

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.

PERMIT**AUTHORITY GRANTING THE PERMIT**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:

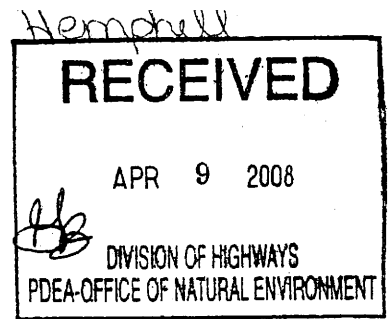
Should the Contractor propose to utilize construction methods (such as temporary structures or fill in waters and/or wetlands for haul roads, work platforms, cofferdams, etc.) not specifically identified in the permit (individual, general, or nationwide) authorizing the project it shall be the Contractor's 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
151 PATTON AVENUE
ROOM 208
ASHEVILLE, NORTH CAROLINA 28801-5006



April 1, 2008

260

Regulatory Division

Action ID. SAW-2007-2197-357/300, TIP No's. R-2518A, R-2518B, and R-2519A

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

Dear Dr. Thorpe:

In accordance with your written request of June 26, 2007, subsequent submittals of October 1, 2007, March 5, 2008 and the ensuing administrative record, enclosed are two copies of a permit to discharge dredged or fill material into 0.94 acres of wetland, and 14,766 linear feet of stream channel within the Little Ivy Creek, Cane River, and South Toe River drainages associated with the widening of approximately 21 miles of US Highway 19/19E in Madison and Yancey Counties, North Carolina. (TIP No's. R-2518 A/B and R-2519A).

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

As you are aware, the US Fish and Wildlife Service (Service) issued a Biological Opinion (BO) on March 14, 2008 regarding the impacts of this project as well as those associated with the construction of R-2519B on the Appalachian elktoe mussel. It is our understanding that R-2519 B is not scheduled to be let until 2009 and you intend to seek a separate Department of the Army permit for its construction. In the BO and the associated mandatory terms and conditions, the Service has stipulated that, for R-2519B, a bridge will be constructed over Big Crabtree Creek. If and until the BO is revised or supplemented, you will be obligated to construct a bridge, in accordance with the BO, over Big Crabtree Creek as well as to implement the other requirements contained in the BO.

261

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

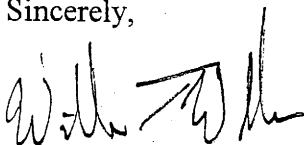
Col. John E. Pulliam, Jr., District Commander
US Army Corps of Engineers, Wilmington District
Post Office Box 1890
Wilmington, NC 28402-1890

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, and that it has been received by the District Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by May 28, 2008.

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

After the permit is authorized in this office, the original copy will be returned to you; the duplicate copy will be permanently retained in this office. Should you have questions, contact Mr. David Baker, Regulatory Division, Asheville Regulatory Field Office, telephone (828) 271-7980 extension 225.

Sincerely,



William T. Walker
Chief, Asheville Field Office

Enclosures

DEPARTMENT OF THE ARMY PERMIT

Permittee **North Carolina Department of Transportation**

Permit No. **2007-2197-357/300**

Issuing Office **CESAW-RG-A**

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

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

Project Description: **to discharge dredged or fill material into 0.94 acres of wetland, and 14,766 linear feet of stream channel within the Little Ivy Creek, Cane River, and South Toe River drainages associated with the widening of approximately 21 miles of US Highway 19/19E. (TIP No's. R-2518 A/B and R-2519A).**

Project Location: **in Madison and Yancey Counties, North Carolina**

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **April 1, 2013**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

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

Special Conditions:

SEE ATTACHED SPECIAL CONDITIONS

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
 - 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.

Special Conditions

1. All work must be performed in strict compliance with the attached plans, which are a part of this permit. Any modifications to the permit plans must be approved by the Corps of Engineers prior to implementation.
2. Failure to institute and carry out the details of the following special conditions will result in a directive to cease all ongoing and permitted work within waters and/or wetlands associated with the permitted project or such other remedies and/or fines as the District Engineer or his authorized representatives may seek.
3. The permittee will ensure that the construction design plans for this project do not deviate from the permit plans attached to this authorization. Written verification shall be provided that the final construction drawings comply with the attached permit drawings prior to any active construction in waters of the United States, including wetlands. Any deviation in the construction design plans will be brought to the attention of the Corps of Engineers, Asheville Regulatory Field Office prior to any active construction in waters and wetlands.
4. The permittee shall schedule a pre-construction meeting between their representatives, the contractor and the Corps of Engineers, Asheville Regulatory Field Office, NCDOT Regulatory Project Manager prior to any work in jurisdictional waters and wetlands to ensure that there is a mutual understanding of all terms and conditions contained in this DA permit. The permittee shall provide the NCDOT Regulatory Project Manager with a copy of the final plans at least two weeks prior to the pre-construction meeting along with a description of any changes that have been made to the project's design, construction methodology or construction timeframe. The permittee shall schedule the pre-construction meeting for a time when the Corps of Engineers and North Carolina Division of Water Quality (NCDWQ) Project Managers can attend. The permittee shall notify the Corps of Engineers and NCDWQ Project Managers a minimum of thirty (30) days in advance of the meeting.
5. The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit, and any authorized modifications. A copy of this permit and any authorized modifications, including all conditions, shall be available at the project site during construction and maintenance of this project.
6. Except as authorized by this permit or any Corps of Engineers approved modification to this permit, no excavation, fill or mechanized land clearing activities shall take place at any time in the construction or maintenance of this project within waters or wetlands nor shall any activities take place that cause the

degradation of waters or wetlands. In addition, except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project in such a manner as to impair normal flows and circulation patterns within, into or out of waters and wetlands or to reduce the reach of waters and wetlands.

7. To ensure that all borrow and waste activities occur on uplands and do not result in the degradation of adjacent waters and wetlands, except as authorized by this permit, the permittee shall require its contractors and/or agents to identify all areas to be used to borrow material or to dispose of dredged, fill or waste material. The permittee shall provide the Corps of Engineers with appropriate maps indicating the locations of proposed borrow or waste sites as soon as such information is available. The permittee will coordinate with the Corps of Engineers before approving any borrow or waste sites that are within 400 feet of any stream or wetland. All jurisdictional wetland delineations on borrow and waste areas shall be verified by the Corps of Engineers and shown on the approved reclamation plans. The permittee shall ensure that all such areas comply with the preceding condition of this permit and shall require and maintain documentation of the location and characteristics of all borrow and disposal sites associated with this project. This documentation will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with the preceding condition. All information will be available to the Corps of Engineers upon request. The permittee shall require its contractors to complete and execute reclamation plans for each waste and borrow site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the Corps of Engineers within 30 days of the completion of the reclamation work.
8. Adequate sedimentation and erosion control measures must be implemented prior to any ground disturbing activities to minimize impacts to downstream aquatic resources. These measures must be inspected and maintained regularly, especially following rainfall events. All fill material must be adequately stabilized at the earliest practicable date to prevent sediment from entering into adjacent waters or wetlands.
9. The permittee shall remove all sediment and erosion control measures placed in waters or wetlands, and shall restore natural grades in those areas prior to project completion.
10. The permittee shall take measures to prevent live or fresh concrete from coming into contact with any surface waters until the concrete has hardened and cured.
11. During the clearing phase of the project, heavy equipment must not be operated in surface waters or stream channels. Temporary stream crossings will be used to access the opposite sides of stream channels. All temporary diversion channels and stream crossings will be constructed of nonerodable materials. Grubbing of riparian vegetation will not occur until immediately before construction begins on

a given segment of stream channel.

12. All authorized culverts will be installed to allow the passage of low stream flows and the continued movement of fish and other aquatic life as well as to prevent head-cutting of the streambed. For all box culverts and for pipes greater than 48 inches in diameter, the bottom of the culvert will be buried one foot below the bed of the stream unless such burial would be impractical and the Corps of Engineers has waived this requirement. For culverts 48 inches in diameter or smaller, the bottom of the pipe will be buried below the bed of the stream to a depth equal to or greater than 20 percent of the diameter of the culvert. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in the disequilibrium of wetlands, streambeds or stream banks adjacent to, upstream of or downstream of the structures. In order to allow for the continued movement of bed load and aquatic organisms, existing channel widths and depths will be maintained at the inlet and outlet ends of culverts. Riprap armoring of streams at culvert inlets and outlets shall be minimized above ordinary high water elevation in favor of bioengineering techniques such as bank sloping, erosion control matting and revegetation with deep-rooted native woody plants.
13. Unless 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.
14. All mechanized equipment operating near surface waters shall be regularly inspected to prevent contamination of streams from leakage of fuels, lubricants, hydraulic fluids or other toxic materials. No equipment staging or storage of construction material will occur in wetlands. Hydro-seeding equipment will not be discharged or washed out into any surface waters or wetlands. In the event of a spill of petroleum products or any other hazardous waste, the permittee shall immediately report it to the NC Division of Water Quality at (919) 733-5083 or (800) 662-7956 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act will be followed.
- *15. Compensatory mitigation for unavoidable impacts to 0.26 acre of riparian wetlands and 0.16 acre of non-riparian wetlands (HUC 06010105) and 0.37 acre of riparian wetlands, 0.15 acre of non-riparian wetlands, and 1,547 linear feet of cold-water stream channel (HUC 06010108) associated with the proposed project shall be provided by the Ecosystem Enhancement Program (EEP) as outlined in the October 22, 2007 letter from William D. Gilmore, P.E., EEP Director. Pursuant to Section X of the EEP Memorandum of Agreement (MOA) and as revised on March 8, 2007, between the State of North Carolina and the US Army Corps of Engineers, Wilmington District, signed on July 22, 2003, the EEP will provide 0.63 acre of restoration equivalent riparian wetlands, 0.31 acre of restoration equivalent non-riparian wetlands and 1,547 linear feet of cold water stream restoration in the French Broad River Basin, Hydrologic Cataloging Units

06010105 and 06010108. For wetlands, a minimum of 1:1 (impact to mitigation) must be in the form of wetland restoration. The remainder of the required compensatory mitigation for the unavoidable impacts associated with the R2518 and R2519A TIP Projects will be accomplished in accordance with the two mitigation plans titled "STREAM MITIGATION PLAN, US19, R-2518A, ON-SITE MITIGATION, MADISON COUNTY, NORTH CAROLINA" dated August 2006; and "STREAM MITIGATION PLAN, US HIGHWAY 19, R-2518B, ON-SITE MITIGATION, YANCEY COUNTY, NORTH CAROLINA" dated February 2007.

16. The permittee shall implement the work moratoria for fishery resources in specific bodies of water as outlined in the attached July 19, 2007 letter from the North Carolina Wildlife Resources Commission.
17. The permittee will report any violation of the above conditions and any violations of Section 404 of the Clean Water Act from unauthorized work in writing to the Wilmington District, US Army Corps of Engineers within 24 hours of the permittee's discovery of the violation.
18. This Corps permit does not authorize you to take an endangered species, in particular the Appalachian elktoe mussel. In order to legally take a listed species, you must have separate authorization under the ESA. (e.g., an ESA Section 10 permit, or a BO under the ESA Section 7, with "incidental take" provisions with which you must comply). The enclosed USFWS Biological Opinion, dated March 14, 2008, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this Corps permit is conditional upon your compliance with all the mandatory terms and conditions associated with incidental take of the attached BO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute non-compliance with your Corps permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its BO, and the ESA.
19. All conditions of the North Carolina Division of Water Quality's Section 401 Water Quality Certification No. 3427, original dated October 11, 2007 and modification dated March 17, 2008, are hereby incorporated as special conditions of this permit.



☒ North Carolina Wildlife Resources Commission ☒

Richard B. Hamilton, Executive Director

TO: Jeff Hemphill, Natural Environment Unit
N. C. Department of Transportation

FROM: Marla Chambers, Western NCDOT Permit Coordinator *Marla Chambers*
Habitat Conservation Program, NCWRC

DATE: July 19, 2007

SUBJECT: Moratoria for the US 19E widening project from I-26 in Madison County to the existing multilane section west of Spruce Pine in Mitchell County. TIP Nos. R-2518, R-2519A, and R-2519B.

As requested, this is to provide a list of moratoria recommended for the portion of the US 19 E widening project from Madison County to Mitchell County, specifically TIP Nos. R-2518, R-2519A, and R-2519B. These recommendations were originally made in our comment letters and communications at earlier stages of the project planning process for specific segments of the project. Recent fish sampling by NCDOT (May 2006 and May 2007) and NCWRC (August 2006) has provided information that allows the appropriate moratoria to be determined for specific bodies of water. They are provided below for your convenience.

Our comments dated May 23, 2003 and November 21, 2005 for R-2519B and February 24, 2005 for R-2518 and R-2519A, as well as email comments dated February 6, 2007, which referred to all three project segments, provided moratoria recommendations. A clarification should be noted regarding the two comment letters for R-2519B; Big Crabtree Creek was erroneously referred to as Cranberry Creek in both letters. This correction was also announced at a recent Concurrence meeting (April 17, 2007).

On the western end, we are not requesting a moratorium for Middle Fork Creek or its unnamed tributaries. An in-water work moratorium from April 1 to June 30 will apply to Cane River and South Toe River to protect federal and state listed species, including the federally Endangered Appalachian elktoe (*Alasmidonta raveneliana*). Smallmouth bass, an important game fish, will also receive some reproduction protection with this moratorium.

The remaining perennial streams within the project will need to adhere to a trout moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer from October 15 to April 15 for streams containing brook or brown trout or from January 1 to April 15 for streams in which the only trout species occurring is rainbow trout. Current data lead us to recommend the October 15 to April 15 trout moratorium for Big Crabtree Creek and the January 1 to April 15 trout moratorium for California Creek, Bald Creek, Little Crabtree Creek, Prices Creek, Brushy Creek, and Long Branch. Unnamed tributaries should use the moratorium appropriate for the named stream they flow to, unless survey data indicate otherwise.

To summarize, we recommend the following work moratoria for waters within the R-2518, R-2519A, and R-2519B projects:

April 1 to June 30 in-water work moratorium: Cane River and South Toe River

October 15 to April 15 trout moratorium: Big Crabtree Creek

January 1 to April 15 trout moratorium: California Creek, Bald Creek, Little Crabtree Creek, Prices Creek, Brushy Creek, and Long Branch

We hope this information clarifies the moratoria needed for the subject project segments. These recommendations are subject to change if new information is presented. If you have any questions, please contact me at (704) 984-1070.

cc: David Baker, USACE
Brian Wiem, NCLWQ
Marella Buncick, USFWS
Christopher Militscher, USEPA

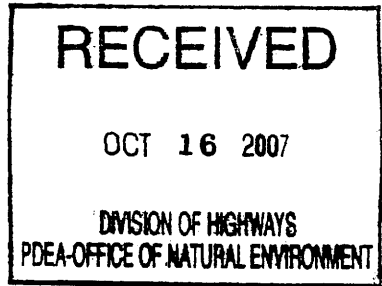


271

Hemphill

*R-2518A
401*

October 11, 2007



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

Subject: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS Proposed Improvements of US 19/US 19E from future I-26 (existing US 19-23) to SR 1186 in Madison and Yancey Counties, State Project Nos. 6.869005T and 6.909001T, TIP Project Nos. R-2518A, R-2518B and R-2519A. DWQ Project No. 20071134, Individual Certification No. 3706

Dear Dr. Thorpe:

Attached hereto is a copy of Certification No. 3706 issued to The North Carolina Department of Transportation dated October 11, 2007.

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

Sincerely,

Coleen H. Sullins,
Director

Attachments

- cc: David Baker, US Army Corps of Engineers, Asheville Field Office
- Chris Militscher, Environmental Protection Agency
- Kathy Matthews, Environmental Protection Agency
- Marla Chambers, NC Wildlife Resources Commission
- Marella Buncick, US Fish and Wildlife Service
- Mike Parker, DWQ Fayetteville Regional Office
- File Copy



**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 (DWQ) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact 0.42 acres of jurisdictional wetlands and 7,059 linear feet of jurisdictional streams in Madison and Yancey Counties. The project shall be constructed pursuant to the application dated received June 26, 2007. The authorized impacts are as described below:

Table 1 - Stream Impacts for R-2518A in the French Broad River Basin

| Site | Permanent Fill in Intermittent Stream (linear ft) | Temporary Fill in Intermittent Stream (linear ft) | Permanent Fill in Perennial Stream (linear ft) | Temporary Fill in Perennial Stream (linear ft) | Total Stream Impact (linear ft) | Stream Impacts Requiring Mitigation (linear ft) |
|----------------|---|---|--|--|---------------------------------|---|
| R-2518A | | | | | | |
| 1 | 0 | 0 | 13 | 10 | 23 | 0 |
| 1A | 0 | 0 | 144 | 0 | 144 | 0 |
| 2 | 0 | 0 | 213 | 20 | 233 | 213 |
| 3 | 0 | 0 | 148 | 20 | 168 | 148 |
| 3A | 0 | 0 | 0 | 36 | 36 | 0 |
| 4 | 0 | 0 | 85 | 10 | 95 | 85 |
| 5 | 0 | 0 | 171 | 10 | 181 | 171 |
| 6 | 0 | 0 | 148 | 20 | 168 | 148 |
| 7 | 0 | 0 | 1,168 | 20 | 1,188 | 1,168 |
| 7A | 0 | 0 | 151 | 10 | 161 | 151 |
| 8 | 0 | 0 | 154 | 10 | 164 | 154 |
| 9 | 0 | 0 | 89 | 10 | 99 | 0 |
| 10 | 0 | 0 | 39 | 20 | 59 | 0 |
| 11 | 0 | 0 | 1,071 | 10 | 1,081 | 1,071 |
| 13 | 0 | 0 | 79 | 20 | 99 | 0 |
| 13A | 194 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 171 | 10 | 181 | 171 |
| 15 | 0 | 0 | 476 | 20 | 496 | 476 |
| 16 | 0 | 0 | 95 | 10 | 105 | 0 |
| 17 | 0 | 0 | 305 | 20 | 325 | 305 |
| 18 | 0 | 0 | 637 | 20 | 657 | 637 |
| 19 | 0 | 0 | 128 | 20 | 148 | 0 |
| 20 | 0 | 0 | 111 | 20 | 131 | 0 |
| 21 | 0 | 0 | 325 | 62 | 387 | 325 |
| 22 | 0 | 0 | 148 | 20 | 168 | 0 |
| 23 | 0 | 0 | 98 | 20 | 118 | 0 |
| 24 | 0 | 0 | 230 | 20 | 250 | 230 |
| Total | 194 | 0 | 6,397 | 468 | 7,059 | 5,453 |

Total Stream Impact for R-2518A: 7,059 linear feet



Table 2 - Estimated Stream Impacts for R-2518B in the French Broad River Basin*

| Site | Permanent Fill (linear ft) | Temporary Fill (linear ft) | Total Stream Impact (linear ft) |
|----------------|-------------------------------|-------------------------------|---------------------------------------|
| R-2518B | | | |
| 1 | 43 | 10 | 53 |
| 2 | 102 | 20 | 122 |
| 3 | 49 | 10 | 59 |
| 4 | 56 | 49 | 105 |
| 5 | 76 | 20 | 96 |
| 6 | 79 | 30 | 109 |
| 7 | 496 | 20 | 516 |
| 8 | 118 | 13 | 131 |
| 9 | 204 | 16 | 220 |
| 10 | 69 | 10 | 79 |
| 11 | 36 | 0 | 36 |
| 12 | 76 | 10 | 86 |
| 13 | 95 | 16 | 111 |
| 14 | 135 | 36 | 171 |
| 14A | 10 | 0 | 10 |
| 15 | 82 | 10 | 92 |
| 16 | 112 | 10 | 122 |
| 17 | 66 | 10 | 76 |
| 18 | 66 | 10 | 76 |
| 20 | 16 | 233 | 249 |
| 20A | 36 | 10 | 46 |
| 21 | 33 | 0 | 33 |
| 22 | 154 | 10 | 164 |
| 23 | 36 | 56 | 92 |
| 24 | 16 | 10 | 26 |
| 25 | 135 | 20 | 155 |
| 26 | 39 | 10 | 49 |
| 27 | 302 | 56 | 358 |
| 28 | | 82 | 82 |
| 2A | 131 | 20 | 151 |
| Total | 2,868 | 807 | 3,675 |

Total Stream Impact for R-2518B: 3,675 linear feet*

*Estimates based on preliminary information at time of application. Impact numbers will be based on final hydraulic designs submitted with required modification.



Table 3 - Estimated Stream Impacts for R-2519A in the French Broad River Basin*

| Site | Permanent Fill (linear ft) | Temporary Fill (linear ft) | Total Stream Impact (linear ft) |
|----------------|-------------------------------|-------------------------------|---------------------------------------|
| R-2519A | | | |
| 1 | 68 | 16 | 84 |
| 2 | 85 | 18 | 103 |
| 3 | 54 | 8 | 62 |
| 4 | 46 | 12 | 58 |
| 5 | 94 | 13 | 107 |
| 6 | 81 | 11 | 92 |
| 8 | 19 | 9 | 28 |
| 9 | 35 | 19 | 54 |
| 9A | 25 | 0 | 25 |
| 10 | 714 | 47 | 761 |
| 11 | 32 | 10 | 42 |
| 12 | 132 | 20 | 152 |
| 13 | 82 | 15 | 97 |
| 14 | 129 | 153 | 282 |
| 15 | 82 | 64 | 146 |
| 16 | 41 | 10 | 51 |
| 18 | 69 | 40 | 109 |
| 21 | 66 | 35 | 101 |
| 22 | 251 | 19 | 270 |
| 23 | 132 | 9 | 141 |
| 24 | 535 | 0 | 535 |
| 25 | 186 | 34 | 220 |
| 26 | 583 | 11 | 594 |
| 27 | 143 | 11 | 154 |
| 28 | 175 | 58 | 233 |
| 29 | 294 | 14 | 308 |
| 30 | 200 | 7 | 207 |
| 31 | 50 | 24 | 74 |
| 32 | 217 | 10 | 227 |
| 33 | 325 | 26 | 351 |
| 34 | 208 | 20 | 228 |
| 35 | 73 | 20 | 93 |
| 36 | 24 | 12 | 36 |
| 37 | 59 | 10 | 69 |
| Total | 5,309 | 785 | 6,092 |

Total Stream Impact for R-2519A: 6,092 linear feet*

*Estimates based on preliminary information at time of application. Impact numbers will be based on final hydraulic designs submitted with required modification.



Table 4 - Wetland Impacts for R-2518A in the French Broad River Basin

| Site | Fill (ac) | Fill (temporary) (ac) | Excavation (ac) | Mechanized Clearing (ac) | Hand Clearing (ac) | Area under Bridge (ac) | Total Wetland Impact (ac) |
|----------------|-------------|-----------------------|-----------------|--------------------------|--------------------|------------------------|---------------------------|
| R-2518A | | | | | | | |
| 7A | 0.01 | 0 | 0 | 0 | 0 | 0 | 0.01 |
| 9 | 0.17 | 0 | 0 | 0.02 | 0 | 0 | 0.19 |
| 12 | 0.16 | 0 | 0 | 0 | 0 | 0 | 0.16 |
| 19 | 0.06 | 0 | 0 | 0 | 0 | 0 | 0.06 |
| Total | 0.40 | 0 | 0 | 0.02 | 0 | 0 | 0.42 |

Total Wetland Impact for R-2518A: 0.42 acres.

Table 5 - Estimated Wetland Impacts for R-2518B in the French Broad River Basin*

| Site | Fill (ac) | Fill (temporary) (ac) | Excavation (ac) | Mechanized Clearing (ac) | Hand Clearing (ac) | Total Wetland Impact (ac) |
|----------------|-------------|-----------------------|-----------------|--------------------------|--------------------|---------------------------|
| R-2518B | | | | | | |
| 1A | 0.07 | 0 | 0 | 0.04 | 0 | 0.11 |
| 2A | 0.11 | 0 | 0.01 | 0 | 0 | 0.12 |
| Total | 0.18 | 0 | 0.01 | 0.04 | 0 | 0.23 |

Total Wetland Impact for R-2518B: 0.23 acres.*

Table 6 - Estimated Wetland Impacts for R-2519A in the French Broad River Basin*

| Site | Fill (ac) | Fill (temporary) (ac) | Excavation (ac) | Mechanized Clearing (ac) | Hand Clearing (ac) | Total Wetland Impact (ac) |
|----------------|-------------|-----------------------|-----------------|--------------------------|--------------------|---------------------------|
| R-2519A | | | | | | |
| 17 | 0.02 | 0 | 0 | 0.02 | 0 | 0 |
| 19 | 0.15 | 0 | 0 | 0.08 | 0 | 0 |
| 20 | 0.01 | 0 | 0 | 0.01 | 0 | 0 |
| Total | 0.18 | 0 | 0 | 0.11 | 0 | 0.29 |

Total Wetland Impact for R-2519A: 0.29 acres.*

*Estimates based on preliminary information at the time of application. Impact numbers will be based on final hydraulic designs submitted with required modification.

The application provides adequate assurance that the discharge of fill material into the waters of the French Broad River Basin or wetlands 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 June 26, 2007. Should your project change, you are required to notify the DWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding US Army Corps of Engineers Permit.

Condition(s) of Certification:

Project Specific Condition(s)

1. This certification authorizes impacts to streams and wetlands for Section R-2518A from Station No. 8+00.000 -L- to Station No. 115+06.547 -L- only. When final design plans are completed for R-2518B and R-2519A, a modification to the 401 Water Quality Certification shall be submitted with five copies and fees to the NC Division of Water Quality. Final designs shall reflect all appropriate avoidance, minimization, and mitigation for impacts to wetlands, streams, and other surface waters. No construction activities that impact any wetlands, streams, or surface waters located in R-2518B and R-2519A shall begin until after the permittee applies for, and receives a written modification of the 401 Water Quality Certification from the NC Division of Water Quality.
2. Compensatory mitigation for impacts to 5,453 linear feet of streams at a replacement ratio of 1:1 is required. Compensatory mitigation for impacts to jurisdictional streams shall be provided by a combination of onsite stream restoration, enhancement, and preservation. The mitigation sites shall be constructed in accordance with the mitigation plans provided in the June 26, 2007 application. The mitigation shall be provided as detailed in the table below:

Table 7 - Mitigation Credits for R-2518A.

| Mitigation Method | Stream Length (lf) | Ratio | Credits |
|-------------------|--------------------|-------|--------------|
| Restoration | 4,078* | 1:1 | 4,078* |
| Enhancement | 640 | 2:1 | 320 |
| Preservation | 15,335 | 4:1 | 3,834 |
| Total | 20,053 | | 8,232 |

*Prior to providing restoration credit for Site D (262 lf of restoration), NCDOT shall provide design plans showing the site is within NCDOT right-of-way or under a conservation easement.

Additional mitigation credits may be available on R-2518B and R-2519A. Final mitigation plans with design lengths shall be submitted with the modification application for R-2518A and R-2519A.

3. The onsite stream mitigation shall be constructed in accordance with the design submitted in your June 26, 2007 application. Please be reminded that as-builts for the completed streams



shall be submitted to the North Carolina Division of Water Quality 401 Wetlands Unit with the as-builts for the rest of the project. If the parameters of this condition are not met, then the permittee shall supply additional stream mitigation for the 5,453 linear feet of impacts. All channel relocations shall be constructed in a dry work area, shall be completed and stabilized, and must be approved on site by DWQ staff, prior to diverting water into the new channel. Whenever possible, channel relocations shall be allowed to stabilize for an entire growing season. All stream relocations shall have buffers in accordance with the Biological Assessment prepared for this project. A transitional phase incorporating rolled erosion control product (RECP) and appropriate temporary ground cover is allowable.

4. The permittee shall monitor the restoration and enhancement mitigation sites following the Level 1 protocols outlined in the "Stream Mitigation Guidelines," dated April 2003 with the following exceptions:
 1. Pebble counts shall not be conducted.
 2. Two cross sections shall be conducted for streams less than 500 linear and five (5) cross sections shall be conducted for streams greater than 500 linear feet.
 3. Riparian success shall be by visual inspection of plant survival. Photos will be taken and comments noted on plant survival.

The permittee shall monitor the preservation sites by visual inspection. Photos will be taken and comments noted on plant survival. The monitoring shall be conducted annually for a minimum of five (5) years after final planting. The monitoring results shall be submitted to DWQ in a final report within sixty (60) days after completing monitoring. After 5 years the NCDOT shall contact the DWQ to schedule a site visit to "close out" the mitigation site.

5. NC DOT shall adhere to all appropriate in-water work moratoriums (including the use of pile driving) prescribed by the US Fish and Wildlife Service and the NC Wildlife Resources Commission. No in-water work is permitted on Bald Creek between January 1 and April 15 of any year, without prior approval from the NC Division of Water Quality and the NC Wildlife Resources Commission.
6. For projects impacting waters classified by the NC Environmental Management Commission as High Quality Waters (HQW), or Water Supply I or II (WSI, WSII) stormwater shall be directed to vegetated buffer areas, grass-lined ditches or other means appropriate to the site for the purpose of pre-treating storm water runoff prior to discharging directly into streams. Mowing of existing vegetated buffers is strongly discouraged.
7. For all construction activities occurring in high quality water (HQW) watersheds, NC DOT shall use *Design Standards in Sensitive Watersheds* [15A NCAC 4B .0124(a)-(e)]. However, due to the size of the project, NC DOT shall not be required to meet 15A NCAC 4B .0124(a) regarding the maximum amount of uncovered acres.
8. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be re-vegetated with appropriate native species.



9. Bridge deck drains shall not discharge directly into streams. Stormwater should be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of *Stormwater Best Management Practices*. Stormwater shall be managed in accordance with your State Stormwater Permit issued by DWQ.
10. Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NC DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.
11. Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage.

General Condition(s)

12. If concrete is used during construction, a dry work area should be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete should not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
13. 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.
14. The dimension, pattern and profile of the stream above and below the crossing should not be modified. Disturbed floodplains and streams should be restored to natural geomorphic conditions.
15. 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.
16. 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.
17. 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.



18. Heavy equipment may be operated within the stream channels however, its usage shall be minimized.
19. 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.
20. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification.
21. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.
22. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If DWQ determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, DWQ may reevaluate and modify this certification.
23. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification.
24. A copy of this Water Quality Certification shall be posted 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.
25. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification.
- * 26. Upon completion of the project, the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed.
27. Native riparian vegetation (ex., river birch, green ash, water tupelo, blackgum, redbay, sycamore, swamp chestnut oak, tag alder, common pawpaw, ironwood, sweet pepperbush, titi, Virginai willow, doghobble) must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.
28. 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 be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities.



29. 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.
30. 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*.
 - a. 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.
 - b. 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*.
 - c. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.
31. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, they shall be removed and the natural grade restored upon completion of the project.

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

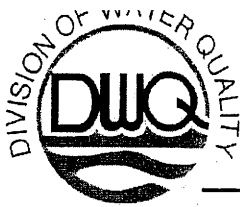
If this Certification is unacceptable to you have the right to an adjudicatory hearing upon written request within sixty (60) days following receipt of this Certification. This request must be in the form of a written petition conforming to Chapter 150B of the North Carolina General Statutes and filed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

This the 11th day of October 2007

DIVISION OF WATER QUALITY

Coleen H. Sullins
Director

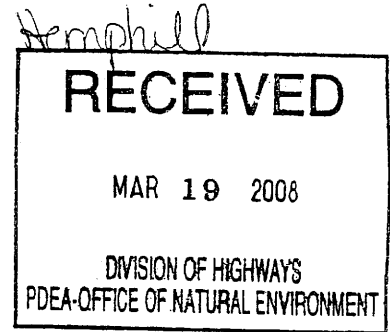
WQC No. 3706



281

R-2518B
401

March 17, 2008



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

Subject: Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water with ADDITIONAL CONDITIONS for Proposed improvements to US 19/US 19E from future I-26 (existing US 19-23) to SR 1186 in Yancey County, State Project Nos. 6.869005T and 6.909001T, TIP Project Nos. R-2518A, R-2518B and R-2519A. DWQ Project No. 20071134v.2, Individual Certification No. 3706

Dear Dr. Thorpe:

Attached hereto is a modification of Certification No. 3706 issued to The North Carolina Department of Transportation dated October 11, 2007.

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

Sincerely,

Coleen Sullins
Director

Attachments

cc: David Baker, US Army Corps of Engineers, Asheville Field Office
Roger Bryan, Division 13 Environmental Officer
Kathy Matthews, Environmental Protection Agency
Marla Chambers, NC Wildlife Resources Commission
Mike Parker, DWQ Asheville Regional Office
File Copy



Modification to the 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 (DWQ) Regulations in 15 NCAC 2H .0500. This certification authorized the NCDOT to permanently impact 0.23 acres of jurisdictional wetlands and 2,737 linear feet of jurisdictional streams in Yancey County. The project shall be constructed pursuant to the modification dated received January 25, 2008 and the revised information dated received March 6, 2008. The authorized impacts are as described below:

Table 1 - Stream Impacts in the French Broad River Basin for R-2518B

| Site | Permanent Fill in Intermittent Stream (linear ft) | Temporary Fill in Intermittent Stream (linear ft) | Permanent Fill in Perennial Stream (linear ft) | Temporary Fill in Perennial Stream (linear ft) | Total Stream Impact (linear ft) | Stream Impacts Requiring Mitigation (linear ft) |
|--------------|---|---|--|--|---------------------------------|---|
| 1 | | | 43 | 10 | 53 | |
| 2 | | | 102 | 20 | 122 | |
| 2A | 131 | 20 | 0 | 0 | 151 | |
| 3 | | | 49 | 10 | 59 | |
| 4 | | | 56 | 49 | 105 | |
| 5 | | | 76 | 20 | 96 | |
| 6 | | | 79 | 30 | 109 | |
| 7 | | | 496 | 20 | 516 | 496 |
| 8 | | | 118 | 13 | 131 | 118 |
| 9 | | | 204 | 16 | 220 | 204 |
| 10 | | | 69 | 10 | 79 | |
| 11 | | | 36 | 0 | 36 | |
| 12 | | | 76 | 10 | 86 | |
| 13 | | | 95 | 16 | 111 | |
| 14 | | | 135 | 36 | 171 | |
| 14A | | | 10 | 0 | 10 | 10 |
| 15 | | | 82 | 10 | 92 | |
| 16 | | | 112 | 10 | 122 | |
| 17 | | | 66 | 10 | 76 | |
| 18 | | | 66 | 10 | 76 | |
| 20 | | | 16 | 233 | 249 | 16 |
| 20A | | | 36 | 10 | 46 | 36 |
| 21 | | | 33 | 0 | 33 | |
| 22 | | | 154 | 10 | 164 | 154 |
| 23 | | | 36 | 56 | 92 | |
| 24 | | | 16 | 10 | 26 | |
| 25 | | | 135 | 20 | 155 | |
| 26 | | | 39 | 10 | 49 | |
| 27 | | | 302 | 56 | 358 | 302 |
| 28 | | | 0 | 118 | 118 | |
| Total | 131 | 20 | 2,737 | 823 | 3,711 | 1,336 |

Total Stream Impact for R-2518B: 3,711 linear feet



Table 2 - Wetland Impacts in the French Broad River Basin for R-2518B

| Site | Fill (ac) | Fill (temporary) (ac) | Excavation (ac) | Mechanized Clearing (ac) | Hand Clearing (ac) | Area under Bridge (ac) | Total Wetland Impact (ac) |
|--------------|-------------|-----------------------|-----------------|--------------------------|--------------------|------------------------|---------------------------|
| 1A | 0.07 | 0 | 0 | 0.04 | 0 | 0 | 0.11 |
| 22A | 0.11 | 0 | 0.01 | 0 | 0 | 0 | 0.12 |
| Total | 0.18 | 0 | 0.01 | 0.04 | 0 | 0 | 0.23 |

Total Wetland Impact for R-2518B: 0.23 acres.

The application provides adequate assurance that the discharge of fill material into the waters of the French Broad 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 modified application dated received January 25, 2008 and the revised information dated received March 6, 2008. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated October 11, 2007 still apply except where superseded by this certification. Should your project change, you are required to notify the DWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Condition(s) of Certification:

Project Specific Conditions:

1. This modification is applicable only to the additional proposed activities for R-2518B. All the authorized activities and conditions of the certification associated with the original Water Quality Certification dated October 11, 2007 still apply except where superseded by this certification.
2. Removal of the 4-barrel box culvert from Bald Creek at Site 20 shall not be conducted in flowing water. The box culvert removal process shall be sequenced to temporarily route Bald Creek through a diversion channel or other best management practice described in NCDOT's *Construction and Maintenance Activities* manual to prevent excavation and culvert removal in flowing water.



3. The proposed extensions of the structures at Sites 3 and 12 shall be backfilled with natural bed material to reduce the risk of developing headcuts.
4. Compensatory mitigation for impacts to 1,336 linear feet of streams at a replacement ratio of 1:1 is required. Compensatory mitigation for impacts to jurisdictional streams shall be provided by a combination of onsite stream restoration and enhancement. The mitigation sites shall be constructed in accordance with the mitigation plans provided in the June 26, 2007 application and revised information letter dated October 1, 2007. The mitigation shall be provided as detailed in the table below:

Table 3 - Mitigation Credits for R-2518B

| Mitigation Method | Stream Length (lf) | Ratio | Credits |
|-------------------|--------------------|-------|--------------|
| Restoration | 1,037 | 1:1 | 1,037 |
| Enhancement | 5,016 | 2:1 | 2,508 |
| Total | 6,053 | | 3,545 |

5. The onsite stream mitigation shall be constructed in accordance with the designs submitted in your June 26, 2007 application, in the revised information letter dated October 1, 2007, and in the January 25, 2008 modification request. Please be reminded that as-builts for the completed streams shall be submitted to the North Carolina Division of Water Quality 401 Wetlands Unit with the as-builts for the rest of the project. If the parameters of this condition are not met, then the permittee shall supply additional stream mitigation for the 3,545 linear feet of impacts. All channel relocations shall be constructed in a dry work area, shall be completed and stabilized, and must be approved on site by DWQ staff, prior to diverting water into the new channel. Whenever possible, channel relocations shall be allowed to stabilize for an entire growing season. All stream relocations shall have buffers in accordance with the Biological Assessment prepared for this project. A transitional phase incorporating rolled erosion control product (RECP) and appropriate temporary ground cover is allowable.
6. The permittee shall monitor the restoration and enhancement mitigation sites following the Level 1 protocols outlined in the "Stream Mitigation Guidelines," dated April 2003 with the following exceptions:
 - a. Pebble counts shall not be conducted.
 - b. Two cross sections shall be conducted for streams less than 500 linear and five (5) cross sections shall be conducted for streams greater than 500 linear feet.
 - c. Riparian success shall be by visual inspection of plant survival. Photos will be taken and comments noted on plant survival.

The monitoring shall be conducted annually for a minimum of five (5) years after final planting. The monitoring results shall be submitted to DWQ in a final report within sixty (60) days after completing monitoring. After 5 years the NCDOT shall contact the DWQ to schedule a site visit to "close out" the mitigation site.



- NC DOT shall adhere to all appropriate in-water work moratoriums (including the use of pile driving) prescribed by the US Fish and Wildlife Service and the NC Wildlife Resources Commission as described in the table below unless prior approval from the NC Division of Water Quality, the US Fish and Wildlife Service, and the NC Wildlife Resources Commission is provided.

Table 4 – In-water Work Moratoriums

| Stream | Moratorium Dates |
|-----------------------------|-----------------------|
| Cane River and tributaries | April 1 to June 30 |
| Bald Creek and tributaries | January 1 to April 15 |
| Price Creek and tributaries | January 1 to April 15 |

- The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be re-vegetated with appropriate native species.
- Bridge deck drains shall not discharge directly into streams. Stormwater should be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of *Stormwater Best Management Practices*. Stormwater shall be managed in accordance with your State Stormwater Permit issued by DWQ.
- Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NC DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.
- Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage.

General Conditions:

- The Permittee shall report any violations of this certification to the Division of Water Quality within 24 hours of discovery.
- If concrete is used during construction, a dry work area should be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete should not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.



14. 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.
15. The dimension, pattern and profile of the stream above and below the crossing should not be modified. Disturbed floodplains and streams should be restored to natural geomorphic conditions.
16. 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.
17. 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.
18. 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.
19. 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.
20. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification.
21. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.
22. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If DWQ determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, DWQ may reevaluate and modify this certification.
23. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification.
24. A copy of this Water Quality Certification shall be posted 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.
25. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification.



- *26. Upon completion of the project, the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed.
27. Native riparian vegetation (ex., river birch, green ash, water tupelo, blackgum, redbay, sycamore, swamp chestnut oak, tag alder, common pawpaw, ironwood, sweet pepperbush, titi, Virginai willow, doghobble) must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.
28. 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 be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities.
29. 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.
30. 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*.
- 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.
 - 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*.
 - The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.
31. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, they shall be removed and the natural grade restored upon completion of the project.

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.



288

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

This the 17th day of March 2008

DIVISION OF WATER QUALITY

A handwritten signature in black ink, appearing to read "C. Sullins", is written over the printed name.

Coleen Sullins
Director

WQC No. 3706



DWQ Project No.: _____ County: _____
 Applicant: _____
 Project Name: _____
 Date of Issuance of 401 Water Quality Certification: _____

***Certificate of Completion**

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401/Wetlands Unit, North Carolina Division of Water Quality, 1621 Mail Service Center, Raleigh, NC, 27699-1621. This form may be returned to DWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

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

Signature: _____ Date: _____

Agent's Certification

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

Signature: _____ Date: _____

Engineer's Certification

_____ Partial _____ Final

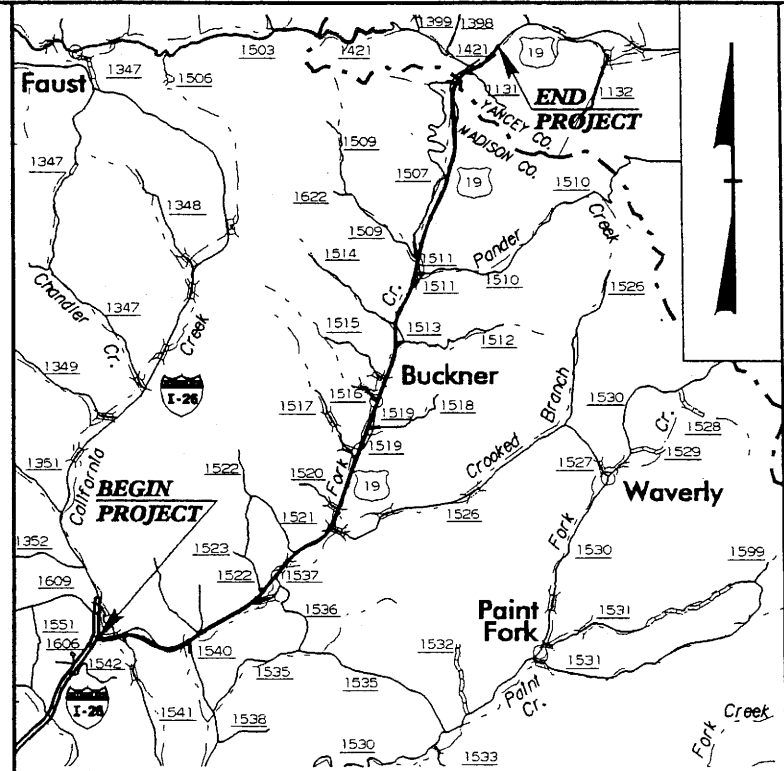
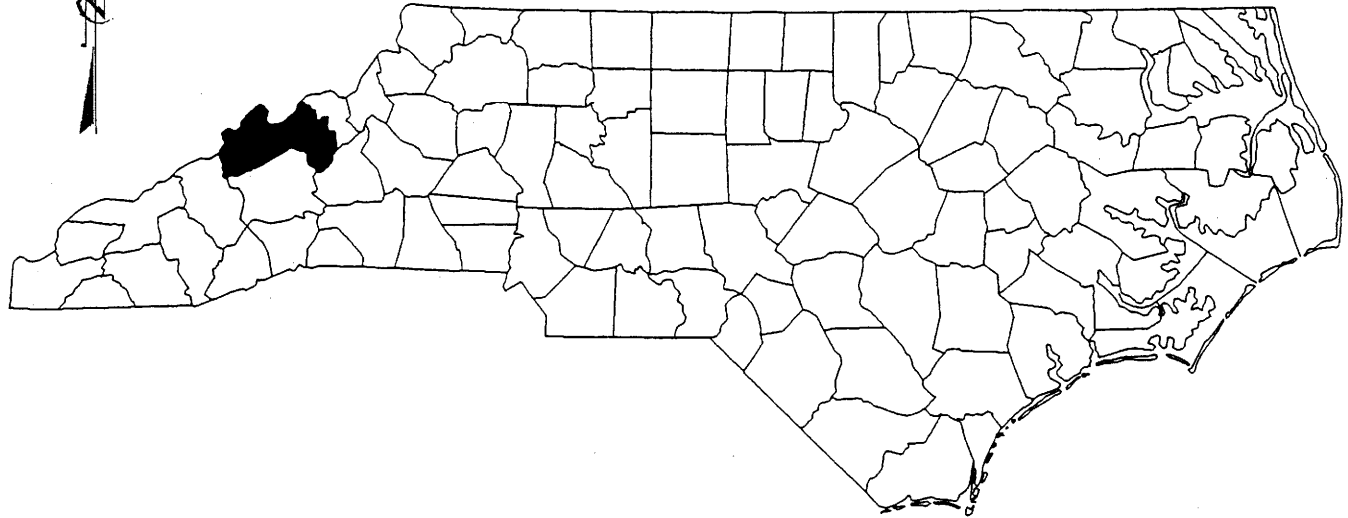
I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation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

Signature _____ Registration No. _____

Date _____

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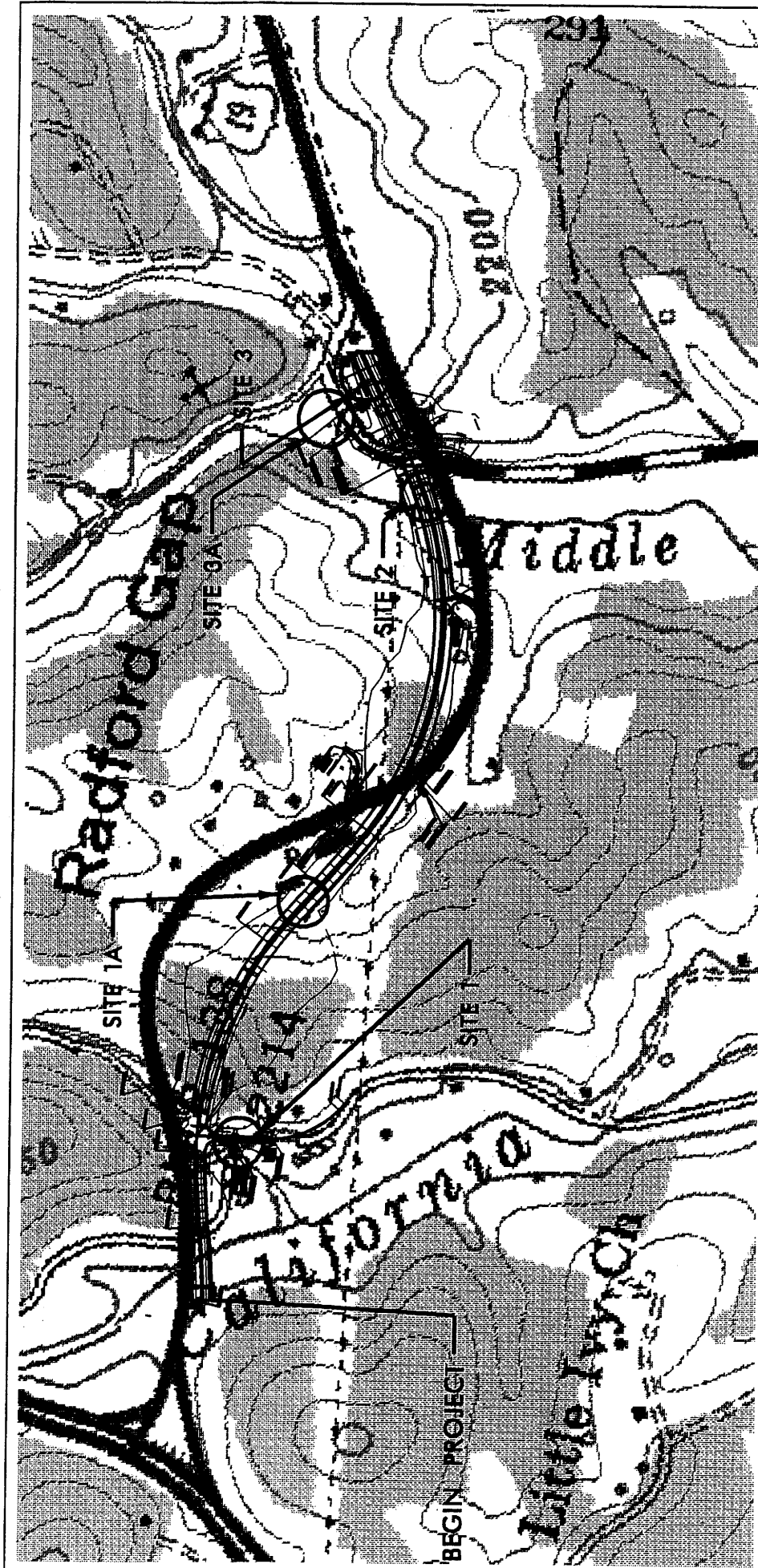
NORTH CAROLINA



VICINITY MAPS

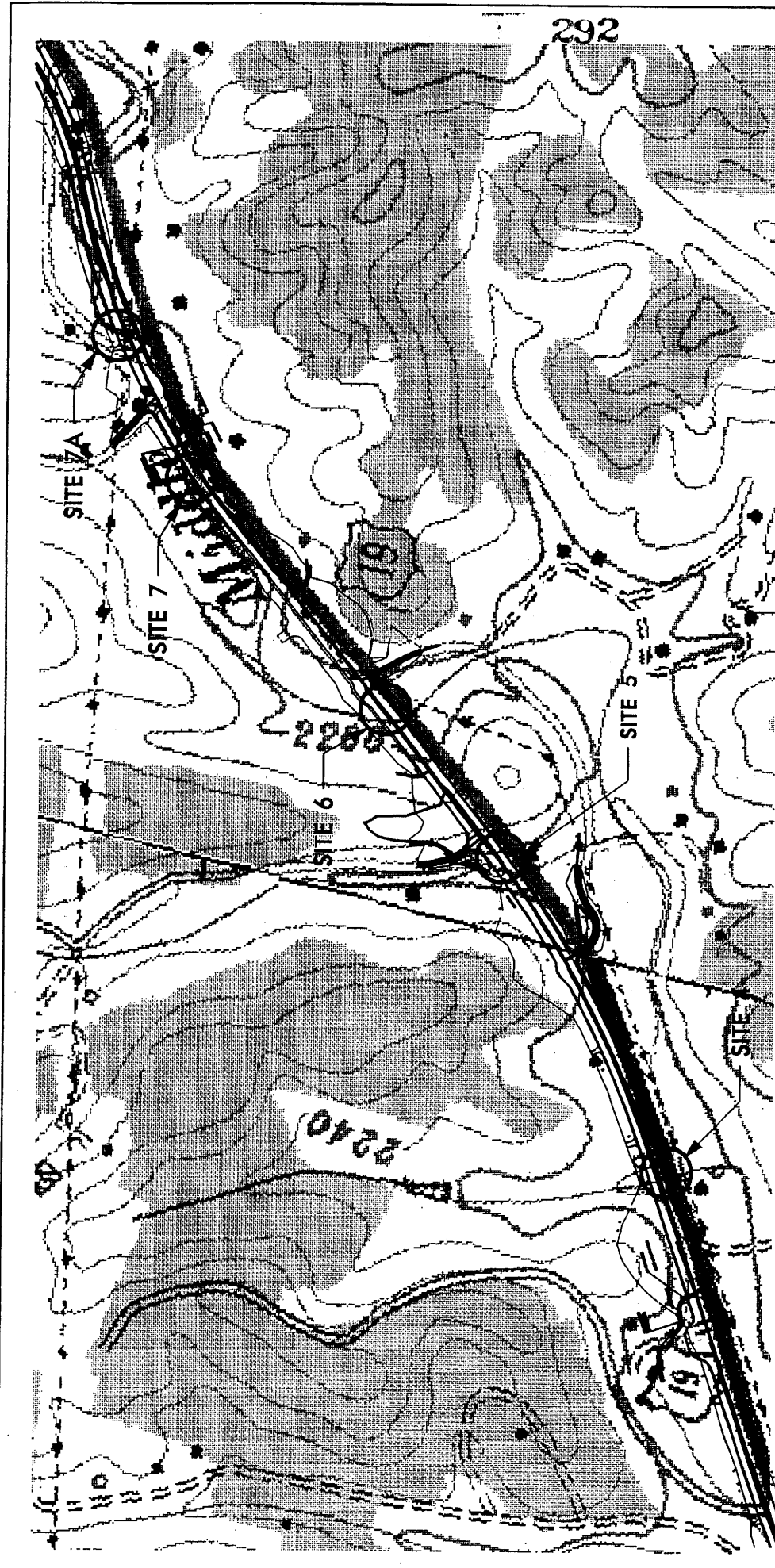
NCDOT
 DIVISION OF HIGHWAYS
 MADISON / YANCEY COUNTIES
 PROJECT NO.: WBS 34445.1.1 (R-2518A)

US 19 FROM I-26 TO 0.8 KM EAS'
 OF THE YANCEY CO. LINE
 Permit Drawing
 Sheet 1 of 6



NC DOT
 DIVISION OF HIGHWAYS
 MADISON / YANCEY COUNTIES
 PROJECT: 6.869005T (R-2518A)
 US 19 FROM 1-26 TO 0.8KM EAST
 OF THE YANCEY CO. LINE
 SHEET OF / /

SITE MAP



NCDOT
 DIVISION OF HIGHWAYS
 MADISON / YANCEY COUNTIES
 PROJECT: 6.869005T (R-2518A)
 US 19 FROM 1-26 TO 0.8KM EAST
 OF THE YANCEY CO. LINE
 SHEET OF / /

SITE MAP

NCDOT

DIVISION OF HIGHWAYS

MADISON / YANCEY COUNTIES

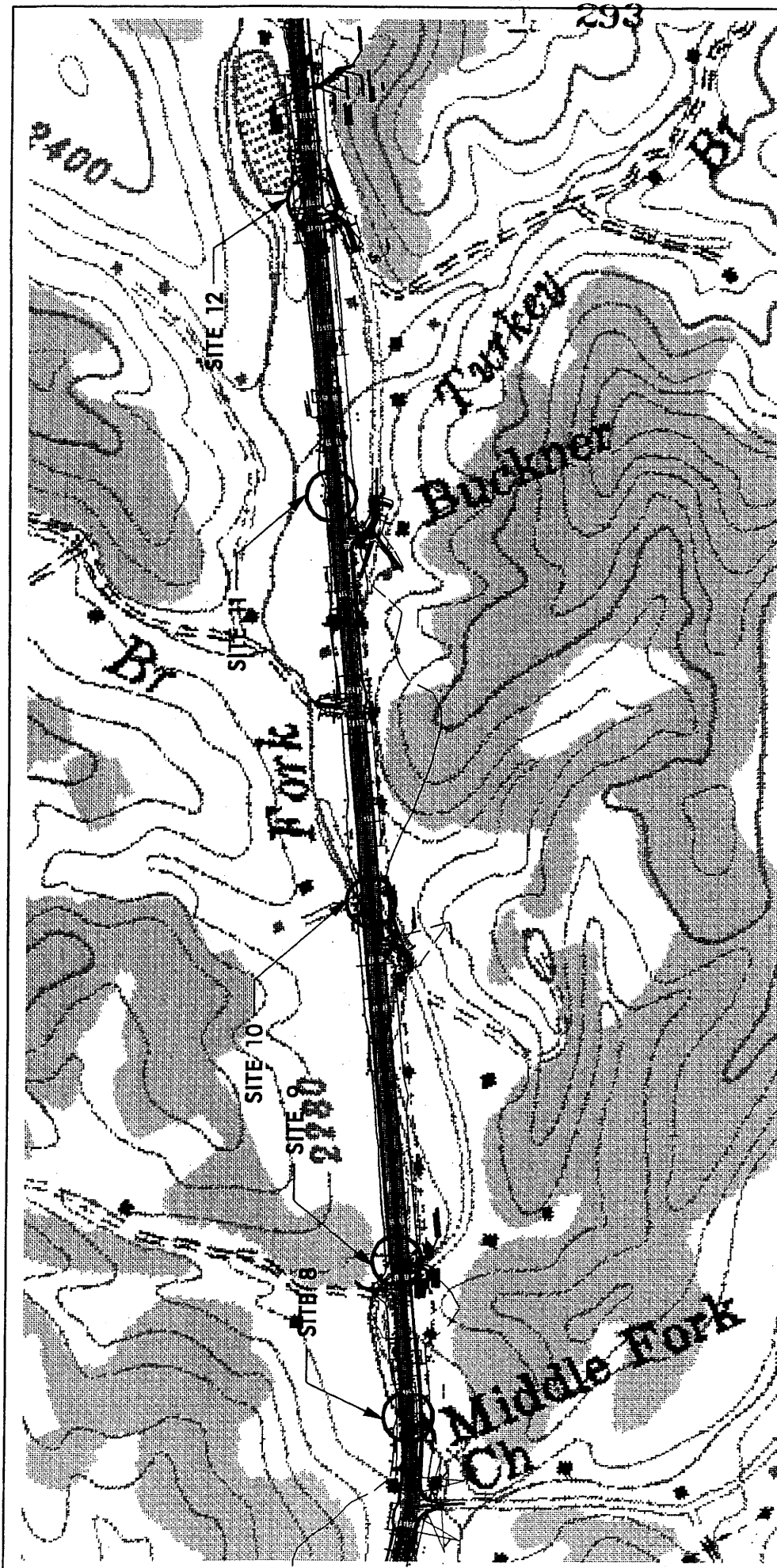
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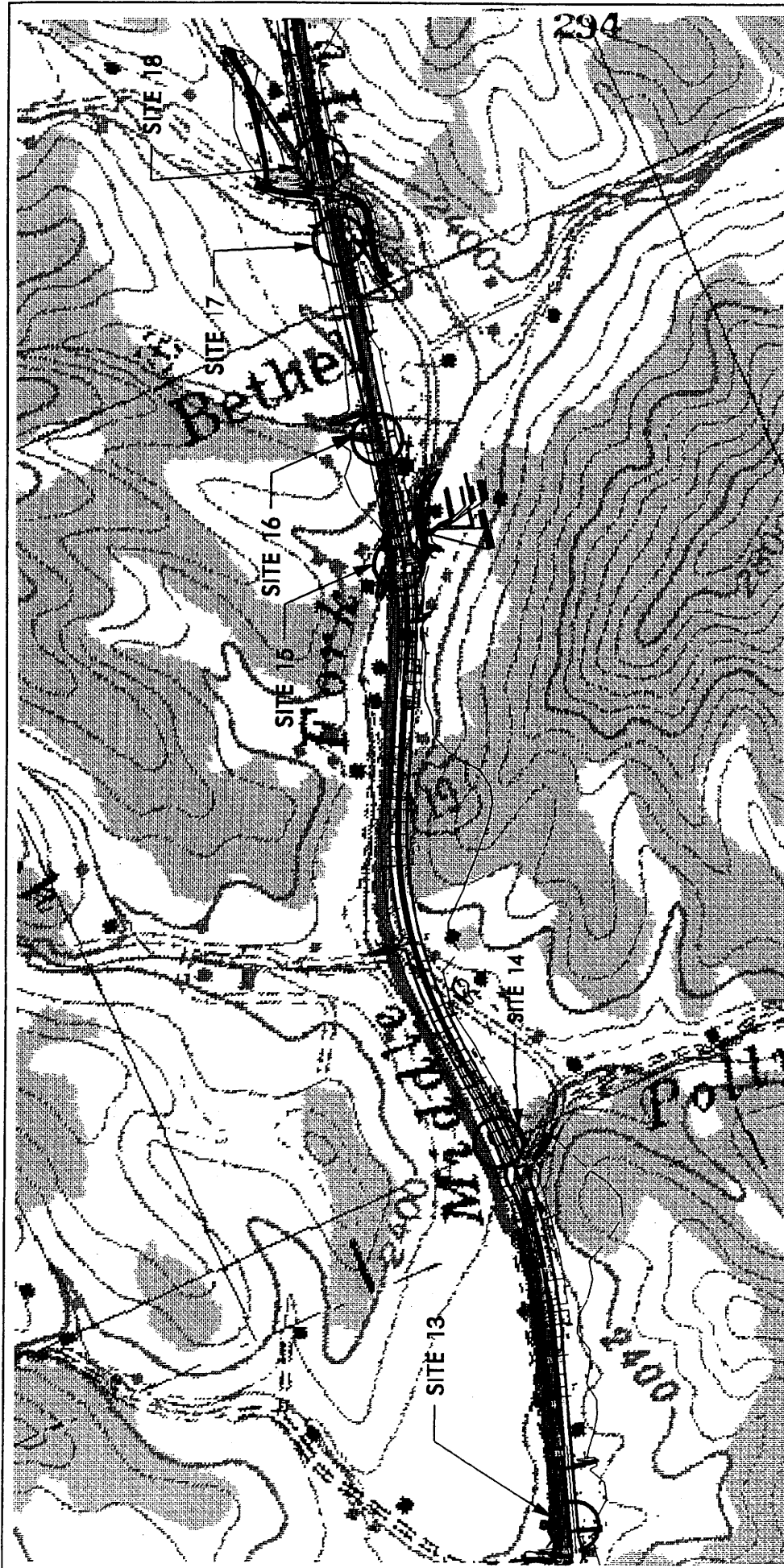
US 19 FROM 1-26 TO 0.8KM EAST

OF THE YANCEY CO. LINE

SHEET OF / /

SITE MAP





NCDOT

DIVISION OF HIGHWAYS

MADISON / YANCEY COUNTIES

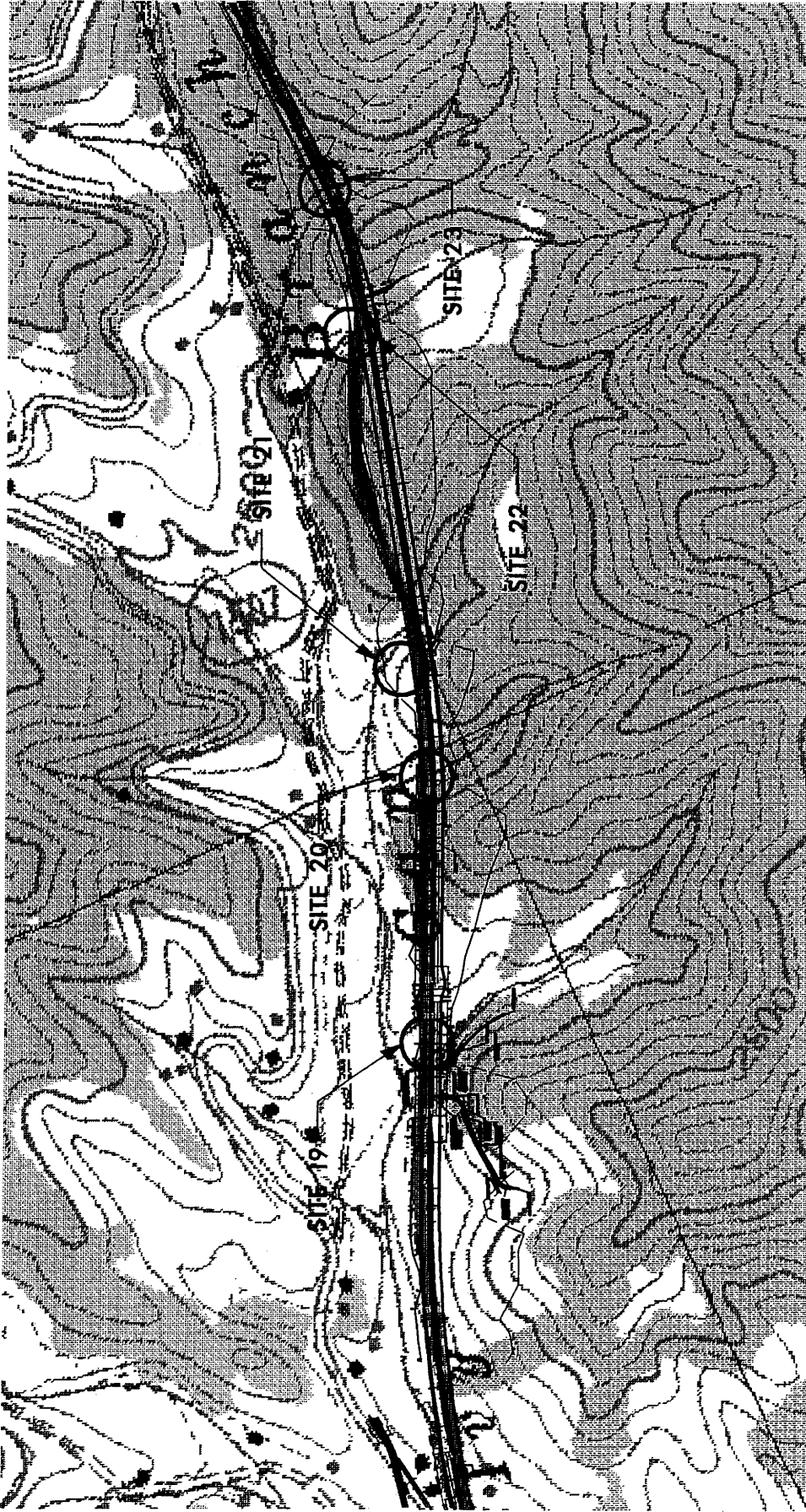
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US 19 FROM 1-26 TO 0.8KM EAST

OF THE YANCEY CO. LINE

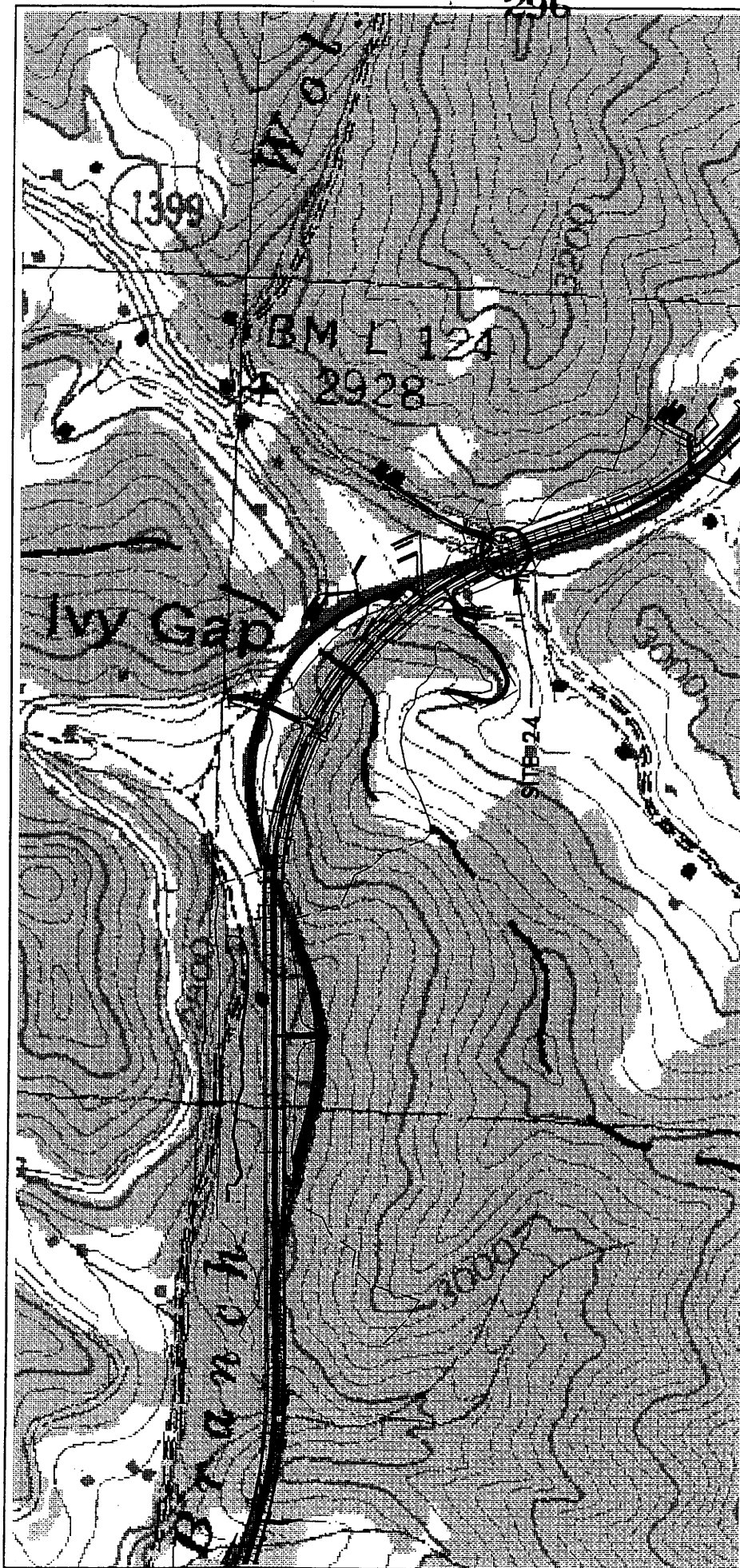
SHEET / OF /

SITE MAP



NCDOT
 DIVISION OF HIGHWAYS
 MADISON / YANCEY COUNTIES
 PROJECT: 6.869005T (R-2518A)
 US 19 FROM 1-26 TO 0.8KM EAST
 OF THE YANCEY CO. LINE
 SHEET OF /

SITE MAP



NCDOT

DIVISION OF HIGHWAYS

MADISON / YANCEY COUNTIES

PROJECT: 6.869005T (R-2518A)

US 19 FROM 1-26 TO 0.8KM EAST

OF THE YANCEY CO. LINE

SHEET / OF /

SITE MAP

297
PROPERTY OWNERS
NAMES AND ADDRESSES

| PARCEL NO. | NAMES | ADDRESSES |
|------------|----------------------|--|
| 2 | HERSHEL METCALF | ROUTE 3 MARS HILL, NC 28754 |
| 10 | ROBERT EATMON | ROUTE 2 MARS HILL, NC 28754 |
| 14 | DAVID PARKER | 226 FOREST STREET MARS HILL, NC 28754 |
| 15 | BRYAN ANDERS | 1504 BIRTHRIGHT STREET CHARLESTON, SC 29407 |
| 25 | DAVID D. DOAN | 90 OLD MILL BRIDGE MARS HILL, NC 28754 |
| 33 | DEWEY ROBINSON | ROUTE 2, BOX 188 MARS HILL, NC 28754 |
| 34 | PAUL P. BRIGGS, JR. | 70 BRIGGS BRANCH ROAD MARS HILL, NC 28754 |
| 35 | DONALD P. RICE | P.O. BOX 295 MARS HILL, NC 28754 |
| 36 | PAUL P. BRIGGS, JR. | 70 BRIGGS BRANCH ROAD MARS HILL, NC 28754 |
| 38 | LEVI HUNTER | ROUTE 2 MARS HILL, NC 28754 |
| 39 | J.C. YOUNG | 425 HWY. 19 MARS HILL, NC 28754 |
| 40 | LEVI HUNTER | ROUTE 2 MARS HILL, NC 28754 |
| 47 | J.C. YOUNG | 425 HWY. 19 MARS HILL, NC 28754 |
| 54 | OLLIE RAY | 111 CROOKED CREEK ROAD MARS HILL, NC 28754 |
| 56 | ROY GUS BALLARD | 2860 US HWY 19 MARS HILL, NC 28754 |
| 57 | RONNIE L. RAY | 2851 US HWY 19 MARS HILL, NC 28754 |
| 60 | BRAWDUS HILL | 421 HAZELMILL ROAD ASHVILLE, NC 28806 |
| 61 | BACCHUS F. MCPETERS | 180 OLD BUCKNER ROAD MARS HILL, NC 28754 |
| 64 | RALPH REAVIS | ROUTE 2 MARS HILL, NC 28754 |
| 68 | HERSHEL BUCKNER | 132 BUCKNER BRANCH MARS HILL, NC 28754 |
| 70 | WILLIE CLINE GOSNELL | P.O. BOX 1146 MARS HILL, NC 28754 |
| 73 | LOT RANDOLPH | 301 JORDON BRANCH ROAD MARS HILL, NC 28754 |
| 81 | RANDALL D. FERGUSON | P.O. BOX 508 MARS HILL, NC 28754 |

NCDOT
DIVISION OF HIGHWAYS
MADISON / YANCEY COUNTIES
PROJECT: 6.869005T (R-2518A)
US 19 FROM I-26 TO 0.8 KM EAST
OF THE YANCEY CO. LINE
Permit Drawing
Sheet 8 of 64

January 12, 2005

County: Madison/Yancey
State Project: WBS No. 34445.1.1 (R-2518A)
Description: US 29 from I-26 to 0.8 Km East of the Yancey Co. Line
Subject: Stormwater Management Plan

ROADWAY DESCRIPTION

The purpose of R-2518A project is to add traffic capacity to US 19/US 19E. Other factors contributing to the need of the project are system linkage and safety. The project begins at an interchange on US 19/23 (future I-26) north of Mars Hill in Madison County and ends at SR 1186 west of Micaville in Yancey County.

ENVIRONMENTAL DESCRIPTION

This project is located in the French Broad River Basin. The streams on this project have been assigned a best usage classification by the North Carolina Division of Water Quality. Surface waters located within the project area have been given classification WS-II. Classification WS-II waters are protected as water supplies which are generally in predominantly undeveloped watersheds. Stringent stormwater management measures may be required on a case-by-case basis where it is determined that additional measures are required to protect water quality and maintain existing and anticipated uses of these waters. Point source discharges of treated wastewater are permitted pursuant of applicable rules and regulations. Class C waters are freshwaters protected for secondary recreation, agriculture, fishing, aquatic life including propagation and survival, wildlife. Impacts to the natural and human environments are minimal.

BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES

Best Management Practices (BMP) used on the project to reduce the stormwater impacts are as follows;

1. Creating grass swales.
2. The use of preformed scour holes
3. Minimize the ditch grades to lower the velocities in the ditches.
4. Installation of retaining walls to avoid impacting the existing stream.
5. Maintaining separation of off site drainage and roadway drainage.
6. The addition of buried inverts on culvert extensions.
7. Use of sills in proposed culverts to create low flow channels.
8. Retrofit exiting culverts with sills to decrease velocities.
9. Utilized energy dissipaters at pipe outlets to lower outlet velocities.
10. Mitigation plan is being developed to improve existing stream conditions through out this project.
11. North Carolina Department of Transportation has maintained a minimum of 8 meters (25 feet) of undisturbed vegetated area next to the stream banks to the extent practicable along the project limits.

WETLAND PERMIT IMPACT SUMMARY

| Site No. | Station (From/To) | Structure Size / Type | WETLAND IMPACTS | | | | SURFACE WATER IMPACTS | | | | | |
|---------------|-------------------|-----------------------|---------------------------------|---------------------------------|-----------------------------|---------------------------------------|---------------------------|-----------------------|--|--|---------------------------|--|
| | | | Fill In Wetlands Permanent (ha) | Fill In Wetlands Temporary (ha) | Excavation In Wetlands (ha) | Mechanized Clearing (Method III) (ha) | Permanent SW impacts (ha) | Temp. SW impacts (ha) | Existing Channel Impacts Permanent (m) | Existing Channel Impacts Temporary (m) | Natural Stream Design (m) | |
| 1 | 11+47 -Y1- | EXIST. 1350 & 800 CSP | | | | | 0.001 | 0.001 | 4 | 3 | | |
| 1A | 14+60 -L- | EXIST. 600 & 400 CSP | | | | | 0.004 | | 44 | | | |
| 2 | 19+70 -L- | RCBC | | | | | 0.035 | 0.004 | 65 | 6 | | |
| 3 | 21+26 -L- | RCBC | | | | | 0.023 | 0.003 | 45 | 6 | | |
| 3A | 11+30 -Y2- | BRIDGE | | | | | 0.009 | | | 11 | | |
| 4 | 27+18 -L- | 1350 CSP | | | | | 0.001 | 0.010 | 26 | 3 | | |
| 5 | 31+61 -L- | RCBC | | | | | 0.010 | 0.001 | 52 | 3 | | |
| 6 | 33+78 -L- | RCBC | | | | | 0.016 | 0.004 | 45 | 6 | | |
| 7 | 37+00 -L- | RCBC & CHANNEL RELOC. | | | | | 0.094 | 0.002 | 356 | 6 | | |
| 7A | 39+01 -L- | 1200 RCP | 0.004 | | | | 0.004 | 0.001 | 46 | 3 | | |
| 8 | 45+38 -L- | RCBC | | | | | 0.017 | 0.001 | 47 | 3 | | |
| 9 | 47+20 -L- | 1200 CSP | 0.067 | | | 0.007 | 0.003 | 0.001 | 27 | 3 | | |
| 10 | 51+55 -L- | 1200 CSP | | | | | 0.002 | 0.001 | 12 | 6 | | |
| 11 | 56+39 -L- | RCBC & CHANNEL RELOC. | | | | | 0.055 | 0.001 | 326 | 3 | | |
| 12 | 60+00 -L- | 600 RCP | 0.064 | | | | | | | | | |
| SHEET TOTALS: | | | 0.135 | | | 0.007 | 0.265 | 0.039 | 1095 | 62 | | |

Note: Natural Stream Design length is included in Mitigation Plan.

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 MADISON / YANCEY COUNTY
 PROJECT # - WBS 34445.1.1 (R-2518A)
 US 19 FROM I-26 TO 0.8 Km EAST OF YANCEY CO. LINE
 Rev. d 6/21/07

SHEET OF

| WETLAND PERMIT IMPACT SUMMARY | | | | | | | | | | | |
|-------------------------------|-------------------|-----------------------|---------------------------------|---------------------------------|-----------------------------|---------------------------------------|---------------------------|-----------------------|--|--|---------------------------|
| Site No. | Station (From/To) | Structure Size / Type | WETLAND IMPACTS | | | | SURFACE WATER IMPACTS | | | | |
| | | | Fill In Wetlands Permanent (ha) | Fill In Wetlands Temporary (ha) | Excavation In Wetlands (ha) | Mechanized Clearing (Method III) (ha) | Permanent SW impacts (ha) | Temp. SW impacts (ha) | Existing Channel Impacts Permanent (m) | Existing Channel Impacts Temporary (m) | Natural Stream Design (m) |
| 13 | 65+71 -L- | 900 RCP | | | | | 0.002 | 0.001 | 24 | 6 | |
| 13A | 67+40 -L- | 450 CSP | | | | | | | 59 | | |
| 14 | 70+10 -L- | RCBC | | | | | 0.011 | 0.001 | 52 | 3 | |
| 15 | 78+00 -L- | RCBC | | | | | 0.036 | 0.002 | 145 | 6 | |
| 16 | 79+29 -L- | 900 RCP | | | | | 0.003 | 0.001 | 29 | 3 | |
| 17 | 81+52 -L- | RCBC | | | | | 0.015 | 0.001 | 93 | 6 | |
| 18 | 82+69 -L- | RCBC & CHANNEL RELOC. | | | | | 0.033 | 0.001 | 194 | 6 | |
| 19 | 88+14 -L- | 1200 RCP | 0.023 | | | | 0.003 | 0.001 | 39 | 6 | |
| 20 | 91+26 -L- | 900 RCP | | | | | 0.002 | 0.001 | 34 | 6 | |
| 21 | 92+89 -L- | 1000 CSP | | | | | 0.009 | 0.001 | 99 | 19 | |
| 22 | 96+48 -L- | 800 CSP | | | | | 0.004 | 0.001 | 45 | 6 | |
| 23 | 98+00 -L- | 1200 CSP | | | | | 0.003 | 0.001 | 30 | 6 | |
| 24 | 109+33 -L- | RCBC | | | | | 0.014 | 0.001 | 70 | 6 | |
| SHEET TOTALS: | | | 0.023 | | | | 0.136 | 0.013 | 913 | 79 | |
| PROJECT TOTALS | | | 0.158 | | | 0.007 | 0.400 | 0.052 | 2008 | 141 | |

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 MADISON / YANCEY COUNTY
 PROJECT # - WBS 34445.1.1 (R-2518A)
 S 19 FROM I-26 TO 0.8 Km EAST OF YANCEY CO. LIN
 Rev. d 6/21/07

Note: Natural Stream Design length is included in Mitigation Plan.

WETLAND PERMIT IMPACT SUMMARY

| Site No. | Station (From/To) | Structure Size / Type | WETLAND IMPACTS | | | | | SURFACE WATER IMPACTS | | | | | Natural Stream Design (ft) |
|---------------|-------------------|-----------------------|---------------------------------|---------------------------------|-----------------------------|---------------------------------------|---------------------------|-----------------------|---|---|--|--|----------------------------|
| | | | Fill In Wetlands Permanent (ac) | Fill In Wetlands Temporary (ac) | Excavation In Wetlands (ac) | Mechanized Clearing (Method III) (ac) | Permanent SW impacts (ac) | Temp. SW impacts (ac) | Existing Channel Impacts Permanent (ft) | Existing Channel Impacts Temporary (ft) | | | |
| 1 | 11+47 -Y1- | EXIST. 1350 & 600 CSP | | | | | 0.002 | 0.002 | 13 | 10 | | | |
| 1A | 14+60 -L- | EXIST. 600 & 400 CSP | | | | | 0.010 | | 144 | | | | |
| 2 | 19+70 -L- | RCBC | | | | | 0.09 | 0.010 | 213 | 20 | | | |
| 3 | 21+26 -L- | RCBC | | | | | 0.06 | 0.007 | 148 | 20 | | | |
| 3A | 11+30 -Y2- | BRIDGE | | | | | 0.002 | 0.022 | | 36 | | | |
| 4 | 27+18 -L- | 1350 CSP | | | | | 0.002 | 0.025 | 85 | 10 | | | |
| 5 | 31+61 -L- | RCBC | | | | | 0.02 | 0.002 | 171 | 10 | | | |
| 6 | 33+78 -L- | RCBC | | | | | 0.04 | 0.010 | 148 | 20 | | | |
| 7 | 37+00 -L- | RCBC & CHANNEL RELOC. | | | | | 0.23 | 0.005 | 1168 | 20 | | | |
| 7A | 39+01 -L- | 1200 RCP | 0.01 | | | | 0.01 | 0.002 | 151 | 10 | | | |
| 8 | 45+38 -L- | RCBC | | | | | 0.04 | 0.002 | 154 | 10 | | | |
| 9 | 47+20 -L- | 1200 CSP | 0.17 | | | 0.02 | 0.007 | 0.002 | 89 | 10 | | | |
| 10 | 51+55 -L- | 1200 CSP | | | | | 0.005 | 0.002 | 39 | 20 | | | |
| 11 | 56+39 -L- | RCBC & CHANNEL RELOC. | | | | | 0.135 | 0.002 | 1071 | 10 | | | |
| 12 | 60+00 -L- | 600 RCP | 0.16 | | | | | | | | | | |
| SHEET TOTALS: | | | 0.34 | | | 0.02 | 0.651 | 0.093 | 3594 | 206 | | | |

Note: Natural Stream Design length is included in Mitigation Plan.

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 MADISON / YANCEY COUNTY
 PROJECT # - WBS 34445.1.1 (R-2518A)
 US 19 FROM I-26 TO 0.8 Km EAST OF YANCEY CO. LINE
 Rev. d 6/21/07

SHEET OF

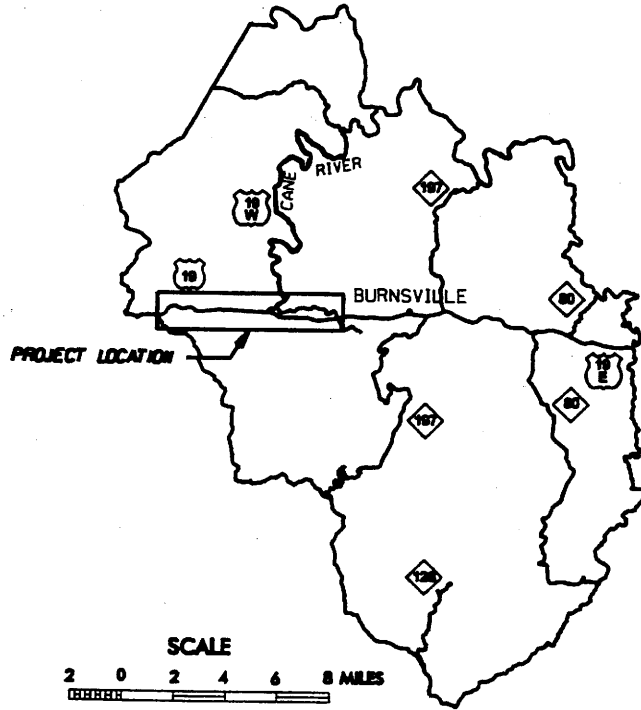
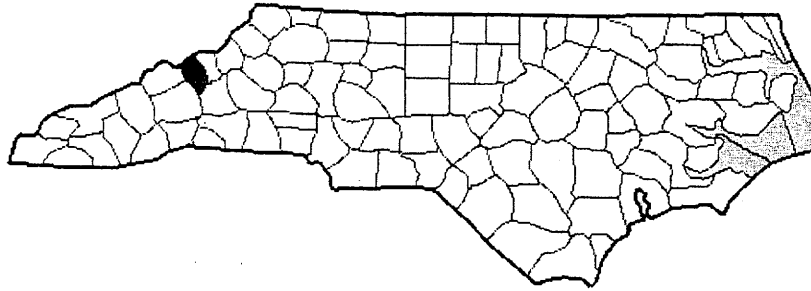
| WETLAND PERMIT IMPACT SUMMARY | | | | | | | | | | | |
|-------------------------------|-------------------|-----------------------|---------------------------------|---------------------------------|-----------------------------|---------------------------------------|---------------------------|-----------------------|---|---|----------------------------|
| Site No. | Station (From/To) | Structure Size / Type | WETLAND IMPACTS | | | | SURFACE WATER IMPACTS | | | | |
| | | | Fill In Wetlands Permanent (ac) | Fill In Wetlands Temporary (ac) | Excavation In Wetlands (ac) | Mechanized Clearing (Method III) (ac) | Permanent SW impacts (ac) | Temp. SW impacts (ac) | Existing Channel Impacts Permanent (ft) | Existing Channel Impacts Temporary (ft) | Natural Stream Design (ft) |
| 13 | 65+71 -L- | 900 RCP | | | | | 0.005 | 0.002 | 59 | 20 | |
| 13A | 67+40 -L- | 450 CSP | | | | | | | 194 | | |
| 14 | 70+10 -L- | RCBC | | | | | 0.03 | 0.002 | 171 | 10 | |
| 15 | 78+00 -L- | RCBC | | | | | 0.09 | 0.005 | 476 | 20 | |
| 16 | 79+29 -L- | 900 RCP | | | | | 0.01 | 0.002 | 95 | 10 | |
| 17 | 81+52 -L- | RCBC | | | | | 0.04 | 0.002 | 305 | 20 | 279 |
| 18 | 82+69 -L- | RCBC & CHANNEL RELOC. | | | | | 0.08 | 0.002 | 637 | 20 | 571 |
| 19 | 88+14 -L- | 1200 RCP | 0.06 | | | | 0.01 | 0.002 | 128 | 20 | |
| 20 | 91+26 -L- | 900 RCP | | | | | 0.007 | 0.002 | 115 | 20 | |
| 21 | 92+89 -L- | 1000 CSP | | | | | 0.02 | 0.002 | 289 | 46 | |
| 22 | 96+48 -L- | 800 CSP | | | | | 0.010 | 0.002 | 148 | 72 | |
| 23 | 98+00 -L- | 1200 CSP | | | | | 0.007 | 0.002 | 98 | 20 | |
| 24 | 109+33 -L- | RCBC | | | | | 0.03 | 0.002 | 230 | 20 | |
| SHEET TOTALS: | | | 0.06 | | | | 0.33 | 0.032 | 2945 | 298 | 850 |
| PROJECT TOTALS | | | 0.40 | | | | 0.97 | 0.13 | 6280 | 524 | 2715 |

Note: Natural Stream Design length is included in Mitigation Plan.

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 MADISON / YANCEY COUNTY
 PROJECT # - WBS 34445.1.1 (R-2518A)
 US 19 FROM I-26 TO 0.8 Km EAST OF YANCEY CO. LINE
 Rev. d 1/30/07

SHEET OF

NORTH CAROLINA


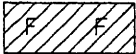
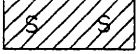



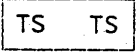


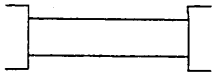
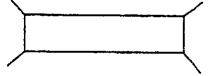


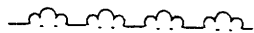
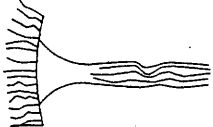
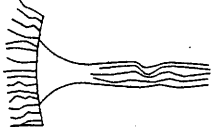



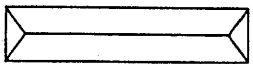
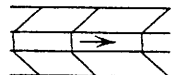


VICINITY MAP

NCDOT
DIVISION OF HIGHWAYS
PROJECT: 3.4445.1.1 (R-2518B)
YANCEY COUNTY

US 19
MADISON COUNTY LINE
TO CANE RIVER
IN BURNSVILLE

WETLAND LEGEND

- | | |
|--|--|
| <p>—WLB— WETLAND BOUNDARY</p> <p> WETLAND</p> <p> DENOTES FILL IN WETLAND</p> <p> DENOTES IMPACTS TO SURFACE WATER</p> <p> DENOTES FILL IN SURFACE WATER (POND)</p> <p> DENOTES TEMPORARY FILL IN WETLAND</p> <p> DENOTES EXCAVATION IN WETLAND</p> <p> DENOTES TEMPORARY IMPACTS TO SURFACE WATER</p> <p> DENOTES MECHANIZED CLEARING</p> <p>→ → FLOW DIRECTION</p> <p>—TB— TOP OF BANK</p> <p>—WE— EDGE OF WATER</p> <p>—C— PROP. LIMIT OF CUT</p> <p>—F— PROP. LIMIT OF FILL</p> <p>▲ PROP. RIGHT OF WAY</p> <p>---NG--- NATURAL GROUND</p> <p>---PL--- PROPERTY LINE</p> <p>—TDE— TEMP. DRAINAGE EASEMENT</p> <p>—PDE— PERMANENT DRAINAGE EASEMENT</p> <p>---EAB--- EXIST. ENDANGERED ANIMAL BOUNDARY</p> <p>---EPB--- EXIST. ENDANGERED PLANT BOUNDARY</p> <p>▽ WATER SURFACE</p> <p>x x x x x x x x x x LIVE STAKES</p> <p> BOULDER</p> <p>— CORE FIBER ROLLS</p> | <p> PROPOSED BRIDGE</p> <p> PROPOSED BOX CULVERT</p> <p> PROPOSED PIPE CULVERT 12"-48" PIPES 54" PIPES & ABOVE</p> <p>(DASHED LINES DENOTE EXISTING STRUCTURES)</p> <p> SINGLE TREE</p> <p> WOODS LINE</p> <p> DRAINAGE INLET</p> <p> ROOTWAD</p> <p> RIP RAP</p> <p> ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE</p> <p> PREFORMED SCOUR HOLE</p> <p> LEVEL SPREADER (LS)</p> <p> DITCH / GRASS SWALE</p> |
|--|--|

NCDOT
DIVISION OF HIGHWAYS
YANCEY COUNTY
PROJECT: 3.4445.1.1 (R-2518B)
US 19
MADISON COUNTY LINE
TO CANE RIVER
IN BURNSVILLE
SHEET OF 7 MAY 2007

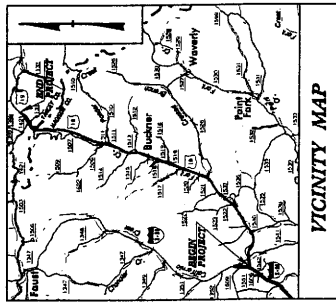
PROPERTY OWNERS
NAMES AND ADDRESSES

| PARCEL NO. | NAMES | ADDRESSES |
|------------|---|--|
| 1 | RANDY D. and wife, CHLOE A. McCURRY | RT. 3, BOX 444 BURNSVILLE, NC 28714 |
| 2 | RUFUS and wife, EDNA INGLE | RT. 3, BOX 446 BURNSVILLE, NC 28714 |
| 5 | JACK BUCKNER | RT 3, BOX 406 BURNSVILLE, NC 28714 |
| 22 | WAYNE T. and wife, DIANA BONE | 7187 SILVERSTONE DR. FAYETTEVILLE, NC 28304 |
| 24 | JAMES W. WESTALL, RHONDA WESTALL and NANCY M. WESTALL | 113 SHEPHARD WAY BURNSVILLE, NC 28714 |
| 25 | WILLIAM A. BANKS and wife, VIRGINIA A. BANKS | P.O. BOX 235 BURNSVILLE, NC 28714 |
| 26 | DONALD CHARLES PONDER and wife, ELIZABETH ANN PONDER | RT. 3, BOX 320 BURNSVILLE, NC 28714 |
| 29 | JOHN S. LEDFORD | RT. 9, BOX 112 BURNSVILLE, NC 28714 |

NCDOT
DIVISION OF HIGHWAYS
YANCEY COUNTY
PROJECT: 3.4445.1.1 (R-2518B)
US 19
MADISON COUNTY LINE
TO CANE RIVER
IN BURNSVILLE

CONTRACT: C201372 TIP PROJECT: R-2518A

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



MADISON / YANCEY COUNTIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

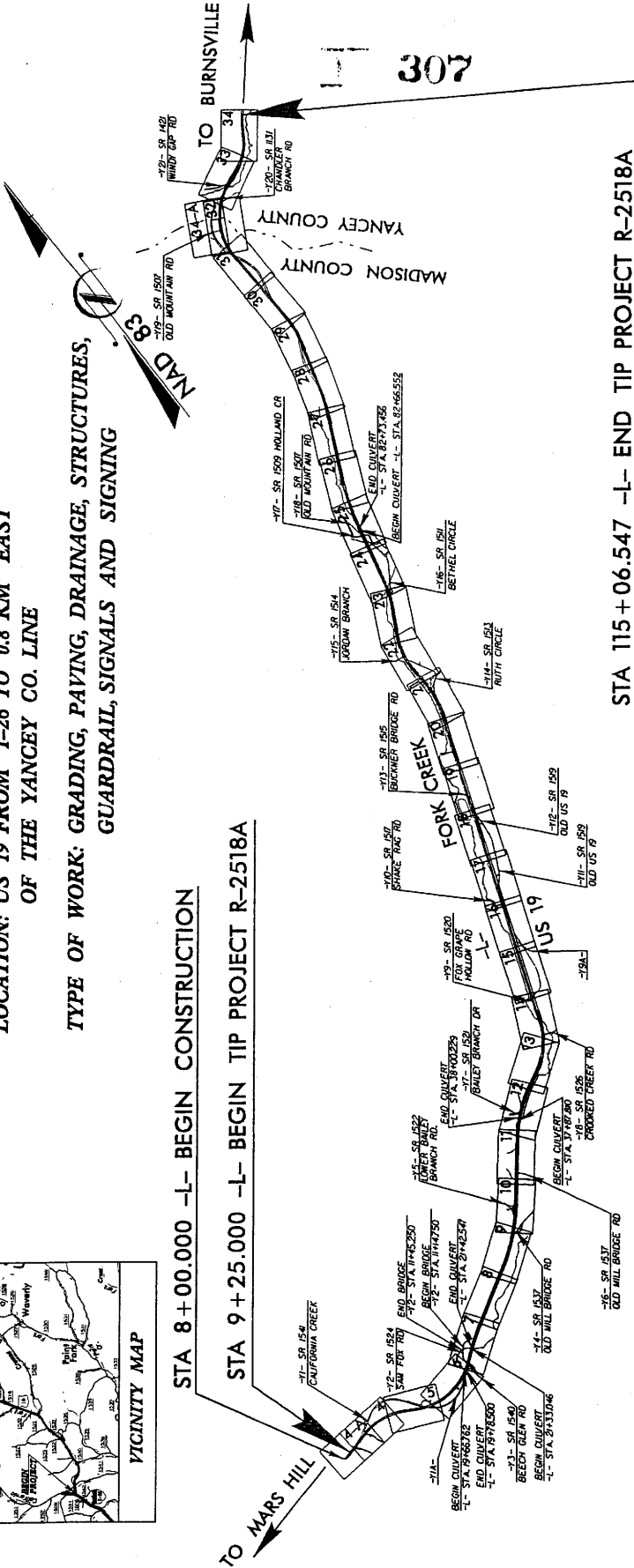
LOCATION: US 19 FROM I-26 TO 0.8 KM EAST
OF THE YANCEY CO. LINE

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

| | |
|--|-----------|
| STATE PROJECT NUMBER IN N.C. | R-2518A |
| STATE PROJECT NUMBER IN FEDERAL ROADWAY MAPS | 34445.1.1 |
| FEDERAL PROJECT NUMBER | FE |
| STATE PROJECT NUMBER IN FEDERAL ROADWAY MAPS | 34445.2.2 |
| FEDERAL PROJECT NUMBER | CONST. |
| STATE PROJECT NUMBER IN FEDERAL ROADWAY MAPS | 34445.4.1 |
| FEDERAL PROJECT NUMBER | |

ALL DIMENSIONS IN THESE PLANS ARE IN METERS UNLESS OTHERWISE SHOWN

STA 8 + 00.000 -L- BEGIN CONSTRUCTION
STA 9 + 25.000 -L- BEGIN TIP PROJECT R-2518A



STA 115 + 06.547 -L- END TIP PROJECT R-2518A

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

GRAPHIC SCALES

PLANS: 1:1000 (Scale 0 to 10 meters)

PROFILE (HORIZONTAL): 1:500 (Scale 0 to 10 meters)

PROFILE (VERTICAL): 1:500 (Scale 0 to 5 meters)

DESIGN DATA

| | | |
|----------|----------|----------|
| ADT 2008 | = 10,860 | - 12,080 |
| ADT 2028 | = 16,440 | - 18,220 |
| DHV | = 10 | % |
| D | = 65 | % |
| T | = 10 | % |
| V | = 100 | km/h |

* (TST) 6% + DUAL 4%

PROJECT LENGTH

| | | |
|--|----------|----|
| LENGTH ROADWAY TIP PROJECT R-2518A | = 10.551 | KM |
| LENGTH STRUCTURE TIP PROJECT R-2518A | = 0.031 | KM |
| TOTAL LENGTH STATE TIP PROJECT R-2518A | = 10.582 | KM |

Prepared in the Office of:

DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh, NC 27610

PROJECT ENGINEER: BRENDA MOORE, PE

PROJECT ADMINISTRATION: THAD F. DUNCAN, PE

RIGHT OF WAY DATE: MARCH 31, 2005

LETTING DATE: DECEMBER 18, 2007

HYDRAULICS ENGINEER: _____

ROADWAY DESIGN ENGINEER: _____

STATE DESIGN ENGINEER: _____

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

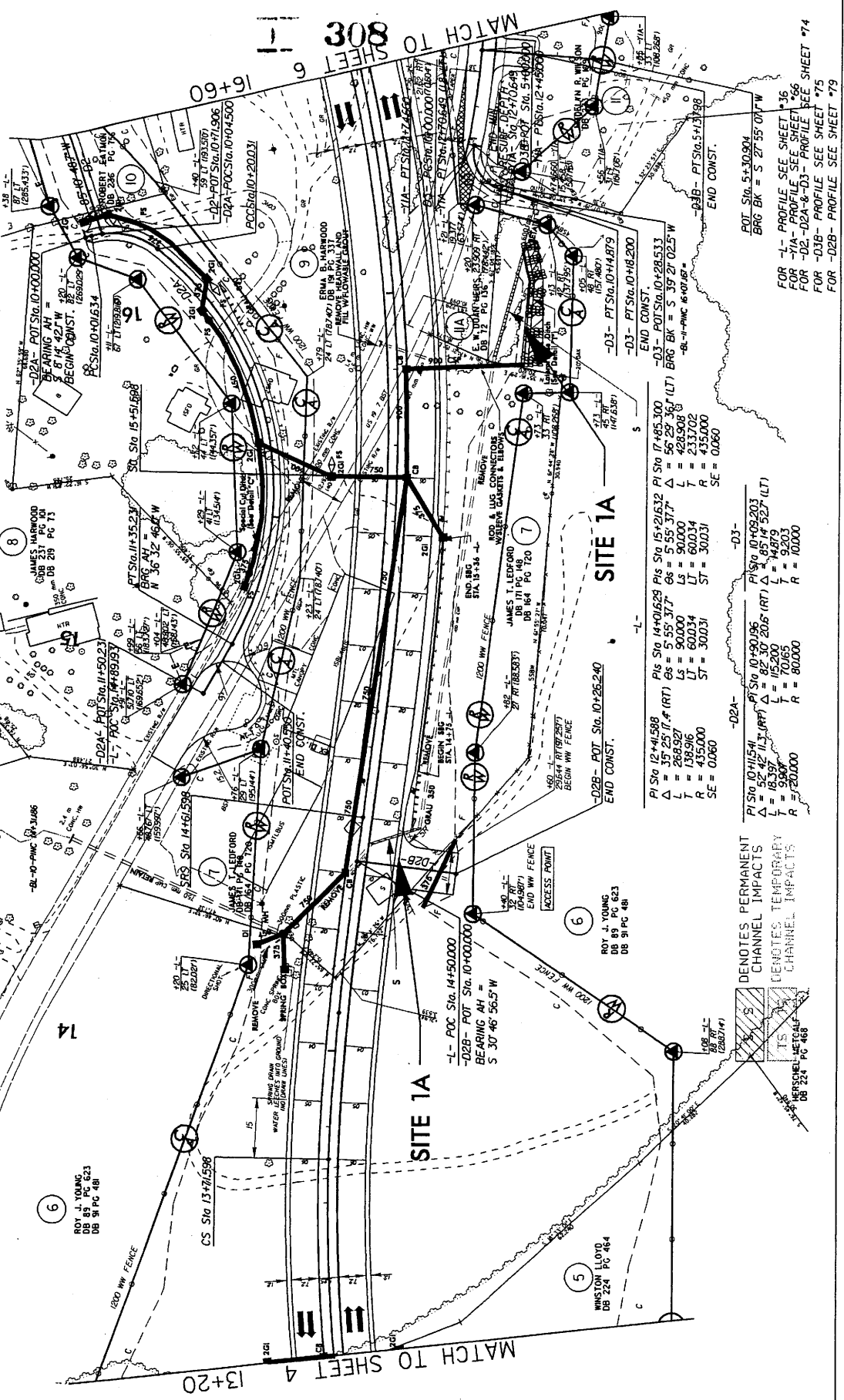
DATE: _____

22-JUN-2007 14:31 11:29:04 AM 17:8215347

PROJECT REFERENCE NO. SHEET NO.
 P-2210A 5
 L & W SHEET NO. 5
 HYDRAULICS ENGINEER

PRELIMINARY PLANS
 TO BE USED FOR CONSTRUCTION

CONTRACT NO. 10-1000-0000
 N/W REV.



SITE 1A

| | |
|------------------|-----------------------|
| Pi Sta 12+41.588 | Pi Sta 10+90.96 |
| Δ = 35' 25" (RT) | Δ = 82' 30" 20.6 (RT) |
| L = 268.927 | L = 152.00 |
| R = 139.916 | R = 80.00 |
| SE = 435.000 | R = 20.000 |
| SE = 0.060 | |

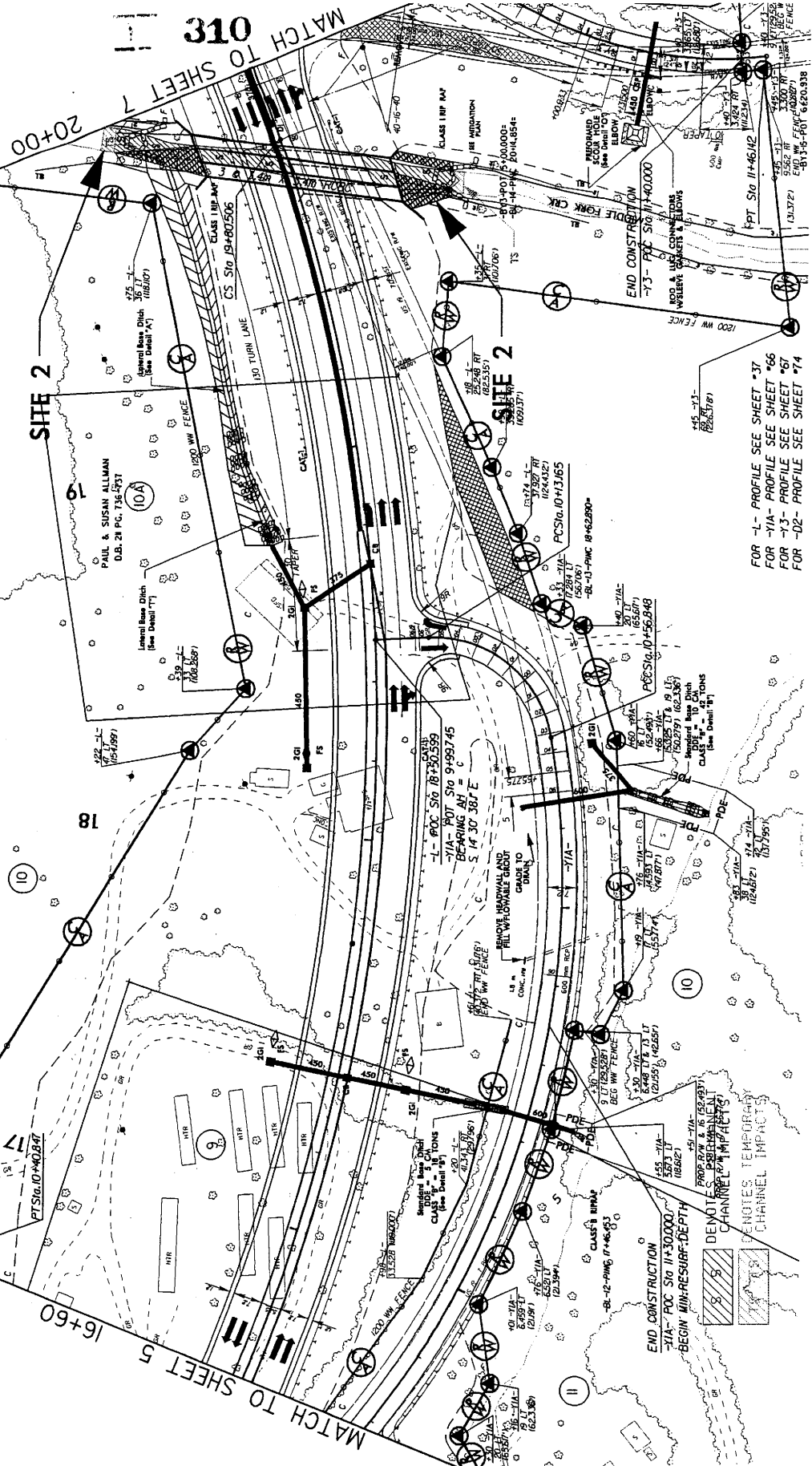
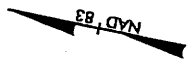
| | |
|-----------------------|-----------------------|
| Pi Sta 10+415.41 | Pi Sta 10+69.203 |
| Δ = 18' 52" 11.3 (RT) | Δ = 85' 14" 52.7 (LT) |
| L = 9.907 | L = 148.9 |
| R = 20.000 | R = 10.000 |

DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS



FOR -1- PROFILE SEE SHEET *36
 FOR -1A- PROFILE SEE SHEET *66
 FOR -D2A-&-D3- PROFILE SEE SHEET *74
 FOR -D3B- PROFILE SEE SHEET *75
 FOR -D2B- PROFILE SEE SHEET *79

PROJECT REFERENCE NO. SHEET IN
 17-207 SHEET NO. 6
 ROADWAY DESIGN ENGINEER
 HYDRAULIC ENGINEER
 PRELIMINARY PLANS
 (NOT FOR CONSTRUCTION)
 CONTRACTOR
 R/W REV.



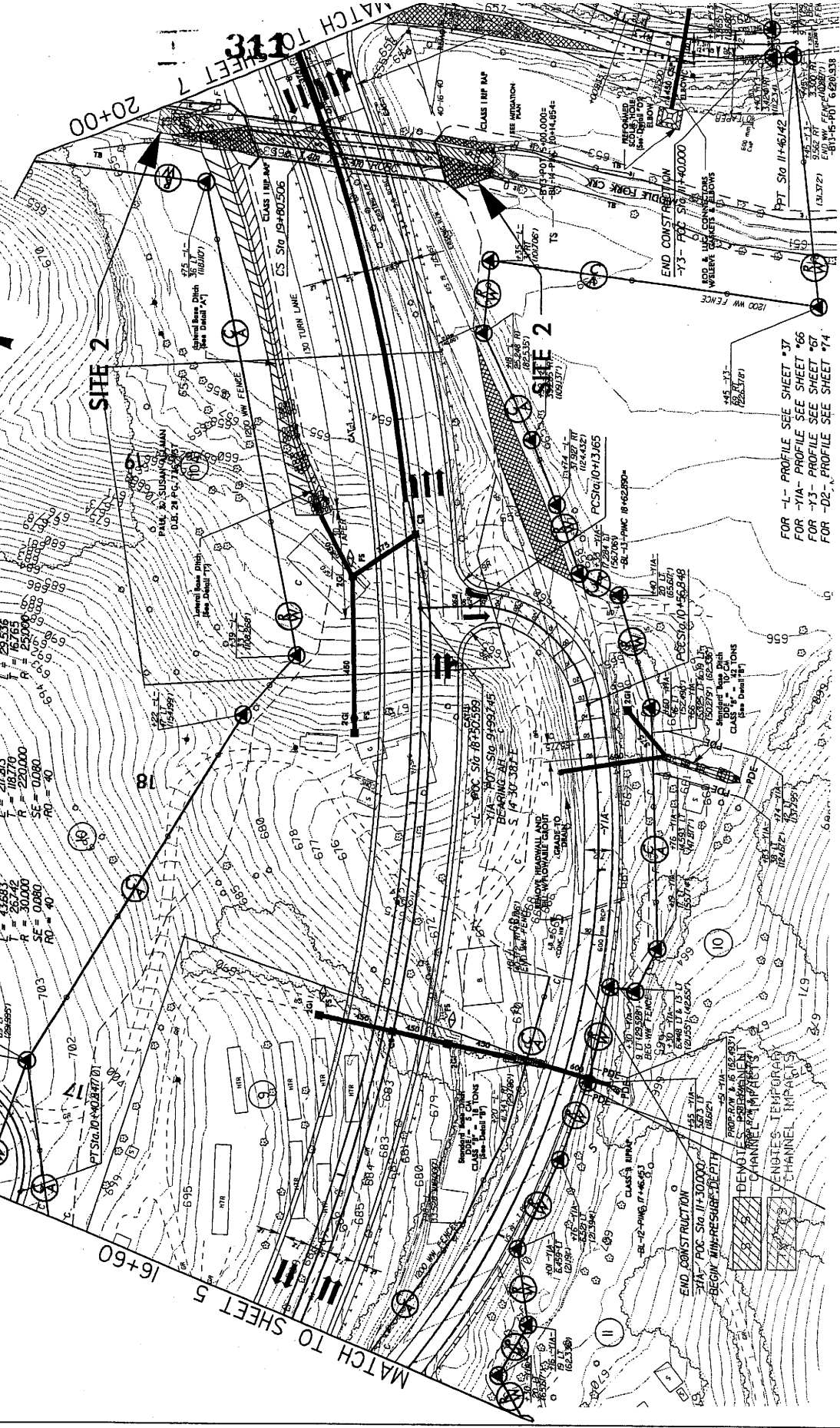
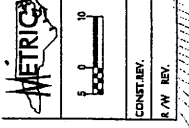
| | | |
|-------|--|--|
| -L- | PI Sta 17+455.300 Δ = 56.297, 367 (LT) L = 78.770 T = 38.654 R = 100.000 SE = 0.080 RO = 40 | PI Sta 20+400.000 Δ = 427.650, 017 (LT) L = 78.770 T = 38.654 R = 100.000 SE = 0.080 RO = 40 |
| -Y1A- | PI Sta 10+359.907 Δ = 43.653, 387 (RT) L = 26.742 T = 30.000 SE = 0.080 RO = 40 | PI Sta 10+290.076 Δ = 29.535, 328 (RT) L = 16.765 T = 25.000 SE = 0.080 RO = 40 |
| -Y1A- | PI Sta 11+755.618 Δ = 45.437, 342 (RT) L = 20.813 T = 118.770 R = 220.000 SE = 0.080 RO = 40 | PI Sta 19+807.506 Δ = 100.000, 000 (RT) L = 100.000 T = 100.000 R = 100.000 SE = 0.080 RO = 40 |

FOR -L- PROFILE SEE SHEET *37
 FOR -Y1A- PROFILE SEE SHEET *66
 FOR -Y3- PROFILE SEE SHEET *67
 FOR -D2- PROFILE SEE SHEET *74

310
 MATCH TO SHEET 7
 20+00
 16+60
 MATCH TO SHEET 5

17-207-001-000-000
 17-207-001-000-000

| | |
|-------------------------|--------------------|
| PROJECT REFERENCE NO. | SHEET |
| R-2016A | 6 |
| ROADWAY DESIGN ENGINEER | HYDRAULIC ENGINEER |
| PRELIMINARY | NO. 10000000000 |
| CONST. REV. | R/W REV. |



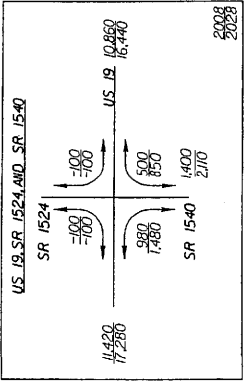
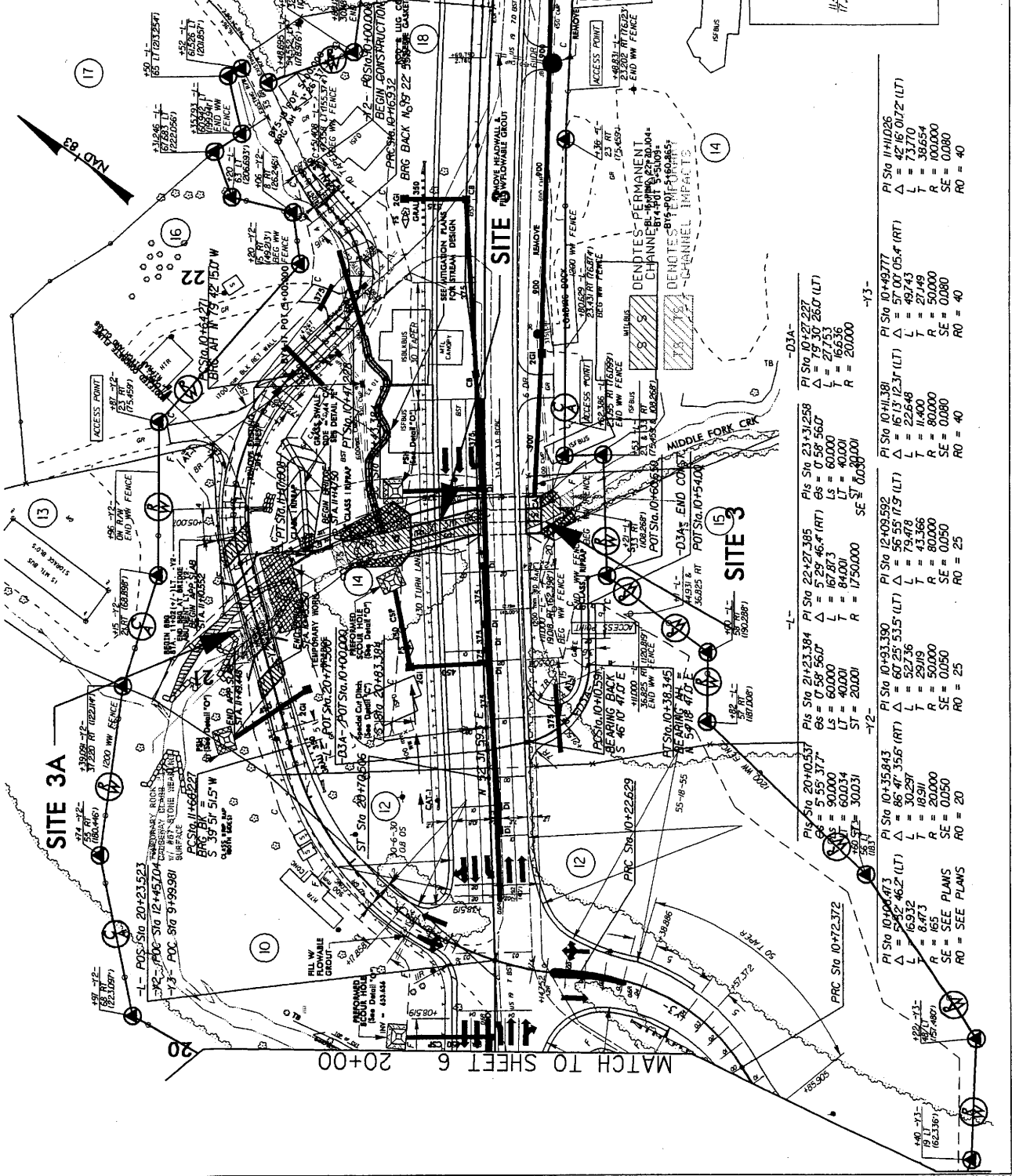
| | | |
|--|---|---|
| PI Sta 17+85.300 $\Delta = 56.29$ $L = 428.908$ $R = 133.770$ $SE = 0.080$ $RO = 40$ | PI Sta 20+10.537 $\Delta = 56.29$ $L = 428.908$ $R = 133.770$ $SE = 0.080$ $RO = 40$ | PI Sta 20+10.537 $\Delta = 56.29$ $L = 428.908$ $R = 133.770$ $SE = 0.080$ $RO = 40$ |
| PI Sta 10+100.000 $\Delta = 56.29$ $L = 428.908$ $R = 133.770$ $SE = 0.080$ $RO = 40$ | PI Sta 11+75.618 $\Delta = 56.43$ $L = 217.813$ $R = 167.765$ $SE = 0.080$ $RO = 40$ | PI Sta 11+75.618 $\Delta = 56.43$ $L = 217.813$ $R = 167.765$ $SE = 0.080$ $RO = 40$ |

FOR -L- PROFILE SEE SHEET #37
 FOR -Y1A- PROFILE SEE SHEET #66
 FOR -Y3- PROFILE SEE SHEET #67
 FOR -D2- PROFILE SEE SHEET #74

PROJECT REFERENCE NO. SHEET NO.
 17 200 SHEET NO. 7
 HIGHWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER

METRIX
 CONSULTING ENGINEERS
 11400 N.W. 22nd Ave., Suite 100
 Fort Lauderdale, FL 33331
 TEL: (954) 577-1111
 FAX: (954) 577-1112
 WWW.METRIX-FL.COM

PRELIMINARY PLANS
 FOR THE
 CONSTRUCTION OF
 A
 10.000' WIDE
 HIGHWAY



FOR -L- PROFILE SEE SHEET #38
 FOR -Y2- PROFILE SEE SHEET #67
 FOR -Y3- PROFILE SEE SHEET #67
 FOR -O3A- PROFILE SEE SHEET #74

Permit Drawing

| Station | Point | Delta | Length | Radius | SE | RO |
|-----------|-------------------|--------|--------|--------|-------|----|
| 10+38.145 | POT Sta 10+38.145 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+40.57 | POT Sta 10+40.57 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+43.00 | POT Sta 10+43.00 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+45.43 | POT Sta 10+45.43 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+47.86 | POT Sta 10+47.86 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+50.29 | POT Sta 10+50.29 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+52.72 | POT Sta 10+52.72 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+55.15 | POT Sta 10+55.15 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+57.58 | POT Sta 10+57.58 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+60.01 | POT Sta 10+60.01 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+62.44 | POT Sta 10+62.44 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+64.87 | POT Sta 10+64.87 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+67.30 | POT Sta 10+67.30 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+69.73 | POT Sta 10+69.73 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+72.16 | POT Sta 10+72.16 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+74.59 | POT Sta 10+74.59 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+77.02 | POT Sta 10+77.02 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+79.45 | POT Sta 10+79.45 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+81.88 | POT Sta 10+81.88 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+84.31 | POT Sta 10+84.31 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+86.74 | POT Sta 10+86.74 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+89.17 | POT Sta 10+89.17 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+91.60 | POT Sta 10+91.60 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+94.03 | POT Sta 10+94.03 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+96.46 | POT Sta 10+96.46 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 10+98.89 | POT Sta 10+98.89 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+01.32 | POT Sta 11+01.32 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+03.75 | POT Sta 11+03.75 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+06.18 | POT Sta 11+06.18 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+08.61 | POT Sta 11+08.61 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+11.04 | POT Sta 11+11.04 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+13.47 | POT Sta 11+13.47 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+15.90 | POT Sta 11+15.90 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+18.33 | POT Sta 11+18.33 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+20.76 | POT Sta 11+20.76 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+23.19 | POT Sta 11+23.19 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+25.62 | POT Sta 11+25.62 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+28.05 | POT Sta 11+28.05 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+30.48 | POT Sta 11+30.48 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+32.91 | POT Sta 11+32.91 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+35.34 | POT Sta 11+35.34 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+37.77 | POT Sta 11+37.77 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+40.20 | POT Sta 11+40.20 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+42.63 | POT Sta 11+42.63 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+45.06 | POT Sta 11+45.06 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+47.49 | POT Sta 11+47.49 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+49.92 | POT Sta 11+49.92 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+52.35 | POT Sta 11+52.35 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+54.78 | POT Sta 11+54.78 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+57.21 | POT Sta 11+57.21 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+59.64 | POT Sta 11+59.64 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+62.07 | POT Sta 11+62.07 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+64.50 | POT Sta 11+64.50 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+66.93 | POT Sta 11+66.93 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+69.36 | POT Sta 11+69.36 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+71.79 | POT Sta 11+71.79 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+74.22 | POT Sta 11+74.22 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+76.65 | POT Sta 11+76.65 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+79.08 | POT Sta 11+79.08 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+81.51 | POT Sta 11+81.51 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+83.94 | POT Sta 11+83.94 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+86.37 | POT Sta 11+86.37 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+88.80 | POT Sta 11+88.80 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+91.23 | POT Sta 11+91.23 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+93.66 | POT Sta 11+93.66 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+96.09 | POT Sta 11+96.09 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 11+98.52 | POT Sta 11+98.52 | 16.636 | 16.636 | 20000 | 0.080 | 40 |
| 12+00.95 | POT Sta 12+00.95 | 16.636 | 16.636 | 20000 | 0.080 | 40 |

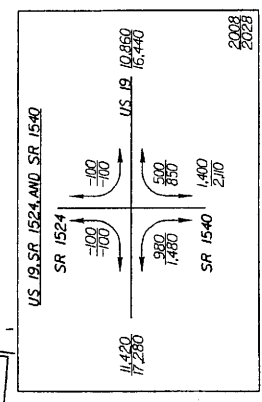
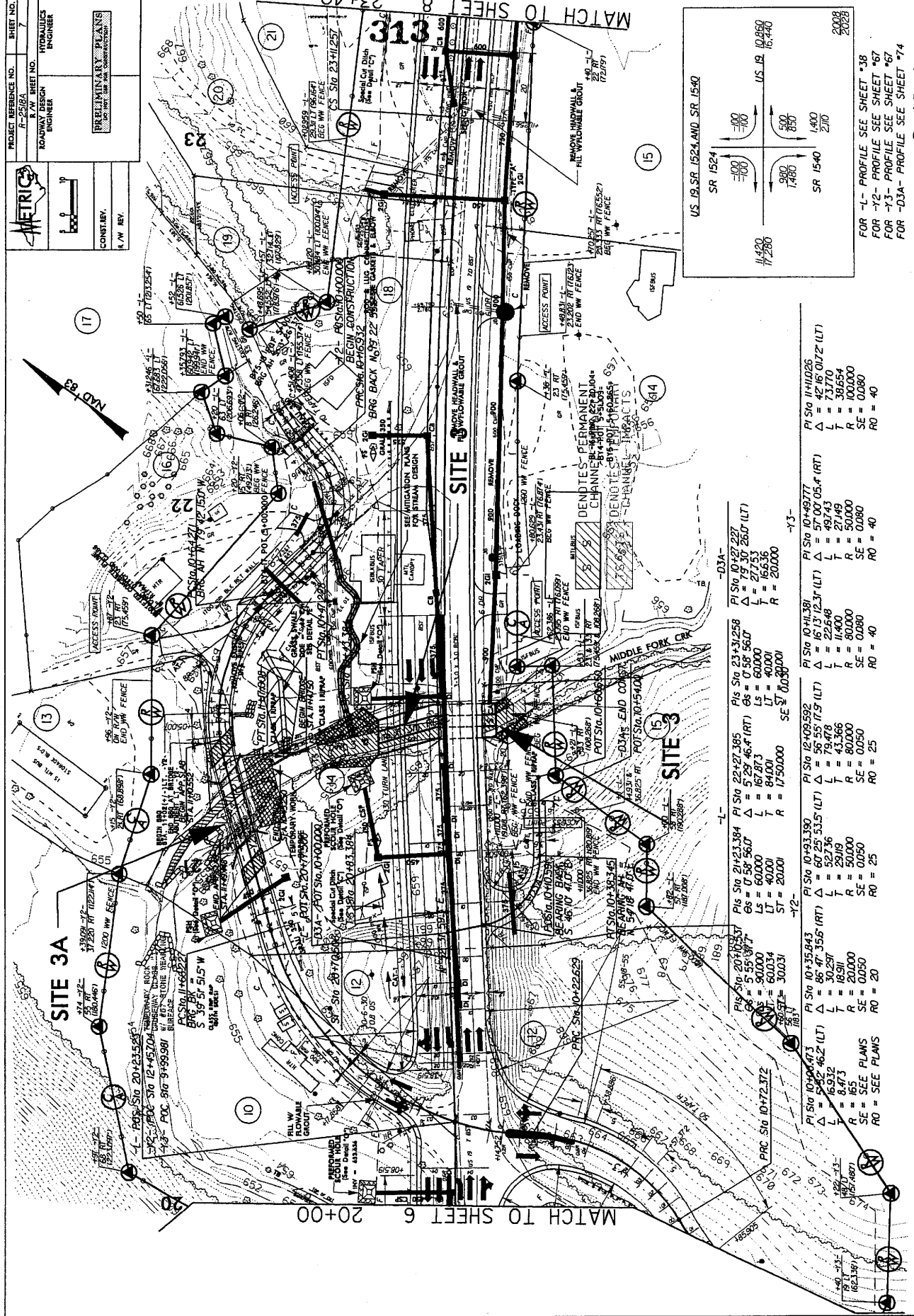
R/W REV: REVISING DRIVEWAY AND ACCESS POINT AND REVISION NAME AND DEED BOOK NUMBER
 ON PARCEL IS (BRYAN AND JOYCE E. ANDERS REVOCABLE TRUST), 06/11/2007 NNN

PROJECT REFERENCE NO. SHEET NO.
 17-2302 7
 ROADWAY DESIGN HYDRAULICS
 ENGINEER ENGINEER

METRIX

CONTRIBUTOR:
 A/W REV.

PRELIMINARY PLANS
 (DO NOT USE FOR CONSTRUCTION)



FOR -L- PROFILE SEE SHEET *38
 FOR -Y2- PROFILE SEE SHEET *67
 FOR -Y3- PROFILE SEE SHEET *67
 FOR -D3A- PROFILE SEE SHEET *74

2008
 2008

Permit Drawing

| Station | PI | LS | TS | ST | R | SE | RO |
|-----------|-----------|----|--------|----|-------|-----------|---------|
| 10+27.227 | 10+27.227 | 68 | 68.000 | 17 | 40000 | SE 0.0000 | RO = 40 |
| 10+31.258 | 10+31.258 | 68 | 68.000 | 17 | 40000 | SE 0.0000 | RO = 40 |
| 10+33.390 | 10+33.390 | 68 | 68.000 | 17 | 40000 | SE 0.0000 | RO = 40 |
| 10+35.843 | 10+35.843 | 68 | 68.000 | 17 | 40000 | SE 0.0000 | RO = 40 |
| 10+37.385 | 10+37.385 | 68 | 68.000 | 17 | 40000 | SE 0.0000 | RO = 40 |
| 10+40.959 | 10+40.959 | 68 | 68.000 | 17 | 40000 | SE 0.0000 | RO = 40 |
| 10+43.381 | 10+43.381 | 68 | 68.000 | 17 | 40000 | SE 0.0000 | RO = 40 |
| 10+49.977 | 10+49.977 | 68 | 68.000 | 17 | 40000 | SE 0.0000 | RO = 40 |
| 11+12.260 | 11+12.260 | 68 | 68.000 | 17 | 40000 | SE 0.0000 | RO = 40 |
| 11+260 | 11+260 | 68 | 68.000 | 17 | 40000 | SE 0.0000 | RO = 40 |

R/W REV. REVISION DRAWING AND ACCESS POINT AND REVISIONS (TRUST), 06/11/2007. N/M PARCEL IS (BRYAN AND JOYCE E. ANDERS REVOCABLE TRUST).

| | |
|-------------------------|--------------------|
| PROJECT REFERENCE NO. | SHEET NO. |
| R-2518A | 9 |
| ROADWAY DESIGN ENGINEER | INSURANCE ENGINEER |
| MOORE & ASSOCIATES | |
| PRELIMINARY PLANS | |
| CONTRACT NO. | |
| N.W. REV. | |

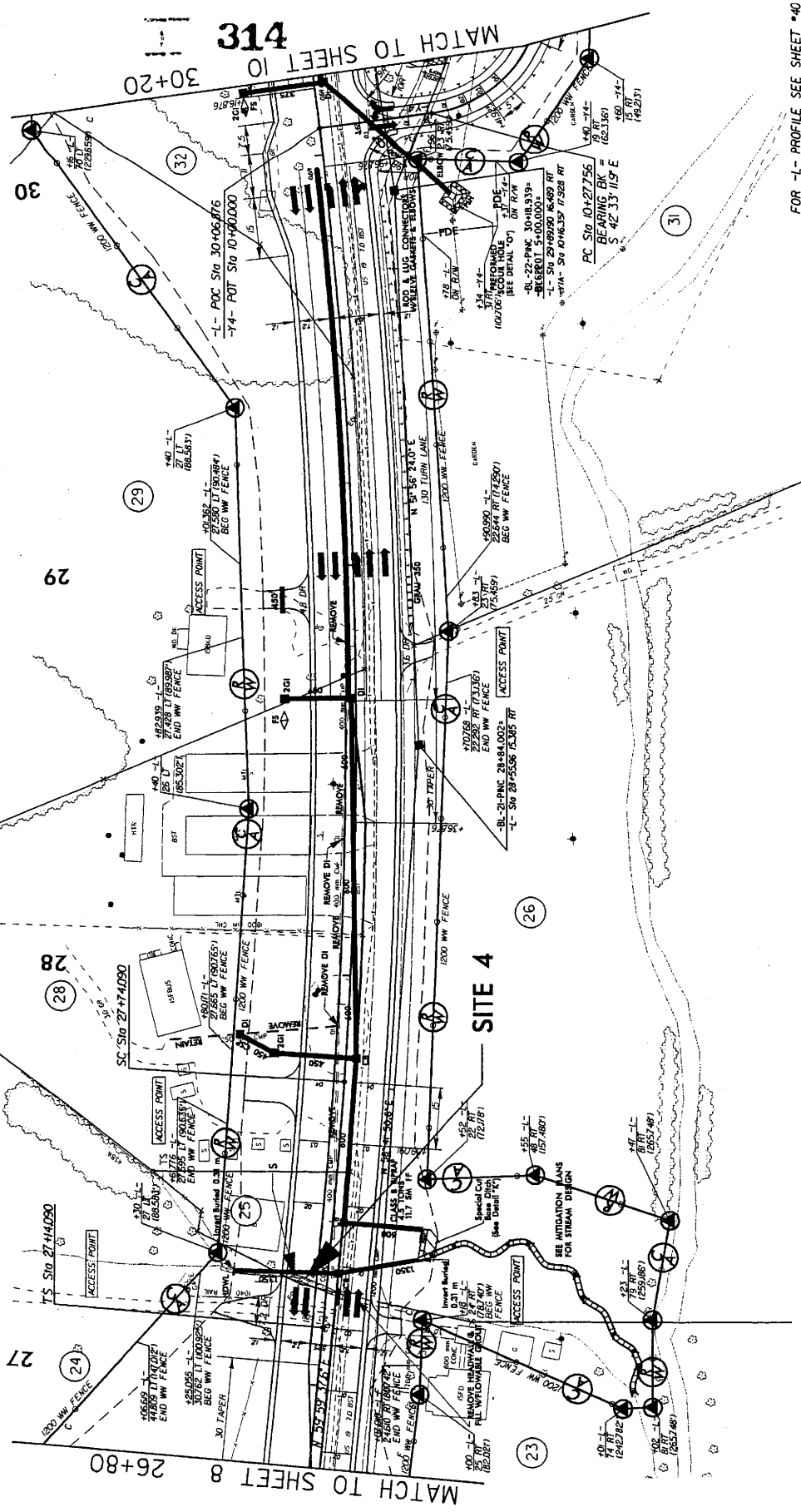


DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS

-Y4-
 PI Sta 10+162.830
 $\Delta = 89.76$ 330.0 (LT)
 $T = 34.936$
 $R = 30.000$
 $SE = 0.080$
 $RO = 40$

-L-
 PI Sta 29+58.270
 $\Delta = 71.15$ 542.1 (LT)
 $T = 182.189$
 $R = 120.000$
 $SE = 0.040$

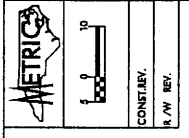
-L-
 PI Sta 27+54.091
 $\Delta = 25.966$
 $T = 60.000$
 $R = 20.000$
 $SE = 0.000$



FOR -L- PROFILE SEE SHEET #40
 FOR -Y4- PROFILE SEE SHEET #6

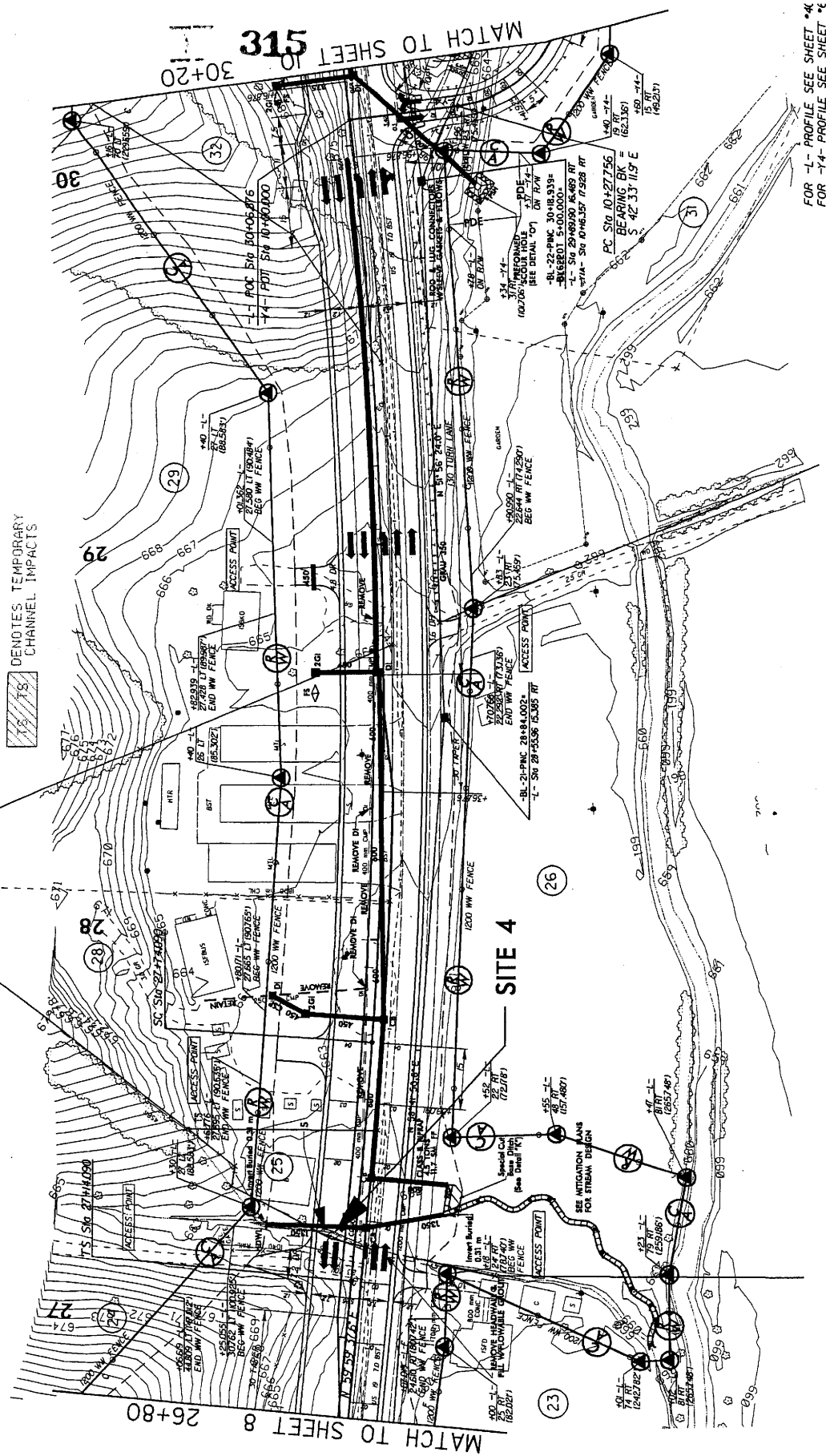
Permit Drawing

PROJECT REFERENCE NO. SHEET NO.
 R-2518A 9
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER
 PRELIMINARY PLANS
 CONTRACTOR: R/W REV.



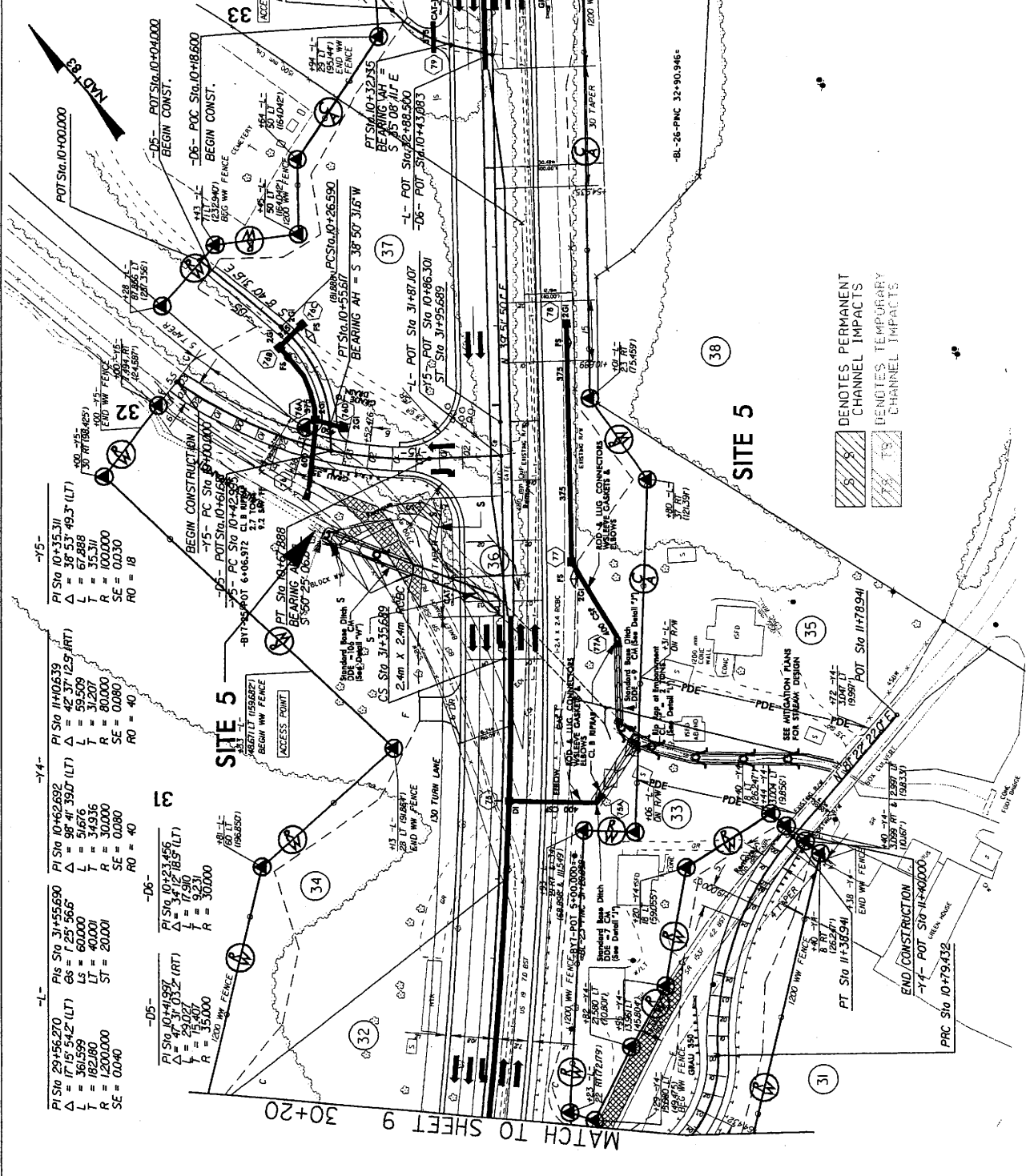
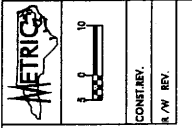
-L- PIS Sta 27+54.091 PI Sta 29+56.270
 68 = 1' 25" 56.6' Δ = 17' 15" 54.2' (LT)
 LS = 60.000 L = 361.599
 ST = 40.000 T = 192.180
 R = 1,200.000 R = 300.000
 SE = 00.40 SE = 02.80
 RO = 40

[Hatched Box] DENOTES PERMANENT CHANNEL IMPACTS
 [Hatched Box] DENOTES TEMPORARY CHANNEL IMPACTS



FOR -L- PROFILE SEE SHEET #4
 FOR -14- PROFILE SEE SHEET #2

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| PROJECT REFERENCE NO. | SHEET NO. |
| 17-201 | 10 |
| ROWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION | |
| CONTRARY TO ANY REV. | |



-Y5-
PI Sta 10+35.311
 $\Delta = 37.53'$ 49.3' (LT)
L = 67.888
T = 35.311
R = 100.000
SE = 0.030
RO = 18

-Y4-
PI Sta 10+46.639
 $\Delta = 42.37'$ 12.9' (RT)
L = 59.509
T = 31.207
R = 80.000
SE = 0.080
RO = 40

-L-
PI Sta 29+56.270
 $\Delta = 17.15'$ 54.2' (LT)
L = 361.599
T = 182.180
R = 1200.000
SE = 0.040

-D6-
PI Sta 10+23.456
 $\Delta = 49.31'$ 18.5' (LT)
L = 14.921
T = 15.407
R = 35.000

-D5-
PI Sta 10+41.937
 $\Delta = 49.31'$ 18.5' (LT)
L = 14.921
T = 15.407
R = 35.000

MATCH TO SHEET 9 30+20

316
MATCH TO SHEET 11 34+60

SITE 5

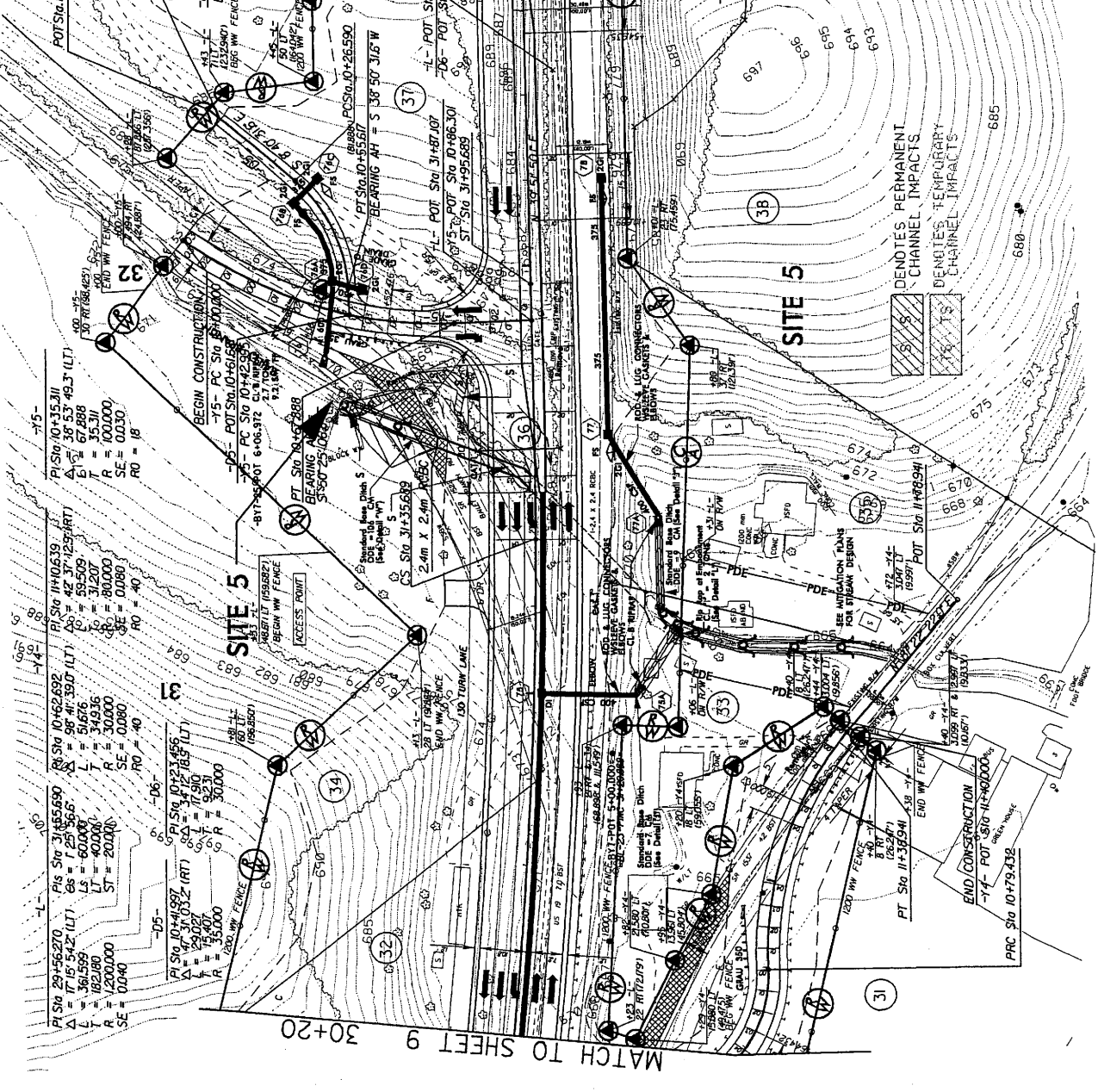
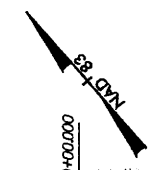
DENDOTES PERMANENT CHANNEL IMPACTS
DENDOTES TEMPORARY CHANNEL IMPACTS
DENDOTES TEMPORARY CHANNEL IMPACTS

FOR -L- PROFILE SEE SHEET #41
FOR -Y4- PROFILE SEE SHEET #67
FOR -Y5- PROFILE SEE SHEET #67
FOR -D5-8-D6- PROFILE SEE SHEET #75

Permit Drawing



| | |
|-----------------------|---------------------|
| PROJECT REFERENCE NO. | 10 |
| PROJECT SHEET NO. | 10 |
| DESIGNER | HYDRAULICS ENGINEER |
| CHECKER | HYDRAULICS ENGINEER |
| DATE | 10/14/2010 |
| BY | 10/14/2010 |
| SCALE | AS SHOWN |
| CONTRACT NO. | 10/14/2010 |
| CONTRACT NAME | 10/14/2010 |



| | | | | |
|--|--|--|--|---|
| <p>PI Sta 29+56.270 $\Delta = 17.15$ $L = 361.569$ $R = 1200.000$ $SE = 0.040$</p> | <p>PI Sta 10+41.997 $\Delta = 47.31$ $L = 250.000$ $R = 150.000$</p> | <p>PI Sta 10+23.456 $\Delta = 34.12$ $L = 17.910$ $R = 50.310$</p> | <p>PI Sta 10+62.692 $\Delta = 58.41$ $L = 94.616$ $R = 31.200$ $SE = 0.080$ $RO = -40$</p> | <p>PI Sta 10+35.311 $\Delta = 26.53$ $L = 94.310$ $R = 100.000$ $SE = 0.030$ $RO = -18$</p> |
|--|--|--|--|---|

DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS

FOR -L- PROFILE SEE SHEET #4
 FOR -T- PROFILE SEE SHEET #67
 FOR -15- PROFILE SEE SHEET #67
 FOR -D5-&-D6- PROFILE SEE SHEET #75

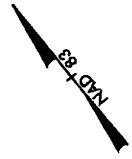
PROJECT REFERENCE NO. SHEET NO.
 R-2518A II

ROADWAY DESIGN ENGINEER
 RESIDENT ENGINEER

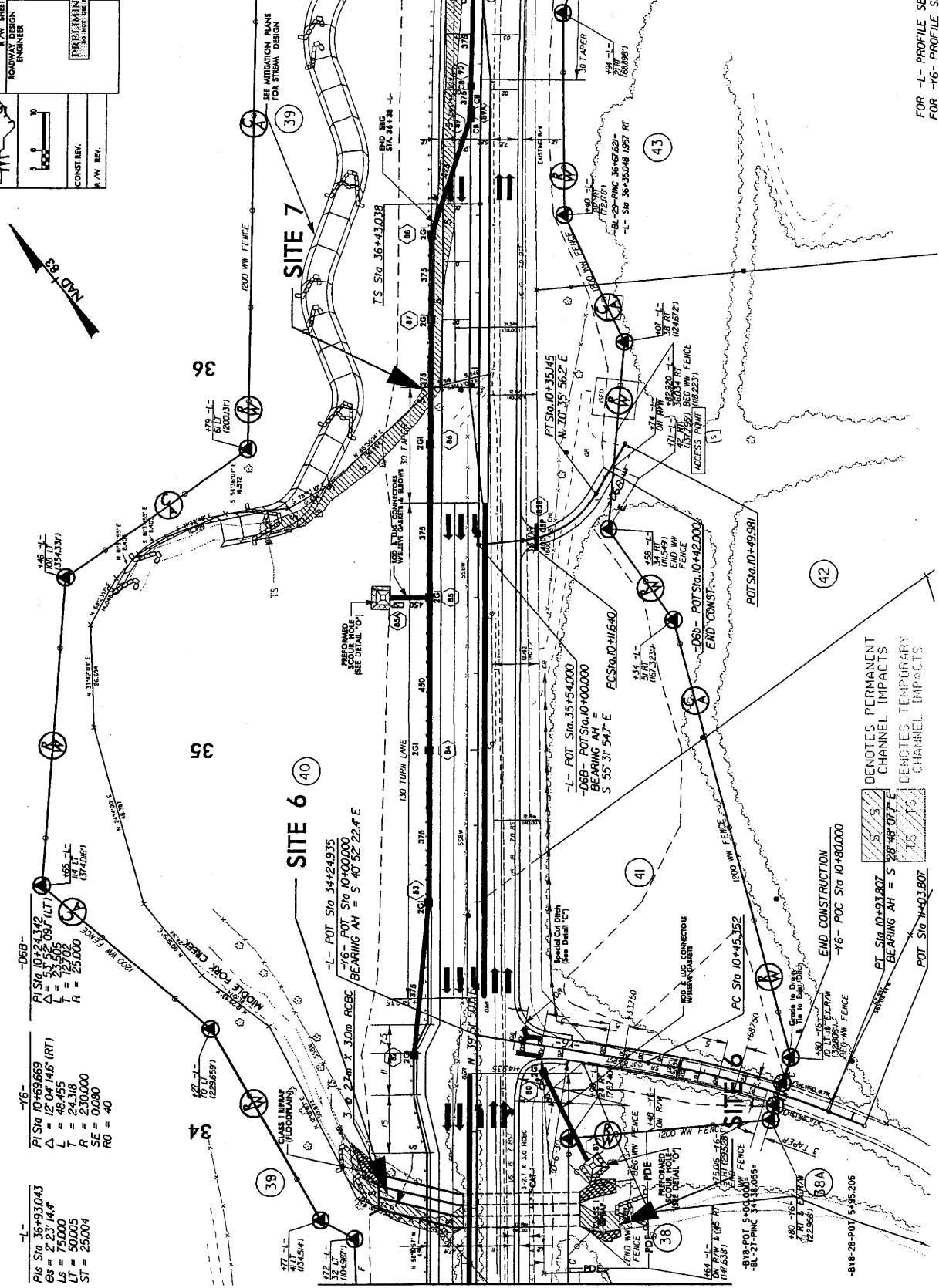
PRELIMINARY PLANS
 FOR THE PROPOSED HIGHWAY IMPROVEMENTS

CONTR. BY
 R.V. RBY.

