

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.

<u>PERMIT</u>	<u>AUTHORITY GRANTING THE PERMIT</u>
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.

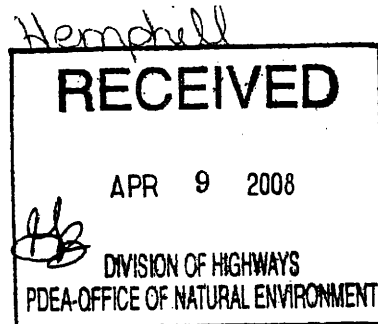
Where construction moratoriums are contained in a permit condition which restricts the Contractor's activities to certain times of the year, those moratoriums will apply only to the portions of the work taking place in the waters or wetlands provided that activities outside those areas is done in such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



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
226 151 PATTON AVENUE
ROOM 208
ASHEVILLE, NORTH CAROLINA 28801-5006

April 1, 2008



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.

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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:

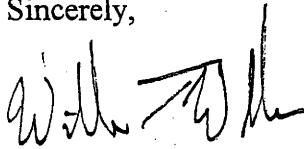
Col. John E. Pulliam, Jr., District Commander
US Army Corps of Engineers, Wilmington District
Post Office Box 1890
Wilmington, NC 28402-1890

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

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

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

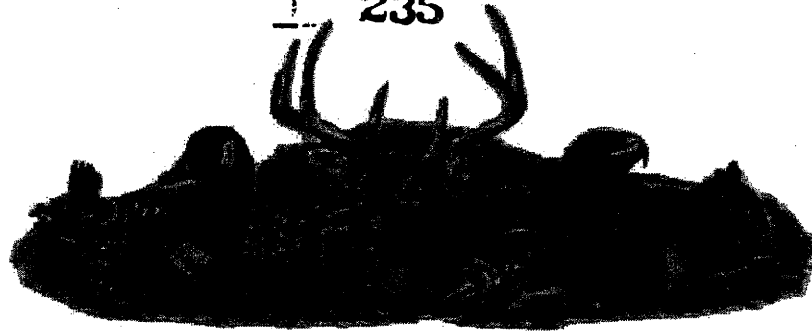
a given segment of stream channel.

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.

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☒ 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 Wien, NCDWQ
Marella Buncick, USFWS
Christopher Militscher, USEPA



Hempill

R-2518A
401

October 11, 2007

RECEIVED

OCT 16 2007

DIVISION OF HIGHWAYS
PDEA-OFFICE OF NATURAL ENVIRONMENT

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

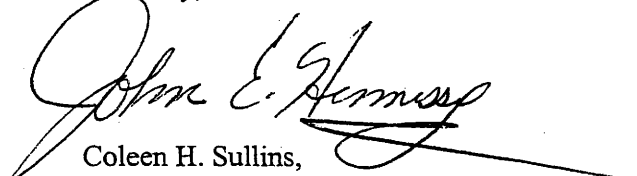
Subject: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS Proposed Improvements of US 19/US 19E from future I-26 (existing US 19-23) to SR 1186 in Madison and Yancey Counties, State Project Nos. 6.869005T and 6.909001T, TIP Project Nos. 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

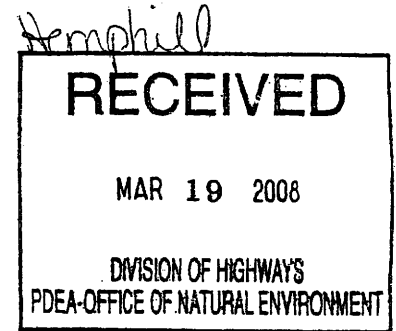
WQC No. 3706



247

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 superceded 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 superceded 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.



7. 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

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 Conditions:

12. The Permittee shall report any violations of this certification to the Division of Water Quality within 24 hours of discovery.
13. 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*.
- 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.



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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

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

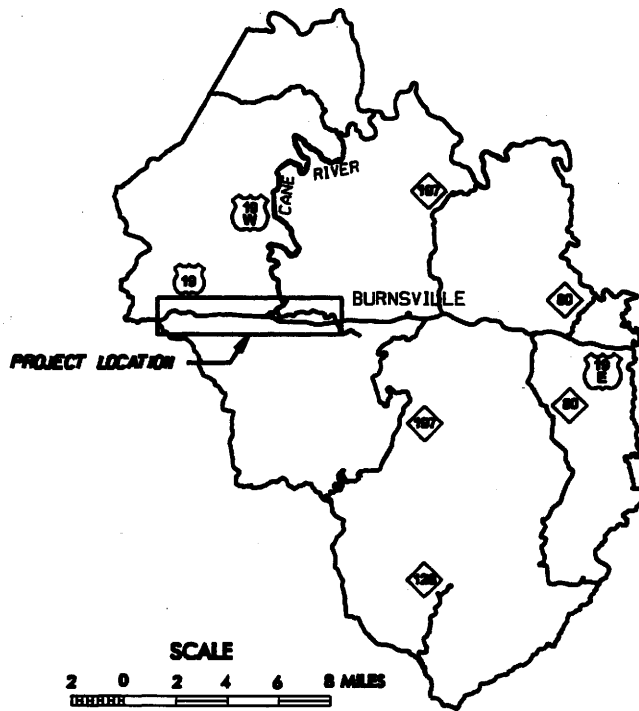
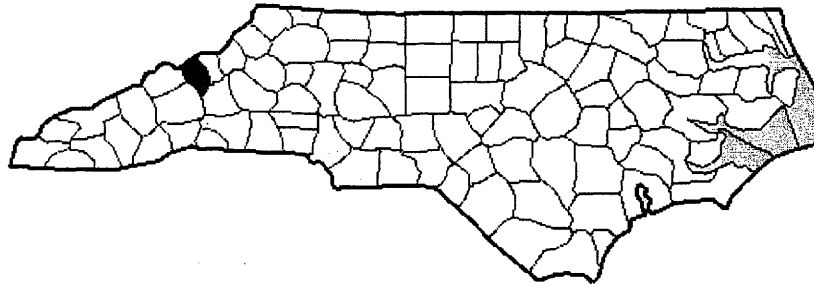
_____ Partial _____ Final

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 _____

NORTH CAROLINA


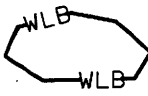


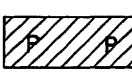
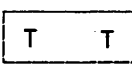
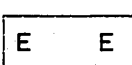
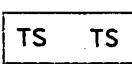
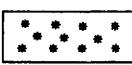

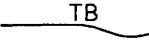
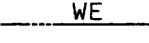
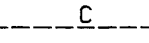
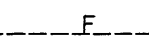

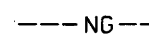
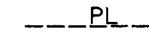
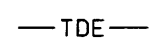
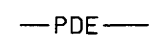

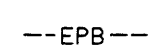
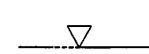
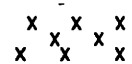

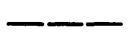


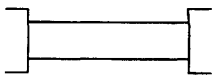
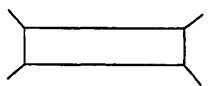

VICINITY MAP


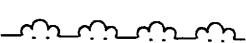
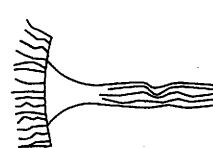
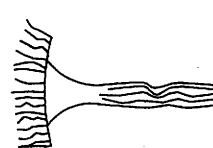
NCDOT
DIVISION OF HIGHWAYS
PROJECT: 3.4445.1.1 (R-2518B)
YANCEY COUNTY




US 19
MADISON COUNTY LINE
TO CANE RIVER
IN BURNSVILLE

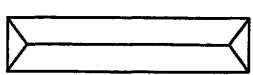
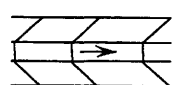
WETLAND ²⁵⁷ LEGEND

-  WETLAND BOUNDARY
-  WETLAND
-  DENOTES FILL IN WETLAND
-  DENOTES IMPACTS TO SURFACE WATER
-  DENOTES FILL IN SURFACE WATER (POND)
-  DENOTES TEMPORARY FILL IN WETLAND
-  DENOTES EXCAVATION IN WETLAND
-  DENOTES TEMPORARY IMPACTS TO SURFACE WATER
-  DENOTES MECHANIZED CLEARING
-  FLOW DIRECTION
-  TOP OF BANK
-  EDGE OF WATER
-  PROP. LIMIT OF CUT
-  PROP. LIMIT OF FILL
-  PROP. RIGHT OF WAY
-  NATURAL GROUND
-  PROPERTY LINE
-  TEMP. DRAINAGE EASEMENT
-  PERMANENT DRAINAGE EASEMENT
-  EXIST. ENDANGERED ANIMAL BOUNDARY
-  EXIST. ENDANGERED PLANT BOUNDARY
-  WATER SURFACE
-  LIVE STAKES
-  BOULDER
-  CORE FIBER ROLLS

-  PROPOSED BRIDGE
-  PROPOSED BOX CULVERT
-  PROPOSED PIPE CULVERT
12"-48" PIPES
54" PIPES & ABOVE
- (DASHED LINES DENOTE EXISTING STRUCTURES)

-  SINGLE TREE
-  WOODS LINE
-  DRAINAGE INLET
-  ROOTWAD

-  RIP RAP
-  ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE
-  PREFORMED SCOUR HOLE

-  LEVEL SPREADER (LS)
-  DITCH / GRASS SWALE

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 2 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

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS											
			Permanent Fill in Wetlands (ha)	Temp. Fill in Wetlands (ha)	Excavation in Wetlands (ha)	Mechanized Clearing in Wetlands (ha)	Hand Clearing in Wetlands (ha)	Permanent SW impacts (ha)	Temp. SW impacts (ha)	Existing Channel Impacts Permanent (m)	Existing Channel Impacts Temp. (m)	Natural Stream Design (m)						
1	115+25	750 RCP																
2	115+72	900 RCP																
2A	117+46	900 CSP																
3	119+68	2-1700 CSP																
4	120+35	600 CSP																
5	122+60	750 RCP																
6	124+25	1400 CSP																
7	133+40	1.5m TB to TB																
8	134+72	3-3.1m x 2.4m RCBC																
9	138+05	4-3.4m x 2.7m RCBC																
10	140+11	1780x1360 CSPA																
11	143+60	900 RCP																
12	146+10	2500x1830 CSPA																
13	150+63	2410x1700 CSPA																
14	156+63	3-2.1x2.1 RCBC																
14A	159+42	TAIL DITCH																
15	162+45	2410x1700 CSPA																
16	164+68	2-2000x1530 CSPA																
17	167+90	1830x1120 CSPA																
18	171+37	1425x950 CSPA																
19	174+19	1200 CSP																
20	175+60	Bridge (Bald Creek)																
20A	-Y14- 10+51	1200 RCP																
21	178+58	600 RCP																
22	185+32	1200 CSP																
22A	185+50	1200 CSP; 600 RCP	0.046		0.005													
23	192+18	Bridge (Price Creek)																
24	196+80	1000 CSP																
25	200+64	1700 CSP																
26	205+81	1400 CSP																
27	206+78	2-2300 CSP																
28	223+60	Bridge (Cane River)																
1A	161+60		0.027			0.0155												
TOTALS:			0.073		0.005	0.016												231

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
YANCEY COUNTY
WBS - 3444S.1.1 (R-2518B)

SHEET OF #####

LAU17C8 FEB 2005

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

Mitigation Type
Enhancement
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

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 Permanent (ft)		Existing Channel Impacts 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+66	2-66" CSP						0.01			49	10	
4	120+35	24" CSP						0.01			56	49	
5	122+80	30" RCP						0.01			76	20	
6	124+25	54" CSP						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" CSP						0.01			69	10	
11	143+60	42" RCP						0.01			36	10	
12	148+10	103"x71" CSP						0.02			76	10	
13	150+63	95"x67" CSP						0.01			95	16	
14	158+63	3-7"x7" RCBC						0.02			135	36	
14A	159+42	TAIL DITCH						0.00			10	10	
15	162+45	95"x67" CSP						0.01			82	10	
16	164+86	2-81"x59" CSP						0.01			112	10	
17	167+90	72"x44" CSP						0.01			66	10	
18	171+37	58"x36" CSP						0.01			66	10	
19	174+19	48" CSP						0.01			16	233	315
20	175+60	Bridge (Bald Creek)						0.00			36	10	
20A	-Y14- 10+51	48" RCP						0.00			33	10	
21	179+56	24" RCP						0.01			154	10	
22	185+32	48" CSP						0.01			36	56	
22A	185+50	48" CSP; 24" RCP	0.11		0.01			0.03			16	10	
23	192+18	Bridge (Price Creek)						0.00			135	20	
24	198+80	42" CSP						0.03			39	10	
25	200+64	66" CSP						0.00			302	56	
26	205+81	54" CSP						0.04			0.05	118	
27	206+76	2-90" CSP						0.01					
28	223+60	Bridge (Cane River)						0.04					
1A	161+60		0.07		0.01			0.48			2866	840	758
TOTALS:			0.18		0.04			0.17					

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

R-2518B F.E.B. 2005

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

Mitigation Site
Site 1
Site 3
Site 4
Site 8
Site 11
Site 12
Mitigation Type
Enhancement
Enhancement
Enhancement
Restoration
Enhancement/Restoration
Length
1748 ft
987 ft
813 ft
997 ft
564 ft
Bridge Pier impacts
Bridge at Price Creek = 30 sq. ft.
Bridge at Cane River = 40 sq. ft.



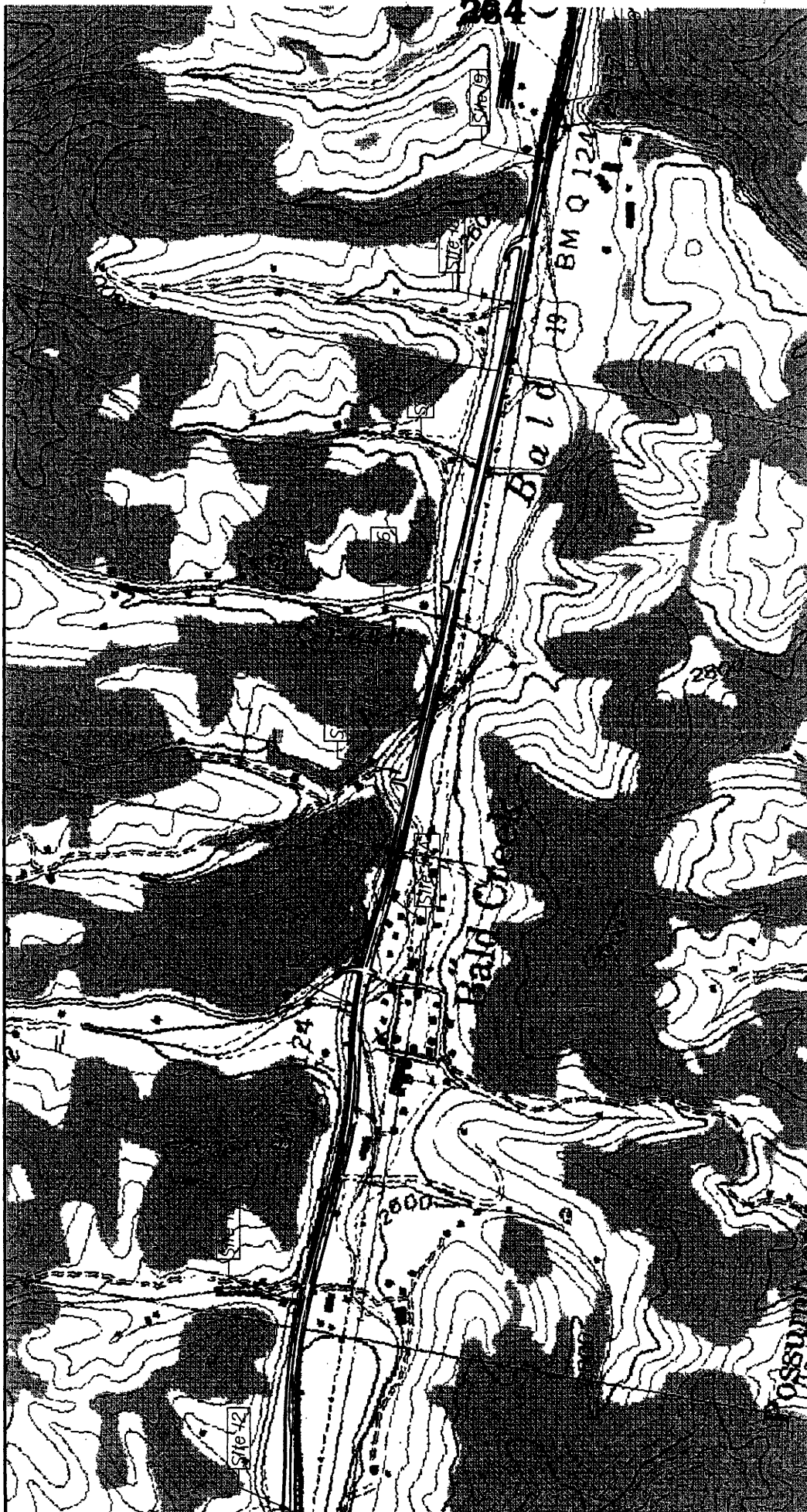
263

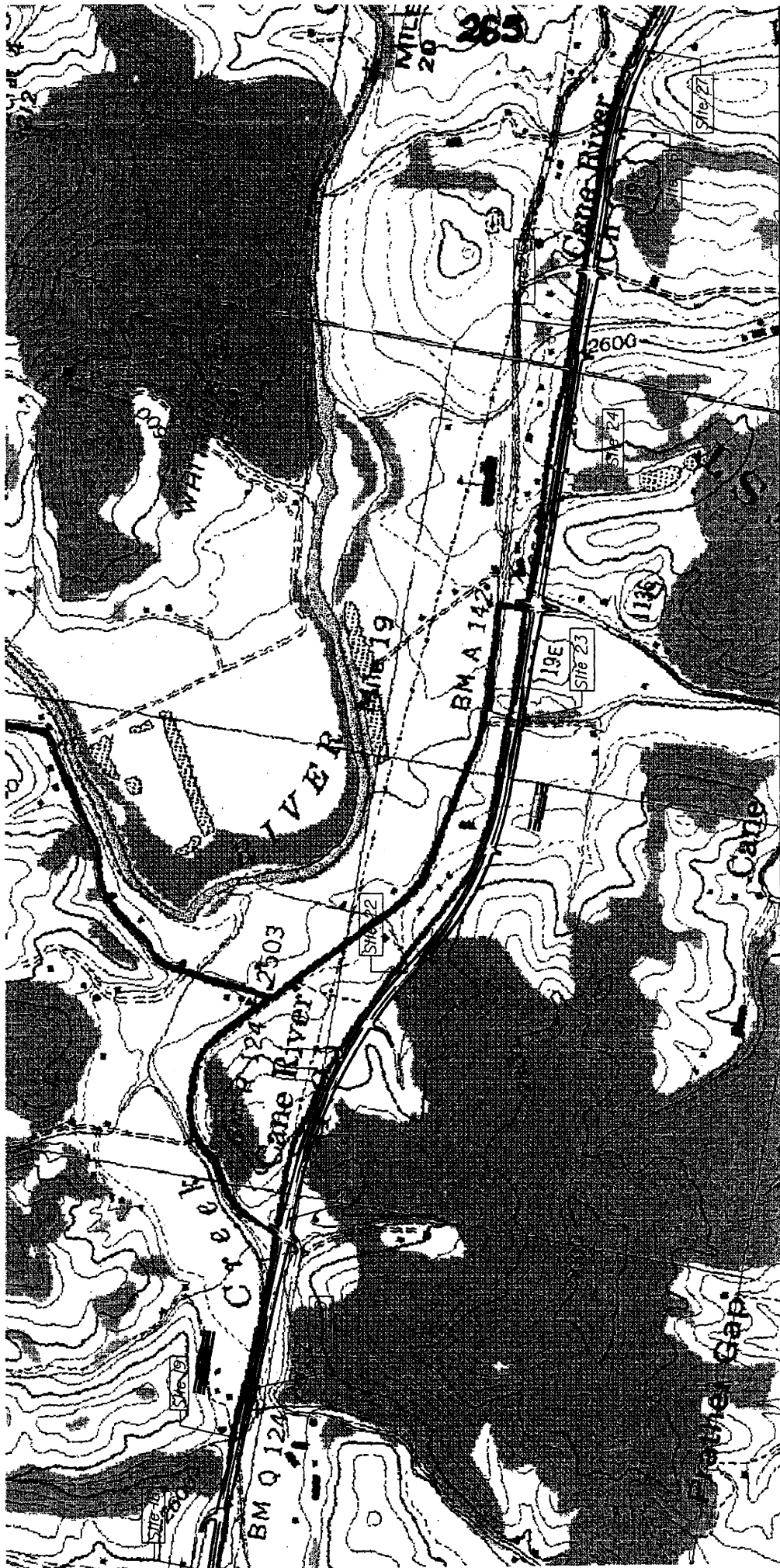
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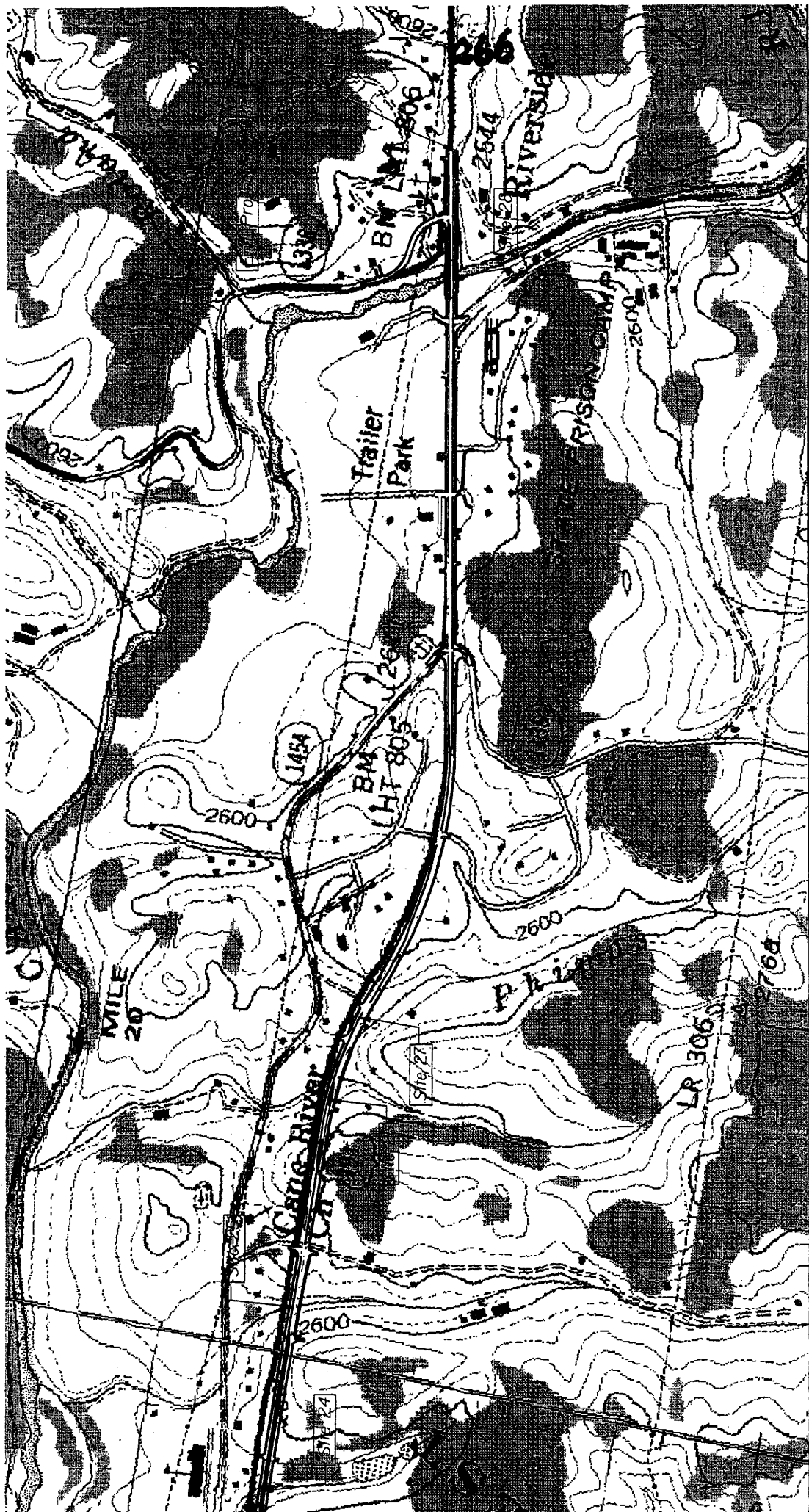
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PROJECT REFERENCE NO. SHEET 4
 TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH (919) 319-8850

