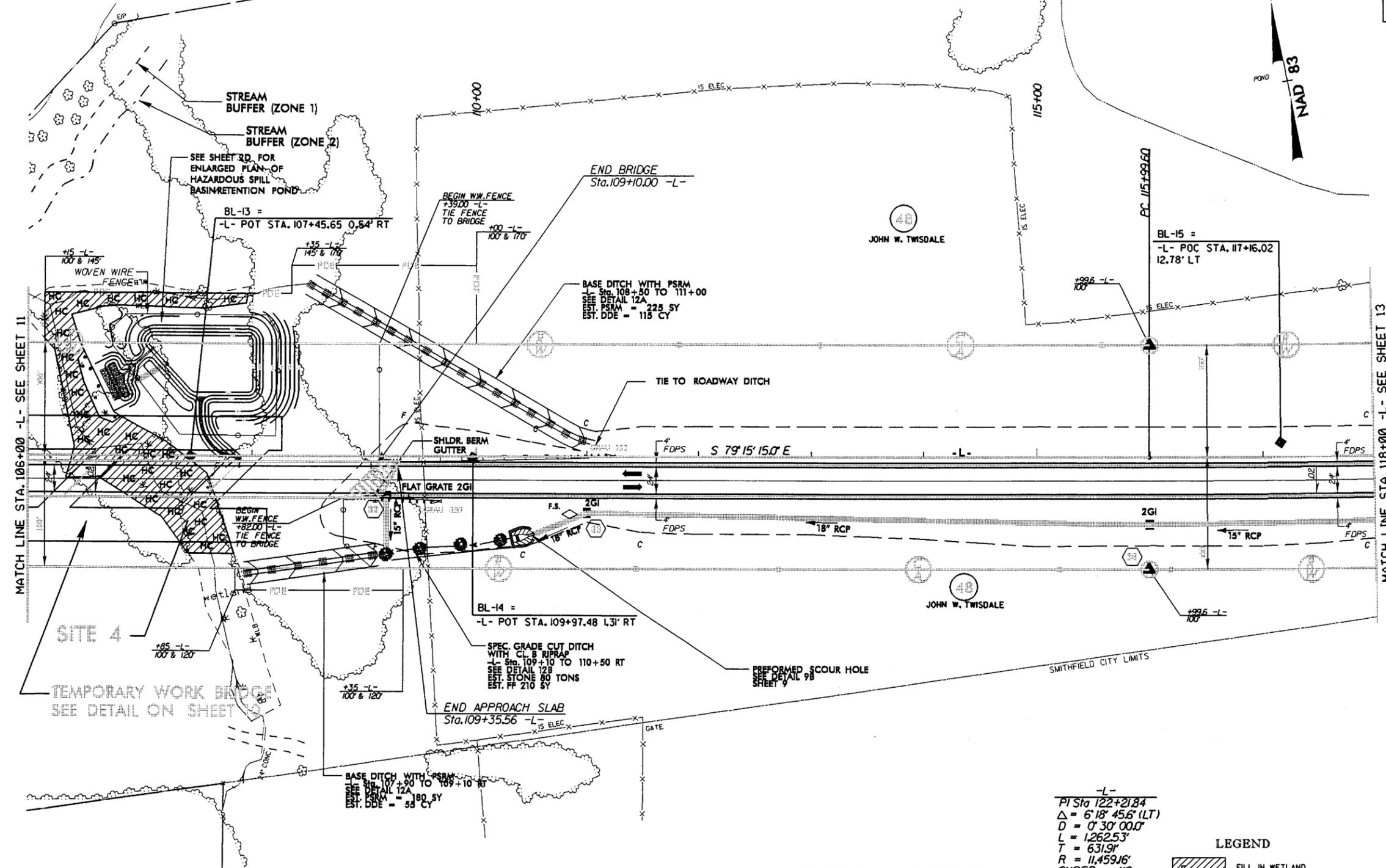


- LEGEND**
- FILL IN WETLAND
 - DENOTES MECHANIZED CLEARING
 - TEMPORARY WORK BRIDGE
 - DENOTES HAND CLEARING

SEE SHEET 18 FOR -L- PROFILE
 SEE SHEET 11 FOR BRIDGE SKETCH

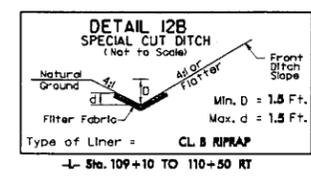
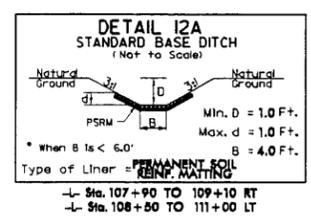
REVISIONS