SEE MITIGATION PLANS FOR STREAM DESIGN



MATCH TO SHEET 318
 37+00



MATCH TO SHEET 10
 33+60

-L-
 Pts Sta 36+93.043
 BS = 2.23 / 14.6'
 LS = 75000
 ST = 250004

-Y6-
 Pts Sta 10+69.669
 Δ = 16.04 / 14.5 (RT)
 T = 24.506
 R = 24.175
 SE = 0.0280
 RO = 40

-D6B-
 Pts Sta 10+52.1342
 Δ = 21.506 / 18.7 (LT)
 T = 12.705
 R = 25.000

-L-
 Pts Sta 34+24.935
 Δ = 16.04 / 14.5 (RT)
 T = 24.506
 R = 24.175
 SE = 0.0280
 RO = 40

-Y6-
 Pts Sta 10+40.000
 Δ = 16.04 / 14.5 (RT)
 T = 24.506
 R = 24.175
 SE = 0.0280
 RO = 40

-D6B-
 Pts Sta 10+35.145
 Δ = 21.506 / 18.7 (LT)
 T = 12.705
 R = 25.000

-L-
 Pts Sta 35+54.000
 Δ = 16.04 / 14.5 (RT)
 T = 24.506
 R = 24.175
 SE = 0.0280
 RO = 40

-Y6-
 Pts Sta 10+00.000
 Δ = 16.04 / 14.5 (RT)
 T = 24.506
 R = 24.175
 SE = 0.0280
 RO = 40

-D6B-
 Pts Sta 10+42.000
 Δ = 21.506 / 18.7 (LT)
 T = 12.705
 R = 25.000

-L-
 Pts Sta 10+49.981
 Δ = 16.04 / 14.5 (RT)
 T = 24.506
 R = 24.175
 SE = 0.0280
 RO = 40

-Y6-
 Pts Sta 10+93.807
 Δ = 16.04 / 14.5 (RT)
 T = 24.506
 R = 24.175
 SE = 0.0280
 RO = 40

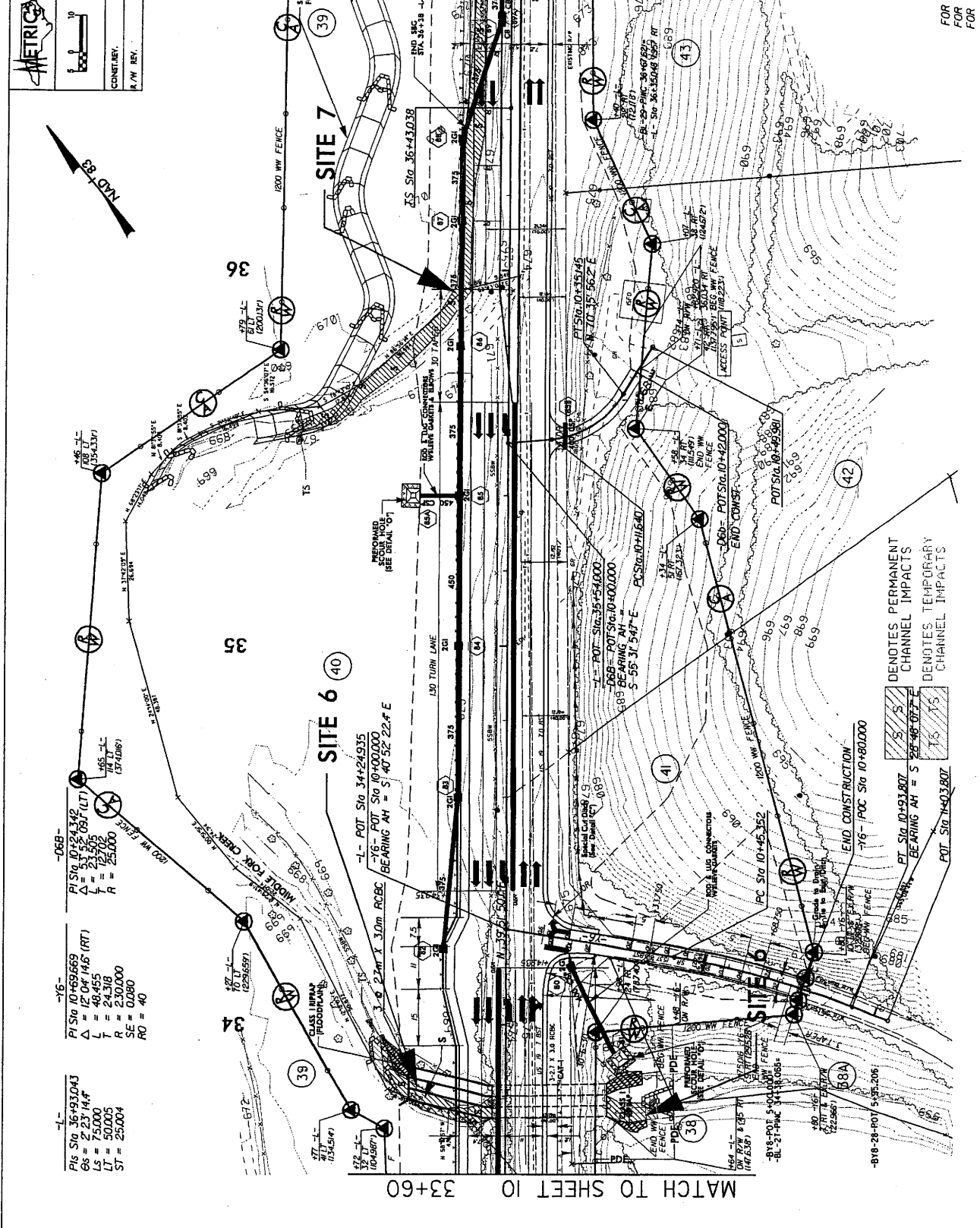
-D6B-
 Pts Sta 10+40.1807
 Δ = 21.506 / 18.7 (LT)
 T = 12.705
 R = 25.000

-L-
 Pts Sta 10+43.307
 Δ = 16.04 / 14.5 (RT)
 T = 24.506
 R = 24.175
 SE = 0.0280
 RO = 40

DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS

FOR -L- PROFILE SEE SHEET *42
 FOR -Y6- PROFILE SEE SHEET *6
 FOR -D6B- PROFILE SEE SHEET *

PROJECT REFERENCE NO. SHEET NO
 R-2702A II
 F.W. SHEET NO. HYDRAULICS ENGINEER
 ROUTING DESIGN ENGINEER
 METRICS
 PRELIMINARY PLANS
 CONTRACTOR: F.W. REV.



-I-
 PISig 35+93.043
 Δ = 2.23 14.4°
 L = 53.000
 R = 23.000
 SF = 23.004

-Y6-
 PISig 10+69.669
 Δ = 12.04 14.6 (RT)
 L = 23.315
 R = 23.000
 SF = 0.080
 RG = 40

-06B-
 PISig 10+25.342
 Δ = 12.04 14.6 (LT)
 L = 23.315
 R = 23.000
 SF = 0.080
 RG = 40

-L- POT Sta 14+24.935
 -Y6- POT Sta 10+00.000
 BEARING AH = S 40° 52' 22.4" E

-L- POT Sta 25+54.000
 -06B- POT Sta 10+00.000
 BEARING AH = S 55° 31' 54.7" E

-06B- POT Sta 10+42.000
 END CONSTRUCTION

-716- POC Sta 10+80.000
 END CONSTRUCTION

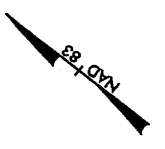
Denotes PERMANENT CHANNEL IMPACTS
 Denotes TEMPORARY CHANNEL IMPACTS



FOR -I- PROFILE SEE SHEET 42
 FOR -Y6- PROFILE SEE SHEET 68
 FOR -06B- PROFILE SEE SHEET 71

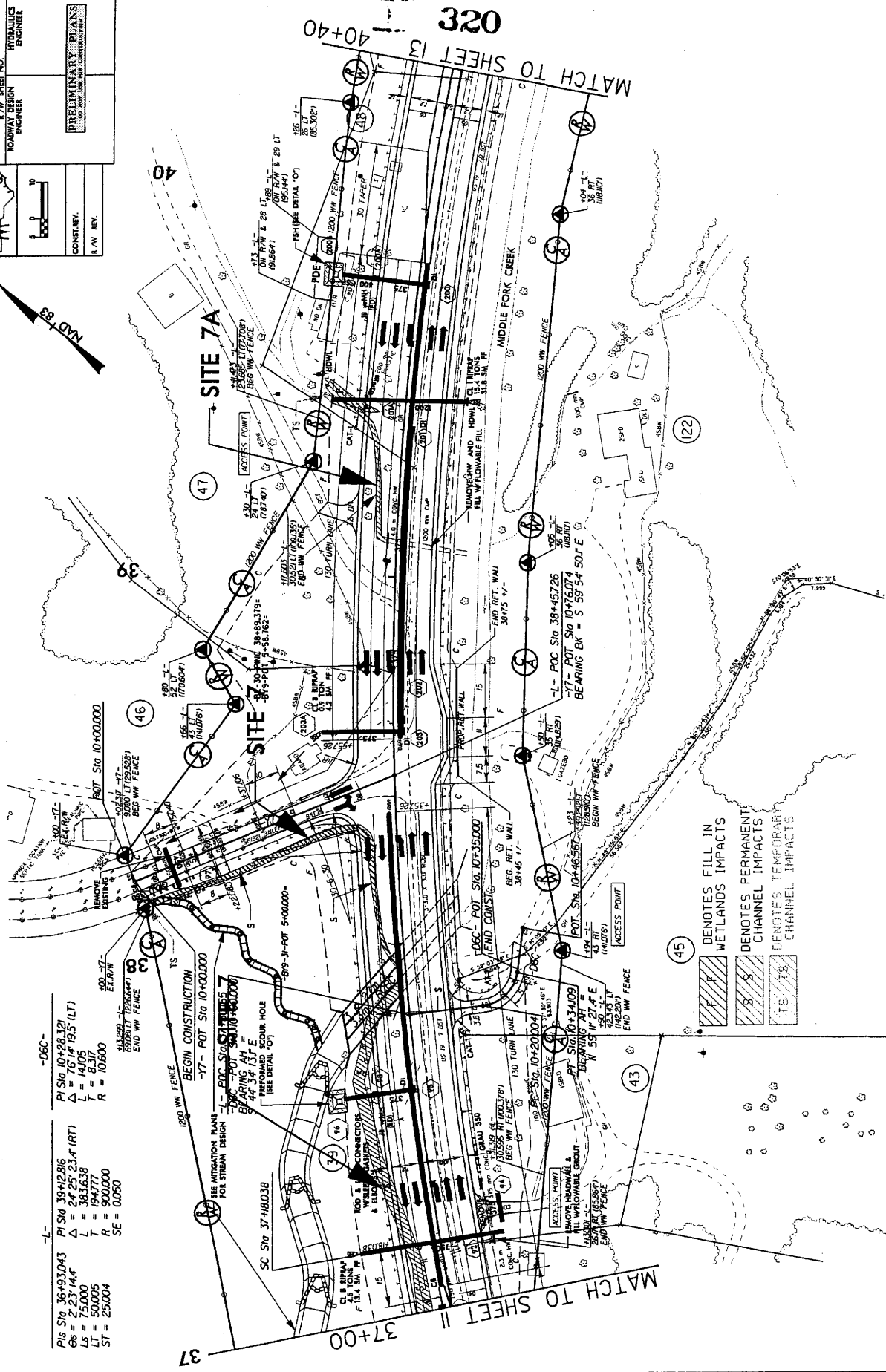
Permit Drawing

PROJECT REFERENCE NO. R-22/05A
 SHEET NO. 12
 METRICS
 METRICS ENGINEERING
 1000 W. 11th Street, Suite 100
 Fargo, ND 58103
 PRELIMINARY PLANS
 CONTRACTOR:
 R/W REV.



-L-
 P1 Sta 36+93.043 PI Sta 39+42.816
 Δ = 2.2374, Δ = 24.2523, Δ (RT)
 L = 75.000, L = 38.3638
 LS = 50.000, R = 69.7700
 ST = 23.004 SE = 00.50

-DSC-
 PI Sta 10+28.321
 Δ = 16.1419, Δ (LT)
 L = 14.50
 R = 10.600



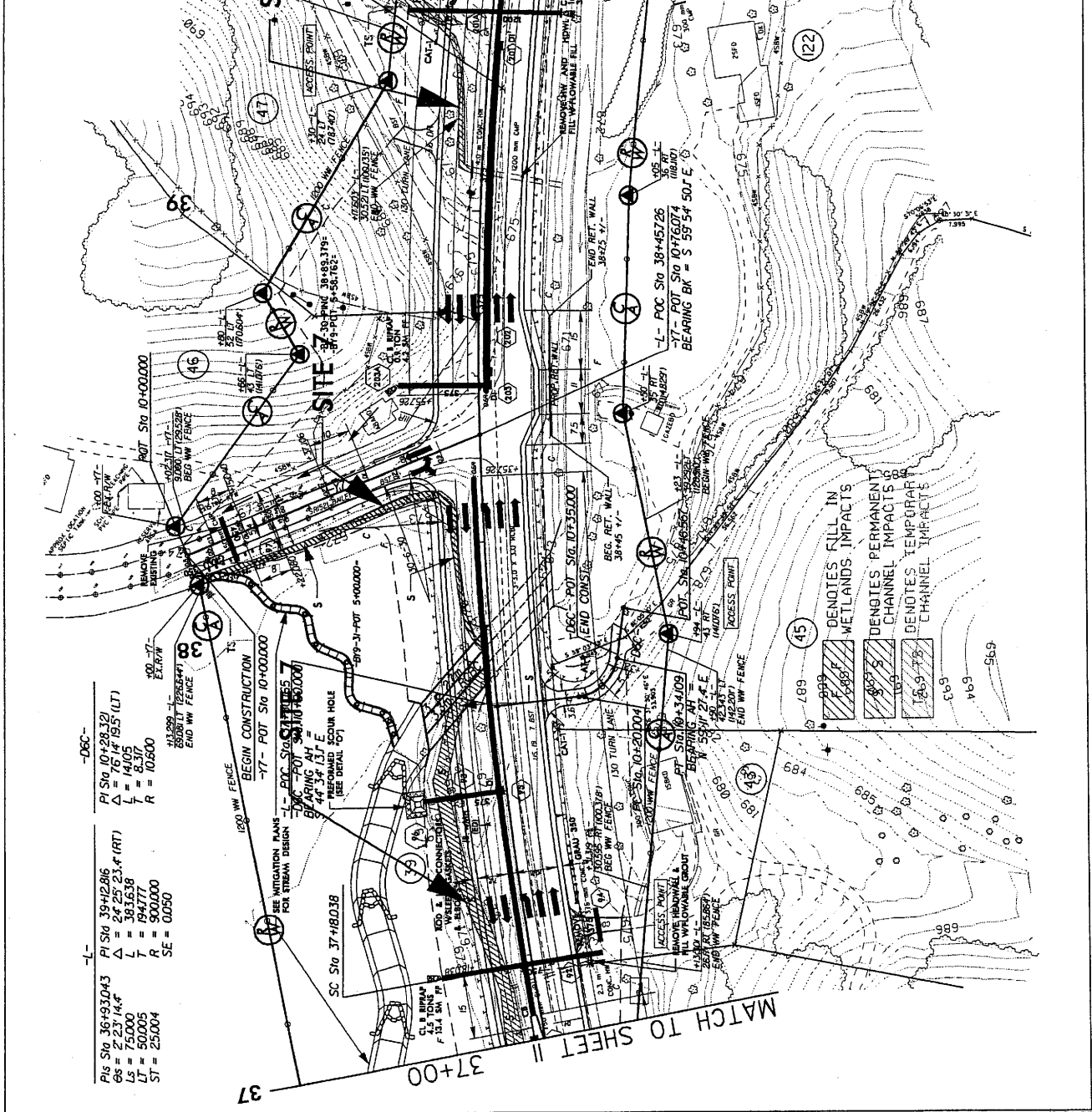
- 45 DENOTES FILL IN WETLANDS IMPACTS
- 45 DENOTES PERMANENT CHANNEL IMPACTS
- 45 DENOTES TEMPORARY CHANNEL IMPACTS

023
 MATCH TO SHEET 13
 40+40

37
 37+00
 MATCH TO SHEET

FOR -L- PROFILE SEE SHEET 43
 FOR -T- PROFILE SEE SHEET 66
 FOR -DSC- PROFILE SEE SHEET 7

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|---|---------------------|
| PROJECT REFERENCE NO. | SHEET NO. |
| R-2518A | 12 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |
| CONVEY. R/W REV. | |
| PRELIMINARY PLANS <small>(DO NOT USE FOR CONSTRUCTION)</small> | |



123
 MATCH TO SHEET 13
 -40+40

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 MATCH TO SHEET

45
 DENOTES FILL IN
 METLANDS IMPACTS
 DENOTES PERMANENT
 CHANNEL IMPACTS
 DENOTES TEMPORARY
 CHANNEL IMPACTS

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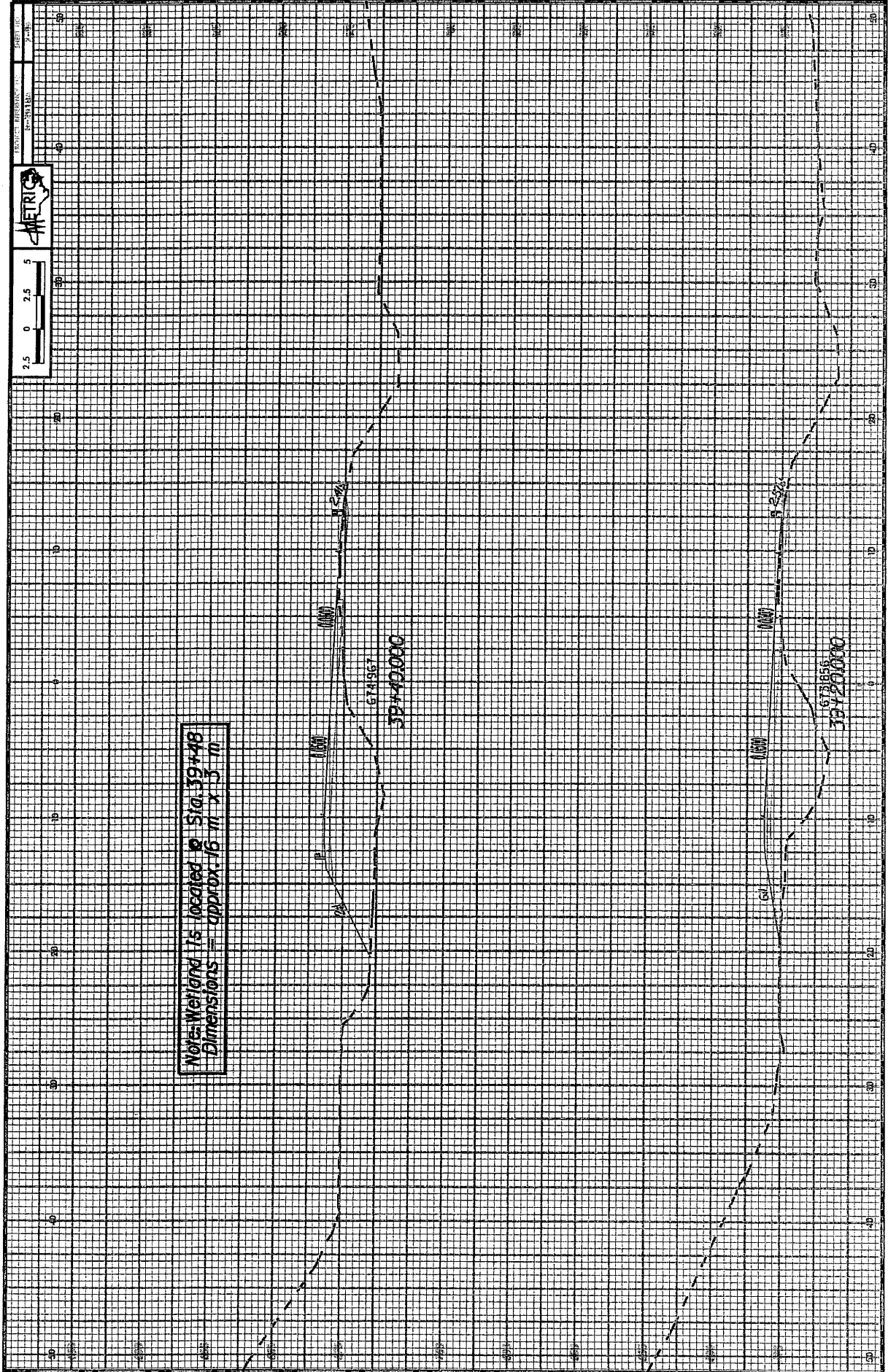
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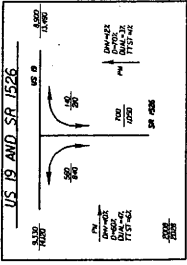
R/W REV. REVISING PARCEL NUMBER ON PARCEL 45A. 6/11/2007 NHM
 FOR -L- PROFILE SEE SHEET #43
 FOR -17- PROFILE SEE SHEET #68
 FOR -D6C- PROFILE SEE SHEET #7
 Permit Drawing



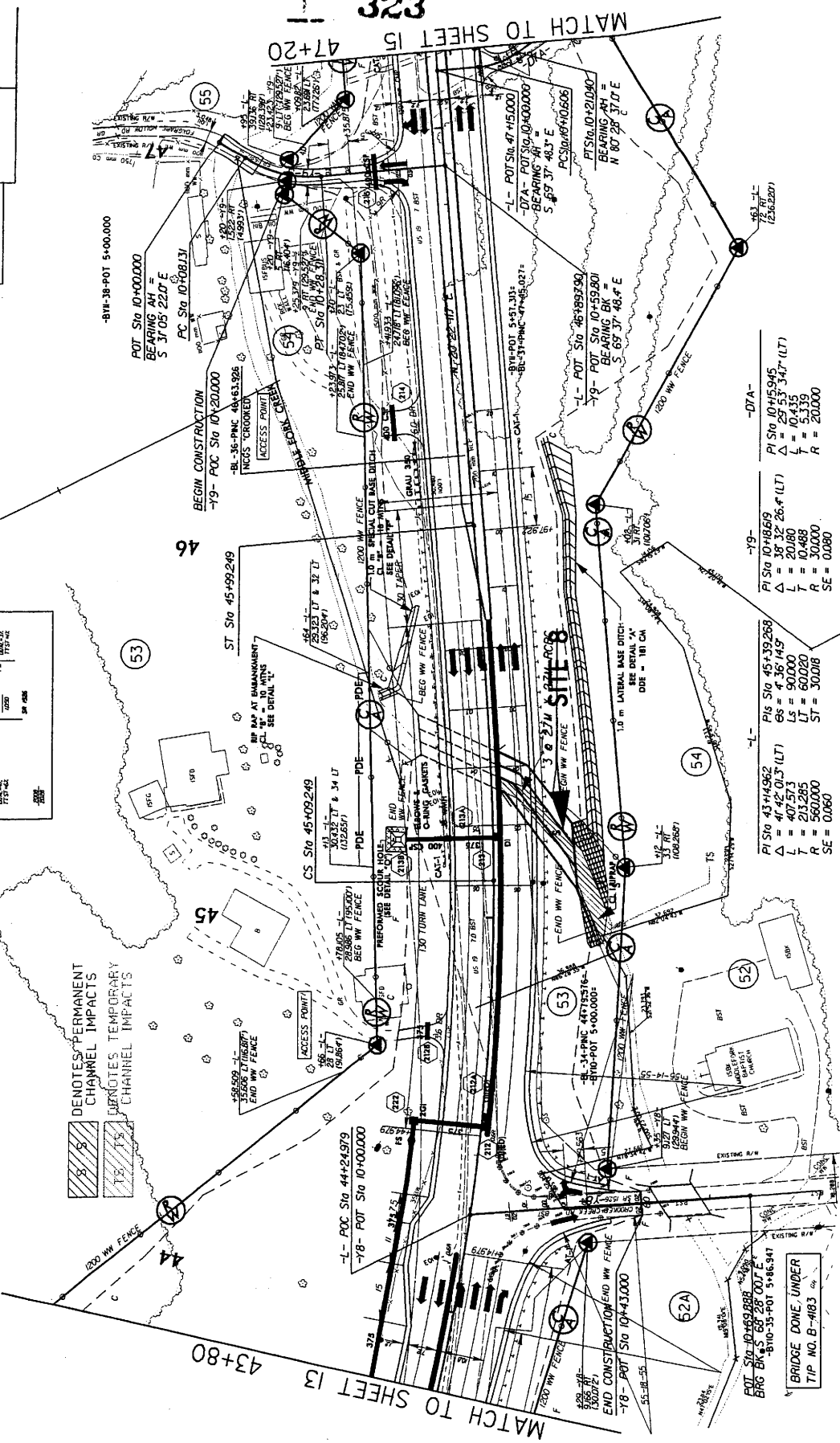
Note: Wetland is located @ Sta. 39+48
 Dimensions = approx. 16 m x 3 m



PROJECT REFERENCE NO. R-25/2A
 SHEET NO. 14
 ROADWAY DESIGN ENGINEER
 METRIC
 PRELIMINARY PLANS
 COUNTY, A.W. B.V.



DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS



-Y9-

| | |
|--------|----------|
| PI Sta | 10+18.69 |
| Δ | 29.53 |
| LT | 20.00 |
| T | 10.488 |
| R | 30.000 |
| SE | 0.080 |

-L-

| | |
|--------|-----------|
| PI Sta | 45+39.268 |
| Δ | 47.36 |
| LT | 60.000 |
| T | 213.285 |
| R | 560.000 |
| SE | 0.060 |

-D7A-

| | |
|--------|-----------|
| PI Sta | 10+15.945 |
| Δ | 29.53 |
| LT | 20.000 |
| T | 10.488 |
| R | 30.000 |
| SE | 0.080 |

FOR -L- PROFILE SEE SHEET #45
 FOR -Y9- PROFILE SEE SHEET #61
 FOR -79- PROFILE SEE SHEET #61
 FOR -D7A- PROFILE SEE SHEET #61

Permit Details

323

MATCH TO SHEET 15

MATCH TO SHEET 13

BRIDGE DONE UNDER TIP NO. B-483

PROJECT REFERENCE NO. SHEET NO. **R-2502A** **14**

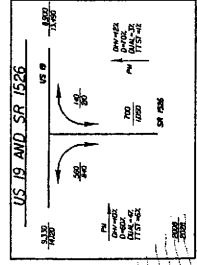
ROADWAY DESIGN ENGINEER **HYDRAULICS ENGINEER**

METRICS

CONSTANT: **1" = 100'**

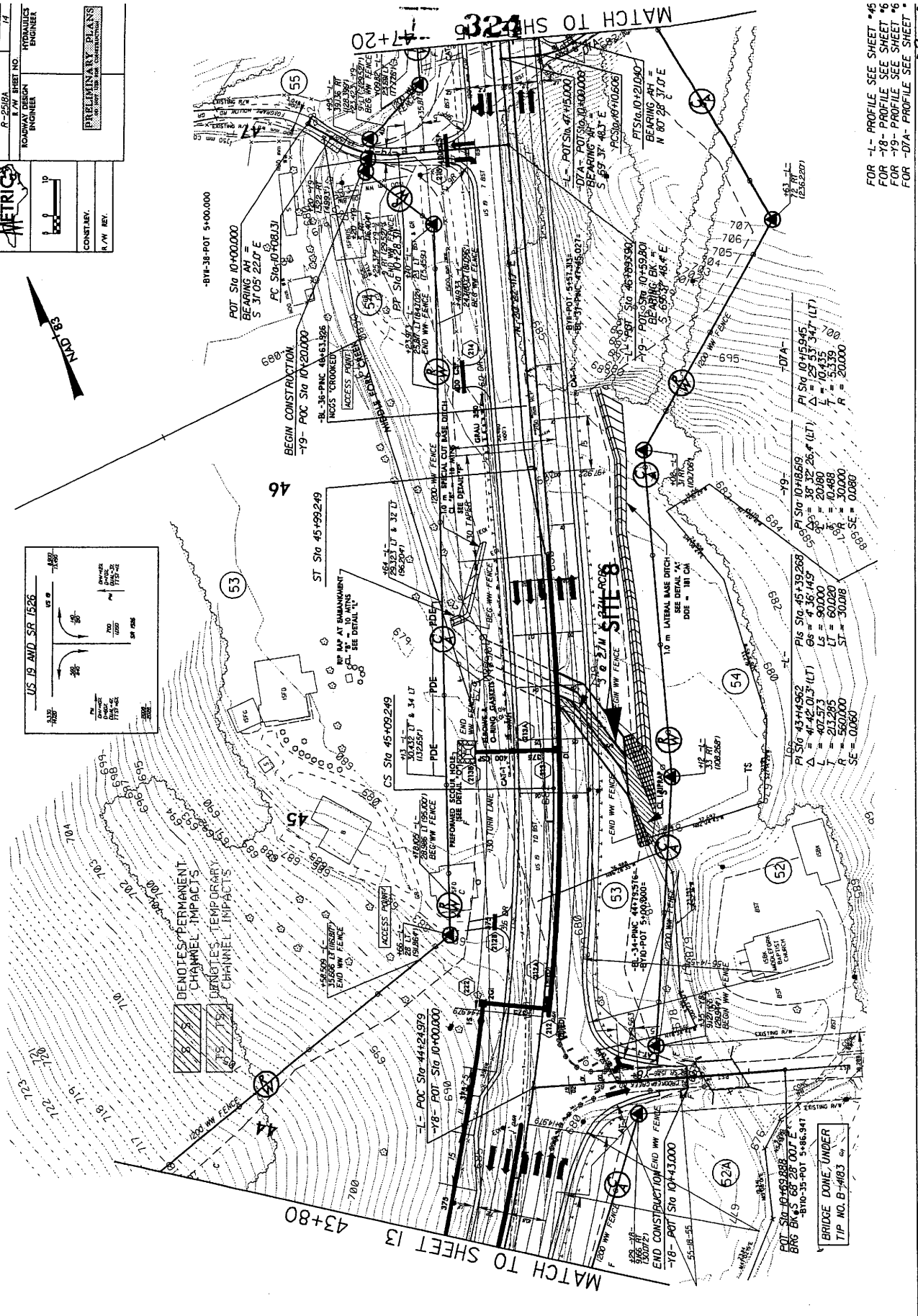
P.A.V. REV.

PRELIMINARY PLANS



DENOTES PERMANENT CHANNEL IMPACTS

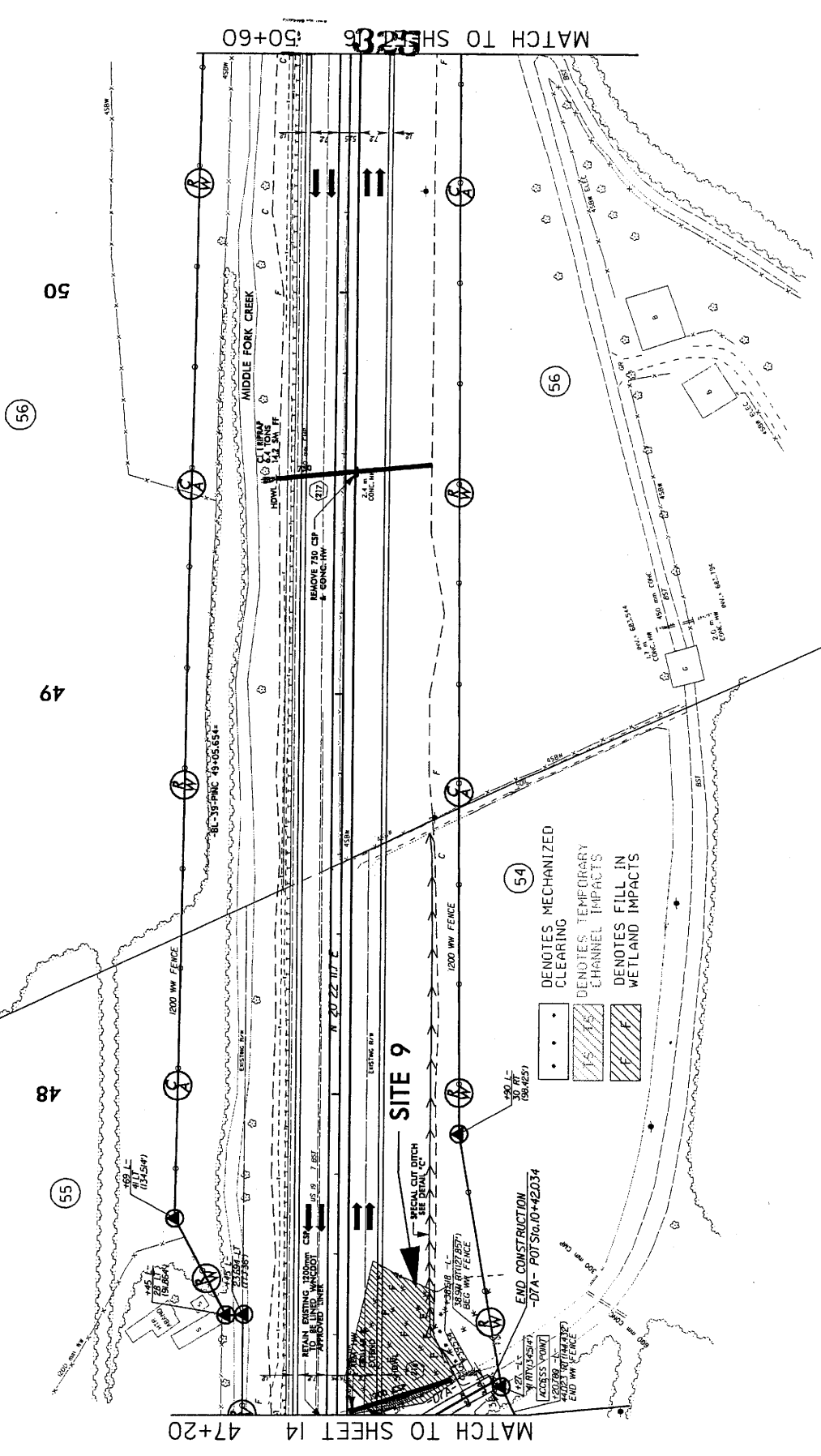
DENOTES TEMPORARY CHANNEL IMPACTS



| | |
|--|--|
| <p>PI Sta 10+18.619 $\Delta = 38.32$ $L = 20.00$ $T = 10.488$ $R = 50.000$ $SE = 0.0086$</p> | <p>PI Sta 10+15.945 $\Delta = 29.33$ $L = 17.00$ $T = 5.339$ $R = 20.000$</p> |
| <p>PI Sta 45+39.268 $\Delta = 42.013$ $L = 60.000$ $T = 213.285$ $R = 560.000$ $SE = 0.0260$</p> | <p>PI Sta 45+39.268 $\Delta = 42.013$ $L = 60.000$ $T = 213.285$ $R = 560.000$ $SE = 0.0260$</p> |

FOR -L- PROFILE SEE SHEET #46
 FOR -Y8- PROFILE SEE SHEET #6
 FOR -Y9- PROFILE SEE SHEET #6
 FOR -DTA- PROFILE SEE SHEET #6

| | | |
|-------------------------------|---|---------------------|
| | PROJECT REFERENCE NO. | SHEET NO. |
| | R-2307 | 25 |
| | ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | PREPARED BY PLANNING BY ANS HAS NOT BEEN COMPLETED | |
| CONTRACTOR R/W REV. | | |



- (54) DENOTES MECHANIZED CLEARING
- (55) DENOTES TEMPORARY CHANNEL IMPACTS
- (56) DENOTES FILL IN WETLAND IMPACTS

| | | |
|--------------------------|----------------------------|----------------------------|
| (54) | (55) | (56) |
| [Symbol: Dotted pattern] | [Symbol: Diagonal lines /] | [Symbol: Diagonal lines \] |

END CONSTRUCTION
 -OTA- FOR Sta. 10+420.34

MATCH TO SHEET 14 47+20

MATCH TO SHEET 15 50+60

FOR -L- PROFILE SEE SHEET #46
 FOR -OTA- PROFILE SEE SHEET #

Plan 11
 11/15/04



PROJECT REFERENCE NO. SHEET NO.
R-25/BA 75

ROADWAY DESIGN ENGINEER
SURVEILLANCE ENGINEER

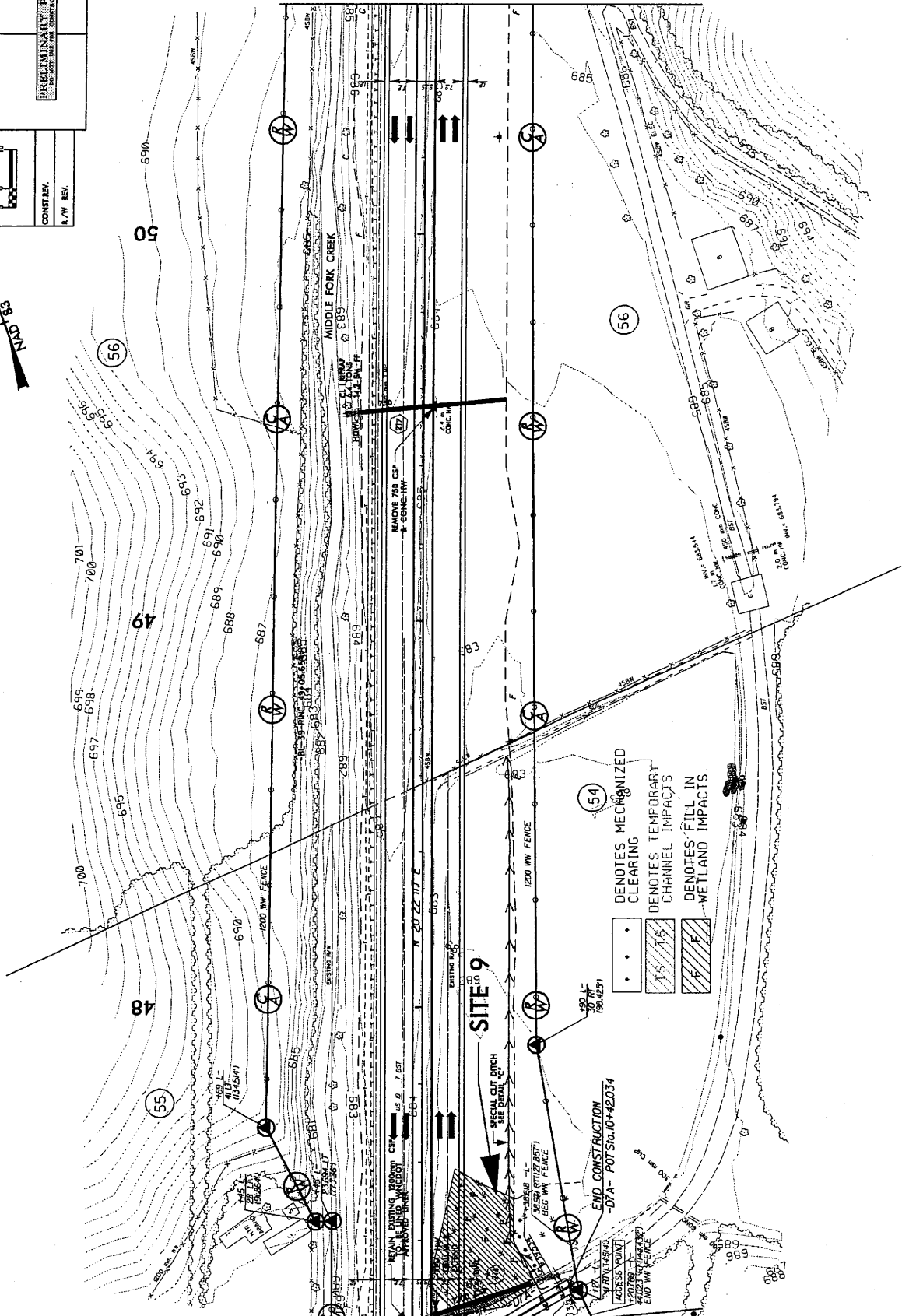
CONTRACTOR
P.W. INC.

PRELIMINARY PLANS
NOT FOR CONSTRUCTION



MATCH TO SHEET 923 50460

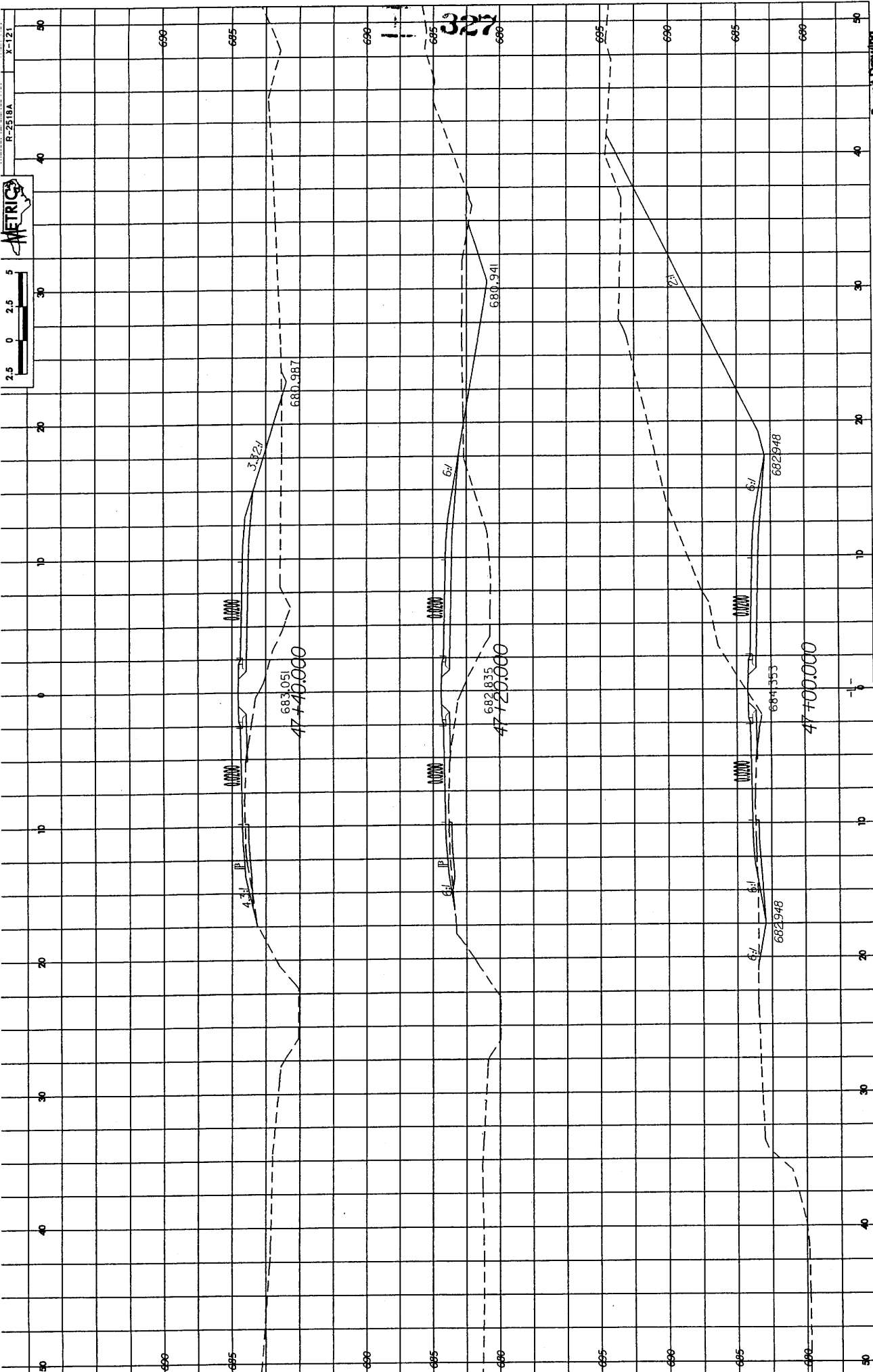
MATCH TO SHEET 14 47+20



FOR -L- PROFILE SEE SHEET #46
FOR -DTA- PROFILE SEE SHEET #46

FOR -DTA- PROFILE SEE SHEET #46

DATE: 08/11/2011 09:25
PROJECT: R-25/BA 75
DRAWN BY: [unreadable]
CHECKED BY: [unreadable]



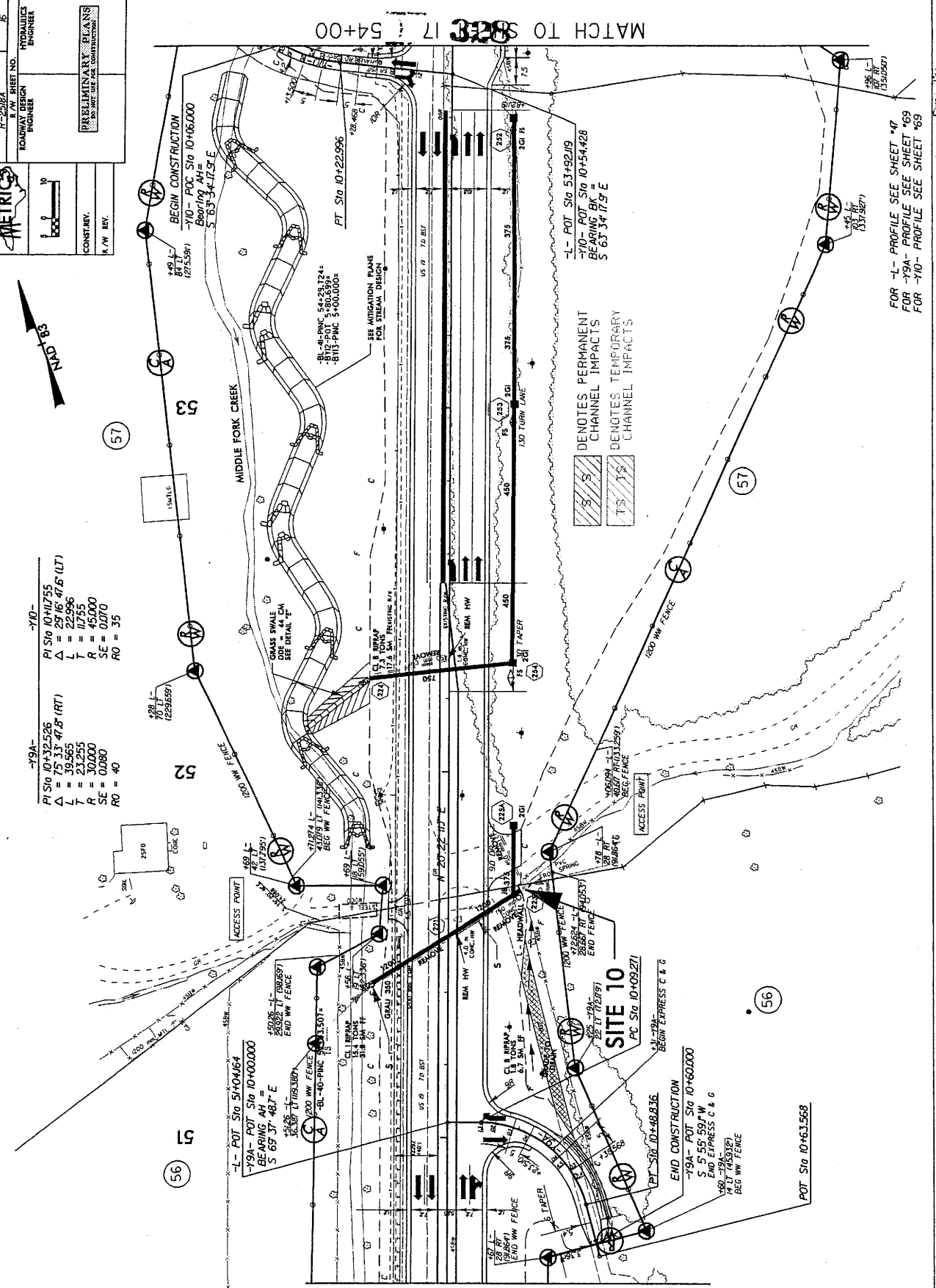
METRICS

PROJECT REFERENCE NO. **F-2212A**
 SHEET NO. **16**
 NOUNAL DESIGN ENGINEER
 PRELIMINARY PLANS
 (SOURCE: SEE THE DEDICATION)

COUNTRY.
 I./W. REF.



| -Y9A- | | -Y10- | |
|--------|-----------|--------|------------|
| PI Sta | 10+32.526 | PI Sta | 10+117.555 |
| Δ | 15.255 | Δ | 29.16 |
| L | 23.255 | L | 47.8 |
| R | 30.000 | R | 45.00 |
| SE | 0.080 | SE | 0.070 |
| RO | 40 | RO | 35 |



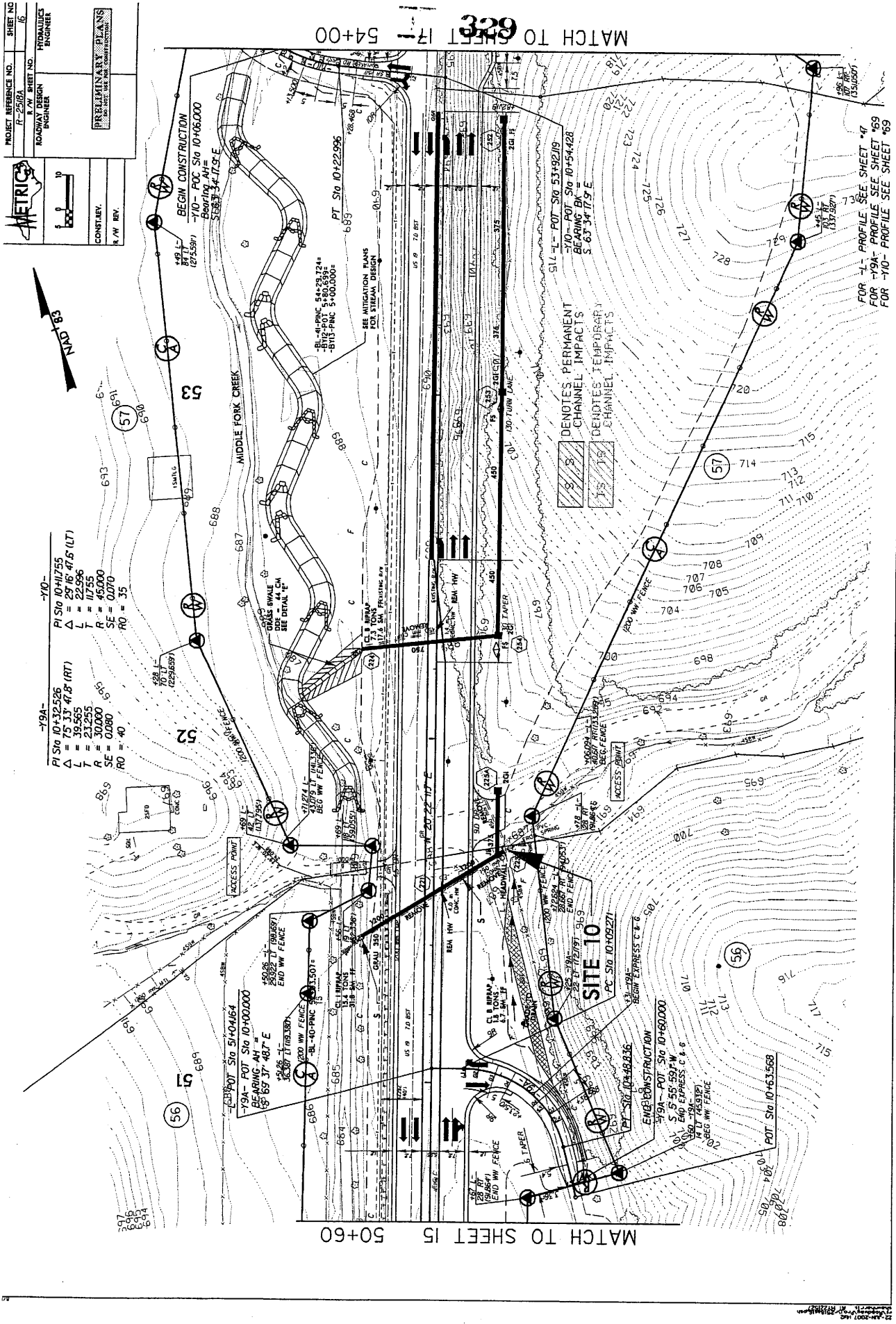
MATCH TO SHEET 15 50+60

MATCH TO SHEET 17 54+00

FOR -L- PROFILE SEE SHEET *47
 FOR -Y9A- PROFILE SEE SHEET *69
 FOR -Y10- PROFILE SEE SHEET *69

36 of 54

R/W REV: REVISED PROPOSED RIGHT OF WAY ON PARCEL 56 (ROY GUS BALLARD), 06/11/2007 NMH



Permit Drawing Sheet 27 of 61

Y9A

| | |
|--------|---------------------|
| PI Sta | 10+32.526 |
| L | = 75.33' 47.8" (RT) |
| T | = 39.565 |
| R | = 23.255 |
| R | = 30.000 |
| SE | = 0.080 |
| RO | = 40 |

Y10

| | |
|--------|----------------------|
| PI Sta | 10+17.555 |
| L | = 29' 15" 47.8" (LT) |
| T | = 22.896 |
| R | = 17.755 |
| R | = 45.000 |
| SE | = 0.070 |
| RO | = 35 |

CONST. REV.
R/W REV.

PROJECT REFERENCE NO. **R-2508A** SHEET NO. **16**
R/W SHEET NO. **16**
HYDRAULIC ENGINEER
ROADWAY DESIGN ENGINEER

PRELIMINARY PLANS
FOR PERMIT. USE FOR CONSTRUCTION.

FOR Y9A- PROFILE SEE SHEET *47
FOR Y10- PROFILE SEE SHEET *69
FOR Y10- PROFILE SEE SHEET *69

DENOTES PERMANENT CHANNEL IMPACTS
DENOTES TEMPORARY CHANNEL IMPACTS

MATCH TO SHEET 17-54+00

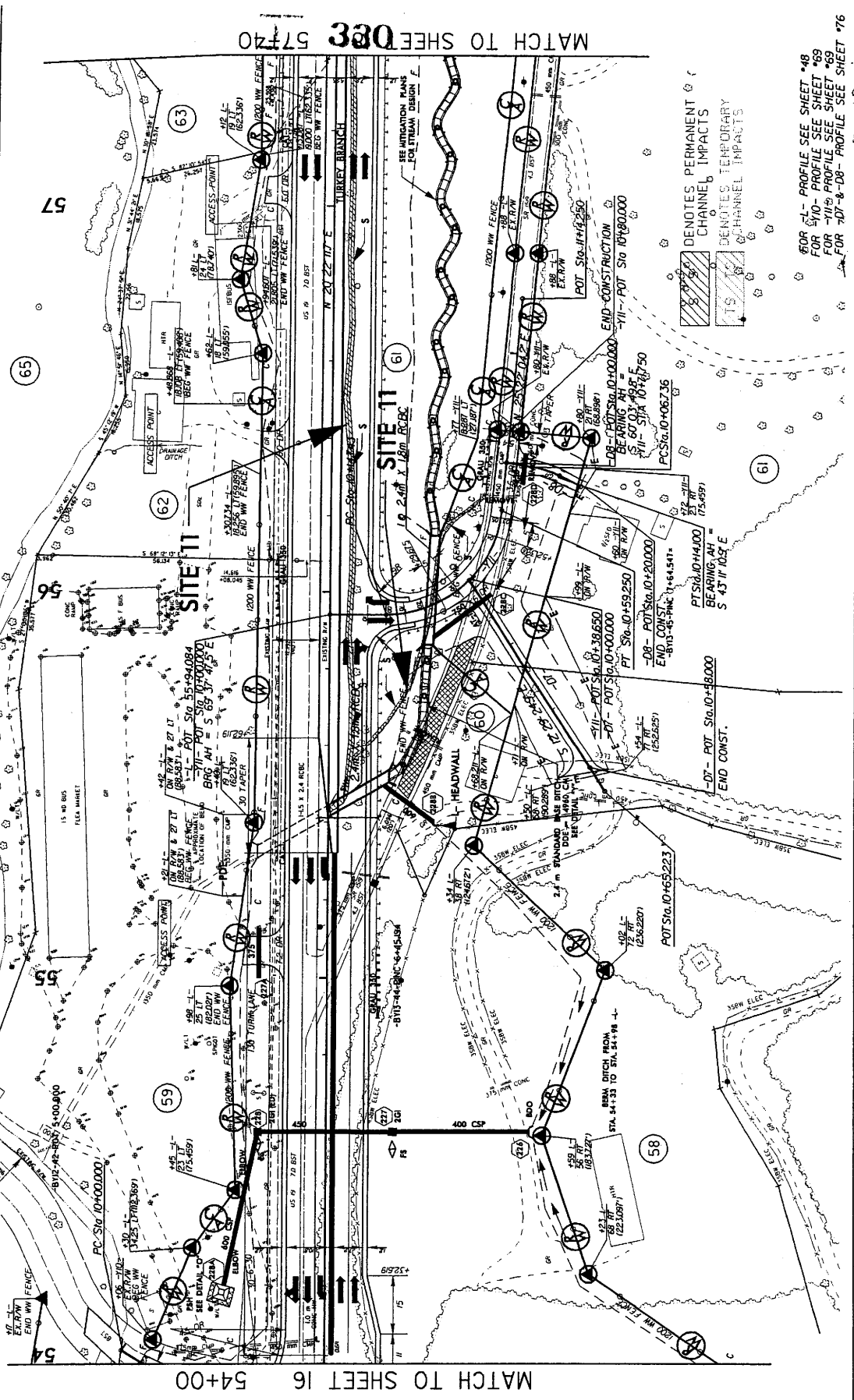
MATCH TO SHEET 15 50+60

PROJECT REFERENCE NO. R-2502A
 SHEET NO. 7
 METRICS
 ROADWAY DESIGN ENGINEER
 HYDRAULICS BRUNNER
 PRELIMINARY PLANS
 CONTRACT NO. 10
 DATE REV.

-10-
 PI Sta 10+117.55
 $\Delta = 29.16$
 $L = 22.996$
 $T = 117.55$
 $R = 45.000$
 $SE = 0.070$
 $PO = 35$

-11-
 PI Sta 10+422.234
 $\Delta = 85.07$
 $L = 44.507$
 $T = 27.491$
 $R = 30.000$
 $SE = 0.080$
 $PO = 40$

-DB-
 PI Sta 10+104.445
 $\Delta = 16.52$
 $L = 7.364$
 $T = 3.709$
 $R = 25.000$



MATCH TO SHEET 16 54+00

MATCH TO SHEET 082 57+40

#FOR 1- PROFILE SEE SHEET #48
 #FOR 5/10- PROFILE SEE SHEET #69
 #FOR 7/10- PROFILE SEE SHEET #69
 #FOR 10/1-8-DB- PROFILE SEE SHEET #76

10-24-2007 08:51:11

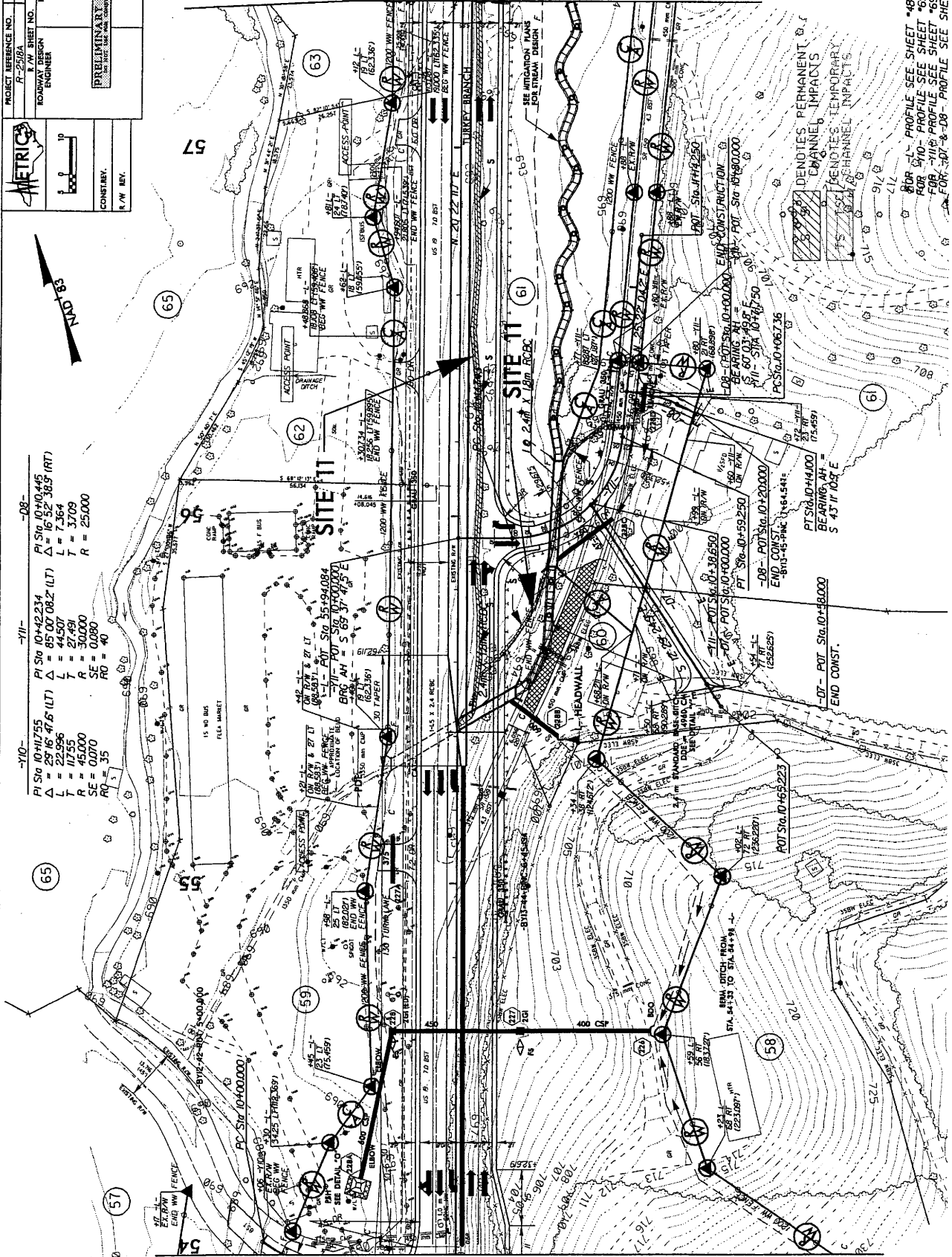
PROJECT REFERENCE NO. **08-111** SHEET NO. **17**
 ROADWAY DESIGN ENGINEER
 METRICS ENGINEERING
 PRELIMINARY DESIGN
 CONTRACTOR: **R/W BK.**



-Y10-
 PI Sta 10+117.55
 $\Delta = 29.16'$ 47.5 (LT)
 $L = 22.956$
 $T = 117.55$
 $R = 45.000$
 $SE = 0.070$
 $RQ = 35$

-Y11-
 PI Sta 10+42.34
 $\Delta = 85.07'$ 08.2 (LT)
 $L = 44.507$
 $T = 27.491$
 $R = 30.000$
 $SE = 0.080$
 $RO = 40$

-D8-
 PI Sta 10+10.445
 $\Delta = 16.52'$ 38.9 (RT)
 $L = 7.364$
 $T = 3.709$
 $R = 25.000$



MATCH TO SHEET 16 54+00

MATCH TO SHEET 18 57+40

FOR PROFILE SEE SHEET 48
 FOR PROFILE SEE SHEET 69
 FOR PROFILE SEE SHEET 69
 FOR PROFILE SEE SHEET 76
 Permit Drawing

METRIC

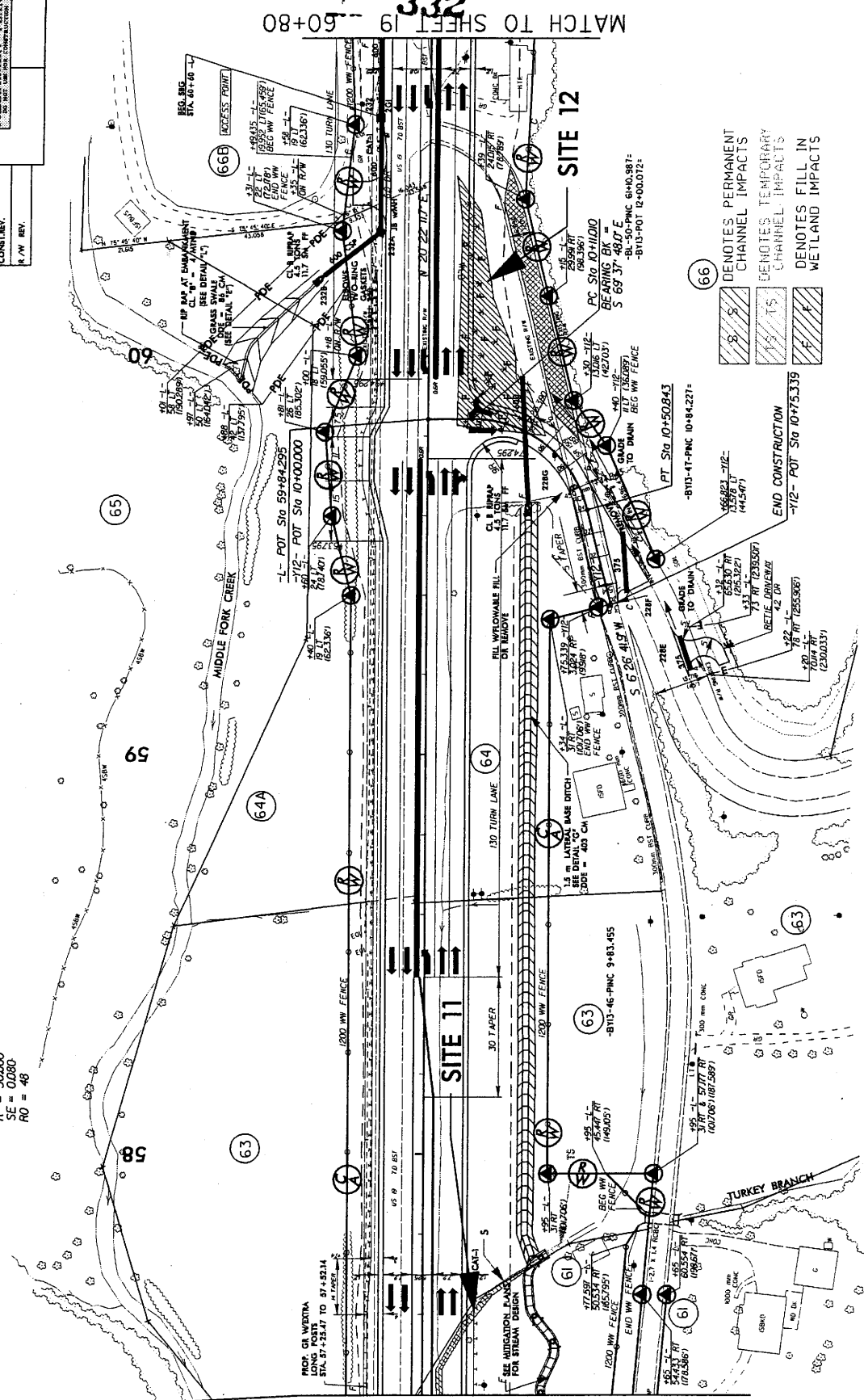
PROJECT REFERENCE NO. SHEET NO.
 R-25/2A 16
 ROADWAY DESIGN ENGINEER
 HYDRAULIC ENGINEER

PRELIMINARY PLANS
 (NO FIELD, TIME, PRICE, COMPACTIBILITY)

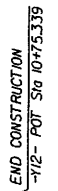
COUNTY: R/W REV.