ROADWAY DESIGN ENGINEER
 HYDRAULIC ENGINEER
 PRELIMINARY PLANS
 FOR THE USE OF CONSTRUCTION

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

CONTRACT NO. 17
 P.W. NO. 17

PROPOSED FENCE LINE INSET

100547 RTI
 BECAUSE
 FENCE ON
 EXIST. C/A

100547 RTI
 BECAUSE
 FENCE ON
 EXIST. C/A

100547 RTI
 BECAUSE
 FENCE ON
 EXIST. C/A

100547 RTI
 BECAUSE
 FENCE ON
 EXIST. C/A

100547 RTI
 BECAUSE
 FENCE ON
 EXIST. C/A

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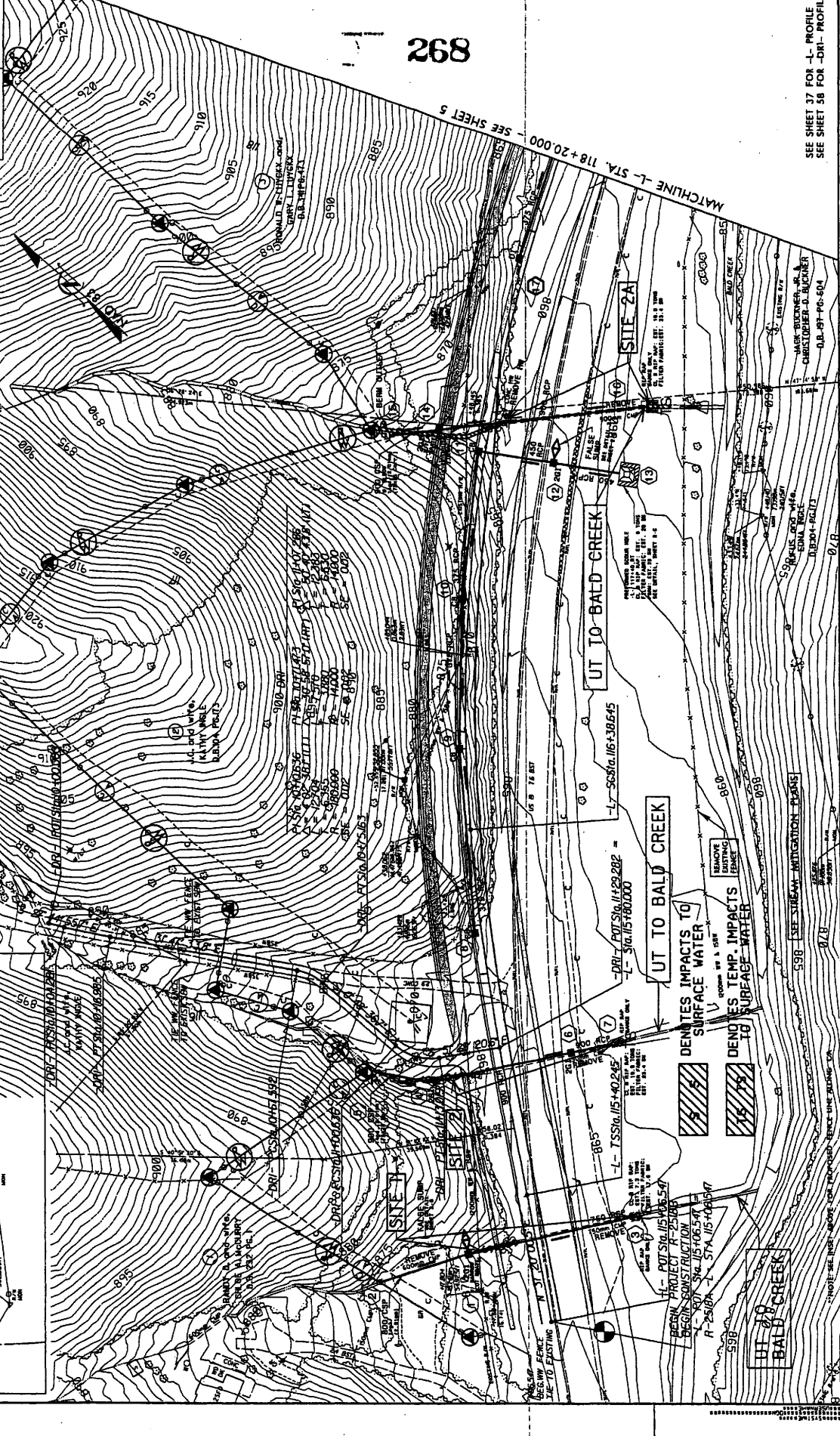
100547 RTI
 BECAUSE
 FENCE ON
 EXIST. C/A

100547 RTI
 BECAUSE
 FENCE ON
 EXIST. C/A

100547 RTI
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 FENCE ON
 EXIST. C/A

100547 RTI
 BECAUSE
 FENCE ON
 EXIST. C/A

100547 RTI
 BECAUSE
 FENCE ON
 EXIST. C/A



268

SEE SHEET 37 FOR -L- PROFILE
 SEE SHEET 58 FOR -DRI- PROFILE
 0.2/1/16/17/18/19

REVISIONS

PROJECT REFERENCE NO. SHEET NO.
 R-25188 2
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER
 PRELIMINARY PLANS
 NOT FOR CONSTRUCTION

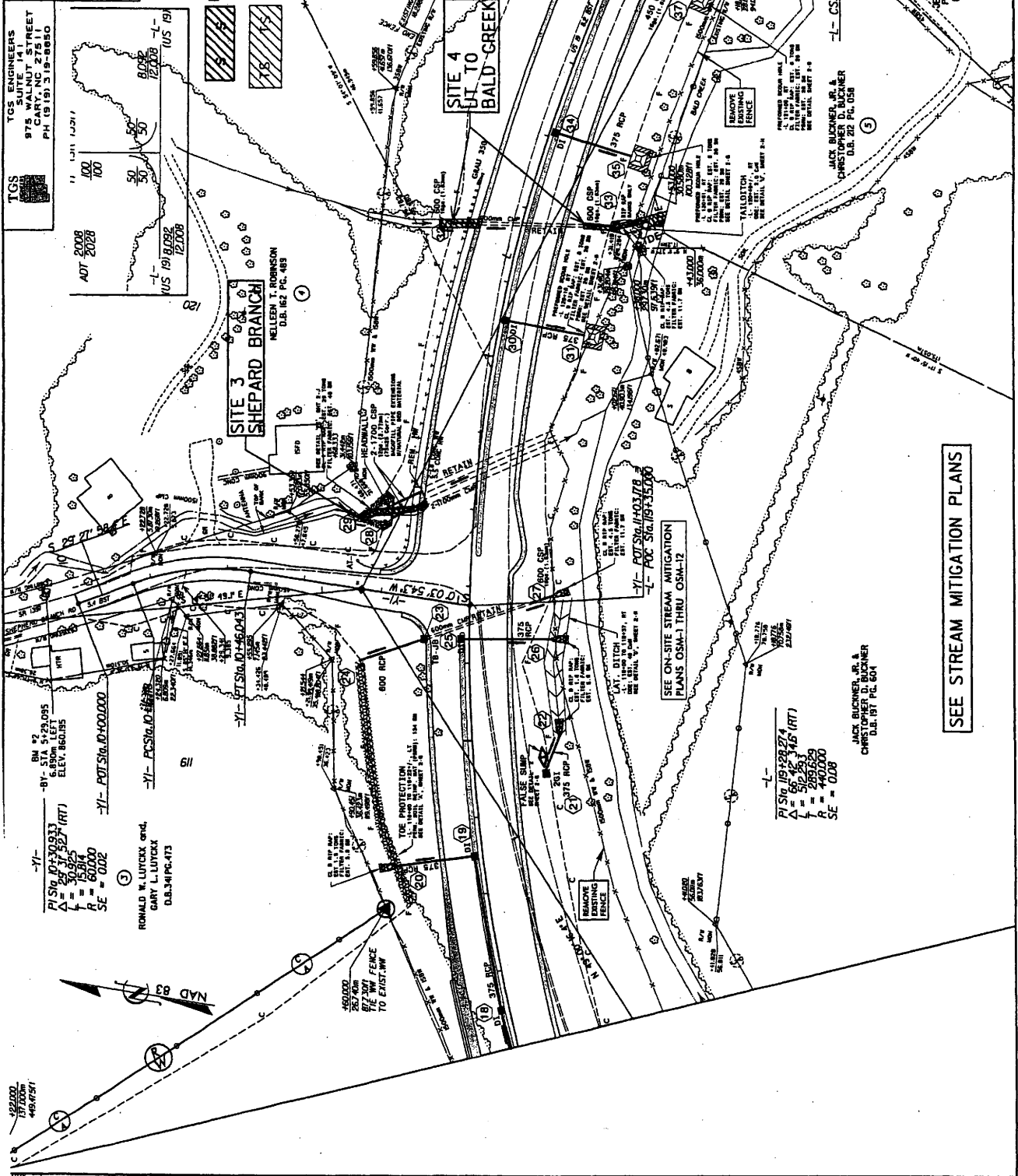
METRIC
 CONST. REV. R/W REV.

TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 PH. (913) 319-8850

ADT 2008
 100 100
 50 50
 15 15
 11 11
 11/11 11/11
 12/08 12/08
 12/08 12/08
 L-191
 L-191

DENOTES IMPACTS TO SURFACE WATER
 DENOTES TEMPORARY IMPACTS TO SURFACE WATERS

269



SEE STREAM MITIGATION PLANS

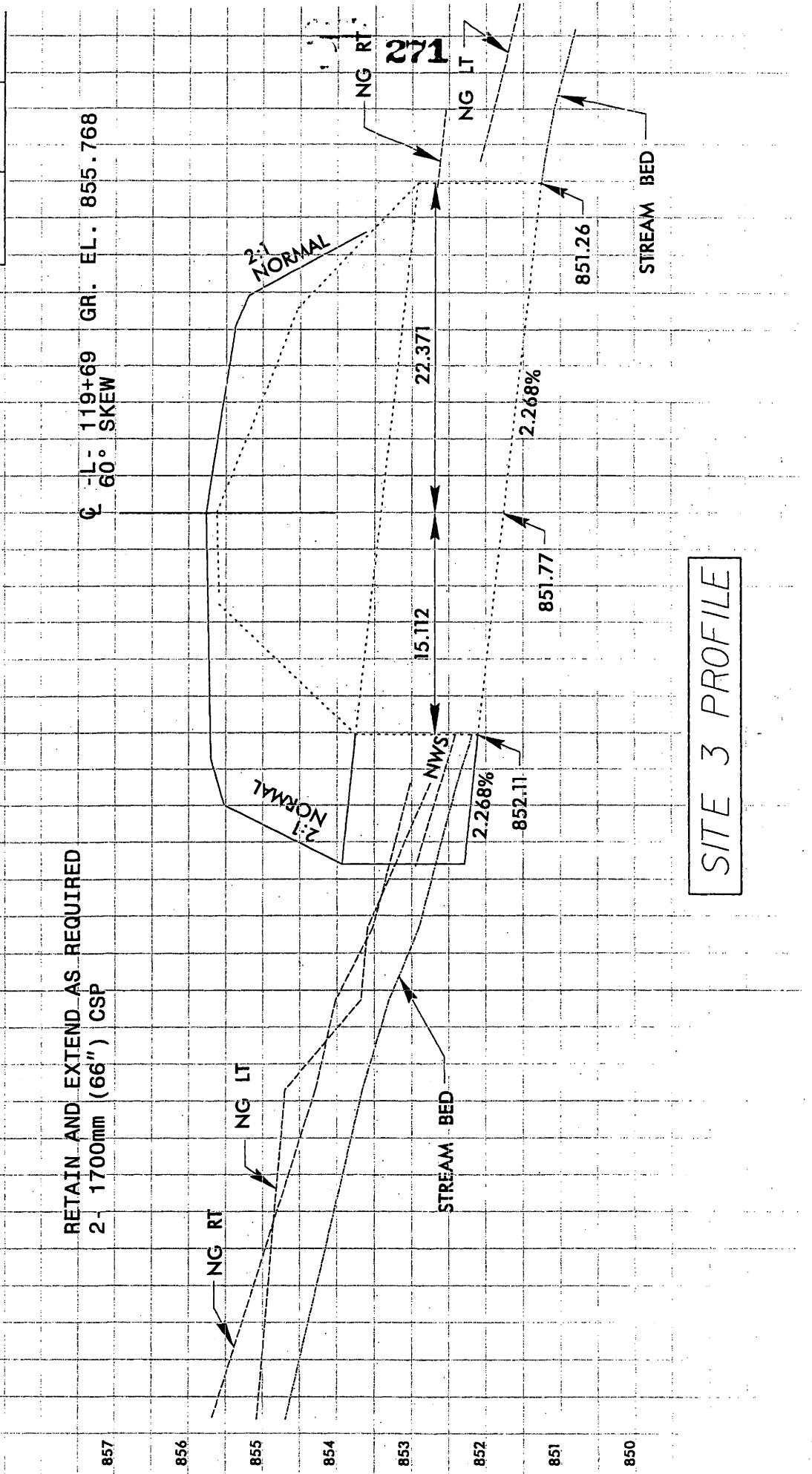
SEE SHEET 37 FOR -L- PROFILE
 SEE SHEET 53 FOR -YI- PROFILE

11/11/11 11:11 AM
 11/11/11 11:11 AM

420000
 170000
 4947571

REVISIONS

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 NO. 6
 R-2500 R.V.M. SHEET NO. HYDRAULIC ENGINEER
 ROADWAY DESIGN ENGINEER
 PRELIMINARY PLANS
 IN ACCORDANCE WITH THE TEXAS CONSTRUCTION ACT

TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 DALLAS, TEXAS 75201
 PH. (214) 761-8800

CONSTR. REV.
 N.W. REV.

JESSE BUCKNER
 D.B. 94 P.C. 19

WILLARD SHEPARD
 D.B. 102 P.C. 227

DONALD and wife,
 RACHEL BUCKNER
 D.B. 143 P.C. 51

JOHNNY and wife,
 JESSIE BUCKNER
 D.B. 143 P.C. 360

LAT. BASE DITCH
 SEE DETAIL V-SHEET 1.5

LAT. BASE DITCH
 SEE DETAIL V-SHEET 1.5

LAT. BASE DITCH
 SEE DETAIL V-SHEET 1.5

LAT. BASE DITCH
 SEE DETAIL V-SHEET 1.5

LAT. BASE DITCH
 SEE DETAIL V-SHEET 1.5

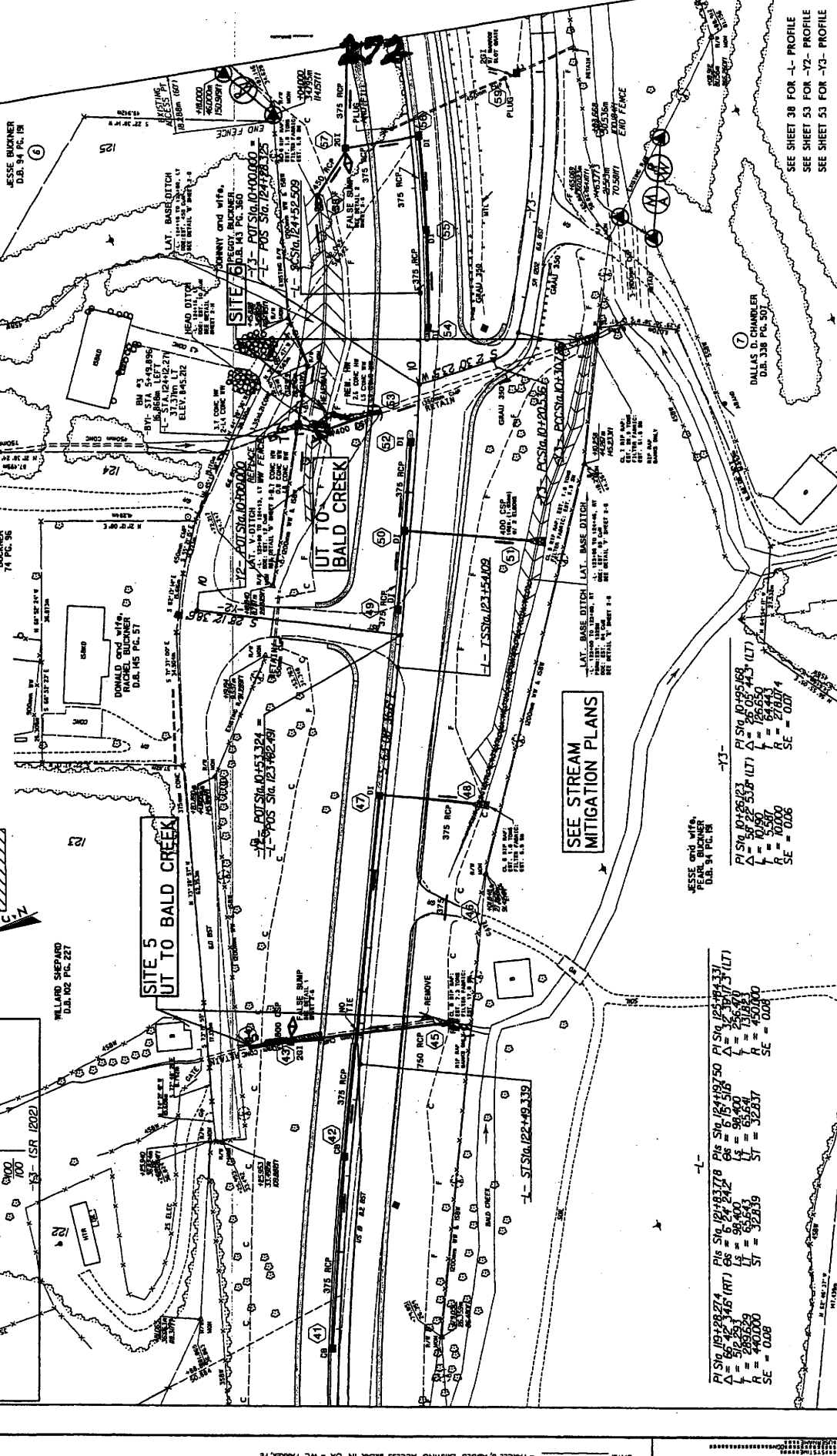
LAT. BASE DITCH
 SEE DETAIL V-SHEET 1.5

LAT. BASE DITCH
 SEE DETAIL V-SHEET 1.5

LAT. BASE DITCH
 SEE DETAIL V-SHEET 1.5

LAT. BASE DITCH
 SEE DETAIL V-SHEET 1.5

LAT. BASE DITCH
 SEE DETAIL V-SHEET 1.5



DENOTES IMPACTS TO SURFACE WATER

DENOTES TEMPORARY IMPACTS TO SURFACE WATERS

SEE STREAM MITIGATION PLANS

JESSE and wife,
 PEARL BUCKNER
 D.B. 94 P.C. 19

PI S# 101929274 PLS S# 121493750 PLS S# 121541317
 Δ = 502531 Δ = 616517 Δ = 256470
 L = 285529 L = 59400 L = 150823
 A = 440000 A = 65543 A = 450000
 SE = 0.06 SE = 0.04 SE = 0.04

PI S# 101929274 PLS S# 121493750 PLS S# 121541317
 Δ = 502531 Δ = 616517 Δ = 256470
 L = 285529 L = 59400 L = 150823
 A = 440000 A = 65543 A = 450000
 SE = 0.06 SE = 0.04 SE = 0.04

SEE SHEET 38 FOR -L- PROFILE
 SEE SHEET 53 FOR -72- PROFILE
 SEE SHEET 53 FOR -73- PROFILE

DATE: _____
 REVISIONS: _____
 PARCELS & 7; REVERSE 'EXIST' RW PLAS TO ACTUAL OFFSET DRAYERS - WC PARKER, PE
 PARCEL 6; ADDED EXISTING ACCESS BREAK IN CN - WC PARKER, PE

TGS ENGINEERS
 975 WALNUT STREET
 SUITE 1411
 DENVER, CO 80202
 PH (303) 319-8850

TGS
 METRIC

PROJECT REFERENCE NO. SHEET
 R-2388 7
 ROADWAY DESIGN ENGINEER
 HYDRAULIC ENGINEER

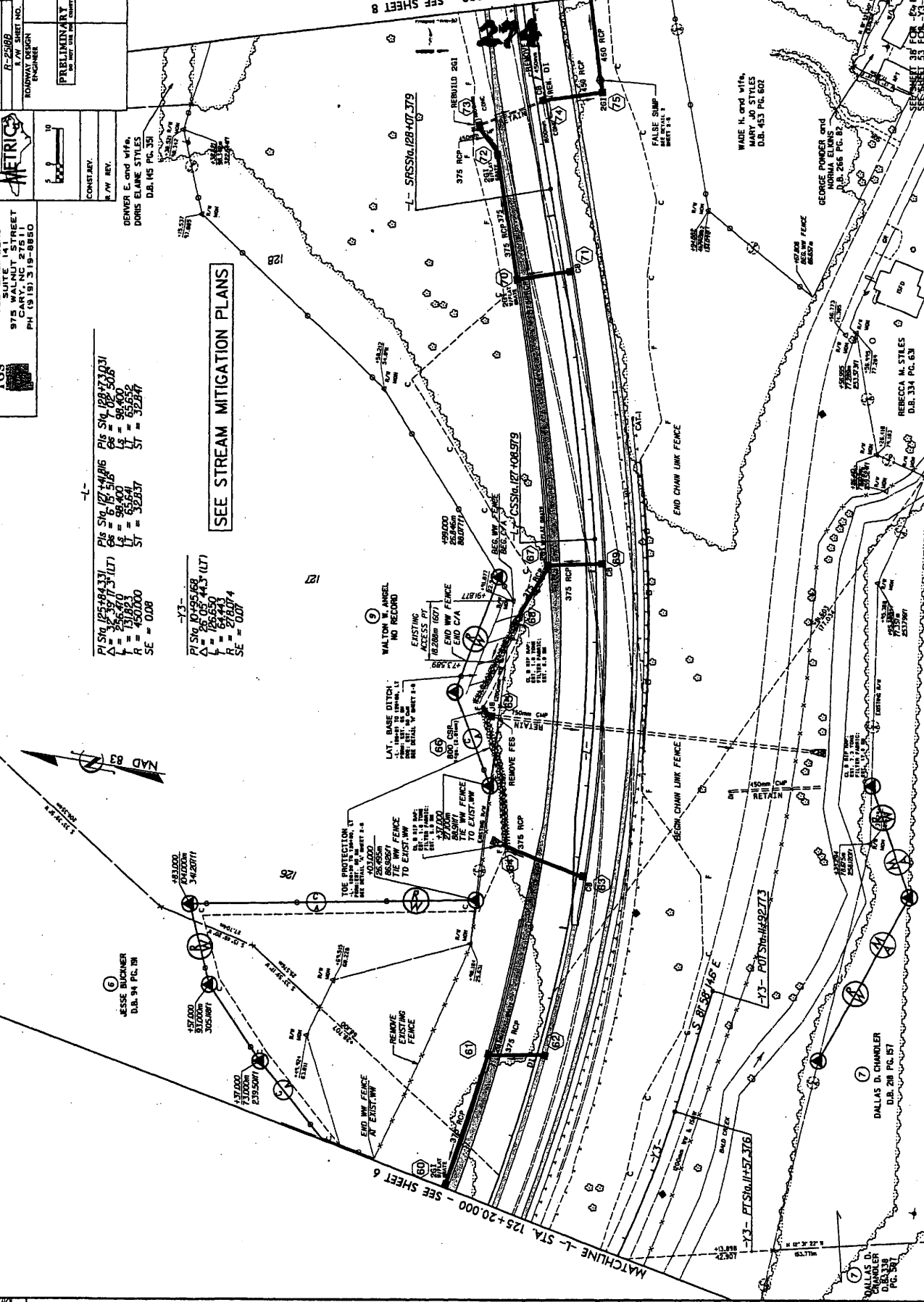
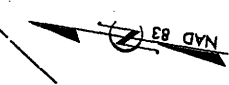
CONTRACT NO. 10
 W. W. REV. 1
 DENVER E. AND WIFE
 DOMS ELKINS STILES
 D.B. 145 PG. 35