ARCADIS G&M
 DETAIL 12A
 11/15/11
 11/15/11



-L-
 PI Sta 122+21.84
 $\Delta = 6^{\circ} 18' 45.6''$ (LT)
 $D = 0^{\circ} 30' 00.0''$
 $L = 1262.53'$
 $T = 631.9'$
 $R = 11,459.16'$
 SUPER = NC
 DS = 50MPH

- LEGEND**
- FILL IN WETLAND
 - DENOTES MECHANIZED CLEARING
 - TEMPORARY WORK BRIDGE
 - DENOTES HAND CLEARING



SEE SHEET 18 FOR -L- PROFILE
 SEE SHEET 11 FOR BRIDGE SKETCH

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

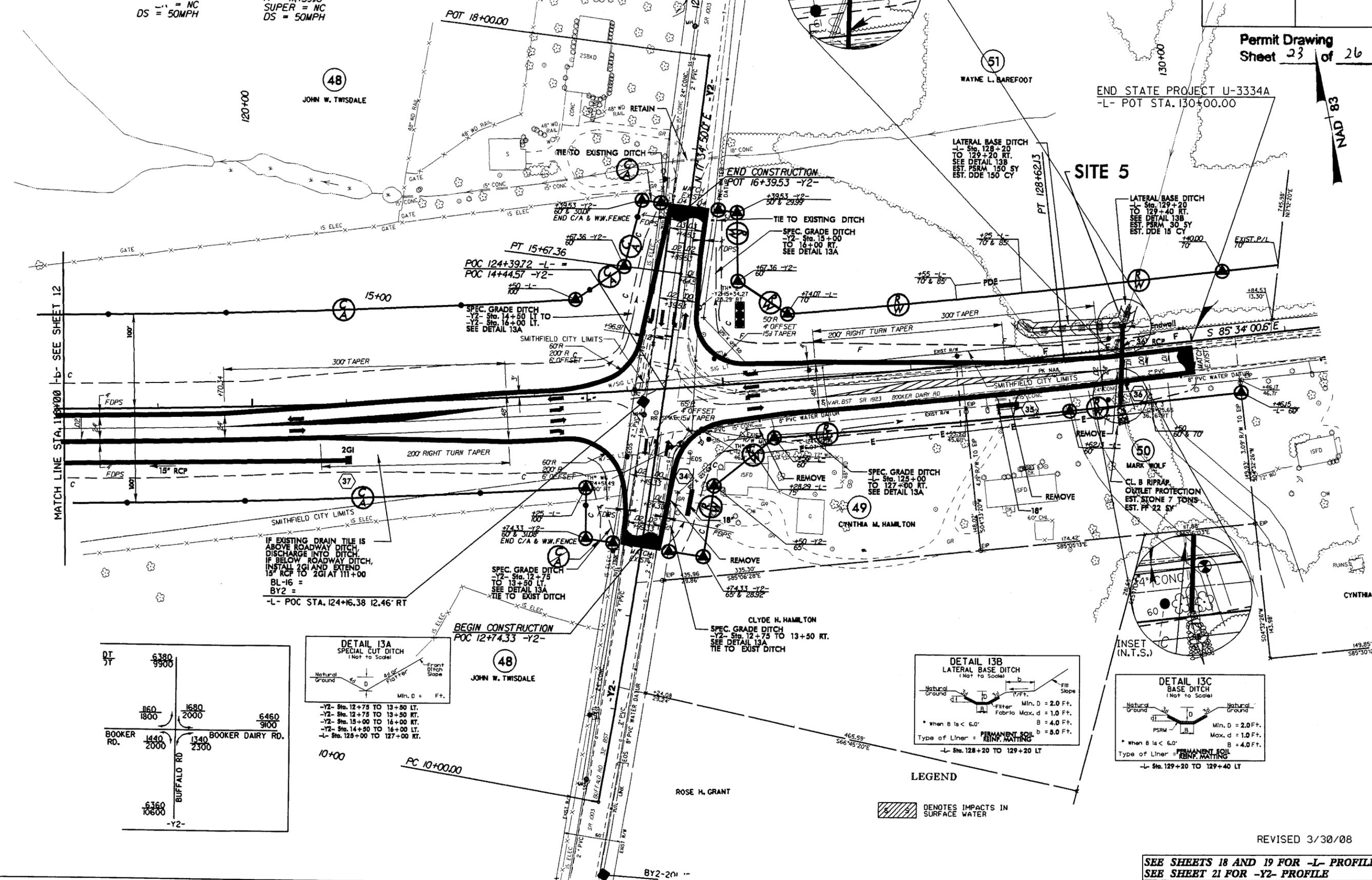
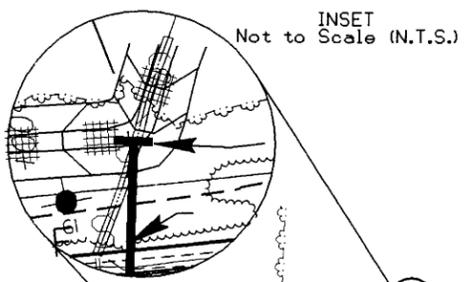
Permit Drawing Sheet 23 of 26

