

**PROJECT SPECIAL PROVISION**

(10-18-95)

Z-1

**PERMITS**

The Contractor's attention is directed to the following permits, which have been issued to the Department of Transportation by the authority granting the permit.

<b><u>PERMIT</u></b>	<b><u>AUTHORITY GRANTING THE PERMIT</u></b>
Dredge and Fill and/or Work in Navigable Waters (404)	U. S. Army Corps of Engineers
Water Quality (401)	Division of Environmental Management, DENR State of North Carolina

The Contractor shall comply with all applicable permit conditions during construction of this project. Those conditions marked by \* are the responsibility of the department and the Contractor has no responsibility in accomplishing those conditions.

Agents of the permitting authority will periodically inspect the project for adherence to the permits.

The Contractor's attention is also directed to Articles 107-10 and 107-14 of the *Standard Specifications* and the following:

Should the Contractor propose to utilize construction methods (such as temporary structures or fill in waters and/or wetlands for haul roads, work platforms, cofferdams, etc.) not specifically identified in the permit (individual, general, or nationwide) authorizing the project it shall be the Contractor's responsibility to coordinate with the Engineer to determine what, if any, additional permit action is required. The Contractor shall also be responsible for initiating the request for the authorization of such construction method by the permitting agency. The request shall be submitted through the Engineer. The Contractor shall not utilize the construction method until it is approved by the permitting agency. The request normally takes approximately 60 days to process; however, no extensions of time or additional compensation will be granted for delays resulting from the Contractor's request for approval of construction methods not specifically identified in the permit.

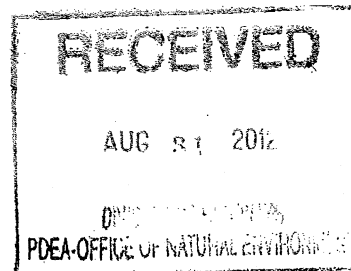
**Where construction moratoriums are contained in a permit condition which restricts the Contractor's activities to certain times of the year, those moratoriums will apply only to the portions of the work taking place in the waters or wetlands provided that activities outside those areas is done in such a manner as to not affect the waters or wetlands.**



REPLY TO  
ATTENTION OF

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

August 27, 2012



Regulatory Division/1145b

SUBJECT: Action ID 2009-00439; TIP No. R-2241A

Mr. Gregory J. Thorpe, Ph.D  
North Carolina Department of Transportation  
Division of Highways  
1598 Mail Service Center  
Raleigh, North Carolina 27699-1598

Dear Dr. Thorpe:

Reference the Department of the Army permit issued to the North Carolina Department of Transportation (NCDOT) on June 6, 2012, to authorize the discharge of fill material into waters of the United States, for construction of Section A of the US 501 improvements (TIP No. R-2241A), from NC 49 in Roxboro to SR 1602 (Jesse Banks Road), in Person County, North Carolina. Also, please reference your July 30, 2012, letter requesting modification of the permit for a net decrease of permanent loss impacts to streams with more than minimal function, an increase of streambank stabilization impacts, and a net decrease of temporary impacts to streams. These changes in impacts result from design modifications to provide additional necessary stream bank protection, re-calculation of impacts, and necessary relocation of a natural gas pipeline main. Additional mitigation is not proposed because the revisions result in a net decrease of permanent loss impacts to streams with more than minimal function.

We have reviewed the requested modification, and determined that it is appropriate and reasonable, and that no public notice is required for this modification. Therefore, the permit is hereby modified to include the changes listed and shown in the modified drawings in the July 30, 2012, modification request, for a net decrease of permanent loss impacts to streams with more than minimal function of 12 linear feet, an increase of stream bank stabilization impacts of 86 linear feet, and a net decrease of temporary impacts to streams of 86 linear feet, and to include the revised mitigation requirement below. This section of the project will now permanently impact 3,381 linear feet of streams (including 3,184 linear feet of stream with more than minimal function) and 2.38 acre of wetlands, impact 525 linear feet of streams for stream bank stabilization, and temporarily impact 772 linear feet of streams.

k) In order to compensate for permanent losses of 3,184 linear feet of stream with more than minimal function, and 2.38 acres of wetlands, the permittee shall make payment to the North Carolina Ecosystem Enhancement Program (NCEEP) in the amount determined by the NCEEP, sufficient to perform the restoration of 6,364 linear feet of warm water stream

and 5.76 acres of riparian non-riverine wetlands in the Lower Dan River Basin, Cataloging Unit 03010104. Construction within jurisdictional areas on the property shall begin only after the permittee has made full payment to the NCEEP and provided a copy of the payment documentation to the Corps, and the NCEEP has provided written confirmation to the Corps that it agrees to accept responsibility for the mitigation work required, in compliance with the NCEEP In-Lieu Fee Instrument, approved by the United States Army Corps of Engineers, Wilmington District on July, 28, 2010.

All other conditions of the previously modified permit, including the permit expiration date of December 31, 2017, remain applicable.

Should you have any questions, please call Mr. Eric Alsmeyer at (919) 554-4884, extension 23.

Sincerely,

 *Steven A. Baker*

Steven A. Baker  
Colonel, U.S. Army  
District Commander

Copies Furnished:

Ms. Amy Chapman  
Division of Water Quality  
North Carolina Department of  
Environment and Natural Resources  
1650 Mail Service Center  
Raleigh, NC 27699-1650

Mr. Clarence Coleman  
Federal Highway Administration  
310 New Bern Ave., Room 410  
Raleigh, North Carolina 27601-1442

Mr. J.W. Bowman, PE, Division Engineer  
North Carolina Department of Transportation  
Division of Highways  
2612 North Duke Street  
Durham, North Carolina 27704

Ms. Beth Harmon  
North Carolina Ecosystem Enhancement Program  
(by e-mail)

RECEIVED

JUN 06 2012

REG. WILM. FLD. OFC.

DEPARTMENT OF THE ARMY PERMIT

Permittee: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
ATTN: DR. GREGORY J. THORPE, PH.D.

Permit No: SAW- 2009-00439

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 the office acting under the authority of the commanding officer.

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

**Project Description:** The proposed project includes 4.5 mile of improvements to existing US 501 and NC 49, to make a multilane roadway facility from NC 49 in Roxboro to SR 1602 (Jesse Banks Road) (TIP No. R-2241A). Impacts to waters of the United States (streams and wetlands) will be from roadway fills and mechanized clearing, new and replacement pipe and box culverts, riprap bank protection, and a utility line crossing (water and sewer). The project will permanently impact 3,832 linear feet of streams at fifteen sites, and 2.38 acre of wetlands at eleven sites. Additional temporary impacts are also proposed to 858 linear feet of stream at fourteen sites.

**Project Location:** US 501 (TIP No. R-2241A), from NC 49 in Roxboro to SR 1602 (Jesse Banks Road), in Person County, North Carolina. The project starts at approximately Latitude 36.4098 N, Longitude 78.9724 W, and ends at Latitude 36.4535 N, Longitude 78.9247 W.

**Permit Conditions:**

**General Conditions:**

1. The time Limit for completing the work authorized ends on December 31, 2017. 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 Conditions 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 eligible for listing in the National Register of Historic Places.

4. If you sell the property associate 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:

- Section 10 of the Rivers and Harbors Act of 1899 (33 U.S. C. 403).
- 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.

e. 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.

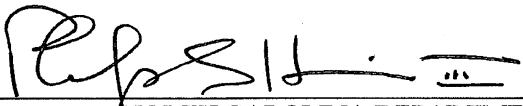
5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

- 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.

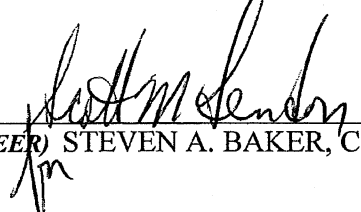
Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance 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 measure 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.

  
 \_\_\_\_\_ 06/04/2012  
 (PERMITTEE) NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (DATE)  
 ATTN: DR. GREGORY J. THORPE, PH.D.

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

  
 \_\_\_\_\_ 6 June 2012  
 (DISTRICT ENGINEER) STEVEN A. BAKER, 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-2009-00439  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION - TIP R-2241A**

**Work Limits**

- a) All work authorized by this permit must be performed in strict compliance with the attached plans, which are a part of this permit. Any modification to these plans must be approved by the US Army Corps of Engineers (USACE) prior to implementation.
- b) 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. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted area. This prohibition applies to all borrow and fill activities connected with this project.
- c) 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 waters or wetlands or to reduce the reach of waters or wetlands.

**Related Laws**

- d) 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. 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) 807-6308 or (800) 858-0368 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act will be followed.

**Project Maintenance**

- \* e) The permittee shall advise the Corps in writing prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.
- f) 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.
- g) 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



**SPECIAL CONDITIONS  
ACTION ID SAW-2009-00439  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION - TIP R-2241A**

maintenance of this project with a copy of this permit. A copy of this permit, including all conditions, shall be available at the project site during construction and maintenance of this project.

- h) The permittee shall employ all sedimentation and erosion control measures necessary to prevent an increase in sedimentation or turbidity within waters and wetlands outside the permit area. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. 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).
- i) The permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the water or wetland to its pre-project condition.

**Enforcement**

- j) Violations of these conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act must be reported in writing to the Wilmington District U.S. Army Corps of Engineers within 24 hours of the permittee's discovery of the violation.

**Mitigation**

- modified, see attached  
Aug 27, 2012*
- k) In order to compensate for permanent losses of 3,196 linear feet of stream with more than minimal function/, and 2.38 acres of wetlands, the permittee shall make payment to the North Carolina Ecosystem Enhancement Program (NCEEP) in the amount determined by the NCEEP, sufficient to perform the restoration of 6,392 linear feet of warm water stream and 5.76 acres of riparian non-riverine wetlands in the Lower Dan River Basin, Cataloging Unit 03010104. Construction within jurisdictional areas on the property shall begin only after the permittee has made full payment to the NCEEP and provided a copy of the payment documentation to the Corps, and the NCEEP has provided written confirmation to the Corps that it agrees to accept responsibility for the mitigation work required, in compliance with the NCEEP In-Lieu Fee Instrument, approved by the United States Army Corps of Engineers, Wilmington District on July, 28, 2010.

**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND  
REQUEST FOR APPEAL**

Applicant: North Carolina Department of Transportation      File Number: SAW-2009-00439      Date: May 23, 2012

Attached is:	See Section below
<input checked="" type="checkbox"/> INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
<input type="checkbox"/> PROFFERED PERMIT (Standard Permit or Letter of permission)	B
<input type="checkbox"/> PERMIT DENIAL	C
<input type="checkbox"/> APPROVED JURISDICTIONAL DETERMINATION	D
<input type="checkbox"/> PRELIMINARY JURISDICTIONAL DETERMINATION	E

**SECTION I -** The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://www.usace.army.mil/inet/functions/cw/cecwo/reg> or Corps regulations at 33 CFR Part 331.

**A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.**

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

**B: PROFFERED PERMIT: You may accept or appeal the permit**

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**C: PERMIT DENIAL:** You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**D: APPROVED JURISDICTIONAL DETERMINATION:** You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the district engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**E: PRELIMINARY JURISDICTIONAL DETERMINATION:** You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

<b>SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT</b>		
REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)		
ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.		
<b>POINT OF CONTACT FOR QUESTIONS OR INFORMATION:</b>		
If you have questions regarding this decision and/or the appeal process you may contact: <b>District Engineer, Wilmington Regulatory Div.</b> <b>Attn: Mr. Eric Alsmeyer</b> <b>3331 Heritage Trade Drive</b> <b>Raleigh, North Carolina 27587</b> <b>Phone: (919) 554-4884, extension 23</b>	If you only have questions regarding the appeal process you may also contact: <b>Mr. Jason Steele, Administrative Appeal Review Officer</b> <b>CESAD-PDO</b> <b>U.S. Army Corps of Engineers, South Atlantic Division</b> <b>60 Forsyth Street, Room 10M15</b> <b>Atlanta, Georgia 30303-8801</b> <b>Phone: (404) 562-5137</b>	
RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.		
_____ Signature of appellant or agent.	Date:	Telephone number:

**For appeals on Initial Proffered Permits send this form to:**

**District Engineer, Wilmington Regulatory Division, Attn: Eric Alsmeyer, 69 Darlington Avenue, Wilmington, North Carolina 28403**

**For Permit denials, Proffered Permits and approved Jurisdictional Determinations send this form to:**

**Division Engineer, Commander, U.S. Army Engineer Division, South Atlantic, Attn: Mr. Jason Steele, Administrative Appeal Officer, CESAD-PDO, 60 Forsyth Street, Room 10M15, Atlanta, Georgia 30303-8801  
Phone: (404) 562-5137**

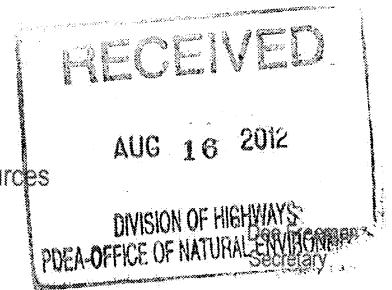
R-12



North Carolina Department of Environment and Natural Resources

Division of Water Quality  
Charles Wakild, P.E.  
Director

Beverly Eaves Perdue  
Governor



August 13, 2012

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

Subject: MODIFICATION to 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for Proposed improvements to US 501 North in Person County, Federal Aid Project No. STP-501(1), State Project No. 34406.2.3, TIP No. R-2241A, NCDWQ Project No. 20120073 version 2.

Dear Dr. Thorpe:

Attached hereto is a modification of Certification No. 3910 issued to The North Carolina Department of Transportation (NCDOT) dated March 23, 2012.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Charles Wakild".

Charles Wakild  
Director

**Attachments**

cc: Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office  
Chris Murray, Division 5 Environmental Officer  
Beth Harmon, Ecosystem Enhancement Program  
Rachelle Beauregard, NCDOT Natural Environment Unit  
File Copy

Transportation and Permitting Unit  
1650 Mail Service Center, Raleigh, North Carolina 27699-1617  
Location: 512 N. Salisbury St. Raleigh, North Carolina 27604  
Phone: 919-807-6300 \ FAX: 919-807-6492  
Internet: [www.ncwaterquality.org](http://www.ncwaterquality.org)

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North Carolina  
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**MODIFICATION to 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act 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 (NCDWQ) Regulations. This certification authorizes the NCDOT to impact 2.39 acres of jurisdictional wetlands and 4,310 linear feet of jurisdictional streams in Person County. The project shall be constructed pursuant to the application dated received January 26, 2012. The authorized impacts are as described below:

**Additional (or Decrease) to Stream Impacts in the Roanoke River Basin**

Site	Permanent Fill in Intermittent Stream (linear ft)	Temporary Impacts to Intermittent Stream (linear ft)	Riprap Stabilization to Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Impacts to Perennial Stream (linear ft)	Riprap Stabilization to Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
1	0	0	0	0	+ 2	0	+ 2	0
6	0	- 10	+ 7	0	0	0	- 3	0
11	0	0	0	0	- 17	+16	-1	+16
17	0	0	0	- 2	- 39	+31	- 10	+ 29
18	0	0	0	- 10	- 22	+ 32	0	+ 22
<b>Total</b>	<b>0</b>	<b>- 10</b>	<b>+ 7</b>	<b>- 12</b>	<b>- 76</b>	<b>+ 79</b>	<b>- 14</b>	<b>+ 67</b>

**Total Additional Stream Impact for Project: -14 linear feet**

The application provides adequate assurance that the discharge of fill material into the waters of the Roanoke 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 January 26, 2012 and modification request received August 2, 2012. Should your project change, you are required to notify the NCDWQ 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.

**Conditions of Certification:**

- \* 1. Compensatory mitigation for 3,626 linear feet of impact to streams in the Roanoke River Basin is now required. We understand that you have chosen to perform compensatory mitigation for impacts to streams 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 January 17, 2012 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the EEP Mitigation Banking Instrument signed July 28, 2010.
- 2. All other conditions in the first version of this Certification dated April 5, 2012 for this project still apply.

## R-14

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 you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission.  
The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings  
6714 Mail Service Center  
Raleigh, NC 27699-6714  
Telephone: (919)-733-2698, Facsimile: (919)-733-3478

A copy of the petition must also be served on DENR as follows:

Ms. Mary Penny Thompson, General Counsel  
Department of Environment and Natural Resources  
1601 Mail Service Center  
Raleigh, NC 27699-1601

This the 13th day of August 2012

DIVISION OF WATER QUALITY



*hw* Charles Wakild  
Director

WQC No. 3910

R-15



North Carolina Department of Environment and Natural Resources

Division of Water Quality  
Charles Wakild, P.E.  
Director

Dee Freeman  
Secretary

Beverly Eaves Perdue  
Governor

April 5, 2012

**RECEIVED**  
Division of Highways

APR 12 2012

Preconstruction  
Project Development and  
Environmental Analysis Branch

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

Subject: CORRECTION to 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for Proposed improvements to US 501 North in Person County, Federal Aid Project No. STP-501(1), State Project No. 34406.2.3, TIP No. R-2241A, NCDWQ Project No. 20120073

Dear Dr. Thorpe:

Attached hereto is a corrected copy of Certification No. 3910 issued to The North Carolina Department of Transportation (NCDOT) dated March 23, 2012.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Robert Rodriguez", written over a horizontal line.

for Charles Wakild  
Director

Attachments

cc: Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office  
Chris Murray, Division 5 Environmental Officer  
Beth Harmon, Ecosystem Enhancement Program  
Rachelle Beauregard, NCDOT Natural Environment Unit  
File Copy

Transportation and Permitting Unit  
1650 Mail Service Center, Raleigh, North Carolina 27699-1617  
Location: 512 N. Salisbury St. Raleigh, North Carolina 27604  
Phone: 919-807-6300 \ FAX: 919-807-6492  
Internet: [www.ncwaterquality.org](http://www.ncwaterquality.org)

An Equal Opportunity \ Affirmative Action Employer

One  
North Carolina  
*Naturally*

**401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act 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 (NCDWQ) Regulations. This certification authorizes the NCDOT to impact 2.39 acres of jurisdictional wetlands and 4,310 linear feet of jurisdictional streams in Person County. The project shall be constructed pursuant to the application dated received January 26, 2012. The authorized impacts are as described below:

**Stream Impacts in the Roanoke River Basin**

Site	Permanent Fill in Intermittent Stream (linear ft)	Temporary Impacts to Intermittent Stream (linear ft)	Riprap Stabilization to Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Impacts to Perennial Stream (linear ft)	Riprap Stabilization to Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
1	0	0	0	138	32	125	289	263
3	23	0	0	0	0	0	23	0
4	0	0	0	112	39	59	210	171
6	23	30	16	0	0	0	69	0
7A	0	0	0	518	108	82	708	600
7B	59	0	0	0	0	0	59	0
8	0	0	0	194	36	13	243	207
9	0	0	0	279	33	16	328	295
10	92	43	20	0	0	0	155	0
11	0	0	0	282	102	36	420	318
13	0	0	0	246	72	0	318	246
14	0	0	0	262	23	13	298	275
15	0	0	0	653	75	13	741	666
17	0	0	0	148	62	36	246	184
18	0	0	0	364	203	10	203	374
<b>Total</b>	<b>197</b>	<b>73</b>	<b>36</b>	<b>3196</b>	<b>785</b>	<b>403</b>	<b>4310</b>	<b>3559</b>

**Total Stream Impact for Project: 4,310 linear feet**

**Wetland Impacts in the Roanoke River Basin**

Site	Permanent Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)	Total Wetland Impact (ac)	Wetland Impacts Requiring Mitigation (ac)
2	0.11	0.01	0.06	0.18	0.18
5	0.22	0	0.06	0.28	0.28
7A	0.13	0	< 0.01	0.13	0.13
8	0.02	< 0.01	0.03	0.05	0.05
11	< 0.01	0	0	< 0.01	0
12	0.12	0	0	0.12	0.12
13	0.17	< 0.01	0.07	0.24	0.24
14	0.09	< 0.01	0	0.09	0.09
15	0.36	0	0.03	0.39	0.39
17	0.47	0.15	0.18	0.80	0.80
19	0.01	0	0.10	0.11	0.11
<b>Total</b>	<b>1.70</b>	<b>0.16</b>	<b>0.53</b>	<b>2.39</b>	<b>2.39</b>

**Total Wetland Impact for Project: 2.39 acres**



## Open Water (Pond) Impacts in the Roanoke River Basin

Site	Pond Removal (ac)	Total Impacts to Open Waters (ac)
16	0.041	0.041
<b>Total</b>	<b>0.041</b>	<b>0.041</b>

**Total Open Water Impact for Project: 0.041 acres.**

The application provides adequate assurance that the discharge of fill material into the waters of the Roanoke 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 January 26, 2012. Should your project change, you are required to notify the NCDWQ 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 approval replaces the one issued March 23, 2012.**

**Conditions of Certification:**

\* Aug 13, 2012 Modified  
1. Compensatory mitigation for 3,559 linear feet of impact to streams in the Roanoke River Basin is required. We understand that you have chosen to perform compensatory mitigation for impacts to streams 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 January 17, 2012 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the EEP Mitigation Banking Instrument signed July 28, 2010.

\* 2. Compensatory mitigation for impacts to 2.39 acres of wetlands in the Roanoke River Basin is required. We understand that you have chosen to perform compensatory mitigation for 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 January 17, 2012 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. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams, 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 downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.

4. 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.

5. 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.

## R-18

6. For all streams being impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and revegetated with appropriate native species. The channel shall be stable prior to diverting water back into it. The banks should also be revegetated with native riparian species to the greatest extent possible.
7. At locations where ponds will be drained, proper measures will be taken to drain the pond with limited impact to upstream and downstream channel stability as well as to native aquatic species. Proper measures will be taken to avoid sediment release and/or sediment accumulation downstream as a result of pond draining.
8. The stream channel shall be excavated no deeper than the natural bed material of the stream, to the maximum extent practicable. Efforts must be made to minimize impacts to the stream banks, as well as to vegetation responsible for maintaining the stream bank stability. Any applicable riparian buffer impact for access to stream channel shall be temporary and be revegetated with native riparian species
9. 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.
10. 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.
11. 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.
12. 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.
- \* 13. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval.
14. 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.
15. 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.
16. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials.
17. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification.
18. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.
19. 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 NCDWQ 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, NCDWQ may reevaluate and modify this certification.
20. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification..
21. A copy of this Water Quality Certification shall be maintained on 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.
22. The outside 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.

23. 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.

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

- \* 25. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify NCDWQ when all work included in the 401 Certification has been completed.

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

27. 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.

28. 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.

29. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification.

30. Pipes and culverts used exclusively to maintain equilibrium in wetlands, where aquatic life passage is not a concern, shall not be buried. These pipes shall be installed at natural ground elevation.

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.

## R-20

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission. The mailing address for the Office of Administrative Hearings is:

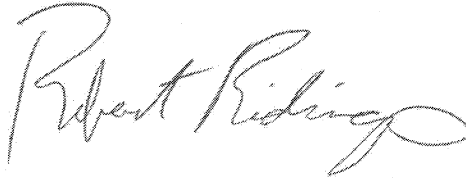
Office of Administrative Hearings  
6714 Mail Service Center  
Raleigh, NC 27699-6714  
Telephone: (919)-733-2698, Facsimile: (919)-733-3478

A copy of the petition must also be served on DENR as follows:

Ms. Mary Penny Thompson, General Counsel  
Department of Environment and Natural Resources  
1601 Mail Service Center  
Raleigh, NC 27699-1601

This the 5th day of April 2012

DIVISION OF WATER QUALITY

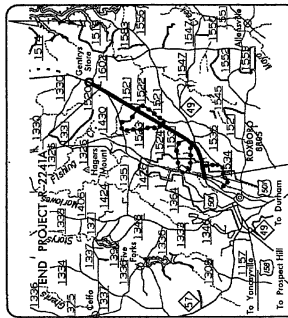


Charles Wakild  
Director

WQC No. 3910

**PROJECT: R-2241A TIP PROJECT: 34406.1.1**

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



Debour  
VICINITY MAP

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**PERSON COUNTY**

LOCATION: US 501 FROM NC 49 IN ROXBORO  
TO SOUTH OF SR 1602

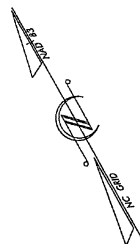
TYPE OF WORK: GRADING, DRAINAGE, PAVING, GUARDRAIL,  
CULVERTS, AND SIGNALS



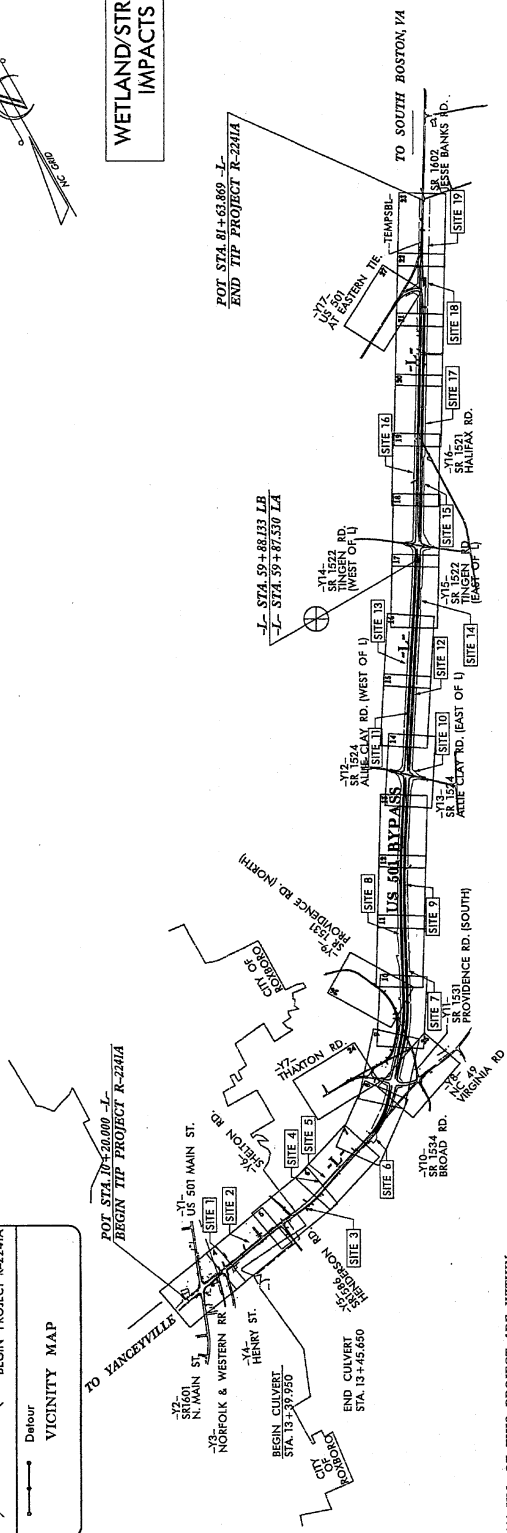
ALL DIMENSIONS IN  
THESE PLANS ARE IN METERS  
AND/OR MILLIMETERS  
UNLESS OTHERWISE SHOWN

STATE PROJECT NUMBER	STATE PROJECT NUMBER
N.C. R-2241A	STATE PROJECT NUMBER
34406.1.1	STATE PROJECT NUMBER
MA-STP-501	STATE PROJECT NUMBER
PE	STATE PROJECT NUMBER

Permit Drawing  
Sheet 1 of 48



WETLAND/STREAM  
IMPACTS



0.833 KM OF THIS PROJECT ARE WITHIN  
THE MUNICIPAL BOUNDARIES OF ROXBORO  
NCDOT CONTACT: MALCOLM WATSON, P.E.  
PROJECT ENGINEER (NCDOT)

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

THIS IS A PRELIMINARY PLAN  
ACCESS PROJECT WITH NO ACCESS  
BEING LIMITED TO POINTS AS  
SHOWN ON THE PLANS

**GRAPHIC SCALE**

PLANS	5 0 10
PROFILE (HORIZONTAL)	5 0 10
PROFILE (VERTICAL)	1 0 2

**DESIGN DATA**

ADT	2007 = 21,725	2027 = 34,142
DIVISION	10,500	17,500
DHV	10%	10%
D	60%	60%
T	11%*	6%**
V	65 km/h	100 km/h

\* TTST 3% + DUAL 8%  
\*\* TTST 2% + DUAL 4%

**PROJECT LENGTH**

LENGTH OF ROADWAY TIP PROJECT R-2241A	= 7.138 km
LENGTH OF STRUCTURES TIP PROJECT R-2241A	= 0.006 km
TOTAL LENGTH OF TIP PROJECT R-2241A	= 7.144 km

Prepared in the Office of  
**RALPH WHITEHEAD ASSOCIATES, INC.**  
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2003 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
OCT. 20, 2006

LETTING DATE:  
OCT. 18, 2011

PROJECT ENGINEER  
**JOSEPH A. FREEMAN, P.E.**

PROJECT DESIGN ENGINEER  
**RICHARD A. ODYSKI, P.E.**

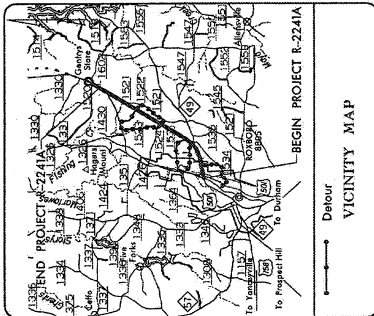
HYDRAULICS ENGINEER

STATE OF NORTH CAROLINA

APPROVED:  
STATE HIGHWAY DESIGN ENGINEER

**PROJECT: 34406.1.1 TIP PROJECT: R-2241A**

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



**STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS**

**PERSON COUNTY**

**LOCATION: US 501 FROM NC 49 IN ROXBORO  
TO SOUTH OF SR 1602**

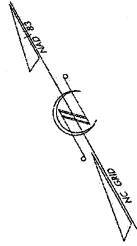
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, GUARDRAIL,  
CULVERTS, AND SIGNALS**



ALL DIMENSIONS IN  
THESE PLANS ARE IN METERS  
AND/OR MILLIMETERS  
UNLESS OTHERWISE SHOWN

STATE	N.C.	PROJECT NUMBER	R-2241A	SHEET NUMBER	1
COUNTY	PERSON	SECTION	MA-STP-501	DATE	PE
DATE	34406.1.1	DESIGNER		APPROVED	

Permit Drawing  
Sheet 2 of 48



**WETLAND/STREAM  
IMPACTS**



0.83 KM OF THIS PROJECT ARE WITHIN  
THE MUNICIPAL BOUNDARIES OF ROXBORO  
NCDOT CONTACT: MALCOLM WATSON, P.E.  
PROJECT ENGINEER (NCDOT)

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

THIS IS A FINAL CONTROLLER  
DRAWING. ALL CHANGES  
BEING LIMITED TO POINTS AS  
SHOWN ON THE PLANS  
PRELIMINARY PLANS  
AS NOTED ON THE DRAWING

**GRAPHIC SCALE**

5	0	10
PLANS		
5	0	10
PROFILE (HORIZONTAL)		
1	0	2
PROFILE (VERTICAL)		

**DESIGN DATA**

5 LANE	4 LANE
ADT = 21,725	ADT = 10,500
2027 = 34,142	17,500
DHV = 10%	10%
D = 60%	60%
T = 11%*	6%**
V = 65 km/h	100 km/h
* TTST 3% + DUAL 8%	
** TTST 2% + DUAL 4%	

**PROJECT LENGTH**

LENGTH OF ROADWAY TIP PROJECT R-2241A	= 7.138 km
LENGTH OF STRUCTURES TIP PROJECT R-2241A	= 0.006 km
TOTAL LENGTH OF TIP PROJECT R-2241A	= 7.144 km

Prepared in the Office of:  
**RALPH WHITEHEAD ASSOCIATES, INC.**  
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
AND STANDARD SPECIFICATIONS

<b>RIGHT OF WAY DATE:</b> OCT. 20, 2005	<b>PROJECT ANGEER:</b> JOSEPH A. FREEMAN, P.E.
<b>LETTING DATE:</b> OCT. 18, 2011	<b>PROJECT DESIGN ENGINEER:</b> RICHARD A. ODYNSKI, P.E.