PRELIMINARY PLANS
 FOR THE
 CONSTRUCTION

-L-
 PLS# 125-184331 PLS# 127-14816 PLS# 128-1031
 AS = 35977.3 (LT) AS = 61537.6 AS = 48830.8
 L = 256.60 L = 99.40 L = 99.40
 P = 13186.00 P = 653.51 P = 653.52
 R = 4000.00 R = 32837 R = 32837
 SE = 0.08

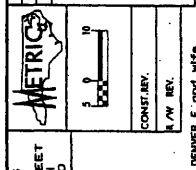
-13-
 PLS# 10-95468 PLS# 05-443 (LT)
 AS = 126650 AS = 54343
 L = 126650 L = 54343
 P = 54343 P = 54343
 R = 54343 R = 54343
 SE = 0.074

SEE STREAM MITIGATION PLANS



REVISIONS
 DATE: MARCH 2006 - PARCELS 6 & 7, REDUCED HWY TIE ON PARCEL 9; ELIMINATED PARCEL 10 - WC PARKER
 DATE: _____ - PARCELS 6 & 7, ADDED EXISTING ACCESS BREAKS IN CA - WC PARKER, PE
 DATE: _____ - FORMER PARCEL BANNERS - NAME CHANGED TO 'STILES' - WC PARKER, PE
 DATE: _____ - PARCEL 8, COMBINED WITH PARCEL 7
 DATE: _____ - PARCELS 8 & 9, REDESIGNED EXISTING CHAIN LINK FENCE TO ACTUAL OFFSET DISTANCES

PROJECT REFERENCE NO.	SHEET NO.
A-25082	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
TGS ENGINEERS	PRELIMINARY PLANS
SUITE 141 STREET	DO NOT USE FOR CONSTRUCTION
975 N. W. STREET	
CARY, NC 27511	
PH (919) 319-8850	



CONSTR. REV.
 1/11/11
 DENVER E. and WIFE
 DORIS ELAINE STYLES
 D.B. 145 PG. 38

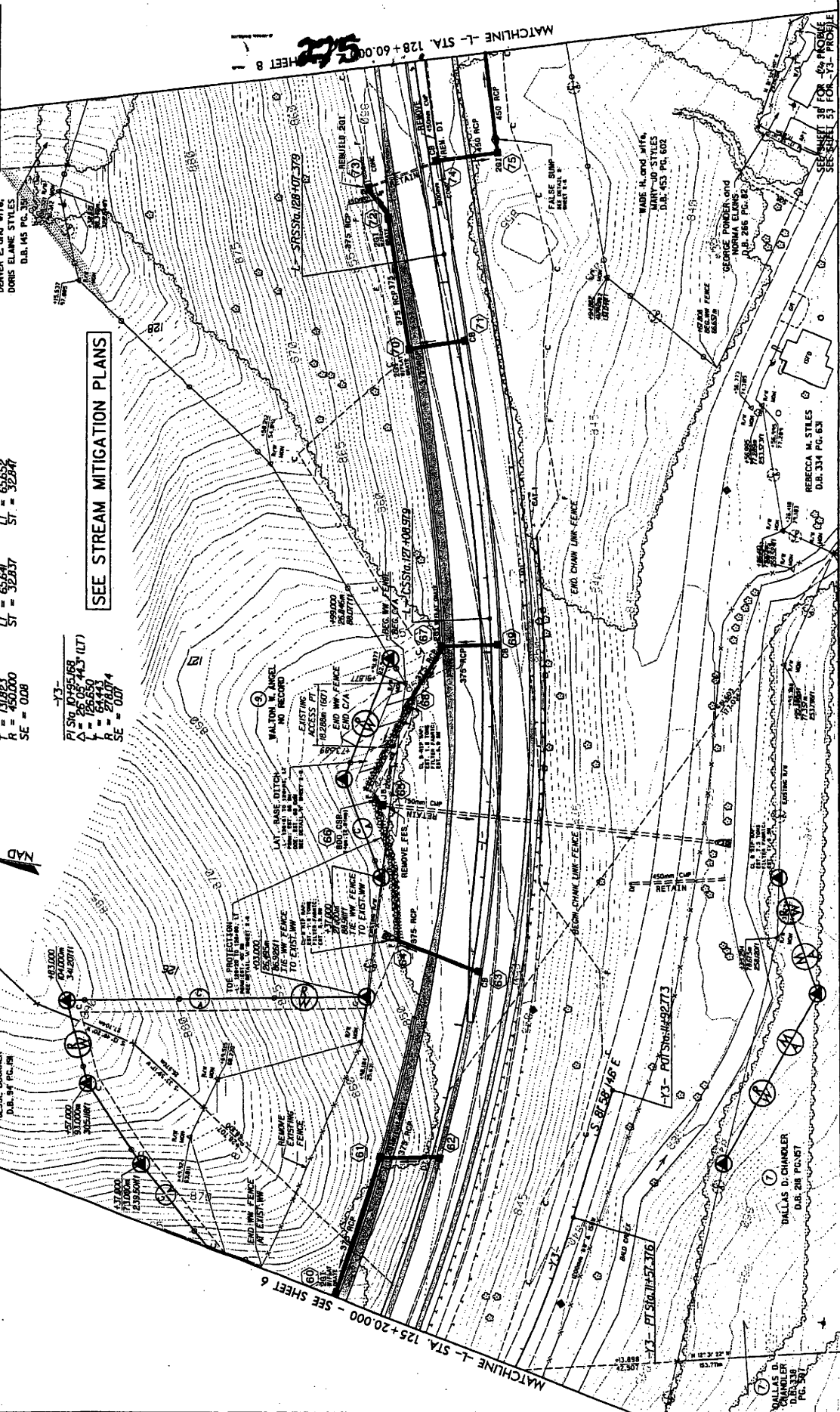
SEE STREAM MITIGATION PLANS

PI STA 125+94.331
 Δ = 34.397
 L = 256.470
 R = 450.000
 SE = 0.028

PI STA 127+41.916
 Δ = 6.151
 L = 98.400
 R = 522.317
 SE = 0.028

PI STA 128+07.379
 Δ = 4.082
 L = 98.400
 R = 522.317
 SE = 0.028

PI STA 127+00.579
 Δ = 26.054
 L = 126.550
 R = 578.074
 SE = 0.027



REVISIONS

DATE: MARCH 2004	PACKETS 2 & 3 TO REDUCED BW TAKE ON PAPER; 9. ESTIMATED PAPER 10 - WC PARKER
DATE:	PACKETS 7 & 8 REDESIGNED DISTRICT HW PLANS TO ACTUAL OFFSET DISTANCES.
DATE:	PACKETS 4 & 5 ADDED EXISTING ACCESS BREAKS IN CA - WC PARKER, PE
DATE:	FORMER PAPER 'BANKS' - NAME CHANGED TO 'STYLES' - WC PARKER, PE
DATE:	PACKETS 6 & 9; ADDED EXISTING ACCESS BREAKS IN CA - WC PARKER, PE

DATE: MARCH 2004 - PACKETS 2 & 3 TO REDUCED BW TAKE ON PAPER; 9. ESTIMATED PAPER 10 - WC PARKER
 DATE: PACKETS 7 & 8 REDESIGNED DISTRICT HW PLANS TO ACTUAL OFFSET DISTANCES.
 DATE: PACKETS 4 & 5 ADDED EXISTING ACCESS BREAKS IN CA - WC PARKER, PE
 DATE: FORMER PAPER 'BANKS' - NAME CHANGED TO 'STYLES' - WC PARKER, PE
 DATE: PACKETS 6 & 9; ADDED EXISTING ACCESS BREAKS IN CA - WC PARKER, PE

	PROJECT REFERENCE NO.	SHEET NO.
	J. 2002 PROJECT MANAGER ENGINEER	
CONVEYER 3.1M. REV.		

-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

EXIST. 3-3.1x2.4

3-3.1x2.7

2.80%

31.597

0.935%

813.98

813.92

813.62

BACKFILL CULVERT EXTENSION
W/BED MATERIAL

SITE 8 PROFILE

278

NG RT

NG LT

NWS

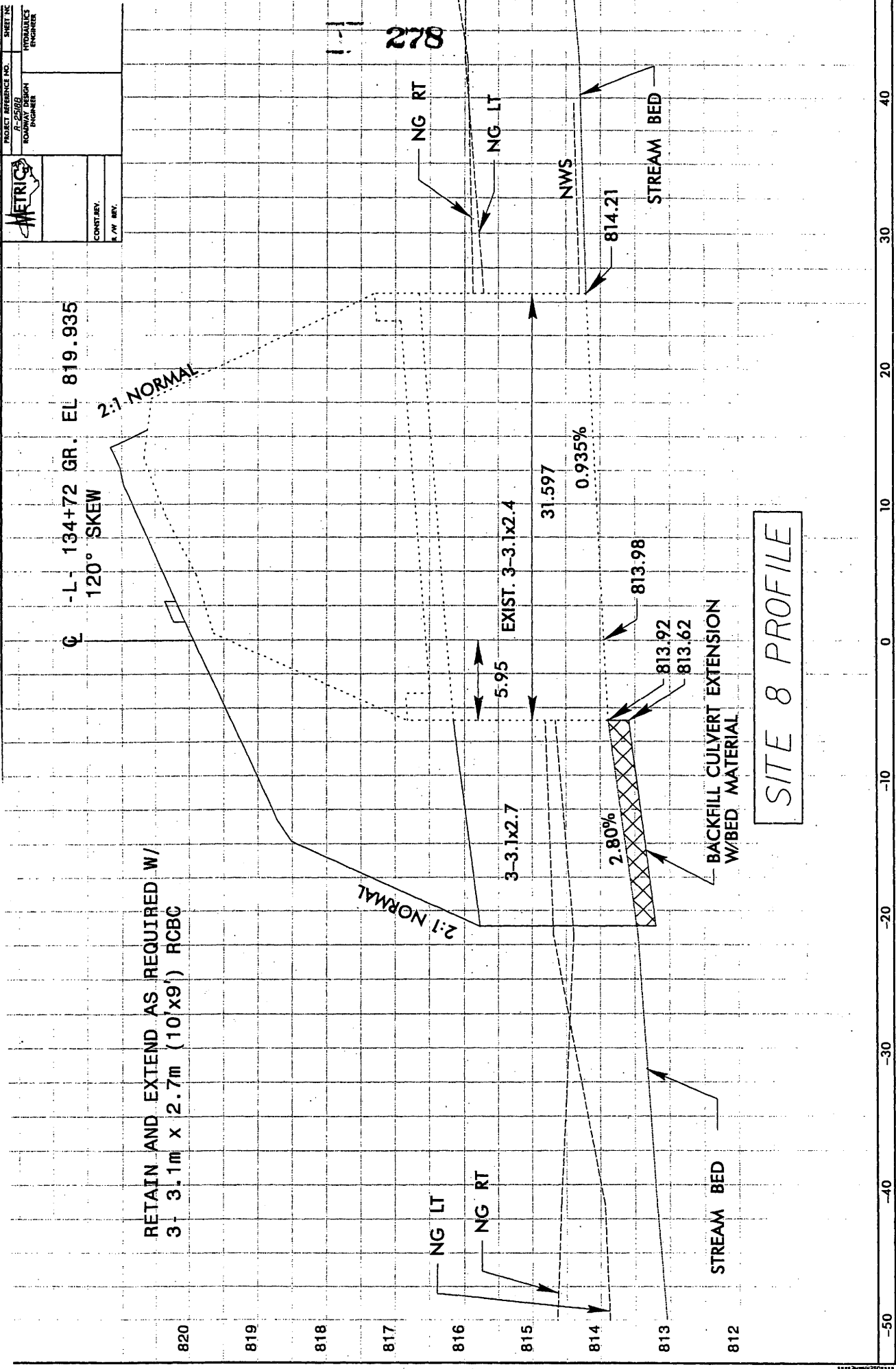
814.21

STREAM BED

NG LT

NG RT

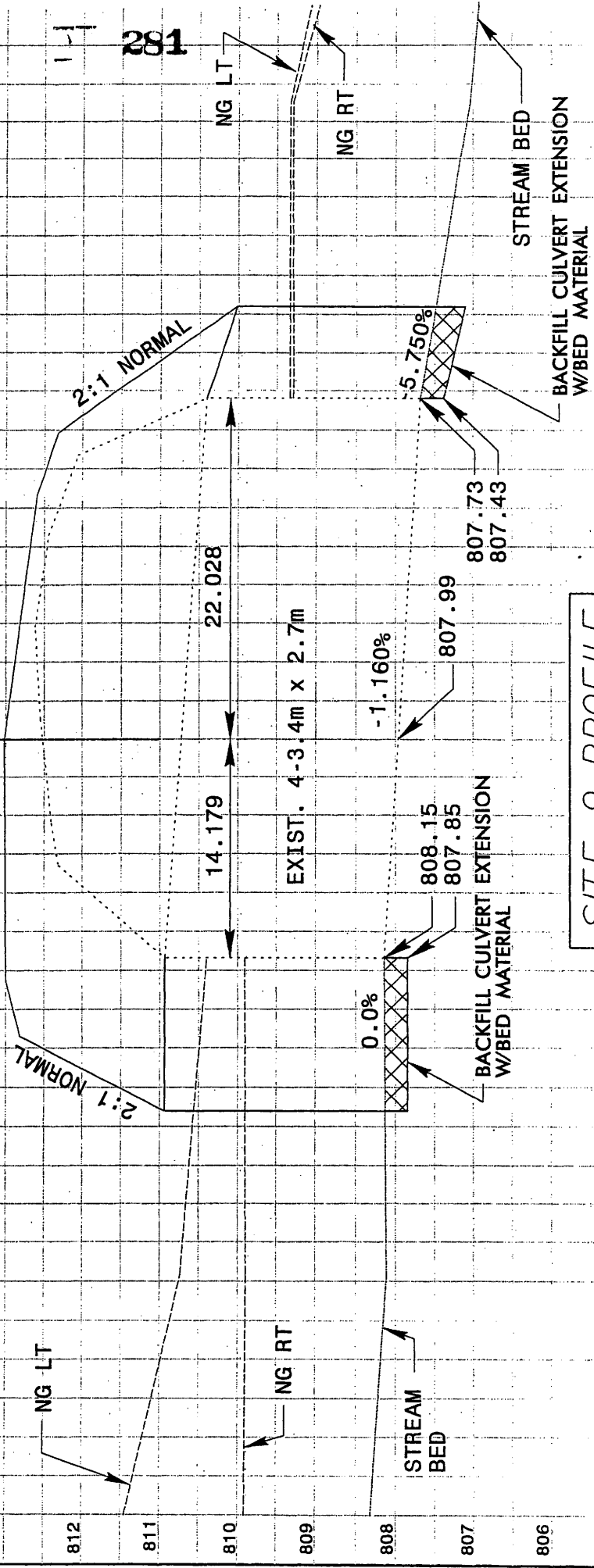
STREAM BED



-50 -40 -30 -20 -10 0 10 20 30 40

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



SITE 9 PROFILE

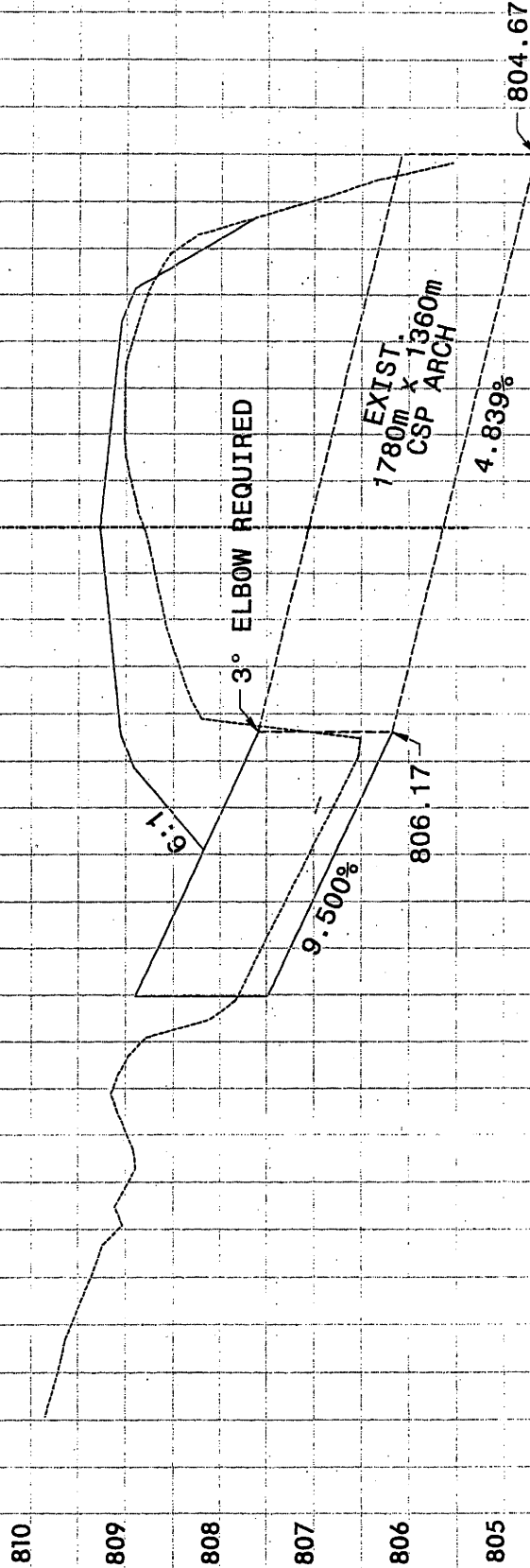
DATE PLOTTED: 08/11/2011 11:28:04 AM BY: [unreadable]



CONTRACT NO.
 R/W NO.

RETAIN AND EXTEND AS REQUIRED W/ 3° VERTICAL ELBOW
 1780mm x 1360 mm (73" x 55") CSP ARCH
 #12 GA. 76.2mm x 25.4mm (3" x 1") CORR.
 WITH HEADWALL ON INLET END

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



SITE 10 PROFILE

810
 809
 808
 807
 806
 805

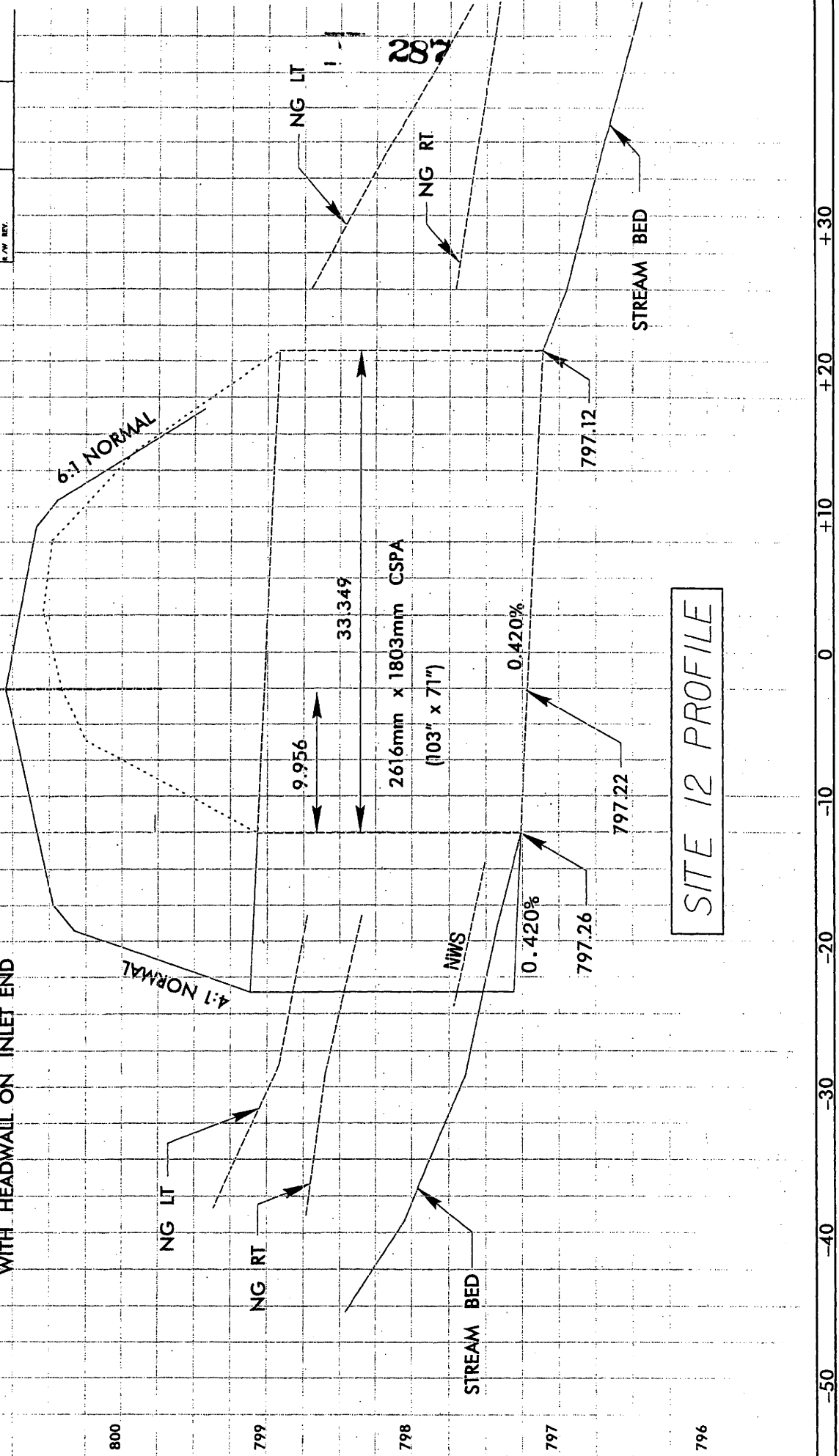
-50 -40 -30 -20 -10 0 +10 +20 +30



CONSULTANT
 LAW, INC.