-Y12-
 P STA 10+34.480
 L = 75.04+23.6 (RT)
 T = 39.831
 R = 23.470
 S = 30.000
 SE = 0.080
 RO = 48



- (66) DENOTES PERMANENT CHANNEL IMPACTS
- (66) DENOTES TEMPORARY CHANNEL IMPACTS
- (66) DENOTES FILL IN WETLAND IMPACTS



END CONSTRUCTION
 -Y12- POT Sta 10+75.539

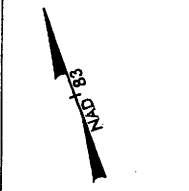
MATCH TO SHEET 19 -- 50+80

MATCH TO SHEET 17 57+40

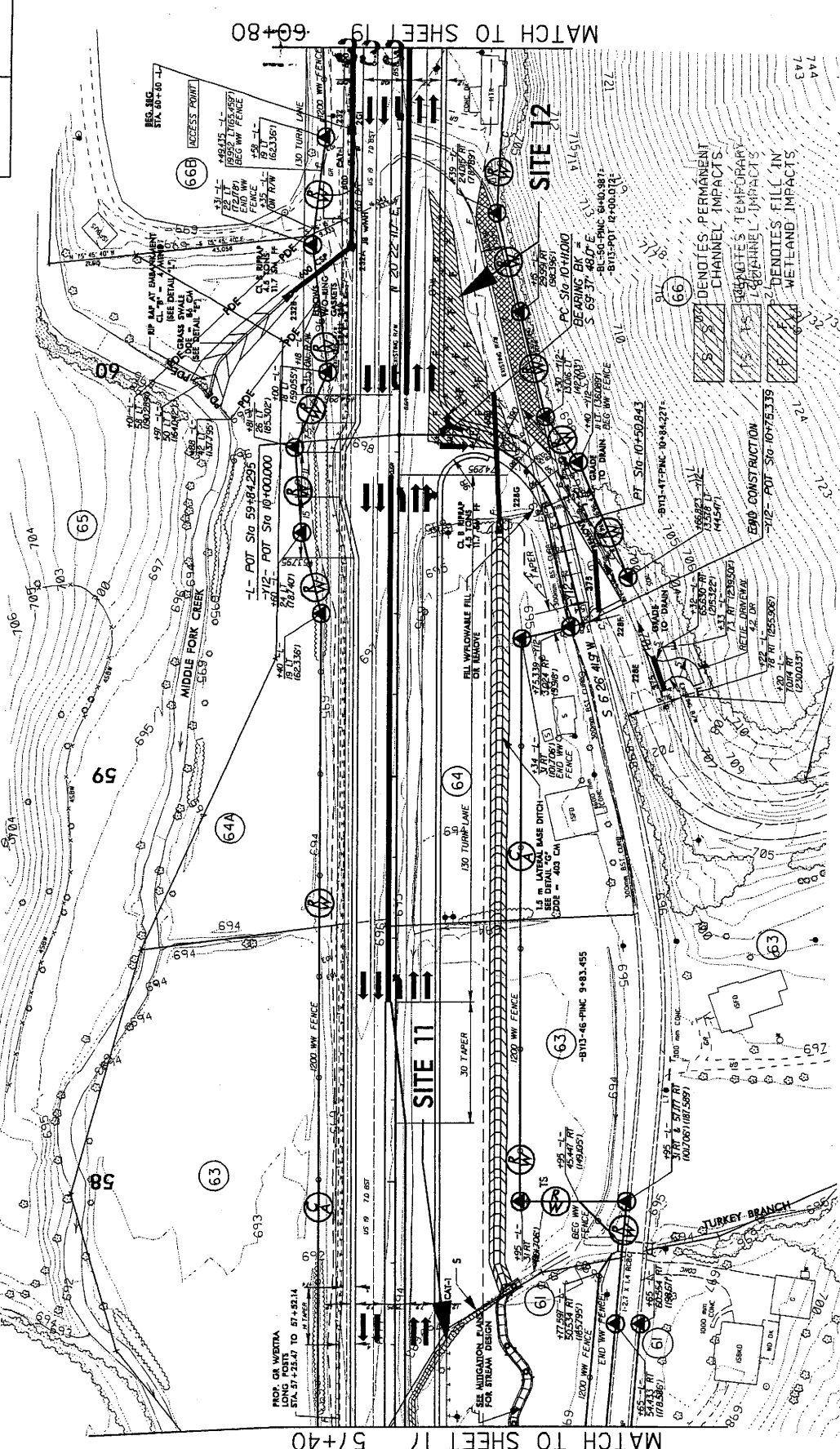
FOR -L- PROFILE SEE SHEET *49
 FOR -Y12- PROFILE SEE SHEET *6

Permit Drawing

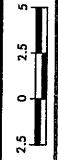
| | |
|--|----------|
| PROJECT REFERENCE NO. | SHEET N° |
| R-2504A | 12 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | |
| PRELIMINARY PLANS NOT TO BE USED FOR CONSTRUCTION | |
| CONTRACT NO. | |
| R/W REV. | |



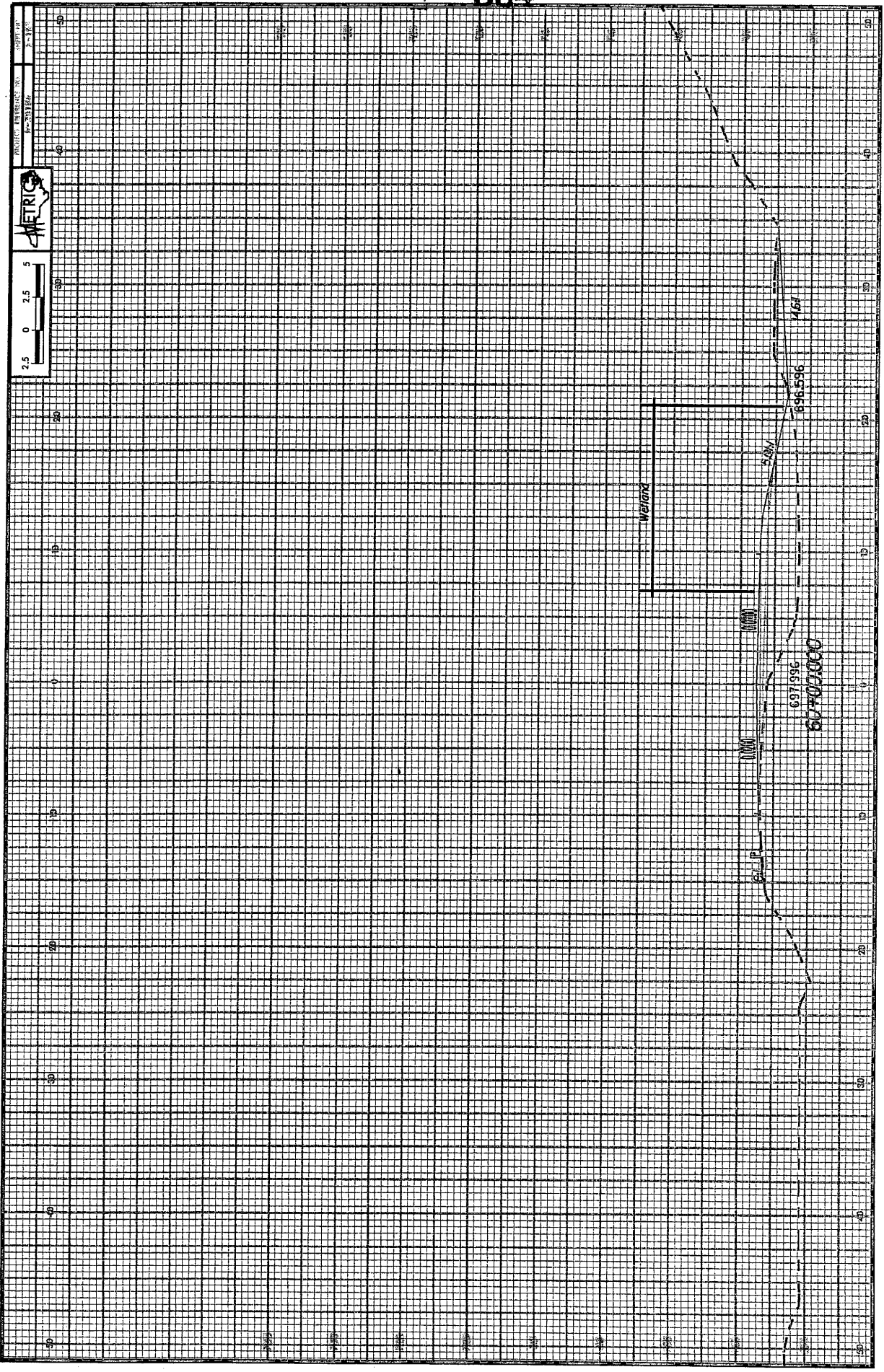
-Y12-
 PI STA 10+34.480
 Δ = 67.238 (RT)
 T = 19.833
 R = 21.470
 S = 30.000
 SE = 0.080
 RO = .48



FOR "L" PROFILE SEE SHEET *49
 FOR "Y12" PROFILE SEE SHEET *6
 Permit Drawing

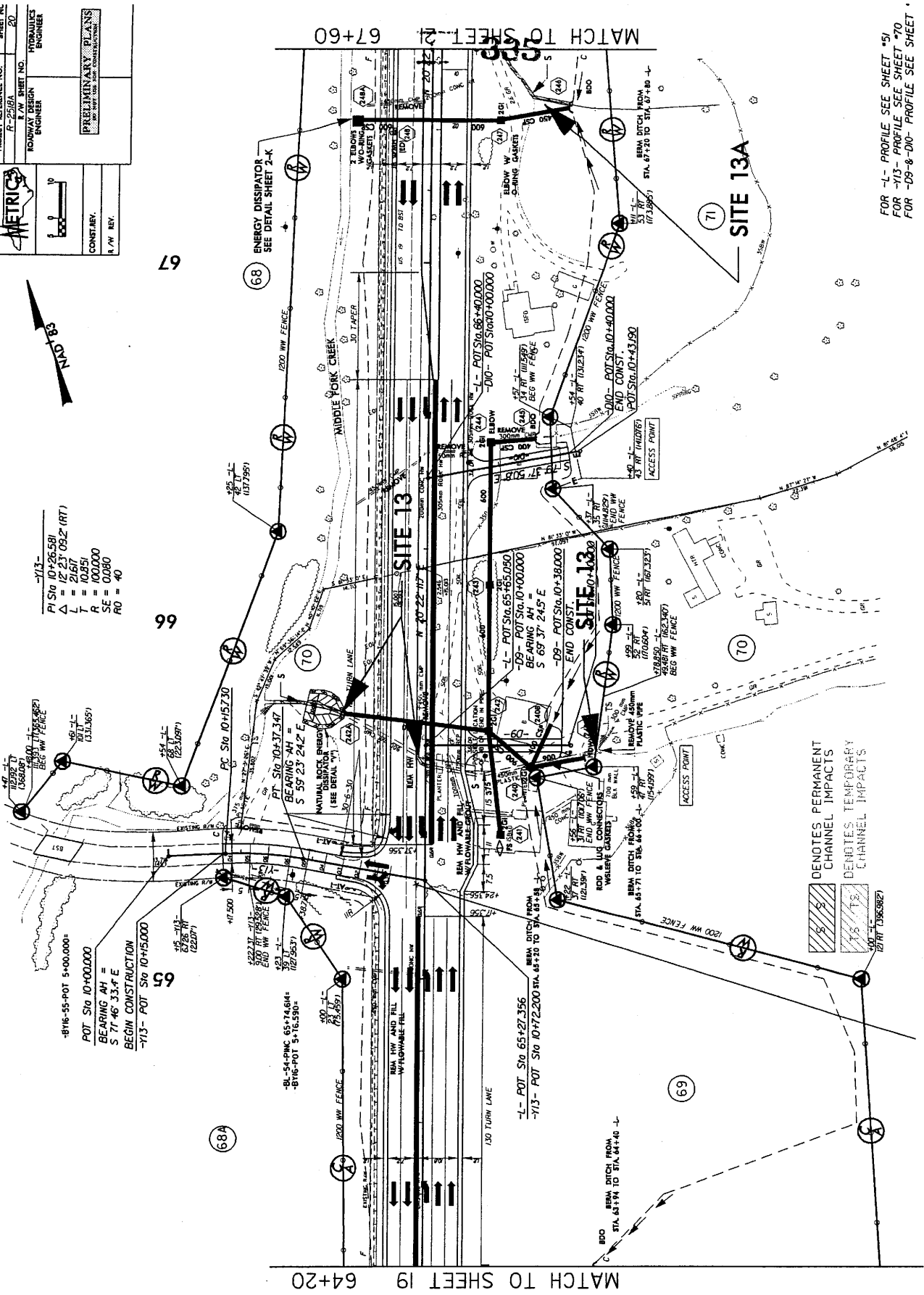


PROJECT: *XXXXXXXXXX*
DATE: *XXXX/XX/XX*
DRAWN BY: *XXXXXX*
CHECKED BY: *XXXXXX*



| | | |
|-------------|-------------------------------|--------------------|
| | PROJECT REFERENCE NO. | SHEET NO. |
| | 17-250 | 20 |
| | ROWWAY DESIGN ENGINEER | HYDRAULIC ENGINEER |
| | | |
| | PRELIMINARY PLANS | |
| | FOR THE USE OF THE CONTRACTOR | |
| CONST. REV. | R/W REV. | |

-113-
 PI Sta 10+26.581
 Δ = 12° 23' 09.2" (RT)
 L = 216.7
 T = 0.851
 R = 100.000
 SE = 0.080
 PO = 40



DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS

FOR -L- PROFILE SEE SHEET #51
 FOR -113- PROFILE SEE SHEET #70
 FOR -D9- & -D10- PROFILE SEE SHEET #

Partial Drawing

| | | | |
|-------------------------|---------|--------------------|----|
| PROJECT REFERENCE NO. | P-25/BA | SHEET NO. | 20 |
| R/W SHEET NO. | | HYDRAULIC ENGINEER | |
| ROADWAY DESIGN ENGINEER | | | |
| METRICS | | | |
| CONSTRY. | | | |
| L/W REV. | | | |
| PRELIMINARY PLANS | | | |



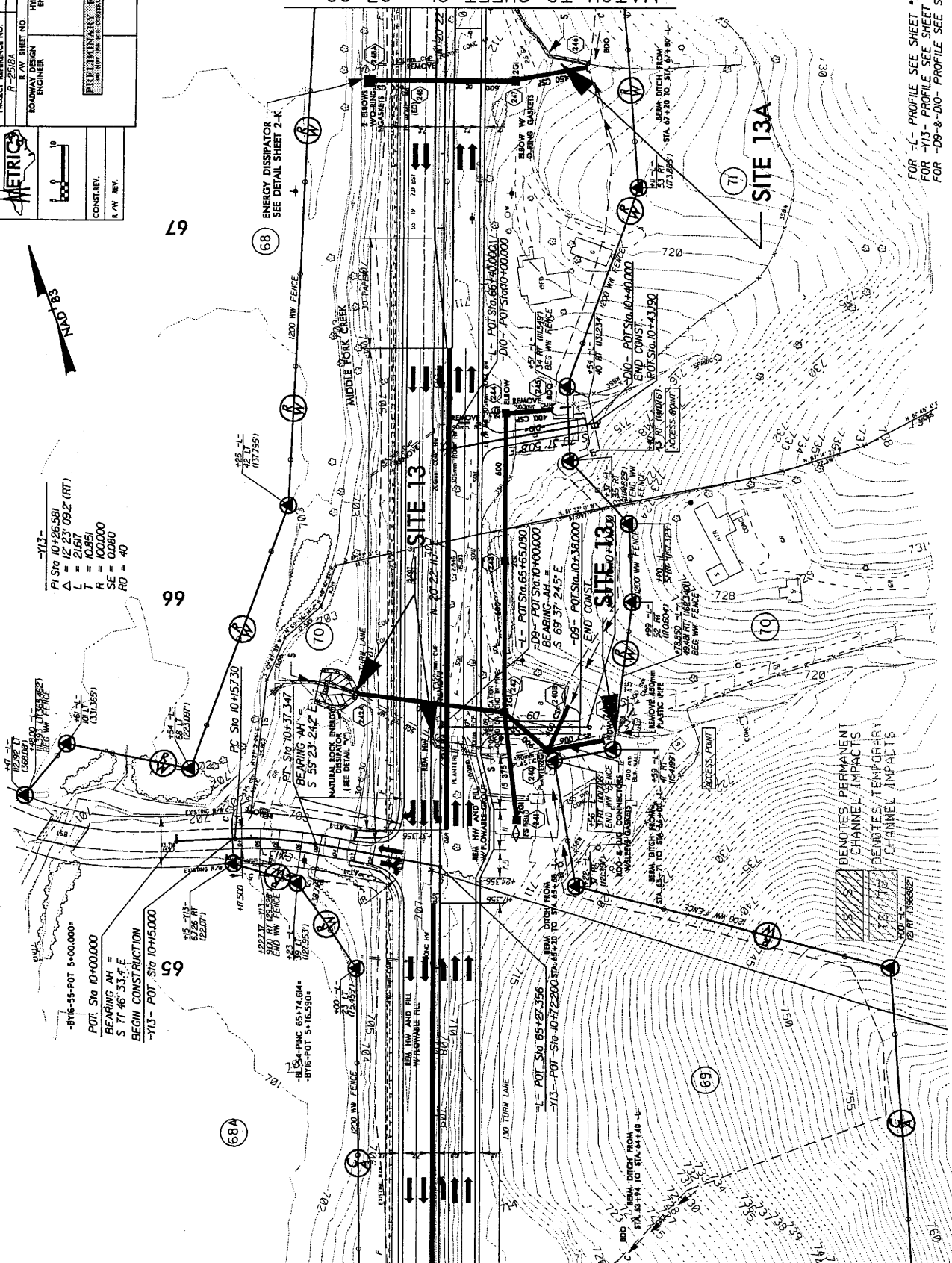
-Y13-
 PI Sta 10+26.581
 $\Delta = 12.23$ OSZ (RT)
 L = 216.71
 R = 108.35
 SE = 0.0890
 RO = 40

PC Sta 10+157.30
 PT Sta 10+37.347
 BEARING AH =
 S 59°23'24.2" E

-B16-55-POT 5+00.000+
 POT Sta 10+00.000
 BEARING AH =
 S 71°46'33.4" E
 BEGN CONSTRUCTION
 -Y13- POT Sta 10+15.000

MATCH TO SHEET 19 64+20

MATCH TO SHEET 21 67+60



DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS

FOR -L- PROFILE SEE SHEET *51
 FOR -Y13- PROFILE SEE SHEET *70
 FOR -D9- & -D10- PROFILE SEE SHEET *

Permit Drawing

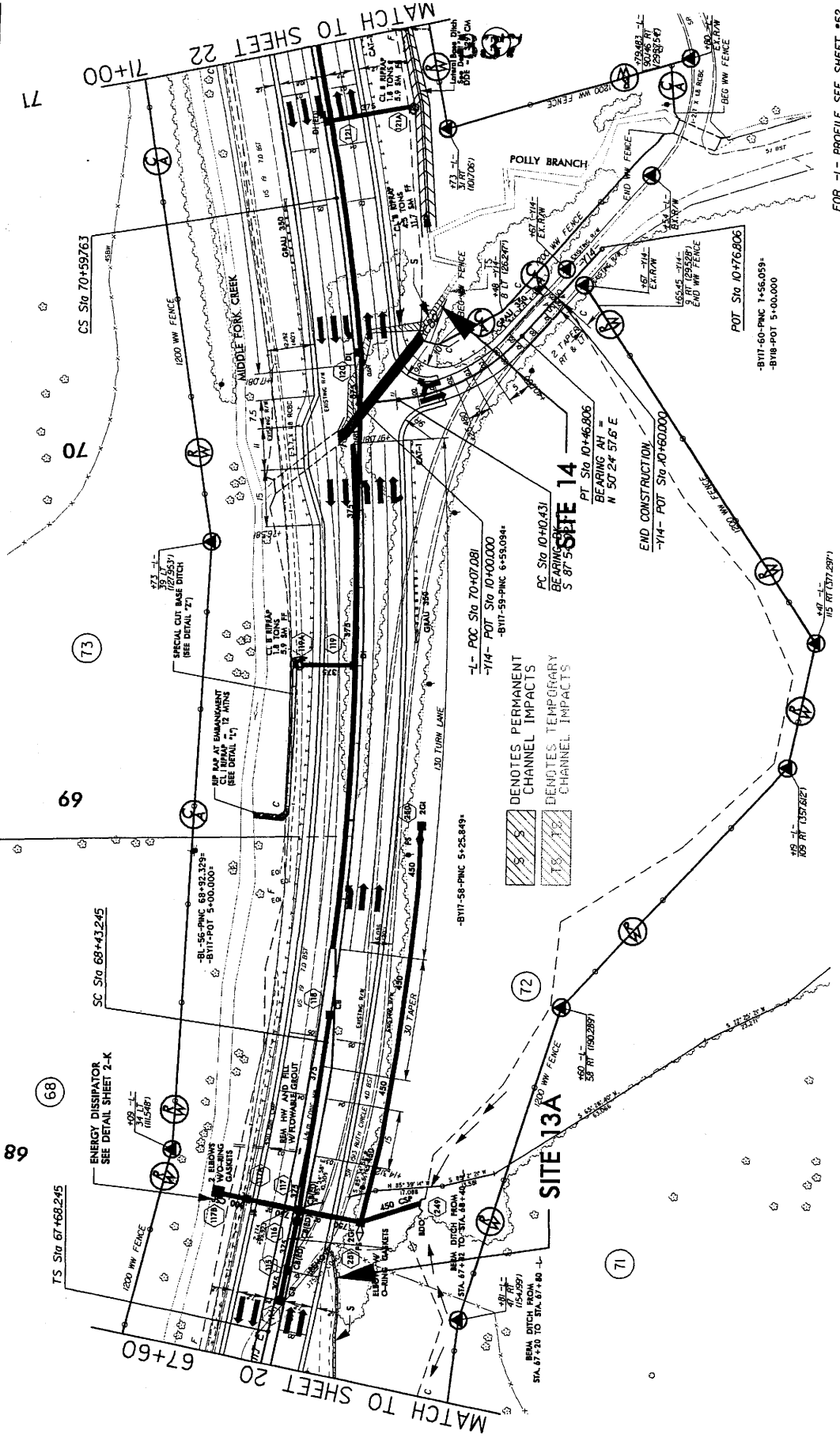


PROJECT REFERENCE NO. SHEET NO. 21
 R-2516A R/W SHEET NO.
 ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER
 PRELIMINARY PLANS
 CONSTANT
 R/W REV.



-1/4-
 PI Sta 10+29.465
 Δ = 47.40' 59.7" (L1)
 L = 36.376'
 A = 19.035°
 R = 50.000'
 SE = 0.080'
 RO = -40'

-L-
 PI Sta 68+48.253
 Δ = 37.04' 09.5"
 L = 75.000'
 A = 69.130°
 R = 700.000'
 SE = 0.0250'
 PI Sta 70+84.769
 Δ = 17.43' 19.8" (L1)
 L = 75.000'
 A = 50.000°
 R = 50.000'
 SE = 25.007'



DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS

FOR -L- PROFILE SEE SHEET *52
 FOR -1/4- PROFILE SEE SHEET *70

Pentrik Drawing
 Sheet 45 of 64



PROJECT REFERENCE NO. SHEET N
 R-2518A Z1
 ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER

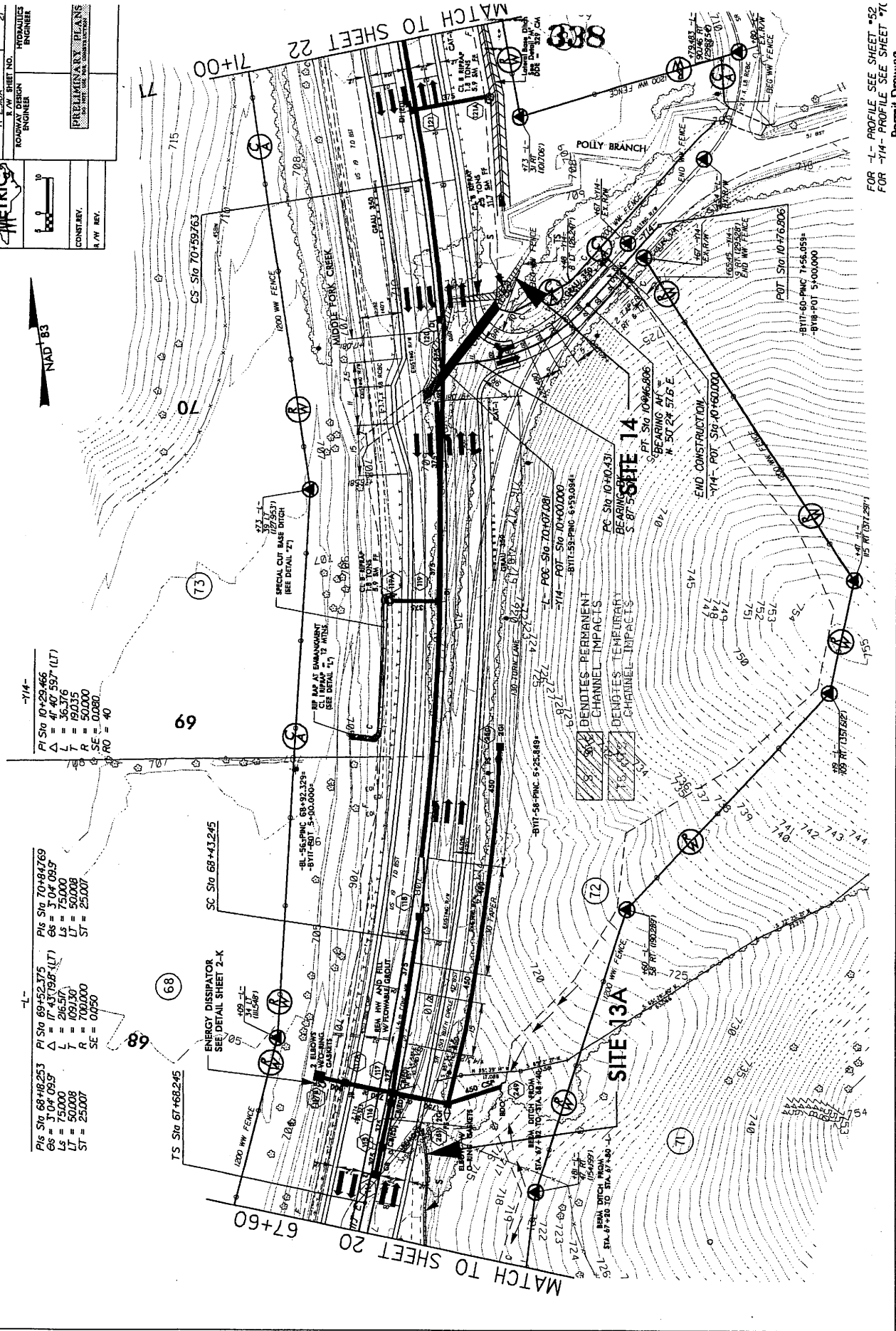


PRELIMINARY PLANS
 CONTRACTOR
 N.Y. REV.

NAD 83

-1/4-
 PI Sta 10+29.466
 Δ = 4' 40" 597 (LT)
 L = 36.376
 L = 60.335
 R = 50.000
 SE = 0.000
 RO = 40

-1-
 PIS Sta 68+18.253 PI Sta 69+52.375 PIS Sta 70+84.769
 Δ = 7' 04" 095' Δ = 7' 43" 958' (LT) Δ = 3' 04" 095'
 L = 49.376 L = 60.335 L = 50.000
 L = 49.376 L = 60.335 L = 50.000
 R = 70.000 R = 70.000 R = 50.000
 SE = 25.000 SE = 25.000 SE = 25.000
 ST = 25.000 ST = 25.000 ST = 25.000

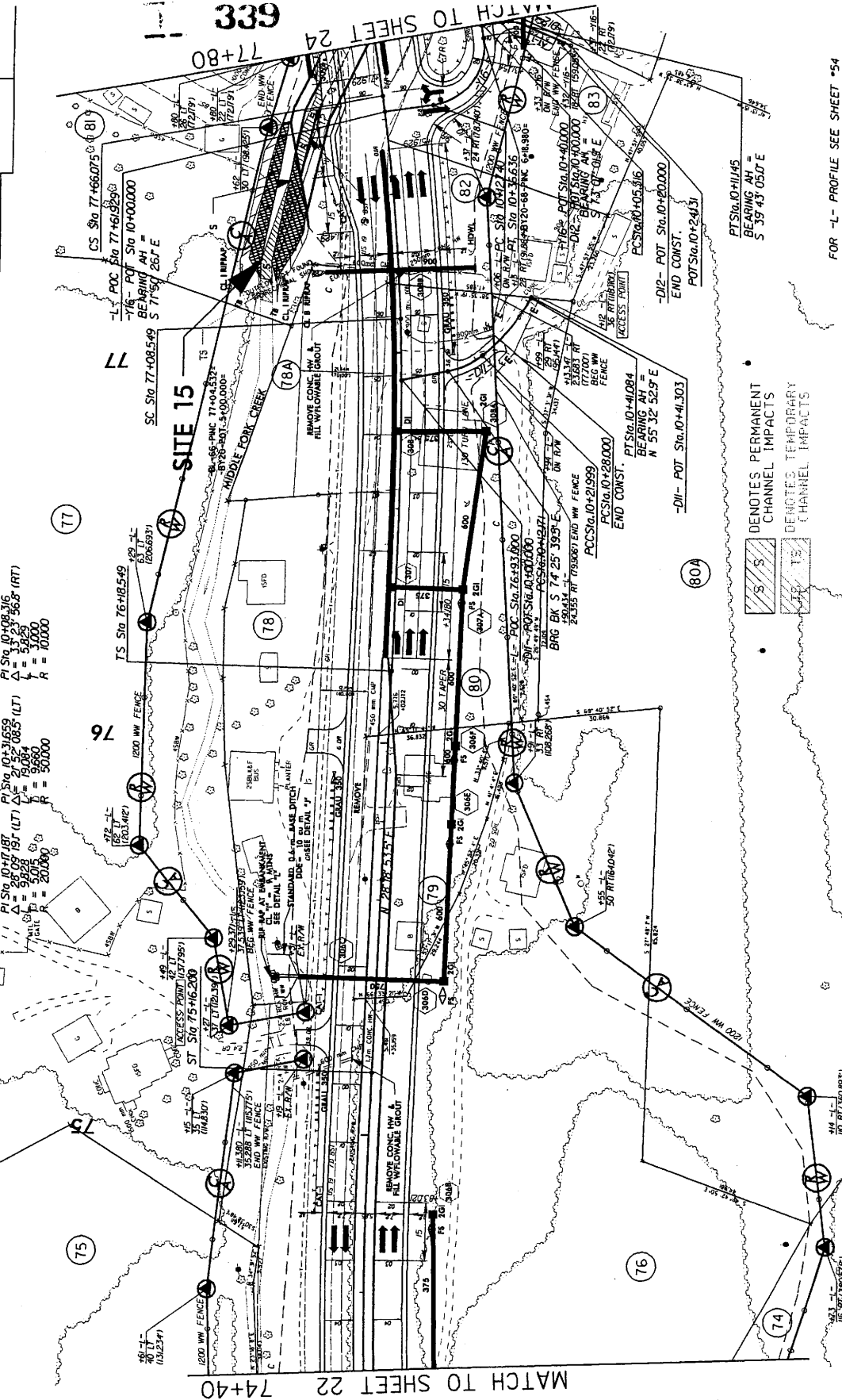
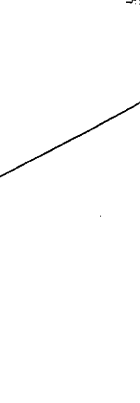


FOR L- PROFILE SEE SHEET 52
 FOR 1/4- PROFILE SEE SHEET 7C
 Permit Drawing

11 2 1 2 4

PROJECT REFERENCE NO. SHEET N
 R-2418 23
 ROADWAY DESIGN SHEET NO.
 ENGINEER
 METRIC
 PRELIMINARY PLANNING
 CONSULTANT
 K/W REV.

| | |
|------------------------|------------------------|
| -Y16- | |
| PI Sta 10+280.78 | PI Sta 77+96.093 |
| Δ = 91° 16' 32.7" (LT) | Δ = 5° 56' 19.5" (LT) |
| L = 23.896 | L = 57.526 |
| T = 15.338 | T = 287.89 |
| R = 15,000 | R = 555,000 |
| SE = 0.070 | SE = 0.060 |
| RO = 42 | RO = 42 |
| -D12- | |
| PI Sta 10+408.316 | PI Sta 10+316.59 |
| Δ = 33° 23' 56.2" (RT) | Δ = 27° 52' 08.5" (LT) |
| L = 54.25 | L = 19.084 |
| T = 56.66 | T = 20.780 |
| R = 10,000 | R = 50,000 |
| -D11- | |
| PI Sta 10+410.84 | PI Sta 10+316.59 |
| Δ = 26° 09' 18.7" (LT) | Δ = 27° 52' 08.5" (LT) |
| L = 92.28 | L = 19.084 |
| T = 20.780 | T = 20.780 |
| R = 10,000 | R = 50,000 |
| -L- | |
| PI Sta 74+56.221 | PI Sta 76+78.569 |
| Δ = 4° 54' 39.8" | Δ = 4° 38' 44.2" |
| L = 90,000 | L = 90,000 |
| LT = 60,023 | LT = 60,021 |
| ST = 30,021 | ST = 30,019 |



FOR -L- PROFILE SEE SHEET *54
 FOR -Y16- PROFILE SEE SHEET *70
 FOR -D11 & -D12- PROFILE SEE SHEET *76

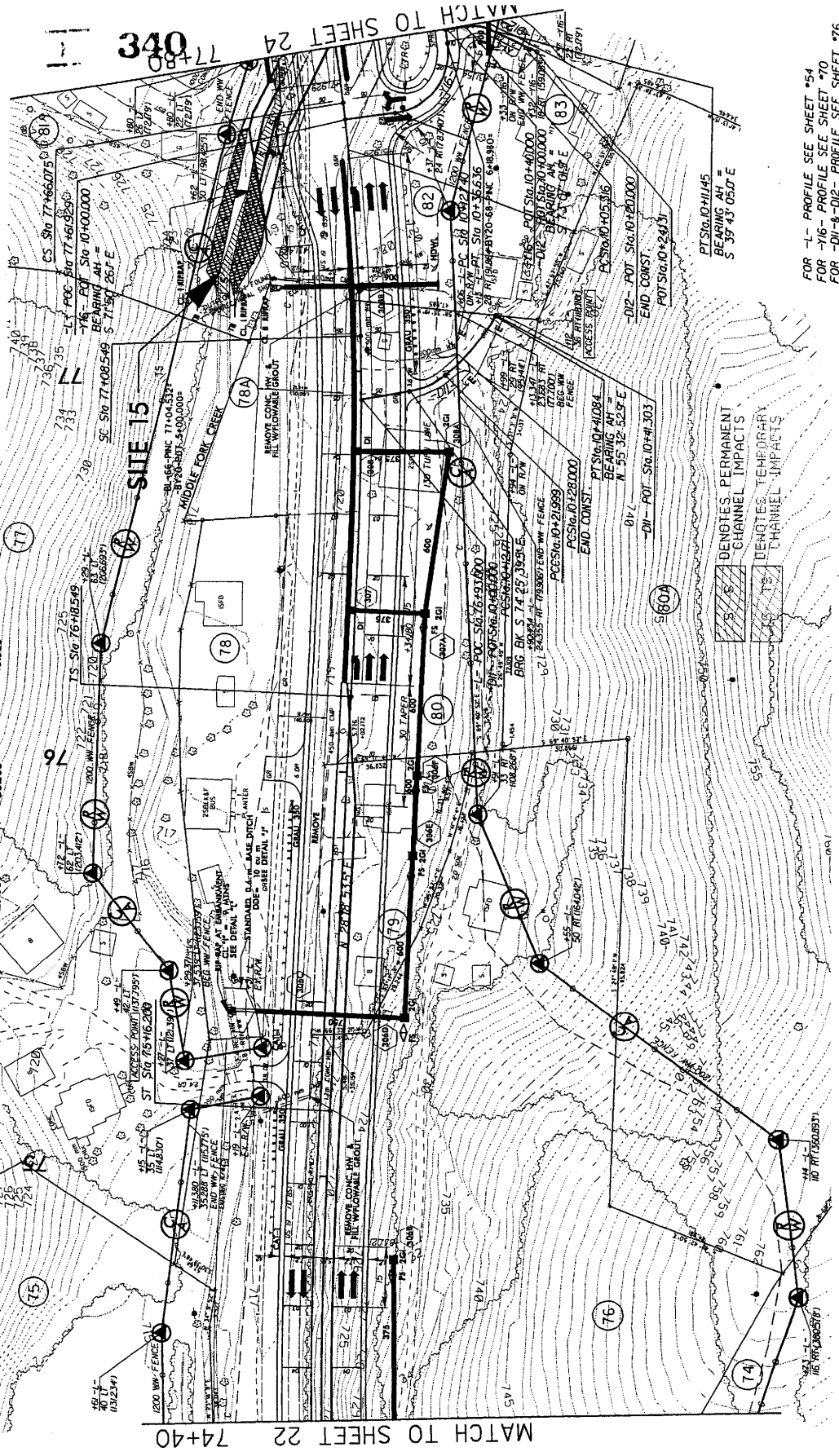
Permit Drawing



| | |
|-------------------------|--------------------|
| PROJECT REFERENCE NO. | SHEET |
| R-25/9A | 23 |
| R.W. SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULIC ENGINEER |
| | |
| PRELIMINARY PLAN | |
| R.W. REV. | |
| CONTRACT | |



| | |
|-------------------|-------------------|
| -Y16- | |
| PI Sta 10+29.078 | PI Sta 10+49.316 |
| Δ = 21.6 327°(LT) | Δ = 20.0 215°(RT) |
| L = 15.936 | L = 15.936 |
| R = 15.000 | R = 15.000 |
| SF = 0.070 | SF = 0.070 |
| RO = 42 | RO = 42 |
| -D12- | |
| PI Sta 77+96.093 | PI Sta 77+96.093 |
| Δ = 11.8 442° | Δ = 11.8 442° |
| L = 90.000 | L = 90.000 |
| LT = 60.021 | LT = 60.021 |
| ST = 30.019 | ST = 30.019 |
| SE = 0.060 | SE = 0.060 |
| -D17- | |
| PI Sta 77+37.337 | PI Sta 77+37.337 |
| Δ = 5.5 52°(RT) | Δ = 5.5 52°(RT) |
| L = 28.789 | L = 28.789 |
| R = 60.021 | R = 60.021 |
| ST = 30.019 | ST = 30.019 |
| SE = 0.060 | SE = 0.060 |
| -D18- | |
| PI Sta 10+10.316 | PI Sta 10+10.316 |
| Δ = 20.0 215°(RT) | Δ = 20.0 215°(RT) |
| L = 15.936 | L = 15.936 |
| R = 15.000 | R = 15.000 |
| SF = 0.070 | SF = 0.070 |
| RO = 42 | RO = 42 |



DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS

FOR -L- PROFILE SEE SHEET *54
 FOR -Y16- PROFILE SEE SHEET *70
 FOR -D11-&-D12- PROFILE SEE SHEET *76
 Permit Draw...

PROJECT REFERENCE NO. R-2508A
 R/W SHEET NO. 24
 ROADWAY DESIGN ENGINEER
 HYDRAULIC ENGINEER
 METRIX
 PRELIMINARY PLANS
 CONTRACTOR: R/W REV.



-D13-
 PI Sta. 10+14.717
 $\Delta = 17.02^\circ$ 27.7' (LT)
 $L = 143.3$
 $T = 7.916$
 $R = 50400$

-D12A-
 PI Sta. 10+10.53
 $\Delta = 38.39^\circ$ 40' (LT)
 $L = 10.22$
 $T = 5.262$
 $R = 15000$

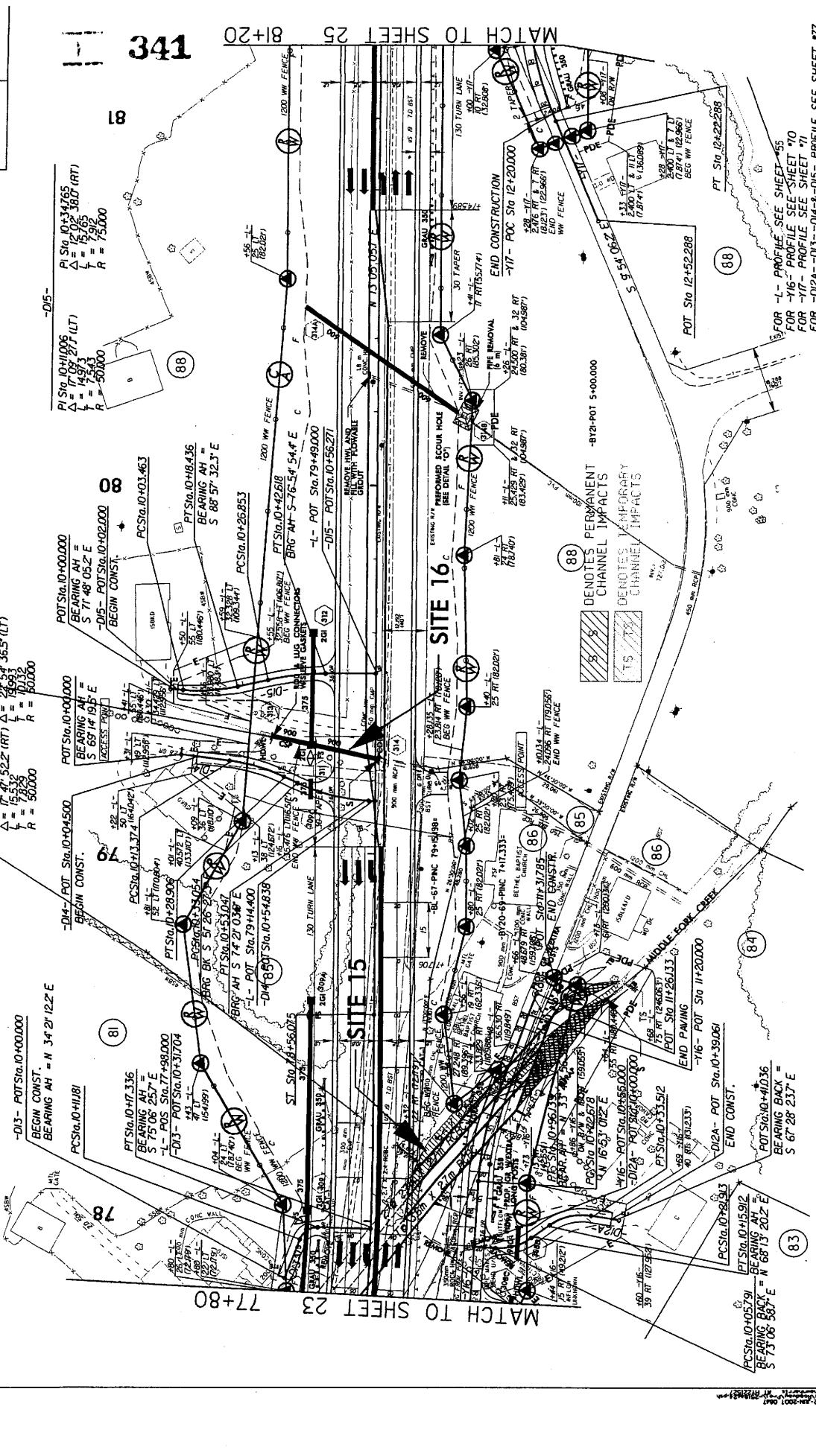
-D14-
 PI Sta. 10+21.203
 $\Delta = 17.47^\circ$ 32.2' (RT)
 $L = 15.53$
 $T = 7.823$
 $R = 50000$

-D14-
 POT Sta. 10+04.500
 BEARING AH = $89^\circ 14' 19.5" E$
 $L = 19.93$
 $R = 80000$

-D14-
 POT Sta. 10+04.500
 BEARING AH = $89^\circ 14' 19.5" E$
 $L = 19.93$
 $R = 80000$

-D13-
 POT Sta. 10+00.000
 BEARING AH = $89^\circ 14' 19.5" E$
 $L = 19.93$
 $R = 80000$

-D13-
 POT Sta. 10+00.000
 BEARING AH = $89^\circ 14' 19.5" E$
 $L = 19.93$
 $R = 80000$



Match to Sheet 23 77+80
 Match to Sheet 25 81+20
 R/W REV: REVISION NAME AND DEED BOOK NUMBER ON PARCEL 85. (SHARON POUNDER BUCKNER) 06/11/2007 NH

FOR L- PROFILE SEE SHEET 55
 FOR Y16- PROFILE SEE SHEET 70
 FOR Y17- PROFILE SEE SHEET 71
 FOR D12A-, D13-, D14- & D15- PROFILE SEE SHEET 77
 Permit Drawing



PROJECT REFERENCE NO. R-25074
 SHEET NO. 22
 ROADWAY DESIGN ENGINEER
 HYDRAULIC ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



-L-
 Pts Sta 77+96.093
 Δ = 4° 38' 44.2"
 L = 90.000
 T = 60.021
 ST = 30.019

-Y17-
 Pts Sta 10+84.490
 Δ = 16° 47' 55.2" (RT)
 L = 23.455
 T = 11.812
 R = 80.000
 SE = 0.080
 RO = 42

-D13-
 Pts Sta 10+105.3
 Δ = 38° 39' 41.7" (LT)
 L = 10.222
 T = 5.262
 R = 15.000

-D14-
 Pts Sta 10+21.203
 Δ = 17° 47' 52.2" (RT)
 L = 15.532
 T = 10.932
 R = 10.000

-D15-
 Pts Sta 10+28.020
 Δ = 44° 18' 16.7" (RT)
 L = 11.599
 T = 6.007
 R = 15.000

-D16-
 Pts Sta 10+41.717
 Δ = 70° 32' 22.1" (RT)
 L = 14.573
 T = 7.912
 R = 30.000

-D17-
 Pts Sta 10+34.265
 Δ = 15° 25' 38.0" (RT)
 L = 15.265
 T = 7.912
 R = 75.000

-D18-
 Pts Sta 10+18.436
 Δ = 88° 57' 32.3" E
 S 88° 57' 32.3" E

-D19-
 Pts Sta 10+02.000
 Δ = 71° 48' 05.2" E
 S 71° 48' 05.2" E

-D20-
 Pts Sta 10+43.186
 Δ = 28° 54' 36.5" (LT)
 L = 15.532
 T = 10.932
 R = 10.000

-D21-
 Pts Sta 10+04.500
 Δ = 69° 14' 05.2" E
 S 69° 14' 05.2" E

-D22-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D23-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D24-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D25-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D26-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D27-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D28-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D29-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D30-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D31-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D32-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D33-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D34-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D35-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D36-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D37-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D38-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D39-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D40-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D41-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D42-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D43-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D44-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D45-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

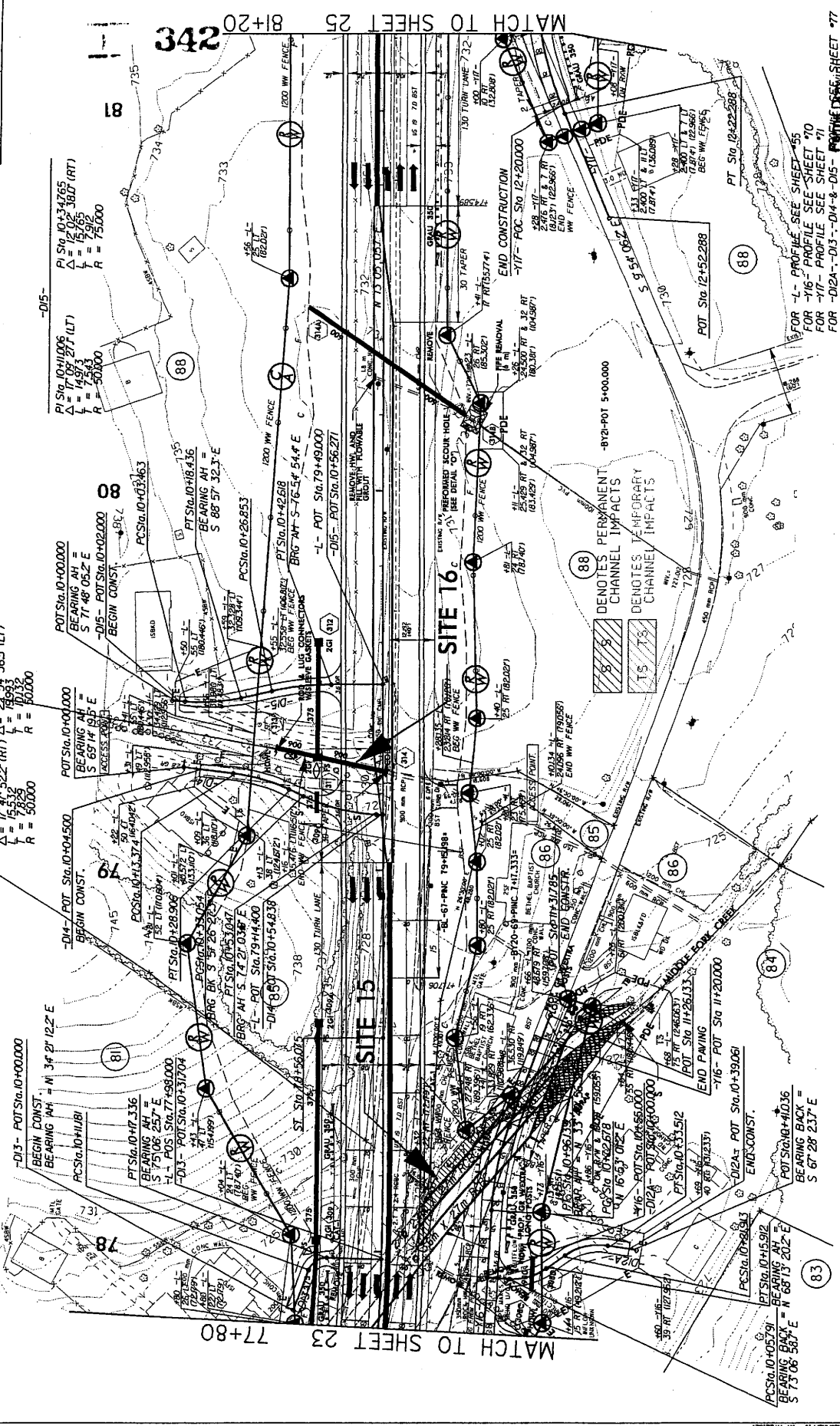
-D46-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D47-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D48-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D49-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E

-D50-
 Pts Sta 10+10.000
 Δ = 57° 11' 00.0" E
 S 57° 11' 00.0" E



R/W REV: REVISION NAME AND DEED BOOK NUMBER ON PARCEL B5. (SHARON PONDER BUCKNER) 06/11/2007 NHH

FOR -L- PROFILE SEE SHEET 55
 FOR -Y17- PROFILE SEE SHEET 90
 FOR -D12A--D13--D14--D15- PROFILE SEE SHEET 91

R/W REV. CHANGING PROPERTY LINES ON PARCEL 92 AND PARCEL 93. 06/11/2007 NMH

R/W REV. REVISING NAME AND DEED BOOK NUMBER ON PARCEL 96. 06/11/2007 NMH

METRIX

PROJECT REFERENCE NO. SHEET NO.
 25

ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER

CONSTITUTEY.
 R/W REV.

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



-D15B-
 PI Sta. 10+72.540
 $\Delta = 53.55'$ 49.0' (LT)
 $L = 14.99'$
 $T = 7.6.31'$
 $R = 15.0000'$

-D14A-
 PI Sta. 11+42.540
 $\Delta = 50.55'$ 56.7' (LT)
 $L = 13.34'$
 $T = 7.144'$
 $R = 15.0000'$

-D14A-
 PI Sta. 10+72.837
 $\Delta = 13.27'$ 52.3' (LT)
 $L = 35.250'$
 $T = 17.707'$
 $R = 20.0000'$

-D14A-
 PI Sta. 10+33.789
 $\Delta = 73.07'$ 20.2' (RT)
 $L = 25.524'$
 $T = 14.832'$
 $R = 20.0000'$

-L-
 PI Sta. 84+78.868
 $\Delta = 10.32'$ 03.9' (RT)
 $Ls = 60.000'$
 $Lt = 40.000'$
 $P = 1700.0000'$
 $SE = 00.30'$

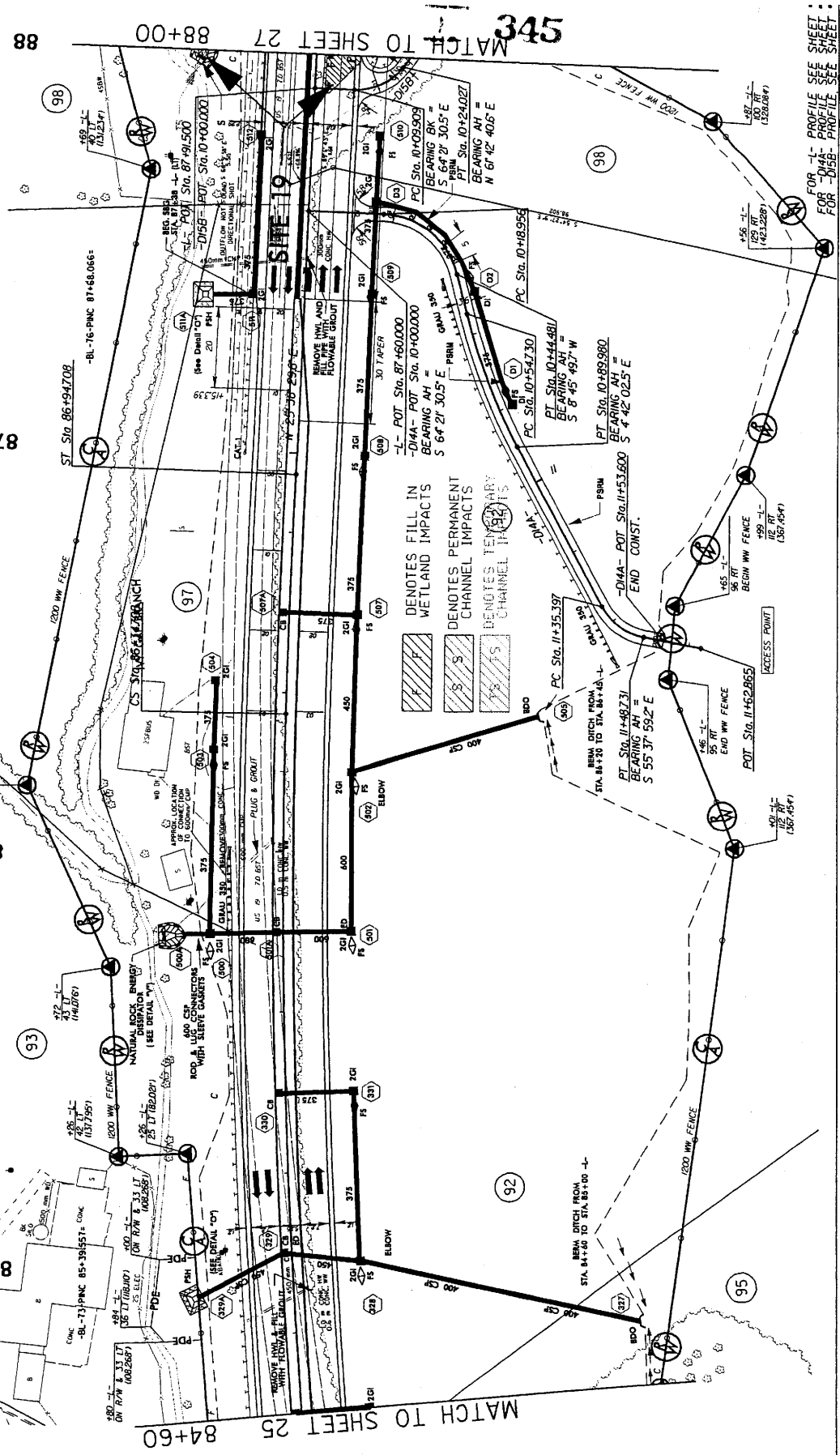
-L-
 PI Sta. 86+54.708
 $\Delta = 7.00'$ 40.0'
 $Ls = 60.000'$
 $Lt = 40.000'$
 $P = 1700.0000'$
 $SE = 00.30'$

-L-
 PI Sta. 85+38.551+00K
 $\Delta = 1.17'$ 78.200'
 $Ls = 1.17'$ 78.200'
 $Lt = 1.17'$ 78.200'
 $P = 1700.0000'$
 $SE = 00.30'$

-L-
 PI Sta. 85+38.551+00K
 $\Delta = 1.17'$ 78.200'
 $Ls = 1.17'$ 78.200'
 $Lt = 1.17'$ 78.200'
 $P = 1700.0000'$
 $SE = 00.30'$

-L-
 PI Sta. 85+38.551+00K
 $\Delta = 1.17'$ 78.200'
 $Ls = 1.17'$ 78.200'
 $Lt = 1.17'$ 78.200'
 $P = 1700.0000'$
 $SE = 00.30'$

-L-
 PI Sta. 85+38.551+00K
 $\Delta = 1.17'$ 78.200'
 $Ls = 1.17'$ 78.200'
 $Lt = 1.17'$ 78.200'
 $P = 1700.0000'$
 $SE = 00.30'$



R/W REV. REVISING NAME AND DEED BOOK NUMBER ON PARCEL 96. 06/11/2007 NMH

R/W REV. CHANGING PROPERTY LINES ON PARCEL 92 AND PARCEL 93. 06/11/2007 NMH

FOR -L- PROFILE SEE SHEET 25
 FOR -D14A- PROFILE SEE SHEET 26
 FOR -D15B- PROFILE SEE SHEET 27

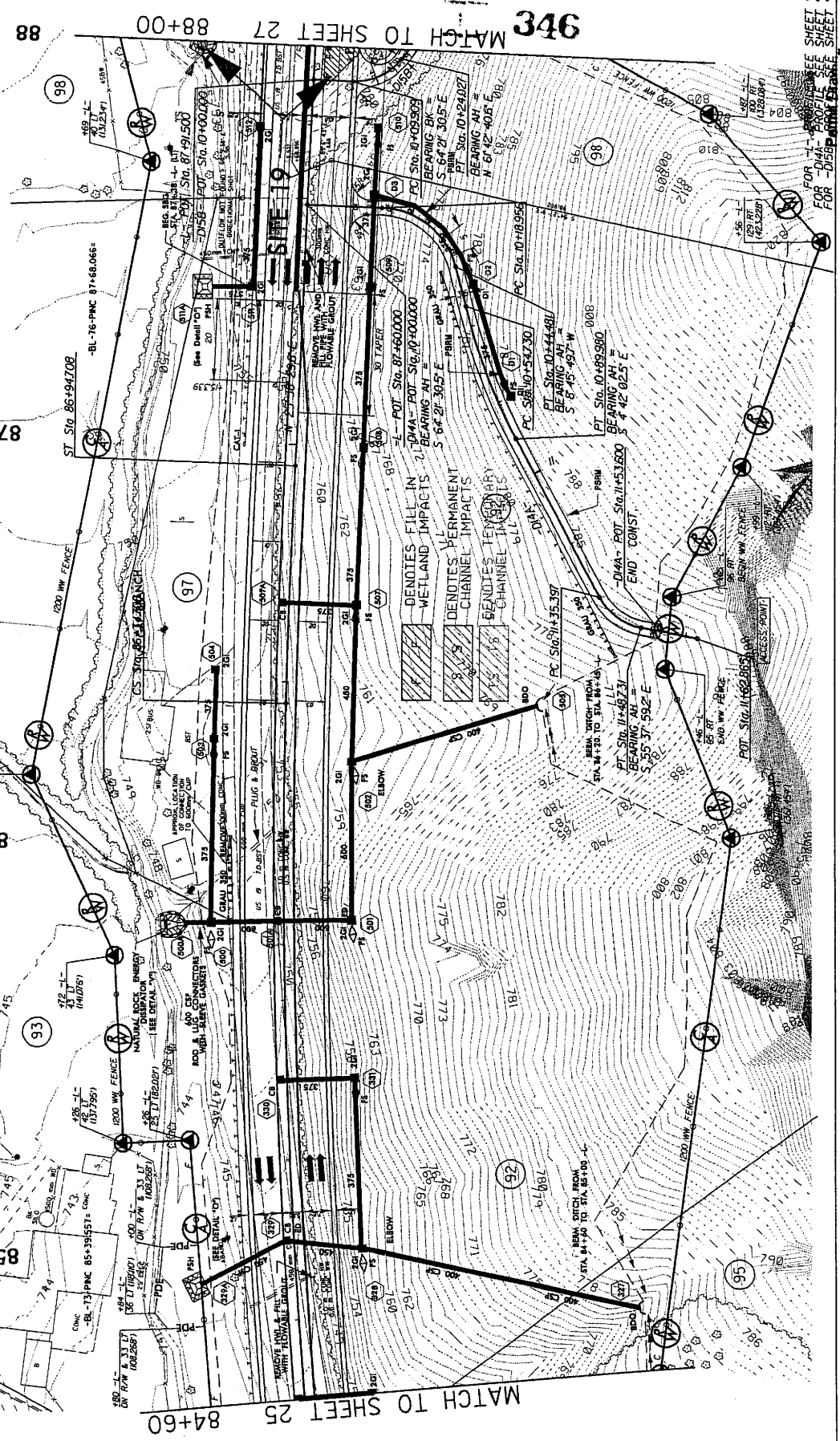
Plan Drawing

PROJECT REFERENCE NO. SHEET NO.
 R-250A 26
 ROADWAY DESIGN ENGINEER
 METRIC
 PRELIMINARY PLANS
 R/W REV.

-L-
 PIS Sta 86+547.08
 Δ = 10' 32" 03.9 (RT)
 L = 312.563
 T = 156.723
 R = 1700.000
 SE = 00.30

-D14A-
 PIS Sta 10+337.89
 Δ = 73' 07" 20.2 (RT)
 L = 25.524
 T = 14.832
 R = 20.000

-D15B-
 PIS Sta 10+175.40
 Δ = 53' 55" 49.0 (LT)
 L = 14.9
 T = 7.631
 R = 15.000



MATCH TO SHEET 27 88+00

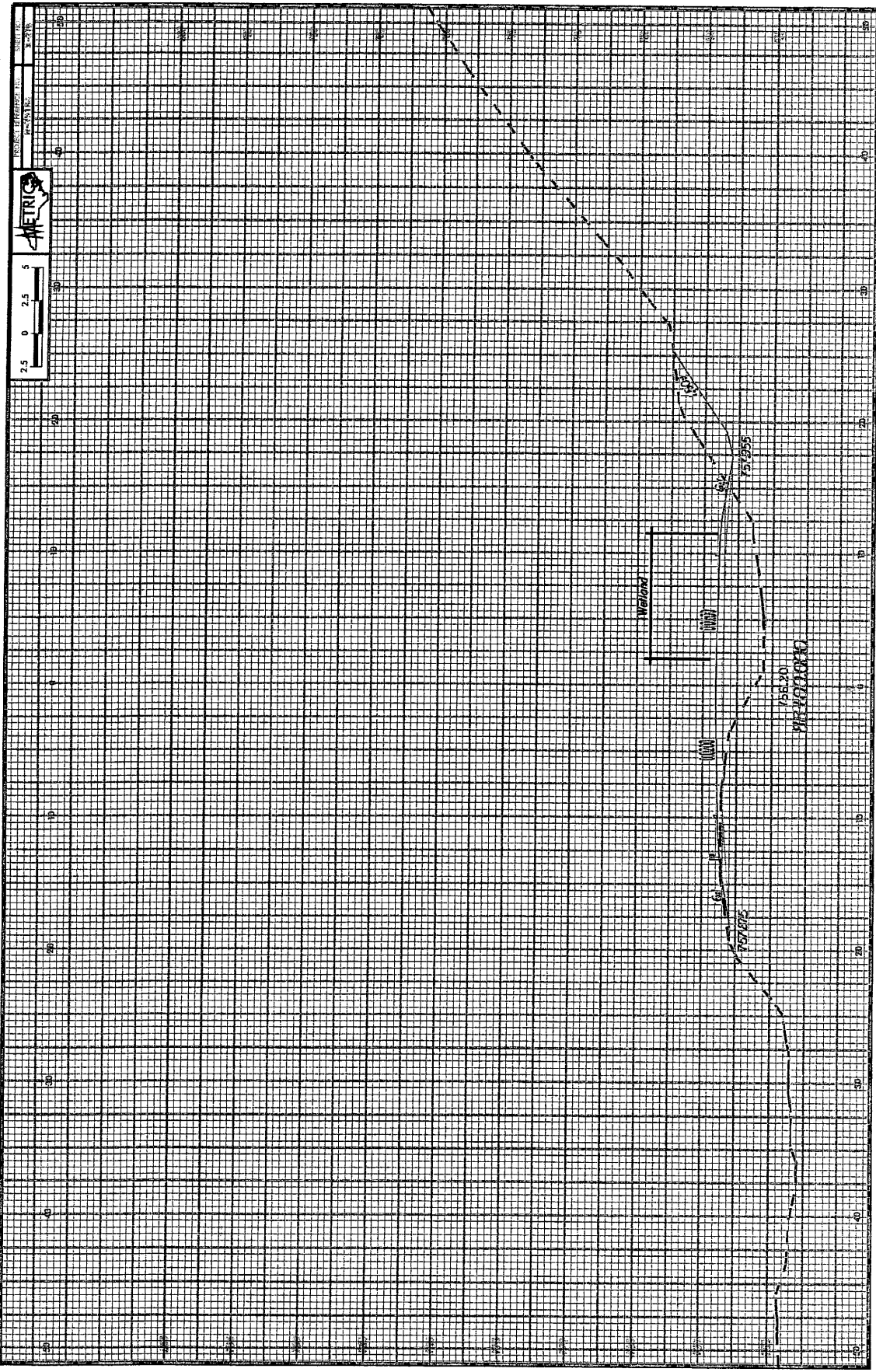
MATCH TO SHEET 25 84+60

R/W REV. CHANGING PROPERTY LINES ON PARCEL 92 AND PARCEL 93, 06/11/2007 NHH

R/W REV. REVISING NAME AND DEED BOOK NUMBER ON PARCEL 96, 06/11/2007 NHH

FOR THE PRELIMINARY SHEET
 FOR THE FINAL SHEET
 FOR THE PERMITS SHEET

Sheet 27 of 64



PROJECT REFERENCE NO. SHEET NO. 27

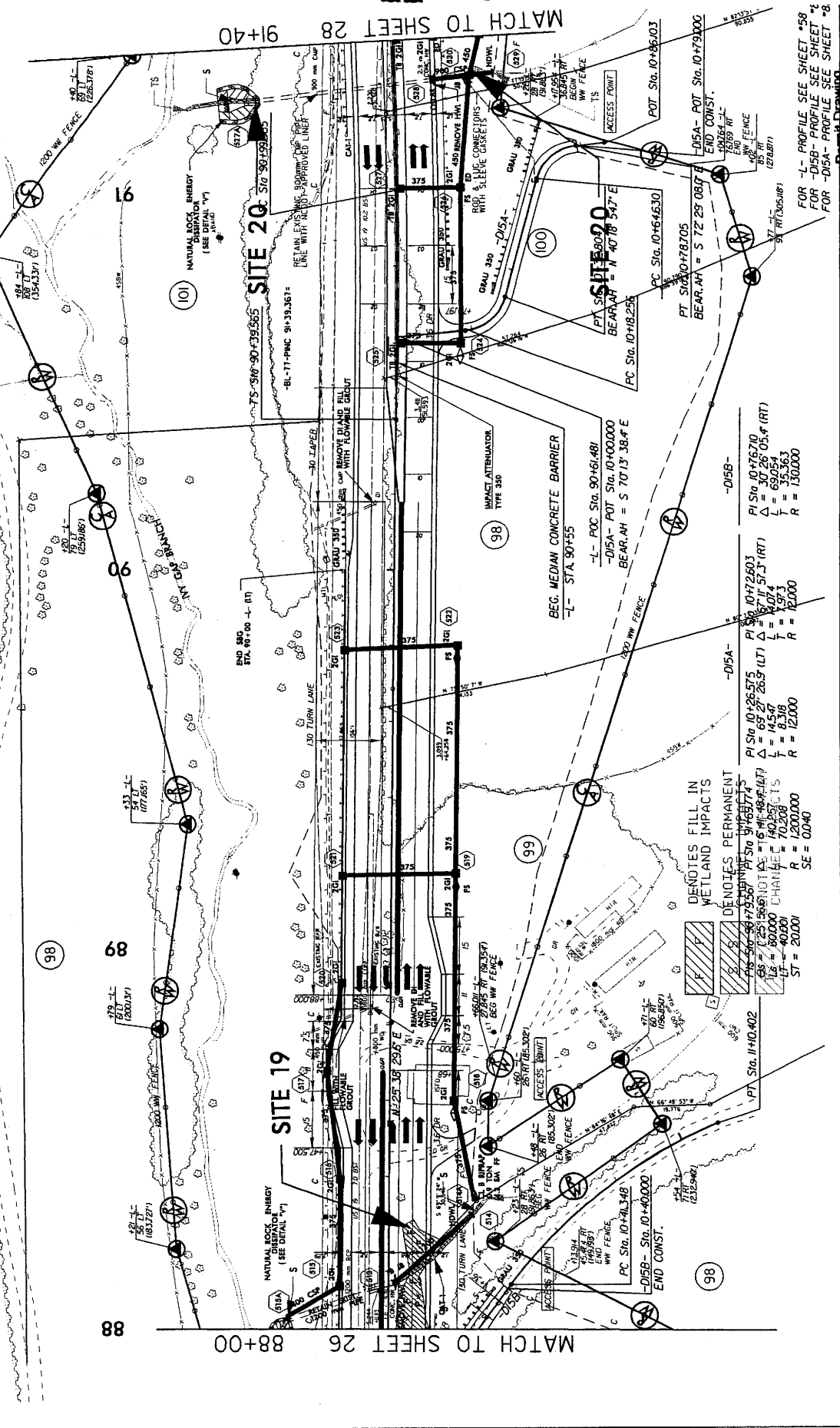
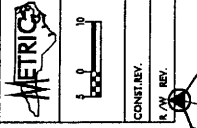
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS

CONST. REV.

R/W REV.



88

FOR -L- PROFILE SEE SHEET #36
 FOR -DISB- PROFILE SEE SHEET #2
 FOR -DISA- PROFILE SEE SHEET #8

Permit Drawing

Sheet 51 of 64

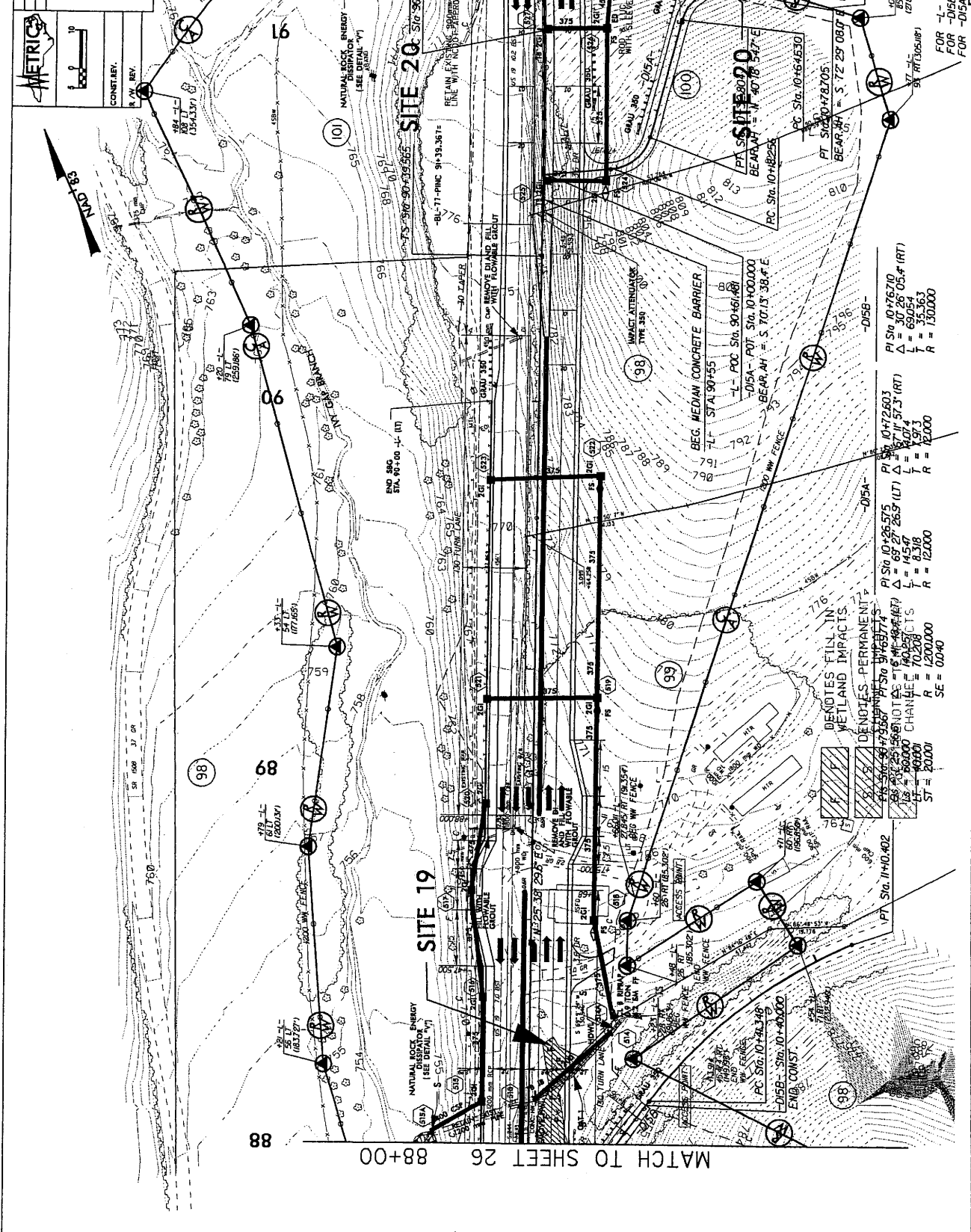
R/W REV. REVISING PROPOSED RIGHT OF WAY AND ACCESS POINT ON PARCEL 100 (SANDRA RAY) 06/11/2007 NHH

PROJECT REFERENCE NO. SHEET NO.
 R-250A 27
 K.M. SHEET NO.
 ROADWAY DESIGN
 HYDRAULICS
 ENGINEER

METRICS

CONST. REV.
 1" = 40'

PRELIMINARY PLANS
 THIS DRAWING HAS BEEN APPROVED FOR PERMITTING PURPOSES ONLY



FOR -L- PROFILE SEE SHEET *58
 FOR -D15B- PROFILE SEE SHEET *60
 FOR -D15A- PROFILE SEE SHEET *61
 Permit Drawing

MATCH TO SHEET 28 91+40

MATCH TO SHEET 26 88+00



PROJECT REFERENCE NO. SHEET NO.
 R-25181 22
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

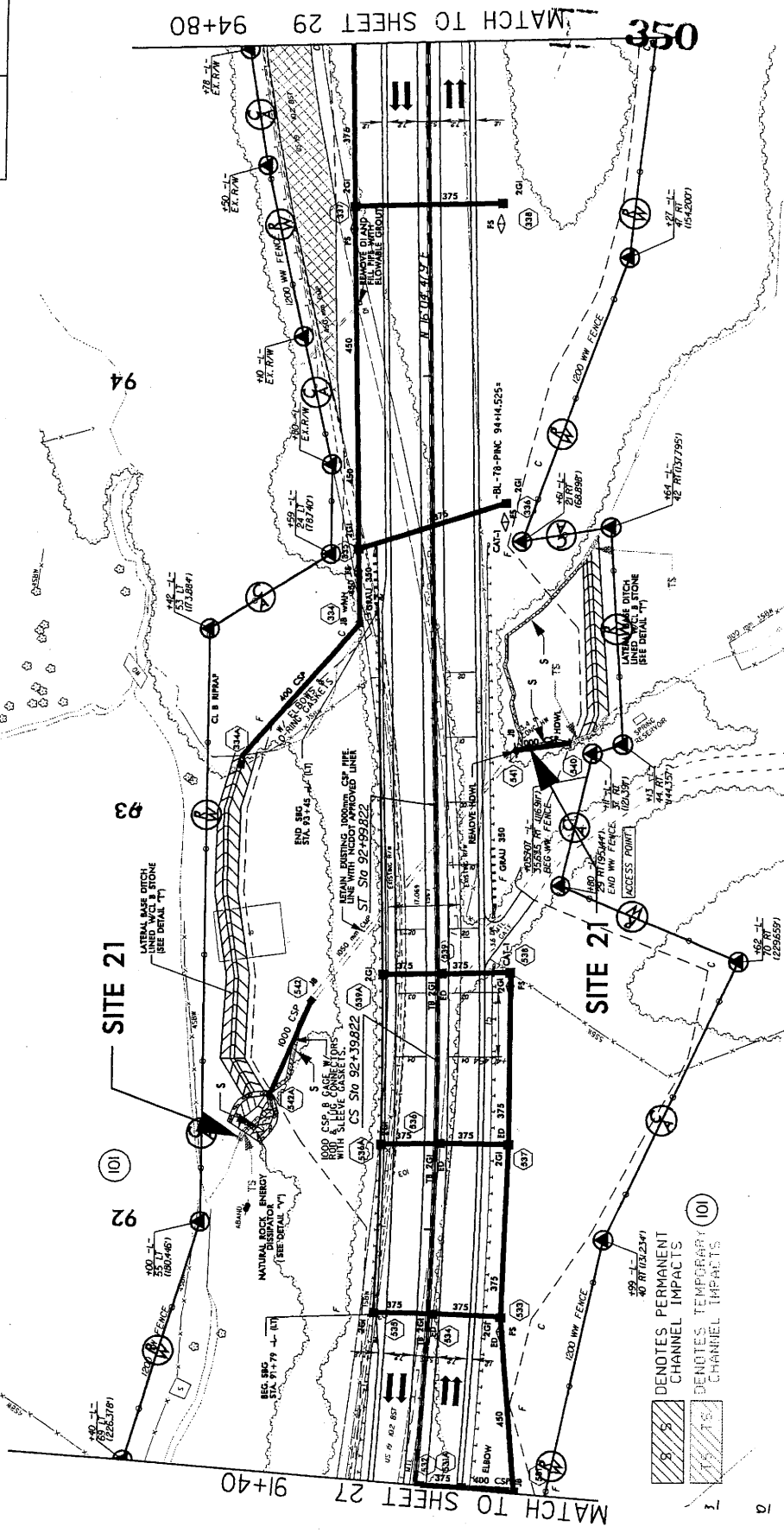
PRELIMINARY PLANS
 FOR THE PROPOSED CONSTRUCTION
 R/W REV.