**HYDRAULICS ENGINEER**

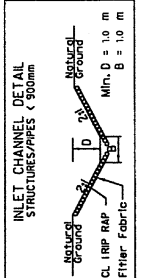
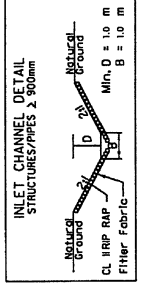
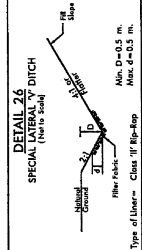
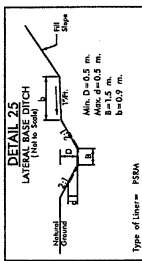
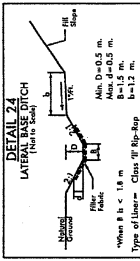
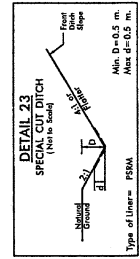
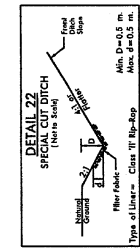
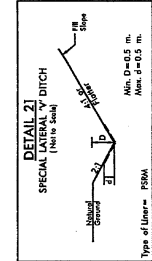
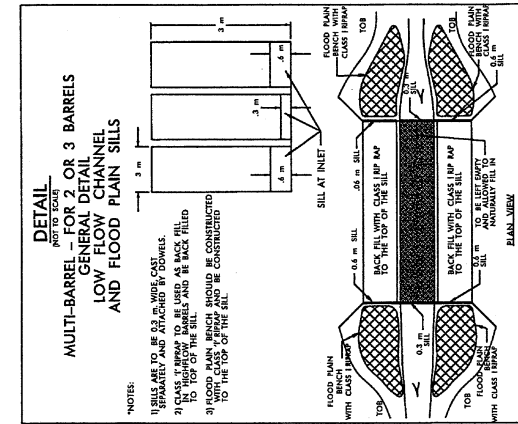
SIGNATURE:	ROADWAY DESIGN ENGINEER
DATE:	

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

APPROVED:  
PROJECT ENGINEER

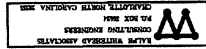


	PROJECT REFERENCE NO.	SHEET NO.
	R-24	21-2
NOT TO SCALE	PAVEMENT DESIGN ENGINEER	
CONST. REV.	ROADWAY DESIGN ENGINEER	
BY REV.	<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



Revised 7/15/12  
 Permit Drawing  
 Sheet 39 of 48

REVISIONS



DATE PLOTTED: 07/15/12 10:00 AM



PROJECT REFERENCE NO. 8-2219A  
 SHEET NO. 4  
 ROADWAY DESIGN ENGINEER  
 HYDRAULICS ENGINEER  
 PRELIMINARY PLANS  
 Permit Drawing  
 Sheet 4 of 48  
 DATE: 6/11/14

**METRICS**  
 1" = 40' HORIZONTAL  
 1" = 10' VERTICAL  
 1" = 10' GRADE

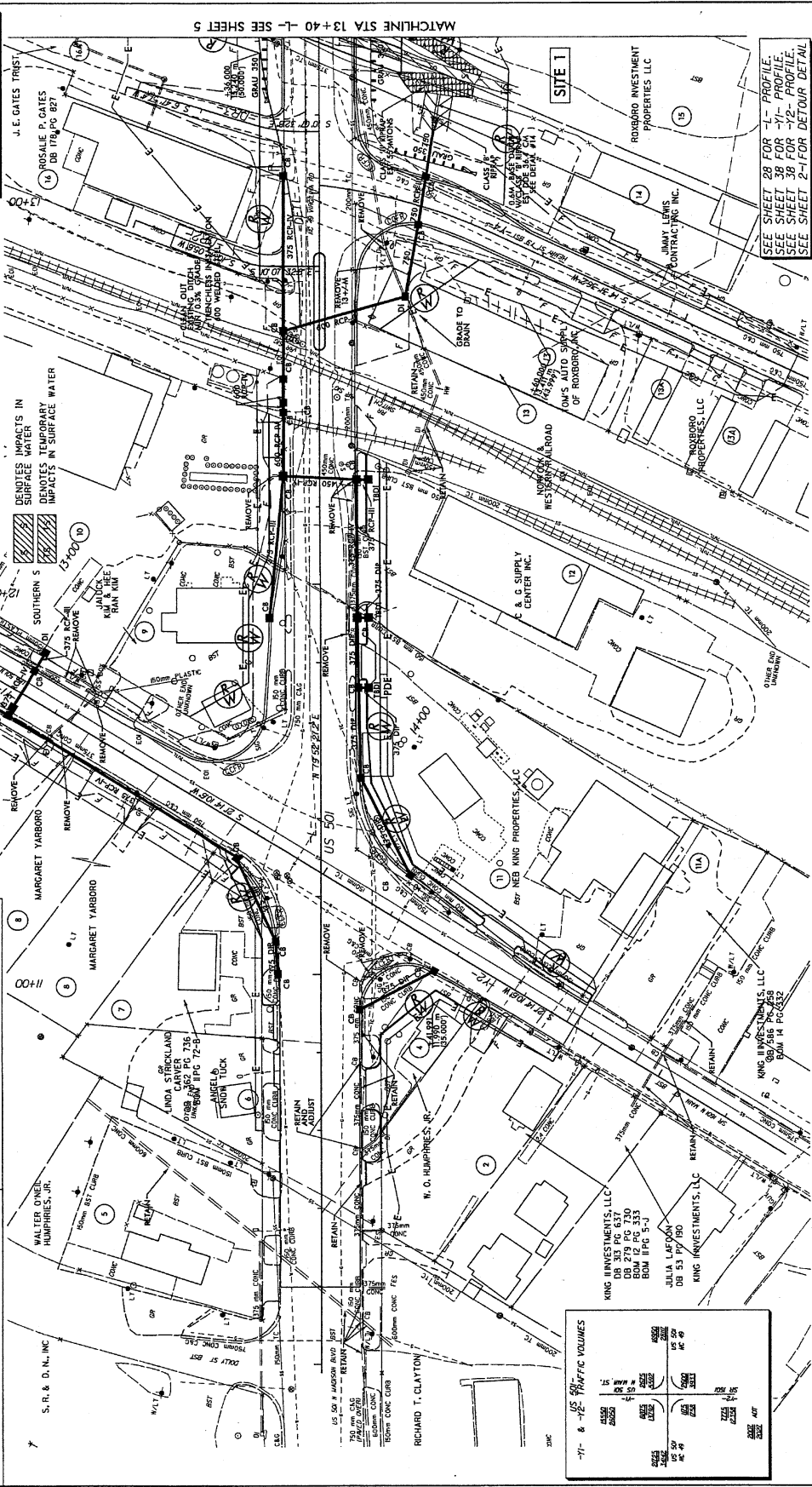
**RAILROAD SKETCH**

**MATCHLINE STA 12+80**  
 MATCHLINE STA 13+40 - SEE SHEET 5

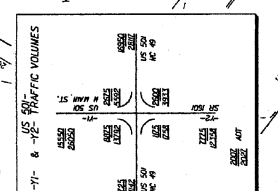
**DATUM DESCRIPTION**  
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY ACT FOR "KA PANEL 13" WITH IAD 83 STATE PLANE GRID COORDINATES OF NORTHINGS 3002611540 EASTING 61630088000. THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT IS 1.000707. THE LOCALIZER GRID BEARING AND LOCALIZED HORIZONTAL DISTANCE FROM "KA PANEL 13" TO I.P.O. STATION 10+2000 IS S 40° 03' 05.5" W 672635.00'. ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES. VERTICAL DATUM USED IS NAVD 83.

- REVISIONS**
- 08-02-14- PARCEL 8, PROPERTY LINE, REMOVED SHARED, UNSTANDARD CANE LINE & ADJACENT PROPERTY ON PARCELS 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

STV / RAITH WATKINS ASSOCIATES, INC.  
 1000 West Park Drive, Suite 200  
 Lincoln, Nebraska 68502  
 Phone: 402-478-5500  
 Fax: 402-478-5501  
 www.stvraith.com

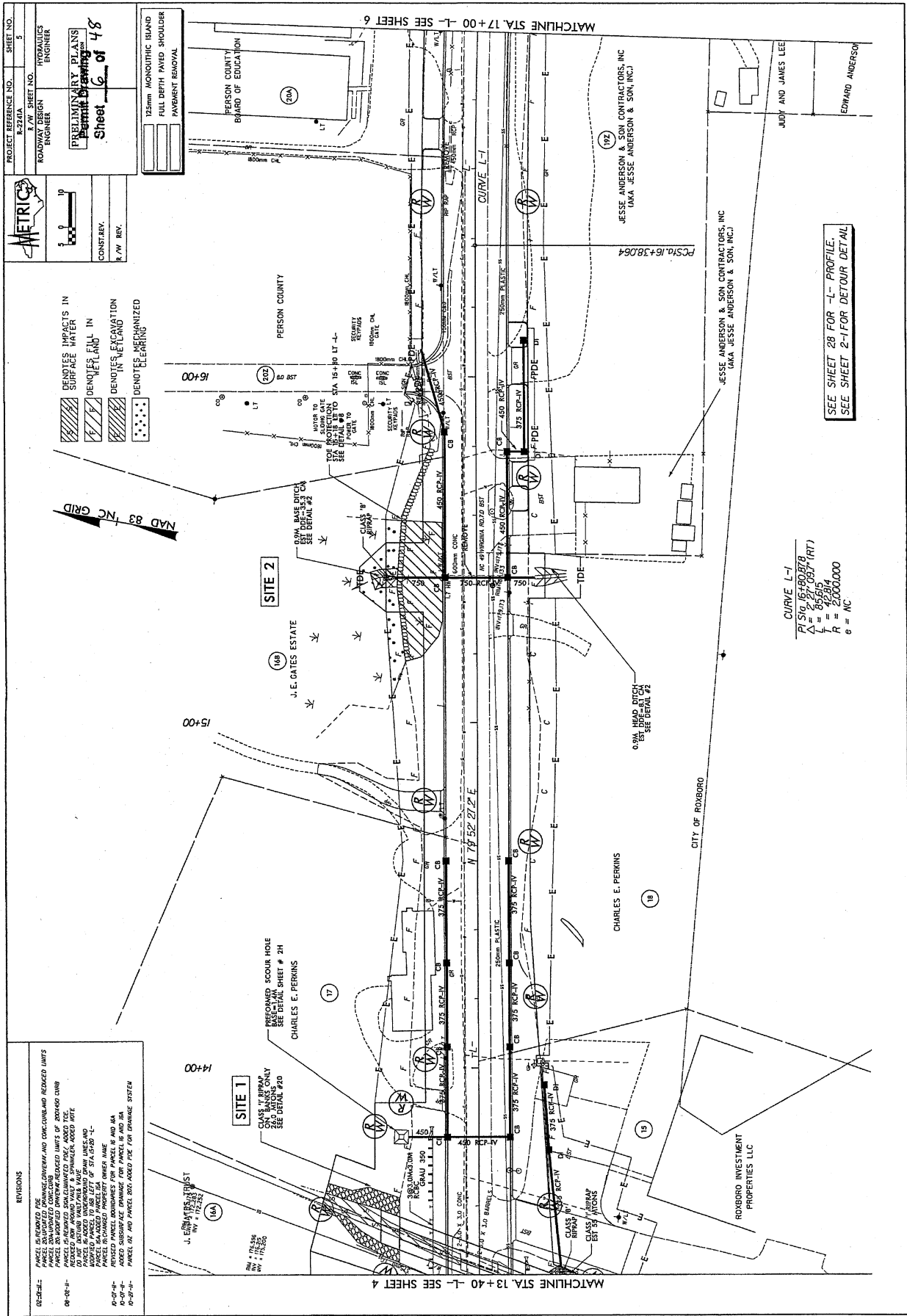


**SEE SHEET 28 FOR -11- PROFILE**  
**SEE SHEET 38 FOR -12- PROFILE**  
**SEE SHEET 2-1 FOR DETOUR DETAIL**



- 08-01-14- PARCELS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.





PROJECT REFERENCE NO. 8-224A  
 R/W SHEET NO. 5  
 HYDRAULICS ENGINEER  
 ROADWAY DESIGN ENGINEER

**PRELIMINARY PLANS**  
 Permit Drawing  
 Sheet 6 of 48

CONST. REV. 1  
 R/W REV. 1

12mm MONOLITHIC ISLAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

PERSON COUNTY BOARD OF EDUCATION

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

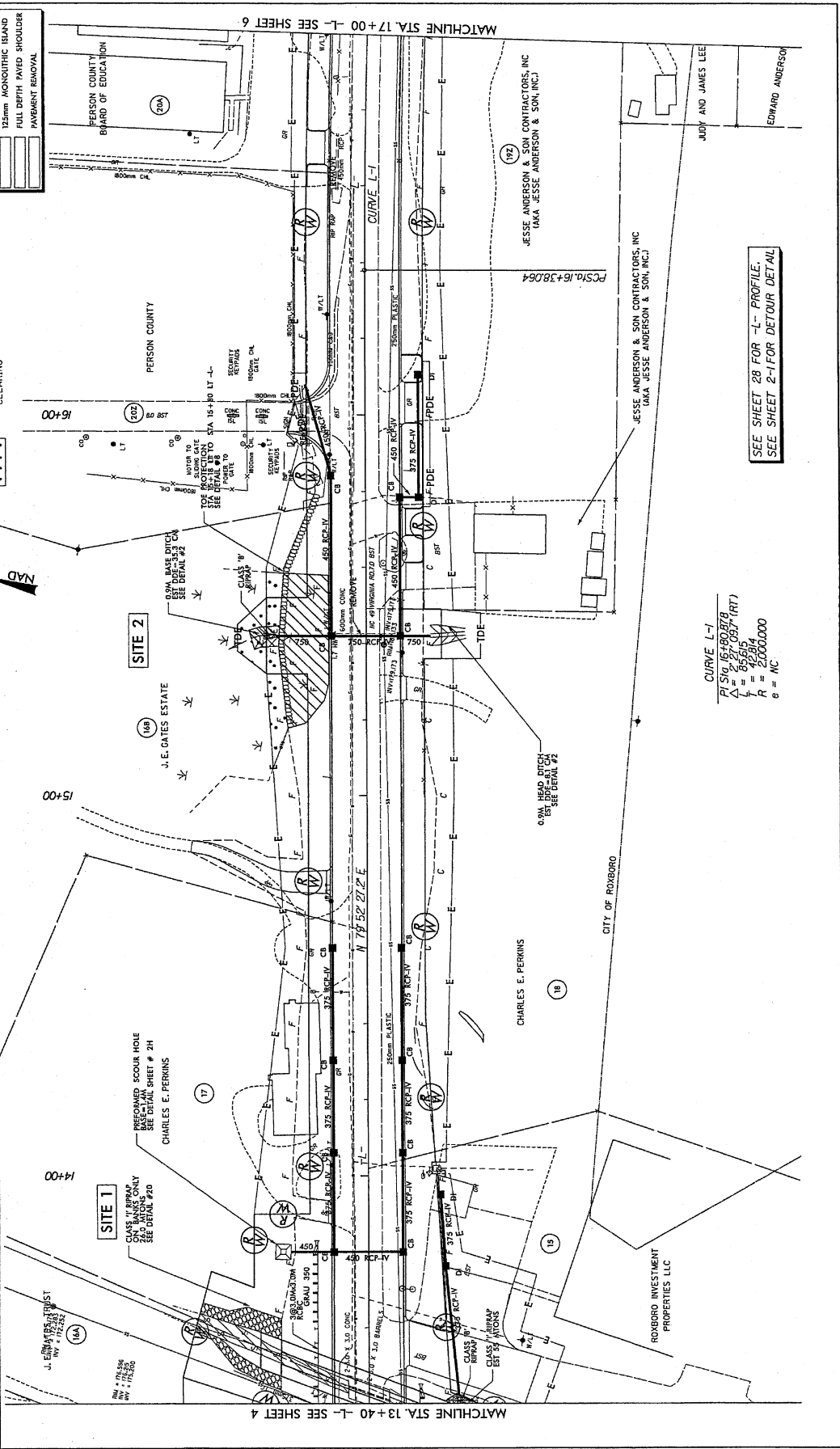
MAD 83 INC GRID

NAD 83 INC GRID

**REVISIONS**

08-20-17 - PARCEL 15 REVERTED TO CLASS 15.10 (WETLAND) AND CONCURRED REDUCED LIMITS  
 PARCEL 15A PARCELED TO CLASS 15.10 (WETLAND)  
 PARCEL 15A PARCELED TO CLASS 15.10 (WETLAND)  
 PARCEL 15A PARCELED TO CLASS 15.10 (WETLAND)  
 PARCEL 15A PARCELED TO CLASS 15.10 (WETLAND)  
 PARCEL 15A PARCELED TO CLASS 15.10 (WETLAND)  
 PARCEL 15A PARCELED TO CLASS 15.10 (WETLAND)  
 PARCEL 15A PARCELED TO CLASS 15.10 (WETLAND)  
 PARCEL 15A PARCELED TO CLASS 15.10 (WETLAND)  
 PARCEL 15A PARCELED TO CLASS 15.10 (WETLAND)  
 PARCEL 15A PARCELED TO CLASS 15.10 (WETLAND)

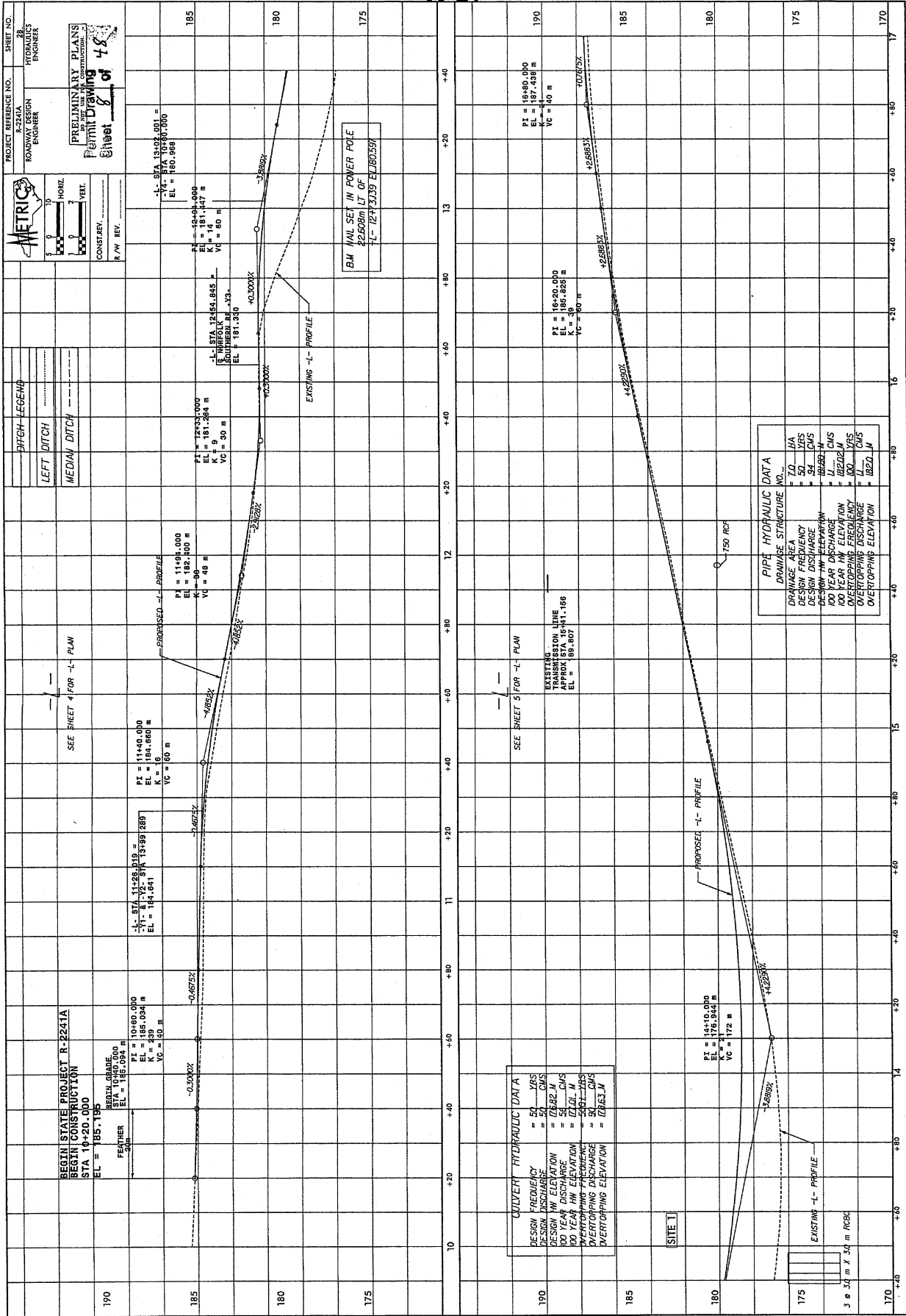
08-20-17 - ADDED A NEW ROWLINE & REWORKED 2 ROWLINES  
 NAME CHANGE PARCEL 15.25  
 CHANGE ROW FROM 25' TO 30'  
 08-20-17 - ADDED A NEW ROWLINE & REWORKED 2 ROWLINES  
 NAME CHANGE PARCEL 15.25  
 CHANGE ROW FROM 25' TO 30'



**CURVE L-1**  
 P = 516.16+50.876  
 Δ = 65.615 (95.7 TRT)  
 L = 65.615  
 T = 42.914  
 R = 22000000  
 e = MC

SEE SHEET 28 FOR L-1 PROFILE.  
 SEE SHEET 2-1 FOR DETOUR DETAIL





**PIPE HYDRAULIC DATA**

DRAINAGE AREA	70.0 HA
DESIGN FREQUENCY	50 YRS
DESIGN DISCHARGE	54 CMS
DESIGN VELOCITY	1.10 M/S
100 YEAR HW ELEVATION	182.02 M
OVERTOPPING FREQUENCY	100 YRS
OVERTOPPING DISCHARGE	1.00 CMS
OVERTOPPING ELEVATION	182.02 M

**QUIVRY HYDRAULIC DATA**

DESIGN FREQUENCY	50 YRS
DESIGN DISCHARGE	54 CMS
DESIGN HW ELEVATION	182.02 M
100 YEAR DISCHARGE	54 CMS
100 YEAR ELEVATION	182.02 M
OVERTOPPING FREQUENCY	50 YRS
OVERTOPPING DISCHARGE	54 CMS
OVERTOPPING ELEVATION	182.02 M

**METRIC**

PROJECT REFERENCE NO. E-2241A  
ROADWAY DESIGN ENGINEER

SHEET NO. 28  
HYDRAULICS ENGINEER

PRELIMINARY PLANS  
Permit Drawing  
Sheet 28 of 48

HORIZ. SCALE: 1" = 30.00 M  
VERT. SCALE: 1" = 3.00 M

CONST. REV. \_\_\_\_\_  
P/W REV. \_\_\_\_\_

**DITCH LEGEND**

LEFT DITCH	---
MEDIAM DITCH	---

SEE SHEET 4 FOR L-PLAN

BEGIN STATE PROJECT R-2241A  
BEGIN CONSTRUCTION  
STA 10+20.000  
EL = 185.195

FEATHER  
STA 10+80.000  
EL = 185.094  
K = 16  
VC = 80 M

REALIGN GRADE  
STA 11+28.019  
EL = 184.800  
K = 16  
VC = 80 M

PROPOSED L-PROFILE  
STA 12+00.000  
EL = 182.100  
K = 9  
VC = 80 M

EXISTING L-PROFILE  
STA 12+55.845  
EL = 181.330  
K = 9  
VC = 80 M

PROPOSED L-PROFILE  
STA 13+00.000  
EL = 180.000  
K = 9  
VC = 80 M

EXISTING L-PROFILE  
STA 13+47.000  
EL = 181.447  
K = 9  
VC = 80 M

PROPOSED L-PROFILE  
STA 14+00.000  
EL = 180.000  
K = 9  
VC = 80 M

EXISTING L-PROFILE  
STA 14+20.000  
EL = 180.000  
K = 9  
VC = 80 M

PROPOSED L-PROFILE  
STA 14+342.000  
EL = 181.166  
K = 9  
VC = 80 M

EXISTING L-PROFILE  
STA 14+359.807  
EL = 181.166  
K = 9  
VC = 80 M

PROPOSED L-PROFILE  
STA 15+00.000  
EL = 180.000  
K = 9  
VC = 80 M

EXISTING L-PROFILE  
STA 15+20.000  
EL = 180.000  
K = 9  
VC = 80 M

PROPOSED L-PROFILE  
STA 15+342.000  
EL = 180.000  
K = 9  
VC = 80 M

EXISTING L-PROFILE  
STA 15+359.807  
EL = 180.000  
K = 9  
VC = 80 M

PROPOSED L-PROFILE  
STA 16+00.000  
EL = 180.000  
K = 9  
VC = 80 M

EXISTING L-PROFILE  
STA 16+20.000  
EL = 180.000  
K = 9  
VC = 80 M

PROPOSED L-PROFILE  
STA 16+359.807  
EL = 180.000  
K = 9  
VC = 80 M

EXISTING L-PROFILE  
STA 17+00.000  
EL = 180.000  
K = 9  
VC = 80 M

EXISTING L-PROFILE  
STA 17+20.000  
EL = 180.000  
K = 9  
VC = 80 M

EXISTING L-PROFILE  
STA 17+359.807  
EL = 180.000  
K = 9  
VC = 80 M

QUIVRY HYDRAULIC DATA  
DESIGN FREQUENCY = 50 YRS  
DESIGN DISCHARGE = 54 CMS  
DESIGN HW ELEVATION = 182.02 M  
100 YEAR DISCHARGE = 54 CMS  
100 YEAR ELEVATION = 182.02 M  
OVERTOPPING FREQUENCY = 50 YRS  
OVERTOPPING DISCHARGE = 54 CMS  
OVERTOPPING ELEVATION = 182.02 M

PIPE HYDRAULIC DATA  
DRAINAGE STRUCTURE NO. \_\_\_\_\_  
DRAINAGE AREA = 70.0 HA  
DESIGN FREQUENCY = 50 YRS  
DESIGN DISCHARGE = 54 CMS  
DESIGN VELOCITY = 1.10 M/S  
100 YEAR HW ELEVATION = 182.02 M  
OVERTOPPING FREQUENCY = 100 YRS  
OVERTOPPING DISCHARGE = 1.00 CMS  
OVERTOPPING ELEVATION = 182.02 M

EXISTING L-PROFILE  
3 @ 34 m X 34 m RCBC

150 RCP

BM (N) SET IN POWER POLE  
STA 12+55.845  
EL 181.330

EXISTING TRANSMISSION LINE  
APPROX. STA 14+11.166  
EL 181.166

QUIVRY HYDRAULIC DATA  
DESIGN FREQUENCY = 50 YRS  
DESIGN DISCHARGE = 54 CMS  
DESIGN HW ELEVATION = 182.02 M  
100 YEAR DISCHARGE = 54 CMS  
100 YEAR ELEVATION = 182.02 M  
OVERTOPPING FREQUENCY = 50 YRS  
OVERTOPPING DISCHARGE = 54 CMS  
OVERTOPPING ELEVATION = 182.02 M