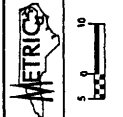
GR. EL. = 800.795
 L-146+06 97° SKEW

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. SHEET 14
 TGS ENGINEERS
 975 WALNUT STREET
 SUITE 141
 PH. (910) 319-8850



DATE: MARCH, 2006 - PAGES 16; EMBLISHED PAGES 16 - WC PARKER, PE
 DATE: MARCH, 2006 - PAGES 15 & 17; REVERSED EXIST W/F FLAGS TO ACTUAL OFFSET DISTANCES - WC PARKER, PE
 DATE: MARCH, 2006 - PAGES 17; ADDED EXISTING ACCESS BEARS IN CA - WC PARKER, PE

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

CONST. BY: N/A REV. 0

ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER

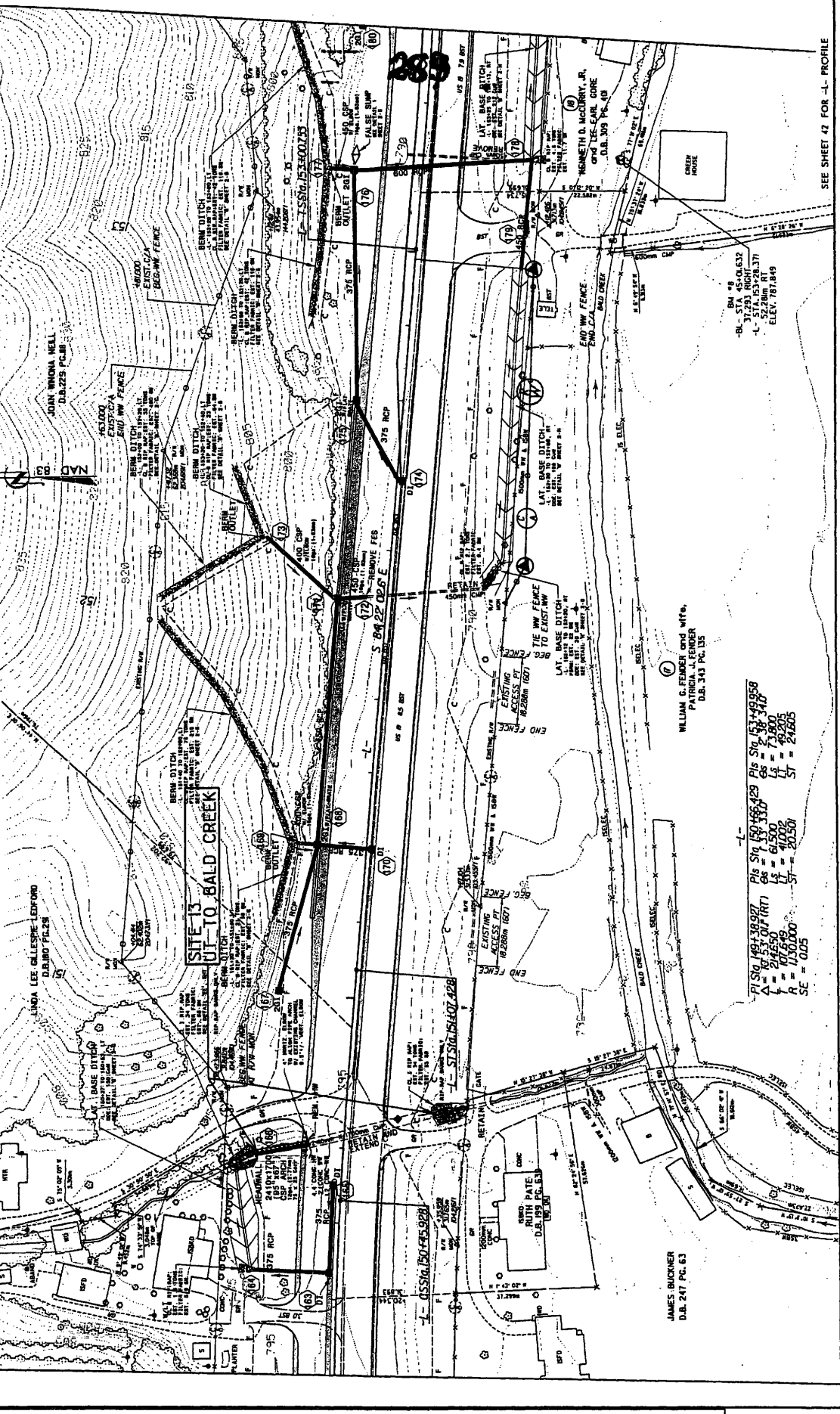
DATE: MARCH, 2006 - PAGES 16; EMBLISHED PAGES 16 - WC PARKER, PE
 DATE: MARCH, 2006 - PAGES 15 & 17; REVERSED EXIST W/F FLAGS TO ACTUAL OFFSET DISTANCES - WC PARKER, PE
 DATE: MARCH, 2006 - PAGES 17; ADDED EXISTING ACCESS BEARS IN CA - WC PARKER, PE

DATE: MARCH, 2006 - PAGES 16; EMBLISHED PAGES 16 - WC PARKER, PE
 DATE: MARCH, 2006 - PAGES 15 & 17; REVERSED EXIST W/F FLAGS TO ACTUAL OFFSET DISTANCES - WC PARKER, PE
 DATE: MARCH, 2006 - PAGES 17; ADDED EXISTING ACCESS BEARS IN CA - WC PARKER, PE

DATE: MARCH, 2006 - PAGES 16; EMBLISHED PAGES 16 - WC PARKER, PE
 DATE: MARCH, 2006 - PAGES 15 & 17; REVERSED EXIST W/F FLAGS TO ACTUAL OFFSET DISTANCES - WC PARKER, PE
 DATE: MARCH, 2006 - PAGES 17; ADDED EXISTING ACCESS BEARS IN CA - WC PARKER, PE

DATE: MARCH, 2006 - PAGES 16; EMBLISHED PAGES 16 - WC PARKER, PE
 DATE: MARCH, 2006 - PAGES 15 & 17; REVERSED EXIST W/F FLAGS TO ACTUAL OFFSET DISTANCES - WC PARKER, PE
 DATE: MARCH, 2006 - PAGES 17; ADDED EXISTING ACCESS BEARS IN CA - WC PARKER, PE

DATE: MARCH, 2006 - PAGES 16; EMBLISHED PAGES 16 - WC PARKER, PE
 DATE: MARCH, 2006 - PAGES 15 & 17; REVERSED EXIST W/F FLAGS TO ACTUAL OFFSET DISTANCES - WC PARKER, PE
 DATE: MARCH, 2006 - PAGES 17; ADDED EXISTING ACCESS BEARS IN CA - WC PARKER, PE



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

PI STATION 150+495.927 PIS STN 150+466.429 PIS STN 153+495.958
 Δ = 26.51' OUT (RT) CS = 2' 38.340'
 L = 246.50' L2 = 61.500'
 R = 110.000' ST = 30.550'
 SE = 0.05

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

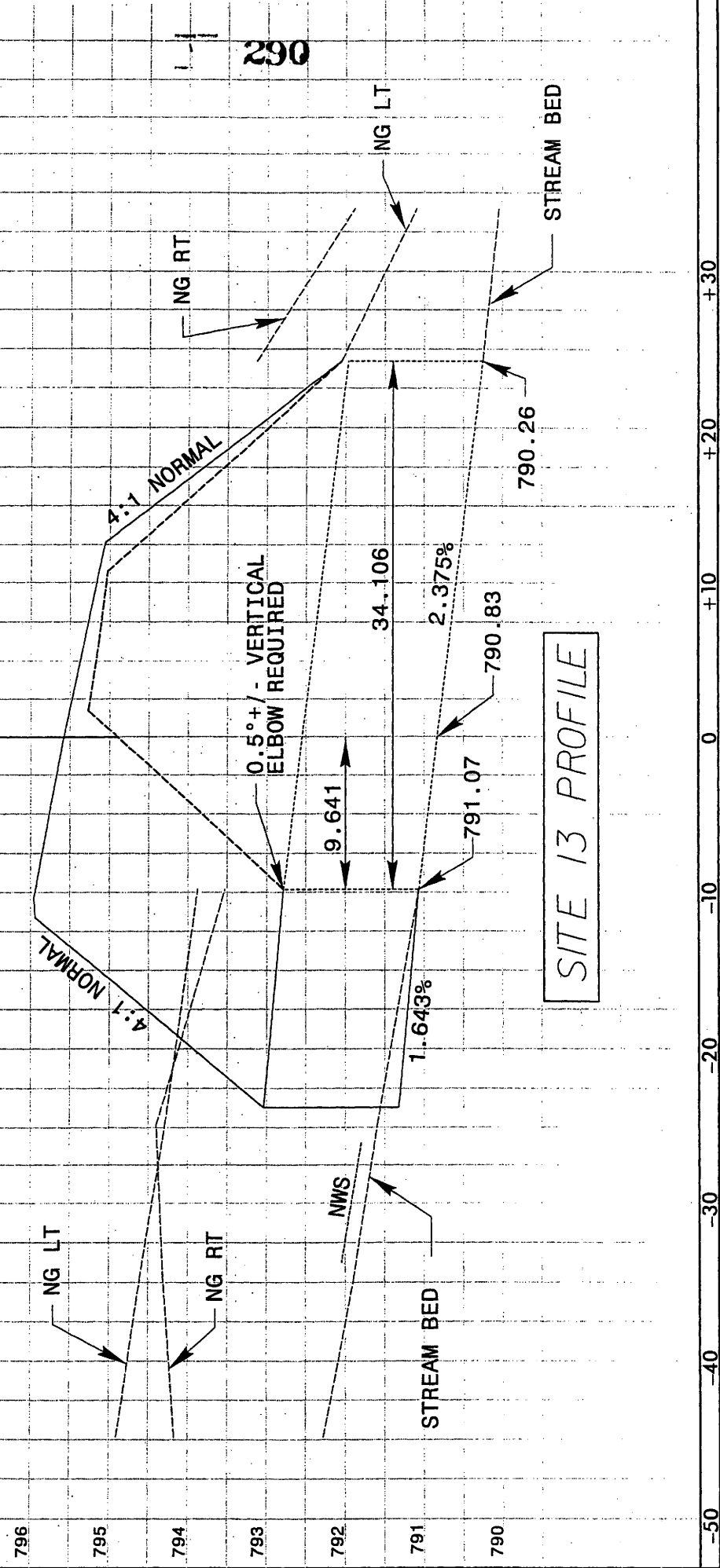
JAMES RUCKNER
 D.B. 247 PG. 63

BM #9
 -BM STA 45+06.32
 -L- 313.33' (202.371)
 -L- 52.28m RT
 ELEV. 787.849

SEE SHEET 47 FOR -L- PROFILE

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

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



SITE 13 PROFILE

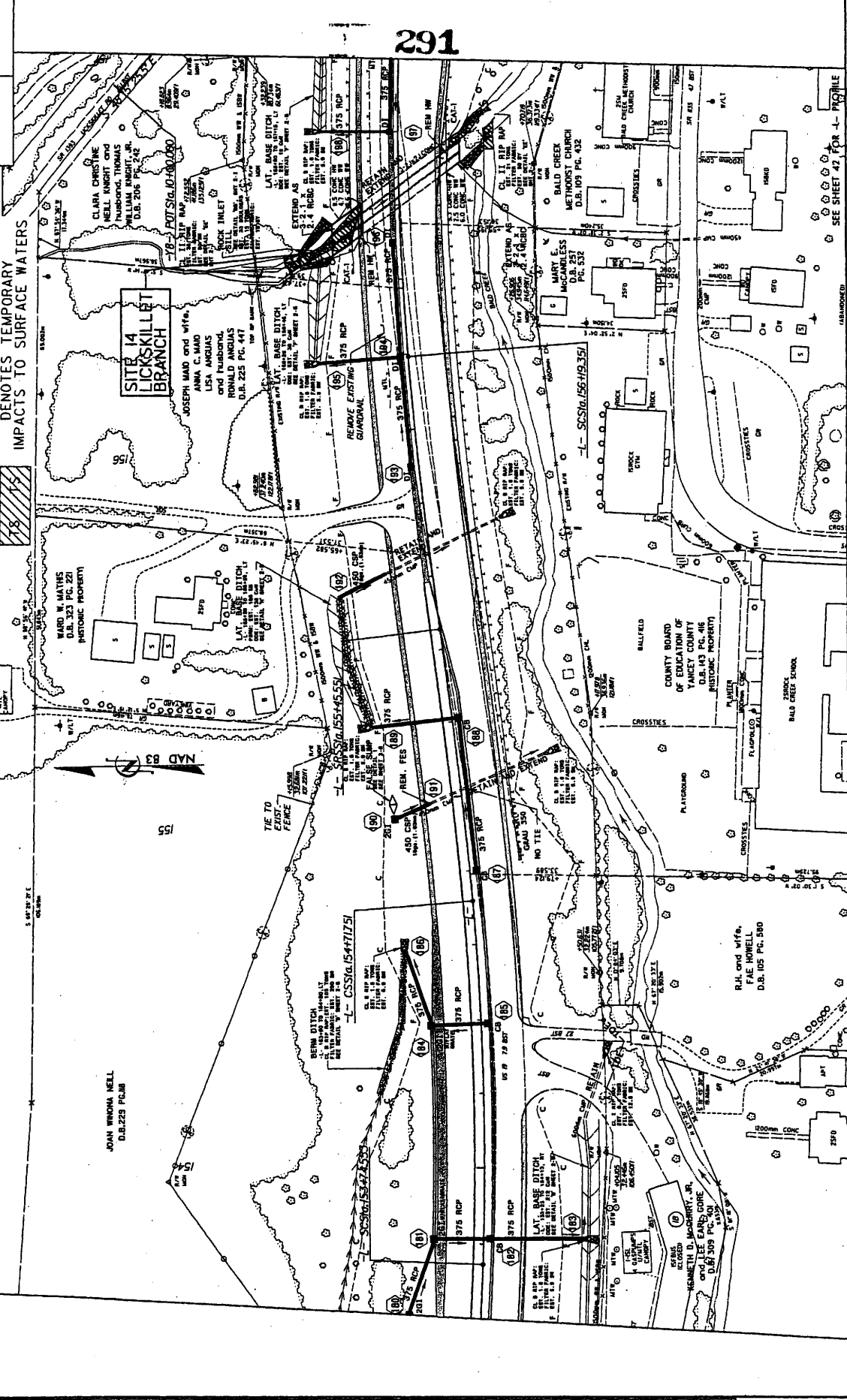
-50 -40 -30 -20 -10 0 +10 +20 +30

PROJECT REFERENCE NO. P-2009
 SHEET NO. 15
 PRELIMINARY PLANS
 FOR THE USE OF THE CONSTRUCTION

TCS ENGINEERS
 975 SAUTE 141 STREET
 CARY, NC 27511
 PH (919) 319-8850

CONSTR. REV.
 10
 DENOTES IMPACTS TO SURFACE WATER
 DENOTES TEMPORARY IMPACTS TO SURFACE WATERS

PI S10 153+49.958 PI S10 154+23.212 PI S10 154+36.356 PI S10 155+07.756
 GS = 7.38 34.0 GS = 6.57 40.6 (L7) GS = 7.30 34.0 GS = 7.30 34.0
 L = 49.205 L = 49.205 L = 49.205 L = 49.205
 R = 800.000 R = 800.000 R = 800.000 R = 800.000
 ST = 24.605 ST = 24.605 ST = 24.605 ST = 24.605
 SE = 0.06 SE = 0.06 SE = 0.06 SE = 0.06



SEE SHEET 47 FOR L-1 PROFILE
 UNBROKEN

DATE: MARCH, 2006 - PAGES: 16; REVISED PAGES: 16 - PAGES: 16; REVISED DISTANCE: WC PARKER, PE
 REVISIONS

PROJECT REFERENCE NO. SHEET NO.
 A-2502 15
 TGS ENGINEERS
 SUITE 141
 978 W. WYOMING STREET
 CARY, NC 27511
 PH (919) 319-8850
 HYDRAULICS
 ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
 SUITE 141
 978 W. WYOMING STREET
 CARY, NC 27511
 PH (919) 319-8850
 HYDRAULICS
 ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

CONSTRICTION
 DENOTES IMPACTS TO SURFACE WATER
 IMPACTS TO SURFACE WATERS

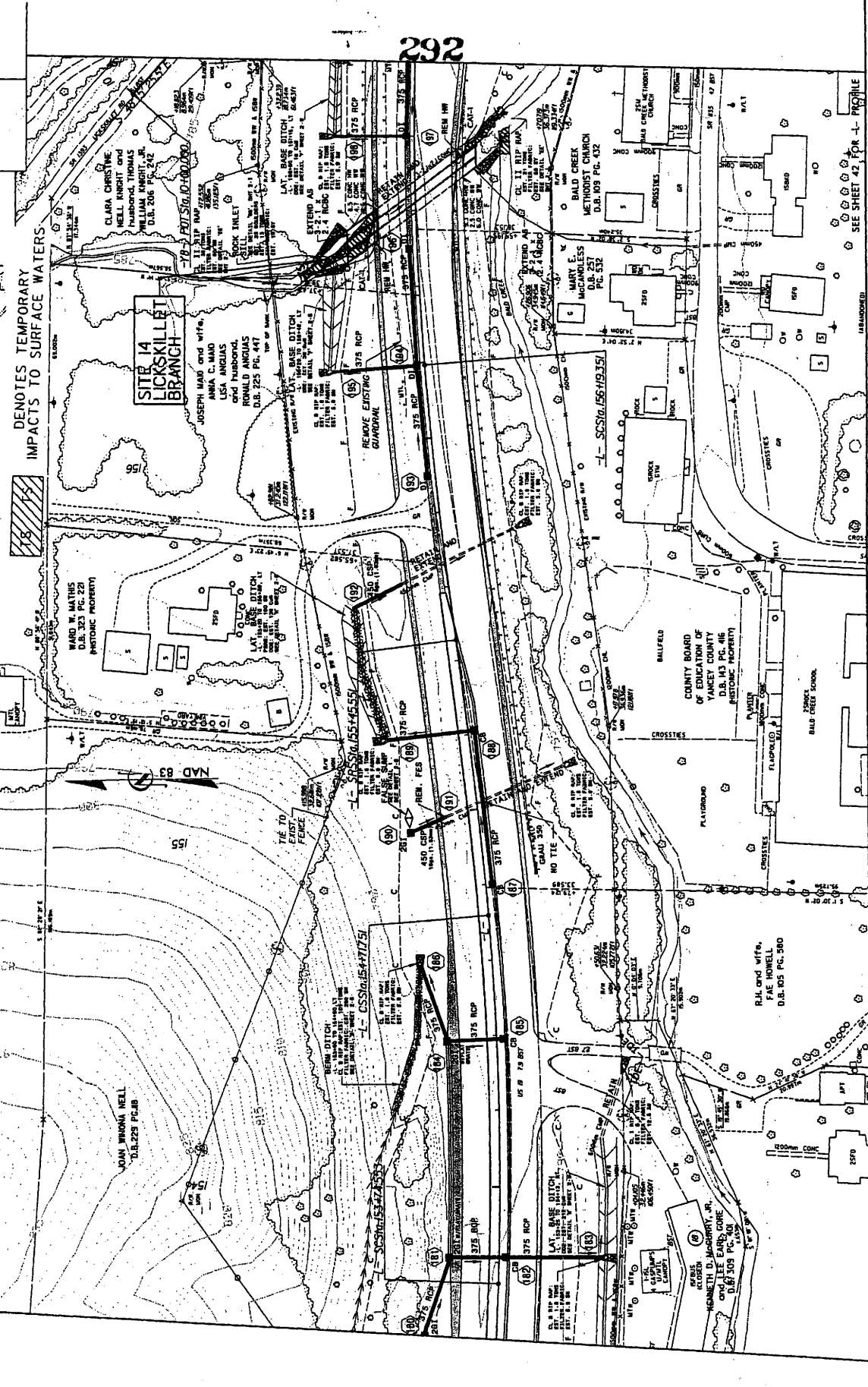
PLS SIG 153+49950 PI STG 154+23216
 GS = 73.380
 LI = 49205
 ST = 24605
 SE = 0.06

PLS SIG 154+23216 PI STG 154+23216
 GS = 73.380
 LI = 49205
 ST = 24605
 SE = 0.06

PLS SIG 154+99356 PI STG 154+99356
 GS = 73.380
 LI = 49205
 ST = 24605
 SE = 0.06

PLS SIG 155+45551 PI STG 155+45551
 GS = 73.380
 LI = 49205
 ST = 24605
 SE = 0.06

PLS SIG 156+19275 PI STG 156+19275
 GS = 73.380
 LI = 49205
 ST = 24605
 SE = 0.06



DATE: MARCH, 2006 - PAPER 16; REVISED PAPER 16 - WC PAPER
 REVISIONS
 DATE: MARCH, 2006 - PAPER 16; REVISED PAPER 16 - WC PAPER
 REVISIONS

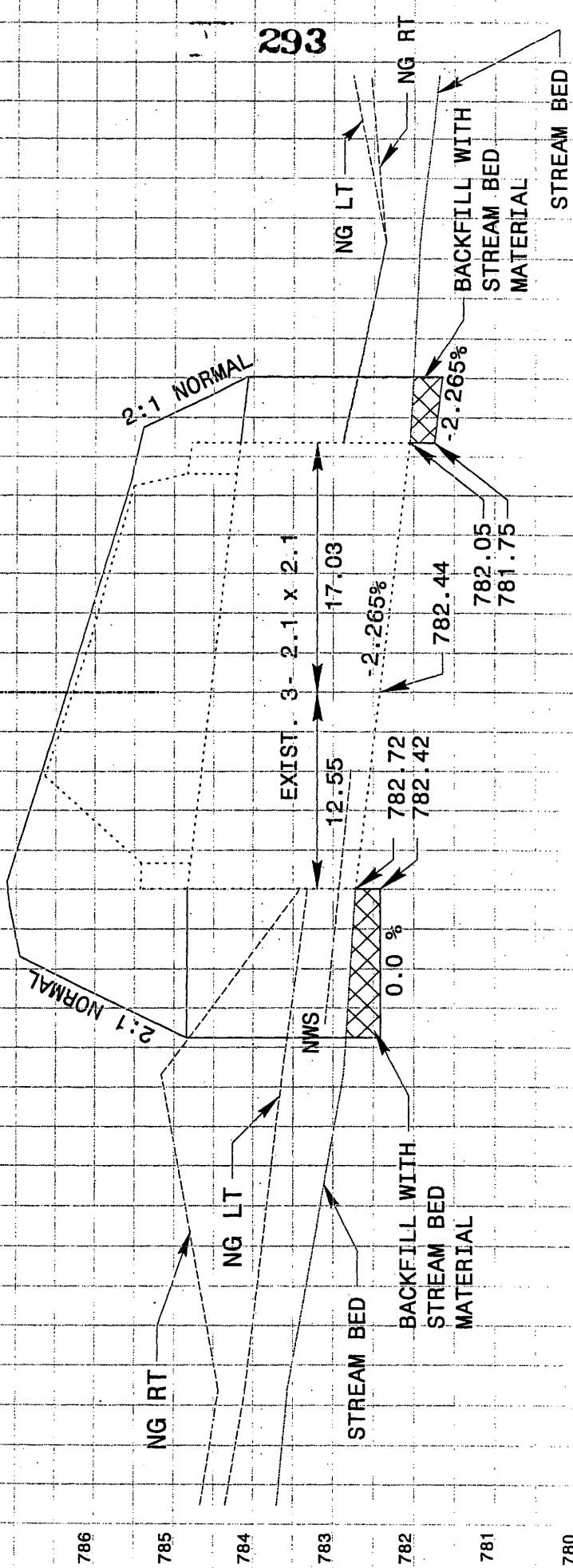
SEE SHEET 42 FOR I-L PROFILE



COURTESY,
 N.W. BRY.

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

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



SITE 14 PROFILE

-50 -40 -30 -20 -10 0 10 20 30 40

PROJECT REFERENCE NO. SHEET NO.
 R-23189 16
 TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 PHILADELPHIA, PA 19107
 PH (215) 319-8950
 HYDRAULIC
 ROADWAY DESIGN
 ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION
 CONST. REV.
 P.W. REV.