END STATE PROJECT U-3334A
 -L- POT STA. 130+00.00

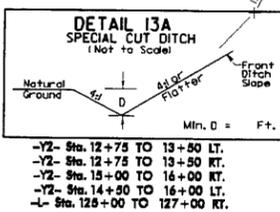
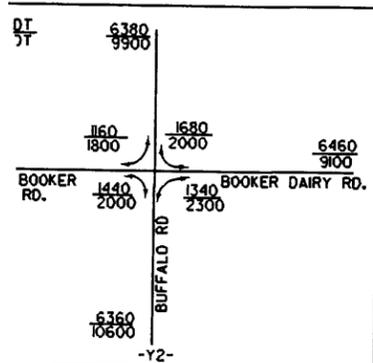
NAD 83

DS = NC
 DS = 50MPH

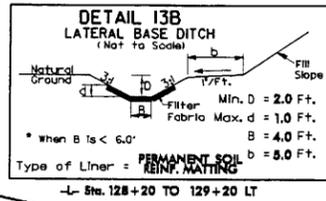
$i = 28374'$
 $R = 11,45916'$
 SUPER = NC
 DS = 50MPH



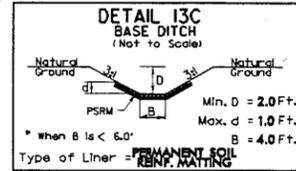
MATCH LINE STA. 118+00 -b- SEE SHEET 12



-Y2- Sta. 12+75 TO 13+50 LT.
 -Y2- Sta. 12+75 TO 13+50 RT.
 -Y2- Sta. 15+00 TO 16+00 RT.
 -Y2- Sta. 14+50 TO 16+00 LT.
 -L- Sta. 128+00 TO 127+00 RT.