PI Stn 91+63.774
 Δ = 64.924 (LT)
 T = 70.208
 R = 1200.000
 SE = 0.040

PI Stn 92+59.824
 Δ = 64.924 (LT)
 T = 70.208
 R = 1200.000
 SE = 0.040

NY GAP BRANCH



101 DENOTES PERMANENT CHANNEL IMPACTS
 102 DENOTES TEMPORARY CHANNEL IMPACTS

MATCH TO SHEET 29 94+80 053

MATCH TO SHEET 27 91+40

FOR -L- PROFILE SEE SHEET #59

Permit Drawing
 Sheet 51 of 64

METRICS

PROJECT REFERENCE NO. SHEET NO.
 R-25/82A K/W SHEET NO. 22
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS
 (NOT FOR CONSTRUCTION)

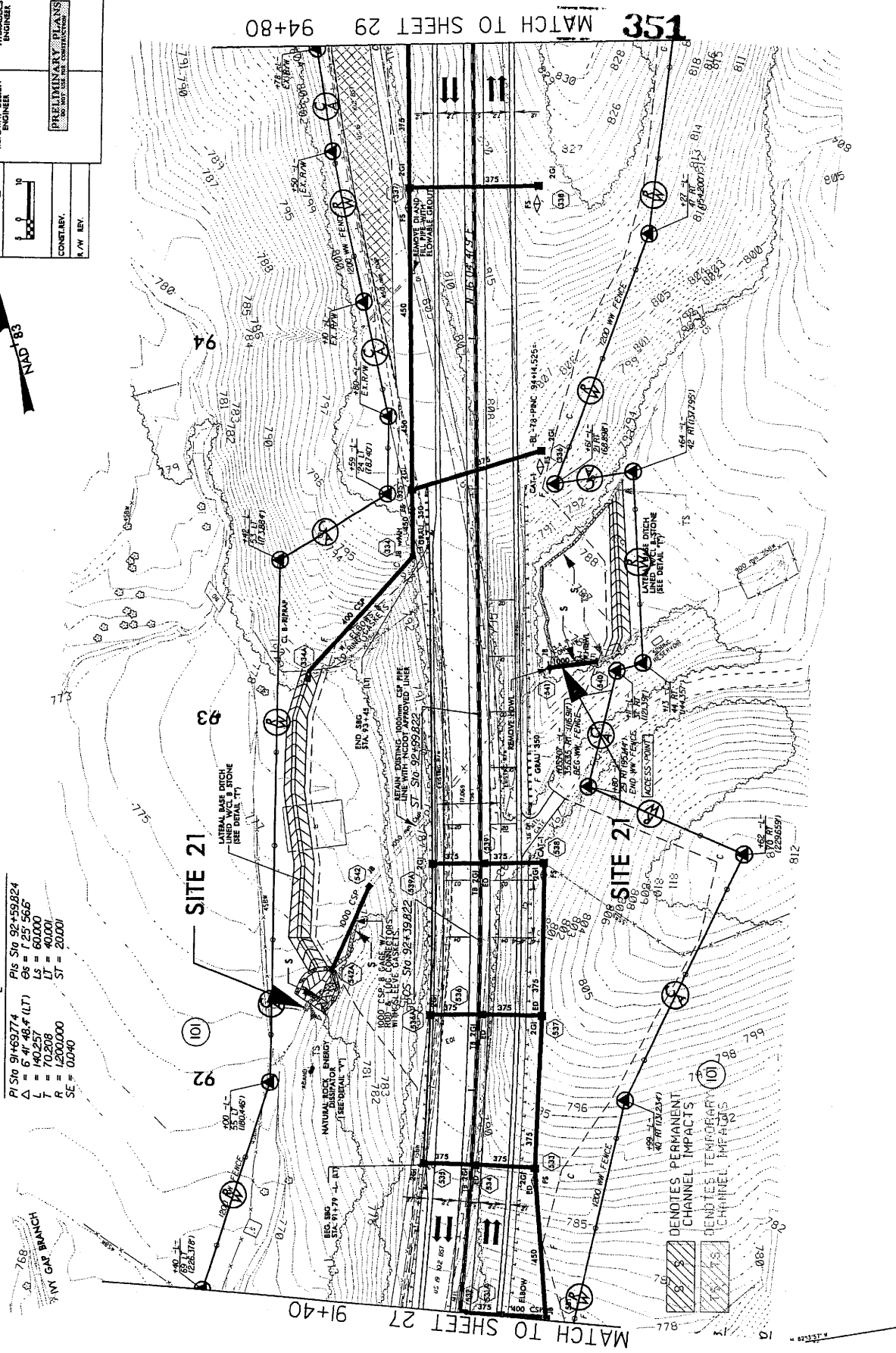
CONST. REV.
 K/W REV.



PLS10 9449774 PLS S10 92+59.824
 Δ = 6' 4" 48' (LT) CS = 1' 25' 56.6
 L = 140.257 LS = 60.000
 T = 70.208 IT = 40.000
 R = 1200.000 ST = 20.000
 SE = 0.040

SITE 21

SITE 21

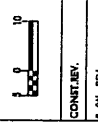


MATCH TO SHEET 29 94+80 **153**

MATCH TO SHEET 27 91+40

FOR T- PROFILE SEE SHEET #59
 Permit Drawing
 Sheet 59 of 64

22-AM-2001 144 22-AM-23-00



| | |
|-------------------------|-------------------|
| PROJECT REFERENCE NO. | R-2518A |
| SHEET NO. | 29 |
| R/W SHEET NO. | 10 |
| ROADWAY DESIGN ENGINEER | BOYD & ASSOCIATES |
| PRELIMINARY PLANS | NO. 1007 MAY 2004 |
| CONF. REV. | |
| P.W. DIV. | |

-D16-
 PI Sta 97+38.505 Pts Sta 98+21.280
 $\Delta = 10' 06" 09.7$ (LT) $\Delta = 4' 17" 49.9$
 $L = 1057.93$ $L = 900.00$
 $T = 53.034$ $L = 600.08$
 $R = 6000.00$ $ST = 30.016$
 $SE = 0.060$

-L-
 PI Sta 96+55.488 Pts Sta 97+38.505
 $\Delta = 10' 06" 09.7$ (LT) $\Delta = 4' 17" 49.9$
 $L = 1057.93$ $L = 900.00$
 $T = 53.034$ $L = 600.08$
 $R = 6000.00$ $ST = 30.016$
 $SE = 0.060$

-L-
 PI Sta 95+185.471 Pts Sta 96+08.456
 $\Delta = 10' 06" 09.7$ (LT) $\Delta = 4' 17" 49.9$
 $L = 1057.93$ $L = 900.00$
 $T = 53.034$ $L = 600.08$
 $R = 6000.00$ $ST = 30.016$
 $SE = 0.060$

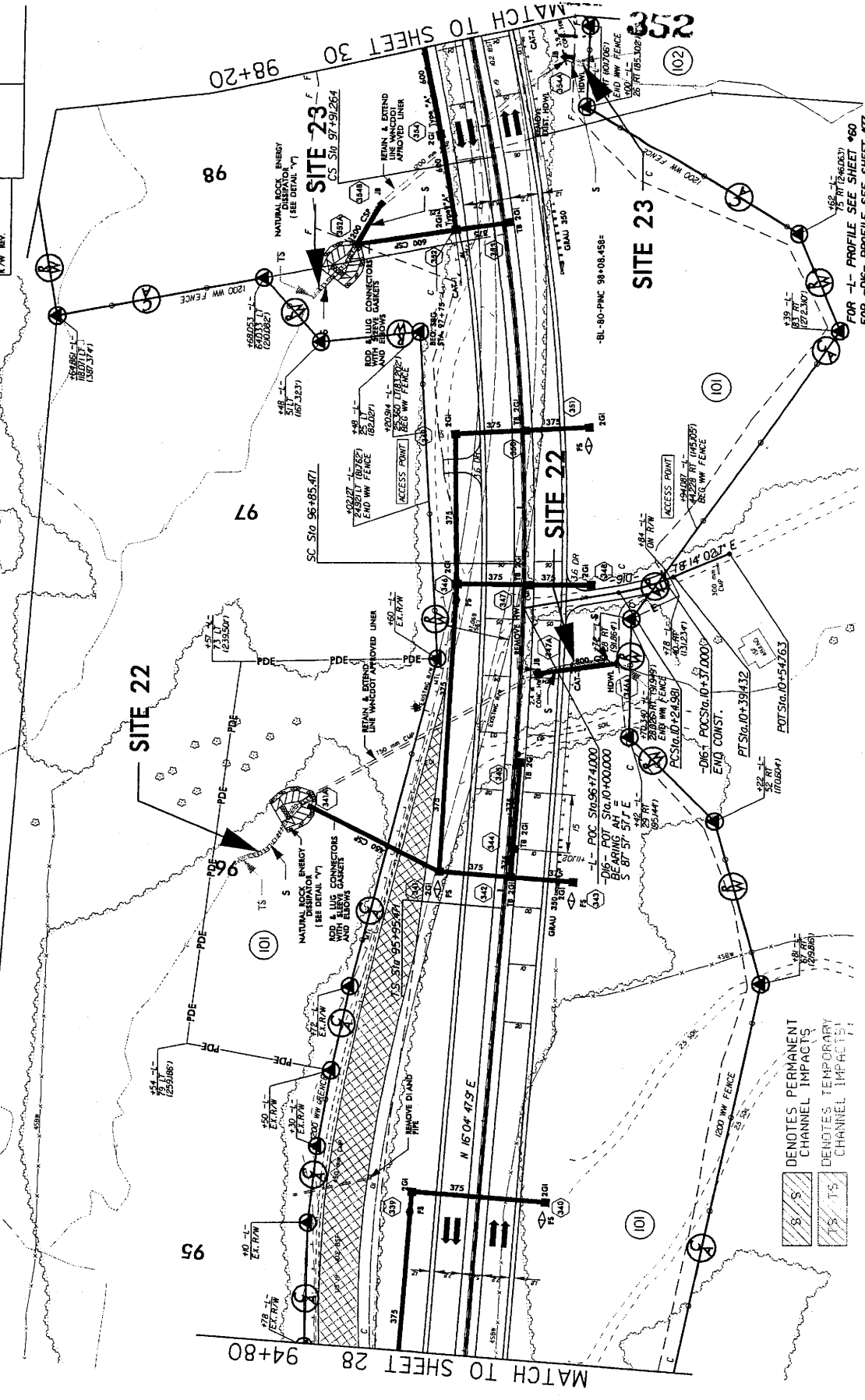
-L-
 PI Sta 94+80.000 Pts Sta 95+185.471
 $\Delta = 10' 06" 09.7$ (LT) $\Delta = 4' 17" 49.9$
 $L = 1057.93$ $L = 900.00$
 $T = 53.034$ $L = 600.08$
 $R = 6000.00$ $ST = 30.016$
 $SE = 0.060$

-L-
 PI Sta 94+80.000 Pts Sta 95+185.471
 $\Delta = 10' 06" 09.7$ (LT) $\Delta = 4' 17" 49.9$
 $L = 1057.93$ $L = 900.00$
 $T = 53.034$ $L = 600.08$
 $R = 6000.00$ $ST = 30.016$
 $SE = 0.060$

-L-
 PI Sta 94+80.000 Pts Sta 95+185.471
 $\Delta = 10' 06" 09.7$ (LT) $\Delta = 4' 17" 49.9$
 $L = 1057.93$ $L = 900.00$
 $T = 53.034$ $L = 600.08$
 $R = 6000.00$ $ST = 30.016$
 $SE = 0.060$

-L-
 PI Sta 94+80.000 Pts Sta 95+185.471
 $\Delta = 10' 06" 09.7$ (LT) $\Delta = 4' 17" 49.9$
 $L = 1057.93$ $L = 900.00$
 $T = 53.034$ $L = 600.08$
 $R = 6000.00$ $ST = 30.016$
 $SE = 0.060$

-L-
 PI Sta 94+80.000 Pts Sta 95+185.471
 $\Delta = 10' 06" 09.7$ (LT) $\Delta = 4' 17" 49.9$
 $L = 1057.93$ $L = 900.00$
 $T = 53.034$ $L = 600.08$
 $R = 6000.00$ $ST = 30.016$
 $SE = 0.060$



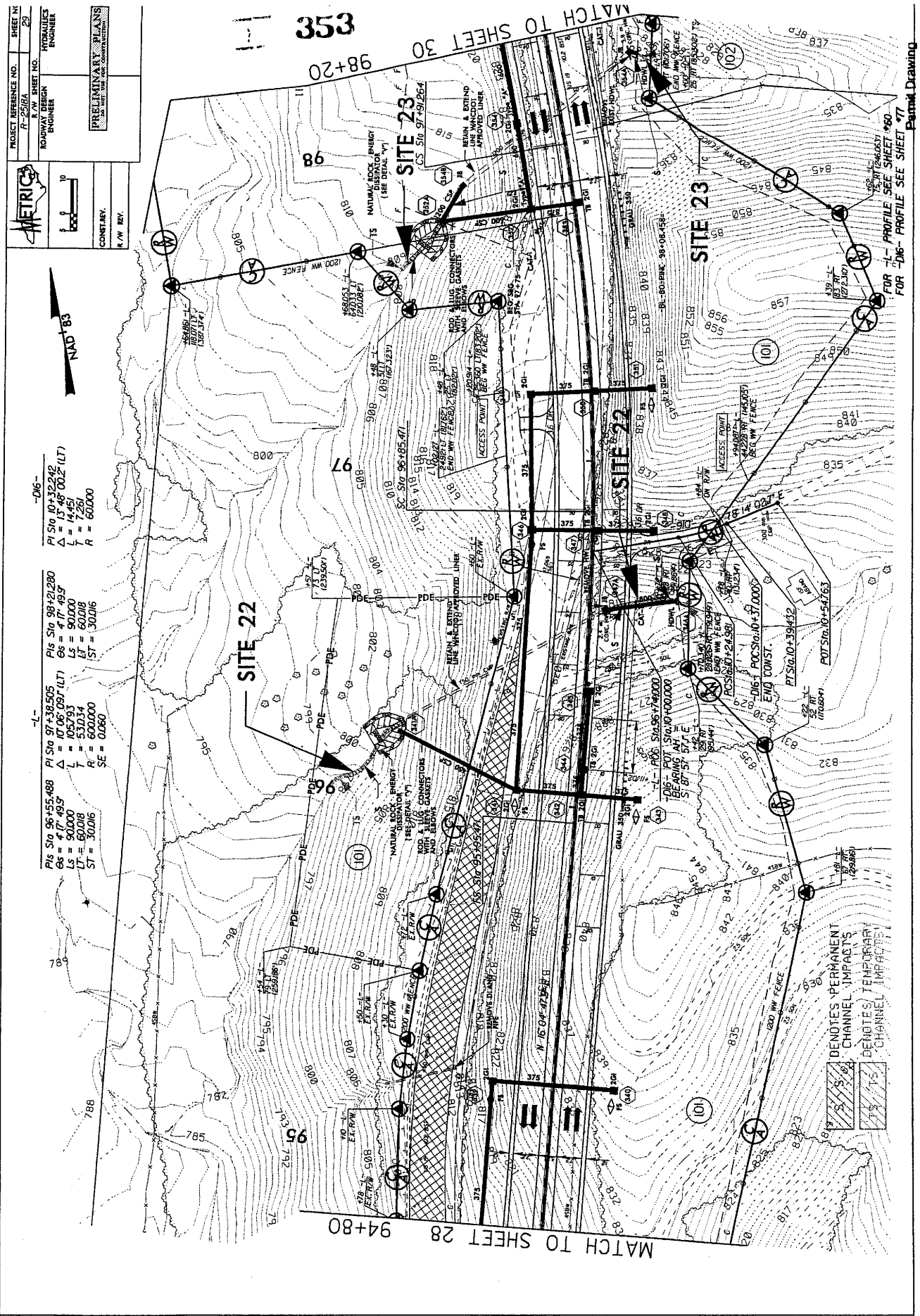


PROJECT REFERENCE NO. SHEET NO.
 R-25/8A 29
 BOARD OF ENGINEERS
 PRELIMINARY PLANS
 CONTRACTOR
 R/W BY



-D16-
 PI Sta 10+32.242
 $\Delta = 13.48' 00.2' (LT)$
 $L = 14.51'$
 $LT = 7.58'$
 $R = 600.00'$

-L-
 PIS Sta 96+55.488 PI Sta 97+38.505 PIS Sta 98+21.280
 $\Delta = 107.06' 09.7' (LT)$ $\Delta = 47' 49.5"$ $\Delta = 17.06' 09.7' (LT)$
 $L = 105.793$ $L = 53.034$ $L = 90.000$
 $LT = 60.008$ $LT = 30.016$ $LT = 60.008$
 $R = 600.000$ $R = 600.000$ $R = 600.000$
 $SE = 0.060$ $SE = 0.060$ $SE = 0.060$



DENOTES PERMANENT CHANNEL IMPACTS
 DENOTES TEMPORARY CHANNEL IMPACTS

FOR -L- PROFILE SEE SHEET 96
 FOR -D16- PROFILE SEE SHEET 77

353

98+20

MATCH TO SHEET 30

MATCH TO SHEET 28 94+80

12-14-2011 09:45

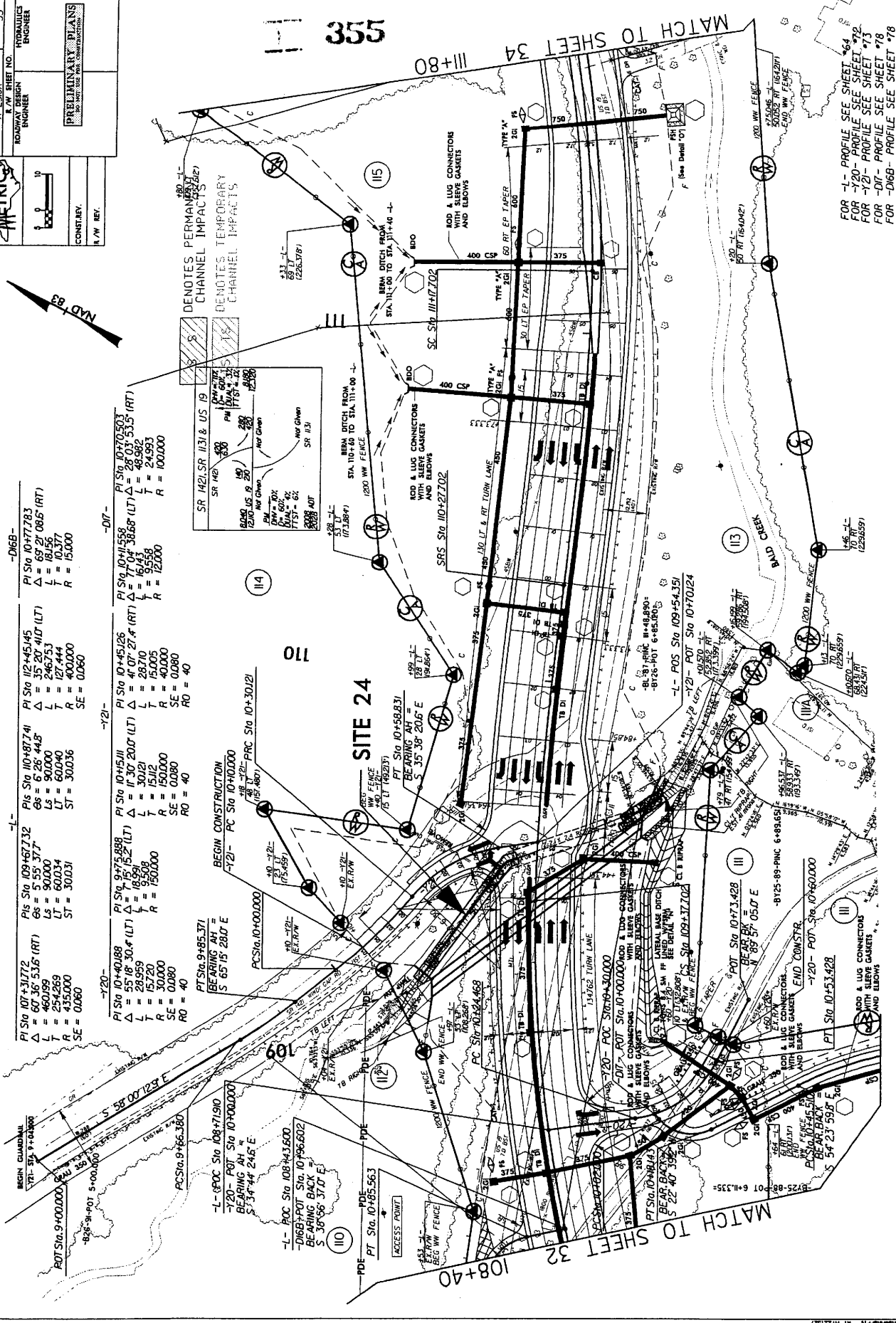


PROJECT REFERENCE NO. SHEET NO.
 R-2518 A 33
 & A.M. SHEET NO.
 HYDRAULICS
 ROADWAY DESIGN ENGINEER



CONTRARY.
 I.W. REV.

PRELIMINARY PLANS
 NOT TO BE USED FOR CONSTRUCTION



-D6B-

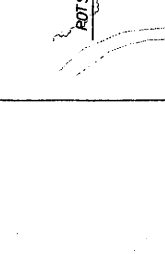
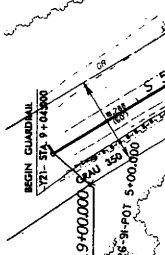
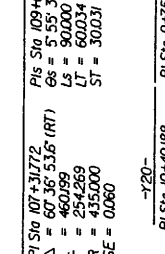
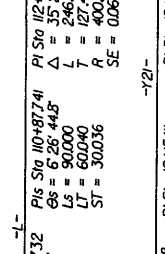
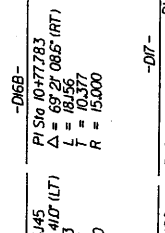
| | | | | | |
|----------------------|-------------------|-------------------|----------------------|----------------------|----------------------|
| PI Sta 107+317.72 | PI Sta 109+577.32 | PI Sta 110+877.41 | PI Sta 112+451.45 | PI Sta 114+777.83 | PI Sta 117+778.3 |
| Δ = 60°36'53.6" (RT) | Δ = 5°55'37.7" | Δ = 6°26'44.5" | Δ = 35°20'41.0" (LT) | Δ = 69°21'08.5" (RT) | Δ = 69°21'08.5" (RT) |
| L = 460.99 | Ls = 90.000 | L = 60.040 | L = 246.753 | L = 181.56 | L = 181.56 |
| R = 242.89 | ST = 60.034 | R = 60.040 | R = 127.444 | T = 10.377 | T = 10.377 |
| SE = 0.080 | ST = 30.036 | SE = 0.080 | SE = 0.060 | R = 15.000 | R = 15.000 |

-Y21-

| | | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| PI Sta 10+40.188 | PI Sta 10+45.126 | PI Sta 10+45.588 | PI Sta 10+45.958 | PI Sta 10+46.503 | PI Sta 10+47.053 |
| Δ = 55°18'30.4" (LT) | Δ = 15°15'52.4" (LT) | Δ = 15°15'52.4" (LT) | Δ = 15°15'52.4" (LT) | Δ = 15°15'52.4" (LT) | Δ = 15°15'52.4" (LT) |
| L = 289.959 | L = 157.20 | L = 157.20 | L = 157.20 | L = 157.20 | L = 157.20 |
| R = 303.000 | R = 150.000 | R = 150.000 | R = 150.000 | R = 150.000 | R = 150.000 |
| SE = 0.080 | RO = 40 | RO = 40 | RO = 40 | RO = 40 | RO = 40 |

-DIT-

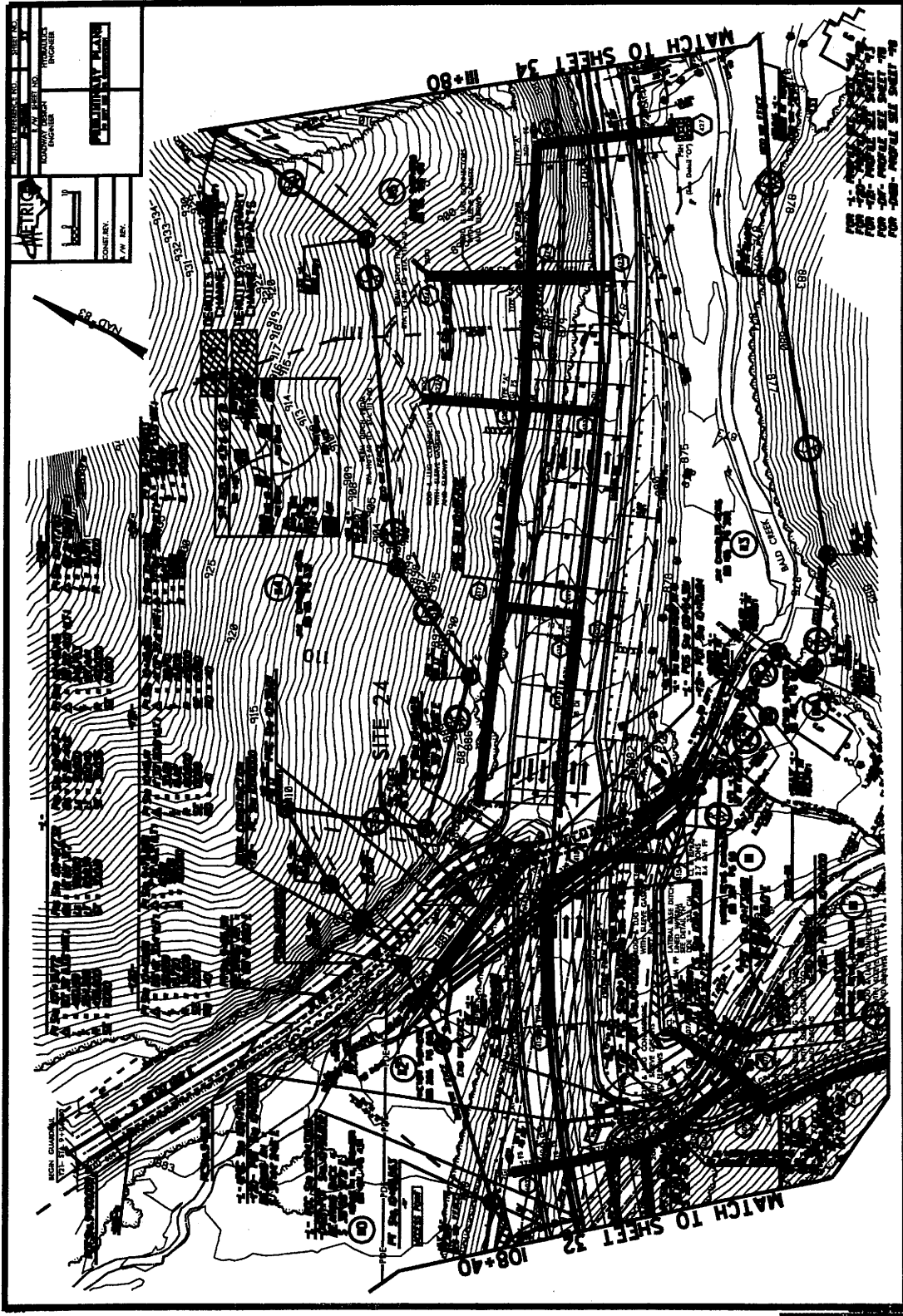
| | | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| PI Sta 10+45.958 | PI Sta 10+46.503 | PI Sta 10+47.053 | PI Sta 10+47.603 | PI Sta 10+48.153 | PI Sta 10+48.703 |
| Δ = 47°07'27.4" (RT) | Δ = 47°07'27.4" (RT) | Δ = 47°07'27.4" (RT) | Δ = 47°07'27.4" (RT) | Δ = 47°07'27.4" (RT) | Δ = 47°07'27.4" (RT) |
| L = 28.710 | L = 28.710 | L = 28.710 | L = 28.710 | L = 28.710 | L = 28.710 |
| T = 15.005 | T = 15.005 | T = 15.005 | T = 15.005 | T = 15.005 | T = 15.005 |
| R = 40.000 | R = 40.000 | R = 40.000 | R = 40.000 | R = 40.000 | R = 40.000 |
| SE = 0.080 | RO = 40 | RO = 40 | RO = 40 | RO = 40 | RO = 40 |



FOR -L- PROFILE SEE SHEET #64
 FOR -Y20- PROFILE SEE SHEET #72
 FOR -Y21- PROFILE SEE SHEET #73
 FOR -DIT- PROFILE SEE SHEET #78
 FOR -D6B- PROFILE SEE SHEET #78

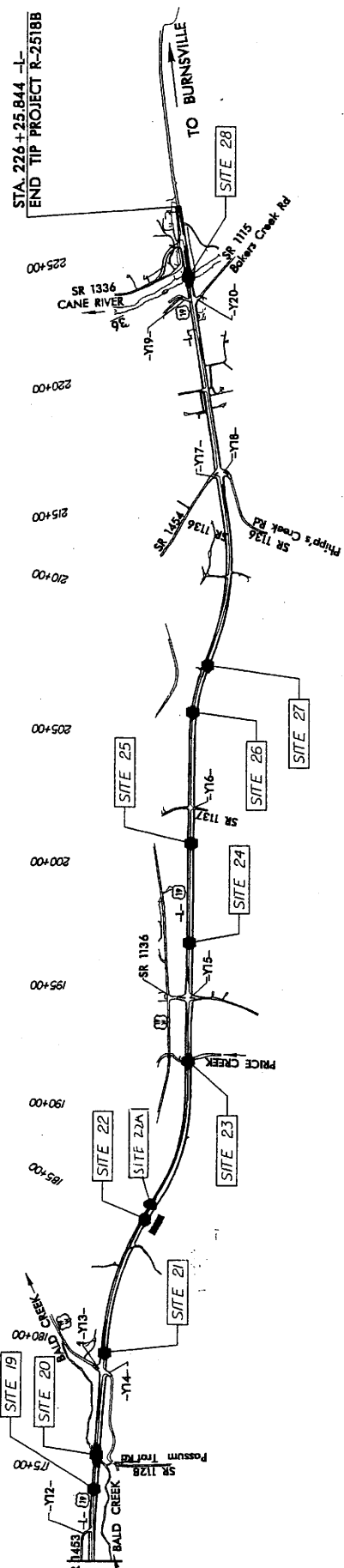
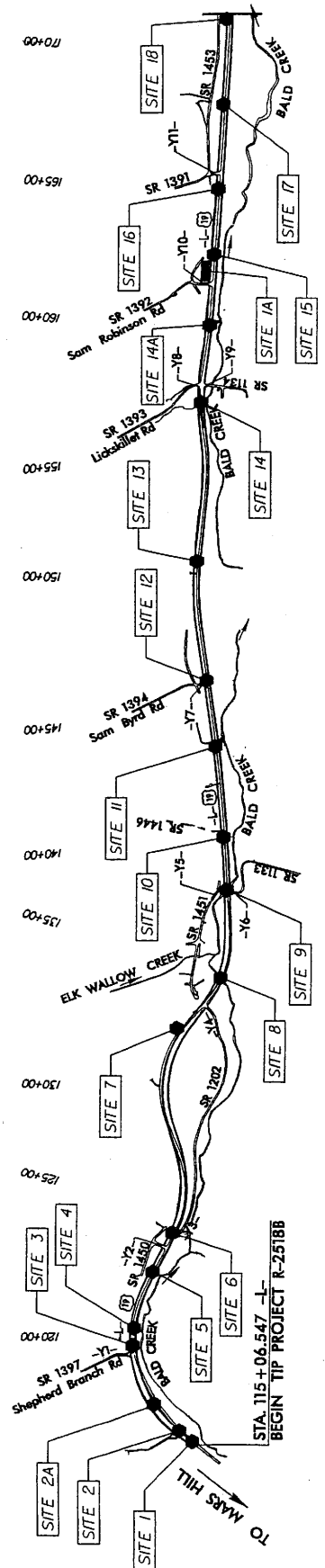
Point Drawing

R/M REV. REVISING PROPERTY LINE BOUNDARIES AND REVISING DEED INFORMATION ON PARCEL 111A, 06/11/2007 NHH



NOTE: REVISION PROPERTY LINE BOUNDARIES AND REVISION FIELD BOOK INFORMATION ON PARCEL NO. 06/19/2017



NC GRID NAD 83

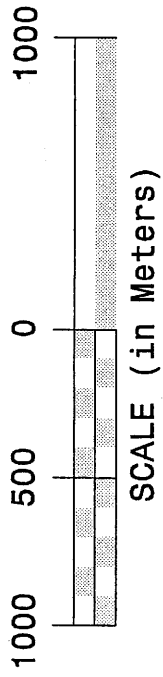


NCDOT
 DIVISION OF HIGHWAYS
 YANCEY COUNTY
 PROJECT: 3.4445.1.1 (R-2518B)
 US 19
 MADISON COUNTY LINE
 TO CANE RIVER
 IN BURNSVILLE

SHEET 2 OF 79 JUNE 2007

SITE MAP

 DENOTES SURFACE WATER SITES
 DENOTES WETLAND SITES



revised 1/17/08

WETLAND PERMIT IMPACT SUMMARY

| Site No. | Station (From/To) | Structure Size / Type | WETLAND IMPACTS | | | | | SURFACE WATER IMPACTS | | | | | Natural Stream Design (m) | |
|----------|-------------------|-----------------------|---------------------------------|-----------------------------|-----------------------------|--------------------------------------|--------------------------------|---------------------------|-----------------------|--|------------------------------------|-----|---------------------------|-----|
| | | | 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) | | | |
| 1 | 115+25 | 750 RCP | | | | | | 0.001 | | | | 13 | 3 | |
| 2 | 115+72 | 900 RCP | | | | | | 0.002 | | | | 31 | 6 | |
| 2A | 117+46 | 900 CSP | | | | | | 0.002 | | | | 40 | 6 | |
| 3 | 118+69 | 2-1700 CSP | | | | | | 0.002 | | | | 15 | 3 | |
| 4 | 120+35 | 600 CSP | | | | | | 0.003 | | | | 17 | 15 | |
| 5 | 122+60 | 750 RCP | | | | | | 0.003 | | | | 23 | 6 | |
| 6 | 124+25 | 1400 CSP | | | | | | 0.002 | | | | 24 | 9 | |
| 7 | 133+40 | 1.5m TB to TB | | | | | | 0.016 | | | | 151 | 6 | 135 |
| 8 | 134+72 | 3-3.1m x 2.4m RCBC | | | | | | 0.020 | | | | 36 | 4 | |
| 9 | 138+05 | 4-3.4m x 2.7m RCBC | | | | | | 0.049 | | | | 62 | 5 | |
| 10 | 140+11 | 1780x1360 CSPA | | | | | | 0.006 | | | | 21 | 3 | |
| 11 | 143+80 | 900 RCP | | | | | | 0.004 | | | | 11 | | |
| 12 | 148+10 | 2500x1830 CSPA | | | | | | 0.008 | | | | 23 | 3 | |
| 13 | 150+63 | 2410x1700 CSPA | | | | | | 0.003 | | | | 29 | 5 | |
| 14 | 158+63 | 3-2.1x2.1 RCBC | | | | | | 0.010 | | | | 41 | 11 | |
| 14A | 159+42 | TAIL DITCH | | | | | | 0.002 | | | | 3 | | |
| 15 | 162+45 | 2410x1700 CSPA | | | | | | 0.003 | | | | 25 | 3 | |
| 16 | 164+88 | 2-2080x1530 CSPA | | | | | | 0.006 | | | | 34 | 3 | |
| 17 | 167+90 | 1830x1120 CSPA | | | | | | 0.004 | | | | 20 | 3 | |
| 18 | 171+37 | 1425x850 CSPA | | | | | | 0.002 | | | | 20 | 3 | |
| 19 | 174+19 | 1200 CSP | | | | | | | | | | | | |
| 20 | 175+60 | Bridge (Bald Creek) | | | | | | 0.002 | 0.034 | | | 5 | 71 | 96 |
| 20A | -Y14- 10+51 | 1200 RCP | | | | | | 0.001 | | | | 11 | 3 | |
| 21 | 179+58 | 600 RCP | | | | | | 0.001 | | | | 10 | | |
| 22 | 185+32 | 1200 CSP | | | | | | 0.003 | | | | 47 | 3 | |
| 22A | 185+50 | 1200 CSP; 800 RCP | 0.046 | | | | | | | | | | | |
| 23 | 192+18 | Bridge (Price Creek) | | | 0.005 | | | | | | | 11 | 17 | |
| 24 | 196+80 | 1000 CSP | | | | | | 0.010 | 0.007 | | | 5 | 3 | |
| 25 | 200+64 | 1700 CSP | | | | | | 0.001 | | | | 41 | 6 | |
| 26 | 205+81 | 1400 CSP | | | | | | 0.012 | | | | 12 | 3 | |
| 27 | 206+76 | 2-2300 CSP | | | | | | 0.002 | | | | 92 | 17 | |
| 28 | 223+60 | Bridge (Cane River) | | | | | | 0.016 | 0.003 | | | | | |
| 1A | 161+60 | | 0.027 | | | | | 0.022 | | | | | 36 | |
| TOTALS: | | | 0.073 | 0.005 | 0.0155 | 0.016 | -0.193 | 0.072 | 873 | 256 | 231 | | | |

Mitigation Site
 Site 1
 Site 3
 Site 4
 Site 8
 Site 11
 Site 12

Mitigation Type
 Enhancement
 Enhancement
 Enhancement
 Restoration
 Enhancement/Restoration

Length
 533 m
 301 m
 248 m
 304 m
 85 m
 178 m

Bridge Pier impacts
 Bridge at Price Creek = 2.79 sq. m
 Bridge at Cane River = 3.72 sq. m

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 YANCEY COUNTY
 WBS - 34445.1.1 (R-2518B)
 SHEET OF

JMD/Revised 2/20/05

WETLAND PERMIT IMPACT SUMMARY

| Site No. | Station (From/To) | Structure Size / Type | WETLAND IMPACTS | | | | SURFACE WATER IMPACTS | | | | Natural Stream Design (ft) | | |
|----------|-------------------|-----------------------|---------------------------------|-----------------------------|-----------------------------|--------------------------------------|--------------------------------|---------------------------|-----------------------|-------------------------------|----------------------------|-----------------------------|-----|
| | | | 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 (ft) | | Existing Channel Temp. (ft) | |
| 1 | 115+25 | 30" RCP | | | | | | 0.00 | | | 43 | 10 | |
| 2 | 115+72 | 36" RCP | | | | | | 0.01 | | | 102 | 20 | |
| 2A | 117+46 | 36" CSP | | | | | | 0.01 | | | 131 | 20 | |
| 3 | 119+68 | 2-66" CSP | | | | | | 0.01 | | | 49 | 10 | |
| 4 | 120+35 | 24" RCP | | | | | | 0.01 | | 0.01 | 56 | 49 | |
| 5 | 122+60 | 30" RCP | | | | | | 0.01 | | | 76 | 20 | |
| 6 | 124+25 | 54" CSP | | | | | | 0.00 | | 0.00 | 79 | 30 | |
| 7 | 133+40 | 4.5' TB to TB | | | | | | 0.04 | | | 496 | 20 | 443 |
| 8 | 134+72 | 3-10"x8' RCBC | | | | | | 0.05 | | | 118 | 13 | |
| 9 | 138+05 | 4-11"x8' RCBC | | | | | | 0.12 | | | 204 | 16 | |
| 10 | 140+11 | 73"x55" CSPA | | | | | | 0.01 | | | 68 | 10 | |
| 11 | 143+60 | 42" RCP | | | | | | 0.01 | | | 36 | | |
| 12 | 146+10 | 103"x71" CSPA | | | | | | 0.02 | | | 76 | 10 | |
| 13 | 150+63 | 95"x67" CSPA | | | | | | 0.01 | | | 95 | 16 | |
| 14 | 156+63 | 3-7"x7' RCBC | | | | | | 0.02 | | 0.00 | 135 | 36 | |
| 14A | 159+42 | TAIL DITCH | | | | | | 0.00 | | | 10 | | |
| 15 | 162+45 | 95"x67" CSPA | | | | | | 0.01 | | | 82 | 10 | |
| 16 | 164+88 | 2-81"x59" CSPA | | | | | | 0.01 | | | 112 | 10 | |
| 17 | 167+90 | 72"x44" CSPA | | | | | | 0.01 | | | 66 | 10 | |
| 18 | 171+37 | 58"x36" CSPA | | | | | | 0.01 | | | 66 | 10 | |
| 19 | 174+19 | 48" CSP | | | | | | 0.01 | | | | | |
| 20 | 175+60 | Bridge (Bald Creek) | | | | | | 0.01 | | | 16 | 233 | 315 |
| 20A | -Y14- 10+51 | 48" RCP | | | | | | 0.00 | | | 36 | 10 | |
| 21 | 179+58 | 24" RCP | | | | | | 0.00 | | | 33 | | |
| 22 | 185+32 | 48" CSP | | | | | | 0.01 | | | 154 | 10 | |
| 22A | 185+50 | 48" CSP; 24" RCP | 0.11 | | 0.01 | | | 0.03 | | 0.02 | 36 | 56 | |
| 23 | 192+18 | Bridge (Price Creek) | | | | | | 0.00 | | | 16 | 10 | |
| 24 | 196+80 | 42" CSP | | | | | | 0.03 | | | 135 | 20 | |
| 25 | 200+64 | 66" CSP | | | | | | 0.00 | | | 39 | 10 | |
| 26 | 205+81 | 54" CSP | | | | | | 0.00 | | | 302 | 56 | |
| 27 | 206+76 | 2-90" CSP | | | | | | 0.04 | | 0.01 | | | |
| 28 | 223+60 | Bridge (Cane River) | | | | | | 0.05 | | | | | |
| 1A | 161+60 | | 0.07 | | | | | | | | | | |
| TOTALS: | | | 0.18 | | 0.01 | 0.04 | | 0.48 | | 0.17 | 2866 | 840 | 758 |

Mitigation Site
 Site 1 Enhancement
 Site 3 Enhancement
 Site 4 Enhancement
 Site 8 Enhancement
 Site 11 Restoration
 Site 12 Enhancement/Restoration

Mitigation Type
 Enhancement
 Enhancement
 Enhancement
 Enhancement
 Restoration
 Enhancement/Restoration

Length
 1748 ft
 987 ft
 813 ft
 997 ft
 279 ft
 584 ft

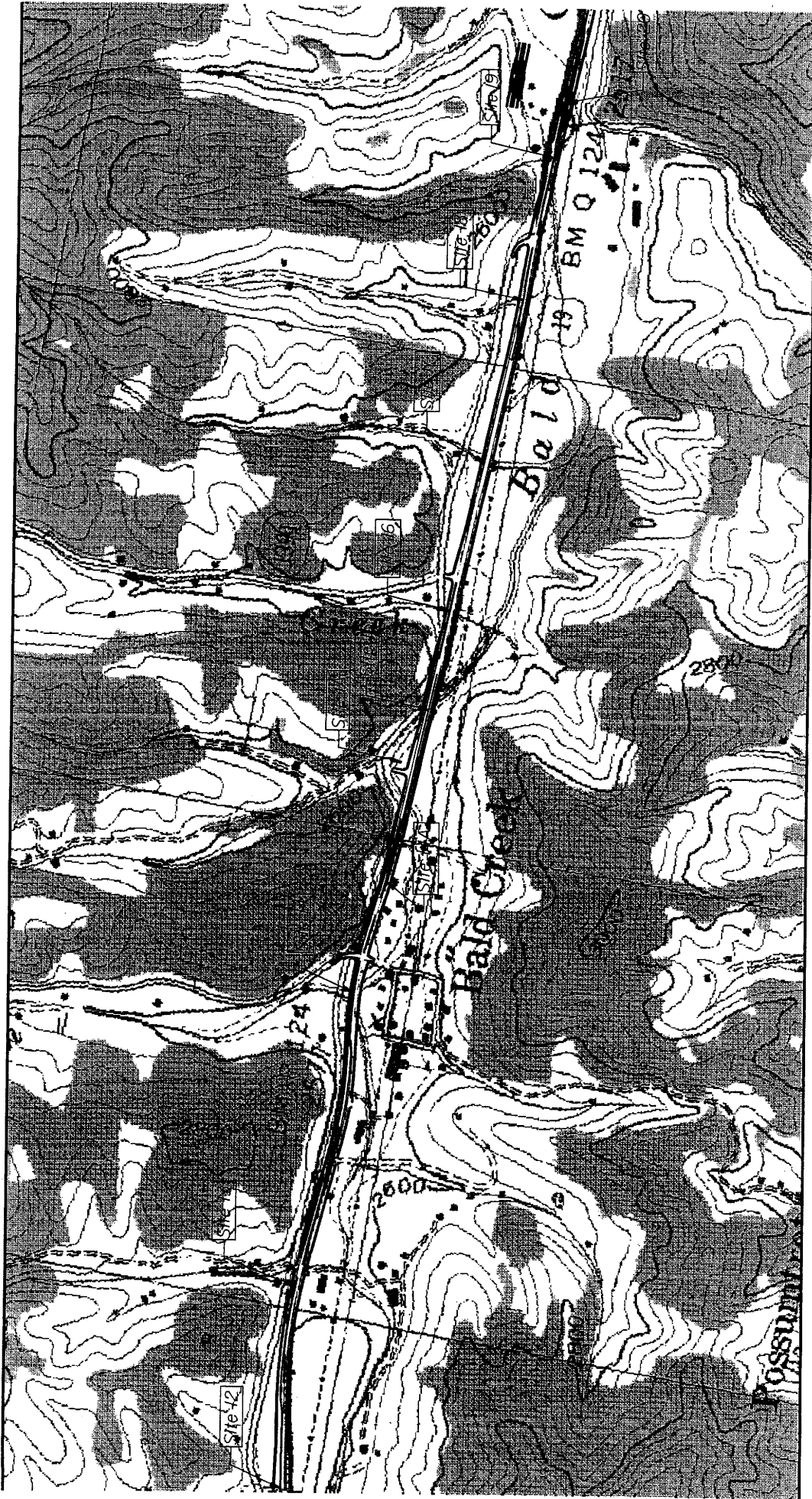
Bridge Pier Impacts
 Bridge at Price Creek = 30 sq. ft.
 Bridge at Cane River = 40 sq. ft.

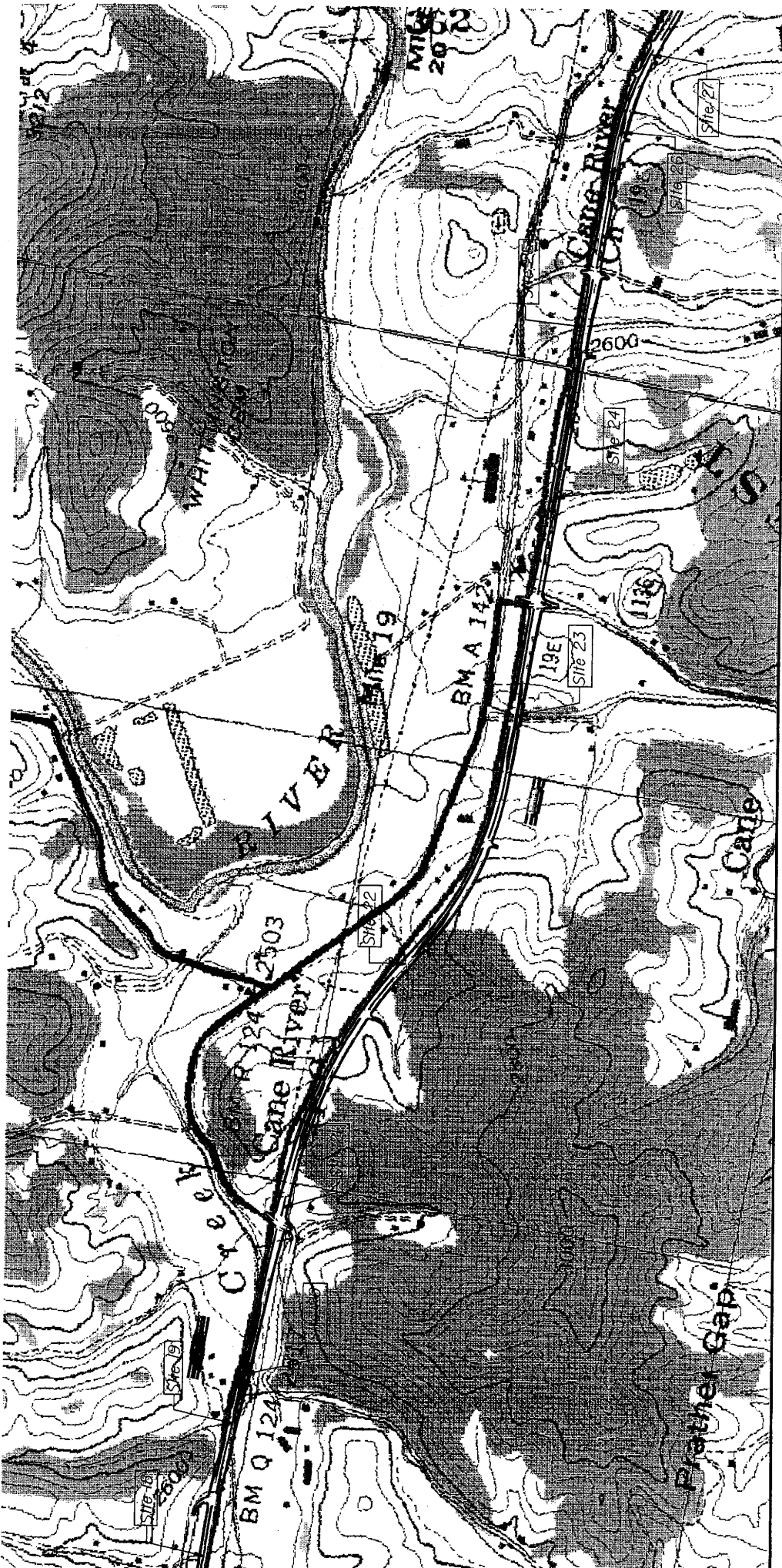
NOTE: All Area Quantities of 0.00 are less than 0.01 acres

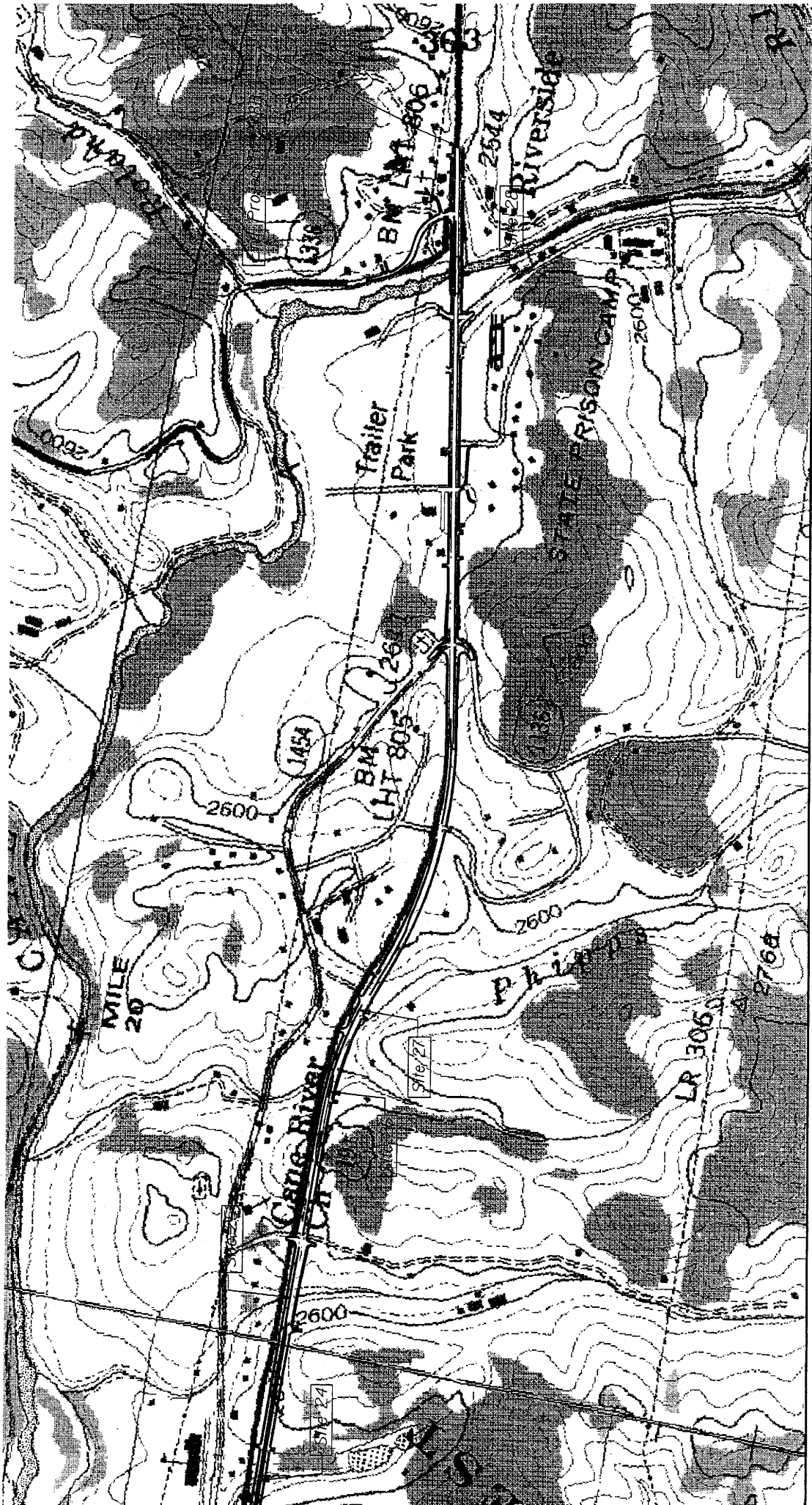
NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 YANCEY COUNTY
 WBS - 34445.1.1 (R-2518B)

SHEET OF
 #####
 RCV/454 FEB 2005









PROJECT REFERENCE NO. PD-25188
 TGS SHEET NO. 4
 ROADWAY DESIGN ENGINEER
 HYDRAULIC ENGINEER
 PRELIMINARY PLANS
 MAY NOT BE USED FOR CONSTRUCTION

TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 CAROLINA, CO
 PH (919) 319-8850

TGS
 METRIC
 CONSULTING
 R/W REV.

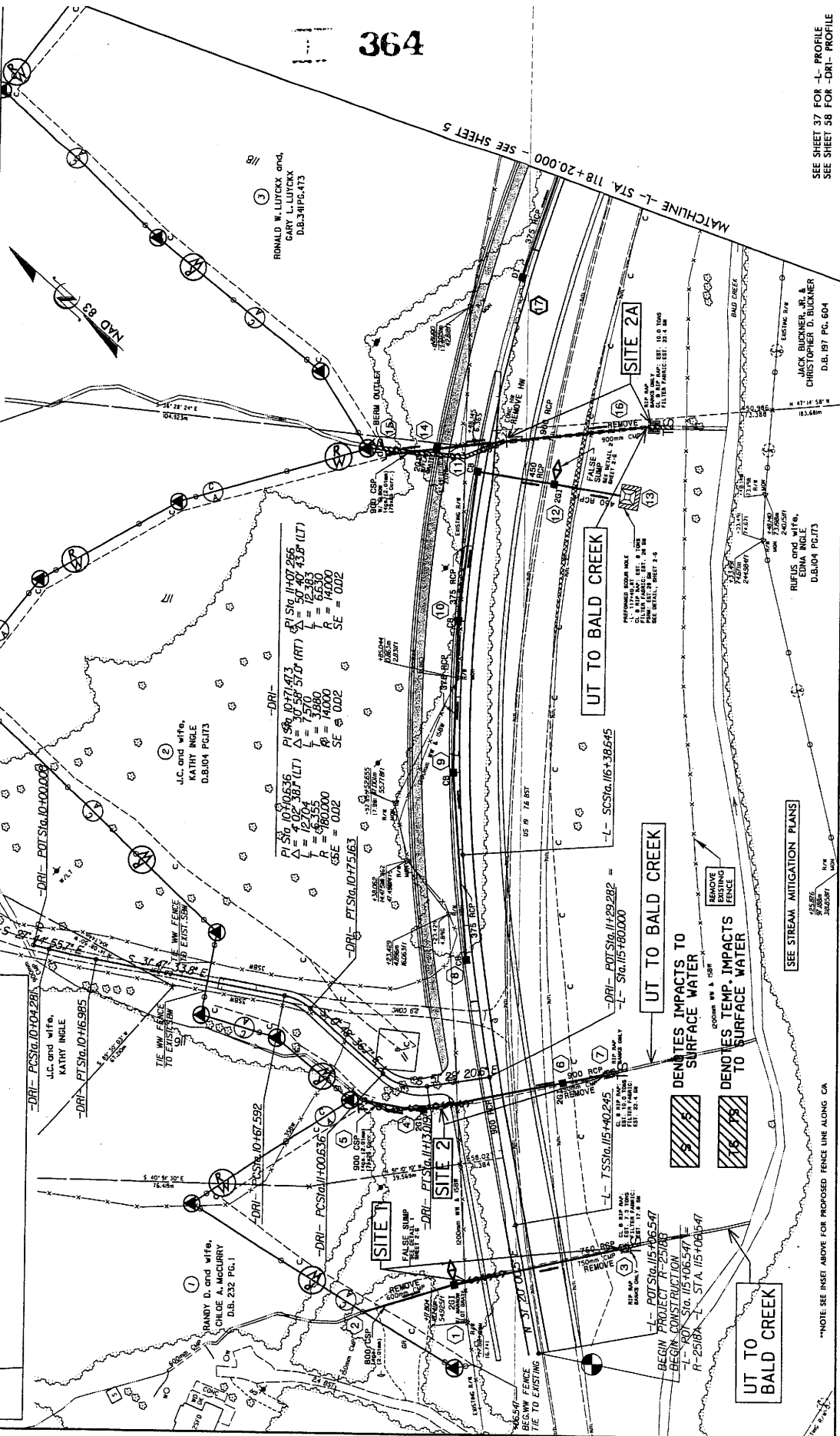
PI S₁ Sta. 116+05.888
 CS = 6.24
 LS = 50.00
 TS = 299.66
 ST = 440.00
 SE = 0.08

PI S₂ Sta. 117+14.73
 CS = 10.56
 LS = 50.40
 TS = 12.38
 ST = 140.00
 SE = 0.02

PI S₃ Sta. 117+47.43
 CS = 10.56
 LS = 50.40
 TS = 12.38
 ST = 140.00
 SE = 0.02

PI S₄ Sta. 118+29.282
 CS = 10.56
 LS = 50.40
 TS = 12.38
 ST = 140.00
 SE = 0.02

PI S₅ Sta. 119+06.547
 CS = 10.56
 LS = 50.40
 TS = 12.38
 ST = 140.00
 SE = 0.02



PROPOSED FENCE LINE INSET

116+54.7
 RTI
 BEGIN CONSTRUCTION
 FENCE ON EXIST. C/A

116+29.282
 RTI
 BEGIN CONSTRUCTION
 FENCE ON EXIST. C/A

117+47.43
 RTI
 BEGIN CONSTRUCTION
 FENCE ON EXIST. C/A

118+29.282
 RTI
 BEGIN CONSTRUCTION
 FENCE ON EXIST. C/A

119+06.547
 RTI
 BEGIN CONSTRUCTION
 FENCE ON EXIST. C/A

116+54.7
 RTI
 BEGIN CONSTRUCTION
 FENCE ON EXIST. C/A

116+29.282
 RTI
 BEGIN CONSTRUCTION
 FENCE ON EXIST. C/A

117+47.43
 RTI
 BEGIN CONSTRUCTION
 FENCE ON EXIST. C/A

118+29.282
 RTI
 BEGIN CONSTRUCTION
 FENCE ON EXIST. C/A

119+06.547
 RTI
 BEGIN CONSTRUCTION
 FENCE ON EXIST. C/A

REVISIONS

SEE SHEET 37 FOR -L- PROFILE
 SEE SHEET 58 FOR -DRI- PROFILE

**NOTE: SEE INSET ABOVE FOR PROPOSED FENCE LINE ALONG CA

06/17/24 11/18

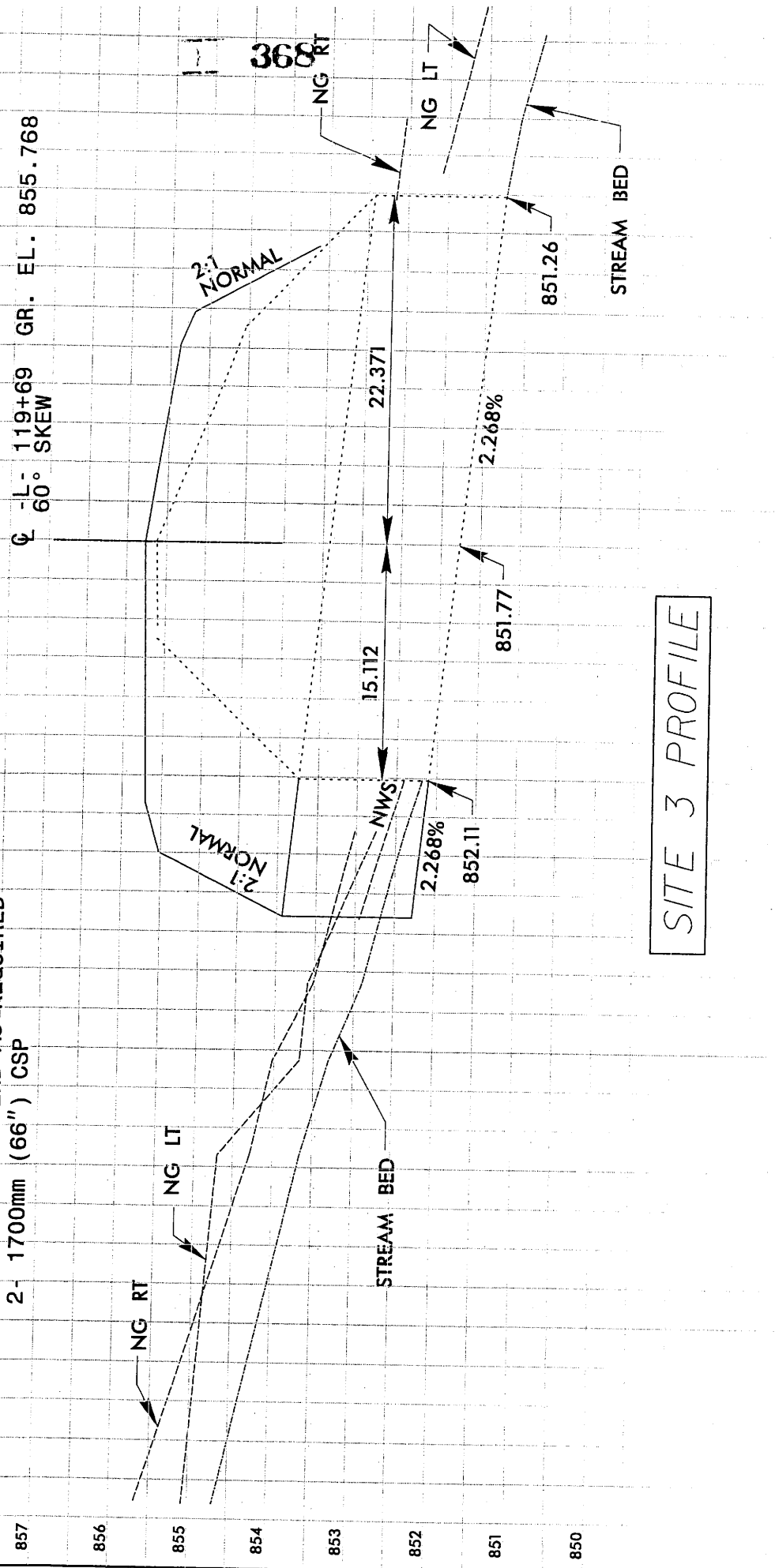


CONST. REV.
R/W REV.

PROJECT REFERENCE NO. 11-23103
ROADWAY DESIGN ENGINEER
SHEET 30

RETAIN AND EXTEND AS REQUIRED
2- 1700mm (66") CSP

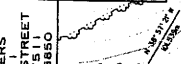
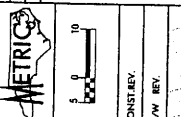
CL -L- 119+69 GR. EL. 855.768
60° SKEW



SITE 3 PROFILE



PROJECT REFERENCE NO. SHEET 6
 R-2509
 R.W. SHEET NO.
 HYDRAULICS ENGINEER
 METRICS
 PRELIMINARY PLANS
 TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH: (919) 319-8650
 TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH: (919) 319-8650
 PRELIMINARY PLANS
 TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH: (919) 319-8650



CONTRIEV
 R.W. REV.