TGS
 METRIC
 SCALE: 1" = 40'

S.W. ROBERTSON
 and
 SHELBY ROBERTSON
 D.B. 99 PG. 581

EDWARD NEWBY
 HENSLEY
 D.B. 102 PG. 83

WAYNE T. OGDEN wife,
 DIANA BONE
 D.B. 203 PG. 01

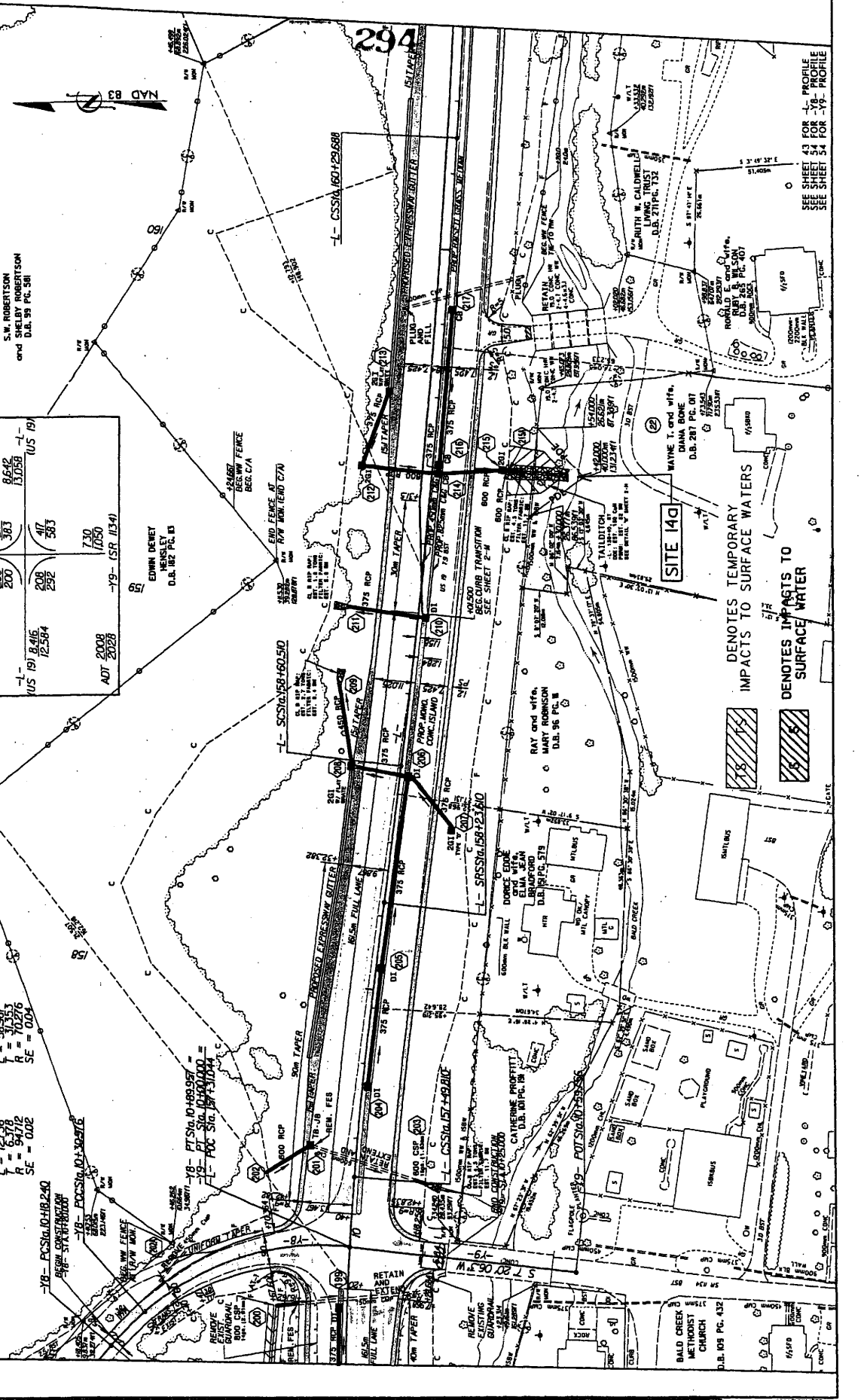
RAY and wife,
 MARY ROBINSON
 D.B. 96 PG. 11

DOUCE EDGE
 CLARA JEAN
 BRADFORD
 D.B. 100 PG. 19

CATHERINE PROFFITT
 D.B. 100 PG. 19

BALD CREEK
 METHODIST
 CHURCH
 D.B. 105 PG. 432

SEE SHEET 43 FOR L-1 PROFILE
 SEE SHEET 54 FOR L-2 PROFILE
 SEE SHEET 54 FOR L-3 PROFILE



-78- (SR 1393)	522 758	200 200	297 383	8642 13059	-1- (US 19)
-1- (US 19)	8416 12584	208 292	417 583		
ADT 2008 2028			730 1050		-19- (SR 1134)

P1 S10 157+74.45
 Δ = 30.36
 L = 73.80
 T = 68.75
 SE = 0.06

P1 S10 158+48.20
 Δ = 30.36
 L = 73.80
 T = 68.75
 SE = 0.06

P1 S10 159+23.74
 Δ = 30.36
 L = 73.80
 T = 68.75
 SE = 0.06

P1 S10 160+98.97
 Δ = 30.36
 L = 73.80
 T = 68.75
 SE = 0.06

P1 S10 161+74.45
 Δ = 30.36
 L = 73.80
 T = 68.75
 SE = 0.06

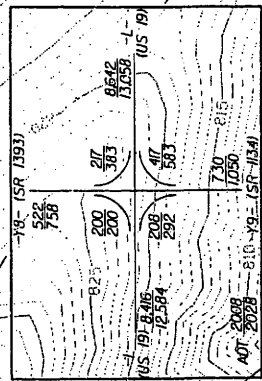
P1 S10 162+48.20
 Δ = 30.36
 L = 73.80
 T = 68.75
 SE = 0.06

PROJECT REFERENCE NO. R-2508
 SHEET NO. 16
 TGS ENGINEERS
 SUITE 14
 975 W. CARY, NC 27511
 PH (919) 319-8880



CONSTRY.
 P.W. BEY.

PRELIMINARY PLANS
 NOT FOR CONSTRUCTION



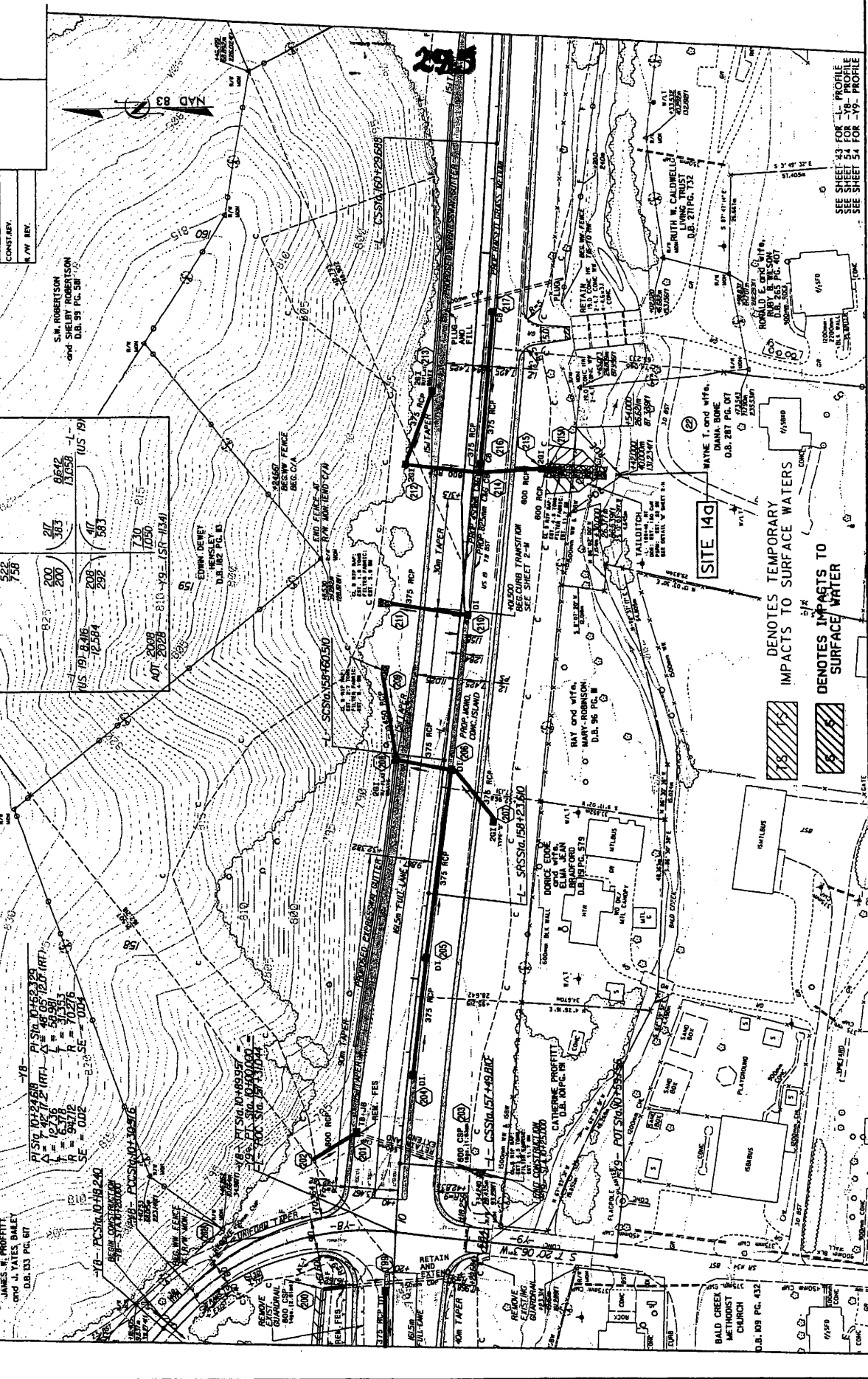
PI Stn 157+44.15 PIS Stn 159+45.029
 Δ = 3.36 3.40
 L = 7.950
 R = 2600.000
 SE = 0.003

PI Stn 157+36.57(IRT)
 Δ = 130.493
 L = 800.000
 SE = 0.006

PI Stn 102+24.68 PIS Stn 104+62.29
 Δ = 47.77 2(IRT) Δ = 46.05 12.0(IRT)
 L = 12.736
 R = 59.581
 SE = 0.002

PI Stn 102+24.68 PIS Stn 104+62.29
 Δ = 47.77 2(IRT) Δ = 46.05 12.0(IRT)
 L = 12.736
 R = 59.581
 SE = 0.002

PI Stn 102+24.68 PIS Stn 104+62.29
 Δ = 47.77 2(IRT) Δ = 46.05 12.0(IRT)
 L = 12.736
 R = 59.581
 SE = 0.002



1/8" = 10'
 DENOTES TEMPORARY IMPACTS TO SURFACE WATERS
 DENOTES IMPACTS TO SURFACE WATER

SEE SHEET 23 FOR -1- PROFILE
 SEE SHEET 24 FOR -2- PROFILE
 SEE SHEET 54 FOR -3- PROFILE

REVISIONS

PROJECT REFERENCE NO. **A-2508**
 SHEET **7**
 HYDRAULICS ENGINEER
 ROADWAY DESIGN ENGINEER
PRELIMINARY PLANS
 NOT FOR CONSTRUCTION

TCS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 PH (512) 318-8850

METRICS
 CONSTANT
 R/W REV.

TCS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 PH (512) 318-8850

AUT 2008
 108 192
 -70- (SR 1392)
 IUS 191,8642 13,242
 IUS 191,8650 13,150
 IUS 191,8650 13,150

JOSEPH EDGAR WHEELER
 D.B. 39 PG. 553

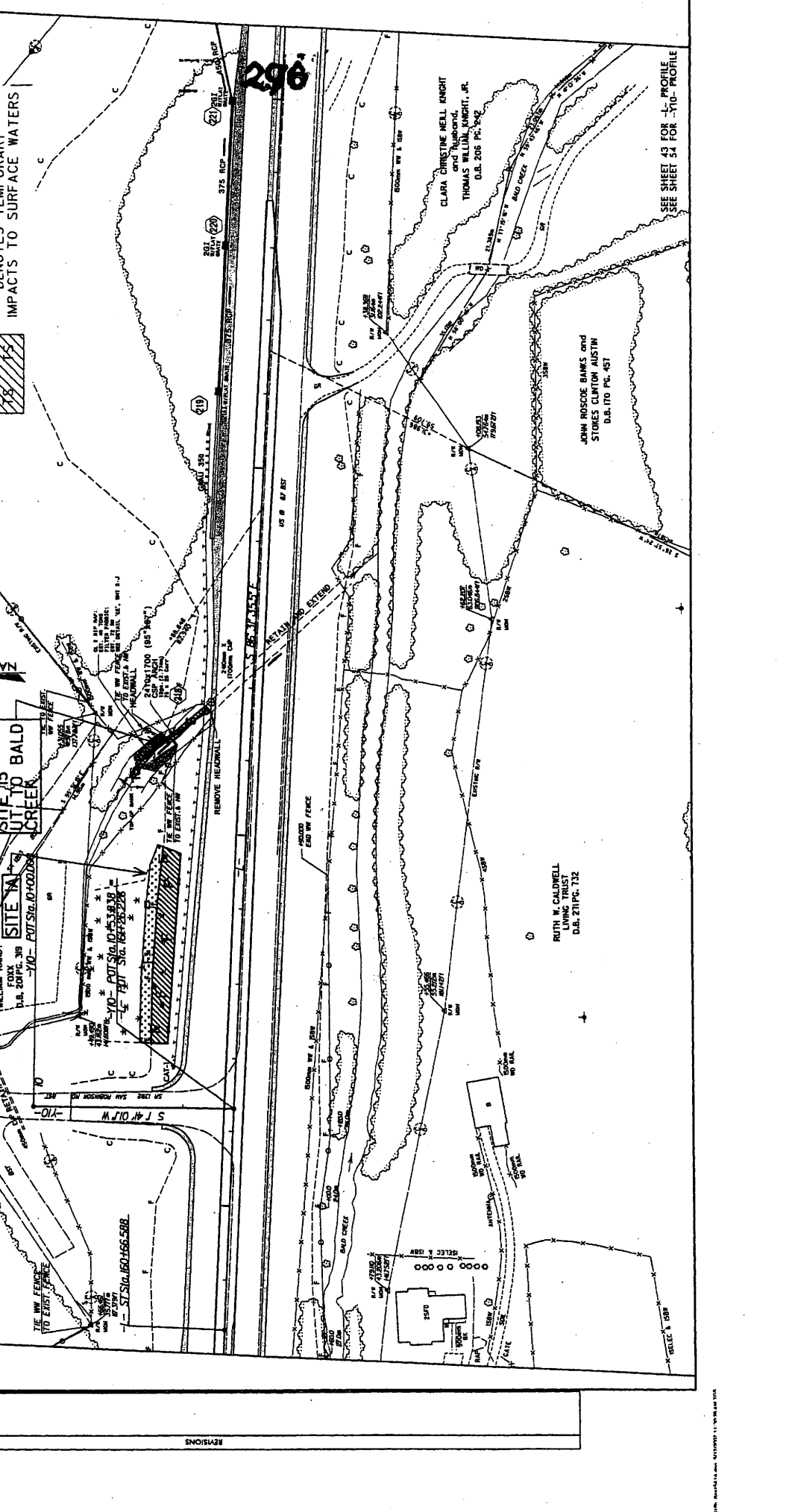
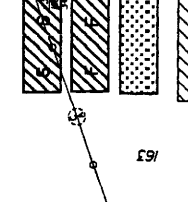
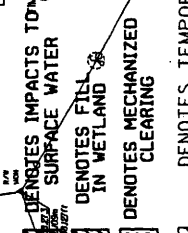
WILLIAM RANDY FOX
 D.B. 20 PG. 38

S.W. ROBERTSON and SHELBY ROBERTSON
 D.B. 39 PG. 58

EDWIN DEWEY HENLEY
 D.B. 82 PG. 83

CLARA CHRISTINE NELL KNIGHT and THOMAS
THOMAS WILLIAM KNIGHT, JR.
 D.B. 208 PG. 84-2

Denotes Impacts to Surface Water
Denotes Fil in Wetland
Denotes Mechanized Clearing
Denotes Temporary Impacts to Surface Waters



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

RUTH M. CALDWELL TRUST
 D.B. 21 PG. 132

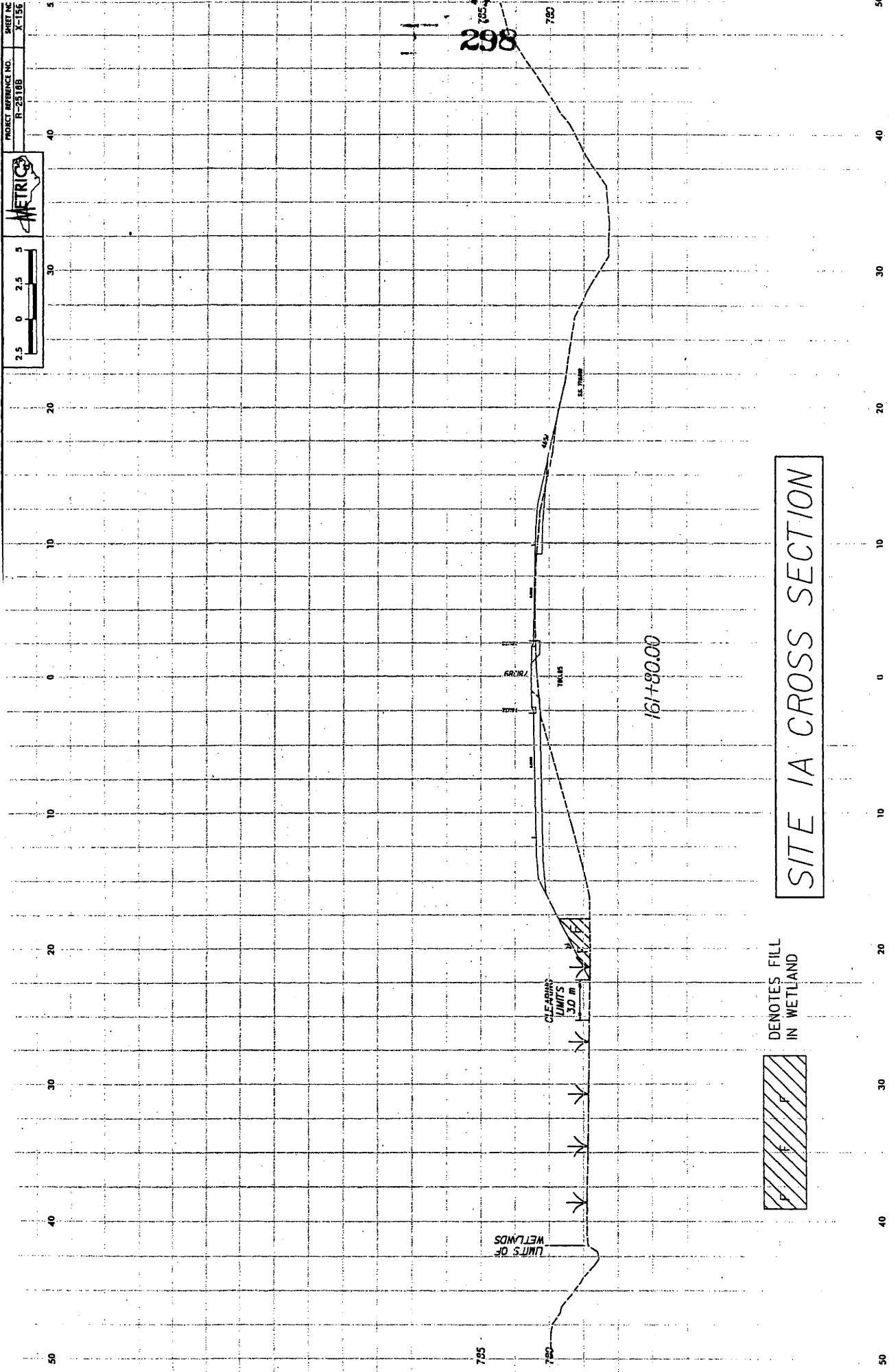
SEE SHEET 43 FOR L PROFILE
SEE SHEET 34 FOR -110- PROFILE

REVISIONS

PROJECT REFERENCE NO. R-2518B



SHEET NO. X-156



SITE IA CROSS SECTION



DENOTES FILL IN WETLAND



PROJECT REFERENCE NO. R-2588
 HYDRAULICS
 ROADWAY DESIGN
 ENGINEER

CONSTABLE,
 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

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

2:1 NORMAL

2:1 NORMAL

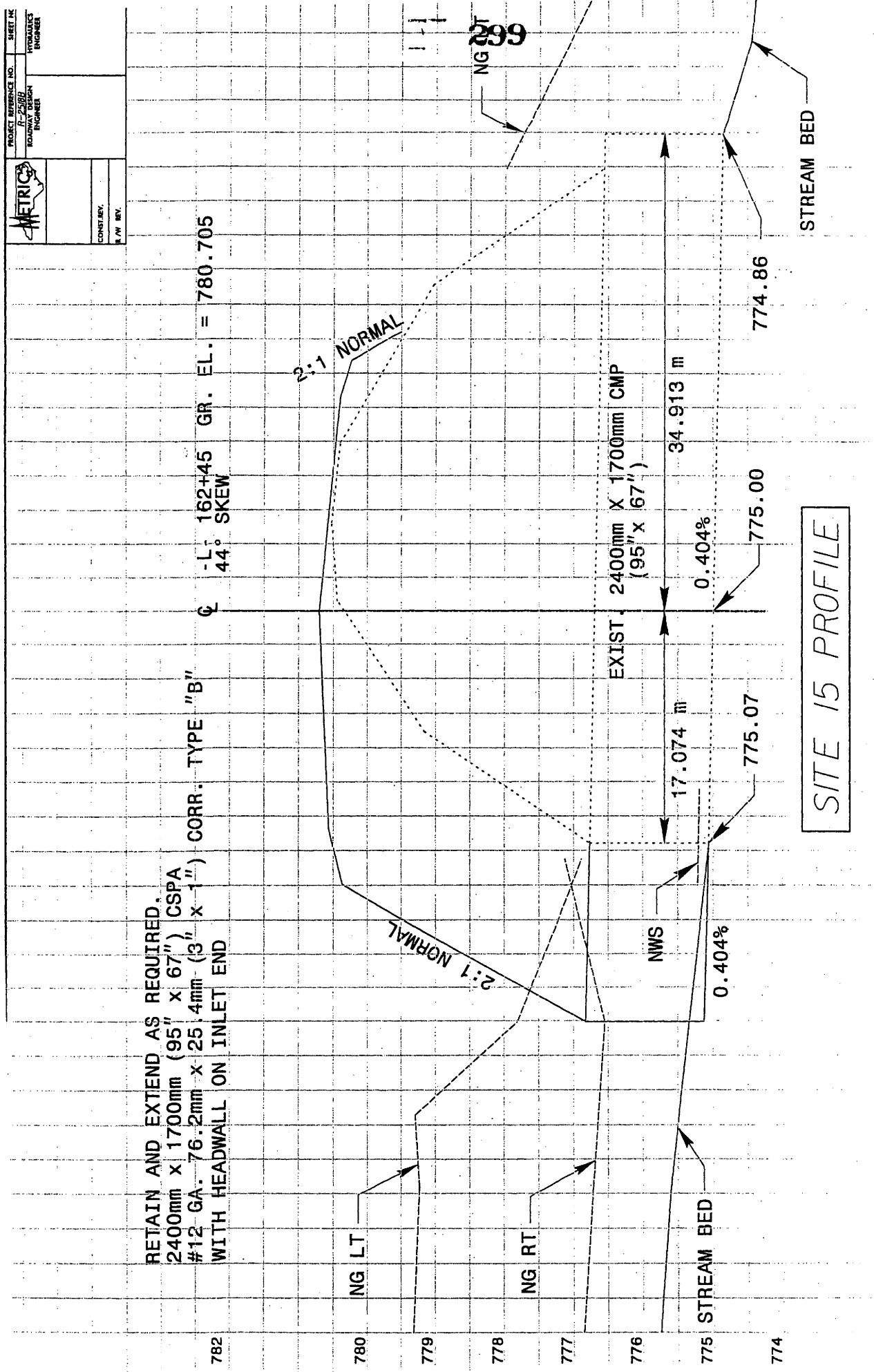
EXIST. 2400mm X 1700mm CMP
 (95" x 67")