-L- Sta. 128+20 TO 129+20 LT



-L- Sta. 129+20 TO 129+40 LT

LEGEND

DENOTES IMPACTS IN SURFACE WATER

REVISIONS

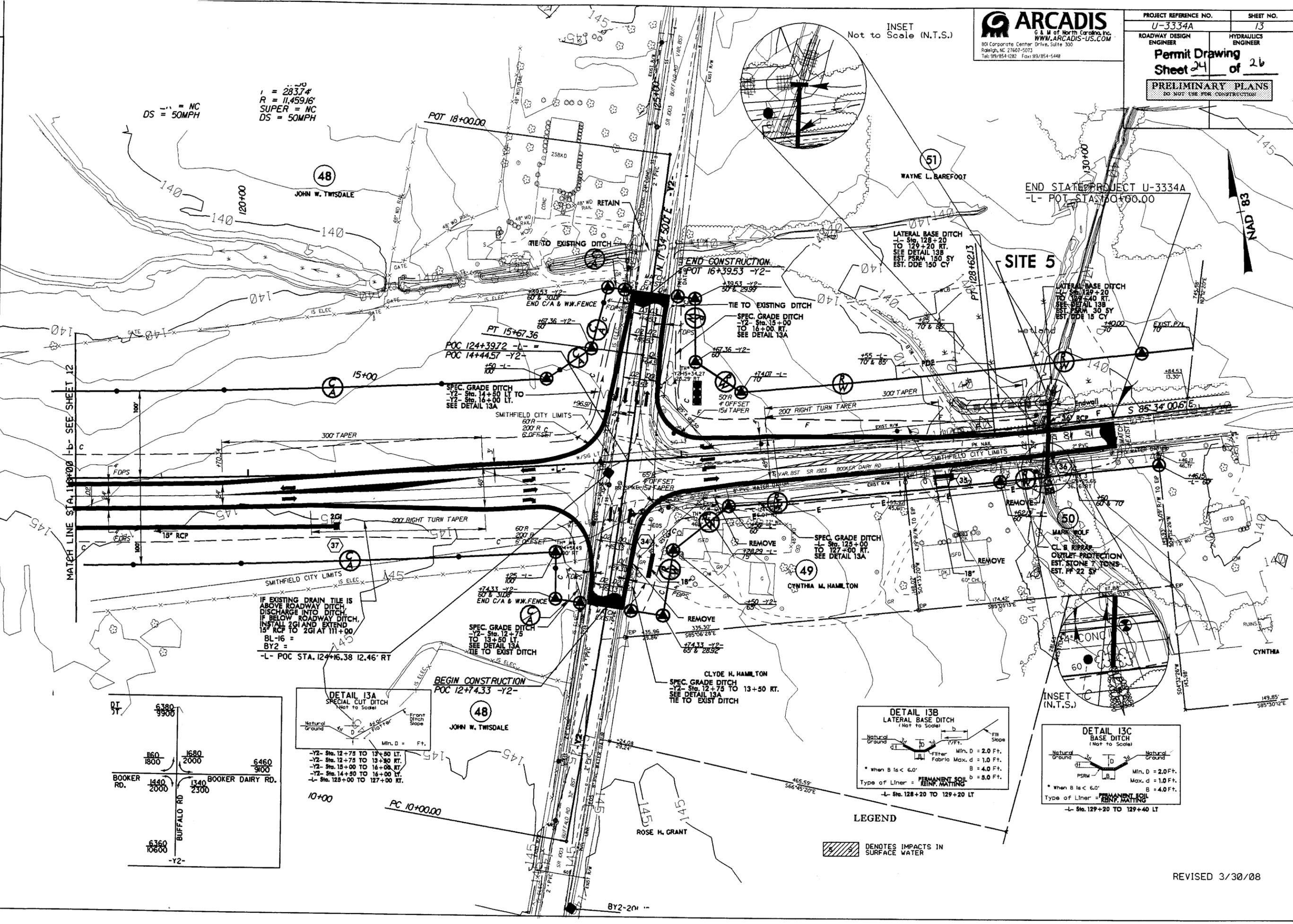
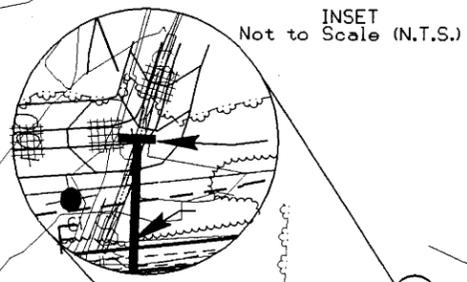
ARCADIS G&M
 DATE: 3/30/08
 FILE: U-3334A-13