JESSE BUCKNER
 D.B. 54 PG.151

WILLARD SHEPARD
 D.B. 102 PG.227

DONALD BUCKNER
 RACHEL BUCKNER
 D.B. 145 PG.51

JESSE and wife
 D.B. 54 PG.151

BALLAS D. CHANSLER
 D.B. 330 PG.50

UT TO BALD CREEK
 POT Sta 10+100.000
 POS Sta 123+82.481

UT TO BALD CREEK
 POT Sta 10+100.000
 POS Sta 123+82.481

UT TO BALD CREEK
 POT Sta 10+100.000
 POS Sta 123+82.481

UT TO BALD CREEK
 POT Sta 10+100.000
 POS Sta 123+82.481

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 POS Sta 123+82.481

UT TO BALD CREEK
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 POS Sta 123+82.481

UT TO BALD CREEK
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 POS Sta 123+82.481

UT TO BALD CREEK
 POT Sta 10+100.000
 POS Sta 123+82.481

UT TO BALD CREEK
 POT Sta 10+100.000
 POS Sta 123+82.481

UT TO BALD CREEK
 POT Sta 10+100.000
 POS Sta 123+82.481

UT TO BALD CREEK
 POT Sta 10+100.000
 POS Sta 123+82.481

UT TO BALD CREEK
 POT Sta 10+100.000
 POS Sta 123+82.481

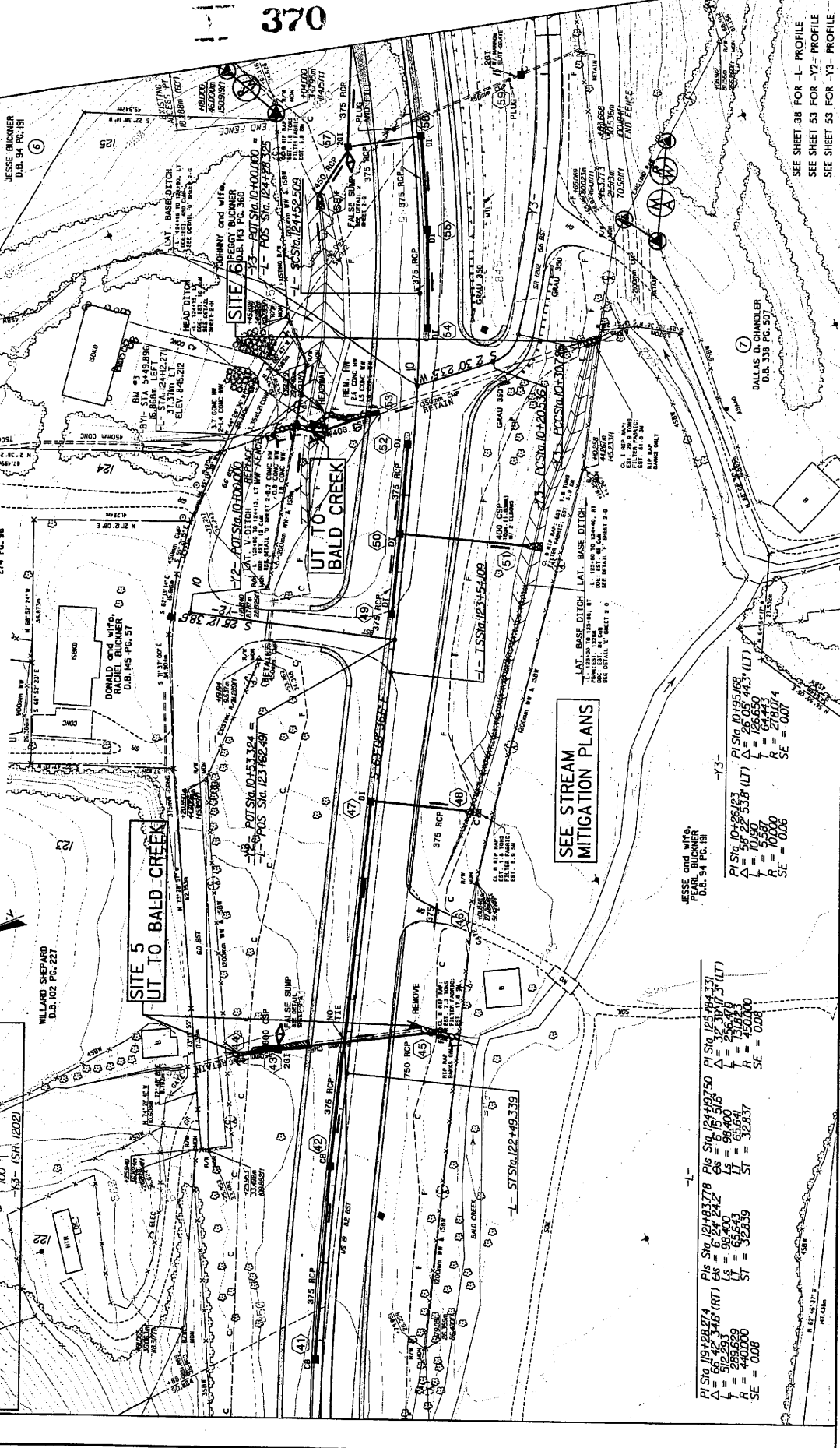
UT TO BALD CREEK
 POT Sta 10+100.000
 POS Sta 123+82.481

UT TO BALD CREEK
 POT Sta 10+100.000
 POS Sta 123+82.481

UT TO BALD CREEK
 POT Sta 10+100.000
 POS Sta 123+82.481

UT TO BALD CREEK
 POT Sta 10+100.000
 POS Sta 123+82.481

UT TO BALD CREEK
 POT Sta 10+100.000
 POS Sta 123+82.481



REVISIONS
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SEE SHEET 38 FOR -1- PROFILE
 SEE SHEET 53 FOR -12- PROFILE
 SEE SHEET 53 FOR -13- PROFILE

SEE SHEET 38 FOR -1- PROFILE
 SEE SHEET 53 FOR -12- PROFILE
 SEE SHEET 53 FOR -13- PROFILE

PROJECT REFERENCE NO. SHEET N
 P-250/B 7
 ROADWAY DESIGN ENGINEER HYDRAULIC ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

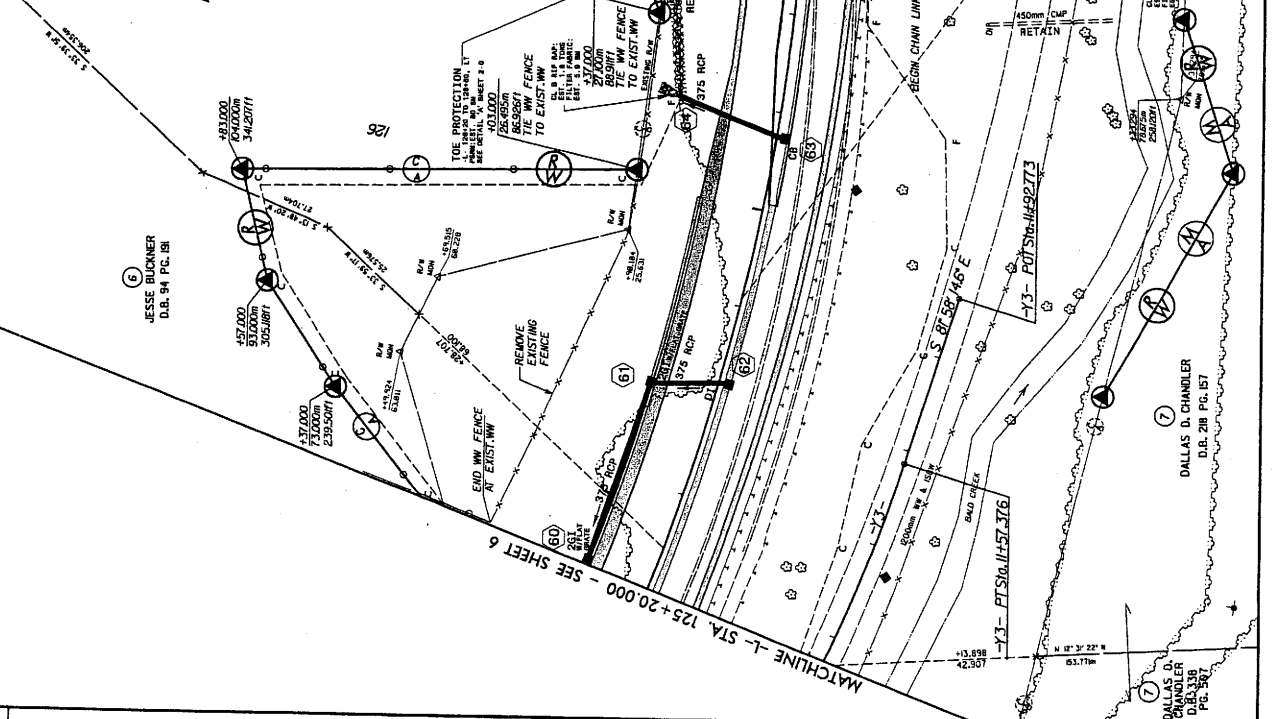
TGS ENGINEERS
 SUITE 141
 975 N. WYOMING STREET
 CARY, NC 27513
 PH (919) 319-8850

CONSTR. BY:
 R. W. REY.
 DENVER E. ORT. WIFE,
 DORIS ELAINE STYLES
 D.B. 45 PG. 351

P/Sig 125+94.331 P/Sig 127+14.916 P/Sig 128+73.031
 C = 266.470 S(LT) C = 89.430 S C = 89.430 S
 L = 73.823 L = 65.641 L = 65.641
 R = 450.000 R = 328.37 R = 328.37
 SE = 0.028 SE = 0.028 SE = 0.028

-Y3-
 P/Sig 125+94.331 P/Sig 127+14.916 P/Sig 128+73.031
 C = 266.470 S(LT) C = 89.430 S C = 89.430 S
 L = 73.823 L = 65.641 L = 65.641
 R = 450.000 R = 328.37 R = 328.37
 SE = 0.028 SE = 0.028 SE = 0.028

SEE STREAM MITIGATION PLANS



REVISIONS
 DATE: MARCH 1, 2006 - PARCELS 2 & 10, REDUCED RW TAKE ON PARCEL 9; ELIMINATED PARCEL 10 - WC PARKER
 DATE: - PARCELS 7 & 9; REVISED 'EXIST MW' FLAGS TO ACTUAL OFFSET DISTANCES.
 DATE: - PARCELS 7 & 9; COMBINED WITH PARCEL 7.
 DATE: - FORMER PARCEL 'BANK' 'CONC' CHANGED TO 'STYLES' - WC PARKER, PE
 DATE: - PARCELS 6 & 8; ADDED EXISTING ACCESS BREAKS IN CA - WC PARKER, PE

MATCHLINE L- STA. 128+60.000 - SEE SHEET 8

PROJECT REFERENCE NO. R-22089
 R/W SHEET NO. 7
 ROADWAY DESIGN ENGINEER
 PRELIMINARY PLANS
 METRICS

TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH (919) 319-8850

TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH (919) 319-8850

L-
 P1 Sta. 125+84.331 P1c Sta. 127+41.816 P1c Sta. 128+73.031
 Δ = 37.59 (7.31 LT) Δ = 6.68 Δ = 6.68
 L = 230.670 L = 99.400 L = 99.400
 R = 450.000 R = 55.574 R = 55.574
 SE = 0.08 SE = 0.08 SE = 0.08

-Y3-
 P1 Sta. 10+95.168 P1c Sta. 127+44.31 (LT)
 Δ = 26.05 Δ = 26.05
 L = 126.530 L = 126.530
 R = 278.074 R = 278.074
 SE = 0.07 SE = 0.07

SEE STREAM MITIGATION PLANS

DENVER E. and wife,
 DORIS ELAINE STYLES
 D.B. 145 PG. 351

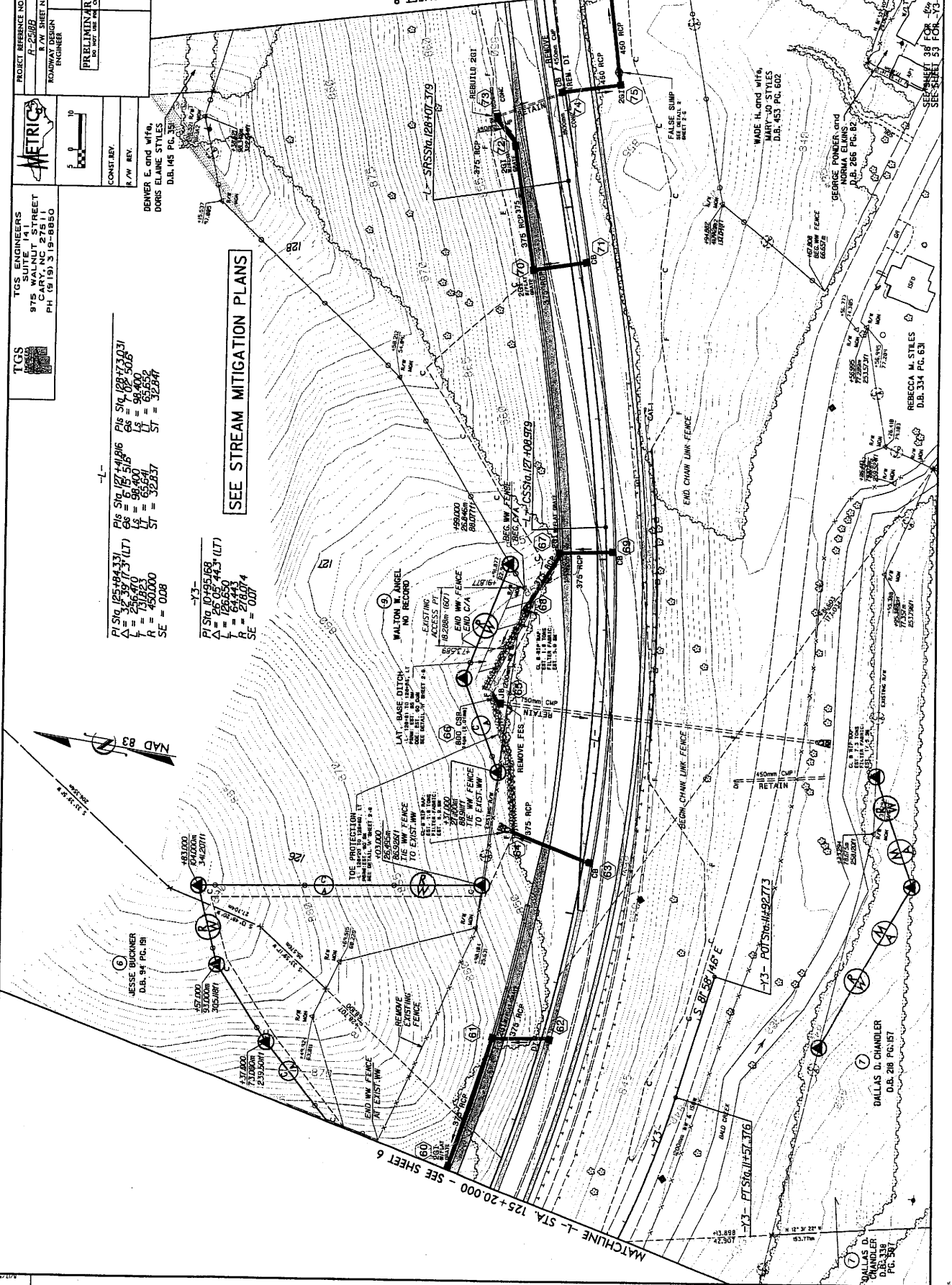
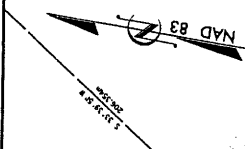
WADE H. and wife,
 MARY-LO STYLES
 D.B. 453 PG. 602

GEORGE POWELL and
 MARY-LO STYLES
 D.B. 266 PG. 82

REBECCA M. STILES
 D.B. 314 PG. 631

DALLAS D. CHANDLER
 D.B. 218 PG. 157

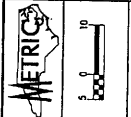
DALLAS D. CHANDLER
 D.B. 316 PG. 381



MATCHLINE L- STA. 125+20.000 - SEE SHEET 6

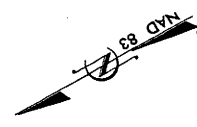
DATE: MARCH, 2006 - PARCELS 6 & 7, REDUCED EXISTING RW TAKE ON PARCELS 9 & 10, ELIMINATED PARCEL 10 - WC PARKER
 REVISIONS
 DATE: MARCH, 2006 - PARCELS 6 & 7, REDUCED EXISTING RW TAKE ON PARCELS 9 & 10, ELIMINATED PARCEL 10 - WC PARKER
 DATE: MARCH, 2006 - PARCELS 6 & 7, REDUCED EXISTING RW TAKE ON PARCELS 9 & 10, ELIMINATED PARCEL 10 - WC PARKER

PROJECT REFERENCE NO. R-2508
 SHEET 9
 R/W SHEET NO. 9
 ROADSIDE WORK ENGINEER
 HYDRAULIC ENGINEER
 PRELIMINARY PLANS
 FOR THE PROPOSED CONSTRUCTION



TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH. (919) 319-8850

CONST. REV.
 8 P.M. REV.

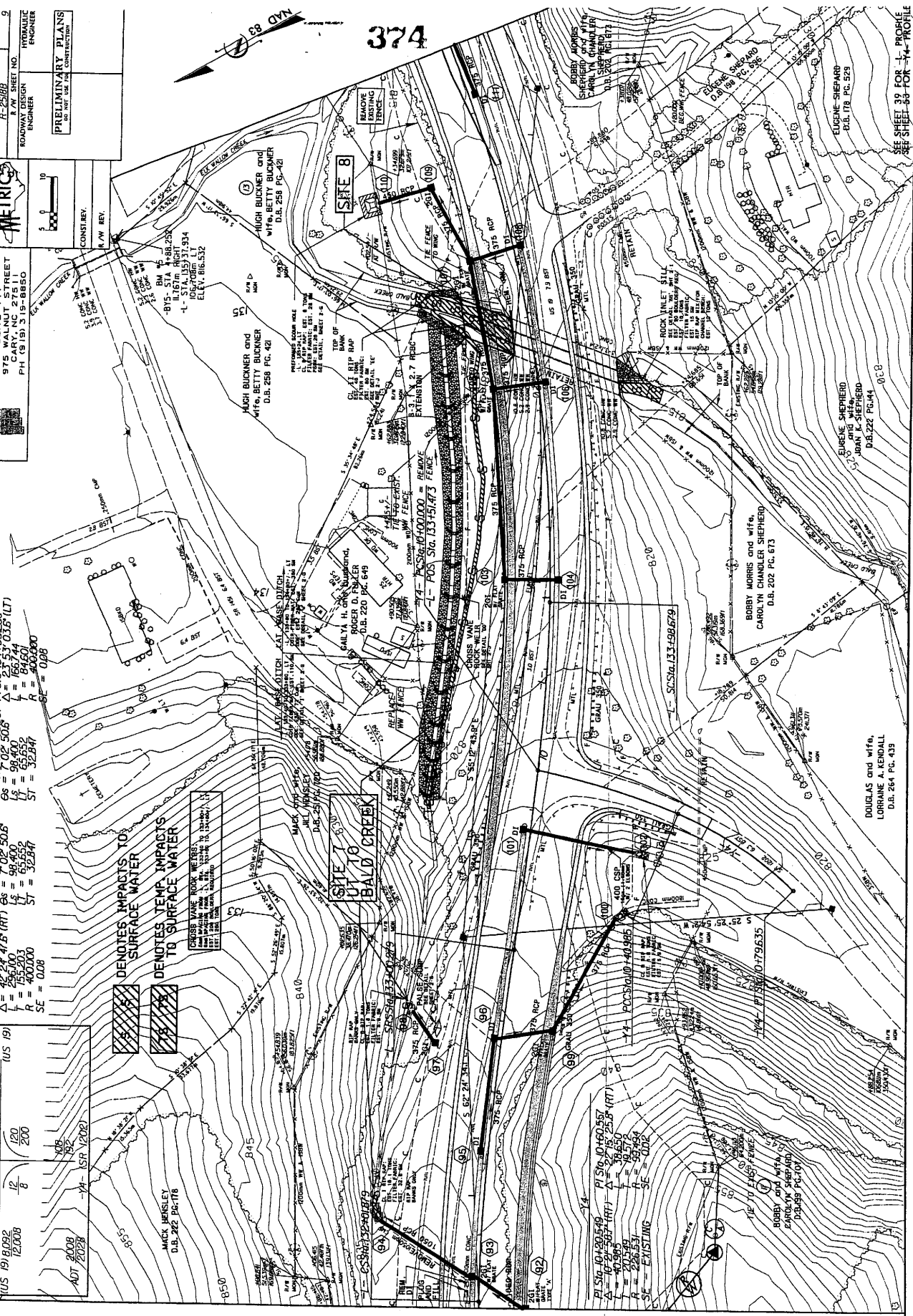


374

PI STA 130+60.982 PI STA 132+34.226
 $\Delta = 22.4715$ (RT) $\Delta = 7.02506$
 $L = 56.00$ $L = 98.00$
 $R = 400.00$ $R = 505.52$
 $P = 0.00$ $P = 0.00$
 $SE = 0.08$ $SE = 0.08$

8.200
 12.200
 12.008
 120
 200
 12
 8
 100
 150
 200
 2028
 ADT
 2008

DENOTES IMPACTS TO SURFACE WATER
 DENOTES TEMP IMPACTS TO SURFACE WATER



SEE SHEET 39 FOR L-PROFILE
 SEE SHEET 85 FOR L-PROFILE
 11/15/08

REVISIONS

| | | |
|----------------------------|---|--------------------------|
| | PROJECT REFERENCE NO. | SHEET NO. |
| | PROJECT DESIGN ENGINEER PROJECT ENGINEER | PROJECT NO. SHEET NO. |
| CONST. REV. P.A.W. REV. | DATE | |

-L- 134+72 GR. EL 819.935
 120° SKEW

2:1 NORMAL

RETAIN AND EXTEND AS REQUIRED W/
 3 - 3.1m x 2.7m (10'x9') RCBC

2:1 NORMAL

NG LT
 NG RT

NG RT

NG LT

EXIST. 3-3.1x2.4

3-3.1x2.7

31.597

0.935%

2.80%

813.98

813.92

813.62

BACKFILL CULVERT EXTENSION
 W/BED MATERIAL

NWS

814.21

STREAM BED

STREAM BED

SITE 8 PROFILE

820

819

818

817

816

815

814

813

812

-50

-40

-30

-20

-10

0

10

20

30

40

375

PROJECT REFERENCE NO. SHEET / 10
 R/W SHEET NO. HYDRAULIC ENGINEER
 R/W DESIGN ENGINEER
 PRELIMINARY PLANS
 (FOR CONSTRUCTION)

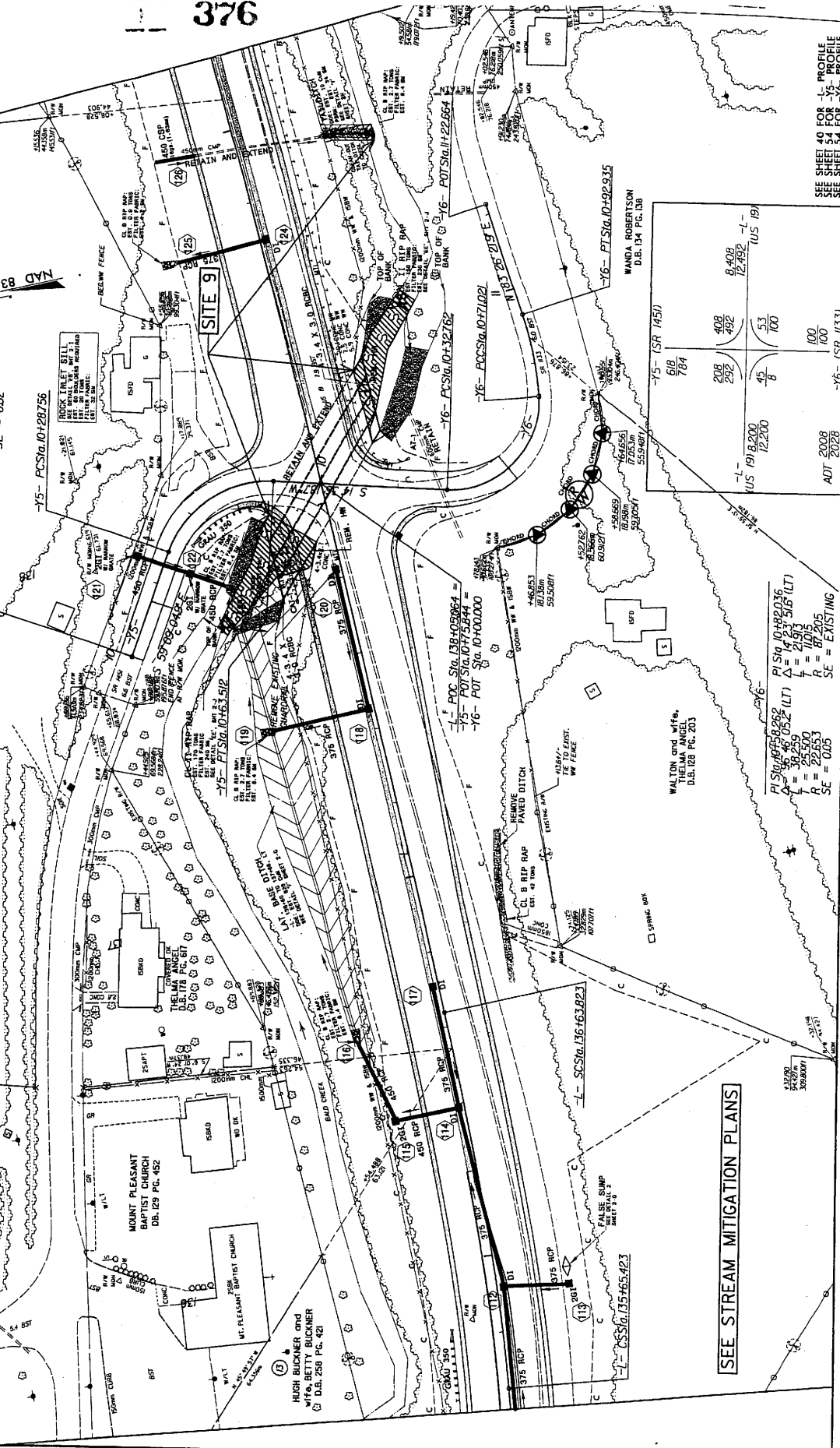
METRIC
 CONSTRY. REV.
 R/W REV.

TGS ENGINEERS
 SUITE 200
 975 WALNUT STREET
 CARY, NC 27511
 PH (919) 319-8950

Denotes Impacts to Surface Water
Impacts to Surface Waters

Denotes Temporary Impacts to Surface Waters

Denotes Stream Mitigation Plans



| | | | | |
|-----|----------|--------|--------|-----|
| -L- | 1918.200 | 12.200 | 4.53 | 100 |
| US | 1918.200 | 12.200 | 4.53 | 100 |
| -L- | 408 | 492 | 8.408 | 100 |
| US | 408 | 492 | 8.408 | 100 |
| -L- | 53 | 100 | 12.492 | 100 |
| US | 53 | 100 | 12.492 | 100 |
| -L- | 100 | 100 | 12.492 | 100 |
| US | 100 | 100 | 12.492 | 100 |

POT Sta. 10+00.000
 $\Delta = 4.53$
 $L = 20.256$
 $R = 27.000$
 $SE = 0.02$

POT Sta. 10+20.000
 $\Delta = 4.53$
 $L = 20.256$
 $R = 27.000$
 $SE = 0.02$

POT Sta. 10+40.000
 $\Delta = 4.53$
 $L = 20.256$
 $R = 27.000$
 $SE = 0.02$

POT Sta. 10+60.000
 $\Delta = 4.53$
 $L = 20.256$
 $R = 27.000$
 $SE = 0.02$

POT Sta. 10+80.000
 $\Delta = 4.53$
 $L = 20.256$
 $R = 27.000$
 $SE = 0.02$

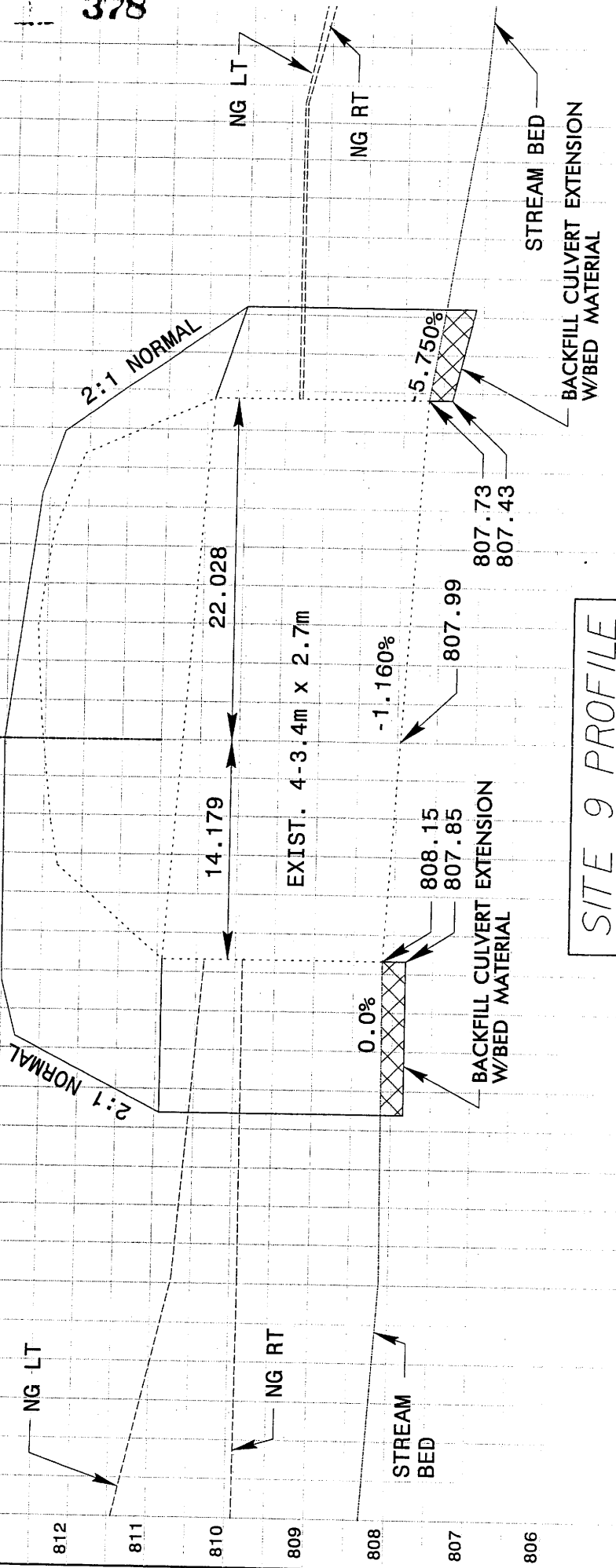
DATE: _____ - EXISTING SURVEYS UPDATED.

SEE SHEET 40 FOR L-PROFILE
 SEE SHEET 41 FOR L-PROFILE
 SEE SHEET 54 FOR L-PROFILE
 SEE SHEET 55 FOR L-PROFILE

| | | |
|--------------------------|---------------------------------------|-------------------------------|
| | PROJECT REFERENCE NO. | SHEET NO. |
| | R-25102 ROADWAY DESIGN ENGINEER | 378 HYDRAULICS ENGINEER |
| CONSTY. REV. R/W REV. | | |

RETAIN AND EXTEND AS REQUIRED W/
4- 3.4m x 3.0m (11'x10') RCBC

CL -L- 138+05 GR. EL 813.019
45° SKEW



SEE SHEET 40 FOR -L- PROFILE

PROJECT REFERENCE NO. R-25568
 SHEET NO. II
 ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER
 PRELIMINARY PLANS
 FOR THE USE OF CONTRACTOR

TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH (919) 319-8850

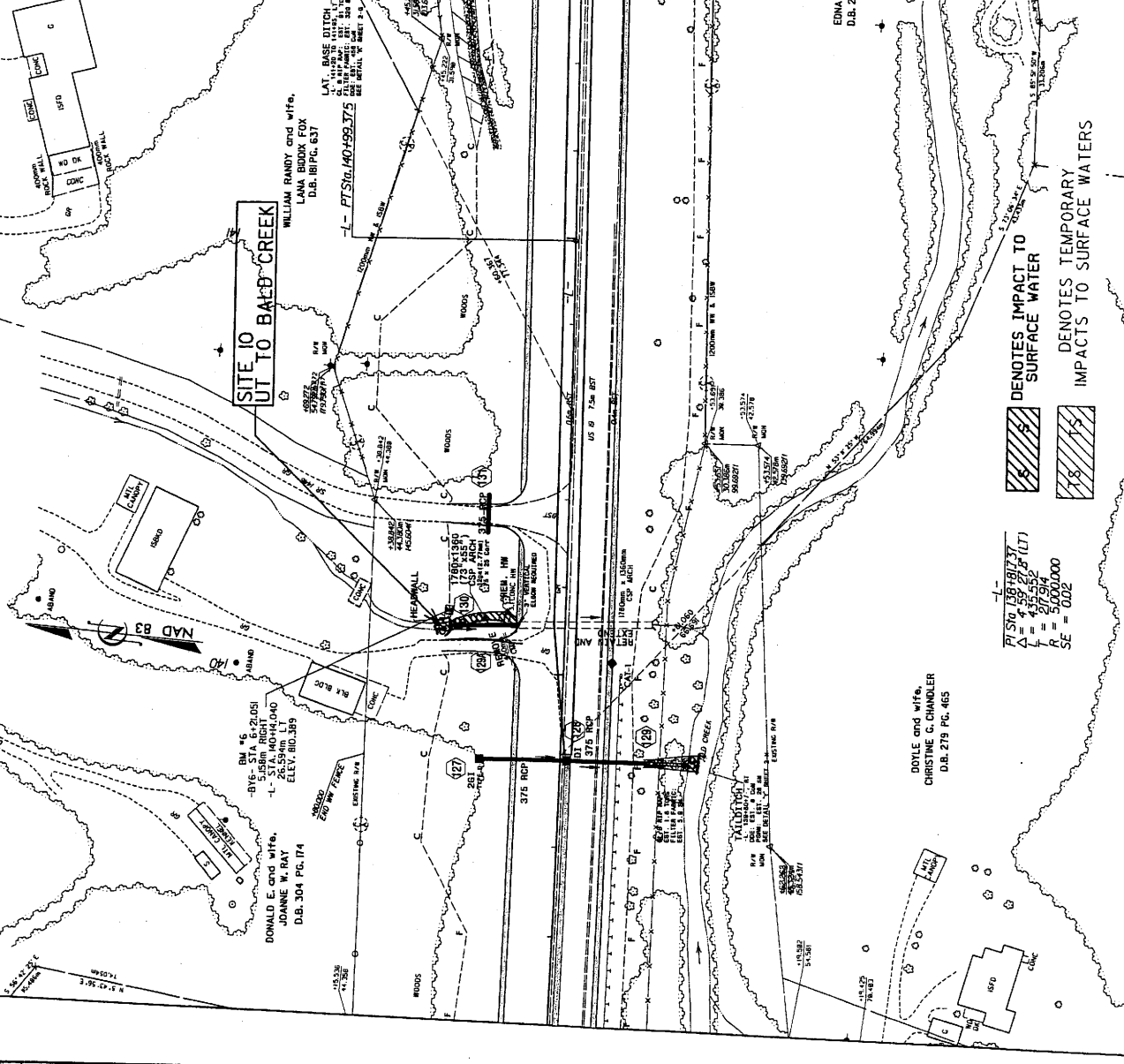
CONTR. REV.
 P. W. REV.

EDNA P. JARVIS
 D.B. 255 PG. 396

WILLIAM RANDY and wife,
 LANA BROOK and wife,
 D.B. 81 PG. 637

DONALD E. and wife,
 JOANNE M. RAY,
 D.B. 304 PG. 174

EDNA P. JARVIS
 D.B. 255 PG. 396



DOYLE and wife,
 CHRISTINE G. CHANDLER
 D.B. 279 PG. 465

$A/S = 139.9137$
 $L = 435.526(LT)$
 $T = 27.914$
 $R = 5,000,000$
 $SE = 0.02$

DENOTES IMPACT TO SURFACE WATER
 DENOTES TEMPORARY IMPACTS TO SURFACE WATERS

REVISIONS

| | |
|-------|---|
| DATE: | EXISTING SURVEYS UPDATED; WC PARKER, PE |
| DATE: | PARCEL 14; REVERSED EXIST HW FLAG TO ACTUAL OFFSET DISTANCE; CORRECTED OFFSET - WC PARKER, PE |

PROJECT REFERENCE NO. R-2108
 R/W SHEET NO. HYDRAULIC ENGINEER
 ROADWAY DESIGN ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH (919) 319-8850

EDNA P. JARVIS
 D.B. 255 PG. 356

WILLIAM RANDY and wife,
 LANA BUDNIK FOX
 D.B. 187 PG. 817

DOYLE and wife,
 CHRISTINE G. CHANDLER
 D.B. 279 PG. 465

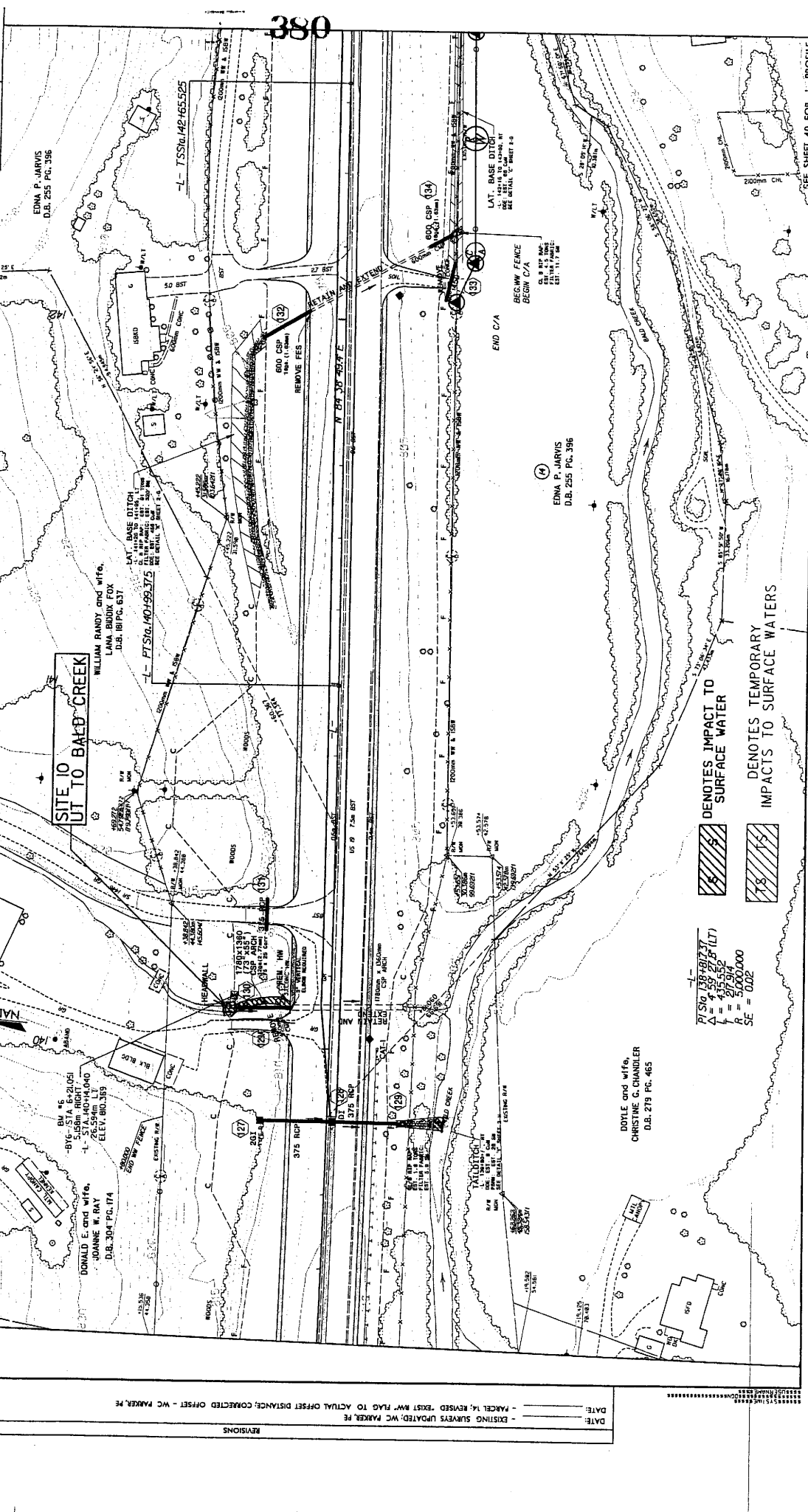
EDNA P. JARVIS
 D.B. 255 PG. 356

DOYLE and wife,
 CHRISTINE G. CHANDLER
 D.B. 279 PG. 465

DOYLE and wife,
 CHRISTINE G. CHANDLER
 D.B. 279 PG. 465

DOYLE and wife,
 CHRISTINE G. CHANDLER
 D.B. 279 PG. 465

DOYLE and wife,
 CHRISTINE G. CHANDLER
 D.B. 279 PG. 465



SITE 10
 UT TO BARD CREEK

PI Sta 138+91.27
 $\Delta = 4.35$
 $L = 217.917$
 $R = 5,000.000$
 $SE = 0.02$

Denotes Impact to Surface Water

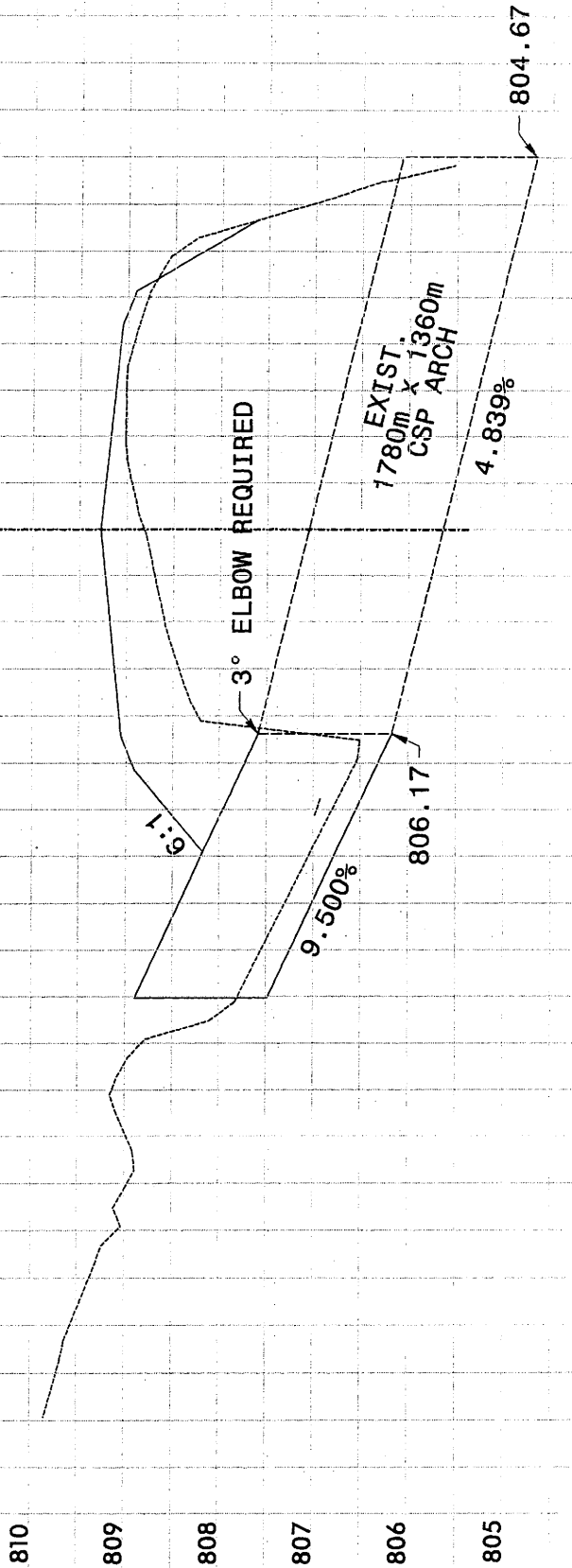
Denotes Temporary Impacts to Surface Waters

SEE SHEET 40 FOR -L- PROFILE

DATE: _____
 DATE: _____
 - EXISTING SURVEYS UPDATED, WC PARKER, PE
 - PARCEL 14, REVISED 'EXIST' RW FLAG TO ACTUAL OFFSET DISTANCE, CORRECTED OFFSET - WC PARKER, PE

RETAIN AND EXTEND AS REQUIRED W/ 3° VERTICAL ELBOW
 1780mm x 1360 mm (73"x55") CSP ARCH
 #12 GA. 76.2mm x 25.4mm (3"x1") CORR.
 WITH HEADWALL ON INLET END

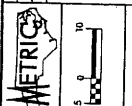
CL -L- 140+11 GR. EL. 809.277
 90° SKEW



SITE 10 PROFILE



PROJECT REFERENCE NO. SHEET 12
 TGS ENGINEERS SUITE 141 FREET CARY, NC 27511 HYDRAULIC ENGINEER
 PH (919) 319-8850
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



TGS ENGINEERS SUITE 141 FREET CARY, NC 27511 PH (919) 319-8850
 HENRY CLAY TURNER III and wife, ELIZABETH M. TURNER P.C. 218
 DOUGLAS F. and wife, DORIS E. SWANN D.B. 255 P.C. 325
 RITA FOX BRIGGS, BRENDA FOX EDWARDS, JANET FOX KIRK, WILLIAM RANDY FOX D.B. 240 P.C. 187

ADT 2008 2008 2008
 -17- (SR 1394)
 208 232
 100 100
 8.4% (25.6%) (US 19)
 100 100
 DENOTES IMPACT TO SURFACE WATER

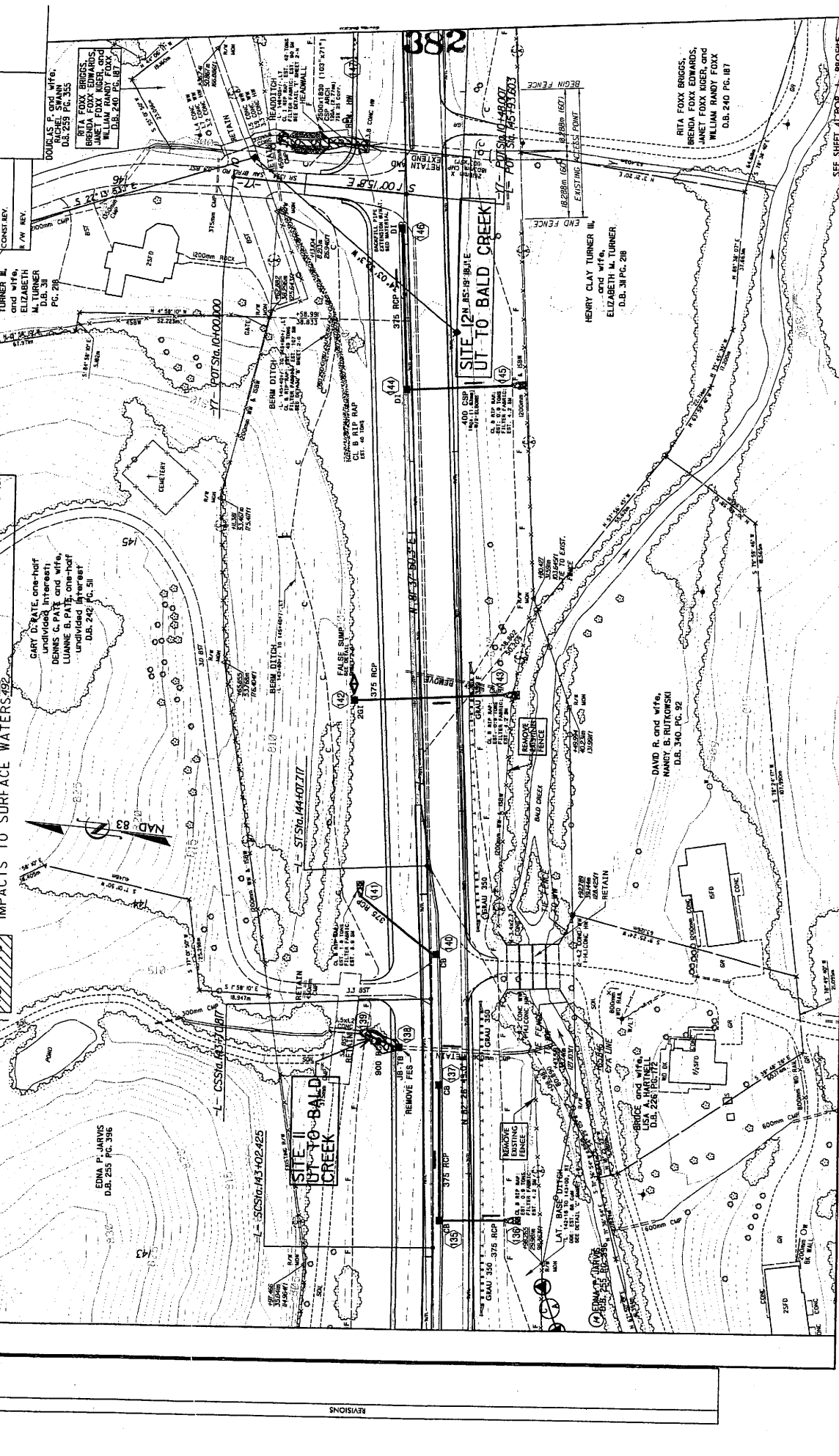
ADT 2008 2008 2008
 DENOTES IMPACT TO SURFACE WATERS
 DENOTES IMPACT TO SURFACE WATER

PIS STA 142+90.05 PIS STA 143+36.25
 CS = 0.4825 Δ = 1.5733 (10') GS = 0.4825
 LS = 36.900 L = 68.392 LT = 24500
 P = 2.033000 ST = 12.500
 SE = 0.03

EDNA P. JARVIS D.B. 255 P.C. 396
 BRUCE and wife, LISA A. HARTWELL D.B. 228 P.C. 177
 DAVID R. and wife, NANCY S. RUTKOWSKI D.B. 340 P.C. 92
 HENRY CLAY TURNER III and wife, ELIZABETH M. TURNER D.B. 318 P.C. 218
 RITA FOX BRIGGS, BRENDA FOX EDWARDS, JANET FOX KIRK, WILLIAM RANDY FOX D.B. 240 P.C. 187

SEE SHEET 11 FOR PROFILE
 SEE SHEET 54 FOR PROFILE

REVISIONS

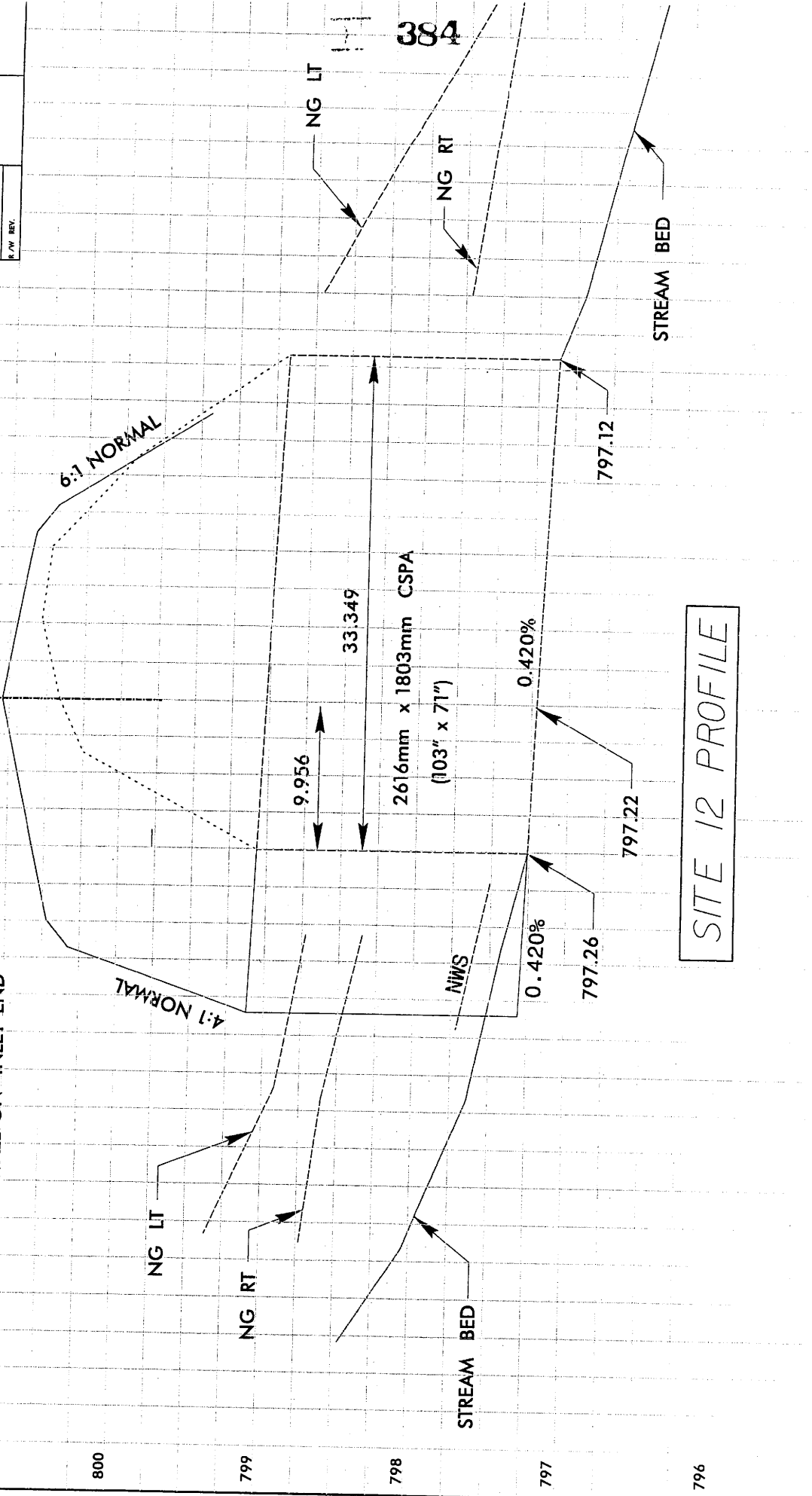


SEE SHEET 11 FOR PROFILE
 SEE SHEET 54 FOR PROFILE

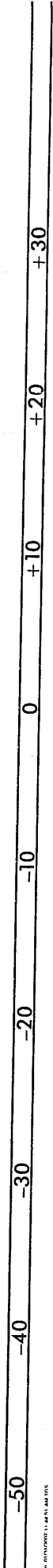
REVISIONS

-L-146+06 GR. EL. = 800.795
 97° SKEW

RETAIN AND EXTEND AS REQUIRED.
 2616mm x 1803mm CSP ARCH (103"x71")
 #12 GA. 76.2mm x 25.4mm CORR. (3" x 1")
 WITH HEADWALL ON INLET END



SITE 12 PROFILE



PROJECT REFERENCE NO. **F-25182** SHEET N
14
 ROUSSEAU J. FENDER
 ENGINEER
 THERMADILUX
 ENGINEER

TGS
 TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH (919) 319-8850

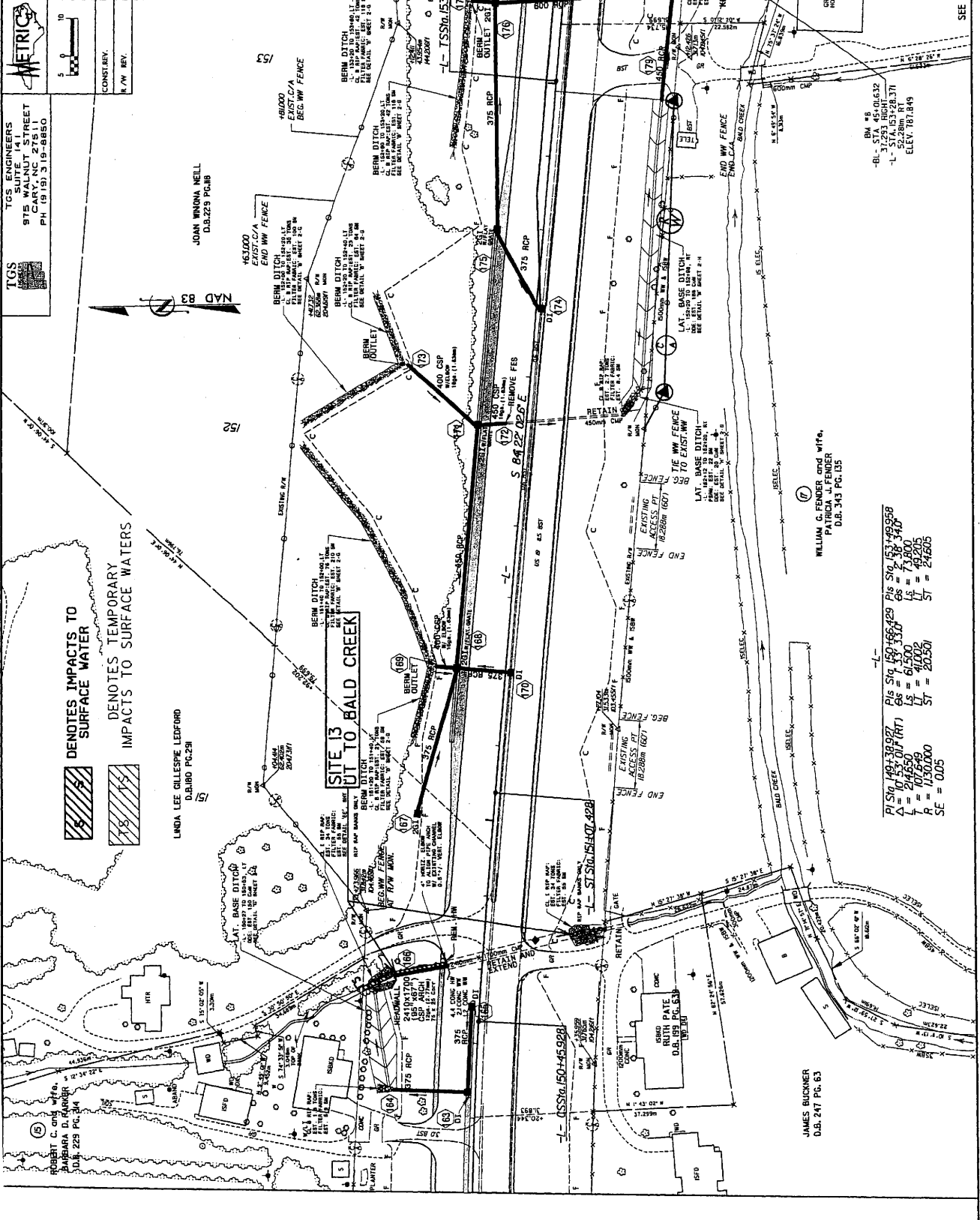
METRICS

CONST. BY
 R.W. BRY.

PROBATIONARY PLANS
 FOR THE STATE OF NORTH CAROLINA

DENOTES IMPACTS TO SURFACE WATER

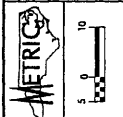
DENOTES TEMPORARY IMPACTS TO SURFACE WATERS



SEE SHEET 42 FOR -L- PROFILE

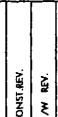
PL STA 149+38.927 Plus Sta 150+56.429 Plus Sta 153+99.959
 $\Delta = 10' 53" 01" (RT)$ $\phi S = 7' 33" 33" 01"$ $\phi S = 2' 38" 34" 01"$
 $L = 214.650$ $L_1 = 61.500$ $L_2 = 73.800$
 $P = 104.079$ $P_1 = 40.026$ $P_2 = 42.605$
 $ST = 205.561$ $ST_1 = 24.605$
 $SE = 10.05$

PROJECT REFERENCE NO. SHEET NO.
 R/W SHEET NO. 14
 R/W SHEET NO. 14
 HYDRAULICS ENGINEER
 ROADWAY DESIGN ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 CLEVELAND, OH 44115
 PH: (216) 319-8800

TGS
 CONSULTING
 R/W REV.



CONST. REV.
 R/W REV.

JOAN WHONA NELL
 D.B. 229 PG. 18

WILLIAM G. FENDER and wife,
 PATRICIA J. FENDER
 D.B. 343 PG. 135

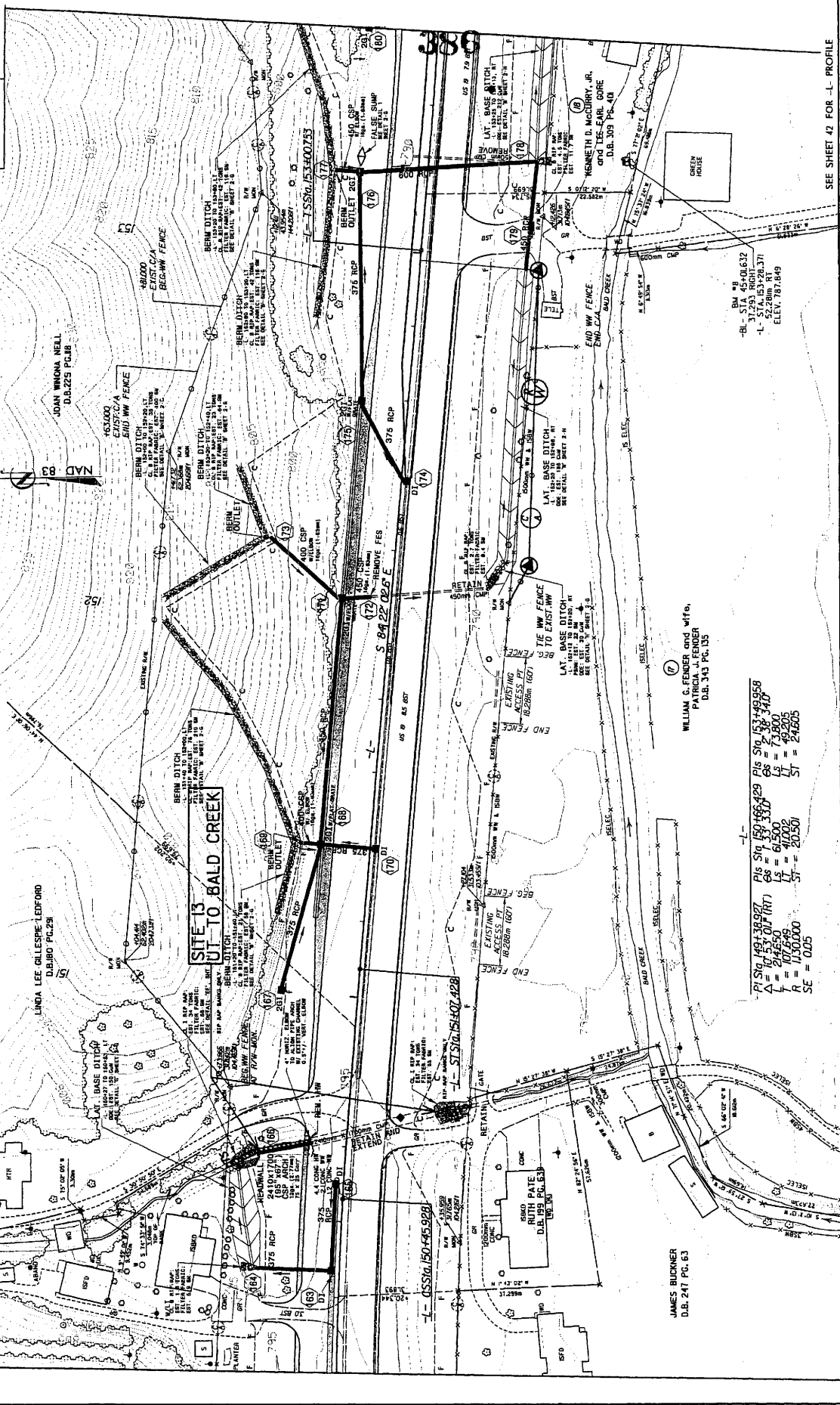
JAMES BUCKNER
 D.B. 247 PG. 63

ROBERT C. and wife,
 BARBARA G. PARKER
 D.B. 229 PG. 24

LINDA LEE GILLESPIE-LEDFORD
 D.B. 402 PG. 25

KENNETH D. MCCURRY, JR.
 and LES-LEAR GORE
 D.B. 309 PG. 40

PI STA 150+45.927
 PI STA 150+66.429
 PI STA 153+49.958
 Δ = 10.5701 (RT)
 T = 47.596
 L = 410.00
 R = 1130.000
 SE = 0.05



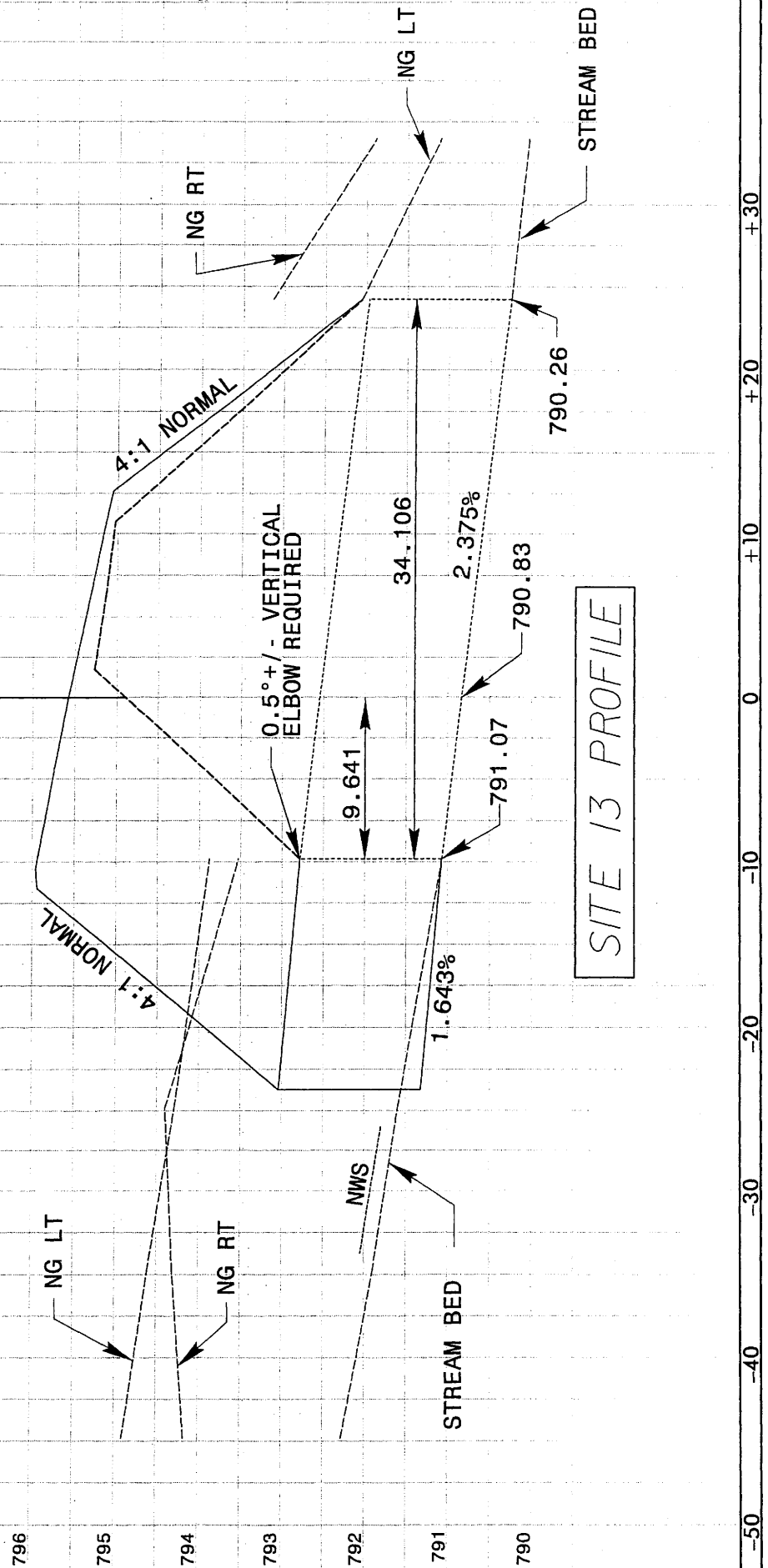
DATE: MARCH, 2006 - PARCEL 16: ELIMINATED PARCEL 16 - WC PARKER, PE
 DATE: _____ - PARCEL 15 & 17: REVISED 'EXIST' MW FLAGS TO ACTUAL OFFSET DISTANCES - WC PARKER, PE
 DATE: _____ - PARCEL 17: ADDED EXISTING ACCESS BREAKS IN CA - WC PARKER, PE

REVISIONS

SEE SHEET 42 FOR -L- PROFILE

RETAIN AND EXTEND AS REQUIRED
 2400mm x 1700mm CSP ARCH (95"x67")
 #12 GA. 76.2mm x 25.4mm CORR. (3"x1")
 WITH HEADWALL ON INLET END

C - L- 150+63 GR. EL. = 795.579
 72° SKEW



SITE 13 PROFILE

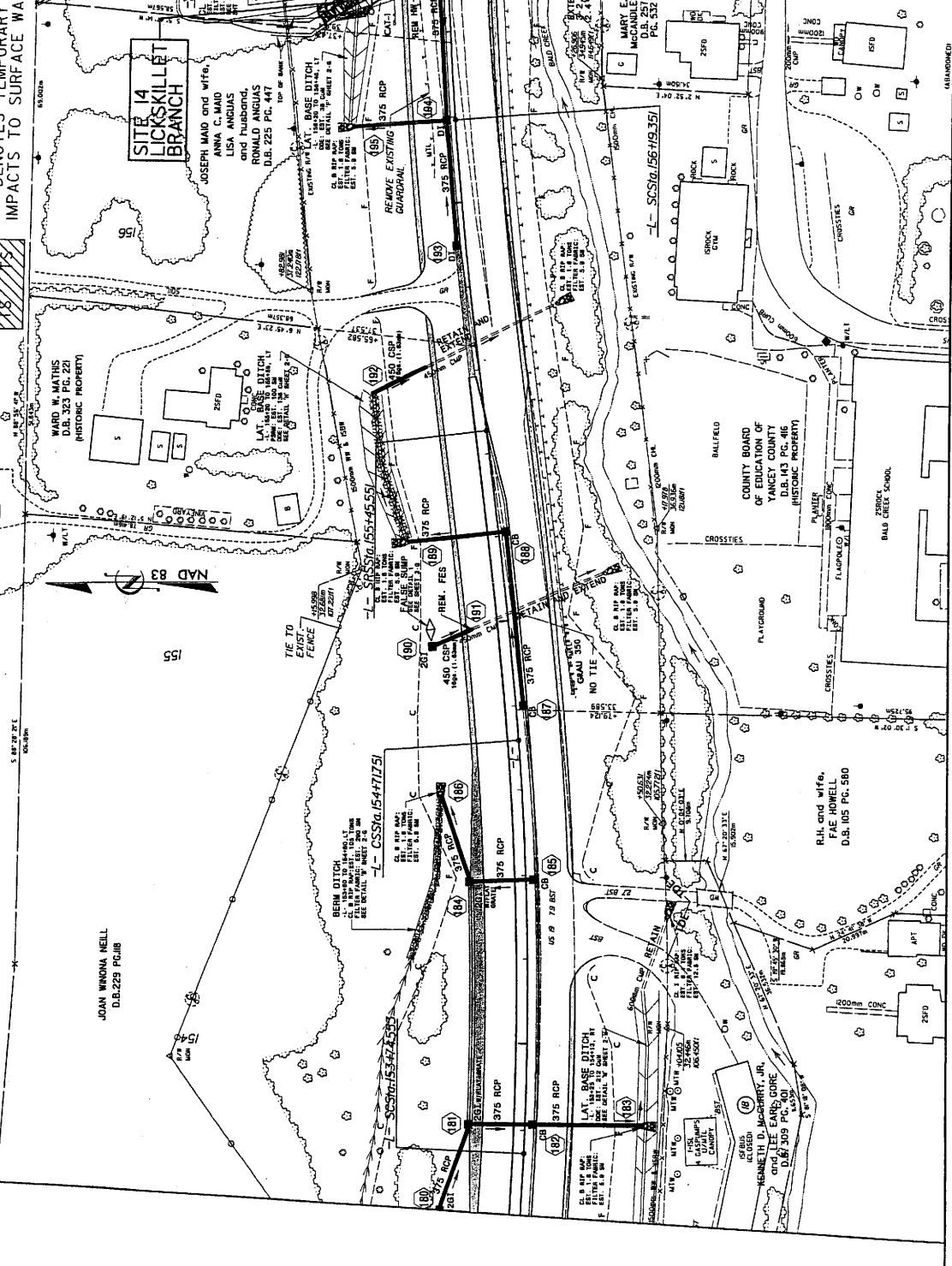
PROJECT REFERENCE NO. SHEET NO.
 R-22488 R.V. SHEET NO. 15
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



TGS ENGINEERS
 SUITE 141
 975 ALAMOUNT STREET
 CAROLINA, NC 27613
 PH: (919) 319-8850

CONST. BY
 DENOTES IMPACTS TO SURFACE WATER
 DENOTES TEMPORARY IMPACTS TO SURFACE WATERS

Pls Sta. 153+49.958 Pls Sta. 154+23.212 Pls Sta. 154+96.356 Pls Sta. 155+94.756
 CS = 7.38 340' CS = 6.59 405' (LT) CS = 7.38 340' CS = 7.38 340'
 L = 49.205 L = 49.205 L = 49.205 L = 49.205
 R = 24605 R = 24605 R = 24605 R = 24605
 ST = 0.06 ST = 0.06 ST = 0.06 ST = 0.06



DATE: MARCH, 2006 - PARCEL 16, ELIMINATED PARCEL 16 - WC PARKER
 DATE: MARCH, 2006 - PARCEL 16, REVISED EXIST RW FLAGS TO ACTUAL OFFSET DISTANCES - WC PARKER, PE
 REVISIONS

SEE SHEET 42 FOR I-PROFILE

METRIC

PROJECT REFERENCE NO. **390**

ROADWAY DESIGN ENGINEER

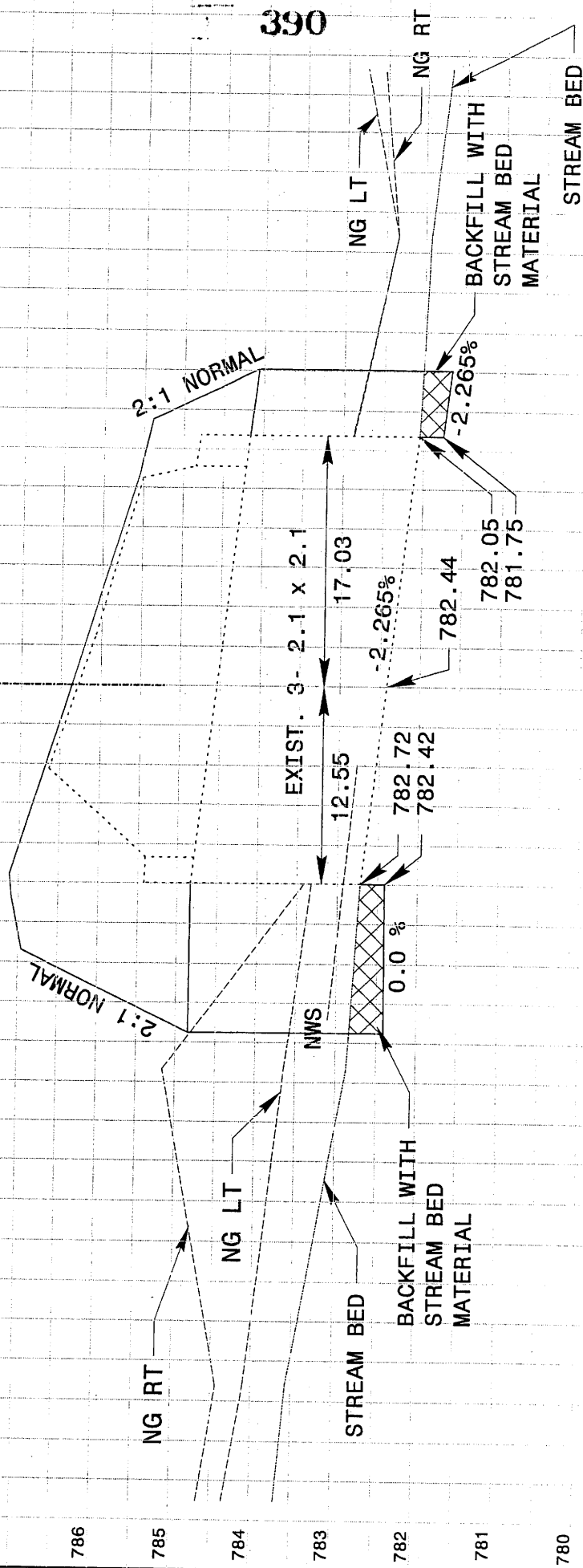
HYDRAULICS ENGINEER

CONST. REV.

R/W REV.