NWS

STREAM BED

SITE 15 PROFILE

STREAM BED



PROJECT REFERENCE NO. SHEET NO.
 A-2298B 10
 ROADWAY DESIGN ENGINEER
 HYDRAULIC ENGINEER

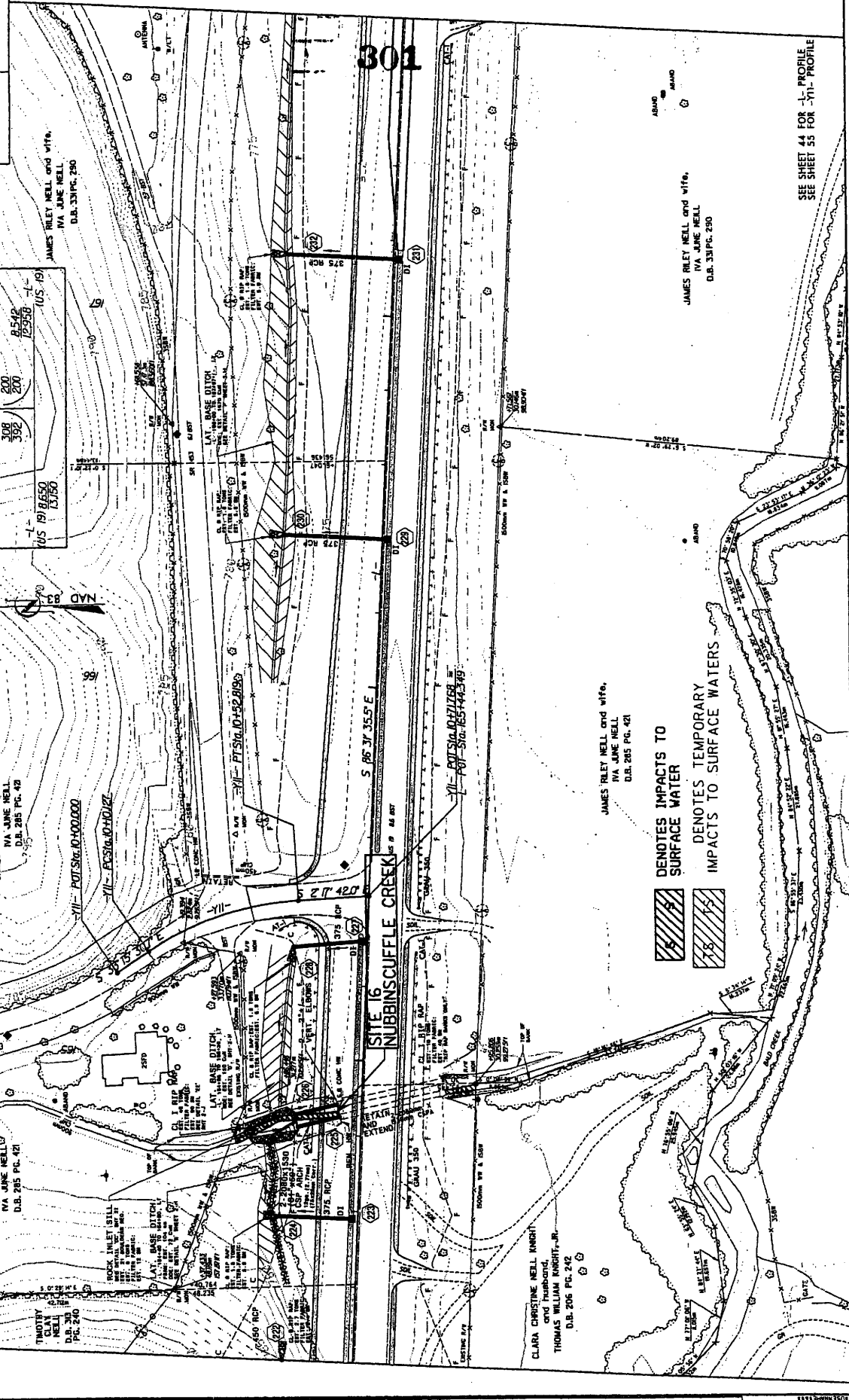
TGS ENGINEERS
 975 WAINWRIGHT STREET
 CARY, NC 27511
 PH. (919) 319-8850



PRELIMINARY PLANS
 TO BE USED FOR CONSTRUCTION

CONST. REV.
 P.W. REV.

10
 5
 1

711-156.1391
 508
 592
 308
 392
 200
 200
 105.191
 12.936
 13.750



 DENOTES IMPACTS TO SURFACE WATER
 DENOTES TEMPORARY IMPACTS TO SURFACE WATERS

SEE SHEET 44 FOR L-1 PROFILE
 SEE SHEET 55 FOR 711-1 PROFILE

REVISIONS

DENOTES TEMPORARY IMPACTS TO SURFACE WATERS



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

GR. EL. = 779.02
 -L- 164+88
 75° SKEW

2:1 NORMAL

EXIST. 2 @
 2080mm X 1530mm
 CMP ARCH

2 - 2° +/-
 VERT.
 ELBOWS

2:1 NORMAL

NG RT

NG LT

778

776

774

6.298

22.652

STREAM BED

0.0%

775.52

775.36

NWS

2.487%

774.80

STREAM BED

NG LT

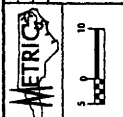
NG RT

302

SITE 16 PROFILE



PROJECT REFERENCE NO. SHEET
 R-2508 1/2
 L.W. SHEET NO. 1/2
 HYDRAULIC ENGINEER



TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 FORT WORTH, TEXAS 76102
 PH. (817) 318-8820

PRELIMINARY PLANS
 NOT FOR CONSTRUCTION

COUNTRY: N.W. REV.

WILLIAM G. FENDER
 PATRICIA J. FENDER
 D.B. 343 P.C. 08

DONALD W. BYRON
 PERRY T. BYRON
 D.B. 115 P.C. 379

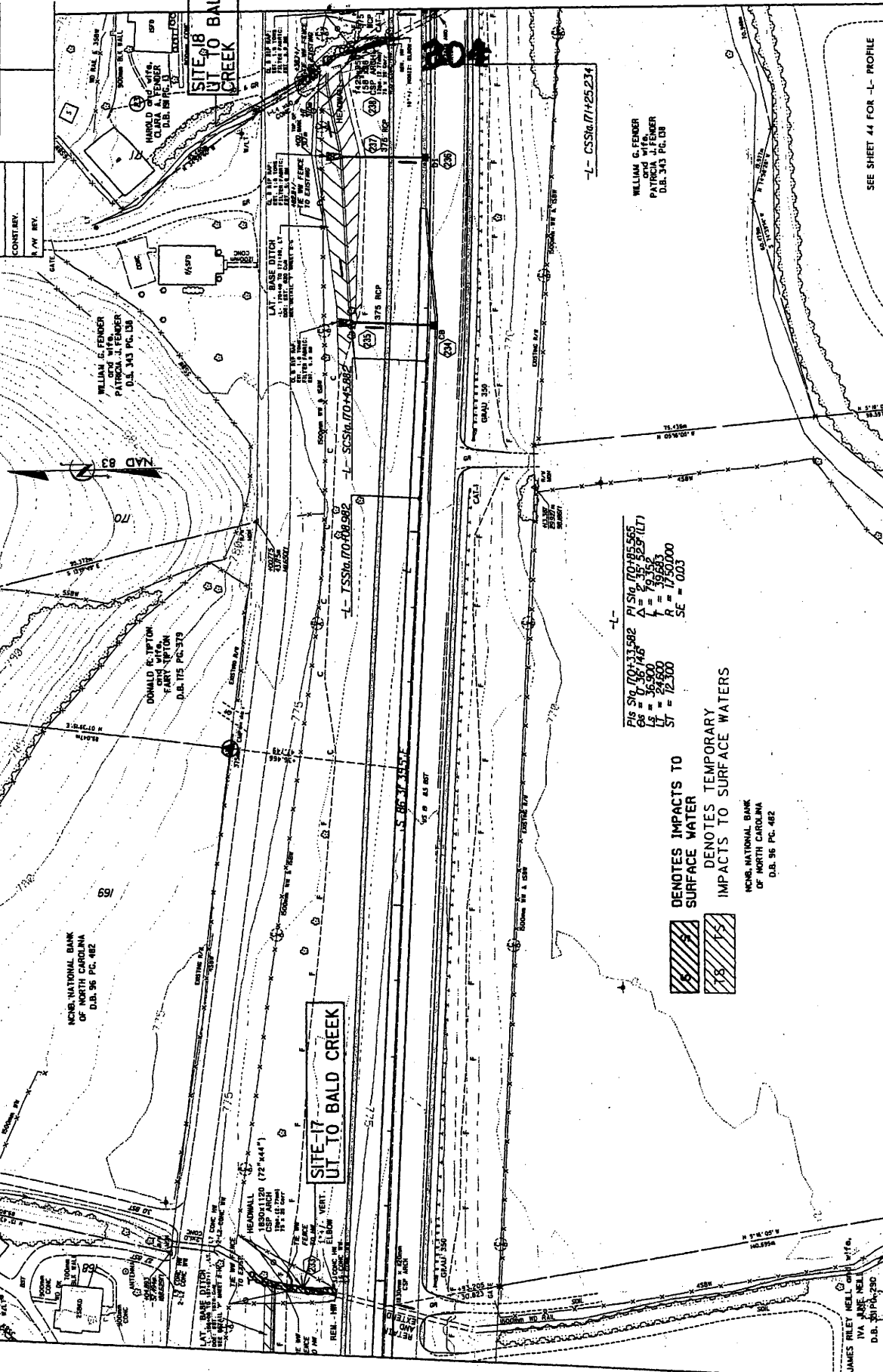
NCNB, NATIONAL BANK
 OF NORTH CAROLINA
 D.B. 96 P.C. 482

JAMES OWEN HELL AND
 DAVID HELL
 D.B. 290 P.C. 290

JAMES OWEN HELL AND
 DAVID HELL
 D.B. 290 P.C. 290

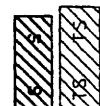
JAMES OWEN HELL AND
 DAVID HELL
 D.B. 290 P.C. 290

JAMES OWEN HELL AND
 DAVID HELL
 D.B. 290 P.C. 290



P15 Sta 70+33.582
 P16 Sta 70+36.746
 L1 = 36.900
 L2 = 24.600
 ST = 72.300
 R = 1750.000
 SE = 0.003

IMPACTS TO SURFACE WATER
 DENOTES TEMPORARY IMPACTS TO SURFACE WATERS



NCNB, NATIONAL BANK
 OF NORTH CAROLINA
 D.B. 96 P.C. 482

WILLIAM G. FENDER
 PATRICIA J. FENDER
 D.B. 343 P.C. 08

SEE SHEET 44 FOR -L- PROFILE

SITE-17
 UT TO BALD CREEK

SITE-18
 UT TO BALD CREEK

REVISIONS

METRIC

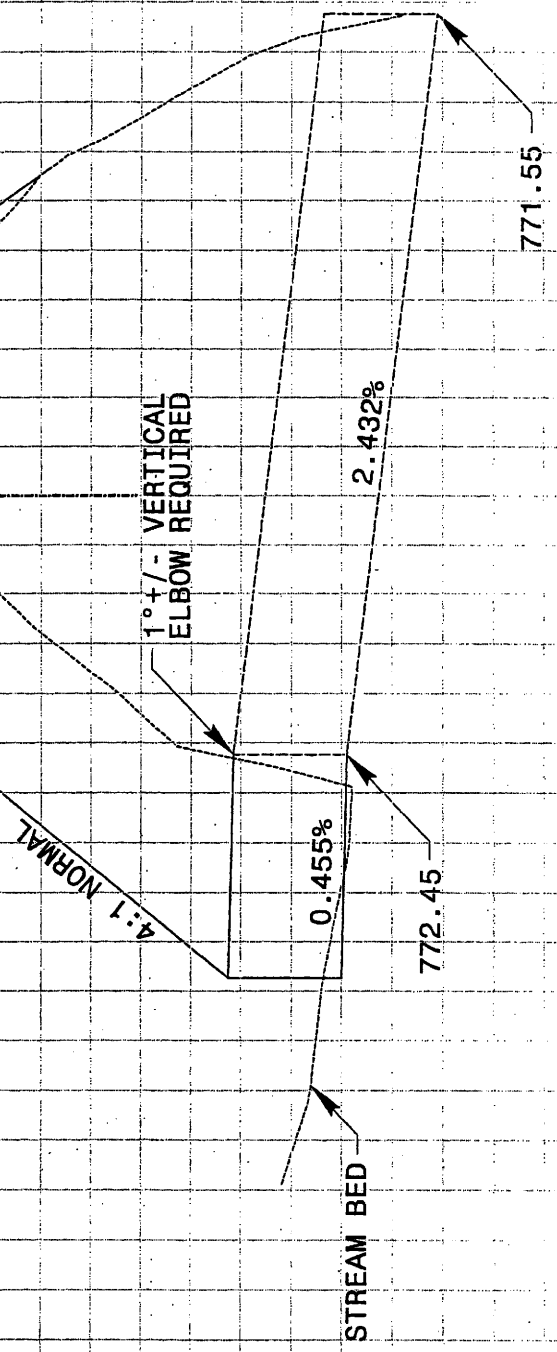
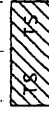
PROJECT REFERENCE NO. SHEET NO.
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

CONST. REV.
 P/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

305

-40 -30 -20 -10 0 +10 +20 +30

PROJECT REFERENCE NO. SHEET IN
 TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 CARY, NC 27511
 PH: (919) 519-0800

TGS
 TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 CARY, NC 27511
 PH: (919) 519-0800

ADT 2008
 2028
 224
 308
 -712- (SR 1453)

US 17 9542
 12958
 0750
 1250
 205
 300

PRELIMINARY PLANS
 BY THE USE OF THE CONSULTANT

CONTR. REV.
 R/W REV.

DATE: _____
 REVISIONS

DATE: _____
 REVISIONS

DATE: _____
 REVISIONS

DATE: _____
 REVISIONS

DATE: _____
 REVISIONS

DATE: _____
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DATE: _____
 REVISIONS

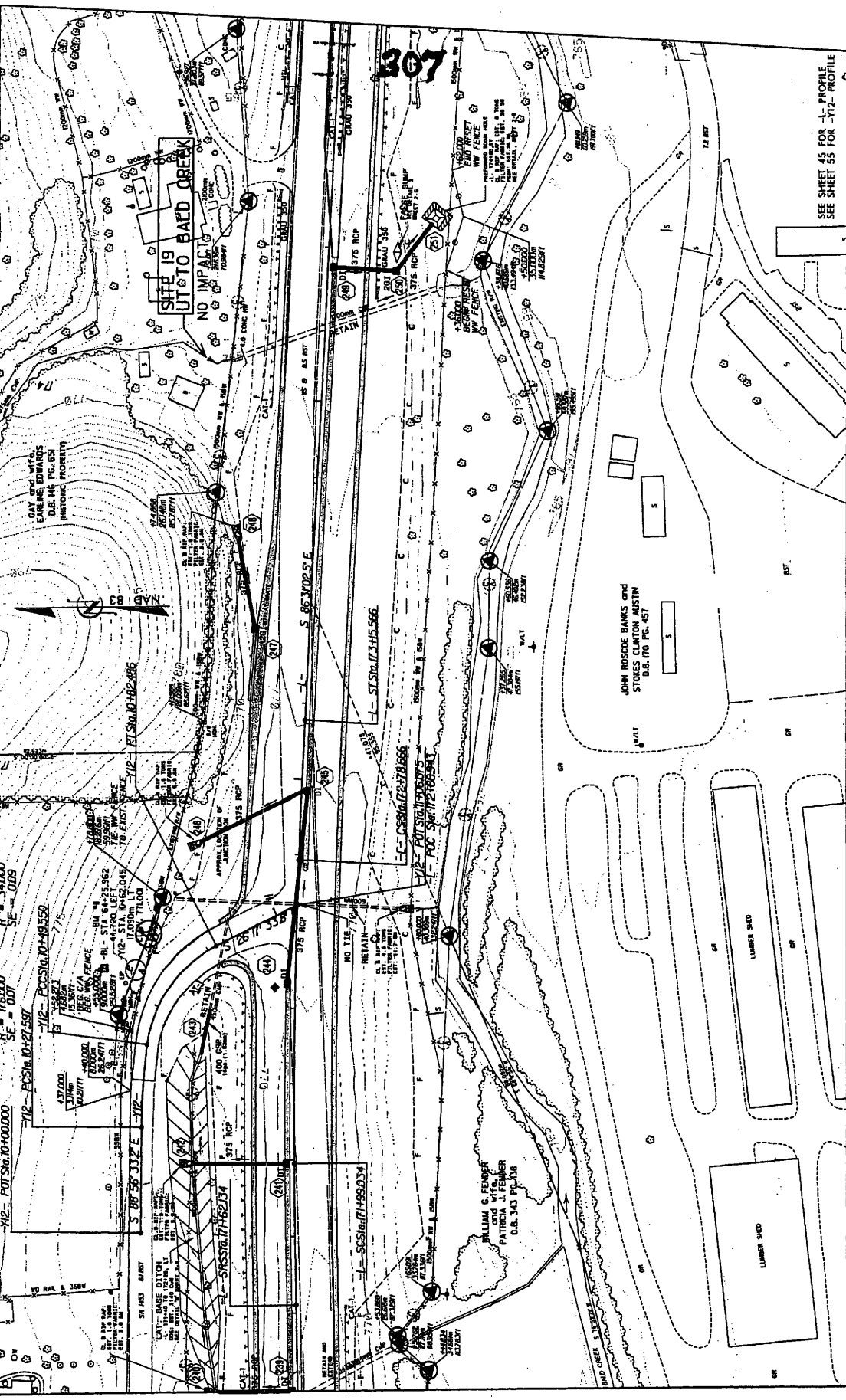
DATE: _____
 REVISIONS

DATE: _____
 REVISIONS

DATE: _____
 REVISIONS

DATE: _____
 REVISIONS

DATE: _____
 REVISIONS



SEE SHEET 45 FOR PROFILE
 SEE SHEET 55 FOR -712- PROFILE

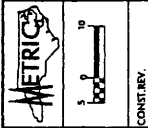
DATE: _____
 REVISIONS

DATE: _____
 REVISIONS

DATE: _____
 REVISIONS

DATE: _____
 REVISIONS

PROJECT REFERENCE NO. **R-25080**
 SHEET NO. **22**
 TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH (919) 519-8850



PRELIMINARY PLANS
 CONSTRUCTION
 1/4" = 1' HORIZ.
 1/8" = 1' VERT.

-73- (US 19 W)	
933 1267	847 1253
00 875	00 783
15 13250	67 1750
ADT 2008	ADT 2028
-714- (SR-102B)	

Bobby John McMillan
 D.B. 289 PC. 003

Alan R. McQuerry and
 Rita A. McQuerry
 D.B. 244 PC. 18

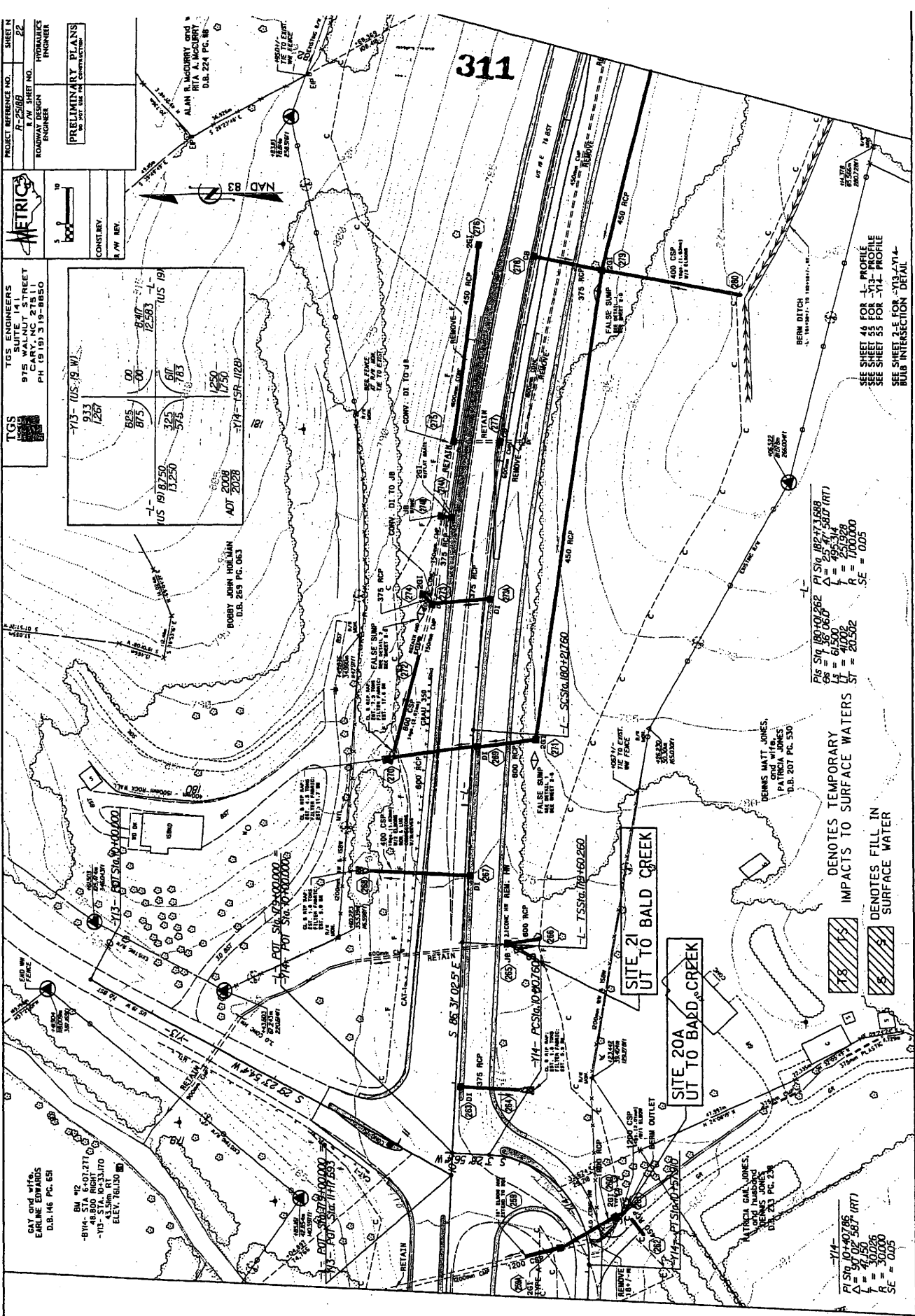
Deanna Matt Jones
 and wife
 Patricia Jones
 D.B. 201 PC. 530

Patricia Carl Jones,
 Deanna Matt Jones
 and wife
 Patricia Jones
 D.B. 233 PC. 274

Gay and wife
 Eugene Edwards
 D.B. 146 PC. 631

BM #2 601.271
 4+30.0 STA. 10+33.170
 -103- STA. 10+33.170
 ELEV. 161.00

311



PI Stg 180+10.262
 PI Stg 182+73.688
 Δ = 25.47, 58.07 (RT)
 L = 610.00
 R = 100.000
 SE = 0.05

PI Stg 10+07.036
 PI Stg 10+367.587 (RT)
 Δ = 4.150, 30.026
 L = 30.000
 R = 30.000
 SE = 0.05

Denotes Temporary
 Impacts to Surface Waters

Denotes Fill in
 Surface Water

SEE SHEET 46 FOR -L- PROFILE
 SEE SHEET 55 FOR -Y13- PROFILE
 SEE SHEET 2-E FOR -Y13-Y14-
 BULB INTERSECTION DETAIL

PROJECT REFERENCE NO. SHEET
 R-2500 23
 R/W SHEET NO. HYDRAULIC ENGINEER
 ROADWAY DESIGN ENGINEER
 PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 PH (813) 319-8850