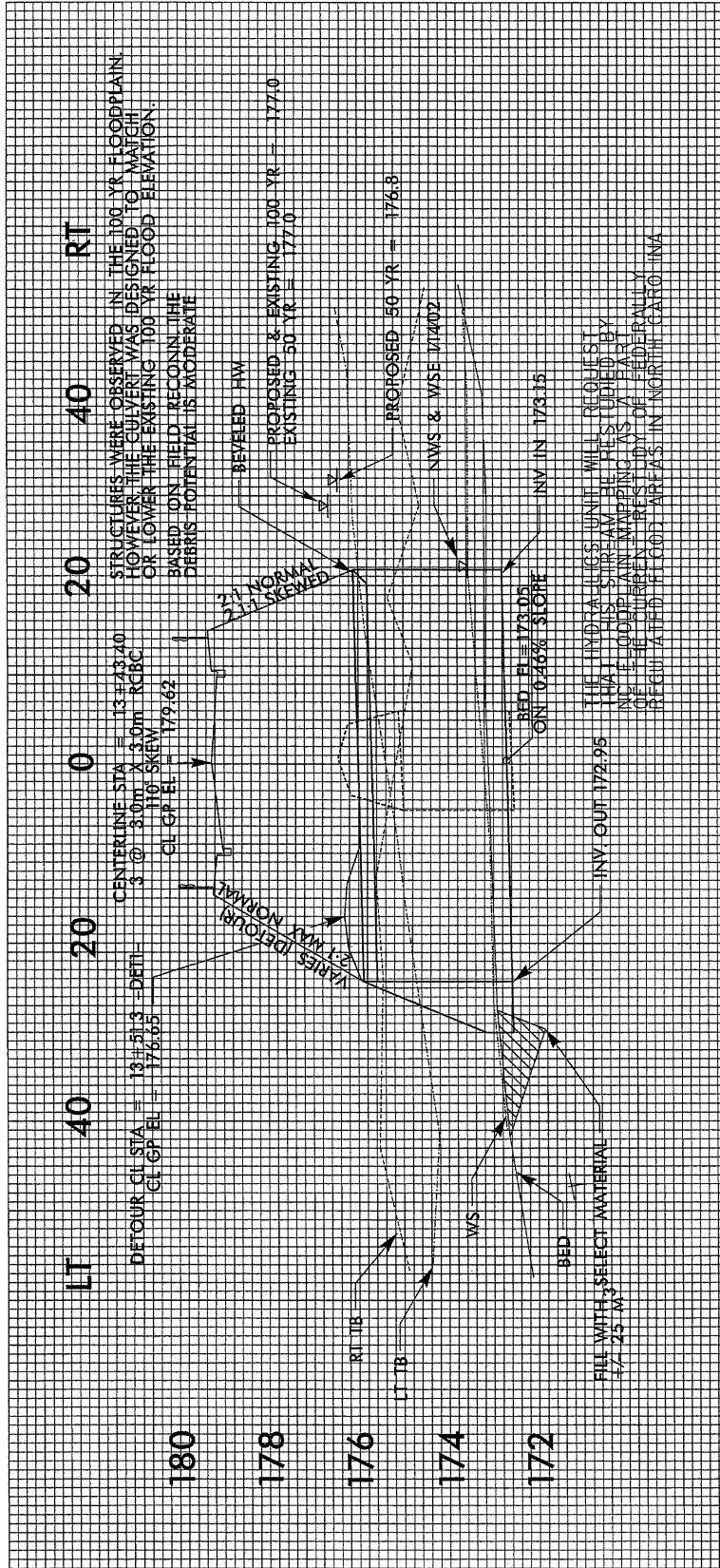
PIPE HYDRAULIC DATA  
DRAINAGE STRUCTURE NO. \_\_\_\_\_  
DRAINAGE AREA = 70.0 HA  
DESIGN FREQUENCY = 50 YRS  
DESIGN DISCHARGE = 54 CMS  
DESIGN VELOCITY = 1.10 M/S  
100 YEAR HW ELEVATION = 182.02 M  
OVERTOPPING FREQUENCY = 100 YRS  
OVERTOPPING DISCHARGE = 1.00 CMS  
OVERTOPPING ELEVATION = 182.02 M

EXISTING L-PROFILE  
3 @ 34 m X 34 m RCBC

150 RCP

BM (N) SET IN POWER POLE  
STA 12+55.845  
EL 181.330

EXISTING TRANSMISSION LINE  
APPROX. STA 14+11.166  
EL 181.166



PROJECT REFERENCE NO. R-224A  
 & W.V. SHEET NO. HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

Permit Drawing 48  
 Sheet 10 of 48

CONST. REV. R/W REV.

125mm MONOLITHIC ISLAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL  
 PROPOSED SIGNAL

**METRIC**

Scale: 1" = 40'

NAD 83 N.C. GRID

DENOTES IMPACTS IN SURFACE WATER

THE MICHAEL S. TURNER ALASKA TRUST

REVISIONS

DATE: 08-02-14 CHANGED PROPERTY OWNERS NAME OF PARCELS 22, 23, 24, 30, 34 TO MATCH SURFACE WATER CONTOUR

DATE: 08-02-14 CHANGED PROPERTY OWNERS NAME OF PARCELS 25, 26, 27, 28, 29, 31 TO MATCH SURFACE WATER CONTOUR

DATE: 08-02-14 CHANGED PROPERTY OWNERS NAME OF PARCELS 32, 33 TO MATCH SURFACE WATER CONTOUR

DATE: 08-02-14 CHANGED PROPERTY OWNERS NAME OF PARCELS 35, 36 TO MATCH SURFACE WATER CONTOUR

DATE: 08-02-14 CHANGED PROPERTY OWNERS NAME OF PARCELS 37, 38 TO MATCH SURFACE WATER CONTOUR

DATE: 08-02-14 CHANGED PROPERTY OWNERS NAME OF PARCELS 39, 40 TO MATCH SURFACE WATER CONTOUR

DATE: 08-02-14 CHANGED PROPERTY OWNERS NAME OF PARCELS 41, 42 TO MATCH SURFACE WATER CONTOUR

DATE: 08-02-14 CHANGED PROPERTY OWNERS NAME OF PARCELS 43, 44 TO MATCH SURFACE WATER CONTOUR

DATE: 08-02-14 CHANGED PROPERTY OWNERS NAME OF PARCELS 45, 46 TO MATCH SURFACE WATER CONTOUR

DATE: 08-02-14 CHANGED PROPERTY OWNERS NAME OF PARCELS 47, 48 TO MATCH SURFACE WATER CONTOUR

DATE: 08-02-14 CHANGED PROPERTY OWNERS NAME OF PARCELS 49, 50 TO MATCH SURFACE WATER CONTOUR

STV / PATH WASHINGTON ASSOCIATES, INC.  
 1000 West Mitchell St., Ste. 200  
 Lincoln, NE 68501  
 NC License Number: F-0981

08-23-14: SHOWN WELL/DRAIN RECONNECTION ON PARCELS 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

08-23-14: PARCELS 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

08-23-14: PARCELS 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

08-23-14: PARCELS 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

08-23-14: PARCELS 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

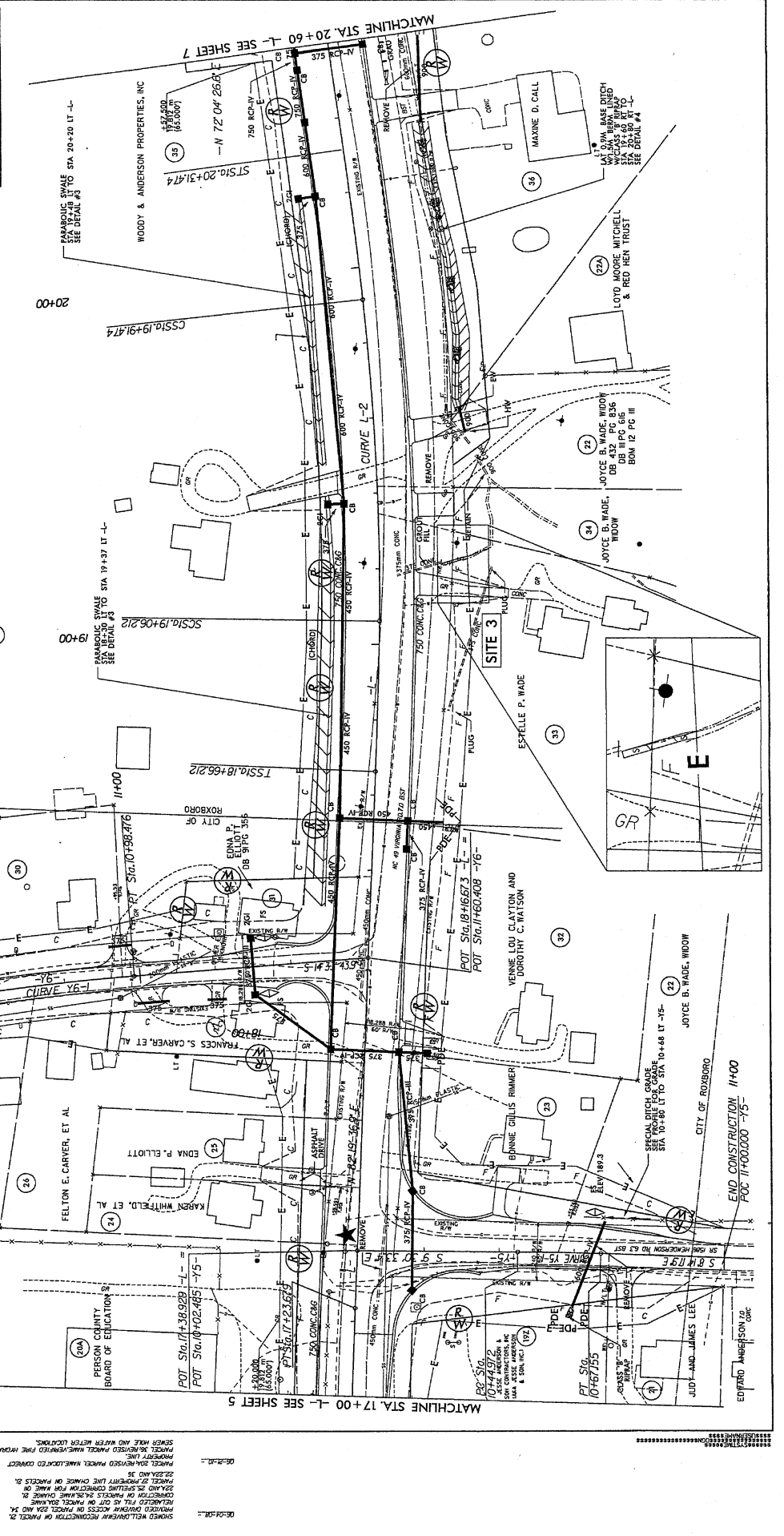
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08-23-14: PARCELS 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

08-23-14: PARCELS 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

08-23-14: PARCELS 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

08-23-14: PARCELS 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50



08-23-14: SHOWN WELL/DRAIN RECONNECTION ON PARCELS 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

08-23-14: PARCELS 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

08-23-14: PARCELS 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

08-23-14: PARCELS 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

08-23-14: PARCELS 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50

**METRIC**

PROJECT REFERENCE NO. 8  
 SHEET NO. 6

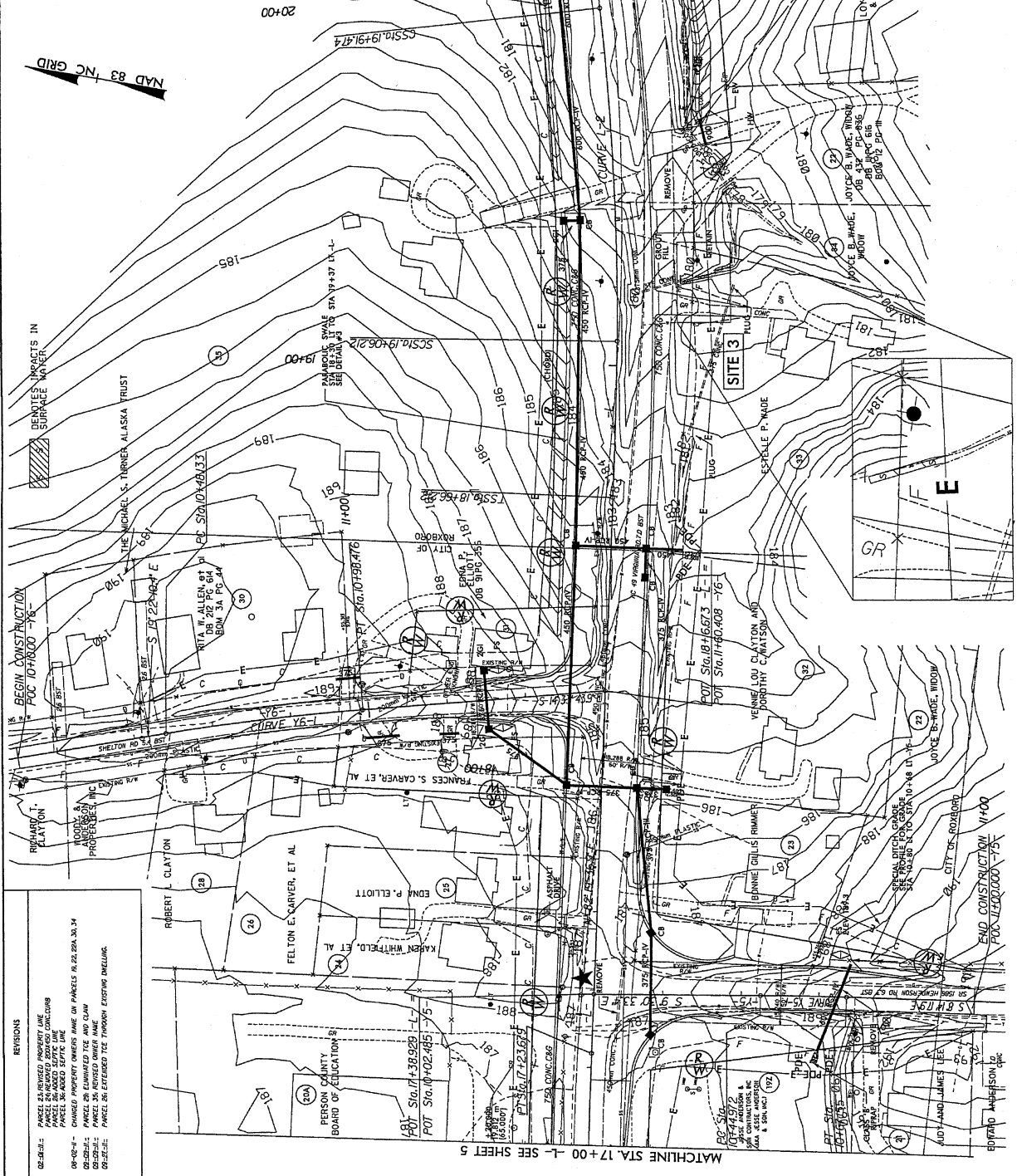
ROADWAY DESIGN ENGINEER  
 HYDRAULICS ENGINEER

PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION.

CONSTRUCTION  
 R/W REV.

- 155mm MONOTURF ISLAND
- FULL DEPTH PAVED SHOULDER
- PAVEMENT REMOVAL
- PROPOSED SIGNAL

Permit Drawing  
 Sheet 11 of 48



**REVISIONS**

02-28-11: PARCEL SHOWN AS REVISED PROPERTY LINE  
 PARCEL SHOWN AS REVISED EXISTING CONCOURSE  
 PARCEL SHOWN AS REVISED EXISTING DRIVE  
 PARCEL SHOWN AS REVISED SEPTIC LINE

08-06-11: CHANGED PROPERTY OWNERS NAME ON PARCELS RA.02.02A.30, 34  
 NO CHANGE TO THE ROAD CENTERLINE  
 02-28-11: PARCEL SHOWN AS REVISED EXISTING DRIVE AND CLAW  
 02-28-11: PARCEL SHOWN AS REVISED EXISTING DRIVE AND CLAW  
 02-28-11: PARCEL SHOWN AS REVISED EXISTING DRIVE AND CLAW

STV/Earthlink Associates, Inc.  
 1000 West Main Street, Suite 200  
 NC License Number: F-3991

SEARCHED FOR AND FOUND WITHIN THE PLANS:  
 PARCELS SHOWN AS REVISED PROPERTY LINE  
 PARCELS SHOWN AS REVISED EXISTING CONCOURSE  
 PARCELS SHOWN AS REVISED EXISTING DRIVE  
 PARCELS SHOWN AS REVISED SEPTIC LINE

02-28-11: PARCEL SHOWN AS REVISED PROPERTY LINE  
 PARCEL SHOWN AS REVISED EXISTING CONCOURSE  
 PARCEL SHOWN AS REVISED EXISTING DRIVE  
 PARCEL SHOWN AS REVISED SEPTIC LINE

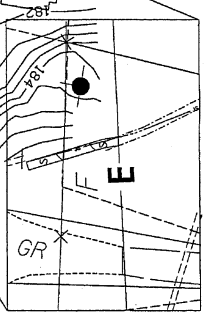
02-28-11: PARCEL SHOWN AS REVISED PROPERTY LINE  
 PARCEL SHOWN AS REVISED EXISTING CONCOURSE  
 PARCEL SHOWN AS REVISED EXISTING DRIVE  
 PARCEL SHOWN AS REVISED SEPTIC LINE

02-28-11: PARCEL SHOWN AS REVISED PROPERTY LINE  
 PARCEL SHOWN AS REVISED EXISTING CONCOURSE  
 PARCEL SHOWN AS REVISED EXISTING DRIVE  
 PARCEL SHOWN AS REVISED SEPTIC LINE

02-28-11: PARCEL SHOWN AS REVISED PROPERTY LINE  
 PARCEL SHOWN AS REVISED EXISTING CONCOURSE  
 PARCEL SHOWN AS REVISED EXISTING DRIVE  
 PARCEL SHOWN AS REVISED SEPTIC LINE

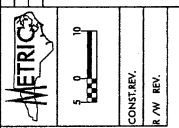
02-28-11: PARCEL SHOWN AS REVISED PROPERTY LINE  
 PARCEL SHOWN AS REVISED EXISTING CONCOURSE  
 PARCEL SHOWN AS REVISED EXISTING DRIVE  
 PARCEL SHOWN AS REVISED SEPTIC LINE

02-28-11: PARCEL SHOWN AS REVISED PROPERTY LINE  
 PARCEL SHOWN AS REVISED EXISTING CONCOURSE  
 PARCEL SHOWN AS REVISED EXISTING DRIVE  
 PARCEL SHOWN AS REVISED SEPTIC LINE





PROJECT REFERENCE NO.	SHEET NO.
7-21-17	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
CONSTABLY	R/W REV.

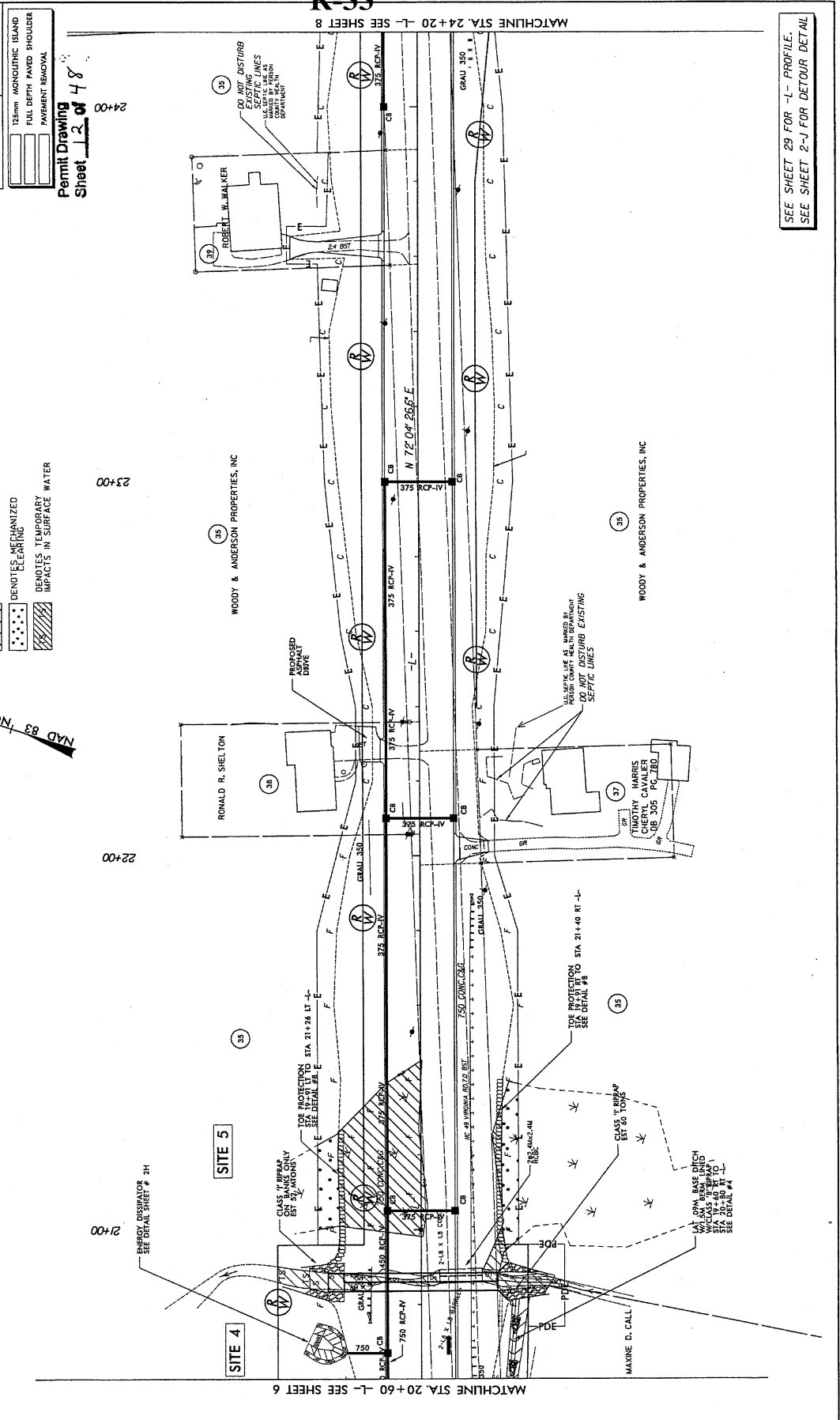


**METRIC**

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

**REVISIONS**  
 02-01-18-1: SHIFTED ROW MOMENT OFF OF PROPERTY LINE AND PROPERTY LINE CHANGE PARCELS 35, 36  
 02-01-18-2: PARCEL 35 REWORKED PARCEL AND DIMENSION OF PARCEL 35  
 02-01-18-3: PARCEL 36 REWORKED PARCEL AND DIMENSION OF PARCEL 36  
 02-01-18-4: PARCEL 37 ADDED MEET ART TO DISTURB SEPTIC LINES  
 02-01-18-5: PARCEL 35 ADDED TOE 3' SETBACK SOUTHWARD OF SEPTIC LINES  
 02-01-18-6: PARCEL 35 REVISED OWNER NAME

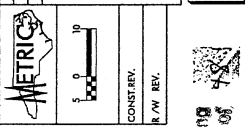
**STV/Ralph Whitehead Associates, Inc.**  
 1005 CHERRYWOOD DRIVE, SUITE 100  
 CHARLOTTE, NC 28226  
 PHONE: 704.366.8000  
 FAX: 704.366.8001  
 NC LICENSE NUMBER: E-15991



**Permit Drawing**  
 Sheet 12 of 48

SEE SHEET 29 FOR -J- PROFILE.  
 SEE SHEET 2-J FOR DETOUR DETAIL.

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



Permit Drawing  
Sheet 13 of 48

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

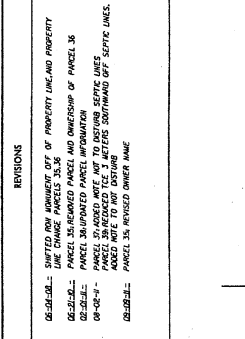
125mm MONOLITHIC ISLAND  
FULL DEPTH PAVED SHOULDER  
PAVEMENT REMOVAL

MAD 83 1/4" NC GRID

REVISIONS

- 02-20-21 - SHIFTED ROW ADJACENT OFF OF PROPERTY LINE AND PROPERTY LINE CHANGE PARCELS 35,36
- 02-20-21 - PARCELS 35 (REMOVED PARCEL) AND BOUNDARY OF PARCEL 35
- 02-20-21 - PARCELS 35 (REMOVED PARCEL) AND BOUNDARY OF PARCEL 35
- 02-20-21 - PARCELS 35 (REMOVED PARCEL) AND BOUNDARY OF PARCEL 35
- 02-20-21 - PARCELS 35 (REMOVED PARCEL) AND BOUNDARY OF PARCEL 35
- 02-20-21 - PARCELS 35 (REMOVED PARCEL) AND BOUNDARY OF PARCEL 35

STV/Ralph Whithead Associates, Inc.  
1000 Chesapeake, NC 28504  
NC License Number: E-0991

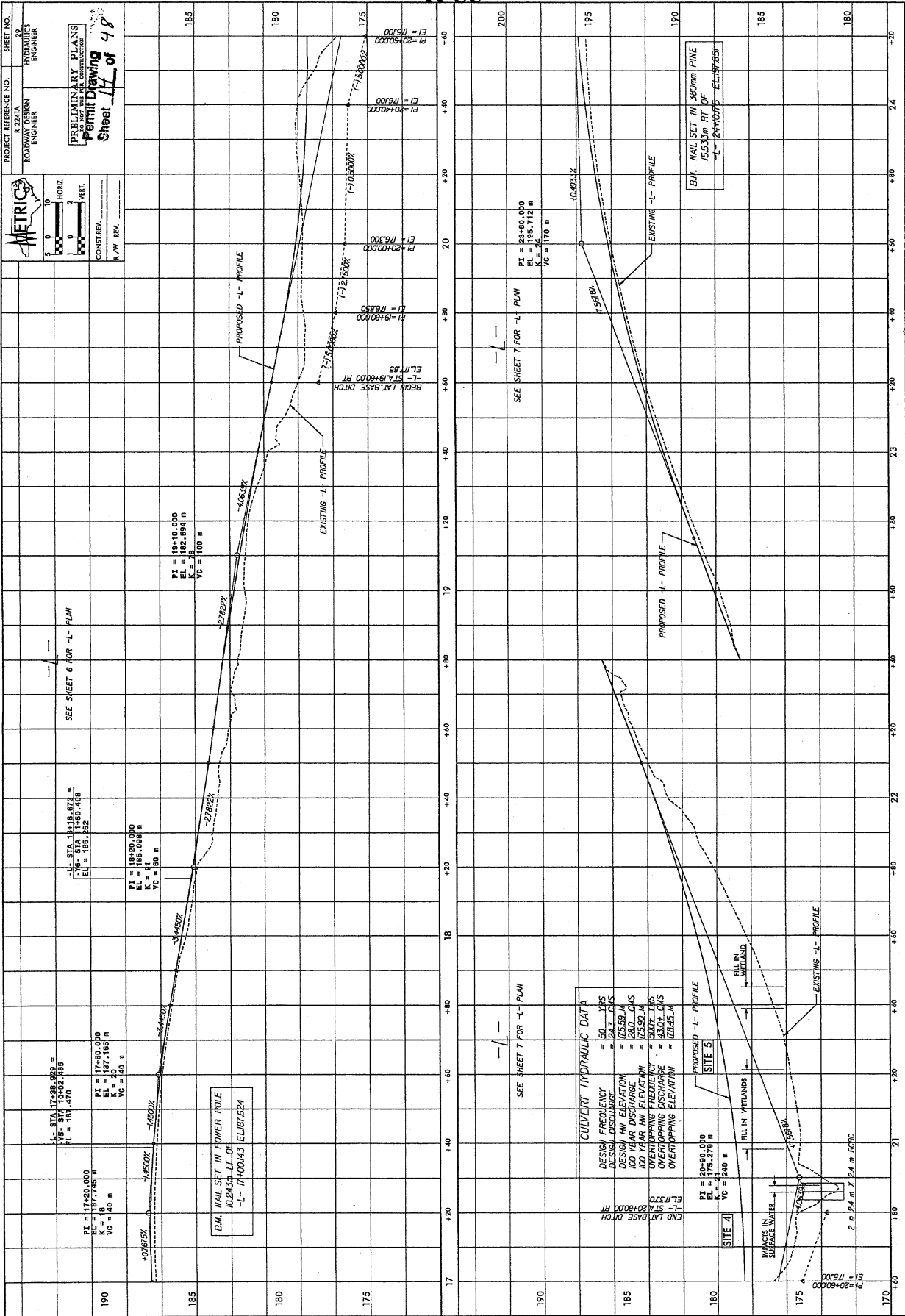


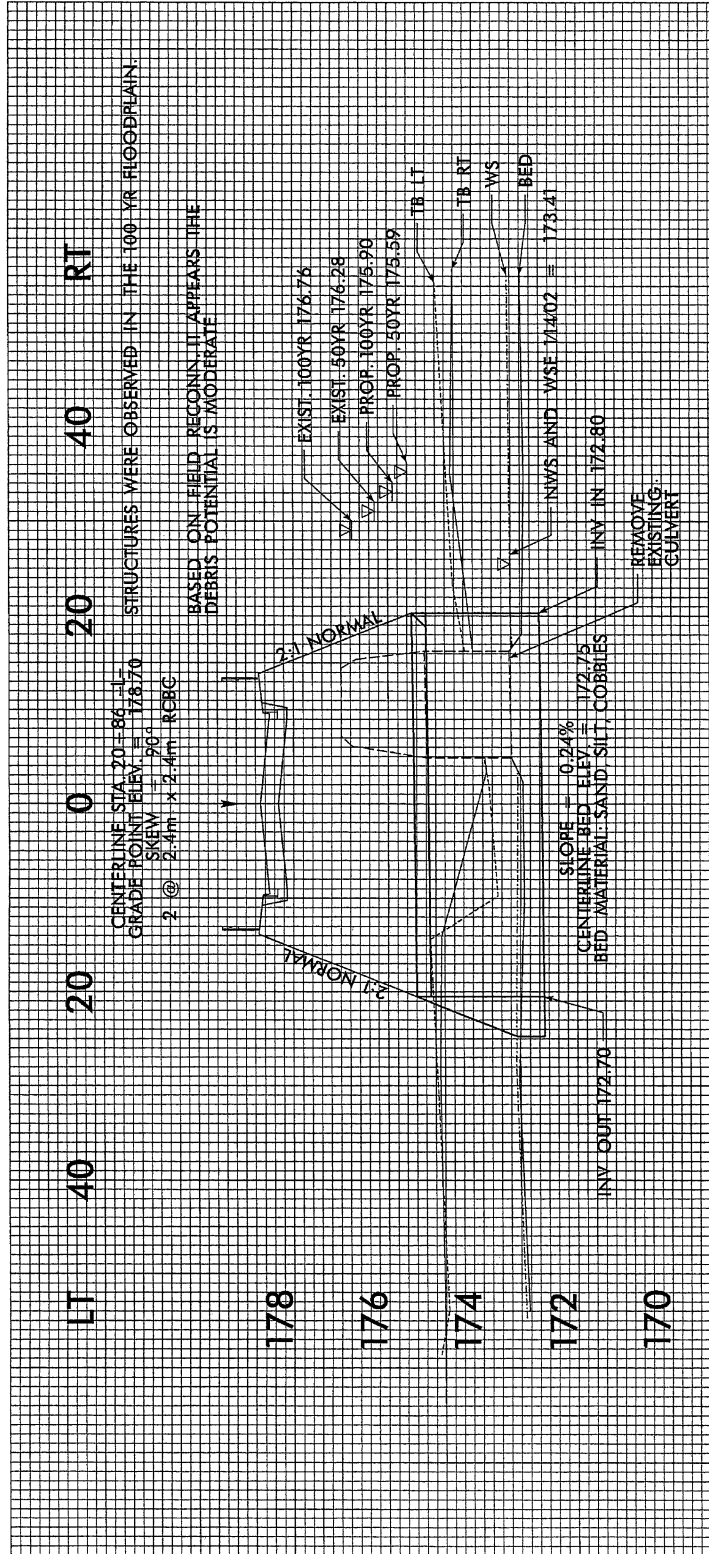
SEE SHEET 29 FOR -L- PROFILE.  
SEE SHEET 2-J FOR DETOUR DETAIL.