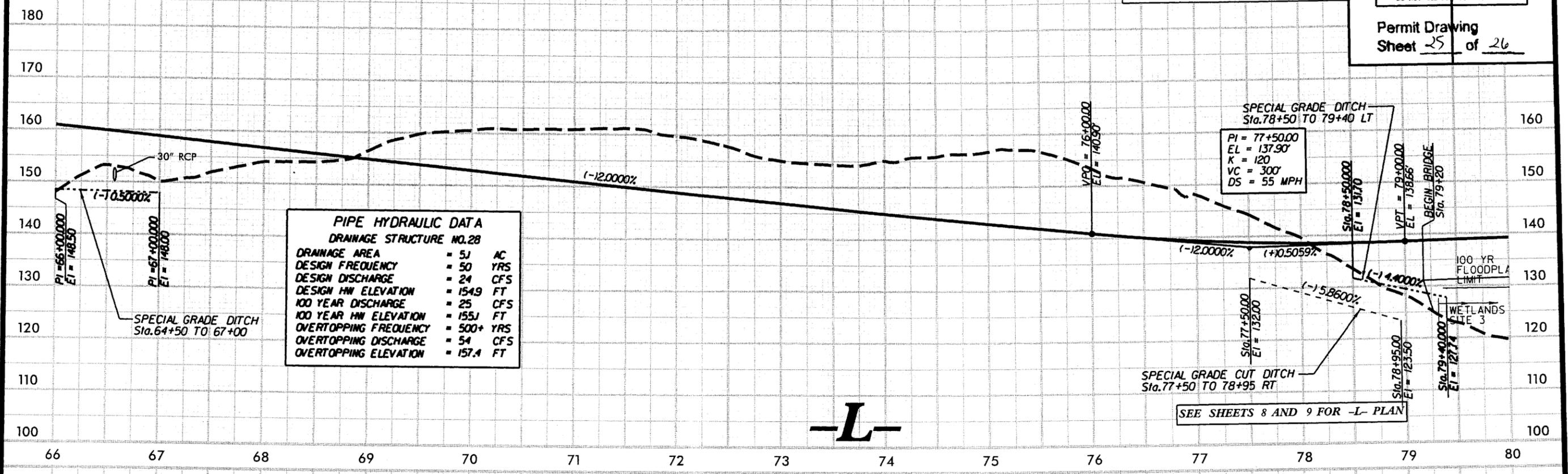
REVISED 3/30/08

SEE SHEETS 18 AND 19 FOR -L- PROFILE
 SEE SHEET 21 FOR -Y2- PROFILE

REVISIONS

$i = 0.00$
 $R = 283.7'$
 $SUPER = NC$
 $DS = 50MPH$





PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO. 28	
DRAINAGE AREA	= 5J AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 24 CFS
DESIGN HW ELEVATION	= 154.9 FT
100 YEAR DISCHARGE	= 25 CFS
100 YEAR HW ELEVATION	= 155J FT
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 54 CFS
OVERTOPPING ELEVATION	= 157.4 FT

BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	= 20,500 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 127.7 FT
BASE DISCHARGE	= 25,100 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 129.5 FT
OVERTOPPING DISCHARGE	= 60,000 CFS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 137.5 FT
DATE OF SURVEY	= SEPT. 2002
W.S. ELEVATION AT DATE OF SURVEY	= 105.6 FT

TBM #5 RR SPIKE IN BASE OF 10" ELM
 STA. 80+51.35 -L- 325.14' RT. EL. = 121.02



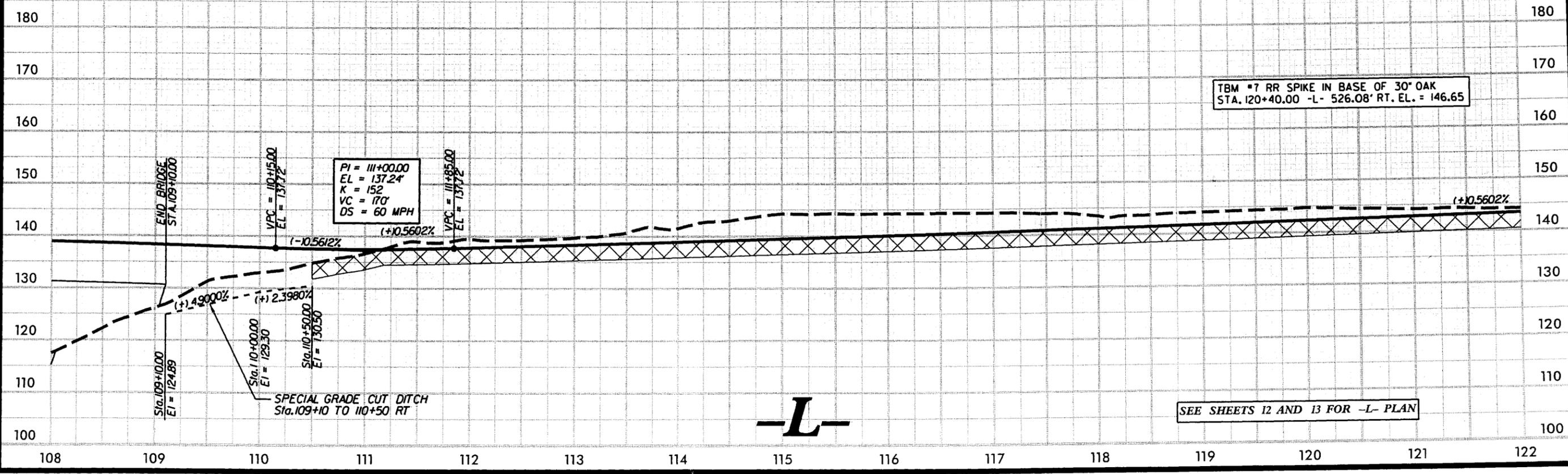
SEE SHEETS 10 AND 11 FOR -L- PLAN

TBM #6 RR SPIKE IN BASE OF 15' POPLAR
 STA. 104+05.09 -L- 337.36' RT. EL. = 124.23



SEE SHEETS 11 AND 12 FOR -L- PLAN

TBM #7 RR SPIKE IN BASE OF 30' OAK
 STA. 120+40.00 -L- 526.08' RT. EL. = 146.65



SEE SHEETS 12 AND 13 FOR -L- PLAN