PI STA 10+45.595
 $\Delta = 24.36$
 $L = 10.496$
 $R = 50.000$
 $SE = 0.02$

PI STA 10+40.815
 $\Delta = 24.36$
 $L = 14.650$
 $R = 25.227$
 $SE = 0.02$

PI STA 10+45.595
 $\Delta = 24.36$
 $L = 10.496$
 $R = 50.000$
 $SE = 0.02$

PI STA 10+45.595
 $\Delta = 24.36$
 $L = 10.496$
 $R = 50.000$
 $SE = 0.02$

PI STA 10+45.595
 $\Delta = 24.36$
 $L = 10.496$
 $R = 50.000$
 $SE = 0.02$

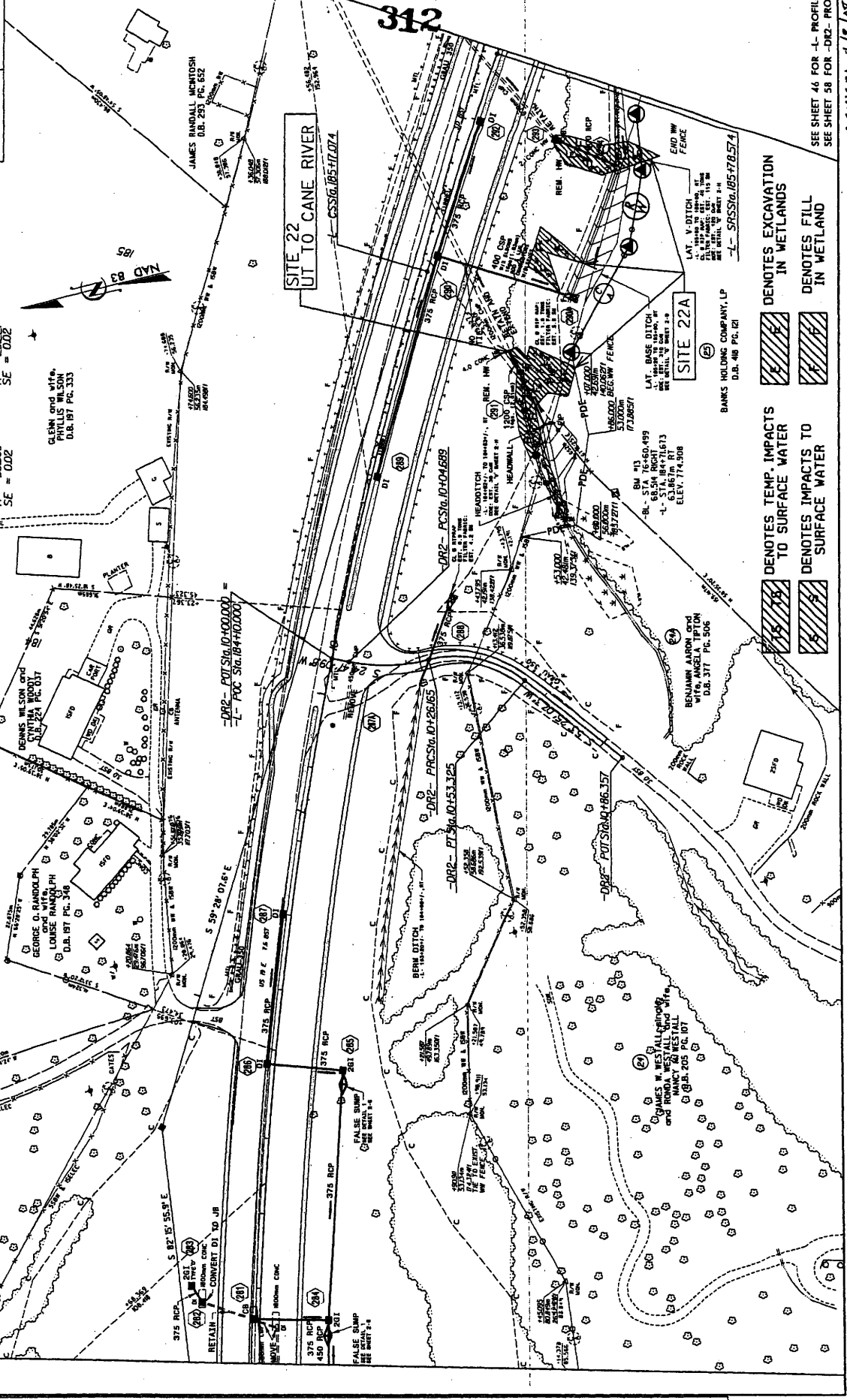
PI STA 10+45.595
 $\Delta = 24.36$
 $L = 10.496$
 $R = 50.000$
 $SE = 0.02$

PI STA 10+45.595
 $\Delta = 24.36$
 $L = 10.496$
 $R = 50.000$
 $SE = 0.02$

PI STA 10+45.595
 $\Delta = 24.36$
 $L = 10.496$
 $R = 50.000$
 $SE = 0.02$

PI STA 10+45.595
 $\Delta = 24.36$
 $L = 10.496$
 $R = 50.000$
 $SE = 0.02$

PI STA 10+45.595
 $\Delta = 24.36$
 $L = 10.496$
 $R = 50.000$
 $SE = 0.02$

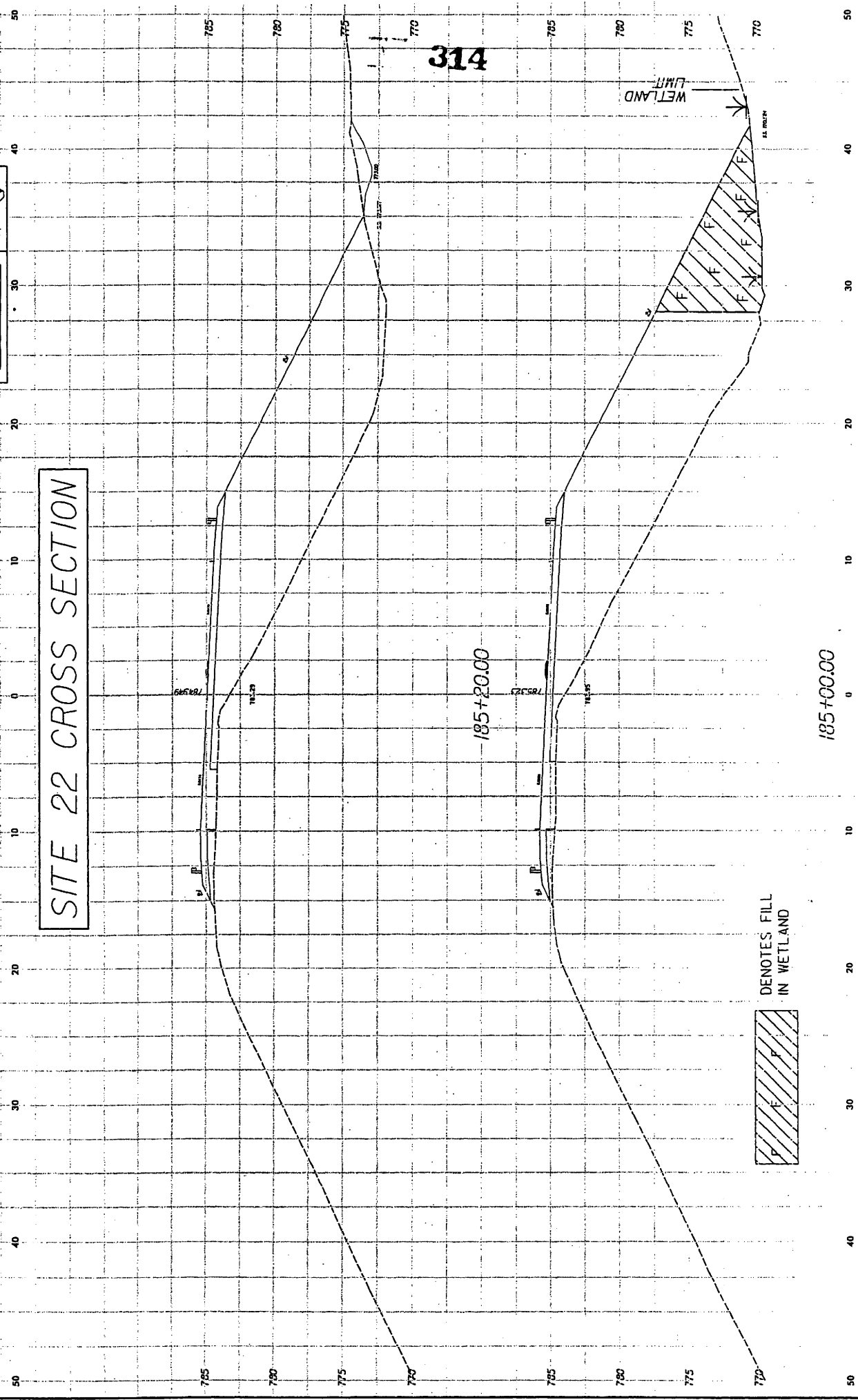


DENOTES EXCAVATION IN WETLANDS
 DENOTES FILL IN WETLAND
 DENOTES TEMP. IMPACTS TO SURFACE WATER
 DENOTES IMPACTS TO SURFACE WATER

SEE SHEET 46 FOR -L- PROFILE
 SEE SHEET 58 FOR -DR2- PROFILE
 0.8.171328 7/18/08



SITE 22 CROSS SECTION



DENOTES FILL
IN WETLAND

185+00.00

185+20.00

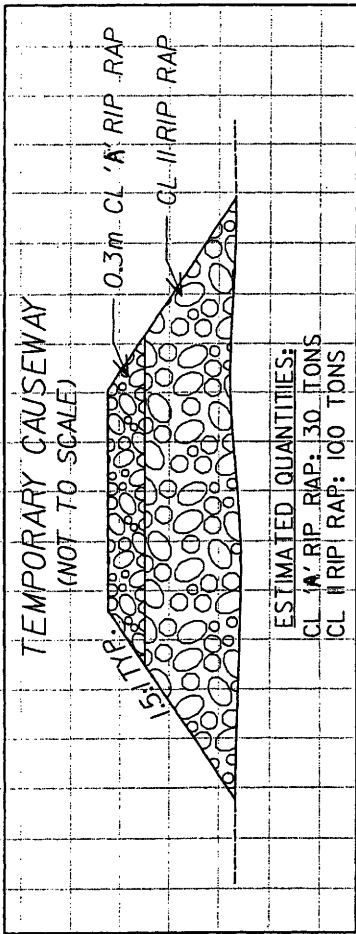
185+29.00

WETLAND
LIMIT

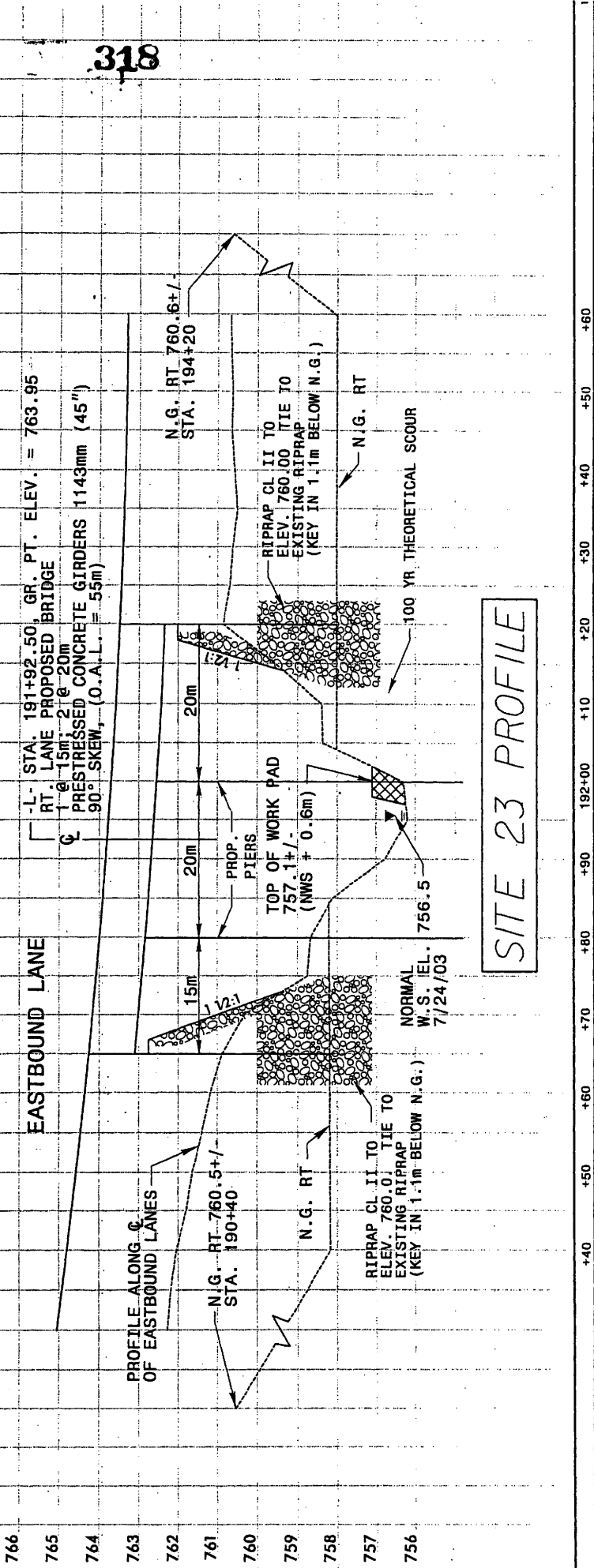
314



COUNTY:
 R/W REV.



ESTIMATED QUANTITIES:
 CL #1 RIP RAP: 30 TONS
 CL #11 RIP RAP: 100 TONS





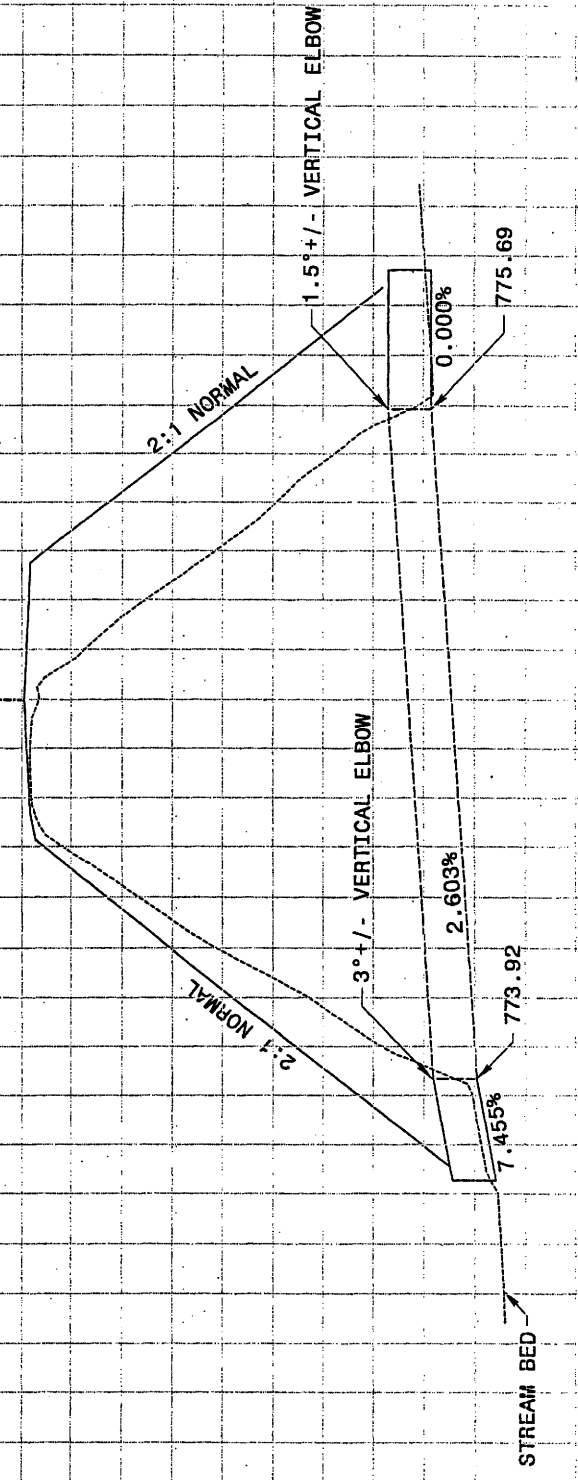
CONST. BY:
 P. W. BEV.

323

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 GR. EL. = 791.90

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



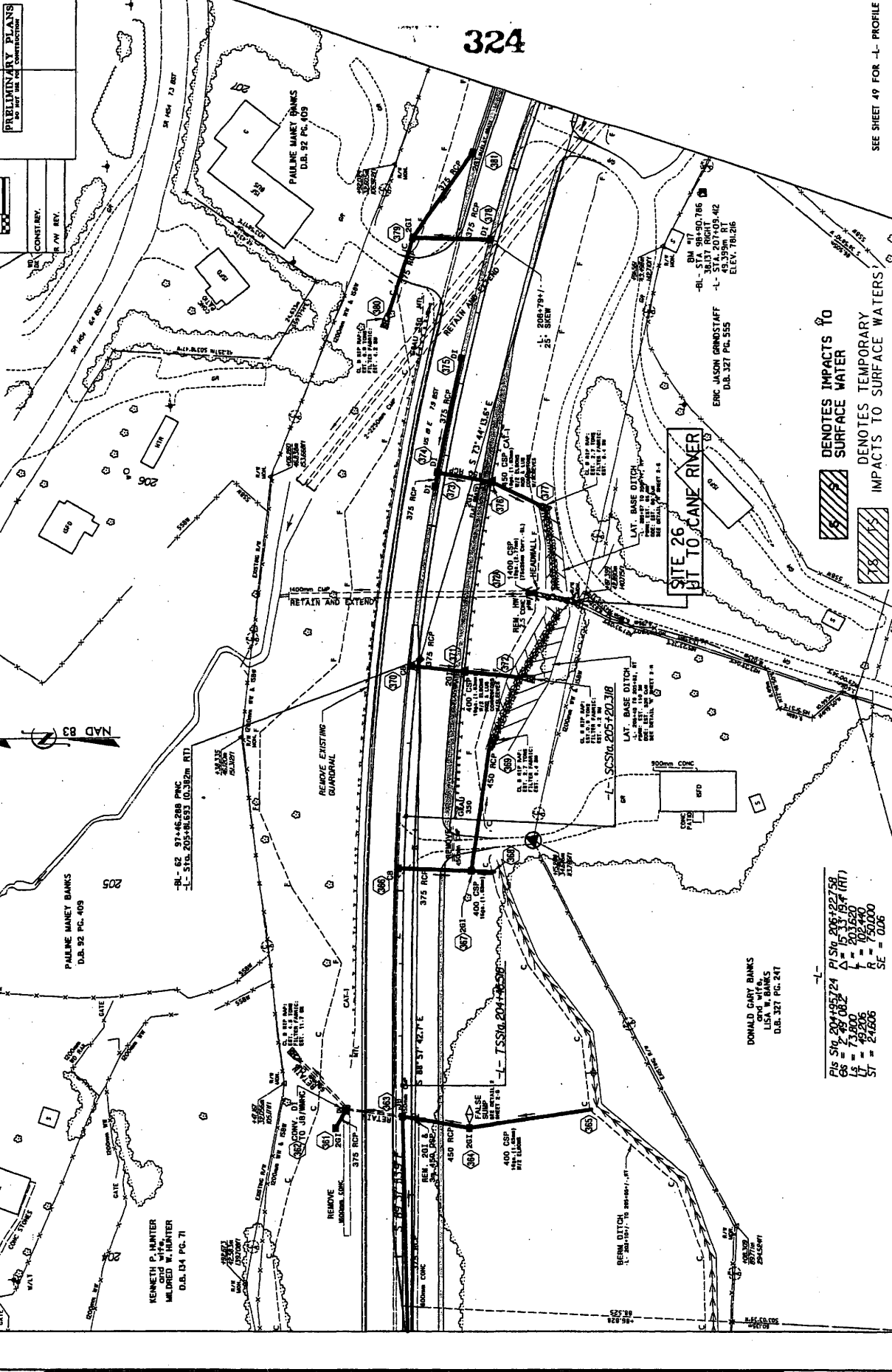
SITE 25 PROFILE

-60 -40 -20 0 +20 +40 +60 +80

PROJECT REFERENCE NO. SHEET NO.
 R-2508 29
 TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 PHOENIX, AZ 85001
 PH (602) 319-8880

TGS
 TGS ENGINEERS
 SUITE 141
 975 WALNUT STREET
 PHOENIX, AZ 85001
 PH (602) 319-8880

METRIC
 METRIC
 CIVIL ENGINEER
 1" = 40' HORIZ.
 1" = 4' VERT.



DENOTES IMPACTS TO SURFACE WATER
 DENOTES TEMPORARY IMPACTS TO SURFACE WATERS

PLS STA. 204+95.24 PI STA. 206+22.50
 66' = 21' 08.2" Δ = 53' 35.4" (RT)
 L = 492.40 R = 750.00
 ST = 24.606 SE = 0.06

DONALD GARY BANKS
 LISA W. BANKS
 D.B. 327 PG. 247

KENNETH P. HANTER
 CINDY W. HANTER
 MALDEN W. HANTER
 D.B. 141 PG. 71

PAULINE MARKET BANKS
 D.B. 92 PG. 409

REVISIONS

PROJECT REFERENCE NO. SHEET NO.
 A-2009 23
 ROADWAY DESIGN ENGINEER HYDRAULIC ENGINEER

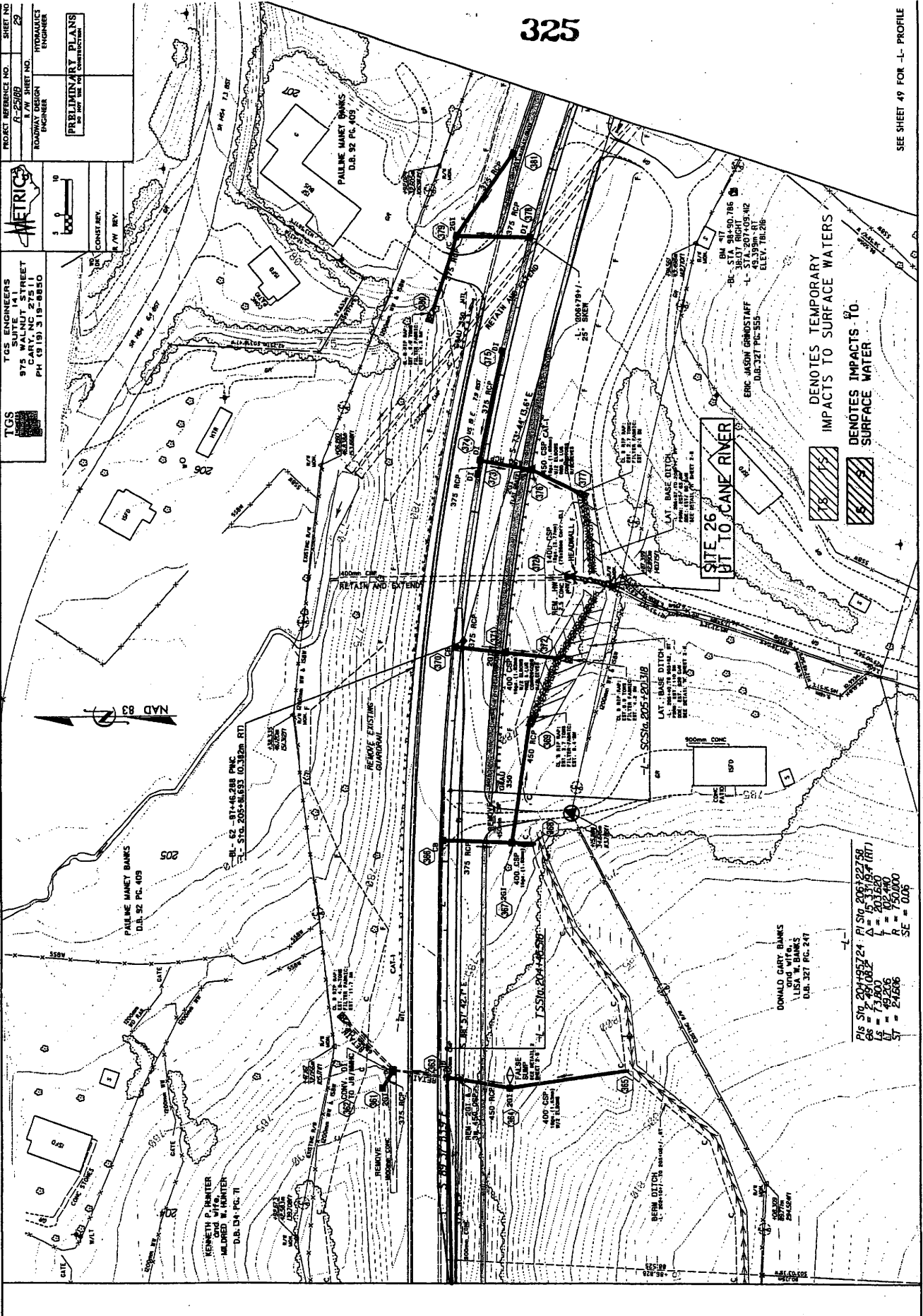
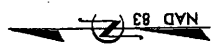