R-34

MATCHLINE STA. 20+60 -L- SEE SHEET 6

MATCHLINE STA. 24+20 -L- SEE SHEET 8



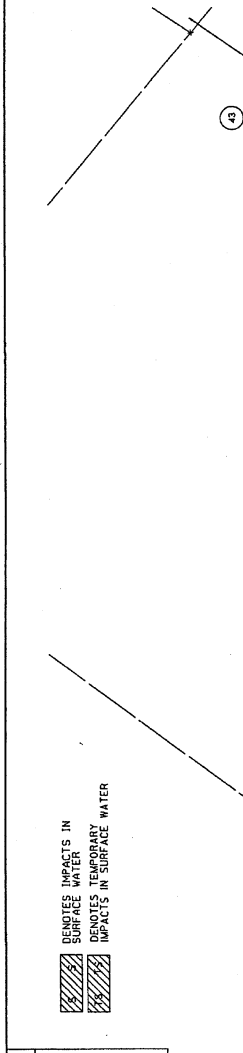


**METRIC**

PROJECT REFERENCE NO. 8  
 STATE SHEET NO. 8  
 ROADWAY DESIGN ENGINEER  
 PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION  
 Permit Drawing 48  
 Sheet 16 of 104  
 DATE: 6/13/12

CONST. REV.  
 P.W. REV.

125mm MONOLITHIC ISLAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

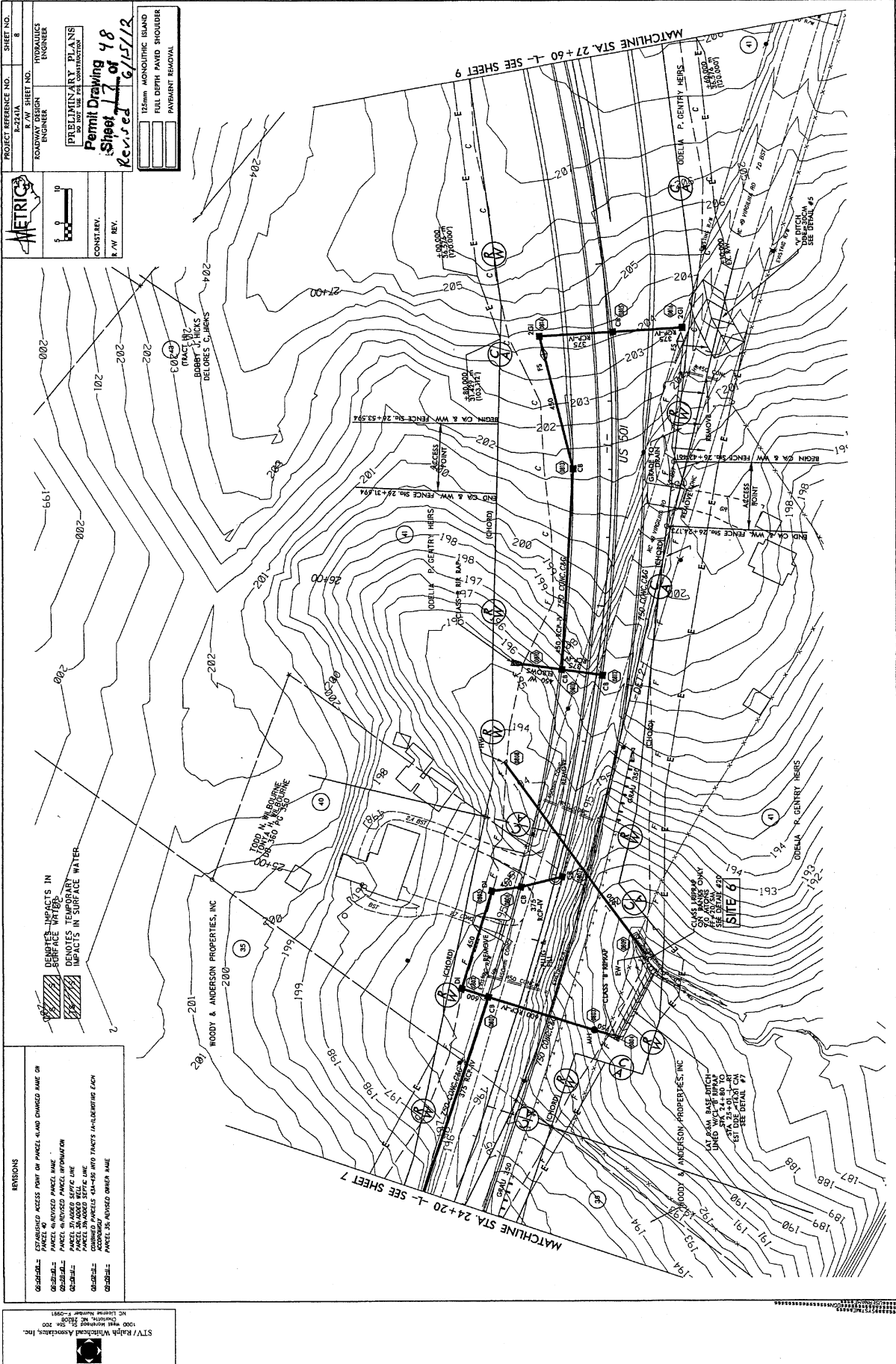


**REVISIONS**

02-01-12: ESTABLISHED ACCESS POINT OF PARCEL 4 AND CHANGED NAME ON PARCEL 40  
 02-01-12: ADDED PARCEL NAME  
 02-01-12: PARCEL 40 ADDED PARCEL INFORMATION  
 02-01-12: PARCEL 40 ADDED SETBACK LINE  
 02-01-12: PARCEL 30 ADDED SETBACK LINE  
 02-01-12: COMBINED PARCELS 43A-43B INTO PARCELS 43A/43B/43C EACH  
 02-01-12: PARCEL 30 REVISED OWNER NAME

STV/RAH Whitefield Associates, Inc.  
 1000 West Main Street, Suite 200  
 Denver, CO 80202  
 NC License Number: F-09971

DENOTES IMPACTS IN SURFACE WATER  
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER



PROJECT REFERENCE NO. 12-221A  
 SHEET NO. 8  
 ROADWAY DESIGN ENGINEER  
 HYDRAULICS ENGINEER

PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION  
**Permit Drawing**  
**Sheet 7 of 48**  
 Revised 6/15/12

CONST. REV.  
 P.W. REV.

15mm MONOLITHIC ISLAND  
 15mm BULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

LEGEND:  
 Hatched box: DENOTES IMPACTS IN SURFACE WATER  
 Dashed box: DENOTES TEMPORARY IMPACTS IN SURFACE WATER

LEGEND:  
 Solid line: ESTABLISHED ACCESS POINT OF PARCEL AND DIMENSION NAME ON PARCEL 40  
 Dashed line: UNADJUDICATED PARCEL NAME  
 Dotted line: ADJUDICATED PARCEL NAME  
 Solid line with dots: PARCEL DIMENSIONED SERVICE LINE  
 Solid line with dashes: PARCEL DIMENSIONED SERVICE LINE  
 Solid line with crosses: DIMENSIONED PARCELS 43A-43B AND TRACTS IN-UNDERWAY EACH  
 Solid line with stars: PARCELS 38 ADJUDICATED OWNER NAME

LEGEND:  
 Solid line with circles: 1000' WET WEATHER DIVERSION LINE  
 Solid line with squares: 1000' WET WEATHER DIVERSION LINE  
 Solid line with triangles: 1000' WET WEATHER DIVERSION LINE  
 Solid line with diamonds: 1000' WET WEATHER DIVERSION LINE

LEGEND:  
 Solid line with stars: 1000' WET WEATHER DIVERSION LINE  
 Solid line with circles: 1000' WET WEATHER DIVERSION LINE  
 Solid line with squares: 1000' WET WEATHER DIVERSION LINE  
 Solid line with triangles: 1000' WET WEATHER DIVERSION LINE

LEGEND:  
 Solid line with stars: 1000' WET WEATHER DIVERSION LINE  
 Solid line with circles: 1000' WET WEATHER DIVERSION LINE  
 Solid line with squares: 1000' WET WEATHER DIVERSION LINE  
 Solid line with triangles: 1000' WET WEATHER DIVERSION LINE

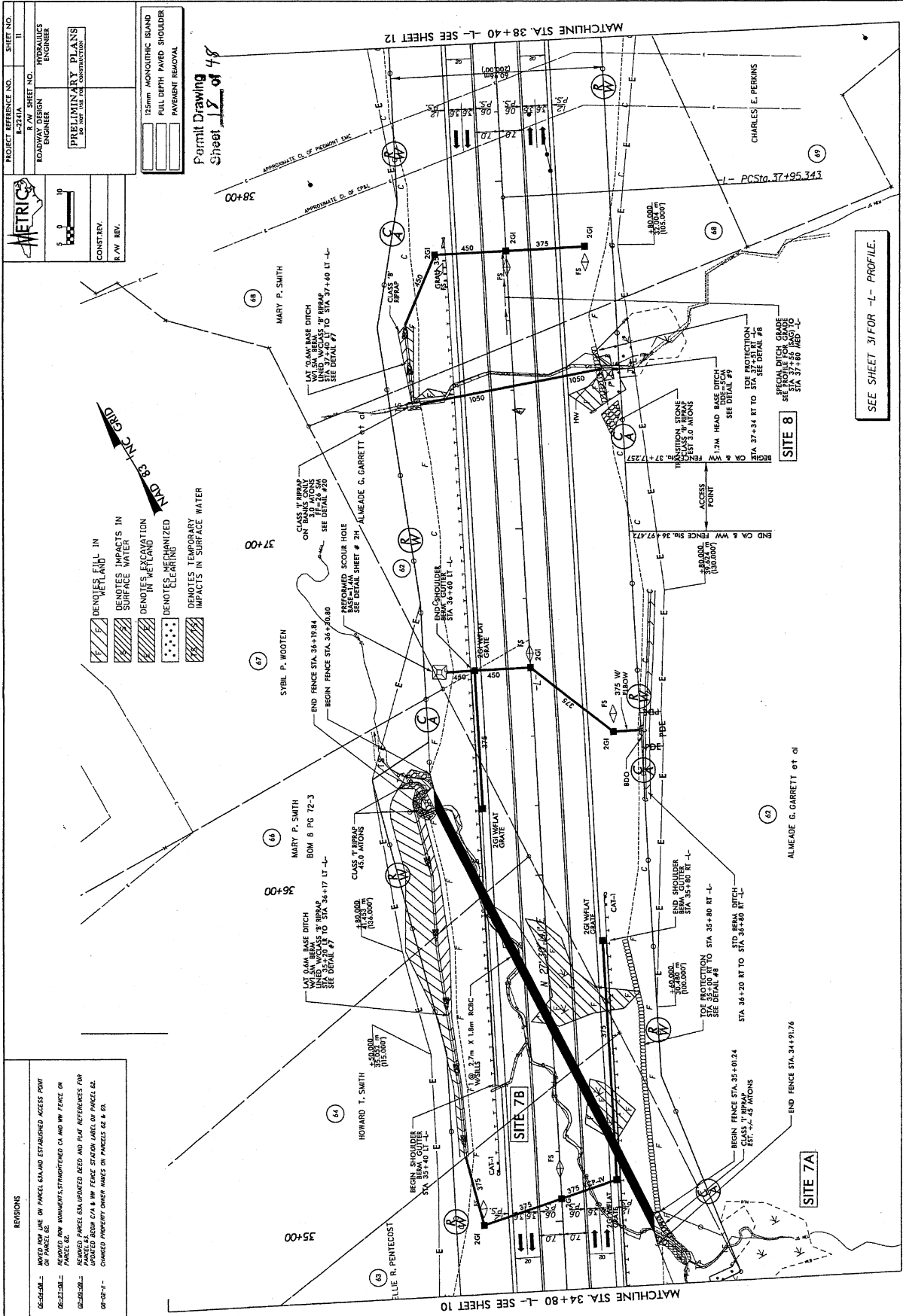
LEGEND:  
 Solid line with stars: 1000' WET WEATHER DIVERSION LINE  
 Solid line with circles: 1000' WET WEATHER DIVERSION LINE  
 Solid line with squares: 1000' WET WEATHER DIVERSION LINE  
 Solid line with triangles: 1000' WET WEATHER DIVERSION LINE

LEGEND:  
 Solid line with stars: 1000' WET WEATHER DIVERSION LINE  
 Solid line with circles: 1000' WET WEATHER DIVERSION LINE  
 Solid line with squares: 1000' WET WEATHER DIVERSION LINE  
 Solid line with triangles: 1000' WET WEATHER DIVERSION LINE

LEGEND:  
 Solid line with stars: 1000' WET WEATHER DIVERSION LINE  
 Solid line with circles: 1000' WET WEATHER DIVERSION LINE  
 Solid line with squares: 1000' WET WEATHER DIVERSION LINE  
 Solid line with triangles: 1000' WET WEATHER DIVERSION LINE

LEGEND:  
 Solid line with stars: 1000' WET WEATHER DIVERSION LINE  
 Solid line with circles: 1000' WET WEATHER DIVERSION LINE  
 Solid line with squares: 1000' WET WEATHER DIVERSION LINE  
 Solid line with triangles: 1000' WET WEATHER DIVERSION LINE

STV / Ralph Whitbeck Associates, Inc.  
 1000 West Highland Drive, Suite 200  
 Denver, Colorado 80202  
 NC License Number: F-09951



**METRICS**

PROJECT REFERENCE NO. E-2324A  
SHEET NO. II

R/W SHEET NO. HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

**PRELIMINARY PLANS**  
DO NOT BE USED FOR CONSTRUCTION

CONSTRY.  
R/W REV.

12mm MONOTYPIC ISLAND  
FULL DEPTH PAVED SHOULDER  
PAVEMENT REMOVAL

Permit Drawing  
Sheet 12 of 48

- REVISIONS**
- 06-28-04 - MOVED ROW LINE ON PARCELS 68 AND ESTABLISHED ACCESS POINT ON PARCELS 62.
  - 06-22-04 - ADDED ROW BOUNDARIES, STRENGTHENED CA AND WW FENCE ON PARCELS 68.
  - 06-22-04 - REMOVED PARCEL 68 IMPROVED DITCH AND FLAG REFERENCES FOR PARCELS 68. BEGON CA & WW FENCE SECTION LATER ON PARCELS 62.
  - 06-02-04 - CHANGED PROPERTY OWNER NAMES ON PARCELS 62 & 68.

- DEFINITIONS**
- DIAGONAL HATCHING - DENOTES FILL IN DENSELY IMPACTS IN SURFACE WATER
  - CROSS-HATCHING - DENOTES WEETLAND
  - DOTTED PATTERNS - DENOTES MECHANIZED CLEARING
  - SLANTED PATTERNS - DENOTES TEMPORARY IMPACTS IN SURFACE WATER

**NOTES**

1. APPROXIMATE C.O. OF PEAKWAY EDC

2. APPROXIMATE C.O. OF CPAL

3. MARY P. SMITH

4. SYBIL P. WOOTEN

5. MARY P. SMITH BOM B PG 72-3

6. HOWARD T. SMITH

7. ALLE R. PENTECOST

8. ALMEADE G. GARRETT ET AL

**REVISIONS**

06-28-04 - MOVED ROW LINE ON PARCELS 68 AND ESTABLISHED ACCESS POINT ON PARCELS 62.

06-22-04 - ADDED ROW BOUNDARIES, STRENGTHENED CA AND WW FENCE ON PARCELS 68.

06-22-04 - REMOVED PARCEL 68 IMPROVED DITCH AND FLAG REFERENCES FOR PARCELS 68. BEGON CA & WW FENCE SECTION LATER ON PARCELS 62.

06-02-04 - CHANGED PROPERTY OWNER NAMES ON PARCELS 62 & 68.

STV / Ralph Whitehead Associates, Inc.  
1500 West 20th Street, Suite 200  
Lincoln, Nebraska 68502  
Phone: 402.441.1200  
Fax: 402.441.1201  
www.stvwhitehead.com

SEE SHEET 31 FOR -L- PROFILE.

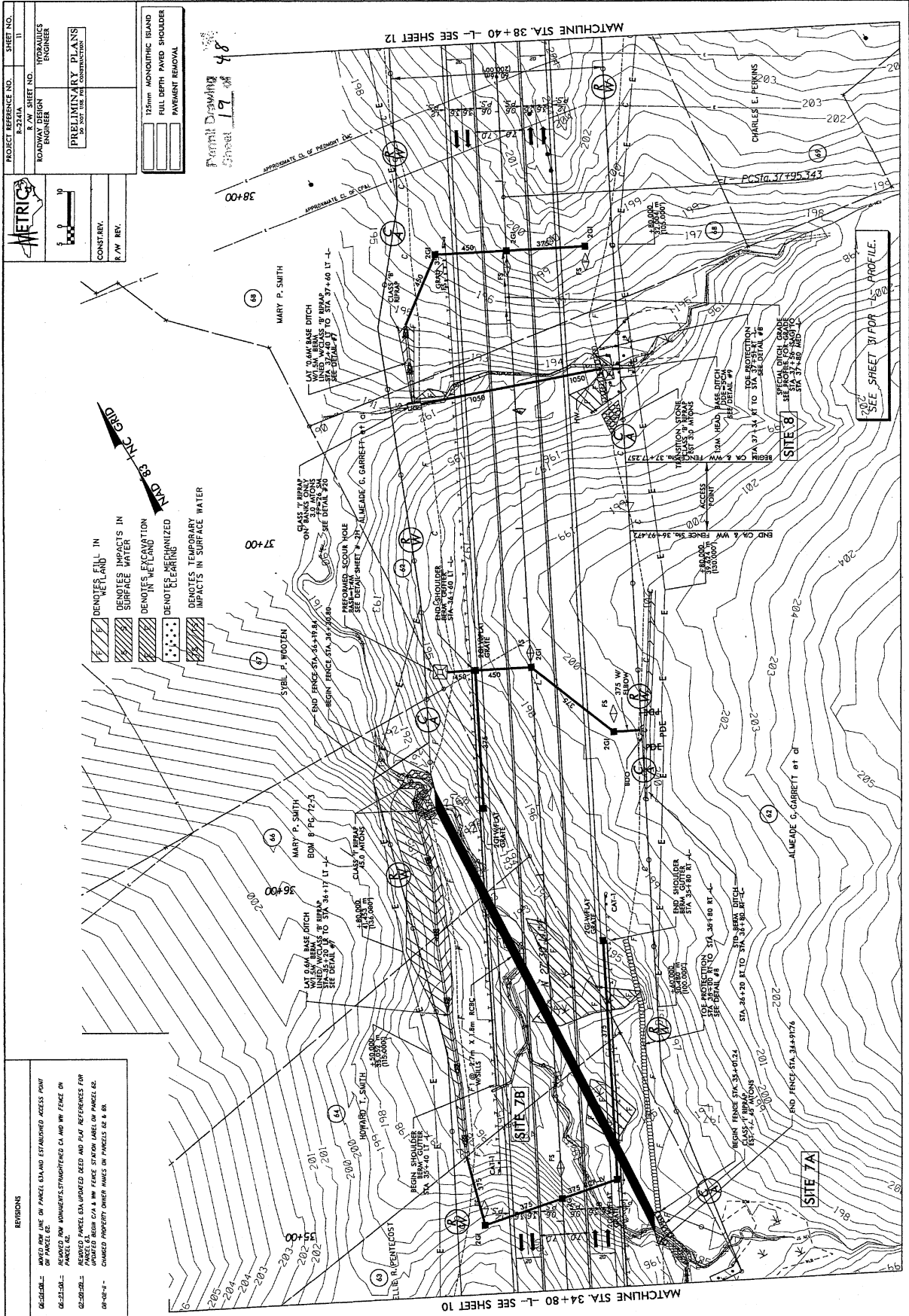
SITE 8

SITE 7A

SITE 7B

MATCHLINE STA. 34+80 -L- SEE SHEET 10

MATCHLINE STA. 38+40 -L- SEE SHEET 12



**METRICS**

PROJECT REFERENCE NO. K-234A  
 S.W. SHEET NO. 11  
 HYDRAULICS ENGINEER  
 ROADWAY DESIGN ENGINEER

**PRELIMINARY PLANS**  
 25' PER 1" PER THE PLAN

12mm MONOTIC ISLAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

CONSTRY.  
 P/W REV.

Formal Drawing Sheet 19 of 48

- REVISIONS**
- 02-21-04 - MOVED ROW LINE ON PARCEL 63A AND ESTABLISHED ACCESS POINT ON PARCEL 62.
  - 02-21-04 - PLACED ROW MARKERS, STRENGTHENED CI AND IW FENCE ON PARCEL 62.
  - 02-21-04 - PLACED PARCEL 63A IMPROVED DEED AND PLAT REFERENCES FOR PARCELS 63, 64 AND 65. SEE FENCE SECTION LABEL ON PARCEL 62.
  - 01-08-04 - CHANGED PROPERTY OWNER NAMES ON PARCELS 62 & 63.

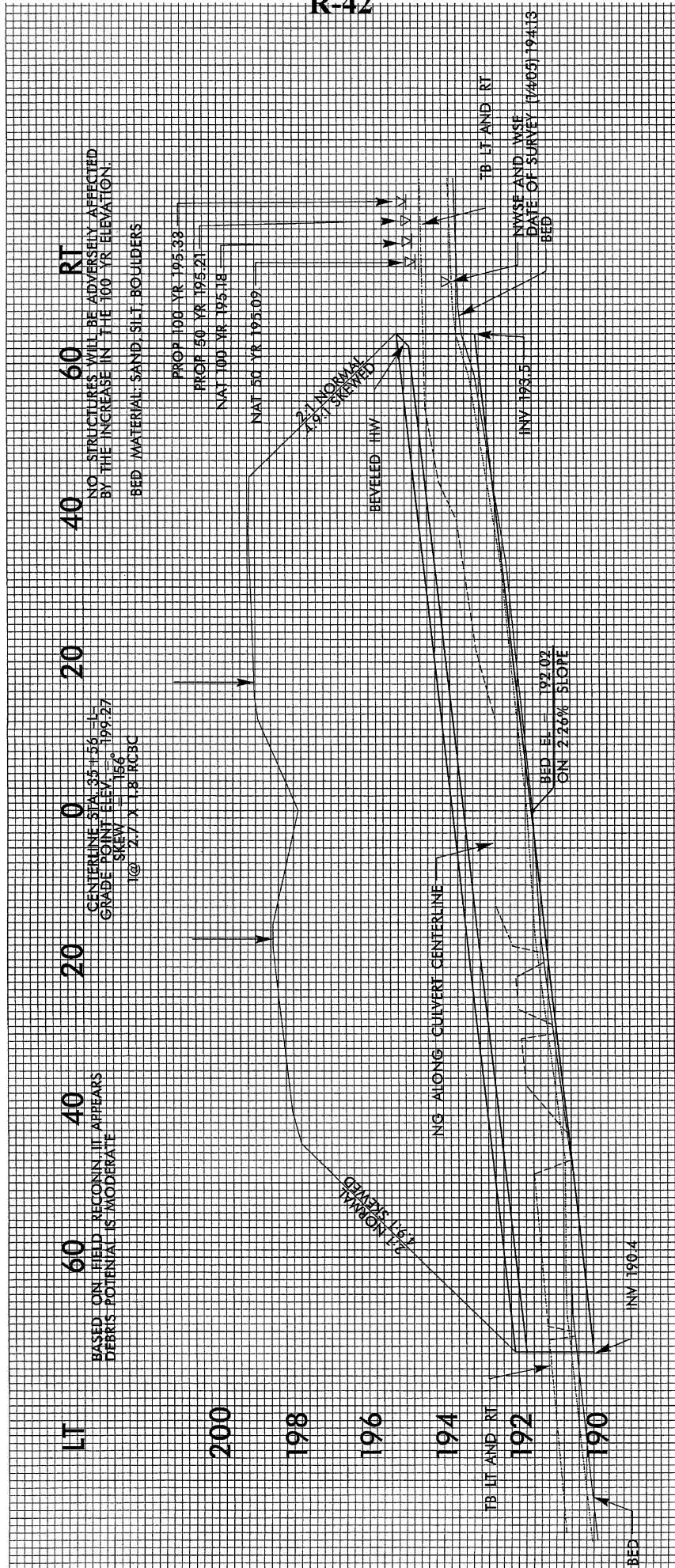
- DENUDED LAND IN SURFACE IMPACTS IN
- DENOTED VEGETATION
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

STV/Ralph Whitehead Associates, Inc.  
 1000 Morrisville Road, Suite 200  
 Morrisville, NC 27560  
 NC License Number F-0291

1000 Morrisville Road, Suite 200  
 Morrisville, NC 27560  
 NC License Number F-0291







PROJECT REFERENCE NO. B-224A SHEET NO. 12

R/W SHEET NO. HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

Permit Drawing Sheet 22 of 48

CONST. REV. R/W REV.

125mm MONOLITHIC ISLAND  
FULL DEPTH PAVED SHOULDER  
PAYMENT REMOVAL

METRIX

SCALE: 1" = 40'

CONSTRUCTION

NO. 10

NO. 9

NO. 8

NO. 7

NO. 6

NO. 5

NO. 4

NO. 3

NO. 2

NO. 1

NO. 10

NO. 9

NO. 8

NO. 7

NO. 6

NO. 5

NO. 4

NO. 3

NO. 2

NO. 1

REVISIONS

06-25-02 ESTABLISHED ACCESS POINT PANEL OR ELIMINATED TREE AND

06-25-02 RELOCATED TO R/W OF PARCEL 71

06-25-02 PARCEL FINISHED PARCEL NAME

06-25-02 CHANGED PROPERTY OWNER INFORMATION OF PARCEL 69

07-27-04 PARCEL 702 CHANGED TO TOE

STV / Ralph Whitehead Associates, Inc.