RETAIN AND EXTEND AS REQUIRED W/
3- 2.1m x 2.4m (7ft x 8ft) RCBC

L- 156+63 GR. EL 786.359
EXISTING 3 - 2.1m x 2.1m (7ft x 7ft) RCBC
56° SKEW



SITE 14 PROFILE

390

786

785

784

783

782

781

780

-50

-40

-30

-20

-10

0

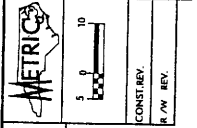
10

20

30

40

PROJECT REFERENCE NO. R-2708
 R/W SHEET NO. 16
 METRICS
 TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH. (919) 319-8850



PRELIMINARY PLANS
 FOR THE PROPOSED CONSTRUCTION

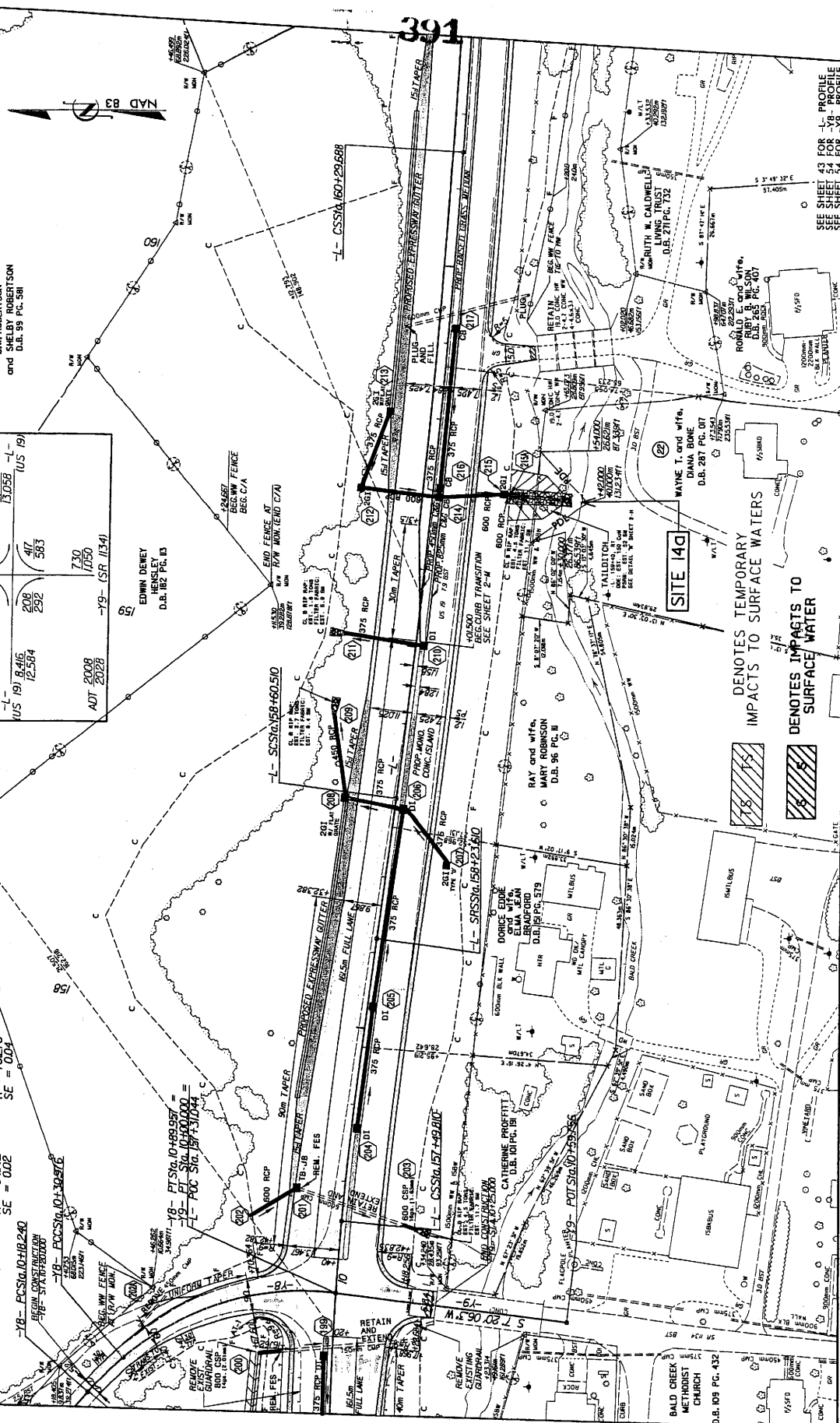
JAMES W. PROFFITT
 and J. YATES BAILEY
 D.B. 103 P.C. 617

PI STA. 156+184.725
 PI STA. 157+141.415
 PI STA. 158+499.290
 PI STA. 159+453.029
 CH = 100.00
 LS = 73.800
 LT = 49.205
 T = 65.375
 R = 600.000
 SE = 0.006

PI STA. 157+141.415
 PI STA. 158+499.290
 PI STA. 159+453.029
 CH = 100.00
 LS = 73.800
 LT = 49.205
 T = 65.375
 R = 600.000
 SE = 0.006

PI STA. 158+499.290
 PI STA. 159+453.029
 CH = 100.00
 LS = 73.800
 LT = 49.205
 T = 65.375
 R = 600.000
 SE = 0.006

PI STA. 159+453.029
 PI STA. 160+100.000
 CH = 100.00
 LS = 73.800
 LT = 49.205
 T = 65.375
 R = 600.000
 SE = 0.006



REVISIONS

SEE SHEET 43 FOR S-1 PROFILE
 SEE SHEET 34 FOR S-2 PROFILE
 SEE SHEET 34 FOR S-3 PROFILE

WAYNE I. and wife
 DIANA BONE
 D.B. 287 P.C. 017
 223.53M

ROSEMARY M. CALDWELL
 and RICHARD L. CALDWELL
 D.B. 103 P.C. 152

RAY and wife
 MARIANNE
 D.B. 96 P.C. 118

BRADFORD
 D.B. 103 P.C. 519

CATHERINE PROFFITT
 D.B. 103 P.C. 118

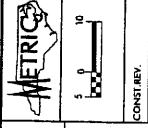
BALD CREEK
 METHODIST
 CHURCH
 D.B. 108 P.C. 432

REMOVE
 GUARDRAIL
 800 CSP
 104' x 12' MIN.

REMOVE
 GUARDRAIL
 800 CSP
 104' x 12' MIN.

REMOVE
 GUARDRAIL
 800 CSP
 104' x 12' MIN.

PROJECT REFERENCE NO. R-2988
 SHEET NO. 16
 TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH. (919) 319-8880



S.M. ROBERTSON and D.B. BAILEY
 REGISTERED PROFESSIONAL ENGINEERS
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

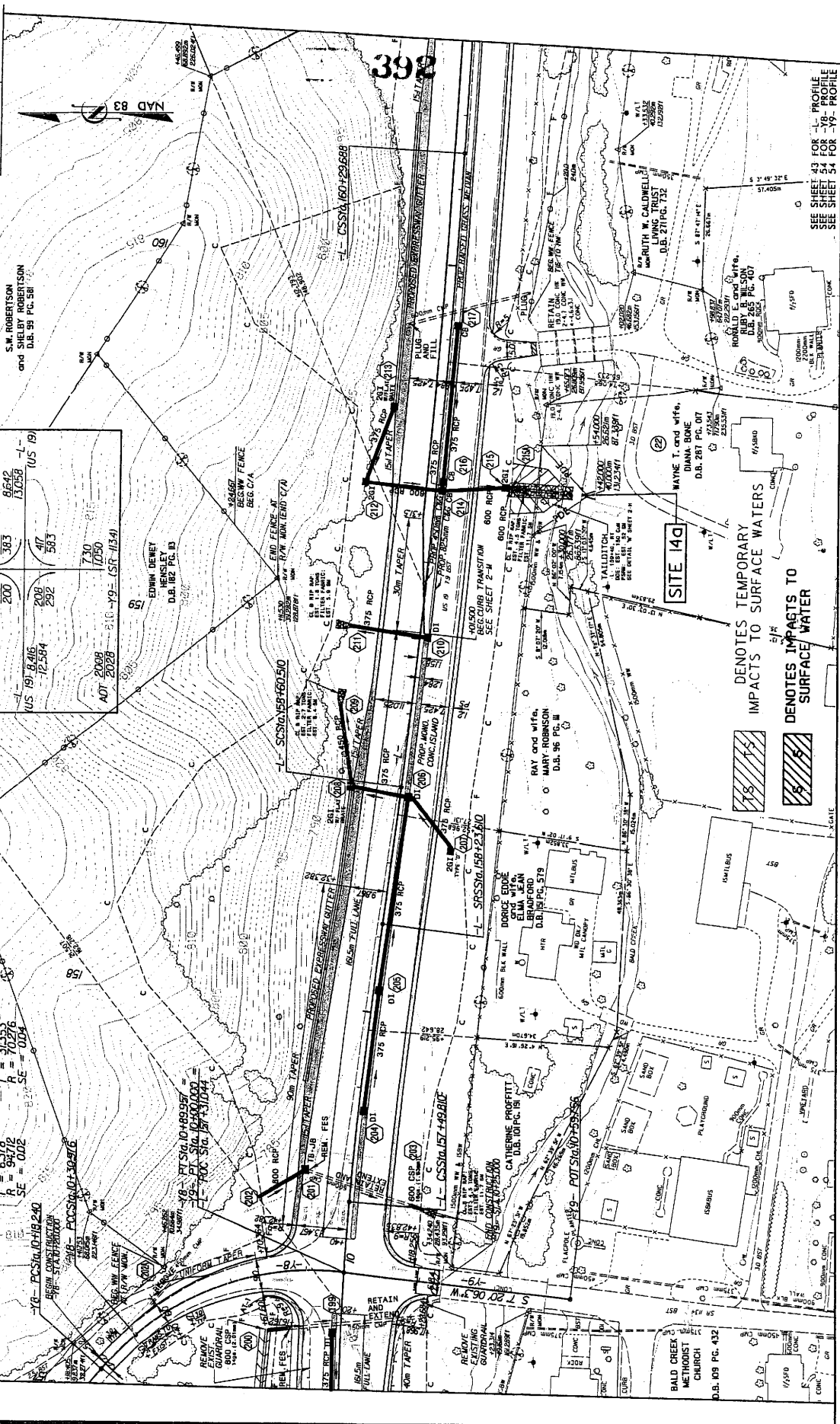
| | |
|----------------|-------|
| -Y8- (SR 1933) | |
| 522 | 758 |
| 200 | 200 |
| 200 | 200 |
| 208 | 292 |
| 477 | 583 |
| 730 | 1050 |
| 8642 | 13058 |
| -L- (US 19) | |
| 208 | 292 |
| 477 | 583 |
| 730 | 1050 |
| 8642 | 13058 |

PI Stn. 157+14.15 PIS Stn. 159+49.90 PIS Stn. 159+45.29
 $\Delta = 1647.43$ (11.7)
 $\Delta = 959.23$
 $L = 24600$
 $ST = 24600$
 $SE = 0.03$

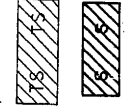
PI Stn. 157+14.15 PIS Stn. 159+49.90 PIS Stn. 159+45.29
 $\Delta = 1647.43$ (11.7)
 $\Delta = 959.23$
 $L = 24600$
 $ST = 24600$
 $SE = 0.03$

PI Stn. 157+14.15 PIS Stn. 159+49.90 PIS Stn. 159+45.29
 $\Delta = 1647.43$ (11.7)
 $\Delta = 959.23$
 $L = 24600$
 $ST = 24600$
 $SE = 0.03$

JAMES W. PROFFIT and J. YATES BAILEY
 D.B. 133 PG. 617



IMPACTS TO SURFACE WATERS
 IMPACTS TO SURFACE WATER



SEE SHEET 43 FOR PROFILE
 SEE SHEET 54 FOR -Y9- PROFILE

REVISIONS

PROJECT REFERENCE NO. **R-2508B**
 ROADWAY DESIGN ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH. (919) 313-8850

TGS

ADT 2008
 2028
 -100- (SR 1392)
 100
 152
 50
 92
 8650
 13130
 -1- (US 19)
 105
 191
 8642
 13242

JOSEPH EDGAR WHEELER
 D.B. 389 PG. 583

WILLIAM RANDY FOX
 D.B. 201 PG. 318
 -100- POT STA. 10+00 TO 28+00

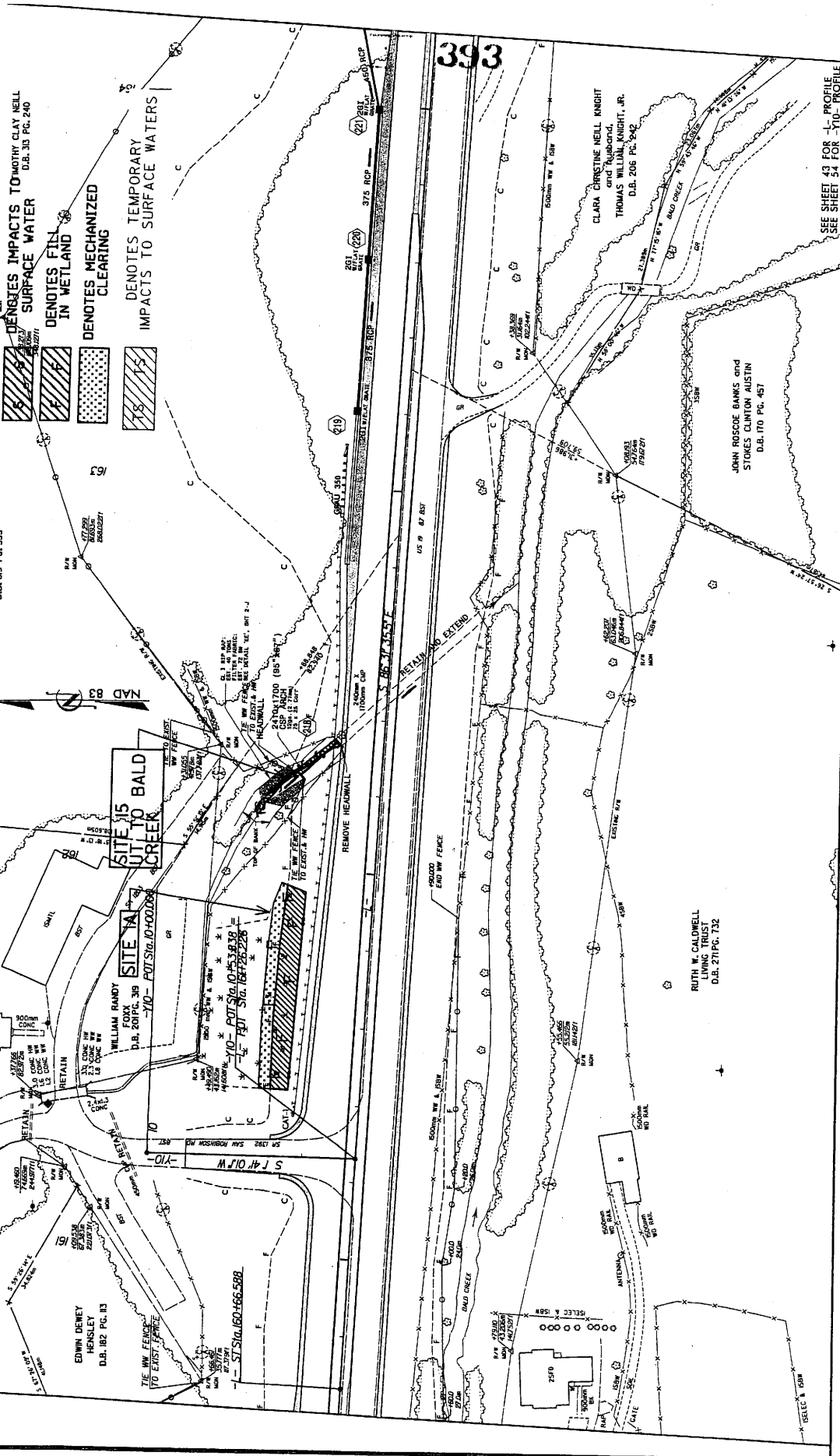
S.M. ROBERTSON and SHELBY ROBERTSON
 D.B. 89 PG. 581

EDWIN DENEY HENSLEY
 D.B. 182 PG. 83

CLARA CHRISTINE NELL KNIGHT and Husband, THOMAS WILLIAM KNIGHT, JR.
 D.B. 208 PG. 582

JOHN ROSCOE BANKS and STOKES CLINTON AUSTIN
 D.B. 170 PG. 457

RUTH W. CALDWELL
 D.B. 271 PG. 732



LEGEND

DENOTES IMPACTS TO MUDRY CLAY NELL SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

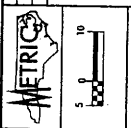
DENOTES TEMPORARY IMPACTS TO SURFACE WATERS

REVISIONS

393

SEE SHEET 43 FOR -10- PROFILE
 SEE SHEET 54 FOR -10- PROFILE

PROJECT REFERENCE NO. SHEET 17
 TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH. (919) 319-8850



CONSTRY.
 P/W REV.

PRELIMINARY PLANS
 2008

ADT 2028
 -710- (SR 1392)
 108
 192
 50
 92
 50
 100
 8650
 13150
 105 191
 13242

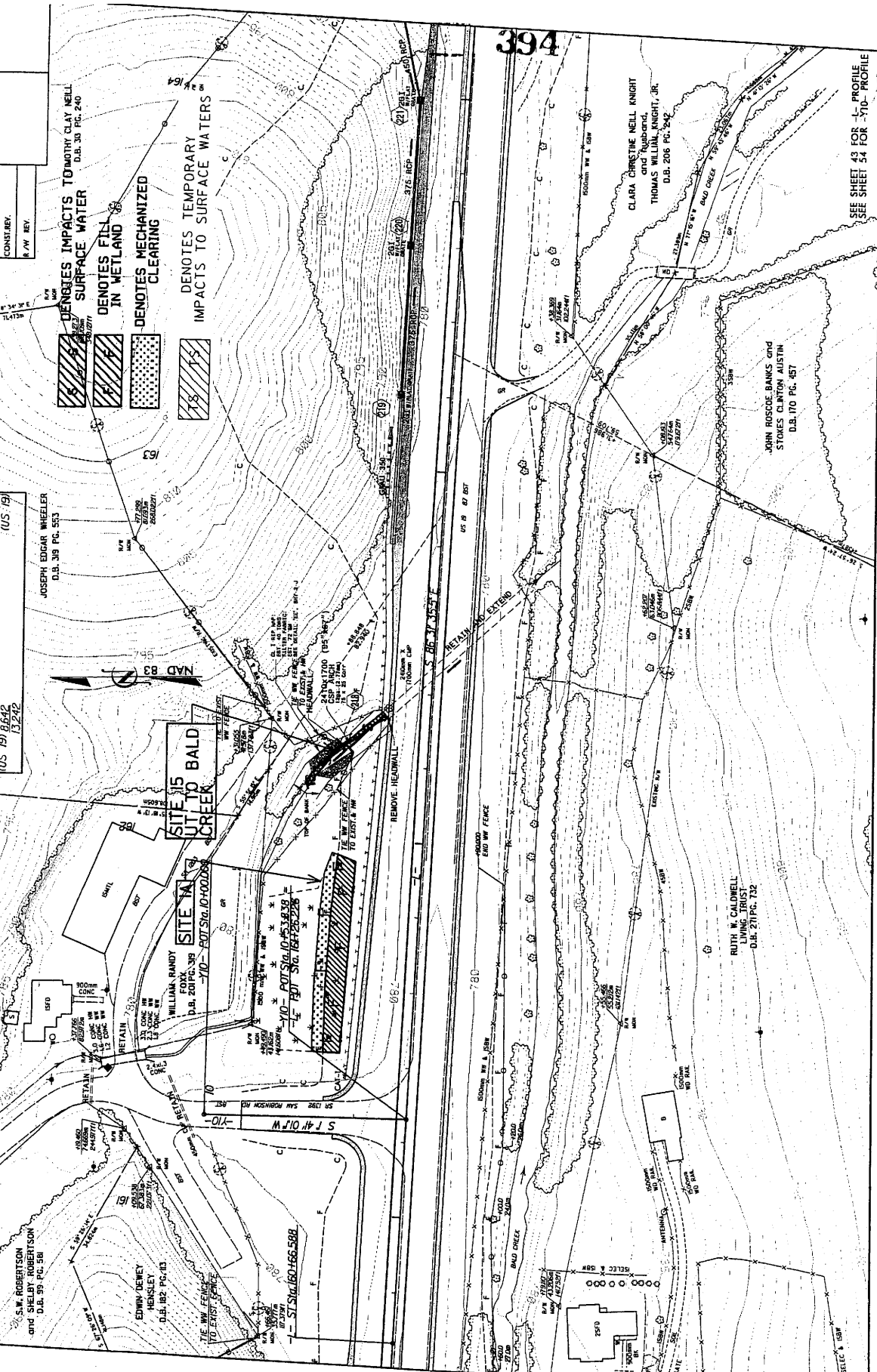
JOSEPH EDGAR WHEELER
 D.B. 319 PG. 553

WILLIAM RANDY FOX
 D.B. 201 PG. 319

S.M. ROBERTSON and SHELBY ROBERTSON
 D.B. 99 PG. 58

EDWIN DEWEY HENSLEY
 D.B. 182 PG. 13

RUTH W. CALDWELL LIVING TRUST
 D.B. 211 PG. 12



CLARA CHRISTINE NELL KNIGHT
 THOMAS WILLIAM KNIGHT, JR.
 D.B. 206 PG. 242

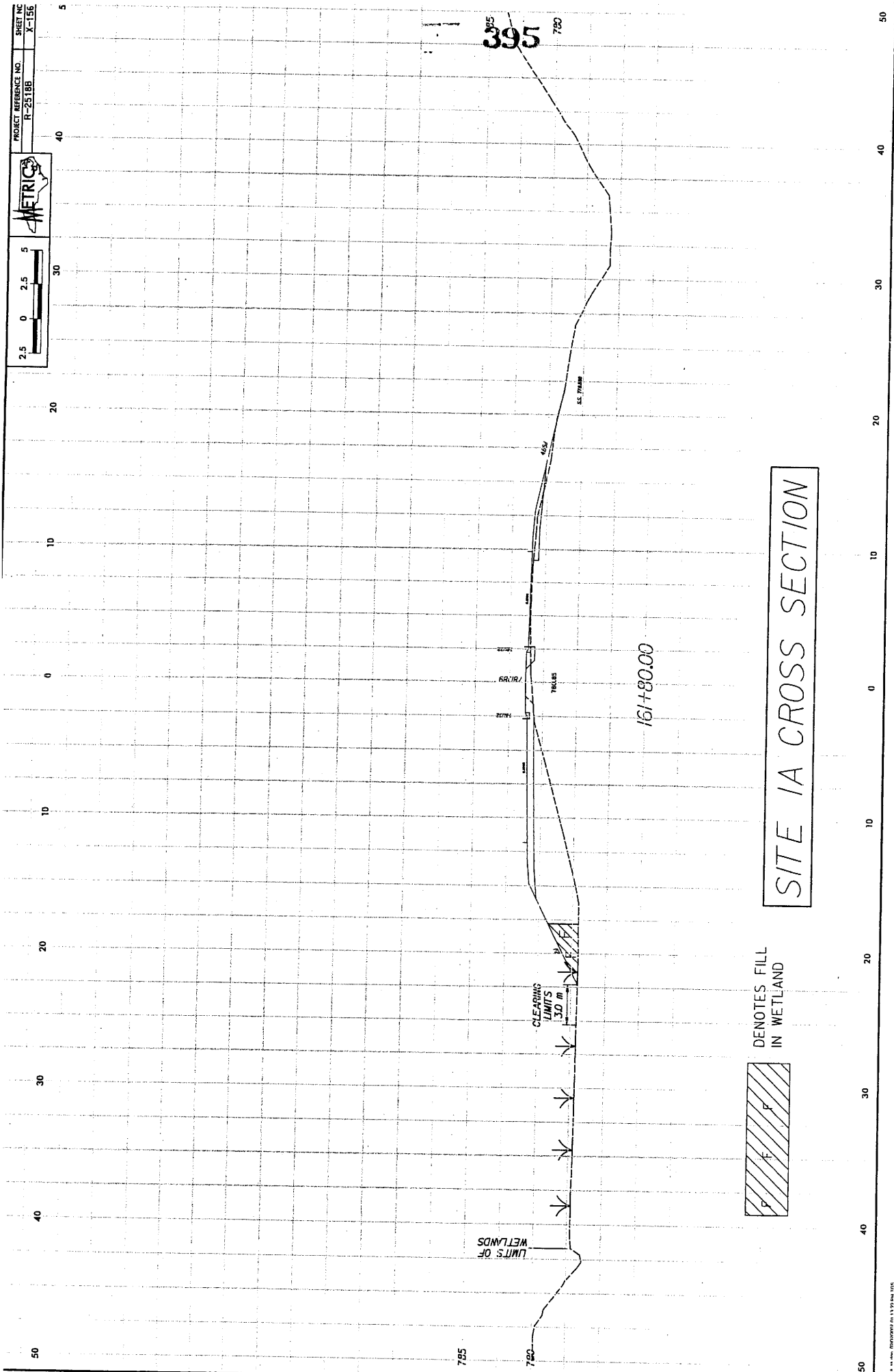
JOHN ROSCOE BANKS and STOKES CLINTON AUSTIN
 D.B. 170 PG. 457

SEE SHEET 43 FOR L-PROFILE
 SEE SHEET 54 FOR S-710-PROFILE

REVISIONS

394

DATE PLOTTED: 04/11/2008 11:28 AM EDT



SITE IA CROSS SECTION

DENOTES FILL
IN WETLAND



PROJECT REFERENCE NO. 2008
 ROADWAY DESIGN ENGINEER

SHEET NO. 1
 PROPOSED ENGINEER

CONTR. BY:
 R/W REV.

RETAIN AND EXTEND AS REQUIRED.
 2400mm x 1700mm (95" x 67") CSPA
 #12 GA. 76.2mm x 25.4mm (3" x 1")
 CORR. TYPE "B"
 WITH HEADWALL ON INLET END

-L: 162+45 GR. EL. = 780.705
 44° SKEW

2:1 NORMAL

2:1 NORMAL

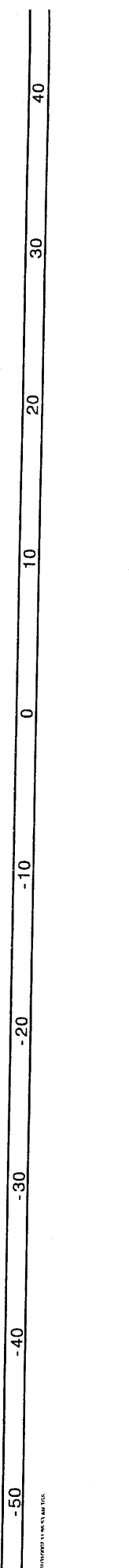
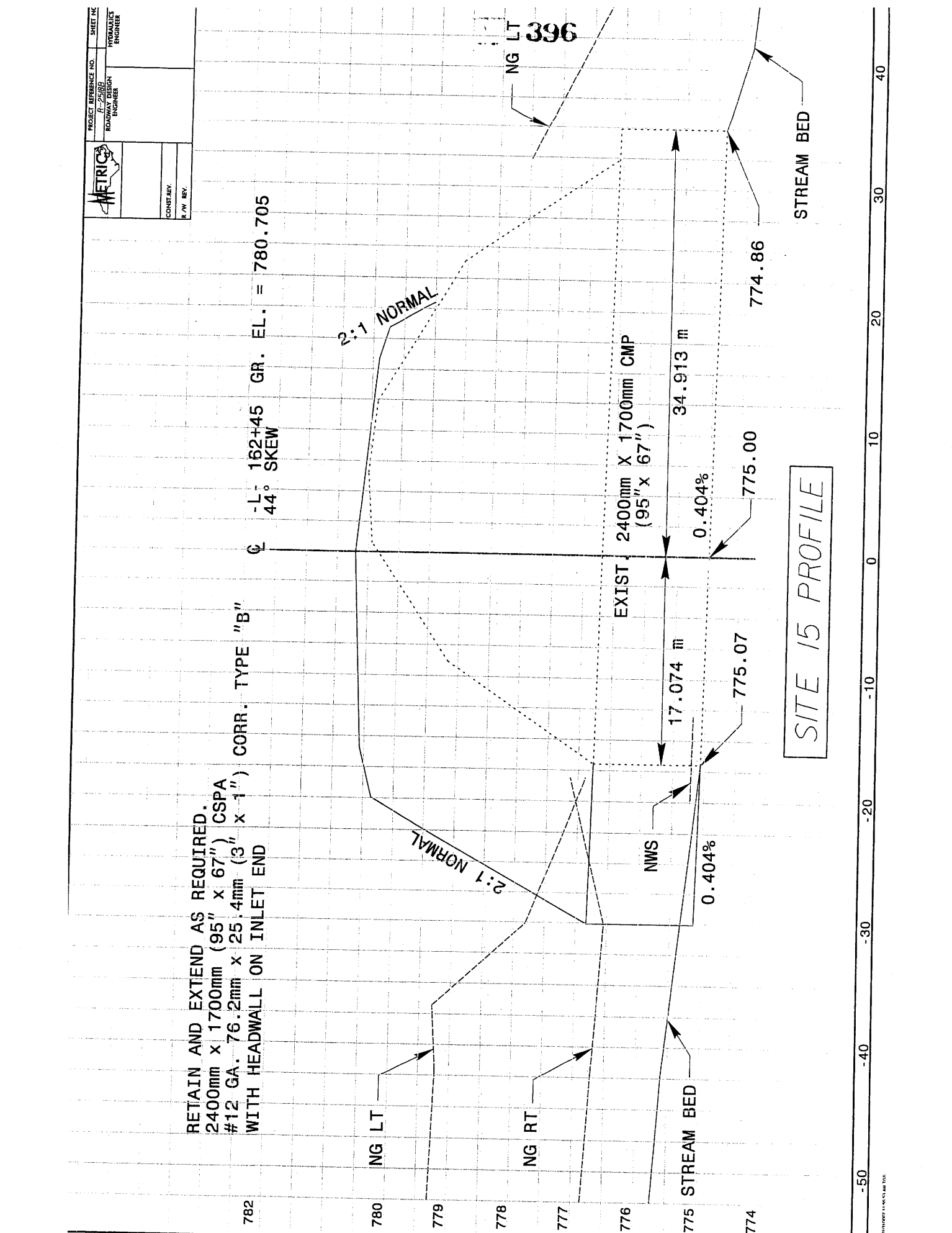
NG LT 396

EXIST. 2400mm X 1700mm CMP
 (95" X 67")

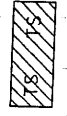
SITE 15 PROFILE

STREAM BED

STREAM BED

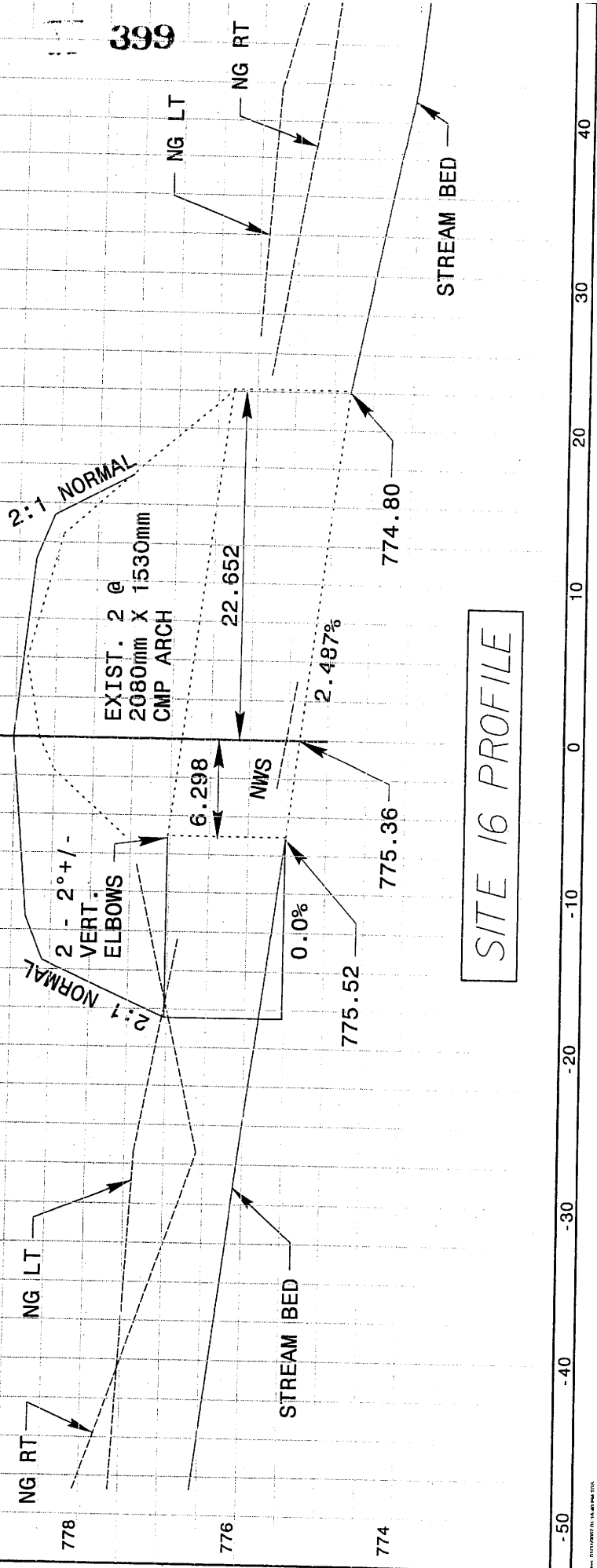


RETAIN AND EXTEND AS REQUIRED.
 2- 2080mm x 1530mm (81" x 59") CSP ARCHES
 #12 GA. 76.2mm x 25.4mm (3" x 1") CORR. TYPE "B"
 WITH HEADWALL ON INLET END
 2 - 2°+/- VERTICAL ELBOWS REQUIRED



DENOTES TEMPORARY
 IMPACTS TO SURFACE WATERS

-L- 164+88 GR. EL. = 779.02
 75° SKEW



SITE 16 PROFILE

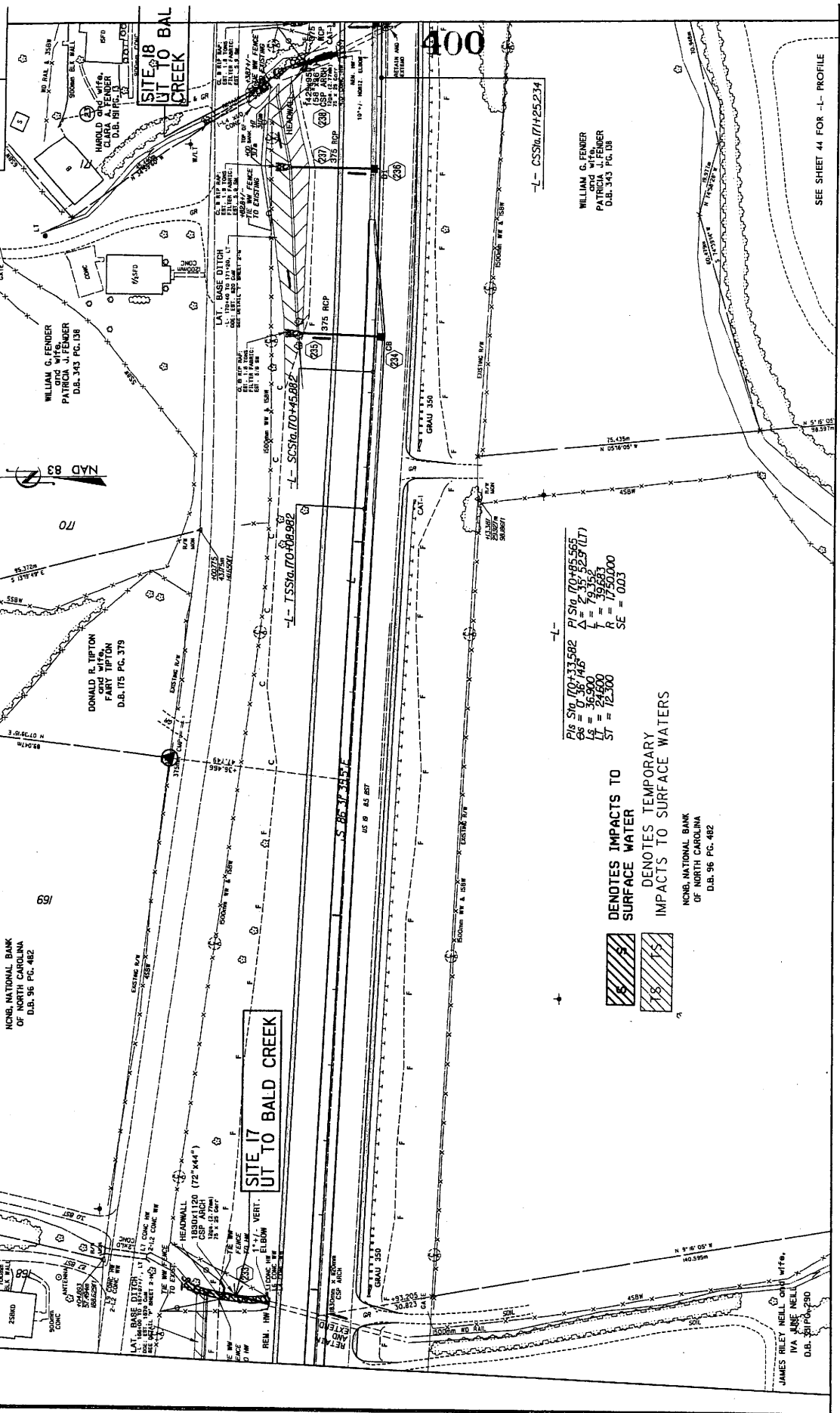
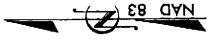


PROJECT REFERENCE NO. SHEET N
 R-25518 19
 ROADWAY DESIGN HYDRAULICS
 ENGINEER ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 PH (919) 319-8950

CONST. REV.
 R/W REV.



NONB. NATIONAL BANK
 OF NORTH CAROLINA
 D.B. 96 PG. 482

DONALD R. TIPTON
 FANNY TIPTON
 D.B. 175 PG. 379

WILLIAM G. FENDER
 PATRICIA J. FENDER
 D.B. 343 PG. 138

SITE 17
 CUT TO BALD CREEK

PI. STA. 170+33.582 P/Sig. 70+195.555
 CS = 0.007425
 LS = 36,500
 LT = 24,600
 ST = 12,300
 SE = 0.03

DIAGONAL HATCHING
 DENOTES IMPACTS TO SURFACE WATER
 HORIZONTAL HATCHING
 DENOTES TEMPORARY IMPACTS TO SURFACE WATERS

NONB. NATIONAL BANK
 OF NORTH CAROLINA
 D.B. 96 PG. 482

WILLIAM G. FENDER
 PATRICIA J. FENDER
 D.B. 343 PG. 138

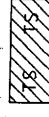
SEE SHEET 44 FOR -L- PROFILE

REVISIONS

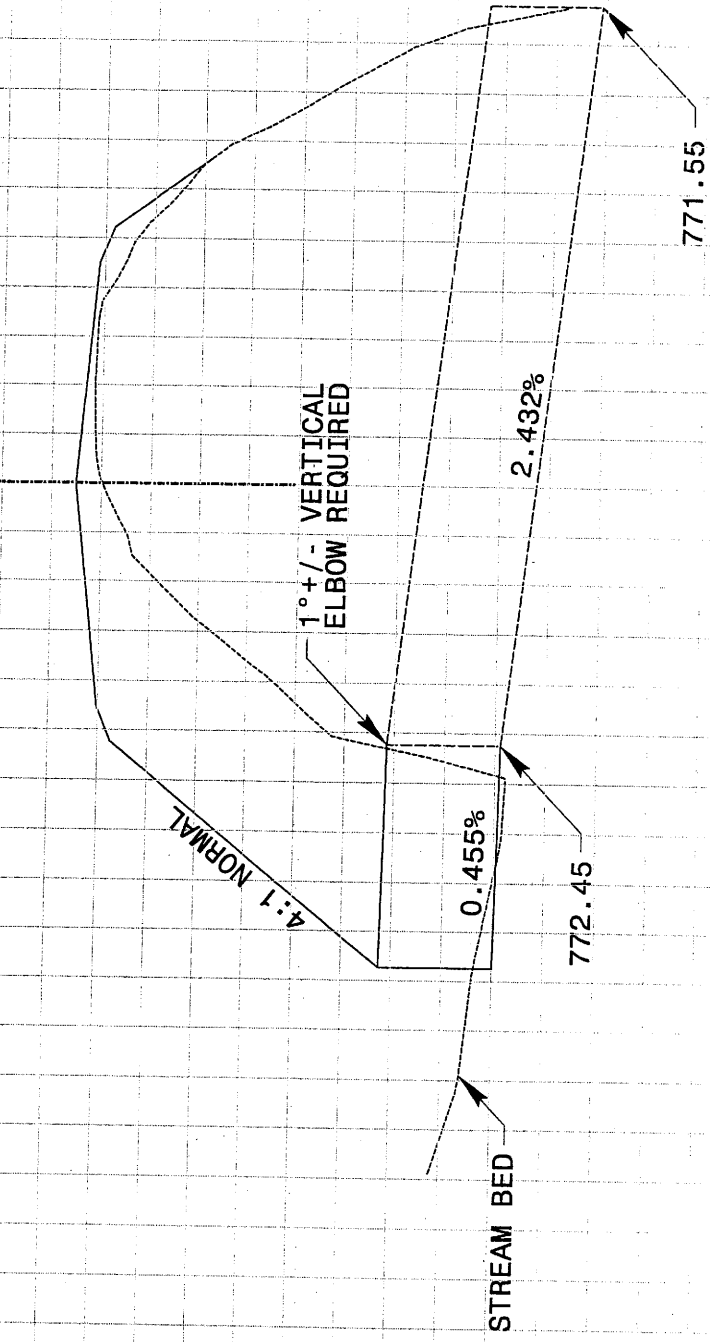
| | | |
|--------------|-------------------------|---------------------|
| | PROJECT REFERENCE NO. | SHEET NO. |
| | ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| CONSTRUCTION | | |
| R/W REV. | | |

RETAIN AND EXTEND AS REQUIRED.
 1830mm x 1120mm (72" x 44") CSPA
 #12 GA. 76.2mm x 25.4mm (3" x 1") CORR. TYPE "B"
 WITH HEADWALL ON INLET END

CL -L- 167+93 GR. EL. = 776.756
 100° SKEW

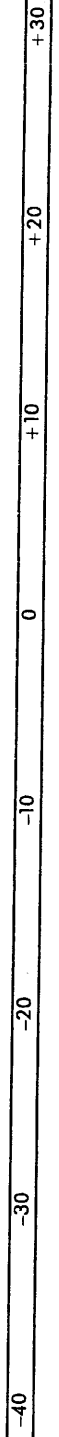


DENOTES TEMPORARY
 IMPACTS TO SURFACE WATERS



SITE 17 PROFILE

402



PROJECT REFERENCE NO. SHEET NO.
 R-2508 20
 TGS ENGINEERS
 SUITE 1411 SHEET
 975 NW 11TH STREET
 CARY, NC 27511
 PH (919) 319-8850
 ROADWAY DESIGN
 ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION
 CONSTRUCTION
 R/W REV.

ADT 2008
 2028
 224
 308
 87.50
 13.250
 12.958
 2/6
 300
 -1/2- (SR 1453)

US 191 0.542
 12.958
 -1/2- (US 191)

PI Stn. 10+47.597
 OS = 0.36745
 LS = 36.500
 ST = 12.500
 SE = 0.033

PI Stn. 10+74.3 (RT)
 OS = 0.36745
 LS = 36.500
 ST = 12.500
 SE = 0.033

PI Stn. 10+77.439
 OS = 0.36745
 LS = 36.500
 ST = 12.500
 SE = 0.033

PI Stn. 10+82.496
 OS = 0.36745
 LS = 36.500
 ST = 12.500
 SE = 0.033

PI Stn. 10+99.550
 OS = 0.36745
 LS = 36.500
 ST = 12.500
 SE = 0.033

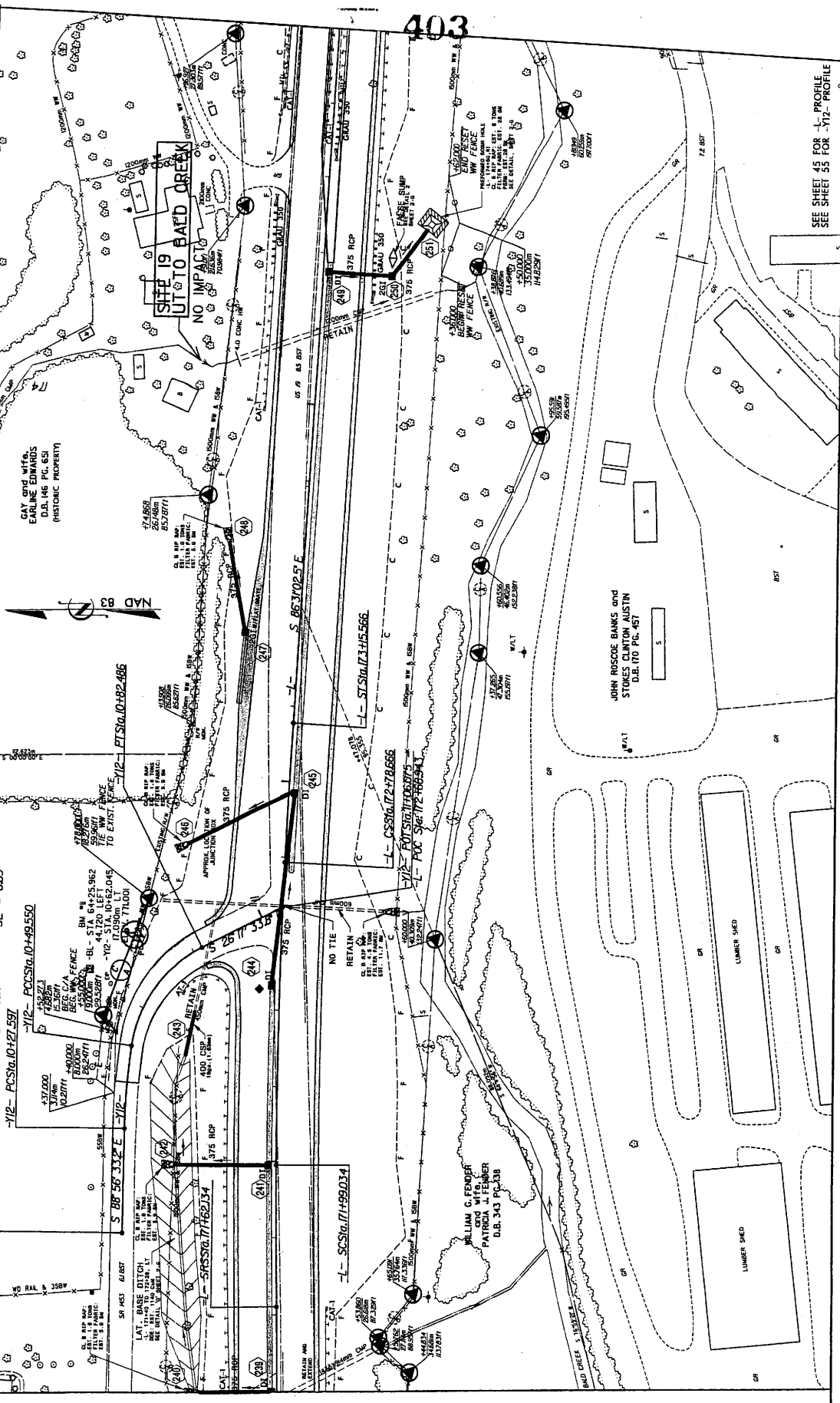
PI Stn. 10+97.597
 OS = 0.36745
 LS = 36.500
 ST = 12.500
 SE = 0.033

PI Stn. 10+99.550
 OS = 0.36745
 LS = 36.500
 ST = 12.500
 SE = 0.033

PI Stn. 10+99.550
 OS = 0.36745
 LS = 36.500
 ST = 12.500
 SE = 0.033

PI Stn. 10+99.550
 OS = 0.36745
 LS = 36.500
 ST = 12.500
 SE = 0.033

PI Stn. 10+99.550
 OS = 0.36745
 LS = 36.500
 ST = 12.500
 SE = 0.033



DATE: _____
 REVISIONS
 - PARCEL 23; REVISED EXIST RW FLAGS TO ACTUAL OFFSET DISTANCES - WC FAXER, PE

SEE SHEET 45 FOR 1/2" PROFILE
 SEE SHEET 35 FOR 1/2" PROFILE

403

PROJECT REFERENCE NO. SHEET NO.
 R-2508 20
 ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
 SUITE 141
 975 W. MARKET STREET
 CARY, NC 27513
 PH (919) 319-8850

CONST. REV.
 R/W REV.

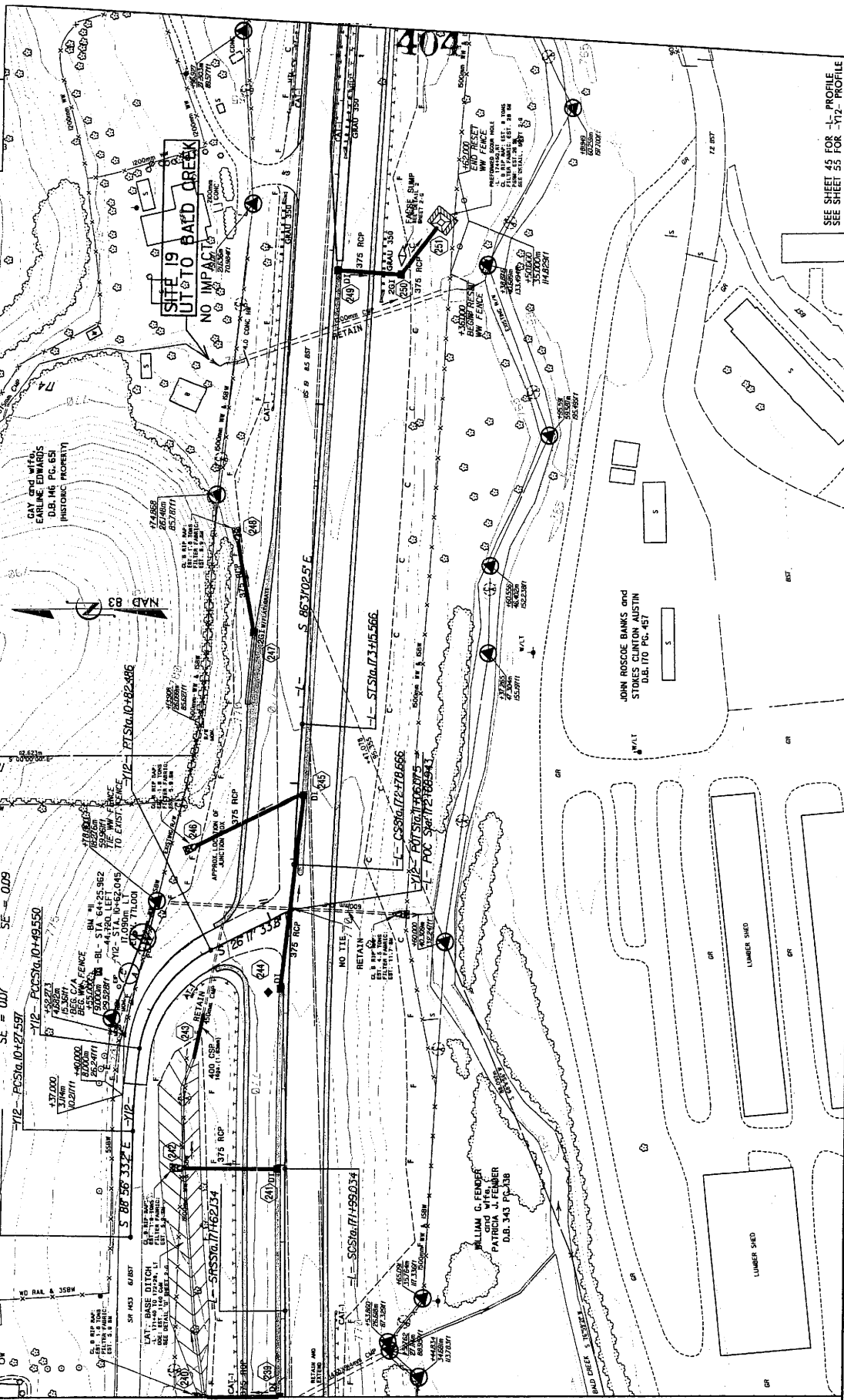
ADT 2008
 2024
 2028
 224
 308
 8
 8
 216
 300
 8750
 13250
 (US 19)

PI STATION 17+486.34
 OS = 0.36746
 LS = 36.500
 ST = 72.500
 SE = 0.013

PI STATION 17+486.34
 OS = 0.36746
 LS = 36.500
 ST = 72.500
 SE = 0.013

PI STATION 17+486.34
 OS = 0.36746
 LS = 36.500
 ST = 72.500
 SE = 0.013

PI STATION 17+486.34
 OS = 0.36746
 LS = 36.500
 ST = 72.500
 SE = 0.013



DATE: _____
 REVISIONS
 - PAVEL 23; REVISED EXIST MW-FLAGS TO ACTUAL OFFSET DISTANCES - WC PAXER, PE

SEE SHEET 45 FOR L-PROFILE
 SEE SHEET 55 FOR V-L-PROFILE

PROJECT REFERENCE NO. SHEET NO.
 T-2302 21
 ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

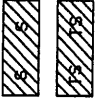
TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 DENVER, CO 80202
 PH (303) 311-6850

METRIC
 CONSTRUCTION
 N/W REV.

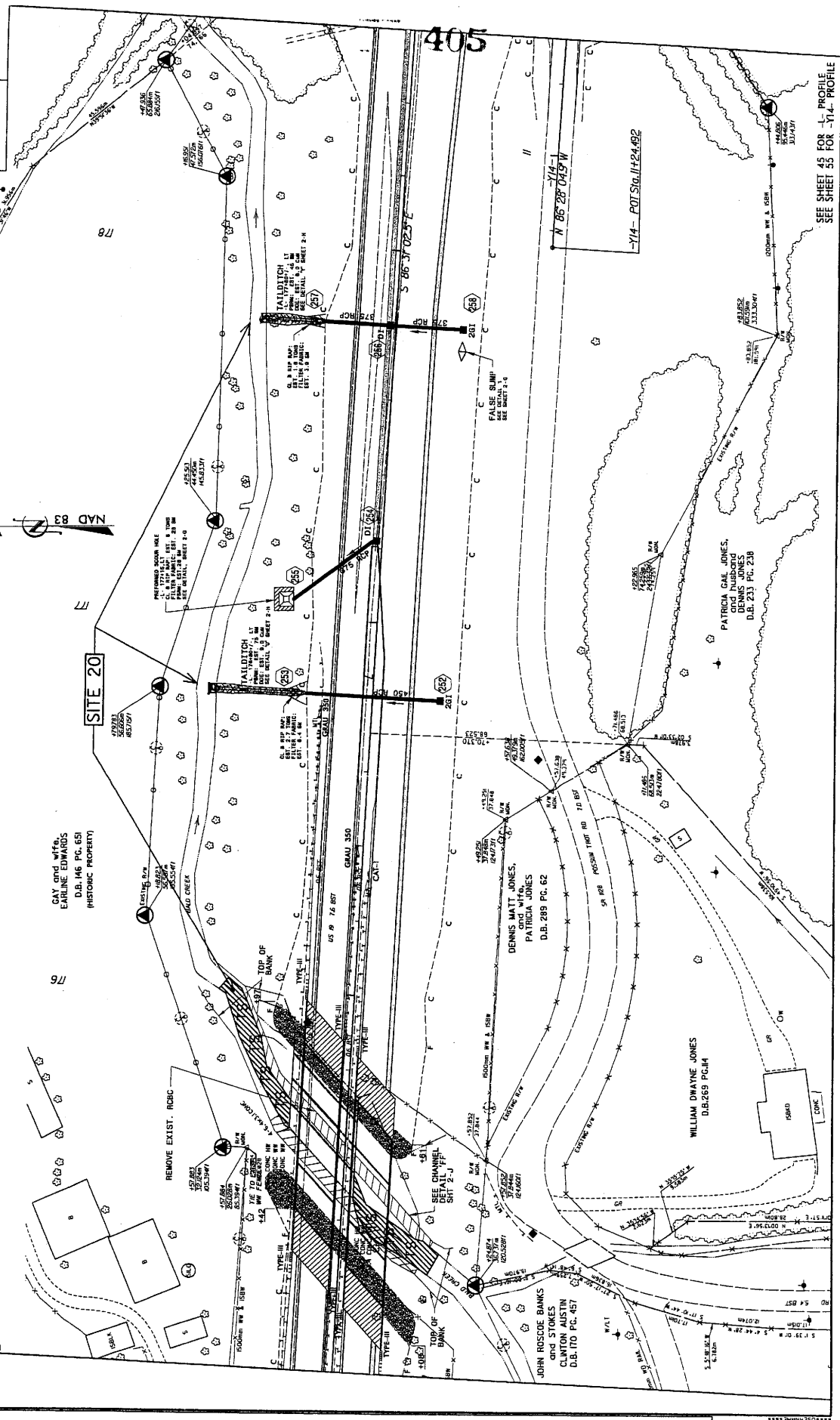
SEE STREAM MITIGATION PLANS

DENOTES IMPACTS TO SURFACE WATER

DENOTES TEMPORARY IMPACTS TO SURFACE WATER



SEE STREAM MITIGATION PLANS



SEE SHEET 45 FOR -1- PROFILE
 SEE SHEET 55 FOR -11- PROFILE

REVISIONS

PROJECT REFERENCE NO. SHEET
 R-25187 23
 R/W SHEET NO.
 R/W SHEET NO.
 ROADWAY DESIGN
 ENGINEER
 HYDRAULIC
 ENGINEER



CONST. REV.
 R/W REV.

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
 SUITE 141
 978 ALAN MCURRY RD
 CARY, NC 27513
 PH (919) 319-8850

-DR2-
 P/Sig 10+15.695
 Δ = 21.476
 T = 10.906
 C = 500.000
 SE = 0.002

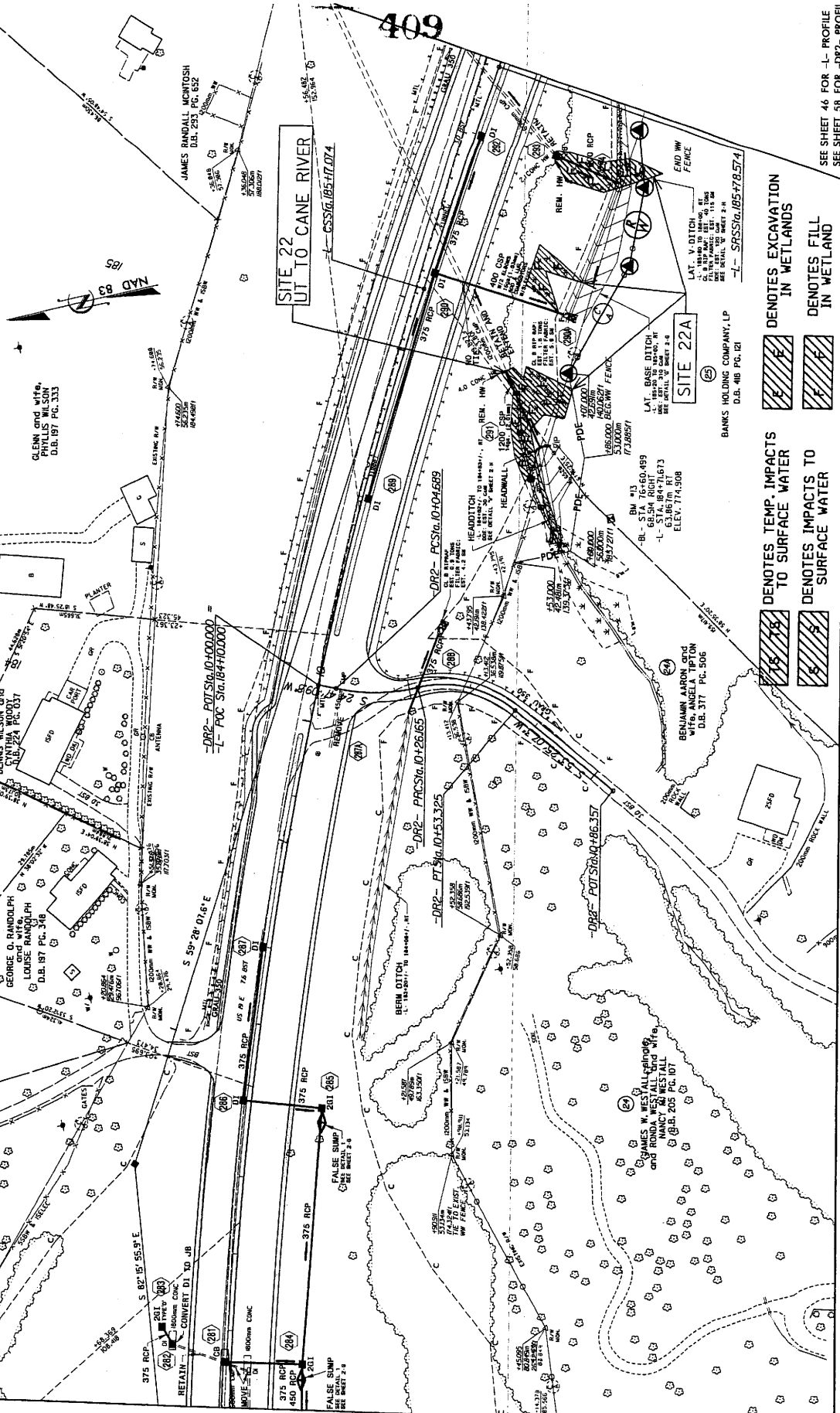
P/Sig 10+42.915
 Δ = 21.476
 T = 10.906
 C = 500.000
 SE = 0.002

GLENN and wife,
 PHYLLIS WILSON
 D.B. 197 PC. 333

P/Sig 185+73.688
 Δ = 25.347
 T = 25.978
 R = 1,000.000
 SE = 0.005

ALAN MCURRY and wife,
 RITA ANN MCURRY
 D.B. 254 PC. 163

ALAN R. MCURRY and wife,
 RITA ANN MCURRY
 D.B. 224 PC. 118



409

SITE 22A
 BANKS HOLDING COMPANY, LP
 D.B. 418 PC. 121

DENOTES TEMP. IMPACTS TO SURFACE WATER
 DENOTES EXCAVATION IN WETLANDS

DENOTES IMPACTS TO SURFACE WATER
 DENOTES FILL IN WETLAND

DENOTES TEMP. IMPACTS TO SURFACE WATER
 DENOTES EXCAVATION IN WETLANDS

DENOTES IMPACTS TO SURFACE WATER
 DENOTES FILL IN WETLAND

DENOTES TEMP. IMPACTS TO SURFACE WATER
 DENOTES EXCAVATION IN WETLANDS

DENOTES IMPACTS TO SURFACE WATER
 DENOTES FILL IN WETLAND

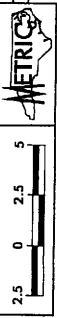
DENOTES TEMP. IMPACTS TO SURFACE WATER
 DENOTES EXCAVATION IN WETLANDS

DENOTES IMPACTS TO SURFACE WATER
 DENOTES FILL IN WETLAND

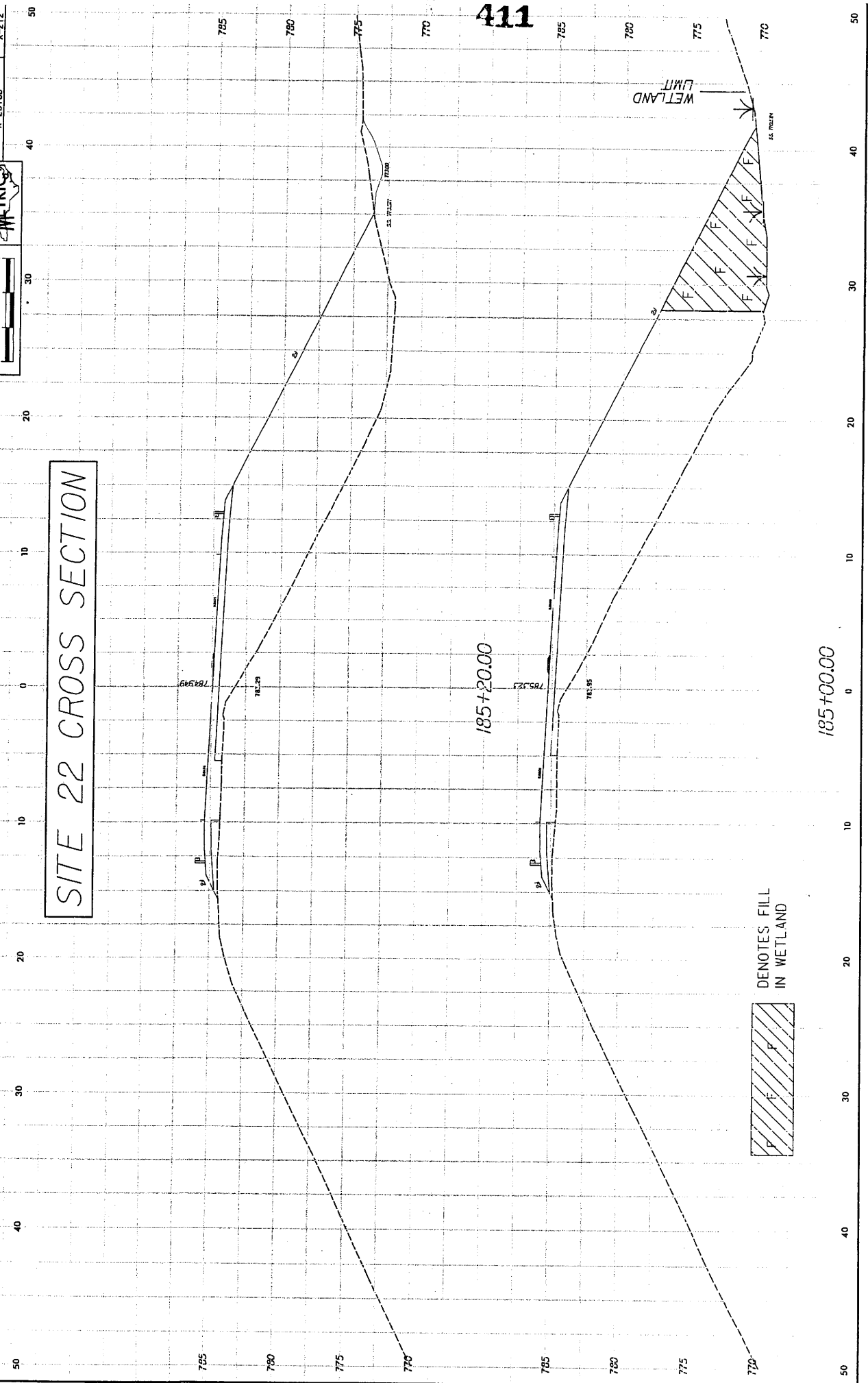
SEE SHEET 46 FOR -L- PROFILE
 SEE SHEET 58 FOR -DR2- PROFILE

DATE 1/15/24 7/16/24

REVISIONS



SITE 22 CROSS SECTION



DENOTES FILL
IN WETLAND

185+00.00

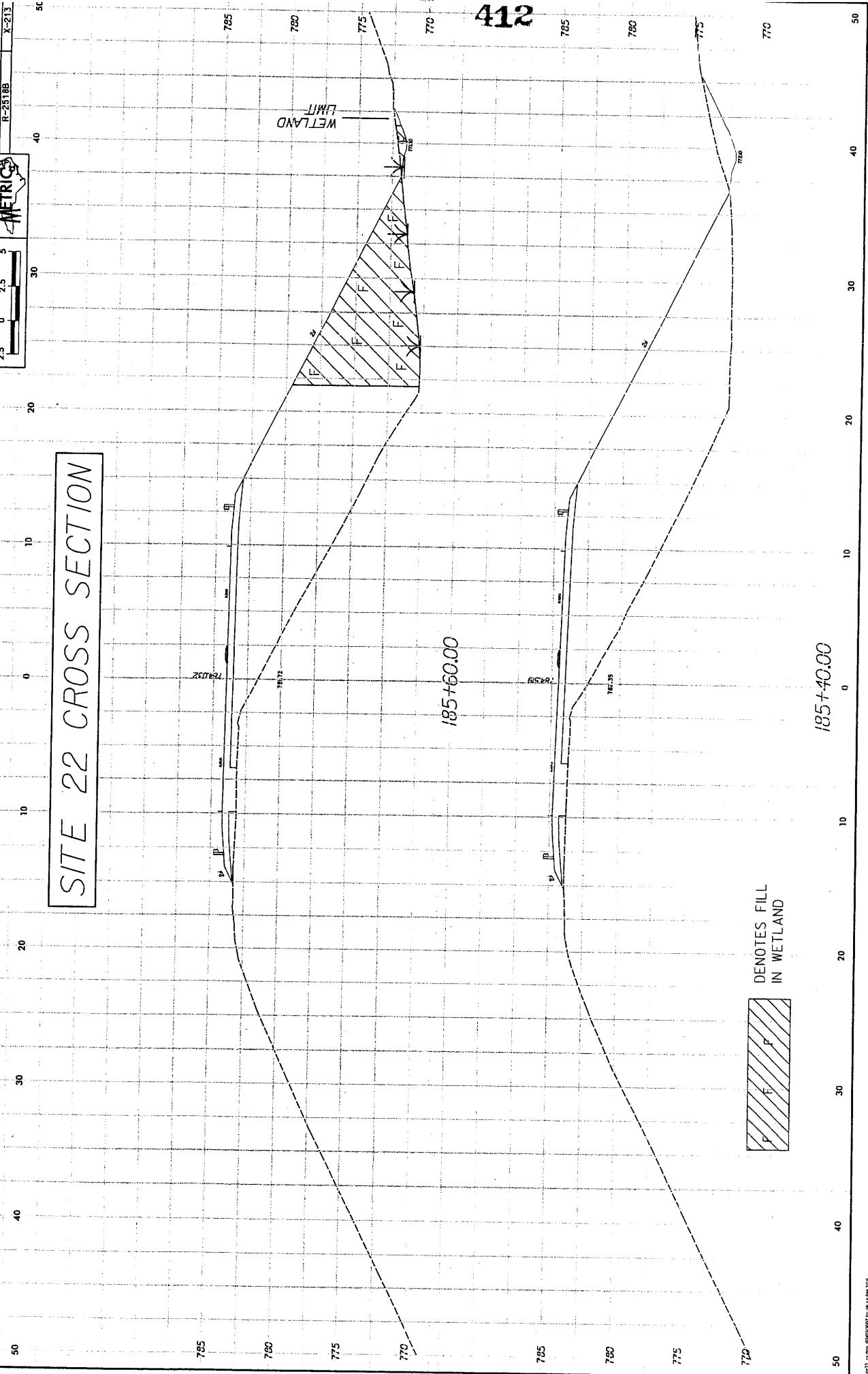
185+20.00

PROJECT REFERENCE NO. R-25188
 SHEET NO. X-213



SITE 22 CROSS SECTION

412



DENOTES FILL
 IN WETLAND

PROJECT REFERENCE NO. 11-22/09
 SHEET NO. 25
 ROADWAY DESIGN ENGINEER
 W.H. BUCKNER
 VIOLA S. BUCKNER
 D.B.M.D. PC-37
 PRELIMINARY PLANS
 DO NOT SCALE FOR CONSTRUCTION

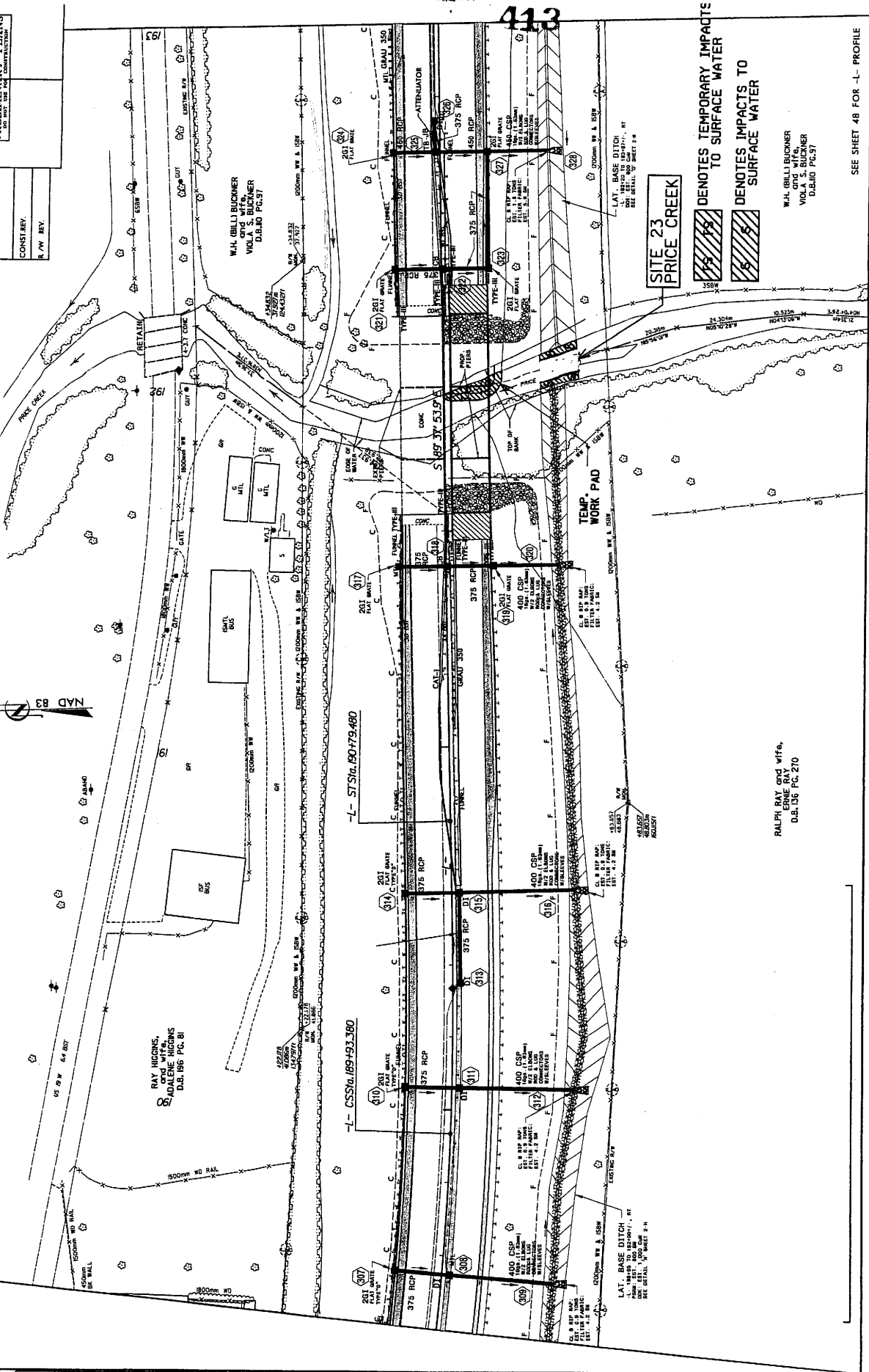


TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH: (919) 313-8880

CONST. REV.
 R/W REV.