TGS ENGINEERS
 975 WALNUT STREET
 CARY, NC 27511
 PH (919) 319-8850

PRELIMINARY PLANS
 DO NOT BE USED FOR CONSTRUCTION



CONSTRY.
 1/4" = 10'



DENOTES TEMPORARY IMPACTS TO SURFACE WATERS
 DENOTES IMPACTS TO SURFACE WATER

PLS STA. 204+45.24 PLS STA. 206+22.58
 C&G = 2.26082 Δ = 15.3118 (RT)
 L = 203.650
 E = 47.236
 S = 2.686 SE = 0.04

DONALD GARY BANKS
 and wife,
 LISA W. BANKS
 D.B. 327 P.C. 47

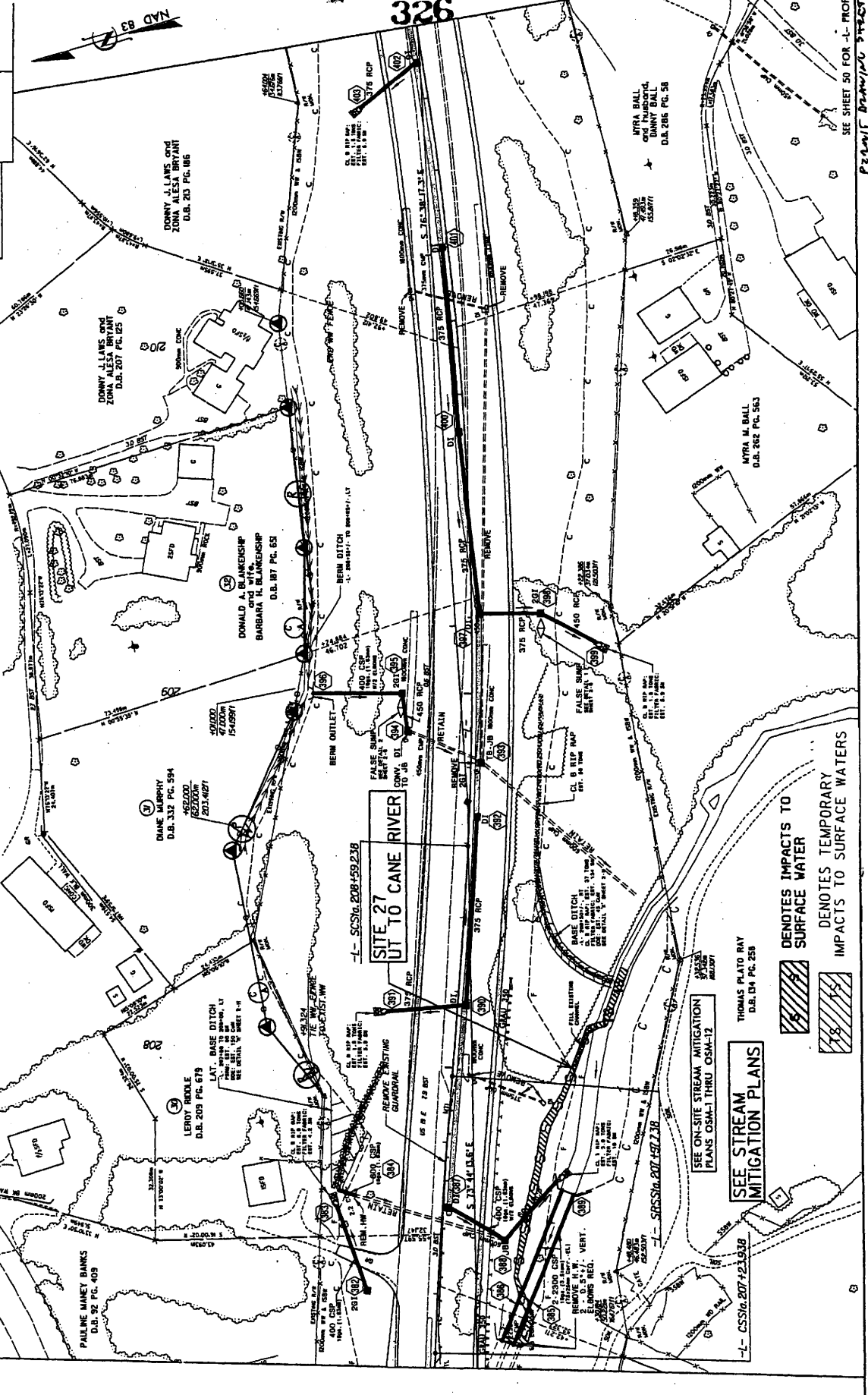
SEE SHEET 49 FOR -L- PROFILE

PROJECT REFERENCE NO. SHEET 1
 R-2268
 1" = 40' SHEET NO. 30
 HYDRAULIC
 DESIGN
 ENGINEER

METRICS
 PRELIMINARY PLANS
 FOR THE CONSTRUCTION

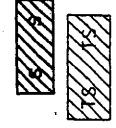
TGS ENGINEERS
 SUITE 141
 975 GARY, NC 27511
 PH (919) 318-8850

PLS S14 207-48543 PLS S14 208-13740 PLS S14 204-59426
 GS = 73200 GS = 61500 GS = 47184
 LS = 49206 LS = 40000 LS = 47184
 ST = 24886 ST = 20502 ST = 40000
 SE = 0.005 SE = 0.005 SE = 0.005



SEE STREAM MITIGATION PLANS OSM-1 THRU OSM-12

DENOTES IMPACTS TO SURFACE WATER
 DENOTES TEMPORARY IMPACTS TO SURFACE WATERS



SEE SHEET 50 FOR L-PROFIL
 PEARL DRUMM STREET

PROJECT REFERENCE NO. **F-2549B** SHEET NO. **328**
 ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER

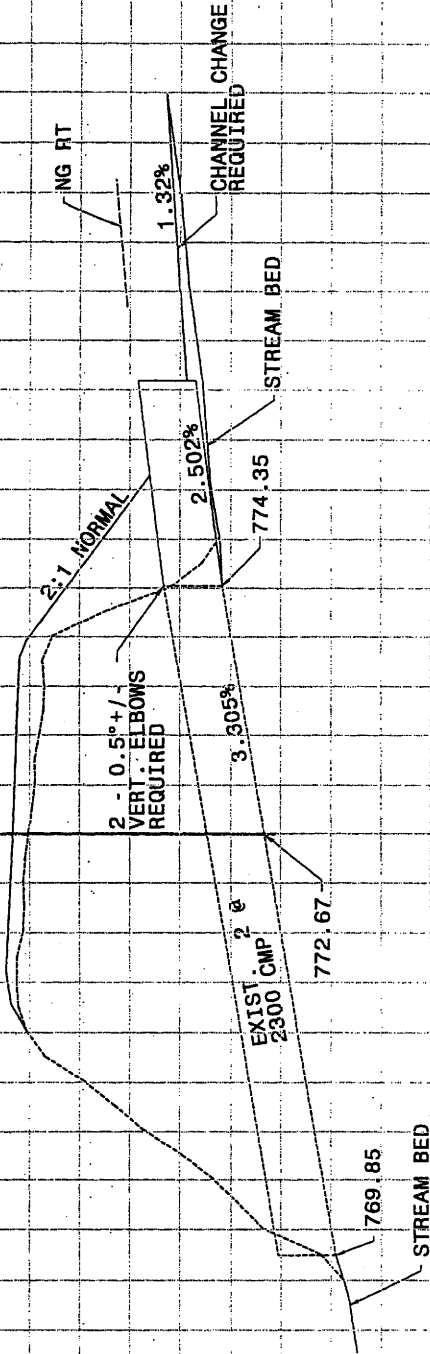
METRIC

CONST. REV.
 1/17/87

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

784
782
780
778
776
774
772
770
768



SITE 27 PROFILE

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

PROJECT MESSAGE NO. SHEET NO.
 T-2500 31
 ROADWAY DESIGN NO. HYDRAULIC ENGINEER
 PRELIMINARY PLANS
 NO. INT. USE FOR CONSTRUCTION

TGS ENGINEERS
 SURVEY
 975 WALNUT STREET
 CARY, NC 27511
 PH: (919) 315-8850

GARY ARKINS
 DB 209 PC 155

CONST. DIV.
 IN P.W. DIV.

SEE SHEET 36 FOR
 -Y21- TRAFFIC DIAGRAM
 AUT 2028
 2925
 4775

PI STA 11400.00
 $\Delta = 16,559$
 $L = 32,565$
 $T = 17,819$
 $R = 50,000$
 $SE = 0.02$

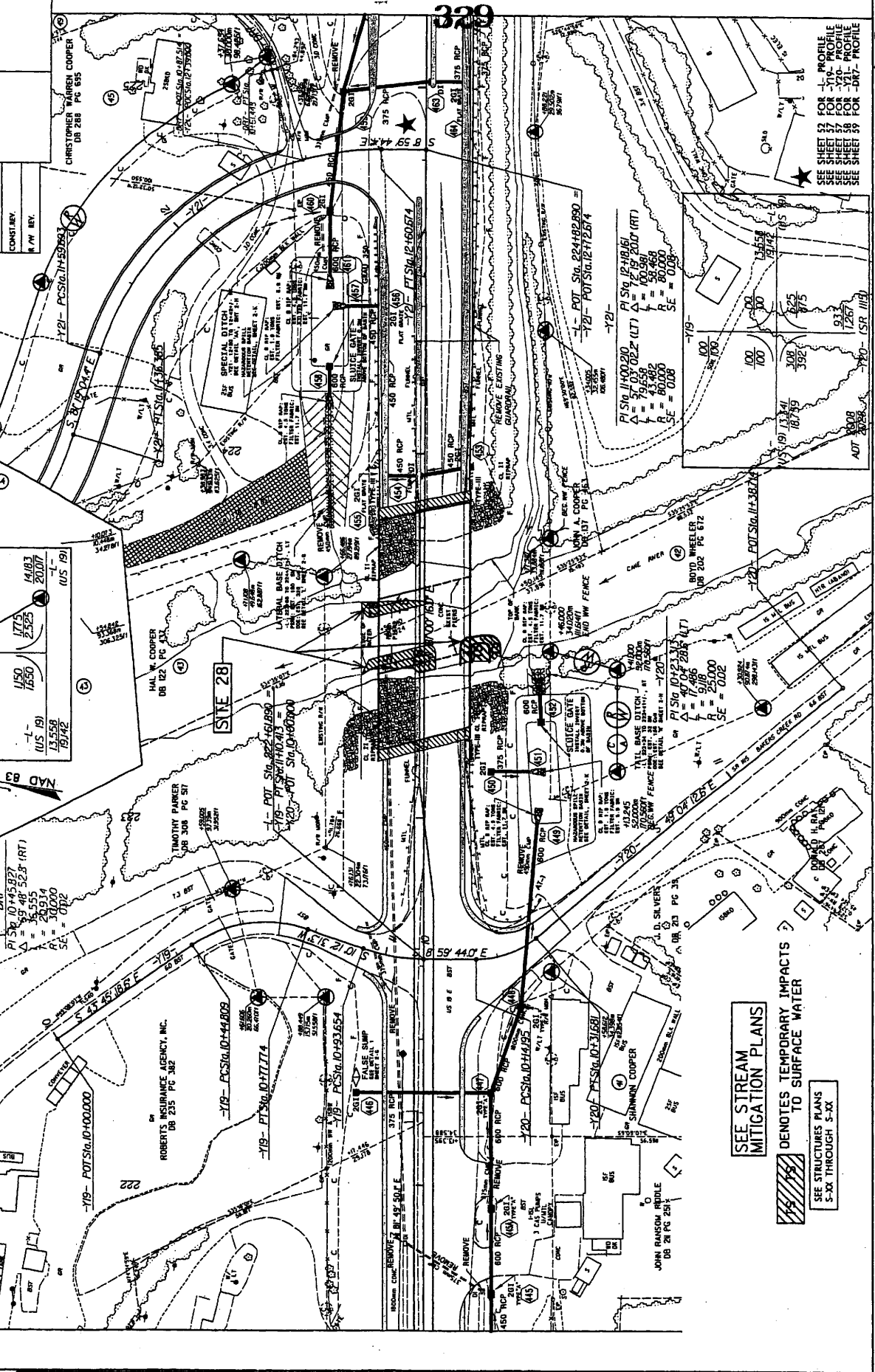
PI STA 10745.82
 $\Delta = 3,465.23$ (RT)
 $L = 6,459$
 $T = 2,934$
 $R = 10,000$
 $SE = 0.02$

PI STA 10452.69 (RT)
 $\Delta = 16,559$
 $L = 32,565$
 $T = 17,819$
 $R = 50,000$
 $SE = 0.02$

PI STA 10452.69 (RT)
 $\Delta = 16,559$
 $L = 32,565$
 $T = 17,819$
 $R = 50,000$
 $SE = 0.02$

PI STA 10745.82
 $\Delta = 3,465.23$ (RT)
 $L = 6,459$
 $T = 2,934$
 $R = 10,000$
 $SE = 0.02$

PI STA 10452.69 (RT)
 $\Delta = 16,559$
 $L = 32,565$
 $T = 17,819$
 $R = 50,000$
 $SE = 0.02$



REVISIONS

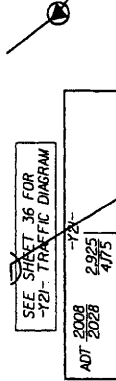
SEE STREAM MITIGATION PLANS
 DENOTES TEMPORARY IMPACTS TO SURFACE WATER
 SEE STRUCTURES PLANS S-XX THROUGH S-XX

SEE SHEET 32 FOR -L- PROFILE
 SEE SHEET 37 FOR -Y19- PROFILE
 SEE SHEET 38 FOR -Y20- PROFILE
 SEE SHEET 39 FOR -Y21- PROFILE
 REVISED FEB 2008
 GARY ARKINS

PROJECT REFERENCE NO. R-2589
 SHEET NO. 34
 PRELIMINARY PLANS
 CONTRACTOR: CHRISTOPHER COOPER
 ENGINEER: TGS ENGINEERS

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

SEE SHEET 36 FOR
 -12- TRAFFIC DIAGRAM

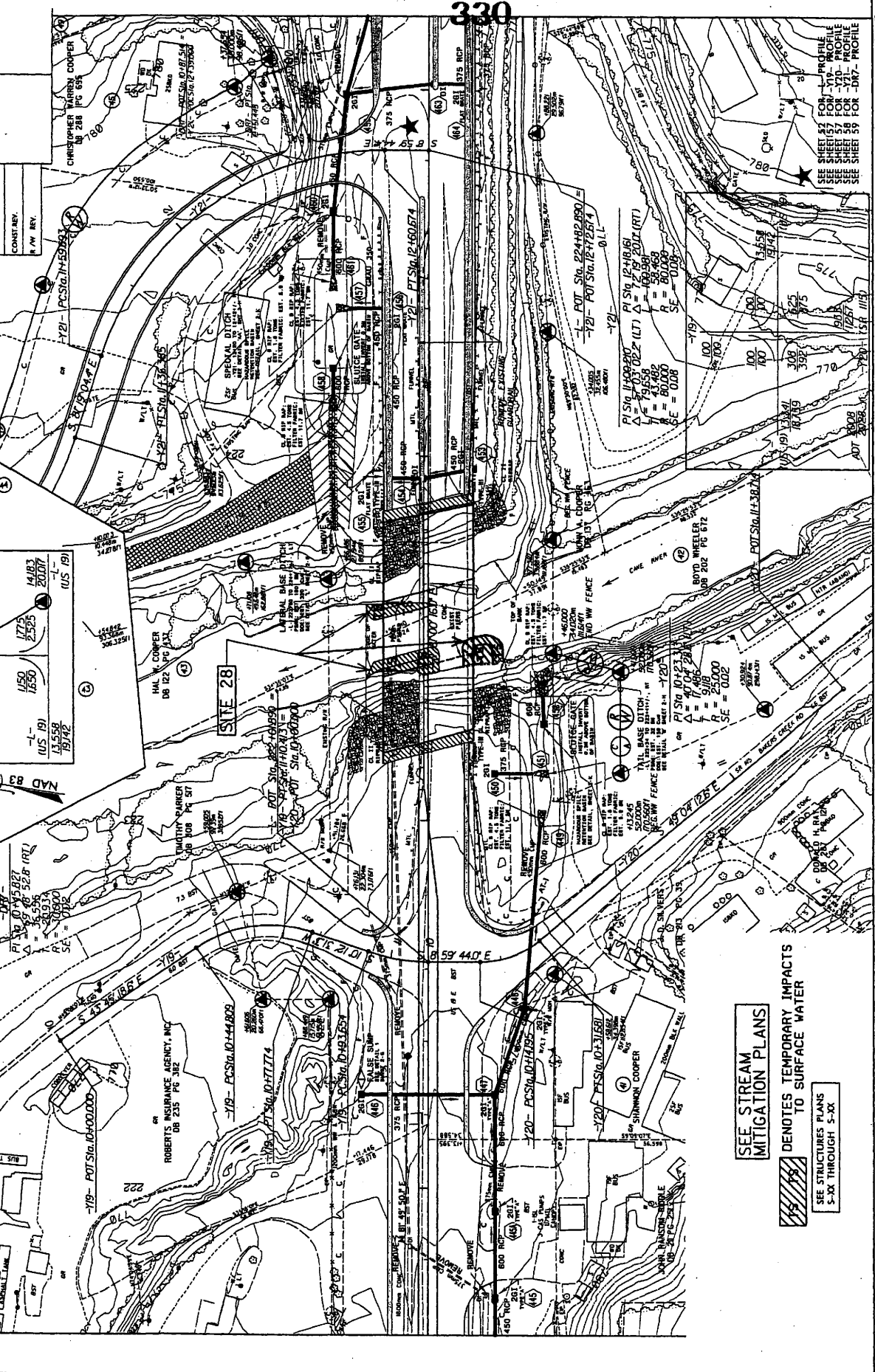


SEE STREAM MITIGATION PLANS
 -19- POT. SIG. 04-14-809
 $\Delta = 53.57$
 $L = 19.12$
 $R = 15.2$
 $R = 35.000$
 $SE = 0.04$

SEE STREAM MITIGATION PLANS
 -18- POT. SIG. 04-17-174
 $\Delta = 53.57$
 $L = 19.12$
 $R = 15.2$
 $R = 35.000$
 $SE = 0.04$

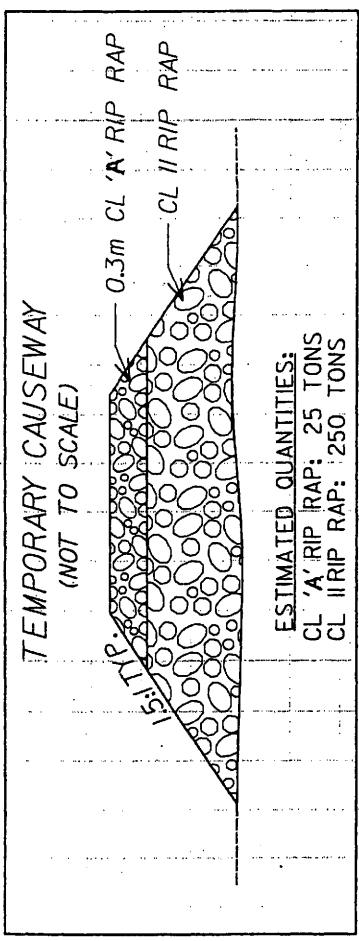
SEE STREAM MITIGATION PLANS
 -17- POT. SIG. 04-18-157
 $\Delta = 53.57$
 $L = 19.12$
 $R = 15.2$
 $R = 35.000$
 $SE = 0.04$

SEE STREAM MITIGATION PLANS
 -16- POT. SIG. 04-19-142
 $\Delta = 53.57$
 $L = 19.12$
 $R = 15.2$
 $R = 35.000$
 $SE = 0.04$

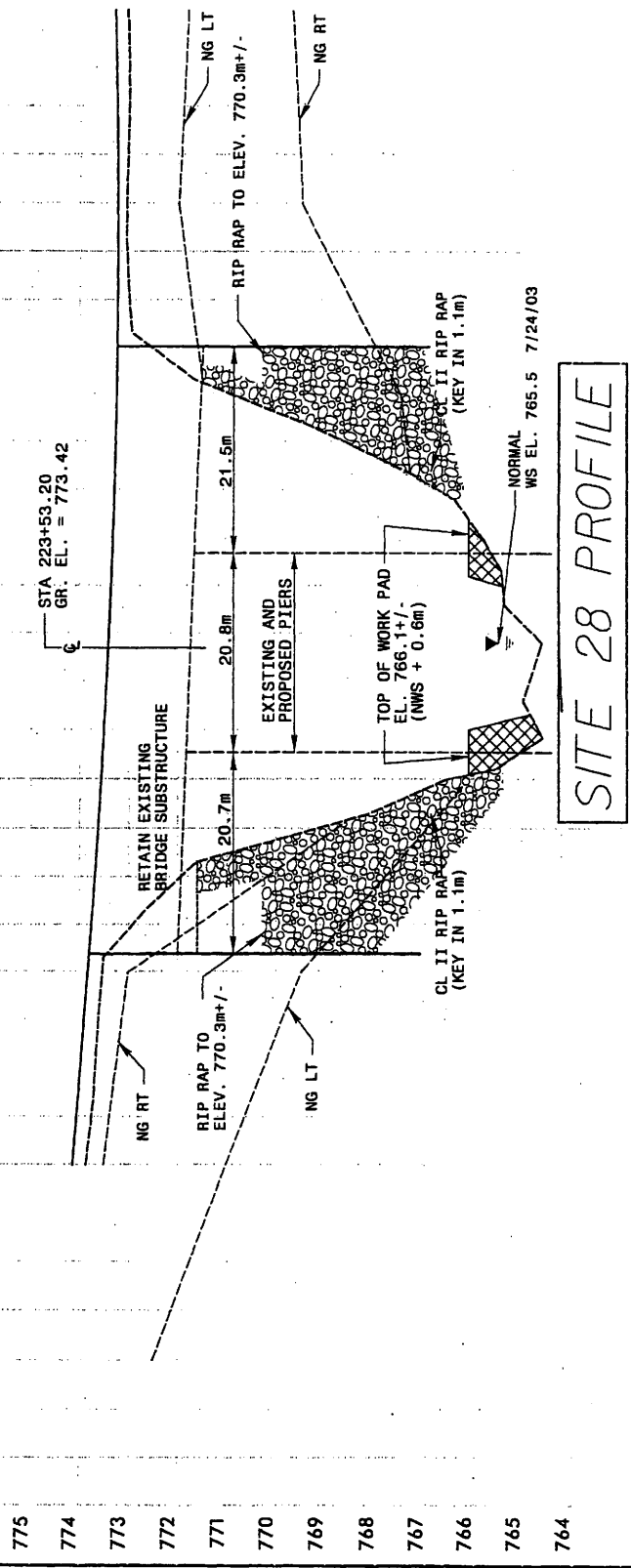


SEE STREAM MITIGATION PLANS
 DENOTES TEMPORARY IMPACTS TO SURFACE WATER
 SEE STRUCTURES PLANS 5-XX THROUGH 5-XX

REVISIONS
 DATE: FEB 2008
 DRAWN BY: [Name]



ESTIMATED QUANTITIES:
 CL 'A' RIP RAP: 25 TONS
 CL 'II' RIP RAP: 250 TONS



SITE 28 PROFILE

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