1000 West Kenneth St., Suite 200

Charlotte, NC 28208

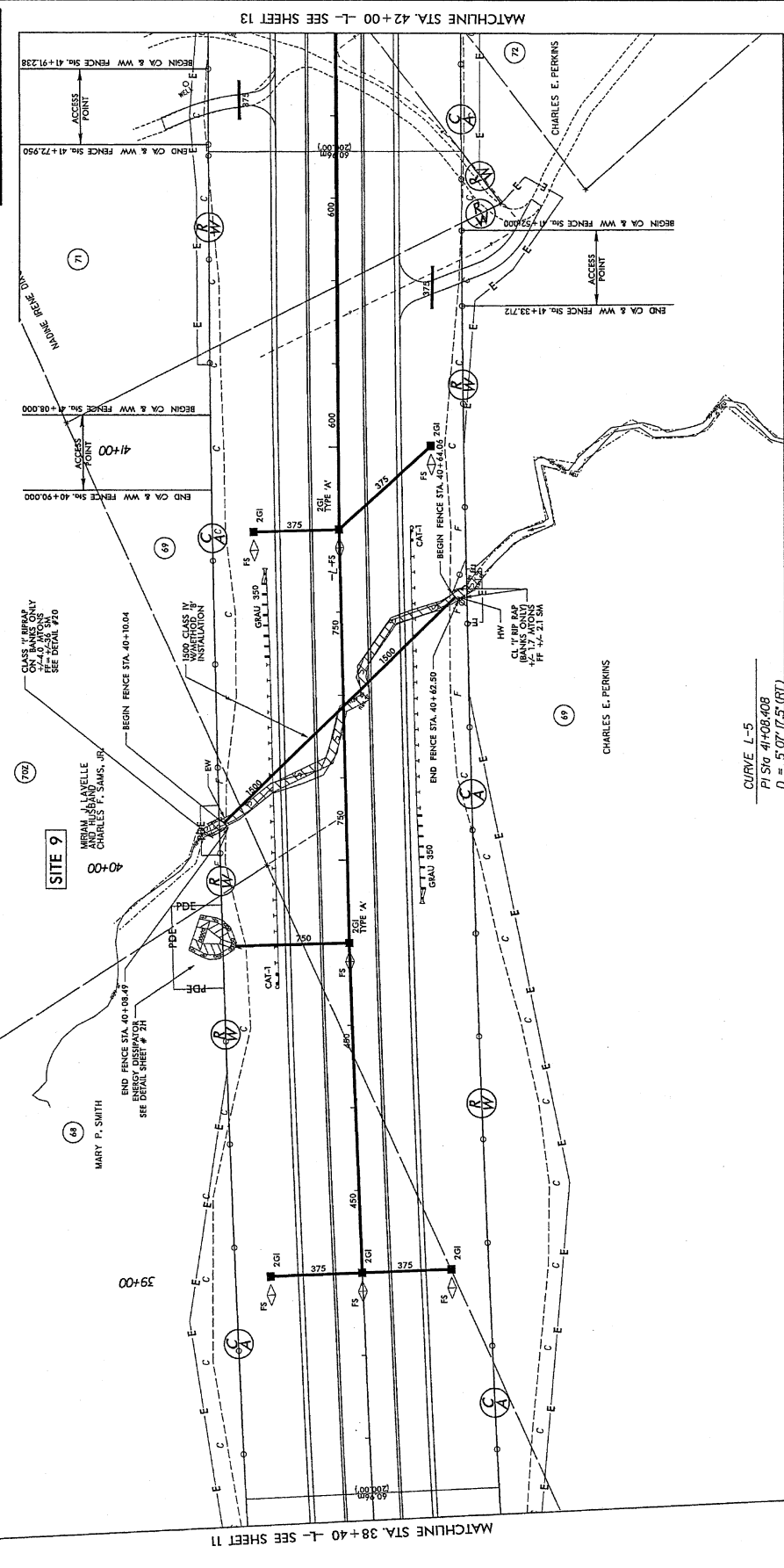
Phone: 704.375.1234

Fax: 704.375.1235

NC License Number: F-2991

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER



MATCHLINE STA. 38+40 -L- SEE SHEET 11

MATCHLINE STA. 42+00 -L- SEE SHEET 13

CURVE L-5  
 PISig 41+08.408  
 D = 507.175 (FT)  
 L = 625.713  
 T = 313.065  
 R = 7,000.000  
 θ = N.C.

SEE SHEET 32 FOR -L- PROFILE.

PROJECT REFERENCE NO. SHEET NO. 12

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

125mm MONOTIC BAND  
FULL DEPTH FAYED SHOULDER  
PAVEMENT REMOVAL

CONSTRY.  
R/W REV.

Permit Drawing  
Sheet 23 of 48

METRIC

0 10 20

SCALE

IND 83 NC CND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

REVISIONS

05-28-02 ESTABLISHED ACCESS POINT PARCEL BOUNDARIES TIG.MD

05-28-02 REVISION TO TIG TO RWY OF PARCEL 11

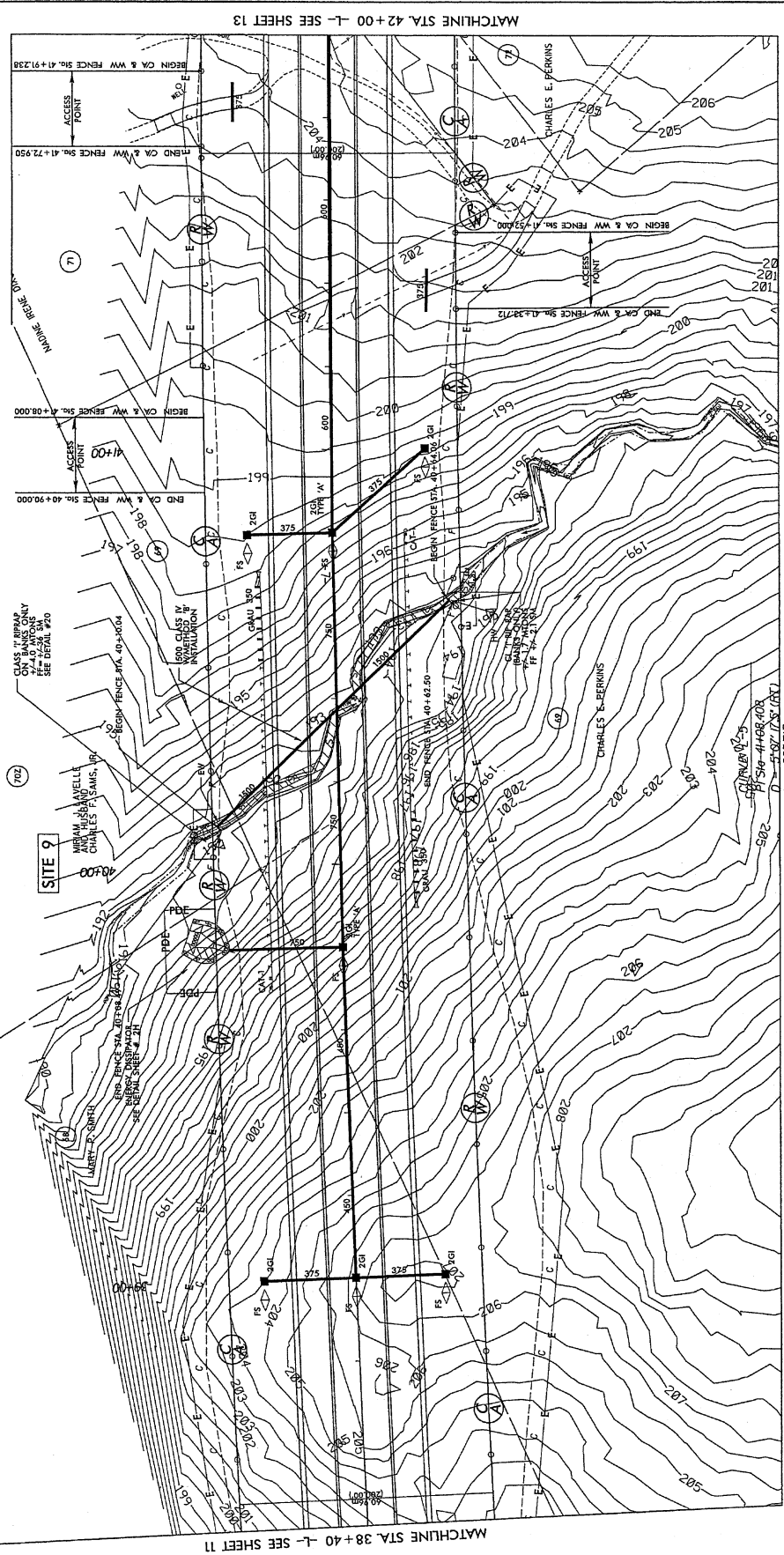
05-28-02 PARCEL AUTHORIZED PARCEL LINE

05-28-02 CHANGED PROPERTY OWNER INFORMATION ON PARCEL 09

05-28-02 PARCEL 100 CHANGED TIG TO PINE

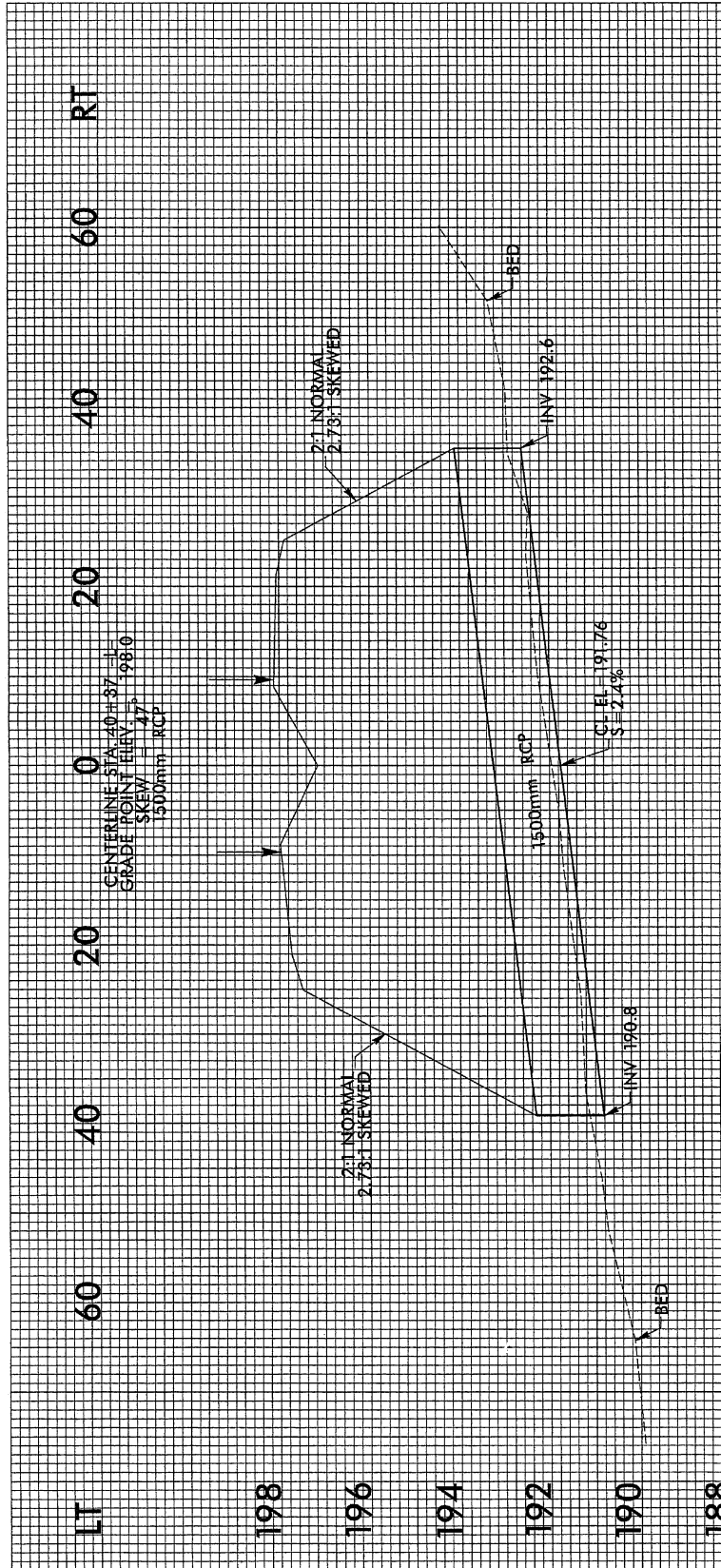
STV / Ralph Whitbeck Associates, Inc.

1000 Central Expressway, Suite 200  
Raleigh, NC 27601  
NC License Number F-0997



SEE SHEET 32 FOR L-L PROFILE.

L = 625.713  
T = 313.065  
R = 7,000.000  
e = NC.



PROJECT REFERENCE NO. 14  
 SHEET NO. 14

PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION  
**Permit Drawing**  
 Sheet 25 of 48

CONSTR. REV.  
 R/W REV.

125mm MONODUCTIB BAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

125mm MONODUCTIB BAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

125mm MONODUCTIB BAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

125mm MONODUCTIB BAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

125mm MONODUCTIB BAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

125mm MONODUCTIB BAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

125mm MONODUCTIB BAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

125mm MONODUCTIB BAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

125mm MONODUCTIB BAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

125mm MONODUCTIB BAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

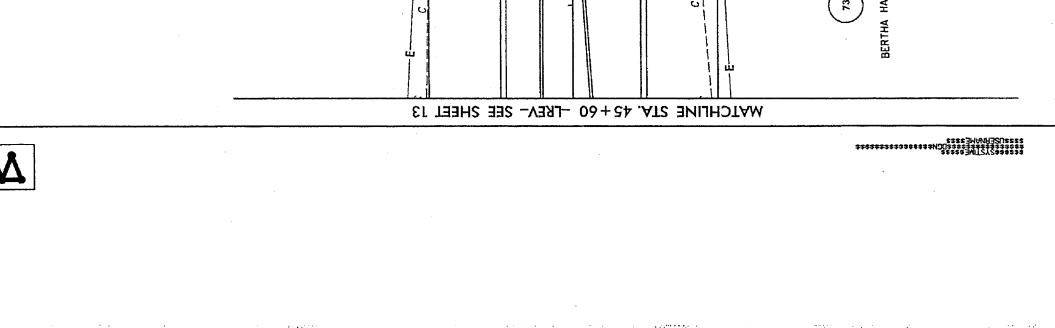
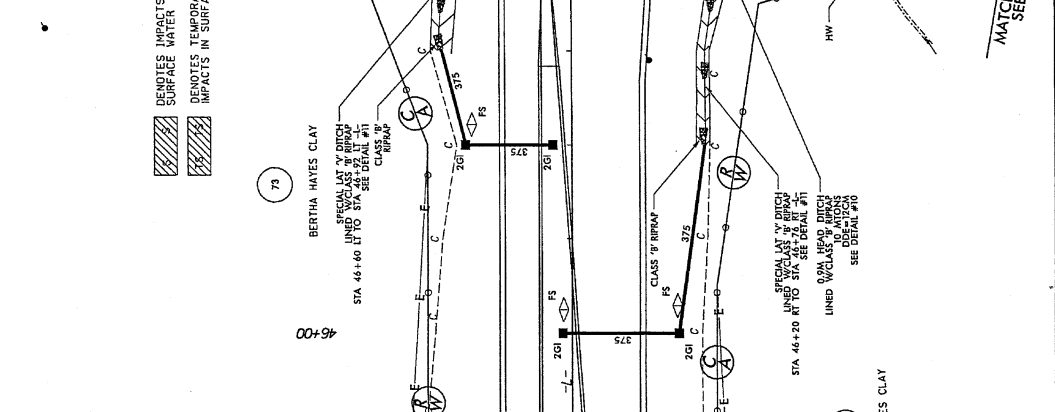
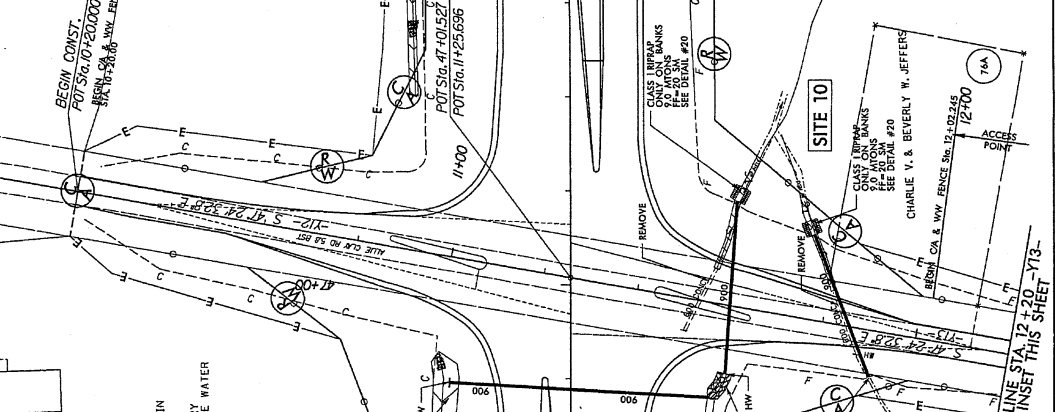
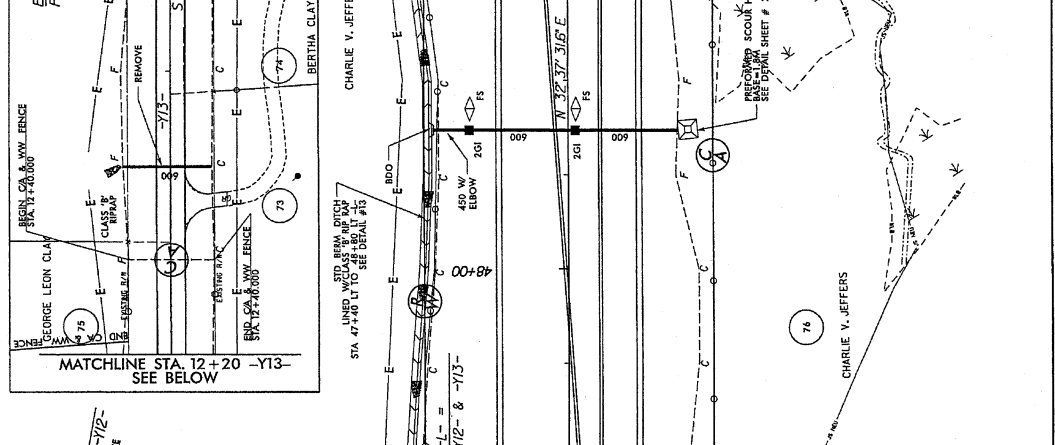
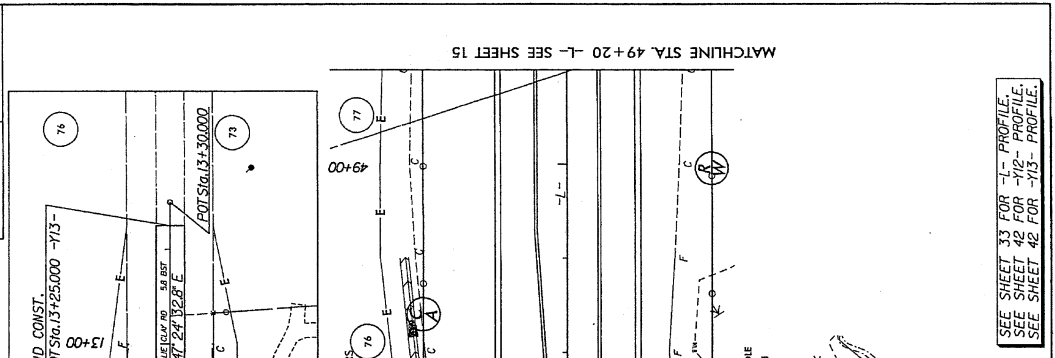
125mm MONODUCTIB BAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

125mm MONODUCTIB BAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

125mm MONODUCTIB BAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

125mm MONODUCTIB BAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

125mm MONODUCTIB BAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL



REVISIONS

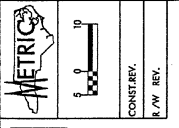
02-21-02 - ESTABLISHED ACCESS POINT ON PARCEL 76A  
 PROPERTY LINE CHANGE 76/76A  
 AND NEW PARCEL 76A

02-21-02 - PARCEL 77/REVISED PARCEL NAME

SEE SHEET 33 FOR -L- PROFILE.  
 SEE SHEET 42 FOR -Y12- PROFILE.  
 SEE SHEET 42 FOR -Y13- PROFILE.

WALSH BROTHERS ASSOCIATES  
 CONSULTING ENGINEERS  
 715 BOX 704  
 CHARLOTTE, NORTH CAROLINA 28203

PROJECT REFERENCE NO.	14
DATE	11/14
ENGINEER	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
PRELIMINARY PLANS	DO NOT USE FOR CONSTRUCTION
<b>Permit Drawing</b>	
Sheet <b>26</b> of <b>48</b>	
CONTRACT NO.	
R.A.W. REV.	

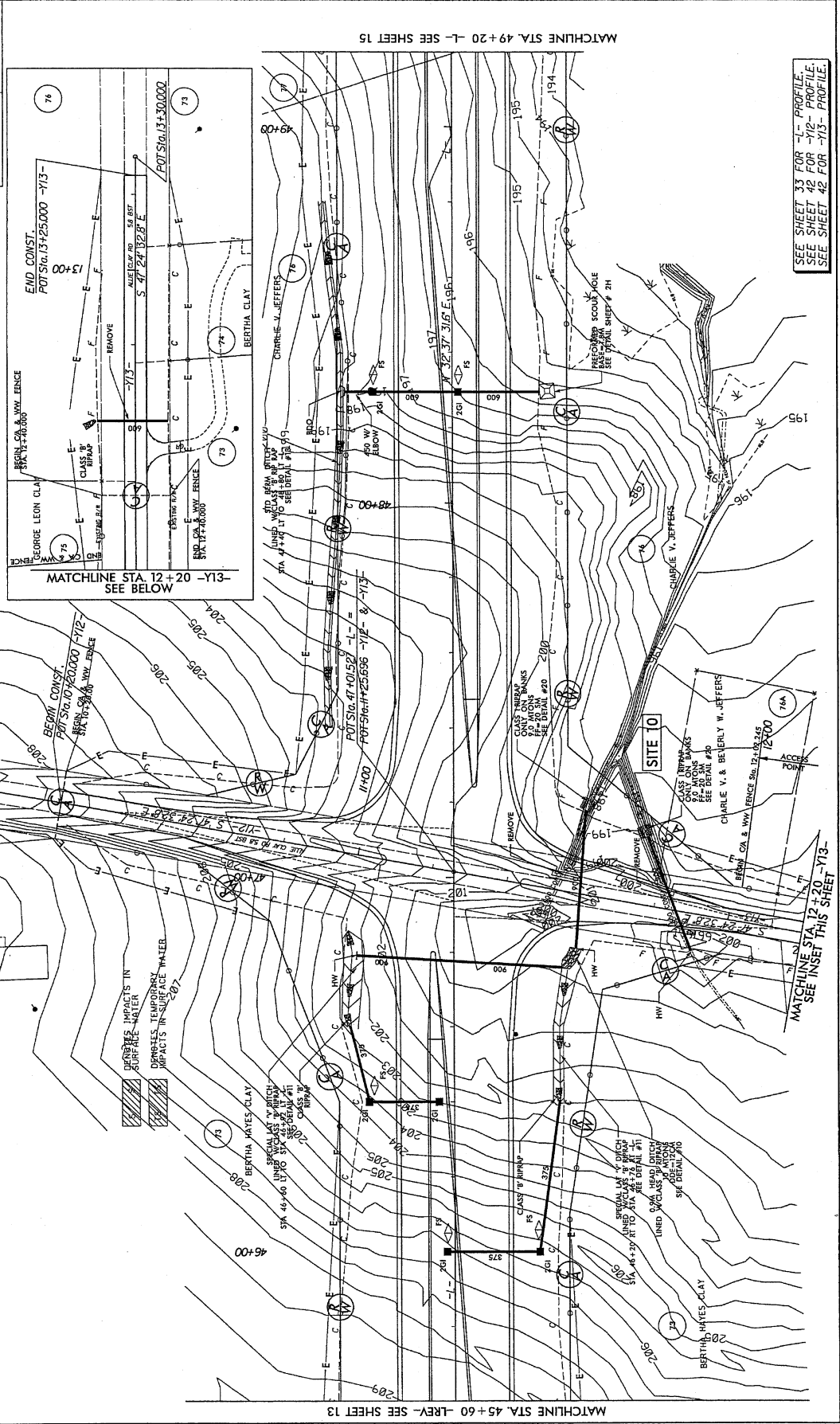
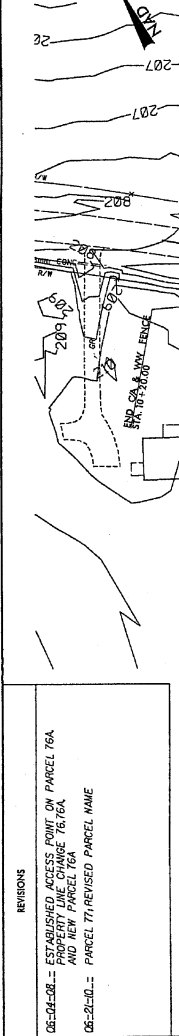


12mm MONUMENTIC BRAND FULL DEPTH PAVED SHOULDER	
PAVEMENT REMOVAL	

REVISIONS

05-24-08 = ESTABLISHED ACCESS POINT ON PARCEL 76A AND NEW PARCEL 76A

05-24-08 = PARCEL 7A, REVISED PARCEL NAME



SEE SHEET 33 FOR -L- PROFILE.  
SEE SHEET 42 FOR -Y12- PROFILE.  
SEE SHEET 42 FOR -Y13- PROFILE.

PROJECT REFERENCE NO. SHEET NO. 15  
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER  
 PRELIMINARY PLANS  
 Permit Drawing of 48  
 Sheet 27 of 48  
 Rev'd 6/15/12

15mm MONOLITHIC ISLAND  
 FULL DEPTH PAVED SHOULDER  
 PARALLEL REMOVAL

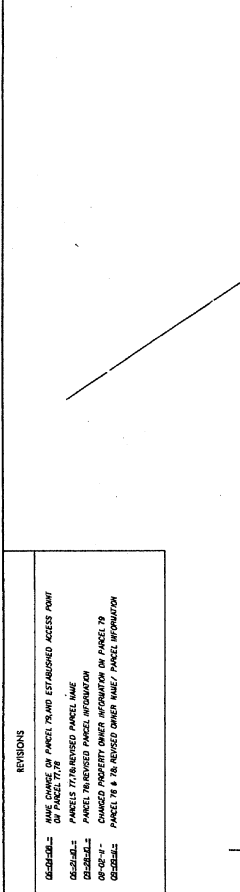
CONTRACTOR: P. W. REV.  
 METRIC

REVISIONS

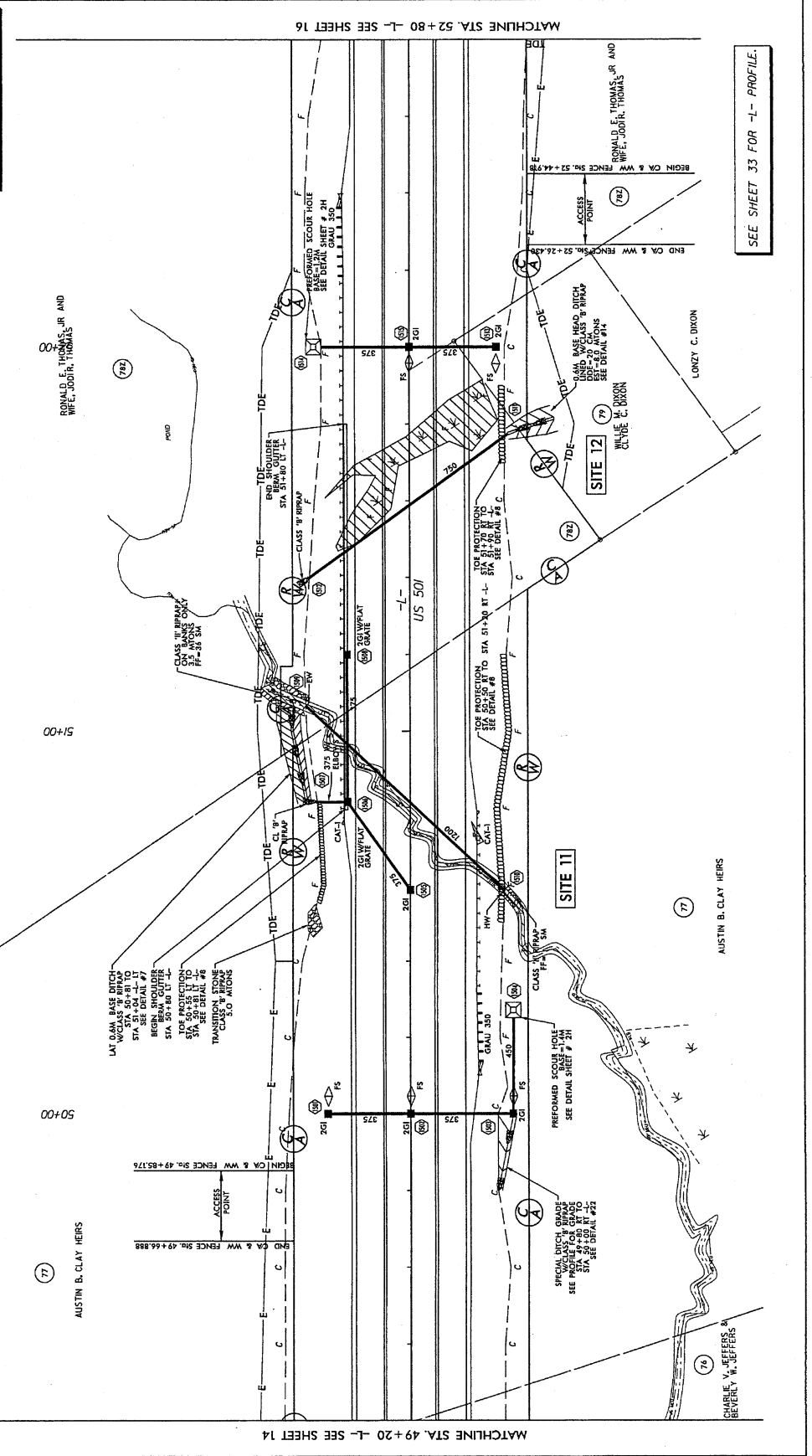
DESCRIPTION: NAME CHANGE OF PARCEL TRAND ESTABLISHED ACCESS POINT OF PARCEL 77.78  
 DESCRIPTION: PARCELS 77.78 REVISED PARCEL NAME  
 DESCRIPTION: PARCEL 77.78 REVISED PARCEL INFORMATION  
 DESCRIPTION: PARCELS 78 & 79 REVISED OWNER NAME, PARCEL INFORMATION

DESIGNER: R. E. THOMAS, JR. AND WIFE, JOYCE H. THOMAS  
 OWNER: CHARLIE V. JEFFERS & BEVERLY W. JEFFERS  
 OWNER: AUSTIN B. CLAY HEIRS  
 OWNER: WILLIE H. DIXON  
 OWNER: LONZLY C. DIXON

LEGEND:  
 DENOTES FILL IN  
 DENOTES IMPACTS IN SURFACE WATER  
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER



STV/ Ralph Whitbeck Associates, Inc.  
 1000 West Meredith St., Ste. 200  
 Raleigh, NC 27601  
 NC License Number: F-09981



SEE SHEET 33 FOR 'L- PROFILE.