-L-
 PI Sta 189+312.84 Plus Sta 190+22.089
 $\Delta = 25.27$ (LT) $CS = 3.19$ 55.6
 $L = 328.706$ $L_s = 66.00$
 $R = 740.000$ $ST = 26.709$
 $SE = 0.07$



SITE 23
 PRICE CREEK

DENOTES TEMPORARY IMPACTS TO SURFACE WATER
 DENOTES IMPACTS TO SURFACE WATER

W.H. BUCKNER
 VIOLA S. BUCKNER
 D.B.M.D. PC-37

RALPH RAY and wife,
 ERNE RAY
 D.B. 156 PG. 210

SEE SHEET 48 FOR -L- PROFILE

REVISIONS

PROJECT REFERENCE NO. **A-25089**
 SHEET NO. **25**
 TGS ENGINEERS
 SUITE 141, STREET
 CARY, NC 27511
 PH (919) 319-8850

W.H. GILLI BUCKNER
 CIVIL ENGINEER
 D.B. 105 PC. 270

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

CONST. BY
 TGS ENGINEERS
 1/2" = 10'

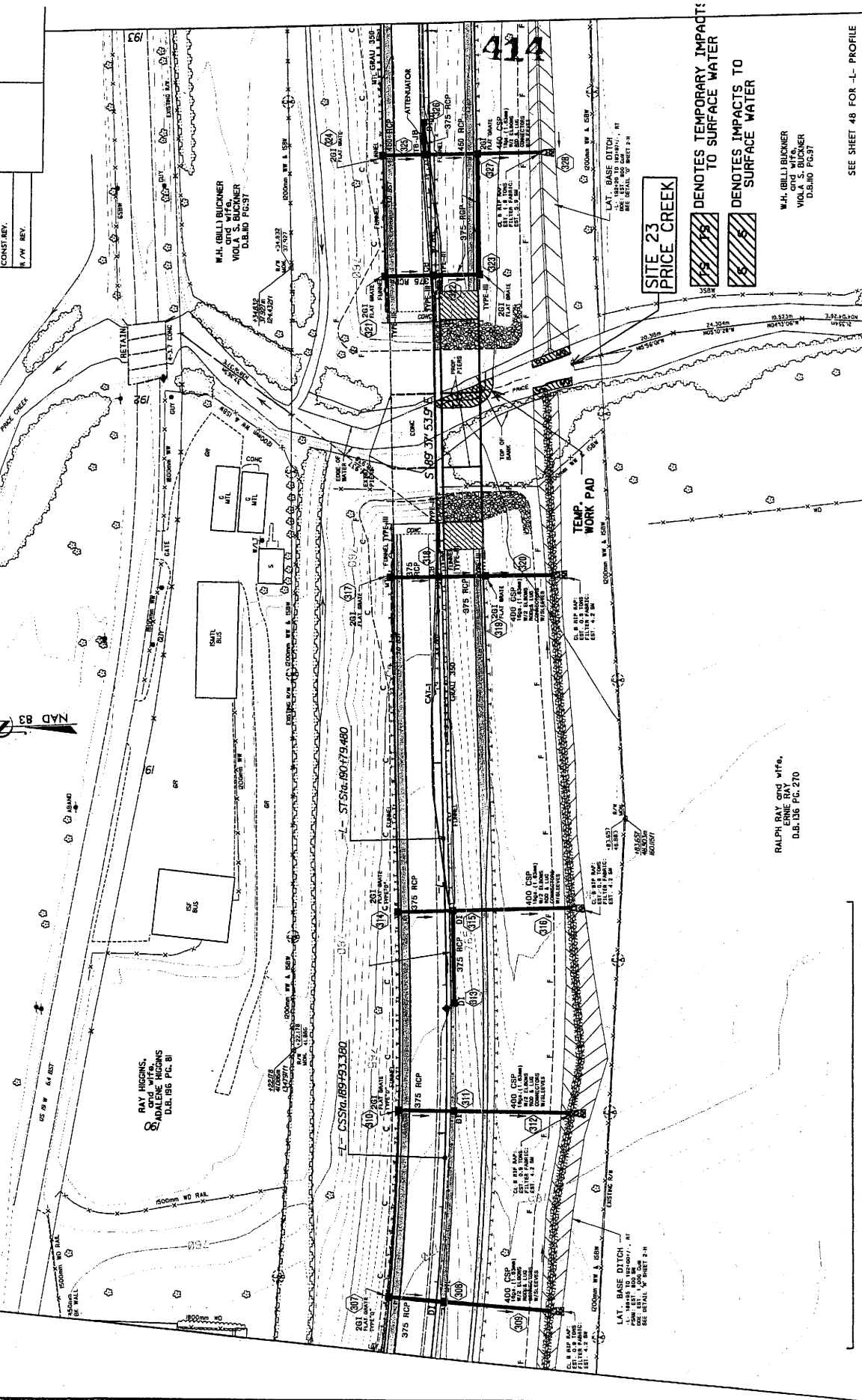
PI STA. 895+317.94
 Δ = 527.00
 L = 167.00
 R = 740.000
 SE = 0.07

PI STA. 891+222.089
 Δ = 527.00
 L = 167.00
 R = 740.000
 SE = 0.07

PI STA. 897+023.1(LT)
 Δ = 527.00
 L = 167.00
 R = 740.000
 SE = 0.07

PI STA. 897+317.94
 Δ = 527.00
 L = 167.00
 R = 740.000
 SE = 0.07

PI STA. 897+317.94
 Δ = 527.00
 L = 167.00
 R = 740.000
 SE = 0.07



SITE 23 PRICE CREEK
 DENOTES TEMPORARY IMPACTS TO SURFACE WATER
 DENOTES IMPACTS TO SURFACE WATER

W.H. GILLI BUCKNER
 CIVIL ENGINEER
 D.B. 105 PC. 270

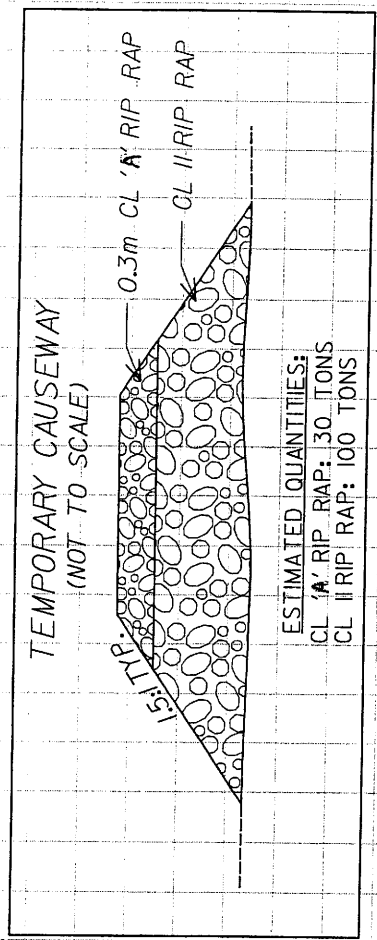
RALPH RAY and wife,
 D.B. 105 PC. 270

SEE SHEET 48 FOR -L- PROFILE

REVISIONS



CONST. REV.
 R/W REV.

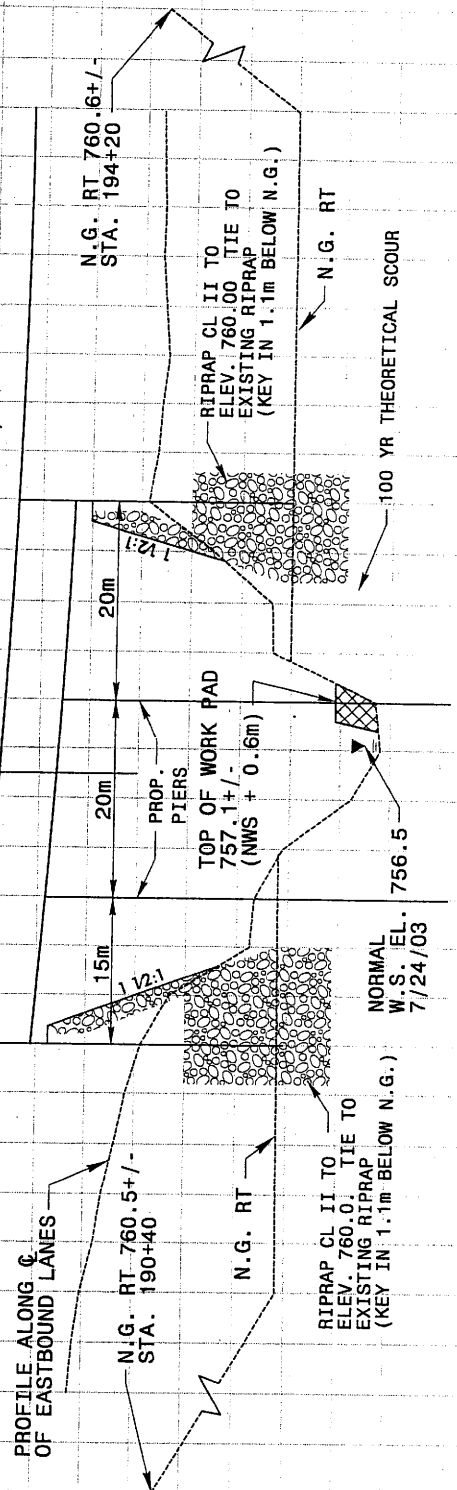


ESTIMATED QUANTITIES:
 CL I RIP RAP: 30 TONS
 CL II RIP RAP: 100 TONS

766
 765
 764
 763
 762
 761
 760
 759
 758
 757
 756

EASTBOUND LANE

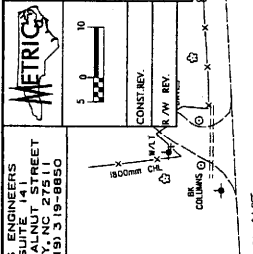
L. STA. 191+92.50, GR. PT. ELEV. = 763.95
 RT. LANE PROPOSED BRIDGE
 1 @ 15m; 2 @ 20m
 PRESTRESSED CONCRETE GIRDERS 1143mm (45")
 90° SKEW, (O.A.L. = 55m)



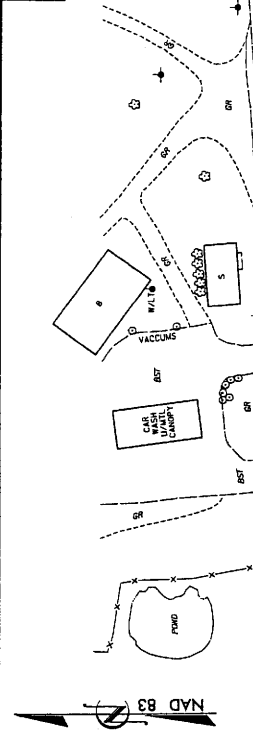
SITE 23 PROFILE

+40 +50 +60 +70 +80 +90 +100 +110 +120 +130 +140 +150 +160

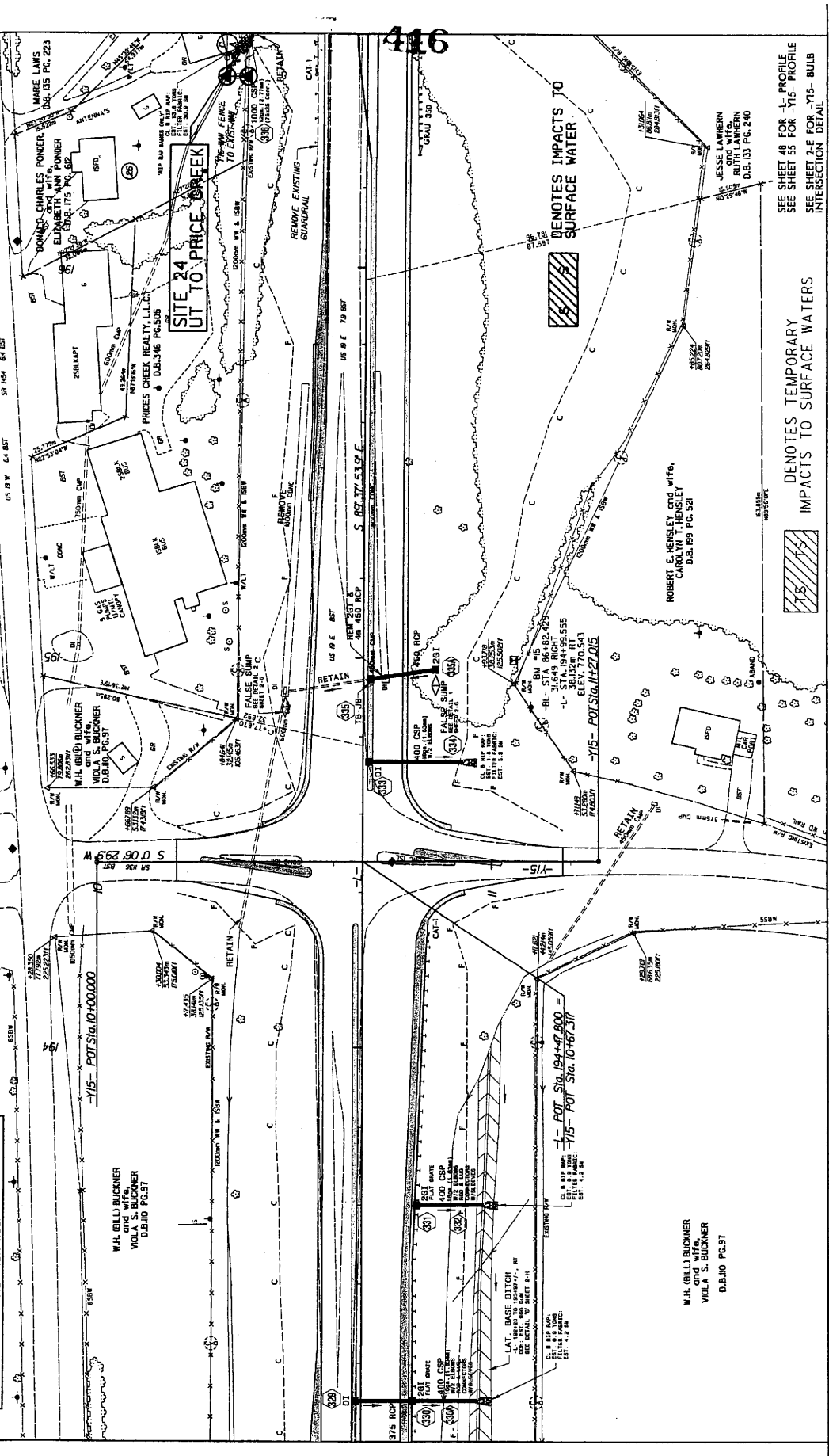
PROJECT REFERENCE NO. R-25088
 SHEET NO. 46
 TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 PH. (919) 319-8950
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 PH. (919) 319-8950



| | | | | |
|-----------------|------------------|--------------|---------------|----------------|
| -Y15- (SR 1136) | 1967 2633 | 1133 1407 | 9658 14242 | -L- (US 19) |
| -L- (US 19) | 408 492 | 1033 1367 | 1858 2442 | |
| | 12483 | | | |
| | ADT 2008 2028 | | | |



416

REVISIONS

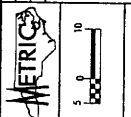
DATE: MARCH 2006 - PARCELS 26 & 27: PROPERTY LINES REVISED, TAKE ON LANS' PROPERTY - WC PARKER
 DATE: MARCH 2006 - PARCELS 26 & 27: PROPERTY LINES REVISED, TAKE ON LANS' PROPERTY - WC PARKER

REMOVES TEMPORARY IMPACTS TO SURFACE WATERS

DENOTES IMPACTS TO SURFACE WATER

SEE SHEET 48 FOR -L- PROFILE
 SEE SHEET 55 FOR -Y15- PROFILE
 SEE SHEET 2-A-F FOR -Y15- BULL INTERSECTION DETAIL

PROJECT REFERENCE NO. SHEET NO.
 TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH (319) 319-0050



TGS ENGINEERS
 SUITE 200B
 975 WALNUT STREET
 CARY, NC 27511
 PH (319) 319-0050

PRELIMINARY PLANS
 ROADWAY DESIGN
 ENGINEER
 METRICS
 CONSTRUCTION
 ENGINEER

CONCRETE
 1/4" = 1'-0"
 1/8" = 1'-0"
 1/16" = 1'-0"

DATE: MARCH, 2006
 REVISIONS
 - PAGES 26 & 27, PROPERTY LINES REVERSED, TAKE ON PAGES 27 ELMHARTER - WC PARKER, PE
 - PAGES 26; REMOVED 'BRST' MW FLAG; REVERSED NAME ON 'LAW'S' PROPERTY - WC PARKER, PE

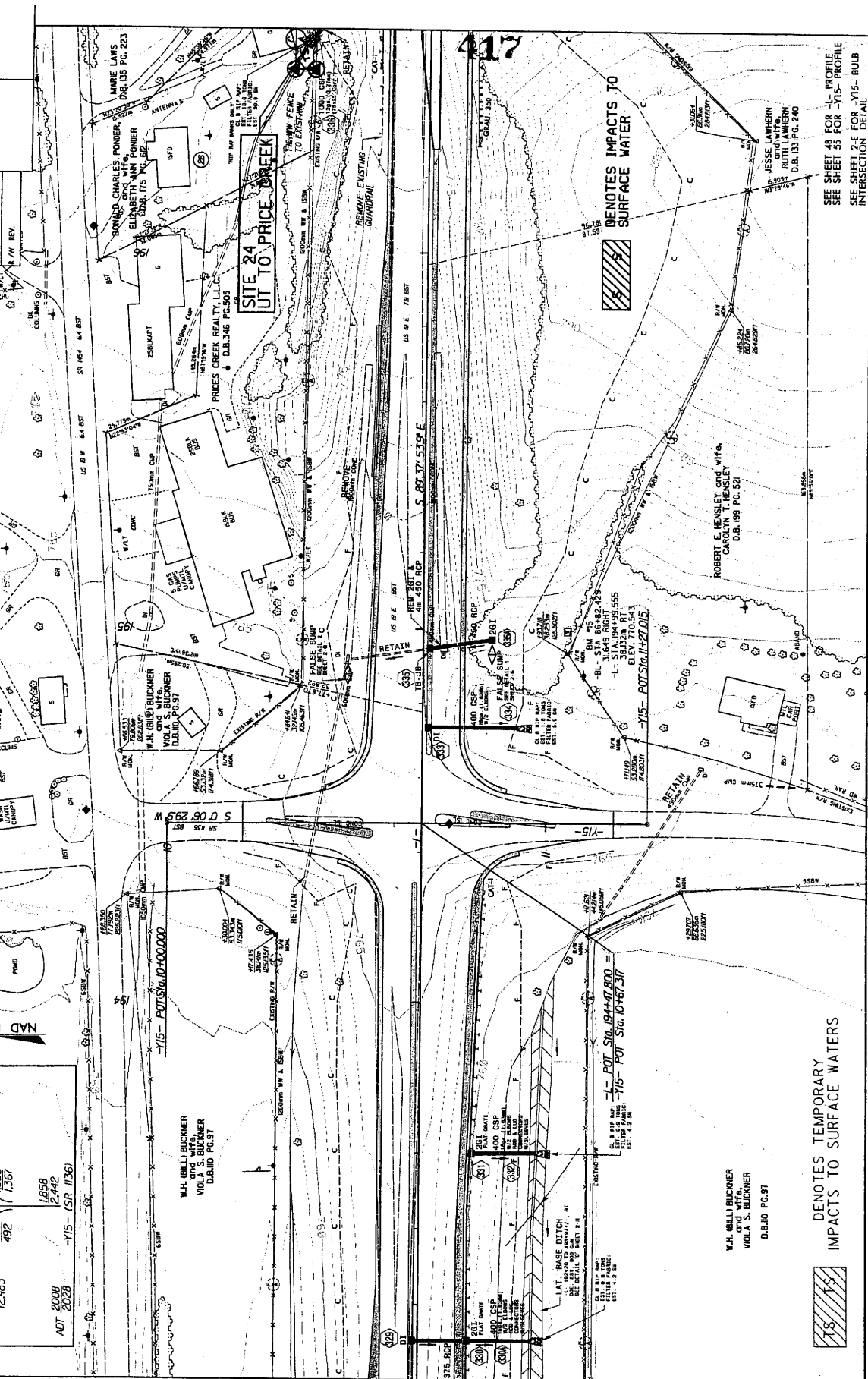
W.H. BUCKNER
 and wife,
 VIOLA S. BUCKNER
 D.B. 110 P.C. 97

W.H. BUCKNER
 and wife,
 CAROLYN T. HENSLEY
 D.B. 199 P.C. 52

WESLEY
 and wife,
 RUTH LAWREN
 D.B. 131 P.C. 240

W.H. BUCKNER
 and wife,
 VIOLA S. BUCKNER
 D.B. 110 P.C. 97

W.H. BUCKNER
 and wife,
 VIOLA S. BUCKNER
 D.B. 110 P.C. 97



| | | |
|------|-------|------|
| 9668 | 14242 | 19 |
| 417 | 583 | 1333 |
| 408 | 492 | 1033 |
| 1459 | 2442 | 1367 |
| 2008 | 2028 | 1136 |

SEE SHEET 48 FOR PROFILE
 SEE SHEET 53 FOR -Y15- PROFILE
 SEE SHEET 2 F FOR -Y15- BULB
 INTERSECTION DETAIL

DENOTES TEMPORARY
 IMPACTS TO SURFACE WATERS

PROJECT REFERENCE NO. SHEET
R-25/08B 20

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

METRICS

CONST. REV.
R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
SUITE 1411 SHEET
975 W. MAIN ST. 275 11
CARY, NC 27513
PH: (919) 319-8850

TGS
ASSOCIATES

KENNETH P. HUNTER
CHD WIFE
MILDRED W. HUNTER
D.B. 134 PG. 71

GUY PHILLIPS, ARVIL KING,
CHD C.B. MARY, TRUSTEES
FOR CAN RIVER BAPTIST CHURCH
D.B. 125 PG. 581

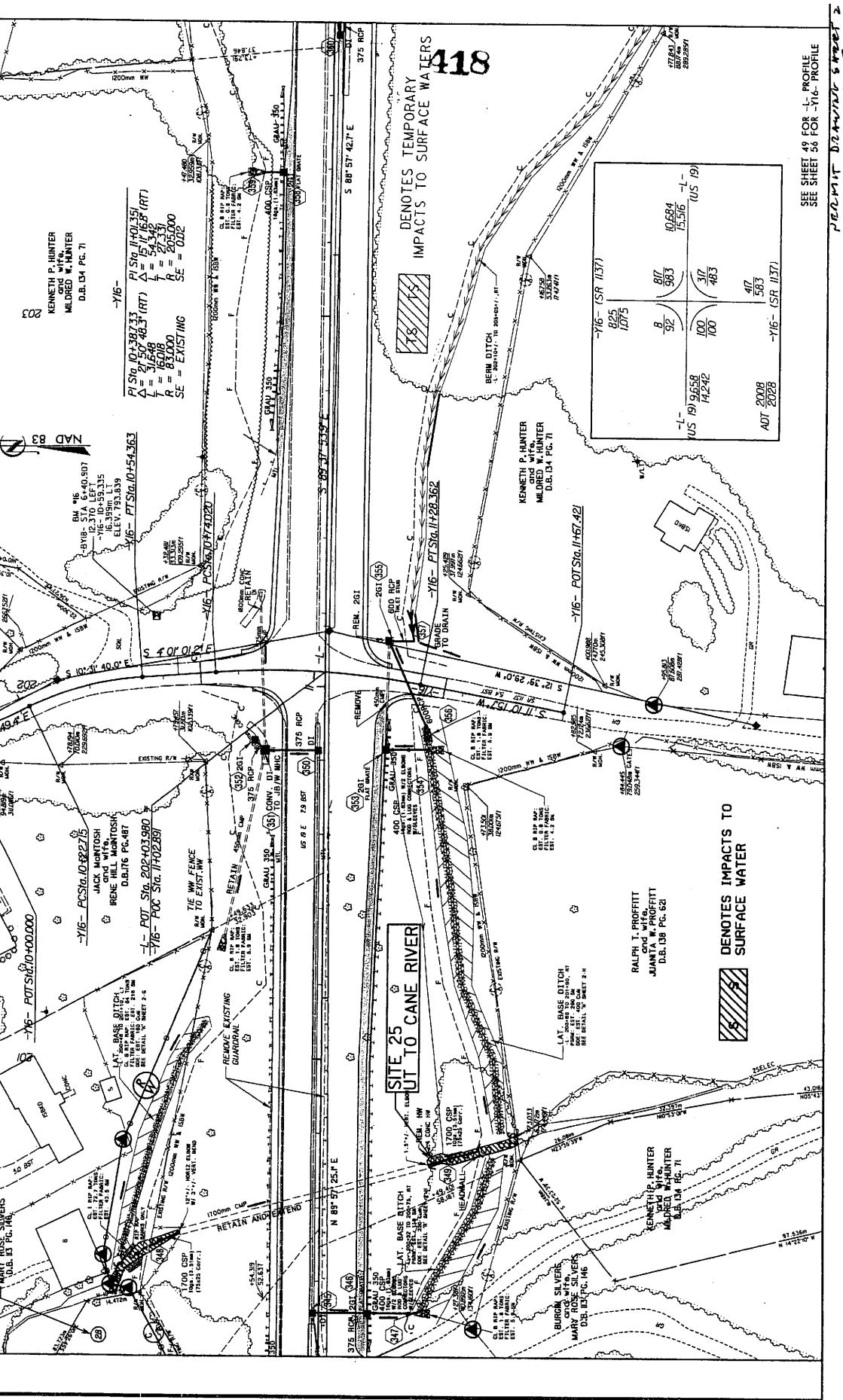
JACK MONTOSH
RENE HILL MONTOSH
D.B. 176 PG. 487

MARY ROSE SILVERS
D.B. 13 PG. 146

JOHN S. LEDFORD
D.B. 109 PG. 462

KENNETH P. HUNTER
CHD WIFE
MILDRED W. HUNTER
D.B. 134 PG. 71

BURTON SILVERS
MILDRED W. HUNTER
D.B. 134 PG. 71



REVISIONS

SEE SHEET 49 FOR -L- PROFILE
SEE SHEET 50 FOR -Y16- PROFILE

PRELIMINARY DRAWING SHEET 2
12/21/2008 POC 2008

TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH. (919) 319-8850

TGS

PROJECT REFERENCE NO. **R-2509**
 SHEET NO. **20**
 R/W SHEET NO. **20**
 ROSS W. HUNTER
 ENGINEER
 HYDRAULICS
 ENGINEER

PRELIMINARY PLANS
 FOR THE PROPOSED CONSTRUCTION

CONSTR. REV.
 R/W REV.

METRICS

1" = 10'

5' 0"

0' 0"

KENNETH P. HUNTER
 MILDRED W. HUNTER
 D.B. 134 PG. 71

-Y16-
 P1 STA. 1140.35
 Δ = 16.1465 (RT)
 L = 54.43
 P = 27.33
 R = 16.08
 SE = EXISTING
 SE = 0.02

-Y16-
 P1 STA. 1043.87
 Δ = 21.5074 (RT)
 L = 31.648
 P = 16.08
 SE = EXISTING
 SE = 0.02

-Y16-
 P1 STA. 1045.43
 Δ = 16.1465 (RT)
 L = 54.43
 P = 27.33
 R = 16.08
 SE = EXISTING
 SE = 0.02

-Y16-
 P1 STA. 1047.00
 Δ = 16.1465 (RT)
 L = 54.43
 P = 27.33
 R = 16.08
 SE = EXISTING
 SE = 0.02

-Y16-
 P1 STA. 1048.56
 Δ = 16.1465 (RT)
 L = 54.43
 P = 27.33
 R = 16.08
 SE = EXISTING
 SE = 0.02

-Y16-
 P1 STA. 1050.12
 Δ = 16.1465 (RT)
 L = 54.43
 P = 27.33
 R = 16.08
 SE = EXISTING
 SE = 0.02

-Y16-
 P1 STA. 1051.68
 Δ = 16.1465 (RT)
 L = 54.43
 P = 27.33
 R = 16.08
 SE = EXISTING
 SE = 0.02

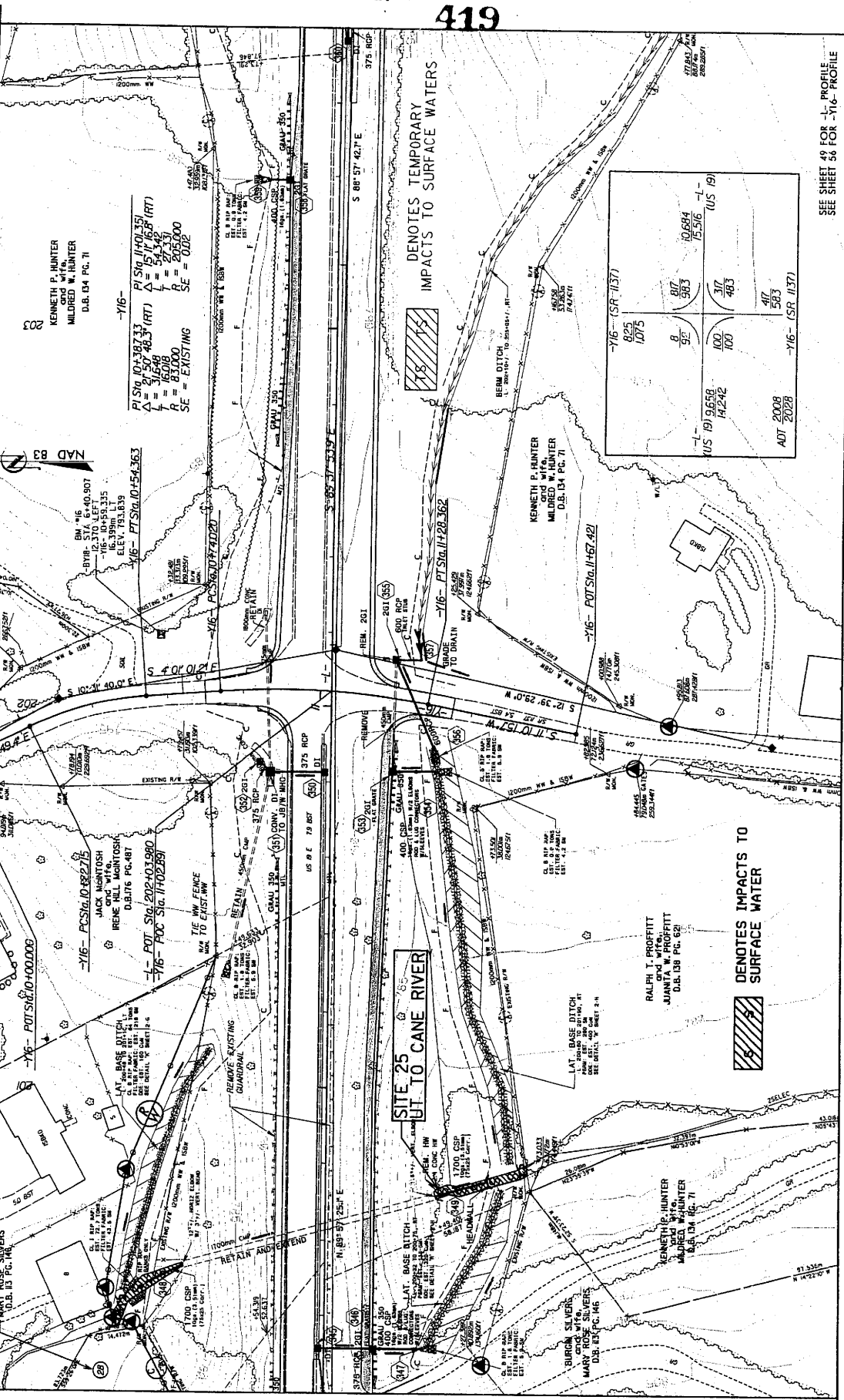
-Y16-
 P1 STA. 1053.24
 Δ = 16.1465 (RT)
 L = 54.43
 P = 27.33
 R = 16.08
 SE = EXISTING
 SE = 0.02

-Y16-
 P1 STA. 1054.80
 Δ = 16.1465 (RT)
 L = 54.43
 P = 27.33
 R = 16.08
 SE = EXISTING
 SE = 0.02

-Y16-
 P1 STA. 1056.36
 Δ = 16.1465 (RT)
 L = 54.43
 P = 27.33
 R = 16.08
 SE = EXISTING
 SE = 0.02

-Y16-
 P1 STA. 1057.92
 Δ = 16.1465 (RT)
 L = 54.43
 P = 27.33
 R = 16.08
 SE = EXISTING
 SE = 0.02

-Y16-
 P1 STA. 1059.48
 Δ = 16.1465 (RT)
 L = 54.43
 P = 27.33
 R = 16.08
 SE = EXISTING
 SE = 0.02



| | | | |
|----------------|----------------|------------------------|------------------|
| 825 1075 | 8 9E | 10684 15516 (US 19) | ADT 2008 2028 |
| 716- (SR 1137) | 716- (SR 1137) | 716- (SR 1137) | 716- (SR 1137) |

SEE SHEET 49 FOR -L- PROFILE
 SEE SHEET 56 FOR -Y16- PROFILE

PARALLEL DRAWING SHEET 23
 0.0112 km 150 - 200

REVISIONS

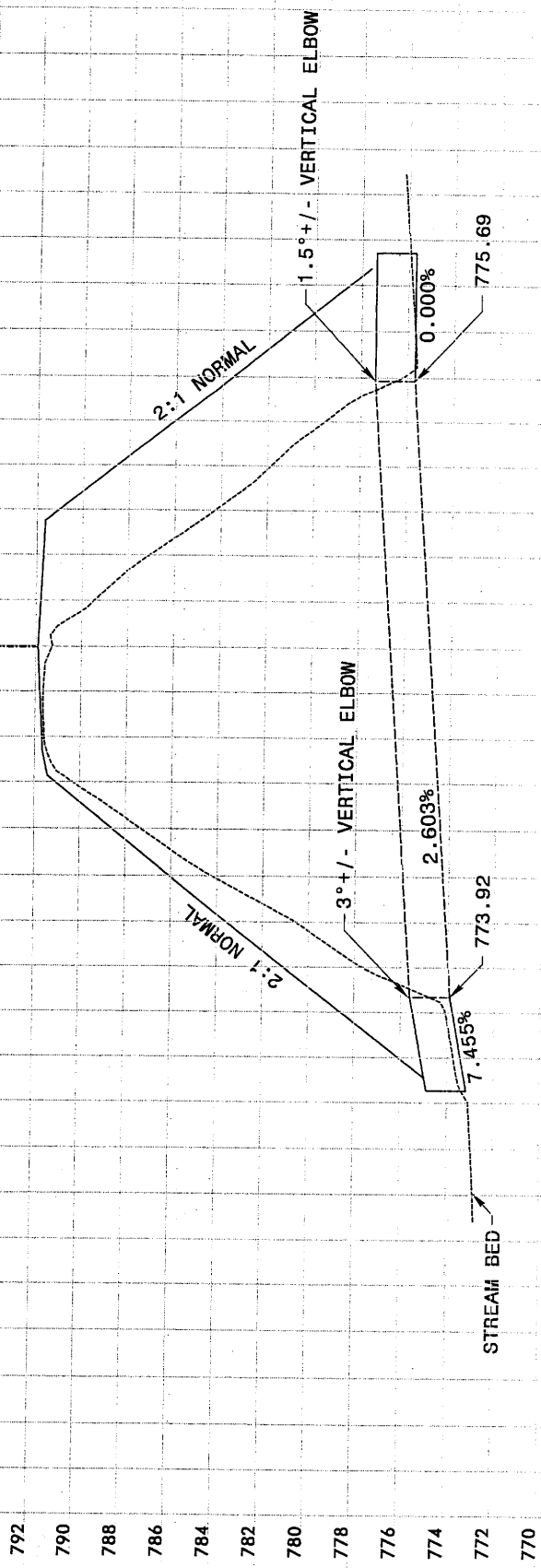


| | |
|----------------------------------|-------------|
| PROJECT REFERENCE NO. R-22/00 | SHEET NO. |
| PROJECT DESIGN ENGINEER | PROJANALYST |
| CONST. REV. | DATE |
| BY | REV. |

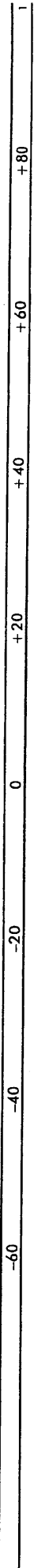
420

RETAIN AND EXTEND AS REQUIRED.
 1700mm (66") CSP
 #10 GA. 76.2mm x 25.4mm (3" x 1") CORR.
 WITH HEADWALL ON INLET END

CL 75° SKEW 200+64 GR. EL. = 791.90



SITE 25 PROFILE



792
790
788
786
784
782
780
778
776
774
772
770

TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH. (919) 319-9850

PROJECT REFERENCE NO. SHEET NO.
 F-2598 29

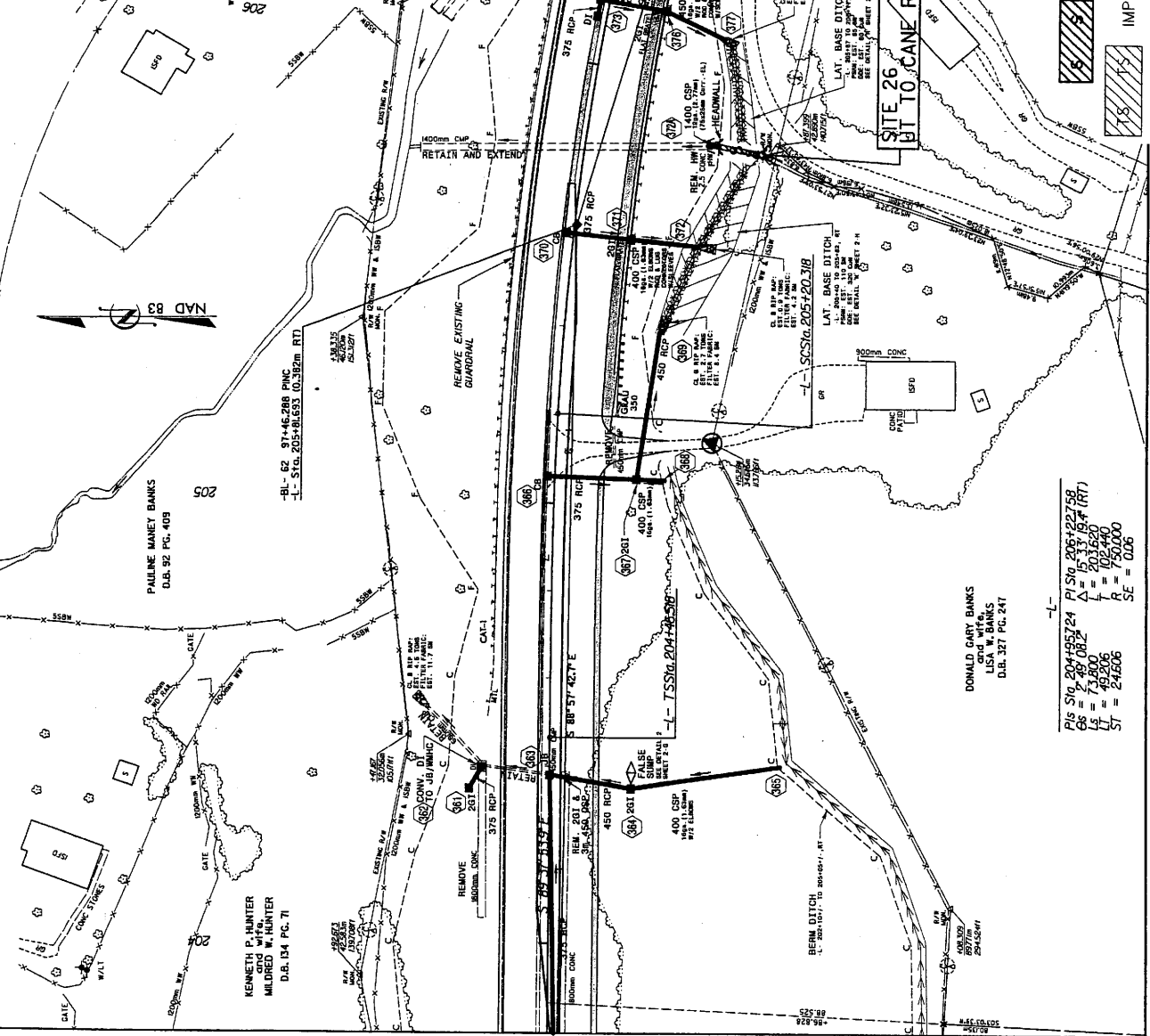
ROADWAY DESIGN ENGINEER
 ROBERT J. JENSEN

PRELIMINARY PLANS
 (FOR INFORMATION)

METRICS

SCALE: 1" = 10'

DATE: 04/11/11



DENOTES IMPACTS TO SURFACE WATER
 DENOTES TEMPORARY IMPACTS TO SURFACE WATERS

-L-
 PLS Sta. 204+95.24 PLS Sta. 206+22.58
 68 = 2-28.08
 L = 73.800
 P = 92.006
 51 = 2+16.00
 SE = 0.06

DONALD GARY BANKS
 L.S. & P.E.
 D.B. 327 PG. 247

SEE SHEET 49 FOR -L- PROFILE

PROJECT REFERENCE NO. R-23102
 SHEET 30
 TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH: (919) 319-8850

HYDRAULIC DESIGN ENGINEER
 PRELIMINARY PLANS
 FOR THE PROPOSED CONSTRUCTION

CONST. BY
 T/W REV.

PI S14 207+48.5+3
 PI S14 208+387.40
 PI S14 210+499.625
 GS = 1.45' 42.6'
 L = 49.00'
 L = 61.00'
 L = 49.00'
 ST = 24.606'
 SE = 0.05'

PAULINE MANEY BANKS
 D.B. 92 PG. 403

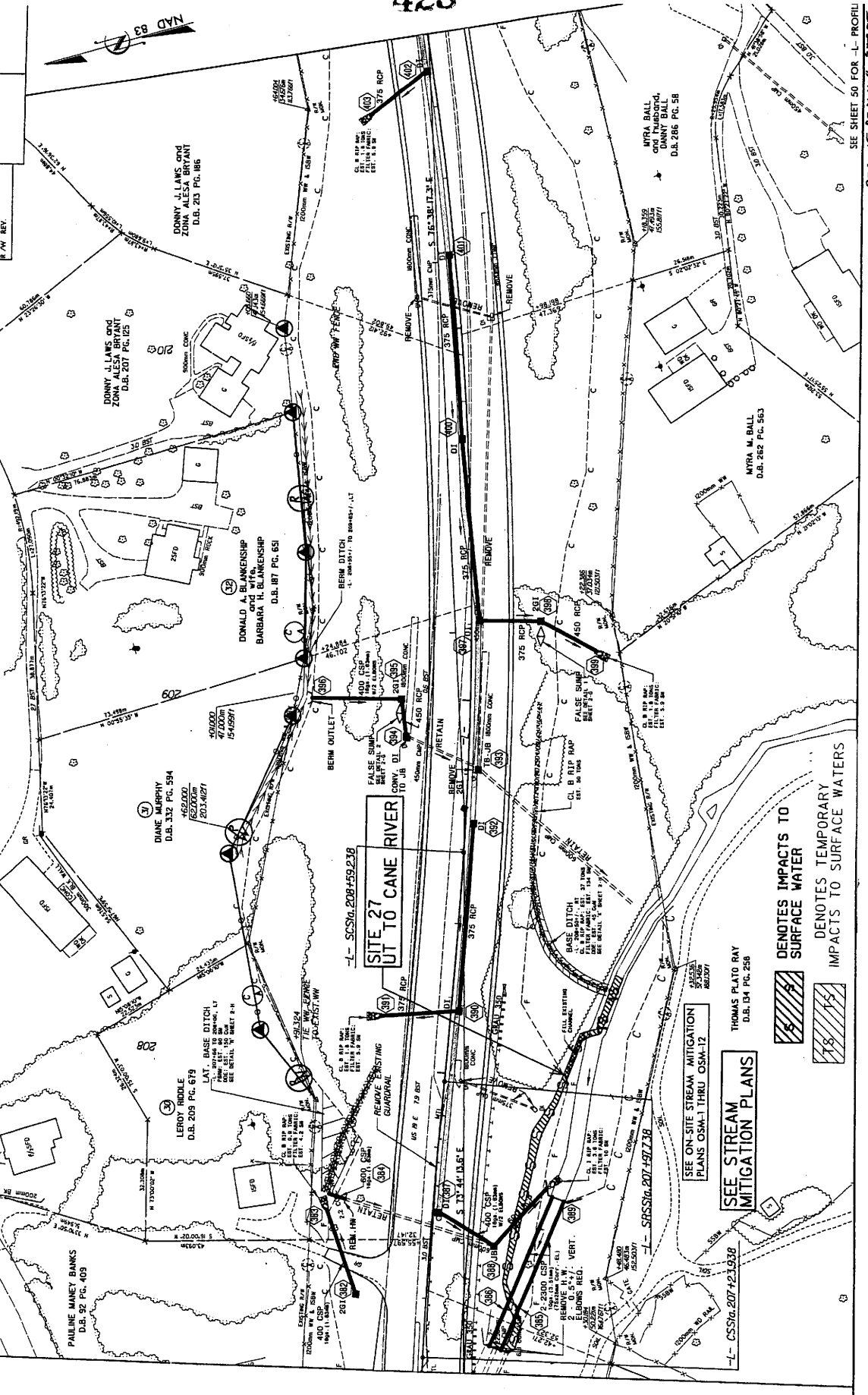
LERROY HIDDLE
 D.B. 209 PG. 679

DIANE MURPHY
 D.B. 332 PG. 594

DONALD A. BLANKENSHIP
 and wife,
 BARBARA H. BLANKENSHIP
 D.B. 87 PG. 651

DONNY J. LANS and
 ZONA ALESA BRYANT
 D.B. 207 PG. 866

MYRA M. BALL
 and THADDEUS,
 DANNY BALL
 D.B. 286 PG. 58



REVISIONS

SEE ON-SITE STREAM MITIGATION PLANS OSM-1 THRU OSM-12
 SEE STREAM MITIGATION PLANS
 DENOTES IMPACTS TO SURFACE WATER
 DENOTES TEMPORARY IMPACTS TO SURFACE WATERS

SEE SHEET 50 FOR L-PROFILE
 PERMIT DRAWING STREET

THOMAS PLATO RAY
 D.B. 194 PG. 258

PAULINE MANEY BANKS
 D.B. 92 PG. 403

LERROY HIDDLE
 D.B. 209 PG. 679

DIANE MURPHY
 D.B. 332 PG. 594

DONALD A. BLANKENSHIP
 and wife,
 BARBARA H. BLANKENSHIP
 D.B. 87 PG. 651

DONNY J. LANS and
 ZONA ALESA BRYANT
 D.B. 207 PG. 866

MYRA M. BALL
 and THADDEUS,
 DANNY BALL
 D.B. 286 PG. 58

THOMAS PLATO RAY
 D.B. 194 PG. 258

PAULINE MANEY BANKS
 D.B. 92 PG. 403

LERROY HIDDLE
 D.B. 209 PG. 679

DIANE MURPHY
 D.B. 332 PG. 594

DONALD A. BLANKENSHIP
 and wife,
 BARBARA H. BLANKENSHIP
 D.B. 87 PG. 651

| | |
|---|---------|
| PROJECT REFERENCE NO. | SHEET # |
| R-2588 | 30 |
| R. W. SHEET NO. | |
| HYDRAULICS | |
| ROADWAY DESIGN | |
| ENGINEER | |
| PRELIMINARY PLANS | |
| SUBJECT TO THE APPROVAL OF THE CONTRACTING AGENCY | |

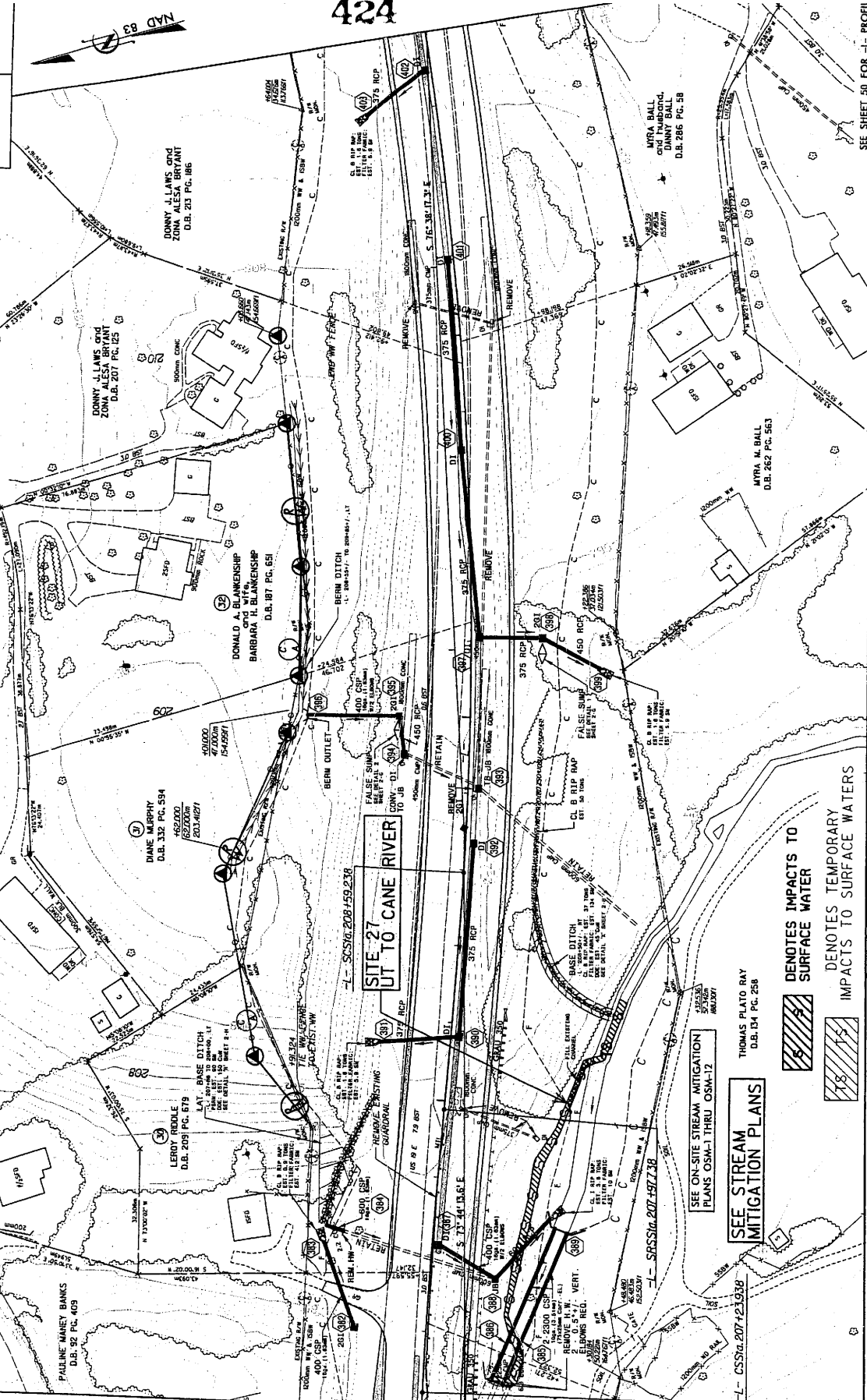
| | |
|--------------------|-----------|
| TGS ENGINEERS | CONSTRY. |
| 875 WALNUT STREET | R. W. BY. |
| CARY, NC 27511 | |
| PH: (919) 319-8850 | |

TGS ENGINEERS
875 WALNUT STREET
CARY, NC 27511
PH: (919) 319-8850

PI S₁₉ = 207+48.543
PI S₁₈ = 207+48.543
PI S₁₇ = 207+48.543
PI S₁₆ = 207+48.543
PI S₁₅ = 207+48.543
PI S₁₄ = 207+48.543
PI S₁₃ = 207+48.543
PI S₁₂ = 207+48.543
PI S₁₁ = 207+48.543
PI S₁₀ = 207+48.543
PI S₉ = 207+48.543
PI S₈ = 207+48.543
PI S₇ = 207+48.543
PI S₆ = 207+48.543
PI S₅ = 207+48.543
PI S₄ = 207+48.543
PI S₃ = 207+48.543
PI S₂ = 207+48.543
PI S₁ = 207+48.543

PI S₁₉ = 207+48.543
PI S₁₈ = 207+48.543
PI S₁₇ = 207+48.543
PI S₁₆ = 207+48.543
PI S₁₅ = 207+48.543
PI S₁₄ = 207+48.543
PI S₁₃ = 207+48.543
PI S₁₂ = 207+48.543
PI S₁₁ = 207+48.543
PI S₁₀ = 207+48.543
PI S₉ = 207+48.543
PI S₈ = 207+48.543
PI S₇ = 207+48.543
PI S₆ = 207+48.543
PI S₅ = 207+48.543
PI S₄ = 207+48.543
PI S₃ = 207+48.543
PI S₂ = 207+48.543
PI S₁ = 207+48.543

PI S₁₉ = 207+48.543
PI S₁₈ = 207+48.543
PI S₁₇ = 207+48.543
PI S₁₆ = 207+48.543
PI S₁₅ = 207+48.543
PI S₁₄ = 207+48.543
PI S₁₃ = 207+48.543
PI S₁₂ = 207+48.543
PI S₁₁ = 207+48.543
PI S₁₀ = 207+48.543
PI S₉ = 207+48.543
PI S₈ = 207+48.543
PI S₇ = 207+48.543
PI S₆ = 207+48.543
PI S₅ = 207+48.543
PI S₄ = 207+48.543
PI S₃ = 207+48.543
PI S₂ = 207+48.543
PI S₁ = 207+48.543



SEENOTES TO SURFACE WATERS
IMPACTS TO SURFACE WATERS

SEENOTES TO SURFACE WATERS
IMPACTS TO SURFACE WATERS

SEENOTES TO SURFACE WATERS
IMPACTS TO SURFACE WATERS

SEENOTES TO SURFACE WATERS
IMPACTS TO SURFACE WATERS

SEENOTES TO SURFACE WATERS
IMPACTS TO SURFACE WATERS

PI S₁₉ = 207+48.543
PI S₁₈ = 207+48.543
PI S₁₇ = 207+48.543
PI S₁₆ = 207+48.543
PI S₁₅ = 207+48.543
PI S₁₄ = 207+48.543
PI S₁₃ = 207+48.543
PI S₁₂ = 207+48.543
PI S₁₁ = 207+48.543
PI S₁₀ = 207+48.543
PI S₉ = 207+48.543
PI S₈ = 207+48.543
PI S₇ = 207+48.543
PI S₆ = 207+48.543
PI S₅ = 207+48.543
PI S₄ = 207+48.543
PI S₃ = 207+48.543
PI S₂ = 207+48.543
PI S₁ = 207+48.543

SEE SHEET 50 FOR -L- PROFILE
PERMIT DRAWING 2588

SEE SHEET 50 FOR -L- PROFILE
PERMIT DRAWING 2588

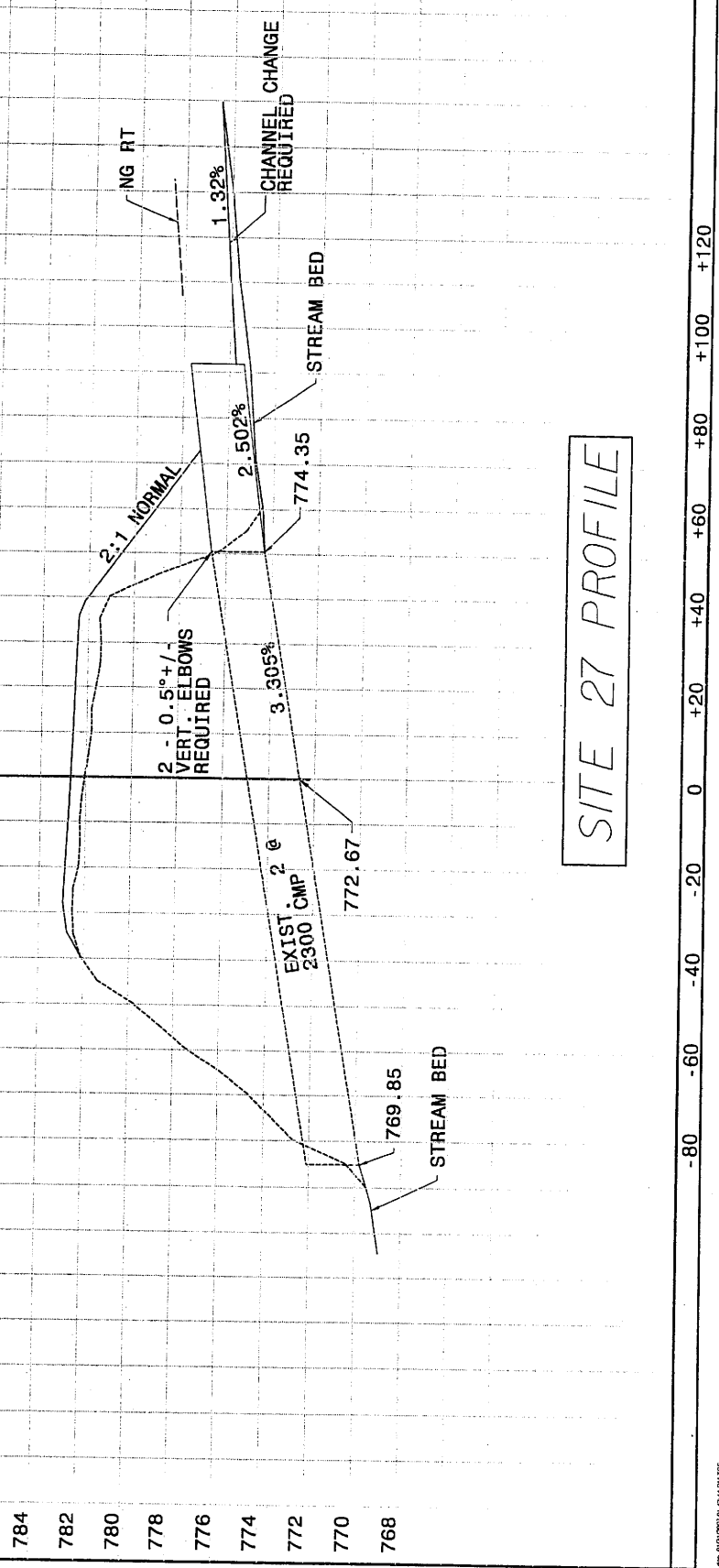


| | |
|----------------------------------|------------------------|
| PROJECT REFERENCE NO. R-25160 | SHEET NO. 425 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| CONSTR. REV. | |
| R/W. REV. | |

425

IN PLACE - 2- 2300mm (90") CSP, 10 GA., ELONGATED
76.2mm X 25.4mm (3" X 1") CORR.
WITH HEADWALL ON INLET END

Q - L - 206+80 GR. EL. = 782.668
25° SKEW



SITE 27 PROFILE

784
782
780
778
776
774
772
770
768

-80 -60 -40 -20 0 +20 +40 +60 +80 +100 +120

PROJECT REFERENCE NO. SHEET NO.
 R/W SHEET NO.
 HYDRAULICS
 ROADWAY DESIGN
 ENGINEER

TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH (919) 319-8850

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

CONSTREY
 R/W REV.

CARY DRINKS
 DB 205 PG 75

SEE SHEET 36 FOR
 -Y2- TRAFFIC DIAGRAM

ADT 2008
 2925
 4175

ADT 2007
 1483
 1775
 2007

ADT (US 19)
 13558
 19742

PI STA 10+462.69
 $\Delta = 57.495$ (RT)
 $L = 17.895$
 $R = 350.000$
 $SE = 0.04$

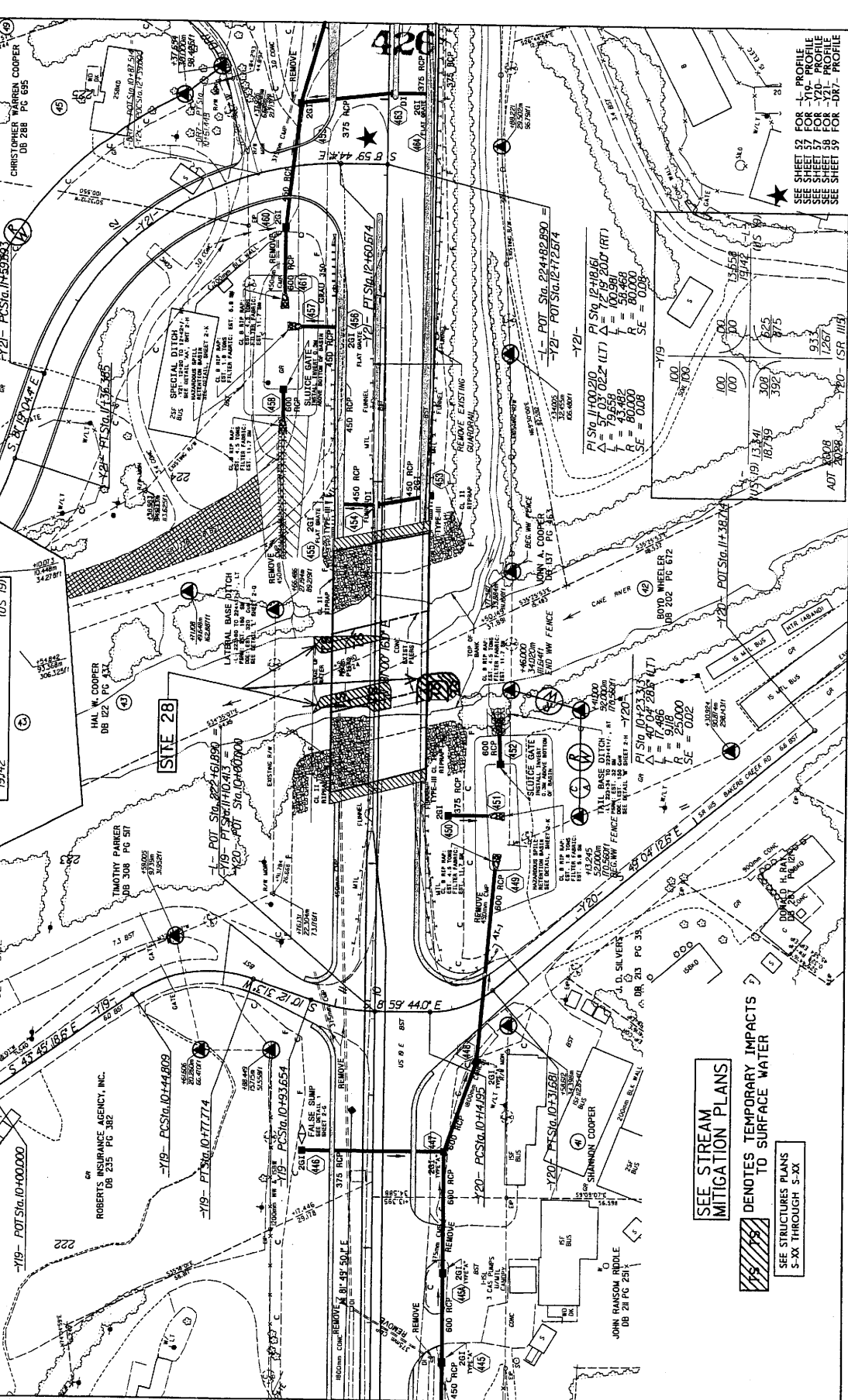
PI STA 10+45.827
 $\Delta = 59.48$ (RT)
 $L = 35.555$
 $R = 269.34$
 $SE = 0.02$

PI STA 10+44.809
 $\Delta = 57.495$ (RT)
 $L = 17.895$
 $R = 350.000$
 $SE = 0.04$

PI STA 10+43.654
 $\Delta = 57.495$ (RT)
 $L = 17.895$
 $R = 350.000$
 $SE = 0.04$

PI STA 10+42.613
 $\Delta = 57.495$ (RT)
 $L = 17.895$
 $R = 350.000$
 $SE = 0.04$

PI STA 10+41.413
 $\Delta = 57.495$ (RT)
 $L = 17.895$
 $R = 350.000$
 $SE = 0.04$



SEE STREAM MITIGATION PLANS
 DENOTES TEMPORARY IMPACTS TO SURFACE WATER
 SEE STRUCTURES PLANS S-XX THROUGH S-XX

REVISIONS

REVISION FEB 2008
 REVISED BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]

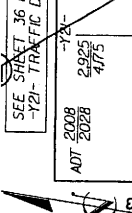
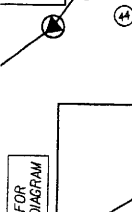
SEE SHEET 37 FOR -L- PROFILE
 SEE SHEET 38 FOR -Y1- PROFILE
 SEE SHEET 39 FOR -Y2- PROFILE
 SEE SHEET 40 FOR -DR- PROFILE

PI STA 10+40.210
 $\Delta = 57.495$ (RT)
 $L = 17.895$
 $R = 350.000$
 $SE = 0.04$

PROJECT REFERENCE NO. SHEET 34
 R/W SHEET NO. HYDRAULIC ENGINEER
 ROADWAY DESIGN ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH (919) 319-8850

CONST. REV.
 R/W REV.



SEE STREAM MITIGATION PLANS

PI STA 10+152.629
 $\Delta = 3.57$
 $L = 17.85$
 $R = 35.000$
 $SE = 0.04$

PI STA 10+021.13
 $\Delta = 19.12$
 $L = 15.2$ (LT)
 $R = 50.000$
 $SE = 0.02$

PI STA 10+343.827
 $\Delta = 36.536$
 $L = 25.934$
 $R = 109.000$
 $SE = 0.02$

PI STA 10+717.4
 $\Delta = 10.000$
 $L = 10.000$
 $R = 10.000$
 $SE = 0.02$

PI STA 10+913.3
 $\Delta = 10.000$
 $L = 10.000$
 $R = 10.000$
 $SE = 0.02$

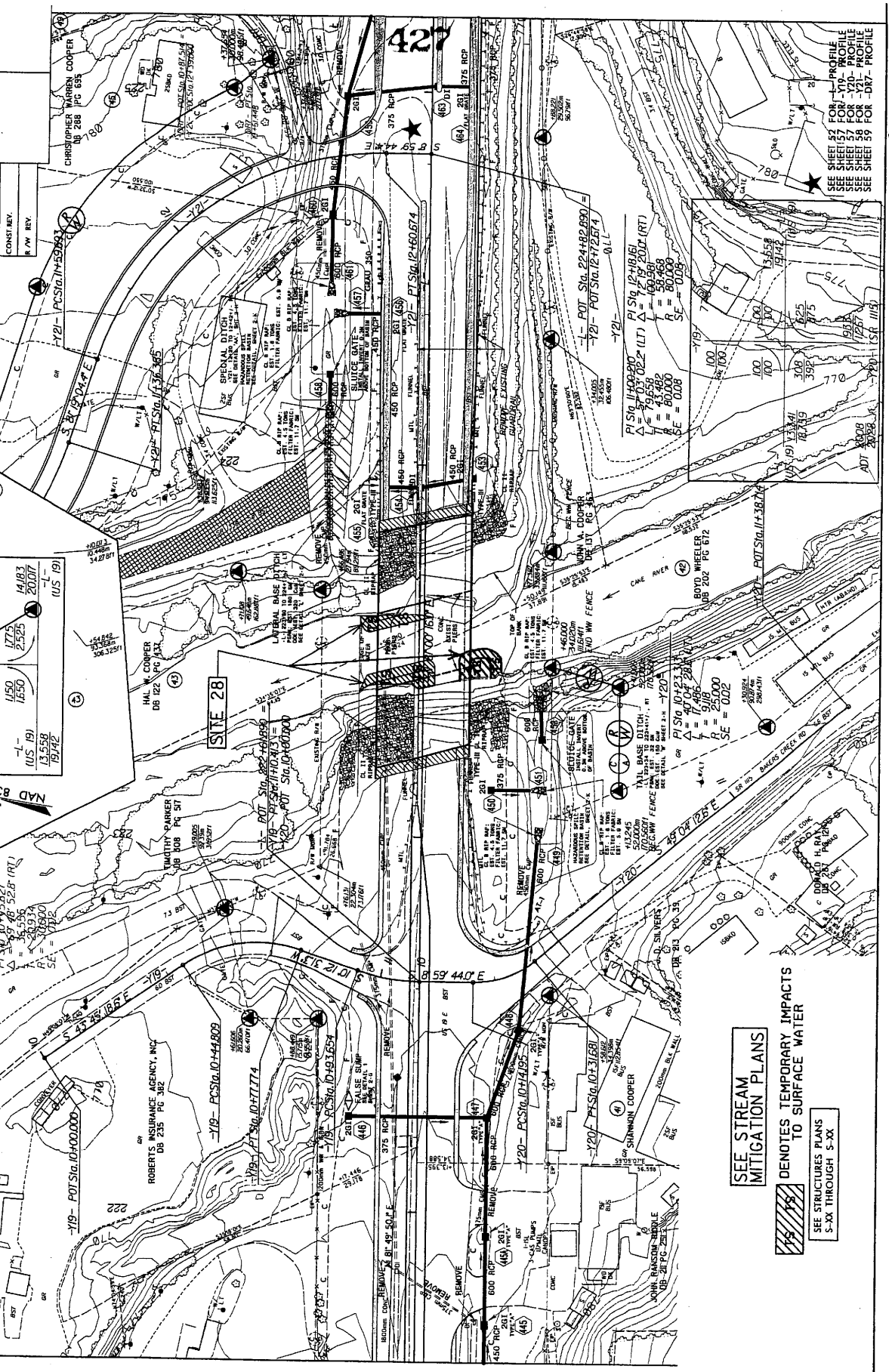
PI STA 10+913.3
 $\Delta = 10.000$
 $L = 10.000$
 $R = 10.000$
 $SE = 0.02$

PI STA 10+913.3
 $\Delta = 10.000$
 $L = 10.000$
 $R = 10.000$
 $SE = 0.02$

PI STA 10+913.3
 $\Delta = 10.000$
 $L = 10.000$
 $R = 10.000$
 $SE = 0.02$

PI STA 10+913.3
 $\Delta = 10.000$
 $L = 10.000$
 $R = 10.000$
 $SE = 0.02$

PI STA 10+913.3
 $\Delta = 10.000$
 $L = 10.000$
 $R = 10.000$
 $SE = 0.02$



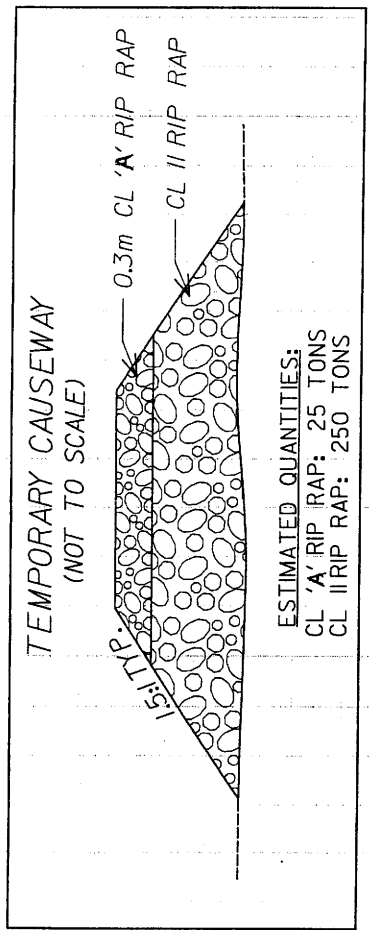
SEE STREAM MITIGATION PLANS

DENOTES TEMPORARY IMPACTS TO SURFACE WATER

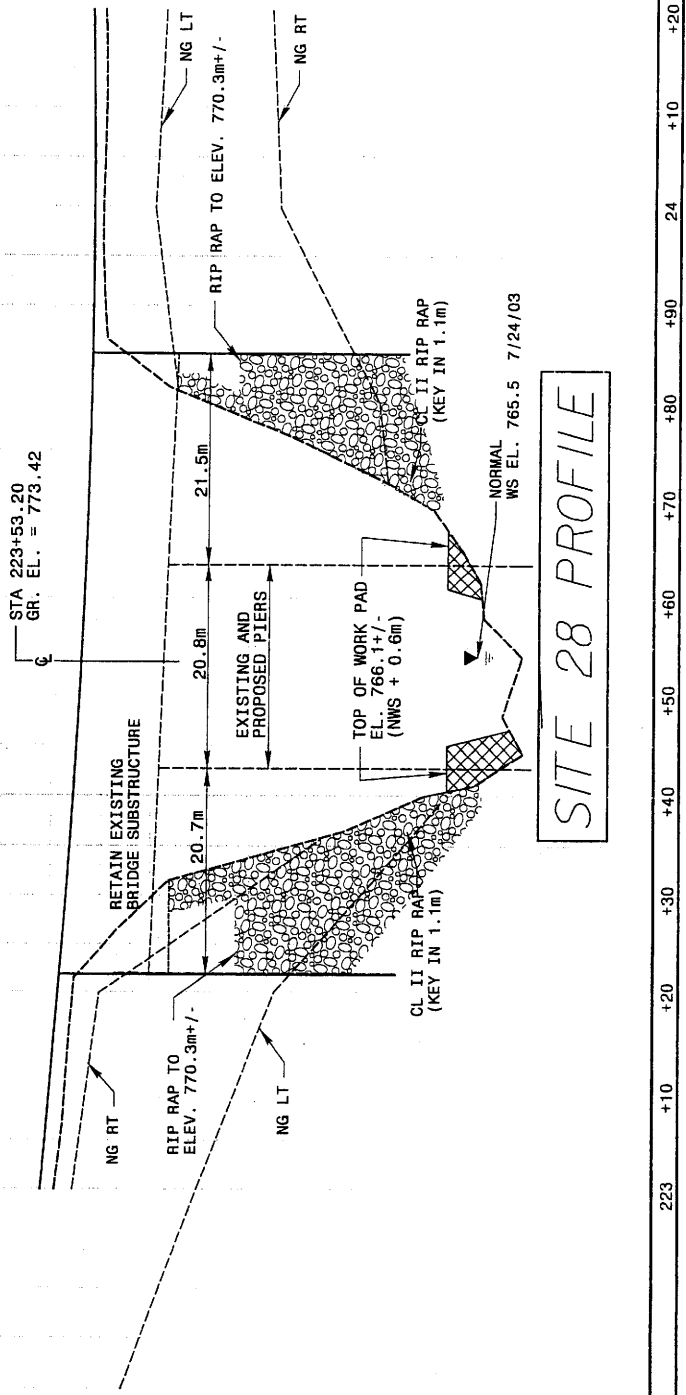
SEE STRUCTURE PLANS S-XX THROUGH S-XX

REVISION 01 FEB 2008
 PLAN IT DRAWING NUMBER 24

| | | |
|-------------|-----------------------|-----------|
| | PROJECT REFERENCE NO. | SHEET NO. |
| | ROAD DESIGNER | PROJ. NO. |
| CONST. REV. | ENGINEER | |
| E/W REV. | | |



775
774
773
772
771
770
769
768
767
766
765
764



SITE 28 PROFILE

223 +10 +20 +30 +40 +50 +60 +70 +80 +90 +10 +20