PROJECT REFERENCE NO.	SHEET NO.
W-222A	15
DESIGNER	ENGINEER
ROADWAY DESIGN	HYDRAULICS
	ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST. BY:	
P.W. REV.	

**METRICS**

15mm MONOLITHIC ISLAND  
RULL DEPTH PAVED SHOULDER  
PAVEMENT REMOVAL

DESIGNER FALL IN  
SEWER IMPACTS IN  
SURFACE WATER  
REMOVES TEMPORARY  
IMPACTS IN SURFACE WATER

Permit Drawing  
Sheet 2 of 48  
Revised 6/11/12

REVISIONS

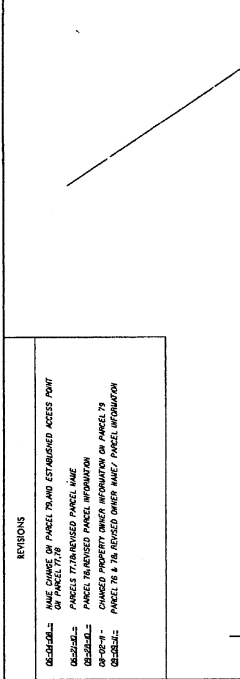
05/28/12 - NAME CHANGE OF PANEL 79 AND ESTABLISHED ACCESS POINT  
OF PANEL 77/78

05/28/12 - PANEL 77/78 REVISED PANEL INFORMATION

05/28/12 - PANEL 79 REVISED PANEL INFORMATION

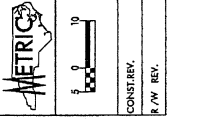
05/28/12 - PANEL 79 & 78 REVISED PANEL INFORMATION

STV/ Ralph Whitbeck Associates, Inc.  
1000 West McLeod St., Ste. 200  
Chattanooga, TN 37403  
Phone: (423) 249-1100  
Fax: (423) 249-1101  
www.stvra.com



SEE SHEET 33 FOR 'L' PROFILE.

PROJECT REFERENCE NO.	14	SHEET NO.	14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
PRELIMINARY PLANS FOR THE CONSTRUCTION OF <b>Permit Drawing Sheet 29 of 48</b>			
CONST. REV.	R/W REV.		
125mm MONOCRITIC BAND FULL DEPTH TADED SHOULDER PAVEMENT REMOVAL			



CONSTRUCTION OF  
R/W REV.

CONST. REV.

CONSTRUCTION OF  
R/W REV.

CONST. REV.

CONSTRUCTION OF  
R/W REV.

CONST. REV.

CONSTRUCTION OF  
R/W REV.

CONST. REV.

CONSTRUCTION OF  
R/W REV.

CONST. REV.

CONSTRUCTION OF  
R/W REV.

CONST. REV.

CONSTRUCTION OF  
R/W REV.

CONST. REV.

CONSTRUCTION OF  
R/W REV.

CONST. REV.

CONSTRUCTION OF  
R/W REV.

CONST. REV.

CONSTRUCTION OF  
R/W REV.

CONST. REV.

CONSTRUCTION OF  
R/W REV.

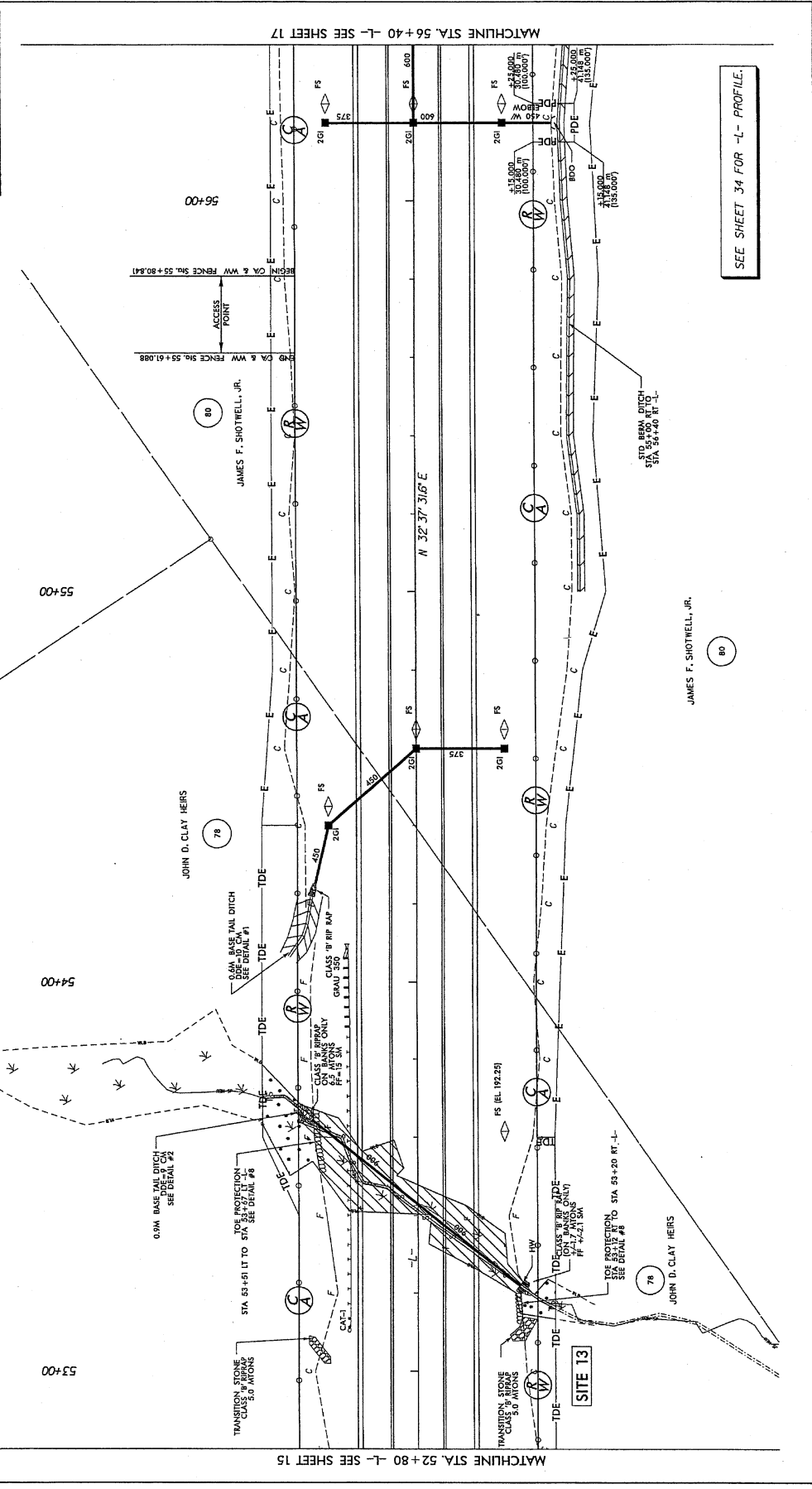
CONST. REV.

CONSTRUCTION OF  
R/W REV.

CONST. REV.

CONSTRUCTION OF  
R/W REV.

CONST. REV.



REVISIONS

05-04-08 -- ESTABLISHED ACCESS POINT ON PARSEL 80

05-08-08 -- PARCEL 78 REVISED PARCEL NAME

05-08-10 -- PARCEL 78 REVISED PARCEL INFORMATION

SEE SHEET 34 FOR -L- PROFILE.

05-04-08 -- ESTABLISHED ACCESS POINT ON PARSEL 80

05-08-08 -- PARCEL 78 REVISED PARCEL NAME

05-08-10 -- PARCEL 78 REVISED PARCEL INFORMATION

05-08-10 -- PARCEL 78 REVISED PARCEL INFORMATION

05-04-08 -- ESTABLISHED ACCESS POINT ON PARSEL 80

05-08-08 -- PARCEL 78 REVISED PARCEL NAME

05-08-10 -- PARCEL 78 REVISED PARCEL INFORMATION

05-08-10 -- PARCEL 78 REVISED PARCEL INFORMATION

PROJECT REFERENCE NO. SHEET NO. TO

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS  
Permit Drawing  
Sheet 30 of 48

CONST. REV. P.W. REV.

12" MIN. MONOLITHIC BAND  
FULL DEPTH PAVED SHOULDER  
PAVEMENT REMOVAL

METRIC

5 0 10

NAD 83 TYP. GRID

REVISIONS

06-04-08 - ESTABLISHED ACCESS POINT ON PARCEL 80  
06-26-08 - PARCEL 78 REVISED PARCEL NAME  
02-28-09 - PARCEL 78 REVISED PARCEL INFORMATION

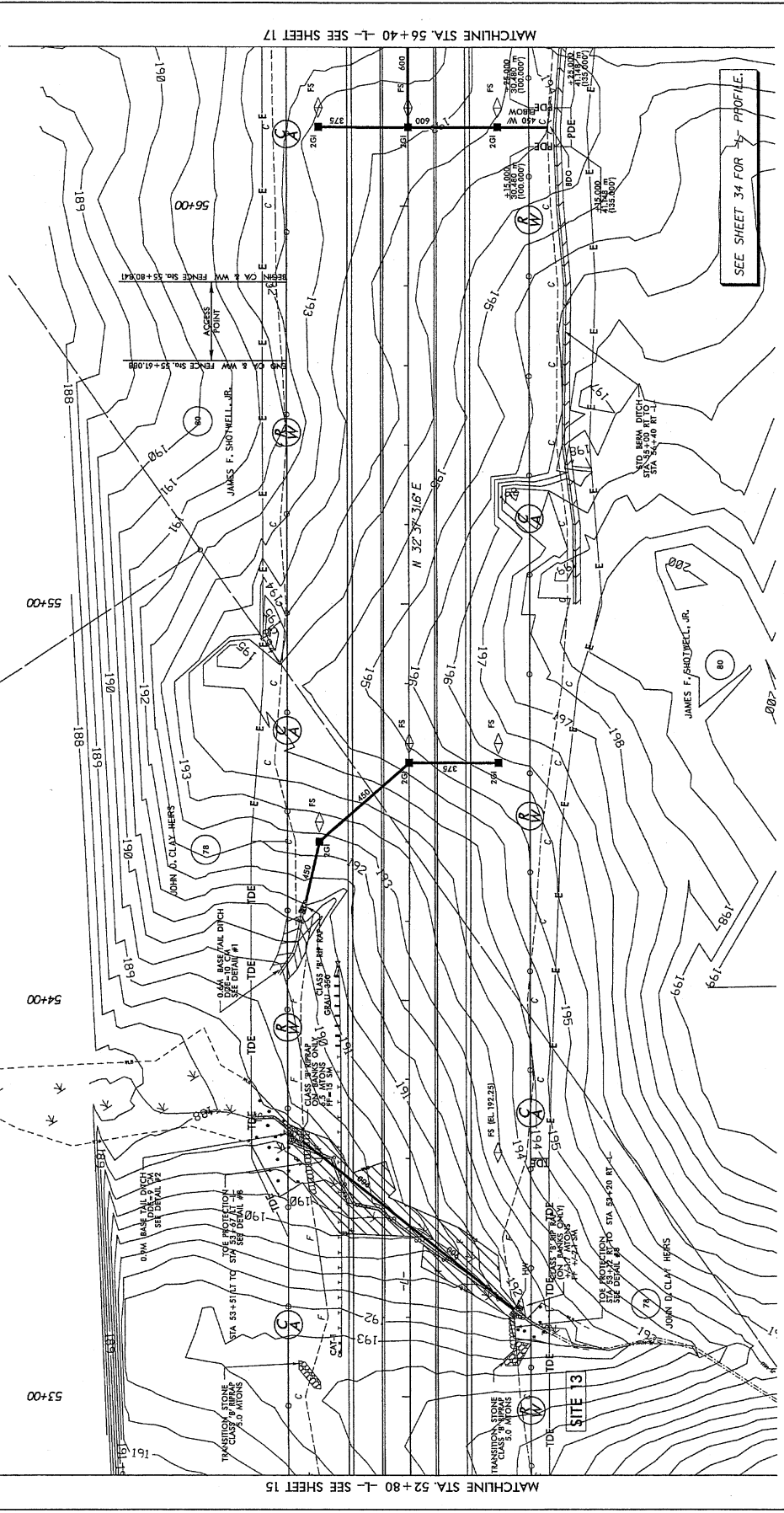
DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES EXCAVATION IN WETLAND

DENOTES MERCHANTIZED CLEARING

W  
WATTS ASSOCIATES  
CONSULTING ENGINEERS  
CHARLOTTE NORTH CAROLINA 28203



SEE SHEET 34 FOR PROFILE.

MATCHLINE STA. 52 + 80 -L- SEE SHEET 15

MATCHLINE STA. 56 + 40 -L- SEE SHEET 17

PROJECT REFERENCE NO. 270A  
 SHEET NO. 17  
 ROADWAY DESIGN ENGINEER  
 HYDRAULICS ENGINEER  
 PRELIMINARY PLANS  
 500 WEST LEE ROAD  
 CONSTRUCTION  
**Permit Drawing**  
**Sheet 48 of 48**

CONTR. BY  
 E/W REV.

DESIGN MONITORING ISLAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

**METRICS**

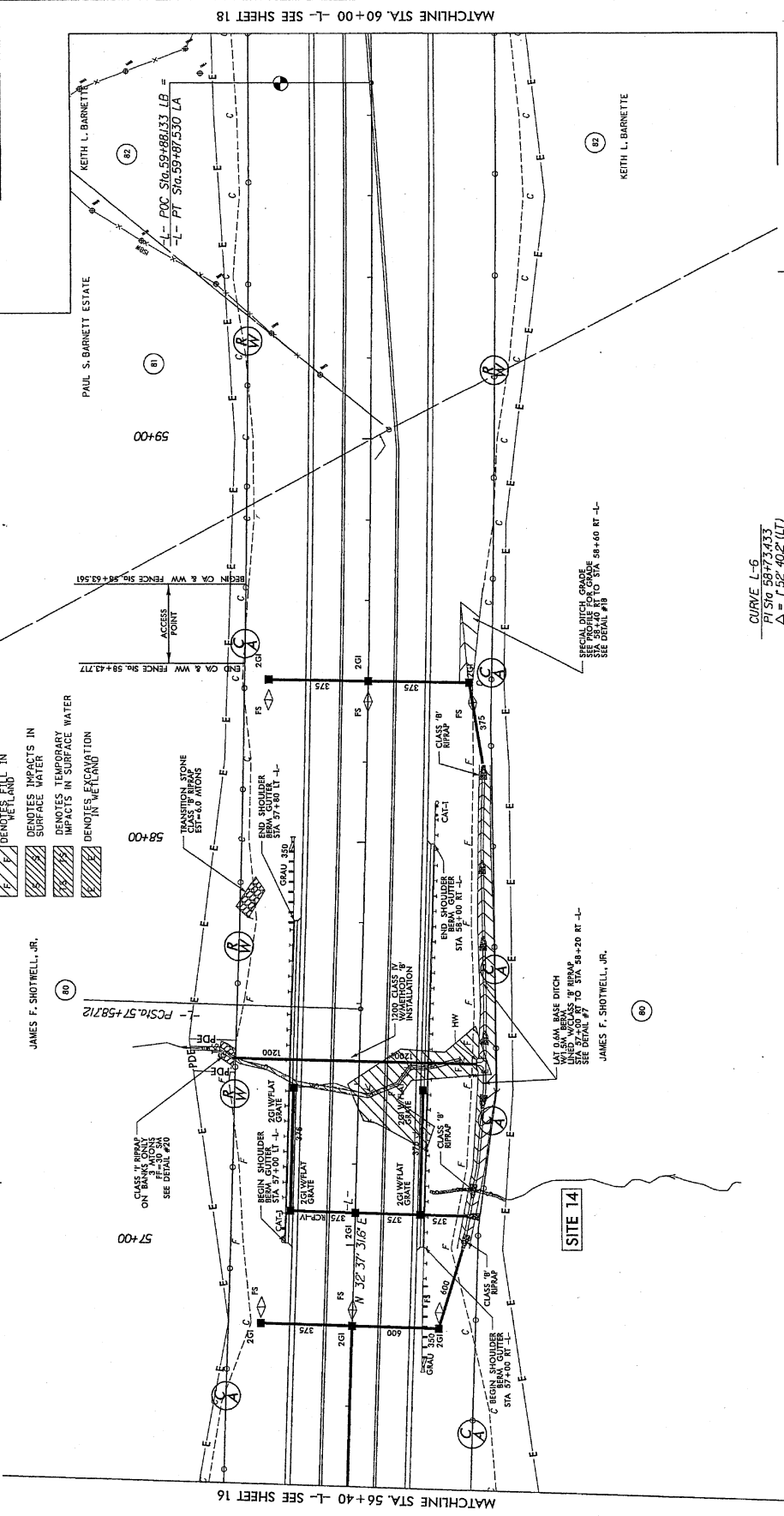
SCALE: 1" = 40'

NO. 88 NC GRID

REVISIONS

REASON: ESTABLISHED ACCESS POINT ON PARCEL 80  
 REVISION: PARCEL 80 REPOSED PARCEL MARKING LOCATED WIRE FENCING  
 REVISION: PARCEL 80 LOCATED ELECTRIC FENCE  
 REVISION: PARCEL 80 BOUNDARY FENCE AND MODIFIED GATEWAY  
 AND TURNING POINTS

STV/Ralph Whitbeck & Associates, Inc.  
 1000 West Kentucky, Suite 200  
 Lexington, Kentucky 40503  
 NC License Number: 7-02971



MATCHLINE STA. 56+40 -L- SEE SHEET 16

MATCHLINE STA. 60+00 -L- SEE SHEET 18

SEE SHEET 34 FOR -L- PROFILE.

CURVE L-6  
 PI STA 58+73.233  
 Δ = 58°40.2'(LT)  
 L = 229.42'  
 T = 114.71'  
 R = 7,000.000  
 θ = N.C.

PROJECT REFERENCE NO. \_\_\_\_\_ SHEET NO. 17

R-22AIA R/W SHEET NO. \_\_\_\_\_ HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

PRELIMINARY PLANS FOR THE CONSTRUCTION OF THE \_\_\_\_\_

**Permit Drawing Sheet 32 of 48**

CONST. BY \_\_\_\_\_

R/W REV. \_\_\_\_\_

125mm MONOTYPIC ISLAND FULL DEPTH PAVED SHOULDER PAVEMENT REMOVAL

0 10

1:10

NO. 63 NC GRID

**REVISIONS**

06-28-06 = ESTABLISHED ACCESS POINT OF PANEL B0

06-28-06 = PANEL B0 REVISED PANEL NAME LOCATED WIRE FENCING

06-28-06 = PANEL B0 LOCATED ELECTRIC FENCE

06-28-06 = AND TERMINAL SEGMENTS

06-28-06 =

06-28-06 =

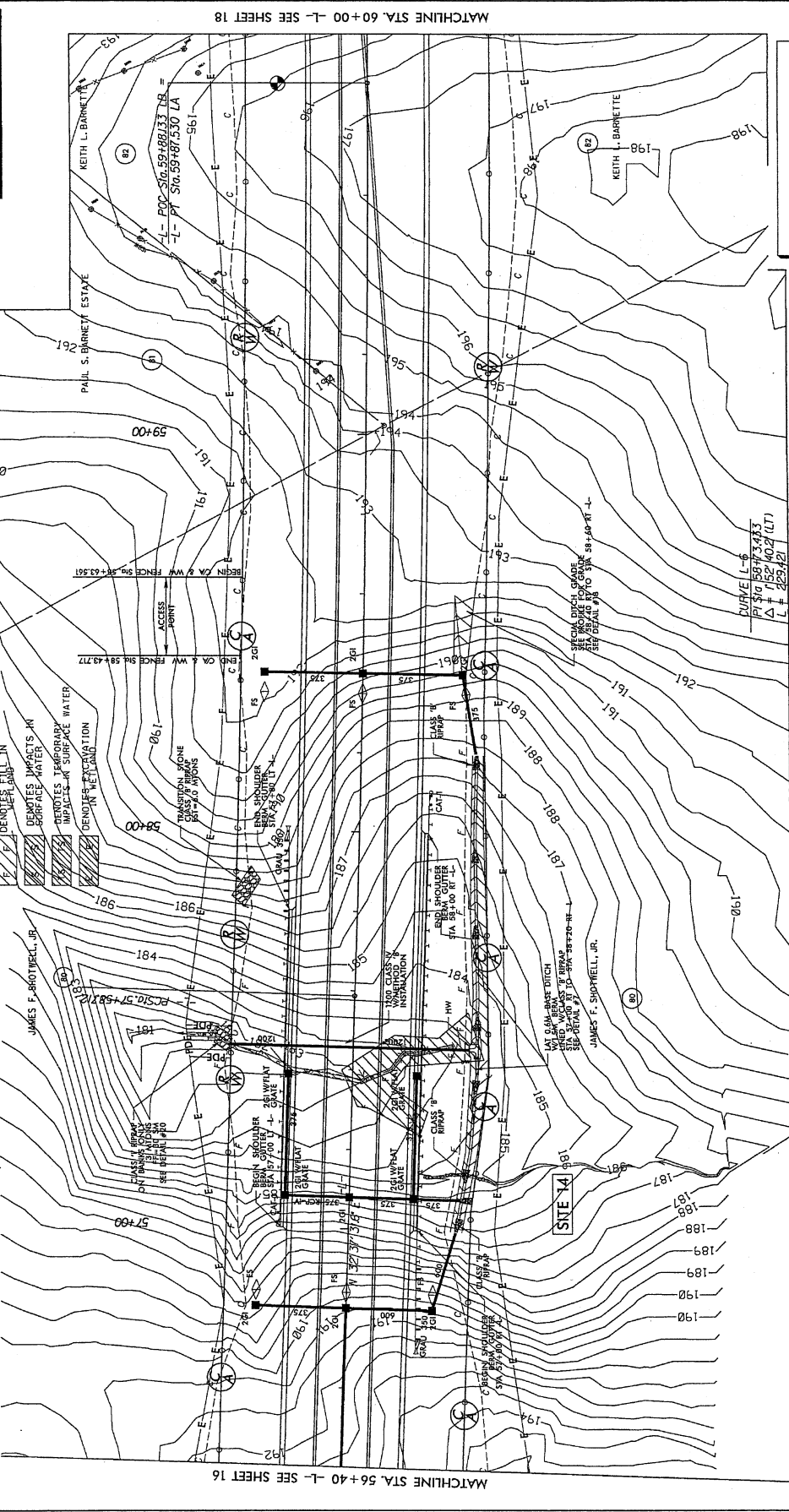
06-28-06 =

STV/Ralph Whitehead Associates, Inc.

1000 Rte. 280

Chattanooga, TN 37420

NO License Number F-0981



SEE SHEET 34 FOR -L- PROFILE.

CURVE 1-6

PT. SIG. 155+73.433

Δ + 1.52' (40.2' (LT))

L = 229.42'

T = 114.71'

R = 7,000.000'

e = M.C.

MATCHLINE STA. 56+40 -L- SEE SHEET 16

MATCHLINE STA. 60+00 -L- SEE SHEET 18

PROJECT REFERENCE NO. R-274A SHEET NO. 18  
 R/W SHEET NO. HYDRAULICS ENGINEER  
 ROADWAY DESIGN ENGINEER  
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
**Permit Drawing**  
**Sheet 33 of 48**

CONSTABLY. R/W REV.  
 15mm MONOARTHIC ISLAND  
 15mm DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

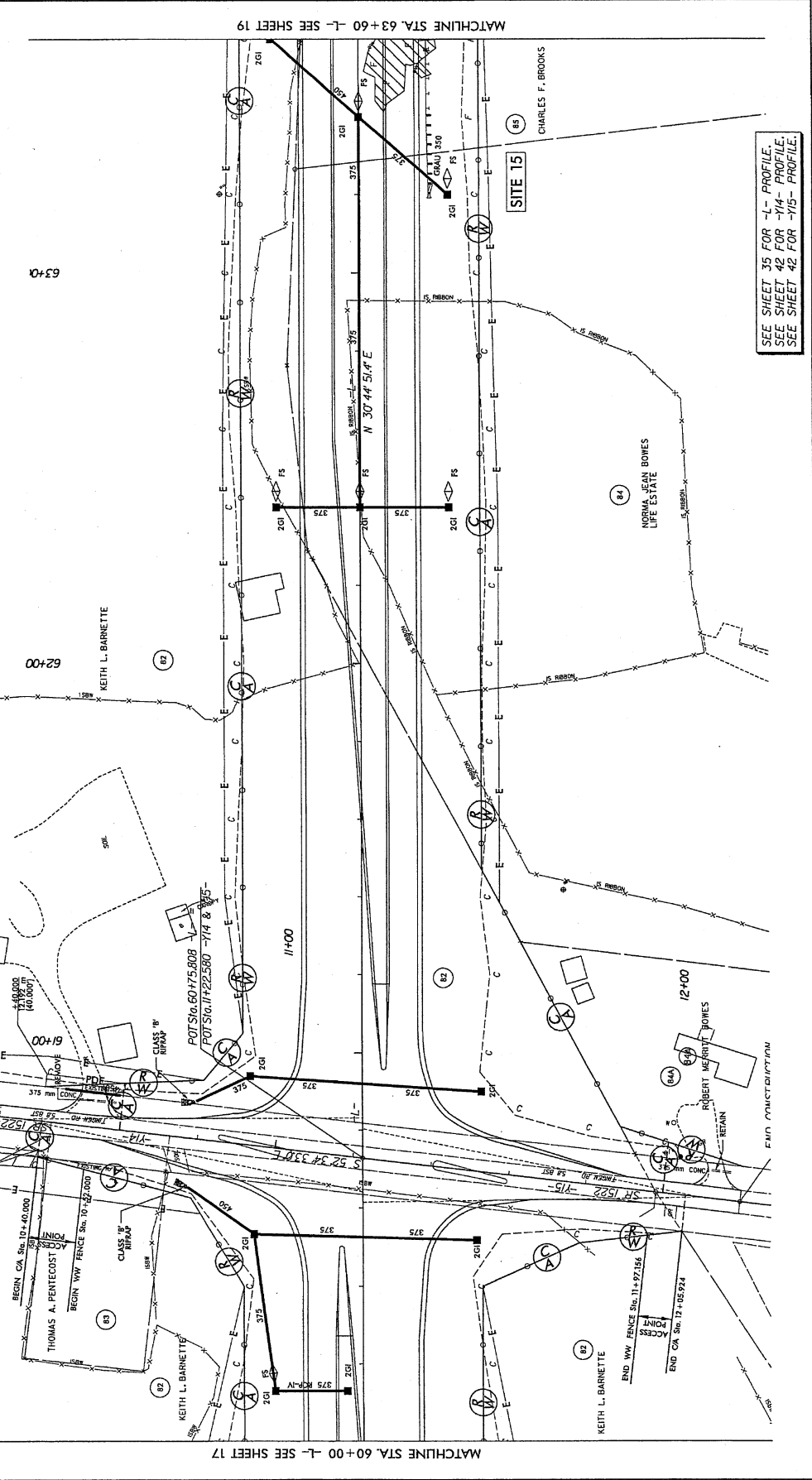
**REVISIONS**

01-20-11: ESTABLISHED ACCESS POINT OF PANEL B1.  
 02-22-11: ESTABLISHED ACCESS POINT OF PANEL B2.  
 03-23-11: ESTABLISHED ACCESS POINT OF PANEL B3.  
 04-24-11: ESTABLISHED ACCESS POINT OF PANEL B4.  
 05-25-11: ESTABLISHED ACCESS POINT OF PANEL B5.  
 06-26-11: ESTABLISHED ACCESS POINT OF PANEL B6.  
 07-27-11: ESTABLISHED ACCESS POINT OF PANEL B7.  
 08-28-11: ESTABLISHED ACCESS POINT OF PANEL B8.  
 09-29-11: ESTABLISHED ACCESS POINT OF PANEL B9.  
 10-30-11: ESTABLISHED ACCESS POINT OF PANEL B10.  
 11-31-11: ESTABLISHED ACCESS POINT OF PANEL B11.  
 12-32-11: ESTABLISHED ACCESS POINT OF PANEL B12.  
 13-33-11: ESTABLISHED ACCESS POINT OF PANEL B13.  
 14-34-11: ESTABLISHED ACCESS POINT OF PANEL B14.  
 15-35-11: ESTABLISHED ACCESS POINT OF PANEL B15.  
 16-36-11: ESTABLISHED ACCESS POINT OF PANEL B16.  
 17-37-11: ESTABLISHED ACCESS POINT OF PANEL B17.  
 18-38-11: ESTABLISHED ACCESS POINT OF PANEL B18.  
 19-39-11: ESTABLISHED ACCESS POINT OF PANEL B19.  
 20-40-11: ESTABLISHED ACCESS POINT OF PANEL B20.

**REVISIONS**

01-20-11: ESTABLISHED ACCESS POINT OF PANEL B1.  
 02-22-11: ESTABLISHED ACCESS POINT OF PANEL B2.  
 03-23-11: ESTABLISHED ACCESS POINT OF PANEL B3.  
 04-24-11: ESTABLISHED ACCESS POINT OF PANEL B4.  
 05-25-11: ESTABLISHED ACCESS POINT OF PANEL B5.  
 06-26-11: ESTABLISHED ACCESS POINT OF PANEL B6.  
 07-27-11: ESTABLISHED ACCESS POINT OF PANEL B7.  
 08-28-11: ESTABLISHED ACCESS POINT OF PANEL B8.  
 09-29-11: ESTABLISHED ACCESS POINT OF PANEL B9.  
 10-30-11: ESTABLISHED ACCESS POINT OF PANEL B10.  
 11-31-11: ESTABLISHED ACCESS POINT OF PANEL B11.  
 12-32-11: ESTABLISHED ACCESS POINT OF PANEL B12.  
 13-33-11: ESTABLISHED ACCESS POINT OF PANEL B13.  
 14-34-11: ESTABLISHED ACCESS POINT OF PANEL B14.  
 15-35-11: ESTABLISHED ACCESS POINT OF PANEL B15.  
 16-36-11: ESTABLISHED ACCESS POINT OF PANEL B16.  
 17-37-11: ESTABLISHED ACCESS POINT OF PANEL B17.  
 18-38-11: ESTABLISHED ACCESS POINT OF PANEL B18.  
 19-39-11: ESTABLISHED ACCESS POINT OF PANEL B19.  
 20-40-11: ESTABLISHED ACCESS POINT OF PANEL B20.

STV / Ralph Whitefield Associates, Inc.  
 1000 West 10th Street, Suite 200  
 Anchorage, Alaska 99501  
 Phone: (907) 562-1234  
 Fax: (907) 562-1235  
 E-mail: info@stvrwa.com



SEE SHEET 35 FOR -Y1- PROFILE.  
 SEE SHEET 42 FOR -Y14- PROFILE.  
 SEE SHEET 42 FOR -Y15- PROFILE.



PROJECT REFERENCE NO. R-2241A  
 S.W. SHEET NO. HYDRAULICS ENGINEER  
 ROADWAY DESIGN ENGINEER

METRICS

PRELIMINARY PLANS  
 Revised 8/17/12  
 Permit Drawing  
 Sheet 35 of 48

CONTR. BY: \_\_\_\_\_  
 P.W. REV. \_\_\_\_\_

125mm MONOLITHIC ISLAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

SCALE: 1" = 40'

DATE: 8/17/12

PROJECT: \_\_\_\_\_

LEGEND:

- 1. Hatched area: DENOTES FILL IN UNDER LAND
- 2. Hatched area: DENOTES IMPACTS IN SURFACE WATER
- 3. Hatched area: DENOTES IMPACTS IN SURFACE WATER POND
- 4. Dotted area: DENOTES MECHANIZED POND CLEARANCE
- 5. Hatched area: DENOTES TEMPORARY IMPACTS IN SURFACE WATER

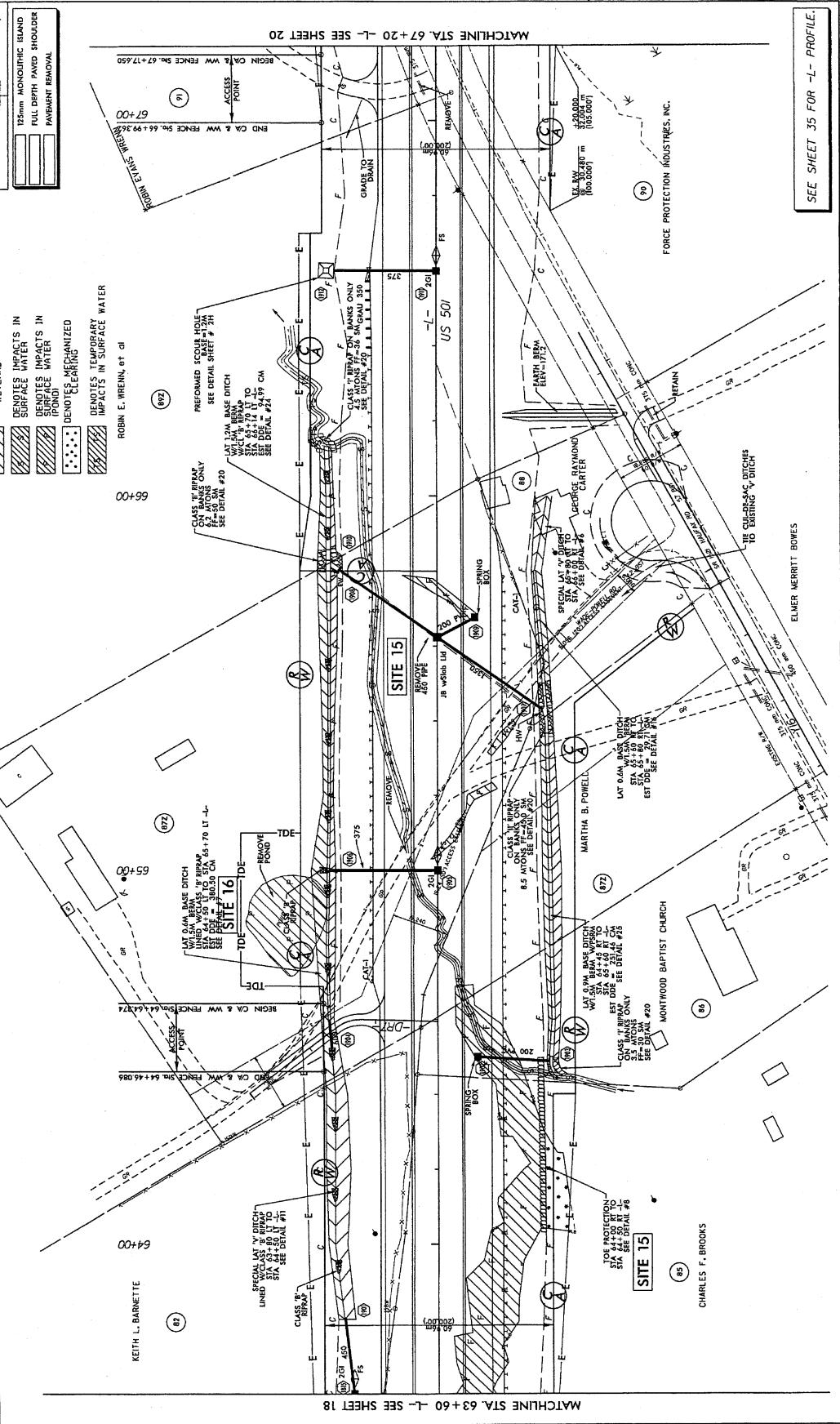
ROBIN E. WEINL, ET al

ROAD 83 TPC CHRD

REVISIONS

01	REVISED	NEW PARCEL 87A AND PROPERTY LINE CHANGE ON PARCEL 87
02	REVISED	PARCEL 87A REVISED, 87B CHANGED, 87C UNCHANGED, 87D UNCHANGED, 87E UNCHANGED, 87F UNCHANGED, 87G UNCHANGED, 87H UNCHANGED, 87I UNCHANGED, 87J UNCHANGED, 87K UNCHANGED, 87L UNCHANGED, 87M UNCHANGED, 87N UNCHANGED, 87O UNCHANGED, 87P UNCHANGED, 87Q UNCHANGED, 87R UNCHANGED, 87S UNCHANGED, 87T UNCHANGED, 87U UNCHANGED, 87V UNCHANGED, 87W UNCHANGED, 87X UNCHANGED, 87Y UNCHANGED, 87Z UNCHANGED
03	REVISED	PARCEL 87A REVISED, 87B CHANGED, 87C UNCHANGED, 87D UNCHANGED, 87E UNCHANGED, 87F UNCHANGED, 87G UNCHANGED, 87H UNCHANGED, 87I UNCHANGED, 87J UNCHANGED, 87K UNCHANGED, 87L UNCHANGED, 87M UNCHANGED, 87N UNCHANGED, 87O UNCHANGED, 87P UNCHANGED, 87Q UNCHANGED, 87R UNCHANGED, 87S UNCHANGED, 87T UNCHANGED, 87U UNCHANGED, 87V UNCHANGED, 87W UNCHANGED, 87X UNCHANGED, 87Y UNCHANGED, 87Z UNCHANGED
04	REVISED	PARCEL 87A REVISED, 87B CHANGED, 87C UNCHANGED, 87D UNCHANGED, 87E UNCHANGED, 87F UNCHANGED, 87G UNCHANGED, 87H UNCHANGED, 87I UNCHANGED, 87J UNCHANGED, 87K UNCHANGED, 87L UNCHANGED, 87M UNCHANGED, 87N UNCHANGED, 87O UNCHANGED, 87P UNCHANGED, 87Q UNCHANGED, 87R UNCHANGED, 87S UNCHANGED, 87T UNCHANGED, 87U UNCHANGED, 87V UNCHANGED, 87W UNCHANGED, 87X UNCHANGED, 87Y UNCHANGED, 87Z UNCHANGED
05	REVISED	PARCEL 87A REVISED, 87B CHANGED, 87C UNCHANGED, 87D UNCHANGED, 87E UNCHANGED, 87F UNCHANGED, 87G UNCHANGED, 87H UNCHANGED, 87I UNCHANGED, 87J UNCHANGED, 87K UNCHANGED, 87L UNCHANGED, 87M UNCHANGED, 87N UNCHANGED, 87O UNCHANGED, 87P UNCHANGED, 87Q UNCHANGED, 87R UNCHANGED, 87S UNCHANGED, 87T UNCHANGED, 87U UNCHANGED, 87V UNCHANGED, 87W UNCHANGED, 87X UNCHANGED, 87Y UNCHANGED, 87Z UNCHANGED

STV / ROTH / WHITFIELD ASSOCIATES, INC.  
 1000 West 15th Street, Suite 200  
 Denver, Colorado 80202  
 Phone: 303.733.1000  
 Fax: 303.733.1001  
 www.stvrwh.com



SEE SHEET 35 FOR -L- PROFILE.

MATCHLINE STA. 67+20.00 -L- SEE SHEET 20

MATCHLINE STA. 63+60.00 -L- SEE SHEET 18



**PROJECT REFERENCE NO.** R-2241A  
**SHEET NO.** 19  
**TOWN ENGINEER** HYDRAULICS ENGINEER  
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION

**Permit Drawing**  
**Sheet 36 of 48**  
**Revised 6/15/12**

**CONST. BY**  
 R. W. REV.

**LEGEND:**  
 Hatched pattern: DENOTES FILL IN WETLAND  
 Hatched pattern: DENOTES IMPACTS IN SURFACE WATER  
 Hatched pattern: DENOTES IMPACTS IN SURFACE WATER POND  
 Dotted pattern: DENOTES MECHANIZED CLEARING  
 Stippled pattern: DENOTES TEMPORARY IMPACTS IN SURFACE WATER  
 Solid black: FULL DEPTH PAVED SHOULDER  
 Dashed line: PAVEMENT REMOVAL

**REVISIONS**

06-02-11: NEW PARCEL #1 AND PROPERTY LINE CHANGE ON PARCEL #7  
 06-02-11: PARCEL #10 RECALCULATED  
 06-02-11: PARCEL #10 RECALCULATED AND ADJUSTED PARCEL #11  
 06-02-11: CHANGED PARCEL #7 TO PARCEL #8  
 06-02-11: CHANGED PARCEL #10 TO PARCEL #9  
 06-02-11: CHANGED PROPERTY INFORMATION ON PARCEL #9  
 06-02-11: CHANGED PROPERTY OWNER NAME  
 06-02-11: CHANGED PROPERTY AND BOUNDARY DATA FENCE, AND TEMPORARY ENCLOSURES

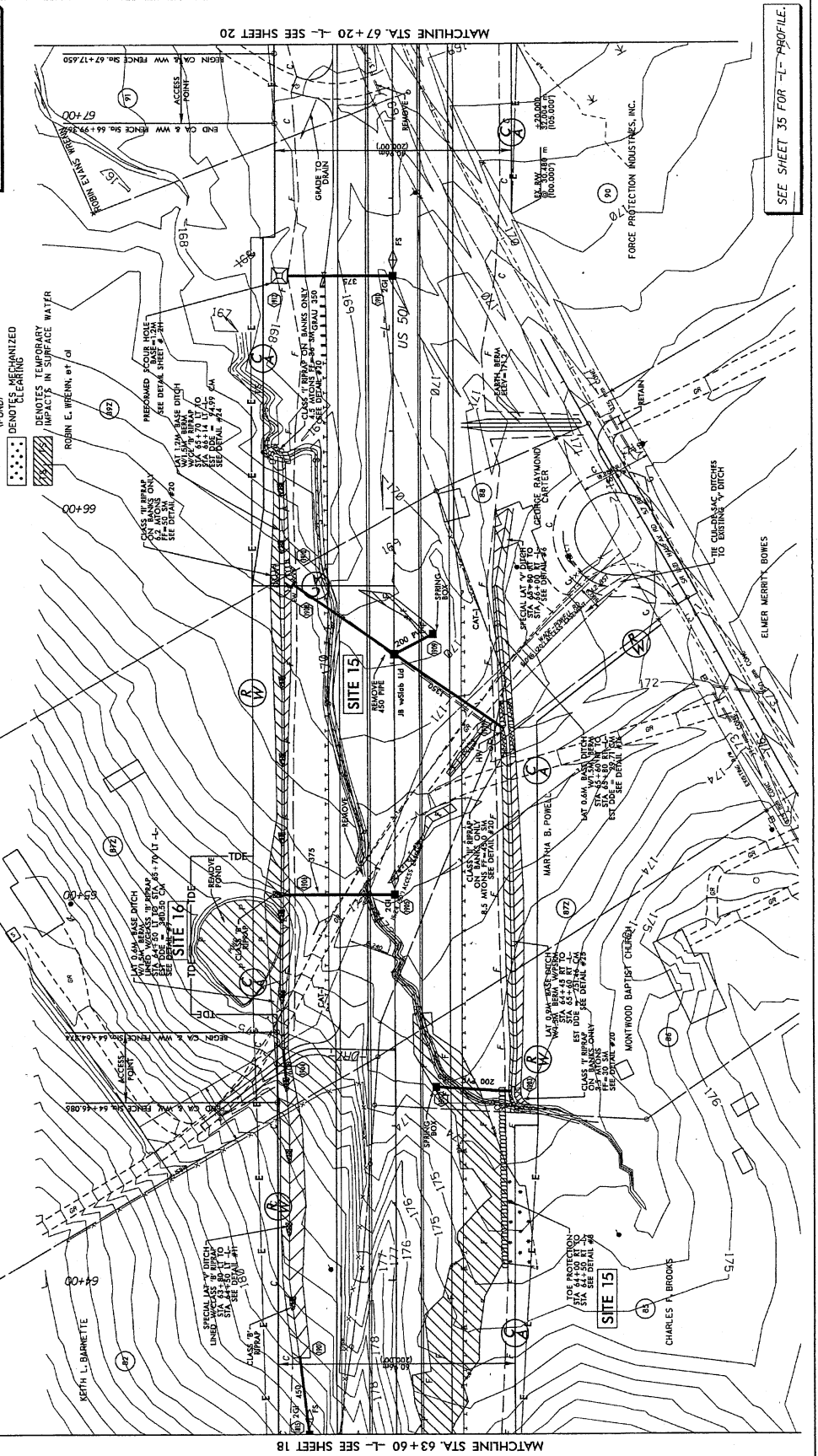
**STV/ Ralph Whitfield Associates, Inc.**  
 1000 West Richmond St., Ste. 200  
 Chicago, IL 60606  
 Phone: 773-334-8991  
 Fax: 773-334-8992

**LEGEND:**  
 Hatched pattern: DENOTES FILL IN WETLAND  
 Hatched pattern: DENOTES IMPACTS IN SURFACE WATER  
 Hatched pattern: DENOTES IMPACTS IN SURFACE WATER POND  
 Dotted pattern: DENOTES MECHANIZED CLEARING  
 Stippled pattern: DENOTES TEMPORARY IMPACTS IN SURFACE WATER  
 Solid black: FULL DEPTH PAVED SHOULDER  
 Dashed line: PAVEMENT REMOVAL

**REVISIONS**

06-02-11: NEW PARCEL #1 AND PROPERTY LINE CHANGE ON PARCEL #7  
 06-02-11: PARCEL #10 RECALCULATED  
 06-02-11: PARCEL #10 RECALCULATED AND ADJUSTED PARCEL #11  
 06-02-11: CHANGED PARCEL #7 TO PARCEL #8  
 06-02-11: CHANGED PARCEL #10 TO PARCEL #9  
 06-02-11: CHANGED PROPERTY INFORMATION ON PARCEL #9  
 06-02-11: CHANGED PROPERTY OWNER NAME  
 06-02-11: CHANGED PROPERTY AND BOUNDARY DATA FENCE, AND TEMPORARY ENCLOSURES

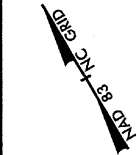
**STV/ Ralph Whitfield Associates, Inc.**  
 1000 West Richmond St., Ste. 200  
 Chicago, IL 60606  
 Phone: 773-334-8991  
 Fax: 773-334-8992



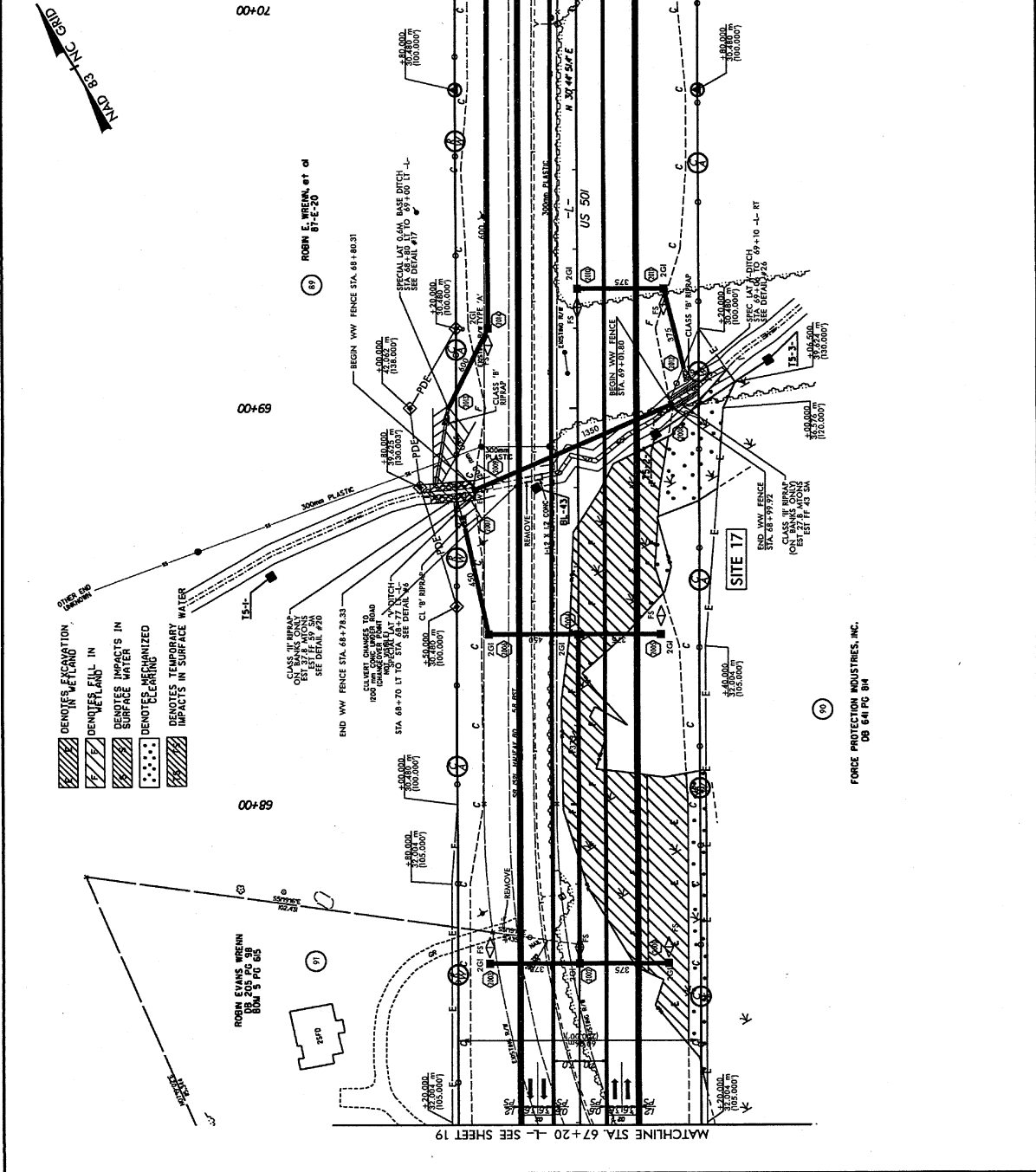
**SEE SHEET 35 FOR "L" PROFILE.**

PROJECT REFERENCE NO. R-522A	SHEET NO. 20
R/W SHEET NO. ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS FOR CONSTRUCTION	
CONSTRY. P/W REV.	

Revised 7/5/12  
 Permit Drawing  
 Sheet 37 of 48



- 125mm MONOLITHIC ISLAND
- FULL DEPTH PAVED SHOULDER
- PAYMENT REMOVAL



STV/Ralph Whitehead Associates, Inc.  
 100 West Street, Suite 200  
 Annapolis, MD 21401  
 Tel: 410-293-7500  
 Fax: 410-293-7501  
 www.stvwhitehead.com

FORCE PROTECTION INDUSTRIES, INC.  
 DB 641 PG 84

FORCE PROTECTION INDUSTRIES, INC.  
 DB 641 PG 84

SEE SHEET 36 FOR -L- PROFILE

**METRICS**  
 ROADWAY DESIGN ENGINEER  
 1" = 40' HORIZONTAL  
 1" = 4' VERTICAL

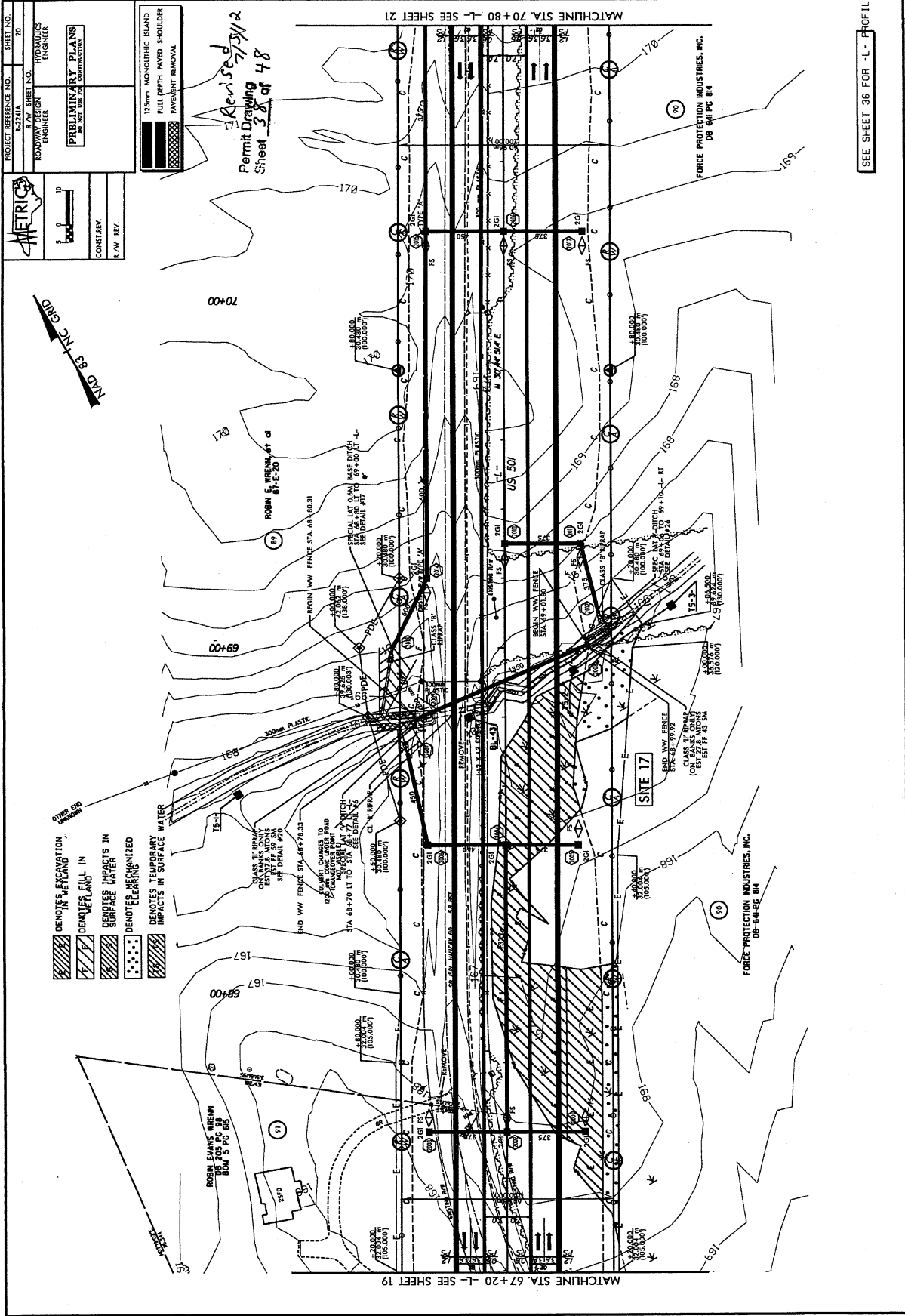
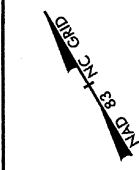
PROJECT REFERENCE NO. R-2201A  
 SHEET NO. 20  
 E.W. SHEET NO. HYDRAULICS ENGINEER

**PRELIMINARY PLANS**  
 FOR THE  
 RECONSTRUCTION OF  
 US 501

CONSTRY.  
 E.W. BK.

125mm MONOLITHIC ISLAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

*Revised 7/21/12*  
 Permit Drawing  
 Sheet 38 of 48



STV / Ralph Whitehead Associates, Inc.  
 1000 West Boulevard, Suite 200  
 Norfolk, Virginia 23510  
 NC License Number F-10891

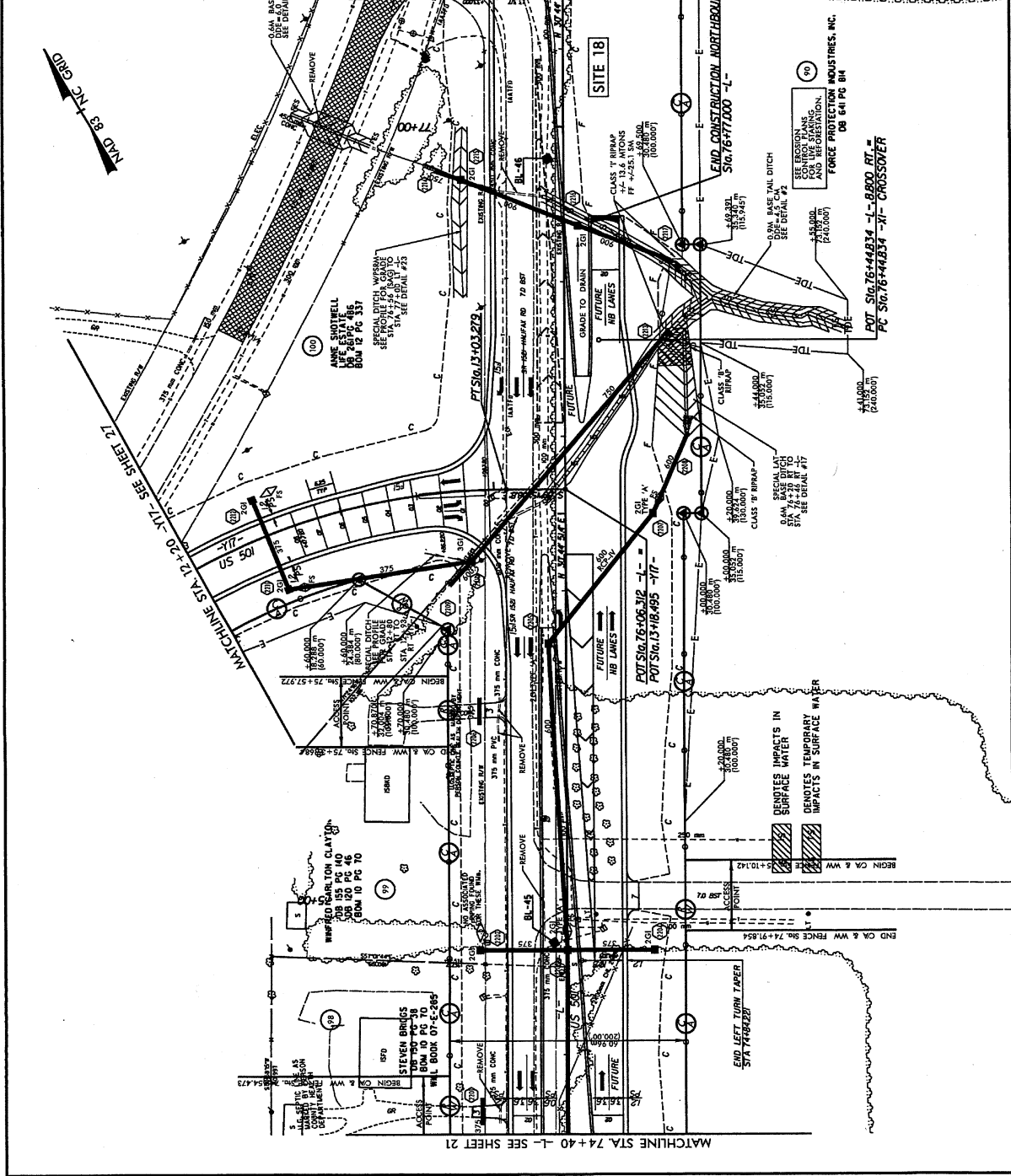
SEE SHEET 36 FOR 'L' PROFILE

PROJECT REFERENCE NO. 8-2721A  
 E/W SHEET NO. 27  
 ROADWAY DESIGN ENGINEER  
 PREPARED BY P. J. ANS  
 DATE 11/11/12

CONSTRY.  
 E/W REV.

12mm MONOTIC ISLAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

Revised 7/15/12  
 Permit Drawing  
 Sheet 37 of 48



STV / Ralph Whitehead Associates, Inc.  
 1000 Riverside Drive, Suite 200  
 Norfolk, VA 23510  
 NC License Number F-2973

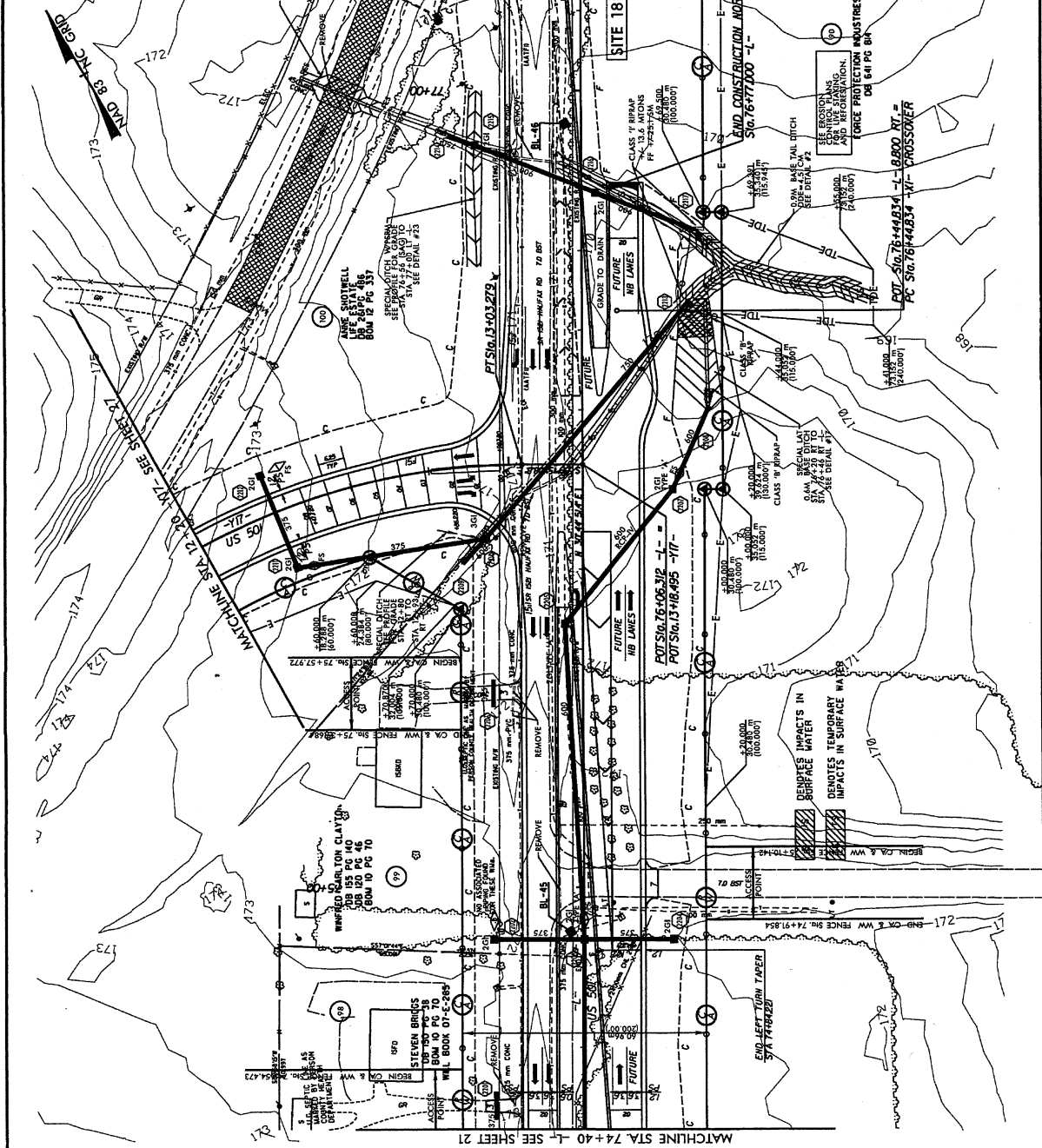
SEE SHEET 37 FOR 'L' PROFILE  
 SEE SHEET 43 FOR 'I-77' PROFILE  
 SEE PAVEMENT MARKING PLANS FOR PROPOSED INTERIM STRIPING THRU INTERSECTION

PROJECT REFERENCE NO. 8-2241A  
 & W. SHEET NO. 22  
 ROADWAY DESIGN ENGINEER  
 HYDRAULICS ENGINEER  
**PRELIMINARY PLANS**  
 FOR THE  
 CONSTRUCTION OF  
 THE  
 ROADWAY

CONST. REV.  
 R.A.W. REV.

15mm MONOTHRIC ISLAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

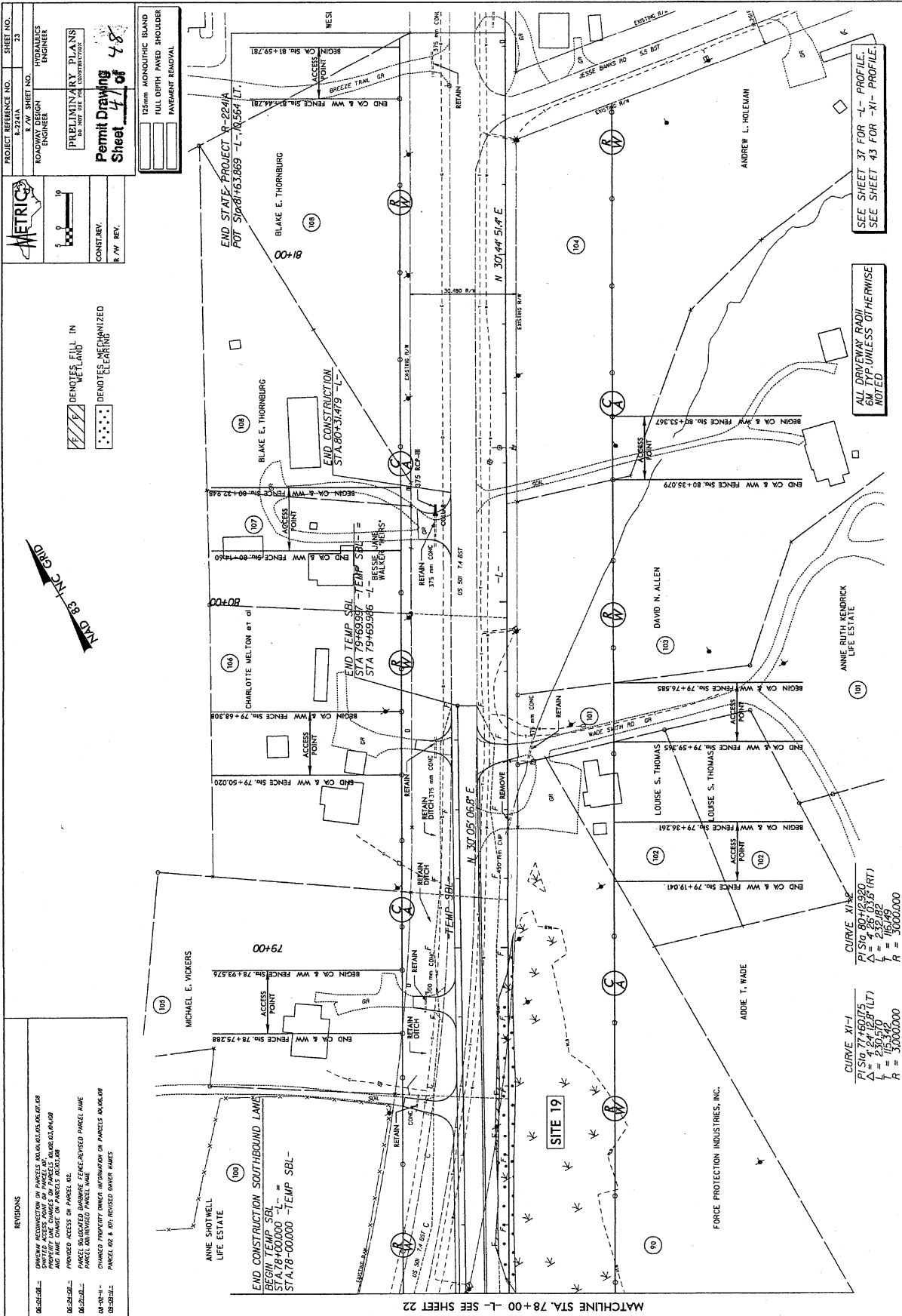
*Revised 7/12/12*  
 Permit Drawing  
 Sheet 40 of 48



SEE PAVEMENT MARKING PLANS FOR PROPOSED INTERIM STRIPING THRU INTERSECTION

SEE SHEET 97 FOR 'L' PROFILE  
 SEE SHEET 93 FOR '117' PROFILE

STV Ralph Whitbeck Associates, Inc.  
 1000 West McLeod St., Ste. 200  
 Denver, CO 80202  
 MC License Number F-5993



PROJECT REFERENCE NO. R-22A/A  
 R/W SHEET NO. 23  
 HYDRAULICS ENGINEER  
 ROADWAY DESIGN ENGINEER  
 PRELIMINARY PLANS FOR THE CONSTRUCTION OF  
**Permit Drawing**  
**Sheet 47 of 48**  
 CONSTATY.  
 R/W REV.

**METRIC**  
 DEMONSTRATES FULL IN  
 METALAND  
 DENOTES MECHANIZED  
 CLEARING

125mm MONOLITHIC ISLAND  
 FULL DEPTH PAVED SHOULDER  
 PAVEMENT REMOVAL

END STATE PROJECT R-22A/A  
 POT STA 81+65.089 -L- 82+64.171

END CONSTRUCTION SBL  
 STA 80+31.479 -L-  
 END TEMP SBL  
 STA 79+65.937 -L-  
 STA 79+65.936 -L-  
 BESSIE JAMES WALKER WELLS

END CONSTRUCTION SOUTHBOUND LANE  
 BEGIN TEMP SBL  
 STA 78+00.000 -L-  
 STA 78+00.000 -L- TEMP SBL

MATCHLINE STA 78+00 -L- SEE SHEET 22

REVISIONS  
 08-20-12: OWNER REVISIONS OF PARCELS AND ADJACENT PARCELS  
 AND NAME CHANGE OF PARCELS AND ADJACENT PARCELS  
 08-20-12: PROVIDED ACCESS TO PARCELS AND ADJACENT PARCELS  
 08-20-12: CHANGED PROPERTY OWNER INFORMATION ON PARCELS AND ADJACENT PARCELS  
 08-20-12: PARCEL AND ADJACENT OWNER NAMES

STV / Ralph Whitehead Associates, Inc.  
 1000 West Main Street  
 Suite 200  
 NC License Number F-6997

CURVE XI-1  
 PLSID 77+60/75  
 $\Delta = 124^{\circ}12'28"$  (LT)  
 $L = 230.170$   
 $R = 3000.000$

CURVE XI-2  
 PLSID 80+12/820  
 $\Delta = 125^{\circ}03'55"$  (RT)  
 $L = 632.182$   
 $R = 3000.000$

SEE SHEET 37 FOR -L- PROFILE.  
 SEE SHEET 43 FOR -X- PROFILE.

ALL DRIVEWAY RADII  
 6M TYP. UNLESS OTHERWISE  
 NOTED

PROPERTY OWNERS:  
 ANNE SHOTWELL LIFE ESTATE  
 MICHAEL E. VICKERS  
 CHARLOTTE MELTON et al  
 BLAKE E. THORNBURG  
 LOUISE S. THOMAS  
 DAVID N. ALLEN  
 ANNIE RUTH KENDRICK LIFE ESTATE  
 ADDIE T. WADE  
 FORCE PROTECTION INDUSTRIES, INC.  
 ANDREW L. HOLDMAN

PROPERTY OWNERS:  
 ANNE SHOTWELL LIFE ESTATE  
 MICHAEL E. VICKERS  
 CHARLOTTE MELTON et al  
 BLAKE E. THORNBURG  
 LOUISE S. THOMAS  
 DAVID N. ALLEN  
 ANNIE RUTH KENDRICK LIFE ESTATE  
 ADDIE T. WADE  
 FORCE PROTECTION INDUSTRIES, INC.  
 ANDREW L. HOLDMAN

PROPERTY OWNERS:  
 ANNE SHOTWELL LIFE ESTATE  
 MICHAEL E. VICKERS  
 CHARLOTTE MELTON et al  
 BLAKE E. THORNBURG  
 LOUISE S. THOMAS  
 DAVID N. ALLEN  
 ANNIE RUTH KENDRICK LIFE ESTATE  
 ADDIE T. WADE  
 FORCE PROTECTION INDUSTRIES, INC.  
 ANDREW L. HOLDMAN

PROJECT REFERENCE NO. 23  
 SHEET NO. 23  
 ROADWAY DESIGN ENGINEER  
 HYDRAULICS ENGINEER  
 PRELIMINARY PLANS  
 NOT FOR CONSTRUCTION  
**Permit Drawing**  
 Sheet 12 of 48

METRIC  
 CONST. REV.  
 R/W REV.

15cm MONUMENTIC IRIS  
 FULL DEPTH PAVED SHOULDER  
 PAYMENT REMOVAL

DEMOTED FILL IN  
 DEMOTED FILL IN  
 DEMOTED FILL IN

END STATE PROJECT R-224/A  
 POT STA 81+63.869 -L- 81+64.281

END CONSTRUCTION  
 STA 80+31.479 -L-

BLAKE E. THORNBURG

WESI

END TEMP SBL  
 STA 79+60.000 -L- =  
 STA 79+60.000 -L- =  
 STA 79+60.000 -L- =

BESSE JAMES  
 WALKER HELMS

CHARLOTTE MELTON et al

END CA & WW FENCE STA 79+49.308

BEGIN CA & WW FENCE STA 79+50.020

END CA & WW FENCE STA 79+50.020

ACCESS POINT

RETAIN

US 50' 24.8 FT

END CA & WW FENCE STA 80+35.075

BEGIN CA & WW FENCE STA 80+35.075

ACCESS POINT

RETAIN

US 50' 24.8 FT

DAVID N. ALLEN

ANNE RUTH KENDRICK  
 LIFE ESTATE

END CA & WW FENCE STA 79+72.555

BEGIN CA & WW FENCE STA 79+72.555

ACCESS POINT

RETAIN

US 50' 24.8 FT

LOUISE S. THOMAS

LOUISE S. THOMAS

END CA & WW FENCE STA 79+19.041

BEGIN CA & WW FENCE STA 79+19.041

ACCESS POINT

RETAIN

US 50' 24.8 FT

AUDIE T. WADE

FORCE PROTECTION INDUSTRIES, INC.

END CONSTRUCTION SOUTHBOUND LANE  
 BEGIN TEMP SBL  
 STA 78+00.000 -L- =  
 STA 78+00.000 -L- =

ANNE SHOTWELL  
 LIFE ESTATE

MICHAEL E. VICKERS

END CA & WW FENCE STA 78+75.288

BEGIN CA & WW FENCE STA 78+75.288

ACCESS POINT

RETAIN

US 50' 24.8 FT

END CONSTRUCTION SOUTHBOUND LANE  
 BEGIN TEMP SBL  
 STA 78+00.000 -L- =  
 STA 78+00.000 -L- =

ANNE SHOTWELL  
 LIFE ESTATE

MICHAEL E. VICKERS

END CA & WW FENCE STA 78+75.288

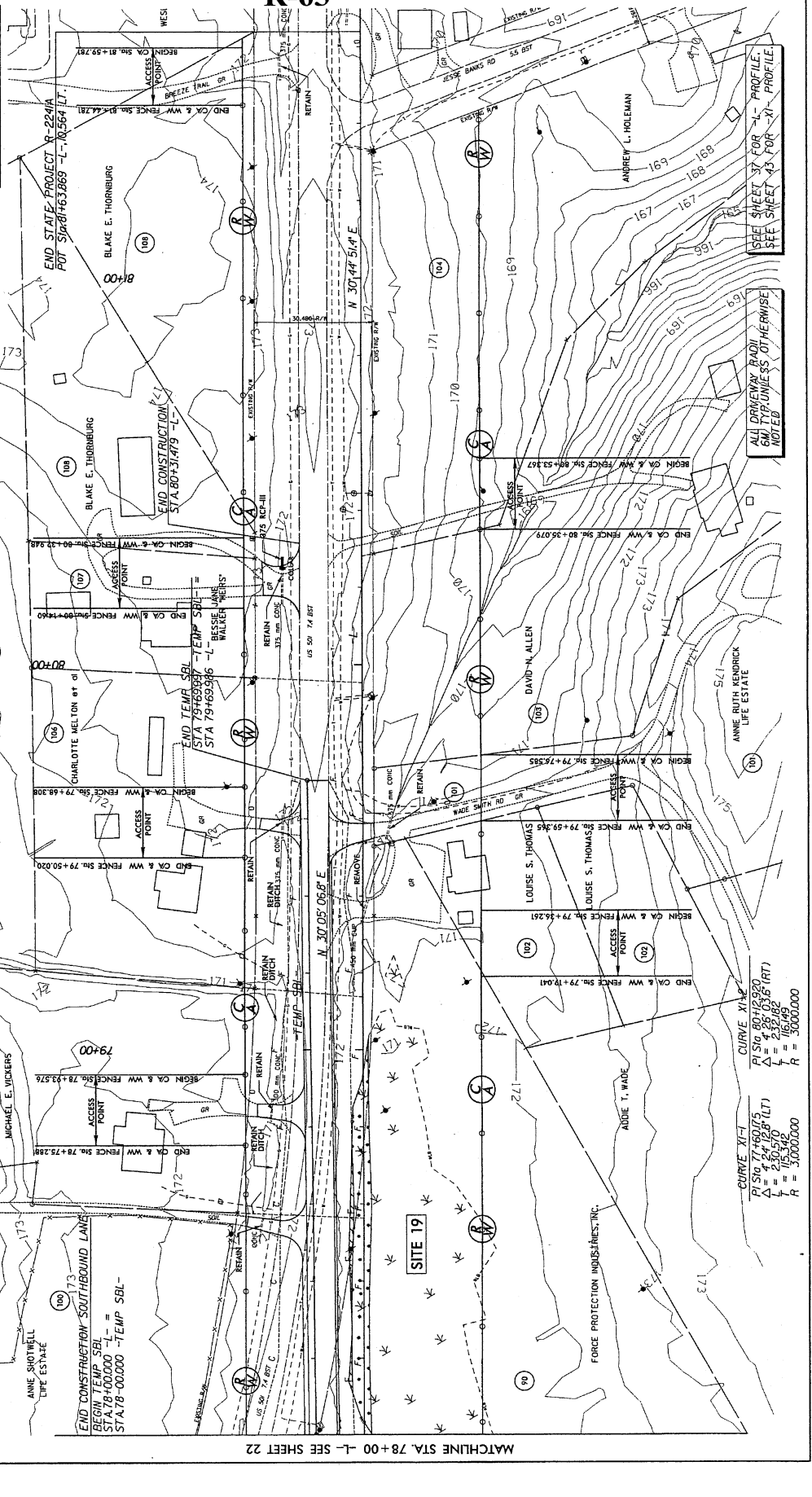
BEGIN CA & WW FENCE STA 78+75.288

ACCESS POINT

RETAIN

US 50' 24.8 FT

STV / Ralph Whitehead Associates, Inc.  
 1000 Lakeshore Blvd. S.  
 Suite 100  
 Minneapolis, MN 55406  
 Phone: 612-338-1000  
 Fax: 612-338-1001  
 E-mail: stv@whitehead.com



ALL DRIVEWAY RADI  
 6M TYP UNLESS OT  
 HERWISE NOTED

CURVE XI-1  
 PLS 519 77+49.075  
 $\Delta = 424.128$  (LT)  
 $L = 230.570$   
 $L = 165.342$   
 $R = 3000.000$

CURVE XI-2  
 PLS 519 80+12.890  
 $\Delta = 429.035$  (RT)  
 $L = 232.682$   
 $L = 161.649$   
 $R = 3000.000$

SEE SHEET 17 FOR  
 PROFILE  
 SEE SHEET 18 FOR  
 PROFILE

MATCHLINE STA. 78+00 -L- SEE SHEET 22

SITE 19

PROPERTY OWNERS  
NAMES AND ADDRESSES

PARCEL NO.	NAMES		ADDRESSES
14	Jimmy Lewis Contracting, Inc.		3068 Chub Lake Rd. Roxboro NC 27574
15	Roxboro Properties LLC		PO Box 190138 Dallas TX 75219
16	Gates, J.E.	Rosalie Gate	Drawer 720 Roxboro NC 27573
16A	J. E. Gates Trust		PO Box 720 Roxboro NC 27573
16B	J. E. Gates Estate		PO Box 720 Roxboro NC 27573
17	Perkins, Charles E.		PO Box F Roxboro NC 27573
33	Wade, Estelle P.		490 Virgilina Rd Roxboro NC 27573
35	Woody & Anderson Properties Inc.		112 S. Main St. Roxboro NC 27573
36	Call, Nathaniel		570 Virgilina Rd. Roxboro NC 27573
41	Gentry, Odella P.		285 Adcock Rd. Lillington NC 27546
63	Pentecost, Nellie R.		1065 Providence Rd. Roxboro NC 27573
64	Smith, Howard		1031 Providence Rd. Roxboro NC 27573
66	Smith, Mary P.		1031 Providence Rd. Roxboro NC 27573
62	Garrett, Almeade G.		1899 Virgilina Rd. Roxboro NC 27573
69	Perkins, Charles		P.O. Box F Roxboro NC 27573
70Z	Wanda H. Perkins Miriam J. Lavelle		525 Mill Hill Rd. Roxboro NC 27574
76	Jeffers, Charlie V.		1108 Semora Rd. Roxboro NC 27573
76A	Jeffers, Charlie V.		1108 Semora Rd. Roxboro NC 27573
	Beverly W. Jeffers		

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IN ROXBORO TO  
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PROPERTY OWNERS  
NAMES AND ADDRESSES

PARCEL NO.	NAMES		ADDRESSES
77	Clay, Austin B.		204 Hill St. Roxboro NC 27573
78	Clay, John D.		701 Patterson Dr. Roxboro NC 27573
78Z	Ronald E. Thomas, Jr.		948 Semora Rd. Roxboro NC 27574
80	Jodi R. Thomas		
	Shotwell, Jr. James		509 Meherrin Lane Murfreesboro NC 27855
85	Brooks, Charles F.		3875 Halifax Rd Roxboro NC 27574
	Wilma Brooks		
86	Montwood Baptist Church		4416 Boston Rd. Roxboro NC 27573
87	Powell, Roy R.		4431 Halifax Rd Roxboro NC 27573
87A	Wade, Racheal D.		124 Wade Powell Rd Roxboro NC 27574
87Z	Martha B. Powell		150 Wade Powell Rd. Roxboro NC 27574
89Z	Robin E. Wrenn		8101 Slatesville Rd. Keeling VA 24566
90	Force Protection Industries, Inc.		9801 Highway 78 Ladson SC 29456
103	Allen, David N.		33 Kendrick Dr. Roxboro NC 27574
	Elizabeth Allen		

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WETLAND PERMIT IMPACT SUMMARY													
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS						
			Permanent Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation in Wetlands (ha)	Mechanized Clearing in Wetlands (ha)	Hand Clearing in Wetlands (ha)	Permanent SW impacts (ha)	Temp. SW impacts (ha)	Existing Channel Impacts Permanent (m)	Existing Channel Impacts Temp. (m)	Natural Stream Design (m)	
1	13+28/13+62 -L-	3@3mx3m RCBC							0.012	0.002	42	8	
	Stream Bank Stabilization								0.013		38		
2	15+12/15+59 -L- LT	750mm CSP	0.045		0.004	0.025							
3 *	19+21/19+23 -L- RT	Fill							<0.001		7		
4	20+84/20+89 -L-	2@2.4mx2.4m RCBC							0.010	0.005	34	12	
	Stream Bank Stabilization								0.010		18		
5	20+89/21+45 -L-	Fill	0.089			0.023							
6 *	24+98/25+10 -L- RT	900mm RCP							0.001	0.001	7	6	
	Stream Bank Stabilization								0.002		7		
7A	34+93/36+38 -L-	2.7mx1.8m RCBC	0.051			0.002			0.012	0.003	158	33	
	Stream Bank Stabilization								0.007		25		
7B *	35+38/35+51 -L- LT	Fill							0.001		18		
8	37+33/37+55 -L-	1050mm RCP	0.008		0.002	0.012			0.004	0.001	59	11	
	Stream Bank Stabilization								0.001		4		
9	40+05/40+70 -L-	1500mm RCP							0.017	0.002	85	10	
	Stream Bank Stabilization								0.002		5		
10 *	11+55/11+82 -Y13- LT	900mm CSP							0.003	0.002	28	13	
	Stream Bank Stabilization								0.001		6		
11	50+41/51+25 -L-	1200mm RCP	0.001						0.008	0.004	86	26	
	Stream Bank Stabilization								0.003		16		
12	51+47/51+91 -L-	750mm RCP	0.047										
13	53+13/53+79 -L-	900mm RCP	0.070		0.001	0.027			0.005	0.001	75	22	
TOTALS:			0.311		0.007	0.089			0.112	0.021	718	141	

\* Note: Stream Impacts are Non-Mitigatable.

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WETLAND PERMIT IMPACT SUMMARY														
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS							
			Permanent Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation in Wetlands (ha)	Mechanized Clearing in Wetlands (ha)	Hand Clearing in Wetlands (ha)	Permanent SW impacts (ha)	Temp. SW impacts (ha)	Existing Channel Impacts Permanent (m)	Existing Channel Impacts Temp. (m)	Natural Stream Design (m)		
14	57+12/57+55 -L- Stream Bank Stabilization	1200mm RCP	0.036		0.002					0.007	0.001	80	7	
15	63+41/66+32 -L- Stream Bank Stabilization	1350mm RCP	0.144			0.013				0.002	0.001	4	23	
16	64+72/64+99 -L- LT	Pond Removal								0.002		4		
17	67+35/69+11 -L- Stream Bank Stabilization	1350 RCP	0.191		0.061	0.074				0.005	0.002	45	7	
18 *	76+03/76+90 -L- Stream Bank Stabilization	750mm/900mm RCP								0.006	0.005	20	55	
19	77+72/79+54 -L- Fill	Fill	0.003			0.039				<0.001	0.005	108	13	
TOTALS:			0.374		0.063	0.126				0.084	0.009	473	92	
TOTALS:			0.685		0.070	0.215				0.196	0.030	1191	233	

\* Note: Stream Impacts are Non-Mitigatable.

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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	13+28/13+62 -L- Stream Bank Stabilization	3@3mx3m RCBC									138	26	
2	15+12/15+59 -L- LT	750mm CSP	0.11		0.01						125		
3 *	19+21/19+23 -L- RT	Fill				0.06					23		
4	20+84/20+89 -L- Stream Bank Stabilization	2@2.4mx2.4m RCBC									112	39	
5	20+89/21+45 -L- Stream Bank Stabilization	Fill	0.22			0.06					59		
6 *	24+98/25+10 -L- RT	900mm RCP									23	20	
7A	34+93/36+38 -L- Stream Bank Stabilization	2.7mx1.8m RCBC	0.13			<0.01					518	108	
7B *	35+38/35+51 -L- LT	Fill									82		
8	37+33/37+55 -L- Stream Bank Stabilization	1050mm RCP	0.02		<0.01	0.03					59		
9	40+05/40+70 -L- Stream Bank Stabilization	1500mm RCP									13		
10 *	11+55/11+82 -Y13- LT Stream Bank Stabilization	900mm CSP									16		
11	50+41/51+25 -L- Stream Bank Stabilization	1200mm RCP	<0.01								20		
12	51+47/51+91 -L- Stream Bank Stabilization	750mm RCP	0.12								282	85	
13	53+13/53+79 -L- Stream Bank Stabilization	900mm RCP	0.17		<0.01	0.07					246	72	
SUB TOTALS:			0.77		0.01	0.21					2356	463	

\* Note: Stream Impacts are Non-Mitigatable.

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